

REFERENCE: R-5759

PROJECT: 44691

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5 TO 6	BORE LOGS
7	SOIL TEST RESULTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILKES

PROJECT DESCRIPTION WIDENING OF NC 115
(STATESVILLE ROAD) FROM US 421 TO 2ND
STREET

SITE DESCRIPTION REPLACE CULVERT ON SR 2355
OVER UNNAMED TRIBUTARY TO FISHING
CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5759	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 (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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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

MARPLES, Z.

FARMER, B.

TURNAGE, J.

BROWN, T.

RIST, S.

SIELIGOWSKI, F.

INVESTIGATED BY TERRACON

DRAWN BY HARTMAN, M.

CHECKED BY RIGGS, Jr., A.

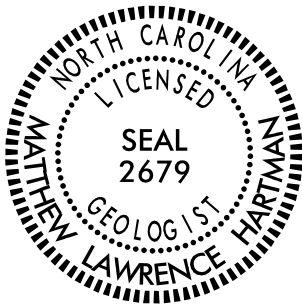
SUBMITTED BY HARTMAN, M.

DATE APRIL 2024

Prepared in the Office of:



2401 BRENTWOOD ROAD, SUITE 107
RALIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: E-0869
NC REGISTERED GEOLOGIC FIRM: C-367



Signed by: Matthew Hartman 09/11/2024
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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL
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

SOIL DESCRIPTION												GRADATION												ROCK DESCRIPTION												TERMS AND DEFINITIONS																																																																																																																																													
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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>												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.												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:												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 (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 (N 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.																																																																																																																																													
SOIL LEGEND AND AASHTO CLASSIFICATION												ANGULARITY OF GRAINS												WEATHERED ROCK (WR)												NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.																																																																																																																																													
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS				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.																																																																																																																																																													
GROUP CLASS.	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	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.																																																																																																																																																															
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PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																																																																																																																																																																	
CONSISTENCY OR DENSENESS												MISCELLANEOUS SYMBOLS												ROCK HARDNESS												FRACTURE SPACING												BEDDING																																																																																																																																	
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)				RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)				ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION		SOIL SYMBOL		ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT		INFERRED SOIL BOUNDARY		INFERRED ROCK LINE		ALLUVIAL SOIL BOUNDARY		DIP & DIP DIRECTION OF ROCK STRUCTURES		TEST BORING		AUGER BORING		CORE BORING		MONITORING WELL		PIEZOMETER INSTALLATION		SLOPE INDICATOR INSTALLATION		CONE PENETROMETER TEST		SOUNDING ROD		TEST BORING WITH CORE		SPT N-VALUE																																																																																																																																					
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50				N/A																25/025		SPT DMT VST PMT		AUGER BORING		CORE BORING		MONITORING WELL		PIEZOMETER INSTALLATION		SLOPE INDICATOR INSTALLATION		CONE PENETROMETER TEST		SOUNDING ROD		TEST BORING WITH CORE		SPT N-VALUE																																																																																																																																					
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30				< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																25/025		SPT DMT VST PMT		AUGER BORING		CORE BORING		MONITORING WELL		PIEZOMETER INSTALLATION		SLOPE INDICATOR INSTALLATION		CONE PENETROMETER TEST		SOUNDING ROD		TEST BORING WITH CORE		SPT N-VALUE																																																																																																																																					
TEXTURE OR GRAIN SIZE												RECOMMENDATION SYMBOLS												ROCK HARDNESS												FRACTURE SPACING												BEDDING																																																																																																																																	
U.S. STD. SIEVE SIZE OPENING (MM)		4 4.76		10 2.00		40 0.42		60 0.25		200 0.075		270 0.053														UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGR	

PROJECT REFERENCE NO.	SHEET NO.
R-5759	3
SITE PLAN	
0 40 80 FEET	

SKEW = 65 DEGREES

NC 115 (STATESVILLE RD)



-L- PT Sta. 44+01.48
-C3- POC Sta. 14+84.55

-C3- PC Sta. 10+00.00
-C3- PT Sta. 15+49.78

Y4 1180
11+80
40' RT

-Y4- PRC Sta. 11+57.12

CULV-1
11+13
17' RT

CULV-2
11+09
59' LT

Y4 1071
10+71
53' LT

-DRW11- PT Sta.
-L- POT Sta.
-C3- POC Sta.
-DRW11- PC Sta. 10+07.
N 19° 34' 02.5" E
-DRW11- POT Sta. 10+00
-C3- POC Sta. 11+60.77
-L- PI Sta. 45+25.36
-C3- POC Sta. 10+38.91=
-Y4- PC Sta. 10+00.00

ISBLK
BUS

WILLIAM MUDD, JR.
DB 1353 PG 134

WILLIAM MUDD, JR.
DB 1353 PG 134

TO SR 2393 (GREEN VALLEY ST)

TO NC 115 (STATESVILLE RD)

FISHING CREEK

12+00

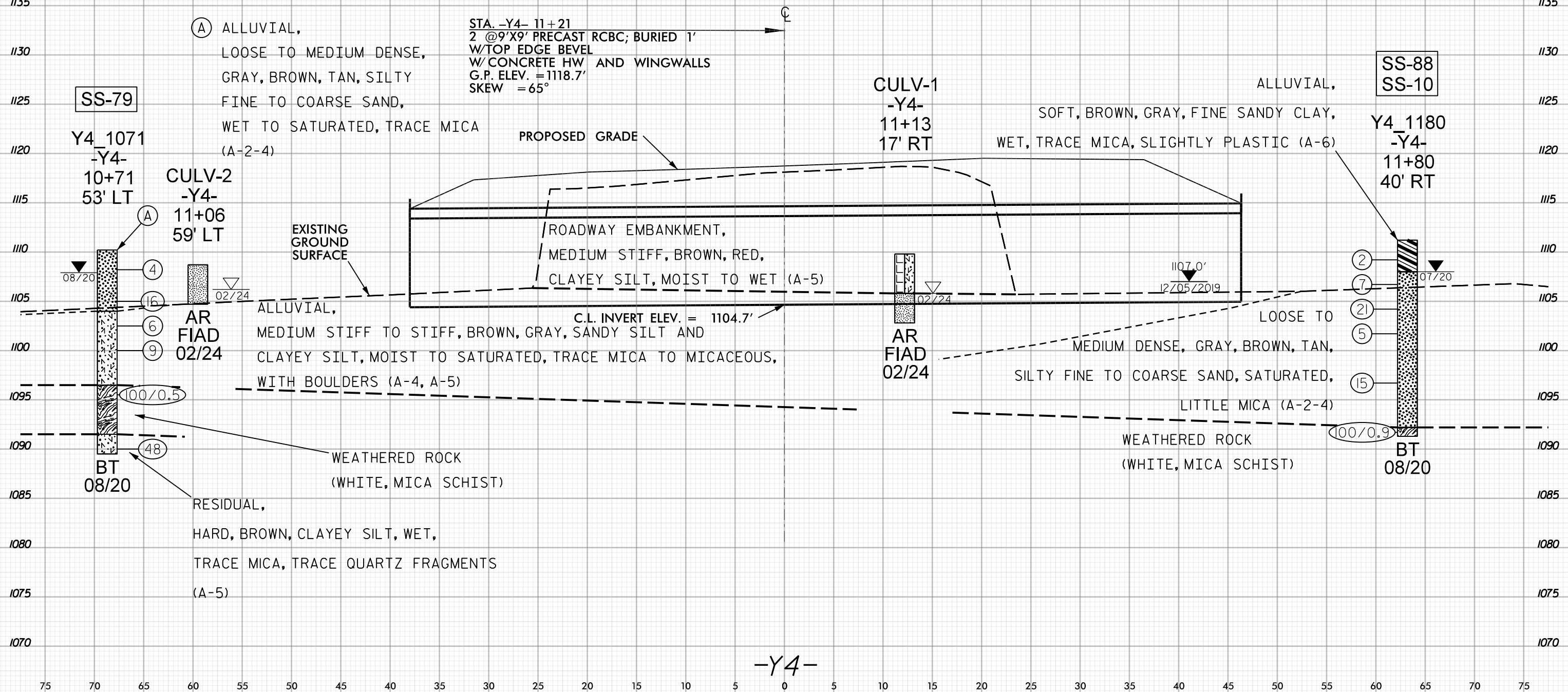
13+00

11+00

NOTE:

INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE EXISTING GROUND PROFILE ALONG CENTERLINE OF CULVERT. TAKEN FROM THE PROVIDED TIN FILE (R-5759) DATED 03/30/2020.

CENTERLINE PROFILE ALONG CULVERT AT -Y4- 11+21.00.
STATION AND OFFSET LABELS ARE REFERENCED TO -Y4-.



GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1						TIP R-5759			COUNTY WILKES					GEOLOGIST MARPLES, Z.					
SITE DESCRIPTION REPLACE CULVERT ON SR 2355 OVER UNNAMED TRIBUTARY TO FISHING CREEK													GROUND WTR (ft)						
BORING NO. CULV-1						STATION 11+13			OFFSET 17 ft RT			ALIGNMENT -Y4-			0 HR. 4.0				
COLLAR ELEV. 1,109.8 ft						TOTAL DEPTH 7.0 ft			NORTHING 877,542			EASTING 1,378,995			24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE N/A									DRILL METHOD Hand Auger					HAMMER TYPE Automatic					
DRILLER N/A						START DATE 02/23/24			COMP. DATE 02/23/24			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)				
1110														1,109.8	GROUND SURFACE 0.0				
1105						ROADWAY EMBANKMENT						▽	LN	1,105.8 MEDIUM STIFF, BROWN, RED, CLAYEY SILT, MOIST TO WET (A-5) 4.0					
						ALLUVIAL								1,102.8 MEDIUM STIFF, BROWN, GRAY, SANDY SILT, SATURATED, MICACEOUS (A-4) 7.0					
						Boring Terminated by Auger Refusal at Elevation 1,102.8 ft ON INFERRED BOULDER													

NCDOT BORE SINGLE R5759_GEO_CULV.GPJ NC_DOT.GDT 4/29/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1						TIP R-5759			COUNTY WILKES					GEOLOGIST MARPLES, Z.					
SITE DESCRIPTION REPLACE CULVERT ON SR 2355 OVER UNNAMED TRIBUTARY TO FISHING CREEK													GROUND WTR (ft)						
BORING NO. CULV-2						STATION 11+06			OFFSET 59 ft LT			ALIGNMENT -Y4-			0 HR. 2.5				
COLLAR ELEV. 1,108.7 ft						TOTAL DEPTH 4.0 ft			NORTHING 877,617			EASTING 1,379,011			24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE N/A									DRILL METHOD Hand Auger					HAMMER TYPE Automatic					
DRILLER N/A						START DATE 02/23/24			COMP. DATE 02/23/24			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)				
1110														1,108.7	GROUND SURFACE 0.0				
1105						ALLUVIAL						▽	LN	1,104.7 MEDIUM STIFF, BROWN, GRAY, SANDY SILT, MOIST TO SATURATED, MICACEOUS (A-4) 4.0					
						Boring Terminated by Auger Refusal at Elevation 1,104.7 ft ON INFERRED BOULDER													

NCDOT BORE SINGLE R5759_GEO_CULV.GPJ NC_DOT.GDT 4/29/24

NCDOT BORE SINGLE R5759_GEO_CULV.GPJ NC_DOT.GDT 4/29/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION REPLACE CULVERT ON SR 2355 OVER UNNAMED TRIBUTARY TO FISHING CREEK												GROUND WTR (ft)			
BORING NO. Y4_1071			STATION 10+71			OFFSET 53 ft LT			ALIGNMENT -Y4-			0 HR.	13.9		
COLLAR ELEV. 1,110.2 ft			TOTAL DEPTH 20.7 ft			NORTHING 877,621			EASTING 1,378,971			24 HR.	2.3		
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 91% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 08/17/20			COMP. DATE 08/17/20			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
1115															
1110															
1105	1,109.2	1.0												1,110.2 GROUND SURFACE 0.0	
	1,106.0	4.2	2	2	2									ALLUVIAL LOOSE TO MEDIUM DENSE, BROWN, GRAY, SILTY FINE TO COARSE SAND, WET, TRACE MICA, TRACE GRAVEL (A-2-4)	
1100	1,103.5	6.7	3	11	5						SS-79	W		1,104.0 6.2	
	1,101.0	9.2	3	3	3							Sat.		MEDIUM STIFF TO STIFF, GRAY, BROWN, CLAYEY SILT, SATURATED, TRACE MICA (A-5)	
1095	1,096.0	14.2	1	3	6							Sat.		1,096.5 13.7	
	1,091.0	19.2	100/0.5											WEATHERED ROCK (BROWN, MICA SCHIST)	
1090			3	11	37							W		1,091.5 18.7	
														1,089.5 20.7	
														RESIDUAL HARD, BROWN, CLAYEY SILT, WET, TRACE MICA, TRACE QUARTZ FRAGMENTS (A-5) Boring Terminated at Elevation 1,089.5 ft IN RESIDUAL CLAYEY SILT	

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION REPLACE CULVERT ON SR 2355 OVER UNNAMED TRIBUTARY TO FISHING CREEK											GROUND WTR (ft)				
BORING NO. Y4_1180			STATION 11+80			OFFSET 40 ft RT			ALIGNMENT -Y4-			0 HR.	8.0		
COLLAR ELEV. 1,111.2 ft			TOTAL DEPTH 19.9 ft			NORTHING 877,496			EASTING 1,379,046			24 HR.	3.2		
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/06/20			COMP. DATE 07/06/20			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
1115															
1110	1,110.2	1.0												1,111.2	GROUND SURFACE 0.0
1105	1,107.7	3.5	2	1	1						SS-88	35%	SOFT, BROWN, GRAY, FINE SANDY CLAY, WET, TRACE MICA, SLIGHTLY PLASTIC (A-6)	1,108.0	3.2
	1,105.2	6.0	3	2	5						SS-10	Sat.			
1100	1,102.7	8.5	7	10	11							Sat.	LOOSE TO MEDIUM DENSE, GRAY, BROWN, TAN, SILTY FINE TO COARSE SAND, SATURATED, LITTLE MICA (A-2-4)		
	1,097.7	13.5	5	2	3							Sat.			
1095	1,092.7	18.5	13	7	8							Sat.			
	1,092.7	18.5	14	50	50/0.4									1,092.2	19.0
														1,091.3	19.9
														WEATHERED ROCK (WHITE, MICA SCHIST)	
														Boring Terminated at Elevation 1,091.3 ft IN WEATHERED ROCK (FELDSPAR MICA SCHIST)	

NCDOT BORE SINGLE R5759_GEO_CULV.GPJ NC_DOT.GDT 4/29/24

LABORATORY TESTING SUMMARY

PROJECT NUMBER: 44691.1.1

TIP: R-5759

COUNTY: WILKES

DESCRIPTION:	WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET
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[illegible]

NP - NON-PLASTIC

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number

REFERENCE: R-5759

PROJECT: 44691

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5 - 6	BORE LOGS
7	SOIL TEST RESULTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILKES
PROJECT DESCRIPTION WIDENING OF NC 115
(STATESVILLE ROAD) FROM US 421
TO 2ND STREET
SITE DESCRIPTION RETAINING WALL INVENTORY
ALONG RETAINING WALL 2 STA. 10+00 -RWAL2-
(68+25 -L-) TO STA. 11+44.81 -RWAL2- (69+60 -L-)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5759	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 (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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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

SANTANA, H.

FARMER, B. C.

TURNAGE, J. R.

SIELIGOWSKI, F. A.

INVESTIGATED BY FARMER, B. C.

DRAWN BY FIELDS, W. D.

CHECKED BY RIGGS, Jr., A F.

SUBMITTED BY RIGGS, Jr., A F.

DATE JULY 2024

Prepared in the Office of:


2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367



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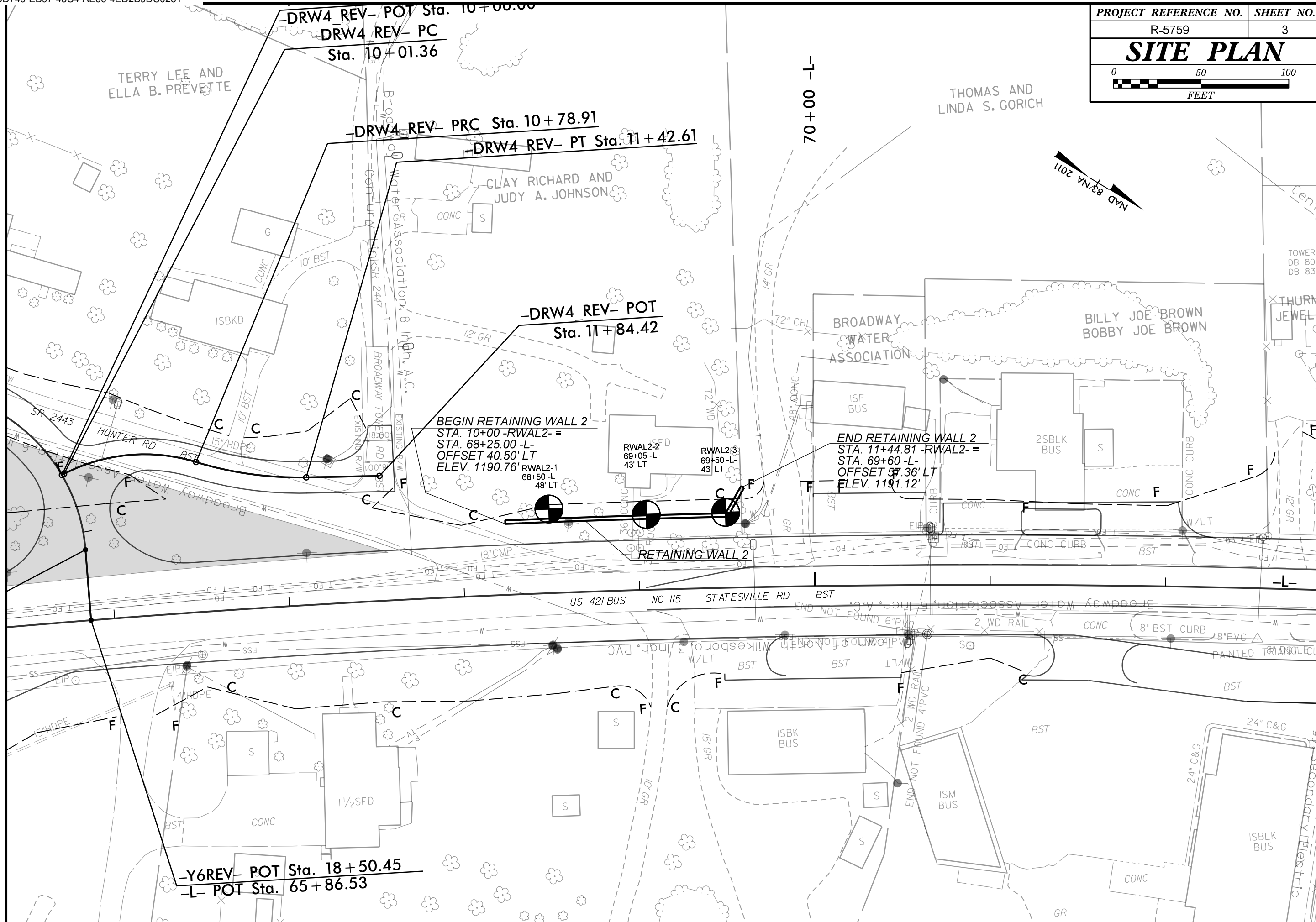
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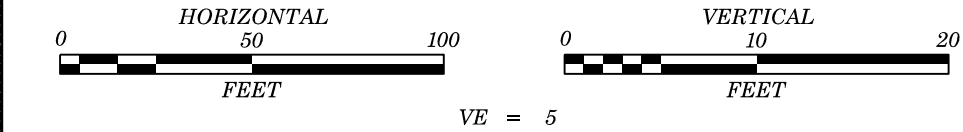
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

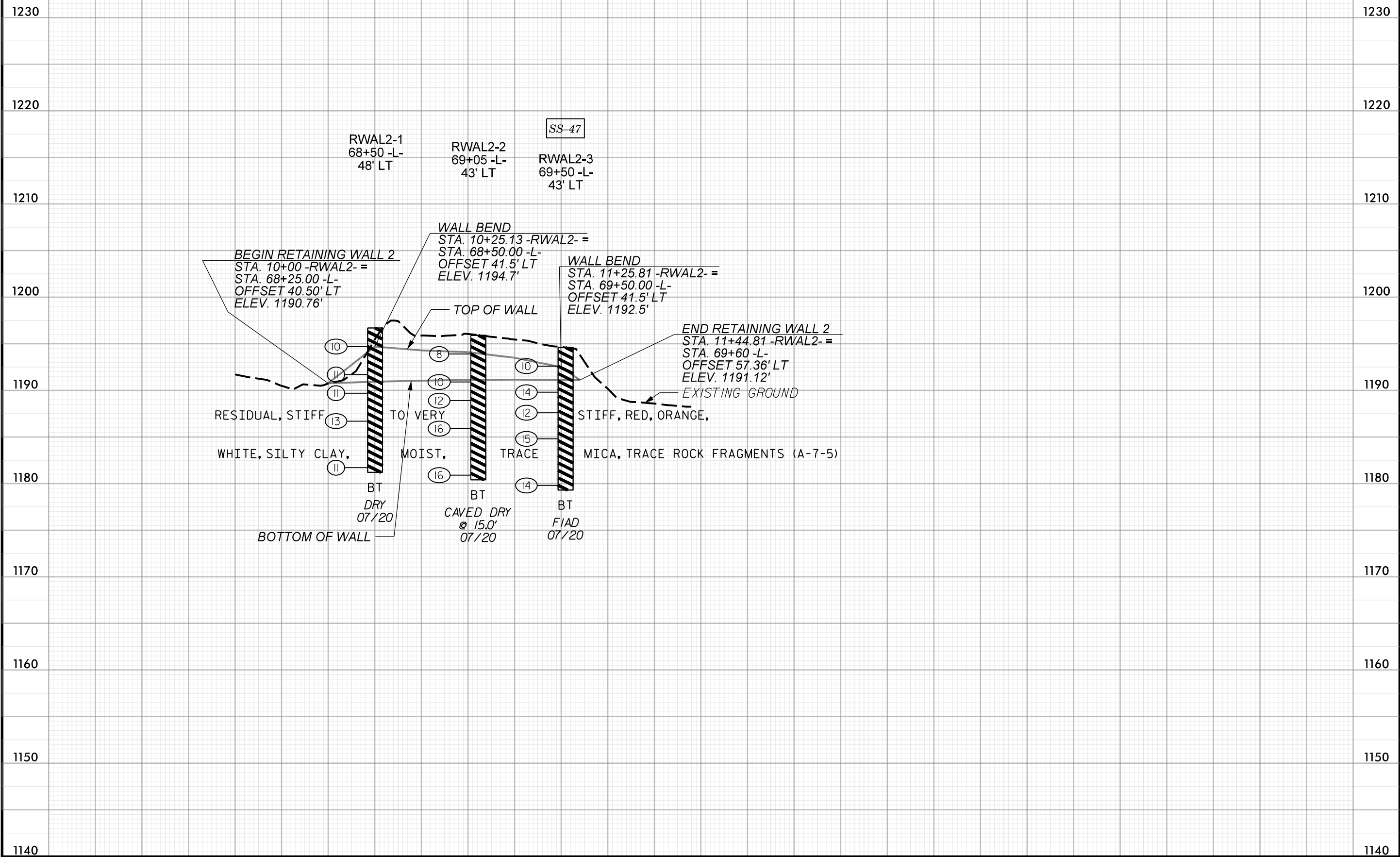
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS															
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO 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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										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.										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:										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 (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 (N 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 MATERIAL.															
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										WEATHERED ROCK (WR)																									
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS					CRYSTALLINE ROCK (CR)		NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.																										
GROUP CLASS.	A-1	A-1-b	A-3	A-2-4	A-2	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7			FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.																													
SYMBOL																																													
% PASSING #10 #40 #200	50 MX 30 MX 15 MX					50 MX 35 MX 10 MX					35 MX 35 MX 35 MX					36 MN 36 MN 36 MN					GRANULAR SOILS		SILT-CLAY SOILS		MUCK, PEAT																				
MATERIAL PASSING #40 LL PI	— 6 MX					— NP					40 MX 41 MN 10 MX 11 MN					40 MX 41 MN 10 MX 11 MN					SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS																						
GROUP INDEX	0					0					4 MX					8 MX 12 MX 16 MX					NO MX																								
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL, AND SAND					FINE SAND					SILTY OR CLAYEY GRAVEL AND SAND					SILTY SOILS					CLAYEY SOILS																								
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD					FAIR TO POOR					FAIR TO POOR					POOR					UNSUITABLE																								
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																													
CONSISTENCY OR DENSENESS										MISCELLANEOUS SYMBOLS										ROCK HARDNESS																									
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)			RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)			ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION		25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES		SOIL SYMBOL		SPT DMT VST PMT TEST BORING		SLOPE INDICATOR INSTALLATION		SEVERE (SEV.)		ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF		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 REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF		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.															
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50			N/A																																						
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30			< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																																						
TEXTURE OR GRAIN SIZE										RECOMMENDATION SYMBOLS										ROCK HARDNESS																									
U.S. STD. SIEVE SIZE OPENING (MM)		4 4.76		10 2.00		40 0.42		60 0.25		200 0.075		270 0.053																																	
BOULDER (BLDR.)		COBBLE (COB.)		GRAVEL (GR.)		COARSE SAND (CSE, SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)																																	
GRAIN SIZE		305 12		75 3		2.0		0.25		0.05		0.005																																	
SOIL MOISTURE - CORRELATION OF TERMS										RECOMMENDATION SYMBOLS										ROCK HARDNESS																									
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION						AR - AUGER REFUSAL		MED. - MEDIUM		VST - VANE SHEAR TEST		CL - CLAY		MICA - MICACEOUS		WEA - WEATHERED		VERY HARD		CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.		HARD		CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.		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.		MEDIUM HARD		CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		SOFT		CAN BE GROVED OR GOUGED 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.		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 FINGER NAIL.	
LL		LIQUID LIMIT		USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE						BT - BORING TERMINATED		MOD. - MODERATELY		WEA - WEATHERED		CPT - CONE PENETRATION TEST		NP - NON PLASTIC		DRY - DRY UNIT WEIGHT																									
PL		PLASTIC LIMIT		SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE						CSE - COARSE		ORG. - ORGANIC		S - BULK		DMT - DILATOMETER TEST		PMT - PRESSUREMETER TEST		SAMPLE ABBREVIATIONS																									
OM		OPTIMUM MOISTURE		SOLID; AT OR NEAR OPTIMUM MOISTURE						DPT - DYNAMIC PENETRATION TEST		SAP. - SAPROLITIC		SS - SPLIT SPOON		e - VOID RATIO		SAP. - PRESSUREMETER TEST																											
SL		SHRINKAGE LIMIT		REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE						F - FINE		SD. - SAND, SANDY		ST - SHELBY TUBE		F - FINE		SL. - SILT, SILTY																											
										FOSS. - FOSSILIFEROUS		SLI. - SLIGHTLY		RS - ROCK				FRAC. - FRACTURED, FRACTURES		TRC. - TRICONE REFUSAL																									
										FRAGS. - FRAGMENTS		w - MOISTURE CONTENT		RT - RECOMPACTED TRIAXIAL				HI. - HIGHLY		V - VERY																									
PLASTICITY										EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING																									
PLASTICITY INDEX (PI)		DRY STRENGTH		DRILL UNITS:						ADVANCING TOOLS:						HAMMER TYPE:																													
NON PLASTIC		VERY LOW		☐ CME-45C						☐ CLAY BITS						☒ AUTOMATIC ☐ MANUAL																													
SLIGHTLY PLASTIC		SLIGHT		☐ CME-55						☐ 6" CONTINUOUS FLIGHT AUGER						CORE SIZE:																													
MODERATELY PLASTIC		MEDIUM		☐ CME-550						☐ 8" HOLLOW AUGERS						☐ -B ☐ -H																													
HIGHLY PLASTIC		HIGH		☐ VANE SHEAR TEST						☐ HARD FACED FINGER BITS						☐ -N																													
				☐ PORTABLE HOIST						☐ TUNG.-CARBIDE INSERTS						HAND TOOLS:																													
				☒ CME 45B (TER1974)						☐ CASING ☐ W/ ADVANCER						☐ POST HOLE DIGGER																													
				☐						☒ TRICONE 2 1/2" * TUNG.-CARB.						☐ HAND AUGER																													
				☐						☐ CORE BIT						☐ SOUNDING ROD																													
				☒						☒ 3/4" HOLLOW STEM AUGERS						☐ VANE SHEAR TEST																													
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.																				FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.																									
																				FRIABLE																									
																				MODERATELY INDURATED																									
																				INDURATED																									
																				EXTREMELY INDURATED																									
																				INDURATION																									
																				RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.																									
																				GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.																									
																				GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.																									
																				SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																									



NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE EXISTING GROUND PROFILE ALONG THE CENTERLINE OF -RWAL2- TAKEN FROM THE PROVIDED PROJECT TIN FILE (R-5759_mergedTIN.tin).



PROJECT REFERENCE NO.	SHEET NO.
R-5759	4
CENTERLINE PROFILE ALONG RETAINING WALL 2	



GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET									GROUND WTR (ft)						
BORING NO. RWAL2-1			STATION 68+50			OFFSET 48 ft LT			ALIGNMENT -L-			0 HR.	Dry		
COLLAR ELEV. 1,196.7 ft			TOTAL DEPTH 15.5 ft			NORTHING 879,406			EASTING 1,377,296			24 HR.	Dry		
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/22/20			COMP. DATE 07/22/20			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	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1200															
1195	1,195.7	1.0												1,196.7	GROUND SURFACE 0.0
1190	1,192.7	4.0	3	4	6							M		RESIDUAL STIFF, RED, ORANGE, BROWN, SILTY CLAY, MOIST, SLIGHTLY PLASTIC (A-7-5)	
	1,190.7	6.0	3	5	6							M			
	1,187.7	9.0	3	5	6							M			
1185	1,182.7	14.0	4	5	8							M			
			3	5	6							M		1,181.2	0.5' LAYER OF SANDY SILT 15.5
Boring Terminated at Elevation 1,181.2 ft IN RESIDUAL SILTY CLAY															

NCDOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET									GROUND WTR (ft)						
BORING NO. RWAL2-2			STATION 69+05			OFFSET 43 ft LT			ALIGNMENT -L-			0 HR. Dry			
COLLAR ELEV. 1,195.9 ft			TOTAL DEPTH 15.5 ft			NORTHING 879,455			EASTING 1,377,270			24 HR. Caved			
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/23/20			COMP. DATE 07/23/20			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	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1200															
1195	1,194.9	1.0												1,195.9	GROUND SURFACE 0.0
1190	1,191.9	4.0	3	4	6	8						M		RESIDUAL STIFF TO VERY STIFF, RED, ORANGE, SILTY CLAY, MOIST, TRACE MICA, SLIGHTLY PLASTIC (A-7-5)	
	1,189.9	6.0	4	6	6	10						M			
	1,186.9	9.0	4	7	9	12						M			
1,181.9	14.0	4	7	9	16						M				
1185						16						M		1,180.4	15.5
														Boring Terminated at Elevation 1,180.4 ft IN RESIDUAL SILTY CLAY CAVED DRY AT 15.0'	

NCDOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET											GROUND WTR (ft)				
BORING NO. RWAL2-3			STATION 69+50			OFFSET 43 ft LT			ALIGNMENT -L-			0 HR. Dry			
COLLAR ELEV. 1,194.6 ft			TOTAL DEPTH 15.3 ft			NORTHING 879,493			EASTING 1,377,246			24 HR. Dry			
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/23/20			COMP. DATE 07/23/20			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)
1195														1,194.6	GROUND SURFACE 0.0
1190	1,193.6	1.0	3	4	6							M		RESIDUAL STIFF, RED, ORANGE, WHITE, SILTY CLAY, MOIST, TRACE MICA, TRACE ROCK FRAGMENTS, SLIGHTLY PLASTIC (A-7-5)	
	1,190.8	3.8	4	6	8							M			
	1,188.6	6.0	5	6	6						SS-47	17%			
1185	1,185.8	8.8	5	7	8							M			
1180	1,180.8	13.8	4	7	7							M			
														1,179.3	15.3
														Boring Terminated at Elevation 1,179.3 ft IN RESIDUAL SILTY CLAY	

COUNTY: WILKES

DESCRIPTION:	WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET
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NP - NON-PLASTIC

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number

REFERENCE: R-5759

PROJECT: 44691

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS
7	SOIL TEST RESULTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILKES
PROJECT DESCRIPTION WIDENING OF NC 115
(STATESVILLE ROAD) FROM US 421
TO 2ND STREET
SITE DESCRIPTION RETAINING WALL INVENTORY
ALONG RETAINING WALL 3, STA. 10+00 -RWAL3-
(86+65 -L-) TO STA. 11+25.41 -RWAL3- (87+85 -L-)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5759	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 (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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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

SANTANA, H.

FARMER, B. C.

TURNAGE, J. R.

SIELIGOWSKI, F. A.

INVESTIGATED BY TERRACON

DRAWN BY FIELDS, W. D.

CHECKED BY RIGGS, Jr., A F.

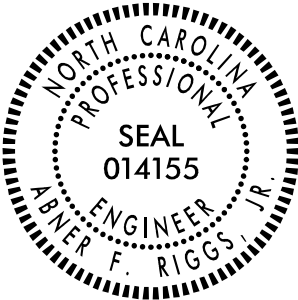
SUBMITTED BY RIGGS, Jr., A F.

DATE JULY 2024

Prepared in the Office of:



2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: F-0869
NC REGISTERED GEOLOGIC FIRM: C-367



DocuSigned by:



10/21/2024

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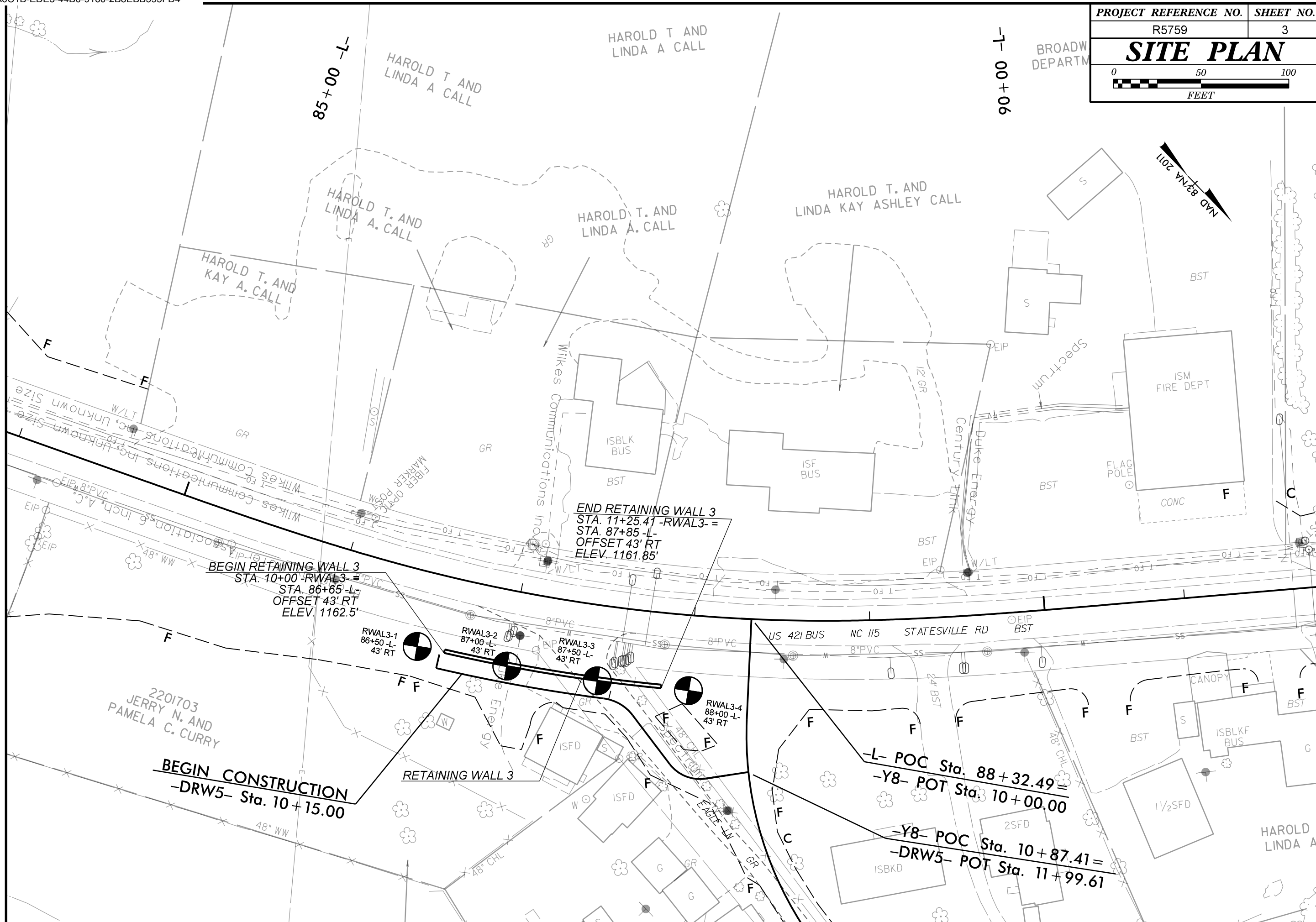
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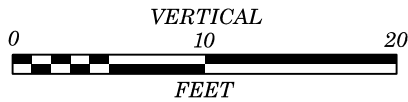
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION												GRADATION												ROCK DESCRIPTION												TERMS AND DEFINITIONS											
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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>												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.												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:												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 (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 (N 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.											
SOIL LEGEND AND AASHTO CLASSIFICATION												ANGULARITY OF GRAINS												WEATHERED ROCK (WR)												CRYSTALLINE ROCK (CR)											
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS				FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.		NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.																											
GROUP CLASS.	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7			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.		COASTAL PLAIN SEDIMENTARY ROCK (CP)																											
SYMBOL																																															
% PASSING	*10	50 MX	30 MX	50 MX	51 MN	10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	36 MN			GRANULAR SOILS		SILT-CLAY SOILS																											
MATERIAL PASSING #40	LL	—	—	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN			SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS																											
PI	6 MX	NP	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN	10 MX																																
GROUP INDEX	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX																																							
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL, AND SAND		FINE SAND		SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS		CLAYEY SOILS																																						
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR						FAIR TO POOR		POOR		UNSATURABLE																														
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																															
CONSISTENCY OR DENSENESS												MISCELLANEOUS SYMBOLS												ROCK HARDNESS																							
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)				RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)				ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION		25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES		SLOPE INDICATOR INSTALLATION		SEVERE (SEV.)		VERY SEVERE (V SEV.)		COMPLETE																									
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50				N/A				SOIL SYMBOL		TEST BORING		CONE PENETROMETER TEST		ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN.		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.		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.		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.																							
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30				< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4				INFERRED SOIL BOUNDARY		CORE BORING		SOUNDING ROD		SEVERE (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.		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.		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.																							
												INFERRED ROCK LINE		MONITORING WELL		TEST BORING WITH CORE		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.		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.		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.																							
												ALLUVIAL SOIL BOUNDARY		PIEZOMETER INSTALLATION		SPT N-VALUE																															
TEXTURE OR GRAIN SIZE												RECOMMENDATION SYMBOLS												ROCK HARDNESS																							
U.S. STD. SIEVE SIZE OPENING (MM)		4		10		40		60		200		270		UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK																					
BOULDER (BLDR.)		COBBLE (COB.)		GRAVEL (GR.)		COARSE SAND (CSE, SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)		SHALLOW UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK																					
GRAIN SIZE		305		75		2.0		0.25		0.05		0.005																																			
MM		IN.		IN.		IN.		IN.		IN.		IN.																																			
SOIL MOISTURE - CORRELATION OF TERMS												ABBREVIATIONS												ROCK HARDNESS																							
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION								AR - AUGER REFUSAL		MED. - MEDIUM		VST - VANE SHEAR TEST		VERY HARD		HARD		MODERATELY HARD		MEDIUM HARD		SOFT		VERY SOFT																			
LL		LIQUID LIMIT		- SATURATED - (SAT.)								BT - BORING TERMINATED		MICA - MICACEOUS		WEA. - WEATHERED		CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.		CAN BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.		CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FINGER PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		CAN BE GROOVED OR GOUGED 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.		CAN BE GROOVED OR GOUGED 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.																					
PL		PLASTIC LIMIT		- WET - (W)								CL - CLAY		MOD. - MODERATELY		γ - UNIT WEIGHT		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.		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.		CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FINGER PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		CAN BE GROOVED OR GOUGED 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.		CAN BE GROOVED OR GOUGED 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.																					
OM		OPTIMUM MOISTURE		- MOIST - (M)								CPT - CONE PENETRATION TEST		NP - NON PLASTIC		γ _d - DRY UNIT WEIGHT		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.		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.		CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FINGER PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		CAN BE GROOVED OR GOUGED 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.		CAN BE GROOVED OR GOUGED 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.																					
SL		SHRINKAGE LIMIT		- DRY - (D)								CSE - COARSE		ORG. - ORGANIC				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												DMT - DILATOMETER TEST		PMT - PRESSUREMETER TEST		SAMPLE ABBREVIATIONS		SOFT		SOFT		SOFT		SOFT		SOFT		SOFT																			
												DPT - DYNAMIC PENETRATION TEST		SAP. - SAPROLITIC				HARD		HARD		HARD		HARD		HARD		HARD																			
												e - VOID RATIO		SD. - SAND, SANDY				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												F - FINE		SL. - SILT, SILTY				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												FOSS. - FOSSILIFEROUS		SLI. - SLIGHTLY				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												FRAC. - FRACTURED, FRACTURES		TCR - TRICONE REFUSAL				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												FRAGS. - FRAGMENTS		w - MOISTURE CONTENT				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
												HL - HIGHLY		V - VERY				MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD		MODERATELY HARD																			
PLASTICITY												EQUIPMENT USED ON SUBJECT PROJECT												ROCK HARDNESS																							
PLASTICITY INDEX (PI)		DRY STRENGTH		DRILL UNITS:								ADVANCING TOOLS:				HAMMER TYPE:				CORE SIZE:				HAND TOOLS:				INDURATION																			
NON PLASTIC		VERY LOW		CME-45C								CLAY BITS				AUTOMATIC				B				POST HOLE DIGGER				FRIABLE																			
SLIGHTLY PLASTIC		SLIGHT		CME-55								6" CONTINUOUS FLIGHT AUGER				C				H				HAND AUGER				MODERATELY INDURATED																			
MODERATELY PLASTIC		MEDIUM		CME-550								8" HOLLOW AUGERS				N				N				SOUNDING ROD				INDURATED																			
HIGHLY PLASTIC		HIGH		VANE SHEAR TEST								HARD FACED FINGER BITS												VANE SHEAR TEST				EXTREMELY INDURATED																			
				PORTABLE HOIST								TUNG-CARBIDE INSERTS																																			
				CME 45B (TER1974)								CASING																																			
												TRICONE																																			
												3/4" HOLLOW STEM AUGERS																																			
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.																																															



NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE EXISTING GROUND PROFILE ALONG THE CENTERLINE OF -RWAL3- TAKEN FROM THE PROVIDED PROJECT TIN FILE (R-5759_mergedTIN.tin).



VE = 5

PROJECT REFERENCE NO.

R-5759

SHEET NO.

4

CENTERLINE PROFILE ALONG
RETAINING WALL 3

1200

1200

1190

1190

1180

1180

1170

1170

1160

1160

1150

1150

1140

1140

1130

1130

1120

1120

1110

1110

10 + 00

11 + 00

12 + 00

-RWAL3-

BEGIN RETAINING WALL 3
STA. 10+00 -RWAL3- =
STA. 86+65 -L-
OFFSET 43' RT
ELEV. 1162.50'

RWAL3-1
86+50 -L-
43' RT

RWAL3-2
87+00 -L-
43' RT

RWAL3-3
87+50 -L-
43' RT

RWAL3-4
88+00 -L-
43' RT

END RETAINING WALL 3
STA. 11+25.41 -RWAL3- =
STA. 87+85 -L-
OFFSET 43' RT
ELEV. 1161.85'

BOTTOM OF WALL
STA. 10+10.44 -RWAL3- =
STA. 86+75 -L-
ELEV. 1156.50'

TOP OF WALL

BOTTOM OF WALL

BOTTOM OF WALL
STA. 11+14.97 -RWAL3- =
STA. 87+75 -L-
ELEV. 1158.60'

EXISTING GROUND

MEDIUM
WHITE, ORANGE,
DRY, TRACE TO

BT
DRY
07/20

BT
FIAD
07/20

BT
DRY
07/20

BT
DRY
07/20

BT
DRY
07/20

(A) RESIDUAL, MEDIUM STIFF TO STIFF, ORANGE, RED, SILTY CLAY, MOIST TO WET, TRACE MICA (A-7-6)

WBS 44691.1.1				TIP R-5759				COUNTY WILKES				GEOLOGIST FARMER, B. C.					
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)					
BORING NO. RWAL3-2				STATION 87+00				OFFSET 43 ft RT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 1,157.4 ft				TOTAL DEPTH 15.5 ft				NORTHING 881,084				EASTING 1,376,495				24 HR. Dry	
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER TURNAGE, J. R.				START DATE 07/21/20				COMP. DATE 07/21/20				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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
1160																	
1155	1,156.4	1.0	3	3	4									1,157.4	GROUND SURFACE 0.0		
	1,153.4	4.0	2	2	4									1,154.4	RESIDUAL MEDIUM STIFF, RED, SILTY CLAY, MOIST, TRACE MICA, SLIGHTLY PLASTIC (A-7-6) MEDIUM STIFF, ORANGE, TAN, WHITE, FINE SANDY SILT, MOIST, TRACE MICA, TRACE ROCK FRAGMENTS (A-4)		
	1,151.4	6.0	2	3	4									3.0			
1150	1,148.4	9.0	3	3	4												
	1,143.4	14.0	3	3	5												
1145																	
													</				

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)			
BORING NO. RWAL3-3			STATION 87+50			OFFSET 43 ft RT			ALIGNMENT -L-			0 HR. Caved			
COLLAR ELEV. 1,158.9 ft			TOTAL DEPTH 15.0 ft			NORTHING 881,126			EASTING 1,376,463			24 HR. FIAD			
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/06/20			COMP. DATE 07/06/20			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
1160															
1155	1,157.9	1.0	3	3	3	6						M		1,158.9 GROUND SURFACE 0.0	
	1,155.4	3.5	2	3	4	7					SS-14	20%		1,155.4	3.5
1150	1,152.9	6.0	3	3	4	7						D		RESIDUAL MEDIUM STIFF, ORANGE, SILTY CLAY, MOIST, TRACE MICA, SLIGHTLY PLASTIC (A-7-6) MEDIUM STIFF TO STIFF, TAN, WHITE, ORANGE, FINE SANDY SILT, MOIST TO DRY, TRACE MICA (A-4)	
	1,150.4	8.5	3	4	5	9					D				
1145	1,145.4	13.5	4	5	7	12						D		1,143.9	15.0
														Boring Terminated at Elevation 1,143.9 ft IN RESIDUAL SANDY SILT	

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.							
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)				
BORING NO. RWAL3-4			STATION 88+00			OFFSET 43 ft RT			ALIGNMENT -L-			0 HR.	Dry			
COLLAR ELEV. 1,158.2 ft			TOTAL DEPTH 15.5 ft			NORTHING 881,166			EASTING 1,376,430			24 HR.	Dry			
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER TURNAGE, J. R.			START DATE 07/21/20			COMP. DATE 07/21/20			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
1160																
1155	1,157.2	1.0	4	5	7									1,158.2	0.0	GROUND SURFACE
	1,154.2	4.0	2	2	4						W			1,155.2	3.0	RESIDUAL STIFF, RED, SILTY CLAY, WET, TRACE MICA, SLIGHTLY PLASTIC (A-7-6)
1150	1,152.2	6.0	2	3	5						M					MEDIUM STIFF TO STIFF, BROWN, ORANGE, WHITE, FINE SANDY SILT, MOIST, TRACE MICA (A-4)
	1,149.2	9.0	3	4	6						M					
1145	1,144.2	14.0	3	5	6									1,142.7	15.5	Boring Terminated at Elevation 1,142.7 ft IN RESIDUAL SANDY SILT
											M					

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

COUNTY: WILKES

[illegible]

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number

REFERENCE: R-5759

PROJECT: 44691

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5 - 9	BORE LOGS
10	SOIL TEST RESULTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILKES
PROJECT DESCRIPTION WIDENING OF NC 115
(STATESVILLE ROAD) FROM US 421
TO 2ND STREET
SITE DESCRIPTION RETAINING WALL INVENTORY
ALONG RETAINING WALL 4, STA. 10+00 -RWAL4-
(132+20 -L-) TO STA. 13+37.05 -RWAL4- (135+45 -L-)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5759	1	10

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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
SANTANA, H.
FARMER, B. C.
TURNAGE, J. R.
SIELIGOWSKI, F. A.

INVESTIGATED BY TERRACON
DRAWN BY FIELDS, W. D.
CHECKED BY RIGGS, Jr., A F.
SUBMITTED BY RIGGS, Jr., A F.
DATE MAY 2024

Prepared in the Office of:



2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: E-0869
NC REGISTERED GEOLOGIC FIRM: C-367



DocuSigned by:
Abner Riggs Jr. 10/21/2024
C2F6ACA84D274B1...
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL
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

SOIL DESCRIPTION												GRADATION												ROCK DESCRIPTION												TERMS AND DEFINITIONS											
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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>												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.												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:												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 (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 (N 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.											
SOIL LEGEND AND AASHTO CLASSIFICATION												ANGULARITY OF GRAINS												WEATHERED ROCK (WR)																							
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)						SILT-CLAY MATERIALS (> 35% PASSING #200)						ORGANIC MATERIALS						CRYSTALLINE ROCK (CR)		NON-CRYSTALLINE ROCK (NCR)		COASTAL PLAIN SEDIMENTARY ROCK (CP)																							
GROUP CLASS.	A-1-a	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.																															
SYMBOL																																															
% PASSING	#10	#40	#200	50 MX	30 MX	15 MX	51 MN	10 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS																														
MATERIAL PASSING #40	LL	PI		—	6 MX	—	NP	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER																															
GROUP INDEX	0	0	0	0	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX	NO MX	NO MX	NO MX	HIGHLY ORGANIC SOILS																															
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND			FINE SAND			SILTY OR CLAYEY GRAVEL AND SAND			SILTY SOILS			CLAYEY SOILS			SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER																															
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR						FAIR TO POOR		POOR		UNSATURABLE																														
PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																															
CONSISTENCY OR DENSENESS																																															
PRIMARY SOIL TYPE		COMPACTNESS OR CONSISTENCY		RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)				RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)				ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION		SOIL SYMBOL		ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT		INFERRED SOIL BOUNDARY		INFERRED ROCK LINE		ALLUVIAL SOIL BOUNDARY																									
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE		< 4 4 TO 10 10 TO 30 30 TO 50 > 50				N/A																																							
GENERALLY SILT-CLAY MATERIAL (COHESIVE)		VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30				< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																																							
TEXTURE OR GRAIN SIZE																																															
U.S. STD. SIEVE SIZE		4 10 40 60 200 270		4.75 2.00 0.42 0.25 0.075 0.053		COARSE SAND (CSE. SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)		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																											
BOULDER (BLDR.)		COBBLE (COB.)		GRAVEL (GR.)		COARSE SAND (CSE. SD.)		FINE SAND (F SD.)		SILT (SL.)		CLAY (CL.)		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																											
GRAIN SIZE		MM IN.		305 12		75 3		2.0		0.25		0.05		0.005		UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK																											
SOIL MOISTURE - CORRELATION OF TERMS																																															
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION				AR - AUGER REFUSAL		MED. - MEDIUM		VST - VANE SHEAR TEST																																			
LL		LIQUID LIMIT		- SATURATED - (SAT.)				CL. - CLAY		MICA - MICACEOUS		WEA. - WEATHERED																																			
PLASTIC RANGE (PI)		PLASTIC LIMIT		- WET - (W)				MOD. - MODERATELY		MOD. - MODERATELY		UNIT WEIGHT																																			
OM		OPTIMUM MOISTURE		- MOIST - (M)				NP - NON PLASTIC		ORG. - ORGANIC		DRY UNIT WEIGHT																																			
SL		SHRINKAGE LIMIT		- DRY - (D)				CSE. - COARSE		PMT - PRESSUREMETER TEST		SAMPLE ABBREVIATIONS																																			
								DPT - DILATOMETER TEST		SAP. - SAPROLITIC		S - BULK																																			
								e - VOID RATIO		SD. - SAND, SANDY		SS - SPLIT SPOON																																			
								F - FINE		SL. - SILT, SILTY		ST - SHELBY TUBE																																			
								FOSS. - FOSSILIFEROUS		SLR. - SLIGHTLY		RS - ROCK																																			
								FRAC. - FRACTURED, FRACTURES		TRI. - TRICONE REFUSAL		RT - RECOMPACTED TRIAXIAL																																			
								FRAGS. - FRAGMENTS		w - MOISTURE CONTENT		CBR - CALIFORNIA BEARING RATIO																																			
								HI. - HIGHLY		V - VERY																																					
EQUIPMENT USED ON SUBJECT PROJECT																																															
DRILL UNITS:				ADVANCING TOOLS:				HAMMER TYPE:				CORE SIZE:				HAND TOOLS:																															
☐ CME-45C				☐ 6" CONTINUOUS FLIGHT AUGER				☒ AUTOMATIC ☐ MANUAL				☐ -B ☐ -H				☐ POST HOLE DIGGER																															
☐ CME-55				☐ 8" HOLLOW AUGERS				☐ CORE SIZE:				☐ -N				☐ HAND AUGER																															
☐ CME-550				☐ HARD FACED FINGER BITS				☐ TUNG.-CARBIDE INSERTS				☐ SOUNDING ROD				☐ VANE SHEAR TEST																															
☐ VANE SHEAR TEST				☐ CASING ☐ W/ ADVANCER				☐ TRICONE ☐ * STEEL TEETH				☐ HAND TOOLS:				☐ POST HOLE DIGGER																															
☐ PORTABLE HOIST				☐ TRICONE ☐ * STEEL TEETH				☐ CORE BIT				☐ SOUNDING ROD				☐ VANE SHEAR TEST																															
☒ CME 45B (TER1974)				☒ TRICONE 2 1/2" * TUNG.-CARB.				☐ CORE BIT				☐ SOUNDING ROD				☐ VANE SHEAR TEST																															
☒ DIETRICH D-50 (TER373)				☒ 3/4" HOLLOW STEM AUGERS				☐ CORE BIT				☐ SOUNDING ROD				☐ VANE SHEAR TEST																															
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.																																											

PROJECT REFERENCE NO.

R-5759

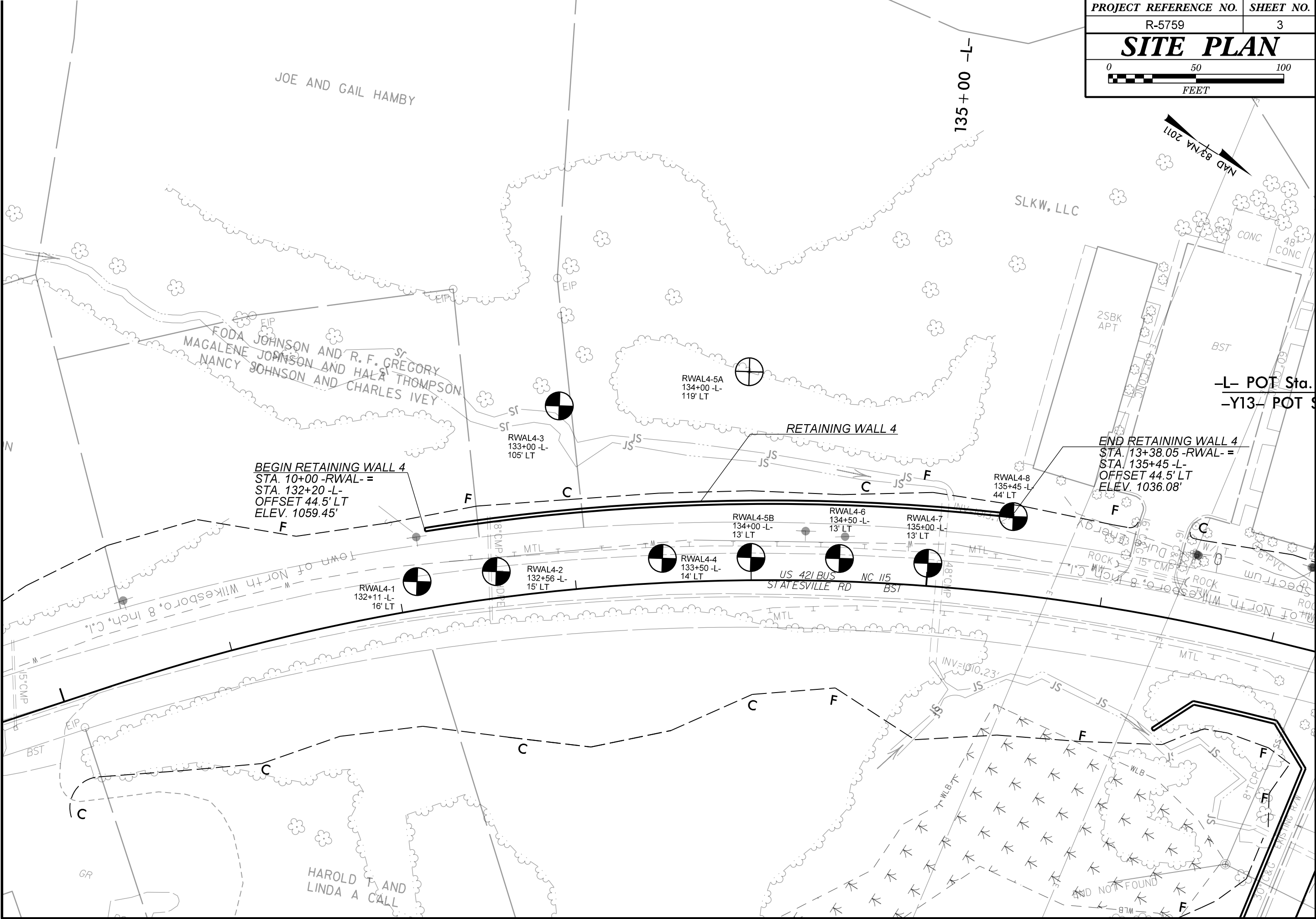
SHEET NO.

3

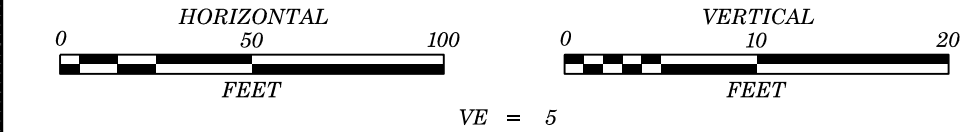
SITE PLAN

050100

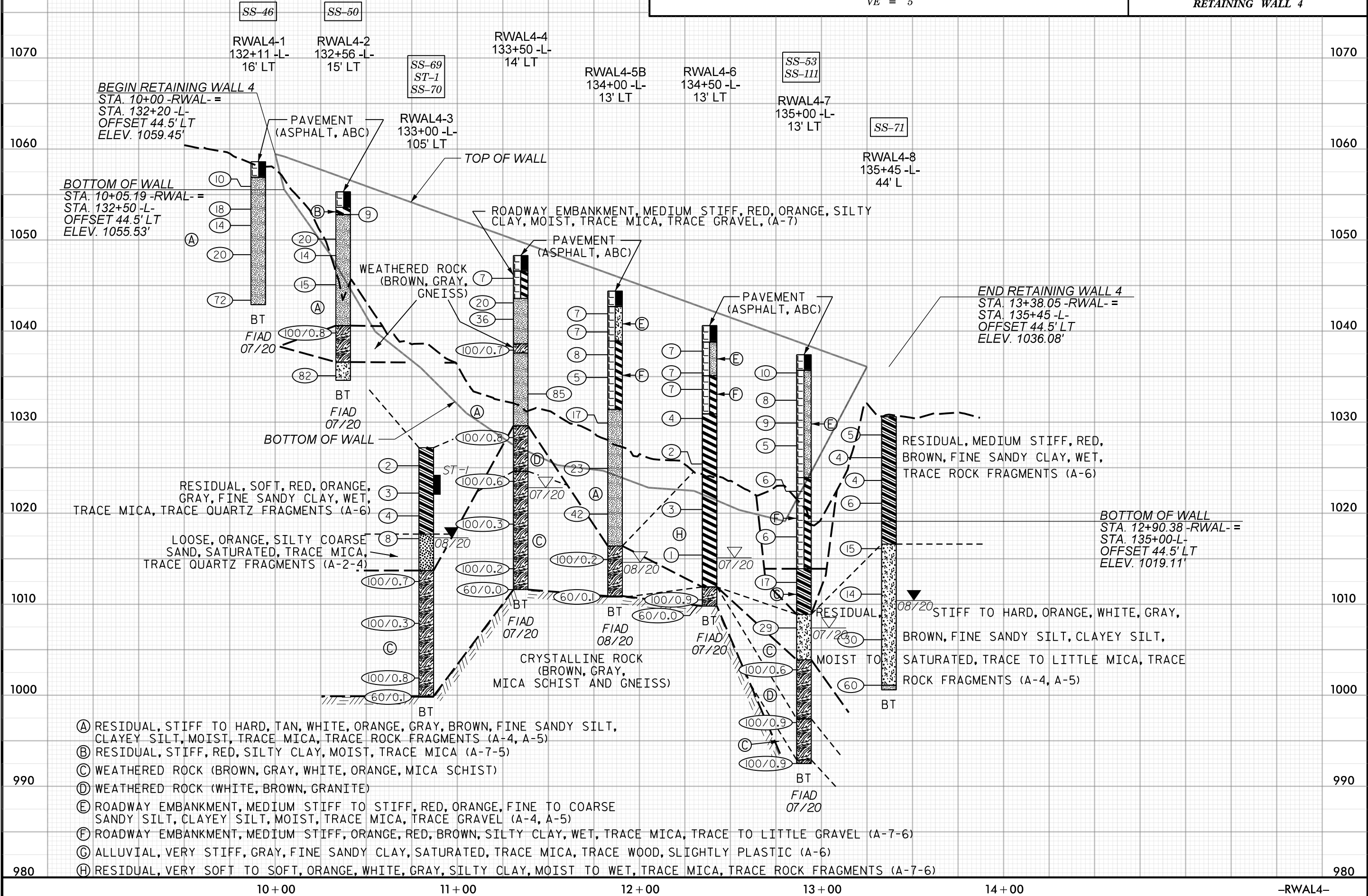
FEET



NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE EXISTING GROUND PROFILE ALONG THE CENTERLINE OF -RWAL4- TAKEN FROM THE PROVIDED PROJECT TIN FILE (R-5759_mergedTIN.tin).



PROJECT REFERENCE NO.	SHEET NO.
R-5759	4
CENTERLINE PROFILE ALONG RETAINING WALL 4	



WBS 44691.1.1				TIP R-5759				COUNTY WILKES				GEOLOGIST FARMER, B. C.					
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)					
BORING NO. RWAL4-2				STATION 132+56				OFFSET 15 ft LT				ALIGNMENT -L-				0 HR. Dry	
COLLAR ELEV. 1,055.3 ft				TOTAL DEPTH 20.7 ft				NORTHING 883,958				EASTING 1,372,993				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER TURNAGE, J. R.				START DATE 07/23/20				COMP. DATE 07/23/20				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)
1060																	
1055																	
1050	1,053.8	1.5															
	1,051.1	4.2	3	4	5												
	1,049.3	6.0	7	10	10												
1045	1,046.1	9.2	5	7	7						SS-50	13%					
	1,041.1	14.2	4	6	9												
1040			9	70	30/0.3												
1035	1,036.1	19.2	70	30	52												

[illegible]

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1						TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.				
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET														GROUND WTR (ft)		
BORING NO. RWAL4-5A			STATION 134+00			OFFSET 119 ft LT			ALIGNMENT -L-			0 HR. Dry				
COLLAR ELEV. 1,046.1 ft			TOTAL DEPTH 7.0 ft			NORTHING 884,019			EASTING 1,372,819			24 HR. 6.0				
DRILL RIG/HAMMER EFF./DATE N/A								DRILL METHOD Hand Auger				HAMMER TYPE N/A				
DRILLER N/A				START DATE 09/01/20			COMP. DATE 09/01/20			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
1050																
1045														1,046.1	GROUND SURFACE 0.0	
														1,043.1	RESIDUAL SOFT, BROWN, SILTY CLAY, WET, TRACE MICA, LITTLE ROCK FRAGMENTS, MODERATELY PLASTIC (A-7-6) 3.0	
1040														1,039.1	MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT, MOIST, LITTLE ROCK FRAGMENTS, NON PLASTIC (A-4) 7.0	
														Boring Terminated at Elevation 1,039.1 ft IN RESIDUAL SANDY SILT		

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1				TIP R-5759				COUNTY WILKES				GEOLOGIST FARMER, B. C.					
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)					
BORING NO. RWAL4-5B				STATION 134+00				OFFSET 13 ft LT				ALIGNMENT -L-				0 HR. 29.8	
COLLAR ELEV. 1,044.4 ft				TOTAL DEPTH 33.6 ft				NORTHING 884,077				EASTING 1,372,908				24 HR. FIAD	
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 91% 01/27/2020								DRILL METHOD H.S. Augers				HAMMER TYPE Automatic					
DRILLER TURNAGE, J. R.				START DATE 08/19/20				COMP. DATE 08/19/20				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)		
1045														1,044.4	GROUND SURFACE 0.0		
1040	1,042.9	1.5	3	4	3	7							M	1,042.7	PAVEMENT 1.7		
	1,040.9	3.5	3	4	3	7							M		ROADWAY EMBANKMENT		
	1,038.4	6.0	4	4	4	8							W	1,038.9	MEDIUM STIFF, RED, ORANGE, FINE TO COARSE SANDY SILT, MOIST, TRACE MICA, TRACE GRAVEL (A-5) 5.5		
1035	1,035.9	8.5	1	2	3	5							W		MEDIUM STIFF, RED, BROWN, SILTY CLAY, WET, TRACE MICA, TRACE GRAVEL, MODERATELY PLASTIC (A-7-6)		
1030	1,030.9	13.5	6	8	9								M	1,031.4	RESIDUAL 13.0		
1025	1,025.9	18.5	8	11	12								M		VERY STIFF TO HARD, BROWN, ORANGE, WHITE, FINE SANDY SILT, MOIST, TRACE MICA (A-4)		
1020	1,020.9	23.5	8	12	30								M				
1015	1,015.9	28.5	100/0.2														
														1,016.4	WEATHERED ROCK 28.0		
	1,010.9	33.5	60/0.1											1,010.9	CRYSTALLINE ROCK 33.5		
														1,010.8	CRYSTALLINE ROCK 33.6		
															Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 1,010.8 ft IN CRYSTALLINE ROCK (MICA SCHIST)		

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/2/24

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)			
BORING NO. RWAL4-7			STATION 135+00			OFFSET 13 ft LT			ALIGNMENT -L-			0 HR.	30.0		
COLLAR ELEV. 1,037.4 ft			TOTAL DEPTH 44.9 ft			NORTHING 884,163			EASTING 1,372,856			24 HR.	FIAD		
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 88% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 07/27/20			COMP. DATE 07/27/20			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)
1040															
1035	1,036.4	1.0	4	5	5									1,037.4	GROUND SURFACE 0.0
1030	1,033.4	4.0	3	4	4									1,035.7	PAVEMENT 1.0' ASPHALT, 0.7' ABC 1.7
	1,030.9	6.5	3	4	5						SS-53	15%		ROADWAY EMBANKMENT MEDIUM STIFF TO STIFF, ORANGE, RED, FINE TO COARSE SANDY SILT, MOIST, TRACE MICA, TRACE GRAVEL (A-4)	
	1,028.4	9.0	3	2	3									LITTLE GRAVEL	
1025															
1020	1,023.4	14.0	2	3	3						SS-111	30%		1,023.9	MEDIUM STIFF, ORANGE, BROWN, SILTY CLAY, WET, SLIGHTLY PLASTIC (A-7-5) 13.5
1015	1,018.4	19.0	2	3	3										
1010	1,013.4	24.0	3	9	8									1,013.9	ALLUVIAL 23.5
														VERY STIFF, GRAY, FINE SANDY CLAY, SATURATED, TRACE MICA, TRACE WOOD, SLIGHTLY PLASTIC (A-6)	
	1,008.4	29.0	7	9	20									1,008.9	RESIDUAL 28.5
1005															
1000	1,003.4	34.0	90	10/0.1										1,003.9	VERY STIFF, GRAY, BROWN, CLAYEY SILT, MOIST, LITTLE MICA (A-5) 33.5
														WEATHERED ROCK (BROWN, MICA SCHIST)	
	998.4	39.0	17	39	53/0.4									997.4	(WHITE, GRANITE) 40.0
995															
	993.4	44.0	27	73/0.4										992.9	(BROWN, MICA SCHIST) 44.5
														992.5	(BROWN, MICA SCHIST) 44.9
														Boring Terminated at Elevation 992.5 ft IN WEATHERED ROCK (MICA SCHIST)	

REFERENCE: R-5759

PROJECT: 44691

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5 TO 7	BORE LOGS
8	SOIL TEST RESULTS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WILKES

PROJECT DESCRIPTION WIDENING OF NC 115
(STATESVILLE ROAD) FROM US 421
TO 2ND STREET

SITE DESCRIPTION RETAINING WALL INVENTORY
ALONG RETAINING WALL 6, STA. 10+00 -RWAL6-
(136+43.92 -L-) TO STA. 11+82.90 -RWAL6-
(11+50.00 -Y13-)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5759	1	8

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
- 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

SANTANA, H.

FARMER, B. C.

TURNAGE, J. R.

SIELIGOWSKI, F. A.

INVESTIGATED BY TERRACON

DRAWN BY HARTMAN, M. L.

FIELDS, W. D.

CHECKED BY RIGGS, Jr., A F.

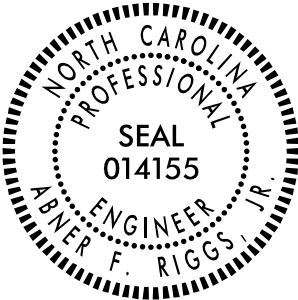
SUBMITTED BY RIGGS, Jr., A F.

DATE MAY 2024

Prepared in the Office of:



2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: E-0869
NC REGISTERED GEOLOGIC FIRM: C-367



DocuSigned by:

Abner Riggs Jr. 10/21/2024

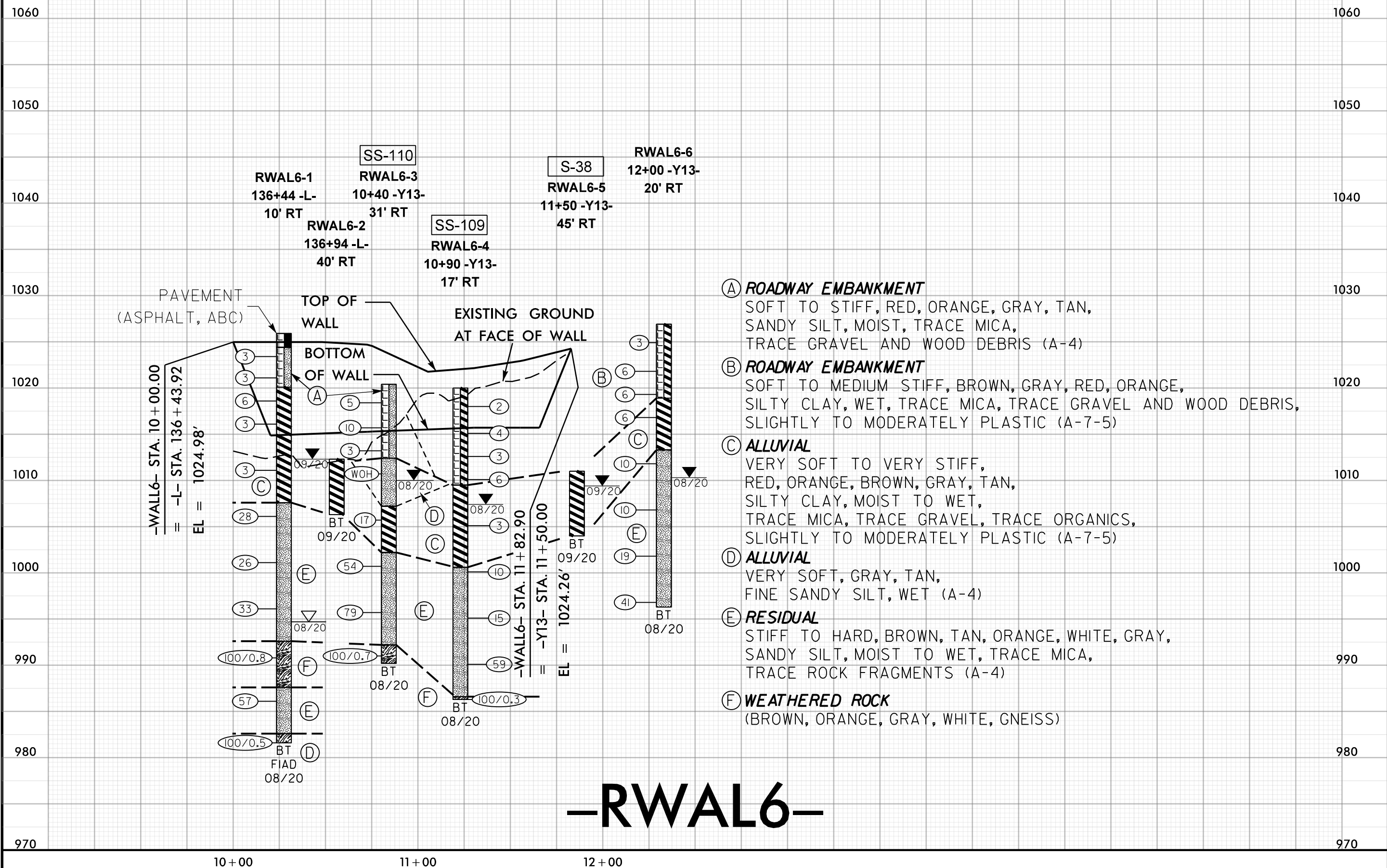
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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										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.										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:										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 DISLOOGED 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 (N 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.									
SOIL LEGEND AND AASHTO CLASSIFICATION										MINERALOGICAL COMPOSITION										WEATHERING																			
GENERAL CLASS. SILT-CLAY MATERIALS (< 35% PASSING #200) ORGANIC MATERIALS										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.										FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.																			
GROUP CLASS. A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-8, A-9, A-10, A-11, A-12, A-13, A-14, A-15, A-16, A-17, A-18, A-19, A-20, A-21, A-22, A-23, A-24, A-25, A-26, A-27, A-28, A-29, A-30, A-31, A-32, A-33, A-34, A-35, A-36, A-37, A-38, A-39, A-40, A-41, A-42, A-43, A-44, A-45, A-46, A-47, A-48, A-49, A-50, A-51, A-52, A-53, A-54, A-55, A-56, A-57, A-58, A-59, A-60, A-61, A-62, A-63, A-64, A-65, A-66, A-67, A-68, A-69, A-70, A-71, A-72, A-73, A-74, A-75, A-76, A-77, A-78, A-79, A-80, A-81, A-82, A-83, A-84, A-85, A-86, A-87, A-88, A-89, A-90, A-91, A-92, A-93, A-94, A-95, A-96, A-97, A-98, A-99, A-100, A-101, A-102, A-103, A-104, A-105, A-106, A-107, A-108, A-109, A-110, A-111, A-112, A-113, A-114, A-115, A-116, A-117, A-118, A-119, A-120, A-121, A-122, A-123, A-124, A-125, A-126, A-127, A-128, A-129, A-130, A-131, A-132, A-133, A-134, A-135, A-136, A-137, A-138, A-139, A-140, A-141, A-142, A-143, A-144, A-145, A-146, A-147, A-148, A-149, A-150, A-151, A-152, A-153, A-154, A-155, A-156, A-157, A-158, 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GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)			
BORING NO. RWAL6-1			STATION 136+44			OFFSET 9 ft RT			ALIGNMENT -L-			0 HR.	31.2		
COLLAR ELEV. 1,025.9 ft			TOTAL DEPTH 44.3 ft			NORTHING 884,304			EASTING 1,372,816			24 HR.	FIAD		
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 91% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 08/19/20			COMP. DATE 08/19/20			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		MOI		ELEV. (ft)	DEPTH (ft)
1030															
1025														1,025.9	GROUND SURFACE 0.0
1020	1,024.4	1.5	1	1	2	3						M		1,024.4	PAVEMENT 1.5
	1,022.1	3.8	3	2	1	3						M			ROADWAY EMBANKMENT
	1,019.6	6.3	2	2	4	6						M		1,020.1	SOFT, RED, ORANGE, FINE TO COARSE SANDY SILT, MOIST, TRACE MICA (A-4) 5.8
1015	1,017.1	8.8	2	1	2	3						W			ALLUVIAL
															SOFT TO MEDIUM STIFF, RED, ORANGE, BROWN, SILTY CLAY, MOIST TO WET, TRACE MICA, SLIGHTLY PLASTIC (A-7-5)
1010	1,012.1	13.8	2	1	2	3						W			
1005	1,007.1	18.8	10	9	19	28						W		1,007.6	RESIDUAL 18.3
															VERY STIFF TO HARD, BROWN, TAN, FINE TO COARSE SANDY SILT, WET TO SATURATED, TRACE TO LITTLE MICA, TRACE TO LITTLE ROCK FRAGMENTS (A-4)
1000	1,002.1	23.8	10	13	13	26						W			
995	997.1	28.8	15	18	15	33						Sat.			
990	992.1	33.8	10	38	62/0.3									992.6	WEATHERED ROCK 33.3
															(BROWN, ORANGE, WHITE, GNEISS)
985	987.1	38.8	9	12	45	57						W		987.6	RESIDUAL 38.3
															HARD, BROWN, ORANGE, WHITE, FINE TO COARSE SANDY SILT, WET, TRACE MICA, TRACE QUARTZ FRAGMENTS (A-4)
	982.1	43.8	70	30/0.0										982.6	43.3
														981.6	WEATHERED ROCK 44.3
															(WHITE, GNEISS)
															Boring Terminated at Elevation 981.6 ft IN WEATHERED ROCK (GNEISS)

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/1/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.							
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)				
BORING NO. RWAL6-2			STATION 136+94			OFFSET 40 ft RT			ALIGNMENT -L-			0 HR.	0.0			
COLLAR ELEV. 1,012.3 ft			TOTAL DEPTH 6.0 ft			NORTHING 884,360			EASTING 1,372,828			24 HR.	0.0			
DRILL RIG/HAMMER EFF./DATE N/A						DRILL METHOD Hand Auger			HAMMER TYPE N/A							
DRILLER N/A			START DATE 09/02/20			COMP. DATE 09/02/20			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)	
1015																
1010														1,012.3	GROUND SURFACE	0.0
														ALLUVIAL		
														MEDIUM STIFF, GRAY, BROWN, SILTY CLAY, WET, TRACE MICA, TRACE GRAVEL, TRACE ORGANICS, SLIGHTLY PLASTIC (A-7-5)		
														1,006.3	6.0	
Boring Terminated at Elevation 1,006.3 ft IN ALLUVIAL SILTY CLAY																

NC DOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/1/24

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)			
BORING NO. RWAL6-4			STATION 10+90			OFFSET 17 ft RT			ALIGNMENT -Y13-			0 HR.	15.4		
COLLAR ELEV. 1,020.0 ft			TOTAL DEPTH 33.7 ft			NORTHING 884,422			EASTING 1,372,856			24 HR.	12.6		
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 91% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic						
DRILLER TURNAGE, J. R.			START DATE 08/19/20			COMP. DATE 08/19/20			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)
1020														1,020.0	GROUND SURFACE 0.0
1015	1,019.0	1.0		2	1	1					SS-109	31%		ROADWAY EMBANKMENT SOFT TO MEDIUM STIFF, BROWN, GRAY, RED, ORANGE, SILTY CLAY, WET, TRACE MICA, TRACE GRAVEL AND WOOD DEBRIS, MODERATELY PLASTIC (A-7-5)	
	1,016.1	3.9		1	2	2						W			
	1,013.6	6.4		1	1	2						W			
1010	1,011.1	8.9		2	2	4					SS-109	31%		ALLUVIAL SOFT, BROWN, GRAY, SILTY CLAY, WET, TRACE MICA, SLIGHTLY PLASTIC (A-7-5)	10.5
	1,006.1	13.9		1	1	2						W			
1005	1,001.1	18.9		3	5	5						SS-109			
1000	996.1	23.9		6	7	8					W				
995	991.1	28.9		8	22	37					W				
990	986.1	33.9		100/0.3							SS-109	31%		WEATHERED ROCK (GRAY, BROWN, GNEISS) Boring Terminated at Elevation 986.3 ft IN WEATHERED ROCK (GNEISS)	33.4
										W					
										W					

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.						
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)			
BORING NO. RWAL6-5			STATION 11+86			OFFSET 17 ft RT			ALIGNMENT -Y13-			0 HR.	1.7		
COLLAR ELEV. 1,011.0 ft			TOTAL DEPTH 7.0 ft			NORTHING 884,405			EASTING 1,372,920			24 HR.	1.6		
DRILL RIG/HAMMER EFF./DATE N/A						DRILL METHOD Hand Auger			HAMMER TYPE N/A						
DRILLER N/A			START DATE 09/02/20			COMP. DATE 09/02/20			SURFACE WATER DEPTH N/A						
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	▼ MOI	L O G	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
1015															
1010														1,011.0	GROUND SURFACE 0.0
1005						<									

NCDOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/1/24

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 44691.1.1			TIP R-5759			COUNTY WILKES			GEOLOGIST FARMER, B. C.							
SITE DESCRIPTION WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET												GROUND WTR (ft)				
BORING NO. RWAL6-6			STATION 12+36			OFFSET 8 ft LT			ALIGNMENT -Y13-			0 HR.	17.4			
COLLAR ELEV. 1,026.9 ft			TOTAL DEPTH 30.6 ft			NORTHING 884,438			EASTING 1,372,965			24 HR.	16.6			
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 91% 01/27/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER TURNAGE, J. R.			START DATE 08/19/20			COMP. DATE 08/19/20			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)	
1030																
1025	1,025.9	1.0	1	1	2									1,026.9	0.0	
1020	1,022.8	4.1	3	3	3							W		ROADWAY EMBANKMENT SOFT TO MEDIUM STIFF, RED, BROWN, SILTY CLAY, WET, TRACE MICA, TRACE GRAVEL, SLIGHTLY PLASTIC (A-7-5)		
	1,020.3	6.6	3	3	3							W				
	1,017.8	9.1	3	3	3							W				
1015												W		ALLUVIAL MEDIUM STIFF, RED, BROWN, SILTY CLAY, WET, TRACE MICA, TRACE GRAVEL, SLIGHTLY PLASTIC (A-7-5)		
	1,012.8	14.1	3	5	5							W				
1010																1,013.3
1005	1,007.8	19.1	4	4	6							W		RESIDUAL STIFF TO HARD, GRAY, TAN, ORANGE, BROWN, WHITE, FINE SANDY SILT, WET, TRACE MICA, TRACE ROCK FRAGMENTS (A-4)		
1000	1,002.8	24.1	4	5	14							W				
	997.8	29.1	11	14	27							W				
													996.3	30.6	Boring Terminated at Elevation 996.3 ft IN RESIDUAL CLAYEY SILT	

NCDOT BORE SINGLE R5759_GEO_RWAL.GPJ NC_DOT.GDT 5/1/24

LABORATORY TESTING SUMMARY

PROJECT NUMBER: 44691.1.1

TIP: R-5759

COUNTY: WILKES

DESCRIPTION:	WIDENING OF NC 115 (STATESVILLE ROAD) FROM US 421 TO 2ND STREET
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[illegible]

NP - NON-PLASTIC

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number