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REFERENCE

DESCRIPTION TITLE SHEET LEGEND (SOIL & ROCK) SITE PLAN PROFILE BORE LOGS

STATE OF NORTH CAROLINA

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

STRUCTURE SUBSURFACE INVESTIGATION

COUNTY PITT

PROJECT DESCRIPTION BRIDGE NO. 171 ON -L-(SR 1418) OVER JOHNSONS MILL RUN

\sim Ó R () 7BP. PROJEC

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4788	1	7

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) TOT-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAIL

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

THE BIDDER OF CONTRACTOR IS CALIFORMUM AND MIDIL AS DUTILS AND UNDER THE UNDER THE CONTRACTOR IS CALIFORED TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN NOTATION ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN NOTOMETURATION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN NOTOMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERRETATIONS MADE, OR OPHION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONSTRUCTIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR SCALIFONE TO MARE 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: I. 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 HAIVING 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

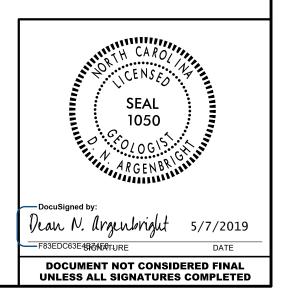
J.P. DELOATCH R.E. SMITH

S.N. ZIMARINO

J.M. EDMONDSON

J.P. PEHRSON

INVESTIGATED BY ______ DRAWN BY <u>S.N.</u> ZIMARINO CHECKED BY _____. M. ARGENBRIGHT SUBMITTED BY ______. DATE MARCH 2019



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION

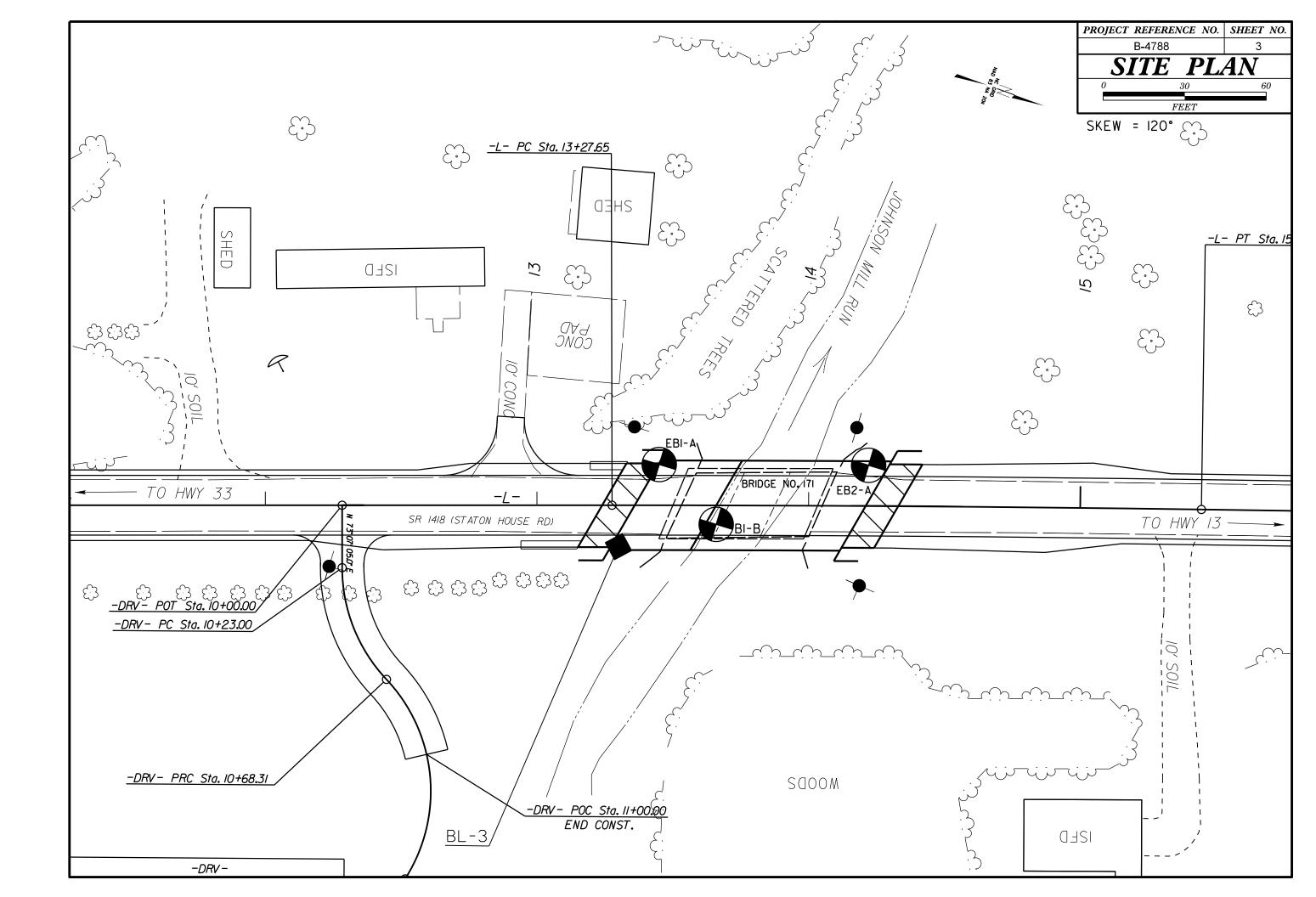
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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.	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	UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <u>GAP-GRADED</u> - 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	ADUIFER - A WATER BEARING FORMATION OR STRATA.				
IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING:		BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.				
CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,	ANGULARITY OF GRAINS	ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:	ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING				
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:	WEATHERED NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES >	A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.				
SOIL LEGEND AND AASHTO CLASSIFICATION	ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	ROCK (WR) 100 BLOWS PER FOOT IF TESTED.	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT				
GENERAL CRANILLAR MATERIALS SUIT-CLAY MATERIALS	MINERALOGICAL COMPOSITION	CRYSTALLINE FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND				
CLASS. (≤ 35% PASSING #200) (> 35% PASSING #200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC.	BOCK (CP)	SURFACE.				
GROUP A-1 A-3 A-2 A-4 A-5 A-6 A-7 A-1, A-2 A-4, A-5	ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.		CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.				
CLASS. A-1-a A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-75 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				
	SLIGHTLY COMPRESSIBLE LL < 31	ROCK INCRI ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.	OF SLOPE.				
SYMBOL 0000000000	MODERATELY COMPRESSIBLE LL = 31 - 50	COASTAL PLAIN COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK BUT MAY NOT YIELD	CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED				
% PASSING SILT-	HIGHLY COMPRESSIBLE LL > 50	SEDIMENTARY ROCK SEDIMENTARY SEDIMENTARY ROCK SEDIMENTARY ROCK SEDIMENTARY ROCK SEDIMENTARY ROCK SEDIMENTARY ROCK SEDIMENTARY ROCK SEDIMENTARY	BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.				
10 50 MX GRANULAR CLAY MUCK	PERCENTAGE OF MATERIAL	WEATHERING	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT				
■40 30 MX 50 MX 51 MN ■200 15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN 36 MN 36 MN	GRANULAR SILT - CLAY ORGANIC MATERIAL SOILS OTHER MATERIAL		ROCKS OR CUTS MASSIVE ROCK.				
	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 HAMMER IF CRYSTALLINE.	DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE				
PASSING #40	LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20%	VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN,	HORIZONTAL.				
LL – – 40 MX 41 MN LITTLE OR	MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35%	(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 10 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN MODERATE HIGHL	HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE	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 SOLUTION		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 EPACS	WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING	(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 GRAVEL, AND SAND CRAVEL AND SAND SOLIS SOLIS		CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.				
MATERIALS SAND SHIND ON AVEL HIND SHIND SUILS SUILS	STATIC WATER LEVEL AFTER <u>24</u> 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 UNSUITA	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 SUBGRADE EXCELLENT TO GOOD FAIR TO POOR POOR POOR ONSOLTA		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				
CONSISTENCY OR DENSENESS	MISCELLANEOUS SYMBOLS	SEVERE AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH	FIELD.				
		(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 OF PENETRATION RESISTENCE COMPRESSIVE STRENGT	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				
CUNSISTENCY (N-VALUE) (TONS/FT ²)	WITH SOIL DESCRIPTION - OF ROCK STRUCTURES	SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT	ITS LATERAL EXTENT.				
GENERALLY VERY LOOSE < 4	SOIL SYMBOL OF TOMT TEST BORING SLOPE INDICATOR	(SEV.) REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.				
GRANIU AR LOOSE 4 TO 10	1 1 1 1 1 1 1 1 1 1	TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF	MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS				
MATERIAL MEDIUM DENSE 10 TO 30 N/A		VERY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE	USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.				
(NON-COHESIVE) VERY DENSE > 50		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	\downarrow	VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <i>IF <u>TESTED, WOULD YIELD SPT N VALUES < 100 BPF</u></i>	RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.				
SILT-CLAY MEDIUM STIFF 4 TO 8 0.5 TO 1.0	TEST BORING WITH CORE	COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND	ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF				
MATERIAL STIFF 8 TO 15 1 TO 2		SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS	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	TTTTTT ALLUVIAL SOIL BOUNDARY A INSTALLATION OF 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		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		HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED	RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO				
BOULDER COBBLE GRAVEL COARSE FINE SILT CLAY	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.				
(BLDR.) (COB.) (CD.) SAND SAND (SL.) (CL.)		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. SU.) (F SU.)	ABBREVIATIONS	HARD EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED	OR SLIP PLANE.				
GRAIN MM 305 75 2.0 0.25 0.05 0.005	AR - AUGER REFUSAL MED MEDIUM VST - VANE SHEAR TEST	BY MODERATE BLOWS.	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				
SIZE IN. 12 3	BT - BORING TERMINATED MICA MICACEOUS WEA WEATHERED CL CLAY MOD MODERATELY γ - UNIT WEIGHT	MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. HARD CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE	A 140 LB. HAMMER FALLING 30 INCHES REDURED TO PRODUCE A PENETRATION OF I FOOT INTO SUIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EOUAL				
SOIL MOISTURE - CORRELATION OF TERMS	CPT - CONE PENETRATION TEST NP - NON PLASTIC γ_{d} - DRY UNIT WEIGHT	POINT OF A GEOLOGIST'S PICK.	TO OR LESS THAN Ø.1 FOOT PER 60 BLOWS.				
	CSE COARSE ORG ORGANIC	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 - PRESSOREMETER TEST <u>SHAFTEE ADDICTIONS</u>	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	PIECES CAN BE BROKEN BY FINGER PRESSURE.	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 TABL	e - VOID RATIO SD SAND, SANDY SS - SPLIT SPOON 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	LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.				
	FOSS FOSSILIFEROUS SLI SLIGHTLY RS - ROCK	SOFT OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY					
PLASTIC SEMISOLID; REQUIRES DRYING TO	FRAC FRACTURED, FRACTURES TCR - TRICONE REFUSAL RT - RECOMPACTED TRIAXIAL	FINGERNAIL.	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.				
	FRAGS FRAGMENTS w - MOISTURE CONTENT CBR - CALIFORNIA BEARING	FRACTURE SPACING BEDDING	BENCH MARK: BL-3				
(PI) PL PLASTIC LIMIT	HI HIGHLY V - VERY RATIO	TERM SPACING TERM THICKNESS	N: 697744				
- 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	E: 2474220 ELEVATION: 25.87 FEET				
OM _ OPTIMUM MOISTURE	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					
	X CME-45C CLAY BITS X AUTOMATIC MANUAL	CLOSE Ø.16 TO 1 FOOT VERY THINLY BEDDED Ø.03 - Ø.16 FEET	NOTES:				
- DRY - (D) REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE		VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET	-				
	CME-55	THINLY LAMINATED < 0.008 FEET					
PLASTICITY	B HULLUW AUGERS	INDURATION					
PLASTICITY INDEX (PI) DRY STRENGTH	CME-550 ARD FACED FINGER BITS	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.					
NON PLASTIC 0-5 VERY LOW	TUNG-CARBIDE INSERTS	FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS:					
SLIGHTLY PLASTIC 6-15 SLIGHT		GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.					
MODERATELY PLASTIC 16-25 MEDIUM	X CASING W/ ADVANCER	MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE;					
HIGHLY PLASTIC 26 OR MORE HIGH	PORTABLE HOIST X TRICONE IST STEEL TEETH HAND AUGER	MUDERATELY INDURATED BREAKS EASILY WHEN HIT WITH HAMMER.					
COLOR		GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE;					
		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.		SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE:					
MUDIFIERS SUUR HS LIURI, UHRK, SINEHKEU, EIL, AKE USEU IU DESUKIBE APPEARANUE.		EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.	DATE: 8-15-14				
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PROJECT REFERENCE NO.



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			VERY LODSE MOIST TO S	TO MEDIU	M DENSE	GRAY SAN EMBANKN	ID. IENT) 3	1-18	ا <u>۲</u>		ـــــــــــــــــــــــــــــــــــــ	● ● ● ● ● ● ● ●	VERY LO	DSE GRAN	SAND
					VERY LO	Э́SE ТО М — — — —	EDIUM @			ENSE TAN S	and. ©-		SATURAT	D (ALLU	VIAL)
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80					STIFF T	+ 				RED, YELL	gw,		AND ORA DENSE G (CAPE F	NGE SILT	
				DENSE ((CAPE F	GRAY SANI), SATUR/ MATION)	4,TED @) <u>- </u>	© , ⊾			.	!	IFF_RED PEFEAR	-!
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	DENSE TO VI SATURATED	RY DENSE GRAY SAND. CAPE FEAR FORMATION)			 	 							1 1 1 4 	1 1 1 1 1 1 1 1	
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				reference no 8 -4788). 	SHEET NO.
			ROADWAY ENGIN	DESIGN		4 YDRAULICS ENGINEER
				COMPLE'		
,			DO	NUT USE FOR	AFW AC	GUIDTTION
			UNLESS	ALL SIGNA	TURES	ERED FINAL COMPLETED
				VE=	2	
_ + + = = +						30
MOIST TO MBANKMENT)				 		20
					 ! !	20
						10
WOOD FRAGMENTS, WET	ALLUVIA)				
				L I	L I	0
ND. SATURATED					 	10
MENTS, WET GYORKTOWN	FORMATI	bn)			- - - 	20
					- 	
					 	_ 30
<u>v</u>)						
						<u>-</u> 40
URATED (PEEDEE FORMA	TION)				 	50
					1 1 1	
.IGNITE, WET (BLACK C	REEK FOR	MATION .		, 		<mark>60</mark>
LE LE REI (DEACK Q	n run				1 1 1	- -
					 	<mark>_</mark> 70
WET (CAPE FEAR FOR	MATION)			. 	 = =	80
IRATED					 	
AY CLAY.				. 	 	_ 90
					1	100
	NOTE: G TAKEN F HYDRAUL	ROUNDLINE ROM BRIDO IC DESIGN	PROFILE E SURVEY I REPORT	ALONG - AND DATED 02	∟- /05/1	9
	NOTE: IN THROUGH PROJECTE	VFERRED S THE BORI D ONTO T	TRATIGRA NGS WITH HE PROFI	PHY IS D BOTH LE	RAWN	
15			1	6		1

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.2.R.92 TIP B-4788 COU								Y PITT				GEOLOGIST DeLoa	WBS	3 17BP.	2.R.92			TIF	B -4788	COUNTY					
			Bridg	je No.		n -L- (SR 14							GROUND WTR (ft)			-				je No.		-L- (SR 14	hnson Mi	II F	
BORI	NG NO.	EB1-	Ą	-	S	TATION 1	3+45		OFFSET	15 ft LT			ALIGNMENT -L-		0 HR. N/A	BOR	ING NO.	EB1-	A		ST	ATION 13	3+45		0
COLI	AR EL	EV. 27	'.0 ft		т	OTAL DEP	TH 114.7	7 ft	NORTHING	697,7	58		EASTING 2,474,19	3	24 HR. 6.6	COL	LAR ELE	EV . 27	7.0 ft		то	TAL DEPT	H 114.7 f	ft	N
DRILL	. RIG/HAN	VIMER EF	F./DATI	E GFC	0075 C	ME-45C 89%	608/13/2018	3	1	DRILL	VIETHOD	D M	ud Rotary	HAMM	ERTYPE Automatic	DRILL	RIG/HAN	IMER EF	F./DATE	E GFC	20075 CN	/IE-45C 89%	08/13/2018	I	
DRIL	LER S	mith, R	. E.		S		E 08/26/	11	COMP. DA	TE 08/	29/11		SURFACE WATER	DEPTH N/	A	DRIL	LER St	mith, R	. E.		ST	ART DATE	08/26/11	1	С
ELEV	DRIVE ELEV	DEPTH	BLC	W COI	UNT		BLOWS	PER FOO	T	SAMP.		L	SOIL AND ROCK DESCRIPTION			ELEV	DRIVE ELEV	DEPTH	BLO	W CO	JNT			PER FOOT	
(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	50	75 100	NO.	моі		ELEV. (ft)		DEPTH (ft)	(ft)	(ft)	(ft)	0.5ft	0.5ft	0.5ft	0 2	25 5	50	75
30		Ļ											_			-50							Match	h Line	_
	27.0	+											- 27.0 GRC	UND SURF	ACE 0.0		-51.2 -	78.2	5	6	8	· · • • 14			
25		+ 0.0	2	4	8	· • 12·								AY EMBAN	KMENT	-55	-	+					· · · · ·	· · · · ·	
	23.0	+ 4.0											GRATSAND,		SATURATED	-55	-56.2 -	83.2	13	10	11				+
		+ 4.0	2	2	1				· · · · · ·			L	-				-	+	13	10	11	· · · •	21 · · · ·	· · · · ·	
20	-	‡												ALLUVIAL	7.0	-60		÷						· · · ·	+
	18.8	<u> </u>	3	3	3							0 0 0 0 0 0 0 0 0 0 0 0		ALLOVIAL AND, SATUR	RATED		-61.2 -	88.2	5	8	10	· · · · / ·		· · · · ·	
15		ŧ				.\			· · · · · ·			0 0 0 0 0 0 0 0 0 0 0 0	-			-65		ł							
15	13.8	13.2			0	- +						0000	-			-03	-66.2 -	93.2				· · · · ·			+
		‡	5	6	6	· •12			· · · · · ·			0 0 0 0 0 0 0 0 0 0 0 0	- - 11.0		16.0		-	ŧ	6	7	12		9 · · · · · · · ·	· · · · ·	
10	-	‡				-/						\mathbb{S}		ALLUVIAL	<u> </u>	-70	-	÷					\ · · · ·		_
	8.8	<u> 18.2</u> 	1	1	1	\mathbf{A}_2			· · · · · ·				GRAY CLAY W	WET	FRAGMENTS,		-71.2 -	98.2	9	16	19	· · · ·	· • • 35	· · · ·	
-		ŧ				<u> .</u>							-			75	-	ł							
5	3.8	23.2				1 1							-			-75	-76.2 -	103.2					<u>;;::</u>		+
		ŧ	2	3	3	6							-				-	ł	10	12	17	· · · ·	4 29 · · ·	· · · · ·	
0	-	ŧ												ALLUVIAL	<u></u> <u>26.0</u>	-80	-	Ł					<u> </u>		
	-1.2	28.2	1	2	2	 : : :							GRAY SAND W	ITH WOOD			-81.2 -	108.2	6	9	24	· · · ·		· · · ·	
_		ŧ				5 °							-				-	L							
-5	-6.2	- - <u>33.2</u>											_			-85	-86.2 -	113.2					· · · ·		
		+	3	6	11	• • •	7						-				-	-	15	21	20		• • • • 41	<u> </u>	
-10		ŧ										0000		ED COASTA			-	L							
	-11.2	38.2	4	7	7							0000	_ GRAY S	AND, SATU	IRATED		-	L							
		ŧ				1						0000	- <u>-14.0</u>		<u>41.0</u>		-	L							
-15	-16.2	43.2				 							GRAY CLAY W	ASTAL PLA	FRAGMENTS.		-	F							
		t	7	6	5	: •11 :							WET (YOR	KTOWN FO	RMATION)		-	Ł							
-20		Ŧ															-	Ł							
0	-21.2	48.2	3	3	5	· · · ·							-				-	Ł							
-25		ŧ											-				-	Ł							
<u>-25</u>	-26.2	 											-				-	F							
-30		1	4	4	6	• •10 •							-				-	Ł							
-30		Ŧ															-	Ł							
	-31.2	58.2	4	4	6								-				-	É							
200		Ŧ			-			.					- - -34.0		61.0		-	E							
	-36.2	T 63.2							· · · · · ·					OUS SILT. \]	-	E							
-40	-30.2	<u>+ 00.2</u> +	4	4	5			.					GRAY MICACE	ORMATION))		-	F							
8 5 -40		Ŧ				:\:							-				-	F							
	-41.2	68.2	5	7	8								-				-	F							
		Ŧ	Ĭ		J								-				-	F							
-45 -45	46.0	‡											<u>-</u> - <u>-45.0</u>		<u>72.0</u>	4	-	F							
0T BL	-46.2	<u>+ 73.2</u> T	6	7	10	- + - ∳17	7						GRAY MICACE		, SATURATED		-	F							
JOGDU -50		Ŧ											- (FĽEĽ -				-	F							
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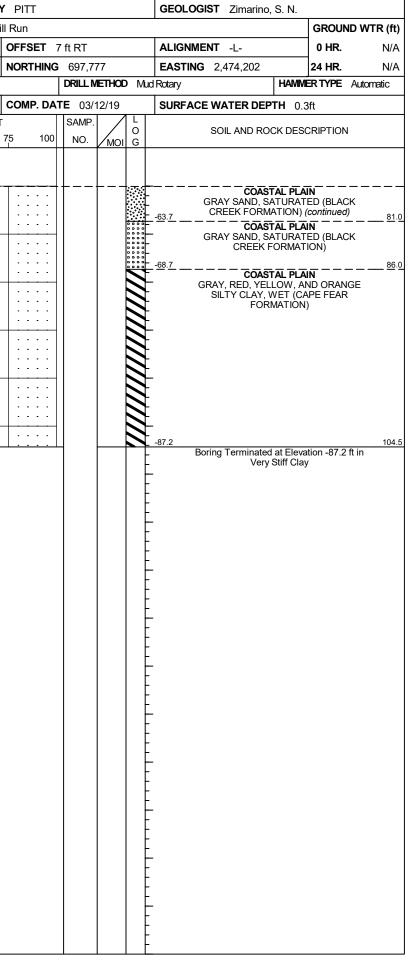
SHEET 5 OF 7

' PITT	GEOLOGIST DeLoatch, J.P.	
l Run		GROUND WTR (ft)
OFFSET 15 ft LT	ALIGNMENT -L-	0 HR. N/A
NORTHING 697,758	EASTING 2,474,193	24 HR. 6.6
DRILL METHOD ML	d Rotary HAMIN	ERTYPE Automatic
COMP. DATE 08/29/11	SURFACE WATER DEPTH N	/Α
75 100 SAMP. L NO. MOI G	SOIL AND ROCK DES	CRIPTION
SAMP. L O		CRIPTION VIN , SATURATED) (continued) VIN WITH LIGNITE, ORMATION) VIN SCLAY, WET MATION) VIN SCLAY, WET MATION) VIN SATURATED MATION) 111.0 VIN VIN ATION) 111.0 VIN ATION) 111.0 VIN
	-	

GEOTECHNICAL BORING REPORT BORE LOG

WRS	17R	P.2.R.92			т	P B-4	788			COUN							GEOLOGIST Zimarino, S. N.			WR	S 17BP	2 R 02	2			ТІ	P B-4788		COUNT	Y
		RIPTION	Bride	ie No				18) ov											ROUND WTR (ft)	-				ridae	No. 1			418) over 、		
) . B1-B		,					2. 00			FFSET	7 ft RT				ALIGNMENT -L-		HR. N/A		RING NO					_	ATION 1			
		L EV. 17	'.4 ft		_)4.5 f	t	_	ORTHING		77			EASTING 2,474,202	_	HR. N/A		LAR EL			ft		_		TH 104.5	ft	N
		MIMER EF		E GFC											HOD	Muc			TYPE Automatic						GFO			608/13/2018		<u> </u>
		Smith, R.			S		DATE	03/	12/19		c	OMP. DA	TE 03/	/12/1	9		SURFACE WATER DEPTH 0).3ft		DRI	LLER S	Smith, F	R. E.			ST	ART DAT	E 03/12/	19	C
ELEV	DRIVE ELEV	, DEPTH		W CO	-			BLO	WSP	ER FO	от		SAMP.			5	SOIL AND ROCK DES	SCRI	PTION	ELE\	/ DRIVE ELEV	DEPT	· · ·	BLOW				BLOWS	PER FOO	r
(ft)	(ft)	(ft)		0.5ft	0.5ft	0	2	5	5	0	75	100	NO.				ELEV. (ft)		DEPTH (fi	(ft)	(ft)	(ft)	0.	5ft C	0.5ft	0.5ft	0	25	50	75
20		+															-			-60	-60.7	78.0		<u> </u>				Mat	ch Line	
	17.4	+ 0.0	W.C.													Ē	17.4WATER SURFACE		2/19)0)		Ŧ		9	17	19		. •36		-
15		Ŧ	WOH	2	0	q 2					-						ALLUVIAL TAN SAND, SATU	L JRATI	ED	-65		Ī.								-
	13.4	4.0	3	2	3	I .					:					E	-				-65.7	<u>+ 83.0</u> _	1	8	35	27				:
		ŧ		3	3	• 6	· ·				-	· · · · ·					10.4		7 (ŧ							/	:
10	9.4	8.0		3	3												10.4 ALLUVIAL GRAY SILTY AND SAND		<u>7.0</u>	-70	-70.7	- 88.0	, ,	8	13	14				+
		‡	'			●6 <u>.</u> 」	· ·	 	· ·	· · ·	-	· · · · ·					GRAT SILTY AND SANL		AY, WEI 11.0			<u>‡</u>		~		,		4 27		:
5	44	+ 13.0									-						-		11.	-75	75.7	+ 93.0						<u>\</u>	· · · ·	
	4.4	+ 13.0	2	3	3		••• •••	· · · ·	· · · ·	· · · ·	•	· · · · ·									-15.1	+ 33.0	1	5	16	20	· · · · ·	. ● 36		
0		‡				¦::	· · · ·		· · ·	· · · ·	:	· · · · ·								-80		‡						·/···		
0	-0.7	+ 18.0	WOH	1	1	$\frac{1}{1:\cdot}$	•••										-			-00	-80.7	+ 98.0 +		8	10	17		<u> </u>		
		ŧ				Ψ ² .	· · · ·	· · ·	· · · ·	· · · ·	-	· · · · ·					-3.7		21.0			‡								-
-5	-5.7	+ 23.0					•••				-						ALLUVIAL GRAY SAN			-85	-85.7	+103.0								-+
		Ŧ	3	2	3	Q 5	•••	· · · ·	· ·	· · · · · ·	•	· · · · ·				-						†		9	11	14		•25	••••	<u>. </u>
-10		Ŧ									-					Ŧ	COASTAL PL	AIN	<u></u> <u>26.0</u>	1		Ŧ								
	-10.7	<u>+ 28.0</u> I	4	6	7		13	•••	•••							Ł	GRAY SILTY AND SAND SHELL FRAGMENTS, WE	ET (YC	.AY WITH ORKTOWN			Ŧ								
		ŧ				. <i>.</i> .	' 	· · ·	· ·		:						-13.7 FORMATIO	N)	31.0			ŧ								
-15	-15.7	+ 33.0	3	3	4	<i> </i> -											-					ŧ								
		ŧ		5	-	.•7	· ·	· · · ·	· ·	· · ·	:	· · · · ·					-18.7		36.0			ŧ								
-20	-20.7	+ 38.0					•••	•••			-				Ň	1	-		00.0			‡								
	20.1	+ 50.0	4	4	5	 . •9	· ·	· · · ·	· · · ·	· · · ·	•	· · · · · · · ·										‡								
-25		ŧ					: :	· · · ·	· · ·	· · · ·	-	· · · · ·				3						‡								
-20	-25.7	+ 43.0	4	4	5	· .										3	-					‡								
		ŧ				- # 8	, 		· · · ·	· · · ·	-	· · · · ·				1	-28.7		46.0			ŧ								
-30	-30.7	+ 48.0			_											1					.	Ŧ								
5/19		Ŧ	3	4	5	9)				-	· · · · ·					aa 7		_			Ŧ								
г 3/25/19 55		<u>I</u>									-					ł		AIN	<u>51.(</u>	1		Ŧ								
	-35.7	<u> </u>	3	4	4		• •				:					Ĩ	GRAY SILT, WET (PEEDE	EE FO	KMATION)			Ŧ								
DO		ŧ				. \ . \	: :	· · ·			-	· · · · ·				Æ						ŧ								
20 -40	-40.7	58.0	5	5	7			<u></u>								ł						+								
rd9.90788		‡		5	'		12.		· · ·	· · ·	:	· · · · ·					-43.7		61.0			<u>‡</u>								
	_157	+ 63.0					۱ ۱				-						GRAY SILTY SAND W			11	.	‡								
GEO	-40.7	+ 03.0	4	6	10		16	 	· · · ·	· · · ·	-	· · · · ·				+	FRAGMENTS, SATURA FORMATIO	TED (‡								
-50 -50		‡					. 		: :	· · ·	-	· · · · ·			×	4			<u> </u>	$\left\{ \right\}$		‡								
	-50.7	+ 68.0	4	5	7	- · ·	1				-					\$	GRAY SILTY CLAY WITH (BLACK CREEK FOR	H LIGN				‡								
OUB		‡					<pre>\'2.</pre>		· · ·	· · · ·	-	· · · · ·				3			,			‡								
BORE DOUBLE	-55.7	+ 73.0					Υ <u>΄</u>				-					3	-					‡								
DT BO		Ŧ	8	10	10		Q 20	 0 	· · · ·	· · · · · ·	-	· · · · · · · ·				3						ŧ								
NCDOT 09-		Ŧ					•••			· · · ·	-						- <u>-58.7</u>		<u></u> <u>76.0</u>	$\left\{ \right\}$		Ŧ								
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SHEET 6 OF 7



GEOTECHNICAL BORING REPORT BORE LOG

	4700	0 0 00					0	001			.00							14/20	4700	0 0 00				D D (70	0	001117			
	17BP.		D.: - 1			FIP B-478	-							GEC	LOGIST DeLoatch, J.I				17BP			No N-		P B-478					
				je NO.		on -L- (SR	,	Jonnso			15 41 -			A								je NO.		,	1418) over	Johnson N	_		
	NG NO.				_	STATION				OFFSET				_			0 HR. N/A		ING NO.								0		
										NORTHING				LEAS Ud Rotar	TING 2,474,167		24 HR. 6.8								PTH 119.		N		
						CME-45C 89											RTYPE Automatic	DRILL RIGHAMMER EFF, DATE GF00075 CWE-45C 89% 08/13/2018											
										COMP. DA									DRILLER Edmondson, J. M. START DATE 08/29/11 ELEV DRIVE ELEV DEPTH BLOW COUNT BLOWS PER										
ELEV (ft)	ELEV	DEPTH (ft)	·	0.5ft			BLOW 25	'S PER F 50		75 100	SAMP	17	Ō		SOIL AND ROCK [DESCI		ELEV (ft)	ELEV	DEPTH (ft)	BLC	0.5ft		0	BLOWS 25	50 PER FOC			
()	(ft)	(,	0.51	0.51	0.51			50			NO.	Имо	I G	ELEV.	(ft)		DEPTH (ft)	()	(ft)	(,	0.51	0.51	0.51				75		
30	28.8 -	0.0													GROUND SU	JRFA	CE 0.0	-50	+	+	-5-	-7-	-8-	- - • • 1	5 <u>Ma</u>	ch Line	<u> </u>		
	- 20.0	- 0.0	1	2	2	• 4 : :						1		-	ROADWAY EME TAN AND BROWN S					Ŧ							•		
25	24.8 -	L 40												F	SATURA	TED		-55	-54.2	<u> </u>	6	8	9						
		+ 4.0	2	1	1	$ \bullet^2 \cdot \cdot$								F						Ŧ	ľ	Ŭ		· · · •	17				
	-	ŧ "								· · · · ·				21.8		<u></u>	7.0		50.0	Ŧ				:::					
20	20.8 -	- 8.0 -	3	2	3	- · · · ·				· · · ·	-			F	TAN AND GRAY SAN	ND WI		-60	-59.2	<u>+ 88.0</u> +	6	7	9		16				
	-	ŧ					· · · · ·						0000	17.8	FRAGMENTS, S	AIUF	ATED 11.0			ŧ				:::\			:		
15	15.8	13.0			-	_ :\;:	:							F				-65	-64.2	93.0) I I I I		:		
10	-	+	2	4	6									F			10.0	-00	-	‡	8	9	14		23				
	-	ŧ				;/::		· · · ·	· · ·	· · · · ·				<u>12.8</u>	ALLUV		<u>16.0</u>			‡					$\begin{bmatrix} N_{1} & \dots \\ N_{n} & \dots \end{bmatrix}$:		
10	10.8 -	- 18.0 -	woн	1	2	-								<u> </u>	GRAY CLAY WITH WC WET	DOD F T	RAGMENTS,	-70	-69.2	<u>+ 98.0</u> +	9	14	22		· · · · ·		-		
	-	ŧ					· · · · ·	· · · ·	· · ·	· · · · ·										‡					$\begin{vmatrix} \cdot & \tilde{f} \\ \cdot & \tilde{f} \end{vmatrix}$	· · · · ·	:		
-	- 5.8 -	23.0					:	: : :						F				75	-74.2	$\frac{1}{103.0}$:		
5	-	ŧ	WOH	3	2	•5 <u></u>								-				-75	-	ŧ	12	13	16				+		
	-	ŧ							· · ·					<u>2.8</u>			<u>26.0</u>			±							:		
0	0.8 -	28.0	woн	wон	1	- <u> i</u>				· · · ·				Ł	GRAY SAND WITH WC SATURA		RAGMENTS,	-80	-79.2	<u>+ 108.0</u>	8	18	28				•		
l	-	Ł						· · · ·		· · · ·				Ł						ł					· · · · /		·		
	-42 -	33.0					:							Ł					-84.2	+ + 113.0					· · · /				
-5	-		2	9	10] ` ı	19							F				-85		+	13	15	20		.		-		
1	-	Ē												<u>-7.2</u>		STAL	PLAIN			Ŧ									
-10	-9.2 -	38.0	8	10	11		1						0000	-	TAN SAND, SA	TURA	ATED	-90	-89.2	+ 118.0	7	10	12		. /				
	-	F					•21						0000	L -12.2			41.0			1					<u>Q22</u>				
	-14.2	43.0												F	GRAY SANDY CLA					Ŧ									
-15	-14.2 -	- 43.0	2	3	3					+				F	FRAGMENTS, WET	Г (YOF			-	Ŧ									
	-	Ŧ												F	FORMAT	ION)				Ŧ									
-20	-19.2 -	48.0	3	4	4									F						Ŧ									
	-	F	Ĭ		•]			-22.2			51.0		-	Ŧ									
	-	53.0												<u> </u>	GRAY MICACEOUS SIL					Ŧ									
-25	-24.2 -	- 55.0	3	4	5	− ;				+ • • • •				F	FORMAT				-	Ŧ									
	-	Ŧ							· · ·					F						Ŧ									
-30	-29.2 -	58.0	<u>,</u>	4	F	_ :¦:								F						ŧ									
		ŧ	3	4	5	- • 9 -					11			-					-	‡									
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-35	-34.2 -	- 63.0 -	3	4	5		-							F					-	‡									
	-	ŧ					· · · · ·	· · · · · ·	· · ·											‡									
40	-39.2 -	68.0					· · · · ·	· · ·						<u></u>	COASTAL					‡									
-40	-	+	4	5	6	11				· · · · ·	1			-	GRAY MICACEOUS SA (PEEDEE FOF				-	‡									
	-	ţ				::::	· · · ·	· · ·	· · ·					ł	•					‡									
-45	-44.2 -	73.0	4	6	9		 5	-						F					-	‡									
	-	ŧ				:: !	· · · ·	· · ·	· · ·	· · · ·				ł						±									
_	-49.2 -	- 78.0					-							<u>-48.2</u>			77.0			ŧ									
-50	10.2	L 0.0				<u>11 i</u>								L						1		L							

SHEET 7 OF 7

