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REFERENCE: B-4462

PROJECT: 38376

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

STRUCTURE  
SUBSURFACE INVESTIGATION

COUNTY Cherokee  
PROJECT DESCRIPTION Replace bridge number 148  
on SR 1127 over Persimmon Creek  
\_\_\_\_\_  
SITE DESCRIPTION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4-5	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4462	1	5

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.

- 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

T. Evans (Falcon)  
S. Gower (Trigon)  
W. Trapp (Trigon)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

INVESTIGATED BY D.M. Mullen  
DRAWN BY DMM  
CHECKED BY JCK  
SUBMITTED BY DMM  
DATE 6.16.2016



DocuSigned by:  
D. Matthew Mullen 6/21/2016  
18909BD3C05440C 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

SOIL DESCRIPTION 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, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION Table with columns for General Class, Group Class, Symbol, % Passing, Material, Group Index, Usual Types, and Gen. Rating.

CONSISTENCY OR DENSENESS Table with columns for Primary Soil Type, Compactness or Consistency, Range of Standard Penetration Resistance, and Range of Unconfined Compressive Strength.

TEXTURE OR GRAIN SIZE Table with columns for U.S. Std. Sieve Size, Boulder, Cobble, Gravel, Coarse Sand, Fine Sand, Silt, and Clay.

SOIL MOISTURE - CORRELATION OF TERMS Table with columns for Soil Moisture Scale, Field Moisture Description, and Guide for Field Moisture Description.

PLASTICITY Table with columns for Plasticity Index (PI) and Dry Strength.

COLOR 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.

GRADATION 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.

ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED. MINERALOGICAL COMPOSITION MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE. COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50

PERCENTAGE OF MATERIAL Table with columns for Organic Material, Granular Soils, Silt-Clay Soils, and Other Material.

GROUND WATER WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP

MISCELLANEOUS SYMBOLS Roadway Embankment, Soil Symbol, Artificial Fill, Inferred Soil Boundary, Inferred Rock Line, Alluvial Soil Boundary, Dip & Dip Direction, Test Boring, Auger Boring, Core Boring, Monitoring Well, Piezometer Installation, Slope Indicator, Cone Penetrometer Test, Sounding Rod, Test Boring with Core, SPT N-Value.

RECOMMENDATION SYMBOLS UNDERCUT, SHALLOW UNDERCUT, UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE, UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK, UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL.

ABBREVIATIONS Table listing various symbols for AR, BT, CL, CPT, CSE, DMT, DPT, e, F, FOSS., FRAC., FRAGS., HI., MED., MICA., MOD., NP., ORG., PMT., SAP., SO., SL., SLI., TCR., u, V, VST., WEA., UNIT WEIGHT, DRY UNIT WEIGHT, SAMPLE ABBREVIATIONS, and CBR.

EQUIPMENT USED ON SUBJECT PROJECT Table with columns for Drill Units, Advancing Tools, Hammer Type, Core Size, Hand Tools, and equipment status checkboxes.

ROCK DESCRIPTION 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:

Table defining rock types: WEATHERED ROCK (WR), CRYSTALLINE ROCK (CR), NON-CRYSTALLINE ROCK (NCR), COASTAL PLAIN SEDIMENTARY ROCK (CP).

WEATHERING FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. 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. 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. 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. MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS. COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS.

ROCK HARDNESS Table with columns for Rock Hardness (VERY HARD to VERY SOFT) and corresponding descriptions.

FRACTURE SPACING and BEDDING Table with columns for Term, Spacing, and Thickness.

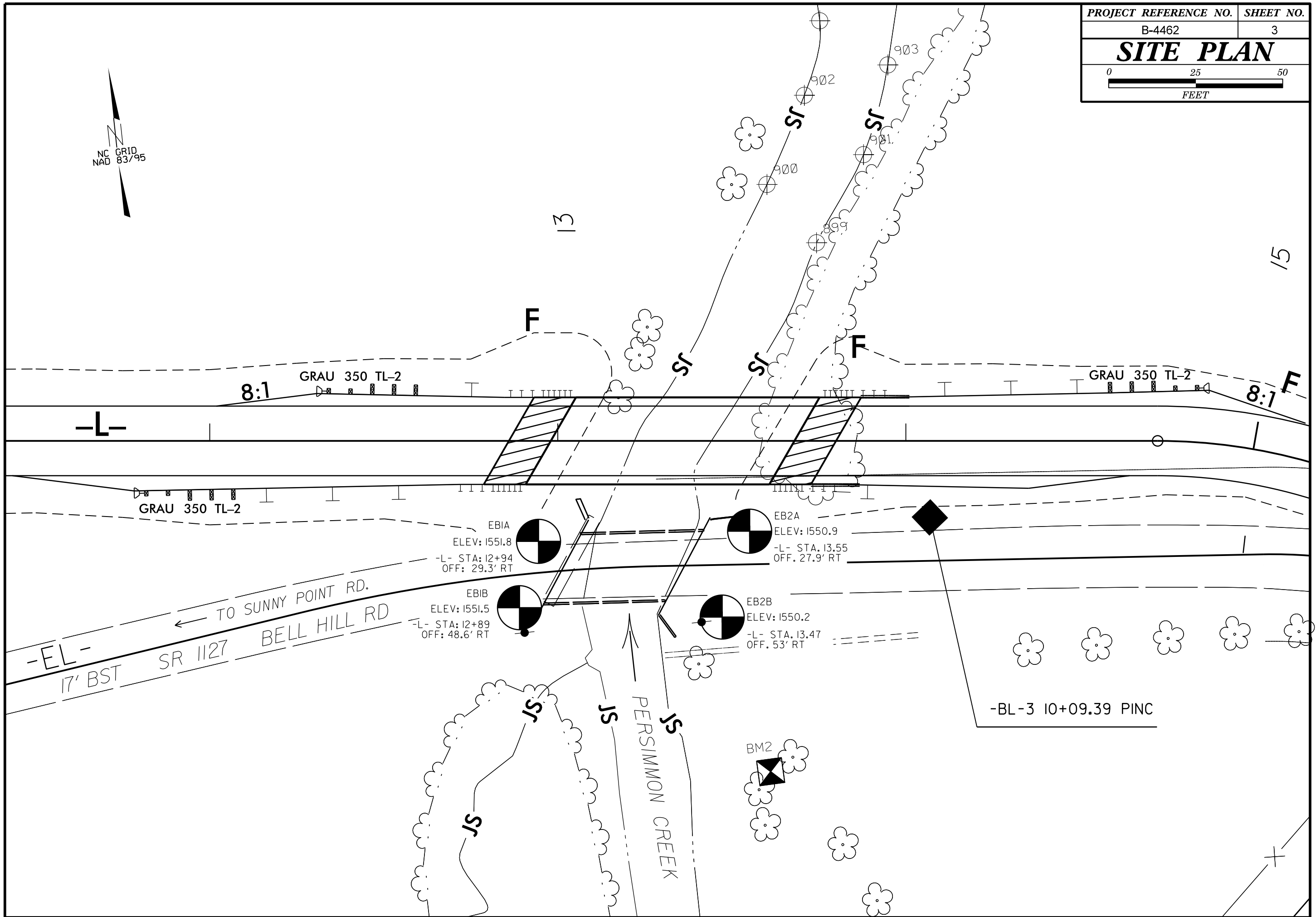
INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

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 DISLOADED 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 (ROD) - 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 INTRUDED 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 (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - 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.

BENCH MARK: BL-3 ELEVATION: 1549.8 FEET

NOTES: -



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 38376.1.2		TIP B-4462		COUNTY CHEROKEE		GEOLOGIST Evans, T.	
SITE DESCRIPTION Bridge No. 148 on SR 1127 over Persimmon Creek							GROUND WTR (ft)
BORING NO. EB1-A		STATION 12+94		OFFSET 29 ft RT		ALIGNMENT L	
COLLAR ELEV. 1,551.8 ft		TOTAL DEPTH 47.5 ft		NORTHING 514,474		EASTING 449,791	
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 80% 02/15/2013			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic		
DRILLER Gower, S.		START DATE 02/26/13		COMP. DATE 02/26/13		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					
1555															
1550	1,550.8	1.0	6	6	9									1,551.8	0.0
	1,548.0	3.8	2	2	1										
1545	1,545.8	6.0	3	1	2										
	1,543.0	8.8	8	7	7									1,543.8	8.0
1540	1,538.0	13.8	9	11	10									1,539.3	12.5
1535	1,533.0	18.8	4	7	24										
1530	1,528.0	23.8	10	12	11										
1525	1,523.0	28.8	14	24	33									1,523.0	28.8
1520	1,518.0	33.8	41	39/0.3										1,517.8	34.0
1515	1,513.3	38.5	100/0.4											1,517.8	34.0
1510	1,508.3	43.5	60/0.1											1,508.3	43.5
1505	1,504.3	47.5	60/0.0											1,504.3	47.5

WBS 38376.1.2		TIP B-4462		COUNTY CHEROKEE		GEOLOGIST Evans, T.	
SITE DESCRIPTION Bridge No. 148 on SR 1127 over Persimmon Creek							GROUND WTR (ft)
BORING NO. EB1-B		STATION 12+89		OFFSET 49 ft RT		ALIGNMENT L	
COLLAR ELEV. 1,551.5 ft		TOTAL DEPTH 48.2 ft		NORTHING 514,456		EASTING 449,784	
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 80% 02/15/2013			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic		
DRILLER Gower, S.		START DATE 02/25/13		COMP. DATE 02/25/13		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					
1555															
1550	1,549.7	1.8												1,551.5	0.0
	1,547.5	4.0	WOH	2	1										
1545	1,545.7	5.8	WOH	2	3										
	1,542.7	8.8	3	4	9									1,546.0	5.5
1540	1,538.1	13.4	9	7	9									1,542.0	9.5
1535	1,532.5	19.0	6	6	9										
1530	1,527.7	23.8	6	6	9										
1525	1,522.7	28.8	11	13	18									1,522.7	28.8
1520	1,517.7	33.8	16	38	62/0.3									1,517.2	34.3
1515	1,513.1	38.4	25	36	30									1,514.5	37.0
1510	1,508.1	43.4	44	43	49									1,503.3	48.2
1505	1,503.3	48.2	60/0.0											1,503.3	48.2

NCDOT BORE DOUBLE B4462\_GEO\_BH\_PDEA\_CHEROKEE.GPJ NC\_DOT\_GDT 6/16/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 38376.1.2		TIP B-4462		COUNTY CHEROKEE		GEOLOGIST Evans, T.									
SITE DESCRIPTION Bridge No. 148 on SR 1127 over Persimmon Creek							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 13+55		OFFSET 28 ft RT		ALIGNMENT L									
COLLAR ELEV. 1,550.9 ft		TOTAL DEPTH 32.3 ft		NORTHING 514,471		EASTING 449,852									
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 80% 02/15/2013			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Gower, S.		START DATE 02/26/13		COMP. DATE 02/26/13		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1555															
1550	1,549.9	1.0	3	3	2									1,550.9	GROUND SURFACE
	1,547.2	3.7	8	3	4										ROADWAY EMBANKMENT Brown fine sandy SILT with minor gravel
1545	1,545.1	5.8	2	1	WOH									1,544.9	6.0
	1,542.2	8.7	6	10	13									1,542.9	8.0
1540															ALLUVIAL Dark-gray silty CLAY
	1,537.1	13.8	4	5	6									1,536.9	14.0
1535															ALLUVIAL SAND & GRAVEL
	1,532.4	18.5	5	6	7									1,532.4	18.5
1530															SAPROLITE Gray SILT with Mica
	1,527.1	23.8	6	11	15										SAPROLITE Red-brown SILT with Mica
1525															
	1,522.1	28.8	8	6	17									1,520.6	30.3
1520														1,518.6	32.3
	1,518.6	32.3	60/0.0												WEATHERED ROCK Mica Schist
															CRYSTALLINE ROCK Mica SCHIST
															Boring Terminated by Auger Refusal at Elevation 1,518.6 ft On Crystalline Rock: Mica SCHIST
															Elevations are Assumed

WBS 38376.1.2		TIP B-4462		COUNTY CHEROKEE		GEOLOGIST Evans, T.									
SITE DESCRIPTION Bridge No. 148 on SR 1127 over Persimmon Creek							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 13+47		OFFSET 53 ft RT		ALIGNMENT L									
COLLAR ELEV. 1,550.2 ft		TOTAL DEPTH 41.3 ft		NORTHING 514,447		EASTING 449,841									
DRILL RIG/HAMMER EFF./DATE TRI9435 CME-55 80% 02/15/2013			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Gower, S.		START DATE 02/25/13		COMP. DATE 02/25/13		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1555															
1550	1,548.5	1.7	2	1	2									1,550.2	GROUND SURFACE
	1,546.2	4.0	WOH	WOH	WOH										ROADWAY EMBANKMENT Brown fine sandy SILT with trace organics
1545														1,544.2	6.0
	1,543.3	6.9	1	2	3									1,541.5	8.7
1540															ALLUVIAL Brown-gray fine to medium SAND
	1,541.5	8.7	8	13	13									1,538.2	12.0
1535															ALLUVIAL SAND & GRAVEL
	1,536.3	13.9	3	5	7									1,531.6	18.6
1530															SAPROLITE Gray SILT with Mica
	1,531.6	18.6	6	9	11									1,531.6	18.6
1525															SAPROLITE Red-brown SILT with Mica
	1,526.8	23.4	5	7	13									1,524.2	26.0
1520															WEATHERED ROCK Red-brown Mica Schist
	1,521.8	28.4	100/0.4											1,521.8	28.4
1515															
	1,516.8	33.4	100/0.5											1,511.8	38.4
1510															CRYSTALLINE ROCK Mica SCHIST
	1,511.8	38.4	60/0.1											1,508.9	41.3
	1,508.9	41.3	60/0.0												Boring Terminated by Auger Refusal at Elevation 1,508.9 ft In Crystalline Rock: Mica SCHIST
															Elevations are Assumed

NCDOT BORE DOUBLE B4462\_GEO\_BH\_PDEA\_CHEROKEE.GPJ NC\_DOT.GDT 6/16/16