

PROJECT: 17BP.4.R.74 REFERENCE: 970083

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY WILSON  
 PROJECT DESCRIPTION BRIDGE NO. 83 ON -L-  
(SR 1378) OVER JUNIPER CREEK AT STA. 13+95.5

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	970083	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 1919 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 MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE 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:
1. 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.
  2. 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

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

O. B. OTI

D. G. PINTER

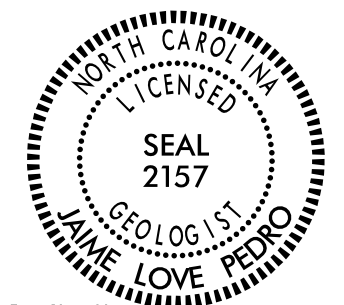
INVESTIGATED BY J. L. PEDRO

DRAWN BY J. L. PEDRO

CHECKED BY N. T. ROBERSON

SUBMITTED BY N. T. ROBERSON

DATE APRIL 2016



DocuSigned by:  
*Jaime Love Pedro* /13/2016  
 B93571039B884B5...

SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

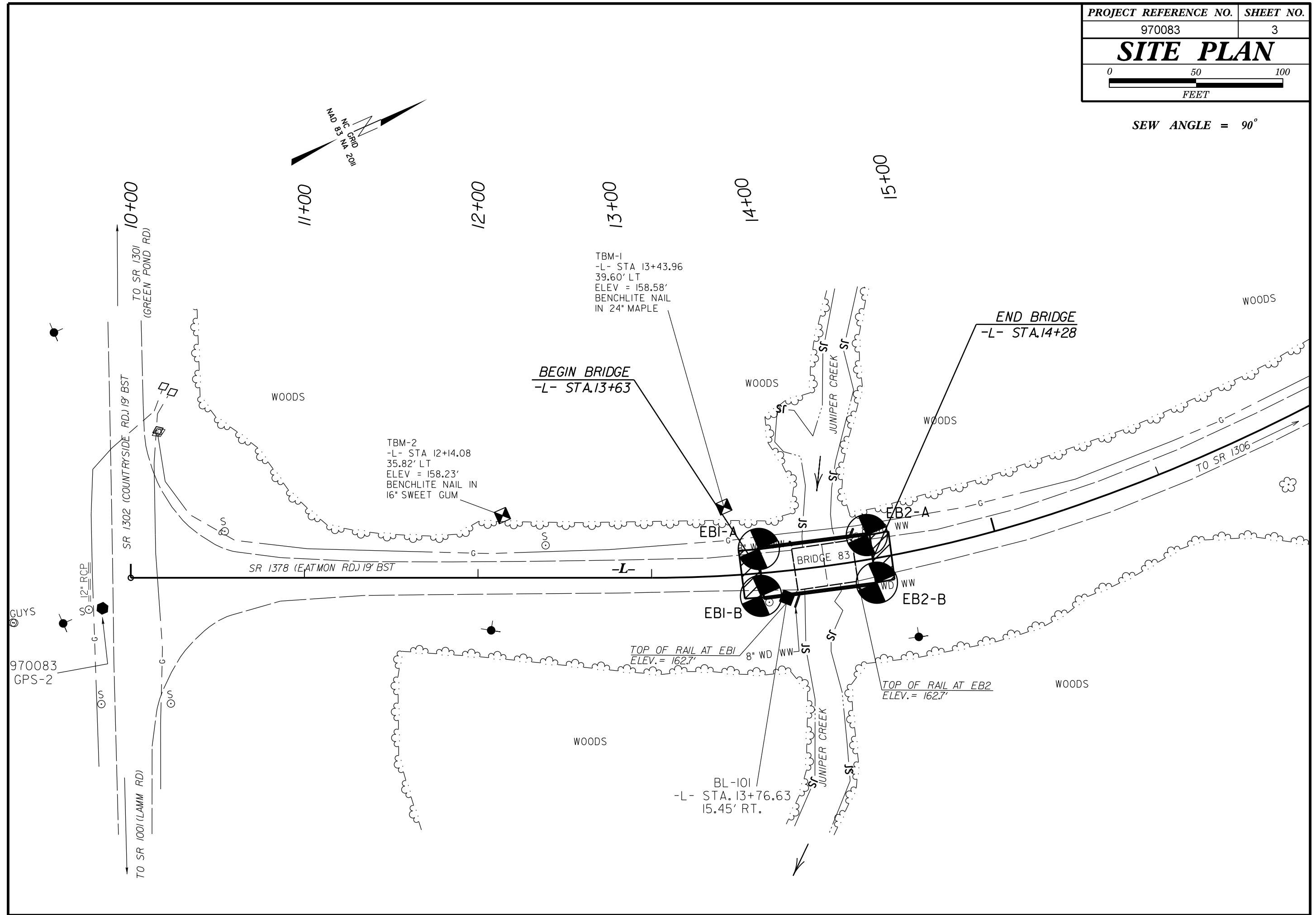
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

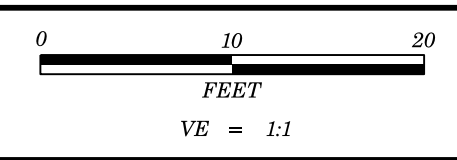
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

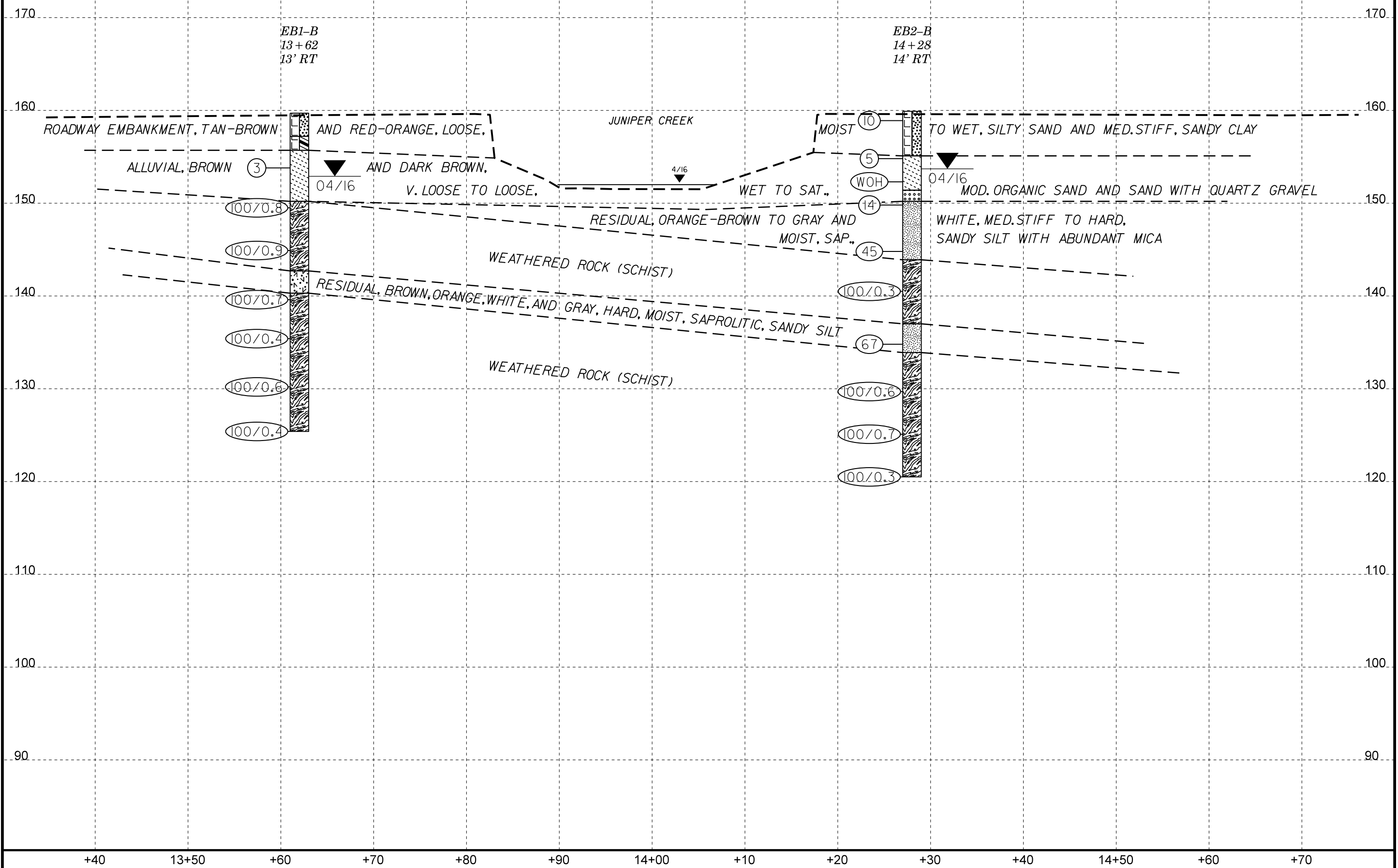
Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, WEATHERING, and various symbols and abbreviations.

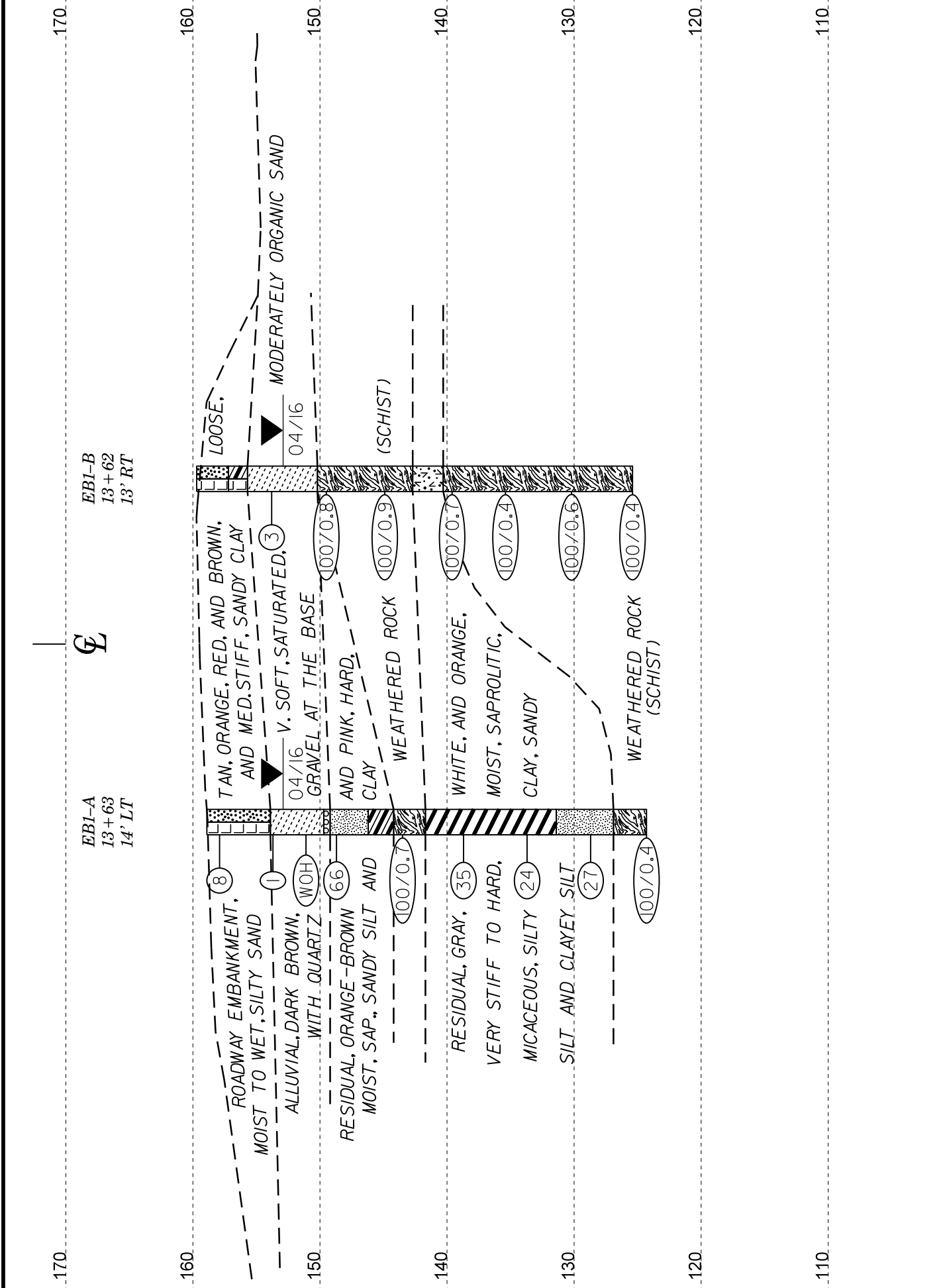
SEW ANGLE = 90°



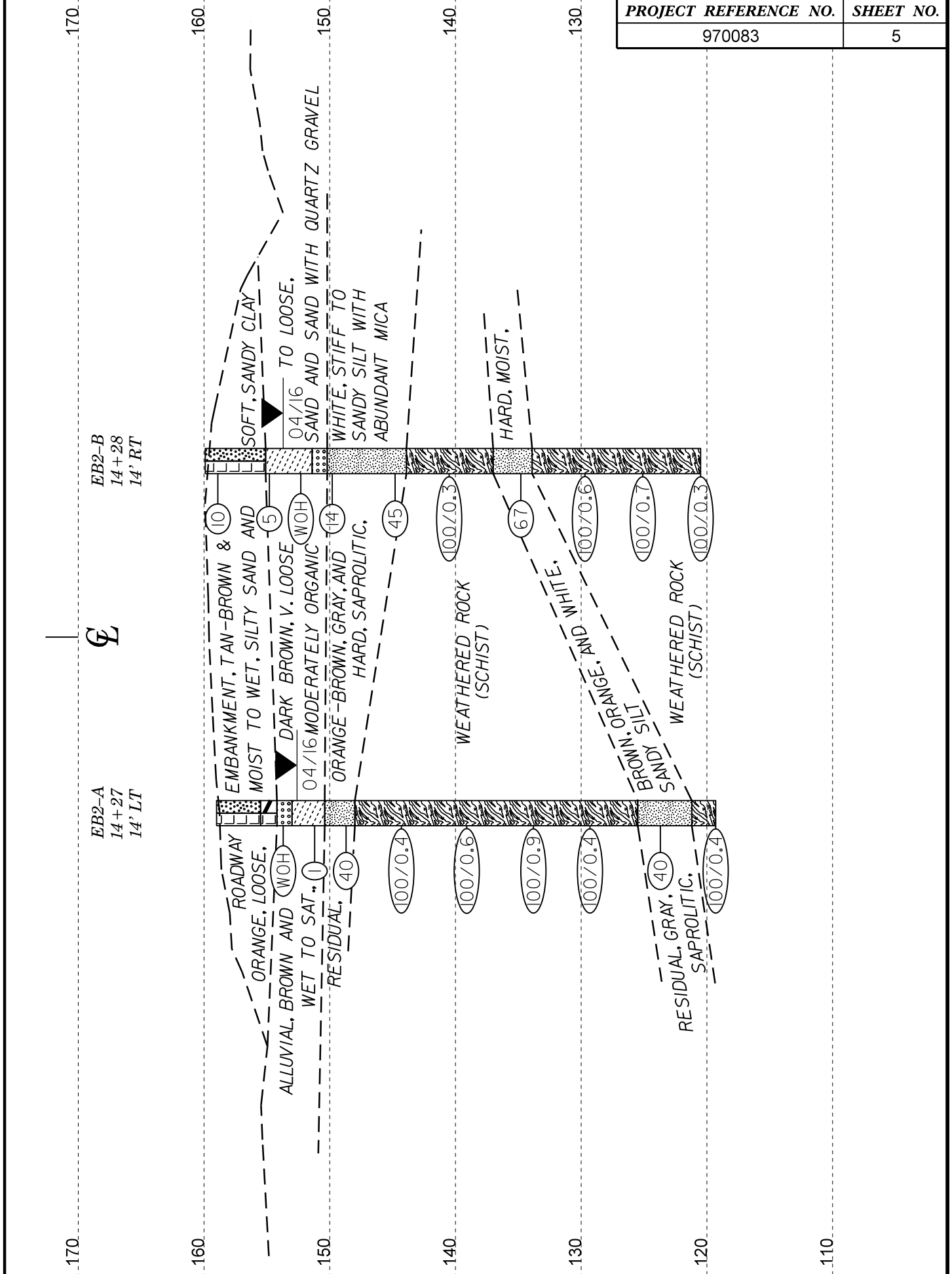


PROJECT REFERENCE NO.	SHEET NO.
970083	4
FENCE DIAGRAM OF BORINGS PROJECTED ALONG -L- PROFILE	





HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 CROSS SECTION THROUGH EBI



HORIZ. SCALE 0 10 20 (FEET) VE = 1:1 CROSS SECTION THROUGH EB2

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.4.R.74		TIP 970083		COUNTY WILSON		GEOLOGIST Pedro, J. L.												
SITE DESCRIPTION BRIDGE NO. 83 ON -L- (SR 1378) OVER JUNIPER CREEK							GROUND WTR (ft)											
BORING NO. EB1-A		STATION 13+63		OFFSET 14 ft LT		ALIGNMENT -L-												
COLLAR ELEV. 158.9 ft		TOTAL DEPTH 34.6 ft		NORTHING 738,038		EASTING 2,286,823												
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 86% 02/09/2015		DRILL METHOD NW Casing w/ Advancer		HAMMER TYPE Automatic														
DRILLER Pinter, D. G.		START DATE 04/19/16		COMP. DATE 04/19/16		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
160	158.9	0.0	1	4	4										158.9	GROUND SURFACE	0.0	
																<b>ROADWAY EMBANKMENT</b> ORANGE-BROWN, SILTY SAND		
155	154.7	4.2	WOH	1	0										153.9	<b>ALLUVIAL</b> BROWN, DARK BROWN, AND DARK GRAY, MODERATELY ORGANIC SAND	5.0	
	152.1	6.8	WOH	WOH	WOH											QUARTZ GRAVEL	9.2	
150	149.7	9.2	5	22	44										149.7	<b>RESIDUAL</b> ORANGE-BROWN, SAPROLITIC, SANDY SILT	9.7	
	146.2														146.2	PINK AND ORANGE, SAPROLITIC, SANDY CLAY	12.7	
145	144.7	14.2	15	60	40/0.2										144.2	<b>WEATHERED ROCK (SCHIST)</b>	14.7	
	141.7														141.7	<b>RESIDUAL</b> GRAY, SAPROLITIC, MICACEOUS, SILTY CLAY	17.2	
140	139.7	19.2	15	15	20										131.4	GRAY, WHITE, AND ORANGE, SAPROLITIC, SANDY SILT	27.5	
	134.7	24.2	10	9	15										126.9	<b>WEATHERED ROCK (SCHIST)</b>	32.0	
130	129.7	29.2	7	7	20										124.3	Boring Terminated at Elevation 124.3 ft IN WEATHERED ROCK (SCHIST)	34.6	
125	124.7	34.2																

WBS 17BP.4.R.74		TIP 970083		COUNTY WILSON		GEOLOGIST Pedro, J. L.												
SITE DESCRIPTION BRIDGE NO. 83 ON -L- (SR 1378) OVER JUNIPER CREEK							GROUND WTR (ft)											
BORING NO. EB1-B		STATION 13+62		OFFSET 13 ft RT		ALIGNMENT -L-												
COLLAR ELEV. 159.7 ft		TOTAL DEPTH 34.3 ft		NORTHING 738,028		EASTING 2,286,848												
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 86% 02/09/2015		DRILL METHOD NW Casing w/ Advancer		HAMMER TYPE Automatic														
DRILLER Pinter, D. G.		START DATE 04/18/16		COMP. DATE 04/18/16		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
160	159.7	0.0													159.7	GROUND SURFACE	0.0	
																<b>ROADWAY EMBANKMENT</b> TAN-BROWN, SILTY SAND		
	157.2														157.2	RED-ORANGE, SANDY CLAY	2.5	
155	154.8	4.9	1	1	2										155.7	<b>ALLUVIAL</b> DARK BROWN, TRACE TO MODEARTE ORGANIC SAND WITH QUARTZ GRAVEL AT BASE	4.0	
	150.8	8.9	1	19	81/0.3										150.2	<b>WEATHERED ROCK (SCHIST)</b>	9.5	
150	145.8	13.9	60	40/0.4											142.7	<b>RESIDUAL</b> GRAY, SAPROLITIC, MICACEOUS, CLAYEY SILT	17.0	
145	140.8	18.9	17	53	47/0.2										140.3	<b>WEATHERED ROCK (SCHIST)</b>	19.4	
140	135.8	23.9	100/0.4															
	130.8	28.9	70	30/0.1														
130	125.8	33.9	100/0.4												125.4	Boring Terminated at Elevation 125.4 ft IN WEATHERED ROCK (SCHIST)	34.3	

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.4.R.74		TIP 970083		COUNTY WILSON		GEOLOGIST Pedro, J. L.										
SITE DESCRIPTION BRIDGE NO. 83 ON -L- (SR 1378) OVER JUNIPER CREEK							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 14+27		OFFSET 14 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 159.0 ft		TOTAL DEPTH 39.7 ft		NORTHING 738,098		EASTING 2,286,841										
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 86% 02/09/2015		DRILL METHOD NW Casing w/ Advancer		HAMMER TYPE Automatic												
DRILLER Pinter, D. G.		START DATE 04/19/16		COMP. DATE 04/19/16		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						
160														159.0	GROUND SURFACE	0.0
												M		155.5	ROADWAY EMBANKMENT TAN-BROWN, SILT SAND	3.5
155	154.7	4.3												154.2	RED-ORANGE, SILTY CLAY	4.8
			WOH	WOH	WOH									153.0	ALLUVIAL BROWN, SAND WITH TRACE WOOD DEBRIS	6.0
	152.2	6.8	WOH	WOH	1									150.4	DARK BROWN, MODERATE ORGANIC SAND	8.6
150	149.7	9.3				27	23	17						148.0	WITH QUARTZ GRAVEL AT BASE	11.0
															RESIDUAL ORANGE-BROWN, SAPROLITIC, SANDY SILT	
145	144.7	14.3				100/0.4									WEATHERED ROCK (SCHIST)	
140	139.7	19.3				80	20/0.1									
135	134.7	24.3				47	53/0.4									
130	129.7	29.3				100/0.4										
125	124.7	34.3				6	15	25						125.5	RESIDUAL BROWN, ORANGE AND WHITE, SAPROLITIC, SANDY SILT	33.5
														121.2	WEATHERED ROCK (SCHIST)	37.8
120	119.7	39.3				100/0.4								119.3	WEATHERED ROCK (SCHIST)	39.7
															Boring Terminated at Elevation 119.3 ft IN WEATHERED ROCK (SCHIST)	

WBS 17BP.4.R.74		TIP 970083		COUNTY WILSON		GEOLOGIST Pedro, J. L.										
SITE DESCRIPTION BRIDGE NO. 83 ON -L- (SR 1378) OVER JUNIPER CREEK							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 14+28		OFFSET 14 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 159.9 ft		TOTAL DEPTH 39.4 ft		NORTHING 738,092		EASTING 2,286,868										
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 86% 02/09/2015		DRILL METHOD NW Casing w/ Advancer		HAMMER TYPE Automatic												
DRILLER Pinter, D. G.		START DATE 04/18/16		COMP. DATE 04/18/16		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						
160														159.9	GROUND SURFACE	0.0
														155.9	ROADWAY EMBANKMENT TAN-BROWN, SILTY SAND	
155	155.8	4.1				2	3	2						155.1	ALLUVIAL BROWN TO DARK BROWN, MODERATE ORGANIC SAND WITH TRACE WOOD	4.8
														151.4	TAN, SAND WITH QUARTZ GRAVEL AT BASE	8.5
150	150.8	9.1				2	3	11						150.2	RESIDUAL ORANGE-BROWN TO GRAY, WHITE, AND BROWN, SAPROLITIC, MICACEOUS, SANDY SILT	9.7
														143.9	WEATHERED ROCK (SCHIST)	16.0
145	145.8	14.1				10	12	33						137.0	RESIDUAL GRAY AND BROWN, SAPROLITIC, SANDY SILT	22.9
														133.9	WEATHERED ROCK (SCHIST)	26.0
140	140.8	19.1				100/0.3										
135	135.8	24.1				14	20	47								
130	130.8	29.1				13	60	40/0.1								
125	125.8	34.1				45	55/0.2									
120	120.8	39.1				100/0.3								120.5	Boring Terminated at Elevation 120.5 ft IN WEATHERED ROCK (SCHIST)	

NCDOT BORE DOUBLE 970083\_GEO\_BH.GPJ NC\_DOT.GDT 5/6/16

# SITE PHOTOGRAPH

Bridge No. 83 on -L- (SR 1378) over Juniper Creek



Looking Northeast towards End Bent 2