

PROJECT: 32572.1.FS10 REFERENCE: A-0009CB

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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 #11: CAST-IN-PLACE CONCRETE WALL WITH ARCHITECTURAL FORM LINER FINISH ON -L- FROM 330+82 LT TO 333+24 LT

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

CG2 EXPLORATION

BRECCIA

S. BRAUN

N. MCLAREN

C. PIERCY

INVESTIGATED BY CG2

DRAWN BY M. BREWER, P.E.

CHECKED BY R. KRAL, P.E.

SUBMITTED BY M. BREWER, P.E.

DATE MAY 2022

Prepared in the Office of:

CG2 | **CAROLINAS GEOTECHNICAL GROUP**
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 (980) 339-8684



DocuSigned by:

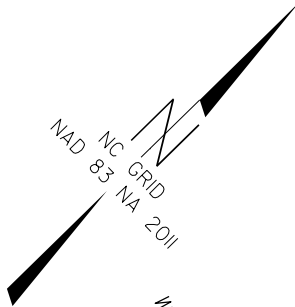
Donald Brewer 05/06/2022

386129C0A4C1462 SIGNATURE DATE

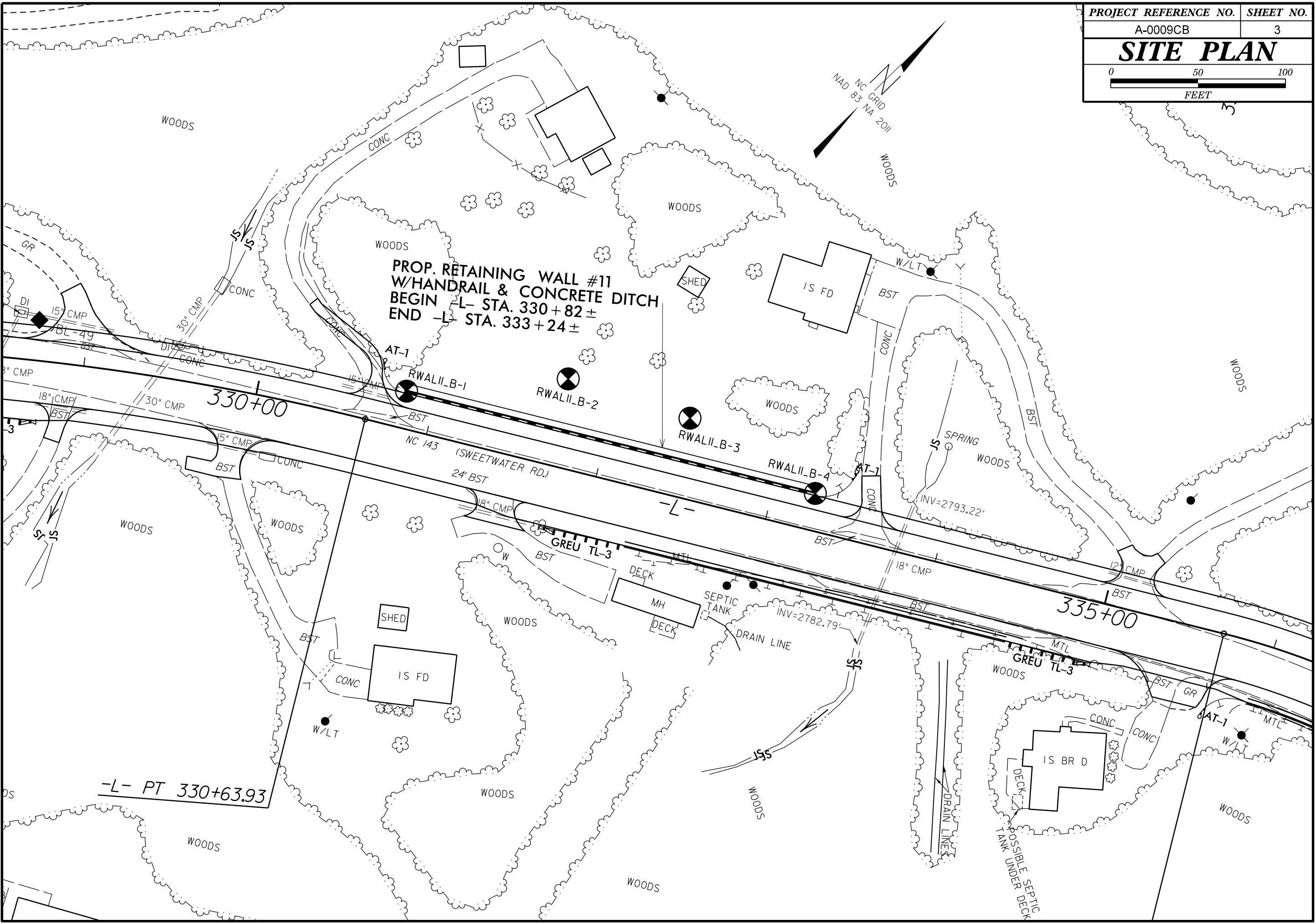
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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 #11
W/HANDRAIL & CONCRETE DITCH**
 BEGIN -L- STA. 330+82 ±
 END -L- STA. 333+24 ±



-L- PT 330+63.93

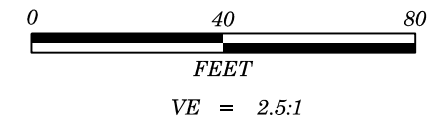
POSSIBLE SEPTIC
TANK UNDER DECK



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GEOTECHNICAL
GROUP



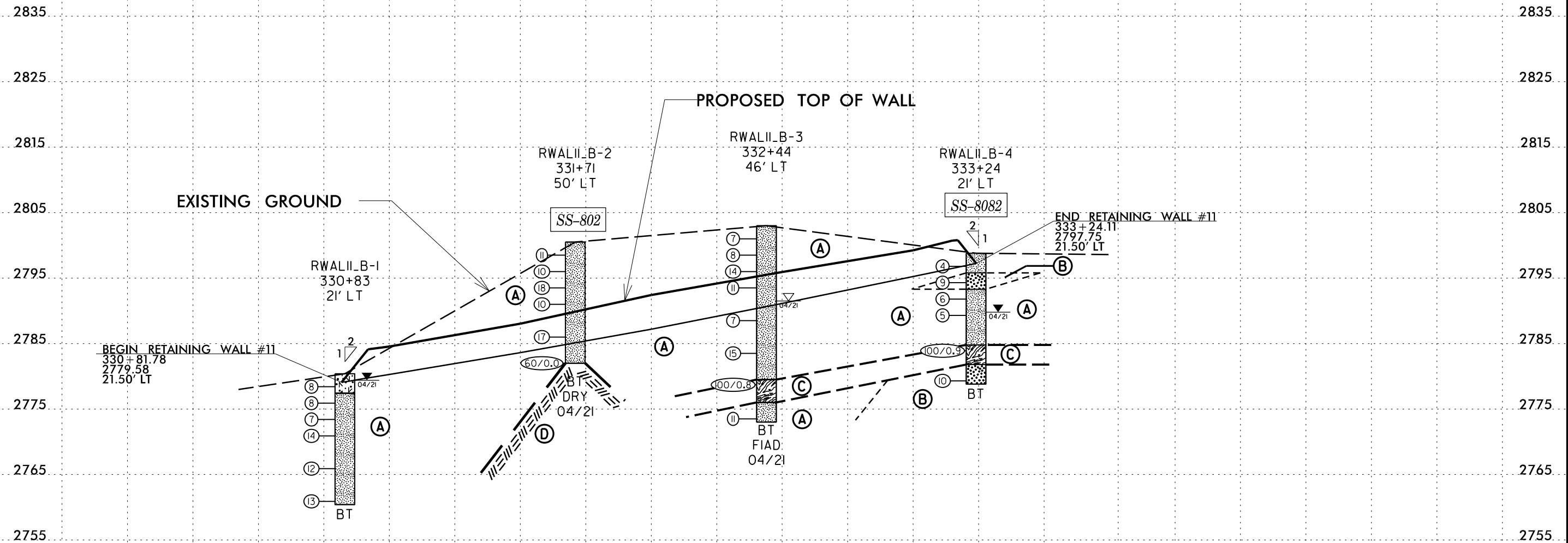
PROJECT REFERENCE NO. SHEET NO.

A-0009CB 4

RETAINING WALL #11
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-802	50' LT	331+71 -L-	6.0' - 7.5'	A-4(0)	27	NP	25	35	23	17	86	72	43	18	-
SS-8082	21' LT	333+24 -L-	1.0' - 2.5'	A-4(4)	30	9	11	33	25	31	100	94	66	22	-

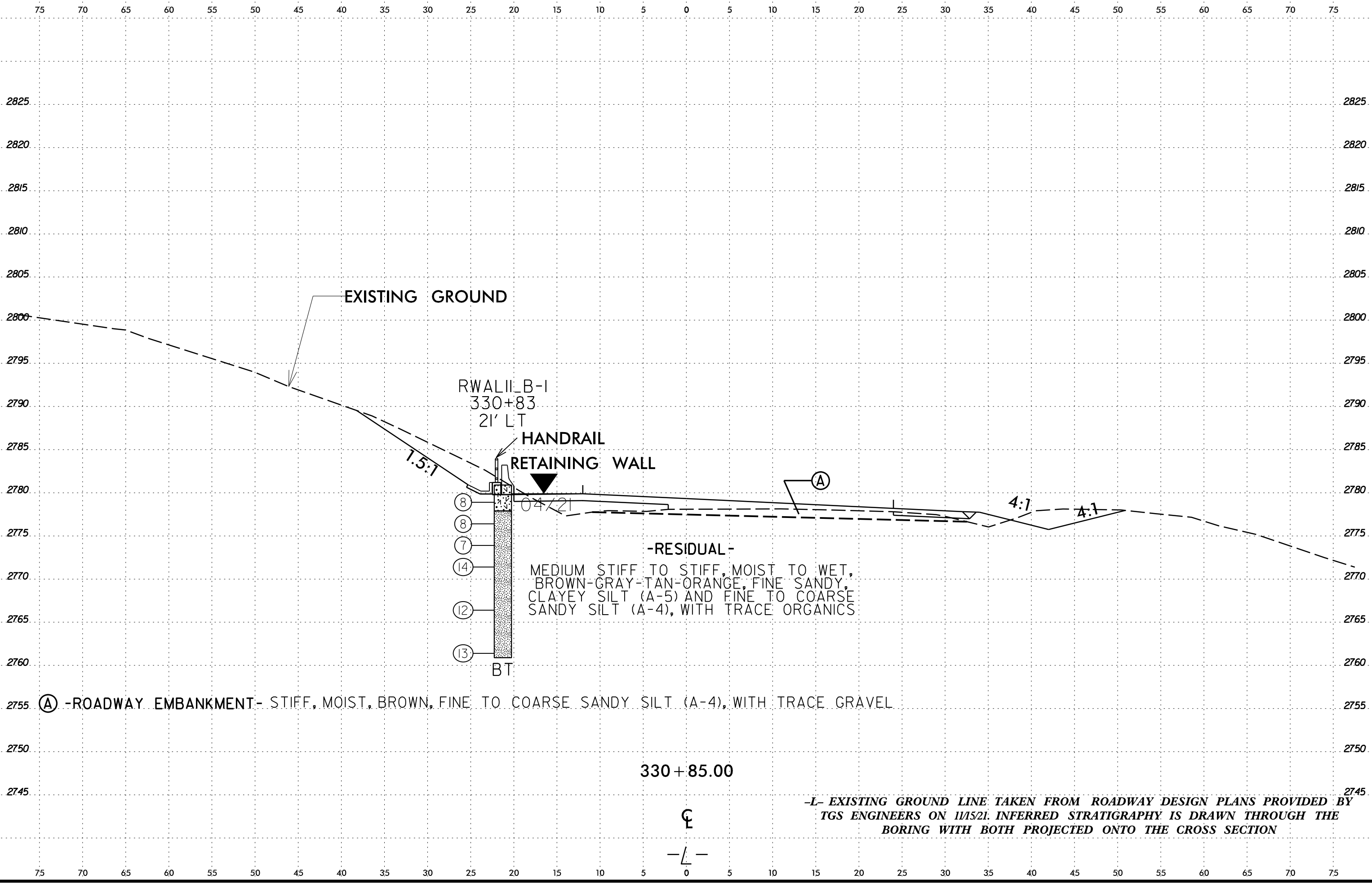


- Ⓐ -RESIDUAL- SOFT TO VERY STIFF, MOIST TO SATURATED, TAN-ORANGE-GRAY-BROWN-BLACK-RED, FINE TO COARSE SANDY SILT (A-4) AND FINE TO COARSE SANDY, CLAYEY SILT (A-5), WITH TRACE ORGANICS AND TRACE TO LITTLE GRAVEL-SIZED ROCK FRAGMENTS
- Ⓑ -RESIDUAL- LOOSE, MOIST, RED-BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4)
- Ⓒ -WEATHERED ROCK-(META-SILTSTONE)
- Ⓓ -CRYSTALLINE ROCK-(META-SILTSTONE)

WALL ENVELOPE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 11/15/21.
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE
PROFILE. EXISTING GROUND LINE IS DRAWN BORING TO BORING.

330+00 330+50 331+00 331+50 332+00 332+50 333+00 333+50 334+00 334+50 335+00

6/23/16
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EXISTING GROUND

RWAL11_B-1
330+83
21' LT

HANDRAIL
RETAINING WALL

- 8
 - 8
 - 7
 - 14
 - 12
 - 13
- BT

-RESIDUAL -
MEDIUM STIFF TO STIFF, MOIST TO WET,
BROWN-GRAY-TAN-ORANGE, FINE SANDY,
CLAYEY SILT (A-5) AND FINE TO COARSE
SANDY SILT (A-4), WITH TRACE ORGANICS

(A) -ROADWAY EMBANKMENT- STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

330 + 85.00

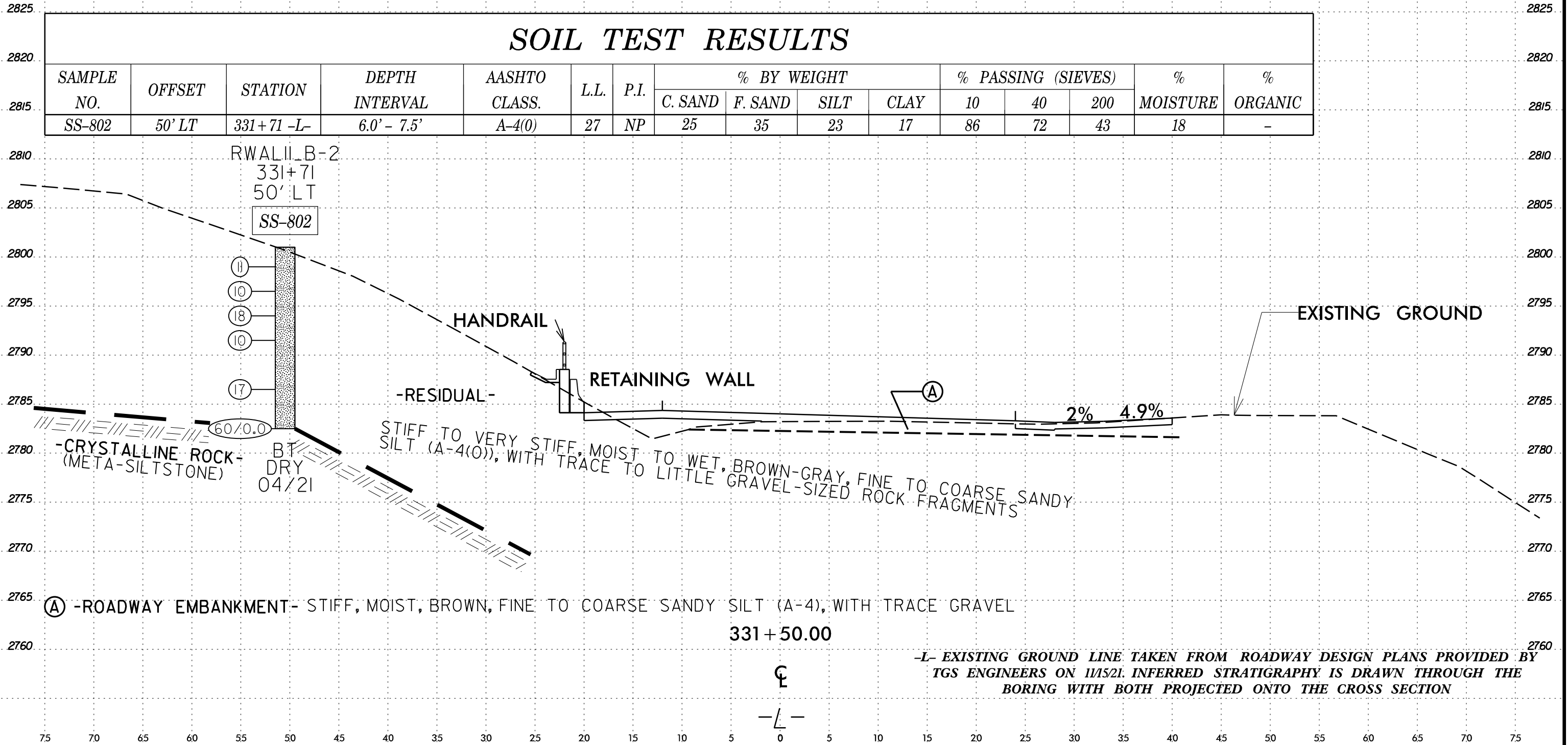
-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY
TGS ENGINEERS ON 11/5/21. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE
BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

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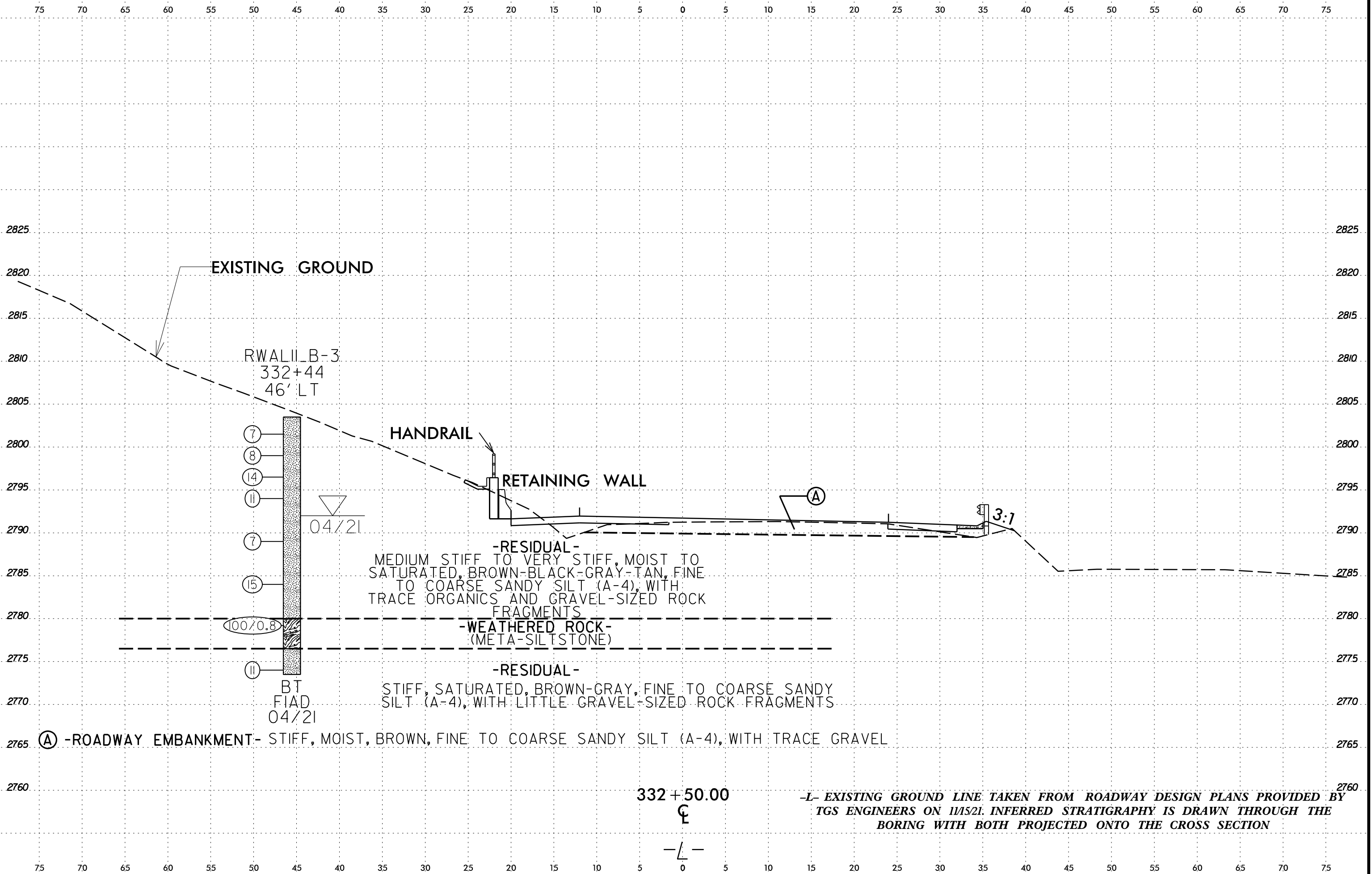
SOIL TEST RESULTS

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-802	50' LT	331+71 -L-	6.0' - 7.5'	A-4(0)	27	NP	25	35	23	17	86	72	43	18	-

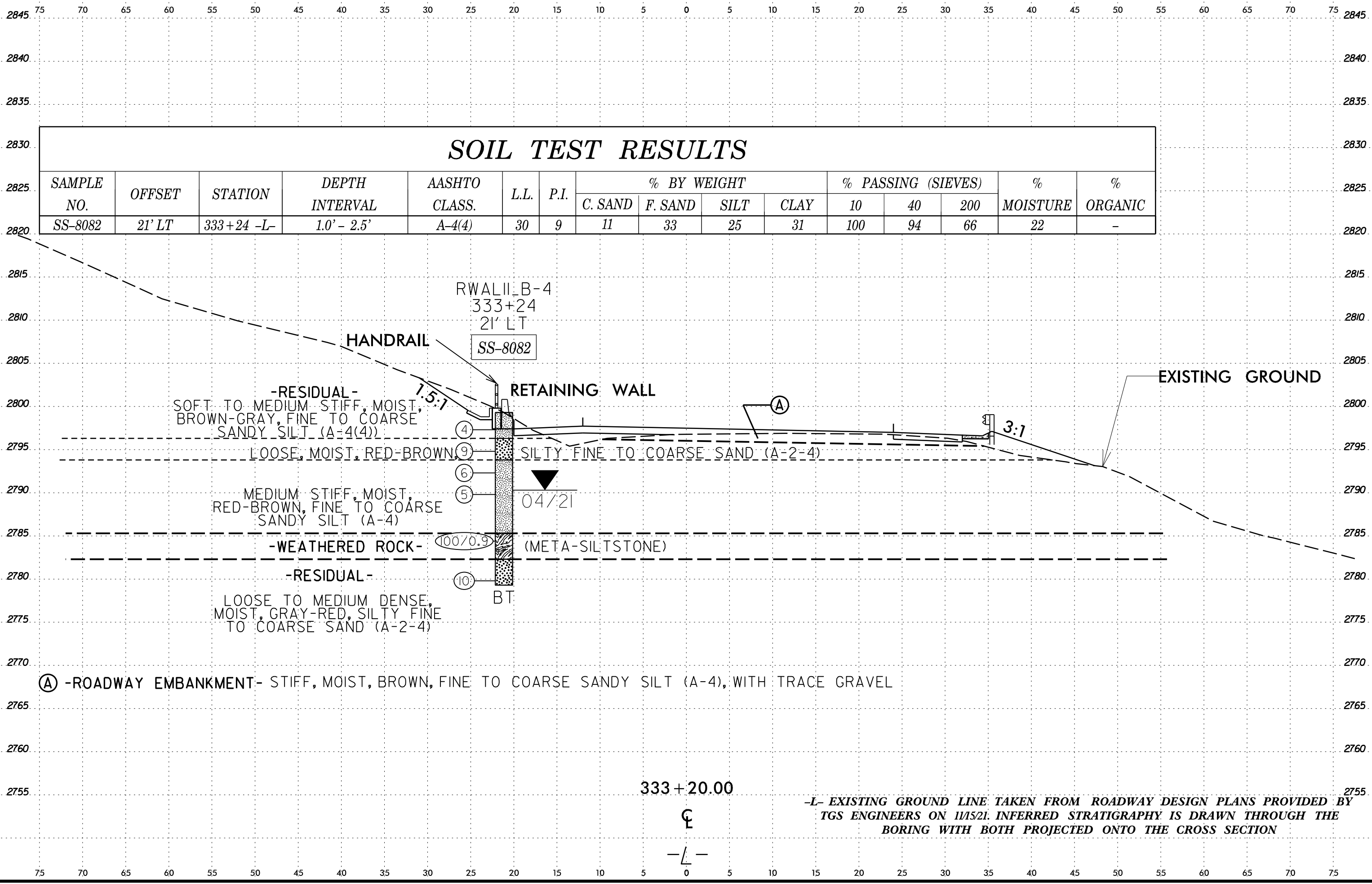


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GEOTECHNICAL BORING REPORT

BORE LOG

WBS 32572.1.FS10			TIP A-0009CB			COUNTY GRAHAM			GEOLOGIST N. McLaren							
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail								GROUND WTR (ft)								
BORING NO. RWAL11_B-1		STATION 330+83		OFFSET 21 ft LT		ALIGNMENT L		0 HR.		1.0						
COLLAR ELEV. 2,780.9 ft		TOTAL DEPTH 20.0 ft		NORTHING 622,012		EASTING 592,730		24 HR.		1.0						
DRILL RIGHAMMER EFF./DATE CG29473 CME-550 79% 03/12/2021						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER J. Estep		START DATE 04/28/21		COMP. DATE 04/28/21		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						
2785																
2780	2,779.9	1.0												2,780.9	0.0	GROUND SURFACE
	2,777.4	3.5	3	3	5								W	2,777.9	3.0	RESIDUAL Medium Stiff to Stiff, Brown-Gray, Fine Sandy, Clayey SILT (A-5), with trace organics
2775	2,774.9	6.0	5	3	5								W			Medium Stiff to Stiff, Tan-Orange-Gray-Brown, Fine to Coarse Sandy SILT (A-4)
	2,772.4	8.5	3	3	4								M			
													W			
2770	2,772.4	8.5	3	5	9											
	2,767.4	13.5	3	3	9								M			
2765	2,767.4	13.5	3	3	9											
	2,762.4	18.5	4	5	8								M			
														2,760.9	20.0	Boring Terminated at Elevation 2,760.9 ft In Residual Sandy Silt (A-4)

WBS 32572.1.FS10			TIP A-0009CB			COUNTY GRAHAM			GEOLOGIST S. Braun							
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail								GROUND WTR (ft)								
BORING NO. RWAL11_B-2		STATION 331+71		OFFSET 50 ft LT		ALIGNMENT L		0 HR.		Dry						
COLLAR ELEV. 2,801.0 ft		TOTAL DEPTH 18.5 ft		NORTHING 622,083		EASTING 592,790		24 HR.		Dry						
DRILL RIGHAMMER EFF./DATE CG20446 Diedrich D50 83% 06/16/2020						DRILL METHOD H.S. Augers			HAMMER TYPE Automatic							
DRILLER C. Odom		START DATE 04/30/21		COMP. DATE 04/30/21		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						
2805																
2800	2,800.0	1.0												2,801.0	0.0	GROUND SURFACE
	2,797.5	3.5	4	5	6								M			RESIDUAL
	2,797.5	3.5	4	7	3								M			Stiff to Very Stiff, Brown-Gray, Fine to Coarse Sandy SILT (A-4(0)), with trace to little gravel-sized rock fragments
2795	2,795.0	6.0	3	11	7							SS-802	18%			
	2,792.5	8.5	13	6	4								W			
2790	2,792.5	8.5	13	6	4											
	2,787.5	13.5	8	11	6								W			
2785	2,787.5	13.5	8	11	6											
	2,782.5	18.5									60/0.0			2,782.5	18.5	Boring Terminated with Standard Penetration Test Refusal at Elevation 2,782.5 ft On Crystalline Rock (META-SILTSTONE)

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 32572.1.FS10		TIP A-0009CB		COUNTY GRAHAM		GEOLOGIST S. Braun										
SITE DESCRIPTION Upgrade NC 143 from SR 1223 (Beech Creek Road) to 0.5 Miles North of Appalachian Trail							GROUND WTR (ft)									
BORING NO. RWAL11_B-3		STATION 332+44		OFFSET 46 ft LT		ALIGNMENT L										
COLLAR ELEV. 2,803.5 ft		TOTAL DEPTH 30.0 ft		NORTHING 622,117		EASTING 592,855										
DRILL RIGHAMMER EFF./DATE CG20446 Diedrich D50 83%/06/16/2020			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER C. Odom		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 MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2805															2,803.5	0.0
	2,802.5	1.0	4	4	3											
2800	2,800.0	3.5	2	3	5											
	2,797.5	6.0	10	10	4											
2795	2,795.0	8.5	3	5	6											
	2,790.0	13.5	5	3	4											
2790	2,790.0	13.5	5	3	4											
	2,785.0	18.5	11	10	5											
2785	2,785.0	18.5	11	10	5											
	2,780.0	23.5	21	79/0.3												
2780	2,780.0	23.5	21	79/0.3												
	2,775.0	28.5	5	5	6											
2775	2,775.0	28.5	5	5	6											

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. RWAL11_B-4		STATION 333+24		OFFSET 21 ft LT		ALIGNMENT L										
COLLAR ELEV. 2,799.3 ft		TOTAL DEPTH 20.0 ft		NORTHING 622,138		EASTING 592,936										
DRILL RIGHAMMER EFF./DATE BRE9533 CME-550X 78% 03/12/2021			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER J. Phillips		START DATE 04/28/21		COMP. DATE 04/28/21		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG G	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
2800															2,799.3	0.0
	2,798.3	1.0	3	2	2											
2795	2,795.8	3.5	2	4	5											
	2,793.3	6.0	2	2	4											
2790	2,790.8	8.5	1	2	3											
	2,785.8	13.5	2	10	90/0.4											
2785	2,785.8	13.5	2	10	90/0.4											
	2,780.8	18.5	2	4	6											
2780	2,780.8	18.5	2	4	6											

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