

REFERENCE: I-5987B

PROJECT: 47533

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROBESON
PROJECT DESCRIPTION I-95 IMPROVEMENTS FROM
US 301 (EXIT 22) IN ROBESON COUNTY TO NC 59
(EXIT 41) IN CUMBERLAND COUNTY
SITE DESCRIPTION BRIDGE NO. 162 ON -Y6-
(MCRAINEY RD.) OVER -L- (I-95) AT -L-
STA. 761 + 20.96

CONTENTS

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-5987B	1	11

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

F&R, INC.

INVESTIGATED BY F&R, INC.
DRAWN BY CROCKETT, S.C.
CHECKED BY HAMM, J. R.
SUBMITTED BY FALCON
DATE DECEMBER 2021

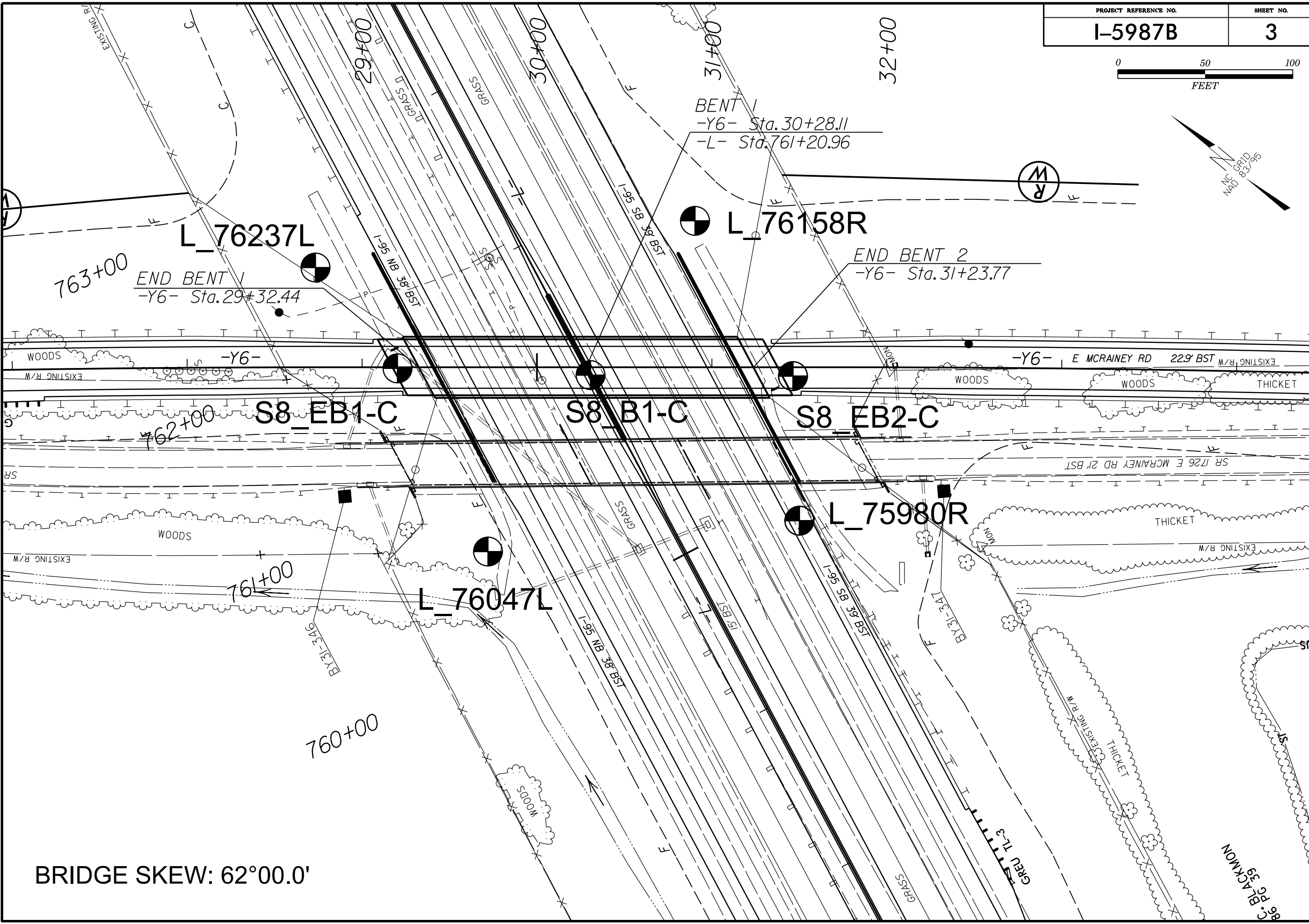
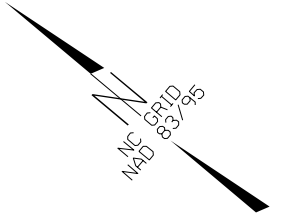
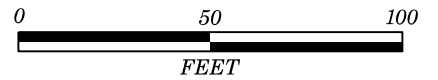


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Stephen C. Crockett Dec 16, 2021
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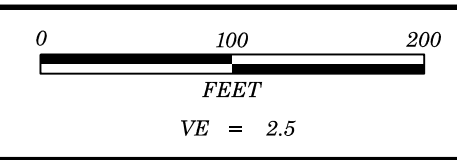
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UNLESS ALL SIGNATURES COMPLETED

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

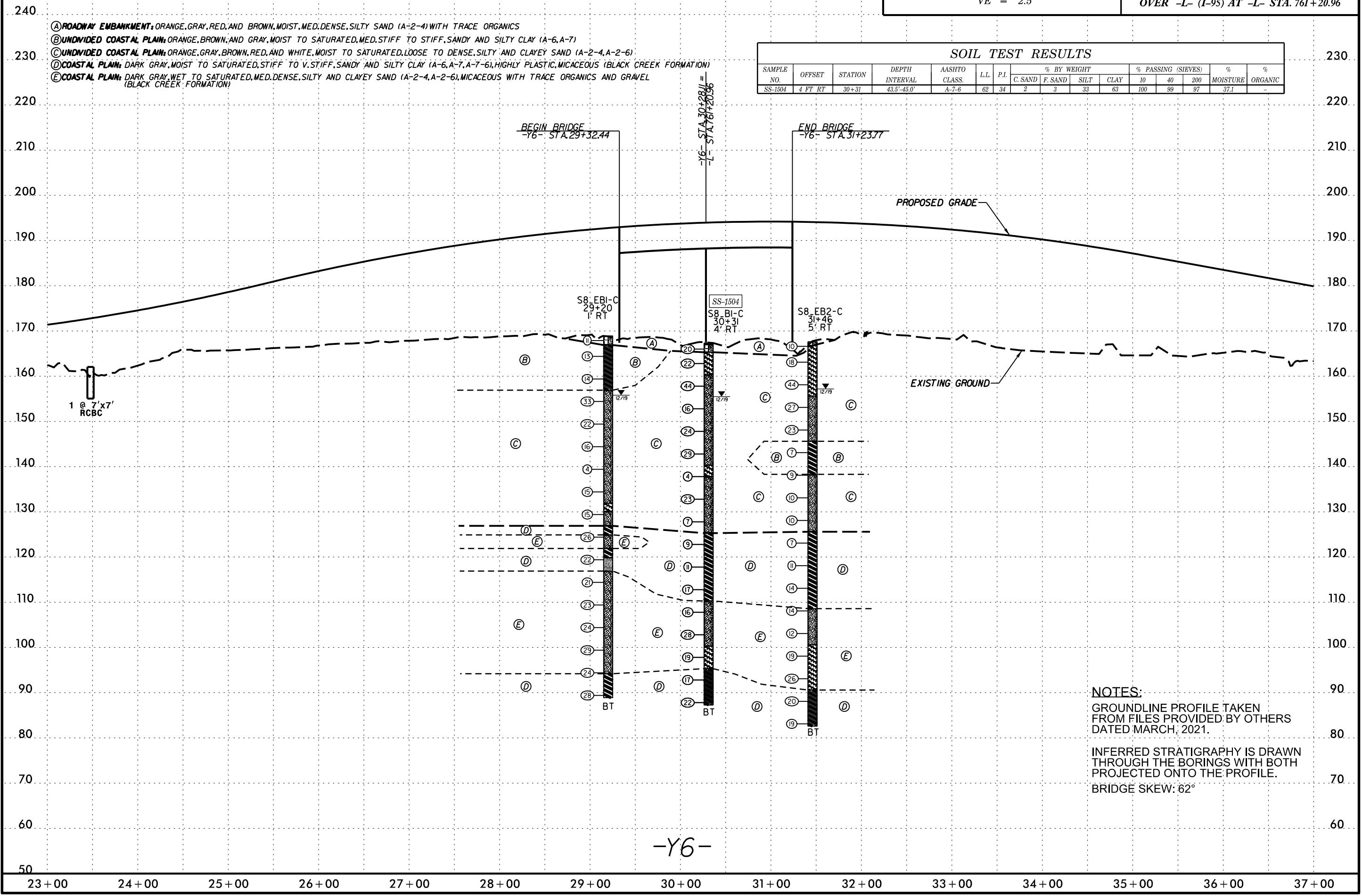
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																									
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER 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></p>										<p>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.</p>										<p>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:</p>										<p>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.</p>																																																																									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										WEATHERED ROCK (WR)										CRYSTALLINE ROCK (CR)																																																																									
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<p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p>SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50</p>										<p>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.</p>										<p>COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>																																																																									
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<p>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.</p>										<p>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.</p>										<p>FRAC. MARK: ELEVATIONS TAKEN FROM I5987_LS_TIN2_TIN DATED 05/21</p> <p>ELEVATION: FEET</p>										<p>FIAD - FILLED IMMEDIATELY AFTER DRILLING</p>																																																																									



BRIDGE SKEW: 62°00.0'



PROJECT REFERENCE NO.	SHEET NO.
I-5987B	4
BRIDGE NO. 162 ON -Y6- (MCRAINEY RD.) OVER -L- (I-95) AT -L- STA. 761+20.96	

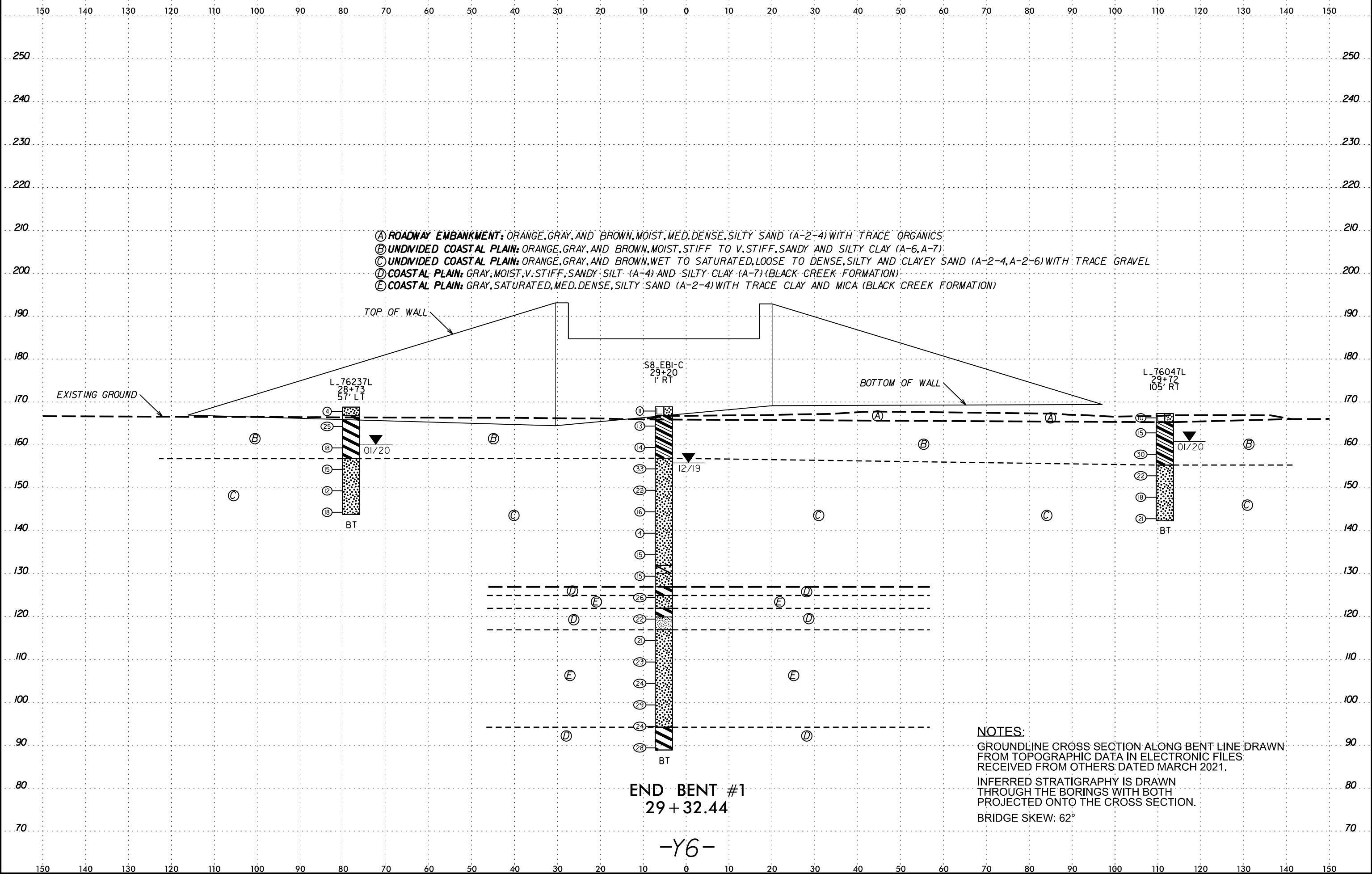


- Ⓐ ROADWAY EMBANKMENT: ORANGE, GRAY, RED, AND BROWN, MOIST, MED. DENSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS
- Ⓑ UNDIVIDED COASTAL PLAIN: ORANGE, BROWN, AND GRAY, MOIST TO SATURATED, MED. STIFF TO STIFF, SANDY AND SILTY CLAY (A-6, A-7)
- Ⓒ UNDIVIDED COASTAL PLAIN: ORANGE, GRAY, BROWN, RED, AND WHITE, MOIST TO SATURATED, LOOSE TO DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6)
- Ⓓ COASTAL PLAIN: DARK GRAY, MOIST TO SATURATED, STIFF TO V. STIFF, SANDY AND SILTY CLAY (A-6, A-7, A-7-6), HIGHLY PLASTIC, MICACEOUS (BLACK CREEK FORMATION)
- Ⓔ COASTAL PLAIN: DARK GRAY, WET TO SATURATED, MED. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6), MICACEOUS WITH TRACE ORGANICS AND GRAVEL (BLACK CREEK FORMATION)

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-1504	4 FT RT	30+31	43.5'-45.0'	A-7-6	62	34	2	3	33	63	100	99	97	37.1	-

NOTES:
 GROUNDLINE PROFILE TAKEN FROM FILES PROVIDED BY OTHERS DATED MARCH, 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.
 BRIDGE SKEW: 62°

-Y6-

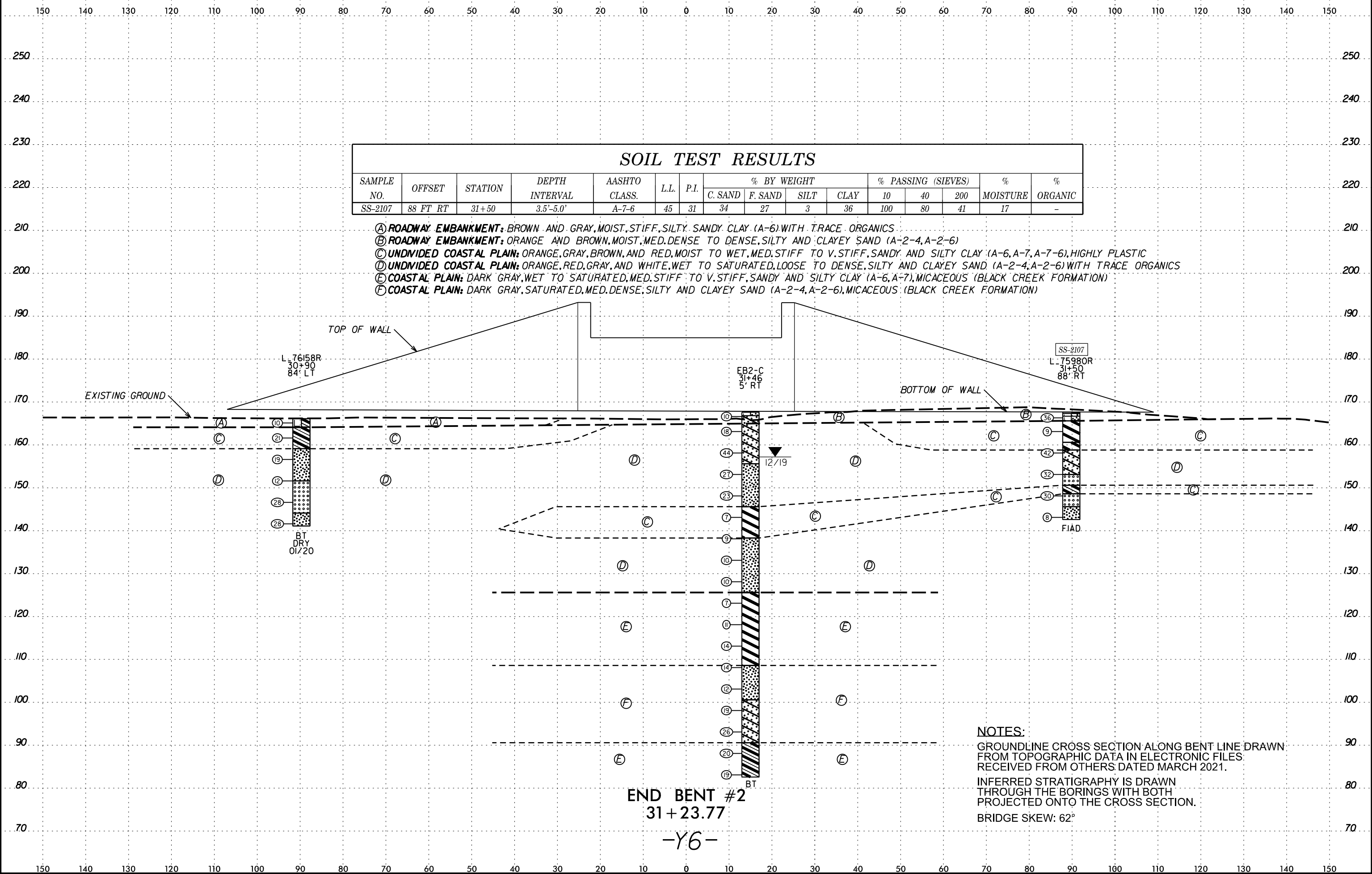


- (A) ROADWAY EMBANKMENT: ORANGE, GRAY, AND BROWN, MOIST, MED. DENSE, SILTY SAND (A-2-4) WITH TRACE ORGANICS
- (B) UNDIVIDED COASTAL PLAIN: ORANGE, GRAY, AND BROWN, MOIST, STIFF TO V. STIFF, SANDY AND SILTY CLAY (A-6, A-7)
- (C) UNDIVIDED COASTAL PLAIN: ORANGE, GRAY, AND BROWN, WET TO SATURATED, LOOSE TO DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE GRAVEL
- (D) COASTAL PLAIN: GRAY, MOIST, V. STIFF, SANDY SILT (A-4) AND SILTY CLAY (A-7) (BLACK CREEK FORMATION)
- (E) COASTAL PLAIN: GRAY, SATURATED, MED. DENSE, SILTY SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION)

NOTES:
 GROUNDLINE CROSS SECTION ALONG BENT LINE DRAWN FROM TOPOGRAPHIC DATA IN ELECTRONIC FILES RECEIVED FROM OTHERS DATED MARCH 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.
 BRIDGE SKEW: 62°

END BENT #1
 29 + 32.44

8/23/99



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-2107	88 FT RT	31+50	3.5'-5.0'	A-7-6	45	31	34	27	3	36	100	80	41	17	-

- Ⓐ ROADWAY EMBANKMENT: BROWN AND GRAY, MOIST, STIFF, SILTY SANDY CLAY (A-6) WITH TRACE ORGANICS
- Ⓑ ROADWAY EMBANKMENT: ORANGE AND BROWN, MOIST, MED. DENSE TO DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6)
- Ⓒ UNDIVIDED COASTAL PLAIN: ORANGE, GRAY, BROWN, AND RED, MOIST TO WET, MED. STIFF TO V. STIFF, SANDY AND SILTY CLAY (A-6, A-7, A-7-6), HIGHLY PLASTIC
- Ⓓ UNDIVIDED COASTAL PLAIN: ORANGE, RED, GRAY, AND WHITE, WET TO SATURATED, LOOSE TO DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6) WITH TRACE ORGANICS
- Ⓔ COASTAL PLAIN: DARK GRAY, WET TO SATURATED, MED. STIFF TO V. STIFF, SANDY AND SILTY CLAY (A-6, A-7), MICACEOUS (BLACK CREEK FORMATION)
- Ⓕ COASTAL PLAIN: DARK GRAY, SATURATED, MED. DENSE, SILTY AND CLAYEY SAND (A-2-4, A-2-6), MICACEOUS (BLACK CREEK FORMATION)

NOTES:
 GROUNDLINE CROSS SECTION ALONG BENT LINE DRAWN FROM TOPOGRAPHIC DATA IN ELECTRONIC FILES RECEIVED FROM OTHERS DATED MARCH 2021.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE CROSS SECTION.
 BRIDGE SKEW: 62°

END BENT #2
 31+23.77
 -Y6-

8/23/99

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST Q. Esteban										
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)									
BORING NO. S8_EB1-C		STATION 29+20		OFFSET 1 ft RT		ALIGNMENT -Y6-										
COLLAR ELEV. 168.9 ft		TOTAL DEPTH 80.0 ft		NORTHING 399,584		EASTING 2,008,994										
DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Tignor		START DATE 12/06/19		COMP. DATE 12/06/19		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						
180																
175																
170	168.9	0.0													168.9	GROUND SURFACE
165	165.4	3.5	2	3	8									M	166.9	ROADWAY EMBANKMENT ORANGE-GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE ORGANICS
160	160.4	8.5	4	6	7									M		UNDIVIDED COASTAL PLAIN ORANGE-BROWN-GRAY, FINE TO COARSE SANDY CLAY (A-6)
155	155.4	13.5	6	6	8									M	156.9	ORANGE TO GRAY, CLAYEY SILTY FINE TO COARSE SAND (A-2-4)
150	150.4	18.5	15	15	18									Sat.		
145	145.4	23.5	9	10	12									Sat.		
140	140.4	28.5	7	6	10									Sat.		
135	135.4	33.5	2	2	2									Sat.		
130	130.4	38.5	6	8	7									Sat.		
125	125.4	43.5	3	5	10									Sat.	131.9	GRAY, CLAYEY FINE TO COARSE SAND (A-2-6)
120	120.4	48.5	7	12	10									Sat.	130.1	GRAY, SILTY FINE TO COARSE SAND (A-2-4)
115	115.4	53.5	5	13	13									M	126.9	COASTAL PLAIN GRAY, SILTY CLAY (A-7) (BLACK CREEK FORMATION)
110	110.4	58.5	8	10	11									M	124.9	GRAY, SILTY FINE TO COARSE SAND (A-2-4) (BLACK CREEK FORMATION)
105	105.4	63.5	7	12	10									M	121.9	GRAY, SILTY CLAY (A-7) WITH TRACE MICA (BLACK CREEK FORMATION)
100	100.4	68.5	10	11	13									Sat.	119.9	GRAY, FINE TO COARSE SANDY SILT (A-4) (BLACK CREEK FORMATION)
														Sat.	116.9	GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION)

NCDOT BORE SINGLE B08_15987_GEO_BRDG_Y6.GPJ_NC_DOT.GDT 11/2/21

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST Q. Esteban										
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)									
BORING NO. S8_EB1-C		STATION 29+20		OFFSET 1 ft RT		ALIGNMENT -Y6-										
COLLAR ELEV. 168.9 ft		TOTAL DEPTH 80.0 ft		NORTHING 399,584		EASTING 2,008,994										
DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Tignor		START DATE 12/06/19		COMP. DATE 12/06/19		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						
100																
95	95.4	73.5	12	14	15									Sat.		Match Line
90	90.4	78.5	9	10	14									Sat.	94.2	GRAY, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE CLAY AND MICA (BLACK CREEK FORMATION) (continued)
			10	12	16									M	88.9	GRAY, SILTY CLAY (A-7) WITH TRACE SAND (BLACK CREEK FORMATION)
																Boring Terminated at Elevation 88.9 ft IN SILTY CLAY (COASTAL PLAIN) (BLACK CREEK FORMATION)

NCDOT BORE SINGLE B08_15987_GEO_BRDG_Y6.GPJ_NC_DOT.GDT 11/2/21

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST B. Painter										
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)									
BORING NO. L_76237L		STATION 28+73		OFFSET 57 ft LT		ALIGNMENT -Y6-										
COLLAR ELEV. 168.8 ft		TOTAL DEPTH 25.0 ft		NORTHING 399,657		EASTING 2,009,008										
DRILL RIG/HAMMER EFF./DATE F&R5785 CME-55 73% 03/01/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Tignor		START DATE 01/14/20		COMP. DATE 01/14/20		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
170	168.8	0.0												168.8	GROUND SURFACE	0.0
			WOH	2	2								W		UNDIVIDED COASTAL PLAIN	
165	165.3	3.5		5	11	14							M	166.8	LIGHT BROWN-ORANGE, SILTY FINE SAND (A-2-4) WITH TRACE ORGANICS	2.0
													M		GRAY-BROWN, FINE TO COARSE SANDY SILTY CLAY (A-7)	
160	160.3	8.5		4	8	10							M			
155	155.3	13.5		3	7	8							Sat.	156.8	ORANGE-BROWN AND WHITE, SILTY FINE TO COARSE SAND (A-2-4)	12.0
150	150.3	18.5		5	5	7							Sat.			
145	145.3	23.5		6	7	11							Sat.			
													Sat.	143.8	Boring Terminated at Elevation 143.8 ft IN SILTY SAND (UNDIVIDED COASTAL PLAIN)	25.0

NCDOT BORE SINGLE B08_15987_GEO_BRDG_Y6.GPJ_NC_DOT.GDT 11/2/21

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST B. Painter										
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)									
BORING NO. L_76047L		STATION 29+72		OFFSET 105 ft RT		ALIGNMENT -Y6-										
COLLAR ELEV. 167.3 ft		TOTAL DEPTH 25.0 ft		NORTHING 399,477		EASTING 2,008,947										
DRILL RIG/HAMMER EFF./DATE F&R5785 CME-55 73% 03/01/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER D. Tignor		START DATE 01/14/20		COMP. DATE 01/14/20		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
170														167.3	GROUND SURFACE	0.0
													M	165.3	ROADWAY EMBANKMENT	
165	167.3	0.0		1	2	8							M	165.3	BROWN, SILTY FINE SAND (A-2-4) WITH TRACE ORGANICS	2.0
													M		UNDIVIDED COASTAL PLAIN	
160	163.8	3.5		3	6	9							M		ORANGE-BROWN TO GRAY, SILTY FINE SANDY CLAY (A-6)	
155	158.8	8.5		7	12	18							M			
150	153.8	13.5		9	10	12							W	155.3	ORANGE-GRAY-RED, SILTY FINE TO COARSE SAND (A-2-4) WITH TRACE GRAVEL FROM 13.5'-15.0'	12.0
145	148.8	18.5		9	8	10							Sat.			
													Sat.			
	143.8	23.5		7	10	11							Sat.	142.3	Boring Terminated at Elevation 142.3 ft IN SILTY SAND (UNDIVIDED COASTAL PLAIN)	25.0

NCDOT BORE SINGLE B08_15987_GEO_BRDG_Y6.GPJ_NC_DOT.GDT 11/2/21

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST B. Painter									
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)								
BORING NO. L_76158R		STATION 30+90		OFFSET 84 ft LT		ALIGNMENT -Y6-									
COLLAR ELEV. 166.1 ft		TOTAL DEPTH 25.0 ft		NORTHING 399,508		EASTING 2,009,168									
DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER D. Tignor		START DATE 01/20/20		COMP. DATE 01/20/20		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
170															
165	166.1	0.0	2	4	6								M	166.1 GROUND SURFACE 0.0	
													M	164.1 ROADWAY EMBANKMENT BROWN-GRAY, SILTY FINE TO COARSE SANDY CLAY (A-6) WITH TRACE ORGANICS -2.0	
160	162.6	3.5	8	9	12								M	UNDIVIDED COASTAL PLAIN GRAY-RED, SILTY FINE TO COARSE SANDY CLAY (A-6) -7.0	
													Sat.	159.1 ORANGE-GRAY, SILTY FINE TO COARSE SAND (A-2-4) -7.0	
155	157.6	8.5	7	10	9									151.6 ORANGE-GRAY-WHITE, FINE SAND (A-3) 14.5	
													Sat.	144.1 GRAY-WHITE, SILTY FINE TO COARSE SAND (A-2-4) 22.0	
150	152.6	13.5	5	5	7									141.1 Boring Terminated at Elevation 141.1 ft IN SILTY SAND (UNDIVIDED COASTAL PLAIN) 25.0	
145	147.6	18.5	11	14	14										
	142.6	23.5	10	13	15										

Notes:
1. Boring caved-in at 3.5' after 24 hours

NCDOT BORE SINGLE B08_15987_GEO_BRDG_Y6.GPJ_NC_DOT.GDT 11/2/21

GEOTECHNICAL BORING REPORT BORE LOG

WBS 47533.1.1		TIP I-5987B		COUNTY ROBESON		GEOLOGIST B. Painter									
SITE DESCRIPTION Bridge No. 162 on -Y6- (McRainey Road) over -L- (I-95) at -L- Sta. 761+20.96							GROUND WTR (ft)								
BORING NO. L_75980R		STATION 31+50		OFFSET 88 ft RT		ALIGNMENT -Y6-									
COLLAR ELEV. 167.6 ft		TOTAL DEPTH 25.0 ft		NORTHING 399,352		EASTING 2,009,075									
DRILL RIG/HAMMER EFF./DATE F&R3495 CME-55 82% 03/01/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER D. Tignor		START DATE 01/22/20		COMP. DATE 01/22/20		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
170															
	167.3	0.3	10	13	23								M	167.6 GROUND SURFACE 0.0	
165	164.1	3.5	3	3	6								M	166.7 ROADWAY EMBANKMENT ASPHALT 0.0	
														165.6 ORANGE-BROWN, SILTY CLAYEY FINE TO COARSE SAND (A-2-6) 2.0	
160	159.1	8.5	7	20	22								M	160.6 BROWN, CLAYEY SILTY FINE SAND (A-2-4) -7.0	
														158.8 UNDIVIDED COASTAL PLAIN ORANGE-BROWN-GRAY, FINE TO COARSE SANDY CLAY (A-7-6), HIGHLY PLASTIC 8.8	
155	154.1	13.5	9	15	17								W	153.1 ORANGE-RED-GRAY, SILTY CLAYEY FINE TO COARSE SAND (A-2-6) 14.5	
														150.6 ORANGE-WHITE, FINE SAND (A-3) 17.0	
150	149.1	18.5	4	13	17								W	148.6 ORANGE-PINK, SILTY FINE SANDY CLAY (A-6) 19.0	
														145.6 WHITE, FINE SAND (A-3) 22.0	
145	144.1	23.5	6	5	3								Sat.	142.6 GRAY, SILTY FINE TO COARSE SAND (A-2-4) 25.0	

Boring Terminated at Elevation 142.6 ft IN SILTY SAND (UNDIVIDED COASTAL PLAIN)

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