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PROJECT: 17BP.2.R.92 REFERENCE: B-4788

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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

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 1919 TOT-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST 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 INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

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

PERSONNEL

- S.N. ZIMARINO
J.P. DELOATCH
R.E. SMITH
J.M. EDMONDSON
J.P. PEHRSON

INVESTIGATED BY T.C. BOTTOMS
 DRAWN BY S.N. ZIMARINO
 CHECKED BY D.N. ARGENBRIGHT
 SUBMITTED BY D.N. ARGENBRIGHT
 DATE MARCH 2019



DocuSigned by:
Dean N. Argenbright 5/7/2019
 F83EDC63E48274 SIGNATURE DATE

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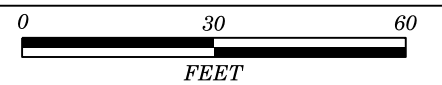
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

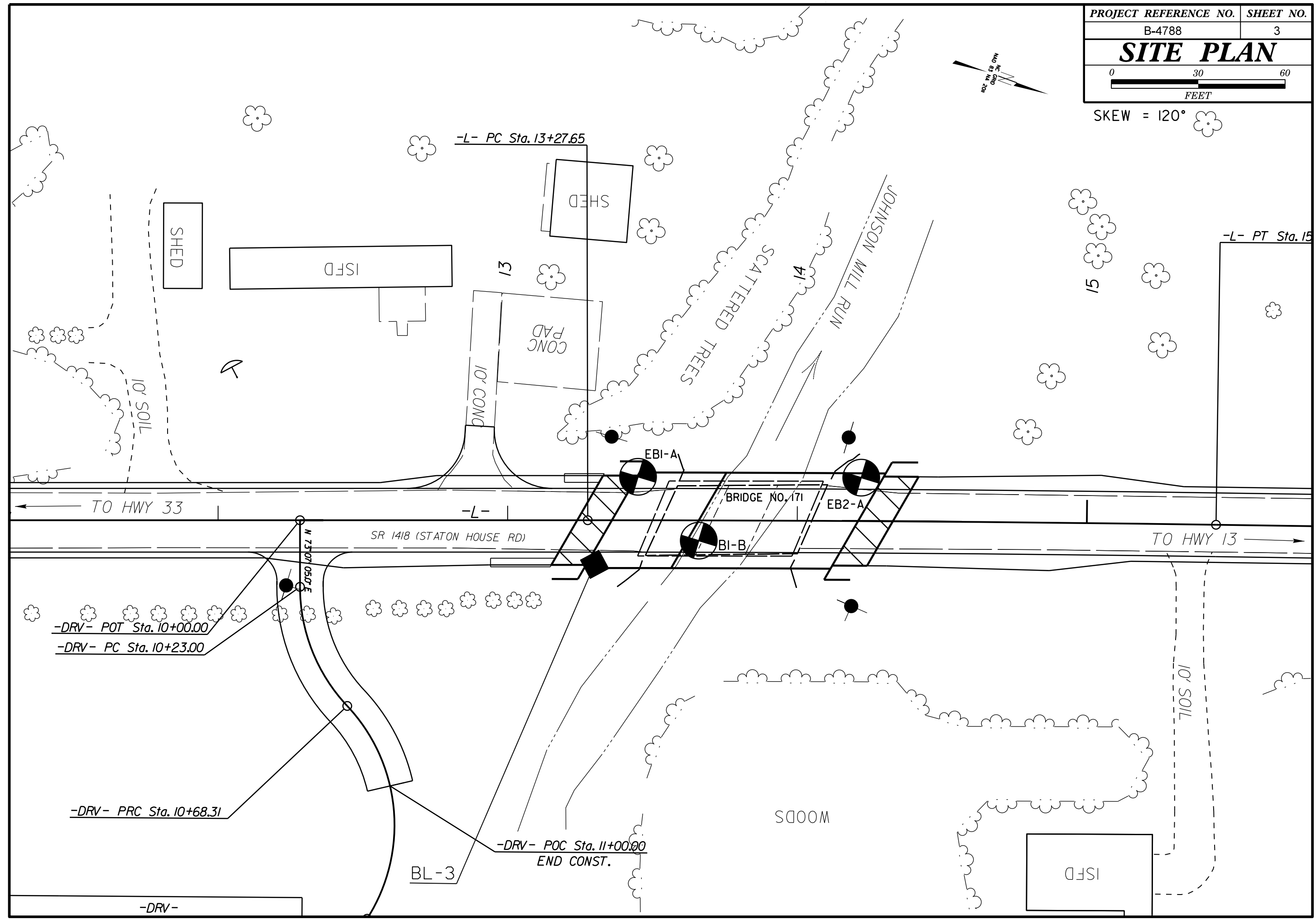
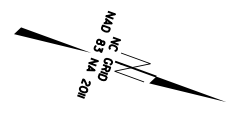
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION.

SITE PLAN



SKREW = 120°



5/14/99

PROJECT REFERENCE NO.

B-4788

SHEET NO.

4

ROADWAY DESIGN ENGINEER

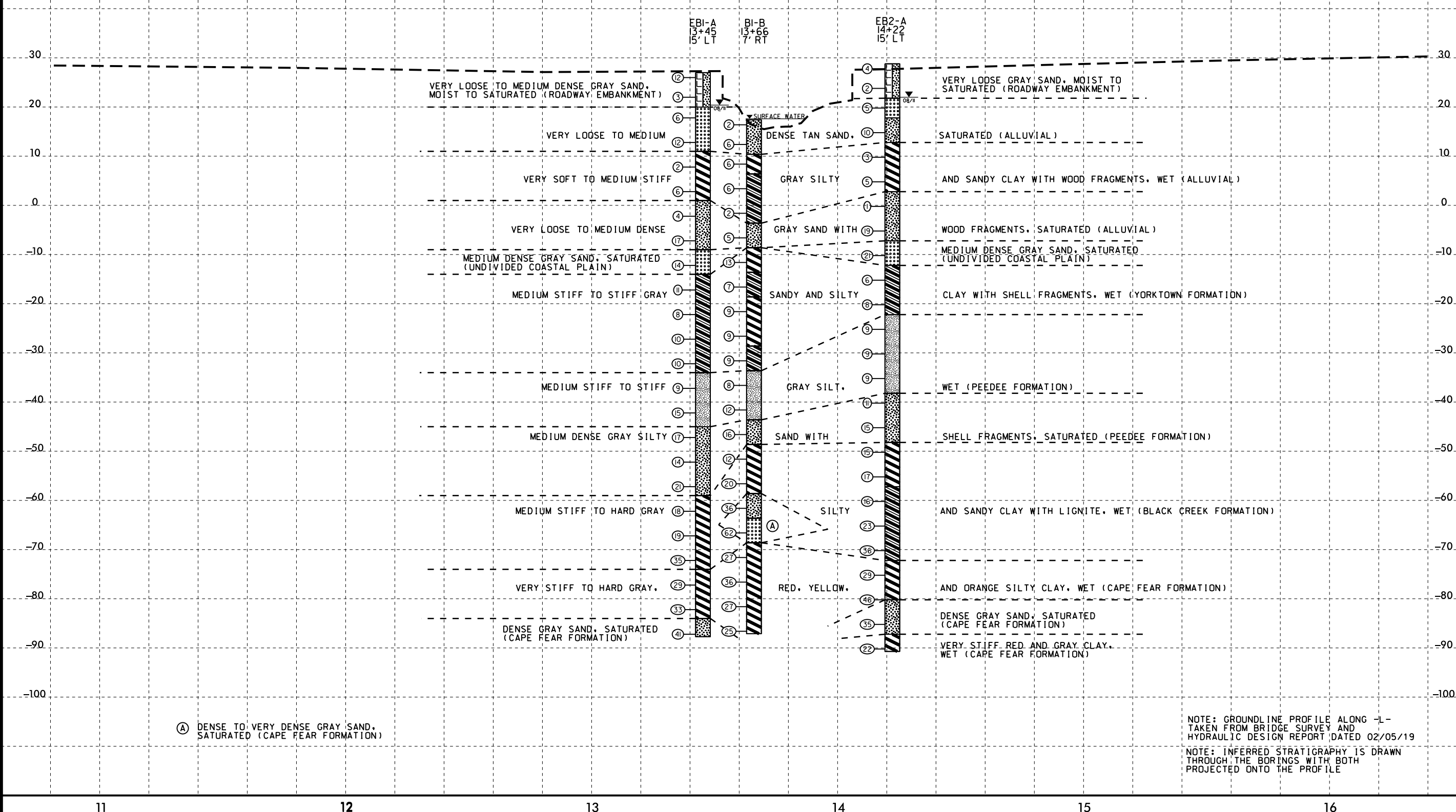
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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VE = 2

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



25-MAR-2019 11:53
B-4788 GEO.BROG.PFL.dgn
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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.2.R.92		TIP B-4788		COUNTY PITT		GEOLOGIST DeLoatch, J.P.	
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run							GROUND WTR (ft)
BORING NO. EB1-A		STATION 13+45		OFFSET 15 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 27.0 ft		TOTAL DEPTH 114.7 ft		NORTHING 697,758		EASTING 2,474,193	
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Smith, R. E.		START DATE 08/26/11		COMP. DATE 08/29/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
30															
	27.0	0.0	2	4	8									27.0	GROUND SURFACE
	23.0	4.0	2	2	1									20.0	ROADWAY EMBANKMENT GRAY SAND, MOIST TO SATURATED
	18.8	8.2	3	3	3									20.0	ALLUVIAL TAN SAND, SATURATED
	13.8	13.2	5	6	6									11.0	ALLUVIAL GRAY CLAY WITH WOOD FRAGMENTS, WET
	8.8	18.2	1	1	1									1.0	ALLUVIAL GRAY SAND WITH WOOD FRAGMENTS, SATURATED
	3.8	23.2	2	3	3									1.0	ALLUVIAL GRAY SAND WITH WOOD FRAGMENTS, SATURATED
	-1.2	28.2	1	2	2									-9.0	UNDIVIDED COASTAL PLAIN GRAY SAND, SATURATED
	-6.2	33.2	3	6	11									-14.0	COASTAL PLAIN GRAY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
	-11.2	38.2	4	7	7									-14.0	COASTAL PLAIN GRAY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
	-16.2	43.2	7	6	5									-34.0	COASTAL PLAIN GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)
	-21.2	48.2	3	3	5									-34.0	COASTAL PLAIN GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)
	-26.2	53.2	4	4	6									-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)
	-31.2	58.2	4	4	6									-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)
	-36.2	63.2	4	4	5									-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)
	-41.2	68.2	5	7	8									-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)
	-46.2	73.2	6	7	10									-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)

WBS 17BP.2.R.92		TIP B-4788		COUNTY PITT		GEOLOGIST DeLoatch, J.P.	
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run							GROUND WTR (ft)
BORING NO. EB1-A		STATION 13+45		OFFSET 15 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 27.0 ft		TOTAL DEPTH 114.7 ft		NORTHING 697,758		EASTING 2,474,193	
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Smith, R. E.		START DATE 08/26/11		COMP. DATE 08/29/11		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
-50															
	-51.2	78.2	5	6	8										Match Line
	-56.2	83.2	13	10	11										
	-61.2	88.2	5	8	10										
	-66.2	93.2	6	7	12										
	-71.2	98.2	9	16	19										
	-76.2	103.2	10	12	17										
	-81.2	108.2	6	9	24										
	-86.2	113.2	15	21	20										

ELEV (ft)	DEPTH (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
27.0	0.0	GROUND SURFACE	0.0
20.0	7.0	ROADWAY EMBANKMENT GRAY SAND, MOIST TO SATURATED	7.0
11.0	16.0	ALLUVIAL TAN SAND, SATURATED	16.0
1.0	26.0	ALLUVIAL GRAY SAND WITH WOOD FRAGMENTS, SATURATED	26.0
-9.0	36.0	UNDIVIDED COASTAL PLAIN GRAY SAND, SATURATED	36.0
-14.0	41.0	COASTAL PLAIN GRAY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	41.0
-34.0	61.0	COASTAL PLAIN GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)	61.0
-45.0	72.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)	72.0
-59.0	86.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION) (continued)	86.0
-59.0	86.0	COASTAL PLAIN GRAY MICACEOUS CLAY WITH LIGNITE, WET (BLACK CREEK FORMATION)	86.0
-74.0	101.0	COASTAL PLAIN RED GRAY MICACEOUS CLAY, WET (CAPE FEAR FORMATION)	101.0
-84.0	111.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (CAPE FEAR FORMATION)	111.0
-87.7	114.7	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (CAPE FEAR FORMATION)	114.7
		Boring Terminated at Elevation -87.7 ft in Dense Sand	

NCDOT BORE DOUBLE B4788_GEO_BRDG.GPJ NC_DOT.GDT 3/25/19

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 17BP.2.R.92	TIP B-4788	COUNTY PITT	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run			GROUND WTR (ft)
BORING NO. B1-B	STATION 13+66	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. 17.4 ft	TOTAL DEPTH 104.5 ft	NORTHING 697,777	EASTING 2,474,202
DRILL RIG/HAMMER EFF./DATE GFC0075 CME-45C 89%/08/13/2018		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 03/12/19	COMP. DATE 03/12/19	SURFACE WATER DEPTH 0.3ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
20															
	17.4	0.0													
15	13.4	4.0	3	3	3										
	9.4	8.0	1	3	3										
10															
	4.4	13.0	2	3	3										
5															
	-0.7	18.0	1	1	1										
0															
-5	-5.7	23.0	3	2	3										
-10	-10.7	28.0	4	6	7										
-15	-15.7	33.0	3	3	4										
-20	-20.7	38.0	4	4	5										
-25	-25.7	43.0	4	4	5										
-30	-30.7	48.0	3	4	5										
-35	-35.7	53.0	3	4	4										
-40	-40.7	58.0	5	5	7										
-45	-45.7	63.0	4	6	10										
-50	-50.7	68.0	4	5	7										
-55	-55.7	73.0	8	10	10										
-60															

WBS 17BP.2.R.92	TIP B-4788	COUNTY PITT	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run			GROUND WTR (ft)
BORING NO. B1-B	STATION 13+66	OFFSET 7 ft RT	ALIGNMENT -L-
COLLAR ELEV. 17.4 ft	TOTAL DEPTH 104.5 ft	NORTHING 697,777	EASTING 2,474,202
DRILL RIG/HAMMER EFF./DATE GFC0075 CME-45C 89%/08/13/2018		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.	START DATE 03/12/19	COMP. DATE 03/12/19	SURFACE WATER DEPTH 0.3ft

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
	-60.7	78.0	9	17	19										
-65	-65.7	83.0	8	35	27										
-70	-70.7	88.0	8	13	14										
-75	-75.7	93.0	15	16	20										
-80	-80.7	98.0	8	10	17										
-85	-85.7	103.0	9	11	14										

NCDOT BORE DOUBLE B4788_GEO_BRDG.GPJ NC_DOT.GDT 3/25/19

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.2.R.92		TIP B-4788		COUNTY PITT		GEOLOGIST DeLoatch, J.P.										
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 14+22		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 28.8 ft		TOTAL DEPTH 119.5 ft		NORTHING 697,287		EASTING 2,474,167										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Edmondson, J. M.		START DATE 08/29/11		COMP. DATE 08/30/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
30	28.8	0.0	1	2	2									28.8	GROUND SURFACE	0.0
															ROADWAY EMBANKMENT	
															TAN AND BROWN SAND, MOIST TO SATURATED	
25	24.8	4.0	2	1	1									21.8	ALLUVIAL	7.0
															TAN AND GRAY SAND WITH WOOD FRAGMENTS, SATURATED	
20	20.8	8.0	3	2	3									17.8	ALLUVIAL	11.0
															GRAY CLAY WITH WOOD FRAGMENTS, WET	
15	15.8	13.0	2	4	6									12.8	ALLUVIAL	16.0
															GRAY CLAY WITH WOOD FRAGMENTS, WET	
10	10.8	18.0	WOH	1	2									2.8	ALLUVIAL	26.0
															GRAY SAND WITH WOOD FRAGMENTS, SATURATED	
5	5.8	23.0	WOH	3	2										UNDIVIDED COASTAL PLAIN	36.0
															TAN SAND, SATURATED	
0	0.8	28.0	WOH	WOH	1										COASTAL PLAIN	41.0
															GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-5	-4.2	33.0	2	9	10										COASTAL PLAIN	51.0
															GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)	
-10	-9.2	38.0	8	10	11										COASTAL PLAIN	67.0
															GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)	
-15	-14.2	43.0	2	3	3										COASTAL PLAIN	77.0
															GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)	
-20	-19.2	48.0	3	4	4											
-25	-24.2	53.0	3	4	5											
-30	-29.2	58.0	3	4	5											
-35	-34.2	63.0	3	4	5											
-40	-39.2	68.0	4	5	6											
-45	-44.2	73.0	4	6	9											
-50	-49.2	78.0														

WBS 17BP.2.R.92		TIP B-4788		COUNTY PITT		GEOLOGIST DeLoatch, J.P.										
SITE DESCRIPTION Bridge No. 171 on -L- (SR 1418) over Johnson Mill Run							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 14+22		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 28.8 ft		TOTAL DEPTH 119.5 ft		NORTHING 697,287		EASTING 2,474,167										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Edmondson, J. M.		START DATE 08/29/11		COMP. DATE 08/30/11		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-50			5	7	8											
-55	-54.2	83.0	6	8	9											
-60	-59.2	88.0	6	7	9											
-65	-64.2	93.0	8	9	14											
-70	-69.2	98.0	9	14	22											
-75	-74.2	103.0	12	13	16											
-80	-79.2	108.0	8	18	28											
-85	-84.2	113.0	13	15	20											
-90	-89.2	118.0	7	10	12											

NCDOT BORE DOUBLE B4788_GEO_BRDG.GPJ NC_DOT.GDT 3/25/19