

REFERENCE: N/A

PROJECT: BP8.R001.1

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY MOORE
PROJECT DESCRIPTION BRIDGE NO. 46 ON SR 1658
(WADSWORTH ROAD) OVER MCINTOSH CREEK
BETWEEN SR 1659 AND SR 1625

INVENTORY

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
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3	SITE PLAN
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7-8	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BP8.R001.1	1	8

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

N. MOHS, LG

E. MAYR, PE

CAROLINA DRILLING

M. RADFORD

W. HAMMEL

INVESTIGATED BY N. MOHS, LG

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SUBMITTED BY RK&K, LLP

DATE DECEMBER 2022

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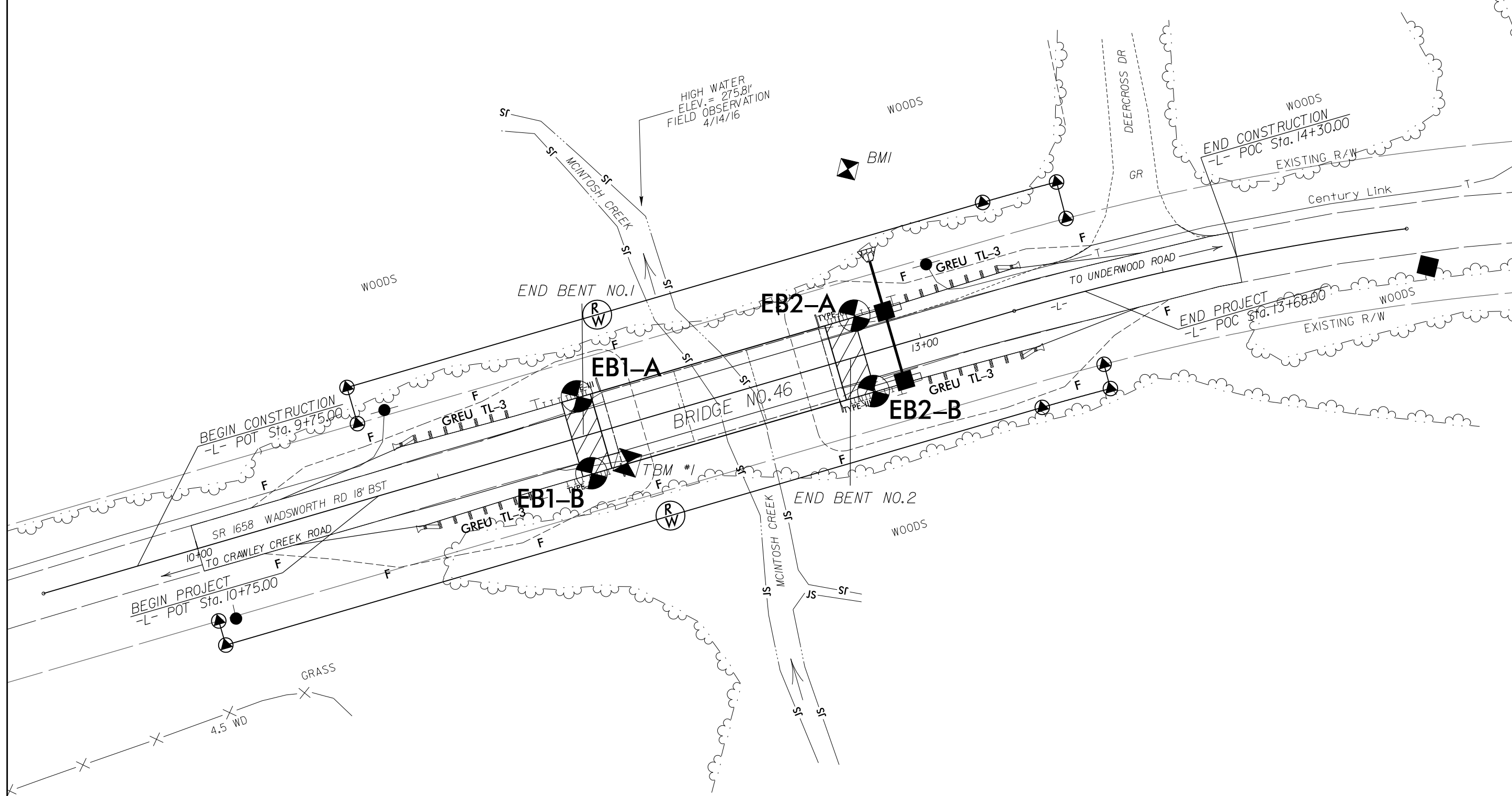


DocuSigned by:
Gregory Goins 12/6/2022
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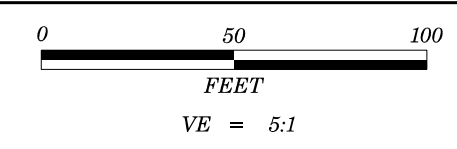
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

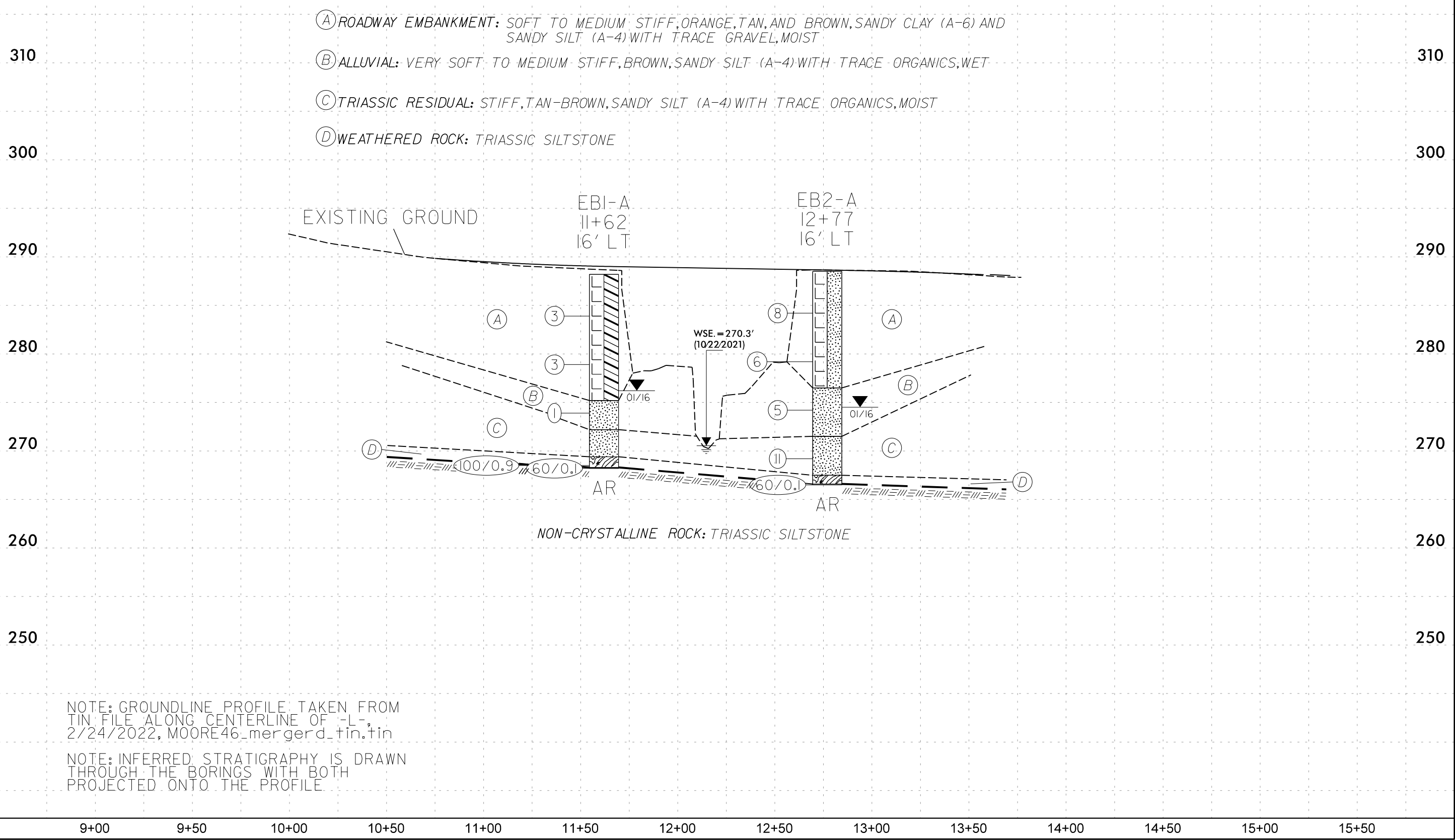
Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, and COLOR.



NOTE:
 SKEW ANGLES ON ALL BENTS ARE 90 DEGREES



PROJECT REFERENCE NO.	SHEET NO.
BP8.R001.1	4
PROFILE ALONG -L- CENTERLINE	



NOTE: GROUNDLINE PROFILE TAKEN FROM TIN FILE ALONG CENTERLINE OF -L-, 2/24/2022, MOORE46_mergerd_tin.tin
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

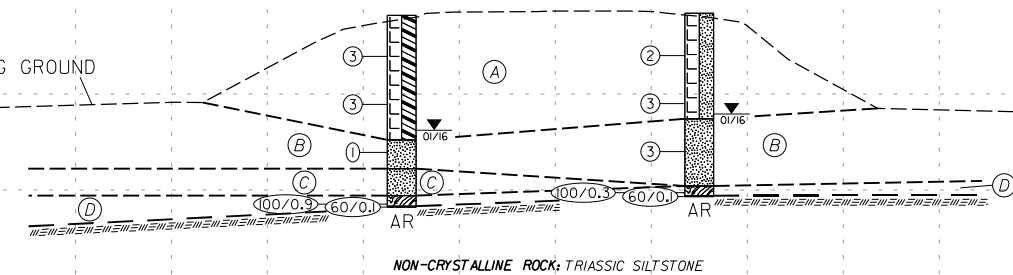
CROSS SECTION THROUGH END BENT 1 AT STA. 11+67.38 -L-

- (A) ROADWAY EMBANKMENT: SOFT, BROWN, SANDY SILT (A-4) AND SANDY CLAY (A-6), MOIST TO WET
- (B) ALLUVIAL: VERY SOFT TO SOFT, BROWN, SANDY SILT (A-4), WET
- (C) TRIASSIC RESIDUAL: TAN-BROWN, SANDY SILT (A-4), WET
- (D) WEATHERED ROCK: TRIASSIC SILTSTONE

EBI-A
11+62
16' LT

EBI-B
11+59
15' RT

EXISTING GROUND



NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

11 + 67.38

NOTES:
GROUNDLINE IS DRAWN ALONG LINE OF
BENT FROM PROVIDED
TIN FILE, MOORE46_mergerd.tin.tin
(DATED 2/24/2022)
INFERRED STRATIGRAPHY IS DRAWN
THROUGH THE BORINGS PROJECTED ONTO
THE CROSS SECTION
SKEW ANGLE IS 90 DEGREES

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

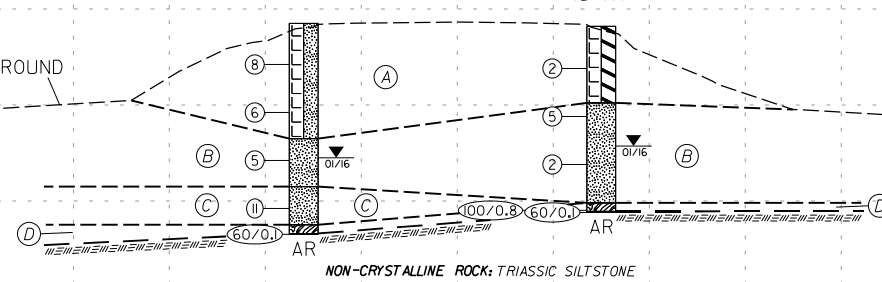
CROSS SECTION THROUGH END BENT 2 AT STA. 12 + 64.63 -L-

- (A) ROADWAY EMBANKMENT: SOFT TO MEDIUM STIFF, ORANGE, TAN, AND BROWN, SILTY CLAY (A-7) AND SANDY SILT (A-4) WITH TRACE GRAVEL, MOIST TO WET
- (B) ALLUVIAL: SOFT TO MEDIUM STIFF, BROWN, SANDY SILT (A-4) WITH TRACE ORGANICS, WET
- (C) TRIASSIC RESIDUAL: STIFF, TAN, SANDY SILT (A-4), MOIST
- (D) WEATHERED ROCK: TRIASSIC SILTSTONE

EB2-A
12+77
16' LT

EB2-B
12+76
15' RT

EXISTING GROUND



NON-CRYSTALLINE ROCK: TRIASSIC SILTSTONE

12 + 64.63

NOTES:
GROUNDLINE IS DRAWN ALONG LINE OF
BENT FROM PROVIDED
TIN FILE, MOORE46_merger.d_tin.tin
(DATED 2/24/2022)
INFERRED STRATIGRAPHY IS DRAWN
THROUGH THE BORINGS, PROJECTED ONTO
THE CROSS SECTION
SKEW ANGLE IS 90 DEGREES

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

GEOTECHNICAL BORING REPORT

BORE LOG

WBS BP8.R001.1		TIP N/A		COUNTY MOORE		GEOLOGIST E. Mayr, PE											
SITE DESCRIPTION Bridge No. 46 on SR 1658 (Wadsworth Road) over McIntosh Creek between SR 1659 and SR 1625							GROUND WTR (ft)										
BORING NO. EB1-A		STATION 11+62		OFFSET 16 ft LT		ALIGNMENT -L-											
COLLAR ELEV. 288.2 ft		TOTAL DEPTH 20.0 ft		NORTHING 604,031		EASTING 1,893,559											
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER M. Radford		START DATE 01/27/16		COMP. DATE 01/27/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
290															288.2	GROUND SURFACE	0.0
285	284.9	3.3	2	1	2								M			ROADWAY EMBANKMENT	
280	279.9	8.3	1	1	2								W			Brown, Sandy Clay	
275	274.9	13.3	WOH	WOH	1								W			ALLUVIAL	13.0
270	269.9	18.3														Brown, Sandy Silt	
	268.3	19.9	20	71	29/0.4											TRIASSIC RESIDUAL	16.0
																Tan-Brown, Sandy Silt	
																WEATHERED ROCK	18.8
																(Triassic Siltstone)	19.9
																NON-CRYSTALLINE ROCK	20.0
																(Triassic Siltstone)	
																Boring Terminated with Standard Penetration Test Refusal at Elevation 268.2 ft in Non-Crystalline Rock (Triassic Siltstone)	
																Initial collar elevation based on assumed elevation of TBM #1 = 100.00 ft. TBM #1 surveyed by RK&K using survey-grade GPS and boring collar elevation was revised 7/27/2022.	

WBS BP8.R001.1		TIP N/A		COUNTY MOORE		GEOLOGIST E. Mayr, PE											
SITE DESCRIPTION Bridge No. 46 on SR 1658 (Wadsworth Road) over McIntosh Creek between SR 1659 and SR 1625							GROUND WTR (ft)										
BORING NO. EB1-B		STATION 11+59		OFFSET 15 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 288.4 ft		TOTAL DEPTH 19.1 ft		NORTHING 604,003		EASTING 1,893,571											
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER M. Radford		START DATE 01/27/16		COMP. DATE 01/27/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
290															288.4	GROUND SURFACE	0.0
285	285.0	3.4	1	1	1								M			ROADWAY EMBANKMENT	
280	280.0	8.4	1	1	2								W			Brown, Sandy Silt	
275	275.0	13.4	1	2	1								W			ALLUVIAL	11.0
270	270.0	18.4														Brown, Sandy Silt	
	269.4	19.0	100/0.3													WEATHERED ROCK	18.0
																(Triassic Siltstone)	19.0
																NON-CRYSTALLINE ROCK	19.1
																(Triassic Siltstone)	
																Boring Terminated with Standard Penetration Test Refusal at Elevation 269.3 ft in Non-Crystalline Rock (Triassic Siltstone)	
																Initial collar elevation based on assumed elevation of TBM #1 = 100.00 ft. TBM #1 surveyed by RK&K using survey-grade GPS and boring collar elevation was revised 7/27/2022.	

GEOTECHNICAL BORING REPORT

BORE LOG

WBS BP8.R001.1		TIP N/A		COUNTY MOORE		GEOLOGIST E. Mayr, PE										
SITE DESCRIPTION Bridge No. 46 on SR 1658 (Wadsworth Road) over McIntosh Creek between SR 1659 and SR 1625							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 12+77		OFFSET 16 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 288.5 ft		TOTAL DEPTH 22.0 ft		NORTHING 604,088		EASTING 1,893,658										
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 01/27/16		COMP. DATE 01/27/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
290														288.5	0.0	GROUND SURFACE
285	285.2	3.3	2	3	5							M				ROADWAY EMBANKMENT Orange, Tan, and Brown, Sandy Silt with Trace Gravel
280	280.2	8.3	3	3	3							M				
275	275.2	13.3	2	3	2							W		276.5	12.9	ALLUVIAL Brown, Sandy Silt with Trace Organics
270	270.2	18.3	2	5	6							M		271.5	17.0	TRIASSIC RESIDUAL Tan, Sandy Silt
	266.6	21.9												267.5	21.0	WEATHERED ROCK (Triassic Siltstone)
														266.6	21.9	NON-CRYSTALLINE ROCK (Triassic Siltstone)
														266.5	22.0	NON-CRYSTALLINE ROCK (Triassic Siltstone)

Boring Terminated with Standard Penetration Test Refusal at Elevation 266.5 ft in Non-Crystalline Rock (Triassic Siltstone)

Initial collar elevation based on assumed elevation of TBM #1 = 100.00 ft. TBM #1 surveyed by RK&K using survey-grade GPS and boring collar elevation was revised 7/27/2022.

WBS BP8.R001.1		TIP N/A		COUNTY MOORE		GEOLOGIST E. Mayr, PE										
SITE DESCRIPTION Bridge No. 46 on SR 1658 (Wadsworth Road) over McIntosh Creek between SR 1659 and SR 1625							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 12+76		OFFSET 15 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 288.2 ft		TOTAL DEPTH 19.4 ft		NORTHING 604,061		EASTING 1,893,673										
DRILL RIG/HAMMER EFF./DATE BRI2974 CME-45C 79% 06/03/2015			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER M. Radford		START DATE 01/27/16		COMP. DATE 01/27/16		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
290														288.2	0.0	GROUND SURFACE
285	284.8	3.4	2	1	1							W				ROADWAY EMBANKMENT Brown, Silty Clay
280	279.8	8.4	1	3	2							W		280.2	8.0	ALLUVIAL Brown, Sandy Silt with Trace Organics
275	274.8	13.4	WOH	1	1							W				
270	269.8	18.4												269.8	18.4	WEATHERED ROCK (Triassic Siltstone)
	268.9	19.3												268.9	19.3	NON-CRYSTALLINE ROCK (Triassic Siltstone)
														268.8	19.4	NON-CRYSTALLINE ROCK (Triassic Siltstone)

Boring Terminated with Standard Penetration Test Refusal at Elevation 268.8 ft in Non-Crystalline Rock (Triassic Siltstone)

Initial collar elevation based on assumed elevation of TBM #1 = 100.00 ft. TBM #1 surveyed by RK&K using survey-grade GPS and boring collar elevation was revised 7/27/2022.

NCDOT BORE DOUBLE B5759_GEO_BRDG0046_BH(1).GPJ_NC_DOT.GDT 11/28/22