

REFERENCE: BR-0121

PROJECT: 67121

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

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

CONTENTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

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

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:
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

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

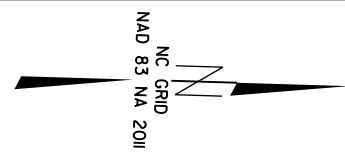
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

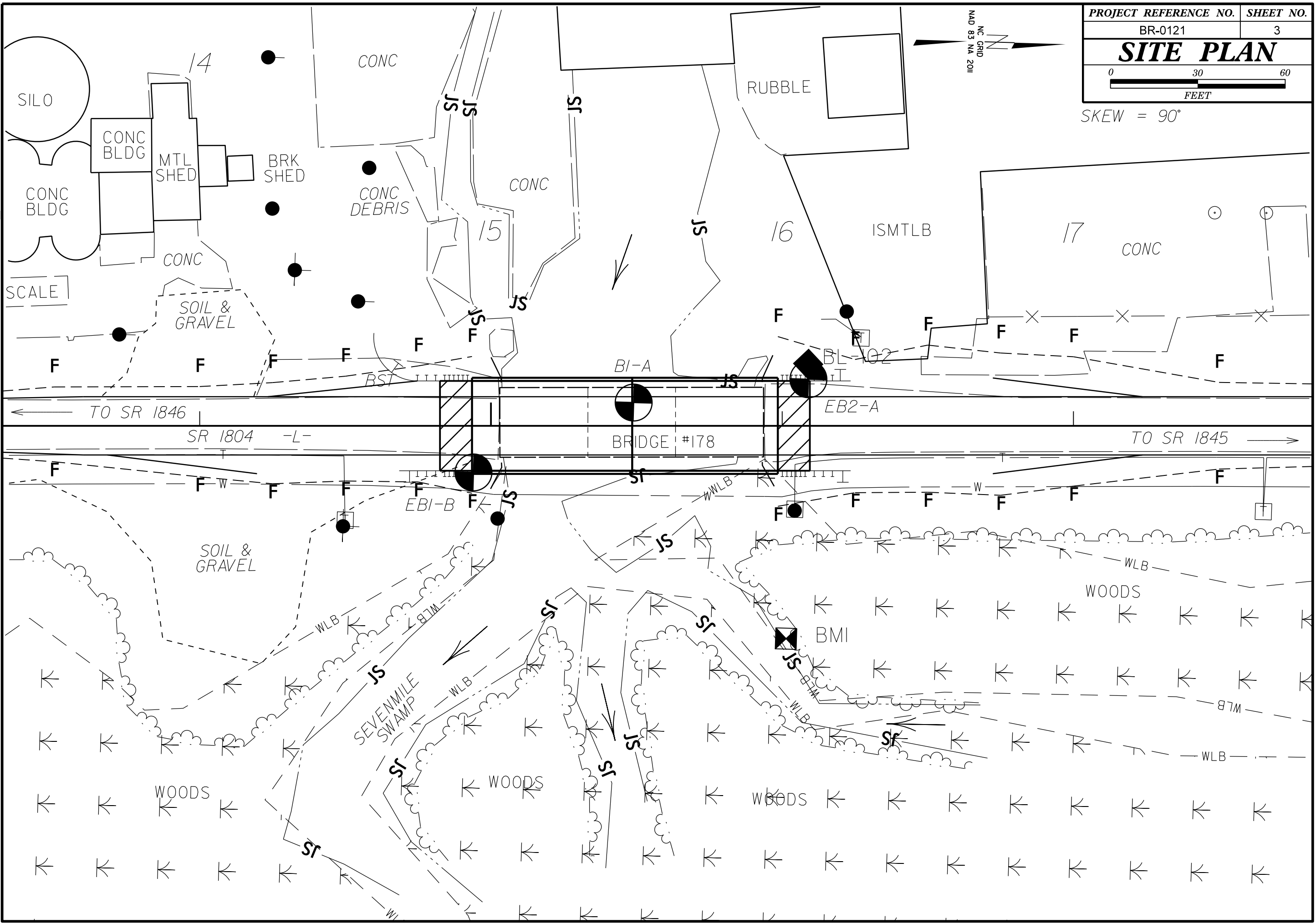
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, PLASTICITY, COLOR, FRACTURE SPACING, BEDDING, INDURATION, and NOTES.



SKEW = 90°



SCALE

← TO SR 1846

SR 1804 -L-

BRIDGE #178

TO SR 1845 →

SOIL & GRAVEL

SEVENMILE SWAMP

WOODS

WOODS

WOODS

WOODS

WOODS

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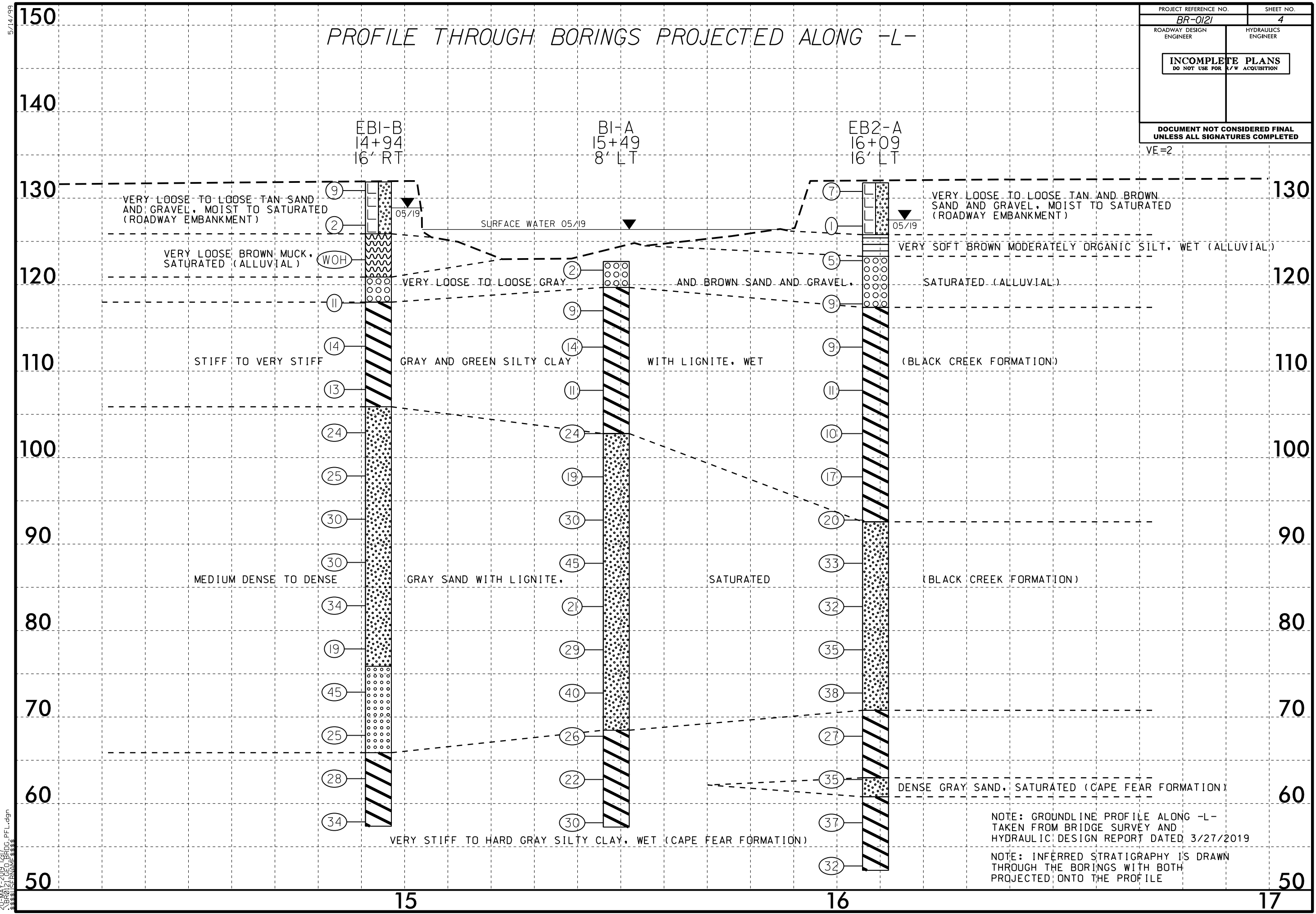
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PROFILE THROUGH BORINGS PROJECTED ALONG -L-



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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																
130	131.8	0.0	3	5	4									131.8	GROUND SURFACE ROADWAY EMBANKMENT TAN SAND AND GRAVEL, MOIST TO SATURATED	0.0
125	127.8	4.0	3	1	1									125.8	ALLUVIAL BROWN MUCK, SATURATED	8.0
120	123.8	8.0	WOH	WOH	WOH									120.8	ALLUVIAL GRAY SAND AND GRAVEL, SATURATED	11.0
115	118.8	13.0	8	5	6									117.9	COASTAL PLAIN GRAY SILTY CLAY WITH LIGNITE, WET (BLACK CREEK FORMATION)	13.9
110	113.8	18.0	4	6	8									105.8	COASTAL PLAIN GRAY SAND WITH LIGNITE, SATURATED	26.0
105	108.8	23.0	3	5	8											
100	103.8	28.0	5	8	16											
95	98.8	33.0	6	10	15											
90	93.8	38.0	6	13	17											
85	88.8	43.0	10	13	17											
80	83.8	48.0	7	16	18											
75	78.8	53.0	5	7	12									75.8		56.0
70	73.8	58.0	3	12	33											
65	68.8	63.0	7	10	15									65.8	COASTAL PLAIN GRAY SILTY CLAY, WET (CAPE FEAR FORMATION)	66.0
60	63.8	68.0	8	12	16											
	58.8	73.0	9	16	18									57.3		74.5

Boring Terminated at Elevation 57.3 ft in Hard Silty Clay

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																
120	122.6	0.0	WOH	1	1									122.6	GROUND SURFACE	0.0
115	117.9	4.7	3	4	5									119.6	ALLUVIAL GRAY SAND AND GRAVEL, SATURATED	3.0
110	113.7	8.9	3	7	7											
105	108.7	13.9	3	5	6											
100	103.7	18.9	4	8	16											
95	98.7	23.9	2	6	13											
90	93.7	28.9	8	13	17											
85	88.7	33.9	9	20	25											
80	83.7	38.9	6	7	14											
75	78.7	43.9	9	14	15											
70	73.7	48.9	10	18	22											
65	68.7	53.9	9	11	15											
60	63.7	58.9	7	11	11											
	58.7	63.9	10	14	16											

Boring Terminated at Elevation 57.2 ft in Hard Silty Clay

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 GFC0075 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	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
135	131.7	0.0	2	4	3									131.7	GROUND SURFACE	0.0	
130	127.7	4.0	1	0	1									125.7	ROADWAY EMBANKMENT TAN AND BROWN SAND WITH GRAVEL, MOIST TO SATURATED		
125	123.7	8.0	1	2	3									123.2	ALLUVIAL BROWN MODERATELY ORGANIC SILT, WET	8.5	
120	118.7	13.0	5	5	4									117.3	ALLUVIAL BROWN SAND AND GRAVEL, SATURATED	14.4	
115	113.7	18.0	3	4	5									117.3	COASTAL PLAIN GRAY AND GREEN SILTY CLAY, WET (BLACK CREEK FORMATION)		
110	108.7	23.0	3	5	6												
105	103.7	28.0	4	5	5												
100	98.7	33.0	4	7	10												
95	93.7	38.0	4	7	13												
90	88.7	43.0	8	15	18												
85	83.7	48.0	8	12	20												
80	78.7	53.0	7	16	19												
75	73.7	58.0	12	14	24												
70	68.7	63.0	7	12	15												
65	63.7	68.0	10	16	19												
60	58.7	73.0	10	16	21												
55																	

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 GFC0075 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	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
55	53.7	78.0	10	12	20									52.2	COASTAL PLAIN GRAY SILTY CLAY, WET (continued) Boring Terminated at Elevation 52.2 ft in Hard Silty Clay	79.5

NCDOT BORE DOUBLE BR0121_GEO BRDG.GPJ_NC_DOT.GDT 5/20/19