

PROJECT: 17BP.1.R.91 REFERENCE: B-5501

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<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY CHOWAN
 PROJECT DESCRIPTION BRIDGE NO. 03 ON -L- (SR 1200)
OVER PEMBROKE CREEK AT -L- STA. 14+37.5

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5501	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 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

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

6/11/2019

48A2D3BD08684848

SIGNATURE

DATE

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

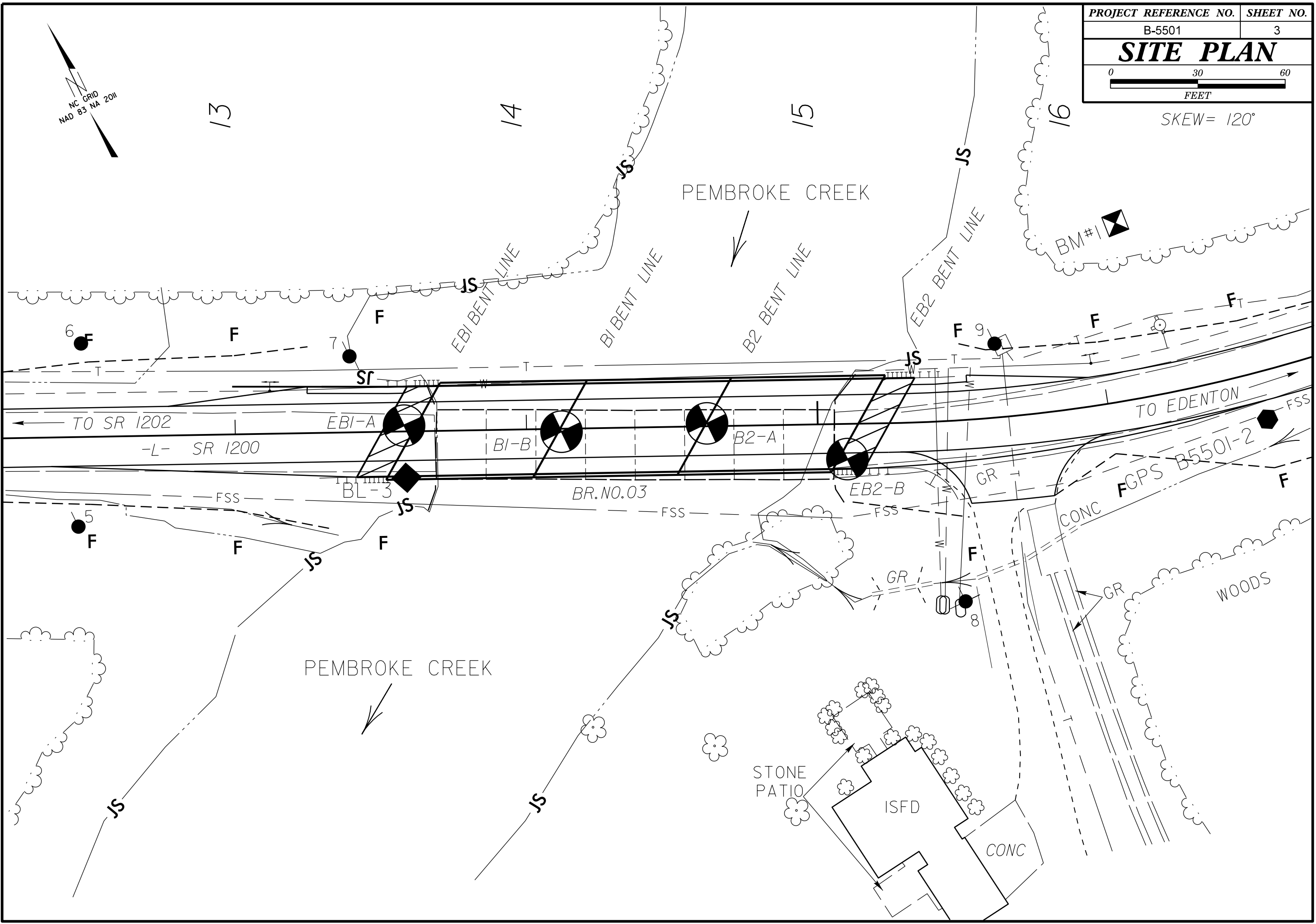
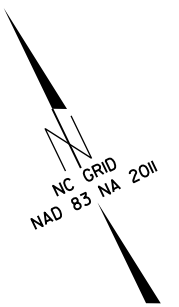
SUBSURFACE INVESTIGATION

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, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, and INDURATION.

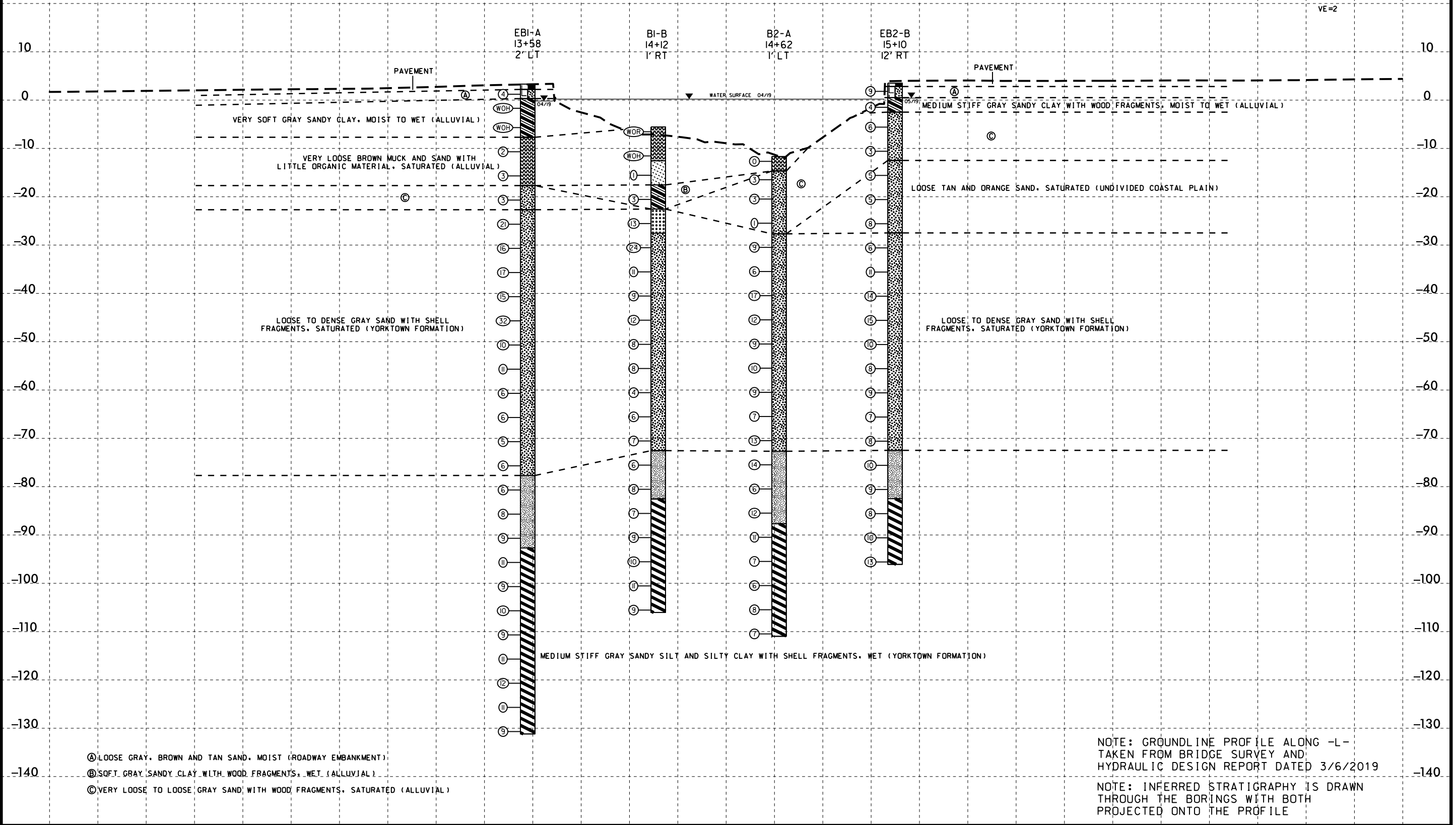
PROJECT REFERENCE NO.	SHEET NO.
B-5501	3
SITE PLAN	
FEET	

SKEW = 120°



PROJECT REFERENCE NO. B-5501	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



- Ⓐ LOOSE GRAY, BROWN AND TAN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓑ SOFT GRAY SANDY CLAY WITH WOOD FRAGMENTS, WET (ALLUVIAL)
- Ⓒ VERY LOOSE TO LOOSE GRAY SAND WITH WOOD FRAGMENTS, SATURATED (ALLUVIAL)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 3/6/2019

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

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5/14/99

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)
BORING NO. EB1-A		STATION 13+58		OFFSET 2 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 3.3 ft		TOTAL DEPTH 134.5 ft		NORTHING 852,910		EASTING 2,694,827	
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89%/08/13/2018			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic	
DRILLER Smith, R. E.		START DATE 04/22/19		COMP. DATE 04/29/19		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				
5														
	2.2	1.1												
0	-0.7	4.0												
			WOH	WOH	WOH									
-5	-4.7	8.0												
			WOH	WOH	WOH									
-10	-9.7	13.0												
			1	1	1									
-15	-14.7	18.0												
			3	2	1									
-20	-19.7	23.0												
			WOR	2	1									
-25	-24.7	28.0												
			6	8	13									
-30	-29.7	33.0												
			5	8	8									
-35	-34.7	38.0												
			6	8	9									
-40	-39.7	43.0												
			5	7	8									
-45	-44.7	48.0												
			14	14	18									
-50	-49.7	53.0												
			4	4	6									
-55	-54.7	58.0												
			3	5	6									
-60	-59.7	63.0												
			3	3	3									
-65	-64.7	68.0												
			2	3	3									
-70	-69.7	73.0												
			2	2	3									
-75	-74.7	78.0												

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)
BORING NO. EB1-A		STATION 13+58		OFFSET 2 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 3.3 ft		TOTAL DEPTH 134.5 ft		NORTHING 852,910		EASTING 2,694,827	
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DRILLER Smith, R. E.		START DATE 04/22/19		COMP. DATE 04/29/19		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				
-75														
			2	3	3									
-80	-79.7	83.0												
			2	3	3									
-85	-84.7	88.0												
			3	4	4									
-90	-89.7	93.0												
			3	4	5									
-95	-94.7	98.0												
			3	4	7									
-100	-99.7	103.0												
			3	4	5									
-105	-104.7	108.0												
			4	4	6									
-110	-109.7	113.0												
			3	4	5									
-115	-114.7	118.0												
			4	5	6									
-120	-119.7	123.0												
			4	5	7									
-125	-124.7	128.0												
			5	5	6									
-130	-129.7	133.0												
			3	4	5									

NCDOT BORE DOUBLE B5501_GEO_BRDG.GPJ NC_DOT.GDT 5/15/19

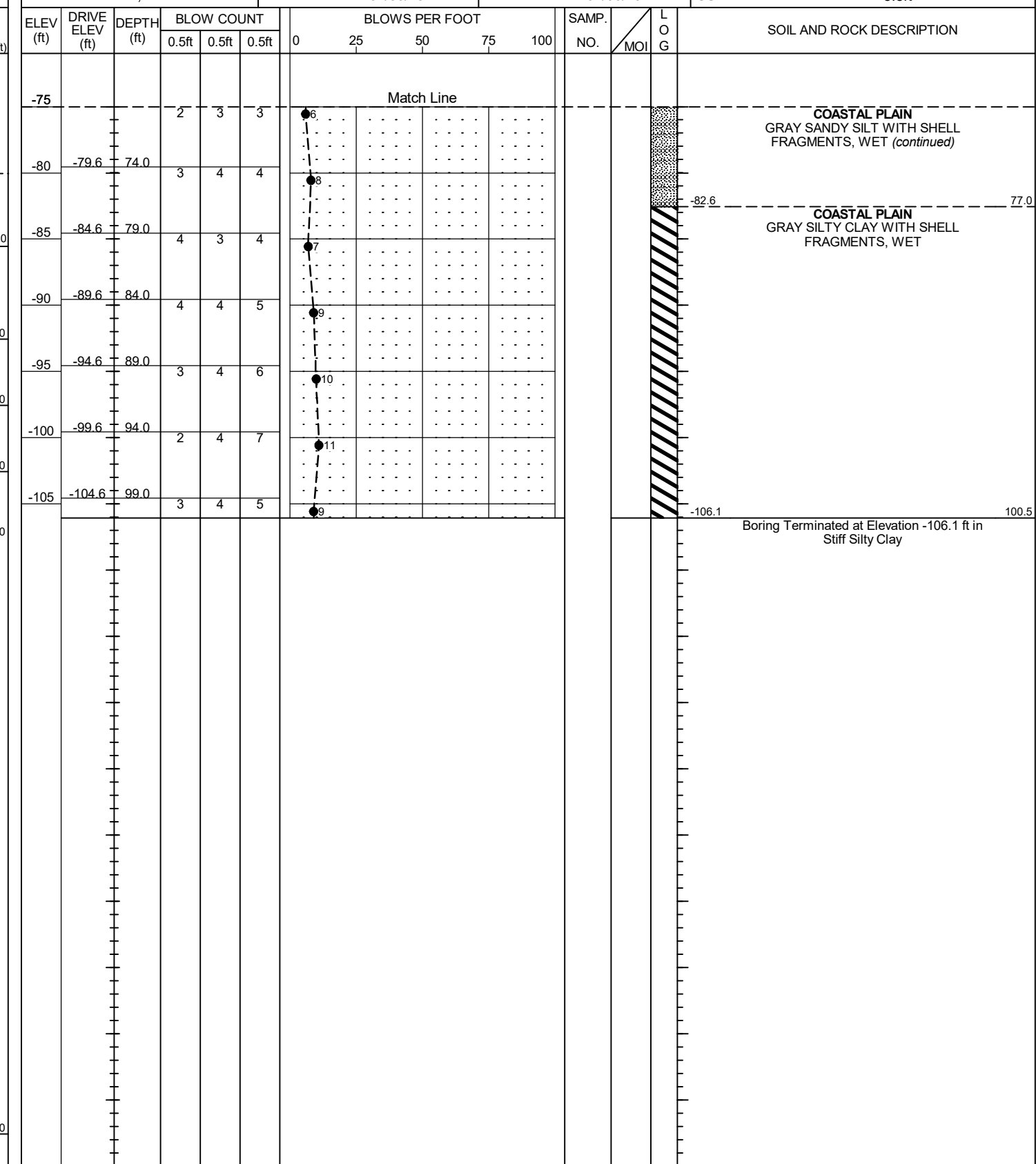
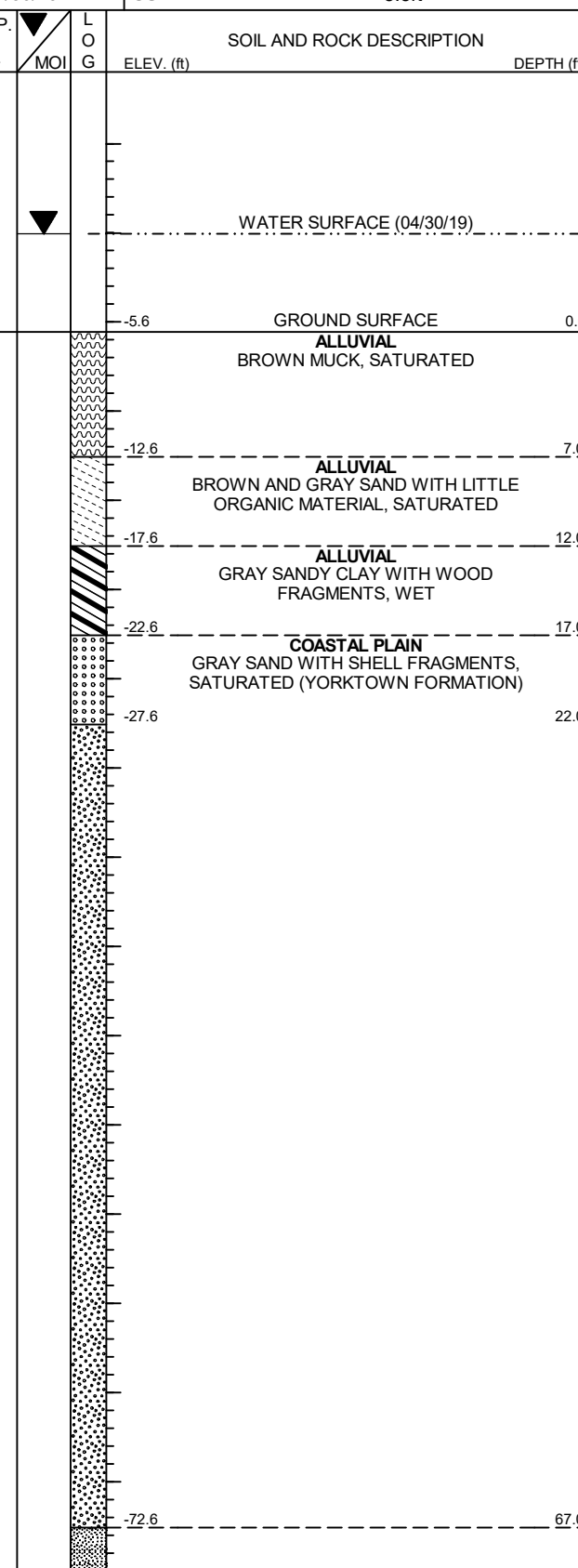
GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.									
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)								
BORING NO. B1-B		STATION 14+12		OFFSET 1 ft RT		ALIGNMENT -L-									
COLLAR ELEV. -5.6 ft		TOTAL DEPTH 100.5 ft		NORTHING 852,885		EASTING 2,694,875									
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 04/30/19		COMP. DATE 04/30/19		SURFACE WATER DEPTH 5.5ft									
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					
5															
0															
-5	-5.6	0.0	WOR	WOR	WOR										
-10	-10.6	5.0	WOH	WOH	WOH										
-15	-14.6	9.0	WOH	WOH	1										
-20	-19.6	14.0	WOH	WOH	3										
-25	-24.6	19.0	4	6	7										
-30	-29.6	24.0	10	13	11										
-35	-34.6	29.0	5	6	5										
-40	-39.6	34.0	4	4	5										
-45	-44.6	39.0	5	6	6										
-50	-49.6	44.0	4	4	4										
-55	-54.6	49.0	3	4	4										
-60	-59.6	54.0	5	1	3										
-65	-64.6	59.0	3	3	3										
-70	-69.6	64.0	2	3	4										
-75	-74.6	69.0													

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.									
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)								
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			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
-75															
-80	-79.6	74.0	3	4	4										
-85	-84.6	79.0	4	3	4										
-90	-89.6	84.0	4	4	5										
-95	-94.6	89.0	3	4	6										
-100	-99.6	94.0	2	4	7										
-105	-104.6	99.0	3	4	5										

NCDOT BORE DOUBLE B5501_GEO_BRDG.GPJ NC_DOT.GDT 5/15/19



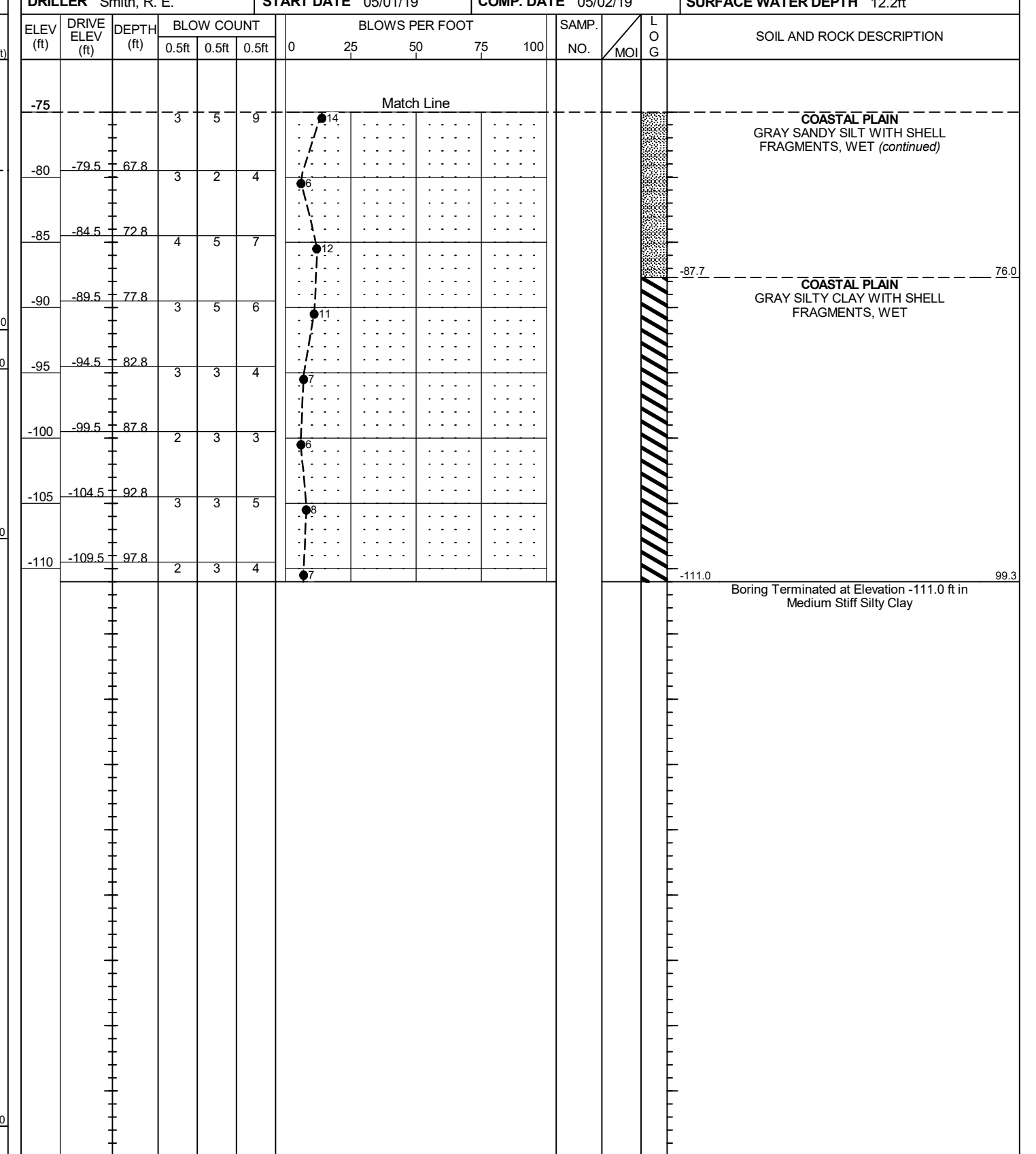
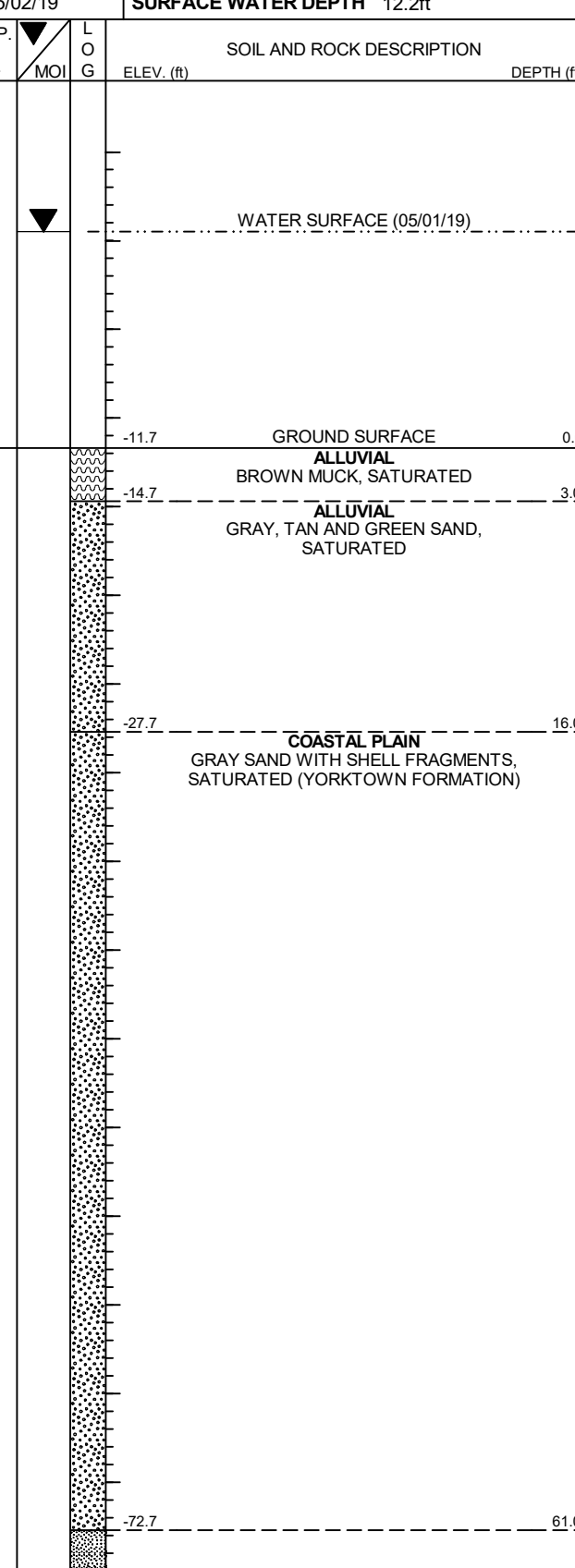
GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.										
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)									
BORING NO. B2-A		STATION 14+62		OFFSET 1 ft LT		ALIGNMENT -L-										
COLLAR ELEV. -11.7 ft		TOTAL DEPTH 99.3 ft		NORTHING 852,866		EASTING 2,694,921										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Smith, R. E.		START DATE 05/01/19		COMP. DATE 05/02/19		SURFACE WATER DEPTH 12.2ft										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
5																
0																
-5																
-10																
-11.7	0.0		1	0	0											
-15	-15.5	3.8	1	1	2											
-20	-19.5	7.8	1	2	1											
-25	-24.5	12.8	1	0	1											
-30	-29.5	17.8	5	5	4											
-35	-34.5	22.8	1	3	3											
-40	-39.5	27.8	5	7	10											
-45	-44.5	32.8	3	5	7											
-50	-49.5	37.8	3	4	5											
-55	-54.5	42.8	3	5	5											
-60	-59.5	47.8	3	4	5											
-65	-64.5	52.8	5	4	3											
-70	-69.5	57.8	9	9	4											
-75	-74.5	62.8														

WBS 17BP.1.R.91		TIP B-5501		COUNTY CHOWAN		GEOLOGIST Zimarino, S. N.										
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK							GROUND WTR (ft)									
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			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-75																
-80	-79.5	67.8	3	2	4											
-85	-84.5	72.8	4	5	7											
-90	-89.5	77.8	3	5	6											
-95	-94.5	82.8	3	3	4											
-100	-99.5	87.8	2	3	3											
-105	-104.5	92.8	3	3	5											
-110	-109.5	97.8	2	3	4											

NCDOT BORE DOUBLE B5501_GEO_BRDG.GPJ NC_DOT.GDT 5/15/19



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.1.R.91				TIP B-5501				COUNTY CHOWAN				GEOLOGIST Zimarino, S. N.							
SITE DESCRIPTION BRIDGE NO. 3 ON -L- (SR 1200) OVER PEMBROKE CREEK												GROUND WTR (ft)							
BORING NO. EB2-B				STATION 15+10				OFFSET 12 ft RT				ALIGNMENT -L-							
COLLAR ELEV. 3.5 ft				TOTAL DEPTH 99.6 ft				NORTHING 852,834				EASTING 2,694,959							
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018												DRILL METHOD Mud Rotary				HAMMER TYPE Automatic			
DRILLER Smith, R. E.				START DATE 04/30/19				COMP. DATE 05/01/19				SURFACE WATER DEPTH N/A							
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5																			
	2.8	0.7																	
			3	5	4														
0	-0.5	4.0																	
			2	2	2														
-5	-4.6	8.1																	
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-10	-9.6	13.1																	
			1	1	2														
-15	-14.6	18.1																	
			2	2	3														
-20	-19.6	23.1																	
			1	1	4														
-25	-24.6	28.1																	
			4	4	4														
-30	-29.6	33.1																	
			2	3	3														
-35	-34.6	38.1																	
			3	5	6														
-40	-39.6	43.1																	
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-45	-44.6	48.1																	
			4	6	9														
-50	-49.6	53.1																	
			3	4	6														
-55	-54.6	58.1																	
			3	3	5														
-60	-59.6	63.1																	
			3	4	5														
-65	-64.6	68.1																	
			3	3	4														
-70	-69.6	73.1																	
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DRILLER Smith, R. E.				START DATE 04/30/19				COMP. DATE 05/01/19				SURFACE WATER DEPTH N/A							
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-85	-84.6	88.1																	
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-90	-89.6	93.1																	
			3	4	6														
-95	-94.6	98.1																	
			4	6	7														

NCDOT BORE DOUBLE B5501_GEO_BRDG.GPJ NC_DOT.GDT 5/15/19