

REFERENCE: N/A

PROJECT: 48793

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

STRUCTURE  
SUBSURFACE INVESTIGATION

COUNTY BLADEN  
PROJECT DESCRIPTION US 701 OVER CAPE FEAR RIVER

SITE DESCRIPTION REPLACE BRIDGE NOS. 16 & 17 ON US 701 OVER CAPE FEAR RIVER

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	N/A	1	47

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

C. MCILROY

M. STANBURY

SUBTERRA EXP.

INVESTIGATED BY N. MOHS, LG

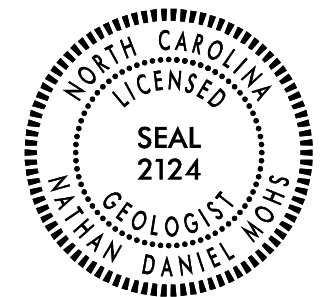
DRAWN BY N. MOHS, LG

CHECKED BY M. SNYDER, PE

SUBMITTED BY N. MOHS, LG

DATE AUGUST 2020

Prepared in the Office of:  
**ICE of CAROLINAS, PLLC**



DocuSigned by:

Nathan Mohs

8/11/2020

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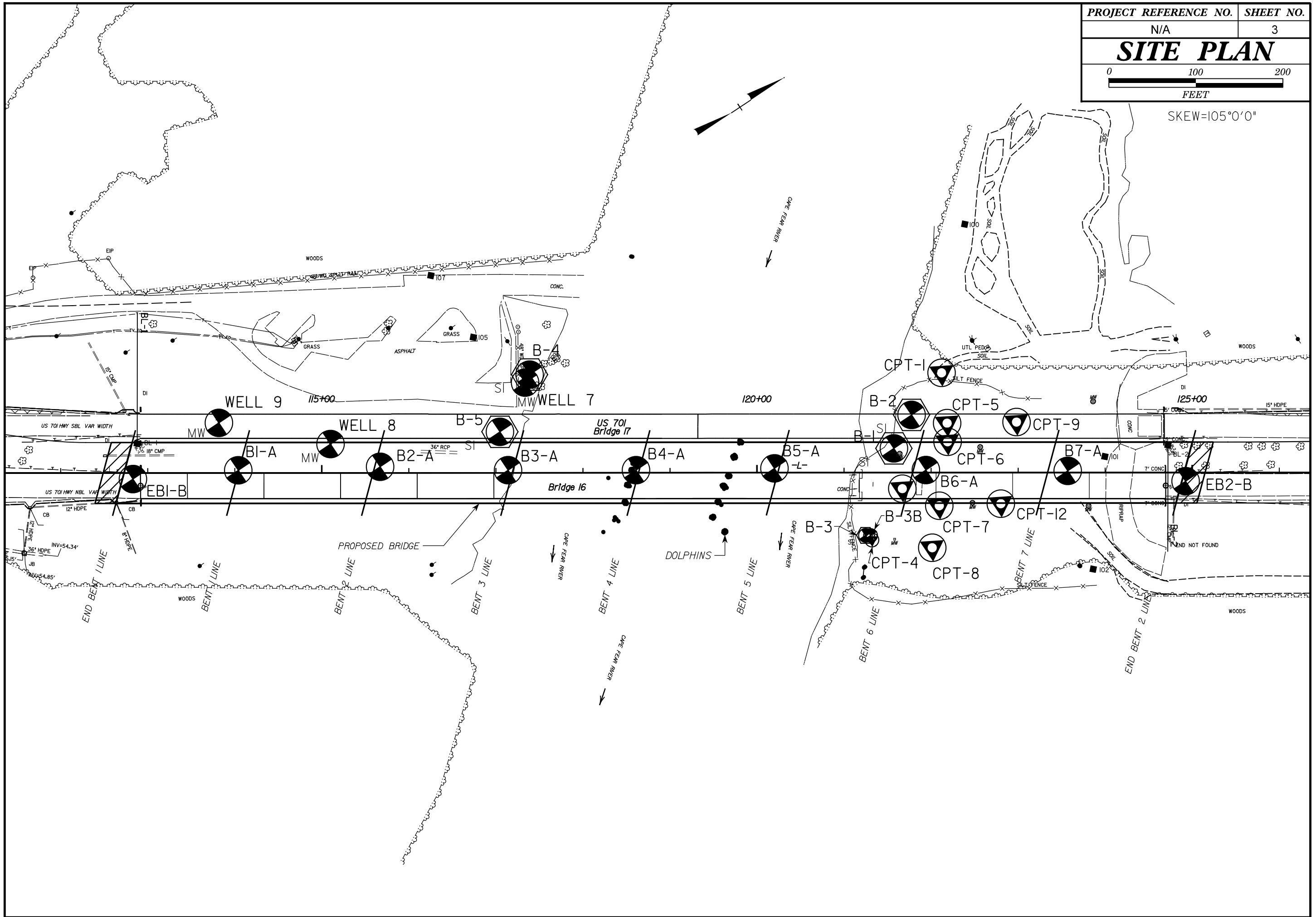
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**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

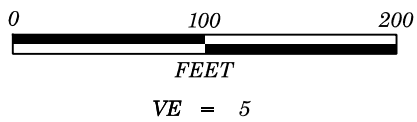
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION  
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																							
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 208, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORMLY GRADED</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA. <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. <b>ARGILLACEOUS</b> - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. <b>ARTESIAN</b> - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. <b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. <b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. <b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. <b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. <b>ROCK QUALITY DESIGNATION (RQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. <b>SILL</b> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. <b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. <b>STRATA ROCK QUALITY DESIGNATION (SROD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. <b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																							
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<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p>SLIGHTLY COMPRESSIBLE LL &lt; 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL &gt; 50</p>										<p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p>										<p>VERY SLIGHT (V SLI) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p>																																																																																																																																																																							
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<b>FRACURE SPACING</b>										<b>BEDDING</b>										<b>MODERATELY HARD</b>										<b>MODERATELY HARD</b>																																																																																																																																																																							
<b>FRACURE SPACING</b>										<b>BEDDING</b>										<b>MODERATELY HARD</b>										<b>MODERATELY HARD</b>																																																																																																																																																																							

SKEW=105°0'0"

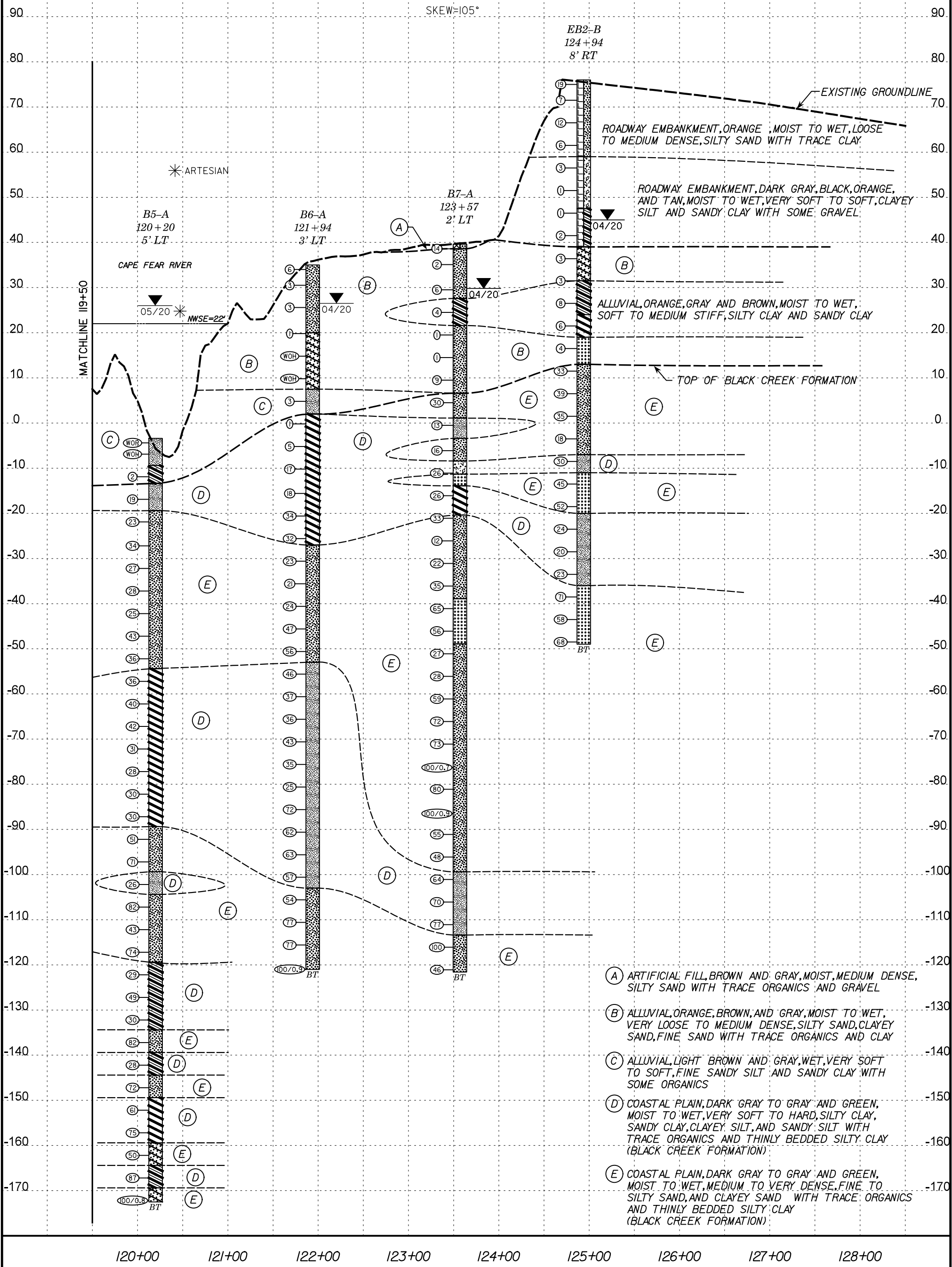






PROJECT REFERENCE NO.	SHEET NO.
N/A	5
PROFILE OF BORINGS ALONG -L-	

SKREW=105°



- (A) ARTIFICIAL FILL, BROWN AND GRAY, MOIST, MEDIUM DENSE, SILTY SAND WITH TRACE ORGANICS AND GRAVEL
- (B) ALLUVIAL, ORANGE, BROWN, AND GRAY, MOIST TO WET, VERY LOOSE TO MEDIUM DENSE, SILTY SAND, CLAYEY SAND, FINE SAND WITH TRACE ORGANICS AND CLAY
- (C) ALLUVIAL, LIGHT BROWN AND GRAY, WET, VERY SOFT TO SOFT, FINE SANDY SILT AND SANDY CLAY WITH SOME ORGANICS
- (D) COASTAL PLAIN, DARK GRAY TO GRAY AND GREEN, MOIST TO WET, VERY SOFT TO HARD, SILTY CLAY, SANDY CLAY, CLAYEY SILT, AND SANDY SILT WITH TRACE ORGANICS AND THINLY BEDDED SILTY CLAY (BLACK CREEK FORMATION)
- (E) COASTAL PLAIN, DARK GRAY TO GRAY AND GREEN, MOIST TO WET, MEDIUM TO VERY DENSE, FINE TO SILTY SAND, AND CLAYEY SAND WITH TRACE ORGANICS AND THINLY BEDDED SILTY CLAY (BLACK CREEK FORMATION)

120+00      121+00      122+00      123+00      124+00      125+00      126+00      127+00      128+00











# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B3-A		STATION 117+14		OFFSET 3 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 30.0 ft		TOTAL DEPTH 168.8 ft		NORTHING 321,279		EASTING 2,119,334	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIETRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic	
DRILLER M. Brown		START DATE 05/18/20		COMP. DATE 05/21/20		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						
30	30.0	0.0	1	2	3									30.0	GROUND SURFACE	0.0
	27.5	2.5	1	2	3									28.0	ALLUVIAL Brown, Silty Sand with Little Clay Brown to Light Gray, Sandy Clay	2.0
25																
	22.1	7.9	WOH	WOH	WOH											
20																
	17.1	12.9	WOR	WOR	WOR											
15																
	11.9	18.1	WOH	WOH	WOH											
10																
	6.9	23.1	WOH	WOH	WOH											
5																
	1.9	28.1	WOH	WOH	WOH											
0																
	-3.1	33.1	WOR	5	7											
-5																
	-8.1	38.1	5	11	16											
-10																
	-13.1	43.1	2	4	5											
-15																
	-18.0	48.0	2	3	4											
-20																
	-23.0	53.0	4	8	14											
-25																
	-28.0	58.0	6	8	10											
-30																
	-32.3	62.3	4	6	8											
-35																
	-37.3	67.3	5	6	12											
-40																
	-42.3	72.3	6	7	15											
-45																
	-47.3	77.3	6	9	12											
-50																

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B3-A		STATION 117+14		OFFSET 3 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 30.0 ft		TOTAL DEPTH 168.8 ft		NORTHING 321,279		EASTING 2,119,334	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIETRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic	
DRILLER M. Brown		START DATE 05/18/20		COMP. DATE 05/21/20		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						
-50																
	-52.3	82.3	9	16	17											
-55																
	-57.3	87.3	8	11	19											
-60																
	-62.3	92.3	7	12	21											
-65																
	-67.3	97.3	8	12	20											
-70																
	-72.3	102.3	8	10	13											
-75																
	-77.3	107.3	7	9	13											
-80																
	-82.3	112.3	6	8	11											
-85																
	-87.3	117.3	7	11	15											
-90																
	-92.3	122.3	36	45	55/0.3											
-95																
	-97.3	127.3	9	20	27											
-100																
	-102.3	132.3	7	12	16											
-105																
	-107.3	137.3	12	24	26											
-110																
	-112.3	142.3	8	11	17											
-115																
	-117.3	147.3	17	30	45											
-120																
	-122.3	152.3	10	19	28											
-125																
	-127.3	157.3	25	51	49/0.4											
-130																

NCDOT BORE DOUBLE US701\_GEO BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy										
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)									
BORING NO. B3-A		STATION 117+14		OFFSET 3 ft LT		ALIGNMENT -L-	0 HR. N/A									
COLLAR ELEV. 30.0 ft		TOTAL DEPTH 168.8 ft		NORTHING 321,279		EASTING 2,119,334	24 HR. 0.0									
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Brown		START DATE 05/18/20		COMP. DATE 05/21/20		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
-130						Match Line										
	-132.3	162.3	6	29	44	73						W	/	-131.0	161.0	Dark Gray, Sandy Clay with Trace Organics
-135												W	.	-136.0	166.0	Gray, Silty Fine Sand with Trace Thinly Bedded Clay and Organics
	-137.3	167.3	16	37	50	87								-138.8	168.8	Boring Terminated at Elevation -138.8 ft in Silty Sand (Black Creek Formation)
																Weak Artesian Water Flow to Ground Surface

NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B4-A		STATION 118+61		OFFSET 3 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 6.7 ft		TOTAL DEPTH 174.4 ft		NORTHING 321,402		EASTING 2,119,415	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 05/05/20		COMP. DATE 05/07/20		SURFACE WATER DEPTH 13.6ft	

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							
10																	
	6.7	0.0													6.7	GROUND SURFACE	0.0
5	4.2	2.5	WOR	WOR	WOR											ALLUVIAL	
			1	WOR	WOR											Gray and Light Brown, Poorly Sorted Silty Sand with Trace Wood Fragments and Rounded Gravel	
0	-1.2	7.9															
			1		2												
-5	-6.2	12.9															
			5		7												
-10	-11.2	17.9															
			2		6												
-15	-16.2	22.9															
			5		7												
-20	-21.2	27.9															
			5		15												
-25	-26.2	32.9															
			6		10												
-30	-31.2	37.9															
			3		9												
-35	-36.2	42.9															
			6		10												
-40	-41.2	47.9															
			7		18												
-45	-46.2	52.9															
			6		11												
-50	-51.2	57.9															
			7		18												
-55	-56.2	62.9															
			9		17												
-60	-61.2	67.9															
			7		20												
-65	-66.2	72.9															
			9		17												
-70																	

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B4-A		STATION 118+61		OFFSET 3 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 6.7 ft		TOTAL DEPTH 174.4 ft		NORTHING 321,402		EASTING 2,119,415	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 05/05/20		COMP. DATE 05/07/20		SURFACE WATER DEPTH 13.6ft	

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						
-70																
	-71.2	77.9														
			7		20											
-75	-76.2	82.9														
			8		16											
-80	-81.2	87.9														
			8		14											
-85																
-90	-91.2	97.9														
			15		66											
-95	-96.2	102.9														
			18		62											
-100	-101.2	107.9														
			7		15											
-105	-106.2	112.9														
			7		15											
-110	-111.2	117.9														
			7		23											
-115	-116.2	122.9														
			13		20											
-120	-121.2	127.9														
			28		43/0.3											
-125	-126.2	132.9														
			26		21											
-130	-131.2	137.9														
			9		16											
-135	-136.2	142.9														
			5		19											
-140	-141.2	147.9														
			16		41											
-145	-146.2	152.9														
			18		43											
-150																

NCDOT BORE DOUBLE US701\_GEO BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy								
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)							
BORING NO. B4-A		STATION 118+61		OFFSET 3 ft LT		ALIGNMENT -L-								
COLLAR ELEV. 6.7 ft		TOTAL DEPTH 174.4 ft		NORTHING 321,402		EASTING 2,119,415								
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic								
DRILLER M. Brown		START DATE 05/05/20		COMP. DATE 05/07/20		SURFACE WATER DEPTH 13.6ft								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)
-150	-151.2	-157.9	9	13	19	Match Line						W	Gray, Silty Clay with Trace Fine Sand <i>(continued)</i>	
-155	-156.2	-162.9	11	19	27							W	-159.3 ----- 166.0 Gray, Well Sorted Clayey Sand	
-160	-161.2	-167.9	17	23	28							W		
-165	-166.2	-172.9	14	16	21							W	-167.7 ----- 174.4	
													W	Boring Terminated at Elevation -167.7 ft in Clayey Sand (Black Creek Formation)

NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B5-A		STATION 120+20		OFFSET 5 ft LT		ALIGNMENT -L-	
COLLAR ELEV. -3.4 ft		TOTAL DEPTH 169.1 ft		NORTHING 321,535		EASTING 2,119,502	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 05/11/20		COMP. DATE 05/15/20		SURFACE WATER DEPTH 23.7ft	

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					
0														0.0	
-3.4	-3.4	0.0											GROUND SURFACE		
-5	-5.9	2.5	WOR	WOR	WOR							W	ALLUVIAL Light Gray, Sandy Silt with Some Organics		
-10	-10.9	7.5	WOH	WOH	WOH							W	Gray, Sandy Clay	6.0	
-15	-15.9	12.5				1	1	1					W	COASTAL PLAIN Gray to Dark Gray, Fine, Sandy Silt with Trace Thinly Bedded Silty Clay (Black Creek Formation)	10.0
-20	-20.9	17.5				5	9	10					W	Dark Gray to Green, Fine, Silty Sand with Trace Thinly Bedded Silty Clay and Organics	16.0
-25	-26.2	22.8				7	9	14					W		
-30	-31.2	27.8				7	15	19					W		
-35	-36.2	32.8				6	11	16					W		
-40	-41.2	37.8				6	10	18					W		
-45	-46.2	42.8				6	15	28					W		
-50	-51.2	47.8				7	13	23					W		
-55	-56.2	52.8				7	14	22					W		
-60	-61.2	57.8				8	14	22					W		
-65	-66.2	62.8				7	14	26					W		
-70	-71.2	67.8				9	15	27					W		
-75	-76.2	72.8				8	13	18					W		
-80						8	11	17					W		

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy	
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. B5-A		STATION 120+20		OFFSET 5 ft LT		ALIGNMENT -L-	
COLLAR ELEV. -3.4 ft		TOTAL DEPTH 169.1 ft		NORTHING 321,535		EASTING 2,119,502	
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 05/11/20		COMP. DATE 05/15/20		SURFACE WATER DEPTH 23.7ft	

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					
-80															
-81.2	-81.2	77.8				8	12	18					W	Dark Gray, Silty Clay with Thinly Bedded Sand (continued)	
-85	-86.2	82.8				10	11	19					W		
-90	-91.2	87.8				12	19	32					W	Green-Gray, Silty Fine Sand with Trace Thinly Bedded Silty Clay, Shells, and Organics	86.0
-95	-96.2	92.8				14	36	35					W		
-100	-101.2	97.8				7	10	16					W	Dark Gray-Green, Sandy Silt with Trace Thinly Bedded Silty Clay and Organics	96.0
-105	-106.2	102.8				16	28	54					W	Gray-Green, Silty Sand with Trace Thinly Bedded Silty Clay and Organics	101.0
-110	-111.2	107.8				15	19	24					W		
-115	-116.2	112.8				13	33	41					W		
-120	-121.2	117.8				6	10	19					W	Dark Gray-Green, Fine Sandy Clay with Some Thinly Bedded Silty Sand	116.0
-125	-126.2	122.8				18	28	21					W		
-130	-131.2	127.8				10	12	18					W		
-135	-136.2	132.8				24	28	54					W	Gray, Silty Fine Sand with Trace Thinly Bedded Silty Clay	131.0
-140	-141.2	137.8				9	12	16					W	Dark Gray to Brown, Sandy Clay with Some Thinly Bedded Sand	136.0
-145	-146.2	142.8				18	30	42					W	Gray, Poorly Sorted, Silty Sand with Trace Silty Clay and Organics	141.0
-150	-151.2	147.8				17	24	37					W	Gray, Silty Clay	146.0
-155	-156.2	152.8				22	32	43					W		
-160													W		

NCDOT BORE DOUBLE US701\_GEO BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

SS-119 24%

SS-128 18%

SS-115 37%

Match Line

# GEOTECHNICAL BORING REPORT

## BORE LOG

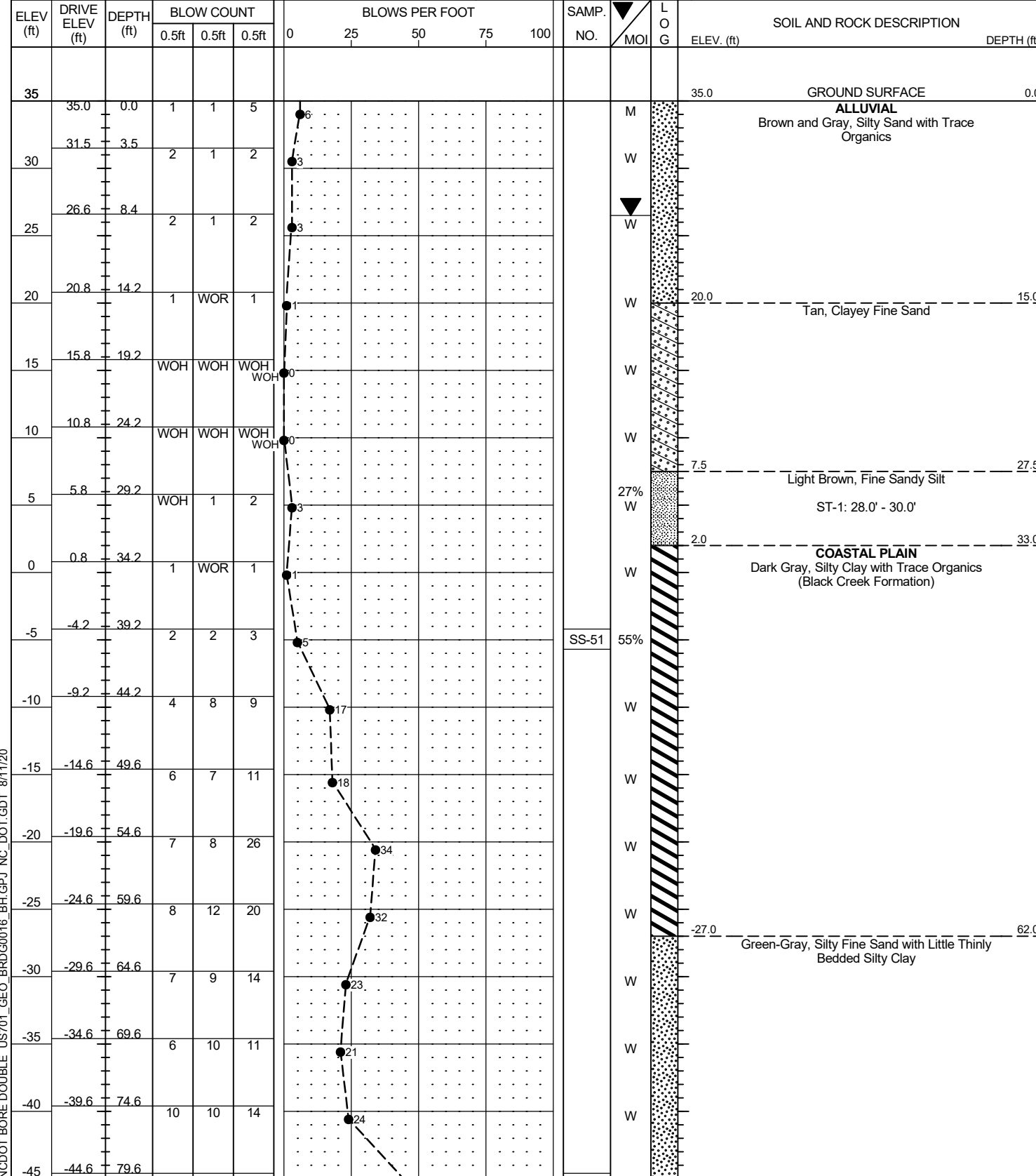
WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy										
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)									
BORING NO. B5-A		STATION 120+20		OFFSET 5 ft LT		ALIGNMENT -L-										
COLLAR ELEV. -3.4 ft		TOTAL DEPTH 169.1 ft		NORTHING 321,535		EASTING 2,119,502										
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Brown		START DATE 05/11/20		COMP. DATE 05/15/20		SURFACE WATER DEPTH 23.7ft										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
-160	-161.2	157.8	14	18	32	Match Line								Gray, Clayey Fine Sand (continued)		
-165	-166.2	162.8	20	36	51	50					SS-129	19%		-164.4	161.0	Gray, Fine Sandy Clay
-170	-171.2	167.8	27	50	50/0.3	87					M			-169.4	166.0	Gray, Clayey Fine Sand
						100/0.8					M			-172.5	169.1	Gray, Clayey Fine Sand
Boring Terminated at Elevation -172.5 ft in Clayey Sand (Black Creek Formation)																
Artesian Water Elevation Measured to 26.1 Feet on 5/15/20																

NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

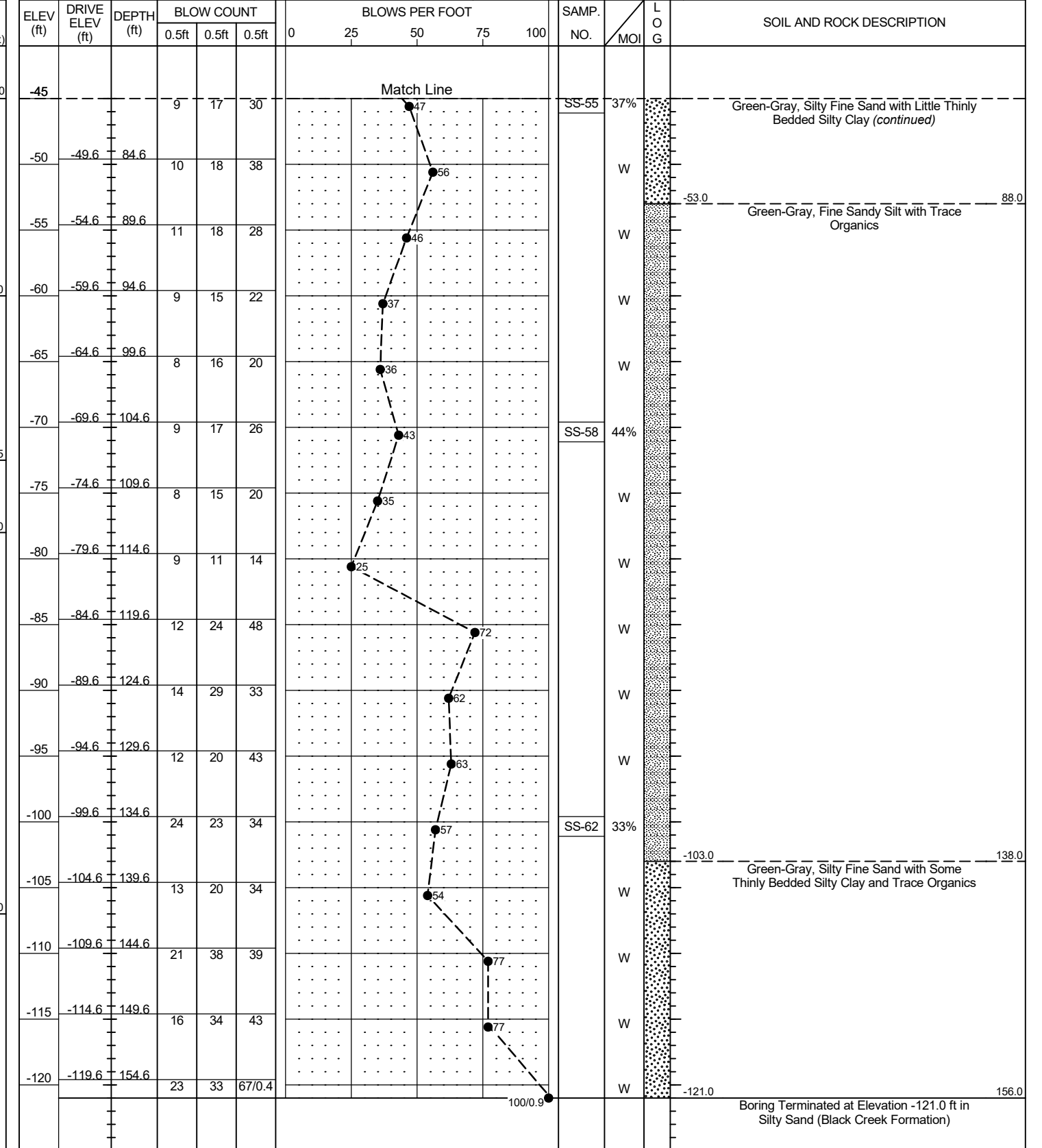
# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1	TIP N/A	COUNTY BLADEN	GEOLOGIST C. McLroy
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River			GROUND WTR (ft)
BORING NO. B6-A	STATION 121+94	OFFSET 3 ft LT	ALIGNMENT -L-
COLLAR ELEV. 35.0 ft	TOTAL DEPTH 156.0 ft	NORTHING 321,679	EASTING 2,119,600
DRILL RIG/HAMMER EFF./DATE SEL1975 DIETRICH D-50 93% 09/06/2019		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER M. Brown	START DATE 04/27/20	COMP. DATE 04/29/20	SURFACE WATER DEPTH N/A



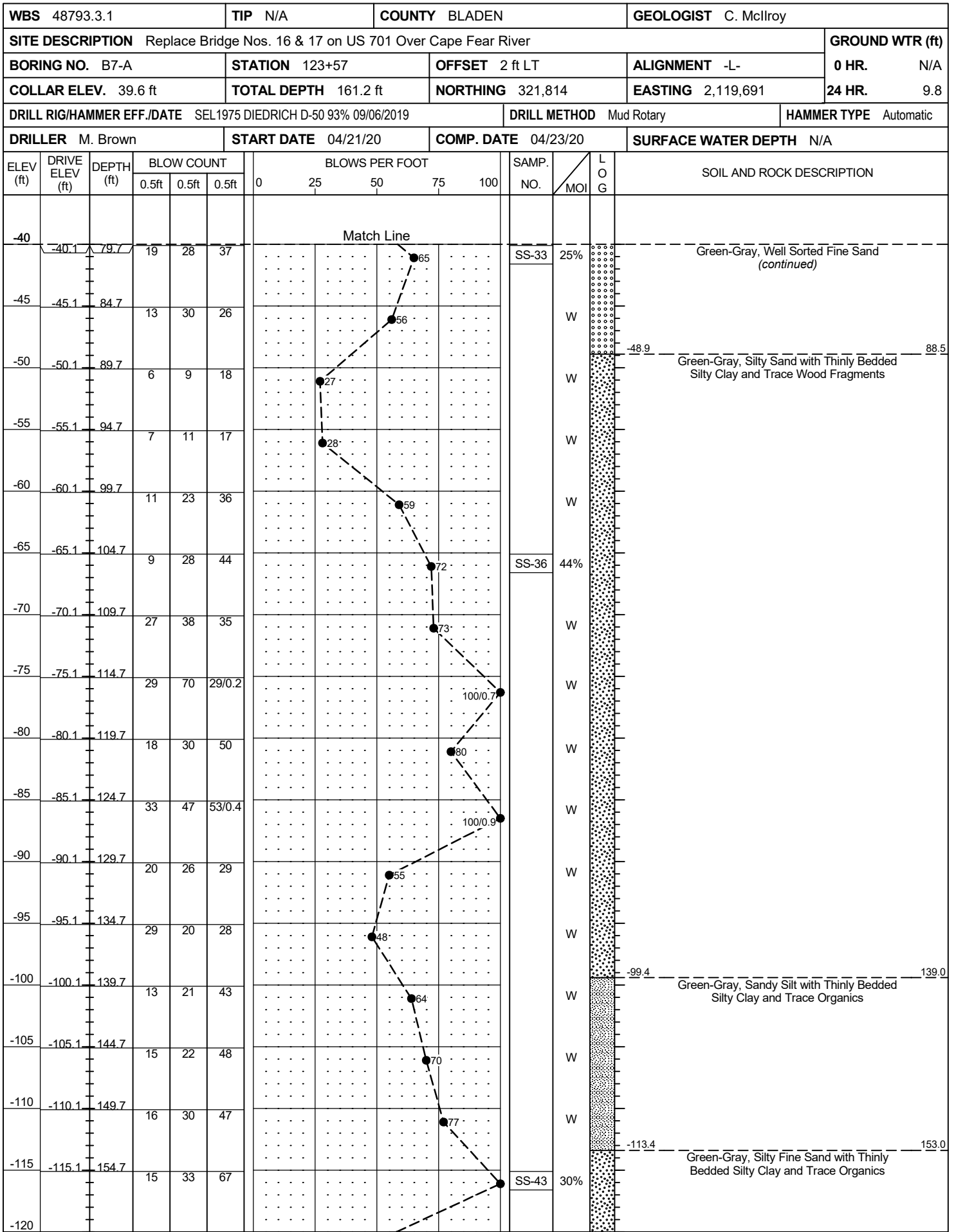
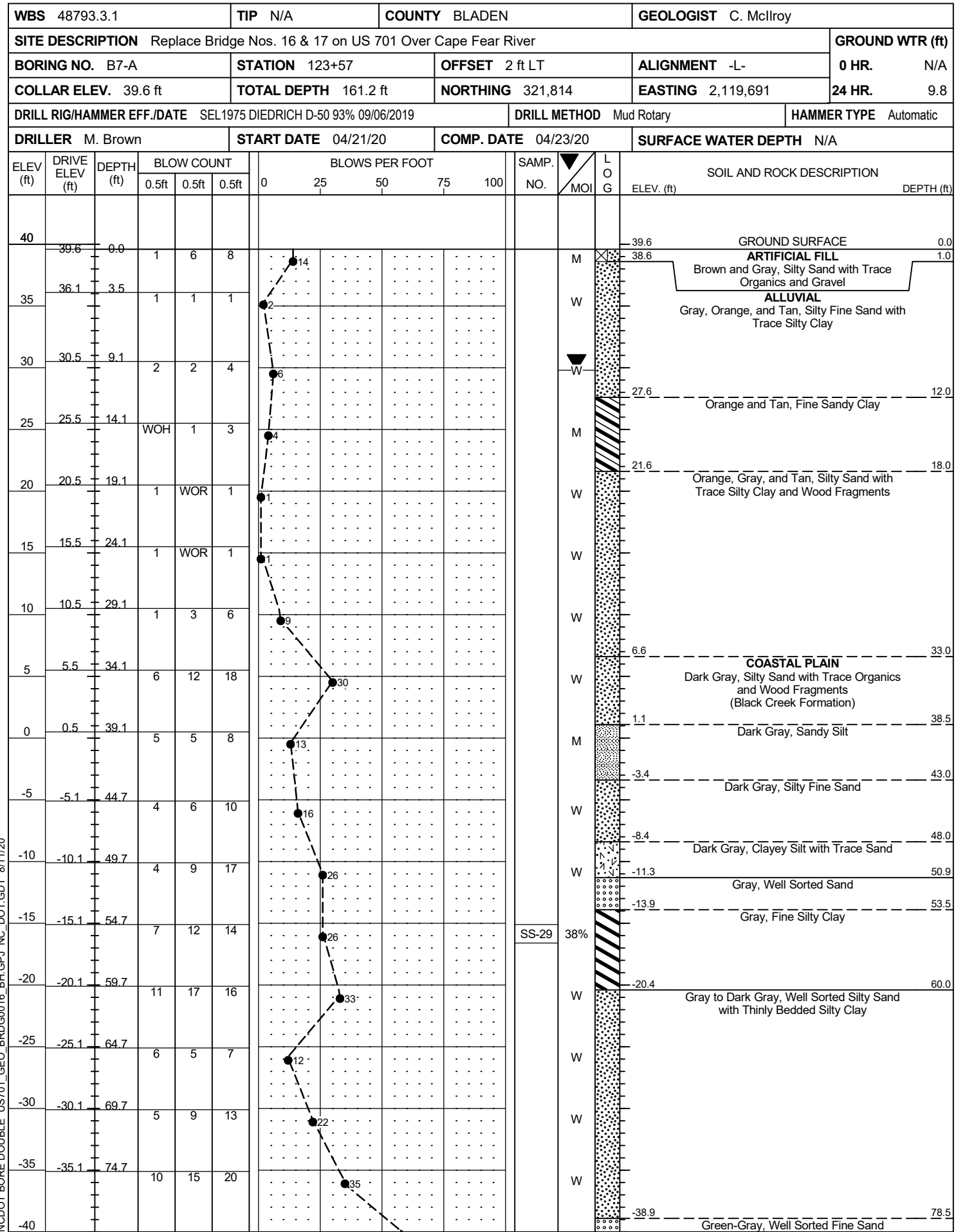
WBS 48793.3.1	TIP N/A	COUNTY BLADEN	GEOLOGIST C. McLroy
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River			GROUND WTR (ft)
BORING NO. B6-A	STATION 121+94	OFFSET 3 ft LT	ALIGNMENT -L-
COLLAR ELEV. 35.0 ft	TOTAL DEPTH 156.0 ft	NORTHING 321,679	EASTING 2,119,600
DRILL RIG/HAMMER EFF./DATE SEL1975 DIETRICH D-50 93% 09/06/2019		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER M. Brown	START DATE 04/27/20	COMP. DATE 04/29/20	SURFACE WATER DEPTH N/A



NCDOT BORE DOUBLE US701\_GEO BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20



GEOTECHNICAL BORING REPORT
BORE LOG



NCDOT BORE DOUBLE US701\_GEO BRDG0016\_BH.GPJ\_NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy										
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)									
BORING NO. B7-A		STATION 123+57		OFFSET 2 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 39.6 ft		TOTAL DEPTH 161.2 ft		NORTHING 321,814		EASTING 2,119,691										
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Brown		START DATE 04/21/20		COMP. DATE 04/23/20		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-120	-120	159.7	10	21	25	...	...	46	...	...		M			-121.6	161.2
Match Line Boring Terminated at Elevation -121.6 ft in Silty Sand (Black Creek Formation)																

NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH.GPJ NC\_DOT.GDT 8/11/20

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy									
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 124+94		OFFSET 8 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 76.0 ft		TOTAL DEPTH 125.0 ft		NORTHING 321,922		EASTING 2,119,776									
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Brown		START DATE 04/16/20		COMP. DATE 04/17/20		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					
80															
	76.0	0.0	5	10	9									76.0	GROUND SURFACE
	72.5	3.5	3	4	3										ROADWAY EMBANKMENT
	70														Orange, Silty Sand with Trace Clay
	67.5	8.5	4	7	5										
	62.5	13.5	3	4	2										
	57.5	18.5	1	1	2									59.0	Dark Gray to Black, Clayey Silt with Some Gravel
	52.5	23.5	1	WOR	1										
	47.5	28.5	WOH	WOH	1									47.5	Orange, Tan, and Gray, Sandy Clay
	42.5	33.5	WOH	WOH	2										
	37.4	38.6	1	1	2									39.0	ALLUVIAL
	32.5	43.5	WOH	1	2										Gray, Clayey Sand with Trace Wood Fragments
	27.5	48.5	1	4	4										
	22.5	53.5	2	2	4										
	17.5	58.5	3	1	3										
	12.5	63.5	5	13	20										
	7.5	68.5	14	17	22										
	2.5	73.5	10	14	21										
0															

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST C. McIlroy									
SITE DESCRIPTION Replace Bridge Nos. 16 & 17 on US 701 Over Cape Fear River							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 124+94		OFFSET 8 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 76.0 ft		TOTAL DEPTH 125.0 ft		NORTHING 321,922		EASTING 2,119,776									
DRILL RIG/HAMMER EFF./DATE SEL1975 DIEDRICH D-50 93% 09/06/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER M. Brown		START DATE 04/16/20		COMP. DATE 04/17/20		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					
0															
	-2.5	78.5	5	8	10										
	-7.5	83.5	6	10	20										
	-12.5	88.5	10	20	25										
	-17.5	93.5	11	24	28										
	-22.5	98.5	7	12	12										
	-27.5	103.5	6	8	12										
	-32.5	108.5	5	9	14										
	-37.5	113.5	12	26	45										
	-42.5	118.5	20	29	29										
	-47.5	123.5	25	33	35										

NCDOT BORE DOUBLE US701\_GEO\_BRD0016\_BH.GPJ NC\_DOT.GDT 8/11/20



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST M. Stanbury										
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River							GROUND WTR (ft)									
BORING NO. B-2		STATION 121+77		OFFSET 66 ft LT		ALIGNMENT N/A										
COLLAR ELEV. 29.1 ft		TOTAL DEPTH 139.9 ft		NORTHING 321,700		EASTING 2,119,538										
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 90% 11/18/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER M. Moseley		START DATE 12/05/19		COMP. DATE 12/06/19		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						
30	29.1	0.0	1	1	1									29.1	GROUND SURFACE	0.0
	26.1	3.0	2	2	2										ALLUVIAL Brown, Silty Sand	
25	21.1	8.0	2	1	1											
20	16.1	13.0	2	2	2											
15	11.1	18.0	3	3	2											
10	6.1	23.0	2	2	3											
5	1.1	28.0	WOH	2	3											
0	-3.9	33.0	5	7	10											
-5	-8.9	38.0	6	8	12											
-10	-13.9	43.0	8	16	13											
-15	-18.9	48.0	6	8	12											
-20	-23.9	53.0	9	15	16											
-25	-28.9	58.0	11	15	27											
-30	-34.4	63.5	12	15	22											
-35	-39.4	68.5	7	12	60											
-40	-44.4	73.5	17	25	26											
-45	-49.4	78.5														

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST M. Stanbury										
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River							GROUND WTR (ft)									
BORING NO. B-2		STATION 121+77		OFFSET 66 ft LT		ALIGNMENT N/A										
COLLAR ELEV. 29.1 ft		TOTAL DEPTH 139.9 ft		NORTHING 321,700		EASTING 2,119,538										
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 90% 11/18/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER M. Moseley		START DATE 12/05/19		COMP. DATE 12/06/19		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						
-50			10	12	18											
	-54.4	83.5	12	16	28											
-55	-59.4	88.5	10	14	21											
-60	-64.4	93.5	10	15	20											
-65	-69.4	98.5	9	14	20											
-70	-74.4	103.5	9	14	16											
-75	-79.4	108.5	9	12	23											
-80	-84.4	113.5	21	32	40											
-85	-89.4	118.5	17	25	34											
-90	-94.4	123.5	18	21	21											
-95	-99.4	128.5	10	13	19											
-100	-104.4	133.5	12	25	32											
-105	-109.4	138.5	25	35	65/0.4											

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Boring Terminated at Elevation -110.8 ft in Sandy Silt (Black Creek Formation)  
Slope Inclinator Installed to 58 Feet

Other Samples:  
ST-3 (12.6 - 14.6)  
ST-4 (22.8 - 24.8)  
ST-5 (24.8 - 26.8)



# GEOTECHNICAL BORING REPORT BORE LOG

WBS 48793.3.1		TIP N/A	COUNTY BLADEN	GEOLOGIST M. Stanbury											
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River															
BORING NO. B-3B		STATION 121+30	OFFSET 72 ft RT	ALIGNMENT N/A	GROUND WTR (ft)										
COLLAR ELEV. 31.0 ft		TOTAL DEPTH 135.0 ft	NORTHING 321,584	EASTING 2,119,627	0 HR. N/A										
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 90% 11/18/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER M. Moseley		START DATE 12/03/19	COMP. DATE 12/04/19	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 ELEV. (ft) DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
35															
30															31.0 GROUND SURFACE Continuous Drilling with No Sampling
25															
20															
15															
10															
5															
0															
-5															
-10															
-15															
-20															
-25															
-30															
-35															
-40															
-45															

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WBS 48793.3.1		TIP N/A	COUNTY BLADEN	GEOLOGIST M. Stanbury											
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River															
BORING NO. B-3B		STATION 121+30	OFFSET 72 ft RT	ALIGNMENT N/A	GROUND WTR (ft)										
COLLAR ELEV. 31.0 ft		TOTAL DEPTH 135.0 ft	NORTHING 321,584	EASTING 2,119,627	0 HR. N/A										
DRILL RIG/HAMMER EFF./DATE SUM2603 CME-550X 90% 11/18/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER M. Moseley		START DATE 12/03/19	COMP. DATE 12/04/19	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 ELEV. (ft) DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
-45						Match Line									
-50															-47.5 Continuous Drilling with No Sampling (continued) 78.5
-55															
-60															
-65															
-70															
-75															
-80															
-85															
-90															
-95															
-100															
-104.0															

Boring Terminated at Elevation -104.0 ft in Sandy Silt (Black Creek Formation)  
Other Samples:  
ST-1 (25.0 - 27.0)  
ST-2 (27.3 - 29.3)

# GEOTECHNICAL BORING REPORT

## BORE LOG

<b>WBS</b> 48793.3.1	<b>TIP</b> N/A	<b>COUNTY</b> BLADEN	<b>GEOLOGIST</b> M. Stanbury
<b>SITE DESCRIPTION</b> Bridge No. 16 on US 701 Over Cape Fear River			<b>GROUND WTR (ft)</b>
<b>BORING NO.</b> B-4	<b>STATION</b> 117+39	<b>OFFSET</b> 113 ft LT	<b>ALIGNMENT</b> N/A
<b>COLLAR ELEV.</b> 30.7 ft	<b>TOTAL DEPTH</b> 60.1 ft	<b>NORTHING</b> 321,361	<b>EASTING</b> 2,119,256
<b>DRILL RIG/HAMMER EFF./DATE</b> SUM2603 CME-550X 90% 11/18/2019		<b>DRILL METHOD</b> Mud Rotary	<b>HAMMER TYPE</b> Automatic
<b>DRILLER</b> M. Moseley	<b>START DATE</b> 12/15/19	<b>COMP. DATE</b> 12/12/19	<b>SURFACE WATER DEPTH</b> 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				
35														
30	30.7	0.0	4	5	5							M	GROUND SURFACE	0.0
												M	ARTIFICIAL FILL Brown, Sandy Silt with Gravel	3.0
	27.1	3.6	6	11	8							M	ALLUVIAL Brown, Clayey Sand	
												M		
	22.1	8.6	2	2	2							SS-79	34% Gray, Silty Clay with Trace Organics	8.0
												M		
	17.1	13.6	1	1	2							SS-81	36% Gray, Silty Clay with Trace Organics	
												M		
	12.1	18.6	WOH	1	1							SS-83	33% Gray, Sandy Clay with Trace Organics	28.0
												M		
	7.1	23.6	WOH	1	2							M		
												M		
	2.1	28.6	1	1	2							M		
												M		
	-2.9	33.6	2	4	3							M	Gray, Clayey Sand with Trace Organics and Gravel	33.0
												M		
	-7.9	38.6	2	2	4							M	Gray, Sandy Clay	38.0
												M		
	-12.9	43.6	7	5	4							M	COASTAL PLAIN Gray, Silty Sand (Black Creek Formation)	43.0
												M		
	-17.9	48.6	6	8	10							M	Black and Gray, Sandy Silt	48.0
												M		
	-22.9	53.6	6	9	12							M	Black and Gray, Silty Sand	53.0
												M		
	-27.9	58.6	6	7	10							M	Black, Sandy Silt	58.0
												M		
													Boring Terminated at Elevation -29.4 ft in Sandy Silt (Black Creek Formation)	60.1
													Slope Inclinator Installed to 60 Feet	

<b>WBS</b> 48793.3.1	<b>TIP</b> N/A	<b>COUNTY</b> BLADEN	<b>GEOLOGIST</b> M. Stanbury
<b>SITE DESCRIPTION</b> Bridge No. 16 on US 701 Over Cape Fear River			<b>GROUND WTR (ft)</b>
<b>BORING NO.</b> B-5	<b>STATION</b> 117+05	<b>OFFSET</b> 47 ft LT	<b>ALIGNMENT</b> N/A
<b>COLLAR ELEV.</b> 31.9 ft	<b>TOTAL DEPTH</b> 59.5 ft	<b>NORTHING</b> 321,296	<b>EASTING</b> 2,119,292
<b>DRILL RIG/HAMMER EFF./DATE</b> SUM2603 CME-550X 90% 11/18/2019		<b>DRILL METHOD</b> Mud Rotary	<b>HAMMER TYPE</b> Automatic
<b>DRILLER</b> M. Moseley	<b>START DATE</b> 12/12/19	<b>COMP. DATE</b> 12/12/19	<b>SURFACE WATER DEPTH</b> 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				
35														
30	31.9	0.0	2	2	2							M	GROUND SURFACE	0.0
												M	ARTIFICIAL FILL Black, Sandy Clay with Trace Organics and Gravel	3.0
	28.9	3.0	1	2	2							M	ALLUVIAL Gray, Silty Clay with Trace Organics	
												SS-91	39% Gray, Silty Clay with Trace Organics	
												M		
	23.9	8.0	WOH	WOH	WOH							SS-93	29% Gray and Brown, Mottled, Sandy Clay	18.0
												M		
	18.9	13.0	WOH	WOH	WOH							SS-95	25% Gray, Sandy Clay	
												M		
	13.9	18.0	WOH	WOH	WOH							M		
												M		
	8.9	23.0	WOH	WOH	WOH							M		
												M		
	3.9	28.0	WOH	WOH	WOH							M		
												M		
	-1.1	33.0	2	2	6							M	Gray, Clayey Sand with Trace Organics	33.0
												M		
	-6.1	38.0	WOH	WOH	3							M	Gray, Sandy Clay	38.0
												M		
	-11.1	43.0	5	10	13							W	Brown, Coarse Sand with Trace Gravel	43.0
												M		
	-16.1	48.0	6	6	6							M	COASTAL PLAIN Gray and Black, Sandy Silt	48.0
												M		
	-21.1	53.0	6	9	11							M		
												M		
	-26.1	58.0	8	9	11							M		
												M		
													Boring Terminated at Elevation -27.6 ft in Sandy Silt (Black Creek Formation)	59.5
													Estimated Elevation Based on B-4 Slope Inclinator Installed to 60 Feet	

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# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST M. Snyder	
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. Well 7		STATION 117+32		OFFSET 103 ft LT		ALIGNMENT N/A	
COLLAR ELEV. 31.2 ft		TOTAL DEPTH 55.2 ft		NORTHING 321,351		EASTING 2,119,261	
DRILL RIG/HAMMER EFF./DATE CAT4425 CME-55 87% 01/16/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic			
DRILLER J. Edmondson		START DATE 12/05/19		COMP. DATE 12/05/19		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
35														
	31.2	0.0	4	6	8									31.2 GROUND SURFACE 0.0
	27.5	3.7	4	4	6									28.2 ARTIFICIAL FILL 3.0 Brown and Gray, Sandy Silt with Trace Gravel
	25.2													25.2 ARTIFICIAL FILL 6.0 Brown, Sandy Clay
	22.5	8.7	WOH	1	2									22.5 ALLUVIAL 8.7 Gray, Silty Clay
	17.5	13.7	WOH	WOH	WOH									17.5 Little Sand and Wood Fragments at 28.7'
	12.5	18.7	WOH	WOH	WOH									
	7.5	23.7	WOH	WOH	WOH									
	2.5	28.7	WOH	WOH	4									
	-2.5	33.7	2	3	4									
	-7.5	38.7	WOH	WOH	WOH									
	-12.5	43.7	WOH	WOH	WOH									
	-17.5	48.7	1	4	5									-17.8 COASTAL PLAIN 49.0 Gray and Black, Clayey Silt with Some Sand (Black Creek Formation)
	-22.5	53.7	5	9	8									-24.0 Boring Terminated at Elevation -24.0 ft in Clayey Silt (Black Creek Formation) Piezometer Pipe Installed to 53 Feet

WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST M. Snyder	
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River							GROUND WTR (ft)
BORING NO. Well 8		STATION 115+10		OFFSET 33 ft LT		ALIGNMENT N/A	
COLLAR ELEV. 32.0 ft		TOTAL DEPTH 39.9 ft		NORTHING 321,126		EASTING 2,119,196	
DRILL RIG/HAMMER EFF./DATE CAT4425 CME-55 87% 01/16/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic			
DRILLER J. Edmondson		START DATE 12/05/19		COMP. DATE 12/05/19		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
35														
	32.0	0.0	1	2	1									32.0 GROUND SURFACE 0.0
	28.6	3.4	WOH	WOH	WOH									29.0 ARTIFICIAL FILL 3.0 Brown, Clayey Sand
	23.6	8.4	1	1	1									23.6 ALLUVIAL 8.4 Gray, Silty Clay with Trace to Little Organics
	18.6	13.4	WOH	WOH	WOH									
	13.6	18.4	WOH	WOH	WOH									
	8.6	23.4	3	4	7									10.0 COASTAL PLAIN 22.0 Gray and Black, Clayey Silt (Black Creek Formation)
	3.6	28.4	3	7	8									
	-1.4	33.4	4	7	10									
	-6.4	38.4	4	6	10									-7.9 Boring Terminated at Elevation -7.9 ft in Clayey Silt (Black Creek Formation) Piezometer Pipe Installed to 38 Feet

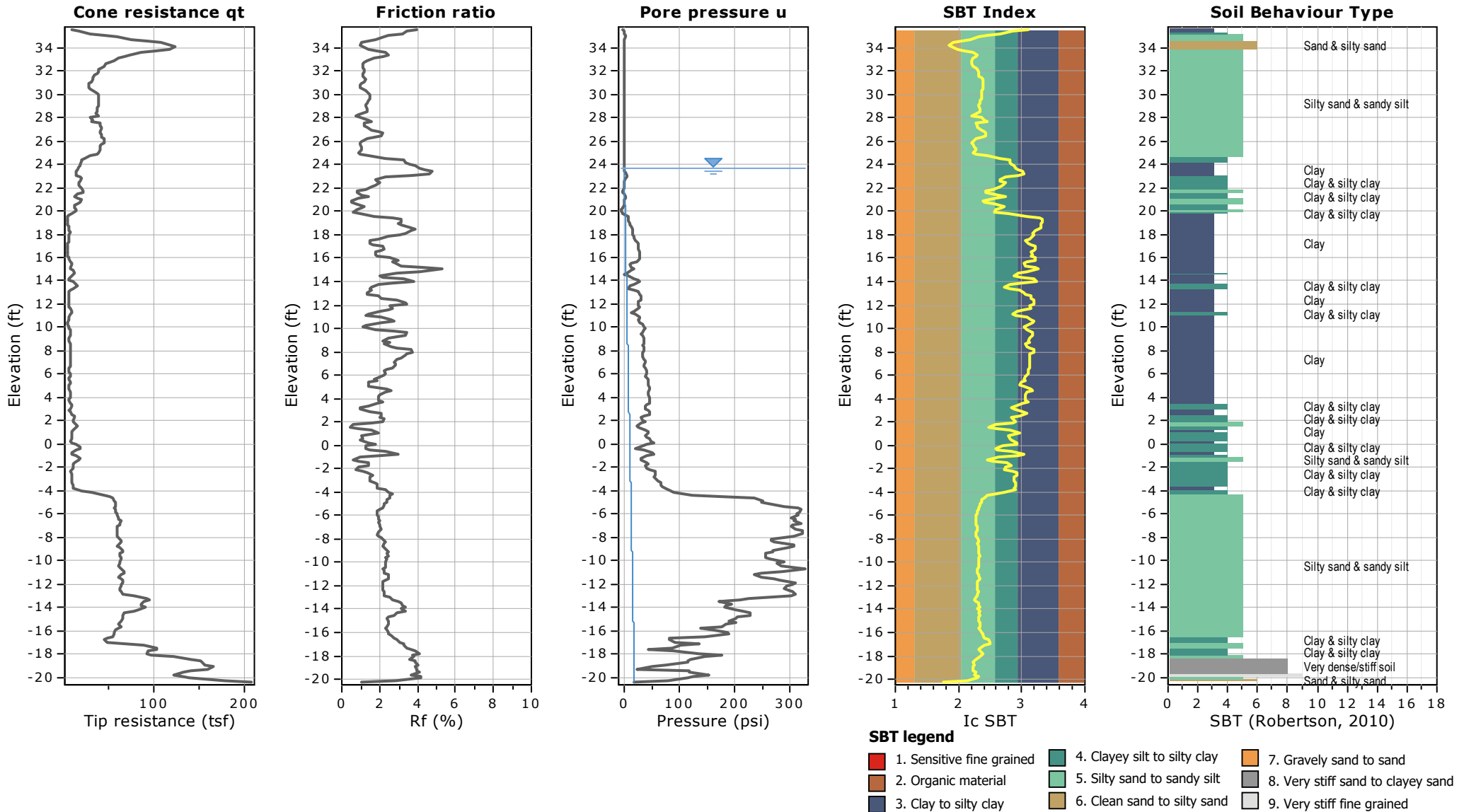
NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH\_2019.GPJ\_NC\_DOT.GDT 8/11/20

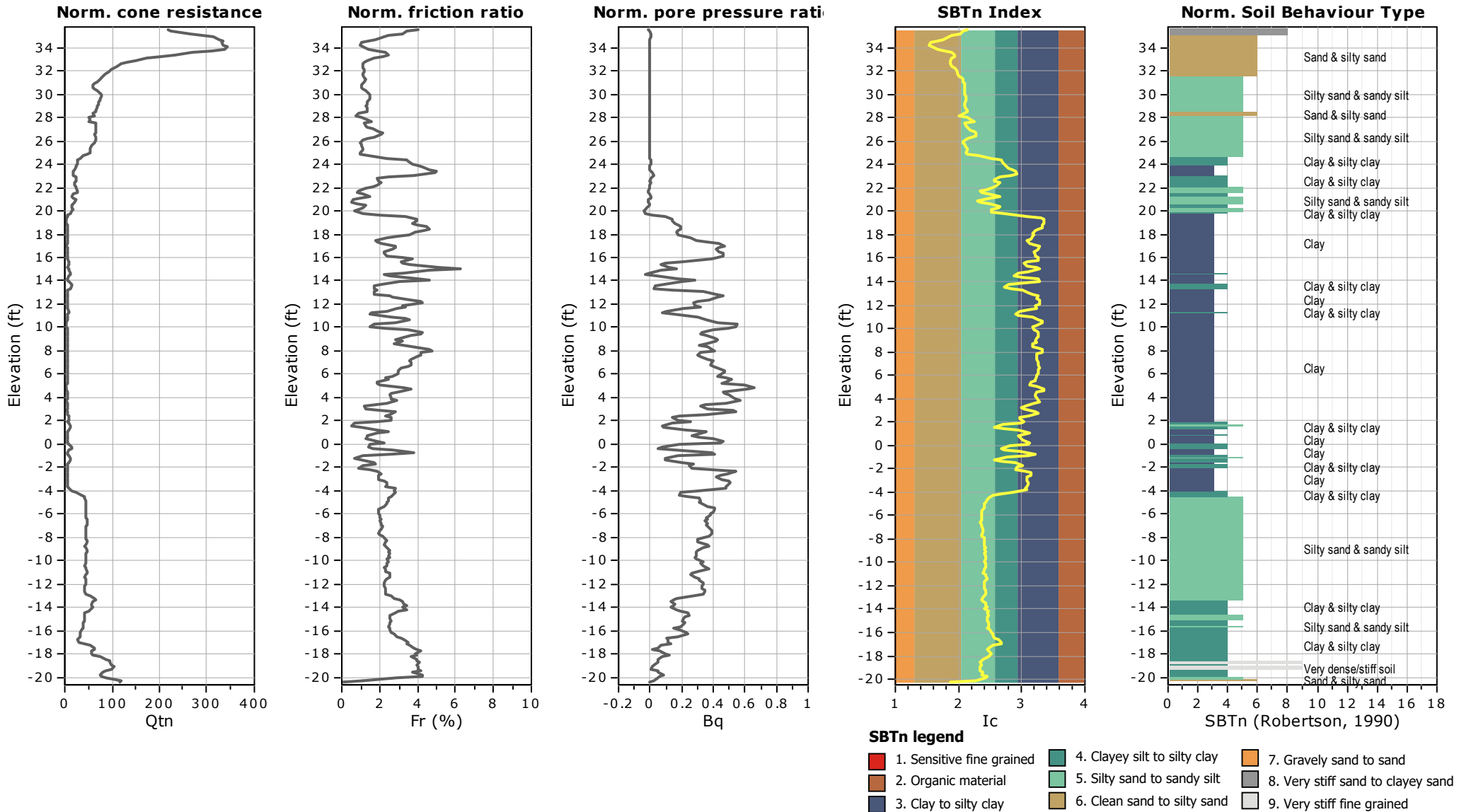
# GEOTECHNICAL BORING REPORT

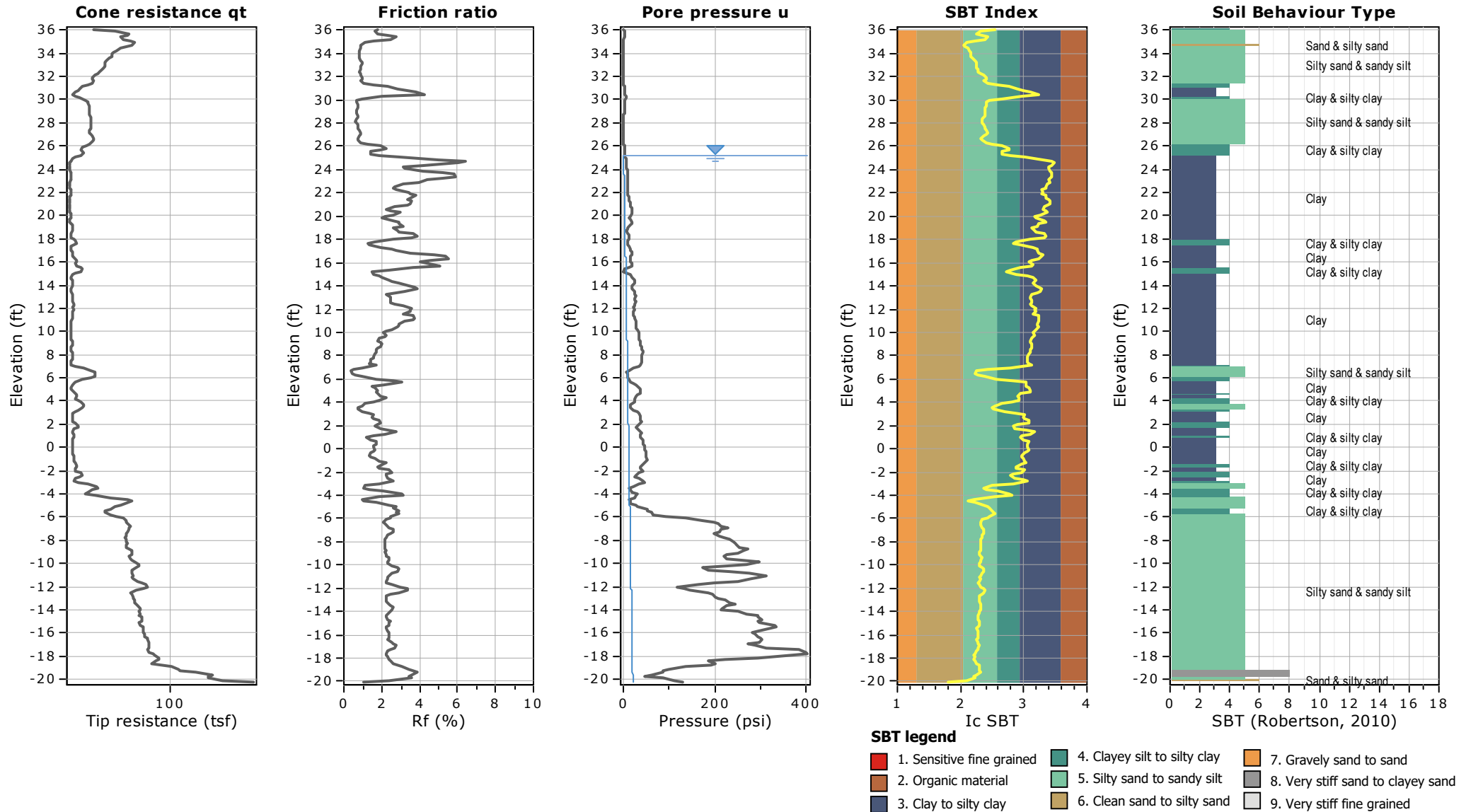
## BORE LOG

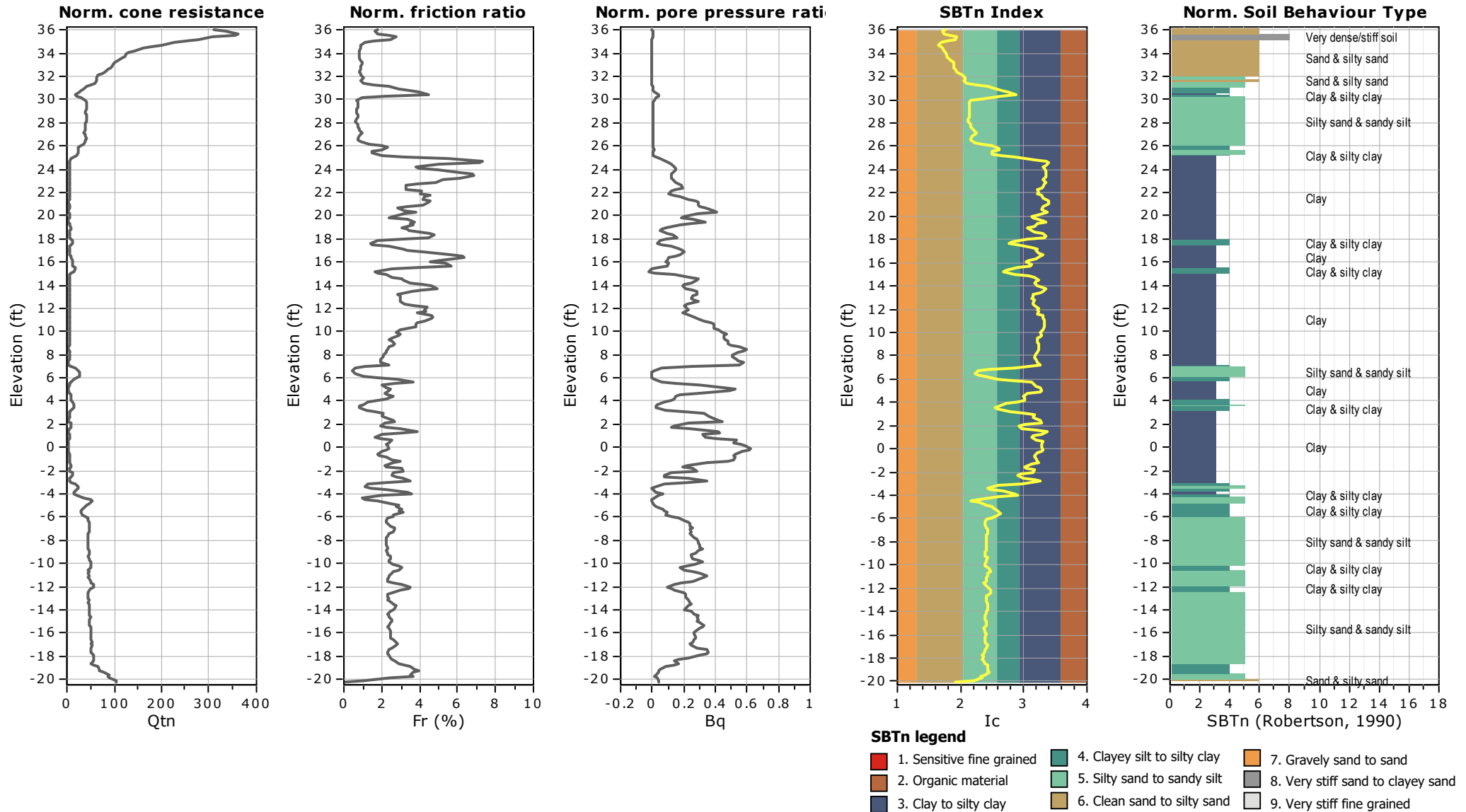
WBS 48793.3.1		TIP N/A		COUNTY BLADEN		GEOLOGIST N. Mohs											
SITE DESCRIPTION Bridge No. 16 on US 701 Over Cape Fear River							GROUND WTR (ft)										
BORING NO. Well 9		STATION 113+82		OFFSET 58 ft LT		ALIGNMENT N/A											
COLLAR ELEV. 38.6 ft		TOTAL DEPTH 40.2 ft		NORTHING 321,033		EASTING 2,119,104											
DRILL RIG/HAMMER EFF./DATE CAT1314 CME-45B 94% 09/26/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER T. Chalmers		START DATE 12/05/19		COMP. DATE 12/05/19		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)			
40														38.6	GROUND SURFACE	0.0	
															<b>ARTIFICIAL FILL</b> Brown, Clayey Sand with Trace Gravel and Wood Fragments		
35	35.1	3.5	3	2	1	3								34.6	<b>ALLUVIAL</b> Gray and Brown, Silty Sand	4.0	
															Gray, Sandy Clay with Trace Roots and Leaves		
30	29.9	8.7	1	1	1	2								30.6	Gray, Sandy Clay with Trace Roots and Leaves	8.0	
															Orange, Brown and Gray, Silty Rounded Coarse Sand		
25	24.9	13.7	2	2	2	4								26.6	Orange, Brown and Gray, Silty Rounded Coarse Sand	12.0	
20	19.9	18.7	2	2	7	9								18.7	<b>COASTAL PLAIN</b> Orange and Brown, Silty Sand, Thinly Bedded with Clay Lenses (Black Creek Formation)	19.9	
15	14.9	23.7	5	6	9	15											
10	9.9	28.7	4	5	8	13								11.1	Dark Gray, Clayey Silt	27.5	
5	4.9	33.7	3	6	7	13								6.1	Dark Gray, Sandy Silt	32.5	
0	-0.1	38.7	5	7	9	16								-1.6	Boring Terminated at Elevation -1.6 ft in Sandy Silt (Black Creek Formation)	40.2	
															Piezometer Pipe Installed to 38 Feet		

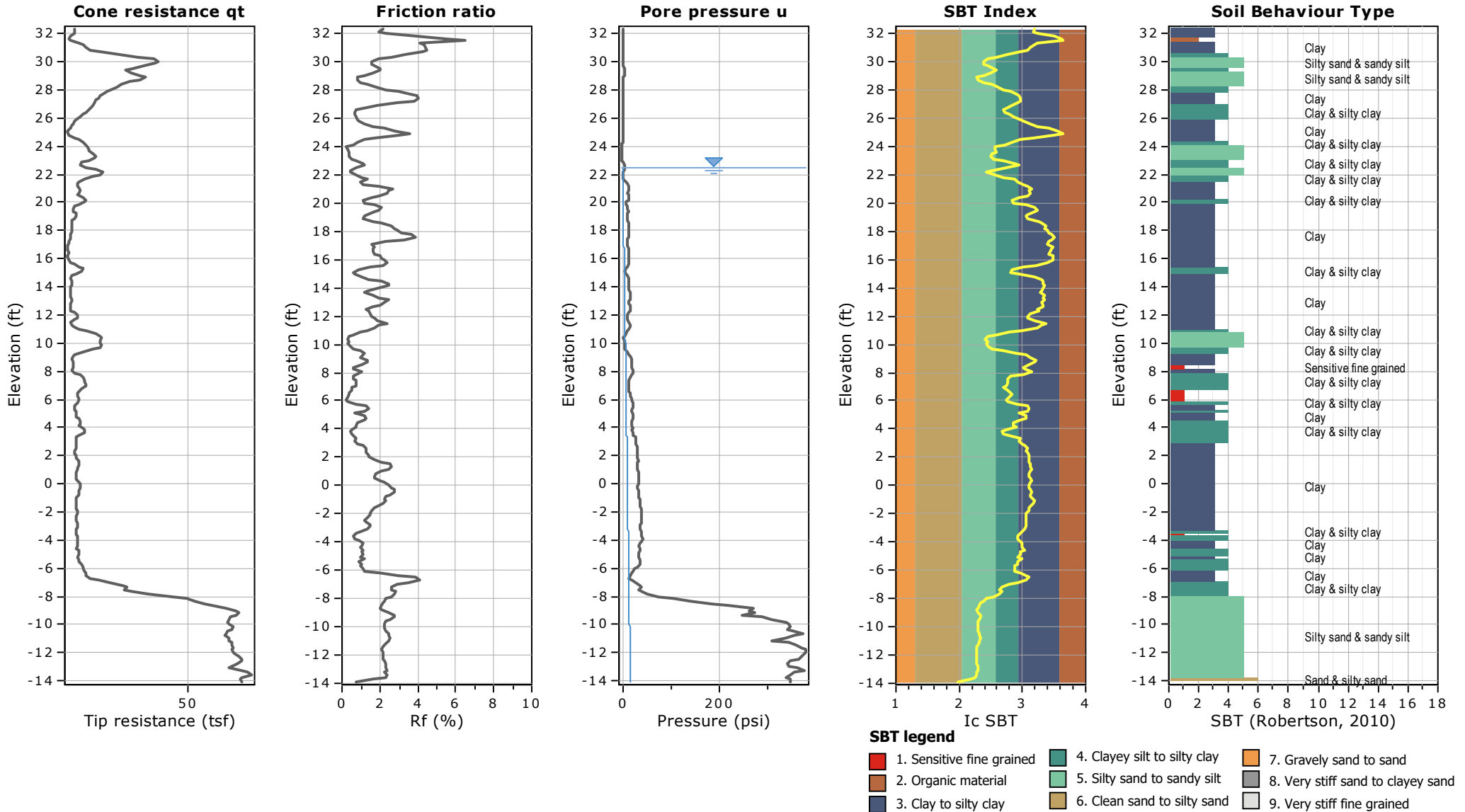
NCDOT BORE DOUBLE US701\_GEO\_BRDG0016\_BH\_2019.GPJ NC\_DOT.GDT 8/11/20

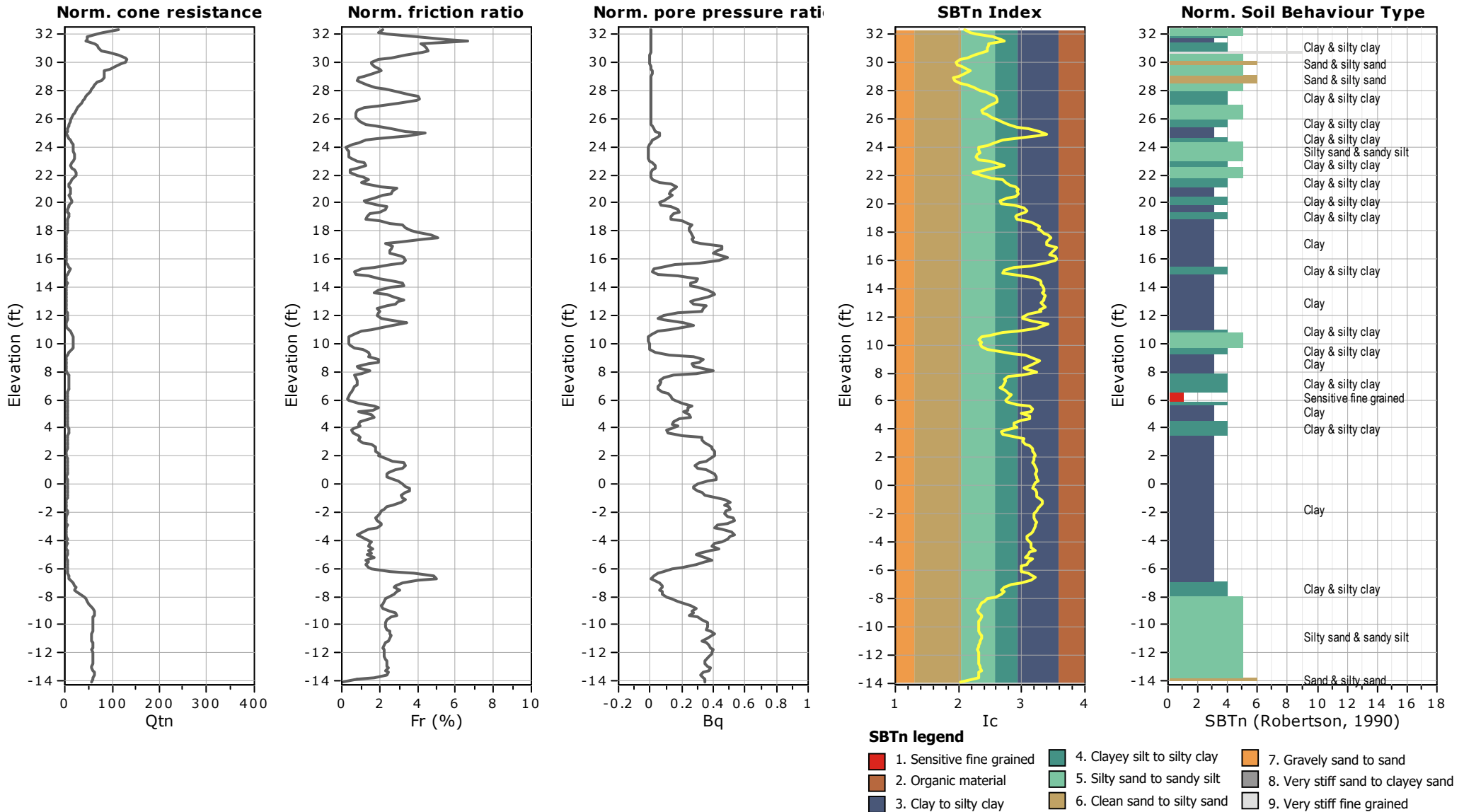




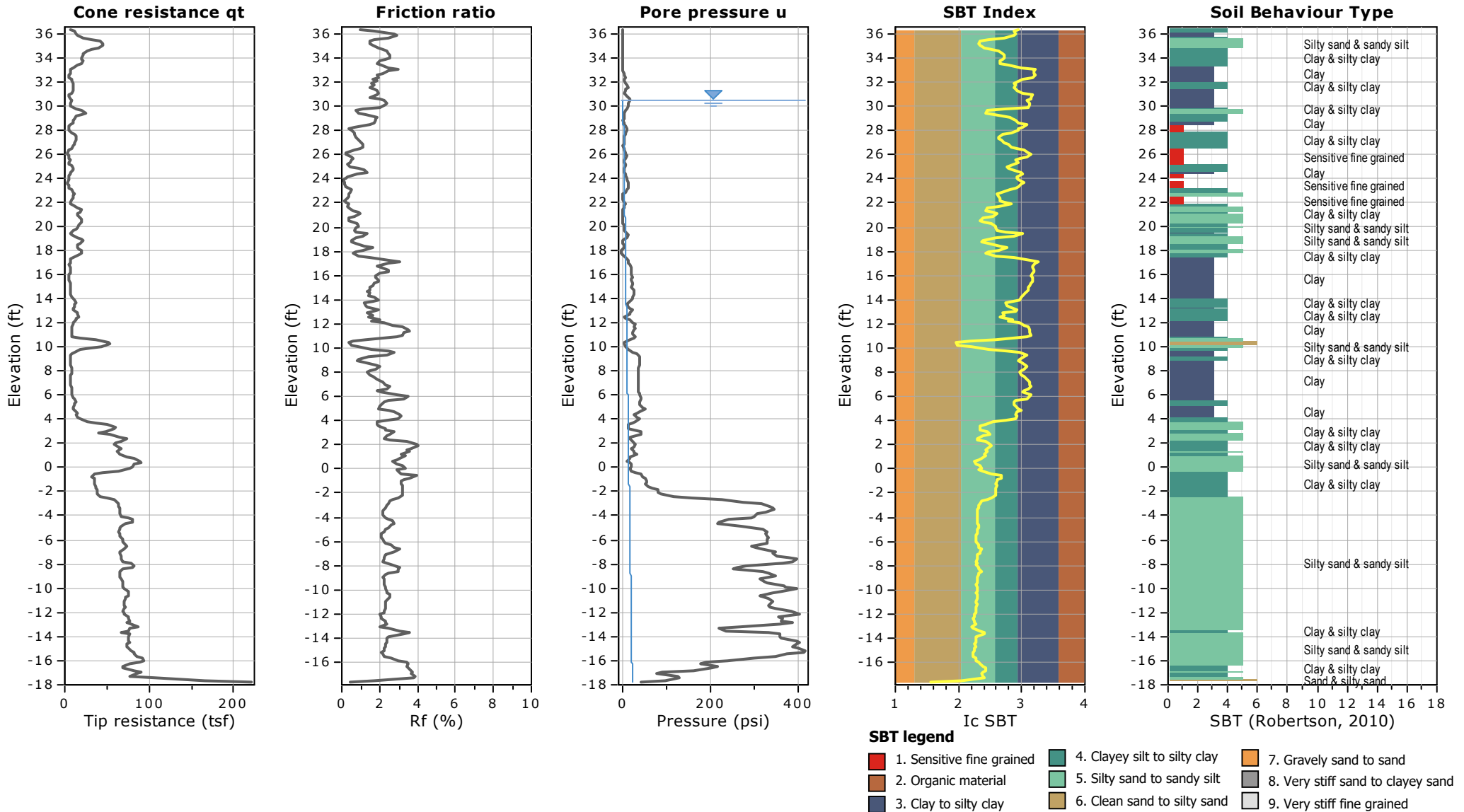


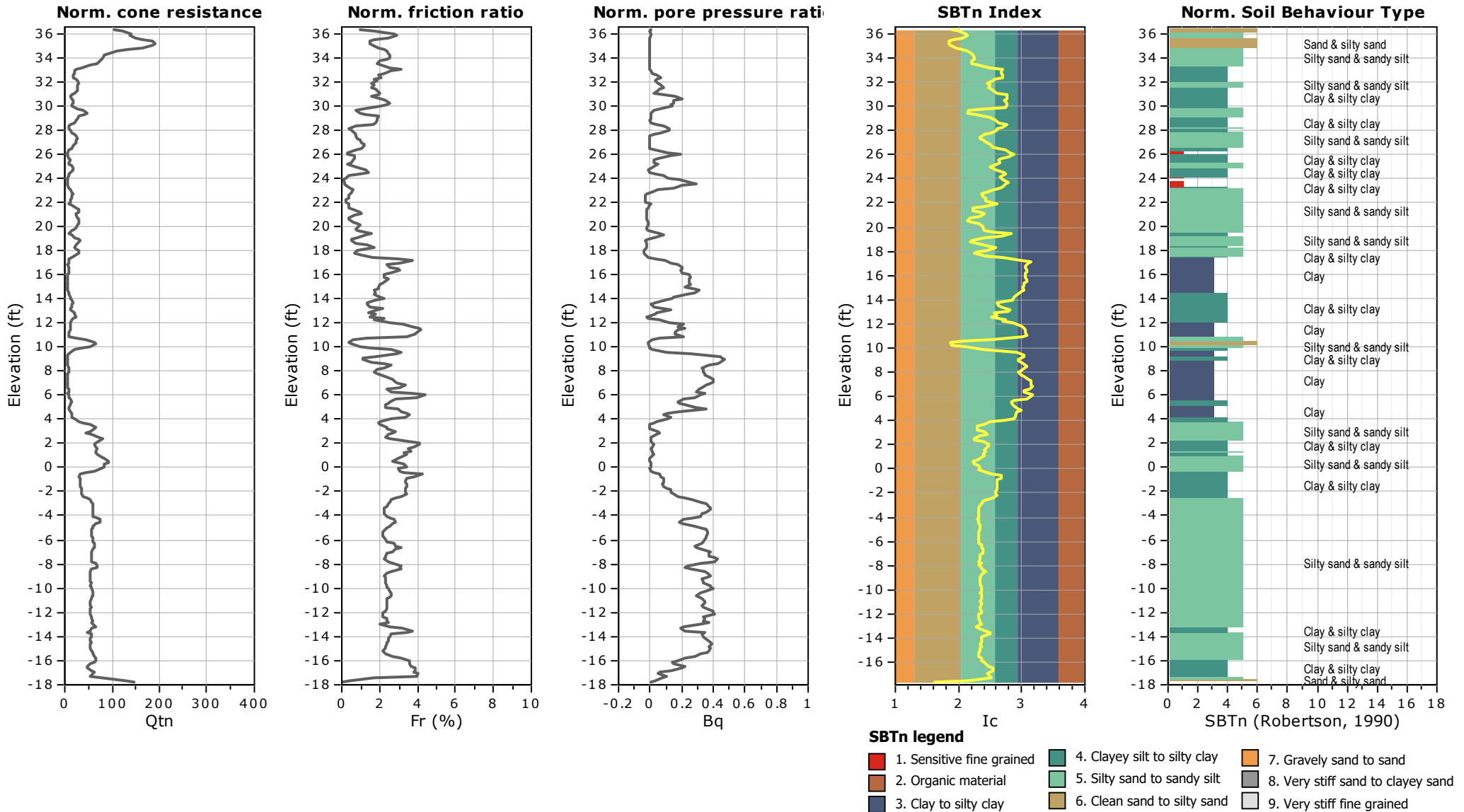


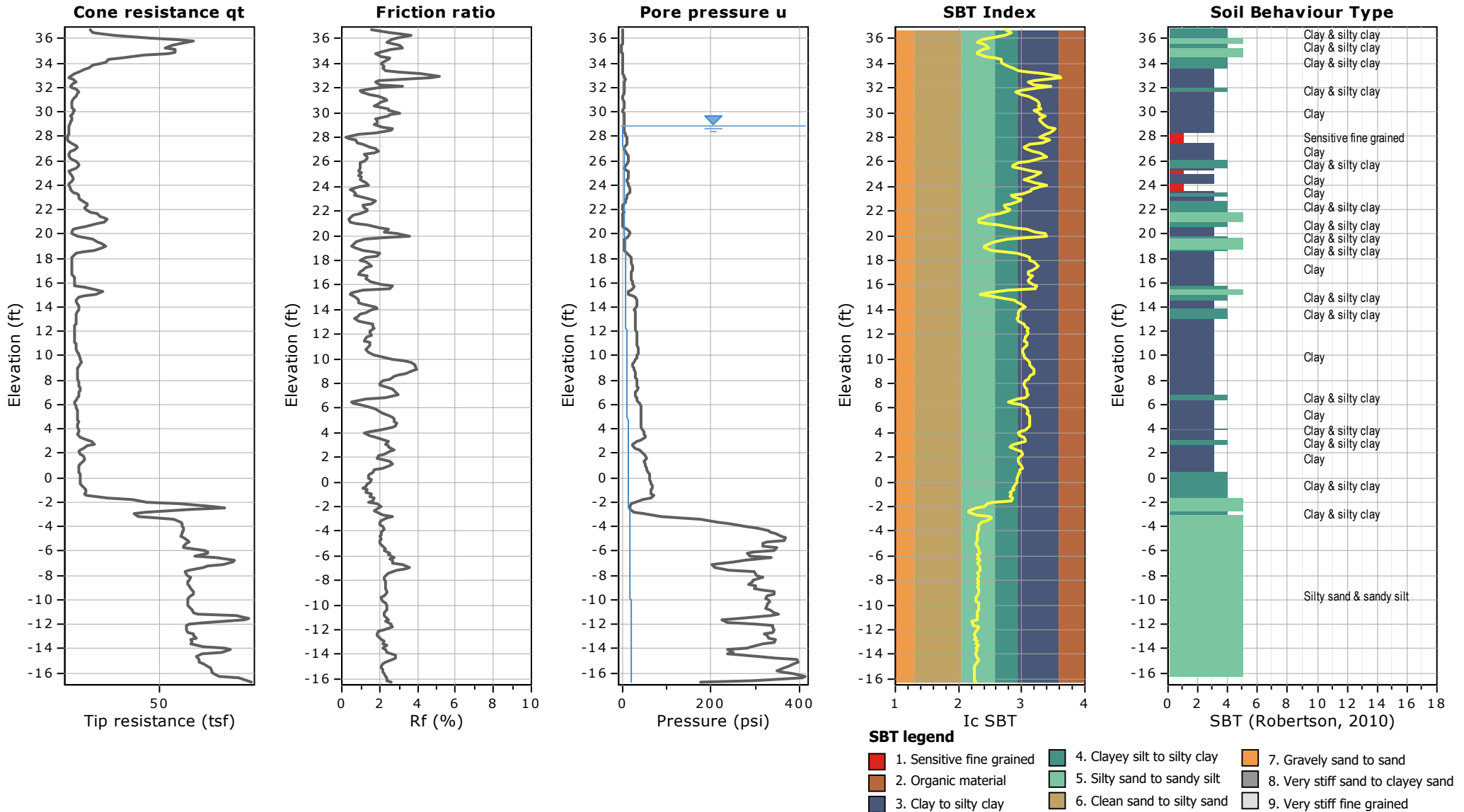


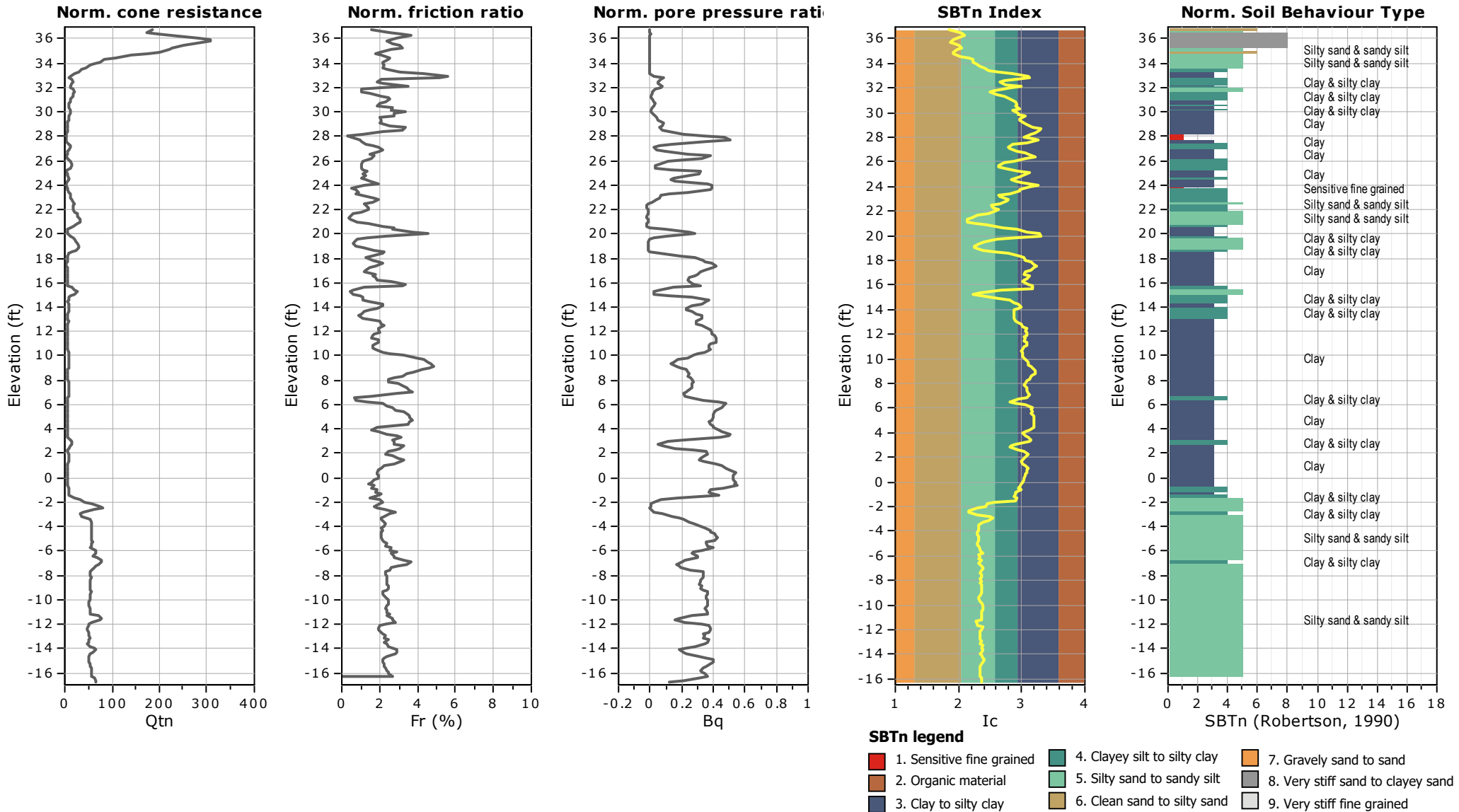


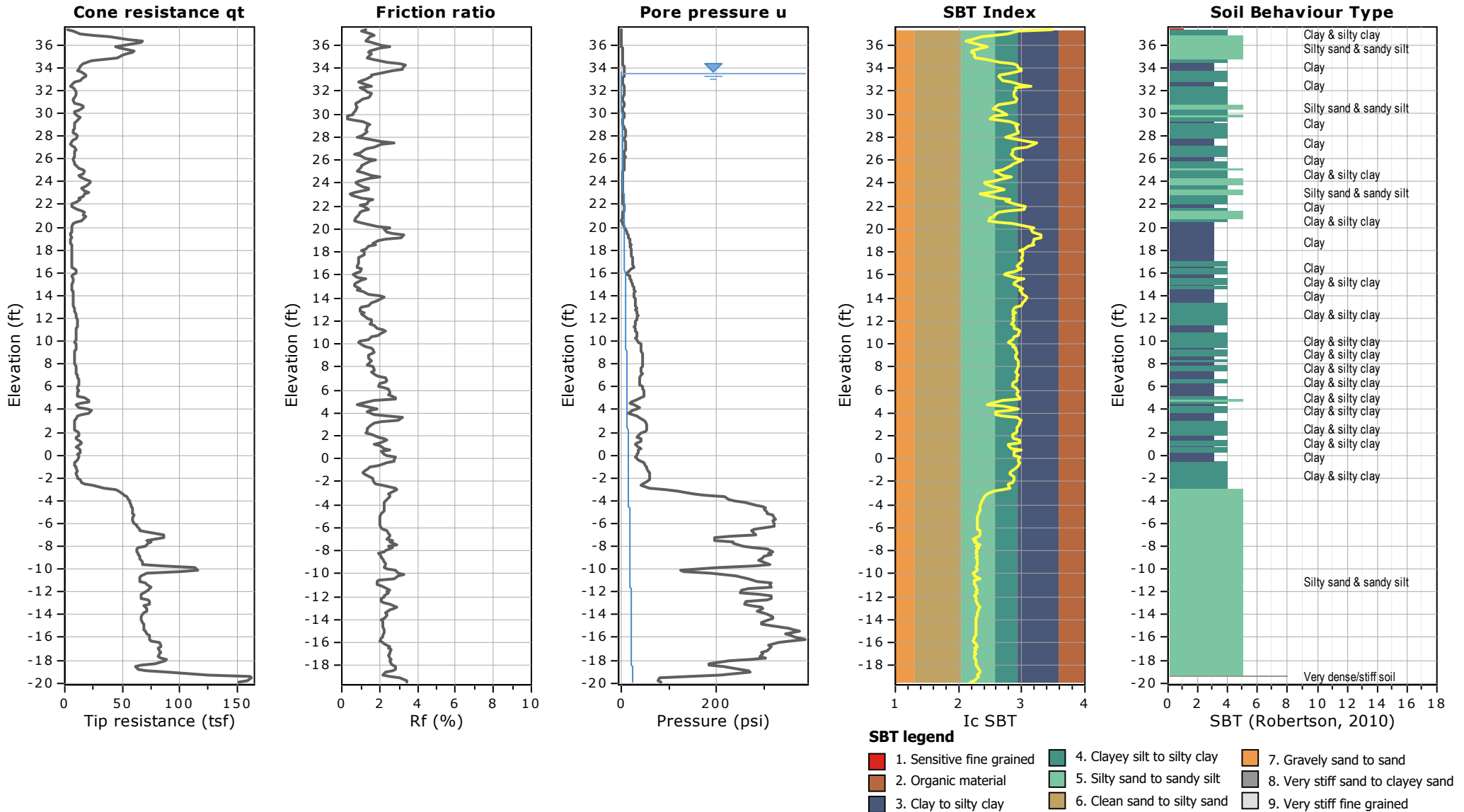


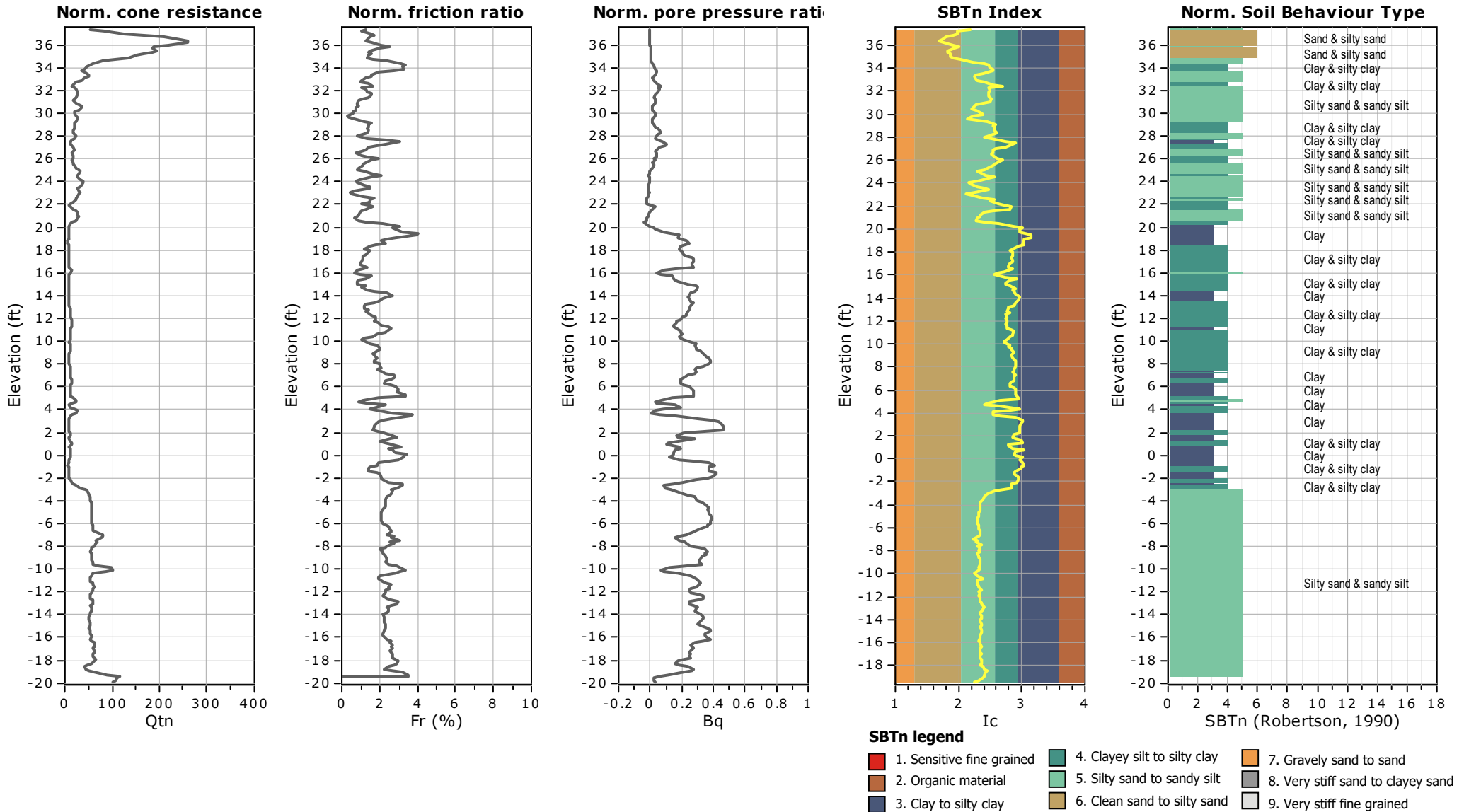


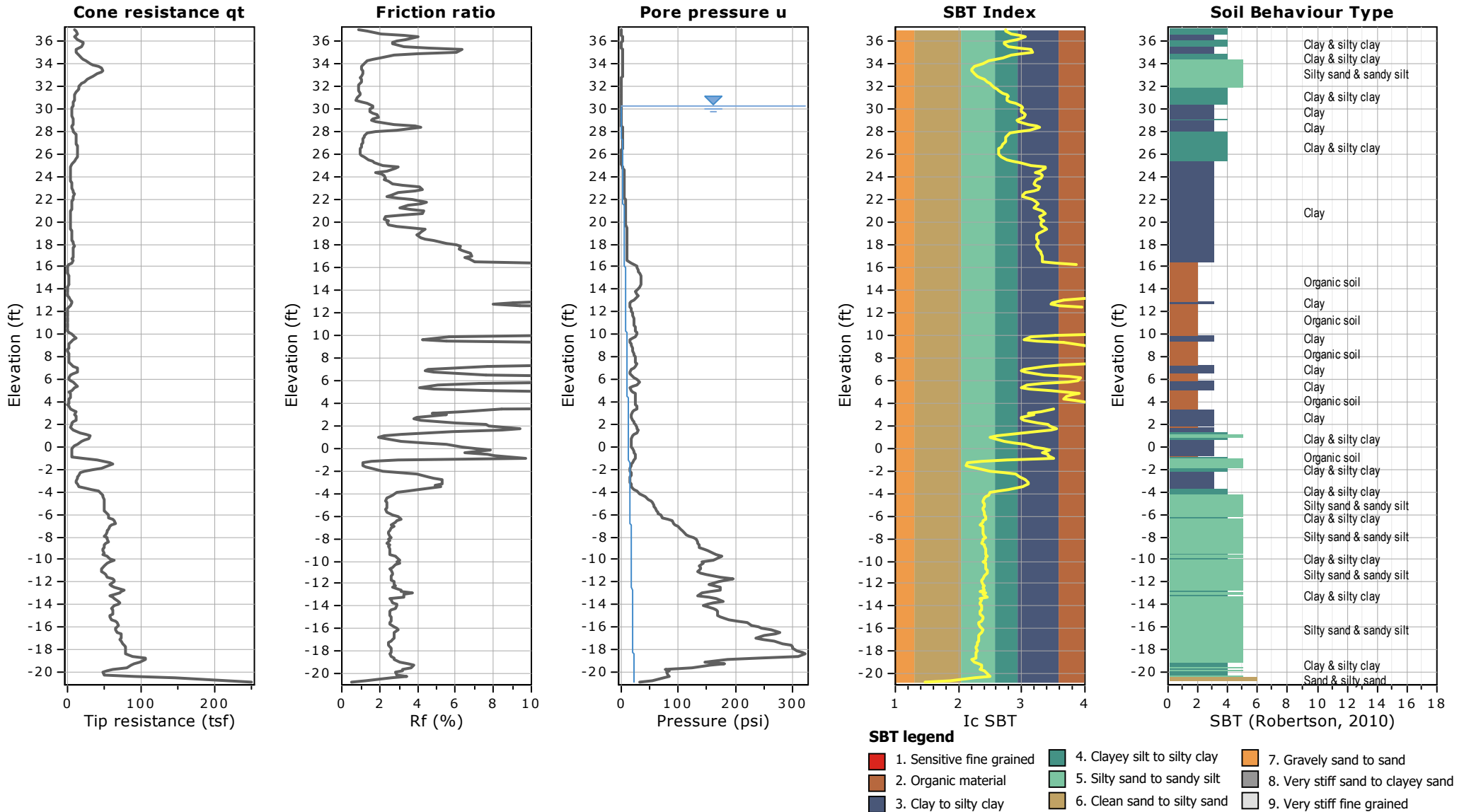






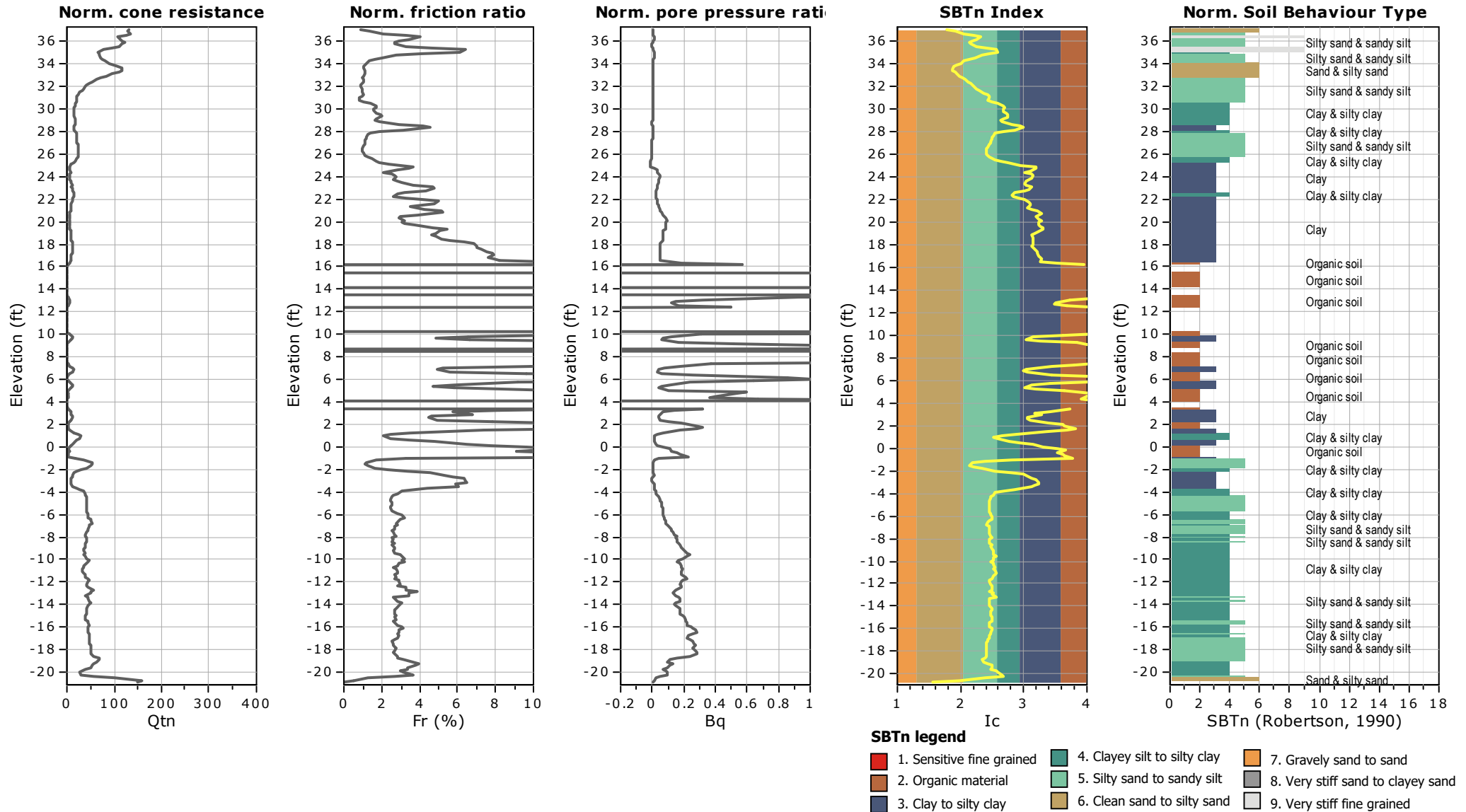






**Project: US 701 over Cape Fear River**

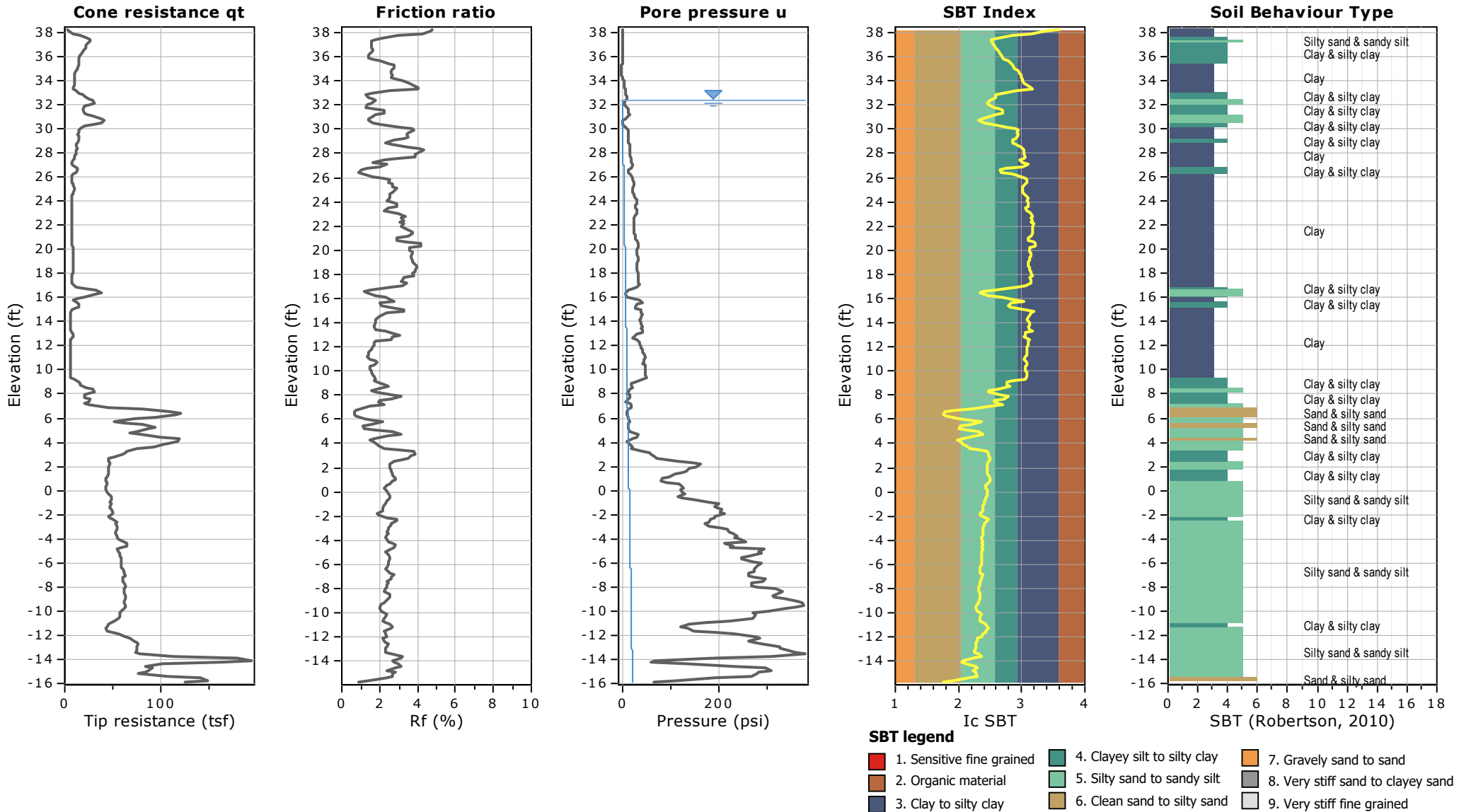
**Location: Bladen County**

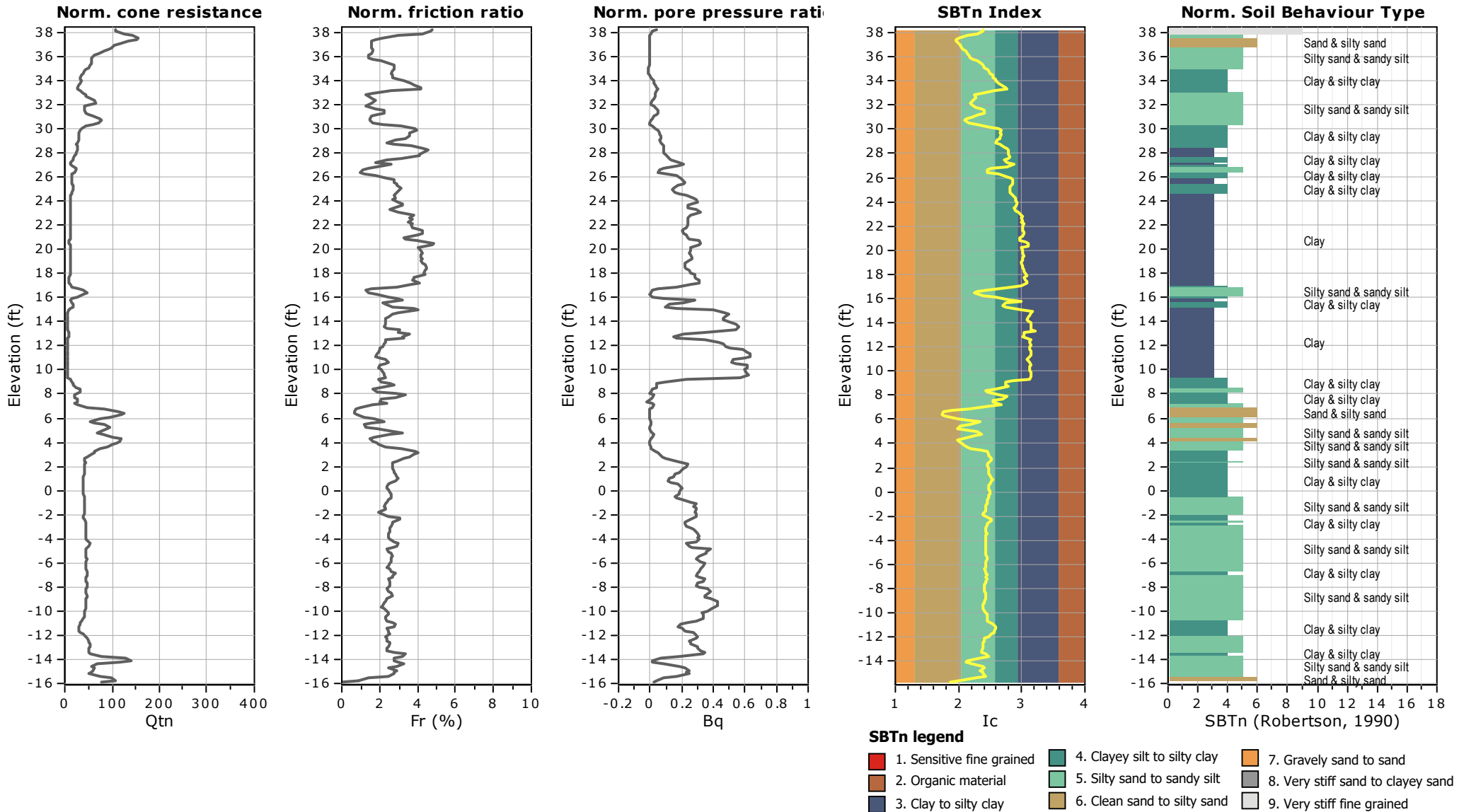


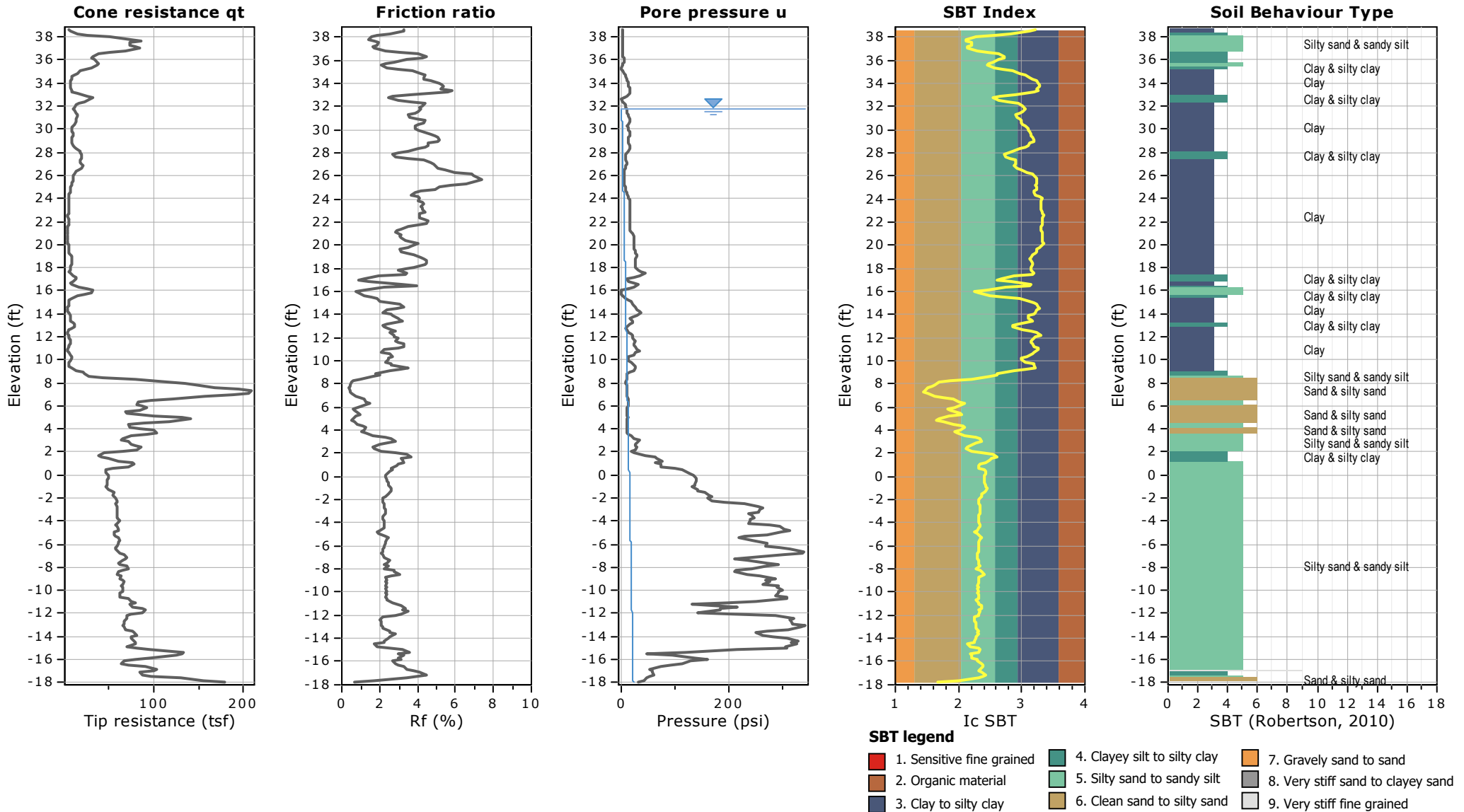


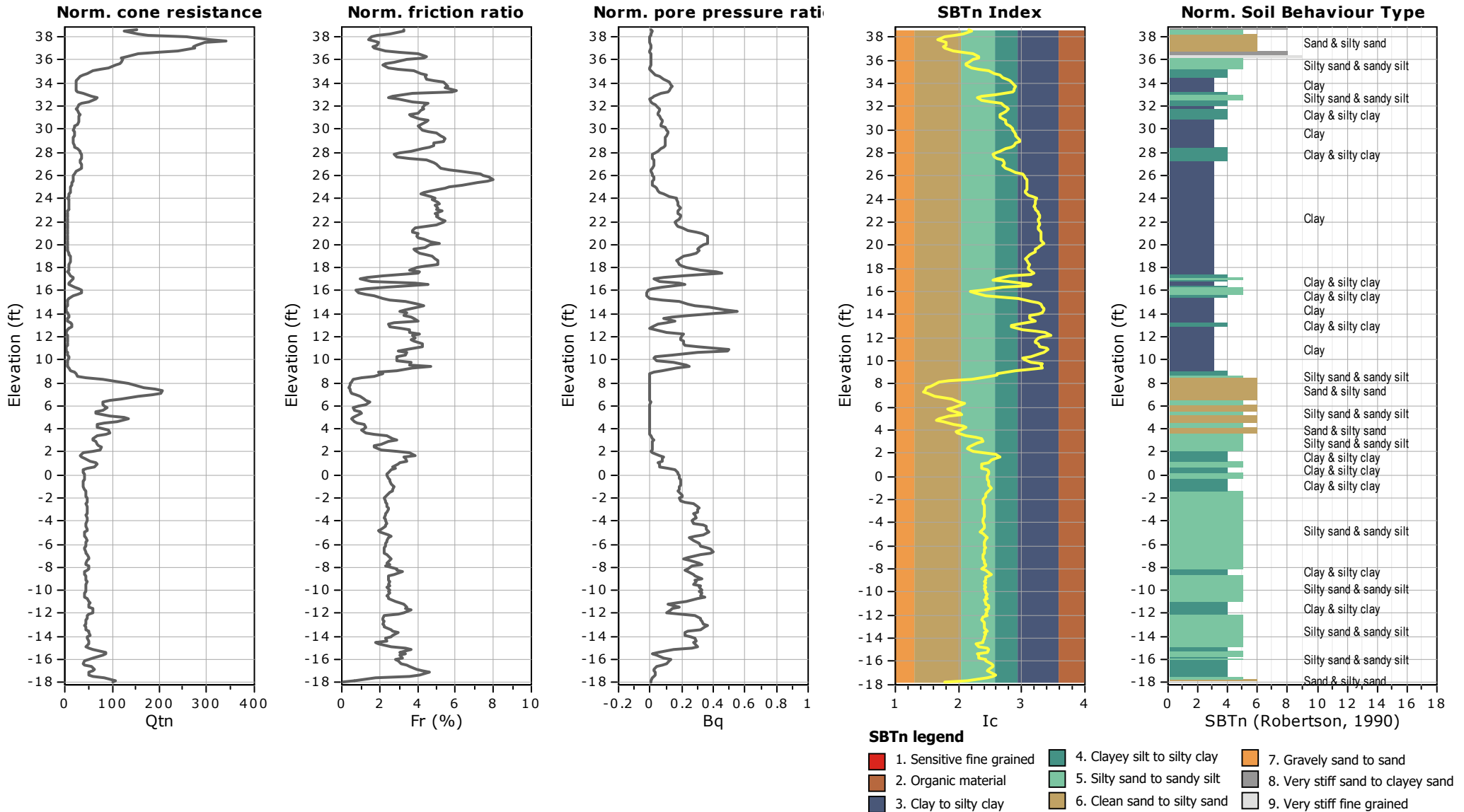
**Project: US 701 over Cape Fear River**

**Location: Bladen County**









**LABORATORY TESTING SUMMARY**

PROJECT NUMBER: 48793.3.1

TIP: N/A

COUNTY: Bladen

DESCRIPTION: Replace Bridge Nos. 16 & 17 on US 701 over Cape Fear River

Boring No.	Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
									Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
B1-A	SS-163	-L-	114+04	3' LT	34 - 35.5	A-7-6 (40)	70	48	0.2	40.5	21.8	37.5	0	100	100	80	46.7	--
B1-A	SS-167	-L-	114+04	3' LT	74.1 - 75.6	A-2-7 (0)	54	32	58.2	15.8	5.6	20.4	1	96	52	26	31.4	--
B1-A	SS-173	-L-	114+04	3' LT	114.1 - 114.6	A-7-6 (18)	72	48	1.8	58.9	12.8	26.5	0	99	98	50	42.7	--
B1-A	SS-176	-L-	114+04	3' LT	144.1 - 145.6	A-2-4 (0)	29	8	77.0	13.3	2.7	7.1	0	98	46	11	30.0	--
B2-A	SS-180	-L-	115+67	7' LT	6.7 - 8.2	A-7-6 (21)	43	19	0.8	4.0	67.4	27.8	0	100	99	97	35.1	--
B2-A	SS-184	-L-	115+67	7' LT	31.5 - 33	A-7-6 (24)	56	36	0.4	47.6	20.6	31.5	0	100	100	70	41.4	--
B2-A	SS-191	-L-	115+67	7' LT	82 - 83.5	A-3 (1)	0	0	83.7	10.0	0.4	5.9	0	100	67	7	22.1	--
B2-A	SS-193	-L-	115+67	7' LT	97 - 98.5	A-7-6 (38)	72	47	1.0	32.1	19.9	46.9	0	100	99	77	50.8	--
B2-A	SS-196	-L-	115+67	7' LT	122 - 123.5	A-7-6 (12)	56	36	9.3	49.0	11.1	30.6	1	99	94	47	36.9	--
B3-A	SS-134	-L-	117+41	3' LT	7.9 - 9.4	A-6 (15)	40	17	0.4	18.2	34.8	46.6	0	100	100	86	38.5	--
B3-A	SS-136	-L-	117+41	3' LT	23.1 - 24.6	A-6 (8)	34	16	0.8	41.4	24.5	33.2	0	100	100	65	31.9	--
B3-A	SS-144	-L-	117+41	3' LT	67.3 - 68.8	A-7-6 (16)	65	41	15.4	34.8	11.8	38.1	1	98	95	50	45.9	--
B3-A	SS-147	-L-	117+41	3' LT	102.3 - 103.8	A-7-6 (35)	68	46	1.1	35.5	18.2	45.2	0	100	99	75	50.8	--
B3-A	SS-151	-L-	117+41	3' LT	132.3 - 133.8	A-7-6 (41)	101	73	16.5	24.5	8.2	50.9	0	100	83	60	40.1	--
B3-A	SS-153	-L-	117+41	3' LT	147.3 - 148.8	A-2-6 (0)	35	18	65.3	20.7	2.6	11.4	0	100	69	15	29.3	--
B4-A	SS-89	-L-	118+61	3' LT	47.9 - 49.4	A-2-4 (0)	28	7	14.6	55.6	5.8	24.0	0	100	99	32	43.5	--
B4-A	SS-99	-L-	118+61	3' LT	122.9 - 124.4	A-4 (0)	NP	NP	12.1	54.4	4.9	28.6	0	99	96	38	41.6	--
B4-A	SS-103	-L-	118+61	3' LT	147.9 - 149.4	A-2-4 (0)	NP	NP	28.9	46.8	4.8	19.5	0	99	94	26	43.0	--
B5-A	SS-115	-L-	120+20	5' LT	62.8 - 64.3	A-7-6 (12)	43	21	1.5	47.6	18.8	32.1	0	99	99	67	37.1	--
B5-A	SS-119	-L-	120+20	5' LT	92.8 - 94.3	A-2-4 (0)	25	7	61.9	20.3	3.3	14.5	0	98	58	21	24.3	--
B5-A	SS-128	-L-	120+20	5' LT	147.8 - 149.3	A-7-6 (17)	46	28	2.0	37.1	14.8	46.1	0	100	98	69	18.3	--
B5-A	SS-129	-L-	120+20	5' LT	157.8 - 159.3	A-2-6 (0)	28	13	28.6	40.1	5.6	25.7	0	100	88	35	19.0	--
B6-A	SS-51	-L-	121+94	3' LT	39.2 - 40.7	A-7-6 (11)	70	48	45.8	22.0	8.9	23.3	0	99	91	39	55.1	--
B6-A	SS-55	-L-	121+94	3' LT	79.6 - 81.1	A-2-4 (0)	NP	NP	54.1	30.3	2.1	13.5	0	100	92	17	37.4	--
B6-A	SS-58	-L-	121+94	3' LT	104.6 - 106.1	A-4 (3)	36	7	1.5	60.1	13.8	24.6	0	100	99	61	43.8	--
B6-A	SS-62	-L-	121+94	3' LT	134.6 - 136.1	A-4 (5)	36	7	5.8	25.3	18.6	50.3	0	99	96	72	32.6	--
B6-A	ST-1	-L-	121+94	3' LT	28.0 - 30.0	A-4 (1)	22	8	3.8	49.6	18.9	27.7	0	100	99	55	26.8	--
B7-A	SS-29	-L-	123+57	2' LT	54.7 - 56.2	A-7-6 (26)	55	38	8.4	24.4	34.3	32.9	0	99	96	71	37.7	--
B7-A	SS-33	-L-	123+57	2' LT	79.7 - 81.2	A-3 (1)	NP	NP	47.1	45.0	0.6	7.3	0	100	97	9	24.5	--
B7-A	SS-36	-L-	123+57	2' LT	104.7 - 106.2	A-2-4 (0)	26	6	28.8	46.2	6.6	18.4	0	99	91	28	44.0	--
B7-A	SS-43	-L-	123+57	2' LT	154.7 - 156.2	A-2-4 (0)	NP	NP	1.4	80.7	7.0	10.9	0	100	99	28	30.2	--

**LABORATORY TESTING SUMMARY**

PROJECT NUMBER: 48793.3.1

TIP: N/A

COUNTY: Bladen

DESCRIPTION: Replace Bridge Nos. 16 & 17 on US 701 over Cape Fear River

Boring No.	Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
									Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
B-1	SS-4	-L-	121+58	28' LT	8.5 - 10.0	A-6 (4)	28	15	15.6	29.0	22.3	33.1	0	100	99	58	--	--
B-1	SS-6	-L-	121+58	28' LT	19.7 - 21.2	A-4 (0)	23	17	10.6	51.9	16.1	21.4	0	100	100	41	--	--
B-1	SS-8	-L-	121+58	28' LT	29.7 - 31.2	A-6 (10)	35	18	1.6	33.5	29.5	35.4	0	100	100	72	--	--
B-2	SS-49	-L-	121+77	66' LT	3.0 - 4.5	A-2-4 (0)	0	0	31.7	43.5	10.1	14.7	0	100	96	28	--	--
B-2	SS-52	-L-	121+77	66' LT	18.0 - 19.5	A-4 (0)	23	16	10.2	53.5	16.7	19.7	0	100	100	41	--	--
B-3	SS-22	-L-	121+24	72' RT	8.5 - 10.0	A-2-4 (0)	0	0	20.4	59.2	9.3	11.1	0	100	99	25	25.6	--
B-3	SS-24	-L-	121+24	72' RT	13.6 - 15.1	A-6 (4)	33	17	7.1	48.3	19.8	24.9	0	100	100	49	27.3	--
B-3	SS-25	-L-	121+24	72' RT	22.4 - 23.9	A-4 (0)	21	17	7.6	63.2	15.2	14.0	0	100	100	36	22.1	--
B-3	SS-28	-L-	121+24	72' RT	37.4 - 38.9	A-7-6 (45)	72	20	0.9	25.2	19.9	54.0	0	100	100	82	49.2	--
B-4	SS-79	-L-	117+39	113' LT	8.6 - 10.1	A-7-6 (33)	53	22	1.0	7.1	39.0	52.9	0	100	99	95	33.6	--
B-4	SS-81	-L-	117+39	113' LT	18.6 - 20.1	A-7-6 (19)	45	21	1.0	23.6	34.6	40.8	0	100	99	81	35.5	--
B-4	SS-83	-L-	117+39	113' LT	28.6 - 30.1	A-6 (13)	39	17	8.2	30.3	29.3	32.3	0	100	97	68	32.9	--
B-5	SS-91	-L-	117+05	47' LT	8.0 - 9.5	A-7-6 (18)	43	22	2.7	15.5	38.9	42.9	0	100	98	85	39.0	--
B-5	SS-93	-L-	117+05	47' LT	18.0 - 19.5	A-6 (8)	35	17	1.1	44.5	24.4	30.0	0	100	100	61	29.3	--
B-5	SS-95	-L-	117+05	47' LT	28.0 - 29.5	A-6 (6)	33	17	2.4	49.1	23.1	25.4	0	100	100	56	25.3	--

# SITE PHOTOGRAPH

Bridge Nos. 16 & 17 on US 701 over Cape Fear River



Looking South from End Bent 2