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REFERENCE: B-4961

PROJECT: 40152

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

STRUCTURE  
SUBSURFACE INVESTIGATION

COUNTY GUILFORD  
PROJECT DESCRIPTION BRIDGE NO. 208 ON SR 3051  
OVER LITTLE ALAMANCE CREEK

CONTENTS

SHEET NO.	DESCRIPTION
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2	LEGEND
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4	CROSS SECTION(S)
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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4961	1	9

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) 707-6850. 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.

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- 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.
  - 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

C. WANG

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INVESTIGATED BY F&R, Inc.

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CHECKED BY P. ALTON

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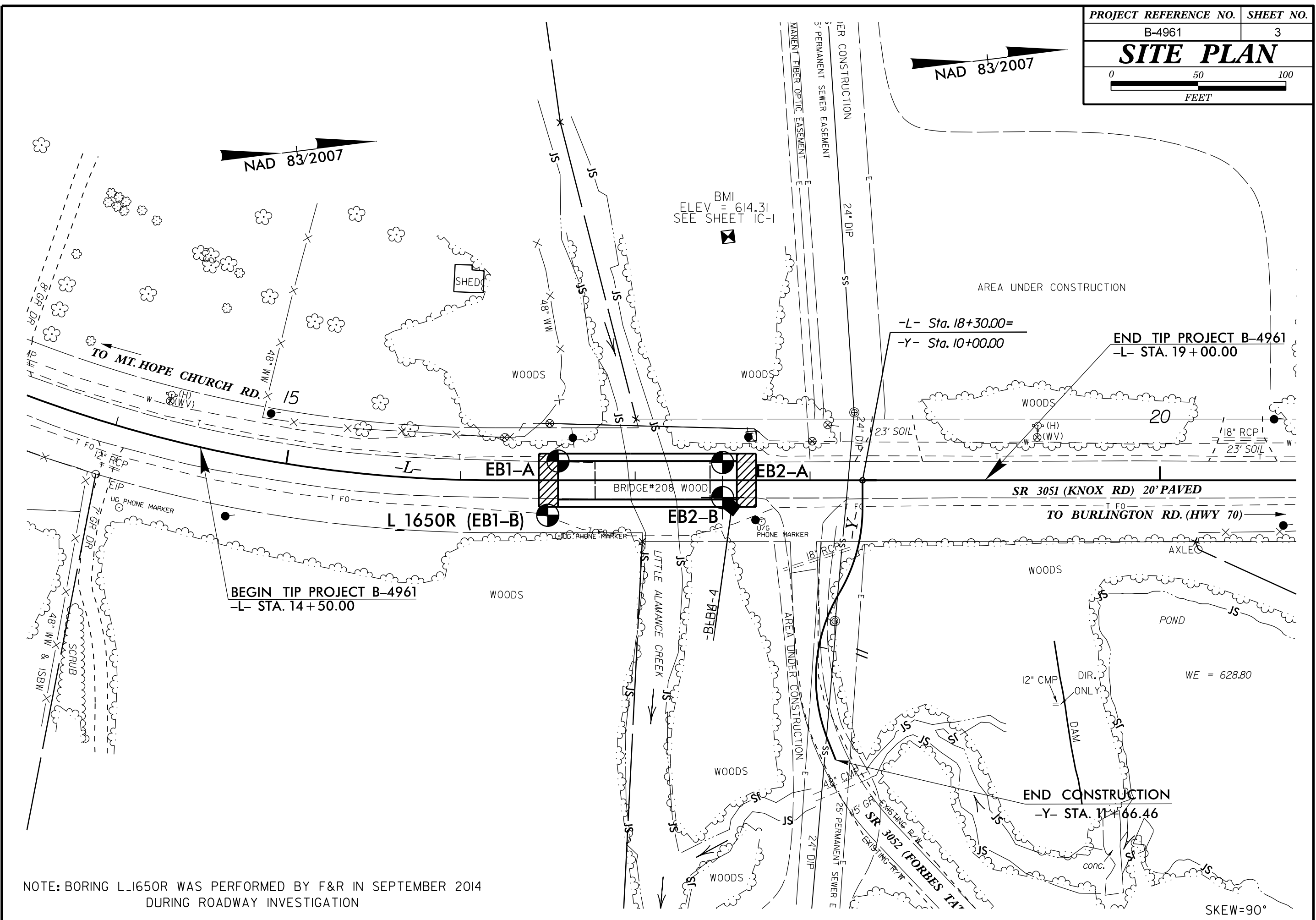
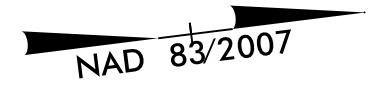
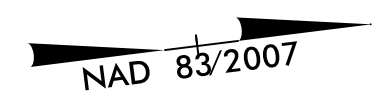
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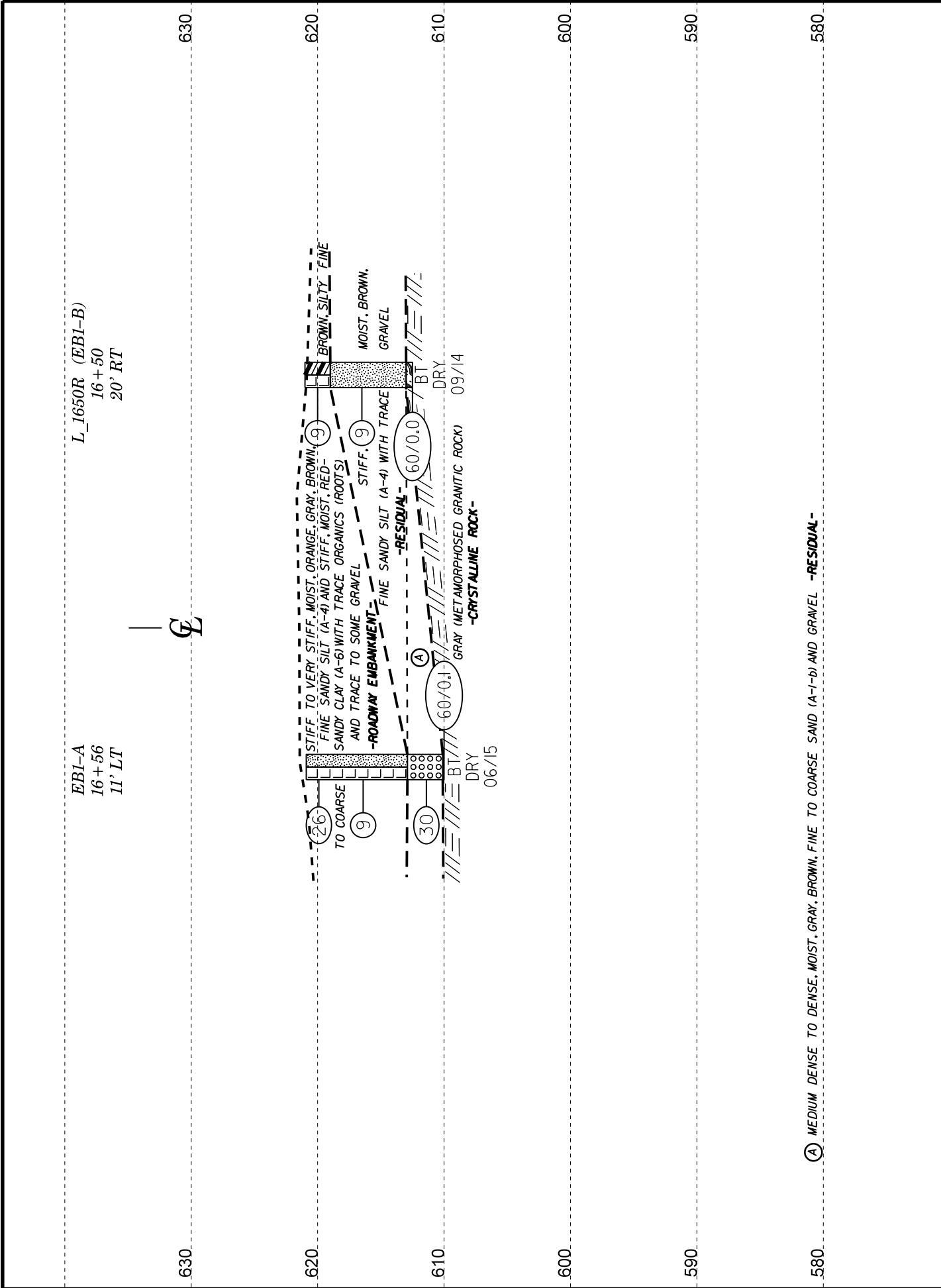
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W. Patrick Alton 8/3/2015

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																																																															
<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 (ASHTO 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, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</p>										<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORMLY GRADED</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. <b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p> <p style="text-align: center;"><b>ANGULARITY OF GRAINS</b></p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <b>ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</b></p>										<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><b>WEATHERED ROCK (WR)</b> - NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES &gt; 100 BLOWS PER FOOT IF TESTED.</p> <p><b>CRYSTALLINE ROCK (CR)</b> - 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><b>NON-CRYSTALLINE ROCK (NCR)</b> - 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><b>COASTAL PLAIN SEDIMENTARY ROCK (CPS)</b> - COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>										<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA. <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. <b>ARGILLACEOUS</b> - 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. <b>ARTESIAN</b> - 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. <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. <b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. <b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. <b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. <b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. <b>ROCK QUALITY DESIGNATION (RQD)</b> - 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. <b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. <b>SILL</b> - 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. <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - 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. <b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. <b>STRATA ROCK QUALITY DESIGNATION (SRQD)</b> - 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. <b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																															
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<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>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p><b>FRIABLE</b> - RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. <b>MODERATELY INDURATED</b> - GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. <b>INDURATED</b> - GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. <b>EXTREMELY INDURATED</b> - SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																																			



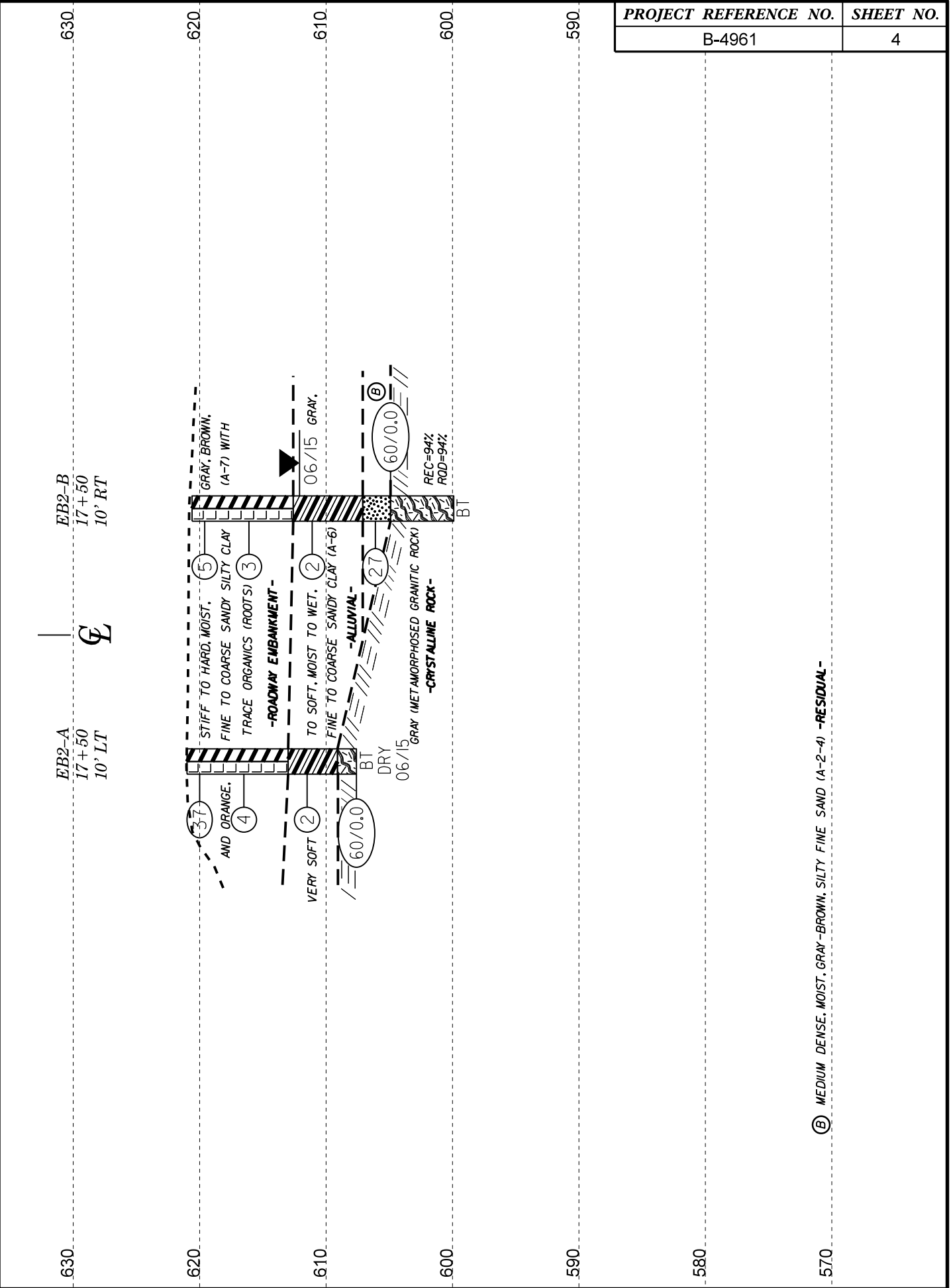
NOTE: BORING L1650R WAS PERFORMED BY F&R IN SEPTEMBER 2014 DURING ROADWAY INVESTIGATION



HORIZ. SCALE 0 10 20 (FEET)

VE = 1:1

CROSS SECTION THROUGH END BENT 1



HORIZ. SCALE 0 10 20 (FEET)

VE = 1:1

CROSS SECTION THROUGH END BENT 2



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

WBS 40152.1.1		TIP B-4961		COUNTY GUILFORD		GEOLOGIST C. Wang									
SITE DESCRIPTION BRIDGE NO. 208 ON SR 3051 (KNOX RD.) OVER LITTLE ALAMANCE CREEK							GROUND WTR (ft)								
BORING NO. EB1-A		STATION 16+56		OFFSET 11 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 620.9 ft		TOTAL DEPTH 10.9 ft		NORTHING 843,423		EASTING 1,809,427									
DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 76% 02/25/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER S. Davis		START DATE 06/10/15		COMP. DATE 06/10/15		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					
625															
620	620.9	0.0	3	8	18									620.9	0.0
	617.4	3.5	7	5	4										
615	612.4	8.5	22	18	12									612.9	8.0
	610.1	10.8	60/0.1											610.1	10.8
														610.0	10.9

WBS 40152.1.1		TIP B-4961		COUNTY GUILFORD		GEOLOGIST D. Racey									
SITE DESCRIPTION BRIDGE NO. 208 ON SR 3051 (KNOX RD.) OVER LITTLE ALAMANCE CREEK							GROUND WTR (ft)								
BORING NO. L_1650R (EB1-B)		STATION 16+50		OFFSET 20 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 621.0 ft		TOTAL DEPTH 8.5 ft		NORTHING 843,413		EASTING 1,809,457									
DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 76% 02/22/2014				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER S. Davis		START DATE 09/09/14		COMP. DATE 09/09/14		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					
625															
620	621.0	0.0	4	5	4									621.0	0.0
	617.5	3.5	3	5	4									619.0	2.0
615	612.5	8.5	60/0.0											613.0	8.0
														612.5	8.5

NCDOT BORE DOUBLE B4961\_GEO\_BH\_BRDG0208.GPJ NC\_DOT\_GDT 7/20/15

- NOTES:
- 1) Boring L1650R (EB1-B) was performed by F&R in September 2014 during th roadway investigation
  - 2) 0.0-0.3' = Surficial Organic Soils
  - 3) Driller indicates harder drilling at 8.0'.

WBS 40152.1.1		TIP B-4961		COUNTY GUILFORD		GEOLOGIST C. Wang								
SITE DESCRIPTION BRIDGE NO. 208 ON SR 3051 (KNOX RD.) OVER LITTLE ALAMANCE CREEK							GROUND WTR (ft)							
BORING NO. EB2-A		STATION 17+50		OFFSET 10 ft LT		ALIGNMENT -L-	0 HR. Dry							
COLLAR ELEV. 621.0 ft		TOTAL DEPTH 13.4 ft		NORTHING 843,516		EASTING 1,809,440	24 HR. Dry							
DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 76% 02/25/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic								
DRILLER S. Davis		START DATE 06/10/15		COMP. DATE 06/10/15		SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
625														
620	621.0	0.0	5	10	27								M	621.0 GROUND SURFACE 0.0
615	617.5	3.5	5	2	2								M	ROADWAY EMBANKMENT GRAY, BROWN, FINE SANDY SILTY CLAY (A-7-5) WITH TRACE COARSE SAND AND ORGANICS (ROOTS)
610	612.5	8.5	5	1	1								W	613.0 ALLUVIAL 8.0 GRAY, FINE TO COARSE SANDY CLAY (A-6)
	607.6	13.4	60/0.0											609.1 11.9 607.6 13.4 CRYSTALLINE ROCK GRAY (METAMORPHOSED GRANITIC ROCK)
<p>Boring Terminated with Standard Penetration Test Refusal at Elevation 607.6 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)</p> <p>NOTES: 1) AUGER REFUSAL AT 13.4'</p>														



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**BORELOG REPORT**

WBS 40152.1.1		TIP B-4961		COUNTY GUILFORD		GEOLOGIST C. Wang										
SITE DESCRIPTION BRIDGE NO. 208 ON SR 3051 (KNOX RD.) OVER LITTLE ALAMANCE CREEK							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 17+50		OFFSET 10 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 620.6 ft		TOTAL DEPTH 20.7 ft		NORTHING 843,514		EASTING 1,809,459										
DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 76% 02/25/2015			DRILL METHOD SPT Core Boring			HAMMER TYPE Automatic										
DRILLER S. Davis		START DATE 06/10/15		COMP. DATE 06/10/15		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						
625																
620	620.6	0.0	2	2	3									620.6	GROUND SURFACE	0.0
615	617.1	3.5	2	2	1										ROADWAY EMBANKMENT ORANGE, RED-BROWN, SILTY CLAY (A-7-5) WITH TRACE FINE AND COARSE SAND AND ORGANICS (ROOTS)	
610	612.1	8.5	1	1	1									612.6	ALLUVIAL GRAY, SILTY FINE SANDY CLAY (A-6)	8.0
605	607.1	13.5	3	5	22									607.1	RESIDUAL GRAY, BROWN, SILTY FINE SAND (A-2-4)	13.5
600	605.0	15.7	60/0.0											604.9	CRYSTALLINE ROCK GRAY (METAMORPHOSED GRANITIC ROCK)	15.7
														599.9	Boring Terminated at Elevation 599.9 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)	20.7
															NOTES: 1) AUGER REFUSAL AT 15.7', BEGIN CORING AT 15.7'	

NCDOT BORE DOUBLE B4961\_GEO\_BH\_BRDG0208.GPJ NC\_DOT.GDT 7/17/15



**NCDOT GEOTECHNICAL ENGINEERING UNIT**  
**CORE BORING REPORT**

WBS 40152.1.1		TIP B-4961		COUNTY GUILFORD		GEOLOGIST C. Wang					
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COLLAR ELEV. 620.6 ft		TOTAL DEPTH 20.7 ft		NORTHING 843,514		EASTING 1,809,459					
DRILL RIG/HAMMER EFF./DATE F&R2175 CME-55 76% 02/25/2015			DRILL METHOD SPT Core Boring			HAMMER TYPE Automatic					
DRILLER S. Davis		START DATE 06/10/15		COMP. DATE 06/10/15		SURFACE WATER DEPTH N/A					
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft)	RQD (ft)	REC. (ft)	RQD (ft)			
604.94	604.9	15.7	5.0	3:20/1.0 2:37/1.0 3:26/1.0 3:48/1.0 2:54/1.0	(4.7) 94%	(4.7) 94%	(4.7) 94%	(4.7) 94%		Begin Coring @ 15.7 ft	15.7
600	599.9	20.7								GRAY, VERY SLIGHTLY WEATHERED TO FRESH, MODERATELY HARD TO HARD, METAMORPHOSED GRANITIC ROCK, CLOSE TO WIDE FRACTURE SPACING	20.7
										Boring Terminated at Elevation 599.9 ft in CRYSTALLINE ROCK (METAMORPHOSED GRANITIC ROCK)	
										NOTES: 1) AUGER REFUSAL AT 15.7', BEGIN CORING AT 15.7'	

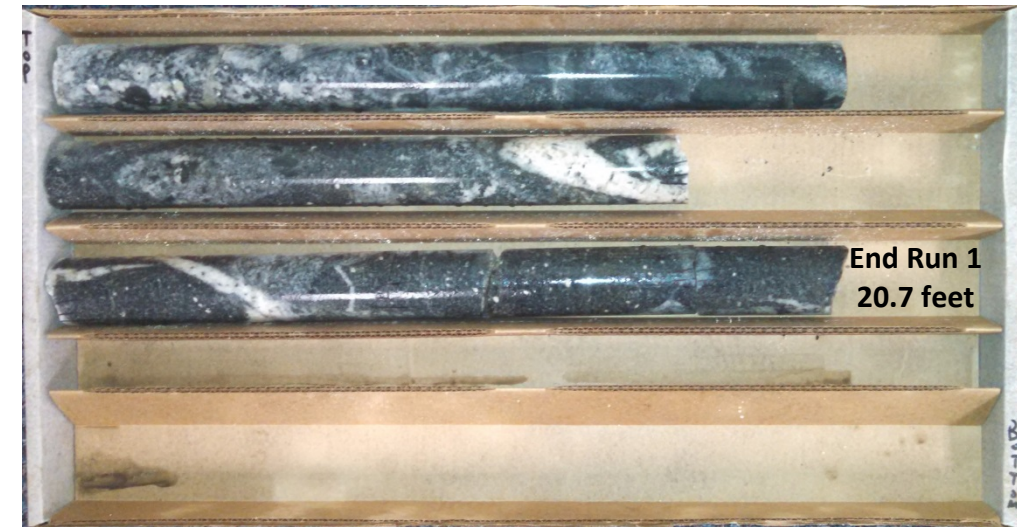
NCDOT CORE DOUBLE B4961\_GEO\_BH\_BRDG0208.GPJ NC\_DOT.GDT 7/17/15



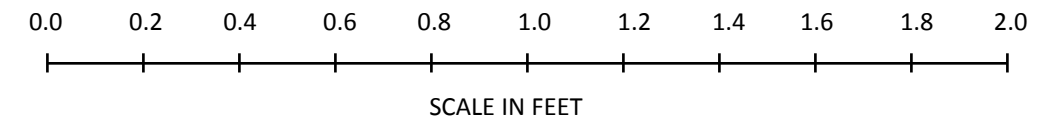


**CORE PHOTOGRAPHS: Bridge No. 208 on SR 3051 over Little Alamance Creek, EB2-B 17+50, 10' RT**

**Begin Run 1  
15.7 feet**



**End Run 1  
20.7 feet**



**Bridge No. 208 on SR 3051 (Knox Road) over Little Alamance Creek**  
**SITE PHOTOGRAPHS**



**Photograph No. 1:** View of drilling operations at boring EB1-B looking northwest



**Photograph No. 3:** View of Forbes Tate Road (-Y-) looking east



**Photograph No. 2:** View of End Bent 1 looking south



**Photograph No. 4:** View of Little Alamance Creek looking upstream