51003 REFERENCE

BP.

STATE OF NORTH CAROLINA

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

CONTENTS

SHEET NO.	DESCRIPTION
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STRUCTURE SUBSURFACE INVESTIGATION

COUNTY JONES

PROJECT DESCRIPTION BRIDGE NO. 32 ON -L- (SR 1142) OVER TUCKAHOE CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-510032	1	12

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 707-6550. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU INN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS,

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE 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 HINSELF AS TO CONDITIONS TO BE ENCOUNTERED OF 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.

- IES:
 THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT
 OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS
 OR CONTRACT FOR THE PROJECT.
 BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS
 FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE
 CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL C.J. CORNETTE S.N. ZIMARINO R.E. SMITH J.M. EDMONDSON

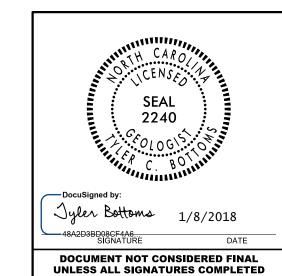
A.N. KITNER

D.G. PINTER

R.E. CLARKE INVESTIGATED BY __T.C. BOTTOMS

DRAWN BY _T.C. BOTTOMS

DATE NOVEMBER 2017



PROJECT REPERENCE NO. SHEET NO.

SF-510032

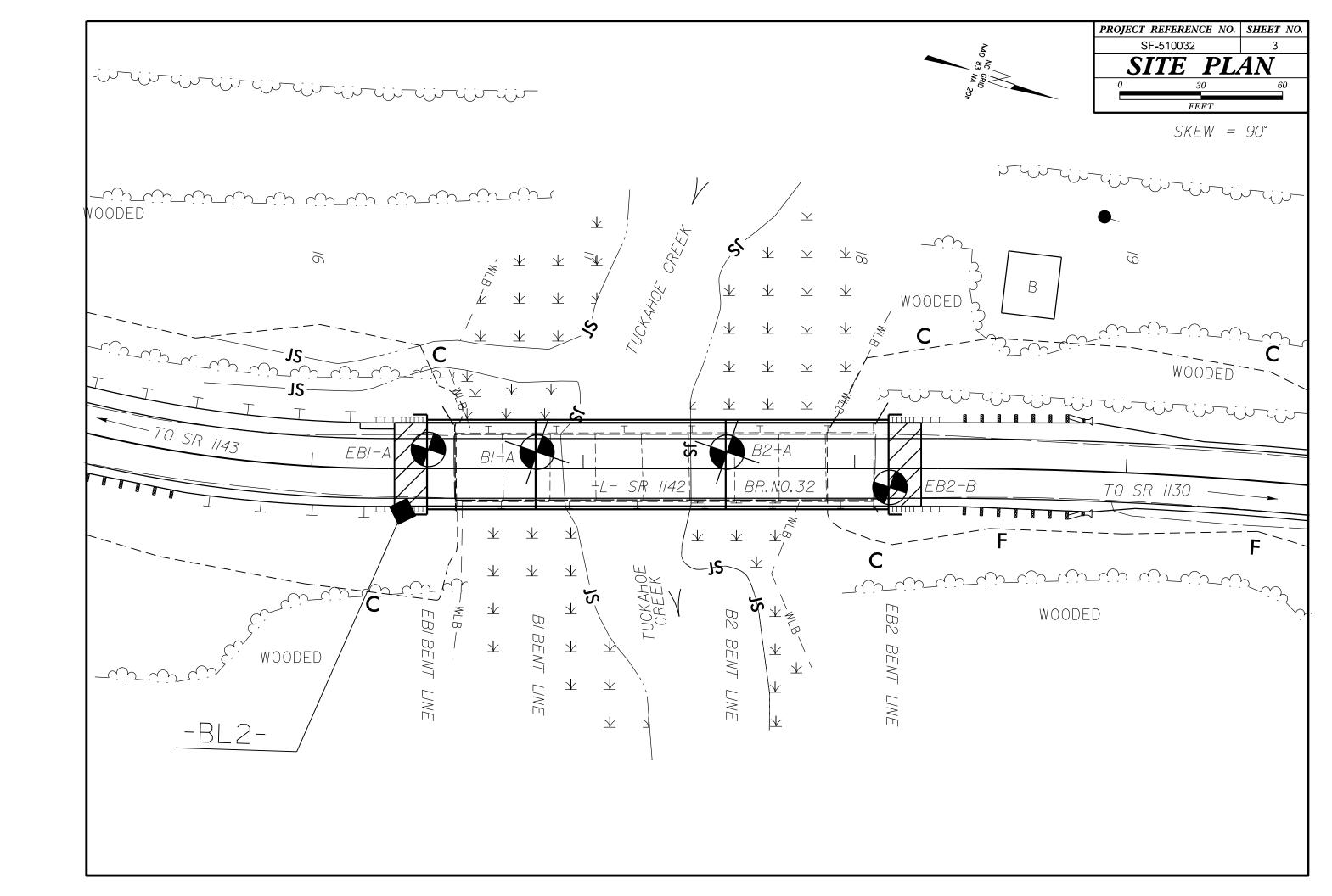
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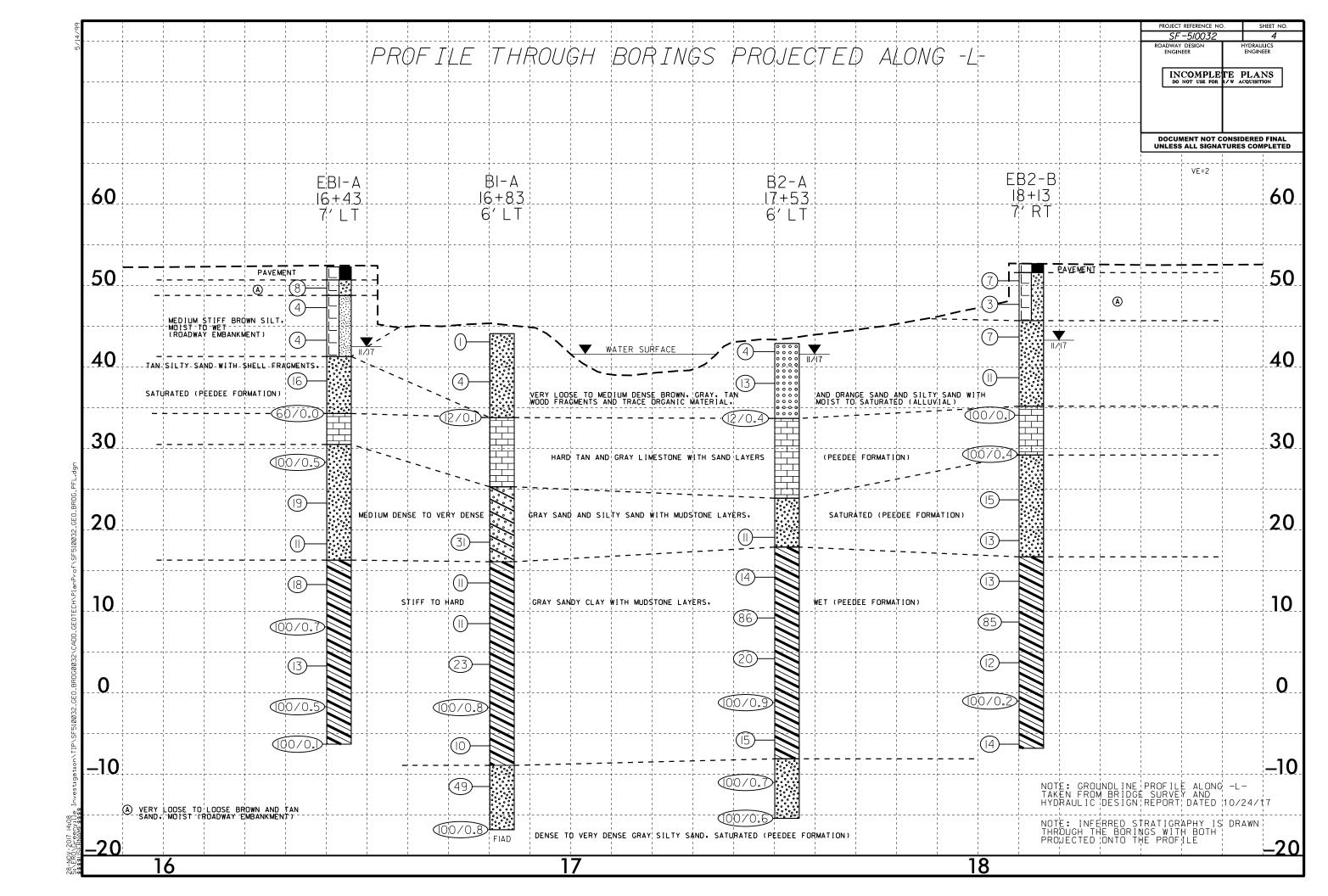
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

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.	ALLUYIUM (ALLUY.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION	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.
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: 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, <u>SUBANGULAR, SUBROUNDED</u> , OR <u>ROUNDED</u> .	WEATHERED // 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 CRYSTALLINE CRYSTALLINE	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND
LLASS. (≤ 35% PASSING "200) (> 35% 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. <u>CALCAREOUS (CALC.)</u> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
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-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 B-2-6 A-2-7 A-4, A-5 A-3 A-6, A-7	COMPRESSIBILITY	NON-CRYSTALLINE FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
SYMBOL COCCOGCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCCOCC	SLIGHTLY COMPRESSIBLE LL < 31	ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.
7. PASSING	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 BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
*10 50 MX GRANULAR SIL1- MUCK,	PERCENTAGE OF MATERIAL	CP) SHELL BEDS, ETC. WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT
#40 30 MX 50 MX 51 MN PEAT SOILS PEAT SOILS SOILS PEAT	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS SOILS OTHER MATERIAL	FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER	ROCKS OR CUTS MASSIVE ROCK.
MATERIAL	TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10%	HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
PASSING *40 SOILS WITH	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% 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,	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE
LL 40 MX 41 MN LITTLE OR PI 6 MX NP 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN 11 MN 11 MN MODERATE HIGHLY	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	(V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.	LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
GROUP INDEX 0 0 0 4 MX 8 MX 12 MX 16 MX NO MX AMOUNTS OF SOULS	GROUND WATER	SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE
USUAL TYPES STONE FRAGS. FINE SILTY OR CLAYEY SILTY CLAYEY MATTER	✓ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(SLI.) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
OF MAJOR GRAVEL, AND 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
CEN PATING		(MOD.) GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS	PARENT MATERIAL.
AS SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR UNSUITABLE	SPRING OR SEEP	DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED 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 OR 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 SPECIAL POPULAR OF SLOPE INDICATOR	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 GRANULAR LOOSE 4 TO 10	SOIL SYMBOL SOIL SYMBOL SCOPE INDICATOR VIST PMT SCOPE 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 DENSE 10 10 30 N/A	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CONE PENETROMETER	IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
(NON-COHESIVE) VERY DENSE > 50	THAN ROADWAY EMBANKMENT TEST	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 VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u>	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 MN MONITORING WELL TEST BORING WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
MATERIAL STIFF 8 TO 15 1 TO 2 COHESIVE) VERY STIFF 15 TO 30 2 TO 4	THE ALLEMAN SOLUTION A PIEZOMETER COST N. MALLES	SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE
HARD > 30 > 4	TTT+++ ALLUVIAL SOIL BOUNDARY △ FIEZOMETER INSTALLATION SPT N-VALUE	ROCK HARDNESS	RUN AND EXPRESSED AS A PERCENTAGE.
TEXTURE OR GRAIN SIZE	RECOMMENDATION SYMBOLS	VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK, BREAKING OF HAND SPECIMENS REQUIRES	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
U.S. STD. SIEVE SIZE 4 10 40 60 200 270	UNDERCUT UNCLASSIFIED EXCAVATION - UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - 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
OPENING (MM) 4.76 2.00 0.42 0.25 0.075 0.053	USED IN THE TOP 2 FEET OF	HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
BOULDER COBBLE GRAVEL SAND SAND SILI CLAY	ONDERCOT LASS ACCEPTABLE DEGRAPABLE 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
(CSE, SD.) (F SD.)	ABBREVIATIONS	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 I 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.
SOLI 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. 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 DPT - DYNAMIC PENETRATION TEST SAP SAPROLITIC S - BULK	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. VERY CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH	STRATA ROCK QUALITY DESIGNATION (SROD) - 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 FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	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 SEMISOLID; REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
(PI) PL PLASTIC LIMIT ATTAIN OPTIMUM MOISTURE	FRAGS FRAGMENTS	FRACTURE SPACING BEDDING TERM SPACING TERM THICKNESS	BENCH MARK: BL-2
	EQUIPMENT USED ON SUBJECT PROJECT	VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED 4 FEET	N=469589.4710 E=2425262.3470 ELEVATION: 51.83 FEET
OM OPTIMUM MOISTURE - MOIST - (M) SOLID; AT OR NEAR OPTIMUM MOISTURE SL SHRINKAGE LIMIT	DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:	WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET	
REQUIRES ADDITIONAL WATER TO	X 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	NOTES:
- DRY - (D) ATTAIN OPTIMUM MOISTURE	X CME-55 G: CONTINUOUS FLIGHT AUGER CORE SIZE:	THINLY LAMINATED < 0.008 FEET	FIAD: FILLED IMMEDIATELY AFTER DRILLING
PLASTICITY	8* HOLLOW AUGERS	INDURATION	
PLASTICITY INDEX (PI) DRY STRENGTH	CME-550 HARD FACED FINGER BITS X-N XWL	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.	
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT	VANE SHEAR TEST TUNGCARBIDE INSERTS HAND TOOLS:	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.	
MODERATELY PLASTIC 16-25 MEDIUM	X CASING W/ ADVANCER POST HOLE DIGGER	CRAING CAN BE CERARATER FROM CAMPLE WITH CIFEL BRODE	
HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST X TRICONE 2 15/6 STEEL TEETH HAND AUGER	MODERATELY INDURATED BREAKS EASILY WHEN HIT WITH HAMMER.	
COLOR	TRICONE TUNG,-CARB. 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).	X CORE BIT VANE SHEAR TEST	CHARD HAMMED DI ONE DECITION TO DREAM CAMBLE.	
MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14





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WBS	17BP.:	2.R.77			TII	SF-510032 COU	INTY	' JONES				GEOLOGIST Zimarino, S. N.	
SITE	DESCR	PTION	BRID	DGE NU	IMBEI	R 32 ON -L- (SR 1142) OVE	RT	UCKAHOE C	REEK				GROUND WTR (ff
BORI	NG NO.	EB1-	4		ST	ATION 16+43		OFFSET 7	ft LT			ALIGNMENT -L-	0 HR. N/A
COLI	AR ELE	V . 52	2.3 ft		TC	TAL DEPTH 58.6 ft		NORTHING	469,59	91		EASTING 2,425,238	24 HR. 9.8
DRILL	RIG/HAM	MER EF	F./DATI	E GFO0	075 C	ME-45C 84% 08/21/2017			DRILL M	ETHOD	Mud	Rotary HAMME	R TYPE Automatic
DRIL	LER E	dmonds	on, J.	M.	ST	ART DATE 11/13/17		COMP. DAT	E 11/1	13/17		SURFACE WATER DEPTH N/A	
ELEV (ft)	DD11 /E	DEPTH (ft)	BLC	w cou	NT 0.5ft	BLOWS PER F0 0 25 50		75 100	SAMP. NO.	MOI	L O G	SOIL AND ROCK DESC	RIPTION DEPTH (
55	-	- -									-	52.3 GROUND SURFA	CE c
50	50.7 -	- - 1.6								L		50.7	1
50	48.3 ⁻	- - 4.0	1	3	5	8				Ļ		ROADWAY EMBANK 48.8 BROWN SAND, MO	
45	44.3	- 4.0 - - - 8.0	1	2	3	4						** ROADWAY EMBANK BROWN SILT, MOIST ** .	
	-	_				:\ : : : : : : : : :	: :			_	<u>.</u>	.41.3	<u>11</u>
40	39.3	13.0	10	10	6	16	: :			0		TAN SILTY SAND WITI FRAGMENTS, SATURATE FORMATION)	H SHELL
35	34.3	18.0								•	₩ <u>.</u>	34.3	18
30	-	- - -	60/0.0					60/0.0				COASTAL PLAIN SEDIMEN HARD GRAY LIMESTONE FORMATION) 30.5 COASTAL PLAI	E (PEEDEE 21
25	29.3 - - - -	- 23.0 - - -	16	100/0.5				100/0.5			-	GRAY SILTY SAND WITH LAYERS, SATURATED FORMATION)	MUDSTONE
20	24.3 - - - 19.3 -	- - -	10	9	10								
15	14.3	- - - - - 38.0	3	5	6		: :					16.3 COASTAL PLAII GRAY SANDY CLAY WITH	
10	- - -	- - -	5	8	10		: : : : 					LAYERS, WET (PEEDEE F	
5	9.3	- 43.0 - - -	8	37 6	3/0.2		· ·	100/0.7				•	
	4.3	48.0	8	7	6		: :					•	
0	-0.7 -	53.0 -	50	100/0.5				- 100/0.5					
-5	-5.7 -	- 58.0 -	- 52	100/0.1				100/0.1				-6.3 Boring Terminated at Eleva	tion -6.3 ft in
		-										Very Hard Sandy C	иау

SHEET 5 OF 12

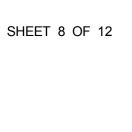
								UKE L	<u> </u>		_	
WBS	17BP.	2.R.77			TI	P SF-510032	COUNT	Y JONES			GEOLOGIST Kintner, A. N.	_
SITE	DESCR	IPTION	BRID	OGE N	UMBE	R 32 ON -L- (SR 1142) OVER T	UCKAHOE C	REEK			GROUND WTR (ft)
BORI	NG NO.	B1-A			S	TATION 16+83		OFFSET 6	ft LT		ALIGNMENT -L-	0 HR. N/A
COLI	AR ELE	EV . 44	1.1 ft		т	OTAL DEPTH 60.9 ft		NORTHING	469,62	29	EASTING 2,425,226	24 HR. FIAD
DRILL	RIG/HAM	IMER EF	F./DATI	E RFC	 00074 C	ME-55 90% 07/12/2016			DRILL M	ETHOD Mu	d Rotary HAMN	IER TYPE Automatic
DRIL	LER Pi	nter. D	. G.		S	TART DATE 11/20/17	7	COMP. DAT			SURFACE WATER DEPTH N	/A
LEV	DRIVE			W CO		1 1	PER FOOT	l	SAMP.			
(ft)	ELEV (ft)	(ft)		0.5ft		 	60	75 100	NO.	MOI G	SOIL AND ROCK DES	SCRIPTION DEPTH (ft)
	(1-7)									V MOI G	LLL V. (II)	DLF III (it)
45	44.1	0.0	ļ								44.1 GROUND SURF	ACE 0.0
	<u>-</u>	Ł	WOH	WOH	1	1					ALLUVIAL BROWN SILTY SAND V	VITH WOOD
40	-	F									FRAGMENTS, MOIST TO	SATURATED
	39.2	4.9	2	2	2	1					-	
	-	‡	-	-		••••••						
35	-	<u> </u>				.\					=	
	33.9 -	10.2	12/0.1			\		12/0.1			. 33.8 . 33.6 COASTAL PLAIN SEDIME	10.3 NTARY ROCK 10.5
	-	Ī									HARD TAN AND GRAY WITH SAND LAYERS	LIMESTONE
30	_	F									FORMATION	
	-	‡									• •	
	-	‡									· · 25.3	18.8
25	-	t				 		+			COASTAL PLA	AIN
	-	-									GRAY CLAYEY SAND, S PEEDEE FORMA	
20	-	F				::::	: : : :				•	
	19.5	24.6	9	14	17						_ ,	
	-	<u> </u>				:::://**					· 16.1	00.0
15	14.5	20.6				/					COASTAL PLA	
	14.5	29.0	3	5	6	1 - 11					GRAY SANDY CLAY, W FORMATION	
	-	F										,
10	9.5	34.6						ļ · · · · ·			-	
	-	‡	3	5	6						•	
_	-	<u> </u>				: : \ : : : : :						
5	4.5	39.6	6	13	10			+			_	
	-	<u> </u>	"	13	10	23					•	
0	-	F				::::::					•	
	-0.5 -	44.6	5	6	94/0.3			`			-	
	-	‡						100/0.8			•	
-5	-5.5 -	100									-	
	-5.5	49.6	4	4	6	•10						
	-	F									- -8.9	53.0
10	-10.5 -	54.6						ļ · · · · ·			COASTAL PLA GRAY SILTY SAND, SA	AIN
	-	ţ	6	21	28	:::: ::::::::::::::::::::::::::::::::	49				(PEEDEE FORMA	ATION)
	-	<u> </u>										
15	-15.5	59.6	14	45	55/0.3	 					_	
			14	45	33/0.3			100/0.8	1		-16.8 Boring Terminated at Elev	60.9 ation -16.8 ft in
	-	ļ.									Very Dense Sa	
	-	ļ								‡	-	
	-	ţ .										
	-	Ł									-	
	-	F									- ·	
	-	‡								‡	•	
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SHEET 6 OF 12

											KE LUG				
	17BP.					SF-51					ONES	GEOLOGIST Kintner	, A. N.		
				DGE NUM			,	1142) C	VER	_	AHOE CREEK			-	D WTR (ft)
BORI	NG NO.	B1-A			STA	TION	16+83			OF	FSET 6 ft LT	ALIGNMENT -L-		0 HR.	N/A
COLI	LAR ELE	E V . 44	.1 ft		TOT	AL DE	PTH 60).9 ft		NO	RTHING 469,629	EASTING 2,425,226		24 HR.	FIAD
DRILL	. RIG/HAM	IMER EF	F./DATI	E RFO007	74 CME	-55 90%	6 07/12/2	016			DRILL METHOD Mud	Rotary	HAMM	ER TYPE	Automatic
DRIL	LER Pi	nter, D.	G.		STAI	RT DA	TE 11/	20/17		CC	MP. DATE 11/20/17	SURFACE WATER DE	PTH N	/A	
COR	E SIZE	NX					1 11.5								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft) %	UN RQD (ft) %	SAMP. NO.	REC. (ft)	RATA RQD (ft) %	L O G	Df ELEV. (ft)	ESCRIPTION AND REMAR	RKS		DEPTH (ft)
33.58												Begin Coring @ 10.5 ft			
30	33.6 - 32.1 - - - - 27.1 -	10.5	1.5 5.0	0:27/0.5 0:52/1.0 0:18/1.0 0:06/1.0 0:15/1.0 0:24/1.0 0:07/1.0	(1.4) 93% (1.7) 34%	(1.4) (93% / (0.4) 8%		(3.1) 37%	(1.8) 22%		- 33.6 HARD TAN AND GF - - - - -	RAY LIMESTONE WITH S FORMATION)	AND LAYE	ERS (PEED	DEE 10.5
25	22.1	22.0	5.0	0:10/1.0 3:12/1.0 0:03/1.0 0:04/1.0 0:02/1.0	2%	(0.0) 0%					- 25.3 GRAY CLAYEY	COASTAL PLAIN SAND, SATURATED (PE	— — — - EDEE FOR	 RMATION)	18.8
20	- - -			N=31							- - - -				
15	_	‡										COASTAL PLAIN			<u>28.0</u>
	-	_		N=11							_ GRAY SAN	DY CLAY, WET (PEEDEE	FORMA	ION)	
10	-	<u> </u>									- -				
10	- - -	-		N=11							- - -				
5	-	<u> </u>									- -				
_	-	F		N=23							- -				
	-	Ī									- -				
0	_	-		N=100/0.8							- - -				
	_	E		N=100/0.8	1						- - -				
-5	_	E									- - -				
	-			N=10							- - -				
	_	F									- - -8.9				53.0
-10	_			N=49								COASTAL PLAIN AND, SATURATED (PEEI	DEE FOR	MATION)	
-15	- -	-									- - -				
	-		-	N=100/0.8	1					****	16.8 Boring Termin	ated at Elevation -16.8 ft ir	Very Den	se Sand	60.9
	-	F									-		-		
	-	F									-				
	-	F									-				
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SHEET 7 OF 12

										UKE L	.00				
WBS	17BP.	2.R.77			TI	P SF-5	10032	(COUNT	/ JONES				GEOLOGIST Kintner, A. N.	
SITE	DESCR	IPTION	BRII	DGE N	IUMBE	R 32 ON	-L- (SR	1142)	OVER T	UCKAHOE	CREEK				GROUND WTR (ft
BOR	NG NO.	B2-A			S ⁻	TATION	17+53			OFFSET	6 ft LT			ALIGNMENT -L-	0 HR. N/A
COL	LAR ELE	EV . 42	2.9 ft		T	OTAL DE	PTH 5	8.3 ft		NORTHING	469,6	96		EASTING 2,425,203	24 HR. 1.0
ORILL	. RIG/HAN	IMER EF	F./DAT	E RFC	O0074 C	ME-55 90	% 07/12/2	2016			DRILL N	METHOD	Mud	Rotary HAMM	ER TYPE Automatic
DRIL	LER Pi	inter, D	. G.		S ⁻	TART DA	TE 11.	/16/17		COMP. DA	TE 11/	16/17		SURFACE WATER DEPTH N/	A
LEV	DRIVE	DEPTH	BLC	ow co	UNT		BLC	DWS PE	R FOOT	•	SAMP.		L	COIL AND DOOK DEC	CDIDTION
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50)	75 100	NO.	MOI		SOIL AND ROCK DES	DEPTH (
45															
	42.9	0.0											F	42.9 GROUND SURF.	ACE 0
	42.9 -	- 0.0	1	2	2	4						V	0000	ALLUVIAL	
40	39.0	3.9											-	GRAY AND TAN SAND V ORGANICS, MOIST TO S	
	39.0	3.9	6	7	6	· \ · · ·•1	3-						0000		
25	-	‡				:::::							0000-		
35	34.1	8.8	12/0.4			 i _				<u> </u>			0000	33.7	9
	-	<u> </u>	12/0.4	1		: : -							卦	33.4 COASTAL PLAIN SEDIME HARD TAN AND GRAY I	NTARY ROCK 9
30	_	Ł											垚	WITH SAND LAYERS FORMATION	(PEEDEE
	-	F									10		#	PORIVIATION)
	-	F											F		
25	_	F											#	23.9	19
	-	‡				:;=				 -	11			COASTAL PLA	JN
20	20.1	22.8				:::::							<u></u>	GRAY SILTY SAND WI FRAGMENTS, SATURAT	ED (PEEDEE
20	20.1	22.8	7	6	5	- 11								FORMATION	•
	-	‡				::::								. 17.9 COASTAL PLA	
15	15.2	27.7	<u> </u>											GRAY SANDY CLAY WITH LAYERS, WET (PEEDEE	
	-	ł	4	6	8	• • 1	14.								
	-	+					. . `	·							
10	10.2	32.7	3	12	74					●86					
	-	F							٠	. –					
5	5.2	37.7							 :						
	-	-	13	10	10	1	●20							•	
	-	‡				:::	: : ` :	~:~:	 						
0	0.2	42.7	5	6	94/0.4				·						
	-	‡			04/0.4	:::				100/0.9	•				
_		<u> </u>				:::		·		T::::					
-5	<u>-4.8</u>	47.7	3	6	9		15			 					
	-	†	1			:::	: 77.	·÷:[-8.1	51
10	-9.8	52.7			00/2 =		-	· · [<u> </u>				COASTAL PLA GRAY AND TAN SILT	IN
	-	ł	32	61	39/0.2		-			100/0.7	<u> </u>		:::\F	SATURATED (PEEDEE F	
	-	Ė	1												
15	-14.8	57.7	65	35/0.1	 	<u> </u>				100/0.6				15.4	58
	-	Ŧ		Ī	1					100/0.6				Boring Terminated at Eleva Very Dense Sa	
	-	Ŧ	1												
	-	‡	1										-		
	-	‡	1												
	-	ţ											L		
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											L LOO				
	17BP.:				<u> </u>	SF-51					ONES	GEOLOGIST Kintner,	A. N.		
				DGE NUM				142) C	VER 7	_	AHOE CREEK				WTR (ft)
	ING NO.					TION				_	FSET 6 ft LT	ALIGNMENT -L-		0 HR.	N/A
COL	LAR ELE	EV . 42	2.9 ft		TOT	AL DEF	PTH 58	.3 ft		NO	RTHING 469,696	EASTING 2,425,203		24 HR.	1.3
DRILL	RIG/HAM	IMER EF	F./DAT	E RFO007	74 CME	-55 90%	6 07/12/20)16			DRILL METHOD Mud	Rotary	HAMME	R TYPE	Automatic
DRIL	. LER Pi	nter, D.	. G.		STAF	RT DA	ΓΕ 11/1	16/17		СО	MP. DATE 11/16/17	SURFACE WATER DE	PTH N/A	١	
COR	E SIZE	NX			1		1 11.0 f			L.					
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (ft)	JN RQD (ft) %	SAMP. NO.	REC. (ft)	RQD (ft) %	L O G	DE	ESCRIPTION AND REMAR	KS		DEPTH (ft)
33.37	33.4 - 32.4 /	9.5 10.5	1.0	1:36/1.0	(1.0)	(1.0)		(3.0)	(2.1) 22%		33.4 HARD TAN AND GF	Begin Coring @ 9.5 ft RAY LIMESTONE WITH SA	ND LAYEF	RS (PEEDE	E 9.5
30	27.4	15.5	5.0	0:49/1.0 0:25/1.0 0:14/1.0 0:10/1.0 0:20/1.0	(1.5) 30%	\100%/ (1.1) 22%		3270	2270		- -	FORMATION)			
25	27.4	13.3	5.0	0:41/1.0 0:27/1.0 0:14/1.0	(0.5) 10%	(0.0) 0%					- - _ _ 23.9				19.0
20	22.4	20.5		0:23/1.0 0:22/1.0							- GRAY SILTY SA	COASTAL PLAIN ND WITH SHELL FRAGME (PEEDEE FORMATION)		URATED	
	-	-		N=11								COASTAL PLAIN AY WITH MUDSTONE LAY			<u> 25.0</u>
15	- -			N=14							- GRAT SANDT CL	FORMATION)	EKS, WE	I (PEEDEE	_
10	- - - -			N=86							- - - -				
5	-	<u> </u>		N=20							- - - -				
0	- - -	-		N=100/0.9	,						- - - -				
-5	-			N=15							- - - -				54.0
-10				N=100/0.7	<u> </u> 						8.1 - GRAY AND TAN SIL -	COASTAL PLAIN TY SAND, SATURATED (F	– – – – PEEDEE F	ORMATIO	N)
-15	- - -	-	_	N=100/0.6	5						- - 15.4 - Boring Termin	ated at Elevation -15.4 ft in	Very Dens	e Sand	58.3

SHEET 9 OF 12

								UKE L						
WBS	17BP.	2.R.77			TI	IP SF-510032	COUNT	Y JONES				GEOLOGIST Zimarino, S. N.		
SITE	DESCR	IPTION	BRII	DGE N	UMBE	R 32 ON -L- (SR 11	42) OVER	TUCKAHOE (CREEK				GROUND V	VTR (ft)
BORI	NG NO.	EB2-	В		S	TATION 18+13		OFFSET 7	ft RT			ALIGNMENT -L-	0 HR.	N/A
COLL	AR ELE	EV . 52	2.7 ft		T	OTAL DEPTH 59.5	ft	NORTHING	469,7	57		EASTING 2,425,196	24 HR.	9.4
DRILL	RIG/HAM	IMER EF	F./DAT	E GFC	00075 C	CME-45C 84% 08/21/201	7	•	DRILL N	METHOD	Mud	d Rotary HAMME	R TYPE Aut	omatic
DRIL	LER Si	mith, R	. E.		S	TART DATE 11/14	/17	COMP. DA	TE 11/	14/17		SURFACE WATER DEPTH N/A	Α	
ELEV	DRIVE	DEPTH		DW CO	UNT	BLOW	S PER FOO	Г	SAMP.		L	OO! AND DOOK DEGG	DIDTION	
(ft)	ELEV (ft)	(ft)	$\overline{}$	0.5ft	0.5ft	0 25	50	75 100	NO.	моі	O G	SOIL AND ROCK DESC		DEPTH (ft)
55														
-33		<u> </u>									F	-		
	51.6 -	1.1										52.7 GROUND SURFA		0.0
50	-	_	3	3	4	→ 7 · · · · ·					- ::-	ROADWAY EMBANK BROWN AND TAN SAN		
	48.7 -	4.0	2	1	2	{ <i>f</i> ::: :::		: : : : :			-	2.1.0 1.1.7 1.1.2 1.7 1.1 0.7 1.1	.5,	
	-	-	-		_	$\begin{vmatrix} \mathbf{q}_3 \\ \mathbf{v} \end{vmatrix} = \mathbf{q}_3$.			-	_45.7		7.0
45	44.7 -	8.0	2	3	4	1				l _ 🖟		ALLUVIAL		
	-	ļ	-	٥	4	7					:::	ORANGE AND TAN SAND SATURATED		
	- -	ţ						.						
40	39.7 -	13.0	2	5	6	1 - 1		+				-		
	_	F	-			11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					F			
35	-	ļ				:::::					:::	35.2		17.5
-55	34.7 -	18.0	32	100/0.1				100/0.1	,			COASTAL PLAIN SEDIMEN		
	-	t									士	HARD TAN LIMESTONE FORMATION)		
30	29.7 -	23.0					-	.			毌			
	<u> </u>	23.0	100/0.4	4				100/0.4	•			- 29.2 — — — — COASTAL PLAI	<u></u>	23.5
	-	‡						: - []			**	GRAY SAND, SATURATE FORMATION)	D (PEEDEE	
25	24.7 –	28.0									<u> </u>	-	1	
			7	7	8	15		: : : : :			::: <u>t</u>			
	_	F				::::::		.						
20	19.7 -	33.0]						-		
	-	‡	6	6	7	13		.						
	-	t				::!:: :::	-	.				- 16.7 COASTAL PLAI	<u></u>	36.0
15	14.7 -	38.0	4	5	8	 					3	 GRAY SANDY CLAY, WE 	T (PEEDEE	
	_	F	'			13.					3	FORMATION)	1	
10	-	ļ					\$ \ [[]	.			3			
10	9.7 -	43.0	20	48	37	1	- 	\$85 .				-		
	-	t					: :	: → · •°° :			3			
5	4.7 -	48.0				· · · · ·		.						
	4.7 -	- 40.0	5	6	6						N.	-		
	-	‡				::::::*					3			
0	-03 -	53.0										_		
	-		11	100/0.2				100/0.2	•		3			
	_	 					· ا ـــــــــــــــــــــــــــــــــــ				3			
-5	-5.3 -	58.0	10	_			:1:				3	-		
	-	<u> </u>	12	8	6	14 7	-		-		*	-6.8 Boring Terminated at Eleva	ation -6.8 ft in	59.5
	- -	‡									þ	Stiff Sandy Cla	y	
	-	ţ									F	-		
	-	ł									F			
	-	F									F			
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SHEET 10 OF 12

CORE PHOTOGRAPH B1-A 10.5' TO 22.0'



CORE PHOTOGRAPH B2-A 9.5' TO 20.5'

