

**Geotechnical Base Line Report  
New I-26 Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No. 1413-15-114**



Prepared for:  
**Thomas & Hutton**  
1501 Main Street  
Columbia, South Carolina 29201

Prepared by:  
**S&ME, Inc.**  
620 Wando Park Boulevard  
Mt Pleasant, South Carolina 29464

**January 21, 2016**



January 21, 2016

Thomas & Hutton  
1501 Main Street  
Columbia, South Carolina 29201

Attention: Mr. Doyle Kelley

Reference: **Geotechnical Base Line Report**  
New I-26 Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No. 1413-15-114

Dear Mr. Kelley:

We have completed our geotechnical exploration for the new Volvo Interchange in Berkeley County, South Carolina. Our exploration was performed in general accordance with Master Subcontract for Services between Thomas & Hutton Engineering Company (T&H) and S&ME, Inc. dated August 25, 2015, and S&ME Proposal No. 14-1500509 dated May 15, 2015. The purpose of our geotechnical services was to explore the site subsurface conditions and prepare a Geotechnical Base Line Report and a Site-Specific Response Analysis Report to support the South Carolina Department of Transportation's (SCDOT) preparation of the design-build package.

Our Site-Specific Response Analysis Report is presented under separate cover.

## ❖ Project Information

We understand a new interchange is being proposed along I-26 approximately 2 miles south of SC 27 (Exit 187) to support the proposed Volvo plant in Berkeley County. The approximate site location is shown on the Site Location Map (Figure I-1) in Appendix I. The project includes constructing a fully directional interchange including associated ramp embankments and three bridges.

This project information was provided by Mr. Doyle Kelley with Thomas & Hutton Engineering Company in an email to Mr. Michael Ulmer, P.E. with S&ME, Inc. dated June 18, 2015.

## ❖ Field Exploration

The field exploration consisted of soil test borings (STB), cone penetration test (CPT) soundings, seismic cone penetration test (SCPT) soundings, dilatometer test (DMT) soundings, manual auger borings with dynamic cone penetrometer testing (HA), bulk soil (BS) sample collection, and Multi-Channel Analysis of Surface Waves (MASW) testing. Test locations for the bridges, embankments, and roadway were selected by S&ME and T&H based on a conceptual interchange layout prepared by T&H and are shown on the Test Location Plan (Figure I-2) in Appendix I. STBs and DMT soundings were performed at the conceptual

bridge abutments locations, a combination of STBs and CPTs were performed for the embankments, and HAs were performed in the roadway improvements portion of the project. Soils encountered in the borings were visually classified in general accordance with ASTM D 2488. Undisturbed Shelby tube samples were collected from wash borings adjacent to test locations ID-01 at a depth of 5 to 7 ft, ID-02 at a depth of 8 to 10 ft, ID-06 at depths of 5 to 7 ft and 10 to 12 ft, IS-18 at depths of 4 to 6 ft and 10 to 12 ft. Near-surface bulk samples were collected at the HA locations.

Table 1 presents a generalized summary of the soil strata encountered with the exploration.

**Table 1 – Soil Stratification Table**

Geologic Formation	Elevation of Top of Layer (ft-NAVD 88)	Depth of Top of Layer (ft)	USCS Soil Type	SPT-N values (bpf)	Average CPT Tip Resistance (tsf)	Average DMT p1 Pressure (tsf)
Penholoway Formation	58 to 76	0	CL, CH SC SP-SC, ML, MH, SM, SP-SM	0 to 36	33.0	11.8
Cooper Marl	36½ to 42	20 to 25	CL, ML	15 to 64	-	-

A tabulated summary of the tests, test depths, coordinates, elevations, and the STB, CPT Sounding and DMT Sounding, and HA Logs are presented in Table 2 and Appendix II. We established approximate test locations in the field using a handheld GPS unit. Final test location coordinates and elevations were surveyed by S&ME’s subcontractor, CHE Surveying.

**Subsurface Water Level Measurements**

We measured subsurface water levels in the CPT soundings and HAs at the time of testing and in the STBs at least 24 hours after completion of each boring.

**SPT Hammer Energy Measurements**

SPT hammer energy measurements were provided by S&ME’s drilling subcontractor, Soil Consultants, Inc. Hammer energy measurement summaries are presented in Appendix II, and the efficiency values are presented on the STB logs. The N-values presented on the logs have not been corrected for hammer efficiency.

**Shear Wave Velocity Measurements**

We performed MASW (Multi-Channel Analysis of Surface Waves) and MAM (Microtremor Array Measurements) at three locations to obtain shear wave velocity measurements to depths of up to 190 ft. Test locations are shown in Figure I-2 in Appendix I. The measured shear wave velocities plotted vs. depth are presented in Appendix II.



**Table 2 – Soil Testing Location Table**

Test ID	Test Location	Test Type	Station	Elevation (ft-NAVD 88)	Depth (ft)	
IC-01	Embankment	CPT	329+34	61.16	32.3	
IC-02		CPT	335+62	61.48	16.9	
IC-03		CPT	341+05	60.80	17.9	
IC-04		CPT	210+62	61.08	16.2	
IC-05		CPT	217+67	61.83	17.8	
IC-06		CPT	324+97	60.65	28.5	
IC-07		CPT	206+16	60.63	17.4	
IC-08		CPT	346+45	60.93	16.5	
IC-09		CPT	223+85	61.71	17.8	
ID-01	Bridge	SPT	330+88	61.67	121.5	
ID-01-DMT		DMT			12	
ID-02		SPT	334+07	62.08	121.5	
ID-02-DMT		DMT			13	
ID-03		SPT	336+78	61.04	121.5	
ID-03-DMT		DMT			10	
ID-04		SPT	339+78	60.67	121.5	
ID-04-DMT		DMT			10	
ID-05		SPT	212+70	60.89	121.5	
ID-05-DMT		DMT			13	
ID-06		SPT	216+50	61.75	121.5	
ID-06-DMT		DMT			16	
IS-01		Roadway	HA/DCP	305+09	58.10	5
IS-02			HA/DCP	146+43	58.86	5
IS-03	HA/DCP		309+88	60.17	5	
IS-04	HA/DCP		141+48	59.61	5	
IS-05	HA/DCP		315+12	60.21	5	
IS-06	HA/DCP		137+50	59.60	5	
IS-07	HA/DCP		409+94	64.17	5	
IS-08	HA/DCP		404+87	65.93	5	
IS-09	HA/DCP		234+05	66.96	5	
IS-10	HA/DCP		400+00	71.47	5	
IS-11	HA/DCP		238+94	71.64	5	
IS-12	HA/DCP		-	76.17	5	
IS-13	HA/DCP		8+42	61.32	5	
IS-14	HA/DCP		12+53	61.77	5	
IS-15	Embankment	SPT	126+03	60.69	20	
IS-16		SPT	109+05	61.03	20	
IS-17		SPT	357+11	62.12	20	
IS-18		SPT	421+46	60.95	20	



## ❖ Laboratory Testing

Laboratory testing on samples selected by S&ME was conducted as part of this project. The laboratory testing included grain size distribution, Atterberg limits, moisture content, corrosion series, standard Proctor compaction, and California Bearing Ratio (CBR) testing were performed on the split-spoon and bulk soil samples. A summary of the laboratory test quantities is presented in Table 3.

**Table 3 – Laboratory Testing Table**

Test Type	Quantity
Atterberg Limits	50
Grain Size Analysis	50
Moisture Content	50
CBR	5
Modified Proctor	5
Corrosion Series (pH, resistivity, chloride, sulfate)	3
One-dimensional Consolidation	4
CU Triaxial	3

A summary of the laboratory test results and the individual data sheets are presented in Appendices III and IV.

One-dimensional consolidation tests, consolidated-undrained (CU) triaxial tests, grain size distribution analyses, Atterberg limits tests, and moisture content tests were performed on the undisturbed Shelby tube samples. The individual data sheets are presented in Appendix IV.

## ❖ Limited Engineering Discussion

### Shear Strength Loss Screening

The soils encountered in the borings and soundings were evaluated for Shear Strength Loss (SSL) based on laboratory soil shear strength testing, SPT and CPT testing, laboratory index testing, and the depth to the water table. In general, the soils between the water table and a depth of approximately 15 ft are loose to medium dense clayey sands and soft to firm sandy clays that classify as clay-like soils ( $PI > 8$ ) under seismic loading. Preliminary analyses indicate that some of the soils in this layer are potentially susceptible to cyclic softening. From a depth of approximately 15 ft to the top of the Cooper marl, the soils are generally medium dense, non-plastic sands that classify as sand-like and are susceptible to cyclic liquefaction SSL. Liquefaction triggering evaluations should be performed on these soils during design. The Cooper Marl and soils below the Cooper Marl are not susceptible to SSL.

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## **Embankments**

### *Stability*

Slope stability analyses were performed on a 20 ft embankment using a representative soil profile. As shown in Figures V-1 in Appendix V, the global stability resistance factor meets the SCDOT Geotechnical Design Manual (GDM) requirements under static conditions. Under pseudo static loading, a yield acceleration of 0.15g was calculated. Based on the peak ground accelerations from our Site-Specific Response Analysis report for this project dated December 11, 2015, ground improvement will be necessary to satisfy the GDM performance requirements.

### *Settlement*

The soils above the Cooper marl are primarily clayey sand and sandy clay. Based on the results of the laboratory testing, we anticipate the majority of static settlement due to embankment fill placement will occur during construction, and pre-loading or surcharging should not be necessary. We anticipate seismic settlements may exceed GDM limits. Ground improvement design for slope stability should also address seismic settlement.

## **Foundations**

Bridge foundations will bear in the Cooper marl. Typical deep foundations used on SCDOT projects in the lowcountry (i.e., drilled shafts and driven pre-stressed concrete and steel piles) should be acceptable for this project. Drilled shaft excavation should be able to be accomplished with soil augers; however, several CPT soundings refused on very dense sand layers which should be accounted for during design and planning. Drilled shaft will have to be constructed using wet methods and/or with casing into the Cooper marl. Both displacement and non-displacement driven piles can be installed into the Cooper marl using diesel hammers typically used by bridge contractors in South Carolina. However, relatively large ( $\geq 14$ -in.) high-displacement piles (such as solid PSC or closed-end pipe piles) driven into stiff, over-consolidated, fine-grained soils like the Cooper marl can high driving resistances and stresses during installation. Composite piles (PSC upper section and H-pile lower section) should be considered when large displacement PSC piles are needed to resist lateral loads near the surface.

## **Additional Construction Considerations**

### *Excavations*

Excavations will encounter low to moderate consistency soils. These materials can be excavated using conventional equipment and techniques. Subsurface water was measured upon completion of the borings and soundings within the upper 5 ft below the existing ground surface. As such, we expect water will be encountered in excavations.

### *Subgrade Preparation*

Establishing positive site drainage before construction will be very important to construction. Prior to beginning mass clearing and grading, we recommend that drainage improvements be made to drain ponded water, lower the water levels, and handle rainfall runoff during construction.

Due to the fines content of the near surface soils, we expect stabilization measures will be required to provide suitable subgrade conditions for construction traffic and the permanent roadway and embankment construction. Stabilization methods will be dependent upon the depth of fill to be placed, prevailing weather conditions, and the condition of the subgrade at the time of construction.

### ❖ Limitations

This report has been prepared in accordance with generally applicable standards of our practice in this geographic area at the time this report was prepared. No other warranty, express or implied, is made. The Geotechnical Engineer of Record for the project must review the data submitted in this report and develop their own interpretation of the testing results as they apply to design.

The in situ and laboratory testing data are intended for SCDOT's engineering interpretation of the data collected.

### ❖ Closure

S&ME, Inc. appreciates this opportunity to work with SCDOT as your geotechnical consultant on this project. If you have any questions or need any further information in regard to this report, please do not hesitate to contact us at 843-884-0005.

Sincerely,


**S&ME, Inc.**



Kyle L. Murrell, P.E.  
Project Engineer



Matthew W. Lucas, P.E.  
Project Engineer



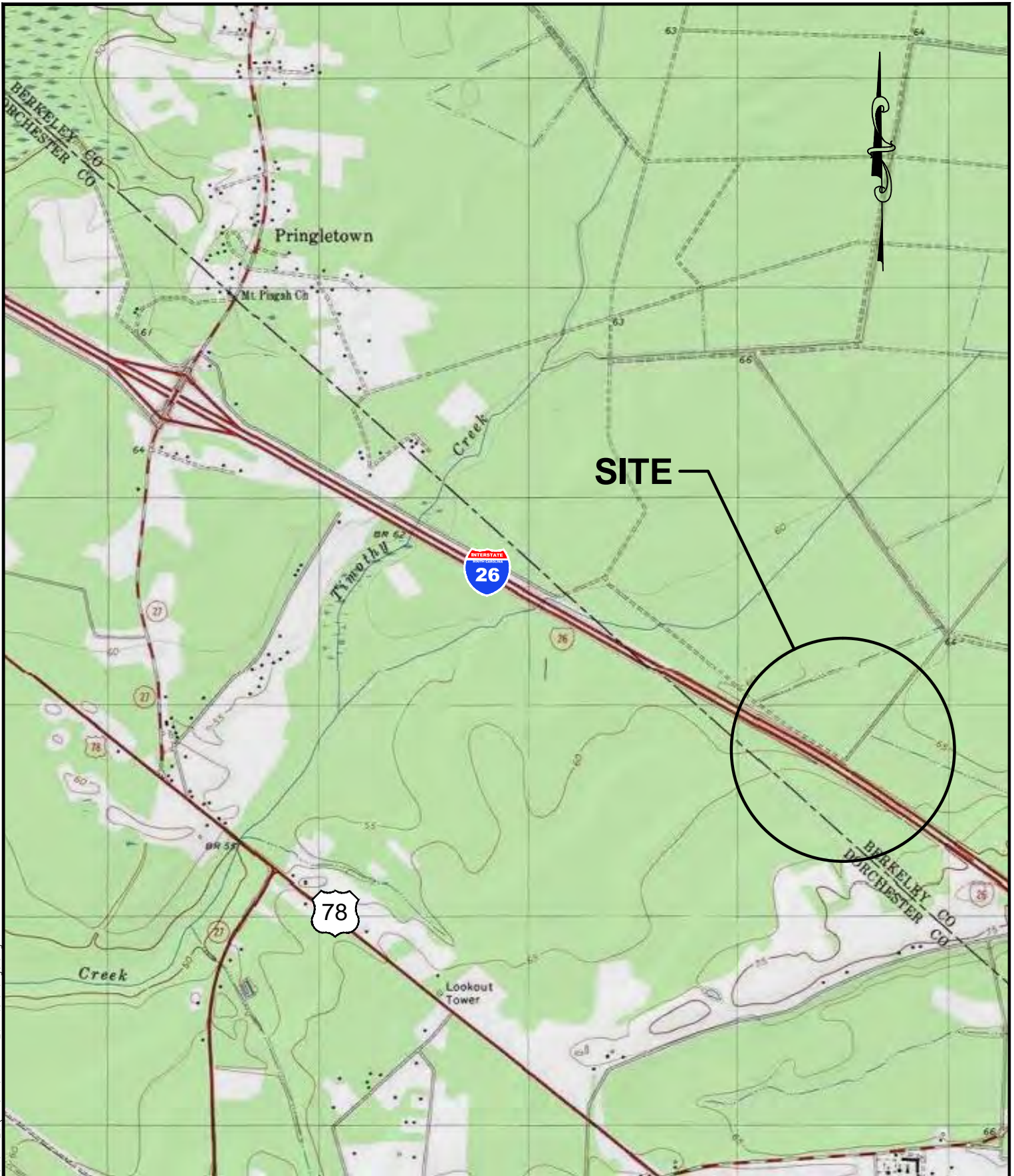
Michael S. Ulmer, P.E.  
Principal Engineer

## **Appendices**

## **Appendix I**

Site Location Map – Figure No. I-1

Test Location Plan – Figure No. I-2



Note: This Site Location Plan was derived from USGS Ridgeville, Pringletown, Summerville NW, and Summerville Quadrangles, South Carolina 7.5 Minute Series (Topographic).

SCALE:	1: 24,000
APPROVED BY:	
DRAWN BY:	LAJ
DATE:	11-30-2015



<b>SITE LOCATION MAP</b> <b>NEW VOLVO INTERCHANGE</b> INTERSTATE 26 BERKELEY COUNTY, SOUTH CAROLINA	FIGURE NO.
	I-1
JOB NO:	1413-15-114

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**LEGEND**

- SUBSURFACE PROFILE TRANSECT
- BRIDGE BORING AND DILATOMETER SOUNDING
- EMBANKMENT CPT SOUNDING 150' FROM ABUTMENT
- EMBANKMENT SPT BORING
- EMBANKMENT CPT SOUNDING
- ROADWAY HAND AUGER BORING w/DCP



**SUBSURFACE PROFILE TRANSECTS  
NEW VOLVO I-26 INTERCHANGE**  
INTERSTATE 26  
BERKELEY COUNTY, SOUTH CAROLINA

SCALE: AS SHOWN	DRAWN BY: LAJ	APPROVED BY:
PROJECT NO. 1413-15-114	DATE: 1-21-2016	FIGURE NO. I-2

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# **Appendix II**

## Field Testing Summary

Generalized Subsurface Profile A-A' – Figure No. 1

Generalized Subsurface Profile B-B' – Figure No. 2

Generalized Subsurface Profile C-C' – Figure No. 3

Generalized Subsurface Profile D-D' – Figure No. 4

CPT Logs

DMT Logs

STB Boring Logs

Manual Auger Logs

SPT Hammer Energy Measurements

Shear Wave Velocity Profiles

Shear Wave Velocity Tabulated Values





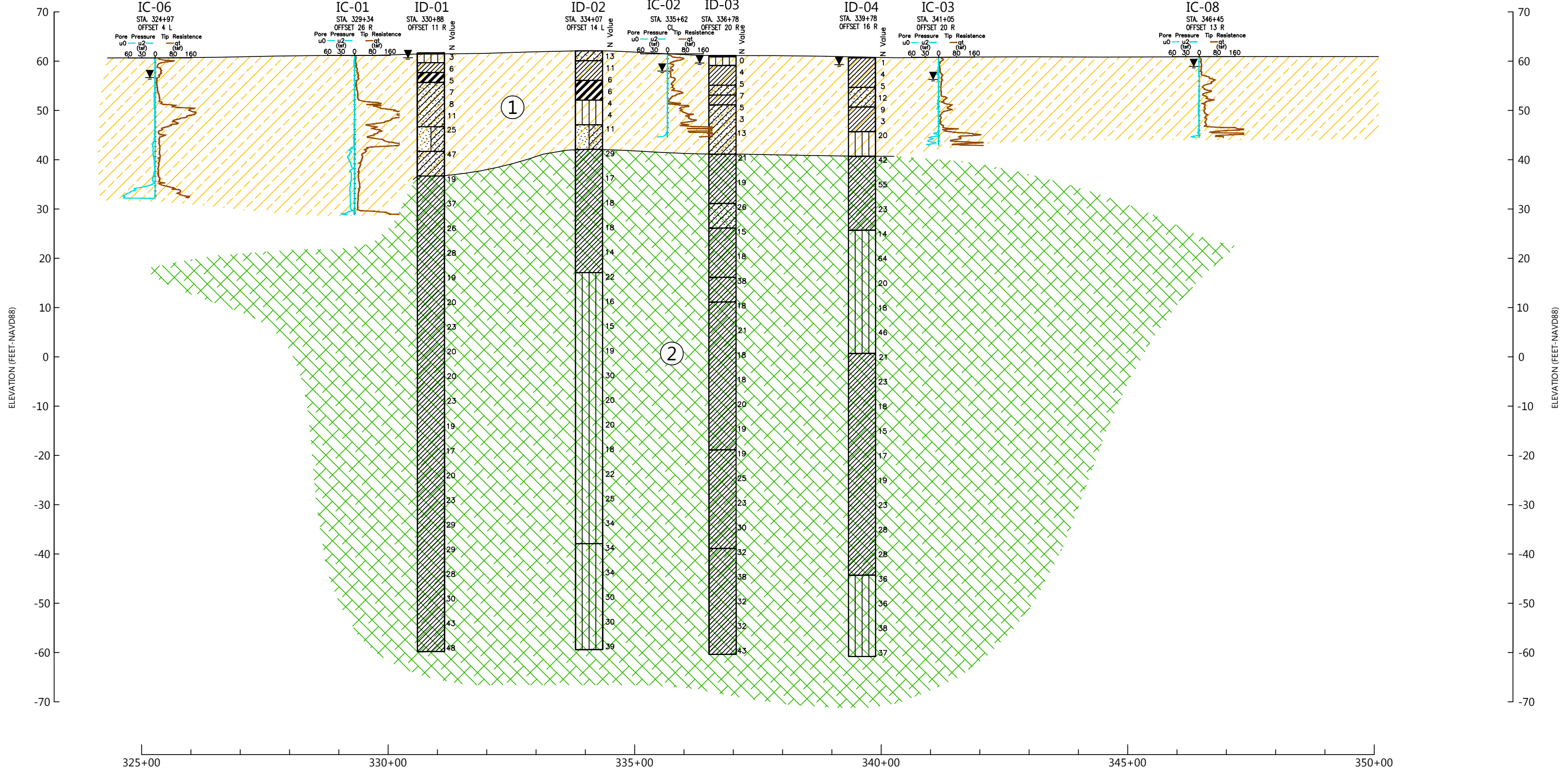
### Field Testing Summary

I-26 Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No. 1413-15-114

Test ID	Structure	Type	Depth	Northing (ft)	Easting (ft)	NAVD88 (ft)	NGVD29 (ft)	Station (ft)	Offset (ft)
IC-01	Embankment	CPT	32.3	469,258	2,220,930	61.16	62.13	329+34	26 R
IC-02		CPT	16.9	469,517	2,221,494	61.48	62.45	335+62	CL
IC-03		CPT	17.9	469,848	2,221,925	60.80	61.77	341+05	20 R
IC-04		CPT	16.2	469,485	2,221,629	61.08	62.06	210+62	6 L
IC-05		CPT	17.8	468,799	2,221,749	61.83	62.80	217+67	35 R
IC-06		CPT	28.5	469,454	2,220,540	60.65	61.63	324+97	4 L
IC-07		CPT	17.4	469,907	2,221,776	60.63	61.60	206+16	18 R
IC-08		CPT	16.5	470,200	2,222,336	60.93	61.90	346+45	13 R
IC-09		CPT	17.8	468,494	2,222,263	61.71	62.68	223+85	6 R
ID-01	Bridge	SPT	121.5	469,280	2,221,087	61.67	62.64	330+88	11 R
ID-01-DMT		DMT	12						
ID-02		SPT	121.5	469,430	2,221,365	62.08	63.06	334+07	14 L
ID-02-DMT		DMT	13						
ID-03		SPT	121.5	469,594	2,221,581	61.04	62.01	336+78	20 R
ID-03-DMT		DMT	10						
ID-04		SPT	121.5	469,770	2,221,825	60.67	61.64	339+78	16 R
ID-04-DMT		DMT	10						
ID-05		SPT	121.5	469,283	2,221,593	60.89	61.86	212+70	2 L
ID-05-DMT		DMT	13						
ID-06		SPT	121.5	468,918	2,221,682	61.75	62.72	216+50	CL
ID-06-DMT		DMT	16						
IS-01	Roadway	HA/DCP	5	470,559	2,218,902	58.10	59.07	305+09	1 R
IS-02		HA/DCP	5	470,537	2,219,351	58.86	59.84	146+43	57 L
IS-03		HA/DCP	5	470,325	2,219,320	60.17	61.14	309+88	4 R
IS-04		HA/DCP	5	470,293	2,219,780	59.61	60.58	141+48	49 L
IS-05		HA/DCP	5	470,059	2,219,795	60.21	61.18	315+12	29 L
IS-06		HA/DCP	5	470,099	2,220,129	59.60	60.57	137+50	35 L
IS-07		HA/DCP	5	468,412	2,222,829	64.17	65.14	409+94	9 L
IS-08		HA/DCP	5	468,123	2,223,245	65.93	66.90	404+87	6 R
IS-09		HA/DCP	5	467,961	2,223,132	66.96	67.93	234+05	10 L
IS-10		HA/DCP	5	467,842	2,223,643	71.47	72.44	400+00	16 R
IS-11		HA/DCP	5	467,680	2,223,532	71.64	72.61	238+94	5 R
IS-12		HA/DCP	5	467,392	2,223,946	76.17	77.14	-	-
IS-13		HA/DCP	5	471,451	2,223,235	61.32	62.29	8+42	1 R
IS-14		HA/DCP	5	471,755	2,223,513	61.77	62.74	12+53	28 R
IS-15	Embankment	SPT	20	469,676	2,221,178	60.69	61.66	126+03	1 R
IS-16		SPT	20	470,679	2,222,504	61.03	62.00	109+05	2 R
IS-17		SPT	20	471,051	2,222,978	62.12	63.09	357+11	7 R
IS-18		SPT	20	469,224	2,222,100	60.95	61.92	421+46	4 L

A

A'



LEGEND



1 PENHOLLOWAY FORMATION - SANDY CLAY, CLAYEY SAND, SANDY SILT, CLAYEY SILT, SILTY SAND

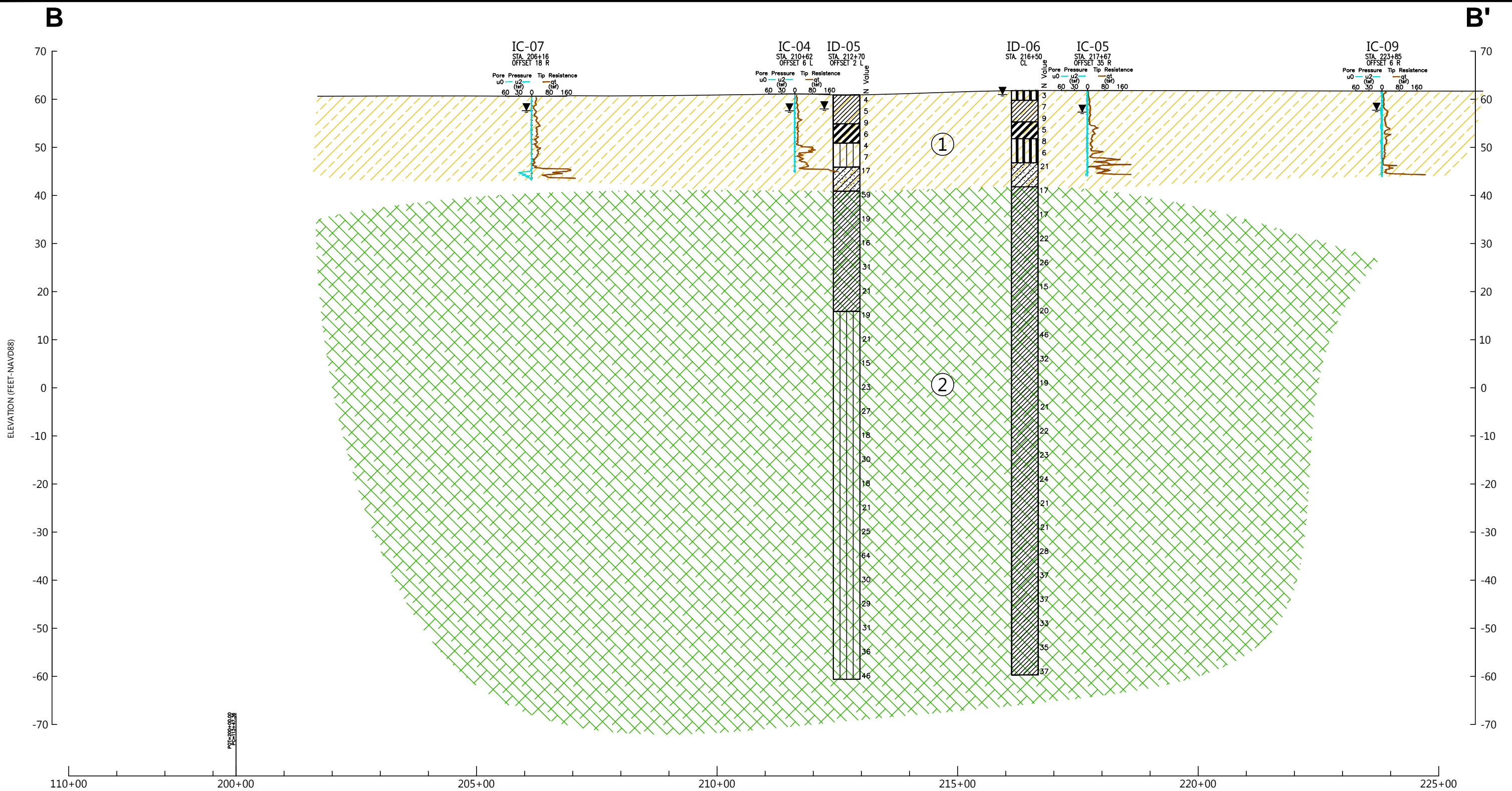
2 COOPER MARL

Note: The soil profile is shown for illustrative purposes only. The actual subsurface conditions will vary between boring locations.



**SUBSURFACE PROFILE A-A'**  
**EASTBOUND OFF-RAMP**  
 NEW VOLVO I-26 INTERCHANGE  
 BERKELEY COUNTY, SOUTH CAROLINA

SCALE: AS SHOWN	DRAWN BY: LAJ	APPROVED BY:
PROJECT NO. 1413-15-114	DATE: 1-21-2016	FIGURE NO. 1



**LEGEND**



① PENHOLLOWAY FORMATION - SANDY CLAY, CLAYEY SAND, SANDY SILT, CLAYEY SILT, SILTY SAND

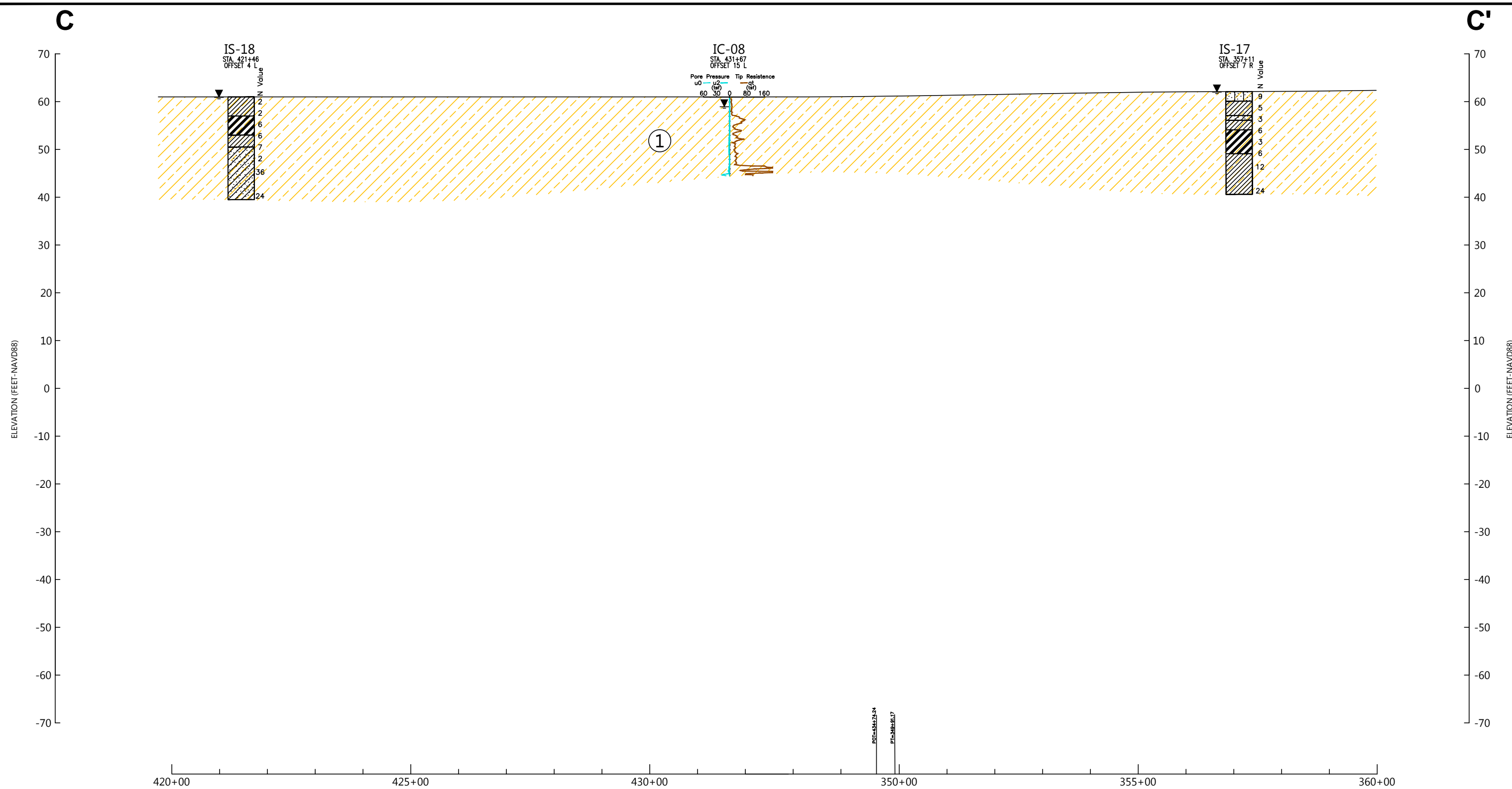
② COOPER MARL

Note: The soil profile is shown for illustrative purposes only. The actual subsurface conditions will vary between boring locations.



**SUBSURFACE PROFILE B-B'**  
**EASTBOUND ON-RAMP**  
 NEW VOLVO I-26 INTERCHANGE  
 BERKELEY COUNTY, SOUTH CAROLINA

SCALE: AS SHOWN	DRAWN BY: LAJ	APPROVED BY:
PROJECT NO. 1413-15-114	DATE: 1-21-2016	FIGURE NO. 2

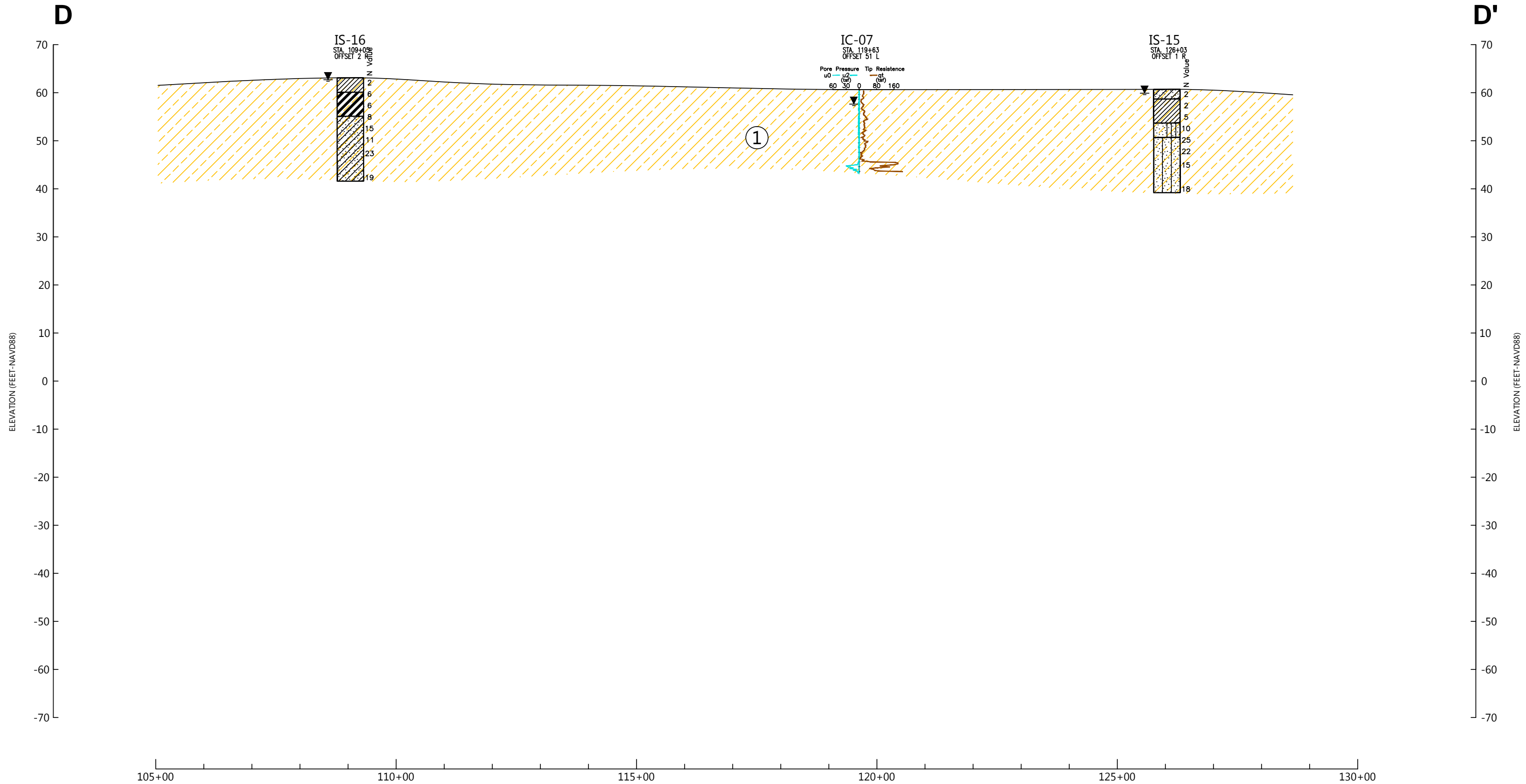


Note: The soil profile is shown for illustrative purposes only. The actual subsurface conditions will vary between boring locations.



<b>SUBSURFACE PROFILE C-C'</b> <b>WESTBOUND OFF-RAMP</b> NEW VOLVO I-26 INTERCHANGE BERKELEY COUNTY, SOUTH CAROLINA		
SCALE: AS SHOWN	DRAWN BY: LAJ	APPROVED BY:
PROJECT NO. 1413-15-114	DATE: 1-21-2016	FIGURE NO. 3

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**LEGEND**



① PENHOLLOWAY FORMATION - SANDY CLAY, CLAYEY SAND, SANDY SILT, CLAYEY SILT, SILTY SAND

② COOPER MARL

Note: The soil profile is shown for illustrative purposes only. The actual subsurface conditions will vary between boring locations.



**SUBSURFACE PROFILE D-D'  
WESTBOUND ON-RAMP  
NEW VOLVO I-26 INTERCHANGE  
BERKELEY COUNTY, SOUTH CAROLINA**

SCALE: AS SHOWN	DRAWN BY: LAJ	APPROVED BY:
PROJECT NO. 1413-15-114	DATE: 1-21-2016	FIGURE NO. 4



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

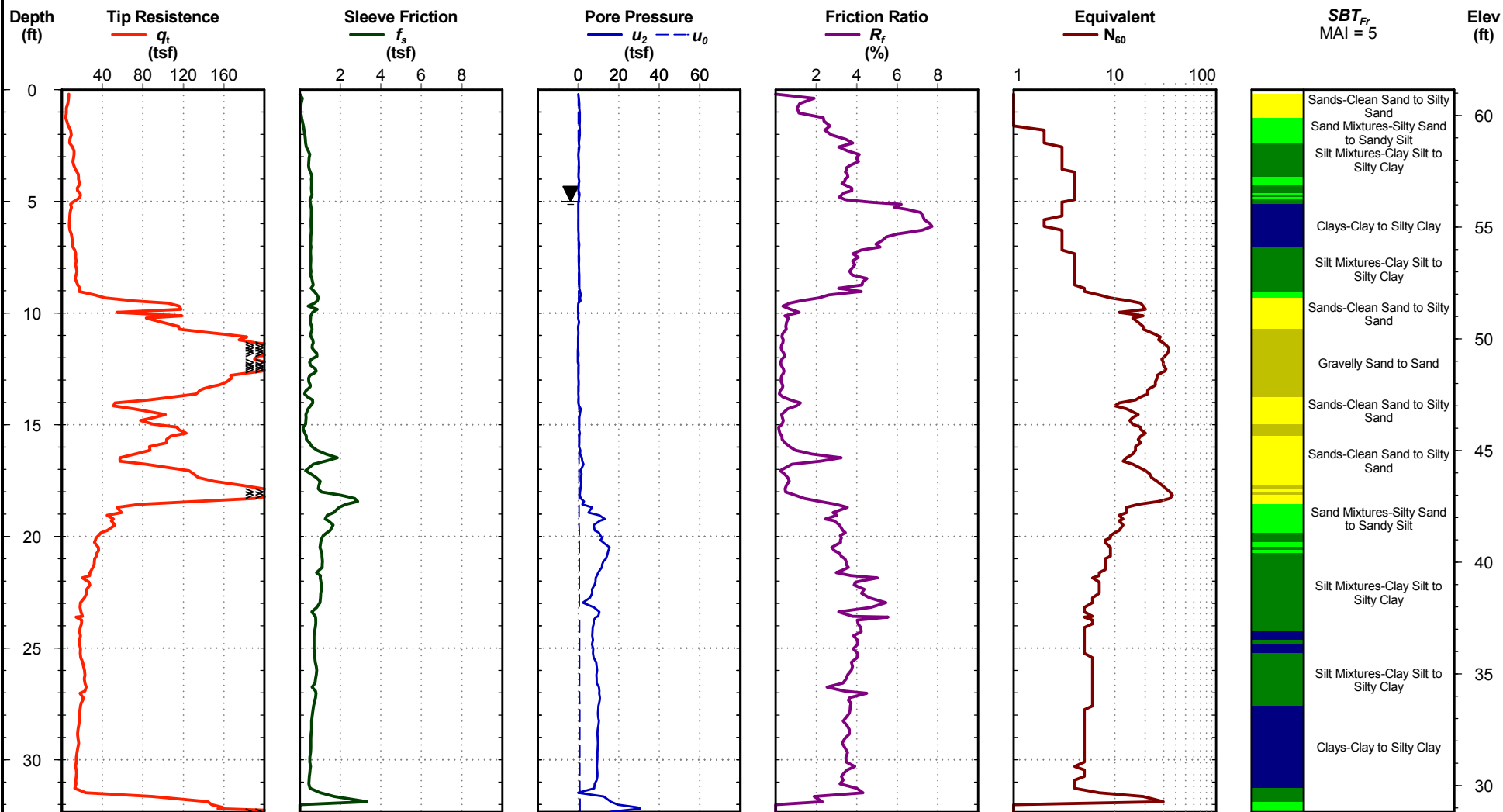
# Cone Penetration Test

# IC-01

Date: Oct. 23, 2015  
 Estimated Water Depth: 5 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.120949  
 Longitude: 80.278324  
 Elevation: 61.16 ft

Total Depth: 32.3 ft  
 Termination Criteria: Maximum Reaction Force  
 Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR VOLVO INTERCHANGE CPT.GPJ S&ME.GDT 11/12/15

# IC-01





Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

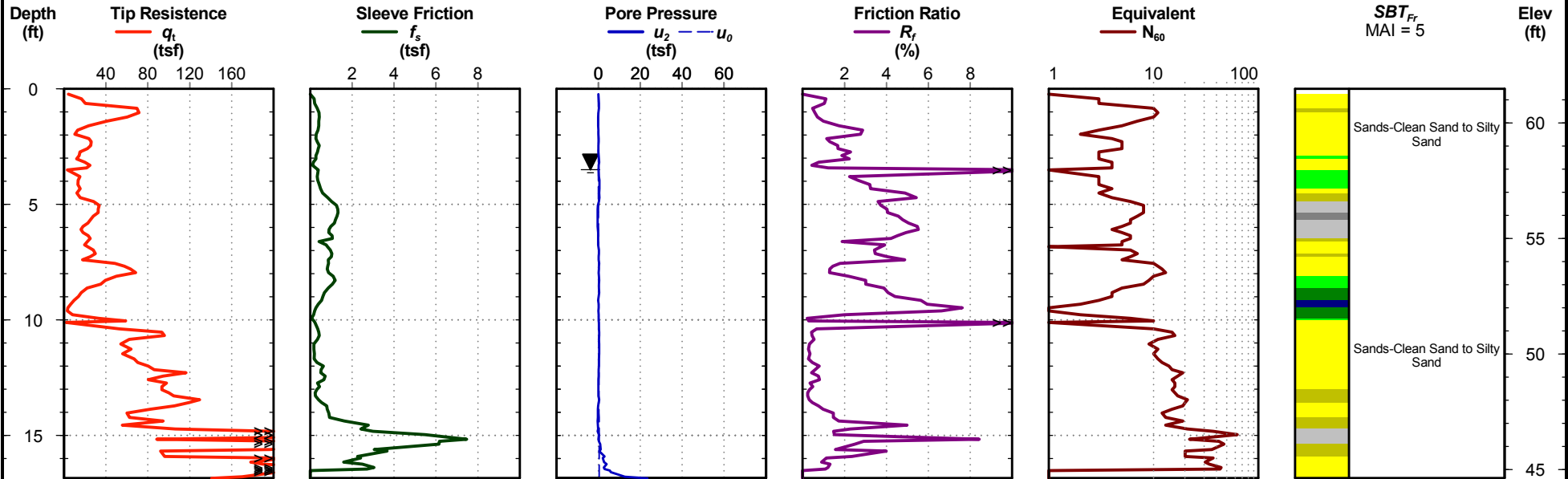
# Cone Penetration Test

# IC-02

Date: Oct. 22, 2015  
Estimated Water Depth: 3.5 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.121651  
Longitude: 80.276476  
Elevation: 61.48 ft

Total Depth: 16.9 ft  
Termination Criteria: Maximum Reaction Force  
Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

# IC-02



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

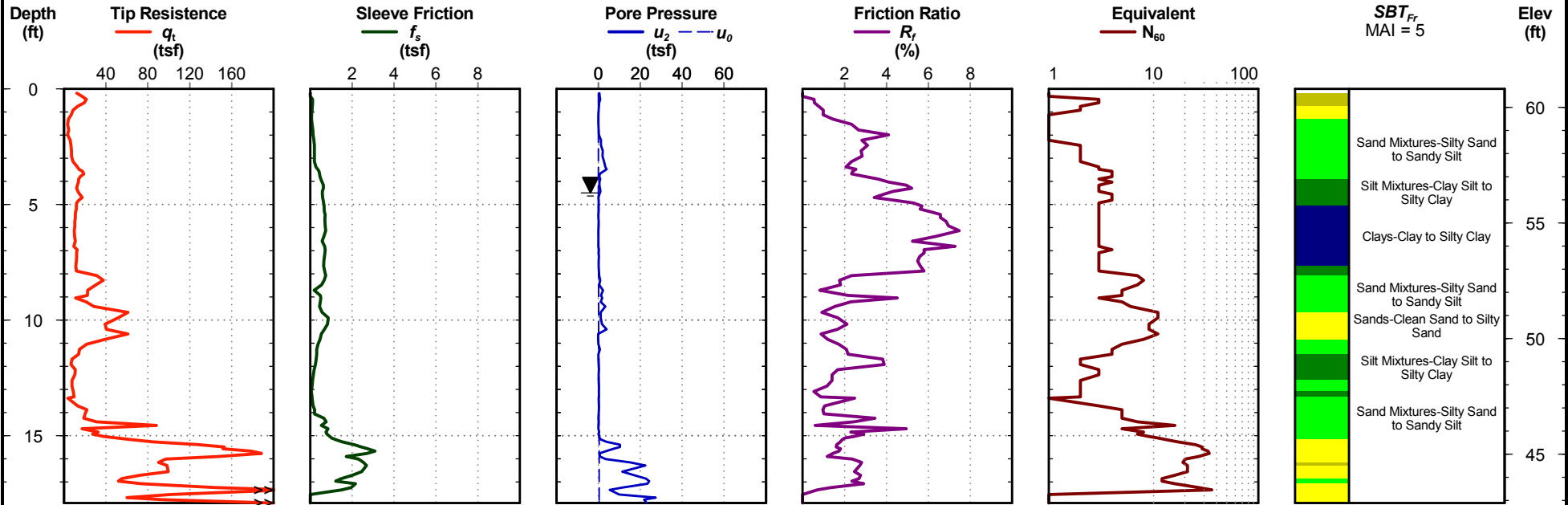
# Cone Penetration Test

# IC-03

Date: Oct. 22, 2015  
 Estimated Water Depth: 4.5 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.122554  
 Longitude: 80.27506  
 Elevation: 60.8 ft

Total Depth: 17.9 ft  
 Termination Criteria: Maximum Reaction Force  
 Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

# IC-03





Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

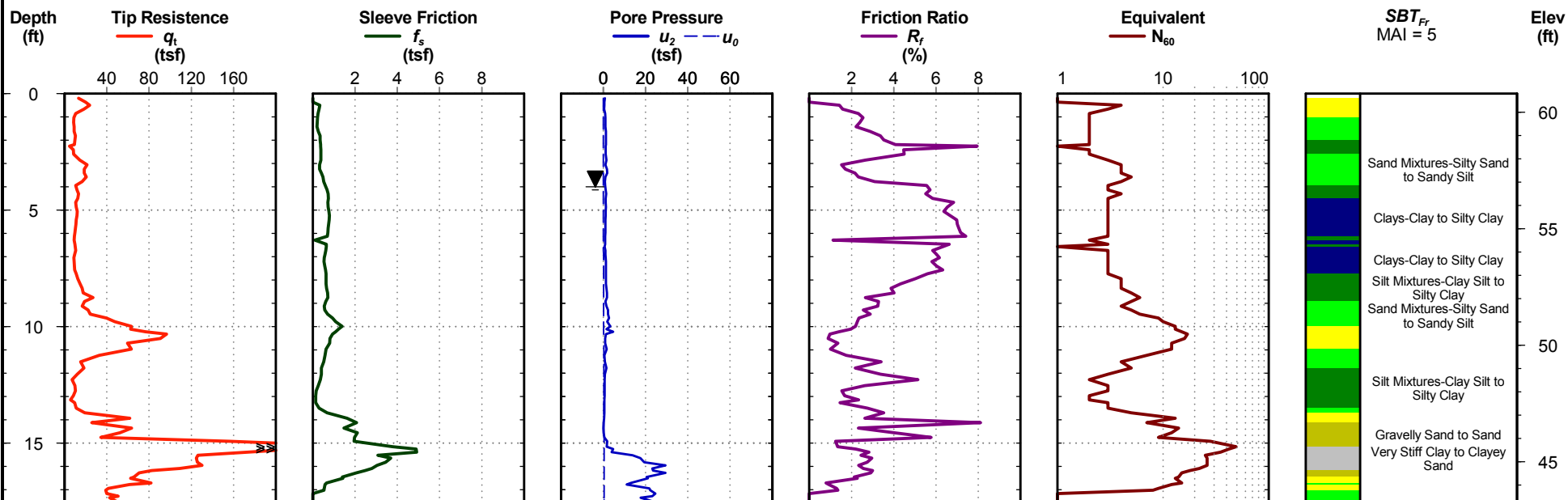
# Cone Penetration Test

IC-03B

Date: Oct. 22, 2015  
Estimated Water Depth: 4 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.122554  
Longitude: 80.27506  
Elevation: 60.8 ft

Total Depth: 17.5 ft  
Termination Criteria: Maximum Reaction Force  
Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

IC-03B



Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

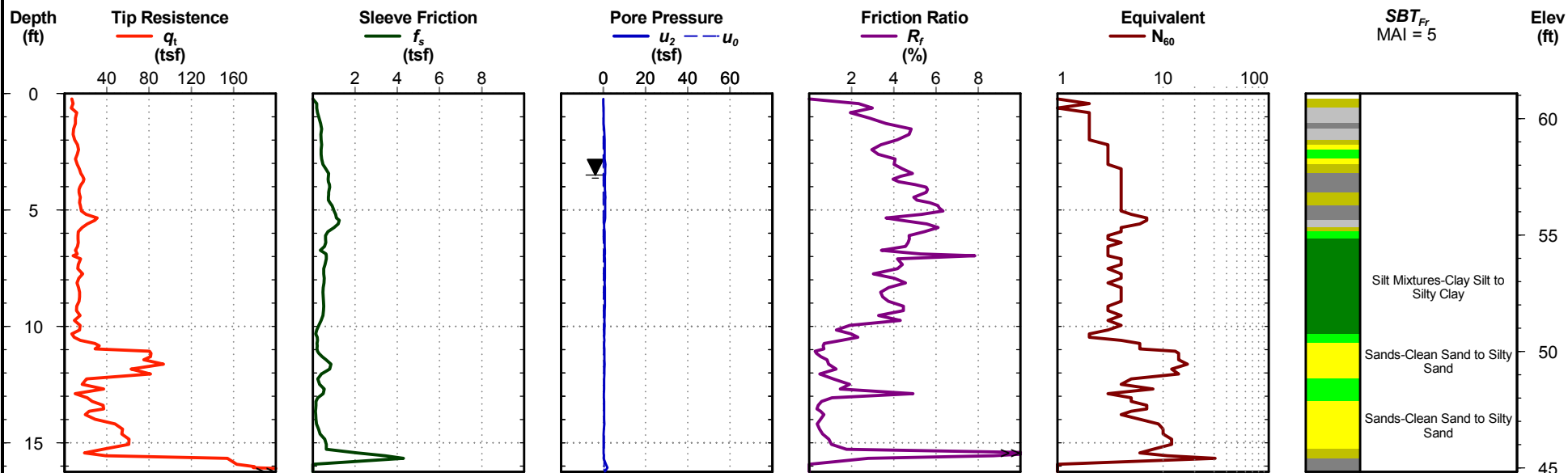
# Cone Penetration Test

# IC-04

Date: Oct. 22, 2015  
Estimated Water Depth: 3.5 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.121561  
Longitude: 80.276036  
Elevation: 61.08 ft

Total Depth: 16.2 ft  
Termination Criteria: Maximum Reaction Force  
Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

# IC-04



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

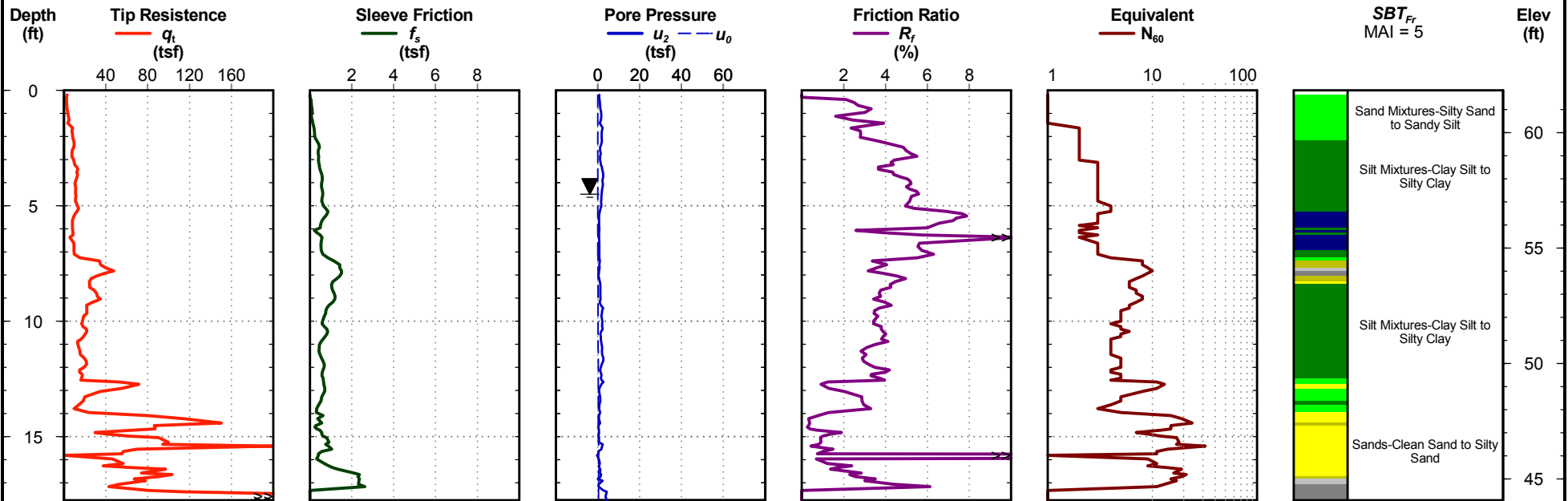
# Cone Penetration Test

IC-05

Date: Oct. 23, 2015  
 Estimated Water Depth: 4.5 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.119674  
 Longitude: 80.275658  
 Elevation: 61.83 ft

Total Depth: 17.8 ft  
 Termination Criteria: Maximum Reaction Force  
 Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

IC-05



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

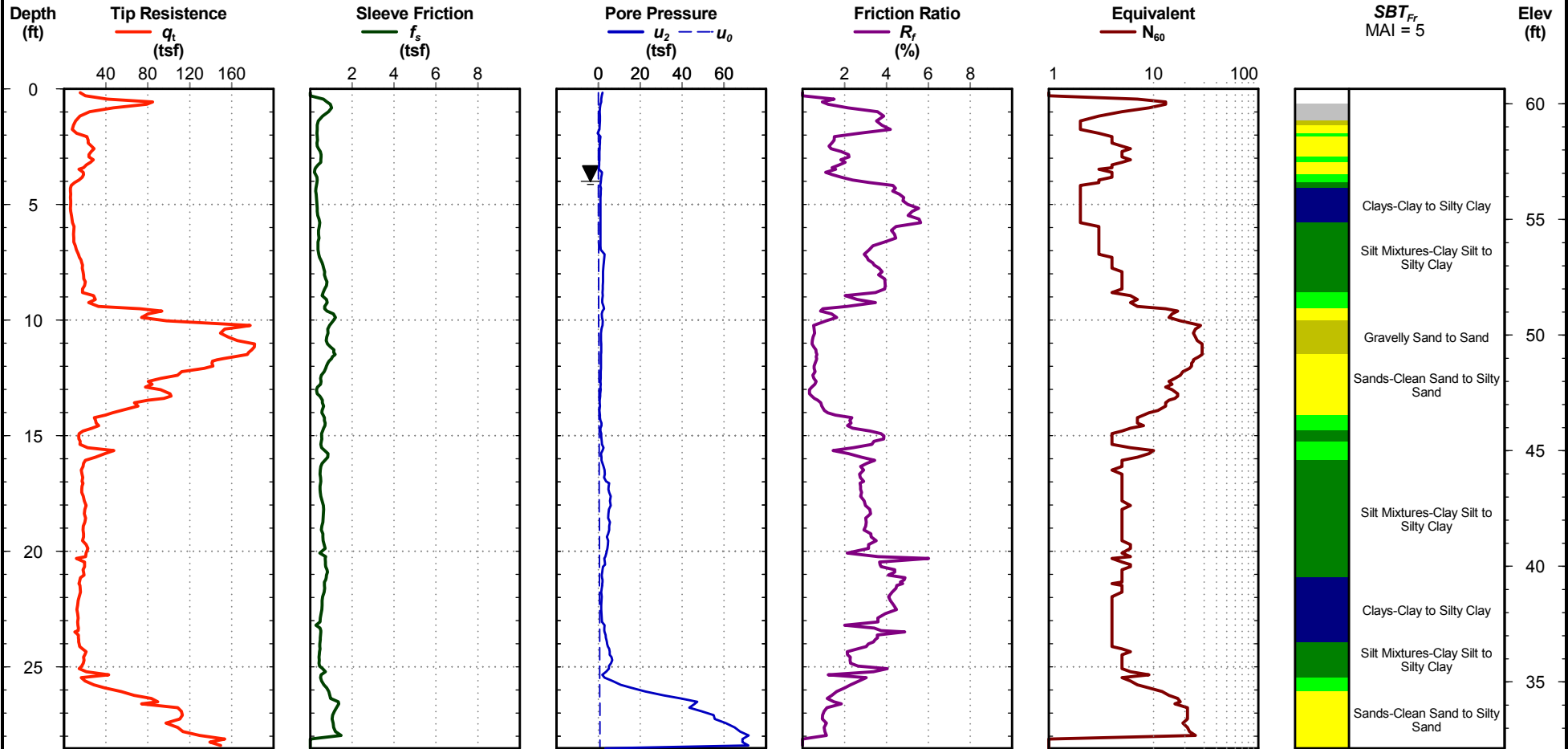
# Cone Penetration Test

IC-06

Date: Oct. 23, 2015  
 Estimated Water Depth: 4 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.121496  
 Longitude: 80.279591  
 Elevation: 60.65 ft

Total Depth: 28.5 ft  
 Termination Criteria: Maximum Reaction Force  
 Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR VOLVO INTERCHANGE CPT.GPJ S&ME.GDT 11/12/15

IC-06



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

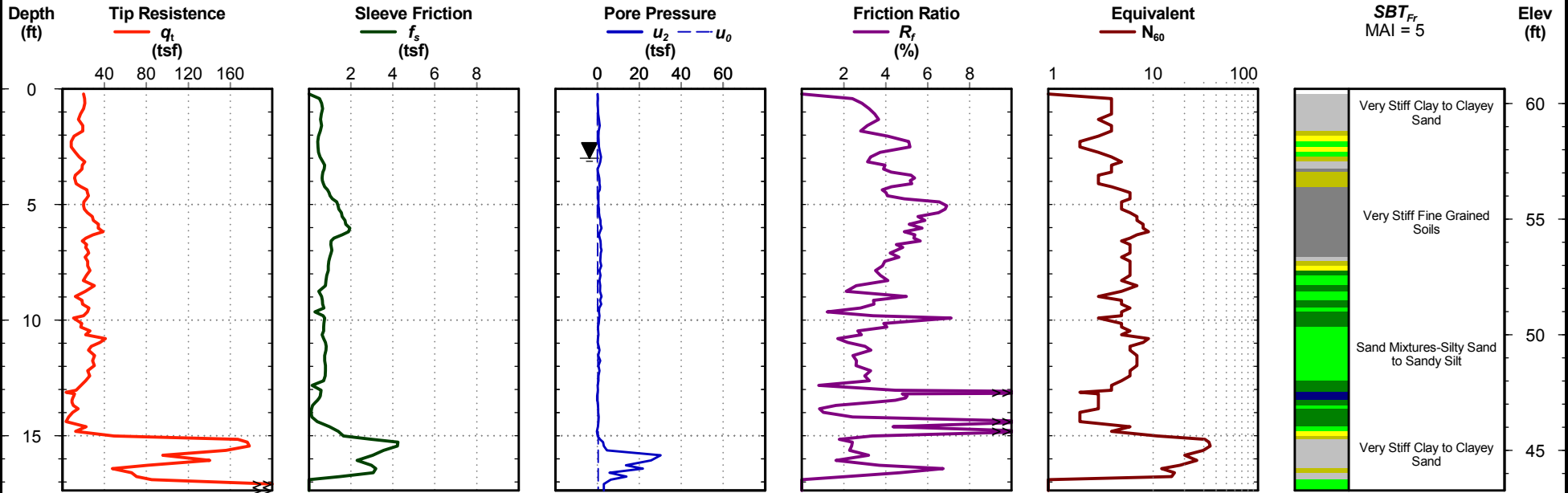
# Cone Penetration Test

IC-07

Date: Oct. 22, 2015  
 Estimated Water Depth: 3 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.122718  
 Longitude: 80.275545  
 Elevation: 60.63 ft

Total Depth: 17.4 ft  
 Termination Criteria: Maximum Reaction Force  
 Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

IC-07



Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

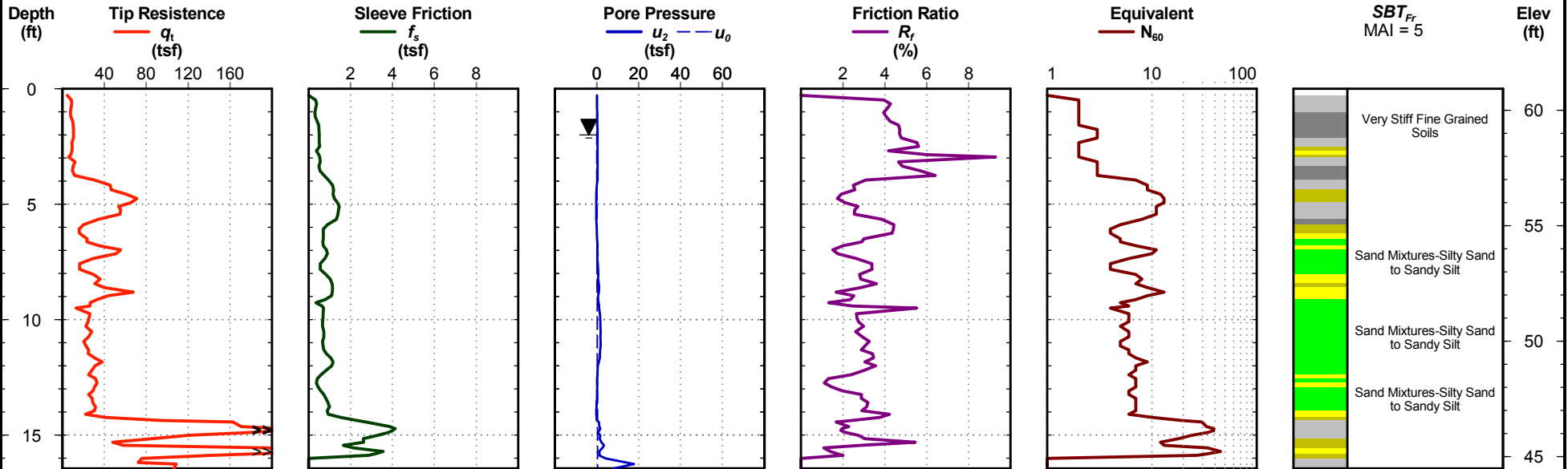
# Cone Penetration Test

IC-08

Date: Oct. 22, 2015  
Estimated Water Depth: 2 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.123513  
Longitude: 80.27371  
Elevation: 60.93 ft

Total Depth: 16.5 ft  
Termination Criteria: Maximum Reaction Force  
Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

IC-08



Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

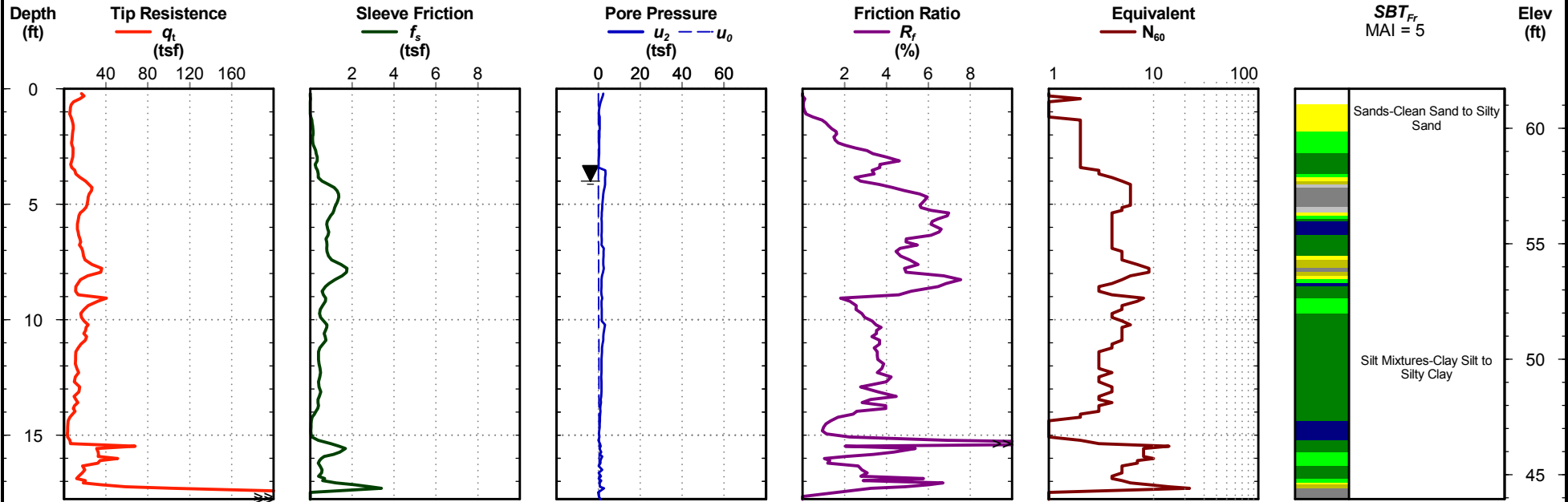
# Cone Penetration Test

IC-09

Date: Oct. 23, 2015  
Estimated Water Depth: 4 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.118824  
Longitude: 80.273986  
Elevation: 61.71 ft

Total Depth: 17.8 ft  
Termination Criteria: Maximum Reaction Force  
Cone Size: 1.44



CPT REPORT - STANDARD - SBT FR - VOLVO INTERCHANGE CPT.GPJ - S&ME.GDT - 11/12/15

IC-09



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

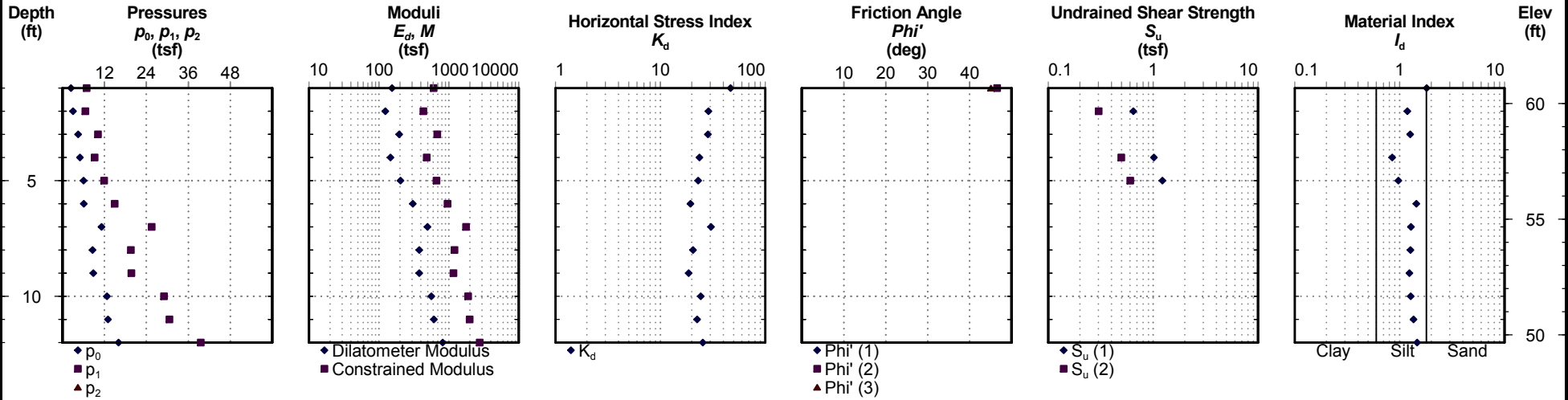
# Dilatometer Test

**ID-01**

Date: Oct. 23, 2015  
 Estimated Water Depth: 5 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.121009  
 Longitude: 80.277809  
 Elevation: 61.67 ft

Total Depth: 12.0 ft  
 Termination Criteria: Maximum Reaction Force  
 Membrane Type: H-25



**ID-01**





Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

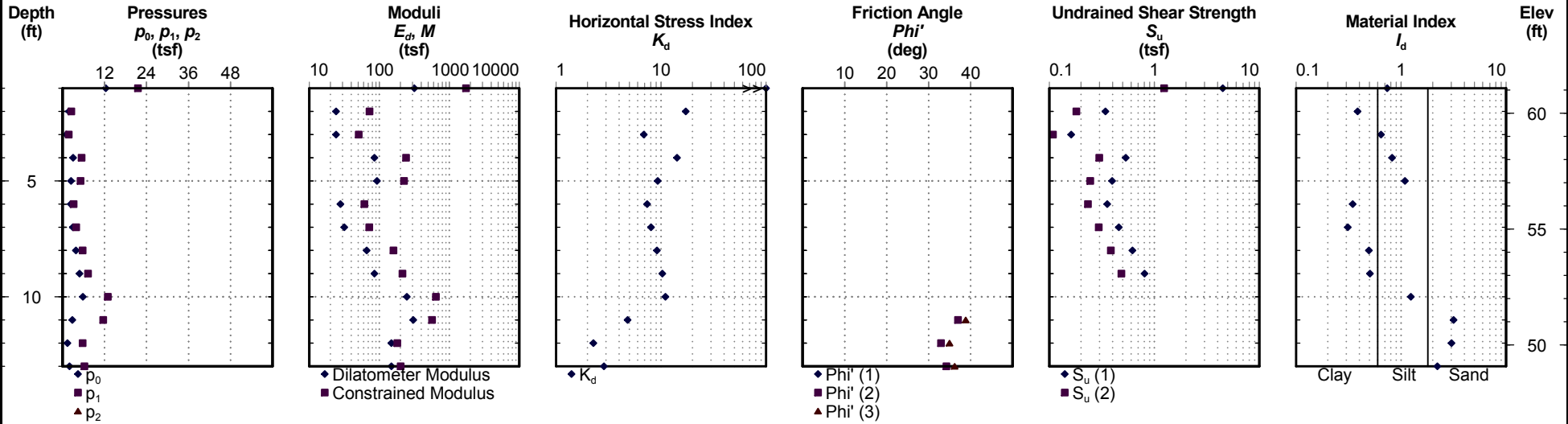
# Dilatometer Test

**ID-02**

Date: Oct. 26, 2015  
 Estimated Water Depth: 3.5 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.121415  
 Longitude: 80.2769  
 Elevation: 62.08 ft

Total Depth: 13.0 ft  
 Termination Criteria: Maximum Reaction Force  
 Membrane Type: H-25



**ID-02**



Volvo Interchange  
Berkeley County, South Carolina  
S&ME Project No: 1413-15-114

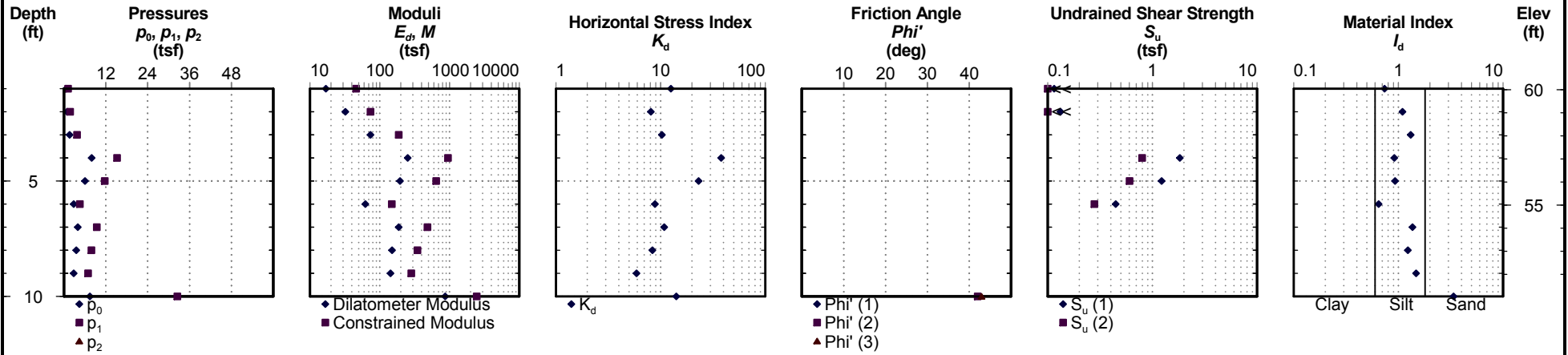
# Dilatometer Test

ID-03

Date: Oct. 22, 2015  
Estimated Water Depth: 4.5 ft  
Rig/Operator: Marooka/D. Oldal

Latitude: 33.121862  
Longitude: 80.276191  
Elevation: 61.04 ft

Total Depth: 10.0 ft  
Termination Criteria: Maximum Reaction Force  
Membrane Type: H-25



ID-03



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

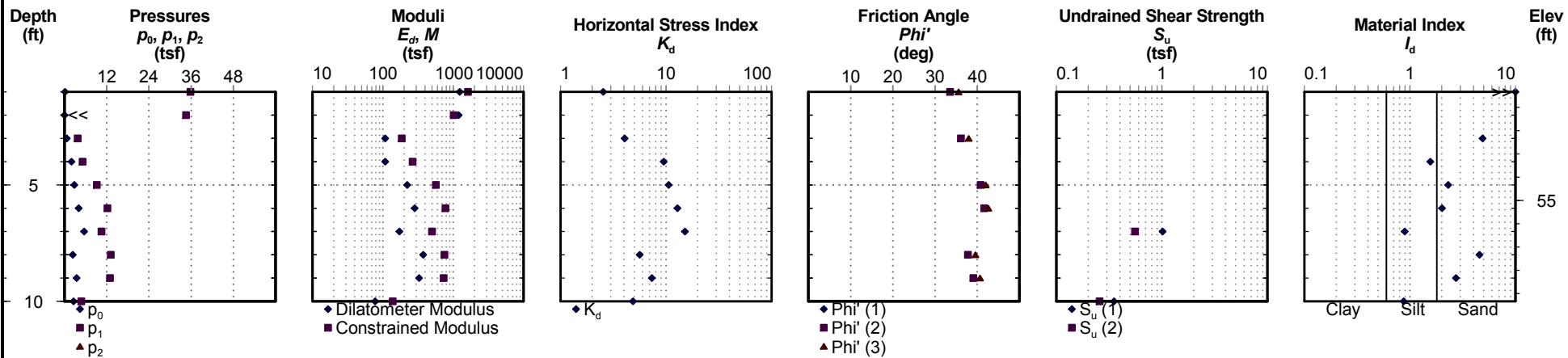
# Dilatometer Test

ID-04

Date: Oct. 22, 2015  
 Estimated Water Depth: 4 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.12234  
 Longitude: 80.275387  
 Elevation: 60.67 ft

Total Depth: 10.0 ft  
 Termination Criteria: Maximum Reaction Force  
 Membrane Type: H-25



ID-04



Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No: 1413-15-114

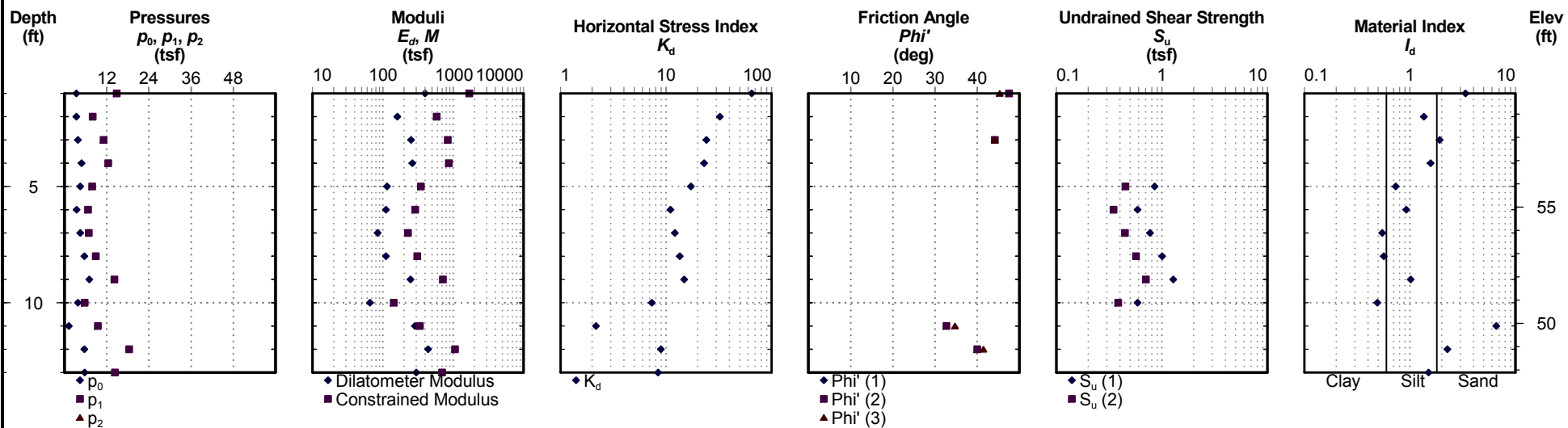
# Dilatometer Test

**ID-05**

Date: Oct. 26, 2015  
 Estimated Water Depth: 3 ft  
 Rig/Operator: Marooka/D. Oldal

Latitude: 33.121005  
 Longitude: 80.276158  
 Elevation: 60.89 ft

Total Depth: 13.0 ft  
 Termination Criteria: Maximum Reaction Force  
 Membrane Type: H-25



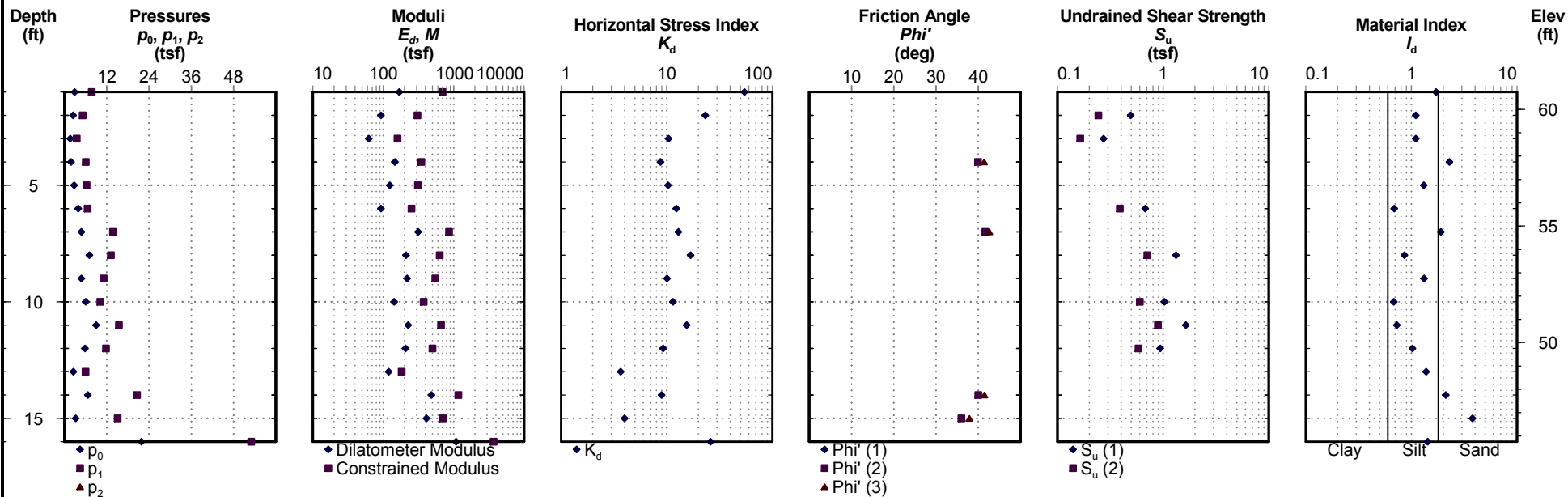
**ID-05**



Date: Oct. 23, 2015  
Estimated Water Depth: 4 ft  
Rig/Operator: Marooka/D. Oldal

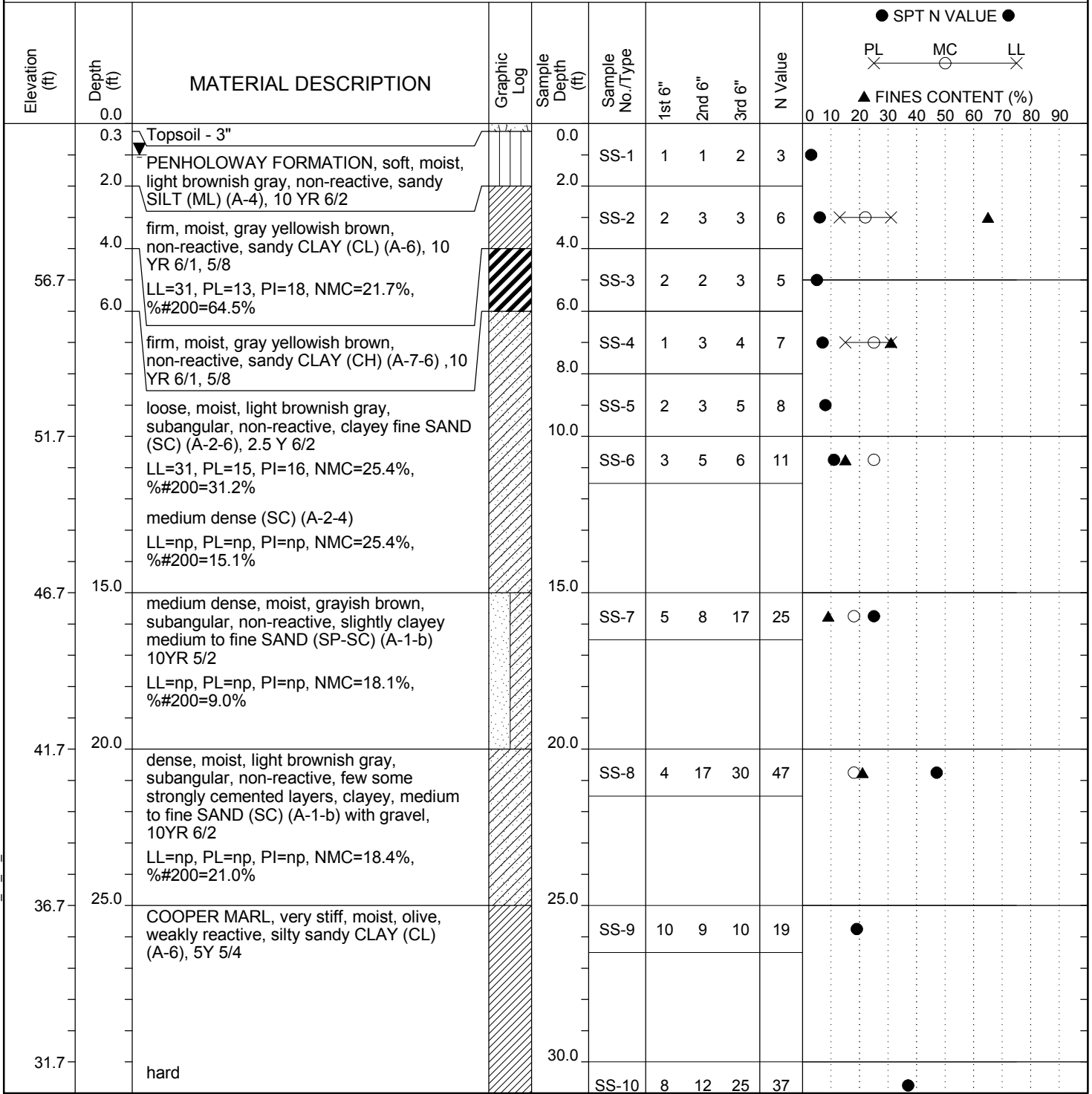
Latitude: 33.120002  
Longitude: 80.275875  
Elevation: 61.75 ft

Total Depth: 16.0 ft  
Termination Criteria: Maximum Reaction Force  
Membrane Type: H-25



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-01
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	330+88	<b>Offset:</b>	11' R
<b>Elev.:</b>	61.7 ft	<b>Latitude:</b>	33.121009	<b>Longitude:</b>	80.277809
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Energy Ratio:</b>	82%
		<b>Groundwater:</b>	TOB	n/a	24HR 1 ft



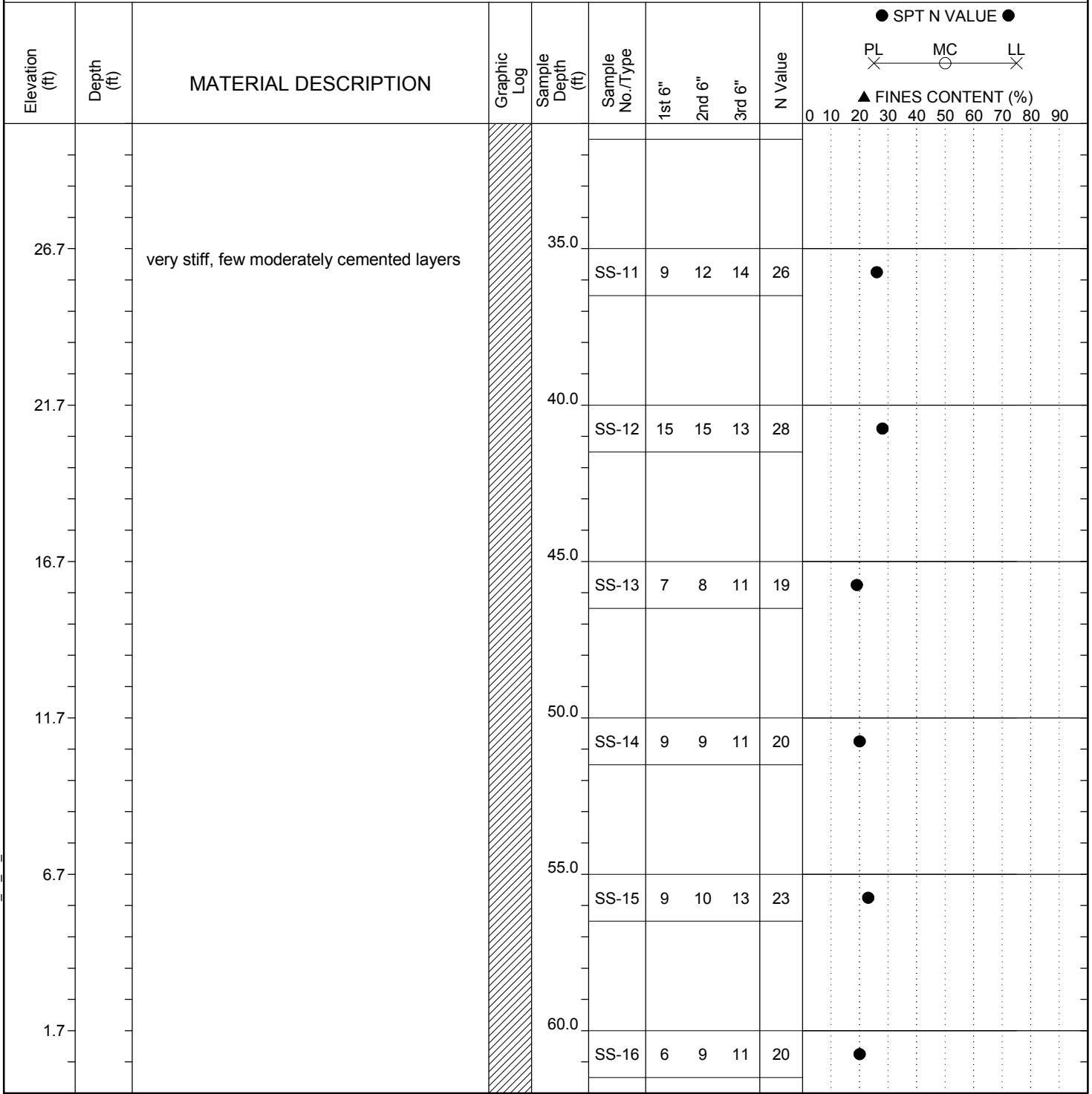
LEGEND Continued Next Page

<b>SAMPLER TYPE</b> SS - Split Spoon UD - Undisturbed Sample AWG - Rock Core, 1-1/8"		<b>DRILLING METHOD</b> HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing	
NQ - Rock Core, 1-7/8" CU - Cuttings CT - Continuous Tube		RW - Rotary Wash RC - Rock Core	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT\_DATA\_TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-01
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	330+88	<b>Offset:</b>	11' R
<b>Elev.:</b>	61.7 ft	<b>Latitude:</b>	33.121009	<b>Longitude:</b>	80.277809
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1 ft



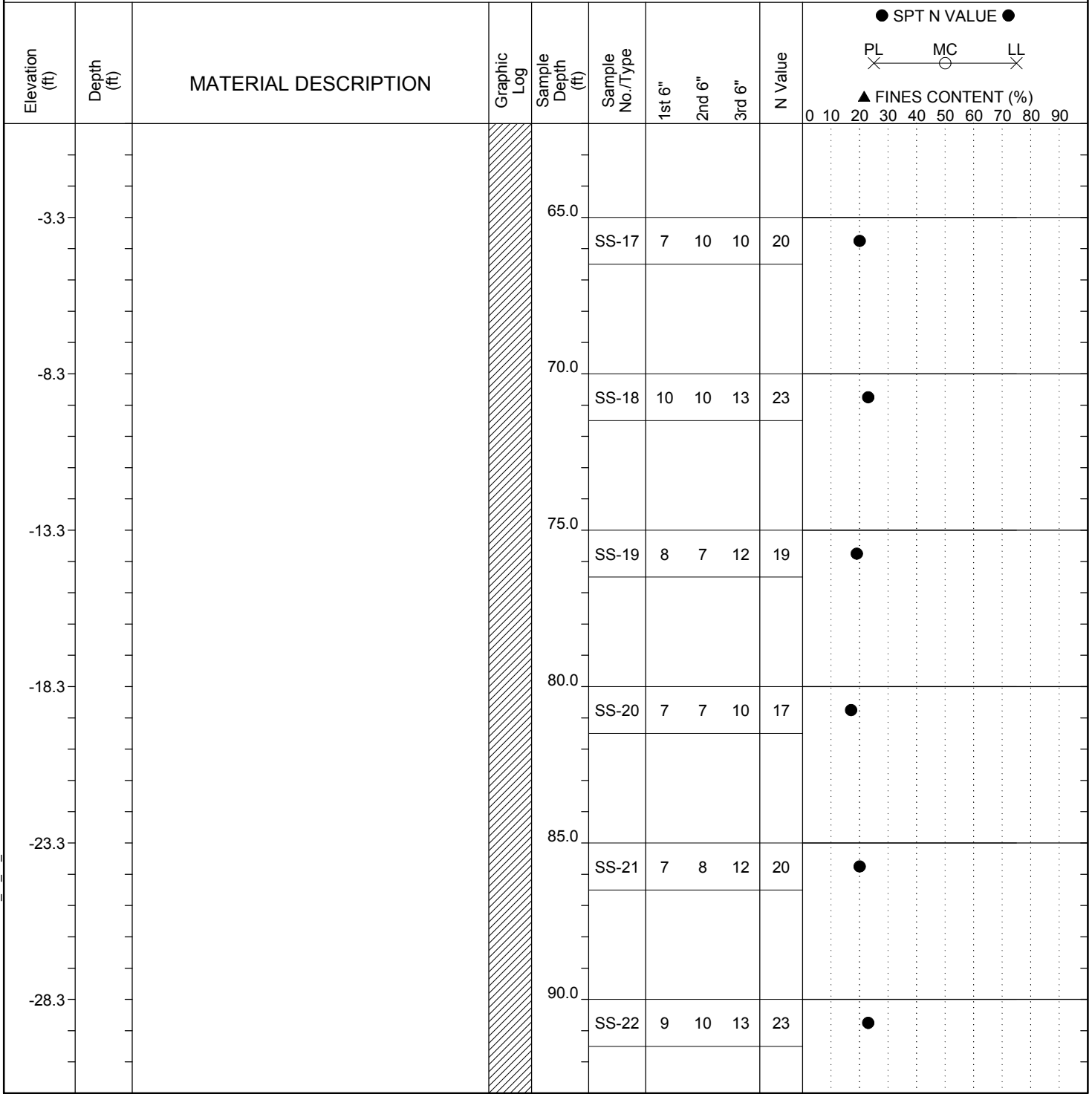
LEGEND Continued Next Page

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-01
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	330+88	<b>Offset:</b>	11' R
<b>Elev.:</b>	61.7 ft	<b>Latitude:</b>	33.121009	<b>Longitude:</b>	80.277809
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>Energy Ratio:</b>	82%
				<b>24HR</b>	1 ft



LEGEND Continued Next Page

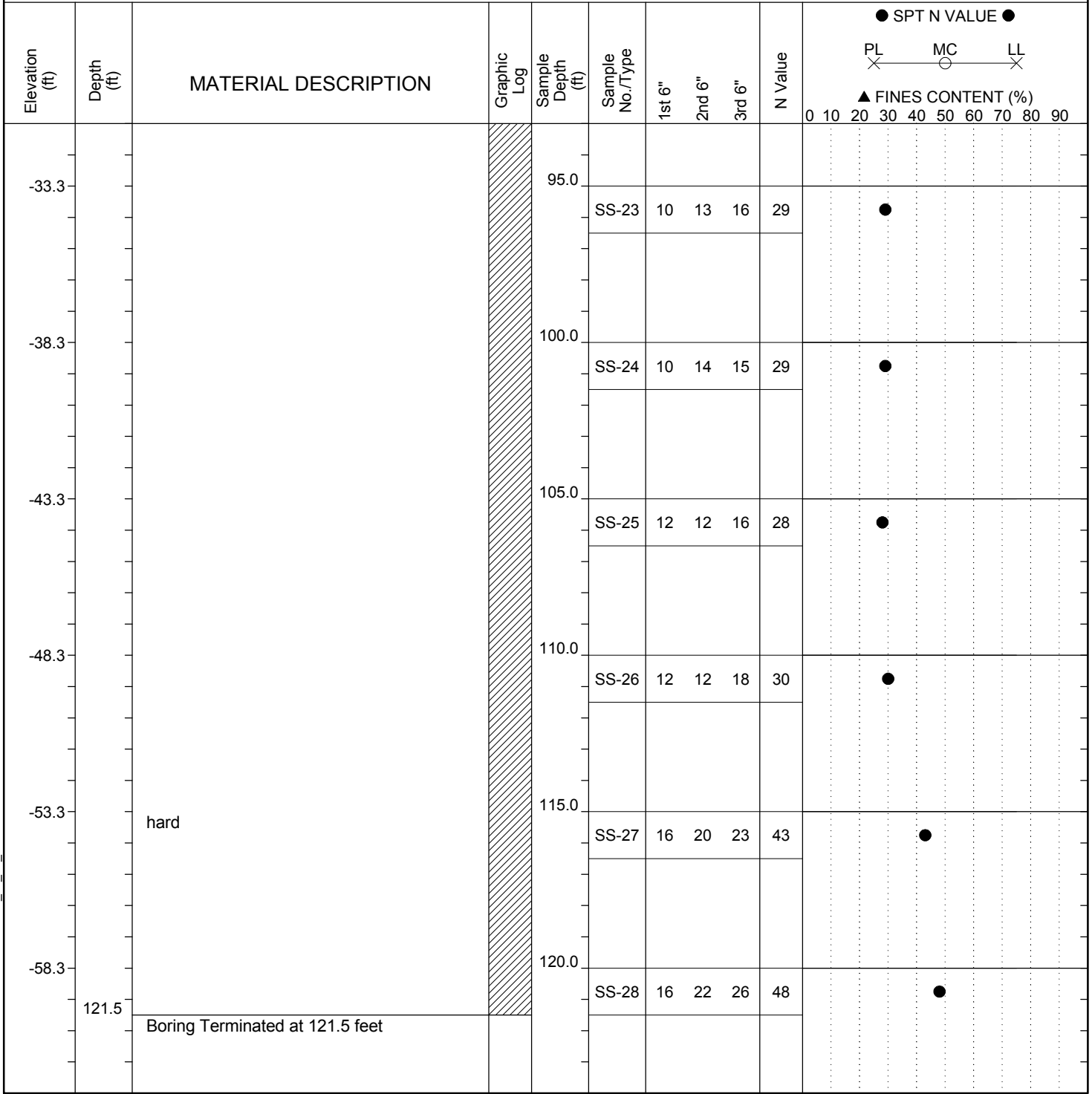
<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-01
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	330+88	<b>Offset:</b>	11' R
<b>Elev.:</b>	61.7 ft	<b>Latitude:</b>	33.121009	<b>Longitude:</b>	80.277809
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1 ft



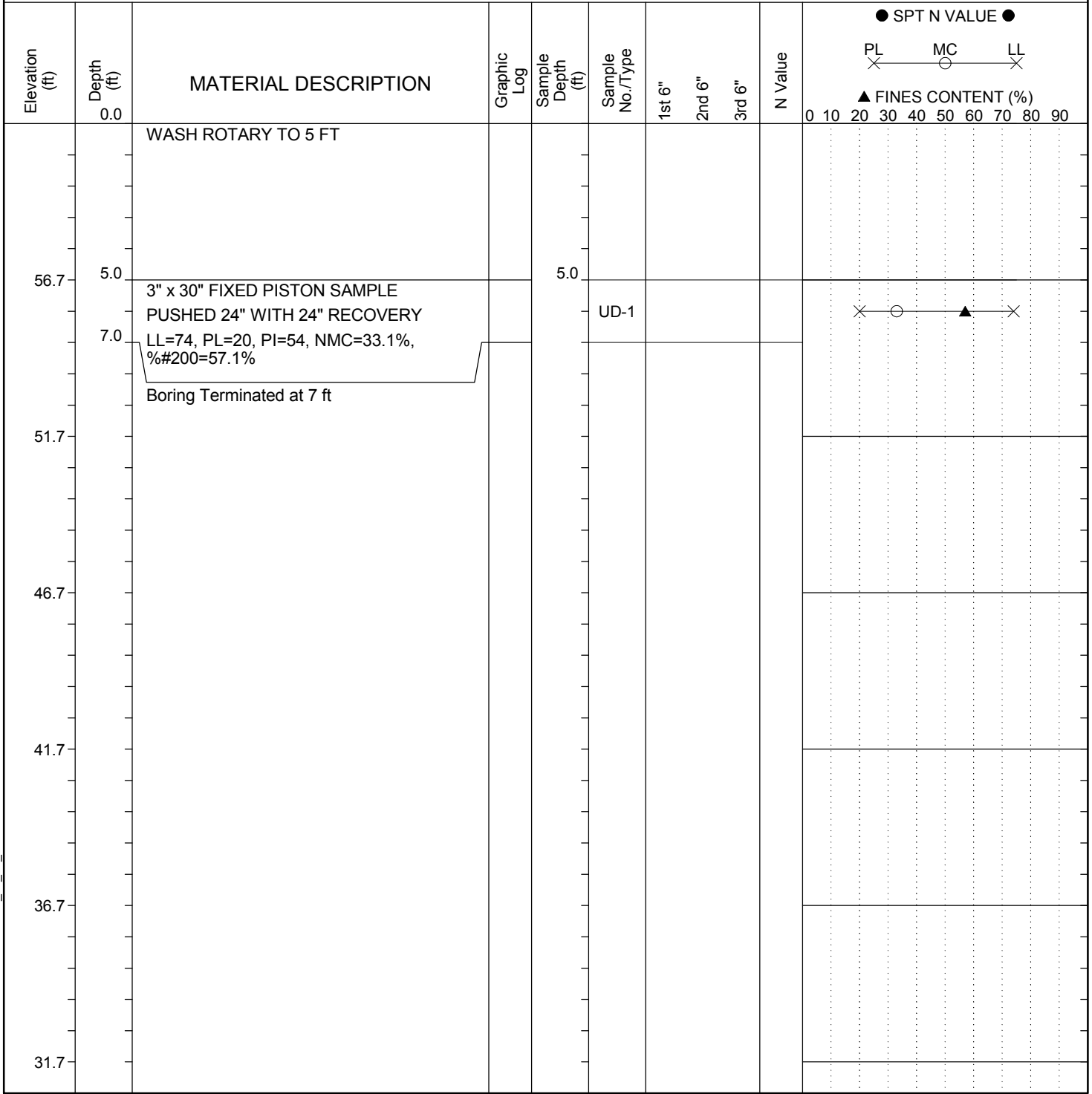
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-01A
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	330+88	<b>Offset:</b>	11' R
<b>Elev.:</b>	61.7 ft	<b>Latitude:</b>	33.121009	<b>Longitude:</b>	80.277809
<b>Total Depth:</b>	7 ft	<b>Soil Depth:</b>	7 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a



### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-02
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	334+07	<b>Offset:</b>	14' L
<b>Elev.:</b>	62.1 ft	<b>Latitude:</b>	33.121415	<b>Longitude:</b>	80.2769
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>Energy Ratio:</b>	82%
				<b>24HR</b>	n/a

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	SPT N VALUE			FINES CONTENT (%)		
						1st 6"	2nd 6"	3rd 6"	PL	MC	LL
57.1	0.0	PENHOLOWAY FORMATION, medium dense, moist, brown, subangular, non-reactive, clayey medium to fine SAND (SC) (A-2-4) 7.5YR 5/4		0.0	SS-1	4	6	7	13	●	
	2.0	stiff, moist, gray yellowish brown, sandy CLAY (CL) (A-4) 10YR 7/1 5/8 LL=23, PL=13, PI=10, NMC=14.8%, %200=66.3%		2.0	SS-2	4	5	6	11	●	○
	6.0	firm		6.0	SS-3	2	2	4	6	●	
	8.0	firm, moist, light gray, non-reactive, CLAY (CH) (A-7-5) 10YR 7/1		8.0	SS-4	1	3	3	6	●	
	10.0	soft, LL=74, PL=33, PI=41, NMC=37.9%, %200=85.2%		10.0	SS-5	1	2	2	4	●	○
	10.0	soft, moist, light brownish gray, non-reactive, clayey SILT (ML) (A-4) 10YR 6/2		10.0	SS-6	1	2	2	4	●	○
47.1	15.0	medium dense, wet, light gray, subangular, strongly reactive, slightly clayey coarse to fine SAND (SP-SC) (A-1-b) 7/1 LL=np, PL=np, PI=np, NMC=22.2%, %200=10.7%		15.0	SS-7	7	7	4	11	●	○
42.1	20.0	COOPER MARL, very stiff, moist, olive, weakly reactive, few moderately cemented layers, sandy CLAY (CL) (A-6) 5Y 5/4		20.0	SS-8	23	13	16	29	●	
37.1	25.0			25.0	SS-9	7	10	7	17	●	
32.1	30.0			30.0	SS-10	5	8	10	18	●	

**LEGEND**

*Continued Next Page*

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

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# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-02
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	334+07	<b>Offset:</b>	14' L
<b>Elev.:</b>	62.1 ft	<b>Latitude:</b>	33.121415	<b>Longitude:</b>	80.2769
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE ●											
										PL	MC	LL	▲ FINES CONTENT (%)								
27.1		stiff		35.0	SS-11	6	8	10	18	●											
22.1				40.0	SS-12	4	6	8	14	●											
17.1	45.0	COOPER MARL, very stiff, moist, olive, weakly reactive, clayey sandy SILT (ML) (A-4) 5Y 5/4		45.0	SS-13	5	9	13	22	●											
12.1		stiff		50.0	SS-14	6	8	8	16	●											
7.1			55.0	SS-15	6	7	8	15	●												
2.1		very stiff		60.0	SS-16	7	9	10	19	●											

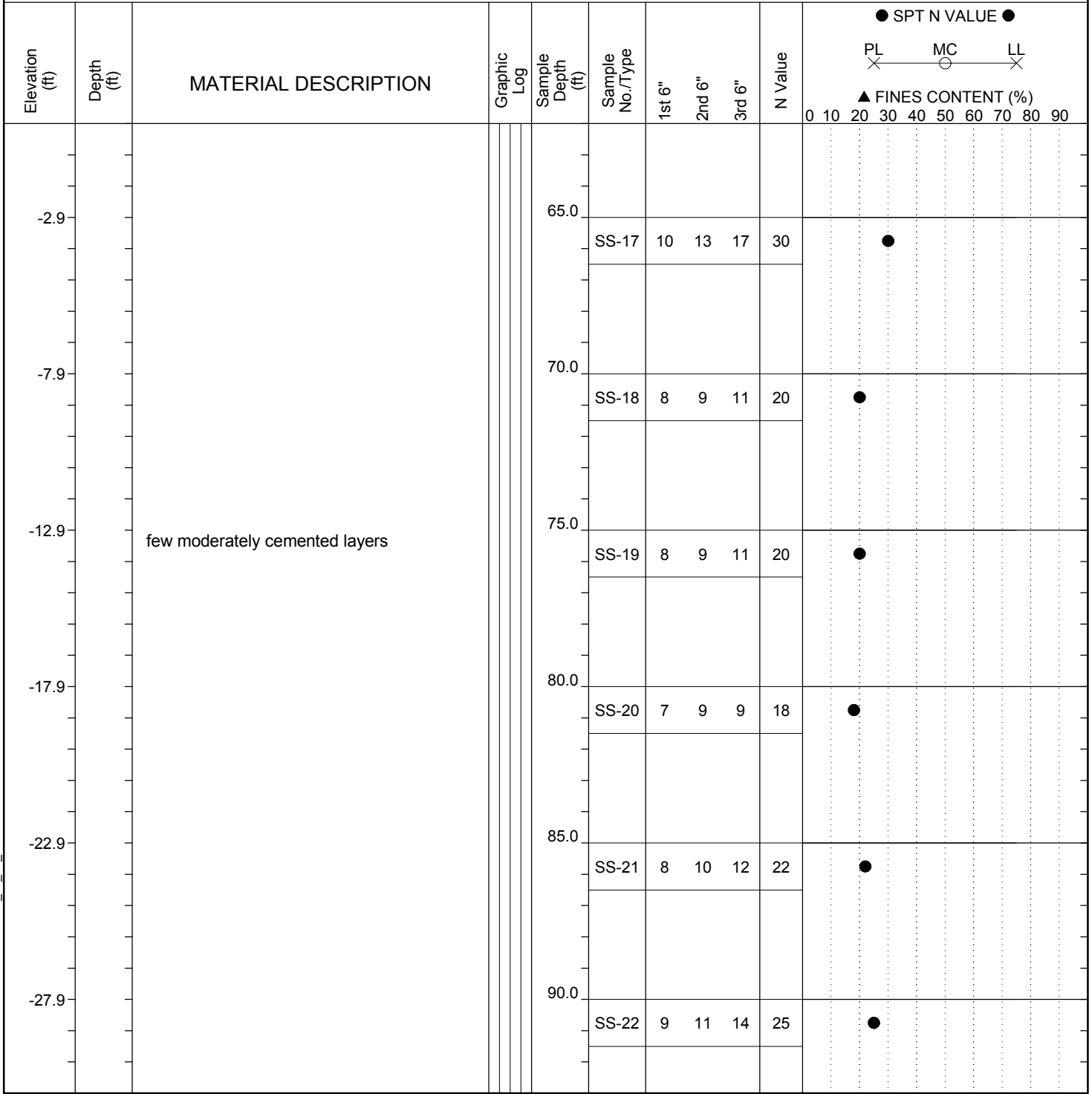
LEGEND Continued Next Page

<b>SAMPLER TYPE</b> SS - Split Spoon UD - Undisturbed Sample AWG - Rock Core, 1-1/8"		<b>DRILLING METHOD</b> HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing		NQ - Rock Core, 1-7/8" CU - Cuttings CT - Continuous Tube		RW - Rotary Wash RC - Rock Core	
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SC\_DOT\_STB\_DATA.GPJ SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b> 1413-15-114	<b>County:</b> Berkeley	<b>Boring No.:</b> ID-02
<b>Site Description:</b> Volvo I-26 Interchange		<b>Route:</b>
<b>Eng./Geo.:</b> M. Lucas	<b>Boring Location:</b> 334+07	<b>Offset:</b> 14' L
<b>Elev.:</b> 62.1 ft	<b>Latitude:</b> 33.121415	<b>Longitude:</b> 80.2769
<b>Total Depth:</b> 121.5 ft	<b>Soil Depth:</b> 121.5 ft	<b>Core Depth:</b> ft
<b>Bore Hole Diameter (in):</b> 4	<b>Sampler Configuration</b>	<b>Liner Required:</b> Y N
<b>Drill Machine:</b> CME 850	<b>Drill Method:</b> Mud Rotary	<b>Hammer Type:</b> Automatic
<b>Core Size:</b> N/A	<b>Driller:</b> SCI	<b>Energy Ratio:</b> 82%
<b>Groundwater:</b> TOB		<b>24HR:</b> n/a



**LEGEND**

*Continued Next Page*

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-02
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	334+07	<b>Offset:</b>	14' L
<b>Elev.:</b>	62.1 ft	<b>Latitude:</b>	33.121415	<b>Longitude:</b>	80.2769
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE ●										
										PL	MC	LL	▲ FINES CONTENT (%)							
										0	10	20	30	40	50	60	70	80	90	
-32.9		hard		95.0	SS-23	10	14	20	34											
-37.9	100.0	hard, moist, olive, strongly reactive, clayey sandy SILT (ML) (A-4) 5Y 5/4		100.0	SS-24	11	16	18	34											
-42.9				105.0	SS-25	7	16	18	34											
-47.9				110.0	SS-26	10	14	16	30											
-52.9				115.0	SS-27	11	14	16	30											
-57.9	121.5	Boring Terminated		120.0	SS-28	15	18	21	39											

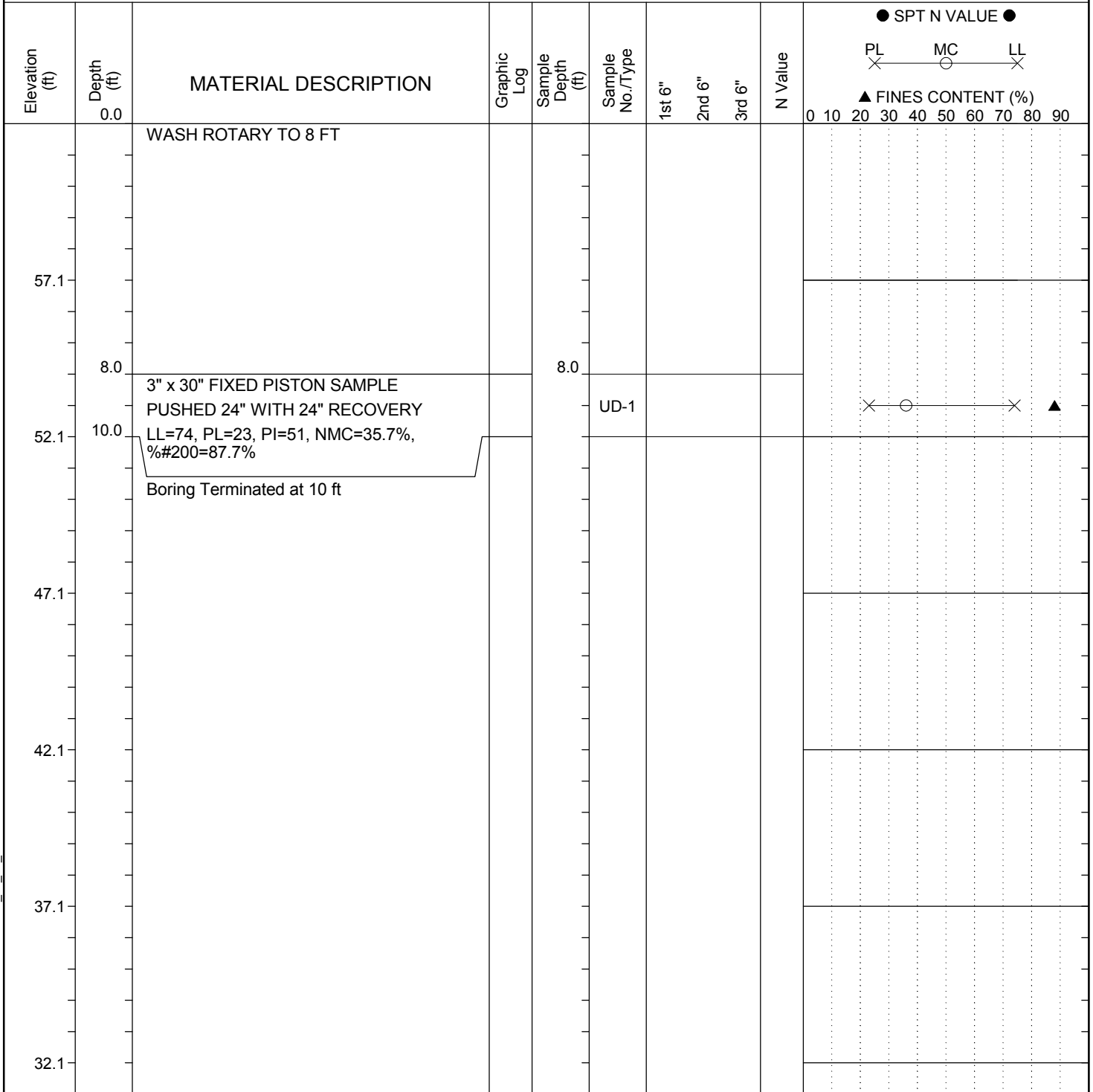
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-02 A
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	334+07	<b>Offset:</b>	14' L
<b>Elev.:</b>	62.1 ft	<b>Latitude:</b>	33.121415	<b>Longitude:</b>	80.2769
<b>Total Depth:</b>	10 ft	<b>Soil Depth:</b>	10 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a



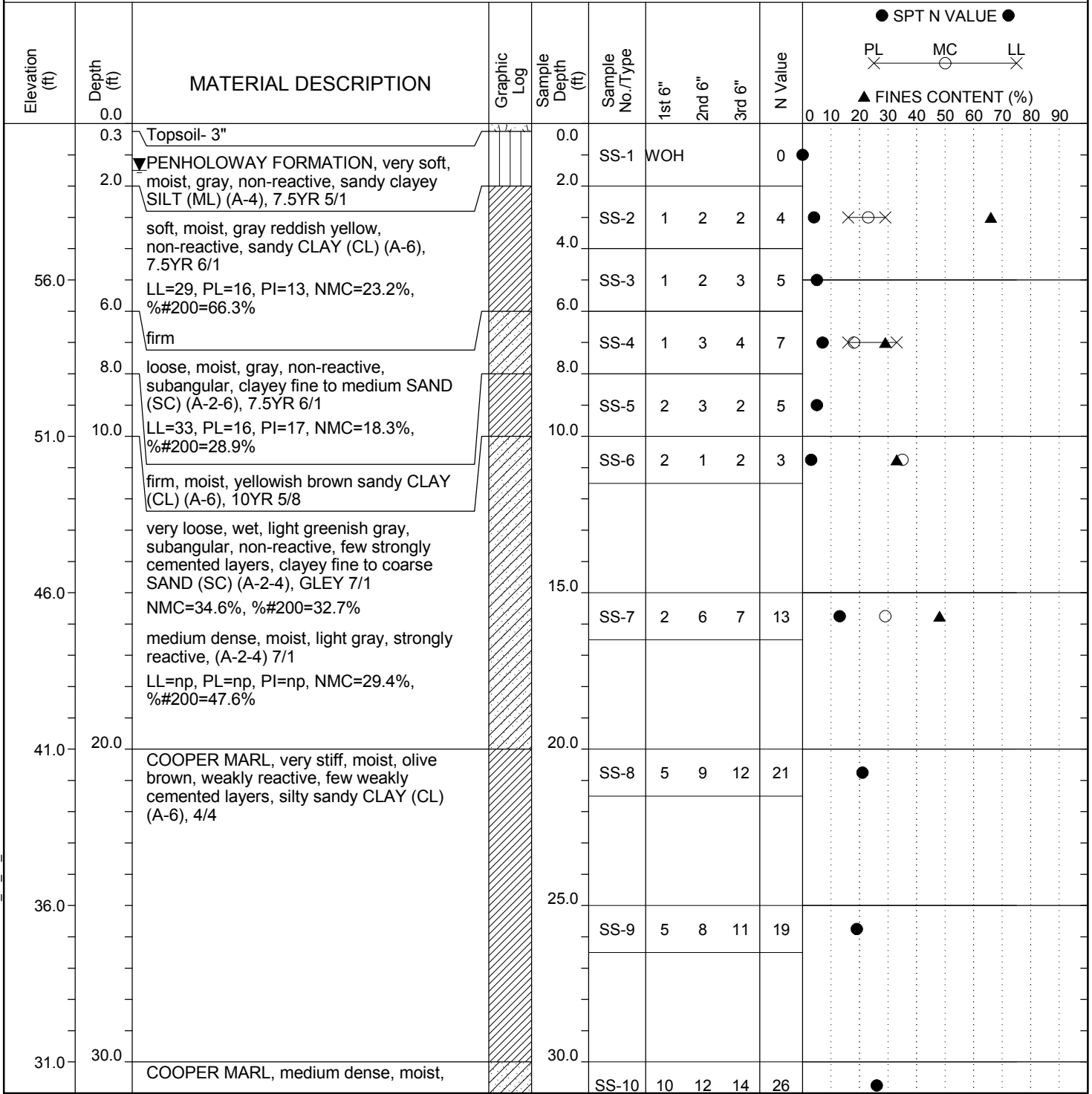
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-03
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	336+78	<b>Offset:</b>	20' R
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.121862	<b>Longitude:</b>	80.276191
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.5 ft



**LEGEND**

*Continued Next Page*

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-03
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	336+78	<b>Offset:</b>	20' R
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.121862	<b>Longitude:</b>	80.276191
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.5 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE											
										0	10	20	30	40	50	60	70	80	90		
26.0	35.0	olive brown, subangular, weakly reactive, few moderately to strongly cemented layers, clayey fine to medium SAND (SC) (A-4), 2.5Y 4/4		35.0																	
21.0	35.0	COOPER MARL, stiff, moist, olive brown, weakly reactive, few weakly cemented layers, silty sandy CLAY (CL) (A-6), 2.5 Y 4/4		35.0	SS-11	8	7	8	15		●										
21.0	40.0	very stiff		40.0	SS-12	7	8	10	18		●										
16.0	45.0	hard		45.0	SS-13	14	16	22	38			●									
11.0	50.0	very stiff		50.0	SS-14	7	8	10	18		●										
6.0	55.0			55.0	SS-15	7	8	13	21		●										
1.0	60.0			60.0	SS-16	8	8	10	18		●										

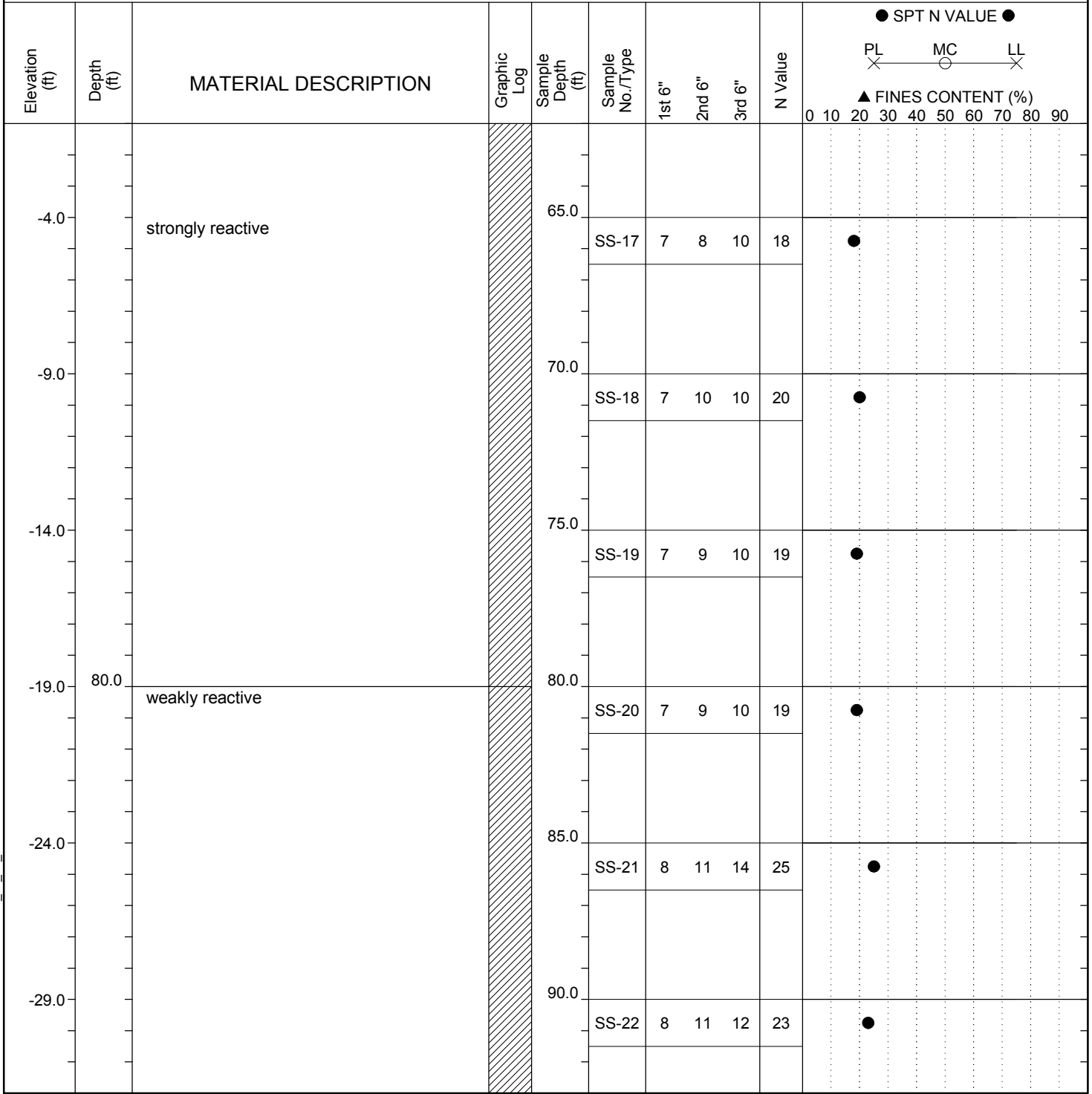
LEGEND Continued Next Page

<b>SAMPLER TYPE</b> SS - Split Spoon UD - Undisturbed Sample AWG - Rock Core, 1-1/8"		<b>DRILLING METHOD</b> HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing		NQ - Rock Core, 1-7/8" CU - Cuttings CT - Continuous Tube		RW - Rotary Wash RC - Rock Core	
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SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-03
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	336+78	<b>Offset:</b>	20' R
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.121862	<b>Longitude:</b>	80.276191
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.5 ft



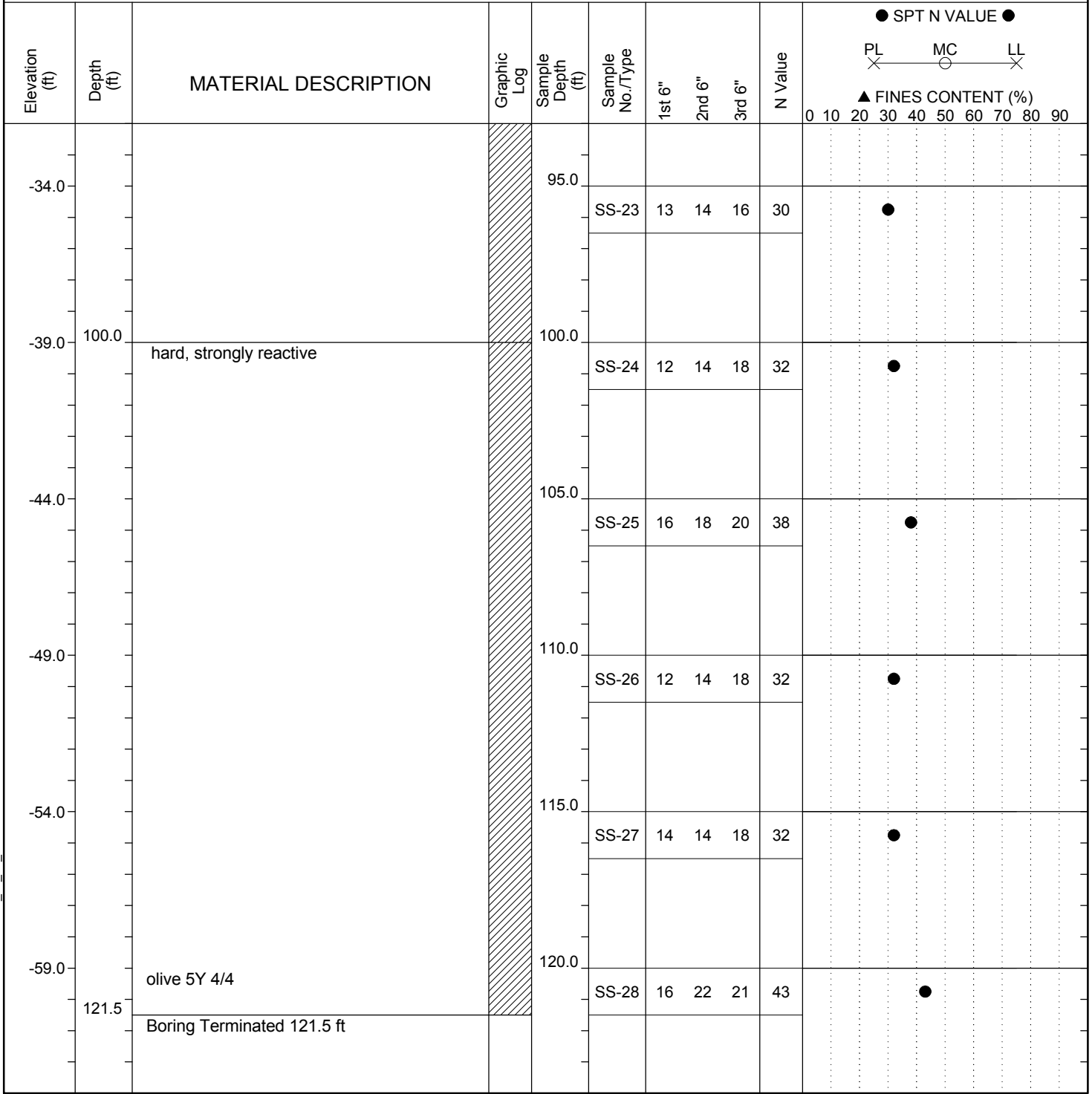
LEGEND Continued Next Page

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-03
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	336+78	<b>Offset:</b>	20' R
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.121862	<b>Longitude:</b>	80.276191
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.5 ft



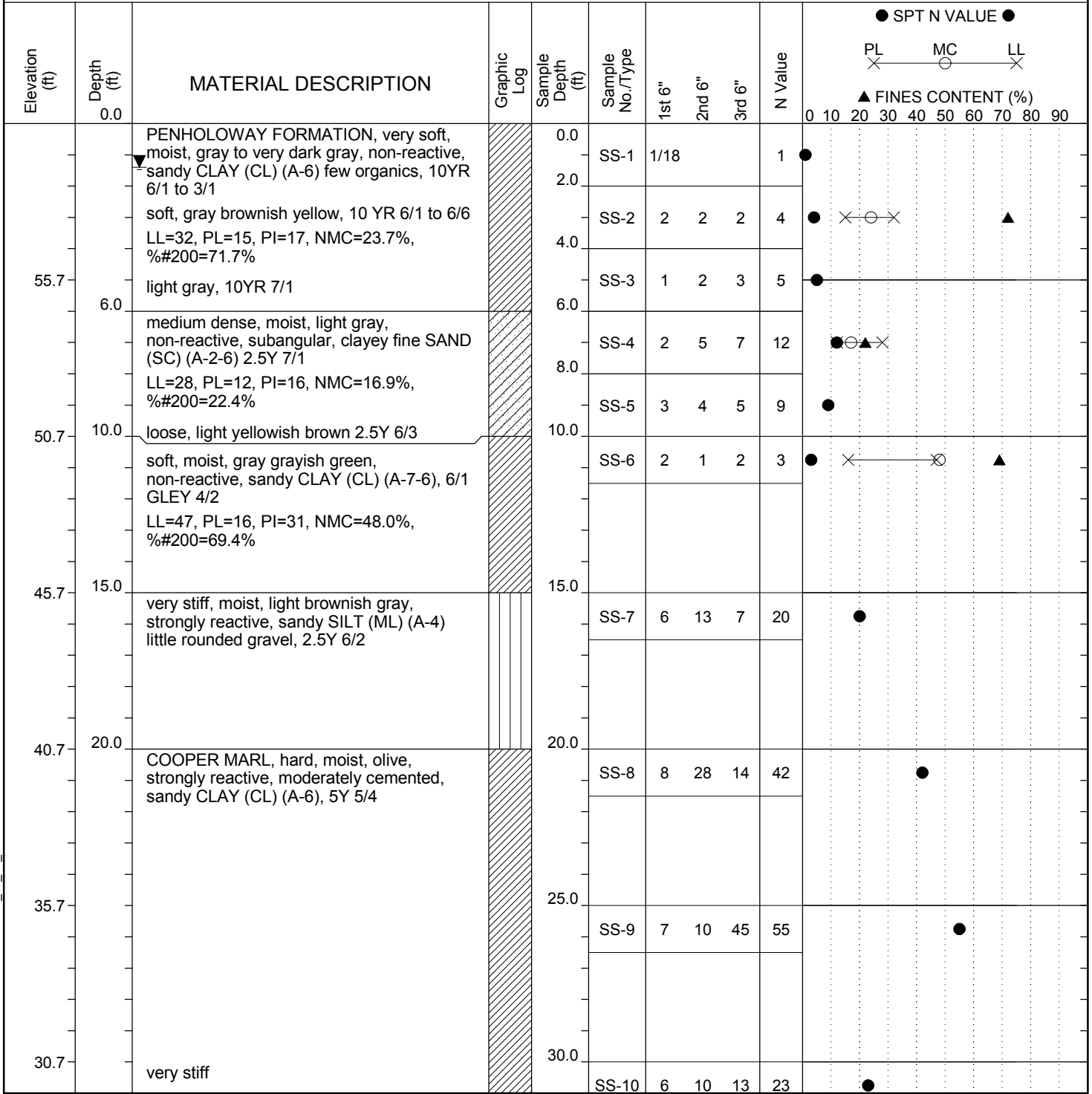
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-04
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	339+78	<b>Offset:</b>	16' R
<b>Elev.:</b>	60.7 ft	<b>Latitude:</b>	33.12234	<b>Longitude:</b>	80.275387
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.4 ft



LEGEND

Continued Next Page

<b>SAMPLER TYPE</b> SS - Split Spoon UD - Undisturbed Sample AWG - Rock Core, 1-1/8"		<b>DRILLING METHOD</b> HSA - Hollow Stem Auger CFA - Continuous Flight Augers DC - Driving Casing	
NQ - Rock Core, 1-7/8" CU - Cuttings CT - Continuous Tube		RW - Rotary Wash RC - Rock Core	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-04
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	339+78	<b>Offset:</b>	16' R
<b>Elev.:</b>	60.7 ft	<b>Latitude:</b>	33.12234	<b>Longitude:</b>	80.275387
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.4 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE									
										PL	MC	LL							
										▲ FINES CONTENT (%)									
										0	10	20	30	40	50	60	70	80	90
25.7	35.0	COOPER MARL, stiff, moist, olive, moderately reactive, clayey sandy SILT (ML) (A-4) 5Y 5/4		35.0	SS-11	6	6	8	14		●								
20.7		hard, moderately cemented		40.0	SS-12	10	28	36	64		●								
15.7		very stiff		45.0	SS-13	8	10	10	20		●								
10.7				50.0	SS-14	7	8	10	18		●								
5.7		hard		55.0	SS-15	8	18	28	46		●								
0.7	60.0	COOPER MARL, moist, stiff, olive, moderately reactive, silty sandy CLAY (CL) (A-6), 5Y 5/4		60.0	SS-16	7	8	13	21		●								

**LEGEND**

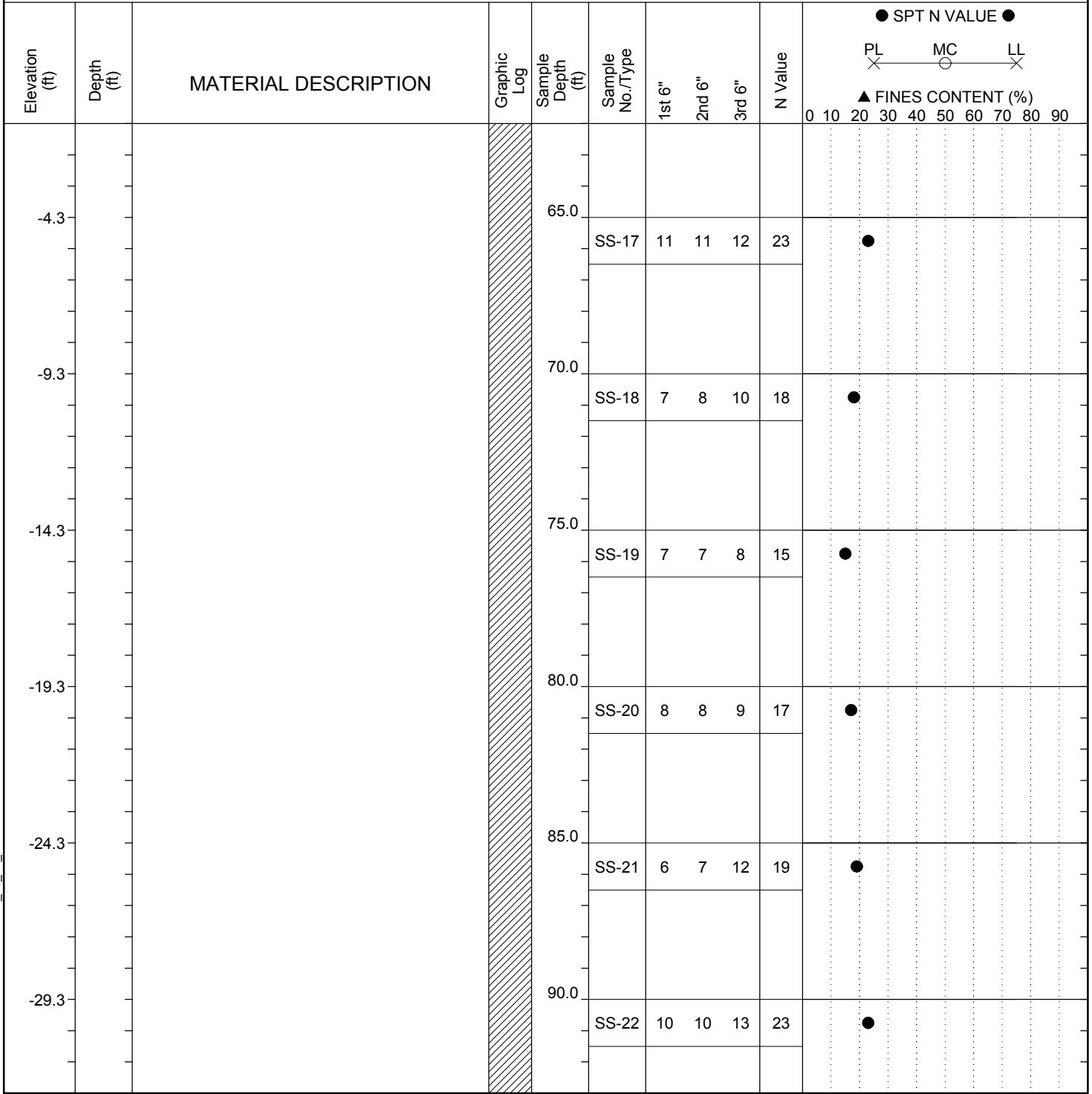
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SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-04
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	339+78	<b>Offset:</b>	16' R
<b>Elev.:</b>	60.7 ft	<b>Latitude:</b>	33.12234	<b>Longitude:</b>	80.275387
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.4 ft



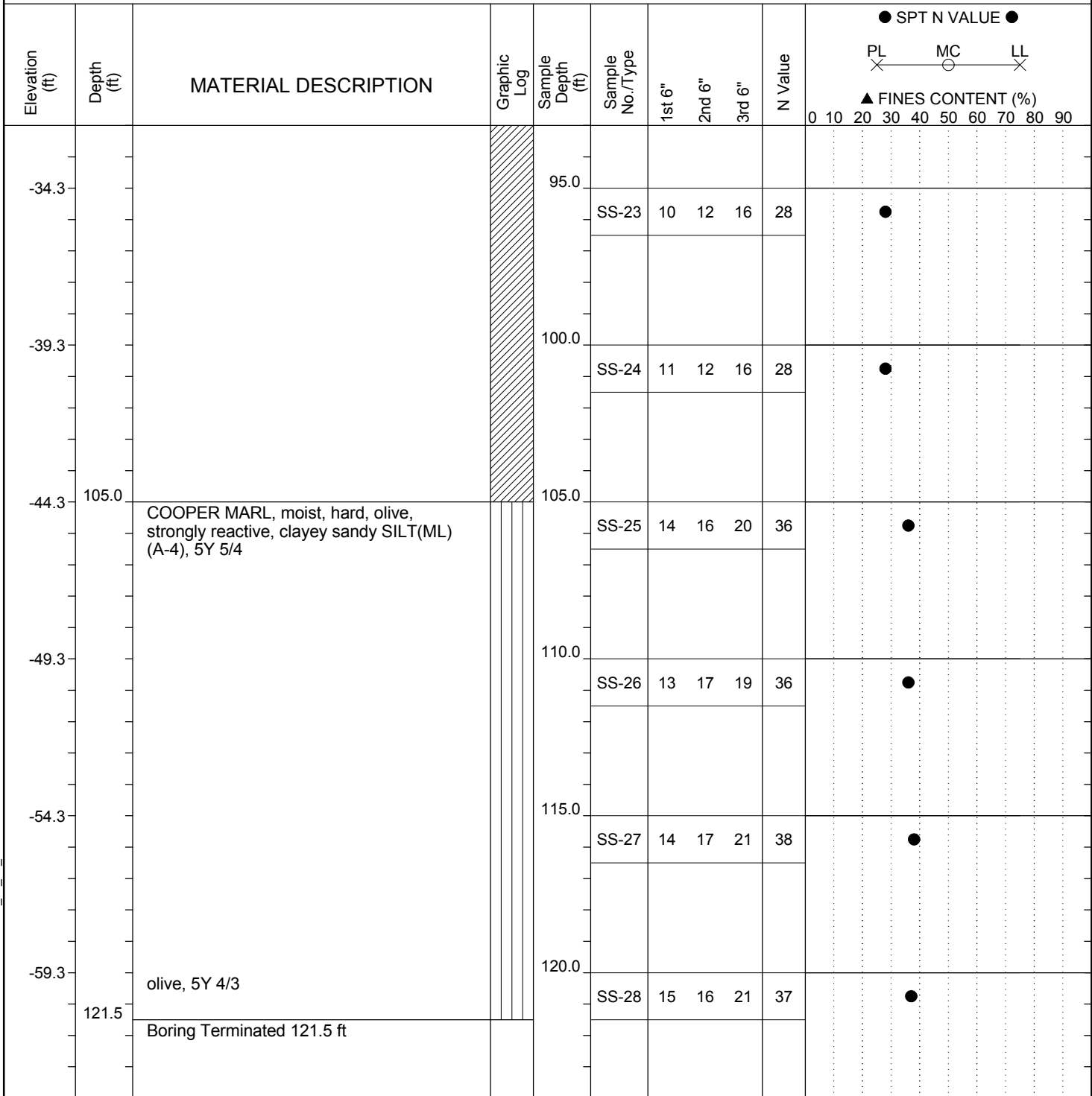
LEGEND Continued Next Page

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-04
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	339+78	<b>Offset:</b>	16' R
<b>Elev.:</b>	60.7 ft	<b>Latitude:</b>	33.12234	<b>Longitude:</b>	80.275387
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	1.4 ft



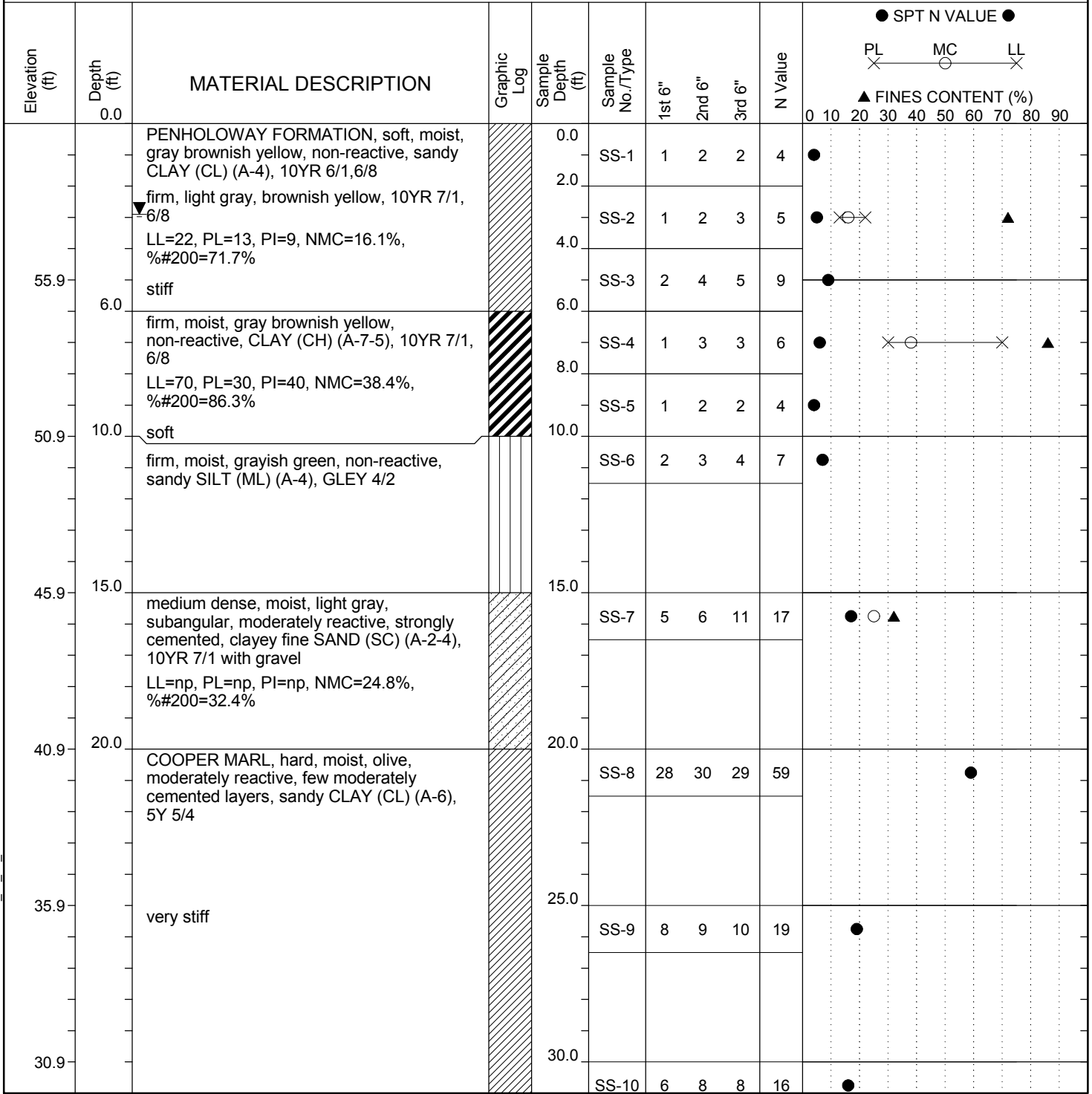
## LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-05
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	212+70	<b>Offset:</b>	2' L
<b>Elev.:</b>	60.9 ft	<b>Latitude:</b>	33.121005	<b>Longitude:</b>	80.276158
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>Energy Ratio:</b>	82%
				<b>24HR</b>	2.9 ft



**LEGEND**

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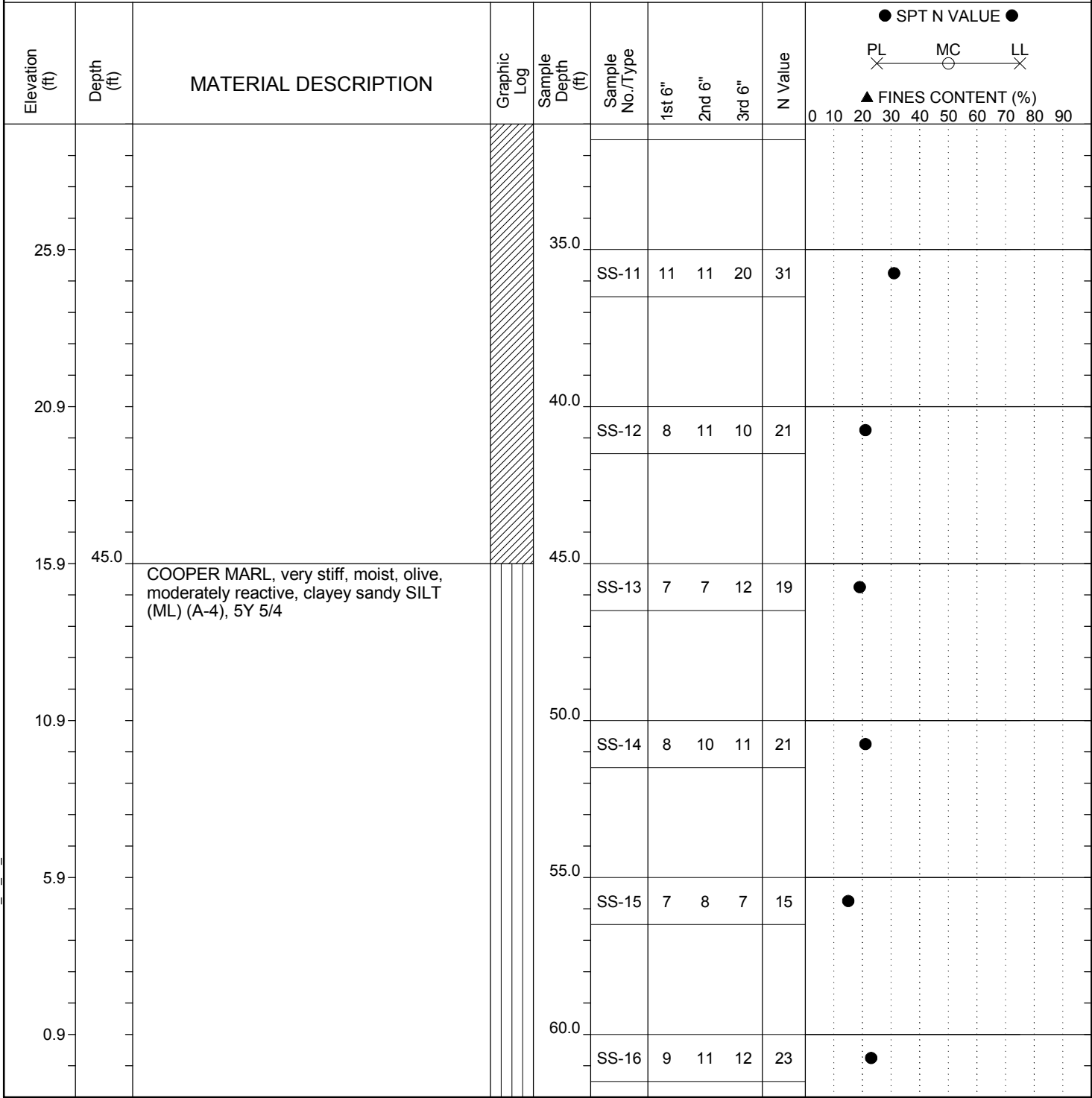
<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-05
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	212+70	<b>Offset:</b>	2' L
<b>Elev.:</b>	60.9 ft	<b>Latitude:</b>	33.121005	<b>Longitude:</b>	80.276158
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	2.9 ft



**LEGEND**

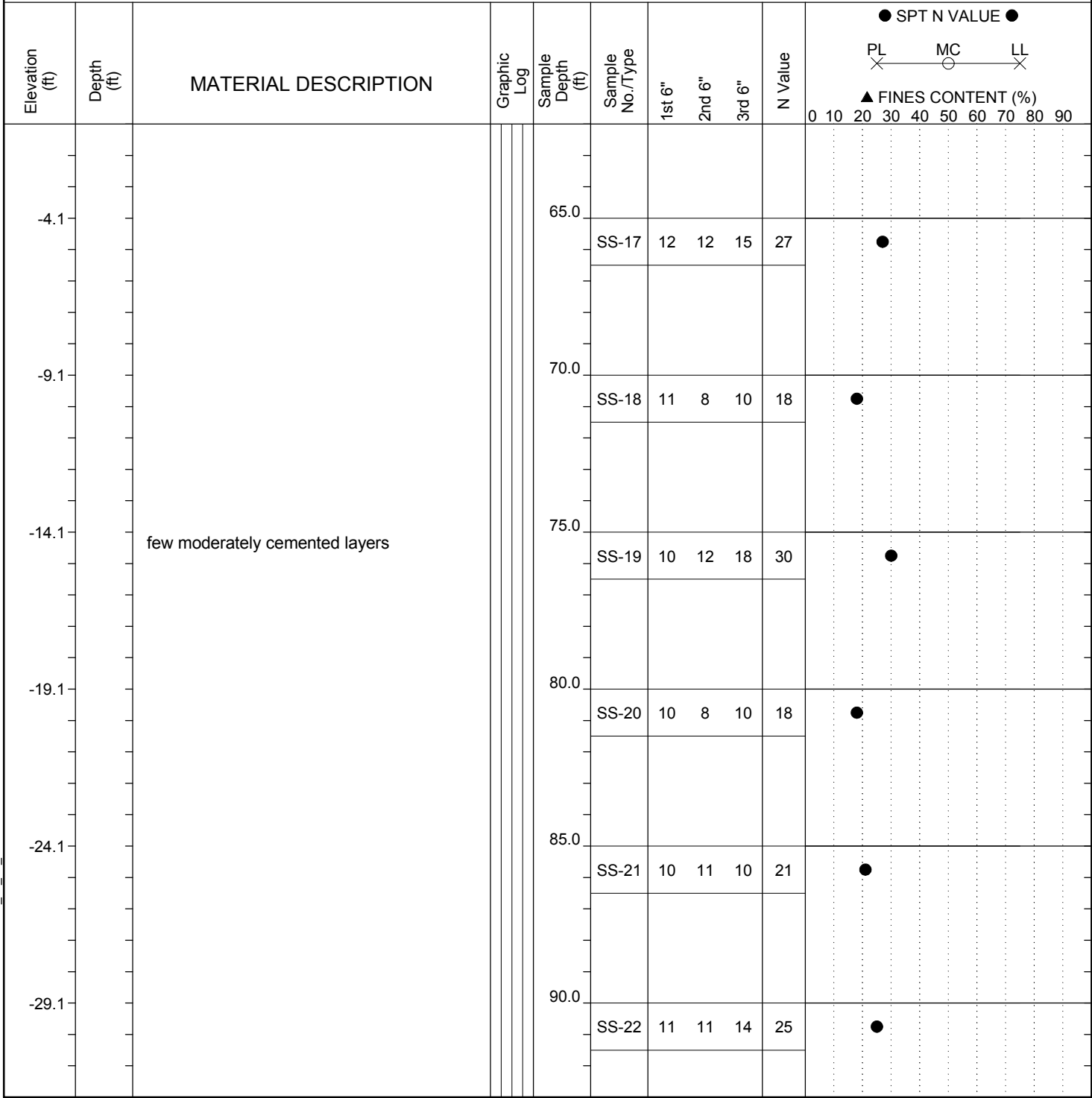
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<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-05
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	212+70	<b>Offset:</b>	2' L
<b>Elev.:</b>	60.9 ft	<b>Latitude:</b>	33.121005	<b>Longitude:</b>	80.276158
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	2.9 ft



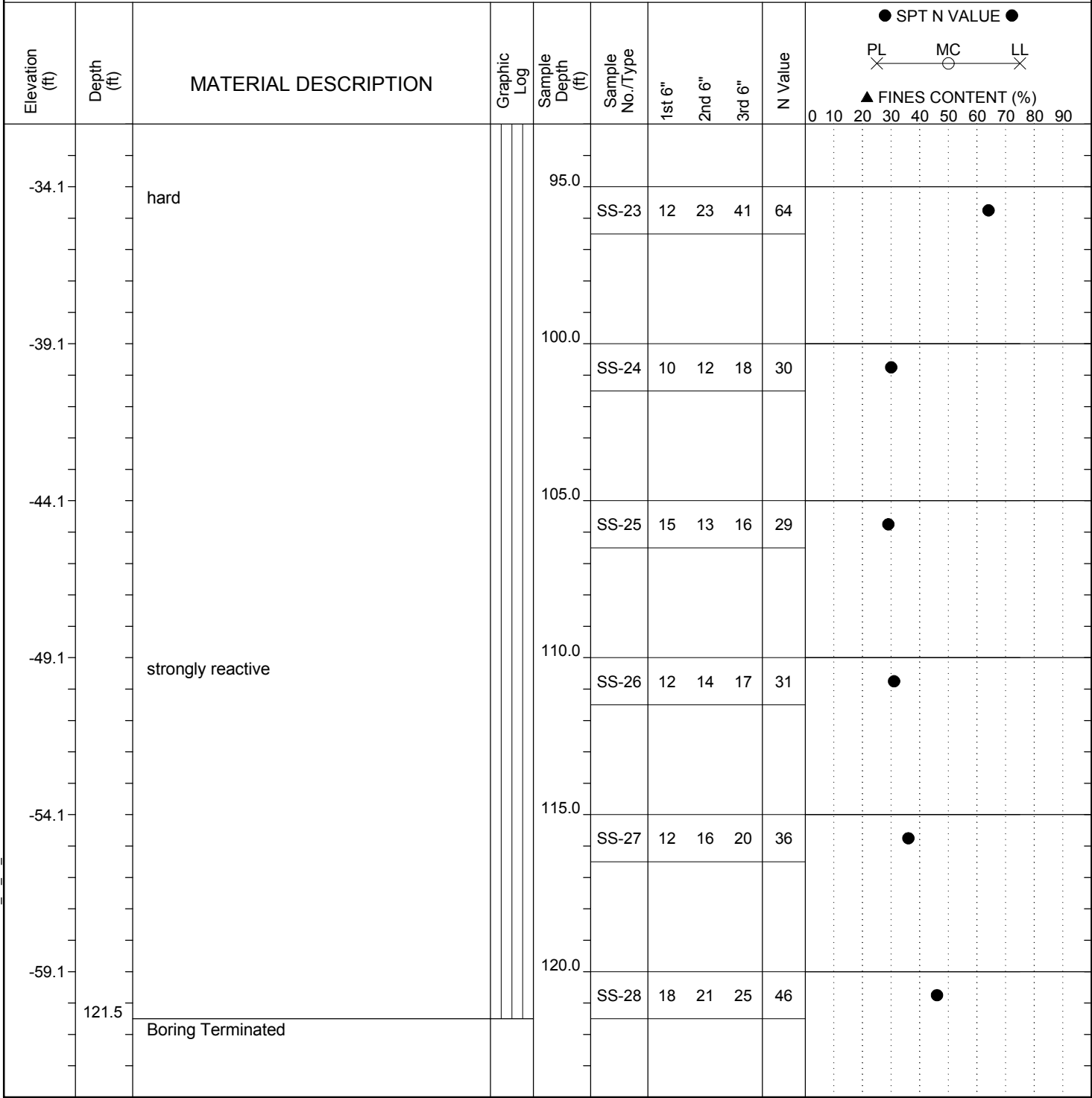
LEGEND Continued Next Page

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-05
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	212+70	<b>Offset:</b>	2' L
<b>Elev.:</b>	60.9 ft	<b>Latitude:</b>	33.121005	<b>Longitude:</b>	80.276158
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	2.9 ft



### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-06
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	216+50	<b>Offset:</b>	CL
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.120002	<b>Longitude:</b>	80.275875
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.8 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE ●		PL — MC — LL			▲ FINES CONTENT (%)	
										0	10	20	30	40	50	60
	0.0	▼ PENHOLLOWAY FORMATION, soft, moist, light brownish gray, non-reactive, clayey SILT (MH) (A-5), 10YR 6/2		0.0	SS-1	1	2	1	3	●						
	2.0	firm, moist, gray yellowish brown, non-reactive, sandy CLAY (CL) (A-6), 6/1 10YR 5/8		2.0	SS-2	2	3	4	7	●	⊗	⊗		▲		
56.8	6.5	LL=33, PL=17, PI=16, NMC=21.4%, %200=65.9% stiff		6.0	SS-3	1	4	5	9	●						
	8.0	firm, moist, light brownish gray, non-reactive, CLAY (CH) (A-7-6) 2.5Y 6/2		8.0	SS-4	2	2	3	5	●						
51.8	10.0	LL=60, PL=19, PI=41, NMC=25.3%, %200=59.7%		10.0	SS-5	3	3	5	8	●	⊗	⊗		▲		
	10.0	firm, moist, greenish gray, non-reactive, clayey SILT (MH) (A-5), GLEY 6/1		10.0	SS-6	1	3	3	6	●						
	15.0	medium dense, moist, greenish gray, non-reactive, subangular, few strongly cemented layers, clayey fine SAND (SC) (A-1-b), GLEY 6/1		15.0	SS-7	9	9	12	21	●						
41.8	20.0	LL=np, PL=np, PI=np, NMC=23.4%, %200=21.8%		20.0	SS-8	6	7	10	17	●						
	20.0	COOPER MARL, stiff, moist, olive, weakly reactive, silty sandy CLAY (CL) (A-6), 5Y 5/3		20.0	SS-9	9	8	9	17	●						
36.8	25.0			25.0	SS-9	9	8	9	17	●						
31.8	30.0			30.0	SS-10	5	9	13	22	●						

**LEGEND**

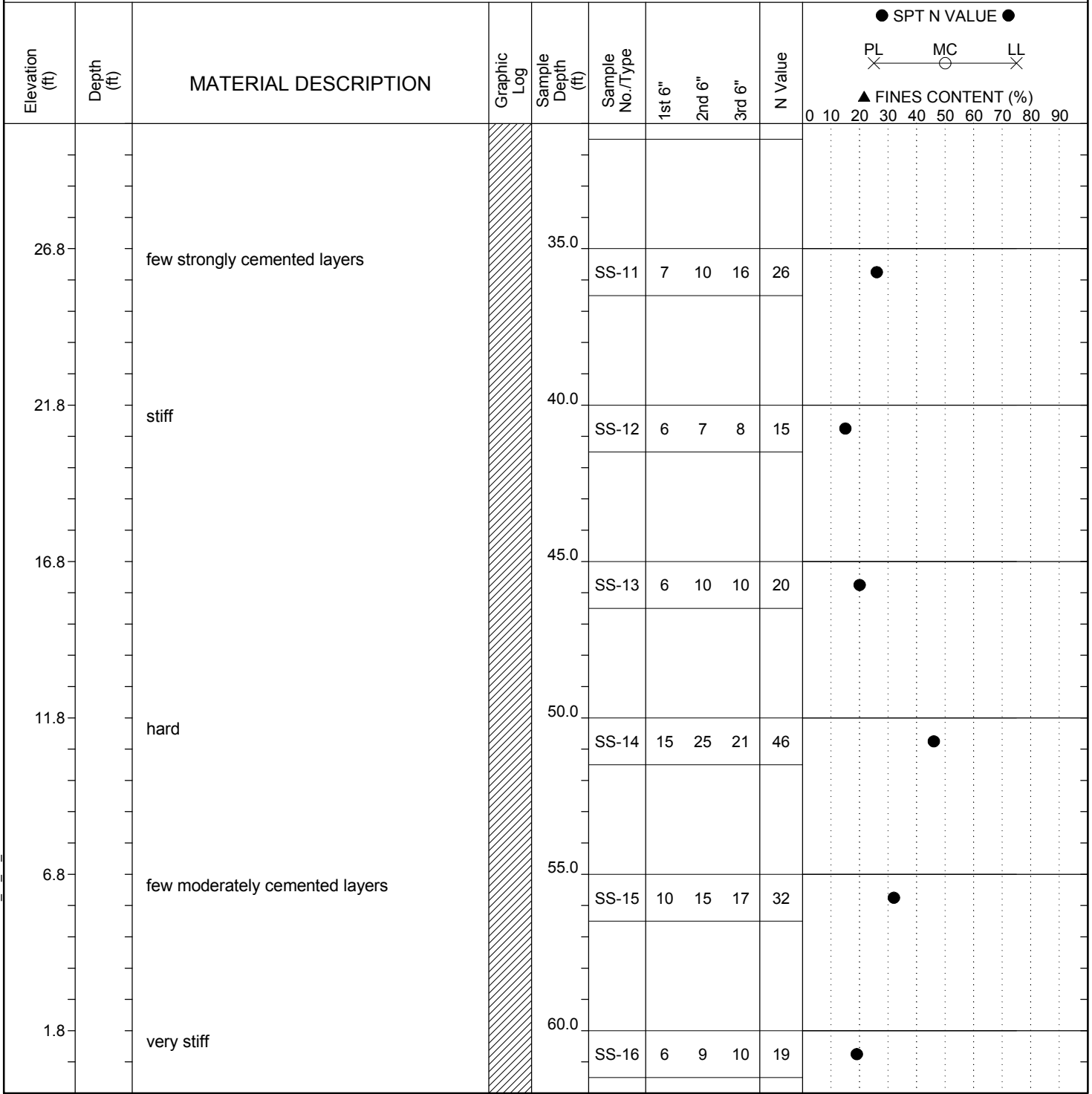
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<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-06
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	216+50	<b>Offset:</b>	CL
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.120002	<b>Longitude:</b>	80.275875
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.8 ft



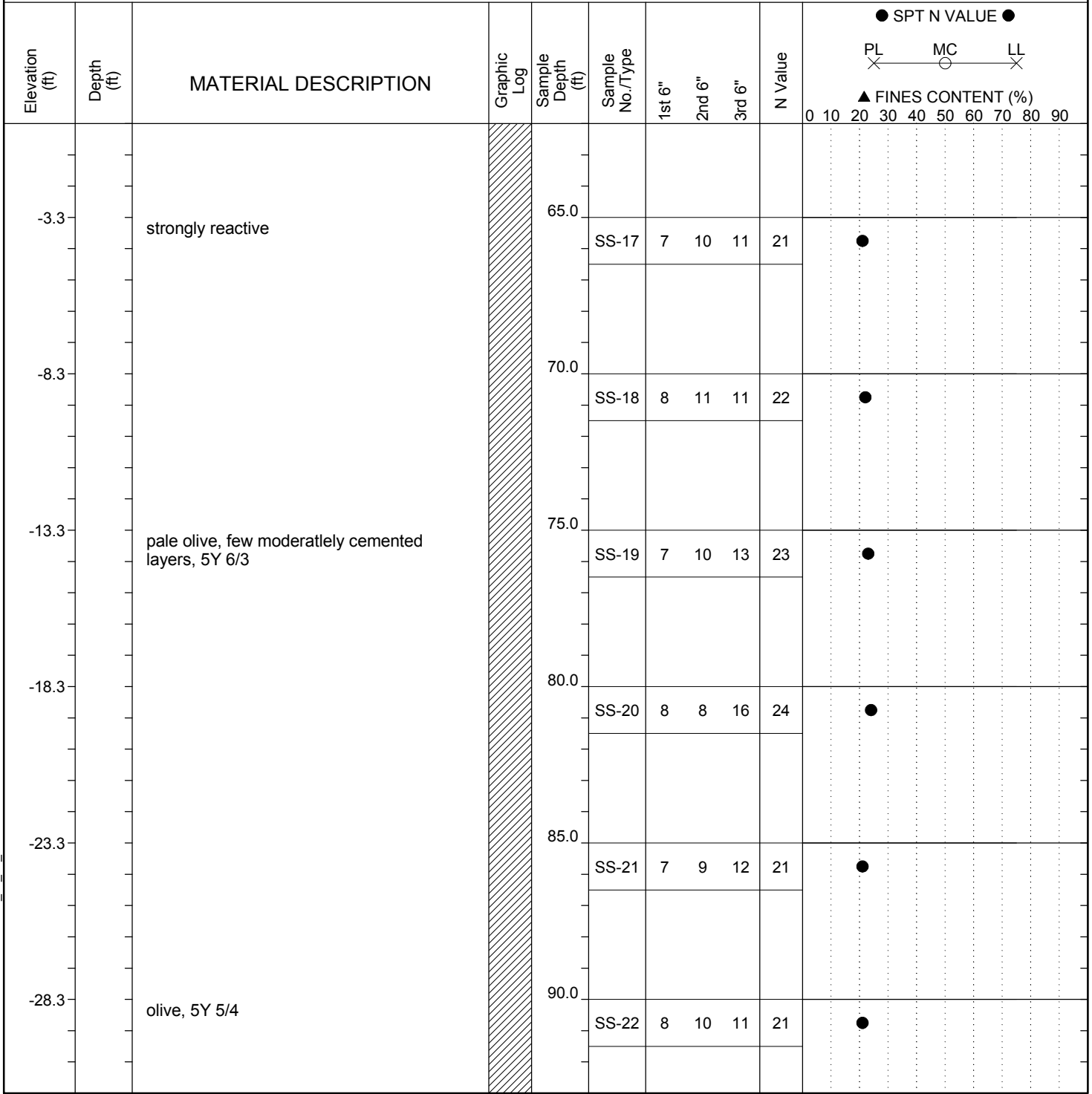
LEGEND Continued Next Page

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-06
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	216+50	<b>Offset:</b>	CL
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.120002	<b>Longitude:</b>	80.275875
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>Energy Ratio:</b>	82%
				<b>24HR</b>	0.8 ft



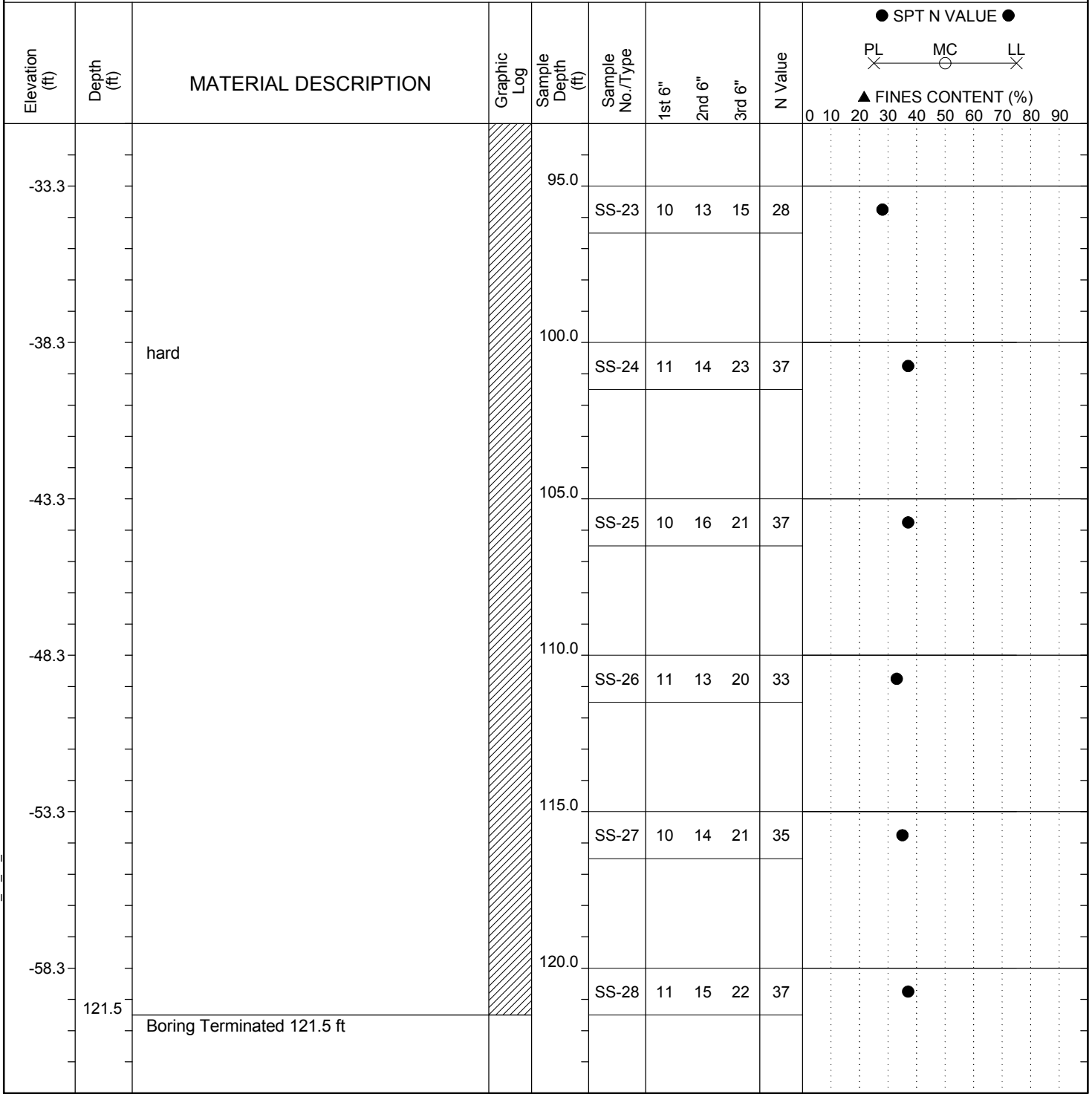
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<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-06
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	216+50	<b>Offset:</b>	CL
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.120002	<b>Longitude:</b>	80.275875
<b>Total Depth:</b>	121.5 ft	<b>Soil Depth:</b>	121.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.8 ft



### LEGEND

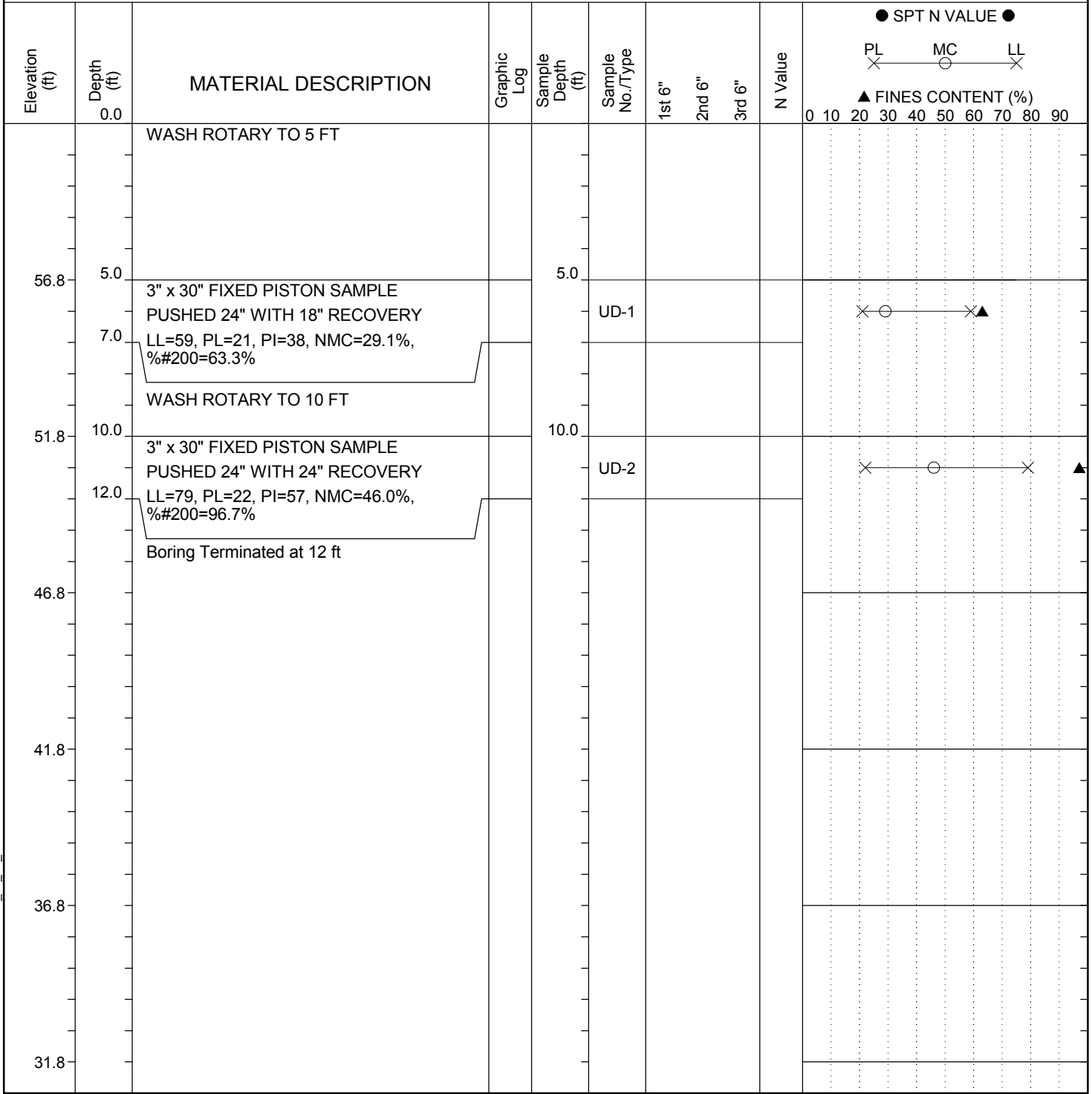
<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	ID-06A
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	216+50	<b>Offset:</b>	CL
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.120002	<b>Longitude:</b>	80.275875
<b>Total Depth:</b>	12 ft	<b>Soil Depth:</b>	12 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a



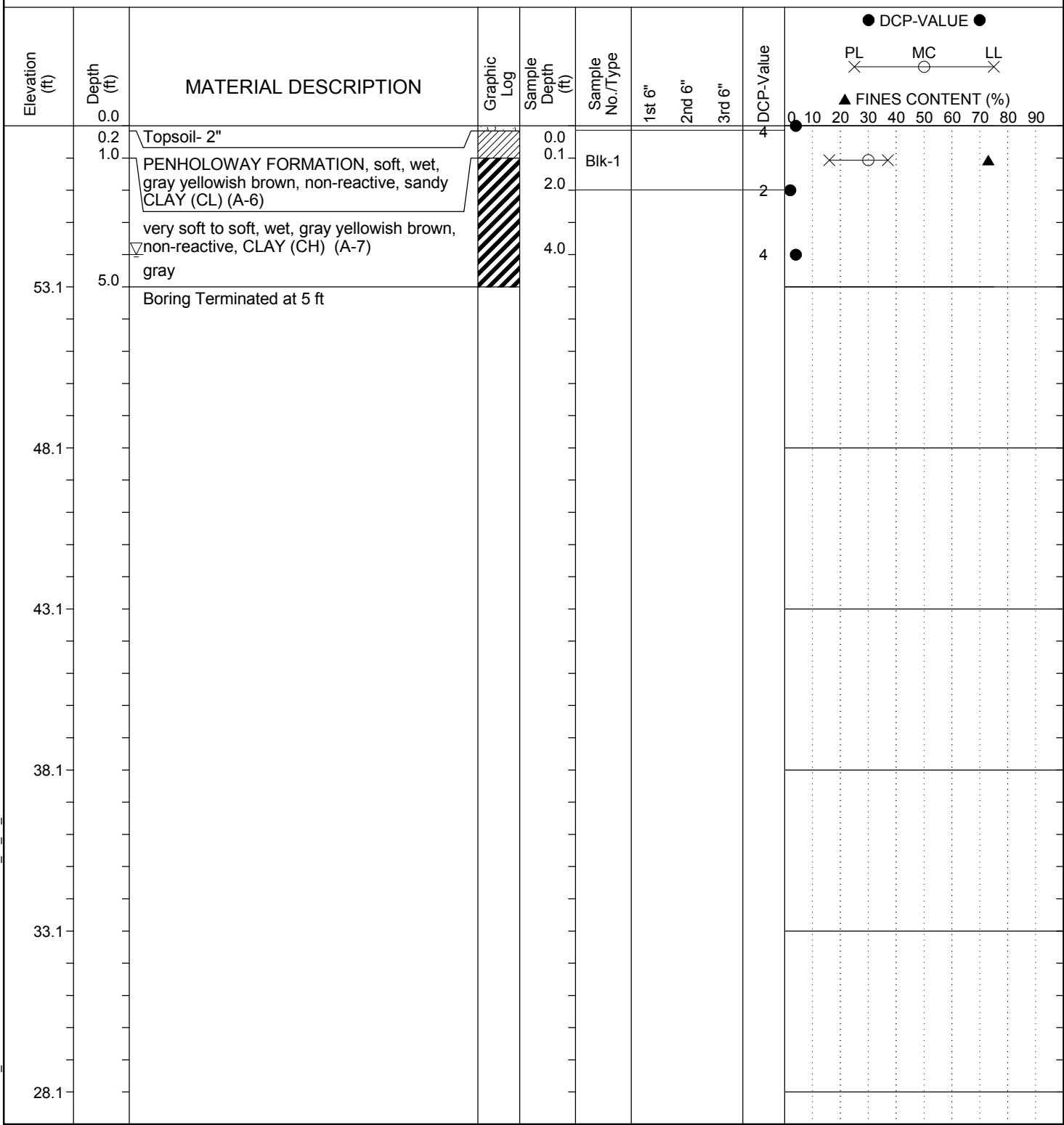
**LEGEND**

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

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# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-01
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	305+09	<b>Offset:</b>	1 R
<b>Elev.:</b>	58.1 ft	<b>Latitude:</b>	33.124564	<b>Longitude:</b>	80.284917
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	4 ft	24 hr
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/27/2015
				<b>Date Completed:</b>	10/27/2015



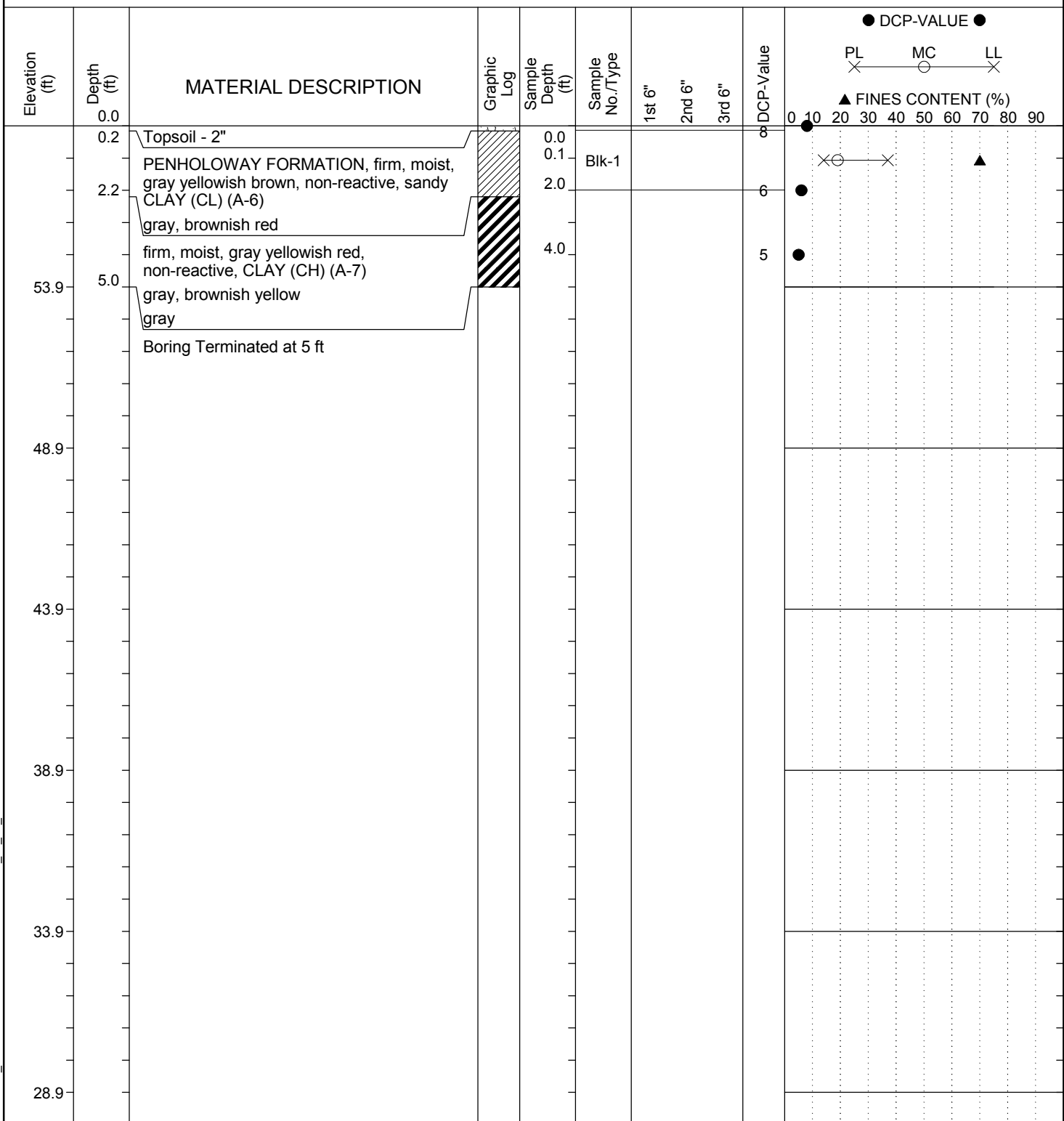
**LEGEND**

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b> 1413-15-114	<b>County:</b> Berkeley	<b>Boring No.:</b> IS-02
<b>Site Description:</b> Volvo I-26 Interchange		<b>Route:</b>
<b>Driller:</b> M. Lucas	<b>Boring Location:</b> 146+43	<b>Offset:</b> 57 L
<b>Elev.:</b> 58.9 ft	<b>Latitude:</b> 33.124496	<b>Longitude:</b> 80.283452
<b>Total Depth:</b> 5 ft	<b>Groundwater:</b> TOB	<b>Date Started:</b> 10/28/2015
<b>Dynamic Cone Penetrometer Test Procedure:</b>		<b>Date Completed:</b> 10/28/2015



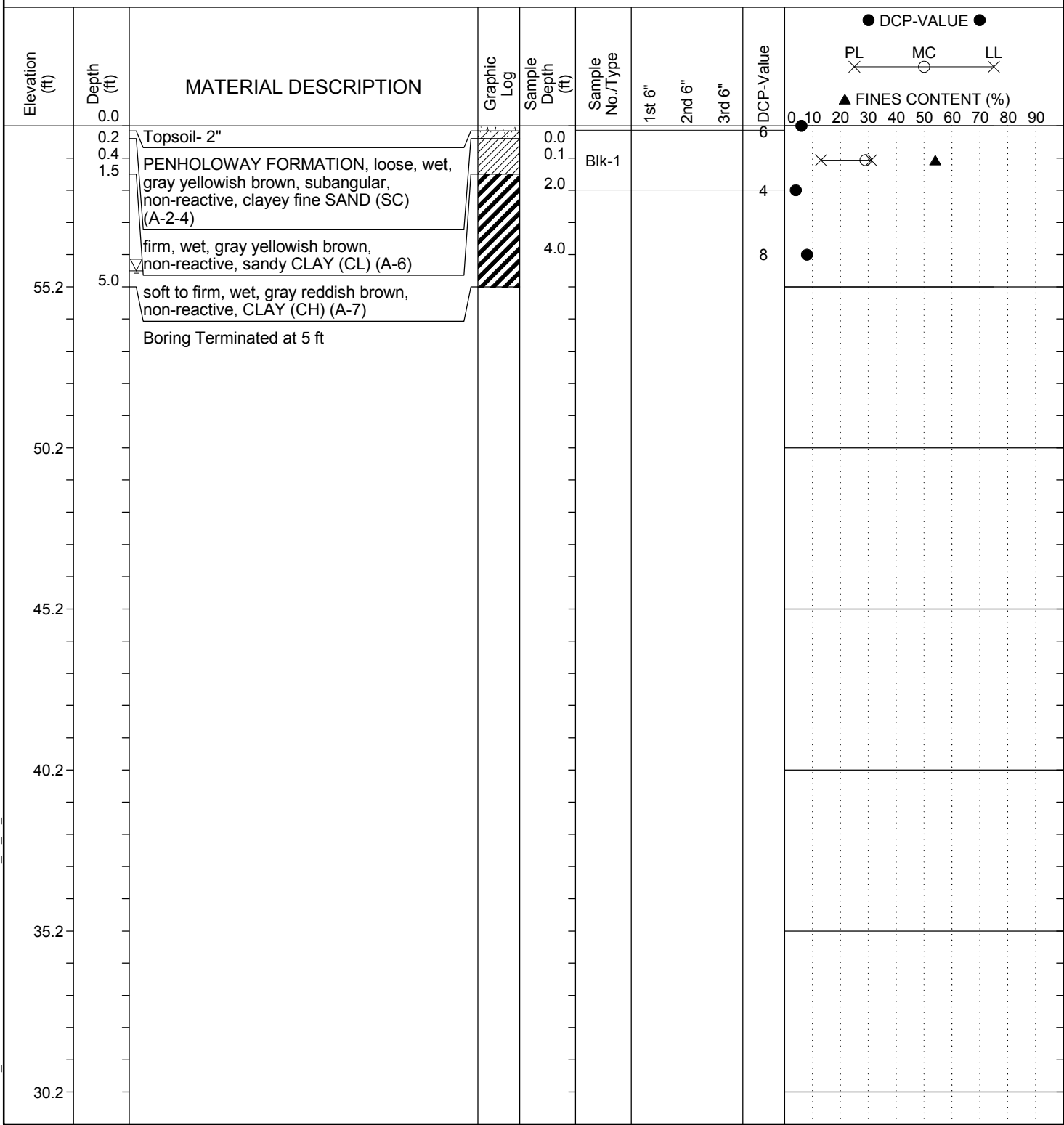
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP - Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

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# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-03
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	309+88	<b>Offset:</b>	4 R
<b>Elev.:</b>	60.2 ft	<b>Latitude:</b>	33.123915	<b>Longitude:</b>	80.283559
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	4.5 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/27/2015
				<b>Date Completed:</b>	10/27/2015



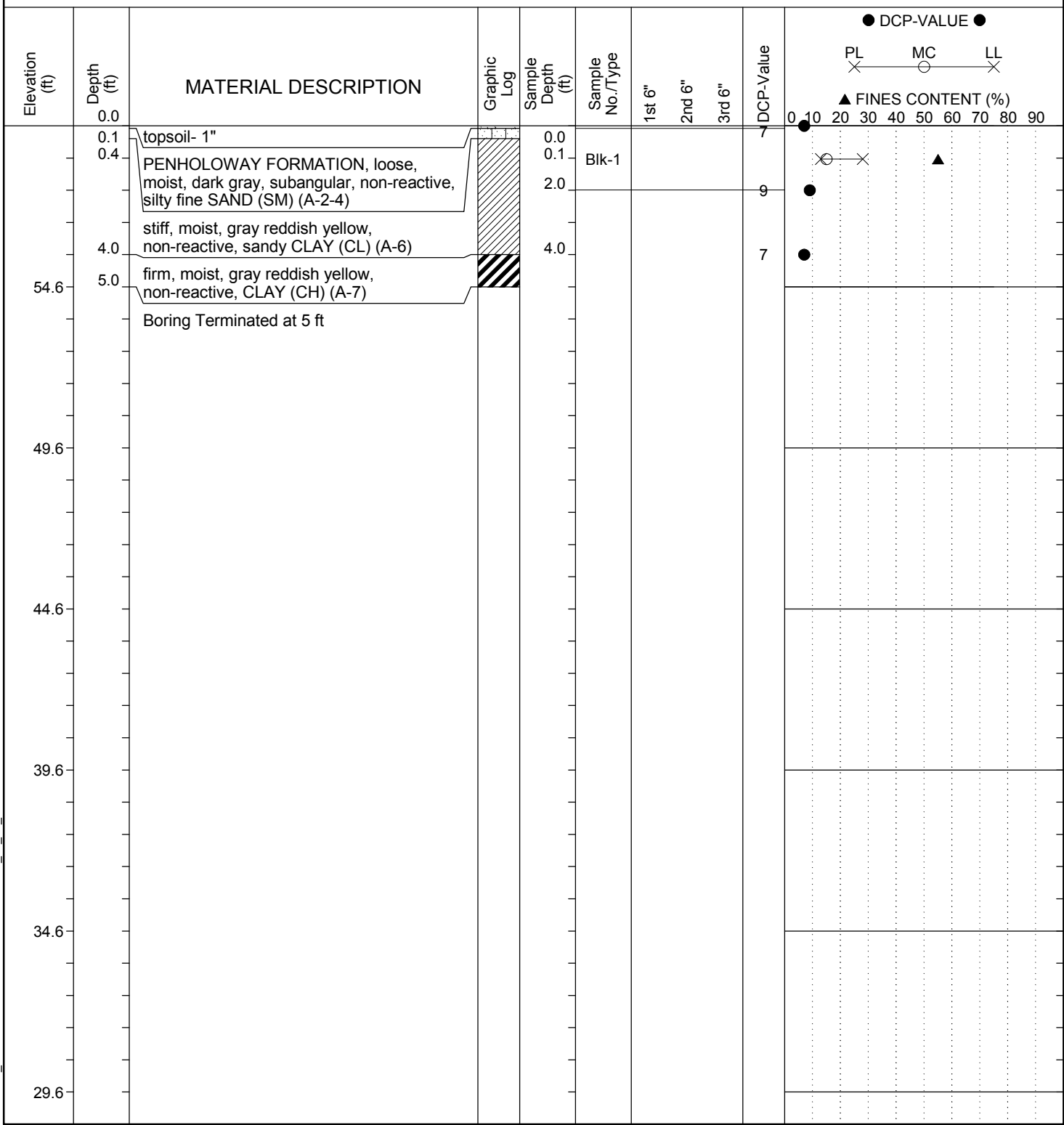
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-04
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	141+48	<b>Offset:</b>	49 L
<b>Elev.:</b>	59.6 ft	<b>Latitude:</b>	33.123817	<b>Longitude:</b>	80.282056
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	Dry	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/28/2015
				<b>Date Completed:</b>	10/28/2015



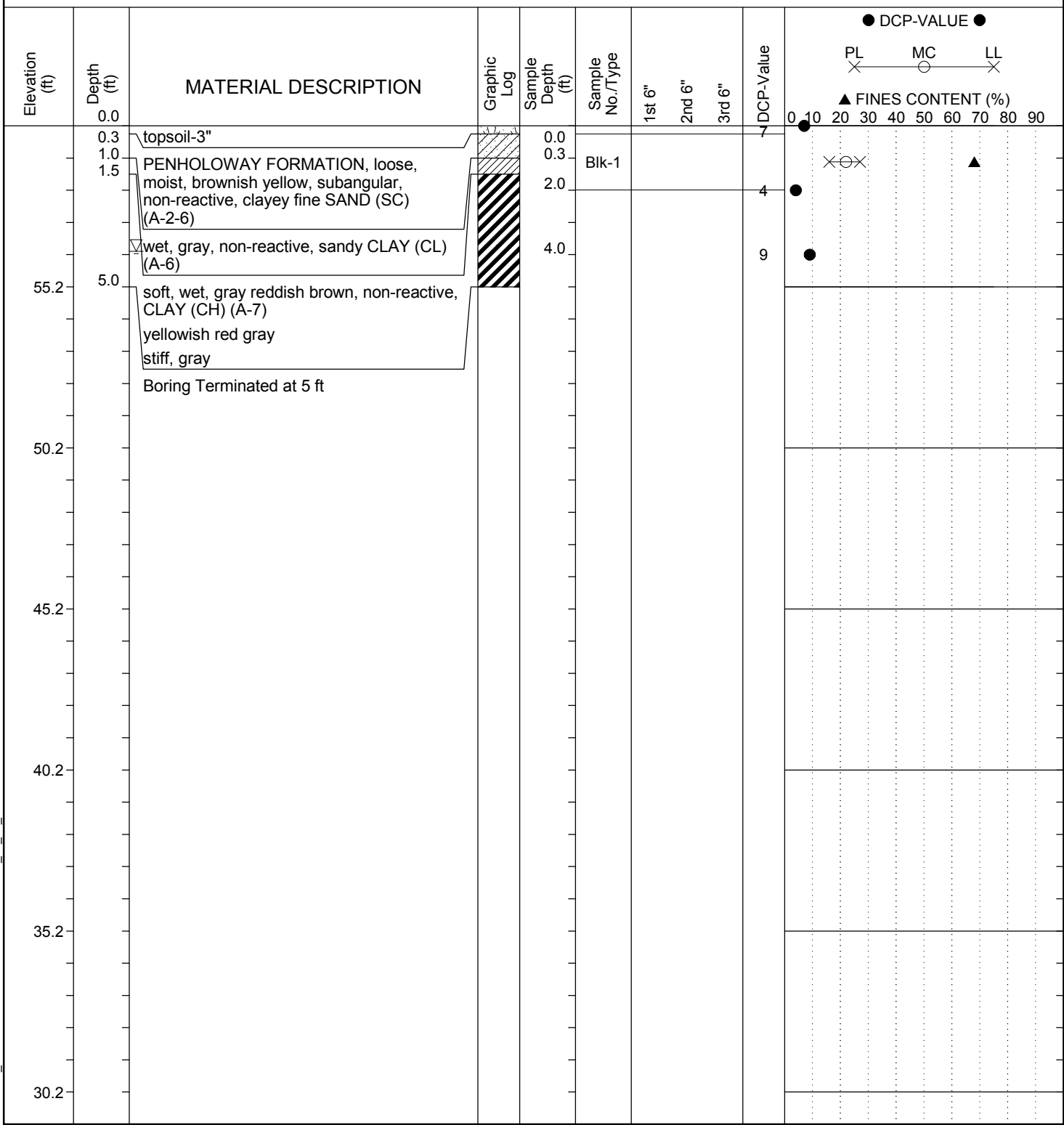
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-05
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	315+12	<b>Offset:</b>	29 L
<b>Elev.:</b>	60.2 ft	<b>Latitude:</b>	33.123175	<b>Longitude:</b>	80.282011
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	3.9 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/27/2015
				<b>Date Completed:</b>	10/27/2015



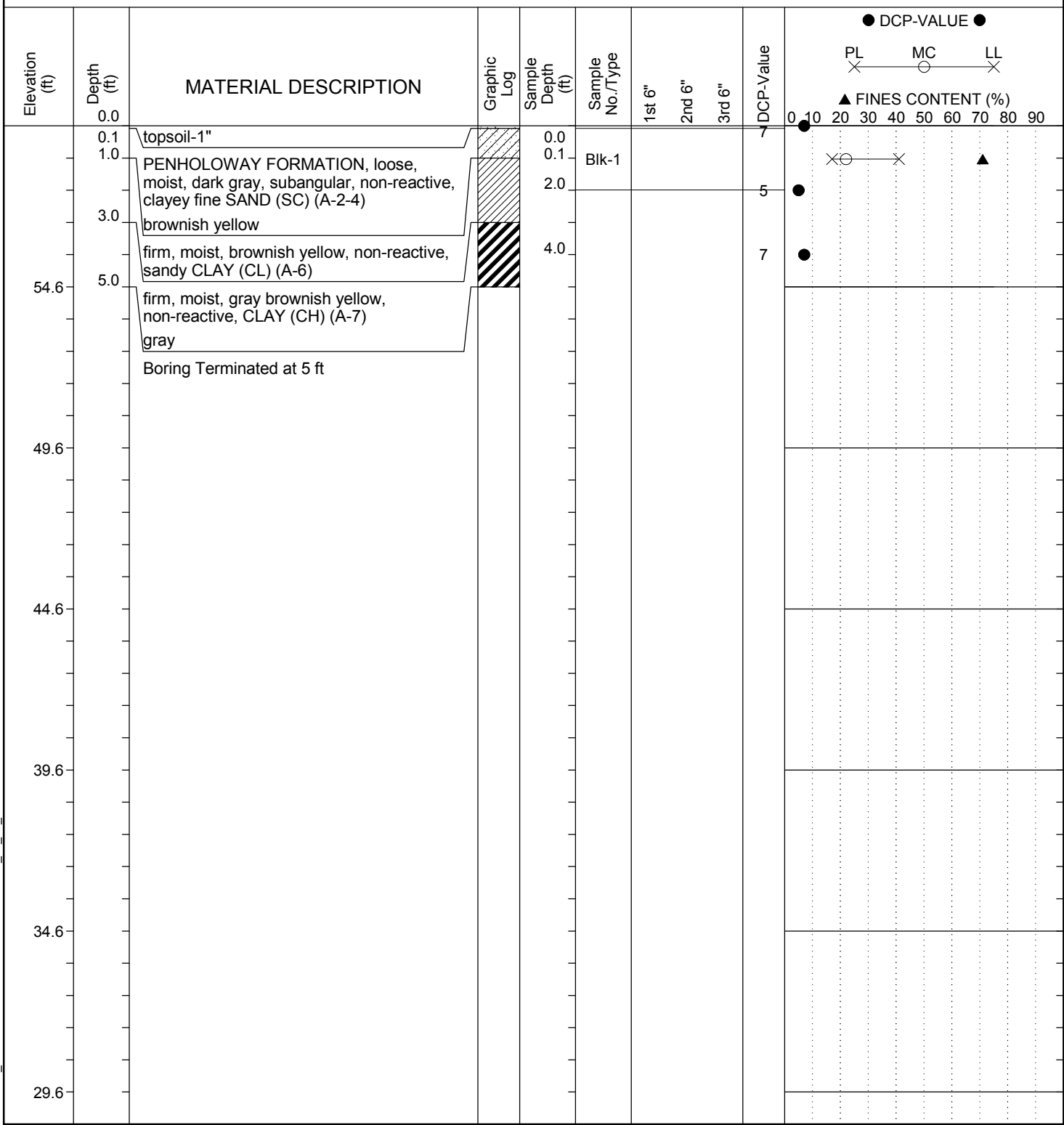
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP - Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-06
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	137+50	<b>Offset:</b>	35 L
<b>Elev.:</b>	59.6 ft	<b>Latitude:</b>	33.123277	<b>Longitude:</b>	80.280922
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	Dry	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/28/2015
				<b>Date Completed:</b>	10/28/2015



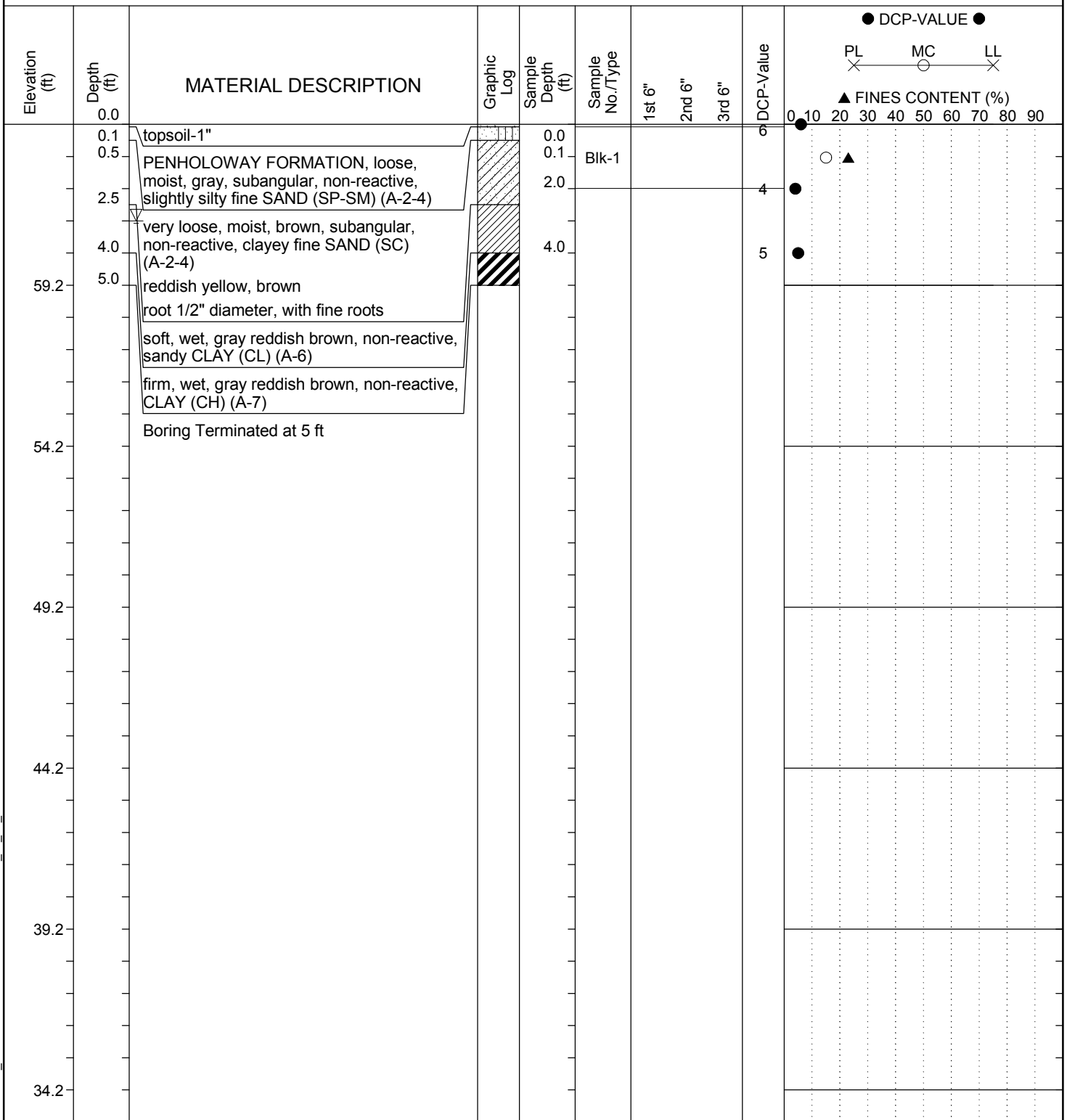
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP - Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-07
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	409+94	<b>Offset:</b>	9 L
<b>Elev.:</b>	64.2 ft	<b>Latitude:</b>	33.118589	<b>Longitude:</b>	80.27214
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	3 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/28/2015
				<b>Date Completed:</b>	10/28/2015



### LEGEND

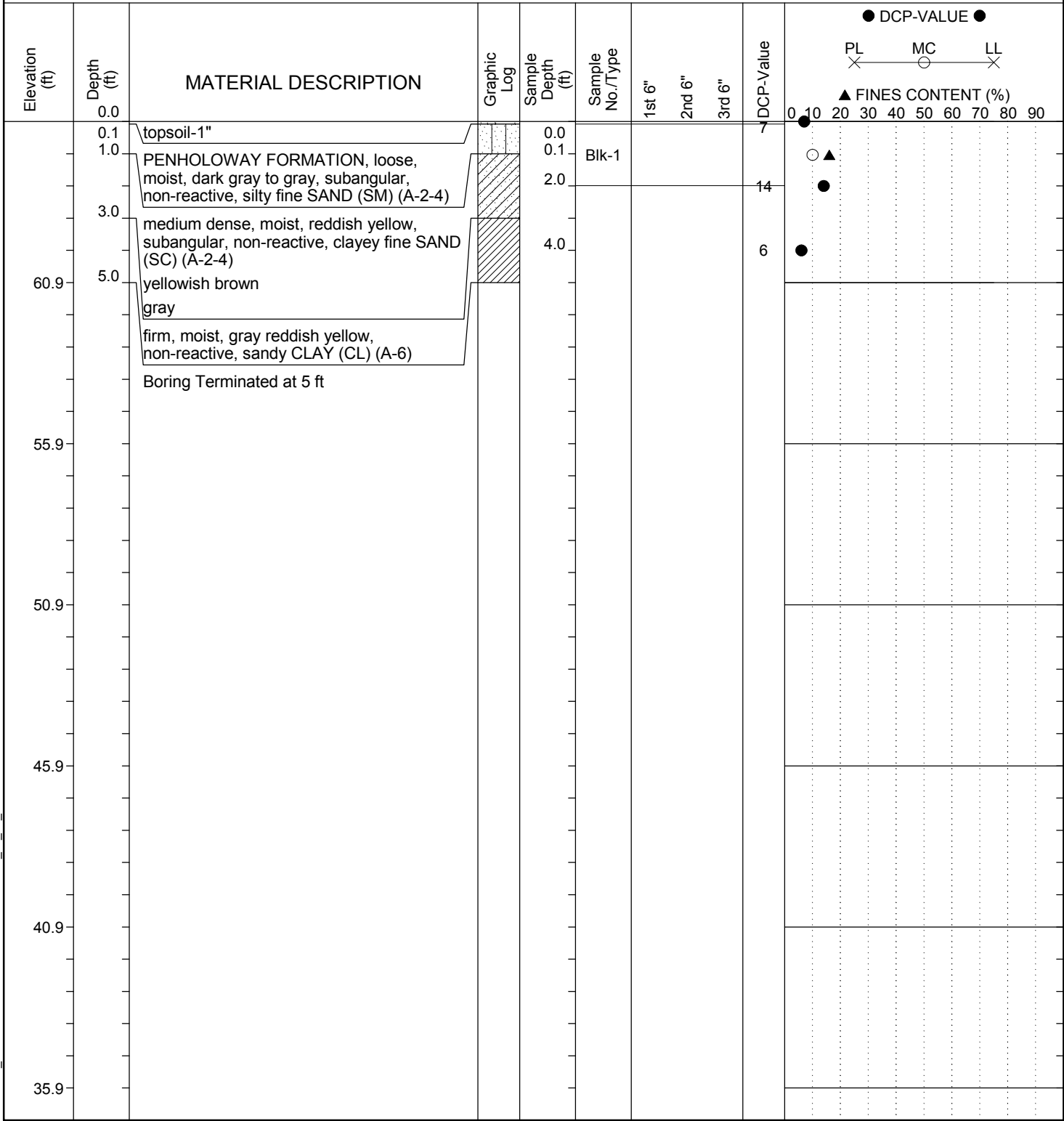
SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG STB\_DATA.GPJ SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-08
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	404+87	<b>Offset:</b>	6 R
<b>Elev.:</b>	65.9 ft	<b>Latitude:</b>	33.117786	<b>Longitude:</b>	80.270786
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	<b>Date Started:</b>	10/28/2015
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Completed:</b>	10/28/2015



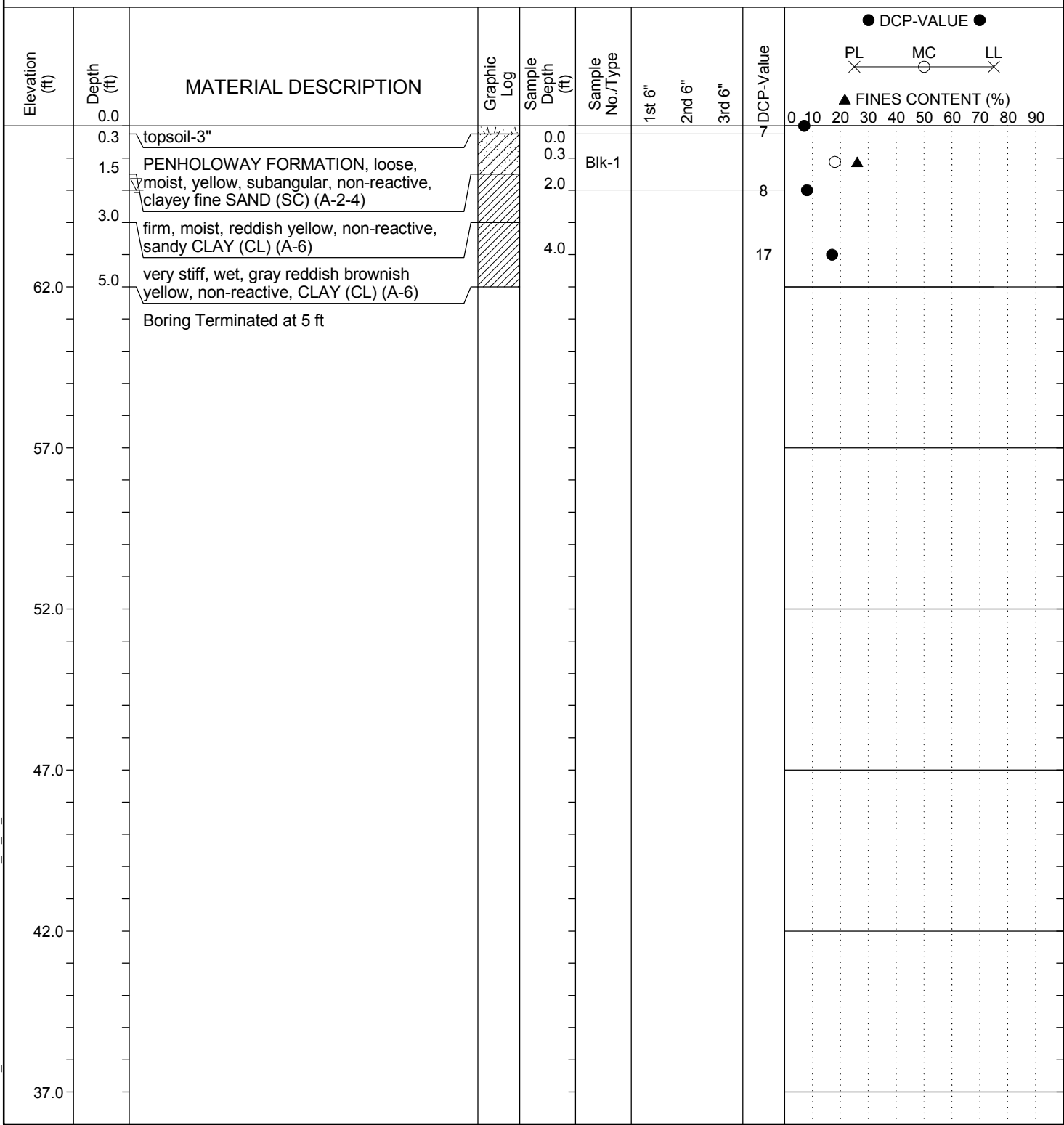
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP - Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-09
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	234+05	<b>Offset:</b>	10 L
<b>Elev.:</b>	67.0 ft	<b>Latitude:</b>	33.117343	<b>Longitude:</b>	80.271162
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	2 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/27/2015
				<b>Date Completed:</b>	10/28/2015



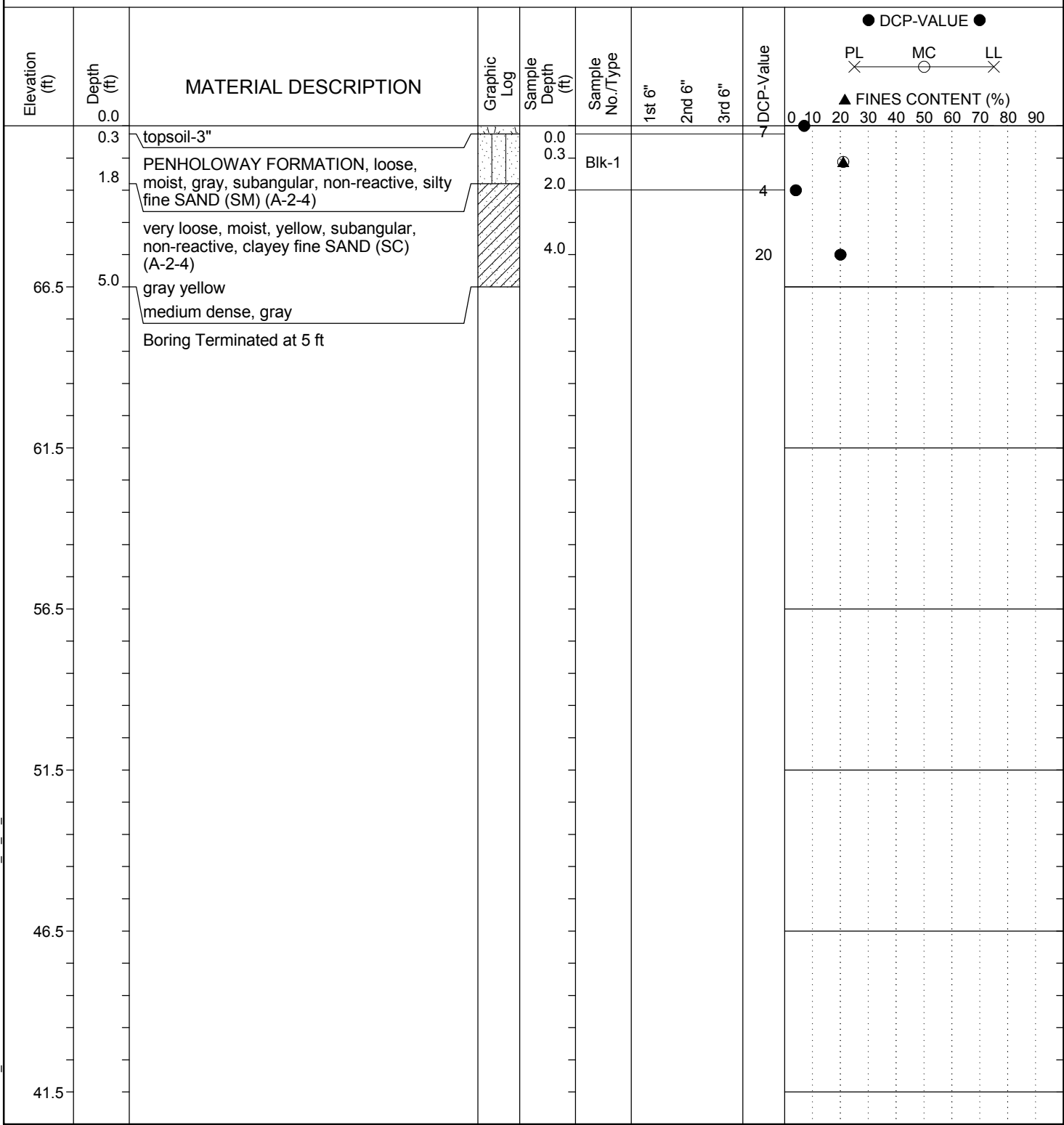
**LEGEND**

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-10
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	400+00	<b>Offset:</b>	16 R
<b>Elev.:</b>	71.5 ft	<b>Latitude:</b>	33.117006	<b>Longitude:</b>	80.269493
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	<b>Date Started:</b>	10/28/2015
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Completed:</b>	10/28/2015



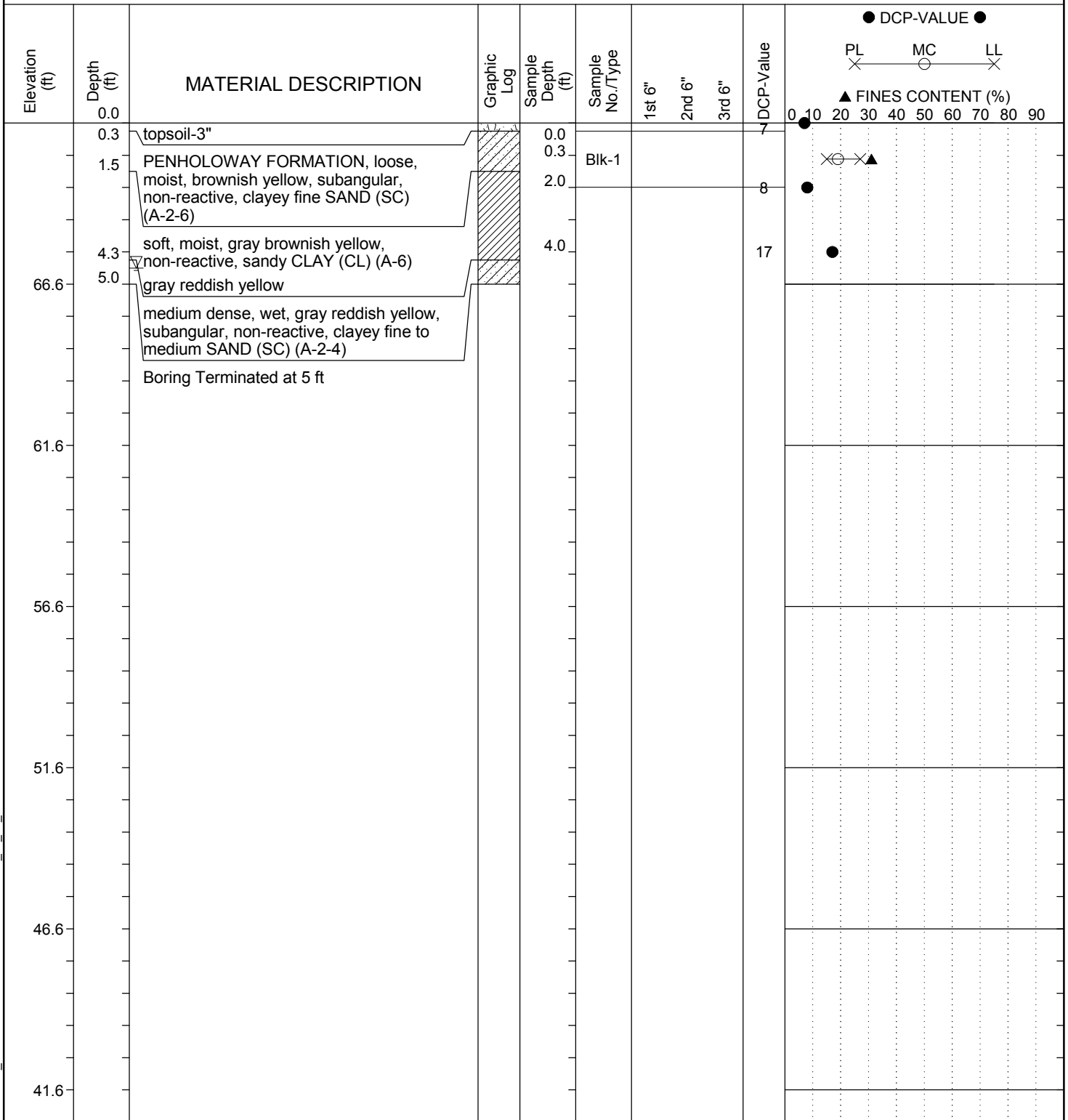
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-11
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	238+94	<b>Offset:</b>	5 R
<b>Elev.:</b>	71.6 ft	<b>Latitude:</b>	33.116564	<b>Longitude:</b>	80.26986
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	4.5 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/28/2015
				<b>Date Completed:</b>	10/28/2015

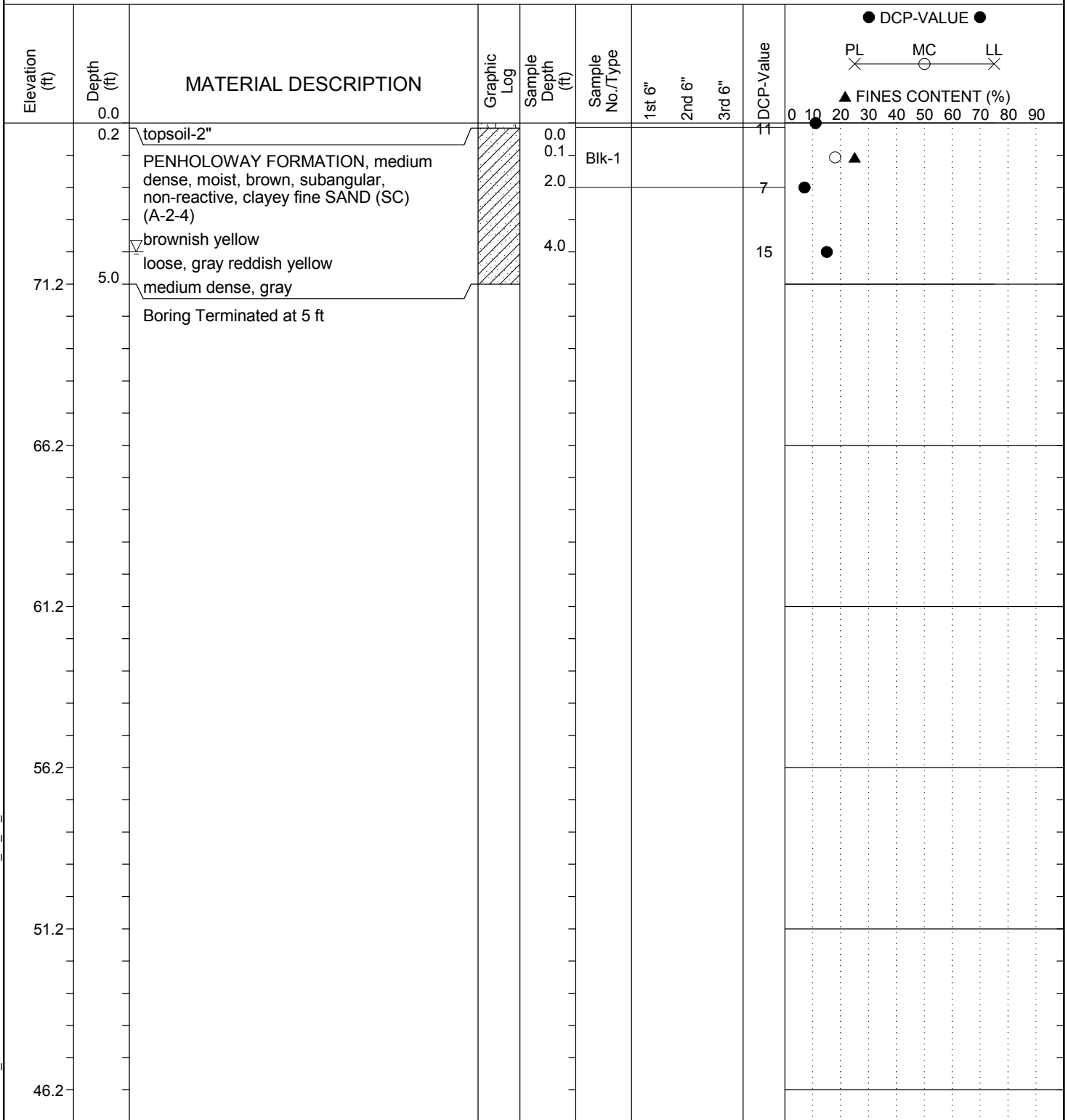


### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-12
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>		<b>Offset:</b>	
<b>Elev.:</b>	76.2 ft	<b>Latitude:</b>	33.115763	<b>Longitude:</b>	80.268516
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	4 ft	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/28/2015
				<b>Date Completed:</b>	10/28/2015

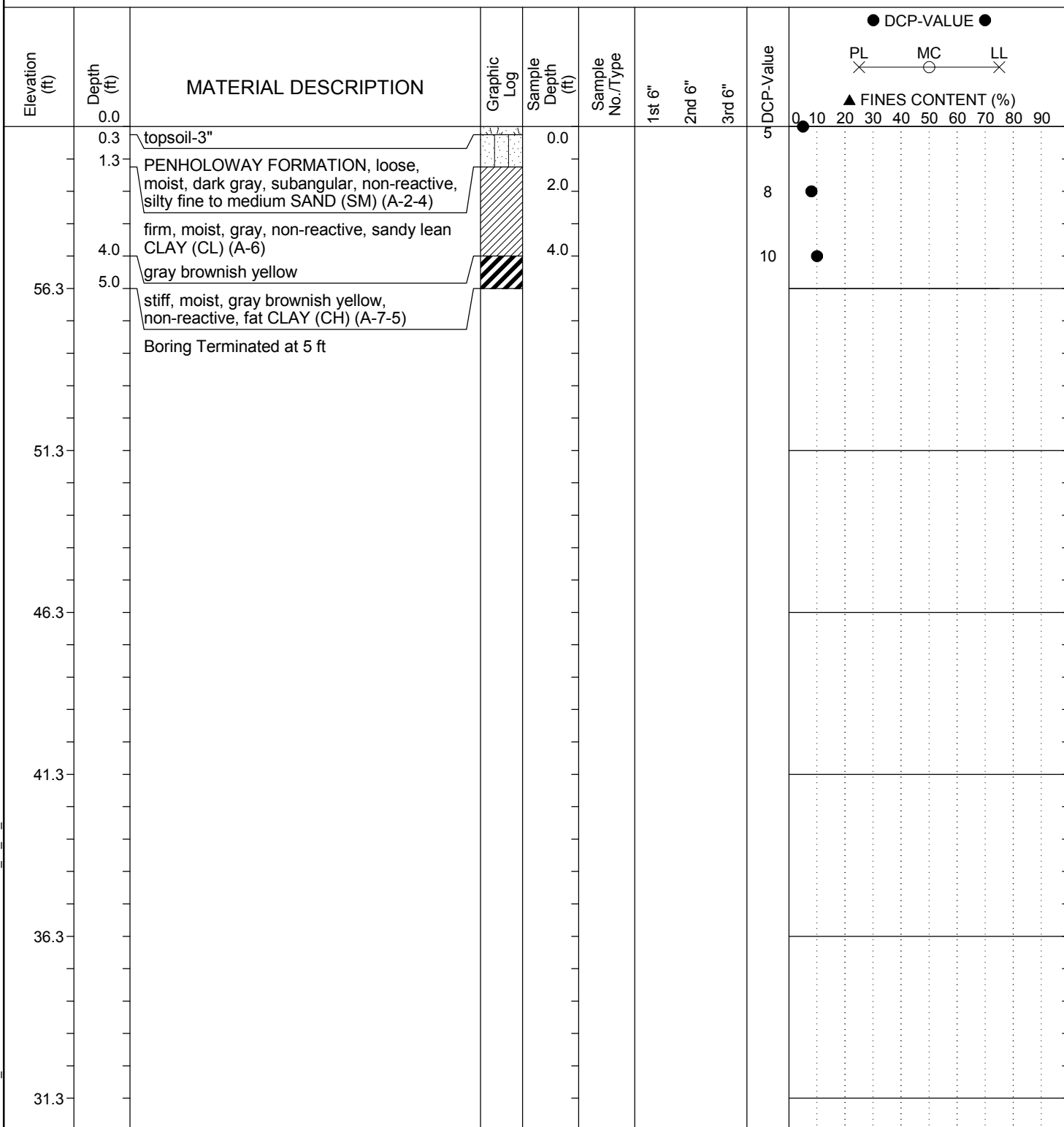


### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-13
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	8+42	<b>Offset:</b>	1 R
<b>Elev.:</b>	61.3 ft	<b>Latitude:</b>	33.126934	<b>Longitude:</b>	80.270744
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	Dry	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/29/2015
				<b>Date Completed:</b>	10/29/2015



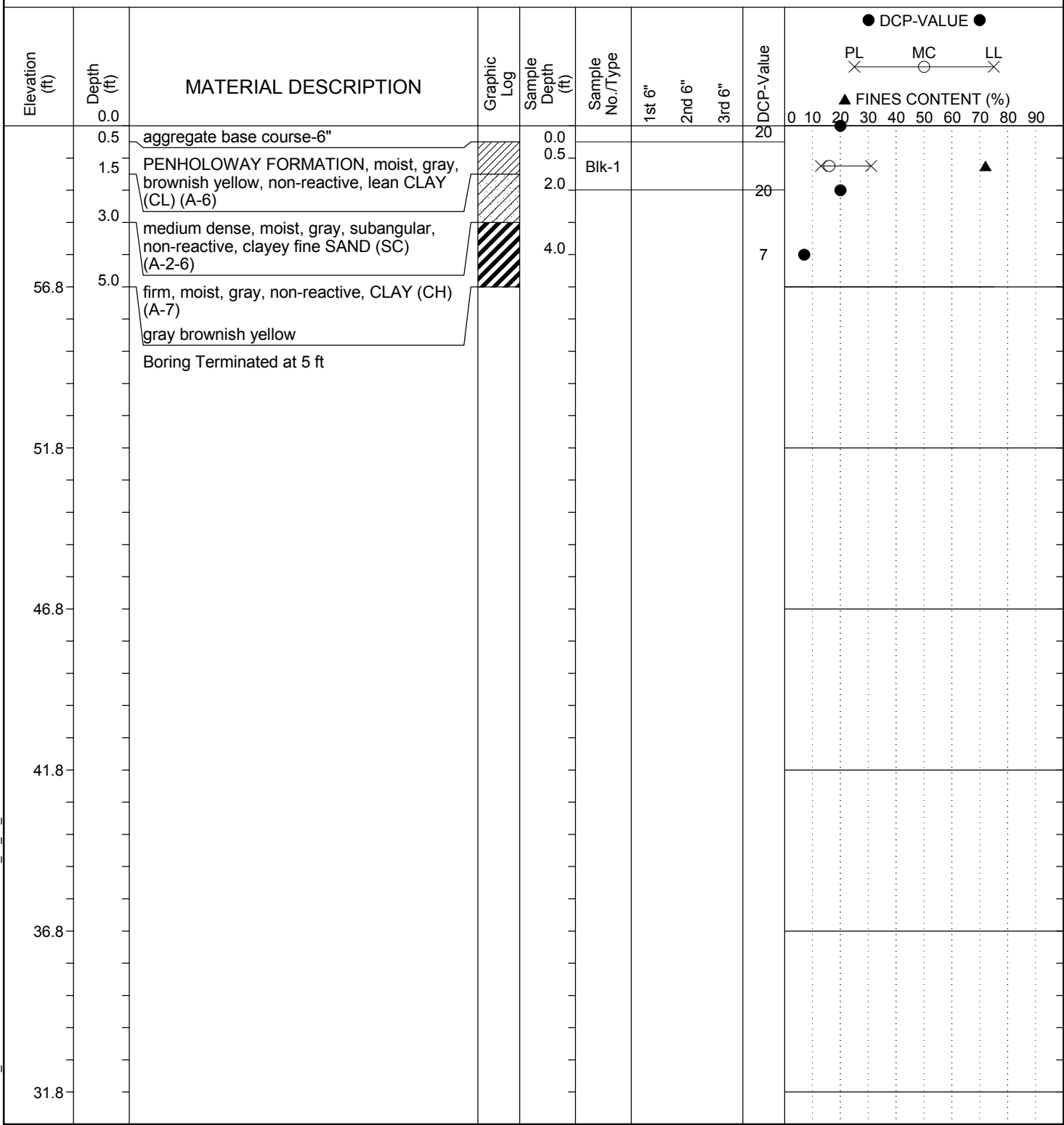
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Manual Auger Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-14
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Driller:</b>	M. Lucas	<b>Boring Location:</b>	12+53	<b>Offset:</b>	28 R
<b>Elev.:</b>	61.8 ft	<b>Latitude:</b>	33.127765	<b>Longitude:</b>	80.269828
<b>Total Depth:</b>	5 ft	<b>Groundwater:</b>	TOB	Dry	24 hr n/a
<b>Dynamic Cone Penetrometer Test Procedure:</b>				<b>Date Started:</b>	10/29/2015
				<b>Date Completed:</b>	10/29/2015



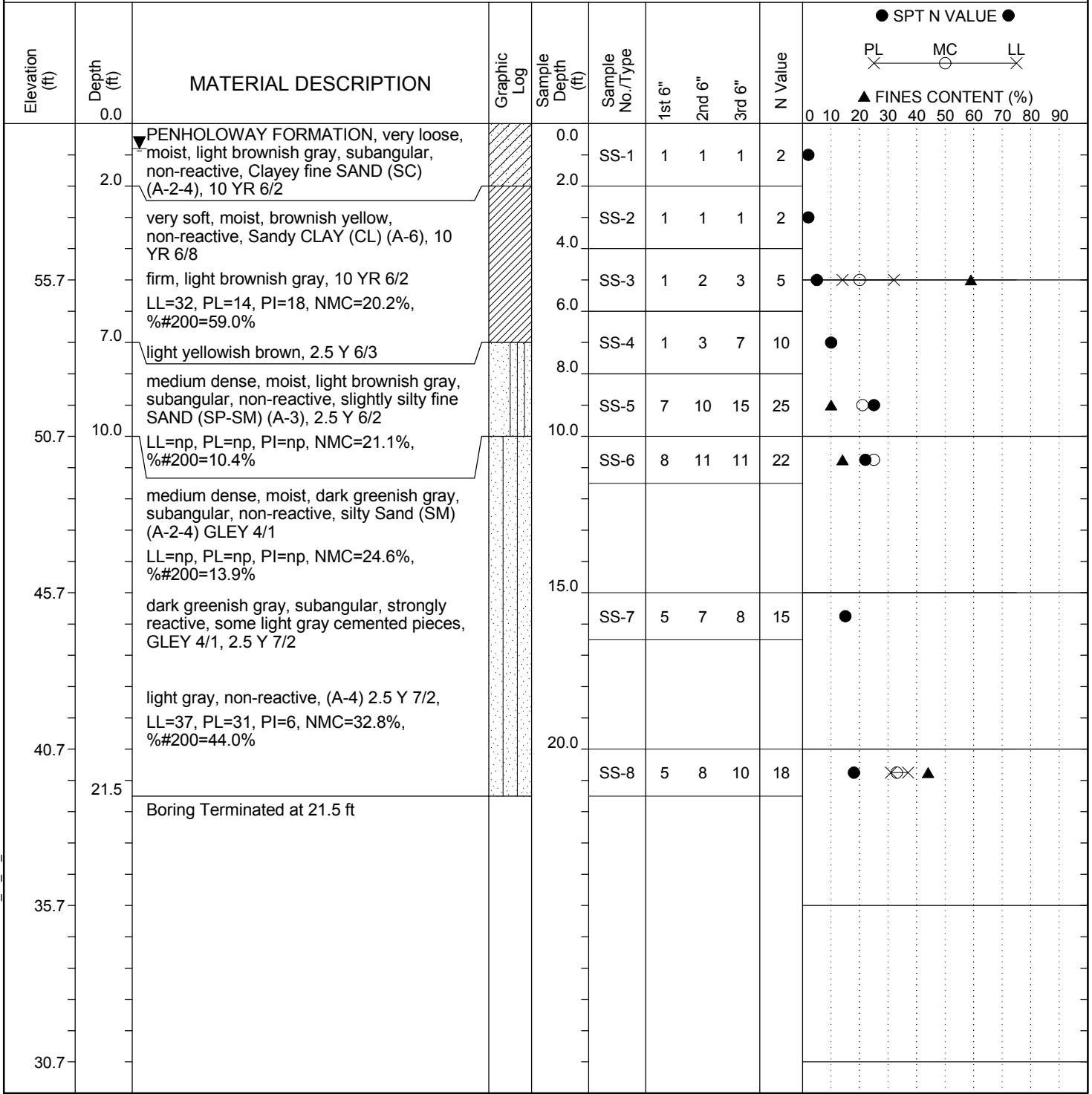
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	DCP Dynamic Cone Penetrometer	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

MANUAL AUGER LOG\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-15
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	126+03	<b>Offset:</b>	1' R
<b>Elev.:</b>	60.7 ft	<b>Latitude:</b>	33.122094	<b>Longitude:</b>	80.277503
<b>Total Depth:</b>	21.5 ft	<b>Soil Depth:</b>	21.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 550X	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>Energy Ratio:</b>	86%
				<b>24HR</b>	0.8 ft



## LEGEND

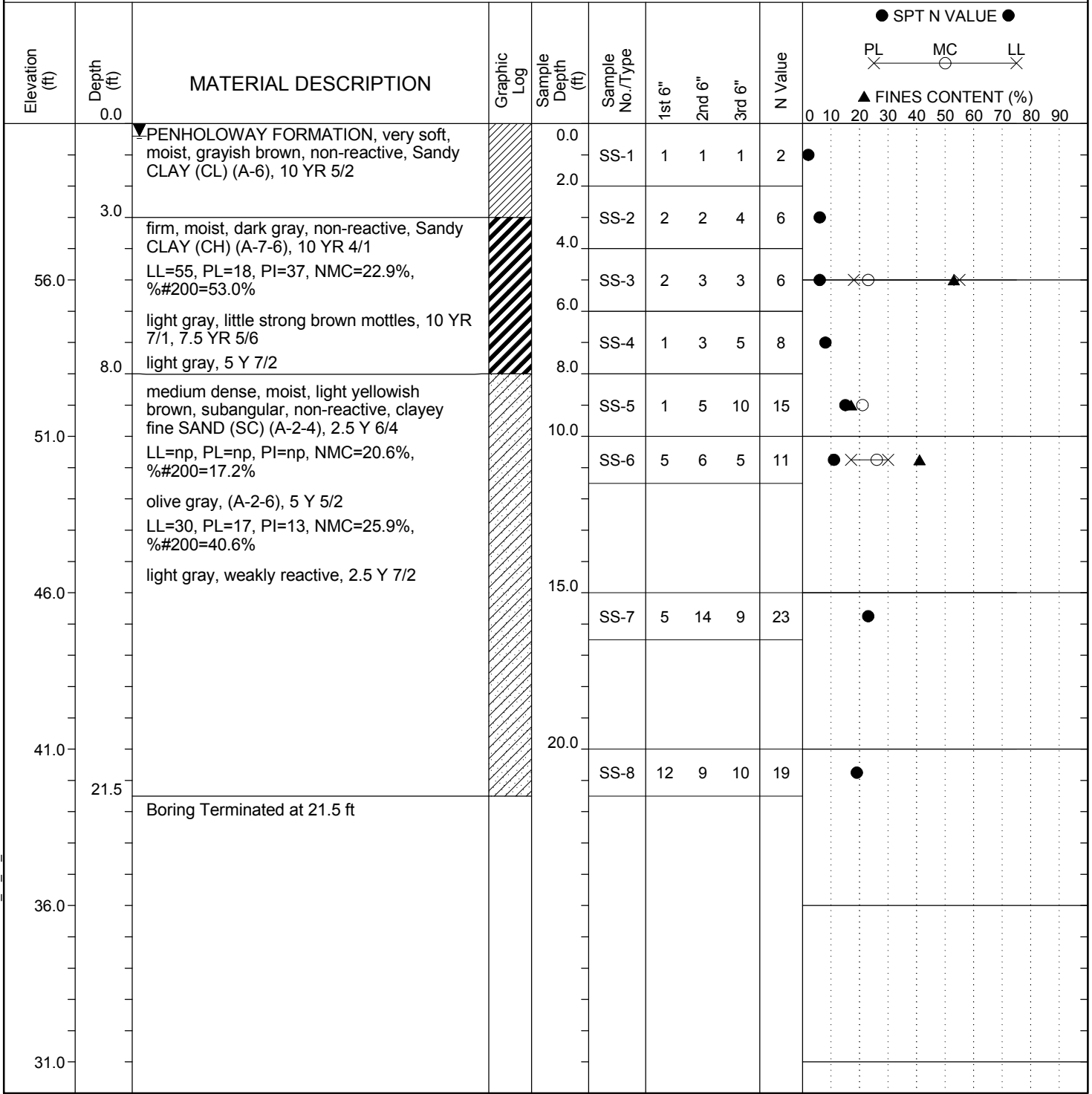
SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16



# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-16
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	109+05	<b>Offset:</b>	2' R
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.124828	<b>Longitude:</b>	80.27315
<b>Total Depth:</b>	21.5 ft	<b>Soil Depth:</b>	21.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 550X	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.4 ft



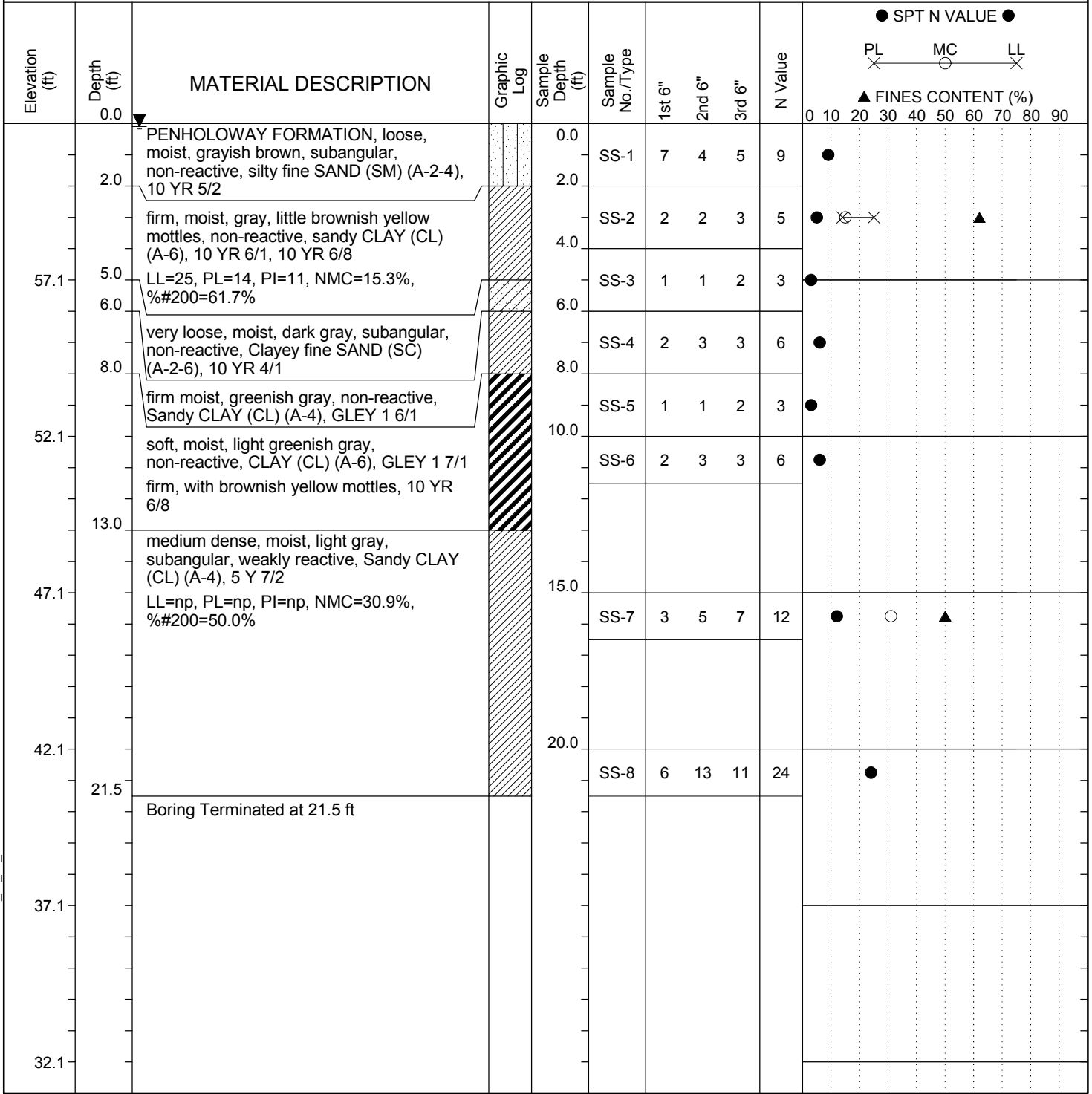
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-17
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	357+11	<b>Offset:</b>	7' R
<b>Elev.:</b>	62.1 ft	<b>Latitude:</b>	33.125838	<b>Longitude:</b>	80.271593
<b>Total Depth:</b>	21.5 ft	<b>Soil Depth:</b>	21.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 550X	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.1 ft



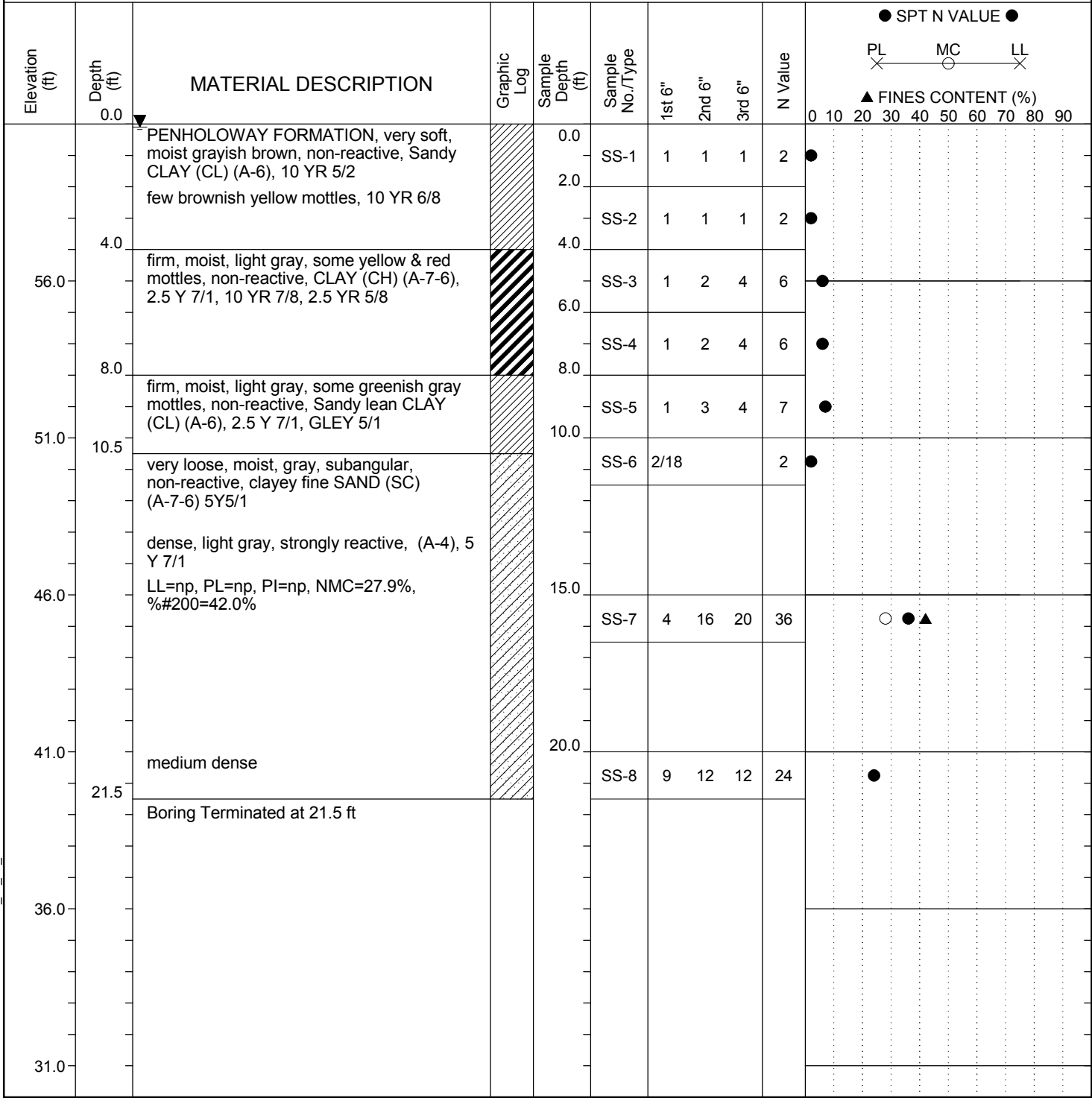
### LEGEND

<b>SAMPLER TYPE</b>		<b>DRILLING METHOD</b>	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-18
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	421+46	<b>Offset:</b>	4' L
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.120835	<b>Longitude:</b>	80.274503
<b>Total Depth:</b>	21.5 ft	<b>Soil Depth:</b>	21.5 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 550X	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	0.1 ft



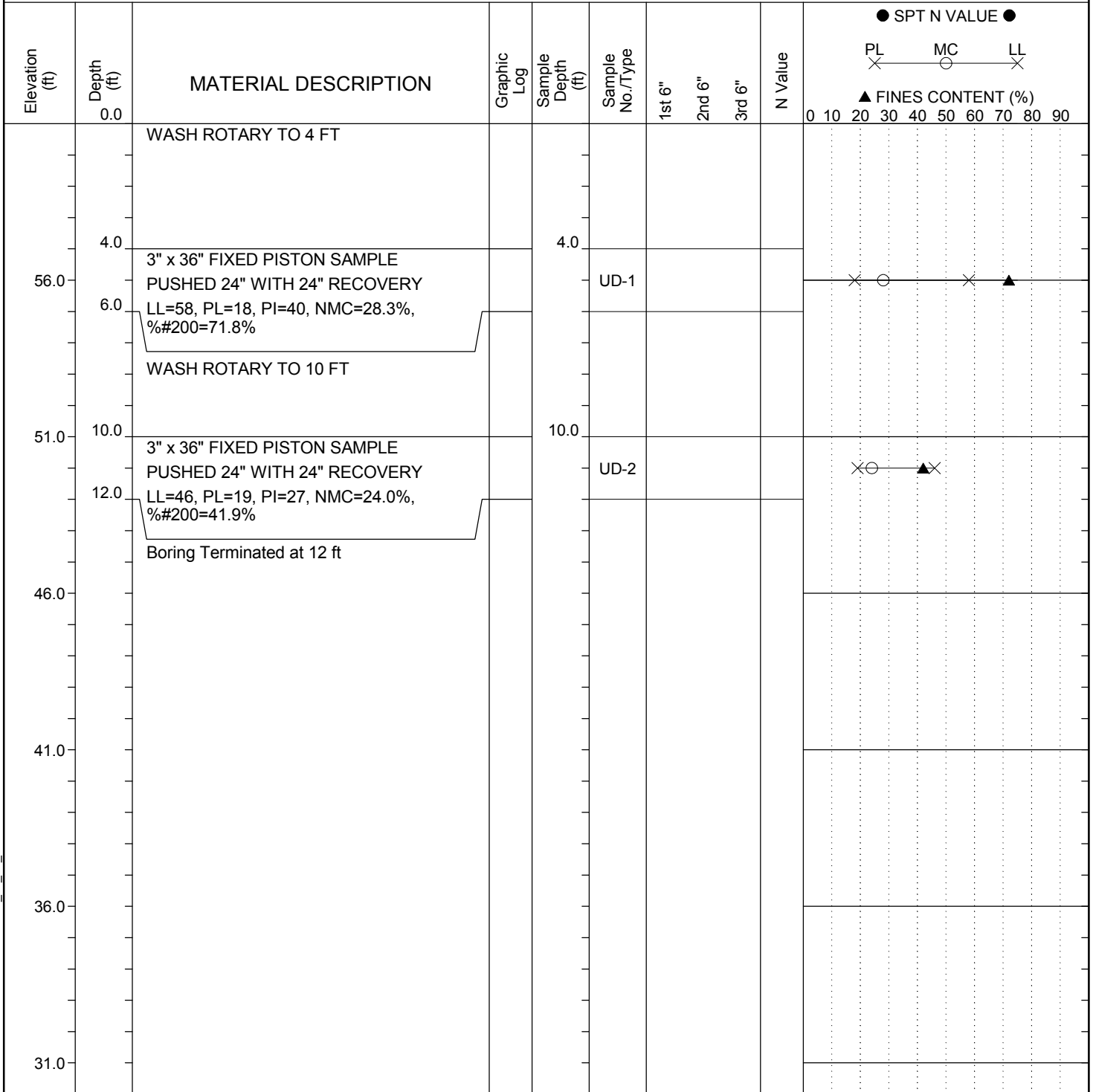
### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC\_DOT\_STB\_DATA.GPJ\_SCDOT DATA TEMPLATE\_12\_30\_2014.GDT 1/21/16

# SCDOT Soil Test Log

<b>Project ID:</b>	1413-15-114	<b>County:</b>	Berkeley	<b>Boring No.:</b>	IS-18 A
<b>Site Description:</b>	Volvo I-26 Interchange			<b>Route:</b>	
<b>Eng./Geo.:</b>	M. Lucas	<b>Boring Location:</b>	421+46	<b>Offset:</b>	4' L
<b>Elev.:</b>	61.0 ft	<b>Latitude:</b>	33.120835	<b>Longitude:</b>	80.274503
<b>Total Depth:</b>	12 ft	<b>Soil Depth:</b>	12 ft	<b>Core Depth:</b>	ft
<b>Bore Hole Diameter (in):</b>	4	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y N
<b>Drill Machine:</b>	CME 850	<b>Drill Method:</b>	Mud Rotary	<b>Hammer Type:</b>	Automatic
<b>Core Size:</b>	N/A	<b>Driller:</b>	SCI	<b>Groundwater:</b>	TOB n/a
				<b>24HR</b>	n/a



### LEGEND

SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

## SPT HAMMER EFFICIENCY



Drill Rig: SCI CME 550X  
 Hammer: Automatic  
 Rig Operator: Grimball  
 Engineer: Henderson

Test Date: 10/22/2015  
 Project No. : \_\_\_\_\_  
 Location: SCI Yard  
 Drilling Method: Mud Rotary

Boring ID: TB-1  
 Rod Type: BW  
 Analyzer ID: 216BW  
 Rod Area: 1.81 in<sup>2</sup>

Depth: 40 ft  
 LE: 43 ft  
 Blow Count: 5, 6, 6

Depth: 45 ft  
 LE: 48 ft  
 Blow Count: 7, 10, 19

Depth: 50 ft  
 LE: 53 ft  
 Blow Count: 11, 15, 23

Blow No.	Energy	Blow No.	Energy
1	0.308	26	
2	0.305	27	
3	0.277	28	
4	0.301	29	
5	0.298	30	
6	0.297	31	
7	0.297	32	
8	0.295	33	
9	0.297	34	
10	0.298	35	
11	0.297	36	
12	0.297	37	
13	0.299	38	
14	0.297	39	
15	0.300	40	
16	0.298	41	
17	0.298	42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Blow No.	Energy	Blow No.	Energy
1	0.300	26	0.281
2	0.309	27	0.295
3	0.308	28	0.286
4	0.308	29	0.285
5	0.304	30	0.291
6	0.308	31	0.285
7	0.303	32	0.296
8	0.302	33	0.287
9	0.306	34	0.290
10	0.304	35	0.291
11	0.303	36	0.294
12	0.301	37	
13	0.301	38	
14	0.304	39	
15	0.301	40	
16	0.302	41	
17	0.307	42	
18	0.303	43	
19	0.293	44	
20	0.301	45	
21	0.296	46	
22	0.288	47	
23	0.291	48	
24	0.286	49	
25	0.292	50	

Blow No.	Energy	Blow No.	Energy
1	0.303	26	0.302
2	0.310	27	0.303
3	0.312	28	0.305
4	0.312	29	0.301
5	0.322	30	0.300
6	0.318	31	0.305
7	0.319	32	0.298
8	0.319	33	0.303
9	0.316	34	0.307
10	0.312	35	0.305
11	0.309	36	0.302
12	0.310	37	0.306
13	0.308	38	0.304
14	0.306	39	0.303
15	0.304	40	0.306
16	0.305	41	0.303
17	0.307	42	0.302
18	0.304	43	0.305
19	0.307	44	0.305
20	0.307	45	0.303
21	0.306	46	0.304
22	0.310	47	0.308
23	0.306	48	0.307
24	0.307	49	0.309
25	0.305	50	

Average Energy: 0.298 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 85%  
 Std. Deviation: 0.006 kip-ft

Average Energy: 0.297 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 85%  
 Std. Deviation: 0.008 kip-ft

Average Energy: 0.307 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 88%  
 Std. Deviation: 0.005 kip-ft

**Average efficiency from all tests: 86%**

Comments: LE = length of rod from below gages to bottom of sampler.  
 Maximum rated energy based on a hammer weight of 0.14 kips and a drop height of 2.5 feet.

## SPT HAMMER EFFICIENCY



Drill Rig: SCI CME 850  
 Hammer: Automatic  
 Rig Operator: Middleton  
 Engineer: Henderson

Test Date: 4/24/2015  
 Project No. : \_\_\_\_\_  
 Location: SCI Yard  
 Drilling Method: Mud Rotary

Boring ID: TB-2  
 Rod Type: BW  
 Analyzer ID: 216BW  
 Rod Area: 1.81 in<sup>2</sup>

Depth: 40 ft  
 LE: 43 ft  
 Blow Count: 1, 1, 2

Depth: 45 ft  
 LE: 48 ft  
 Blow Count: 10, 15, 16

Depth: 50 ft  
 LE: 53 ft  
 Blow Count: 7, 12, 15

Blow No.	Energy	Blow No.	Energy
1	0.261	26	
2	0.269	27	
3	0.281	28	
4	0.286	29	
5		30	
6		31	
7		32	
8		33	
9		34	
10		35	
11		36	
12		37	
13		38	
14		39	
15		40	
16		41	
17		42	
18		43	
19		44	
20		45	
21		46	
22		47	
23		48	
24		49	
25		50	

Blow No.	Energy	Blow No.	Energy
1	0.293	26	0.281
2	0.293	27	0.288
3	0.296	28	0.289
4	0.293	29	0.283
5	0.297	30	0.290
6	0.292	31	0.279
7	0.293	32	0.288
8	0.291	33	0.284
9	0.290	34	0.285
10	0.287	35	0.279
11	0.288	36	0.283
12	0.293	37	0.282
13	0.283	38	0.264
14	0.286	39	0.282
15	0.285	40	0.282
16	0.284	41	0.288
17	0.285	42	
18	0.284	43	
19	0.286	44	
20	0.285	45	
21	0.285	46	
22	0.288	47	
23	0.289	48	
24	0.287	49	
25	0.282	50	

Blow No.	Energy	Blow No.	Energy
1	0.271	26	0.295
2	0.295	27	0.291
3	0.298	28	0.287
4	0.291	29	0.289
5	0.289	30	0.287
6	0.290	31	0.287
7	0.292	32	0.285
8	0.292	33	0.283
9	0.293	34	0.285
10	0.286	35	
11	0.291	36	
12	0.287	37	
13	0.291	38	
14	0.283	39	
15	0.292	40	
16	0.283	41	
17	0.289	42	
18	0.292	43	
19	0.293	44	
20	0.284	45	
21	0.293	46	
22	0.281	47	
23	0.291	48	
24	0.286	49	
25	0.298	50	

Average Energy: 0.274 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 78%  
 Std. Deviation: 0.011 kip-ft

Average Energy: 0.286 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 82%  
 Std. Deviation: 0.006 kip-ft

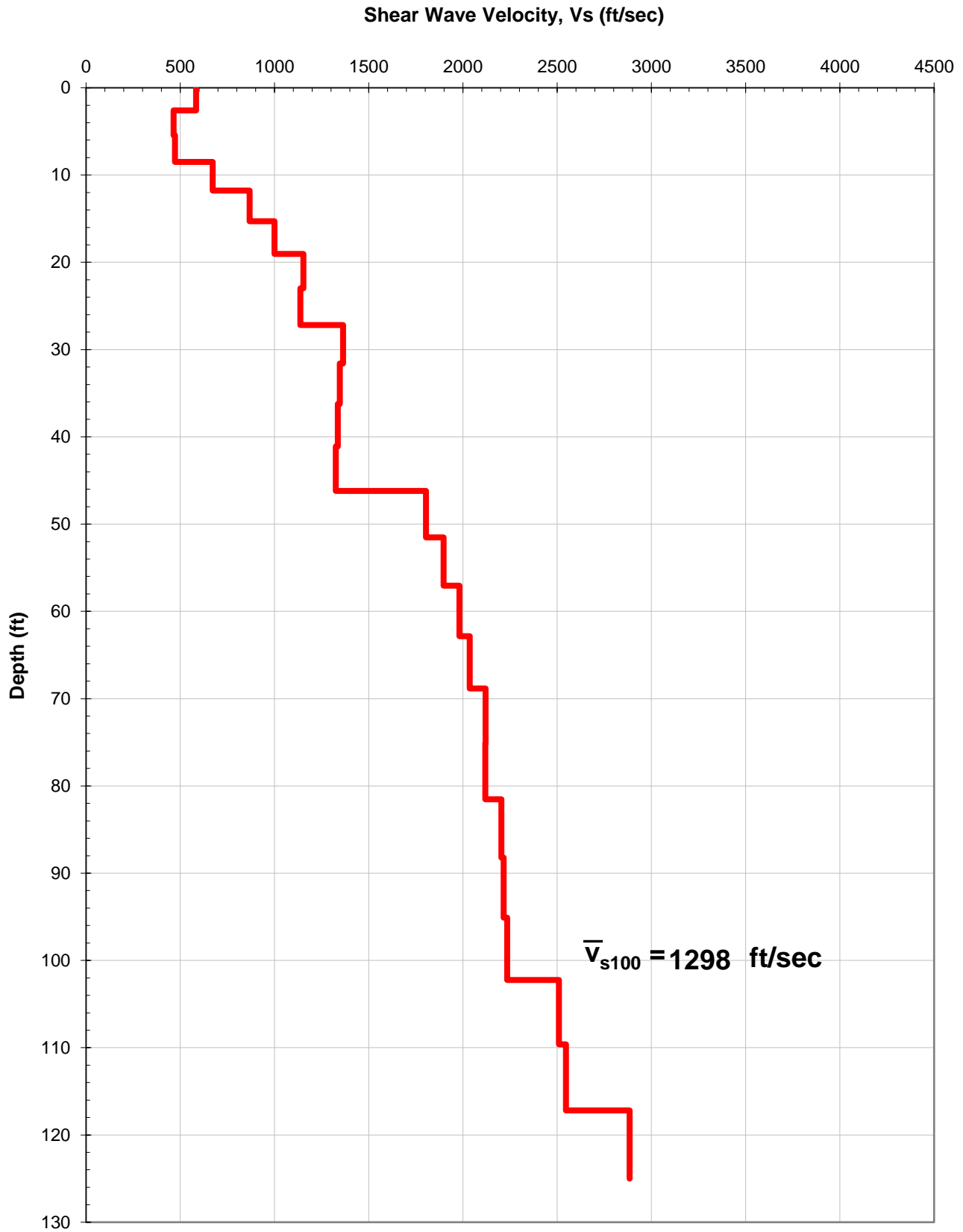
Average Energy: 0.289 kip-ft  
 Max. Rated Energy: 0.350 kip-ft  
 Efficiency: 83%  
 Std. Deviation: 0.005 kip-ft

**Average efficiency from all tests: 82%**

Comments: LE = length of rod from below gages to bottom of sampler.  
 Maximum rated energy based on a hammer weight of 0.14 kips and a drop height of 2.5 feet.

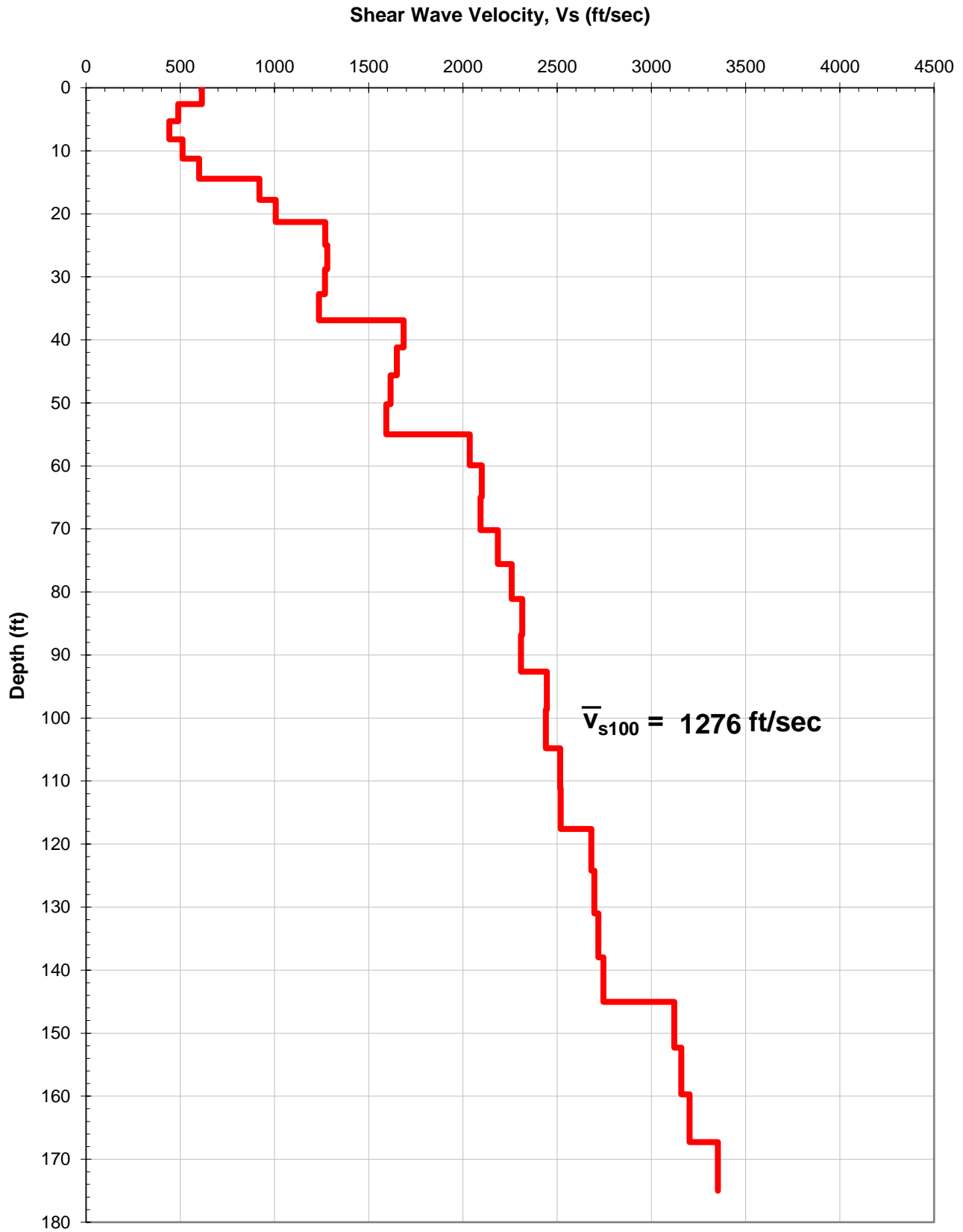


Shear Wave Velocity Profile SW-1  
Volvo I-26 Interchange  
Ridgeville, South Carolina  
1413-15-114





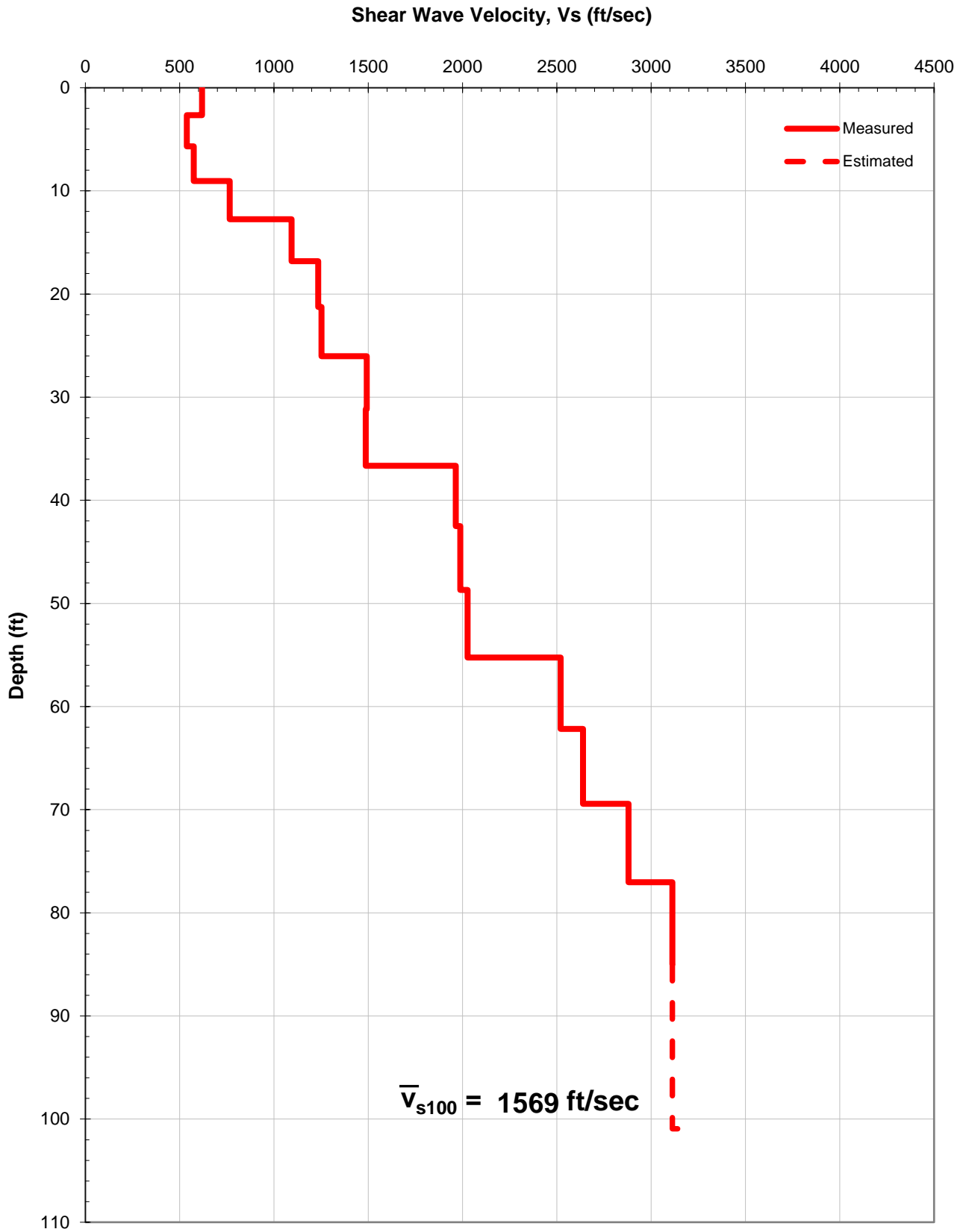
Shear Wave Velocity Profile SW-2  
Volvo I-26 Interchange  
Ridgeville, South Carolina  
1413-15-114







Shear Wave Velocity Profile SW-3  
Volvo I-26 Interchange  
Ridgeville, South Carolina  
1413-15-114





**Shear Wave Velocity Tabulated Values**  
**Volvo I-26 Interchange**  
**Berkeley County, South Carolina**  
**1413-15-114**

SW-1		SW-2		SW-3	
Depth (ft)	Shear Wave Velocity, $V_s$ (ft/sec)	Depth (ft)	Shear Wave Velocity, $V_s$ (ft/sec)	Depth (ft)	Shear Wave Velocity, $V_s$ (ft/sec)
2.6	584	1.3	615	1.3	619
5.4	465	3.9	489	4.2	538
8.5	472	6.7	442	7.3	574
11.8	672	9.7	512	10.9	574
15.3	868	12.8	600	14.8	765
19.0	1000	16.1	920	19.0	1093
23.0	1154	19.5	1006	23.6	765
27.2	1137	23.1	1269	28.6	1093
31.6	1364	26.9	1280	33.9	1235
36.2	1346	30.8	1268	39.6	1252
41.1	1335	34.8	1236	45.6	1988
46.2	1326	39.0	1685	52.0	2026
51.5	1804	43.4	1649	58.7	2521
57.1	1897	47.9	1616	65.8	2639
62.8	1981	52.6	1593	73.2	2879
68.8	2036	57.4	2035	81.0	3112
75.1	2120	62.4	2100	92.5	3112
81.5	2119	67.6	2093	100.5	3112
88.2	2204	72.9	2185	100.9	3222
95.1	2215	78.3	2259	-	-
100.0	2235	84.0	2314	-	-
102.2	2235	89.7	2308	-	-
109.6	2509	95.6	2446	-	-
117.2	2546	99.3	2440	-	-
125.0	2884	102.4	2440	-	-
140.6	2884	108.0	2516	-	-
-	-	114.4	2519	-	-
-	-	120.9	2681	-	-
-	-	127.6	2697	-	-
-	-	134.5	2719	-	-
-	-	141.5	2745	-	-
-	-	148.7	3121	-	-
-	-	156.0	3159	-	-
-	-	163.5	3202	-	-
-	-	171.1	3353	-	-
-	-	182.7	3353	-	-
-	-	190.4	3404	-	-

## **Appendix III**

Summary I of Laboratory Test Data

Grain Size Analysis, Atterberg Limits, and Natural Moisture Content Test Results

Proctor Test Results

California Bearing Ratio Test Results

pH and Resistivity Test Results

Chloride and Sulfate Content Test Results



**Summary I of Laboratory Test Data (Page 1 of 2)**

I-26 Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No. 1413-15-114

Sample Location	Sample Type	Sample Depth (ft)	USCS Classification	AASHTO Classification	Natural Moisture (%)	% Finer #200	Atterberg Limits		CBR	Modified Proctor		pH	Resistivity (ohm-cm)	Chloride (mg/kg)	Sulfate (mg/kg)
							LL	PI		Max g <sub>d</sub> (pcf)	OMC (%)				
ID-01	SS	2 – 4	CL	A-6	21.7	64.5	31	18	-	-	-	-	-	-	-
	SS	6 – 8	SC	A-2-6	25.4	31.2	31	16	-	-	-	-	-	-	-
	SS	10 – 11.5	SC	A-2-4	25.4	15.1	np	np	-	-	-	-	-	-	-
	SS	15 – 16.5	SP-SC	A-1-b	18.1	9	np	np	-	-	-	-	-	-	-
	SS	20 – 21.5	SC	A-1-b	18.4	21	np	np	-	-	-	-	-	-	-
ID-02	SS	2 – 4	CL	A-4	14.8	66.3	23	10	-	-	-	-	-	-	-
	SS	8 – 10	CH	A-7-5	37.9	85.2	74	41	-	-	-	-	-	-	-
	SS	15 – 16.5	SP-SC	A-1-b	22.2	10.7	np	np	-	-	-	-	-	-	-
ID-03	SS	0-2	ML	-	-	-	-	-	-	-	-	5.48	5,578	36	130
	SS	2 – 4	CL	A-6	23.2	66.3	29	13	-	-	-	-	-	-	-
	SS	6 – 8	SC	A-2-6	18.3	28.9	33	17	-	-	-	-	-	-	-
	SS	10 – 11.5	SC	A-2-4	34.6	32.7	-	-	-	-	-	-	-	-	-
	SS	15 – 16.5	SC	A-4	29.4	47.6	np	np	-	-	-	-	-	-	-
ID-04	SS	2 - 4	CL	A-6	23.7	71.7	32	17	-	-	-	-	-	-	-
	SS	6 – 8	SC	A-2-6	16.9	22.4	28	16	-	-	-	-	-	-	-
	SS	10 – 11.5	CL	A-7-6	48	69.4	47	31	-	-	-	-	-	-	-
ID-05	SS	2 – 4	CL	A-4	16.1	71.7	22	9	-	-	-	-	-	-	-
	SS	6 – 8	CH	A-7-5	38.4	86.3	70	40	-	-	-	-	-	-	-
	SS	15 – 16.5	SC	A-2-4	24.8	32.4	np	np	-	-	-	-	-	-	-
ID-06	SS	2 – 4	CL	A-6	21.4	65.9	33	16	-	-	-	-	-	-	-
	SS	8 – 10	CH	A-7-6	25.3	59.7	60	41	-	-	-	-	-	-	-
	SS	15 – 16.5	SC	A-1-b	23.4	21.8	np	np	-	-	-	-	-	-	-

Bulk = Bulk Sample, SS = Split-spoon sample, ST = Shelby tube, np=not plastic, ND=not detected at the reporting limit for the sample



Summary I of Laboratory Test Data (Page 2 of 2)

I-26 Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No. 1413-15-114

Sample Location	Sample Type	Sample Depth (ft)	USCS Classification	AASHTO Classification	Natural Moisture (%)	% Finer #200	Atterberg Limits		CBR	Modified Proctor		pH	Resistivity (ohm-cm)	Chloride (mg/kg)	Sulfate (mg/kg)
							LL	PI		Max g <sub>d</sub> (pcf)	OMC (%)				
IS-01	Bulk	0 - 2	CL	A-6	29.6	72.5	37	21	-	-	-	-	-	-	-
IS-02	Bulk	0 - 2	CL	A-6	18.7	70.1	37	23	-	-	-	4.53	6,694	36	ND
IS-03	Bulk	0 - 2	CL	A-6	29.3	53.8	31	18	5	111.1	16.1	-	-	-	-
IS-04	Bulk	0 - 2	CL	A-6	15.1	55.1	28	15	4	114.1	15	-	-	-	-
IS-05	Bulk	0 - 2	CL	A-6	22.3	68.2	27	11	-	-	-	-	-	-	-
IS-06	Bulk	0 - 2	CL	A-6	21.6	70.5	41	24	-	-	-	-	-	-	-
IS-07	Bulk	0 - 2	SC	A-2-4	15.3	23.1	np	np	-	-	-	-	-	-	-
IS-08	Bulk	0 - 2.5	SC	A-2-4	9.6	15.5	np	np	7	114.0	14.8	-	-	-	-
IS-09	Bulk	0 - 2	SC	A-2-4	17.6	25.5	np	np	-	-	-	-	-	-	-
IS-10	Bulk	0 - 2	SM	A-2-4	21.1	20.9	np	np	-	-	-	-	-	-	-
IS-11	Bulk	0 - 2.5	SC	A-2-6	18.8	30.7	27	12	8	113.0	15.8	-	-	-	-
IS-12	Bulk	0 - 2	SC	A-2-4	18.4	24.9	np	np	-	-	-	5.01	5,578	12	ND
IS-14	Bulk	0 - 2	CL	A-6	16.3	71.8	31	18	1	112.6	13.3	-	-	-	-
IS-15	SS	4 - 6	CL	A-6	20.2	59	32	18	-	-	-	-	-	-	-
	SS	8 - 10	SP-SM	A-3	21.1	10.4	np	np	-	-	-	-	-	-	-
	SS	10 - 11.5	SM	A-2-4	24.6	13.9	np	np	-	-	-	-	-	-	-
	SS	20 - 21.5	SM	A-4	32.8	44	37	6	-	-	-	-	-	-	-
IS-16	SS	4 - 6	CH	A-7-6	22.9	53	55	37	-	-	-	-	-	-	-
	SS	8 - 10	SC	A-2-4	20.6	17.2	np	np	-	-	-	-	-	-	-
	SS	10 - 11.5	SC	A-2-6	25.9	40.6	30	13	-	-	-	-	-	-	-
IS-17	SS	2 - 4	CL	A-6	15.3	61.7	25	11	-	-	-	-	-	-	-
	SS	15 - 16.5	CL	A-4	30.9	50	np	np	-	-	-	-	-	-	-
IS-18	SS	15 - 16.5	SC	A-4	27.9	42	np	np	-	-	-	-	-	-	-

Bulk = Bulk Sample, SS = Split-spoon sample, ST = Shelby tube, np=not plastic, ND=not detected at the reporting limit for the sample

### Sieve Analysis of Soils



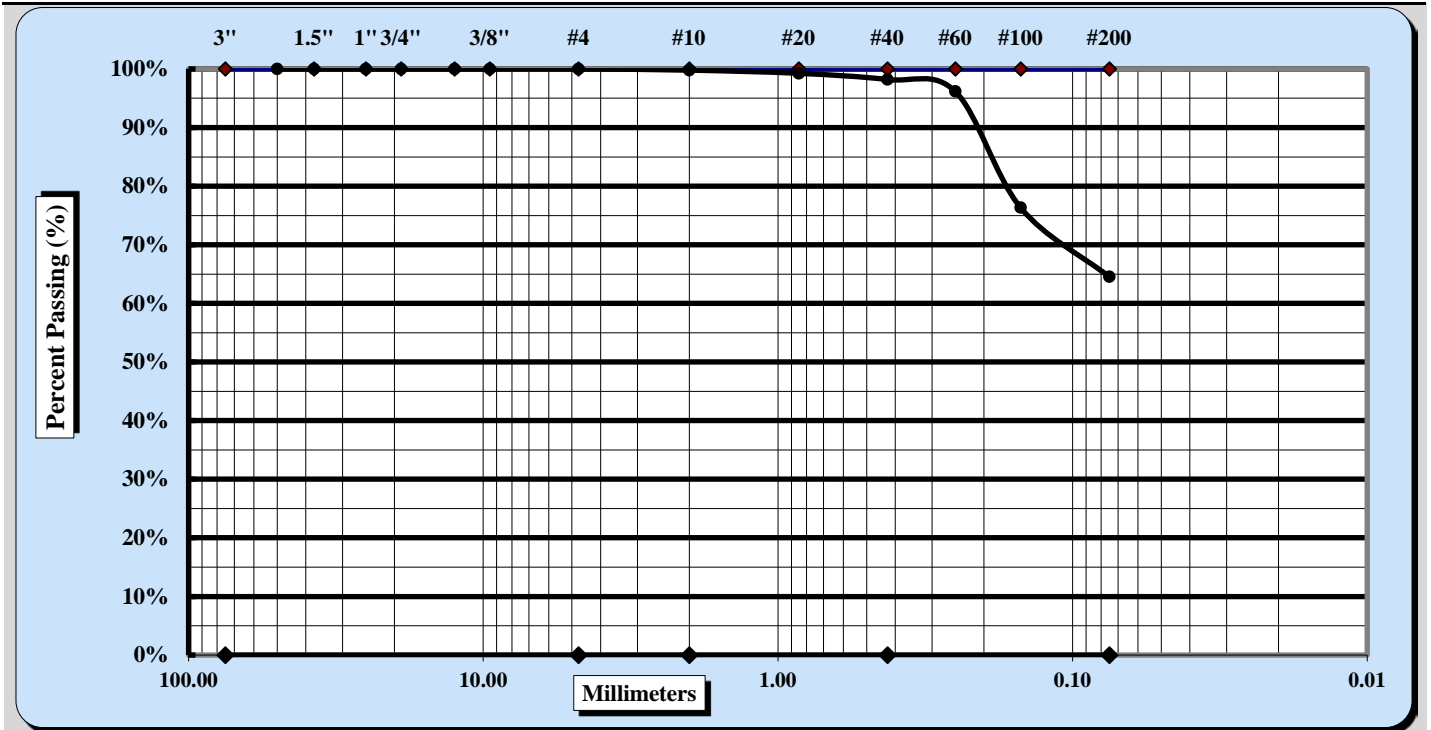
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-11-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-9-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-01</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#2</b>	<b>Depth</b>
			<b>2 - 4 FT</b>

**Sample Description:** Gray yellowish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.2%	Fine Sand	33.7%
Gravel	0.0%	Medium Sand	1.6%	Silt & Clay	64.5%
Liquid Limit	31	Plastic Limit	13	Plastic Index	18
Specific Gravity				Moisture Content	21.7%
Coarse Sand	0.2%	Medium Sand	1.6%	Fine Sand	33.7%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/11/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

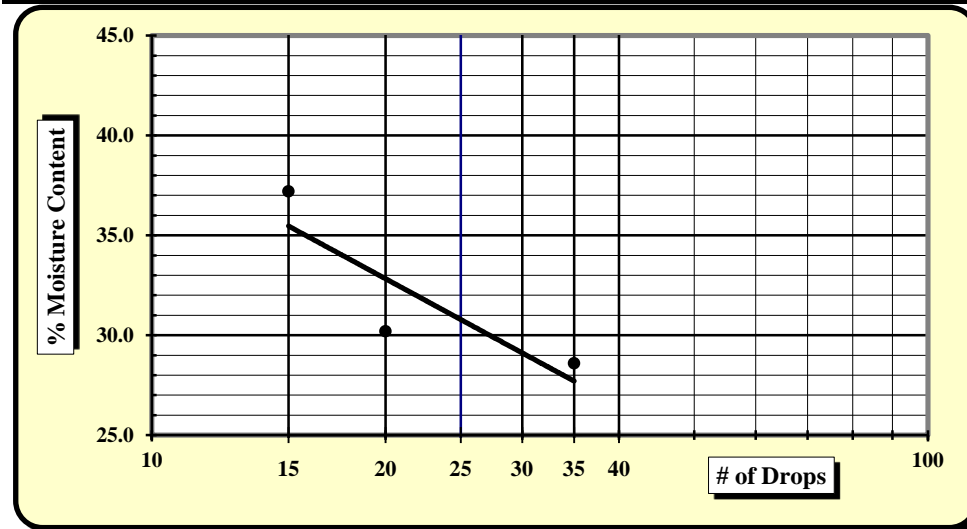
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-01</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4 FT</b>		

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.17	21.44	22.51				<b>21.16</b>	21.39	
B	Wet Soil Weight + A	46.58	50.30	45.83				28.02	27.08	
C	Dry Soil Weight + A	39.69	43.89	40.42				27.26	26.43	
D	Water Weight (B-C)	<b>6.89</b>	<b>6.41</b>	<b>5.41</b>				<b>0.76</b>	<b>0.65</b>	
E	Dry Soil Weight (C-A)	<b>18.52</b>	<b>22.45</b>	<b>17.91</b>				<b>6.10</b>	<b>5.04</b>	
F	% Moisture (D/E)*100	<b>37.2%</b>	<b>28.6%</b>	<b>30.2%</b>				<b>12.5%</b>	<b>12.9%</b>	
N	# OF DROPS	15	35	20						
LL	LL = F * FACTOR									
Ave.	Average									<b>12.7%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>31</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>18</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



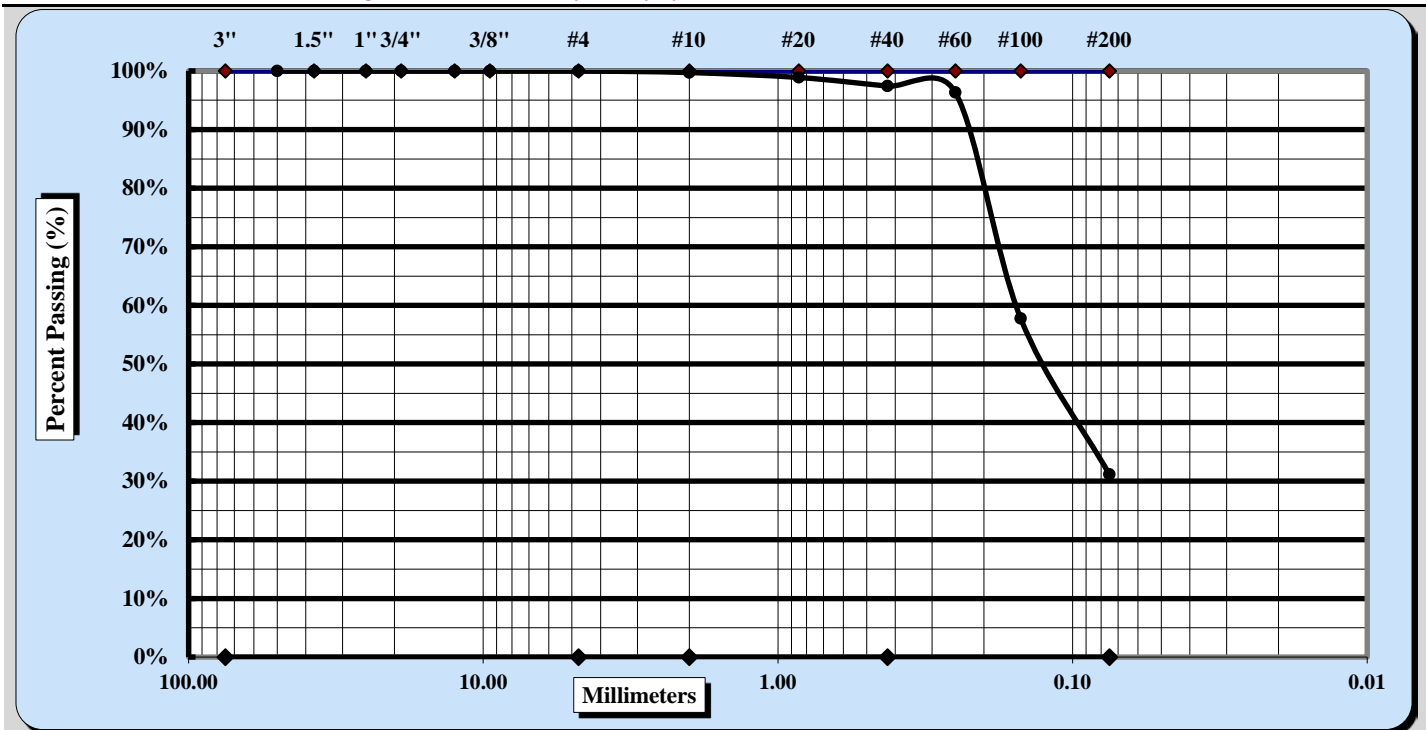
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Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-11-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-9-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-01</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#4</b>	<b>Depth</b>
			<b>6 - 8 FT</b>

**Sample Description:** Light Brownish Gray, Clayey Fine SAND (SC) (A-2-6)







**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

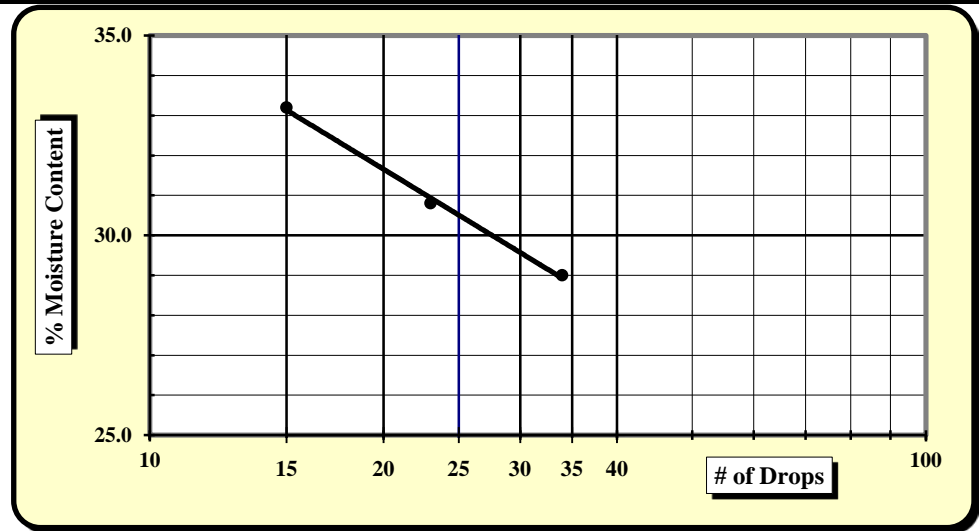
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-01</b>	<b>Sample #:</b>	<b>#4</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 6 - 8 FT</b>		

**Sample Description:** Light Brownish Gray, Clayey Fine Sand (SC) (A-2-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	14.18	21.32	20.82				<b>21.26</b>	21.20	
B	Wet Soil Weight + A	37.57	46.31	47.68				27.91	27.46	
C	Dry Soil Weight + A	32.31	40.43	40.98				27.02	26.63	
D	Water Weight (B-C)	<b>5.26</b>	<b>5.88</b>	<b>6.70</b>				<b>0.89</b>	<b>0.83</b>	
E	Dry Soil Weight (C-A)	<b>18.13</b>	<b>19.11</b>	<b>20.16</b>				<b>5.76</b>	<b>5.43</b>	
F	% Moisture (D/E)*100	<b>29.0%</b>	<b>30.8%</b>	<b>33.2%</b>				<b>15.5%</b>	<b>15.3%</b>	
N	# OF DROPS	34	23	15						
LL	LL = F * FACTOR									
Ave.	Average									<b>15.4%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>31</b>
Plastic Limit	<b>15</b>
Plastic Index	<b>16</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

Date

Telford Wood  
Technical Responsibility

Date

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### Sieve Analysis of Soils



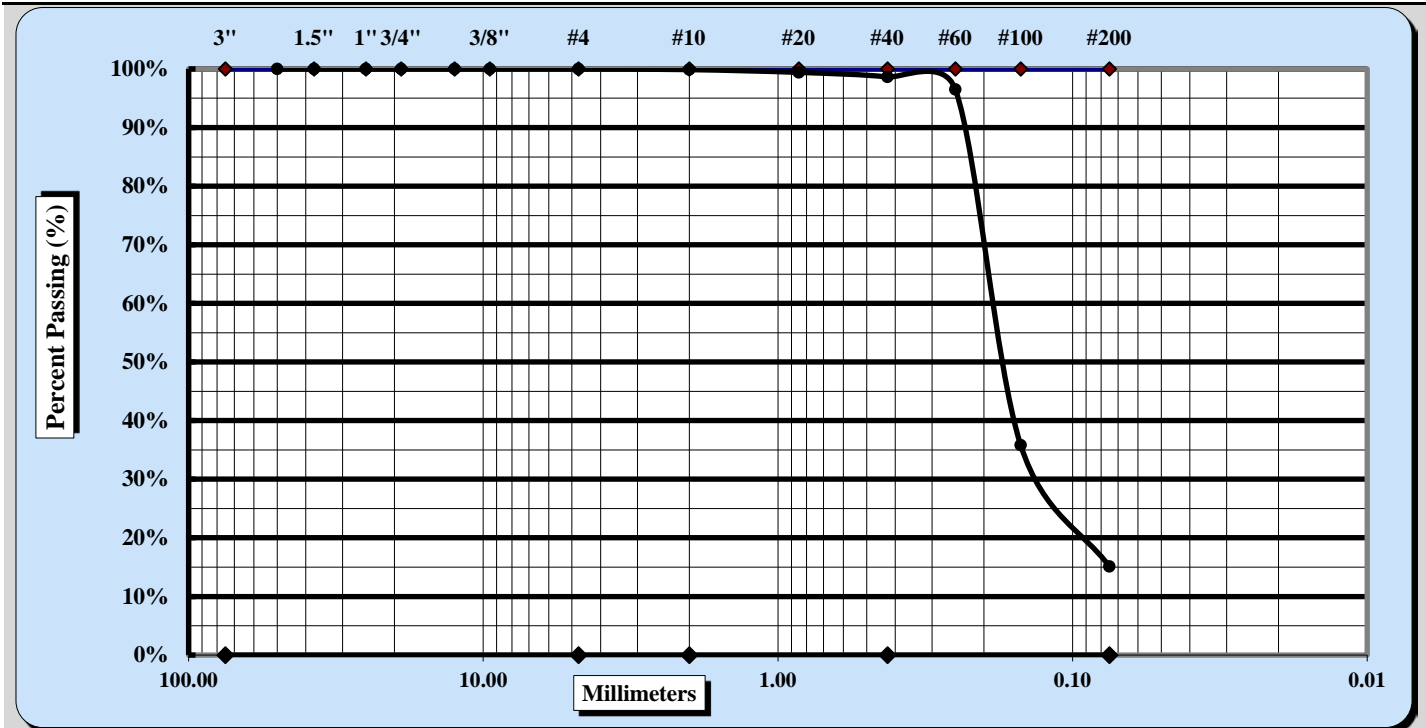
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-11-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-9-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-01</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>6</b>	<b>Depth</b>
			<b>10 FT</b>

**Sample Description:** Light Brownish Gray, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.1%	Fine Sand	83.5%
Gravel	0.0%	Medium Sand	1.3%	Silt & Clay	15.1%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	25.4%

Coarse Sand	0.1%	Medium Sand	1.3%	Fine Sand	83.5%
-------------	------	-------------	------	-----------	-------

Description of Sand & Gravel Particles:	Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>	
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/11/2015  
Date

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## Sieve Analysis of Soils



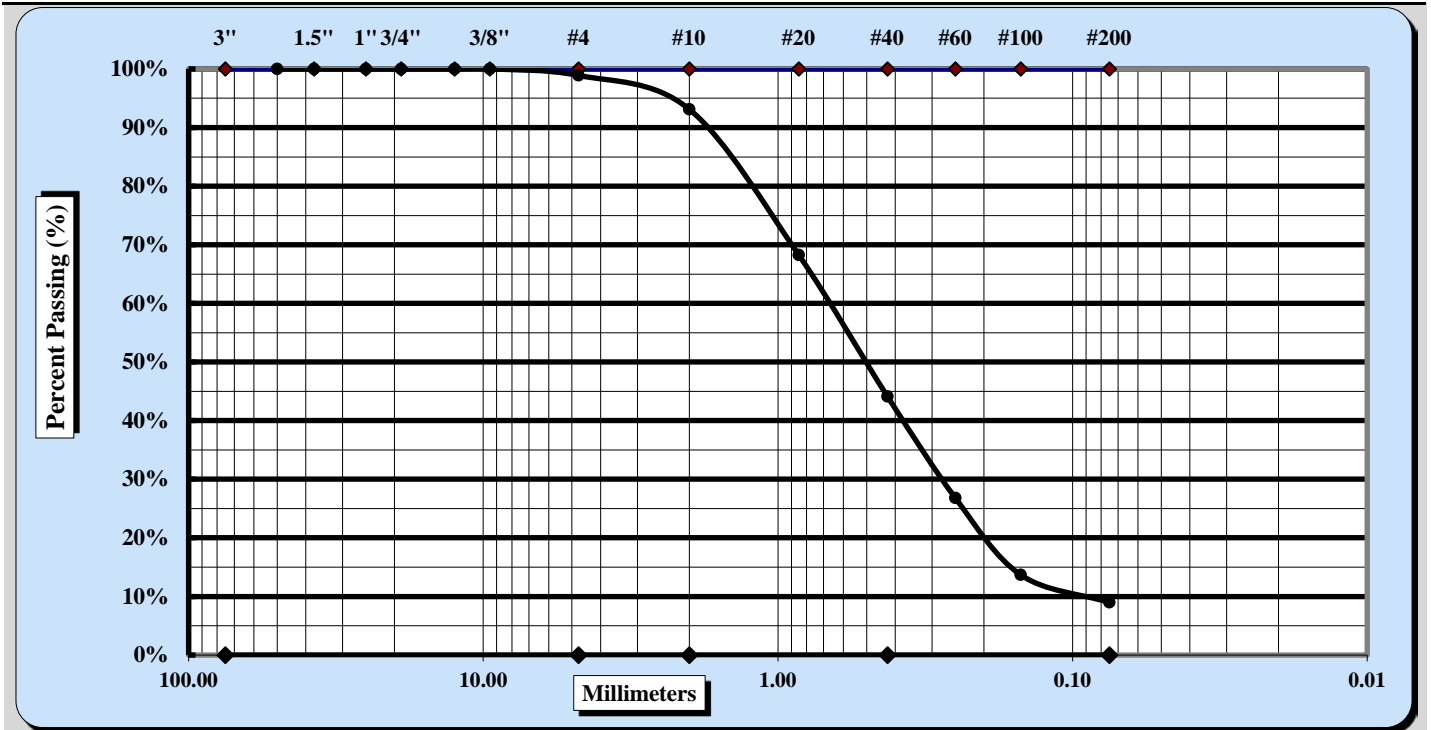
ASTM D 422

Quality Assurance

**S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	Report Date:	11-11-15
Project Name:	I - 26 Volvo Interchange	Test Date(s):	11-9-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Sample Id.	ID-01	Type:	Sample Date: 10-28-15
Location:	Sample: #7	Depth	15 - 16.5 FT

**Sample Description:** Grayish Brown, Slightly Clayey Medium to Fine SAND (SP-SC) (A-1-b)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	5.8%	Fine Sand	35.2%
Gravel	1.1%	Medium Sand	49.0%	Silt & Clay	9.0%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	18.1%
Coarse Sand	5.8%	Medium Sand	49.0%	Fine Sand	35.2%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/11/2015  
Date

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# Sieve Analysis of Soils



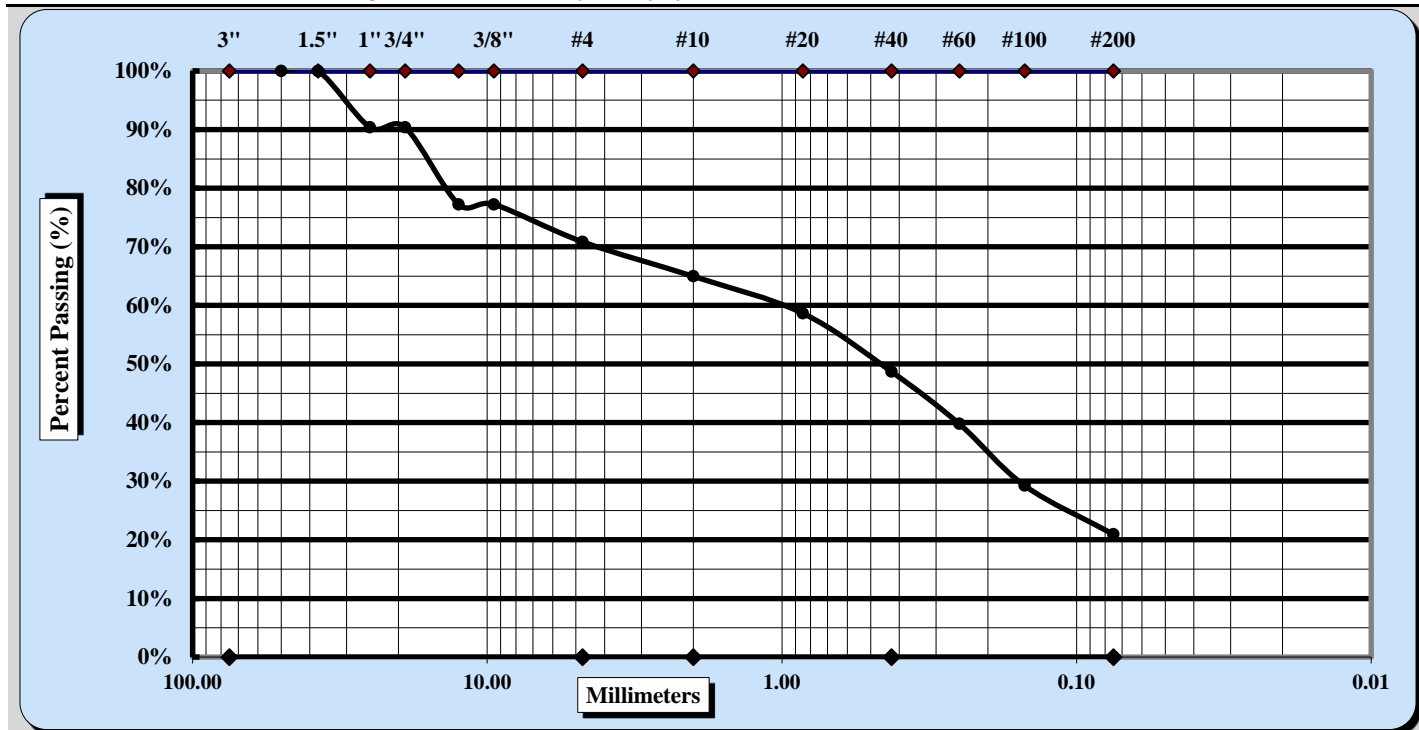
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-11-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-9-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-01</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#8</b>	<b>Depth</b>
			<b>20 - 21.5 FT</b>

**Sample Description:** Light Brownish Gray, Clayey Medium to Fine SAND (SC) (A-1-b)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	1.5"	Coarse Sand	5.9%	Fine Sand	27.7%
Gravel	29.2%	Medium Sand	16.3%	Silt & Clay	21.0%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	18.4%
Coarse Sand	5.9%	Medium Sand	16.3%	Fine Sand	27.7%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/11/2015  
Date

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### Sieve Analysis of Soils



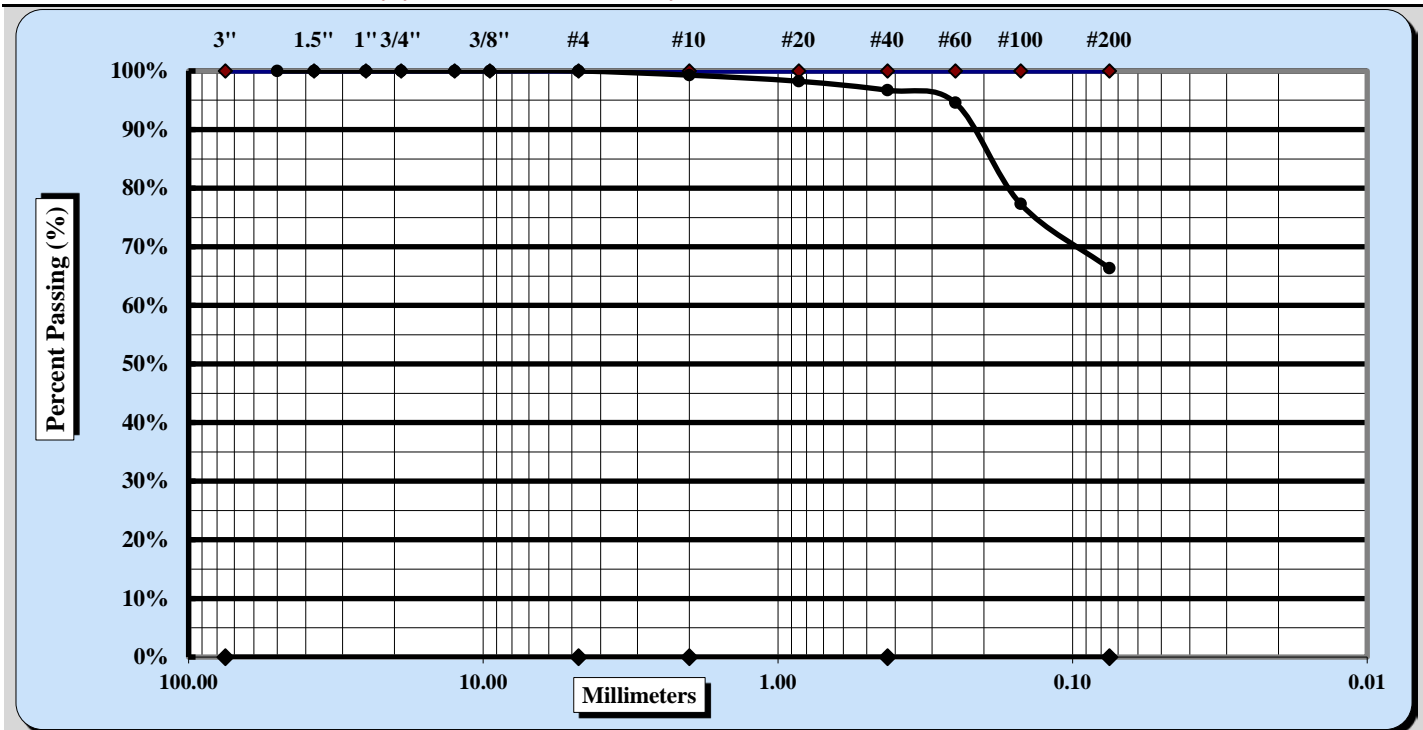
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-02</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#2</b>	<b>Depth</b>
			<b>2 - 4 FT</b>

**Sample Description:** Gray yellowish brown, sandy CLAY (CL) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.7%	Fine Sand	30.4%
Gravel	0.0%	Medium Sand	2.6%	Silt & Clay	66.3%
Liquid Limit	23	Plastic Limit	13	Plastic Index	10
Specific Gravity				Moisture Content	14.8%
Coarse Sand	0.7%	Medium Sand	2.6%	Fine Sand	30.4%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

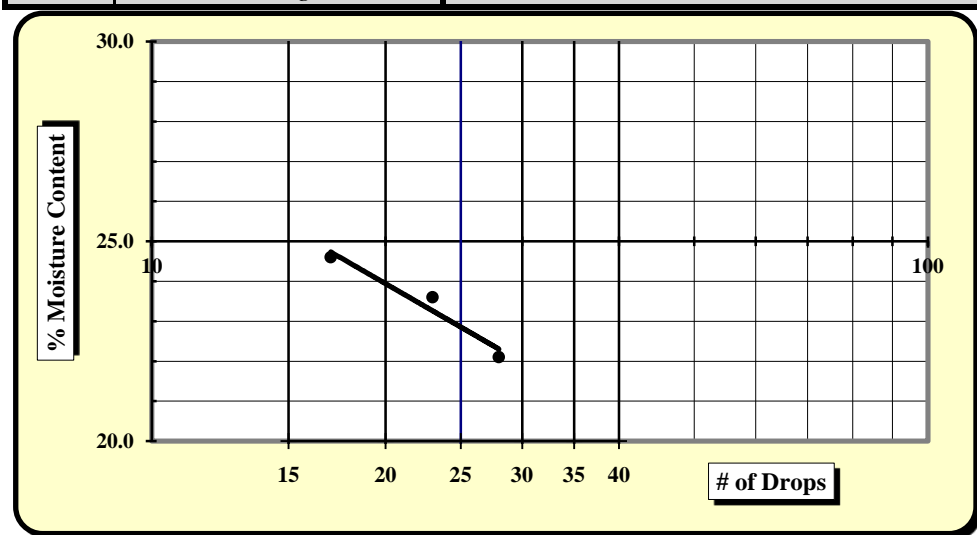
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-11-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-02</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10/19 - 10/28/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4FT</b>		

**Sample Description:** Gray yellowish brown, Sandy CLAY (CL) (A-4)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.26	21.07	20.94				21.04	21.23	
B	Wet Soil Weight + A	51.00	45.63	49.53				27.99	27.54	
C	Dry Soil Weight + A	45.61	40.94	43.88				27.18	26.80	
D	Water Weight (B-C)	5.39	4.69	5.65				0.81	0.74	
E	Dry Soil Weight (C-A)	24.35	19.87	22.94				6.14	5.57	
F	% Moisture (D/E)*100	22.1%	23.6%	24.6%				13.2%	13.3%	
N	# OF DROPS	28	23	17						
LL	LL = F * FACTOR									
Ave.	Average									<b>13.3%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>23</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>10</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

<u>Kim Gonzalez</u> Technician Name	<u>11/12/2015</u> Date	<u>Telford Wood</u> Technical Responsibility	<u>11/12/2015</u> Date
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### Sieve Analysis of Soils



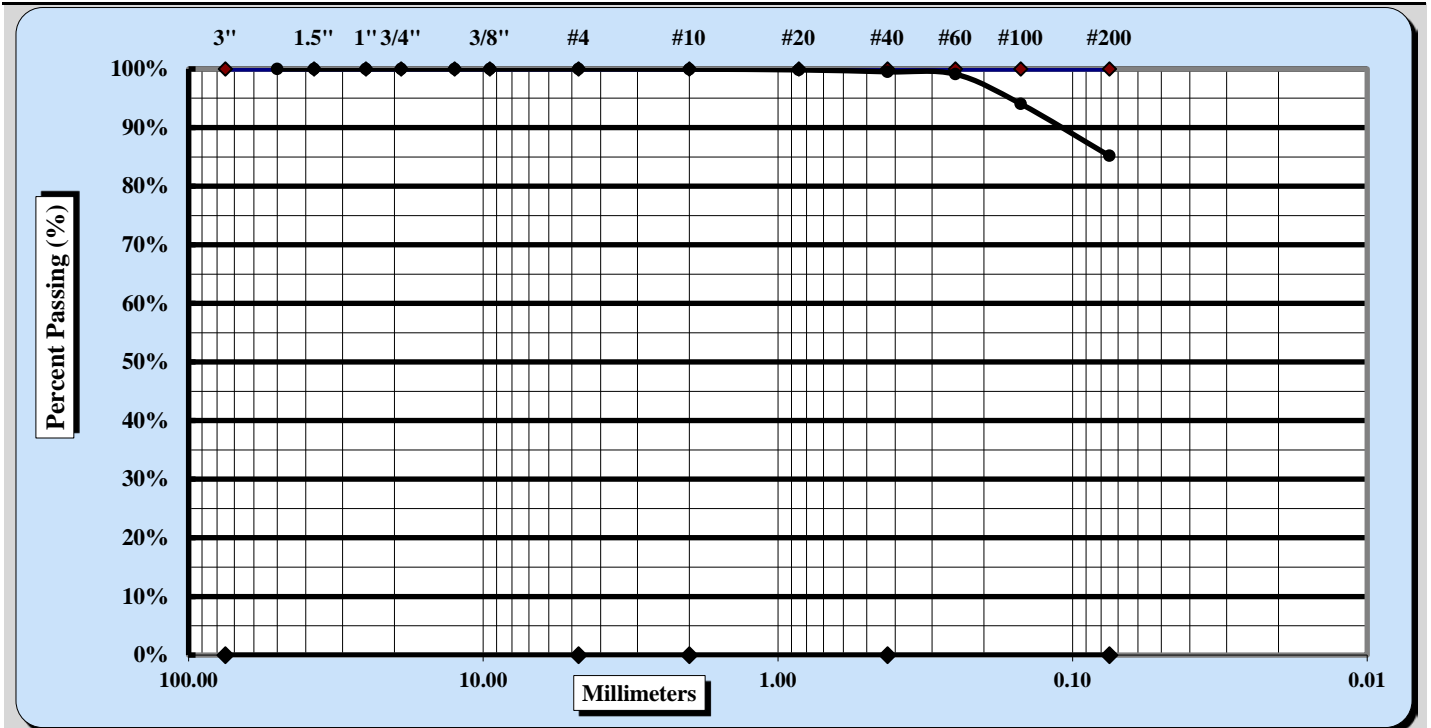
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-02</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#5</b>	<b>Depth</b>
			<b>8 - 10 FT</b>

**Sample Description:** Light Gray CLAY (CH) (A-7-5)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	14.3%
Gravel	0.0%	Medium Sand	0.5%	Silt & Clay	85.2%
Liquid Limit	74	Plastic Limit	33	Plastic Index	41
Specific Gravity				Moisture Content	37.9%

Coarse Sand	0.0%	Medium Sand	0.5%	Fine Sand	14.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/12/2015  
Date

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### Sieve Analysis of Soils



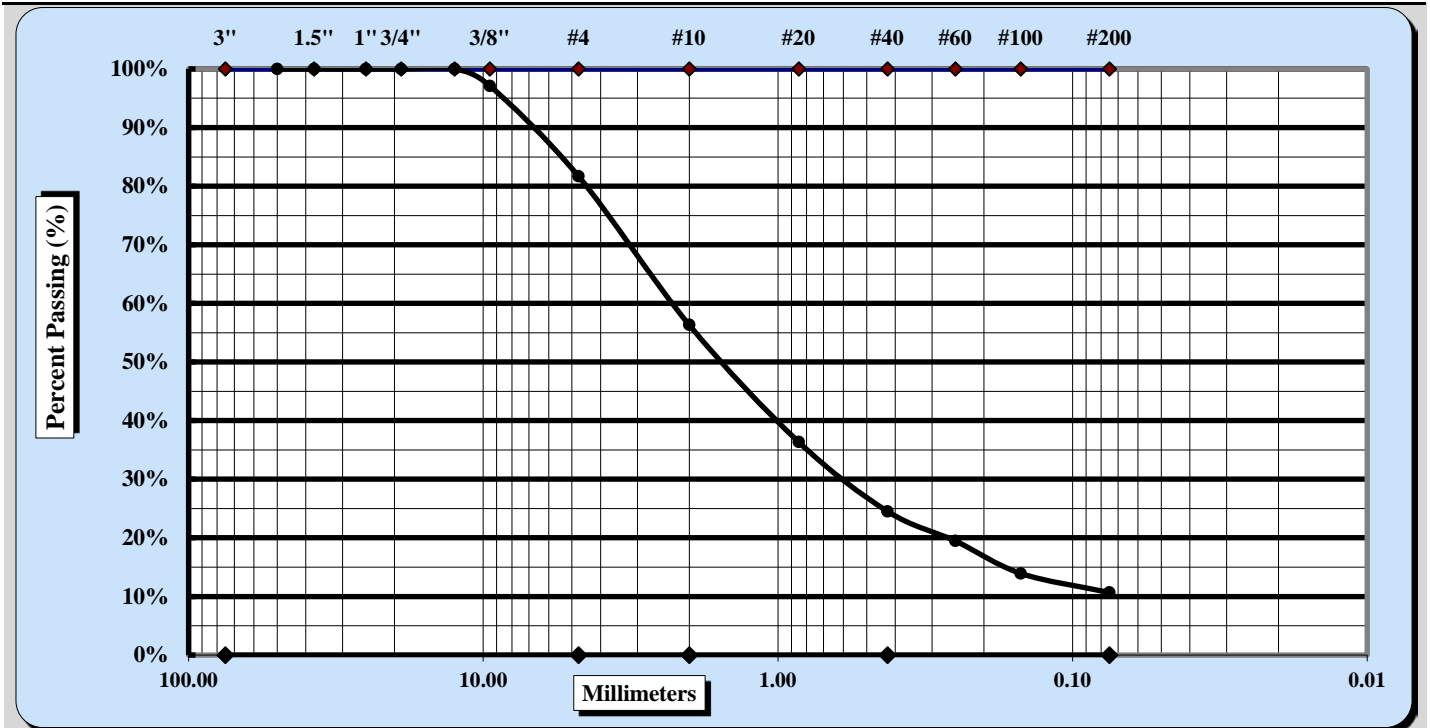
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-02</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #7	<b>Depth</b>	<b>15 - 16.5 FT</b>

**Sample Description:** Light Gray, Slightly Clayey Coarse to Fine SAND (SP-SC) (A-1-b)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	25.4%	Fine Sand	13.9%
Gravel	18.3%	Medium Sand	31.8%	Silt & Clay	10.7%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	22.2%
Coarse Sand	25.4%	Medium Sand	31.8%	Fine Sand	13.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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### Sieve Analysis of Soils



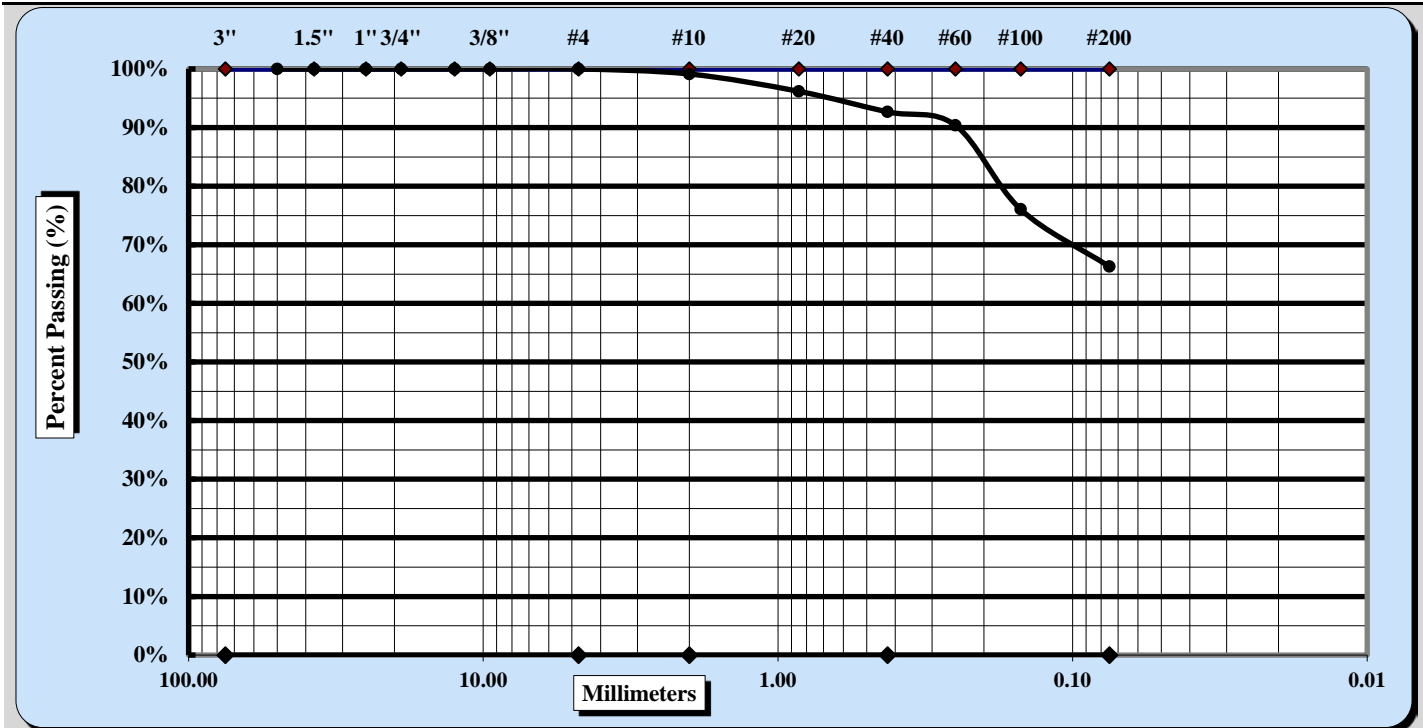
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-03</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#2</b>	<b>Depth</b>
			<b>2 - 4 FT</b>

**Sample Description:** Gray reddish yellow, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.9%	Fine Sand	26.4%
Gravel	0.0%	Medium Sand	6.5%	Silt & Clay	66.3%
Liquid Limit	29	Plastic Limit	16	Plastic Index	13
Specific Gravity				Moisture Content	23.2%
Coarse Sand	0.9%	Medium Sand	6.5%	Fine Sand	26.4%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

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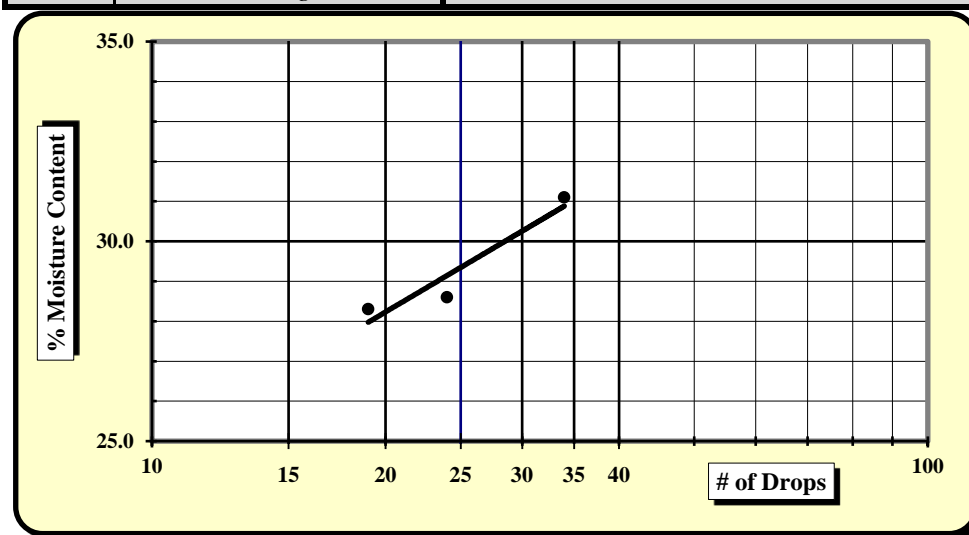
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-03</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4 FT</b>		

**Sample Description:** Gray Reddish Yellow Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	20.89	21.06	21.26				<b>20.77</b>	21.13	
B	Wet Soil Weight + A	44.38	39.41	49.87				25.54	25.67	
C	Dry Soil Weight + A	38.81	35.36	43.50				24.90	25.03	
D	Water Weight (B-C)	<b>5.57</b>	<b>4.05</b>	<b>6.37</b>				<b>0.64</b>	<b>0.64</b>	
E	Dry Soil Weight (C-A)	<b>17.92</b>	<b>14.30</b>	<b>22.24</b>				<b>4.13</b>	<b>3.90</b>	
F	% Moisture (D/E)*100	<b>31.1%</b>	<b>28.3%</b>	<b>28.6%</b>				<b>15.5%</b>	<b>16.4%</b>	
N	# OF DROPS	34	19	24						
LL	LL = F * FACTOR									
Ave.	Average									<b>16.0%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>29</b>
Plastic Limit	<b>16</b>
Plastic Index	<b>13</b>
Group Symbol	<b>CL</b>

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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### Sieve Analysis of Soils



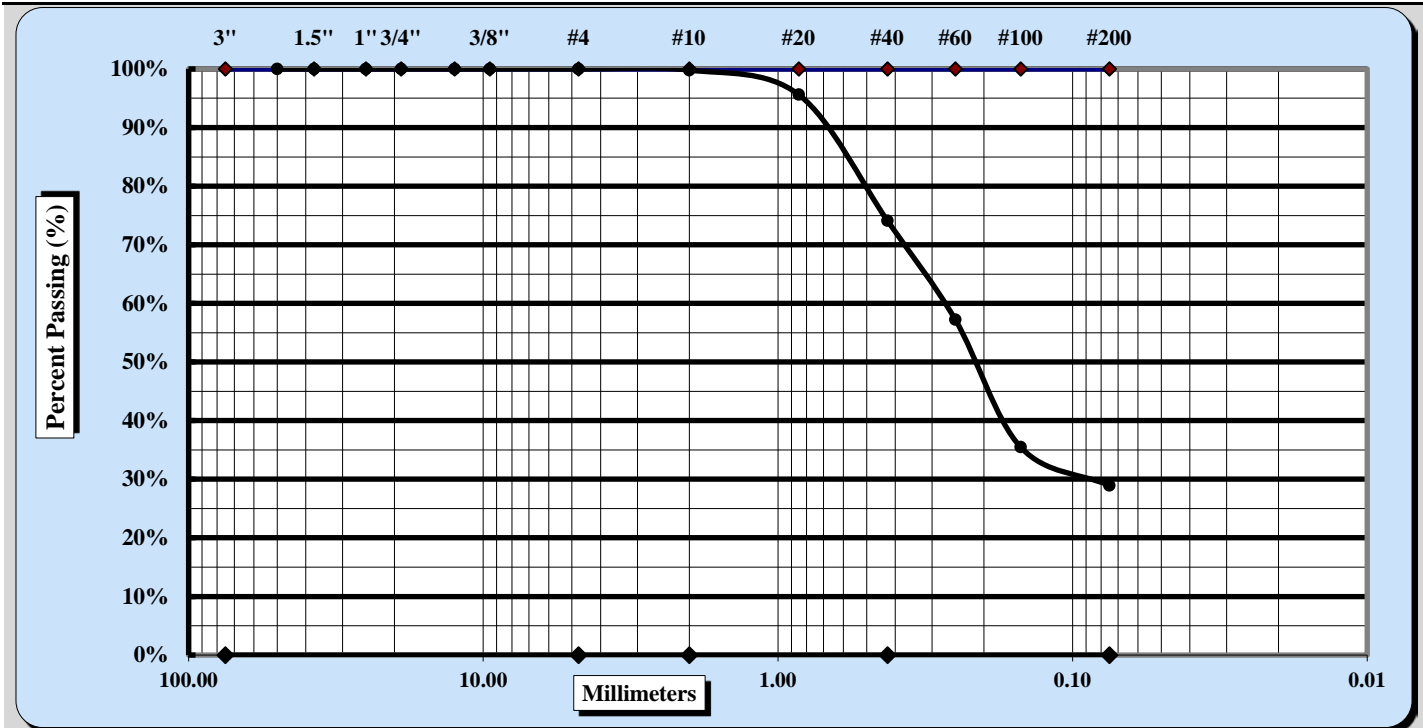
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S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-03</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#4</b>	<b>Depth</b>
			<b>6 - 8 FT</b>

**Sample Description:** Gray Clayey Fine SAND (SC) (A-2-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.2%	Fine Sand	45.2%
Gravel	0.0%	Medium Sand	25.7%	Silt & Clay	28.9%
Liquid Limit	33	Plastic Limit	16	Plastic Index	17
Specific Gravity				Moisture Content	18.3%
Coarse Sand	0.2%	Medium Sand	25.7%	Fine Sand	45.2%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464

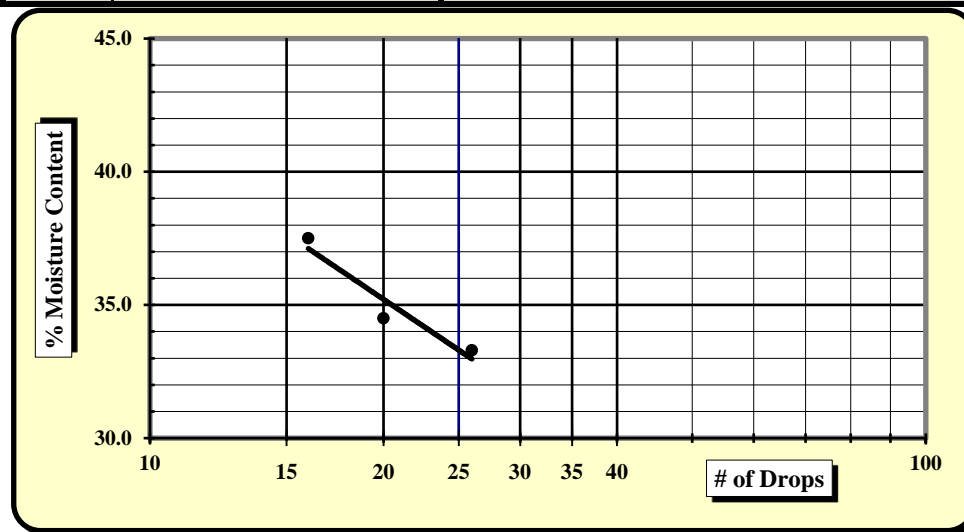
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-03</b>	<b>Sample #:</b>	<b>4</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 6 - 8 FT</b>		

**Sample Description:** Gray Clayey Fine SAND (SC) (A-2-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	22.19	21.06	21.16				21.04	20.73	
B	Wet Soil Weight + A	44.28	45.90	49.97				29.93	28.62	
C	Dry Soil Weight + A	38.76	39.53	42.11				28.43	27.78	
D	Water Weight (B-C)	5.52	6.37	7.86				1.50	0.84	
E	Dry Soil Weight (C-A)	16.57	18.47	20.95				7.39	7.05	
F	% Moisture (D/E)*100	33.3%	34.5%	37.5%				20.3%	11.9%	
N	# OF DROPS	26	20	16						
LL	LL = F * FACTOR									
Ave.	Average									16.1%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>33</b>
Plastic Limit	<b>16</b>
Plastic Index	<b>17</b>
Group Symbol	

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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### Sieve Analysis of Soils



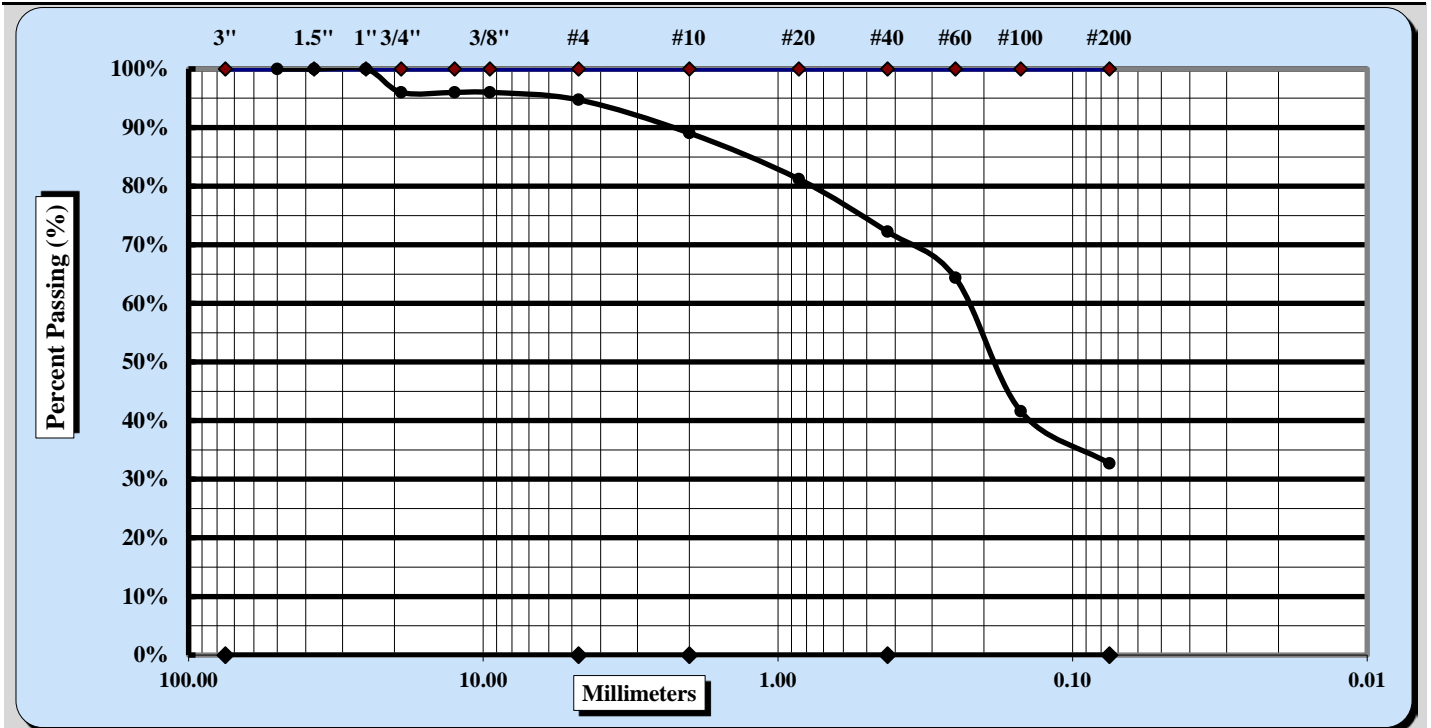
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-03</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#6</b>	<b>Depth</b>
			<b>10 - 11.5FT</b>

**Sample Description:** Light Greenish Gray, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	1"	Coarse Sand	5.7%	Fine Sand	39.5%
Gravel	5.3%	Medium Sand	16.8%	Silt & Clay	32.7%
Liquid Limit	NA	Plastic Limit	NA	Plastic Index	NA
Specific Gravity				Moisture Content	34.6%
Coarse Sand	5.7%	Medium Sand	16.8%	Fine Sand	39.5%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



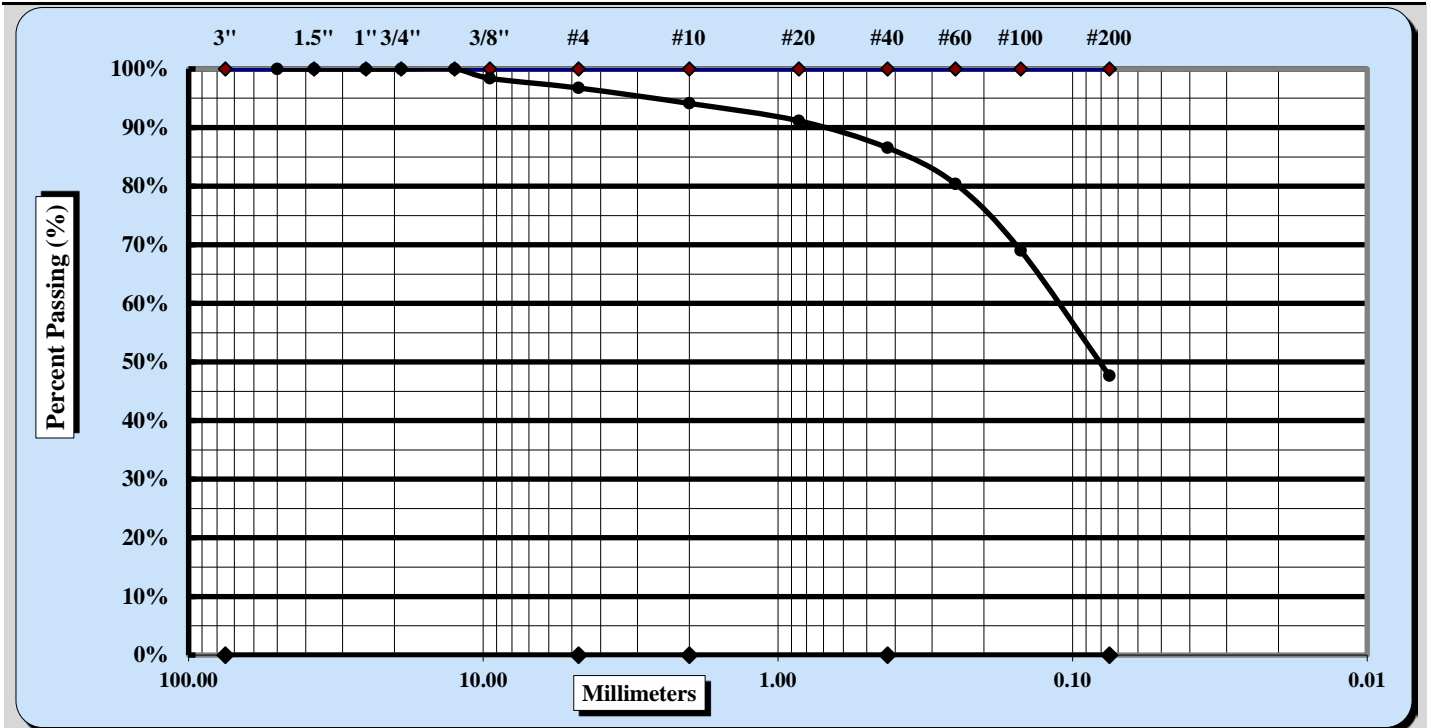
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-03</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#7</b>	<b>Depth</b>
			<b>15 - 16.5 FT</b>

**Sample Description:** Light Gray, Clayey Fine SAND (SC) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	1/2"	Coarse Sand	2.6%	Fine Sand	38.9%
Gravel	3.2%	Medium Sand	7.6%	Silt & Clay	47.6%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	29.4%

Coarse Sand	2.6%	Medium Sand	7.6%	Fine Sand	38.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



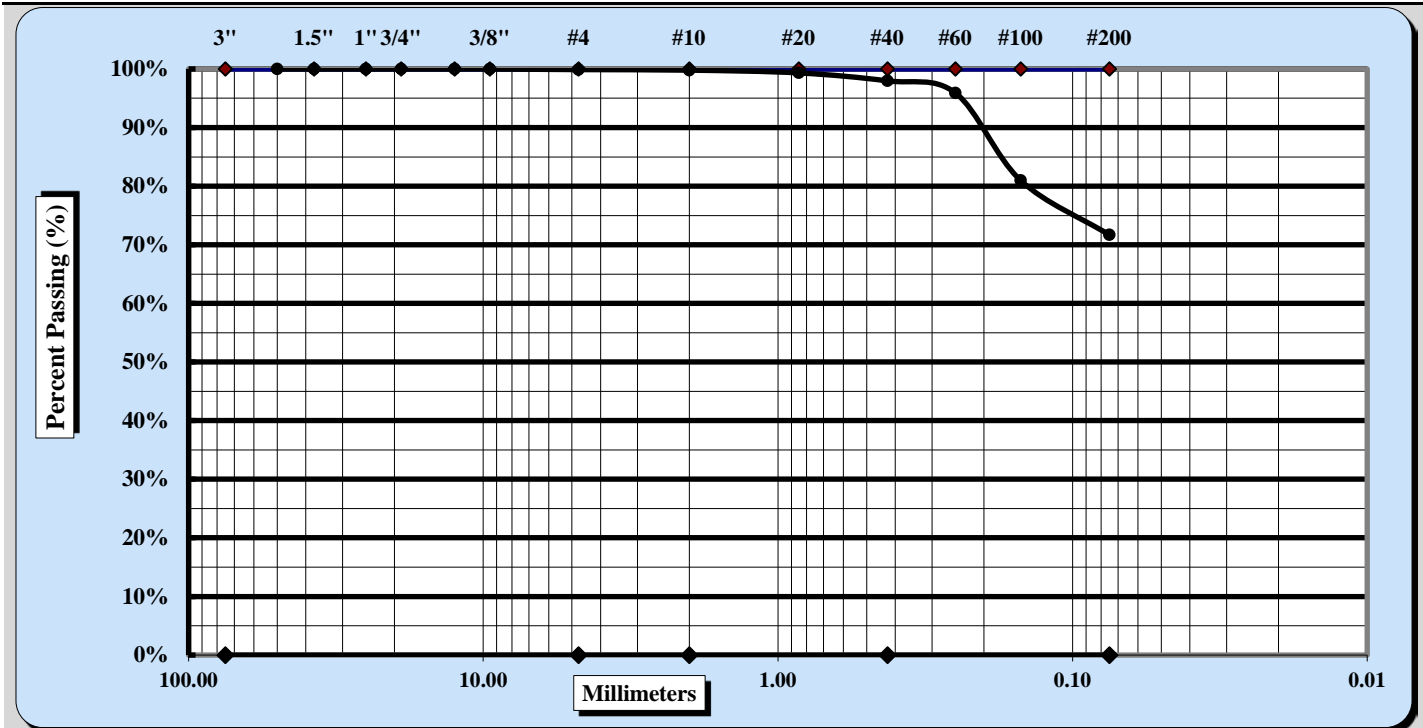
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-04</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #2	<b>Depth</b>	<b>2 - 4 FT</b>

**Sample Description:** Gray Brownish Yellow, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.1%	Fine Sand	26.3%
Gravel	0.1%	Medium Sand	1.8%	Silt & Clay	71.7%
Liquid Limit	32	Plastic Limit	15	Plastic Index	17
Specific Gravity				Moisture Content	23.7%
Coarse Sand	0.1%	Medium Sand	1.8%	Fine Sand	26.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

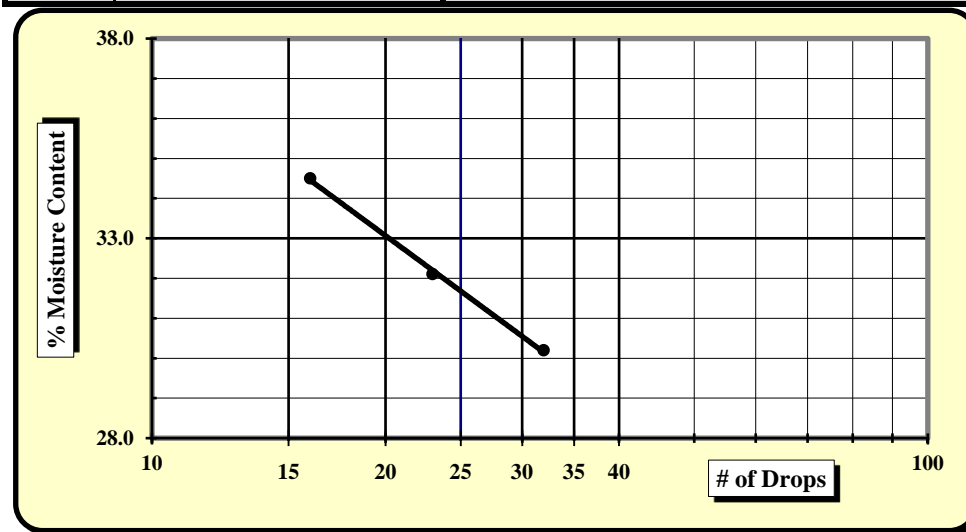
**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-11-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-04</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10/19 - 10/28/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4 FT</b>		

<b>Sample Description:</b>	<b>Gray Brownish Yellow, Sandy CLAY (CL) (A-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	20.81	20.64	21.38				<b>20.93</b>	20.73	
B	Wet Soil Weight + A	44.28	45.31	44.43				28.35	28.70	
C	Dry Soil Weight + A	38.84	39.32	38.52				27.42	27.68	
D	Water Weight (B-C)	<b>5.44</b>	<b>5.99</b>	<b>5.91</b>				<b>0.93</b>	<b>1.02</b>	
E	Dry Soil Weight (C-A)	<b>18.03</b>	<b>18.68</b>	<b>17.14</b>				<b>6.49</b>	<b>6.95</b>	
F	% Moisture (D/E)*100	<b>30.2%</b>	<b>32.1%</b>	<b>34.5%</b>				<b>14.3%</b>	<b>14.7%</b>	
N	# OF DROPS	32	23	16						
LL	LL = F * FACTOR									
Ave.	Average									<b>14.5%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>32</b>
Plastic Limit	<b>15</b>
Plastic Index	<b>17</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

11/12/2015  
Date

Telford Wood  
Technical Responsibility

11/12/2015  
Date

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### Sieve Analysis of Soils



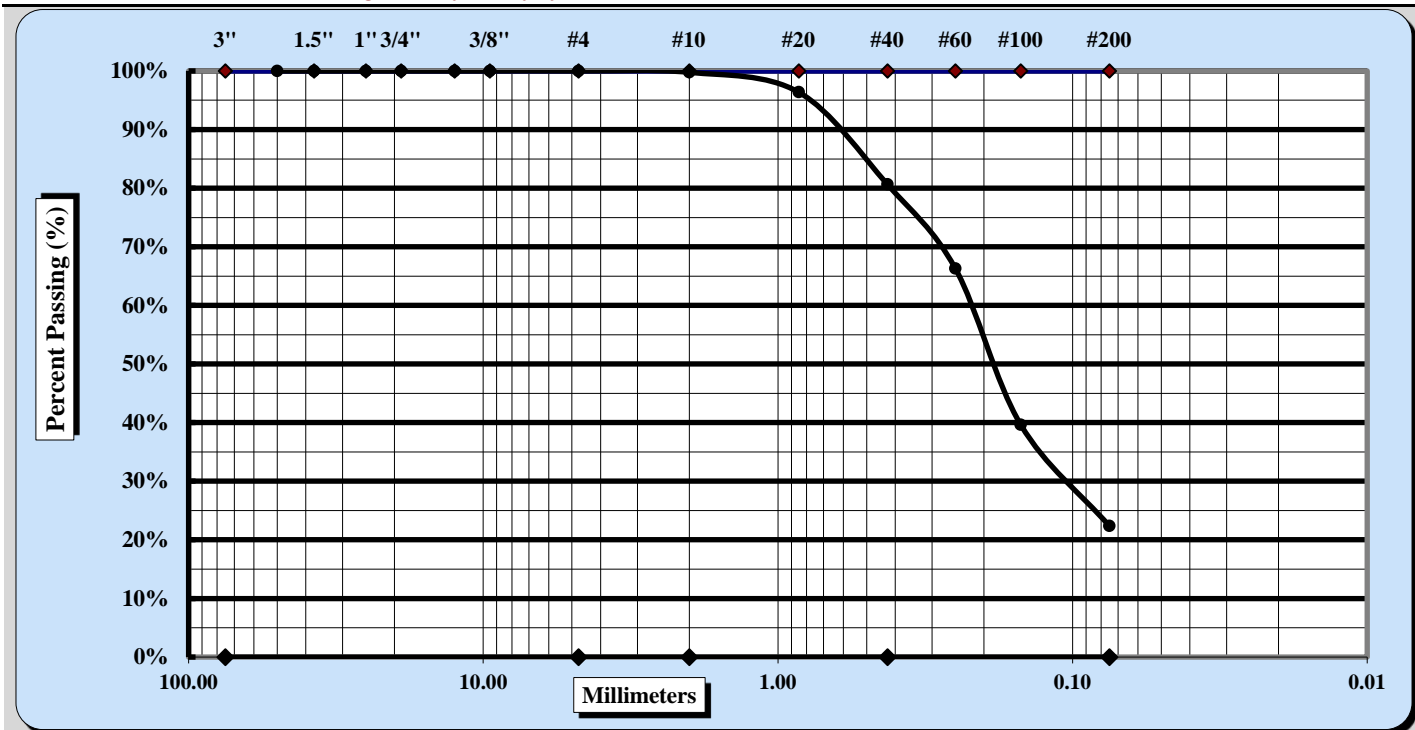
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-04</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #4	<b>Depth</b>	<b>6 - 8 FT</b>

**Sample Description:** Light Gray, Clayey Fine SAND (SC) (A-2-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.2%	Fine Sand	58.3%
Gravel	0.0%	Medium Sand	19.1%	Silt & Clay	22.4%
Liquid Limit	28	Plastic Limit	12	Plastic Index	16
Specific Gravity				Moisture Content	16.9%

Coarse Sand	0.2%	Medium Sand	19.1%	Fine Sand	58.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/12/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

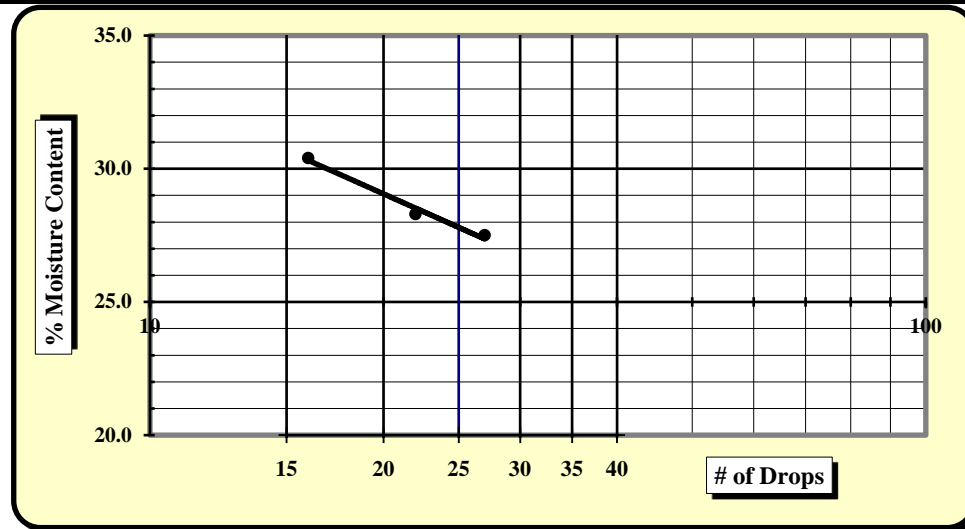
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<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-04</b>	<b>Sample #:</b>	<b>4</b>	<b>Sample Date:</b>	<b>10/19 - 10/28/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 6 - 8 FT</b>		

**Sample Description:** Light Gray, Clayey Fine SAND (SC) (A-2-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	15.03	14.52	22.68				21.45	20.77	
B	Wet Soil Weight + A	36.93	34.16	43.25				27.91	28.04	
C	Dry Soil Weight + A	32.21	29.83	38.45				27.22	27.25	
D	Water Weight (B-C)	4.72	4.33	4.80				0.69	0.79	
E	Dry Soil Weight (C-A)	17.18	15.31	15.77				5.77	6.48	
F	% Moisture (D/E)*100	27.5%	28.3%	30.4%				12.0%	12.2%	
N	# OF DROPS	27	22	16						
LL	LL = F * FACTOR									
Ave.	Average									12.1%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>28</b>
Plastic Limit	<b>12</b>
Plastic Index	<b>16</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

<u>Kim Gonzalez</u> Technician Name	<u>11/12/2015</u> Date	<u>Telford Wood</u> Technical Responsibility	<u>11/12/2015</u> Date
--	---------------------------	---	---------------------------

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### Sieve Analysis of Soils



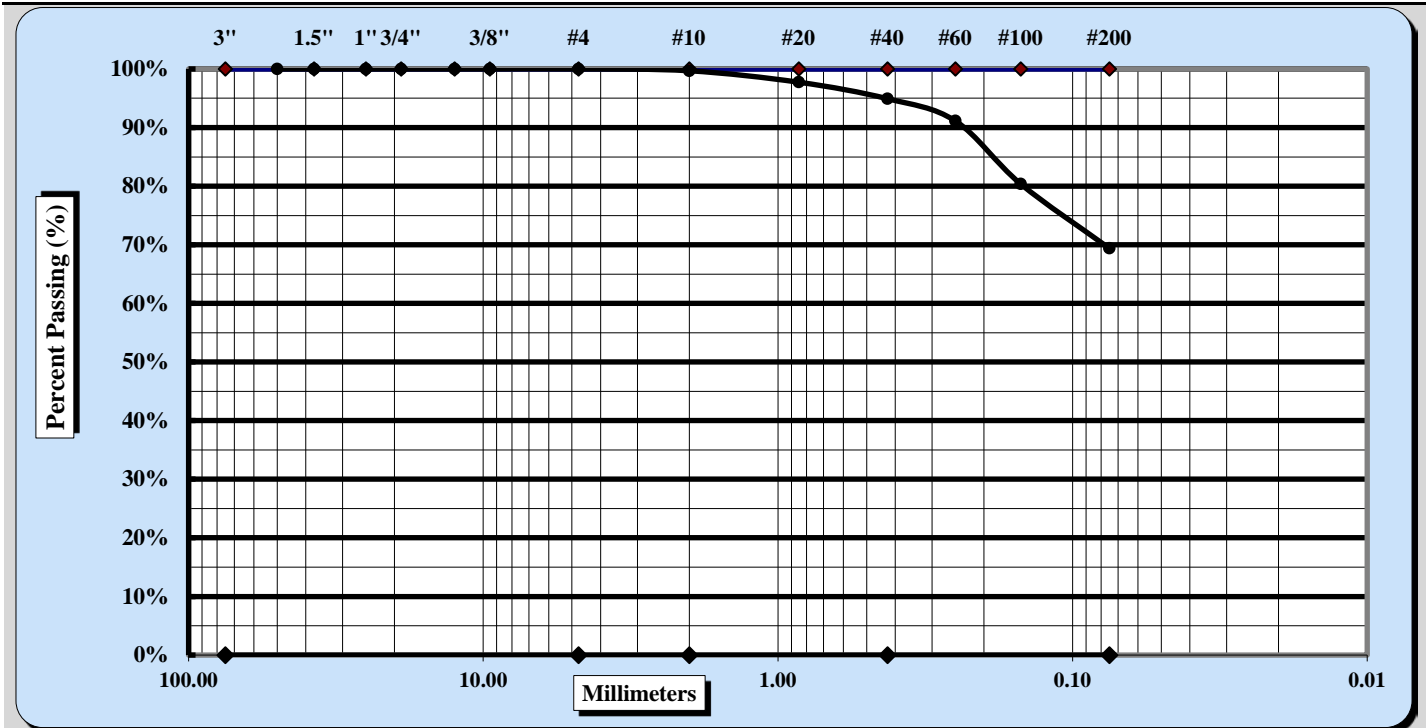
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-04</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #6	<b>Depth</b>	<b>10 - 11.5 FT</b>

**Sample Description:** Gray Grayish Green, Sandy CLAY (CL) (A-7-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.3%	Fine Sand	25.5%
Gravel	0.0%	Medium Sand	4.8%	Silt & Clay	69.4%
Liquid Limit	47	Plastic Limit	16	Plastic Index	31
Specific Gravity				Moisture Content	48.0%
Coarse Sand	0.3%	Medium Sand	4.8%	Fine Sand	25.5%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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Revision No. 0

### Liquid Limit, Plastic Limit, and Plastic Index

Revision Date: 11/20/07

Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

Quality Assurance

S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464

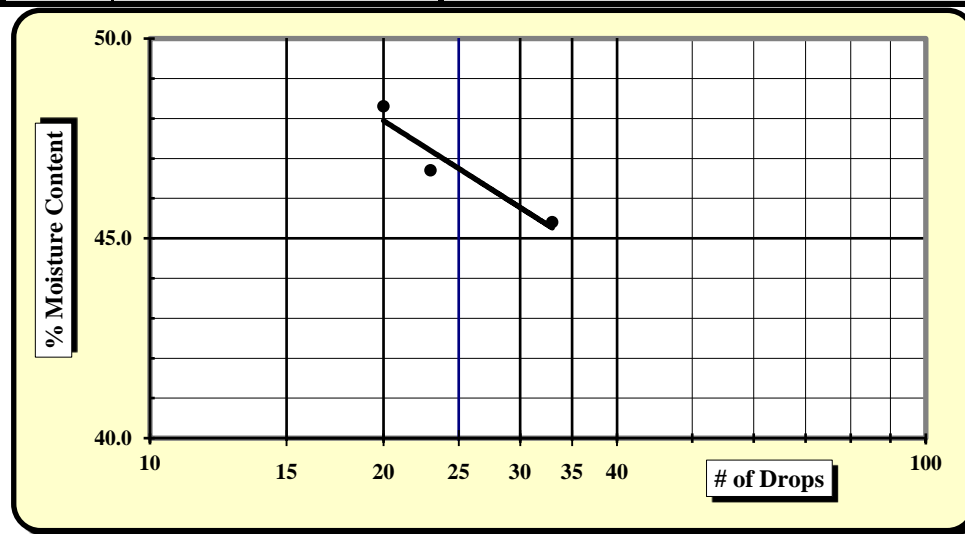
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<b>Project Name:</b>	I-26 Volvo Interchange	<b>Test Date(s)</b>	11-11-15
<b>Client Name:</b>	Thomas & Hutton		
<b>Client Address:</b>	1501 Main street: Columbia, SC 29201		

<b>Boring #:</b>	ID-04	<b>Sample #:</b>	6	<b>Sample Date:</b>	10/19 - 10/28/15
<b>Location:</b>	<b>Offset:</b>		<b>Depth 10 - 11.5 FT</b>		

**Sample Description:** Gray Grayish Green, Sandy CLAY (CL) (A-7-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.11	21.28	21.50				22.32	22.29	
B	Wet Soil Weight + A	48.31	45.52	46.66				28.85	28.17	
C	Dry Soil Weight + A	39.82	37.80	38.47				27.94	27.41	
D	Water Weight (B-C)	8.49	7.72	8.19				0.91	0.76	
E	Dry Soil Weight (C-A)	18.71	16.52	16.97				5.62	5.12	
F	% Moisture (D/E)*100	45.4%	46.7%	48.3%				16.2%	14.8%	
N	# OF DROPS	33	23	20						
LL	LL = F * FACTOR									
Ave.	Average							<b>15.5%</b>		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>47</b>
Plastic Limit	<b>16</b>
Plastic Index	<b>31</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

11/12/2015  
Date

Telford Wood  
Technical Responsibility

11/12/2015  
Date

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### Sieve Analysis of Soils



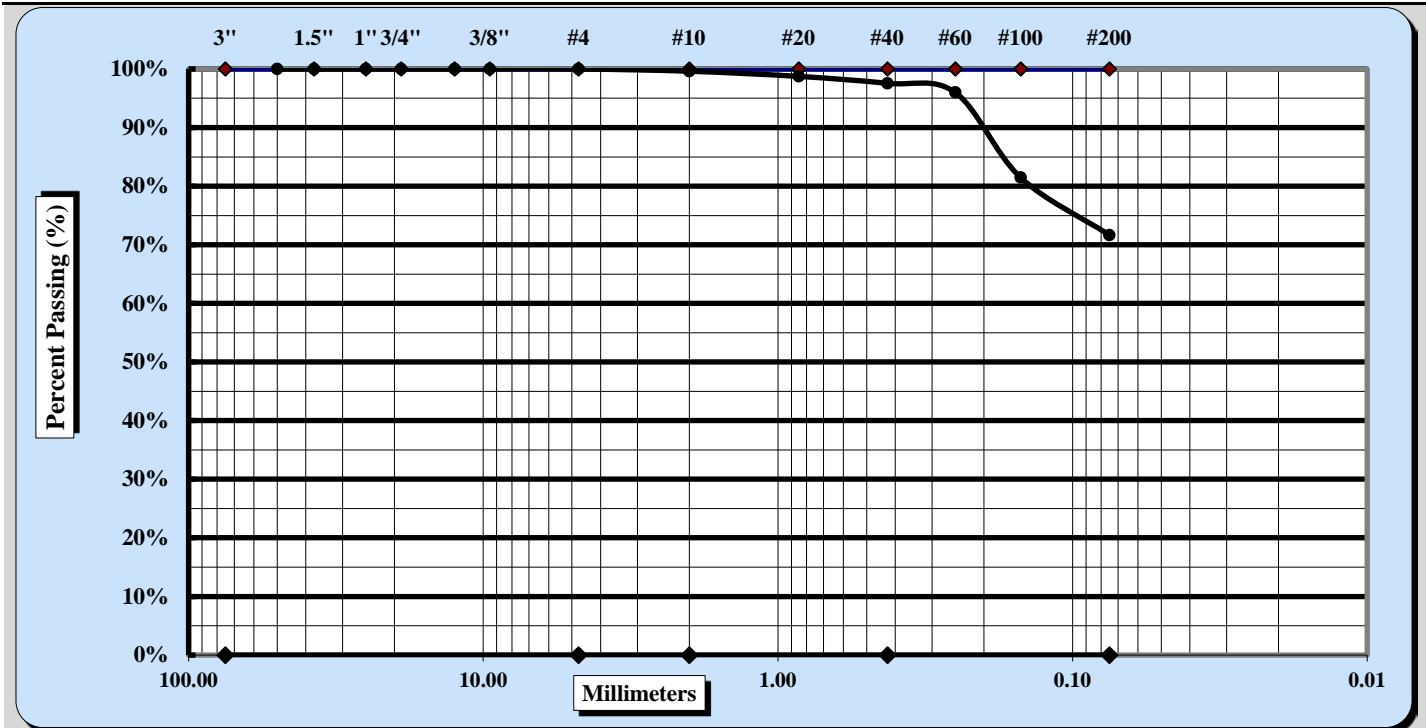
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-05</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #2	<b>Depth</b>	<b>2 - 4 FT</b>

**Sample Description:** Light Gray Brownish Yellow, Sandy CLAY (CL) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.4%	Fine Sand	25.9%
Gravel	0.0%	Medium Sand	2.1%	Silt & Clay	71.7%
Liquid Limit	22	Plastic Limit	13	Plastic Index	9
Specific Gravity				Moisture Content	16.1%
Coarse Sand	0.4%	Medium Sand	2.1%	Fine Sand	25.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/12/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

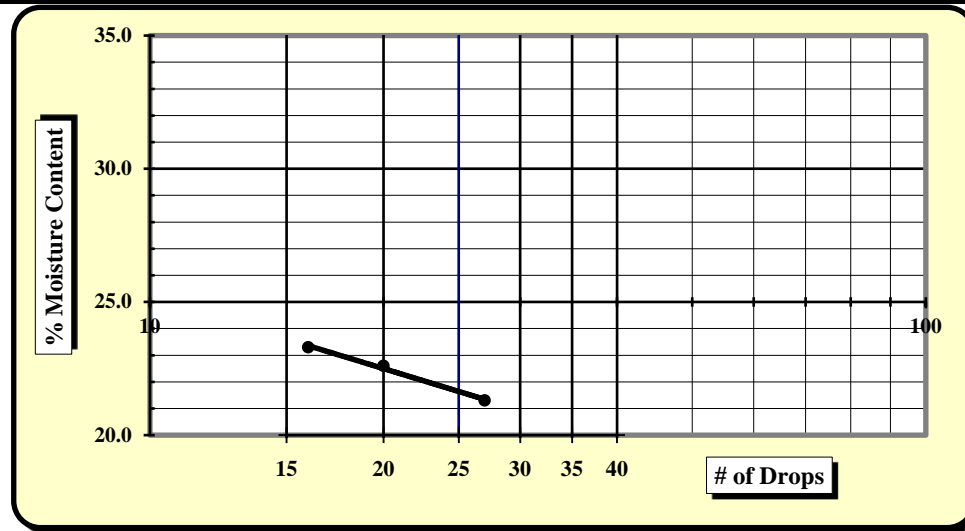
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-05</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10/19 - 10/28/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4 FT</b>		

**Sample Description:** Light Gray Brownish Yellow, Sandy CLAY (CL) (A-4)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	22.44	21.44	21.93				<b>21.20</b>	22.49	
B	Wet Soil Weight + A	49.78	54.31	47.15				29.17	32.02	
C	Dry Soil Weight + A	44.97	48.26	42.39				28.27	30.90	
D	Water Weight (B-C)	<b>4.81</b>	<b>6.05</b>	<b>4.76</b>				<b>0.90</b>	<b>1.12</b>	
E	Dry Soil Weight (C-A)	<b>22.53</b>	<b>26.82</b>	<b>20.46</b>				<b>7.07</b>	<b>8.41</b>	
F	% Moisture (D/E)*100	<b>21.3%</b>	<b>22.6%</b>	<b>23.3%</b>				<b>12.7%</b>	<b>13.3%</b>	
N	# OF DROPS	27	20	16						
LL	LL = F * FACTOR									
Ave.	Average									<b>13.0%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>22</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>9</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

11/12/2015  
Date

Telford Wood  
Technical Responsibility

11/12/2015  
Date

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### Sieve Analysis of Soils



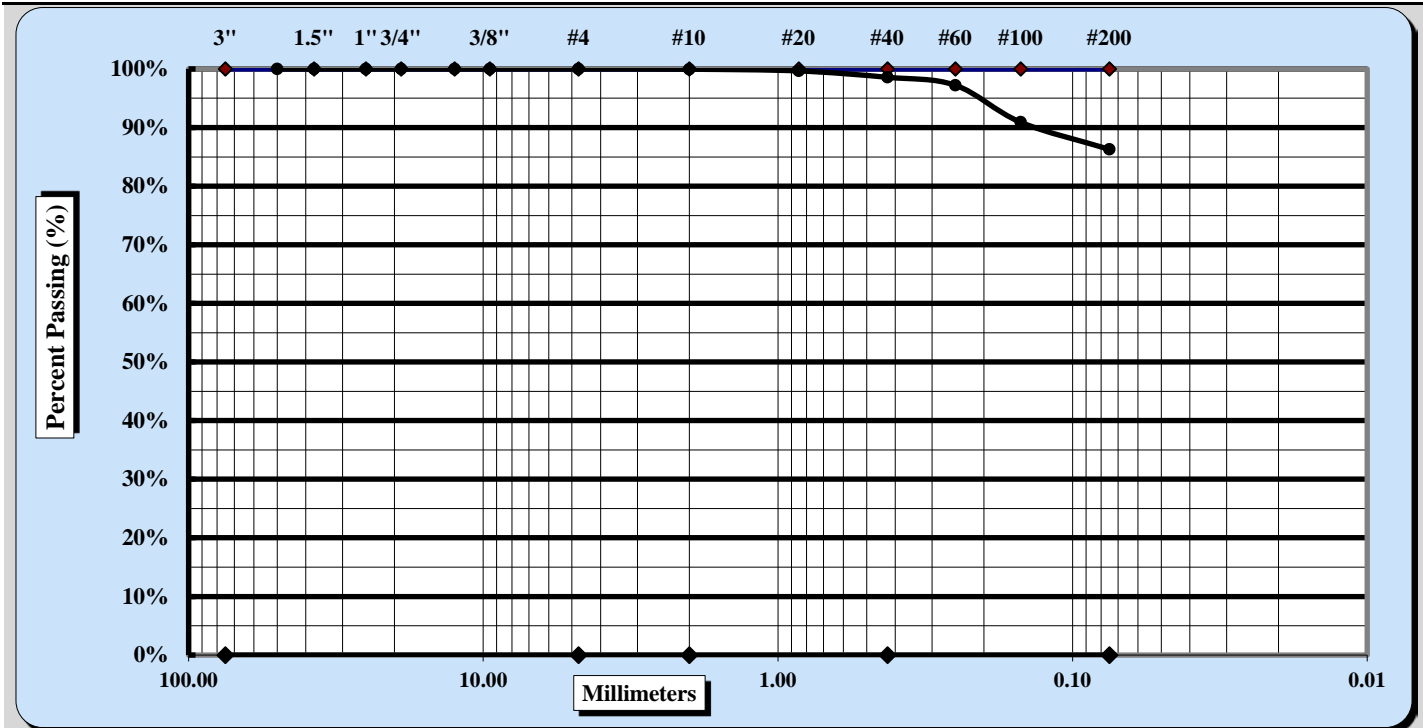
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-05</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #4	<b>Depth</b>	<b>6 - 8 FT</b>

**Sample Description:** Gray Brownish Yellow, CLAY (CH) (A-7-5)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	12.3%
Gravel	0.0%	Medium Sand	1.4%	Silt & Clay	86.3%
Liquid Limit	70	Plastic Limit	30	Plastic Index	40
Specific Gravity				Moisture Content	38.4%

Coarse Sand	0.0%	Medium Sand	1.4%	Fine Sand	12.3%
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Description of Sand & Gravel Particles:	Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>	
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

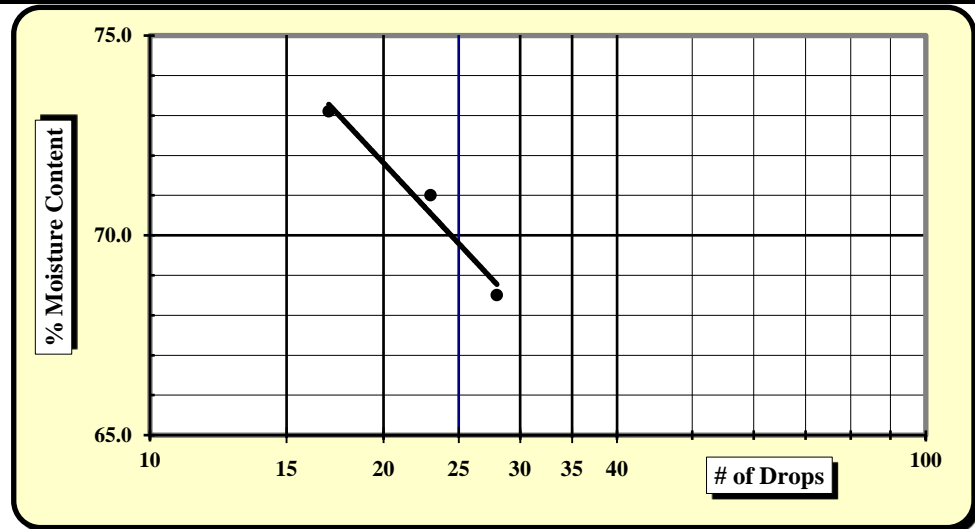
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-11-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-05</b>	<b>Sample #:</b>	<b>4</b>	<b>Sample Date:</b>	<b>10/19 - 10/28/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 6 - 8 FT</b>		

**Sample Description:** Grayish Brownish Yellow, CLAY (CH) (A-7-5)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.33	21.14	20.90				<b>21.08</b>	21.18	
B	Wet Soil Weight + A	41.97	42.75	44.44				27.40	27.74	
C	Dry Soil Weight + A	33.58	33.78	34.50				25.94	26.26	
D	Water Weight (B-C)	<b>8.39</b>	<b>8.97</b>	<b>9.94</b>				<b>1.46</b>	<b>1.48</b>	
E	Dry Soil Weight (C-A)	<b>12.25</b>	<b>12.64</b>	<b>13.60</b>				<b>4.86</b>	<b>5.08</b>	
F	% Moisture (D/E)*100	<b>68.5%</b>	<b>71.0%</b>	<b>73.1%</b>				<b>30.0%</b>	<b>29.1%</b>	
N	# OF DROPS	28	23	17						
LL	LL = F * FACTOR									
Ave.	Average									<b>29.6%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>70</b>
Plastic Limit	<b>30</b>
Plastic Index	<b>40</b>
Group Symbol	<b>CH</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

<u>Kim Gonzalez</u> Technician Name	<u>11/12/2015</u> Date	<u>Telford Wood</u> Technical Responsibility	<u>11/12/2015</u> Date
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### Sieve Analysis of Soils



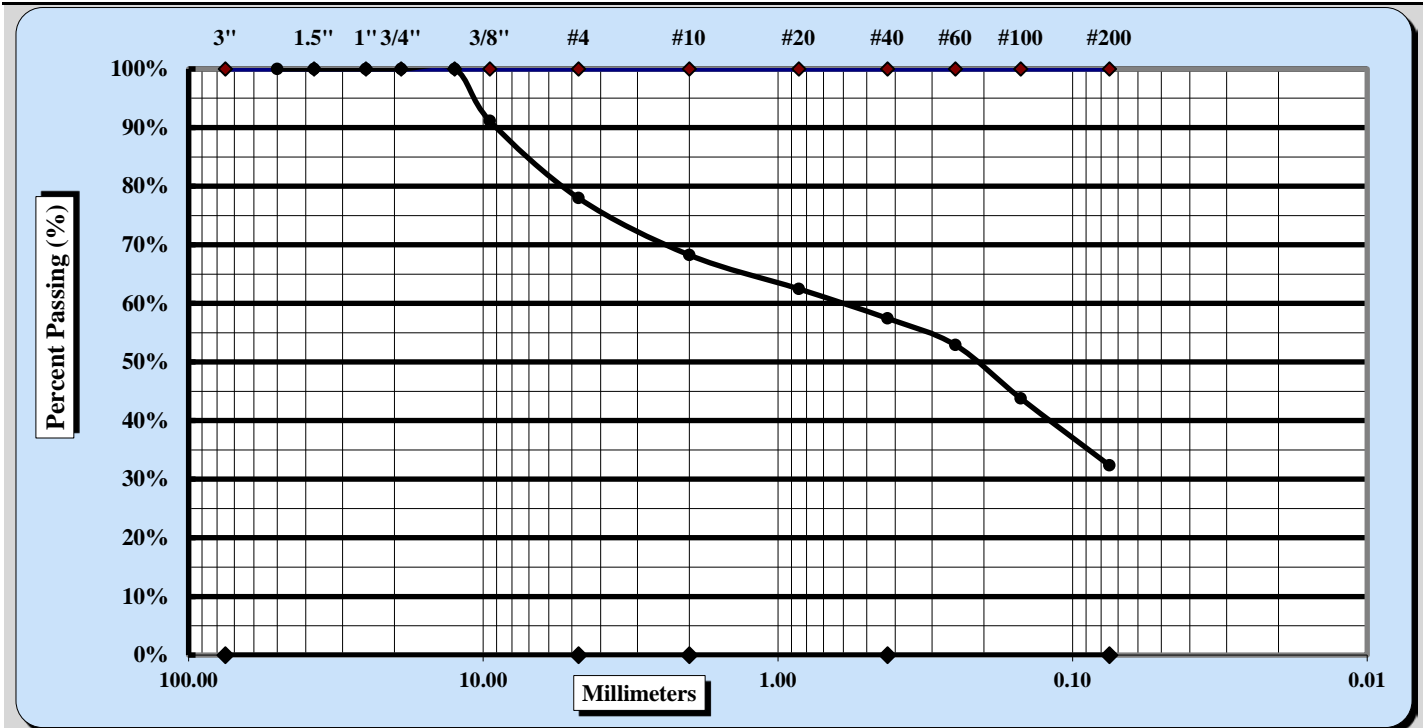
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-12-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-10-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-05</b>	<b>Type:</b>	<b>Sample Date:</b> 10/19/15 - 10/28/15
<b>Location:</b>	<b>Sample:</b> #7	<b>Depth</b>	<b>15 - 16.5 FT</b>

**Sample Description:** Light Gray, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	1/2"	Coarse Sand	9.7%	Fine Sand	25.1%
Gravel	22.0%	Medium Sand	10.8%	Silt & Clay	32.4%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	24.8%

Coarse Sand	9.7%	Medium Sand	10.8%	Fine Sand	25.1%
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Description of Sand & Gravel Particles:	Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>	
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/12/2015  
Date

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### Sieve Analysis of Soils



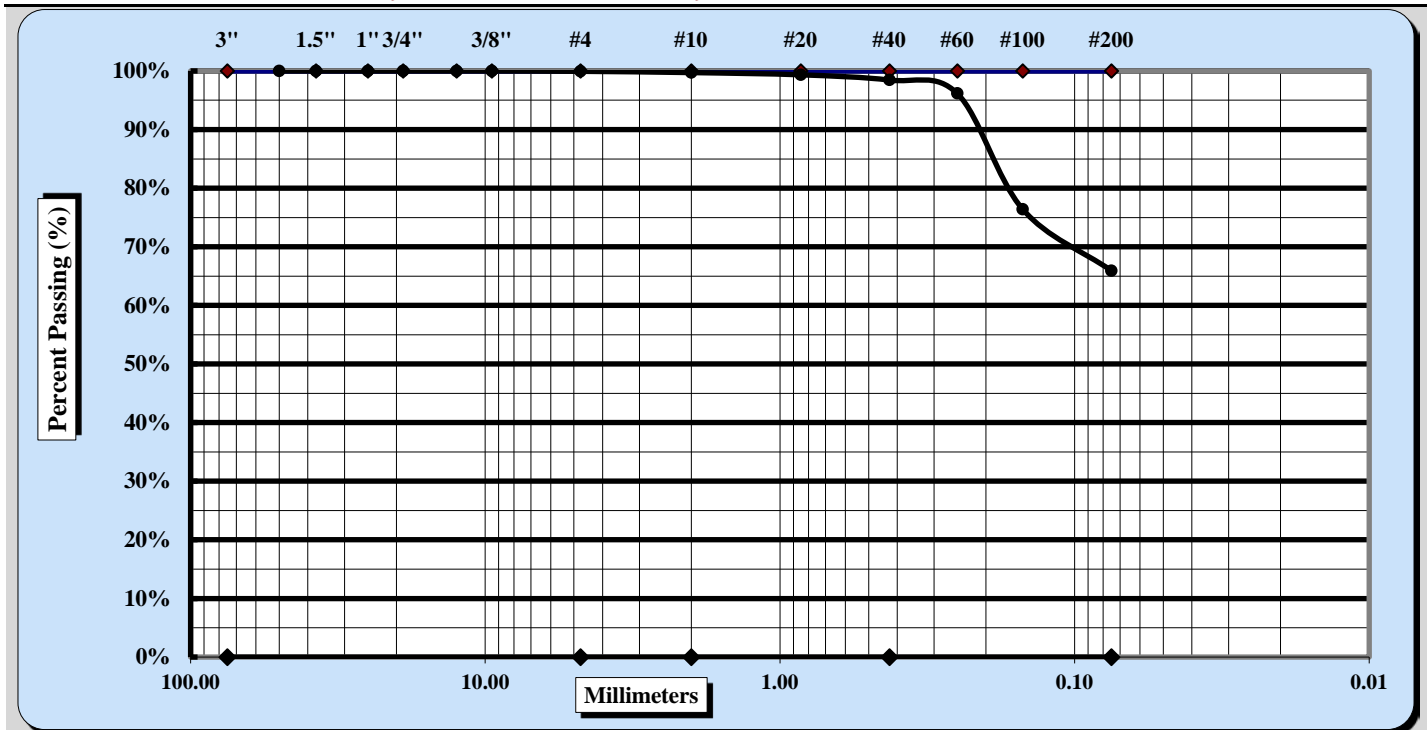
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-06</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#2</b>	<b>Depth</b>
			<b>2 - 4 FT</b>

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.2%	Fine Sand	32.5%
Gravel	0.1%	Medium Sand	1.3%	Silt & Clay	65.9%
Liquid Limit	33	Plastic Limit	17	Plastic Index	16
Specific Gravity		Moisture Content			21.4%
Coarse Sand	0.2%	Medium Sand	1.3%	Fine Sand	32.5%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/10/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

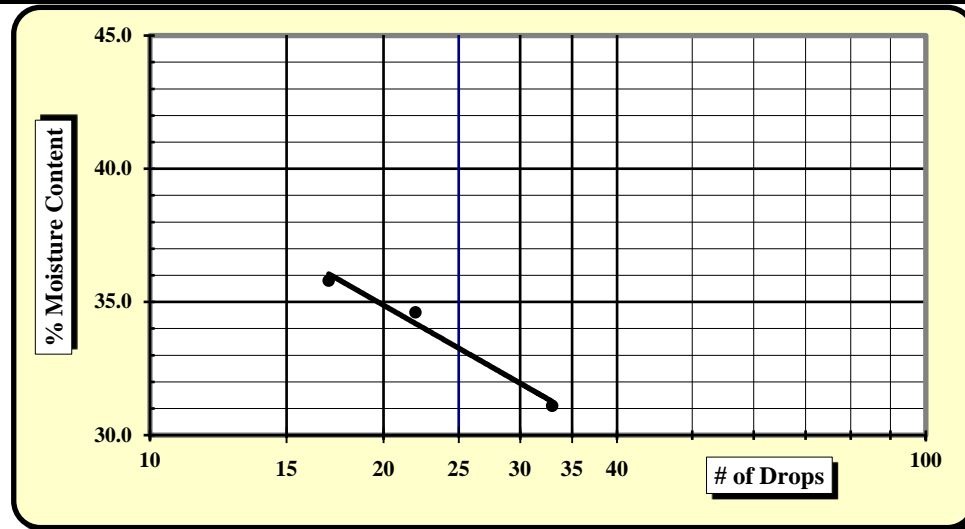
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-06</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2 - 4 FT</b>		

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.07	21.29	20.94				<b>20.90</b>	20.98	
B	Wet Soil Weight + A	46.27	43.36	45.83				28.40	27.49	
C	Dry Soil Weight + A	39.62	37.69	39.93				27.32	26.53	
D	Water Weight (B-C)	<b>6.65</b>	<b>5.67</b>	<b>5.90</b>				<b>1.08</b>	<b>0.96</b>	
E	Dry Soil Weight (C-A)	<b>18.55</b>	<b>16.40</b>	<b>18.99</b>				<b>6.42</b>	<b>5.55</b>	
F	% Moisture (D/E)*100	<b>35.8%</b>	<b>34.6%</b>	<b>31.1%</b>				<b>16.8%</b>	<b>17.3%</b>	
N	# OF DROPS	17	22	33						
LL	LL = F * FACTOR									
Ave.	Average									<b>17.1%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>33</b>
Plastic Limit	<b>17</b>
Plastic Index	<b>16</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



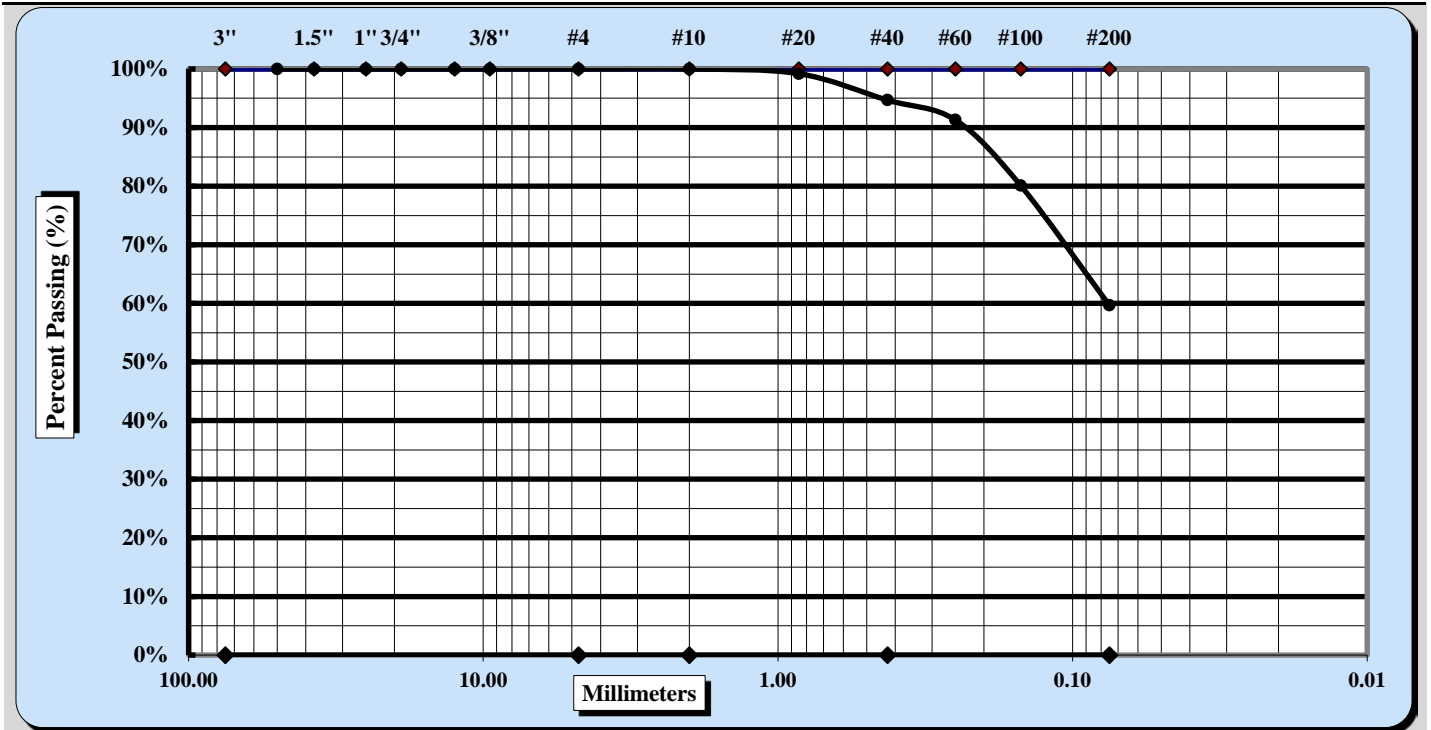
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-06</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#5</b>	<b>Depth</b>
			<b>8 - 10 FT</b>

**Sample Description:** Light Brownish Gray, Sandy CLAY (CH) (A-7-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	35.0%
Gravel	0.0%	Medium Sand	5.3%	Silt & Clay	59.7%
Liquid Limit	60	Plastic Limit	19	Plastic Index	41
Specific Gravity				Moisture Content	25.3%
Coarse Sand	0.0%	Medium Sand	5.3%	Fine Sand	35.0%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464

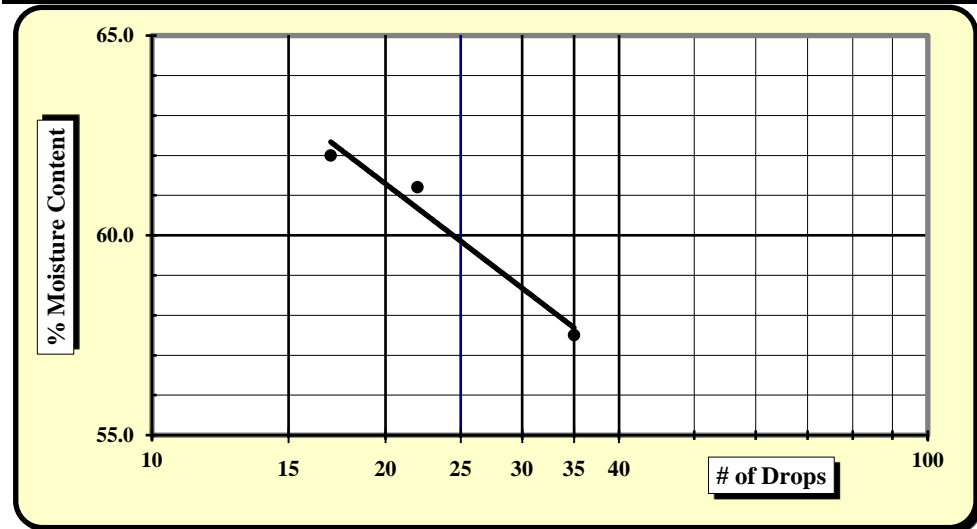
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<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>ID-06</b>	<b>Sample #:</b>	<b>5</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 8 - 10 FT</b>		

**Sample Description:** Light Brownish Gray, Sandy CLAY (CH) (A-7-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.95	22.50	14.97				21.29	22.89	
B	Wet Soil Weight + A	45.39	44.15	37.33				28.53	30.31	
C	Dry Soil Weight + A	36.83	35.93	28.77				27.39	29.15	
D	Water Weight (B-C)	8.56	8.22	8.56				1.14	1.16	
E	Dry Soil Weight (C-A)	14.88	13.43	13.80				6.10	6.26	
F	% Moisture (D/E)*100	57.5%	61.2%	62.0%				18.7%	18.5%	
N	# OF DROPS	35	22	17						
LL	LL = F * FACTOR									
Ave.	Average									18.6%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>60</b>
Plastic Limit	<b>19</b>
Plastic Index	<b>41</b>
Group Symbol	<b>CH</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



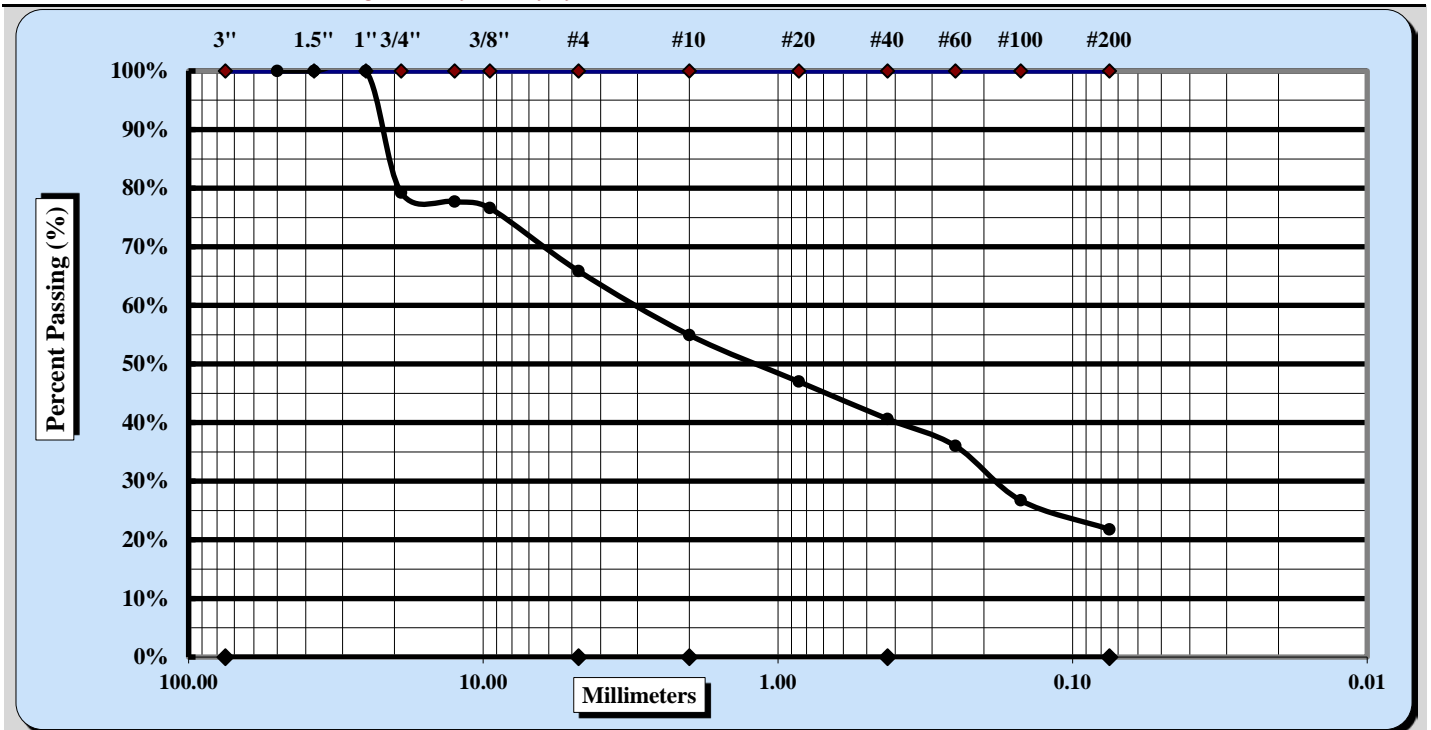
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>ID-06</b>	<b>Type:</b>	<b>Sample Date:</b>
<b>Location:</b>	<b>Sample:</b>	<b>#7</b>	<b>Depth</b>
			<b>15 - 16.5 FT</b>

**Sample Description:** Light Gray, Clayey Fine SAND (SC) (A-1-b)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	1"	Coarse Sand	10.9%	Fine Sand	18.8%
Gravel	34.1%	Medium Sand	14.3%	Silt & Clay	21.8%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	23.4%
Coarse Sand	10.9%	Medium Sand	14.3%	Fine Sand	18.8%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



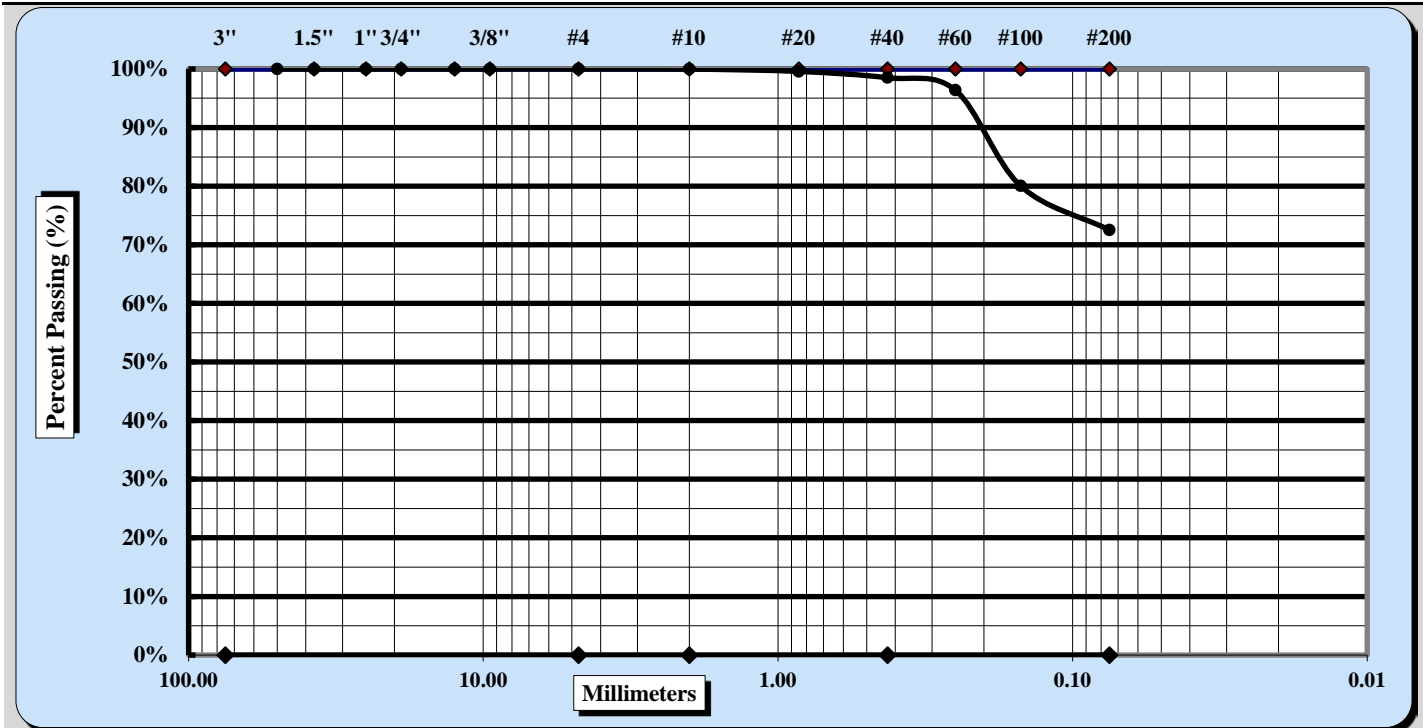
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-01</b>	<b>Type:</b>	<b>Bulk</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Sample Date:</b>
			<b>11-4-15</b>
		<b>Depth</b>	<b>0-2 FT</b>

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	26.0%
Gravel	0.0%	Medium Sand	1.5%	Silt & Clay	72.5%
Liquid Limit	37	Plastic Limit	16	Plastic Index	21
Specific Gravity				Moisture Content	29.6%
Coarse Sand	0.0%	Medium Sand	1.5%	Fine Sand	26.0%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

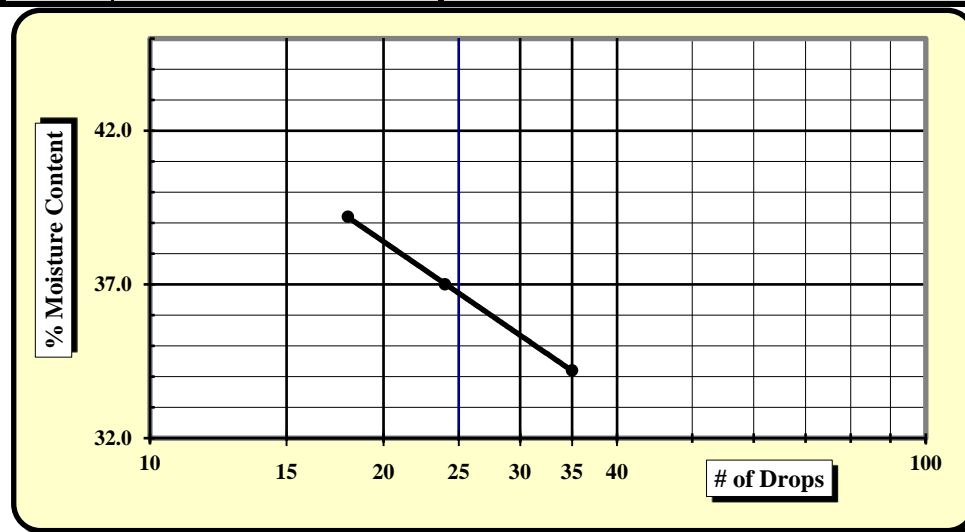
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-01</b>	<b>Sample #:</b>	<b>Bulk</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset: Blk-1</b>		<b>Depth 0-2 FT</b>		

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	20.95	20.93	21.25				<b>21.44</b>	14.66	
B	Wet Soil Weight + A	46.68	45.10	48.32				31.95	23.26	
C	Dry Soil Weight + A	40.12	38.57	40.70				30.53	22.10	
D	Water Weight (B-C)	<b>6.56</b>	<b>6.53</b>	<b>7.62</b>				<b>1.42</b>	<b>1.16</b>	
E	Dry Soil Weight (C-A)	<b>19.17</b>	<b>17.64</b>	<b>19.45</b>				<b>9.09</b>	<b>7.44</b>	
F	% Moisture (D/E)*100	<b>34.2%</b>	<b>37.0%</b>	<b>39.2%</b>				<b>15.6%</b>	<b>15.6%</b>	
N	# OF DROPS	35	24	18						
LL	LL = F * FACTOR									
Ave.	Average								<b>15.6%</b>	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>37</b>
Plastic Limit	<b>16</b>
Plastic Index	<b>21</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

Date

Telford Wood  
Technical Responsibility

Date

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### Sieve Analysis of Soils



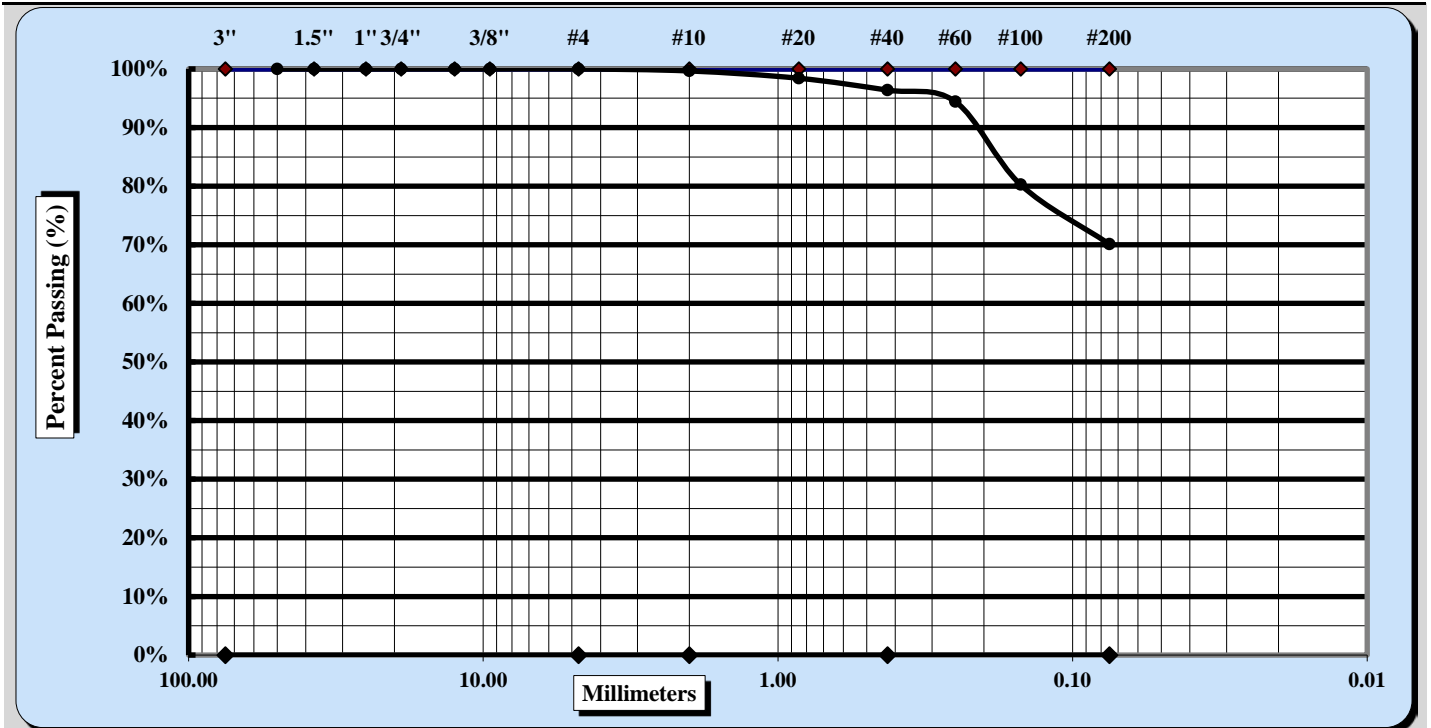
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-02</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>11-4-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2 FT</b>

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.3%	Fine Sand	26.3%
Gravel	0.0%	Medium Sand	3.3%	Silt & Clay	70.1%
Liquid Limit	37	Plastic Limit	14	Plastic Index	23
Specific Gravity				Moisture Content	18.7%
Coarse Sand	0.3%	Medium Sand	3.3%	Fine Sand	26.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-02</b>	<b>Sample #:</b>	<b>Bulk</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset: Blk-1</b>		<b>Depth 0-2 FT</b>		

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	22.46	21.19	21.07				<b>21.43</b>	14.22	
B	Wet Soil Weight + A	52.56	45.31	45.10				29.60	23.08	
C	Dry Soil Weight + A	44.99	38.82	38.07				28.52	22.03	
D	Water Weight (B-C)	7.57	6.49	7.03				1.08	1.05	
E	Dry Soil Weight (C-A)	22.53	17.63	17.00				7.09	7.81	
F	% Moisture (D/E)*100	33.6%	36.8%	41.4%				15.2%	13.4%	
N	# OF DROPS	35	24	16						
LL	LL = F * FACTOR									
Ave.	Average									<b>14.3%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>37</b>
Plastic Limit	<b>14</b>
Plastic Index	<b>23</b>
Group Symbol	<b>CL</b>

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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### Sieve Analysis of Soils



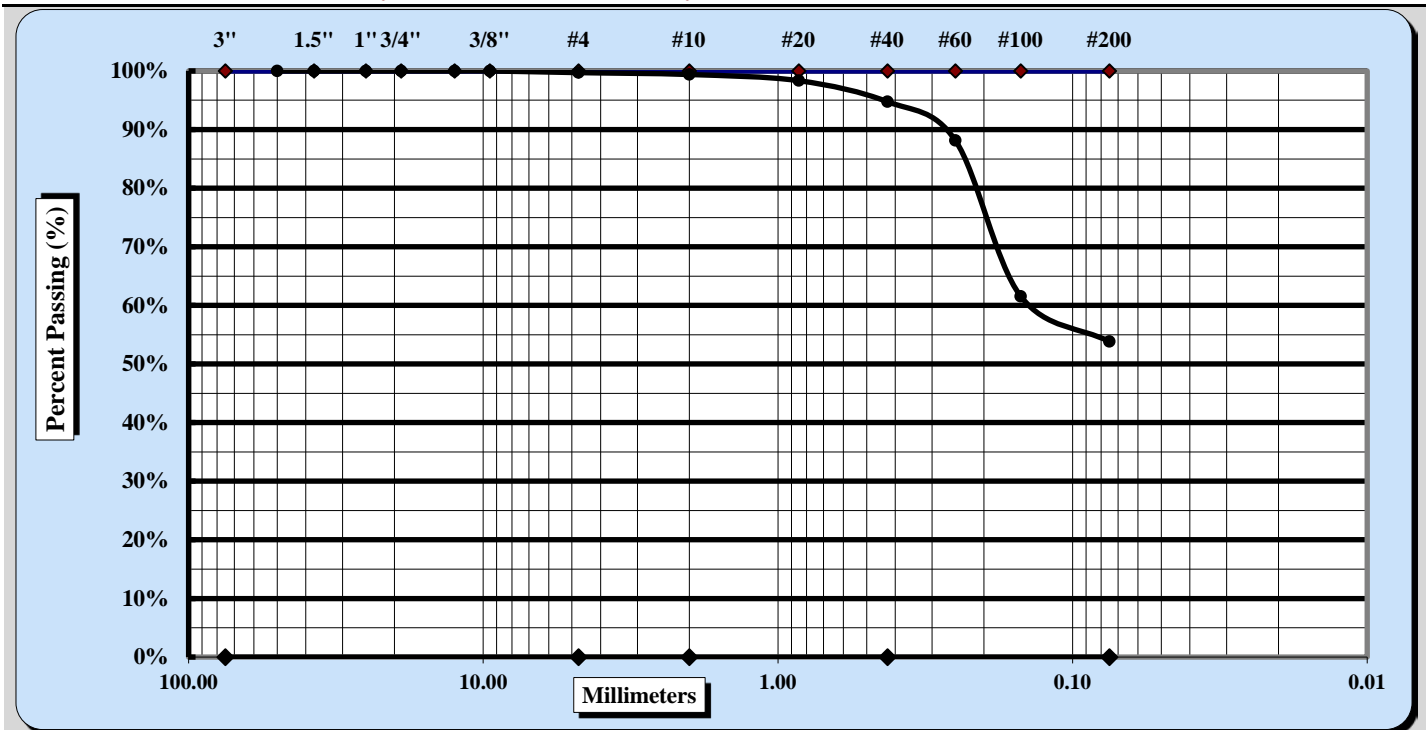
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-03</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>10-28-5</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2 FT</b>

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	0.3%	Fine Sand	40.9%
Gravel	0.3%	Medium Sand	4.6%	Silt & Clay	53.8%
Liquid Limit	31	Plastic Limit	13	Plastic Index	18
Specific Gravity				Moisture Content	29.3%
Coarse Sand	0.3%	Medium Sand	4.6%	Fine Sand	40.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/9/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

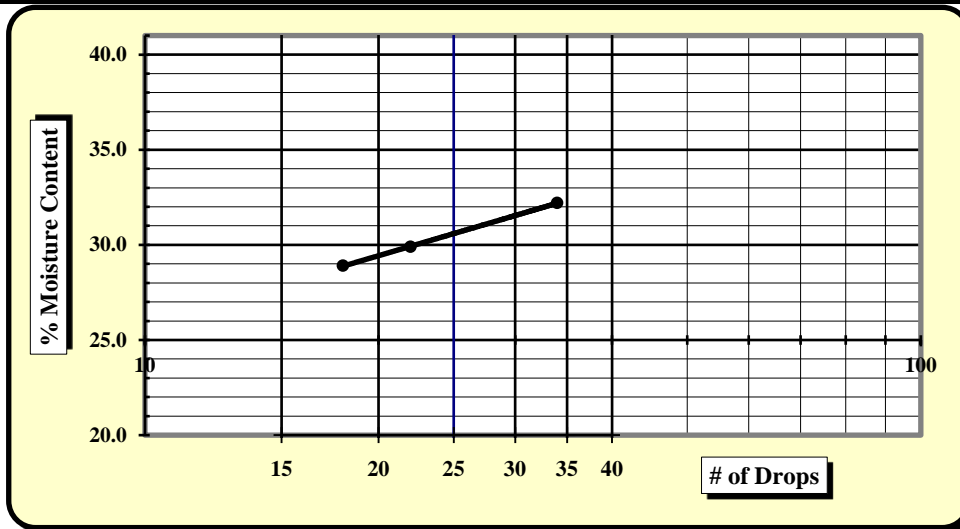
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-03</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0-2 FT</b>		

**Sample Description:** Gray Yellowish Brown, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.13	20.52	21.20				<b>22.31</b>	20.58	
B	Wet Soil Weight + A	44.76	40.16	42.82				27.77	26.58	
C	Dry Soil Weight + A	39.00	35.64	37.97				27.14	25.90	
D	Water Weight (B-C)	<b>5.76</b>	<b>4.52</b>	<b>4.85</b>				<b>0.63</b>	<b>0.68</b>	
E	Dry Soil Weight (C-A)	<b>17.87</b>	<b>15.12</b>	<b>16.77</b>				<b>4.83</b>	<b>5.32</b>	
F	% Moisture (D/E)*100	<b>32.2%</b>	<b>29.9%</b>	<b>28.9%</b>				<b>13.0%</b>	<b>12.8%</b>	
N	# OF DROPS	34	22	18						
LL	LL = F * FACTOR									
Ave.	Average									<b>12.9%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>31</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>18</b>
Group Symbol	<b>CL</b>

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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# Moisture - Density Report

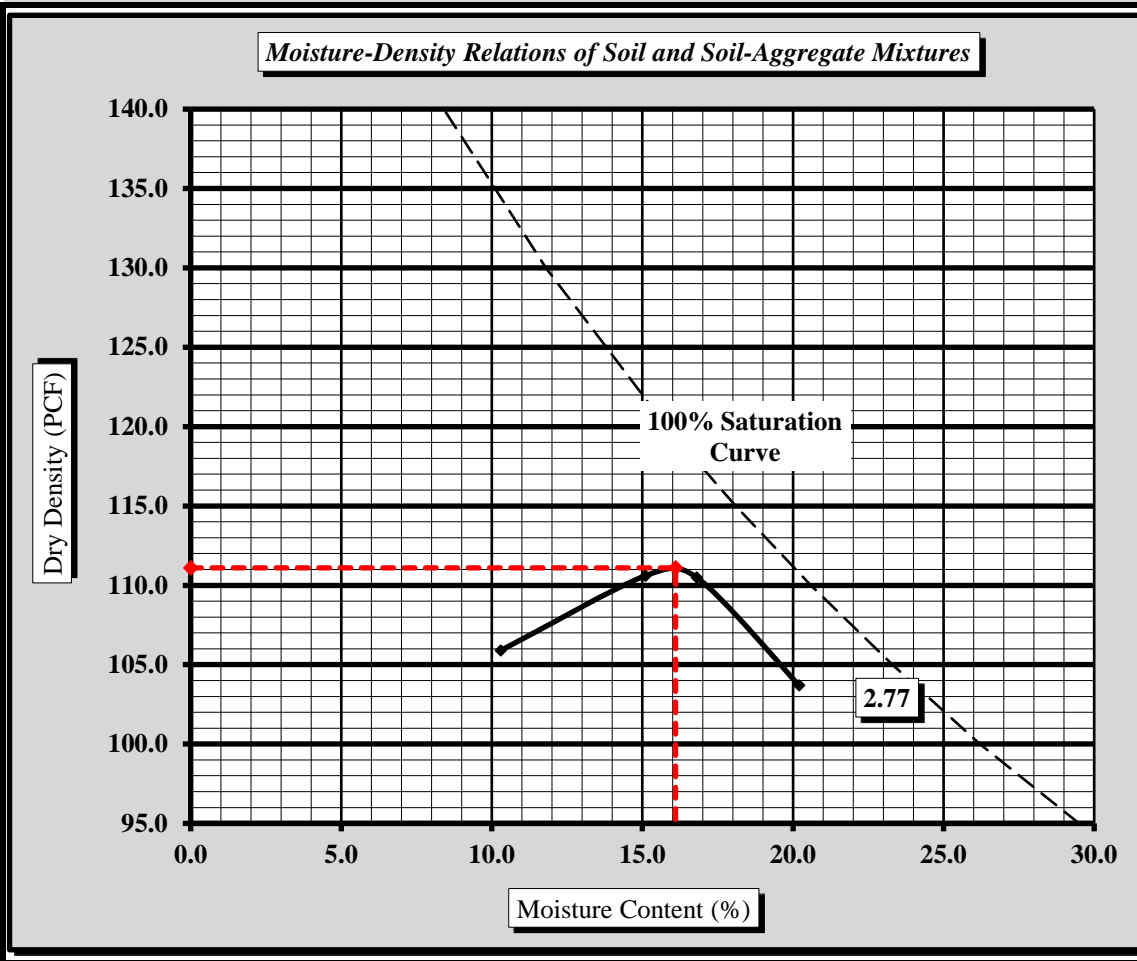


Quality Assurance

S&ME, Inc. Charleston Branch, 620 Wando Park Blvd. Mt. Pleasant, SC 29464

S&ME Project #:	<b>1413-15-114</b>	Report Date:	11-5-15
Project Name:	I-26 Volvo Interchange	Test Date(s):	11-5-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Boring #:	IS-03	Sample #:	Blk-1
		Sample Date:	10/28/2015
Location:		Offset:	Depth:
			0-2 FT
Sample Description:	Gray Yellowish Brown, Sandy CLAY (CL) (A-6)		

**Maximum Dry Density 111.1 PCF. Optimum Moisture Content 16.1%**  
**ASTM D 698 -- Method A**



Soil Properties	
Natural Moisture Content	<b>29.3%</b>
Specific Gravity of Soil	
Liquid Limit	<b>31</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>18</b>
% Passing	
3/4"	100.0%
#4	99.7%
#10	99.4%
#20	98.3%
#40	94.8%
#60	88.2%
#100	61.6%
#200	53.8%
Oversize Fraction	
Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction  Corrected for Oversize Fraction (ASTM D 4718)   
 Sieve Size used to separate the Oversize Fraction: #4 Sieve  3/8 inch Sieve  3/4 inch Sieve   
 Mechanical Rammer  Manual Rammer  Moist Preparation  Dry Preparation

**References / Comments / Deviations:**  
 ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass  
 ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Telford Wood      Telford Wood      Location Coordinator      11/5/2015  
 Technical Responsibility      Signature      Position      Date  
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**CBR (California Bearing Ratio) of Laboratory  
Compacted Soil**



*enter reference here or delete & leave blank*

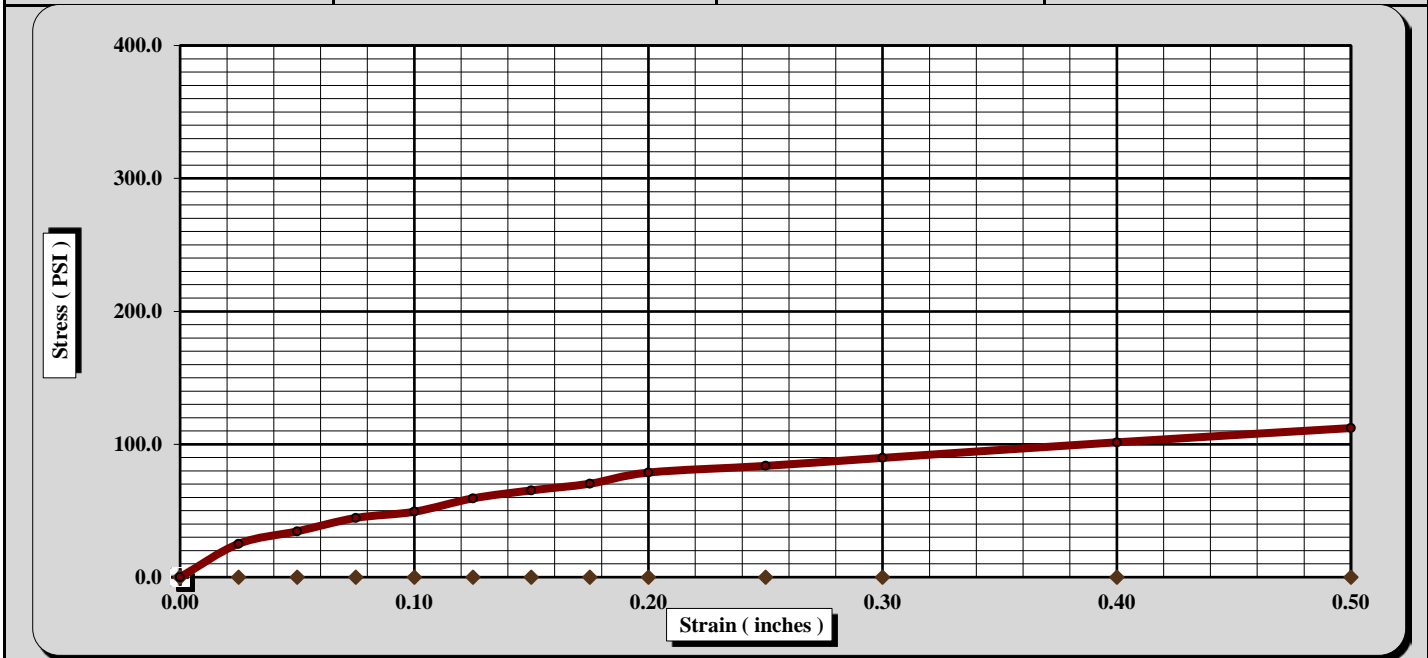
*Quality Assurance*

**S&ME, Inc. Branch, Branch Address**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-18-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-13-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 main Street: columbia, SC 29201</b>		
<b>Boring #:</b>	<b>IS-03</b>	<b>Sample #:</b>	<b>Blk-1</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth</b>	<b>0-2 FT</b>
<b>Sample Description:</b> <b>Gray Yellowish Brown, Sandy CLAY (CL) (A-6)</b>			

<b>ASTM D 698 Method A</b>	<b>Maximum Dry Density:</b>	<b>111.1 PCF</b>	<b>Optimum Moisture Content:</b>	<b>16.1%</b>
	<i>Compaction Test performed on grading complying with CBR spec.</i>		<b>% Retained on the 3/4" sieve:</b>	<b>0.0%</b>

Uncorrected CBR Values		Corrected CBR Values	
<b>CBR at 0.1 in.</b>	<b>4.9</b>	<b>CBR at 0.1 in.</b>	<b>0.0</b>
<b>CBR at 0.2 in.</b>	<b>5.2</b>	<b>CBR at 0.2 in.</b>	<b>0.0</b>



CBR Sample Preparation:

*Grading was in accordance with the above method and compacted using the 6" diameter CBR mold.*

Before Soaking		After Soaking	
Compactive Effort (Blows per Layer)	20	Final Dry Density (PCF)	103.2
Initial Dry Density (PCF)	105.0	Average Final Moisture Content	17.7%
Moisture Content of the Compacted Specimen	16.1%	Moisture Content (top 1" after soaking)	17.1%
Percent Compaction	94.5%	Percent Swell	0.3%
Soak Time:	96hr	Surcharge Weight	10.0
Liquid Limit	31	Surcharge Wt. per sq. Ft.	51.1
		Plastic Index	18
		Apparent Relative Density	

Notes/Deviations/References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/18/2015  
Date

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### Sieve Analysis of Soils



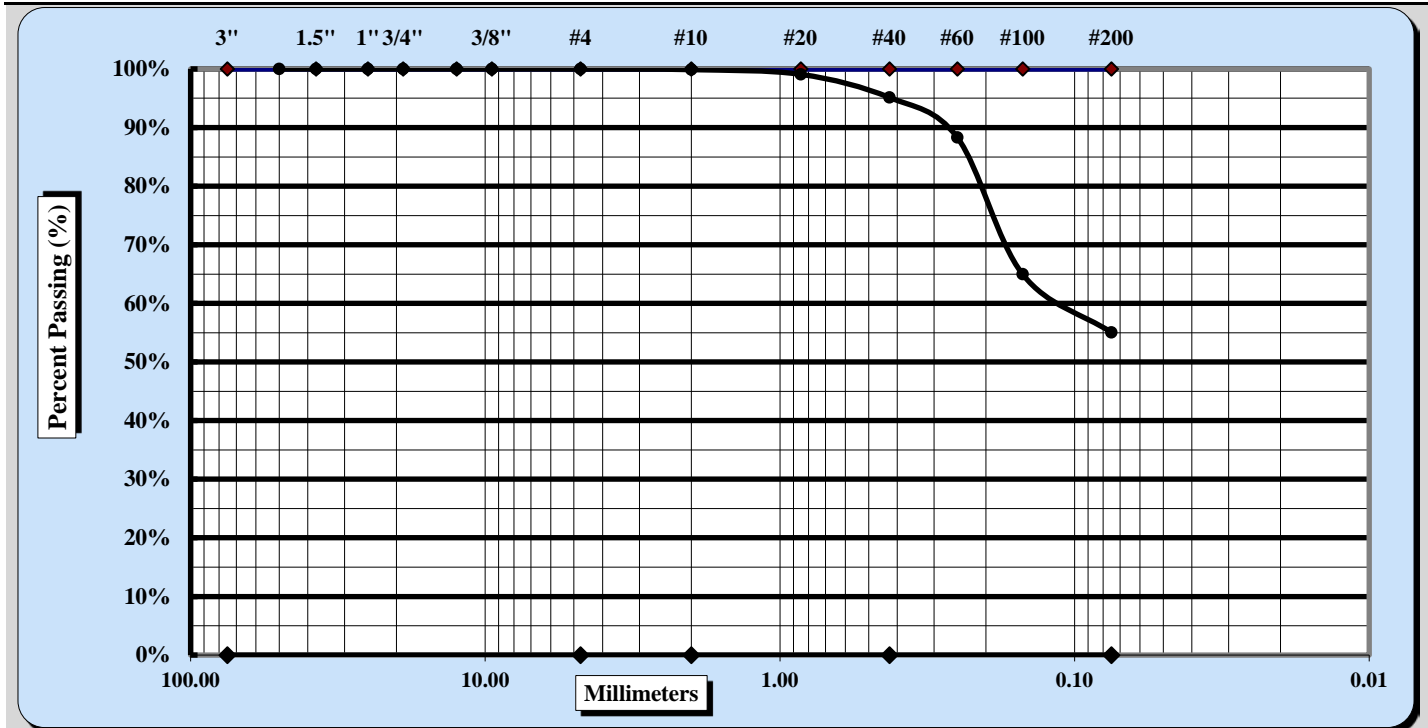
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-04</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>10-28-5</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b> 0-2 FT

**Sample Description:** Dark gray to gray, reddish yellow, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.1%	Fine Sand	40.1%
Gravel	0.0%	Medium Sand	4.7%	Silt & Clay	55.1%
Liquid Limit	28	Plastic Limit	13	Plastic Index	15
Specific Gravity				Moisture Content	15.1%
Coarse Sand	0.1%	Medium Sand	4.7%	Fine Sand	40.1%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/9/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

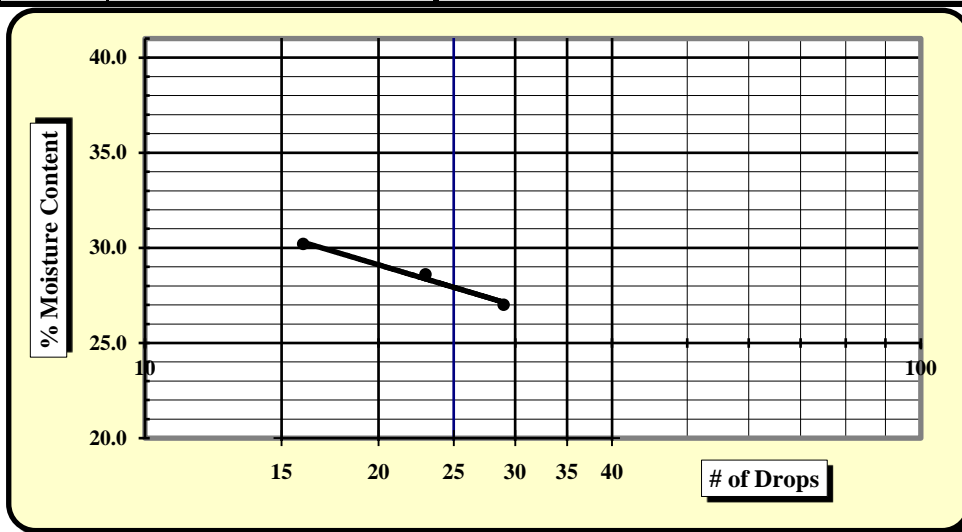
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-04</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0-2 FT</b>		

**Sample Description:** Dark gray to gray, reddish yellow, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	20.66	21.35	21.31				22.62	14.75	
B	Wet Soil Weight + A	40.75	47.72	39.65				29.89	22.33	
C	Dry Soil Weight + A	36.48	41.85	35.40				29.05	21.48	
D	Water Weight (B-C)	4.27	5.87	4.25				0.84	0.85	
E	Dry Soil Weight (C-A)	15.82	20.50	14.09				6.43	6.73	
F	% Moisture (D/E)*100	27.0%	28.6%	30.2%				13.1%	12.6%	
N	# OF DROPS	29	23	16						
LL	LL = F * FACTOR									
Ave.	Average									12.9%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>28</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>15</b>
Group Symbol	<b>CL</b>

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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# Moisture - Density Report

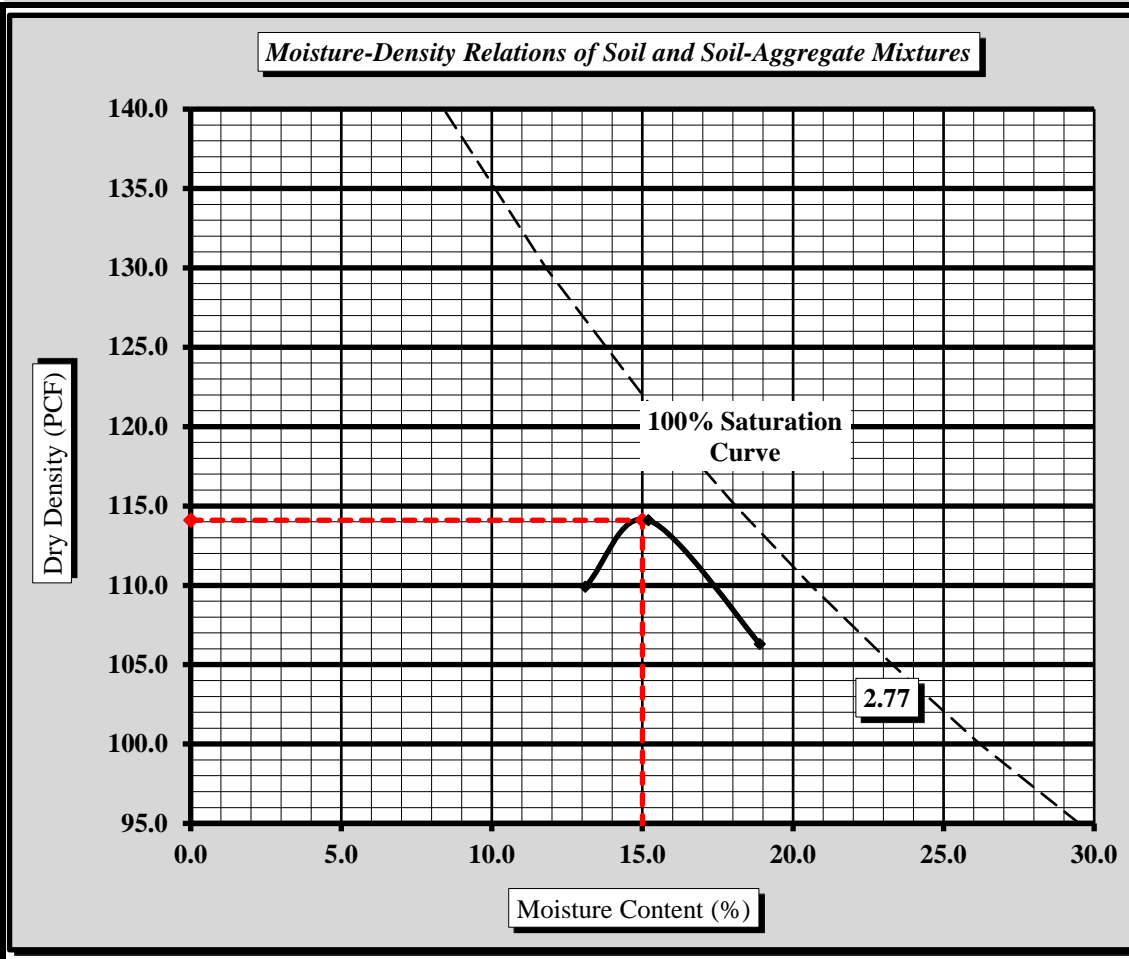


Quality Assurance

S&ME, Inc. Charleston Branch, 620 Wando Park Blvd. Mt. Pleasant, SC 29464

S&ME Project #:	<b>1413-15-114</b>	Report Date:	11-4-15
Project Name:	I-26 Volvo Interchange	Test Date(s):	11-4-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Boring #:	IS-04	Sample #:	Blk-1
		Sample Date:	10/28/2015
Location:		Offset:	
		Depth:	0-2 FT
Sample Description:	Dark gray to gray, reddish yellow, Sandy CLAY (CL) (A-6)		

**Maximum Dry Density 114.1 PCF. Optimum Moisture Content 15.0%**  
**ASTM D 698 -- Method A**



Soil Properties	
Natural Moisture Content	<b>15.1%</b>
Specific Gravity of Soil	
Liquid Limit	<b>28</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>15</b>
% Passing	
3/4"	100.0%
#4	100.0%
#10	99.9%
#20	99.1%
#40	95.1%
#60	88.3%
#100	65.0%
#200	55.1%
Oversize Fraction	
Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction  Corrected for Oversize Fraction (ASTM D 4718)   
 Sieve Size used to separate the Oversize Fraction: #4 Sieve  3/8 inch Sieve  3/4 inch Sieve   
 Mechanical Rammer  Manual Rammer  Moist Preparation  Dry Preparation

**References / Comments / Deviations:**

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass  
 ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

**Telford Wood**  
 Technical Responsibility

*Telford Wood*  
 Signature

**Location Coordinator**  
 Position

**11/4/2015**  
 Date

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**CBR (California Bearing Ratio) of Laboratory  
Compacted Soil**



*Quality Assurance*

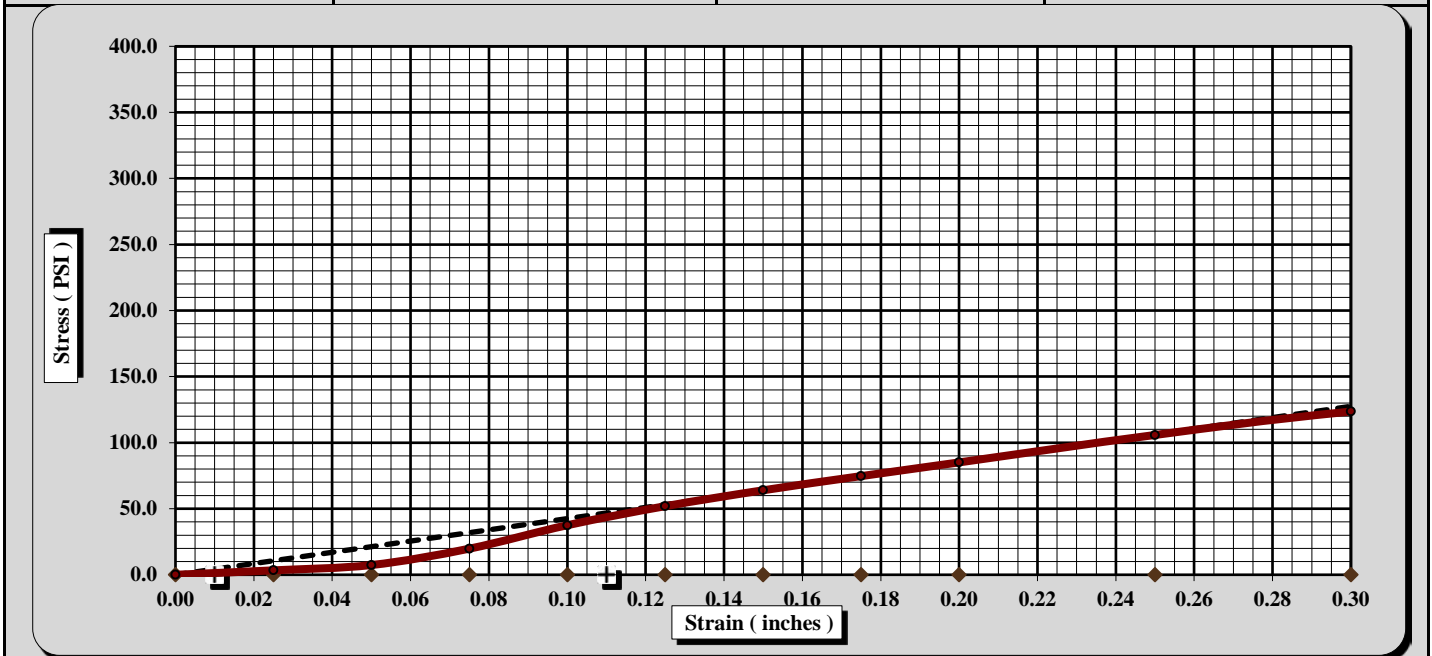
S&ME, Inc. 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-064</b>	<b>Report Date:</b>	<b>11-18-15</b>
<b>Project Name:</b>	<b>Project Soter</b>	<b>Test Date(s)</b>	<b>11-13-15</b>
<b>Client Name:</b>	<b>Berkeley County</b>		
<b>Client Address:</b>	<b>P.O. Box 6122: Moncks Corner, SC 29461</b>		
<b>Sample Id:</b>	<b>IS-04</b>	<b>Sample #:</b>	<b>Blk-1</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth:</b>	<b>0 - 2 FT</b>

**Sample Description:** Dark gray to gray, reddish yellow, Sandy CLAY (CL) (A-6)

<b>ASTM D 698 Method A</b>	<b>Maximum Dry Density:</b>	<b>114.1 PCF</b>	<b>Optimum Moisture Content:</b>	<b>15.0%</b>
	<b>Line 19: Use an alternate discription here if applicable</b>		<b>% Retained on the 3/4" sieve:</b>	<b>0.0%</b>

Uncorrected CBR Values		Corrected CBR Values	
<b>CBR at 0.1 in.</b>	<b>3.8</b>	<b>CBR at 0.1 in.</b>	<b>0.0</b>
<b>CBR at 0.2 in.</b>	<b>5.7</b>	<b>CBR at 0.2 in.</b>	<b>0.0</b>



CBR Sample Preparation:

*Grading was in accordance with the above method and compacted using the 6" diameter CBR mold.*

Before Soaking		After Soaking	
Compactive Effort (Blows per Layer)	0	Final Dry Density (PCF)	107.5
Initial Dry Density (PCF)	108.3	Average Final Moisture Content	17.5%
Moisture Content of the Compacted Specimen	15.6%	Moisture Content (top 1" after soaking)	14.6%
Percent Compaction	94.9%	Percent Swell	0.2%
Soak Time:	96 hr	Surcharge Weight	10.0
Liquid Limit	28	Surcharge Wt. per sq. Ft.	51.3
		Plastic Index	15
		Apparent Relative Density	

Notes/Deviations/References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/18/2015  
Date

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### Sieve Analysis of Soils



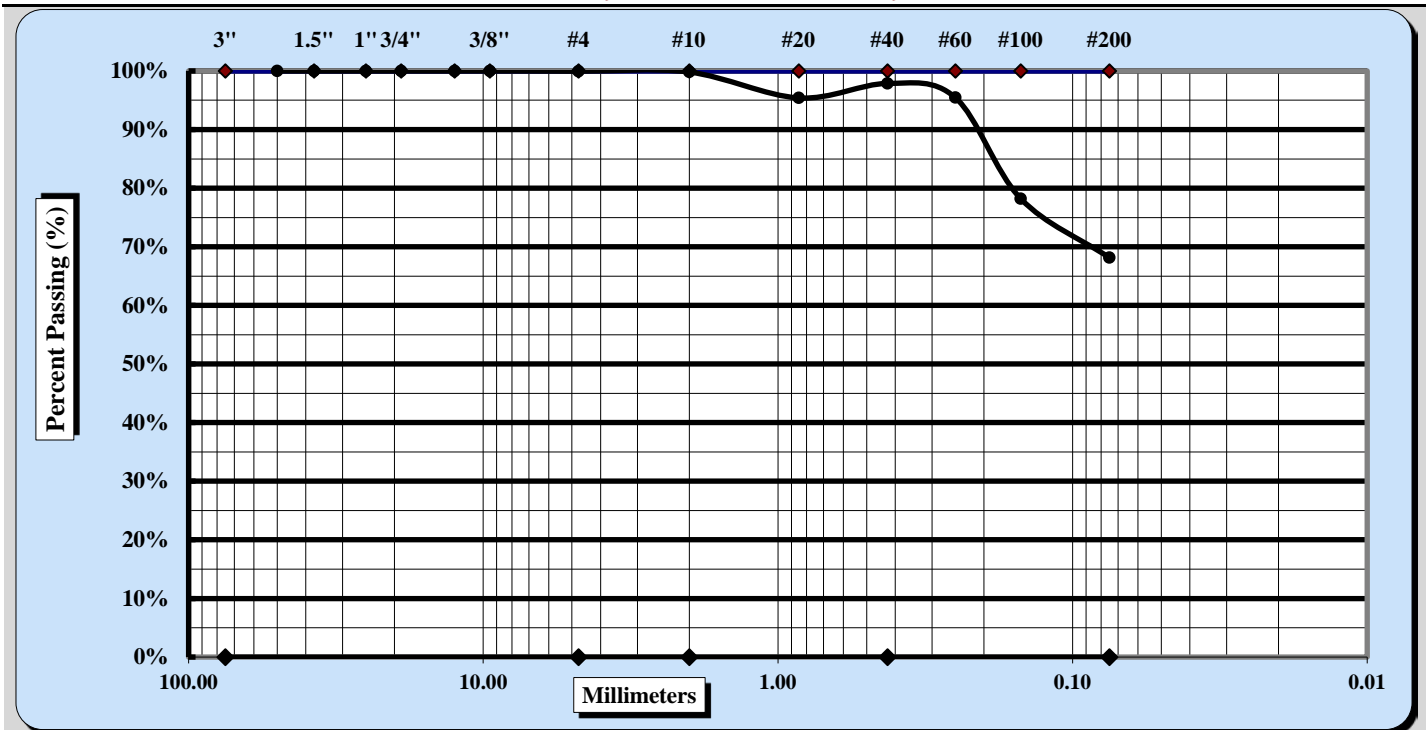
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-05</b>	<b>Type:</b>	<b>Bulk</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Sample Date:</b>
			<b>11-4-15</b>
		<b>Depth</b>	<b>0-2 FT</b>

**Sample Description:** Brownish Yellow, Gray, Reddish Brown, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.1%	Fine Sand	29.7%
Gravel	0.0%	Medium Sand	1.9%	Silt & Clay	68.2%
Liquid Limit	27	Plastic Limit	16	Plastic Index	11
Specific Gravity				Moisture Content	22.3%
Coarse Sand	0.1%	Medium Sand	1.9%	Fine Sand	29.7%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-05</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0-2 FT</b>		

<b>Sample Description:</b>	<b>Brownish Yellow, Gray, Reddish Brown, Sandy CLAY (CL) (A-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	22.82	22.16	20.86				20.74	22.01	
B	Wet Soil Weight + A	45.71	44.96	48.74				29.48	30.43	
C	Dry Soil Weight + A	40.85	39.75	43.13				28.25	29.28	
D	Water Weight (B-C)	4.86	5.21	5.61				1.23	1.15	
E	Dry Soil Weight (C-A)	18.03	17.59	22.27				7.51	7.27	
F	% Moisture (D/E)*100	27.0%	29.6%	25.2%				16.4%	15.8%	
N	# OF DROPS	23	16	35						
LL	LL = F * FACTOR									
Ave.	Average									16.1%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	27
Plastic Limit	16
Plastic Index	11
Group Symbol	CL
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

Notes / Deviations / References: Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Date      Telford Wood Technical Responsibility      Date  
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### Sieve Analysis of Soils



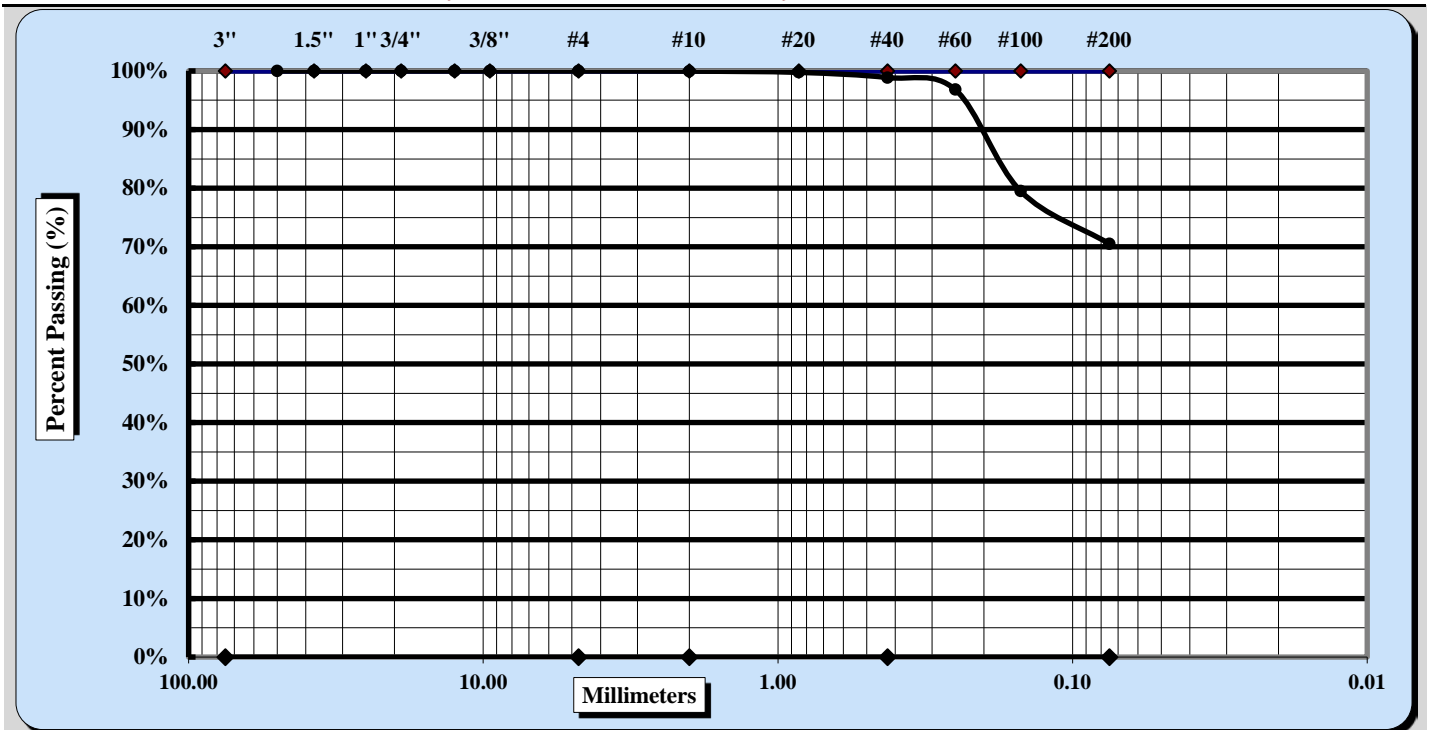
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-06</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>11-4-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Depth</b>	<b>0-2 FT</b>
<b>Location:</b>	<b>Sample:</b>	<b>Depth</b>	<b>0-2 FT</b>

**Sample Description:** Dark Gray to Brownish Yellow, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	28.4%
Gravel	0.0%	Medium Sand	1.1%	Silt & Clay	70.5%
Liquid Limit	41	Plastic Limit	17	Plastic Index	24
Specific Gravity				Moisture Content	21.6%
Coarse Sand	0.0%	Medium Sand	1.1%	Fine Sand	28.4%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464

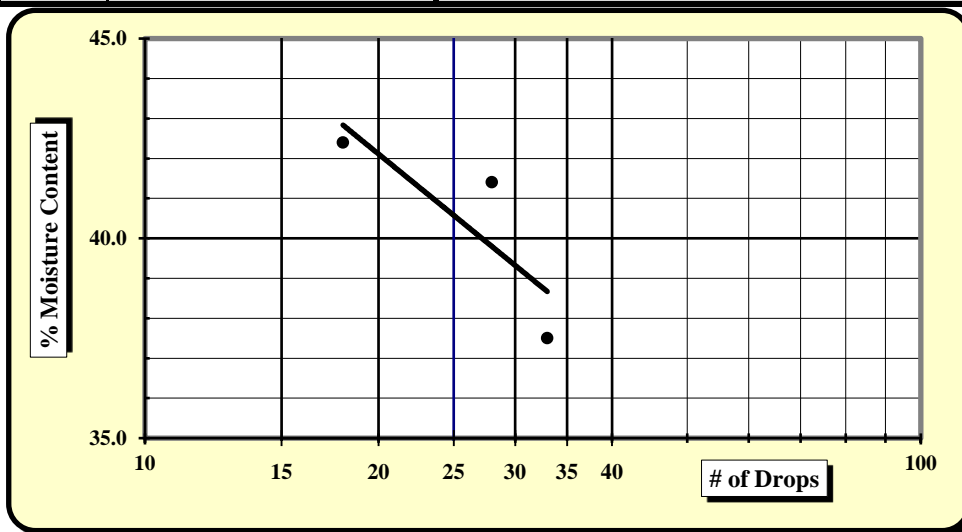
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-06</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0-2 FT</b>		

**Sample Description:** Dark Gray to Brownish Yellow, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.24	21.21	14.52				21.40	20.93	
B	Wet Soil Weight + A	42.93	48.86	37.60				28.96	30.99	
C	Dry Soil Weight + A	36.58	40.63	31.31				27.86	29.49	
D	Water Weight (B-C)	6.35	8.23	6.29				1.10	1.50	
E	Dry Soil Weight (C-A)	15.34	19.42	16.79				6.46	8.56	
F	% Moisture (D/E)*100	41.4%	42.4%	37.5%				17.0%	17.5%	
N	# OF DROPS	28	18	33						
LL	LL = F * FACTOR									
Ave.	Average									17.3%



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>41</b>
Plastic Limit	<b>17</b>
Plastic Index	<b>24</b>
Group Symbol	<b>CL</b>

Multipoint Method   
 One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
 Technician Name

Date

Telford Wood  
 Technical Responsibility

Date

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### Sieve Analysis of Soils



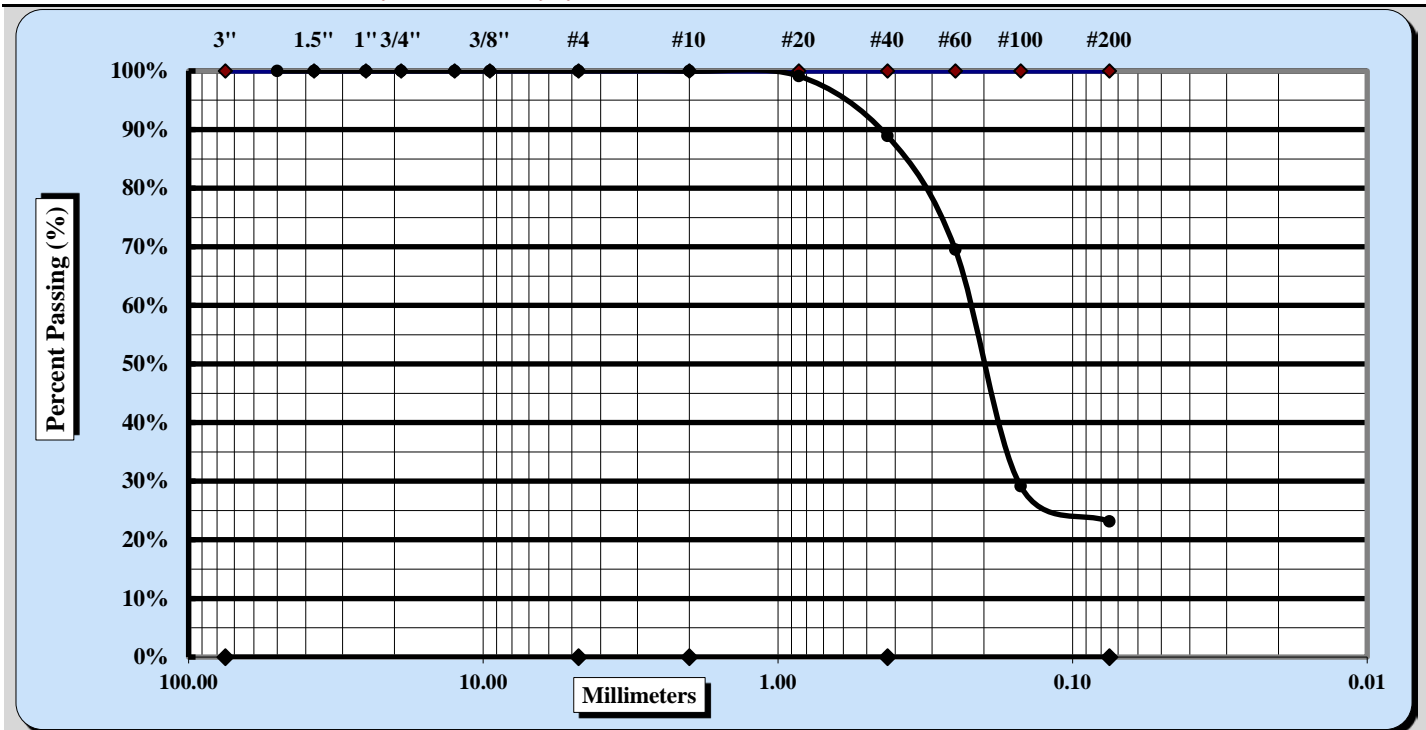
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-07</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>11-4-15</b>
<b>Location:</b>		<b>Sample:</b>	<b>Blk-1</b>
		<b>Depth</b>	<b>0-2 FT</b>

**Sample Description:** Gray Brown, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	65.8%
Gravel	0.0%	Medium Sand	11.1%	Silt & Clay	23.1%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	15.3%
Coarse Sand	0.0%	Medium Sand	11.1%	Fine Sand	65.8%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



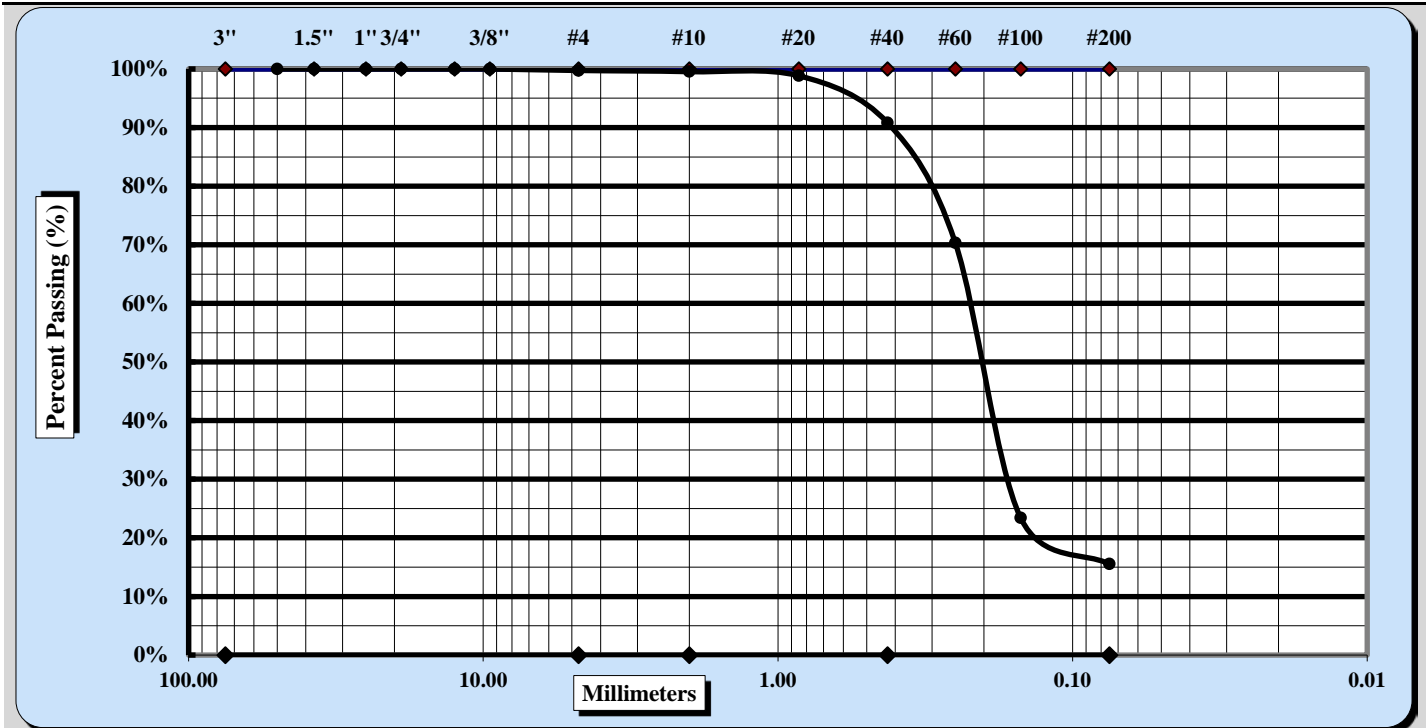
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-08</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>10-28-5</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2.5 FT</b>

**Sample Description:** Dark Gray, Gray, Reddish Yellow, Silty Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	0.2%	Fine Sand	75.3%
Gravel	0.3%	Medium Sand	8.7%	Silt & Clay	15.5%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	9.6%
Coarse Sand	0.2%	Medium Sand	8.7%	Fine Sand	75.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/9/2015  
Date

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# Moisture - Density Report



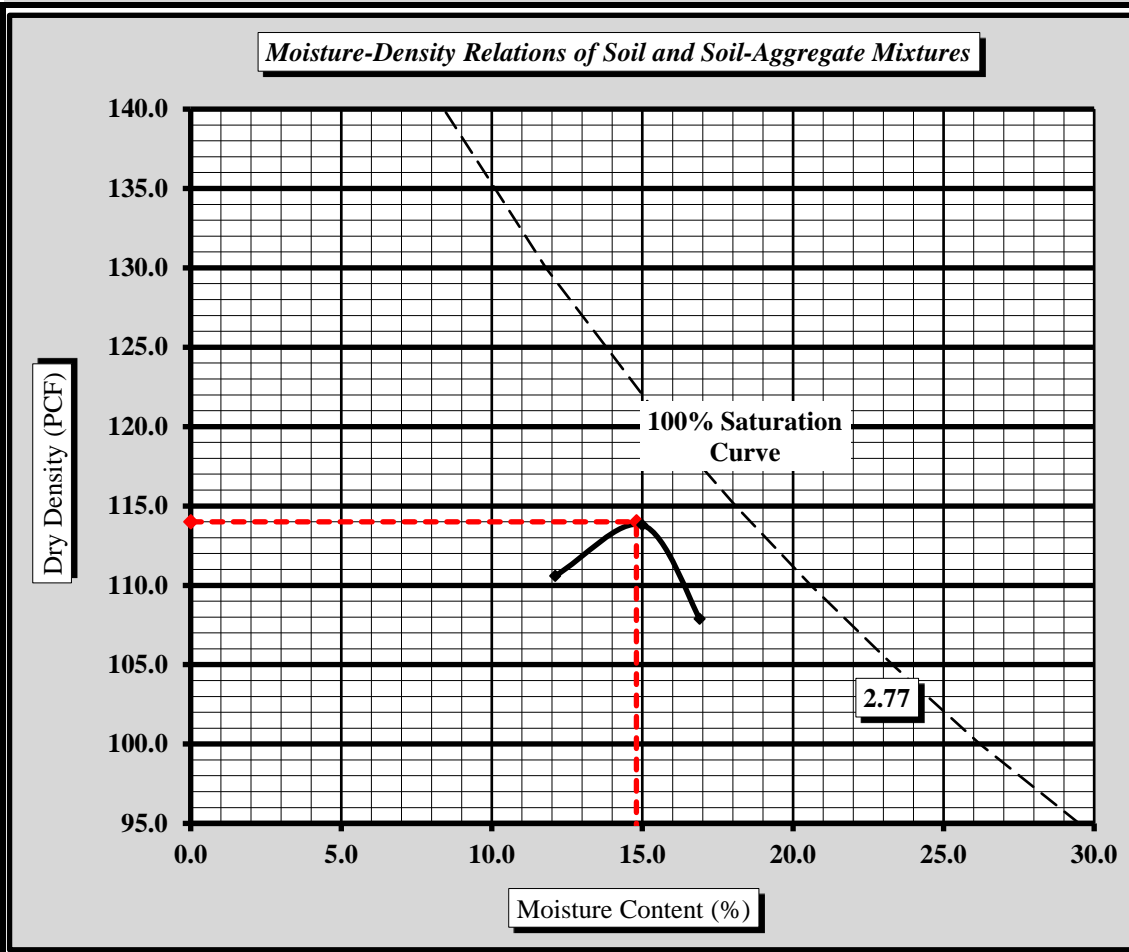
Quality Assurance

S&ME, Inc. Charleston Branch, 620 Wando Park Blvd. Mt. Pleasant, SC 29464

S&ME Project #:	<b>1413-15-114</b>	Report Date:	11-4-15
Project Name:	I-26 Volvo Interchange	Test Date(s):	11-4-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Boring #:	IS-08	Sample #:	Blk-1
		Sample Date:	10/28/2015
Location:		Depth:	0 - 2.5 FT
Sample Description:	Dark Gray, Gray, Reddish Yellow, Silty Clayey Fine SAND (SC) (A-2-4)		

**Maximum Dry Density 114.0 PCF. Optimum Moisture Content 14.8%**

ASTM D 698 -- Method A



Soil Properties	
Natural Moisture Content	<b>9.6%</b>
Specific Gravity of Soil	
Liquid Limit	<b>NP</b>
Plastic Limit	<b>NP</b>
Plastic Index	<b>NP</b>
% Passing	
3/4"	100.0%
#4	99.7%
#10	99.5%
#20	98.8%
#40	90.8%
#60	70.3%
#100	23.4%
#200	15.5%
Oversize Fraction	
Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction  Corrected for Oversize Fraction (ASTM D 4718)   
 Sieve Size used to separate the Oversize Fraction: #4 Sieve  3/8 inch Sieve  3/4 inch Sieve   
 Mechanical Rammer  Manual Rammer  Moist Preparation  Dry Preparation

**References / Comments / Deviations:**

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass  
 ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

**Telford Wood**  
 Technical Responsibility

*Telford Wood*  
 Signature

**Location Coordinator**  
 Position

**11/4/2015**  
 Date

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**CBR (California Bearing Ratio) of Laboratory  
Compacted Soil**



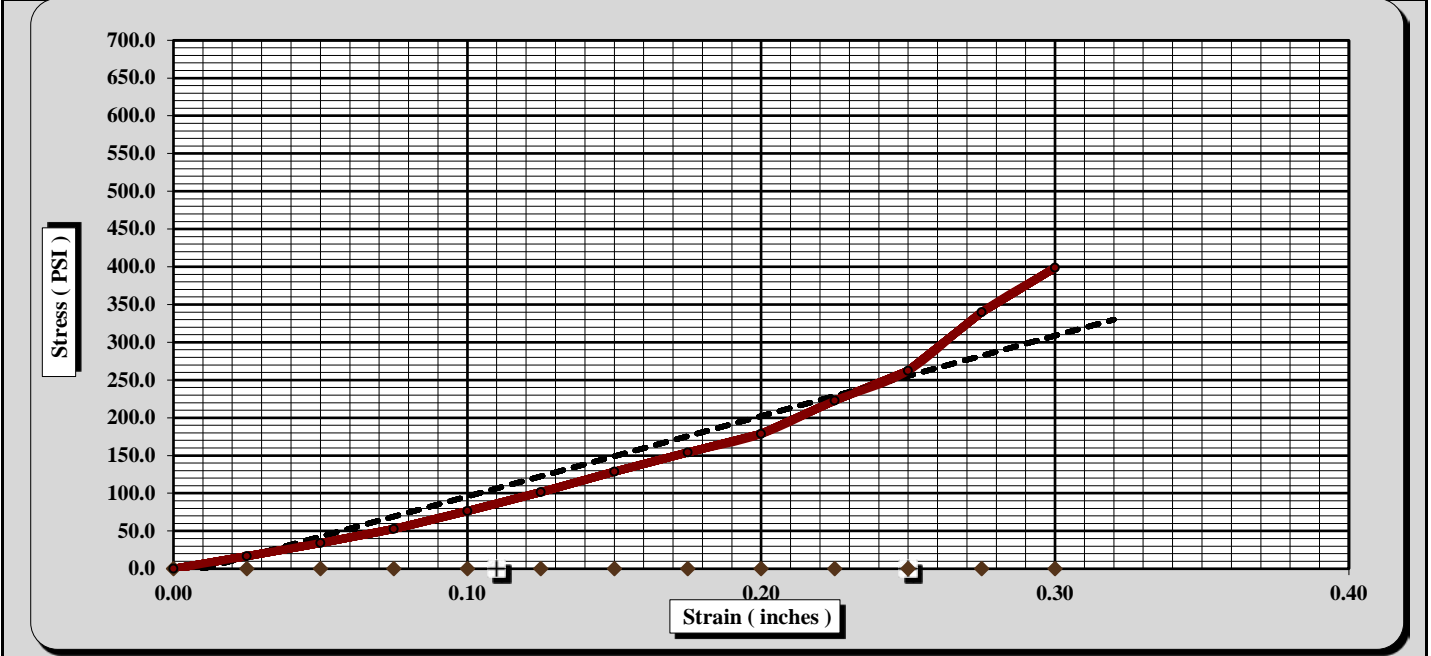
*Quality Assurance*

S&ME, Inc. 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-16-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-11-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id:</b>	<b>IS-08</b>	<b>Sample #:</b>	<b>Blk-1</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth:</b>	<b>0 - 2.5 FT</b>
<b>Sample Description:</b> Dark Gray, Gray, Reddish Yellow, Silty Clayey Fine SAND (SC) (A-2-4)			

<b>ASTM D 698 Method A</b>	<b>Maximum Dry Density:</b>	<b>114.0 PCF</b>	<b>Optimum Moisture Content:</b>	<b>14.8%</b>
	<b>Line 19: Use an alternate discription here if applicable</b>		<b>% Retained on the 3/4" sieve:</b>	<b>0.0%</b>

Uncorrected CBR Values		Corrected CBR Values	
<b>CBR at 0.1 in.</b>	<b>7.6</b>	<b>CBR at 0.1 in.</b>	<b>0.0</b>
<b>CBR at 0.2 in.</b>	<b>11.9</b>	<b>CBR at 0.2 in.</b>	<b>0.0</b>



CBR Sample Preparation:

*Grading was in accordance with the above method and compacted using the 6" diameter CBR mold.*

Before Soaking		After Soaking	
Compactive Effort (Blows per Layer)	0	Final Dry Density (PCF)	111.4
Initial Dry Density (PCF)	107.8	Average Final Moisture Content	10.9%
Moisture Content of the Compacted Specimen	14.6%	Moisture Content (top 1" after soaking)	13.7%
Percent Compaction	94.5%	Percent Swell	0.0%
Soak Time:	96hr	Surcharge Weight	10.0
Liquid Limit	NP	Surcharge Wt. per sq. Ft.	50.9
		Plastic Index	NP
		Apparent Relative Density	

**Notes/Deviations/References:** Liquid Limit: ASTM D 4318, Specific Gravity: ASTM D 854, Classification: ASTM D 2487

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/11/2015  
Date

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### Sieve Analysis of Soils



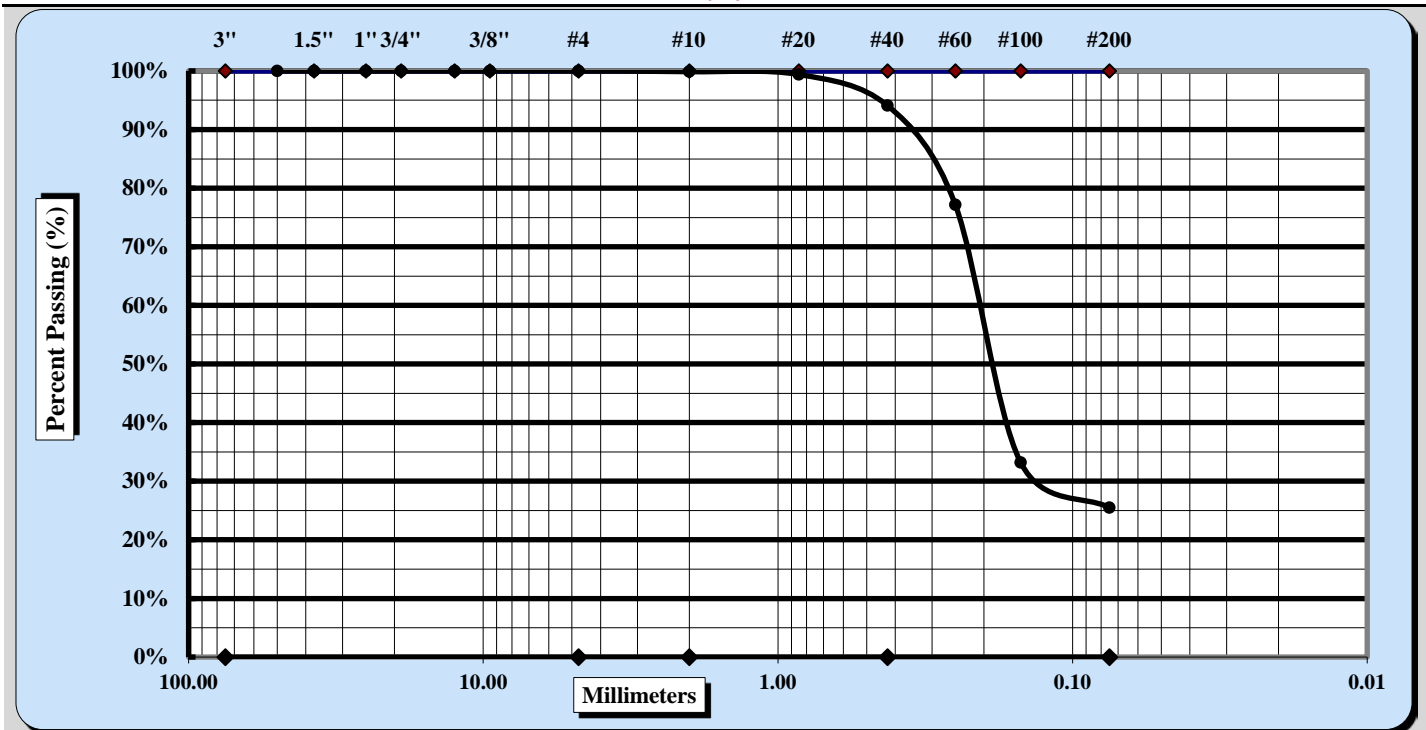
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-09</b>	<b>Type:</b>	<b>Bulk</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Sample Date:</b>
			<b>11-4-15</b>
		<b>Depth</b>	<b>0-2 FT</b>

**Sample Description:** Yellow to Reddish Yellow, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.1%	Fine Sand	68.6%
Gravel	0.0%	Medium Sand	5.8%	Silt & Clay	25.5%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	17.6%
Coarse Sand	0.1%	Medium Sand	5.8%	Fine Sand	68.6%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



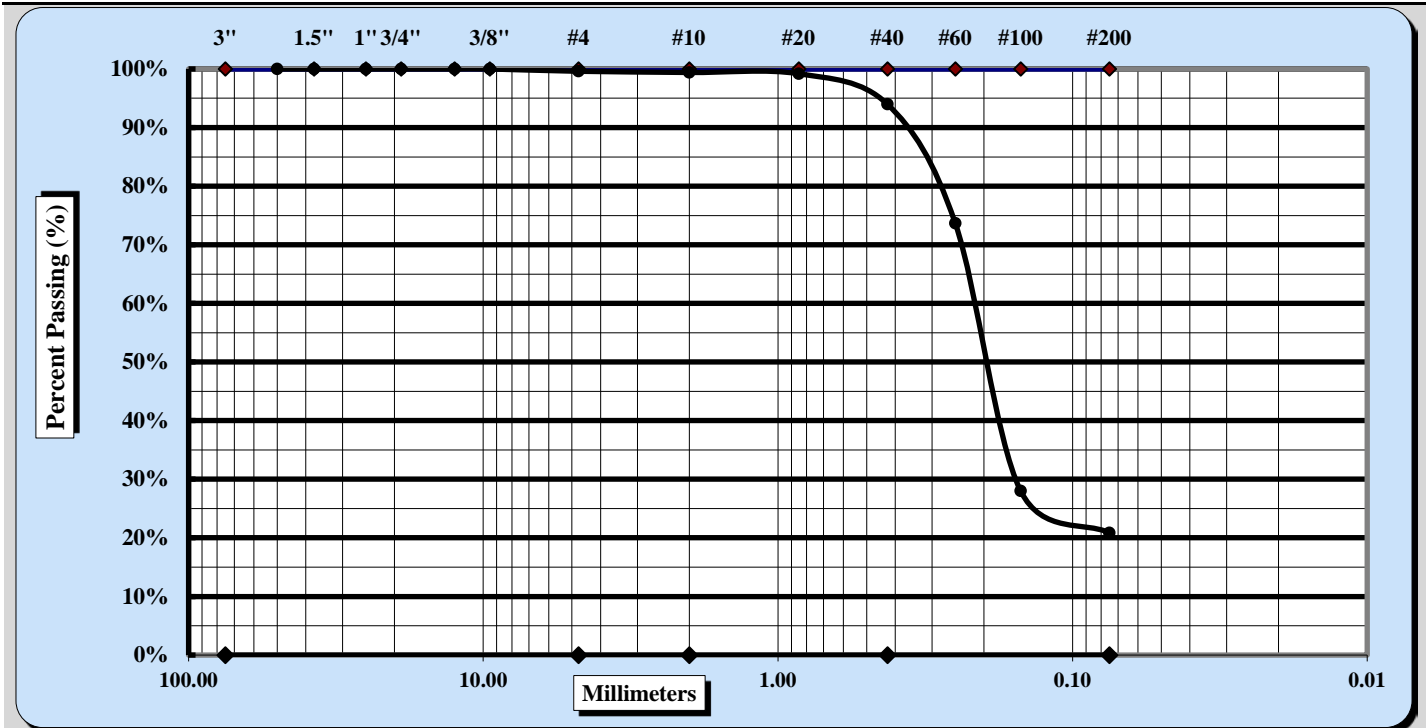
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-10</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>11-4-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2 FT</b>

**Sample Description:** Gray, Silty Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	0.2%	Fine Sand	73.1%
Gravel	0.4%	Medium Sand	5.4%	Silt & Clay	20.9%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	21.1%

Coarse Sand	0.2%	Medium Sand	5.4%	Fine Sand	73.1%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



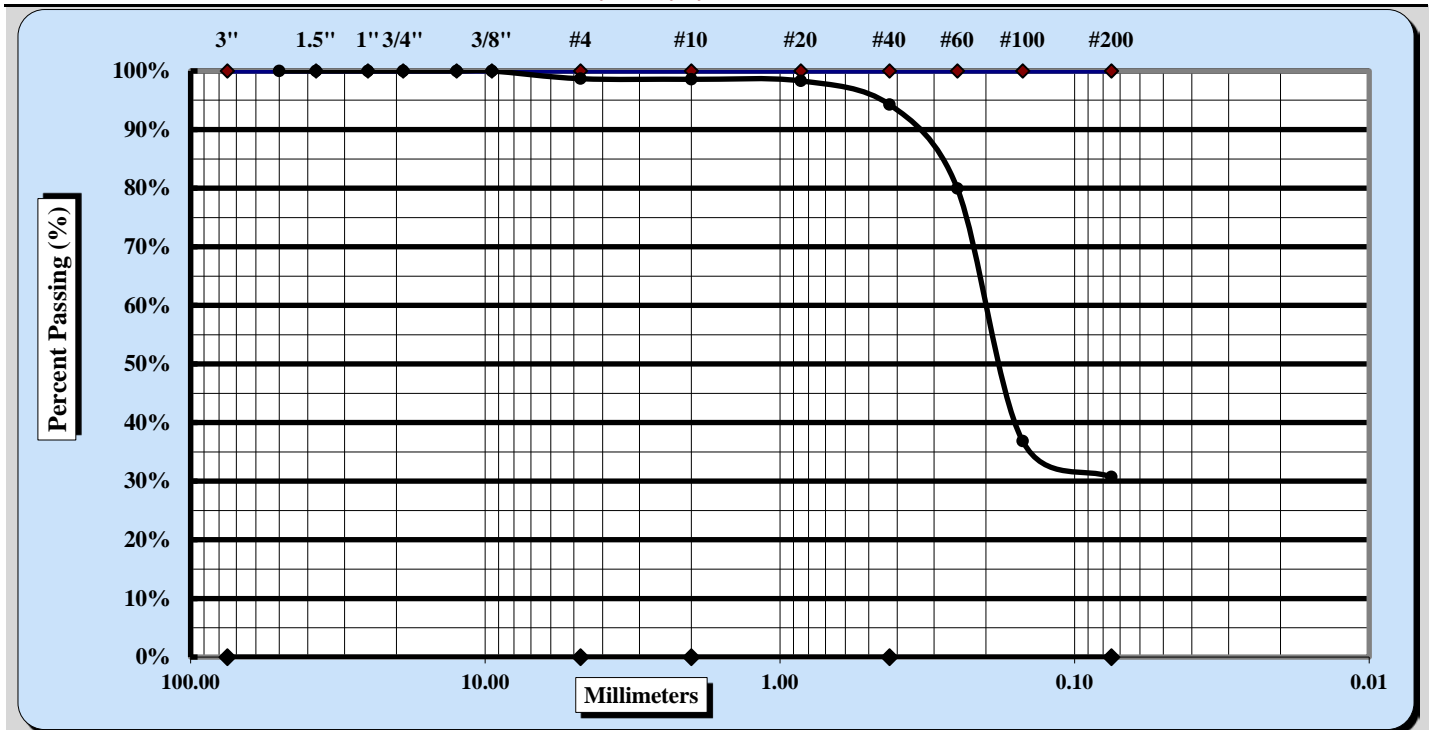
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-11</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2.5 FT</b>

**Sample Description:** Brownish Yellow Gray, Clayey Fine SAND (SC) (A-2-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	0.1%	Fine Sand	63.6%
Gravel	1.3%	Medium Sand	4.3%	Silt & Clay	30.7%
Liquid Limit	27	Plastic Limit	15	Plastic Index	12
Specific Gravity				Moisture Content	18.8%
Coarse Sand	0.1%	Medium Sand	4.3%	Fine Sand	63.6%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/9/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

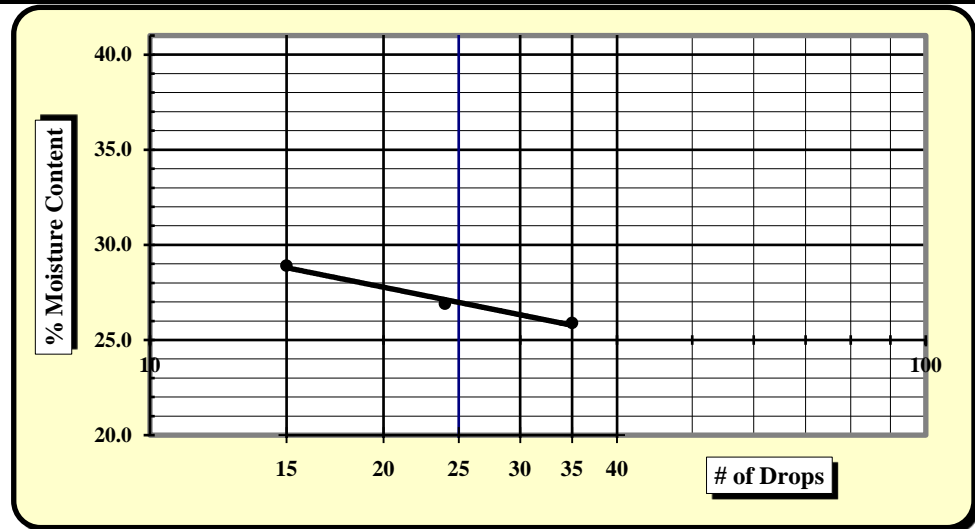
**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-11</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0-2.5 FT</b>		

<b>Sample Description:</b>	<b>Brownish Yellow Gray, Clayey Fine SAND (SC) (A-2-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.31	22.71	21.47				14.06	14.40	
B	Wet Soil Weight + A	37.53	41.01	41.07				20.19	19.49	
C	Dry Soil Weight + A	34.19	37.13	36.68				19.39	18.83	
D	Water Weight (B-C)	3.34	3.88	4.39				0.80	0.66	
E	Dry Soil Weight (C-A)	12.88	14.42	15.21				5.33	4.43	
F	% Moisture (D/E)*100	25.9%	26.9%	28.9%				15.0%	14.9%	
N	# OF DROPS	35	24	15						
LL	LL = F * FACTOR									
Ave.	Average							<b>15.0%</b>		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>27</b>
Plastic Limit	<b>15</b>
Plastic Index	<b>12</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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# Moisture - Density Report

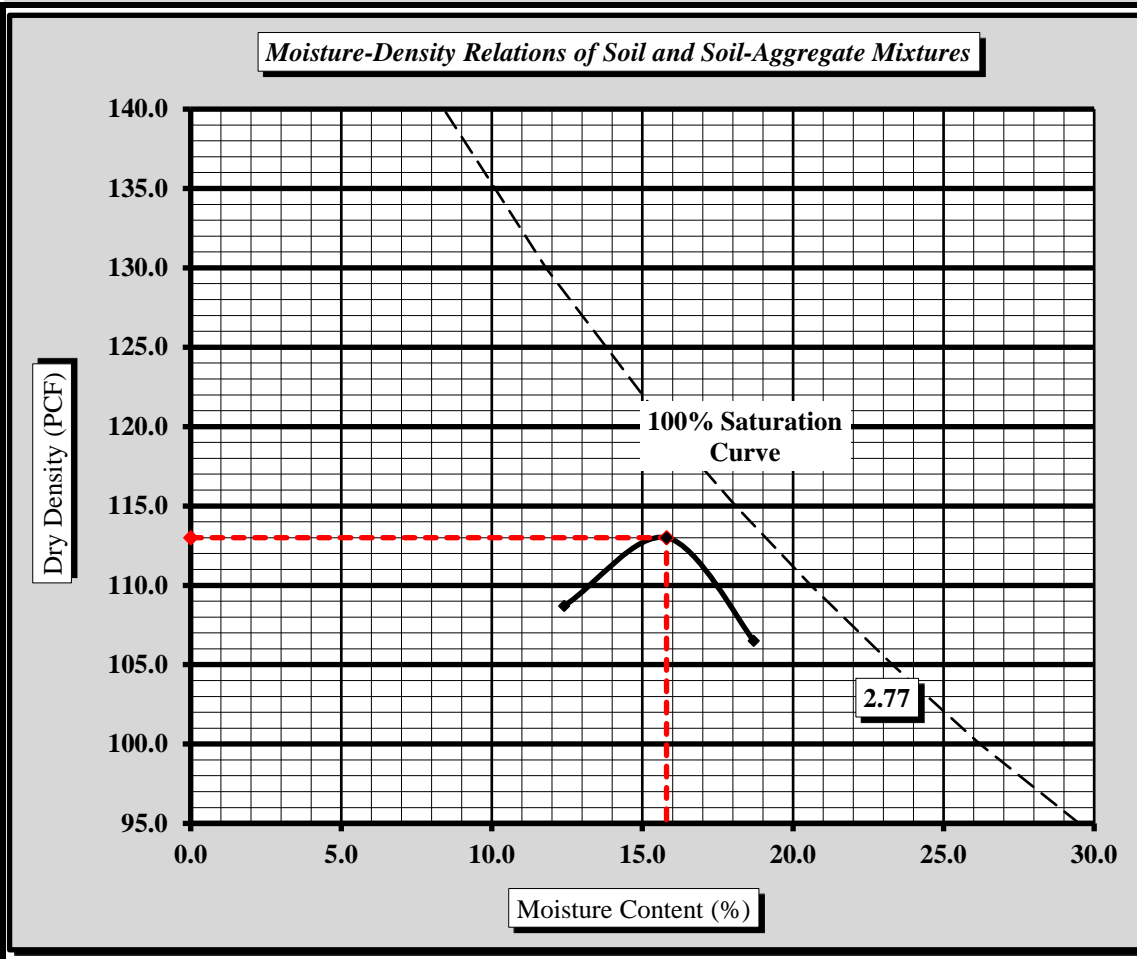


Quality Assurance

S&ME, Inc. Charleston Branch, 620 Wando Park Blvd. Mt. Pleasant, SC 29464

S&ME Project #:	<b>1413-15-114</b>	Report Date:	11-4-15
Project Name:	I-26 Volvo Interchange	Test Date(s):	11-4-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Boring #:	IS-11	Sample #:	Blk-1
		Sample Date:	10/28/2015
Location:		Offset:	
		Depth:	0 - 2.5 FT
Sample Description:	Brownish Yellow Gray, Clayey Fine SAND (SC) (A-2-6)		

**Maximum Dry Density 113.0 PCF. Optimum Moisture Content 15.8%**  
**ASTM D 698 -- Method A**



Soil Properties	
Natural Moisture Content	<b>18.8%</b>
Specific Gravity of Soil	
Liquid Limit	<b>27</b>
Plastic Limit	<b>15</b>
Plastic Index	<b>12</b>
% Passing	
3/4"	100.0%
#4	98.7%
#10	98.6%
#20	98.3%
#40	94.3%
#60	80.0%
#100	36.9%
#200	30.7%
Oversize Fraction	
Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction  Corrected for Oversize Fraction (ASTM D 4718)   
 Sieve Size used to separate the Oversize Fraction: #4 Sieve  3/8 inch Sieve  3/4 inch Sieve   
 Mechanical Rammer  Manual Rammer  Moist Preparation  Dry Preparation

**References / Comments / Deviations:**

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass  
 ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

**Telford Wood**  
 Technical Responsibility

*Telford Wood*  
 Signature

**Location Coordinator**  
 Position

**11/4/2015**  
 Date

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**CBR (California Bearing Ratio) of Laboratory  
Compacted Soil**



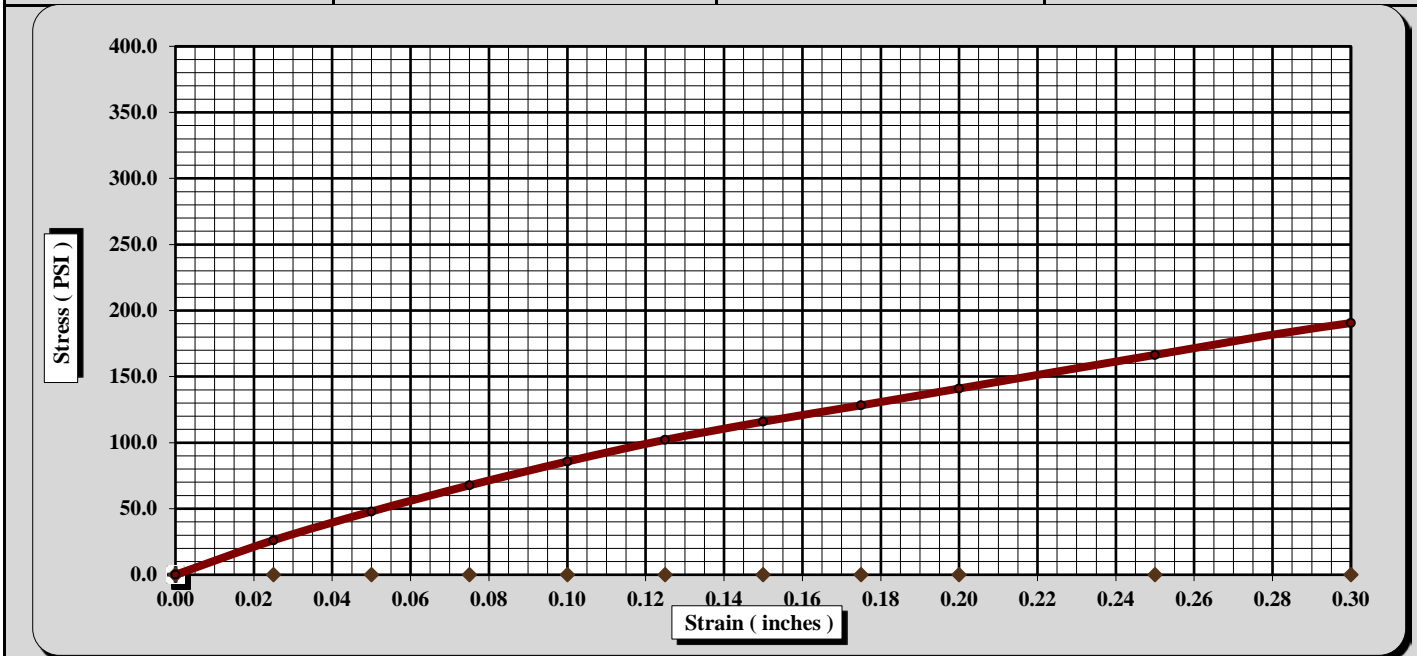
Quality Assurance

S&ME, Inc. 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id:</b>	<b>IS-11</b>	<b>Sample #:</b>	<b>Blk-1</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth:</b>	<b>0 - 2.5 FT</b>
<b>Sample Description:</b> <b>Brownish Yellow Gray, Clayey Fine SAND (SC) (A-2-6)</b>			

**ASTM D1557 Method A** Maximum Dry Density: **113.0 PCF** Optimum Moisture Content: **15.8%**  
 Line 19: Use an alternate discription here if applicable % Retained on the 3/4" sieve: **0.0%**

Uncorrected CBR Values		Corrected CBR Values	
CBR at 0.1 in.	<b>8.6</b>	CBR at 0.1 in.	<b>0.0</b>
CBR at 0.2 in.	<b>9.4</b>	CBR at 0.2 in.	<b>0.0</b>



CBR Sample Preparation:  
*Grading was in accordance with the above method and compacted using the 6" diameter CBR mold.*

Before Soaking		After Soaking	
Compactive Effort (Blows per Layer)	0	Final Dry Density (PCF)	109.2
Initial Dry Density (PCF)	108.4	Average Final Moisture Content	15.8%
Moisture Content of the Compacted Specimen	16.6%	Moisture Content (top 1" after soaking)	16.1%
Percent Compaction	95.9%	Percent Swell	0.0%
Soak Time:	96	Surcharge Weight	10.0
Liquid Limit	27	Surcharge Wt. per sq. Ft.	50.9
		Plastic Index	12
		Apparent Relative Density	

Notes/Deviations/References: Liquid Limit: ASTM D 4318, Specific Gravity: ASTM D 854, Classification: ASTM D 2487

Telford Wood  
 Technical Responsibility

*Telford Wood*  
 Signature

Location Coordinator  
 Position

11/11/2015  
 Date

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### Sieve Analysis of Soils



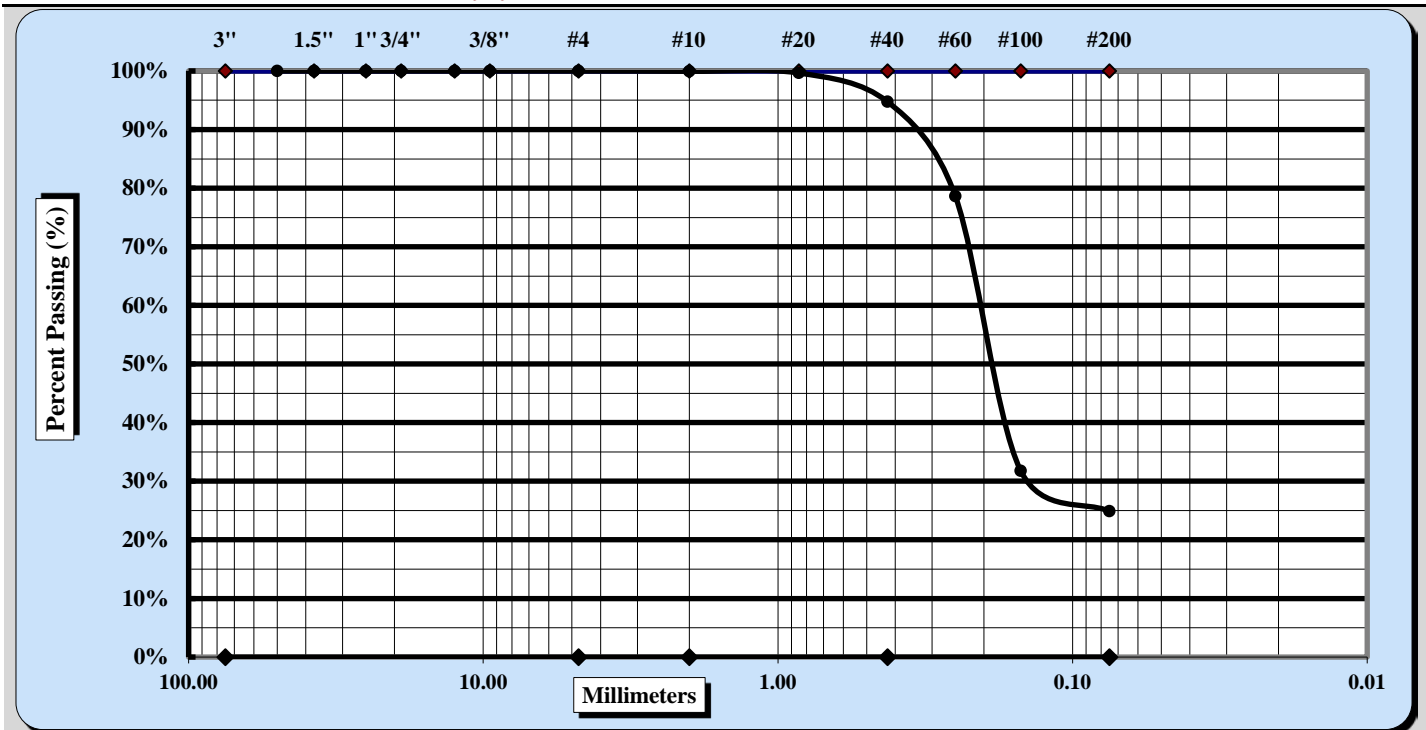
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-10-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-5-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-12</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>11-4-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0-2 FT</b>

**Sample Description:** Brown, Clayey Fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.1%	Fine Sand	69.9%
Gravel	0.0%	Medium Sand	5.2%	Silt & Clay	24.9%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	18.4%
Coarse Sand	0.1%	Medium Sand	5.2%	Fine Sand	69.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

11/10/2015  
Date

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### Sieve Analysis of Soils



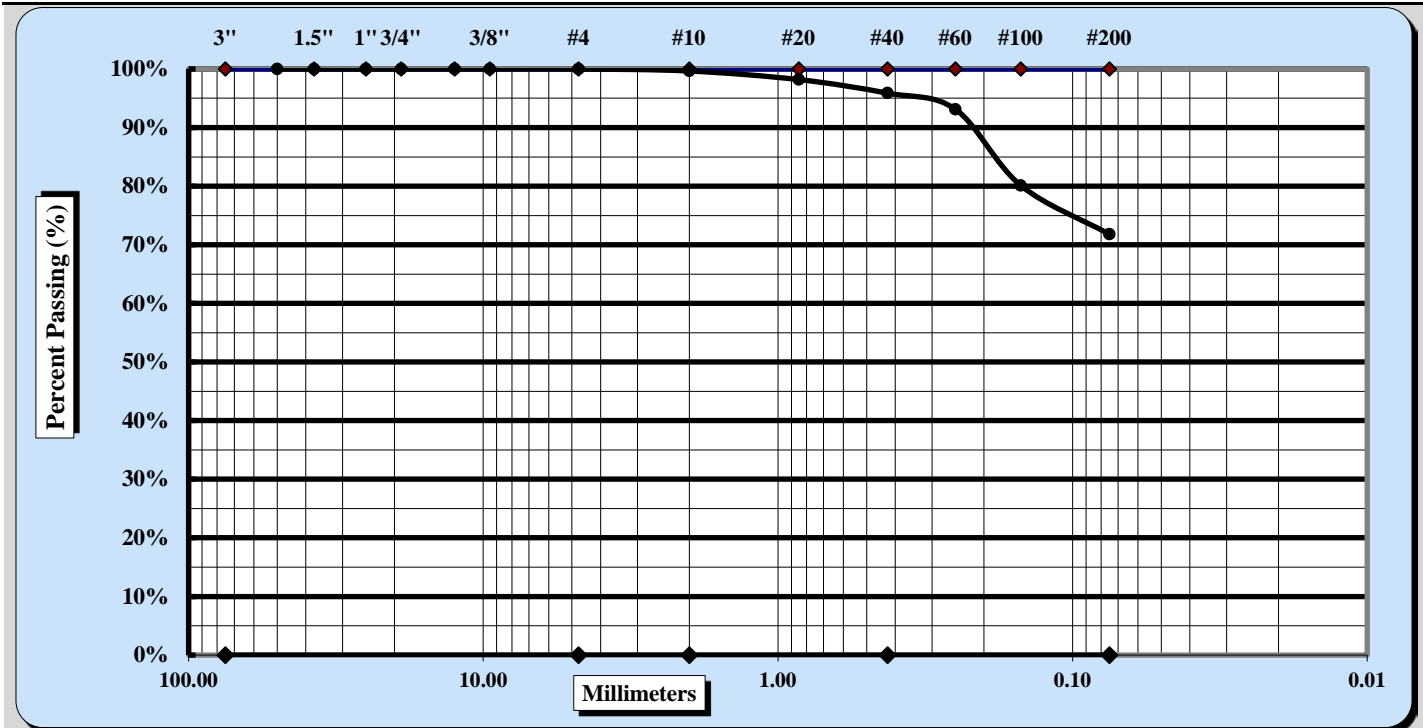
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-14</b>	<b>Type:</b>	<b>Bulk</b>
		<b>Sample Date:</b>	<b>10-29-15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Blk-1</b>	<b>Depth</b>
			<b>0 - 2 FT</b>

**Sample Description:** Gray Brownish Yellow, Sandy CLAY (CL) (A-6)





**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

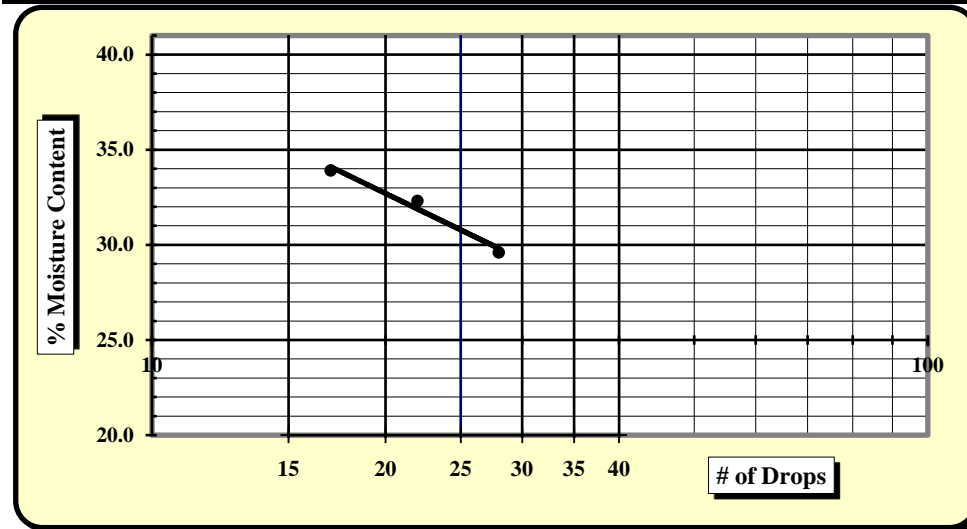
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-4-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-14</b>	<b>Sample #:</b>	<b>Blk-1</b>	<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 0 - 2 FT</b>		

**Sample Description:** Gray Brownish Yellow, Sandy CLAY (CL) (A-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	19.90	21.40	14.48				<b>20.90</b>	21.18	
B	Wet Soil Weight + A	47.36	46.44	38.99				26.16	27.12	
C	Dry Soil Weight + A	41.09	40.33	32.79				25.61	26.40	
D	Water Weight (B-C)	<b>6.27</b>	<b>6.11</b>	<b>6.20</b>				<b>0.55</b>	<b>0.72</b>	
E	Dry Soil Weight (C-A)	<b>21.19</b>	<b>18.93</b>	<b>18.31</b>				<b>4.71</b>	<b>5.22</b>	
F	% Moisture (D/E)*100	<b>29.6%</b>	<b>32.3%</b>	<b>33.9%</b>				<b>11.7%</b>	<b>13.8%</b>	
N	# OF DROPS	28	22	17						
LL	LL = F * FACTOR									
Ave.	Average									<b>12.8%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>31</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>18</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name Date Telford Wood Technical Responsibility Date

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# Moisture - Density Report

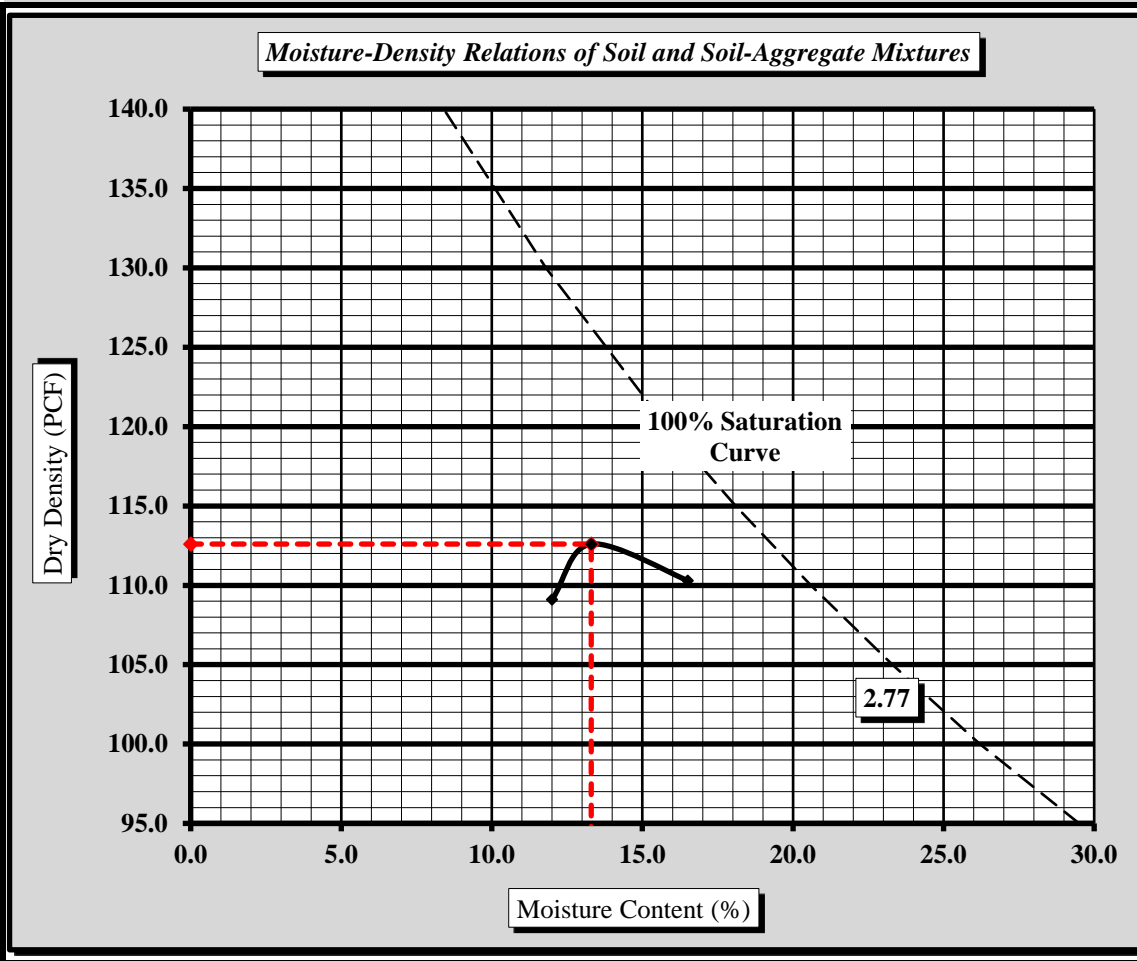


Quality Assurance

S&ME, Inc. Charleston Branch, 620 Wando Park Blvd. Mt. Pleasant, SC 29464

S&ME Project #:	<b>1413-15-114</b>	Report Date:	11-5-15
Project Name:	I-26 Volvo Interchange	Test Date(s):	11-5-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Boring #:	IS-14	Sample #:	Blk-1
		Sample Date:	10/28/2015
Location:		Offset:	
		Depth:	0 - 2 FT
Sample Description:	Gray Brownish Yellow, Sandy CLAY (CL) (A-6)		

**Maximum Dry Density 112.6 PCF. Optimum Moisture Content 13.3%**  
**ASTM D 698 -- Method A**



Soil Properties	
Natural Moisture Content	<b>16.3%</b>
Specific Gravity of Soil	
Liquid Limit	<b>31</b>
Plastic Limit	<b>13</b>
Plastic Index	<b>18</b>
% Passing	
3/4"	100.0%
#4	100.0%
#10	99.7%
#20	98.2%
#40	95.9%
#60	93.1%
#100	80.1%
#200	71.8%
Oversize Fraction	
Bulk Gravity	
% Moisture	
% Oversize	
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction  Corrected for Oversize Fraction (ASTM D 4718)   
 Sieve Size used to separate the Oversize Fraction: #4 Sieve  3/8 inch Sieve  3/4 inch Sieve   
 Mechanical Rammer  Manual Rammer  Moist Preparation  Dry Preparation

**References / Comments / Deviations:**  
 ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass  
 ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Telford Wood  
 Technical Responsibility

Signature

Location Coordinator  
 Position

11/4/2015  
 Date

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**CBR (California Bearing Ratio) of Laboratory  
Compacted Soil**



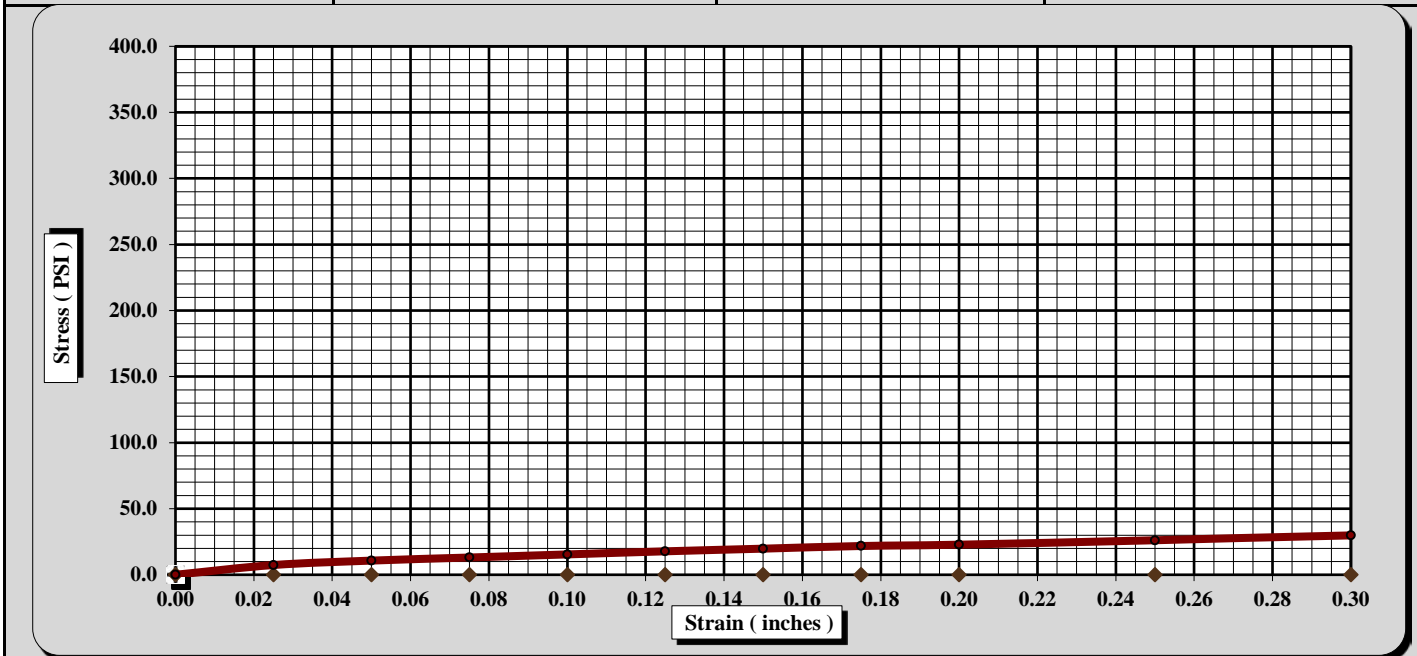
*Quality Assurance*

S&ME, Inc. 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-16-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-11-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id:</b>	<b>IS-14</b>	<b>Sample #:</b>	<b>Blk-1</b>
		<b>Sample Date:</b>	<b>10-28-15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth:</b>	<b>0 - 2 FT</b>
<b>Sample Description:</b> <b>Gray Brownish Yellow, Sandy CLAY (CL) (A-6)</b>			

<b>ASTM D1557 Method A</b>	<b>Maximum Dry Density:</b>	<b>112.6 PCF</b>	<b>Optimum Moisture Content:</b>	<b>13.3%</b>
	<b>Line 19: Use an alternate discription here if applicable</b>		<b>% Retained on the 3/4" sieve:</b>	<b>0.0%</b>

Uncorrected CBR Values		Corrected CBR Values	
<b>CBR at 0.1 in.</b>	<b>1.5</b>	<b>CBR at 0.1 in.</b>	<b>0.0</b>
<b>CBR at 0.2 in.</b>	<b>1.5</b>	<b>CBR at 0.2 in.</b>	<b>0.0</b>



CBR Sample Preparation:  
*Grading was in accordance with the above method and compacted using the 6" diameter CBR mold.*

Before Soaking		After Soaking	
Compactive Effort (Blows per Layer)	0	Final Dry Density (PCF)	104.6
Initial Dry Density (PCF)	107.6	Average Final Moisture Content	15.5%
Moisture Content of the Compacted Specimen	13.2%	Moisture Content (top 1" after soaking)	17.2%
Percent Compaction	95.6%	Percent Swell	0.9%
Soak Time:	96	Surcharge Weight	10.0
Liquid Limit	31	Surcharge Wt. per sq. Ft.	50.9
		Plastic Index	18
		Apparent Relative Density	

Notes/Deviations/References: Liquid Limit: ASTM D 4318, Specific Gravity: ASTM D 854, Classification: ASTM D 2487

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

11/16/2015  
Date

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### Sieve Analysis of Soils



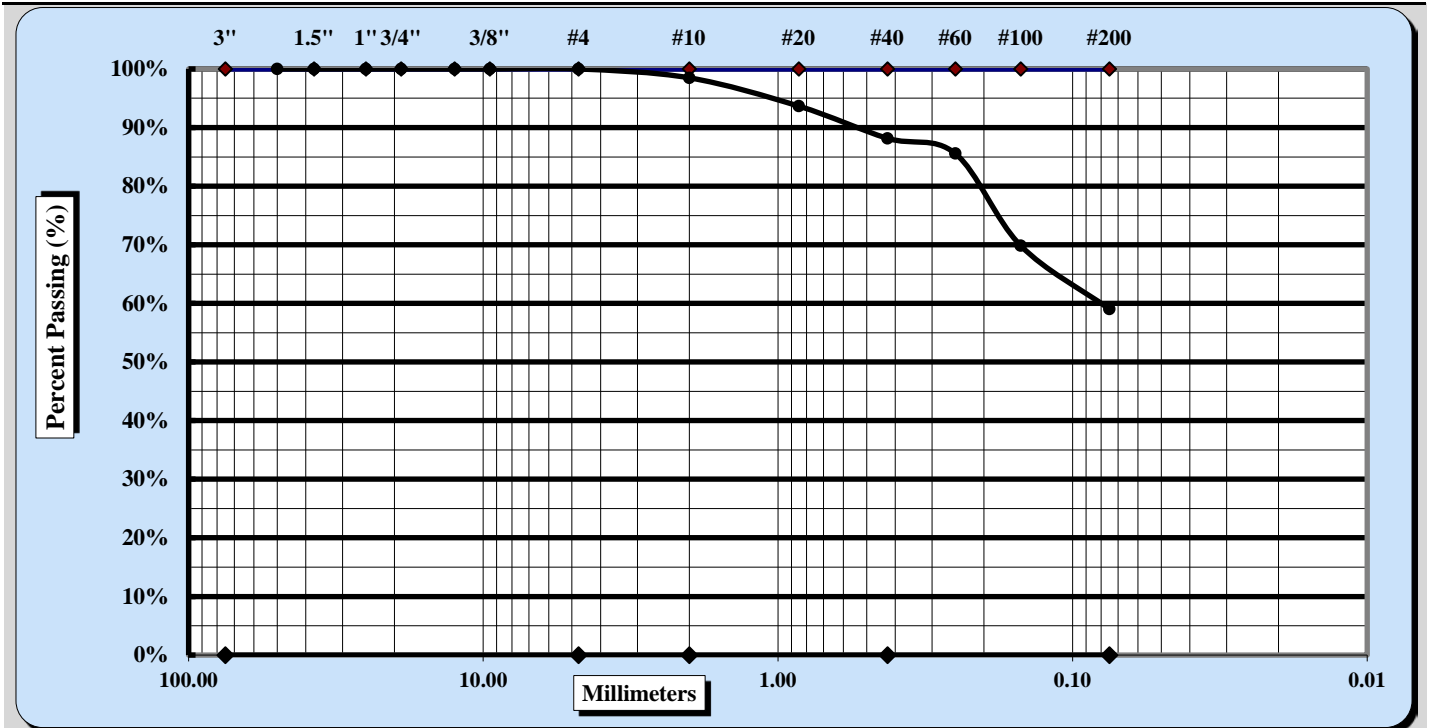
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-15</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>#3</b>	<b>Depth</b>
			<b>4 - 6 FT</b>

**Sample Description:** Light brownish gray, Sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	1.5%	Fine Sand	29.1%
Gravel	0.0%	Medium Sand	10.3%	Silt & Clay	59.0%
Liquid Limit	32	Plastic Limit	14	Plastic Index	18
Specific Gravity				Moisture Content	20.2%
Coarse Sand	1.5%	Medium Sand	10.3%	Fine Sand	29.1%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-3-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>12-2-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		
<b>Boring #:</b>	<b>IS-015</b>	<b>Sample #:</b>	<b>3</b>
		<b>Sample Date:</b>	<b>10/23/15 - 10/26/15</b>
<b>Location:</b>	<b>Offset:</b>	<b>Depth 4-6 FT</b>	

<b>Sample Description:</b>	<b>Light brownish gray, sandy CLAY (CL) (A-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	22.50						<b>20.81</b>	21.22	
B	Wet Soil Weight + A	48.29						27.16	27.17	
C	Dry Soil Weight + A	42.12						26.35	26.46	
D	Water Weight (B-C)	6.17						0.81	0.71	
E	Dry Soil Weight (C-A)	19.62						5.54	5.24	
F	% Moisture (D/E)*100	31.4%						14.6%	13.5%	
N	# OF DROPS	25								
LL	LL = F * FACTOR									
Ave.	Average									<b>14.1%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **32**

Plastic Limit **14**

Plastic Index **18**

Group Symbol **CL**

Multipoint Method

One-point Method

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Date      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



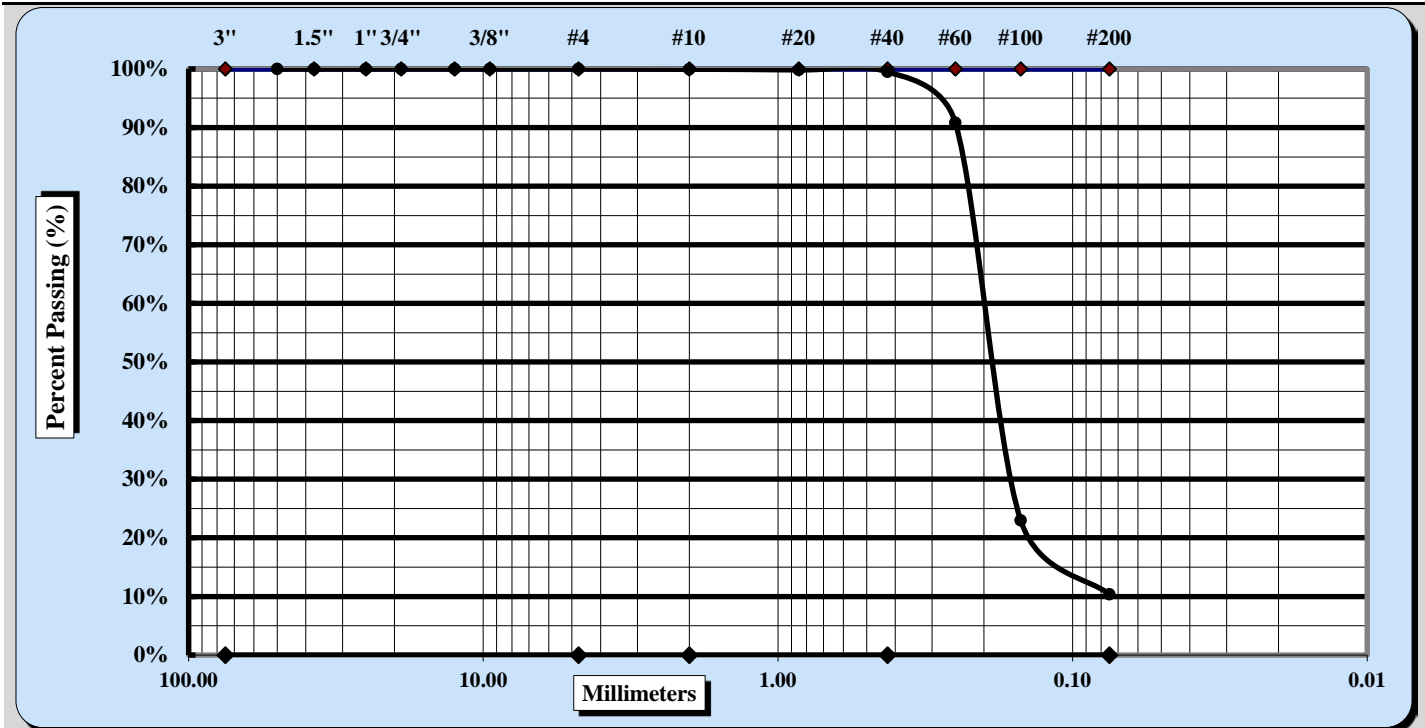
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-15</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Depth</b>	<b>8 - 10 FT</b>

**Sample Description:** Light brownish gray, slightly silty fine SAND; (SP-SM) (A-3)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	89.1%
Gravel	0.0%	Medium Sand	0.4%	Silt & Clay	10.4%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	21.1%
Coarse Sand	0.0%	Medium Sand	0.4%	Fine Sand	89.1%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

12/2/2015  
Date

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### Sieve Analysis of Soils



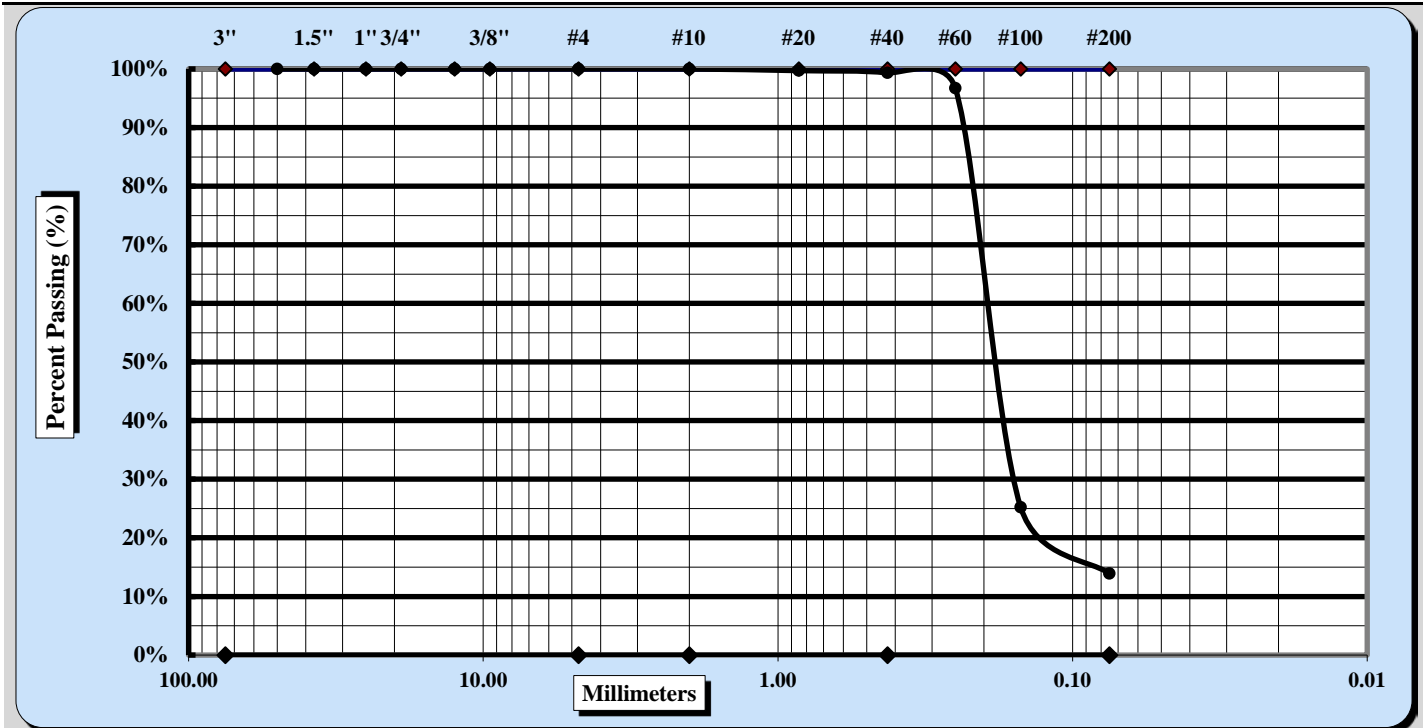
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-15</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>#6</b>	<b>Depth</b>
			<b>10 -11.5 FT</b>

**Sample Description:** Dark greenish gray, silty fine SAND (SM) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.0%	Fine Sand	85.4%
Gravel	0.0%	Medium Sand	0.7%	Silt & Clay	13.9%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	24.6%
Coarse Sand	0.0%	Medium Sand	0.7%	Fine Sand	85.4%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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## Sieve Analysis of Soils



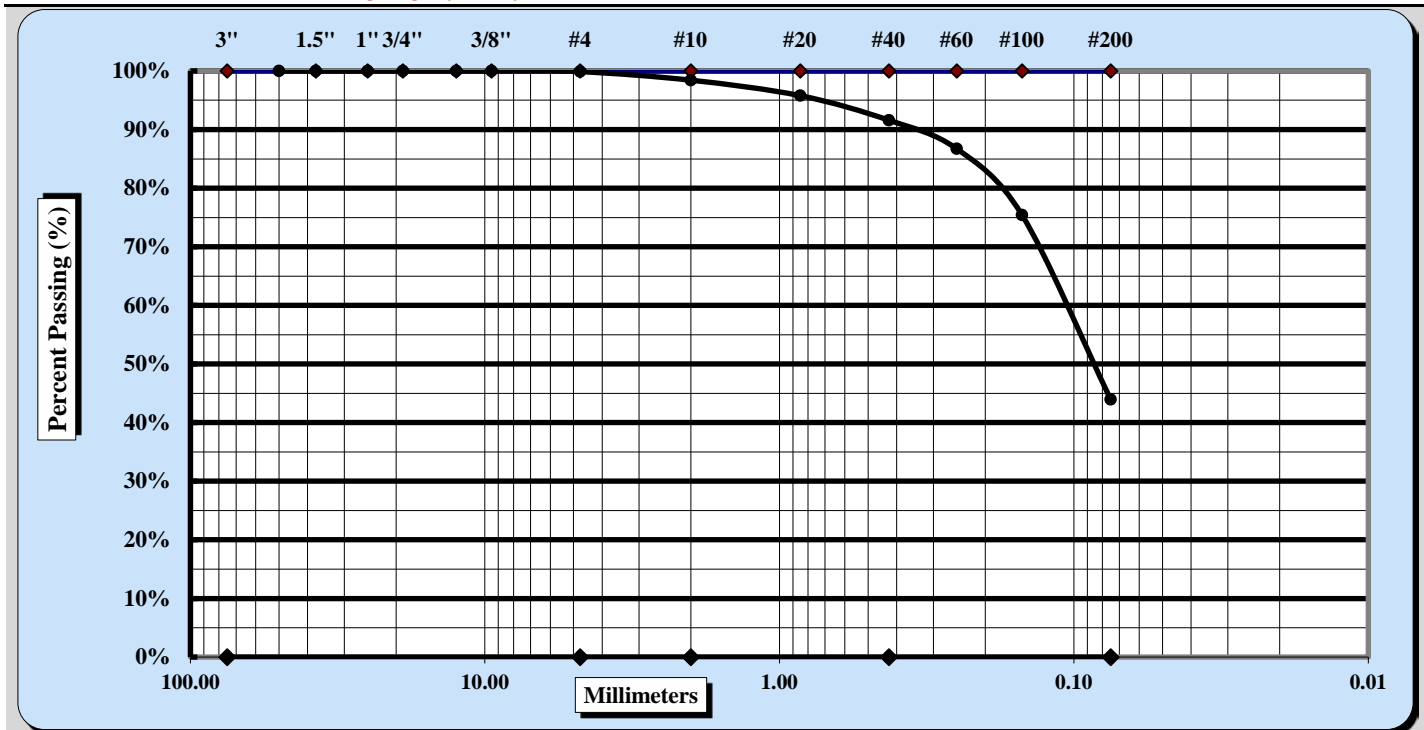
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	Report Date:	12-2-15
Project Name:	I - 26 Volvo Interchange	Test Date(s):	11-19-15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street: Columbia, SC 29201		
Sample Id.	IS-15	Type:	SS
Location:		Sample:	#8
		Sample Date:	10/23 - 10/26/15
		Depth	20 - 21.5 FT

**Sample Description:** Light gray, silty SAND (SM) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	1.5%	Fine Sand	47.6%
Gravel	0.1%	Medium Sand	6.8%	Silt & Clay	44.0%
Liquid Limit	37	Plastic Limit	31	Plastic Index	6
Specific Gravity				Moisture Content	32.8%

Coarse Sand	1.5%	Medium Sand	6.8%	Fine Sand	47.6%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

*Notes / Deviations / References:*

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

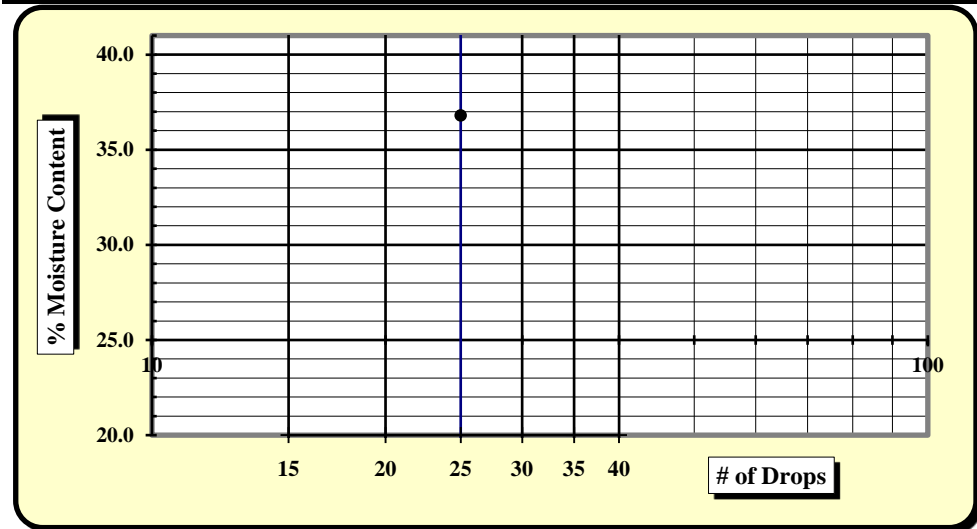
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-3-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>12-2-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-015</b>	<b>Sample #:</b>	<b>8</b>	<b>Sample Date:</b>	<b>10/23/15 - 10/26/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 4-6 FT</b>		

**Sample Description:** Light gray, silty SAND (SM) (A-4)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.22						22.47	15.03	
B	Wet Soil Weight + A	51.46						26.22	22.42	
C	Dry Soil Weight + A	43.33						25.33	20.64	
D	Water Weight (B-C)	8.13						0.89	1.78	
E	Dry Soil Weight (C-A)	22.11						2.86	5.61	
F	% Moisture (D/E)*100	36.8%						31.1%	31.7%	
N	# OF DROPS	25								
LL	LL = F * FACTOR									
Ave.	Average									<b>31.4%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>37</b>
Plastic Limit	<b>31</b>
Plastic Index	<b>6</b>
Group Symbol	<b>ML</b>
Multipoint Method	<input type="checkbox"/>
One-point Method	<input checked="" type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Date      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



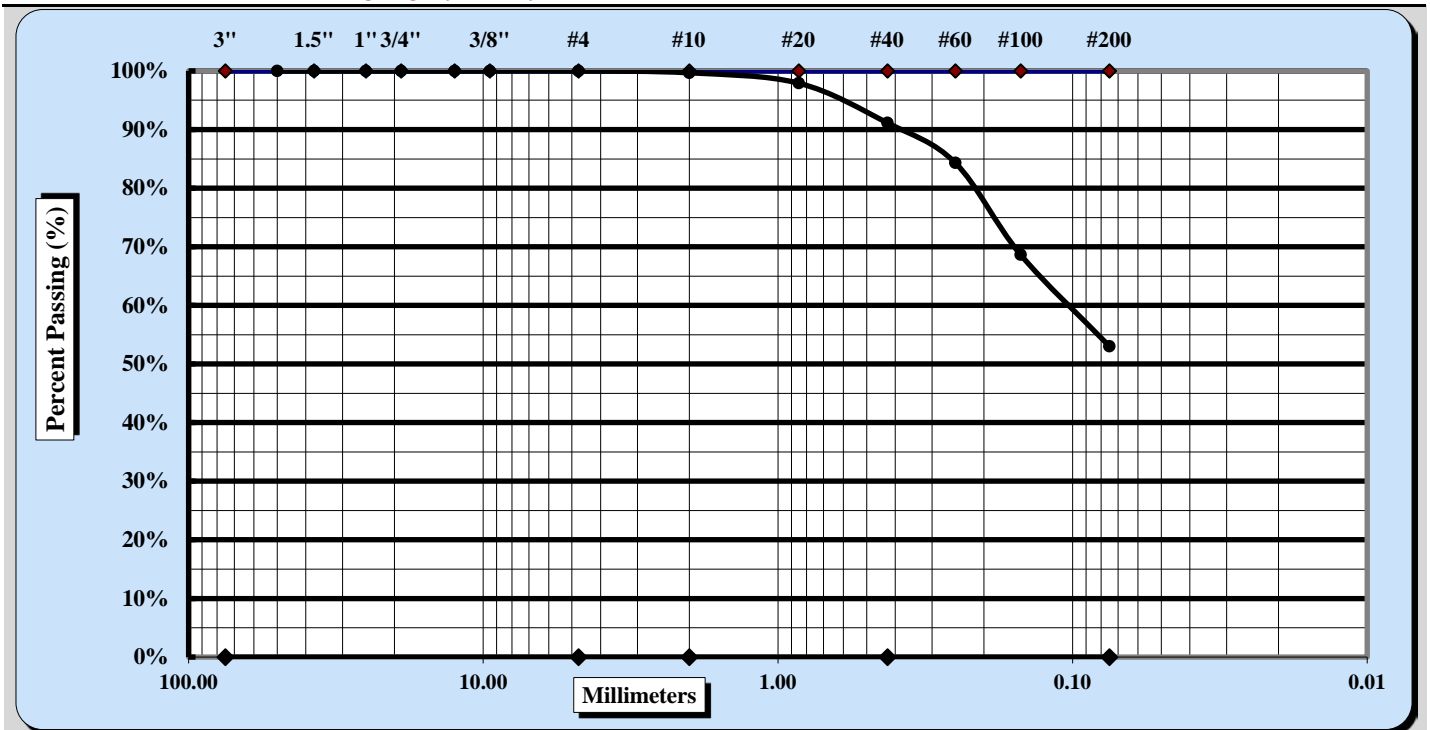
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-16</b>	<b>Type:</b>	<b>SS</b>
<b>Location:</b>	<b>Sample:</b>	<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
	<b>#3</b>	<b>Depth</b>	<b>4 - 6 FT</b>

**Sample Description:** Light gray, sandy CLAY (CH) (A-7-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.3%	Fine Sand	38.1%
Gravel	0.0%	Medium Sand	8.5%	Silt & Clay	53.0%
Liquid Limit	55	Plastic Limit	18	Plastic Index	37
Specific Gravity				Moisture Content	22.9%
Coarse Sand	0.3%	Medium Sand	8.5%	Fine Sand	38.1%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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### Liquid Limit, Plastic Limit, and Plastic Index

**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

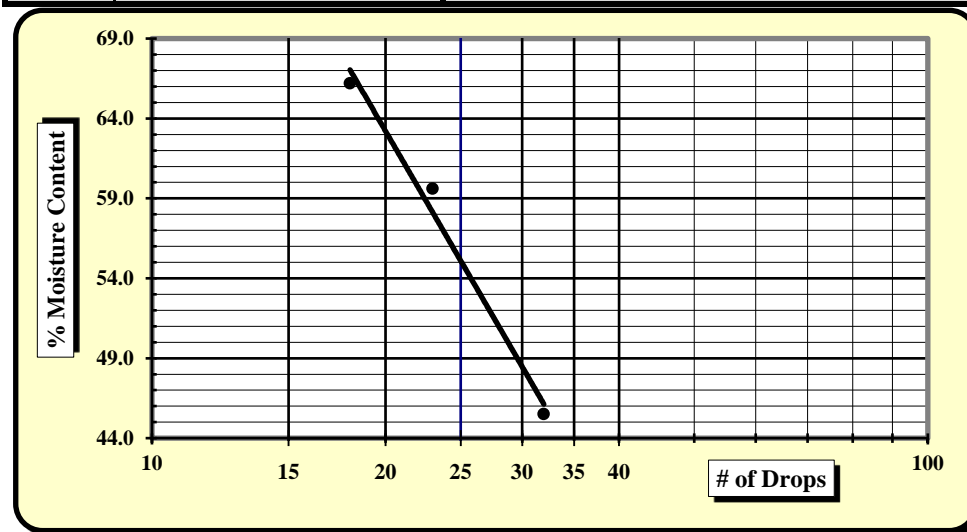
<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-016</b>	<b>Sample #:</b>	<b>3</b>	<b>Sample Date:</b>	<b>10/23/15 - 10/26/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 4-6 FT</b>		

**Sample Description:** Light gray, sandy CLAY (CH) (A-7-6)

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit						Plastic Limit		
		1	2	3	4	5	6	7	8	9
A	Tare Weight	20.93	20.92	21.15				<b>21.79</b>	22.28	
B	Wet Soil Weight + A	45.83	42.08	36.32				28.02	28.50	
C	Dry Soil Weight + A	38.04	34.18	30.28				27.07	27.55	
D	Water Weight (B-C)	<b>7.79</b>	<b>7.90</b>	<b>6.04</b>				<b>0.95</b>	<b>0.95</b>	
E	Dry Soil Weight (C-A)	<b>17.11</b>	<b>13.26</b>	<b>9.13</b>				<b>5.28</b>	<b>5.27</b>	
F	% Moisture (D/E)*100	<b>45.5%</b>	<b>59.6%</b>	<b>66.2%</b>				<b>18.0%</b>	<b>18.0%</b>	
N	# OF DROPS	32	23	18						
LL	LL = F * FACTOR									
Ave.	Average									<b>18.0%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>55</b>
Plastic Limit	<b>18</b>
Plastic Index	<b>37</b>
Group Symbol	<b>CH</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez  
Technician Name

Date

Telford Wood  
Technical Responsibility

Date

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### Sieve Analysis of Soils



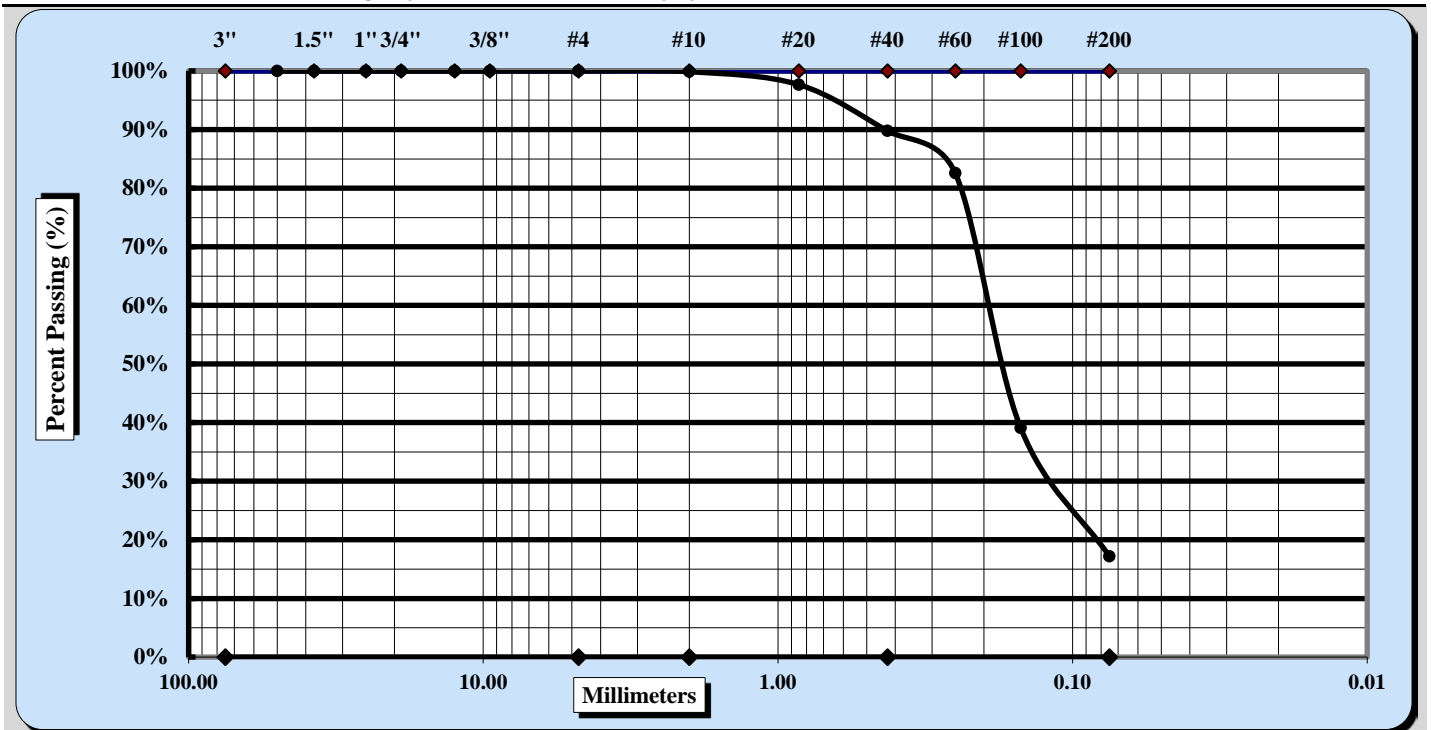
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-16</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Depth</b>	<b>8 -10 FT</b>

**Sample Description:** Light yellowish brown, clayey fine SAND (SC) (A-2-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#10	Coarse Sand	0.1%	Fine Sand	72.6%
Gravel	0.0%	Medium Sand	10.1%	Silt & Clay	17.2%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	20.6%
Coarse Sand	0.1%	Medium Sand	10.1%	Fine Sand	72.6%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

12/2/2015  
Date

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### Sieve Analysis of Soils



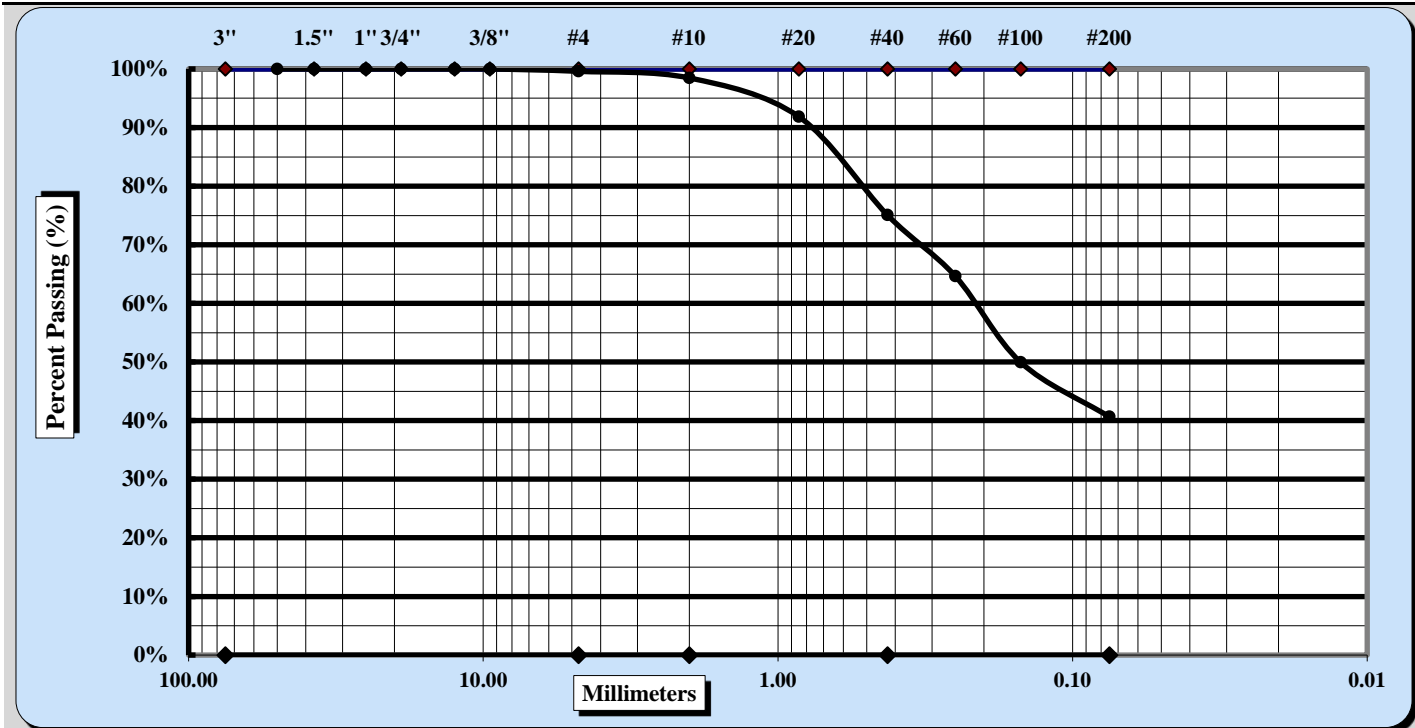
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-16</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>#6</b>	<b>Depth</b>
			<b>10 - 11.5 FT</b>

**Sample Description:** Olive gray, clayey Fine SAND (SC) (A-2-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	1.1%	Fine Sand	34.4%
Gravel	0.4%	Medium Sand	23.4%	Silt & Clay	40.6%
Liquid Limit	30	Plastic Limit	17	Plastic Index	13
Specific Gravity				Moisture Content	25.9%

Coarse Sand	1.1%	Medium Sand	23.4%	Fine Sand	34.4%
-------------	------	-------------	-------	-----------	-------

Description of Sand & Gravel Particles:	Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>	
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

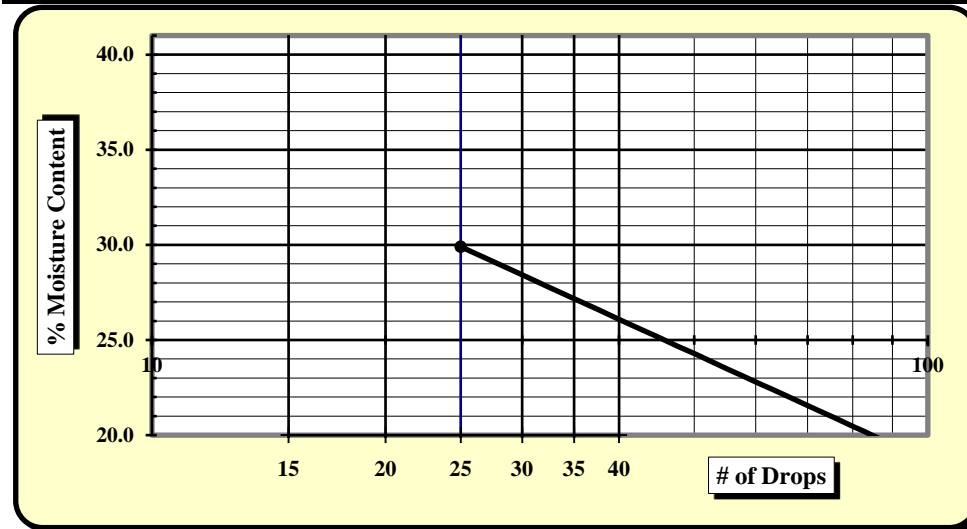
**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>11-9-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>11-6-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-016</b>	<b>Sample #:</b>	<b>6</b>	<b>Sample Date:</b>	<b>10/23/15 - 10/26/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 10-11.5 FT</b>		

<b>Sample Description:</b>	<b>Olive gray, clayey Fine SAND (SC) (A-2-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.25						20.91	20.64	
B	Wet Soil Weight + A	49.28						27.59	26.62	
C	Dry Soil Weight + A	42.83						26.66	25.76	
D	Water Weight (B-C)	6.45						0.93	0.86	
E	Dry Soil Weight (C-A)	21.58						5.75	5.12	
F	% Moisture (D/E)*100	29.9%						16.2%	16.8%	
N	# OF DROPS	25								
LL	LL = F * FACTOR									
Ave.	Average									<b>16.5%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>30</b>
Plastic Limit	<b>17</b>
Plastic Index	<b>13</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



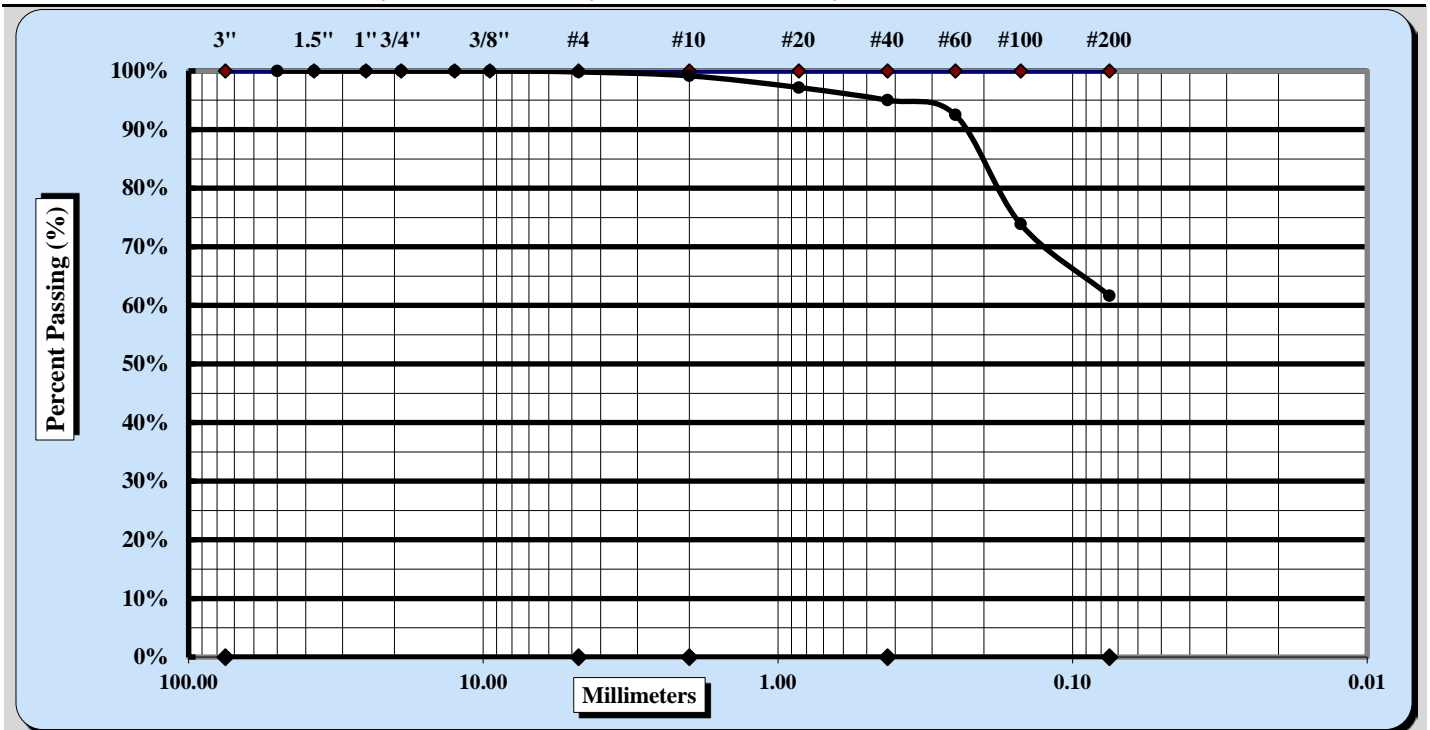
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-17</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>Depth</b>	<b>2 - 4 FT</b>

**Sample Description:** Gray, little brownish yellow mottles, sandy CLAY (CL) (A-6)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	#4	Coarse Sand	0.7%	Fine Sand	33.3%
Gravel	0.2%	Medium Sand	4.2%	Silt & Clay	61.7%
Liquid Limit	25	Plastic Limit	14	Plastic Index	11
Specific Gravity				Moisture Content	15.3%
Coarse Sand	0.7%	Medium Sand	4.2%	Fine Sand	33.3%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

12/2/2015  
Date

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**Liquid Limit, Plastic Limit, and Plastic Index**

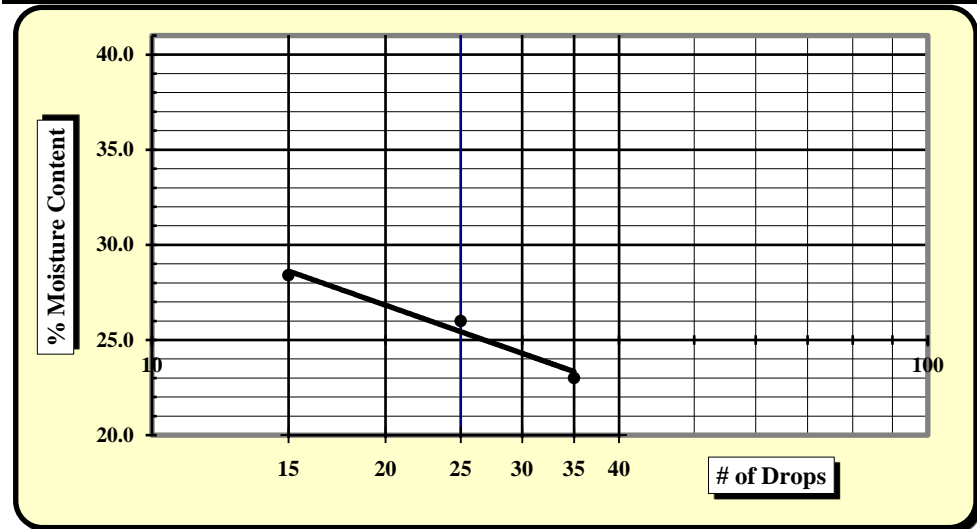
**S&ME, Inc. 620 Wando Park Boulevard Mt. Pleasant, SC 29464**

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-3-15</b>
<b>Project Name:</b>	<b>I-26 Volvo Interchange</b>	<b>Test Date(s)</b>	<b>12-2-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main street: Columbia, SC 29201</b>		

<b>Boring #:</b>	<b>IS-017</b>	<b>Sample #:</b>	<b>2</b>	<b>Sample Date:</b>	<b>10/23/15 - 10/26/15</b>
<b>Location:</b>	<b>Offset:</b>		<b>Depth 2-4 FT</b>		

<b>Sample Description:</b>	<b>Gray, little brownish yellow mottles, Sandy CLAY (CL) (A-6)</b>				
<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&amp;ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	6976	7/22/2015	Grooving tool	10473	7/28/2015
LL Apparatus	6238	7/28/2015	Grooving tool		
Oven	13796	7/28/2015	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit			
		1	2	3	4	5	6	7	8	9
A	Tare Weight	21.45	20.87	20.93				21.06	20.72	
B	Wet Soil Weight + A	43.65	48.26	43.50				27.63	28.04	
C	Dry Soil Weight + A	39.50	42.60	38.51				26.85	27.15	
D	Water Weight (B-C)	4.15	5.66	4.99				0.78	0.89	
E	Dry Soil Weight (C-A)	18.05	21.73	17.58				5.79	6.43	
F	% Moisture (D/E)*100	23.0%	26.0%	28.4%				13.5%	13.8%	
N	# OF DROPS	35	25	15						
LL	LL = F * FACTOR									
Ave.	Average									<b>13.7%</b>



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic	<input type="checkbox"/>
Liquid Limit	<b>25</b>
Plastic Limit	<b>14</b>
Plastic Index	<b>11</b>
Group Symbol	<b>CL</b>
Multipoint Method	<input checked="" type="checkbox"/>
One-point Method	<input type="checkbox"/>

Wet Preparation  Dry Preparation  Air Dried  Estimate the % Retained on the #40 Sieve: 10%

**Notes / Deviations / References:** Note and deviations from the test method are recorded.

Kim Gonzalez Technician Name      Telford Wood Technical Responsibility      Date

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### Sieve Analysis of Soils



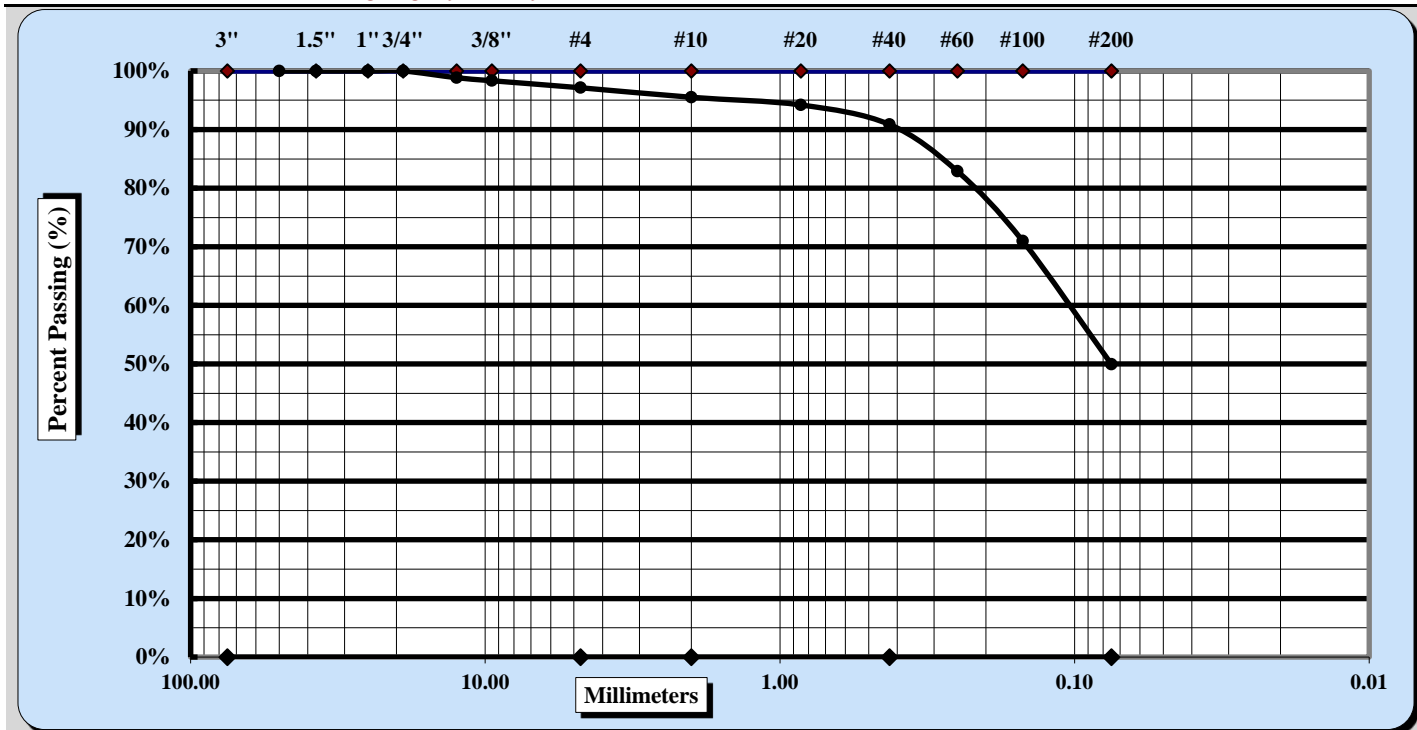
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-17</b>	<b>Type:</b>	<b>SS</b>
			<b>Sample Date:</b> 10/23 - 10/26/15
<b>Location:</b>	<b>Sample:</b>	<b>#7</b>	<b>Depth</b> 15 - 16.5 FT

**Sample Description:** Light gray, sandy CLAY (CL) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/4"	Coarse Sand	1.6%	Fine Sand	40.9%
Gravel	2.9%	Medium Sand	4.6%	Silt & Clay	50.0%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	30.9%
Coarse Sand	1.6%	Medium Sand	4.6%	Fine Sand	40.9%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

*Telford Wood*  
Signature

Location Coordinator  
Position

12/2/2015  
Date

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### Sieve Analysis of Soils



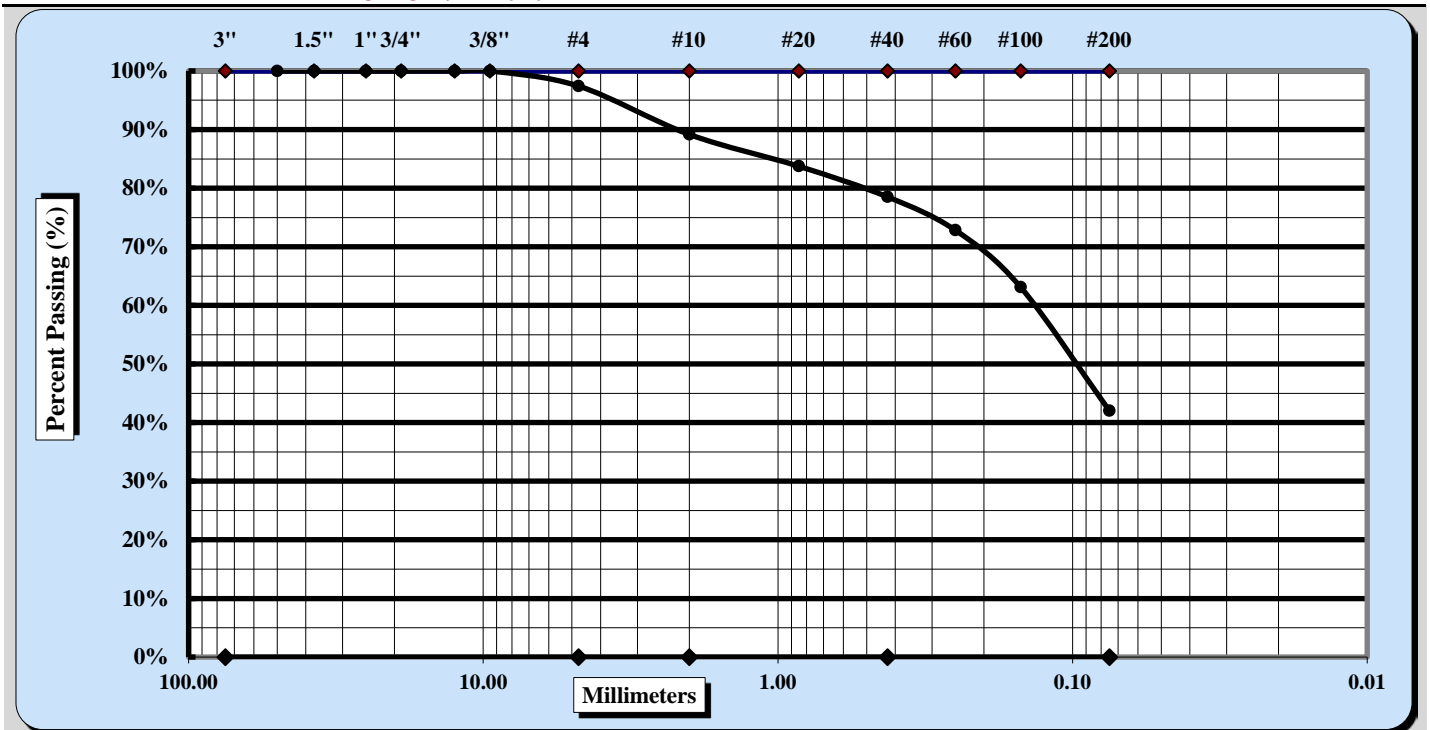
ASTM D 422

Quality Assurance

S&ME, Inc. - 620 Wando Park Blvd., Mt. Pleasant, SC 29464

<b>Project #:</b>	<b>1413-15-114</b>	<b>Report Date:</b>	<b>12-2-15</b>
<b>Project Name:</b>	<b>I - 26 Volvo Interchange</b>	<b>Test Date(s):</b>	<b>11-19-15</b>
<b>Client Name:</b>	<b>Thomas &amp; Hutton</b>		
<b>Client Address:</b>	<b>1501 Main Street: Columbia, SC 29201</b>		
<b>Sample Id.</b>	<b>IS-18</b>	<b>Type:</b>	<b>SS</b>
		<b>Sample Date:</b>	<b>10/23 - 10/26/15</b>
<b>Location:</b>	<b>Sample:</b>	<b>#7</b>	<b>Depth</b>
			<b>15-16.5 FT</b>

**Sample Description:** Light gray, clayey fine SAND (SC) (A-4)



Cobbles	< 300 mm (12") and > 75 mm (3")	Fine Sand	< 0.425 mm and > 0.075 mm (#200)
Gravel	< 75 mm and > 4.75 mm (#4)	Silt	< 0.075 and > 0.005 mm
Coarse Sand	< 4.75 mm and > 2.00 mm (#10)	Clay	< 0.005 mm
Medium Sand	< 2.00 mm and > 0.425 mm (#40)	Colloids	< 0.001 mm

Maximum Particle Size	3/8"	Coarse Sand	8.3%	Fine Sand	36.5%
Gravel	2.6%	Medium Sand	10.7%	Silt & Clay	42.0%
Liquid Limit	NP	Plastic Limit	NP	Plastic Index	NP
Specific Gravity				Moisture Content	27.9%
Coarse Sand	8.3%	Medium Sand	10.7%	Fine Sand	36.5%
Description of Sand & Gravel Particles:		Rounded	<input type="checkbox"/>	Angular	<input type="checkbox"/>
Hard & Durable	<input type="checkbox"/>	Soft	<input type="checkbox"/>	Weathered & Friable	<input type="checkbox"/>

Notes / Deviations / References:

Telford Wood  
Technical Responsibility

Signature

Location Coordinator  
Position

12/2/2015  
Date

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Client:	S&ME, Inc.
Project Name:	I-26 Volvo Interchange
Project Location:	Berkeley County, South Carolina
GTX #:	304013
Test Date:	11/20/15
Tested By:	jbr
Checked By:	mcm

**pH of Soil by ASTM G51**

Boring ID	Sample ID	Depth, ft	Description	pH Reading
IS-02	---	0-2	Moist, mottled gray & reddish brown clay	4.53
IS-12	---	0-2	Moist, brown silt	5.01
ID-03	---	0-2	Moist, brown silt	5.48

Notes:



Client:	S&ME, Inc
Project Name:	I-26 Volvo Interchange
Project Location:	Berkely County, South Carolina
GTX #:	304013
Test Date:	11/25/15
Tested By:	jbr
Checked By:	jdt

<h2 style="margin: 0;">Minimum Laboratory Soil Resistivity by AASHTO T 288</h2>
---

Boring ID	Sample ID	Depth, ft.	Sample Description	Minimum Soil Resistivity, ohm-cm
ID-03	---	0-2	Moist, brown silt	5,578
IS-02	---	0-2	Moist, mottles gray and red clay	6,694
IS-12	---	0-2	Moist, brown silt	5,578

Comments: Test Equipment: Nilsson Model 400 Soil Resistance Meter, MC Miller Soil Box  
 Test conducted in standard laboratory atmosphere: 68-73 F



## ANALYTICAL REPORT

Lab Number:	L1530274
Client:	Geo Testing Express 2358 Perimeter Park Drive Suite 320 Atlanta, GA 30341
ATTN:	Marty Molino
Phone:	(770) 217-5389
Project Name:	I-26 VOLVO INTERCHANGE
Project Number:	304013
Report Date:	11/25/15

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Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

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Eight Walkup Drive, Westborough, MA 01581-1019  
508-898-9220 (Fax) 508-898-9193 800-624-9220 - [www.alphalab.com](http://www.alphalab.com)





**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

<b>Alpha Sample ID</b>	<b>Client ID</b>	<b>Matrix</b>	<b>Sample Location</b>	<b>Collection Date/Time</b>	<b>Receive Date</b>
L1530274-01	IS-02   0-2FT.	SOIL	BERKELEY COUNTY, SC	11/17/15 09:37	11/18/15
L1530274-02	ID-03   0-2FT.	SOIL	BERKELEY COUNTY, SC	11/17/15 09:41	11/18/15
L1530274-03	IS-12   0-2FT.	SOIL	BERKELEY COUNTY, SC	11/17/15 09:45	11/18/15

**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

### Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet all of the requirements of NELAC, for all NELAC accredited parameters. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

#### HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

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**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

### Case Narrative (continued)

#### Sample Receipt

The samples were received at the laboratory on November 18, 2015; however, the chain of custody was not relinquished. The requested analyses were performed.

#### Sulfate

L1530274-01: The sample has an elevated detection limit due to the dilution required by the sample matrix.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Cristin Walker

Title: Technical Director/Representative

Date: 11/25/15

# **INORGANICS & MISCELLANEOUS**

Project Name: I-26 VOLVO INTERCHANGE

Lab Number: L1530274

Project Number: 304013

Report Date: 11/25/15

## SAMPLE RESULTS

Lab ID: L1530274-01

Date Collected: 11/17/15 09:37

Client ID: IS-02 I 0-2FT.

Date Received: 11/18/15

Sample Location: BERKELEY COUNTY, SC

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	11/19/15 23:30	30,2540G	RT
Chloride	36		mg/kg	12	--	1	-	11/23/15 18:59	1,9251	LA
Sulfate	ND		mg/kg	240	--	2	-	11/20/15 12:45	1,9038	MP



Project Name: I-26 VOLVO INTERCHANGE

Lab Number: L1530274

Project Number: 304013

Report Date: 11/25/15

## SAMPLE RESULTS

Lab ID: L1530274-02

Date Collected: 11/17/15 09:41

Client ID: ID-03 I 0-2FT.

Date Received: 11/18/15

Sample Location: BERKELEY COUNTY, SC

Field Prep: Not Specified

Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	11/19/15 23:30	30,2540G	RT
Chloride	36		mg/kg	12	--	1	-	11/23/15 19:00	1,9251	LA
Sulfate	130		mg/kg	120	--	1	-	11/20/15 12:45	1,9038	MP



**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

**SAMPLE RESULTS**

**Lab ID:** L1530274-03  
**Client ID:** IS-12 I 0-2FT.  
**Sample Location:** BERKELEY COUNTY, SC  
**Matrix:** Soil

**Date Collected:** 11/17/15 09:45  
**Date Received:** 11/18/15  
**Field Prep:** Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
<b>General Chemistry - Westborough Lab</b>										
Solids, Total	87.2		%	0.100	NA	1	-	11/19/15 23:30	30,2540G	RT
Chloride	12		mg/kg	10	--	1	-	11/23/15 19:01	1,9251	LA
Sulfate	ND		mg/kg	110	--	1	-	11/20/15 12:45	1,9038	MP



Project Name: I-26 VOLVO INTERCHANGE

Lab Number: L1530274

Project Number: 304013

Report Date: 11/25/15

**Method Blank Analysis**  
**Batch Quality Control**

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG842719-1										
Sulfate	ND		mg/kg	100	--	1	-	11/20/15 12:45	1,9038	MP
General Chemistry - Westborough Lab for sample(s): 01-03 Batch: WG843543-1										
Chloride	ND		mg/kg	10	--	1	-	11/23/15 18:45	1,9251	LA



## Lab Control Sample Analysis

Batch Quality Control

**Project Name:** I-26 VOLVO INTERCHANGE

**Project Number:** 304013

**Lab Number:** L1530274

**Report Date:** 11/25/15

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG842719-2								
Sulfate	95		-		80-121	-		12
General Chemistry - Westborough Lab Associated sample(s): 01-03 Batch: WG843543-2								
Chloride	99		-		89-109	-		35

### Matrix Spike Analysis Batch Quality Control

**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG842719-4 QC Sample: L1530276-01 Client ID: MS Sample												
Sulfate	ND	207	200	97	-	-	-	-	22-183	-	-	12
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG843543-4 QC Sample: L1530269-01 Client ID: MS Sample												
Chloride	26	408	390	97	-	-	-	-	62-129	-	-	35

## Lab Duplicate Analysis

Batch Quality Control

Project Name: I-26 VOLVO INTERCHANGE

Project Number: 304013

Lab Number: L1530274

Report Date: 11/25/15

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG842605-1 QC Sample: L1530234-01 Client ID: DUP Sample						
Solids, Total	88.8	88.3	%	1		20
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG842719-3 QC Sample: L1530276-01 Client ID: DUP Sample						
Sulfate	ND	ND	mg/kg	NC		12
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG843543-3 QC Sample: L1530269-01 Client ID: DUP Sample						
Chloride	26	23	mg/kg	12		35

**Project Name:** I-26 VOLVO INTERCHANGE**Project Number:** 304013**Lab Number:** L1530274**Report Date:** 11/25/15**Sample Receipt and Container Information**

Were project specific reporting limits specified? YES

**Cooler Information Custody Seal****Cooler**

A Absent

**Container Information**

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1530274-01A	Glass 120ml/4oz unpreserved	A	N/A	4.7	Y	Absent	CL-9251(28),SO4-9038(28),TS(7)
L1530274-02A	Glass 120ml/4oz unpreserved	A	N/A	4.7	Y	Absent	CL-9251(28),SO4-9038(28),TS(7)
L1530274-03A	Glass 120ml/4oz unpreserved	A	N/A	4.7	Y	Absent	CL-9251(28),SO4-9038(28),TS(7)

\*Values in parentheses indicate holding time in days



**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

## GLOSSARY

### Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCS D	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

### Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

### Terms

**Total:** With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

**Analytical Method:** Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

### Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

**Report Format:** Data Usability Report



**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

#### Data Qualifiers

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

**Project Name:** I-26 VOLVO INTERCHANGE  
**Project Number:** 304013

**Lab Number:** L1530274  
**Report Date:** 11/25/15

## REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

## LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



## Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

### Westborough Facility

**EPA 8260C:** 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; Iodomethane (methyl iodide) (soil); Methyl methacrylate (soil); Azobenzene.

**EPA 8270D:** Dimethylnaphthalene, 1,4-Diphenylhydrazine.

**EPA 625:** 4-Chloroaniline, 4-Methylphenol.

**SM4500:** Soil: Total Phosphorus, TKN, NO<sub>2</sub>, NO<sub>3</sub>.

### Mansfield Facility

**EPA 8270D:** Biphenyl.

**EPA 2540D:** TSS

**EPA TO-15:** Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

The following analytes are included in our Massachusetts DEP Scope of Accreditation, Westborough Facility:

### Drinking Water

**EPA 200.8:** Sb,As,Ba,Be,Cd,Cr,Cu,Pb,Ni,Se,Tl; **EPA 200.7:** Ba,Be,Ca,Cd,Cr,Cu,Na; **EPA 245.1:** Mercury;

**EPA 300.0:** Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

**EPA 332:** Perchlorate.

**Microbiology:** **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, Enterolert-QT.**

### Non-Potable Water

**EPA 200.8:** Al,Sb,As,Be,Cd,Cr,Cu,Pb,Mn,Ni,Se,Ag,Tl,Zn;

**EPA 200.7:** Al,Sb,As,Be,Cd,Ca,Cr,Co,Cu,Fe,Pb,Mg,Mn,Mo,Ni,K,Se,Ag,Na,Sr,Ti,Tl,V,Zn;

**EPA 245.1, SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2340B, SM2320B, SM4500CL-E, SM4500F-BC, SM426C, SM4500NH3-BH, EPA 350.1:** Ammonia-N, **LACHAT 10-107-06-1-B:** Ammonia-N, **SM4500NO3-F,**

**EPA 353.2:** Nitrate-N, **SM4500NH3-BC-NES, EPA 351.1, SM4500P-E, SM4500P-B, E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, SM14 510AC, EPA 420.1, SM4500-CN-CE, SM2540D.**

**EPA 624:** Volatile Halocarbons & Aromatics,

**EPA 608:** Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT,

Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

**EPA 625:** SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

**Microbiology:** **SM9223B-Colilert-QT; Enterolert-QT, SM9222D-MF.**

For a complete listing of analytes and methods, please contact your Alpha Project Manager.





# CHAIN OF CUSTODY

PAGE 1 OF 1

## Project Information

Project Name: I-26 Volvo Interchange

Project Location: Berkeley County, SC

Project #: 304013

Project Manager: Marty Molino

ALPHA Quote #:

## Turn-Around Time

Standard  Rush (ONLY IF PRE-APPROVED)

Due Date: Time:

Westborough, MA Mansfield, MA  
 TEL: 508-898-9220 TEL: 508-822-9300  
 FAX: 508-898-9193 FAX: 508-822-3288

## Client Information

Client: Geotesting Express

Address: 2358 Perimeter Park Drive, Suite

Atlanta, GA 30341

Phone: 770-645-6575

Fax: 770-645-6570

Email: mmolino@geotesting.com

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab: 11/18/15

ALPHA Job #: 4530274

## Report Information Data Deliverables

FAX  EMAIL  
 ADEx  Add'l Deliverables

## Billing Information

Same as Client info PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

Criteria

## ANALYSIS

Chlorides	Sulfates																	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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**SAMPLE HANDLING**  
 Filtration  
 Done  
 Not Needed  
 Lab to do  
 Preservation  
 Lab to do  
 (Please specify below)

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
30274 -01	IS-02   0-2 ft.	11/17/15	937	Soil	jm
-02	ID-03   0-2 ft.	11/17/15	941	Soil	jm
-03	IS-12   0-2 ft.	11/17/15	945	Soil	jm

Container Type	G	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
Marty Molino	11/17/15 (MM/MD)	<i>Jan Wuong</i>	11/18/15 10:00

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO 01-01(I-NJ)  
(rev. 5-JAN-12)





# CHAIN OF CUSTODY

PAGE 1 OF 1

## Project Information

Westborough, MA    Mansfield, MA  
 TEL: 508-898-9220    TEL: 508-822-9300  
 FAX: 508-898-9193    FAX: 508-822-3288

Project Name: I-26 Volvo Interchange

## Client Information

Client: Geotesting Express  
 Address: 2358 Perimeter Park Drive, Suite  
 Atlanta, GA 30341  
 Phone: 770-645-6575  
 Fax: 770-645-6570  
 Email: mmolino@geotesting.com

Project Location: Berkeley County, SC

Project #: 304013

Project Manager: Marty Molino

ALPHA Quote #:

## Turn-Around Time

Standard     Rush (ONLY IF PRE-APPROVED)

Due Date:    Time:

These samples have been Previously analyzed by Alpha

Other Project Specific Requirements/Comments/Detection Limits:

Date Rec'd in Lab: 11/18/15

ALPHA Job #: 4530274

## Report Information Data Deliverables

FAX     EMAIL  
 ADEx     Add'l Deliverables

## Billing Information

Same as Client info    PO #:

## Regulatory Requirements/Report Limits

State/Fed Program

Criteria

## ANALYSIS

Chlorides	Sulfates																	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SAMPLE HANDLING**  
**Filtration**  
 Done  
 Not Needed  
 Lab to do  
**Preservation**  
 Lab to do  
*(Please specify below)*

TOTAL # BOTTLES

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection		Sample Matrix	Sampler's Initials
		Date	Time		
<u>30274 -01</u>	IS-02   0-2 ft.	11/17/15	937	Soil	jm
<u>-02</u>	ID-03   0-2 ft.	11/17/15	941	Soil	jm
<u>-03</u>	IS-12   0-2 ft.	11/17/15	945	Soil	jm

Container Type	G	G	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Preservative	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Relinquished By:	Date/Time	Received By:	Date/Time
		<i>Jan Wong</i>	<u>11/18/15 10:00</u>

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

## **Appendix IV**

Summary II of Laboratory Test Data

Grain Size Analysis, Atterberg Limits, and Natural Moisture Content Test Results

Consolidated Undrained Triaxial Test Results

One-Dimensional Consolidation Test Results



**Summary II of Laboratory Test Data**

I-26 Volvo Interchange  
 Berkeley County, South Carolina  
 S&ME Project No. 1413-15-114

Sample Location*	Sample Type	Sample Depth (ft)	USCS Classification	AASHTO Classification	Natural Moisture (%)	% Finer #200	Atterberg Limits		One-Dimensional Consolidation					Consolidated Undrained Triaxial Test			
							LL	PI	Initial Void Ratio $e_0$	Final Void Ratio <sup>1</sup> $e_f$	Preconsolidation Pressure (psf)	Compression Index $C_c$	Swell Index $C_r$	Total Stress		Effective Stress	
														Cohesion [c] (psf)	Friction Angle [φ] (°)	Cohesion [c'] (psf)	Friction Angle [φ'] (°)
ID-01A	ST	5 – 7	CH	A-7-6	33.1	57.1	74	54	-	-	-	-	-	0	22	153	28.2
ID-02A	ST	8 – 10	CH	A-7-6	35.7	87.7	74	51	0.952	0.676	6,300	0.42	0.08	-	-	-	-
ID-06A	ST	5 – 7	CH	A-7-6	29.1	63.3	59	38	-	-	-	-	-	0	22	120	30.4
	ST	10-12	CH	A-7-6	46	96.7	79	57	1.44	1.06	6,200	0.40	0.12	-	-	-	-
IS-18A	ST	4-6	CH	A-7-6	28.3	71.8	58	40	0.785	0.587	6,200	0.19	0.04	-	-	-	-
	ST	10-12	SC	A-7-6	24	41.9	46	27	1.37	0.773	na	na	na	884	3.2	47.7	30.5

<sup>1</sup> At maximum applied pressure 32,000psf

\*The following laboratory test results were collected from wash borings performed adjacent to selected soil borings with SPT sampling. The wash boring labels are identified with "A" designation at end of label. However the "A" is not shown on the lab data sheets.



Client:	S&ME, Inc.		
Project:	I-26 Volvo Interchange		
Location:	Berkeley County, South Carolina	Project No:	GTX-304013
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	11/30/15
Depth :	---	Test Id:	252806
		Tested By:	jm
		Checked By:	MCM

## Moisture Content of Soil and Rock - ASTM D2216

Boring ID	Sample ID	Depth	Description	Moisture Content, %
ID-01	- - -	5-7 ft	Moist, olive yellow sandy clay	33.1
ID-02	- - -	8-10 ft	Moist, greenish gray clay	35.7
ID-06	- - -	5-7 ft	Moist, yellow sandy clay	29.1
ID-06	- - -	10-12 ft	Moist, olive gray clay	46.0
IS-18	- - -	4-6 ft	Moist, mottled red and yellowish brown clay with sand	28.3
IS-18	- - -	10-12	Moist, greenish gray clayey sand	24.0

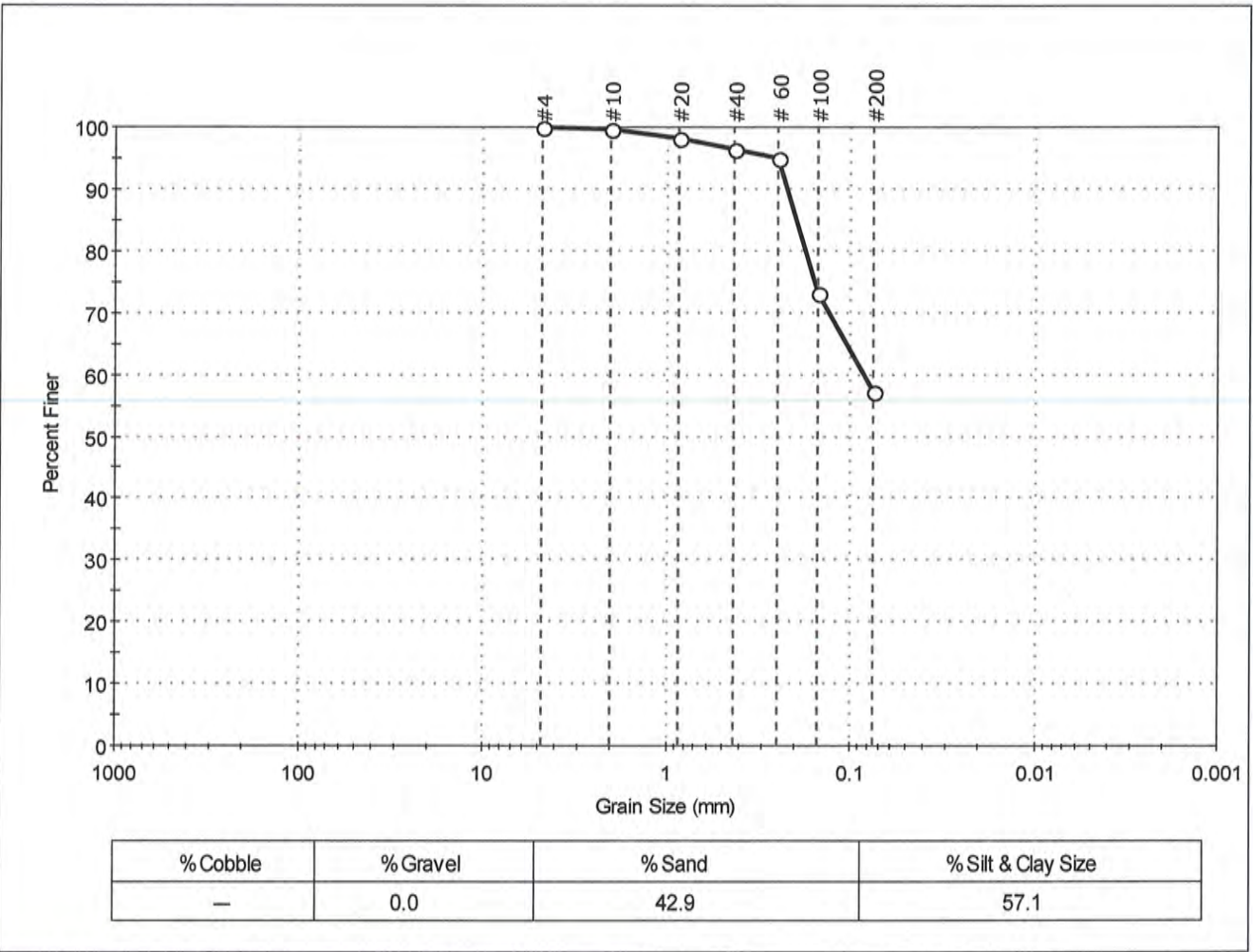
Notes: Temperature of Drying : 110° Celsius





Client: S&ME, Inc.	Project: I-26 Volvo Interchange	Location: Berkeley County, South Carolina	Project No: GTX-304013
Boring ID: ID-01	Sample Type: tube	Tested By: jm	Checked By: MCM
Sample ID: ---	Test Date: 11/25/15	Test Id: 252789	
Depth: 5-7 ft			
Test Comment: ---			
Sample Description: Moist, olive yellow sandy clay			
Sample Comment: ---			

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	98		
#40	0.42	96		
#60	0.25	95		
#100	0.15	73		
#200	0.075	57		

<u>Coefficients</u>	
D <sub>85</sub> = 0.1977 mm	D <sub>30</sub> = N/A
D <sub>60</sub> = 0.0849 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = N/A	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

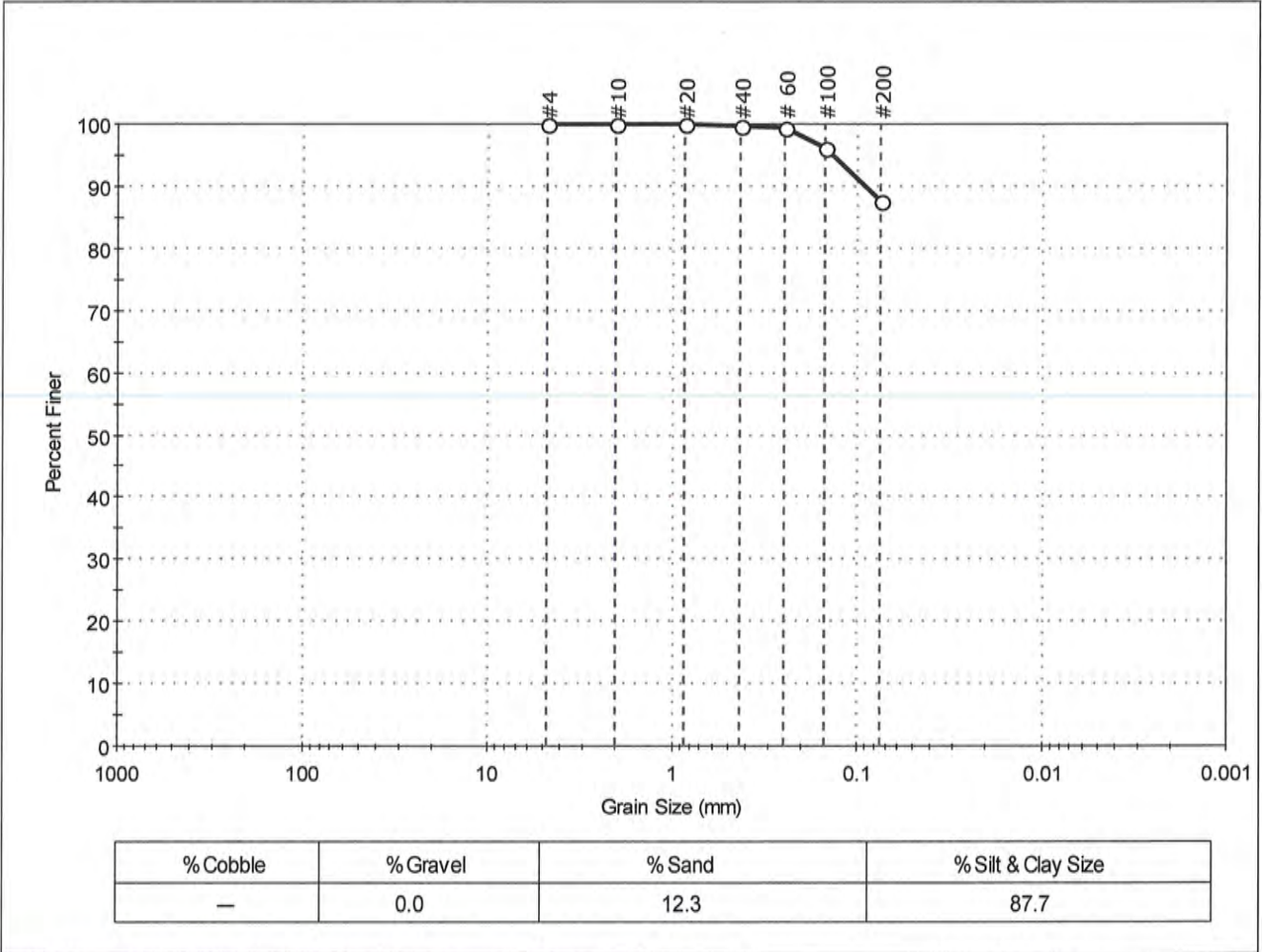
<u>Classification</u>	
<u>ASTM</u>	Sandy Fat clay (CH)
<u>AASHTO</u>	Clayey Soils (A-7-6 (27))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape :	---
Sand/Gravel Hardness :	---



Client: S&ME, Inc.	Project: I-26 Volvo Interchange	Location: Berkeley County, South Carolina	Project No: GTX-304013
Boring ID: ID-02	Sample Type: tube	Tested By: jm	Checked By: MCM
Sample ID: ---	Test Date: 11/25/15	Test Id: 252790	
Depth : 8-10 ft			
Test Comment: ---			
Sample Description: Moist, greenish gray clay			
Sample Comment: ---			

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	96		
#200	0.075	88		

<u>Coefficients</u>	
D <sub>85</sub> = N/A	D <sub>30</sub> = N/A
D <sub>60</sub> = N/A	D <sub>15</sub> = N/A
D <sub>50</sub> = N/A	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

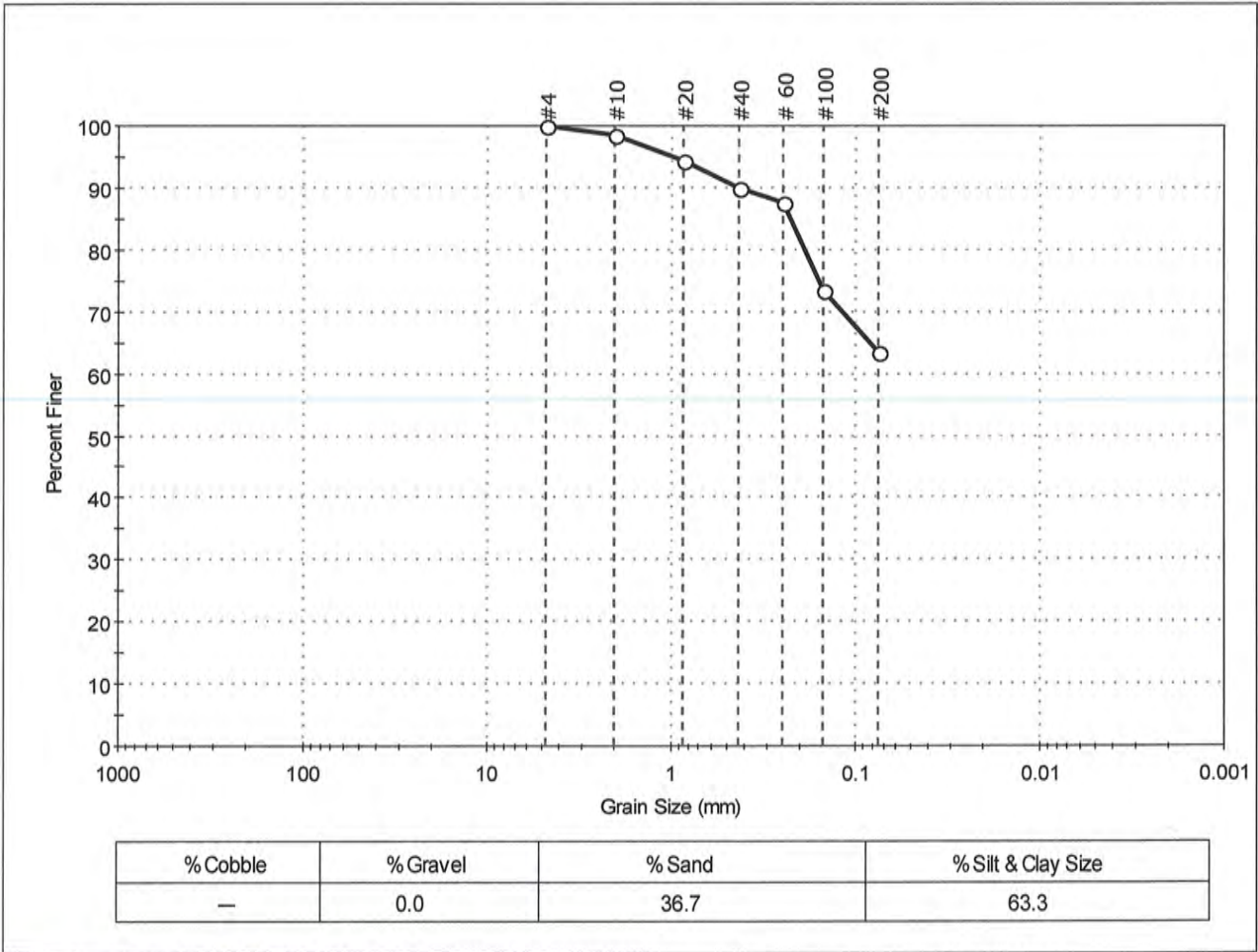
<u>Classification</u>	
<u>ASTM</u>	Fat clay (CH)
<u>AASHTO</u>	Clayey Soils (A-7-6 (49))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape :	---
Sand/Gravel Hardness :	---



Client: S&ME, Inc.	Project: I-26 Volvo Interchange	Location: Berkeley County, South Carolina	Project No: GTX-304013
Boring ID: ID-06	Sample Type: tube	Tested By: jm	Checked By: MCM
Sample ID: ---	Test Date: 11/30/15	Test Id: 252791	
Depth : 5-7 ft			
Test Comment: ---			
Sample Description: Moist, yellow sandy clay			
Sample Comment: ---			

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.85	94		
#40	0.42	90		
#60	0.25	87		
#100	0.15	73		
#200	0.075	63		

<u>Coefficients</u>	
D <sub>85</sub> = 0.2287 mm	D <sub>30</sub> = N/A
D <sub>60</sub> = N/A	D <sub>15</sub> = N/A
D <sub>50</sub> = N/A	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

<u>Classification</u>	
<u>ASTM</u>	Sandy Fat clay (CH)
<u>AASHTO</u>	Clayey Soils (A-7-6 (22))

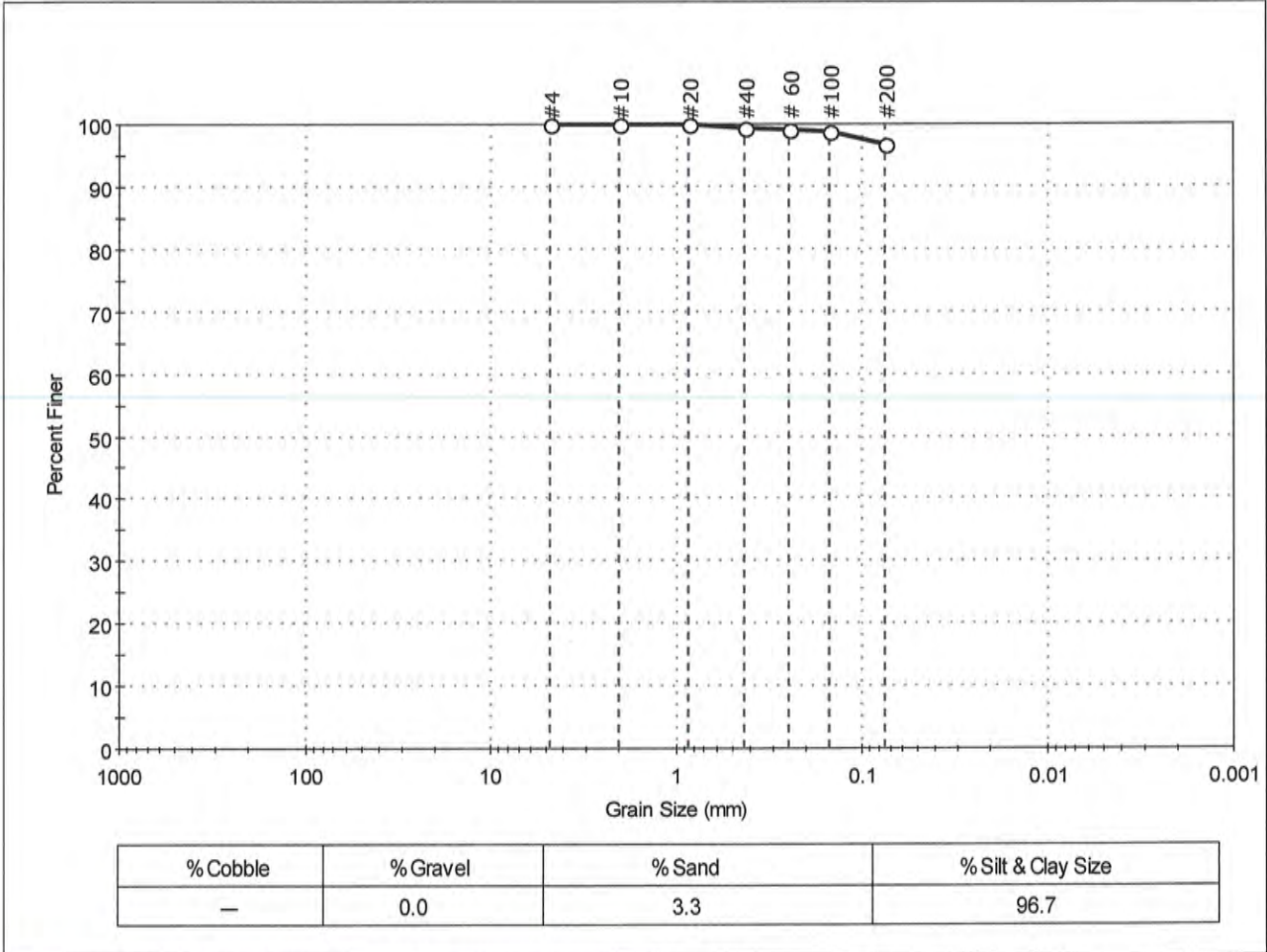
<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---





Client: S&ME, Inc.	Project: I-26 Volvo Interchange	Location: Berkeley County, South Carolina	Project No: GTX-304013
Boring ID: ID-06	Sample Type: tube	Tested By: jm	Checked By: MCM
Sample ID: ---	Test Date: 11/30/15	Test Id: 252792	
Depth : 10-12 ft			
Test Comment: ---			
Sample Description: Moist, olive gray clay			
Sample Comment: ---			

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	97		

<u>Coefficients</u>	
D <sub>85</sub> = N/A	D <sub>30</sub> = N/A
D <sub>60</sub> = N/A	D <sub>15</sub> = N/A
D <sub>50</sub> = N/A	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

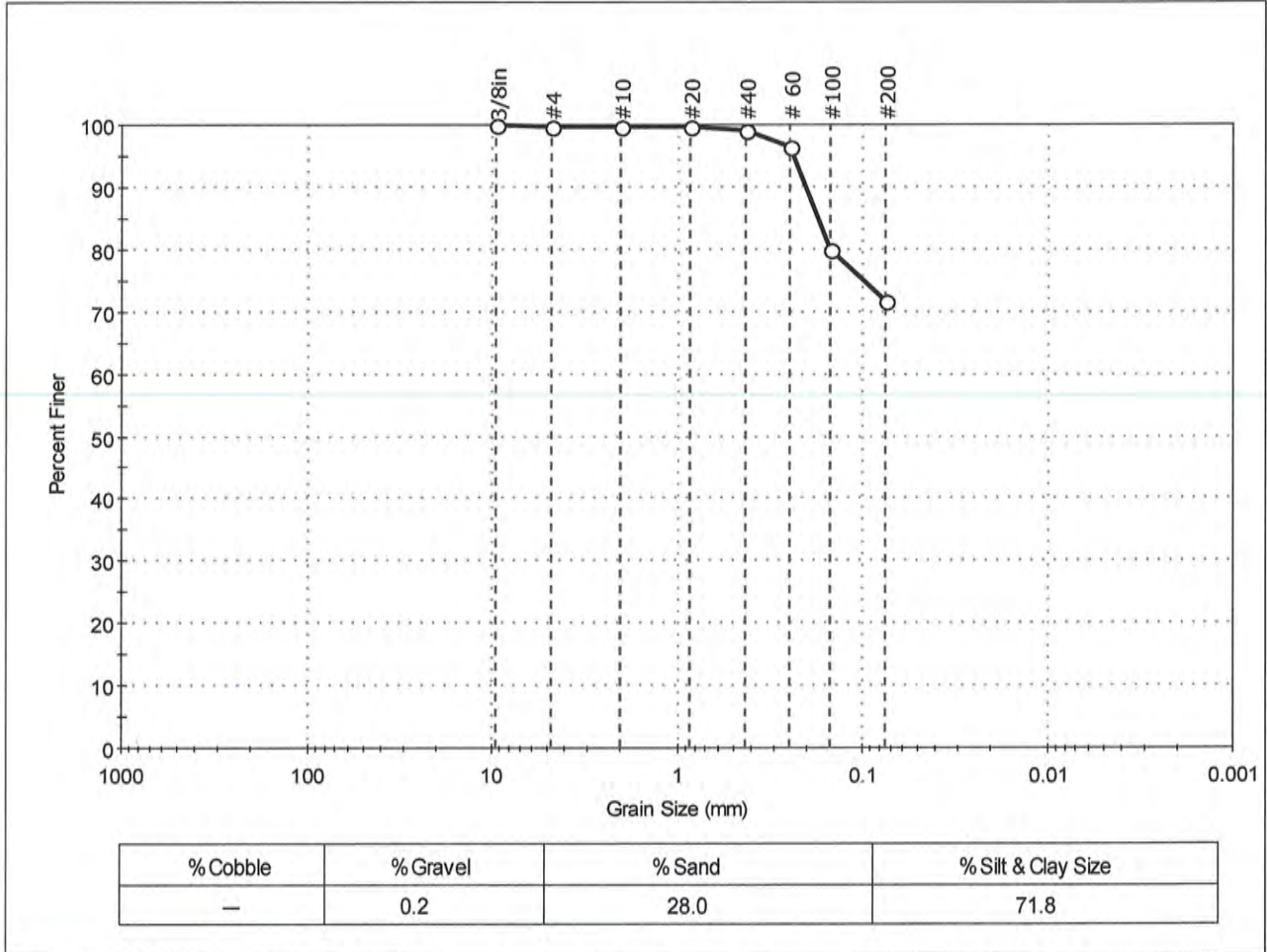
<u>Classification</u>	
<u>ASTM</u>	Fat clay (CH)
<u>AASHTO</u>	Clayey Soils (A-7-6 (63))

<u>Sample/Test Description</u>	
Sand/Gravel Particle Shape :	---
Sand/Gravel Hardness :	---



Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange				
Location:	Berkeley County, South Carolina				
Boring ID:	IS-18	Sample Type:	tube	Tested By:	jm
Sample ID:	---	Test Date:	11/25/15	Checked By:	MCM
Depth:	4-6 ft	Test Id:	252793		
Test Comment:	---				
Sample Description:	Moist, mottled red and yellowish brown clay with sand				
Sample Comment:	---				

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8in	9.50	100		
#4	4.75	100		
#10	2.00	100		
#20	0.85	100		
#40	0.42	99		
#60	0.25	96		
#100	0.15	80		
#200	0.075	72		

<b>Coefficients</b>	
D <sub>85</sub> = 0.1756 mm	D <sub>30</sub> = N/A
D <sub>60</sub> = N/A	D <sub>15</sub> = N/A
D <sub>50</sub> = N/A	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

<b>Classification</b>	
<b>ASTM</b>	Fat clay with sand (CH)
<b>AASHTO</b>	Clayey Soils (A-7-6 (28))

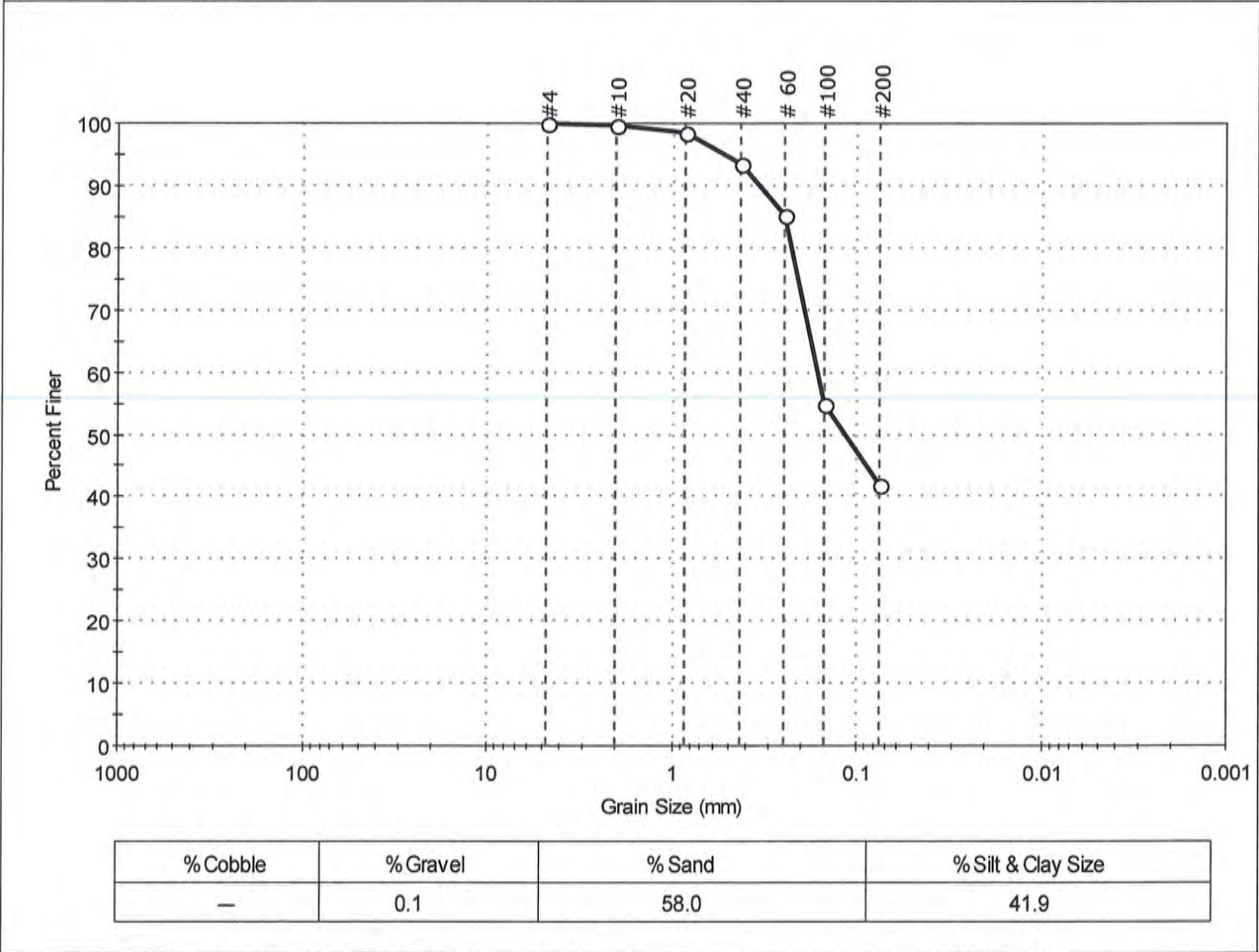
<b>Sample/Test Description</b>	
Sand/Gravel Particle Shape :	---
Sand/Gravel Hardness :	---





Client: S&ME, Inc.	Project: I-26 Volvo Interchange	Location: Berkeley County, South Carolina	Project No: GTX-304013
Boring ID: IS-18	Sample Type: tube	Tested By: jm	Checked By: MCM
Sample ID: ---	Test Date: 11/25/15	Test Id: 252794	
Depth: 10-12			
Test Comment: ---			
Sample Description: Moist, greenish gray clayey sand			
Sample Comment: ---			

## Particle Size Analysis - ASTM D422



Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	98		
#40	0.42	93		
#60	0.25	85		
#100	0.15	55		
#200	0.075	42		

Coefficients	
D <sub>85</sub> = 0.2495 mm	D <sub>30</sub> = N/A
D <sub>60</sub> = 0.1637 mm	D <sub>15</sub> = N/A
D <sub>50</sub> = 0.1158 mm	D <sub>10</sub> = N/A
C <sub>u</sub> = N/A	C <sub>c</sub> = N/A

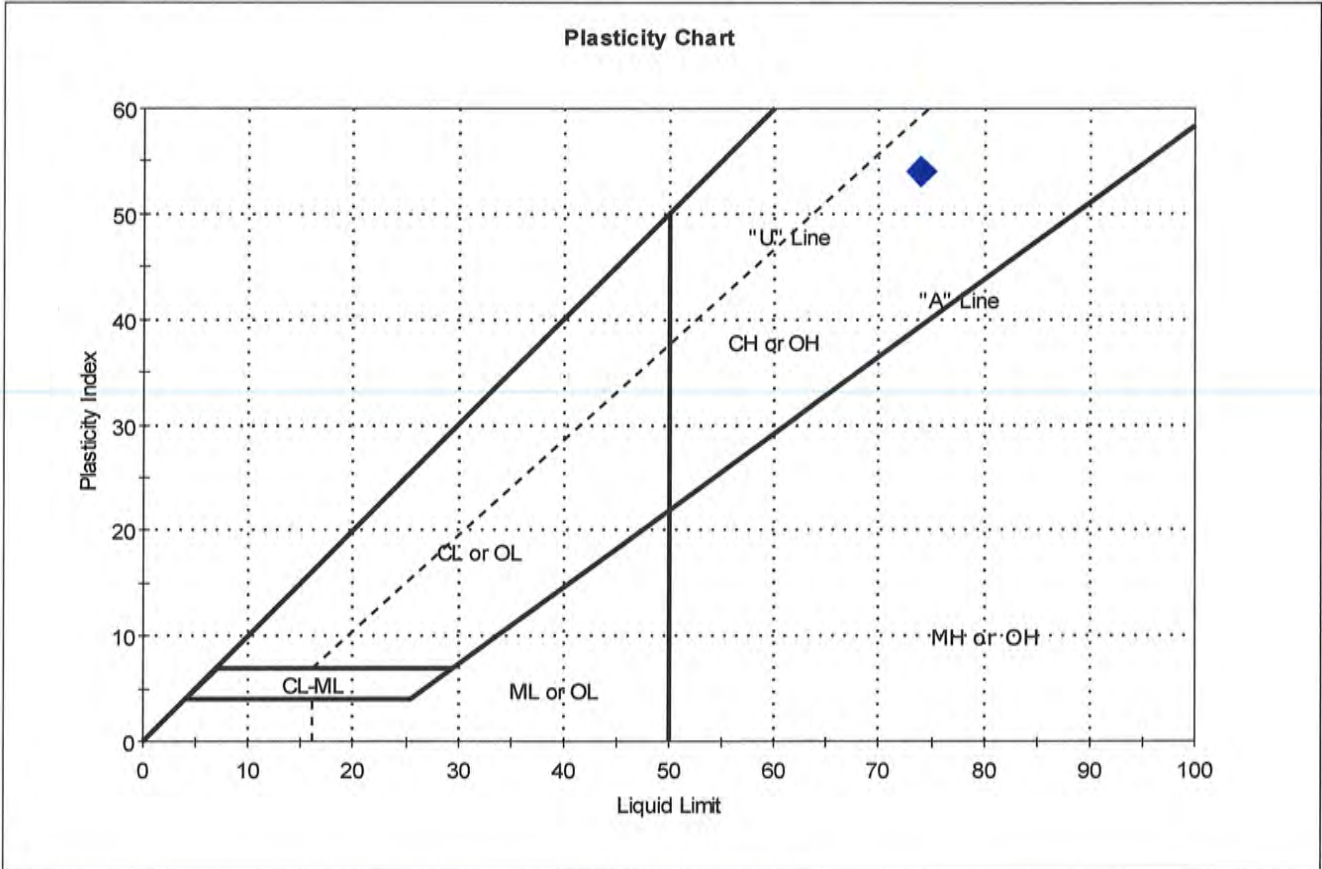
Classification	
<u>ASTM</u>	Clayey sand (SC)
<u>AASHTO</u>	Clayey Soils (A-7-6 (6))

Sample/Test Description
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---



Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange		Tested By:	jm	
Location:	Berkeley County, South Carolina		Checked By:	MCM	
Boring ID:	ID-01	Sample Type:	tube	Test Date:	11/25/15
Sample ID:	---	Test Id:	252795		
Depth :	5-7 ft				
Test Comment:	---				
Sample Description:	Moist, olive yellow sandy clay				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



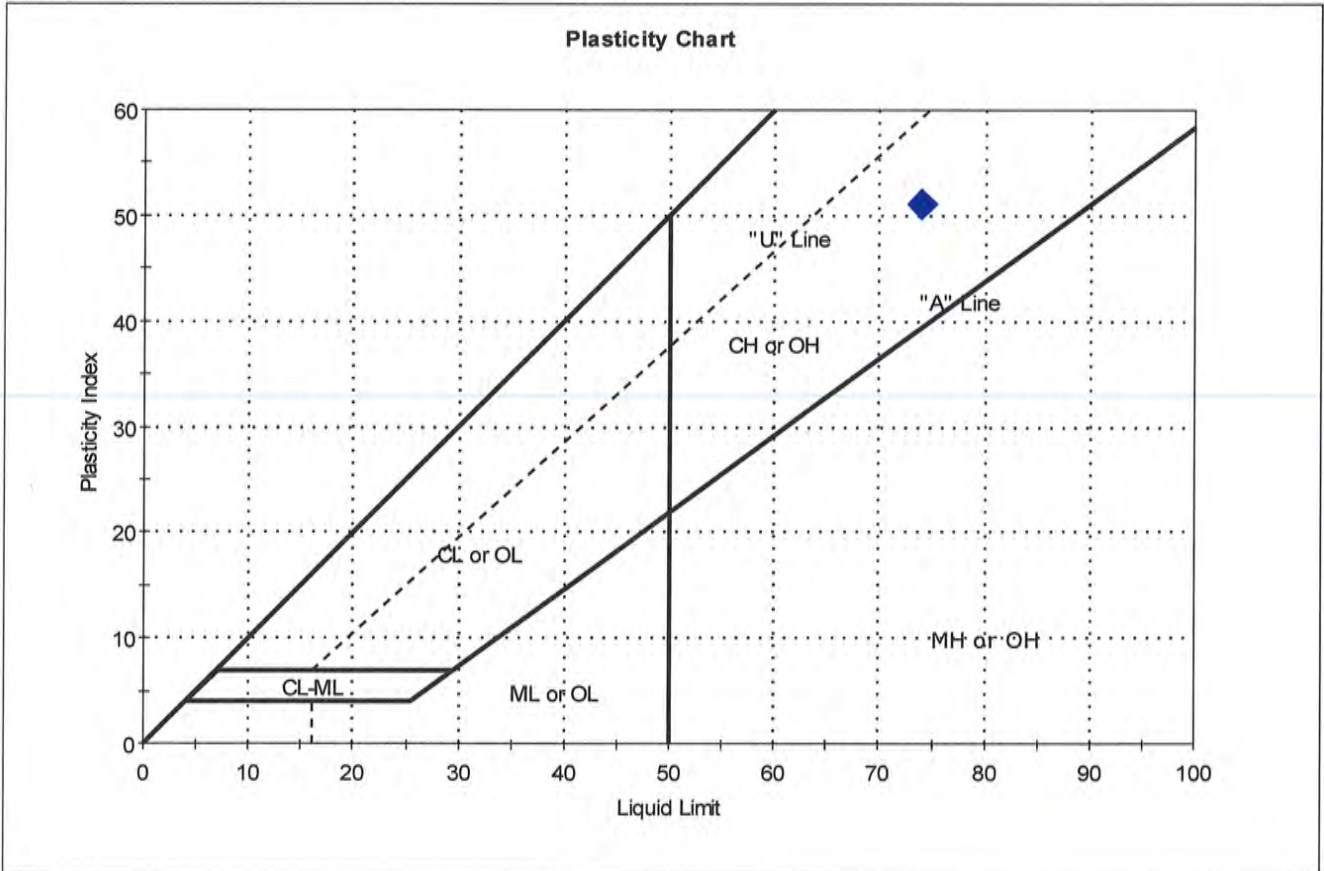
Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	ID-01	5-7 ft	33	74	20	54	0.2	Sandy Fat clay (CH)

Sample Prepared using the WET method  
 4% Retained on #40 Sieve  
 Dry Strength: HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM



Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange		Tested By:	jm	
Location:	Berkeley County, South Carolina		Checked By:	MCM	
Boring ID:	ID-02	Sample Type:	tube	Test Date:	11/25/15
Sample ID:	---	Test Id:	252796		
Depth :	8-10 ft				
Test Comment:	---				
Sample Description:	Moist, greenish gray clay				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	ID-02	8-10 ft	36	74	23	51	0.2	Fat clay (CH)

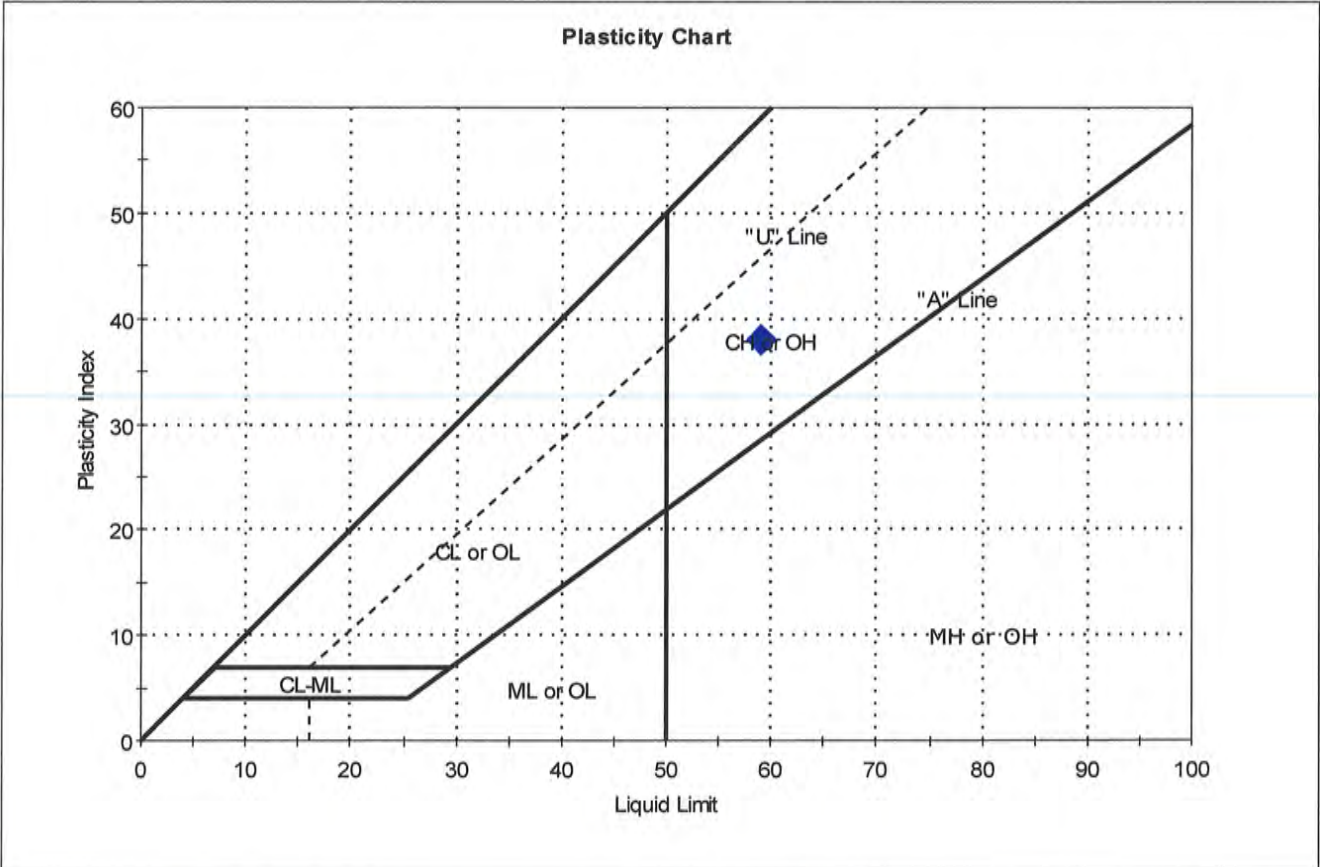
Sample Prepared using the WET method  
 0% Retained on #40 Sieve  
 Dry Strength: VERY HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM





Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange		Tested By:	jm	
Location:	Berkeley County, South Carolina		Checked By:	MCM	
Boring ID:	ID-06	Sample Type:	tube	Test Date:	11/25/15
Sample ID:	---	Test Id:	252797		
Depth :	5-7 ft				
Test Comment:	---				
Sample Description:	Moist, yellow sandy clay				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



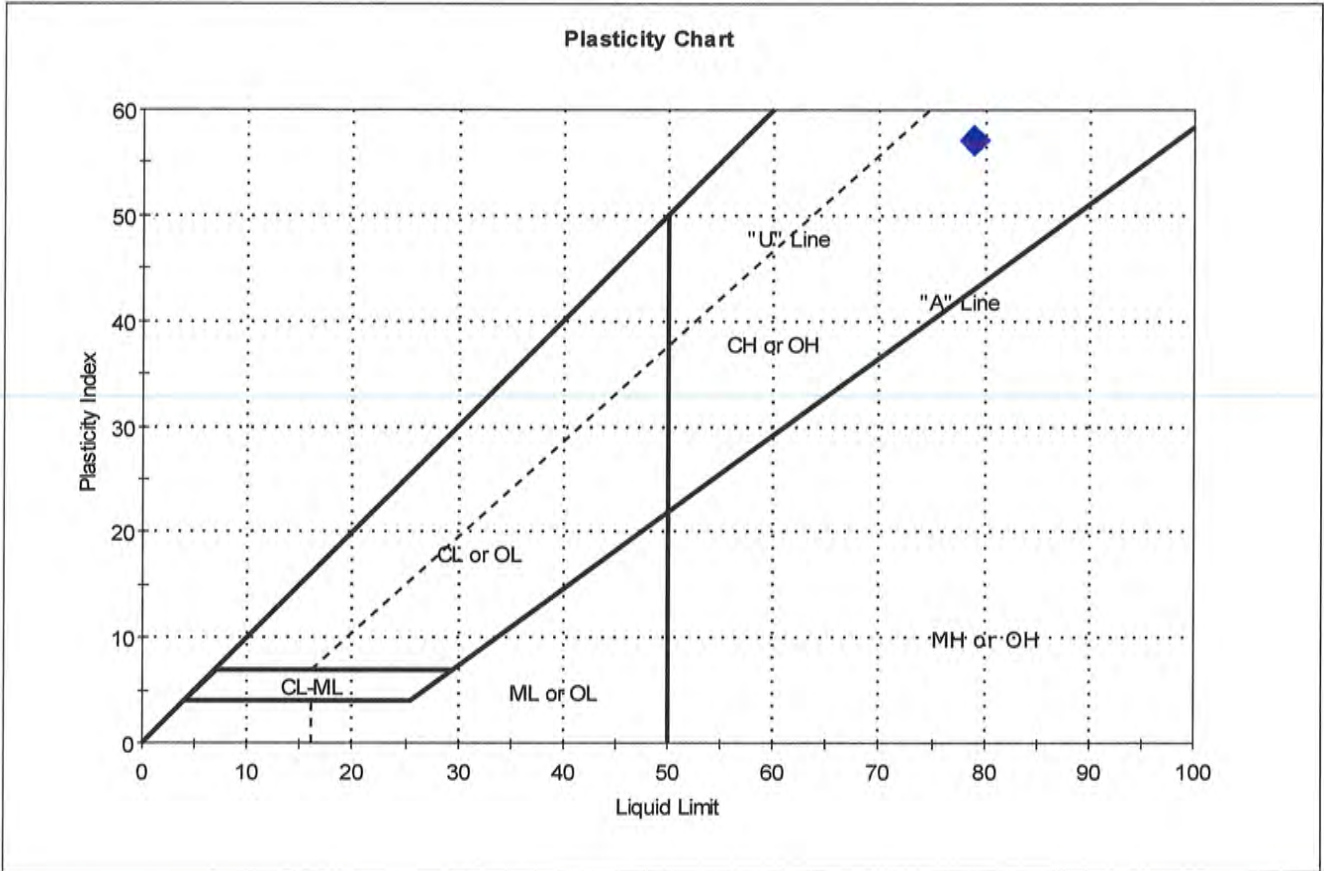
Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	ID-06	5-7 ft	29	59	21	38	0.2	Sandy Fat clay (CH)

Sample Prepared using the WET method  
 10% Retained on #40 Sieve  
 Dry Strength: HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM



Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange		Tested By:	jm	
Location:	Berkeley County, South Carolina		Checked By:	MCM	
Boring ID:	ID-06	Sample Type:	tube	Test Date:	11/25/15
Sample ID:	---	Test Id:	252798		
Depth :	10-12 ft				
Test Comment:	---				
Sample Description:	Moist, olive gray clay				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



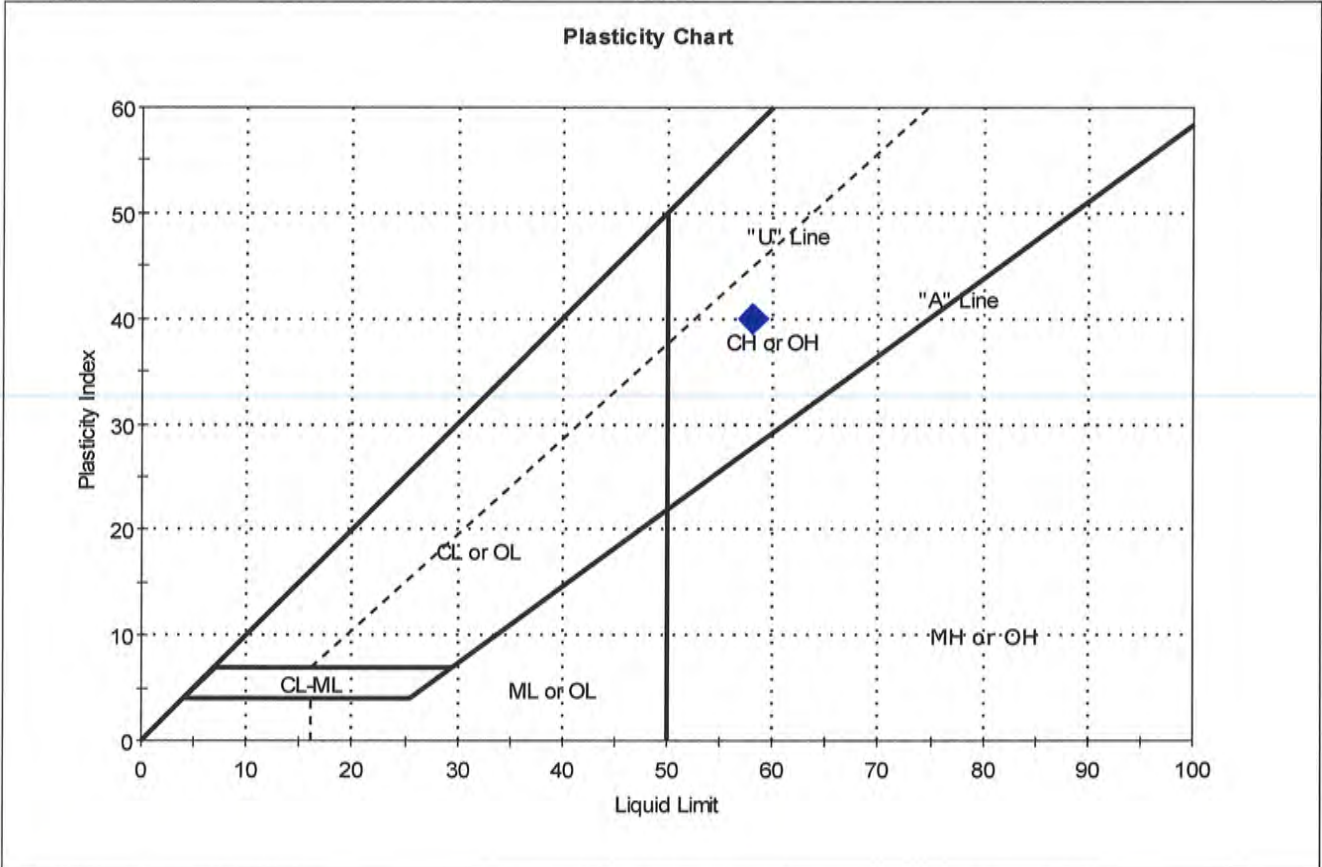
Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	ID-06	10-12 ft	46	79	22	57	0.4	Fat clay (CH)

Sample Prepared using the WET method  
 0% Retained on #40 Sieve  
 Dry Strength: VERY HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM



Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange				
Location:	Berkeley County, South Carolina		Tested By:	jm	
Boring ID:	IS-18	Sample Type:	tube	Checked By:	MCM
Sample ID:	---	Test Date:	11/25/15	Test Id:	252799
Depth :	4-6 ft				
Test Comment:	---				
Sample Description:	Moist, mottled red and yellowish brown clay with sand				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	IS-18	4-6 ft	28	58	18	40	0.3	Fat clay with sand (CH)

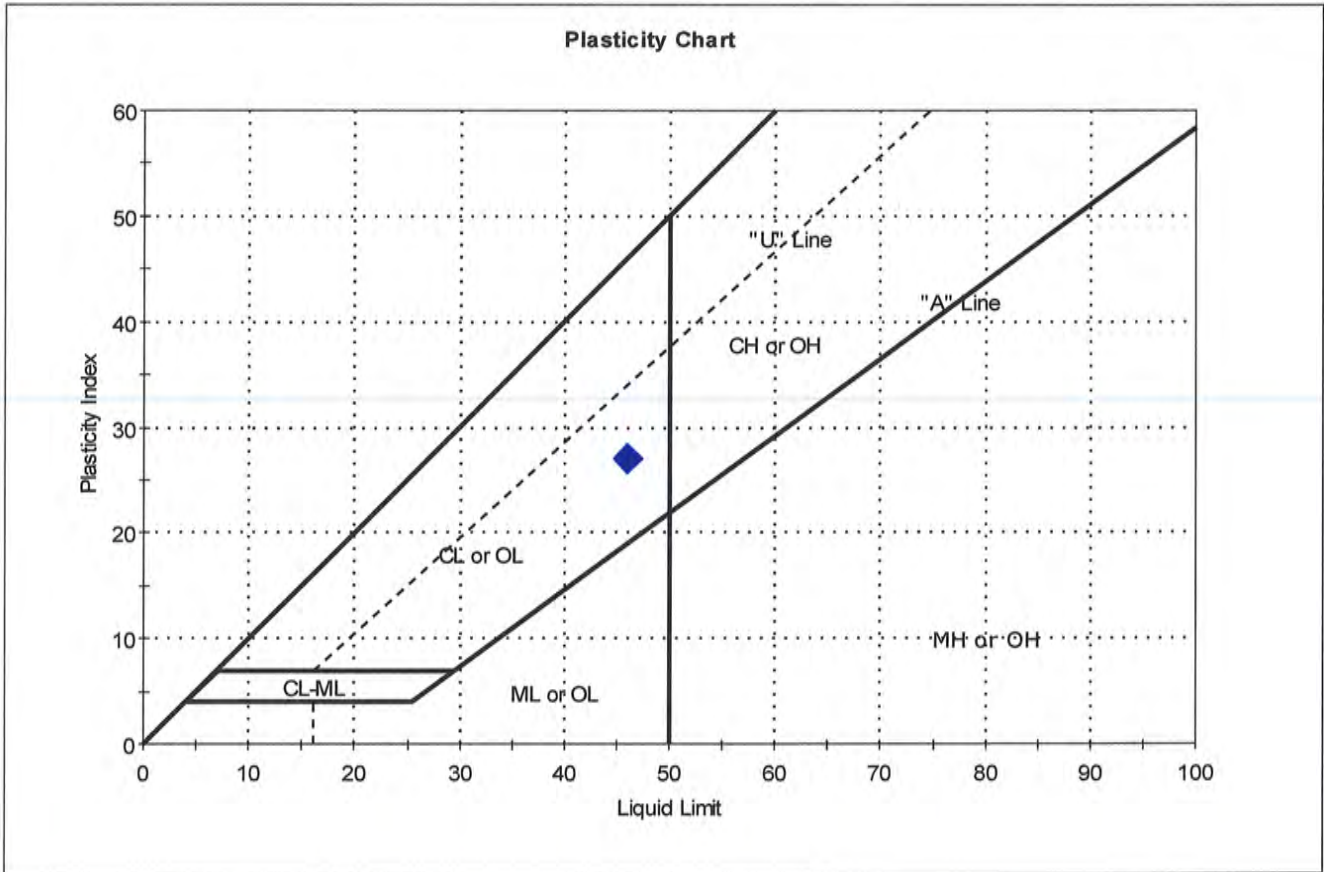
Sample Prepared using the WET method  
 1% Retained on #40 Sieve  
 Dry Strength: HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM





Client:	S&ME, Inc.		Project No:	GTX-304013	
Project:	I-26 Volvo Interchange		Tested By:	jm	
Location:	Berkeley County, South Carolina		Checked By:	MCM	
Boring ID:	IS-18	Sample Type:	tube	Test Date:	11/25/15
Sample ID:	---	Test Id:	252800		
Depth :	10-12				
Test Comment:	---				
Sample Description:	Moist, greenish gray clayey sand				
Sample Comment:	---				

## Atterberg Limits - ASTM D4318



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
◆	---	IS-18	10-12	24	46	19	27	0.2	Clayey sand (SC)

Sample Prepared using the WET method  
 7% Retained on #40 Sieve  
 Dry Strength: HIGH  
 Dilatancy: NONE  
 Toughness: MEDIUM

Client: S&ME, Inc.

Project Name: I-26 Volvo Interchange

Project Location: Berkeley County, SC

Project Number: GTX-304013

Tested By: jm

Checked By: mcm

Boring ID: ID-01

Preparation: intact

Description: Moist, Olive yellow sandy clay

Classification: Sandy Fat clay

Group Symbol: CH

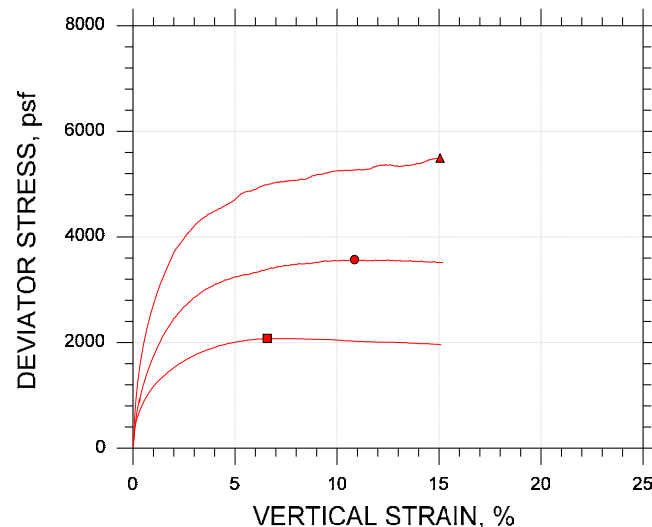
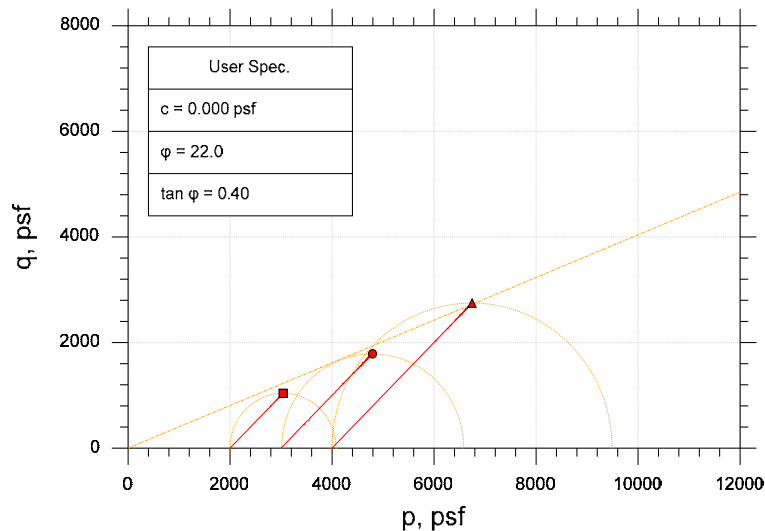
Liquid Limit: 74

Plastic Limit: 20

Plasticity Index: 54

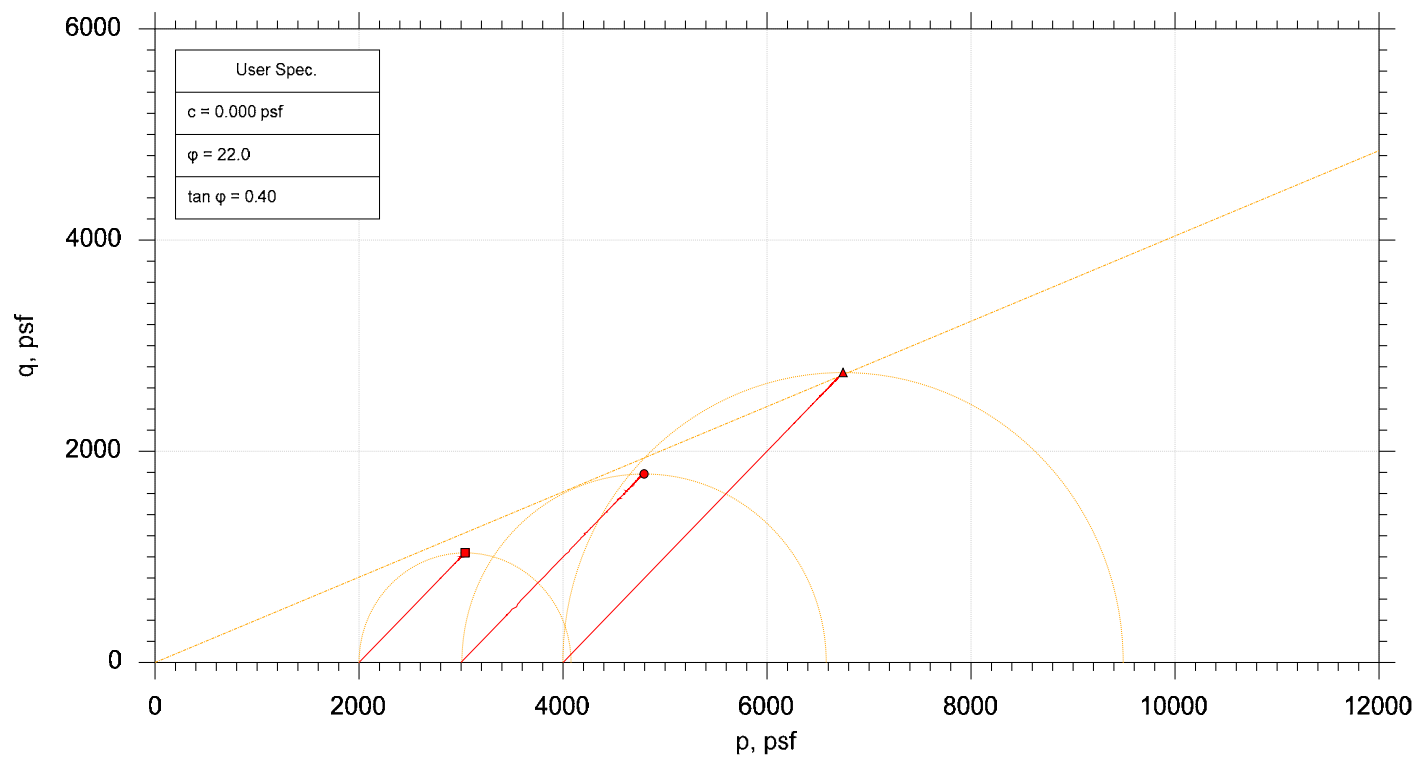
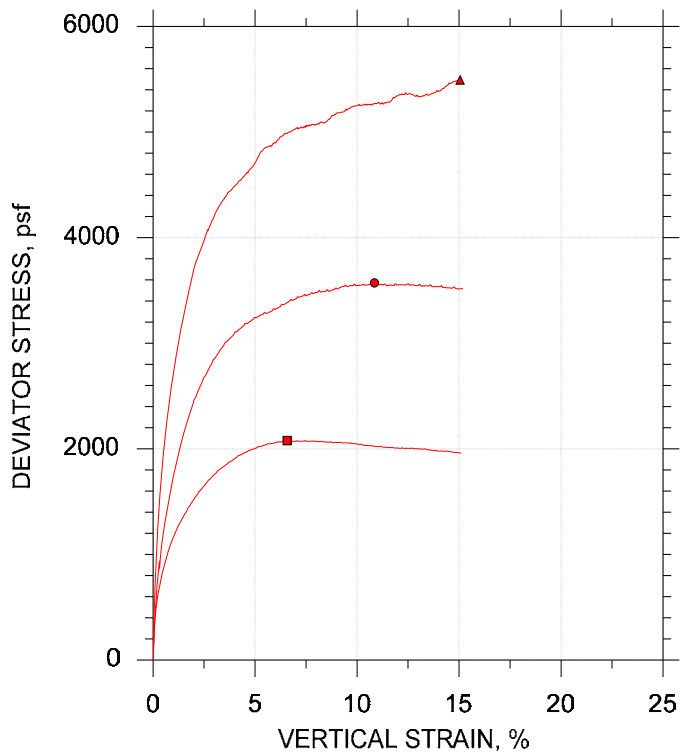
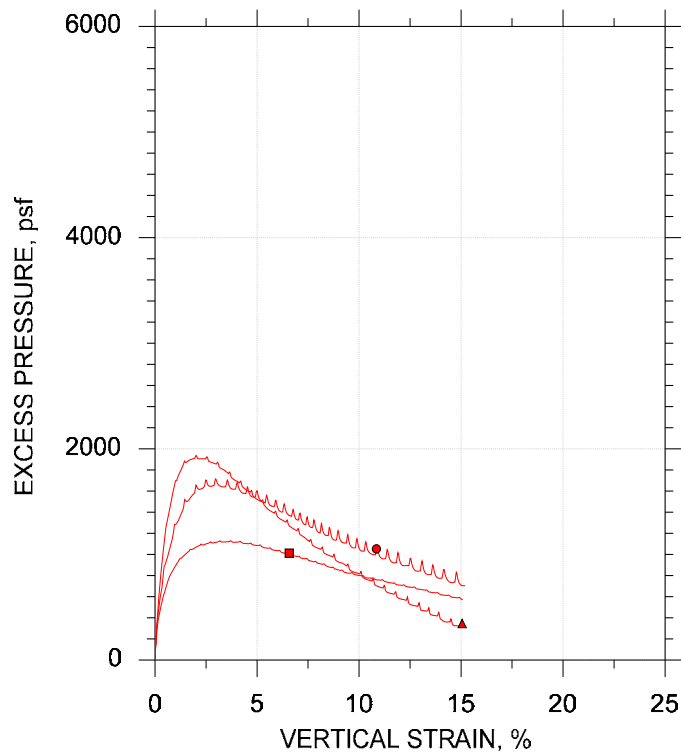
Estimated Specific Gravity: 2.7

### CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Symbol	■	●	▲	
Sample ID	---	---	---	
Depth, ft	5-7 ft	5-7 ft	5-7 ft	
Test Number	CU-1-1	CU-1-2	CU-1-3	
Initial	Height, in	5.995	6.204	6.064
	Diameter, in	2.870	2.860	2.860
	Moisture Content (from Cuttings), %	25.6	23.6	22.6
	Dry Density, pcf	99.2	103.	102.
	Saturation (Wet Method), %	99.0	99.3	93.9
	Void Ratio	0.699	0.641	0.649
Before Shear	Moisture Content, %	24.7	22.7	22.5
	Dry Density, pcf	101.	105.	105.
	Cross-sectional Area (Method A), in <sup>2</sup>	6.398	6.354	6.319
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.668	0.613	0.608
	Back Pressure, psf	1.883e+004	1.768e+004	1.653e+004
Vertical Effective Consolidation Stress, psf	1997.	2996.	3998.	
Horizontal Effective Consolidation Stress, psf	2000.	2999.	4000.	
Vertical Strain after Consolidation, %	0.7460	0.8398	0.8931	
Volumetric Strain after Consolidation, %	1.923	2.302	2.521	
Time to 50% Consolidation, min	210.3	176.9	219.0	
Shear Strength, psf	1039.	1786.	2747.	
Strain at Failure, %	6.57	10.9	15.1	
Strain Rate, %/min	0.01600	0.01600	0.01600	
Deviator Stress at Failure, psf	2078.	3572.	5494.	
Effective Minor Principal Stress at Failure, psf	987.2	1956.	3651.	
Effective Major Principal Stress at Failure, psf	3065.	5528.	9145.	
B-Value	0.96	0.96	0.95	
Notes:	- Before Shear Saturation set to 100% for phase calculation. - Moisture Content determined by ASTM D2216. - Atterberg Limits determined by ASTM D4318. - Deviator Stress includes membrane correction. - Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.			
Remarks:				

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

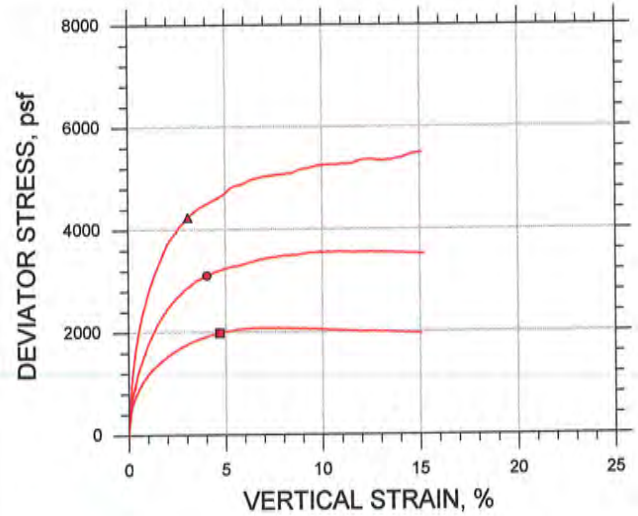
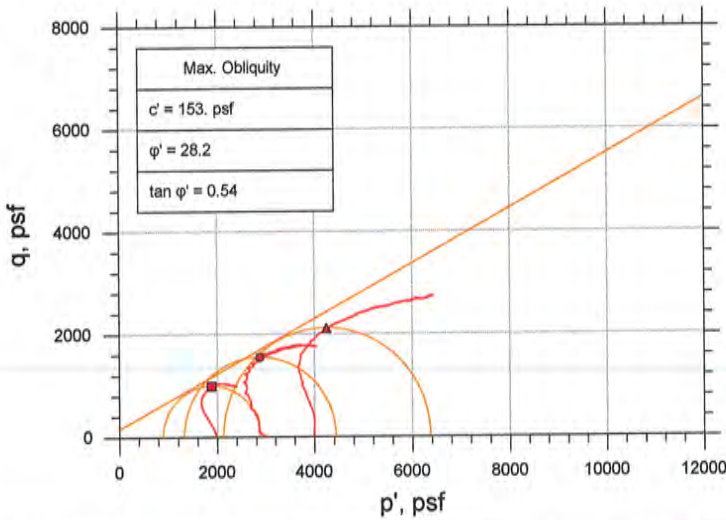


	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	---	CU-1-1	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-1m.dat
●	---	CU-1-2	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-2m.dat
▲	---	CU-1-3	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-3m.dat

	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-01	Sample Type: intact	
	Description: Moist, Olive yellow sandy clay		
	Remarks: System A		

Client: S&ME, Inc.	
Project Name: I-26 Volvo Interchange	
Project Location: Berkeley County, SC	
Project Number: GTX-304013	
Tested By: jm	Checked By: mcm
Boring ID: ID-01	
Preparation: intact	
Description: Moist, Olive yellow sandy clay	
Classification: Sandy Fat clay	
Group Symbol: CH	
Liquid Limit: 74	Plastic Limit: 20
Plasticity Index: 54	Estimated Specific Gravity: 2.7

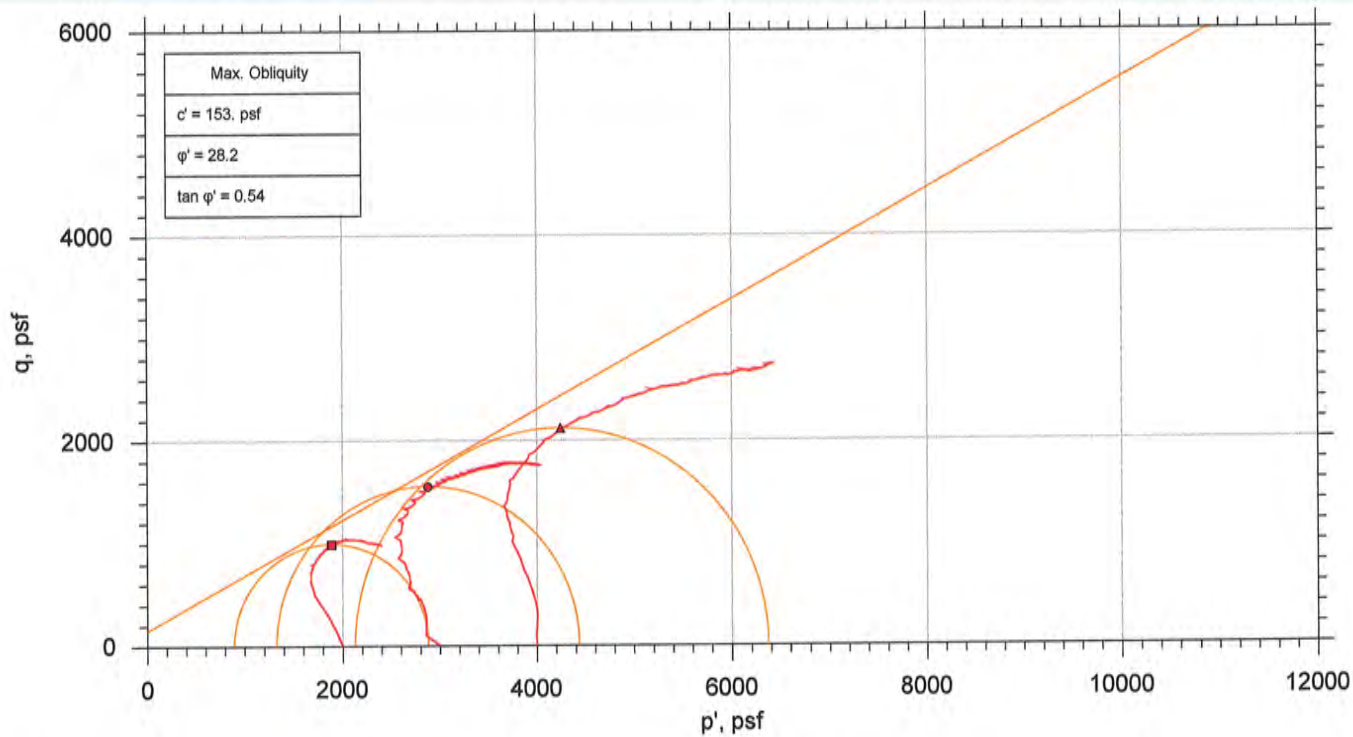
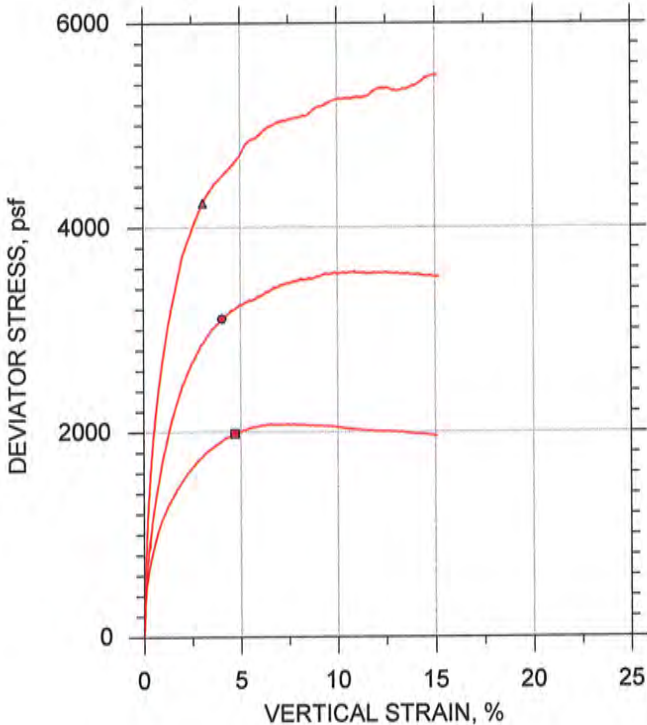
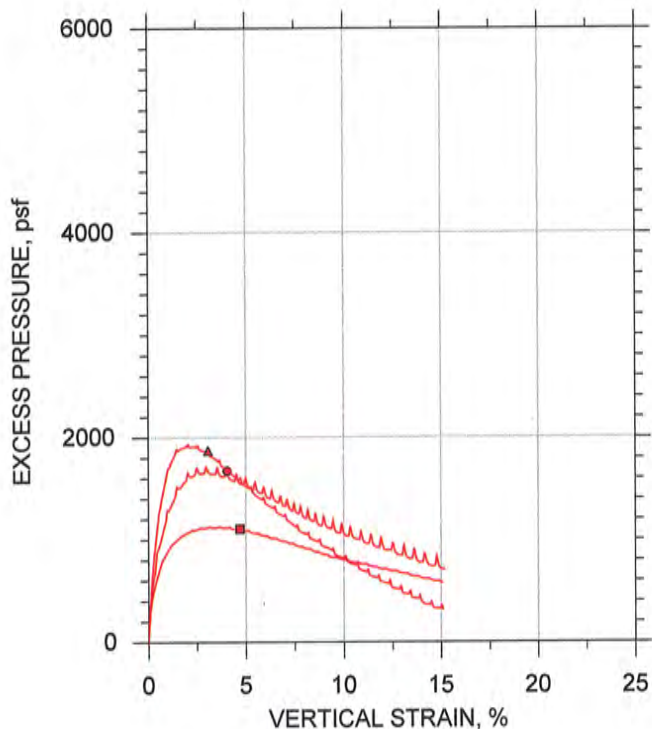
**CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767**



Symbol	■	●	▲
Sample ID	---	---	---
Depth, ft	5-7 ft	5-7 ft	5-7 ft
Test Number	CU-1-1	CU-1-2	CU-1-3
Initial			
Height, in	5.995	6.204	6.064
Diameter, in	2.870	2.860	2.860
Moisture Content (from Cuttings), %	25.6	23.6	22.6
Dry Density, pcf	99.2	103.	102.
Saturation (Wet Method), %	99.0	99.3	93.9
Void Ratio	0.699	0.641	0.649
Before Shear			
Moisture Content, %	24.7	22.7	22.5
Dry Density, pcf	101.	105.	105.
Cross-sectional Area (Method A), in <sup>2</sup>	6.398	6.354	6.319
Saturation, %	100.0	100.0	100.0
Void Ratio	0.668	0.613	0.608
Back Pressure, psf	1.883e+004	1.768e+004	1.653e+004
Vertical Effective Consolidation Stress, psf	1997.	2996.	3998.
Horizontal Effective Consolidation Stress, psf	2000.	2999.	4000.
Vertical Strain after Consolidation, %	0.7460	0.8398	0.8931
Volumetric Strain after Consolidation, %	1.923	2.302	2.521
Time to 50% Consolidation, min	210.3	176.9	219.0
Shear Strength, psf	994.2	1555.	2120.
Strain at Failure, %	4.70	4.04	3.08
Strain Rate, %/min	0.01600	0.01600	0.01600
Deviator Stress at Failure, psf	1988.	3110.	4240.
Effective Minor Principal Stress at Failure, psf	892.0	1324.	2126.
Effective Major Principal Stress at Failure, psf	2880.	4433.	6366.
B-Value	0.96	0.96	0.95
Notes:			
- Before Shear Saturation set to 100% for phase calculation. - Moisture Content determined by ASTM D2216. - Atterberg Limits determined by ASTM D4318. - Deviator Stress includes membrane correction. - Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.			
Remarks:			



CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■ ---	CU-1-1	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-1m.dat
● ---	CU-1-2	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-2m.dat
▲ ---	CU-1-3	5-7 ft	jm	11/16/15	mcm	11/30/15	304013-CU-1-3m.dat

	Project: I-26 Volvo Interchange		Location: Berkeley County, SC		Project No.: GTX-304013	
	Boring No.: ID-01		Sample Type: intact			
	Description: Moist, Olive yellow sandy clay					
	Remarks: System A					

Client: S&ME, Inc.

Project Name: I-26 Volvo Interchange

Project Location: Berkeley County, SC

Project Number: GTX-304013

Tested By: jm

Checked By: mcm

Boring ID: ID-06

Preparation: intact

Description: Moist, yellow sandy clay

Classification: Sandy Fat clay

Group Symbol: CH

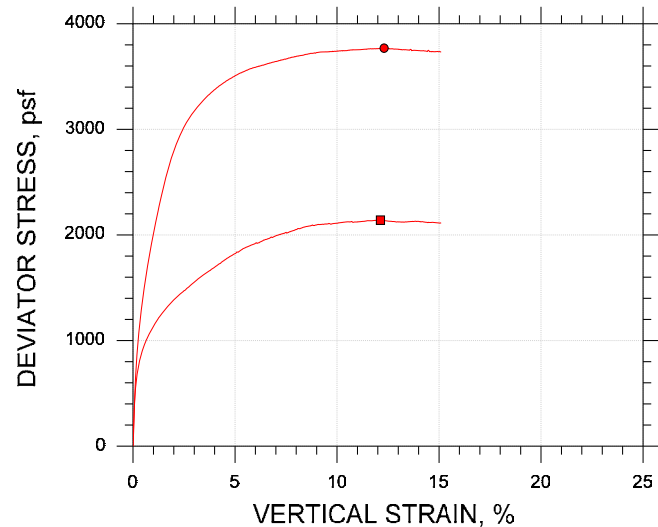
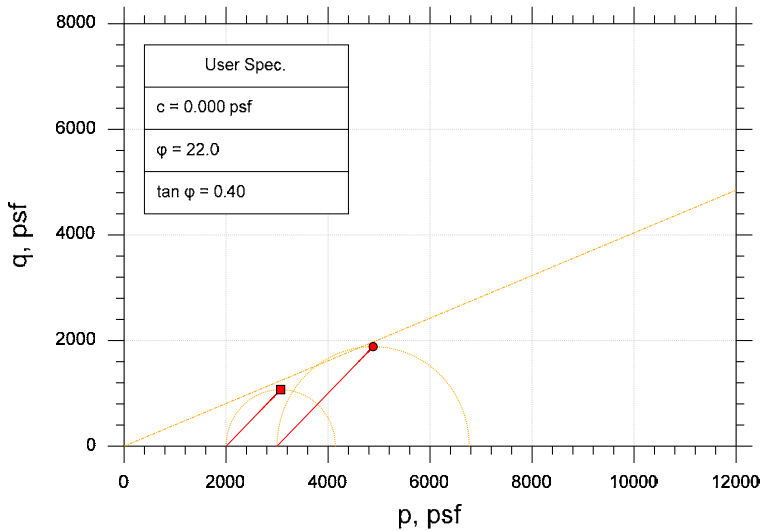
Liquid Limit: 59

Plastic Limit: 21

Plasticity Index: 38

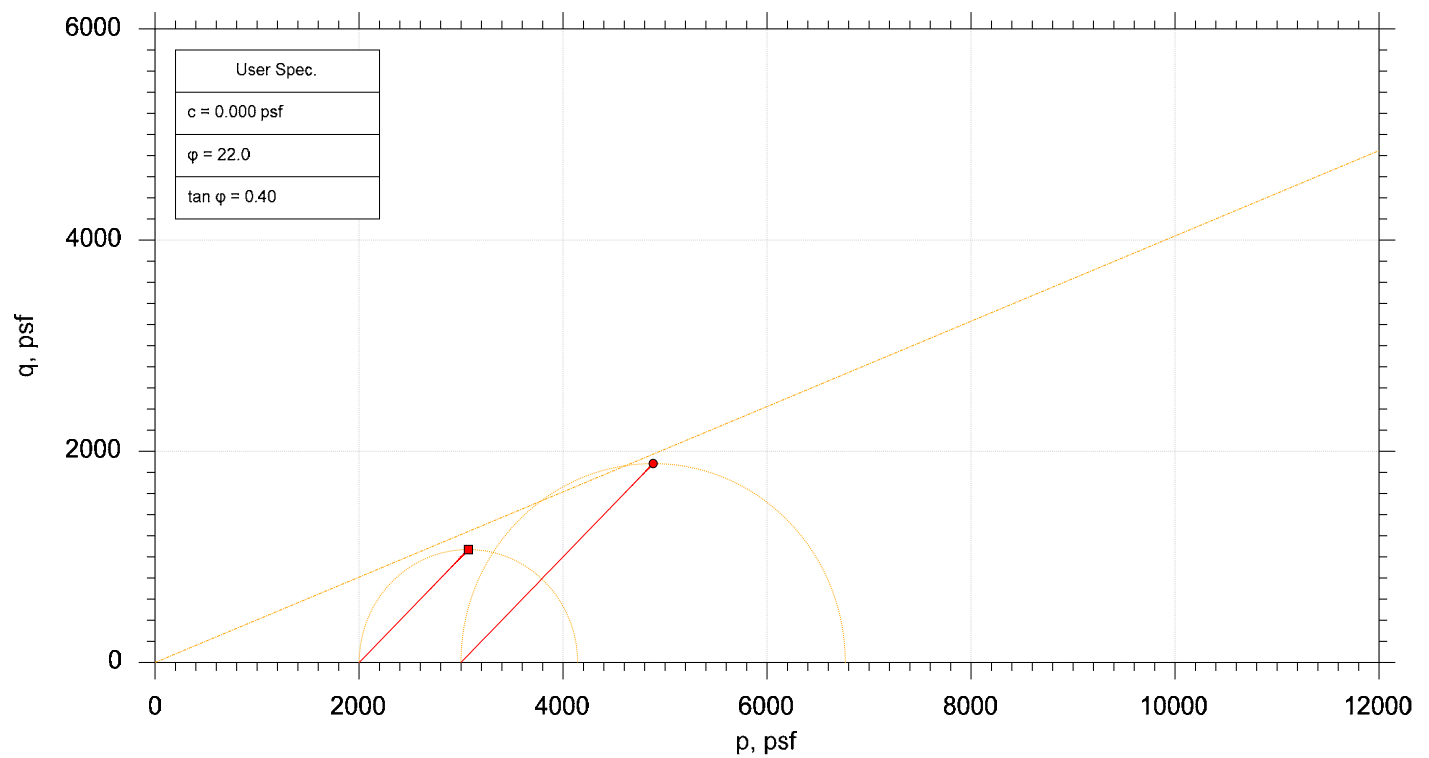
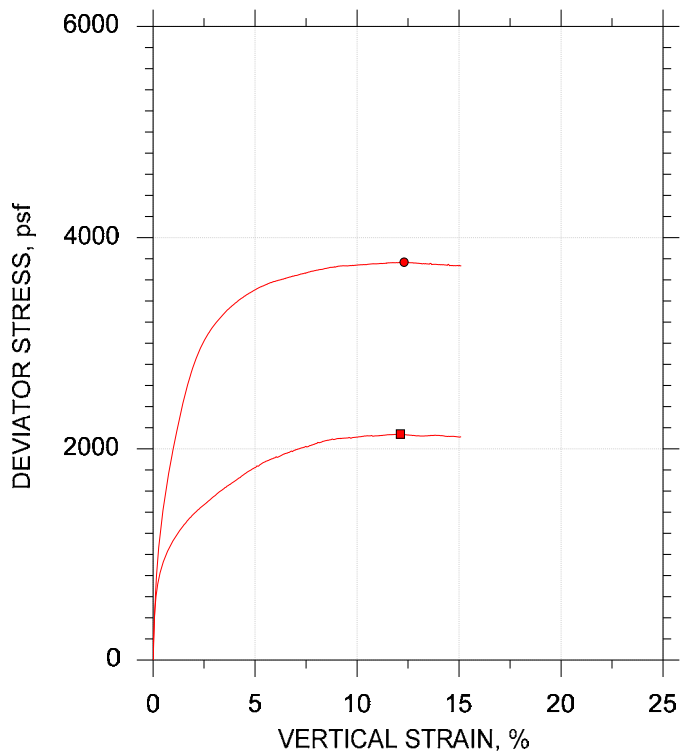
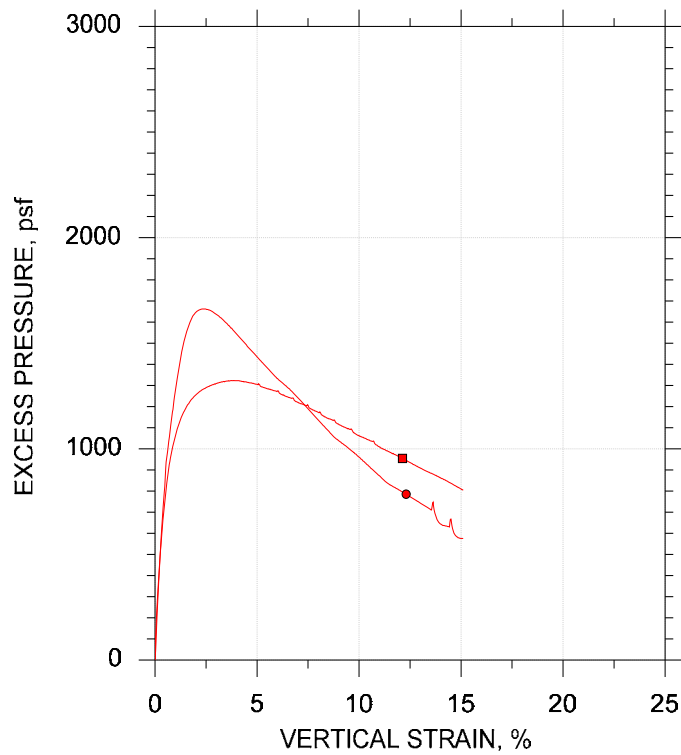
Estimated Specific Gravity: 2.7

### CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Symbol	■	●		
Sample ID	---	---		
Depth, ft	5-7 ft	5-7 ft		
Test Number	CU-2-1	CU-2-2		
Initial	Height, in	5.824	6.091	
	Diameter, in	2.860	2.870	
	Moisture Content (from Cuttings), %	25.7	19.8	
	Dry Density, pcf	99.0	107.	
	Saturation (Wet Method), %	98.9	93.5	
	Void Ratio	0.703	0.573	
Before Shear	Moisture Content, %	23.8	18.2	
	Dry Density, pcf	103.	113.	
	Cross-sectional Area (Method A), in <sup>2</sup>	6.280	6.147	
	Saturation, %	100.0	100.0	
	Void Ratio	0.642	0.491	
	Back Pressure, psf	1.886e+004	4177.	
Vertical Effective Consolidation Stress, psf	1996.	2998.		
Horizontal Effective Consolidation Stress, psf	2002.	2999.		
Vertical Strain after Consolidation, %	1.226	0.3947		
Volumetric Strain after Consolidation, %	3.233	5.697		
Time to 50% Consolidation, min	150.1	213.2		
Shear Strength, psf	1070.	1884.		
Strain at Failure, %	12.1	12.3		
Strain Rate, %/min	0.01600	0.01600		
Deviator Stress at Failure, psf	2140.	3768.		
Effective Minor Principal Stress at Failure, psf	1047.	2213.		
Effective Major Principal Stress at Failure, psf	3187.	5982.		
B-Value	0.95	1.17		
Notes:	<ul style="list-style-type: none"> <li>- Before Shear Saturation set to 100% for phase calculation.</li> <li>- Moisture Content determined by ASTM D2216.</li> <li>- Atterberg Limits determined by ASTM D4318.</li> <li>- Deviator Stress includes membrane correction.</li> <li>- Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.</li> </ul>			
Remarks:				

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

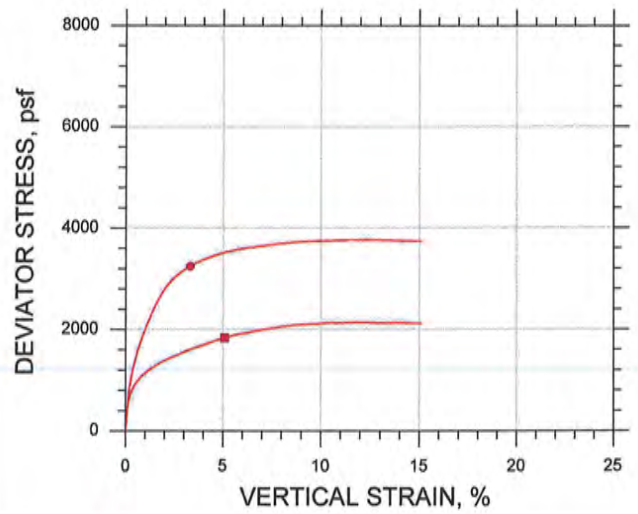
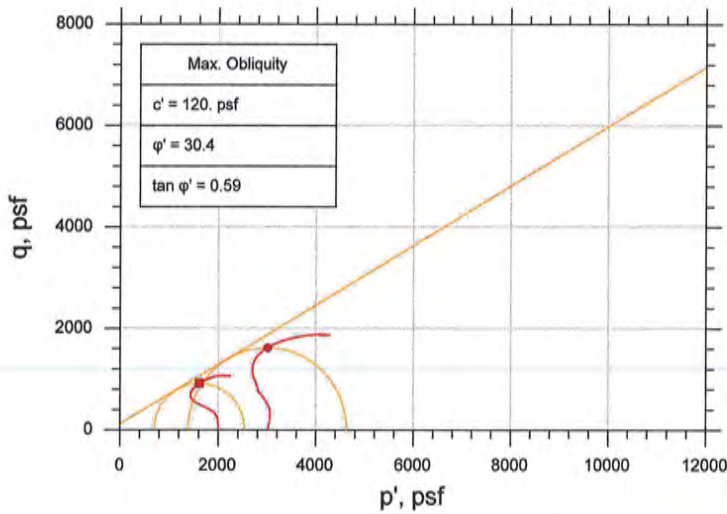


	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	---	CU-2-1	5-7 ft	jm	11/20/15	mcm	11/30/15	304013-CU-2-1m.dat
●	---	CU-2-2	5-7 ft	jm	11/20/15	mcm	11/30/15	304013-CU-2-2m.dat

	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Sample Type: intact	
	Description: Moist, yellow sandy clay		
	Remarks: System A		

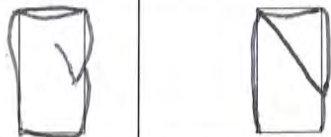
Client: S&ME, Inc.	
Project Name: I-26 Volvo Interchange	
Project Location: Berkeley County, SC	
Project Number: GTX-304013	
Tested By: jm	Checked By: mcm
Boring ID: ID-06	
Preparation: intact	
Description: Moist, yellow sandy clay	
Classification: Sandy Fat clay	
Group Symbol: CH	
Liquid Limit: 59	Plastic Limit: 21
Plasticity Index: 38	Estimated Specific Gravity: 2.7

**CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767**



Symbol	■	●		
Sample ID	---	---		
Depth, ft	5-7 ft	5-7 ft		
Test Number	CU-2-1	CU-2-2		
Initial				
Height, in	5.824	6.091		
Diameter, in	2.860	2.870		
Moisture Content (from Cuttings), %	25.7	19.8		
Dry Density, pcf	99.0	107.		
Saturation (Wet Method), %	98.9	93.5		
Void Ratio	0.703	0.573		
Before Shear				
Moisture Content, %	23.8	18.2		
Dry Density, pcf	103.	113.		
Cross-sectional Area (Method A), in <sup>2</sup>	6.280	6.147		
Saturation, %	100.0	100.0		
Void Ratio	0.642	0.491		
Back Pressure, psf	1.886e+004	4177.		
Vertical Effective Consolidation Stress, psf	1996.	2998.		
Horizontal Effective Consolidation Stress, psf	2002.	2999.		
Vertical Strain after Consolidation, %	1.226	0.3947		
Volumetric Strain after Consolidation, %	3.233	5.697		
Time to 50% Consolidation, min	150.1	213.2		
Shear Strength, psf	918.7	1622.		
Strain at Failure, %	5.08	3.30		
Strain Rate, %/min	0.01600	0.01600		
Deviator Stress at Failure, psf	1837.	3245.		
Effective Minor Principal Stress at Failure, psf	693.8	1382.		
Effective Major Principal Stress at Failure, psf	2531.	4627.		
B-Value	0.95	1.		

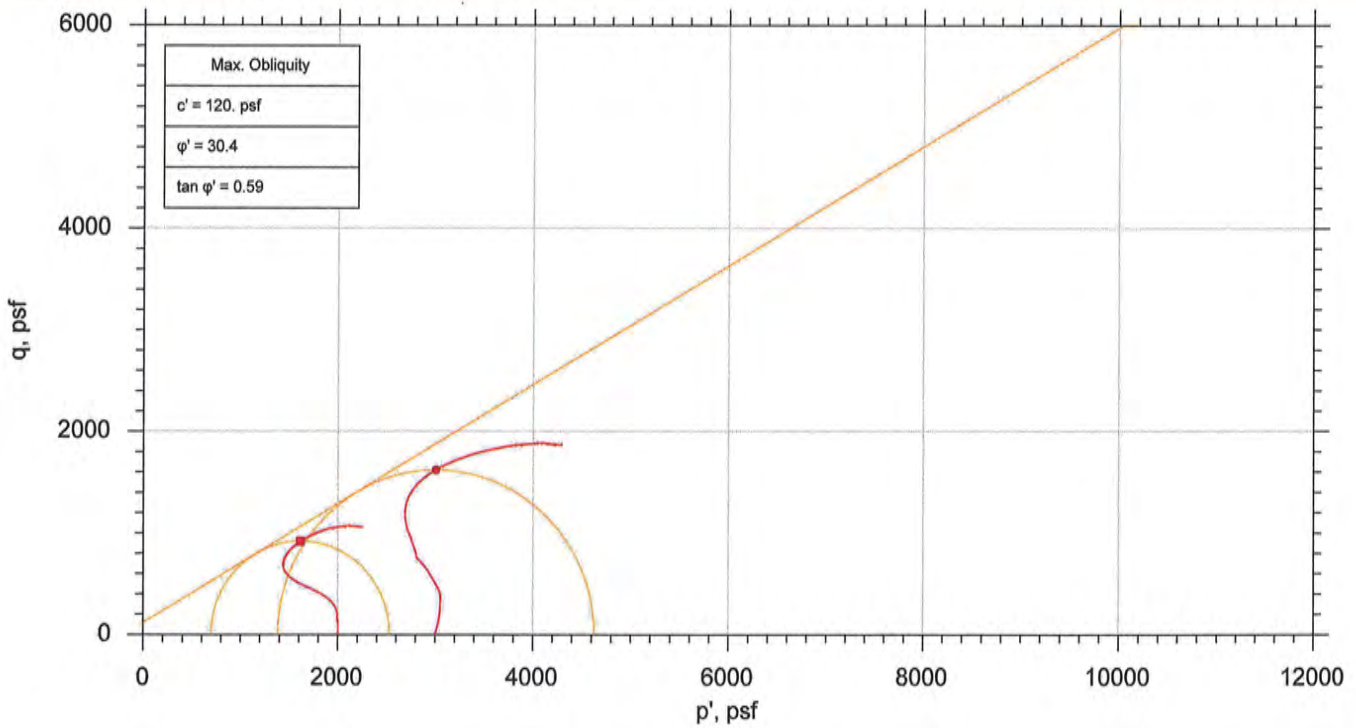
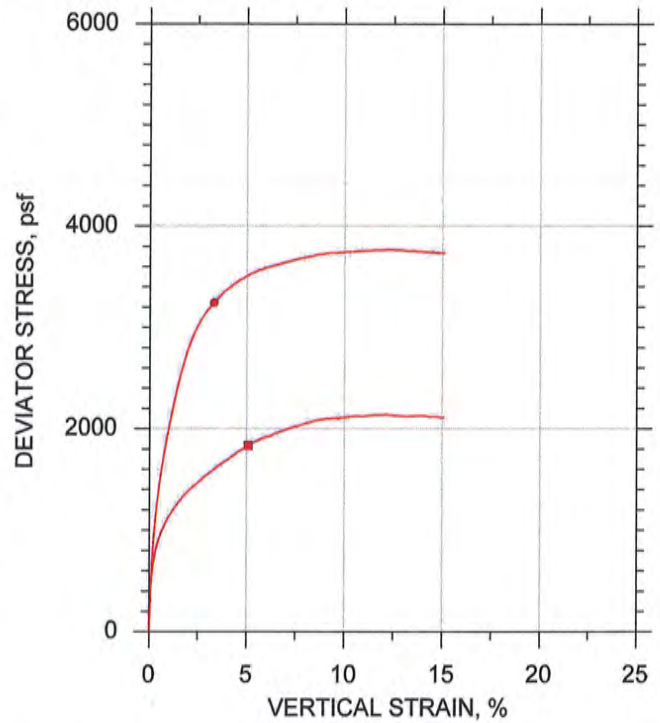
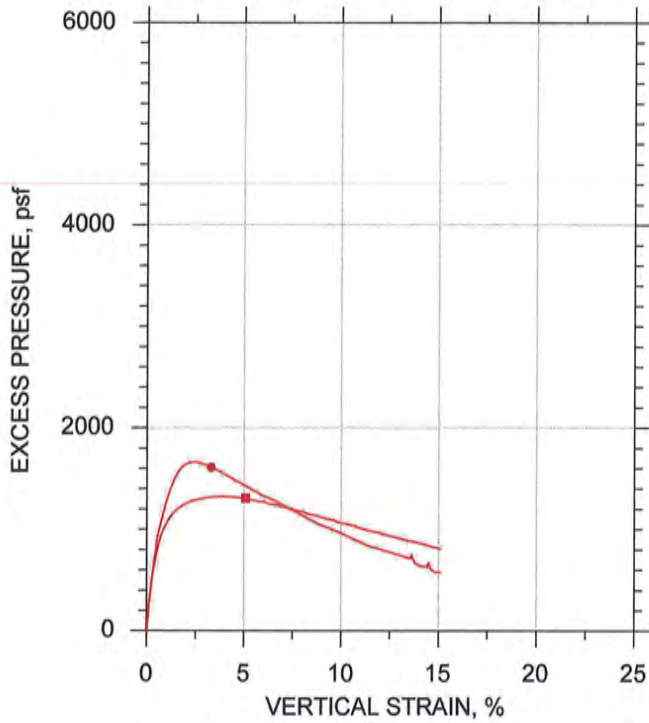
Notes:  
 - Before Shear Saturation set to 100% for phase calculation.  
 - Moisture Content determined by ASTM D2216.  
 - Atterberg Limits determined by ASTM D4318.  
 - Deviator Stress includes membrane correction.  
 - Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.




Remarks:



CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	CU-2-1	5-7 ft	jrn	11/20/15	mcm	11/30/15	304013-CU-2-1m.dat
●	CU-2-2	5-7 ft	jrn	11/20/15	mcm	11/30/15	304013-CU-2-2m.dat

	Project: I-26 Volvo Interchange		Location: Berkeley County, SC		Project No.: GTX-304013	
	Boring No.: ID-06		Sample Type: intact			
	Description: Moist, yellow sandy clay					
	Remarks: System A					

Client: S&ME, Inc.

Project Name: I-26 Volvo Interchange

Project Location: Berkeley County, SC

Project Number: GTX-304013

Tested By: jm

Checked By: mcm

Boring ID: IS-18

Preparation: intact

Description: Moist, greenish gray clay with sand

Classification: Clayey sand

Group Symbol: SC

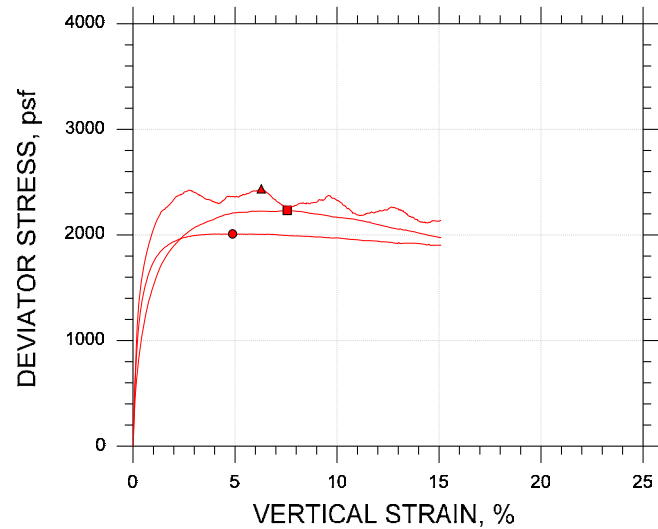
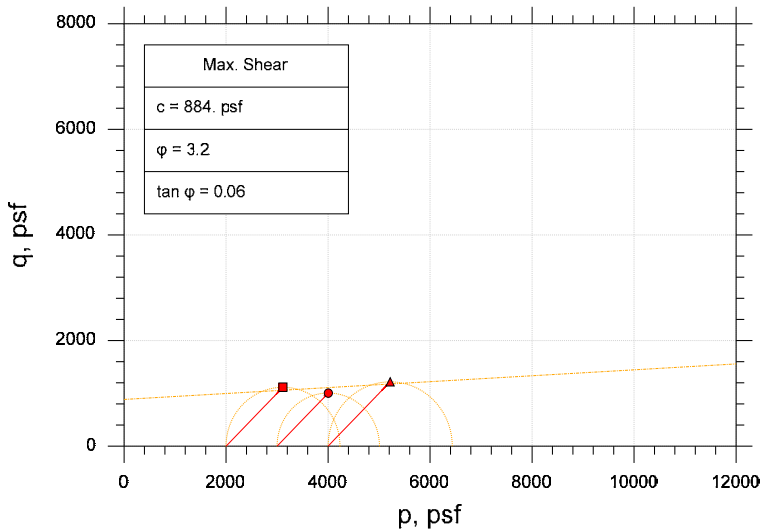
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Plastic Limit: 19

Plasticity Index: 27

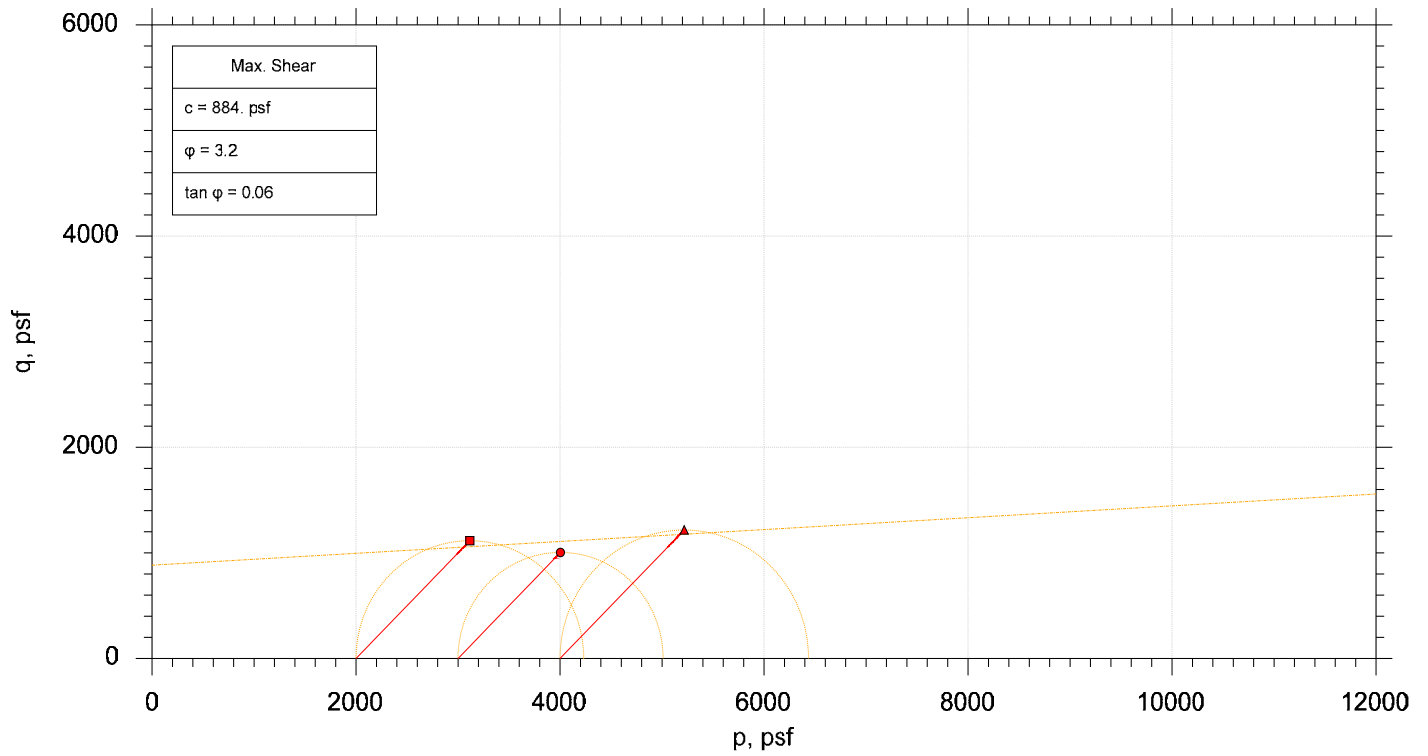
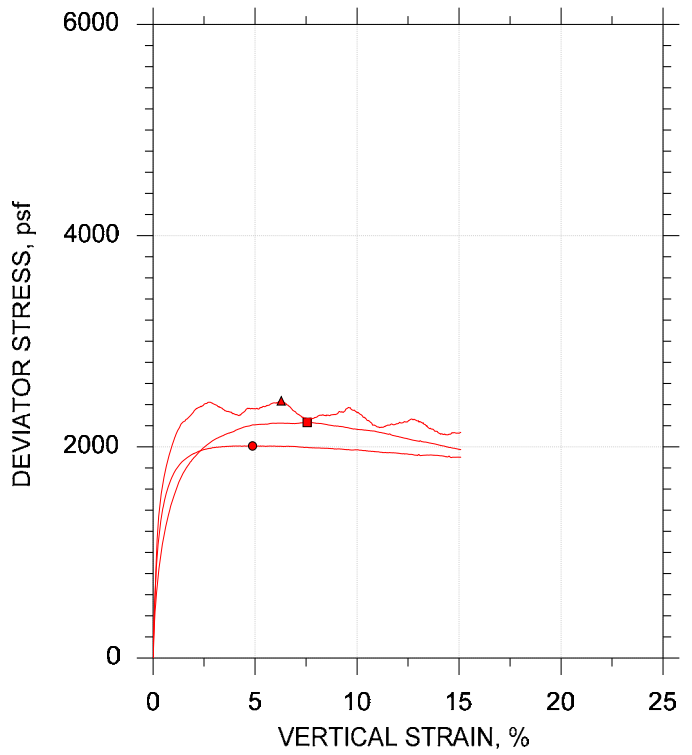
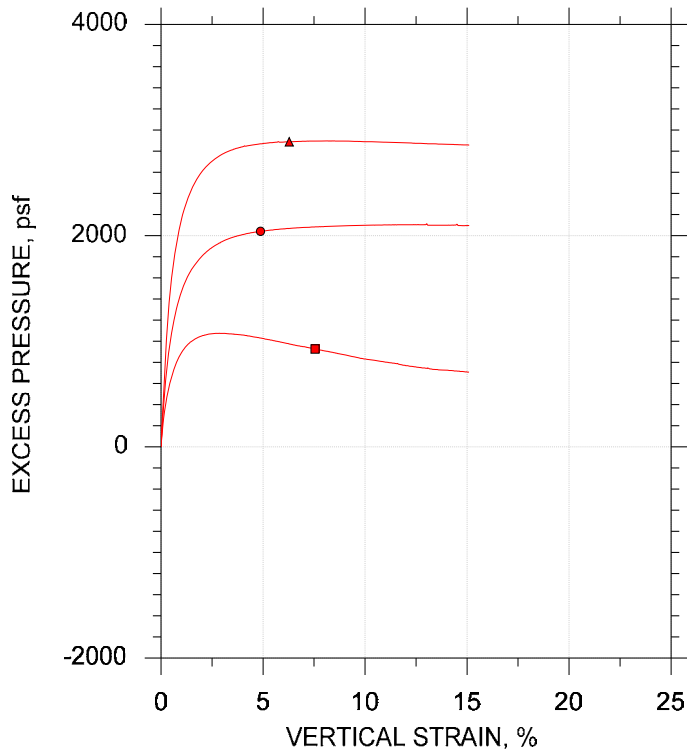
Estimated Specific Gravity: 2.7

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



Symbol	■	●	▲	
Sample ID	---	---	---	
Depth, ft	10-12 ft	10-12 ft	10-12 ft	
Test Number	CU-4-1	CU-3-2	CU-3-3	
Initial	Height, in	6.147	6.059	6.017
	Diameter, in	2.850	2.860	2.850
	Moisture Content (from Cuttings), %	34.5	40.0	33.9
	Dry Density, pcf	87.3	77.5	82.5
	Saturation (Wet Method), %	99.9	91.9	87.8
	Void Ratio	0.931	1.18	1.04
Before Shear	Moisture Content, %	32.3	37.6	42.8
	Dry Density, pcf	90.1	83.6	78.2
	Cross-sectional Area (Method A), in <sup>2</sup>	6.240	6.058	6.964
	Saturation, %	100.0	100.0	100.0
	Void Ratio	0.872	1.02	1.15
	Back Pressure, psf	1.166e+004	1.080e+004	7344.
Vertical Effective Consolidation Stress, psf	1996.	2993.	3986.	
Horizontal Effective Consolidation Stress, psf	1999.	3000.	4000.	
Vertical Strain after Consolidation, %	0.8985	1.625	3.313	
Volumetric Strain after Consolidation, %	2.992	7.010	-5.781	
Time to 50% Consolidation, min	31.36	27.57	90.25	
Shear Strength, psf	1116.	1005.	1218.	
Strain at Failure, %	7.55	4.88	6.28	
Strain Rate, %/min	0.01600	0.01600	0.01600	
Deviator Stress at Failure, psf	2232.	2010.	2436.	
Effective Minor Principal Stress at Failure, psf	1072.	957.9	1110.	
Effective Major Principal Stress at Failure, psf	3304.	2967.	3546.	
B-Value	0.95	0.95	0.95	
Notes:	<ul style="list-style-type: none"> <li>- Before Shear Saturation set to 100% for phase calculation.</li> <li>- Moisture Content determined by ASTM D2216.</li> <li>- Atterberg Limits determined by ASTM D4318.</li> <li>- Deviator Stress includes membrane correction.</li> <li>- Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.</li> </ul>			
Remarks:				
System A				

CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767



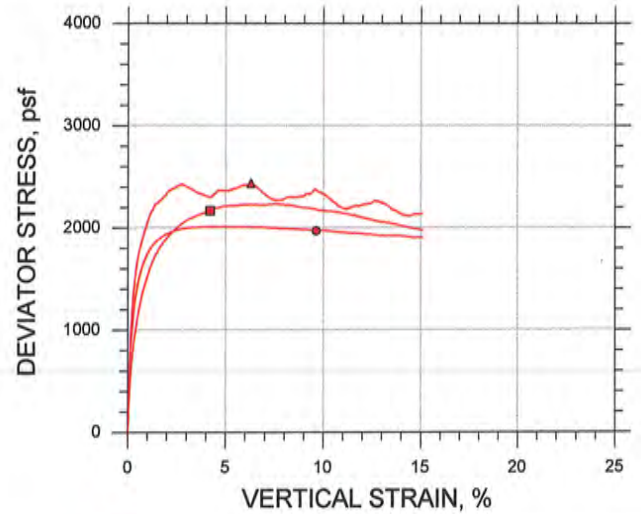
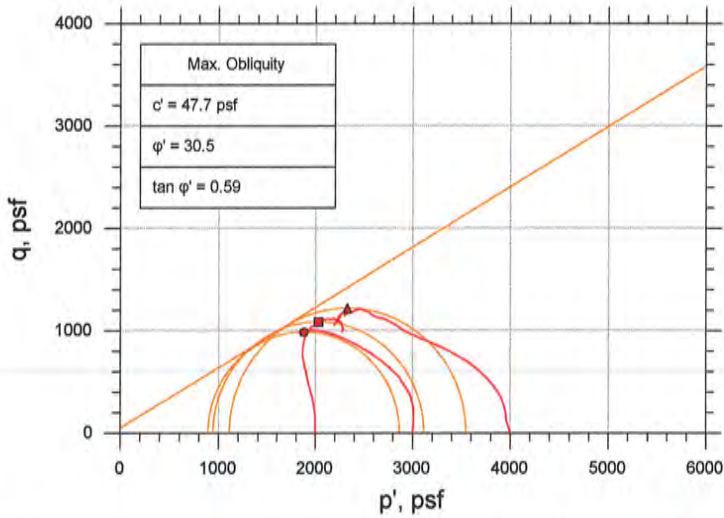
Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■ ---	CU-4-1	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-1m.dat
● ---	CU-3-2	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-2m.dat
▲ ---	CU-3-3	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-3m.dat

Project: I-26 Volvo Interchange		Location: Berkeley County, SC		Project No.: GTX-304013	
Boring No.: IS-18		Sample Type: intact			
Description: Moist, greenish gray clay with sand					
Remarks: System A					



Client: S&ME, Inc.	
Project Name: I-26 Volvo Interchange	
Project Location: Berkeley County, SC	
Project Number: GTX-304013	
Tested By: jm	Checked By: mcm
Boring ID: IS-18	
Preparation: intact	
Description: Moist, greenish gray clay with sand	
Classification: Clayey sand	
Group Symbol: SC	
Liquid Limit: 46	Plastic Limit: 19
Plasticity Index: 27	Estimated Specific Gravity: 2.7

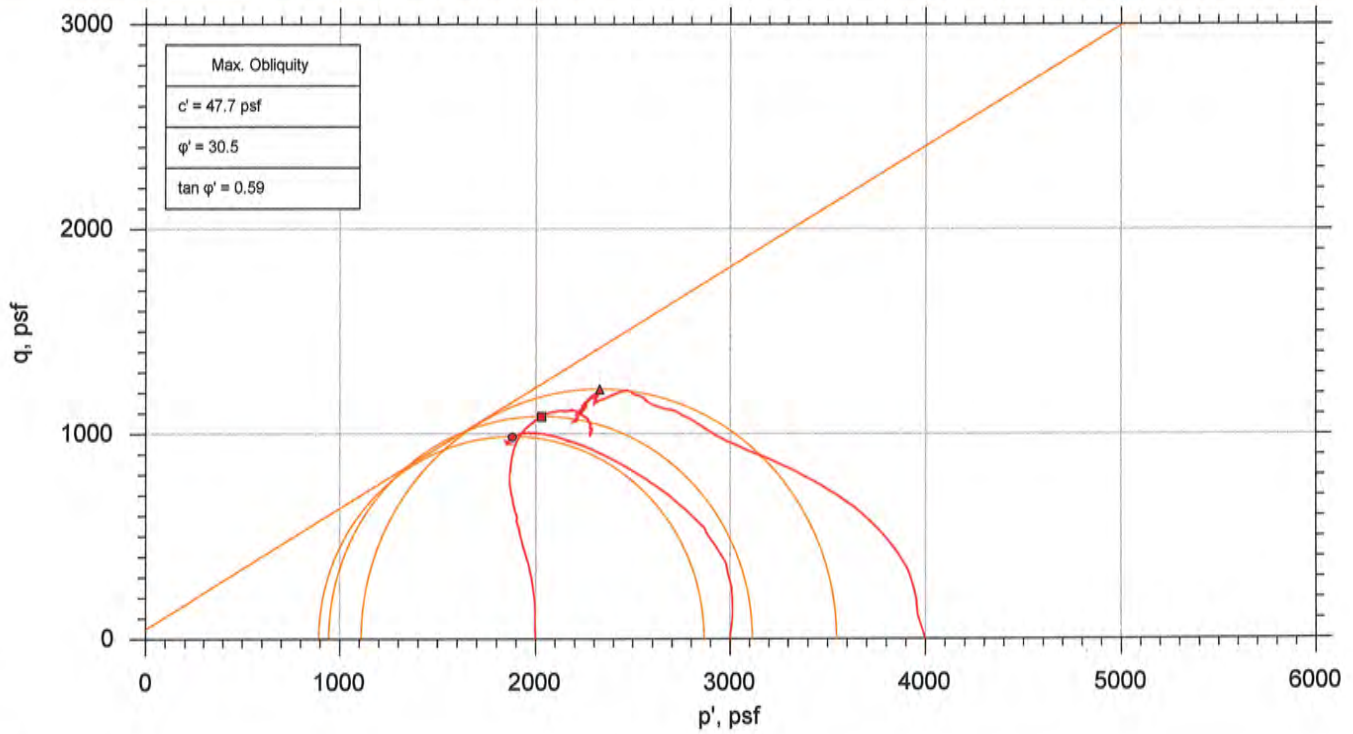
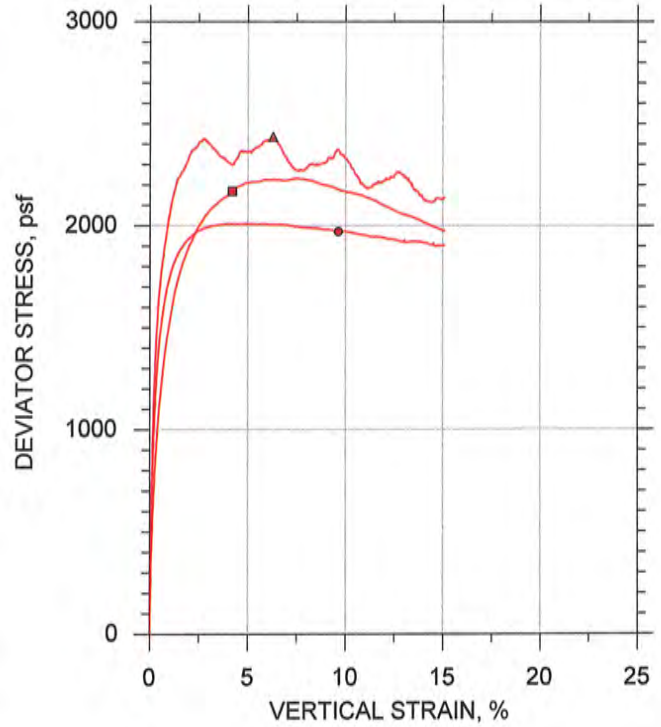
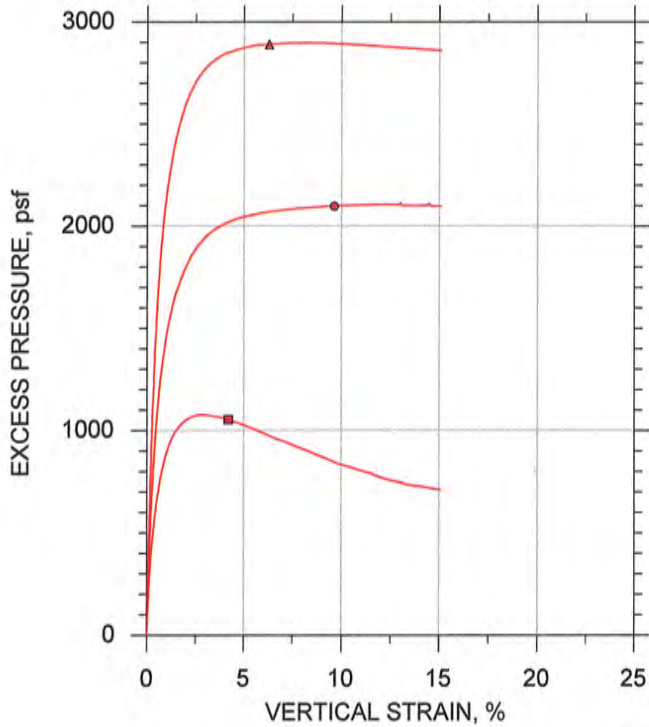
**CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767**



Symbol	■	●	▲	
Sample ID	---	---	---	
Depth, ft	10-12 ft	10-12 ft	10-12 ft	
Test Number	CU-4-1	CU-3-2	CU-3-3	
Initial				
Height, in	6.147	6.059	6.017	
Diameter, in	2.850	2.860	2.850	
Moisture Content (from Cuttings), %	34.5	40.0	33.9	
Dry Density, pcf	87.3	77.5	82.5	
Saturation (Wet Method), %	99.9	91.9	87.8	
Void Ratio	0.931	1.18	1.04	
Before Shear				
Moisture Content, %	32.3	37.6	42.8	
Dry Density, pcf	90.1	83.6	78.2	
Cross-sectional Area (Method A), in <sup>2</sup>	6.240	6.058	6.964	
Saturation, %	100.0	100.0	100.0	
Void Ratio	0.872	1.02	1.15	
Back Pressure, psf	1.166e+004	1.080e+004	7344.	
Vertical Effective Consolidation Stress, psf	1996.	2993.	3986.	
Horizontal Effective Consolidation Stress, psf	1999.	3000.	4000.	
Vertical Strain after Consolidation, %	0.8985	1.625	3.313	
Volumetric Strain after Consolidation, %	2.992	7.010	-5.781	
Time to 50% Consolidation, min	31.36	27.57	90.25	
Shear Strength, psf	1085.	986.1	1218.	
Strain at Failure, %	4.20	9.63	6.28	
Strain Rate, %/min	0.01600	0.01600	0.01600	
Deviator Stress at Failure, psf	2169.	1972.	2436.	
Effective Minor Principal Stress at Failure, psf	944.7	893.8	1110.	
Effective Major Principal Stress at Failure, psf	3114.	2866.	3546.	
B-Value	0.95	0.95	0.95	
Notes:				
- Before Shear Saturation set to 100% for phase calculation.				
- Moisture Content determined by ASTM D2216.				
- Atterberg Limits determined by ASTM D4318.				
- Deviator Stress includes membrane correction.				
- Values for c and phi determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.				
Remarks:				



CONSOLIDATED UNDRAINED TRIAXIAL TEST by ASTM D4767

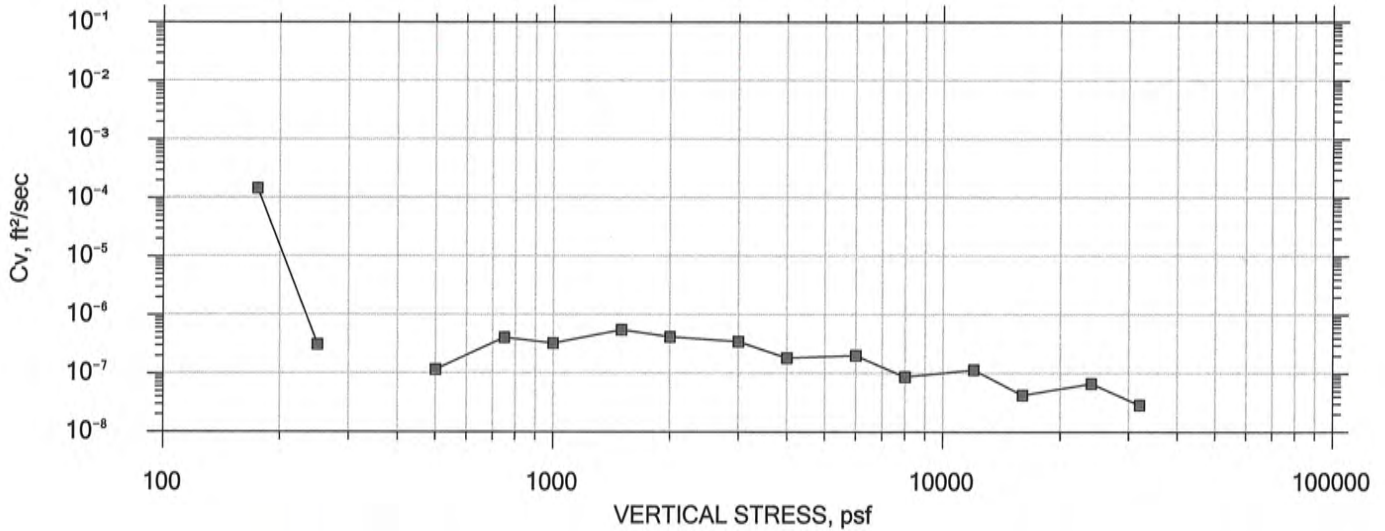
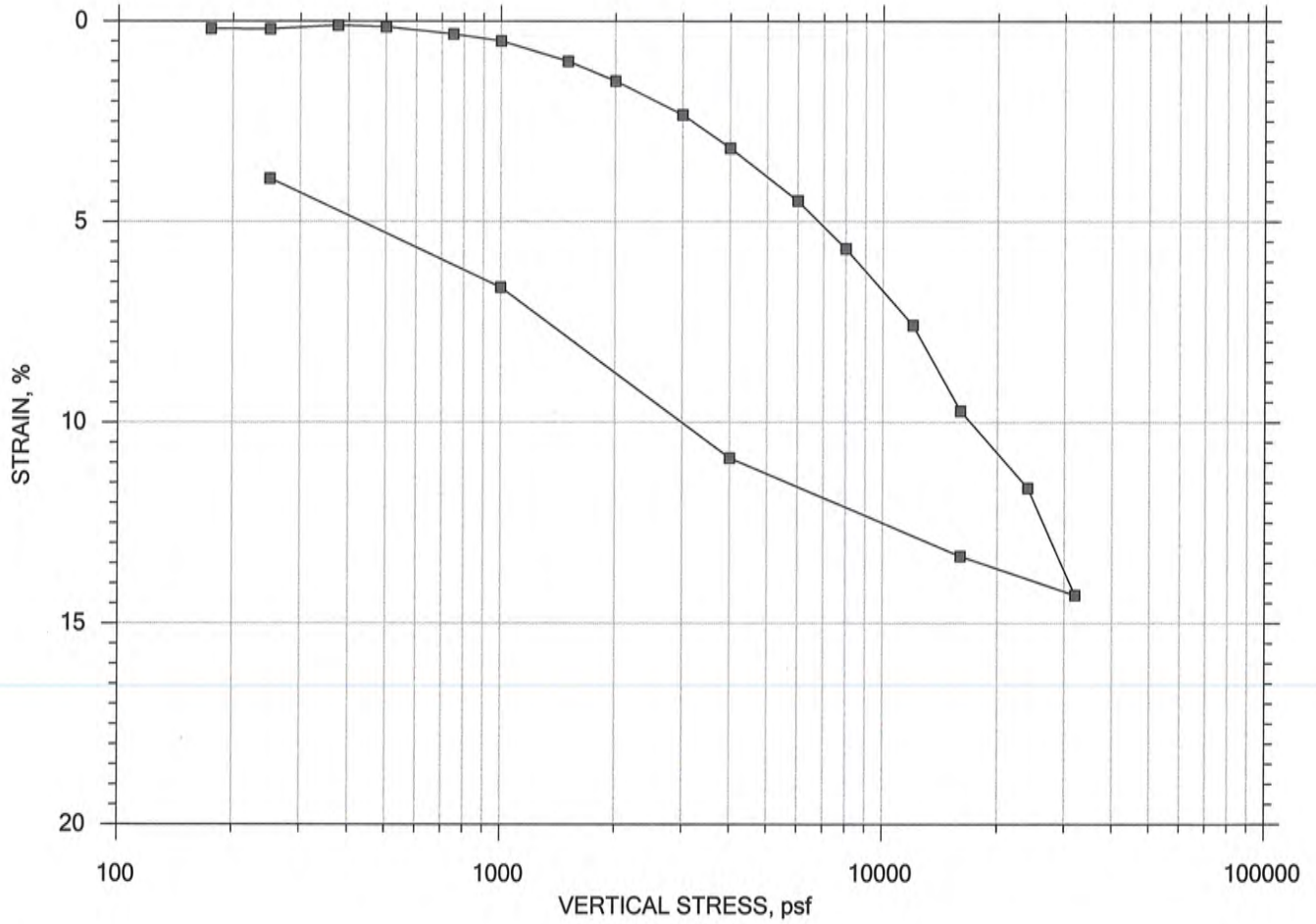



Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	CU-4-1	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-1m.dat
●	CU-3-2	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-2m.dat
▲	CU-3-3	10-12 ft	jm	11/13/15	mcm	11/30/15	304013-CU-3-3m.dat

	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Sample Type: intact	
	Description: Moist, greenish gray clay with sand		
	Remarks: System A		

# One-Dimensional Consolidation by ASTM D2435 - Method B

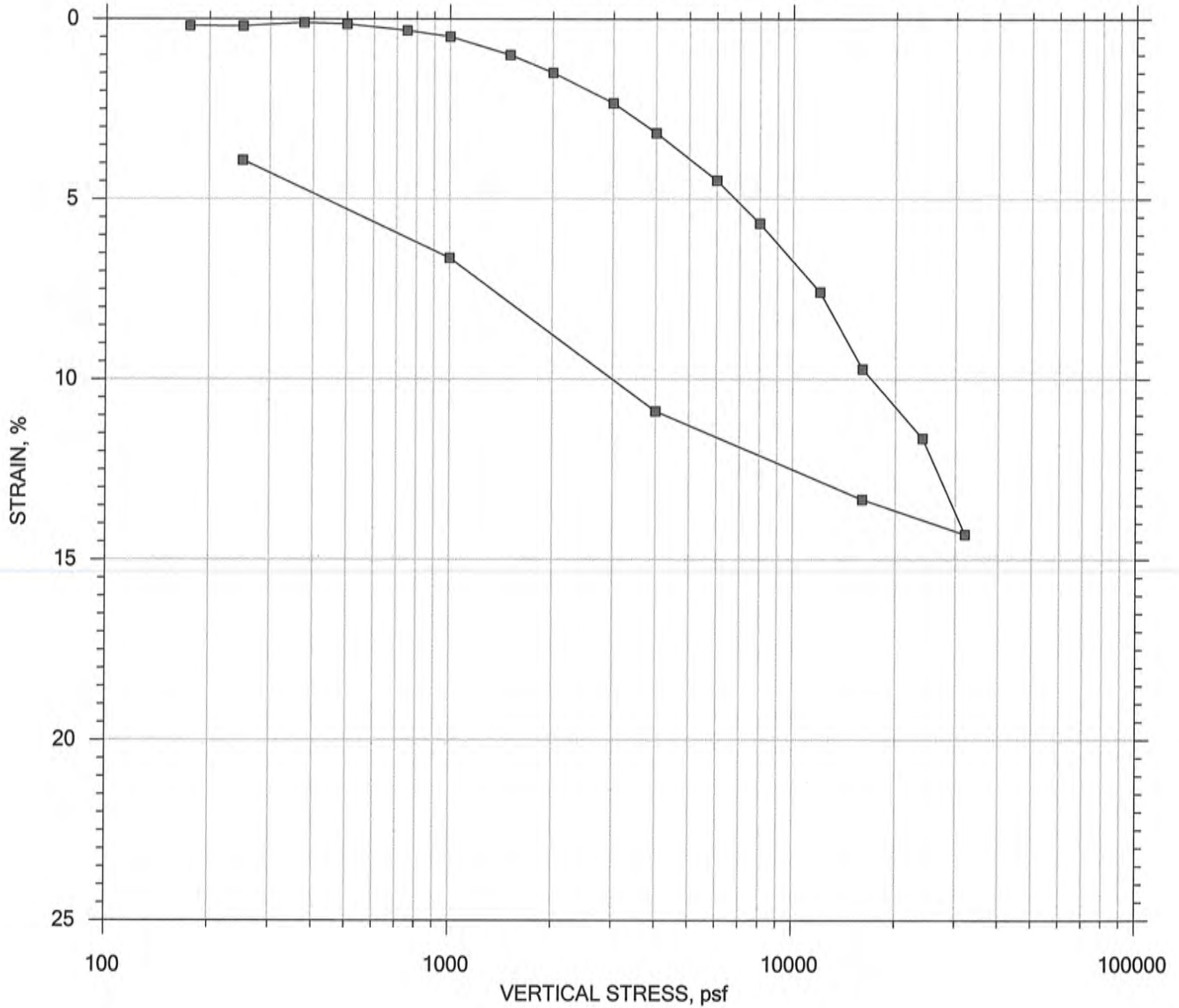
## SUMMARY REPORT




	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		
	Displacement at End of Increment		

# One-Dimensional Consolidation by ASTM D2435 - Method B

## SUMMARY REPORT



				Before Test	After Test	
Current Vertical Effective Stress: ---				Water Content, %	34.47	33.22
Preconsolidation Stress: ---				Dry Unit Weight, pcf	87.317	89.464
Compression Ratio: ---				Saturation, %	98.65	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.96	0.91
LL: 74	PL: 23	PI: 51	GS: 2.74			

	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: ID-02  
 Sample No.: ---  
 Test No.: IP-1

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/20/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 8-10 ft  
 Elevation: ---

Soil Description: Moist, greenish gray clay  
 Remarks: System 5077

Estimated Specific Gravity: 2.74  
 Initial Void Ratio: 0.956  
 Final Void Ratio: 0.909

Liquid Limit: 74  
 Plastic Limit: 23  
 Plasticity Index: 51

Specimen Diameter: 2.50 in  
 Initial Height: 1.00 in  
 Final Height: 0.98 in

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	a1	RING	a50	a50
Wt. Container + Wet Soil, gm	132.09	168.52	167.12	167.12
Wt. Container + Dry Soil, gm	101.88	129.74	129.74	129.74
Wt. Container, gm	17.350	17.230	17.230	17.230
Wt. Dry Soil, gm	84.530	112.51	112.51	112.51
Water Content, %	35.74	34.47	33.22	33.22
Void Ratio	---	0.956	0.909	---
Degree of Saturation, %	---	98.65	100.00	---
Dry Unit Weight, pcf	---	87.317	89.464	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.



One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: ID-02  
 Sample No.: ---  
 Test No.: IP-1

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/20/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 8-10 ft  
 Elevation: ---

Soil Description: Moist, greenish gray clay  
 Remarks: System 5077

Displacement at End of Increment

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt T90 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec
1	175.	0.001817	0.952	0.182	0.221	1.11e-004	1.04e-005	2.19e-006
2	250.	0.001880	0.952	0.188	106.436	2.30e-007	8.42e-007	3.68e-010
3	375.	0.0009808	0.954	0.0981	0.000	0.00e+000	-7.20e-006	-0.00e+000
4	500.	0.001393	0.953	0.139	219.015	1.12e-007	3.30e-006	7.02e-010
5	750.	0.003171	0.950	0.317	61.145	3.99e-007	7.11e-006	5.41e-009
6	1.00e+003	0.004885	0.946	0.489	59.635	4.08e-007	6.86e-006	5.32e-009
7	1.50e+003	0.009955	0.936	0.995	43.237	5.59e-007	1.01e-005	1.08e-008
8	2.00e+003	0.01486	0.927	1.49	54.922	4.36e-007	9.80e-006	8.13e-009
9	3.00e+003	0.02335	0.910	2.34	63.737	3.70e-007	8.50e-006	5.99e-009
10	4.00e+003	0.03158	0.894	3.16	107.329	2.16e-007	8.22e-006	3.38e-009
11	6.00e+003	0.04474	0.868	4.47	104.084	2.18e-007	6.58e-006	2.73e-009
12	8.00e+003	0.05671	0.845	5.67	233.227	9.48e-008	5.99e-006	1.08e-009
13	1.20e+004	0.07573	0.808	7.57	153.806	1.39e-007	4.76e-006	1.26e-009
14	1.60e+004	0.09710	0.766	9.71	480.004	4.27e-008	5.34e-006	4.34e-010
15	2.40e+004	0.1163	0.728	11.6	268.113	7.30e-008	2.40e-006	3.34e-010
16	3.20e+004	0.1429	0.676	14.3	640.859	2.90e-008	3.32e-006	1.83e-010
17	1.60e+004	0.1332	0.695	13.3	81.327	2.24e-007	6.06e-007	2.58e-010
18	4.00e+003	0.1088	0.743	10.9	260.838	7.27e-008	2.04e-006	2.81e-010
19	1.00e+003	0.06626	0.826	6.63	1322.049	1.55e-008	1.42e-005	4.17e-010
20	250.	0.03915	0.879	3.92	1137.522	1.94e-008	3.61e-005	1.33e-009

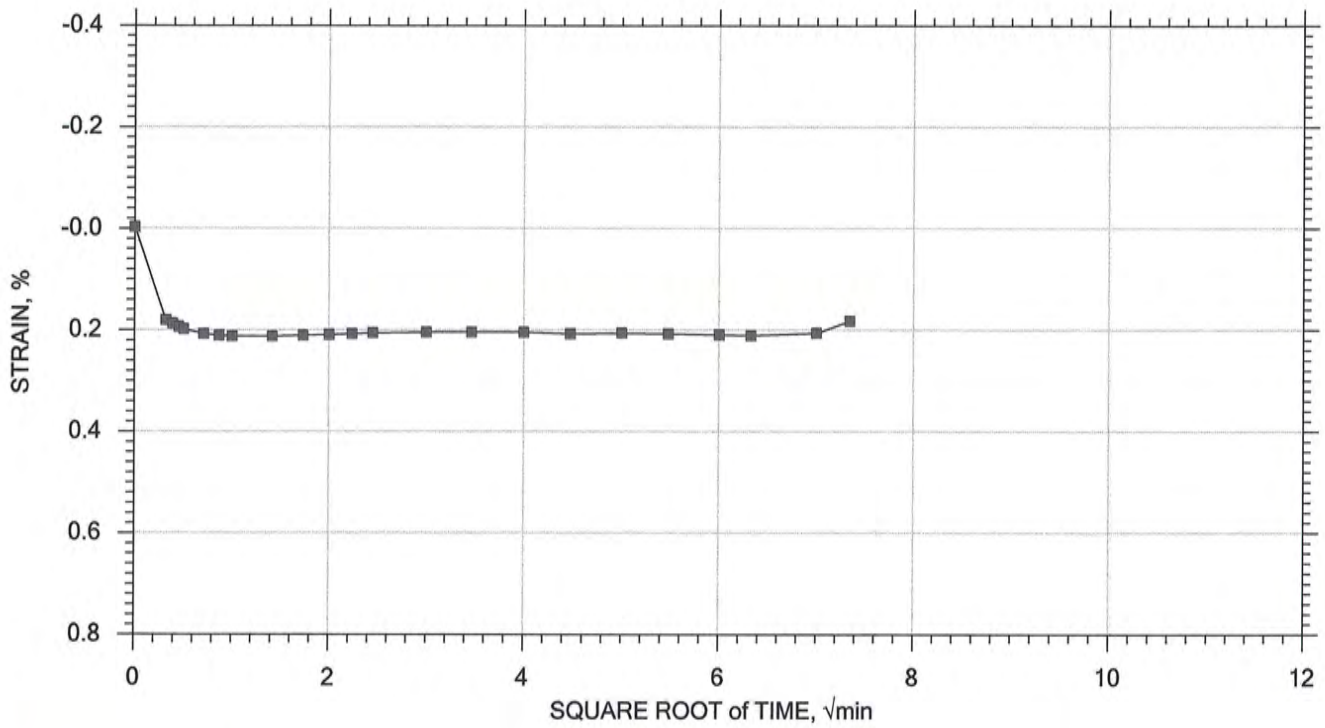
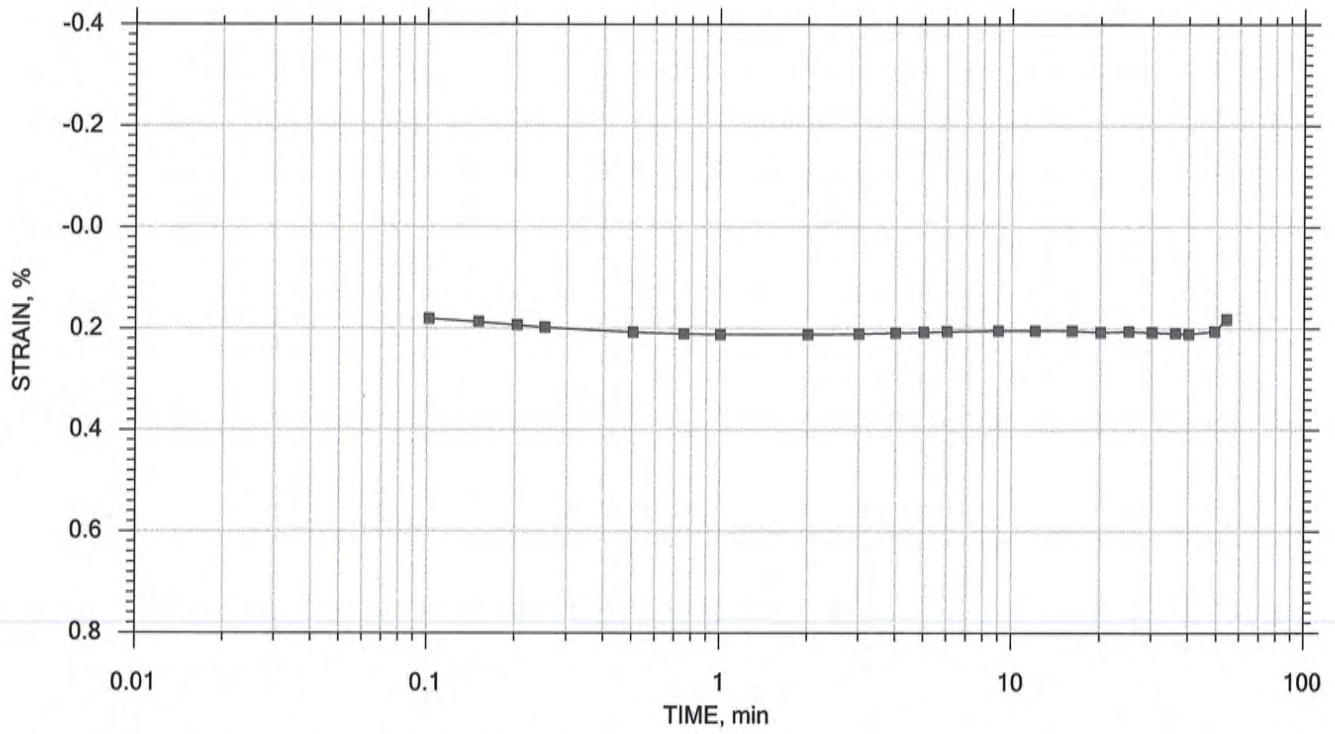
	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec	Ca %
1	175.	0.001817	0.952	0.182	0.000	0.00e+000	1.04e-005	0.00e+000	0.00e+000
2	250.	0.001880	0.952	0.188	0.000	0.00e+000	8.42e-007	0.00e+000	0.00e+000
3	375.	0.0009808	0.954	0.0981	0.000	0.00e+000	-7.20e-006	-0.00e+000	0.00e+000
4	500.	0.001393	0.953	0.139	0.000	0.00e+000	3.30e-006	0.00e+000	0.00e+000
5	750.	0.003171	0.950	0.317	12.402	4.58e-007	7.11e-006	6.19e-009	0.00e+000
6	1.00e+003	0.004885	0.946	0.489	20.773	2.72e-007	6.86e-006	3.55e-009	0.00e+000
7	1.50e+003	0.009955	0.936	0.995	0.000	0.00e+000	1.01e-005	0.00e+000	0.00e+000
8	2.00e+003	0.01486	0.927	1.49	0.000	0.00e+000	9.80e-006	0.00e+000	0.00e+000
9	3.00e+003	0.02335	0.910	2.34	0.000	0.00e+000	8.50e-006	0.00e+000	0.00e+000
10	4.00e+003	0.03158	0.894	3.16	0.000	0.00e+000	8.22e-006	0.00e+000	0.00e+000
11	6.00e+003	0.04474	0.868	4.47	0.000	0.00e+000	6.58e-006	0.00e+000	0.00e+000
12	8.00e+003	0.05671	0.845	5.67	0.000	0.00e+000	5.99e-006	0.00e+000	0.00e+000
13	1.20e+004	0.07573	0.808	7.57	0.000	0.00e+000	4.76e-006	0.00e+000	0.00e+000
14	1.60e+004	0.09710	0.766	9.71	0.000	0.00e+000	5.34e-006	0.00e+000	0.00e+000
15	2.40e+004	0.1163	0.728	11.6	0.000	0.00e+000	2.40e-006	0.00e+000	0.00e+000
16	3.20e+004	0.1429	0.676	14.3	0.000	0.00e+000	3.32e-006	0.00e+000	0.00e+000
17	1.60e+004	0.1332	0.695	13.3	0.000	0.00e+000	6.06e-007	0.00e+000	0.00e+000
18	4.00e+003	0.1088	0.743	10.9	0.000	0.00e+000	2.04e-006	0.00e+000	0.00e+000
19	1.00e+003	0.06626	0.826	6.63	0.000	0.00e+000	1.42e-005	0.00e+000	0.00e+000
20	250.	0.03915	0.879	3.92	0.000	0.00e+000	3.61e-005	0.00e+000	0.00e+000


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 1 of 20

Stress: 175 psf



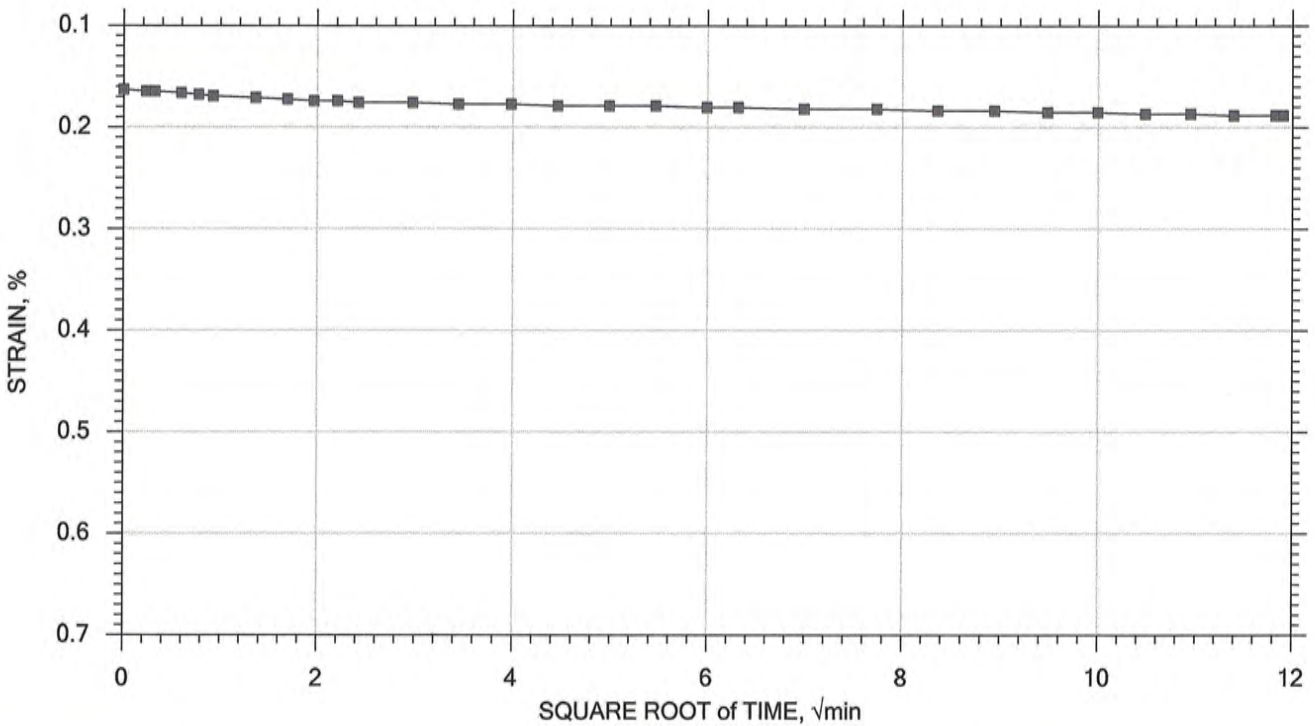
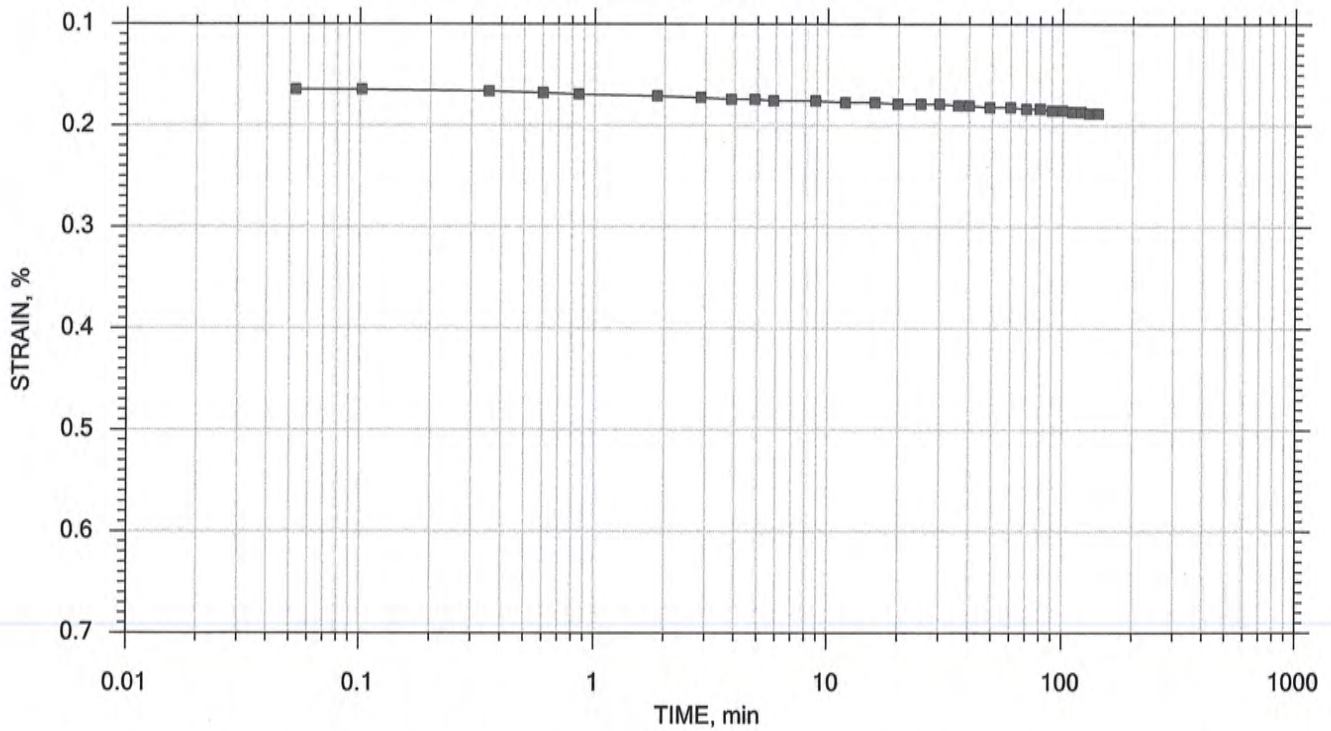
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	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 2 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: Jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

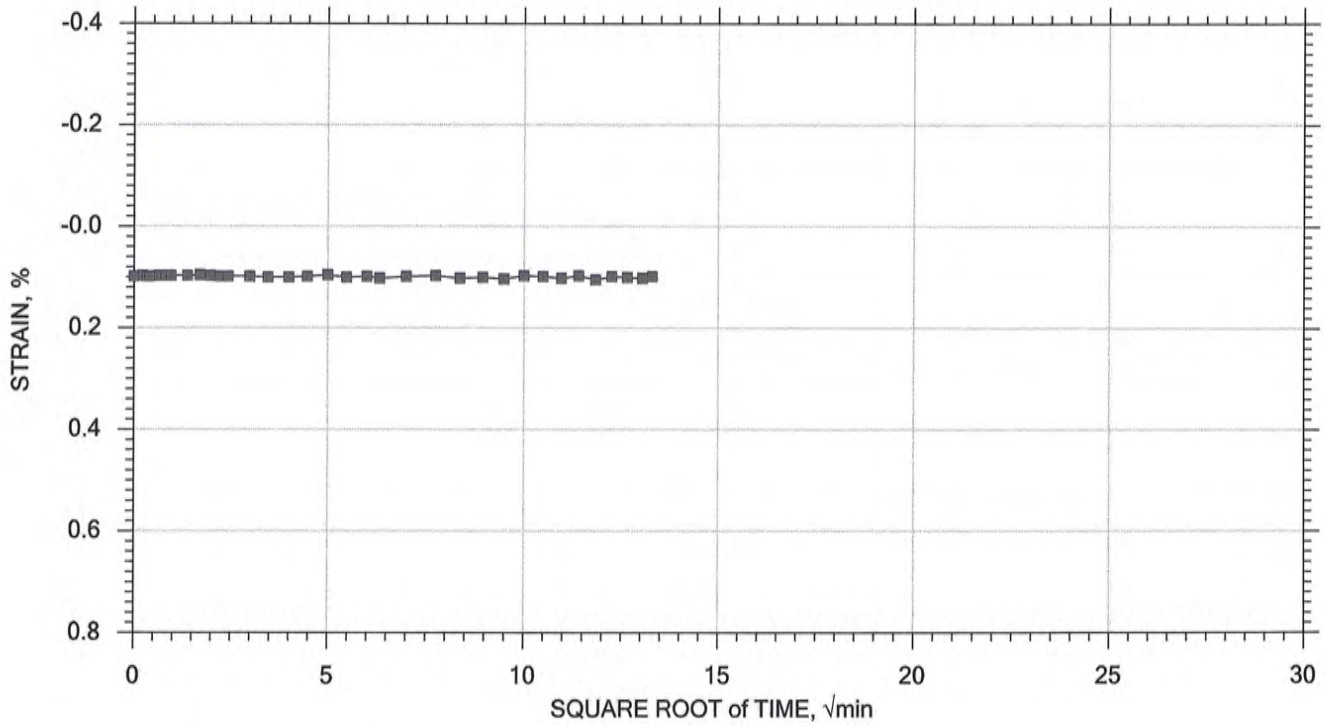
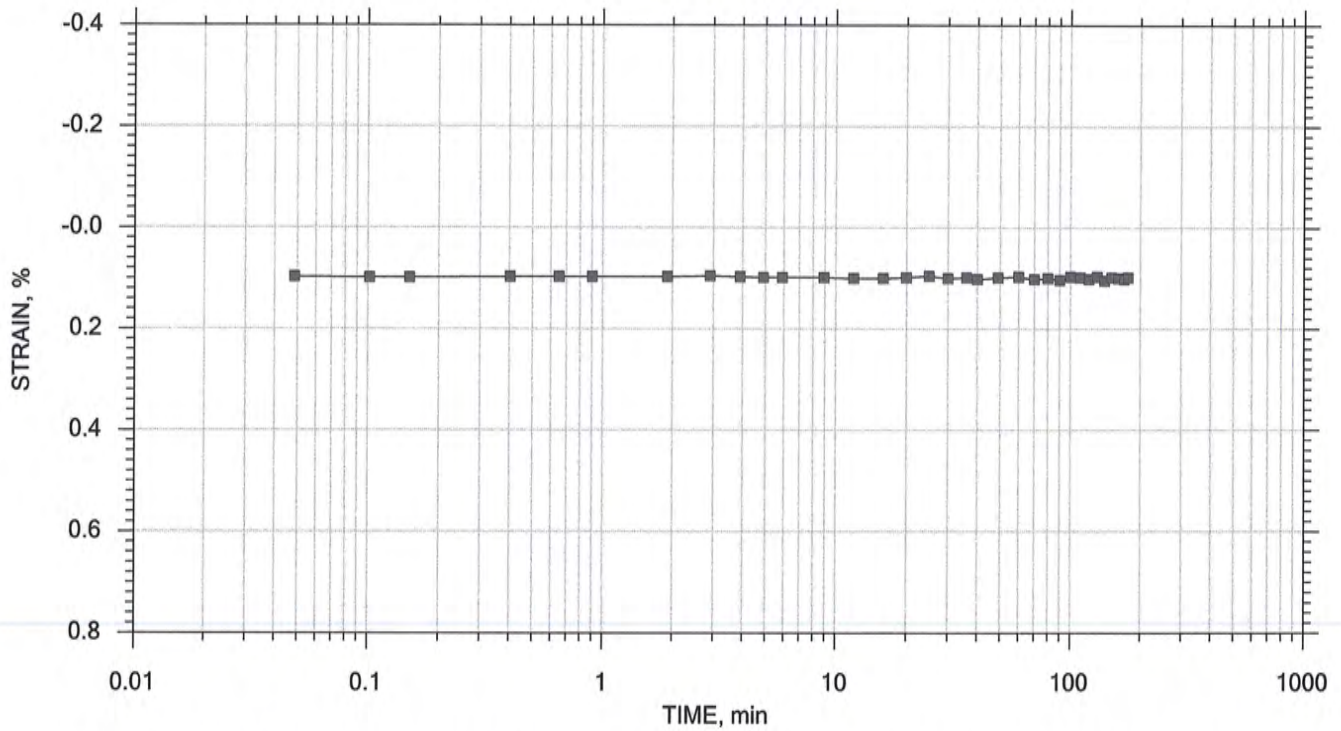



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 3 of 20

Stress: 375 psf



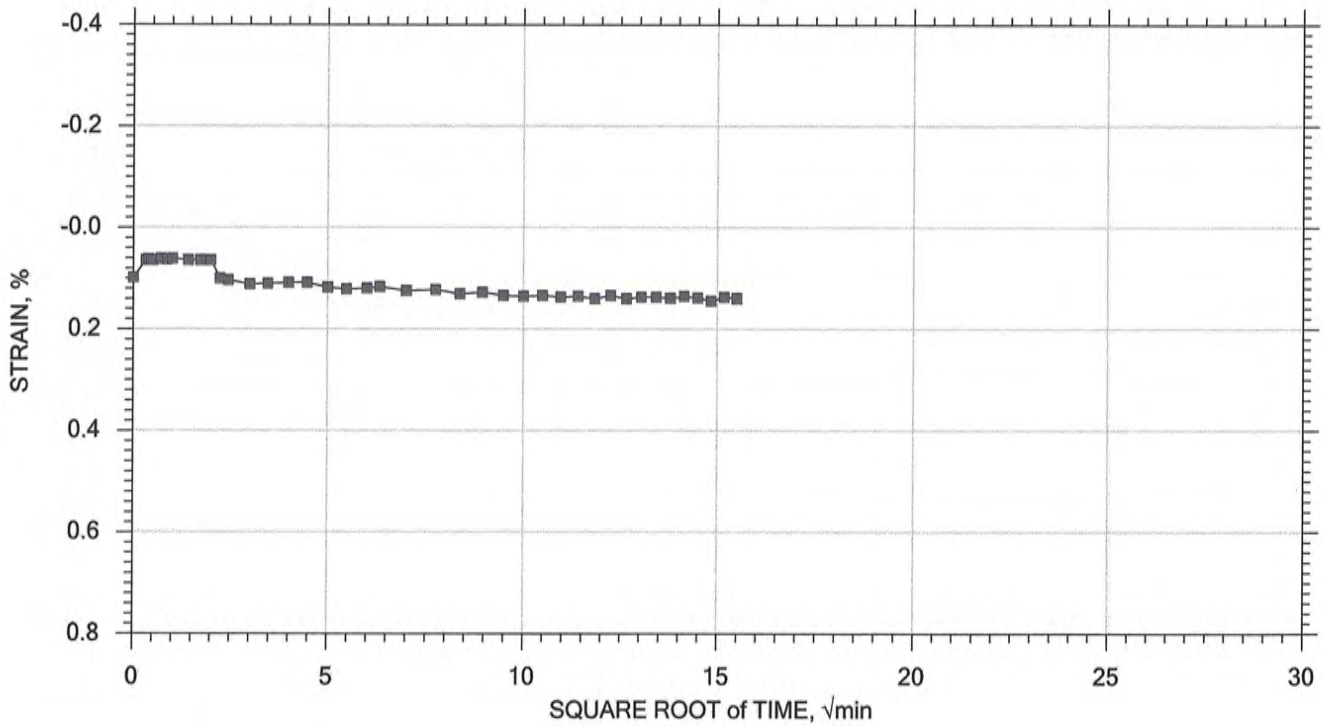
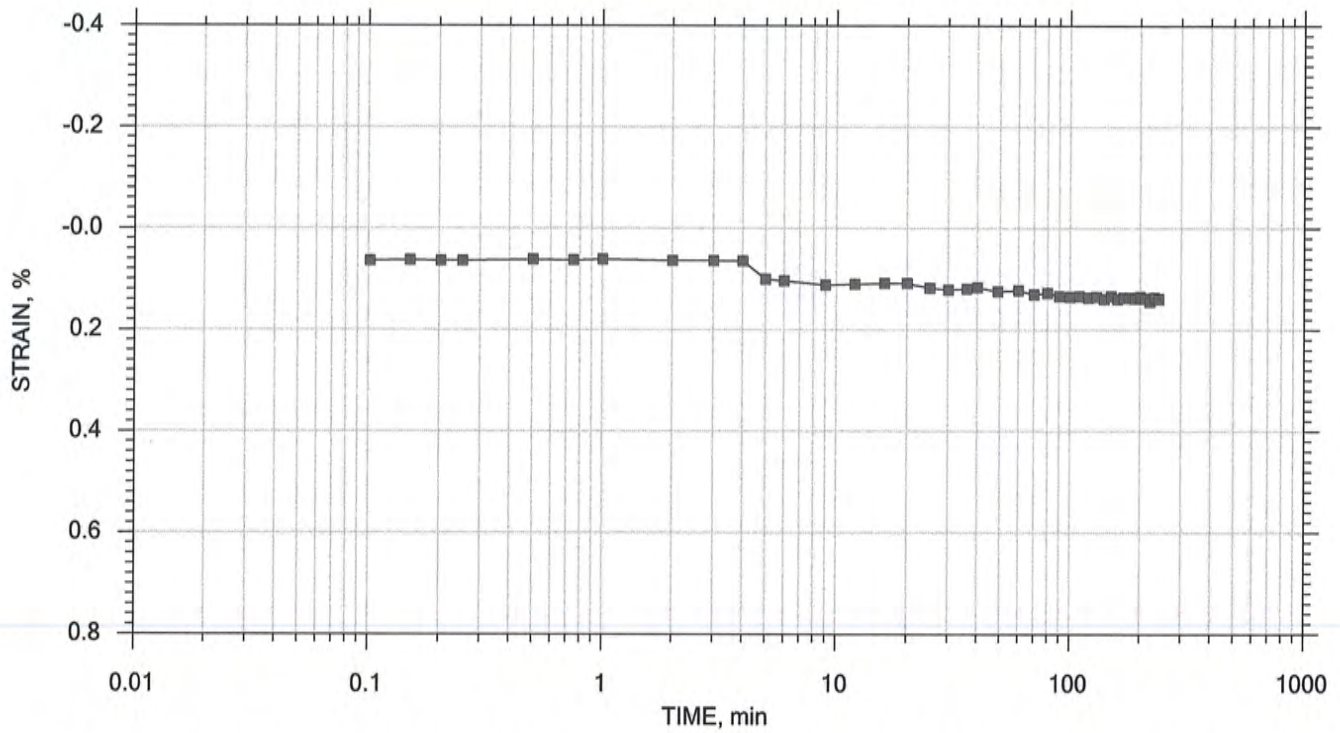
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	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 4 of 20

Stress: 500 psf



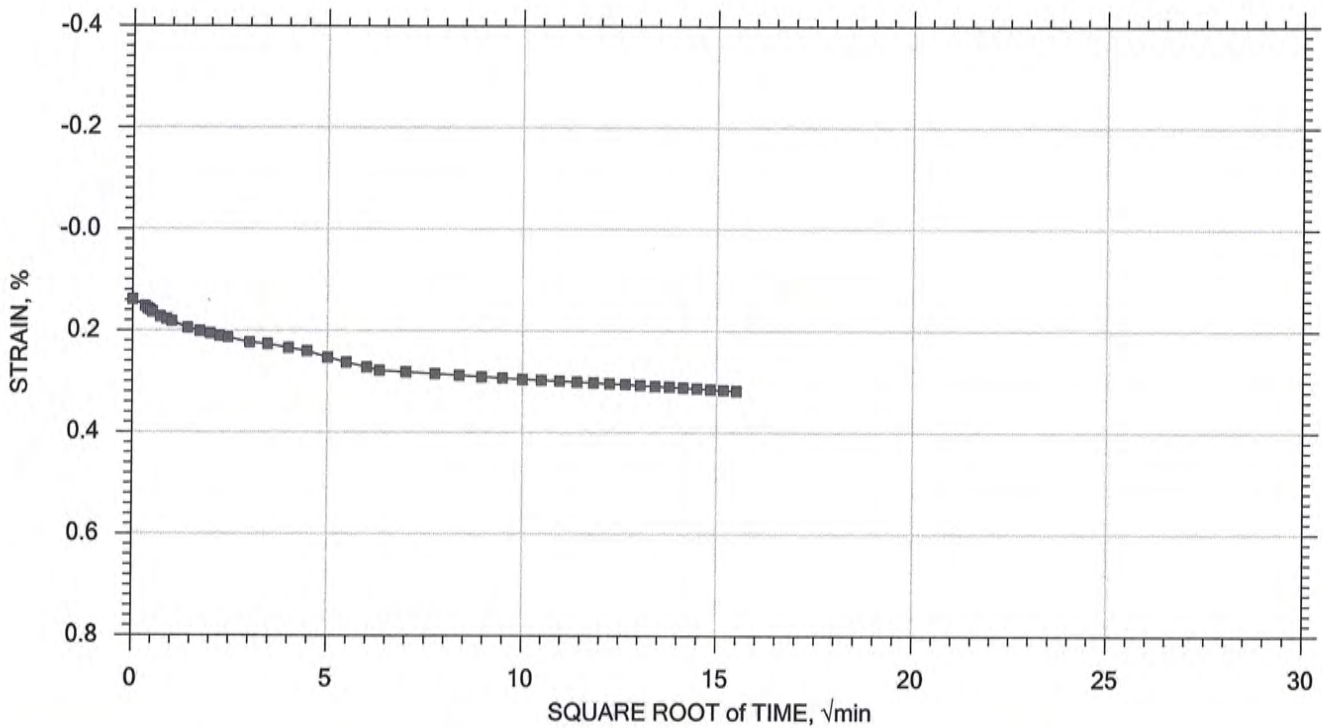
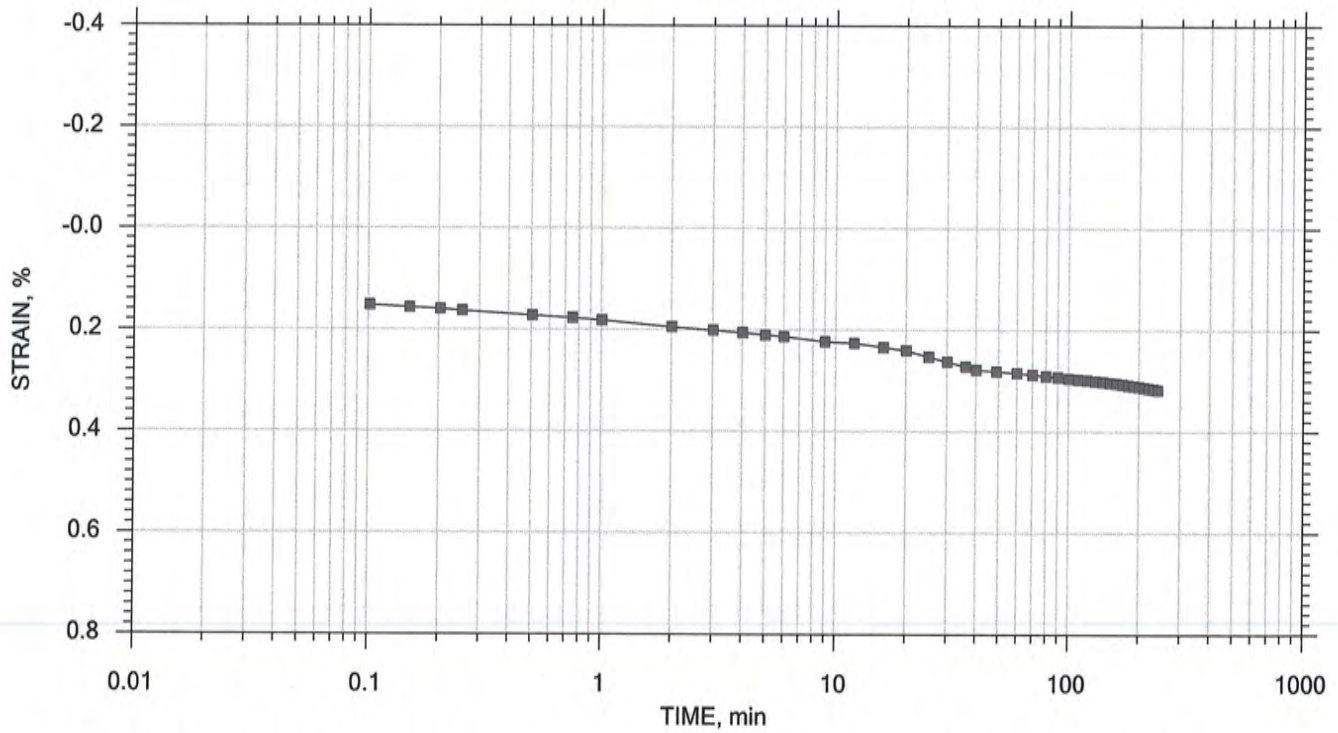
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	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 5 of 20

Stress: 750 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

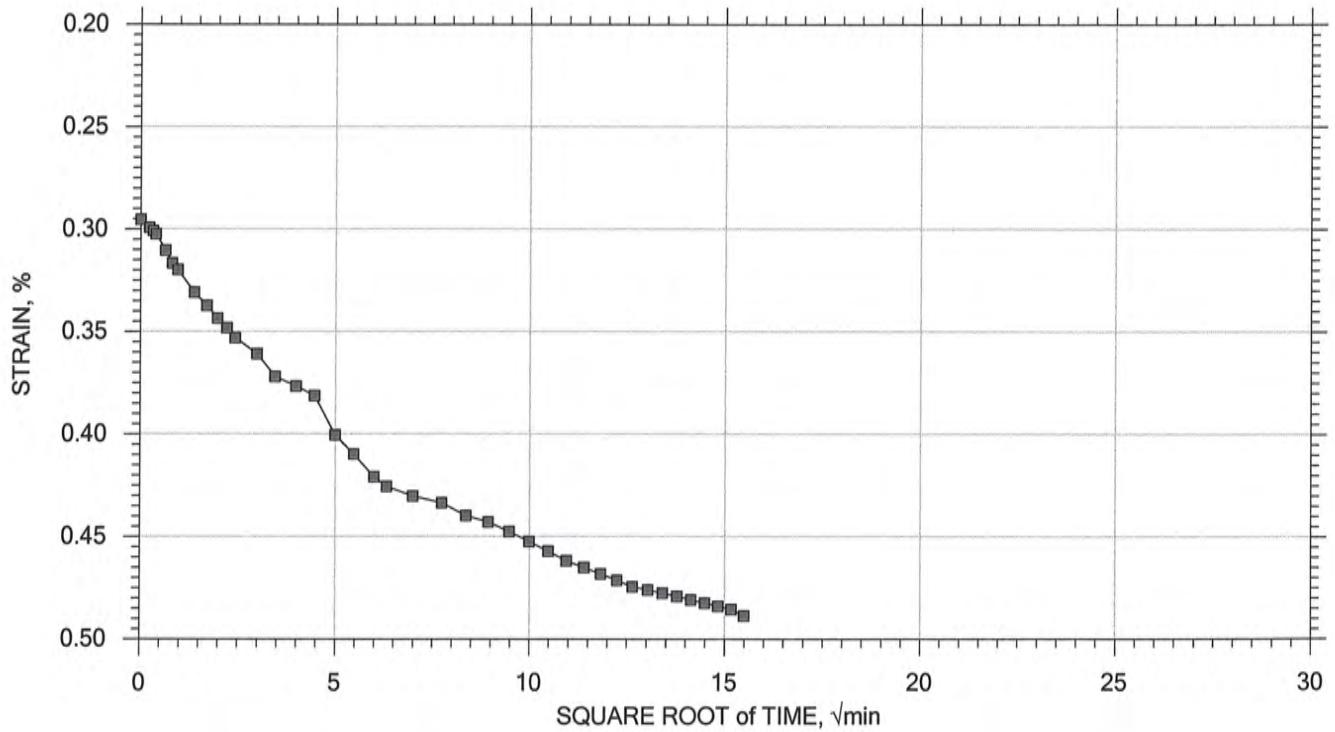
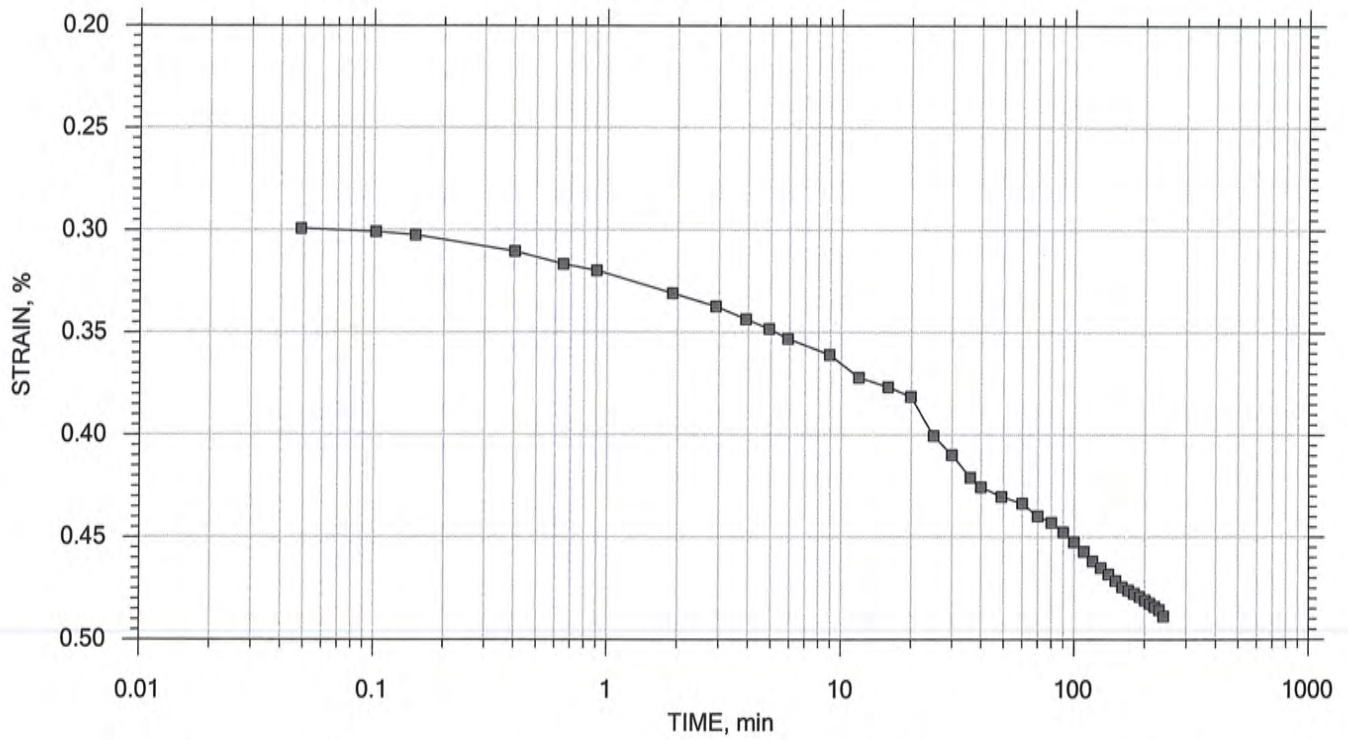



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 6 of 20

Stress: 1000 psf



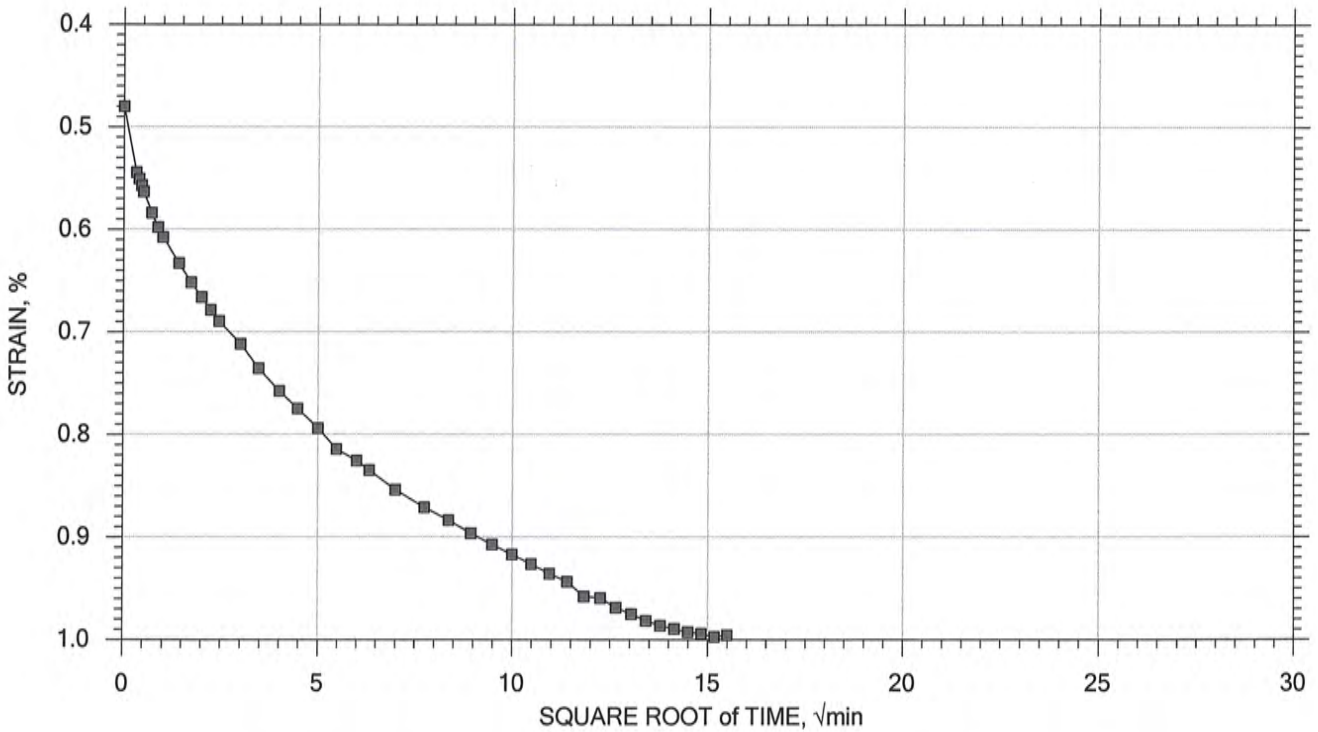
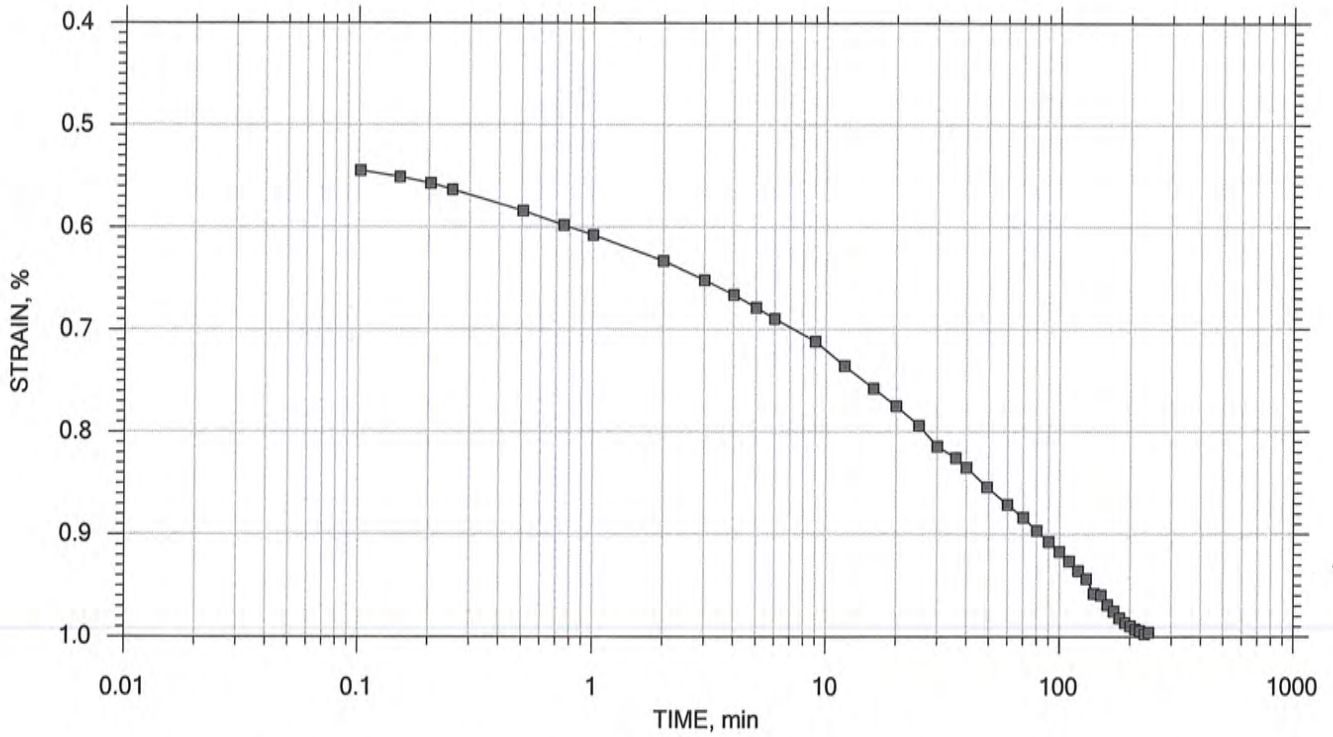
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	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 7 of 20

Stress: 1500 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

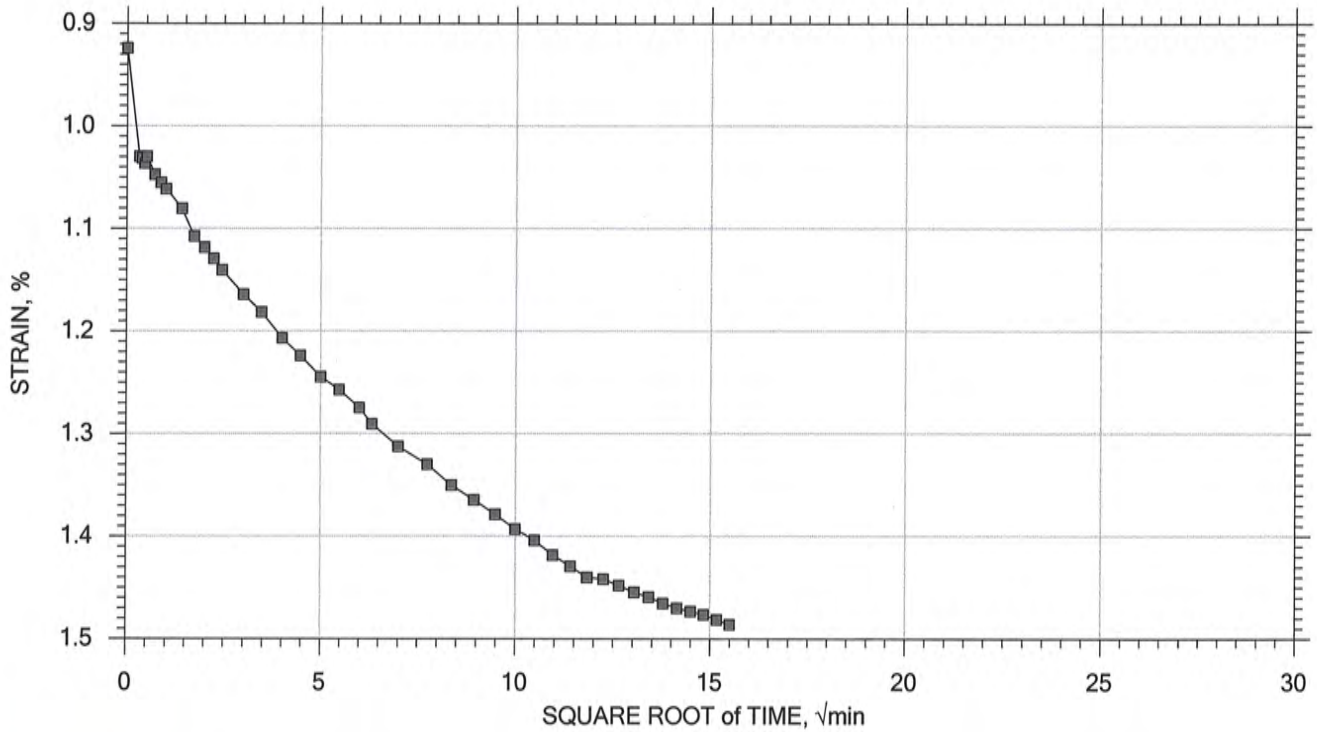
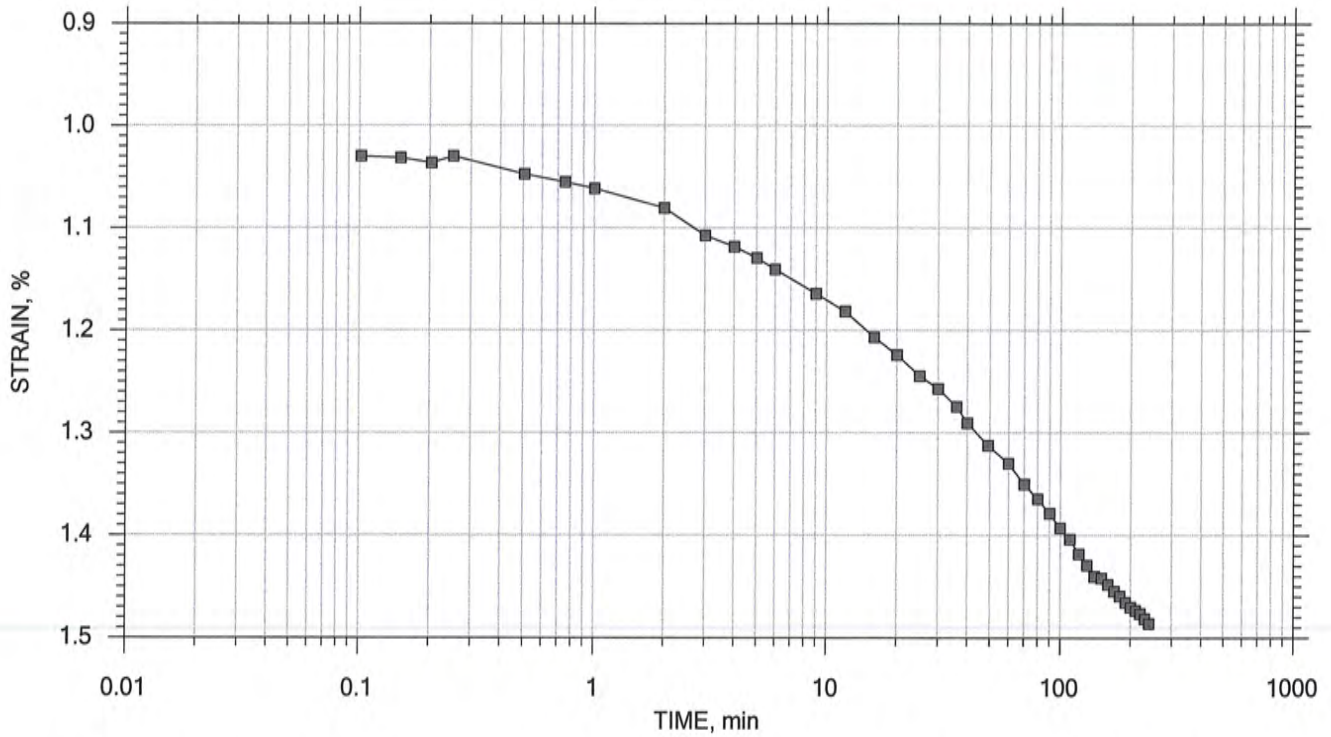



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 8 of 20

Stress: 2000 psf



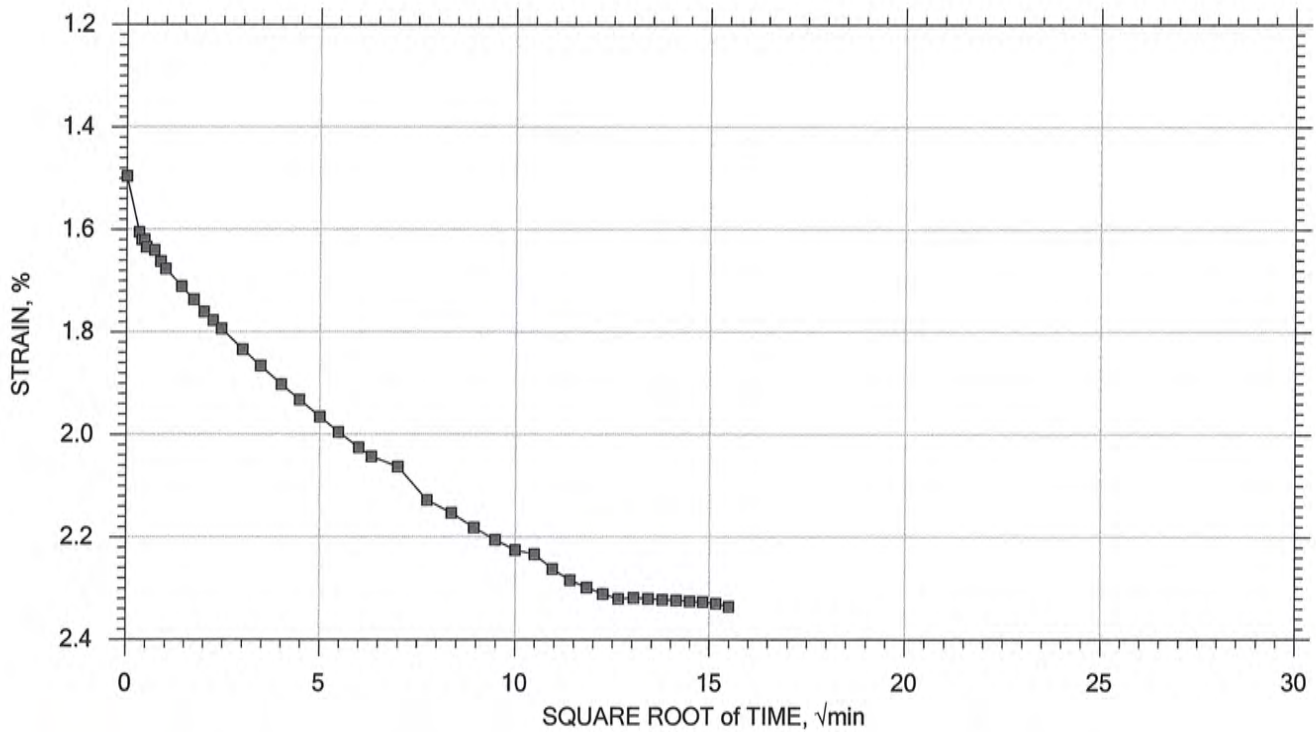
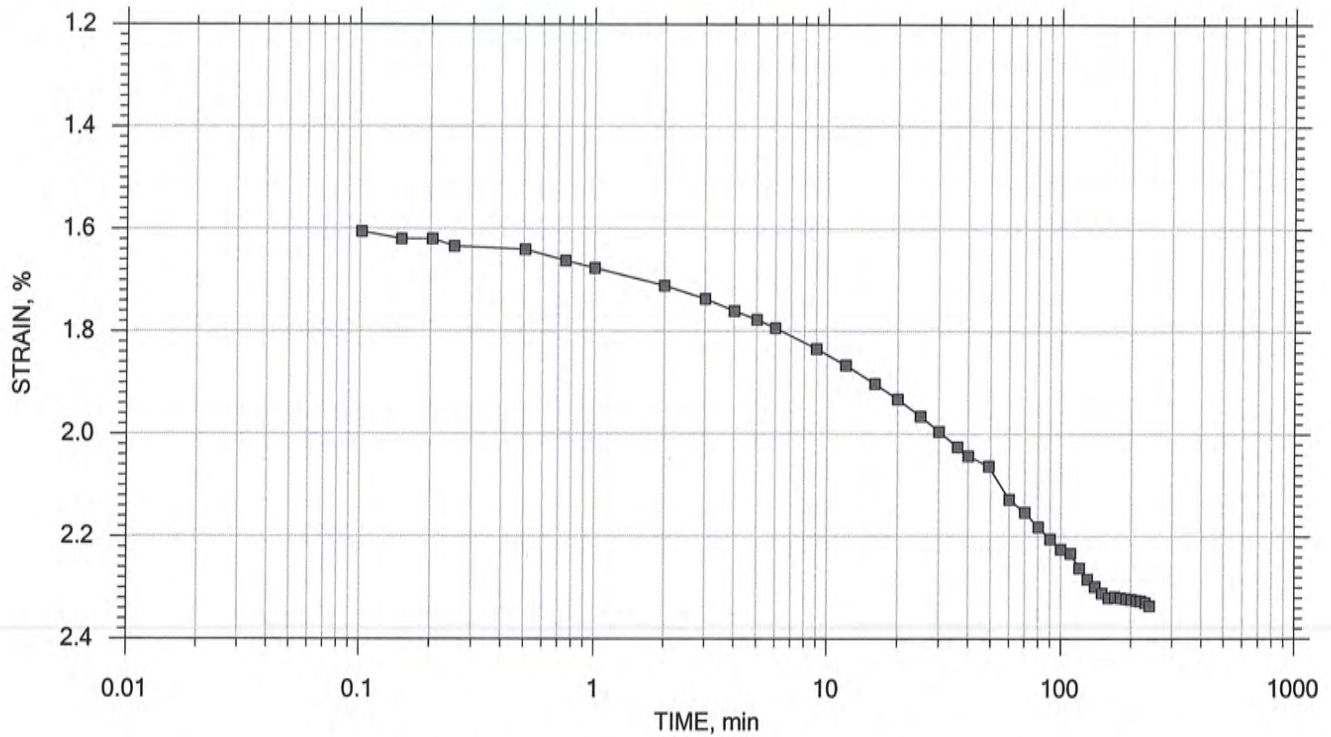
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	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 9 of 20

Stress: 3000 psf



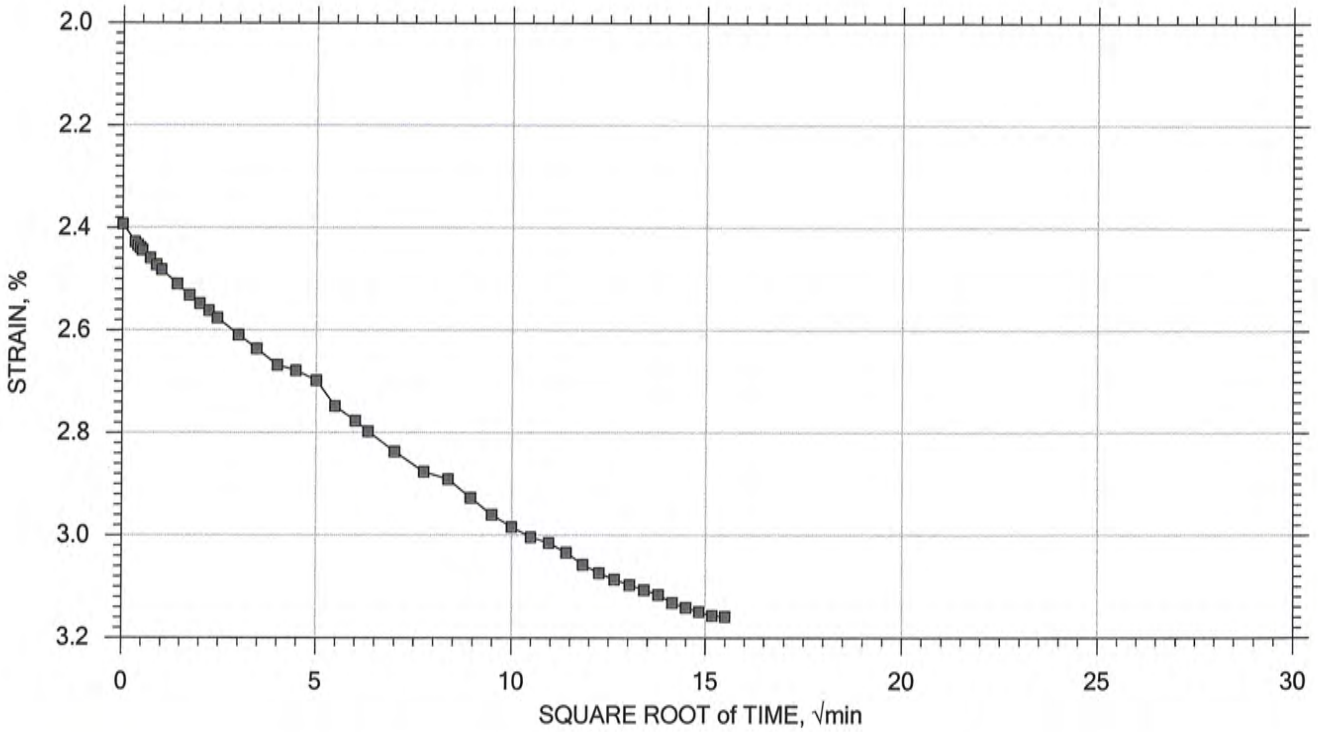
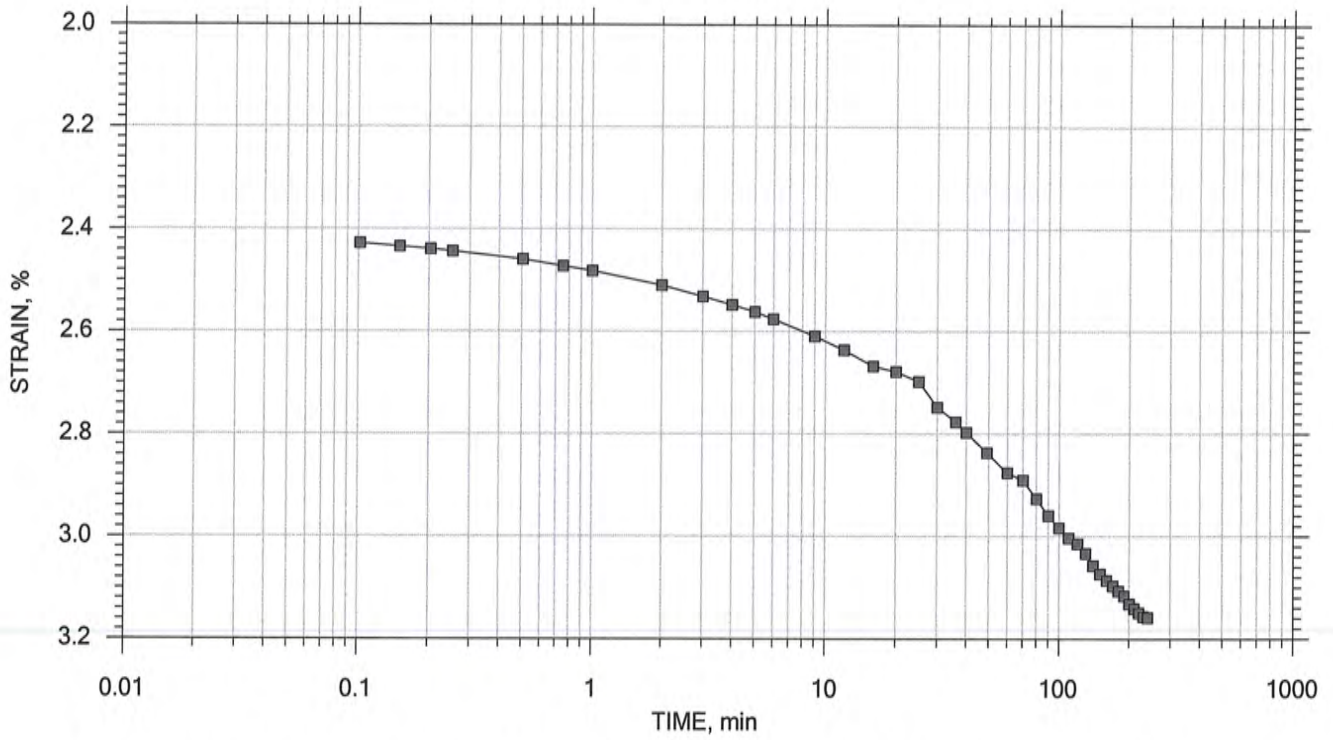
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 10 of 20

Stress: 4000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

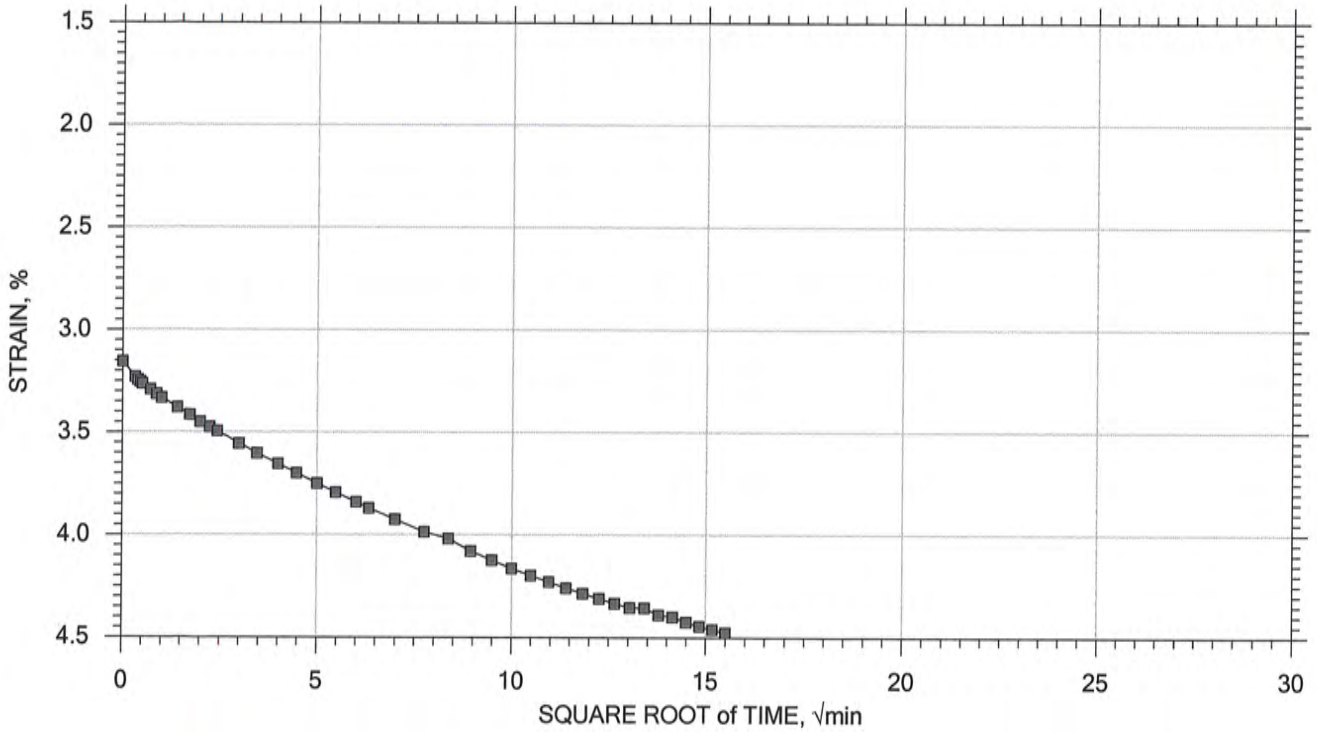
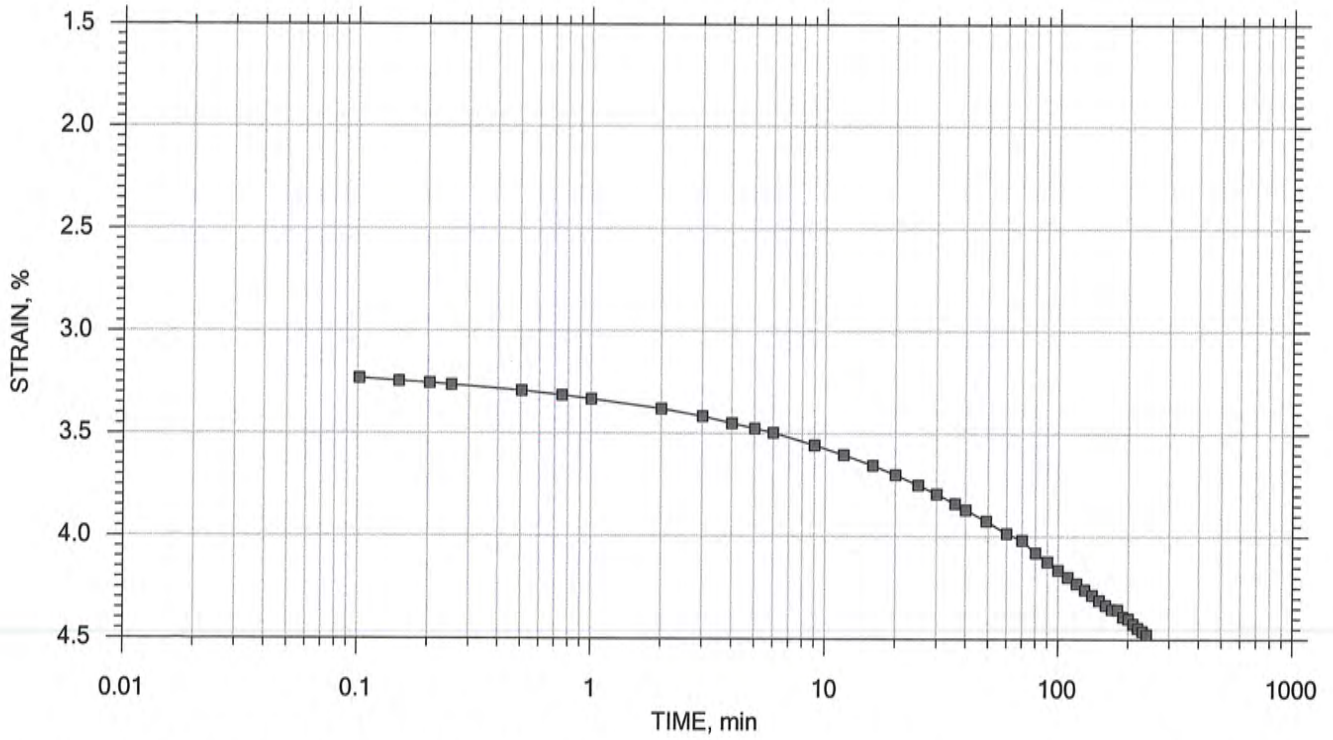



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 11 of 20

Stress: 6000 psf



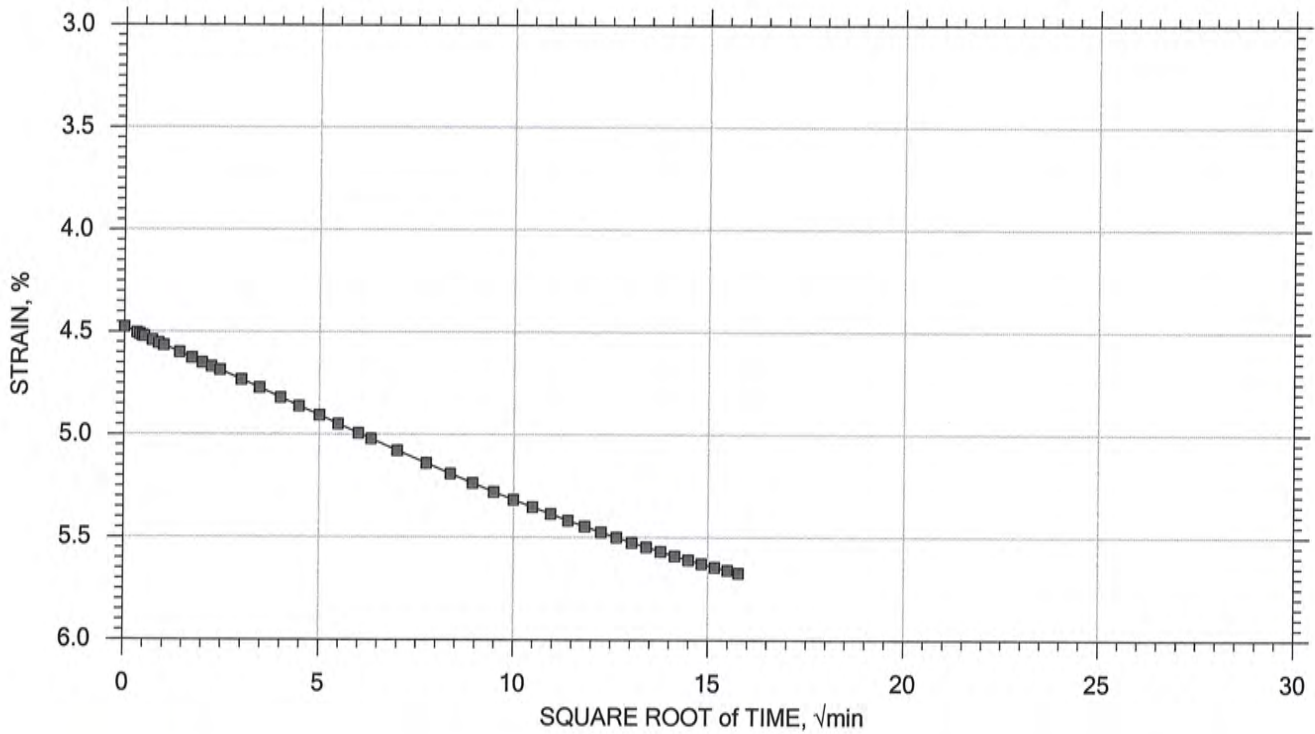
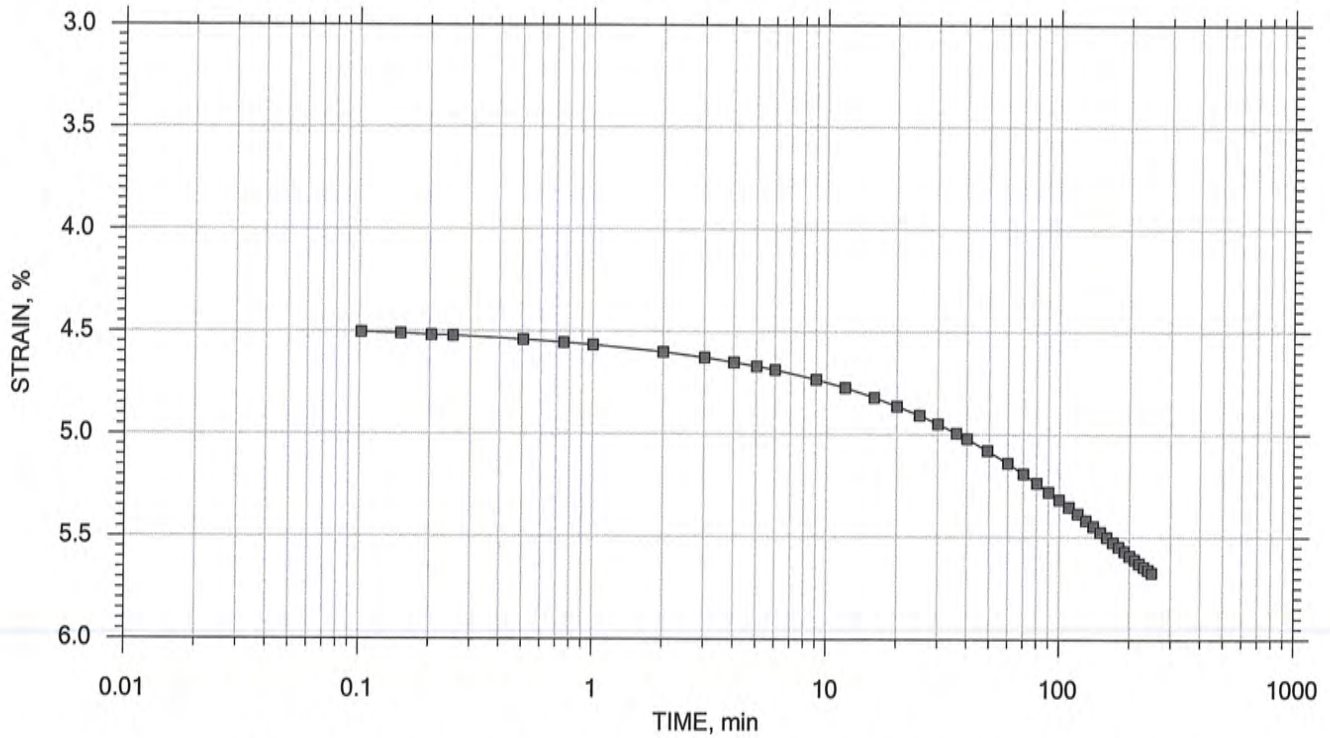
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 12 of 20

Stress: 8000 psf



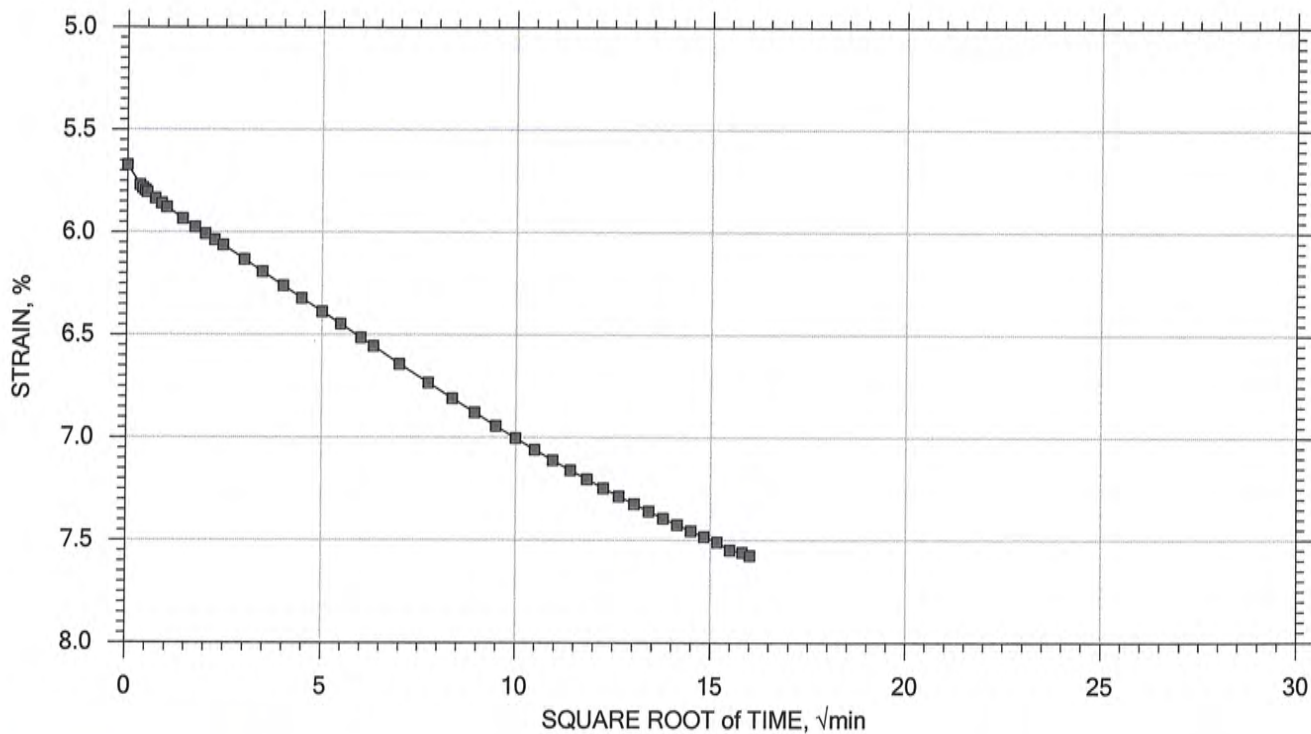
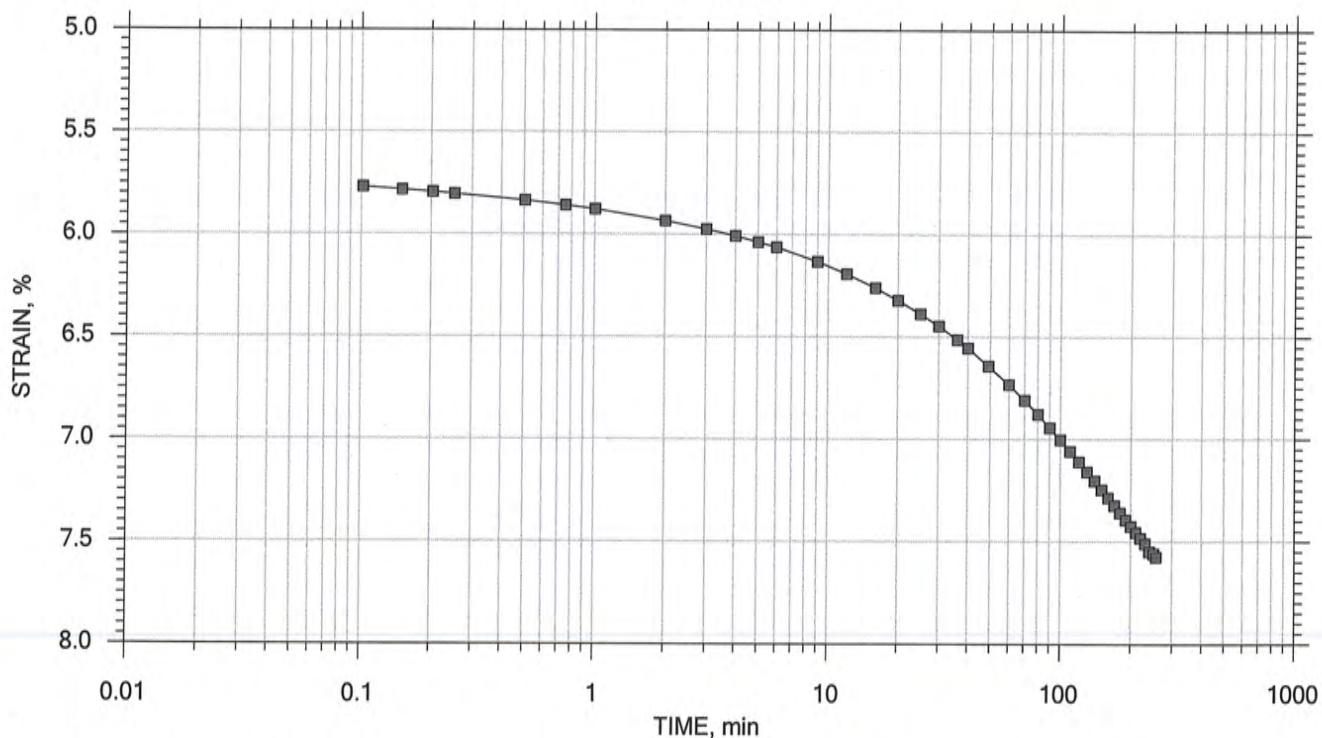
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 13 of 20

Stress: 12000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

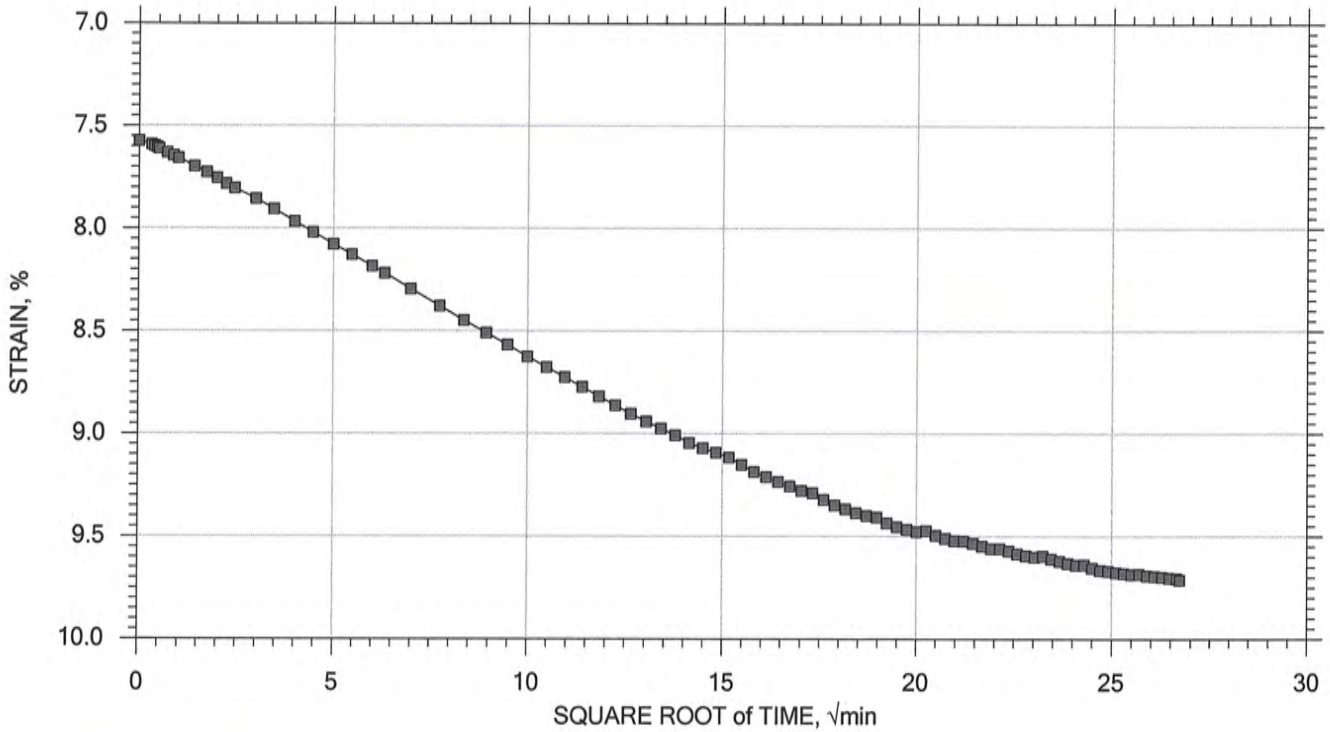
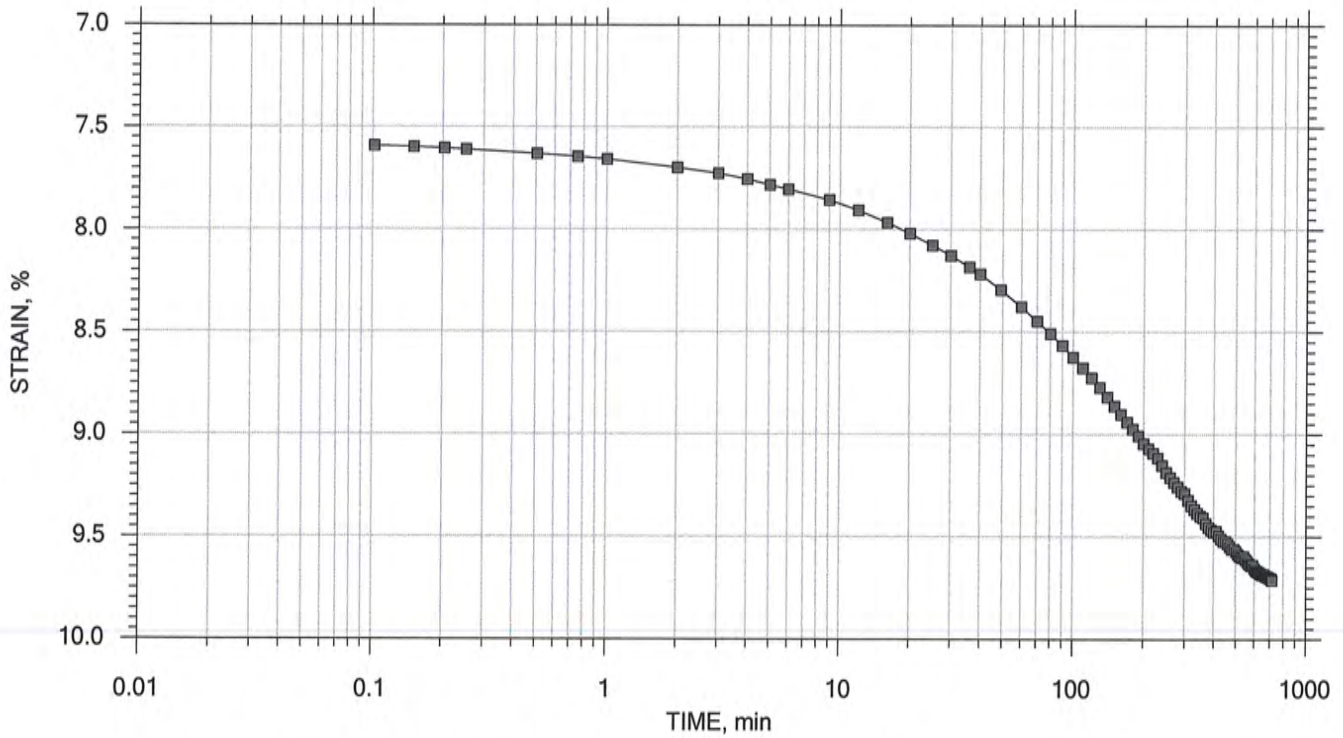



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 14 of 20

Stress: 16000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

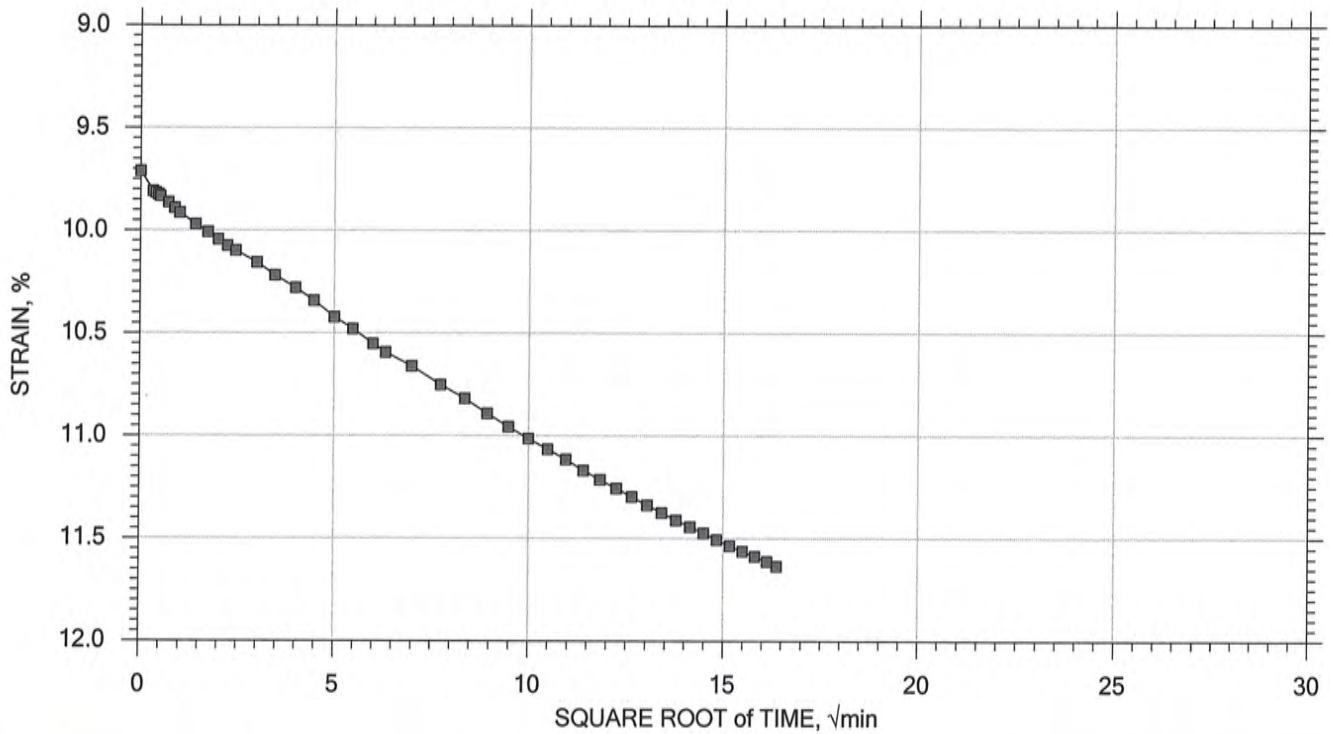
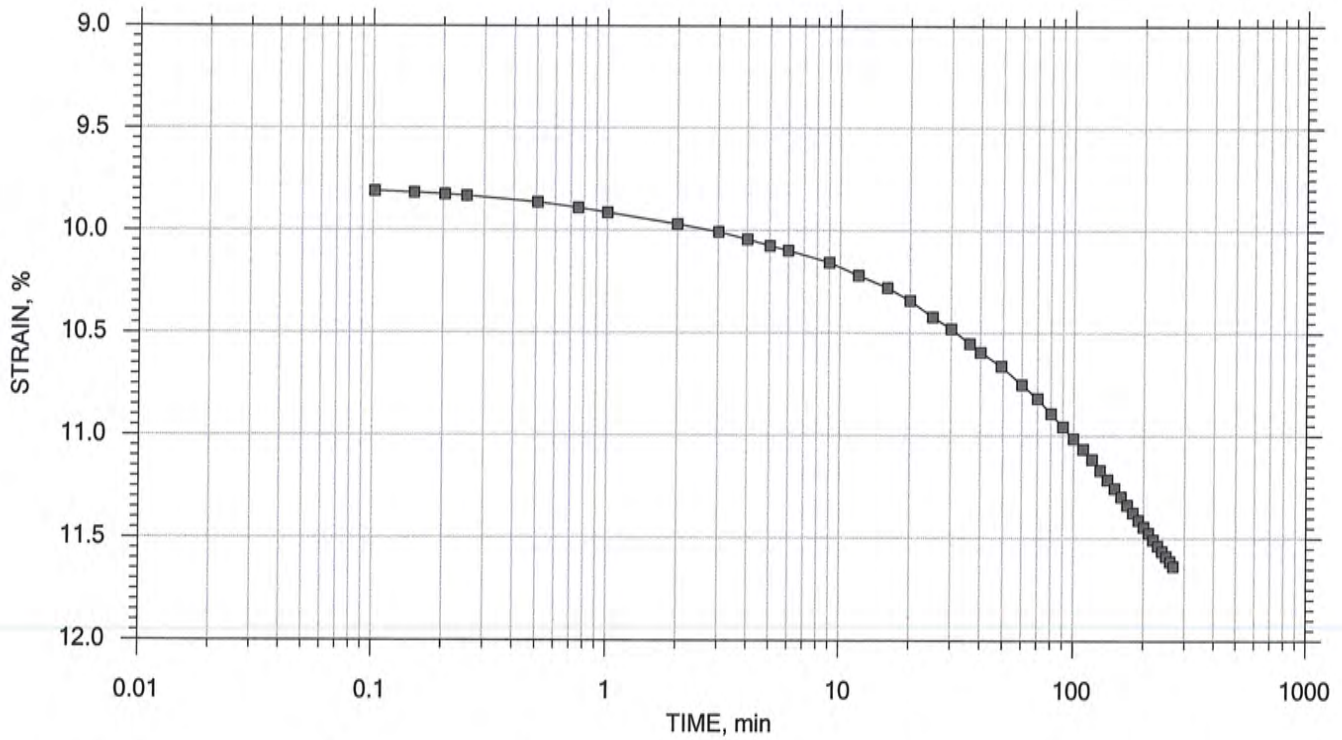



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 15 of 20

Stress: 24000 psf



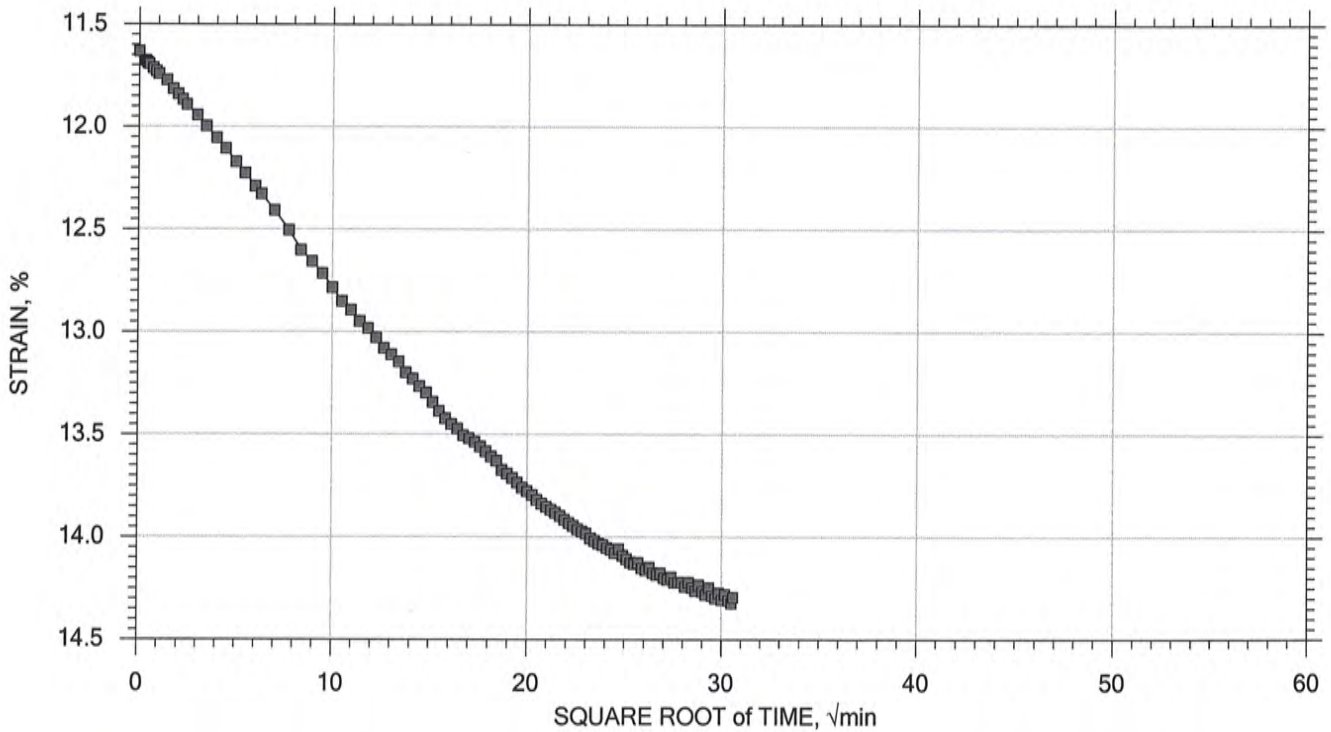
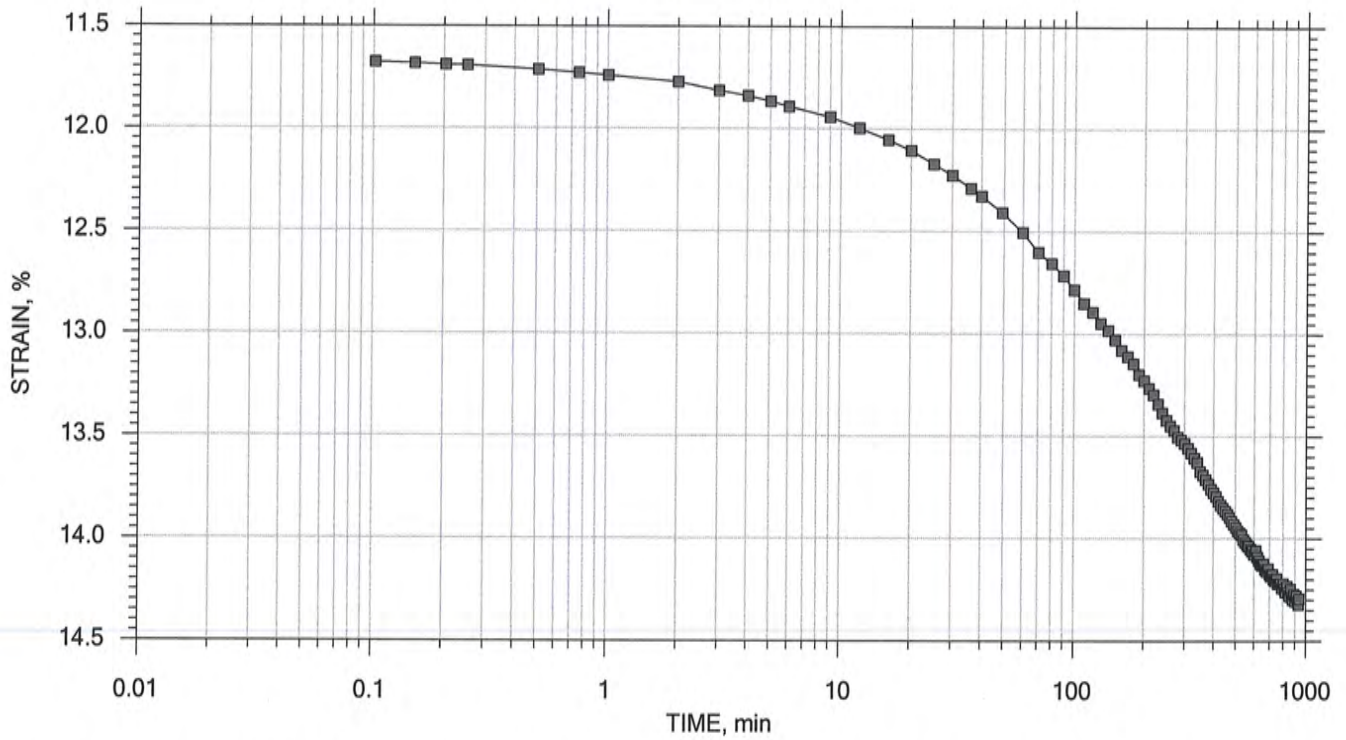
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 16 of 20

Stress: 32000 psf



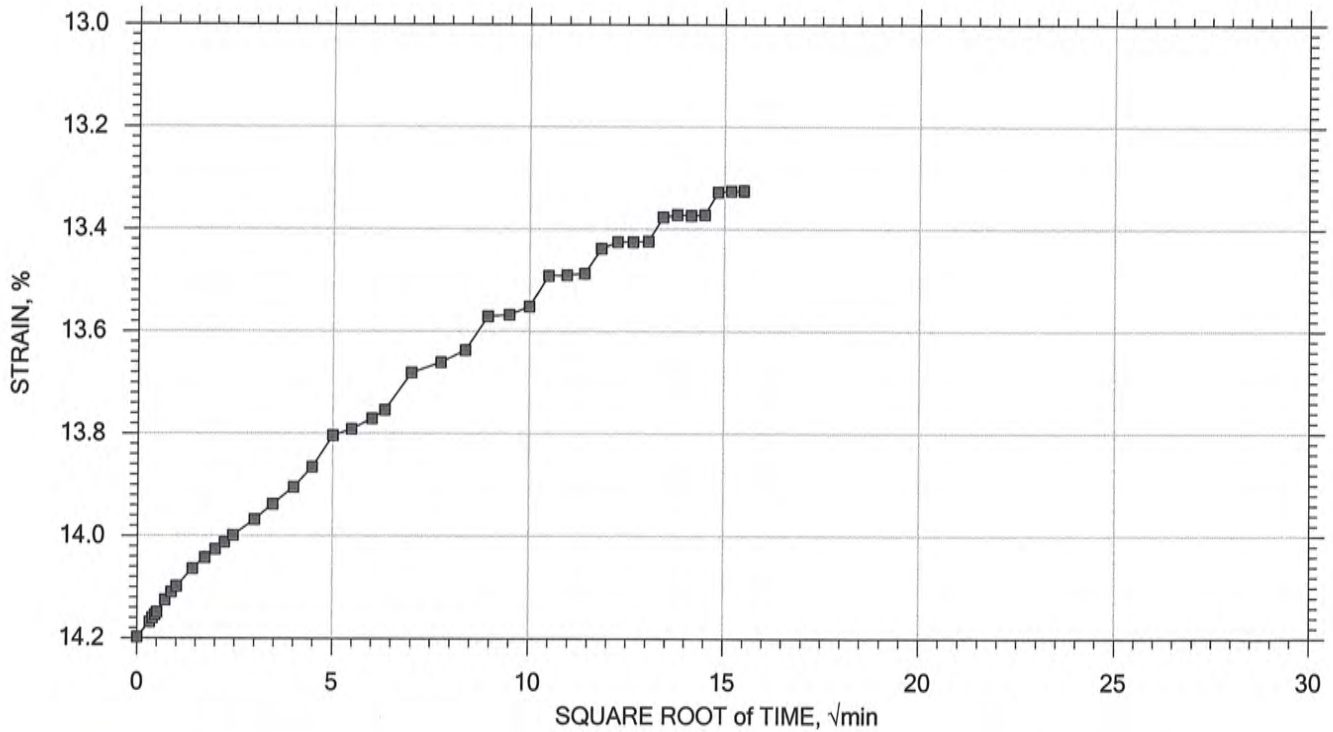
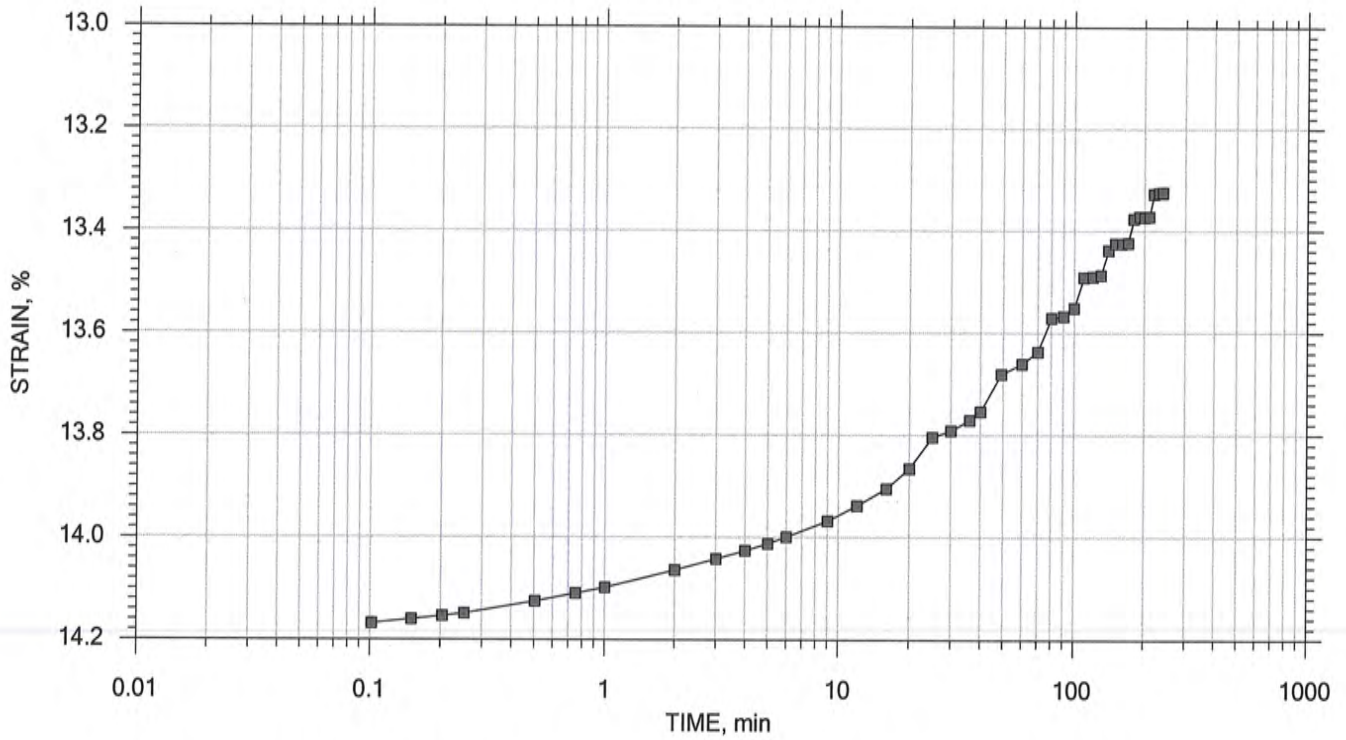
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 17 of 20

Stress: 16000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		

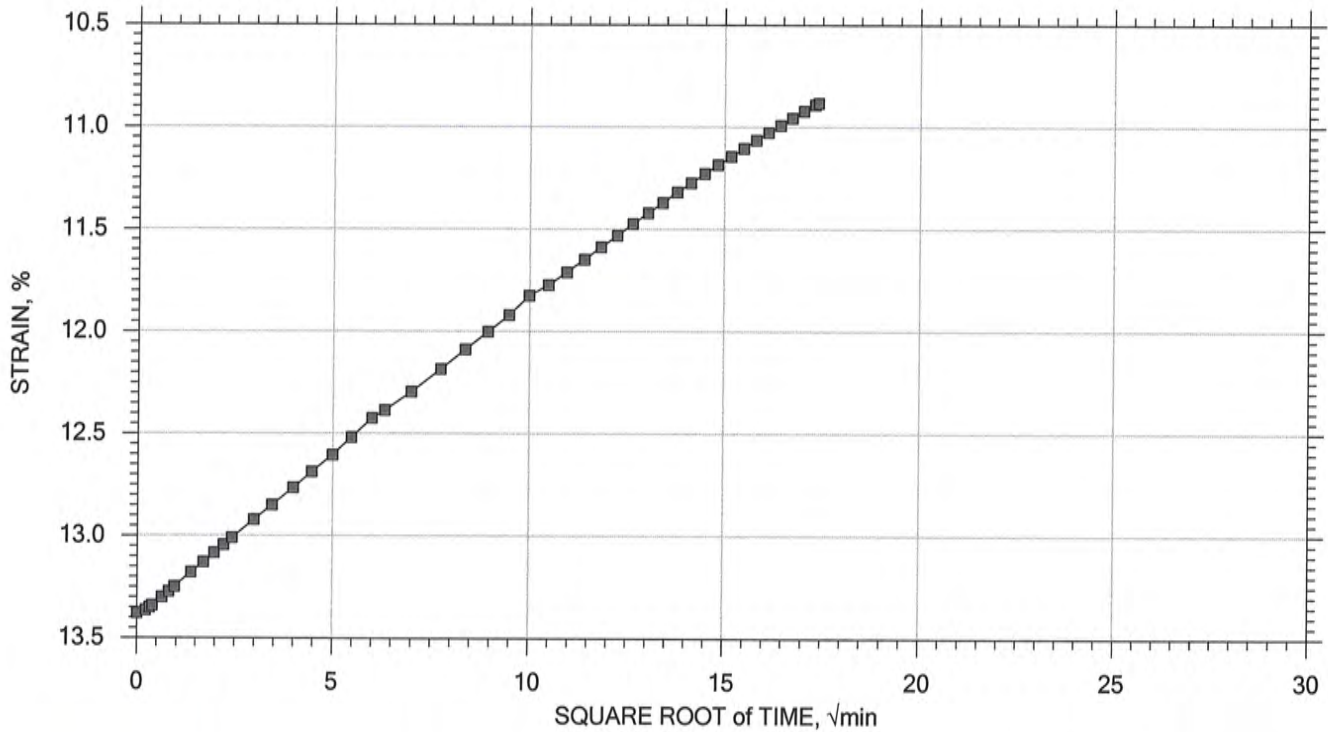
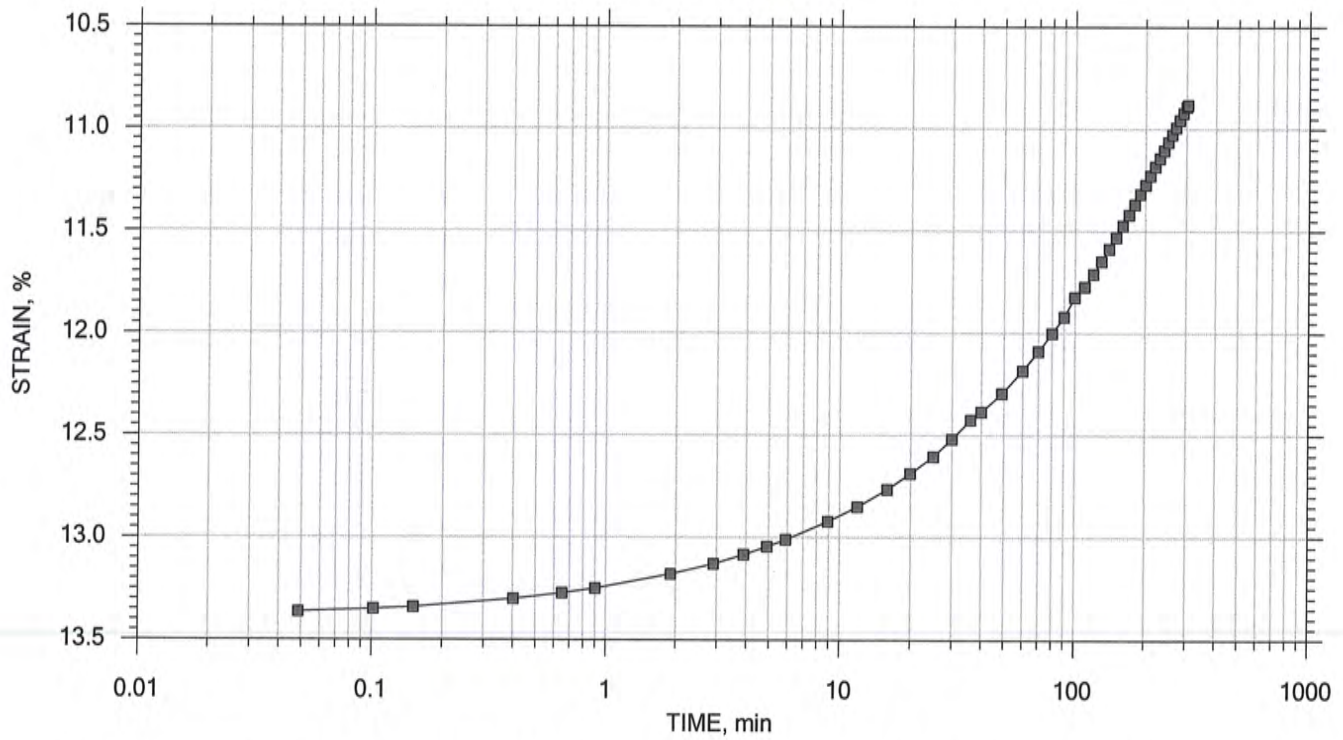



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 18 of 20

Stress: 4000 psf



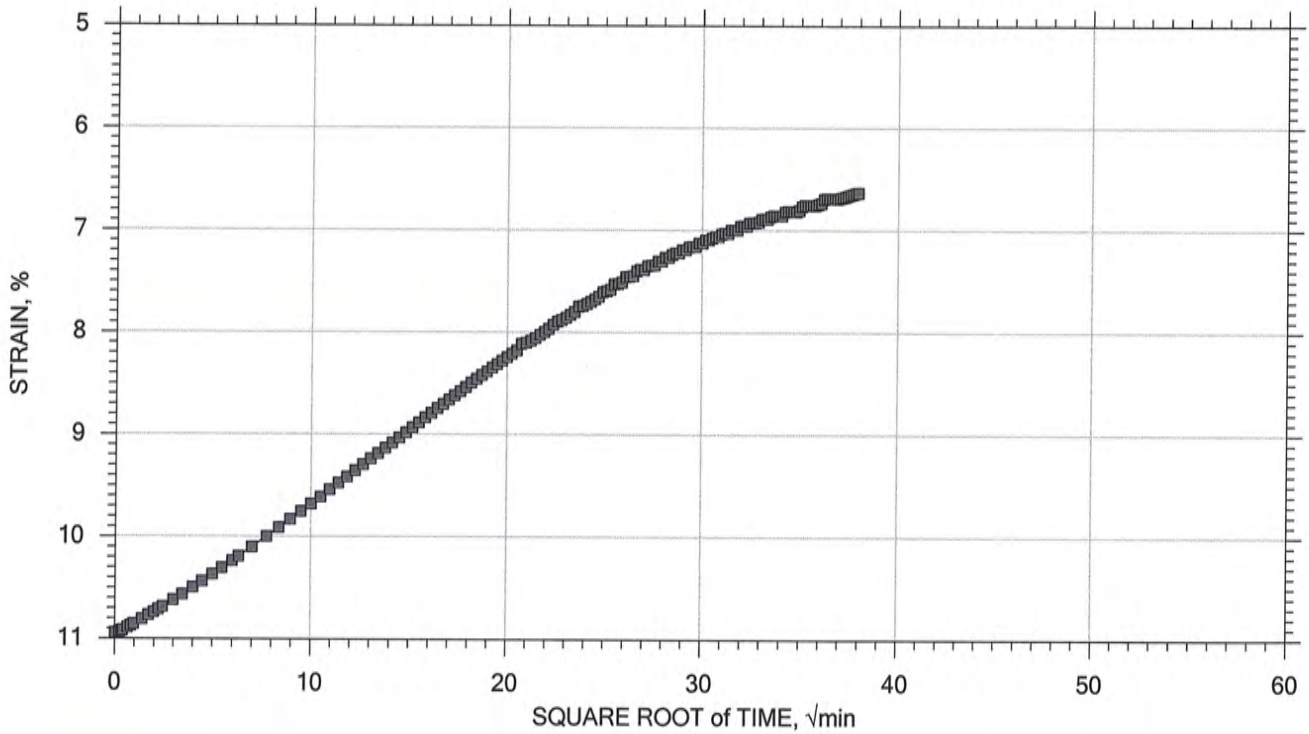
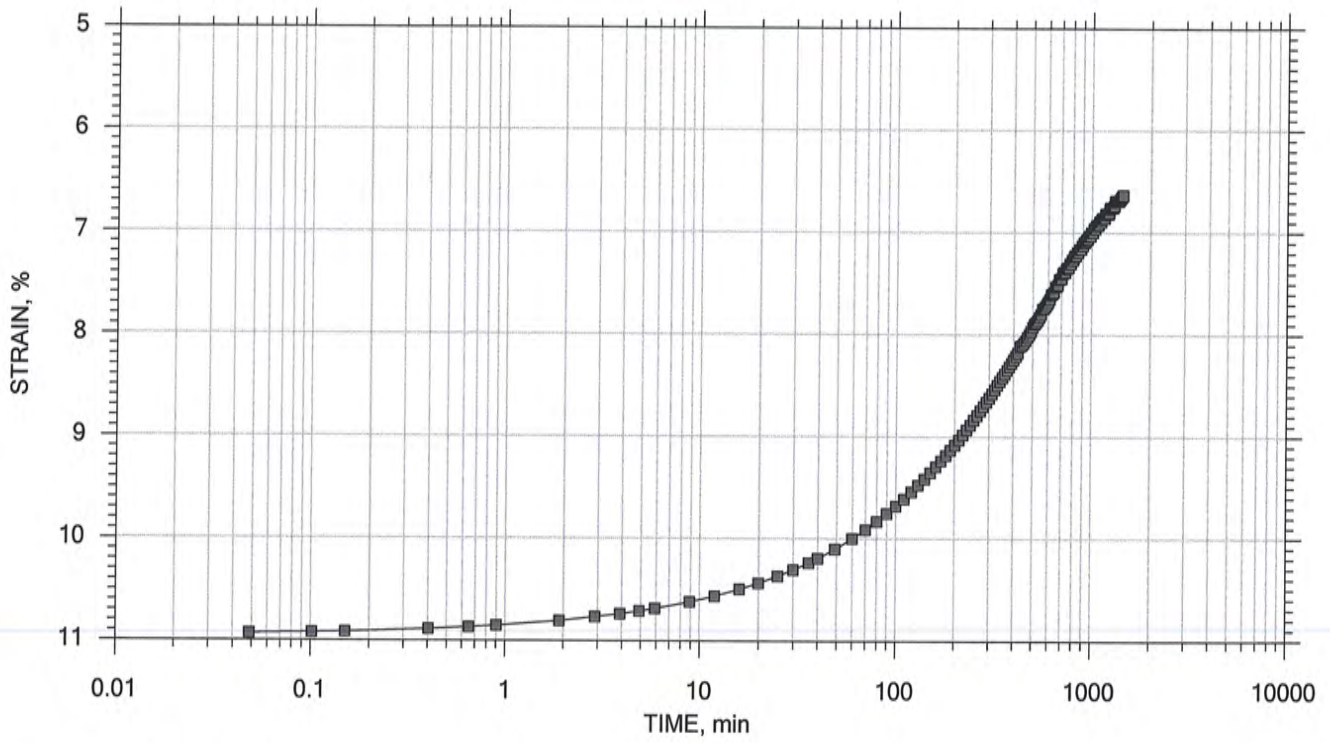
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 19 of 20

Stress: 1000 psf



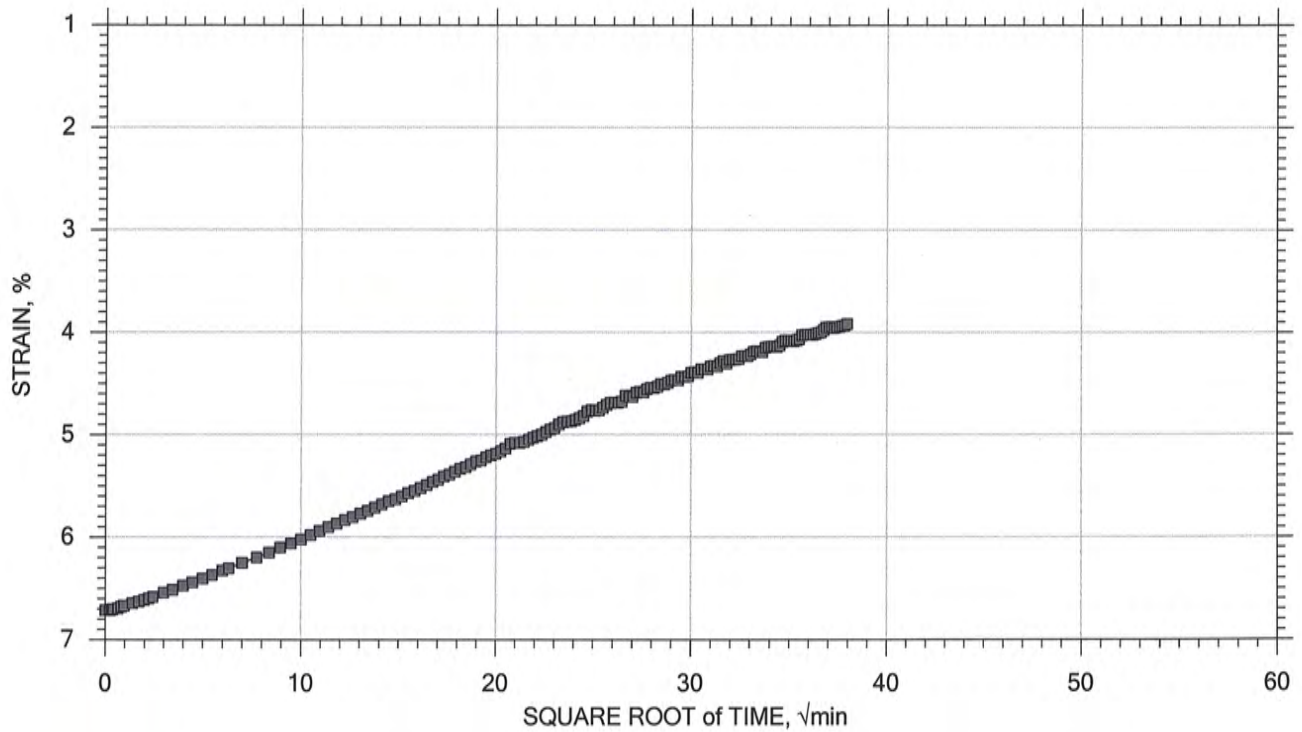
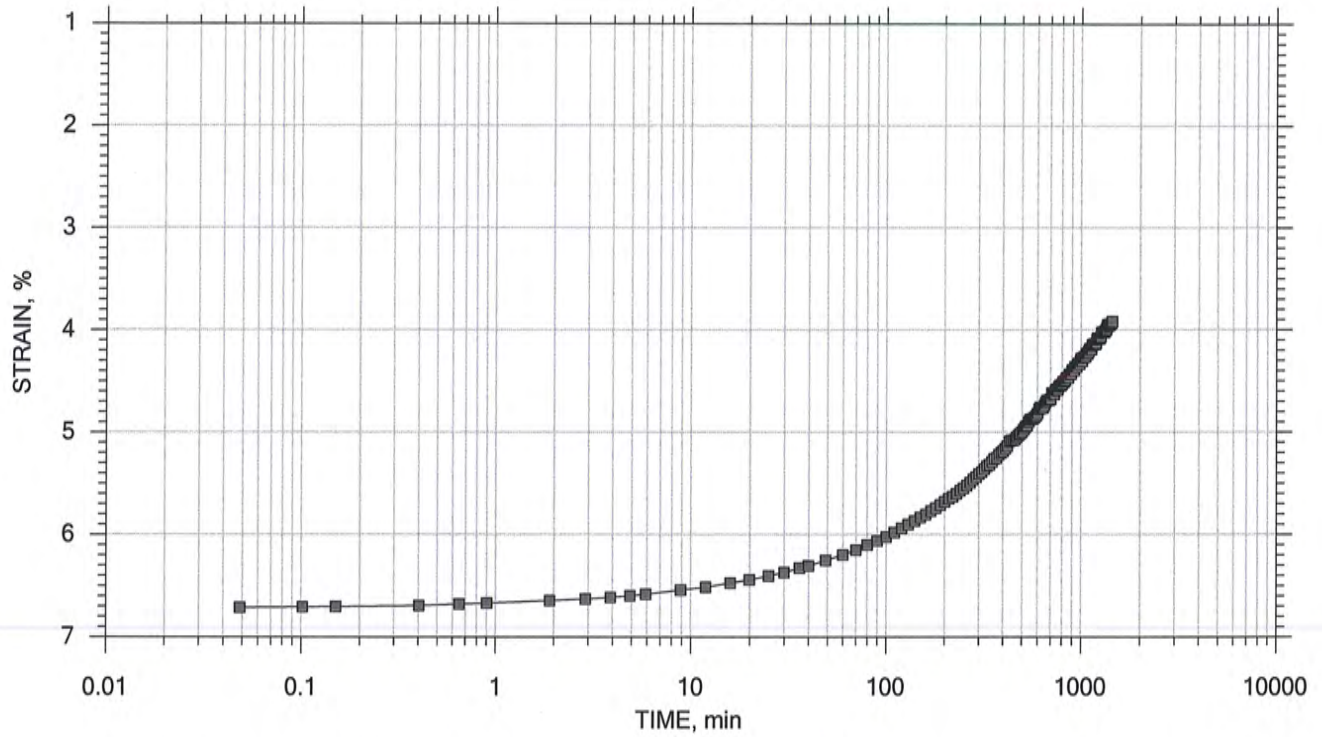
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 20 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: ID-02	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/20/15	Test No.: IP-1
	Depth: 8-10 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clay		
	Remarks: System 5077		



The first part of the document discusses the importance of maintaining accurate records of all transactions. This includes not only sales and purchases but also any other financial activities that may occur during the course of the business. It is essential to ensure that all records are kept up-to-date and are easily accessible for review.

In addition, it is important to regularly reconcile the books to ensure that the records are accurate and complete. This involves comparing the records with bank statements and other external sources to identify any discrepancies and correct them as soon as possible.

The second part of the document focuses on the importance of maintaining accurate records of all assets and liabilities. This includes not only physical assets such as equipment and inventory but also intangible assets such as patents and trademarks. It is essential to ensure that all assets are properly valued and recorded in the books.

Similarly, it is important to maintain accurate records of all liabilities, including loans and accounts payable. This involves tracking the amounts owed and the terms of the liabilities to ensure that they are properly accounted for in the books.

The third part of the document discusses the importance of maintaining accurate records of all income and expenses. This includes not only the revenue generated by the business but also the costs incurred in the process of generating that revenue. It is essential to ensure that all income and expenses are properly recorded and categorized in the books.

In addition, it is important to regularly review the records to identify any trends or patterns in the data. This can help the business owner make informed decisions about how to manage the business and improve its performance.

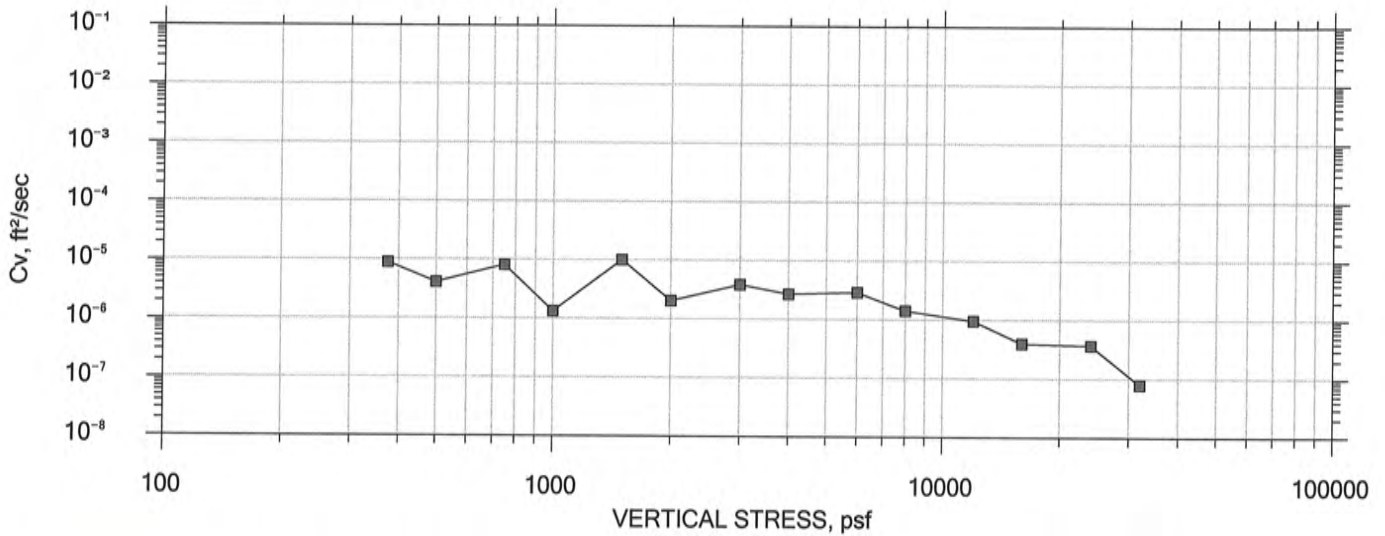
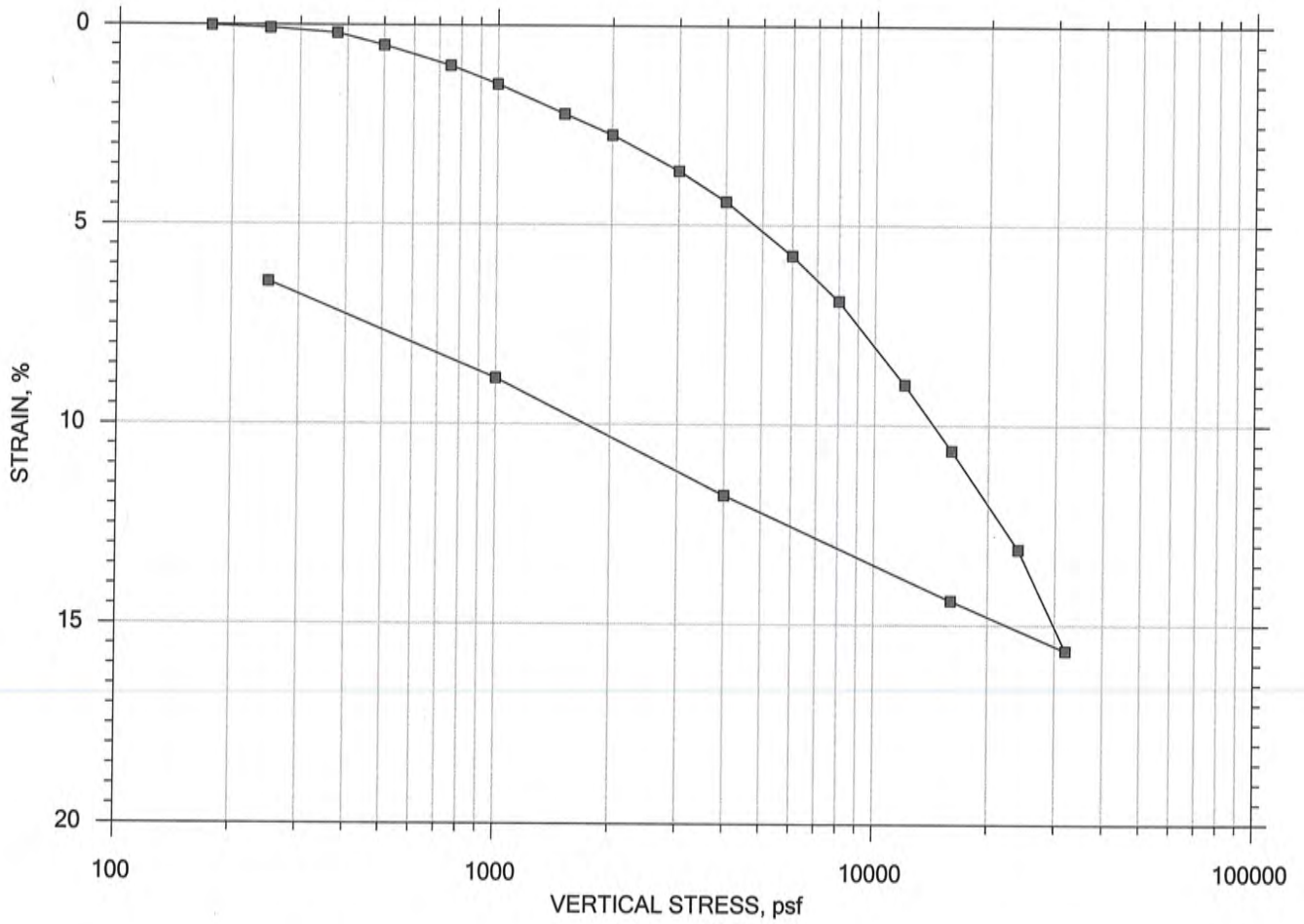
Finally, the document emphasizes the importance of maintaining accurate records of all tax-related information. This includes not only the tax returns filed but also the supporting documentation for all deductions and credits. It is essential to ensure that all tax-related information is properly recorded and organized for easy access during tax season.


By following these guidelines, business owners can ensure that their books are accurate and complete, which is essential for making informed decisions and managing the business effectively.



# One-Dimensional Consolidation by ASTM D2435 - Method B

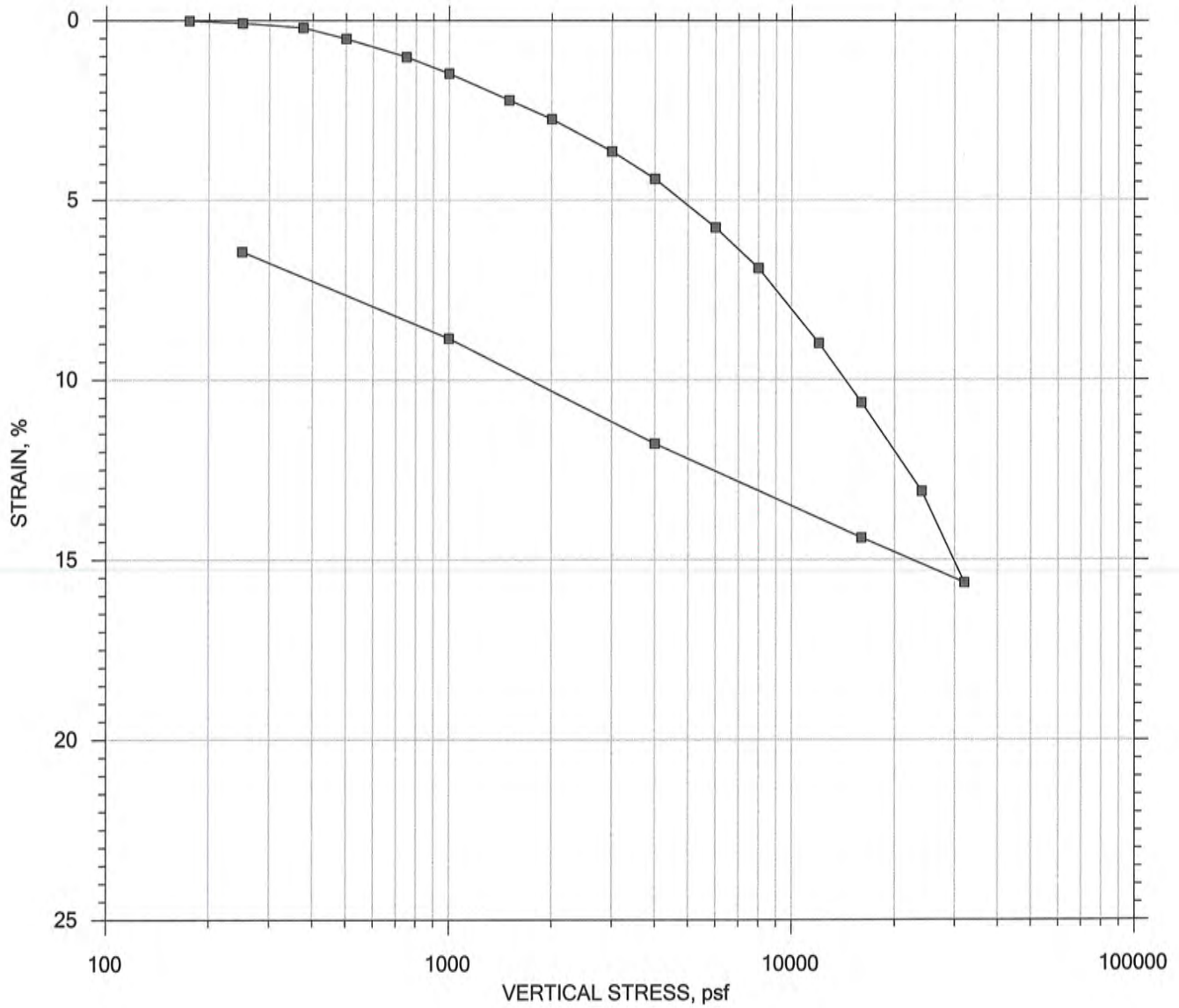
## SUMMARY REPORT




	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		
	Displacement at End of Increment		

# One-Dimensional Consolidation by ASTM D2435 - Method B

## SUMMARY REPORT



				Before Test	After Test
Current Vertical Effective Stress: ---			Water Content, %	47.21	47.98
Preconsolidation Stress: ---			Dry Unit Weight, pcf	69.258	73.522
Compression Ratio: ---			Saturation, %	88.72	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	1.44
LL: 79	PL: 22	PI: 57	GS: 2.71		

	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: ID-06  
 Sample No.: ---  
 Test No.: IP-2

Location: Berkeley County, SC  
 Tested By: jm  
 Test Date: 11/23/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 10-12 ft  
 Elevation: ---

Soil Description: Moist, olive gray clay  
 Remarks: System A

Estimated Specific Gravity: 2.71  
 Initial Void Ratio: 1.44  
 Final Void Ratio: 1.30

Liquid Limit: 79  
 Plastic Limit: 22  
 Plasticity Index: 57

Specimen Diameter: 2.50 in  
 Initial Height: 1.00 in  
 Final Height: 0.94 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	a24	RING	a42	a42
Wt. Container + Wet Soil, gm	131.84	147.53	148.22	148.22
Wt. Container + Dry Soil, gm	95.420	105.40	105.40	105.40
Wt. Container, gm	16.270	16.160	16.160	16.160
Wt. Dry Soil, gm	79.150	89.240	89.240	89.240
Water Content, %	46.01	47.21	47.98	47.98
Void Ratio	---	1.44	1.30	---
Degree of Saturation, %	---	88.72	100.00	---
Dry Unit Weight, pcf	---	69.258	73.522	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: ID-06  
 Sample No.: ---  
 Test No.: IP-2

Location: Berkeley County, SC  
 Tested By: jm  
 Test Date: 11/23/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 10-12 ft  
 Elevation: ---

Soil Description: Moist, olive gray clay  
 Remarks: System A

Displacement at End of Increment

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt T90 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec
1	175.	0.0001008	1.44	0.0101	0.000	0.00e+000	5.76e-007	0.00e+000
2	250.	0.0007159	1.44	0.0716	0.000	0.00e+000	8.20e-006	0.00e+000
3	375.	0.002011	1.44	0.201	3.001	8.15e-006	1.04e-005	1.61e-007
4	500.	0.005070	1.43	0.507	6.059	4.02e-006	2.45e-005	1.87e-007
5	750.	0.01012	1.42	1.01	5.226	4.62e-006	2.02e-005	1.78e-007
6	1.00e+003	0.01473	1.41	1.47	17.463	1.37e-006	1.84e-005	4.81e-008
7	1.50e+003	0.02219	1.39	2.22	2.918	8.10e-006	1.49e-005	2.30e-007
8	2.00e+003	0.02742	1.37	2.74	11.708	1.99e-006	1.05e-005	3.97e-008
9	3.00e+003	0.03636	1.35	3.64	6.302	3.65e-006	8.94e-006	6.21e-008
10	4.00e+003	0.04402	1.33	4.40	8.472	2.67e-006	7.66e-006	3.89e-008
11	6.00e+003	0.05753	1.30	5.75	10.819	2.04e-006	6.75e-006	2.63e-008
12	8.00e+003	0.06887	1.27	6.89	15.611	1.38e-006	5.67e-006	1.49e-008
13	1.20e+004	0.08972	1.22	8.97	22.332	9.31e-007	5.21e-006	9.24e-009
14	1.60e+004	0.1062	1.18	10.6	35.309	5.65e-007	4.12e-006	4.44e-009
15	2.40e+004	0.1309	1.12	13.1	47.915	3.98e-007	3.08e-006	2.33e-009
16	3.20e+004	0.1563	1.06	15.6	213.122	8.44e-008	3.17e-006	5.10e-010
17	1.60e+004	0.1438	1.09	14.4	20.125	8.81e-007	7.81e-007	1.31e-009
18	4.00e+003	0.1176	1.15	11.8	43.659	4.25e-007	2.18e-006	1.76e-009
19	1.00e+003	0.08838	1.23	8.84	181.998	1.08e-007	9.75e-006	2.01e-009
20	250.	0.06432	1.28	6.43	0.000	0.00e+000	3.21e-005	0.00e+000

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec	Ca %
1	175.	0.0001008	1.44	0.0101	0.000	0.00e+000	5.76e-007	0.00e+000	0.00e+000
2	250.	0.0007159	1.44	0.0716	0.000	0.00e+000	8.20e-006	0.00e+000	0.00e+000
3	375.	0.002011	1.44	0.201	0.000	0.00e+000	1.04e-005	0.00e+000	0.00e+000
4	500.	0.005070	1.43	0.507	0.000	0.00e+000	2.45e-005	0.00e+000	0.00e+000
5	750.	0.01012	1.42	1.01	0.416	1.35e-005	2.02e-005	5.18e-007	0.00e+000
6	1.00e+003	0.01473	1.41	1.47	0.000	0.00e+000	1.84e-005	0.00e+000	0.00e+000
7	1.50e+003	0.02219	1.39	2.22	0.427	1.29e-005	1.49e-005	3.65e-007	0.00e+000
8	2.00e+003	0.02742	1.37	2.74	0.000	0.00e+000	1.05e-005	0.00e+000	0.00e+000
9	3.00e+003	0.03636	1.35	3.64	0.000	0.00e+000	8.94e-006	0.00e+000	0.00e+000
10	4.00e+003	0.04402	1.33	4.40	0.000	0.00e+000	7.66e-006	0.00e+000	0.00e+000
11	6.00e+003	0.05753	1.30	5.75	1.136	4.52e-006	6.75e-006	5.81e-008	0.00e+000
12	8.00e+003	0.06887	1.27	6.89	0.000	0.00e+000	5.67e-006	0.00e+000	0.00e+000
13	1.20e+004	0.08972	1.22	8.97	0.000	0.00e+000	5.21e-006	0.00e+000	0.00e+000
14	1.60e+004	0.1062	1.18	10.6	14.080	3.29e-007	4.12e-006	2.58e-009	0.00e+000
15	2.40e+004	0.1309	1.12	13.1	0.000	0.00e+000	3.08e-006	0.00e+000	0.00e+000
16	3.20e+004	0.1563	1.06	15.6	0.000	0.00e+000	3.17e-006	0.00e+000	0.00e+000
17	1.60e+004	0.1438	1.09	14.4	0.000	0.00e+000	7.81e-007	0.00e+000	0.00e+000
18	4.00e+003	0.1176	1.15	11.8	0.000	0.00e+000	2.18e-006	0.00e+000	0.00e+000
19	1.00e+003	0.08838	1.23	8.84	0.000	0.00e+000	9.75e-006	0.00e+000	0.00e+000
20	250.	0.06432	1.28	6.43	0.000	0.00e+000	3.21e-005	0.00e+000	0.00e+000

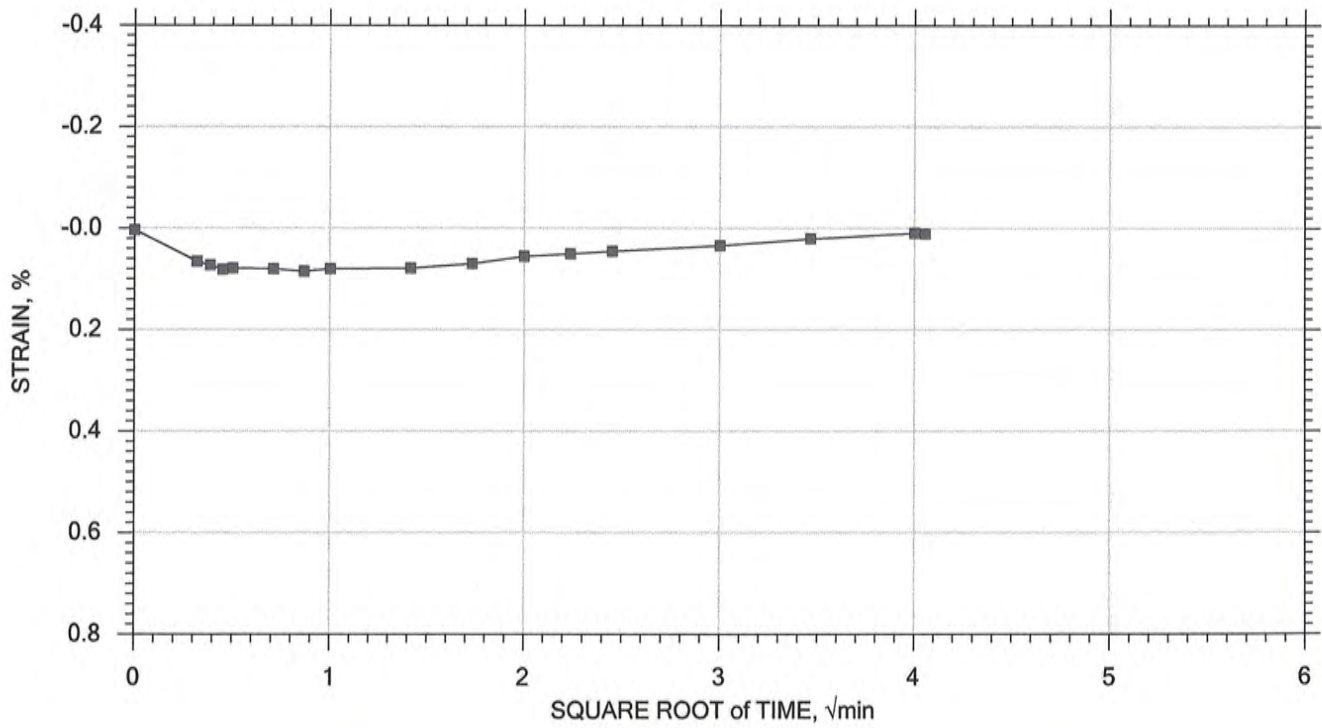
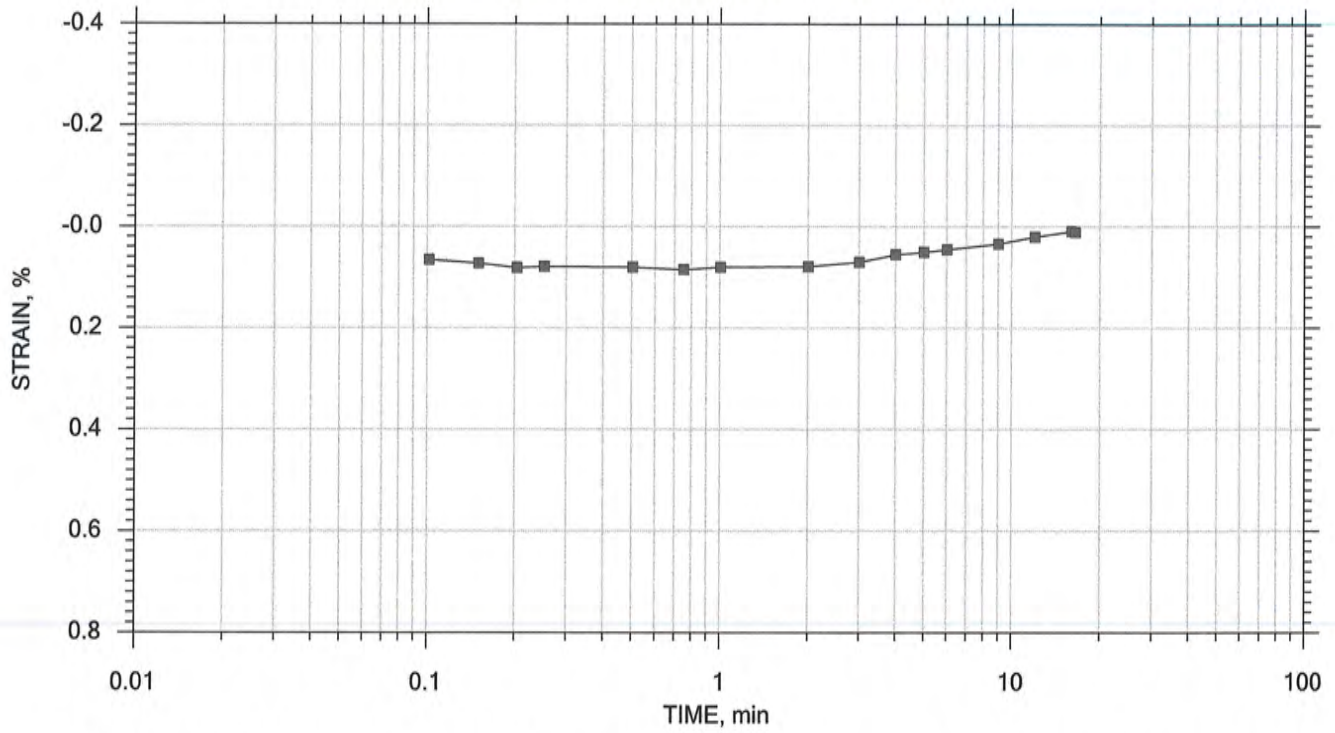



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 1 of 20

Stress: 175 psf



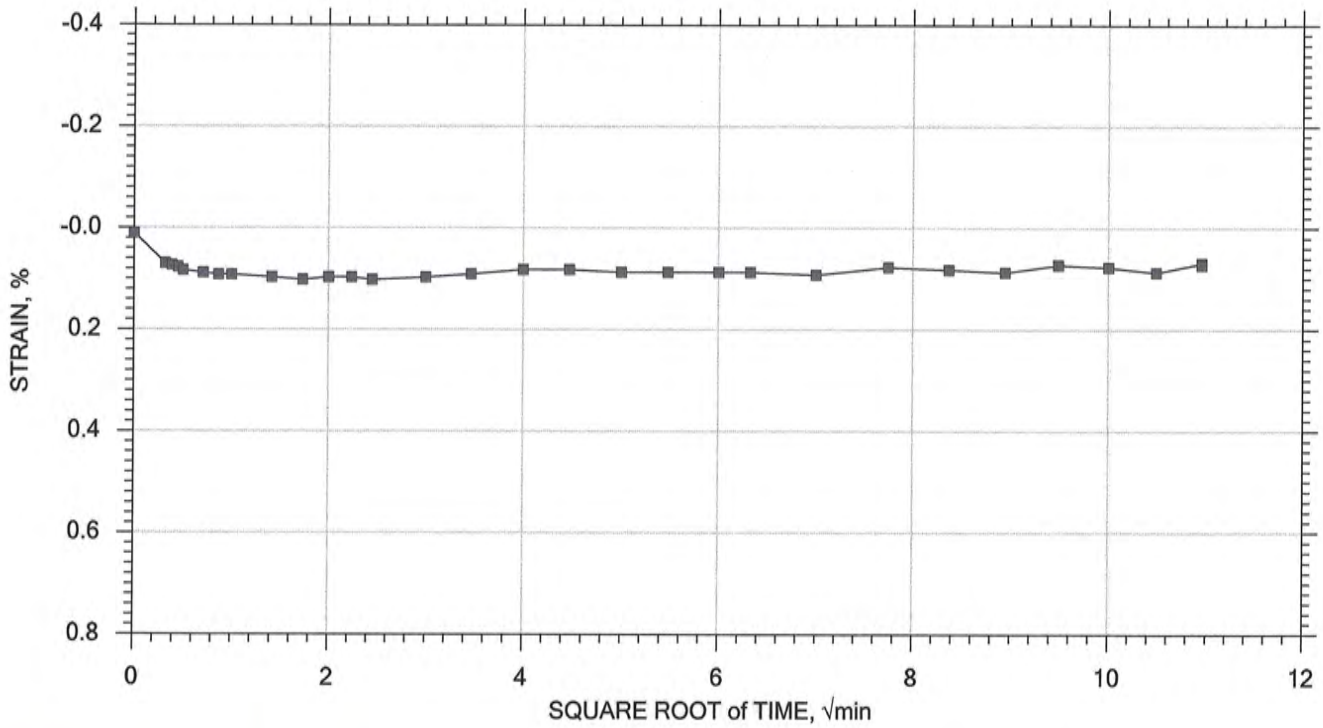
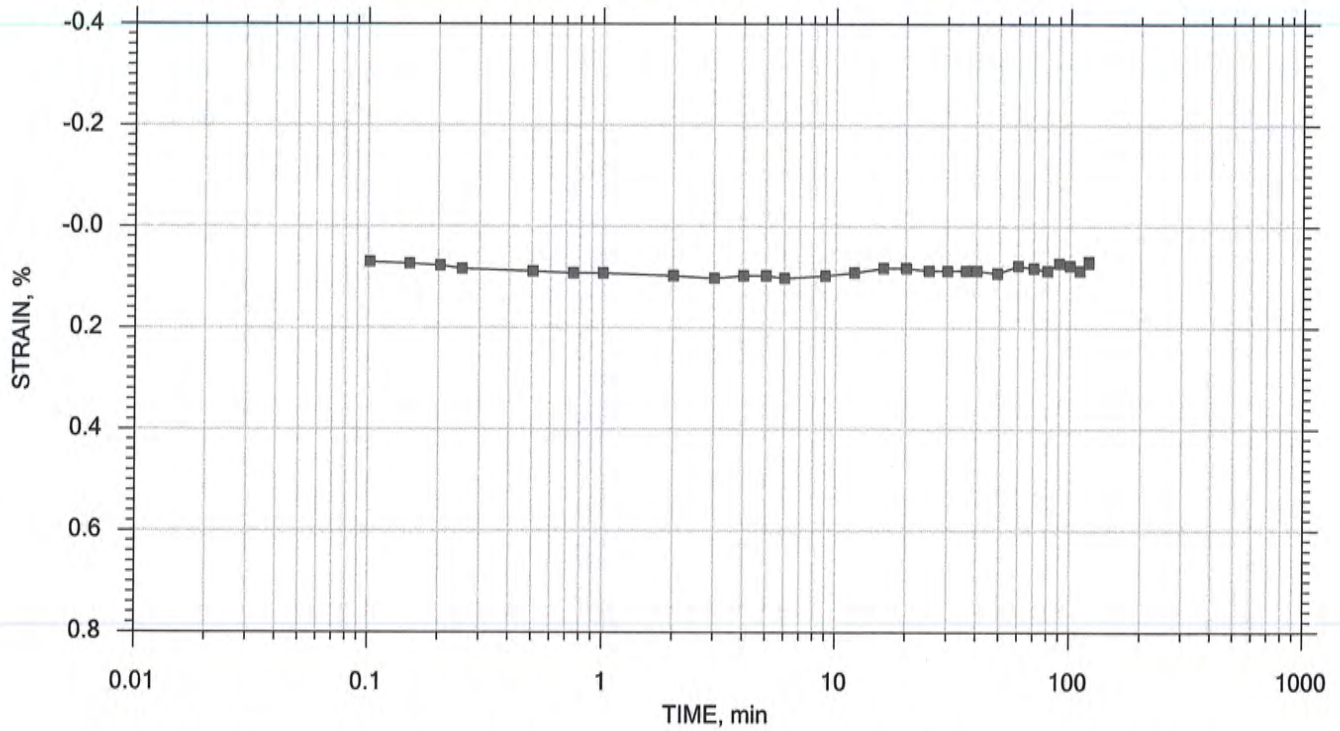
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 2 of 20

Stress: 250 psf



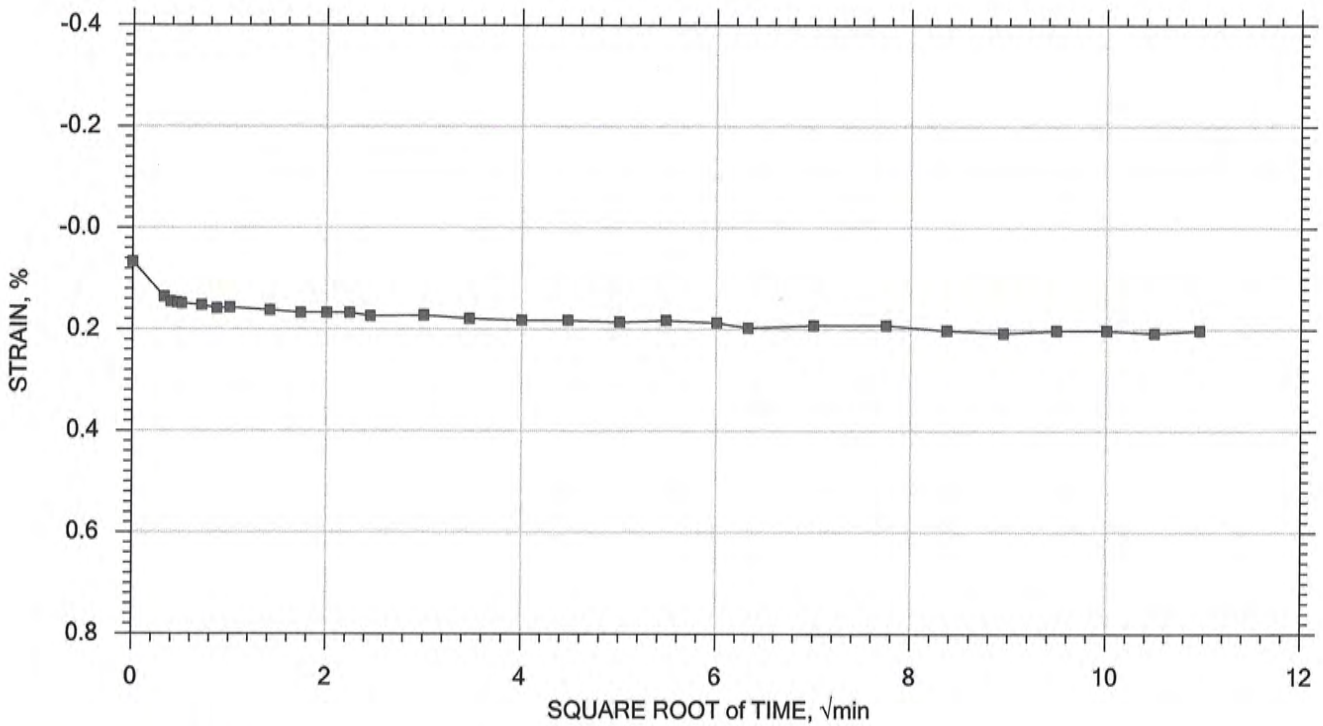
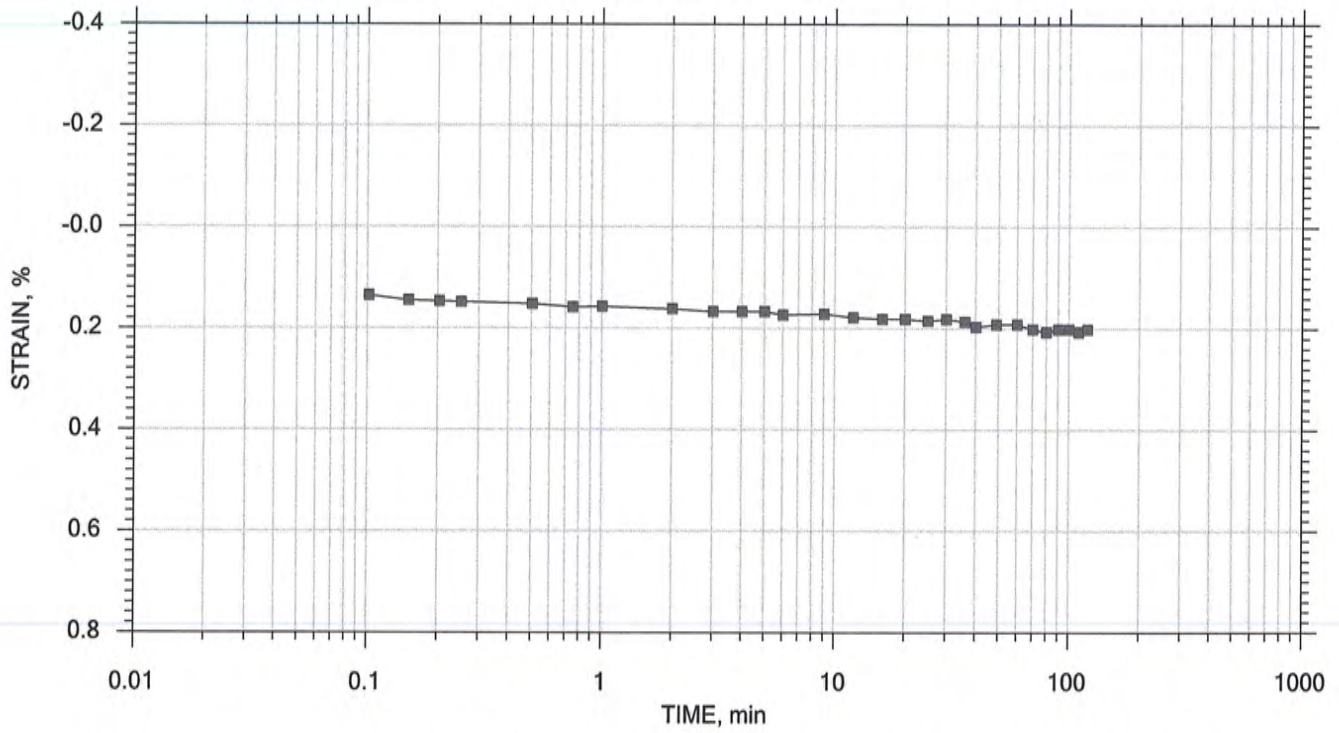
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 3 of 20

Stress: 375 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

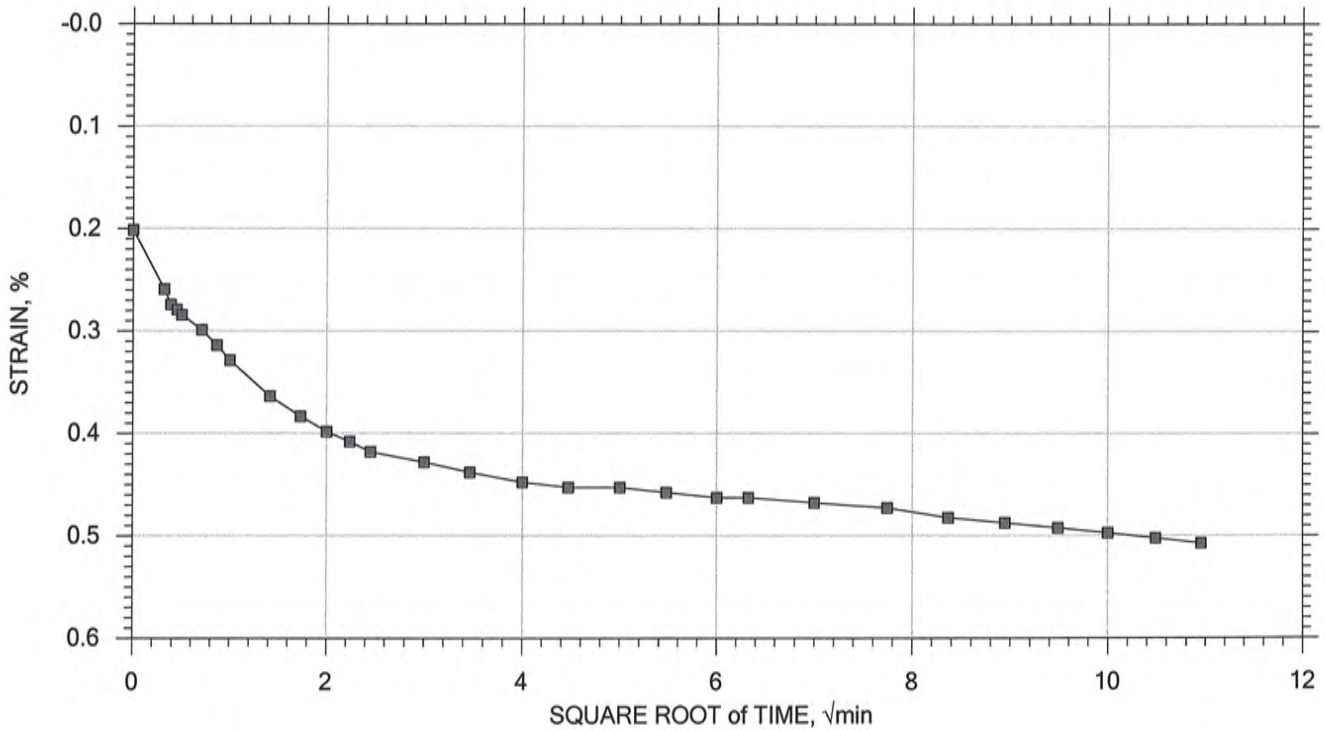
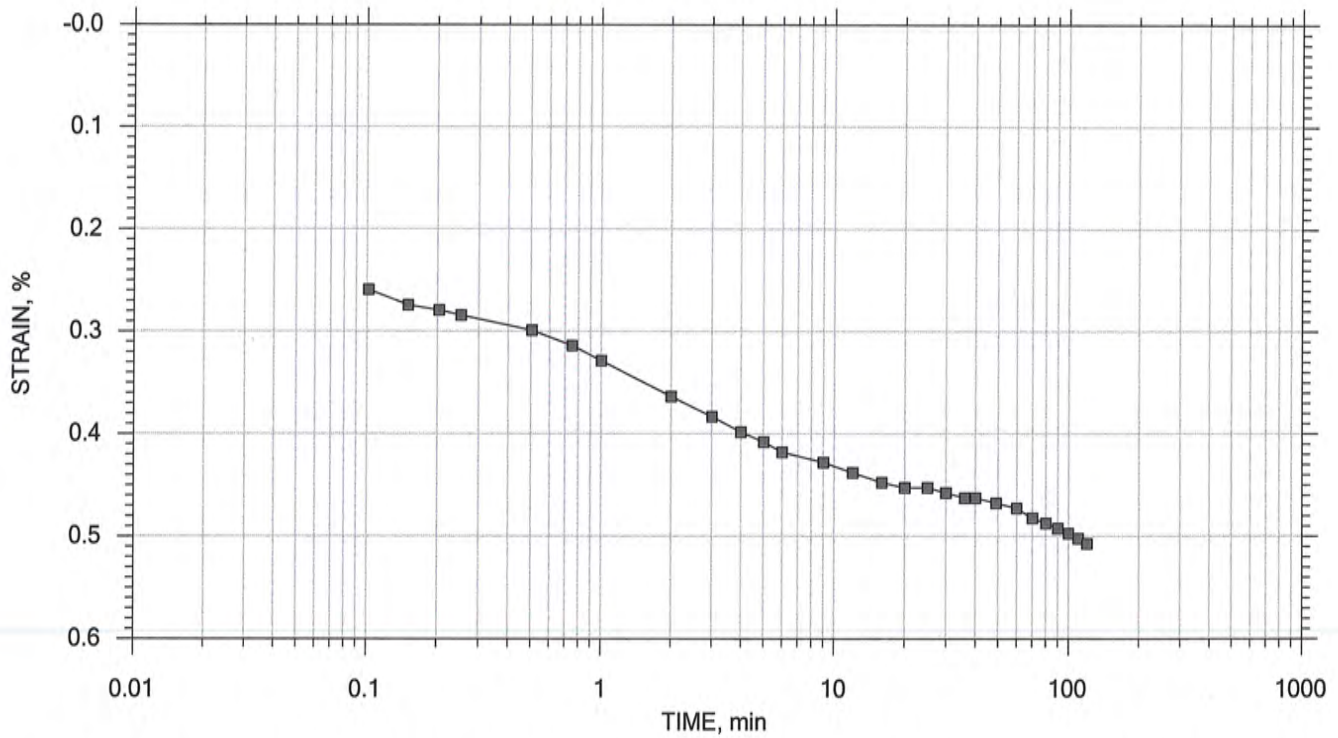



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 4 of 20

Stress: 500 psf



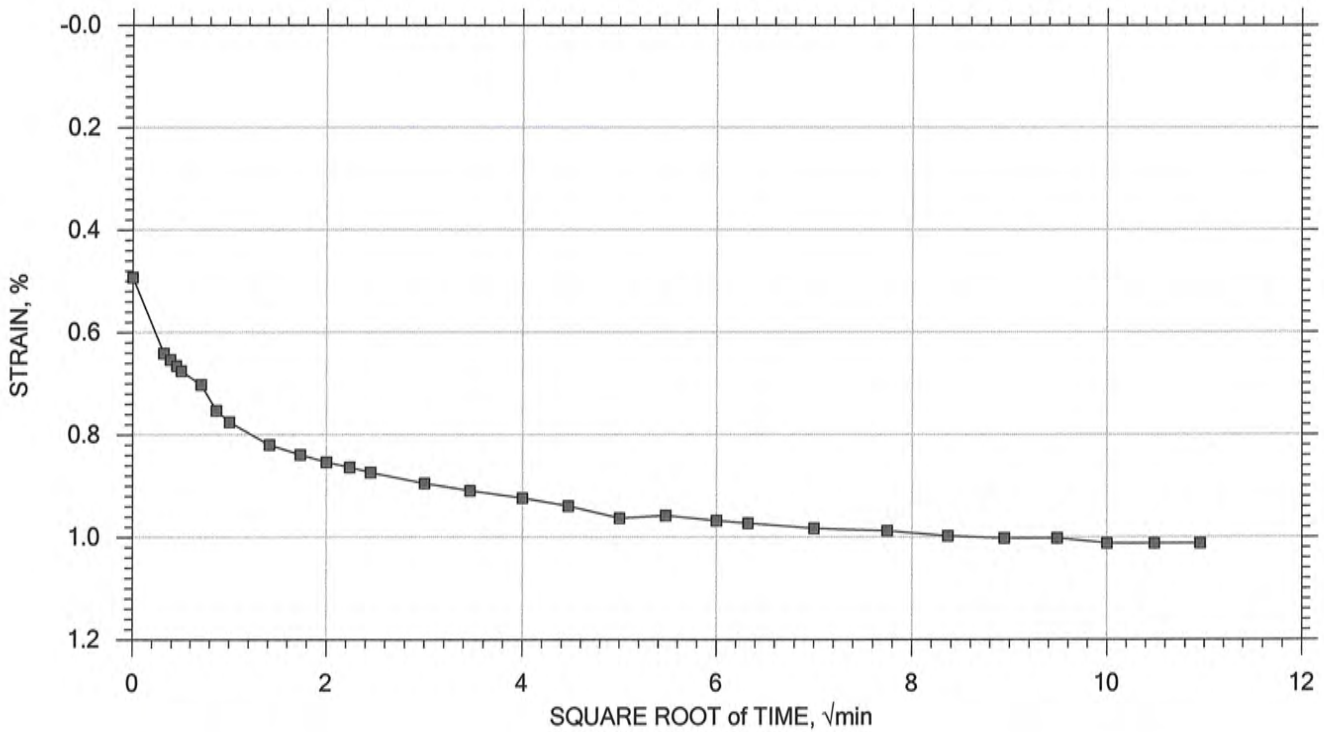
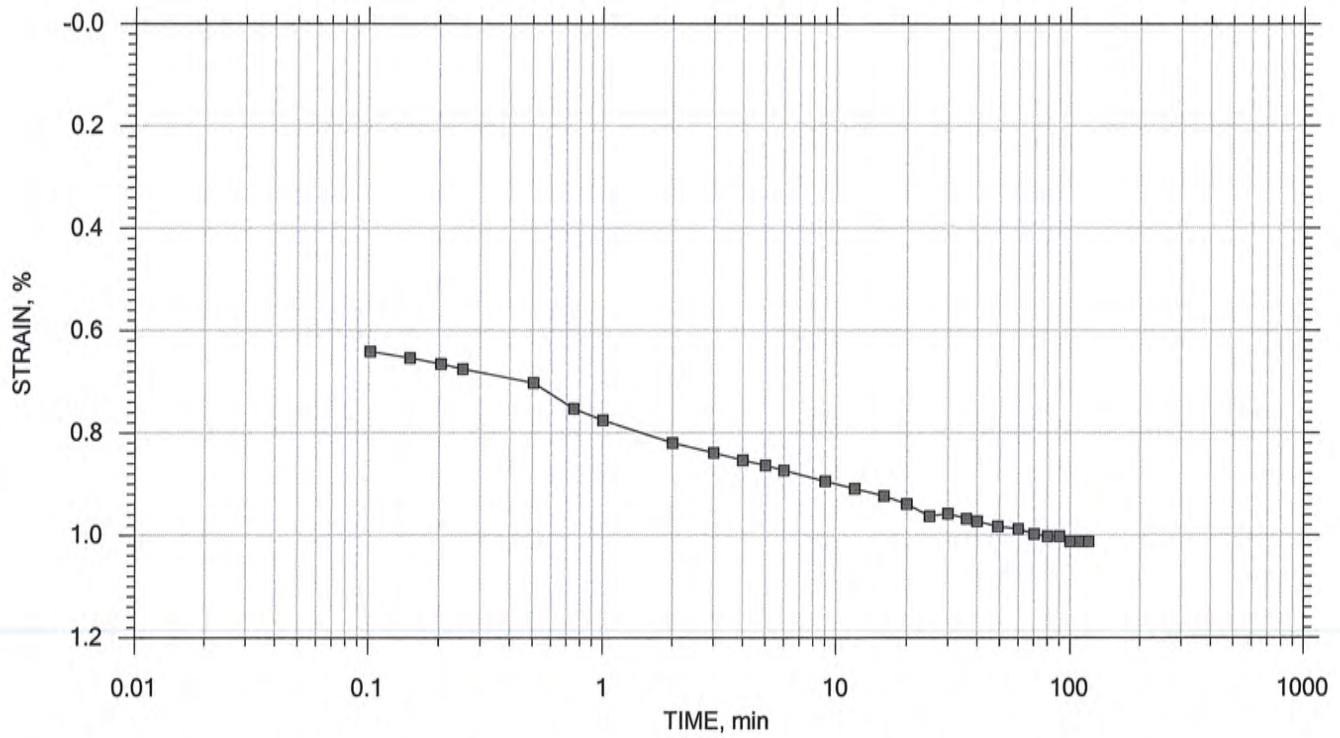
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 5 of 20

Stress: 750 psf



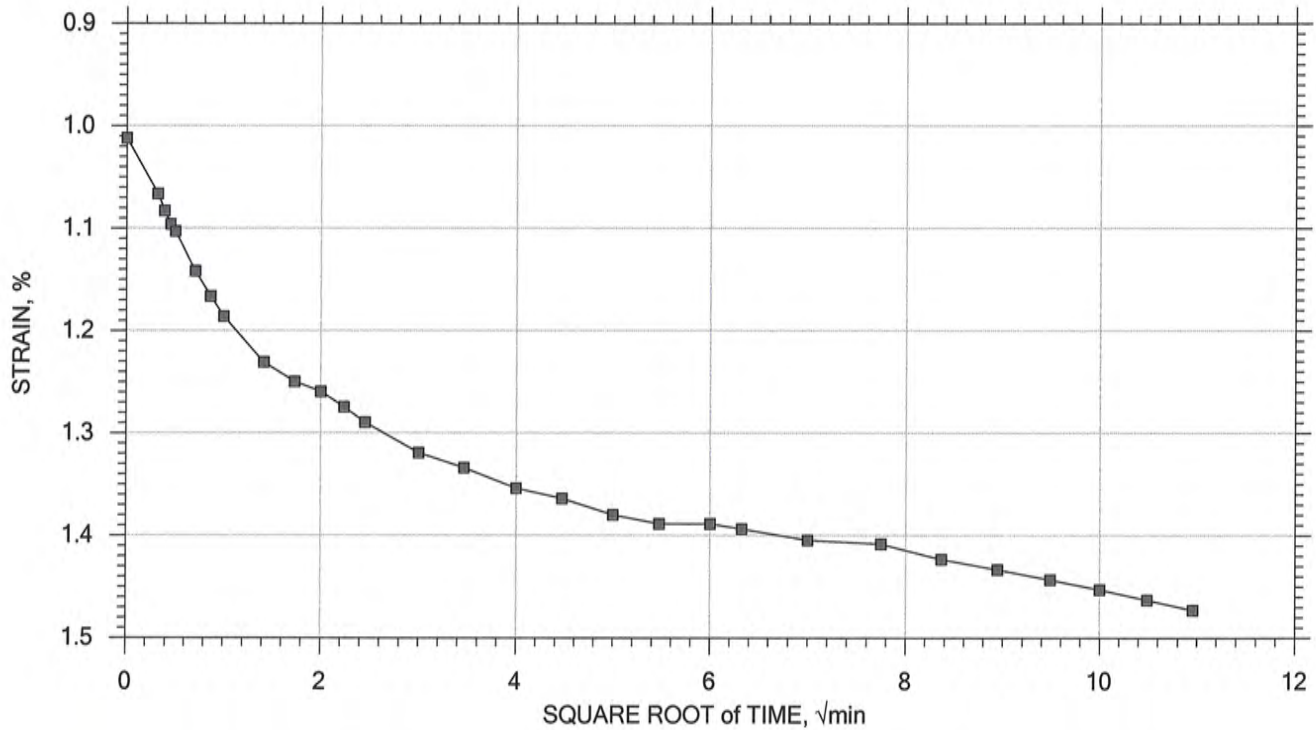
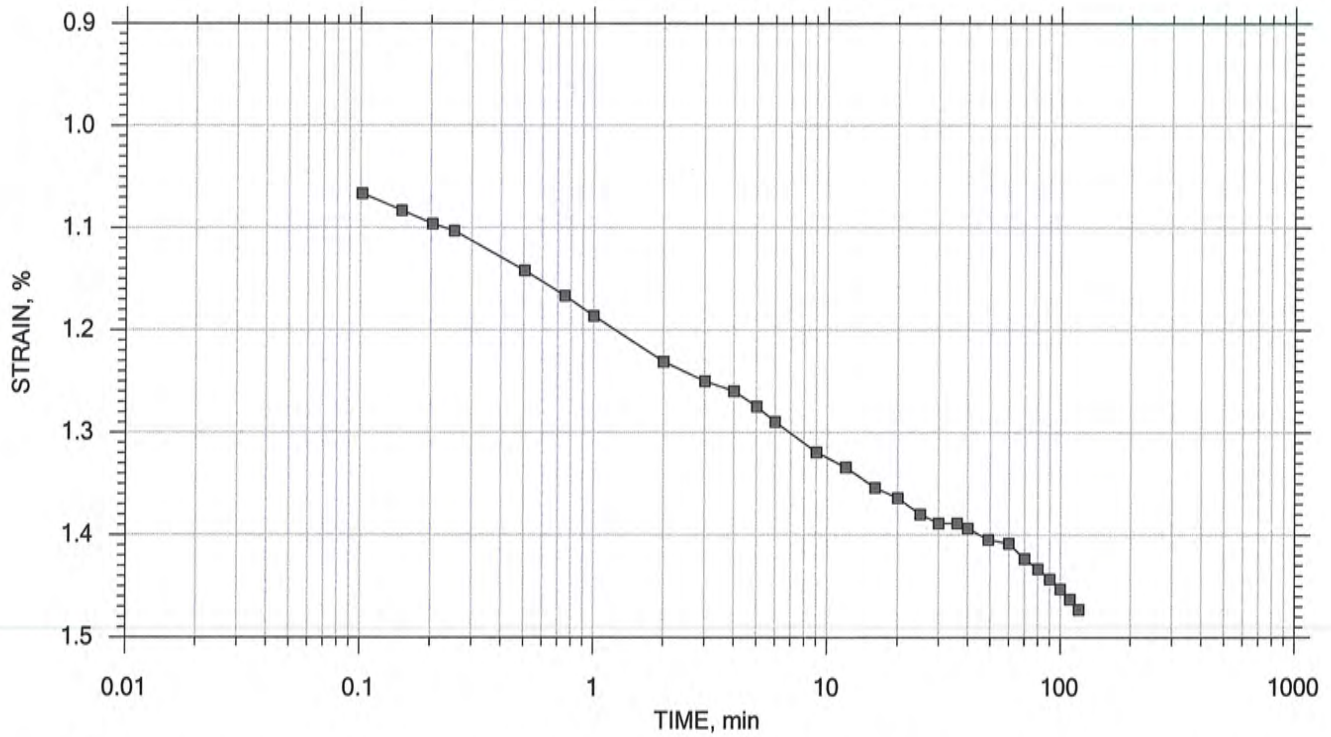
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 6 of 20

Stress: 1000 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

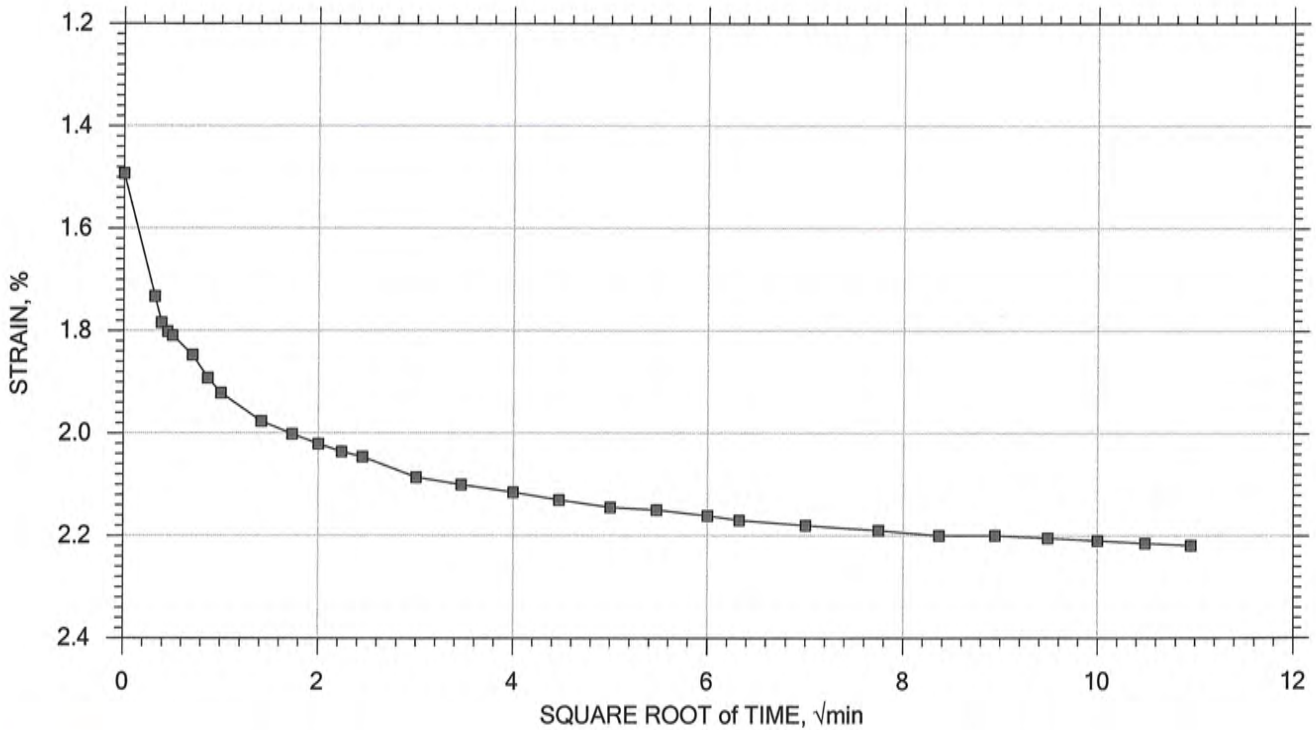
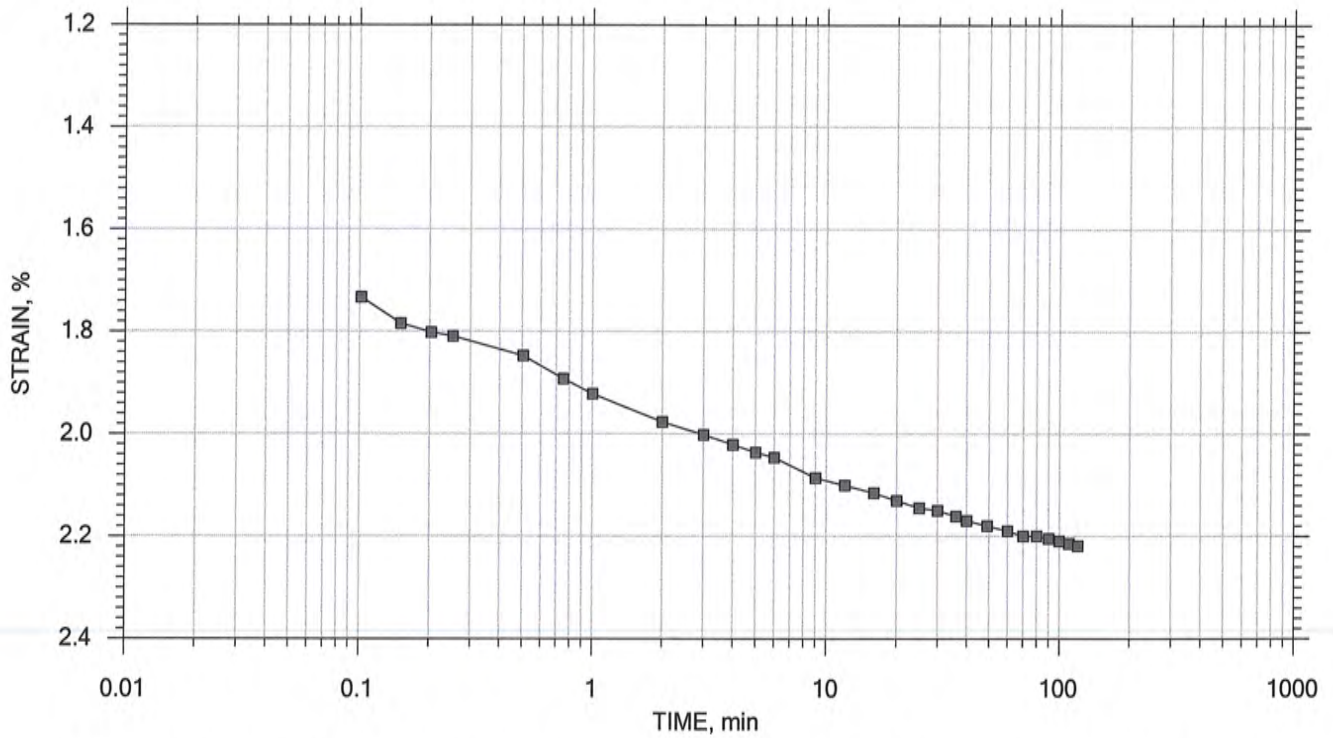



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 7 of 20

Stress: 1500 psf



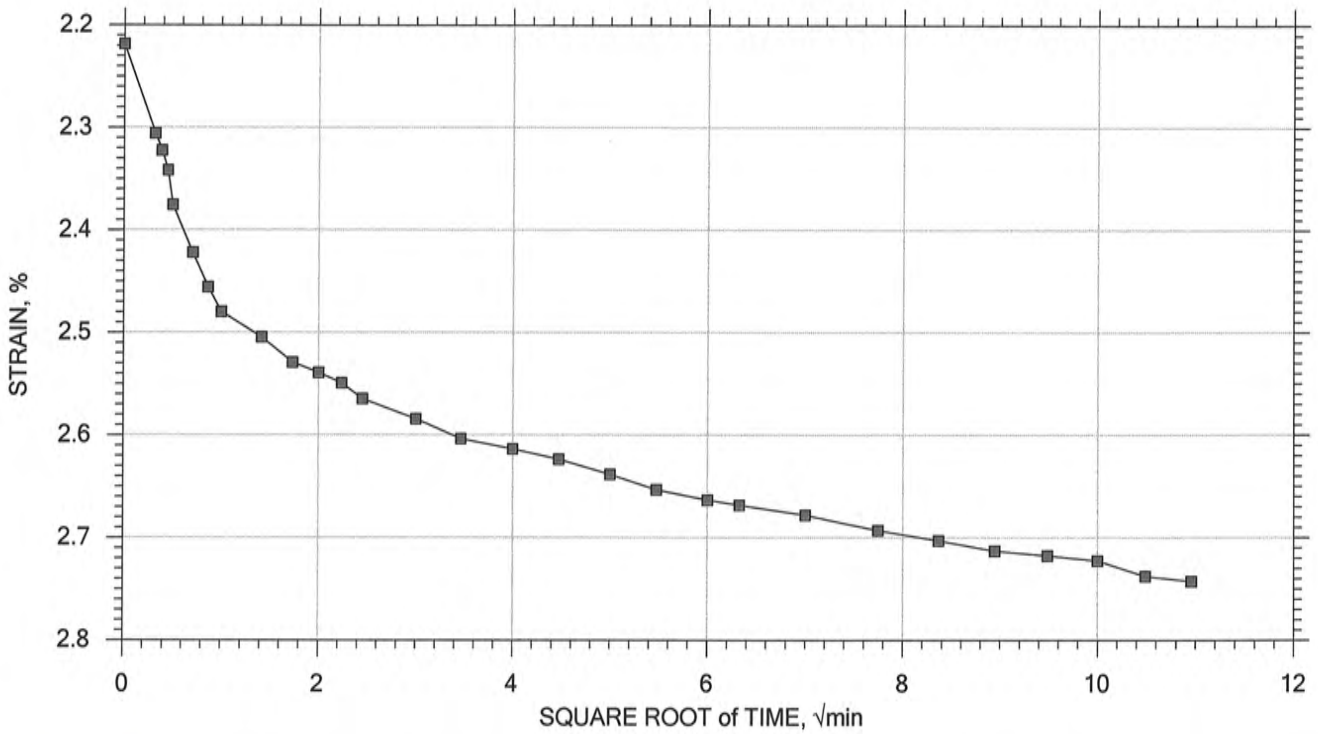
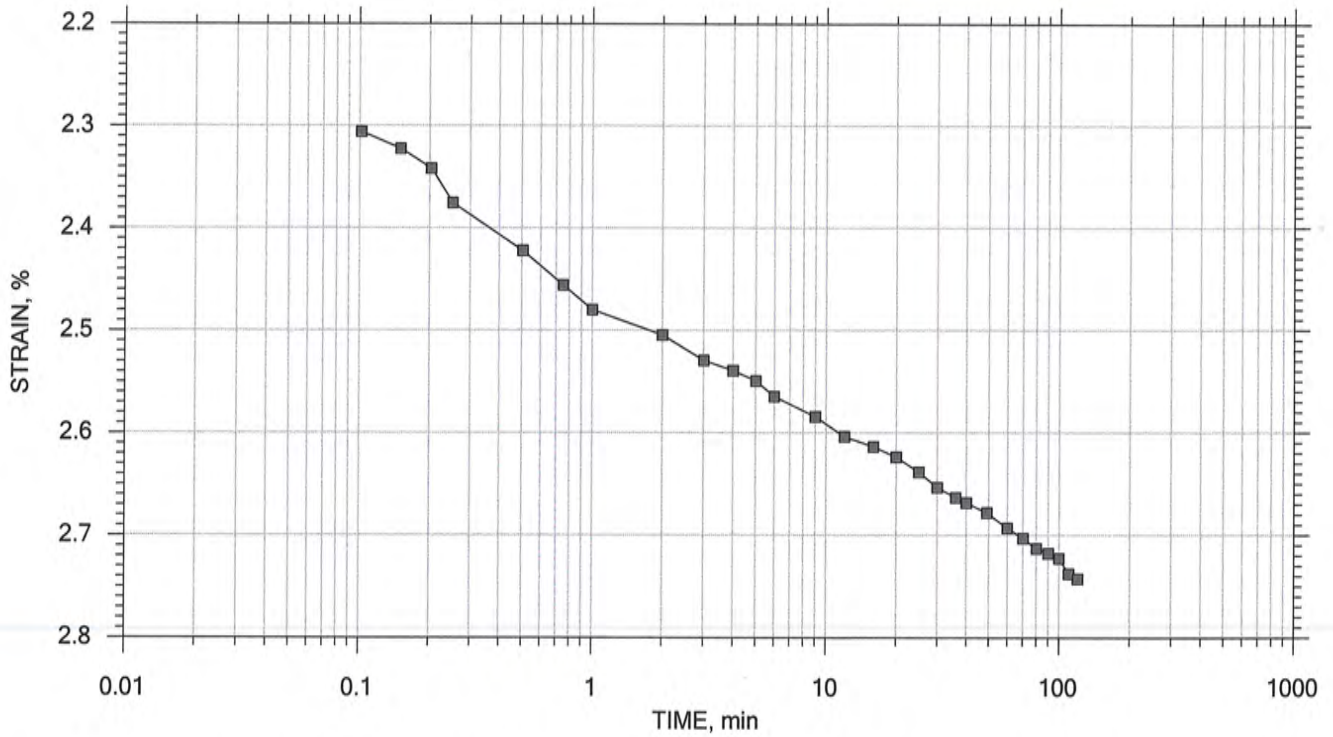
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 8 of 20

Stress: 2000 psf



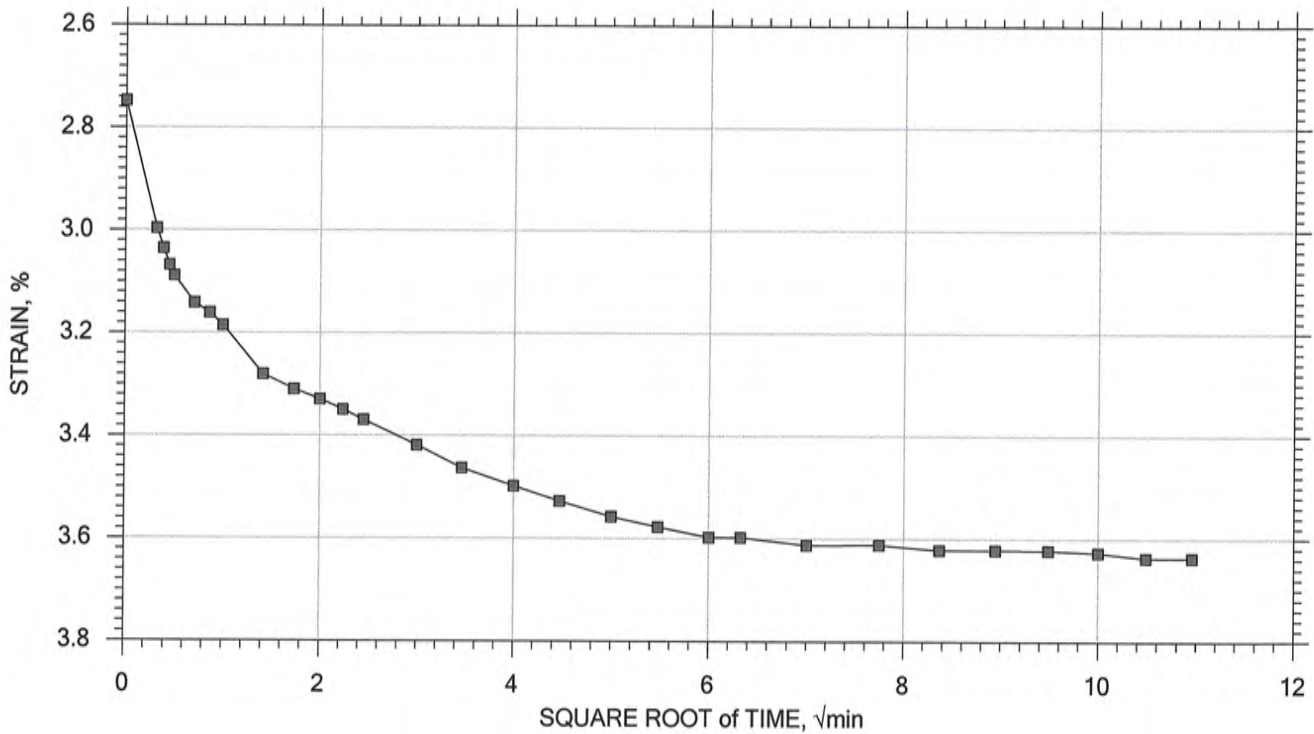
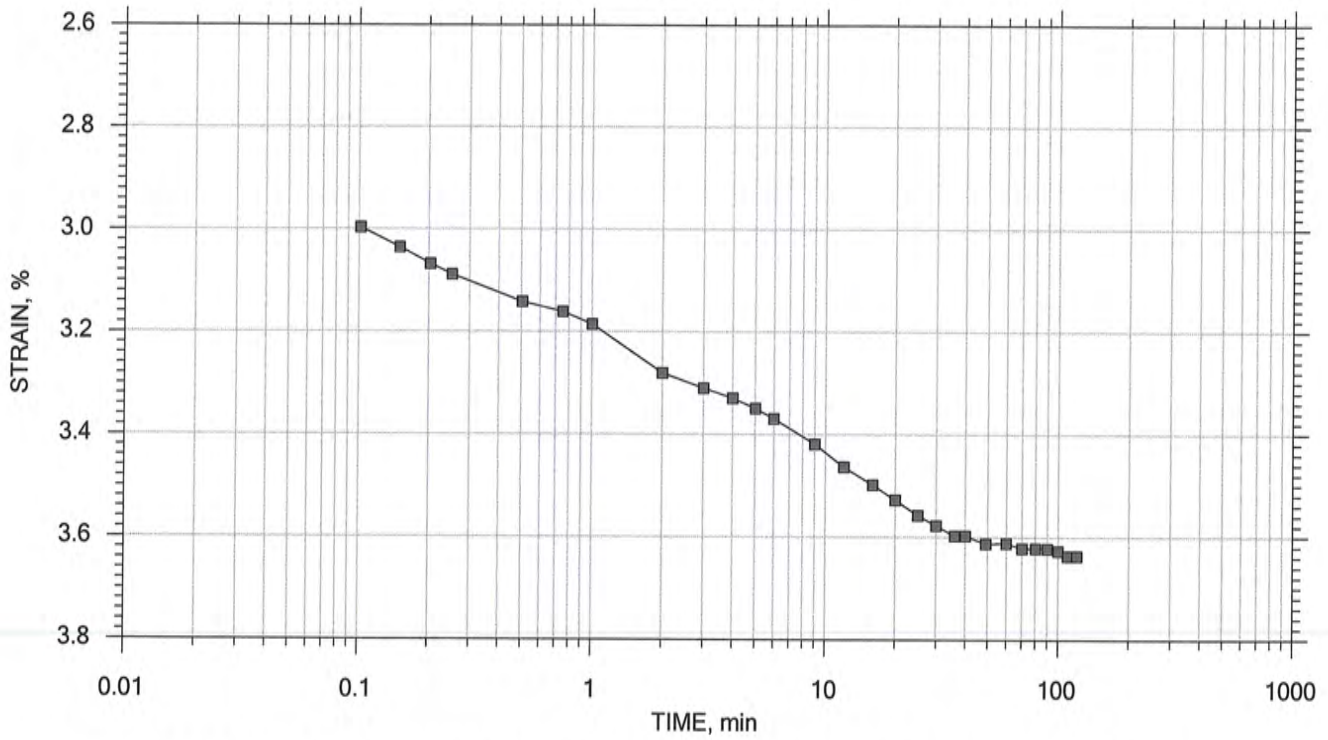
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 9 of 20

Stress: 3000 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

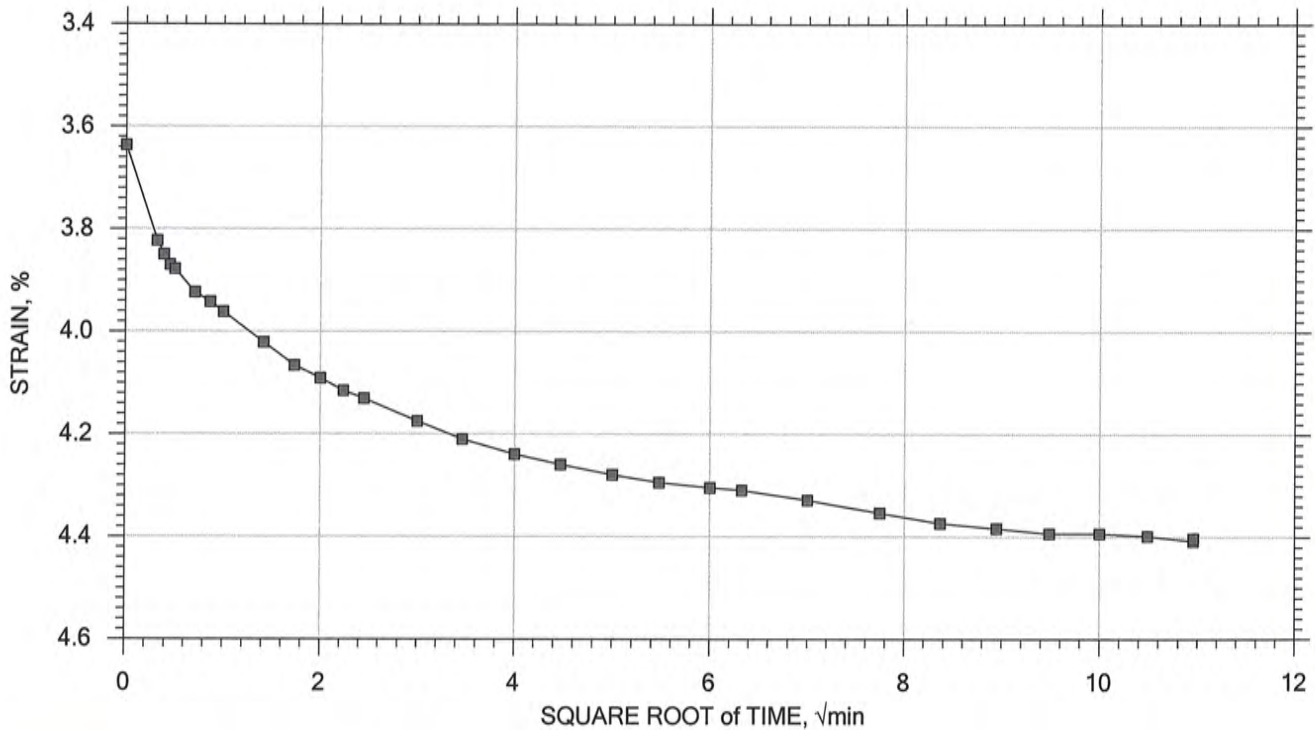
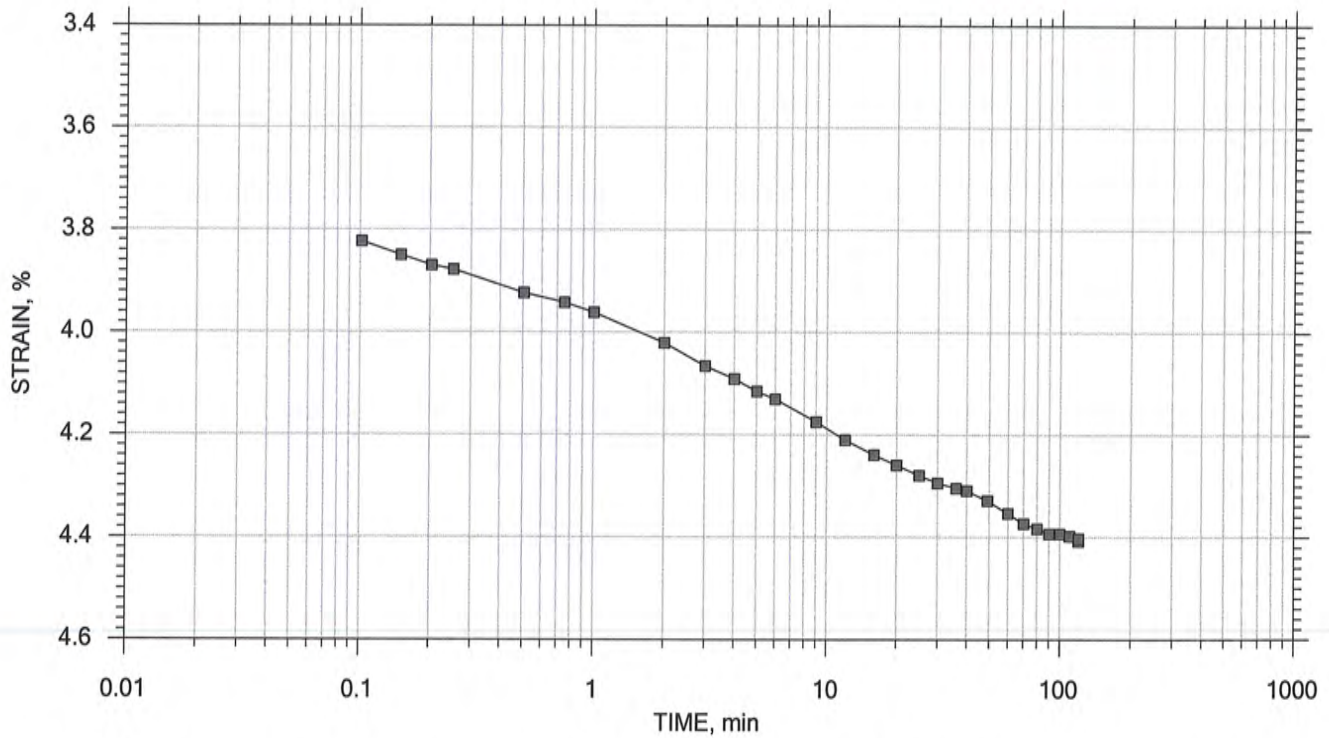



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 10 of 20

Stress: 4000 psf



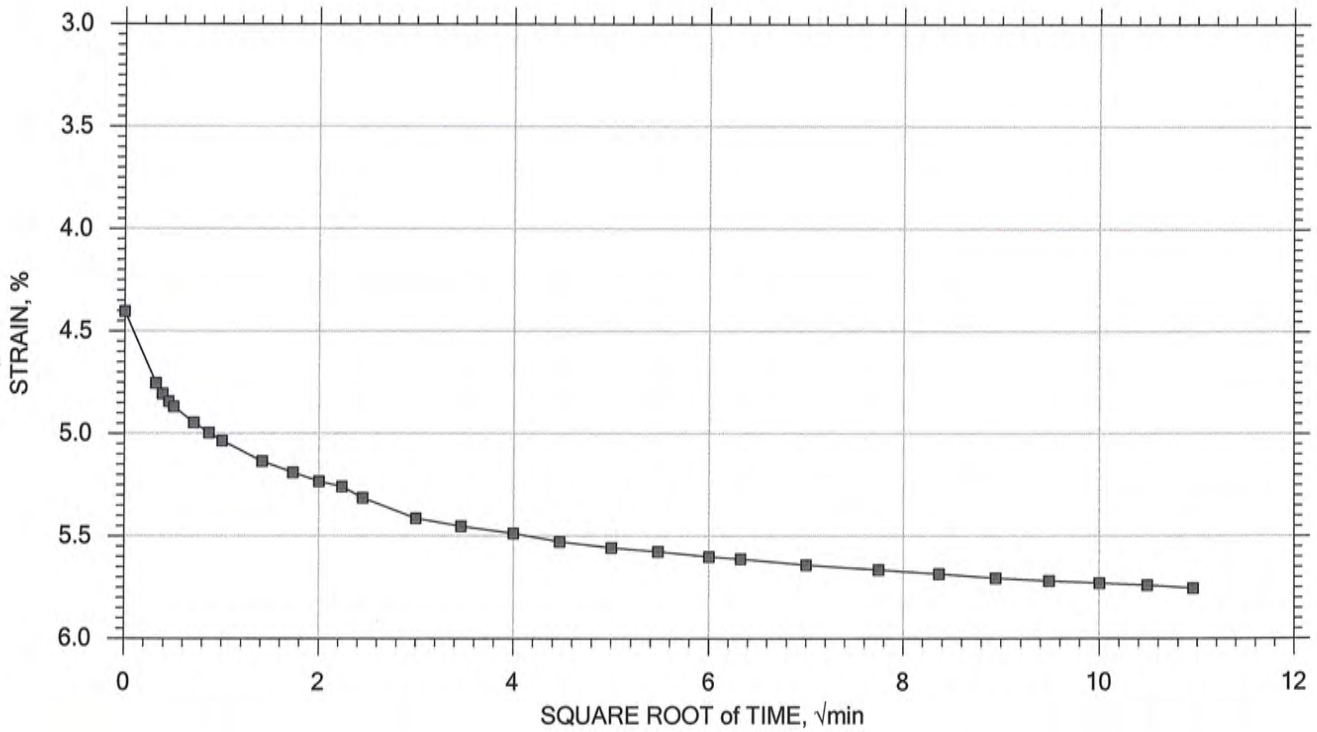
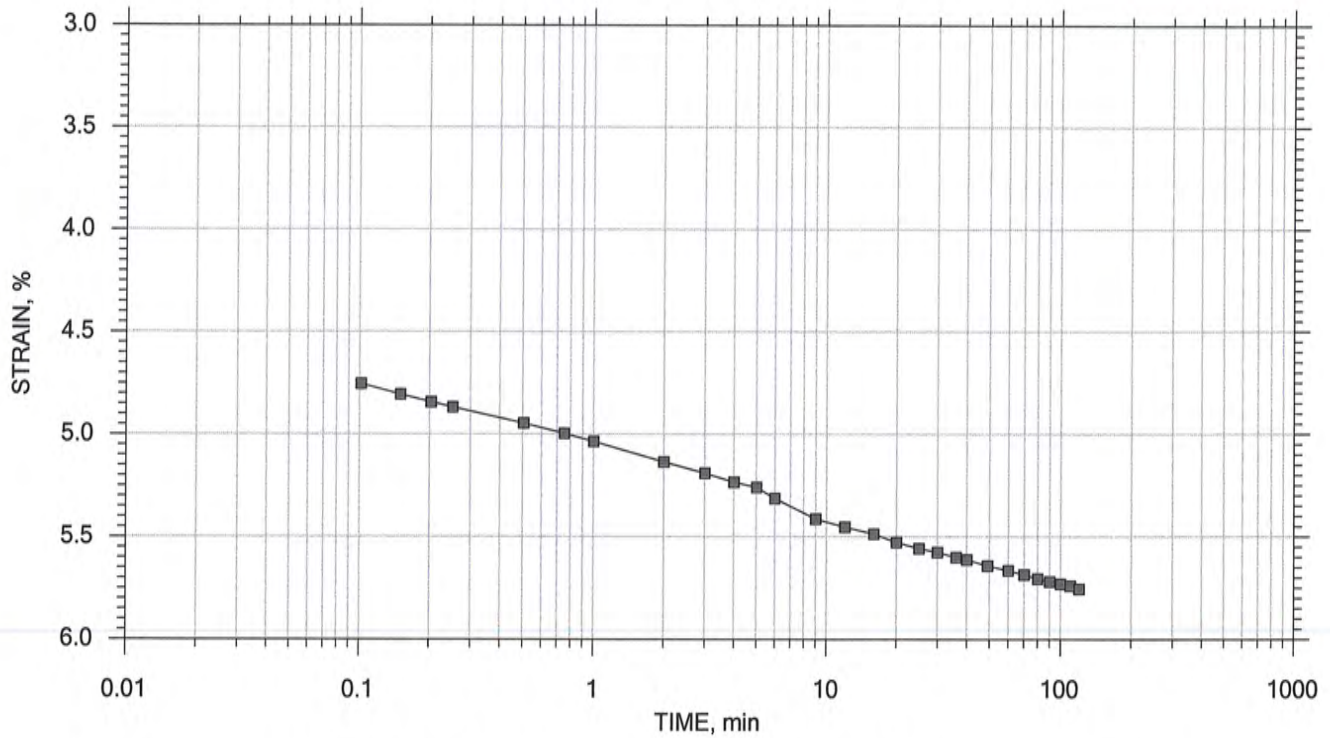
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 11 of 20

Stress: 6000 psf



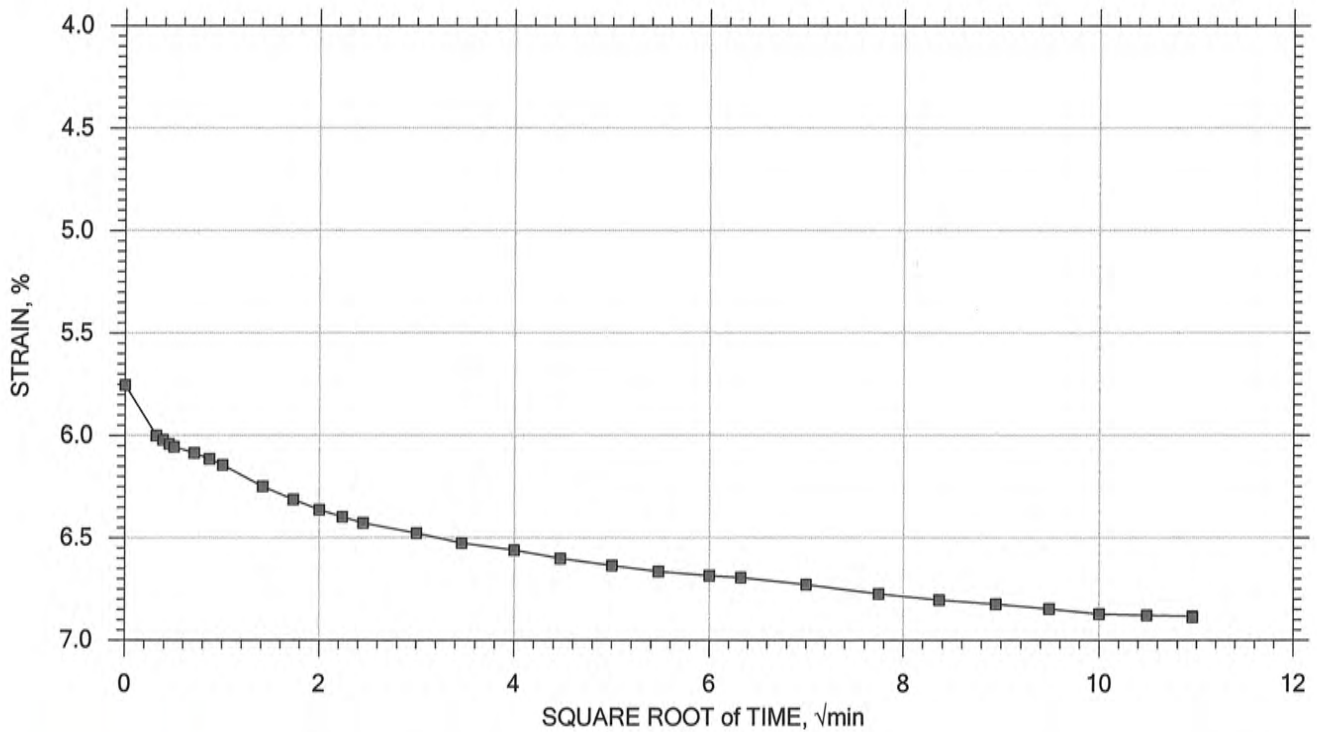
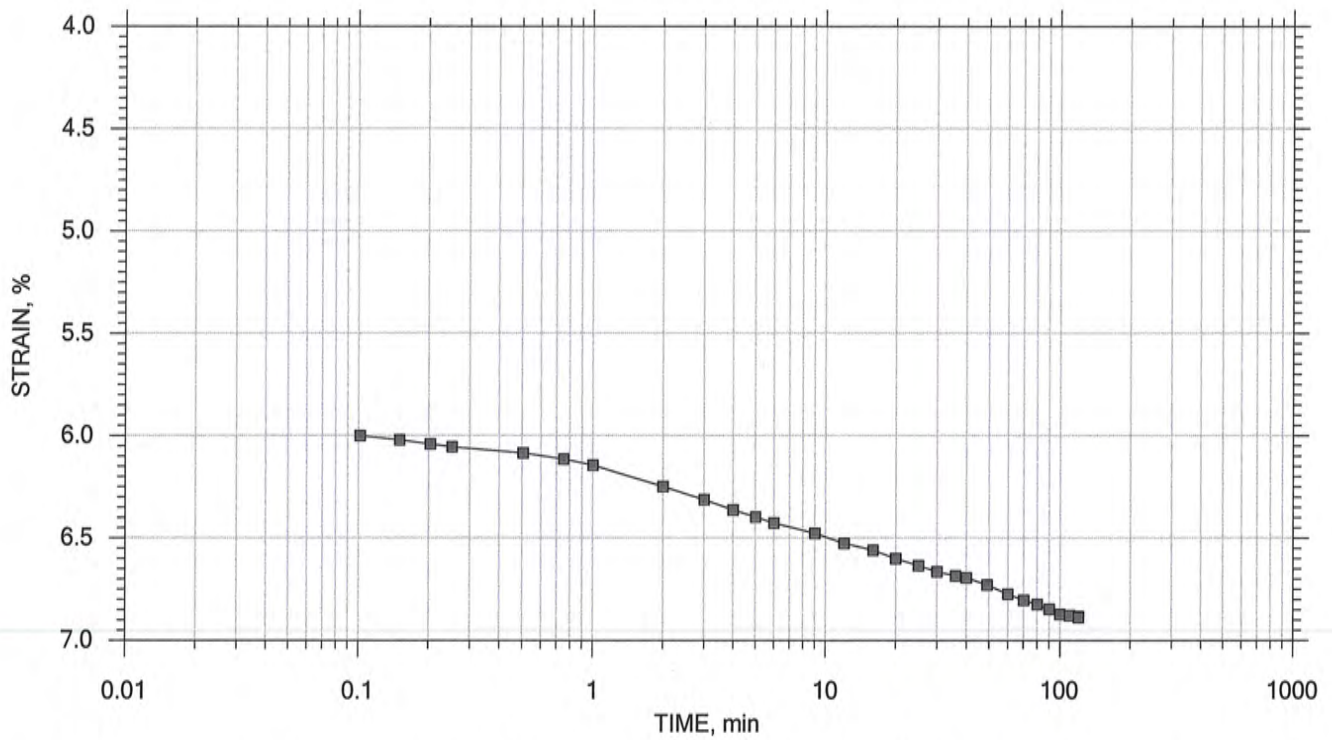
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 12 of 20

Stress: 8000 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

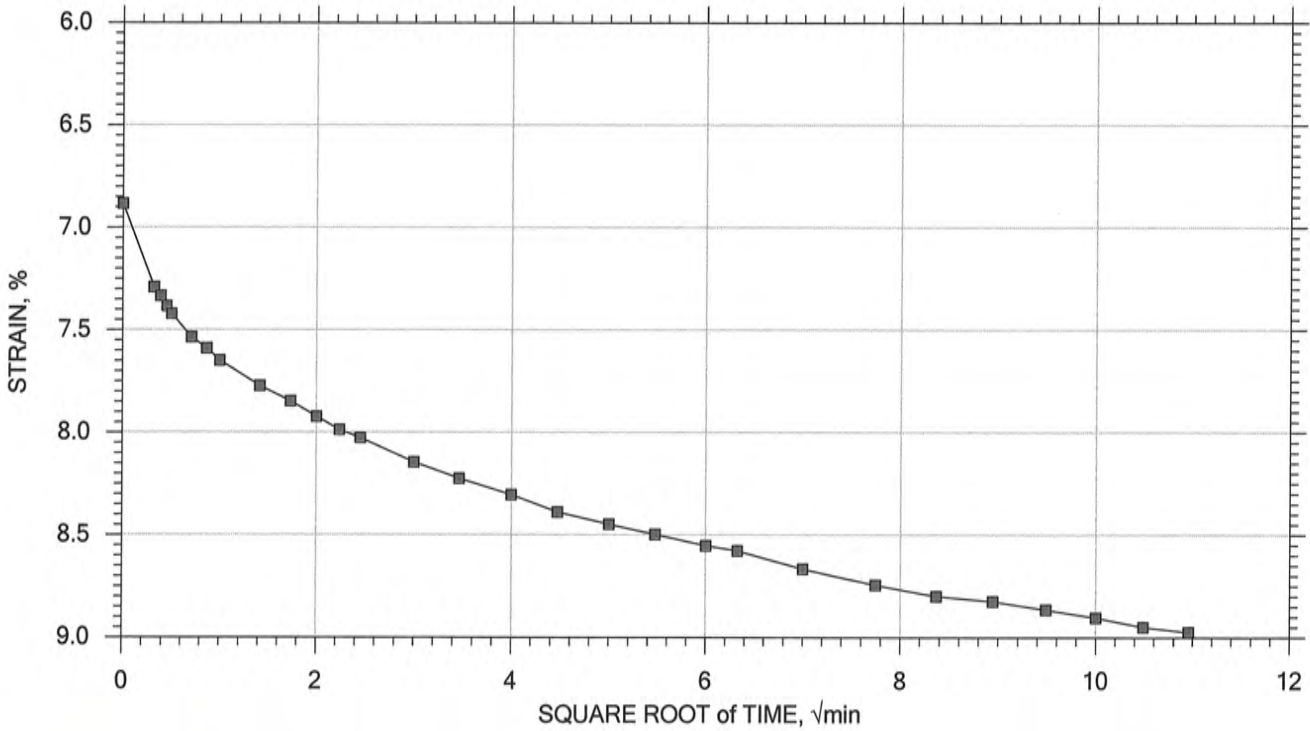
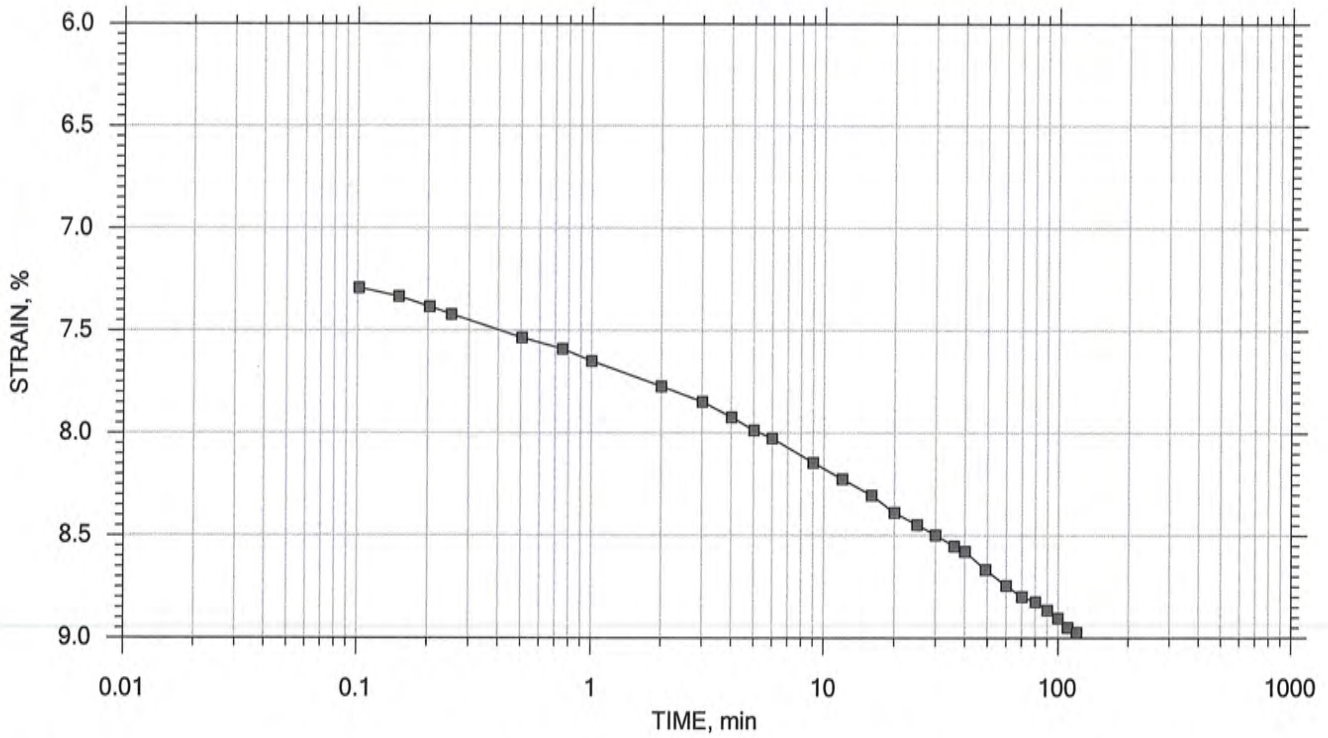



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 13 of 20

Stress: 12000 psf



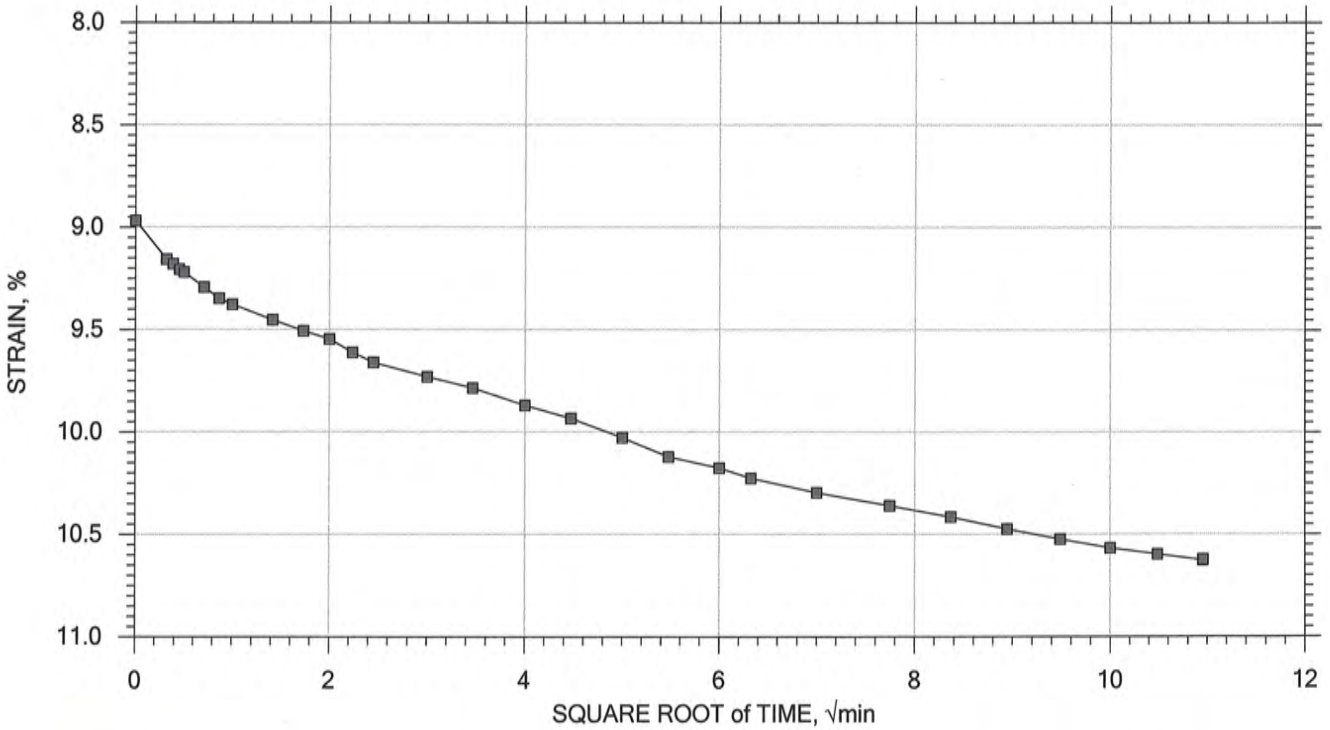
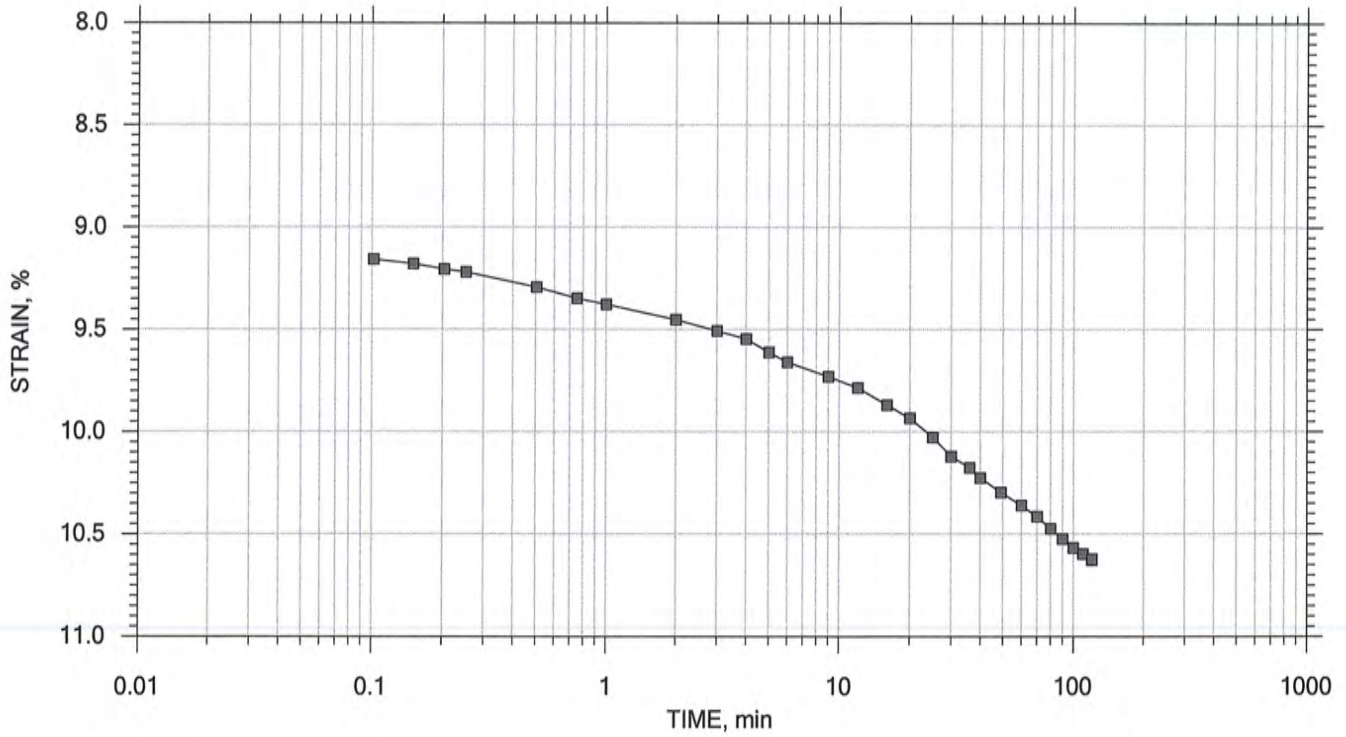
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 14 of 20

Stress: 16000 psf



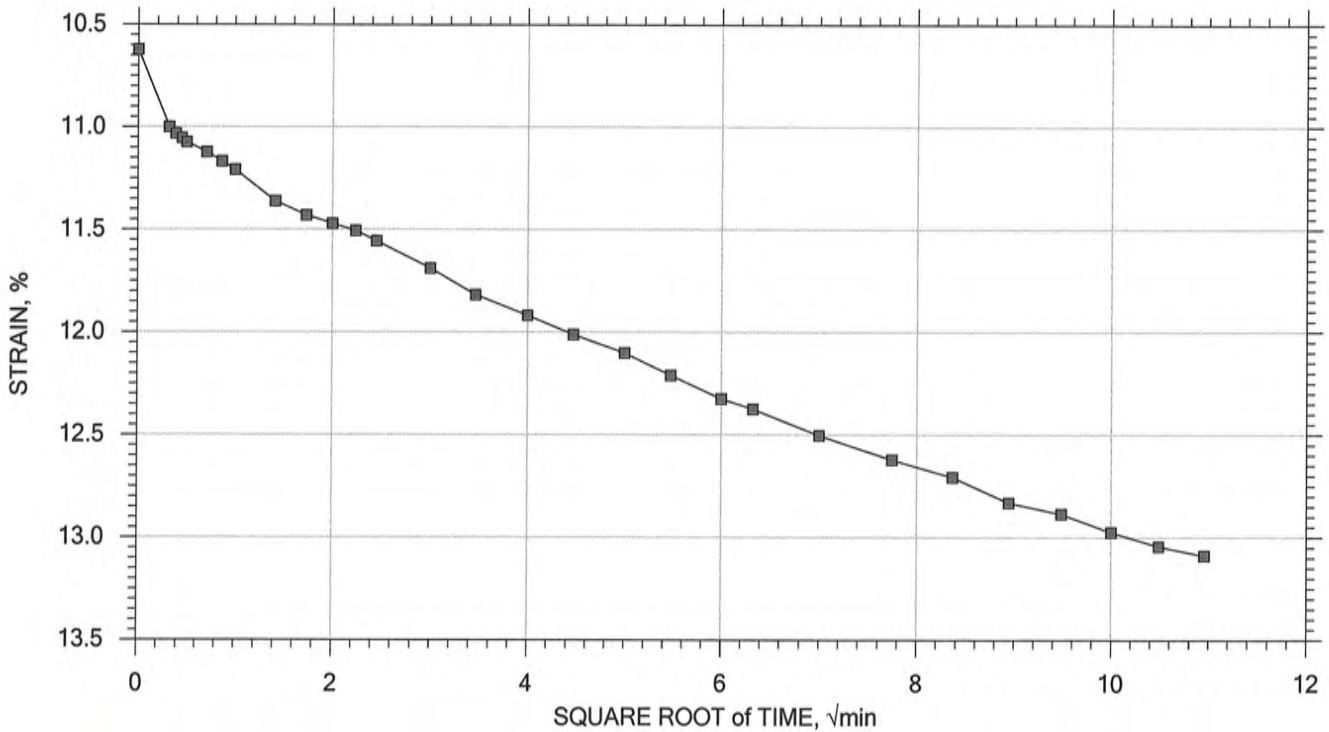
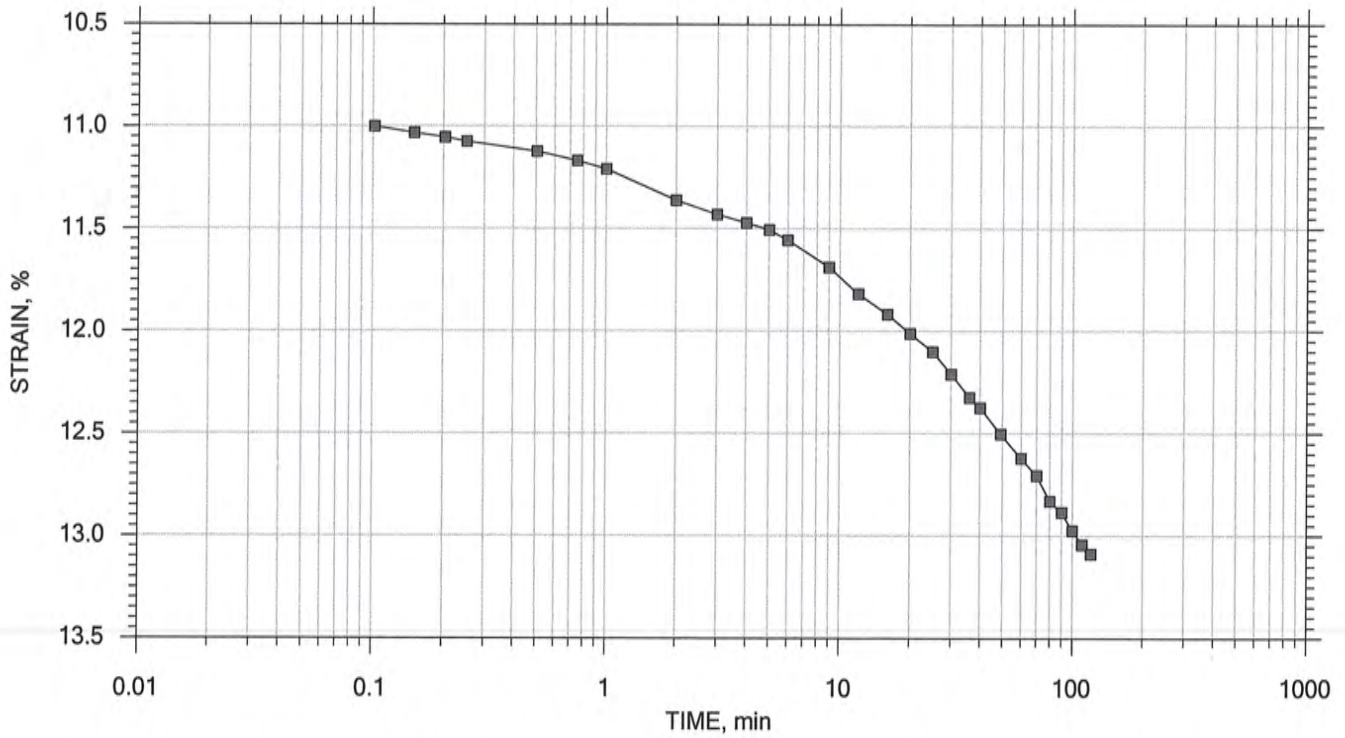
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 15 of 20

Stress: 24000 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

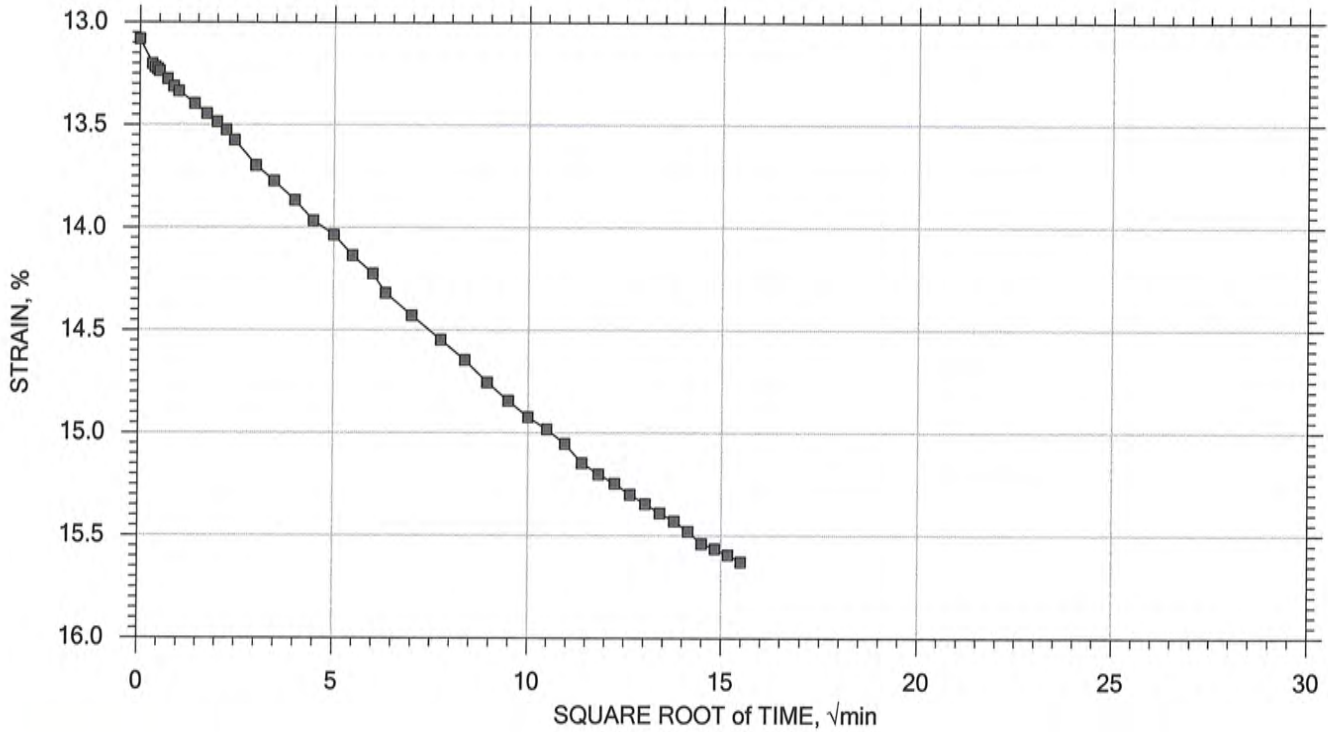
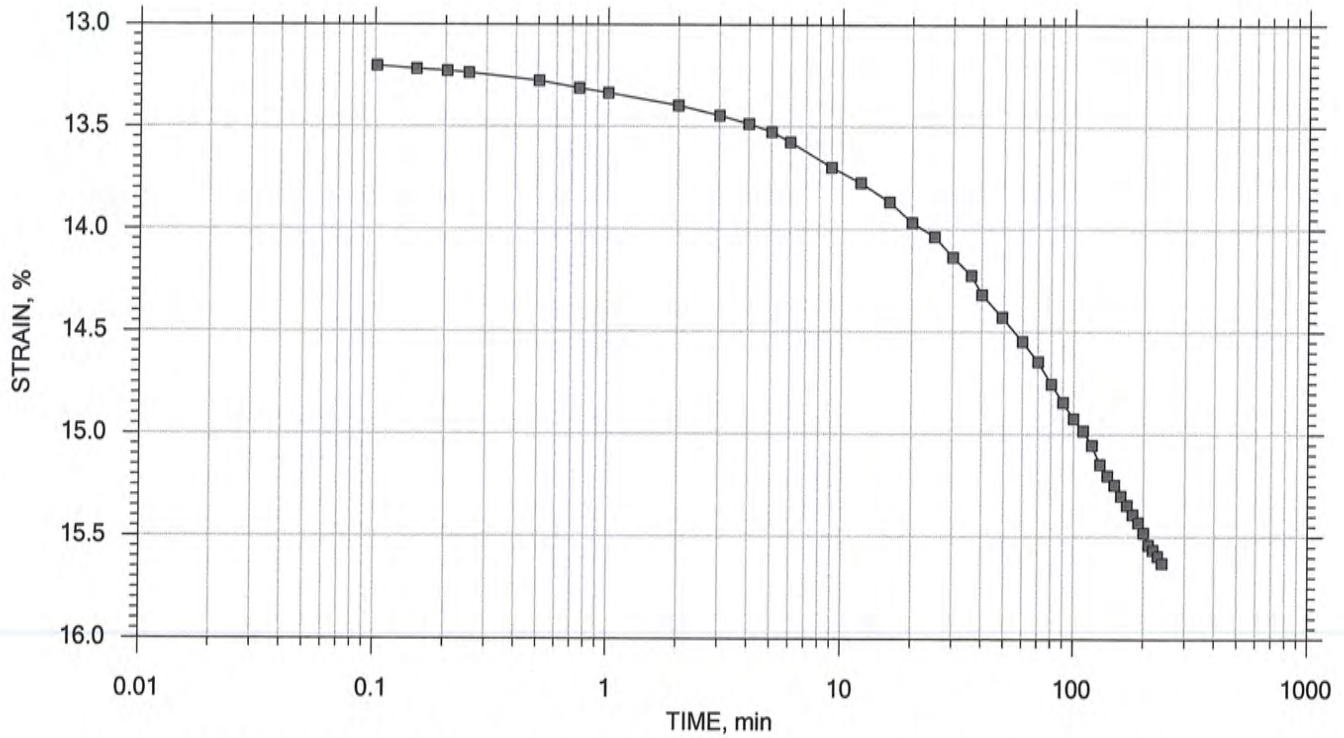



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 16 of 20

Stress: 32000 psf



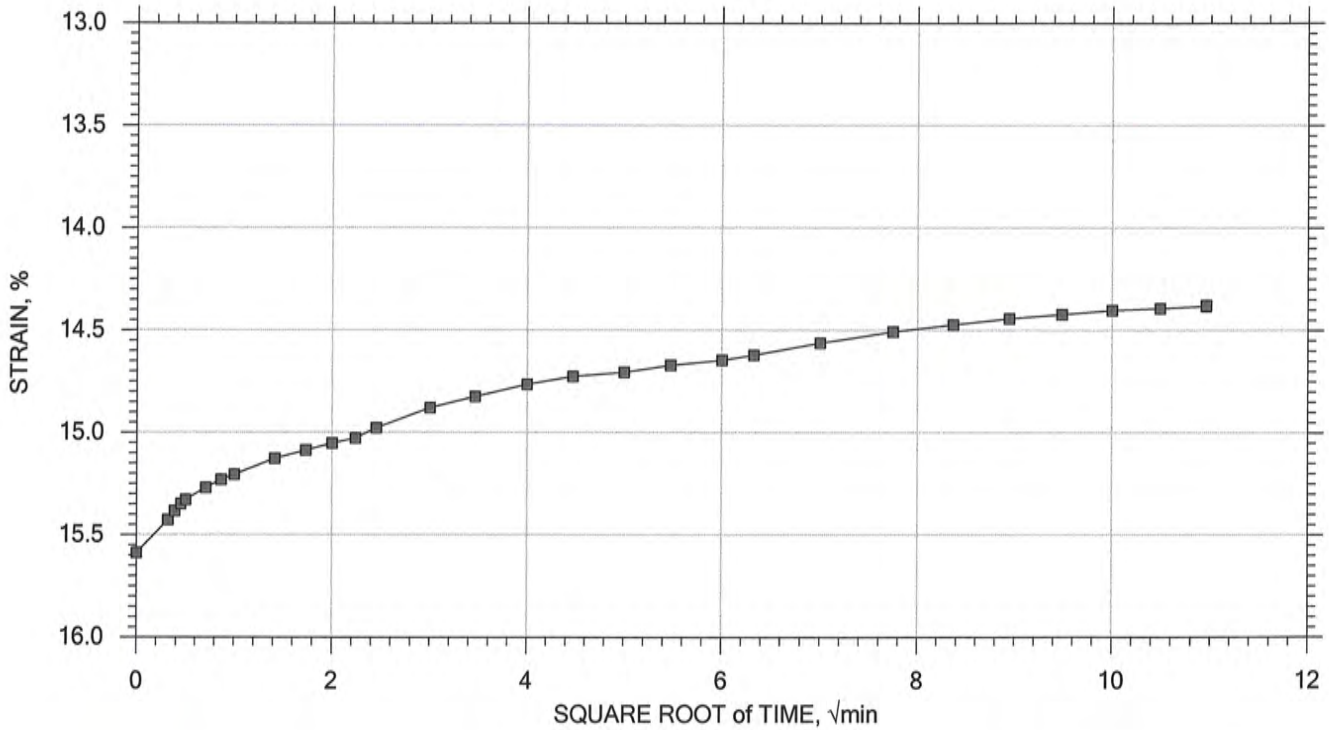
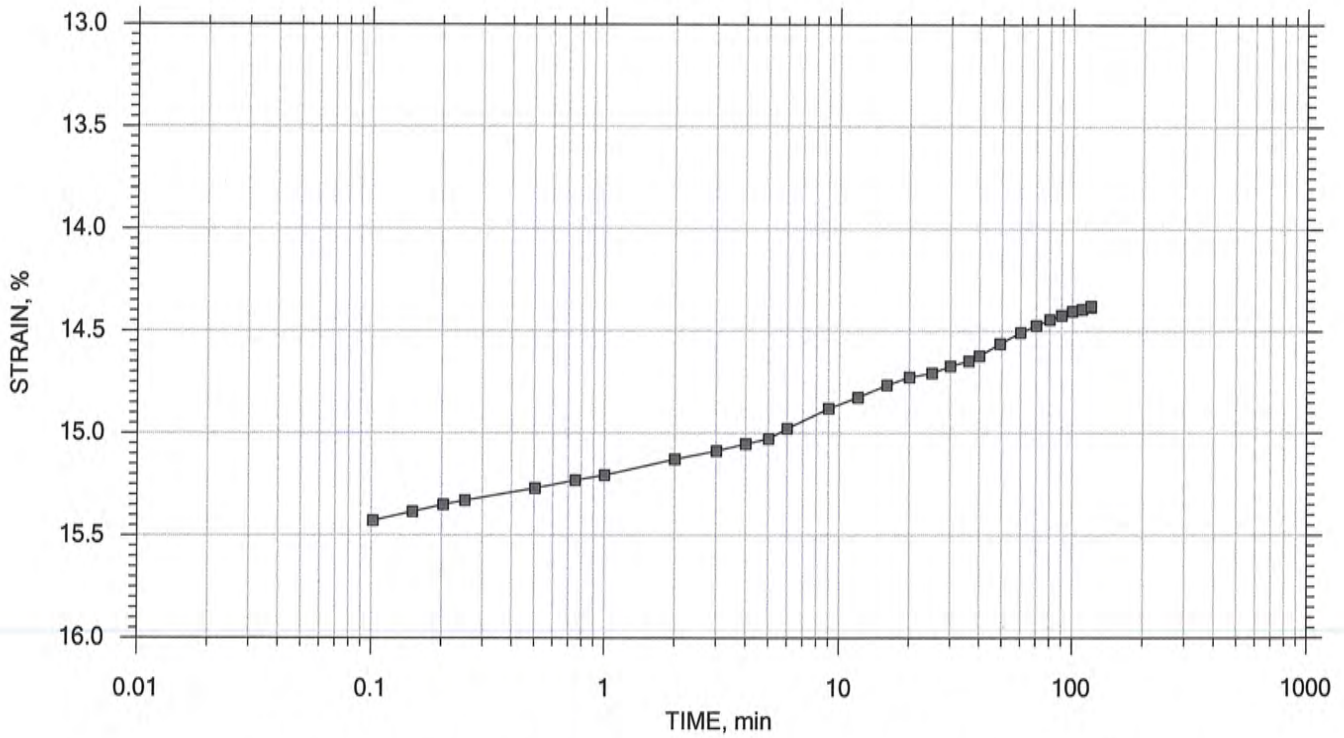
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 17 of 20

Stress: 16000 psf



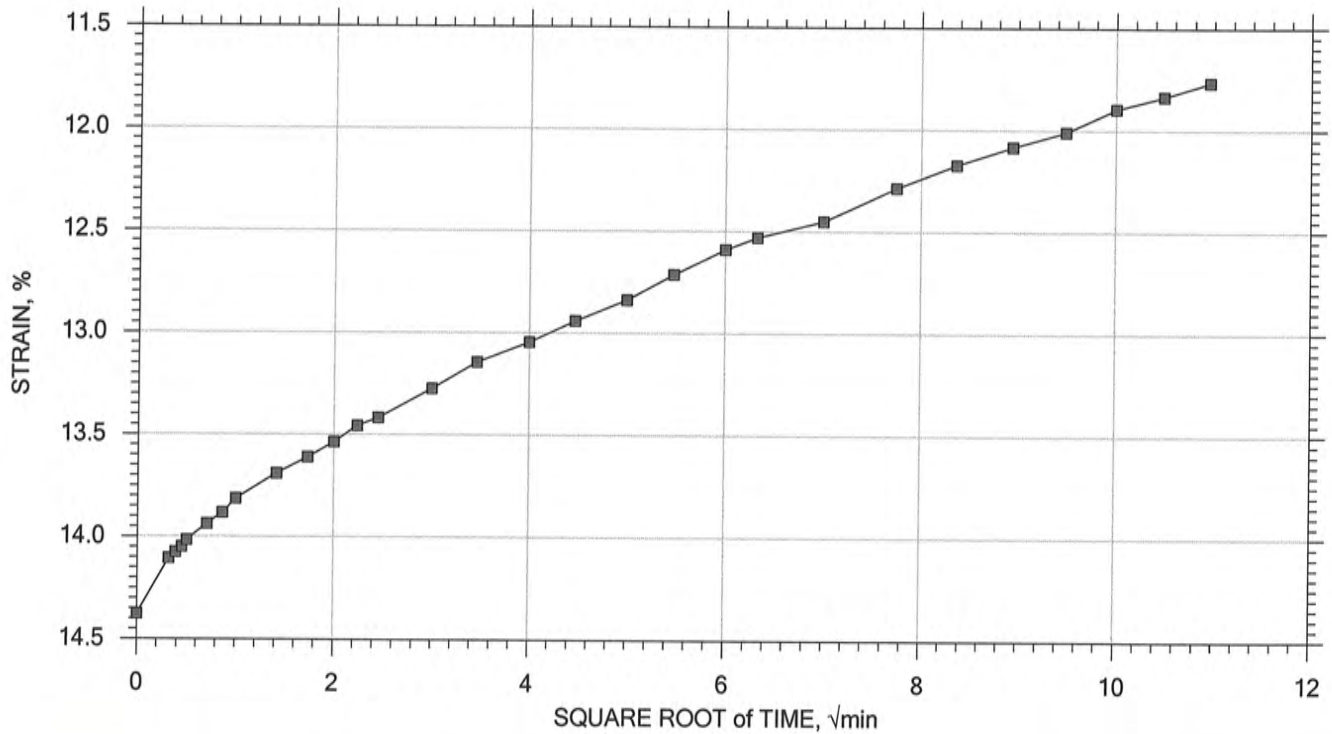
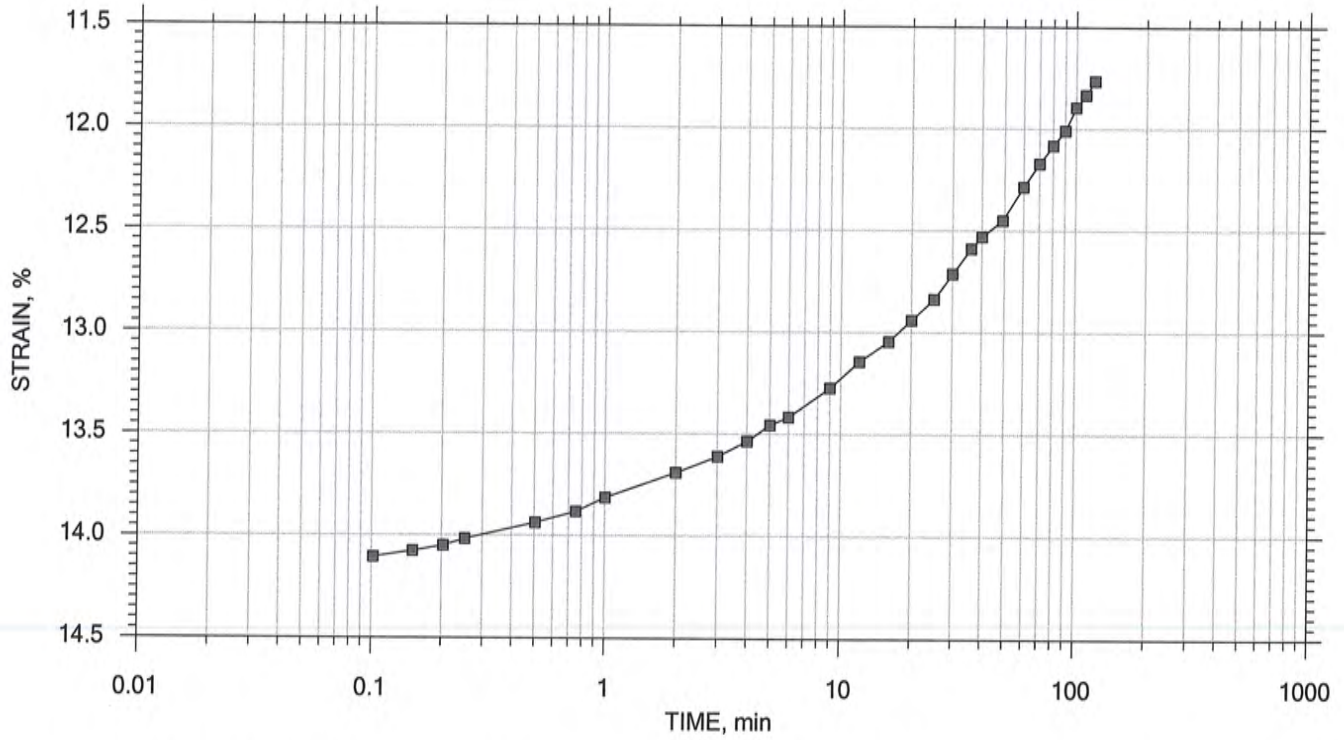
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 18 of 20

Stress: 4000 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

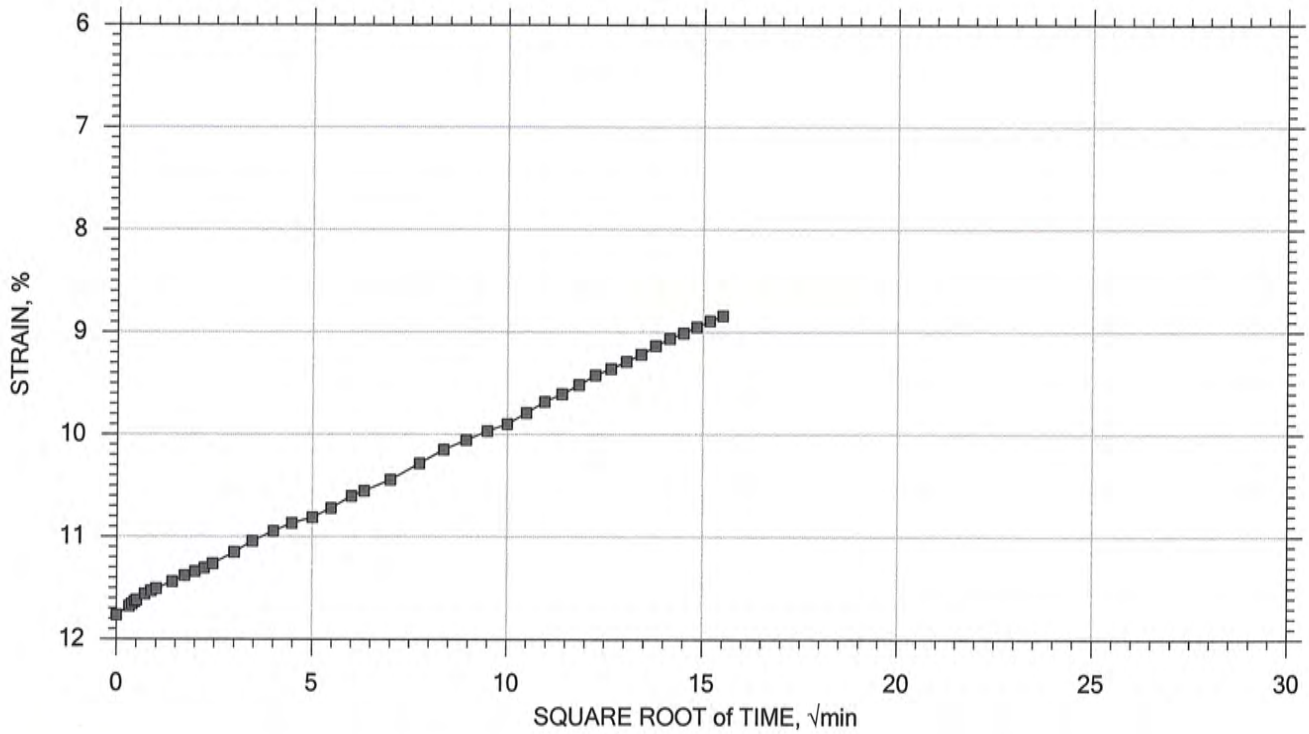
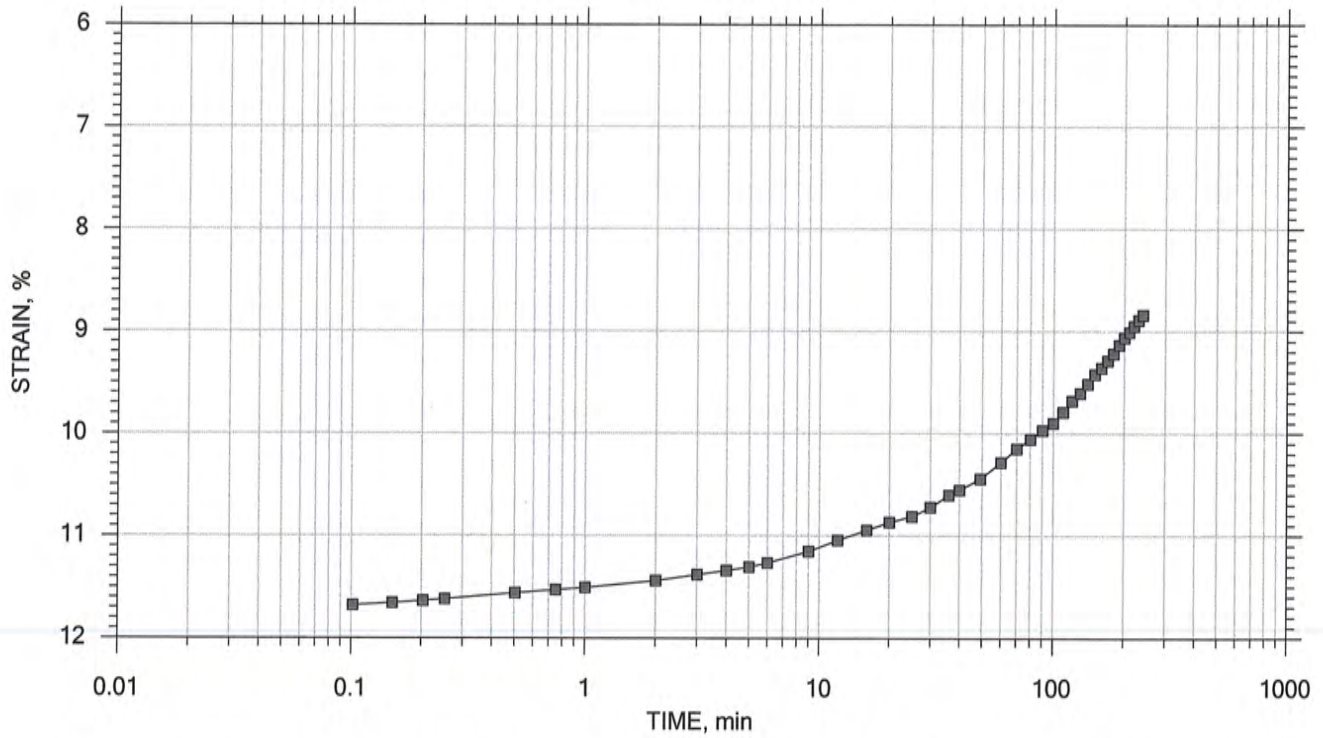



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 19 of 20

Stress: 1000 psf



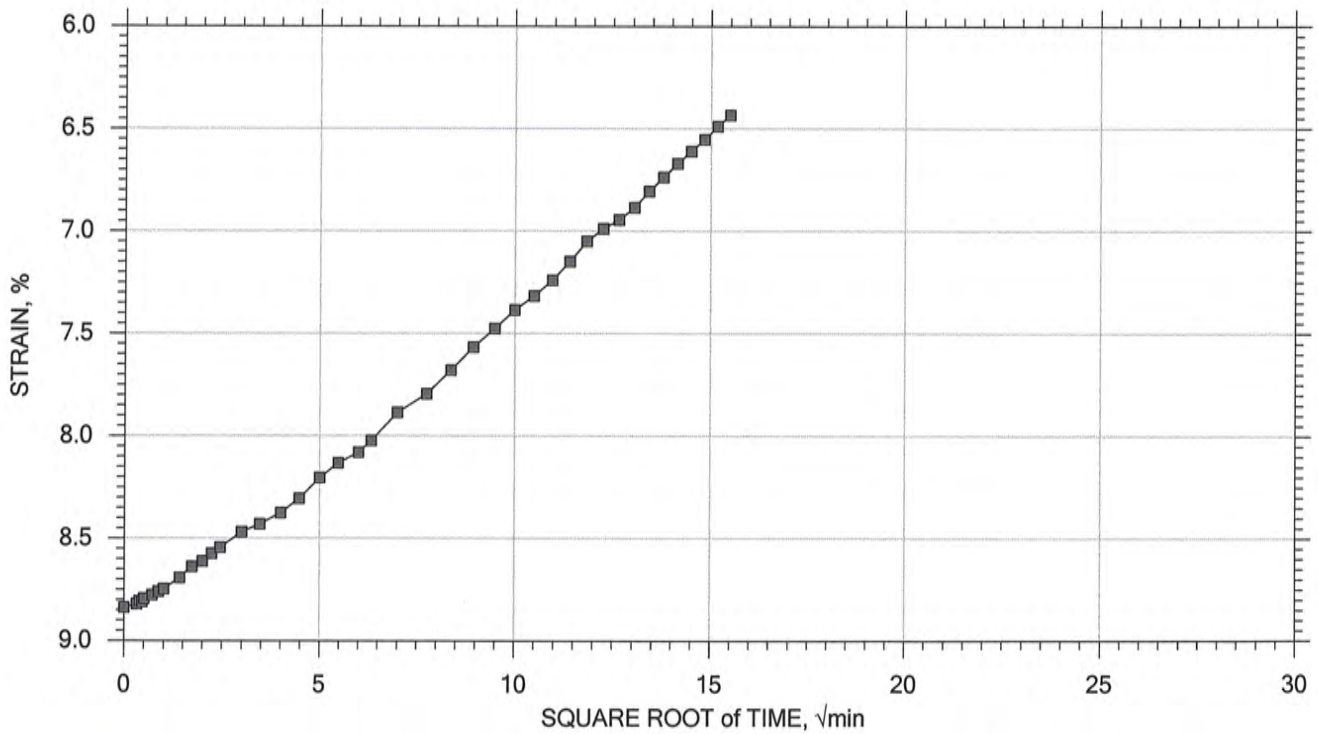
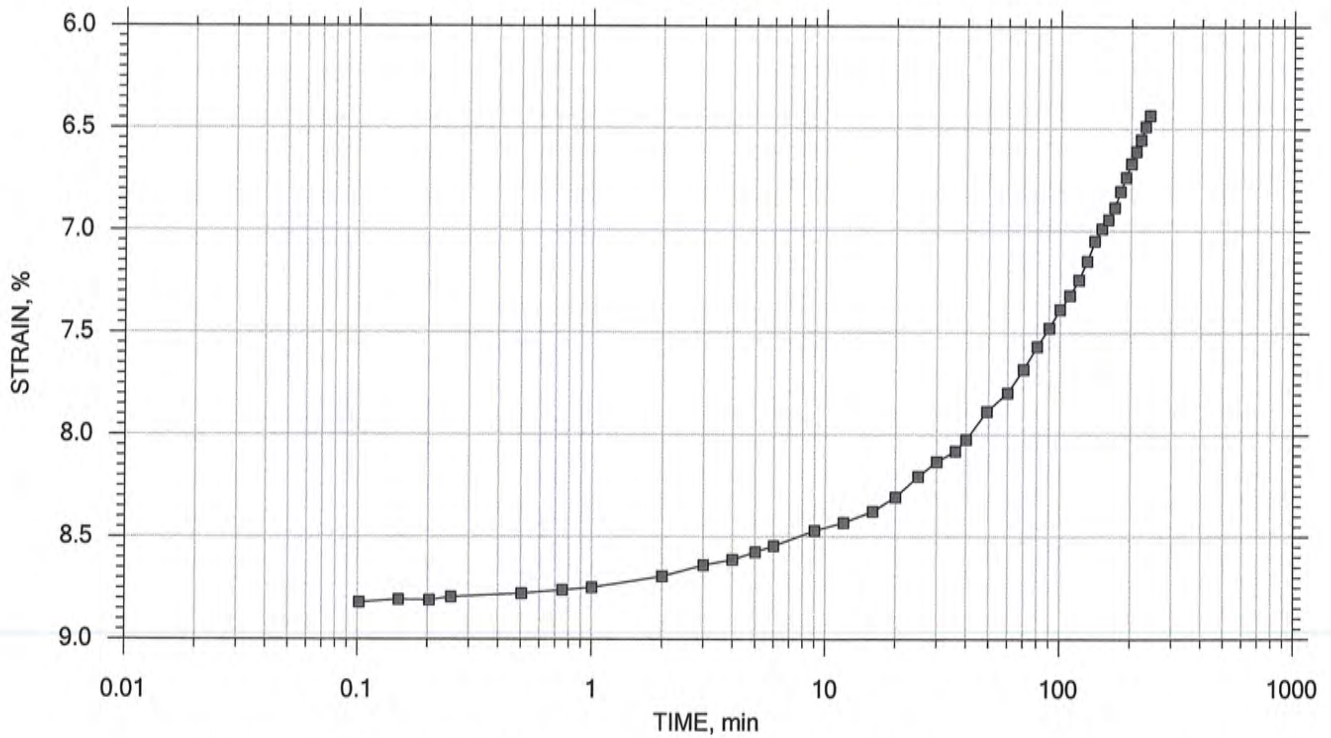
	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 20 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkeley County, SC	Project No.: GTX-304013
	Boring No.: ID-06	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/23/15	Test No.: IP-2
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, olive gray clay		
	Remarks: System A		

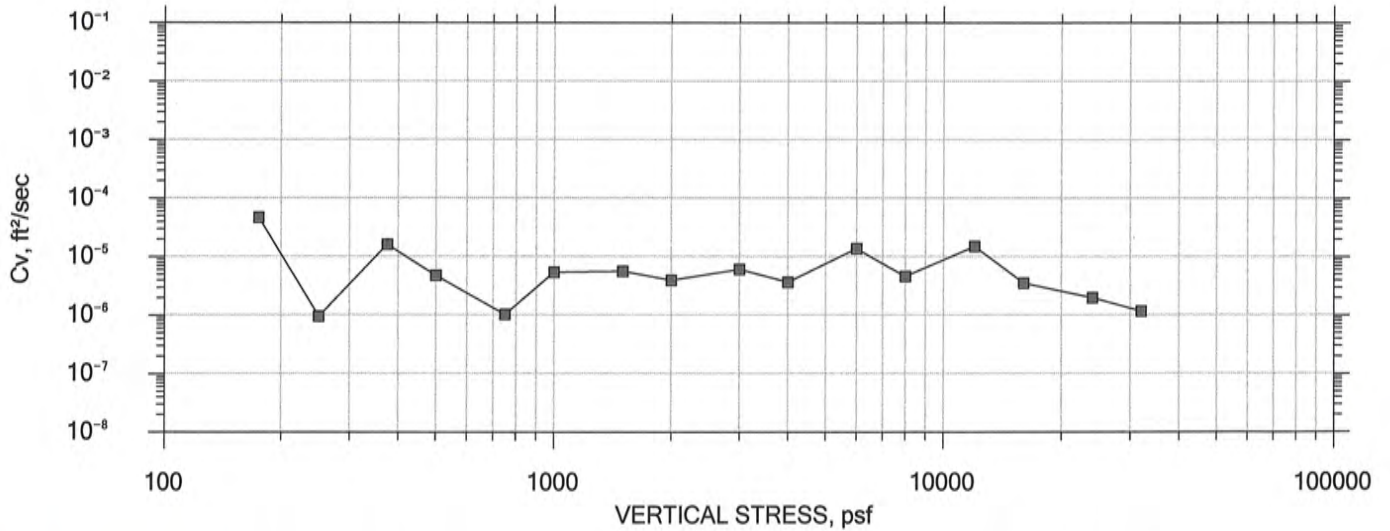
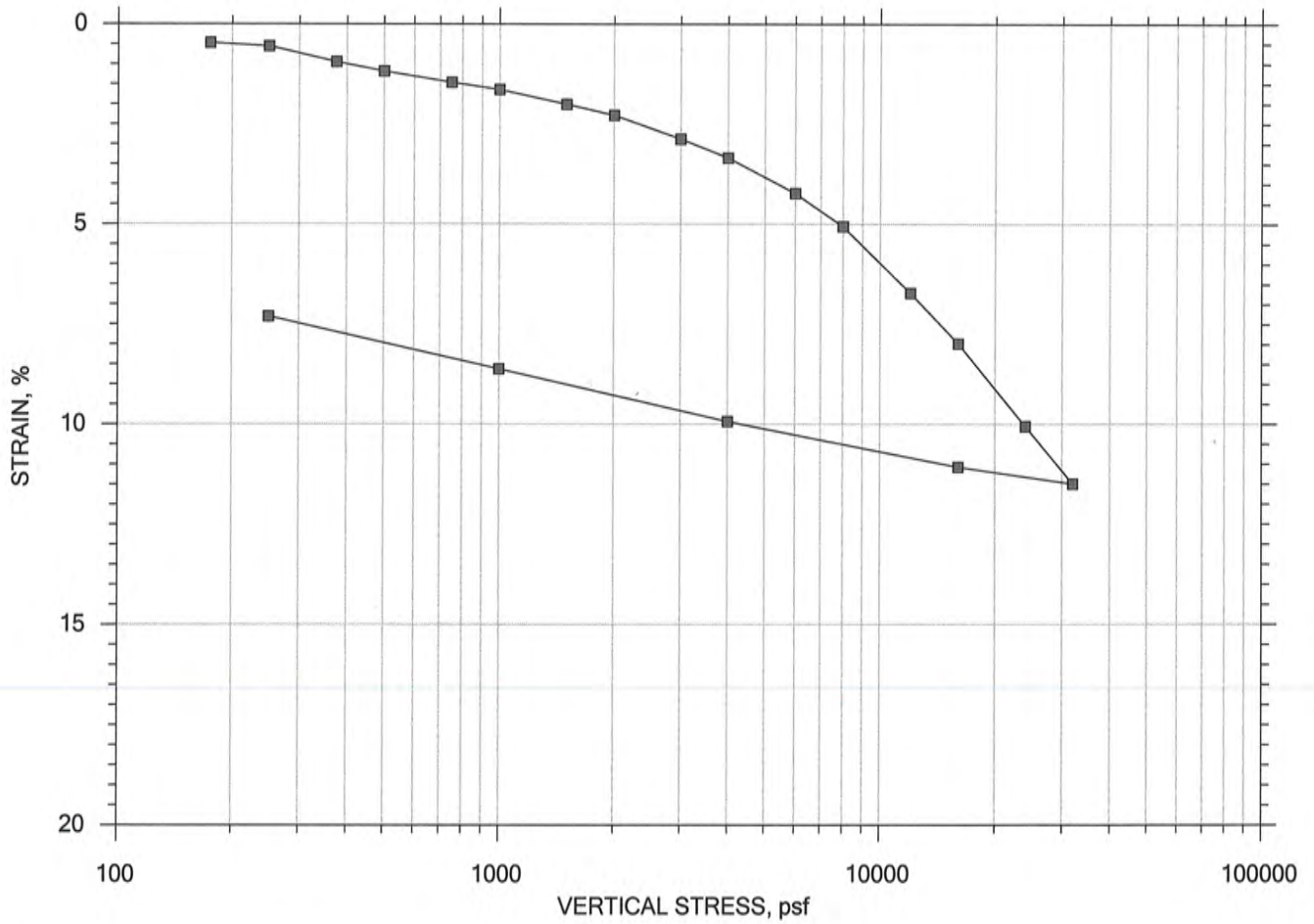







# One-Dimensional Consolidation by ASTM D2435 - Method B

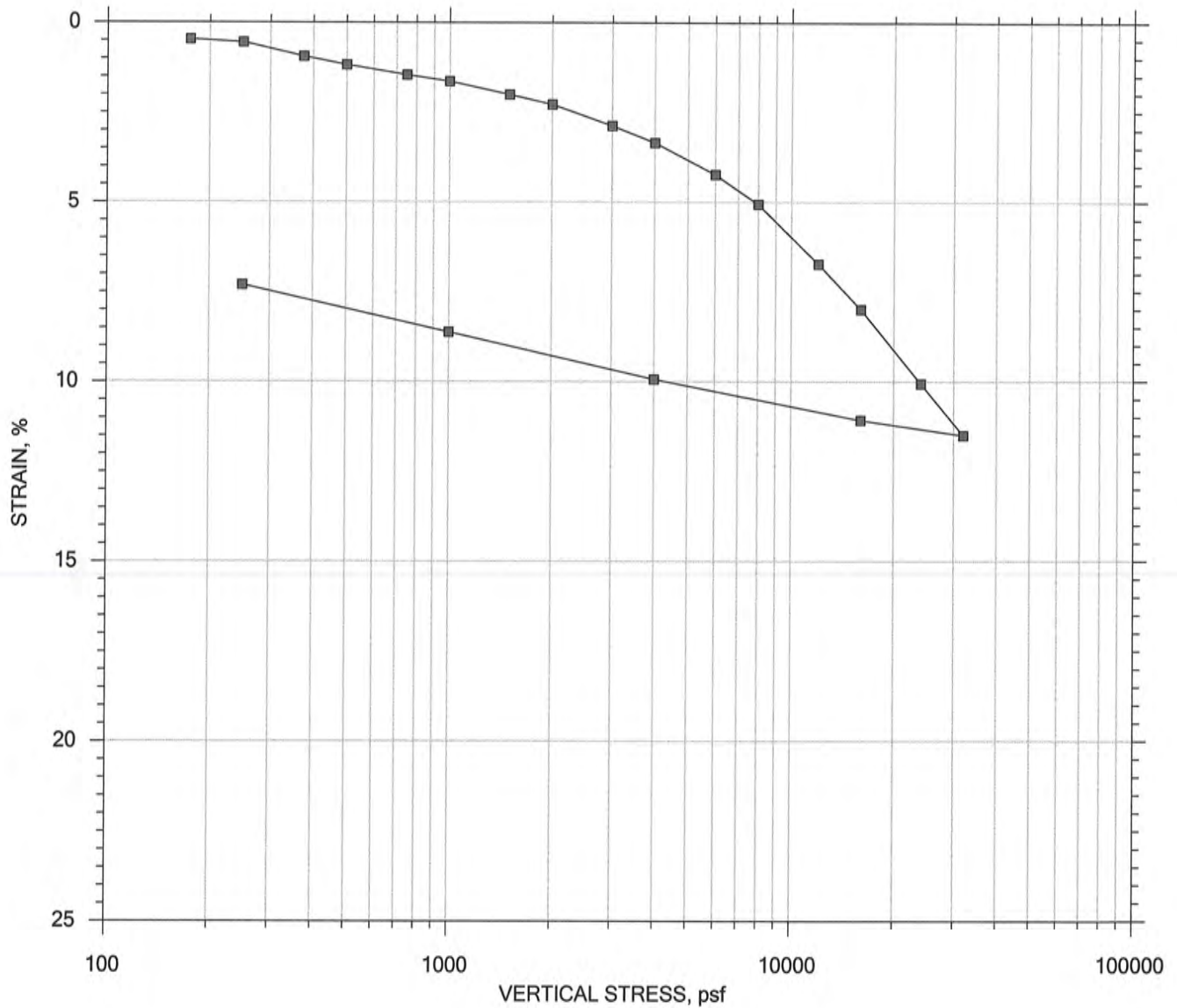
## SUMMARY REPORT




	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		
	Displacement at End of Increment		

# One-Dimensional Consolidation by ASTM D2435 - Method B

## SUMMARY REPORT



				Before Test	After Test
Current Vertical Effective Stress: ---			Water Content, %	26.78	26.05
Preconsolidation Stress: ---			Dry Unit Weight, pcf	93.145	98.41
Compression Ratio: ---			Saturation, %	90.35	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	0.79
LL: 58	PL: 18	PI: 40	GS: 2.68		

	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: IS-18  
 Sample No.: ---  
 Test No.: IP-3

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/18/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 4-6 ft  
 Elevation: ---

Soil Description: Moist, mottled red and yellowish brown clay with sand  
 Remarks: System 5077

Estimated Specific Gravity: 2.68  
 Initial Void Ratio: 0.793  
 Final Void Ratio: 0.697

Liquid Limit: 58  
 Plastic Limit: 18  
 Plasticity Index: 40

Specimen Diameter: 2.50 in  
 Initial Height: 1.00 in  
 Final Height: 0.95 in

Container ID	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
	a45	RING	5077	a22
Wt. Container + Wet Soil, gm	116.61	362.57	361.70	168.14
Wt. Container + Dry Soil, gm	94.410	330.43	330.43	136.89
Wt. Container, gm	16.030	210.41	210.41	16.950
Wt. Dry Soil, gm	78.380	120.02	120.02	119.94
Water Content, %	28.32	26.78	26.05	26.05
Void Ratio	---	0.793	0.697	---
Degree of Saturation, %	---	90.35	100.00	---
Dry Unit Weight, pcf	---	93.145	98.410	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: IS-18  
 Sample No.: ---  
 Test No.: IP-3

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/18/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 4-6 ft  
 Elevation: ---

Soil Description: Moist, mottled red and yellowish brown clay with sand  
 Remarks: System 5077

Displacement at End of Increment

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt T90 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec
1	175.	0.004658	0.785	0.466	0.521	4.69e-005	2.66e-005	2.37e-006
2	250.	0.005526	0.783	0.553	22.673	1.07e-006	1.16e-005	2.36e-008
3	375.	0.009439	0.776	0.944	1.512	1.60e-005	3.13e-005	9.52e-007
4	500.	0.01176	0.772	1.18	6.020	3.99e-006	1.86e-005	1.41e-007
5	750.	0.01456	0.767	1.46	44.460	5.37e-007	1.12e-005	1.15e-008
6	1.00e+003	0.01634	0.764	1.63	4.704	5.06e-006	7.11e-006	6.84e-008
7	1.50e+003	0.02005	0.757	2.01	4.276	5.53e-006	7.42e-006	7.82e-008
8	2.00e+003	0.02280	0.752	2.28	6.966	3.37e-006	5.49e-006	3.52e-008
9	3.00e+003	0.02869	0.741	2.87	4.005	5.81e-006	5.89e-006	6.52e-008
10	4.00e+003	0.03337	0.733	3.34	6.475	3.56e-006	4.68e-006	3.17e-008
11	6.00e+003	0.04223	0.717	4.22	1.690	1.34e-005	4.43e-006	1.13e-007
12	8.00e+003	0.05047	0.702	5.05	5.110	4.37e-006	4.12e-006	3.43e-008
13	1.20e+004	0.06715	0.673	6.72	1.534	1.42e-005	4.17e-006	1.12e-007
14	1.60e+004	0.07980	0.650	7.98	6.187	3.40e-006	3.16e-006	2.05e-008
15	2.40e+004	0.1005	0.613	10.1	9.645	2.11e-006	2.59e-006	1.04e-008
16	3.20e+004	0.1149	0.587	11.5	16.390	1.19e-006	1.80e-006	4.07e-009
17	1.60e+004	0.1107	0.594	11.1	10.216	1.89e-006	2.65e-007	9.54e-010
18	4.00e+003	0.09929	0.615	9.93	19.633	1.00e-006	9.48e-007	1.81e-009
19	1.00e+003	0.08617	0.638	8.62	77.350	2.61e-007	4.37e-006	2.17e-009
20	250.	0.07303	0.662	7.30	221.240	9.40e-008	1.75e-005	3.13e-009

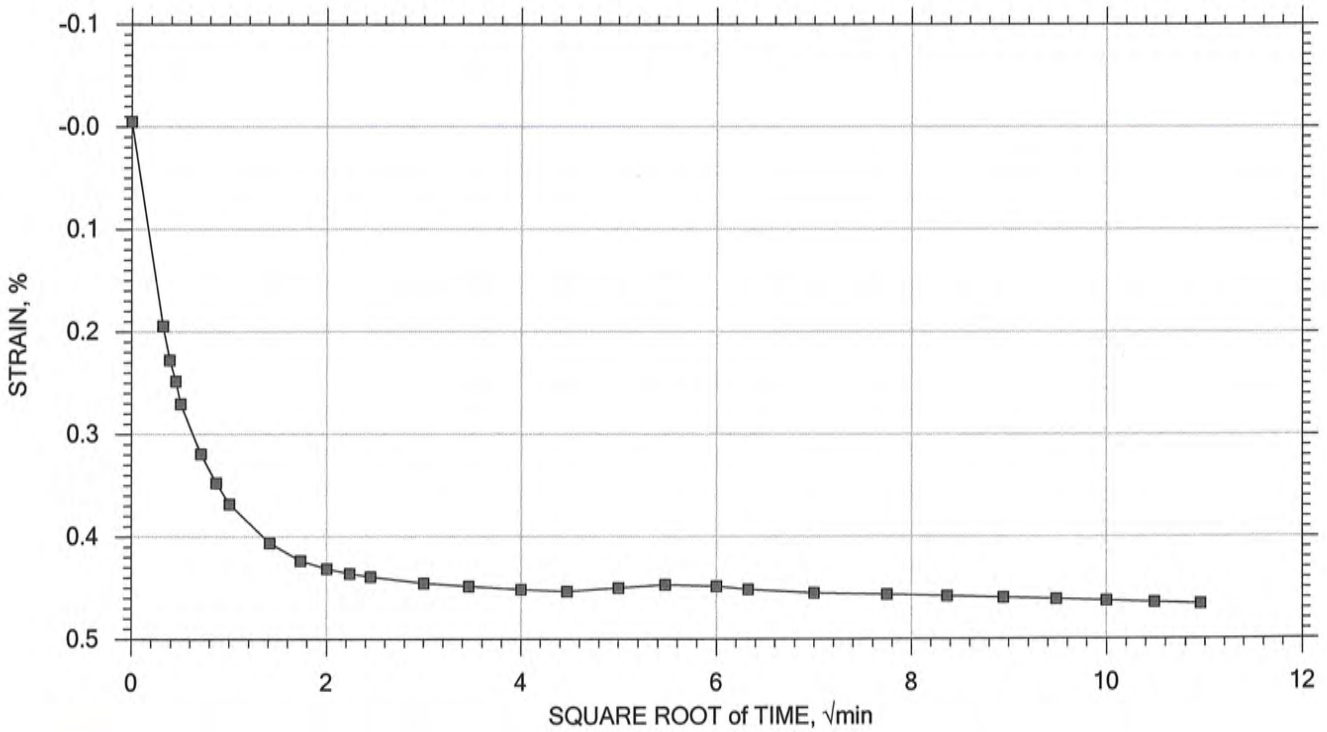
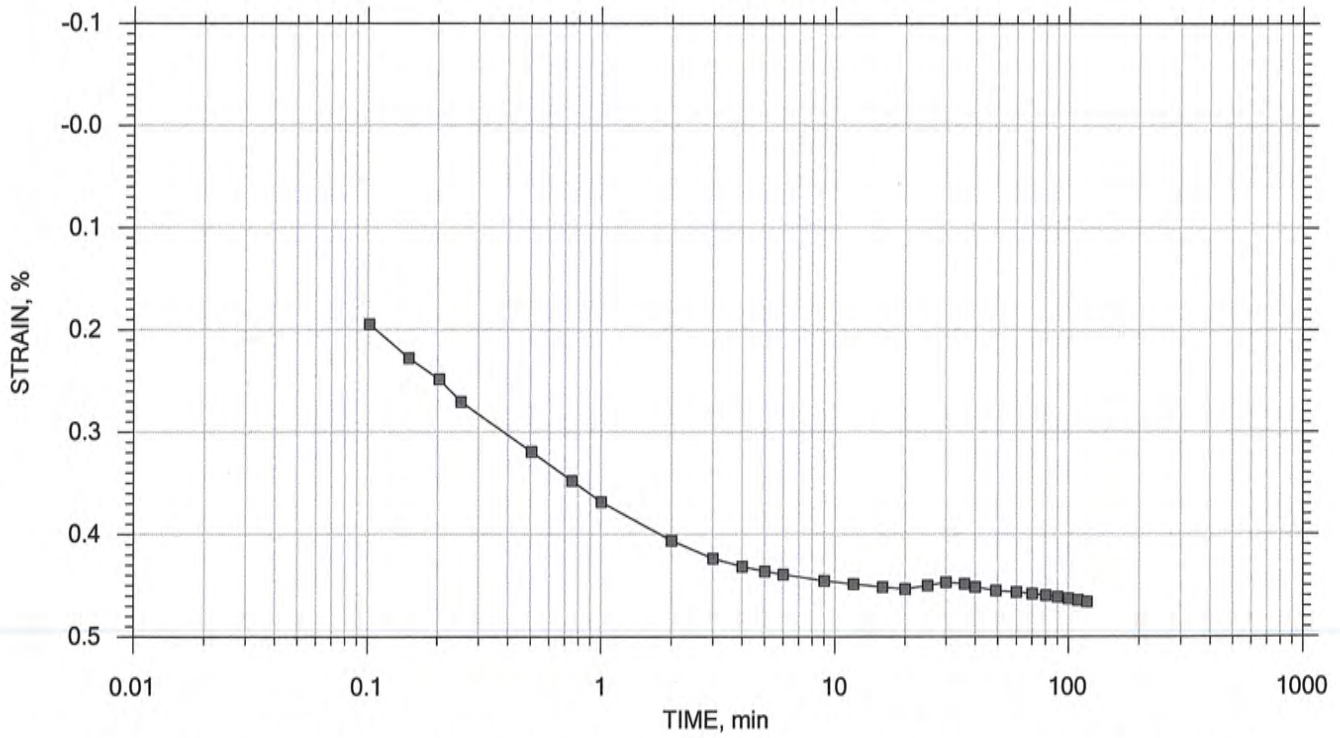
	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec	Ca %
1	175.	0.004658	0.785	0.466	0.000	0.00e+000	2.66e-005	0.00e+000	0.00e+000
2	250.	0.005526	0.783	0.553	0.000	0.00e+000	1.16e-005	0.00e+000	0.00e+000
3	375.	0.009439	0.776	0.944	0.000	0.00e+000	3.13e-005	0.00e+000	0.00e+000
4	500.	0.01176	0.772	1.18	0.000	0.00e+000	1.86e-005	0.00e+000	0.00e+000
5	750.	0.01456	0.767	1.46	0.000	0.00e+000	1.12e-005	0.00e+000	0.00e+000
6	1.00e+003	0.01634	0.764	1.63	0.967	5.71e-006	7.11e-006	7.73e-008	0.00e+000
7	1.50e+003	0.02005	0.757	2.01	0.000	0.00e+000	7.42e-006	0.00e+000	0.00e+000
8	2.00e+003	0.02280	0.752	2.28	1.092	5.00e-006	5.49e-006	5.22e-008	0.00e+000
9	3.00e+003	0.02869	0.741	2.87	0.000	0.00e+000	5.89e-006	0.00e+000	0.00e+000
10	4.00e+003	0.03337	0.733	3.34	0.000	0.00e+000	4.68e-006	0.00e+000	0.00e+000
11	6.00e+003	0.04223	0.717	4.22	0.000	0.00e+000	4.43e-006	0.00e+000	0.00e+000
12	8.00e+003	0.05047	0.702	5.05	0.000	0.00e+000	4.12e-006	0.00e+000	0.00e+000
13	1.20e+004	0.06715	0.673	6.72	0.000	0.00e+000	4.17e-006	0.00e+000	0.00e+000
14	1.60e+004	0.07980	0.650	7.98	0.000	0.00e+000	3.16e-006	0.00e+000	0.00e+000
15	2.40e+004	0.1005	0.613	10.1	0.000	0.00e+000	2.59e-006	0.00e+000	0.00e+000
16	3.20e+004	0.1149	0.587	11.5	0.000	0.00e+000	1.80e-006	0.00e+000	0.00e+000
17	1.60e+004	0.1107	0.594	11.1	1.841	2.44e-006	2.65e-007	1.23e-009	0.00e+000
18	4.00e+003	0.09929	0.615	9.93	0.000	0.00e+000	9.48e-007	0.00e+000	0.00e+000
19	1.00e+003	0.08617	0.638	8.62	0.000	0.00e+000	4.37e-006	0.00e+000	0.00e+000
20	250.	0.07303	0.662	7.30	0.000	0.00e+000	1.75e-005	0.00e+000	0.00e+000


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 1 of 20

Stress: 175 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

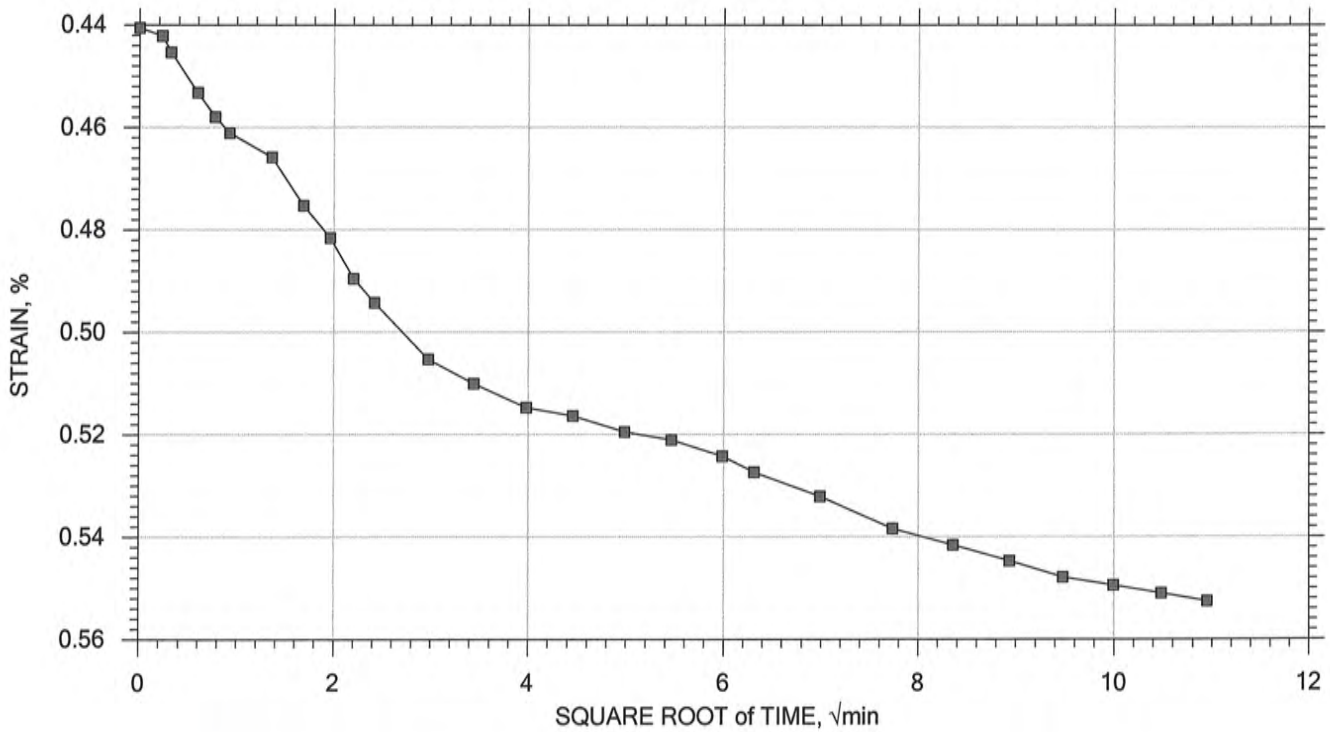
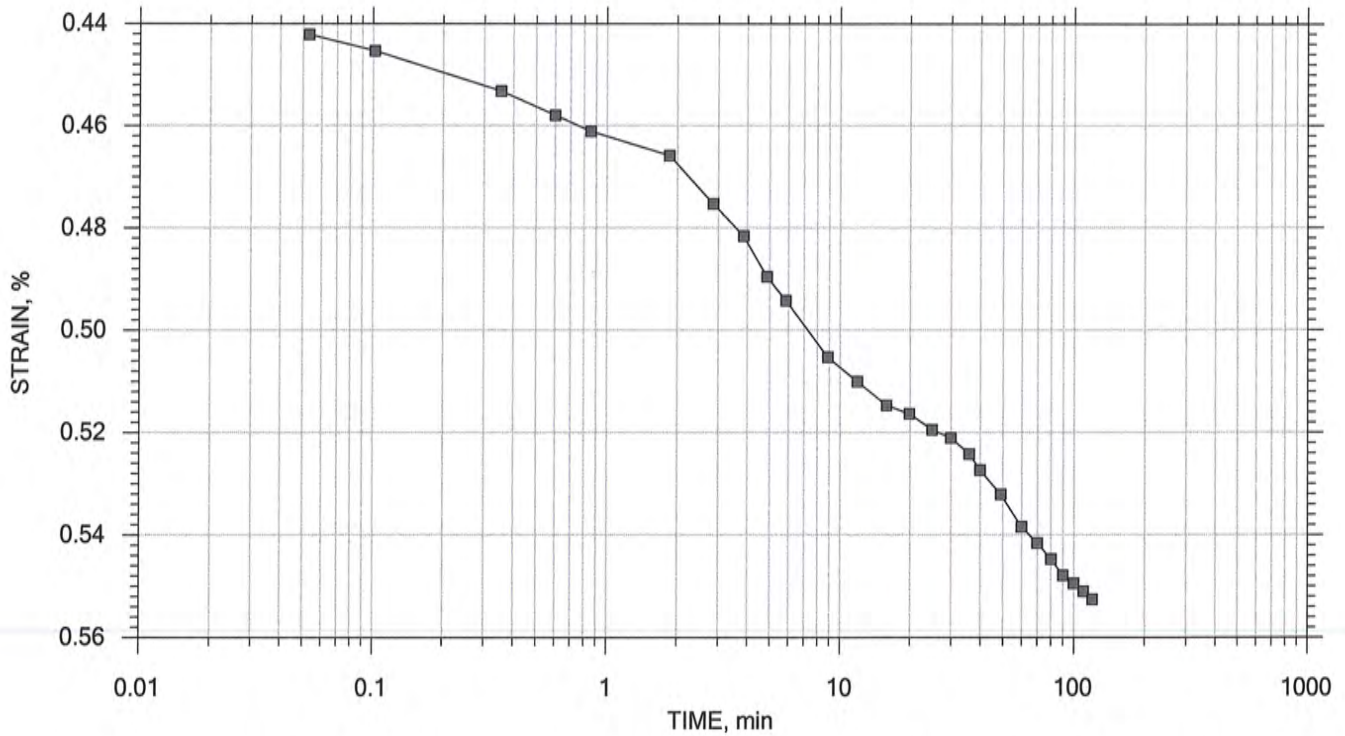



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 2 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

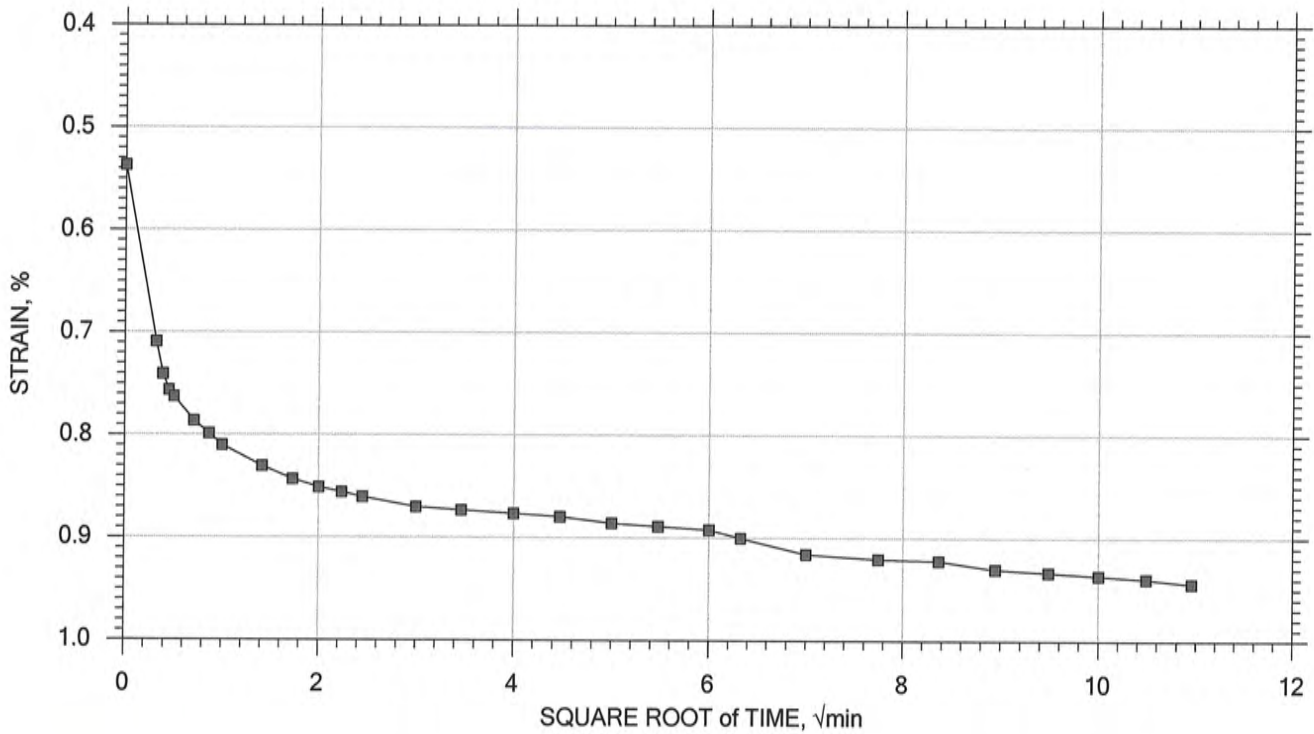
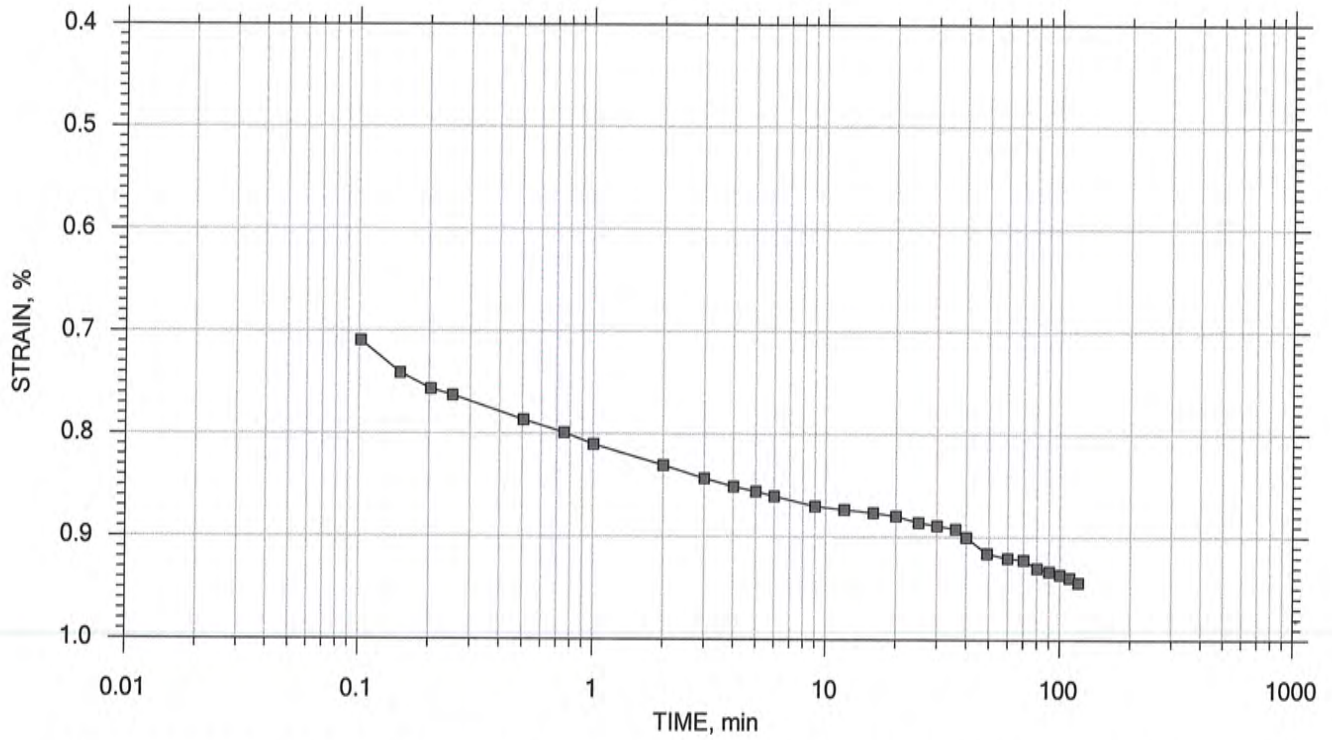



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 3 of 20

Stress: 375 psf



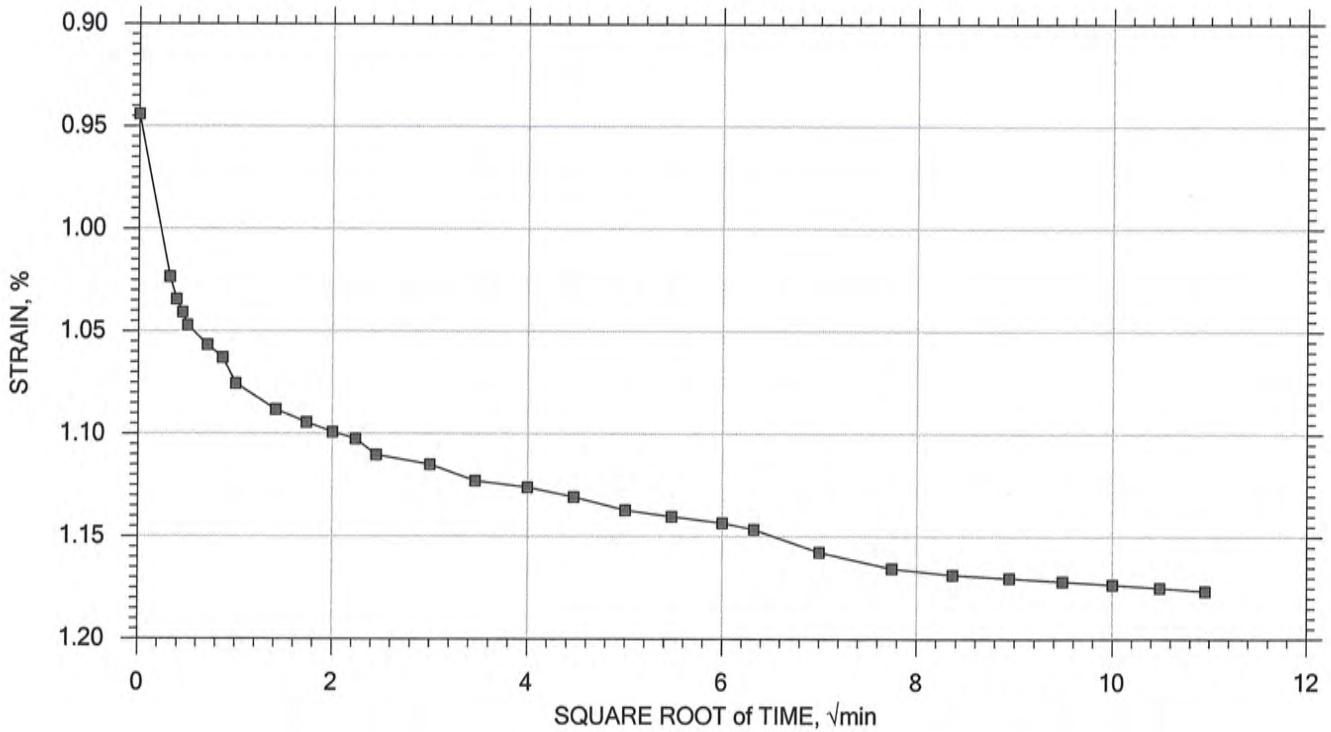
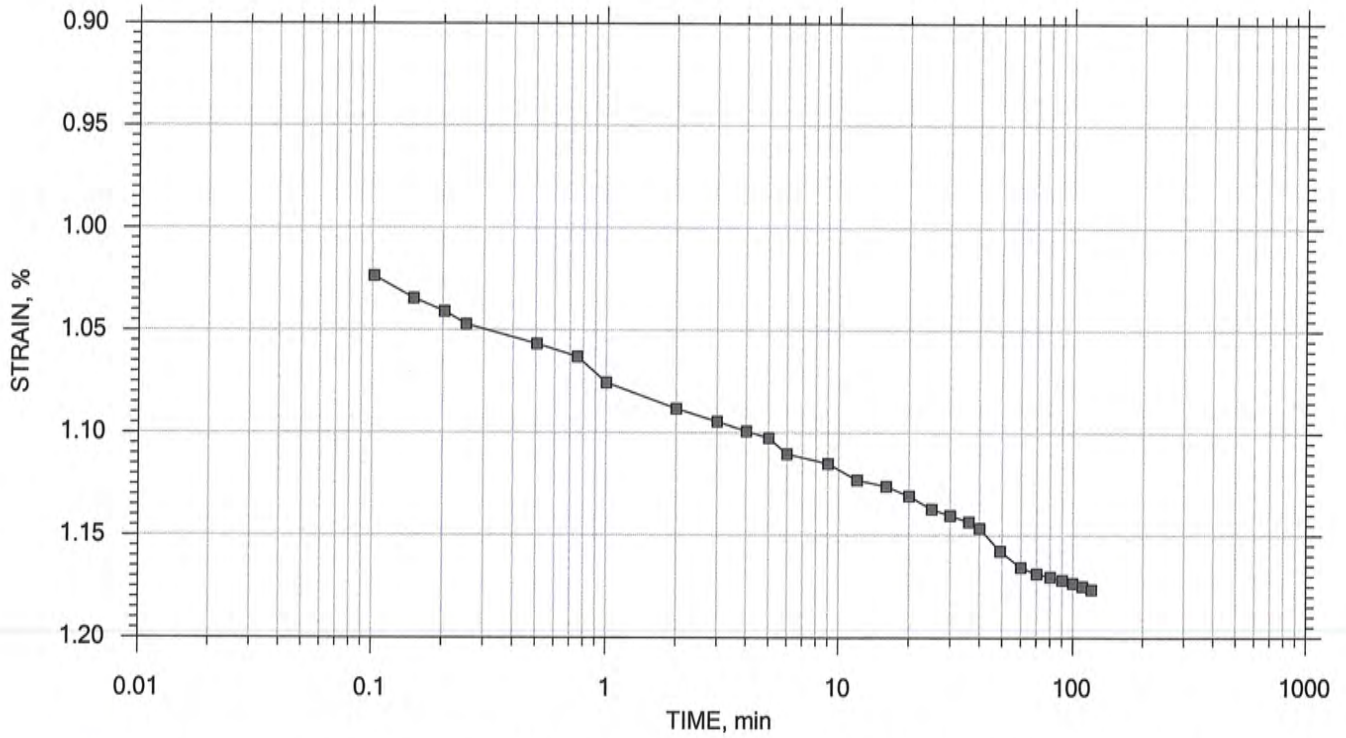
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 4 of 20

Stress: 500 psf



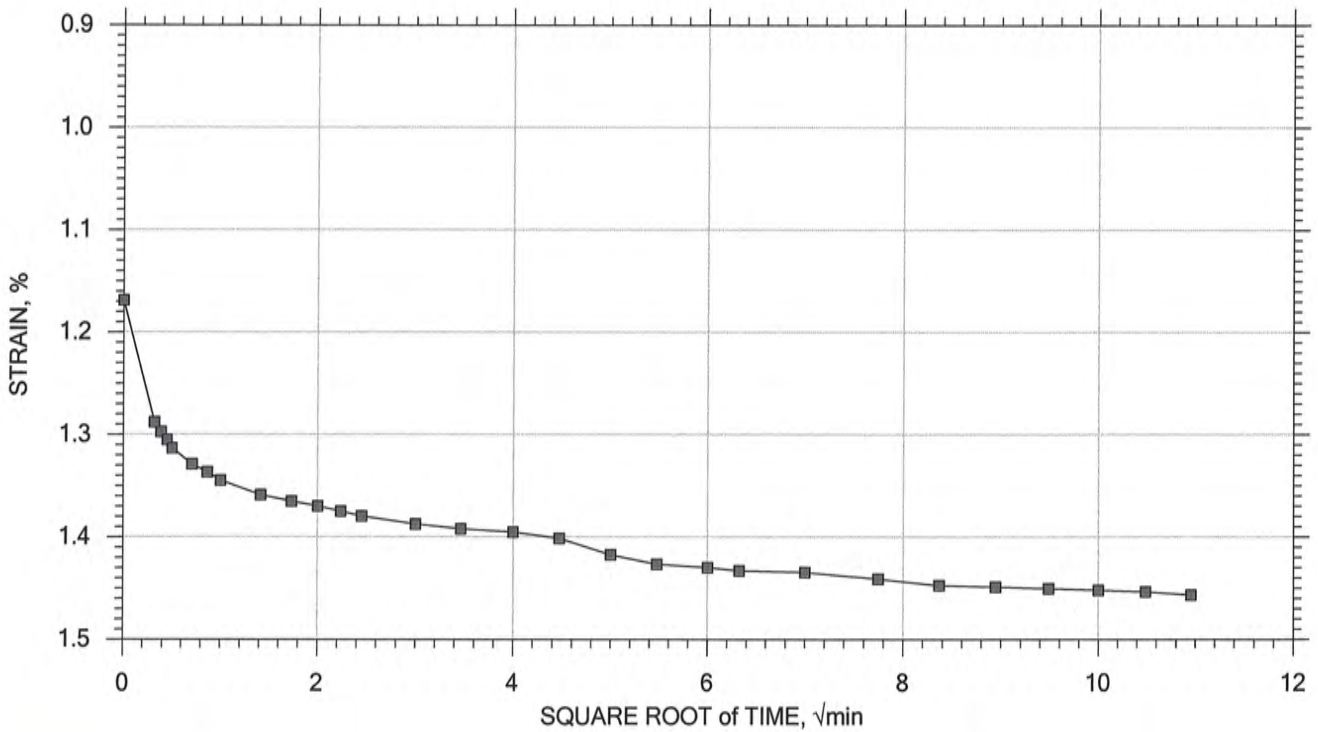
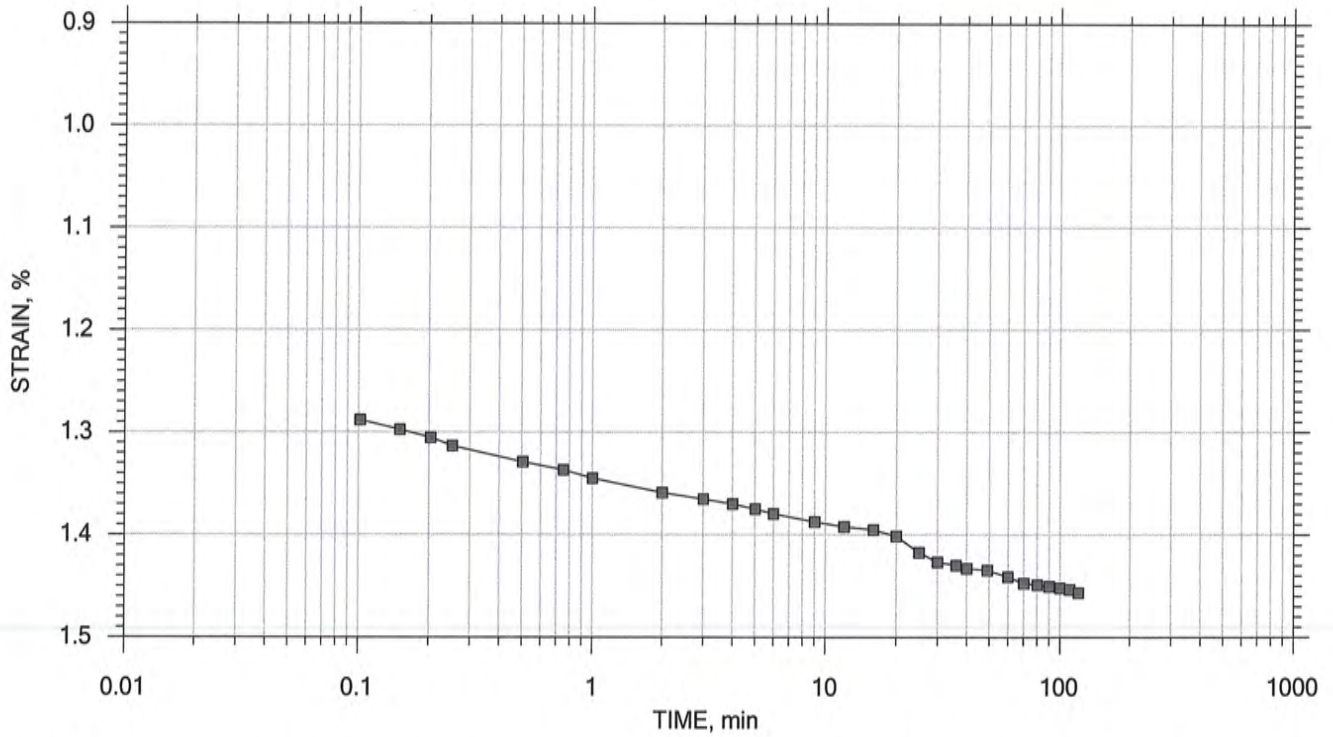
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 5 of 20

Stress: 750 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

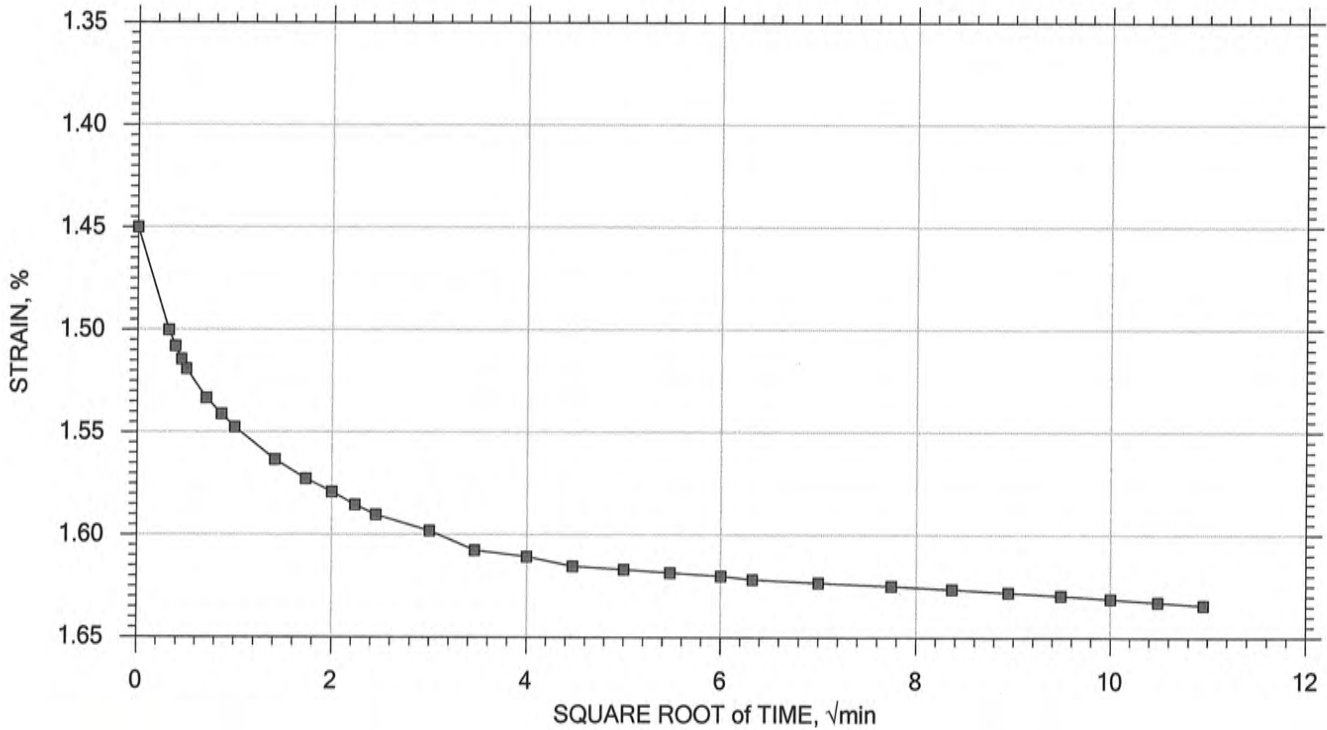
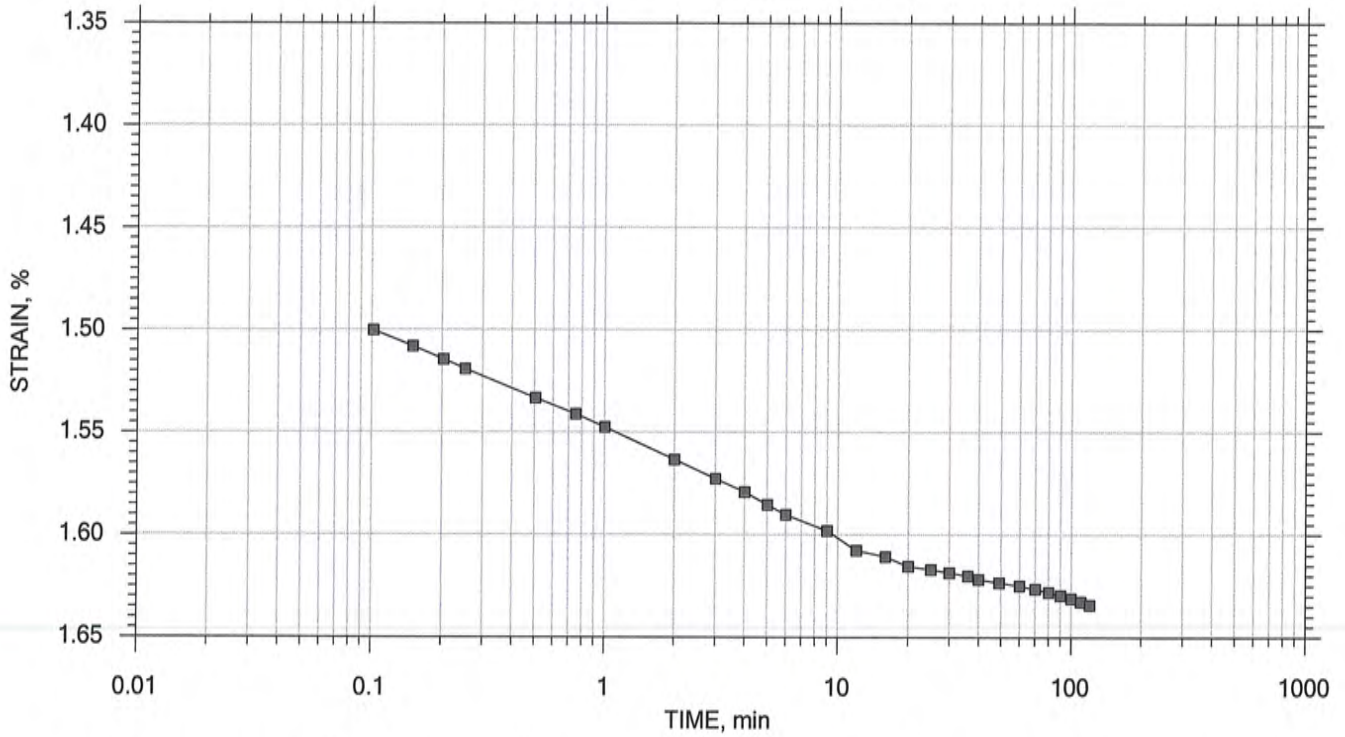



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 6 of 20

Stress: 1000 psf



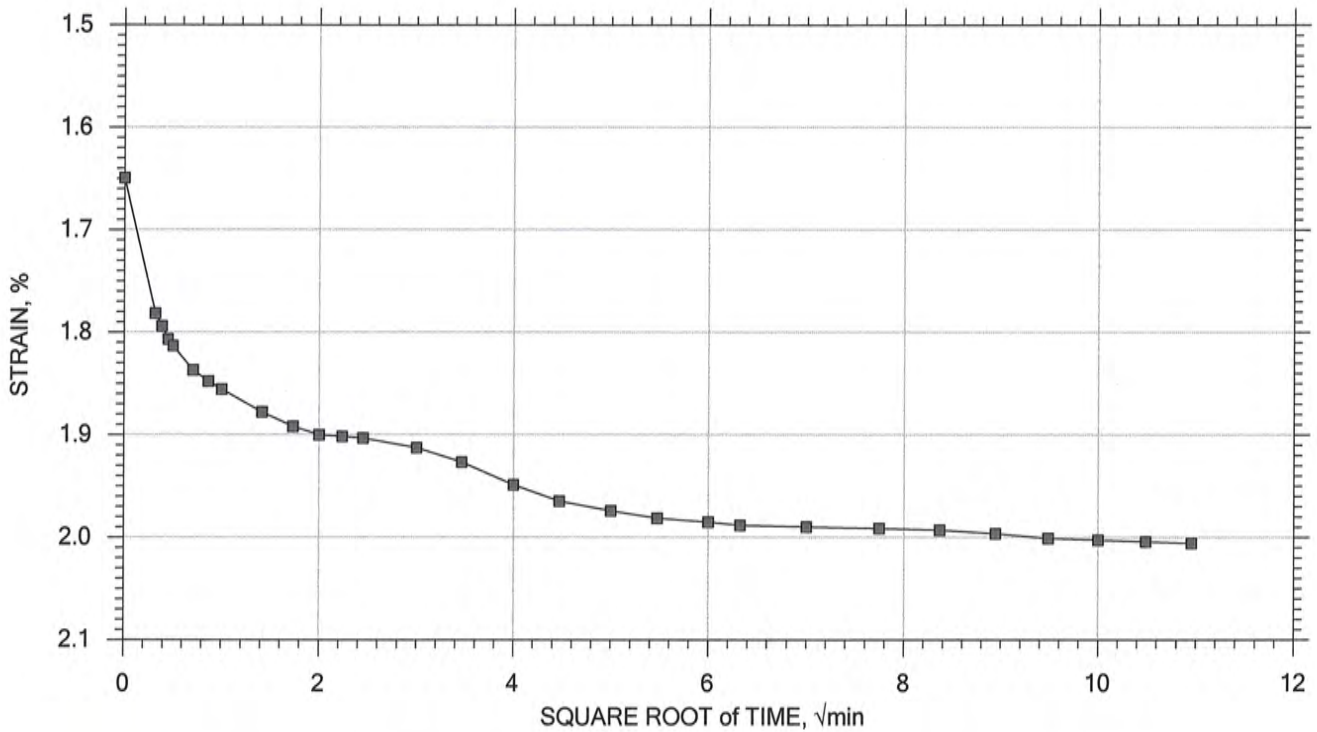
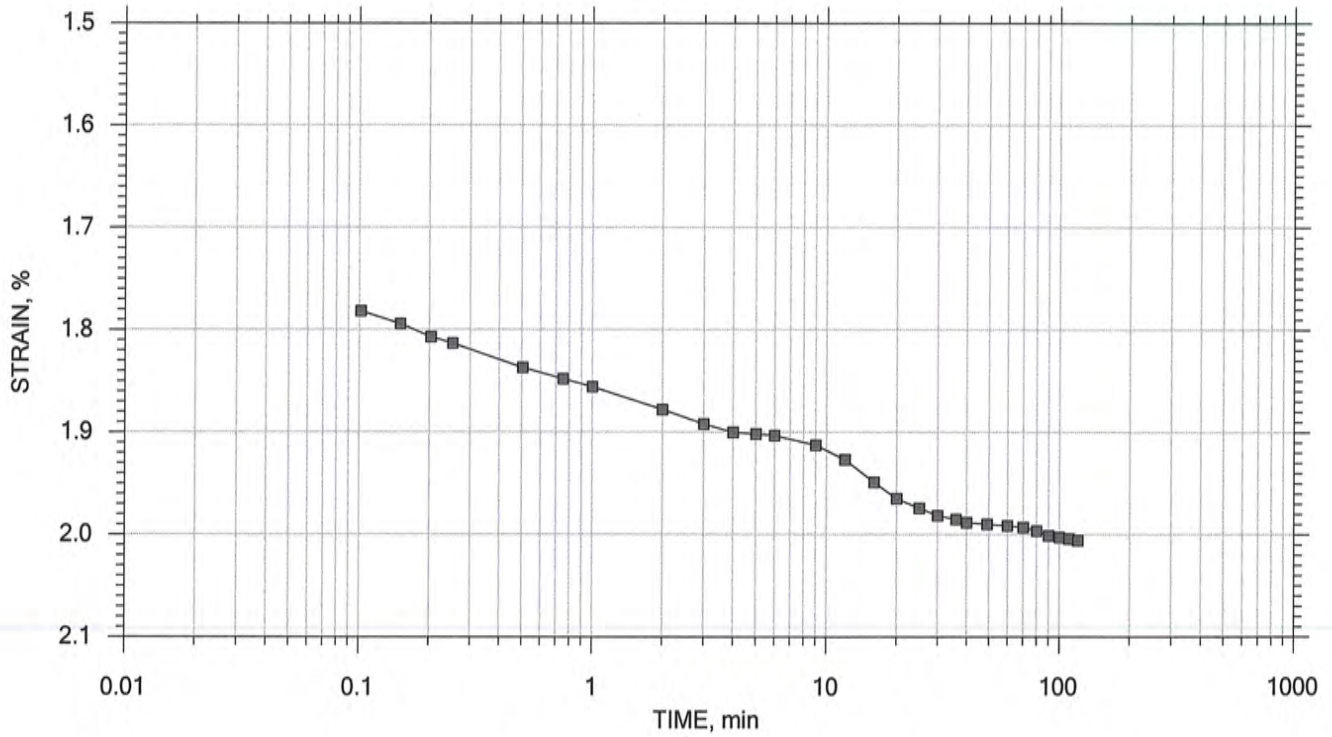
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 7 of 20

Stress: 1500 psf



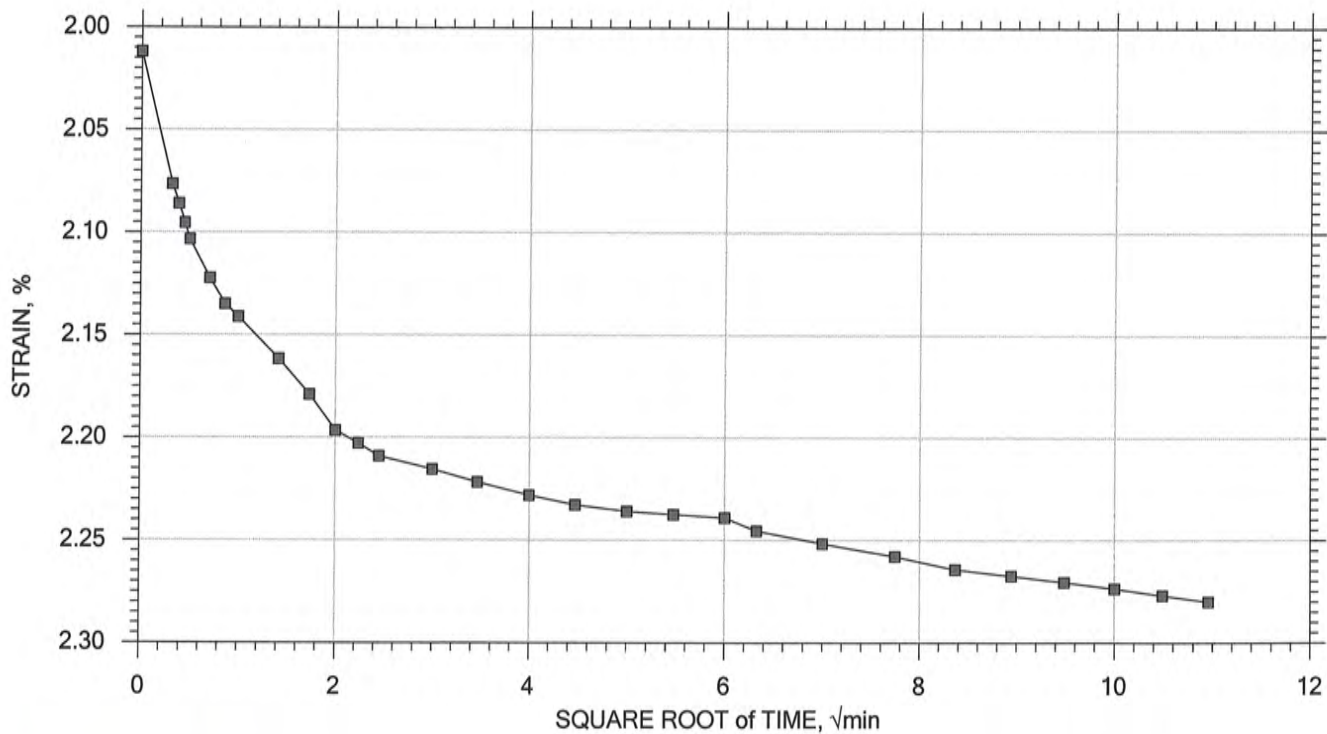
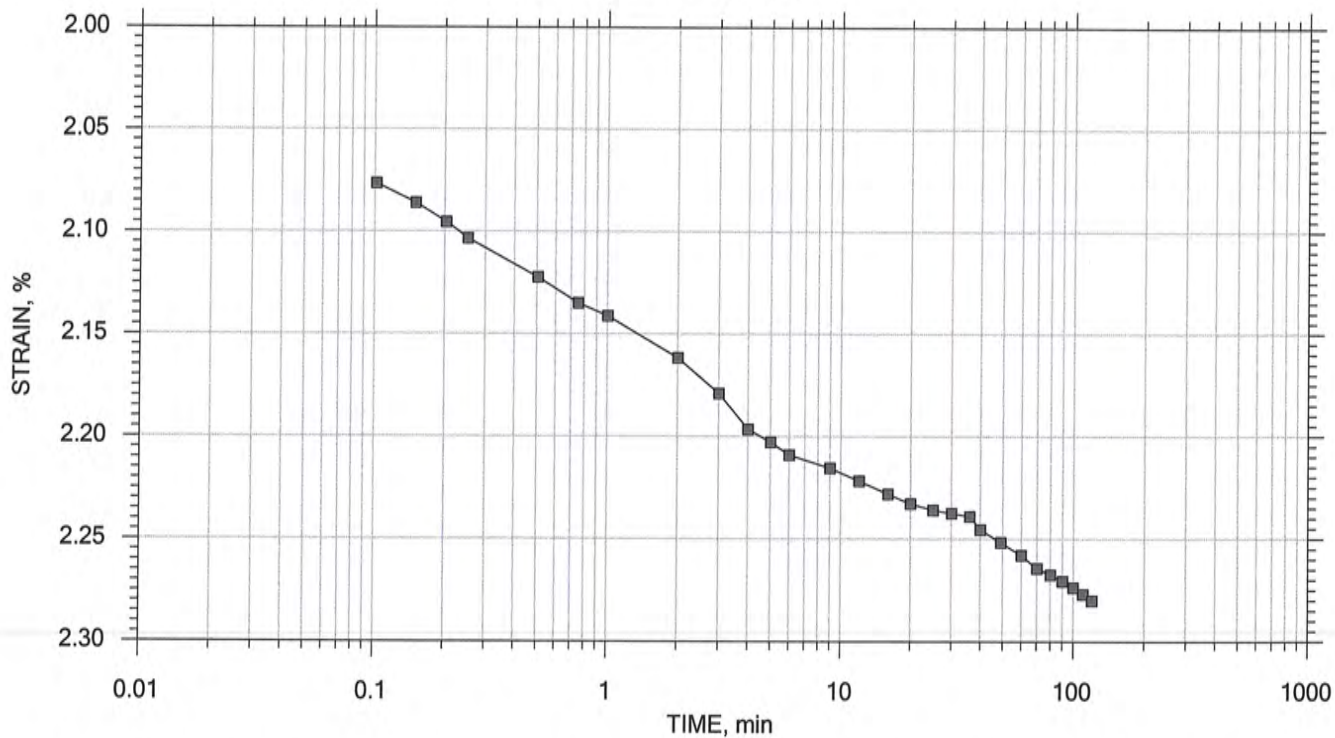
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 8 of 20

Stress: 2000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

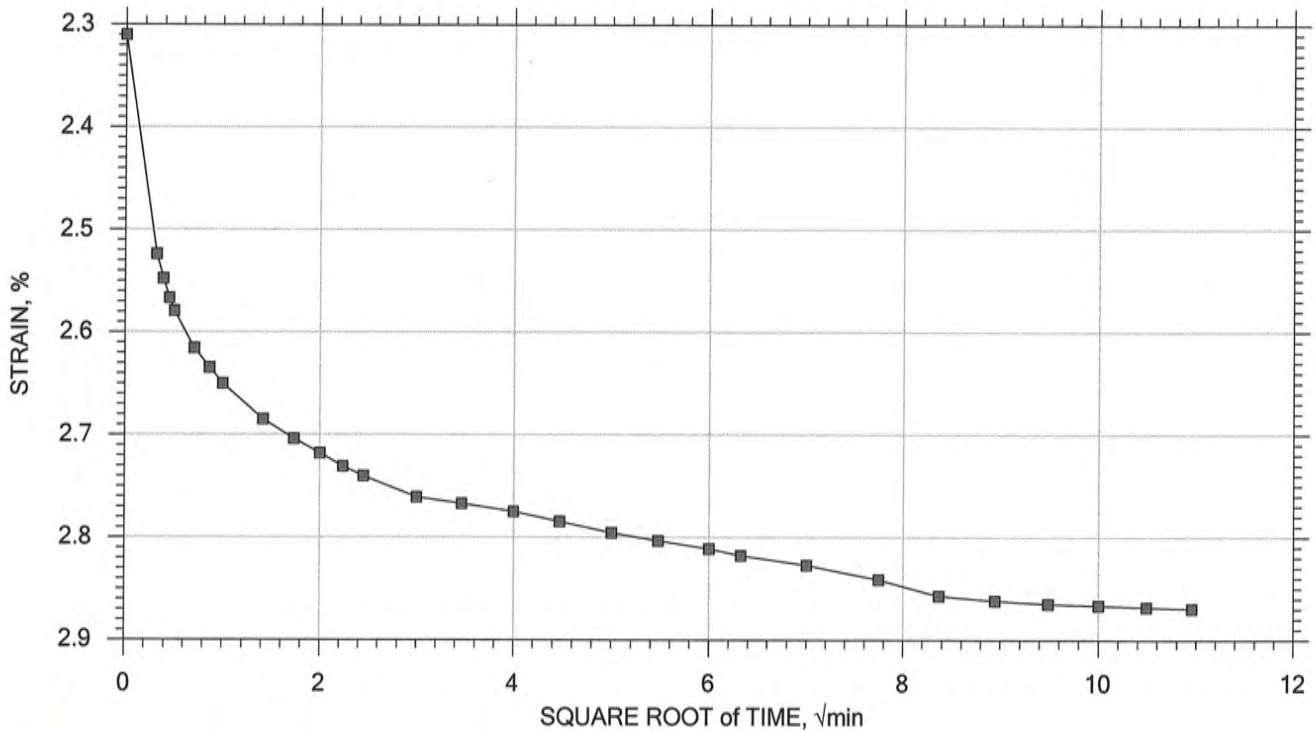
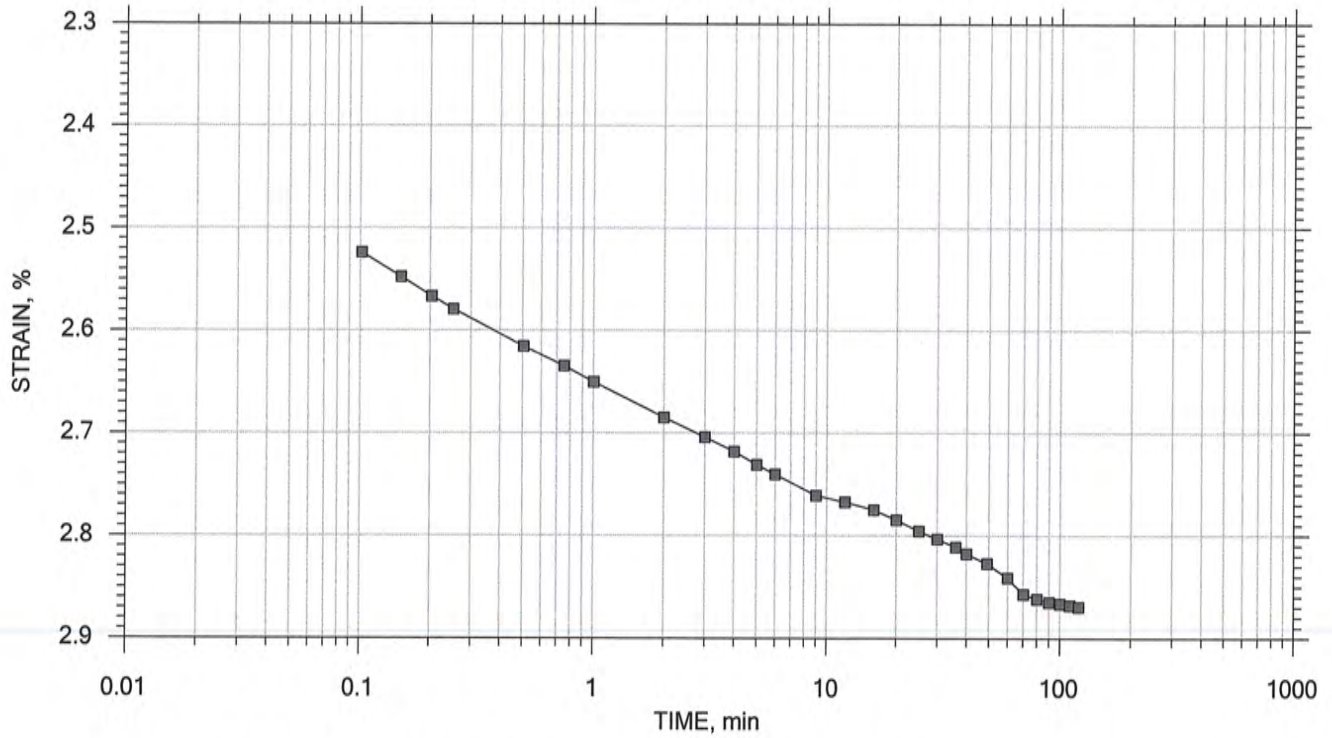



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 9 of 20

Stress: 3000 psf



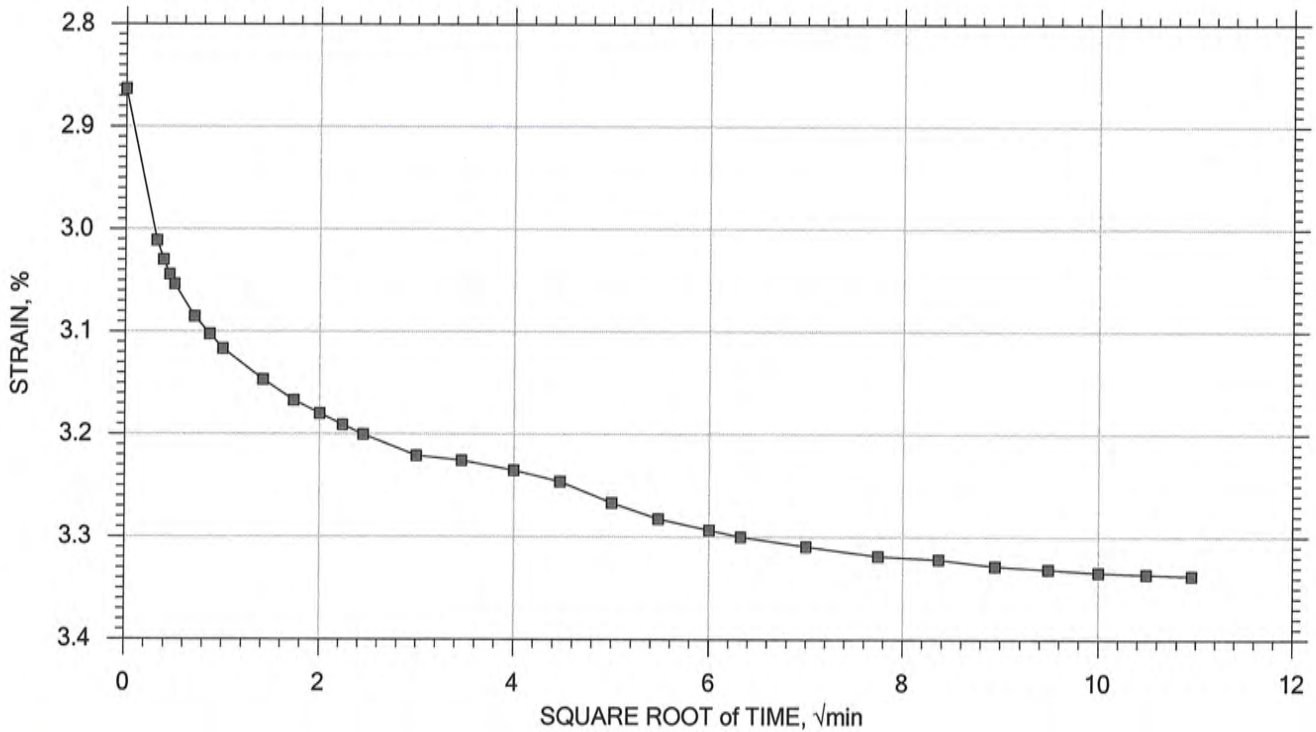
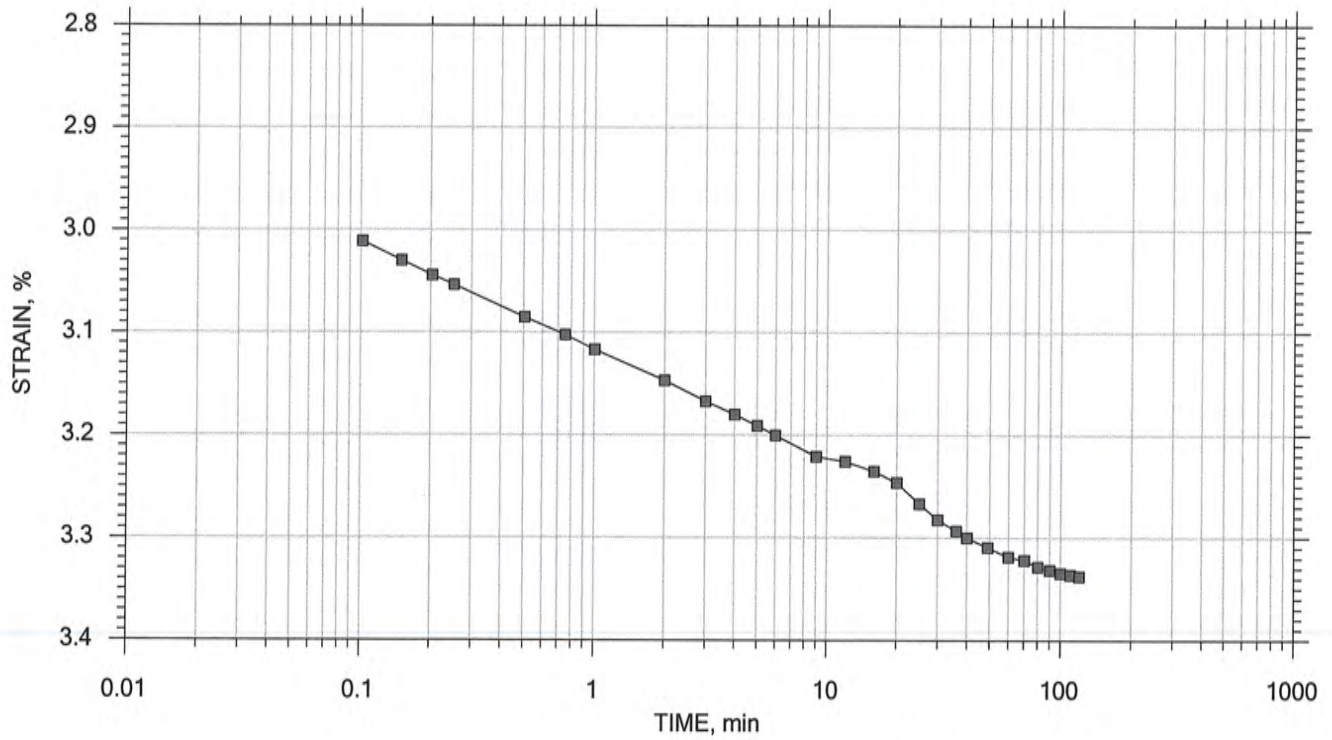
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 10 of 20

Stress: 4000 psf



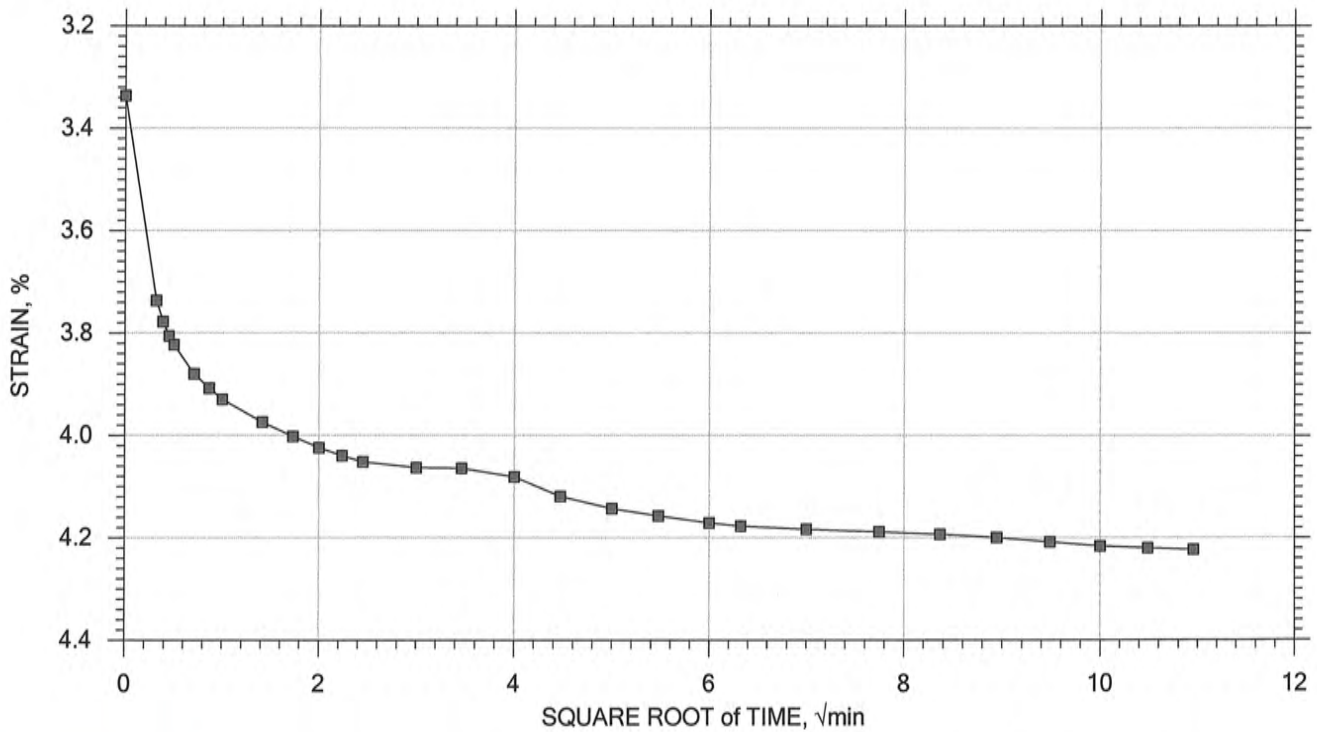
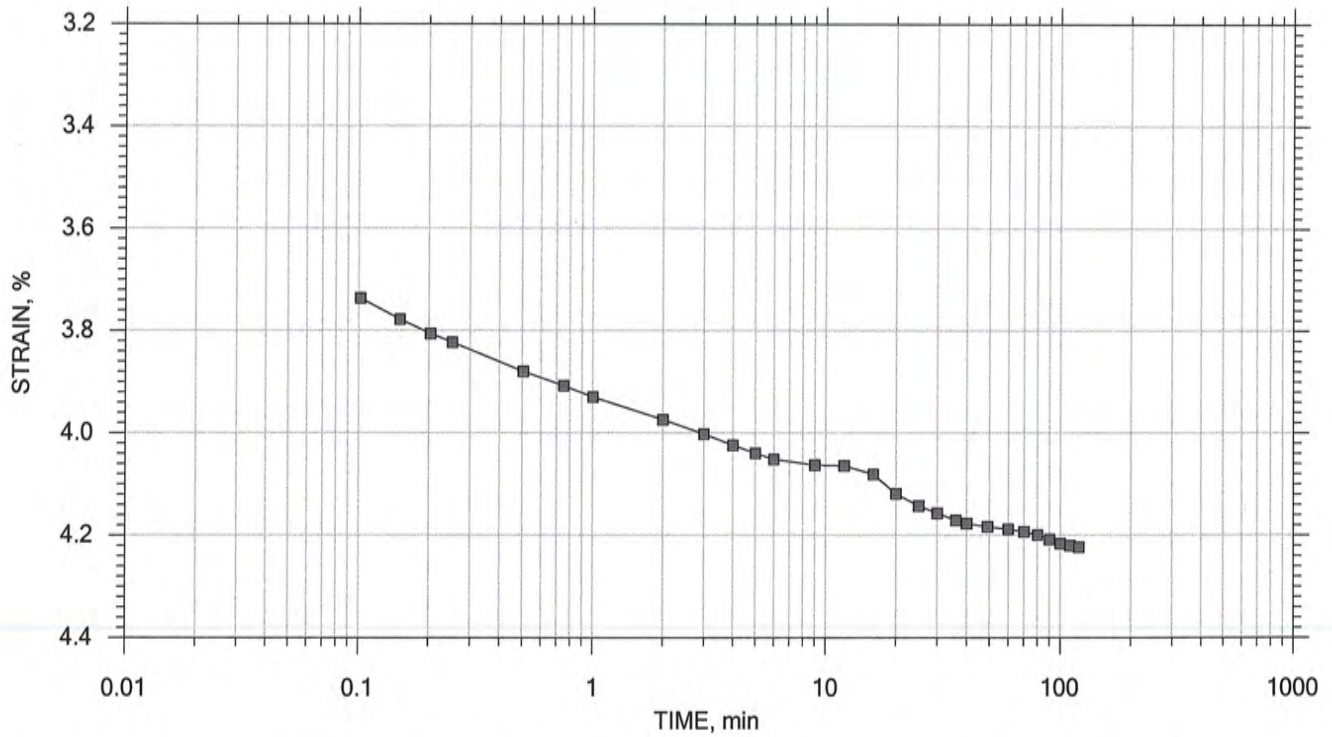
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 11 of 20

Stress: 6000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

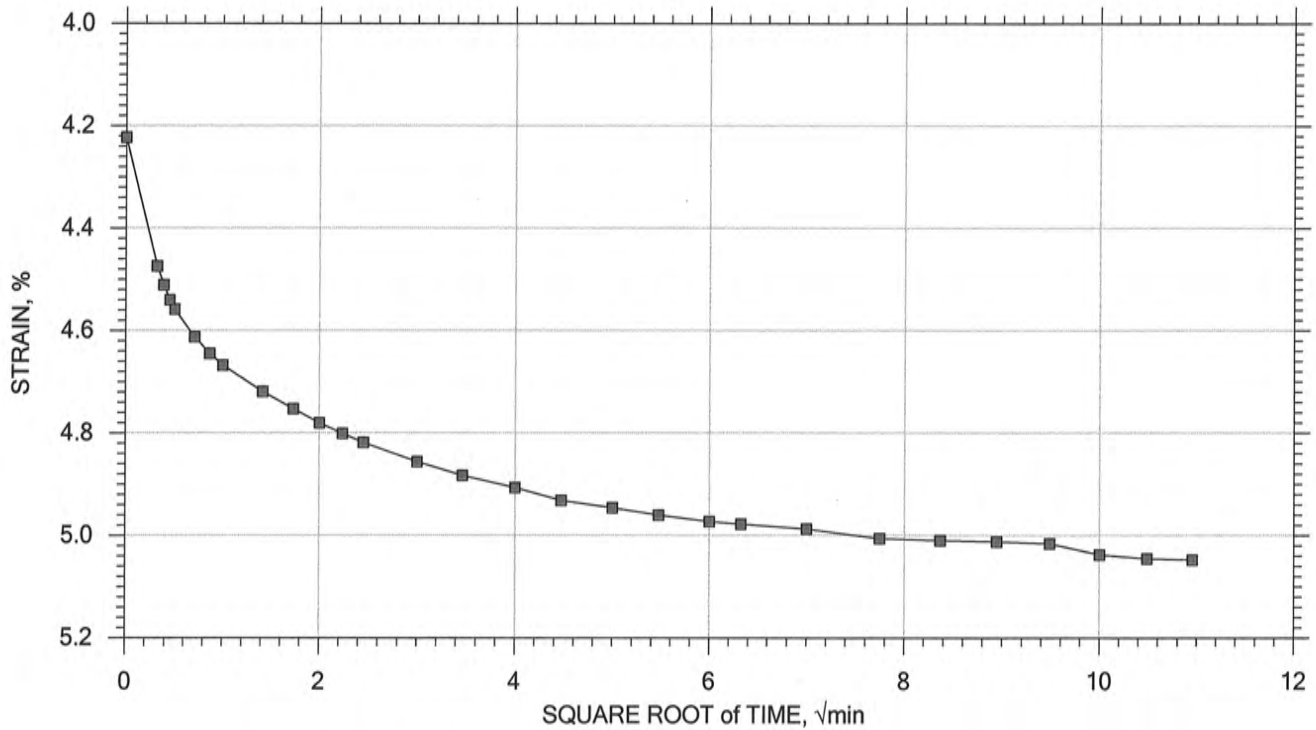
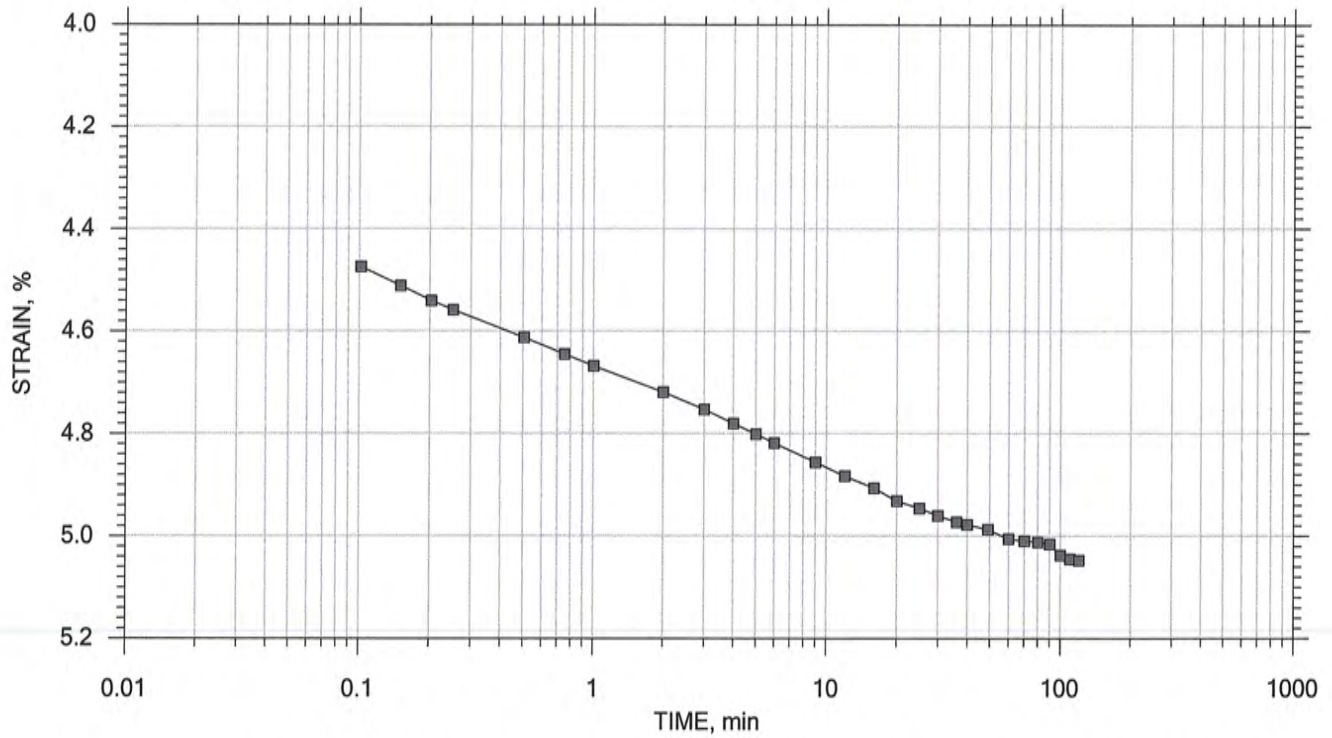



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 12 of 20

Stress: 8000 psf



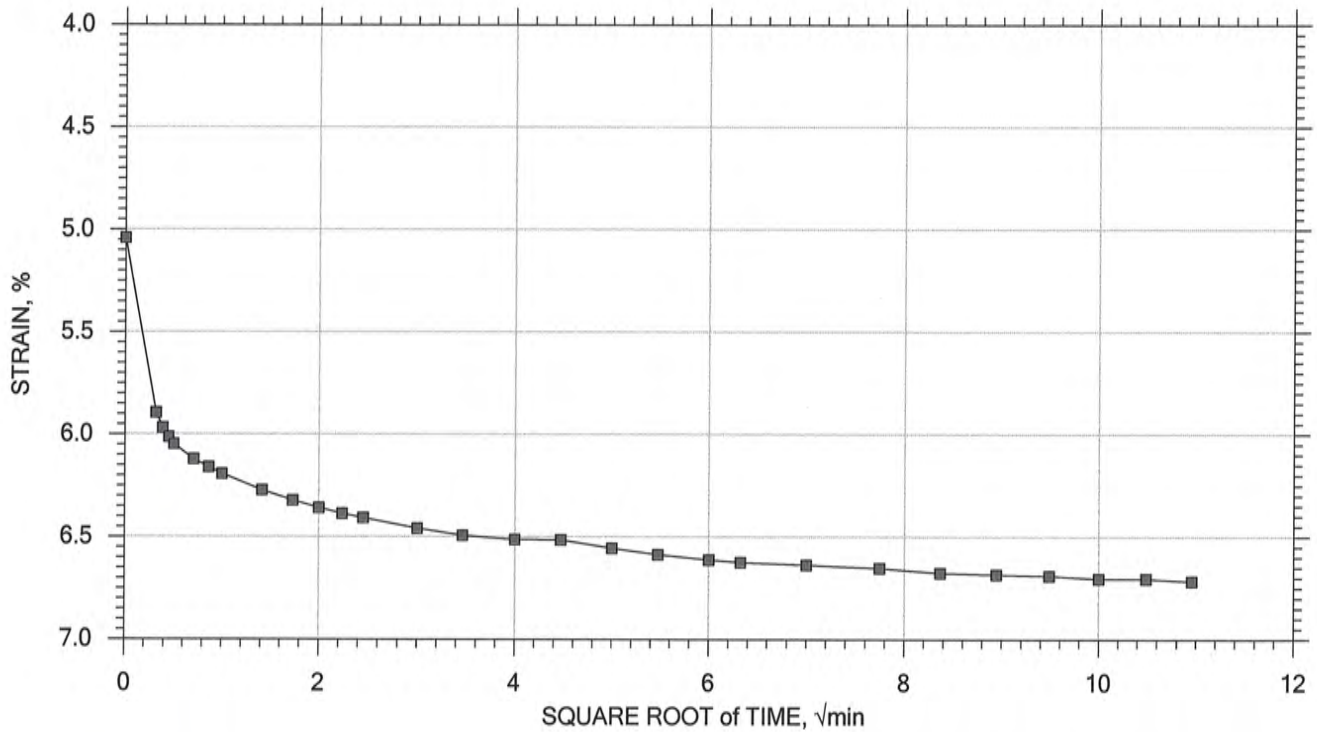
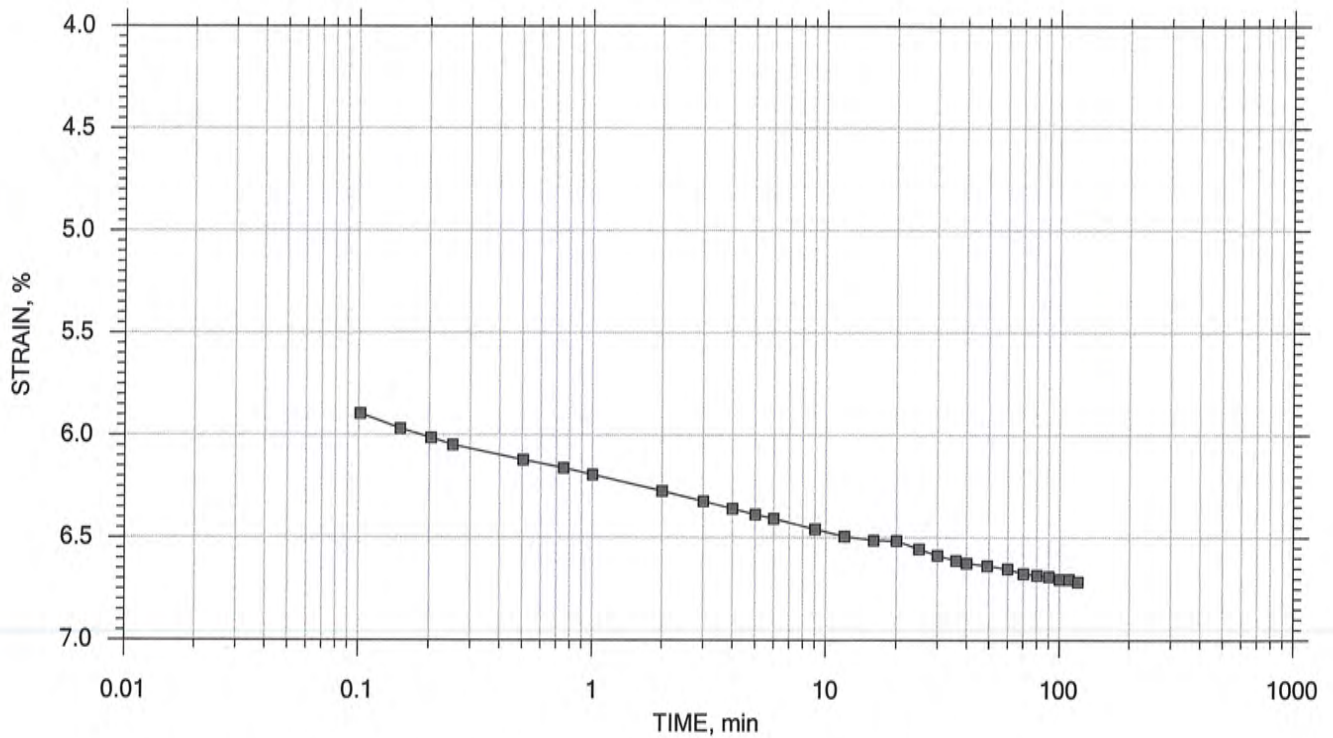
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 13 of 20

Stress: 12000 psf



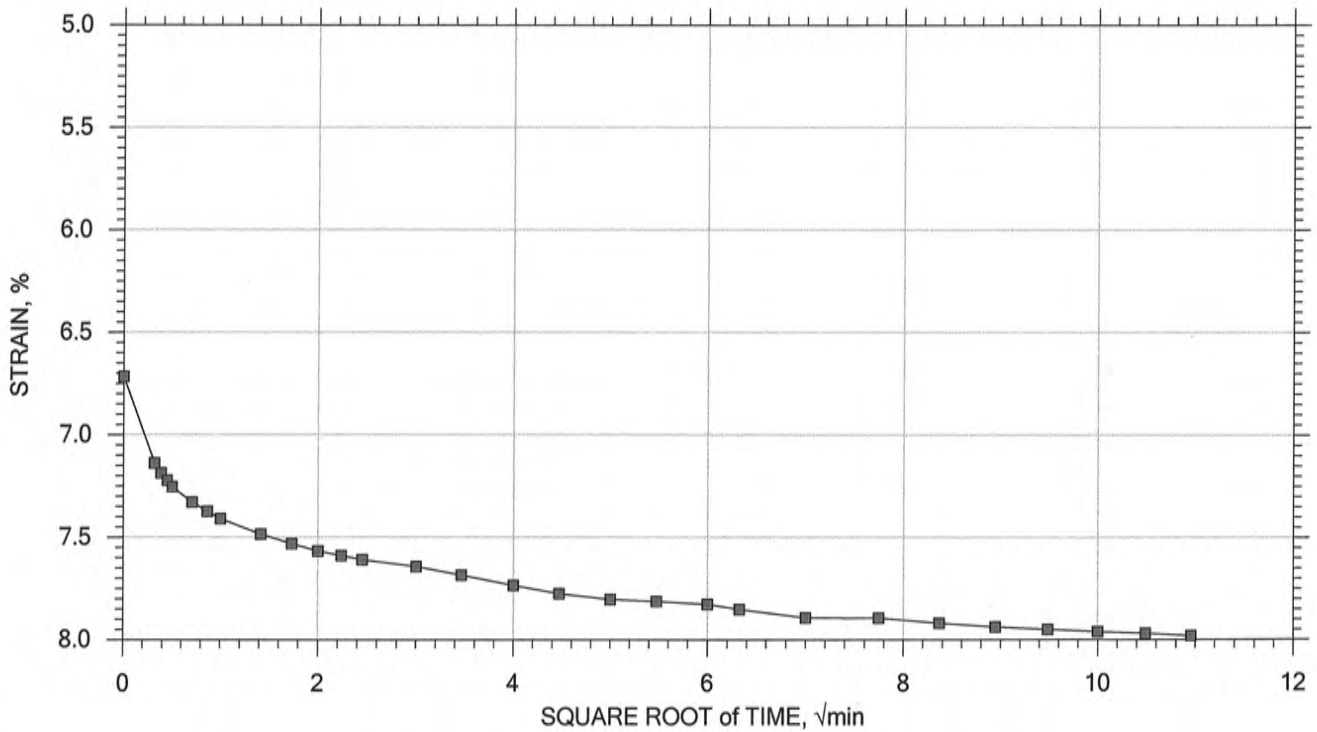
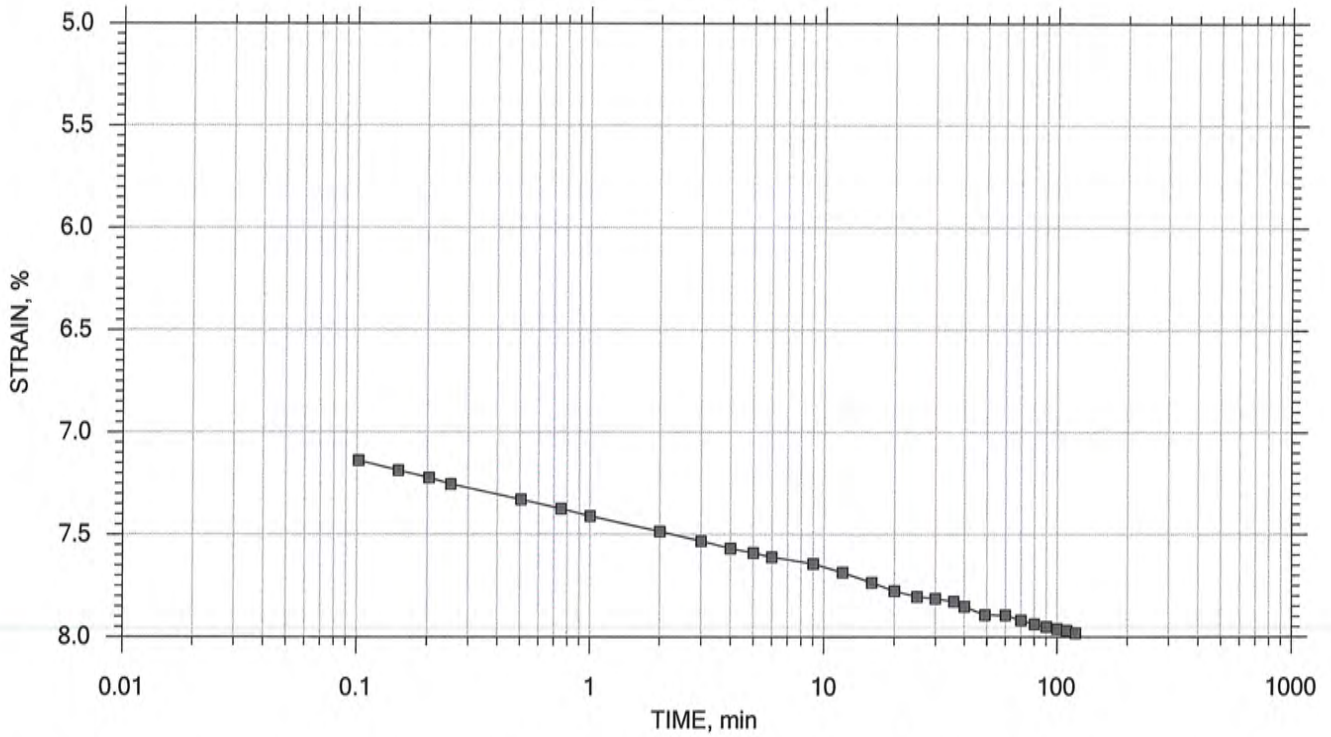
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 14 of 20

Stress: 16000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

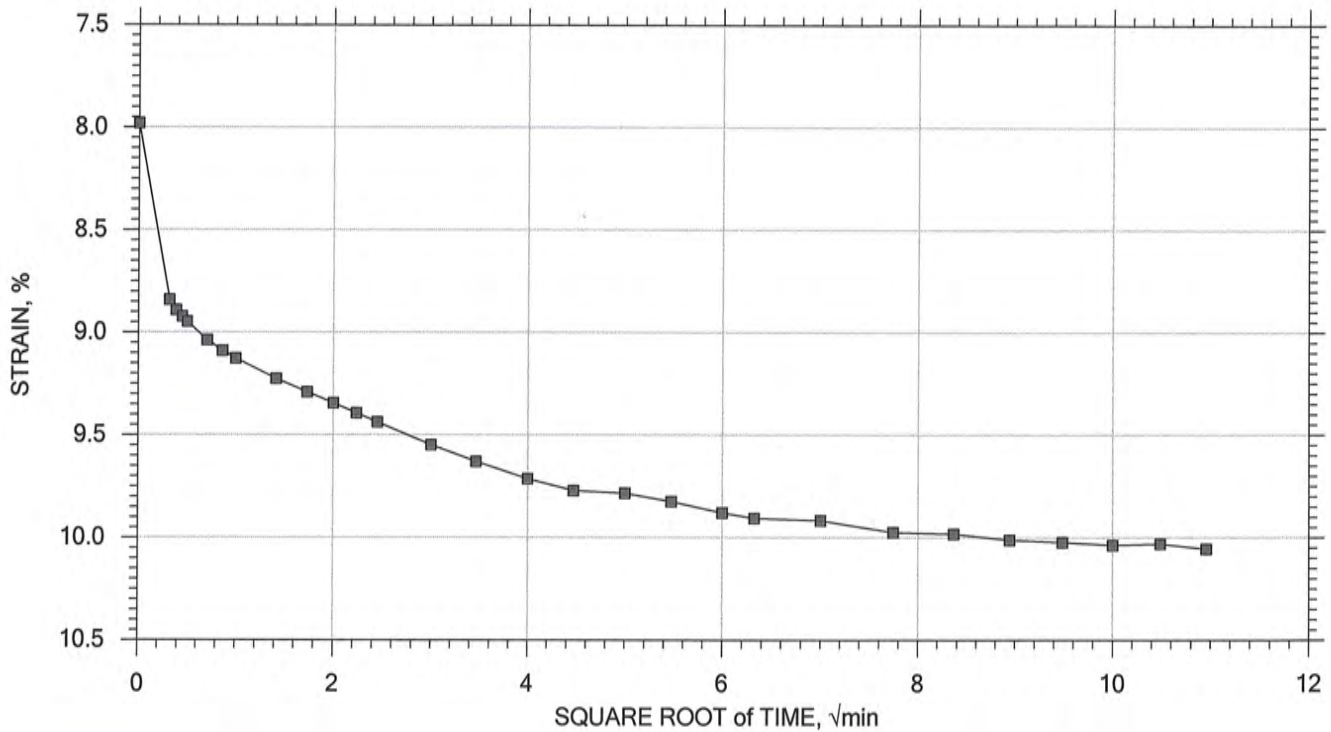
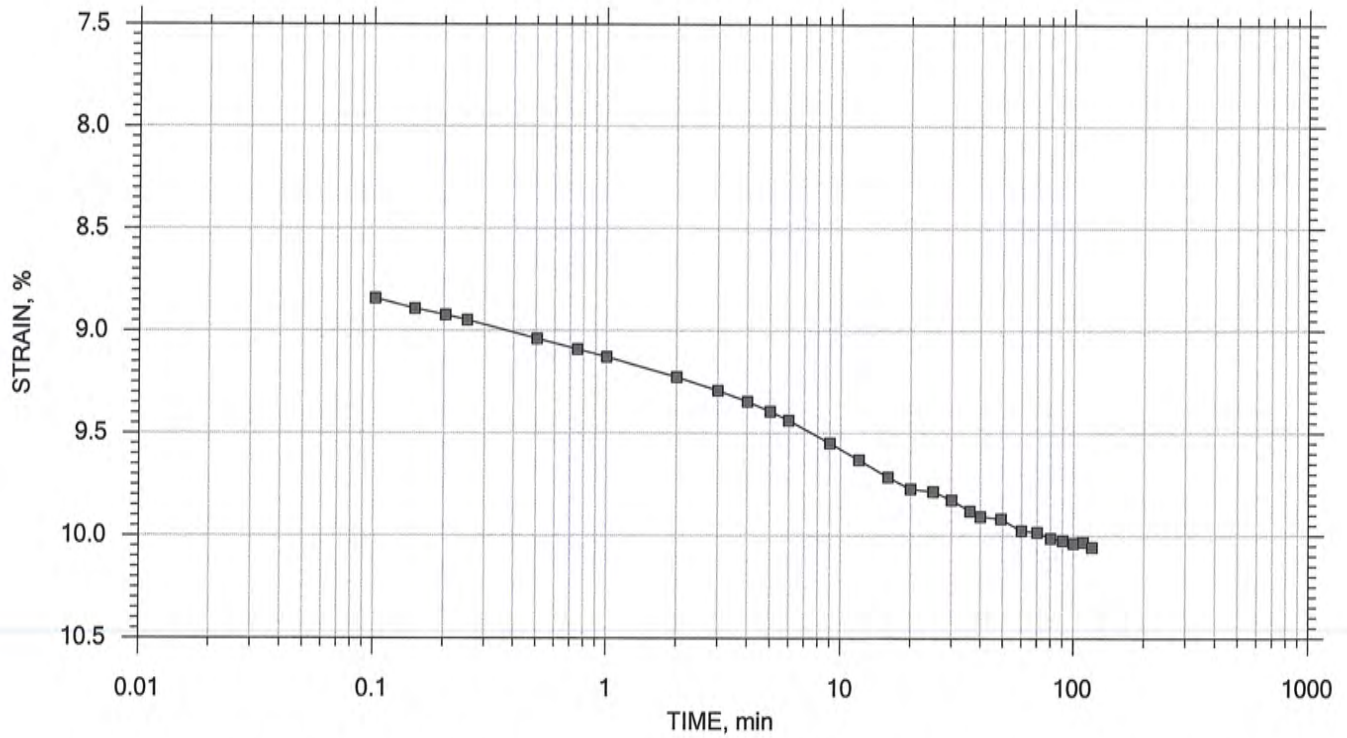



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 15 of 20

Stress: 24000 psf



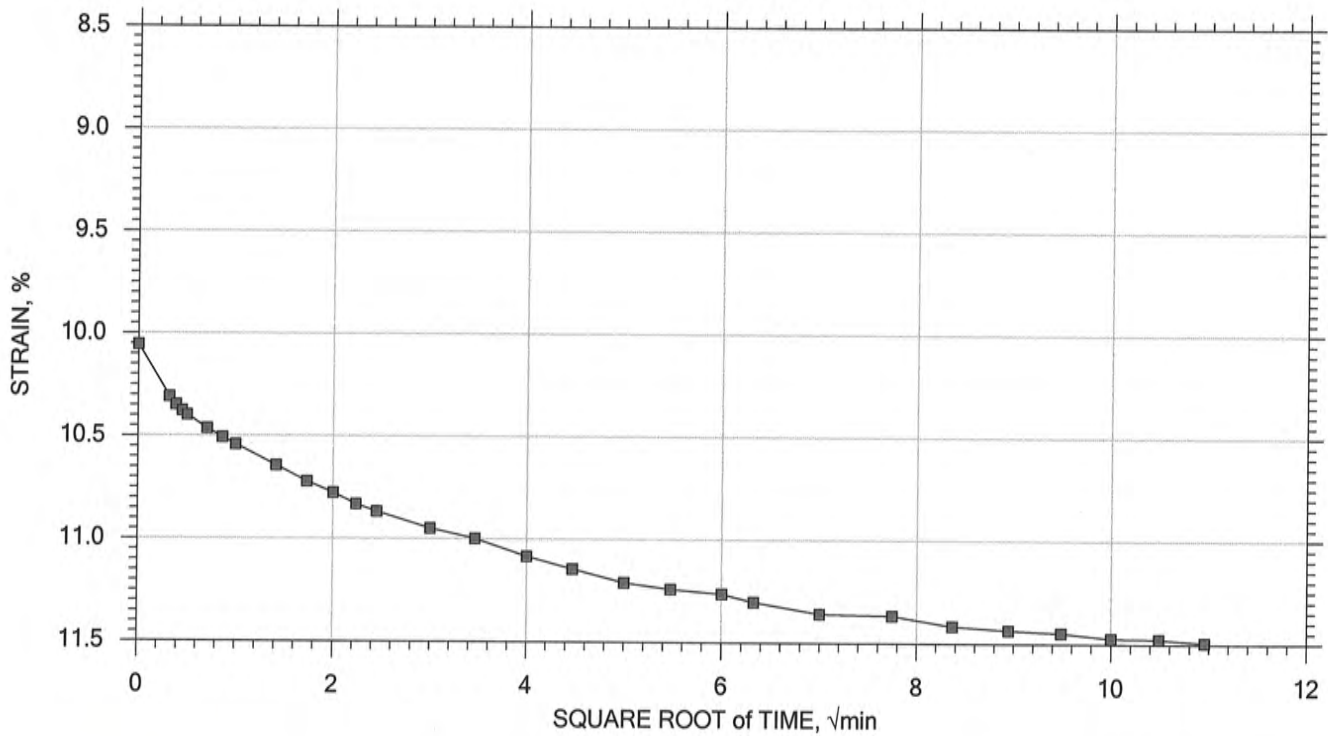
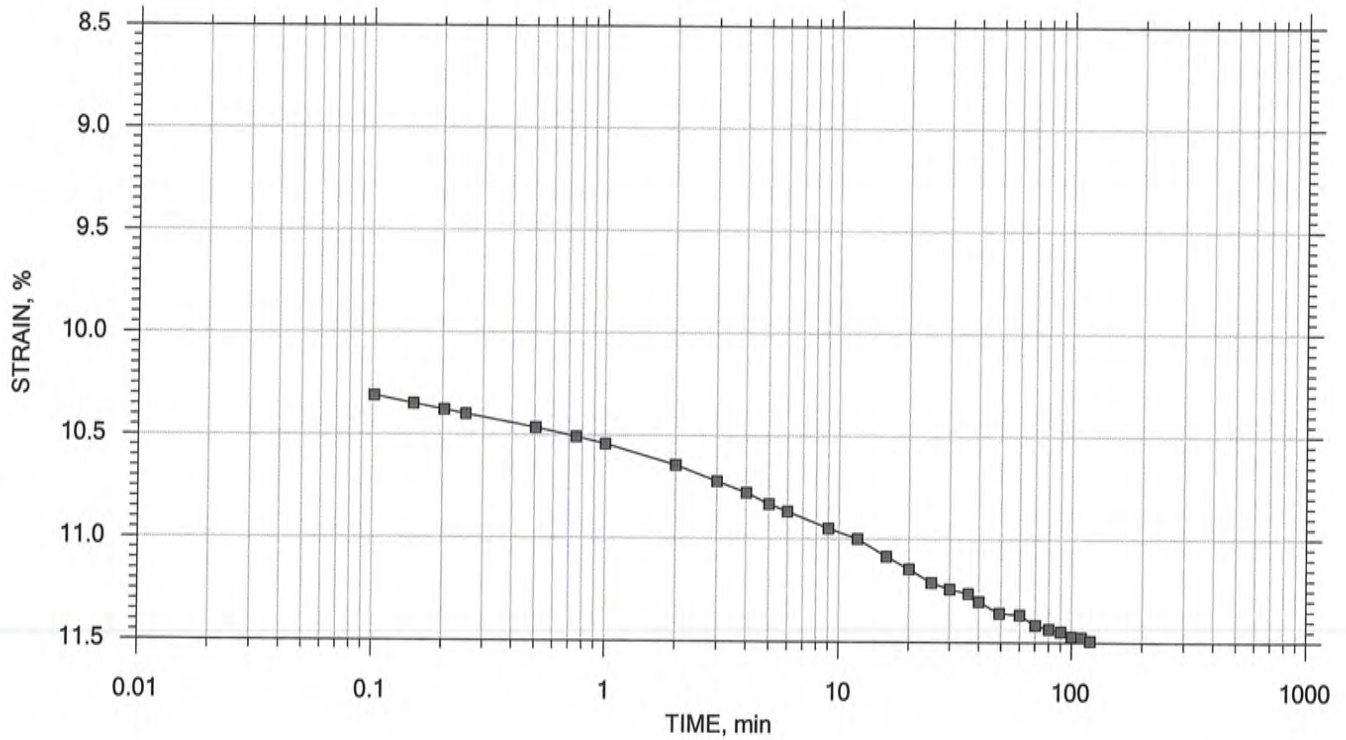
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 16 of 20

Stress: 32000 psf



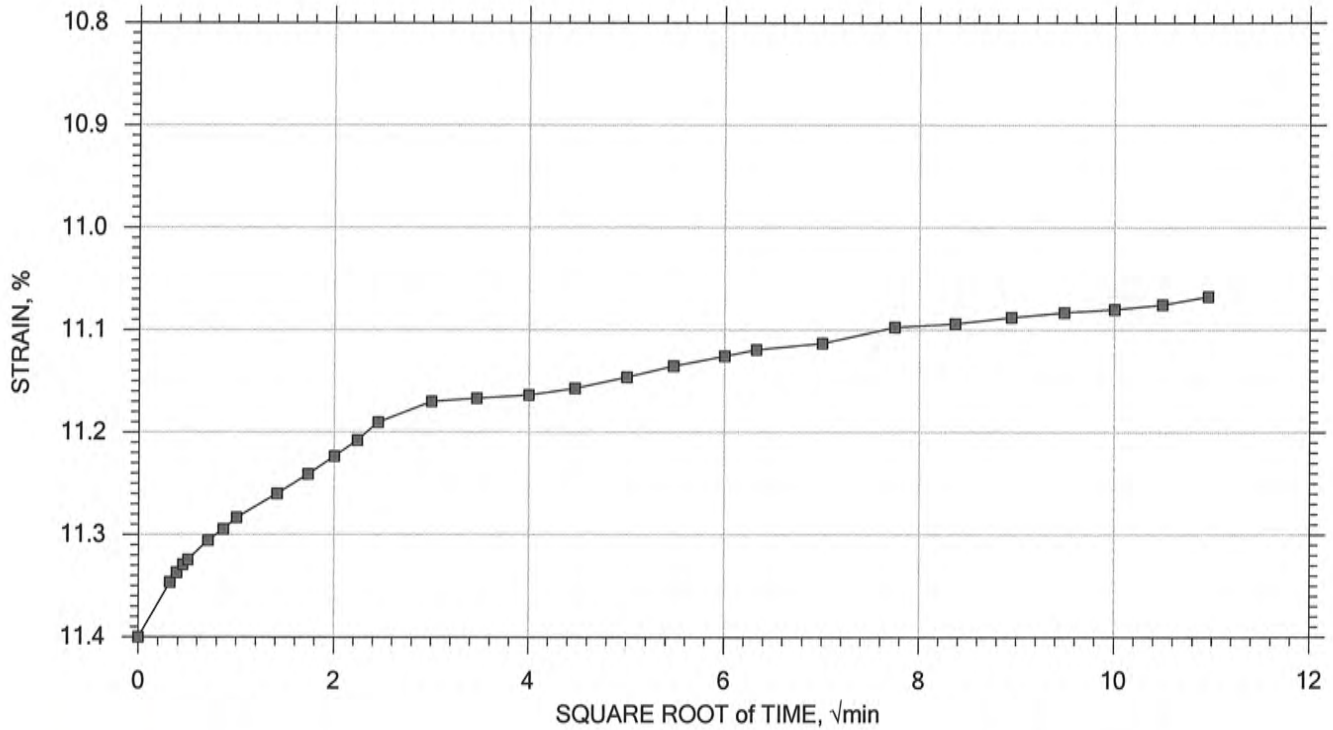
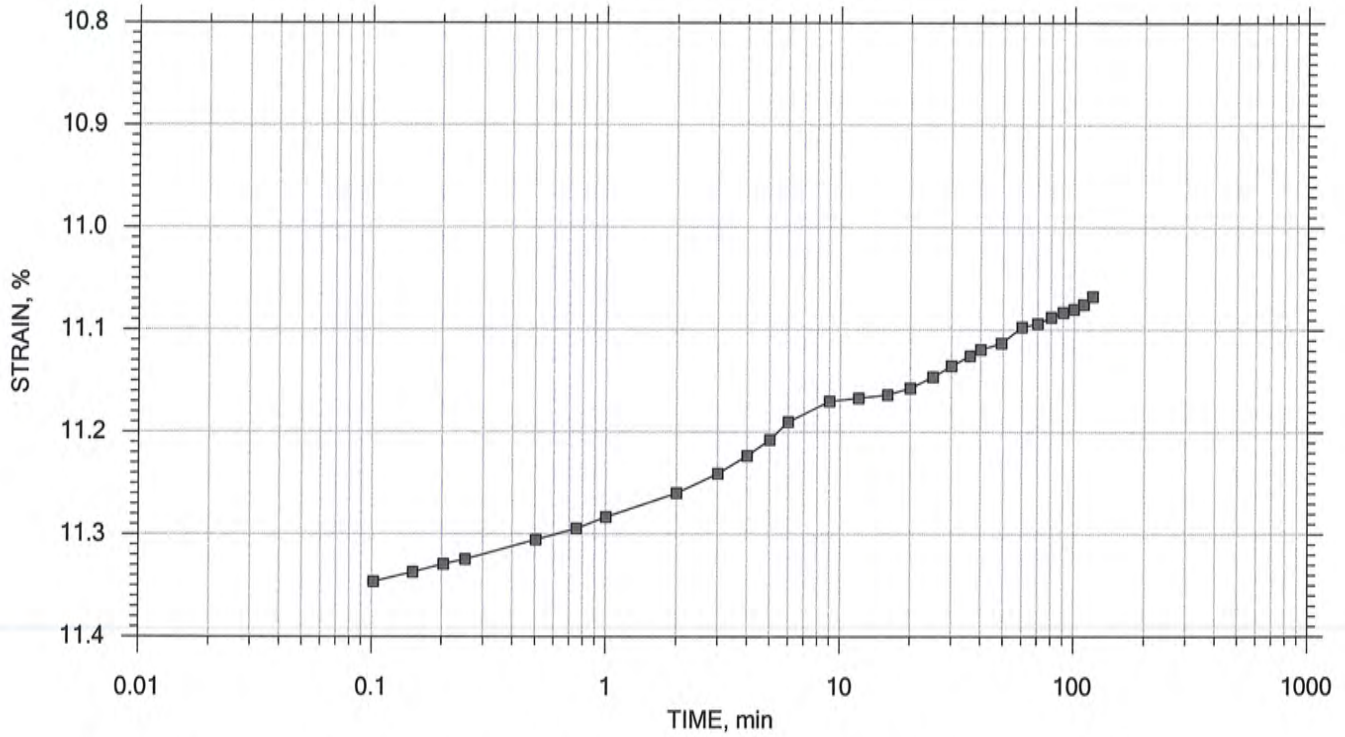
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 17 of 20

Stress: 16000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		

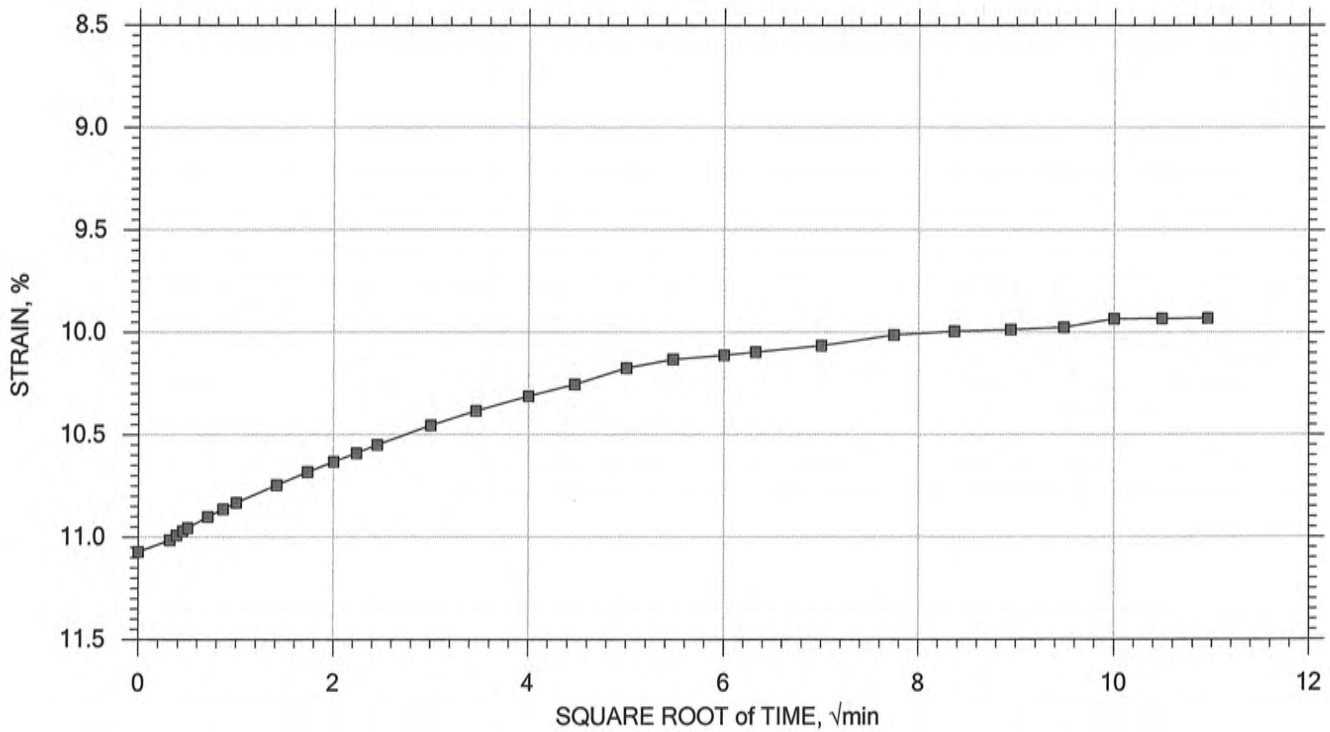
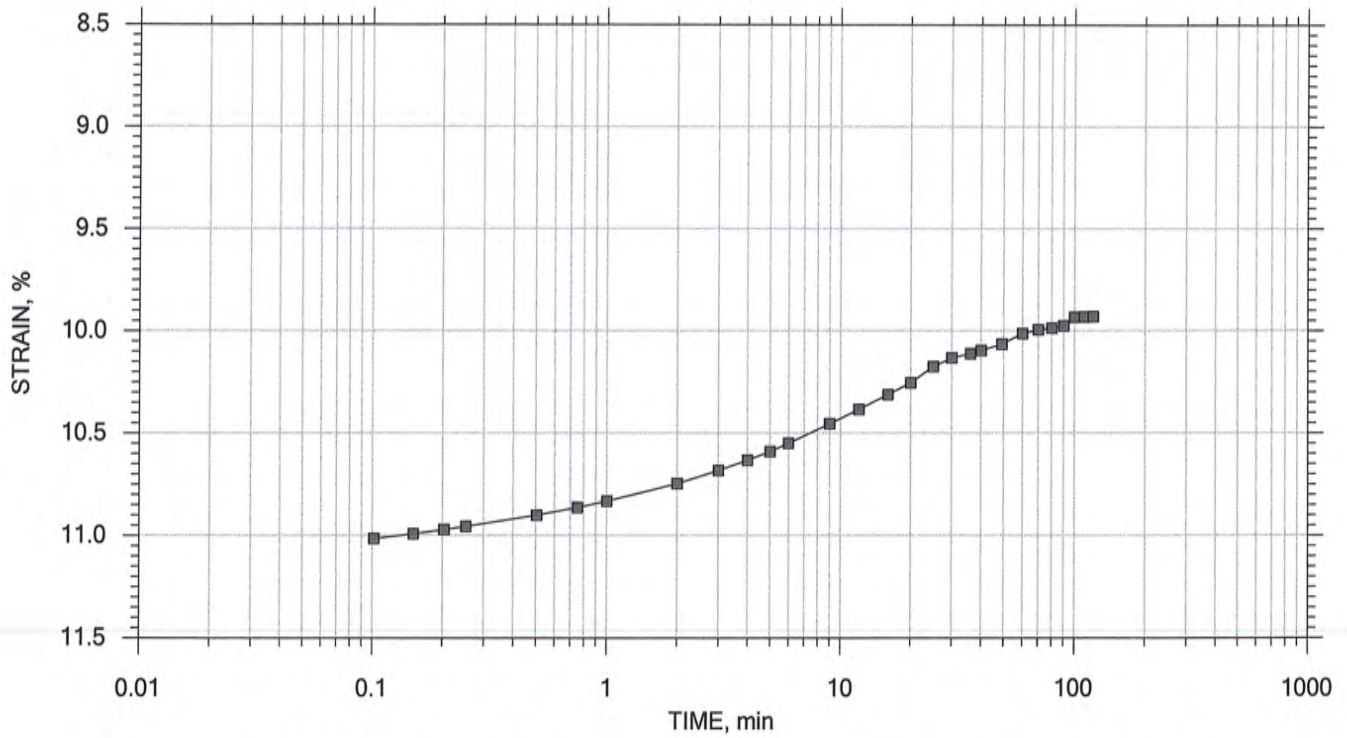



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 18 of 20

Stress: 4000 psf



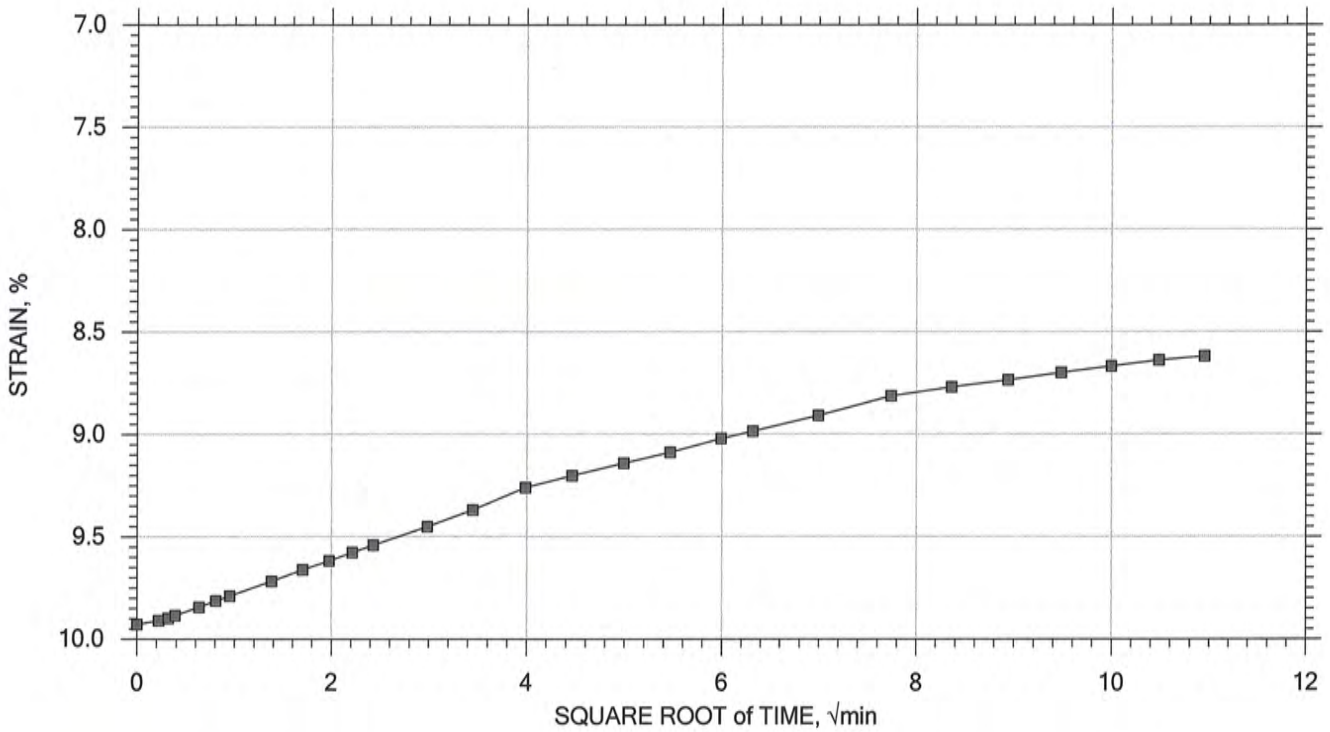
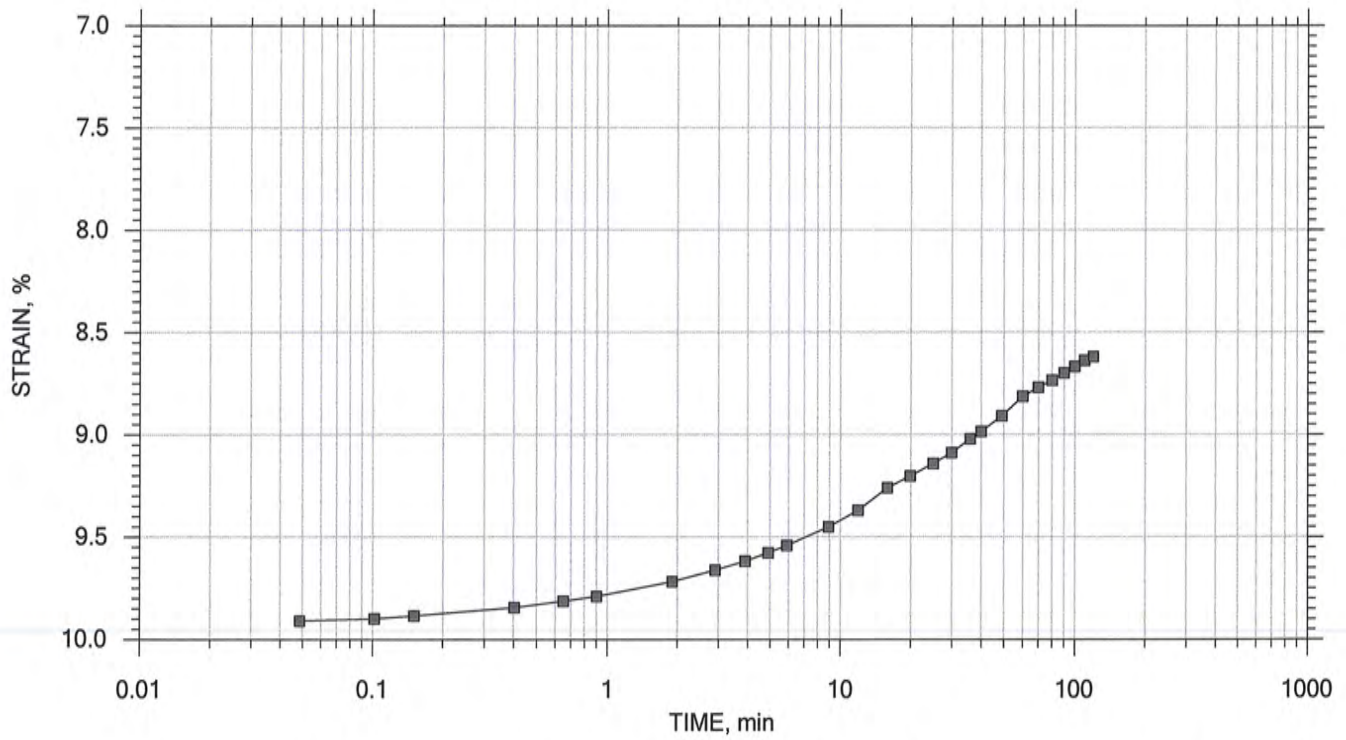
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 19 of 20

Stress: 1000 psf



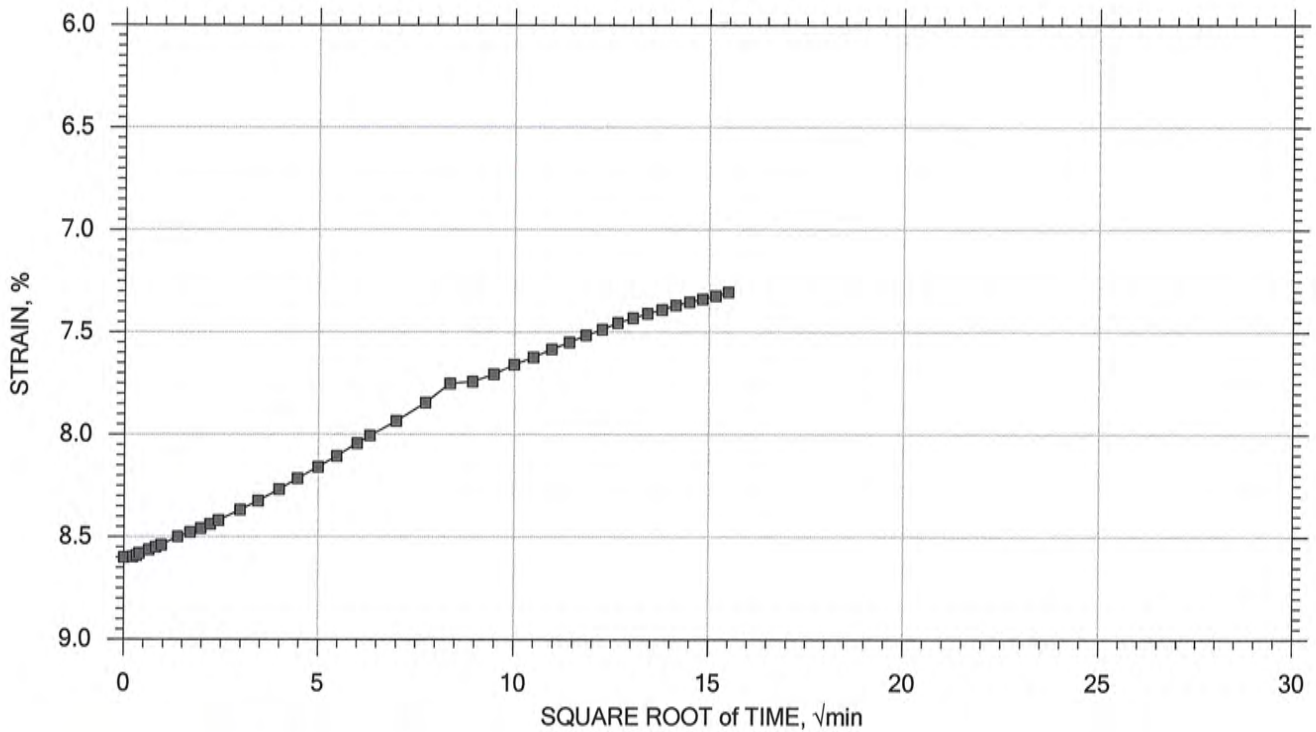
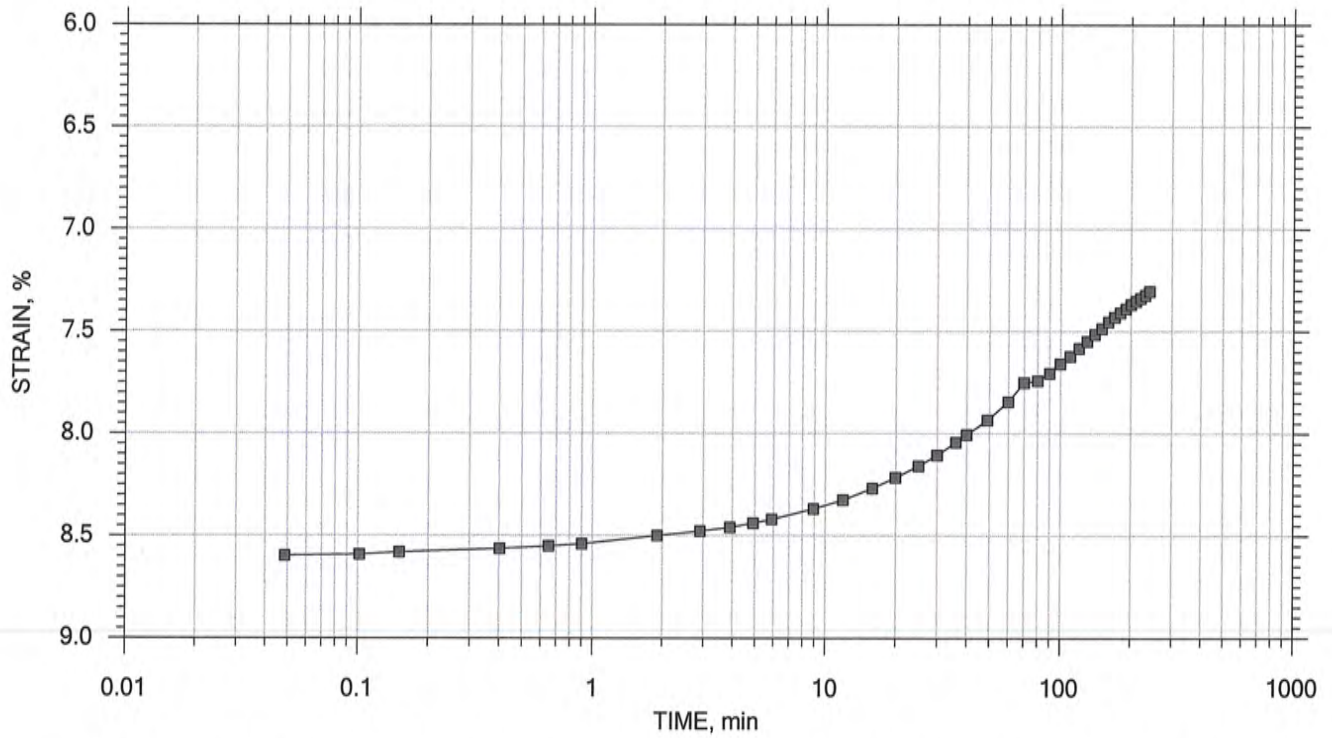
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 20 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/18/15	Test No.: IP-3
	Depth: 4-6 ft	Sample Type: intact	Elevation: ---
	Description: Moist, mottled red and yellowish brown clay with sand		
	Remarks: System 5077		



The first part of the document discusses the importance of maintaining accurate records of all transactions. This includes not only sales and purchases but also any other financial activities that may occur during the course of the business. It is essential to ensure that all records are kept in a clear and organized manner, and that they are readily accessible at all times.

In addition, it is important to ensure that all records are kept for the appropriate period of time. This is typically determined by the relevant tax authorities, and it is essential to ensure that all records are kept for the full period required.

The second part of the document discusses the importance of maintaining accurate records of all assets and liabilities. This includes not only physical assets such as property and equipment but also intangible assets such as patents and trademarks. It is essential to ensure that all assets and liabilities are accurately valued and recorded, and that they are readily accessible at all times.

In addition, it is important to ensure that all assets and liabilities are kept for the appropriate period of time. This is typically determined by the relevant tax authorities, and it is essential to ensure that all assets and liabilities are kept for the full period required.

The third part of the document discusses the importance of maintaining accurate records of all income and expenses. This includes not only sales and purchases but also any other financial activities that may occur during the course of the business. It is essential to ensure that all income and expenses are accurately recorded, and that they are readily accessible at all times.

In addition, it is important to ensure that all income and expenses are kept for the appropriate period of time. This is typically determined by the relevant tax authorities, and it is essential to ensure that all income and expenses are kept for the full period required.

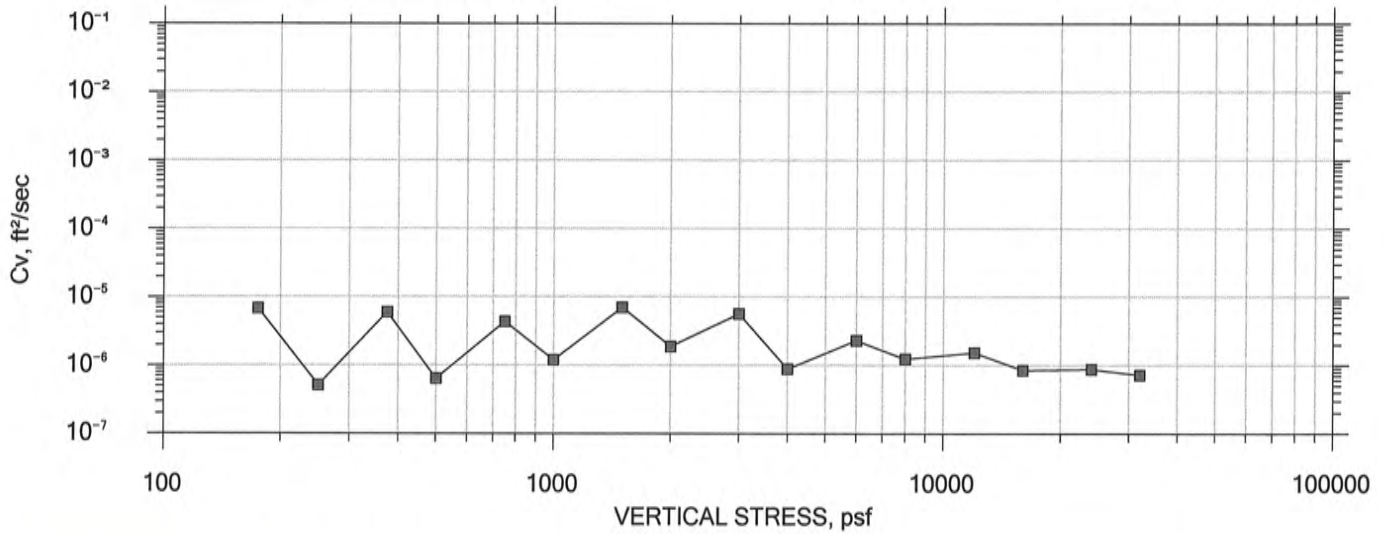
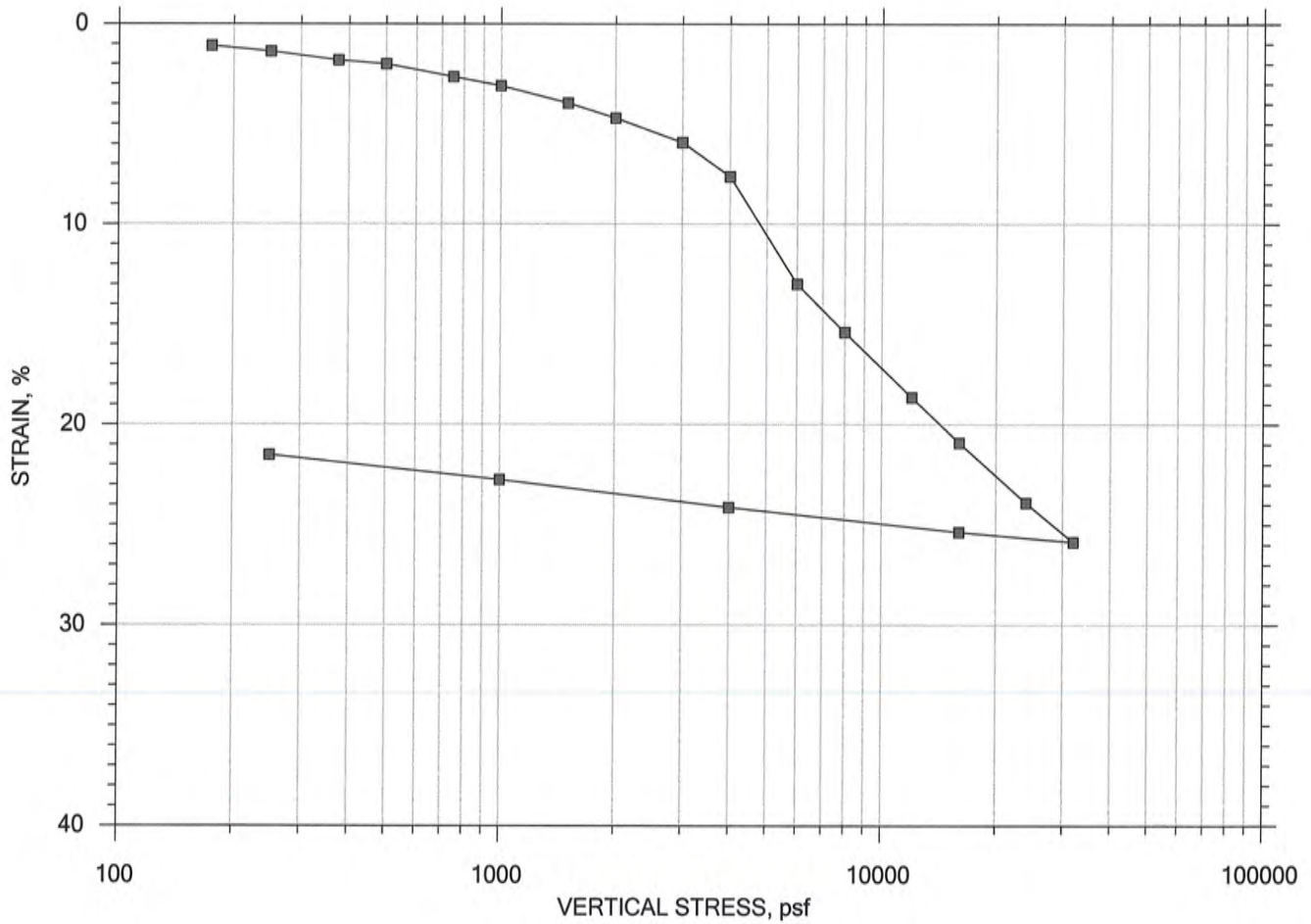
The fourth part of the document discusses the importance of maintaining accurate records of all tax payments and credits. This includes not only sales and purchases but also any other financial activities that may occur during the course of the business. It is essential to ensure that all tax payments and credits are accurately recorded, and that they are readily accessible at all times.


In addition, it is important to ensure that all tax payments and credits are kept for the appropriate period of time. This is typically determined by the relevant tax authorities, and it is essential to ensure that all tax payments and credits are kept for the full period required.



# One-Dimensional Consolidation by ASTM D2435 - Method B

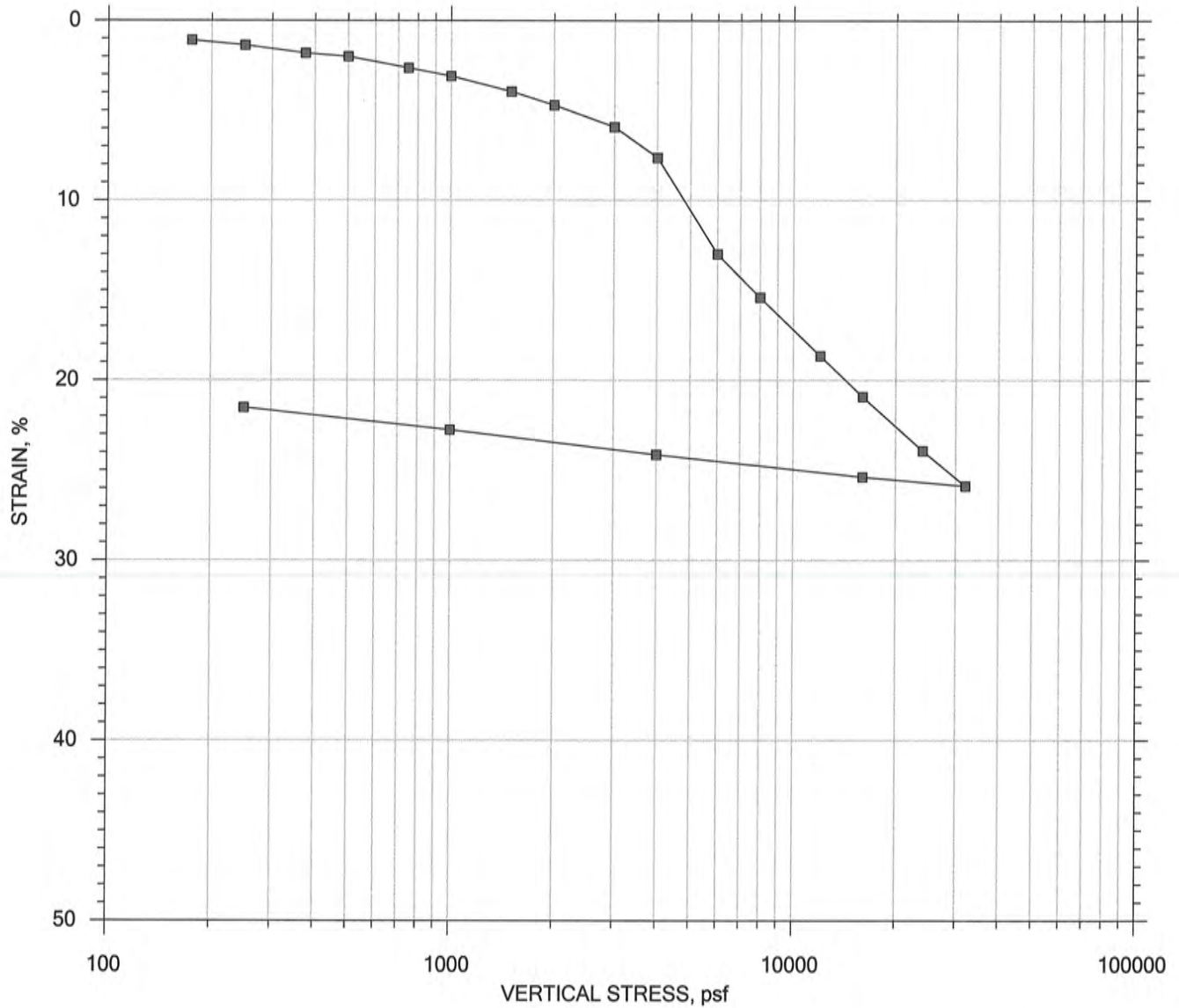
## SUMMARY REPORT



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		
	Displacement at End of Increment		

# One-Dimensional Consolidation by ASTM D2435 - Method B

## SUMMARY REPORT



				Before Test	After Test	
Current Vertical Effective Stress: ---				Water Content, %	48.80	32.84
Preconsolidation Stress: ---				Dry Unit Weight, pcf	72.135	90.452
Compression Ratio: ---				Saturation, %	96.90	100.00
Diameter: 2.5 in		Height: 1 in		Void Ratio	1.39	0.91
LL: 46	PL: 19	PI: 27	GS: 2.76			

	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		
	Displacement at End of Increment		

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: IS-18  
 Sample No.: ---  
 Test No.: IP-4

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/13/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 10-12 ft  
 Elevation: ---

Soil Description: Moist, greenish gray clayey sand  
 Remarks: System 5077

Estimated Specific Gravity: 2.76  
 Initial Void Ratio: 1.39  
 Final Void Ratio: 0.908

Liquid Limit: 46  
 Plastic Limit: 19  
 Elasticity Index: 27

Specimen Diameter: 2.50 in  
 Initial Height: 1.00 in  
 Final Height: 0.80 in

	Before Consolidation		After Consolidation	
	Trimmings	Specimen+Ring	Specimen+Ring	Trimmings
Container ID	a8	RING	5077	a24
Wt. Container + Wet Soil, gm	113.18	348.72	333.88	139.45
Wt. Container + Dry Soil, gm	74.970	303.36	303.36	108.99
Wt. Container, gm	17.210	210.41	210.41	16.230
Wt. Dry Soil, gm	57.760	92.948	92.948	92.760
Water Content, %	66.15	48.80	32.84	32.84
Void Ratio	---	1.39	0.908	---
Degree of Saturation, %	---	96.90	100.00	---
Dry Unit Weight, pcf	---	72.135	90.452	---

Note: Specific Gravity and Void Ratios are calculated assuming the degree of saturation equals 100% at the end of the test. Therefore, values may not represent actual values for the specimen.

One-Dimensional Consolidation by ASTM D2435 - Method B

Project: I-26 Volvo Interchange  
 Boring No.: IS-18  
 Sample No.: ---  
 Test No.: IP-4

Location: Berkely County, SC  
 Tested By: jm  
 Test Date: 11/13/15  
 Sample Type: intact

Project No.: GTX-304013  
 Checked By: mcm  
 Depth: 10-12 ft  
 Elevation: ---

Soil Description: Moist, greenish gray clayey sand  
 Remarks: System 5077

Displacement at End of Increment

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Sq.Rt T90 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec	
1	175.	0.01088	1.37	1.09	3.812	6.37e-006	6.21e-005	7.53e-007	
2	250.	0.01373	1.36	1.37	31.890	7.51e-007	3.81e-005	5.44e-008	
3	375.	0.01801	1.35	1.80	3.812	6.23e-006	3.42e-005	4.06e-007	
4	500.	0.01992	1.34	1.99	73.305	3.22e-007	1.53e-005	9.37e-009	
5	750.	0.02635	1.33	2.64	4.277	5.47e-006	2.57e-005	2.68e-007	
6	1.00e+003	0.03094	1.32	3.09	19.552	1.18e-006	1.84e-005	4.14e-008	
7	1.50e+003	0.03942	1.30	3.94	4.371	5.23e-006	1.70e-005	1.69e-007	
8	2.00e+003	0.04702	1.28	4.70	12.283	1.83e-006	1.52e-005	5.29e-008	
9	3.00e+003	0.05909	1.25	5.91	3.713	5.93e-006	1.21e-005	1.36e-007	
10	4.00e+003	0.07616	1.21	7.62	25.716	8.29e-007	1.71e-005	2.69e-008	
11	6.00e+003	0.1298	1.08	13.0	9.097	2.17e-006	2.68e-005	1.11e-007	
12	8.00e+003	0.1538	1.02	15.4	13.471	1.34e-006	1.20e-005	3.07e-008	
13	1.20e+004	0.1864	0.946	18.6	11.599	1.46e-006	8.14e-006	2.26e-008	
14	1.60e+004	0.2090	0.892	20.9	16.032	9.85e-007	5.65e-006	1.06e-008	
15	2.40e+004	0.2391	0.820	23.9	14.011	1.05e-006	3.75e-006	7.53e-009	
16	3.20e+004	0.2586	0.773	25.9	16.835	8.22e-007	2.44e-006	3.82e-009	
17	1.60e+004	0.2536	0.785	25.4	5.716	2.38e-006	3.14e-007	1.42e-009	
18	4.00e+003	0.2412	0.815	24.1	15.121	9.19e-007	1.03e-006	1.80e-009	
19	1.00e+003	0.2275	0.848	22.7	25.725	5.59e-007	4.58e-006	4.87e-009	
20	250.	0.2151	0.877	21.5	60.664	2.45e-007	1.65e-005	7.68e-009	

	Applied Stress psf	Final Displacement in	Void Ratio	Strain at End %	Log T50 min	Cv ft <sup>2</sup> /sec	Mv 1/psf	k cm/sec	Ca %
1	175.	0.01088	1.37	1.09	0.000	0.00e+000	6.21e-005	0.00e+000	0.00e+000
2	250.	0.01373	1.36	1.37	0.000	0.00e+000	3.81e-005	0.00e+000	0.00e+000
3	375.	0.01801	1.35	1.80	0.898	6.15e-006	3.42e-005	4.00e-007	0.00e+000
4	500.	0.01992	1.34	1.99	0.000	0.00e+000	1.53e-005	0.00e+000	0.00e+000
5	750.	0.02635	1.33	2.64	1.340	4.06e-006	2.57e-005	1.99e-007	0.00e+000
6	1.00e+003	0.03094	1.32	3.09	0.000	0.00e+000	1.84e-005	0.00e+000	0.00e+000
7	1.50e+003	0.03942	1.30	3.94	0.610	8.69e-006	1.70e-005	2.80e-007	0.00e+000
8	2.00e+003	0.04702	1.28	4.70	0.000	0.00e+000	1.52e-005	0.00e+000	0.00e+000
9	3.00e+003	0.05909	1.25	5.91	0.876	5.84e-006	1.21e-005	1.34e-007	0.00e+000
10	4.00e+003	0.07616	1.21	7.62	0.000	0.00e+000	1.71e-005	0.00e+000	0.00e+000
11	6.00e+003	0.1298	1.08	13.0	1.970	2.33e-006	2.68e-005	1.19e-007	0.00e+000
12	8.00e+003	0.1538	1.02	15.4	3.728	1.13e-006	1.20e-005	2.58e-008	0.00e+000
13	1.20e+004	0.1864	0.946	18.6	2.447	1.60e-006	8.14e-006	2.49e-008	0.00e+000
14	1.60e+004	0.2090	0.892	20.9	4.893	7.50e-007	5.65e-006	8.07e-009	0.00e+000
15	2.40e+004	0.2391	0.820	23.9	4.563	7.52e-007	3.75e-006	5.37e-009	0.00e+000
16	3.20e+004	0.2586	0.773	25.9	5.016	6.41e-007	2.44e-006	2.98e-009	0.00e+000
17	1.60e+004	0.2536	0.785	25.4	1.478	2.13e-006	3.14e-007	1.27e-009	0.00e+000
18	4.00e+003	0.2412	0.815	24.1	0.000	0.00e+000	1.03e-006	0.00e+000	0.00e+000
19	1.00e+003	0.2275	0.848	22.7	0.000	0.00e+000	4.58e-006	0.00e+000	0.00e+000
20	250.	0.2151	0.877	21.5	0.000	0.00e+000	1.65e-005	0.00e+000	0.00e+000

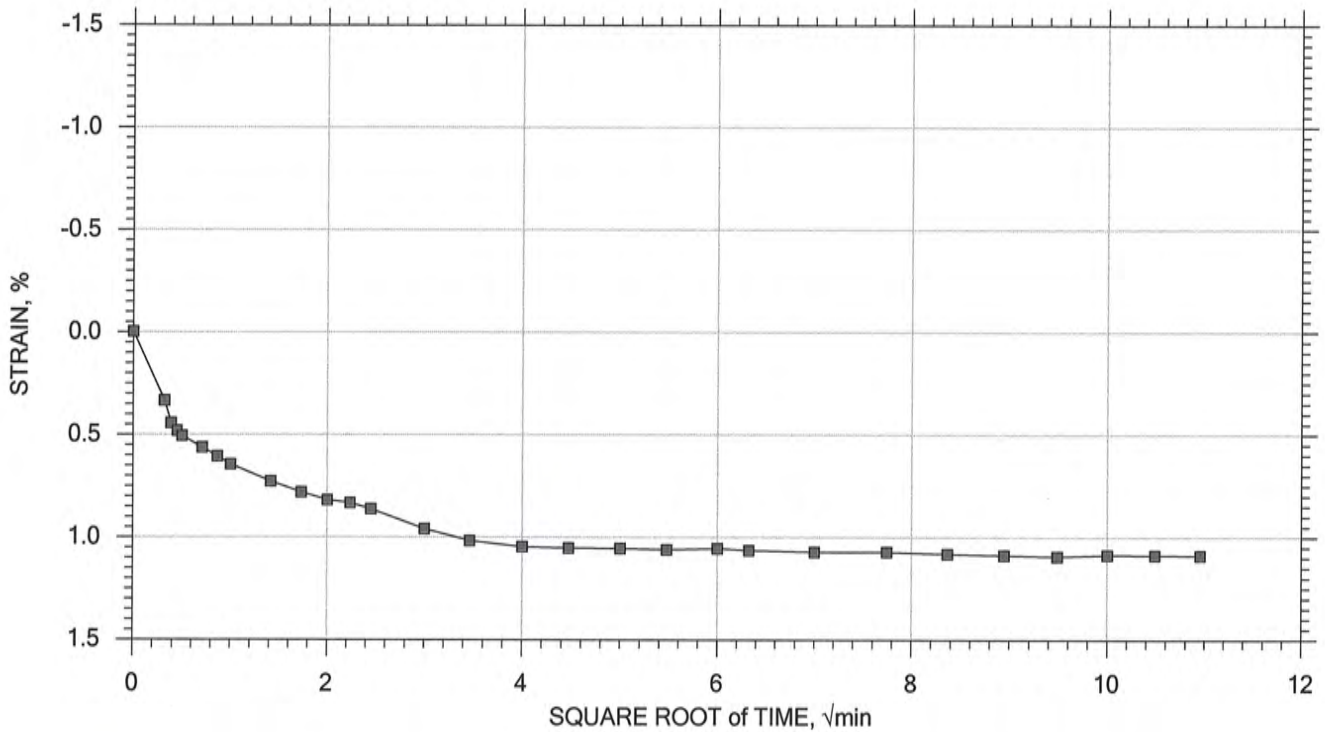
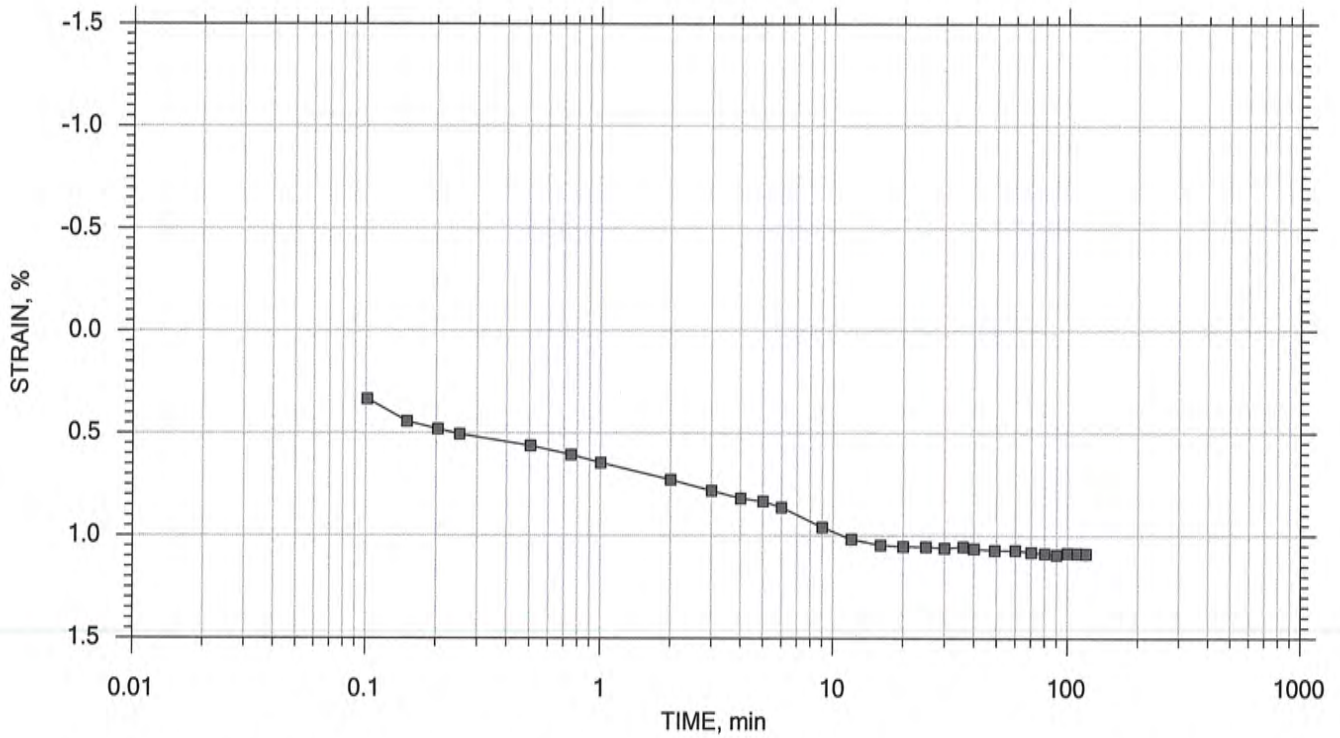



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 1 of 20

Stress: 175 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

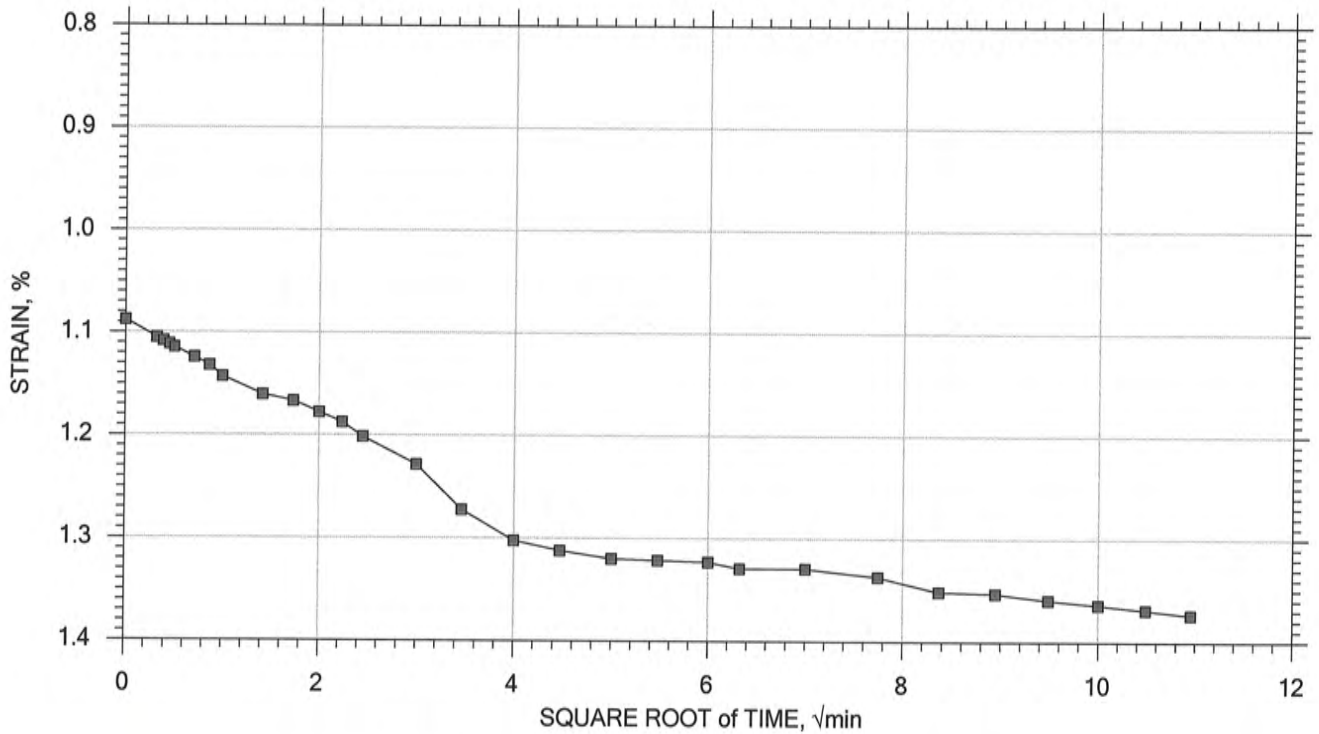
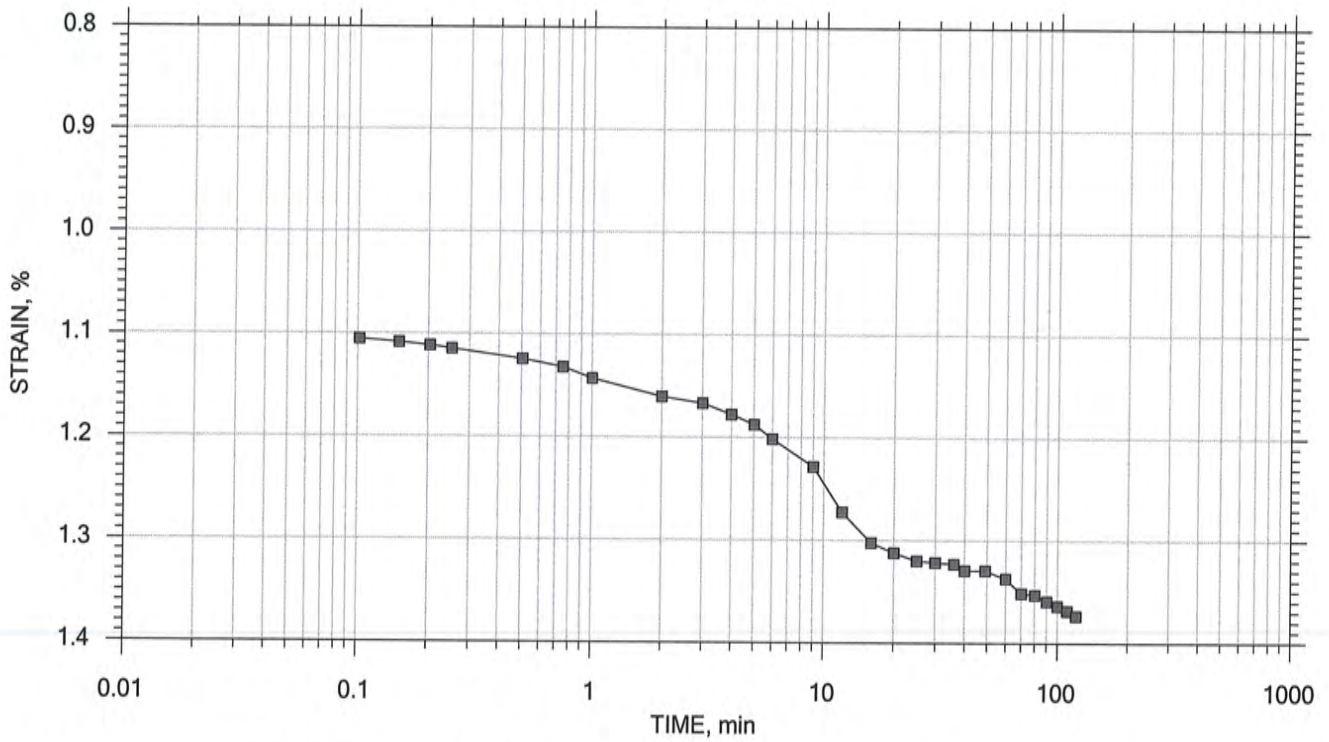



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 2 of 20

Stress: 250 psf



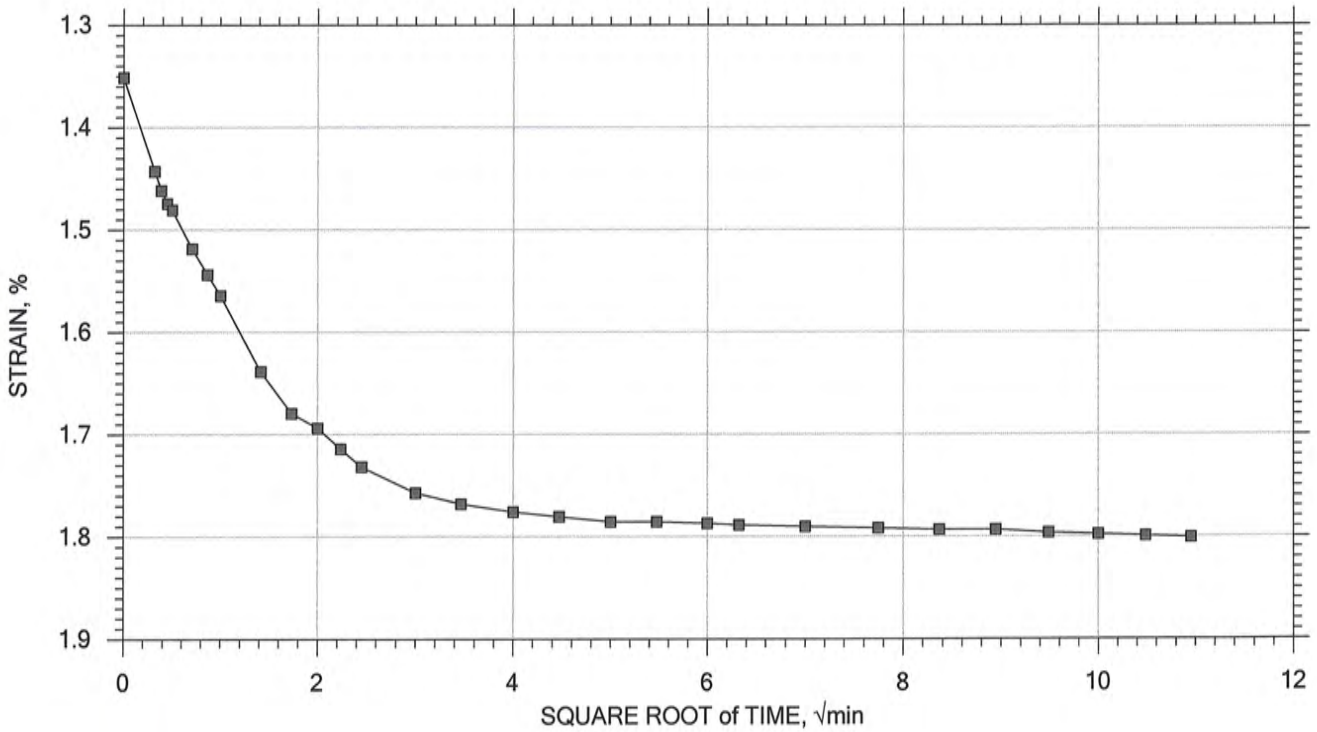
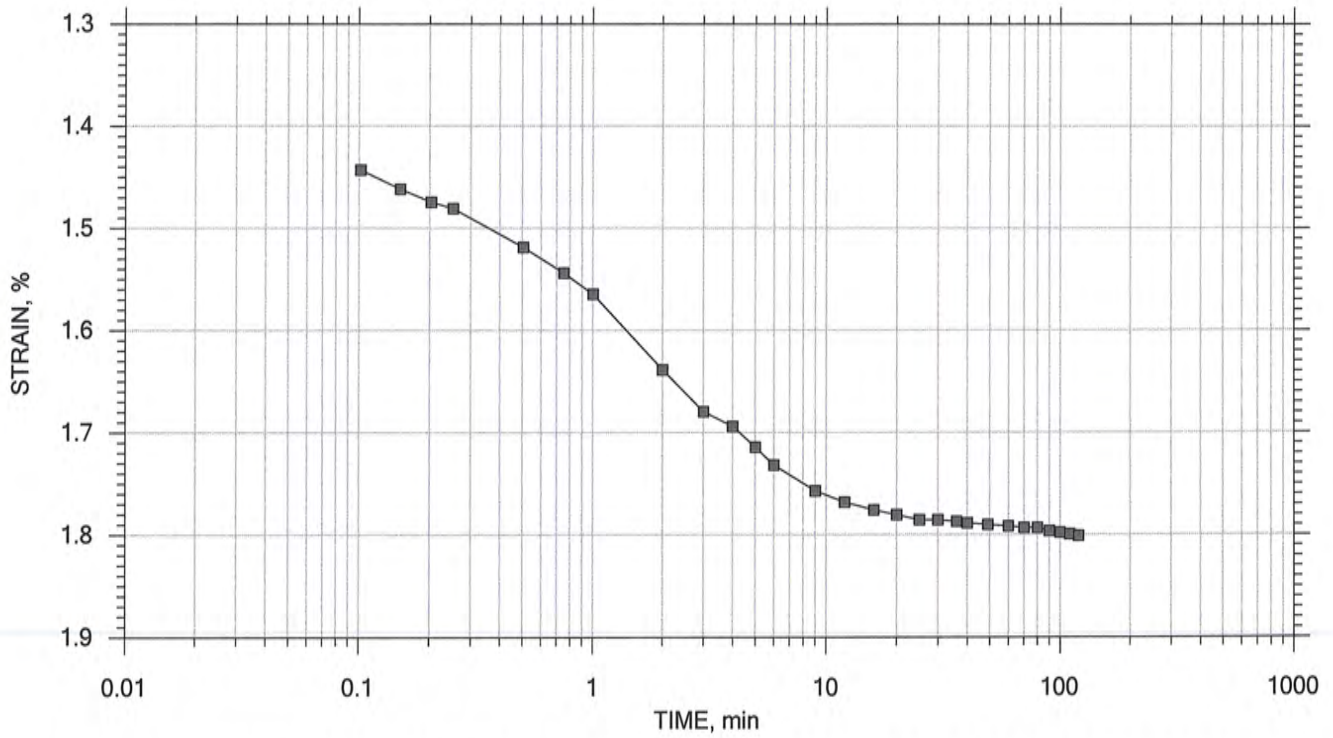
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 3 of 20

Stress: 375 psf



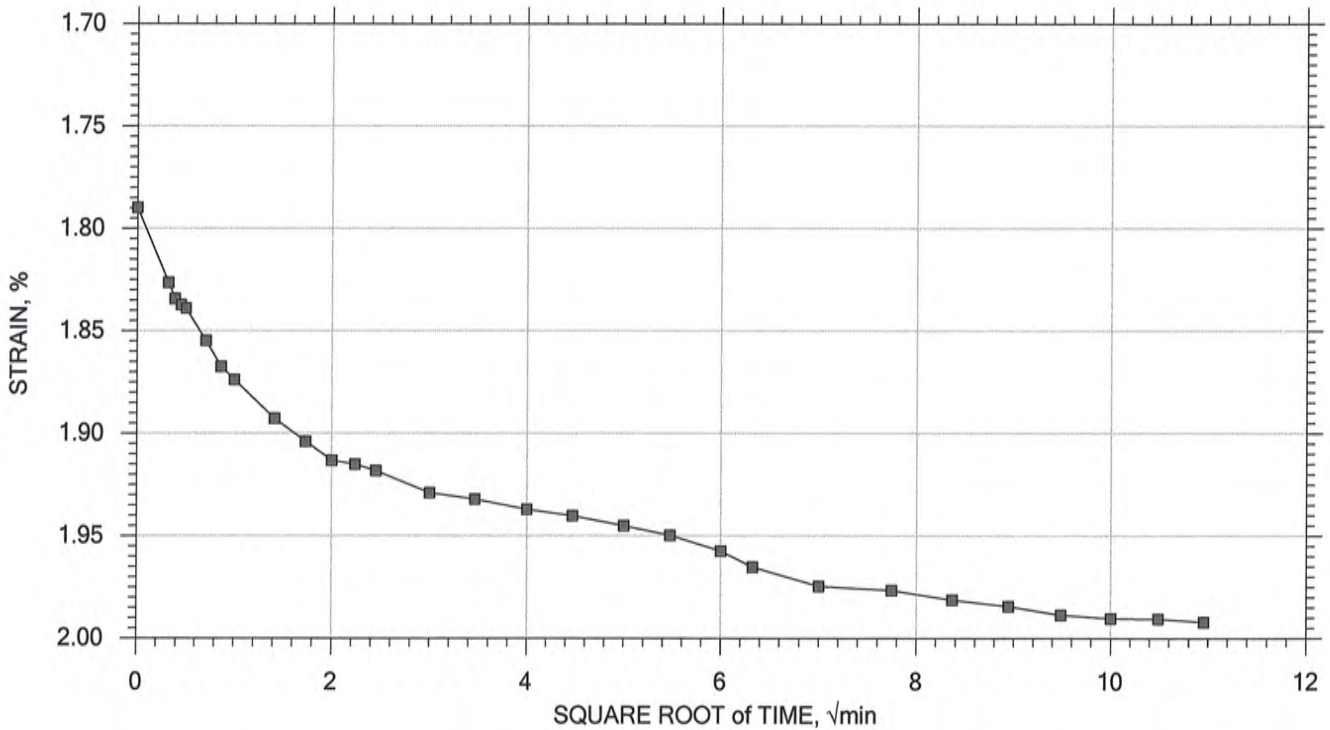
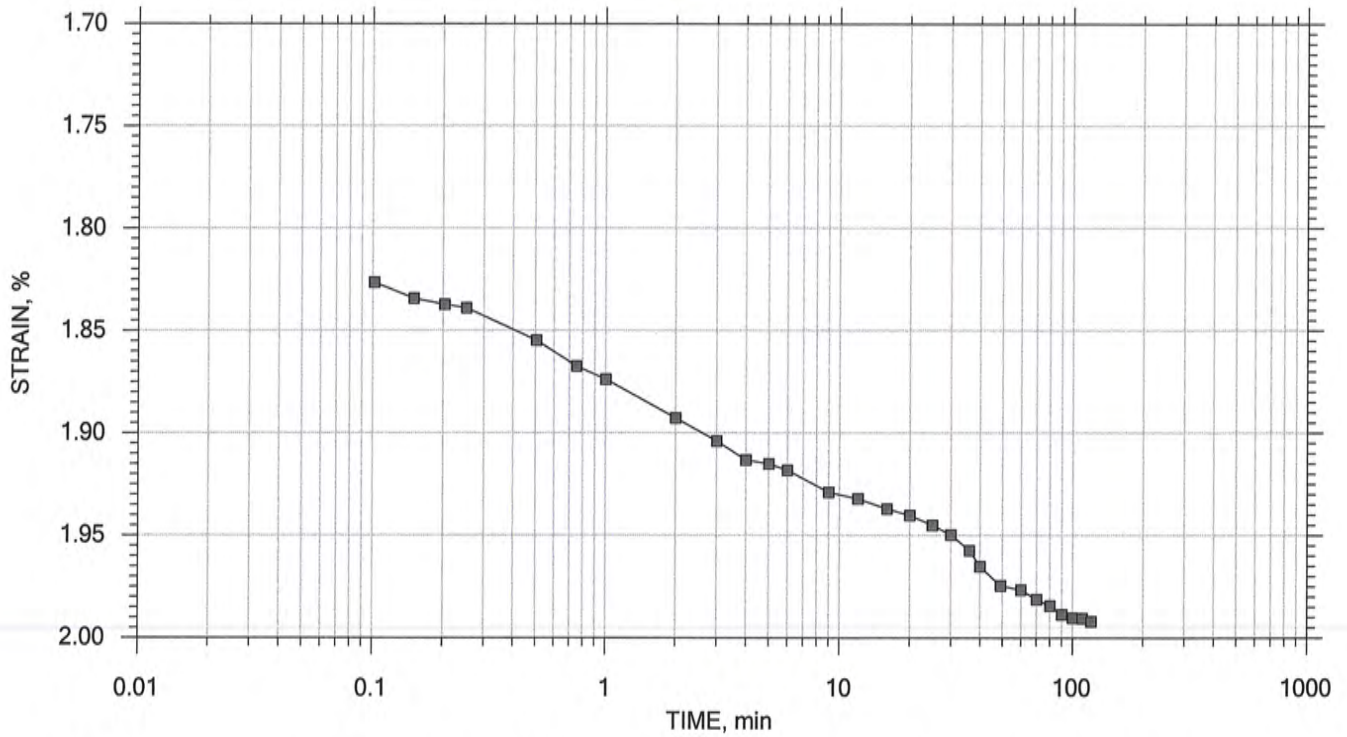
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 4 of 20

Stress: 500 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

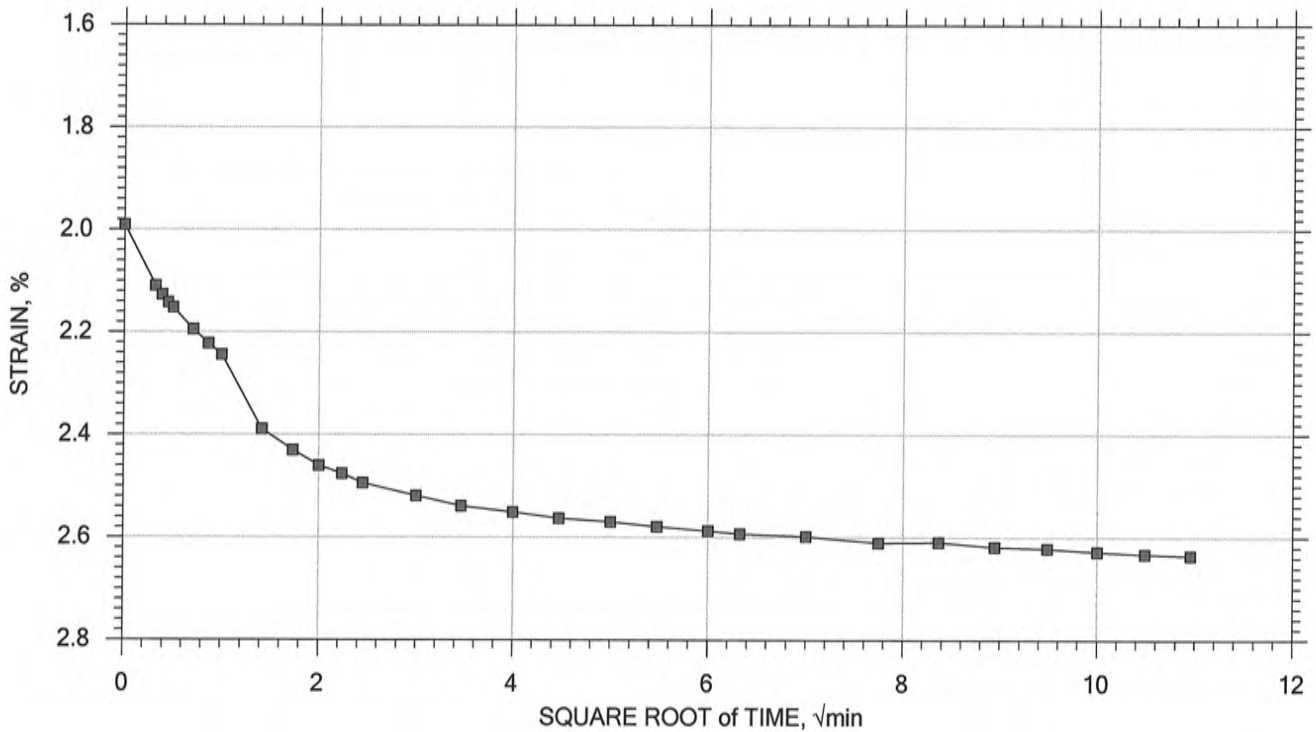
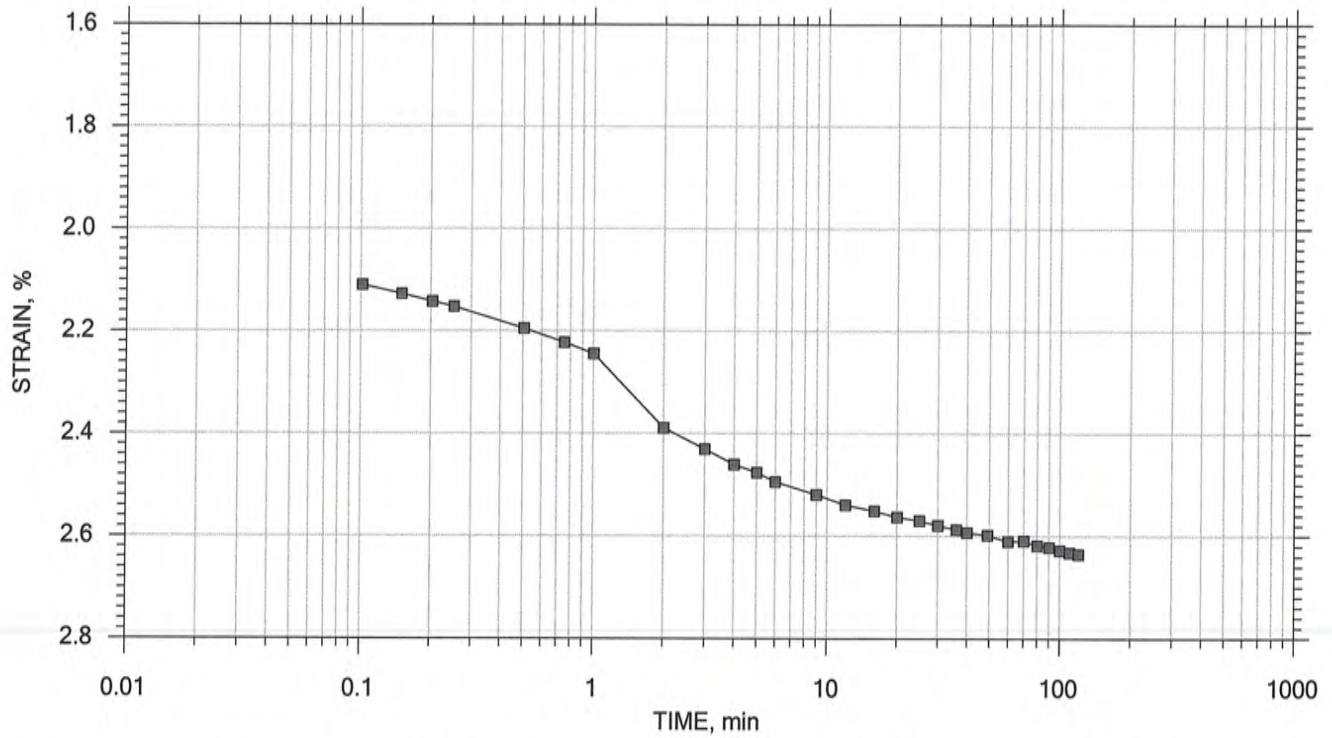



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 5 of 20

Stress: 750 psf



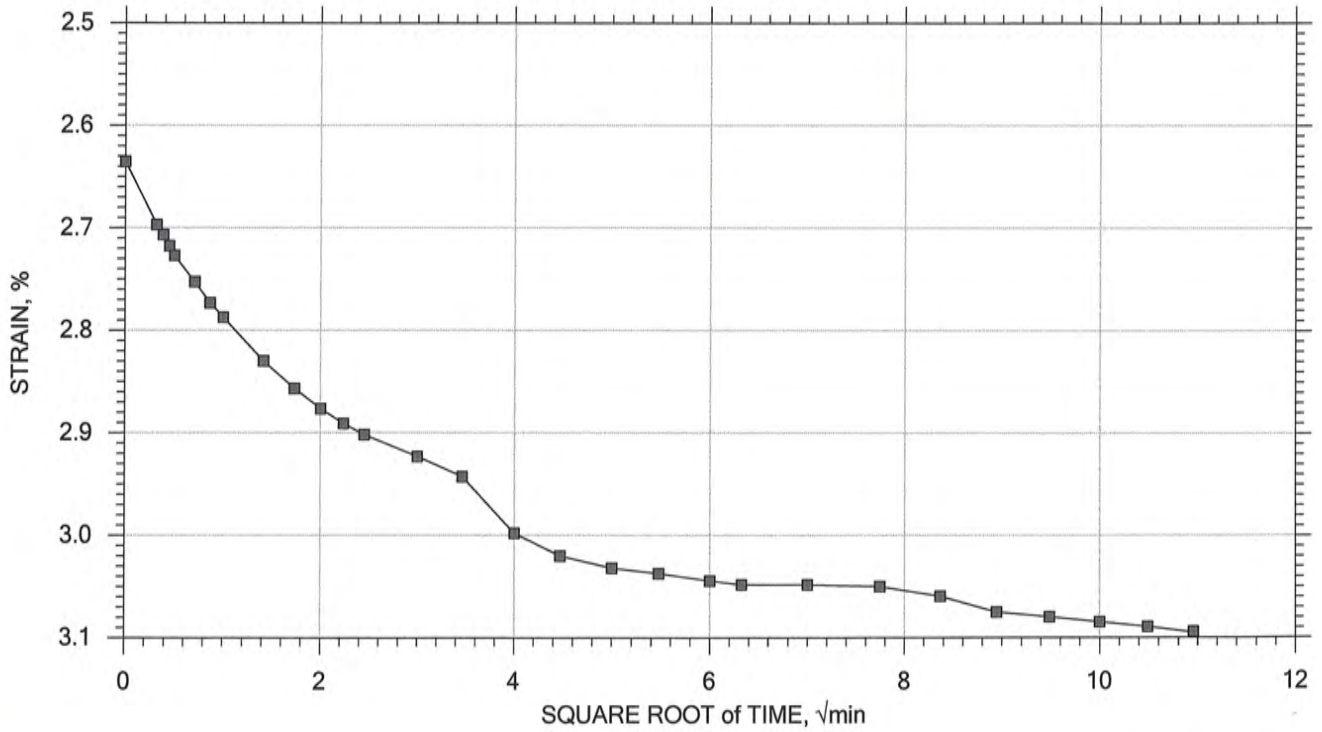
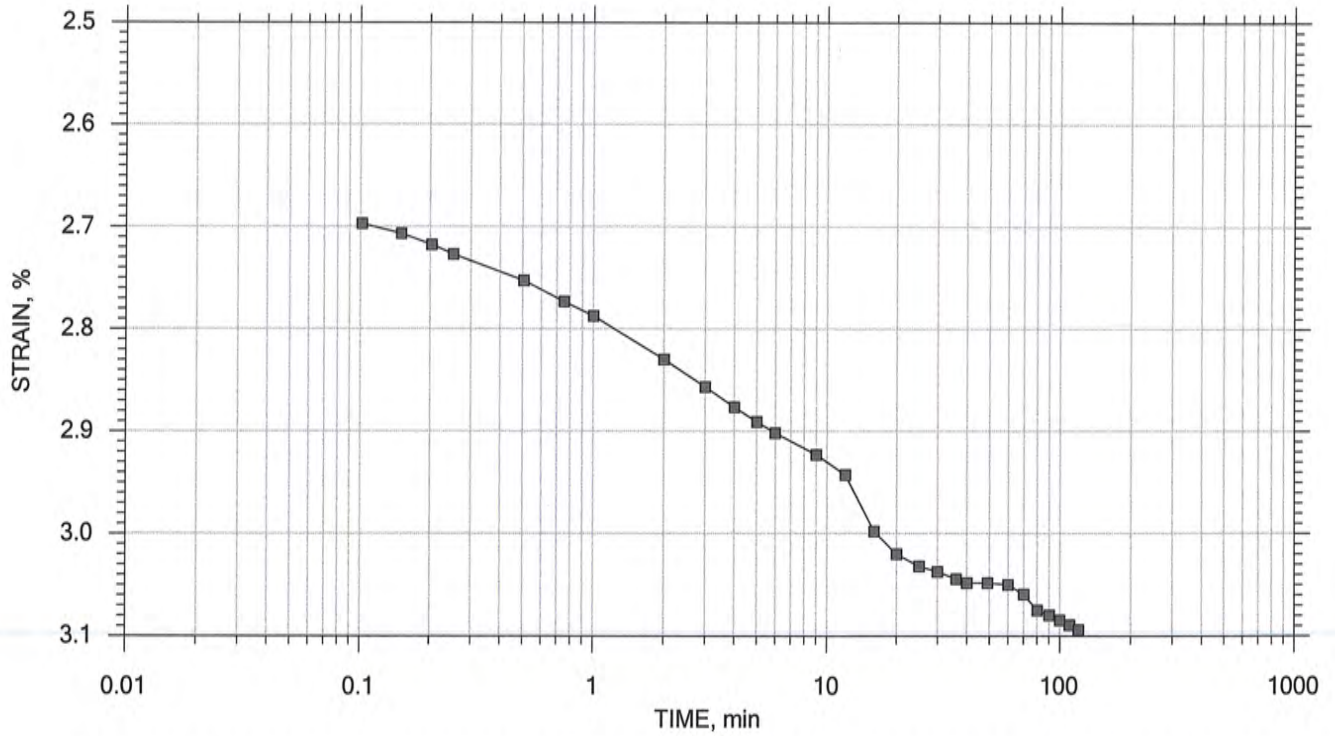
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 6 of 20

Stress: 1000 psf



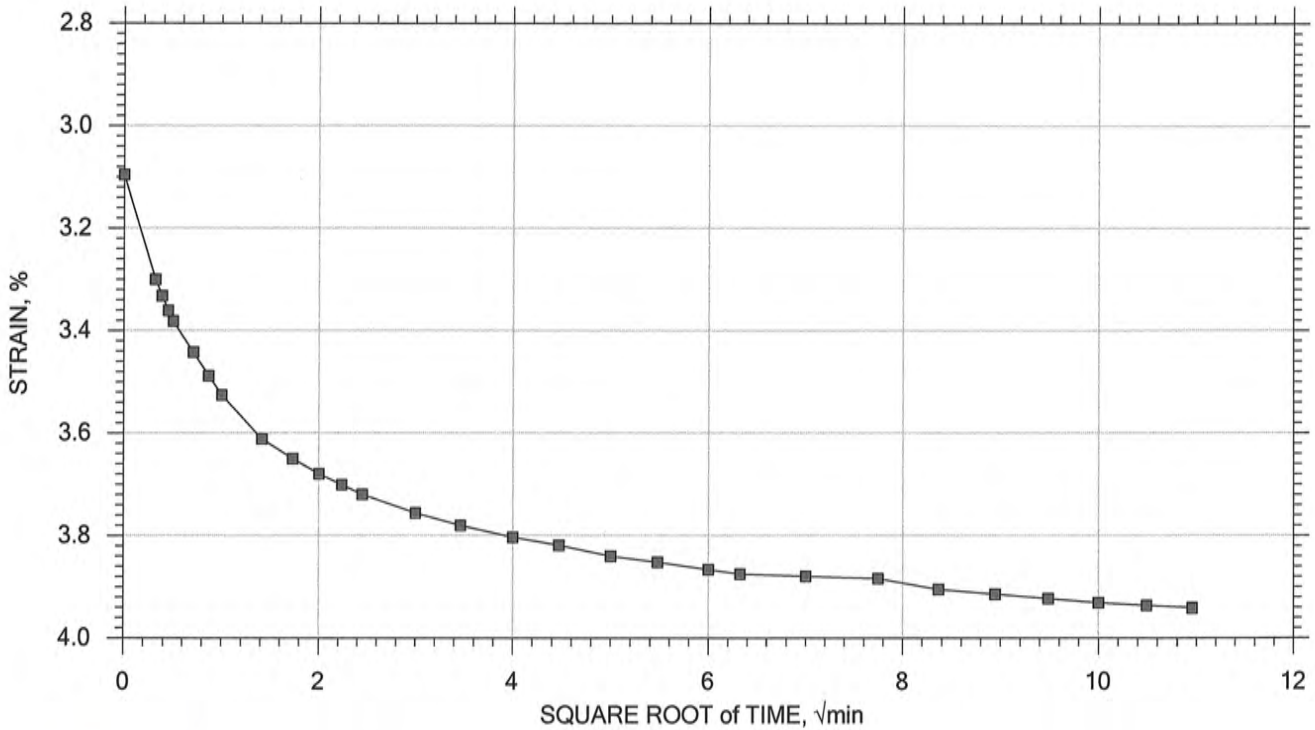
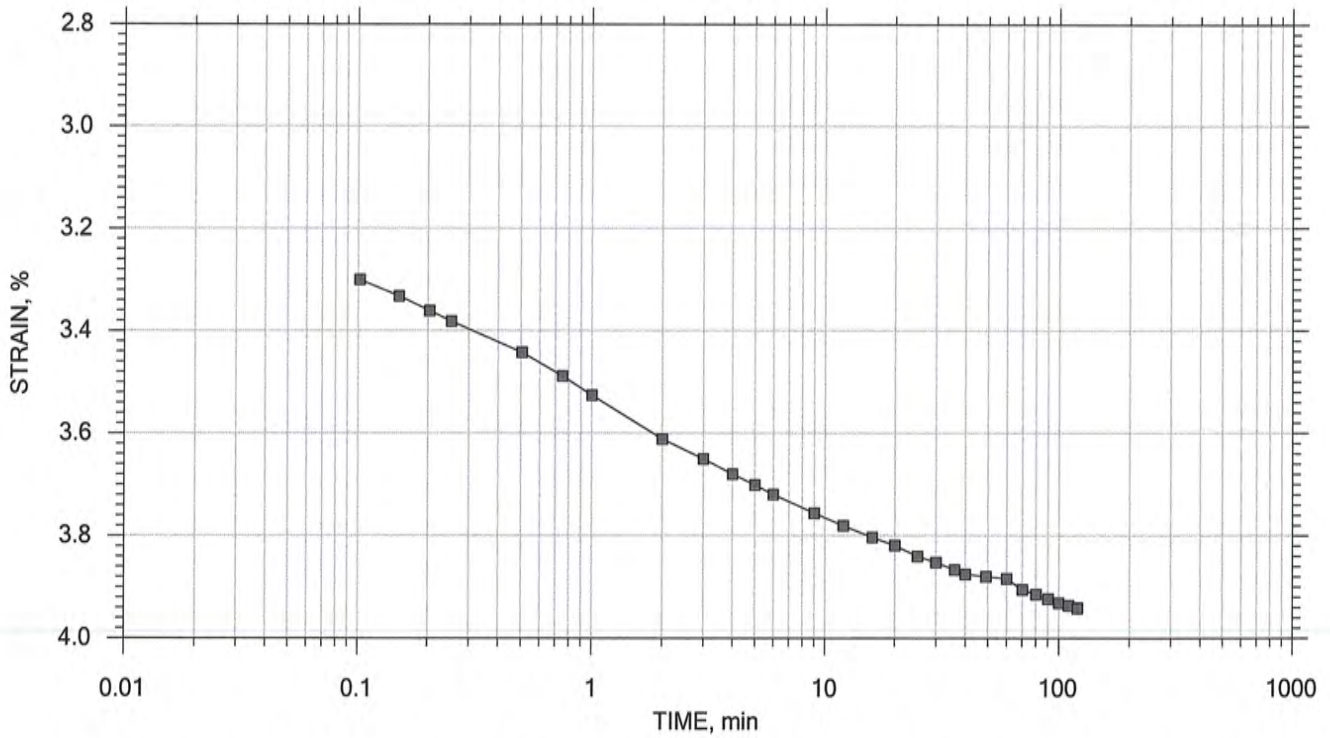
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	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 7 of 20

Stress: 1500 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

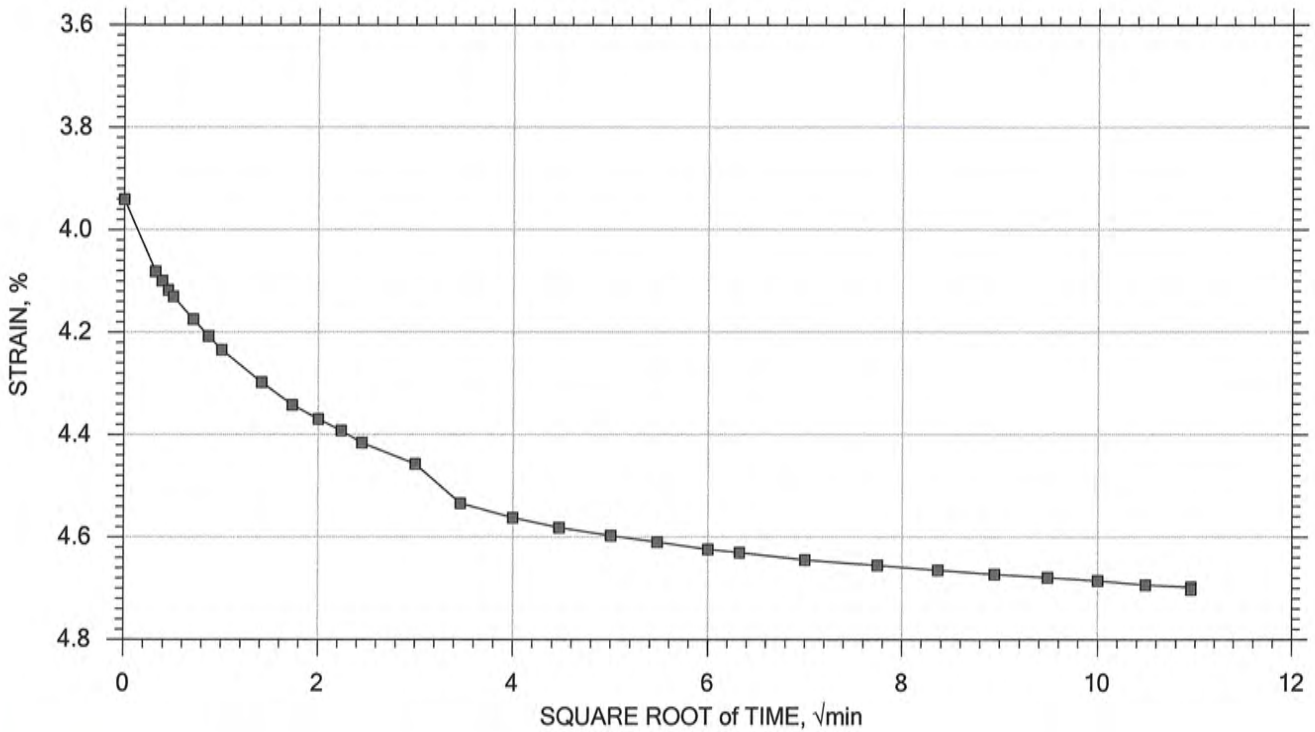
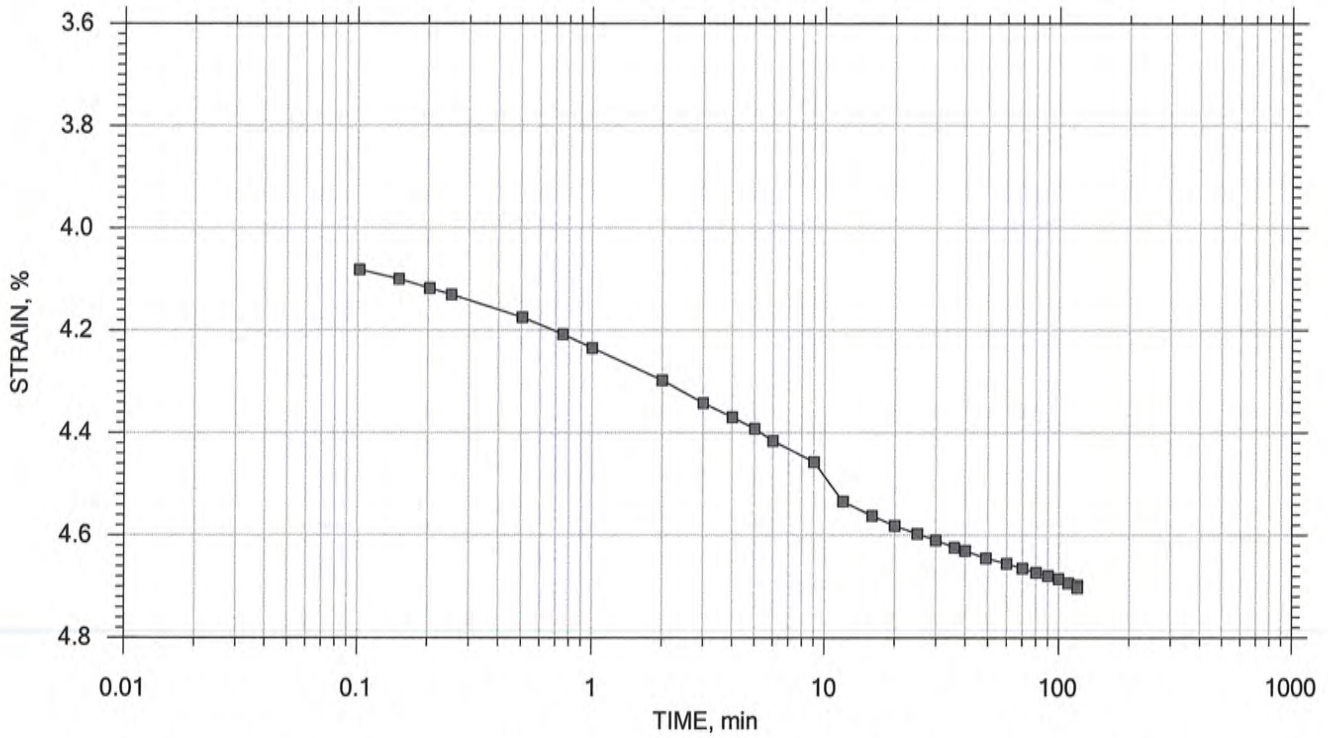



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 8 of 20

Stress: 2000 psf



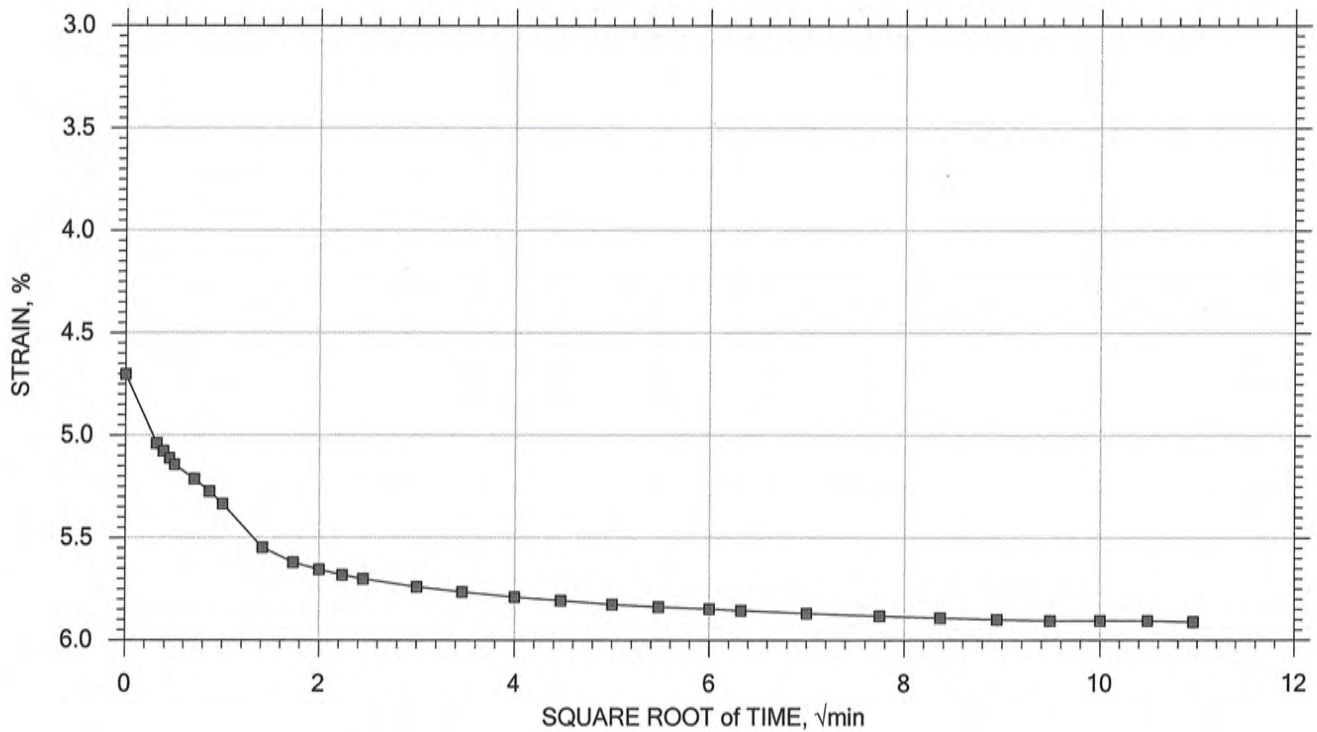
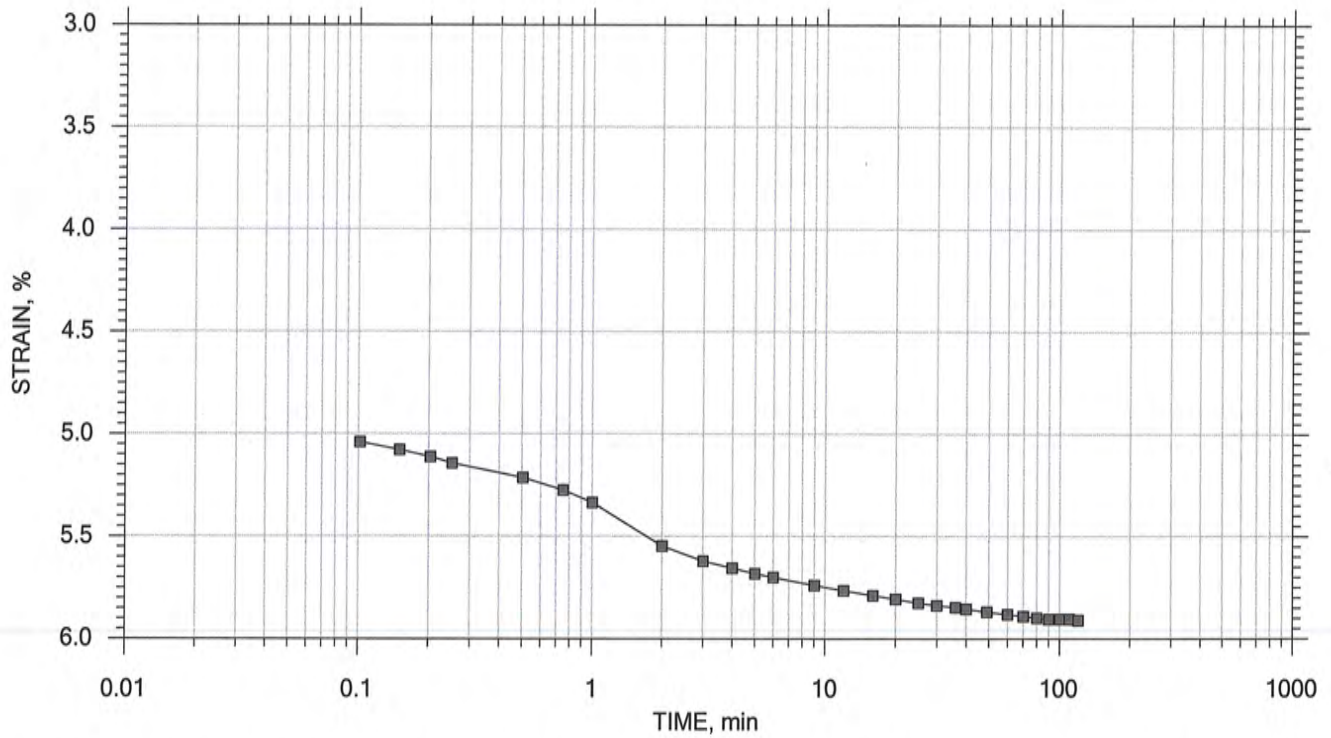
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 9 of 20

Stress: 3000 psf



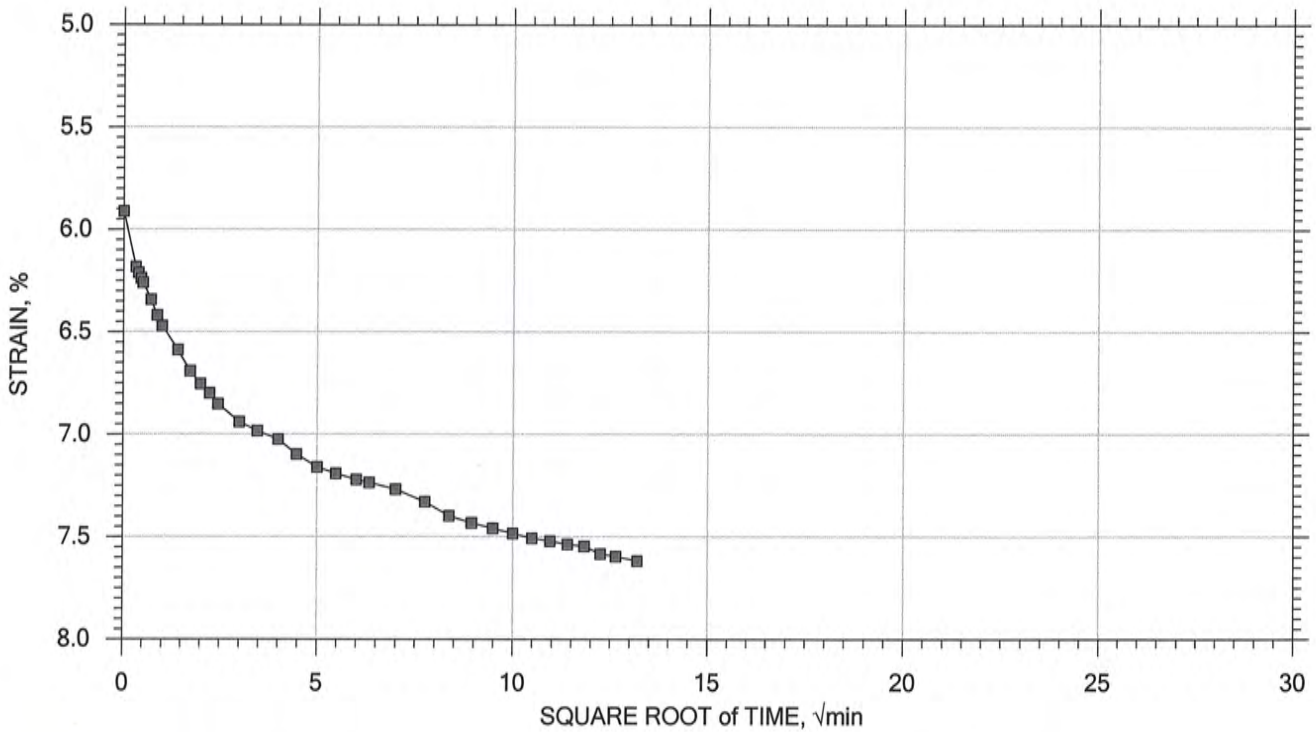
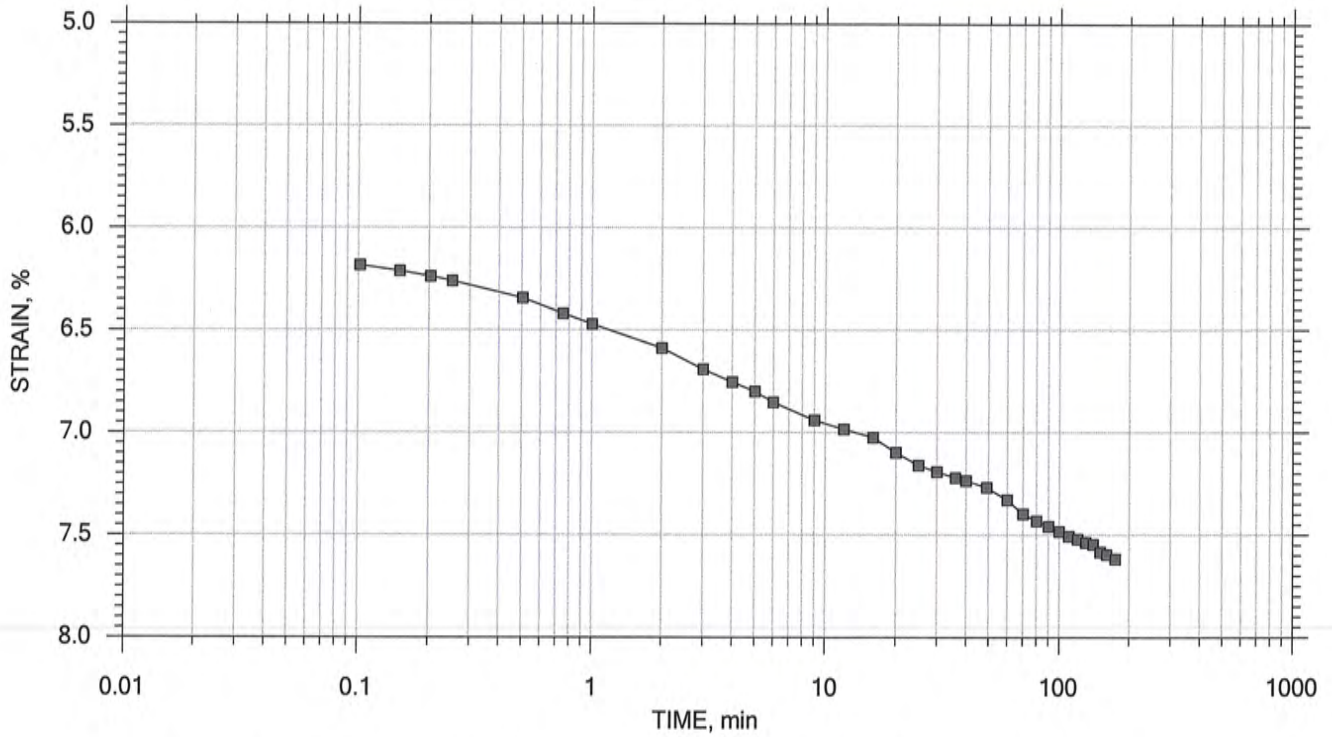
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 10 of 20

Stress: 4000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

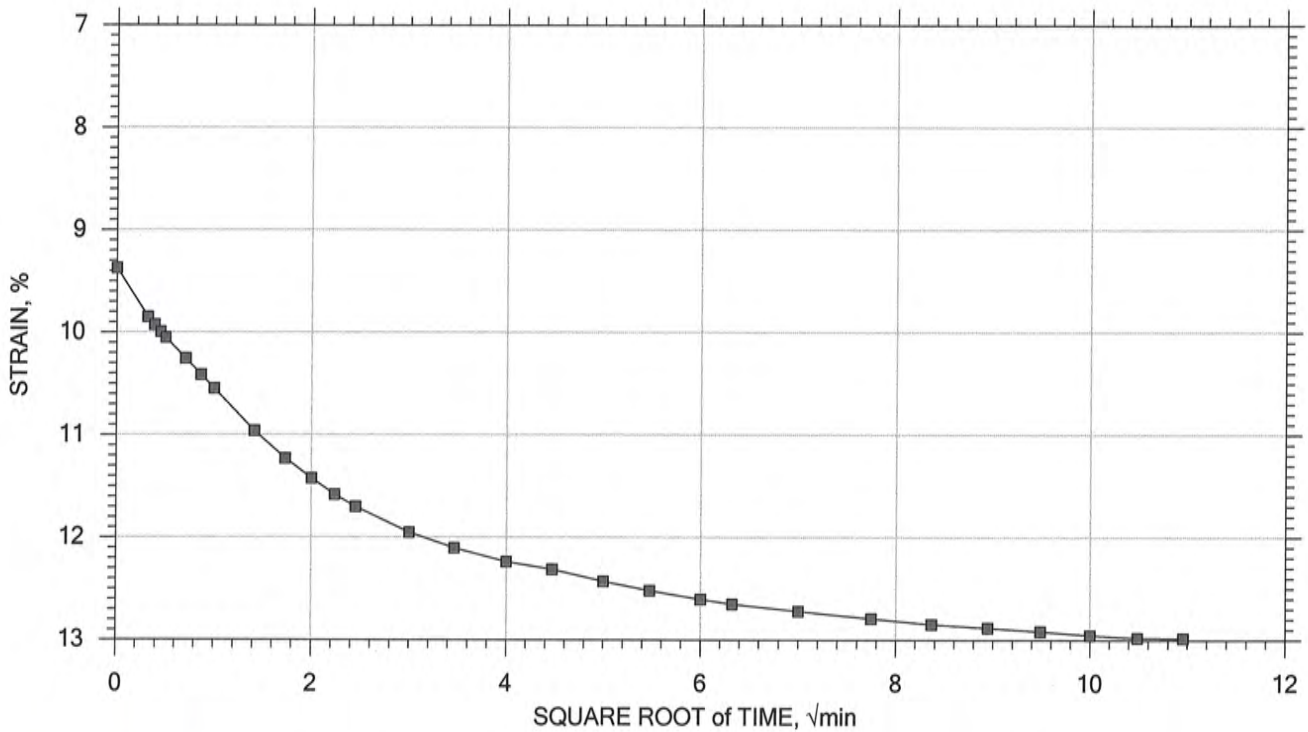
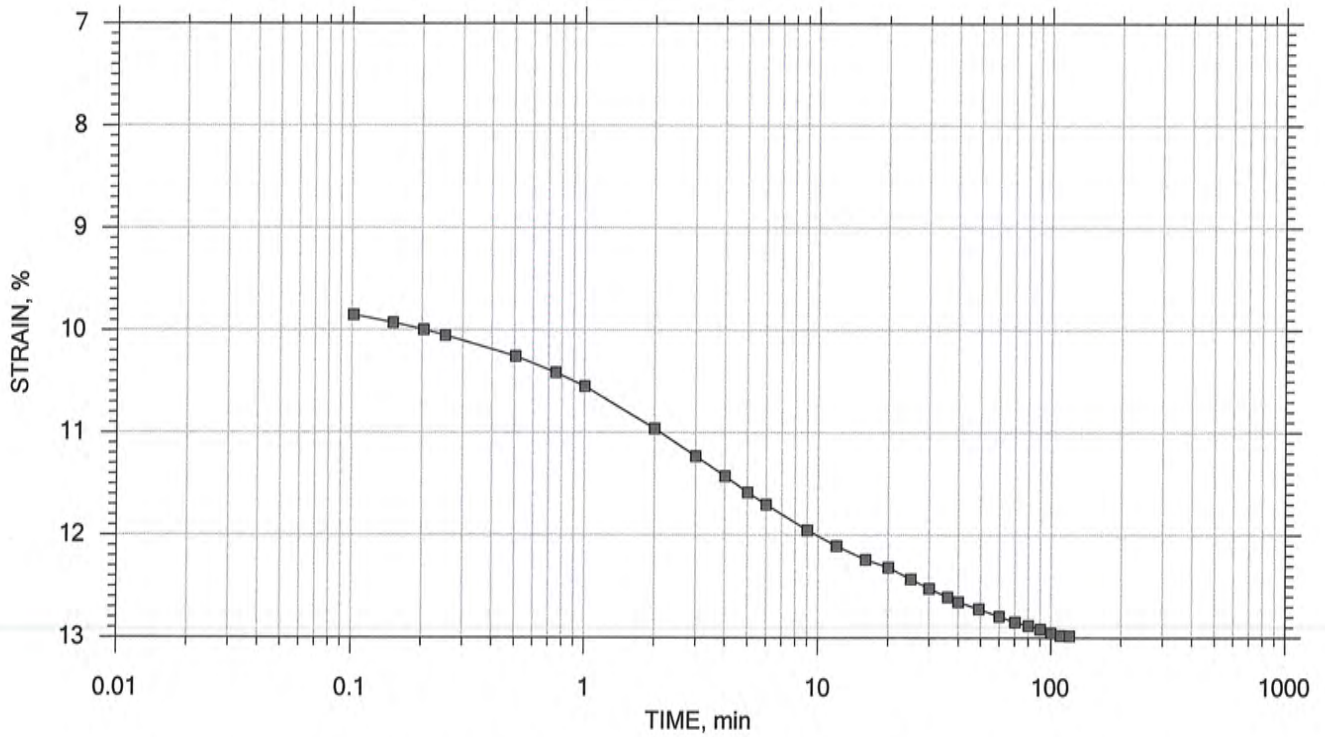



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 11 of 20

Stress: 6000 psf



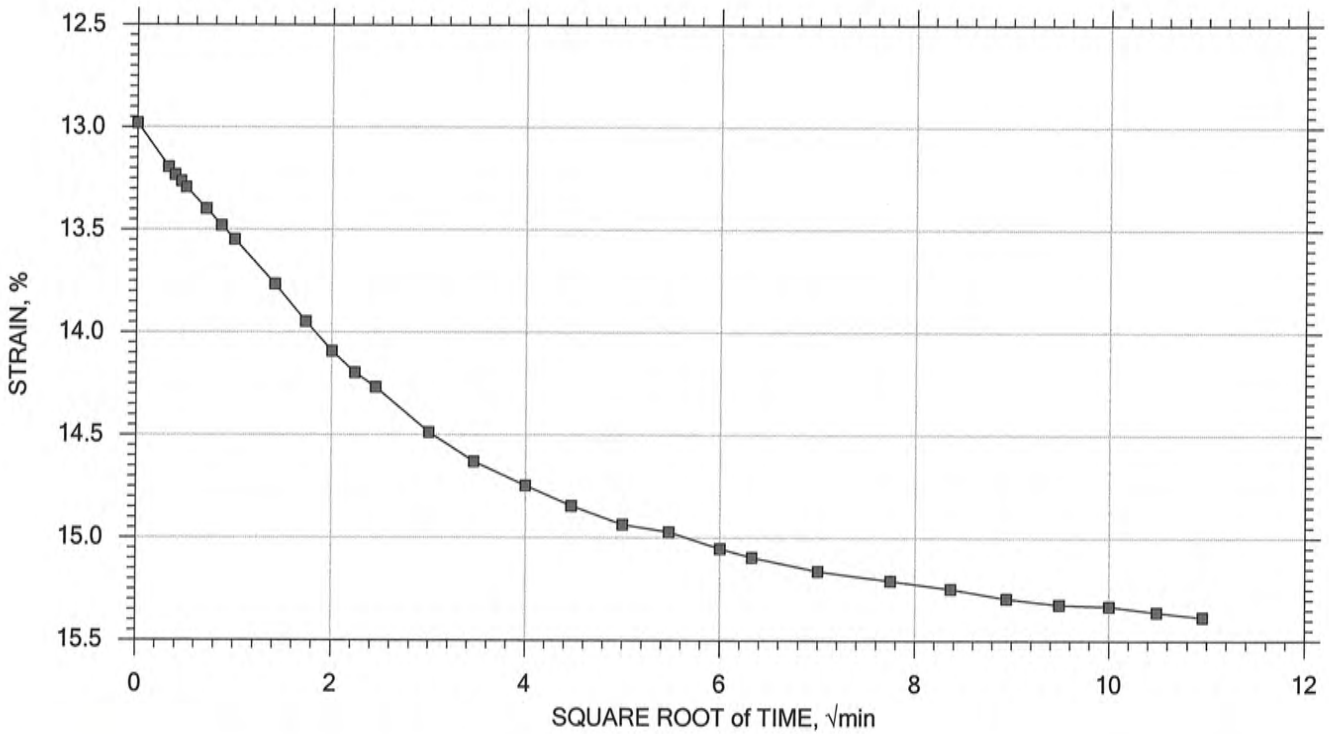
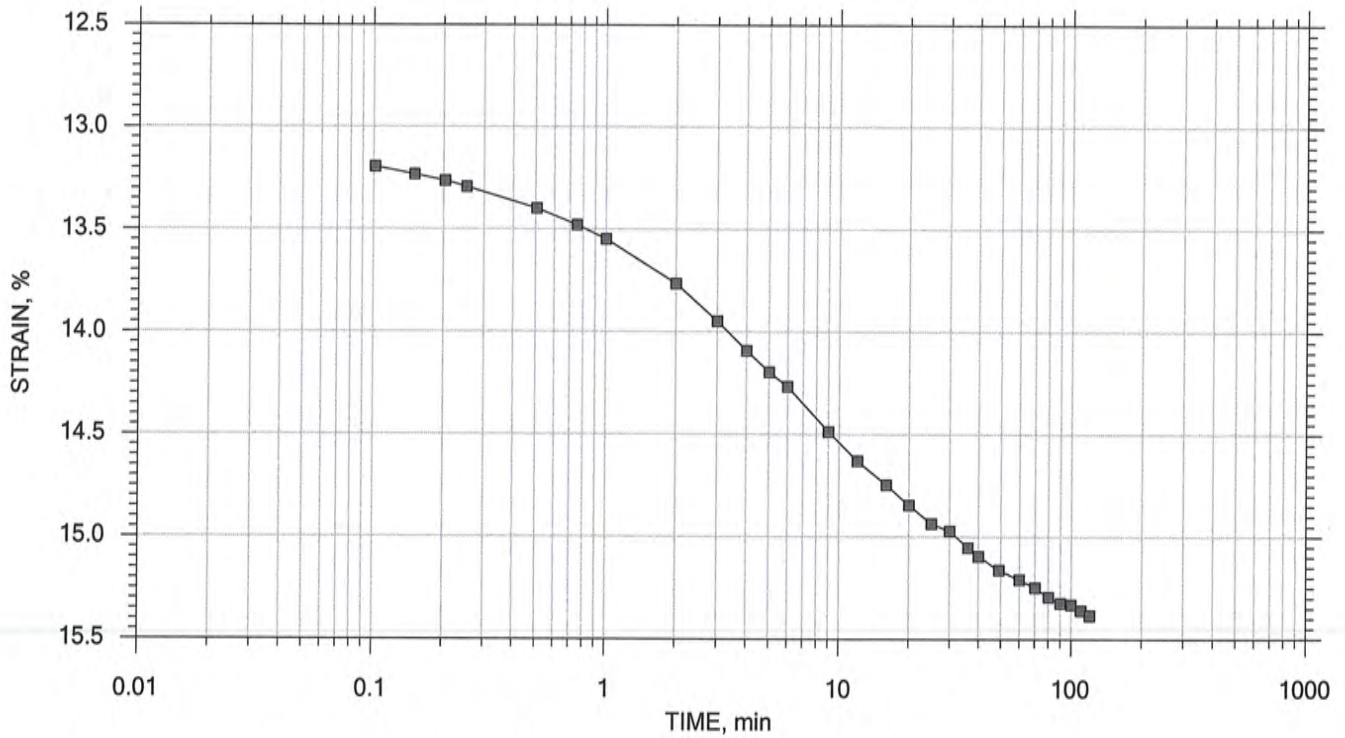
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 12 of 20

Stress: 8000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

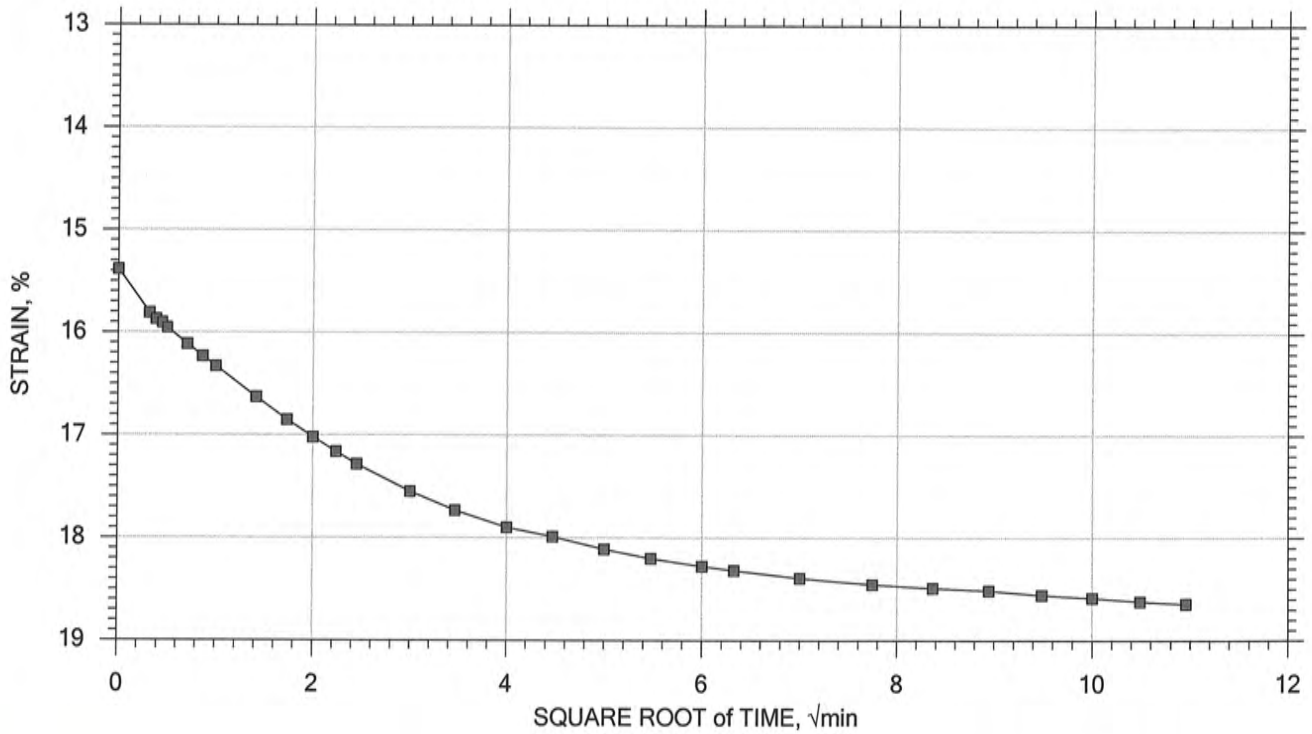
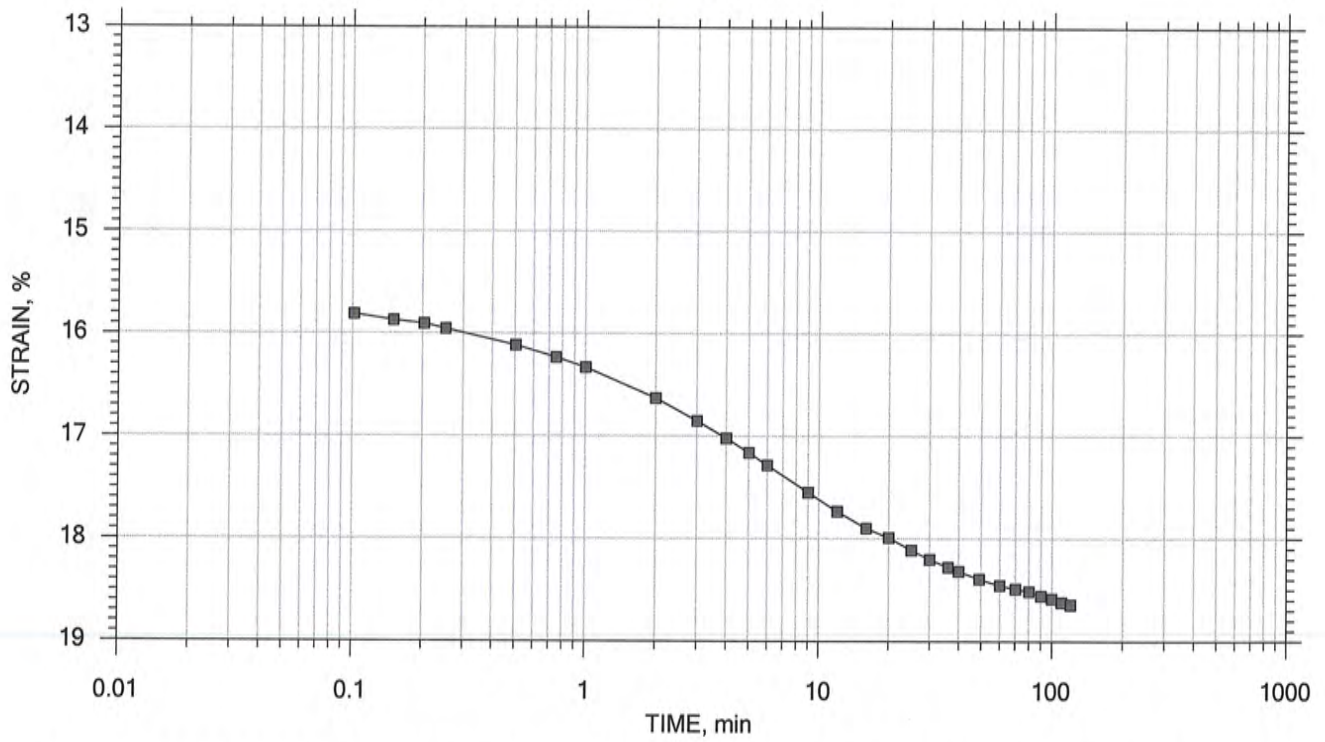



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 13 of 20

Stress: 12000 psf



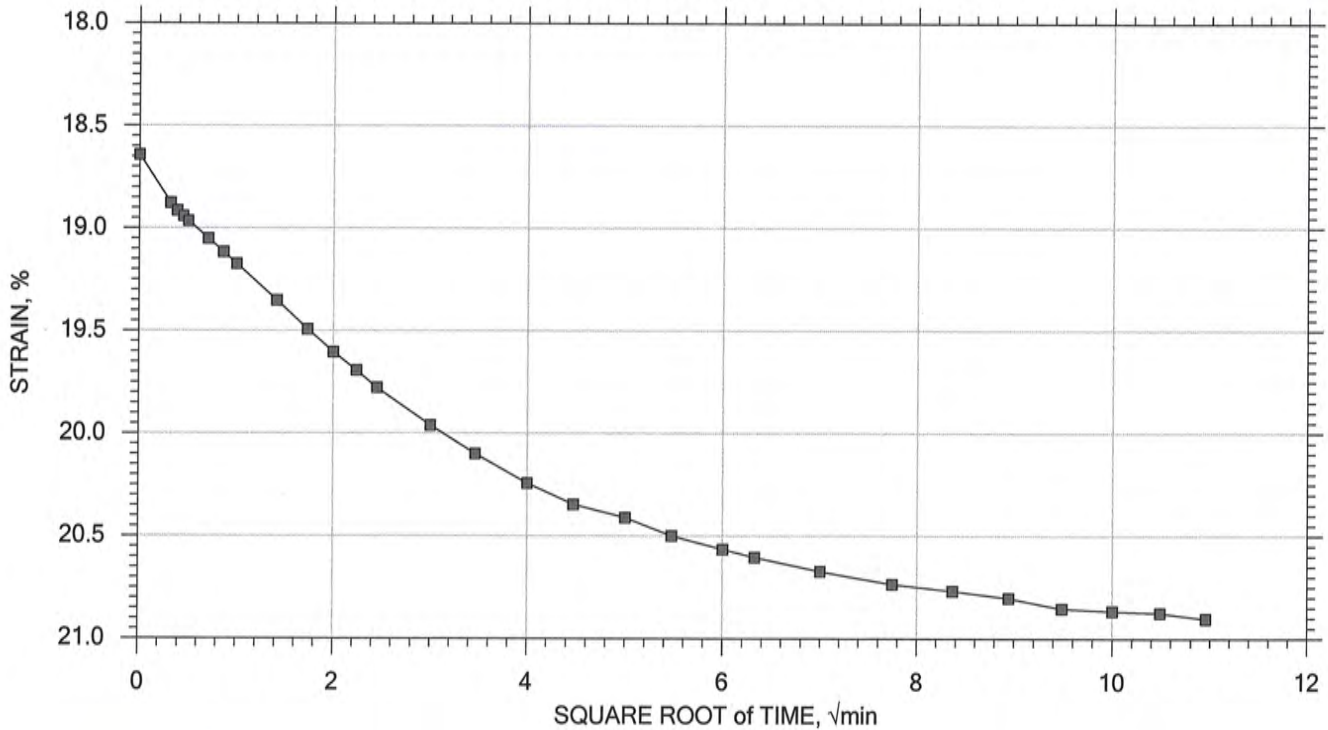
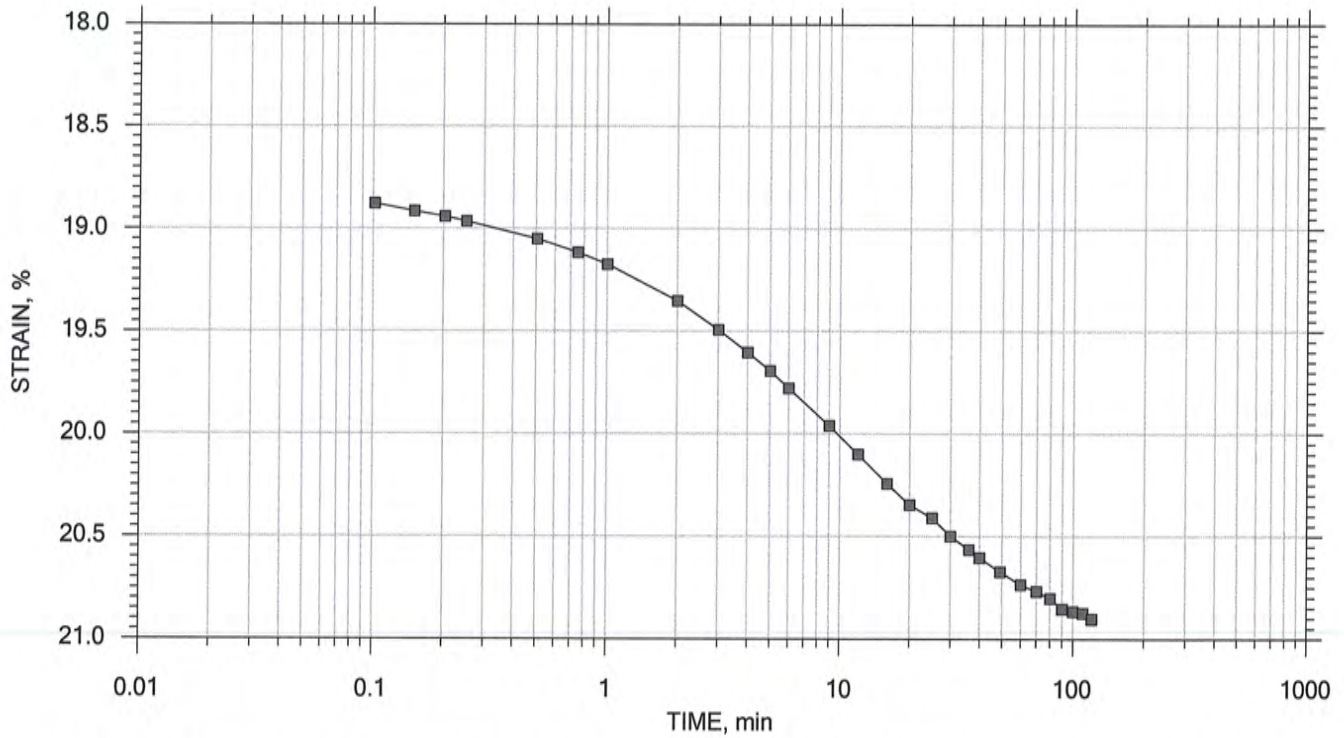
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 14 of 20

Stress: 16000 psf



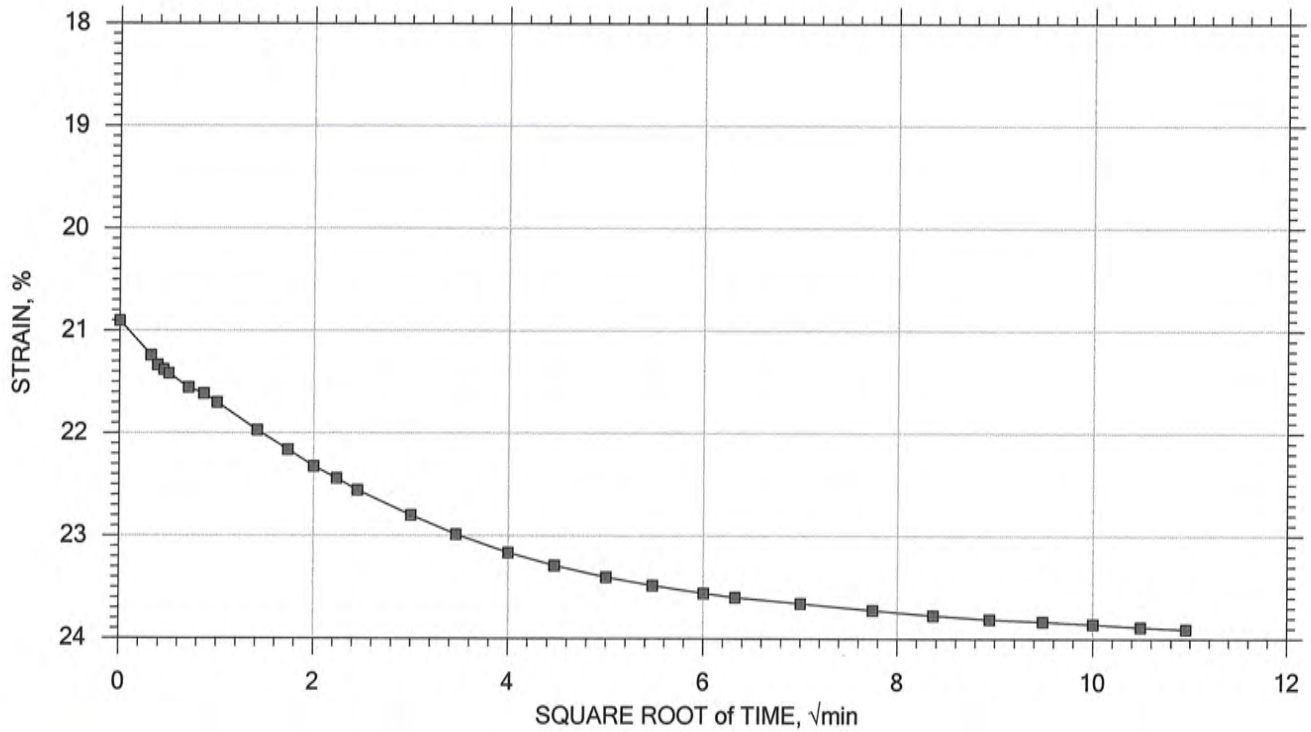
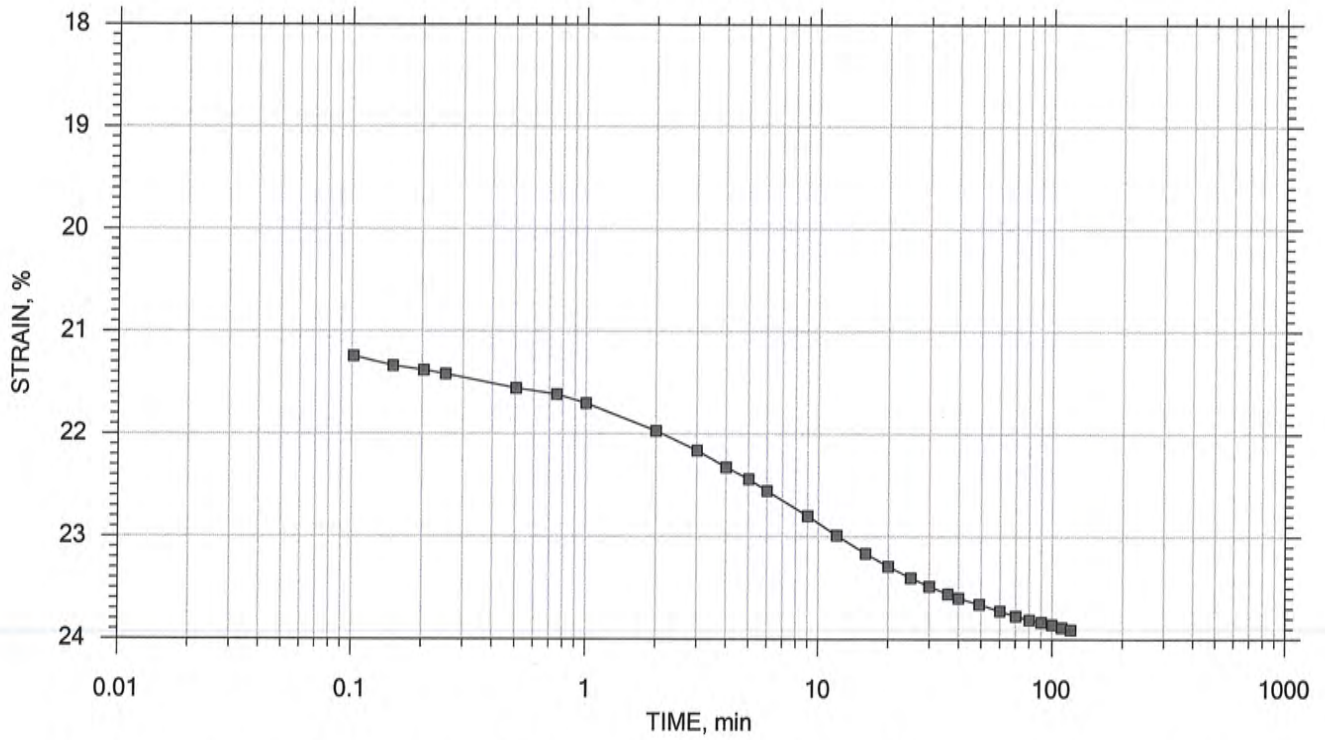
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 15 of 20

Stress: 24000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

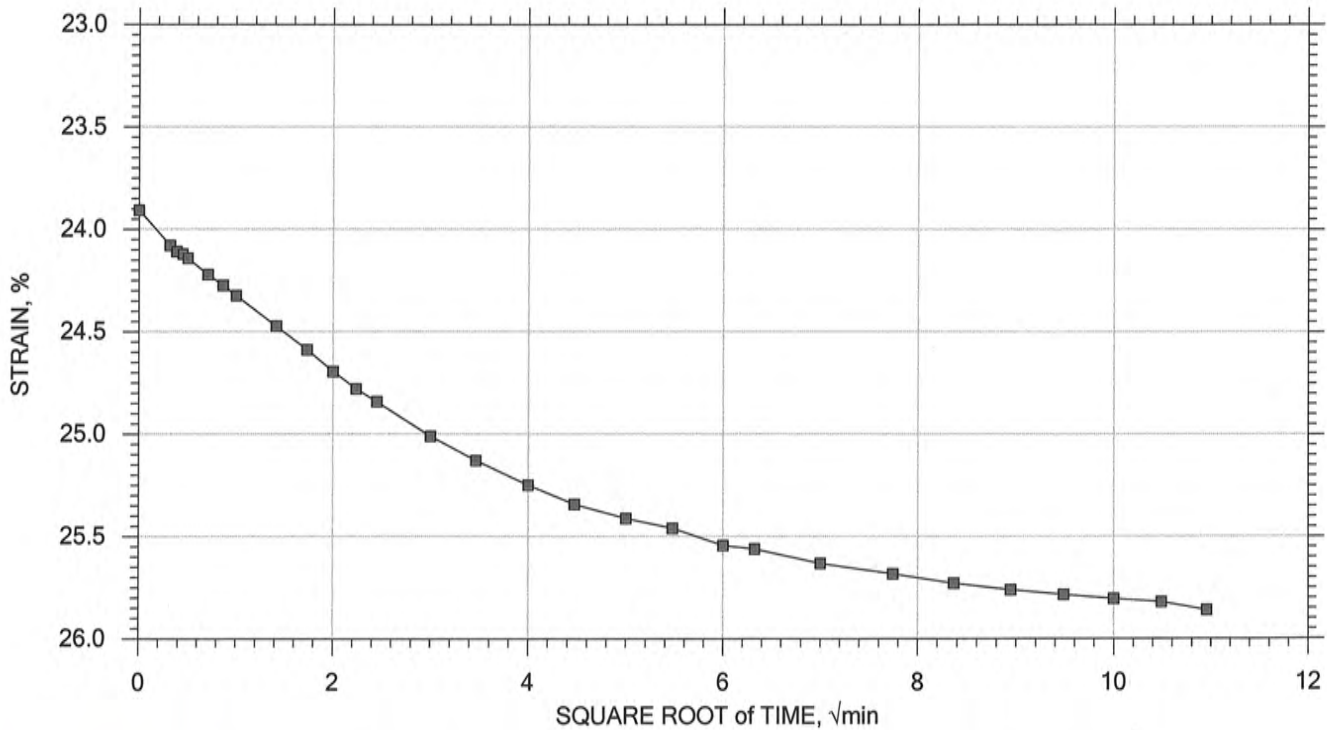
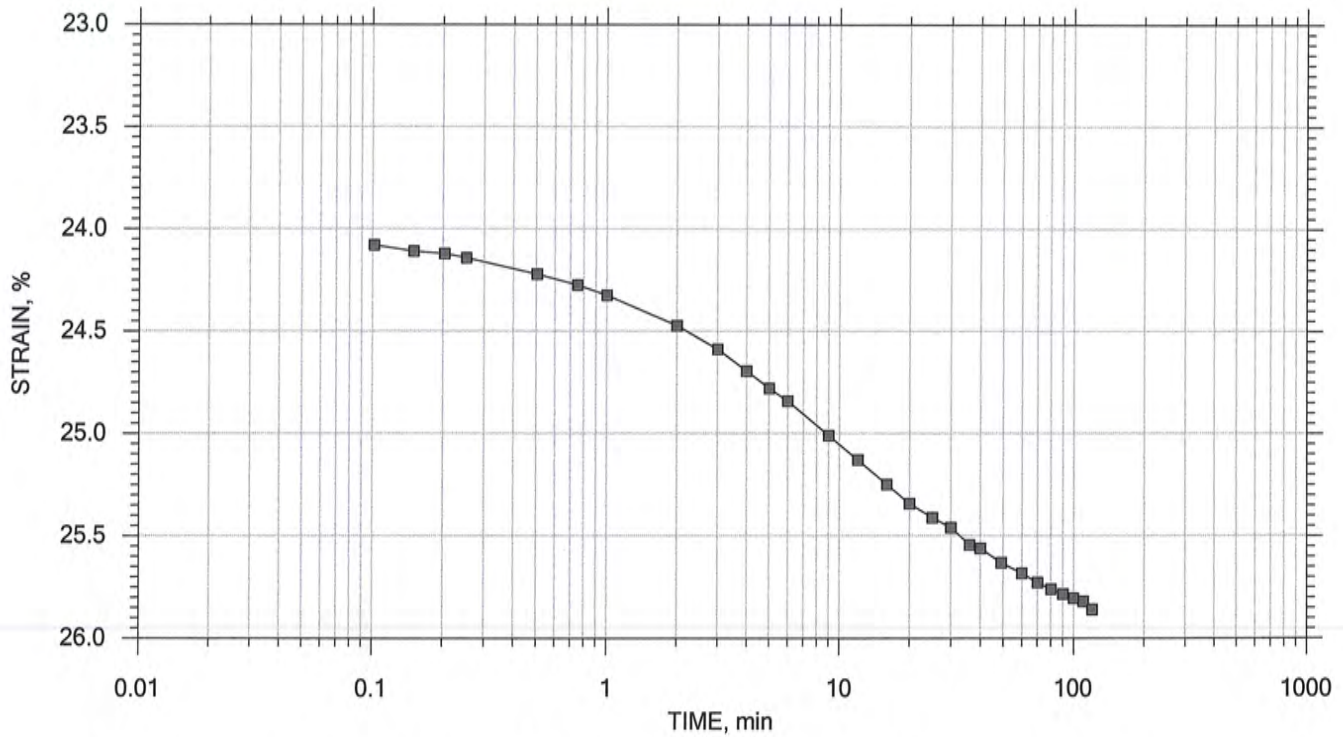



# One-Dimensional Consolidation by ASTM D2435 - Method B

## TIME CURVES

Constant Load Step 16 of 20

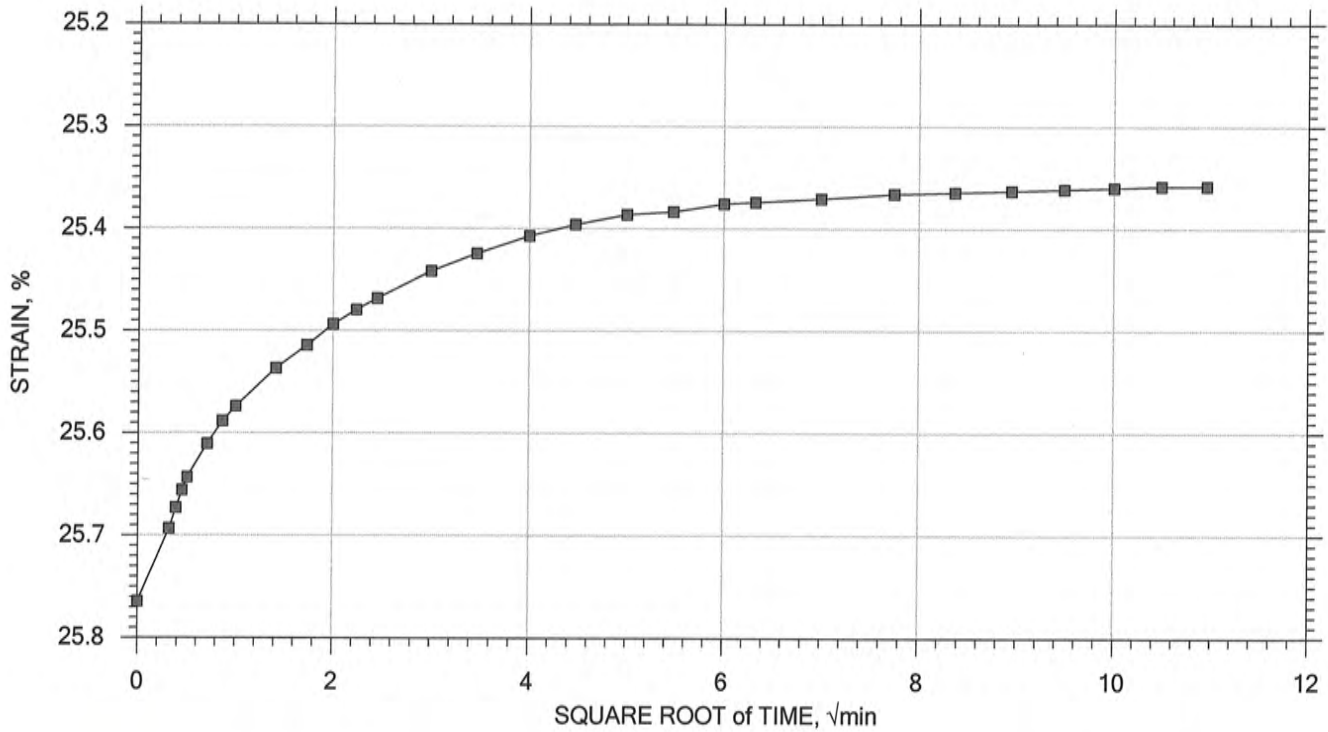
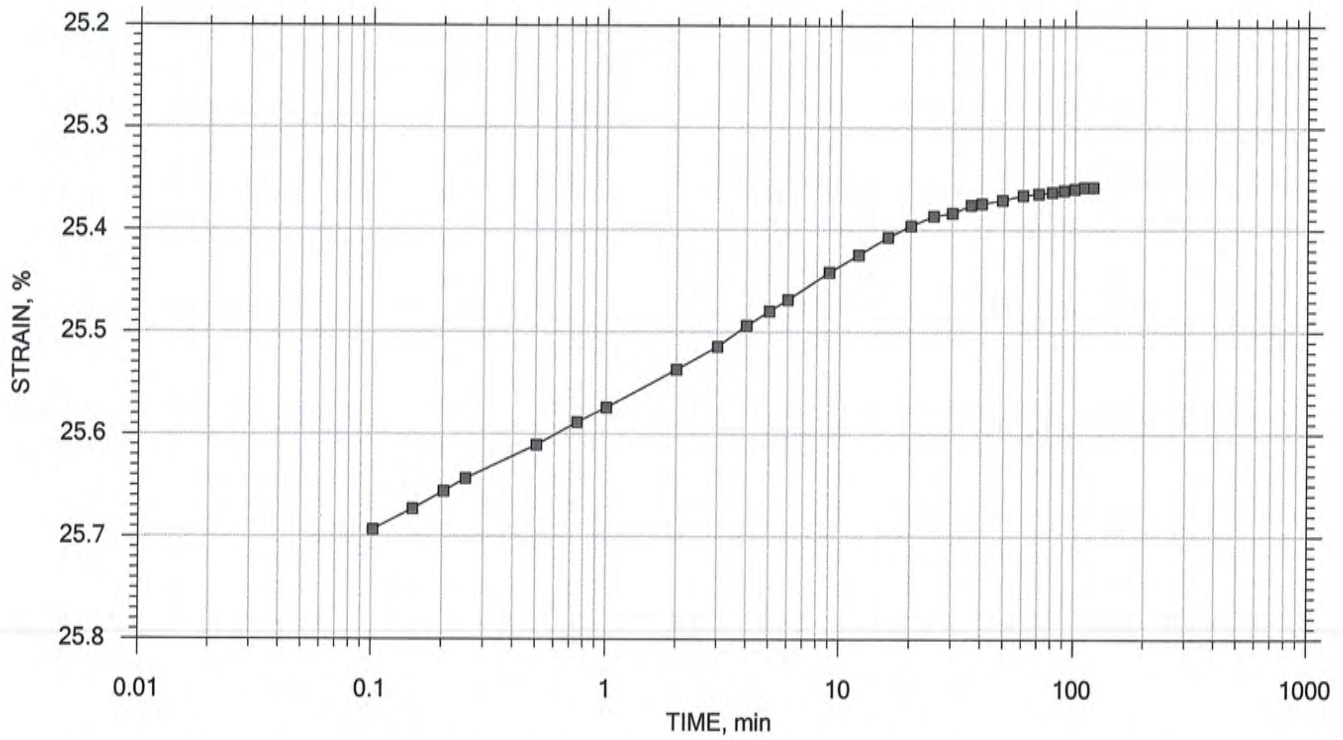
Stress: 32000 psf




	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES  
Constant Load Step 17 of 20  
Stress: 16000 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		

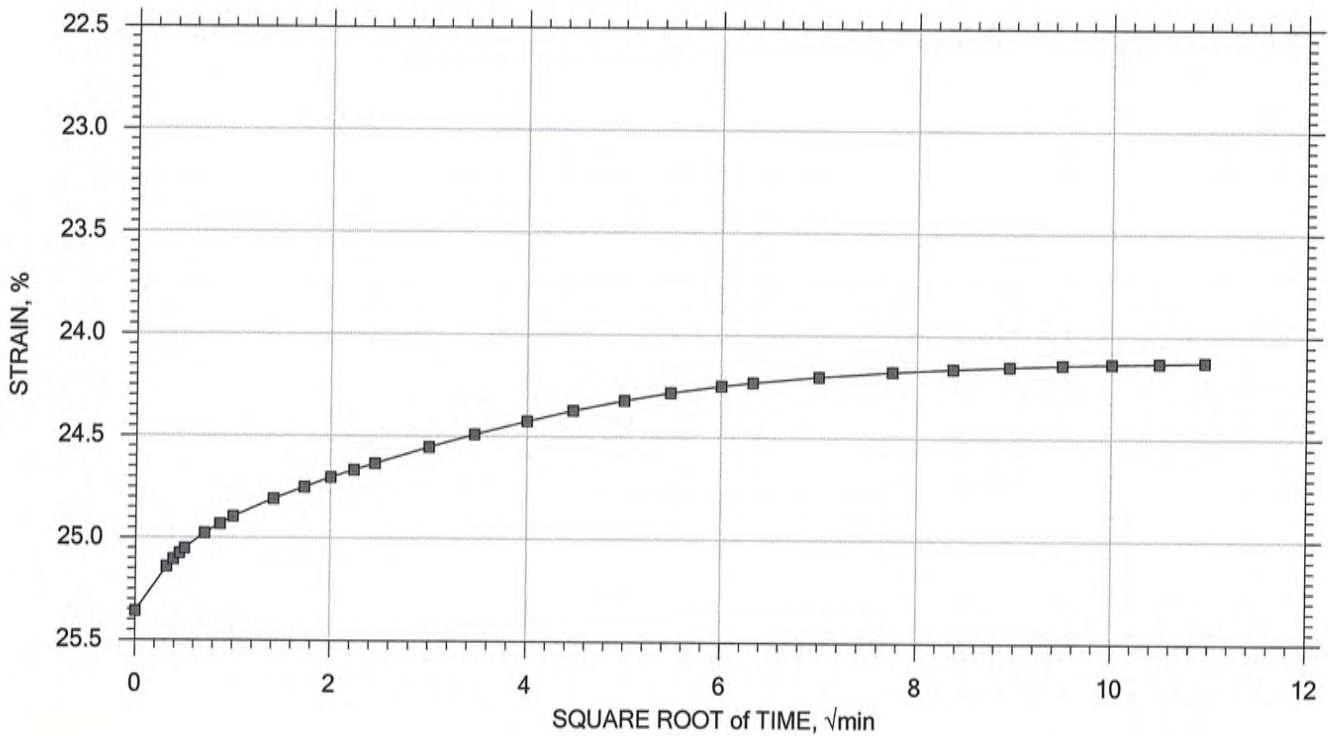
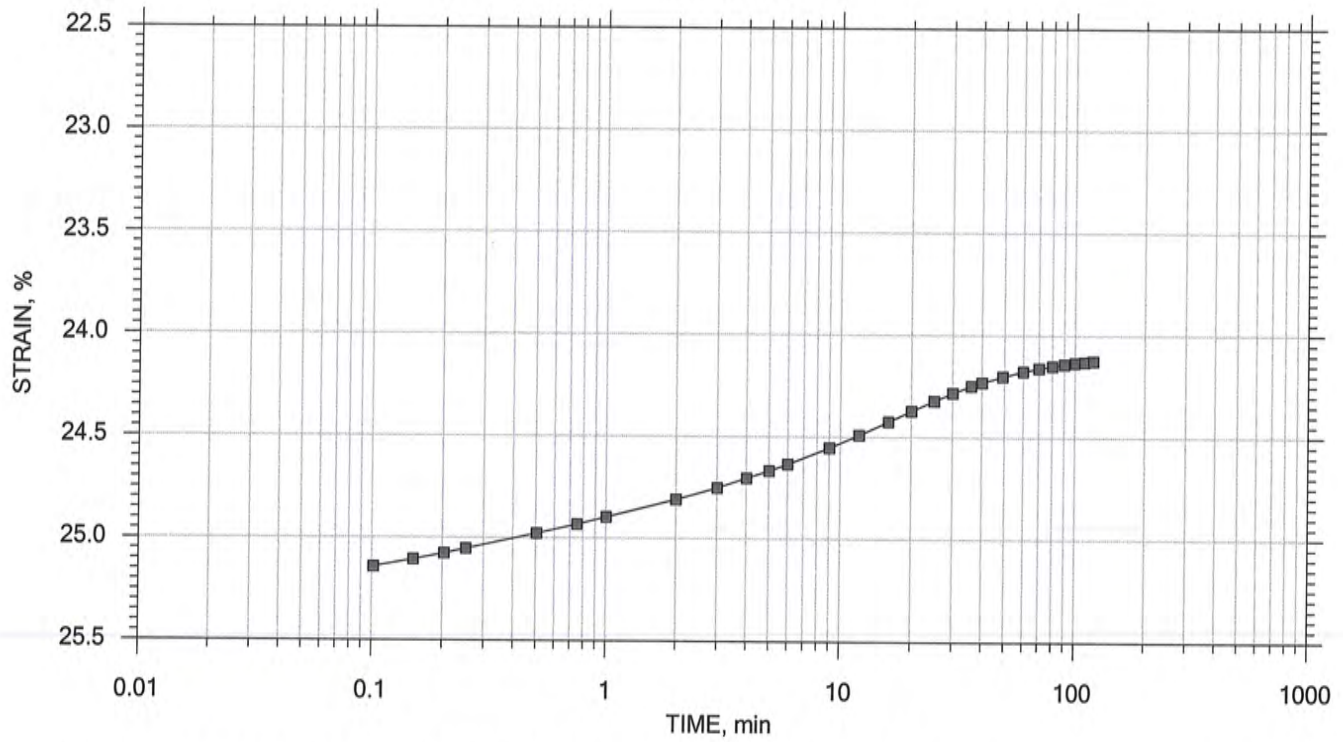



# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 18 of 20

Stress: 4000 psf



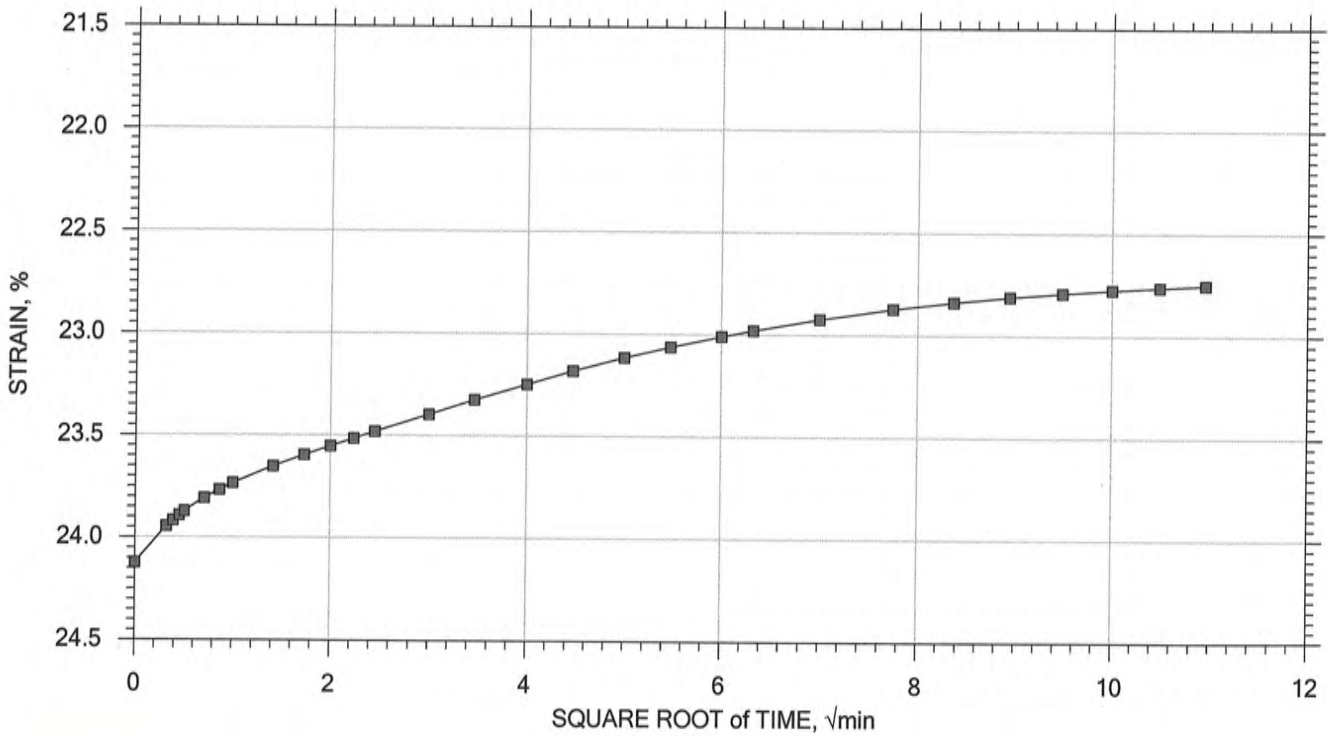
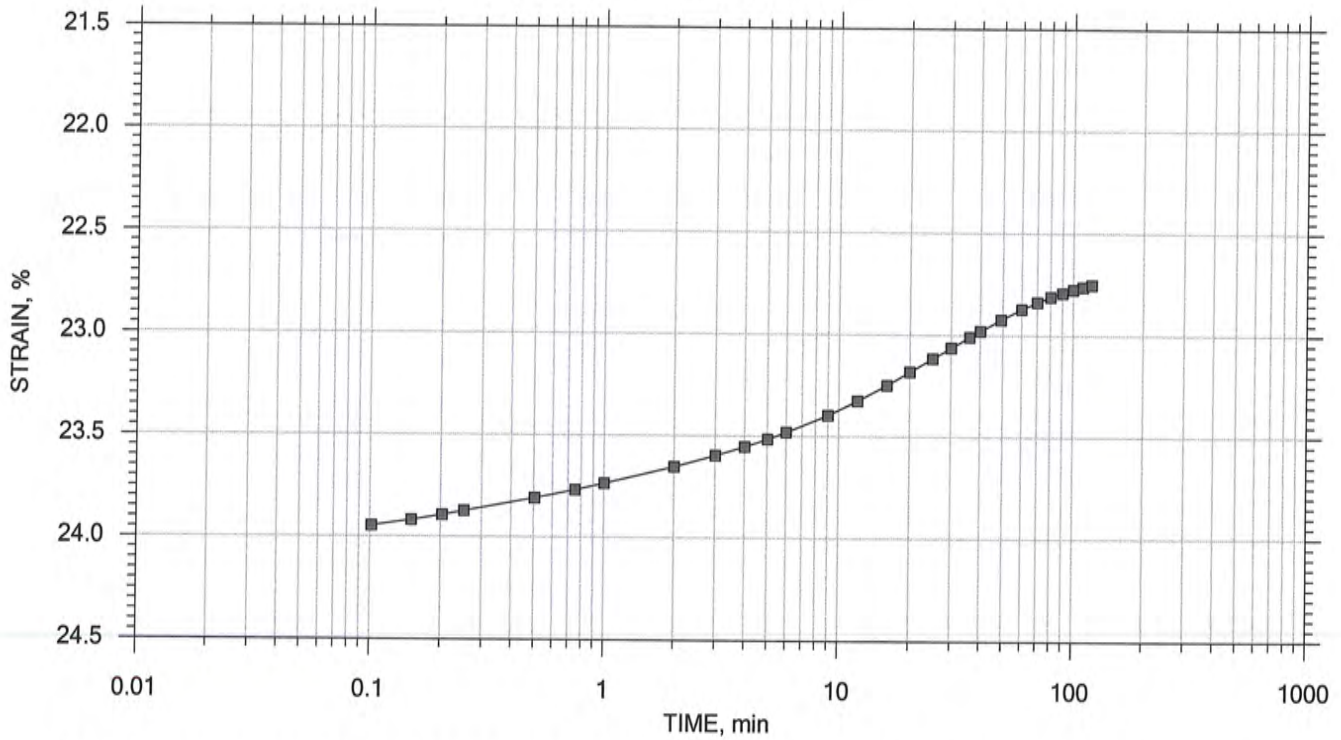
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 19 of 20

Stress: 1000 psf



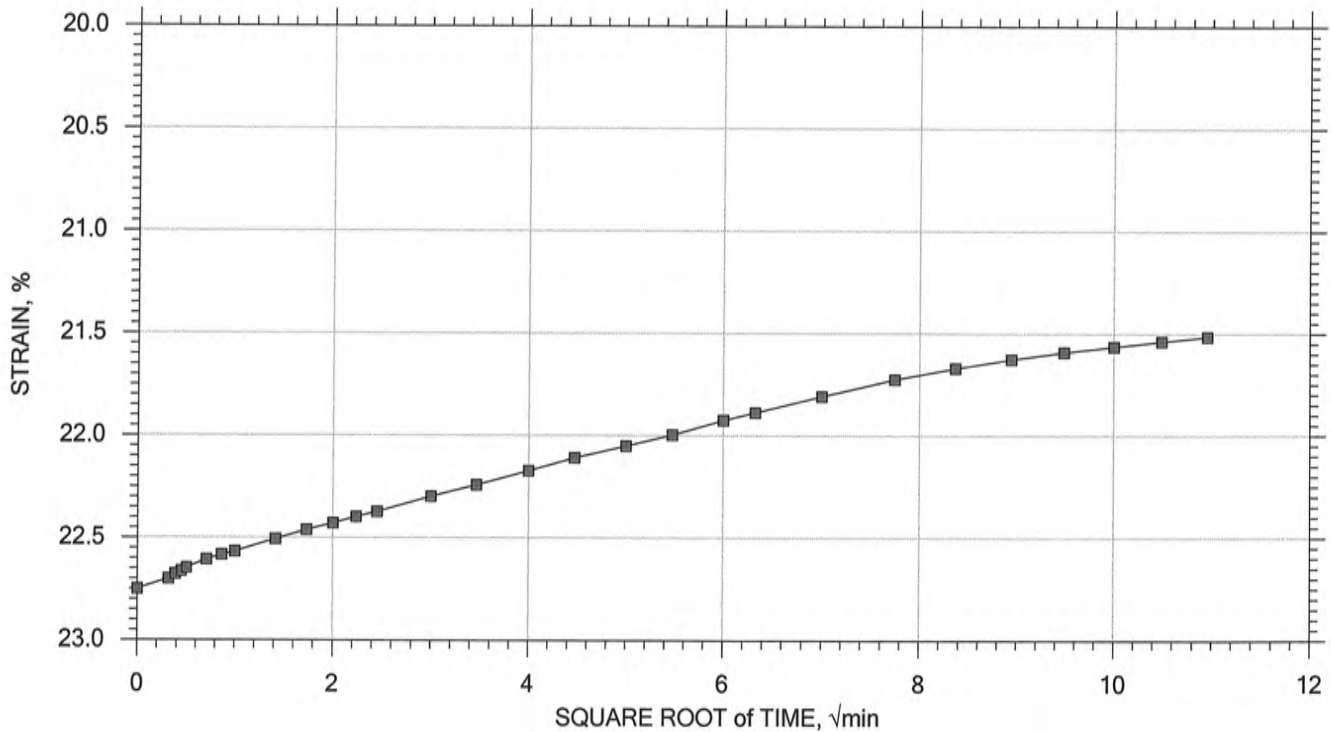
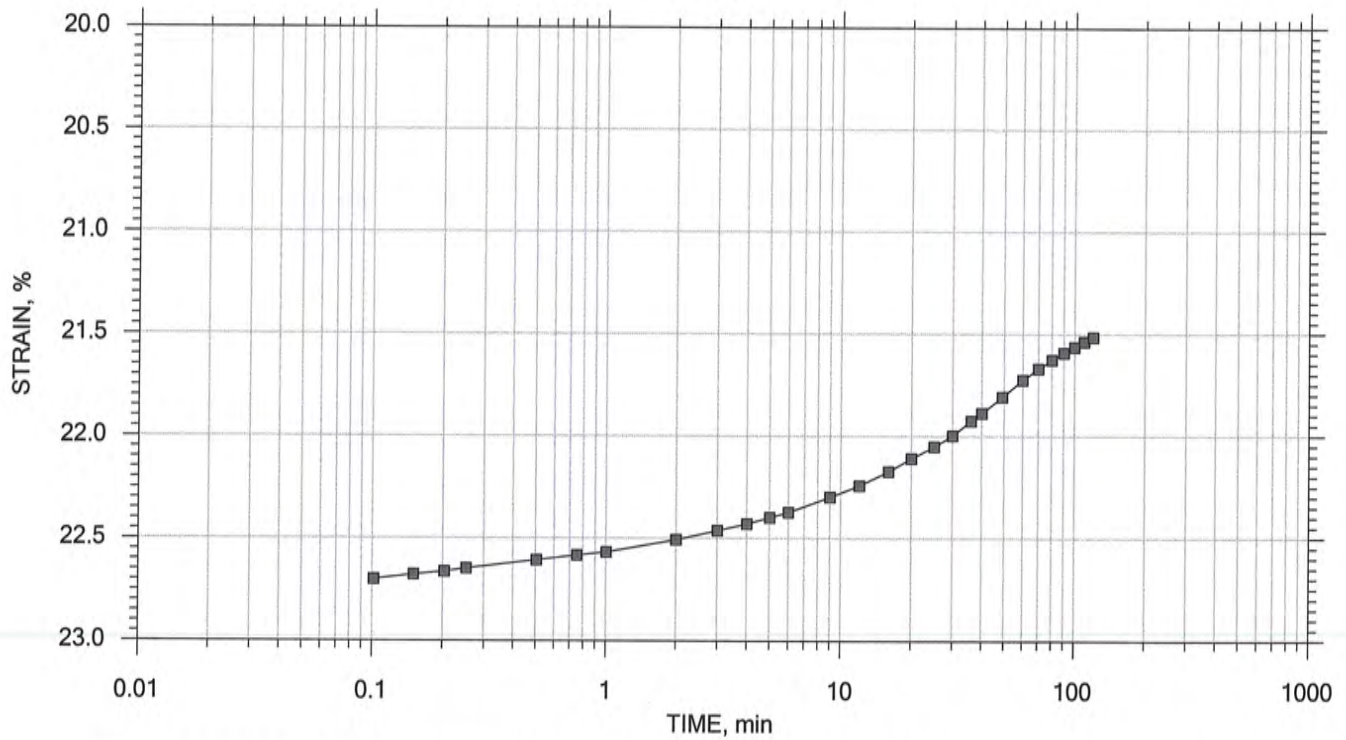
	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		


# One-Dimensional Consolidation by ASTM D2435 - Method B

TIME CURVES

Constant Load Step 20 of 20

Stress: 250 psf



	Project: I-26 Volvo Interchange	Location: Berkely County, SC	Project No.: GTX-304013
	Boring No.: IS-18	Tested By: jm	Checked By: mcm
	Sample No.: ---	Test Date: 11/13/15	Test No.: IP-4
	Depth: 10-12 ft	Sample Type: intact	Elevation: ---
	Description: Moist, greenish gray clayey sand		
	Remarks: System 5077		