

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5603	1	9

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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 (MIN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DECREE 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. THES WATER LEVELS OR SOIL MOISTIGE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

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INVESTIGATED BY ______S&ME, INC.

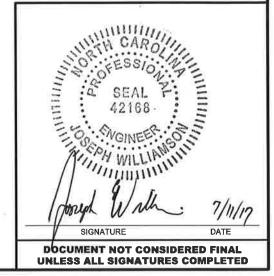
DRAWN BY _____C. CHANDLER

CHECKED BY K. HILL

SUBMITTED BY _J. WILLIAMSON

DATE ______ 2017





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

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

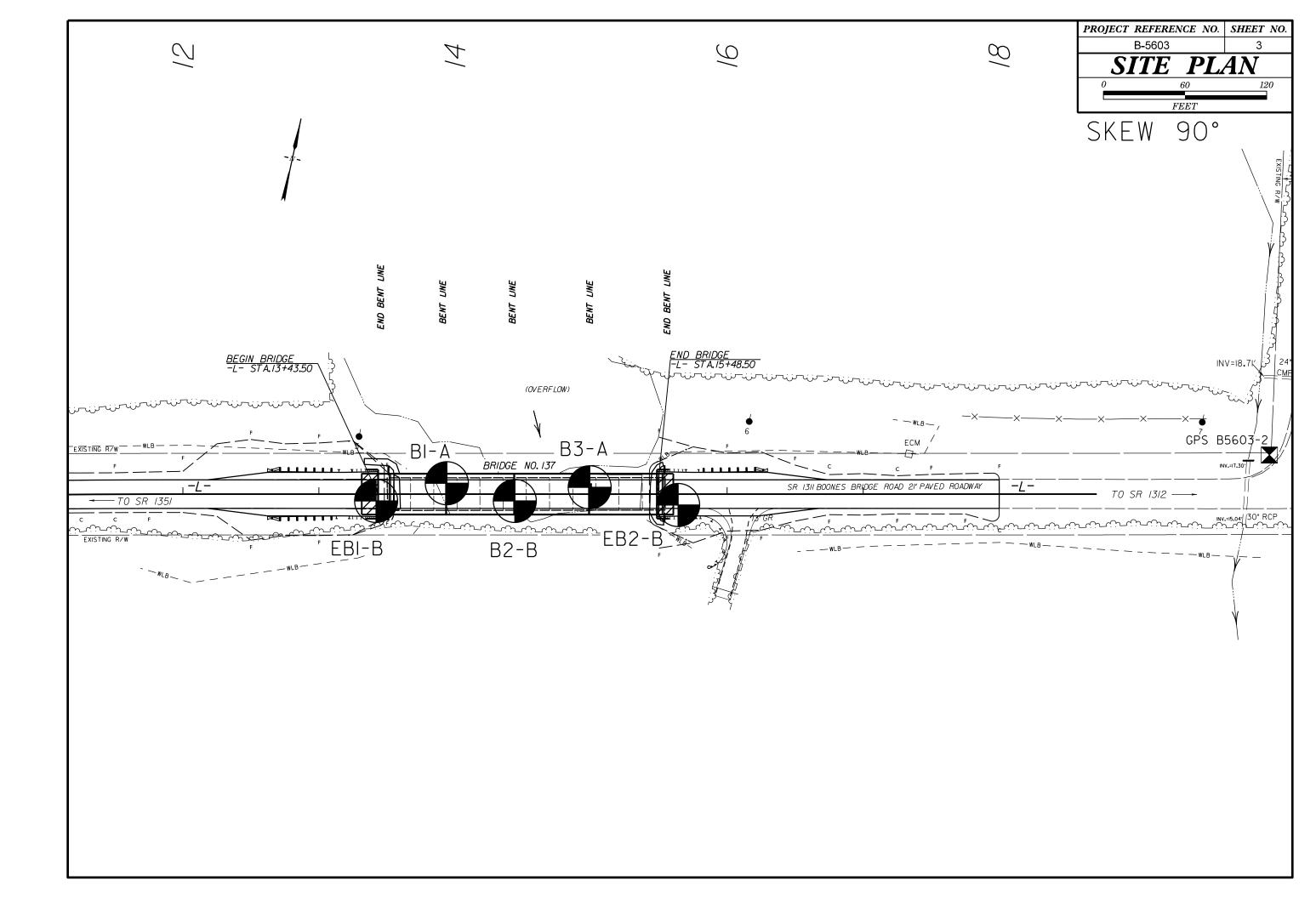
	SOIL D	ESCRIPTION			GRADATION			ROCK DE	SCRIPTION
BE PENETRATED ACCORDING TO IS BASED (CONSISTENCY, CO	DERED UNCONSOLIDATED, SEMI-CON) WITH A CONTINUOUS FLIGHT PO) THE STANDARD PENETRATION TE ON THE AASHTO SYSTEM, BASIC (OLOR, TEXTURE, MOISTURE, AASHTO (RALOGICAL COMPOSITION, ANGULAF	YER AUGER AND YIELD LESS ST (AASHTO T 206, ASTM DI DESCRIPTIONS GENERALLY IN CLASSIFICATION, AND OTHE	THAN 100 BLOWS PER FOOT 586). SOIL CLASSIFICATION ICLUDE THE FOLLOWING: R PERTINENT FACTORS SUCH	UNIFORMLY GRADED - IND GAP-GRADED - INDICATES	S A GOOD REPRESENTATION OF PARTICL DICATES THAT SOIL PARTICLES ARE ALL A MIXTURE OF UNIFORM PARTICLE SIZ ANGULARITY OF GRAIN	APPROXIMATELY THE SAME SIZE. ES OF TWO OR MORE SIZES. S	ROCK LINE INDICAT SPT REFUSAL IS PE BLOWS IN NON-COA REPRESENTED BY A	TES THE LEVEL AT WHICH NON-CO ENETRATION BY A SPLIT SPOON S	WOULD YIELD SPT REFUSAL IF TESTE ASTAL PLAIN MATERIAL WOULD YIELD AMPLER EQUAL TO OR LESS THAN Ø. ANSITION BETWEEN SOIL AND ROCK WS:
VERY ST	TIFF.GRAY.SILTY CLAY.MOIST WITH INT.	ERBEDDED FINE SAND LAYERS.	HIGHLY PLASTIC, A-7-6		OR ROUNDNESS OF SOIL GRAINS IS DE SULAR, <u>SUBROUNDED</u> , OR <u>ROUNDED</u> .	SIGNATED BY THE TERMS:	WEATHERED	NON-COASTAL PLA	IN MATERIAL THAT WOULD YIELD SPI
CENEDAL	SOIL LEGEND AND	AASHTO CLASSIFI	CATION	-	MINERALOGICAL COMPOSI	TION	ROCK (WR)	100 BLOWS PER F	
GENERAL CLASS. GROUP A-1	(≤ 35% PASSING ■200)	(> 35% PASSING =200)	ORGANIC MATERIALS		ES SUCH AS QUARTZ, FELDSPAR, MICA, TA DESCRIPTIONS WHEN THEY ARE CONSIDE		CRYSTALLINE ROCK (CR)	WOULD YIELD SP	GRAIN IGNEOUS AND METAMORPHIC RC REFUSAL IF TESTED. ROCK TYPE IN CHIST.ETC. GRAIN METAMORPHIC AND NON-COAST4
CLASS. A-1-0 A		7 A-7-5. A-7-6	A-3 A-6, A-7	CL 1011		11 4 21	NON-CRYSTALLINE ROCK (NCR)	SEDIMENTARY ROOM	CK THAT WOULD YEILD SPT REFUSAL DES PHYLLITE, SLATE, SANDSTONE, ET
SYMBOL 000000 000000 % PASSING			SILT-	MODER	TLY COMPRESSIBLE ATELY COMPRESSIBLE Y COMPRESSIBLE	LL < 31 LL = 31 - 50 LL > 50	COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN S	EDIMENTS CEMENTED INTO ROCK, BUT CK TYPE INCLUDES LIMESTONE, SANDS
■10 50 MX ■40 30 MX 5	50 MX 51 MN		GRANULAR CLAY MUCK,		PERCENTAGE OF MATER	IAL	-		HERING
	25 MX 10 MX 35 MX 31 MX 41 MX 40 MX 41 MX	X 36 MN 36 MN 36 MN 36 MN N 40 MX 41 MN 40 MX 41 MN N 10 MX 10 MX 11 MN 11 MN		ORGANIC MATERIAL TRACE OF ORGANIC MAT LITTLE ORGANIC MATTE MODERATELY ORGANIC HIGHLY ORGANIC		<u>OTHER MATERIAL</u> TRACE 1 - 10% LITTLE 10 - 20% SOME 20 - 35% HIGHLY 35% AND ABOVE	HAMME VERY SLIGHT ROCK (V SLI.) CRYST	ER IF CRYSTALLINE. GENERALLY FRESH, JOINTS STAINED	NTS MAY SHOW SLIGHT STAINING. ROCK D, SOME JOINTS MAY SHOW THIN CLAY C SHINE BRIGHTLY. ROCK RINGS UNDER H
GROUP INDEX Ø USUAL TYPES STONE FR OF MAJOR GRAVEL.	IRAGS. FINE SILTY OR CLAYEY	8 MX 12 MX 16 MX NO MX SILTY CLAYEY SOILS SOILS	MODERATE ORGANIC AMOUNTS OF ORGANIC ORGANIC SOILS MATTER	∇	GROUND WATER		SLIGHT ROCK (SLI.) 1 INCH CRYST	GENERALLY FRESH, JOINTS STAINED H. OPEN JOINTS MAY CONTAIN CLAY TALS ARE DULL AND DISCOLORED. C) AND DISCOLORATION EXTENDS INTO RO . IN GRANITOID ROCKS SOME OCCASIONA RYSTALLINE ROCKS RING UNDER HAMME!
MATERIALS SAND GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD	FAIR TO POOR	FAIR TO POOR UNSUITABL	 .∈ 	STATIC WATER LEVEL AFTER 24 H PERCHED WATER, SATURATED ZONE, OR SPRING OR SEEP		(MOD.) GRANI DULL	ITOID ROCKS, MOST FELDSPARS ARE	ISCOLORATION AND WEATHERING EFFECT DULL AND DISCOLORED, SOME SHOW CL4 SHOWS SIGNIFICANT LOSS OF STRENGT
	PI OF A-7-5 SUBGROUP IS ≤ LL		> LL - 30				MODERATELY ALL F	ROCK EXCEPT QUARTZ DISCOLORED	OR STAINED. IN GRANITOID ROCKS, ALL F
PRIMARY SOIL T	COMPACTNESS OR	Y OR DENSENESS RANGE OF STANDARD PENETRATION RESISTENCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH			CTION	(MOD. SEV.) AND C		KAOLINIZATION. ROCK SHOWS SEVERE L ST'S PICK. ROCK GIVES "CLUNK" SOUND
GENERALLY GRANULAR	VERY LOOSE LOOSE MEDIUM DENSE	(N-VALUE) < 4 4 TO 10 10 TO 30	(TONS/FT ²)	U UITH SOIL DES	CRIPTION OF ROCK STRUC		(SEV.) REDUC TO SC		
	E) DENSE VERY DENSE VERY SOFT	30 TO 50 > 50 < 2	< 0.25	ARTIFICIAL FIL		CONE PENETROMETER TEST SOUNDING ROD	VERY ALL F SEVERE BUT N (V SEV.) REMAI	ROCK EXCEPT QUARTZ DISCOLORED MASS IS EFFECTIVELY REDUCED TO INING. SAPROLITE IS AN EXAMPLE (DR STAINED. ROCK FABRIC ELEMENTS AF SOIL STATUS, WITH ONLY FRAGMENTS O F ROCK WEATHERED TO A DEGREE THAT MAIN. IF TESTED, WOULD YIELD SPT N
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	SOFT MEDIUM STIFF STIFF VERY STIFF HARD	2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4	INFERRED ROCK		LL - TEST BORING WITH CORE - SPT N-VALUE	COMPLETE ROCK SCATT	REDUCED TO SOIL. ROCK FABRIC N	DT DISCERNIBLE, OR DISCERNIBLE ONLY Y BE PRESENT AS DIKES OR STRINGERS
		OR GRAIN SIZE	/ 4	+	RECOMMENDATION SYMBO	DLS	1		IARDNESS
U.S. STD. SIEVE SI		40 60 200	270			UNCLASSIFIED EXCAVATION -		OT BE SCRATCHED BY KNIFE OR SH RAL HARD BLOWS OF THE GEOLOGIS	ARP PICK. BREAKING OF HAND SPECIMEN T'S PICK.
OPENING (MM) BOULDER	4.76 2.00 COBBLE GRAVEL	0.42 0.25 0.075 COARSE FINE SAND SAND		SHALLOW UNDERCUT	UNSUITABLE WASTE La UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK	ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL	TO DE	ETACH HAND SPECIMEN.	NLY WITH DIFFICULTY. HARD HAMMER B
(BLDR.) GRAIN MM 30		(CSE. SD.) (F SD. 0.25		AR - AUGER REFUSAL	ABBREVIATIONS MED MEDIUM	VST - VANE SHEAR TEST	HARD EXCAV		GOUGES OR GROOVES TO 0.25 INCHES DI IST'S PICK. HAND SPECIMENS CAN BE D
SIZE IN. 12	2 3 SOIL MOISTURE - 1	CORRELATION OF	TERMS	BT - BORING TERMINATED CL CLAY CPT - CONE PENETRATION	MICA MICACEOUS MOD MODERATELY TEST NP - NON PLASTIC	WEA WEATHERED γ - UNIT WEIGHT $\gamma_{ m d}$ - DRY UNIT WEIGHT	HARD CAN E		S DEEP BY FIRM PRESSURE OF KNIFE C PEICES 1 INCH MAXIMUM SIZE BY HARD
SOIL MOIST (ATTERBER		PTION	TELD MOISTURE DESCRIPTION	DPT - DYNAMIC PENETRATI	ION TEST SAP SAPROLITIC	S - BULK	FROM		KNIFE OR PICK. CAN BE EXCAVATED IN E BY MODERATE BLOWS OF A PICK POIN SURE.
	- Saiur (SAT.) QUID LIMIT	FROM BELOW	NUID; VERY WET, USUALLY THE GROUND WATER TABLE	e - VOID RATIO F - FINE FOSS FOSSILIFEROUS FRAC FRACTURED, FRACTI	SD SAND, SANDY SL SILT, SILTY SLI SLIGHTLY	SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK	SOFT OR MO		CAVATED READILY WITH POINT OF PICK. BY FINGER PRESSURE. CAN BE SCRATCH
RANGE <	- WET -		EQUIRES DRYING TO MUM MOISTURE	FRAGS FRAGMENTS	w - MOISTURE CONTENT	RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING	FRAC	TURE SPACING	BEDDING
ом 🔔 ор	ASTIC LIMIT MOIST	- (M) SOLID; AT OF	NEAR OPTIMUM MOISTURE	HI HIGHLY	V - VERY IPMENT USED ON SUBJECT ADVANCING TOOLS:	RATIO PROJECT HAMMER TYPE:	TERM VERY WIDE WIDE	SPACING MORE THAN 10 FEET 3 TO 10 FEET	TERM VERY THICKLY BEDDED THICKLY BEDDED 1
SL SH	HRINKAGE LIMIT DRY -		DITIONAL WATER TO MUM MOISTURE	CME-45C	CLAY BITS	X AUTOMATIC MANUAL	MODERATELY CLI CLOSE VERY CLOSE	.0SE 1 TO 3 FEET 0.16 TO 1 FOOT LESS THAN 0.16 FEET	THINLY BEDDED 0.1 VERY THINLY BEDDED 0.0 THICKLY LAMINATED 0.00 THINLY LAMINATED <
	PLA	STICITY		CME-55	8 HOLLOW AUGERS	Вн		INDU	RATION
NON PLAST SLIGHTLY	PLASTI TIC	CITY INDEX (PI) 0-5 6-15	DRY STRENGTH VERY LOW SLIGHT	X CME-550	HARD FACED FINGER BITS		FOR SEDIMENTARY	RUBBING WITH	NING OF MATERIAL BY CEMENTING,HE FINGER FREES NUMEROUS GRAINS; BY HAMMER DISINTEGRATES SAMPLE.
	LY PLASTIC _ASTIC 2	16-25 6 OR MORE	MEDIUM HIGH	PORTABLE HOIST	X CASING W/ ADVANCER	POST HOLE DIGGER	MODERATELY		E SEPARATED FROM SAMPLE WITH ST Y WHEN HIT WITH HAMMER.
	(COLOR		4 🗆 👘	TRICONE' TUNGCARB.		INDURATED		DIFFICULT TO SEPARATE WITH STEEL BREAK WITH HAMMER.
	MAY INCLUDE COLOR OR COLOR RS SUCH AS LIGHT, DARK, STREA				CORE BIT	VANE SHEAR TEST	EXTREMELY	SHARP HAMME	R BLOWS REQUIRED TO BREAK SAMPLI

PROJECT REFERENCE NO.

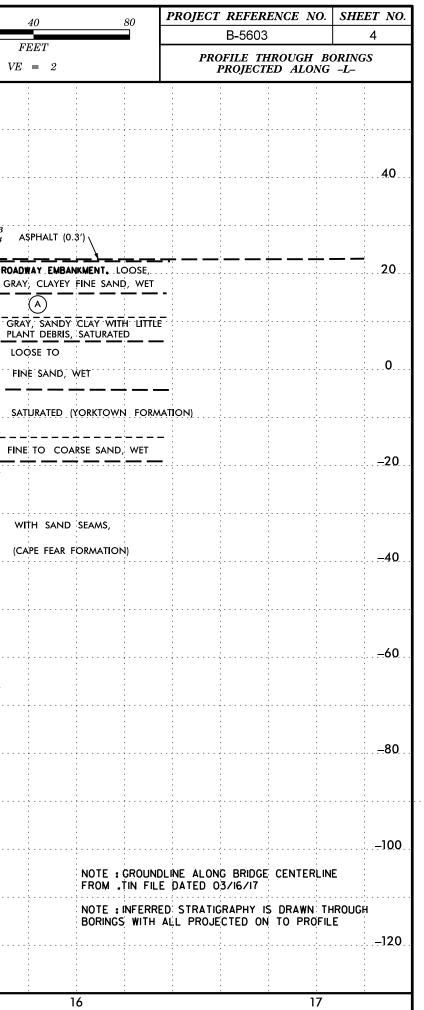


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	TERMS AND DEFINITIONS
D. AN INFERRED SPT REFUSAL.	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.
FOOT PER 60 IS OFTEN	AQUIFER - A WATER BEARING FORMATION OR STRATA.
	ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.
N VALUES >	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.
N VHLUED /	ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT
CK THAT CLUDES GRANITE,	WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.
	CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.
L PLAIN IF TESTED.	COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM
MAY NOT YIELD	OF SLOPE.
TONE, 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.
	DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.
RINGS UNDER	$\underline{\text{DIP}}$ - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.
DATINGS IF OPEN, AMMER BLOWS IF	DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.
CK UP TO L FELDSPAR	FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.
BLOWS.	FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.
S. IN Y. ROCK HAS	FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.
AS COMPARED	FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.
ELDSPARS DULL	FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE
OSS OF STRENGTH WHEN STRUCK.	FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.
	LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO
VIDENT BUT RE KAOLINIZED	ITS LATERAL EXTENT.
SE RECEINIZED	LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS
E DISCERNIBLE	MUTTED (MULL) - IRREGULARLY MARKED WITH SPOIS OF DIFFERENT COLORS. MUTTEING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.
STRONG ROCK	PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE
only minor Alues < 100 BPF	OF AN INTERVENING IMPERVIOUS STRATUM. R <u>ESIDUAL (RES.)SOIL</u> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.
IN SMALL AND	ROCK QUALITY DESIGNATION (ROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF
. SAPROLITE IS	ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.
5 REQUIRES	SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.
LOWS REQUIRED	<u>SILL</u> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.
EP CAN BE ETACHED	<u>SLICKENSIDE</u> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.
R PICK POINT. BLOWS OF THE	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 WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.
FRAGMENTS	STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY
T. SMALL, THIN	TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.
PIECES 1 INCH ED READILY BY	<u>STRATA ROCK QUALITY DESIGNATION (SROD)</u> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO ON GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.
	TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
THICKNESS	BENCH MARK: GPS B5603-2 STA 19+98 -L- (EXTENDED), 29' LT
THICKNESS 4 FEET	<u>N 1018639 E 2546367</u> ELEVATION: 22.48 FEET
5 - 4 FEET 6 - 1.5 FEET	
3 - 0.16 FEET 8 - 0.03 FEET	
0.008 FEET	FIAD : FILLED IMMEDIATELY AFTER DRILLING
AT, PRESSURE, ETC.	
EEL PROBE:	
PROBE:	
:	
	DATE: 8-15-14



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(0)						[
	ALLUYIAL, A VERY LOOSE TO LOOSE, ORAN AND GRAY, SILTY SAND AND WET TO SATURATED	CLAYEY SAND,	TIFF, BLUISH GRAY, SANDY SI RACE MICA, WET (YORKTOWN	LT WITH FORMATION)	······	
	B COASTAL PLAIN, VERY LOOSE, BLUISH GRAY, C SATURATED (YORKTOWN FORM		COASTAL PLAIN, MED. DENSE, GRAY, CLAYEY FI COARSE SAND, WET (CAPE FEA MED. DENSE, GRAY, SILTY SAN ND CLAY LENSES, SATURATED			
		A	ND CLAY LENSES, SATUKATED	(CAPE FEAR FORMATION)		
	EXISTING GROUND					EB2-B 15+64 8'RT
20	ROADWAY EMBANKMENT, MED. DE Gray and Brown, silty sand), WET (]] → ┝	$\begin{array}{c} BI-A\\ I3+94\\ \hline \\ \hline \\ \hline \\ \hline \\ \end{array} \begin{array}{c} B^{*}LT \overline{\bigtriangledown}\\ $	$B2-B$ $14+44 \bigvee_{5'RT} - \mathbf{y}_{\text{MEHERSIN}}$		
	UNDIVIDED COASTAL PLAIN, LOOSE TO MED. DENSE, GRAY FINE SAND, WET			UNDIVIDED MED. DENSE	() () () () () () () () () ()	
0		(2			GRAY AND TAN	6
	COASTAL PLAIN, SOFT TO MED. STIFF, BLUISH	GRAY, C SAN	IDY CLAY	LAY 0	ell Fragments, we	т то 3- Ц
.–20	COASTAL PLAIN, MED. DENSE TO DENSE, GRA WET (CAPE FEAR FORMATION)	Y, CLAYEY SAN			SE,G————————————————————————————————————	AYEY ®
		25			40- 36- SANDY SUT	3- 11 25- 1
.–40	STIFF TO HARD, RED, GRAY A			AY, 30 CLAY AND 28 WET TO	32 SANDY SILT	
	MED, DENSE AND VERY STIFF, AND SANDY SILT WITH TRACE	GRAY, 26 MICA				
.–60		33 -11 22 -11		30 	(24)	
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-80			< <u>(@</u> _(t))>> (@_ \			2 FIAD
		30- X (5-				
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NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

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	ING NO.				_	TATION				OFFSET					_	SNMENT -L-	0 HR.	N/A		NG NO.						13+42			\downarrow^{c}
	LAR ELE					OTAL DE				NORTH						TING 2,545,733	24 HR.	FIAD		AR ELI						E PTH 1			N
				TE SN		3 CME-550				1				DM	ud Rotar		IER TYPE	Automatic					TE SN			0X 80% 0			_
										COMP.			0/17	1 . 1	SUR	FACE WATER DEPTH	I/A									ATE 04			0
ELEV (ft)		DEPTH (ft)	·	0.5ft		$\left \right _{0}$	BL 25		PER FOO 50			MP.	▼∕	Ō		SOIL AND ROCK DES	CRIPTION		ELEV (ft)	DRIVE ELEV	DEPTH (ft)	· – – – – –	W COU 0.5ft		0	BLC 25	DWS PE 50	ER FOOT	T 75
(,	(ft)	(,	0.51	0.51	0.51		20			10		10.	моі	G	ELEV.	ft)		DEPTH (ft)	(,	(ft)	(,	0.51	0.511	0.511				,	
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10		ŧ					· ·				·			0000	-				-70	-	ŧ				· · ·	<u>`\</u> ··	· ·		·
	8.8 -	13.5	1	2	8		: :	· · ·	· · · · · ·		·		W	0 0 0 0 0 0 0 0 0 0 0 0	-					-71.2 -	93.5	11	12	15				· · · · · ·	:
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5	3.8 -	- 18.5												0 0 0 0 0 0 0 0 0 0 0 0	-				-75	-76.2 -	98.5				· · ·				
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0		+					· ·				·				<u> </u>	COASTAL PL	<u></u>	22.0	-80	-	ł					· \ · ·	• •	· · ·	·
	-1.2 -	23.5	1	2	2		· · ·	· · ·	· · · ·		·		W		-	Bluish Gray Sandy (Yorktown Forma	CLAY			-81.2 -	103.5	10	15	15		. \ . \		· · · · · ·	:
-	-	ł					· · ·	· · ·	· · · ·	· · · · ·					4 7	(TORIOWITFOITIG	alion)	27.0	05	-	ł				· · ·		· ·	· · ·	
-5	-6.2 -	28.5				 								S	= <u></u>	Bluish Gray CL	AY		-85	-86.2 -	108.5				· · ·	<u> </u>			
	-	ŧ	1	1	1	•2 · · ·	· ·	· · ·	· · · · · ·	· · · · ·			W		-					-	ł	9	10	15		: 4 25 :		· · ·	
-10		ŧ					• •				·				<u>-9.7</u>	Bluish Gray CLAY with		<u>32.0</u>	-90	-	F					· \ .	• •		·
	-11.2 -	33.5	1	1	4	:::	: :	· · ·	· · · · · ·	· · · · ·	:		W		-	Fragments				-91.2 -	113.5	8	14	24			 •38*	· · ·	
45	-	ł					· · ·	· · ·	· · · ·	· · · · ·					- 14.7			37.0		-							000		
-15	-16.2 -	- 38.5													-	Light Gray Clayey Fine to (Cape Fear Form	Coarse SAN	ND		-	F F								
	-	÷	7	10	11		21	· · ·	· · · ·	· · · · ·	·		W	///	-	(Cape real rolli	allon)			-	ł								
-20		ŧ				· · ·	· \ ·				·			\langle / \rangle	-					-	L.								
	-21.2 -	43.5	13	16	18	:::	: .	34	· · · · · ·		·		W	///	-					-	ł								
05	-	ŧ							· · · ·	. .	:				- 24 7			47.0		-	ł								
-25	-26.2 -	48.5				 	<u>; /.</u>							N	-	Red Gray CL/	AY			-	ŧ								
	-	ŧ	8	10	15		. 4 25	· · · · · ·		· · · · · · · ·	:		М		-					-	ŧ								
-30	-	ŧ					· \\ ·			• • • • •	<u>.</u>				-					-	ŧ								
	-31.2 -	53.5	9	12	18	:::	· \	 80		· · · · ·	:		М		-					-	ŧ								
0F	-	ŧ						· · ·		. .	:				-					-	ŧ								
-35	-36.2 -	- 58.5				<u> </u>			<u> </u>						-						ŧ								
	-	ŧ	10	14	19			33		. .	:		М		-					-	ŧ								
-40		ŧ					<u>: :</u>				·				-					-	ŧ								
	-41.2 -	63.5	12	14	17	:::	: . .	 31		· · · · ·	:		М		-					-	ŧ								
45	-	ţ						· · ·	· · · ·	. .	:				- -44 7			67.0		-	ŧ								
-45	-46.2 -	68.5	_			1	<u>. /.</u>								= <u></u>	Gray Clayey Fine	SAND	- <u> </u>		-	ŧ								
	-	ŧ	8	10	16		: 4 26	· · ·		. .	:		W	<u>/~//</u>	-					-	ŧ								
-50		ŧ					· \\				·				-49.7	Gray Silty CLAY with		72.0		-	<u>t</u>								
-35 -40 -45 -50	-51.2 -	73.5	7	15	20		: :	• • • •	· · · · · ·	· · · · · · · ·	:		w		-	Gray Silly CLAT WIT	nace IVIICa			-	ŧ								
	-	ŧ					· ·/		· · · · · ·	· · · · · · · ·	:				-					-	ŧ								
-55		L	1	1	1				I												L	1							

SHEET 5 OF 9

' HERTFORD	GEOLOGIST Bradley, N.	
Road) over Overflow to Meherr	in River	GROUND WTR (ft)
OFFSET 5 ft RT	ALIGNMENT -L-	0 HR. N/A
NORTHING 1,018,466	EASTING 2,545,733	24 HR. FIAD
DRILL METHOD Mu	d Rotary HAMM	ER TYPE Automatic
COMP. DATE 04/10/17	SURFACE WATER DEPTH N/	'A
	SOIL AND ROCK DESC	CRIPTION
75 100 NO. MOI G		
╷╴╴╴┤┼╶╶┝╴╴┝╴╴	Gray Silty CLAY with Trace M	lica (continued) — — —
	-74.7	97.0
	Dark Gray CLA	Y
	-84.7 Gray Sandy SILT with San	<u>107.0</u>
	Gray Sandy SiLT with San Trace Mica	d Seams and
	-92.7 Boring Terminated at Eleva	115.0 tion -92.7 ft in
	Boring Terminated at Eleva Hard Sandy SILT (Cape Fe	ar Formation)

NCDOT GEOTECHNICAL ENGINEERING UNIT

WBS	45558					IP B-5603			TY HERT	FORD			GEOLOGIST Swartley, J. R.	1		45558.1.1				P B-5603	COUNT	
				lge No		on -L- (SR		ones Brid			low to N	Леhe		GROUND WTR (ft)				dge No		on -L- (SR 1311/Boo	ones Bridg	e R
		. B1-A			_	TATION 1			OFFSET				ALIGNMENT -L-	0 HR. N/A		ING NO. B1				FATION 13+94		0
		EV. 14				OTAL DEP			NORTHI	NG 1,01			EASTING 2,545,781	24 HR. N/A		LAR ELEV.				DTAL DEPTH 91.6		N
				TE SN		3 CME-550X			_			DN		IER TYPE Automatic				ATE S		CME-550X 80% 05/11		
		Vhite, J								DATE 04		1.	SURFACE WATER DEPTH 0	.7ft	DRIL	LER White	-			FART DATE 04/17/		C
ELEV (ft)	DRIVE ELEV	DEPTH (ft)		0.5ft		$\left\ \right\ _{0}$	BLOWS	S PER FOC 50	DT 7 <u>5</u> 10			Ō	SOIL AND ROCK DES		ELEV (ft)	DRIVE ELEV (ft)		OW CO		BLOWS	S PER FOOT 50	
	(ft)		0.51	0.511	0.51					00 NO.	<u>/ MOI</u>	G	ELEV. (ft)	DEPTH (ft)		(ft) (n	, 0.51	0.51	0.51			75
45													WATER SURFACE (04/17/17) AGE — · · — · · — · · 0. 0						Ma	tch Line	
15	14.7	 0.0	3	1	0		· · · ·				Sat.	-	- ALLUVIAL		65	-65.4 80.	1	6	10			.
		ŧ						. .	· · · ·				- Tan and Gray Silty	SAND						$\left \begin{array}{cccccccccccccccccccccccccccccccccccc$	· · · · ·	
10	-	‡				<u> · · · ·</u>	· · ·		· · · ·	·			-		-70	-70.4 + 85	1			· · · \ · · · ·		_
-	8.6	+ 6.1 +	1	1	1			· · · · · · · ·		.	Sat.		-			‡	9	10	14	24		
5		ŧ				$\left \begin{array}{cccc} \mathbf{T}^{\underline{\epsilon}} & \cdot & \cdot \\ \mathbf{I} & \cdot & \cdot \end{array}\right $		· · · · · · · ·					-		-75						· · · · · ·	
	4.6 -	+ 10.1 +	WOH	1	1	-					Sat.		 -		10	-75.4 + 90. +	1 6	10	13			. †
		ŧ				$\left \begin{array}{c} \mathbf{T}_{\mathbf{T}} \\ \mathbf{I}_{\mathbf{T}} \\ \mathbf{I}_{$		· · · · · · · ·		.			- F 1.2	13.5		i i						
0	-0.4 -	+ + 15.1				1 1		· · · · ·	· · · ·			$\langle / /$	COASTAL PLA Bluish Gray Clayey	NN		‡				l		
		ŧ	1	2	2	4		· · · · · · · ·			Sat.		(Yorktown Forma	ation)						l		
-5		ŧ				 ::::		· · · · · · · ·					F							l		
	-5.4 -	+ 20.1 T	WOH	1	1						Sat.	///	-							l		
		Ŧ						· · · · ·		.			- 8.8	23.5						l		
-10	-10.4 -	25.1			- <u>`</u>			· · · · ·					Bluish Gray Sandy CLAY v Shell Fragmer	with Weathered		‡				l		
		Ŧ	1	2	3	● 5 [±] · · ·		· · · · · · · ·		.	Sat.									l		
-15	45.4	Ŧ						· · · · · · · ·					<u>-13.8</u> Bluish Light Gray Sandy S	ILT with Trace 28.5		l Ŧ				l		
	-15.4 -	+ 30.1 T	3	5	7	· •					w		Mica							l		
		Ŧ								.			<u>-18.8</u>	<u>33.5</u>		l Ŧ				l		
-20	-20.4 -	35.1	6	8	14	<u>\</u>							Red Gray Silty C (Cape Fear Form			 				l		
		Ŧ		0	17		22				W					Ī				l		
-25	-25.4 -	T + 40.1														Ī				l		
	-20.4	1 40.1 1	9	12	18	1	4 30				w									l		
		ŧ					! : : :			.										l		
-30	-30.4 -	45.1	8	11	18	$\left \right $														l		
		ŧ					9 29				VV V									l		
-35	-35 4 -	+ + 50.1					1						-							l		
		+	10	13	18	1	9 31		· · · · ·	·	w		-							l		
40		‡					-1	. .	· · · ·	:			► -			‡				l		
-40	-40.4 -	- 55.1	8	14	20	$\left \left \begin{array}{c} \cdot \cdot \cdot \cdot \end{array} \right \right $					w		-							l		
		ŧ						. .	· · · ·	:			43.8	58.5		‡				l		
-45	-45.4 -	+ 60.1					/	· · · ·	· · · ·			~ ~	Gray Sandy SILT, M							l		
-45		ŧ	7	9	13				· · · · ·	.	W	N N N N	-			‡				l		
-50		ŧ						· · · · · · · ·	· · · · ·	.			48.8 Brown Gray Silty	<u> </u>		‡				l		
-50	-50.4 -	+ 65.1 +	7	11	13	$\left \left \begin{array}{c} \cdots \end{array} \right \right $	24				l w									l		
		‡						· · · · · · · ·	· · · · ·	·			+ +			‡				l		
-55	-55.4 -	+ 70.1					<u> · · ·</u>	· · · · ·	· · · ·	·			► 〒							l		
		‡		9	14		•23 · · ·	· · · · ·		:	W		F F			‡				l		
-60		‡				· · · <i>i</i>		· · · · ·	· · · · ·	:			F F			‡				l		
	-60.4 -	+ 75.1 +	5	7	10	<i> </i> -	7				w		 - -			‡				l		
-60		ŧ					' · · · · · ·	· · · · ·		.			F F			‡				l		
-65		†								•		N				<u>†</u>				·		

SHEET 6 OF 9

COUNT	HERTFC	RD			GEOLOGIST Swartley	, J. R.		
s Bridge	e Road) ove	r Overflo	w to M	lehe	rrin River		GROUN	D WTR (ft)
	OFFSET	8 ft LT			ALIGNMENT -L-		0 HR.	N/A
	NORTHING	3 1,018	,490		EASTING 2,545,781		24 HR.	N/A
17		DRILL M	IETHO	D M	lud Rotary	HAMM	ER TYPE	Automatic
	COMP. DA	TE 04/	17/17		SURFACE WATER DEP	TH 0.7	7ft	
R FOOT	75 100	SAMP. NO.	моі	L O G	SOIL AND RO	CK DESC	RIPTION	
Line								
	· · · ·		w	J	Brown Gray Silt	V CLAY (continued)	
· · · · ·				N	- 68.8 Gray Silty SAND	with Lign	ite and Cla	<u>83.5</u> y
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		Sat.		- - 73.8	Silty CLA		<u>88</u> .5
			w	3	_	SIITY CLA	r	
			w		-76.9 Boring Terminated Very Stiff CLAY (0	at Eleval	ion -76.9 f	91.6 n)
				-	- - - - -			

NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

	45558 DESCR		Brid	ae No		P B-						HERTF(Road) ove		ow to	Me	herri	GEOLOGIST Bradley, N.	GROUND W	TR (ft)		45558 DESCR		N Brid	dge Nr		I P B-5		11/Boon	COUNT es Brido	
	NG NO.			30110		TATIO			5511	20 0110	-	OFFSET					ALIGNMENT -L-	0 HR.	N/A		ING NO			-90 140			N 14+4			
	AR ELE							H 90	.7 ft		_	IORTHIN			3		EASTING 2,545,832	24 HR.	N/A		LAR EL							90.7 ft		NO
	RIG/HAI			TE SM									DRILL			Muc		_I MER TYPE Auto						TE S				% 05/11/2		1
	ER W							04/1			С	OMP. DA					SURFACE WATER DEPTH				LER V							04/12/1		co
	DD1 (5	DEPTH		W CO	_					ER FOO			SAMF		71	L				ELEV	DRIVE ELEV	DEPTH	1	ow co				BLOWS F		
(ft)	ELEV (ft)	(ft)	0.5ft	0.5ft	0.5ft	0	2	25	5	0	75 	5 100	NO.	M		D G	SOIL AND ROCK DES		EPTH (ft)	(ft)	ELEV (ft)	(ft)		0.5ft	0.5ft	0	25	5	50	75
45															,		WATER SURFACE	04/12/17)		05								Mate	h Line	
15	13.7 -	- 0.0															3.7 GROUND SURI	ACE	0.0	-65	-65.5	79.2		<u> </u>	- <u>-</u>					. .
	-	ł	WOH	WOH	1	🕂 : :	· · · ·		· ·	· · ·	:	· · · · ·		Sat	t. 📈		ALLUVIAL Gray Clayey Fine					ŧ					₽ <u>1</u> 2 • • • •	· · · ·	· · · ·	· · ·
10	-	÷				<u>`</u> ,	•••				·		-		<u>~</u> %				3.5	-70	-70.5 -	+ + 84.2						· · · ·		· ·
-	8.3	5.4	2	7	8		\			· · · · · ·	:	· · · · ·		w	000		Gray Fine SA					ŧ	3	5	6	:•	11	· · · · · · · ·		: :
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	4.5 -	9.2	4	5	5		10 10							l w	000						-75.5 -	+ 89.2 +	7	10	12					
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0	-0.5 -	14.2				- / -	•••		•••		•		-			\$	COASTAL PL Bluish Gray Sand				-	ŧ								
	-	F	1	1	2	• 3 .	•••				:			W			(Yorktown Form					ŧ								
-5	-	F				i	•••		· ·			· · · · ·										Ŧ								
	-5.5 -	- <u>19.2</u>	woн	1	1	1 2								w		Ŧ						Ŧ								
	-	F					•••										.0		22.7			Ŧ								
-10	-10.5 -	24.2	1	1	3		· ·						-			Ŧ	Bluish Gray CLAY with Fragments	Trace Shell			-	Ŧ								
	-	E		1	5	• ⁴	• •							W		Ŧ	0					Ŧ								
-15	45.5	E														Ŧ	<u>4.0</u> Bluish Gray Ci	AY	<u> 27.7</u>			Ŧ								
	-15.5 -	<u> 29.2 </u>	1	2	4	6	• •				•			w		Ŧ						Ŧ								
	-	E					\									Ŧ	9.0		32.7			Ŧ								
-20	-20.5	34.2	10	9	17						-		-			Ŧ	Red Gray CL (Cape Fear Forn	AY ation)			-	Ŧ								
	-	L		3				₽26 I			•			M		F		,				ł								
-25	-25.5 -	20.2				1 1	•••	1			•					£						Ł								
F	-20.0		8	13	15		· ·	6 28			:			м		7						ł								
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-30	-30.5 -	44.2	8	14	16								1			\mathbf{z}					-	ŧ								
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-35	-35.5 -	49.2				<u>· ·</u>	•••	 			•					Ł						ŧ.								
F		- ' <i>.</i>	9	12	16	::	· · · ·	• 28	· ·	 	:	· · · · ·		м		7					· ·	‡			1	1				
40	-	ŧ				· ·	· · · ·	į:::	 	 	·	· · · · ·				X	9.0		<u> </u>		· ·	‡			1	1				
-40	-40.5 -	54.2	7	11	14			25						м		*	Brown Gray Silty CLAY w	IIIT TRACE MICA			-	‡			1	1				
	-	ŧ				· · 	· · ·	2 <u>0</u> .	 	 	· ·	· · · · ·									· ·	‡			1	1				
-45	- -45.5 -	- 59.2					• •		•••		·					\$					- -	‡			1	1				
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-30	-50.5 -	64.2	8	12	18			1 20					1	М		7	Brown Gray C	A1			-	ŧ			1	1				
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-55	- -55.5 -	- 69.2					· ·	(· ·		·					*	Gray Silty CLAY with	Frace Mica	<u> </u>		- -	‡			1	1				
	-	+	6	9	11		: ¢ 2		 	· · · ·	:	· · · · · ·		M		1						ŧ								
-60	-	ŧ				· ·	·/· ·/·		· ·	 	· ·	· · · · ·				1						ŧ			1	1				
	-60.5 -	74.2	4	6	8		1	·						м		\$					-	ŧ			1	1				
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-65	-	t				$ \cdot \cdot$	<u> · ·</u>				·						Dark Gray CLAY with	race Lignite	<u> </u>			t				L				

SHEET 7 OF 9

OUNT	HERTFC	DF	RD			GEOLOGIST Bradley, N.			
s Bridge	Road) ove	r	Overflo	w to N	1ehe	rrin River		GROUN	D WTR (ft)
	OFFSET	5	ft RT			ALIGNMENT -L-		0 HR.	N/A
	NORTHING	G	1,018	,488		EASTING 2,545,832		24 HR.	N/A
17			DRILL N	IETHO	D N	lud Rotary	IAMME	ER TYPE	Automatic
	COMP. DA	Т	E 04/*	12/17		SURFACE WATER DEPTH	1 1.8	Bft	
R FOOT			SAMP.		L O	SOIL AND ROCK	DESC		
	75 100		NO.	моі	G		DLUU		
Line					_				
· · · ·				М		Dark Gray CLAY w	vith Tra nued)	ice Lignite	
· · · ·						-			
						_			
· · · ·				М	\boldsymbol{Z}				
						-			
				м		-77.0			90.7
		1				Boring Terminated at Very Stiff CLAY (Car	Elevat	ion -77.0 f r Formatio	't in
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NCDOT GEOTECHNICAL ENGINEERING UNIT BORELOG REPORT

	45558		J Dria			P B-5603			Y HERTFO		ow to N	Mob		DLOGIST Bradley, N.	GROUND WT	P (#)		45558		I Drid			P B-5		311/Paa	COUN nes Bridg	
	ING NO.			iye 190		TATION		nes bliug	OFFSET					GNMENT -L-	0 HR.	κ(π) N/A		NG NO			iye inc					100 6010	
	AR ELI						TH 91.2	ft	NORTHING		3 509			STING 2,545,884	-	N/A		AR ELI							H 91.2	ft	
				TE SM			80% 05/11					D	Mud Rota		IER TYPE Autom						TE S				0% 05/11		1
	LER W						E 04/13/		COMP. DA					RFACE WATER DEPTH 1.				LER V							04/13/		cc
ELEV			1	W CO				PER FOOT		SAMP.		1 L	T				ELEV		DEPTH	1	ow co					PER FOO	
(ft)	ELEV (ft)	(ft)	·	0.5ft		о	25	50	75 100	NO.	мо	0 I G	ELEV.	SOIL AND ROCK DES(PTH (ft)	(ft)	ELEV (ft)	(ft)			0.5ft	0	2	5	50	75
							·	·																•		•	
15													14.4	WATER SURFACE (0 GROUND SURF	04/13/17)	<u>_</u>	-65								Mat	ch Line	
	14.4	<u> </u>	WOH	WOH	1	•1					Sat.	<i>~</i> ~~	• <u> </u>	ALLUVIAL		0.0		-65.3	<u>79.7</u> I	6	8	10		•18		· · ·	·
	-	Ī										~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	10.4	Gray Clayey Fine S	SAND	4.0			l					·].			
10	-	ł				$ \rightarrow $		+	+			••••	€ €			<u>4.0</u>	-70	-70.3 -	84.7	6	9	11	<u> </u>	-		<u> </u>	
	8.2	<u> 6.2 </u>	4	5	6						Sat.	0 0 0 0 0 0 0 0 0	。 。	Gray Fine SAN	ID				ł				· ·	. € 20) 		
5	47 -	97				· F · ·						0 0 0 0 0 0 0 0 0	°				-75	-75.3 -	89.7					· [.			
		<u> </u>	2	2	5	•7 · ·					w	0 0 0 0 0 0 0 0 0	°					-75.5 -	- 09.7	6	7	11		·•18			
		Ŧ										0 0 0 0 0 0 0 0 0	<u> </u>			13.2			Ŧ								
0	-0.3 -	14.7	WOH	1	2						l w			COASTAL PLA Bluish Gray Sandy	CLAY			-	Ŧ								
		Ŧ			-									(Yorktown Forma	tion)				Ŧ								
-5	-53 -	- 19.7											-						Ŧ								
	-0.0	T 19.7	WOH	1	1	•2 · · ·					w		Ŧ					-	Ŧ								
	-	Ŧ											<u>-8.8</u>			23.2			Ŧ								
-10	-10.3 -	24.7	1	1	3								<u> </u>	Bluish Gray CLAY with Fragments	Trace Shell			-	Ŧ								
	-	ŧ	'	'	5	• 4					W		-						Ŧ								
-15	-	†				(:::			· · · · · ·				- <u>13.8</u>	Bluish Gray Clayey Fine to	Coarse SAND	<u>28.2</u>		-	ŧ								
10	-15.3 -	<u>- 29.7</u>	3	3	2	5					w	/./						-	ŧ								
	-	ŧ				- X			· · · · · ·			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- -18.8			33.2		-	ŧ								
-20	-20.3 -	- 34.7							· · · · ·			<i></i>	ݱ	Light Gray Clayey Fine to ((Cape Fear Forma				-	‡								
	-	‡	5	14	14		•28		 		W	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	₽ ₽	(Cape Fear Forma	allon			-	ŧ								
05	-	t					N II		. .				-23.8			<u>38.2</u>		-	ŧ								
-25	-25.3 -	- 39.7	11	18	22		· · •	<u> </u>			м			Red Glay CLA	LT			-	ŧ								
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-30	-30.3 -						· · · į · ·												Ł								
		-	8	15	21		. ∳36 .				М								ŧ								
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-35	-35.3 -	49.7	9	13	19		<u></u>	+	+									-	Ł								
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-40	40.2											N	<u>-38.8</u>	Brown Gray CL	AY	<u>53.2</u>		-	Ŧ								
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-55	-55.3 –	- 69.7					' 	· · ·					1					_	‡								
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	-	t				::::::							- <u>58.8</u>			<u>73.2</u>		-	ŧ								
-60	-60.3 -	74.7	4	6	10			+	· · · · · ·		N4			Dark Gray CLAY with	n Lignite			-	ŧ								
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SHEET 8 OF 9

OUNT	y he	ERTFO	DF	RD			GEOLOGIS	ST Bradley,	N.		
Bridge	e Roa	d) ove	er	Overflo	w to N	1ehe	rrin River			GROUN	D WTR (ft)
	OFF	SET	5	ft LT			ALIGNMEN	IT -L-		0 HR.	N/A
	NOF	THING	G	1,018	,509		EASTING	2,545,884		24 HR.	N/A
7			Ι	DRILL N	IETHO	D N	lud Rotary		HAMM	ER TYPE	Automatic
	CON	IP. DA	T	E 04/ ⁻	14/17		SURFACE	WATER DEP	TH 1.1	1ft	
R FOOT	75	100		SAMP. NO.	моі	L O G	•	SOIL AND ROO	CK DESC	RIPTION	
ine											
	T.		+ -		<u>—</u> — —		Da	rk Gray CLAY w	ith Lignit	e (continue	ed) — — — — —
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					IVI		-76.8 Bor	ing Terminated	at Elevat	ion -76.8 f	91.2 t in
							- Ve	ery Stiff CLAY (C	Cape Fea	r Formatio	n)
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NCDOT GEOTECHNICAL ENGINEERING UNIT

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	NG NO.			ige No		on -L- (SR TATION		ones Brid	-	-	8 ft RT	UW to	wen			ENT -L-		D WTR (ft) N/A		ING NO.			ige No		on -L- (S F ATION	R 1311/B	oones		Ro OF
	AR ELE				_	OTAL DEF		ft			G 1,01	9 510		_		G 2,545,950	24 HR.	FIAD								PTH 95	0.ft		NO
						3 CME-550X																				X 80% 05			
											TE 04				,			Automatic		LER W			TE Sr			TE 04/1			со
		1	-	W COL				S PER FO		NF. DF			/ / L		SURFAC		WA					1	W CO				NS PER		
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		0.5ft		0	25	50 50	75	100		1'/	O DI G	EL	LEV. (ft)	SOIL AND ROCK DES	CRIPTION	DEPTH (ft)	ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)		0.5ft		0	25	50		75
25		Ļ																	-55	-557	78.5					N	1atch L	ine	— —
	-	<u> </u>												<u>- 37</u>		GROUND SURI Asphalt (3 incl ROADWAY EMBA	ies)	<u>8.3</u>		-		5	10	12			· · · · · ·		-
20	19.3	3.5	3	2	3		<u> </u>		.		-		/° •/• •/			Gray Clayey Fine			-60	-60.7	83.5	7	9	12	<u></u>	<u> </u>			+
	-	ŧ		2	5	● 5		 	.	· · ·		W	, ~, 							-	ŧ			12	· · · ·	●21 .!	· · ·		.
15	- 14.3	- 95							.					<u>15</u>	5.8			7.0	-65	65.7	88.5					. 	.		Ŀ
-	- 14.3	- 0.5	3	3	2	- ∳5		- -		· · ·		w	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	, , ,		Orange Tan Clayey F	ine SAND			-05.7	- 00.5	7	10	13	· · · ·		.	· · · · · ·	
10	-	ŧ				<i>[</i> ::::		• • • •		· · ·			<u>/</u> ~/~		<u>).8</u>				-70	-	ŧ				· · · ·	:i : :	· · ·	· · ·	
10	9.3	13.5	WOH	WOH	1				.		1	Sat.			C	ALLUVIAL	th Little Orgar	nic	-70	-70.7	93.5	7	9	12	· · · ·	- <u> </u>	.		+.
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5	4.3 -	- 18.5					• • • •	• • • •	.	· · ·				5.	<u> </u>	UNDIVIDED COAST		<u> </u>		-	‡								
-		+	3	2	4	- ● 6		- -		· · · · · ·		w	000			Gray Fine SA	ND			-	ŧ								
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	-0.7	23.5	4	4	4				.			w w	000	-						-	ŧ								
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-5	-57	28.5						· · · ·	.	· · ·			Ň	4	.2	COASTAL PL	AIN	<u>27.0</u>		-	ŧ								
F		- 20.0	1	1	1			· · · · ·		· · ·		w				Bluish Gray Sand (Yorktown Form				-	ŧ								
-10	-	ŧ						• • • • •		· · · · · ·				<u>-9</u>	.2			<u>32.0</u>		-	‡								
- 10	-10.7	33.5	1	1	2				.		1	w				Bluish Gray CLAY with Fragments	Trace Shell			-	ŧ								
	-	ŧ			-	$\left \begin{array}{cccc} \P^3 & \cdots \\ \vdots & \vdots & \vdots \\ \vdots & \vdots & \vdots \\ \end{array}\right $		• • • • •	· · ·	· · ·		vv								-	ŧ								
-15	-15.7	- 38.5						· · · ·	.	· · ·			1:	<u>↓</u> - <u>1</u>	4.2	Bluish Gray Clayey F	ine SAND	<u> </u>		-	‡								
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-20	-20.7	43.5	7	17	22				.		-					Red Gray CL (Cape Fear Forn	AY lation)			-	ŧ								
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-35	-35 7 -	58.5					1	• • • •	· · ·	· · ·										-	‡								
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-40	-40.7	63.5	9	10	12		1				11	М				Brown Gray Silty CLAY w	ith Trace Mic	а		-	ŧ								
	-	‡			-			• • • •	· · ·	· · · · · ·					10					-	‡								
-45	- -45 7 -	68.5					<u> </u>	• • • •	· · ·	· · ·			R		4.2	Brown Gray C	AY	<u> </u>		-	‡								
F		+	7	11	14	1 ::::	•25		· · ·	· · · · · ·		м		\$						-	‡								
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-30	-50.7	73.5	9	11	16						11									-	ŧ								
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SHEET 9 OF 9

COUNTY	HERTF	ORD			GEOLOGIS	T Bradley,	N.		
s Bridge	Road) ove	er Overflo	ow to N	lehe	rrin River			GROUN	ID WTR (ft)
	OFFSET	8 ft RT			ALIGNMEN	T -L-		0 HR.	N/A
	NORTHIN	G 1,018	3,510		EASTING	2,545,950		24 HR.	FIAD
17		DRILL	NETHO	D M	lud Rotary		HAMM	ER TYPE	Automatic
	COMP. DA	ATE 04/	11/17			NATER DEP	TH N/	A	
R FOOT	75 100	SAMP.	· /	L O G		Soil and Roo			
Line									
	· · · ·	11	м	S		Brown Gray C	LAY (co	ntinued)	
· · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·						ray CLA		<u>82.0</u>
		1	м	\Box	-	Dark C		•	
· · · · ·				\Box	-				
				\Box	-				
· · · · ·			М	\Box	-				
· · · · · · · ·				\mathbf{N}					<u>92.0</u>
		11		\Box	_	Gray Silty CLA	Y with Tr	ace Mica	
			M		<u>-72.2</u> - Bori	ng Terminated Stiff Silty CLAY	at Elevat	ion -72.2 f	95.0 't in
					- Very	Stiff Silty CLAY	(Cape F	ear Forma	tion)
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