

PROJECT: 17BP.3.R.81 REFERENCE: B-5540

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY BRUNSWICK
 PROJECT DESCRIPTION BRIDGE NO. 202 ON -L- (SR 1357)
OVER MULBERRY BRANCH AT STA. 14 + 60.00

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5540	1	8

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.J. CORNETTE
R.E. SMITH
J.M. EDMONDSON

INVESTIGATED BY T.C. BOTTOMS
 DRAWN BY C.J. CORNETTE
 CHECKED BY D.N. ARGENBRIGHT
 SUBMITTED BY D.N. ARGENBRIGHT
 DATE SEPTEMBER 2018



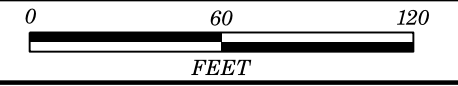
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Tyler Bottoms 10/22/2018
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**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

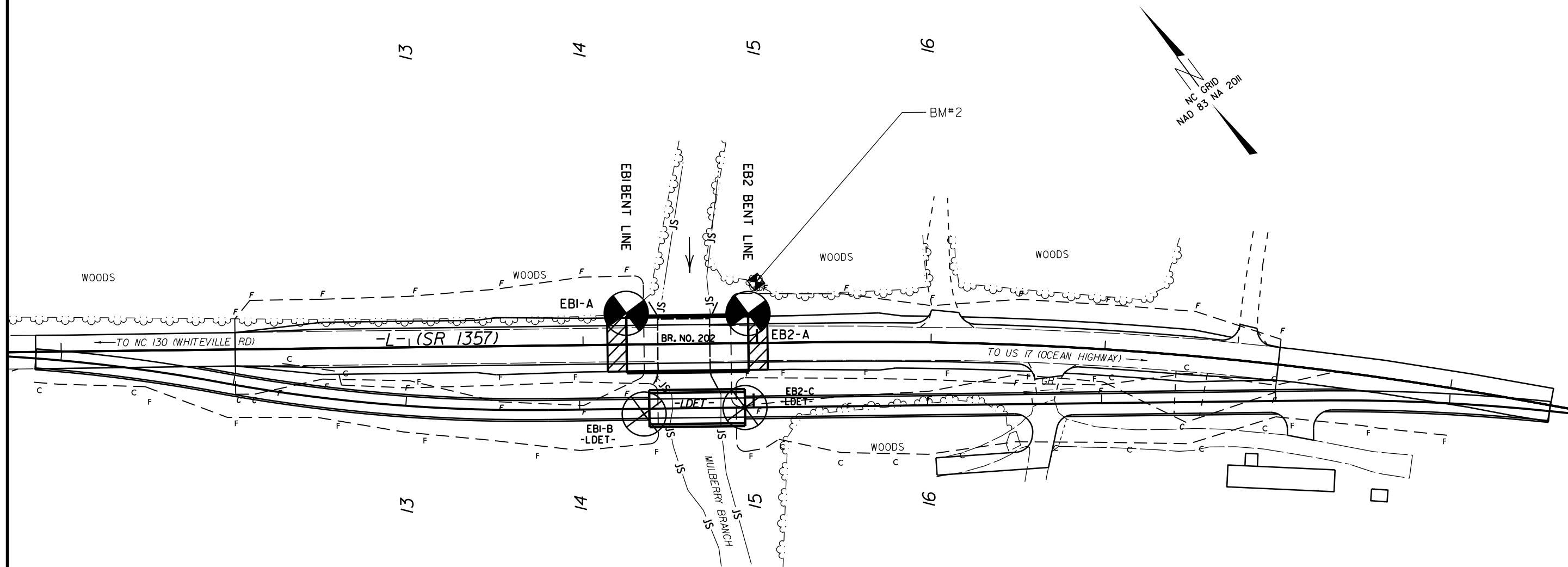
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical specifications, classification charts, and symbols for geotechnical engineering.

SITE PLAN



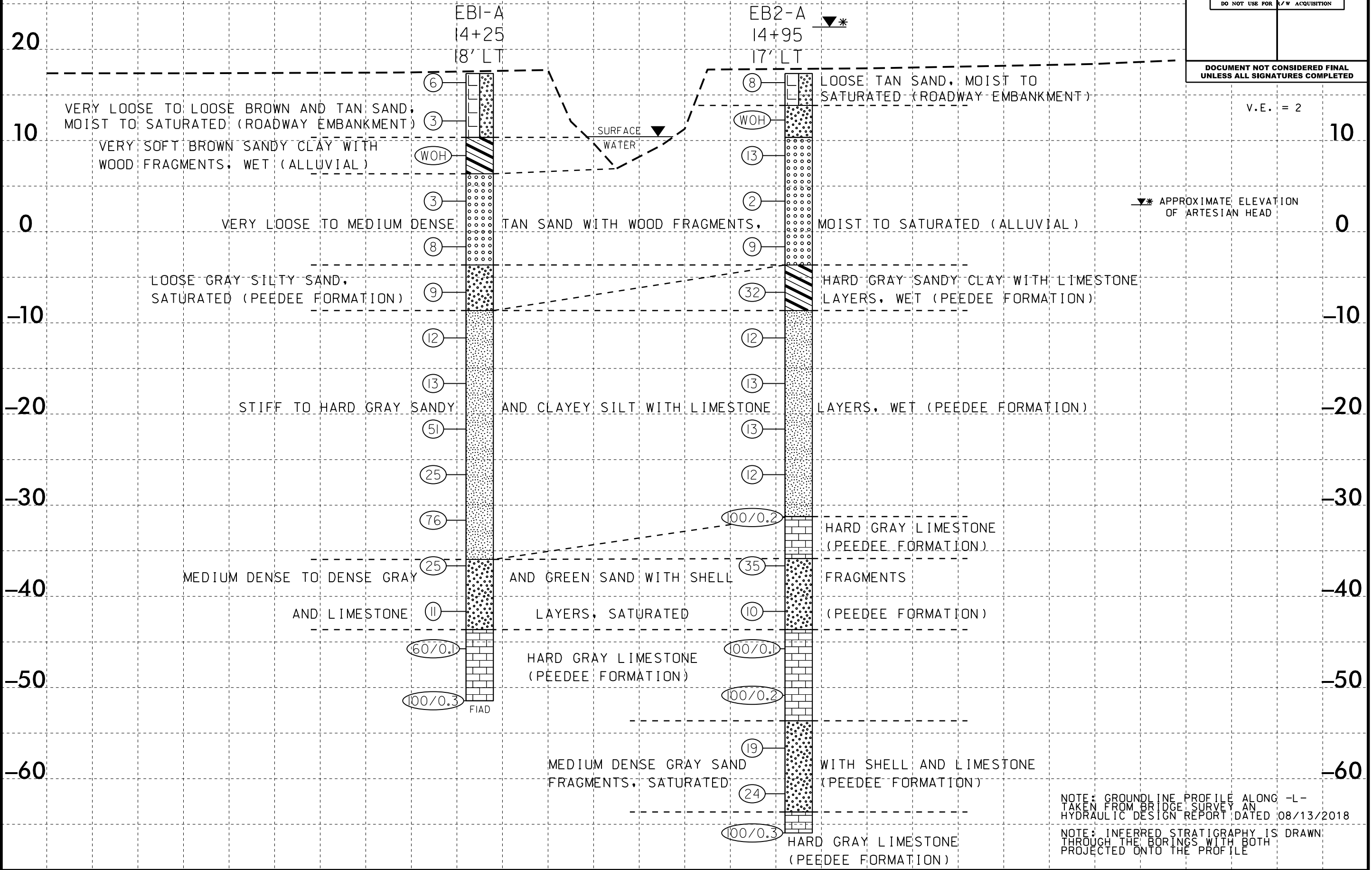
SKEW = 90°



5/14/99

PROJECT REFERENCE NO. B-5540	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



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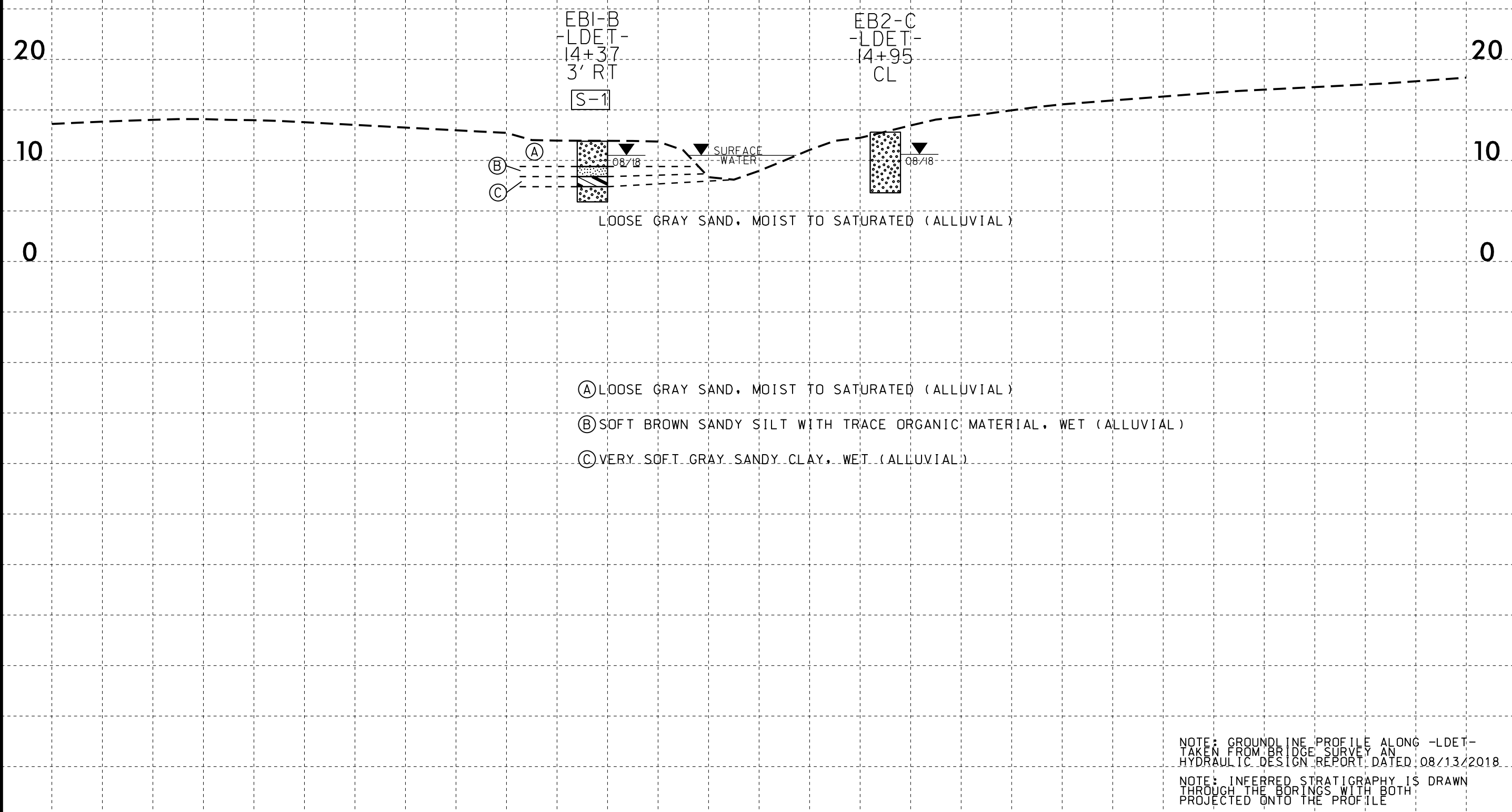
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PROFILE THROUGH BORINGS PROJECTED ALONG -LDET-

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		
S-1	3' RT	14+37	2.5-3.5	A-4(O)	21	2	7.4	49.4	29.0	14.1	100	99	44	29.3	4.1

V.E. = 2



- (A) LOOSE GRAY SAND, MOIST TO SATURATED (ALLUVIAL)
- (B) SOFT BROWN SANDY SILT WITH TRACE ORGANIC MATERIAL, WET (ALLUVIAL)
- (C) VERY SOFT GRAY SANDY CLAY, WET (ALLUVIAL)

NOTE: GROUNDLINE PROFILE ALONG -LDET- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 08/13/2018.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.3.R.81		TIP B-5540		COUNTY BRUNSWICK		GEOLOGIST Cornette, C. J.										
SITE DESCRIPTION BRIDGE NUMBER 202 ON -L- (SR 1357) OVER MULBERRY BRANCH							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 14+25		OFFSET 18 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 17.4 ft		TOTAL DEPTH 68.8 ft		NORTHING 88,093		EASTING 2,182,821										
DRILL RIG/HAMMER EFF./DATE GFO0075 CME-45C 89% 08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Edmondson, J. M.		START DATE 08/30/18		COMP. DATE 08/30/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
20														17.4	0.0	GROUND SURFACE
	17.4	0.0	2	3	3	6										ROADWAY EMBANKMENT BROWN AND TAN SAND, MOIST TO SATURATED
15																
	13.2	4.2	1	2	1	3										
10																
	9.4	8.0	WOH	WOH	WOH	0										ALLUVIAL BROWN SANDY CLAY WITH WOOD FRAGMENTS, WET
5																
	4.4	13.0	2	2	1	3										ALLUVIAL TAN SAND WITH WOOD FRAGMENTS, SATURATED
0																
	-0.6	18.0	7	4	4	9										
-5																
	-5.6	23.0	2	5	4	9										COASTAL PLAIN GRAY SILTY SAND, SATURATED (PEEDEE FORMATION)
-10																
	-10.6	28.0	4	5	7	12										COASTAL PLAIN GRAY SANDY SILT WITH LIMESTONE LAYERS, WET (PEEDEE FORMATION)
-15																
	-15.6	33.0	5	6	7	13										
-20																
	-20.6	38.0	4	7	44	51										
-25																
	-25.6	43.0	4	14	11	25										
-30																
	-30.6	48.0	19	68	8	76										
-35																
	-35.6	53.0	42	10	15	25										COASTAL PLAIN GRAY AND GREEN SAND WITH SHELL FRAGMENTS AND LIMESTONE LAYERS, SATURATED (PEEDEE FORMATION)
-40																
	-40.6	58.0	5	5	6	11										
-45																
	-45.6	63.0	60/0.1			60/0.1										COASTAL PLAIN SEDIMENTARY ROCK HARD GRAY LIMESTONE (PEEDEE FORMATION)
-50																
	-50.6	68.0	21	100/0.3		100/0.3										Boring Terminated at Elevation -51.4 ft in Hard Limestone

NCDOT BORE DOUBLE B5540_GEO_BRDG.GPJ NC_DOT.GDT 9/17/18

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.3.R.81		TIP B-5540		COUNTY BRUNSWICK		GEOLOGIST Cornette, C. J.											
SITE DESCRIPTION BRIDGE NUMBER 202 ON -L- (SR 1357) OVER MULBERRY BRANCH							GROUND WTR (ft)										
BORING NO. EB1-B -LDET-		STATION 14+37		OFFSET 3 ft RT		ALIGNMENT -LDET-											
COLLAR ELEV. 11.9 ft		TOTAL DEPTH 6.0 ft		NORTHING 88,040		EASTING 2,182,794											
DRILL RIG/HAMMER EFF./DATE GFO0075 CME-45C 89% 08/13/2018		DRILL METHOD Hand Auger		HAMMER TYPE Automatic													
DRILLER Edmondson, J. M.		START DATE 08/28/18		COMP. DATE 08/28/18		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							
15																	
															11.9	GROUND SURFACE	0.0
															9.4	ALLUVIAL GRAY SAND, MOIST TO SATURATED	2.5
															8.4	BROWN SANDY SILT WITH TRACE ORGANIC MATERIAL, WET	3.5
															7.4	GRAY SANDY CLAY, WET	4.5
															5.9	GRAY SAND, SATURATED	6.0
																Boring Terminated at Elevation 5.9 ft in Loose Sand	

WBS 17BP.3.R.81		TIP B-5540		COUNTY BRUNSWICK		GEOLOGIST Cornette, C. J.											
SITE DESCRIPTION BRIDGE NUMBER 202 ON -L- (SR 1357) OVER MULBERRY BRANCH							GROUND WTR (ft)										
BORING NO. EB2-C -LDET-		STATION 14+95		OFFSET CL		ALIGNMENT -LDET-											
COLLAR ELEV. 12.8 ft		TOTAL DEPTH 6.0 ft		NORTHING 88,008		EASTING 2,182,843											
DRILL RIG/HAMMER EFF./DATE GFO0075 CME-45C 89% 08/13/2018		DRILL METHOD Hand Auger		HAMMER TYPE Automatic													
DRILLER Smith, R. E.		START DATE 08/28/18		COMP. DATE 08/28/18		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							
15																	
															12.8	GROUND SURFACE	0.0
																ALLUVIAL GRAY SAND, MOIST TO SATURATED	
															6.8	Boring Terminated at Elevation 6.8 ft in Loose Sand	

NCDOT BORE DOUBLE B5540_GEO_BRDG.GPJ NC_DOT.GDT 9/17/18