



# GEOTECHNICAL SUBSURFACE DATA REPORT

S-17-58 over Beaverdam Creek  
Dillon County, South Carolina



## PREPARED FOR

SCDOT

955 Park Street

Columbia, South Carolina 29201



## PREPARED BY

F&ME Consultants, Inc.

211 Business Park Boulevard

Columbia, South Carolina 29203

SCDOT Project ID.: PO43715

FME Project No.: G7100.010—Task 00002

April 4, 2025

April 4, 2025

Mr. Trapp Harris, P.E.  
South Carolina Department of Transportation  
955 Park Street  
Columbia, South Carolina 29201

Re: Geotechnical Subsurface Data Report  
S-17-58 over Beaverdam Creek  
Dillon County, South Carolina  
SCDOT Project ID.: P043715  
FME Project No.: G7100.010 – Task 00002

Mr. Harris:

Submitted herein is F&ME Consultants, Inc.'s (FME) Geotechnical Subsurface Data Report for the S-17-58 over Beaverdam Creek project. This report contains findings from our subsurface field exploration and laboratory testing program

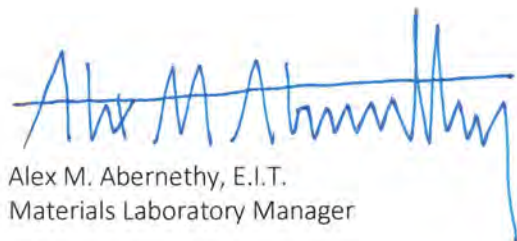
It has been a pleasure working with you on this project and we appreciate the opportunity to be of service. Please notify us if there are any questions or if we can be of further assistance.

Respectfully Submitted,

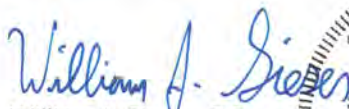
**F&ME CONSULTANTS, INC.**

A handwritten signature in blue ink that reads 'Rebecca M. Coldiron'.

Rebecca M. Coldiron  
Geotechnical Staff Professional

A handwritten signature in blue ink that reads 'Alex M. Abernethy'.

Alex M. Abernethy, E.I.T.  
Materials Laboratory Manager

A handwritten signature in blue ink that reads 'William J. Gieser'.

William J. Gieser, P.E.  
Senior Project Engineer



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# 1. INTRODUCTION

## 1.1. GENERAL

The project takes place along S-17-58 (Gaddy's Mill Road) and is located approximately five (5) miles northwest of Lakeview, South Carolina. We understand that this project will involve the demolition/removal of the existing bridge structure and the replacement with a new bridge structure on the existing roadway alignment. A Site Location Plan (Figure 1) is presented in Section 1 of the Appendix of this report.

## 1.2. SCOPE

FME performed a geotechnical subsurface exploration and laboratory testing for the project. The original South Carolina Department of Transportation (SCDOT) Scope of Services was issued on January 31, 2025, a revised Scope of Services was issued to FME by SCDOT on February 4, 2025. The field exploration consisted of Soil Test Borings (STB) with Standard Penetration Testing (SPT), Manual Auger Borings (MAB), and the collection of Bulk Soil Samples (BS). Laboratory testing was performed on soil samples collected from the Soil Test Borings and the Bulk Soil Samples.

Field exploration methods and laboratory procedures were conducted in general accordance with the current American Association of State Highway and Transportation Officials (AASHTO), American Society of Testing and Materials (ASTM) Standards. This report was prepared in general accordance with the 2022 SCDOT Geotechnical Design Manual (GDM).

# 2. SUBSURFACE EXPLORATION SUMMARY

From February 26, 2025, through March 1, 2025, FME performed three (3) Soil Test Borings and six (6) Manual Auger Borings. Additionally, two (2) bulk soil samples were collected on site via Manual Auger Boring methodologies. The soils were visually classified in the field based upon the Unified Soil Classification System (USCS) in general accordance with ASTM D2488. Testing locations and target exploration depths were provided by the SCDOT. A Boring Location Plan (Figure 2) displaying the test locations performed during the subsurface exploration is contained in Section 2 of the Appendix within to this report.

## 2.1. SOIL TEST BORINGS

Soil Test Borings were performed utilizing a CME 45B trailer-mounted drill rig. The measured energy transfer ratio for the CME 45B was 86.4% utilizing an automatic hammer. SPT hammer calibration records are provided within Section 7 of the Appendix of this report. Soil Test Borings B-1 through B-3 utilized rotary wash drilling techniques to maintain a stable borehole and were sampled continuously through the upper ten (10) feet utilizing SPT testing. Following the continuous sampling, SPT testing was performed on standard five (5) foot intervals thereafter until the target boring depth was achieved. SPT sampling was performed in general accordance with ASTM D1586 to determine the relative densities and consistencies of the subsurface soils, and to collect subsurface soil samples.



**Table 1 – Field Exploration Summary Table – Soil Test Borings**

Test ID	Test Type	Soil Depth (ft)	Bridge/Air/Water Gap (ft)	Total Boring Depth (ft)	Latitude	Longitude	Elevation (ft-MSL)
B-1	STB	100.0	N/A	100.0	34.39329371	-79.23941112	91.7
B-2	STB	100.0	20.9	120.9	34.39338652	-79.23921838	91.6
B-3	STB	100.0	N/A	100.0	34.3934765	-79.23902365	91.5
<b>Total</b>		<b>300.0</b>	<b>20.9</b>	<b>320.9</b>			

## 2.2. MANUAL AUGER BORINGS

FME conducted six (6) roadway approach Manual Auger Borings (designated as P-1 through P-6). Pavement core samples from each Soil Test Boring were bagged and transported to FME's laboratory facility following boring completion. These cores were measured and photographed to document thickness, distress and existing surface conditions. Copies of the Manual Auger Boring Logs are contained within Section 3B of the Appendix of this report. Pavement core photographic documentation is presented within Section 6 of the Appendix of this report

**Table 2 – Field Exploration Summary Table – Bulk Soil Samples**

Test ID	Test Type	Test Depth (ft)	Latitude	Longitude	Elevation (ft-MSL)
P-1	MAB	5.3	34.39240086	-79.24155207	102.0
P-2	MAB	5.3	34.39263876	-79.24079675	100.4
P-3	MAB	5.3	34.39297325	-79.24008412	95.5
P-4	MAB	5.6	34.39379464	-79.23835317	90.8
P-5	MAB	5.4	34.39413001	-79.23763608	91.0
P-6	MAB	5.3	34.39455862	-79.23701637	91.0
<b>TOTAL</b>		<b>32.2</b>			

## 2.3. BULK SOIL SAMPLES

Two Bulk Soil Samples were collected on-site (designated as BS-1 and BS-2). Bulk Soil Sample BS-1 was collected via Manual Auger Boring Methodologies (MAB) from the embankment near Soil Test Boring B-3. Bulk Soil Sample BS-2 was collected as a composite sample from the upper five (5) feet of auger cuttings encountered within the six (6) roadway approach Manual Auger Borings. Bulk Soil Sample Logs are presented within Section 3C of the Appendix of this report.

The table below summarizes test designations, depth, locations and existing surface elevations for the Bulk Soil Samples

**Table 3 – Field Exploration Summary Table – Bulk Soil Samples**

Test ID	Test Type	Test Depth (ft)	Latitude	Longitude	Elevation (ft-MSL)
BS-1	BS/MAB	5.0	34.39342985	-79.2389907	91.2
BS-2 <sup>1</sup>	BS/MAB	5.0	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>
<b>TOTAL</b>		<b>10.0</b>			

<sup>1</sup>Composite Bulk Soil Sample BS-2 was Created from Upper FiveSix (5) feet of Auger Cuttings Collected within Soil Test Borings P-1 through P-6.

## 2.4. GROUND WATER

Groundwater depths were recorded at the time of boring (TOB) and/or twenty-four (24) hours following boring completion. Groundwater depth measurements are noted on the individual Subsurface Exploration Logs in Section 3 of the Appendix.

## 2.5. TEST LOCATION TABLE

The following table summarizes the state plane coordinates in feet, latitude-longitude in decimal degrees, and existing surface elevations of the test locations for the subsurface exploration.

**Table 4 – Test Location Table**

Test ID	Test Type	Northing	Easting	Latitude	Longitude	Elevation (ft-MSL)
B-1	STB	935935.799	2531069.063	34.39329371	-79.23941112	91.7
B-2	STB	935970.557	2531126.620	34.39338652	-79.23921838	91.6
B-3	STB	936004.298	2531184.795	34.39347650	-79.23902365	91.5
BS-1	BS/MAB	935987.492	2531195.024	34.39342985	-79.23899070	91.2
BS-2 <sup>1</sup>	BS/MAB	N/A	N/A	N/A	N/A	N/A
P-1	MAB	935599.945	2530428.851	34.39240086	-79.24155207	102.0
P-2	MAB	935690.384	2530655.195	34.39263876	-79.24079675	100.4
P-3	MAB	935815.743	2530868.063	34.39297325	-79.24008412	95.5
P-4	MAB	936123.496	2531385.049	34.39379464	-79.23835317	90.8
P-5	MAB	936249.208	2531599.251	34.39413001	-79.23763608	91.0
P-6	MAB	936408.344	2531783.502	34.39455862	-79.23701637	91.0

<sup>1</sup>Bulk Soil Sample BS-2 was a composite sample created from the upper 5-ft. of auger cuttings from the specified boreholes.

### 3. LABORATORY TESTING SUMMARY

Following completion of FME's field exploration, draft boring logs were generated and reviewed internally by FME. Based on the data represented in these logs, FME was authorized to designate soil samples for laboratory testing on behalf of the SCDOT. The laboratory testing performed on the soil samples collected from the Soil Test Borings is summarized in the table below. Data sheets containing the results from this testing are provided in Section 4A and 4C within the Appendix of this report.

**Table 5 – Laboratory Testing Summary Table – Soil Test Boring (Split-Spoon) Samples**

Type of Test	Quantity	Procedure
Moisture Content	15	AASHTO T265 (ASTM D2216)
Atterberg Limits	15	AASHTO T89/T90 (ASTM D4318)
Hydrometer and Grain Size	4	ASTM D6913/AASHTO T11 (ASDM D1140)
Grain-Size Distribution w/ Wash 200	11	AASHTO D6913/AASHTO T11 (ASTM D1140)
pH	1	AASHTO T289 (ASTM G51)
Soil Sulfate Content	1	AASHTO T290 (ASTM C1580)
Soil Chloride Content	1	AASHTO T291
Soil Resistivity	1	AASHTO T288

The laboratory testing performed for the Bulk Soil samples is summarized in the table below. The data sheets containing the results from this testing are provided in Section 4B of the Appendix attached to this report.

**Table 6 – Laboratory Testing Summary Table – Bulk Soil Samples**

Type of Test	Quantity	Procedure
Moisture Content	2	AASHTO T265 (ASTM D2216)
Atterberg Limits	2	AASHTO T89/T90 (ASTM D4318)
Grain-size Distribution w/ Wash 200	2	ASTM D6913/AASHTO T11 (ASTM D1140)
CU Triaxial	1	AASHTO T297 (ASTM D4767)
California Bearing Ratio Test	1	AASHTO T193

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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### **APPENDIX**

<b>SECTION 1</b>	<b>SITE LOCATION PLAN</b>
<b>SECTION 2</b>	<b>BORING LOCATION PLAN</b>
<b>SECTION 3</b>	<b>SUBSURFACE EXPLORATION LOGS</b>
<b>SECTION 3A</b>	<b>SOIL TEST BORING (STB) LOGS</b>
<b>SECTION 3B</b>	<b>MANUAL AUGER BORING (MAB) LOGS</b>
<b>SECTION 3C</b>	<b>BULK SOIL SAMPLE (BS) LOGS</b>
<b>SECTION 4</b>	<b>LABORATORY TEST RESULTS</b>
<b>SECTION 4A</b>	<b>SPLIT SPOON SAMPLES (SS)</b>
<b>SECTION 4B</b>	<b>BULK SOIL SAMPLES (BS)</b>
<b>SECTION 4C</b>	<b>CORROSION SERIES TESTING</b>
<b>SECTION 5</b>	<b>ON-SITE DRILL RIG PHOTOS</b>
<b>SECTION 6</b>	<b>PAVEMENT CORE PHOTOS</b>
<b>SECTION 7</b>	<b>SPT HAMMER CALIBRATION</b>
<b>SECTION 8</b>	<b>GEOSCOPING FORM</b>



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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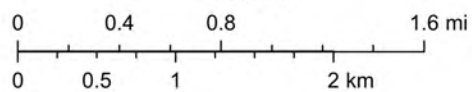
# **APPENDIX**

## **SECTION 1**

## **SITE LOCATION PLAN**



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F&ME CONSULTANTS, INC.  
COLUMBIA, SC

4			
3			
2			
1			
REV.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	CTC	DATE 3.7.25	GROUP -- --
R/W		DATE	

S-17-58 OVER BEAVERDAM CREEK  
DILLON COUNTY, SOUTH CAROLINA

SITE LOCATION PLAN

SCDOT PROJECT ID: P043715

FME JOB NO. G7100.010 TASK 00002

SCALE: AS NOTED

FIGURE 1

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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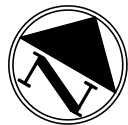
# **APPENDIX**

## **SECTION 2      BORING LOCATION PLAN**







SUBSURFACE TESTING DATA							
Boring ID	Test Type	Northing	Easting	Latitude	Longitude	Test Elevation (MSL)	Test Depth (ft)
B-1	STB	935935.799	2531069.063	34.39329371	-79.23941112	91.7	100.0
B-2	STB	935970.557	2531126.620	34.39338652	-79.23921838	91.6	120.9
B-3	STB	936004.298	2531184.795	34.39347650	-79.23902365	91.5	100.0
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P-6	MAB	936408.344	2531783.502	34.39455862	-79.23701637	91.0	5.0
Composite Bulk Soil Sample BS-2 is composed of the upper 5-ft. of auger cuttings encountered within Manual Auger Borings P-1 through P-6							



LEGEND:

 SOIL TEST BORING LOCATION

 MANUAL AUGER BORING TEST LOCATION

4			
3			
2			
1			
REV.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	CTC	DATE 3.7.25	GROUP -
R/W		DATE	

 F&ME CONSULTANTS, INC.  
COLUMBIA, SC

S-17-58 OVER BEAVERDAM CREEK  
DILLON COUNTY, SOUTH CAROLINA

BORING LOCATION PLAN

SCDOT PROJECT ID: P043715	FME JOB NO. G7100.010 TASK 00002
SCALE: NTS	FIGURE 2



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 3      SUBSURFACE EXPLORATION LOGS**

## Boring Log Descriptors

### Correlation of Penetration Resistance with Relative Density and Consistency

Coarse Grained Soils (Sand/Gravel)		Fine Grained Soils (Silt/Clay)	
SPT Blow Count	Relative Density	SPT Blow Count	Consistency
≤4	Very Loose	≤2	Very Soft
5 – 10	Loose	3 – 4	Soft
11 – 30	Medium Dense	5 – 8	Firm
31 – 50	Dense	9 – 15	Stiff
≥51	Very Dense	16 – 30	Very Stiff
		≥31	Hard

### Particle Size Identification

Gravel	Sieve Size
Fine	#4 to 3/4-in.
Coarse	3/4-in. to 3-in.

Sand	Sieve Size
Fine	#200 to #40
Medium	#40 to #10
Coarse	#10 to #4

Clay/Silt	Sieve Size
Fines Content	<#200

SYMBOL	PRINT CODE*	TYPICAL DESCRIPTION
	SCCT	CONCRETE
	SCAT	ASPHALT
	SCTS	TOPSOIL/PEAT
	SCSAND	SAND
	SCSTSAND	SILTY SAND/SANDY SILT
	SCCLSAND	CLAYEY SAND/SANDY CLAY
	SCCLAY	CLAY
	SCSILT	SILT
	SCSTCLAY	SILTY CLAY/CLAYEY SILT
	SCSAP	SAPROLITE
	SCLS	LIMESTONE
	SCBR	GRANITE (BEDROCK)
	SCMARL	MARL

### SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS  (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS  (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES  (APPRECIABLE AMOUNT OF FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
				SM	SILTY SANDS, SAND-SILT MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS



## Rock Description Legend

Discontinuity Type		Discontinuity Width (mm)		Amount of Infilling	
<b>F</b>	Fault	<b>W</b>	Wide (12.5 – 50)	<b>Su</b>	Surface Stain
<b>J</b>	Joint	<b>MW</b>	Moderately Wide (2.5 – 12.5)	<b>Sp</b>	Spotty
<b>Sh</b>	Shear	<b>N</b>	Narrow (1.25 – 2.5)	<b>Pa</b>	Partially Filled
<b>Fo</b>	Foliation	<b>VN</b>	Very Narrow (<1.25)	<b>FI</b>	Filled
<b>V</b>	Vein	<b>T</b>	Tight	<b>No</b>	None
<b>B</b>	Bedding				

Type of Infilling		Surface Shape of Joint		Discontinuity Spacing (ft)	
<b>Cl</b>	Clay	<b>Wa</b>	Wave	<b>EW</b>	Extremely Wide (>65)
<b>Ca</b>	Calcite	<b>Pl</b>	Planar	<b>W</b>	Wide (22 – 65)
<b>Ch</b>	Chloride	<b>St</b>	Stepped	<b>M</b>	Moderate (7.5 – 22)
<b>Fe</b>	Iron Oxide	<b>Ir</b>	Irregular	<b>C</b>	Close (2 – 7.5)
<b>Gy</b>	Gypsum/Talc			<b>VC</b>	Very Close (<2)
<b>H</b>	Healed				
<b>No</b>	None				
<b>Py</b>	Pyrite				
<b>Qz</b>	Quartz				
<b>Sd</b>	Sand				

Roughness of Surface	
<b>Slk</b>	Slickensided (Surface has smooth, glassy finish with visual evidence of striations)
<b>S</b>	Smooth (Surface appears smooth and feels smooth to touch)
<b>SR</b>	Slightly Rough (Asperities on the discontinuity surfaces are distinguishable and can be felt)
<b>R</b>	Rough (some ridges and side-angle steps are evident; asperities are clearly visible, and discontinuity surface feels very abrasive)
<b>VE</b>	Very Rough (Near vertical steps and ridges occur on the discontinuity Surface)



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

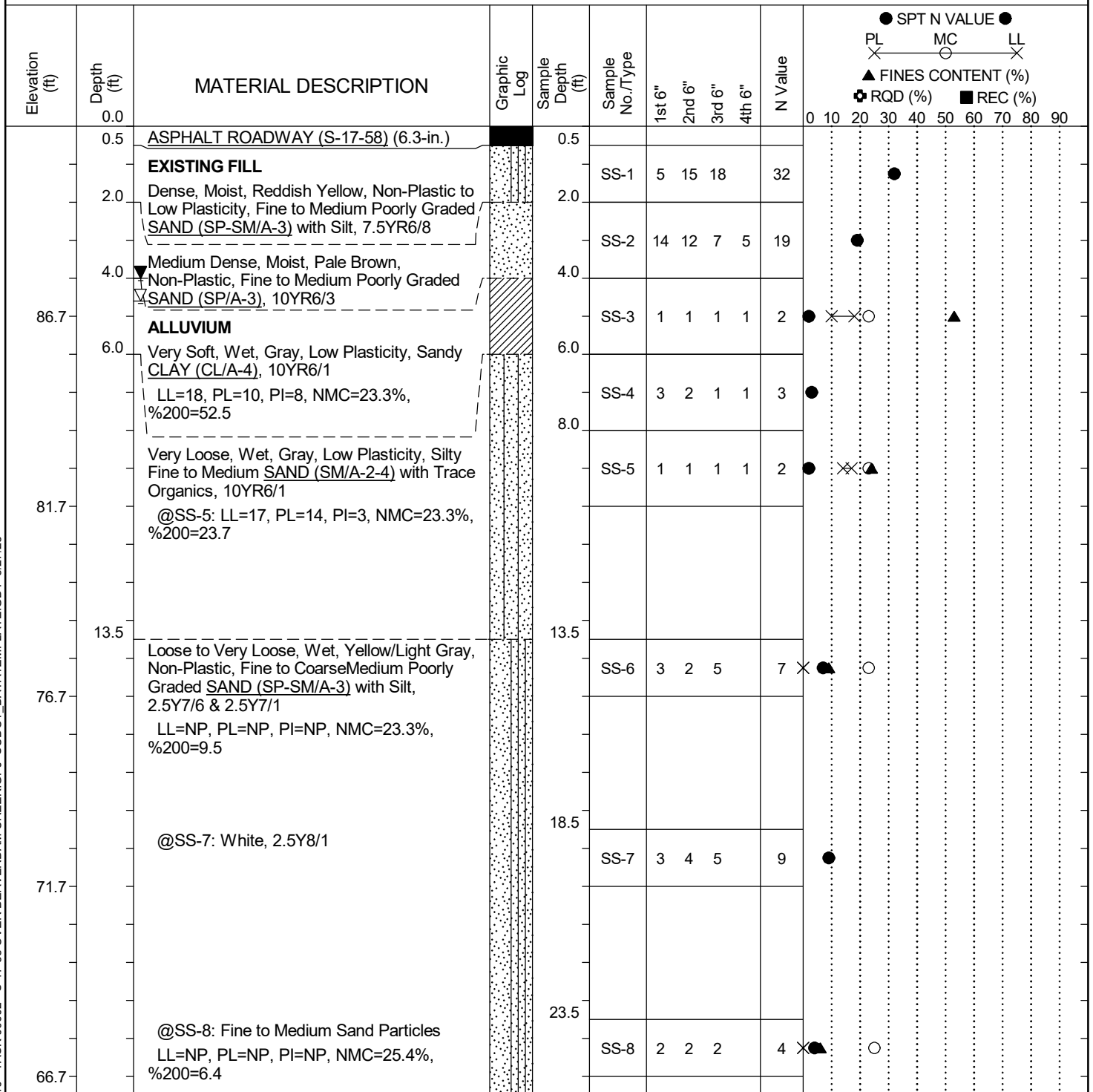
## **SECTION 3      SUBSURFACE EXPLORATION LOGS**

### **SECTION 3A      SOIL TEST BORING (STB) LOGS**



# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-1
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.7 ft	<b>Latitude:</b>	34.39329371	<b>Longitude:</b>	-79.23941112
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	100 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB
				4.6(cave 89.4)	24HR
					4.0(wet cave 33.6)



## 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	

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-1
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.7 ft	<b>Latitude:</b>	34.39329371	<b>Longitude:</b>	-79.23941112
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	100 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 4.6(cave 89.4)
<b>24HR</b>	4.0(wet cave 33.6)				

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL X MC X LL X  ▲ FINES CONTENT (%)  ⊕ RQD (%) ■ REC (%) </div>
61.7		@SS-9: Light Gray, 2.5Y7/1 LL=NP, PL=NP, PI=NP, NMC=27.2%, %200=5.9		28.5	SS-9	1	1	1		2	●▲○
56.7		@SS-10: LL=NP, PL=NP, PI=NP, NMC=24.7%, %200=5.8		33.5	SS-10	1/12"	1			1	●▲○
51.7				38.5	SS-11	2	3	4		7	●
46.7		@SS-12: Light Gray/Reddish Yellow, 2.5Y7/1 & 5YR7/8		43.5	SS-12	4	4	5		9	●
41.7	48.5	<b>BLACK CREEK GROUP</b> (Cretaceous) Stiff, Moist, Dark Gray, Medium Plasticity to High Plasticity, Lean <u>CLAY (CL/A-6)</u> with Sand, 2.5Y4/1		48.5	SS-13	4	5	8		13	●

## LEGEND

Continued Next Page

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

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-1
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.7 ft	<b>Latitude:</b>	34.39329371	<b>Longitude:</b>	-79.23941112
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	100 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 4.6(cave 89.4)
<b>24HR</b>	4.0(wet cave 33.6)				

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL X MC X LL X  ▲ FINES CONTENT (%)  + RQD (%) ■ REC (%) </div>
53.5	36.7	Very Stiff, Moist, Dark Gray, Medium Plasticity to High Plasticity, Lean <u>CLAY</u> (CL/A-6), 2.5Y4/1		53.5	SS-14	9	12	18		30	
58.5	31.7	Very Stiff, Moist, Gray, Low Plasticity to Medium Plasticity, Sandy Lean <u>CLAY</u> (CL/A-6), 2.5Y6/1		58.5	SS-15	8	8	13		21	
63.5	26.7			63.5	SS-16	6	8	14		22	
68.5	21.7	Very Stiff to Hard, Moist, Gray, Medium Plasticity to High Plasticity, Lean <u>CLAY</u> (CL/A-6), 2.5Y5/1		68.5	SS-17	6	10	15		25	
73.5		@SS-18: Reddish Gray, 5R5/1		73.5	SS-18	9	12	20		32	

## LEGEND

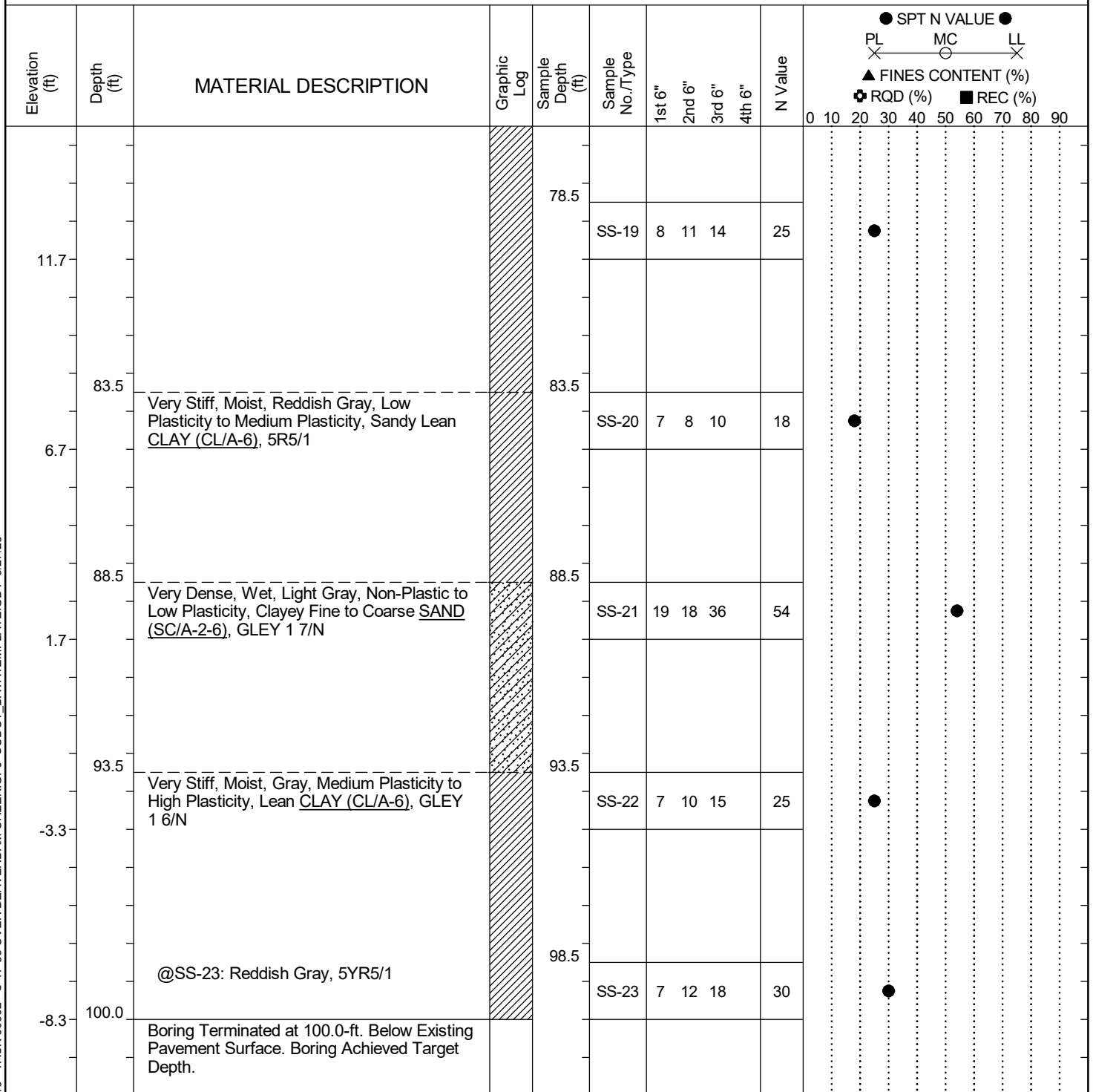
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SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving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

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-1
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.7 ft	<b>Latitude:</b>	34.39329371	<b>Longitude:</b>	-79.23941112
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	100 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 4.6(cave 89.4) 24HR 4.0(wet cave 33.6)



## LEGEND

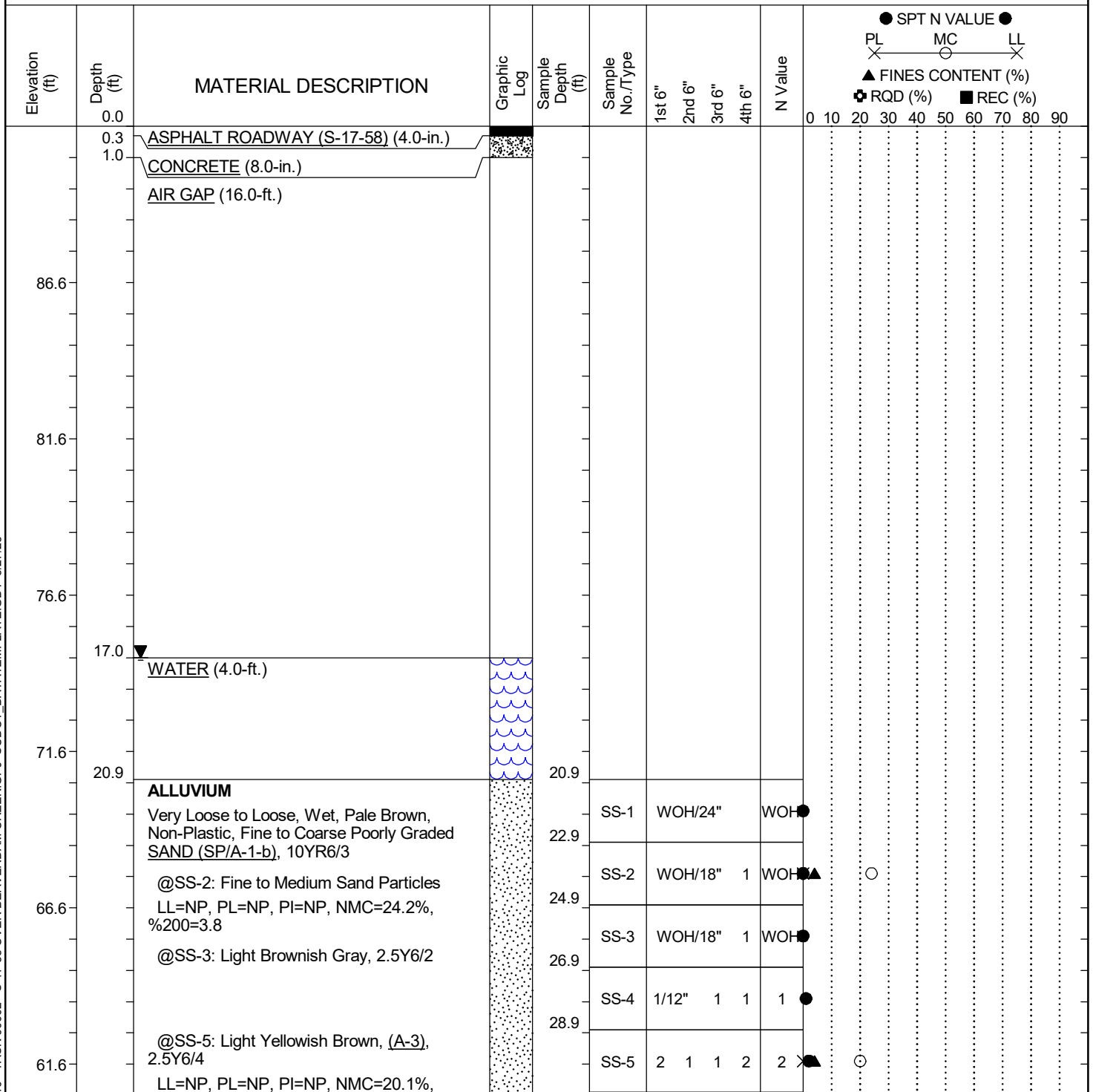
SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving Casing	

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25



# SCDOT Soil Test Log

<b>Project ID:</b>	P043715				<b>County:</b>	Dillon			<b>Boring No.:</b>	B-2		
<b>Site Description:</b>	S-17-58 over Beaverdam Creek								<b>Route:</b>	S-17-58		
<b>Eng./Geo.:</b>	W. Pitts		<b>Boring Location:</b>	N/A		<b>Offset:</b>	N/A		<b>Alignment:</b>	Existing		
<b>Elev.:</b>	91.6 ft		<b>Latitude:</b>	34.39338652		<b>Longitude:</b>	-79.23921838		<b>Date Started:</b>	2/26/2025		
<b>Total Depth:</b>	120.9 ft		<b>Soil Depth:</b>	100 ft		<b>Core Depth:</b>	N/A ft		<b>Date Completed:</b>	2/27/2025		
<b>Bore Hole Diameter (in):</b>	3		<b>Sampler Configuration</b>			<b>Liner Required:</b>	Y (N)		<b>Liner Used:</b>	Y (N)		
<b>Drill Machine:</b>	CME 45B		<b>Drill Method:</b>	RW		<b>Hammer Type:</b>	Automatic			<b>Energy Ratio:</b>	86.4%	
<b>Core Size:</b>	N/A		<b>Driller:</b>	D. Harris		<b>Groundwater:</b>	<b>TOB</b>	17 ft		<b>24HR</b>	17 ft	



## LEGEND

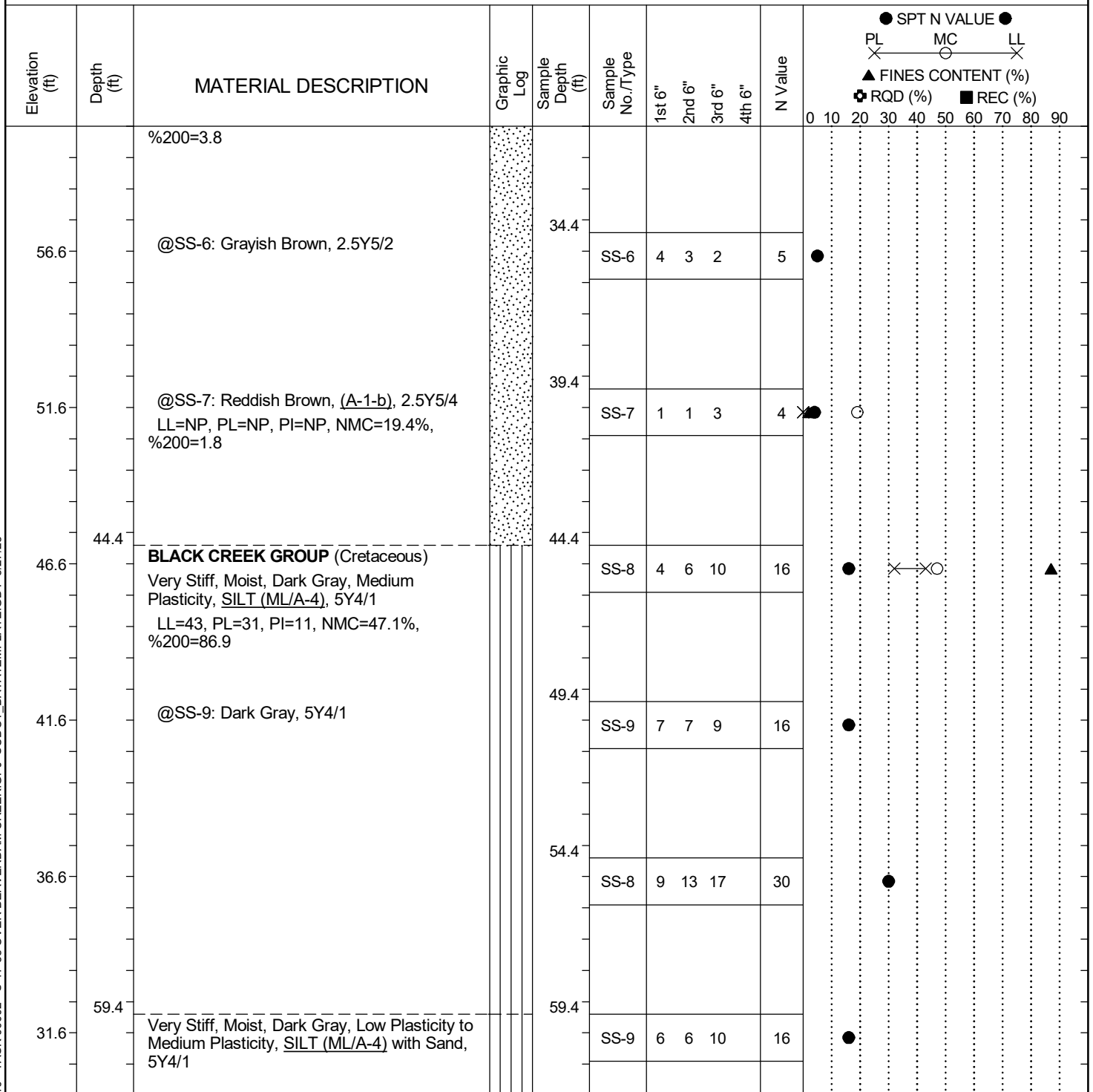
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SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving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

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-2
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.6 ft	<b>Latitude:</b>	34.39338652	<b>Longitude:</b>	-79.23921838
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	120.9 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 17 ft
<b>24HR</b>	17 ft				



## LEGEND

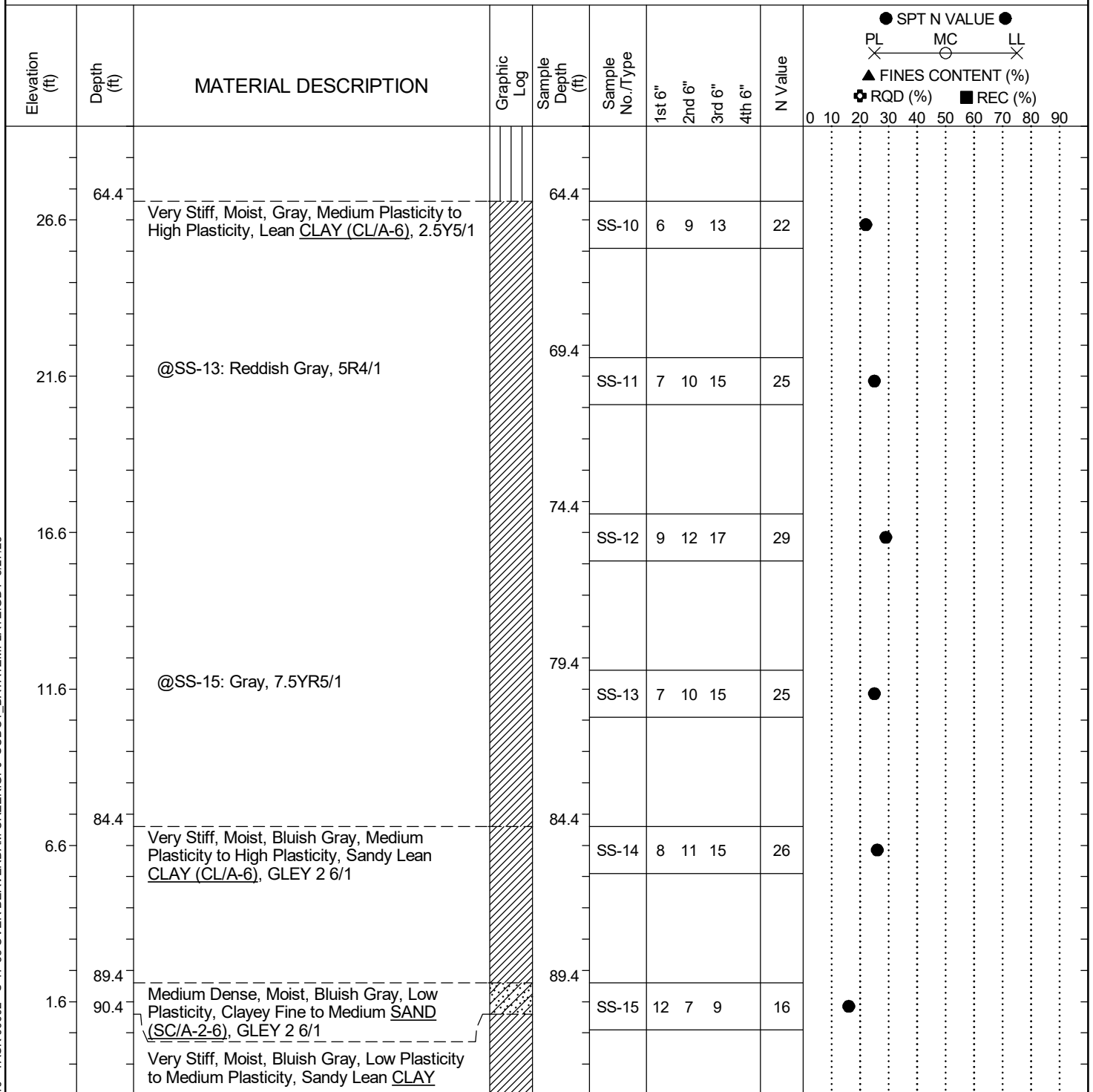
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SAMPLER TYPE		DRILLING METHOD	
SS - Split Spoon	NQ - Rock Core, 1-7/8"	HSA - Hollow Stem Auger	RW - Rotary Wash
UD - Undisturbed Sample	CU - Cuttings	CFA - Continuous Flight Augers	RC - Rock Core
AWG - Rock Core, 1-1/8"	CT - Continuous Tube	DC - Driving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

SC.DOT G7100.010 - TASK 0002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-2
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.6 ft	<b>Latitude:</b>	34.39338652	<b>Longitude:</b>	-79.23921838
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	120.9 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Liner Used:</b>	Y (N)				
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 17 ft
<b>24HR:</b>	17 ft				



## LEGEND

Continued Next Page

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

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-2
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.6 ft	<b>Latitude:</b>	34.39338652	<b>Longitude:</b>	-79.23921838
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	120.9 ft	<b>Soil Depth:</b>	100 ft	<b>Core Depth:</b>	N/A ft
<b>Date Completed:</b>	2/27/2025				
<b>Bore Hole Diameter (in):</b>	3	<b>Sampler Configuration</b>	<b>Liner Required:</b> Y (N)		<b>Liner Used:</b> Y (N)
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Hammer Type:</b>	Automatic
<b>Energy Ratio:</b>	86.4%				
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 17 ft
<b>24HR</b>	17 ft				

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL — MC — LL  X — X — X  ▲ FINES CONTENT (%)  + RQD (%) ■ REC (%) </div>
-3.4	99.4	(CL/A-6) GLEY 2 61 @SS-16: Dark Greenish Gray, GLEY 2 4/1		94.4	SS-16	5	9	14		23	●
-8.4	99.4	Very Stiff, Moist, Bluish Gray, Medium Plasticity to High Plasticity, Lean CLAY (CL/A-6), GLEY 2 4/1		99.4	SS-17	6	9	15		24	●
-13.4				104.4	SS-18	6	9	13		22	●
-18.4				109.4	SS-19	7	10	14		24	●
-23.4				114.4	SS-20	8	10	14		24	●
-28.4	120.9	Boring Terminated at 120.9-ft. Below Existing Pavement Surface. Boring Achieved Target Depth.		119.4	SS-21	9	11	14		25	●

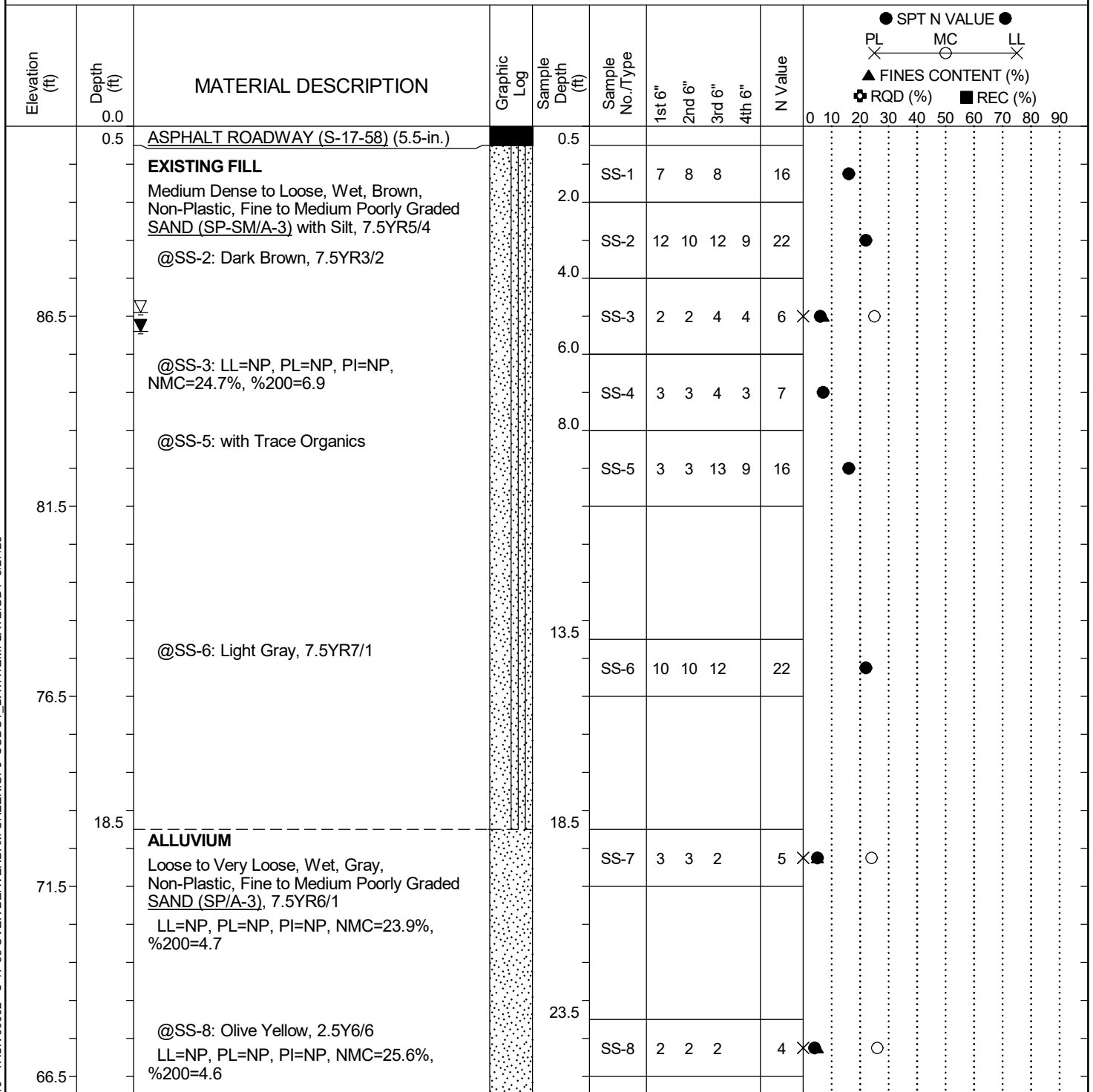
## LEGEND

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 G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	B-3
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Eng./Geo.:</b>	W. Pitts	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.5 ft	<b>Latitude:</b>	34.3934765	<b>Longitude:</b>	-79.23902365
<b>Total Depth:</b>	100 ft	<b>Soil Depth:</b>	100 ft	<b>Date Started:</b>	2/28/2025
<b>Core Depth:</b>	N/A ft	<b>Date Completed:</b>	3/1/2025		
<b>Bore Hole Diameter (in):</b>	3.0	<b>Sampler Configuration</b>		<b>Liner Required:</b>	Y (N)
<b>Drill Machine:</b>	CME 45B	<b>Drill Method:</b>	RW	<b>Liner Used:</b>	Y (N)
<b>Hammer Type:</b>	Automatic	<b>Energy Ratio:</b>	86.4%		
<b>Core Size:</b>	N/A	<b>Driller:</b>	D. Harris	<b>Groundwater:</b>	TOB 4.9 ft
				<b>24HR</b>	5.4 ft



## LEGEND

Continued Next Page

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

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715				<b>County:</b>	Dillon		<b>Boring No.:</b>	B-3		
<b>Site Description:</b>	S-17-58 over Beaverdam Creek							<b>Route:</b>	S-17-58		
<b>Eng./Geo.:</b>	W. Pitts		<b>Boring Location:</b>			N/A		<b>Offset:</b>	N/A		
<b>Alignment:</b>									Existing		
<b>Elev.:</b>	91.5 ft		<b>Latitude:</b>	34.3934765		<b>Longitude:</b>	-79.23902365		<b>Date Started:</b>	2/28/2025	
<b>Total Depth:</b>	100 ft		<b>Soil Depth:</b>	100 ft		<b>Core Depth:</b>	N/A ft		<b>Date Completed:</b>	3/1/2025	
<b>Bore Hole Diameter (in):</b>	3.0		<b>Sampler Configuration</b>			<b>Liner Required:</b>		Y (N)		<b>Liner Used:</b>	Y (N)
<b>Drill Machine:</b>	CME 45B		<b>Drill Method:</b>	RW		<b>Hammer Type:</b>	Automatic		<b>Energy Ratio:</b>	86.4%	
<b>Core Size:</b>	N/A		<b>Driller:</b>	D. Harris		<b>Groundwater:</b>	<b>TOB</b>	4.9 ft		<b>24HR</b>	5.4 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL X MC X LL X  ▲ FINES CONTENT (%)  ⊕ RQD (%) ■ REC (%) </div>
61.5		@SS-9: LL=NP, PL=NP, PI=NP, NMC=27.7%, %200=4.0		28.5	SS-9	2	1	1		2	●
56.5		@SS-10: Light Brownish Gray, (A-1-b), 2.5Y6/2 LL=NP, PL=NP, PI=NP, NMC=24.4%, %200=4.1		33.5	SS-10	3	2	3		5	●
51.5		@SS-11: Light Brownish Gray/Light Reddish Brown, 2.5Y6/2 & 2.5YR6/4		38.5	SS-11	3	3	4		7	●
46.5	43.5	<b>BLACK CREEK GROUP</b> (Cretaceos) Stiff to Very Stiff, Wet, Black, Low Plasticity to Medium Plasticity, Sandy Lean <u>CLAY</u> (CL/A-6), 5Y2.5/2		43.5	SS-12	3	5	5		10	●
41.5		@SS-13: Most, Very Dark Gray, 5Y3/1		48.5	SS-13	8	10	18		28	●

## LEGEND

Continued Next Page

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

SC.DOT G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# SCDOT Soil Test Log

<b>Project ID:</b>	P043715				<b>County:</b>	Dillon		<b>Boring No.:</b>	B-3		
<b>Site Description:</b>	S-17-58 over Beaverdam Creek							<b>Route:</b>	S-17-58		
<b>Eng./Geo.:</b>	W. Pitts		<b>Boring Location:</b>			N/A		<b>Offset:</b>	N/A		
<b>Alignment:</b>									Existing		
<b>Elev.:</b>	91.5 ft		<b>Latitude:</b>	34.3934765		<b>Longitude:</b>	-79.23902365		<b>Date Started:</b>	2/28/2025	
<b>Total Depth:</b>	100 ft		<b>Soil Depth:</b>	100 ft		<b>Core Depth:</b>	N/A ft		<b>Date Completed:</b>	3/1/2025	
<b>Bore Hole Diameter (in):</b>	3.0		<b>Sampler Configuration</b>			<b>Liner Required:</b>		Y (N)		<b>Liner Used:</b>	Y (N)
<b>Drill Machine:</b>	CME 45B		<b>Drill Method:</b>	RW		<b>Hammer Type:</b>	Automatic		<b>Energy Ratio:</b>	86.4%	
<b>Core Size:</b>	N/A		<b>Driller:</b>	D. Harris		<b>Groundwater:</b>	<b>TOB</b>	4.9 ft		<b>24HR</b>	5.4 ft

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL X MC X LL X  ▲ FINES CONTENT (%)  + RQD (%) ■ REC (%) </div>
36.5	58.5	Very Stiff, Moist, Dark Olive Gray, Low Plasticity to Medium Plasticity, Lean CLAY (CL/A-6), 5Y3/2		53.5	SS-14	6	6	10		16	●
31.5				58.5	SS-15	5	7	9		16	●
26.5				63.5	SS-16	5	7	12		19	●
21.5		@SS-17: Very Dark Gray, 5Y3/2		68.5	SS-17	6	10	12		22	●
16.5				73.5	SS-18	6	9	13		22	●

## 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: P043715				County: Dillon		Boring No.: B-3		
Site Description:		S-17-58 over Beaverdam Creek					Route: S-17-58	
Eng./Geo.: W. Pitts		Boring Location: N/A		Offset: N/A		Alignment: Existing		
Elev.: 91.5 ft		Latitude: 34.3934765		Longitude: -79.23902365		Date Started: 2/28/2025		
Total Depth: 100 ft		Soil Depth: 100 ft		Core Depth: N/A ft		Date Completed: 3/1/2025		
Bore Hole Diameter (in): 3.0		Sampler Configuration		Liner Required: Y (N)		Liner Used: Y (N)		
Drill Machine: CME 45B		Drill Method: RW		Hammer Type: Automatic		Energy Ratio: 86.4%		
Core Size: N/A		Driller: D. Harris		Groundwater: TOB 4.9 ft		24HR 5.4 ft		

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 6"	2nd 6"	3rd 6"	4th 6"	N Value	<div> ● SPT N VALUE ●  PL X MC X LL X  ▲ FINES CONTENT (%)  + RQD (%) ■ REC (%) </div>
11.5				78.5	SS-19	6	8	14		22	
83.5				83.5	SS-20	11	25	33		58	
6.5		Very Dense to Dense, Wet, Gray, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 7.5R6/1									
				88.5	SS-21	9	10	22		32	
1.5											
93.5				93.5	SS-22	7	9	15		24	
-3.5		Very Stiff, Wet, Dark Olive Gray, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 5Y3/2									
				98.5	SS-23	6	9	13		22	
-8.5		Very Stiff, Moist, Very Dark Gray, Low Plasticity to Medium Plasticity, Lean CLAY (CL/A-6), 5Y3/1									
	100.0	Boring Terminated at 100.0-ft. Below Existing Pavement Surface. Boring Achieved Target Depth.									

## 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 G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT\_DATATEMPLATE.GDT 3/27/25

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

---

# **APPENDIX**

## **SECTION 3      SUBSURFACE EXPLORATION LOGS**

### **SECTION 3B      MANUAL AUGER BORING (MAB) LOGS**

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	P-1
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Driller:</b>	T. Peterson	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	102.0 ft	<b>Latitude:</b>	34.39240086	<b>Longitude:</b>	-79.24155207
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	5.3 ft	<b>Groundwater:</b>	TOB	<b>NE</b>	24 hr
<b>Backfilled:</b>	Date Completed: 2/26/2025				
<b>Dynamic Cone Penetrometer Test Procedure:</b>			Sowers and Hedges (1966)		

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	DCP-VALUE	PL	MC	LL	FINES CONTENT (%)
	0.0													
	0.3	ASPHALT ROADWAY (S-17-58) (3.3-in.)		0.3										
		EXISTING FILL												
		Medium Dense, Moist, Brownish Yellow, Non-Plastic, Fine to Medium Poorly Graded SAND (SP-SM/A-3) with Silt, 10YR6/6			DS-1	20	25+		13					
	1.3	Stiff to Firm, Moist, Light Yellowish Brown, Non-Plastic to Low Plasticity, Sandy SILT (ML/A-4), 10YR6/6		1.3	DS-2	13	25+		13					
		@DS-3: Light Yellowish Brown/Pale Brown, 10YR6/6 & 10YR6/3		2.3	DS-3	6	8	11	8					
	3.3	Stiff, Moist, Yellowish Brown, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 10YR5/4		3.3	DS-4	8	11	25+	11					
		@DS-5: Light Yellowish Brown, 10YR6/4		4.3	DS-5	11	21	25+	13					
		@DS-6: Yellowish Brown, 10YR5/4		4.8	DS-6	17	25+		13					
	5.3	Boring Terminated at 5.3-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.												

## LEGEND

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

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	P-2
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Driller:</b>	T. Peterson	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	100.4 ft	<b>Latitude:</b>	34.39263876	<b>Longitude:</b>	-79.24079675
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	5.1 ft	<b>Groundwater:</b>	TOB	<b>NE</b>	24 hr
<b>Backfilled:</b>	Date Completed: 2/26/2025				
<b>Dynamic Cone Penetrometer Test Procedure:</b>			Sowers and Hedges (1966)		

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	DCP-VALUE	PL	MC	LL	FINES CONTENT (%)
	0.0													
	0.3	ASPHALT ROADWAY (S-17-58) (3.0-in.)		0.3										
		<b>EXISTING FILL</b> Medium Dense to Loose, Moist, Yellowish Brown, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 10YR5/6  @DS-2: Pale Brown, 10YR6/3			DS-1	7	21	25	13					
				1.3										
					DS-2	6	7	9	6					
	2.3	Firm to Stiff, Moist, Pale Brown, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 10YR6/3  @DS-4: Pale Brown/Light Yellowish Brown, 10YR6/3 & 10YR6/4		2.3	DS-3	3	6	9	6					
				3.3										
					DS-4	8	13	13	9					
				4.3										
				4.8	DS-5	12	13	12	9					
	5.3	Boring Terminated at 5.3-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.			DS-6	12	13	13	9					

## 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		

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	<div style="text-align: center;">                     ● DCP-VALUE ●                        ▲ FINES CONTENT (%)                 </div>
	0.0	ASPHALT ROADWAY (S-17-58) (3.0-in.)	[Solid Black]							
	0.3	<b>EXISTING FILL</b> Medium Dense, Moist, Light Yellowish Brown, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 10YR6/4	[Diagonal Hatching]	0.3	DS-1	9	9	23	11	●
	1.3	Stiff, Moist, Yellowish Brown, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 10YR5/6	[Diagonal Hatching]	1.3	DS-2	8	17	25	12	●
	2.3	Medium Dense, Moist, Yellowish Brown/Light Brownish Gray, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 10YR5/6 & 10YR6/2  @DS-4: Brownish Yellow, 10YR6/6	[Diagonal Hatching]	2.3	DS-3	15	25+		13	●
				3.3	DS-4	11	25+		13	●
				4.3	DS-5	14	21	25+	13	●
90.5	5.3	Boring Terminated at 5.3-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.		4.8	DS-6	14	25		13	●

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

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	P-4
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Driller:</b>	T. Peterson	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	90.8 ft	<b>Latitude:</b>	34.39379464	<b>Longitude:</b>	-79.23835317
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	5.6 ft	<b>Groundwater:</b>	TOB	<b>NE</b>	24 hr
<b>Backfilled:</b>	Date Completed: 2/26/2025				
<b>Dynamic Cone Penetrometer Test Procedure:</b>			Sowers and Hedges (1966)		

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	DCP-VALUE	PL	MC	LL	FINES CONTENT (%)
	0.0	ASPHALT ROADWAY (S-17-58) (7.3-in.)												
	0.6	EXISTING FILL		0.6	DS-1	11	21	25+	13					
	1.6	Medium Dense, Moist, Light Yellowish Brown/Dark Yellowish Brown, Low Plasticity, Fine to Medium Poorly Graded SAND (SP-SC/S-2-4), 10YR6/4 & 10YR4/4		1.7	DS-2	5	7	8	6					
	2.6	Loose, Moist, Light Gray/Yellowish Brown, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6) with Clay, 10YR7/2 & 10YR6/4		2.6	DS-3	11	12	10	8					
	3.1	Loose, Moist, Light Gray, Low Plasticity, Dine to Medium Poorly Graded SAND (SP-SC/A-2-4) with Clay, 10YR7/2		3.6	DS-4	1	2	3	2					
	3.6	Firm, Moist, Light Gray, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 10YR7/2		4.6	DS-5	3	23	25+	13					
	5.1	Very Soft, Moist, Light Greenish Gray, Medium Plasticity to High Plasticity, Lean CLAY (CL/A-6), 7/4 GLEY 1		5.1	DS-6	11	17	15	11					
	5.6	@DS-5: Stiff												
		Medium Dense, Moist, Light Gray, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), GLEY 1 7/N												
		Boring Terminated at 5.6-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.												

## LEGEND

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

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	P-5
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Driller:</b>	T. Peterson	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.0 ft	<b>Latitude:</b>	34.39413001	<b>Longitude:</b>	-79.23763608
<b>Date Started:</b>	2/26/2025				
<b>Total Depth:</b>	5.4 ft	<b>Groundwater:</b>	TOB	<b>NE</b>	24 hr
<b>Date Completed:</b>	2/26/2025				
<b>Dynamic Cone Penetrometer Test Procedure:</b>	Sowers and Hedges (1966)				

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	DCP-VALUE	PL	MC	LL	FINES CONTENT (%)
	0.0	ASPHALT ROADWAY (S-17-58) (4.5-in.)												
	0.4	Stiff, Moist, Brownish Yellow, Non-Plastic to Low Plasticity, Sandy SILT (ML/A-4), 10YR6/6		0.4	DS-1	12	15	21	11					
	1.4	Stiff, Moist, Yellowish Brown, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 10YR5/6		1.4	DS-2	8	12	25	12					
	2.4	Loose, Moist, Light Gray/Very Dark Gray, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 20YR7/1 & 2.5Y4/1		2.4	DS-3	5	8	13	8					
	3.4	@DS-4: Wet, with Trace Organics		3.4	DS-4	3	6	8	6					
	4.4	Loose, Wet, Very Dark Gray, Non-Plastic, Fine to Medium Poorly Graded SAND (SP-SM/A-4) with Silt & Trace Organics, 10YR4/1		4.4	DS-5	8	14	12	9					
	4.9			4.9	DS-6	6	7	7	6					
	5.4	Boring Terminated at 5.4-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.												

## LEGEND

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

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715	<b>County:</b>	Dillon	<b>Boring No.:</b>	P-6
<b>Site Description:</b>	S-17-58 over Beaverdam Creek			<b>Route:</b>	S-17-58
<b>Driller:</b>	T. Peterson	<b>Boring Location:</b>	N/A	<b>Offset:</b>	N/A
<b>Elev.:</b>	91.0 ft	<b>Latitude:</b>	34.39455862	<b>Longitude:</b>	-79.23701637
<b>Total Depth:</b>	5.2 ft	<b>Groundwater:</b>	TOB	<b>Date Started:</b>	2/26/2025
<b>Dynamic Cone Penetrometer Test Procedure:</b>	Sowers and Hedges (1966)				

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	DCP-VALUE ●	PL X	MC ○	LL X	FINES CONTENT (%) ▲
	0.0	ASPHALT ROADWAY (S-17-58) (2.5-in.)												
	0.3	Medium Dense, Moist, Yellowish Brown, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 10YR6/6		0.3	DS-1	21	25+		13	●				
	1.3	Medium Dense, Moist, Gray, Low Plasticity, Fine to Medium Poorly Graded SAND (SP-SC/A-2-4) with Clay, 2.5Y6/1		1.3	DS-2	20	25+		13	●				
	2.3	Loose, Moist, Gray, Low Plasticity to Medium Plasticity, Clayey Fine to Medium SAND (SC/A-2-6), 2.5Y6/1		2.3	DS-3	4	6	7	6	●				
	3.3	Firm to Stiff, Moist, Gray, Low Plasticity to Medium Plasticity, Sandy Lean CLAY (CL/A-6), 2.5Y6/1		3.3	DS-4	6	6	11	7	●				
	4.3			4.3	DS-5	7	13	18	11	●				
	4.8			4.8	DS-6	9	9	14	9	●				
	5.3	Boring Terminated at 5.3-ft. Below Existing Roadway Surface. Boring Achieved Target Depth.												

## 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		



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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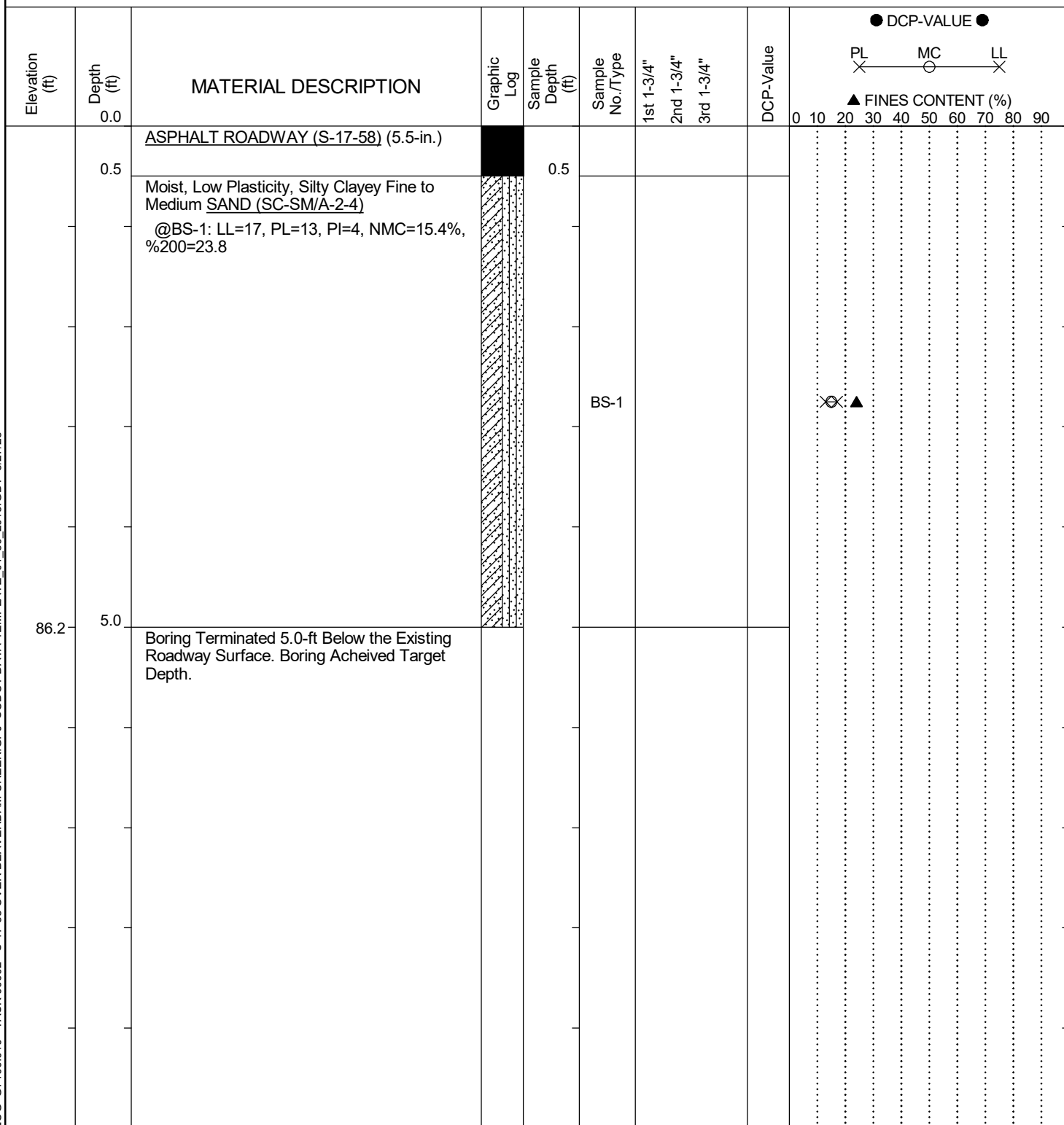
# **APPENDIX**

## **SECTION 3      SUBSURFACE EXPLORATION LOGS**

### **SECTION 3C      BULK SOIL SAMPLE (BS) LOGS**

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715			<b>County:</b>	Dillon			<b>Boring No.:</b>	BS-1		
<b>Site Description:</b>	S-17-58 over Beaverdam Creek							<b>Route:</b>	S-17-58		
<b>Driller:</b>	T. Peterson		<b>Boring Location:</b>	N/A		<b>Offset:</b>	N/A		<b>Alignment:</b>	Existing	
<b>Elev.:</b>	91.2 ft		<b>Latitude:</b>	34.39342985		<b>Longitude:</b>	-79.2389907		<b>Date Started:</b>	2/26/2025	
<b>Total Depth:</b>	5 ft		<b>Groundwater:</b>	TOB		<b>NE</b>	24 hr		<b>Date Completed:</b>	2/26/2025	
<b>Dynamic Cone Penetrometer Test Procedure:</b>						ASTM D6951					



## LEGEND

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

# SCDOT Manual Auger Log

<b>Project ID:</b>	P043715			<b>County:</b>	Dillon			<b>Boring No.:</b>	BS-2		
<b>Site Description:</b>	S-17-58 over Beaverdam Creek							<b>Route:</b>	S-17-58		
<b>Driller:</b>	T. Peterson		<b>Boring Location:</b>	N/A		<b>Offset:</b>	N/A		<b>Alignment:</b>	Existing	
<b>Elev.:</b>	N/A ft		<b>Latitude:</b>	0		<b>Longitude:</b>	0		<b>Date Started:</b>	2/26/2025	
<b>Total Depth:</b>	5 ft		<b>Groundwater:</b>	TOB		<b>NE</b>	24 hr		<b>Date Completed:</b>	2/26/2025	
<b>Dynamic Cone Penetrometer Test Procedure:</b>				ASTM D6951							

Elevation (ft)	Depth (ft)	MATERIAL DESCRIPTION	Graphic Log	Sample Depth (ft)	Sample No./Type	1st 1-3/4"	2nd 1-3/4"	3rd 1-3/4"	DCP-Value	<div> <div>● DCP-VALUE ●</div> <div> <div>PL</div> <div>MC</div> <div>LL</div> </div> <div>▲ FINES CONTENT (%)</div> </div>
	0.0	Moist, Medium Plasticity, Clayey Fine to Medium <u>SAND (SC/A-6)</u> @BS-2: LL=28, PL=12, PI=16, NMC=15.6%, %200=36.1 <i>Composite Bulk Soil Sample BS-2 was Formed Using the Upper 5.0-ft. of Auger Cuttings Encountered within Soil Test Borings P-1 Through P-6.</i>		0.0						<div> <div>×</div> <div>○</div> <div>×</div> </div> <div>▲</div>
	5.0	Boring Terminated 5.0-ft Below the Existing Roadway Surface. Boring Acheived Target Depth.			BS-2					

## 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	

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 4**

## **LABORATORY TEST RESULTS**

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 4      LABORATORY TEST RESULTS**

### **SECTION 4A      SPLIT SPOON SAMPLES (SS)**



# SUMMARY OF LABORATORY RESULTS

PAGE 1 OF 1

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Classification	Water Content (%)	Dry Density (pcf)	Saturation (%)	Void Ratio
B-1	6.0	18	10	8	9.51	53	CL	23.3			
B-1	10.0	17	14	3	9.51	24	SM	23.3			
B-1	15.0	NP	NP	NP	9.51	9	SP-SM	23.3			
B-1	25.0	NP	NP	NP	4.76	6	SP-SM	25.4			
B-1	30.0	NP	NP	NP	4.76	6	SP-SM	27.2			
B-1	35.0	NP	NP	NP	4.76	6	SP-SM	24.7			
B-2	24.9	NP	NP	NP	4.76	4	SP	24.2			
B-2	30.9	NP	NP	NP	19	4	SP	20.1			
B-2	40.9	NP	NP	NP	4.76	2	SP	19.4			
B-2	45.9	43	32	11	2	87	ML	47.1			
B-3	6.0	NP	NP	NP	19	7	SP-SM	24.7			
B-3	20.0	NP	NP	NP	19	5	SP	23.9			
B-3	25.0	NP	NP	NP	4.76	5	SP	25.6			
B-3	30.0	NP	NP	NP	4.76	4	SP	27.7			
B-3	35.0	NP	NP	NP	4.76	4	SP	24.4			



# INDEX PROPERTIES VERSUS DEPTH

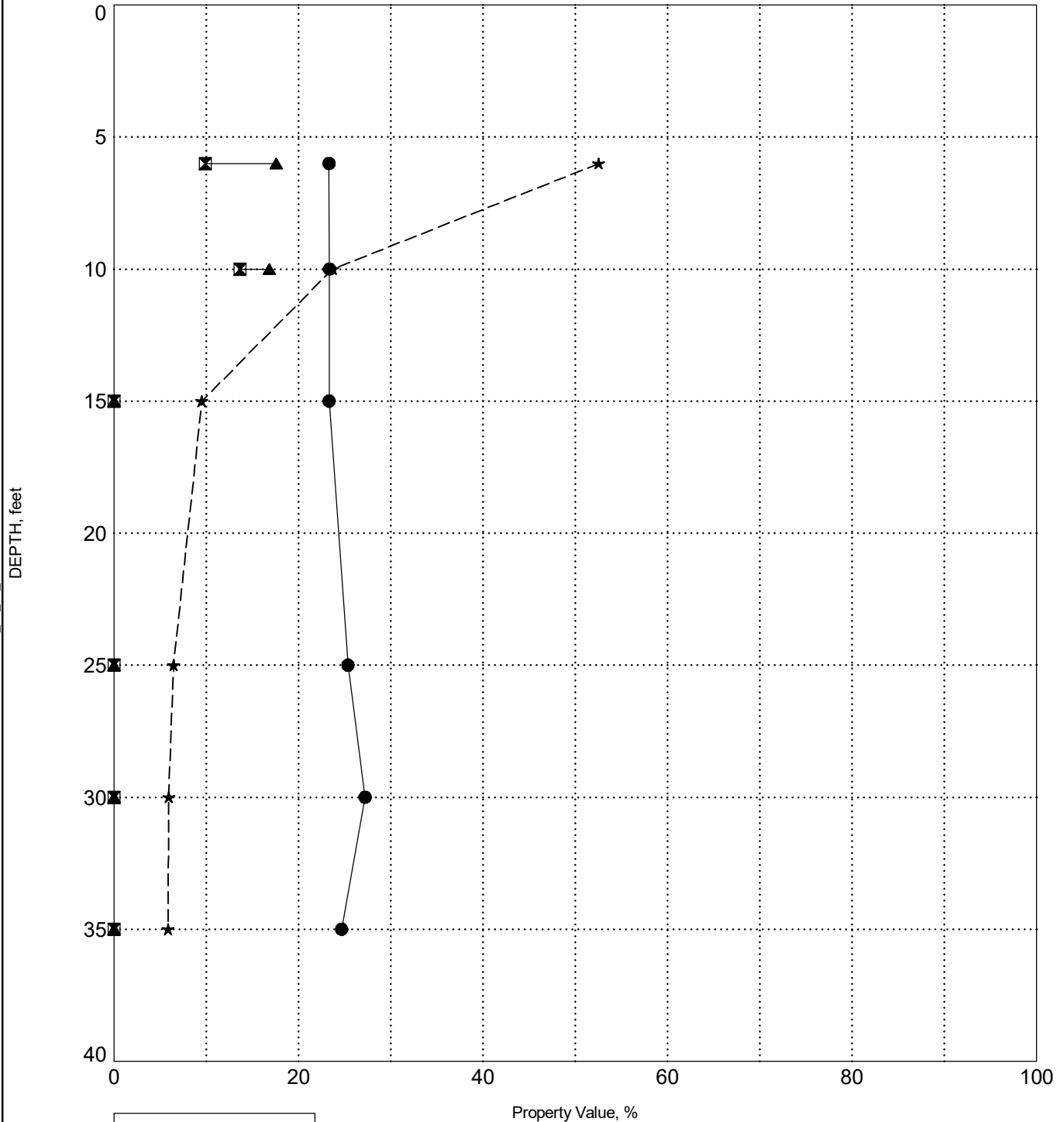
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

SURFACE ELEVATION: 91.7

## BORING B-1



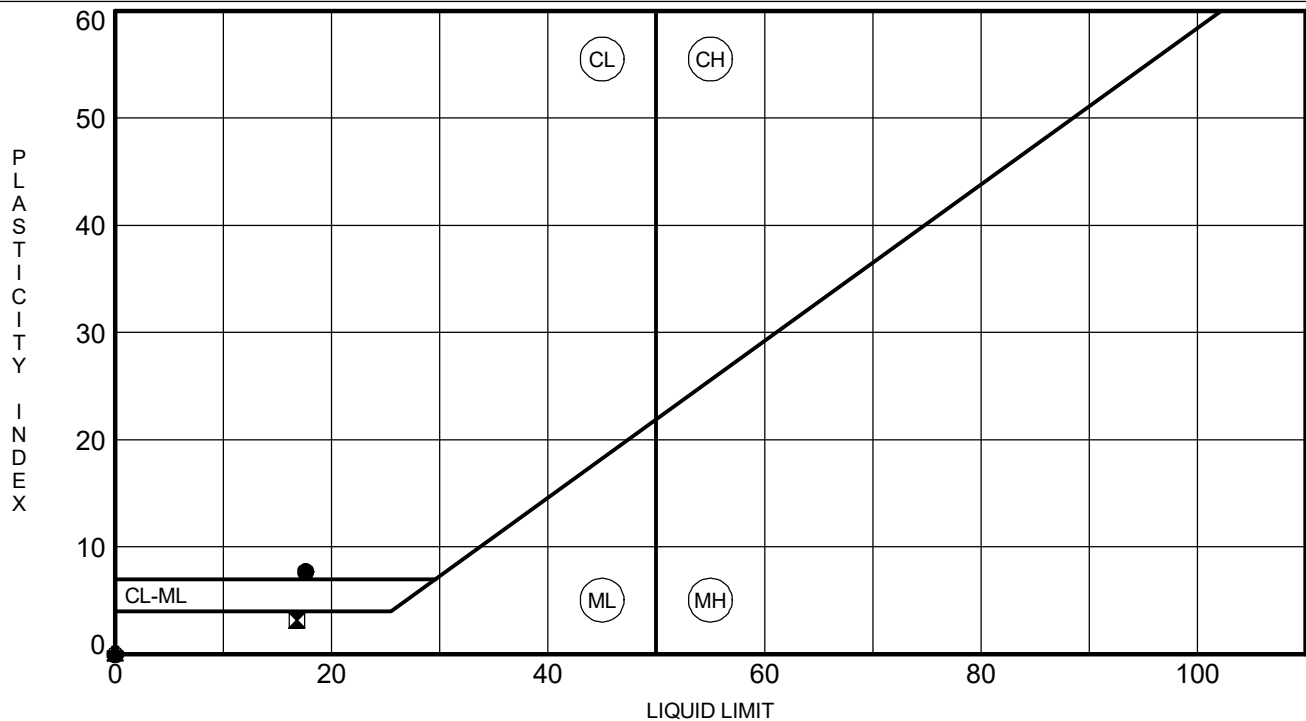
LEGEND	
●	Water Content
☒	Plastic Limit
▲	Liquid Limit
★	Fines

## ATTERBERG LIMITS' RESULTS

**PROJECT ID** P043715

**PROJECT NAME** S-17-58 over Beaverdam Creek

**PROJECT COUNTY** Dillon

[illegible]



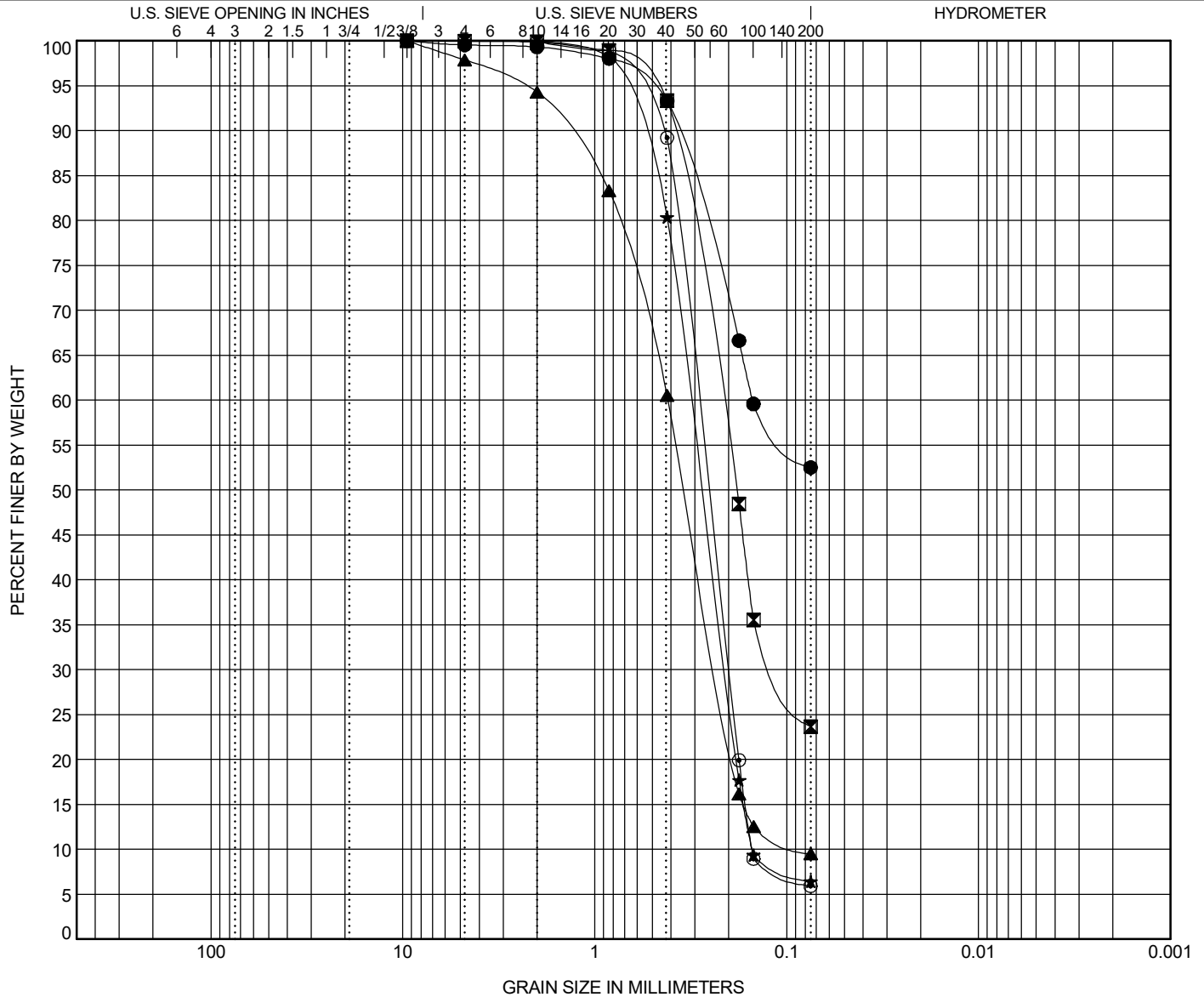


# GRAIN SIZE DISTRIBUTION

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification					LL	PL	PI	Cc	Cu
● B-1	6.0	SANDY LEAN CLAY (CL/A-4)					18	10	8		
☒ B-1	10.0	SILTY SAND (SM/A-2-4)					17	14	3		
▲ B-1	15.0	POORLY GRADED SAND with SILT (SP-SM/A-3)					NP	NP	NP	1.54	4.95
★ B-1	25.0	POORLY GRADED SAND with SILT (SP-SM/A-3)					NP	NP	NP	0.92	2.10
⊙ B-1	30.0	POORLY GRADED SAND with SILT (SP-SM/A-3)					NP	NP	NP	0.91	1.93
BOREHOLE	DEPTH	D90	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● B-1	6.0	0.377	0.151			0.5	47.0	52.5			
☒ B-1	10.0	0.394	0.221	0.108		0.0	76.3	23.7			
▲ B-1	15.0	1.422	0.416	0.232	0.084	2.1	88.4	9.5			
★ B-1	25.0	0.609	0.317	0.21	0.151	0.0	93.6	6.4			
⊙ B-1	30.0	0.444	0.292	0.201	0.151	0.0	94.1	5.9			

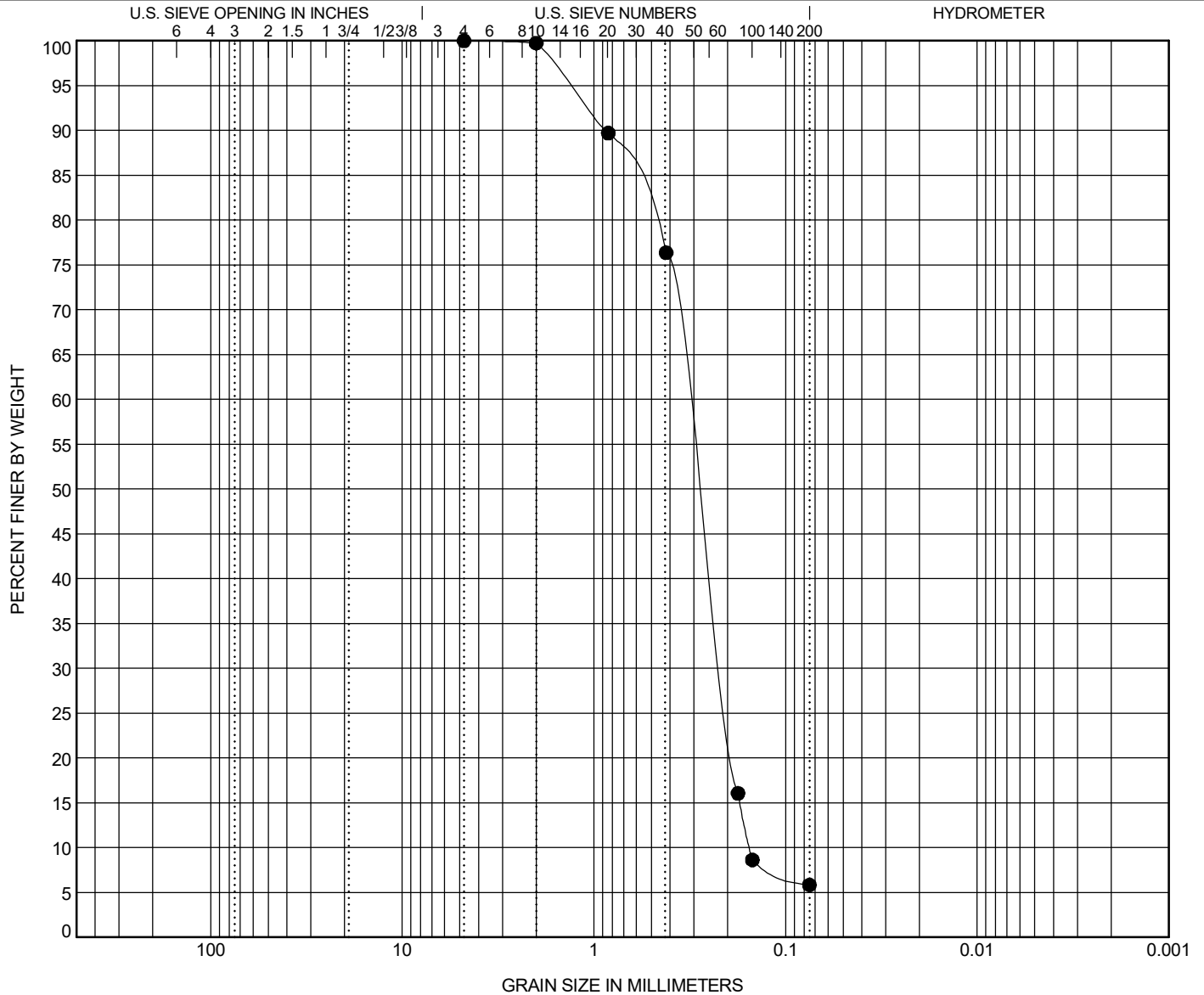


# GRAIN SIZE DISTRIBUTION

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



**F&ME CONSULTANTS, INC**  
**211 Business Park Blvd.**  
**Columbia, SC 29203**

**MOISTURE CONTENT DETERMINATION**  
**(AASHTO T265)**

<b>PROJECT:</b>	S-17-58 over Beaverdam Creek	<b>SCDOT PROJECT ID:</b>	P043715
<b>SAMPLE NUMBER:</b>	25-0632	<b>DATE REQUESTED:</b>	3/5/2025
<b>DESCRIPTION OF SOIL:</b>	VARIOUS		
<b>TESTED BY:</b>	AC/KB	<b>DATE OF TESTING:</b>	3/6/2025
<b>WEIGHED BY:</b>	AAB	<b>DATE OF WEIGHING:</b>	3/7/2025

BORING NO.	B-1	B-1	B-1	B-1	B-1
SAMPLE NO.	SS-3	SS-5	SS-6	SS-8	SS-9
SAMPLE DEPTH	4.0 - 6.0	8.0 - 10.0	13.5 - 15.0	23.5 - 25.0	28.5 - 30.0
WATER CONTENT, W%	23.3	23.3	23.3	25.4	27.2

BORING NO.	B-1				
SAMPLE NO.	SS-10				
SAMPLE DEPTH	33.5 - 35.0				
WATER CONTENT, W%	24.7				

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					



# INDEX PROPERTIES VERSUS DEPTH

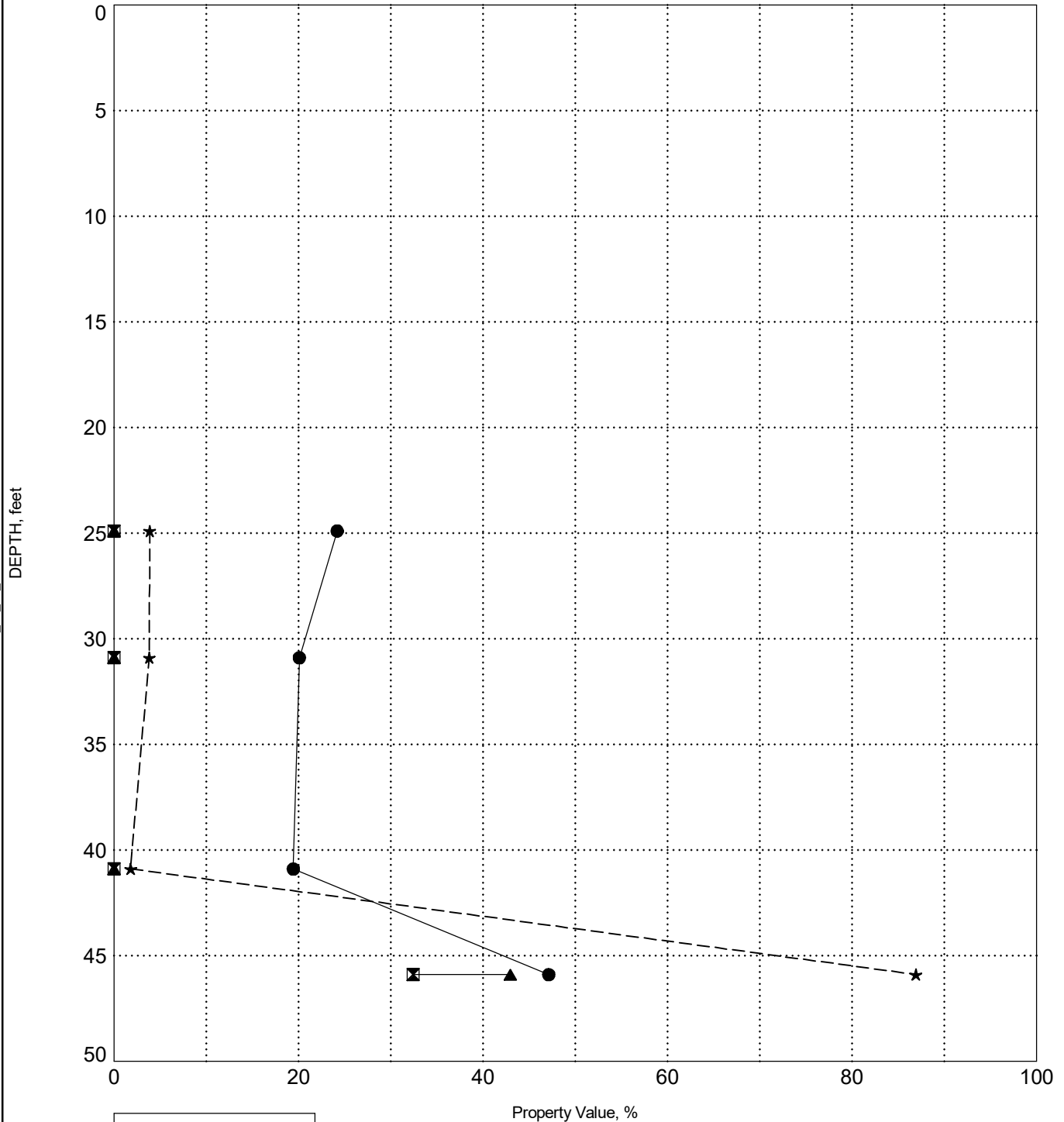
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

SURFACE ELEVATION: 91.6

## BORING B-2



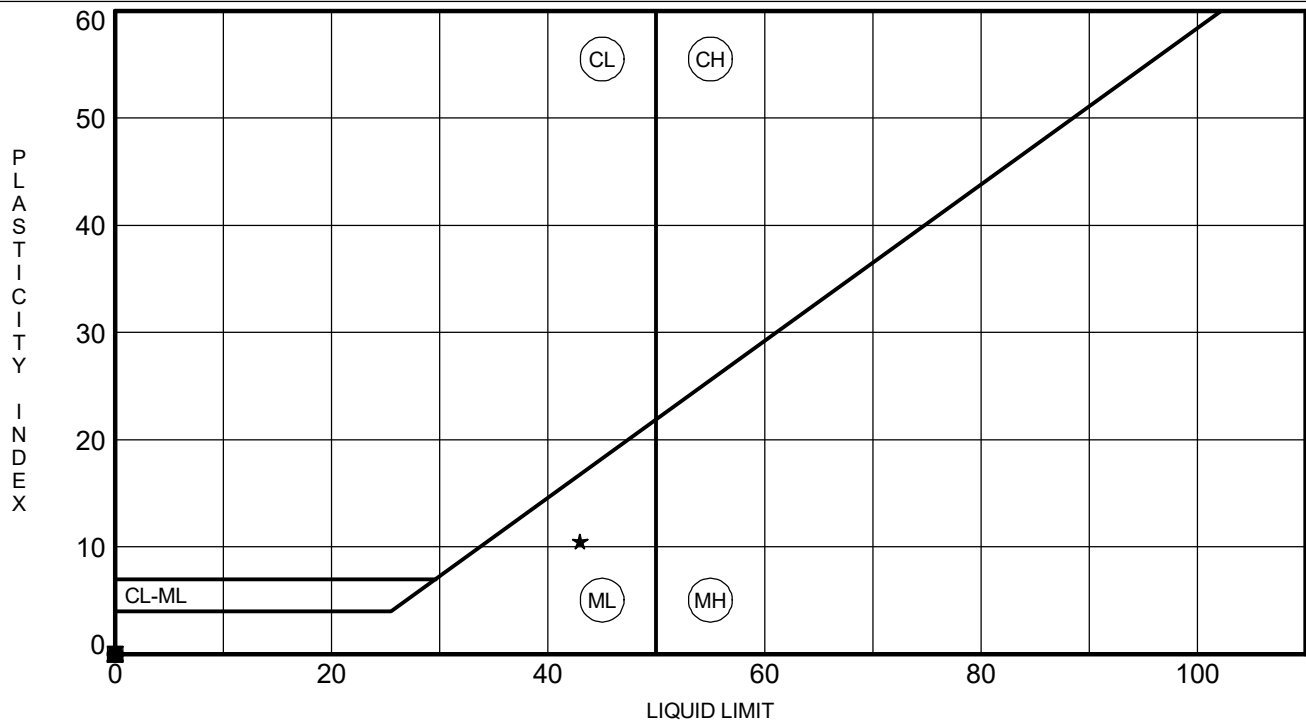
LEGEND	
●	Water Content
⊠	Plastic Limit
▲	Liquid Limit
★	Fines

## ATTERBERG LIMITS' RESULTS

**PROJECT ID** P043715

**PROJECT NAME** S-17-58 over Beaverdam Creek

**PROJECT COUNTY** Dillon

[illegible]

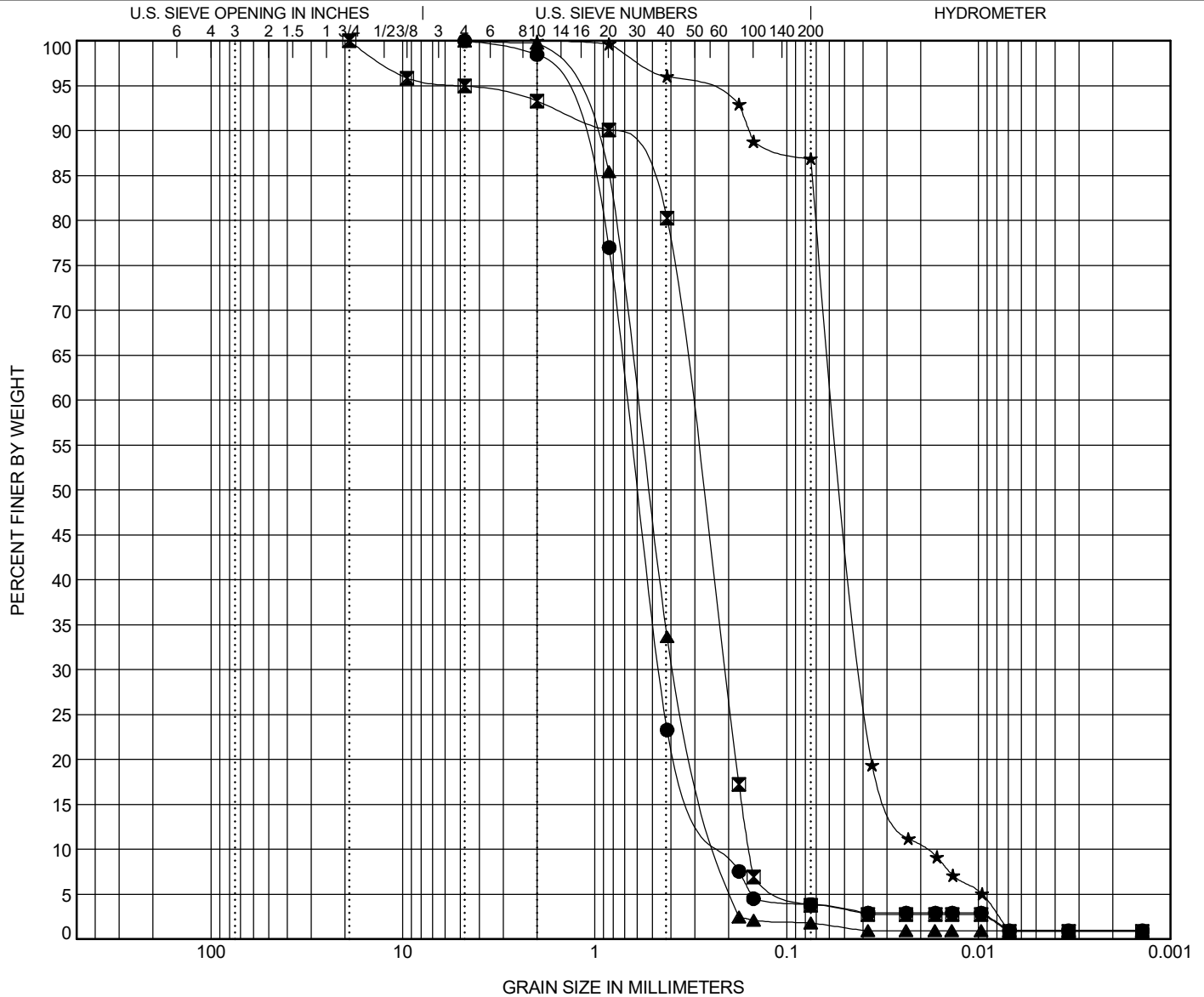


# GRAIN SIZE DISTRIBUTION

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● B-2	24.9	POORLY GRADED SAND (SP/A-1-b)	NP	NP	NP	1.54	3.33
☒ B-2	30.9	POORLY GRADED SAND (SP/A-3)	NP	NP	NP	0.89	2.03
▲ B-2	40.9	POORLY GRADED SAND (SP/A-1-b)	NP	NP	NP	1.10	2.74
★ B-2	45.9	SILT (ML/A-7-5)	43	32	11	1.53	2.95

BOREHOLE	DEPTH	D90	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-2	24.9	1.421	0.675	0.458	0.202	0.0	96.1	2.9	0.9
☒ B-2	30.9	0.834	0.318	0.211	0.157	5.0	91.2	2.9	0.9
▲ B-2	40.9	1.107	0.598	0.379	0.218	0.0	98.2	0.8	1.0
★ B-2	45.9	0.157	0.056	0.04	0.019	0.0	13.1	85.9	1.0

**F&ME CONSULTANTS, INC**  
**211 Business Park Blvd.**  
**Columbia, SC 29203**

**MOISTURE CONTENT DETERMINATION**  
**(AASHTO T265)**

<b>PROJECT:</b>	S-17-58 over Beaverdam Creek	<b>SCDOT PROJECT ID:</b>	P043715
<b>SAMPLE NUMBER:</b>	25-0633	<b>DATE REQUESTED:</b>	3/5/2025
<b>DESCRIPTION OF SOIL:</b>	VARIOUS		
<b>TESTED BY:</b>	AC/KB	<b>DATE OF TESTING:</b>	3/6/2025
<b>WEIGHED BY:</b>	AAB	<b>DATE OF WEIGHING:</b>	3/7/2025

BORING NO.	B-2	B-2	B-2	B-2	
SAMPLE NO.	SS-2	SS-5	SS-7	SS-8	
SAMPLE DEPTH	22.9 - 24.9	28.9 - 30.9	39.4 - 40.9	44.4 - 45.9	
WATER CONTENT, W%	24.2	20.1	19.4	47.1	

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					



# INDEX PROPERTIES VERSUS DEPTH

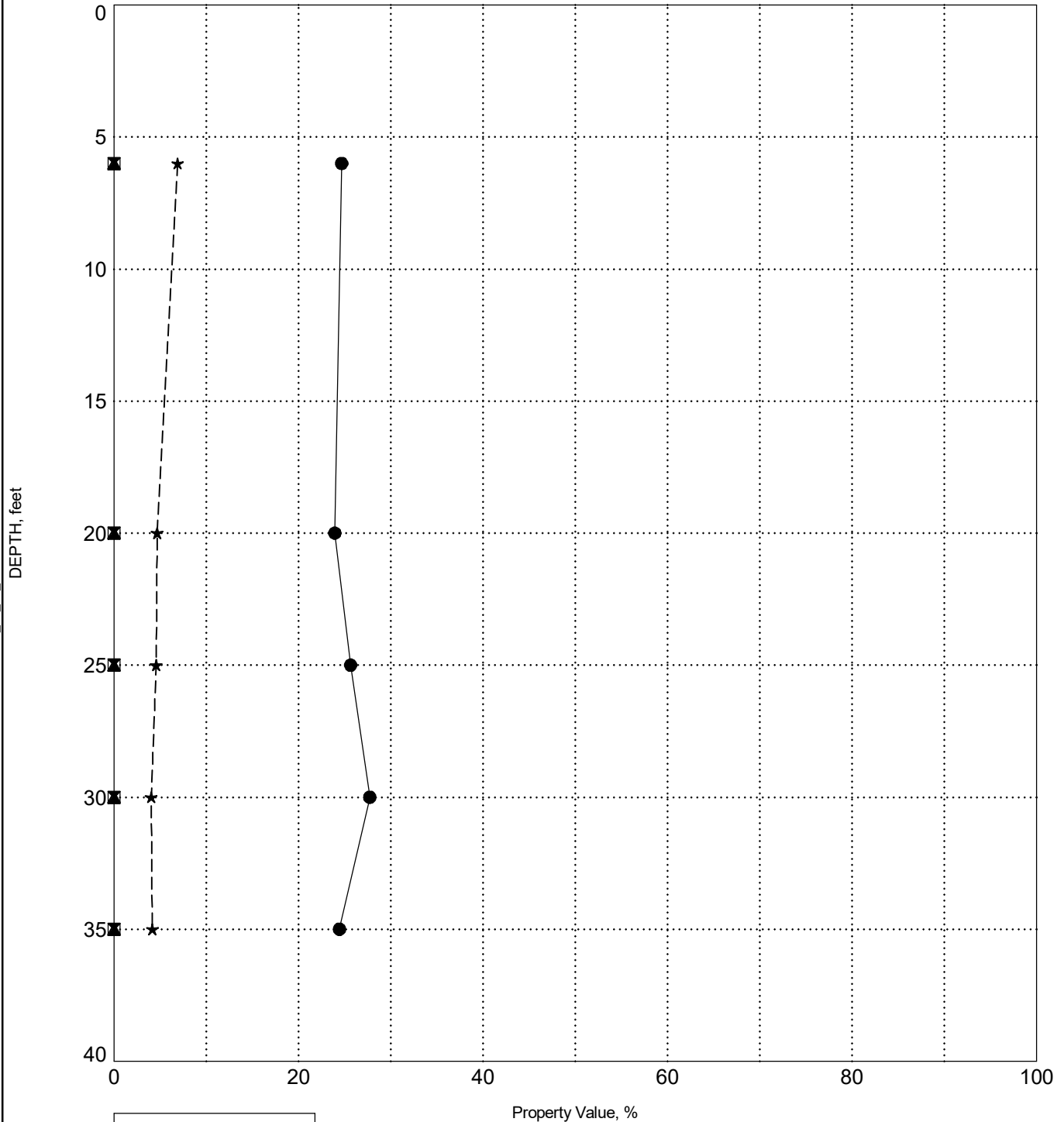
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

SURFACE ELEVATION: 91.5

## BORING B-3



LEGEND	
●	Water Content
■	Plastic Limit
▲	Liquid Limit
★	Fines

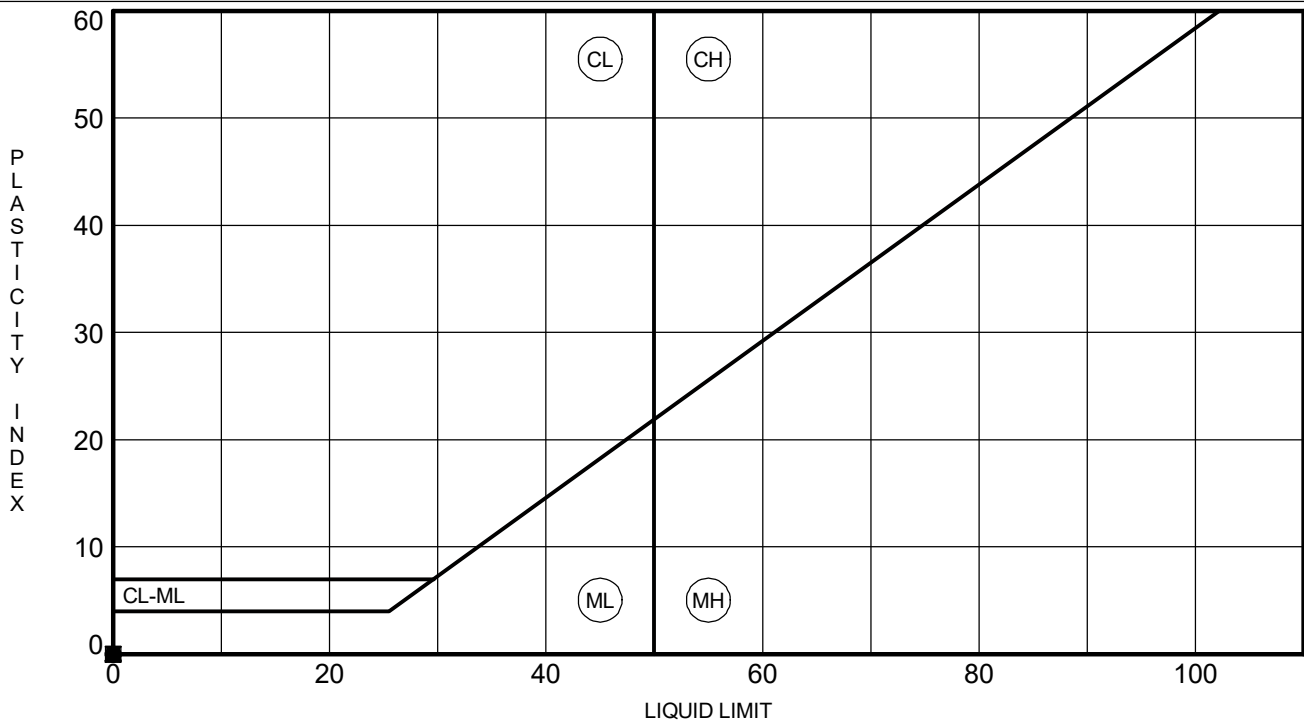


## ATTERBERG LIMITS' RESULTS

**PROJECT ID** P043715

**PROJECT NAME** S-17-58 over Beaverdam Creek

**PROJECT COUNTY** Dillon

[illegible]

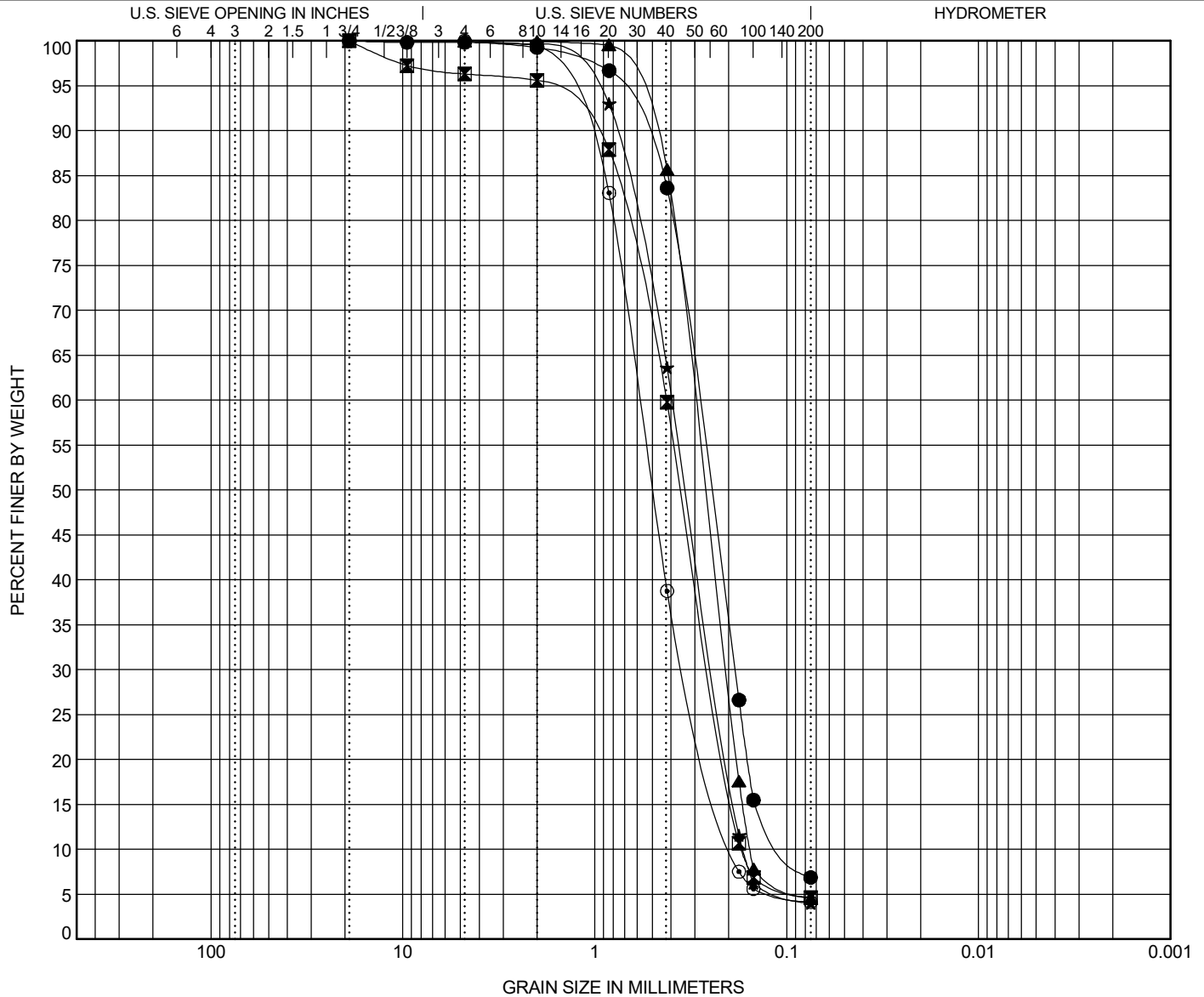


# GRAIN SIZE DISTRIBUTION

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification					LL	PL	PI	Cc	Cu
● B-3	6.0	POORLY GRADED SAND with SILT (SP-SM/A-3)					NP	NP	NP	1.23	3.05
☒ B-3	20.0	POORLY GRADED SAND (SP/A-3)					NP	NP	NP	0.85	2.46
▲ B-3	25.0	POORLY GRADED SAND (SP/A-3)					NP	NP	NP	0.91	1.96
★ B-3	30.0	POORLY GRADED SAND (SP/A-3)					NP	NP	NP	0.87	2.35
⊙ B-3	35.0	POORLY GRADED SAND (SP/A-1-b)					NP	NP	NP	0.98	3.09
BOREHOLE	DEPTH	D90	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● B-3	6.0	0.589	0.294	0.186	0.096	0.2	93.0	6.9			
☒ B-3	20.0	1.062	0.422	0.249	0.172	3.7	91.7	4.7			
▲ B-3	25.0	0.521	0.303	0.207	0.155	0.0	95.4	4.6			
★ B-3	30.0	0.783	0.395	0.24	0.168	0.0	96.0	4.0			
⊙ B-3	35.0	1.21	0.586	0.33	0.19	0.0	95.9	4.1			

GRAIN SIZE G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT DATA TEMPLATE\_01\_30\_2015.GDT 3/10/25

**F&ME CONSULTANTS, INC**  
**211 Business Park Blvd.**  
**Columbia, SC 29203**

**MOISTURE CONTENT DETERMINATION**  
**(AASHTO T265)**

<b>PROJECT:</b>	S-17-58 over Beaverdam Creek	<b>SCDOT PROJECT ID:</b>	P043715
<b>SAMPLE NUMBER:</b>	25-0644	<b>DATE REQUESTED:</b>	3/5/2025
<b>DESCRIPTION OF SOIL:</b>	VARIOUS		
<b>TESTED BY:</b>	AC/KB	<b>DATE OF TESTING:</b>	3/6/2025
<b>WEIGHED BY:</b>	AAB	<b>DATE OF WEIGHING:</b>	3/7/2025

BORING NO.	B-3	B-3	B-3	B-3	B-3
SAMPLE NO.	SS-3	SS-7	SS-8	SS-9	SS-10
SAMPLE DEPTH	4.0 - 6.0	18.5 - 20.0	23.5 - 25.0	28.5 - 30.0	33.5 - 35.0
WATER CONTENT, W%	24.7	23.9	25.6	27.7	24.4

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

---

# **APPENDIX**

## **SECTION 4      LABORATORY TEST RESULTS**

### **SECTION 4B      BULK SOIL SAMPLES (BS)**



## SUMMARY OF LABORATORY RESULTS

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

Boring No.	Sample Depth (ft.)	Liquid Limit	Plastic Limit	Plasticity Index	%<#200 Sieve	Soil Classification	Moisture Content (%)	Max Dry Density (PCF)	Optimum Moisture Content (%)	C (psi)	$\phi$ (Degrees)	C' (psi)	$\phi'$ (Degrees)
BS-1	0.5 – 5.0	17	13	4	23.8	SC-SM	15.4	124.8	9.8	6.4	10.4	1.1	34.1
BS-2	0.0 – 5.0	28	12	16	36.1	SC	15.6	121.7	11.5	--	--	--	--



# INDEX PROPERTIES VERSUS DEPTH

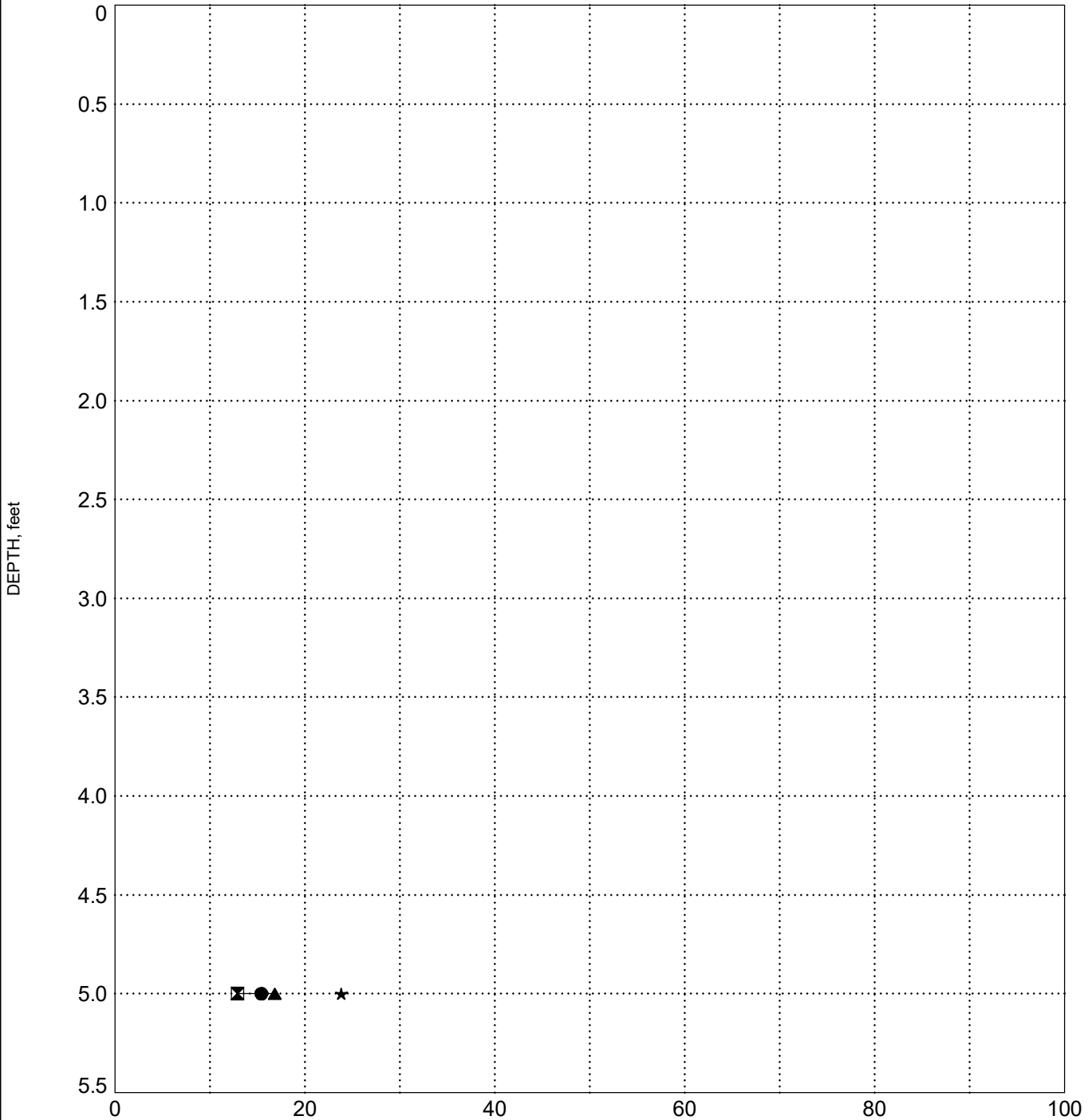
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

SURFACE ELEVATION: 91.2

## BORING BS-1



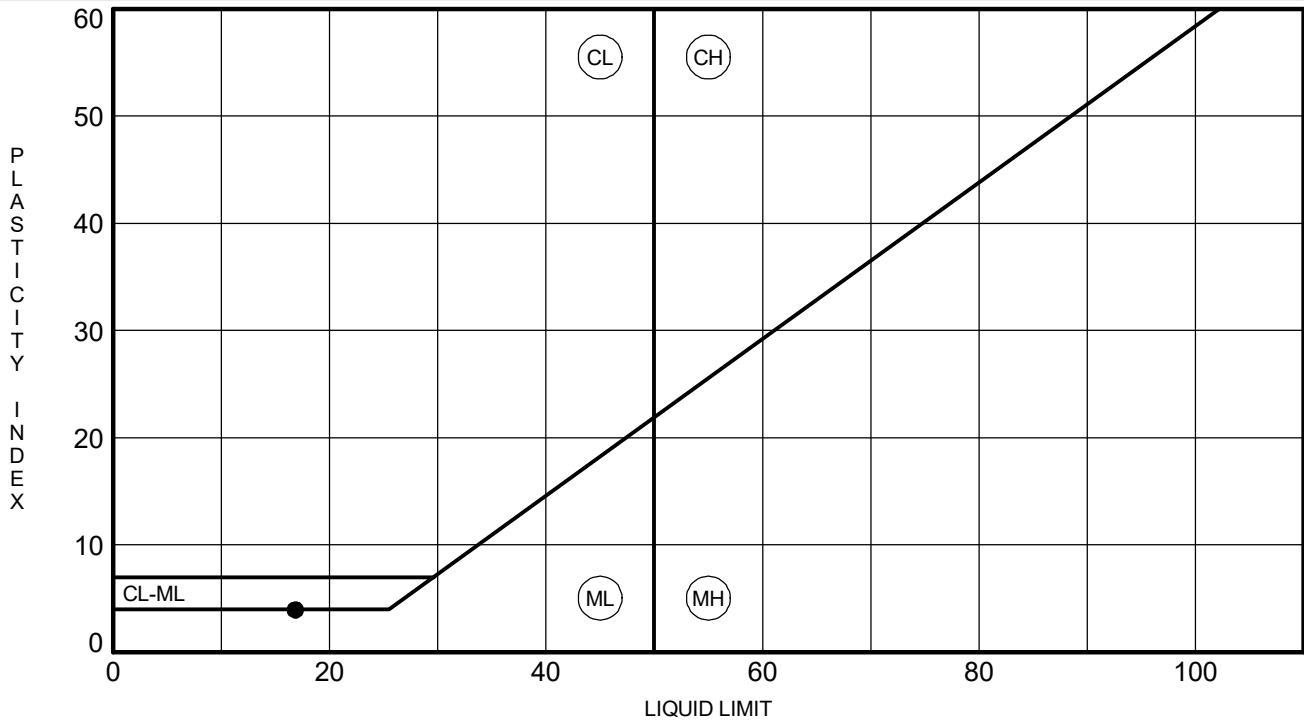
LEGEND	
●	Water Content
☒	Plastic Limit
▲	Liquid Limit
★	Fines

## ATTERBERG LIMITS' RESULTS

**PROJECT ID** P043715

**PROJECT NAME** S-17-58 over Beaverdam Creek

**PROJECT COUNTY** Dillon

[illegible]

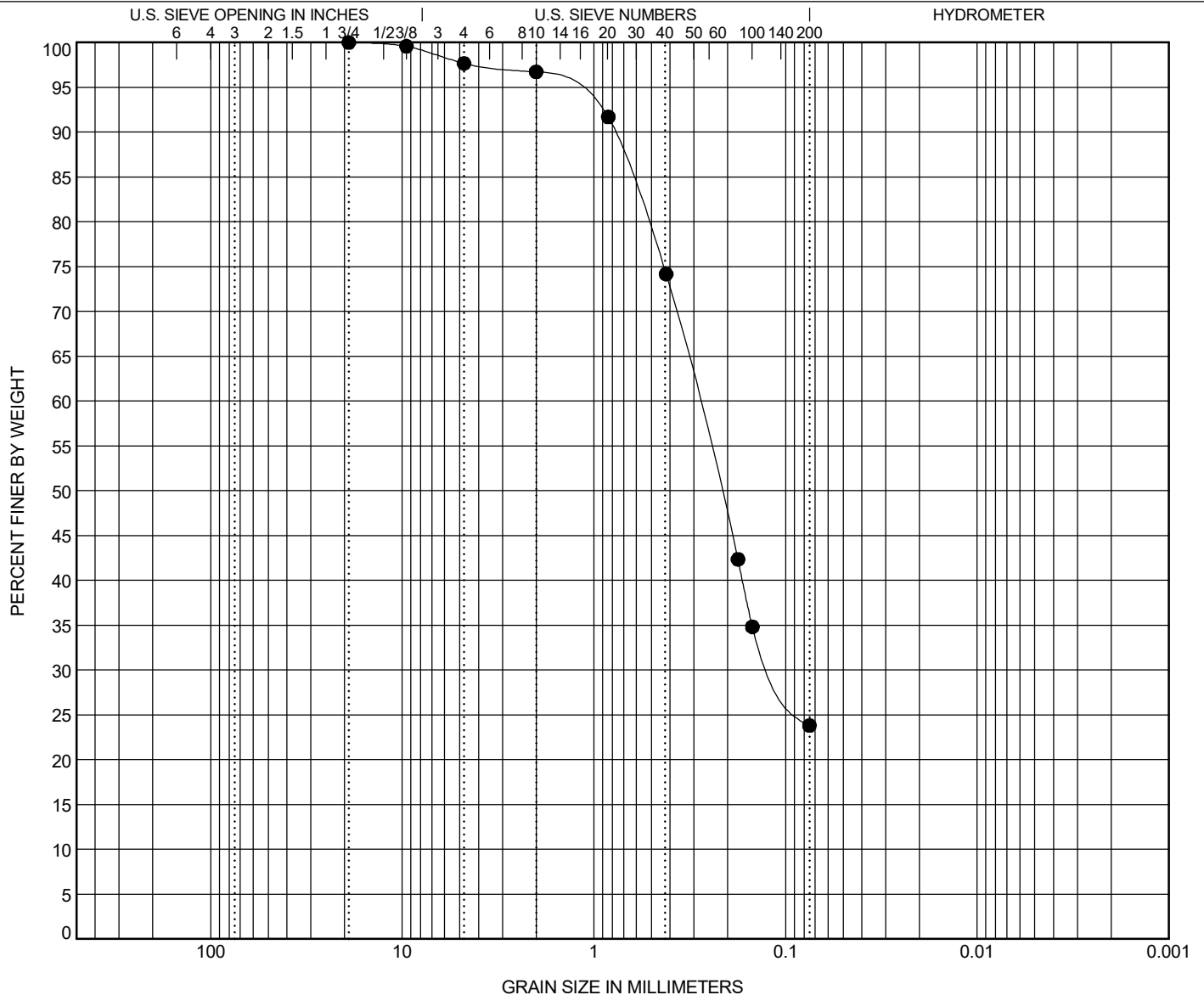


# GRAIN SIZE DISTRIBUTION

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification					LL	PL	PI	Cc	Cu
● BS-1	5.0	SILTY, CLAYEY SAND (SC-SM/A-2-4)					17	13	4		
BOREHOLE	DEPTH	D90	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● BS-1	5.0	0.786	0.286	0.11		2.3	73.8	23.8			

GRAIN SIZE G7100.010 - TASK 00002 - S-17-58 OVER BEAVERDAM CREEK.GPJ SCDOT DATA TEMPLATE\_01\_30\_2015.GDT 3/4/25



**F&ME CONSULTANTS, INC**  
**211 Business Park Blvd.**  
**Columbia, SC 29203**

**MOISTURE CONTENT DETERMINATION**  
**(AASHTO T265)**

<b>PROJECT:</b>	S-17-58 over Beaverdam Creek	<b>SCDOT PROJECT ID:</b>	P043715
<b>SAMPLE NUMBER:</b>	25-0589	<b>DATE REQUESTED:</b>	2/26/2025
<b>DESCRIPTION OF SOIL:</b>	SILTY, CLAYEY SAND (SC-SM/A-2-4)		
<b>TESTED BY:</b>	AG & AB	<b>DATE OF TESTING:</b>	2/27/2025
<b>WEIGHED BY:</b>	TE	<b>DATE OF WEIGHING:</b>	2/28/2025

BORING NO.	BS-1				
SAMPLE NO.	--				
SAMPLE DEPTH	0.0 - 5.0				
WATER CONTENT, W%	15.4				

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

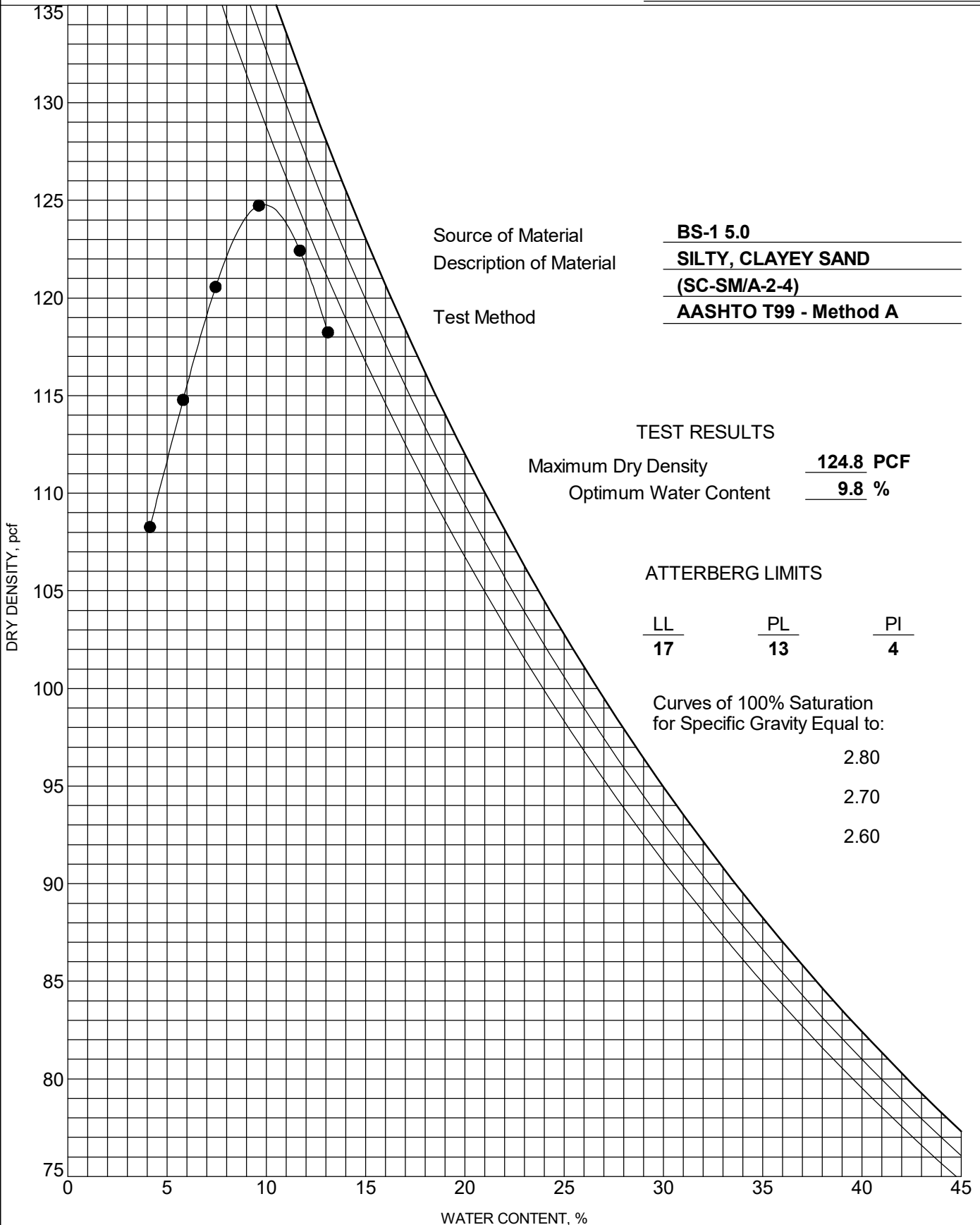


# MOISTURE-DENSITY RELATIONSHIP

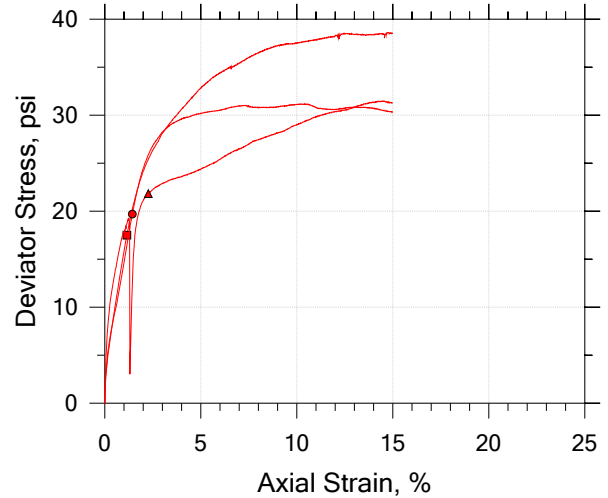
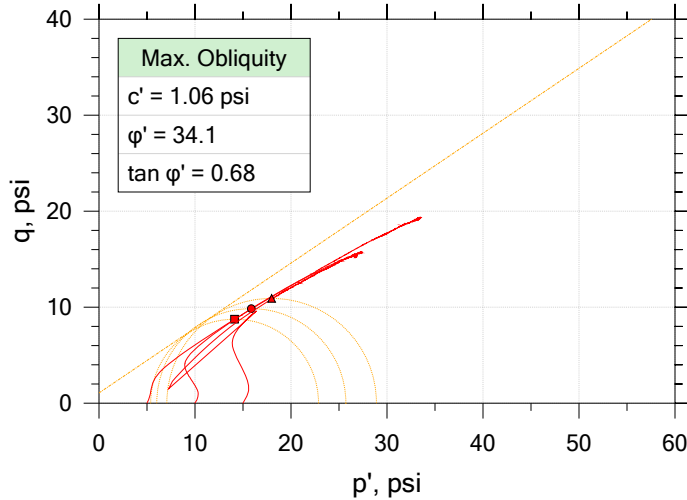
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon




## Consolidated Undrained by AASHTO T297

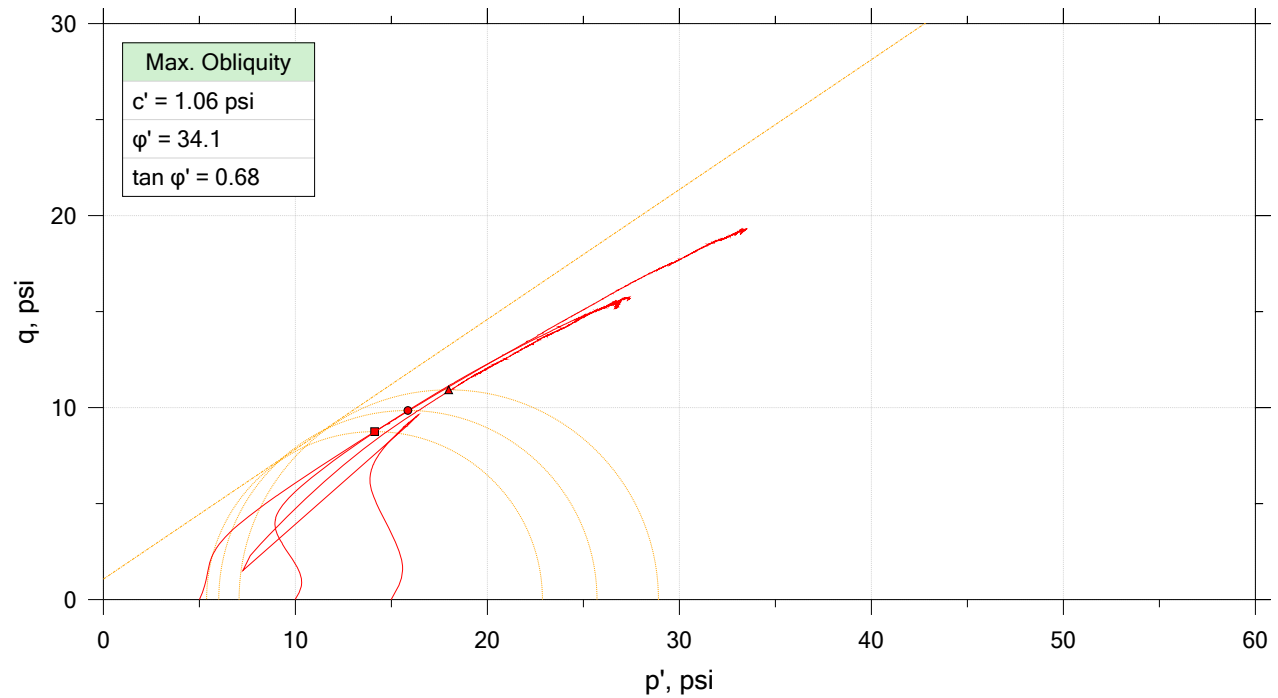
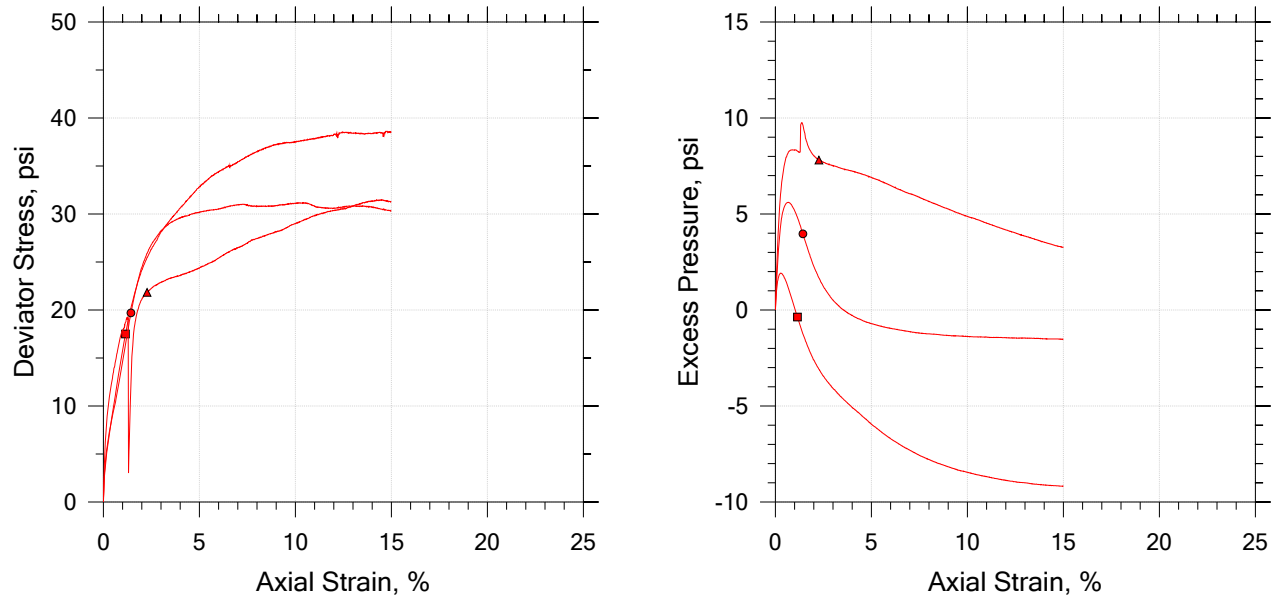


Symbol	■	●	▲	
Sample ID	25-0589	25-0589	25-0589	
Depth	0.0' - 5.0'	0.0' - 5.0'	0.0' - 5.0'	
Test Number	A	B	C	
Initial				
Height, in	6.000	6.000	6.000	
Diameter, in	2.800	2.800	2.800	
Moisture Content (from Cuttings), %	9.6	9.6	9.3	
Dry Density, pcf	119.	119.	119.	
Saturation (Wet Method), %	62.8	62.8	61.5	
Void Ratio	0.409	0.408	0.405	
Final				
Moisture Content, %	14.8	14.4	14.4	
Dry Density, pcf	120.	121.	121.	
Cross-Sectional Area (Method A), in <sup>2</sup>	6.117	6.094	6.096	
Saturation, %	100.0	100.0	100.0	
Void Ratio	0.395	0.387	0.385	
Back Pressure, psi	101.0	101.0	101.0	
Vertical Effective Consolidation Stress, psi	4.994	9.971	14.95	
Horizontal Effective Consolidation Stress, psi	5.005	9.982	14.99	
Vertical Strain after Consolidation, %	0.08581	0.2127	0.3075	
Volumetric Strain after Consolidation, %	0.3007	0.6418	1.066	
Time to 50% Consolidation, min	0.3000	0.2000	0.2200	
Shear Strength, psi	8.748	9.849	10.92	
Strain at Failure, %	1.15	1.43	2.27	
Strain Rate, %/min	0.0005000	0.0005000	0.0005000	
Deviator Stress at Failure, psi	17.50	19.70	21.84	
Effective Minor Principal Stress at Failure, psi	5.372	6.008	7.063	
Effective Major Principal Stress at Failure, psi	22.87	25.71	28.90	
B-Value	0.94	0.87	0.93	


Notes:  
 - Before Shear Saturation set to 100% for phase calculation.  
 - Moisture Content determined by ASTM D2216.  
 - Atterberg Limits determined by ASTM D4318.  
 - Deviator Stress includes membrane correction.  
 - Values for  $c$  and  $\phi$  determined from best-fit straight line for the specific test conditions.  
 Actual strength parameters may vary and should be determined by an engineer for site conditions.

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		

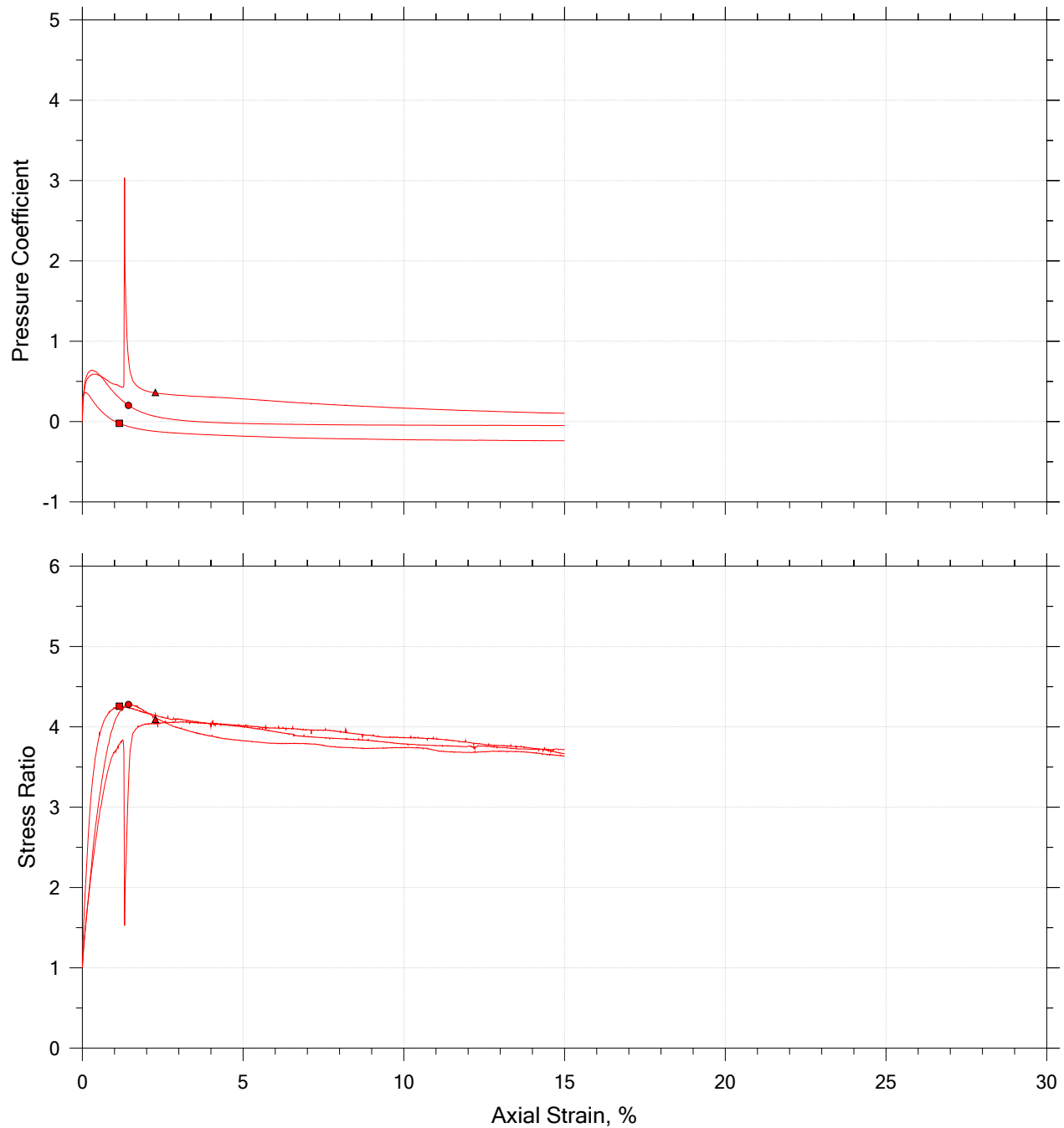
## Consolidated Undrained by AASHTO T297




	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	25-0589	A	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestA.dat
●	25-0589	B	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestB.dat
▲	25-0589	C	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestC.dat

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		

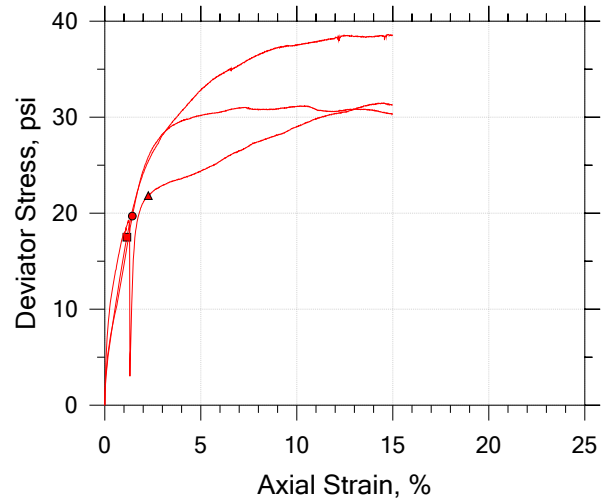
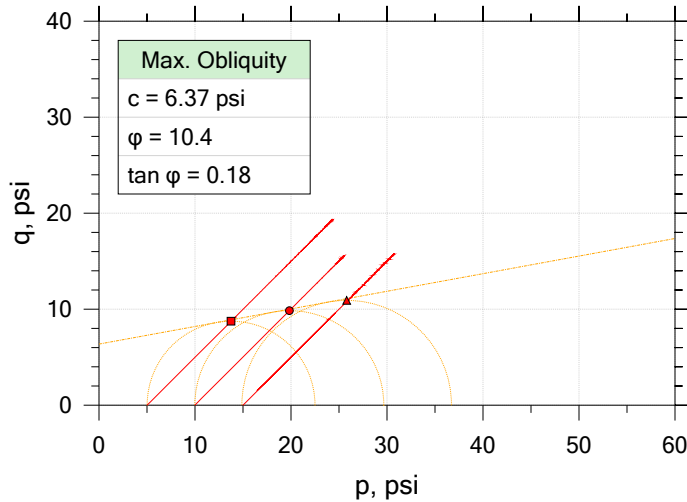
## Consolidated Undrained by AASHTO T297



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	25-0589	A	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestA.dat
●	25-0589	B	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestB.dat
▲	25-0589	C	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestC.dat

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		

## Consolidated Undrained by AASHTO T297

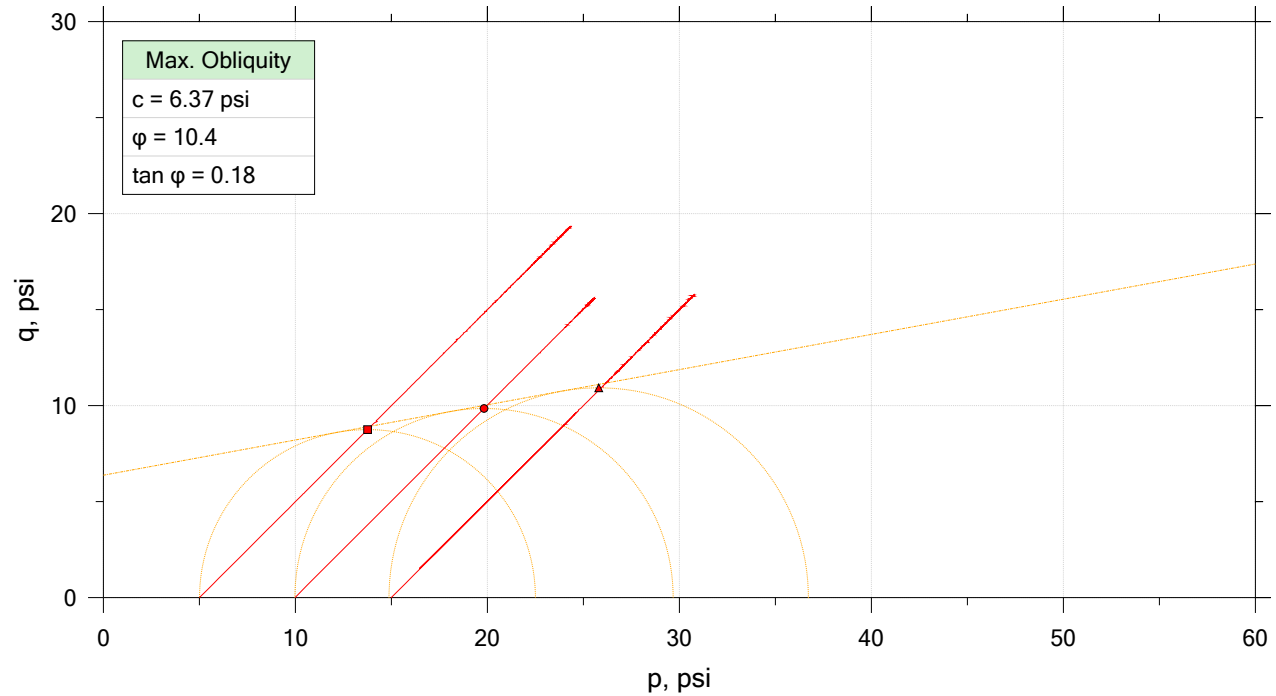
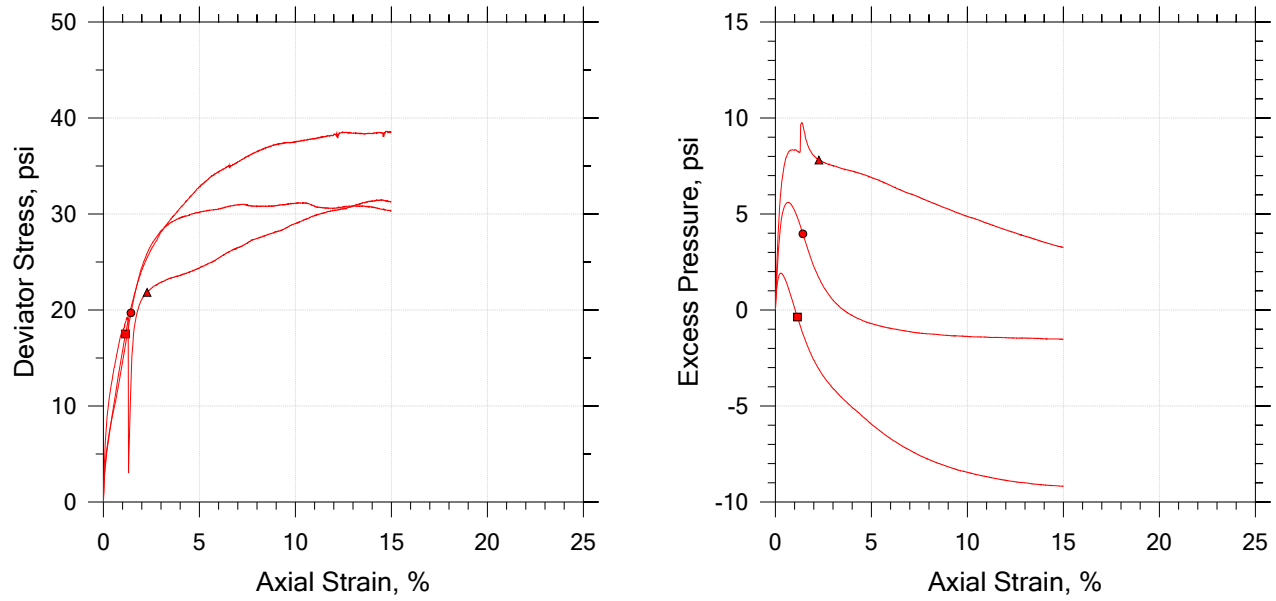


Symbol	■	●	▲	
Sample ID	25-0589	25-0589	25-0589	
Depth	0.0' - 5.0'	0.0' - 5.0'	0.0' - 5.0'	
Test Number	A	B	C	
Initial				
Height, in	6.000	6.000	6.000	
Diameter, in	2.800	2.800	2.800	
Moisture Content (from Cuttings), %	9.6	9.6	9.3	
Dry Density, pcf	119.	119.	119.	
Saturation (Wet Method), %	62.8	62.8	61.5	
Void Ratio	0.409	0.408	0.405	
Final				
Moisture Content, %	14.8	14.4	14.4	
Dry Density, pcf	120.	121.	121.	
Cross-Sectional Area (Method A), in <sup>2</sup>	6.117	6.094	6.096	
Saturation, %	100.0	100.0	100.0	
Void Ratio	0.395	0.387	0.385	
Back Pressure, psi	101.0	101.0	101.0	
Vertical Effective Consolidation Stress, psi	4.994	9.971	14.95	
Horizontal Effective Consolidation Stress, psi	5.005	9.982	14.99	
Vertical Strain after Consolidation, %	0.08581	0.2127	0.3075	
Volumetric Strain after Consolidation, %	0.3007	0.6418	1.066	
Time to 50% Consolidation, min	0.3000	0.2000	0.2200	
Shear Strength, psi	8.748	9.849	10.92	
Strain at Failure, %	1.15	1.43	2.27	
Strain Rate, %/min	0.0005000	0.0005000	0.0005000	
Deviator Stress at Failure, psi	17.50	19.70	21.84	
Effective Minor Principal Stress at Failure, psi	5.372	6.008	7.063	
Effective Major Principal Stress at Failure, psi	22.87	25.71	28.90	
B-Value	0.94	0.87	0.93	


Notes:  
 - Before Shear Saturation set to 100% for phase calculation.  
 - Moisture Content determined by ASTM D2216.  
 - Atterberg Limits determined by ASTM D4318.  
 - Deviator Stress includes membrane correction.  
 - Values for  $c$  and  $\phi$  determined from best-fit straight line for the specific test conditions.  
 Actual strength parameters may vary and should be determined by an engineer for site conditions.

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		

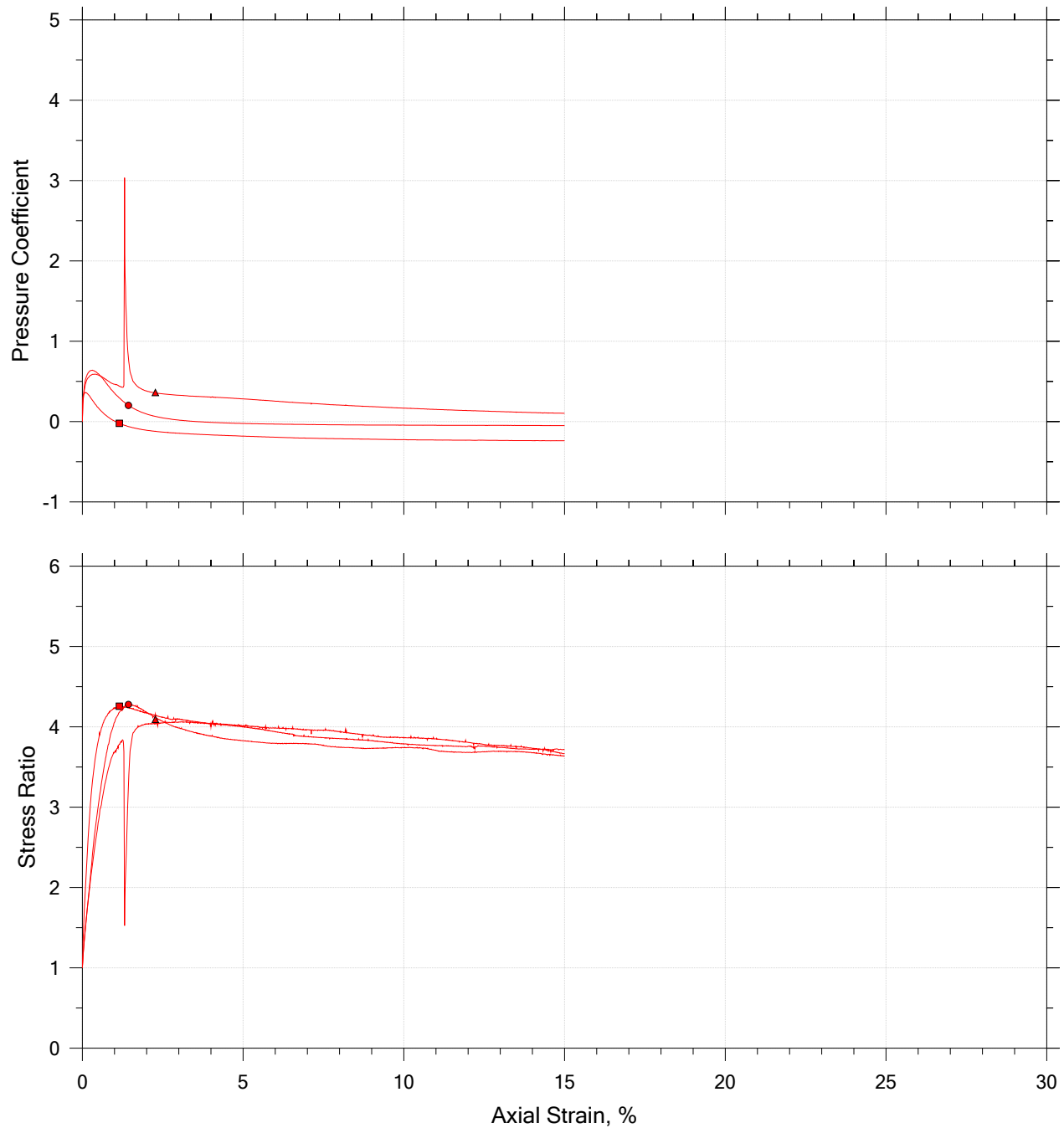
## Consolidated Undrained by AASHTO T297




	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	25-0589	A	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestA.dat
●	25-0589	B	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestB.dat
▲	25-0589	C	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestC.dat

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		

## Consolidated Undrained by AASHTO T297



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	25-0589	A	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestA.dat
●	25-0589	B	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestB.dat
▲	25-0589	C	0.0' - 5.0'	RMC	3/5/2025	WAP/ WJG	3/11/2025	G7100.010.00002_BS-1_TestC.dat

	Project Name: S-17-58 over Beaverdam Creek	Location: Dillon County	Project Number: P043715
	Boring Number: BS-1	Tester: RMC	Checker: WAP/ WJG
	Sample Number: 25-0589	Test Date: 3/5/2025	Depth: 0.0' - 5.0'
	Test Number: ABC	Preparation: Remolded	Elevation: 91.2
	Description: SILTY, CLAYEY SAND (SC-SM/A-2-4) LL=17, PL=13, PI=4, %200=23.8		
	Remarks: Max Dry Density=124.8 pcf, OMC=9.8%, Samples Molded at 95% of Max Dry Density		





# INDEX PROPERTIES VERSUS DEPTH

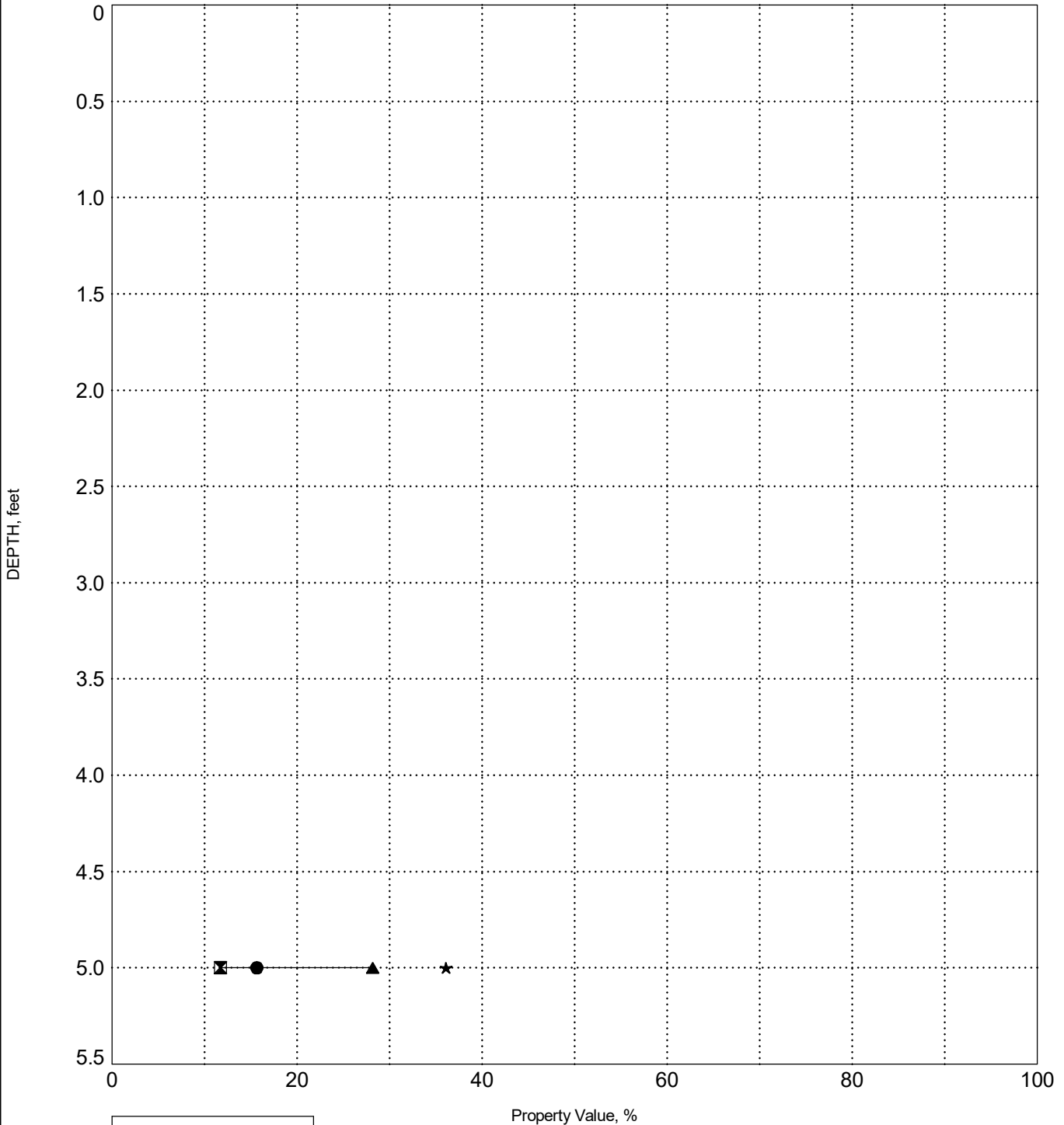
PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

SURFACE ELEVATION: N/A

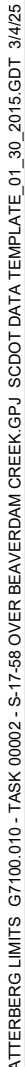
## BORING BS-2



LEGEND	
●	Water Content
☒	Plastic Limit
▲	Liquid Limit
★	Fines



**PROJECT COUNTY** Dillon

[illegible]

## GRAIN SIZE DISTRIBUTION

**F&ME CONSULTANTS, INC**  
**211 Business Park Blvd.**  
**Columbia, SC 29203**

**MOISTURE CONTENT DETERMINATION**  
**(AASHTO T265)**

<b>PROJECT:</b>	S-17-58 over Beaverdam Creek	<b>SCDOT PROJECT ID:</b>	P043715
<b>SAMPLE NUMBER:</b>	25-0590	<b>DATE REQUESTED:</b>	2/26/2025
<b>DESCRIPTION OF SOIL:</b>	CLAYEY SAND (SC/A-6)		
<b>TESTED BY:</b>	AG & AB	<b>DATE OF TESTING:</b>	2/27/2025
<b>WEIGHED BY:</b>	TE	<b>DATE OF WEIGHING:</b>	2/28/2025

BORING NO.	BS-2				
SAMPLE NO.	--				
SAMPLE DEPTH	0.0 - 5.0				
WATER CONTENT, W%	15.6				

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

BORING NO.					
SAMPLE NO.					
SAMPLE DEPTH					
WATER CONTENT, W%					

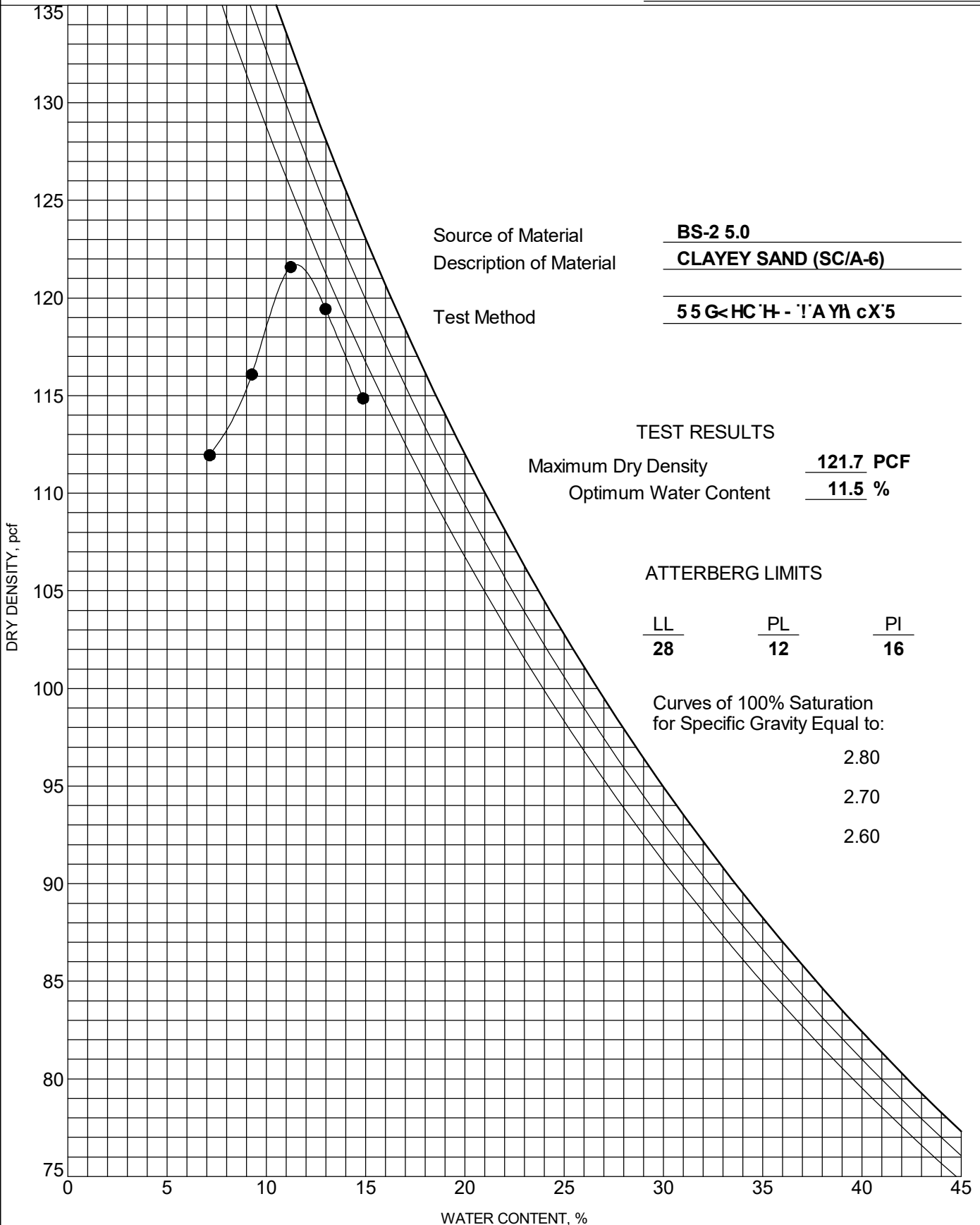


# MOISTURE-DENSITY RELATIONSHIP

PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon



# CALIFORNIA BEARING RATIO (CBR) AASHTO T193

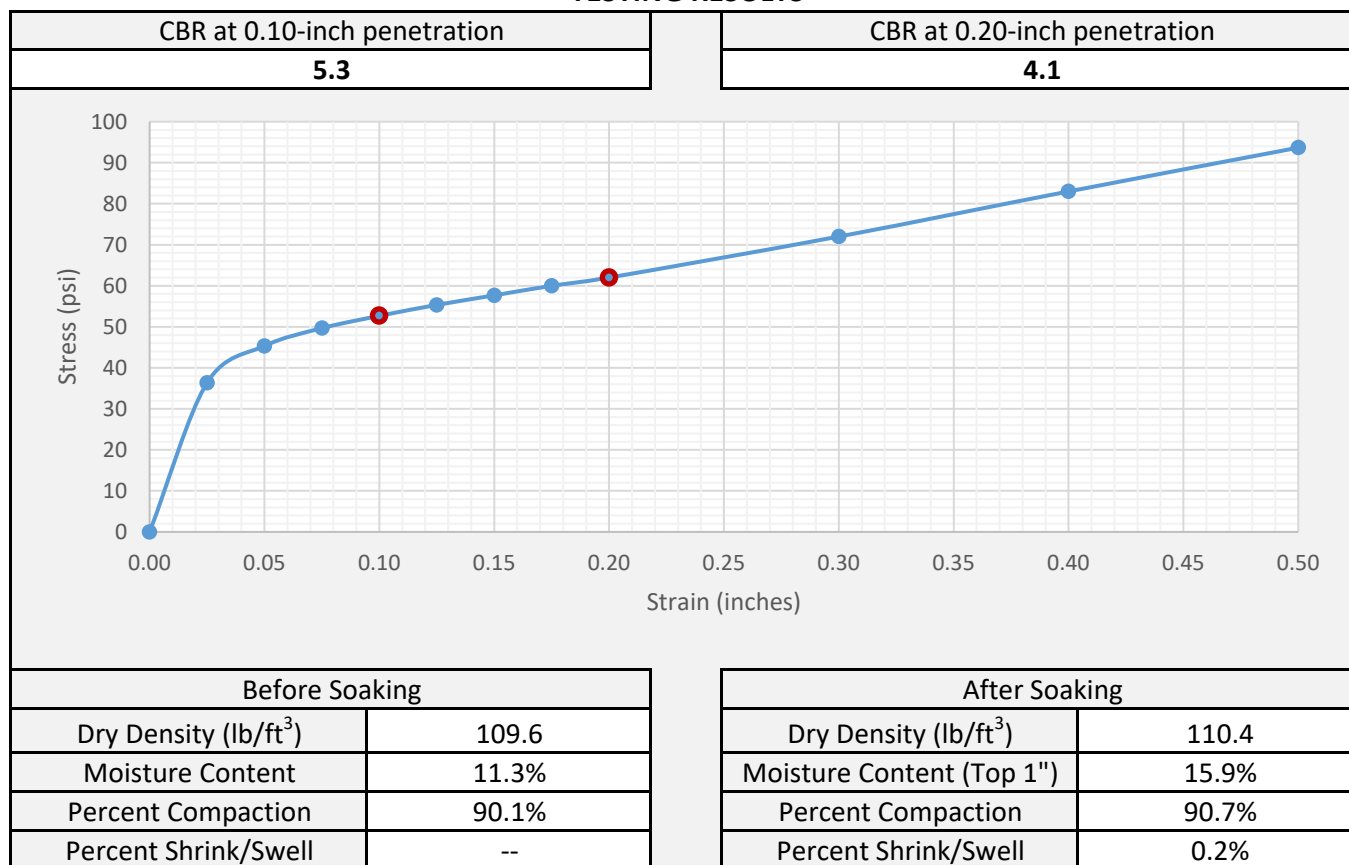
## SAMPLE INFORMATION

Project Name	S-17-58 RBO Beaverdam Creek			Project No.	G7100.009 - Task 00020
Sample Location	BS-2			FME Lab ID	25-0590
Soil Description	Clayey SAND (SC/A-6)			Depth/Elev.	0.0 - 5.0
Date Sampled	--	Sampled By:	JTP	Date Received	2/26/2025
Date Test Began	3/6/2025	Date Completed	3/10/25	Tested By	DH

## MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	121.7	Optimum Moisture Content (%)	11.5
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

## TESTING RESULTS



## ADDITIONAL COMMENTS

Target %Compaction = 90%

	<b>F&amp;ME Consultants, Inc.</b> <small>211 Business Park Blvd., Columbia, South Carolina 29203</small>		<b>3/11/25</b>
		Reviewed By	Date

# CALIFORNIA BEARING RATIO (CBR) AASHTO T193

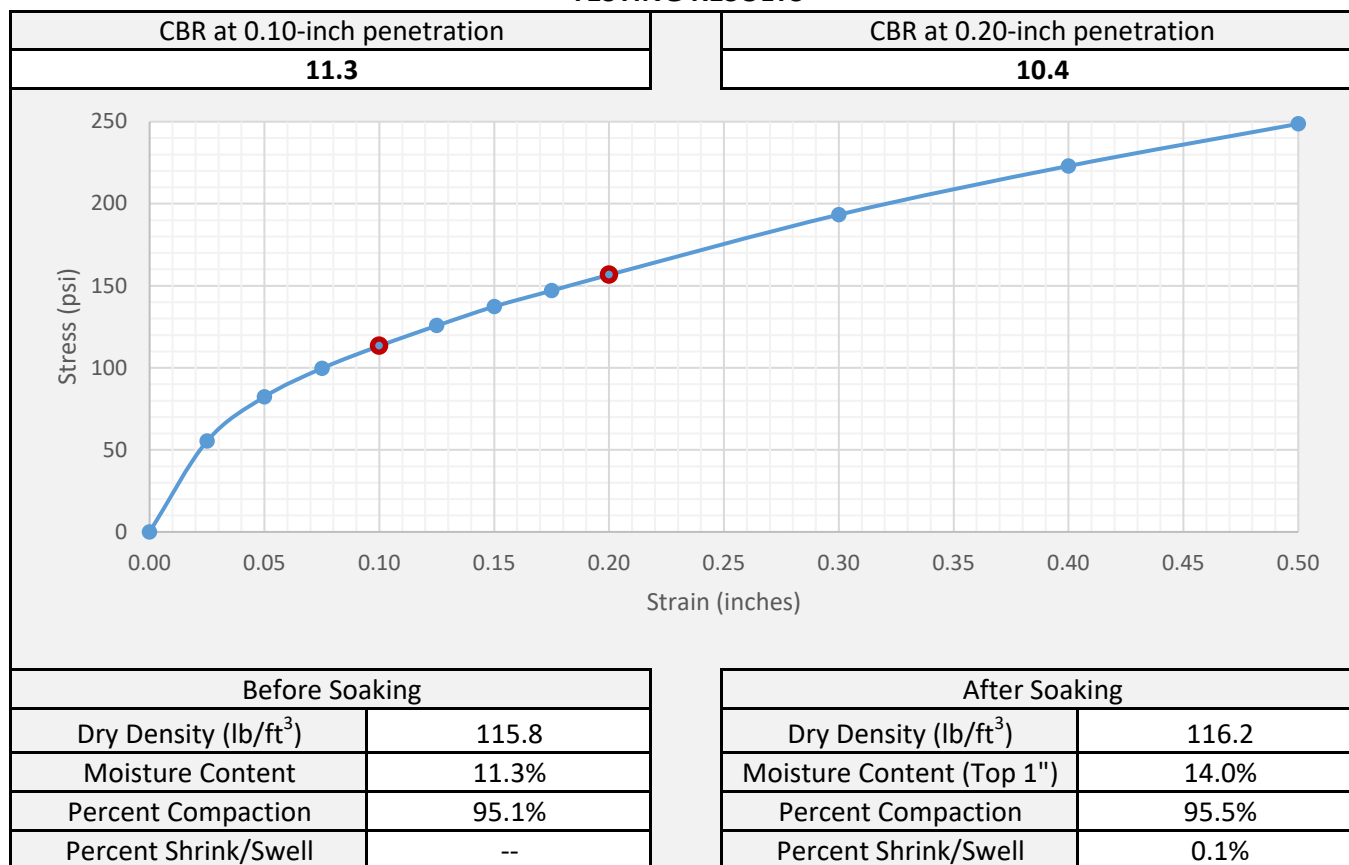
## SAMPLE INFORMATION

Project Name	S-17-58 RBO Beaverdam Creek			Project No.	G7100.009 - Task 00020
Sample Location	BS-2			FME Lab ID	25-0590
Soil Description	Clayey SAND (SC/A-6)			Depth/Elev.	0.0 - 5.0
Date Sampled	--	Sampled By:	JTP	Date Received	2/26/2025
Date Test Began	3/6/2025	Date Completed	3/10/25	Tested By	DH

## MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	121.7	Optimum Moisture Content (%)	11.5
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

## TESTING RESULTS



## ADDITIONAL COMMENTS

Target %Compaction = 95%

	<b>F&amp;ME Consultants, Inc.</b> <small>211 Business Park Blvd., Columbia, South Carolina 29203</small>		<b>3/11/25</b>
		Reviewed By	Date

# CALIFORNIA BEARING RATIO (CBR) AASHTO T193

## SAMPLE INFORMATION

Project Name	S-17-58 RBO Beaverdam Creek			Project No.	G7100.009 - Task 00020
Sample Location	BS-2			FME Lab ID	25-0590
Soil Description	Clayey SAND (SC/A-6)			Depth/Elev.	0.0 - 5.0
Date Sampled	--	Sampled By:	JTP	Date Received	2/26/2025
Date Test Began	3/6/2025	Date Completed	3/10/25	Tested By	DH

## MOLDING CHARACTERISTICS

Method	AASHTO T99 - Method A	% Retained on 3/4" Sieve	0%
Max Dry Density (lb/ft <sup>3</sup> )	121.7	Optimum Moisture Content (%)	11.5
Soak Time (hr)	96	Surcharge Weight (lb)	10.0

## TESTING RESULTS

CBR at 0.10-inch penetration		CBR at 0.20-inch penetration	
14.8		15.5	
<p>The graph plots Stress (psi) on the y-axis (0 to 450) against Strain (inches) on the x-axis (0.00 to 0.50). A blue curve represents the test data, with a red dot at 0.20 inches strain and 230 psi stress. The curve passes through approximately (0.10, 150), (0.20, 230), (0.30, 310), (0.40, 380), and (0.50, 440).</p>			
Before Soaking		After Soaking	
Dry Density (lb/ft³)	121.8	Dry Density (lb/ft³)	121.7
Moisture Content	11.3%	Moisture Content (Top 1")	13.0%
Percent Compaction	100.0%	Percent Compaction	100.0%
Percent Shrink/Swell	--	Percent Shrink/Swell	0.1%

## ADDITIONAL COMMENTS

Target %Compaction = 100%

	<b>F&amp;ME Consultants, Inc.</b> <small>211 Business Park Blvd., Columbia, South Carolina 29203</small>		3/11/25
			Date



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 4      LABORATORY TEST RESULTS**

### **SECTION 4C      CORROSION SERIES TESTING**

# CORROSION SERIES SUMMARY

PAGE 1 OF 1



PROJECT ID P043715

PROJECT NAME S-17-58 over Beaverdam Creek

PROJECT COUNTY Dillon

Borehole	Sample No.	Sample Depth (ft.)	pH of Soil in Distilled Water	Electrical Resistivity ( $\Omega$ -cm)	Chloride Content (mg/kg (ppm))	Sulfate Content (mg/kg (ppm))
B-1	SS-1/SS-2	0.5 – 4.0	5.3	7,973	28.9	49.6

**pH DETERMINATION  
(AASHTO T289)**

Project Name:	S-17-58 over Beaverdam Creek	SCDOT Project Number:	P043715
FME Project No.:	G7100.010 - Task 00002	Sample Elevation/Depth:	B-1
Description of Sample:	Soil (Composite)	Date Received	2/28/2025
Tested By:	JM	Date Tested:	3/7/2025

Boring ID	B-1
Boring Depth (ft.)	0.5 - 4.0
FME Lab ID No.	25-0632
pH Value	5.26
Temperature (°C)	20.8

Date Reviewed: 3/12/2025Reviewed By: A. Abernethy

**SOIL RESISTIVITY  
(AASHTO T288)**

Project Name:	S-17-58 over Beaverdam Creek	Project ID:	P043715
Location:	B-1	FME Lab ID No.:	25-0632
Sampled By:	WAP	Date Sampled:	2/26/2025
Soil Description:	Soil (Composite)	Date Received:	2/27/2025
Tested By:	JM	Date Tested:	3/7/2025

Boring No.	Sample Depth (ft.)	Minimum Soil Resistivity, $\Omega$ -cm
B-1	0.5 - 4.0	7,973

Date Reviewed: 3/7/2025 Reviewed By: A. Abernethy

## CHLORIDE ION CONTENT IN SOILS

AASHTO T 291 - 94 (2018) (Method B)

Client: F&ME Consultants, Inc.  
 Client Reference: Beaverdam Cr. G7100.010  
 Project No.: 2025-160-001  
 Lab ID: 2025-160-001-001

Boring No.: B-1  
 Depth (ft): 0.5-4.0'  
 Sample No.: SS-1 & SS-2  
 Description: Brown

( - # 10 Sieve material )

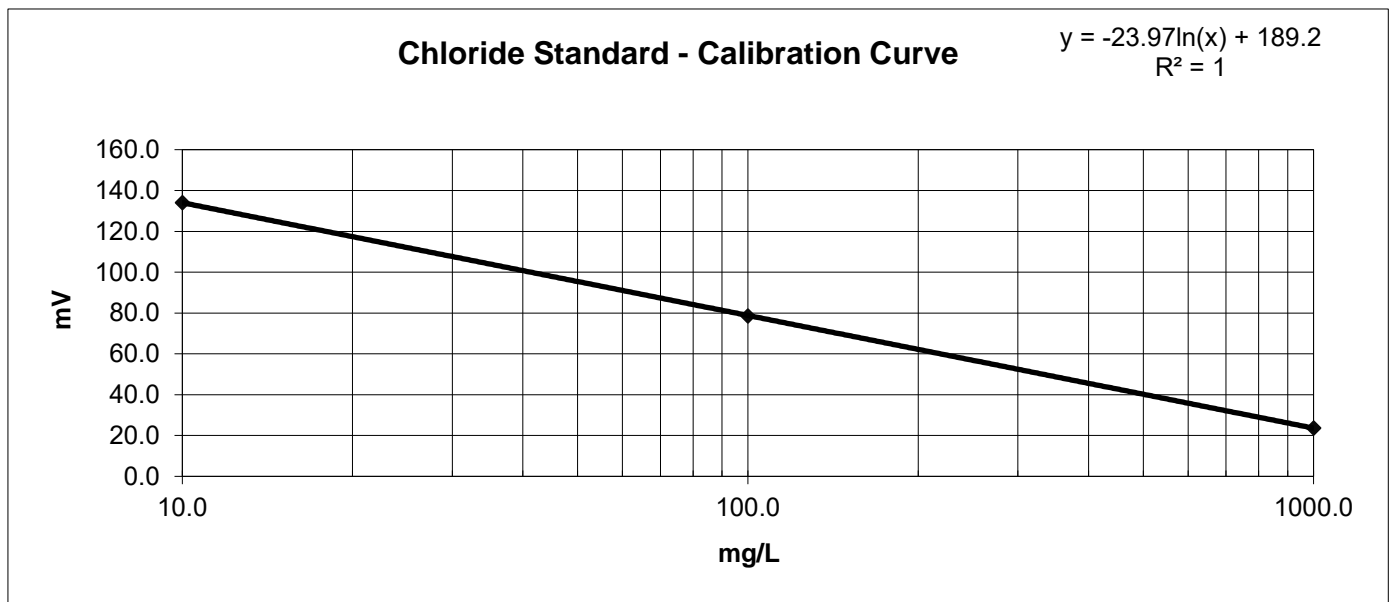
### CHLORIDE STANDARD: CALIBRATION CURVE

STANDARD	MILLIVOLTS (mV)
10.0 mg/L	134.1
100.0 mg/L	78.6
1000.0 mg/L	23.7

### MEASUREMENT OF CHLORIDES

Sample Weight (g):	100.0	CONCENTRATION	CONCENTRATION
Water added to Sample (ml):	100.0	(mg/L)	(mg/kg)
Size of Sample Aliquot (ml):	25.0		
Sample Reading (mV):	108.6	28.85	28.85

Notes: 1) Samples and standards were buffered by the addition of an equal volume of the 0.2 M KNO<sub>3</sub> solution (1:1 volume).  
 2) Samples were dried for a minimum of 12 hours at 110 °F. 5°C.



Notes:

Tested By JAM

Date 3/26/25

Checked By EG

Date 3/27/25

## Water-Soluble Sulfate Ion Content in Soil AASHTO T 290-95 (2020)

Client:	F&ME Consultants, Inc.	Boring No.: B-1
Client Reference:	Beaverdam Cr. G7100.010	Depth (ft): 0.5-4.0'
Project No.:	2025-160-001	Sample No.: SS-1 & SS-2
Lab ID:	2025-160-001-001	Soil Description: Brown

### Sulfate Standard - Calibration Curve Spectrophotometer Readings

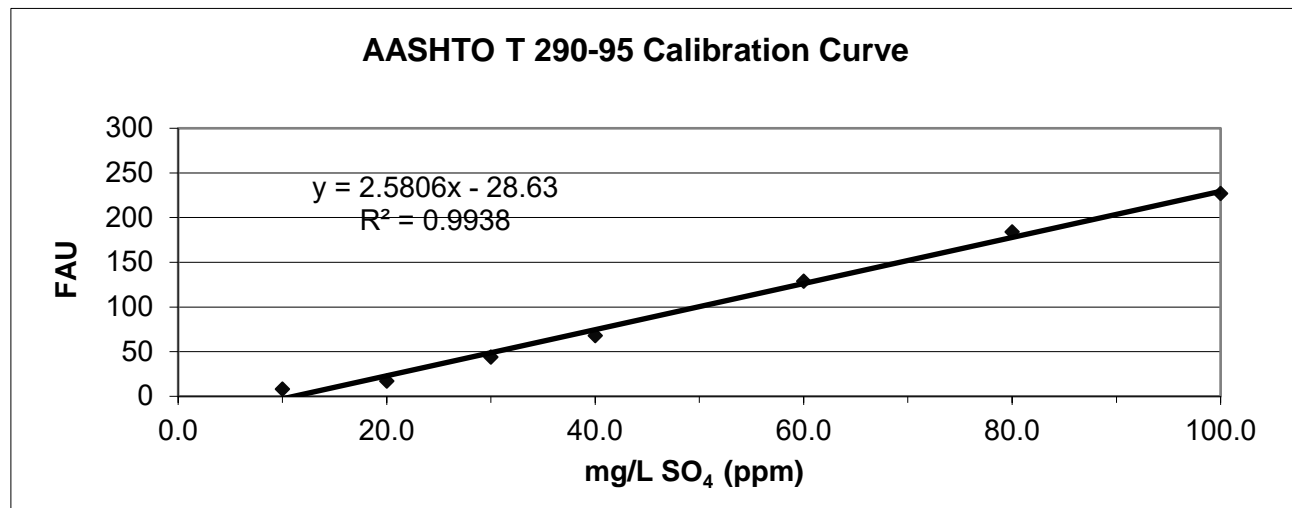
<u>Sulfate Ion Concentrations (mg/L)</u>								
0.0	4.0	10.0	20.0	30.0	40.0	60.0	80.0	100.0
<u>Spectrophotometer Readings (FAU)</u>								
Underrange	Underrange	8	17	44	68	129	184	227

### Measurement of Barium Chloride Turbidity

(Sample contains 5.0 mL NaCl solution and 0.3 g BaCl<sub>2</sub>·2H<sub>2</sub>O)

<p><b>Sample Weight (g):</b> 100.0</p> <p><b>Water added to Sample (mL):</b> 300.0</p> <p><b>Size of Sample Aliquot (mL):</b> 50.0</p> <p><b>Sample Reading (FAU):</b> 14</p> <p><b>Sample Diluted:</b> No</p> <p><b>Sulfate Solution Added (ml):</b> 0</p>	<p><b><u>Sample Moisture Content</u></b></p> <p>Tare Number: 1744</p> <p>Weight of Tare &amp; Wet Sample (g): 229.71</p> <p>Weight of Tare &amp; Dry Sample (g): 229.51</p> <p>Weight of Tare (g): 82.90</p> <p>Weight of Water (g): 0.20</p> <p>Weight of Dry Sample (g): 146.61</p> <p>Moisture Content (%): 0.14</p>
---	---

Sample Sulfate Ion Concentration:	16.52	mg/L SO <sub>4</sub> (ppm)
Sample Sulfate Ion Content:	49.6	mg/Kg SO <sub>4</sub> (not corrected for moisture)
Sample Sulfate Ion Content:	49.6	mg/Kg SO <sub>4</sub> (corrected for moisture)



Tested by: JAM	Date: 3/26/25	Checked by: EG	Date: 3/27/2025
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# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 5**

## **ON-SITE DRILL RIG PHOTOS**

## On-Site Drill Rig Set Up Photographs



**B-1**



**B-2**



**B-3**



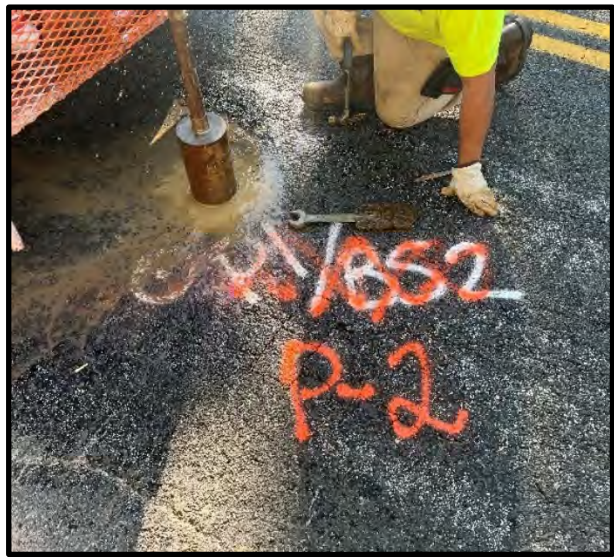
**P-1**



## On-Site Drill Rig Set Up Photographs



P-1 (Equipment Failure)



P-2



P-3



P-4

## On-Site Drill Rig Set Up Photographs



P-5

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 6**

## **PAVEMENT CORE PHOTOS**



## Pavement Core Photos



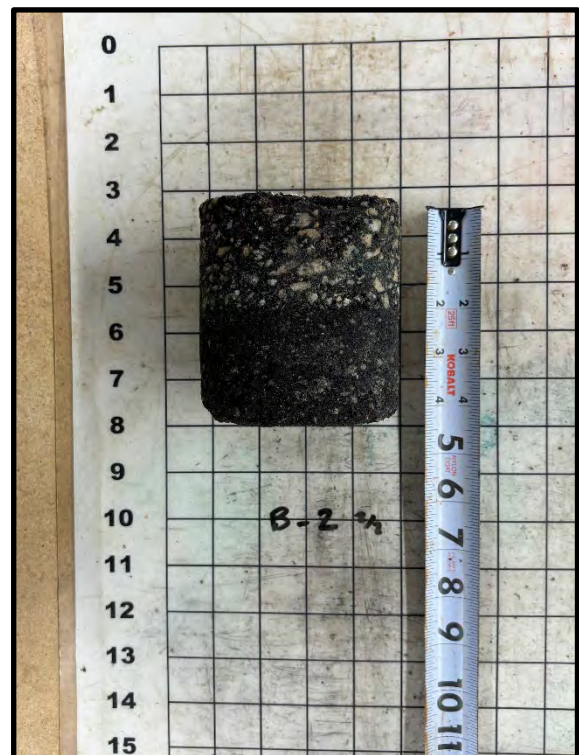
B-1 Side 1



B-1 Side 2



B-2 Side 1



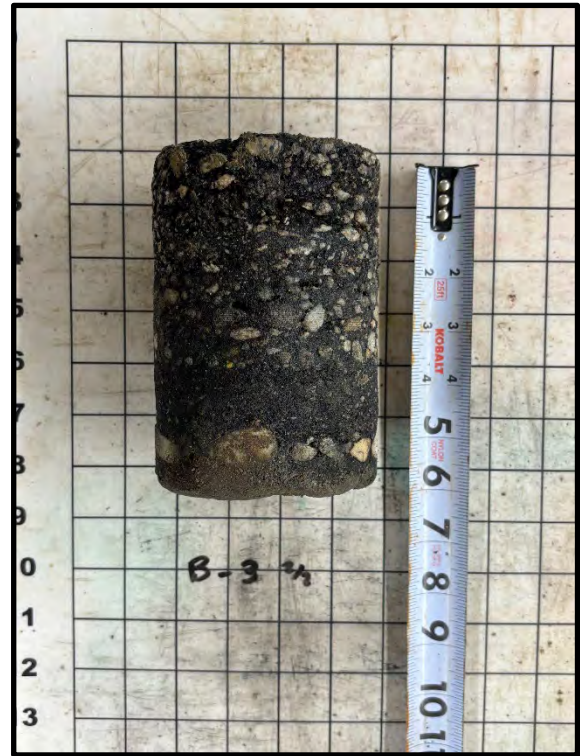
B-2 Side 2



## Pavement Core Photos



B-3 Side 1



B-3 Side 2



P-1 Side 1



P-1 Side 2



## Pavement Core Photos



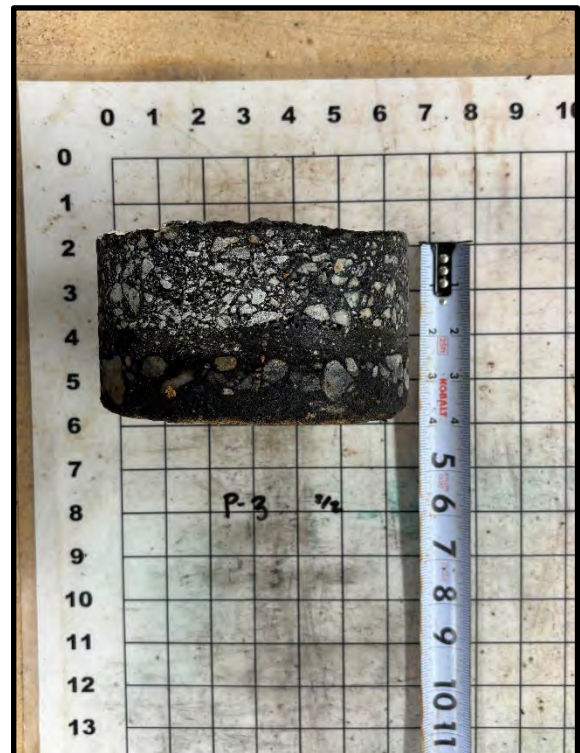
P-2 Side 1



P-2 Side 2



P-3 Side 1



P-3 Side 2



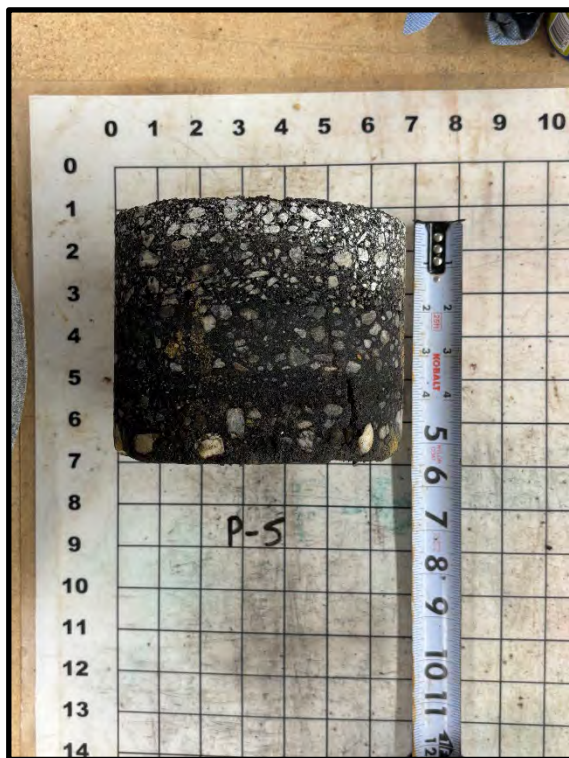
## Pavement Core Photos



P-4 Side 1



P-4 Side 2



P-5 Side 1



P-5 Side 2

## Pavement Core Photos



**P-6**



# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 7      SPT HAMMER CALIBRATION**

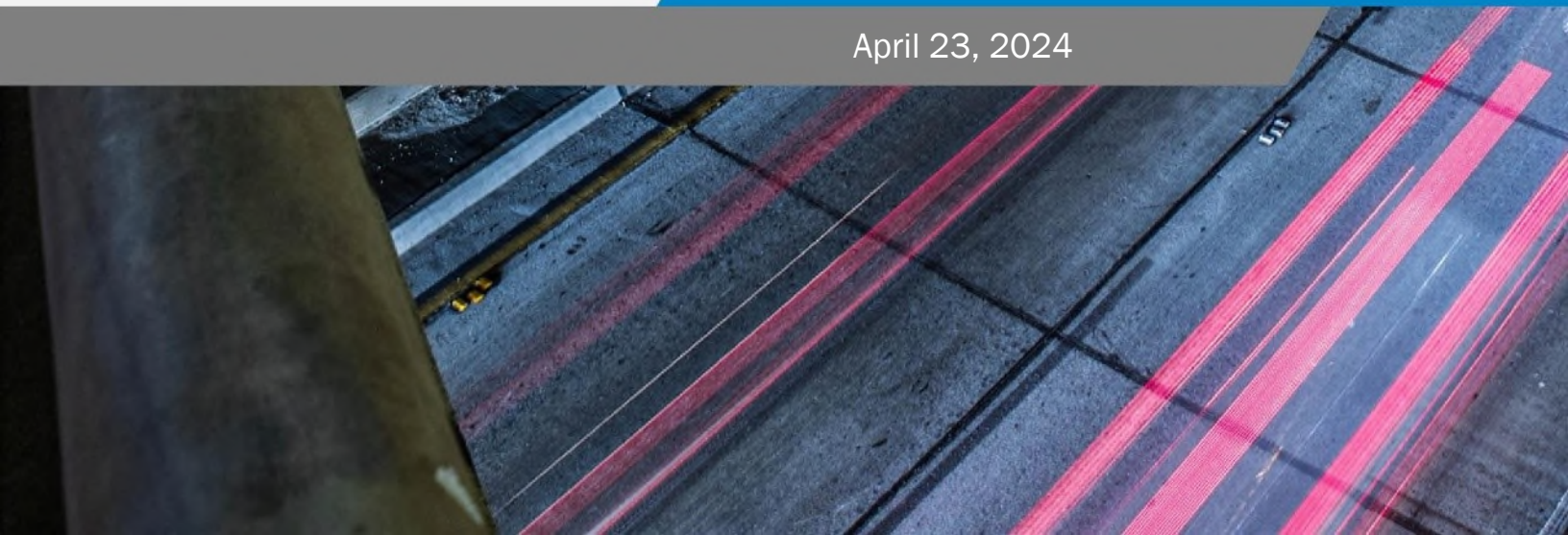


**CAROLINAS  
GEOTECHNICAL  
GROUP**

## **Report of SPT Hammer Energy**

Prepared for:  
Breccia Construction, LLC  
620-B Industrial Way  
Chester, South Carolina 29706

April 23, 2024







2400 Crownpoint Executive Drive  
Suite 800  
Charlotte, NC 28227



(980) 339-8684



contact@carolinasgeotech.com



www.carolinasgeotech.com

April 23, 2024

Mr. Adam J. Shannon  
Breccia Construction, LLC  
620-B Industrial Way  
Chester, South Carolina 29706

SUBJECT: **Report of SPT Hammer Energy**  
Breccia Construction, LLC CME 45B Trailer Rig (SN 303304)  
Chester, South Carolina  
CG2 Project No.: 240021095

Dear Mr. Shannon:

Carolinas Geotechnical Group, PLLC (CG2) has completed the Standard Penetration Test (SPT) energy measurements on the automatic hammer mounted on a Breccia Construction, LLC (Breccia) CME 45B trailer-mounted drill rig with a serial number of 303304, see attached Drill Rig Photo Log. This service was performed by Mr. Robert E. Kral, PE on April 12, 2024. SPT energy testing was performed in general accordance with ASTM D4633 and the most recent revision of the North Carolina Department of Transportation (NCDOT), Geotechnical Engineering Unit's requirements. The testing procedures, equipment used during testing, and detailed results are presented in this report.

CG2 recommends Breccia submit this Report of SPT Hammer Energy to the NCDOT Geotechnical Engineering Unit at [SPT\\_Hammer\\_Energy\\_Submittal@ncdot.gov](mailto:SPT_Hammer_Energy_Submittal@ncdot.gov) for review and approval no later than May 10, 2024.

#### DYNAMIC TESTING METHODOLOGY

Testing was performed using a model SPT (Serial No. 4553 TB) Pile Driving Analyzer™ (PDA) manufactured by Pile Dynamics, Inc. The PDA was used to record and interpret data from two piezoresistive accelerometers (Serial Nos. K10959 and K10960) bolted to a 2-foot long AWJ drill rod (SN 728AWJ) internally instrumented with two strain transducers. The instrumented AWJ drill rod has a cross-sectional area of 1.13 square inches, an outside diameter of approximately 1.75 inches, and an inside diameter of 1.25 inches at the gauge location. The accelerometers and strain gauges, which are mounted on opposing axis near the middle of the instrumented rod, monitor acceleration and strain for each hammer blow. The analyzer converts the data to velocities and forces and computes the maximum transferred hammer energies with the "EFV" method described in ASTM D4633. Preliminary results are recorded and displayed in real-time for each blow. Calibration sheets for the PDA, accelerometers, and the instrumented rod are included in Appendix III.

## Report of SPT Hammer Energy

Chester, South Carolina

CG2 Project No.: 240021095

### TESTING AND OBSERVATIONS

CG2 personnel was on site April 12, 2024 to observe and perform high-strain dynamic testing during SPT sampling on the CME 45B trailer-mounted drill rig operated by D. Harris of Breccia. The measurements were taken during drilling operations at 1817 Lowrys Highway in Chester, South Carolina (Chester County). The approximate coordinates (not professionally surveyed) for the test location are 34.7704252, -81.2454632. No Soil Test Boring Log was maintained. SPT energy measurements were recorded during three intervals at depths of approximately 28½, 33½, and 38½ feet below the existing ground surface. The information presented in the table below summarizes the equipment tested and tooling used during the SPT energy measurements.

**Table 1: SPT Field Data**

Drill Rig Information	
Manufacturer	CME
Model	45B
Serial Number	303304
Operator	D. Harris
Carrier	Trailer
Hammer Information	
Model / Type	CME / Auto
Serial Number	N/A
Anvil Height (inches)	11.5
Anvil Diameter (inches)	2.5
Drop Height (inches)	30
Ram Weight (pounds)	140
Ram Serial Number	N/A
Drilling and Instrumented Rod Information	
Drill Rod Type	AWJ
OD (inches)	1.75
ID (inches)	1.25
Cross-Sectional Area (in <sup>2</sup> )	1.13
Typical Lengths (feet)	5
Instrumented Rod Type	AWJ (SN 728)
OD (inches)	1.75
ID (inches)	1.25
Cross-Sectional Area (in <sup>2</sup> )	1.13
Total Instrumented Rod Length (feet)	2.00
Length Below Gages (feet)	0.70
Split-Spoon Length (feet)	2.85

## Report of SPT Hammer Energy

Chester, South Carolina

CG2 Project No.: 240021095

### DYNAMIC TESTING RESULTS

The total rod length from the instrumentation to the tip of the split-spoon sampler was determined by adding 3.6 feet to the required drill rod length at each sample depth. Based on the test data recorded, the automatic hammer on the CME 45B trailer-mounted drill rig operated at a rate of about 53.3 to 58.8 BPM during dynamic testing. The measured transferred hammer energy (EFV) ranged from 288.7 to 323.1 foot-pounds, which corresponds to Energy Transfer Ratio (ETR) values of 82.5 to 92.3%, respectively. These data ranges are based on the overall minimum and maximum values for the last 12 inches of each sample interval.

The SPT Energy Measurement Data Summary tables in Appendix I present the test data from every hammer blow at each sampling interval along with representative force and velocity traces for each test interval. The reported blow counts, obtained by the drill rig personnel, a summary of the test data, and average computed BPM, EFV, and ETR values are provided in Table 2. The BPM, EFV, and ETR values presented in Table 2 were computed by averaging data from the last 12 inches of each sample interval. Plots and tables of the following are also included in Appendix I and present the test data with depth for each test interval:

- Penetration vs. BLC
- Penetration vs. CSX
- Average ETR vs. Rod Length
- Penetration vs. FMX
- Penetration vs. VMX
- ETR vs. Rod Length
- Penetration vs. EFV
- Penetration vs. ETR

**Table 2: Summary of Dynamic Testing Results**

Data Set ID	Sample Depth (ft)	Drill Rod Length (ft)	Instrumentation to Sampler Tip Length (ft)	Blows per 6" Increment / N-value	Soil Sample Description (Piedmont Residual)	Avg. BPM	Avg. EFV (ft-lbs)	Avg. ETR (%)
1	28½ - 30	30	33.6	4-9-11 / 20	SA SILT	53.8	299.4	85.5
2	33½ - 35	35	38.6	4-7-10 / 17	SA SILT	58.3	311.7	89.1
3	38½ - 40	40	43.6	5-7-10 / 17	SA SILT	54.5	297.0	84.9
Overall Average						55.4	302.5	86.4

The average hammer rate, transferred energy, and transfer ratio were calculated for each depth interval. Per ASTM D4633, only the blows from the final foot of each sample interval (i.e., the blows that determine the N-value) were included when computing the average values shown in Table 2. The overall average transferred hammer energy for the automatic hammer on the CME 45B truck-mounted drill rig (for all the depth intervals included in Table 2) was 302.5 foot-pounds, with an average ETR of 86.4%.

**Report of SPT Hammer Energy**

Chester, South Carolina

CG2 Project No.: 240021095

**LIMITATIONS OF REPORT**

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The information contained in this report were based on the applicable standards of our profession in this geographic area at the time this report was prepared. No other warranty, express or implied, is made.

**CLOSING**

CG2 is pleased to have the opportunity to provide these services to you. If you have questions concerning the content of this report, or if CG2 can be of further service, please contact CG2 at (980) 339-8684.

Sincerely,  
**Carolinas Geotechnical Group, PLLC**

DocuSigned by:



F926DBFBA80F4FE...  
Pressley M. Perry, EIT  
Staff Professional

DocuSigned by:



8AD703B2A8484F4...  
Robert E. Kral, PE  
Geotechnical Design Manager  
NC Registration No. 042642

**Appendices:**

- Appendix I - CME 45B Trailer Rig (SN 303304) SPT Energy Measurements Summary Plots and Tables
- Appendix II - SPT Hammer Energy Field Form (Field Log) and Drill Rig Photo Log
- Appendix III - Instrumented Rod and Accelerometer Calibration Sheets
- Appendix IV - Certificate of Proficiency



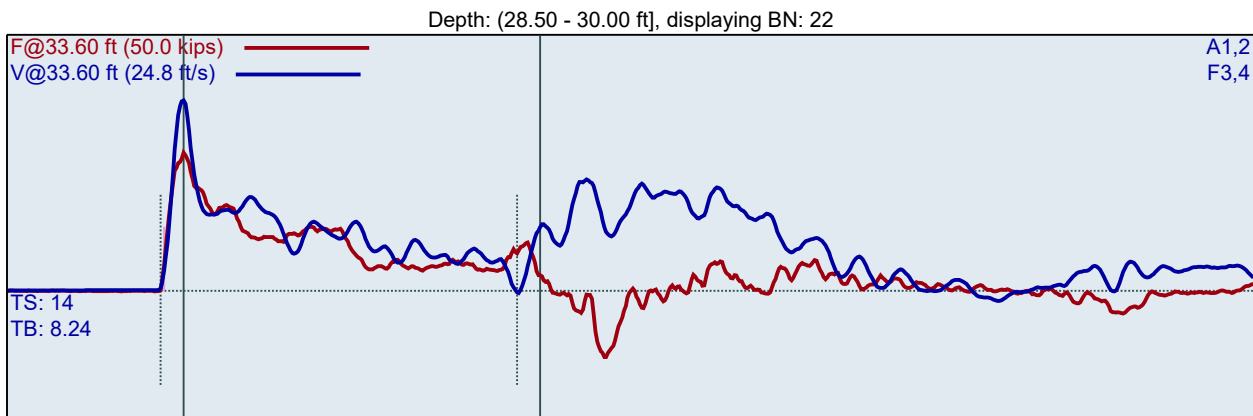
# APPENDIX I

CME 45B (SN 303304)  
REK  
B-2

B-2  
Interval start: 4/12/2024

AR: 1.13 in<sup>2</sup>  
LE: 33.60 ft  
WS: 16807.9 ft/s

SP: 0.492 k/ft<sup>3</sup>  
EM: 30000 ksi



F3 : [728AWJ1] 224.649 PDICAL (1) FF1  
F4 : [728AWJ2] 224.139 PDICAL (1) FF1

A1 (PR): [K10959] 413.827 mv/6.4v/5000g (1) VF1  
A2 (PR): [K10960] 419.894 mv/6.4v/5000g (1) VF1

BPM: Blows/Minute

FMX: Maximum Force

VMX: Maximum Velocity

DMX: Maximum Displacement

CSX: Compression Stress Maximum

DFN: Final Displacement

EFV: Maximum Energy

ETR: Energy Transfer Ratio - Rated

LP	BL#	BC	BPM	FMX	VMX	DMX	CSX	DFN	EFV	ETR
ft		/6"	bpm	kips	ft/s	in	ksi	in	ft-lb	%
28.63	1	4	8.8	27.6	15.9	2.3	24.5	1.5	291.9	83.4
28.75	2	4	52.7	26.6	16.0	1.7	23.5	1.5	292.4	83.5
28.88	3	4	53.3	27.4	17.6	1.5	24.2	1.5	293.9	84.0
29.00	4	4	53.6	27.0	15.9	1.5	23.9	1.5	288.7	82.5
29.06	5	9	53.4	27.4	17.4	1.3	24.3	0.7	294.5	84.1
29.11	6	9	53.8	27.6	16.9	1.2	24.4	0.7	291.2	83.2
29.17	7	9	54.1	27.6	17.8	1.1	24.5	0.7	296.5	84.7
29.22	8	9	53.3	27.3	18.3	1.1	24.1	0.7	299.4	85.5
29.28	9	9	53.8	28.3	16.9	1.0	25.1	0.7	288.7	82.5
29.33	10	9	53.9	28.1	17.8	1.0	24.9	0.7	295.3	84.4
29.39	11	9	53.5	26.9	18.1	1.0	23.8	0.7	298.1	85.2
29.44	12	9	54.1	27.3	17.8	1.0	24.2	0.7	298.6	85.3
29.50	13	9	53.6	27.5	17.9	0.9	24.4	0.7	298.4	85.3
29.55	14	11	54.2	27.6	17.1	0.9	24.4	0.5	290.2	82.9
29.59	15	11	53.5	27.7	16.4	0.9	24.5	0.5	291.8	83.4
29.64	16	11	53.6	27.4	16.5	0.8	24.3	0.5	293.2	83.8
29.68	17	11	54.1	28.0	16.3	0.9	24.8	0.5	304.3	86.9
29.73	18	11	53.6	28.1	17.7	0.8	24.8	0.5	306.1	87.4
29.77	19	11	54.0	26.4	19.2	0.8	23.4	0.5	309.1	88.3
29.82	20	11	53.4	27.7	18.0	0.7	24.6	0.5	303.1	86.6
29.86	21	11	54.0	28.4	17.7	0.8	25.1	0.5	311.9	89.1
29.91	22	11	53.4	27.0	18.4	0.7	23.9	0.5	307.9	88.0
29.95	23	11	53.7	28.3	17.4	0.7	25.1	0.5	308.5	88.1
30.00	24	11	54.2	27.7	17.8	0.7	24.5	0.5	301.3	86.1



Average	53.8	27.6	17.6	0.9	24.4	0.6	299.4	85.5
Std Dev	0.3	0.5	0.7	0.2	0.4	0.1	6.7	1.9
Maximum	54.2	28.4	19.2	1.3	25.1	0.7	311.9	89.1
Minimum	53.3	26.4	16.3	0.7	23.4	0.5	288.7	82.5

N-value: 20

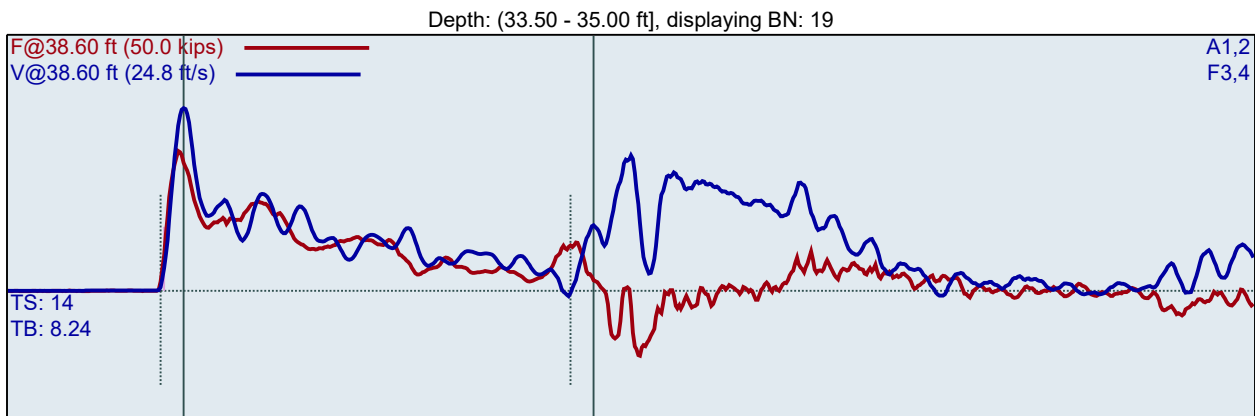
Sample Interval Time: 24.64 seconds.

CME 45B (SN 303304)  
REK  
B-2

B-2  
Interval start: 4/12/2024

AR: 1.13 in<sup>2</sup>  
LE: 38.60 ft  
WS: 16807.9 ft/s

SP: 0.492 k/ft<sup>3</sup>  
EM: 30000 ksi



F3 : [728AWJ1] 224.649 PDICAL (1) FF1  
F4 : [728AWJ2] 224.139 PDICAL (1) FF1

A1 (PR): [K10959] 413.827 mv/6.4v/5000g (1) VF1  
A2 (PR): [K10960] 419.894 mv/6.4v/5000g (1) VF1

LP ft	BL#	BC /6"	BPM bpm	FMX kips	VMX ft/s	DMX in	CSX ksi	DFN in	EFV ft-lb	ETR %
33.63	1	4	1.9	27.9	18.1	1.9	24.7	1.5	312.2	89.2
33.75	2	4	57.9	27.8	18.5	1.6	24.6	1.5	310.4	88.7
33.88	3	4	57.8	28.1	17.7	1.6	24.8	1.5	306.4	87.5
34.00	4	4	57.9	28.2	17.9	1.6	25.0	1.5	311.8	89.1
34.07	5	7	57.7	28.0	17.8	1.2	24.7	0.9	309.4	88.4
34.14	6	7	58.8	27.5	17.3	1.2	24.3	0.9	301.7	86.2
34.21	7	7	57.9	27.5	17.5	1.1	24.3	0.9	305.5	87.3
34.29	8	7	58.5	27.8	17.7	1.1	24.6	0.9	313.5	89.6
34.36	9	7	58.3	27.8	17.6	1.1	24.6	0.9	320.7	91.6
34.43	10	7	58.5	27.8	17.7	1.0	24.6	0.9	311.8	89.1
34.50	11	7	58.5	28.7	18.4	0.9	25.4	0.9	319.2	91.2
34.55	12	10	58.3	28.1	17.8	0.9	24.9	0.6	311.0	88.9
34.60	13	10	58.5	27.8	17.6	0.9	24.6	0.6	313.5	89.6
34.65	14	10	58.3	26.9	16.8	1.1	23.8	0.6	303.2	86.6
34.70	15	10	58.5	27.4	17.5	0.9	24.2	0.6	309.0	88.3
34.75	16	10	58.3	27.2	17.3	1.0	24.1	0.6	310.8	88.8
34.80	17	10	58.1	28.0	18.2	0.8	24.8	0.6	310.6	88.7
34.85	18	10	58.7	27.8	17.7	0.7	24.6	0.6	307.0	87.7
34.90	19	10	58.4	27.3	17.7	0.9	24.1	0.6	315.2	90.0
34.95	20	10	58.0	28.2	18.5	0.9	25.0	0.6	323.1	92.3
35.00	21	10	58.5	27.7	18.6	0.8	24.5	0.6	313.3	89.5
Average			58.3	27.7	17.7	1.0	24.5	0.7	311.7	89.1
Std Dev			0.3	0.4	0.4	0.1	0.4	0.1	5.6	1.6
Maximum			58.8	28.7	18.6	1.2	25.4	0.9	323.1	92.3
Minimum			57.7	26.9	16.8	0.7	23.8	0.6	301.7	86.2

N-value: 17

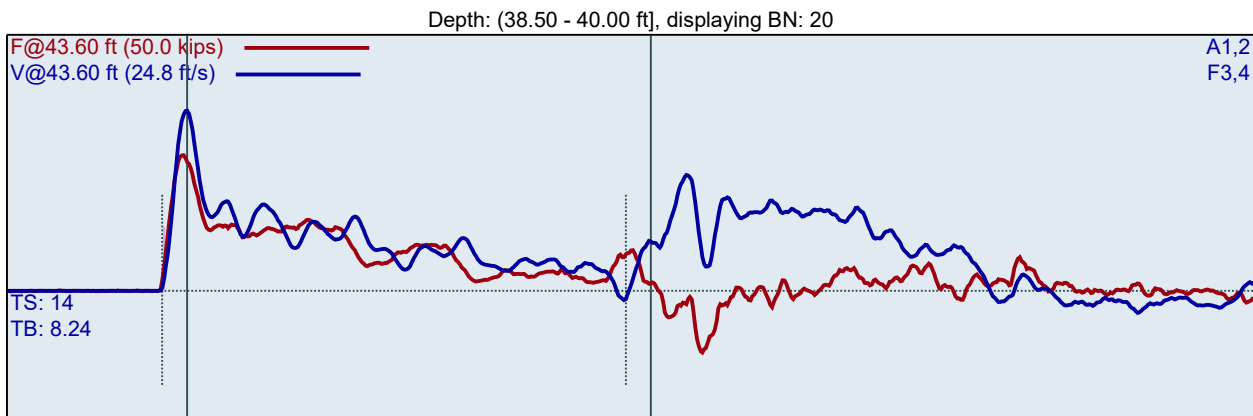
Sample Interval Time: 20.53 seconds.

CME 45B (SN 303304)  
REK  
B-2

B-2  
Interval start: 4/12/2024

AR: 1.13 in<sup>2</sup>  
LE: 43.60 ft  
WS: 16807.9 ft/s

SP: 0.492 k/ft<sup>3</sup>  
EM: 30000 ksi



F3 : [728AWJ1] 224.649 PDICAL (1) FF1  
F4 : [728AWJ2] 224.139 PDICAL (1) FF1

A1 (PR): [K10959] 413.827 mv/6.4v/5000g (1) VF1  
A2 (PR): [K10960] 419.894 mv/6.4v/5000g (1) VF1

LP ft	BL#	BC /6"	BPM bpm	FMX kips	VMX ft/s	DMX in	CSX ksi	DFN in	EFV ft-lb	ETR %
38.60	1	5	1.9	27.8	18.7	2.0	24.6	1.2	310.8	88.8
38.70	2	5	52.2	26.3	17.6	1.6	23.3	1.2	298.0	85.1
38.80	3	5	53.0	26.7	18.9	1.5	23.6	1.2	311.1	88.9
38.90	4	5	54.7	26.7	19.0	1.3	23.6	1.2	304.6	87.0
39.00	5	5	54.5	26.4	17.6	1.4	23.4	1.2	295.3	84.4
39.07	6	7	54.5	27.2	18.7	1.2	24.0	0.9	304.9	87.1
39.14	7	7	54.5	26.9	18.7	1.1	23.8	0.9	306.3	87.5
39.21	8	7	54.4	26.9	17.8	1.1	23.8	0.9	298.2	85.2
39.29	9	7	54.4	26.8	18.0	1.0	23.7	0.9	295.3	84.4
39.36	10	7	54.3	26.8	17.7	0.9	23.7	0.9	292.1	83.5
39.43	11	7	54.5	27.1	18.5	1.0	24.0	0.9	302.1	86.3
39.50	12	7	54.6	26.7	17.9	0.9	23.7	0.9	294.1	84.0
39.55	13	10	54.1	26.6	17.9	0.8	23.5	0.6	290.0	82.9
39.60	14	10	54.8	26.5	17.9	0.9	23.5	0.6	294.1	84.0
39.65	15	10	54.9	26.2	17.6	0.9	23.2	0.6	290.8	83.1
39.70	16	10	54.8	26.3	17.4	0.7	23.3	0.6	289.7	82.8
39.75	17	10	54.4	26.3	17.3	0.8	23.3	0.6	289.3	82.7
39.80	18	10	54.5	26.4	17.3	0.8	23.4	0.6	297.0	84.9
39.85	19	10	54.3	26.4	17.4	0.8	23.4	0.6	299.3	85.5
39.90	20	10	54.8	26.5	17.4	0.8	23.4	0.6	297.4	85.0
39.95	21	10	54.3	27.7	18.0	0.8	24.5	0.6	308.1	88.0
40.00	22	10	54.6	27.3	17.7	0.7	24.2	0.6	300.9	86.0
Average			54.5	26.7	17.8	0.9	23.7	0.7	297.0	84.9
Std Dev			0.2	0.4	0.4	0.1	0.3	0.1	5.8	1.6
Maximum			54.9	27.7	18.7	1.2	24.5	0.9	308.1	88.0
Minimum			54.1	26.2	17.3	0.7	23.2	0.6	289.3	82.7
N-value: 17										

Sample Interval Time: 23.19 seconds.

**Summary of SPT Test Results**

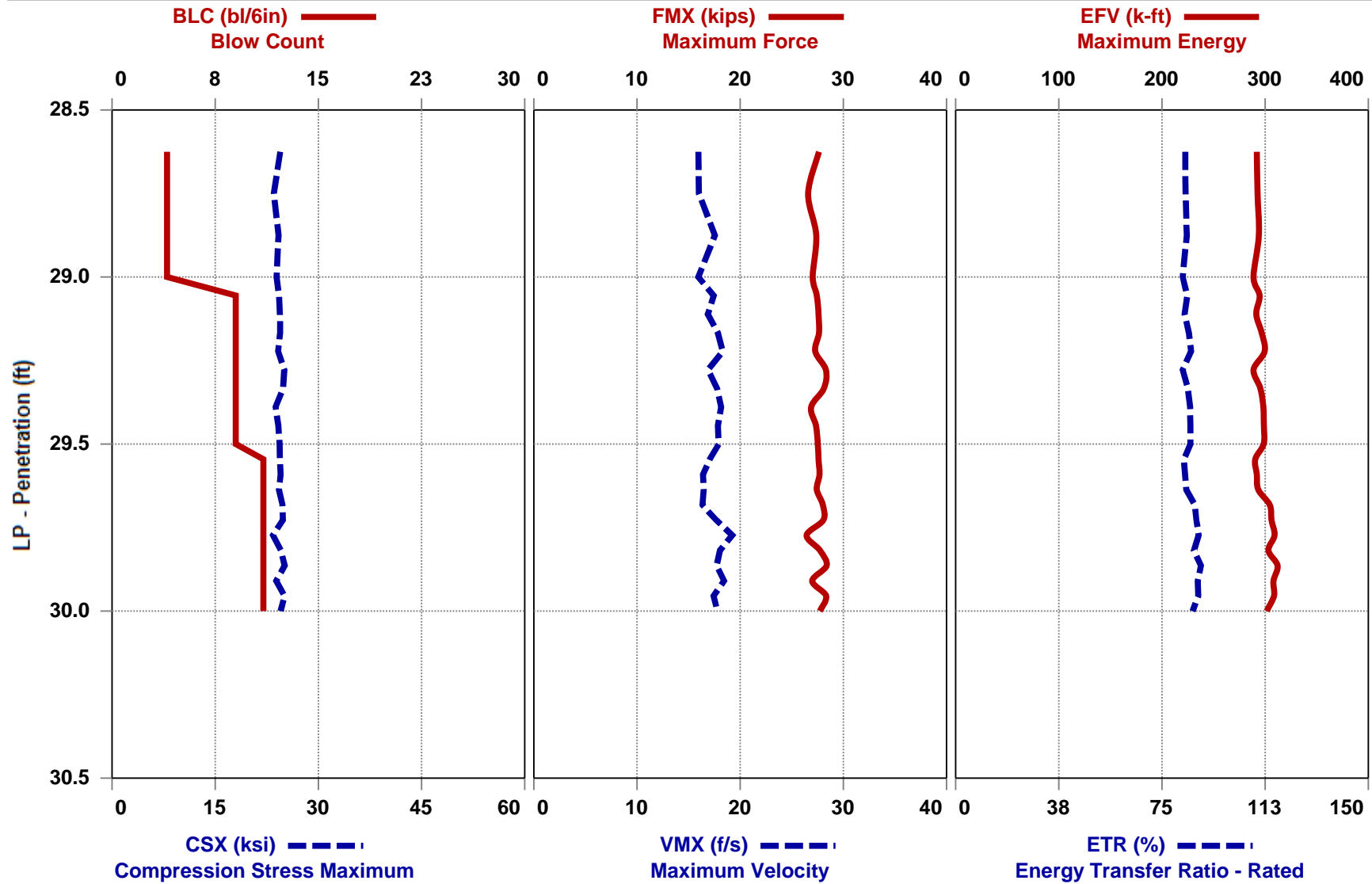
Project: CME 45B (SN 303304), Test Date: 4/12/2024

BPM: Blows/Minute						CSX: Compression Stress Maximum							
FMX: Maximum Force						DFN: Final Displacement							
VMX: Maximum Velocity						EFV: Maximum Energy							
DMX: Maximum Displacement						ETR: Energy Transfer Ratio - Rated							
Instr. Length ft	Start Depth ft	Final Depth ft	Blows Applied /6"	N Value	N60 Value	Average BPM bpm	Average FMX kips	Average VMX ft/s	Average DMX in	Average CSX ksi	Average DFN in	Average EFV ft-lb	Average ETR %
33.60	28.50	30.00	<b>4-9-11</b>	<b>20</b>	<b>28</b>	53.8	27.6	17.6	0.9	24.4	0.6	299.4	85.5
38.60	33.50	35.00	<b>4-7-10</b>	<b>17</b>	<b>24</b>	58.3	27.7	17.7	1.0	24.5	0.7	311.7	89.1
43.60	38.50	40.00	<b>5-7-10</b>	<b>17</b>	<b>24</b>	54.5	26.7	17.8	0.9	23.7	0.7	297.0	84.9
<b>Overall Average Values:</b>						55.4	27.4	17.7	0.9	24.2	0.7	302.5	86.4
<b>Standard Deviation:</b>						2.0	0.6	0.6	0.1	0.5	0.1	8.8	2.5
<b>Overall Maximum Value:</b>						58.8	28.7	19.2	1.3	25.4	0.9	323.1	92.3
<b>Overall Minimum Value:</b>						53.3	26.2	16.3	0.7	23.2	0.5	288.7	82.5



CME 45B (SN 303304) - 28.5 TO 30.0

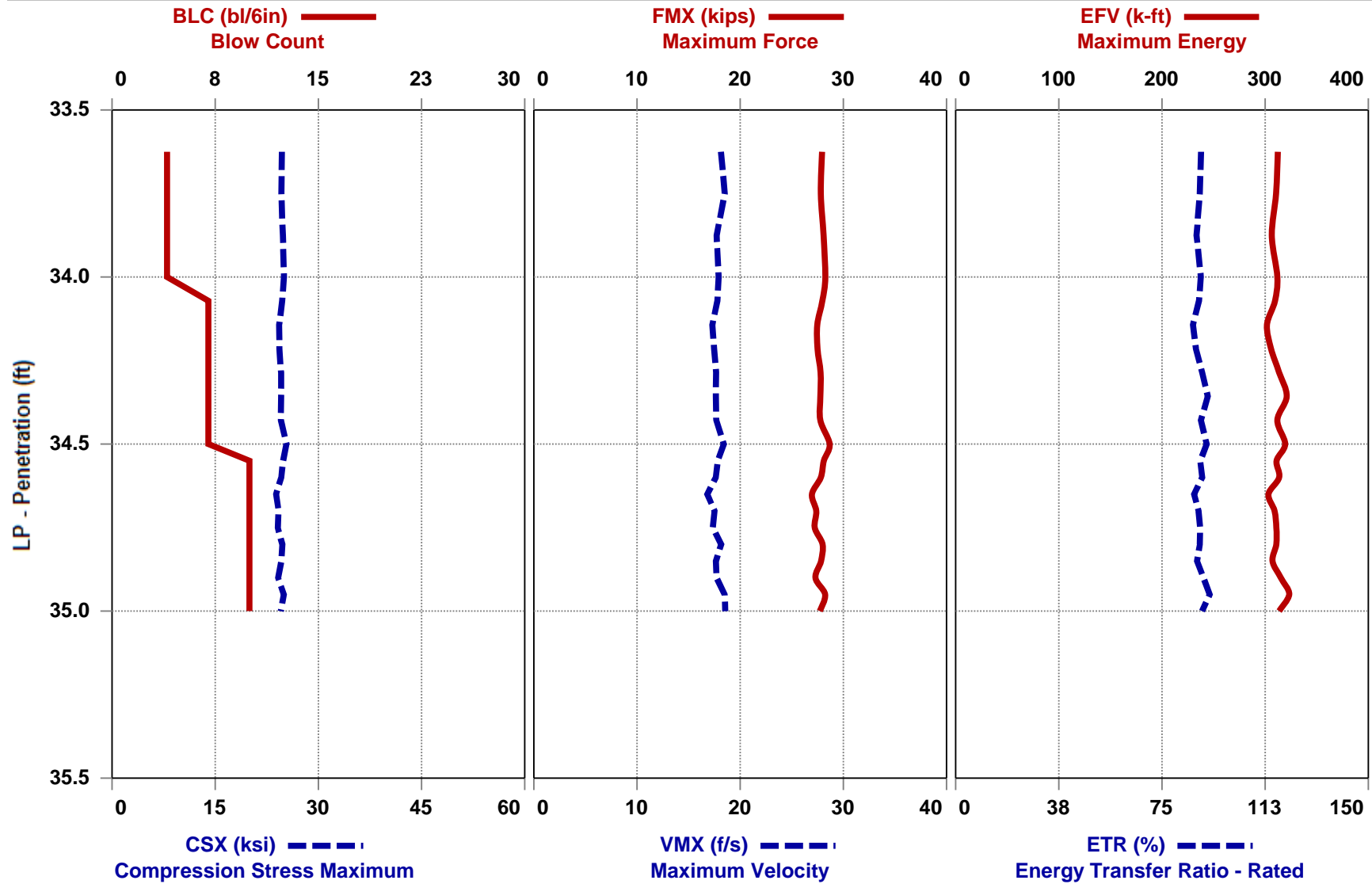
B-2





CME 45B (SN 303304) - 33.5 TO 35.0

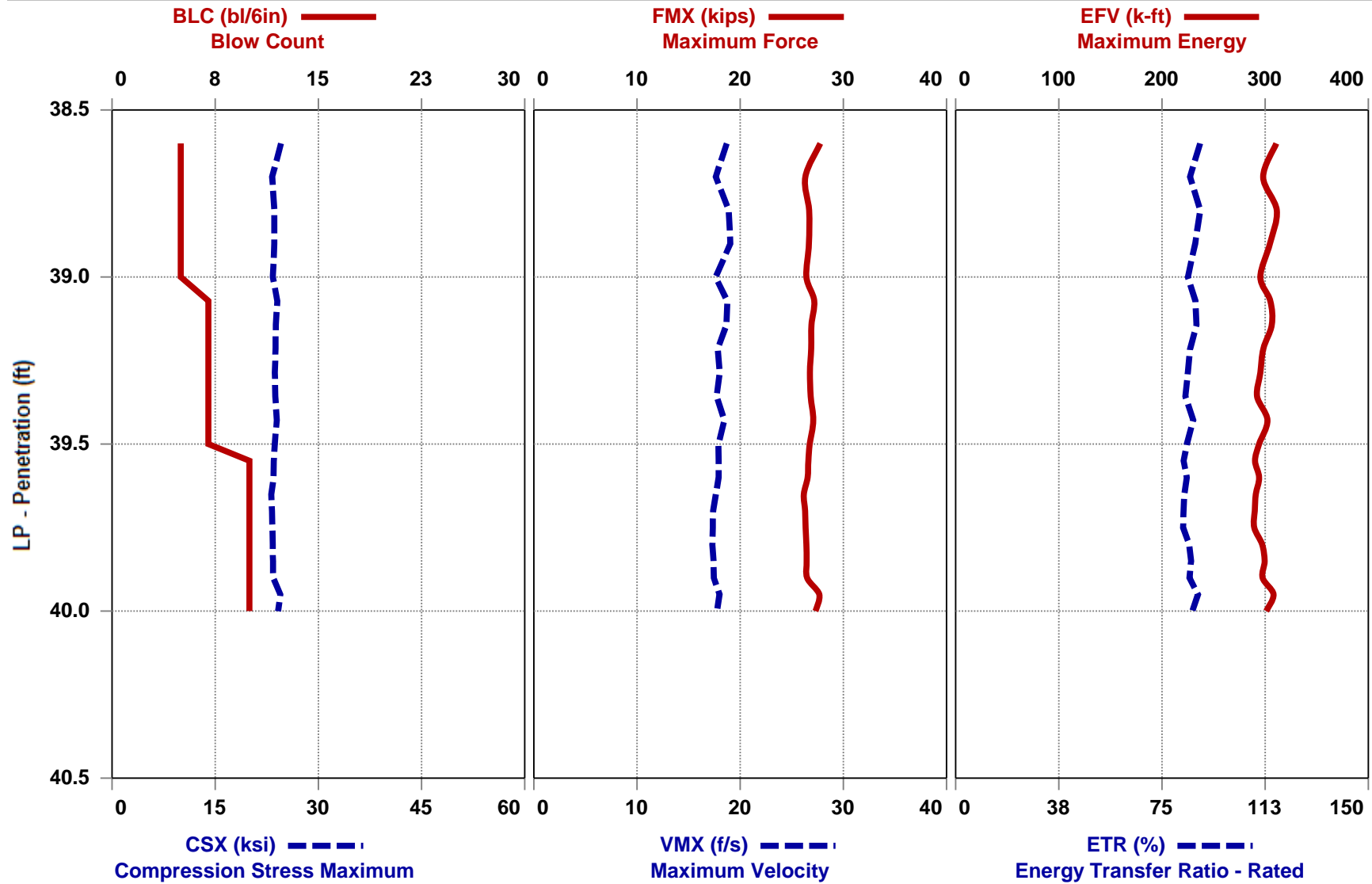
B-2



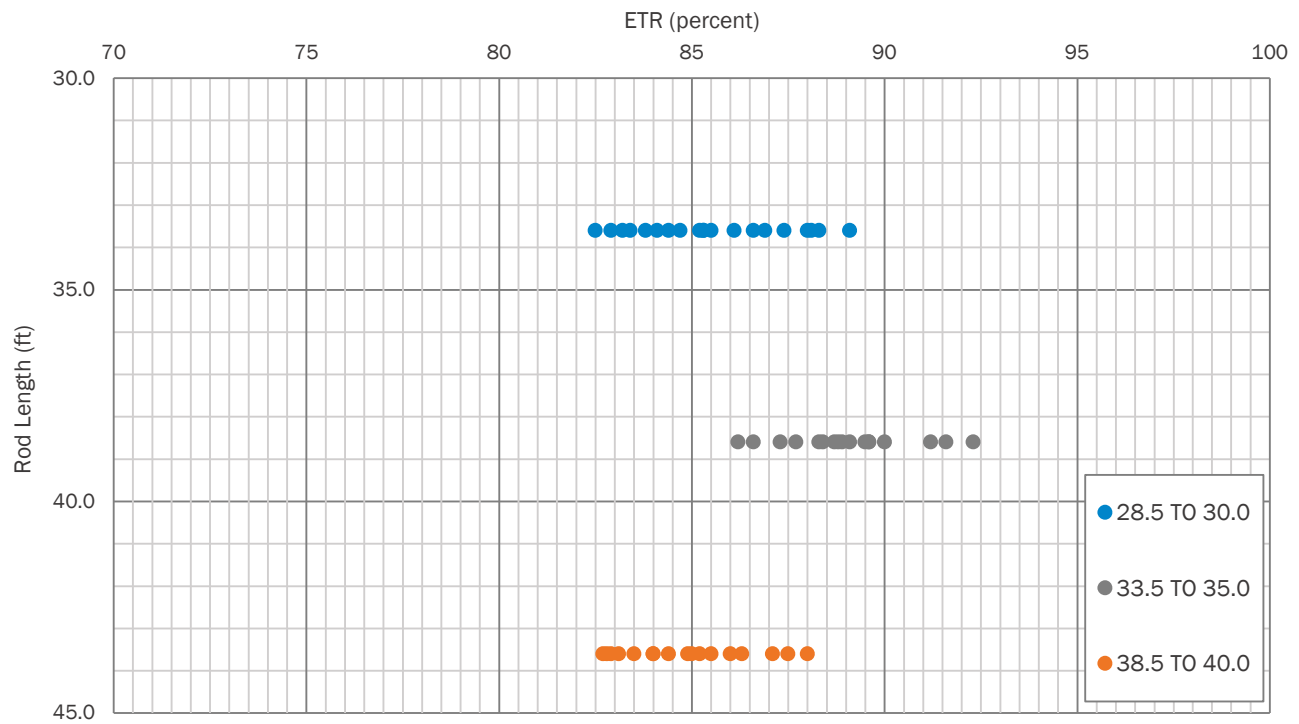


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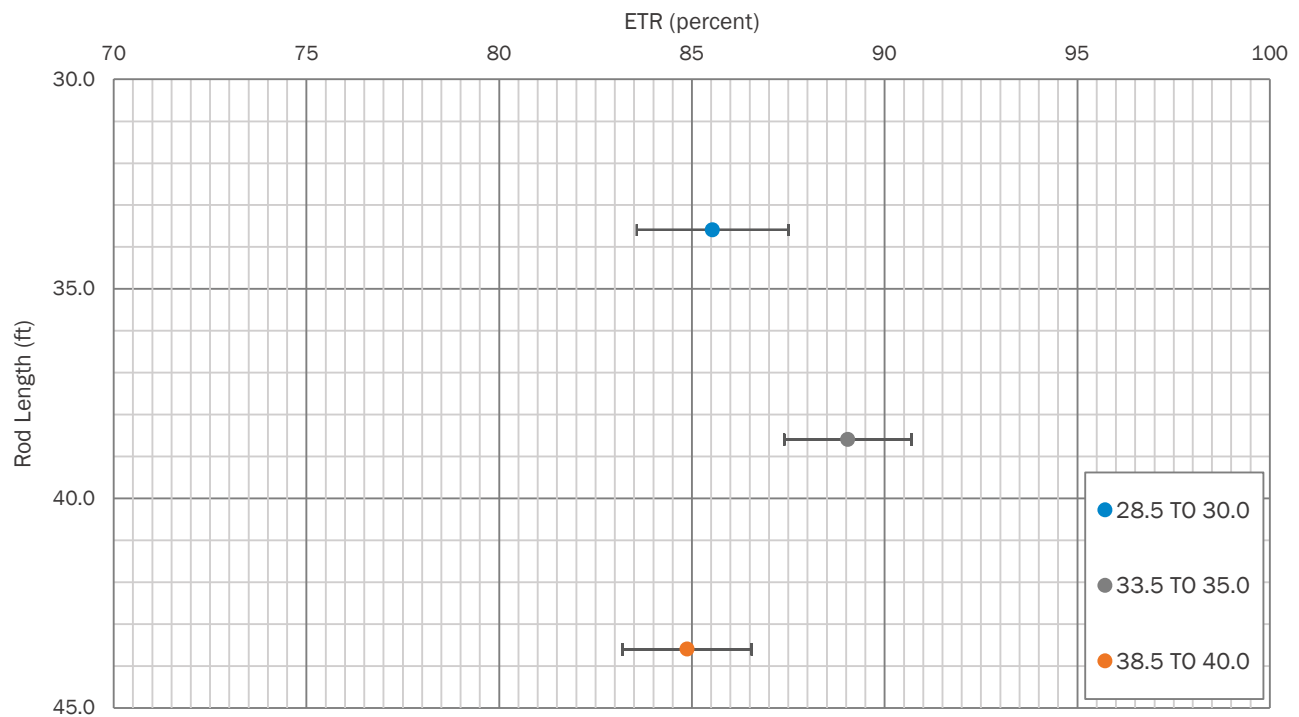
B-2



### ETR versus Rod Length CME 45B Trailer (SN 303304)



### Average ETR versus Rod Length $\pm 1$ Standard Deviation CME 45B Trailer (SN 303304)







## APPENDIX II

# SPT Hammer Energy Field Form

**Project:** SPT HAMMER ENERGY  
**Project No.:** 240021095  
**Boring No.:** B-2

**Date:** 4/12/2024  
**Weather:** 50's CLEAR  
**Drill Rod Type:** AWJ

## On-site Personnel

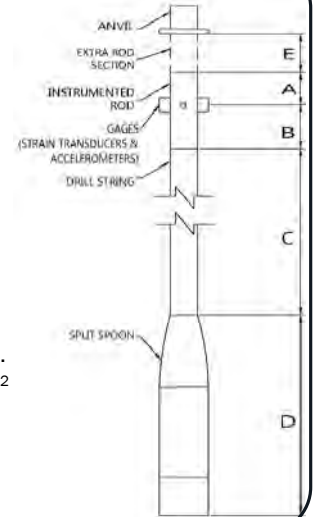
Drilling Company: BRECCIA CONSTRUCTION, LLC  
 Rig Operator: D. HARRIS  
 Engr/Geologist: N/A  
 Client Rep.: N/A  
 Analyzer Oper.: R. KRAL

## Rig/Hammer Info

Drill Rig Make/Model: CME 45B  
 Carrier Type: TRAILER  
 Rig Serial No.: 303304  
 Hammer Type/Model: CME  
 Hammer Serial No.: N/A  
 Hammer Drop System: AUTO  
 Lubrication Condition: PER MANUFACTURER  
 Manufacturer Recommended  
 Operation Rate (bpm): 55  
 Drop Height (in.): 30  
 Hammer Weight (lbs): 140  
 Anvil Dimension (in.): 11.5  
 Drilling Method: 2.25 HSA

## Rod Info

**(A + E)** Impact Surface to Gages Length: 1.36 ft  
**(B)** Instr. Rod Length below Gages: 0.70 ft  
**(A) + (B)** Instr. Rod Length: 2.00 ft  
**(D)** Spoon Length: 2.85 ft  
**(E)** Rod Length Above Instr. Rod (if applicable): 0.06 ft  
 Instr. Rod S/N: 728AWJ  
 Instr. Rod Outside Dia.: 1.75 in.  
 Instr. Rod Area: 1.13 in<sup>2</sup>  
 PDA Make/Model: SPT  
 PDA Serial No.: 4553 TB  
 Calib. Pulse Test (y/n): Y



## Gage Info

Gage		Serial No.	Calibration No.
Accel.	A3	K10959	413.83
	A4	K10960	419.89
Strain	F3	728AWJ-1	224.65
	F4	728AWJ-2	224.14

Date of Test	Test Depth Increment (ft to ft)	Test Time Start / Stop (military)	Length of Drill String (ft) (C)	(LE) Length below Gages (ft) (B) + (C) + (D)	Avg. Meas. Hammer Rate (BPM)	SPT Blow Counts				Drop Height in Tolerance (y/n)	Soil Class.
						6"	12"	18"	N-Value		
12-Apr	28.5 TO 30.0	0822/0822	30	33.6	53	4	9	11	20	Y	SA SI
12-Apr	33.5 TO 35.0	0830/0831	35	38.6	57	4	7	10	17	Y	SA SI
12-Apr	38.5 TO 40.0	0838/0838	40	43.6	54	5	7	10	17	Y	SA SI

## Notes:

TESTING PERFORMED AT 1817 LOWRYS HIGHWAY IN CHESTER, SOUTH CAROLINA (CHESTER COUNTY). THE APPROXIMATE COORDINATES ARE 34.7704252, - 81.2454632.

NOTE: (1) Note any unusual hammer operating conditions that affect the hammer performance, or changes in operating conditions (e.g. verticality, weather, or lubrication between trials). (2) Note any changes in rod diameter along drill string and record locations of short rod sections.



Prepared By (print/signature)

4/12/2024  
Date



Figure No. 1: Rear View of Drill Rig



Figure No. 2: Side View of Drill Rig



Figure No. 3: Serial Number Plate



Figure No. 4: Automatic Hammer



## APPENDIX III



# *Certificate of Calibration*

Pile Dynamics, Inc. certifies that the

Pile Driving Analyzer®, Model SPT

Serial Number: 4553 TB

was calibrated on 18 December 2023  
using a PDA Calibration Box whose output was calibrated with test equipment  
traceable to NIST.

This certificate is valid for 2 years from above date.



Tested by [Signature]

Pile Dynamics, Inc.  
30725 Aurora Road  
Cleveland, Ohio 44139 USA





# *Certificate of Calibration*

**Pile Dynamics, Inc. certifies that the**

**Pile Driving Analyzer®, Model SPT**

**Serial Number: 4549 TB**

was calibrated on 14 July 2022

using a PDA Calibration Box whose output was calibrated with test equipment  
traceable to NIST.

This certificate is valid for 2 years from above date.



Tested by

*MC*



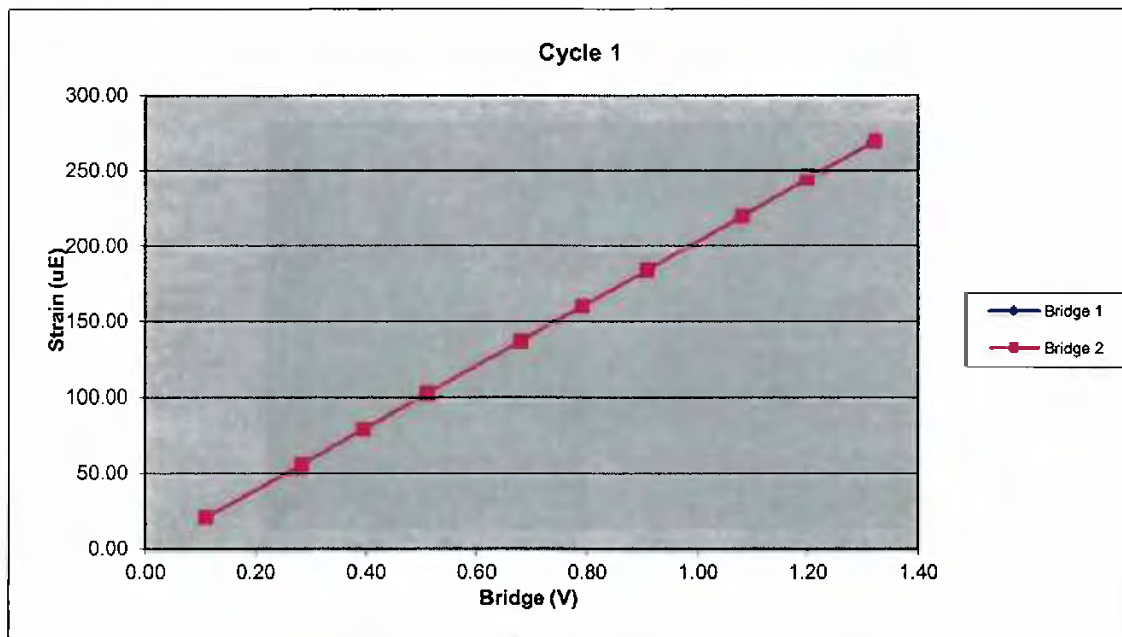
Pile Dynamics, Inc.  
30725 Aurora Road  
Cleveland, Ohio 44139 USA



528AWJ		Cycle 1		
Sample	Force (lb)	Strain ( $\mu\text{E}$ )	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	803.20	21.15	0.11	0.11
3	2080.73	56.33	0.28	0.28
4	2904.01	79.79	0.39	0.39
5	3765.89	103.49	0.51	0.51
6	5005.11	138.03	0.68	0.68
7	5828.59	161.56	0.79	0.79
8	6692.71	185.68	0.91	0.91
9	7962.93	221.03	1.08	1.08
10	8831.54	245.89	1.20	1.20
11	9736.80	270.68	1.32	1.32

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7358.13	Force Calibration (lb/V)	7351.82
Offset	3.52	Offset	6.26
Correlation	0.999999	Correlation	0.999999
Strain Calibration ( $\mu\text{E/V}$ )	205.90	Strain Calibration ( $\mu\text{E/V}$ )	205.73
Offset	-1.56	Offset	-1.48
Correlation	0.999995	Correlation	0.999996

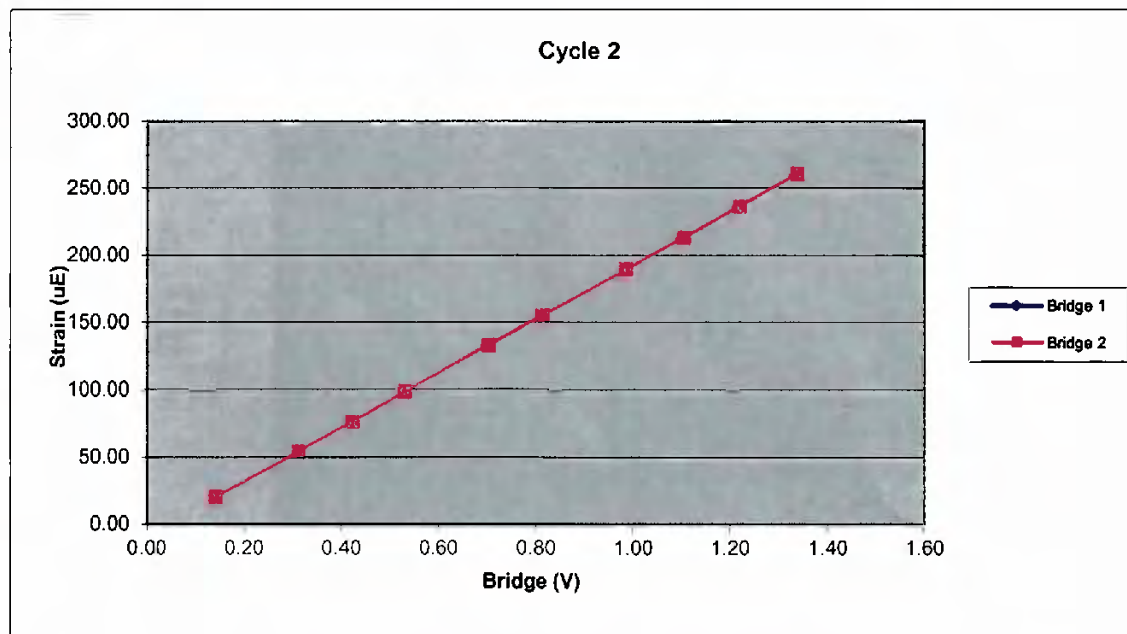
Force Strain Calibration	
EA (Kips)	35735.87
Offset	59.29
Correlation	0.999995



528AWJ		Cycle 2		
Sample	Force (lb)	Strain ( $\mu\text{E}$ )	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	1038.71	19.60	0.14	0.14
3	2288.25	53.30	0.31	0.31
4	3093.11	75.49	0.42	0.42
5	3893.00	97.84	0.53	0.53
6	5167.50	132.26	0.70	0.70
7	5988.25	154.39	0.81	0.81
8	7248.72	188.87	0.98	0.98
9	8125.71	212.29	1.10	1.10
10	8976.19	235.45	1.22	1.22
11	9854.85	259.50	1.33	1.34

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7381.92	Force Calibration (lb/V)	7365.94
Offset	-0.76	Offset	4.69
Correlation	0.999998	Correlation	0.999999
Strain Calibration ( $\mu\text{E}/\text{V}$ )	200.83	Strain Calibration ( $\mu\text{E}/\text{V}$ )	200.40
Offset	-8.59	Offset	-8.44
Correlation	0.999997	Correlation	0.999996

Force Strain Calibration	
EA (Kips)	36756.34
Offset	315.07
Correlation	0.999995

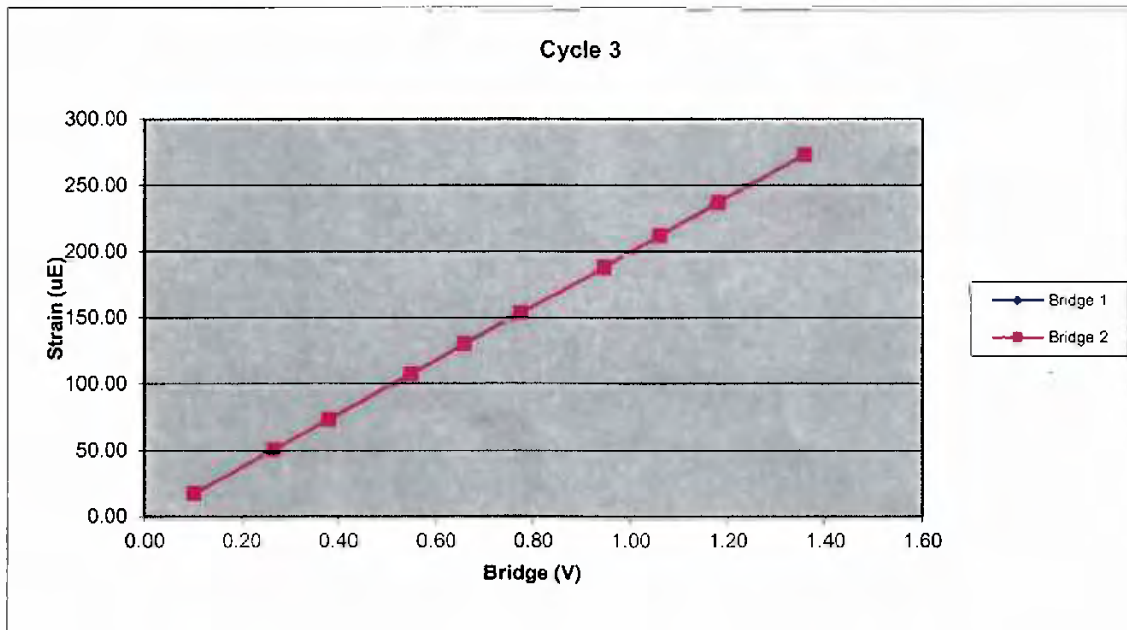




528AWJ		Cycle 3		
Sample	Force (lb)	Strain ( $\mu\text{E}$ )	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	734.68	18.74	0.10	0.10
3	1943.58	51.94	0.26	0.26
4	2781.29	75.07	0.38	0.38
5	4027.81	108.88	0.55	0.55
6	4829.55	131.78	0.66	0.66
7	5689.29	155.36	0.77	0.77
8	6956.49	190.12	0.95	0.95
9	7799.46	214.09	1.06	1.06
10	8693.90	238.78	1.18	1.18
11	10007.88	275.06	1.36	1.36

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7366.71	Force Calibration (lb/V)	7364.49
Offset	-6.17	Offset	-9.40
Correlation	0.999998	Correlation	0.999999
Strain Calibration ( $\mu\text{E}/\text{V}$ )	203.78	Strain Calibration ( $\mu\text{E}/\text{V}$ )	203.72
Offset	-2.08	Offset	-2.17
Correlation	0.999989	Correlation	0.999993

Force Strain Calibration	
EA (Kips)	36149.33
Offset	69.26
Correlation	0.999994



Bridge Excitation (V) 5  
Shunt Resistor (ohm) 60.4k

Calibration Factors	528AWJ		
Bridge 1 ( $\mu\text{E/V}$ )	203.51	Bridge 2 ( $\mu\text{E/V}$ )	203.28
EA Factor (Kips)	36213.85	Area ( $\text{in}^2$ )	1.21

Calibrated by:



Calibrated Date:

7/18/2022

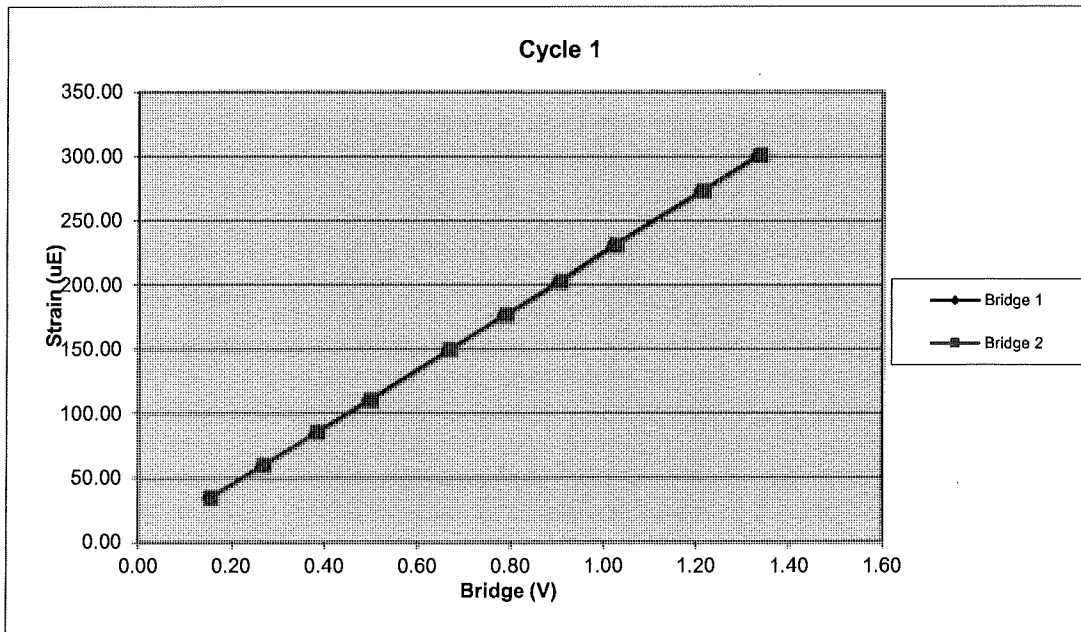
Pile Dynamics Inc  
30725 Aurora Rd  
Solon, OH 44139

Traceable to N.I.S.T.

728AWJ		Cycle 1		
Sample	Force (lb)	Strain ( $\mu$ E)	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	1199.06	34.33	0.16	0.16
3	2052.76	59.72	0.27	0.27
4	2924.20	85.27	0.38	0.39
5	3782.68	110.02	0.50	0.50
6	5074.34	149.22	0.67	0.67
7	5985.06	176.19	0.79	0.79
8	6869.47	202.19	0.90	0.91
9	7768.10	230.48	1.02	1.03
10	9202.28	272.31	1.21	1.22
11	10126.06	300.27	1.33	1.34

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7583.03	Force Calibration (lb/V)	7557.58
Offset	20.67	Offset	0.95
Correlation	1.000000	Correlation	0.999999
Strain Calibration ( $\mu$ E/V)	226.02	Strain Calibration ( $\mu$ E/V)	225.27
Offset	-1.27	Offset	-1.86
Correlation	0.999984	Correlation	0.999979

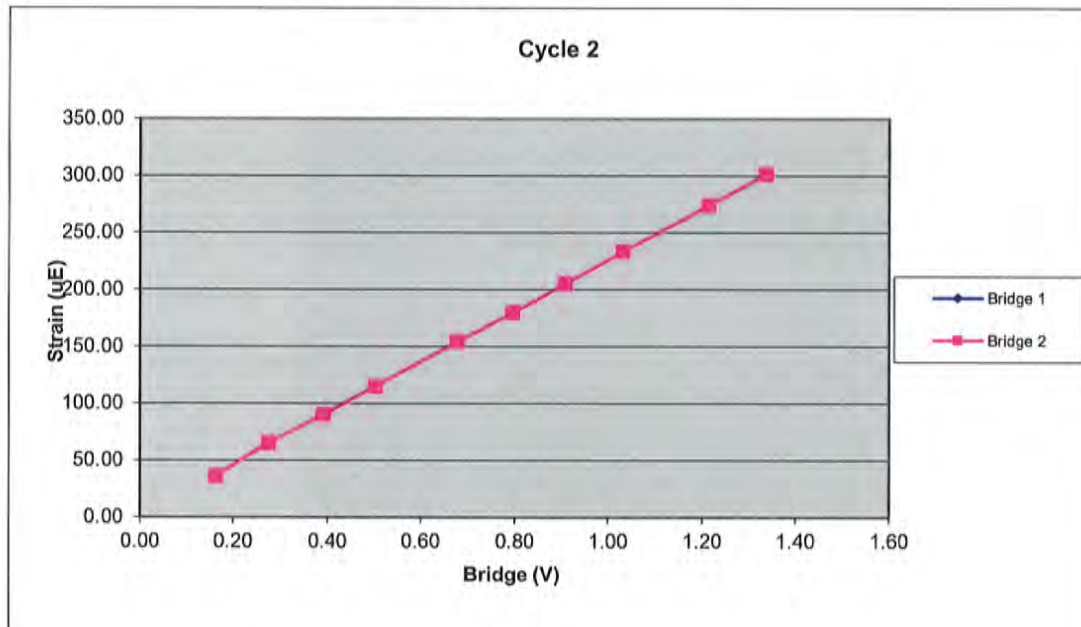
Force Strain Calibration	
EA (Kips)	33548.47
Offset	63.54
Correlation	0.999983



728AWJ		Cycle 2		
Sample	Force (lb)	Strain ( $\mu$ E)	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	1236.98	35.69	0.16	0.16
3	2108.61	64.71	0.28	0.28
4	2976.64	89.52	0.39	0.39
5	3811.14	114.45	0.50	0.50
6	5141.89	153.54	0.68	0.68
7	6032.24	178.92	0.80	0.80
8	6903.48	204.54	0.91	0.91
9	7825.42	232.64	1.03	1.03
10	9217.58	273.43	1.22	1.22
11	10151.02	300.79	1.34	1.34

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7561.16	Force Calibration (lb/V)	7576.28
Offset	14.33	Offset	4.68
Correlation	0.999997	Correlation	0.999995
Strain Calibration ( $\mu$ E/V)	223.39	Strain Calibration ( $\mu$ E/V)	223.84
Offset	1.55	Offset	1.27
Correlation	0.999945	Correlation	0.999943

Force Strain Calibration	
EA (Kips)	33843.24
Offset	-37.68
Correlation	0.999950



728AWJ		Cycle 3		
Sample	Force (lb)	Strain ( $\mu\text{E}$ )	Bridge 1 (V)	Bridge 2 (V)
1	0.00	0.00	0.00	0.00
2	822.90	24.10	0.11	0.11
3	2132.69	64.89	0.28	0.28
4	2972.74	89.98	0.39	0.39
5	3841.65	115.75	0.50	0.51
6	4741.16	141.06	0.62	0.62
7	6043.35	179.33	0.79	0.80
8	6961.58	206.39	0.91	0.92
9	7901.94	232.60	1.03	1.04
10	8816.85	260.36	1.15	1.16
11	9759.65	288.75	1.28	1.29

Bridge 1		Bridge 2	
Force Calibration (lb/V)	7644.24	Force Calibration (lb/V)	7602.69
Offset	-5.25	Offset	-12.15
Correlation	0.999999	Correlation	0.999997
Strain Calibration ( $\mu\text{E}/\text{V}$ )	224.53	Strain Calibration ( $\mu\text{E}/\text{V}$ )	223.31
Offset	1.57	Offset	1.37
Correlation	0.999950	Correlation	0.999942

Force Strain Calibration	
EA (Kips)	34041.33
Offset	-58.11
Correlation	0.999945



Bridge Excitation (V) 5  
Shunt Resistor (ohm) 60.4k

Calibration Factors	728AWJ		
Bridge 1 ( $\mu\text{E/V}$ )	224.65	Bridge 2 ( $\mu\text{E/V}$ )	224.14
EA Factor (Kips)	33811.01	Area ( $\text{in}^2$ )	1.13

Calibrated by: Sean Bonner  
Calibrated Date: 2/6/2024

Pile Dynamics Inc  
30725 Aurora Rd  
Solon, OH 44139

Traceable to N.I.S.T.

# Accelerometer Calibration Certificate

## Pile Dynamics, Inc.



Calibrated by Pile Dynamics, Inc.  
Calibration performed on 14Jun2022

Serial No: K10959 Temperature: 79.0 °F

Model: PR Humidity: 50%

Calibrated on: Channel 3 on 8G 5161 LE

### PDA CALIBRATION FACTOR

413.8 mv/5000g

(82.8  $\mu$ v/g)

R<sup>2</sup>: 0.999956 [Chip programmed]

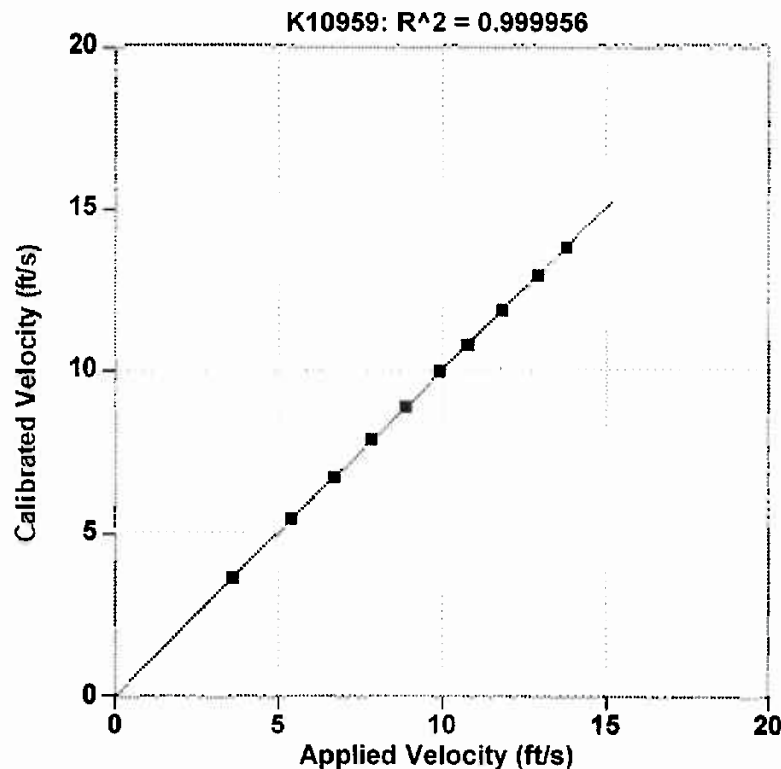
Ref Acc 1: 72517! Cal on: 24Mar2022  
1049 g's/volt

Ref Acc 2: 72505! Cal on: 24Mar2022  
1035 g's/volt

Operator: William Johnson

  
Signed

Reference accelerometer calibrations are traceable to  
the United States National Institute of Standards and  
Technology (NIST).



Reference Velocity	S/N K10959 Velocity
ft/s	ft/s
3.605	3.589
5.397	5.412
6.705	6.699
7.841	7.862
8.877	8.913
9.904	9.929
10.746	10.721
11.807	11.815
12.910	12.889
13.783	13.762
Maximum Acceleration: 935 g's	



# Accelerometer Calibration Certificate

## Pile Dynamics, Inc.



Calibrated by Pile Dynamics, Inc.  
Calibration performed on 14Jun2022

Serial No: K10960 Temperature: 79.0 °F

Model: PR Humidity: 50%

Calibrated on: Channel 3 on 8G 5161 LE

### PDA CALIBRATION FACTOR

**419.9 mv/5000g**

(84.0  $\mu\text{v/g}$ )

R<sup>2</sup>: 0.999944 [Chip programmed]

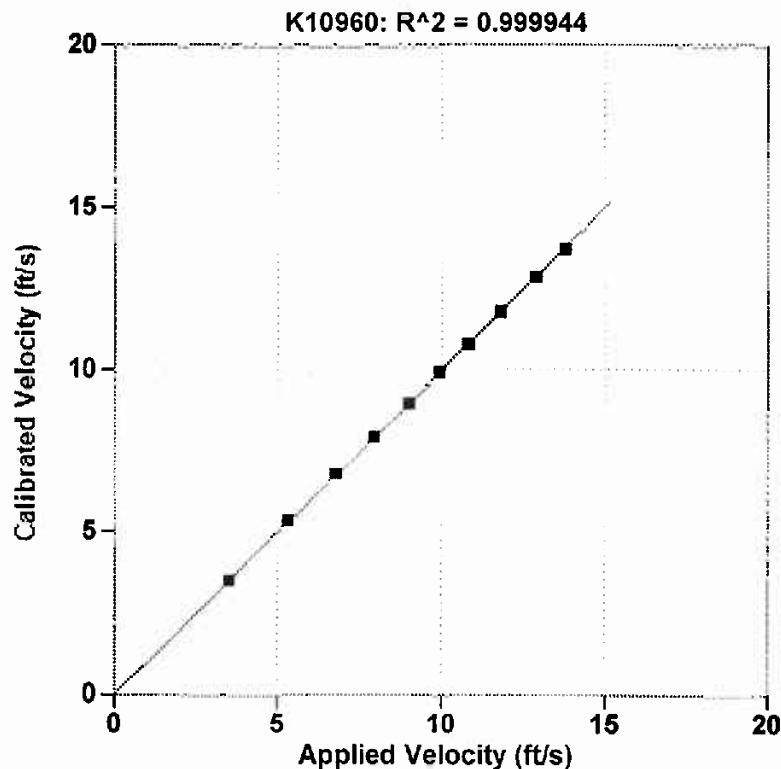
Operator: William Johnson

Ref Acc 1: 72517! Cal on: 24Mar2022  
1049 g's/volt

Ref Acc 2: 72505! Cal on: 24Mar2022  
1035 g's/volt

Signed

Reference accelerometer calibrations are traceable to  
the United States National Institute of Standards and  
Technology (NIST).



Reference Velocity	S/N K10960 Velocity
ft/s	ft/s
3.513	3.540
5.322	5.345
6.769	6.796
7.933	7.937
8.998	9.037
9.912	9.923
10.788	10.775
11.781	11.779
12.877	12.863
13.771	13.732

Maximum Acceleration: 934 g's



# Accelerometer Calibration Certificate

## Pile Dynamics, Inc.



Calibrated by Pile Dynamics, Inc.  
Calibration performed on 14Jun2022

Serial No: K11957 Temperature: 79.0 °F

Model: PR Humidity: 50%

Calibrated on: Channel 3 on 8G 5161 LE

### PDA CALIBRATION FACTOR

409.6 mv/5000g

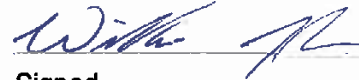
(81.9  $\mu$ v/g)

R<sup>2</sup>: 0.999919 [Chip programmed]

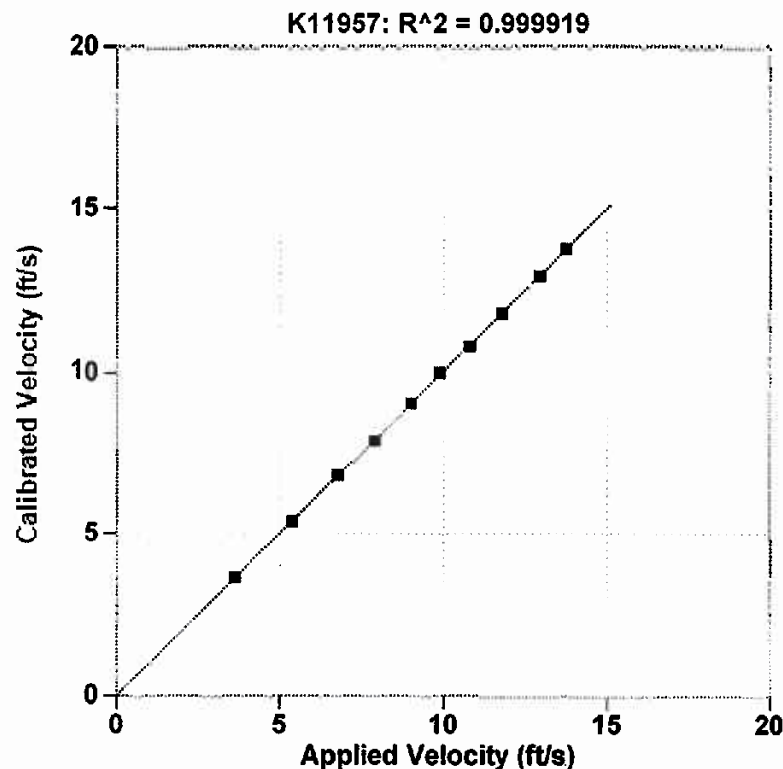
Operator: William Johnson

Ref Acc 1: 72517! Cal on: 24Mar2022  
1049 g's/volt

Ref Acc 2: 72505! Cal on: 24Mar2022  
1035 g's/volt

  
Signed

Reference accelerometer calibrations are traceable to  
the United States National Institute of Standards and  
Technology (NIST).



Reference Velocity ft/s	S/N K11957 Velocity ft/s
3.643	3.661
5.377	5.363
6.761	6.783
7.895	7.905
8.973	8.989
9.864	9.918
10.780	10.730
11.763	11.749
12.920	12.894
13.735	13.746

Maximum Acceleration: 931 g's



## APPENDIX IV





This documents that  
**Robert E. Kral**  
**Carolinas Geotechnical Group**  
has on May 20, 2016 achieved the rank of  
**ADVANCED**


**on the Dynamic Measurement and Analysis Proficiency Test.**

The individual identified on this document demonstrated to the degree granted above an understanding of theory, data quality evaluation, interpretation and signal matching for high strain dynamic testing of deep foundations. ***It is recommended that individuals at the Advanced level seek Master or Expert levels through additional study within six years of the date of this document.***

The ability of the individual named to provide appropriate knowledge and advice on a specific project is not implied or warranted by the Pile Driving Contractors Association or Pile Dynamics, Inc. **This certificate can be verified at [www.PDAproficiencytest.com](http://www.PDAproficiencytest.com).** The Pile Driving Contractors Association or Pile Dynamics, Inc. assumes no liability for foundation testing and analysis work performed by the bearer of this certificate.

  
Steven A. Hall, Executive Director  
Pile Driving Contractors Association



  
Garland Likins, Senior Partner  
Pile Dynamics, Inc.

No. 2072

# **S-17-58 over Beaverdam Creek**

## **Geotechnical Subsurface Data Report**

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# **APPENDIX**

## **SECTION 8**

## **GEOSCOPING FORM**



# GeoScoping Form

PROJECT INFORMATION	
Project ID: <u>P043715</u>	Date of Trip: <u>2/26/25 - 2/28/25</u>
County: <u>Dillon</u>	Location: <u>Over Beaverdam Creek, South of Gaddys Mill Pond</u>
Rd/Route: <u>S-17-58</u>	Local Name: <u>Gaddys Mill Rd.</u>
Attendees: <u>William Pitts</u>	

EXISTING BRIDGE INFORMATION	
Bridge Length: <u>105'</u>	Bridge Width: <u>28'</u>
Superstructure Type: <u>Concrete</u>	Substructure Type: <u>Timber Pile</u>
Begin Bridge Sta.: <u>N/A</u>	End Bridge Sta.: <u>N/A</u>
Begin Bridge Embankment Sta. <sup>1</sup> : <u>N/A</u>	End Bridge Embankment Sta. <sup>1</sup> : <u>N/A</u>
Structure Number:	Posted Weight Limit: <u>No Signage</u>
Crossing: <u>Beaverdam Creek</u>	Skew: <u>-</u>
Latitude: <u>34.393387</u>	Longitude: <u>-79.239258</u>
Existing Fill Height: <u>Approx 4.0'</u>	Approximate Existing Slope Angle: <u>20°-30°</u>

<sup>1</sup>Begin and End Bridge Embankment 100 feet down station or up station from bridge, respectively

EXISTING ROADWAY EMBANKMENT INFORMATION	
Begin Project Sta.: <u>N/A</u>	Begin Bridge Embankment Sta. <sup>1</sup> : <u>N/A</u>
Accessibility Issues: <u>None</u>	
Ground Cover: <u>Stonebase / Fill Soil / Top Soils</u>	
Existing Fill Height: <u>Approx 4.0' under Existing Road</u>	Approximate Existing Slope Angle: <u>0°-5°</u>
Local Development (undeveloped, developed residential, developed commercial, developed industrial, etc.): <u>undeveloped / Farmland / Residential</u>	
Topography (level, flat, rolling, steep, hillside, valley, swamp, gully, etc.): <u>Flat / Slight Grade / Swamp</u>	
Traffic Control Necessary (Y/N): <u>NO</u>	
Surface Soil: <u>Sand with Silt (SP-SM)</u>	Muck (Y/N): <u>NO</u>
Exposed Rock (Y/N): <u>NO</u>	In Stream Bed (Y/N): <u>Yes</u>
In Banks (Y/N): <u>Yes</u>	Wetlands On-Site (Y/N): <u>Yes</u>
Wetlands Adjacent (Y/N): <u>Yes</u>	Depth EG to Water: <u>Approx. 4.0'</u>
Water Depth: <u>Approx. 4.0'</u>	Depth to Existing Ground: <u>on grade</u>
Scour Condition at EB: <u>Minimal</u>	Scour Condition at IB: <u>Assessed undetermined</u>
End Bridge Embankment Sta. <sup>1</sup> : <u>N/A</u>	End Project Sta.: <u>N/A</u>
Accessibility Issues: <u>None</u>	
Ground Cover: <u>Stonebase / Fill Soil / Top Soils</u>	
Existing Fill Height: <u>Approx 4.0' under Existing Road</u>	Approximate Existing Slope Angle: <u>0°-5°</u>
Local Development (undeveloped, developed residential, developed commercial, developed industrial, etc.): <u>undeveloped / Farmland / Residential</u>	
Topography (level, flat, rolling, steep, hillside, valley, swamp, gully, etc.): <u>Flat / Slight Grade / Swamp</u>	
Traffic Control Necessary (Y/N): <u>Yes</u>	
Surface Soil: <u>Silty Sand (SM)</u>	Muck (Y/N): <u>NO</u>
Exposed Rock (Y/N): <u>NO</u>	In Stream Bed (Y/N): <u>Yes</u>
In Banks (Y/N): <u>Yes</u>	Wetlands On-Site (Y/N): <u>Yes</u>
Wetlands Adjacent (Y/N): <u>Yes</u>	Depth EG to Water: <u>Approx. 4.0'</u>
Water Depth: <u>Approx. 4.0'</u>	Depth to Existing Ground: <u>on grade</u>
Scour Condition at EB: <u>Minimal</u>	Scour Condition at IB: <u>undetermined</u>

## GeoScoping Form

UTILITIES INFORMATION	
Attached:	Fiber Optic (spectrum) / Water line / Power lines
Above Ground/ Overhead:	Fiber optic and Water Run along side of Existing Bridge. Power lines Run overhead
Underground:	Fiber optic and waterlines are both underground as well

COMMENTS

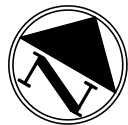
Instructions:

1. Attach boring location plan for bridge and roadway.
2. Attach all photographs taken, photographs to be labeled as to direction looking in and what is being depicted.
3. Fill out GeoScoping Form as completely as possible, using additional sheets as necessary to describe site conditions.
4. If representative of GEC on site during GeoScoping, include GEC representative's name and contact number in Attendees block.







SUBSURFACE TESTING DATA							
Boring ID	Test Type	Northing	Easting	Latitude	Longitude	Test Elevation (MSL)	Test Depth (ft)
B-1	STB	935935.799	2531069.063	34.39329371	-79.23941112	91.7	100.0
B-2	STB	935970.557	2531126.620	34.39338652	-79.23921838	91.6	120.9
B-3	STB	936004.298	2531184.795	34.39347650	-79.23902365	91.5	100.0
BS-1	BS/MAB	935987.492	2531195.024	34.39342985	-79.23899070	91.2	5.0
P-1	MAB	935599.945	2530428.851	34.39240086	-79.24155207	102.0	5.0
P-2	MAB	935690.384	2530655.195	34.39263876	-79.24079675	100.4	5.0
P-3	MAB	935815.743	2530868.063	34.39297325	-79.24008412	95.5	5.0
P-4	MAB	936123.496	2531385.049	34.39379464	-79.23835317	90.8	5.0
P-5	MAB	936249.208	2531599.251	34.39413001	-79.23763608	91.0	5.0
P-6	MAB	936408.344	2531783.502	34.39455862	-79.23701637	91.0	5.0
Composite Bulk Soil Sample BS-2 is composed of the upper 5-ft. of auger cuttings encountered within Manual Auger Borings P-1 through P-6							



LEGEND:

 SOIL TEST BORING LOCATION

 MANUAL AUGER BORING TEST LOCATION

4			
3			
2			
1			
REV.	BY	DATE	DESCRIPTION OF REVISION
TOPO.		DATE	
DWG.	CTC	DATE 3.7.25	GROUP -
R/W		DATE	

 F&ME CONSULTANTS, INC.  
COLUMBIA, SC

S-17-58 OVER BEAVERDAM CREEK  
DILLON COUNTY, SOUTH CAROLINA

BORING LOCATION PLAN

SCDOT PROJECT ID: P043715	FME JOB NO. G7100.010 TASK 00002
SCALE: NTS	FIGURE 2



## GeoScoping Form



**Approach Boring B-1 Looking Southwest**



**Approach Boring B-1 Looking Southwest**



**Approach Boring B-3 looking Northeast**



**East Approach Looking North**



## GeoScoping Form



**Gas Line**



**Guardrail Looking Northeast**



**Looking Northeast, Pile Header**



**Looking Southwest, Bridge underside**



## GeoScoping Form



**On Bridge Looking North**



**On Bridge Looking South**



**On Site Looking Northeast, Left Approach**



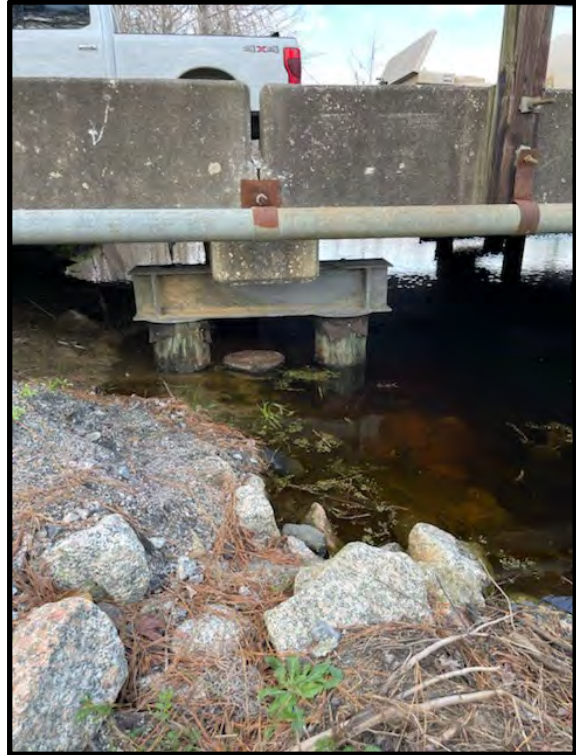
**On Site Looking Southwest, Left Approach**



## GeoScoping Form



**On Site Looking Southwest, Right Approach**



**Pile Cap**



**Signage**



**Utility Marker**



## GeoScoping Form



Utility Marker



Utility Marker



Utility Marker



Utility Marker