

REFERENCE: BR-0112

PROJECT: 67112

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY EDGECOMBE
PROJECT DESCRIPTION REPLACE BRIDGE 320035 ON
SR 1616 (SHARP POINT RD.) OVER OTTER CREEK
AT STATION 16+42.6

CONTENTS

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0112	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

N. MOHS, LG

M. STANBURY

M. SNYDER, PE

SUB TERRA EXP.

INVESTIGATED BY N. MOHS, LG

DRAWN BY N. MOHS, LG

CHECKED BY M. SNYDER, PE

SUBMITTED BY N. MOHS, LG

DATE AUGUST 2019

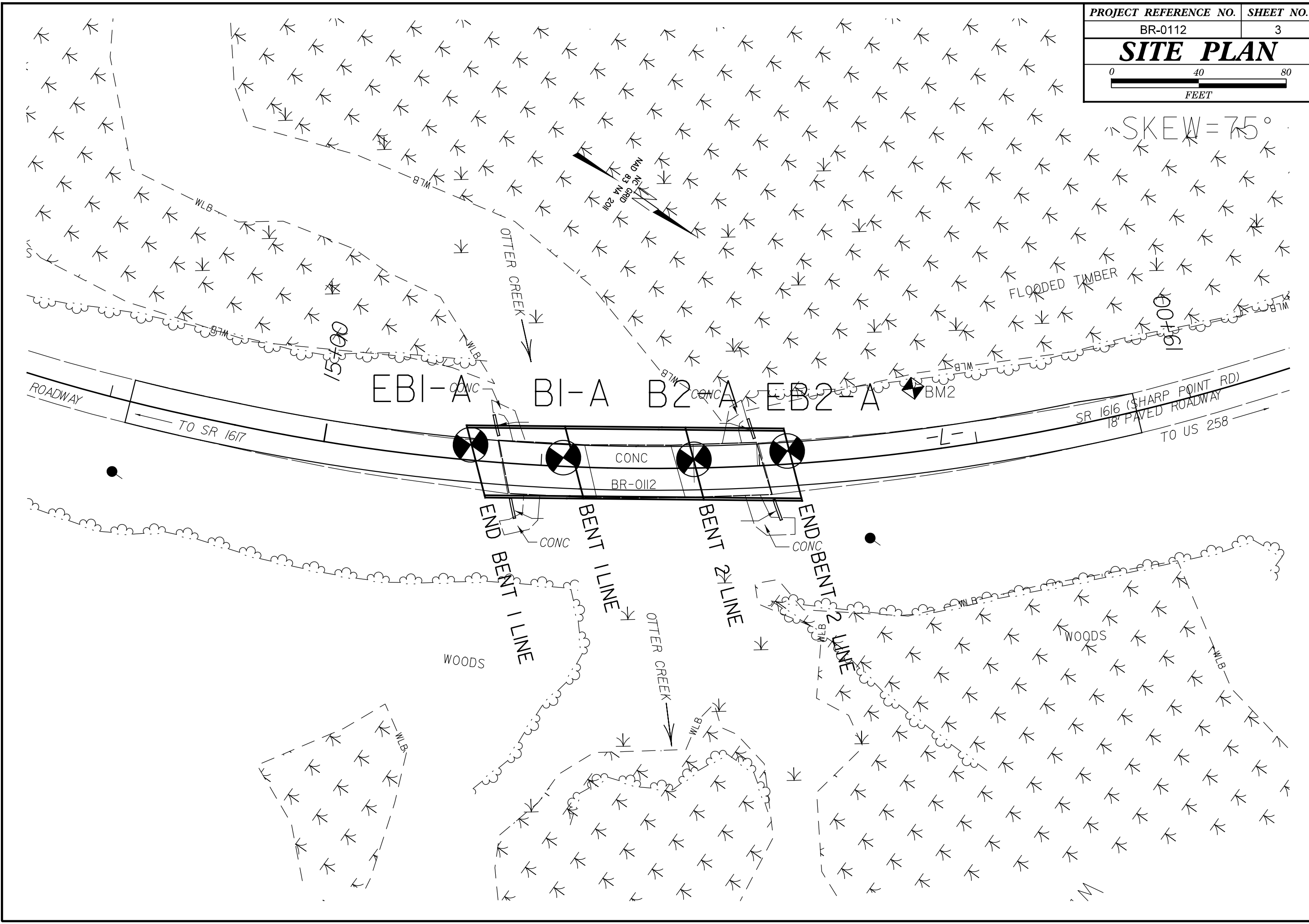


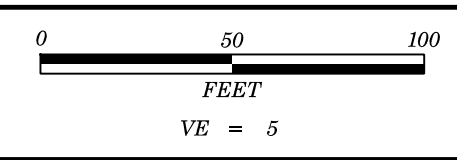
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Nathan Mohs 10/22/2019
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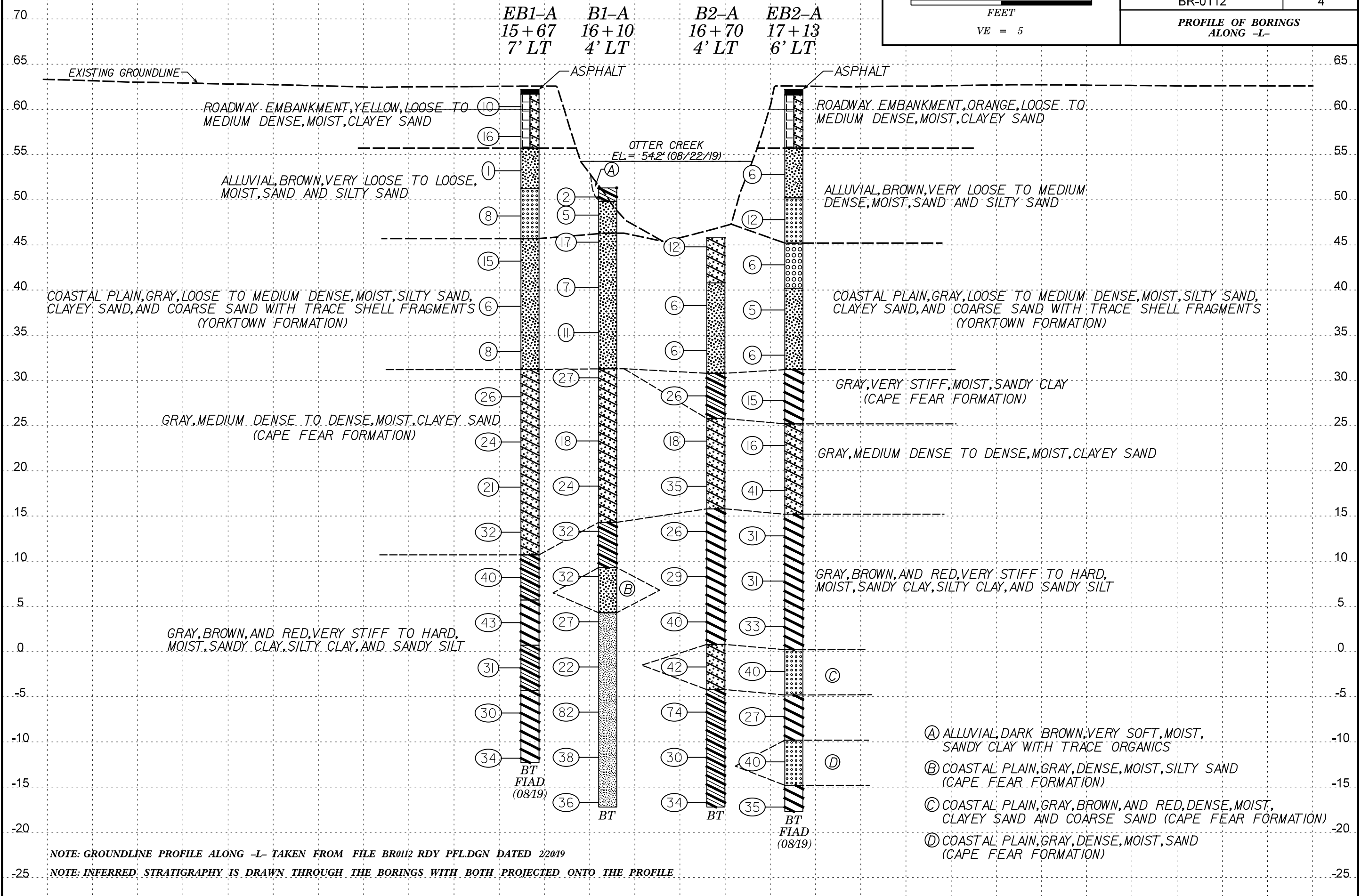
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, 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.





PROJECT REFERENCE NO.	SHEET NO.
BR-0112	4
PROFILE OF BORINGS ALONG -L-	



WBS 67112.1.1		TIP BR-0112		COUNTY EDGECOMBE		GEOLOGIST M. Stanbury										
SITE DESCRIPTION Bridge No. 320035 on SR 1616 Over Otter Creek							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 15+67		OFFSET 7 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 62.2 ft		TOTAL DEPTH 74.5 ft		NORTHING 723,797		EASTING 2,411,503										
DRILL RIG/HAMMER EFF./DATE INS0439 Diedrich D-50 90% 03/12/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER R. Cassell		START DATE 08/22/19		COMP. DATE 08/22/19		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						
65																
	61.3	0.9	11	4	6									62.2	GROUND SURFACE	0.0
60														61.7	Asphalt	0.5
	58.0	4.2	4	9	7										ROADWAY EMBANKMENT	
															Yellow, Clayey Sand	
55														55.7	ALLUVIAL	6.5
	54.2	8.0	1	0	1										Brown, Silty Sand	
50														51.2	Brown, Fine Sand with Trace Organics	11.0
	49.2	13.0	2	3	5											
45														45.7	COASTAL PLAIN	16.5
	44.2	18.0	8	6	9										Gray, Silty Sand with Trace Shell Fragments	
															(Yorktown Formation)	
40																
	39.2	23.0	5	3	3											
35																
	34.2	28.0	3	3	5											
30														31.2	Gray, Clayey Sand with Trace Gravel	31.0
	29.2	33.0	11	12	14										(Cape Fear Formation)	
25																
	24.2	38.0	9	12	12											
20																
	19.2	43.0	8	10	11											
15																
	14.2	48.0	11	15	17											
10														10.7	Gray, Sandy Clay	51.5
	9.2	53.0	12	20	20											
5														5.7	Gray, Silty Clay	56.5
	4.2	58.0	16	19	24											
0														0.7	Gray, Sandy Clay	61.5
	-0.8	63.0	10	14	17											
-5														-4.3	Gray and Red, Mottled, Silty Clay	66.5
	-5.8	68.0	12	13	17											
-10																
	-10.8	73.0	10	15	19											
														-12.3	Boring Terminated at Elevation -12.3 ft in Silty Clay (Cape Fear Formation)	74.5

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 67112.1.1		TIP BR-0112		COUNTY EDGECOMBE		GEOLOGIST M. Stanbury	
SITE DESCRIPTION Bridge No. 320035 on SR 1616 Over Otter Creek							GROUND WTR (ft)
BORING NO. B1-A		STATION 16+10		OFFSET 4 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 51.3 ft		TOTAL DEPTH 68.5 ft		NORTHING 723,835		EASTING 2,411,483	
DRILL RIG/HAMMER EFF./DATE INS0439 Diedrich D-50 90% 03/12/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 07/11/19		COMP. DATE 07/11/19		SURFACE WATER DEPTH 7.8ft	

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					
55															
50	51.3	0.0													
	49.3	2.0	WOH	WOH	2										
	46.3	5.0	3	2	3										
45	46.3	5.0	7	9	8										
40	41.3	10.0	5	4	3										
35	36.3	15.0	2	3	8										
30	31.3	20.0	7	11	16										
25	24.3	27.0	8	10	8										
20	19.3	32.0	10	11	13										
15	14.3	37.0	8	14	18										
10	9.3	42.0	13	15	17										
5	4.3	47.0	11	13	14										
0	-0.7	52.0	8	8	14										
-5	-5.7	57.0	23	17	65										
-10	-10.7	62.0	13	17	21										
-15	-15.7	67.0	11	16	20										

WBS 67112.1.1		TIP BR-0112		COUNTY EDGECOMBE		GEOLOGIST M. Stanbury	
SITE DESCRIPTION Bridge No. 320035 on SR 1616 Over Otter Creek							GROUND WTR (ft)
BORING NO. B2-A		STATION 16+70		OFFSET 4 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 45.8 ft		TOTAL DEPTH 63.0 ft		NORTHING 723,885		EASTING 2,411,449	
DRILL RIG/HAMMER EFF./DATE INS0439 Diedrich D-50 90% 03/12/2019			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER M. Brown		START DATE 07/11/19		COMP. DATE 07/12/19		SURFACE WATER DEPTH 9.1ft	

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					
50															
45	45.8	0.0													
			2	6	6										
40	39.3	6.5	3	3	3										
35	34.3	11.5	3	2	4										
30	29.3	16.5	9	12	14										
25	24.3	21.5	7	8	10										
20	19.3	26.5	12	15	20										
15	14.3	31.5	8	11	15										
10	9.3	36.5	9	13	16										
5	4.3	41.5	14	18	22										
0	-0.7	46.5	16	19	23										
-5	-5.7	51.5	21	30	44										
-10	-10.7	56.5	12	14	16										
-15	-15.7	61.5	14	16	18										

NCDOT BORE DOUBLE BR0112 GEO BRD0035 BH.GPJ NC DOT.GDT 8/30/19

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 67112.1.1		TIP BR-0112		COUNTY EDGECOMBE		GEOLOGIST M. Stanbury	
SITE DESCRIPTION Bridge No. 320035 on SR 1616 Over Otter Creek						GROUND WTR (ft)	
BORING NO. EB2-A		STATION 17+13		OFFSET 6 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 62.2 ft		TOTAL DEPTH 79.9 ft		NORTHING 723,917		EASTING 2,411,422	
DRILL RIG/HAMMER EFF./DATE INS0439 Diedrich D-50 90% 03/12/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic			
DRILLER R. Cassell		START DATE 08/21/19		COMP. DATE 08/22/19		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
65															
62.2	61.8													GROUND SURFACE	0.0
60														Asphalt	0.8
														ROADWAY EMBANKMENT	
														Orange, Clayey Sand	
55	53.8	8.4	3	3	3								M	ALLUVIAL	6.5
														Tan, Silty Sand	
50	48.8	13.4	8	7	5								M	Tan, Sand	12.0
45	43.8	18.4	5	3	3								M	COASTAL PLAIN	17.0
														Tan, Coarse Sand with Trace Shell Fragments	
40	38.8	23.4	4	2	3								M	(Yorktown Formation)	22.0
														Gray, Silty Sand with Trace Shell Fragments	
35	33.8	28.4	4	2	4								M		
30	28.8	33.4	5	7	8								M	Gray, Silty Clay	31.0
														(Cape Fear Formation)	
25	23.8	38.4	6	6	10								M	Gray, Clayey Sand	37.0
20	18.8	43.4	14	19	22								M		
15	13.8	48.4	8	13	18								M	Gray, Silty Clay	47.0
10	8.8	53.4	11	14	17								M		
5	3.8	58.4	14	14	19								M		
0	-1.2	63.4	8	17	23								M	Gray, Sand	62.0
-5	-6.2	68.4	10	11	16								M	Gray, Silty Clay	67.0
-10	-11.2	73.4	17	19	21								M	Gray, Sand	72.0
-15													M		77.0

NCDOT BORE DOUBLE BR0112_GEO BRD0035_BH.GPJ NC_DOT.GDT 8/30/19

WBS 67112.1.1		TIP BR-0112		COUNTY EDGECOMBE		GEOLOGIST M. Stanbury	
SITE DESCRIPTION Bridge No. 320035 on SR 1616 Over Otter Creek						GROUND WTR (ft)	
BORING NO. EB2-A		STATION 17+13		OFFSET 6 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 62.2 ft		TOTAL DEPTH 79.9 ft		NORTHING 723,917		EASTING 2,411,422	
DRILL RIG/HAMMER EFF./DATE INS0439 Diedrich D-50 90% 03/12/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic			
DRILLER R. Cassell		START DATE 08/21/19		COMP. DATE 08/22/19		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
-15	-16.2	78.4	12	15	20									Match Line	
														Gray, Silty Clay (continued)	79.9
														Boring Terminated at Elevation -17.7 ft in Silty Clay (Cape Fear Formation)	

SITE PHOTOGRAPH



VIEW LOOKING SOUTH TOWARD END BENT 2