

REFERENCE: U-5798B

PROJECT: 44369

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5	LABORATORY TESTING SUMMARY

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY HOKE/CUMBERLAND

PROJECT DESCRIPTION WIDEN TO MULTI- LANES SR
1102 (GILLIS HILL ROAD) FROM SOUTH OF CELTIC
DRIVE TO NORTH OF SR 1112 (STONEY POINT RD.)

SITE DESCRIPTION RETAINING WALL NO.1 AT
STA. 20+20 TO STA. 22+90 -LB-

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5798B	1	5

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO 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. J.

TURNAGE, J. R.

OXENDINE, J.

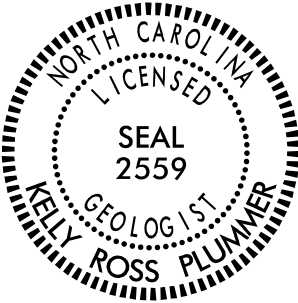
INVESTIGATED BY MARPLES, Z. J.

DRAWN BY ALMULLA, H.

CHECKED BY RIGGS JR., A. F.

SUBMITTED BY PLUMMER, K. R.

DATE DECEMBER 2023



DocuSigned by:
Kelly Plummer
51340CC5FA2E414...
SIGNATURE

2/3/2025
DATE

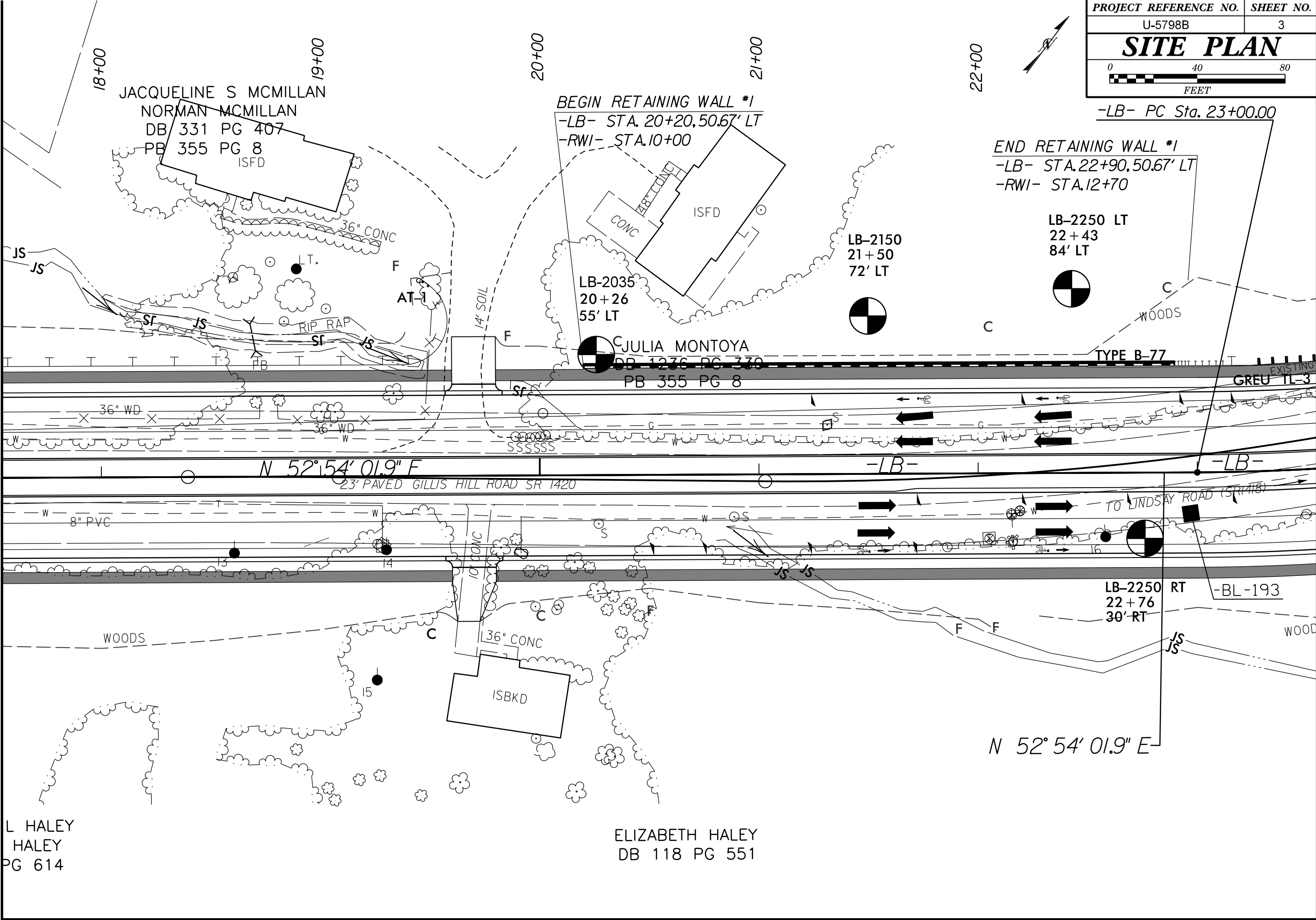
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SOIL DESCRIPTION							
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206; ASTM D1986). 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, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>							
SOIL LEGEND AND AASHTO CLASSIFICATION							
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)				SILT-CLAY MATERIALS (> 35% PASSING #200)	
		A-1	A-1-a	A-3	A-2	A-4	A-5
GROUP CLASS.		A-1-a		A-3	A-2-4	A-2-5	A-2-6
SYMBOL							
% PASSING #10 #40 #200		50 MX 30 MX 15 MX	50 MX 25 MX 10 MX	51 MN 35 MX 35 MX 35 MX 35 MX	35 MN 36 MN 36 MN 36 MN	41 MN 41 MN 41 MN 41 MN	41 MN 41 MN 41 MN 41 MN
MATERIAL PASSING #40 LL PI		-	-	40 MX 41 MN 40 MX 41 MN	40 MX 41 MN 40 MX 41 MN	40 MX 41 MN 40 MX 41 MN	41 MN 41 MN 41 MN 41 MN
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	POOR UNSUITABLE
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 RESISTENCE (N-VALUE)		RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F ²)	
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 STIFF 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 OPENING (MM)		4 10 40 60 200 270		270 0.075 0.053			
		BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GRL.)		COARSE SAND (CSE, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)			
GRAIN SIZE MM IN.		305 12 75 3		2.0 0.25 0.05 0.005			
SOIL MOISTURE SCALE - CORRELATION OF TERMS							
SOIL MOISTURE SCALE (ATTERBERG LIMITS)		FIELD MOISTURE DESCRIPTION		GUIDE FOR FIELD MOISTURE DESCRIPTION			
LL - LIQUID RANGE (PL) PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT		- SATURATED - (SAT.) - WET - (W) - MOIST - (M) - DRY - (D)		USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE SOLID; AT OR NEAR OPTIMUM MOISTURE REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE			
PLASTICITY							
PLASTICITY INDEX (PI)				DRY STRENGTH			
NON PLASTIC SLIGHTLY PLASTIC MODERATELY PLASTIC HIGHLY PLASTIC				0-5 6-15 16-25 26 OR MORE VERY LOW SLIGHT MEDIUM HIGH			
COLOR							
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.							

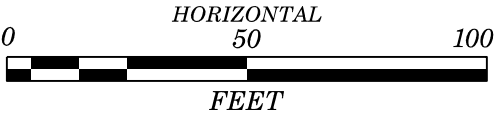
GRADATION		
WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.		
ANGULARITY OF GRAINS		
THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.		
MINERALOGICAL COMPOSITION		
MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.		
COMPRESSIBILITY		
SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50		
PERCENTAGE OF MATERIAL		
ORGANIC MATERIAL SILT - CLAY OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE		
GROUND WATER		
WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP		
MISCELLANEOUS SYMBOLS		
ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION DIP & DIP DIRECTION OF ROCK STRUCTURES SOIL SYMBOL TEST BORING ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING INFERRRED SOIL BOUNDARY CORE BORING INFERRRED ROCK LINE MONITORING WELL ALLUVIAL SOIL BOUNDARY PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD TEST BORING WITH CORE SPT N-VALUE		
RECOMMENDATION SYMBOLS		
UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNACCEPTABLE DEGRADABLE ROCK SHALLOW UNDERCUT ACCEPTABLE DEGRADABLE ROCK		
ABBREVIATIONS		
AR - AUGER REFUSAL MED. - MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA. - MICACEOUS WEA. - WEATHERED CL. - CLAY MOD. - MODERATELY ? - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC % - DRY UNIT WEIGHT CSE. - COARSE PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DMT - DILATOMETER TEST SAP. - SAPROLITIC S - BULK OPT - DYNAMIC PENETRATION TEST SD. - SAND, SANDY SS - SPLIT SPOON e - VOID RATIO SL. - SILT, SILTY ST - SHELBY TUBE f - FINE SLI. - SLIGHTLY RS - ROCK FOSS. - FOSSILIFEROUS TCR - TRICONE REFUSAL RT - RECOMPACT TRIAXIAL FRAC. - FRACTURED, FRACTURES w - MOISTURE CONTENT CBR - CALIFORNIA BEARING RATIO FRAGS. - FRAGMENTS v - VERY		
EQUIPMENT USED ON SUBJECT PROJECT		
DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE: ☐ CME-45C ☐ CLAY BITS ☒ AUTOMATIC ☐ MANUAL ☐ CME-55 ☐ 6" CONTINUOUS FLIGHT AUGER ☐ -B _____ ☐ -H _____ ☐ CME-550 ☐ 8" HOLLOW AUGERS ☐ -N _____ ☐ VANE SHEAR TEST ☐ HARD FACED FINDER BITS ☐ CORE SIZE: ☐ PORTABLE HOIST ☐ TUNG.-CARBIDE INSERTS ☐ POST HOLE DIGGER ☐ DIEHDICH D-50 (TSR373) ☐ CASING ☐ W/ ADVANCER ☐ HAND AUGER ☐ _____ ☐ TRICONE _____ * STEEL TEETH ☐ SOUNDING ROD ☐ _____ ☐ TRICONE _____ * TUNG.-CARB. ☐ VANE SHEAR TEST ☐ _____ ☒ 4¼" SOLID STEM AUGERS ☐ _____ ☐ _____ ☒ MUD ROTARY ☐ _____		

ROCK DESCRIPTION		
HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT		

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	3
SITE PLAN	
0 40 80 FEET	

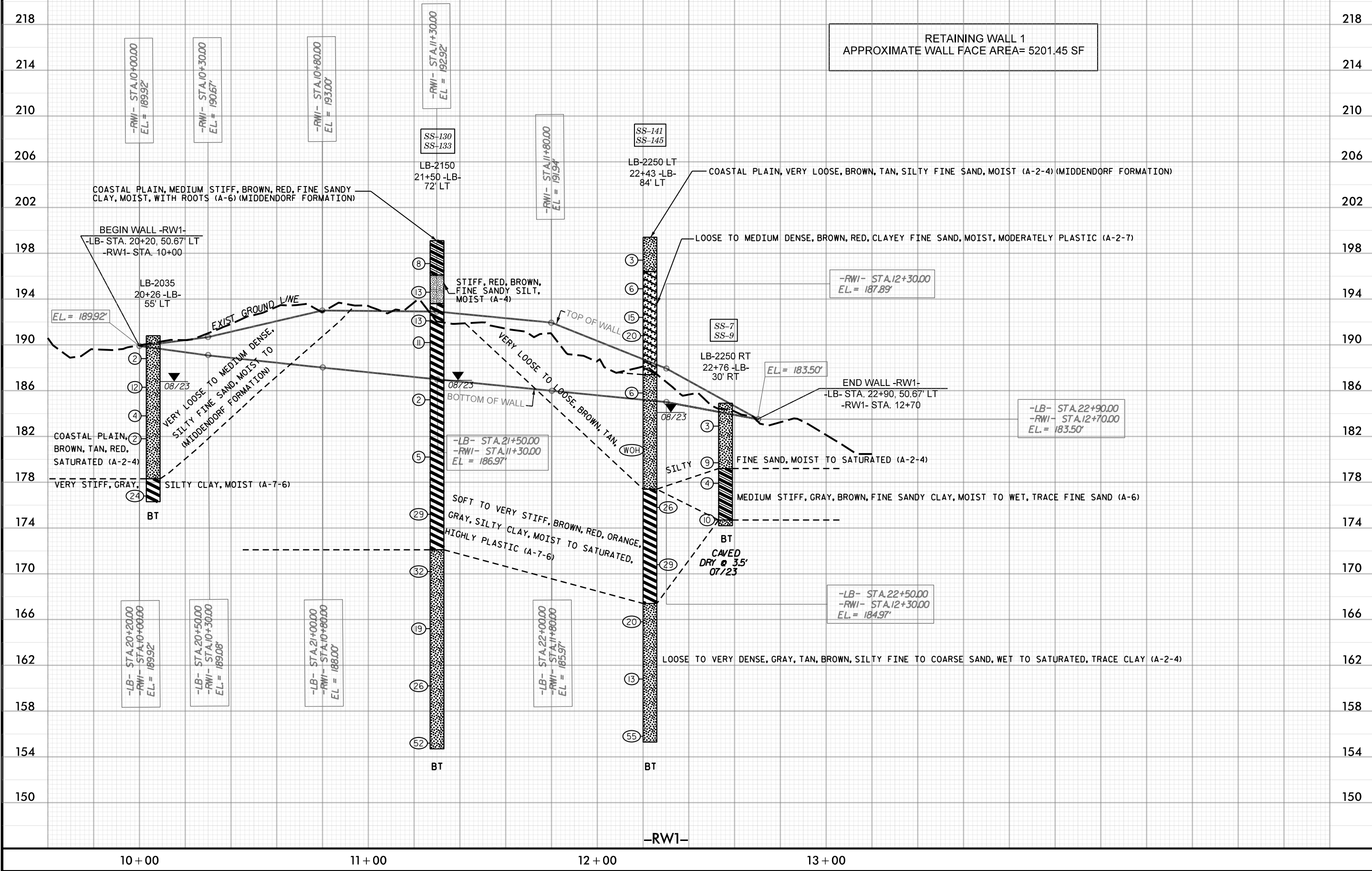


NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ON TO THE EXISTING GROUND PROFILE ALONG THE CENTERLINE OF -RW1- TAKEN FROM THE PROVIDED PROJECT TIN FILE (U5798_LS_TIN.tin) DATED 08/23/2023.



VE = 5:1

PROJECT REFERENCE NO.	SHEET NO.
U-5798B	4
PROFILE ALONG -RW1- AT STA. 10+00 TO STA. 12+70	



LABORATORY TESTING SUMMARY

PROJECT NUMBER: 44369.1.3

TIP: U-5798B

COUNTY: Cumberland/ Hoke

DESCRIPTION:	Widen to Multi-Lanes SR 1102 (Gillis Hill Rd.) From South of Celtic Drive to North of SR 1112 (Stoney Point Rd.)
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[illegible]

NP - NON-PLASTIC

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number