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DESCRIPTION

LABORATORY RESULTS SITE PHOTOGRAPH(S)

TITLE SHEET LEGEND (SOIL & ROCK)

SITE PLAN

BORE LOG(S)

SHEET NO.

4 5-8 9

Ŕ REFERENCE

40163

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY _LENOIR

PROJECT DESCRIPTION BRIDGE No. 20 AND BRIDGE No. 34 ON NC 55 OVER THE NEUSE RIVER

SITE DESCRIPTION BRIDGE No. 34 ON NC 55 OVER NEUSE RIVER OVERFLOW AT -L- STA. 35+00

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4926	1	10

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 SUBSURFACE 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 (INP-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED MATER 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 MOY 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 SATISTY 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 CONJUTIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTES:

1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.

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

PERSONNEL J. HOWARD S. HARDEE

INVESTIGATED BY _WOOD E&IS, INC.

DRAWN BY <u>R. Rahie</u>

CHECKED BY __C. T. TANG

SUBMITTED BY M. LEAR

DATE __FEBRUARY, 2022

WOOD E&IS, INC. 4021 STIRRUP CREEK DRIVE, SUITE 100 DURHAM, NORTH CAROLINA 27703 (919) 381-9900

NC Engineering F-1253 NC Geology C-247 AND CAROLINA 4/18/2022 SIGNATURE

B-4926

PROJECT REFERENCE NO.

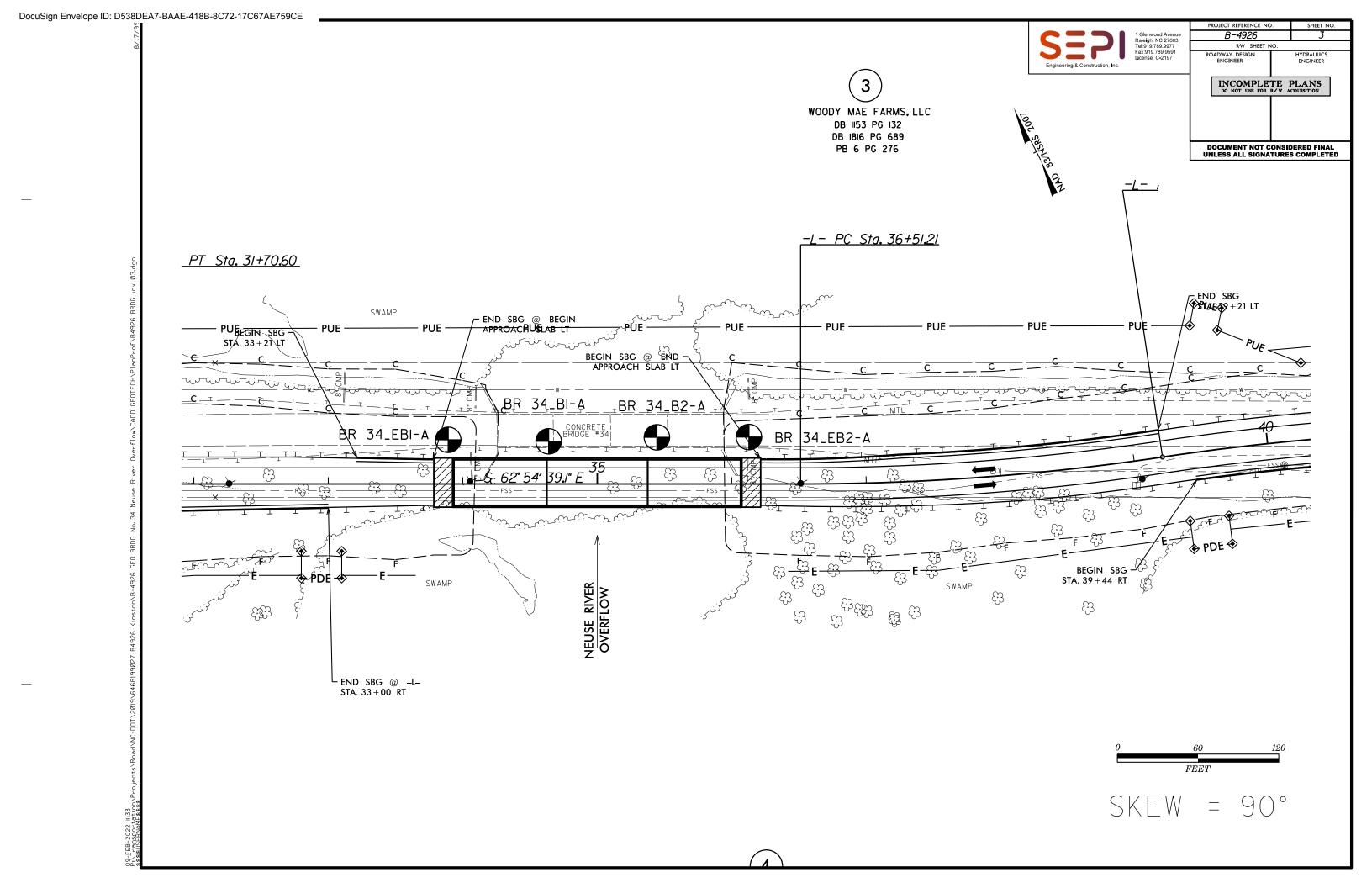
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

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.	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:	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	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 VILLY NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 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 CRYSTALLINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
LLASS. (\$30% PASSING "200) (>30% 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.
CROUP 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-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-4-A-5 A-6 A-7 A-1, A-2 A-4, A-5 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. COLLUYIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
000000000	SLIGHTLY COMPRESSIBLE LL < 31	ROCK (NCR) SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.
SYMBOL 0000d00000	MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 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,	PERCENTAGE OF MATERIAL	(CP) SHELL BEDS, ETC.	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
"40 30 MX 50 MX 51 MN SOILS CLAY PEAT	GRANII AR SILT - CLAY	- WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
15 MA 25 MA 15 MA 35 MA 35 MA 35 MA 35 MA 36 MA	ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	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. VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN.	HORIZONTAL.
LL - 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 50ULS WITH	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	(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 LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
PI 6 MX NP IW MX IW MX II MN II MN IW MX IW MX II MN II MN MODERATE DECANIC	GROUND WATER	OF A CRYSTALLINE NATURE.	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NU MX AMUDITS OF SOILS		SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO (SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
OF MAJOR GRAVELAND 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 FAIR TO POOR UNSUITABLE	∇PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA	(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.
AS SUBURALE PUOK	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 CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.
PANCE OF CTANDARD PANCE OF LINCONFINED	MISCELLHINEUUS STMBULS	(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 COMPACTNESS OR PENETRATION RESISTENCE COMPRESSIVE STRENGTH	ROADWAY EMBANKMENT (RE) 25/025 DIP & DIP DIRECTION	<u>IF TESTED, WOULD YIELD SPT REFUSAL</u>	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
(N-AHTOE) (LON2) E.L.	WITH SOIL DESCRIPTION → OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	ITS LATERAL EXTENT.
GENERALLY VERY LOOSE < 4 CONTRACT CONTRACT 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.
GRANULAR MEDIUM DENSE 10 TO 30 N/A	ARTIFICIAL FILL (AF) OTHER AUGER BORING CONE PENETROMETER	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTILED (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	THAN ROADWAY EMBANKMENT 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	TEST BORING	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF	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	INFERRED ROCK LINE "OMNITORING WELL 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	→ → → → → → → ALLUVIAL SOIL BOUNDARY △ 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.	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 EMBANKMENT OR BACKFILL	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL SAND SAND SILT CLAY	UNDERCOT LCC HOLE DEGRADABLE NOCK	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
(USE, SU.) (F SU.)	ABBREVIATIONS AB - AUCED DEFLICAL MED - MEDIUM VCT - VANE CHEAD TEST	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.	OR SLIP PLANE.
GRAIN MM 305 75 2.0 0.25 0.05 0.005 SIZE IN. 12 3	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST 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.	STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF 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 γ - 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
SOU MOISTURE SCALE FIELD MOISTURE	CPT - CONE PENETRATION TEST NP - NON PLASTIC γ_d - DRY UNIT WEIGHT CSE COARSE ORG ORGANIC	POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. 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	SOFT CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS 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 (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL
(SAT.) FROM BELOW THE GROUND WATER TABLE	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	TENGTH 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.
PLASTIC PLOUID LIMIT	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
RANGE - WET - (W) SEMISULID; REUDIRES DRYING TO	FRACE FRACTURES, FRACTURES TOR - TRICUNE REFUSAL RT - RECOMPACTED TRIAXIAL FRAGS FRAGMENTS W - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: ELEVATIONS DETERMINED FROM PROVIDED ELECTRONIC FILES
(PI) PL _ PLASTIC LIMIT	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	(b4926_ls_tin_171205,tin)
ON CONTINUE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET	ELEVATION: N/A FEET
OM OPTIMUM MOISTURE SL SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	NOTES:
PEOULDES ADDITIONAL MATER TO	CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE 0.16 TO 1 FOOT VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	
- DRY - (D) ATTAIN OPTIMUM MOISTURE	CME-55 4° CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	FIAD - FILLED IMMEDIATELY AFTER DRILLING
PLASTICITY	8* HOLLOW AUGERSBH	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	X CME-550 HARD FACED FINGER BITS -N O	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
NON PLASTIC 0-5 VERY LOW	TUNGCARBIDE INSERTS	RUBBING WITH FINGER FREES NUMEROUS GRAINS;	
SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM	VANE SHEAR TEST X CASING W/ ADVANCER HAND TOOLS:	GENILE BLUW BY HAMMER DISINIEGRATES SAMPLE.	
HIGHLY PLASTIC 26 OR MORE HIGH	POSTABLE HOLE INCLE	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE: BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TOUGHT - THE CARD I HAND HOULT	COAING ARE DISEIGNED TO SEPARATE WITH STEEL PROPE.	
		INDURATED DIFFICULT TO BREAK WITH HAMMER.	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE;	
THE SECOND CONTROL OF THE COLD TO DESCRIBE HE ENTRINGE.	DUAL MASS DCP	SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14



							B	<u>ORE L</u>	.UG						
WBS	40163	.1.2			TI	P B-4926	COUNT	Y Lenoir				GEOLOGIST J. Ho	ward		
SITE	DESCR	IPTIO	N Brid	lge No		n NC 55 Over Neuse	River Ov	erflow Near	Kinston,	NC		_		GROUN	D WTR (fi
BOR	ING NO	. BR 3	4_EB	1-A	ST	TATION 33+89		OFFSET	33 ft LT			ALIGNMENT -L-		0 HR.	N/A
COLI	LAR ELI	EV . 27	'.9 ft		TC	OTAL DEPTH 84.9	ft	NORTHIN	3 565,6	09		EASTING 2,449,40)6	24 HR.	9.6
DRILL	RIG/HAN	MER E	FF./DA	TE SN	ME9403	CME-550X 80% 12/03	/2020		DRILL N	IETHO	D M	ud Rotary	HAMI	MER TYPE	Automatic
DRIL	LER S	. Harde	е		S	TART DATE 04/24/	19	COMP. DA	TE 04/	24/19	4 .	SURFACE WATER	DEPTH N	I/A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	UNT 0.5ft	BLOWS 0 25	PER FOOT	75 100	SAMP. NO.	MO	0 I G	SOIL AND	ROCK DES	SCRIPTION	DEPTH (f
30		-										_			
25	27.0	0.9	3	3	3					D		27.0 ASPHALT (0.0- - ROADI	VAY EMBA	RETE (0.4- NKMENT	
	24.2	3.7	3	40	12		<u> </u>			14/		 Very loose to v tan-brown, si 			
	1	-		"	'-	:::: :;;;	652			W		aspl	alt lenses a	ıt 4.2'	
20	19.5 -	- - 8.4										- -			
Ī	19.5	- 0.4	1	1	1					_Sat		- -			
	}	_				;:::: ::::									12.
15	14.5	13.4	1	1	3		 	 	00.400	000/		Soft, wet, gray,	ALLUVIAL fine sandv.		
	}	_		'					SS-103	30%		- t	ace organic	cs	,
10	9.5	- 40.4				<u> </u>						10.9 Loose to medi	um dense, s	saturated, gi	<u> 17</u> .
İ	9.5	18.4	3	3	4	:•				Sat.		silty, fine SANE	(A-2-4) wit	h trace orga	nics
	-	_										-			
5	4.5	23.4	2	6	11	- \ -	1	1				- -			
		-		0	''	: : ; • i7 : : : : :				Sat.		•			
0	- 1	-				:: <i>i;</i> :: ::::					0000	0.9	saturated	grav-white	<u>27</u> .
	-0.5	- 28.4 -	6	6	4	10				Sat.			arse SAND		iiiic
	- 1	-				: [_ : : : :					-3.1	DASTAL PL		31.
-5	-5.5	- - 33.4					1					Stiff to hard, m	oist, dark g	ray, fine sar	ıdy,
	-	-	16	26	25	:::: :::;				D		fragments and	ine sandy p	n trace shell partings (Pe	edee
-10	1	-				:::: ;::::						- -	Formation)		
-10	-10.5	- 38.4 -	4	4	5					М		- -			
	‡	-				: :: ::::						- -			
-15	-15.5	- - 43.4										- -			
	-		4	5	9					М		- -			
-20	‡	-				[[:::/:[:::::					1	.			
-20	-20.5	- 48.4 -	4	5	15		1 : : : :	1		М		_ -			
	‡	-				::: ; [*]:::::						- -			
-25	-25.5	- - 53.4				· · · · <u>/</u> · · · · · ·						- -			
	-	-	5	7	9	16		: : : :		М		- -			
20	‡	-				:::: \x;::		: : : :				28.1 Hard, moist to	saturated, d	ark green-g	ray, 56.
-30	-30.5	- 58.4 -	16	21	31		- in			М		glauconitic, fine	sandy SIL [*] Formation)	I (A-4) (Pee	dee
	-	_				[[:::::	▼ 52 \	: : : :		IVI		- -	•		
-35	-35.5	- - 63.4					1					- -			
	-00.0	-	16	23	35	[:::: ::::	. €58	: : : :		W		- -			
,	}	-				:::: ::::	1:7::					.			
-40	-40.5	68.4	17	24	43	 .	1			C-4		<u>-</u>			
	}	_	''	- '	"	:::: :::	/ -6	⁷		Sat.		- -			
-45	- -45.5 -	- - 73.4					. /					- -			
}	-40.5 -	- 1 3.4 -	16	21	33	: : : : : : -	54]		Sat.		• •			
	-	_					']					-49.1			<u> </u>
-50	1	_				./									

GEOTECHNICAL BORING REPORT **BORE LOG**

WRS	40163	112			ТІ	P B-4	4926		COUN			.00			GEOLOGIST J. Howard		
-			N Brid	lae No				r Neuse	River O			Kinston	. NC		1 3-3-3-31 5. Howard	GROUN	D WTR (ft)
	ING NO						N 33+		7141701 0			33 ft LT			ALIGNMENT -L-	0 HR.	N/A
-	LAR EL				_			· 84.91	ft	+		5 565,6				24 HR.	9.6
	RIG/HAN			TF SM						1101		DRILL		D Mı	·		Automatic
—	LER S							04/24/		COM	IP DΔ	TE 04/		- 1110	SURFACE WATER DEPTH NA		7 tatomatio
ELEV	DRIVE	DEPTH		W COL					PER FOO			SAMP.	_	1 [•		
(ft)	ELEV (ft)	(ft)	0.5ft			0	25		50	75 	100	NO.	MOI	O G	SOIL AND ROCK DESC	CRIPTION	DEPTH (ft)
-50	-50.5	78.4					 -	Mato	ch Line	- — -		<u> </u>	<u> </u>		Very stiff, wet to satura	ted dark	
	-	-	7	8	10	: :	•18						W		green-gray, fine sandy CL trace shell fragments (Peed	4Y (A-6) w	rith
-55		Ī				: :	-								(continued)	oo i oiiilai	.011)
	-55.5 -	- 83.4 -	11	10	10		. •20						Sat.		-57.0		84.9
															Boring Terminated at Eleva Coastal Plain: Very stiff, fin CLAY (A-6) (Peedee F	e sandy, s	
		-															

							B	<u>ORE L</u>	OG						
WBS	40163	.1.2			T	TP B-4926	COUNT	Y Lenoir				GEOLOGIST J. Howard	t		
SITE	DESCR	IPTIO	N Bric	dge No	o. 34 o	on NC 55 Over Neuse	River Ove	erflow Near	Kinston,	NC		_		GROUN	D WTR (f
BOR	ING NO	. BR 3	34_B1-	-A	S	STATION 34+64		OFFSET	32 ft LT			ALIGNMENT -L-		0 HR.	N/A
COL	LAR EL	EV . 12	2.0 ft		T	OTAL DEPTH 99.2 f	t	NORTHING				EASTING 2,449,472	2	4 HR.	N/A
DRILL	RIG/HAI	MER E	FF./DA	TE SI	ME9403	3 CME-550X 80% 12/03/	2020		DRILL M	ETHO	D Mu	ud Rotary	HAMMER	RTYPE	Automatic
DRIL	LER S	. Harde				TART DATE 04/29/1		COMP. DA		29/19	1	SURFACE WATER DEF	PTH 7.0f	t	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft		- ∤	PER FOOT	75 100	SAMP. NO.	MOI	L O G	SOIL AND ROC	K DESCF	RIPTION	DEPTH (i
20		- - -							-	•		WATER SURF	FACE (04/	/29/19)_	
15	-	- - -										-			
	12.0	0.0	3	1	1		T	T		W			DLINE UVIAL		0
10	9.3	2.7				∮ 2 · · · · · · · · · · · · · · · · · · ·		ļ · · · ·		VV		Very soft to medium to gray, fine to coar	stiff, wet,		
5	-	-	WOH	1	0	1,				W		(A-7-6) with trac fragments	ce organic	s, wood	A.I
3	4.3	7.7	3	3	7	 \\ 		1		W		-			
0	-					, \$10				**		Very loose, saturated (A-2-4) with			AND 10
	-0.7	12.7	1	3	2	- 				Sat.	Ŀ	_	Ü		
-5	-5.7 -	- - - 17.7										-4.0 COAST Stiff to very stiff, we	AL PLAIN		16
		-	3	6	12	18				W		green, fine sandy, s fine sandy partings	ilty CLAY	(A-7-6) v	with
-10	-	-				:::/ ::::						ilile salidy partiligs	(reedee	romanc	(ווכ
	-10.7	22.7	20	14	10					М		-			
45	-	- - -													
-15	-15.7	27.7	4	5	8			1		М		-			
	-	-				♥13.				IVI					
-20	-20.7	- 32.7]						- -21.2			33
	-	-	4	6	19	25				М	-	Medium dense, wet, (A-2-4) (Peed			
-25] -	-									F	-25.0		•	37
	-25.7	37.7	5	6	11	1				W		Stiff, moist, dark gr (A-6) (Peed	ay, fine sa	andy CLA tion)	AY —
	-	_				:::::158;::						-29.0			41
-30	-30.7	42.7	17	24	34	<u> </u>		 				Hard, moist to satura glauconitic, fine sand	dy SILT (A		
	-	_	''	24	34		1 58			М		Form	nation)		
-35	-35.7	- - 47.7										_			
	-33.7	- 	13	15	26	41				М					
-40	-	-													
-40	-40.7	52.7	17	26	39	-				Sat.		_			
	-	-					🗥	::::		out.	 				
-45	-45.7	- 57.7]	· · · · <u>`</u>	\			#	-			
	-	-	16	22	56			78		Sat.	F				
-50	-						<u> </u>						ark green	grav, fin	<u> </u>
	-50.7	62.7	13	10	10	20				Sat.		sandy CLAY (A- fragments (Pe	with tra	ace shell	
	-											-54.0			66.
-55	-55.7	67.7	6	-	10			+				Medium dense, mo clayey fine SANI	D (A-2-6)	green gra (Peedee	ay,
		_	6	7	10					М	\searrow	Form	nation)		<u>70</u> .
-60	-	-				· · · · /\ · · · ·									

GEOTECHNICAL BORING REPORT BORE LOG

WBS	40163	12			ТП	P B-4926		Y Lenoir	.00			GEOLOGIST J. Howard		
			N Brid	ae No		n NC 55 Over N			Kinston	. NC		CECECOICT U. Howard	GROUN	D WTR (ft)
	ING NO					FATION 34+64		OFFSET				ALIGNMENT -L-	0 HR.	N/A
	LAR EL				_	OTAL DEPTH		NORTHIN				EASTING 2,449,472	24 HR.	N/A
				TE SN		CME-550X 80%			· · · ·		D Mu	<u> </u>	J IER TYPE	
	LER S					TART DATE 04		COMP. DA	1			SURFACE WATER DEPTH 7		
ELEV	DRIVE	DEPTH		w col			OWS PER FOOT		SAMP.	_	11			
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0 25	50	75 100	NO.	мо	O G	SOIL AND ROCK DES	CRIPTION	DEPTH (ft)
-60					$\lfloor _ $		Match Line		\sqcup_{-}	L_{-}	$\rfloor _ \rfloor$			
	-60.7	- /2./	18	18	16	:::: :	34			М	Ŀ	Dense to very dense, moi green gray, silty fine to d	st to wet, da coarse SAN	ark D
	-	_					· \				Ŀ	(A-2-4) with trace friable of lenses (Peedee Formation		
-65	-65.7	77.7	7	16	37		- \	+			-	-	, ,	,
	-	-	,	10	31		53			М	<u> </u>			
-70	-	-					/				<u> </u>	_		
	-70.7	82.7	17	16	19	:::: :	./ 35			w	<u> </u>			
	_	_									-	-74.0		86.0
-75	-75.7	87.7	100/0.1					100/0.1		w		Hard, indurated, green gra SAND and very dense, we	t, silty fine s	
]	_	100/0.1					100/0.1		'		-77.5 (A-2-4) (Peedee Fo		89.5
-80		_									E	fine SAND (A-2-4) with	trace shell	Silly
	-80.7	92.7	12	16	18		34			w	E	fragments (Peedee F	ormation)	
]										E			
-85	-85.7	97.7	18	26	35						<u> </u>	-		
			18	20	35	1	•61 .		Ц	W		-87.2 Boring Terminated at Elev	ation -87.2	99.2 ft in
												(A-2-4) (Peedee Fo	rmation)	

COLLAR ELEV. 13.1 ft									<u>B</u>	<u>ORE</u>	<u>L</u> (<u>UG</u>						
BORING NO. BR 34_B2-A	WBS	40163	3.1.2			Т	IP B-492	3	COUNT	Y Lenoir					GEOLOGIST J. H	loward		
COLLAR ELEV. 13.1 ft	SITE	DESC	RIPTIO	N Brid	lge No	o. 34 c	on NC 55 C	ver Neuse	River Ov	erflow Ne	ar K	inston,	NC				GROUN	ID WTR (fi
DRILL RIGHAMMER EFF,DATE SME9403 CME-550X 80% 12/03/20/20 DRILL METHOD Mud Rotary HAMMER TYPE Automatic DRILLER S. Hardee START DATE 04/25/19 COMP. DATE 04/25/19 SURFACE WATER DEPTH 6.0ft	BOR	ING NO	. BR 3	4_B2-	-A	s	TATION	35+44		OFFSET	3	5 ft LT			ALIGNMENT -L-		0 HR.	N/A
DRILLER S. Hardes	COLI	LAR EL	EV. 13	3.1 ft		Т	OTAL DEI	PTH 97.51	ft	NORTHI	NG	565,5	40		EASTING 2,449,	545	24 HR.	N/A
ELEV (ft) DEPTH	DRILL	RIG/HAI	MMER E	FF./DA	TE SI	иЕ9403	3 CME-550X	80% 12/03	/2020			DRILL M	IETHO	D Mu	ud Rotary	HAM	MER TYPE	Automatic
ELEV (ft)	DRIL	LER S	. Harde	ee		s	TART DA	Γ E 04/25/	19	COMP. I	DAT	E 04/2	25/19		SURFACE WATE	R DEPTH	6.0ft	
10	ELEV		DEPTH	BLC	w co	UNT		BLOWS	PER FOOT	-		SAMP.	V /		SOII AN	D BUCK DE	SCRIPTION	İ
13.1	(ft)		(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 10	00	NO.	/моі			D ROOK BE		DEPTH (
13.1																		
15	20		1										_		– WATER	R SURFACE	(04/25/19)	
13.1 0.0 WOH WOH WOH WOH 10 10 10.3 2.8 WOH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			‡											1 -	, <u> </u>	1.991.12195	(0.17.107.10)_	— —
13.1 0.0 WOH WOH WOH WOH 10 10 10.3 2.8 WOH 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15		‡												•			
10	13	42.4	† , ,												– ` 13 1	MUDI INF	:	0
10		13.1	- 0.0	WOH	WOH	WOH	•0	: : : :			П		W			ALLUVIA	L	
5 5.6 7.5 2 1 1 1	10	10.3	2.8	WOH	1	1	<u> </u>			1			۱۸/					
5 5 7 5 2 1 1 1 1 2 1 1 2 1 1 1 2 1 1 1 2 1 1 1 2 1 1 1 1 2 1			‡			·	 • • • • • • • • • • • • • • • • • • •						VV					
Soliton Soli	_	5.6	7.5] :::::									fine con	dy alayay S	<u> </u>
O 0.6 12.5 2 3 5		-	ţ	2	1	1	P 2	1	<u> </u>	1	1		W					ıL ı
0			ţ				<u> </u> -									CASTALB		11
-10	0	0.6	12.5	2	3	5	• • • • •			1			м		Medium stiff	o hard, drv t	o wet, dark o	gray,
-10			‡				.¶° .								ine sandy, sand part	siity CLAY (/ ings (Peede	e Formation	ne)
-10	_	-4.4	17.5				: : : :											
-10	-5	-	-	3	3	5	. 8				$\exists 1$		М		- ·			
-10			‡				:::::	√::::										
-15 -14.4 - 27.5 3 5 7 12 W -20 -19.4 - 32.5 4 19 19	-10	-9.4	22.5	11	18	19							n		-			
-19.4 - 32.5			ļ					. /. •37 . /										
-19.4 - 32.5		-14.4 :	27.5				:::;	√ 1::::										
-20	-15	-14.4	- 27.5	3	5	7	12	+::::	 	+	$\exists 1$		W		-			
-20		-	ţ				: : : :											
Dense, wet, dark gray, silty fine SAND (A-2-4) (Peedee Formation) Service of the same of	-20	-19.4	32.5	4	19	19	<u> </u>											
-25 -24.4 - 37.5 4 7 8 (A-6) (Peedee Formation) M (A-6) (Peedee Formation) M -27.9 Hard, wet, dark green-gray, glauconitic, and the second SULT (A-A) (Peedee Formation)			ł				::::						IVI					ND <u>35</u>
-25 4 7 8		24.4	27.5				::{:	: : : :		1::::	: 11				Very stiff, m	oist, gray, fir	ne sandy CL	AY
Hard, wet, dark green-gray, glauconitic,	-25	-24.4	57.5	4	7	8	15	+	<u> </u>	+	$\exists 1$		М		-	(. 55455 . 5		
20 -29.4 T 42.5 fine condy CILT (A.4) (Decides Formation)			ł					`\.:::										41
	-30	-29.4	42.5	12	17	26	<u> </u>	· >'.		1						lark green-gr LT (A-4) (Pe	ay, glauconi edee Forma	tic, tion)
		-	ŧ		''				3				IVI					
-35 -34 47.5 17 28 42 -40 -39.4 52.5 17 24 38 -41 -42 -44.4 57.5 6 22 33 -50 -49.4 62.5 15 23 15 -50 -51.4 67.5 8 11 10 -50 -59.4 72.5 8 11 10 -60 -59.4 72.5 8 11 10		244.	1,75				::::	1::::										
	-35	-34.4	1 47.3	17	28	42	1	+		70	$\exists 1$		W	H	-			
-40 -39.4 - 52.5			ł				: : : :	: : : :	1:::/:					H				
	-40	-39.4	52.5	17	24	38			<u> </u>				١٨/	Ŀ	_			
			1	''	- '								VV	-	•			
-45		44.4	F 7 F						$ \cdot $					-	•			
	-45	-44.4	57.5	6	22	33	1	+	9 55	+	4		W	F	<u>-</u>			
-50 -49.4 - 62.5			Ŧ						, ::::					F	•			
-55 -54.4 - 67.5 8 11 10 - 21 - 38 W W — -53.9 Medium dense, wet, dark green gray, clayey fine to coarse SAND (A-2-6) with trace cemented sand fragments (Peedee Formation) — 71	-50	-49.4	62.5	15	23	15	↓	<u> </u>						F	· · _			
-55 -54.4 - 67.5 8 11 10 W W Series Gray, clayey fine to coarse SAND (A-2-6) with trace cemented sand fragments (Peedee Formation) -57.9 Formation) -71		-	Ŧ	'3	23	15		38		T			W	F	- ·			
Section 2.5. Secti			Ī					<u> </u>							- -53.9			67
trace cemented sand fragments (Peedee	-55	-54.4	6/.5	8	11	10	1	21	1	+	$\exists 1$		W	/	Medium de clayey fine t	o coarse SA	ND (A-2-6) v	ıy, vith
_ ₋₆₀		:	Ŧ					\.						//	trace cemen	ted sand frag	gments (Pée	dee <u>71</u> .
	-60	-59.4	72.5] ::::	\\									<u></u>	

GEOTECHNICAL BORING REPORT BORE LOG

WB	40163	3.1.2			TI	P B-4	926	COUNT	Y Lend	oir				GEOLOGIST J. Howard		
SITE	DESCF	RIPTIO	N Bric	lge No	. 34 or	n NC 5	5 Over Neu	se River Ov	erflow N	lear l	Kinston,	NC			GROU	ND WTR (ft)
BOF	RING NO	. BR 3	4_B2-	-A	ST	OITA	N 35+44		OFFSI	ET 3	5 ft LT			ALIGNMENT -L-	0 HR.	N/A
COL	LAR EL	EV . 13	3.1 ft		TC	TAL [DEPTH 97.	5 ft	NORT	HING	565,5	40		EASTING 2,449,545	24 HR.	N/A
DRIL	L RIG/HAI	MMER E	FF./DA	TE SN	ЛЕ9403	CME-5	50X 80% 12/	03/2020			DRILL N	IETHO	D M	lud Rotary HA	MMER TYPE	Automatic
DRII	LER S	. Harde				ART [DATE 04/2	5/19	COMP	. DA	TE 04/	25/19		SURFACE WATER DEPTH	6.0ft	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		0.5ft	UNT 0.5ft	0	BLOW 25	S PER FOO	Γ 75 '	100	SAMP. NO.	MOI	L O G	SOIL AND ROCK D	ESCRIPTIO	N DEPTH (ft)
-60 -65 -70 -75	(ft)	(III) - 77.5 - 82.5 - 87.5 - 97.5	0.5ft	78/0.3	17 12 19			atch Line	100	100 	NO.				dense, wet, o coarse SAlble to indurate enses (Peed Intinued) gray, CEMEN Formation) k green-gray with trees a fromation) gray, SEMEN Formation) gray, CEMEN GEMEN G	DEPTH (ft) dark ND ed ee 83.1 ITED \83.5

							B	ORE L	UG						
WBS	40163	.1.2			TI	IP B-4926	COUNT	/ Lenoir				GEOLOGIST J. Howa	ard		
				<u> </u>		n NC 55 Over Neuse	River Ove			NC				GROUN	ID WTR (f
BOR	ING NO	. BR 3	4_EB2	2-A	ST	TATION 36+13		OFFSET 3	35 ft LT			ALIGNMENT -L-		0 HR.	N/A
	LAR ELI					OTAL DEPTH 84.9 f		NORTHING	565,5	09		EASTING 2,449,606		24 HR.	9.8
DRILL	. RIG/HAN	MER E	FF./DA	TE SN	ЛЕ9403	3 CME-550X 80% 12/03/	2020		DRILL N	IETHO	D M	ud Rotary	HAMMI	ER TYPE	Automatic
DRIL	LER S	. Harde				TART DATE 04/23/1		COMP. DA		23/19	<i>a</i>	SURFACE WATER D	EPTH N/	A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	UNT 0.5ft	4	PER FOOT	75 100	SAMP. NO.	MOI	O G	SOIL AND RO	OCK DESC	CRIPTION	DEPTH (f
30		-										_			
	27.0	0.9	5	4	5					D		27.9 GROUI 27.0 ASPHALT (0.0-0.4 - ROADWA		RETE (0.4	0.9') 0.
25	23.8 -	- - 4.1										 Loose to mediu tan-orange, silty 	m dense,	dry to mois	
	-	-	3	16	34	:::: :::>	50			М		trace asph			
20	19.5 -	- - 8.4										- 19.9	-		8.
	-10.0	-	2	1	2	•3			SS-100	35%		Soft, wet, gray- sandy CLAY (orange, fir A-6) with ti	e to coars ace grave	se I
15	1	-				:::: ::::						15.9			12.
15	14.5	- 13.4 -	1	1	1			 	SS-101	46%		Soft to medium stir	LLUVIAL f, wet to m	noist, dark	gray
	-	-							00 101	1070		and gray, fine san trac	dy, silty C e organics	LAY (A-6)	with
10	9.5	- - 18.4										- -			
	1	-	1	1	4	•5				М		- - 6.9			21.
5	-	-				-					0000		saturated,	gray, fine	to
	4.5	- 23.4 -	7	7	5	12.				Sat.	0000	_ coarse SAND (A-3) With i	race grave	eı
	1	-				: :, :::::						- 1.9 - 1.9	STAL PLA	<u></u> – – –	
0	-0.5	- - 28.4				-		<u> </u>				Stiff, moist, dark g	ay, fine to	coarse sa	andy,
	1	-	3	5	6	:•11:::	:::::		SS-102	23%		silty CLAY (A-7-	b) (Peede	e Formatio	on)
-5	1	-				:::::						-			
	-5.5	- 33.4 -	4	5	6	111				М		- -			
	1	-										- - -9.1			37.
-10	-10.5	- - 38.4	40	00	40							Hard, wet, dark g	ray, sandy edee Form		ILT — S.
	42.2	- 44.0	16	32	40	:::: ::::	>	72		W		12.1Stiff, moist, dark			<u>40</u> .
-15	-13.3 -	-	4	5	6	1 11				М		 CLAY (A-6) wi 	th fine san ee Formati	dy parting	S
	-15.5 -	- 43.4	4	5	8	· · •13 · · · · ·				М			or orman	Olly	
]											-			
-20	-20.5	48.4	9	29	50			<u> </u>				- - _{-21.0}			48
]	_	9	23	50		L	i		W		Very dense, wet, c			
-25	-25.5	53.4				-						Very stiff, moist, d CLAY (A-6) w	ark gray, f	ne sandy,	silty
	-25.5		5	8	10	18				М		- (Peede	e Formati	on)	
	}	_										28.1 Hard, wet, dark			
-30	-30.5	- 58.4	14	17	24	 . `\ .		 		w		fine sandy SILT (A			
	-	-		"	-	•41				VV		- -			
-35	-35.5	- - 63.4				· · · · · · · ·		• • • •				- -			
	-00.0	-	17	23	41	1 :::: ::::	64	: : : :		W		- -			
40	-	-					:f::					- -			
-40	-40.5	- 68.4 -	16	23	31		,			w		- -			
	‡	-				:::: ::::	J	: : : :		٧٧		- -			
-45	-45.5	- - 73.4		<u></u>]	1					- -			
		-	16	21	29] :::: ::::	50			W		- -			
		-				:::: ::::						49.1			
-50	1							1							

GEOTECHNICAL BORING REPORT BORE LOG

WBS	3 40163	3.1.2			TI	P E	B-4926		COUNT	Y Lenc	oir				GEOLOGIST J. Howard		
SITE	DESCR	RIPTION	N Brid	lge No	o. 34 o	n NO	C 55 Ov	er Neuse	River Ove	erflow N	lear k	Kinston,	NC			GROUI	ND WTR (ft)
BOF	RING NO	. BR 3	4_EB	2-A	S.	TAT	ION 36	i+13		OFFSE	ET 3	5 ft LT			ALIGNMENT -L-	0 HR.	N/A
COL	LAR EL	EV . 27	7.9 ft		T	ОТА	L DEPT	H 84.91	t	NORT	HING	565,5	09		EASTING 2,449,606	24 HR.	9.8
DRIL	L RIG/HAN	MER E	FF./DA	TE SI	лЕ9403	CM	E-550X 8	30% 12/03	2020			DRILL N	IETHO	D M	ud Rotary HAMM	ER TYPE	Automatic
DRII	L ER S	. Harde	e		S	TAR	T DATE	04/23/	19	COMP	. DA	TE 04/	23/19		SURFACE WATER DEPTH N	/A	
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLC 0.5ft	0.5ft		0	2		PER FOOT		100	SAMP. NO.	MOI	L O G	SOIL AND ROCK DESC	CRIPTION	N DEPTH (ft)
-50	-50.5	78.4						Mato	h Line						Hard to very stiff, wet, dark o		
-55	- - -55.5	- - -	16	60	27						37		W		sandy CLAY (A-6) with tra sand lenses (Peedee F (continued)	ice cemer	ited
	-55.5	- 03.4	14	13	9	Ŀ	· · · •	22	<u> </u>				W		-57.0		84.9
NCDO I BORE SINGLE B-4820 GEO RUWY GIN GPJ NC DO L'GD I 29/22							•								Boring Terminated at Eleva Coastal Plain: Very stiff, fir CLAY (A-6) (Peedee F Pushed tubes ST-1 and S location -L- 36+18, iST-1 from 8.5-10.5 ft (I -ST-2 from 13.0-15.0 ft (I -ST-2 from 13.0-15.0) st. (I -ST-2 from	ne sandy, formation) 6T-2 at off 35 ft LT Rec=2.0 ft	oft in silty

Bridge No. 34 on NC 55 (-L-) Over the Neuse River Overflow at -L- Sta. 35+00 Wood E&IS Project No.: 6468-19-9027

Date Reported: July 2019 NCDOT WBS No.: 40163.1.2 Tip No.: B-4926 County: LENOIR Date Tested: June 2019

HODO! HOO!	10 +0.100.1.2		11p 110:: D +020			oounty.						Bato Tootoa.	04110 2010			
						S	OIL T	EST RES	SULTS							
OAMBI E NO	OTATION	OFFOFT	LINE	DEPTH	AASHTO		Б.		% BY V	VEIGHT		% F	PASSING SIE	VES	%	%
SAMPLE NO.	AMPLE NO. STATION OFFSET LINE INTERVAL CLASS. L.L. P.I. C. SAND F. SAND SILT CLAY 10 40 200 MOISTURE C															ORGANIC
SS-103	O. GAIND TI. GAIND OILT GLAT TO 40 200															-
SS-100	36+13	35' LT	-L-	8.4-9.9'	A-6(12)	37	22	27.5	6.8	33.7	31.4	99.4	77.1	65.6	35.2	-
SS-101	36+13	35' LT	-L-	13.4-14.9'	A-6(8)	30	14	2.1	25.1	37.9	34.9	100.0	99.6	74.2	45.5	-
SS-102	36+13	35' LT	-L-	28.4-29.9'	A-7-6(20)	41	26	12.6	7.5	49.4	30.3	99.8	91.3	80.8	23.4	-

ND = NOT DETERMINED

NV = NO VALUE

NP = NON-PLASTIC

allat 2. Roma 2 Albert Romero Print Name 115-01-0504 Signature Certification #

B-4926/ Bridge No.34 on NC 55 (-L-) over Neuse River Overflow at -L- Sta. 35+00

SITE PHOTOGRAPH

