

REFERENCE: N/A

PROJECT: 17BP.14.R.149

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.14.R.149	1	8

**STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT**

**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY JACKSON
 PROJECT DESCRIPTION DIVISION 14 BRIDGES
GROUP 1
 SITE DESCRIPTION BRIDGE NO.185 ON SR 1705
(DARK RIDGE ROAD) OVER JONES CREEK

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2, 2A	LEGEND (SOIL & ROCK)
3	SITE PLAN
4-7	BORELOGS

PERSONNEL
<u>GEOLOGIC</u>
<u>M. FOULKE</u>

INVESTIGATED BY ECS SOUTHEAST, LLP
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 SUBMITTED BY ECS SOUTHEAST, LLP
 DATE JANUARY 2017

CAUTION NOTICE

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D. Matthew Brewer 1-9-17
 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
(PAGE 1 OF 2)

SOIL DESCRIPTION										GRADATION									
<p>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 ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>									
<p>SOIL LEGEND AND AASHTO CLASSIFICATION</p>										<p>ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>									
<p>MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p>COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50</p>									
<p>PERCENTAGE OF MATERIAL</p>										<p>GROUND WATER</p>									
<p>CONSISTENCY OR DENSENESS</p>										<p>MISCELLANEOUS SYMBOLS</p>									
<p>TEXTURE OR GRAIN SIZE</p>										<p>RECOMMENDATION SYMBOLS</p>									
<p>SOIL MOISTURE - CORRELATION OF TERMS</p>										<p>ABBREVIATIONS</p>									
<p>PLASTICITY</p>										<p>EQUIPMENT USED ON SUBJECT PROJECT</p>									
<p>COLOR</p>										<p>HAND TOOLS:</p>									
<p>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.</p>										<p>POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST</p>									

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS
(PAGE 2 OF 2)

ROCK DESCRIPTION		TERMS AND DEFINITIONS
<p>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. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>		<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. 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. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT 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. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. 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. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE 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 ITS LATERAL EXTENT. 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 USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - 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 INTRODUCED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN 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. STRATA CORE RECOVERY (SCRC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL 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. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>
<p>WEATHERED ROCK (WR)  NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.</p>	<p>CRYSTALLINE ROCK (CR)  FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p>	
<p>NON-CRYSTALLINE ROCK (NCR)  FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</p>	<p>COASTAL PLAIN SEDIMENTARY ROCK (CPI)  COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>	
WEATHERING		
<p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p>	<p>VERY SLIGHT (V SLI.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p>	
<p>SLIGHT (SLI.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p>	<p>MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN 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 WITH FRESH ROCK.</p>	
<p>MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <u>IF TESTED, WOULD YIELD SPT REFUSAL.</u></p>	<p>SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF.</u></p>	
<p>VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF.</u></p>	<p>COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>	
ROCK HARDNESS		
<p>VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p>	<p>HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p>	
<p>MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</p>	<p>MEDIUM HARD CAN BE GROOVED OR COUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p>	
<p>SOFT CAN BE GROVED OR COUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.</p>	<p>VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.</p>	
FRACTURE SPACING		BEDDING
<p>TERM SPACING</p>	<p>TERM THICKNESS</p>	
<p>VERY WIDE MORE THAN 10 FEET</p>	<p>VERY THICKLY BEDDED 4 FEET</p>	
<p>WIDE 3 TO 10 FEET</p>	<p>THICKLY BEDDED 1.5 - 4 FEET</p>	
<p>MODERATELY CLOSE 1 TO 3 FEET</p>	<p>THINLY BEDDED 0.16 - 1.5 FEET</p>	
<p>CLOSE 0.16 TO 1 FOOT</p>	<p>VERY THINLY BEDDED 0.03 - 0.16 FEET</p>	
<p>VERY CLOSE LESS THAN 0.16 FEET</p>	<p>THICKLY LAMINATED 0.008 - 0.03 FEET</p>	
	<p>THINLY LAMINATED < 0.008 FEET</p>	
INDURATION		
<p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p>		
<p>FRIABLE</p>	<p>RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p>	
<p>MODERATELY INDURATED</p>	<p>GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p>	
<p>INDURATED</p>	<p>GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p>	
<p>EXTREMELY INDURATED</p>	<p>SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>	
		<p>BENCH MARK: BMI N-630,874; E-777,124 ELEVATION: 2852.35 FEET</p>
<p>NOTES: SURVEY INFORMATION PROVIDED BY VAUGHN AND MELTON</p>		
		<p>DATE: 6-15-14</p>

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.14.R.149		TIP N/A		COUNTY JACKSON		GEOLOGIST M. Foulke									
SITE DESCRIPTION Bridge 490185 on SR 1705 (Dark Ridge Road) over Jones Creek							GROUND WTR (ft)								
BORING NO. EB1-A		STATION 13+20		OFFSET 7 ft LT		ALIGNMENT -L-	0 HR. 8.7								
COLLAR ELEV. 2,853.3 ft		TOTAL DEPTH 24.7 ft		NORTHING 630,921		EASTING 777,178	24 HR. FIAD								
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 87% 12/10/16				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER B. Thomas		START DATE 12/08/16		COMP. DATE 12/08/16		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2855															
	2,852.3	1.0	3	2	1									2,853.3	GROUND SURFACE 0.0
2850	2,849.8	3.5	5	6	5								M		ROADWAY EMBANKMENT Very Loose to Medium Dense, Brown, Clayey Fine to Coarse SAND (A-2-6), with little organics
	2,847.3	6.0	14	18	12								W	2,847.3	6.0
2845	2,844.8	8.5	2	1	3								M	2,844.3	9.0
	2,839.8	13.5	6	6	9								M	2,839.3	14.0
2840	2,834.8	18.5	5	6	8								M		RESIDUAL Soft, Tan-Red, Fine to Coarse Sandy SILT (A-4), some mica
	2,829.8	23.5	15	85/0.4										2,831.3	22.0
2835	2,828.7	24.6												2,828.7	24.6
														2,828.6	24.7
2830															WEATHERED ROCK Red-White-Black (BIOTITE GNEISS)
															CRYSTALLINE ROCK (BIOTITE GNEISS) Boring Terminated with Standard Penetration Test Refusal at Elevation 2,828.6 ft In Crystalline Rock (BIOTITE GNEISS)

NCDOT BORE SINGLE BRIDGE 185 BORELOGS.GPJ NC_DOT.GDT 1/9/17

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.14.R.149		TIP N/A		COUNTY JACKSON		GEOLOGIST M. Foulke												
SITE DESCRIPTION Bridge 490185 on SR 1705 (Dark Ridge Road) over Jones Creek							GROUND WTR (ft)											
BORING NO. EB1-B		STATION 13+21		OFFSET 10 ft RT		ALIGNMENT -L-		0 HR. 9.5										
COLLAR ELEV. 2,852.4 ft		TOTAL DEPTH 28.5 ft		NORTHING 630,904		EASTING 777,182		24 HR. FIAD										
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 87% 12/10/16				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER B. Thomas		START DATE 12/08/16		COMP. DATE 12/08/16		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION				
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)			
2855															2852.4	GROUND SURFACE	0.0	
2850	2,851.4	1.0	2	1	2								M		2,848.4	ROADWAY EMBANKMENT Very Loose, Red-Brown, Clayey Fine to Coarse SAND (A-2-6), with little organics	4.0	
	2,848.9	3.5	3	4	2								M			Loose to Medium Dense, Brown, Silty Fine to Coarse SAND (A-2-4), with little organics		
2845	2,846.4	6.0	11	8	5								M					
	2,843.9	8.5	4	3	2								M		2,842.9	RESIDUAL Loose to Medium Dense, Red-Brown-Orange-Black, Silty Fine to Coarse SAND (A-2-4), little to some mica	9.5	
2840	2,838.9	13.5	12	9	8								M					
2835	2,833.9	18.5	8	9	9								M					
2830	2,828.9	23.5	12	12	13								M					
2825	2,823.9	28.5											M		2,823.9	Boring Terminated with Standard Penetration Test Refusal at Elevation 2,823.9 ft On Crystalline Rock (BIOTITE GNEISS)	28.5	
			60/0.0															

NCDOT BORE SINGLE BRIDGE 185 BORELOGS.GPJ NC_DOT.GDT 1/20/17

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.14.R.149		TIP N/A		COUNTY JACKSON		GEOLOGIST M. Foulke											
SITE DESCRIPTION Bridge 490185 on SR 1705 (Dark Ridge Road) over Jones Creek							GROUND WTR (ft)										
BORING NO. EB2-A		STATION 13+65		OFFSET 7 ft LT		ALIGNMENT -L-	0 HR. 7.0										
COLLAR ELEV. 2,852.9 ft		TOTAL DEPTH 25.0 ft		NORTHING 630,930		EASTING 777,222	24 HR. FIAD										
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 87% 12/10/16				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER B. Thomas		START DATE 12/08/16		COMP. DATE 12/08/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
2855															2,852.9	0.0	GROUND SURFACE
	2,851.9	1.0				2	2	2						M			ROADWAY EMBANKMENT
2850	2,849.4	3.5				2	1	1						M			Very Loose to Medium Dense, Brown, Silty Fine to Coarse SAND (A-2-4), with little gravel
	2,846.9	6.0				6	8	7						M			
2845	2,844.4	8.5				13	56	44/0.3						M			
	2,843.1									100/0.8							Very Dense, Red-Brown, Silty Clayey Fine to Coarse SAND (A-2-6)
2840	2,839.4	13.5				13	3	4						M			(Possible Cobbles or Boulders)
	2,834.9																RESIDUAL
2835	2,834.4	18.5				73	27/0.3										Loose, Brown-Black-White, Silty Fine to Coarse SAND (A-2-4), with trace gravel
	2,829.4									100/0.8							WEATHERED ROCK
2830	2,829.4	23.5															Black-White (BIOTITE GNEISS)
	2,827.9									100/0.7							
	2,827.9	25.0								60/0.0							Boring Terminated with Standard Penetration Test Refusal at Elevation 2,827.9 ft On Crystalline Rock (BIOTITE GNEISS)
										60/0.0							

NCDOT BORE SINGLE BRIDGE 185 BORELOGS.GPJ NC_DOT.GDT 18/17

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.14.R.149		TIP N/A		COUNTY JACKSON		GEOLOGIST M. Foulke											
SITE DESCRIPTION Bridge 490185 on SR 1705 (Dark Ridge Road) over Jones Creek							GROUND WTR (ft)										
BORING NO. EB2-B		STATION 13+65		OFFSET 14 ft RT		ALIGNMENT -L-		0 HR. 8.0									
COLLAR ELEV. 2,852.4 ft		TOTAL DEPTH 30.0 ft		NORTHING 630,910		EASTING 777,226		24 HR. FIAD									
DRILL RIG/HAMMER EFF./DATE GEO105 Diedrich D120 87% 12/10/16				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER B. Thomas		START DATE 12/08/16		COMP. DATE 12/08/16		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	L O G	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
2855																	
	2,851.4	1.0													2,852.4	0.0	GROUND SURFACE
2850	2,848.9	3.5	2	2	2												ROADWAY EMBANKMENT
	2,846.4	6.0	5	12	18												Loose to Dense, Brown-Red-Black, Clayey Silty Fine to Coarse SAND (A-2-6), with trace gravel
2845	2,843.9	8.5	46	23	20												
	2,838.9	13.5	24	18	12										2,843.9	8.5	RESIDUAL
2840	2,833.9	18.5	3	3	5												Loose to Medium Dense, Black-White-Brown-Red, Silty Fine to Coarse SAND (A-2-4), with some mica
2835	2,828.9	23.5	13	9	9												
2830	2,823.9	28.5	13	13	14												
2825	2,822.4	30.0	51	49/0.5											2,824.4	28.0	WEATHERED ROCK
															2,822.4	30.0	Black-White (BIOTITE GNEISS)
																	Boring Terminated with Standard Penetration Test Refusal at Elevation 2,822.4 ft On Crystalline Rock (BIOTITE GNEISS)

NCDOT_BORE_SINGLE_BRIDGE_185_BORELOGS.GPJ NC_DOT.GDT 1/9/17