5987B REFERENCE **CONTENTS**

DESCRIPTION

LEGEND (SOIL & ROCK)

TITLE SHEET

CROSS SECTIONS

SITE PLAN

BORE LOGS

PROFILE

SHEET NO.

5-7

8-18

4

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION **DIVISION OF HIGHWAYS** GEOTECHNICAL ENGINEERING UNIT

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY ROBESON

PROJECT DESCRIPTION I-95 IMPROVEMENTS FROM US 301 (EXIT 22) IN ROBESON COUNTY TO NC 59 (EXIT 41) IN CUMBERLAND COUNTY SITE DESCRIPTION BRIDGE ON -L- (I-95) OVER -Y5- (NC 20) AT -L- STA. 617 + 12.20

STATE PROJECT REFERENCE NO. 18 I-5987B

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 (1991) 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 SUBSUFFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BORCHOLE. 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 METHOL. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE OR 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 INTERRETATIONS 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.

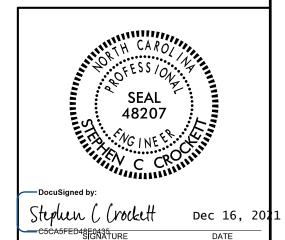
 2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

M.A.D.GOODNIGHT, D.J. WEIS, J.M. F&R, INC.

INVESTIGATED BY GOODNIGHT, D.J. DRAWN BY _ CROCKETT, S.C.

CHECKED BY __HAMM, J. R. SUBMITTED BY _FALCON

DATE __DECEMBER 2021



DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO. SHEET NO.

1–5987B

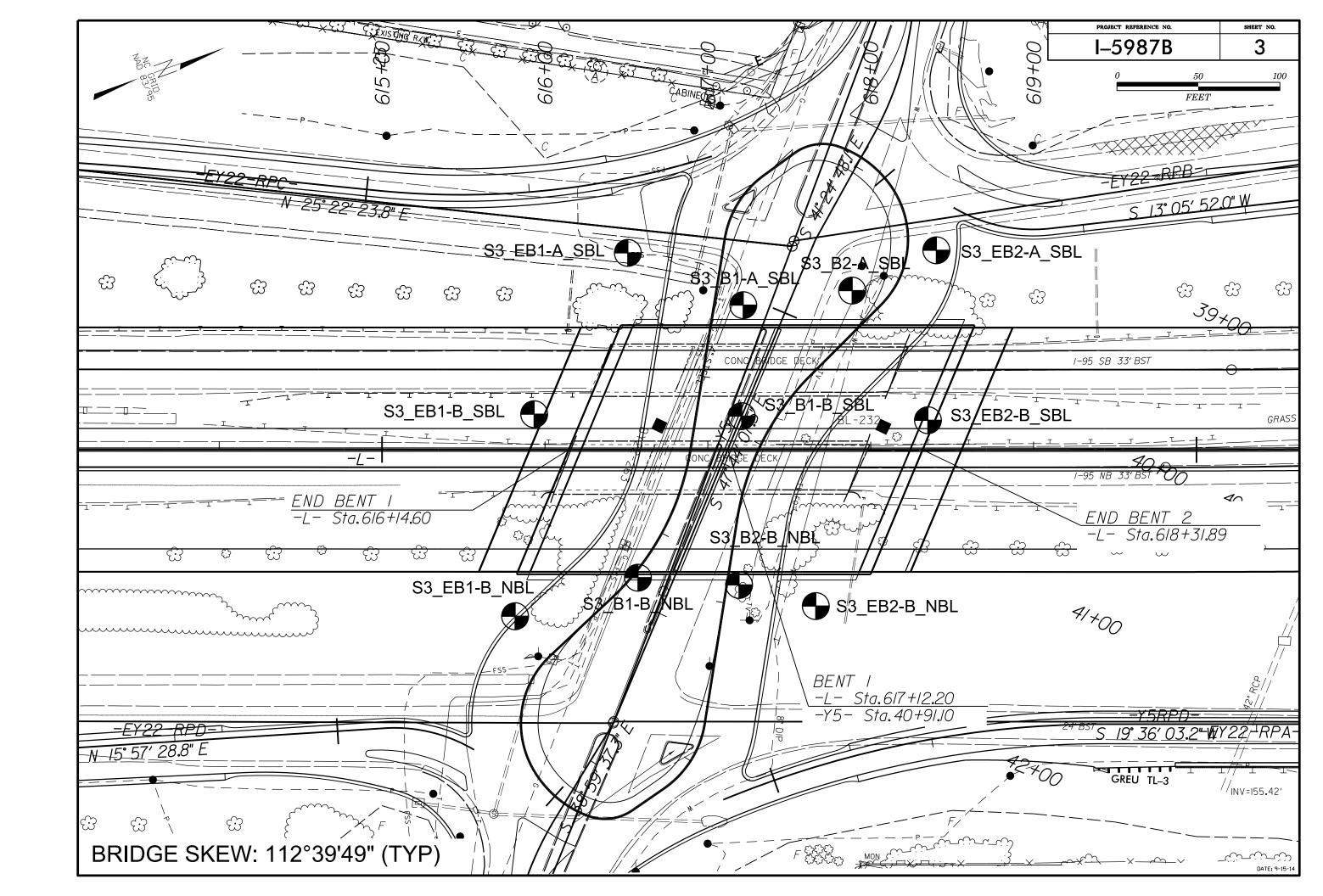
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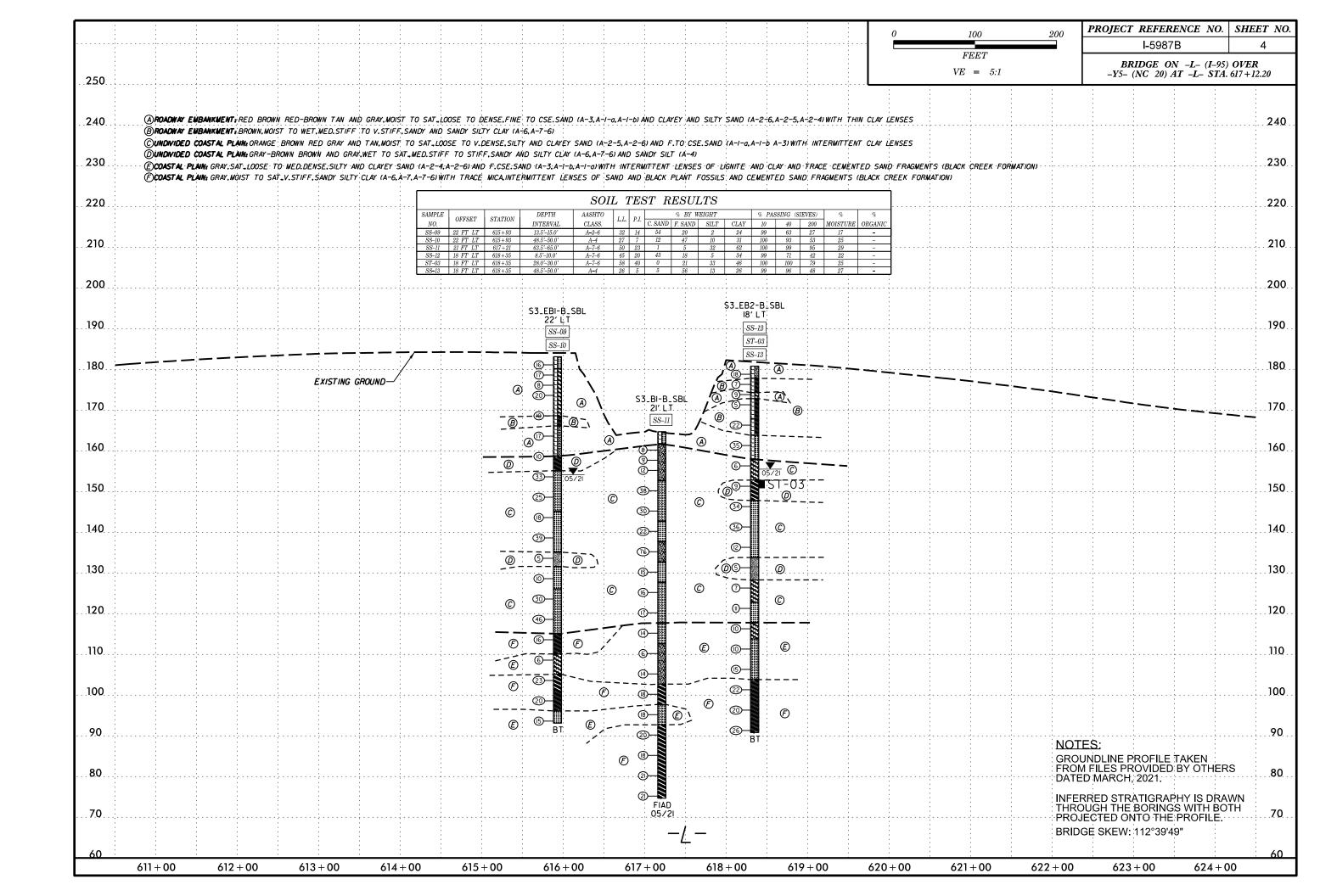
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

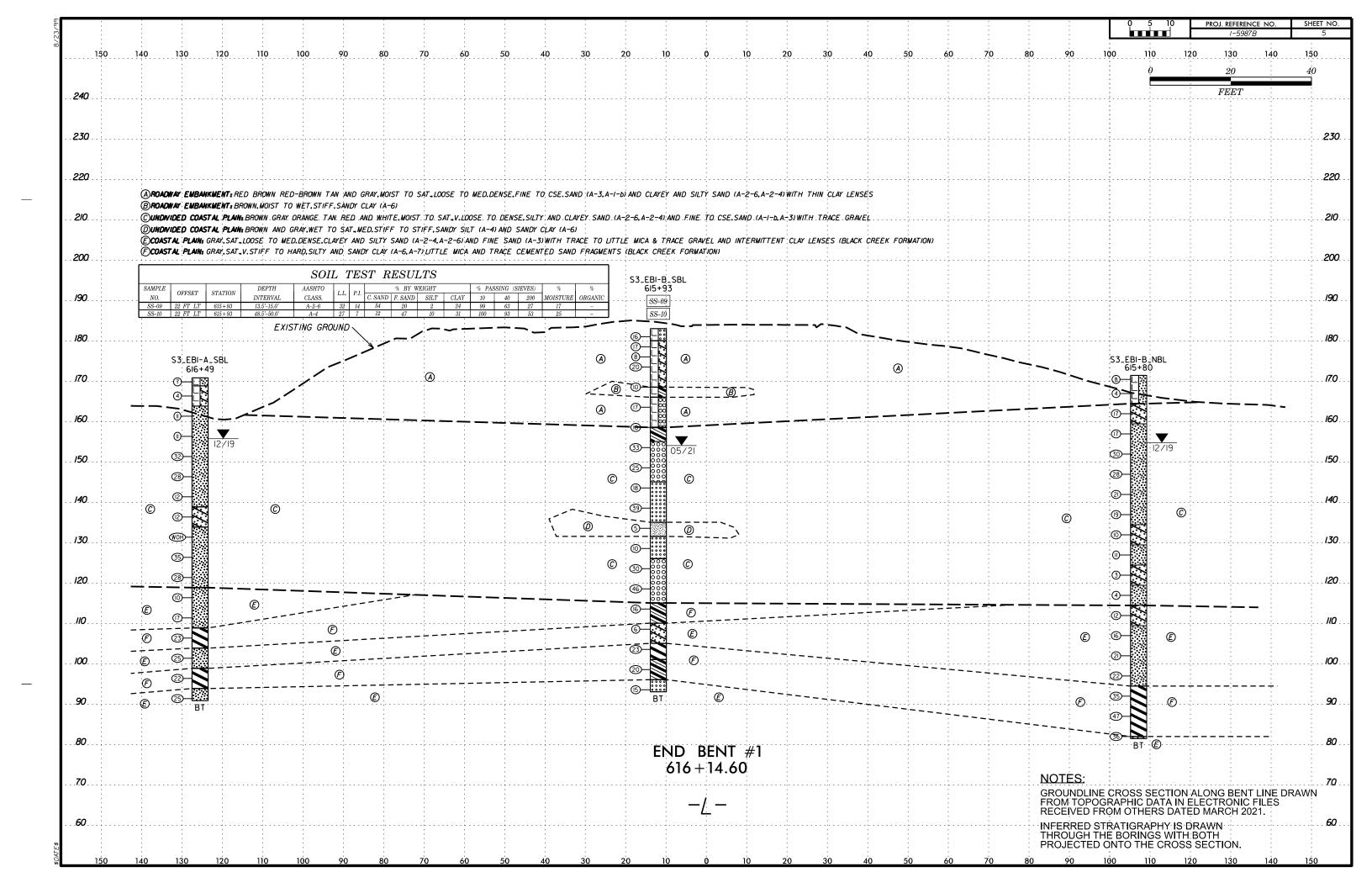
SUBSURFACE INVESTIGATION

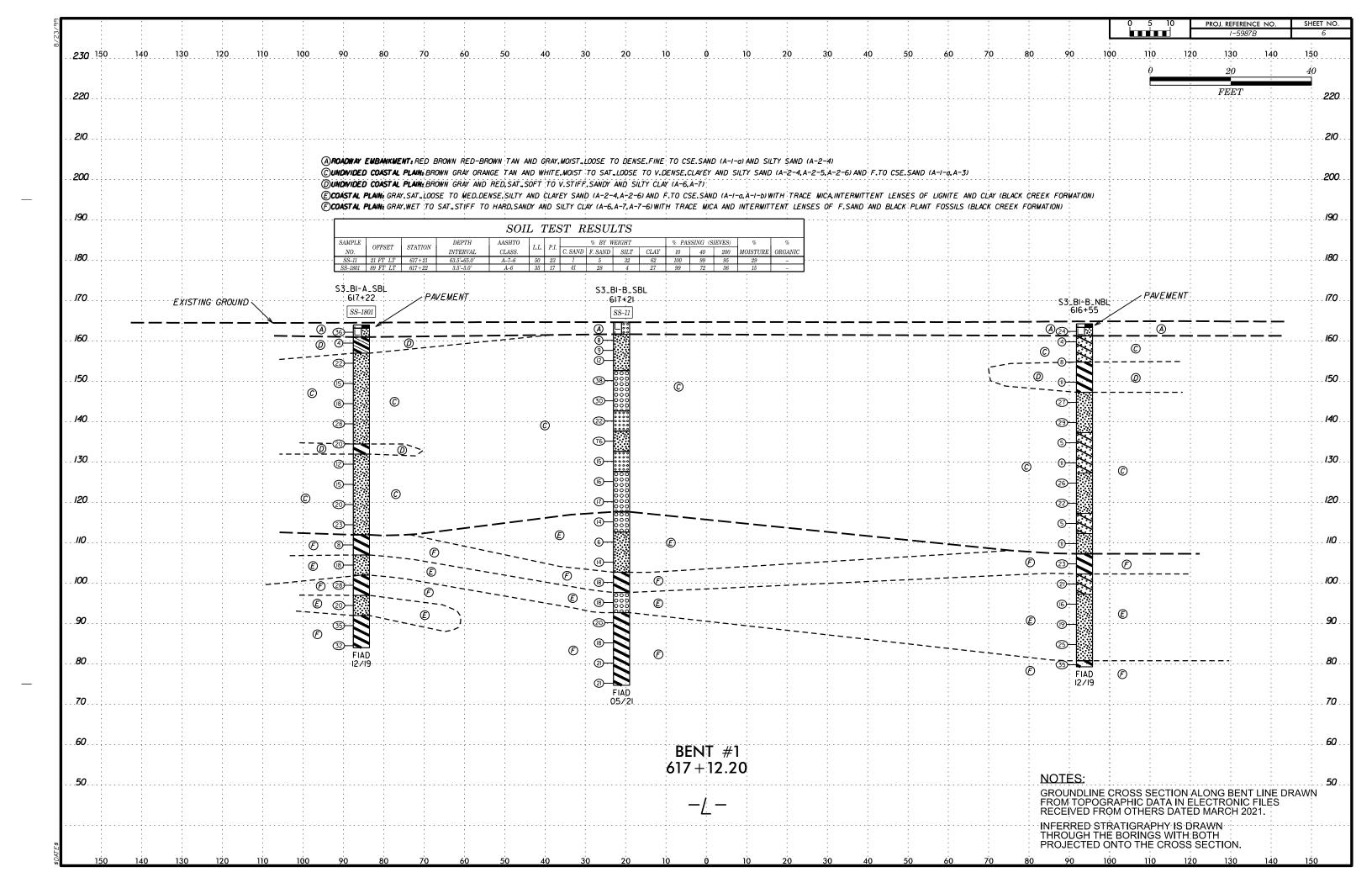
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

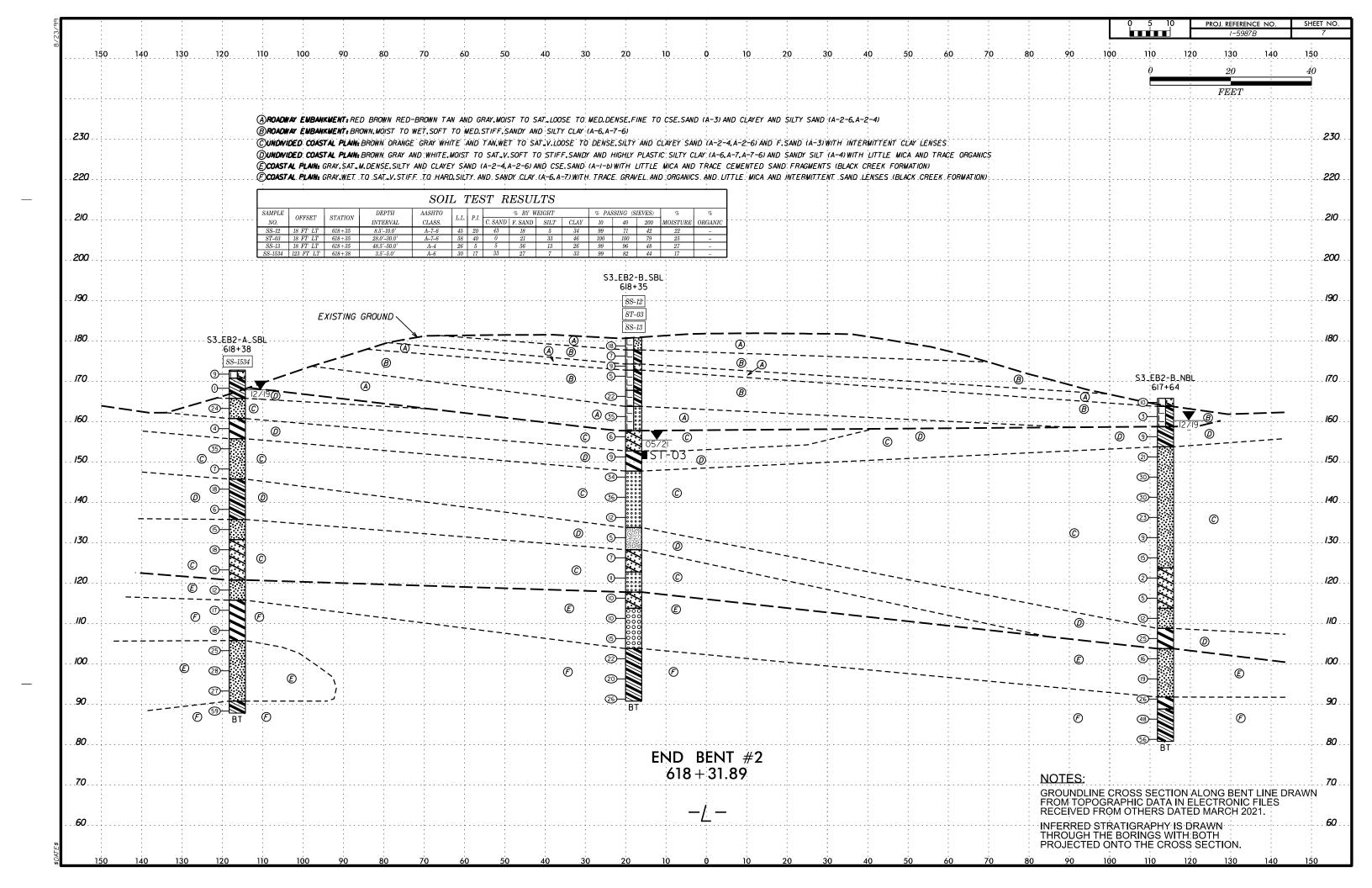
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.	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.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM, BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:	GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.	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	AQUIFER - A WATER BEARING FORMATION OR STRATA.
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH	ANGULARITY OF GRAINS	REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6	THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS:	NI//ANI//A	ARGILLACEOUS - 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.
SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	WEATHERED VILLOW NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT
GENERAL GRANULAR MATERIALS SILT-CLAY MATERIALS ORGANIC MATERIALS	MINERALOGICAL COMPOSITION	CRYSTALLINE CRYSTA	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
LLASS. (\$\(\sigma\) 537. PASSING "200) (> 337. PASSING "200)	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.	ROCK (CR) WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.	SURFACE.
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5 CLASS. A-1-0 A-1-b A-2-4 A-2-5 A-2-6 A-2-7 B-2-6 A-2-7 A-3-4 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE - FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
000000000	SLIGHTLY COMPRESSIBLE LL < 31	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.
SYMBOL 000000000000000000000000000000000000	MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED
7. PASSING GRANULAR SILT- MUCK,	HIGHLY COMPRESSIBLE LL > 50 PERCENTAGE OF MATERIAL	SEDIMENTARY ROCK SPT REFUSAL, ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*40 30 MX 50 MX 51 MN CLAY PEAT		- WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
"ביש מום אל היים בין איז מום א	GRANUL AR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE
MATERIAL PASSING *40	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	HAMMER IF CRYSTALLINE.	HORIZONTAL.
LL - - 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 11T1F DB	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
PI 6 MX NP IW MX IW MX II MN II MN IW MX IW MX II MN II MN MODERATE ORGANIC	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH,
GROUP INDEX W W 4 MX 8 MX 12 MX 16 MX NU MX AMUUNIS UF SOILS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
USUAL TYPES STUNE HARDS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
MATERIALS SAND SAND GRAVEL AND SAND SOILS SOILS	STATIC WATER LEVEL AFTER 24 HOURS	MODERATE SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM
GEN. RATING EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE		(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED	PARENT MATERIAL.
45 SUBURADE PUUR	SPRING OR SEEP	WITH FRESH ROCK.	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30		MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, IN GRANITOID ROCKS, ALL FELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
CONSISTENCY OR DENSENESS RANGE OF STANDARD RANGE OF UNCONFINED	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH (MOD. SEV.) AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK, ROCK GIVES "CLUNK" SOUND WHEN STRUCK.	JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
PRIMARY SOIL TYPE COMPACTINESS OF PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	IF TESTED, WOULD YIELD SPT REFUSAL	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(N-VALUE) (TUNS/FT-)	WITH SOIL DESCRIPTION → OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT (SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GENERALLY VERY LOOSE	SOIL SYMBOL OPT ONT TEST BORING SLOPE INDICATOR INSTALLATION	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.
MATERIAL MEDIUM DENSE 10 TO 30 N/A	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) DENSE 30 TO 50 VERY DENSE > 50	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER TEST	VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE SEVERE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
VERY SOFT < 2 < 0.25	──── INFERRED SOIL BOUNDARY — CORE BORING SOUNDING ROD	(V SEV.) REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR	OF AN INTERVENING IMPERVIOUS STRATUM.
GENERALLY SOFT 2 TO 4 0.25 TO 0.5 SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	INFERRED ROCK LINE MONITORING WELL TEST BORING	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0 MATERIAL STIFF 8 TO 15 1 TO 2	WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS, QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS	ROCK QUALITY DESIGNATION (ROD) - 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
(COHESIVE) VERY STIFF 15 TO 30 2 TO 4 HARD > 30 > 4	TTTT ALLUVIAL SOIL BOUNDARY A PIEZOMETER INSTALLATION SPT N-VALUE	ALSO AN EXAMPLE.	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	ROCK HARDNESS	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT
		VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES	ROCK,
U.S. STD. SIEVE SIZE 4 10 40 60 200 270 OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	UNDERCOT WASTE ACCEPTABLE, BUT NOT TO BE	SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED	SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO
COARSE FINE	SHALLOW UNCLASSIFIED EXCAVATION - USED IN THE TOP 3 FEET OF ACCEPTABLE DEGRADABLE ROCK EMBANKMENT OR BACKFILL	TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER	ABBRE VIATIONS	MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE	SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT.	A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL
SOIL MOISTURE - CORRELATION OF TERMS	CL CLAY MOD MODERATELY 7 - UNIT WEIGHT	HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE	WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
COU MOISTURE SCALE FIELD MOISTURE	CPT - CONE PENETRATION TEST NP - NON PLASTIC $\gamma_{ m d}$ - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC	POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK, CAN BE EXCAVATED IN FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
(ATTERBERG LIMITS) DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS	FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
- SATURATED - USUALLY LIQUID; VERY WET, USUALLY	DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON	PIECES CAN BE BROKEN BY FINGER PRESSURE.	STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY
(SAT.) FROM BELOW THE GROUND WATER TABLE LL LIQUID LIMIT	F - FINE SL SILT, SILTY ST - SHELBY TUBE	VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK, PIECES 1 INCH SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY	THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
PLASTIC CEMICOLID. DEGLIDES DRVING TO	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
(P) ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS w - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: ELEVATIONS TAKEN FROM 15987_LS_TINI.TIN
" " PL L + PLASTIC LIMIT -	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	DATED 05/2I
OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: FEET
SL SHRINKAGE LIMIT	X CME-45C CLAY BITS X AUTOMATIC MANUAL	MODERATELY CLOSE	NOTES:
- DRY - (D) REQUIRES ADDITIONAL WATER TO	S. CONTINUOUS ELIGHT AUGER	VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
ATTAIN OPTIMUM MOISTURE	X CME-55	THINLY LAMINATED < 0.008 FEET INDURATION	1
PLASTICITY	√	INDUM I ION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	1
PLASTICITY INDEX (PI) ORY STRENGTH	CME-550 HARD FACED FINGER BITS -N -N	DIRRING WITH FINGED EDEES NUMEROUS COAINS.	
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST TUNGCARBIDE INSERTS HAND TOOLS:	FRIABLE GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM	X CASING W/ ADVANCER POST HOLE DIGGER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;	
	PORTABLE HOIST X TRICONE 2 15/6 STEEL TEETH HAND AUGER	BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TRICONE TUNGCARB. SOUNDING ROD	INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY).	CORE BIT VANE SHEAR TEST		
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-1
		1	1











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WBS	47533	.1.1			T	IP_	I-5987B		COUNT	Y ROE	BESO	N			GEOLOGIST R. French	
SITE	DESCR	IPTION	BRII	OGE O	N -L-	(I-95	5) OVER	-Y5- (NC	20) AT -L	STA. 6	617+1	2.20				GROUND WTR (ft)
BORI	NG NO.	S3 E	B1-A	SBL	- 1	TAT	ION 61	6+51		OFFS	ET ·	121 ft L1	-		ALIGNMENT -L-	0 HR. N/A
—	AR ELI				1	OTA	AL DEPT	H 80.0	ft	NORT	HING	386,1	60		EASTING 2,004,004	24 HR . 15.1
				E E0E				03/01/2019				DRILL N) Mus	1	ER TYPE Automatic
			·F./DAT	E FAR										iviuo	 	
DRIL	LER S	. Davis	1			STAF	RT DATE	12/12/			, DA	TE 12/	12/19	1	SURFACE WATER DEPTH N/	Α
ELEV	DRIVE ELEV	DEPTH	' ——	W CO		41.			PER FOO			SAMP.	▼/	0	SOIL AND ROCK DES	CRIPTION
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	25 L	50	75 	100	NO.	/MOI	G	ELEV. (ft)	DEPTH (ft
175																
	-	F												l F	-	
	-	ļ .													470.0 CDOUND SUDE	۸۵۶
170	170.9 -	0.0	3	3	4	+	7						М		170.9 GROUND SURF. ROADWAY EMBAN	KMENT
		+					, , , , ,			.					DARK GRAY-BROWN, SI COARSE SAND (A-2-4) V	
	167.4	3.5	1	2	2	╢╻							М		\ORGANICS AND G	RAVEL/
165	_	Ļ					<u> </u>								ORANGE-BROWN, SILTY TO COARSE SAND	(A-2-6)
	400.4	- 0.5					.\				: :					· <i> </i>
	162.4	8.5	7	5	6	11	. 11 .						М	-	BROWN-ORANGE TO W SILTY FINE TO COARSE	
160	-	ļ				_	· † · · ·			<u> </u>					-	3AND (A-2-4)
	- 157.4 ⁻	125					: j:::							:::±		
	137.4	13.5	6	6	5											
155	_	F				-			+	-				<u>-</u>	-	
	152.4 ⁻	18.5					: : : : `	<u> </u>			: :					
	- 10Z. -	- 10.5	11	14	18			32			: :		Sat.	li:::t		
150	-	-				\parallel		 	 					-	-	
	147.4 ⁻	23.5												<u> </u>		
45			8	11	17			28			: :		Sat.			
145	-	t						<u> </u>	+					Ŀ	-	
	142.4	28.5					/.							[∷:∓		
440	-	ļ .	10	5	7		12				: :		Sat.	 		
140	-	<u> </u>					 		+	 					_ _ 138.9	32.0
	137.4	33.5				41								/ /-	BROWN-GRAY, SILTY CL/ COARSE SAND (/	
135		ļ.	4	8	4		12.	: : : :			: :		Sat.		337 H (3E 37 H 45 (7	(20)
100	-	‡					/							\sim		37.0
	132.4	38.5	1 1	WOH	WOL	<u>, /</u>	 				: :				WHITE-GRAY, SILTY FINE SAND (A-2-4	TO COARSE
130	-	+	'	***	****	•0					٠ ٠		Sat.	:::: <u> </u> -	`	•
	-	F												li I	-	
	127.4	43.5	11	15	20	41	 	\			: :		Cat			
125	-	ŀ	''	'	20			35					Sat.			
	-	F						<i></i>						-	_	
	122.4	48.5	15	14	14	+		<i>L</i> .::::			: :		Sat.			
120	-	_						28					J Gat.		_	
; ;		+					/:								- 118.9	<u> </u>
	117.4	53.5	4	4	6	+	/						Sat.	II	DARK GRAY, SILTY FINE	TO COARSE
115	_	Ļ					. 710 .							:::	SAND (A-2-4) (BLACF FORMATION)
	440.4	0 -					: :/: :				: :					
	112.4	58.5	4	6	11		\				٠ ٠		Sat.	:::: <u> </u> -		
110	_	ļ.													- 400.0	60.6
1	107.4	63.5					:::				: :					<u>62.0</u> Y (A-7) WITH
	107.4	55.5	6	9	14	1	: : : :}	 23 .			::		Sat.		TRACE MICA	
105	_	+				-		ļ	+	+	-			N	103.9	67. <u>0</u>
	- 102.4	68.5									::				DARK GRAY, SILTY FINE	TO COARSE
		<u> </u>	7	11	14	7		25			: :		Sat.	li:::t	SAND (A-2-4)
100	-	ł				1								:::: 	_ 	
	97.4 ⁻	73.5					j	: : : :							DARK GRAY, SANDY SILT	Y CLAY (A-7)
125 120 115 110 100		‡	7	8	14		: : : : .	22			: :		Sat.	D	WITH LITTLE M	IOA
95		L				$\perp \perp$	·····	L					<u> </u>			

GEOTECHNICAL BORING REPORT BORE LOG

WBS	NBS 47533.1.1 TIP I-5987B COU											<u>у</u>			GEOLOGIST R. French	
			BRID	OGE O			95) OVER -Y									GROUND WTR (ft
-	NG NO.						TION 616+		,			21 ft LT			ALIGNMENT -L-	0 HR. N/A
	AR ELE						AL DEPTH					386,1				24 HR . 15.1
-				F F&F			E-55 84% 03/			1) Mı	<u> </u>	ER TYPE Automatic
+	LER S.		1.,57(1)				RT DATE)	COME	I	ΓΕ 12/		1410	SURFACE WATER DEPTH N/A	
ELEV	DD11 /E	DEPTH	BLC	ow co		П			ER FOO			SAMP.		1 L	1	
(ft)	ELEV (ft)	(ft)		0.5ft			0 25		0	75	100	NO.	MOI	O G	SOIL AND ROCK DESC	CRIPTION DEPTH (
95								Match	n Line							
				T						1		T			93.9 DARK GRAY, SILTY FINE	TO COARSE 77.
	92.4	78.5	9	9	16	$\ \cdot \ $		· · · ·			: :		Sat.		SAND (A-2-4) WITH LIT	TLE MICA 80.
	_	-						·		-					Boring Terminated at Eleva SAND (COASTAL PLAIN) (E	ition 90.9 ft IN
	-	<u> </u>													FORMATION))
	-	<u> </u>													-	
	-	<u> </u>													- -	
	-	‡													- -	
	_	<u> </u>													- -	
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				_				ORE					1				
WBS 47					IP I -5987B		COUNTY						GEOLOGI	ST Weis, J.	M.		
				_	(I-95) OVER -Y		20) AT -L-									1	D WTR (ft
	NO. S3_E		SBL	+	TATION 615+			OFFSE					ALIGNME			0 HR.	15.5
	ELEV. 1				OTAL DEPTH			NORTH	ING	386,07				2,004,078	1	24 HR.	29.0
			E MID39		ME-45C 91% 02/2					DRILL M) Mu	d Rotary			ER TYPE	Automatic
	R Powell, I	Т.			TART DATE				DA	TE 05/2	27/21	1 1 1	SURFACE	WATER DE	PTH N/	Α	
- /ft, * EL	RIVE DEPTI	0.5ft	OW COU	N I D.5ft	0 25		PER FOOT 50		100	SAMP.	V	ō		SOIL AND RO	OCK DES	CRIPTION	
(1	ft) (11)	0.511	0.51	J.JIL			ĭ	10	.00	INO.	/MOI	G	ELEV. (ft)				DEPTH
185													– - 183.1	CROUN	ND SURF.	ACE.	(
_18	2.1 1.0	3	6	10				T:::	-					ROADWAY	/ EMBAN	KMENT	
180 17	9.6 + 3.5				• 16				:		М		<u> 180.1</u>	ED AND BRO	N CLAY L	ENSES	<u>, </u>
17	7.4 + 6.0	4	8	9	: : 17 :				:		W		. R	ED-BROWN T SAN	ΓΟ BRΟV ND (A-2-6	√N, CLAYE)	ΞΥ
175	7.1 6.0	5	5	3					-		W		- -				
17.5	4.6 + 8.5	8	11	9				1:::	\exists		W		-				
	‡							: : :	:				• •				
170 16	9.6 + 13.5				/			ļ · · ·	-				- -				
	‡	8	5	5	: ﴿ 10 : :				-	SS-09	17%		168.1	BROWN, S.	ANDY CI	AY (A-6)	15
165	‡				[] : :\; : [:				:				166.1	BROWN, C			1
16	4.6 + 18.5	6	9	8					-		Sat.		-	2.1.011.1., 0		- (* * * ~)	
	Ŧ				:::::::::::::::::::::::::::::::::::::				-				- -				
160 15	9.6 + 23.5	4		6				+	-				-				0
	Ŧ	4	4	0	10				-		W		- 158.6 -	UNDIVIDED			24
155	‡ <u>.</u>							: : :	-					BROWN, S.		, ,	28
15	4.6 + 28.5	13	15	18) 33					-Sat	000	_	N AND BROW	/N, CSE.	SAND (A-1	I-b)
	Ŧ				:::: ;	<i>i</i>	: : : :		-			000					
150 14	9.6 - 33.5	9	13	12				+	$\frac{1}{2}$		0-1	000	- 				
	Ŧ			12	25				:		Sat.	000	•				
145	4.6 38.5				/				•				145.1				38
	30.5	8	9	9	1 : : :418				-		Sat.	0000	<u>.</u>	TAN TO RE	D, F. SAI	ND (A-3)	
440	‡				:::::\;				:			0000	- -				
140 13	9.6 + 43.5	10	18	21	<u> </u>	, <u>, , , , , , , , , , , , , , , , , , </u>		+			Sat.	0000	-				
	‡				:::: ;	7 39.			-		out.	0000	<u>.</u>				
135	4.6 + 48.5				<u> </u>			<u> </u>				0000	135.1		עום אם ווי	T (A 4)	48
	‡	1	3	2	4 5			: : :	:	SS-10	25%		• •	GRAT, SA	AND I SIL	· (/\ - +)	
130	‡				[:::: :			: : :	:			0000	<u>- 131.6</u>	— — — <u>— T</u> AN, F	SAND (A-3) — — -	5
12	9.6 + 53.5	2	5	5	10 - 1			: : :			Sat.	0000	-				
	‡							: : :				0000	- 126.1				57
125 12	4.6 + 58.5	10		10	/ .			+	-			0000	LIGI	HT GRAY TO	TAN, CSE	SAND (A	-1-b)
	Ŧ	10	14	16	:::: •	30		: : :	:		Sat.	0000	-				
120	06 ± 22 =					. <u>/</u>		:::	-			000	•				
11	9.6 + 63.5	18	22	24			16				Sat.	0000	- - -				
	Ŧ					/			$\left \cdot \right $			0000	- -				
115	$\frac{4.6}{1}$ 68.5	3	6	10				+	\exists		Sot.		<u>115.1</u>	COAS	TAL PLA	IN	68
	Ī			.0	, • 16 .				:		Sat.		<u>.</u>	GRAY, F. S.	ANDY CL	AY (A-6)	
110	9.6 - 73.5							1									
	+ 73.5	3	3	3	1 🍕 🗀 1			: : :	:		Sat.		. L	IGHT GRAY, C	LAYEY S	SAND (A-2-	∙ნ)
405	‡				: \\: : :				:			//	- 405 4				
105		1	1 1		11 🔪 L		1	1	- 1			. ``	105.1				<u> </u>

GEOTECHNICAL BORING REPORT BORE LOG

WBS	47533	.1.1			TI	P I-59	987B		COL		ROE					GEOLOGIST Weis, J. M.		
SITE	DESCR	IPTION	BRID	GE O	N -L- (I-95) C)VER	-Y5- (NC	20) A	T -L-	STA. 6	617+1	2.20				GROUND V	VTR (ft)
BOR	NG NO.	S3_E	B1-B_	SBL	Sī	TATIO	N 61	5+93			OFFS	ET 2	22 ft LT			ALIGNMENT -L-	0 HR.	15.5
COL	LAR ELI	EV . 18	3.1 ft		ТС	OTAL I	DEPTI	H 90.0 f	t		NORT	HING	386,0	73		EASTING 2,004,078	24 HR.	29.0
DRILL	. RIG/HAN	IMER EF	F./DATE	MID	3964 CN	ИЕ-45C	91% 0	2/21/2019					DRILL N	IETHO) Μι	ud Rotary HAMMI	R TYPE Aut	omatic
DRIL	LER P	owell, B	•		ST	TART I	DATE	05/27/2	:1		COMF	P. DAT	Γ E 05/2	27/21		SURFACE WATER DEPTH N/A	4	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLO 0.5ft	W CO	_	0	2	BLOWS 5	PER F		75 	100	SAMP.	MOI	0 O L	SOIL AND ROCK DESC		DEPTH (ft)
105	104.6	78.5	<u></u> 7	10	 13			Mato	h Line)	T]	GRAY, SILTY CLAY (A-7	(continued)	
100	- 99.6 -	- - - 83.5 -	6	9	11		- 1							Sat.		GRAY, SANDY CLAY (A-6) CEMENTED SAND FRA		82.0
95	94.6 -	- - 88.5	6	7	8		.j. ∫ 15_							Sat.	0000	96.1 GRAY, F. SAND (A-3 INTERMITTENT CLAY	LENSES	<u>87.0</u>
NCDOI BORE SINGLE BUS 13307_GEO_BRUG_L01700.GT3 NC_DOI.GD1 12/0/21																Boring Terminated at Eleva SAND (COASTAL PLAIN) (E FORMATION	BLACK CREEK	

							<u></u>	URE L					
WBS	47533	3.1.1			TI	P I-5987B	COUNTY	ROBESON	l			GEOLOGIST R. French	
SITE	DESCR	IPTION	BRID	OGE O	N -L- (I-95) OVER -Y5- (NC	20) AT -L-	STA. 617+12	2.20				GROUND WTR (ft)
BORI	NG NO.	S3_E	B1-B N	NBL	ST	TATION 615+82		OFFSET 1	02 ft RT			ALIGNMENT -L-	0 HR. N/A
COLI	AR ELI	E V . 17	'1.5 ft		Т	OTAL DEPTH 90.0 f		NORTHING	386.020)		EASTING 2,004,191	24 HR. 16.7
DRILL	RIG/HAN	IMER EF	F./DAT	F F&R		ME-55 84% 03/01/2019			DRILL ME		Muc	<u> </u>	R TYPE Automatic
	LER S					TART DATE 12/11/1	<u> </u>	COMP, DAT			11101	SURFACE WATER DEPTH N//	
	DRIVE		BLC	W COL		T T	PER FOOT		SAMP.		LT	JOHN ACE WATER DEFTIT 19/7	`
ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft					75 100	NO		2	SOIL AND ROCK DESC	
	(11)		0.010	0.010	0.010		<u> </u>	1	110.	MOI (G	ELEV. (ft)	DEPTH (ft
180		+									-	-	
		F									F		
175		‡									F		
175	-	‡									ļ	•	
	171.5	1									Ŀ	171,5 GROUND SURFA	ACE 0.
170		1	2	3	5	8				м	: E	ROADWAY EMBANI	MENT
	168.0	3.5								E	-	RED-BROWN-ORANGE, S COARSE SAND (A-2-4) W	
	100.0	- 0.0	2	2	2					м 📙		ORGANICS	
165	-	‡								Ŀ		- 164.5	
	163.0	8.5			40	:				% %	$\sqrt{}$	UNDIVIDED COASTA GRAY-BROWN, SILTY CLA	
		‡	5	'	10	1				M N		COARSE SAND (A	
160	_	t				 	+	+		×	$\stackrel{\sim}{=}$	- <u>159.5</u> BROWN-ORANGE-GRAY, S	12.0
	158.0	13.5	7	7	10					Sat .	Ę	COARSE SAND (A-2-4) W	
155		Ŧ				: : • • • • • • • • • • • • • • • • •			;			GRAVEL	
100	450.0	1,0,5								•	-	-	
	153.0	18.5	11	12	18	30				Sat.	:=		
150	-	ţ										_	
	148.0	23.5				: : : : : : : :					-		
		-	10	13	15	28	: : : :			Sat.	F		
145	-	Ŧ									-	-	
	143.0	28.5	6	9	12	:::::/ :::::					-		
440		‡	"		12	· · · • •21 · · · · · · · · · ·				Sat			
140	-	<u> </u>				 [1				-	
	138.0	33.5	6	10	9					Sat .	-		
135		ŧ									÷	- 134.5	37.0
	133.0	38.5				$ \cdot\cdot \cdot \not \cdot \cdot \cdot \cdot \cdot \cdot$				*	\	BROWN-LIGHT GRAY, SI	TY CLAYEY
		-	7	5	5	10 - 10	: : : :		;	Sat. 👯	/ /	FINE TO COARSE SAN	ID (A-2-6)
130	_	Ŧ				-				<u> </u>	\setminus	- 129.5	42.0
	128.0	43.5	4	4	7						:	WHITE-GRAY-BROWN, SI COARSE SAND (A	
105		‡	7		,	:•11: ::::				Sat.	:=	·	,
125	-	<u> </u>				 					÷	- <u>124.5</u> WHITE-LIGHT GRAY, SIL	TY CLAYEY 47.9
	123.0	48.5	2	1	2					Sat. 🖔	$\frac{7}{2}$	FINE TO COARSE SAN	
120		-								· · · · · · · · · · · · · · · · · · ·	//	440.5	50.4
	118.0	53.5									${\Rightarrow}$	- <u>119.5</u> WHITE-LIGHT GRAY, SIL	
	110.0	- 55.5	3	2	2	4				Sat .		COARSE SAND (A	-2-4)
115	_	‡				1					::-	- 114.5	57.0
	113.0	58.5				:\;:: ::::				*	$\overline{\ \ }$	COASTAL PLA DARK GRAY, SILTY CLAY	N
	-	ţ	2	4	8	12				Sat. 👯	$\frac{1}{2}$	COARSE SAND (A-2-6) W	ITH TRACE
110	-	+					+	+		<u></u>	\setminus	GRAVEL AND MICA (BLA FORMATION)	<u> </u>
}	108.0	63.5	6	6	10	::;: ::::	: : : :			. l	::	DARK GRAY-GRAY, SIL COARSE SAND (A-2-4) W	Y FINE TO
105	-	‡			10	1 16				Sat.	::	MICA	IIII IIVACE
100		‡ .				\						-	
	103.0	68.5	7	10	11					Sat .	::\t		
100		+									: F		

GEOTECHNICAL BORING REPORT BORE LOG

WBS	47533	.1.1			TI	Р	I-5987B		COUNT		OBESO					GEOLOGIST R. French		
SITE	DESCRI	PTION	BRID	GE O	N -L- (I- 9	95) OVER	-Y5- (NC	20) AT -I	STA	. 617+1	2.20)				GROUN	ID WTR (ft)
BORI	NG NO.	S3_E	B1-B N	NBL .	Sī	ſΑ [·]	TION 61	5+82		OFF	SET	102 f	ft RT			ALIGNMENT -L-	0 HR	N/A
COLI	AR ELE	V . 17	1.5 ft		TO)T	AL DEPT	H 90.0 f	t	NOF	RTHING	38	36,02	0		EASTING 2,004,191	24 HR.	16.7
DRILL	RIG/HAM	MER EF	F./DATE	F&R			E-55 84% C							ETHOD	Mu	d Rotary HAMM	ER TYPE	Automatic
DRIL	LER S.	Davis	1			ΓΑΙ	RT DATE				MP. DA	_		1/19		SURFACE WATER DEPTH N/	A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		W CO			0 2	BLOWS 5	PER FOC 5 <u>0</u>	75 75	100		MP	MOI	L O G	SOIL AND ROCK DESC	CRIPTION	DEPTH (ft)
	(1-7)												ľ	VIVIOI		LLLV. (II)		DEF III (II)
100								Mato	h Line									
	98.0	73.5					: : : :			: :						DARK GRAY-GRAY, SIL COARSE SAND (A-2-4) V	VITH TRA	OE
	-	-	8	10	12		· · · • • • • • • • • • • • • • • • • •	22						Sat.	-	MICA (continue	d)	
95	-	-				F		\								<u> 94.5</u> <u>DARK GRAY, SILTY CLAY</u>	Y (A-7) WI	<u>77.0</u> TH
	93.0 -	_ 78.5 -	8	13	22			· \ · · · · Q 35 ·						Sat.		TRACE MICA	` ′	
90	-	-				-		/		- -						-		
	88.0	83.5	9	16	31									Sat.				
85	_							7						oat.		· · _		
	83.0	- - 88.5	10	17	19			/ .						_		-		00.5
	-	-	10	17	19			- ∮ 36					-	Sat.		82.0 81.5 DARK GRAY, SILTY FINE	TO COAF	89.5 RSE90.0
	-	- -													F	SAND (A-2-4) WITH TR Boring Terminated at Eleva	ation 81.5 t	ft IN
	-	- -													ŀ	SAND (COASTAL PLAIN) (E FORMATION		REEK
	-	-														- -		
	-	-																
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								B	ORE L	<u>.UG</u>						
WBS	47533	3.1.1			ТІ	P I -5987B		COUNTY	/ ROBESC	N		GEOLOGI	IST W. Hami	rick		
SITE	DESCR	IPTION	BRII	DGE C	N -L- (I-95) OVER	-Y5- (NC	20) AT -L-	STA. 617+1	12.20					GROU	ND WTR (ft)
BOR	NG NO.	S3_B	1-A SI	BL	S ⁻	T ATION 61	7+22		OFFSET	89 ft LT		ALIGNME	NT -L-		0 HR.	N/A
COLI	LAR ELE	EV. 16	64.0 ft		T	OTAL DEPT	H 80.0 f	t	NORTHING	386,21	6	EASTING	2,004,058		24 HR.	FIAD
DRILL	. RIG/HAN	IMER EF	F./DAT	E F&F	R3495 C	ME-55 82% 0	3/01/2019			DRILL M	ETHOD N	/lud Rotary		HAMMI	ER TYPE	Automatic
DRIL	LER D	. Tignor			S	TART DATE	12/18/1	19	COMP. DA	TE 12/1	8/19	SURFACE	WATER DE	TH N/	4	
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	UNT		BLOWS	PER FOOT	•	SAMP.	▼/ L		COIL AND DO	OK DEC		.1
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	25	50	7 <u>5</u> 100	NO.	MOI G		SOIL AND RC	OK DESI	SKIPTIOI	DEPTH (1
165		L														
	163.2	0.8		10		 		T	T			164.0 163.2	ROADWAY	ID SURF		0
	400 5 -	1 ,,	17	16	20	::::-	→ 36 -	1::::			M	161.0	AS ORANGE-BRO	WN SILT	Y FINE 1	
160	160.5	3.5	1	2	2	4				SS-1801	15%	\	COARSE	SAND (A	\-2-4)	
	-	Ŧ					: : : :	: : : :				157.0 _ E	UNDIVIDED BROWN, FINE	TO COAF		DY _ <u>7</u>
155	155.5	8.5		<u> </u>	<u> </u>							<u>}</u>] \	CL BROWN-ORAN	AY (A-6) JGF SII T	YFINE	1
	-	Ŧ	9	11	11		22				Sat	<u>-</u>	COARSE			
	-	‡				::::/						-				
150	150.5	13.5	4	8	7	15		ļ · · · · ·			Sat	_				
	-	‡										-				
145	- 145.5	18.5										<u>:</u>				
143	-	ļ	5	10	8	●18		1			Sat					
	-	‡				: : : '/						<u>+</u>				
140	140.5	23.5	12	15	13	\					Sat	_				
	-	‡					7 ²⁸				Oat.	_				
	135.5	29.5				::::/	[: : : :									
135	133.3	20.3	7	7	13	•20	0	 			Sat.	134.5	AY-BROWN, F	INE SANI		(Δ-7)
	-	1				/.						132.0				32
130	130.5	33.5	5	6	6	: : /: :							ROWN-ORAN LTY FINE TO C			
	-	Ī		"	"	. 12.					Sat.				,	,
	405.5											<u>:</u> _				
125	125.5	38.5	2	7	8	15		+	+		Sat					
	-	Ī					: : : :	: : : :	: : : :			F				
120	120.5	43.5			14	::::/:										
	-	Ŧ	3	9	11	•2	0				Sat.					
	-	Ŧ				::::						-				
115	115.5	<u> 48.5</u>	14	11	12		23				Sat	<u> </u>				
	:	Ŧ				: : : ; i"						112.0				52
110	110.5	53.5				::,/::						I		TAL PLA		
110	-	‡	1	3	5	. •8			1		Sat.		RAY, FINE TO ((A-7) (BLACK C	REEK FO	DRMATIC	N)
	:	‡				: \.::						107.0	RAY, SILTY FIN	IET Z ZZ	<u> </u>	AND 57
105	105.5	58.5	2	7	11	/ .					Sat	GI	۱۳۰۲, کالـ۱۲ ۲۱۱۰)	A-2-4)	VARSE SI	MIND
	:	‡				: : : 🛴						100.0				
100	100.5	63.5				::::\						102.0 — GF	RAY, FINE TO		SANDY	<u> </u>
100		- 55.5	8	11	17		P 28	1			Sat.	\		(A-7)		
	-	‡				: : : : ,	/					97.0				67
95	95.5	68.5	4	9	11	· · · · ·/	<u> </u>				Sat I	L GI	RAY, SÎLTY FIN)	IE TO CC A-2-4)	ARSE S	AND
		ţ			''	•20	0 				Sat.		`	•		
	00.5	70.5				'	Niii					92.0 — GF	RAY, FINE TO		SANDY	
90	90.5	73.5	12	15	20	 	₩35	+	1		Sat.	}		(A-7)		
	-	ł					.					}				
85	85.5 ⁻	78.5					:/: : :					1				
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GEOTECHNICAL BORING REPORT BORE LOG

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WBS	47533	.1.1			TI	P I-	-5987B		COUNT	Y RO	BESO	N			GEOLOGIST	W. Hamr	ick		
SITE	DESCR	PTION	BRID	GE O	N -L- (I -95)) OVER -Y	'5- (NC :	20) AT -L	- STA.	617+1	2.20						GROUN	ID WTR (ft)
BOR	NG NO.	S3_B	1-A SE	BL.	s ⁻	ΓΑΤΙ	ION 617+	+22		OFFS	SET 8	9 ft LT			ALIGNMENT	-L-		0 HR.	N/A
	AR ELE						L DEPTH			1		386,2	16		EASTING 2			24 HR.	FIAD
				- F&D			55 82% 03/0					DRILL N		Mud	1	,001,000	Пими		Automatic
				- ran						0011				iviuu	1		1		Automatic
DRIL	LER D.					IAK	T DATE				P. DAI	TE 12/			SURFACE W	ATER DEP	TH N/	Α	
ELEV	DRIVE ELEV	DEPTH	BLO	W CO					PER FOO		400	SAMP.	/	0	sc	OIL AND RO	CK DES	CRIPTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50	75 	100	NO.	/MOI	G	ELEV. (ft)				DEPTH (ft)
85								Matc	h Line			$L_{}$	L	L					
			14	17	15	Ш.		♦ 32					Sat.		84.0 Borino	g Terminated	at Eleva	tion 84.0	80.0 ft IN
		-												F	CLAY (COASTAL F	PLAIN) (E MATION	BLACK CR	EEK
	1	_														FOR	WATION	,	
	_	_																	
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WBS	47533	3.1.1			TI	P I-5987	3	COUNTY	/ ROBESO	N		GEOLOGI	IST Goodnig	ht, D.		
SITE	DESCR	IPTION	BRII	DGE O	N -L- (I-95) OVEI	R -Y5- (NC	20) AT -L-	STA. 617+1	2.20					GROUN	D WTR (ft)
BOR	NG NO.	S3_B	1-B_S	BL	S	TATION 6	317+21		OFFSET :	21 ft LT		ALIGNME	NT -L-		0 HR.	10.0
COLI	AR ELE	E V . 16	64.7 ft		TO	OTAL DEP	TH 90.0 f	t	NORTHING	386,192	2	EASTING	2,004,122	2	24 HR.	FIAD
DRILL	RIG/HAN	IMER EF	F./DAT	E MID	3964 CI	ME-45C 91%	02/21/2019	·		DRILL ME	THOD N	lud Rotary		HAMMER	RTYPE	Automatic
DRIL	LER Po	owell, E	3.		S	TART DAT	E 05/20/2	:1	COMP. DA	TE 05/20)/21	SURFACE	WATER DEI	PTH N/A		
ELEV	DRIVE ELEV	DEPTH	BLC	ow co	UNT		BLOWS	PER FOOT	-	SAMP.	V/L		COUL AND DO	OK DEGO	DIDTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	MOI G	ELEV. (ft)	SOIL AND RO	OCK DESCR	RIPTION	DEPTH (f
165												164.7	7 INCH	ES ASPHAI	т	0
	-	F				1					L	- 10117	ROADWAY	EMBANK	/IENT	
	161.2	3.5				: : : :	: : : :	: : : :				161.7	TAN, SAND		·	3
160	-		9	5	3	8	ļ · · · ·	ļ · · · ·			М	<u>.</u> ⊤⁄	AN AND GRAY,	SILTY CLA		ND
	158.7 - -	6.0	2	4	5						М	<u>}</u>	(A-2-5)		
155	156.2	8.5	4	5	7	:\f`::					м	‡				
133	-	‡			'	12-					IVI	<u> -</u>				
	454.0	10.5					\;				000	<u>- 152.7</u> — OF	ANGE AND LI	GHT GRAY	FTOC	. <u> </u>
150	151.2	13.5	10	17	21		38_				Sat.	<u></u>	SAN	ID (A-1-a)		
	-	<u> </u>					1:1::				000	<u></u>				
	146.2	18.5		10	40		:/: : :				000	<u></u>				
145	-	ł	9	12	18	 	4 30	+ : : : :	 		Sat.	_				
	-	ł					<i>V</i> ::::	1			000	142.7	LIGHT GRA	V F SANIT	- (Δ-3) —	22
140	141.2	23.5	8	9	13		1				Sat.	-	LIGHT GIV	II, II. OAINE	(/4-0)	
	-	F					77				000	1277				0.
	136.2	28.5					: : : : `	\			000	137 <u>.7</u>	IGHT GRAY, G		TYSAN	D 21
35		-	21	25	51		ļ · · · ·		76		Sat.	<u></u>	(A-2-5)		
	-	‡										132.7				32
120	131.2	33.5	4	7	8						000	0 0 0	LIGHT GR	AY, SAND	(A-3)	
130	-	‡	-	′		1 .	 	 			Sat.	_				
		<u> </u>				.					000	127 <u>.7</u>	IGHT GRAY A	ND TAN. F	TO CSE	37
25	126.2	38.5	5	7	9		3	<u> </u>			Sat.			ID (A-1-a)		
	-	Ĺ				: : {:		1::::	1::::		000	_				
	121.2	43.5				.					000	<u></u>				
120	_	-	6	6	11	1	7		1		Sat.	<u></u>				
	-	Ŧ				:::	: : : :	: : : :			000	<u> 117.7</u>		TAL PLAIN		47
115	116.2	48.5	2	7	7	: : i ;					Sat. 000		GHT GRAY, F.	TO CSE. S.	AND (A-1	
	-	Ŧ				/					000	ó- L	WITH INTERM .IGNITE AND C	LAY (BLAC		K
	- - 111.2	53.5				:/:::		: : : :			Š		FOF GHT GRAY, S	RMATION) LIGHTLY S	ILTY F	<u>-</u> <u>52</u>
10	-	1 55.5	3	2	4	6	<u> </u>	1			Sat.		CSE. SAND (A-			
	-	‡				:\;:::						‡	1 01			
05	106.2	58.5	2	6	8	::\::						‡				
ບວ	-	‡	_			14.	 	: : : :			Sat.	‡				
	404.5	† _{00 -}		[::;						<u> </u>	ARK GRAY, F.	SANDY SI	LTY CLA	<u>62</u>
100	101.2	63.5	4	8	10		8			SS-11	29%		(A-7-6) WITH T		A (BLACI	
	-	ŧ				: :: <u> </u> :						- - 97.7	JILLIN	. 51 (110	••••	67
	96.2	[68.5			<u> </u>			1::			000		GRAY, SLIGHT SAND (A-1-b) W			
95	-	<u> </u>	3	7	11	•	8	+	+		Sat.	£ `	LENSÈS OF CI	_AY (BLAC	K CREEK	(
	-	Ŧ		[::::¦					000	92.7		RMATION)		72
90	91.2	73.5	6	9	11	<i>[</i> ∶ ∶ ∶		: : : :	: : : :		м	- V	RK GREY, F. S. VITH TRACE M	1ICA, INTEF	RMITTEN	T
55	-	‡									** 		NSES OF F. SA OSSILS (BLACK			
	86.2 -	78.5		[:::;						\$	·			
85	UU.Z _	10.5	3	6	12	• • • 났			1		w	↓				

GEOTECHNICAL BORING REPORT BORE LOG

									UKE L	<u> </u>			_		
WBS	47533	3.1.1			TI	P I -5987	3	COUNTY	/ ROBESO	N			GEOLOGIST Goodnight, D.		
SITE	DESCR	IPTION	BRID	OGE O	N -L- (I-95) OVE	R -Y5- (NC 2	20) AT -L-	STA. 617+1	2.20				GROUND WT	R (ft)
BORI	NG NO.	S3 B	1-B S	BL	S	TATION 6	617+21		OFFSET 2	21 ft LT			ALIGNMENT -L-	0 HR.	10.0
	AR ELE						TH 90.0 ft		NORTHING		92				FIAD
				F MID		ME-45C 91%				DRILL M) Min	·	R TYPE Autom	
	LER Po						E 05/20/21		COMP. DA			1110	SURFACE WATER DEPTH N/A		
				ow co			BLOWS P			SAMP.		1 - 1	SORFACE WATER DEFTIT 10/F	`	
LEV (ft)	CLCV	DEPTH (ft)	0.5ft		0.5ft	0			75 100	NO		0	SOIL AND ROCK DESC		
	(ft)		0.010	0.010	0.011		7	<u> </u>	1	110.	/MOI	G	ELEV. (ft)	DE	PTH (ft
85		 		+			Match	Line	T		├		DARK GREY, F. SANDY SIL	TY CLAY (A-7)	
	-	Ŧ				::::							WITH TRACE MICA, INTE LENSES OF F. SAND AND E	RMITTENT	
BO	81.2	83.5	5	9	12	: : :					w		FOSSILS (BLACK CREEK F	ORMATION)	
	-	‡					21				\		_ (continued)		
	70.0	1													
75	76.2	88.5	5	9	12						w		_74.7		90.0
	-												Boring Terminated at Eleva CLAY (COASTAL PLAIN) (B	tion 74.7 ft IN	
	-	Ī											FORMATION)		
	-	ţ .											_		
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WBS	47533	.1.1			Т	IP I-5987B	COUNTY	ROBESOI	N	GEOLOGIST R.	French		
SITE	DESCR	IPTION	BRID	OGE ON	l -L-	(I-95) OVER -Y5- (NC	20) AT -L-	STA. 617+1	2.20			GROUND WT	R (ft
BORIN	NG NO.	S3_B	1-B N	3L	s	STATION 616+57		OFFSET 7	9 ft RT	ALIGNMENT -L-	•	0 HR.	N/A
COLL	AR ELI	EV . 16	4.3 ft		Т	OTAL DEPTH 85.0	t	NORTHING	386,099	EASTING 2,004	,194	24 HR.	FIAD
DRILL F	RIG/HAN	IMER EF	F./DATI	E F&R2	175 (CME-55 84% 03/01/2019			DRILL METHOD N	lud Rotary	HAMM	ER TYPE Automa	atic
	. ER S	. Davis			S	TART DATE 12/18/	19	COMP. DAT	Γ E 12/18/19	SURFACE WATE	R DEPTH N/	A	
v	DRIVE ELEV	DEPTH	BLC	w cou	NT	BLOWS	PER FOOT		SAMP. L	SOIL A	ND ROCK DES	CRIPTION	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	50	75 100	NO. MOI G	ELEV. (ft)			PTH
165	_										ROUND SURF	ACE	(
-	163.4	0.9	11	13	11				M L		DWAY EMBANI ASPHALT		
400	160.8 -	3.5									Y-BROWN, SIL		3
160	-	‡	2	2	2	4			M 🔆		DARSE SAND (A VIDED COASTA		
		<u> </u>				}::: ::::			%%.	BROWN	I, SILTY CLAYE DARSE SAND (A	Y FINE TO	
155	155.8 -	8.5	5	4	4				M N), II (OL O) II ID ()	(20)	ç
		ŀ				.					VN-GRAY, FINE IDY SILTY CLA		
	150.8 -	13.5								- -	ID I GILL I GLI	. (, , , ,	
150	-150.0	F 15.5	1	1	10	11-	+	1	Sat.	_			
		F					: : : :			147.3			1
145	145.8	18.5	7	11	16	_ :::::	: : : :				RAY TO BROW E TO COARSE		
	-	F	′	''	10	27			Sat.	_			
		ļ								<u>;</u>			
140	140.8 -	23.5	9	13	16	29			Sat.	_			
		‡								- 137.3			2
135	135.8 -	28.5] ://: ::::				WHITE-GF	RAY, SILTY CLA DARSE SAND (A		
133	-	ţ	4	3	2	¶5			Sat.	_), II (OL O) II IB ()	(20)	
		‡				:\; : : : : : :				<u>-</u>			
130	130.8 -	33.5	5	6	5	1 . 7			Sat.	_			
		‡							% % % % % % % % % % % % % % % % % % %				3
405	125.8 -	38.5] :::\ ::::				WHITE-GR	AY, SILTY FINE SAND (A-2-4		_ =
125	-	<u> </u>	7	12	14	26	 	 	Sat.		3AND (A-2-4)	
		<u> </u>				: : : : : : : :							
120	120.8 -	43.5	14	10	12	<u> </u>			Sat	<u>L</u>			
		<u> </u>								117.0			4-
	115.8 -	48.5				::/:: ::::				T 117.3 — WHITE-GF	RAY, SILTY CLA	YEY FINE TO	47
115			2	3	2	9 5	+	 	Sat.	<u>. </u>	DARSE SAND (A	1 -∠-0)	
		<u> </u>				:\: : : : : : :				112.3	7. Cor. +5; = 1; =		5
110	110.8	53.5	3	5	6	<u> </u>			Sat.	WHITE-GR	AY, SILTY FINE SAND (A-2-4		
	-	ł							Jai.	107.0			_
	105.8 -	58.5								107.3	COASTAL PLA		5
105	-		6	9	14	23	+		Sat.		(Y, SILTY FINE ACK CREEK FO		
	-	ŀ								102.3		·=====	62
100	100.8	63.5	7	9	12	4 :::::					AY, SILTY CLA SAND (A-2-6) V		
	-	F	'			21	1		Sat.	-	MICA (
		F				: : : <i>j</i> : : : : :				97.3 — DARK GR	AY, SILTY FINE	TO COARSE	67
95	95.8 -	- 68.5	5	7	9	16			Sat.		4-2-4) WITH TR		
		‡								-			
90	90.8	73.5			11	1 :::/: ::::				‡			
30	-	‡	7	8	11	19			Sat.	 			
		‡								‡			
85	85.8 -	78.5	10	11	14	-		• • • •		‡			

GEOTECHNICAL BORING REPORT BORE LOG

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	47533						987B		COUNT							GEOLOGIST R. French		
SITE	DESCR	PTION	BRID	OGE O	N -L- (I-95) (OVER -	-Y5- (N0	C 20) AT -	L- STA.	617+1	2.2	0				GROUND	WTR (ft)
BORI	NG NO.	S3_B	1-B NE	3L	S	TATIO	N 616	3+57		OFF	SET 7	79 ft	RT			ALIGNMENT -L-	0 HR.	N/A
COLI	AR ELE	V . 16	64.3 ft		TO	DTAL	DEPTH	4 85.0	ft	NOR	THING	3	86,09	9		EASTING 2,004,194	24 HR.	FIAD
DRILL	RIG/HAM	MER EF	F./DATE	E F&F	R2175 C	ME-55	84% 0	3/01/201	9	•		DR	JLL M	ETHOD) Mu	Rotary HAMME	R TYPE A	utomatic
DRIL	LER S.	Davis			ST	TART	DATE	12/18	/19	CON	IP. DA	TE	12/1	8/19		SURFACE WATER DEPTH N/A	`	
ELEV	ם מינים	DEPTH	BLC	W CO					S PER FOC	-			AMP.	V /	L	1		
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	50	75	100	١	١Ο.	MOI	O G	SOIL AND ROCK DESC	RIPTION	DEPTH (ft)
										·						· ·		
85								Ma	tch Line									
							•	25	.	- T - :		T		Sat.	-	DARK GRAY, SILTY FINE	TO COARSI	E
	-	- -						<i>`````</i>		- - :					‡	SAND (A-2-4) WITH TRA (continued)	ACE IVIICA	
80	80.8 - -	- 83.5 -	9	13	22			.\ 		-				Sat.		80.8 - _{79.3} DARK GRAY, SILTY FINE S	SANDY CLA	83.5 Y 85.0
	-	-						<u> </u>								(A-7) Boring Terminated at Elevat		/ 55.5
	-	_													-	CLAY (COASTAL PLAIN) (B	LACK CREE	K
	-	-													ŀ	FORMATION)		
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							<i>D</i>	ORE L	<u>UG</u>		
WBS	47533	.1.1			T	IP I-5987B	COUNT	Y ROBESO	N	GEOLOGIST W. Pesl	
SITE	DESCR	IPTION	BRI	OGE ON	N -L-	(I-95) OVER -Y5- (N	C 20) AT -L	- STA. 617+1	2.20		GROUND WTR (ft)
BOR	NG NO.	S3_B	2-A SI	3L	s	STATION 617+89		OFFSET 9	98 ft LT	ALIGNMENT -L-	0 HR. N/A
COLI	AR ELI	EV . 16	3.5 ft		ĪΤ	OTAL DEPTH 80.) ft	NORTHING	386.282	EASTING 2,004,072	24 HR . 7.9
DRILL	RIG/HAN	IMER EF	F./DAT	F F&R	2175	CME-55 84% 03/01/20	19	I	DRILL METHOD MI		JER TYPE Automatic
	LER S					START DATE 01/0		COMP DAT	ΓE 01/07/20	SURFACE WATER DEPTH N/	
	DRIVE		BLC	W COL	!	T	S PER FOO	<u> </u>	SAMP. V	30KI ACE WATER DEI 111 1V	^
ELEV (ft)	ELEV (ft)	DEPTH (ft)	0.5ft		0.5ft	- 	50	75 100	NO. MOI G	SOIL AND ROCK DES	
	(11)					 			I WOI G	ELEV. (ft)	DEPTH (ft
170		Ł								_	
	-	+								-	
165	-	F								-	
100	163.5 ⁻	- 0.0								- 163.5 GROUND SURF	
	-	<u> </u>	2	4	7	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			w ::	- ROADWAY EMBAN - <u>161.5</u> ORANGE-BROWN-GRAY,	
160	160.0_	3.5				· /· · · · · ·				COARSE SAND (A-2-4) V	VITH TRACE
	-	t	1	2	2	4			W 1/2	ORGANICS AND UNDIVIDED COASTA	AL PLAIN
	-	Ī								GRAY-BROWN, SILTY CL 156.5 COARSE SAND (A-2-6) V	
155	155.0	8.5	5	6	8	1			V	_ '\ ORĠANIĆS	j
		ļ			J	14			Sat.	- TAN-LIGHT GRAY, SIL ⁻ - COARSE SAND (A-2-4) V	
450		<u> </u>				:::\: :::				- CLAY	
150	150.0_	13.5	10	11	10		- 	 	Sat	_	
	-	L								_	
145	145.0	L 18.5				[\forestar				-	
	-		12	16	16	32			Sat	-	
	-	‡				:::: /:::				-	
140	140.0	23.5	8		10	/				<u>-</u>	
		_	8	9	10	19 • 19			Sat	_	
	-	L								<u>136.5</u> GRAY, FINE SANDY SILT	27.0
135	135.0_	28.5	5	9	10					WITH TRACE COAR:	
		F				· · · • • • · · · · • •					
130	130.0	33.5				i :::i :::				- 131.5 - GRAY, SILTY CLAYEY FIN	<u>32.0</u> E TO COARSE
100	130.0_	- 33.3	3	11	11	• 22			Sat	— 129.5 SAND (A-2-6 TAN-LIGHT GRAY-WHITE	
	-	‡				::::/ ::::				TO COARSE SAND	
125	125.0	38.5				· · · / · · · ·				<u>-</u>	
	-	t	10	6	8	14			Sat	-	
	-	L				::::1::::				_	
120	120.0	43.5	23	31	23			+	Sat	<u>-</u>	
	-	F					. 54			<u>-</u>	
115	4450	10.5								- <u>116.5</u> - GRAY, SILTY FINE TO CO	DARSE SAND 47.0
113	115.0_	48.5	6	7	6	•13-			Sat	(A-2-4) WITH TRACE CLA	AY AND MICA
		<u> </u>				: /:: :::				-	
110	110.0	53.5] -					
	-	ŀ	3	3	5	8			Sat.		
	-	ł								- <u>106.5</u>	57.0
105	105.0	58.5	6	8	11	1			Sat.	COASTAL PLA GRAY, SILTY FINE TO CO	DARSE SAND
	-	Ī				1 19			Jal.	- (A-2-4) WITH TRACE M CREEK FORMAT	ION)
100	400.0	‡ <u></u>				$\ \dots \ _{N}$				- 101.5 DARK GRAY, FINE TO CC	62.0
100	100.0_	63.5	10	18	20	1	8		w	SILTY CLAY (A-7) WITH AND WOOD FRAG	TRACE MICA
	-	‡				:::: ::/`				- 96.5	67.0
95	95.0	68.5	L			<u> </u>				GRAY, SILTY FINE TO CO	DARSE SAND
	-		8	11	14	• • • • • • • • • • • • • • • • • • • •			Sat	— (A-2-4) WITH TRACE MIC GRAVEL	A, CLAY, AND
	-	F								-	
90	90.0	73.5				11	-			 	

GEOTECHNICAL BORING REPORT BORE LOG

	D (ORE LOG		
WBS 47533.1.1	TIP I-5987B COUNTY	ROBESON	GEOLOGIST W. Pesl	
SITE DESCRIPTION BRIDGE ON -L	L- (I-95) OVER -Y5- (NC 20) AT -L-	STA. 617+12.20		GROUND WTR (ft)
BORING NO. S3_B2-A SBL	STATION 617+89	OFFSET 98 ft LT	ALIGNMENT -L-	0 HR. N/A
COLLAR ELEV. 163.5 ft	TOTAL DEPTH 80.0 ft	NORTHING 386,282	EASTING 2,004,072	24 HR . 7.9
DRILL RIG/HAMMER EFF./DATE F&R217	5 CME-55 84% 03/01/2019	DRILL METHOD Mud	Rotary HAMME	ER TYPE Automatic
DRILLER S. Davis	START DATE 01/07/20	COMP. DATE 01/07/20	SURFACE WATER DEPTH N//	4
ELEV DRIVE DEPTH BLOW COUNT (ft) (ft) 0.5ft 0.5ft 0.5		(00 / 0	SOIL AND ROCK DESC	
(ft) (ft) (ft) 0.5ft 0.5ft 0.5ft 0.5ft (ft) 0.5ft (ft) 0.5ft	Match Line 2	75 100 NO. MOI G	GRAY, SILTY FINE TO CC (A-2-4) WITH TRACE MICA GRAYEL (continue of the continue of the continu	DEPTH (ft) DARSE SAND A, CLAY, AND Led) JT7.0 GRAY, FINE WITH TRACE Stion 83.5 ft IN BLACK CREEK

								D	URE L	.UG						
WBS	47533	.1.1			TI	IP I -5987B	(COUNTY	ROBESC	N		GEOLOG	IST R. Fren	ch/W. Har	nrick	
SITE	DESCR	IPTION	BRII	DGE O	N -L- ((I-95) OVER -Y5	- (NC 20)) AT -L-	STA. 617+	12.20					GROUND	WTR (ft)
BOR	NG NO.	S3_B	2-B N	BL	s ⁻	TATION 617+1	19		OFFSET	83 ft RT		ALIGNME	NT -L-		0 HR.	N/A
COLI	AR ELE	EV. 16	3.1 ft		T	OTAL DEPTH	105.0 ft		NORTHING	386,15	56	EASTING	2,004,219		24 HR.	2.8
DRILL	. RIG/HAN	IMER EF	F./DAT	E F&F	R2175 (CME-55 84% 03/0	1/2019			DRILL M	ETHOD	Mud Rotary		НАММЕ	R TYPE Au	tomatic
	LER S.					TART DATE 1			COMP. DA				E WATER DE			
ELEV	DRIVE	DEPTH	BLC	ow co		11		R FOOT		SAMP.						
(ft)	ELEV (ft)	(ft)	0.5ft			0 25	50		75 100	NO.	MOILG		SOIL AND R	OCK DESC	RIPTION	DEPTH (ft)
	, ,								1							
165																
100	163.1	0.0										163.1	GROU	ND SURFA	CE	0.0
	-	- "	2	2	6	. 8			: : : :		м		ROADWA AY-BROWN, S	Y EMBANK	MENT	E 2.0
160	159.6 -	3.5				: : : :							AND (A-2-4) W	TH TRAC	ORGANICS	<u> </u>
	-		3	3	2	5: : : :				SS-1036	17%	В	UNDIVIDED ROWN-ORAN			
	-	+				'\ · · · ·						156.1	SAND	Y CLAY (A	-6)	7.0
155	154.6	8.5			ļ.,	1 - 1 - 1 -			+			≨_ G	RAY, SILTY FI	NE TO CO (A-2-4)	ARSE SAND)
	-	ļ	6	6	4	10 1					Sat.	<u> </u>		(/ (2 +)		
450	-	‡				:/: : : :						151.1		ᇝᇎᇑᆕ		12.0
150	149.6	13.5	2	2	1	∤├ / : : : :			+		c.,	RE RE	D-GRAY-BRO	WN, SILTY _AY (A-6)	FINE SAND	Υ
	-	-	_	-	'	•3 .					Sat.	}				
145	-	ļ				:						146.1	ANGE-BROWI	J.GRAV S		17.0
143	144.6	18.5	8	12	14	1					Sat			E SAND (A		O
	-	t				20					out.	<u>}</u> _				
140	-					$ \cdot \cdot \cdot \cdot \gamma' \cdot$										
	139.6	23.5	7	7	10						Sat	<u> </u>				
	-	ţ				:://:: ::						1004				07.0
135	- 134.6	20.5				. / .						136.1 — <u> </u>	HITE-BROWN			<u> </u>
	134.0	20.5	2	1	2	√ 3 · · · ·					Sat.	,	FINE TO CO.	ARSE SAN	ID (A-2-6)	
	-	‡				', : : : :					~	? }				
130	129.6 -	33.5				1					%	}				
	-		3	4	4	1 :					Sat.	}				
	-	-				. \ .					<i>***</i> *********************************	}				
125	124.6 -	38.5] \ .					*	<u>.</u>				
	-	‡	3	6	9	15					Sat.	}				
	-	t				::/:: :					·//	<u>121.1</u>				42.0
120	119.6	43.5	3	2	3	 			+			<u></u>	HITE-GRAY, S SAI	ILTY FINE ND (A-2-4)	TO COARSI	≣
	-	F	3	_	"	 ∮ 5 .					Sat.	<u>:</u> F	27.0	/		
445	-	‡				: : : :						116.1	HITE-GRAY, S		75.75 ED = 7-2	47.0
115	114.6	48.5	2	1	3	<u> </u>			+ : : : :		Sat.	↓		SILTY CLA E SAND (A		,
	-	ł	-	1		•4 .					Jal. %	}				
110	-	F									<u> </u>	111.1		STAL PLAI	<u></u>	<u>52.0</u>
. 10	109.6	53.5	2	2	3	 					Sat.	<u>.</u>	ARK GRAY, SI	LTY FINE	TO COARSE	
	-	ţ										*	SAND (A-2- FO	4) (BLACK RMATION)		
105	104.0	<u> </u>										<u>::</u>		,		
	104.6	58.5	1	2	4	6					Sat	; F				
	-	ļ.										101.1				62.0
100	99.6 -	63.5				, . .						* ''''	DARK GRAY, F	INE SILTY	CLAY (A-7)	
	- 55.0	L 33.3	5	8	12	1	: : :				Sat.	<u>±</u>				
	-	F										96.1				67.0
95	94.6 -	- 68.5] · · · · / · ·						G G	RAY, SILTY FI		ARSE SAND	<u> </u>
	-	‡	6	7	9	16					Sat.	<u>:</u>		(A-2-4)		
	-	t				[] : : :/; -	· · ·					91.1				72.0
90	89.6 -	73.5		<u> </u>	4.4	1			+				ARK GRAY, FIN CLAY (A-7) W			Y
	-	ļ	′	8	14						Sat.	1		AGMENTS		
	-	ţ				11::::\:	: : :					t				
85				1		11 ' IV			1 1			J				

GEOTECHNICAL BORING REPORT BORE LOG

WBS	47533	.1.1			TII	P -	5987B			COU		RO						GEOLOGIST R. French/W. Ha	mrick	
SITE	DESCR	IPTION	BRID	GE O	N -L- (I	-95)	OVER	-Y5- (NC 2	20) AT	Γ-L- \$	STA.	617+	12.	.20				GROUN	ID WTR (ft)
BOR	NG NO.	S3_B	2-B NE	3L	ST	ATK	DN 61	17+19				OFFS	ET	83	ft RT			ALIGNMENT -L-	0 HR.	N/A
COLI	LAR ELE	EV . 16	3.1 ft		TC	TAL	. DEPT	H 10	5.0 f	ft	ı	NOR	THING	3	386,15	6		EASTING 2,004,219	24 HR.	2.8
	. RIG/HAM		F./DATE	F&F											ORILL M) Mu			Automatic
	LER S.	ı				ART	DATE					СОМ	P. DA		12/1	6/19	1	SURFACE WATER DEPTH N/	4	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		W CO	UNT 0.5ft	0	2	BLO\ 25		PER FO		'5 I	100		SAMP. NO.	MOI	L O G	SOIL AND ROCK DESC	CRIPTION	DEPTH (ft)
85	84.6	78.5	<u></u>	11	 20	-		31	···	h Line				††		– – – Sat.	!	DARK GRAY, FINE TO CO	ARSE SAI	NDY
	-	-				:		/			: :							_ CLAY (A-7) WITH TRAG _ FRAGMENTS (cont	inued)	
80	79.6	83.5	5	8	12	-	· · · /		· ·		· ·			1		Sat.		- - -		
	-	_			-	:	\P^2	0					: :			Sal.		- -		
75	74.6 -	- - 88.5		10		<u> </u>	`	\ · ·						$\ $				- -		
	-	-	7	12	16			9 28					: :			Sat.		- -		
70	69.6	03.5				Ŀ	/				· ·		· ·					71.1 GRAY, SILTY FINE SAND	(A -2 - 4) W	TTH - 92.0
	- 69.0	- 95.5	7	8	8	:	16					: :	: :			Sat.		TRACE GRAVE	EL	
65		-				:	/.	: :		: :	: :		: :					- -		
	64.6 -	98.5	6	9	13	-	j	22						11		Sat.		- -		
						:	/											- 61.1		102.0
60	59.6 -	103.5	8	11	16	-		27				-				Sat.		GRAY, SILTY FINE TO CO CLAY (A-7)	ARSE SIL	105.0
	-	_						<u> </u>						1				Boring Terminated at Eleva CLAY (COASTAL PLAIN) (E	tion 58.1	ft IN
	_																	FORMATION)	
	-																	- - -		
	_	-																- -		
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								D	ORE L	UG						
WBS	47533	.1.1			TI	P I -5987B		COUNTY	ROBESO	N		GEOL	OGIST B. Paint	er/W. Ha	mrick	
SITE	DESCR	IPT I ON	BRII	OGE O	N -L- (I-95) OVER -	Y5- (NC 2	:0) AT -L-	STA. 617+1	2.20					GROU	ND WTR (ft
BOR	NG NO.	S3_E	B2-A	SBL	S	TATION 618	3+40		OFFSET	123 ft LT		ALIGN	IMENT -L-		0 HR.	N/A
COLL	AR ELE	V . 17	72.8 ft		TO	OTAL DEPTH	85.0 ft		NORTHING	386,33	39	EAST	ING 2,004,066		24 HR.	4.9
DRILL	RIG/HAM	MER EF	F./DAT	E F&F	R3495 C	ME-55 82% 03	/01/2019			DRILL M	ETHOD	Mud Rotary		НАММ	ER TYPE	Automatic
DRIL	LER D.	Tignor			S	TART DATE	12/12/19		COMP. DA	TE 12/1	16/19	SURF	ACE WATER DE	PTH N/	4	
ELEV	DRIVE	DEPTH	BLC	w co	UNT		BLOWS P	ER FOOT		SAMP.	V /		COUL AND DO	201/ DE0/		
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	5	0	75 100	NO.	MOI		SOIL AND RO	JCK DES	SKIPTION	N DEPTH (
175																
	470.0												GROUI	ND SURF	∆CF	C
	172.8 - -	- 0.0 -	2	4	5	- • 9					М	<u> </u>	SURFICIAI	ORGAN	IC SOIL	
170	169.3	- - 3.5				·/···						170.8	ROADWAY ORANGE-BROW			
	-	-	WOH	WOH	1	1				SS-1534	V		TO COAR UNDIVIDED	SE SAND	(A-2-6)	j
165	-	-									17%	165.8	BROWN, FINE	TO COAF		OY7
100	164.3	8.5	7	11	13	,					w	<u>`</u>	LIGHT BROWN			NE J
	-		'	''		2					vv		SAI	ND (A-2-4))	
160	450.0	- 40 -				/ .						160 <u>.8</u>	- GRAY-BROWN	I, FINE SA	NDY SIL	<u>12</u>
•	159.3	13.5	WOH	2	2	4			: : : :		Sat.	}	CLAY (A-7) WIT	H TRACE	ORGAN	ICS
	-	_							: : : :			155.8				17
155	154.3	18.5			10				1				ORANGE-GRAY-	BROWN, G SAND (A-2		SILTY
	_		11	16	19		35		::::		Sat.	:: <u>-</u>	1 1142 (5AND (A-2)	
150	-					/						: F				
	149.3	23.5	2	3	4	1.2					Sat					
	-	-									Out.					
145	144.3	20.5				ý						145.8	GRAY-BROWN			
	144.5		9	9	9						w	3	CLAY (A-6) \	WITH LIT	TLE MICA	
	-	_				/ .						<u> </u>				
140	139.3	33.5	2		4	 / - 			 			*				
	_	_	_	2	4	6			: : : :		w [}				
135	-	-				$ \cdot\rangle\cdot $						135.8	WHITE, SILTY F	NE TO C	DARSE S	AND - 37
	134.3	38.5	5	7	8	\.					Sat			(A-2-4)	37 II 10 <u>2</u> 0	12
	_	_				1 .						130.8				42
130	129.3	43.5									** **	<u> </u>	GRAY-WHITE, S			TO
	-		5	7	11	18			: : : :		Sat.	\}	COARSI	E SAND (A	~-∠- 0)	
125	-	-				:::;:			: : : :		· · · · · · · · · · · · · · · · · · ·	\				
120	124.3	48.5	7	9	5	· · · <u>/</u> · ·					Sat.	\				
	-	<u> </u>				· · • • • • • • • • • • • • • • • • •			: : : :)	*				
120	- 119.3	- 53 5							: : : :			120.8		STAL PLA		52
	118.3	- 33.5	3	5	7	1			: : : :		Sat.	*	GRAY, SILTY FII (A-2-4) (BLACK			
	-	<u> </u>				: : /: :			: : : :			115.8	, , ,			57
115	114.3	58.5	6	7	10	 \ 			 			}- <u></u>	GRAY, FINE SAI	NDY SILT	Y CLAY (4-7)
	-	_	"	′	'0	17			: : : :		Sat.	<u>}</u>				
110	-	L										\mathbf{S}				
	109.3	63.5	5	7	11						Sat.	S				
	-	-										105.8				67
105	- 104.3	68.5					• • • •					100.0	DARK GRAY, SI			RSE º/
	-	-	4	10	15		25		: : : :		Sat.	*	SAN	ND (A-2-4))	
100	-	<u>-</u>				:::: \			: : : :			-				
100	99.3	73.5	9	11	17						c.;	.: <u>-</u> 				
	-	_		''	''		28		: : : :		Sat.	*				
95	-	L										:: <u> </u>				

GEOTECHNICAL BORING REPORT BORE LOG

WBS	47533	.1.1			TI	Р	I-5987B		COUNT	Y ROE	BESO	N			GEOLOGIST B. Painter/W. Ha	mrick	
SITE	DESCR	PTION	BRID	GE O	N -L- (1-9	95) OVER	-Y5- (NC	20) AT -L	- STA. 6	317+1	2.20				GROUND W	TR (ft)
BOR	NG NO.	S3_EI	B2-A S	BL	Sī	ГΑ	ATION 61	8+40		OFFS	ET 1	23 ft L	Г		ALIGNMENT -L-	0 HR.	N/A
COL	LAR ELE	V . 17	2.8 ft		т	тс	TAL DEPT	H 85.0 f	t	NORT	HING	386,3	39		EASTING 2,004,066	24 HR.	4.9
DRILL	. RIG/HAM	MER EF	F./DATE	F&R	3495 C	CMI	E-55 82% 0	3/01/2019				DRILL N	/IETHO) Mu	d Rotary HAMM	ER TYPE Auto	matic
DRIL	LER D.	Tignor			ST	TΑ	ART DATE	12/12/1	9	COME	P. DAT	Γ E 12/	16/19		SURFACE WATER DEPTH N/A	A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		W COL			0 2		PER FOO' 50	T 75	100	SAMP.	MOI	L O G	SOIL AND ROCK DESC		DEPTH (ft)
95 90	89.3 = 89.3 = = = = = = = = = = = = = = = = = = =	(ft) -78.5						25		75	100		'/	0		TO COARSE inued) ARSE SANDY ation 87.8 ft IN	82.0 85.0

								D	ORE L	UG							
WBS	47533.	.1.1			<u> </u>	IP I -5987B		COUNTY	' ROBESO	N			GEOLOGI	ST Weis, J.	M.		
SITE	DESCRI	PTION	BRII	DGE ON	1 -L-	(I -95) OVER	-Y5- (NC	20) AT -L-	STA. 617+1	2.20						GROUN	ID WTR (ft)
BOR	ING NO.	S3_E	B2-B_	SBL	s	TATION 6	18+35		OFFSET	18 ft LT			ALIGNME	NT -L-		0 HR.	14.5
COL	LAR ELE	V . 18	30.8 ft		Т	OTAL DEPI	H 90.0 ft		NORTHING	386,29	99		EASTING	2,004,163		24 HR.	25.3
DRILL	RIG/HAM	MER EF	F./DAT	E MID3	964 C	ME-45C 91% ()2/21/2019			DRILL M	ETHOD	Mu	d Rotary		HAMME	R TYPE	Automatic
DRIL	LER Po	well, E	3.		s	TART DATE	05/26/2	1	COMP. DA	TE 05/2	27/21		SURFACE	WATER DEI	PTH N/A	4	
ELEV	DRIVE	DEPTH	BLC	W COL	NT		BLOWS F	PER FOOT		SAMP.	lacktriangledown/	L		OO!! AND DO	OK DEOK	DIDTION	
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	25 5	50	75 100	NO.	моі	O G	ELEV. (ft)	SOIL AND RO	OCK DESC	RIPTION	DEPTH (f
185																	
	-	-										F	-				
	1 7	-										-	. 180.8	GROUN	ID SURFA	ACF	0.
180	179.8	- 1.0	8	8	10	 							_	ROADWAY	EMBAN	MENT	
	177.3	- - 35				18					М		. 177.8	HT BROWN, S IGHT BROWN			3.
175	1	-	3	4	3	7					w		. L	IGHT BROWN	I, SANDY	CLAY (A-	3)
173	174.8	- 6.0 -	4	6	3	1 - 1 - 1					w		-174.3 RFΓ	AND LIGHT E	ROWN (CLAYEY S	6.5
	172.3	8.5	3	2	3	<i>:[:::::::::::::::::::::::::::::::::</i>				SS-12	22%		- 172.0	(A-2-6)		1—-0.
170		-		_		Q 5				33-12	22 /0		, ⊾I –	GHT BROWN (, SANDY (A-7-6)	SILTY CLA	AY.
	167.3	- - 40 E				::`\;:							<u>. 16</u> 7 <u>.8</u>				13.
	107.3	- 13.0 -	3	6	16	1 : : : ` ` \	 22				w		. L	IGHT BROWN	I, SANDY	CLAY (A-	3)
165	1 1	-					\ <u>.</u>		 				_ . 163.8				17.0
	162.3	18.5	13	21	14		<u> </u>							DARK BROV	VN, F. SA	ND (A-3)	
160	<u> </u>	-	13	21	14		. ▶35 .				Sat.						
		-				: : /							. <u>157.8</u>				23.
	157.3	23.5	1	3	3	-	: : : :	: : : :			Sat.			UNDIVIDED GRAY, CLAY			
155	 	-				1 7					-	//	· =	OIVAI, OLA	ILI OAN) (A-2-0)	
	152.3	- - 28.5											. <u>152.8</u>	RAY-BROWN	- GII TV 7		
150	7	-	2	4	5] . d .e					25% W			INAT-DROWN	, SILTT O	LAT (A-7-	0)
100	1 7	- -				\							. 147.0				22
	147.3	33.5	11	15	19						Sat.	0000		HT GRAY TO			
145		-					. 434 .				Out.	0000	- VV -	TITH INTERMIT) (43	TENT CL 5.0'-47.0')	AY LENS	⊑S
	142.3	- - 38.5					: :::					0000					
140	142.0	- - -	13	17	19	1	. 936 .				Sat.	0000					
140	† †	- -					/		 			-	-				
-	137.3	43.5	3	4	8	::://.						0 0 0 0 0 0 0 0 0 0 0 0 0					
135	<u> </u>	-	"		U	· 9 12.					Sat.	0000	-				
	1000	-				:/: : :						 	<u>. 133.8</u>		NDY SILT	(A-4)	47.0
135	132.3	48.5 -	1	2	3	∫ ∮ 5	: : : :			SS-13	27%	#E		,		. ,	
130	 	- -							+				-				
	127.3	- 53.5											128.3	TAN, CLAY	EY SAND	(A-2-6)	<u>52</u> .
125] - 7	-	3	3	4	1					Sat.	///					
]	-				· į· · ·						<u>//</u>	– . 122.8				58.
	122.3	58.5	6	6	5	1 . 7	: : : :				Sat.			LĪGHT GR	AY, SANI	O (A-3)	50.
120		-				 • • • • • • • • • • • • • • • • • •						0000	-				
	117.3	- - 63.5]]:;;::	: : : :		: : : :			0000	. <u>117.8</u>			<u></u> – – –	63.
115		-	2	4	6	10 .	: : : :				Sat.	/ //		RAY, CLAYEY		1-2-6) WIT	
	† ‡	- -				 : 	: : : :					\\\\	– TR/ <u>. 11</u> 3 <u>.8</u> _	ACE CEMENTE BLACK CRE	EK FORM	MATION)	NTS <u>67</u> .!
	112.3	68.5	3	4	6	: ::	: : : :		: : : :		804	000 000 000 000	· · · ·	GRAY, CS			- — -
110		- -			J	. •10 .					Sat.	0000	-				
	107.	-				::/::	: : : :										
2	107.3	73.5 -	4	6	9	\ \	: : : :		: : : :		Sat.						
105	I I		1	1		$\Pi = \Lambda^{\infty}$	1	1	1 1	1	1	ooo[

GEOTECHNICAL BORING REPORT BORE LOG

										T .		JIN						T	
	47533						I-5987E						BESC					GEOLOGIST Weis, J. M.	T
	DESCR									20) A								T	GROUND WTR (ft)
	NG NO.			SBL			ION 6				-		ET					ALIGNMENT -L-	0 HR. 14.5
-	AR ELE						L DEP			t		NORT	HING		386,29			EASTING 2,004,163	24 HR. 25.3
	RIG/HAM			E MID										_) Mu		MER TYPE Automatic
	LER PO					ΓAR	RT DAT					COM	P. DA		05/2	7/21	1 1	SURFACE WATER DEPTH N	/A
ELEV (ft)	DRIVE ELEV	DEPTH (ft)	0.5ft	0.5ft				BL 25	LOWS	PER F 50		75	100		SAMP. NO	▼/	0	SOIL AND ROCK DES	
(,	(ft)	(1.5)	0.511	0.511	0.511	H		<u> </u>		JU		<u>. </u>	100		NO.	/MOI	G	ELEV. (ft)	DEPTH (ft)
105						\vdash		Τ.	Mate	h Line) 	Τ		+			000		
	102.3	78.5	5	10	12		<i>\</i>	. -								147		GRAY, SANDY CLAY INTERMITTENT SAN	(A-6) WITH
100	-	_		'	'2			P 22 .								W		-	
	97.3 -	- 00 5					,	i :										• •	
0.5	97.5	- 0.3.5 -	8	9	11		: : : 4	20 .	: : :		: :					Sat.		• •	
95	-	_				-		\										-	
	92.3	88.5	8	11	15			1:			: :							• •	
				l ''	10	Н.	<u></u>	• 26		1		٠.		Н		М		_ 90.8 Boring Terminated at Elev	90.0 vation 90.8 ft IN
	-	-																- CLAY (COASTAL PLAIN) (FORMATION	BLACK CREEK N)
	-	-																- <u>Other Samples:</u>	
	-	-																ST-03 (28.0 - 30.0)	
	-	_																• •	
	_	-																-	
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								D	UKE L	UG				
WBS	47533	.1.1			ТІ	IP I-5987B		COUNTY	ROBESC	N			GEOLOGIST B. Painter	
SITE	DESCR	IPTION	BRID	OGE O	N -L- ((I-95) OVER	-Y5- (NC	20) AT -L-	STA. 617+	2.20				GROUND WTR (ft)
BOR	NG NO.	S3_E	B2-B N	NBL	S.	TATION 61	7+66		OFFSET	96 ft RT	-		ALIGNMENT -L-	0 HR. N/A
COLI	AR ELE	V 16	7.8 ft		T	OTAL DEPT	H 85.0 ft	:	NORTHING	386.1	196		EASTING 2,004,247	24 HR. 5.5
DRILL	RIG/HAM	MER EF	F./DAT	F F&F	<u>I</u>	CME-55 82% (3/01/2019) Mu		HAMMER TYPE Automatic
	LER D			- 101		TART DATE		<u> </u>	COMP. DA			1110	SURFACE WATER DEPT	
		DEPTH		W CO				PER FOOT		SAMP		1 L T	SORI ACE WATER DELT	II IV/A
ELEV (ft)	ELEV (ft)	(ft)	0.5ft		0.5ft	$\left\ \right\ _{0} = 2$			75 100	NO.	17	O G		K DESCRIPTION
	(11)						I.	1	1		/MOI		ELEV. (ft)	DEPTH (ft
180		-											_	
	-	[• •	
175	-	-											•	
170	-	-											-	
	-												• •	
170	-	_											• —	
	- 167.8 -	- - 0.0											167.8 GROUND	SURFACE 0.0
	- 107.0	- 0.0	1	3	7	· • 10 ·					М		ROADWAY E	MBANKMENT CLAYEY FINE TO
165	164.3	3.5				-/:			ļ · · · ·				COARSE S	AND (A-2-6) '
	-	_	WOH	1	2	3								RAY, FINE SANDY ′ (A-6)
400	-					j : : :					*		- _ 160.8	
160	159.3	8.5	2	4	5	 `\: : :			1					DASTAL PLAIN TE, SILTY FINE TO
	-			4	3	. •9					М			DY CLAY (A-6)
155	-					\							155.8 WHITE GRAV-ORAL	NGE, SILTY FINE TO 12.0
	154.3	13.5	12	11	10	7					Sat.			AND (A-2-4)
	-					: : : 🔨					Jun		• •	
150	- 149.3	105					<u> </u>						• -	
	149.5		11	14	16		\				Sat.		• •	
	-	_				::::	1:::							
145	144.3	23.5				<u> </u>	 	 	 			-	-	
	-		9	12	18		∮ 30				Sat.		•	
140	-						/::::						•	
110	139.3	28.5	8	11	12				1		Sat.		-	
	-					: : : <i>,?</i> "	23				Jai.		•	
135	404.0	- 00 5				/ .							-	
	134.3	33.5	2	4	5	. /					Sat.		•	
1	-	_				: }:::							• -	
130	129.3	38.5							+				- -	
<u>-</u>	-		9	7	8	15					Sat.		•	
130	-	_				:,/:::							- - <u>125.8</u> — — — — — — — — — — — — — — — — — — —	42.0
120	124.3	43.5	2	1	1	/					Sat.			CLAYEY FINE TO AND (A-2-6)
	-		_	'	`	Q 2					Sat.	\mathbb{Z}	•	
120	-	-				<u> j</u>							_	
	119.3	48.5	2	2	3	5					Sat.			
	-					1/							- - 115.8	52.0
115	114.3	- 53.5				- `	 	 					GRAY AND BROW	/N, SILTY FINE TO
	-		4	6	6	12.	: : : :	: : : :			Sat.		- CUARSE S	AND (A-2-4)
110	-	-				::/:/:	: : : :						<u>. 110.8</u>	57.0
110	109.3	58.5	7	11	14	 \					147		 DARK GRAY, SILTY 	AL PLAIN CLAY (A-7) (BLACK
	-	<u>-</u>	′	''	'-	:::::/	25		: : : :		W		- CREEK FO -	DRMATION)
105	-					/							<u>105.8</u>	YEY SILTY FINE TO 62.0
	104.3	63.5	6	8	8	16					Sat.		 COARSE SAND (A 	-2-4) WITH LITTLE CA
3	-					: : : : : .	: : : :						- IVII -	υ Λ
100	-	-										::::: 	-	

GEOTECHNICAL BORING REPORT BORE LOG

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	47533					P I-5987B			Y ROBES					GEOLOGIST B. Painter	
					N -L- (I-95) OVER	-Y5- (NC	20) AT -L-						T	GROUND WTR (ft)
BOR	NG NO.	S3_E	B2-B N	NBL		FATION 61			OFFSET					ALIGNMENT -L-	0 HR. N/A
COLI	LAR ELE	V . 16	7.8 ft		TO	OTAL DEPT	H 85.0 f	t	NORTHIN	NG 3	386,19	96		EASTING 2,004,247	24 HR. 5.5
DRILL	. RIG/HAM	MER EF	F./DAT	E F&F	R3495 C	ME-55 82% C	3/01/2019			DI	RILL M	ETHO	D Mu	d Rotary HAM	MER TYPE Automatic
DRIL	LER D.	Tignor				TART DATE	12/11/1	9	COMP. D				4	SURFACE WATER DEPTH	N/A
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		0.5ft		0 2		PER FOOT 50	- 75 10		NO	MOI	0 I G	SOIL AND ROCK DE	SCRIPTION DEPTH (ft
100	99.3	68.5					Mato	ch Line		\prod			ļ <u>.</u>	DARK GRAY, CLAYEY	
95	94.3	- - -	7	9	10		· · · · · · · · · · · · · · · · · ·					Sat.		COARSE SAND (A-2-4) MICA (contin	WITH LITTLE ued)
	94.3		7	11	15		26					Sat.		_ 93.8 - DARK GRAY, SILTY CL - TRACE ORGANICS, I	LITTLE MICA
90	89.3 - -	78.5 - - -	9	20	28			48				W		GRAY, SILTY FINE SAN WITH TRACE GRAVEL	IDY CLAY (A-6)
85	84.3	- 83.5 -	10	23	33			56				w		- - - - 82.8	85.
														Boring Terminated at Ele CLAY (COASTAL PLAIN) FORMATIO FORMATIO	(BLACK CREEK