

PROJECT: 32572.1.FS10 REFERENCE: A-0009CB

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	WALL ENVELOPE
5-6	BORE LOGS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY GRAHAM
 PROJECT DESCRIPTION UPGRADE NC 143 FROM SR
1223 (BEECH CREEK ROAD) TO 0.5 MILES NORTH
OF APPALACHIAN TRAIL
 SITE DESCRIPTION RETAINING WALL #9:
CAST-IN-PLACE CONCRETE WALL ON -L- FROM
290+80 LT TO 292+85 LT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CB	1	6

CAUTION NOTICE

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

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

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- 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

BRECCIA
C. PIERCY

INVESTIGATED BY CG2
 DRAWN BY M. BREWER, P.E.
 CHECKED BY R. KRAL, P.E.
 SUBMITTED BY M. BREWER, P.E.
 DATE APRIL 2022

Prepared in the Office of:



**CAROLINAS
 GEOTECHNICAL
 GROUP**
 2400 CROWNPOINT EXECUTIVE DRIVE
 SUITE 800
 CHARLOTTE, NC 28227
 (980) 339-8684

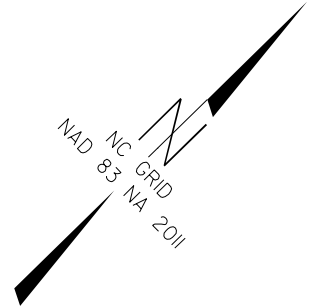


DocuSigned by:
Donald Brewer 05/06/2022
 386129C0A4C1462
 SIGNATURE DATE

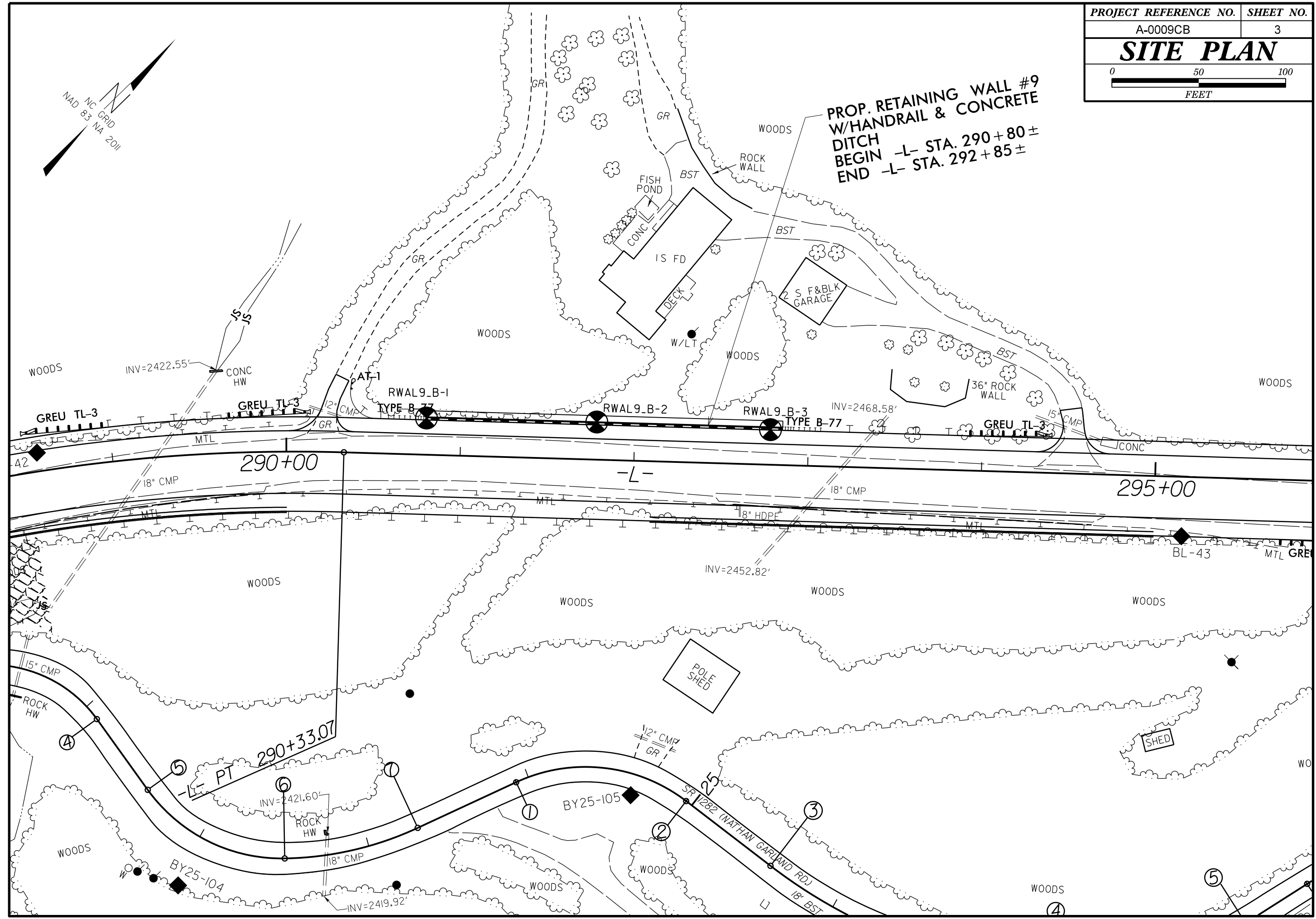
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

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

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION, and ELEVATION.



**PROP. RETAINING WALL #9
W/HANDRAIL & CONCRETE
DITCH**
 BEGIN -L- STA. 290+80±
 END -L- STA. 292+85±

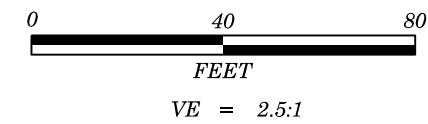




Prepared in the Office of:



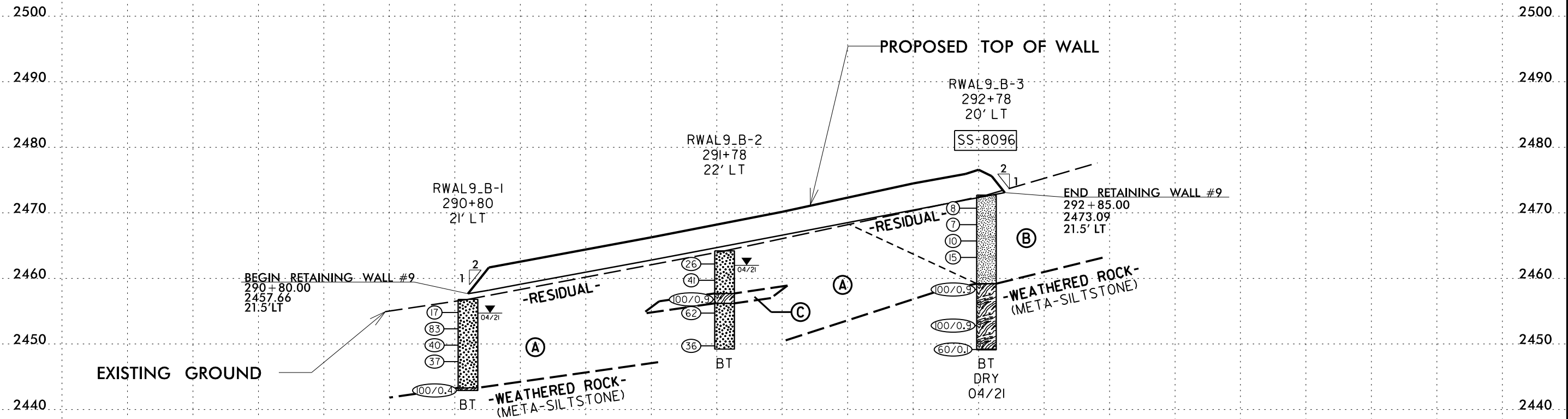
CAROLINAS
GEOTECHNICAL
GROUP



PROJECT REFERENCE NO.	SHEET NO.
A-0009CB	4
RETAINING WALL #9 PROFILE BORINGS PROJECTED ALONG WALL ENVELOPE	

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-8096	20' LT	292+78 -L-	6.0' - 7.5'	A-4(0)	24	NP	15	46	23	16	100	94	52	26	-



- (A) -RESIDUAL- MEDIUM DENSE TO VERY DENSE, MOIST, GRAY-BROWN-YELLOW, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS
- (B) -RESIDUAL- MEDIUM STIFF TO VERY STIFF, MOIST, BROWN-RED-GRAY, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS
- (C) -WEATHERED ROCK-(META-SILTSTONE)

WALL ENVELOPE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 11/5/21.
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE
PROFILE. EXISTING GROUND LINE IS DRAWN BORING TO BORING.

289 + 50 290 + 00 290 + 50 291 + 00 291 + 50 292 + 00 292 + 50 293 + 00 293 + 50 294 + 00 294 + 50

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 32572.1.FS10		TIP A-0009CB		COUNTY GRAHAM		GEOLOGIST C. Piercy									
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail							GROUND WTR (ft)								
BORING NO. RWAL9_B-1		STATION 290+80		OFFSET 21 ft LT		ALIGNMENT L									
COLLAR ELEV. 2,456.8 ft		TOTAL DEPTH 13.9 ft		NORTHING 619,143		EASTING 590,140									
DRILL RIGHAMMER EFF./DATE BRE9533 CME-550X 78% 03/12/2021				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER J. Phillips		START DATE 04/29/21		COMP. DATE 04/29/21		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2460															
	2,455.8	1.0	2	6	11									2,456.8	0.0
2455	2,453.3	3.5	21	37	46										
	2,450.8	6.0	11	18	22										
2450	2,448.3	8.5	11	17	20										
	2,443.3	13.5												2,443.3	13.5
			100/0.4											2,442.9	13.9

WBS 32572.1.FS10		TIP A-0009CB		COUNTY GRAHAM		GEOLOGIST C. Piercy									
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail							GROUND WTR (ft)								
BORING NO. RWAL9_B-2		STATION 291+78		OFFSET 22 ft LT		ALIGNMENT L									
COLLAR ELEV. 2,464.2 ft		TOTAL DEPTH 15.0 ft		NORTHING 619,211		EASTING 590,210									
DRILL RIGHAMMER EFF./DATE BRE9533 CME-550X 78% 03/12/2021				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER J. Phillips		START DATE 04/29/21		COMP. DATE 04/29/21		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
2465															
	2,463.2	1.0	7	12	14									2,464.2	0.0
2460	2,460.7	3.5	22	17	24										
	2,458.2	6.0	35	55	45/0.4										
2455	2,455.7	8.5	30	34	28										
	2,450.7	13.5	11	18	18										
														2,449.2	15.0

NCDOT BORE DOUBLE A-0009CB_GEO_RDY_GTM.GPJ NC_DOT.GDT 4/26/22

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 32572.1.FS10		TIP A-0009CB		COUNTY GRAHAM		GEOLOGIST C. Piercy											
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail							GROUND WTR (ft)										
BORING NO. RWAL9_B-3		STATION 292+78		OFFSET 20 ft LT		ALIGNMENT L											
COLLAR ELEV. 2,472.7 ft		TOTAL DEPTH 23.6 ft		NORTHING 619,279		EASTING 590,283											
DRILL RIGHAMMER EFF./DATE BRE9533 CME-550X 78% 03/12/2021				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER J. Phillips		START DATE 04/29/21		COMP. DATE 04/29/21		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)		
2475															2,472.7	0.0	GROUND SURFACE
2470	2,471.7	1.0	2	3	5								M			RESIDUAL Medium Stiff to Stiff, Brown-Red-Gray, Fine to Coarse Sandy SILT (A-4(0)), with trace gravel-sized rock fragments	
	2,469.2	3.5	2	3	4							M					
	2,466.7	6.0	4	4	6							M					
2465	2,464.2	8.5	4	6	9							M					
2460	2,459.2	13.5	11	89/0.4						100/0.9				2,459.2	13.5	WEATHERED ROCK Gray, (META-SILTSTONE)	
2455	2,454.2	18.5	44	48	52/0.4					100/0.9							
2450	2,449.2	23.5	60/0.1							60/0.1				2,449.2	23.5	CRYSTALLINE ROCK Gray, (META-SILTSTONE) Boring Terminated with Standard Penetration Test Refusal at Elevation 2,449.1 ft In Crystalline Rock (META-SILTSTONE)	

NCDOT BORE DOUBLE A-0009CB_GEO_RDY_GTM.GPJ NC_DOT.GDT 4/26/22