

REFERENCE: B-3186/B-5898

PROJECT: 38332/48030

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY HAYWOOD
 PROJECT DESCRIPTION US 23/US 74/US 19 (GREAT SMOKY MOUNTAIN HWY) FROM WEST OF NC 209(CRABTREE RD.) TO EAST OF RUSS AVE.
 SITE DESCRIPTION RETAINING WALL #1 FROM -L LT- STA. 48+60.08 TO 49+09.03

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3186/B-5898	1	5

CAUTION NOTICE

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

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

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

- NOTES:
- 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

C. SWAFFORD

GEOTECHNOLOGY, INC.

INVESTIGATED BY C. SWAFFORD

DRAWN BY T. LYNN

CHECKED BY K. BUSSEY

SUBMITTED BY HDR

DATE NOVEMBER 2021

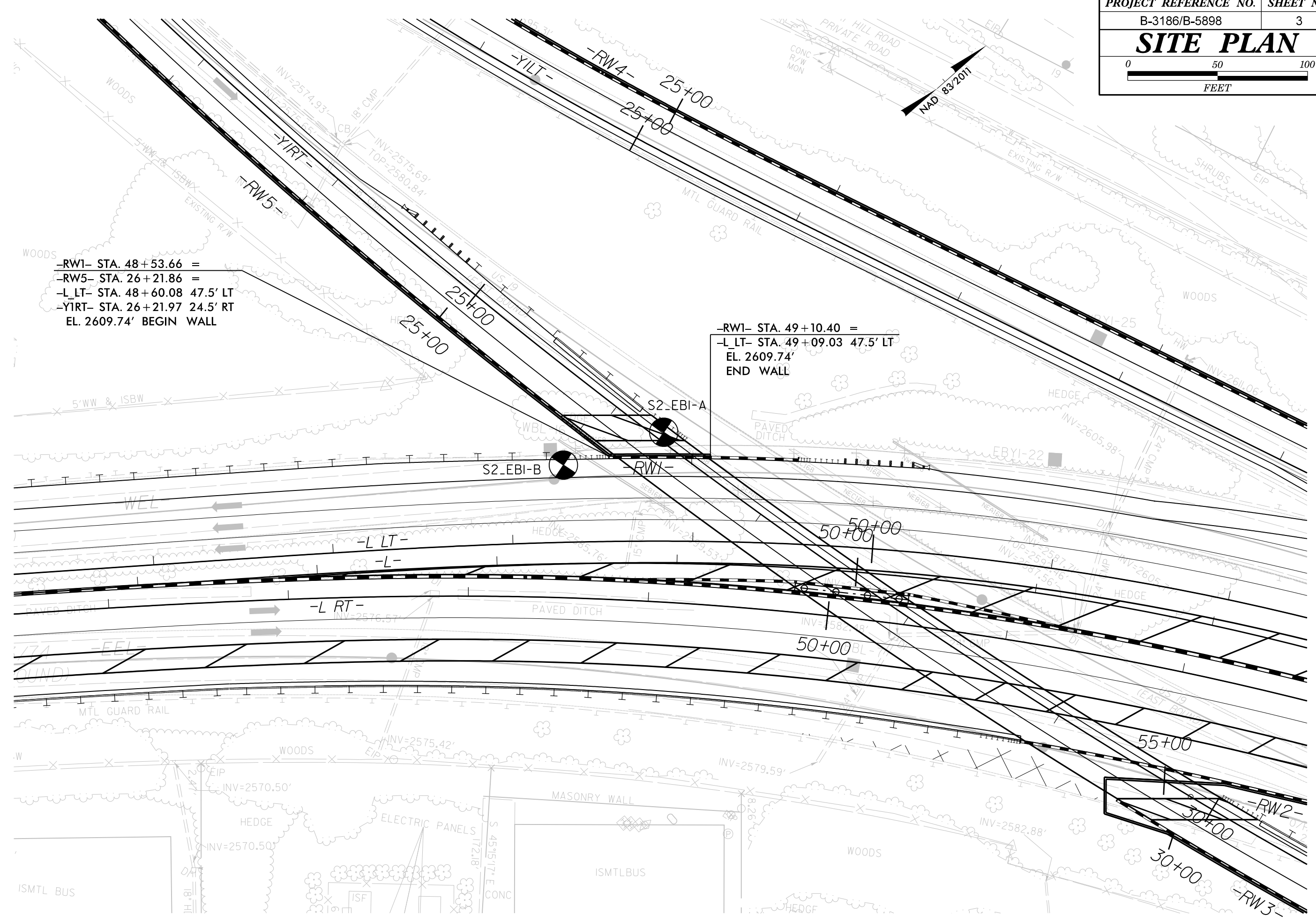
HDR HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-01116



Kenneth R. Bussey, Jr. 9/6/2023
 SIGNATURE DATE

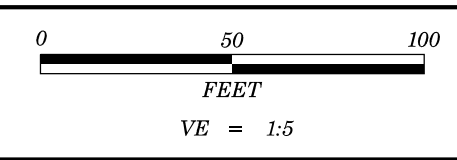
**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

PROJECT REFERENCE NO. B-3186/B-5898	SHEET NO. 3
SITE PLAN	



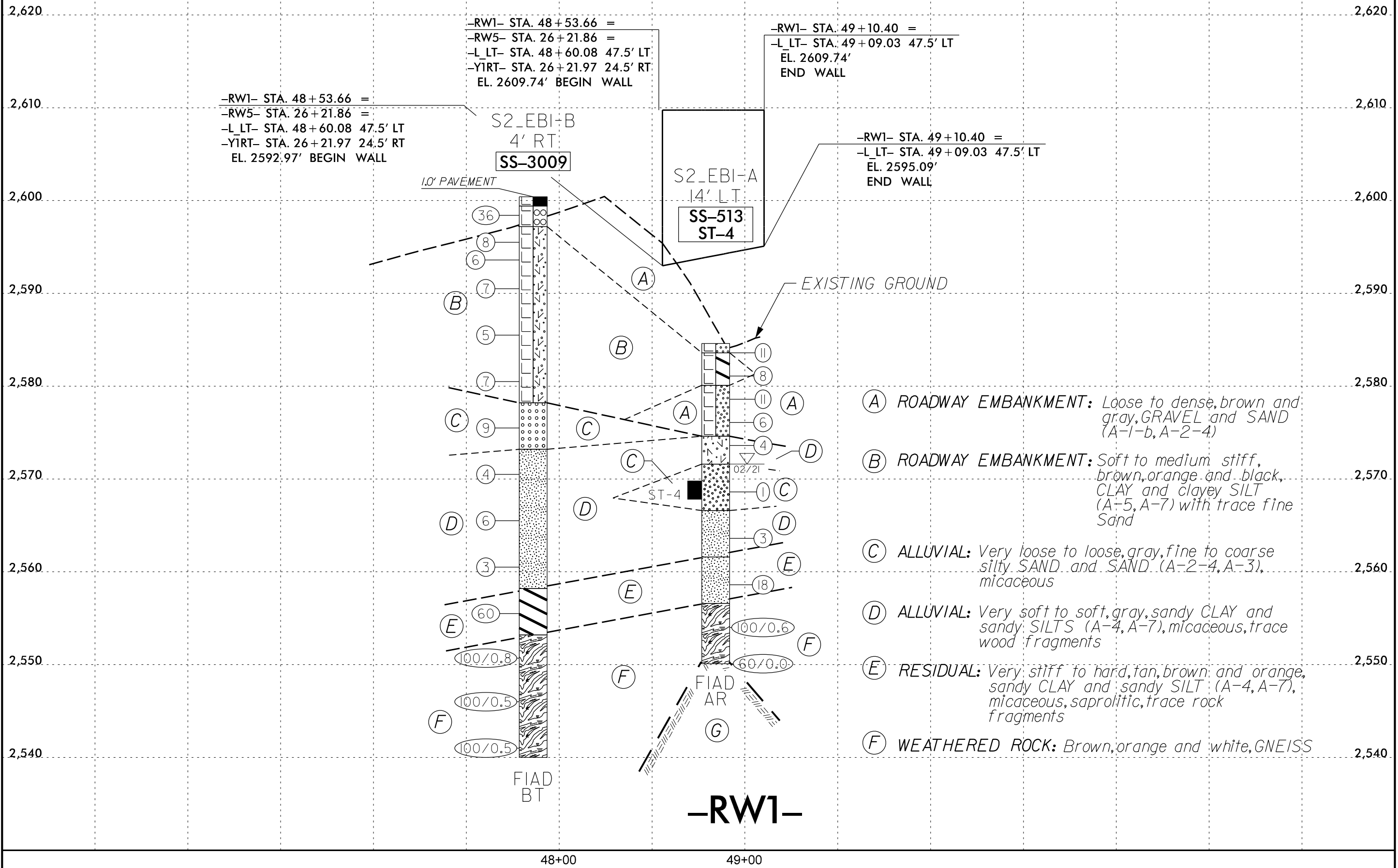
-RW1- STA. 48+53.66 =
 -RW5- STA. 26+21.86 =
 -L LT- STA. 48+60.08 47.5' LT
 -YIRT- STA. 26+21.97 24.5' RT
 EL. 2609.74' BEGIN WALL

-RW1- STA. 49+10.40 =
 -L LT- STA. 49+09.03 47.5' LT
 EL. 2609.74'
 END WALL



PROJECT REFERENCE NO.	SHEET NO.
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-RW1- PROFILE	

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		
-Y 1RT- SS-3009	44' RT	25+96	38.9' - 40.4'	A-4	37	8	26.8	36.0	25.4	11.8	86.6	72.3	36.7	43	-
-Y 1RT- SS-513	5' LT	26+29	10.0' - 11.5'	A-5 (9)	48	10	4.1	32.5	49.9	13.5	100.0	98.0	74.1	51	-
-Y 1RT- ST-4	5' LT	26+29	15.0' - 17.0'	A-2-4	27	6	41.2	30.8	7.0	21.0	94.4	66.3	31.2	28	-



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 38332.1.FS1		TIP B-3186 / B-5898		COUNTY HAYWOOD		GEOLOGIST C. Swafford										
SITE DESCRIPTION US 23/ US 74 (Great Smoky Mountain Highway)							GROUND WTR (ft)									
BORING NO. S2_EB1-B		STATION 25+96		OFFSET 44 ft RT		ALIGNMENT -Y1RT-										
COLLAR ELEV. 2,600.4 ft		TOTAL DEPTH 60.4 ft		NORTHING 666,863		EASTING 819,251										
DRILL RIGHAMMER EFF./DATE GTC3277 CME-75 83% (09/15/2020)			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic										
DRILLER K. Boone		START DATE 02/27/21		COMP. DATE 02/27/21		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						
2605																
2600	2,599.4	1.0	11	20	16											
	2,596.5	3.9	6	4	4											
2595	2,594.6	5.8	6	3	3											
	2,591.5	8.9	4	3	4											
2590																
	2,586.5	13.9	3	2	3											
2585																
	2,581.5	18.9	3	3	4											
2580																
	2,576.5	23.9	4	4	5											
2575																
	2,571.5	28.9	3	3	1											
2570																
	2,566.5	33.9	1	3	3											
2565																
	2,561.5	38.9	WOH	1	2											
2560																
	2,556.5	43.9	18	27	33											
2555																
	2,551.5	48.9	32	68/0.3												
2550																
	2,546.5	53.9	86	14/0.0												
2545																
	2,541.5	58.9	79	21/0.0												
2540																
Boring Terminated at Elevation 2,540.0 ft in Weathered Rock (GNEISS)																

NCDOT BORE DOUBLE B3186_GEO SITE 2.GPJ NC DOT.GDT 8/10/21

WBS 38332.1.FS1		TIP B-3186 / B-5898		COUNTY HAYWOOD		GEOLOGIST C. Swafford										
SITE DESCRIPTION US 23/ US 74 (Great Smoky Mountain Highway)							GROUND WTR (ft)									
BORING NO. S2_EB1-A		STATION 26+29		OFFSET 5 ft LT		ALIGNMENT -Y1RT-										
COLLAR ELEV. 2,584.6 ft		TOTAL DEPTH 34.5 ft		NORTHING 666,917		EASTING 819,274										
DRILL RIGHAMMER EFF./DATE GTC9083 CME-550X 80% (11/24/2020)			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER L. Wanstrath		START DATE 02/25/21		COMP. DATE 02/25/21		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						
2585	2,584.6	0.0	5	7	4											
	2,582.1	2.5	3	4	4											
2580	2,579.6	5.0	6	5	6											
	2,577.1	7.5	3	3	3											
2575	2,574.6	10.0	3	2	2											
	2,569.6	15.0	1	WOH	1											
2570																
	2,564.6	20.0	1	1	2											
2565																
	2,559.6	25.0	4	7	11											
2560																
	2,554.6	30.0	90	10/0.1												
2555																
	2,550.1	34.5	60/0.0													
Boring Terminated with Standard Penetration Test Refusal at Elevation 2,550.1 ft on Crystalline Rock (GNEISS)																
Other Samples: ST-4 (15.0 - 17.0)																