

REFERENCE: BR-0121

PROJECT: 67121

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY SAMPSON  
PROJECT DESCRIPTION BRIDGE NO. 178 ON -L- (SR 1804)  
OVER SEVENMILE SWAMP AT -L- STA. 15+46.5

**CONTENTS**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0121	1	6

**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 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:
- 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

- D.N. ARGENBRIGHT  
T.C. BOTTOMS  
S.N. ZIMARINO  
R.E. SMITH  
J.P. PEHRSON

INVESTIGATED BY T.C. BOTTOMS  
DRAWN BY T.C. BOTTOMS  
CHECKED BY D.N. ARGENBRIGHT  
SUBMITTED BY D.N. ARGENBRIGHT  
DATE MAY 2019

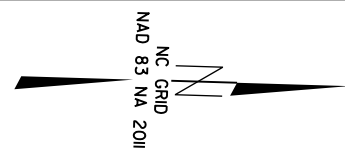


DocuSigned by:  
Tyler C. Bottoms 6/18/2019  
48A2D3BD08 SIGNATURE DATE

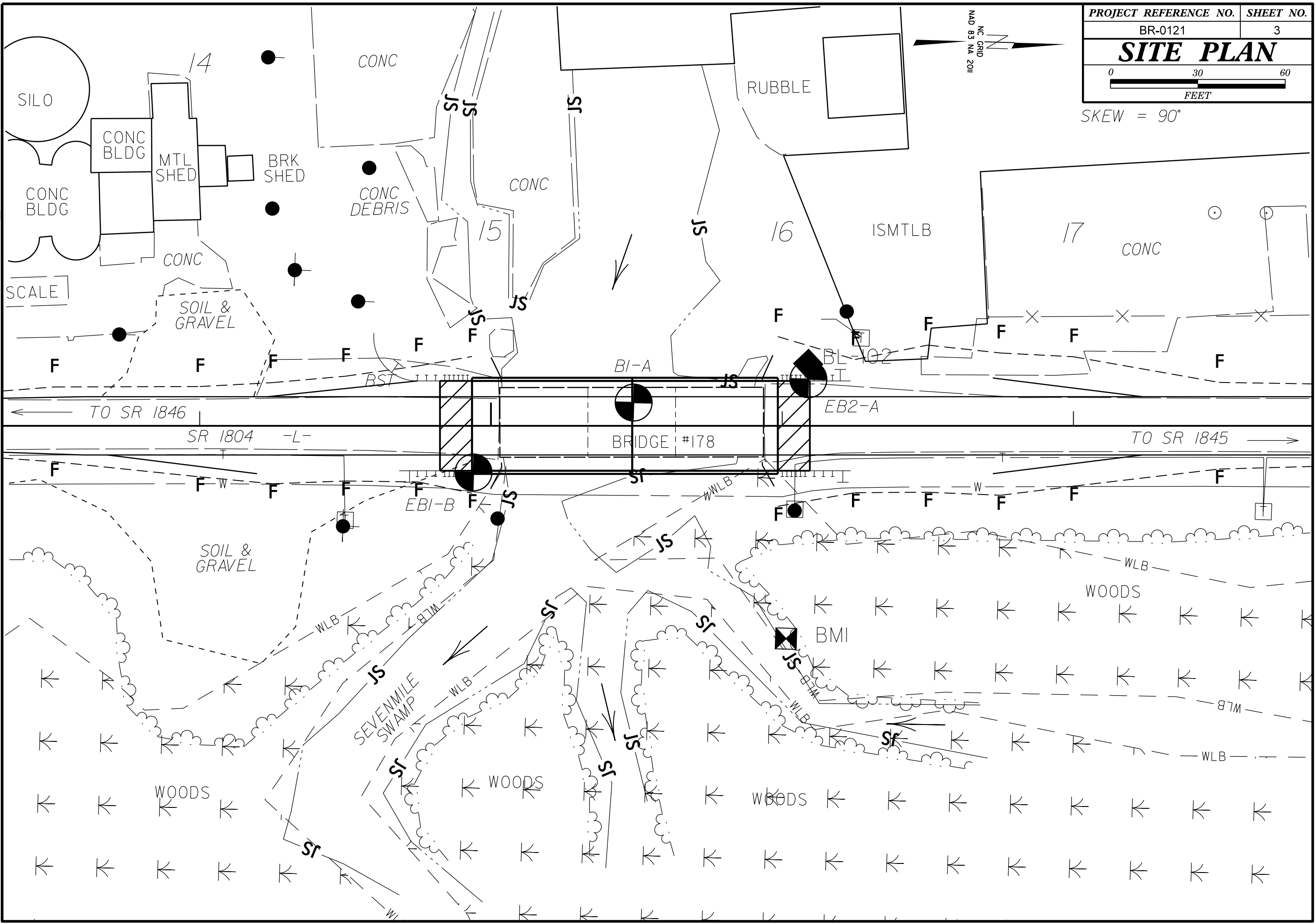
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UNLESS ALL SIGNATURES COMPLETED**

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. It contains detailed technical specifications, classification charts, and symbols for geotechnical engineering.



SKEW = 90°

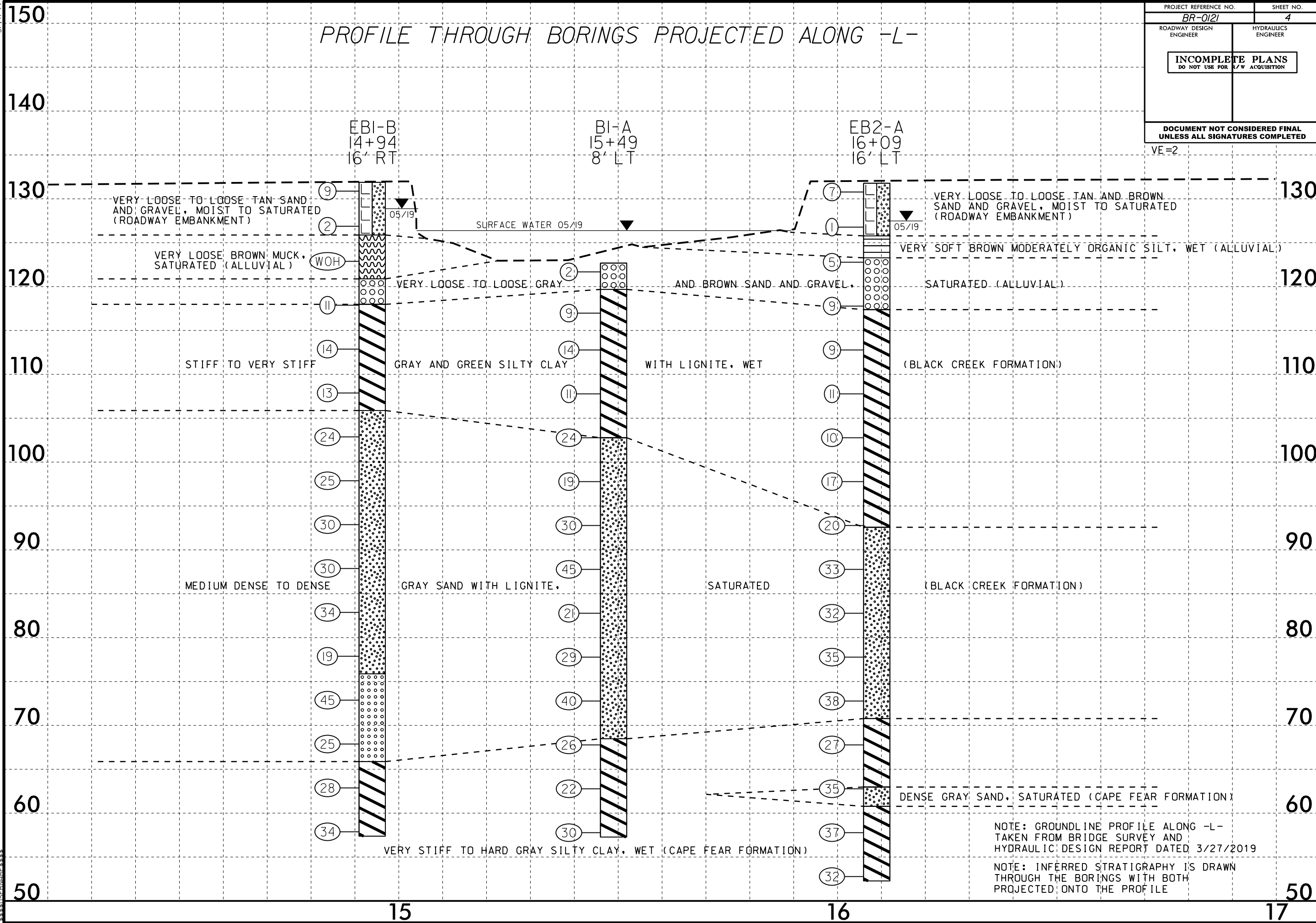


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5/14/99

PROJECT REFERENCE NO. <i>BR-0121</i>	SHEET NO. <b>4</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	

# PROFILE THROUGH BORINGS PROJECTED ALONG -L-



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# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67121.1.1		TIP BR-0121		COUNTY SAMPSON		GEOLOGIST Zimarino, S. N.										
SITE DESCRIPTION BRIDGE NO. 178 ON -L- (SR 1804) OVER SEVENMILE SWAMP							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 14+94		OFFSET 16 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 131.8 ft		TOTAL DEPTH 74.5 ft		NORTHING 523,500		EASTING 2,186,661										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 05/14/19		COMP. DATE 05/15/19		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						
135																
	131.8	0.0	3	5	4										131.8	GROUND SURFACE
130	127.8	4.0	3	1	1										125.8	ROADWAY EMBANKMENT TAN SAND AND GRAVEL, MOIST TO SATURATED
125	123.8	8.0	WOH	WOH	WOH										120.8	ALLUVIAL BROWN MUCK, SATURATED
120	118.8	13.0	8	5	6										117.9	ALLUVIAL GRAY SAND AND GRAVEL, SATURATED
115	113.8	18.0	4	6	8										105.8	COASTAL PLAIN GRAY SILTY CLAY WITH LIGNITE, WET (BLACK CREEK FORMATION)
110	108.8	23.0	3	5	8										105.8	COASTAL PLAIN GRAY SAND WITH LIGNITE, SATURATED
105	103.8	28.0	5	8	16											
100	98.8	33.0	6	10	15											
95	93.8	38.0	6	13	17											
90	88.8	43.0	10	13	17											
85	83.8	48.0	7	16	18											
80	78.8	53.0	5	7	12											
75	73.8	58.0	3	12	33											
70	68.8	63.0	7	10	15											
65	63.8	68.0	8	12	16											
60	58.8	73.0	9	16	18											

WBS 67121.1.1		TIP BR-0121		COUNTY SAMPSON		GEOLOGIST Bottoms, T. C.										
SITE DESCRIPTION BRIDGE NO. 178 ON -L- (SR 1804) OVER SEVENMILE SWAMP							GROUND WTR (ft)									
BORING NO. B1-A		STATION 15+49		OFFSET 8 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 122.6 ft		TOTAL DEPTH 65.4 ft		NORTHING 523,554		EASTING 2,186,635										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 05/16/19		COMP. DATE 05/16/19		SURFACE WATER DEPTH 3.7ft										
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						
125																
	122.6	0.0	WOH	1	1										122.6	GROUND SURFACE
120	117.9	4.7	3	4	5										119.6	ALLUVIAL GRAY SAND AND GRAVEL, SATURATED
115	113.7	8.9	3	7	7											
110	108.7	13.9	3	5	6											
105	103.7	18.9	4	8	16											
100	98.7	23.9	2	6	13											
95	93.7	28.9	8	13	17											
90	88.7	33.9	9	20	25											
85	83.7	38.9	6	7	14											
80	78.7	43.9	9	14	15											
75	73.7	48.9	10	18	22											
70	68.7	53.9	9	11	15											
65	63.7	58.9	7	11	11											
60	58.7	63.9	10	14	16											

NCDOT BORE DOUBLE BR0121\_GEO BRDGG.GPJ\_NC\_DOT.GDT 5/20/19

## GEOTECHNICAL BORING REPORT BORE LOG

WBS 67121.1.1		TIP BR-0121		COUNTY SAMPSON		GEOLOGIST Argenbright, D. N.												
SITE DESCRIPTION BRIDGE NO. 178 ON -L- (SR 1804) OVER SEVENMILE SWAMP							GROUND WTR (ft)											
BORING NO. EB2-A		STATION 16+09		OFFSET 16 ft LT		ALIGNMENT -L-												
COLLAR ELEV. 131.7 ft		TOTAL DEPTH 79.5 ft		NORTHING 523,614		EASTING 2,186,625												
DRILL RIGHAMMER EFF./DATE GFO0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic														
DRILLER Smith, R. E.		START DATE 05/15/19		COMP. DATE 05/15/19		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
135															131.7	0.0	GROUND SURFACE	0.0
															131.7	0.0	ROADWAY EMBANKMENT	
																	TAN AND BROWN SAND WITH GRAVEL, MOIST TO SATURATED	
130			2	4	3										127.7	4.0		
125			1	0	1										123.7	8.0	ALLUVIAL	
															123.2	8.5	BROWN MODERATELY ORGANIC SILT, WET	
120			1	2	3												ALLUVIAL	
																	BROWN SAND AND GRAVEL, SATURATED	
115			5	5	4										118.7	13.0		
																	COASTAL PLAIN	
110			3	4	5										113.7	18.0	GRAY AND GREEN SILTY CLAY, WET	
																	(BLACK CREEK FORMATION)	
105			3	5	6										108.7	23.0		
100			4	5	5										103.7	28.0		
95			4	7	10										98.7	33.0		
90			4	7	13										93.7	38.0		
85			8	15	18										88.7	43.0		
80			8	12	20										83.7	48.0		
75			7	16	19										78.7	53.0		
70			12	14	24										73.7	58.0		
65			7	12	15										68.7	63.0		
60			10	16	19										63.7	68.0		
55			10	16	21										58.7	73.0		

WBS 67121.1.1		TIP BR-0121		COUNTY SAMPSON		GEOLOGIST Argenbright, D. N.												
SITE DESCRIPTION BRIDGE NO. 178 ON -L- (SR 1804) OVER SEVENMILE SWAMP							GROUND WTR (ft)											
BORING NO. EB2-A		STATION 16+09		OFFSET 16 ft LT		ALIGNMENT -L-												
COLLAR ELEV. 131.7 ft		TOTAL DEPTH 79.5 ft		NORTHING 523,614		EASTING 2,186,625												
DRILL RIGHAMMER EFF./DATE GFO0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic														
DRILLER Smith, R. E.		START DATE 05/15/19		COMP. DATE 05/15/19		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
55															53.7	78.0		
																	Match Line	
																	COASTAL PLAIN	
																	GRAY SILTY CLAY, WET	79.5
																	Boring Terminated at Elevation 52.2 ft in Hard Silty Clay	

NCDOT BORE DOUBLE BR0121\_GEO\_BRDGD.GPJ\_NC\_DOT\_GDT 5/20/19