GEOTECHNICAL SUBSURFACE DATA REPORT

CSX Railroad Bridge over Interstate 85
Spartanburg County, South Carolina

For

By

F&ME

CONSULTANTS

Geotechnical / Environmental / Materials
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June 3, 2016

SCDOT Project No.: 0040692
F&ME File No.: G5439.00

F&ME
CONSULTANTS

June 3, 2016

Mr. Derek Staton, PE
TranSystems Corporation
2550 West Tyvola Road, Suite 140
Charlotte, North Carolina 28217

Re: Geotechnical Subsurface Data Report
CSX Railroad Bridge over Interstate 85
Spartanburg County, South Carolina
SCDOT Project No.: 0040692
F&ME Project No.: G5439.00

Dear Mr. Staton:

Submitted herein is the geotechnical subsurface data report for the above referenced project. Included is a general project description, a summary of the field investigations performed, the results from the performed field investigation, and the results from our laboratory testing.

Please notify us if there are any questions.

Sincerely,

F&ME CONSULTANTS

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 30374 JOHN FRANCIS HAMILTON 6/3/16

SOUTH CAROLINA F&ME CONSULTANTS, INC. No. 4891 CERTIFICATE OF AUTHORIZATION

John F. Hamilton, PE
Geotechnical Design Manager

JFH/jfh

Attachments

3112 Devine Street Columbia, South Carolina 29205 P 803.254.4540 F 803.254.4542 www.fmecol.com

1. INTRODUCTION

The project site is located at the intersection of the CSX railroad and Interstate 85 near SC Route 57 in Spartanburg County, South Carolina. A site location plan is presented in Section 1 of the Appendix.

It is our understanding that the project will include the construction of a new railroad bridge on a new railroad alignment and subsequently the demolition and removal of the existing bridge structure. We understand that the increase in vertical grade of the replacement bridge relative to the existing bridge approach subgrade is approximately two (2) to four (4) feet.

The final subsurface investigation was performed by F&ME in general accordance with the 2010 SCDOT Geotechnical Design Manual (GDM).

2. SUBSURFACE INVESTIGATION

From August 26, 2015 to September 9, 2015, five (5) soil test borings (designated as B-1 through B-5) were performed for final bridge design purposes. The bridge soil test borings were advanced utilizing a CME-550 drill rig. Hollow-stem auger drilling techniques were used to maintain a stable borehole. Standard Penetration Tests (SPT's) were continuously obtained in the top ten (10) feet of each test boring. Following the continuous sampling, SPT samples were obtained at regular, five (5) foot intervals throughout the remaining depths of the borings. SPT samples were performed in general accordance with ASTM D-1586 to determine the relative densities and consistencies of the subsurface soils and to collect subsurface soil samples. During SPT testing of the encountered soils, an automatic hammer system was used. The energy ratio for the CME 550 hammer is 74%. The borings were advanced to auger refusals, and subsequently advanced into rock using NQ rock coring techniques.

From August 24, 2015 to September 3, 2015, ten (10) soil test borings (designated as RW-1 through RW-10) were performed for final railroad embankment design purposes. The soil test borings were advanced utilizing a CME 550 drill rig. Hollow-stem auger drilling techniques were used to maintain a stable borehole. SPT's were continuously obtained in the top ten (10) feet of each test boring. Following the continuous sampling, SPT samples were obtained at regular, five (5) foot intervals throughout the remaining depths of the borings. SPT samples were performed in general accordance with ASTM D-1586 to determine the relative densities and consistencies of the subsurface soils and to collect subsurface soil samples. During SPT testing of the encountered soils, an automatic hammer system was used. The energy ratio for the CME 550 hammer is 74%. The borings were advanced to auger refusals and subsequently terminated.

From August 25, 2015 to September 8, 2015, six (6) soil test borings (designated as W-1 to W-6) were performed for final retaining wall design purposes. The soil test borings were advanced utilizing a CME 550 drill rig. Hollow-stem auger drilling techniques

were used to maintain a stable borehole. SPT's were continuously obtained in the top ten (10) feet of each test boring. Following the continuous sampling, SPT samples were obtained at regular, five (5) foot intervals throughout the remaining depths of the borings. SPT samples were performed in general accordance with ASTM D-1586 to determine the relative densities and consistencies of the subsurface soils and to collect subsurface soil samples. During SPT testing of the encountered soils, an automatic hammer system was used. The energy ratio for the CME 550 hammer is 74%. The borings were advanced to auger refusals and subsequently terminated.

On September 11, 2015, four (4) auger probe borings (designated as RW-3A, W-1A, W-2A, and W-5A) were performed. The purpose of the auger probe borings was to collect undisturbed Shelby Tube samples. The auger probe borings were advanced with a CME 550 drill rig. Hollow-stem auger drilling techniques were used to maintain a stable borehole. SPT tests were not performed in the auger probe borings. The auger probe borings were advanced to targeted depths and subsequently terminated.

On September 11, 2015, three (3) bulk soil samples (designated as BS-1 through BS-3) were performed. The purpose of the bulk soil samples was to collect soil specimens in areas designated for excavation and evaluate these samples for potential reuse on other areas of the project. The bulk soil samples were obtained by using a manually advanced hand auger. Dynamic cone penetration tests were not performed at these locations. The bulk soil samples were collected to a depth of five (5) feet below the existing ground surface and subsequently terminated.

The horizontal and vertical survey coordinates of the borings performed were collected by F&ME personnel utilizing a Trimble R8 GPS rover on the SC VRS system. The horizontal and vertical survey coordinates of the boring locations were placed on the CAD drawing (provided by TranSystems) for the proposed railroad alignment. Subsequently, the station and offset of each boring location relative to the proposed railroad alignment were determined.

The locations of the borings are provided in the following table.

SOIL TEST LOCATION TABLE					
Test Number	**Test Hole Locale**	**Station**	**Offset from CL (ft)**	**Elevation (ft-MSL)**	**Depth (ft)**
B-1	Bridge North Abutment	1318+64	43.9-RT	758.7	80.5
B-2	Bridge Pier 1	1319+38	11.9-LT	730.2	27.2
B-3	Bridge Pier 2	1320+48	7.9-LT	730.3	40.7
B-4	Bridge Pier 2	1320+06	49.0-LT	733.0	45.3
B-5	Bridge South Abutment	1322+67	5.0-LT	753.2	70.9
RW-1	Railroad Embankment	1306+99	30.9-LT	751.9	31.5
RW-2	Railroad Embankment	1311+90	12.8-LT	754.7	64.5
RW-3	Railroad Embankment	1317+07	40.0-RT	757.6	62.6
RW-3A	Railroad Embankment	1317+07	40.0-RT	757.6	29.0
RW-4	Railroad Embankment	1323+69	9.9-LT	761.4	52.1
RW-5	Railroad Embankment	1326+70	20.9-LT	785.6	49.0
RW-6	Railroad Embankment	1330+26	28.7-LT	784.9	40.6
RW-7	Railroad Embankment	1332+66	21.7-LT	783.8	39.3
RW-8	Railroad Embankment	1335+70	16.1-LT	770.7	17.0
RW-9	Railroad Embankment	1338+68	30.8-LT	782.6	35.2
RW-10	Railroad Embankment	1344+68	46.1-LT	780.4	46.1
W-1	Wall #1[a]	1314+06	44.9-LT	742.7	61.5
W-1A	Wall #1[a]	1314+06	44.9-LT	742.7	8.0
W-2	Wall #1[a]	1314+98	42.3-LT	741.1	57.5
W-2A	Wall #1[a]	1314+98	42.3-LT	741.1	15.0
W-3	Wall #2[a]	1317+99	88.4-LT	726.8	37.1
W-4	Wall #3[a]	1320+10	61.2-RT	735.9	50.0
W-5	Wall #4[a]	1322+18	15.0-LT	742.1	32.6
W-5A	Wall #4[a]	1322+18	15.0-LT	742.1	25.0
W-6	Wall #5[a]	1323+02	83.3-RT	759.0	68.5
BS-1	Railroad Embankment	1314+50	25.0-LT	745.0	5.0
BS-2	Railroad Embankment	1326+50	20.0-LT	770.0	5.0
BS-3	Railroad Embankment	1332+50	20.0-LT	787.0	5.0

[a]Wall designations as shown on the bridge plans

We have provided a boring location plan in Section 2 of the Appendix displaying the locations of the borings performed during the final subsurface investigation. The boring logs are provided in Section 3 of the Appendix.

3. LABORATORY TESTING PROGRAM

Select samples from the borings were tested in our laboratory to determine representative physical and engineering properties. The laboratory program included moisture content, Atterberg limits, grain size distribution, organics content, standard Proctor, triaxial shear testing, specific gravity, and UC rock strength tests. These tests were used to determine the strength and behavioral characteristics of the soils as well as verify the field classifications by the AASHTO classification system and USCS. For the UC rock strength tests, the rock core specimens were lapped in general accordance with ASTM D 4543.

Electro-chemical testing was also performed. Electro-chemical testing consisted of sulfate, pH, and soil resistivity tests. The results from the electro-chemical testing will provide indications of subsurface properties that could cause possible long-term degradation of foundation elements.

All soil and rock testing was conducted in accordance with applicable ASTM/AASHTO standards. The type and number of laboratory tests are summarized in the following table.

LABORATORY TEST PROGRAM	
Type of Test	**Number of Tests**
Moisture Content	70
Atterberg Limits	70
Grain Size	70
Organics Content	2
Standard Proctor	2
CU Triaxial Shear	4
Specific Gravity	3
Rock UC Strength	12
Corrosion Series	2

Data sheets presenting the results of the laboratory test program are provided in Section 4 of the Appendix.

APPENDIX

CONTENTS

APPENDIX

SECTION 1

SITE LOCATION PLAN

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG	0040692	I-85	

TN
MN (6.8°W)

Scale 1 : 112,500
1" = 1.78 mi
Data Zoom 10-7

F&ME CONSULTANTS
GEOTECHNICAL – ENVIRONMENTAL – MATERIALS
COLUMBIA, SOUTH CAROLINA

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO. _____ DATE _____
DWG. CTC DATE 9/10/2015 GROUP ___ - ___
R/W _____ DATE _____

I-85 REHABILITATION MM 77 TO MM 84
CSX RR BRIDGE OVER I-85

SITE LOCATION PLAN

HRZ SCALE = NTS

FIGURE 1

APPENDIX

SECTION 2

BORING LOCATION PLAN

FED. RD. DIV. NO.	STATE	COUNTY	PROJECT ID	ROAD / ROUTE NO.	SHEET NO.
3	SC	SPARTANBURG	0040692	I-85	

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CONSULTANTS
GEOTECHNICAL – ENVIRONMENTAL – MATERIALS
COLUMBIA, SOUTH CAROLINA

REV. NO.	BY	DATE	DESCRIPTION OF REVISION
4			
3			
2			
1			

TOPO. _____ DATE _____
DWG. CTC DATE 9/10/2015 GROUP ___ – ___
R/W _____ DATE _____

I-85 REHABILITATION MM 77 TO MM 84
CSX RR BRIDGE OVER I-85

FINAL BORING LOCATION PLAN FOR
RAILROAD BRIDGE AND RAILROAD EMBANKMENT

HRZ SCALE = NTS

FIGURE 2

APPENDIX

SECTION 3

BORING LOGS

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1318+64	**Offset:**	43.9 R	**Alignment:**	Centerline
Elev.:	758.7 ft	**Latitude:**	35.031316	**Longitude:**	81.8589212	**Date Started:**	8/26/2015
Total Depth:	80.5 ft	**Soil Depth:**	69.2 ft	**Core Depth:**	11.3 ft	**Date Completed:**	8/27/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 43 ft	**24HR**	45 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
	0.0	Railway Ballast								
	1.0	BALLAST (12.0")		1.0						
	2.0	**FILL**		2.0	SS-1	3	3			
		Soft, Moist, Brown, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=7.5YR 4/4			SS-2	3	2	2	4	4th 6" = 2 Blows
	4.0			4.0						
753.7		No Recovery			SS-3	2	2	2	4	4th 6" = 1 Blow
		Very Loose, Moist, Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Micaceous, Munsell=7.5YR 4/4		6.0	SS-4	1	1	1	2	4th 6" = 1 Blow
		LL=NP, PL=NP, PI=NP, NMC=21.6%, %#200=44.9		8.0	SS-5	1	1	3	4	4th 6" = 2 Blows
748.7		=> Red, 2.5YR 4/6								
	12.0	**RESIDUUM**								
		Stiff to Very Stiff, Moist, Strong Brown, Non-Plastic, Sandy SILT (ML/A-4(0)), Micaceous, Munsell=7.5YR 4/6		13.5	SS-6	3	4	5	9	
743.7		LL=NP, PL=NP, PI=NP, NMC=28.6%, %#200=52.9		18.5	SS-7	3	4	5	9	
738.7										
		=> with Gravel		23.5	SS-8	6	6	4	10	
733.7										
		=> Brown, Munsell=7.5YR 4/4		28.5	SS-9	9	6	9	15	
728.7										
	33.5			33.5	SS-10	12	7	5	12	
		Medium Dense, Moist, Dark Brown, Non-Plastic, Silty Fine to Coarse SAND (SM/A-4(0)), Micaceous, Munsell=7.5YR 4/4								
723.7		LL=NP, PL=NP, PI=NP, NMC=24.7%, %#200=36.6		38.5	SS-11	4	7	10	17	
718.7										

Continued Next Page

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1318+64	**Offset:**	43.9 R	**Alignment:**	Centerline
Elev.:	758.7 ft	**Latitude:**	35.031316	**Longitude:**	81.8589212	**Date Started:**	8/26/2015
Total Depth:	80.5 ft	**Soil Depth:**	69.2 ft	**Core Depth:**	11.3 ft	**Date Completed:**	8/27/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 43 ft	**24HR**	45 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value	SPT N VALUE / PL MC LL / FINES CONTENT (%)
713.7		▽ =>Very Dense	43.5	SS-12	16	42	45	87	
708.7		=>Dense, with Gravel	48.5	SS-13	18	15	22	37	
703.7	54.0	**PARTIALLY WEATHERED ROCK (PWR)** Hard, Moist to Dry, Brown, Low Plasticity, Sandy SILT (ML), with Gravel, Micaceous, Munsell=7.5YR 4/4	53.5	SS-14	32	50/4"		100+	>>
698.7			58.5	SS-15		50/4.5"		100+	>>
693.7			63.5	SS-16	45	50/1.5"		100+	>>
688.7	69.2	**GNEISS** Biotite, Feldspar, Quartz, White, Gray, Brown. Numerous, Very Close, Moderatelly Wide Joints. Joints Typically Dip 0-90 Degrees. Highly Weathered, Weak. @ 69.5'=>UC Strength 9230 psi	68.5 69.2	SS-17		50/3.5"		100+	>>
683.7		@ 70.5'=>Few Very Close, Very Tight Joints. Joints Typically Dip 30-50 Degrees. Highly to Moderatelly Weathered, Strong.	70.5 75.5	NQ-1 NQ-2					REC=50%, RQD=0%, RMR=9 REC=88%, RQD=75%, RMR=67
678.7	80.5	@ 75.5'=>Numerous, Very Close, Very Tight Joints. Moderately to Slightly Weathered, Strong. Graphite in Cuttings		NQ-3					REC=93%, RQD=80%, RMR=57
		Boring Terminated at 80.5 feet							

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 10/7/15

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-2
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1319+38	**Offset:**	11.9 L	**Alignment:**	Centerline
Elev.:	730.2 ft	**Latitude:**	35.0309921	**Longitude:**	81.859213	**Date Started:**	8/28/2015
Total Depth:	27.2 ft	**Soil Depth:**	16.4 ft	**Core Depth:**	10.8 ft	**Date Completed:**	8/8/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 12 ft	**24HR**	NR

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
	0.0	Asphalt Roadway								
	0.6	ASPHALT (7.5")		0.5						
		FILL			SS-1	9	6	7	13	
	2.0	Stiff, Moist, Yellowish Brown, Low Plasticity, Sandy SILT (ML), Munsell=10YR 5/4		2.0						
	3.0				SS-2	3	3	3	6	4th 6" = 5 Blows
		Firm, Moist, Red, Low Plasticity, SILT (ML), Munsell=2.5Y 4/6		4.0						
725.2		**RESIDUUM**			SS-3	2	7	10	17	4th 6" = 7 Blows
		Loose to Medium Dense, Moist to Wet, Yellowish Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4), Micaceous, Munsell=10YR 5/6		6.0						
		LL=NP, PL=NP, PI=NP, NMC=28.1%, %#200=33.3			SS-4	2	4	7	11	4th 6" = 6 Blows
				8.0						
					SS-5	3	3	5	8	4th 6" = 6 Blows
720.2		=> with Gravel								
		LL=NP, PL=NP, PI=NP, NMC=33.8%, %#200=31.7								
		▽		13.5						
					SS-6	3	4	5	9	
715.2										
	16.4			16.4						
		GNEISS			NQ-1					REC=85%, RQD=73%, RMR=70
		Biotite, Feldspar, Quartz, White, Gray, Brown. No Joints. Slightly Weathered to Fresh, Strong.								
		@ 16.9'=>UC Strength 14150 psi								
710.2				20.7						
					NQ-2					REC=100%, RQD=100%, RMR=77
		@ 23.7'=>UC Strength 13730 psi								
705.2				25.7						
					NQ-3					REC=100%, RQD=100%, RMR=77
	27.2									
		Boring Temrinated at 27.2 feet								

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 10/7/15

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+48	**Offset:**	7.9 L	**Alignment:**	Centerline
Elev.:	730.3 ft	**Latitude:**	35.0308516	**Longitude:**	81.8588872	**Date Started:**	9/9/20015
Total Depth:	40.7 ft	**Soil Depth:**	13.9 ft	**Core Depth:**	26.8 ft	**Date Completed:**	9/9/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 13 ft	**24HR**	NR

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 / FINES CONTENT (%)
	0.0	Asphalt Roadway								
		ASPHALT (12.0")								
	1.0									
		STONEBASE (12.0")								
	2.0			2.0						
		Stiff, Moist, Yellowish Red, Sandy SILT (ML), Munsell=5YR 4/6			SS-1	10	7	6	13	4th 6" = 5 Blows
	4.0			4.0						
725.3		Loose, Moist, Strong Brown, Micaceous Silty Fine to Medium SAND (SM), Munsell=7.5YR 5/6			SS-2	3	3	4	7	4th 6" = 6 Blows
		LL=NP, PL=NP, PI=NP, NMC=29.4%, %#200=26.4		6.0						
		=>Strong Brown, Munsell=7.5YR 3/4			SS-3	3	4	4	7	4th 6" = 12 Blows
		=>Hard		8.0						
					SS-4	30	50/6.0"		50	
720.3										
				13.5						
	13.9	=>Brown, Munsell=7.5YR 5/4		13.9	SS-5		50/5.0"		50	
		GNEISS			NQ-1					REC=86%, RQD=38%, RMR=45
715.3		Biotite, Feldspar, Quartz, White, Gray, Brown. Few, Very Close, Very Tight Joints. Joints Typically Dip 10-40 Degrees. Highly to Moderatelly Weathered, Strong.		15.7						
		@ 14.9'=>UC Strength 8720 psi			NQ-2					REC=33%, RQD=0%, RMR=24
		=>Numerous, Very Close, Very Tight Joints. Joints Typically Dip 10-80 Degrees. Highly Weathered, Strong.								
710.3				20.7						
		=>Few, Very Close, Very Tight Joints. Joints Typically Dip 30-60 Degrees. Highly to Slightly Weathered, Strong.			NQ-3					REC=58%, RQD=28%, RMR=45
		@ 23.2'=>UC Strength 12850 psi								
705.3				25.7						

SPT N VALUE ● PL × MC ○ LL × ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+48	**Offset:**	7.9 L	**Alignment:**	Centerline
Elev.:	730.3 ft	**Latitude:**	35.0308516	**Longitude:**	81.8588872	**Date Started:**	9/9/20015
Total Depth:	40.7 ft	**Soil Depth:**	13.9 ft	**Core Depth:**	26.8 ft	**Date Completed:**	9/9/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 13 ft	**24HR**	NR

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
		=>Numerous, Very Close, Very Tight Joints. Joints Typically Dip 30-50 Degrees. Highly to Slightly Weathered, Medium Strong.			NQ-4			REC=75%, RQD=58%, RMR=47
		@ 28.2'=>UC Strength 5000 psi						
700.3				30.7				
		=>Few, Very Close, Very Tight Joints. Joints Typically Dip 0-20 Degrees. Highly to Slightly Weathered, Strong.			NQ-5			REC=85%, RQD=70%, RMR=42
		@ 30.7'=>UC Strength 9780 psi						
695.3				35.7				
		=>Numerous, Very Close, Very Tight Joints. Joints Typically Dip 10-20 Degrees. Highly to Slightly Weathered, Strong.			NQ-6			REC=93%, RQD=57%, RMR=54
		@ 38.0'=>UC Strength 13430 psi						
690.3								
	40.7	Boring Temrinated at 40.7 feet						
685.3								
680.3								

SC_DOT G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 10/7/15

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+06	**Offset:**	49.0 L	**Alignment:**	Centerline
Elev.:	733.0 ft	**Latitude:**	35.0308061	**Longitude:**	81.8590768	**Date Started:**	9/9/2015
Total Depth:	45.3 ft	**Soil Depth:**	24.9 ft	**Core Depth:**	20.4 ft	**Date Completed:**	9/9/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 10 ft	**24HR**	NR

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
	0.0	Asphalt Roadway								
	1.0	ASPHALT (12.0")								
	2.0	STONEBASE (12.0")		2.0						
		RESIDIUM Loose, Moist, Dark Grayish Brown and Dark Red, Silty Fine to Medium SAND (SM), Munsell=10YR 4/2 and 2.5YR 3/6			SS-1	6	3	3	6	4th 6" = 4 Blows
				4.0						
728.0		=>Yellowish Red, Munsell=5YR 5/6			SS-2	2	2	3	5	4th 6" = 3 Blows
				6.0						
		=>Brown, Munsell=7.5YR 5/4, LL=NP, PL=NP, PI=NP, NMC=31.1%, %#200=27.0			SS-3	2	3	4	7	4th 6" = 4 Blows
	8.0			8.0						
		Soft, Moist to Wet, Strong Brown, Micaceous SILT (ML), Munsell=7.5YR 4/6			SS-4	1	2	1	3	4th 6" = 3 Blows
723.0		▽								
	13.5			13.5						
		Medium Dense, Wet, Dark Yellowish Brown, Silty Fine to Medium SAND (SM), Munsell=10YR 4/6			SS-5	2	1	11	12	4th 6" = 1 Blow
718.0		LL=NP, PL=NP, PI=NP, NMC=34.7%, %#200=21.6								
	18.5			18.5						
		Very Dense, Wet, Brown, Silty Fine to Coarse SAND (SM), Munsell=10YR 5/3			SS-6	11	50/5.5"		100+	>>
713.0	20.0									
		PARTIALLY WEATHERED ROCK (PWR) Very Dense, Wet, Dark Yellowish Brown, Silty Fine to Coarse SAND (SM), Munsell=10YR 3/6								
				23.5						
					SS-7	12	16	50/5.5"	66	
	24.9			24.8	SS-8		10/0.0"		100+	>>
708.0				24.9						

Continued Next Page

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+06	**Offset:**	49.0 L	**Alignment:**	Centerline
Elev.:	733.0 ft	**Latitude:**	35.0308061	**Longitude:**	81.8590768	**Date Started:**	9/9/2015
Total Depth:	45.3 ft	**Soil Depth:**	24.9 ft	**Core Depth:**	20.4 ft	**Date Completed:**	9/9/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 10 ft	**24HR**	NR

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
		GNEISS Biotite, Feldspar, Quartz, White, Gray, Brown. Numerous, Very Close, Tight to Very Tight Joints. Joints Typically Dip 20-60 Degrees. Highly to Slightly Weathered, Strong.			NQ-1			REC=78%, RQD=63%, RMR=50
		@ 26.2'=>UC Strength 9970 psi		30.3				
703.0								
		@ 32.0'=>UC Strength 12510 psi			NQ-2			REC=93%, RQD=78%, RMR=45
698.0				35.3				
		=>Few, Close, Very Tight Joints. Joints Typically Dip 10-20 Degrees. Slightly Weathered to Fresh, Strong.			NQ-3			REC=100%, RQD=100%, RMR=55
693.0				40.3				
		=>Few, Very Close, Tight to Very Tight Joints. Joints Typically Dip 10-20 Degrees. Fresh, Medium Strong.			NQ-4			REC=100%, RQD=77%, RMR=52
		@ 42.8'=>UC Strength 7070 psi						
688.0	45.3	Boring Temrinated at 45.3 feet						
683.0								

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-5
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1322+67	**Offset:**	5.0 L	**Alignment:**	Centerline
Elev.:	753.2 ft	**Latitude:**	35.0302896	**Longitude:**	81.8594473	**Date Started:**	9/4/2015
Total Depth:	70.9 ft	**Soil Depth:**	60.9 ft	**Core Depth:**	10.0 ft	**Date Completed:**	9/4/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 50 ft	**24HR**	NR

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 (%)
	0.0	Kudzu								
		Firm to Stiff, Dry to Moist, Reddish Brown, Sandy SILT (ML), with rocky debris and wood, Munsell=5YR 4/2		1.0						
				2.0	SS-1	2	3	4	7	4th 6" = 4 Blows
					SS-2	2	4	5	9	4th 6" = 9 Blows
				4.0						
748.2		=>Very Stiff			SS-3	9	9	9	18	4th 6" = 9 Blows
	6.0			6.0						
		Firm to Stiff, Moist, Red, Sandy Lean CLAY (CL), Munsell=2.5YR 4/6			SS-4	3	2	3	5	4th 6" = 3 Blows
				8.0						
		=> LL=38, PL=24, PI=14, NMC=24.0%, %#200=59.9			SS-5	2	2	4	6	4th 6" = 4 Blows
743.2										
				13.5						
					SS-6	4	6	8	14	
738.2										
	18.5			18.5						
		Medium Dense, Moist, Reddish Brown, Silty Fine to Medium SAND (SM), Micaceous, Munsell=5YR 5/4			SS-7	4	5	6	11	
733.2										
				23.5						
		=>with White, Munsell=5YR 8/1, LL=NP, PL=NP, PI=NP, NMC=23.3%, %#200=25.5			SS-8	4	5	7	12	
728.2										
				28.5						
		=> Moist to Wet, Reddish Brown and White, Munsell=5YR 5/4 and 5YR 8/1			SS-9	3	4	10	14	
723.2										
				33.5						
		=>Brown, No Sand, Munsell=7.5YR 5/4			SS-10	4	5	8	13	
718.2										

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	B-5
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1322+67	**Offset:**	5.0 L	**Alignment:**	Centerline
Elev.:	753.2 ft	**Latitude:**	35.0302896	**Longitude:**	81.8594473	**Date Started:**	9/4/2015
Total Depth:	70.9 ft	**Soil Depth:**	60.9 ft	**Core Depth:**	10.0 ft	**Date Completed:**	9/4/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA/RC	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	NQ	**Driller:**	D. Harris	**Groundwater:**	**TOB** 50 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	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
713.2		=>with White, with Sand, Munsell=7.5YR 8/1, LL=NP, PL=NP, PI=NP, NMC=22.5%, %#200=27.4	38.5	SS-11	4	6	7	13	
708.2		=>Very Stiff, No Sand	43.5	SS-12	5	7	9	16	
703.2		=>Micaceous ▽	48.5	SS-13	7	10	16	26	
698.2		=> Dense, LL=NP, PL=NP, PI=NP, NMC=26.5%, %#200=32.9	53.5	SS-14	5	9	23	32	
693.2	60.9		58.5	SS-15	50/0.0"			100+	>>
			60.8	~~SS-16~~	~~10/0.0"~~			~~100+~~	>>
		GNEISS Biotite, Feldspar, Quartz, White, Gray, Brown. Few, Very Close, Tight to Very Tight Joints. Joints Typically Dip 0-90 Degrees. Highly to Slightly Weathered, Strong.	60.9	NQ-1					REC=90%, RQD=60%, RMR=50
688.2		@ 63.3'=>UC Strength 12350 psi =>Moderate to Slightly Weathered	65.9	NQ-2					REC=93%, RQD=75%, RMR=59
683.2	70.9	Boring Terminated at 70.9 feet							

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1306+99	**Offset:**	30.9 L	**Alignment:**	Centerline
Elev.:	751.9 ft	**Latitude:**	35.0339223	**Longitude:**	81.8566291	**Date Started:**	8/24/2015
Total Depth:	31.5 ft	**Soil Depth:**	31.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/24/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 29.5 ft	**24HR**	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
	0.0	Asphalt Roadway								
	0.2	ASPHALT (2.0")		0.5						
	0.5	STONEBASE (4.0")			SS-1	3	3	4	6	●
	2.0	Firm, Moist, Yellowish Red, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=5YR 5/8		2.0	SS-2	2	4	5	9	×● ○ ▲ 4th 6" = 5 Blows
746.9		**RESIDUUM**		4.0	SS-3	3	3	5	8	● 4th 6" = 5 Blows
		Loose to Medium Dense, Moist,Yellowish Red, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Micaceous, Munsell=5YR 5/8		6.0	SS-4	6	6	7	13	● 4th 6" = 7 Blows
		LL=NP, PL=NP, PI=NP, NMC=25.6%, %#200=36.6		8.0	SS-5	4	6	6	12	×● ○ ▲ 4th 6" = 9 Blows
741.9		=>Reddish Brown, Munsell=5YR 4/4								
		=>Yellowish Red, Munsell=5YR 5/8								
		LL=NP, PL=NP, PI=NP, NMC=25.7%, %#200=34.0		13.5	SS-6	11	9	16	25	●
		=>Brown, Munsell=7.5YR 4/4								
736.9				18.5	SS-7	6	5	7	12	●
731.9										
		LL=NP, PL=NP, PI=NP, NMC=28.8%, %#200=28.5		23.5	SS-8	9	7	5	12	×● ▲
726.9										
		=>Dense, Dark Brown, Munsell=7.5YR 3/3		28.5	SS-9	20	13	29	42	●
721.9										
	31.5	Boring Terminated at 31.5 feet Due to Auger Refusal								

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 Soil Test Log

Project ID:	0040692	**County:**	Spartanburg	**Boring No.:**	RW-2		
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84			**Route:**	CSX Mainline		
Eng./Geo.:	R. Wessinger	**Boring Location:**	1311+90	**Offset:**	12.8 L	**Alignment:**	Centerline
Elev.:	754.7 ft	**Latitude:**	35.0328128	**Longitude:**	81.857581	**Date Started:**	8/25/2015
Total Depth:	64.5 ft	**Soil Depth:**	64.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 17 ft	**24HR**	NR

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
	0.0	Railway Ballast								
		BALLAST (24.0")								
	2.0	**FILL**		2.0						
		Stiff to Firm, Moist, Yellowish Red, Non-Plastic, Fine to Medium Sandy SILT (ML/A-4(0)), Micaceous, Munsell=5YR 4/6			SS-1	3	4	6	10	4th 6" = 6 Blows
749.7				4.0	SS-2	4	5	5	10	4th 6" = 6 Blows
		=> Red, Munsell=2.5YR 4/8		6.0	SS-3	3	3	4	7	4th 6" = 5 Blows
		LL=NP, PL=NP, PI=NP, NMC=23.5%, %#200=48.5		8.0	SS-4	2	4	4	8	4th 6" = 5 Blows
744.7										
				13.5						
		=> Very Stiff, with Coarse Sand			SS-5	4	6	10	16	
739.7		LL=NP, PL=NP, PI=NP, NMC=20.5%, %#200=58.1, (ML/A-6(6))								
	16.5	▽ **RESIDUUM**		18.5						
		Stiff to Firm, Moist to Wet, Reddish Brown, Non-Plastic, Fine to Medium Sandy SILT (ML/A-4(0)), Micaceous, Munsell=2.5YR 5/4			SS-6	6	5	5	10	
734.7		LL=NP, PL=NP, PI=NP, NMC=26.0%, %#200=52.1								
				23.5						
					SS-7	4	4	7	11	
729.7										
				28.5						
					SS-8	4	4	4	8	
724.7										
				33.5						
		LL=NP, PL=NP, PI=NP, NMC=35.1%, %#200=39.5			SS-9	3	4	6	10	

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-2
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1311+90	**Offset:**	12.8 L	**Alignment:**	Centerline
Elev.:	754.7 ft	**Latitude:**	35.0328128	**Longitude:**	81.857581	**Date Started:**	8/25/2015
Total Depth:	64.5 ft	**Soil Depth:**	64.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 17 ft	**24HR**	NR

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
				38.5						
		=> Very Stiff to Stiff, Yellowish Brown, Munsell=10YR 4/2			SS-10	4	6	13	19	
714.7										
				43.5						
					SS-11	4	5	7	12	
709.7										
				48.5						
		=> Firm to Stiff			SS-12	3	3	5	8	
704.7		LL=NP, PL=NP, PI=NP, NMC=31.3%, %#200=37.5								
				53.5						
					SS-13	6	6	7	13	
699.7										
				58.5						
		=> Yellowish Brown, Munsell=10YR 4/2			SS-14	4	8	5	13	
694.7										
	64.5			64.5	SS-15	10/0"			100+	>>
689.7		Boring Terminated at 64.5 feet Due to Auger Refusal								

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 10/7/15

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1317+07	**Offset:**	40.0 R	**Alignment:**	Centerline
Elev.:	757.6 ft	**Latitude:**	35.0316859	**Longitude:**	81.8586488	**Date Started:**	8/26/2015
Total Depth:	62.6 ft	**Soil Depth:**	62.6 ft	**Core Depth:**	0 ft	**Date Completed:**	8/26/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 35 ft	**24HR**	NR

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
	0.0	Railway Ballast								
		BALLAST (24.0")								
	2.0			2.0						
		FILL								
		Medium Dense, Moist, Brown/Red, None to Low Plasticity, Silty Fine to Medium SAND (SM), with Gravel, Munsell=7.5YR 4/4 and 2.5YR 4/6			SS-1	6	12	7	19	4th 6" = 2 Blows
	4.0			4.0						
752.6					SS-2	2	2	3	5	4th 6" = 3 Blows
		Firm to Soft, Red, Moist, Non-Plastic, Sandy SILT (ML/A-4(0)), Micaceous, Munsell=2.5YR 4/6		6.0						
		LL=NP, PL=NP, PI=NP, NMC=18.5%, %#200=43.7			SS-3	2	2	2	4	4th 6" = 2 Blows
				8.0	SS-4	1	2	1	3	4th 6" = 2 Blows
747.6										
				13.5						
		=>Brown, Munsell=7.5YR 4/4			SS-5	1	2	2	4	
		LL=NP, PL=NP, PI=NP, NMC=24.1%, %#200=50.7								
742.6										
				18.5						
		=> Stiff			SS-6	12	7	2	9	
737.6										
	23.5			23.5						
		Very Loose to Loose, Moist, Brown, Non-Plastic, Silty Fine to Coarse SAND (SM/A-4(0)), Munsell=7.5YR 4/4			SS-7	2	1	1	2	
732.6		LL=NP, PL=NP, PI=NP, NMC=23.8%, %#200=45.5								
				28.5						
					SS-8	1	1/12"		1	
727.6		LL=NP, PL=NP, PI=NP, NMC=24.0%, %#200=45.6								

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1317+07	**Offset:**	40.0 R	**Alignment:**	Centerline
Elev.:	757.6 ft	**Latitude:**	35.0316859	**Longitude:**	81.8586488	**Date Started:**	8/26/2015
Total Depth:	62.6 ft	**Soil Depth:**	62.6 ft	**Core Depth:**	0 ft	**Date Completed:**	8/26/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 35 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
				33.5					
	34.5	=>Red, Munsell=2.5YR 4/6			SS-9	WOH	2	6	8
722.6		▽**ALLUVIUM** Firm, Moist to Wet, Dark Yellowish Brown, Non-Plastic, Sandy SILT (ML/A-4(0)), with Gravel, Munsell=10YR 4/4 LL=NP, PL=NP, PI=NP, NMC=30.8%, %#200=43.0							
	38.5			38.5	SS-10	1	3	3	6
717.6		Loose, Moist to Wet, Gray, Low Plasticity, Clayey Fine to Medium SAND (SC/A-4(2)), Munsell=2.5Y 5/1 LL=32, PL=22, PI=10, NMC=19.9%, %#200=45.9							
	42.0	**RESIDUUM** Very Stiff, Moist, Dark Yellowish Brown, Low Plasticity, SILT (ML), Micaceous, with Gravel, Munsell=10YR 4/4		43.5	SS-11	4	6	13	19
712.6									
	48.5	Very Dense, Moist, Dark Yellowish Brown, None to Low Plasticity, Silty Fine to Coarse SAND (SM), with Gravel, Munsell=10YR 4/4		48.5	SS-12	14	18	50/5"	68+
707.6									
	53.5	Hard, Moist, Dark Yellowish Brown, Low Plasticity, Sandy SILT (ML), Munsell=10YR 4/4		53.5	SS-13	10	17	18	35
702.6									
	58.5	Very Stiff, Moist to Wet, Dark Yellowish Brown, Low Plasticity, SILT (ML), Micaceous, Munsell=10YR 4/4		58.5	SS-14	7	10	17	27
697.6									
	62.6	Boring Terminated at 62.6 feet Due to Auger Refusal		62.6	~~SS-15~~	~~10/0"~~			~~100+~~

SPT N VALUE ● PL × MC ○ LL × ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90

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	

SCDOT Soil Test Log

Project ID:	0040692	**County:**	Spartanburg	**Boring No.:**	RW-3A		
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84			**Route:**	CSX Mainline		
Eng./Geo.:	R. Wessinger	**Boring Location:**	1317+07	**Offset:**	40.0 R	**Alignment:**	Proposed
Elev.:	757.6 ft	**Latitude:**	35.0316859	**Longitude:**	81.8586488	**Date Started:**	9/11/2015
Total Depth:	29 ft	**Soil Depth:**	29 ft	**Core Depth:**	0 ft	**Date Completed:**	9/11/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** NR	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
	0.0	Railway Ballast							
		Auger to 25 feet							
752.6									
747.6									
742.6									
737.6									
732.6	25.0	Moist, Red, Moderate Plasticity, Fine Sandy SILT (ML/A-6(7)), Munsell=2.5YR 4/6, LL=40, PL=29, PI=11, NMC=23.5%, %#200=68.7, Eff. Cohesion=390 psf, Eff. Friction Angle=33 deg							
	29.0	Boring Terminated at 29.0 feet							
727.6									

● SPT N VALUE ●

PL MC LL

▲ FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1323+69	**Offset:**	9.9 L	**Alignment:**	Proposed
Elev.:	761.4 ft	**Latitude:**	35.030039	**Longitude:**	81.8596026	**Date Started:**	09/03/2015
Total Depth:	52.1 ft	**Soil Depth:**	52.1 ft	**Core Depth:**	0 ft	**Date Completed:**	9/3/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 42 ft	**24HR**	NR

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
	0.0	Grass Mat								
		RESIDUUM		0.0						
		Hard, Dry to Moist, Yellowish Red, Low Plasticity, SILT (ML), Munsell=5YR 5/6			SS-1	12	17	15	32	4th 6" = 4 Blows
		=> Stiff to Very Stiff		2.0	SS-2	4	6	9	15	4th 6" = 11 Blows
				4.0						
756.4					SS-3	4	8	8	16	4th 6" = 10 Blows
		=> Red, Micaceous, Munsell=2.5YR 4/6		6.0	SS-4	2	3	7	10	4th 6" = 9 Blows
				8.0	SS-5	4	6	8	14	4th 6" = 8 Blows
751.4										
	13.5			13.5						
		Loose to Medium Dense, Moist to Wet, Yellowish Red, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Munsell=5YR 5/6			SS-6	4	4	5	9	
746.4		LL=NP, PL=NP, PI=NP, NMC=21.1%, %#200=40.4								
				18.5	SS-7	5	5	8	13	
741.4										
				23.5	SS-8	7	8	7	15	
736.4										
				28.5						
		=> Yellowish Brown, 10YR 5/4			SS-9	3	5	8	13	
731.4		LL=NP, PL=NP, PI=NP, NMC=26.2%, %#200=33.7, (SM/A-2-4)								

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1323+69	**Offset:**	9.9 L	**Alignment:**	Proposed
Elev.:	761.4 ft	**Latitude:**	35.030039	**Longitude:**	81.8596026	**Date Started:**	09/03/2015
Total Depth:	52.1 ft	**Soil Depth:**	52.1 ft	**Core Depth:**	0 ft	**Date Completed:**	9/3/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 42 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
			33.5	SS-10	5	9	13	22
726.4								
			38.5	SS-11	26	29	50	79
	39.5	**PARTIALLY WEATHERED ROCK (PWR)**						
721.4		Hard, Moist to Wet, Yellowish Brown, Low Plasticity, Sandy SILT (ML), with Gravel, Micaceous, Munsell=10YR 5/4						
			43.5	SS-12	50/2.5"			100+
716.4								
	48.5		48.5	SS-13	21	50/3.5"		100+
		Hard, Wet, Yellowish Brown, Low Plasticity, SILT (ML), with Sand, Micaceous, Munsell=10YR 5/4						
711.4								
	52.1		52.1			10/0"		100+
		Boring Terminated at 52.1 feet Due to Auger Refusal						
706.4								
701.4								

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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	

SCDOT Soil Test Log

Project ID:		**County:**	Spartanburg	**Boring No.:**	RW-5		
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84			**Route:**	CSX Mainline		
Eng./Geo.:	R. Wessinger	**Boring Location:**	1326+70	**Offset:**	20.9 L	**Alignment:**	Centerline
Elev.:	785.6 ft	**Latitude:**	35.0293073	**Longitude:**	81.8600697	**Date Started:**	09/03/2015
Total Depth:	49 ft	**Soil Depth:**	49 ft	**Core Depth:**	0 ft	**Date Completed:**	9/3/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 45 ft	**24HR**	NR

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
	0.0	Grass Mat								
		RESIDUUM		0.0						
		Very Stiff to Stiff, Dry to Moist, Red, None to Low Plasticity, Sandy SILT (ML), Munsell=2.5YR 4/6			SS-1	6	7	10	17	4th 6" = 13 Blows
		=> Yellowish Red, Munsell=5YR 5/6		2.0	SS-2	9	12	13	25	4th 6" = 11 Blows
		=>Stong Brown/White, Munsell=7.5YR 5/6 and 7.5YR 8/1		4.0	SS-3	6	5	11	16	4th 6" = 8 Blows
780.6				6.0	SS-4	4	4	5	9	4th 6" = 5 Blows
	8.0			8.0	SS-5	4	3	3	6	4th 6" = 5 Blows
775.6		Loose to Medium Dense, Moist, Strong Brown, Non-Plastic, Silty Fine to Coarse SAND (SM/A-4(0)), Munsell=7.5YR 4/6								
		LL=NP, PL=NP, PI=NP, NMC=12.4%, %#200=35.5		13.5	SS-6	8	7	9	16	
		=> Very Stiff to Stiff, Strong Brown/White, Munsell=7.5YR 5/6 and 7.5YR 8/1								
770.6				18.5	SS-7	5	6	6	12	
		=> Strong Brown, Munsell=7.5YR 4/6								
765.6		LL=NP, PL=NP, PI=NP, NMC=18.6%, %#200=37.2								
		=> Strong Brown/White/Black, Munsell=7.5YR 4/6, 7.5YR 8/1, and 7.5YR 2.5/1		23.5	SS-8	5	7	12	19	
760.6										
	28.5			28.5	SS-9	20	50/1"		100+	>>
755.6		Hard, Moist, Strong Brown/White/Black, Low Plasticity, Sandy SILT (ML), with Gravel, Micaceous, Munsell=7.5YR 4/6, 7.5YR 8/1, and 7.5YR 2.5/1								
	31.0	Medium Dense, Moist to Wet, Dark Brown,								

Continued Next Page

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	

SCDOT Soil Test Log

Project ID:		**County:**	Spartanburg	**Boring No.:**	RW-5		
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84			**Route:**	CSX Mainline		
Eng./Geo.:	R. Wessinger	**Boring Location:**	1326+70	**Offset:**	20.9 L	**Alignment:**	Centerline
Elev.:	785.6 ft	**Latitude:**	35.0293073	**Longitude:**	81.8600697	**Date Started:**	09/03/2015
Total Depth:	49 ft	**Soil Depth:**	49 ft	**Core Depth:**	0 ft	**Date Completed:**	9/3/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 45 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
		Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4), Micaceous, Munsell=10YR 3/3		33.5	SS-10	6	6	12	18
750.6									
		LL=NP, PL=NP, PI=NP, NMC=23.2%, %#200=32.9		38.5	SS-11	5	9	9	18
745.6									
		LL=NP, PL=NP, PI=NP, NMC=26.3%, %#200=28.0		43.5	SS-12	4	5	9	14
740.6									
	48.5			48.5					
	49.0	**PARTIALLY WEATHERED ROCK (PWR)** Hard, Wet, Dark Brown and Black, Low Plasticity, Sandy SILT (ML), with Gravel, Munsell=10YR 3/3 and 10YR 2/1		49.0	SS-13	50/5.5"			100+
						10/0.1"			100+
735.6									
730.6									
725.6									

SPT N VALUE ●

PL ✕ MC ○ LL ✕

▲ FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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	

SCDOT Soil Test Log

Project ID:	0040692		**County:**	Spartanburg		**Boring No.:**	RW-6
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1330+26	**Offset:**	28.7 L	**Alignment:**	Centerline
Elev.:	784.9 ft	**Latitude:**	35.028446	**Longitude:**	81.860639	**Date Started:**	09/02/2015
Total Depth:	40.6 ft	**Soil Depth:**	40.6 ft	**Core Depth:**	0 ft	**Date Completed:**	9/2/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 27 ft	**24HR**	NR

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
	0.0	Grass Mat								
		RESIDUUM		0.0						
		Stiff to Very Stiff, Dry to Moist, Red, Low Plasticity, Sandy SILT (ML), Munsell=10R 4/6			SS-1	9	10	10	20	4th 6" = 10 Blows
				2.0	SS-2	8	8	10	18	4th 6" = 12 Blows
				4.0						
779.9					SS-3	6	7	6	13	4th 6" = 6 Blows
	6.0			6.0						
		Loose to Medium Dense, Moist, Red and White, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4), Munsell=10R 4/6 and 10R 8/1			SS-4	4	6	5	11	4th 6" = 4 Blows
		LL=NP, PL=NP, PI=NP, NMC=19.0%, %#200=41.5		8.0	SS-5	4	4	17	21	4th 6" = 39 Blows
774.9		=> with Gravel								
				13.5						
		=>Brown, Micaceous, Munsell=7.5YT 4/4			SS-6	6	5	5	10	
769.9		LL=NP, PL=NP, PI=NP, NMC=16.6%, %#200=31.9								
				18.5						
		=> with Gravel			SS-7	13	10	14	24	
764.9										
				23.5						
		=>Very Dense, Very Pale Brown/White, Munsell=10YR 7/4 and 10YR 8/1			SS-8	50/4"			100+	>>
759.9										
		▽								
				28.5						
		=>Medium Dense, Moist to Wet, Strong Brown and Black, Micaceous, Munsell=7.5YR 4/6 and 7.5YR 2.5/1			SS-9	7	6	8	14	
754.9		LL=NP, PL=NP, PI=NP, NMC=27.0%, %#200=28.0								

Continued Next Page

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-6
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1330+26	**Offset:**	28.7 L	**Alignment:**	Centerline
Elev.:	784.9 ft	**Latitude:**	35.028446	**Longitude:**	81.860639	**Date Started:**	09/02/2015
Total Depth:	40.6 ft	**Soil Depth:**	40.6 ft	**Core Depth:**	0 ft	**Date Completed:**	9/2/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 27 ft	**24HR**	NR

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
				33.5	SS-10	6	9	7	16	●
749.9										
				38.5	SS-11	38	50/5"		100+	>>
	39.0	**PARTIALLY WEATHERED ROCK (PWR)**								
744.9	40.6	Very Dense, Wet, Strong Brown and Black, None to Low Plasticity, Silty Fine to Coarse SAND (SM), with Gravel, Munsell=7.5YR 4/6 and 7.5YR 2.5/1		40.6	~~SS-12~~		~~10/0"~~		~~100+~~	>>
		Boring Terminated at 40.6 feet Due to Auger Refusal								
739.9										
734.9										
729.9										
724.9										

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-7
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1332+66	**Offset:**	21.7 L	**Alignment:**	Centerline
Elev.:	783.8 ft	**Latitude:**	35.0278839	**Longitude:**	81.8610569	**Date Started:**	09/02/2015
Total Depth:	39.3 ft	**Soil Depth:**	39.3 ft	**Core Depth:**	0 ft	**Date Completed:**	9/2/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 33 ft	**24HR**	NR

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
	0.0	Grass Mat		0.0						
		Very Stiff to Stiff, Moist to Dry, Red, Low Plasticity, Sandy SILT (ML), Munsell=10R 5/8		2.0	SS-1	5	8	10	18	4th 6" = 11 Blows
				4.0	SS-2	7	8	10	18	4th 6" = 10 Blows
778.8	6.0			6.0	SS-3	4	7	7	14	4th 6" = 6 Blows
		Loose to Medium Dense, Moist, Yellowish Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Munsell=5YR 5/8		8.0	SS-4	2	4	4	8	4th 6" = 7 Blows
		LL=NP, PL=NP, PI=NP, NMC=22.0%, %#200=47.3			SS-5	4	5	6	11	4th 6" = 5 Blows
773.8				13.5	SS-6	4	6	10	16	
768.8				18.5	SS-7	4	7	6	13	
763.8		=> Yellowish Brown/White, Munsell=10YR 5/6 and 10YR 8/1		23.5	SS-8	3	6	8	14	
758.8		LL=NP, PL=NP, PI=NP, NMC=23.5%, %#200=33.9								
	28.5	**PARTIALLY WEATHERED ROCK (PWR)**		28.5	SS-9	50/3.5"			100+	>>
753.8		Very Dense, Dry to Moist, White/Yellowish Brown, None to Low Plasticity, Silty Fine to Coarse SAND (SM), Munsell=10YR 8/1 and 10YR 5/6								
	33.5 ▽			33.5	SS-10	50/4"			100+	>>
748.8		Hard, Wet, Yellowish Brown/White, Low Plasticity, Sandy SILT (ML), with Gravel, Munsell=10YR 8/1 and 10YR 5/6								
	39.3			38.5	SS-11	30	50/5.5"		100+	>>
743.8		Boring Terminated at 39.3 feet Due to Auger Refusal		39.3			10/0"		100+	>>

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-8
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1335+70	**Offset:**	16.1 L	**Alignment:**	Centerline
Elev.:	770.7 ft	**Latitude:**	35.0271743	**Longitude:**	81.861596	**Date Started:**	09/02/2015
Total Depth:	17 ft	**Soil Depth:**	17 ft	**Core Depth:**	0 ft	**Date Completed:**	9/2/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** None	**24HR**	NR

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 (%)
	0.0	Wooded Area								
	0.1	TOPSOIL (1.0")		0.0	SS-1	5	5	6	11	4th 6" = 6 Blows
		RESIDUUM Stiff to Very Stiff, Dry to Moist, Strong Brown, Low Plasticity, Sandy SILT (ML), Munsell=7.5YR 5/6		2.0	SS-2	8	9	9	18	4th 6" = 15 Blows
		=> Yellowish Red, Munsell=5YR 5/8		4.0						
765.7		=> Strong Brown, with Gravel, Munsell=7.5YR 5/6			SS-3	6	7	8	15	4th 6" = 8 Blows
	6.0	Medium Dense to Dense, Moist, Strong Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Micaceous, Munsell=7.5YR 5/6		6.0	SS-4	5	6	6	12	4th 6" = 5 Blows
		LL=NP, PL=NP, PI=NP, NMC=17.3%, %#200=40.8		8.0	SS-5	4	5	6	11	4th 6" = 5 Blows
760.7		=> with Gravel								
		=> Strong Brown/White/Black, Munsell=7.5YR 5/6, 7.5YR 8/1, and 7.5YR 2.5/1		13.5	SS-6	7	12	21	33	
755.7										
	17.0	Boring Terminated at 17.0 feet Due to Auger Refusal		17.0	SS-7	10/0"			100+	>>
750.7										
745.7										

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-9
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1338+68	**Offset:**	30.8 L	**Alignment:**	Centerline
Elev.:	782.6 ft	**Latitude:**	35.0264875	**Longitude:**	81.8621551	**Date Started:**	09/02/2015
Total Depth:	35.2 ft	**Soil Depth:**	35.2 ft	**Core Depth:**	0 ft	**Date Completed:**	9/2/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 35 ft	**24HR**	NR

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
	0.0	Wooded Area								
		RESIDUUM		0.0						
		Very Stiff to Stiff, Dry to Moist, Yellowish Red, Low Plasticity, Sandy SILT (ML/A-4(6)), with Fine Sand, Muncell=5YR 5/8		2.0	SS-1	4	8	10	18	4th 6" = 11 Blows
					SS-2	4	10	11	21	4th 6" = 15 Blows
		=> Micaceous		4.0						
777.6					SS-3	8	10	13	23	4th 6" = 13 Blows
		Yellowish Red, Munsell=5YR 5/6		6.0						
					SS-4	3	5	5	10	4th 6" = 10 Blows
				8.0						
					SS-5	3	6	6	12	4th 6" = ▲ Blows
772.6		LL=NP, PL=NP, PI=NP, NMC=24.9%, %#200=70.6								
				13.5						
					SS-6	6	11	13	24	
767.6										
	18.5			18.5						
		Medium Dense to Loose, Dry to Moist, White/Pink, Non-Plastic, Silty Fine to Coarse SAND (SM/A-2-4), Munsell=5YR 8/1 and 5YR 8/4			SS-7	9	10	17	27	
762.6		LL=NP, PL=NP, PI=NP, NMC=17.3%, %#200=25.8								
				23.5						
		=>Gray/White, Munsell=7.5YR 5/1 and 7.5YR 8/1			SS-8	8	4	5	9	
757.6										
				28.5						
		LL=NP, PL=NP, PI=NP, NMC=31.1%, %#200=30.4			SS-9	3	4	6	10	
752.6		=> Brown, Munsell=7.5YR 5/4								
	33.5			33.5						
		Stiff, Wet, Brown, Low Plasticity, Sandy SILT			SS-10	7	3	11	14	
747.6	35.2	▽(ML), Micaceous, Munsell=7.5YR 5/4		35.2			10/0"		100+	>>
		Boring Terminated at 35.2 feet Due to Auger Refusal								
742.6										

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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	

SCDOT Soil Test Log

Project ID:	0040692		**County:**	Spartanburg	**Boring No.:**	RW-10	
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84				**Route:**	CSX Mainline	
Eng./Geo.:	R. Wessinger	**Boring Location:**	1344+68	**Offset:**	46.1 L	**Alignment:**	Centerline
Elev.:	780.4 ft	**Latitude:**	35.0252904	**Longitude:**	81.8635665	**Date Started:**	8/31/2015
Total Depth:	48.5 ft	**Soil Depth:**	48.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/31/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 28 ft	**24HR**	NR

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
	0.0	Wooded Area								
	0.2	TOPSOIL (2.0")		0.0	SS-1	5	5	7	12	4th 6" = 9 Blows
		RESIDUUM Stiff to Very Stiff, Moist to Dry, Red, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=2.5YR 4/6		2.0	SS-2	4	7	9	16	4th 6" = 15 Blows
	4.0			4.0	SS-3	12	6	5	11	4th 6" = 7 Blows
775.4		Loose to Medium Dense, Moist, Pinkish White, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4), Munsell=7.5YR 8/2		6.0	SS-4	5	5	6	11	4th 6" = 6 Blows
		=>Brown, Micaceous, Munsell=7.5YR 5/4		8.0	SS-5	3	4	4	8	4th 6" = 5 Blows
770.4		LL=NP, PL=NP, PI=NP, NMC=16.6%, %#200=32.8		13.5	SS-6	4	6	22	28	
765.4				18.5	SS-7	5	7	9	16	
760.4				23.5	SS-8	7	6	10	16	
755.4										

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	RW-10
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1344+68	**Offset:**	46.1 L	**Alignment:**	Centerline
Elev.:	780.4 ft	**Latitude:**	35.0252904	**Longitude:**	81.8635665	**Date Started:**	8/31/2015
Total Depth:	48.5 ft	**Soil Depth:**	48.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/31/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 28 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
		LL=NP, PL=NP, PI=NP, NMC=17.2%, %#200=28.3		28.5	SS-9	7	6	8	14
750.4	34.0	**PARTIALLY WEATHERED ROCK (PWR)** Hard, Moist to Dry, Brown, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=7.5YR 5/4		33.5	SS-10	11	50/5"		100+
745.4				38.5	SS-11	6	18	41	59
740.4				43.5	SS-12		50/1"		100+
735.4	48.5	Boring Terminated at 48.5 Due to Auger Refusal		48.5	SS-13		10/0"		100+
730.4									

SPT N VALUE ● PL × MC ○ LL × ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+06	**Offset:**	44.9 L	**Alignment:**	Centerline
Elev.:	742.7 ft	**Latitude:**	35.0322809	**Longitude:**	81.8579046	**Date Started:**	8/25/2015
Total Depth:	61.5 ft	**Soil Depth:**	61.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 18.5 ft	**24HR**	17.8 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 70 80 90
	0.0	Grass Mat								
		FILL		0.0						
		Loose, Moist, Red, Non-Plastic, Silty Fine to Medium SAND (SM/A-4(0)), Micaceous, Munsell=2.5YR 4/6			SS-1	2	4	5	9	4th 6" = 4 Blows
				2.0	SS-2	3	3	3	6	4th 6" = 4 Blows
				4.0						
737.7					SS-3	3	4	5	9	4th 6" = 6 Blows
		LL=NP, PL=NP, PI=NP, NMC=19.6%, %#200=47.6		6.0						
		=> Dark Red, Munsell=2.5YR 3/6			SS-4	2	4	5	9	4th 6" = 8 Blows
				8.0	SS-5	3	4	5	9	4th 6" = 7 Blows
732.7										
	13.5			13.5						
		Stiff, Moist to Wet, Red, Moderate Plasticity, Sandy SILT (ML/A-7-5(12)) Munsell=2.5YR 3/6			SS-6	4	4	7	11	
727.7		LL=48, PL=32, PI=16, NMC=28.4%, %#200=69.5								
	16.5	**RESIDUUM**								
		Loose to Medium Dense, Moist to Wet, Yellowish Red, Non-Plastic, Silty Fine to Coarse SAND (SM/A-2-4), Micaceous, Munsell=5YR 4/6		18.5	SS-7	5	4	3	7	
722.7										
		LL=NP, PL=NP, PI=NP, NMC=26.4%, %#200=21.4		23.5	SS-8	4	4	6	10	
717.7		=> Brown, Munsell=7.5YR 4/3								
				28.5	SS-9	3	4	5	9	
712.7		LL=NP, PL=NP, PI=NP, NMC=29.7%, %#200=18.9								

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+06	**Offset:**	44.9 L	**Alignment:**	Centerline
Elev.:	742.7 ft	**Latitude:**	35.0322809	**Longitude:**	81.8579046	**Date Started:**	8/25/2015
Total Depth:	61.5 ft	**Soil Depth:**	61.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 18.5 ft	**24HR**	17.8 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 70 80 90
				33.5	SS-10	3	4	7	11	
707.7										
				38.5	SS-11	4	7	20	27	
702.7		=>Dark Brown, Munsell=7.5YR 3/4								
				43.5	SS-12	3	6	10	16	
697.7										
				48.5	SS-13	5	6	9	15	
692.7										
				53.5	SS-14	6	9	13	22	
687.7		LL=NP, PL=NP, PI=NP, NMC=31.6%, %#200=19.8								
		=>Dense		58.5	SS-15	14	16	32	48	
682.7										
	61.5	Boring Terminated at 61.5 feet Due to Auger Refusal								

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-1A
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+06	**Offset:**	44.9 L	**Alignment:**	Proposed
Elev.:	742.7 ft	**Latitude:**	35.0322809	**Longitude:**	81.8579046	**Date Started:**	9/11/2015
Total Depth:	8 ft	**Soil Depth:**	8 ft	**Core Depth:**	0 ft	**Date Completed:**	9/11/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** NR	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
	0.0	Grass Mat							
		Auger to 6 feet							
737.7	6.0	**FILL**		6.0					
		Loose, Moist, Red, Moderate Plasticity, Fine Sandy SILT (ML/A-6(7)), Munsell=2.5YR 4/6, LL=40, PL=29, PI=11, NMC=23.5%, %#200=68.7, Eff. Cohesion=390 psf, Eff. Friction Angle=33 deg			ST-1				
	8.0	Boring Terminated at 8.0 feet							
732.7									
727.7									
722.7									
717.7									
712.7									

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-2
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+98	**Offset:**	42.3 L	**Alignment:**	Proposed
Elev.:	741.1 ft	**Latitude:**	35.0320723	**Longitude:**	81.8580634	**Date Started:**	8/25/2015
Total Depth:	57.5 ft	**Soil Depth:**	57.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 23 ft	**24HR**	18.5 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 / PL MC LL / FINES CONTENT (%)
	0.0	Kudzu								
		FILL Very Loose to Loose, Moist, Red, Non-Plastic, Silty Fine to Coarse SAND (SM/S-4(0)), Micaceous, Munsell=2.5YR 4/8		0.0	SS-1	2	2	2	4	4th 6" = 4 Blows
				2.0	SS-2	4	4	4	8	4th 6" = 5 Blows
		LL=NP, PL=NP, PI=NP, NMC=19.1%, %#200=43.0		4.0	SS-3	3	3	6	9	4th 6" = 4 Blows
736.1		=>Strong Brown, Munsell=7.5YR 4/6		6.0	SS-4	2	4	4	8	4th 6" = 4 Blows
	8.0	Stiff, Moist, Red, Low Plasticity, SILT (ML), with Fine to Medium Sand, Munsell=2.5YR 4/8		8.0	SS-5	3	4	6	10	4th 6" = 10 Blows
731.1		LL=49, PL=41, PI=8, NMC=26.3%, %#200=71.8								
	12.0	**RESIDUUM** Loose to Medium Dense, Moist to Wet, Reddish Yellow, Non-Plastic, Silty Fine to Coarse SAND (SM/A-4(0)), Munsell=7.5YR 6/6		13.5	SS-6	6	7	5	12	
726.1										
		=> Micaceous		18.5	SS-7	3	3	3	6	
721.1		LL=NP, PL=NP, PI=NP, NMC=36.7%, %#200=41.2								
		=> Strong Brown, Munsell=7.5YR 4/6		23.5	SS-8	3	2	5	7	
716.1										
		LL=NP, PL=NP, PI=NP, NMC=32.1%, %#200=45.4		28.5	SS-9	2	3	5	8	
711.1										

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-2
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+98	**Offset:**	42.3 L	**Alignment:**	Proposed
Elev.:	741.1 ft	**Latitude:**	35.0320723	**Longitude:**	81.8580634	**Date Started:**	8/25/2015
Total Depth:	57.5 ft	**Soil Depth:**	57.5 ft	**Core Depth:**	0 ft	**Date Completed:**	8/25/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 23 ft	**24HR**	18.5 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
				33.5	SS-10	6	7	9	16
706.1									
				38.5	SS-11	2	3	5	8
701.1									
				43.5	SS-12	3	4	6	10
696.1		LL=NP, PL=NP, PI=NP, NMC=30.2%, %#200=21.6, (SM/A-2-4)							
				48.5	SS-13	3	5	7	12
691.1									
	54.0			53.5	SS-14	14	50/5"		100+
		PARTIALLY WEATHERED ROCK (PWR)							
686.1		Hard, Moist, Brown, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=7.5YR 5/4							
	57.5								
		Boring Terminated at 57.5 feet Due to Auger Refusal							
681.1									

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-2A
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1314+98	**Offset:**	42.3 L	**Alignment:**	Proposed
Elev.:	741.1 ft	**Latitude:**	35.0320723	**Longitude:**	81.8580634	**Date Started:**	9/11/2015
Total Depth:	15 ft	**Soil Depth:**	15 ft	**Core Depth:**	0 ft	**Date Completed:**	9/11/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** NR	**24HR**	NR

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
	0.0	Kudzu								
		Auger to 13 feet								
736.1										
731.1										
	13.0	**RESIDUUM**		13.0						
		Moist, Reddish Yellow, Non-Plastic, Silty Fine to Coarse SAND (SM/A-4(0)), Munsell=7.5YR 6/6, LL=NP, PL=NP, PI=NP, NMC=30.8%, %#200=47.8, Eff. Cohesion=680 psf, Eff. Friction Angle=32 deg			ST-1				×	○ ▲
726.1	15.0	Boring Terminated at 15.0 feet								
721.1										
716.1										
711.1										

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1317+99	**Offset:**	88.4 L	**Alignment:**	Centerline
Elev.:	726.8 ft	**Latitude:**	35.0312921	**Longitude:**	81.8584289	**Date Started:**	8/31/2015
Total Depth:	37.1 ft	**Soil Depth:**	37.1 ft	**Core Depth:**	0 ft	**Date Completed:**	8/31/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 12.5 ft	**24HR**	NR

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 (%)
	0.0	Kudzu								
		FILL Firm, Moist, Yellowish Red, Low Plasticity, Sandy SILT (ML), Munsell=5YR 4/6		0.0	SS-1	3	3	4	7	4th 6" = 4 Blows
	2.0	**RESIDUUM** Loose to Medium Dense, Moist to Wet, Strong Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4)), Micaceous, Munsell=7.5YR 5/6		2.0	SS-2	3	3	5	8	4th 6" = 4 Blows
721.8				4.0	SS-3	3	3	3	6	4th 6" = 4 Blows
				6.0	SS-4	3	3	4	7	4th 6" = 4 Blows
		LL=NP, PL=NP, PI=NP, NMC=35.3%, %#200=31.7		8.0	SS-5	2	3	3	6	4th 6" = 3 Blows
716.8										
		▽		13.5	SS-6	2	3	4	7	
711.8		LL=NP, PL=NP, PI=NP, NMC=37.3%, %#200=23.6								
				18.5	SS-7	3	2	5	7	
706.8										
				23.5	SS-8	8	4	7	11	
701.8		LL=NP, PL=NP, PI=NP, NMC=31.0%, %#200=26.6								

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1317+99	**Offset:**	88.4 L	**Alignment:**	Centerline
Elev.:	726.8 ft	**Latitude:**	35.0312921	**Longitude:**	81.8584289	**Date Started:**	8/31/2015
Total Depth:	37.1 ft	**Soil Depth:**	37.1 ft	**Core Depth:**	0 ft	**Date Completed:**	8/31/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 12.5 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
				28.5					
	29.0	**PARTIALLY WEATHERED ROCK (PWR)**			SS-9	4	50/5"		100+
696.8		Hard, Moist to Wet, Brown, Low Plasticity, Sandy SILT (ML), Micaceous, Munsell=7.5YR 5/4							
				33.5					
					SS-10	15	50/3"		100+
691.8									
	37.1			37.1	SS-11		10/0"		100+
		Boring Terminated at 37.1 feet Due to Auger Refusal							
686.8									
681.8									
676.8									

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+10	**Offset:**	61.2 R	**Alignment:**	Centerline
Elev.:	735.9 ft	**Latitude:**	35.0309922	**Longitude:**	81.859213	**Date Started:**	8/28/2015
Total Depth:	50 ft	**Soil Depth:**	50 ft	**Core Depth:**	0 ft	**Date Completed:**	8/28/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 12.5 ft	**24HR**	NR

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
	0.0	Asphalt Roadway								
	0.5	ASPHALT (6.0")		0.5						
		Stiff, Moist, Strong Brown/Reddish Yellow, Low Plasticity, Sandy SILT (ML), Munsell=7.5YR 5/6 and 5YR 6/8		2.0	SS-1	7	6	8	14	
	3.0	**RESIDUUM**			SS-2	4	5	5	10	4th 6" = 6 Blows
		Loose, Moist to Wet, Strong Brown, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4), Micaceous, Munsell=7.5YR 5/6		4.0	SS-3	3	4	4	8	4th 6" = 6 Blows
730.9		LL=NP, PL=NP, PI=NP, NMC=19.7%, %#200=20.1		6.0	SS-4	3	3	4	7	4th 6" = 5 Blows
				8.0	SS-5	2	3	4	7	4th 6" = 4 Blows
725.9		LL=NP, PL=NP, PI=NP, NMC=27.8%, %#200=18.8								
		▽		13.5	SS-6	16	20	20	40	
		=> Dense, with Gravel								
720.9										
				18.5	SS-7	4	4	6	10	
		=>Loose to Medium Dense								
715.9										
				23.5	SS-8	5	7	10	17	
710.9		LL=NP, PL=NP, PI=NP, NMC=27.7%, %#200=19.7								

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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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-4
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1320+10	**Offset:**	61.2 R	**Alignment:**	Centerline
Elev.:	735.9 ft	**Latitude:**	35.0309922	**Longitude:**	81.859213	**Date Started:**	8/28/2015
Total Depth:	50 ft	**Soil Depth:**	50 ft	**Core Depth:**	0 ft	**Date Completed:**	8/28/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 12.5 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
				28.5					
					SS-9	6	9	10	19
705.9									
				33.5					
		LL=NP, PL=NP, PI=NP, NMC=24.3%, %#200=31.8			SS-10	7	11	16	27
700.9									
	38.5			38.5					
		PARTIALLY WEATHERED ROCK (PWR)			SS-11	17	50/4.5"		100+
695.9		Hard, Moist, Strong Brown, Low Plasticity, SILT (ML), Micaceous, Munsell=7.5YR 5/6							
				43.5					
					SS-12	34	50/2.5"		100+
690.9									
				48.5					
					SS-13	17	28	46	74
685.9	50.0								
		Boring Terminated at 50.0 feet Due to Auger Refusal							

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-5
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1322+18	**Offset:**	15.0 L	**Alignment:**	Centerline
Elev.:	742.1 ft	**Latitude:**	35.0303931	**Longitude:**	81.8593369	**Date Started:**	09/03/2015
Total Depth:	32.6 ft	**Soil Depth:**	32.6 ft	**Core Depth:**	0 ft	**Date Completed:**	9/3/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 31 ft	**24HR**	NR

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 (%)
	0.0	Kudzu								
	0.1	TOPSOIL (1.0")		0.0	SS-1	2	3	3	6	4th 6" = 4 Blows
		FILL Firm, Moist to Dry, Yellowish Red, Low Plasticity, Sandy SILT (ML), Munsell=5YR 5/6		2.0	SS-2	3	2	3	5	4th 6" = 6 Blows
737.1		=> With Trace of Organics		4.0	SS-3	3	3	2	5	4th 6" = 3 Blows
	6.0	Firm, Moist, Red, Moderate Plasticity, Sandy Lean CLAY (CL/A-6(7)), Munsell=10R 4/8 LL=40, PL=25, PI=15, NMC=23.4%, %#200=58.6		6.0	SS-4	2	3	4	7	4th 6" = 4 Blows
				8.0	SS-5	2	2	4	6	4th 6" = 4 Blows
732.1	12.0	**RESIDUUM** Loose to Medium Dense, Moist to Wet, Yellowish Red, Non-Plastic, Silty Fine to Coarse SAND (SM/A-2-4)), with Gravel, Munsell=5YR 5/6		13.5	SS-6	3	7	8	15	
727.1				18.5	SS-7	6	3	3	6	
722.1		LL=NP, PL=NP, PI=NP, NMC=24.5%, %#200=22.9								
		=> Strong Brown, Munsell=7.5YR 5/8		23.5	SS-8	2	2	7	9	
717.1				28.5	SS-9	3	5	6	11	
712.1		=>Yellowish Brown, Micaceous, Munsell=10YR 5/6 ▽								
	32.6	Boring Terminated at 32.6 Due to Auger Refusal		32.6	SS-10	10/0"			100+	>>

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-5A
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1322+18	**Offset:**	15.0 L	**Alignment:**	Proposed
Elev.:	742.1 ft	**Latitude:**	35.0303931	**Longitude:**	81.8593369	**Date Started:**	9/11/2015
Total Depth:	25 ft	**Soil Depth:**	25 ft	**Core Depth:**	0 ft	**Date Completed:**	9/11/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** NR	**24HR**	NR

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
	0.0	Kudzu Auger to 23 feet						
737.1								
732.1								
727.1								
722.1								
	23.0	**RESIDUUM**		23.0				
		Moist, Yellowish Red, Non-Plastic, Silty Fine to Medium SAND (SM/A-2-4)), Munsell=5YR 5/6, LL=NP, PL=NP, PI=NP, NMC=36.1%, %#200=31.4, Eff. Cohesion=320 psf, Eff. Friction Angle=24 deg			ST-1		×	▲○
717.1	25.0	Boring Terminated at 25.0 feet						
712.1								

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 Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-6
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1323+02	**Offset:**	83.3 R	**Alignment:**	Centerline
Elev.:	759.0 ft	**Latitude:**	35.0303271	**Longitude:**	81.8597609	**Date Started:**	9/8/2015
Total Depth:	68.5 ft	**Soil Depth:**	68.5 ft	**Core Depth:**	0 ft	**Date Completed:**	9/8/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 48 ft	**24HR**	NR

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
	0.0	Railway Ballast								
	0.5	BALLAST (6.0")		0.0	SS-1	X	4	5	9	4th 6" = 4 Blows
		Loose to Very Loose, Dry to Moist, Brownish Yellow, Silty Fine SAND (SM), Munsell=10YR 6/6		2.0	SS-2	2	2	2	4	4th 6" = 1 Blow
	4.0			4.0						
754.0		Soft to Firm, Moist, Brownish Yellow, Fine to Medium Sandy SILT (ML), Munsell=10YR 6/6			SS-3	8	2	1	3	4th 6" = 2 Blows
				6.0	SS-4	3	2	3	5	4th 6" = 2 Blows
				8.0	SS-5	1	2	2	4	4th 6" = 4 Blows
	9.5									
749.0		**RESIDIUM** Loose to Medium Dense, Moist, Red, Silty Fine to Medium SAND (SM), Munsell=2.5YR 4/6		13.5	SS-6	3	5	8	13	
744.0				18.5	SS-7	5	8	11	19	
739.0				23.5	SS-8	3	3	5	8	
734.0		=>Strong Brown, Micaceous, Munsell=7.5YR 5/6, LL=NP, PL=NP, PI=NP, NMC=22.0%, %#200=30.0								
		=>Moist to Wet, With White, Munsell=8/1		28.5	SS-9	10	7	6	13	
729.0				33.5	SS-10	3	3	5	8	
724.0		=>Reddish Yellow, Micaceous with Sand, Munsell=7.5YR 6/6, LL=NP, PL=NP, PI=NP, NMC=32.6%, %#200=39.8								

Continued Next Page

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	

SCDOT Soil Test Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	W-6
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Eng./Geo.:	R. Wessinger	**Boring Location:**	1323+02	**Offset:**	83.3 R	**Alignment:**	Centerline
Elev.:	759.0 ft	**Latitude:**	35.0303271	**Longitude:**	81.8597609	**Date Started:**	9/8/2015
Total Depth:	68.5 ft	**Soil Depth:**	68.5 ft	**Core Depth:**	0 ft	**Date Completed:**	9/8/2015
Bore Hole Diameter (in):	6.0	**Sampler Configuration**		**Liner Required:**	Y (N)	**Liner Used:**	Y (N)
Drill Machine:	CME 550	**Drill Method:**	HSA	**Hammer Type:**	Automatic	**Energy Ratio:**	74%
Core Size:	N/A	**Driller:**	D. Harris	**Groundwater:**	**TOB** 48 ft	**24HR**	NR

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	N Value
				38.5	SS-11	4	4	5	9
719.0									
				43.5	SS-12	3	4	5	9
714.0									
		▽		48.5	SS-13	2	5	5	10
		=>Wet, Strong Brown/Black, Micaceous SILT (ML), Munsell=7.5YR 5/6 and 7.5YR 2.5/1							
709.0									
				53.5	SS-14	3	3	5	8
704.0									
				58.5	SS-15	2	3	4	7
699.0		=> LL=NP, PL=NP, PI=NP, NMC=35.7%, %#200=28.4							
				63.5	SS-16	2	3	50/3.5"	53
694.0									
	68.5			68.5			10/0.0"		100+
		Boring Terminated at 68.5 feet Due to Auger Refusal							
689.0									

SPT N VALUE

PL MC LL

FINES CONTENT (%)

0 10 20 30 40 50 60 70 80 90

>>

SC_DOT G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 10/7/15

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	

SCDOT Manual Auger Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	BS-1
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Driller:	M. Touchberry	**Boring Location:**	1314+50	**Offset:**	25.0 L	**Alignment:**	Proposed
Elev.:	745.0 ft	**Latitude:**		**Longitude:**		**Date Started:**	9/11/2015
Total Depth:	5 ft	**Groundwater:**	**TOB** NR	**24 hr** NR		**Date Completed:**	9/11/2015
Dynamic Cone Penetrometer Test Procedure:							

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	DCP-Value	● DCP-VALUE ● PL MC LL ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90
	0.0	Grass Mat								
		Moist, Reddish Brown, Silty Fine to Medium SAND (SM/A-2-4), Munsell=5YR 4/2								
740.0	5.0	Boring Terminated at 5.0 feet								

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 11/20/15

SCDOT Manual Auger Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	BS-2
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Driller:	M. Touchberry	**Boring Location:**	1326+50	**Offset:**	20.0 L	**Alignment:**	Proposed
Elev.:	770.0 ft	**Latitude:**		**Longitude:**		**Date Started:**	9/11/2015
Total Depth:	5 ft	**Groundwater:**	**TOB** NR	**24 hr**	NR	**Date Completed:**	9/11/2015
Dynamic Cone Penetrometer Test Procedure:							

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	DCP-Value	● DCP-VALUE ● PL MC LL ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90
	0.0	Grass Mat								
		Dry, Reddish Brown, Sandy SILT (ML), Munsell=2.5YR 4/6, LL=32, PL=24, PI=8, NMC=4.0%, %#200=51.0, Eff. Cohesion=310 psf, Eff. Friction Angle=32 deg		0.0	BS-1					
765.0	5.0	Boring Terminated at 5.0 feet								

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 11/20/15

SCDOT Manual Auger Log

Project ID:	0040692			**County:**	Spartanburg	**Boring No.:**	BS-3
Site Description:	I-85 Rehabilitation Mile Marker 77 to 84					**Route:**	CSX Mainline
Driller:	M. Touchberry	**Boring Location:**	1332+50	**Offset:**	20.0 L	**Alignment:**	Proposed
Elev.:	787.0 ft	**Latitude:**		**Longitude:**		**Date Started:**	9/11/2015
Total Depth:	5 ft	**Groundwater:**	**TOB** NR	**24 hr**	NR	**Date Completed:**	9/11/2015
Dynamic Cone Penetrometer Test Procedure:							

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	DCP-Value	● DCP-VALUE ● PL MC LL ▲ FINES CONTENT (%) 0 10 20 30 40 50 60 70 80 90
	0.0	Grass Mat								
		Moist, Red, Low Plasticity, Sandy SILT (ML), Munsell=10R 5/8								
782.0	5.0	Boring Terminated at 5.0 feet								

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 G5439 - I-85 MM 77-84.GPJ SCDOT DATA TEMPLATE_12_30_2014.GDT 11/20/15

APPENDIX

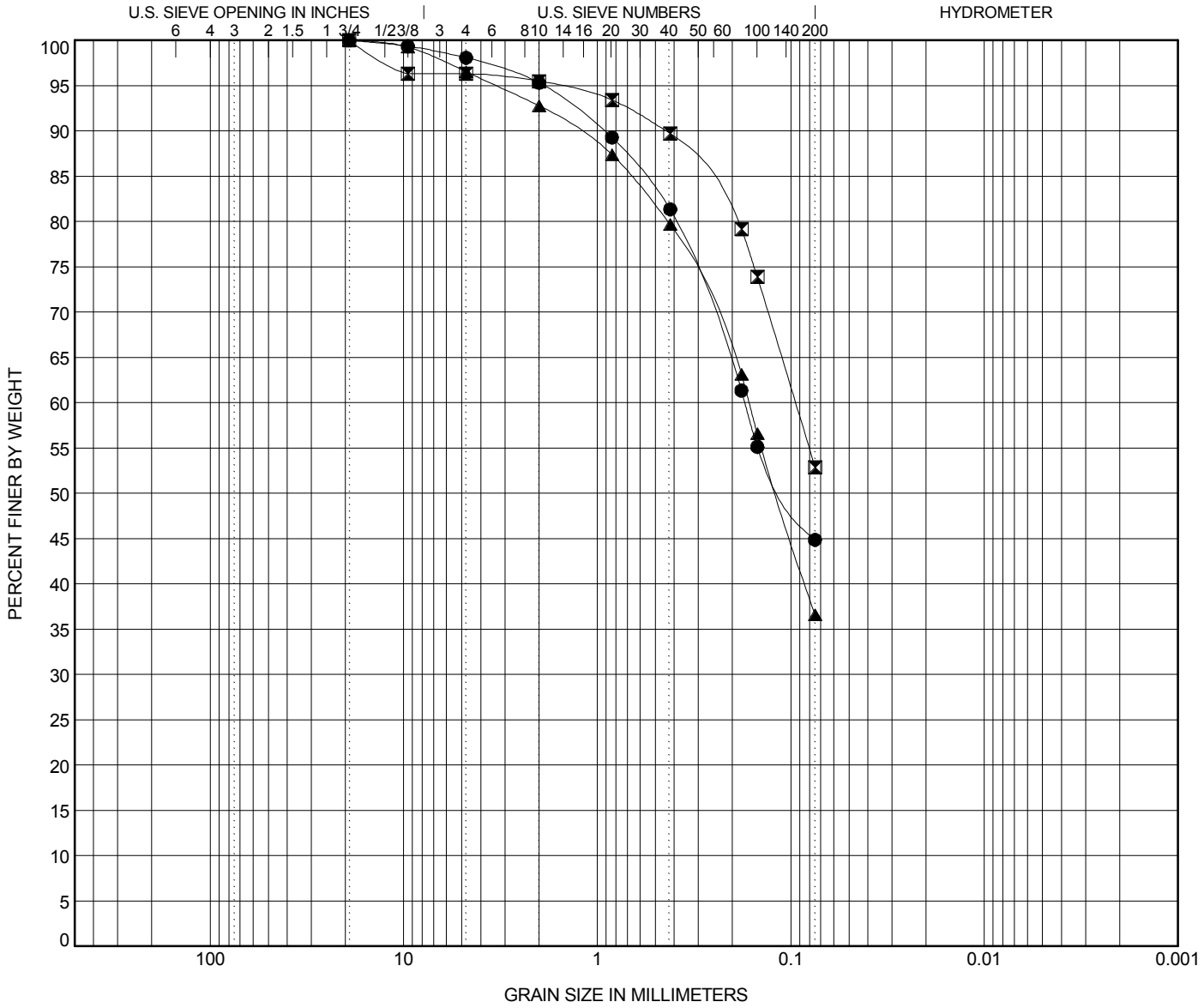
SECTION 4

LABORATORY TEST RESULTS

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-1**	**8.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⊠	**B-1**	**15.0**	**Sandy SILT (ML) A-4(0)**	**NP**	**NP**	**NP**		
▲	**B-1**	**35.0**	**Silty F/C SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		

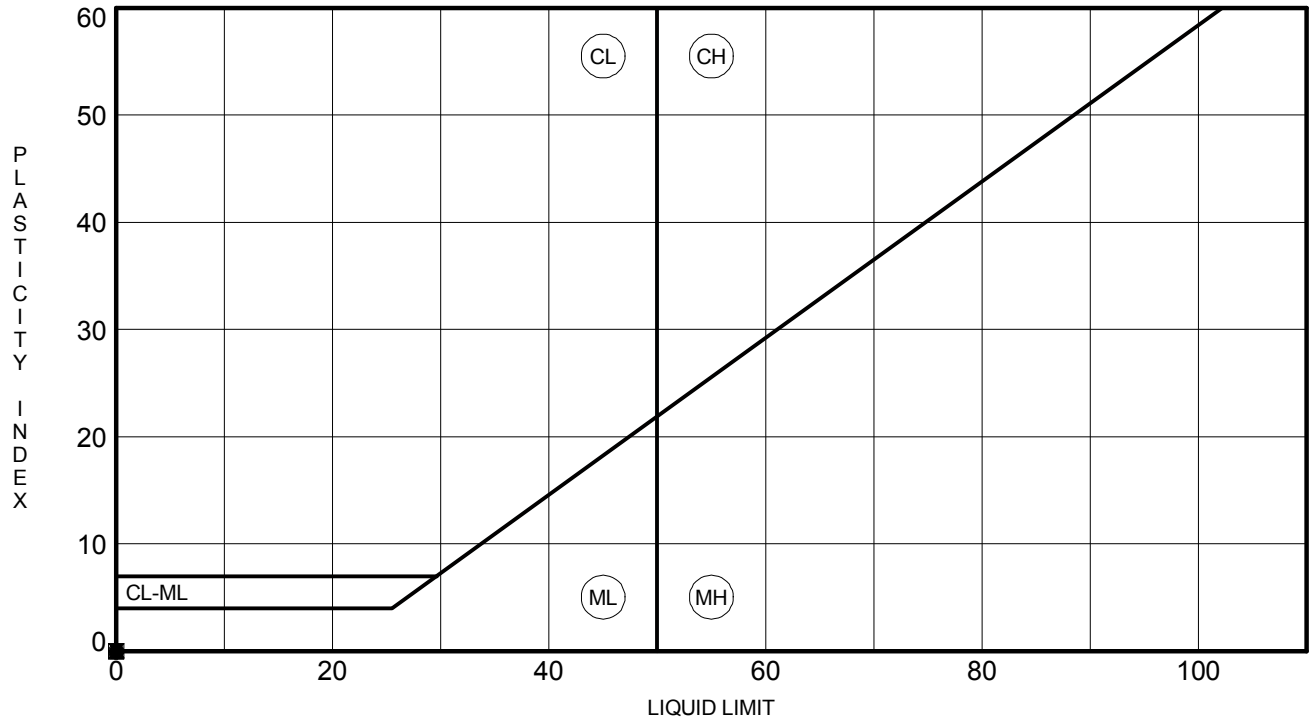
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-1**	**8.0**	**19.1**	**0.173**			**1.9**	**53.2**	**44.9**	
⊠	**B-1**	**15.0**	**19.1**	**0.095**			**3.7**	**43.4**	**52.9**	
▲	**B-1**	**35.0**	**19.1**	**0.164**			**3.5**	**59.9**	**36.6**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-1**	**8.0**	**NP**	**NP**	**NP**	**45**	**Silty F/M SAND (SM) A-4(0)**
⊠	**B-1**	**15.0**	**NP**	**NP**	**NP**	**53**	**Sandy SILT (ML) A-4(0)**
▲	**B-1**	**35.0**	**NP**	**NP**	**NP**	**37**	**Silty F/C SAND (SM) A-4(0)**

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CONSULTANTS

3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

ROCK CORE COMPRESSION TEST

Project Name:	I-85 Rehab MM77 - MM85	Project Number:	G 5439.00
Sampled By:	RW	Date Sampled:	8/30/2015
Tested By:	JH	Date Tested:	9/15/2015

Specimen Marking	B-1 15-1310A					
Depth	NQ-2					
Length (in)	3.638					
Diameter (in)	1.858					
Mass (g)	448.41					
Cross Sectional Area (in^2)	2.711					
Load (lb)	25,025					
Compressive Strength (psi)	9,230					
Corrected Compressive Strength (psi)	9,230					
Unit Weight (lb/ft^3)	173.13					

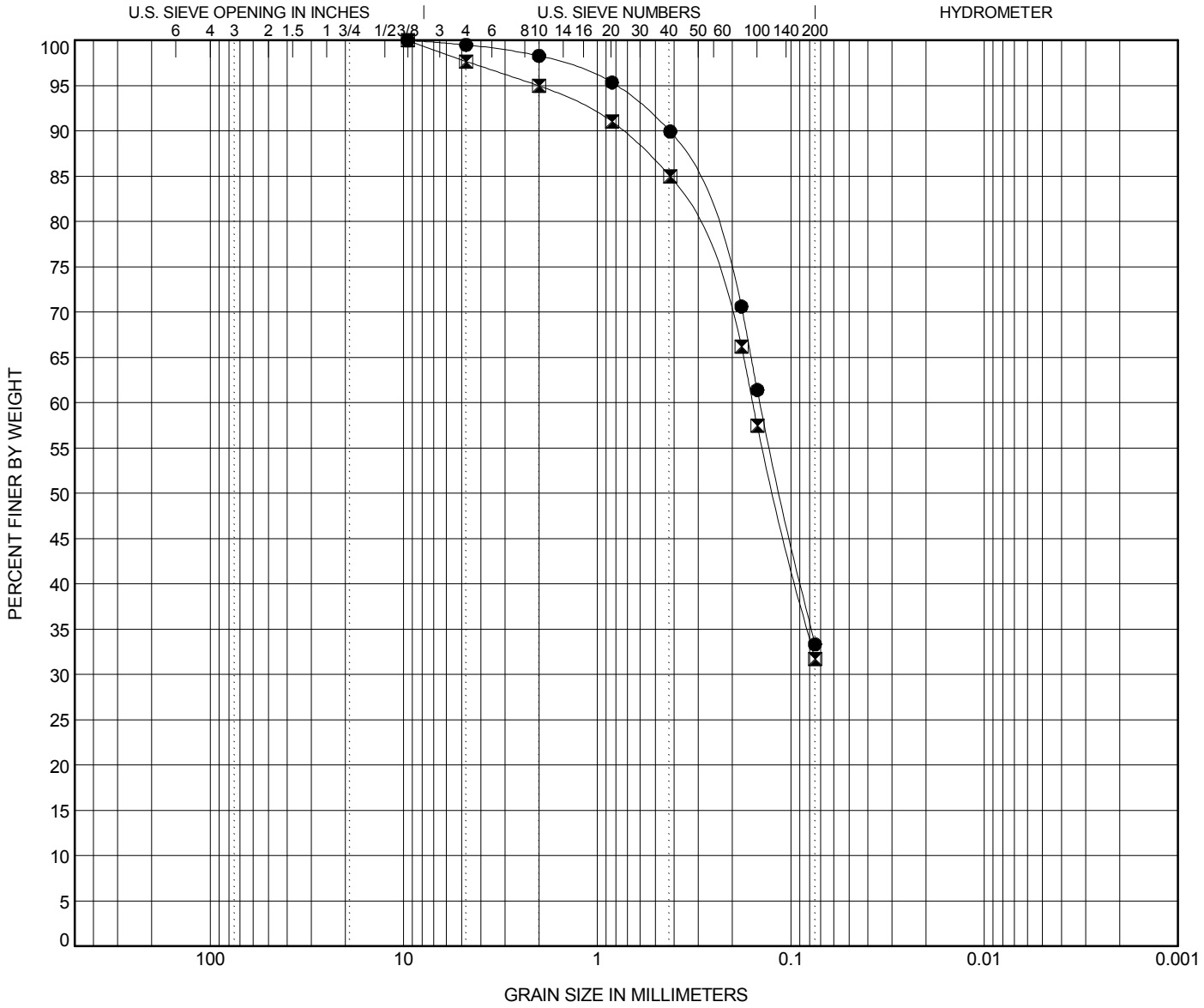
Signature: _____

Remarks: _____

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-2**	**4.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⧓	**B-2**	**10.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

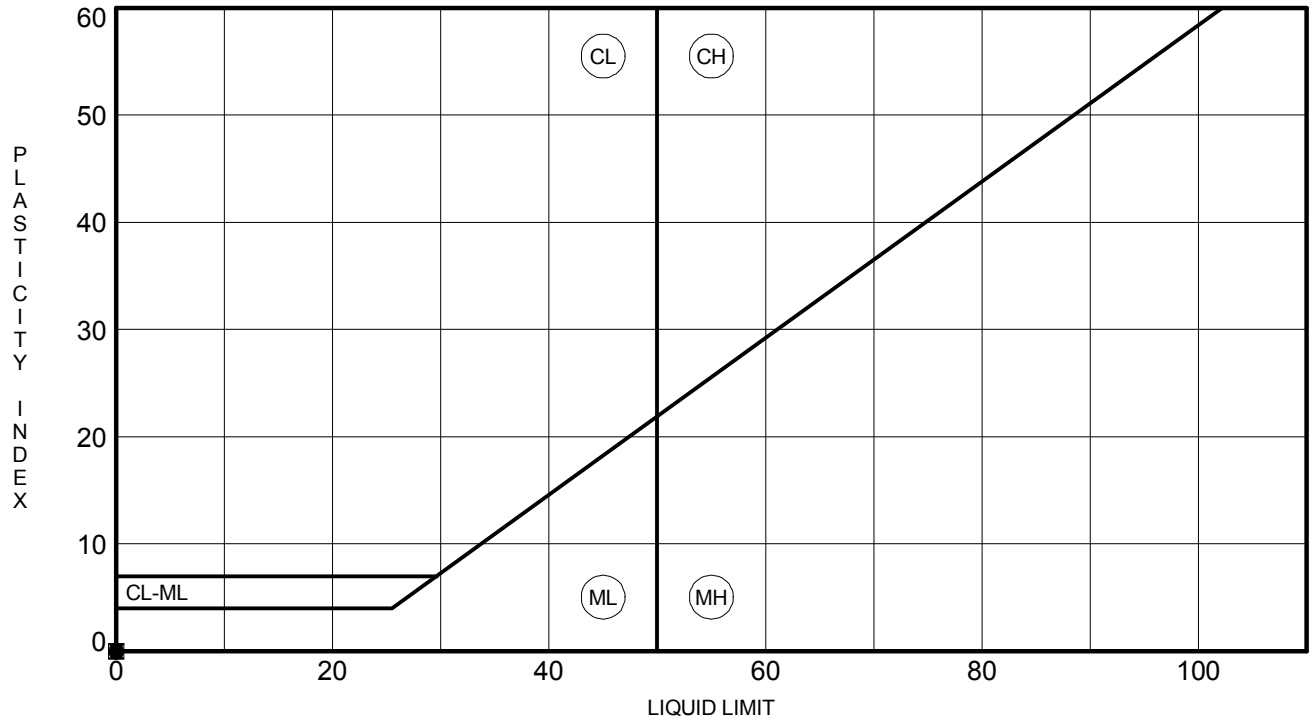
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-2**	**4.0**	**9.52**	**0.144**			**0.5**	**66.2**	**33.3**	
⧓	**B-2**	**10.0**	**9.52**	**0.157**			**2.3**	**65.9**	**31.7**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-2**	**4.0**	**NP**	**NP**	**NP**	**33**	**Silty F/M SAND (SM) A-2-4**
⊠	**B-2**	**10.0**	**NP**	**NP**	**NP**	**32**	**Silty F/M SAND (SM) A-2-4**

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Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

ROCK CORE COMPRESSION TEST

Project Name:	I-85 Rehab MM77 - MM85	Project Number:	G 5439.00
Sampled By:	RW	Date Sampled:	8/30/2015
Tested By:	JH	Date Tested:	9/15/2015

Specimen Marking	B-2 15-1311A	B-2 15-1311B				
Depth	NQ-1	NQ-2				
Length (in)	3.653	3.668				
Diameter (in)	1.859	1.862				
Mass (g)	444.29	455.61				
Cross Sectional Area (in^2)	2.714	2.723				
Load (lb)	38,415	37,385				
Compressive Strength (psi)	14,150	13,730				
Corrected Compressive Strength (psi)	14,150	13,730				
Unit Weight (lb/ft^3)	170.64	173.77				

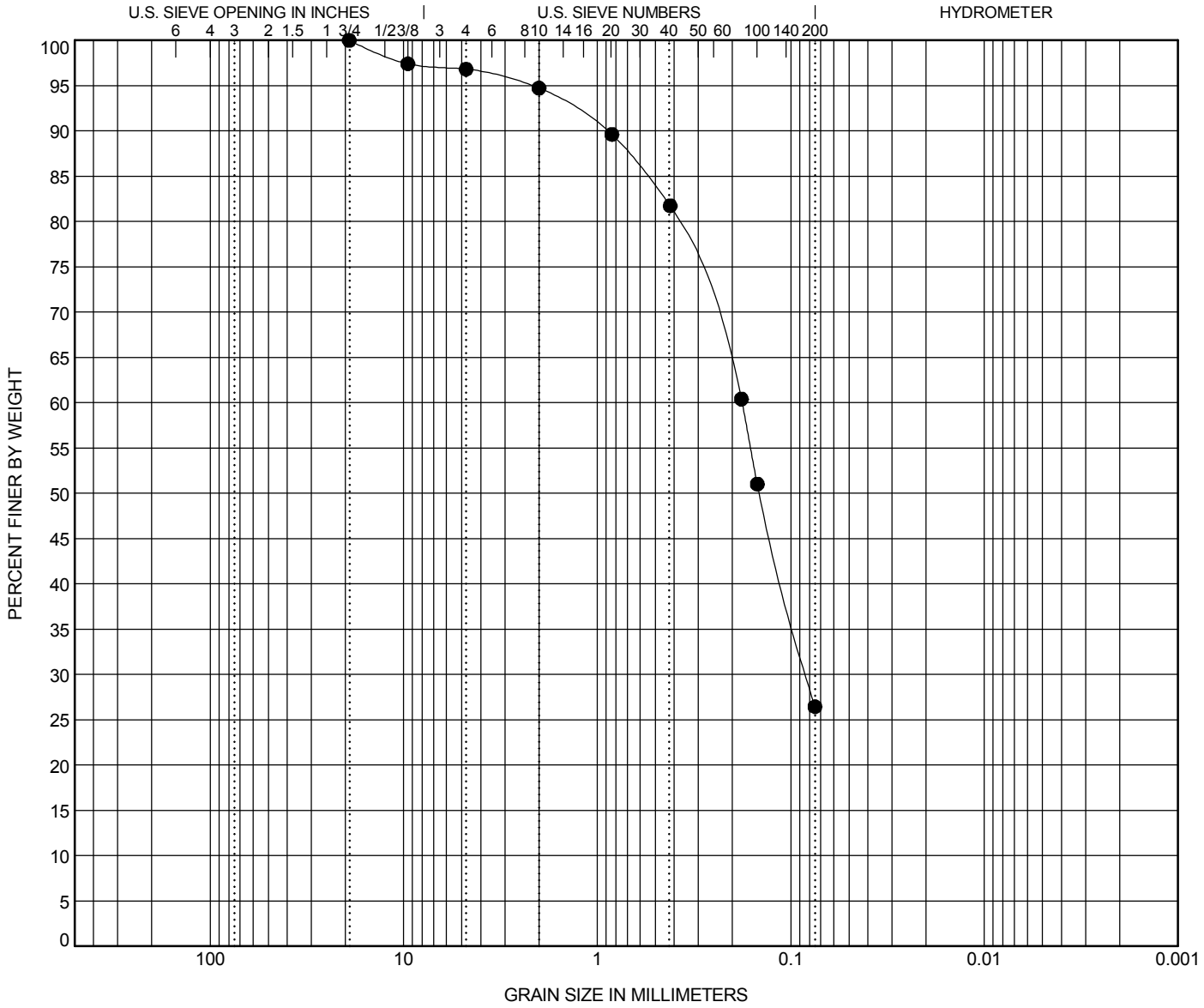
Signature: 

Remarks:

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **B-3**	**6.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

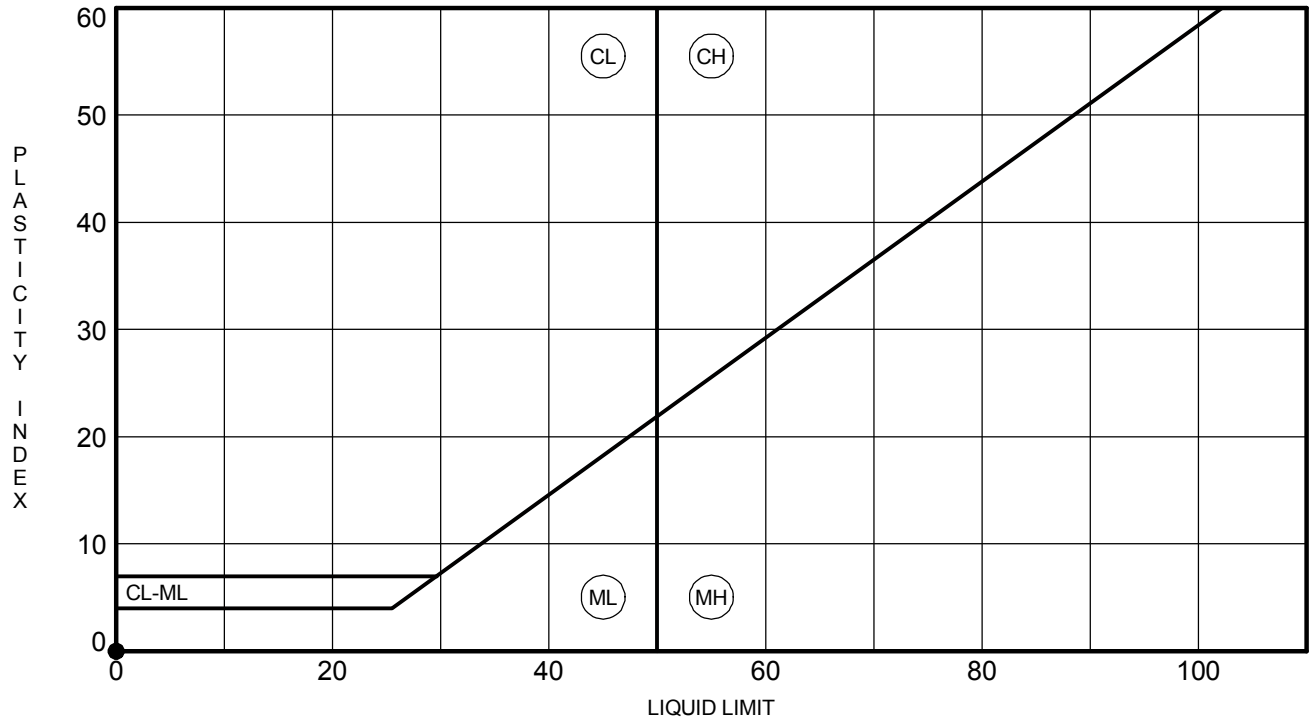
BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **B-3**	**6.0**	**19.1**	**0.179**	**0.083**		**3.2**	**70.4**	**26.4**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/25/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-3**	**6.0**	**NP**	**NP**	**NP**	**26**	**Silty F/M SAND (SM) A-2-4**

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CONSULTANTS

3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

ROCK CORE COMPRESSION TEST

Project Name:	I-85 Rehab MM77 - MM85	Project Number:	G 5439.00
Sampled By:	RW	Date Sampled:	8/30/2015
Tested By:	JH	Date Tested:	9/15/2015

Specimen Marking	B-3 15-1386A	B-3 15-1386B	B-3 15-1386C	B-3 15-1386D	B-3 15-1386E	
Depth	NQ-1	NQ-3	NQ-4	NQ-5	NQ-6	
Length (in)	3.812	3.77	3.77	3.549	3.488	
Diameter (in)	1.865	1.866	1.862	1.865	1.866	
Mass (g)	439.31	438.66	454.63	438.46	428.83	
Cross Sectional Area (in^2)	2.732	2.735	2.723	2.732	2.735	
Load (lb)	23,835	35,140	13,620	26,730	36,740	
Compressive Strength (psi)	8,720	12,850	5,000	9,780	13,430	
Corrected Compressive Strength (psi)	8,720	12,850	5,000	9,780	13,430	
Unit Weight (lb/ft^3)	160.61	161.99	168.74	172.27	171.27	

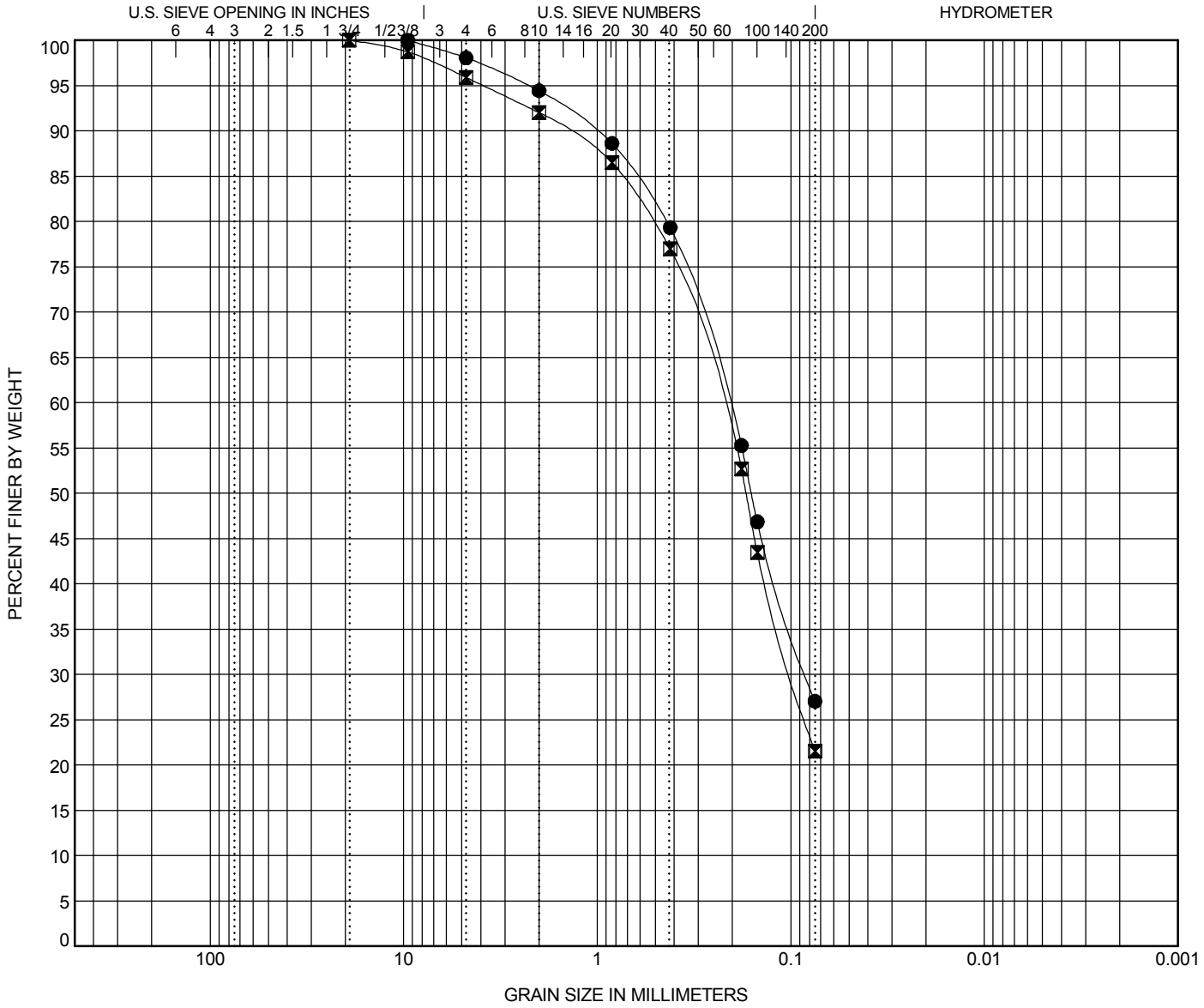
Signature: _____

Remarks: _____

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

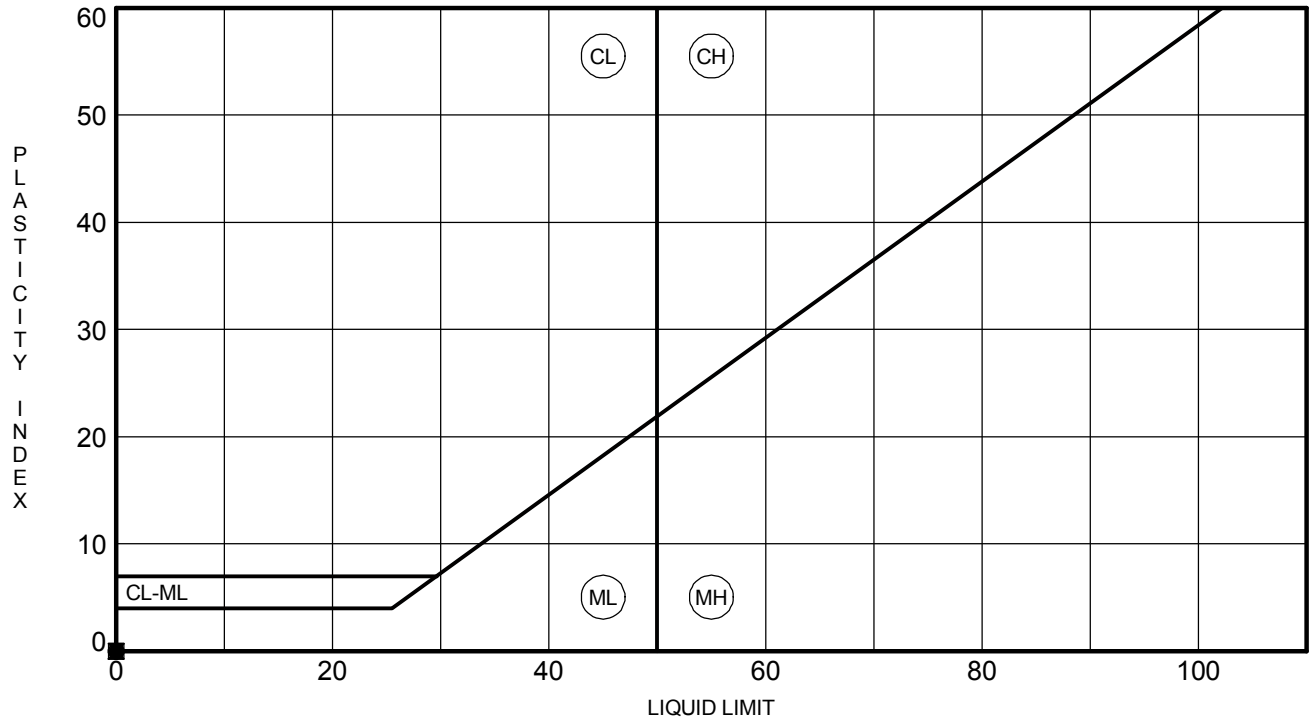
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-4**	**8.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⊠	**B-4**	**15.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-4**	**8.0**	**9.52**	**0.213**	**0.083**		**1.9**	**71.0**	**27.0**	
⊠	**B-4**	**15.0**	**19.1**	**0.232**	**0.098**		**4.1**	**74.3**	**21.6**	

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-4**	**8.0**	**NP**	**NP**	**NP**	**27**	**Silty F/M SAND (SM) A-2-4**
⊠	**B-4**	**15.0**	**NP**	**NP**	**NP**	**22**	**Silty F/M SAND (SM) A-2-4**

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3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

ROCK CORE COMPRESSION TEST

Project Name: I-85 Rehab MM77 - MM85 Project Number: G 5439.00

Sampled By: RW Date Sampled: 8/30/2015

Tested By: JH Date Tested: 9/15/2015

Specimen Marking	B-4 15-1387A	B-4 15-1387B	B-4 15-1387C			
Depth	NQ-1	NQ-2	NQ-4			
Length (in)	3.768	3.844	3.545			
Diameter (in)	1.861	1.868	1.866			
Mass (g)	467.28	476.96	44399			
Cross Sectional Area (in^2)	2.72	2.741	2.735			
Load (lb)	27,110	34,300	19,330			
Compressive Strength (psi)	9,970	12,510	7,070			
Corrected Compressive Strength (psi)	9,970	12,510	7,070			
Unit Weight (lb/ft^3)	173.73	172.37	174.47			

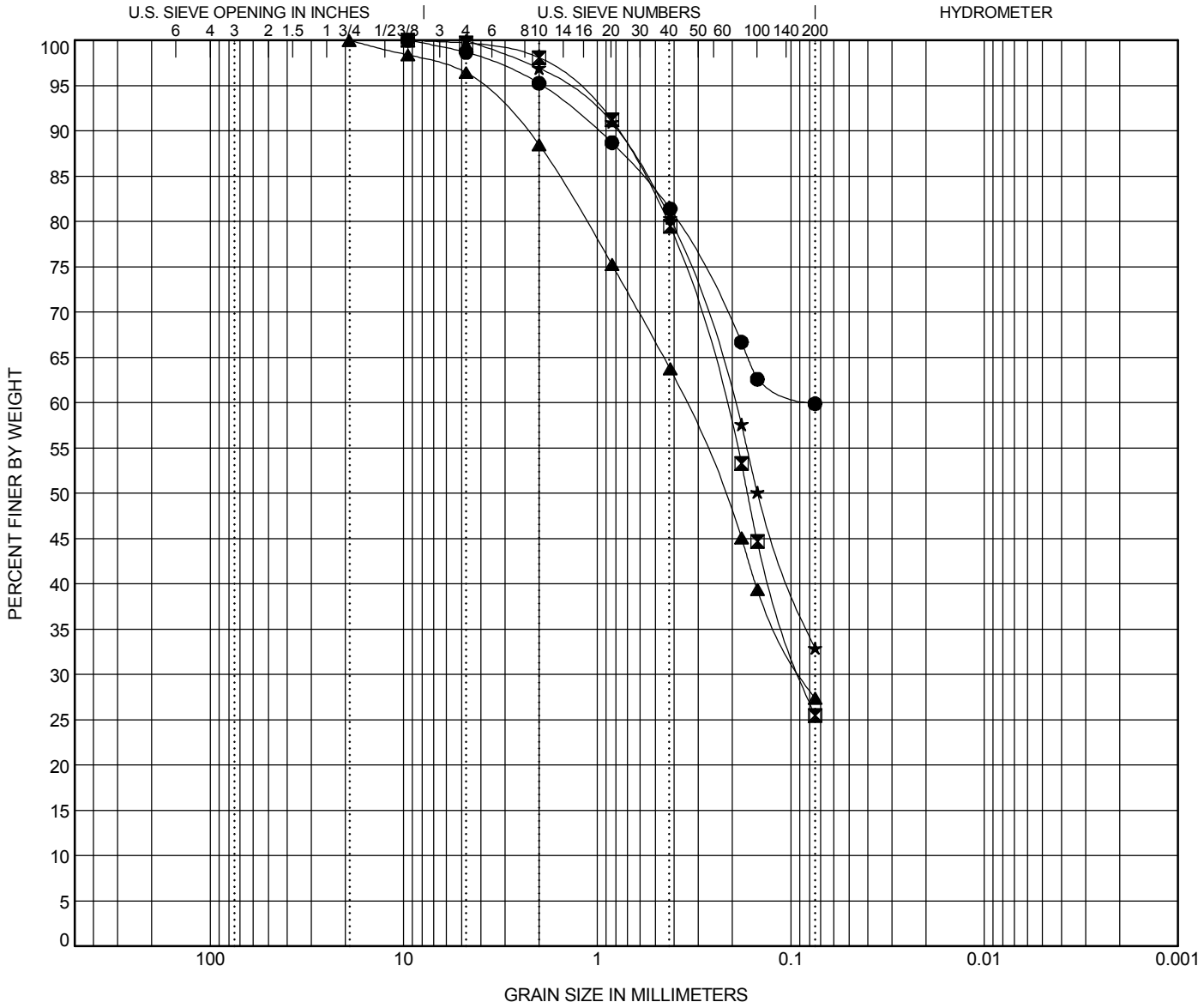
Signature: _____

Remarks: _____

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**B-5**	**10.0**	**Sandy Lean CLAY (CL) A-6(7)**	**38**	**24**	**14**		
⊠	**B-5**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**B-5**	**40.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
★	**B-5**	**55.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

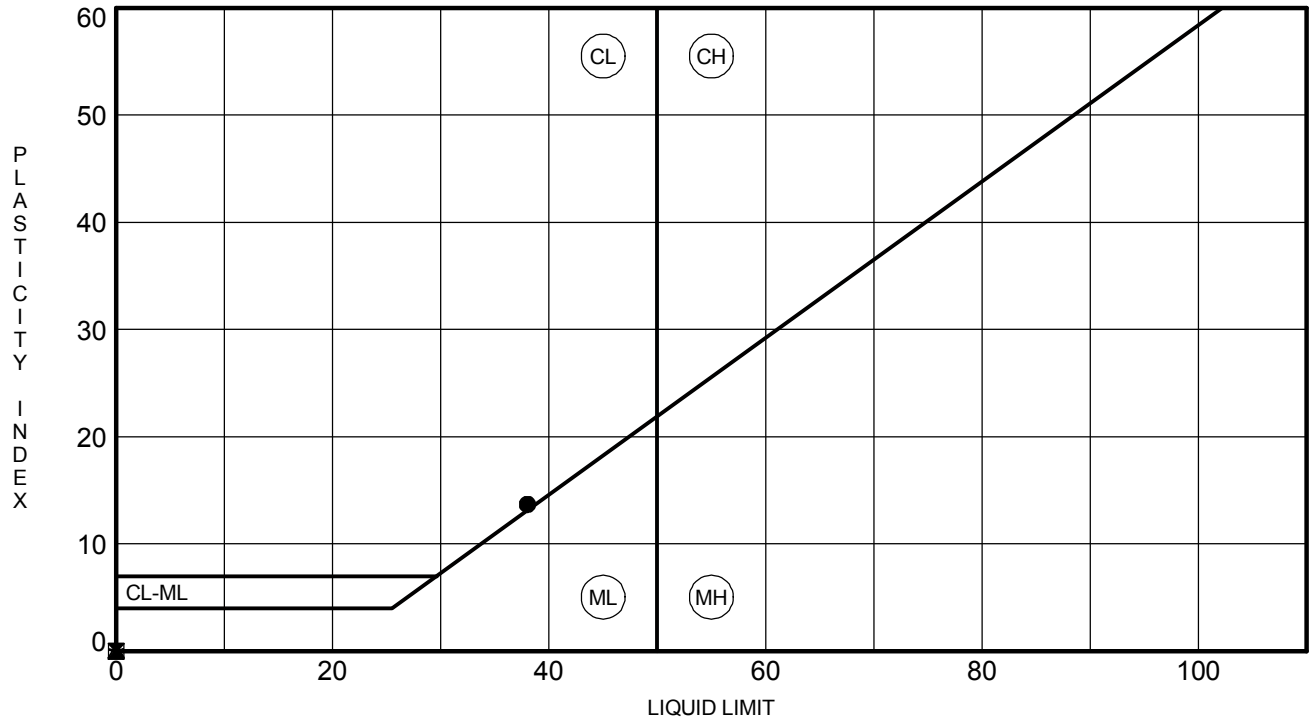
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**B-5**	**10.0**	**9.52**	**0.077**			**1.3**	**38.8**	**59.9**	
⊠	**B-5**	**25.0**	**9.52**	**0.224**	**0.088**		**0.3**	**74.2**	**25.5**	
▲	**B-5**	**40.0**	**19.1**	**0.354**	**0.087**		**3.6**	**69.1**	**27.4**	
★	**B-5**	**55.0**	**4.76**	**0.197**			**0.0**	**67.1**	**32.9**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/25/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**B-5**	**10.0**	**38**	**24**	**14**	**60**	**Sandy Lean CLAY (CL) A-6(7)**
⧓	**B-5**	**25.0**	**NP**	**NP**	**NP**	**25**	**Silty F/M SAND (SM) A-2-4**
▲	**B-5**	**40.0**	**NP**	**NP**	**NP**	**27**	**Silty F/M SAND (SM) A-2-4**
★	**B-5**	**55.0**	**NP**	**NP**	**NP**	**33**	**Silty F/M SAND (SM) A-2-4**

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CONSULTANTS

3112 Devine Street
Columbia, South Carolina 29205
GEOTECHNICAL / ENVIRONMENTAL / MATERIALS

ROCK CORE COMPRESSION TEST

Project Name:	I-85 Rehab MM77 - MM85	Project Number:	G 5439.00
Sampled By:	RW	Date Sampled:	8/30/2015
Tested By:	JH	Date Tested:	9/15/2015

Specimen Marking	B-5 15-1355A					
Depth	NQ-1					
Length (in)	3.726					
Diameter (in)	1.858					
Mass (g)	459.79					
Cross Sectional Area (in^2)	2.711					
Load (lb)	33,485					
Compressive Strength (psi)	12,350					
Corrected Compressive Strength (psi)	12,350					
Unit Weight (lb/ft^3)	173.27					

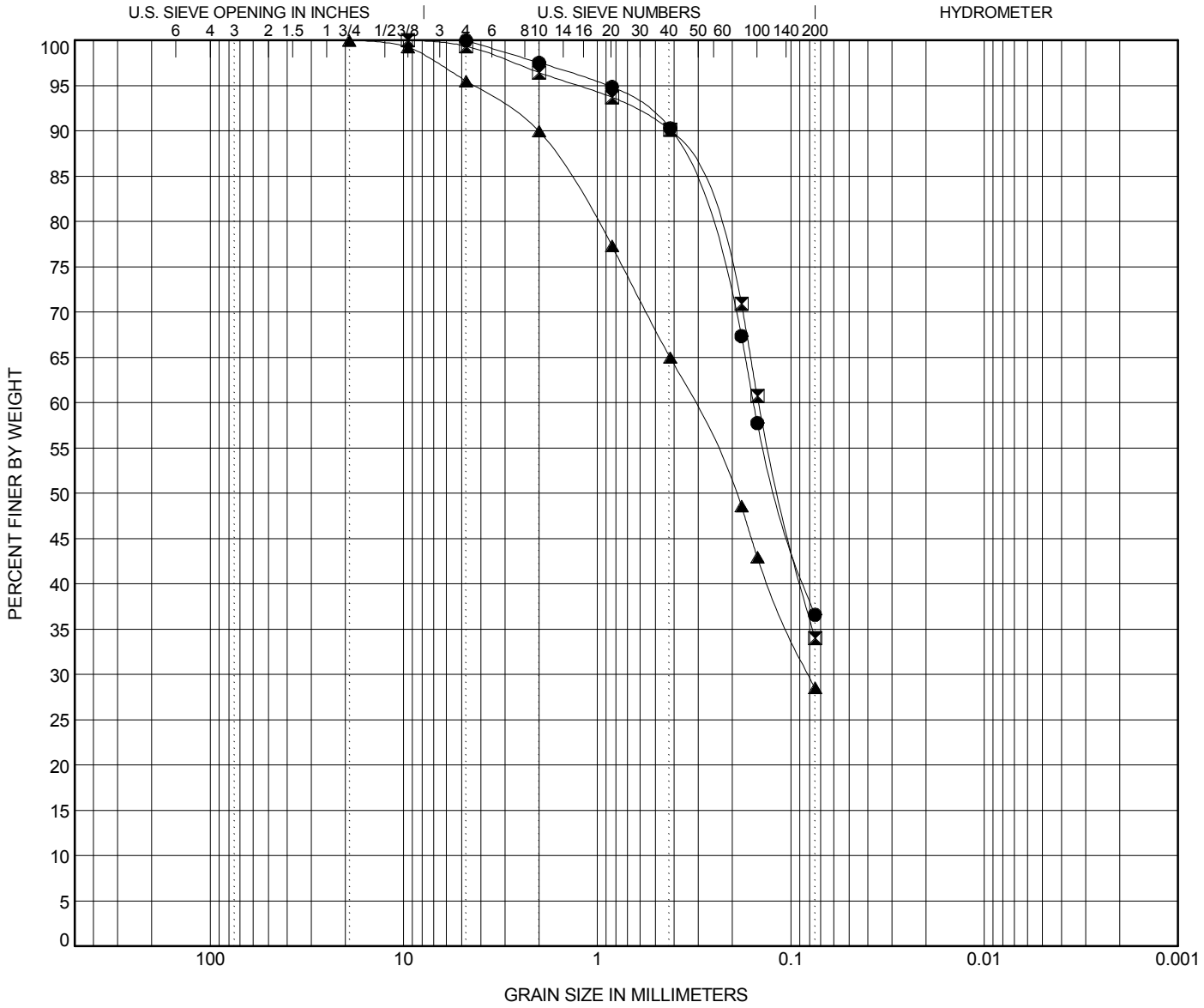
Signature: _____

Remarks: _____

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-1**	**4.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-1**	**10.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**RW-1**	**25.0**	**Silty F/C SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

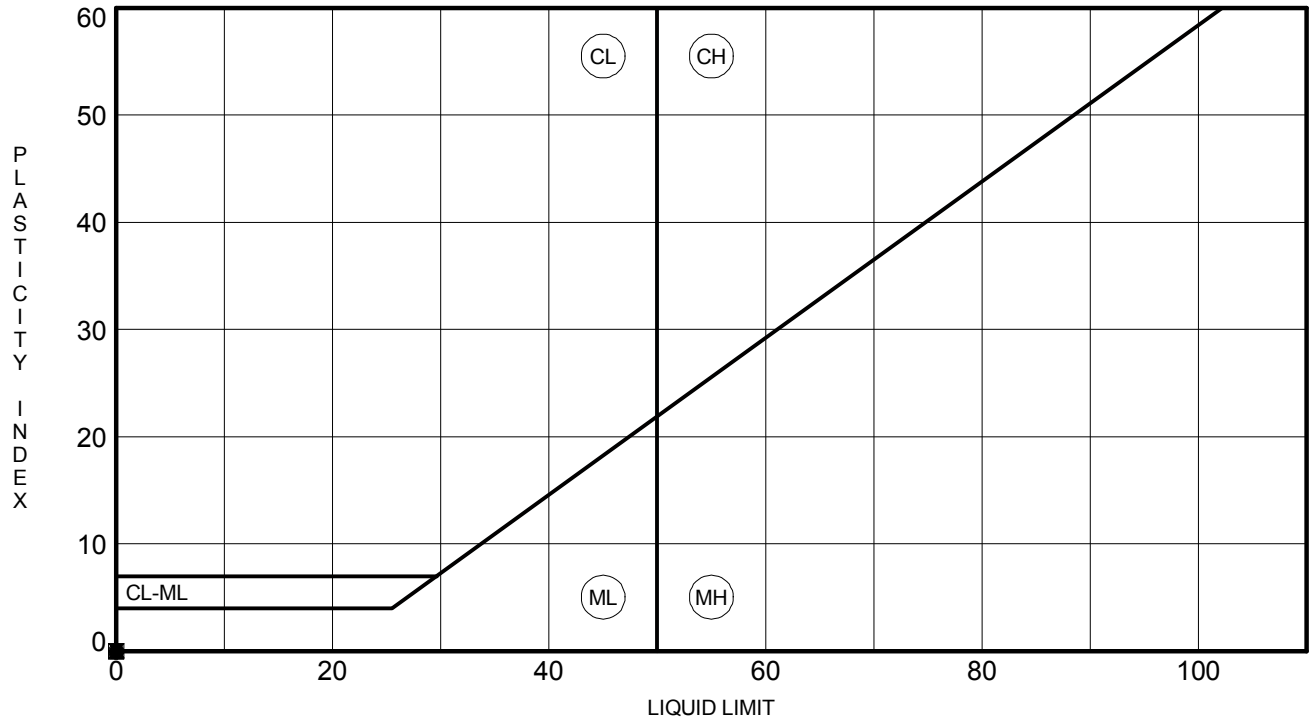
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-1**	**4.0**	**4.76**	**0.156**			**0.0**	**63.4**	**36.6**	
⧓	**RW-1**	**10.0**	**9.52**	**0.146**			**0.6**	**65.4**	**34.0**	
▲	**RW-1**	**25.0**	**19.1**	**0.324**	**0.08**		**4.5**	**67.0**	**28.5**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

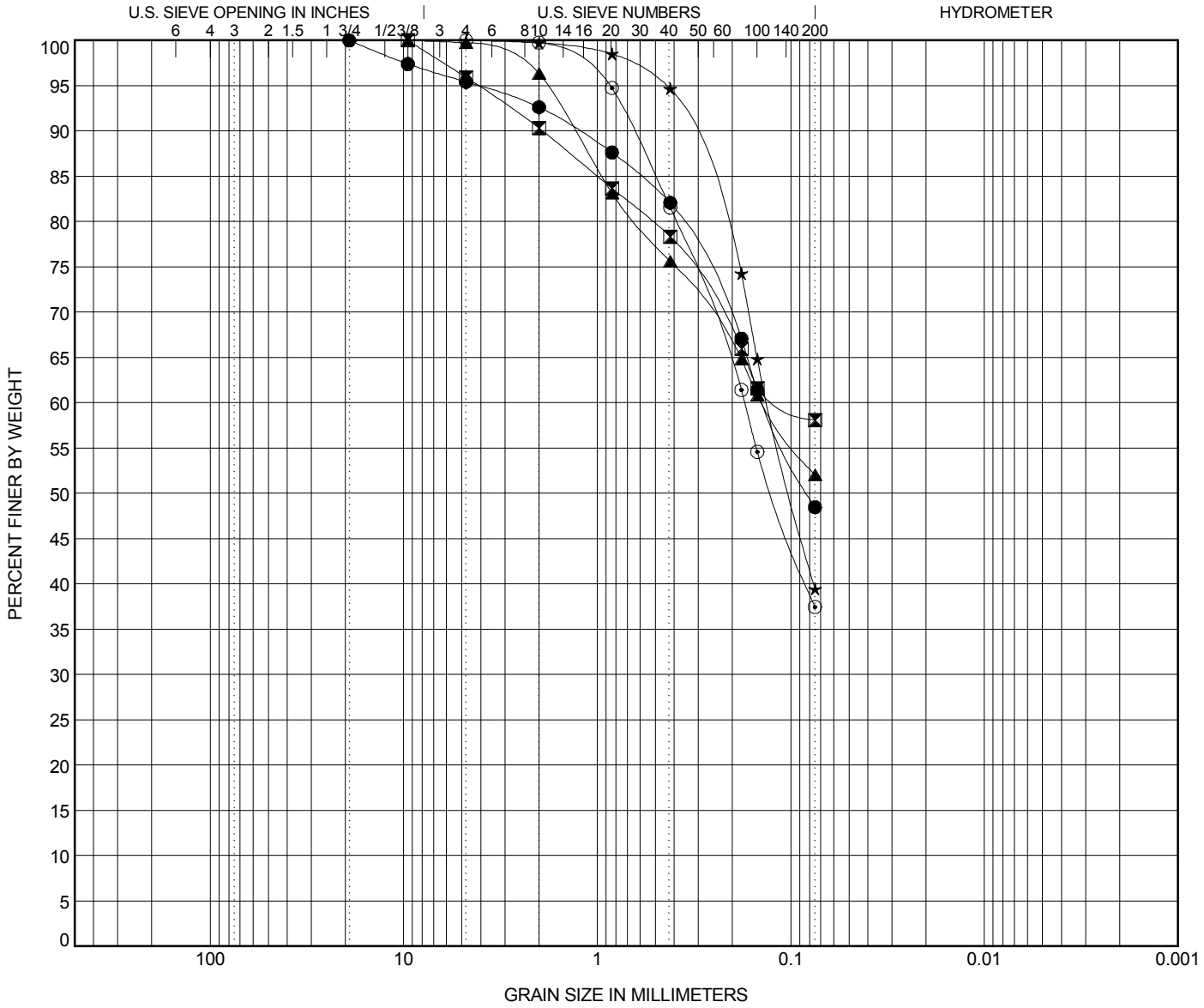


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-1**	**4.0**	**NP**	**NP**	**NP**	**37**	**Silty F/M SAND (SM) A-4(0)**
⧓	**RW-1**	**10.0**	**NP**	**NP**	**NP**	**34**	**Silty F/M SAND (SM) A-2-4**
▲	**RW-1**	**25.0**	**NP**	**NP**	**NP**	**29**	**Silty F/C SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-2**	**6.0**	**Sandy SILT (ML) A-4(0)**	**NP**	**NP**	**NP**		
⊠	**RW-2**	**15.0**	**Sandy SILT (ML) A-6(6)**	**39**	**26**	**13**		
▲	**RW-2**	**20.0**	**Sandy SILT (ML) A-4(0)**	**NP**	**NP**	**NP**		
★	**RW-2**	**35.0**	**Silty Fine SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⊙	**RW-2**	**50.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		

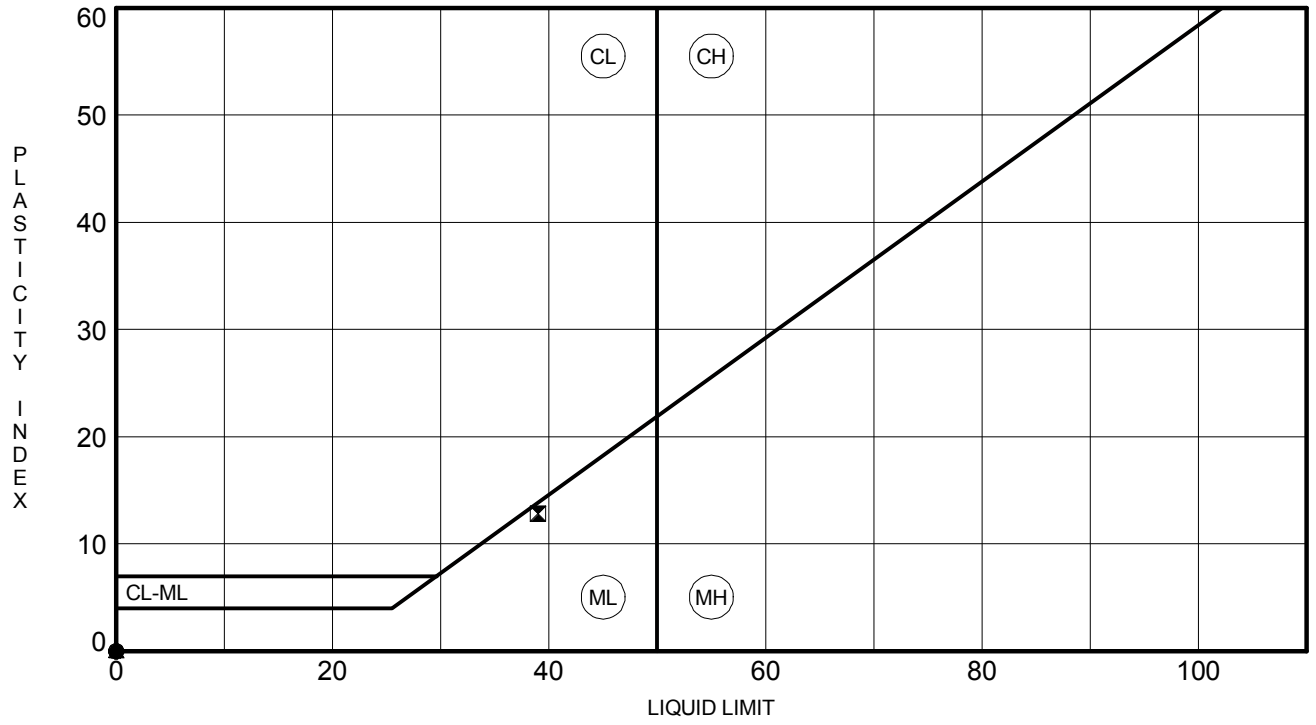
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-2**	**6.0**	**19.1**	**0.139**			**4.6**	**47.0**	**48.5**	
⊠	**RW-2**	**15.0**	**9.52**	**0.109**			**4.1**	**37.8**	**58.1**	
▲	**RW-2**	**20.0**	**9.52**	**0.139**			**0.3**	**47.7**	**52.1**	
★	**RW-2**	**35.0**	**4.76**	**0.131**			**0.0**	**60.5**	**39.5**	
⊙	**RW-2**	**50.0**	**4.76**	**0.173**			**0.0**	**62.5**	**37.5**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

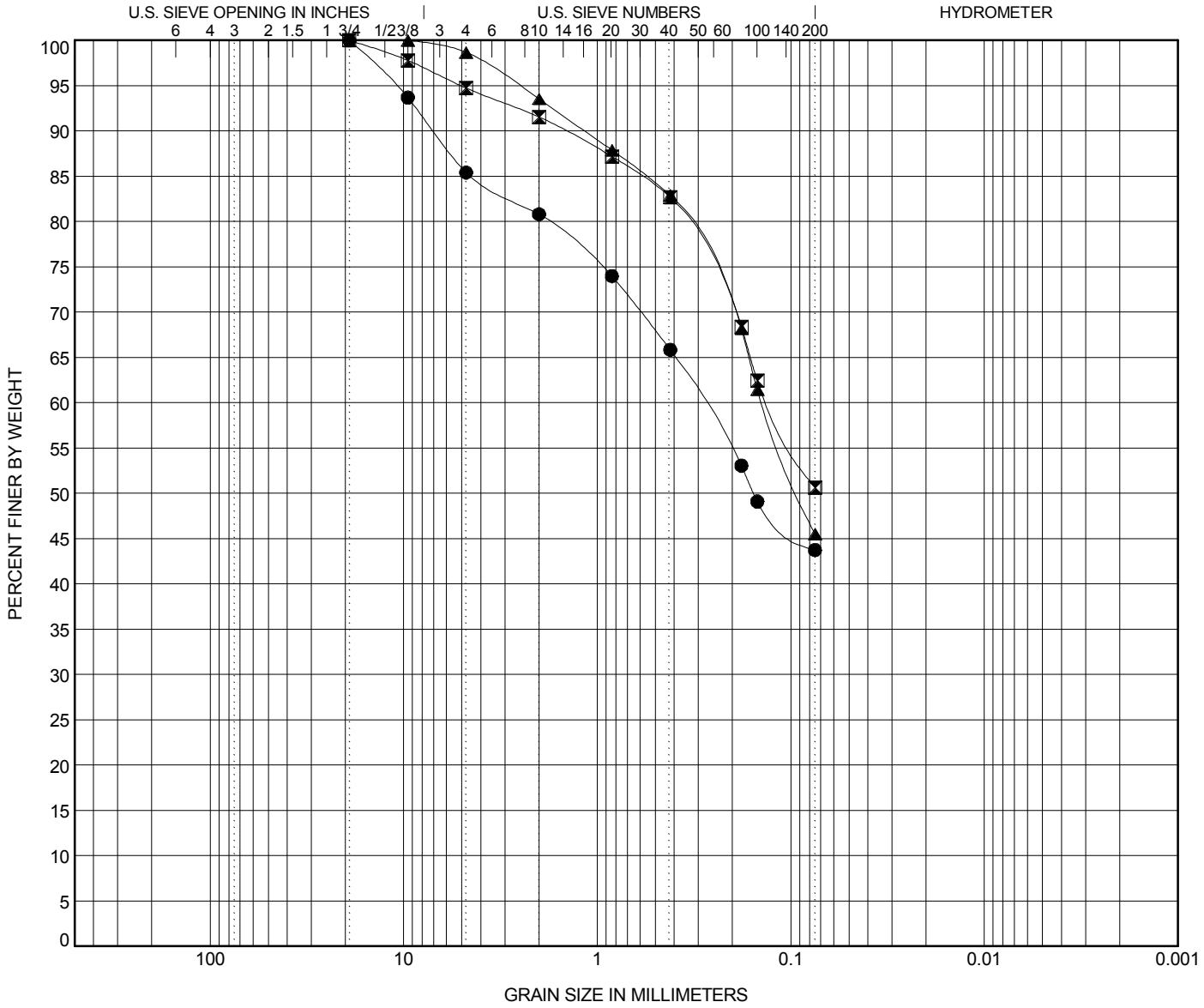


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-2**	**6.0**	**NP**	**NP**	**NP**	**48**	**Sandy SILT (ML) A-4(0)**
⧓	**RW-2**	**15.0**	**39**	**26**	**13**	**58**	**Sandy SILT (ML) A-6(6)**
▲	**RW-2**	**20.0**	**NP**	**NP**	**NP**	**52**	**Sandy SILT (ML) A-4(0)**
★	**RW-2**	**35.0**	**NP**	**NP**	**NP**	**39**	**Silty Fine SAND (SM) A-4(0)**
⊙	**RW-2**	**50.0**	**NP**	**NP**	**NP**	**37**	**Silty F/M SAND (SM) A-4(0)**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-3**	**6.0**	**Sandy SILT (ML) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-3**	**15.0**	**Sandy SILT (ML) A-4(0)**	**NP**	**NP**	**NP**		
▲	**RW-3**	**25.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		

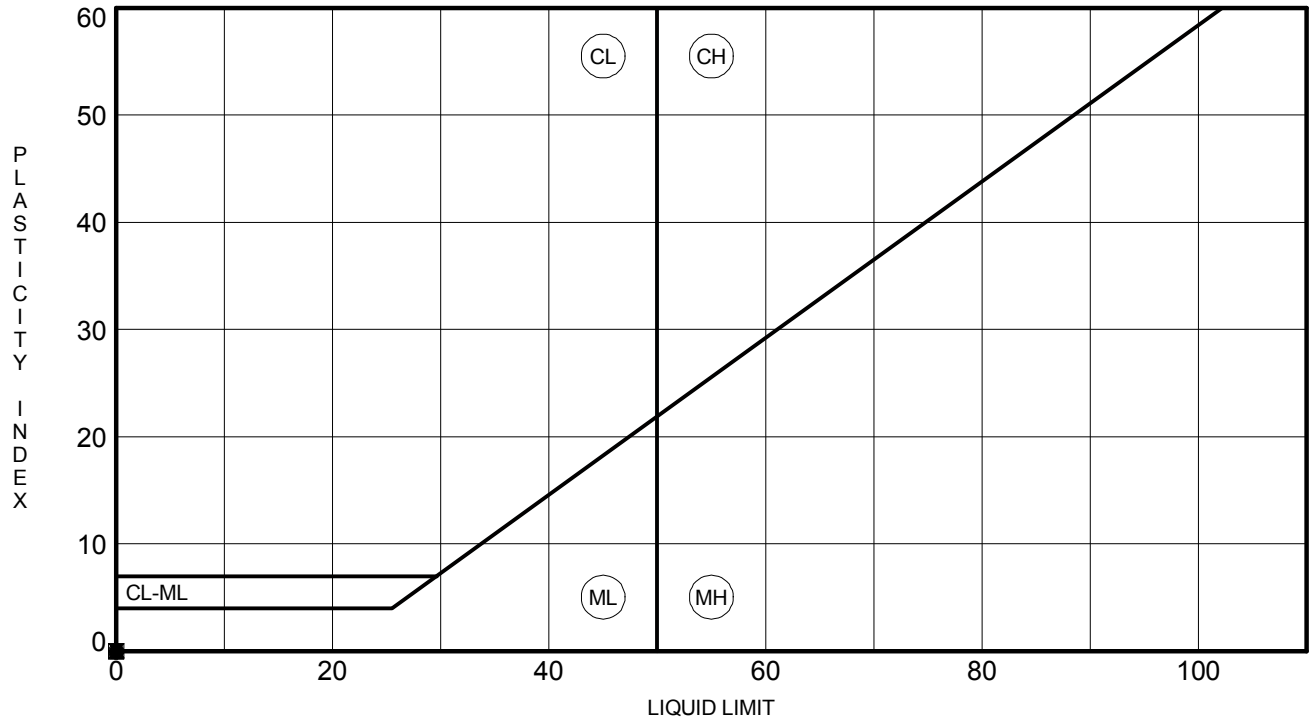
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-3**	**6.0**	**19.1**	**0.285**			**14.6**	**41.7**	**43.7**	
⧓	**RW-3**	**15.0**	**19.1**	**0.129**			**5.3**	**44.1**	**50.7**	
▲	**RW-3**	**25.0**	**9.52**	**0.14**			**1.3**	**53.1**	**45.5**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

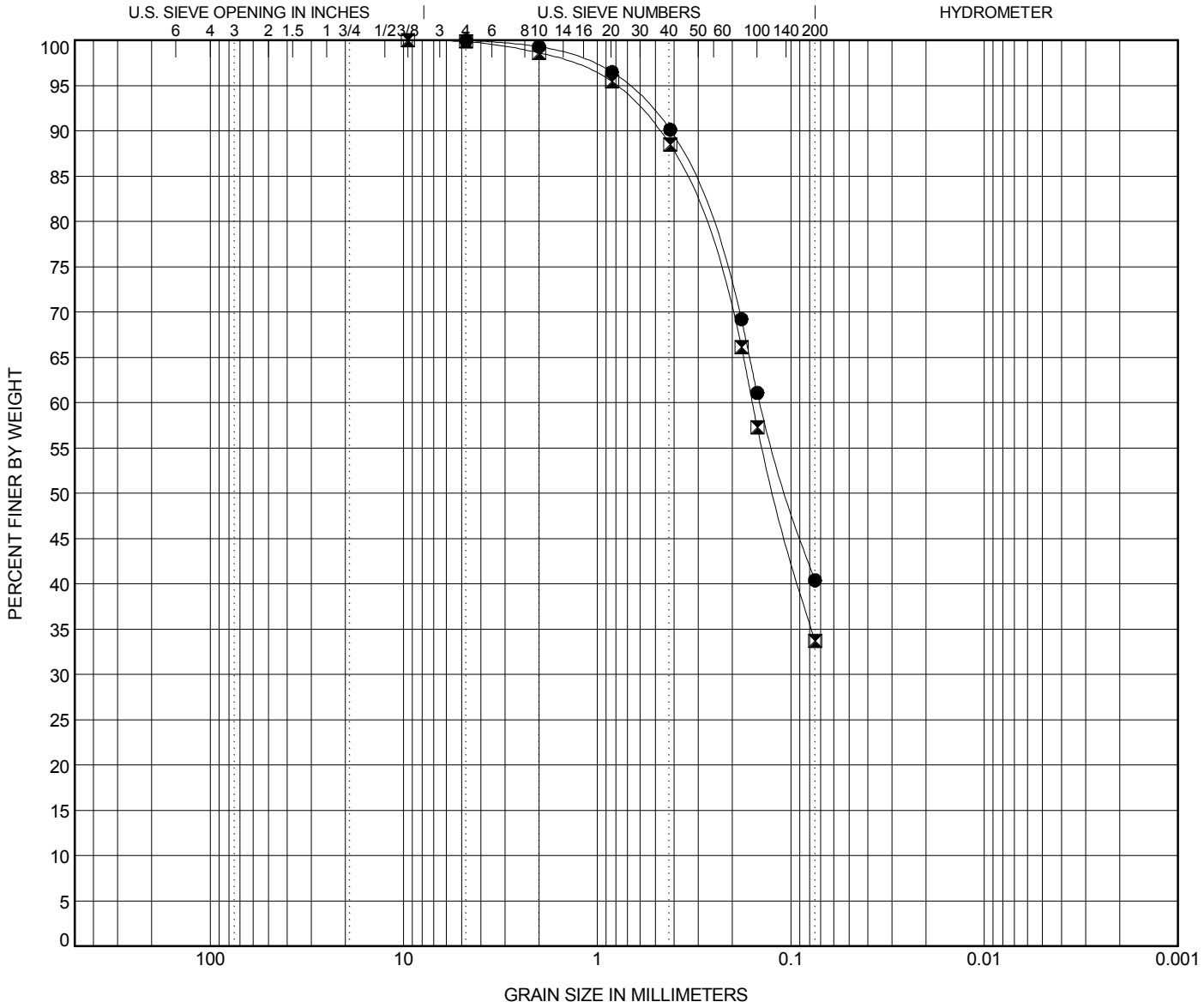


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-3**	**6.0**	**NP**	**NP**	**NP**	**44**	**Sandy SILT (ML) A-4(0)**
⧓	**RW-3**	**15.0**	**NP**	**NP**	**NP**	**51**	**Sandy SILT (ML) A-4(0)**
▲	**RW-3**	**25.0**	**NP**	**NP**	**NP**	**46**	**Silty F/M SAND (SM) A-4(0)**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-4**	**15.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-4**	**30.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

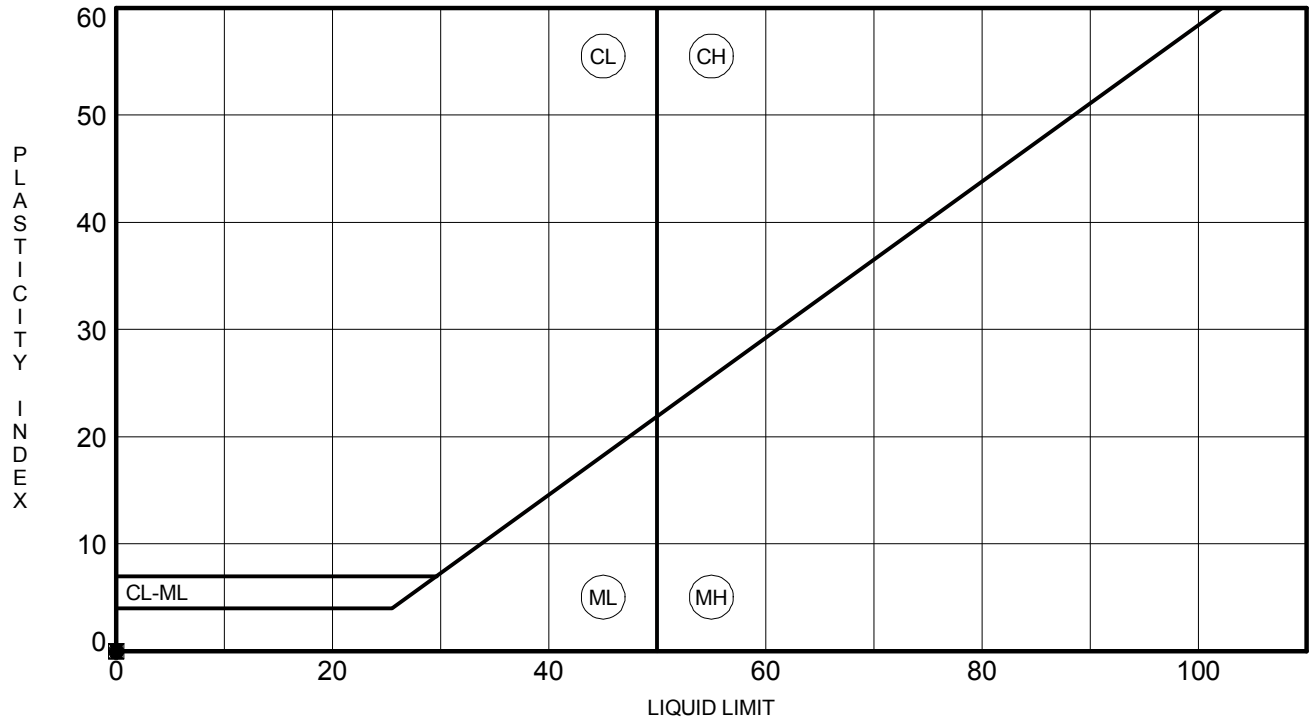
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-4**	**15.0**	**4.76**	**0.144**			**0.0**	**59.6**	**40.4**	
⧓	**RW-4**	**30.0**	**9.52**	**0.158**			**0.1**	**66.1**	**33.7**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

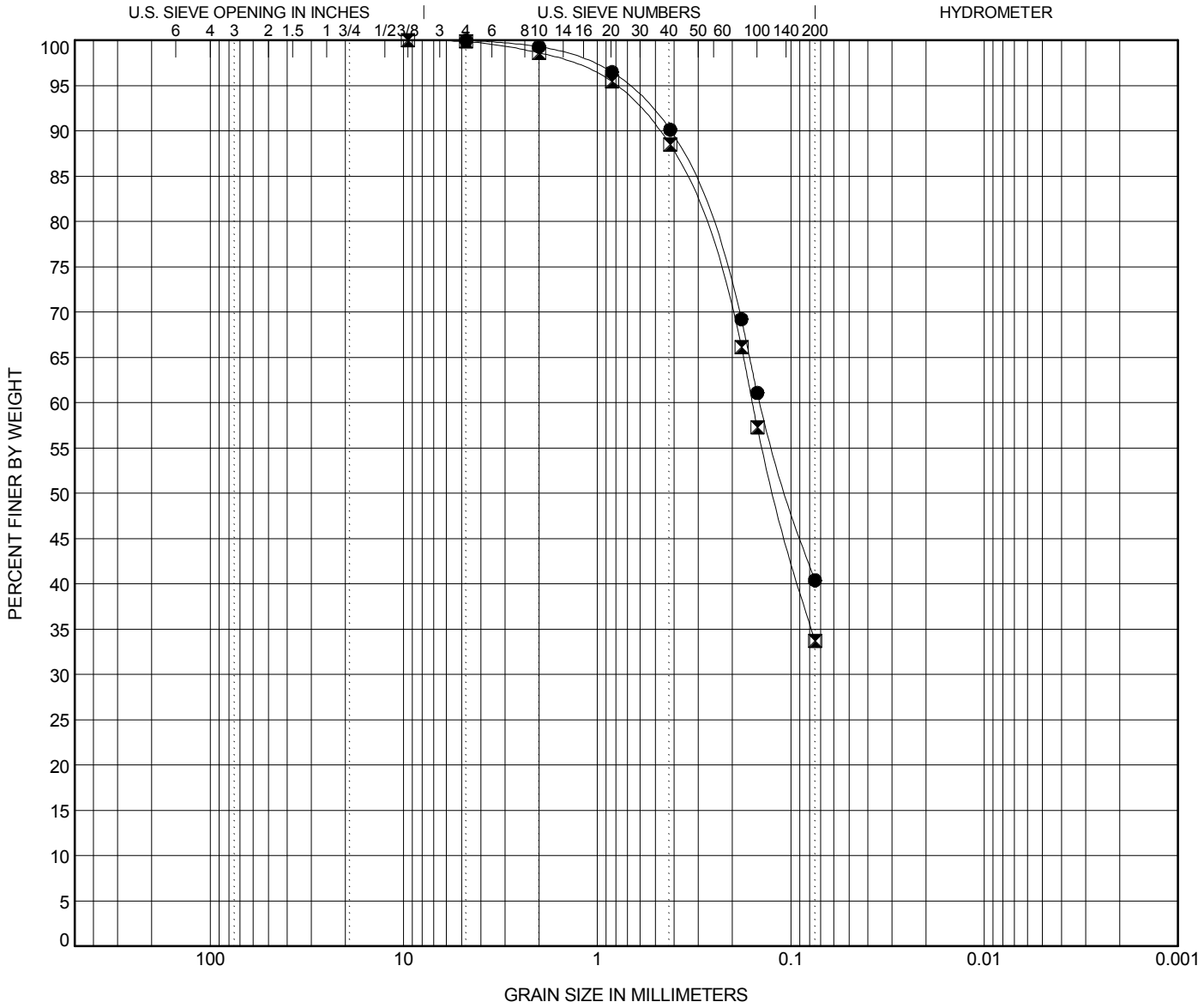


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-4**	**15.0**	**NP**	**NP**	**NP**	**40**	**Silty F/M SAND (SM) A-4(0)**
⧓	**RW-4**	**30.0**	**NP**	**NP**	**NP**	**34**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-4**	**15.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-4**	**30.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

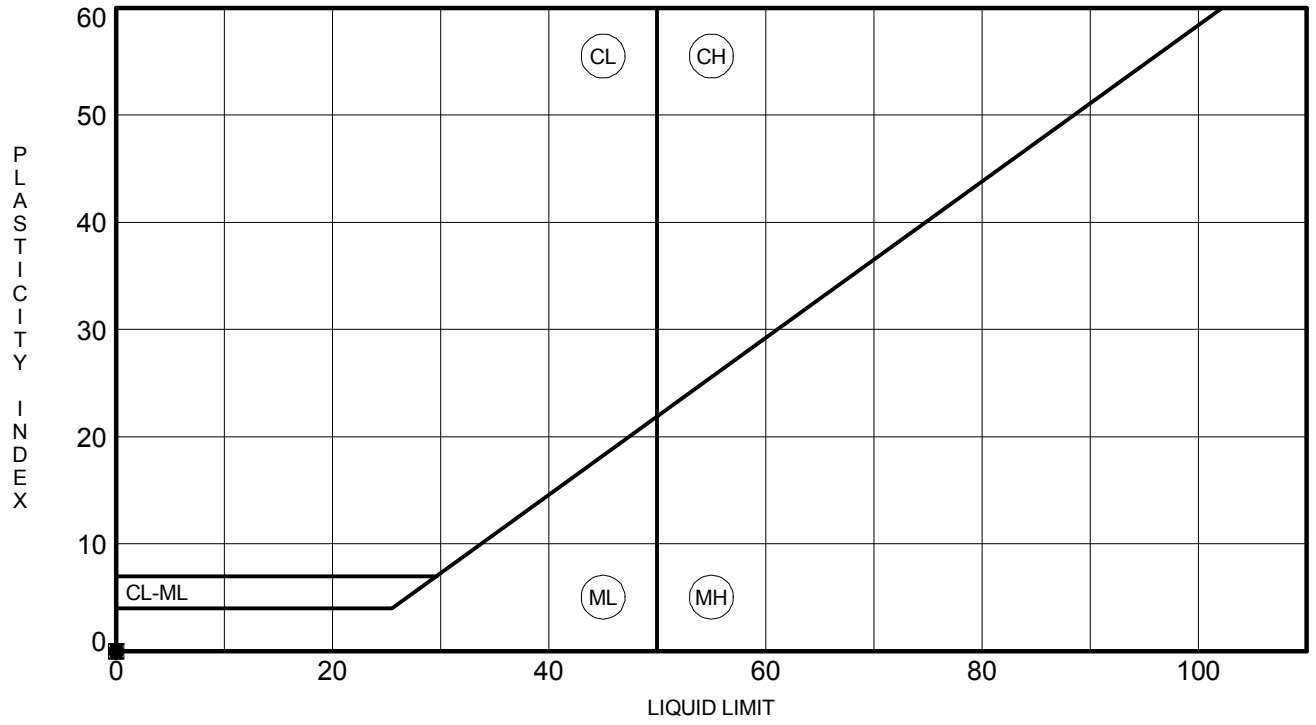
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-4**	**15.0**	**4.76**	**0.144**			**0.0**	**59.6**	**40.4**	
⧓	**RW-4**	**30.0**	**9.52**	**0.158**			**0.1**	**66.1**	**33.7**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

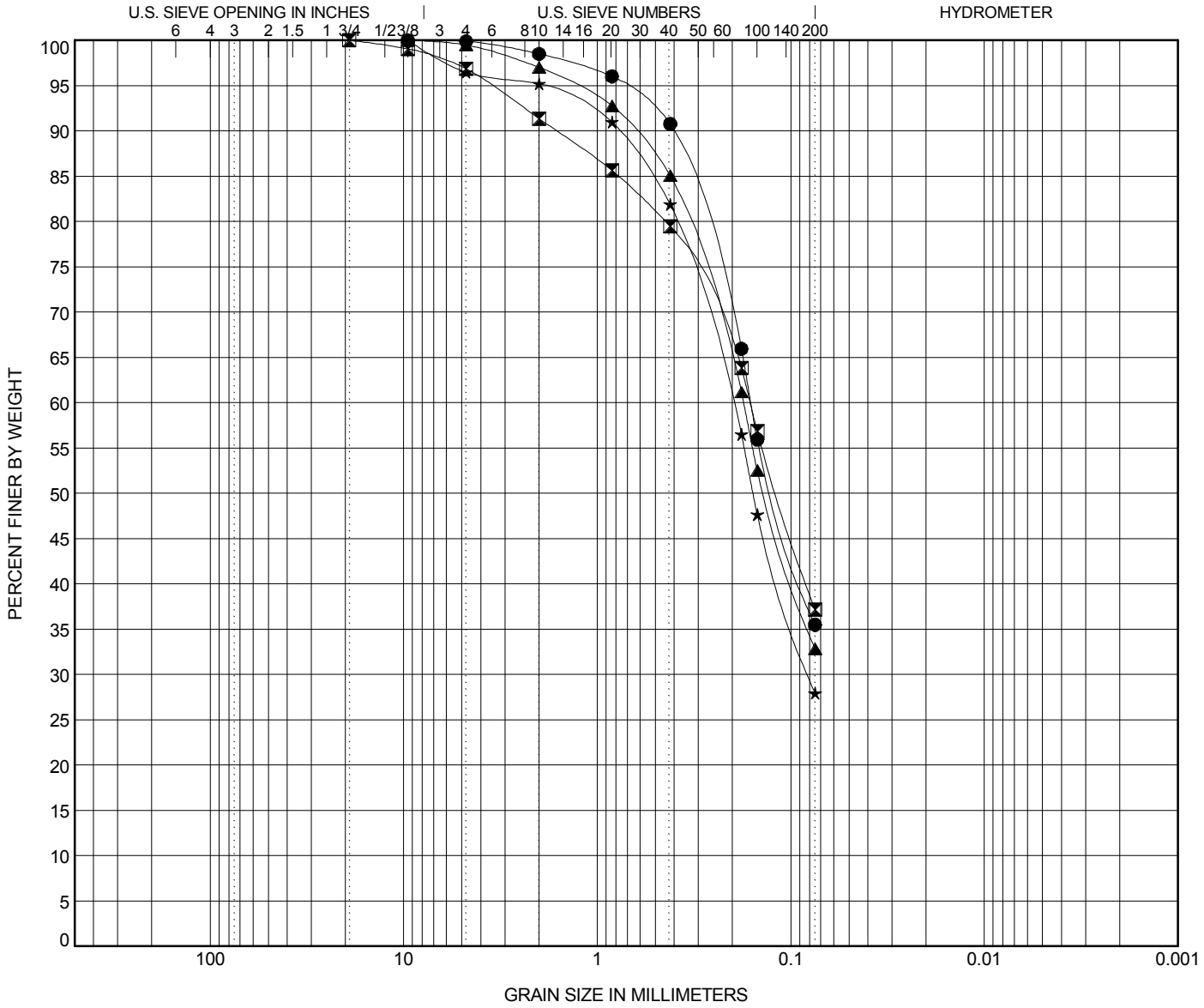


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-4**	**15.0**	**NP**	**NP**	**NP**	**40**	**Silty F/M SAND (SM) A-4(0)**
⧓	**RW-4**	**30.0**	**NP**	**NP**	**NP**	**34**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

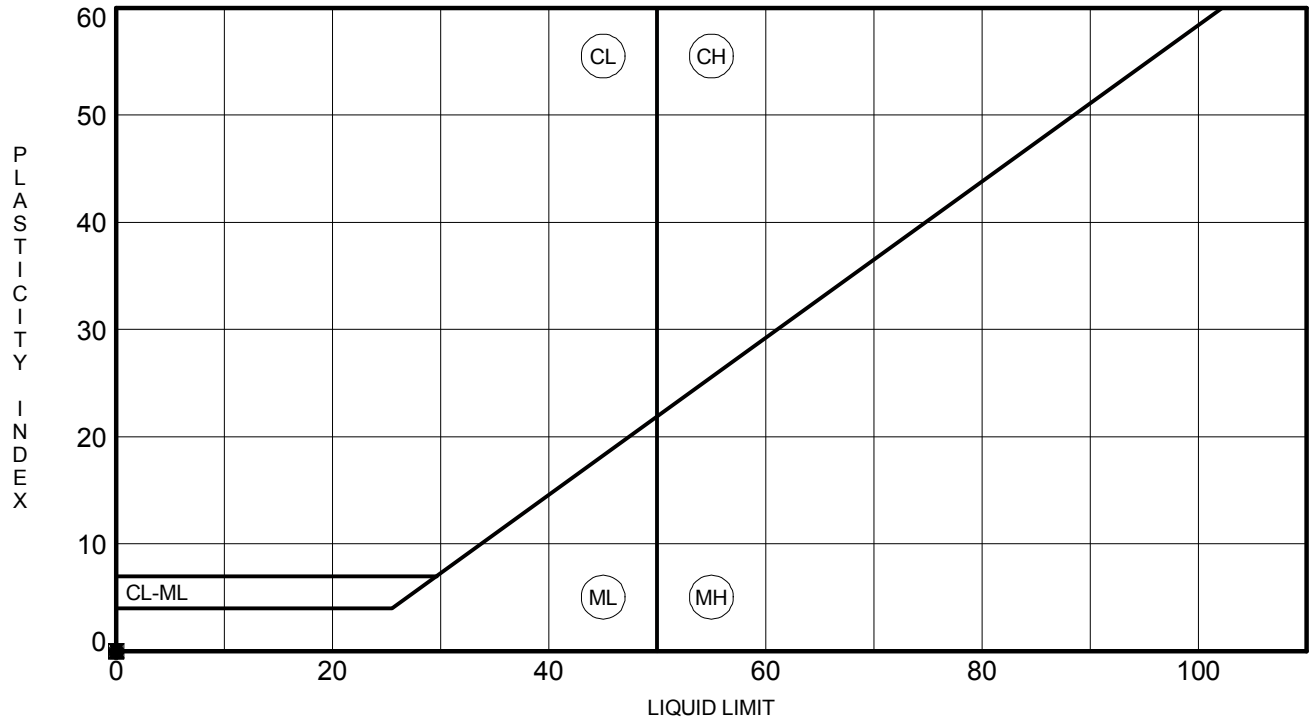
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-5**	**10.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-5**	**20.0**	**Silty F/C SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
▲	**RW-5**	**40.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
★	**RW-5**	**45.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-5**	**10.0**	**9.52**	**0.161**			**0.1**	**64.4**	**35.5**	
⧓	**RW-5**	**20.0**	**19.1**	**0.162**			**3.1**	**59.7**	**37.2**	
▲	**RW-5**	**40.0**	**9.52**	**0.175**			**0.5**	**66.6**	**32.9**	
★	**RW-5**	**45.0**	**9.52**	**0.202**	**0.081**		**3.5**	**68.5**	**28.0**	

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

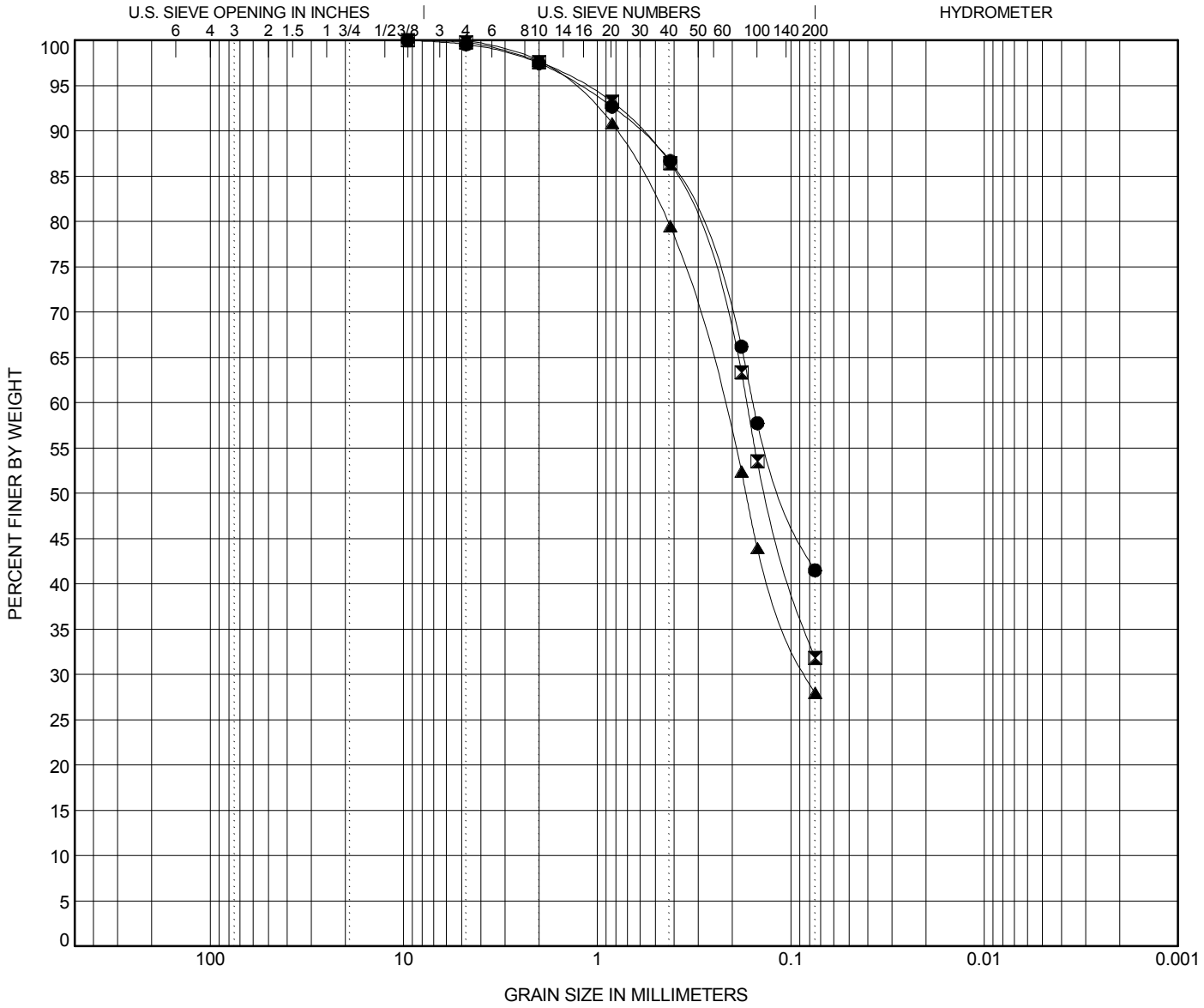


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-5**	**10.0**	**NP**	**NP**	**NP**	**36**	**Silty F/M SAND (SM) A-4(0)**
⊠	**RW-5**	**20.0**	**NP**	**NP**	**NP**	**37**	**Silty F/C SAND (SM) A-4(0)**
▲	**RW-5**	**40.0**	**NP**	**NP**	**NP**	**33**	**Silty F/M SAND (SM) A-2-4**
★	**RW-5**	**45.0**	**NP**	**NP**	**NP**	**28**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-6**	**8.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-6**	**15.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**RW-6**	**30.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

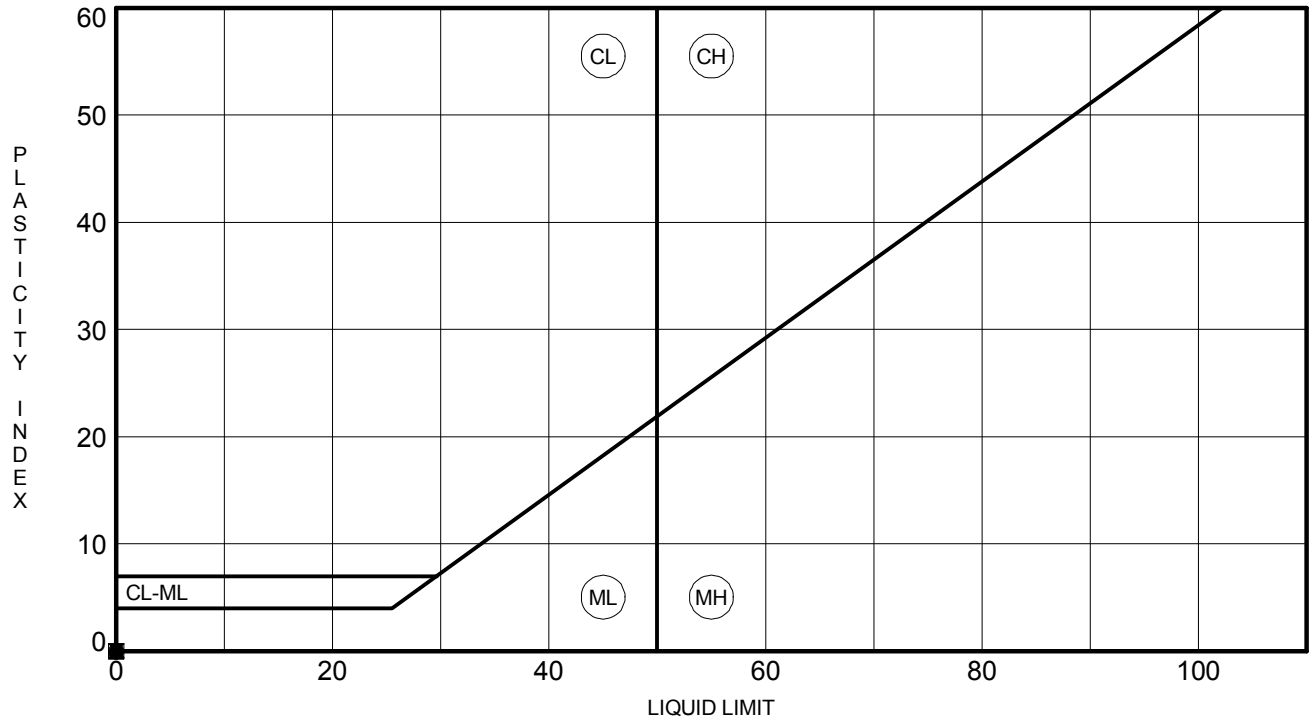
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-6**	**8.0**	**9.52**	**0.157**			**0.4**	**58.1**	**41.5**	
⧓	**RW-6**	**15.0**	**9.52**	**0.169**			**0.2**	**67.9**	**31.9**	
▲	**RW-6**	**30.0**	**4.76**	**0.228**	**0.082**		**0.0**	**72.0**	**28.0**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

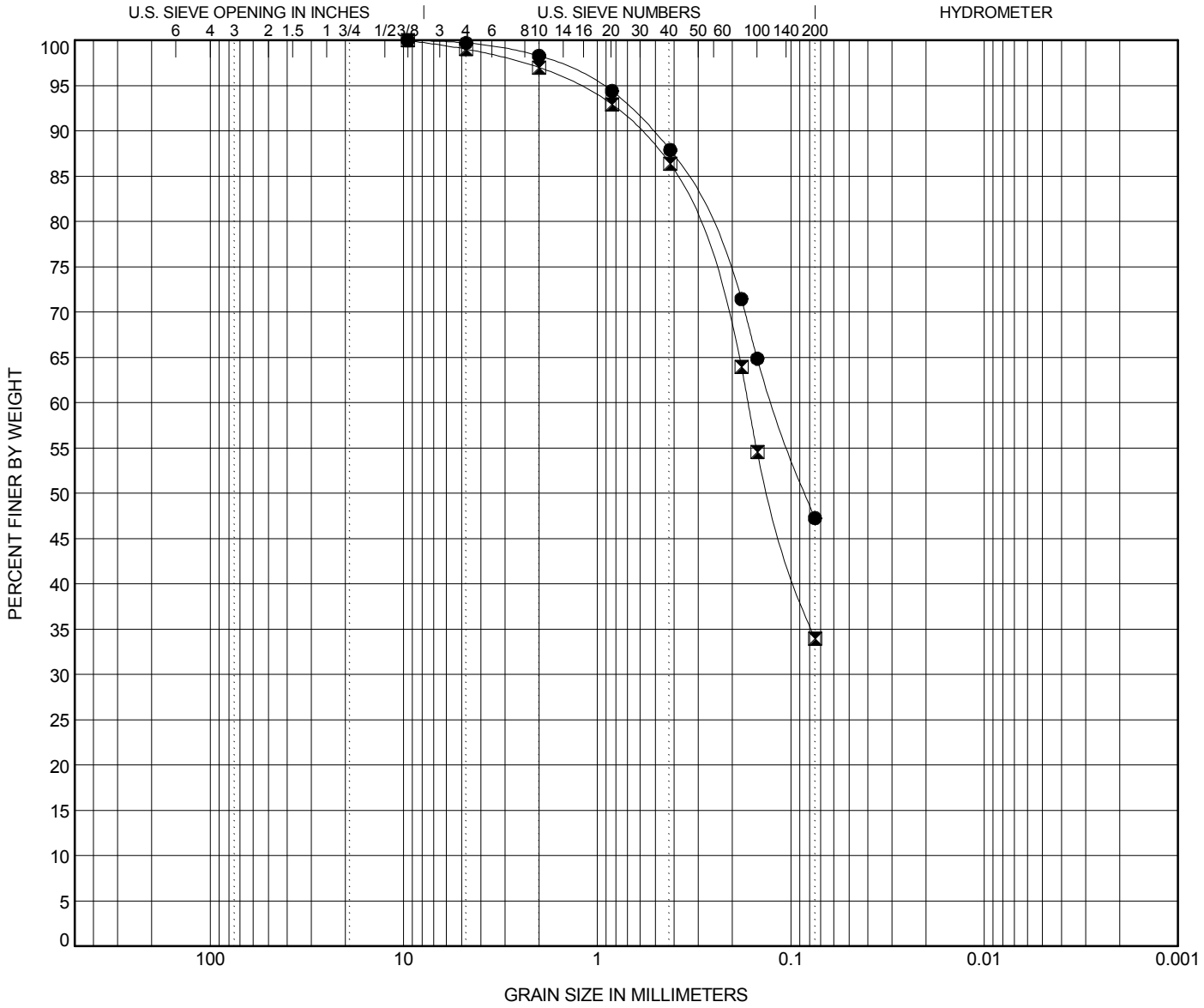


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-6**	**8.0**	**NP**	**NP**	**NP**	**42**	**Silty F/M SAND (SM) A-4(0)**
⧓	**RW-6**	**15.0**	**NP**	**NP**	**NP**	**32**	**Silty F/M SAND (SM) A-2-4**
▲	**RW-6**	**30.0**	**NP**	**NP**	**NP**	**28**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-7**	**8.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⧓	**RW-7**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

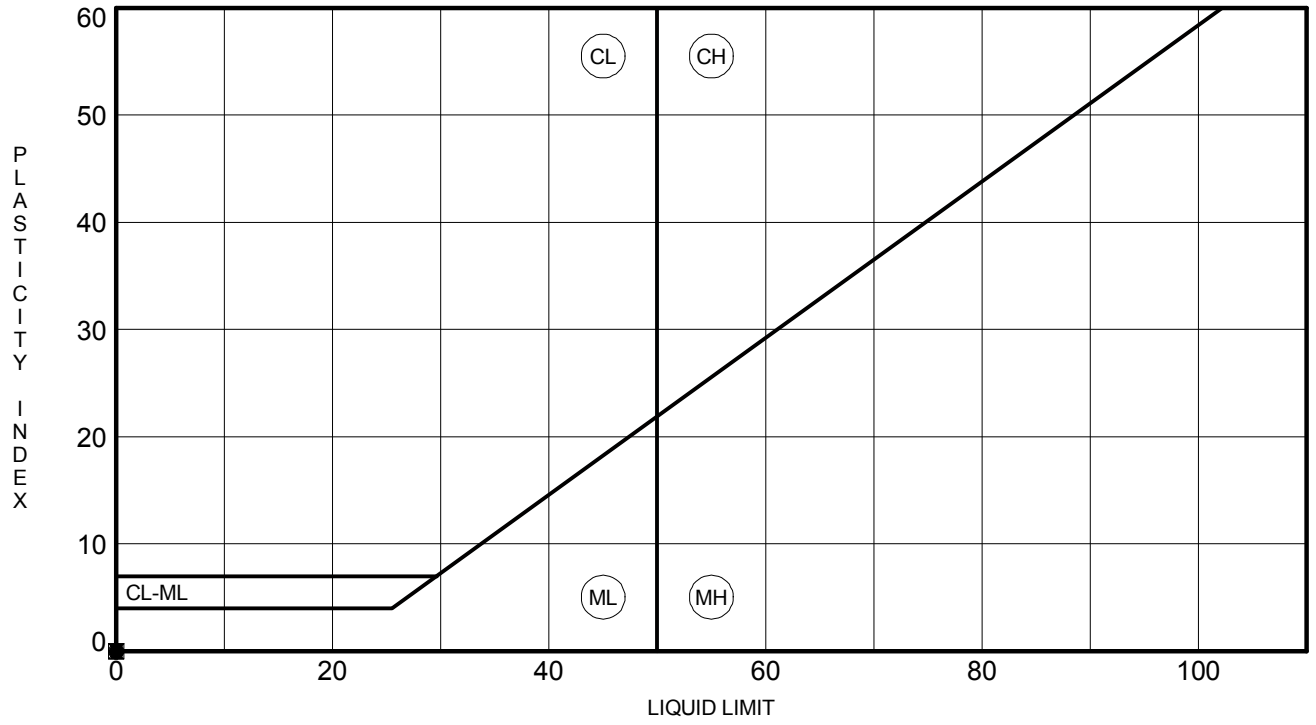
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-7**	**8.0**	**9.52**	**0.123**			**0.3**	**52.5**	**47.3**	
⧓	**RW-7**	**25.0**	**9.52**	**0.166**			**1.0**	**65.1**	**33.9**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

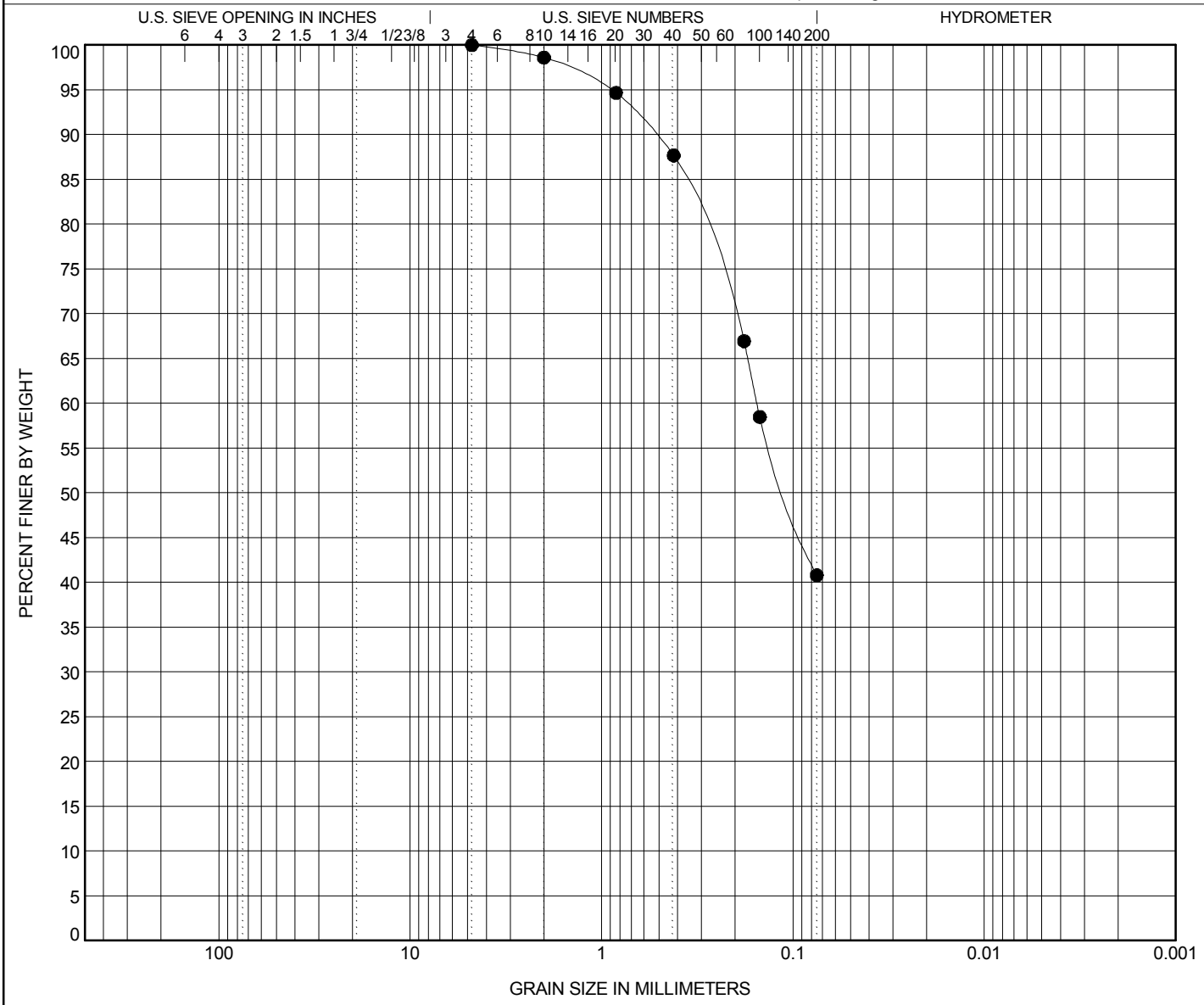


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-7**	**8.0**	**NP**	**NP**	**NP**	**47**	**Silty F/M SAND (SM) A-4(0)**
⧓	**RW-7**	**25.0**	**NP**	**NP**	**NP**	**34**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

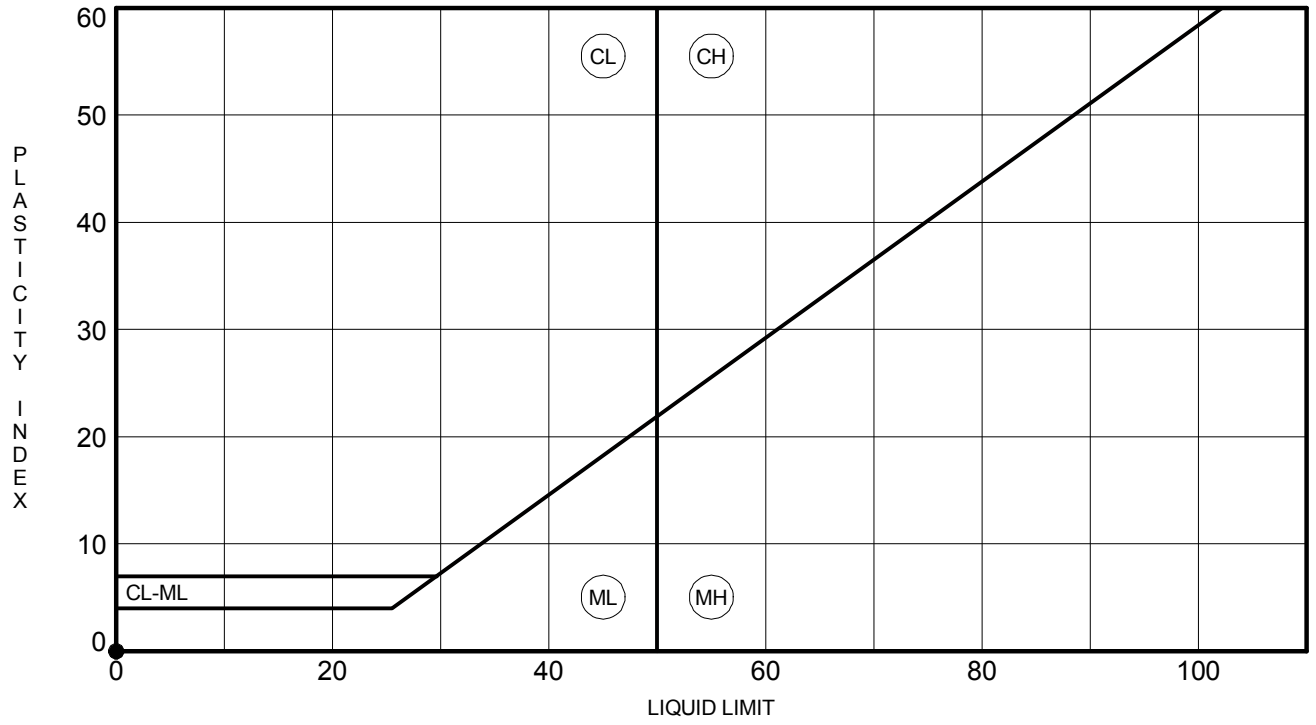
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-8**	**6.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-8**	**6.0**	**4.76**	**0.154**			**0.0**	**59.2**	**40.8**	

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

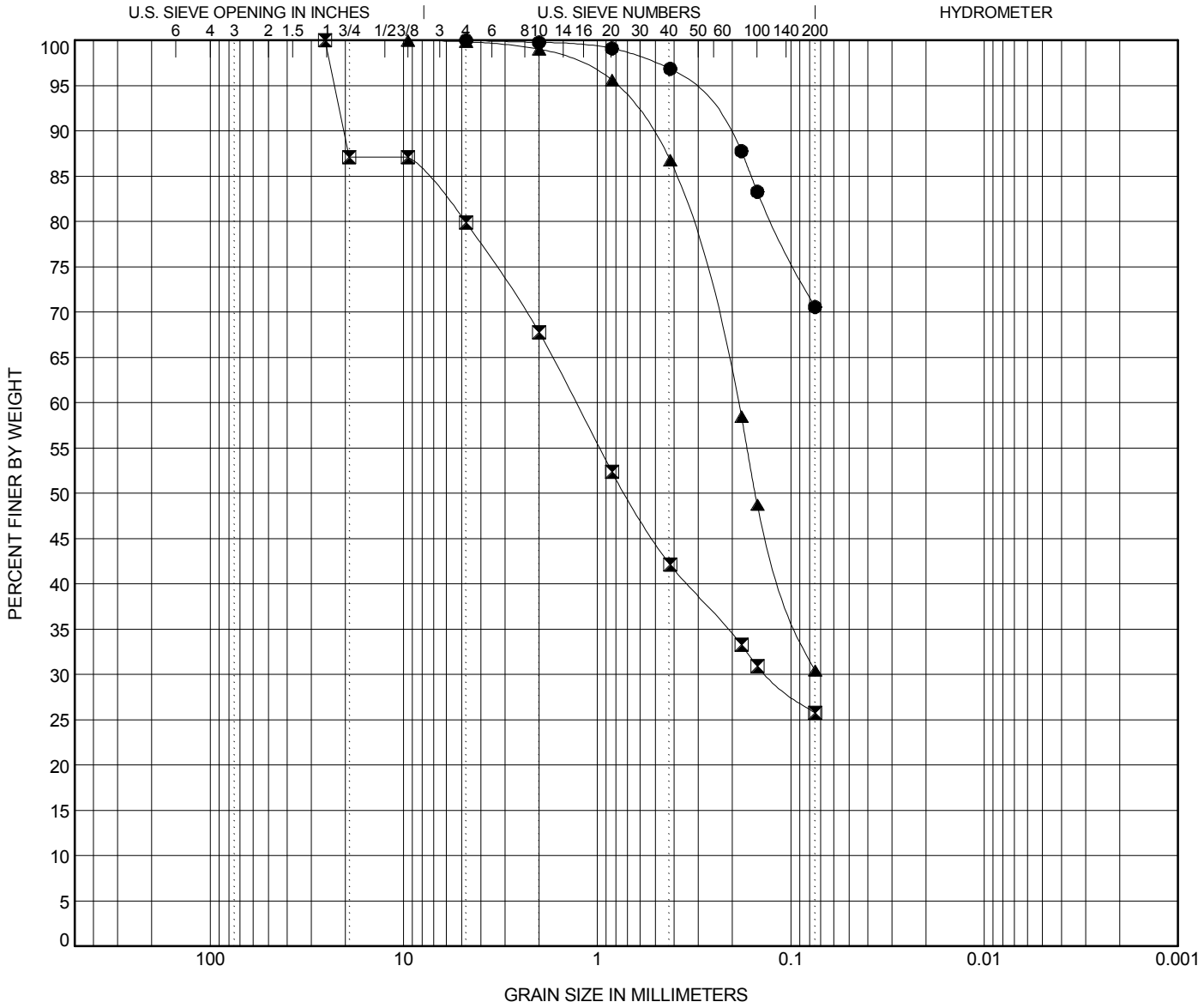


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-8**	**6.0**	**NP**	**NP**	**NP**	**41**	**Silty F/M SAND (SM) A-4(0)**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

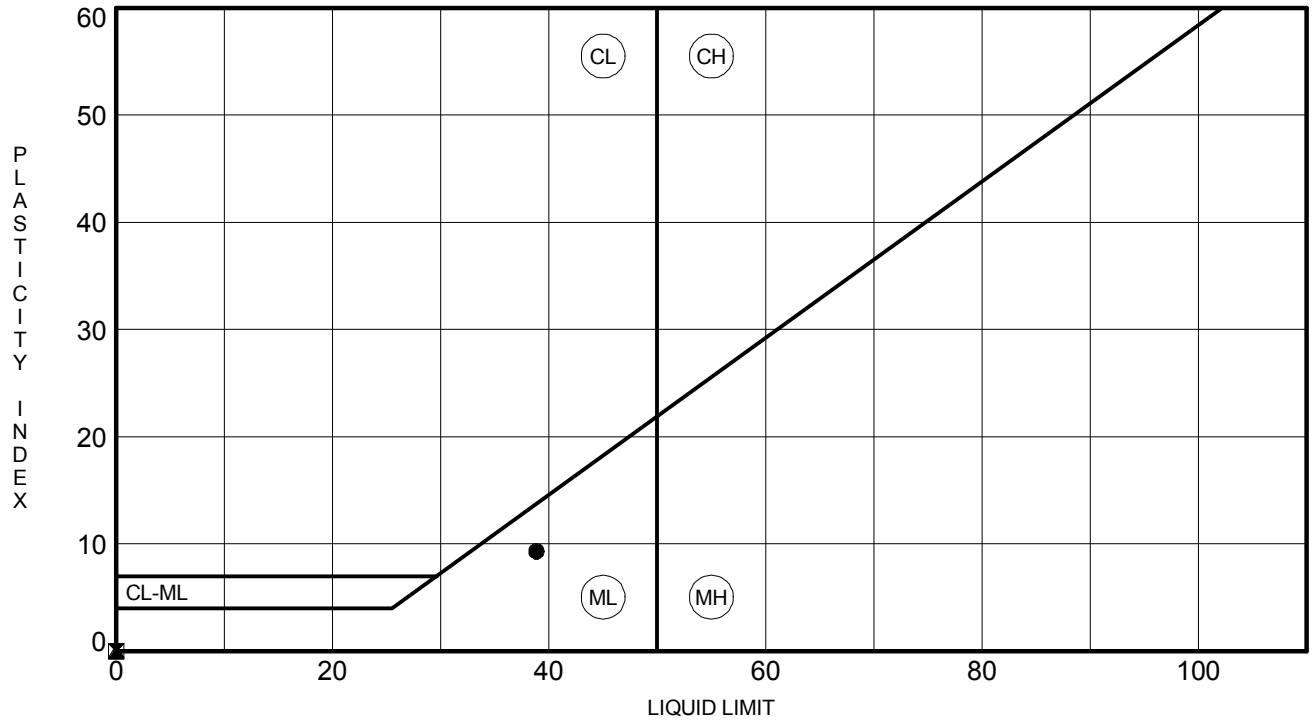
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-9**	**10.0**	**SILT with Fine Sand (ML) A-4(6)**	**39**	**30**	**9**		
⧓	**RW-9**	**20.0**	**Silty F/C SAND with Gravel (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**RW-9**	**30.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-9**	**10.0**	**4.76**				**0.0**	**29.4**	**70.6**	
⧓	**RW-9**	**20.0**	**25.4**	**1.29**	**0.132**		**20.1**	**54.0**	**25.8**	
▲	**RW-9**	**30.0**	**9.52**	**0.188**			**0.1**	**69.4**	**30.4**	

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

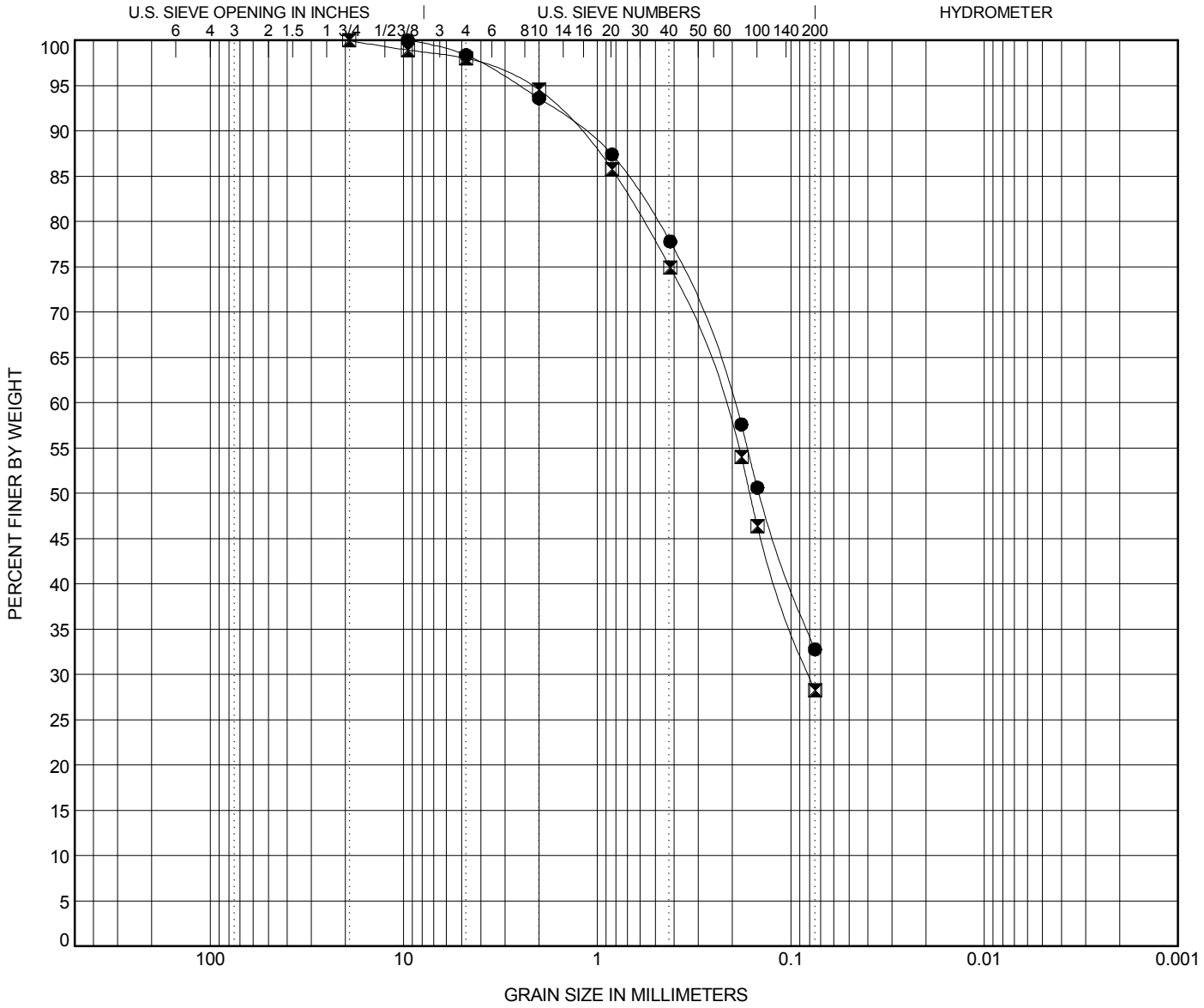


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-9**	**10.0**	**39**	**30**	**9**	**71**	**SILT with Fine Sand (ML) A-4(6)**
⧓	**RW-9**	**20.0**	**NP**	**NP**	**NP**	**26**	**Silty F/C SAND with Gravel (SM) A-2-4**
▲	**RW-9**	**30.0**	**NP**	**NP**	**NP**	**30**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

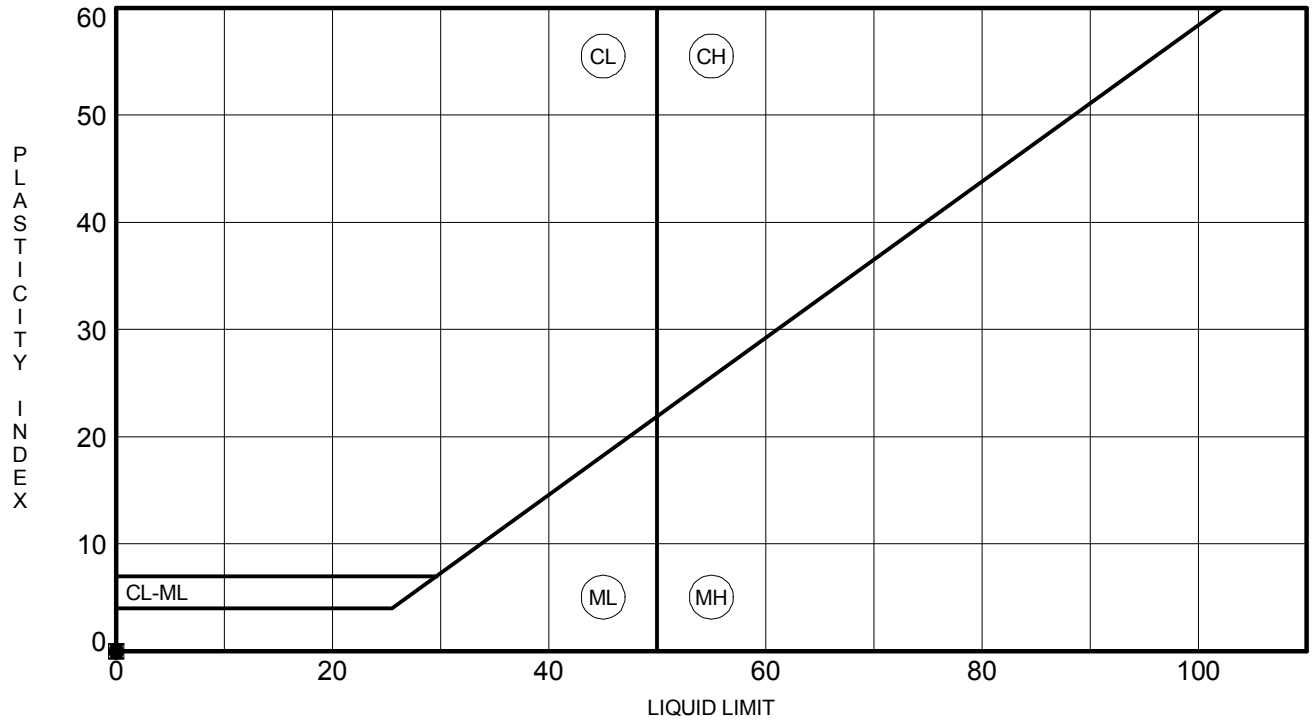
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**RW-10**	**10.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⧓	**RW-10**	**30.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**RW-10**	**10.0**	**9.52**	**0.199**			**1.6**	**65.6**	**32.8**	
⧓	**RW-10**	**30.0**	**19.1**	**0.229**	**0.08**		**2.0**	**69.7**	**28.3**	

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

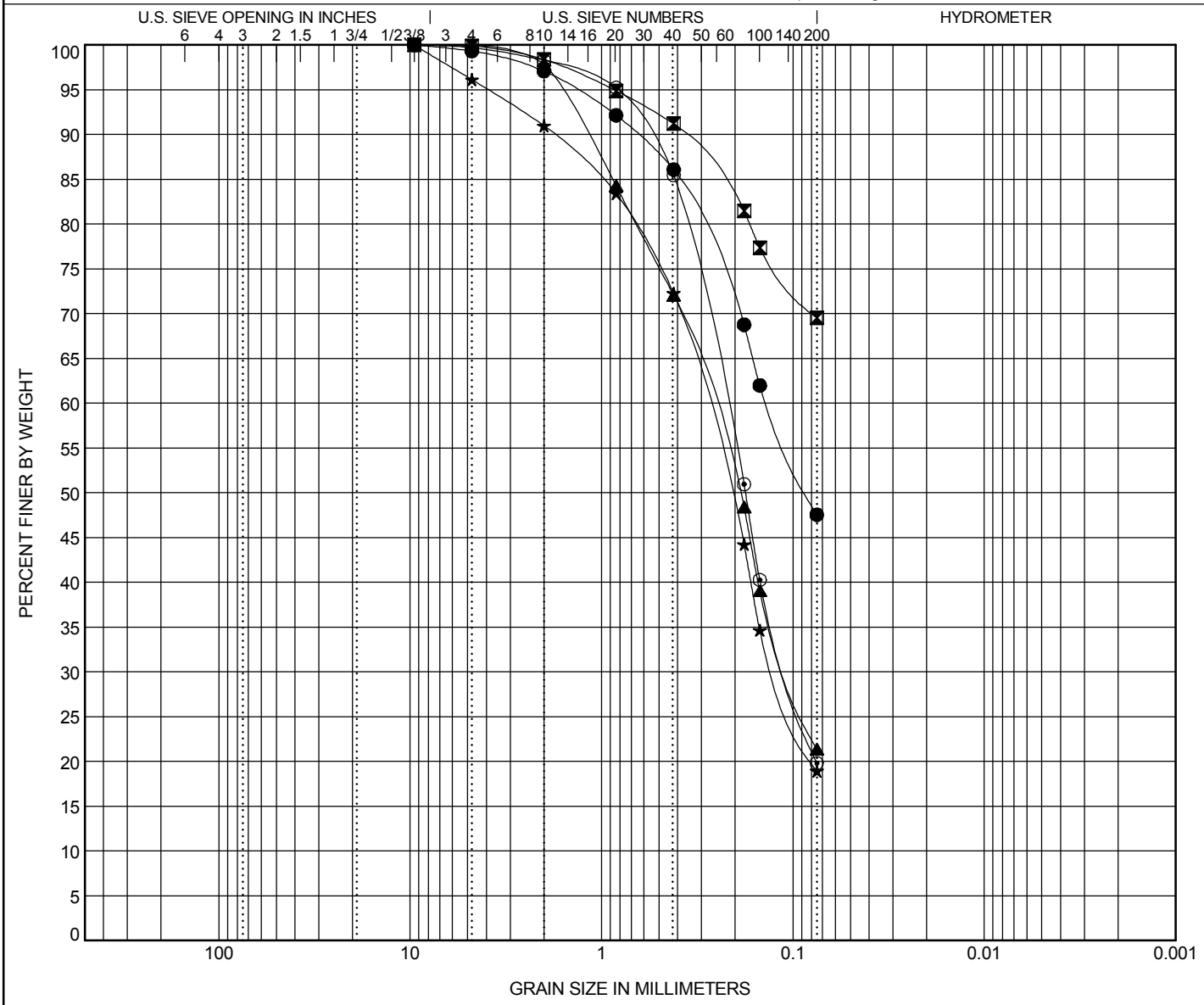


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**RW-10**	**10.0**	**NP**	**NP**	**NP**	**33**	**Silty F/M SAND (SM) A-2-4**
⧓	**RW-10**	**30.0**	**NP**	**NP**	**NP**	**28**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

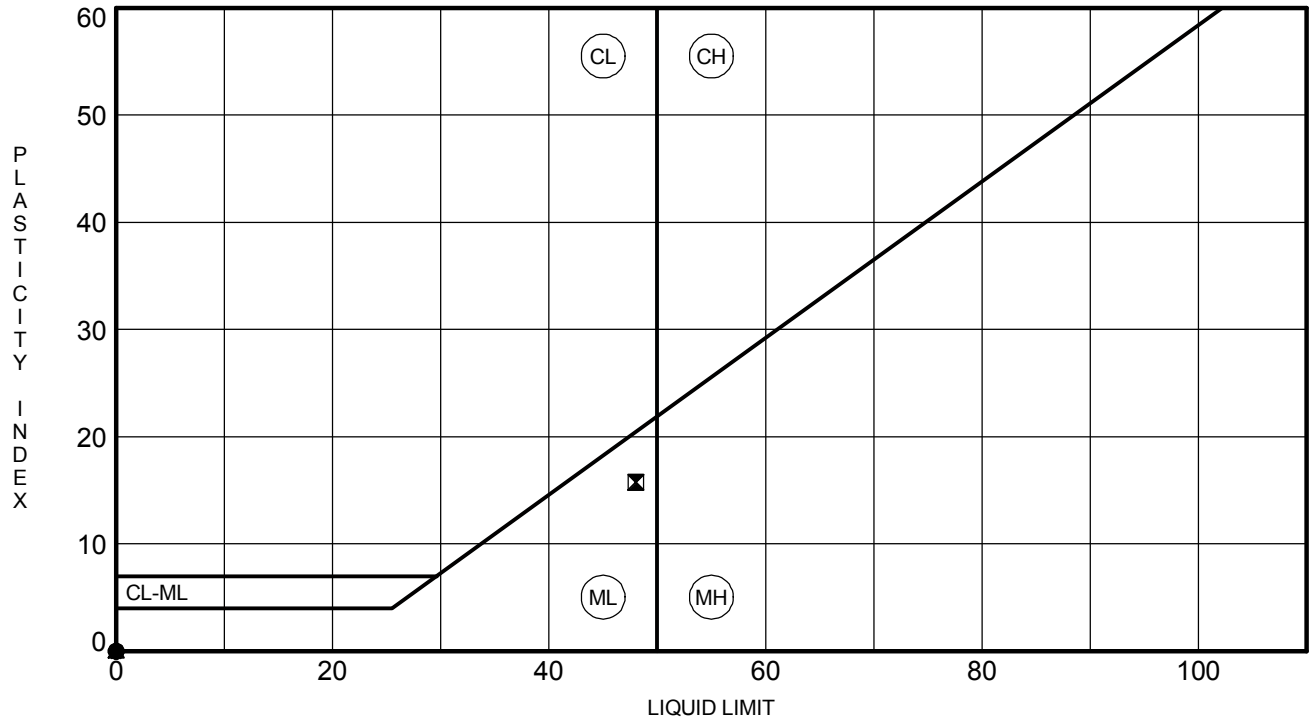
	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	W-1	6.0	Silty F/M SAND (SM) A-4(0)	NP	NP	NP		
⊠	W-1	15.0	Sandy SILT (ML) A-7-5(12)	48	32	16		
▲	W-1	25.0	Silty F/M SAND (SM) A-2-4	NP	NP	NP		
★	W-1	30.0	Silty F/C SAND (SM) A-2-4	NP	NP	NP		
⊙	W-1	55.0	Silty F/M SAND (SM) A-2-4	NP	NP	NP		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	W-1	6.0	9.52	0.136			0.7	51.8	47.6	
⊠	W-1	15.0	9.52				0.1	30.4	69.5	
▲	W-1	25.0	4.76	0.273	0.105		0.0	78.6	21.4	
★	W-1	30.0	9.52	0.29	0.122		3.9	77.2	18.9	
⊙	W-1	55.0	9.52	0.225	0.106		0.3	79.9	19.8	

ATTERBERG LIMITS' RESULTS

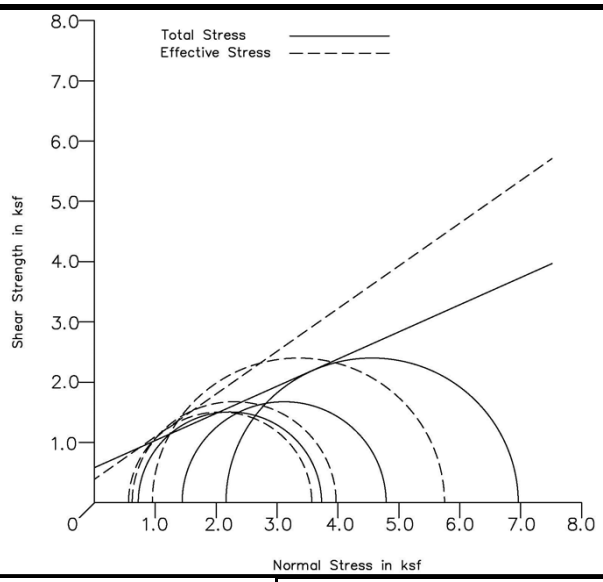
PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

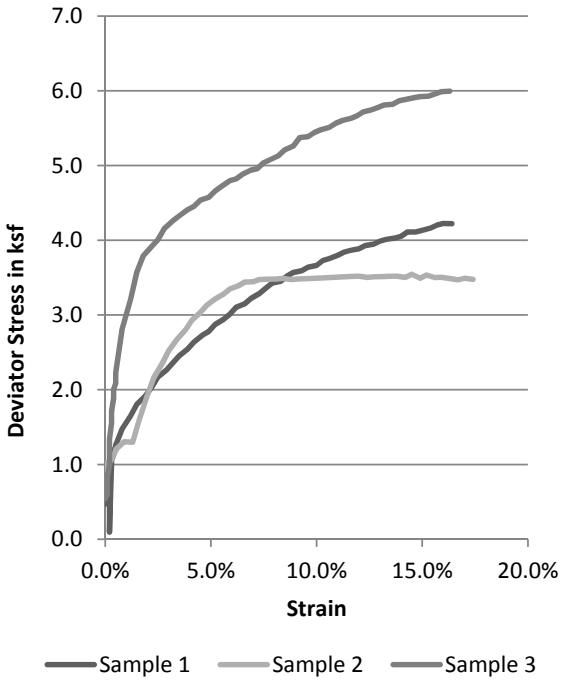


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-1**	**6.0**	**NP**	**NP**	**NP**	**48**	**Silty F/M SAND (SM) A-4(0)**
⊠	**W-1**	**15.0**	**48**	**32**	**16**	**70**	**Sandy SILT (ML) A-7-5(12)**
▲	**W-1**	**25.0**	**NP**	**NP**	**NP**	**21**	**Silty F/M SAND (SM) A-2-4**
★	**W-1**	**30.0**	**NP**	**NP**	**NP**	**19**	**Silty F/C SAND (SM) A-2-4**
⊙	**W-1**	**55.0**	**NP**	**NP**	**NP**	**20**	**Silty F/M SAND (SM) A-2-4**

TRIAXIAL SHEAR TEST REPORT
ASTM D4767 / AASHTO T297



Stress-Strain Curves



		Sample 1	Sample 2	Sample 3
Initial	Water Content, %	23.5%	23.5%	23.5%
	Void Ratio	0.57	0.62	0.66
	Diameter, in.	2.79	2.84	2.83
	Height, in.	5.93	5.58	5.97
	Volume, in^3	36.20	35.26	37.61
Final	Water Content, %	20.0%	22.2%	24.5%
	Void Ratio	0.57	0.57	0.61
	Diameter, in.	2.79	2.84	2.83
	Height, in.	5.91	5.57	5.87
	Volume, in^3	36.10	35.18	37.01
	Saturation, %	92.6%	100.0%	100.0%
	Dry Density, PCF	105.1	105.3	102.5
	Cell Pressure (ksf)	6.48	2.88	7.20
	Sample Pressure (ksf)	5.76	1.44	5.04
	Stress at Failure (ksf)	3.01	3.35	4.80
	Strain at Failure, %	5.9%	5.9%	5.9%
	σ_1 at Failure (ksf)	3.73	4.79	6.96
	σ_3 at Failure (ksf)	0.72	1.44	2.16
	σ'_1 at Failure (ksf)	3.57	3.97	5.75
	σ'_3 at Failure (ksf)	0.56	0.62	0.95

Project Name: I-85 Rehabilitation Mile Marker 77 to 84

Project Number: G5439 Date: 10/13/2015

SCDOT Project ID: 0040692

Sample/Location: W-1 / Sample 15-1401

Depth/Elevation: 6.0' - 8.0'

Type of Test : Consolidated Undrained

Sample Type : Undisturbed - Shelby Tube

Description: Orange Fine to Medium Sandy SILT (ML), A-6(7)

PI= 11 % Fines= 68.7

C= 0.58 ksf C'= 0.39 ksf

ϕ= 24° ϕ'= 33°

F&ME CONSULTANTS

3112 Devine Street Columbia, SC 29205

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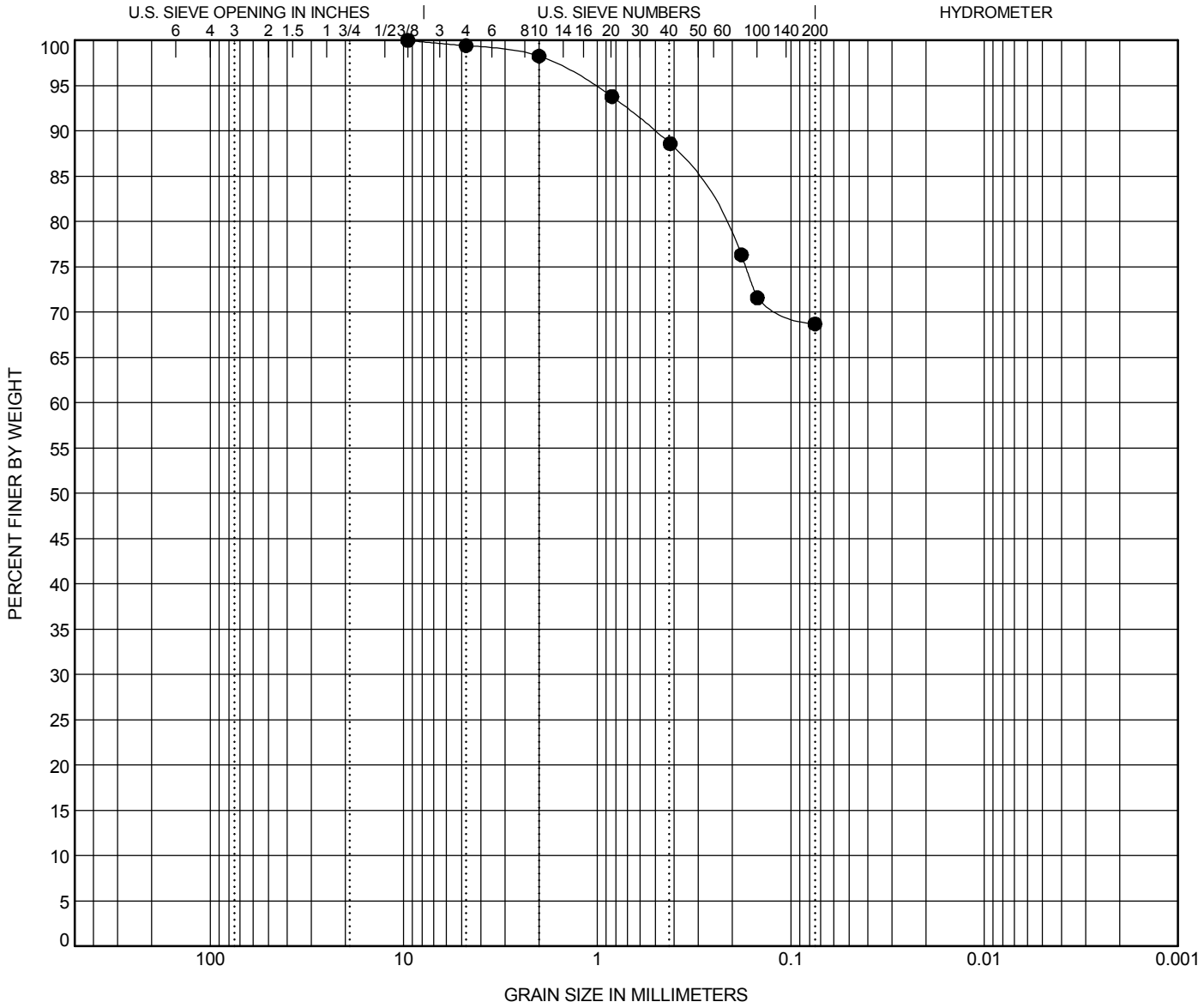
GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **W-1A**	**8.0**	**Sandy SILT (ML) A-6(7)**	**40**	**29**	**11**		

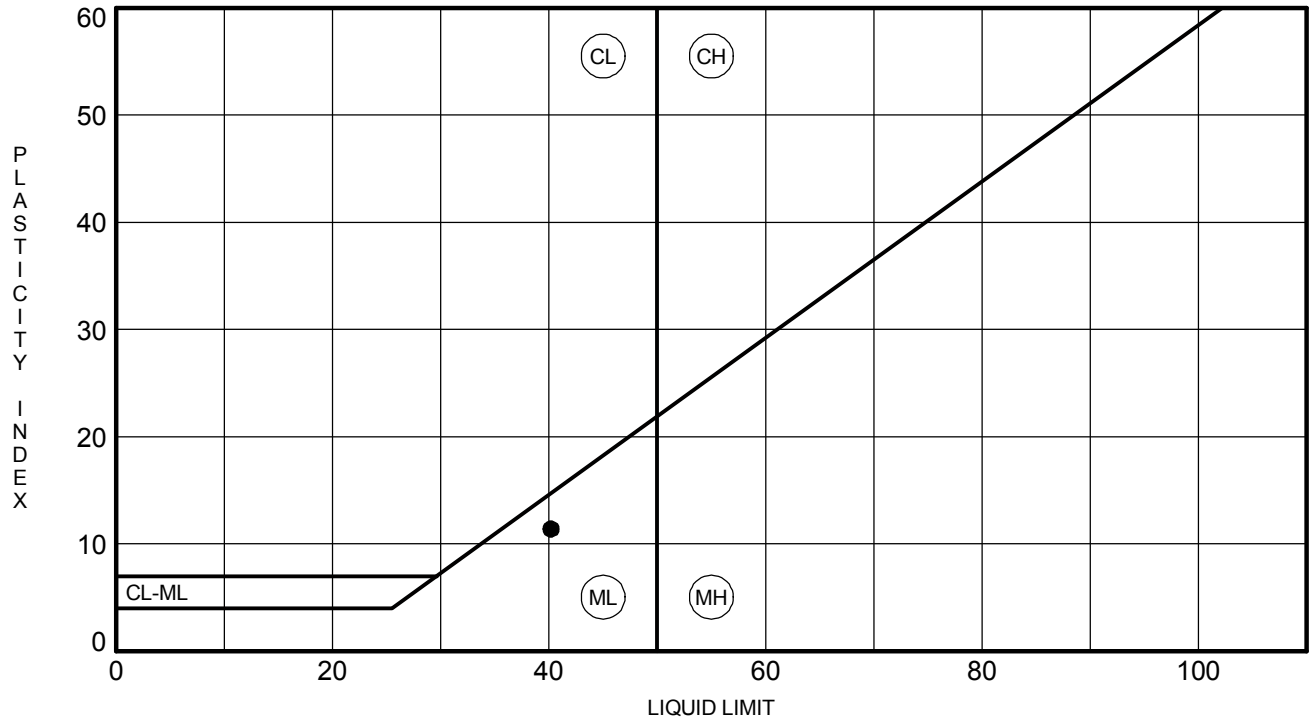
BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **W-1A**	**8.0**	**9.52**				**0.6**	**30.7**	**68.7**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 11/13/15

ATTERBERG LIMITS' RESULTS

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

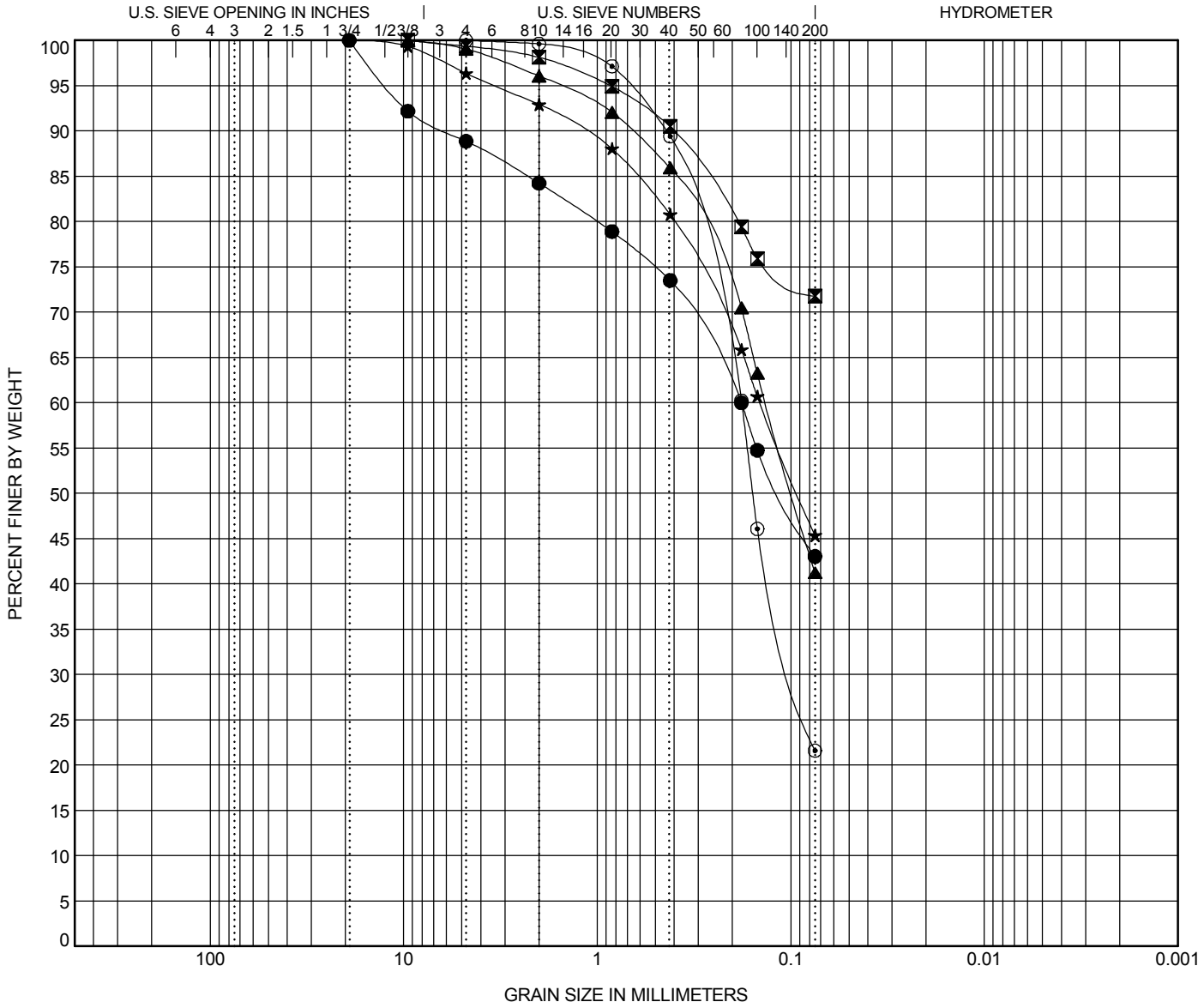


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-1A**	**8.0**	**40**	**29**	**11**	**69**	**Sandy SILT (ML) A-6(7)**

GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-2**	**4.0**	**Silty F/C SAND (SM) A-4(0)**	**31**	**26**	**5**		
⊠	**W-2**	**10.0**	**SILT with F/M Sand (ML) A-5(8)**	**49**	**41**	**8**		
▲	**W-2**	**20.0**	**Silty F/M SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
★	**W-2**	**30.0**	**Silty F/C SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		
⊙	**W-2**	**45.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

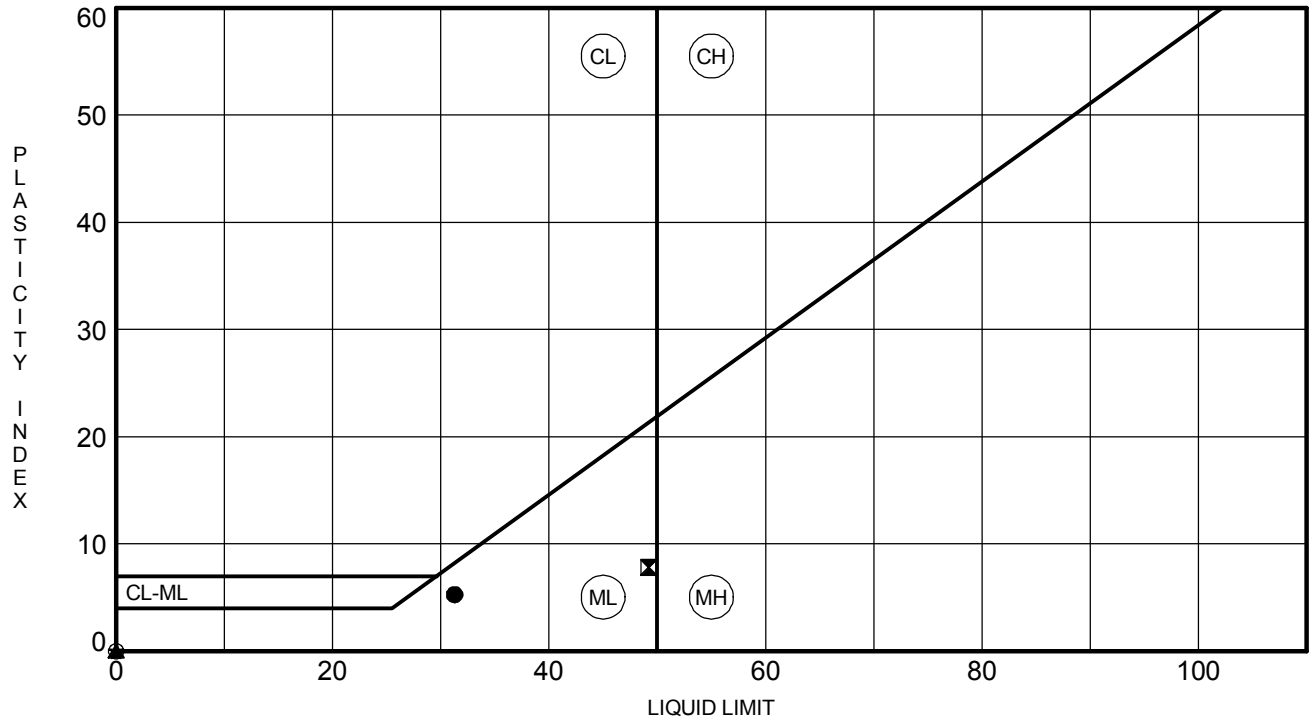
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-2**	**4.0**	**19.1**	**0.18**			**11.1**	**45.8**	**43.0**	
⊠	**W-2**	**10.0**	**9.52**				**0.6**	**27.6**	**71.8**	
▲	**W-2**	**20.0**	**9.52**	**0.135**			**1.0**	**57.8**	**41.2**	
★	**W-2**	**30.0**	**19.1**	**0.144**			**3.6**	**51.0**	**45.4**	
⊙	**W-2**	**45.0**	**4.76**	**0.179**	**0.095**		**0.0**	**78.4**	**21.6**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 11/13/15

ATTERBERG LIMITS' RESULTS

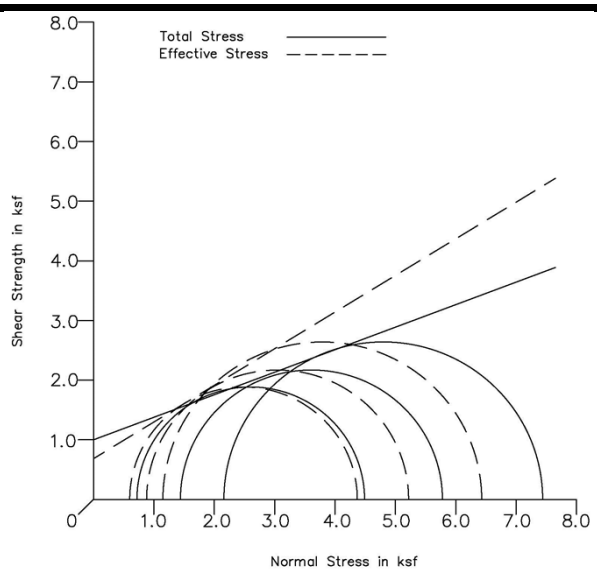
PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

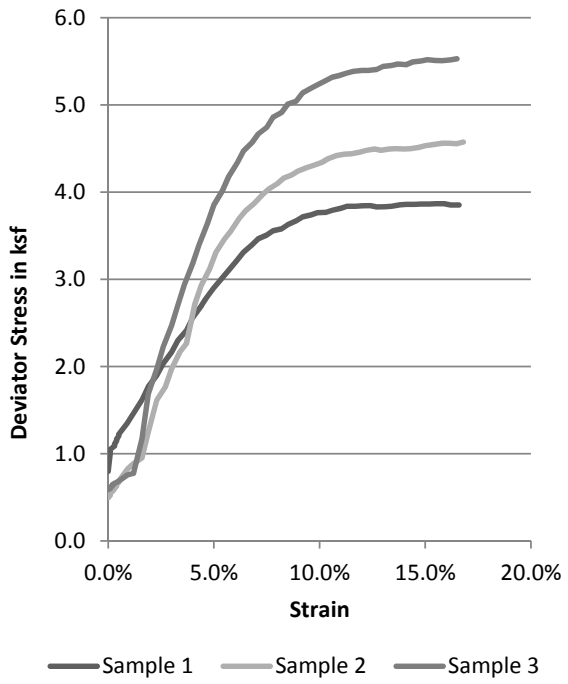
PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-2**	**4.0**	**31**	**26**	**5**	**43**	**Silty F/C SAND (SM) A-4(0)**
⊠	**W-2**	**10.0**	**49**	**41**	**8**	**72**	**SILT with F/M Sand (ML) A-5(8)**
▲	**W-2**	**20.0**	**NP**	**NP**	**NP**	**41**	**Silty F/M SAND (SM) A-4(0)**
★	**W-2**	**30.0**	**NP**	**NP**	**NP**	**45**	**Silty F/C SAND (SM) A-4(0)**
⊙	**W-2**	**45.0**	**NP**	**NP**	**NP**	**22**	**Silty F/M SAND (SM) A-2-4**

TRIAXIAL SHEAR TEST REPORT
ASTM D4767 / AASHTO T297





		Sample 1	Sample 2	Sample 3
Initial	Water Content, %	30.8%	30.8%	30.8%
	Void Ratio	0.92	0.97	0.96
	Diameter, in.	2.81	2.80	2.83
	Height, in.	5.74	5.65	5.76
	Volume, in^3	35.61	34.88	36.23
Final	Water Content, %	42.0%	45.9%	40.6%
	Void Ratio	0.87	0.95	0.91
	Diameter, in.	2.81	2.80	2.83
	Height, in.	5.61	5.57	5.62
	Volume, in^3	34.82	34.40	35.40
	Saturation, %	100.0%	100.0%	100.0%
	Dry Density, PCF	87.6	84.3	85.7
	Cell Pressure (ksf)	6.48	7.20	7.20
	Sample Pressure (ksf)	5.76	5.76	5.04
	Stress at Failure (ksf)	3.77	4.34	5.28
	Strain at Failure, %	10.3%	10.1%	10.3%
	σ_1 at Failure (ksf)	4.49	5.78	7.44
	σ_3 at Failure (ksf)	0.72	1.44	2.16
	σ'_1 at Failure (ksf)	4.37	5.22	6.43
	σ'_3 at Failure (ksf)	0.60	0.88	1.15

Project Name: I-85 Rehabilitation Mile Marker 77 to 84

Project Number: G5439 Date: 10/13/2015

SCDOT Project ID: 0040692

Sample/Location: W-2 / Sample 15-1402

Depth/Elevation: 13.0' - 15.0'

Type of Test : Consolidated Undrained

Sample Type : Undisturbed - Shelby Tube

Description: Red Silty Fine to Coarse SAND (SM), A-4(0)

PI= NP % Fines= 47.8

C= 1.00 ksf C'= 0.68 ksf

ϕ= 21° ϕ'= 32°

F&ME CONSULTANTS

3112 Devine Street Columbia, SC 29205

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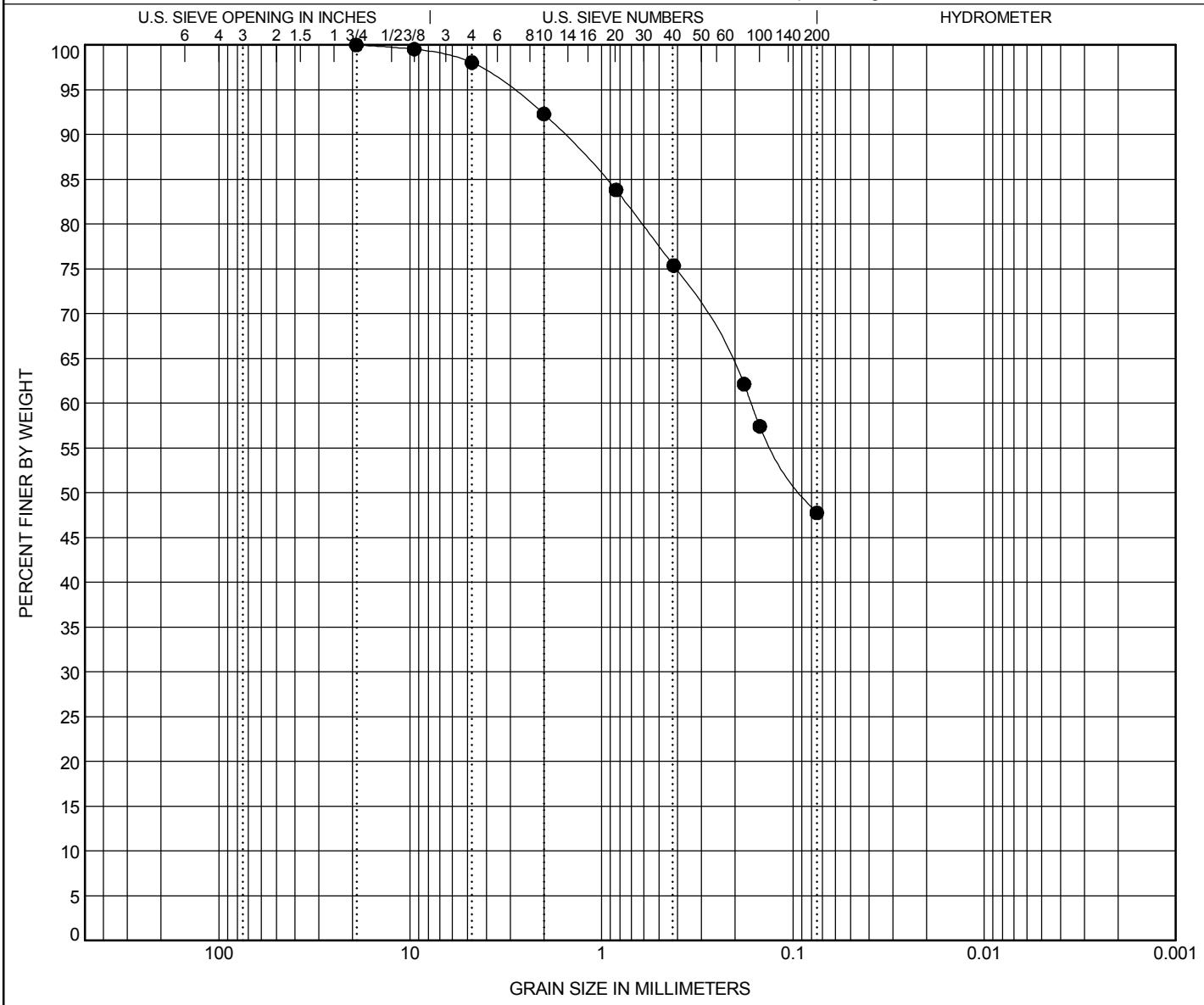
GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-2A**	**15.0**	**Silty F/C SAND (SM) A-4(0)**	**NP**	**NP**	**NP**		

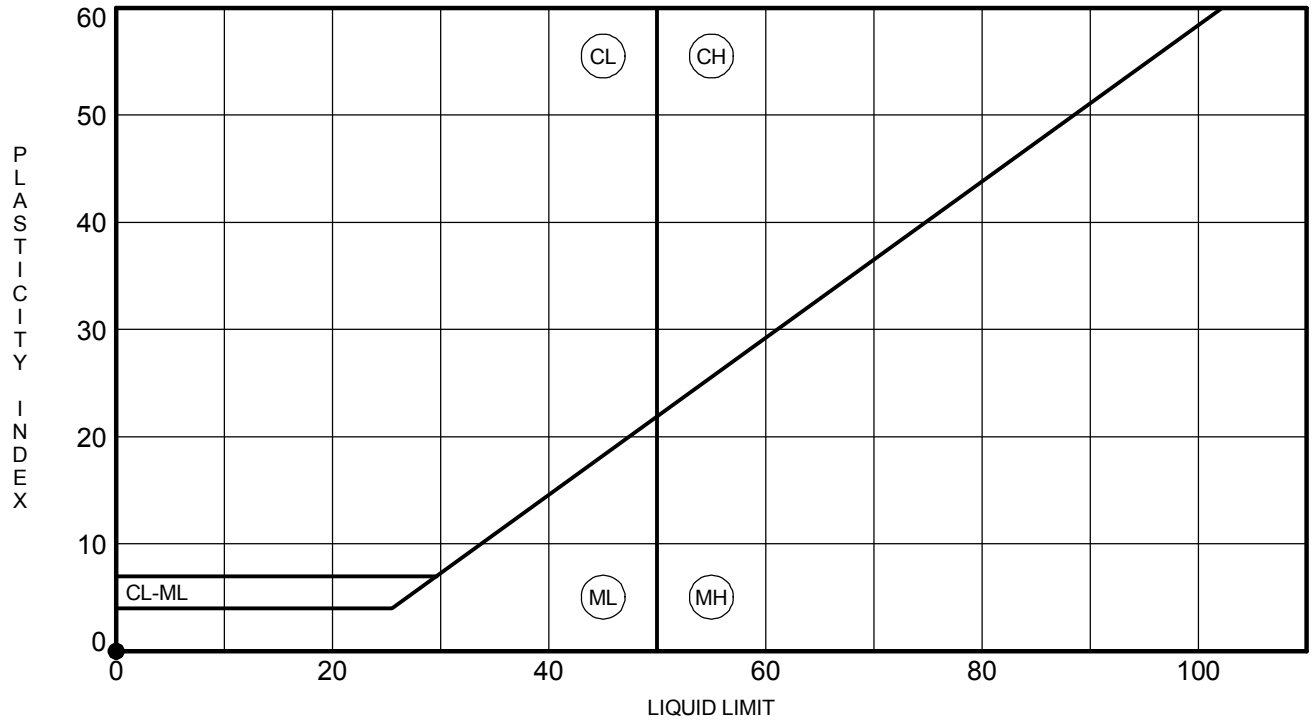
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-2A**	**15.0**	**19.1**	**0.165**			**2.0**	**50.3**	**47.8**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 11/13/15

ATTERBERG LIMITS' RESULTS

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

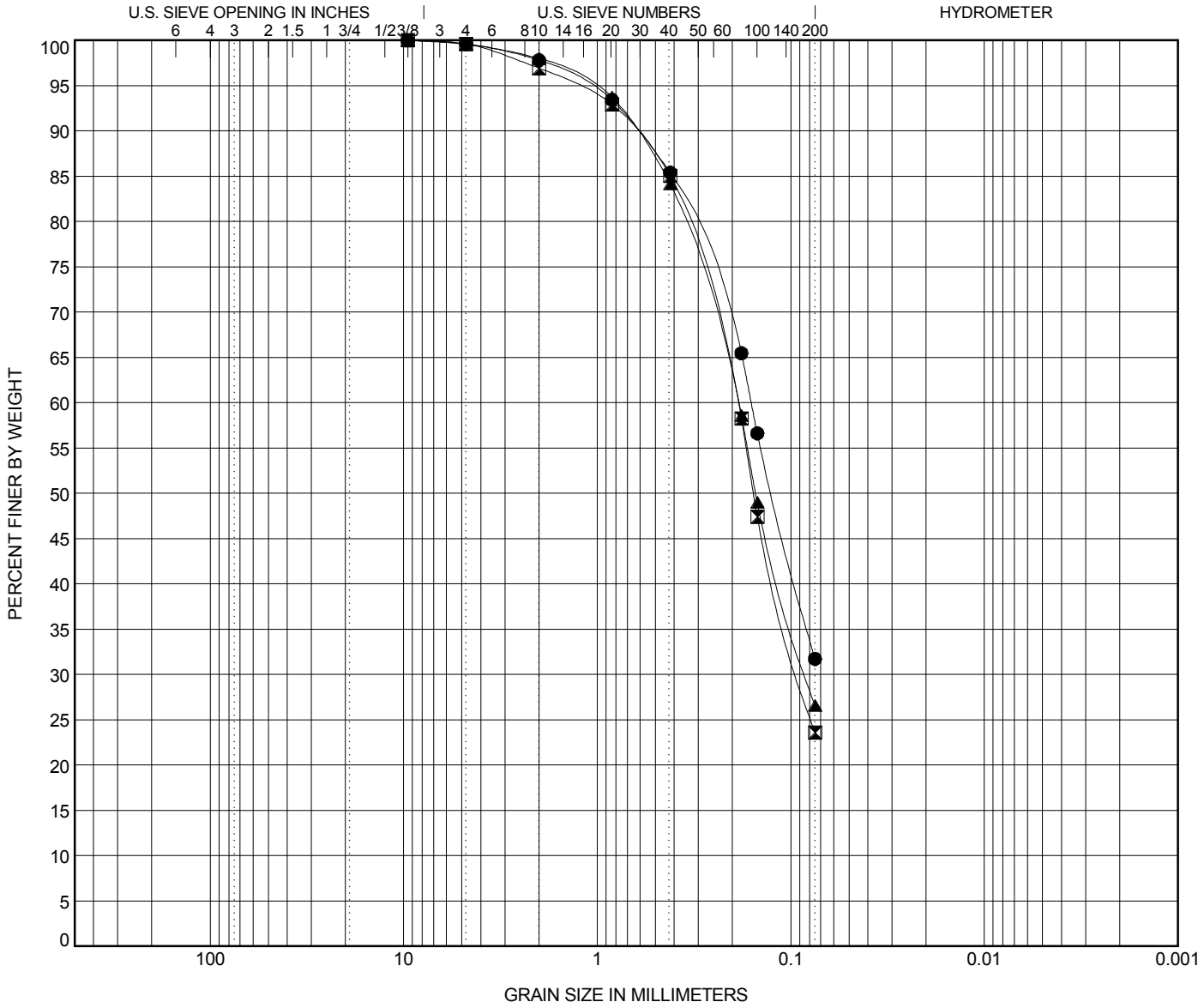


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-2A**	**15.0**	**NP**	**NP**	**NP**	**48**	**Silty F/C SAND (SM) A-4(0)**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-3**	**8.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⧓	**W-3**	**15.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**W-3**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

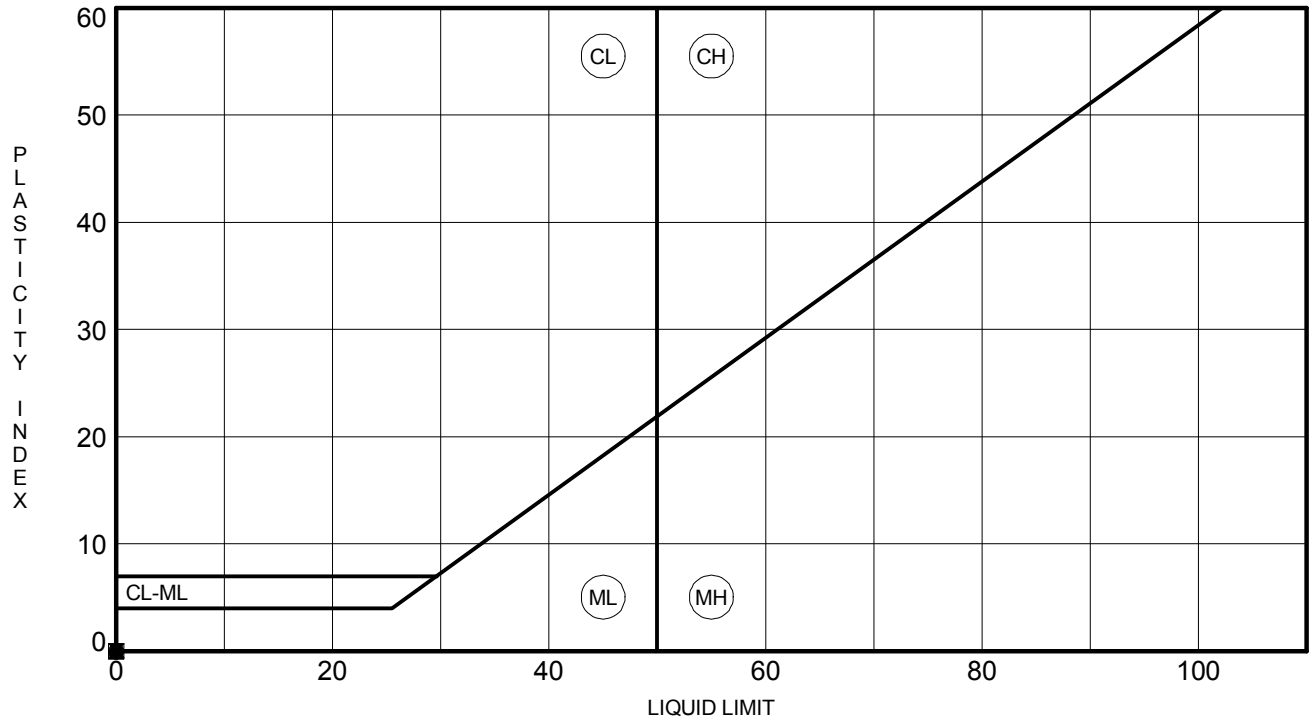
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-3**	**8.0**	**9.52**	**0.16**			**0.4**	**67.9**	**31.7**	
⧓	**W-3**	**15.0**	**9.52**	**0.19**	**0.09**		**0.4**	**76.0**	**23.6**	
▲	**W-3**	**25.0**	**9.52**	**0.189**	**0.083**		**0.4**	**73.0**	**26.6**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

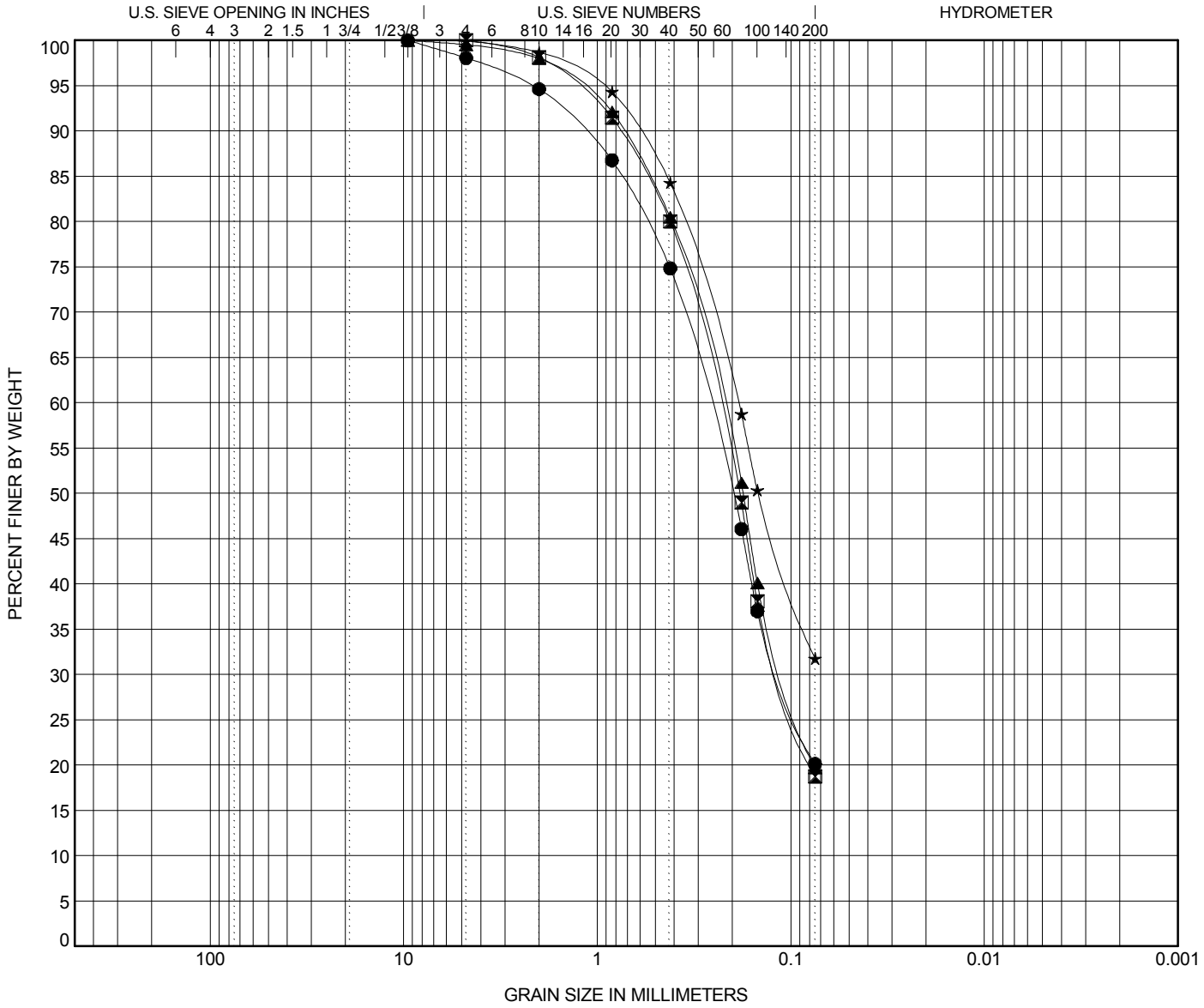


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-3**	**8.0**	**NP**	**NP**	**NP**	**32**	**Silty F/M SAND (SM) A-2-4**
⊠	**W-3**	**15.0**	**NP**	**NP**	**NP**	**24**	**Silty F/M SAND (SM) A-2-4**
▲	**W-3**	**25.0**	**NP**	**NP**	**NP**	**27**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-4**	**4.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⊠	**W-4**	**10.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**W-4**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
★	**W-4**	**35.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

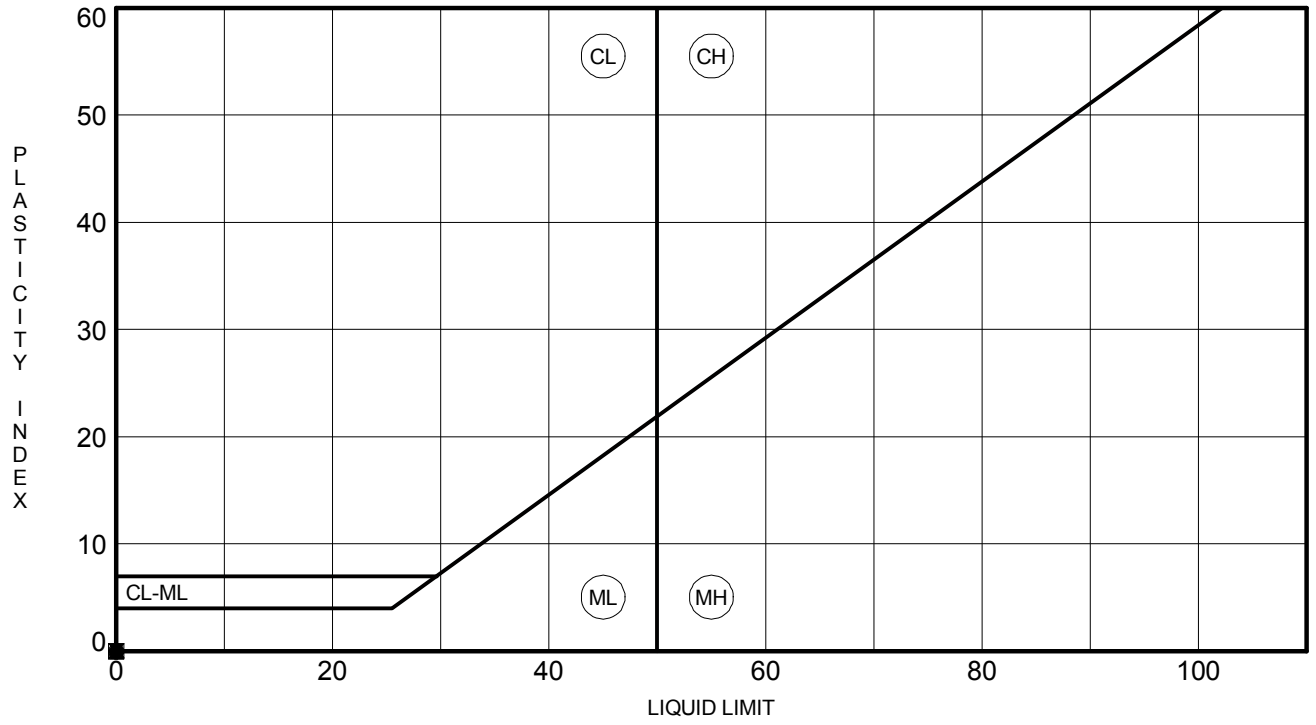
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-4**	**4.0**	**9.52**	**0.271**	**0.112**		**1.9**	**77.9**	**20.1**	
⊠	**W-4**	**10.0**	**4.76**	**0.243**	**0.112**		**0.0**	**81.2**	**18.8**	
▲	**W-4**	**25.0**	**9.52**	**0.232**	**0.106**		**0.5**	**79.8**	**19.7**	
★	**W-4**	**35.0**	**9.52**	**0.188**			**0.1**	**68.1**	**31.8**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



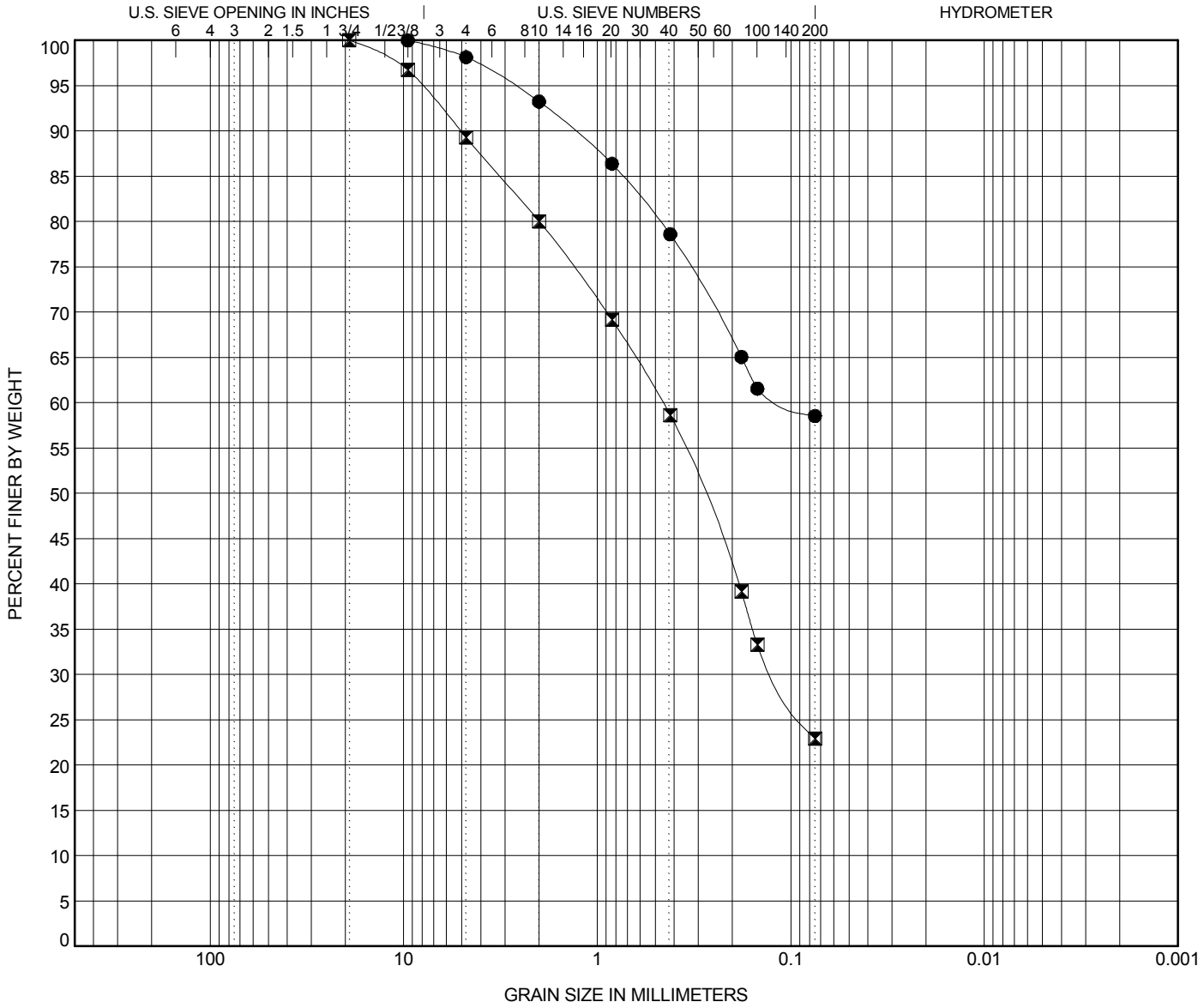
	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-4**	**4.0**	**NP**	**NP**	**NP**	**20**	**Silty F/M SAND (SM) A-2-4**
⊠	**W-4**	**10.0**	**NP**	**NP**	**NP**	**19**	**Silty F/M SAND (SM) A-2-4**
▲	**W-4**	**25.0**	**NP**	**NP**	**NP**	**20**	**Silty F/M SAND (SM) A-2-4**
★	**W-4**	**35.0**	**NP**	**NP**	**NP**	**32**	**Silty F/M SAND (SM) A-2-4**

ATTERBERG LIMITS G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-5**	**8.0**	**Sandy Lean Clay (CL) A-6(7)**	**40**	**25**	**15**		
⊠	**W-5**	**20.0**	**Silty F/C SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

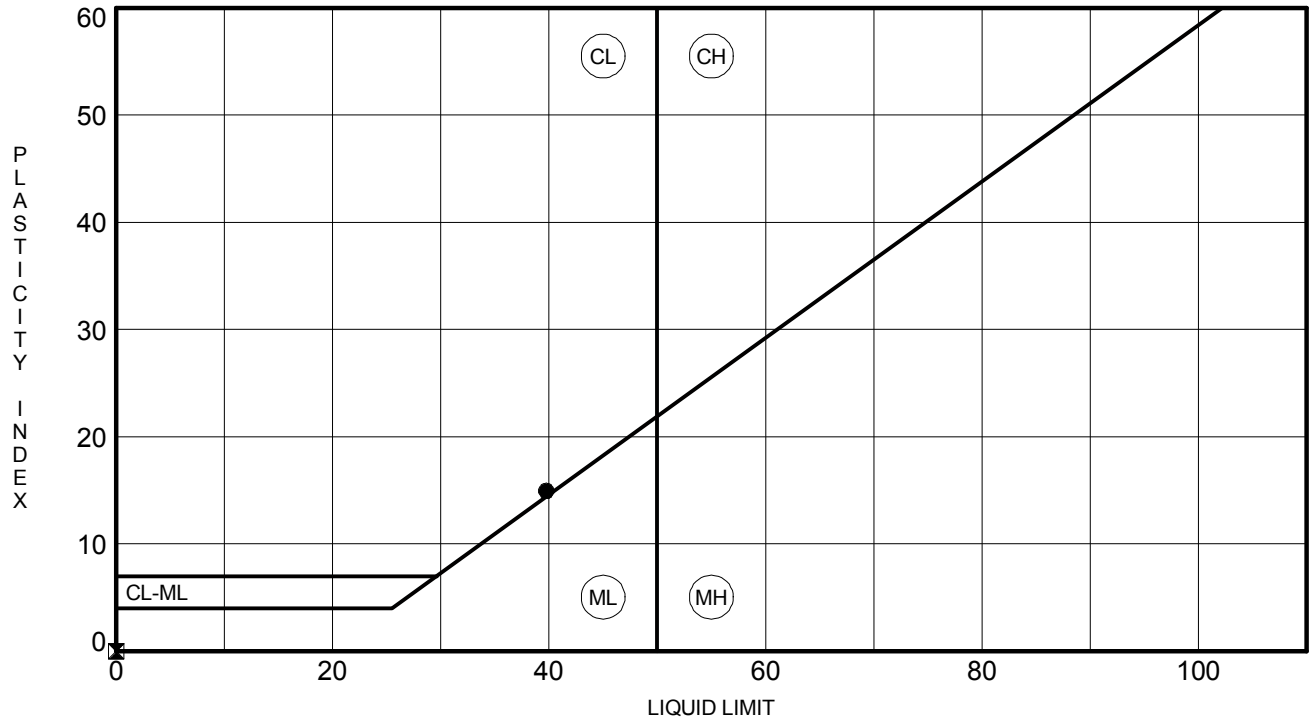
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-5**	**8.0**	**9.52**	**0.104**			**1.9**	**39.6**	**58.6**	
⊠	**W-5**	**20.0**	**19.1**	**0.459**	**0.12**		**10.7**	**66.3**	**22.9**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/22/15

ATTERBERG LIMITS' RESULTS

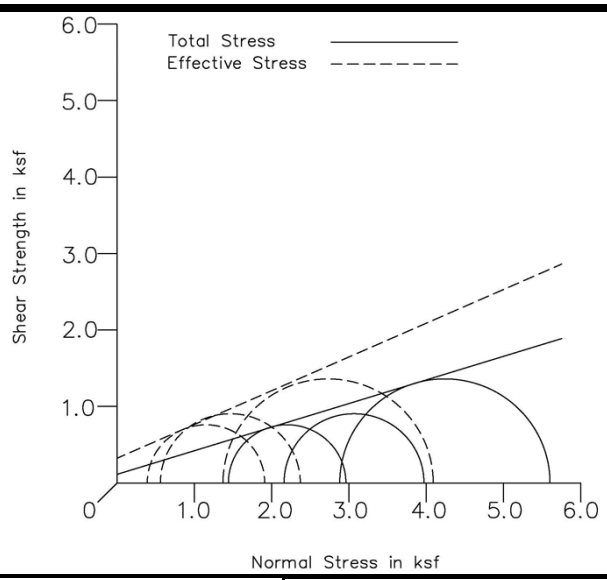
PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

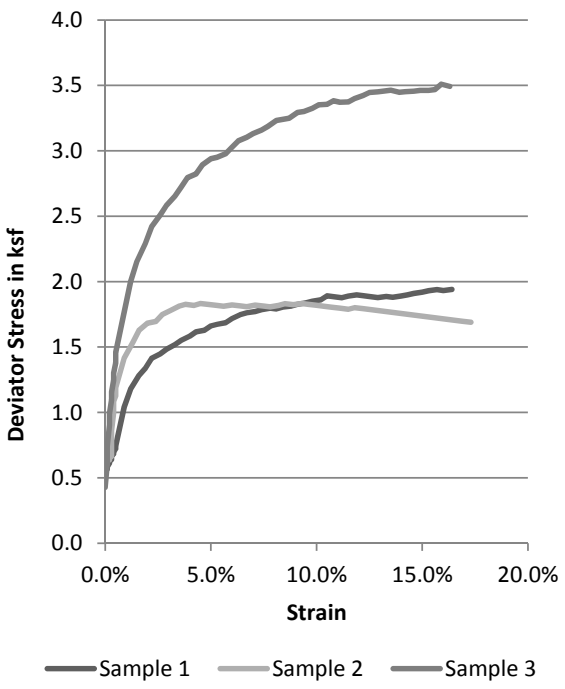
PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-5**	**8.0**	**40**	**25**	**15**	**59**	**Sandy Lean Clay (CL) A-6(7)**
⊠	**W-5**	**20.0**	**NP**	**NP**	**NP**	**23**	**Silty F/C SAND (SM) A-2-4**

TRIAXIAL SHEAR TEST REPORT
ASTM D4767 / AASHTO T297





		Sample 1	Sample 2	Sample 3
Initial	Water Content, %	36.1%	36.1%	36.1%
	Void Ratio	0.89	0.94	0.98
	Diameter, in.	2.81	2.79	2.83
	Height, in.	5.81	5.50	5.84
	Volume, in^3	35.96	33.51	36.63
Final	Water Content, %	28.3%	28.1%	30.0%
	Void Ratio	0.87	0.89	0.89
	Diameter, in.	2.81	2.79	2.83
	Height, in.	5.73	5.37	5.57
	Volume, in^3	35.46	32.69	34.97
	Saturation, %	86.6%	83.3%	89.1%
Dry Density, PCF		88.6	87.3	87.4
Cell Pressure (ksf)		4.32	4.32	4.32
Sample Pressure (ksf)		2.88	2.16	1.44
Stress at Failure (ksf)		1.52	1.81	2.72
Strain at Failure, %		3.3%	3.5%	3.6%
σ_1 at Failure (ksf)		2.96	3.97	5.60
σ_3 at Failure (ksf)		1.44	2.16	2.88
σ'_1 at Failure (ksf)		1.91	2.37	4.09
σ'_3 at Failure (ksf)		0.39	0.56	1.37

Project Name: I-85 Rehabilitation Mile Marker 77 to 84

Project Number: G5439 Date: 11/6/2015

SCDOT Project ID: 0040692

Sample/Location: W-5 / Sample 15-1403

Depth/Elevation: 23.0' - 25.0'

Type of Test : Consolidated Undrained

Sample Type : Undisturbed - Shelby Tube

Description: Orange Brown Silty Fine to Medium SAND (SM), A-2-4

PI= NP % Fines= 31.4

C= 0.11 ksf C'= 0.32 ksf

ϕ= 17° ϕ'= 24°

F&ME CONSULTANTS

3112 Devine Street Columbia, SC 29205

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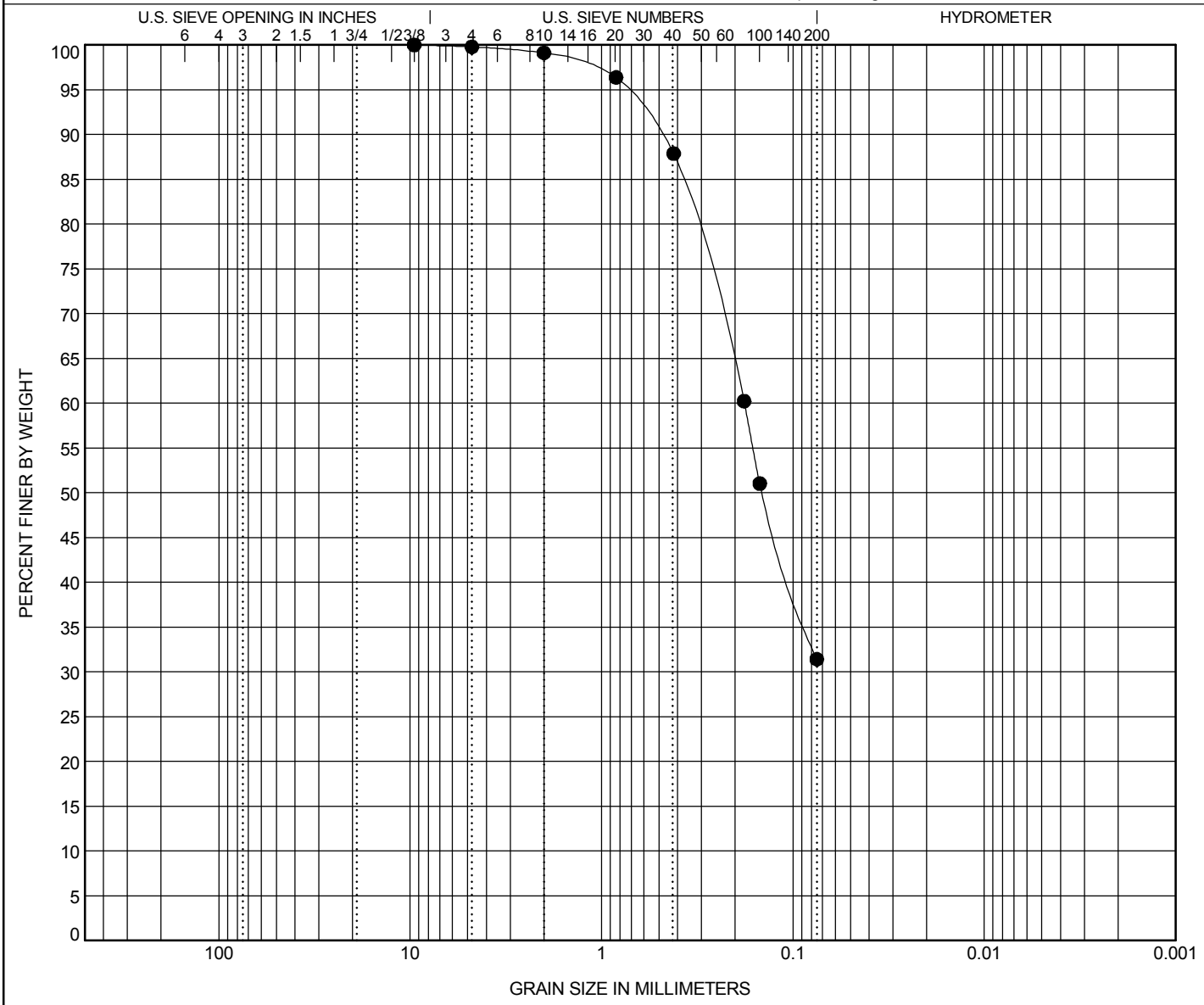
GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-5A**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

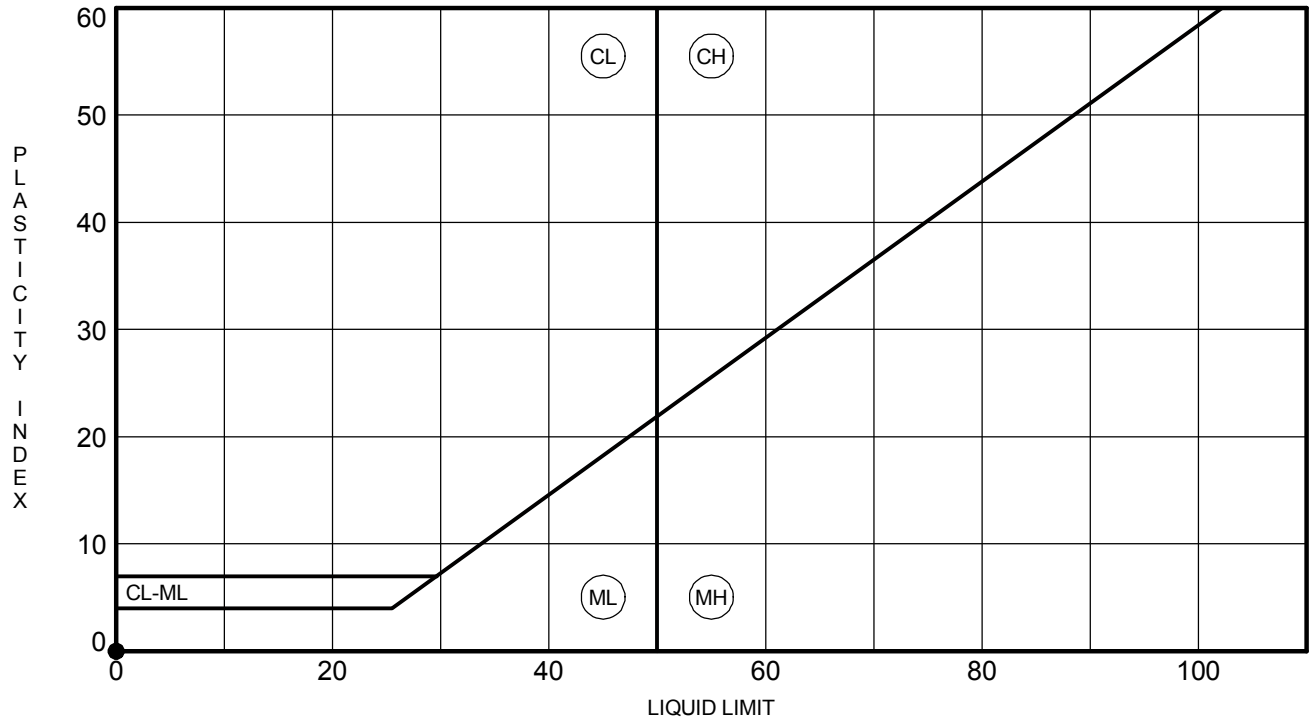
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-5A**	**25.0**	**9.52**	**0.179**			**0.2**	**68.4**	**31.4**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 11/13/15

ATTERBERG LIMITS' RESULTS

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg

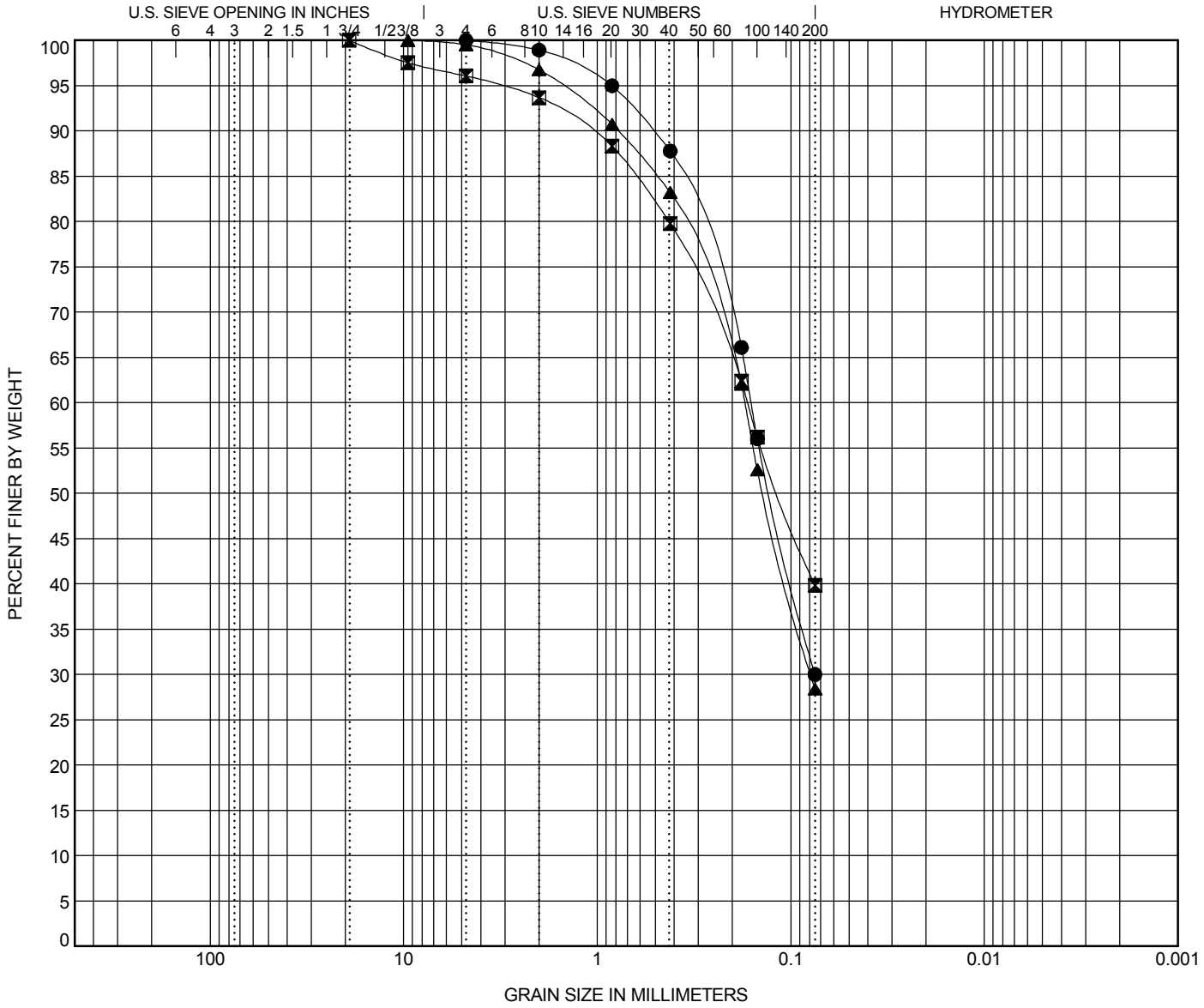


	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-5A**	**25.0**	**NP**	**NP**	**NP**	**31**	**Silty F/M SAND (SM) A-2-4**

GRAIN SIZE DISTRIBUTION

PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	**W-6**	**25.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
⊠	**W-6**	**35.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		
▲	**W-6**	**60.0**	**Silty F/M SAND (SM) A-2-4**	**NP**	**NP**	**NP**		

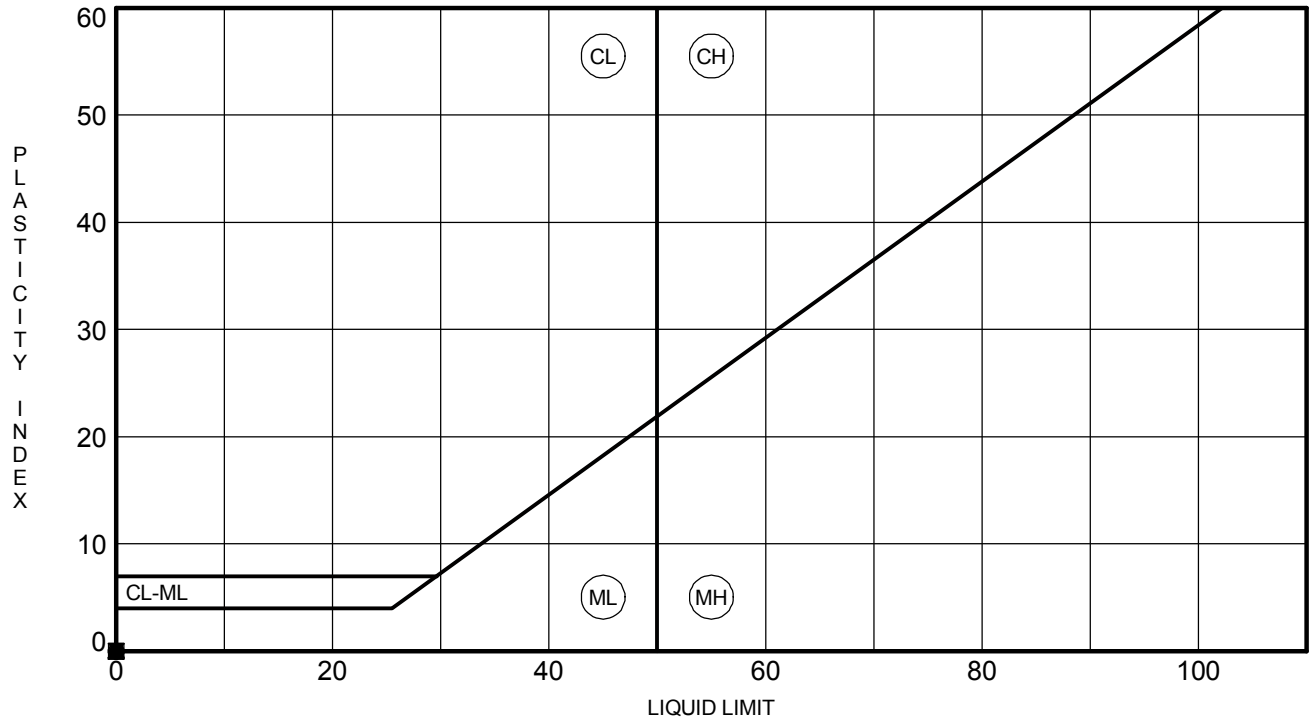
	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**W-6**	**25.0**	**4.76**	**0.16**			**0.0**	**70.0**	**30.0**	
⊠	**W-6**	**35.0**	**19.1**	**0.167**			**3.9**	**56.2**	**39.8**	
▲	**W-6**	**60.0**	**9.52**	**0.173**	**0.078**		**0.5**	**71.1**	**28.4**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 9/25/15

ATTERBERG LIMITS' RESULTS

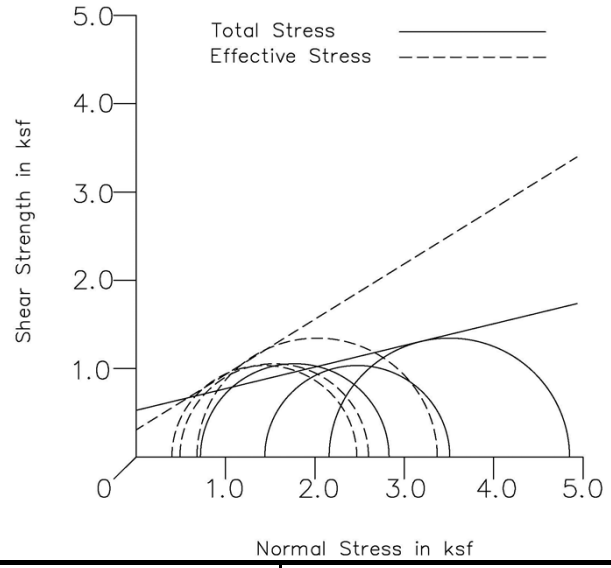
PROJECT ID _____ **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

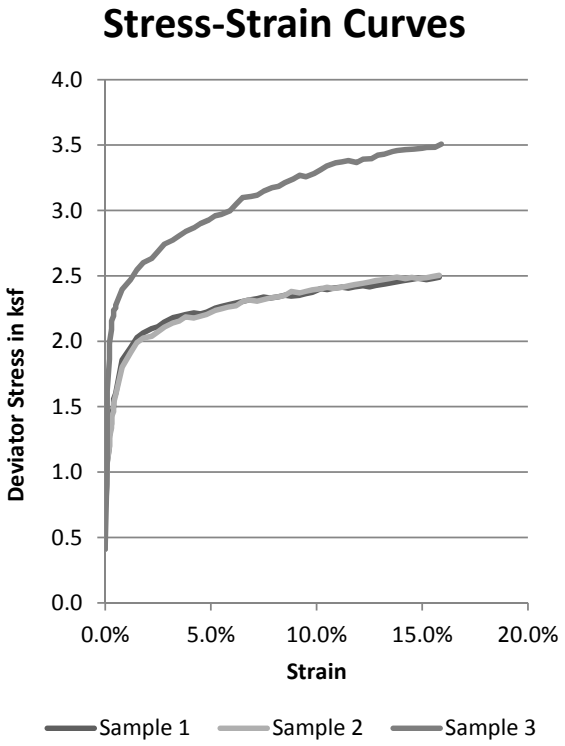
PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**W-6**	**25.0**	**NP**	**NP**	**NP**	**30**	**Silty F/M SAND (SM) A-2-4**
⊠	**W-6**	**35.0**	**NP**	**NP**	**NP**	**40**	**Silty F/M SAND (SM) A-2-4**
▲	**W-6**	**60.0**	**NP**	**NP**	**NP**	**28**	**Silty F/M SAND (SM) A-2-4**

TRIAXIAL SHEAR TEST REPORT
ASTM D4767 / AASHTO T297





		Sample 1	Sample 2	Sample 3
Initial	Water Content, %	20.4%	21.5%	22.5%
	Void Ratio	0.65	0.69	0.67
	Diameter, in.	2.77	2.79	2.78
	Height, in.	6.01	6.00	5.98
	Volume, in^3	36.30	36.58	36.19
Final	Water Content, %	25.2%	25.2%	24.0%
	Void Ratio	0.64	0.67	0.63
	Diameter, in.	2.77	2.79	2.78
	Height, in.	5.95	5.94	5.84
	Volume, in^3	35.95	36.24	35.36
	Saturation, %	100.0%	100.0%	100.0%
	Dry Density, PCF	102.2	100.1	102.3
	Cell Pressure (ksf)	7.20	7.20	7.20
	Sample Pressure (ksf)	6.48	5.76	5.04
	Stress at Failure (ksf)	2.11	2.07	2.69
	Strain at Failure, %	2.5%	2.5%	2.5%
	σ_1 at Failure (ksf)	2.83	3.51	4.85
	σ_3 at Failure (ksf)	0.72	1.44	2.16
	σ'_1 at Failure (ksf)	2.60	2.47	3.37
	σ'_3 at Failure (ksf)	0.49	0.40	0.68

Project Name: I-85 Rehabilitation Mile Marker 77 to 84

Project Number: G5439 Date: 11/2/2015

SCDOT Project ID: 0040692

Sample/Location: BS-2 / Sample 15-1363

Depth/Elevation: 0.0' - 5.0'

Type of Test : Consolidated Undrained

Sample Type : Remolded

Description: Orange Brown Sandy SILT (ML), A-4(2)

PI= 8 % Fines= 51.0

C= 0.53 ksf C'= 0.31 ksf

ϕ= 14° ϕ'= 32°

F&ME CONSULTANTS

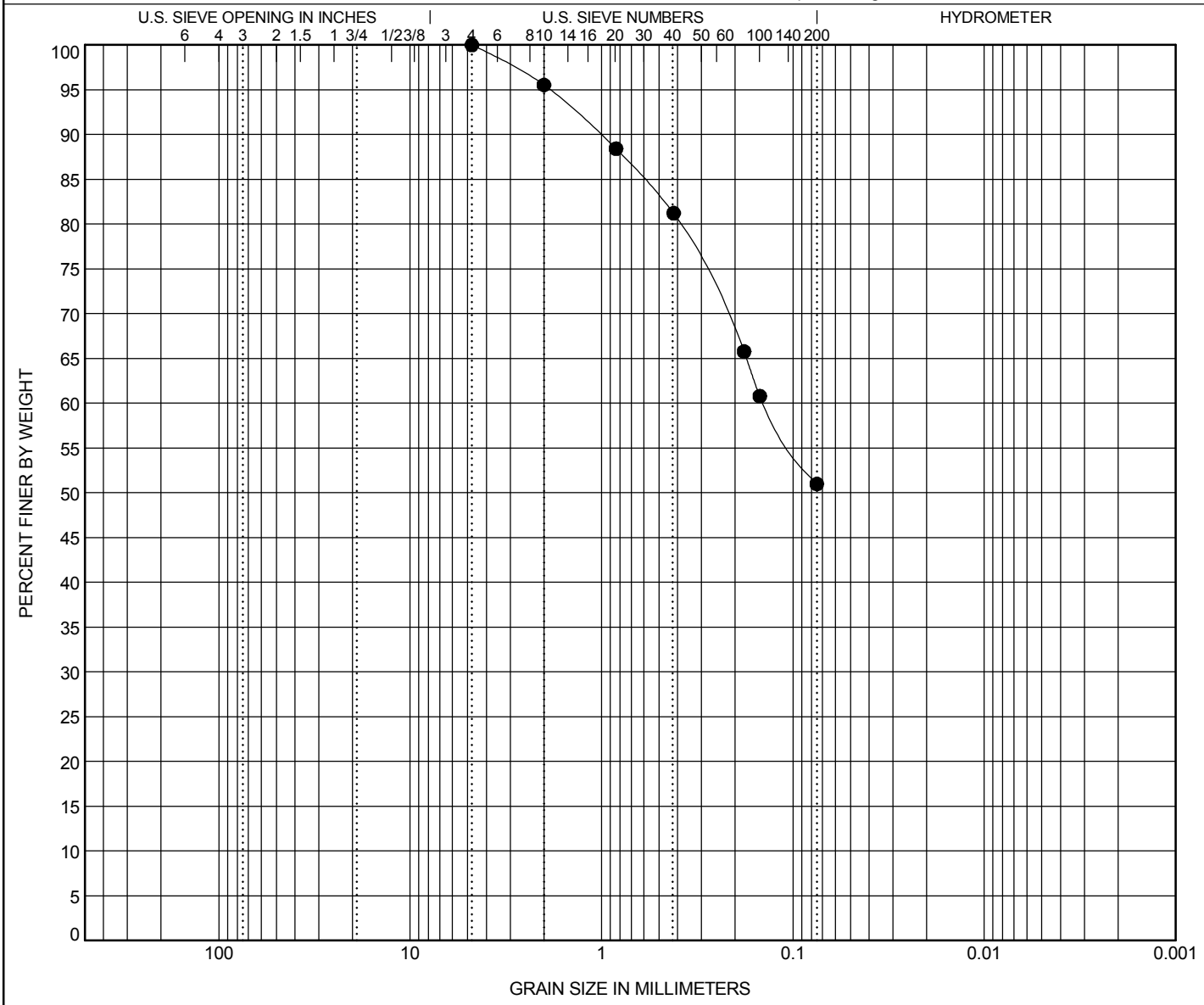
3112 Devine Street Columbia, SC 29205

Geotechnical · Environmental · Materials

GRAIN SIZE DISTRIBUTION

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● **BS-2**	**5.0**	**Sandy SILT (ML) A-4(2)**	**32**	**24**	**8**		

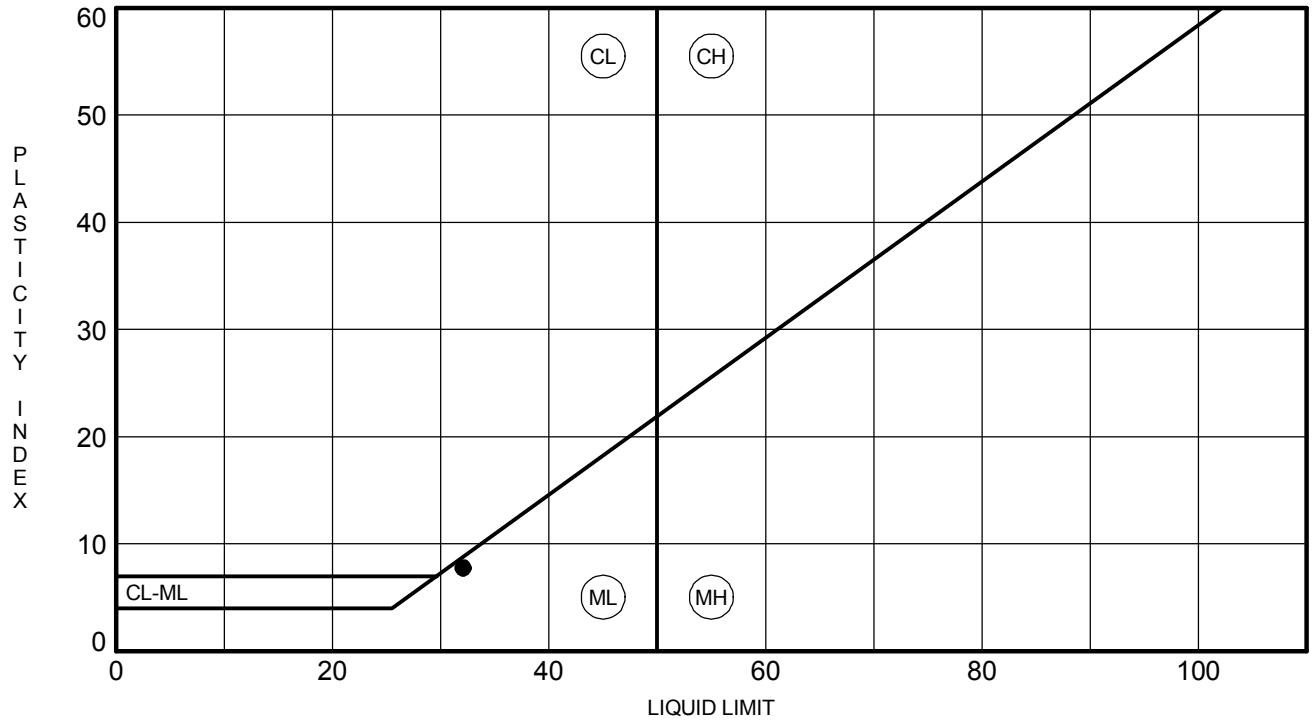
BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● **BS-2**	**5.0**	**4.76**	**0.141**			**0.0**	**49.0**	**51.0**	

GRAIN SIZE G5439 - I-85 MM 77-84.GPJ GINT STD US LAB.GDT 11/13/15

ATTERBERG LIMITS' RESULTS

PROJECT ID 0040692 **PROJECT NAME** I-85 Rehabilitation Mile Marker 77 to 84

PROJECT COUNTY Spartanburg



	BOREHOLE	DEPTH	LL	PL	PI	Fines	Classification
●	**BS-2**	**5.0**	**32**	**24**	**8**	**51**	**Sandy SILT (ML) A-4(2)**

Determining pH of Soil for Use in Corrosion Testing
AASHTO T 289

PROJECT TITLE	F&ME/I-85 REHAB/SC	SAMPLE ID	15-1308H
PROJECT NO.	1524908.03	SAMPLE TYPE	Bag
REMARKS	F&ME Job No. G5439	SAMPLE DEPTH	-

SAMPLE PREPARATION

Sieved through the #10 Sieve	YES
Air Dry	YES
Type of Water	DISTILLED

WATER & SOIL

Trial	pH	Temperature
1	5.5	21.1
2	5.5	21.1
3	5.5	21.1
AVERAGE	5.5	21.1

Description	SILT; dark yellowish brown.
USCS	(ML)

TECH	TJ
DATE	10/7/15
CHECK	
REVIEW	
APPROVE	

Determining Minimum Laboratory Soil Resistivity
AASHTO T 288

PROJECT TITLE	F&ME/I-85 REHAB/SC	SAMPLE ID	15-1308I
PROJECT NO.	1524908	SAMPLE TYPE	Bag
REMARKS	F&ME Job No. G5439	SAMPLE DEPTH	-

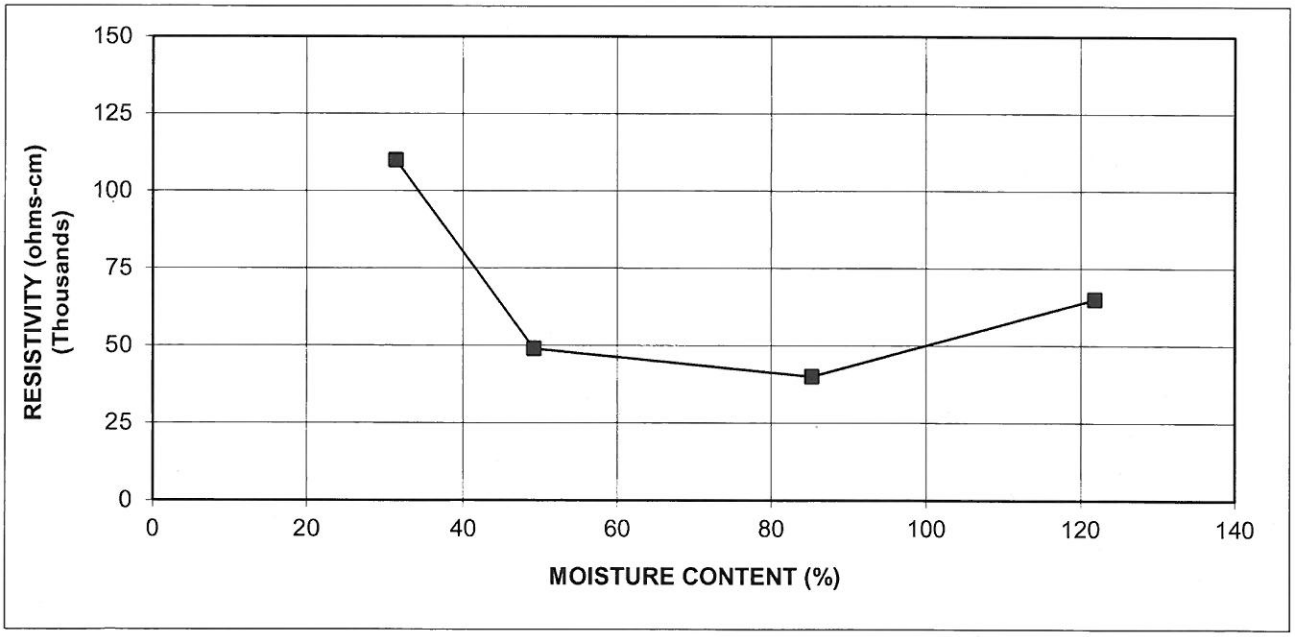
SAMPLE PREPARATION	Sieved through the #10 Sieve	Yes
TEST APPARATUS	Miller Soilbox and Nilsson 400 Soil Resistance Meter.	

Identification: Lowest resistivity

SPECIMEN (Point)	1	2	3	4
RESISTIVITY (ohms-cm)	110,000	49,000	40,000	65,000

MOISTURE CONTENT: AS-RECEIVED

WET WEIGHT & TARE	107.41	107.92	158.29	332.31
DRY WEIGHT & TARE	93.93	89.24	109.40	178.44
TARE WEIGHT	50.93	51.23	52.03	52.14
WEIGHT OF MOISTURE (gm)	13.48	18.68	48.89	153.87
WEIGHT OF DRY SOIL (gm)	43.00	38.01	57.37	126.30
MOISTURE CONTENT (%)	31.35	49.14	85.22	121.83



Description: SILT; dark yellowish brown.

USCS: (ML)

TECH	TJ
DATE	10/7/15
CHECK	
REVIEW	
APPROVE	

Determining pH of Soil for Use in Corrosion Testing
AASHTO T 289

PROJECT TITLE	F&ME/I-85 REHAB/SC	SAMPLE ID	15-1375N
PROJECT NO.	1524908.03	SAMPLE TYPE	Bag
REMARKS	F&ME Job No. G5439	SAMPLE DEPTH	-

SAMPLE PREPARATION

Sieved through the #10 Sieve	YES
Air Dry	YES
Type of Water	DISTILLED

WATER & SOIL

Trial	pH	Temperature
1	5.1	21.0
2	5.1	21.0
3	5.1	20.9
AVERAGE	5.1	21.0

Description	SILTY SAND; grayish brown.
USCS	(SM)

TECH	TJ
DATE	10/7/15
CHECK	
REVIEW	
APPROVE	

Determining Minimum Laboratory Soil Resistivity
AASHTO T 288

PROJECT TITLE	F&ME/I-85 REHAB/SC	SAMPLE ID	15-1357O
PROJECT NO.	1524908	SAMPLE TYPE	Bag
REMARKS	F&ME Job No. G5439	SAMPLE DEPTH	-

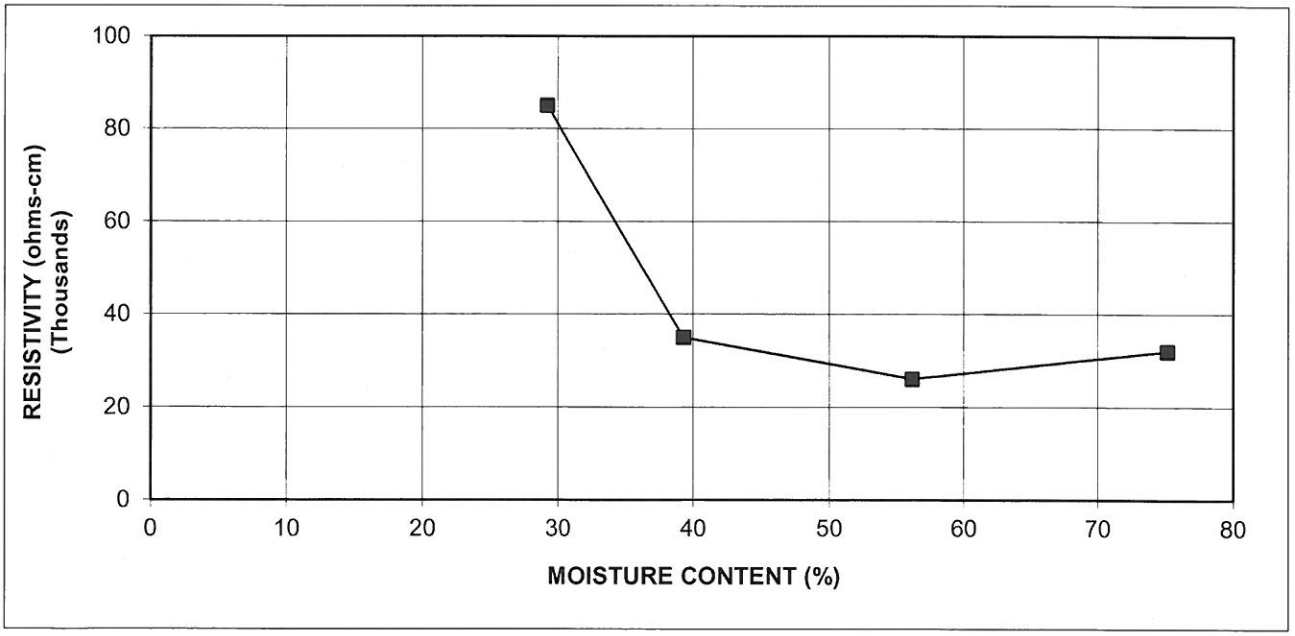
SAMPLE PREPARATION	Sieved through the #10 Sieve	Yes
TEST APPARATUS	Miller Soilbox and Nilsson 400 Soil Resistance Meter.	

Identification: Lowest resistivity

SPECIMEN (Point)	1	2	3	4
RESISTIVITY (ohms-cm)	85,000	35,000	26,000	32,000

MOISTURE CONTENT

WET WEIGHT & TARE	142.02	164.39	161.10	371.58
DRY WEIGHT & TARE	121.62	132.75	118.60	230.56
TARE WEIGHT	51.78	52.26	42.93	42.89
WEIGHT OF MOISTURE (gm)	20.40	31.64	42.50	141.02
WEIGHT OF DRY SOIL (gm)	69.84	80.49	75.67	187.67
MOISTURE CONTENT (%)	29.21	39.31	56.16	75.14



Description: SILTY SAND; grayish brown.

USCS: (SM)

TECH	TJ
DATE	10/7/15
CHECK	
REVIEW	
APPROVE	

ACL

ADVANCED CHEMISTRY LABS, INC.

Phone: (770) 409-1444
Fax: (770) 409-1844
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P.O. Box 88610 • Atlanta, GA 30356
www.acl-labs.com

Client: Golder Associates, Inc.
3730 Chamblee Tucker Road
Atlanta, GA 30341-0000

Client Proj #: 1524908
ACL Project #: 68421
Date Received: 10/06/2015
Date Reported: 68421

Contact: Mr. Henry Mock

Sample ID: B-1 **Matrix:** Soil

ACL #: 307792 **Date/Time Sampled:**

Analyte (Method)	Result	PQL	Units	DF	Prep Date/Time	Analysis Date/Time	Analyst
Sol. Sulfate (9038)*	BQL	50	mg/kg	5	10/19/2015 10:20	10/19/2015 10:20	MM

ACL

ADVANCED CHEMISTRY LABS, INC.

Phone: (770) 409-1444
Fax: (770) 409-1844
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P.O. Box 88610 • Atlanta, GA 30356
www.acl-labs.com

Client: Golder Associates, Inc.
3730 Chamblee Tucker Road
Atlanta, GA 30341-0000

Client Proj #: 1524908
ACL Project #: 68421
Date Received: 10/06/2015
Date Reported: 68421

Contact: Mr. Henry Mock

Sample ID: B-2 **Matrix:** Soil

ACL #: 307793 **Date/Time Sampled:**

Analyte (Method)	Result	PQL	Units	DF	Prep Date/Time	Analysis Date/Time	Analyst
Sol. Sulfate (9038)*	171	50	mg/kg	5	10/19/2015 10:20	10/19/2015 10:20	MM