

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

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<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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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.

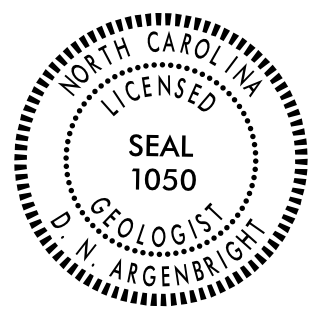
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- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. BY HAVING REQUESTED THIS INFORMATION, 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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 UNLESS ALL SIGNATURES COMPLETED**

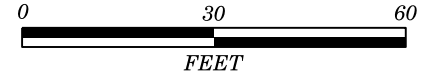
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

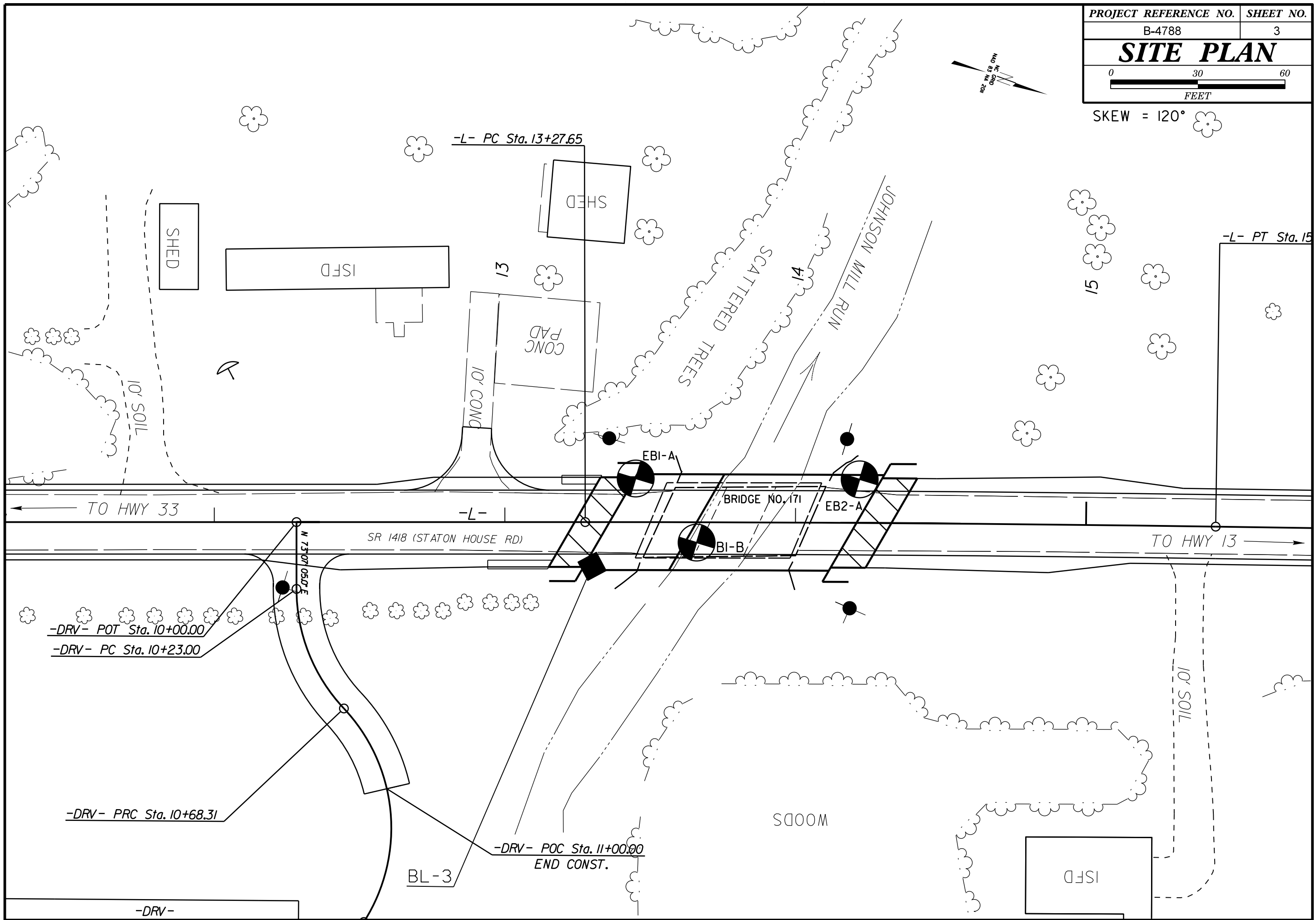
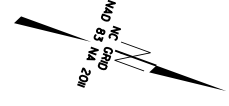
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical specifications, classification charts, and symbols for soil and rock analysis.

SITE PLAN



SKREW = 120°



5/14/99

PROJECT REFERENCE NO. SHEET NO.

B-4788 4

ROADWAY DESIGN ENGINEER

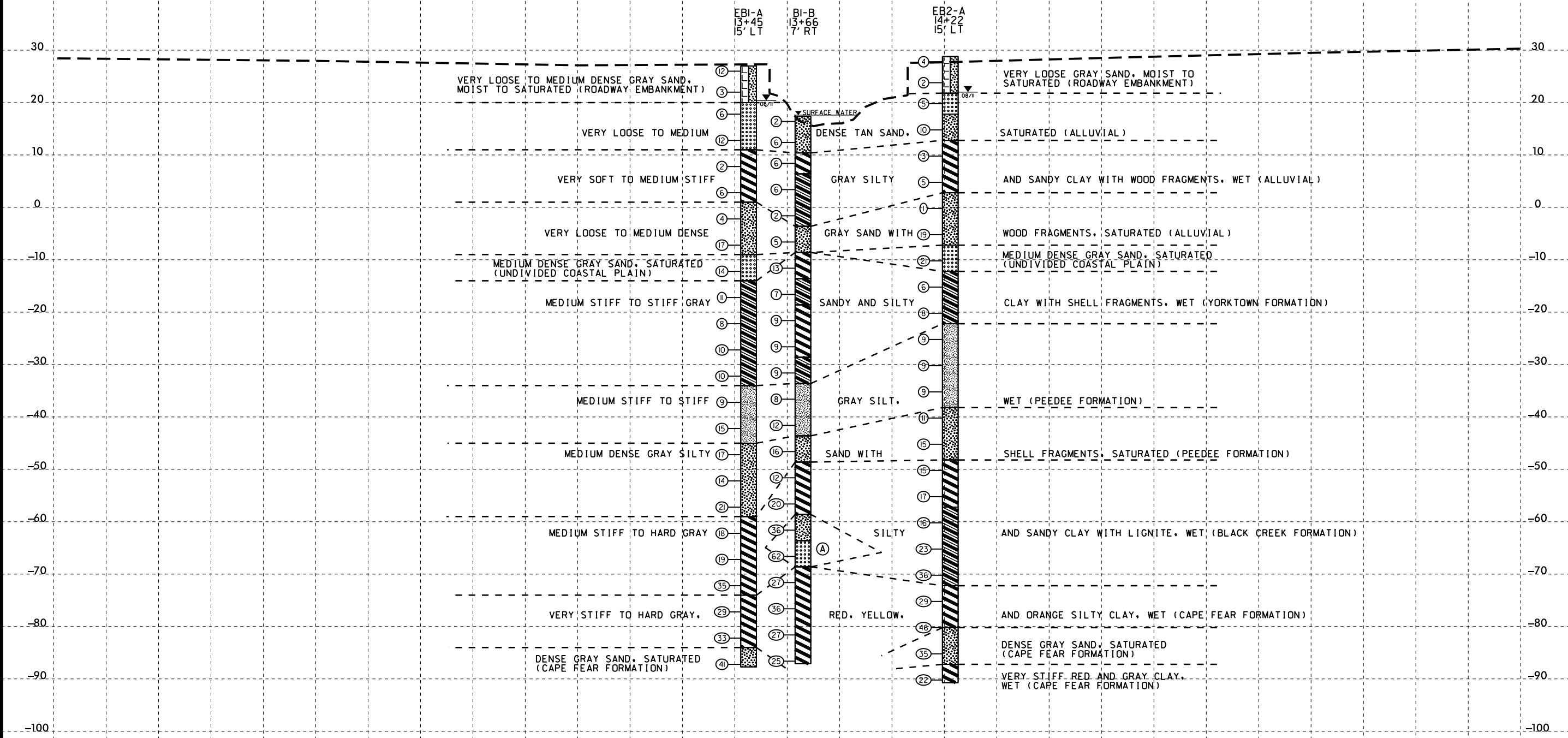
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

VE = 2

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



(A) DENSE TO VERY DENSE GRAY SAND, SATURATED (CAPE FEAR FORMATION)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 02/05/19
NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

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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											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										-9.0	UNDIVIDED COASTAL PLAIN GRAY SAND, SATURATED
	-1.2	28.2	1	2	2										-14.0	COASTAL PLAIN GRAY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
	-6.2	33.2	3	6	11										-34.0	COASTAL PLAIN GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)
	-11.2	38.2	4	7	7										-45.0	COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)
	-16.2	43.2	7	6	5											
	-21.2	48.2	3	3	5											
	-26.2	53.2	4	4	6											
	-31.2	58.2	4	4	6											
	-36.2	63.2	4	4	5											
	-41.2	68.2	5	7	8											
	-46.2	73.2	6	7	10											

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BORING NO. EB1-A		STATION 13+45		OFFSET 15 ft LT		ALIGNMENT -L-										
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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						
	-51.2	78.2	5	6	8											
	-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											

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 RIGHAMMER 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 MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
20																
	17.4	0.0	WOH	2	0											
	13.4	4.0		3	3											
	9.4	8.0		1	3											
	4.4	13.0		2	3											
	-0.7	18.0	WOH	1	1											
	-5.7	23.0		3	2											
	-10.7	28.0		4	6											
	-15.7	33.0		3	3											
	-20.7	38.0		4	4											
	-25.7	43.0		4	4											
	-30.7	48.0		3	4											
	-35.7	53.0		3	4											
	-40.7	58.0		5	5											
	-45.7	63.0		4	6											
	-50.7	68.0		4	5											
	-55.7	73.0		8	10											

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 RIGHAMMER 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 MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
	-60.7	78.0		9	17	19										
	-65.7	83.0		8	35	27										
	-70.7	88.0		8	13	14										
	-75.7	93.0		15	16	20										
	-80.7	98.0		8	10	17										
	-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-		0 HR. N/A								
COLLAR ELEV. 28.8 ft		TOTAL DEPTH 119.5 ft		NORTHING 697,287		EASTING 2,474,167		24 HR. 6.8								
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	
25	24.8	4.0	2	1	1									21.8	TAN AND BROWN SAND, MOIST TO SATURATED	7.0
20	20.8	8.0	3	2	3									17.8	ALLUVIAL	11.0
15	15.8	13.0	2	4	6									12.8	TAN AND GRAY SAND WITH WOOD FRAGMENTS, SATURATED	16.0
10	10.8	18.0	WOH	1	2									10.8	ALLUVIAL	
5	5.8	23.0	WOH	3	2									2.8	GRAY CLAY WITH WOOD FRAGMENTS, WET	26.0
0	0.8	28.0	WOH	WOH	1										ALLUVIAL	
-5	-4.2	33.0													GRAY SAND WITH WOOD FRAGMENTS, SATURATED	
-10	-9.2	38.0													UNDIVIDED COASTAL PLAIN	36.0
-15	-14.2	43.0													TAN SAND, SATURATED	
-20	-19.2	48.0													COASTAL PLAIN	41.0
-25	-24.2	53.0													GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-30	-29.2	58.0													COASTAL PLAIN	51.0
-35	-34.2	63.0													GRAY MICACEOUS SILT, WET (PEEDEE FORMATION)	
-40	-39.2	68.0													COASTAL PLAIN	67.0
-45	-44.2	73.0													GRAY MICACEOUS SAND, SATURATED (PEEDEE FORMATION)	
-50	-49.2	78.0														77.0

WBS 17BP.2.R.92		TIP B-4788		COUNTY PITT		GEOLOGIST DeLoatch, J.P.										
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BORING NO. EB2-A		STATION 14+22		OFFSET 15 ft LT		ALIGNMENT -L-		0 HR. N/A								
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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																
-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											

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