

PROJECT: 17BP.4.R.66 REFERENCE: 320045

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE(S)
5-6	BORE LOG(S)
7	SITE PHOTOGRAPH(S)

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY EDGEcombe
 PROJECT DESCRIPTION BRIDGE NO. 45 ON -L-
 (SR 1428) OVER WHITE OAK SWAMP AT 17+57

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	320045	1	7

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 1919 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.

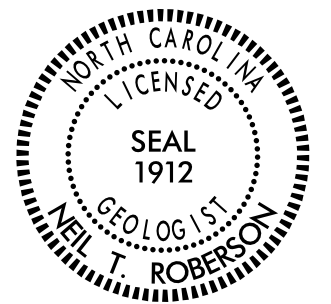
NOTES:

- 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

O. B. OTT
D. G. PINTER
R. E. SMITH
J. M. EDMUNDSON

INVESTIGATED BY N. T. ROBERSON
 DRAWN BY J. L. PEDRO
 CHECKED BY J. L. PEDRO
 SUBMITTED BY N. T. ROBERSON
 DATE FEBRUARY 2017



DocuSigned by:

Neil Roberson 2/27/2017
 4061D9A8C6C649C...
 SIGNATURE DATE

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

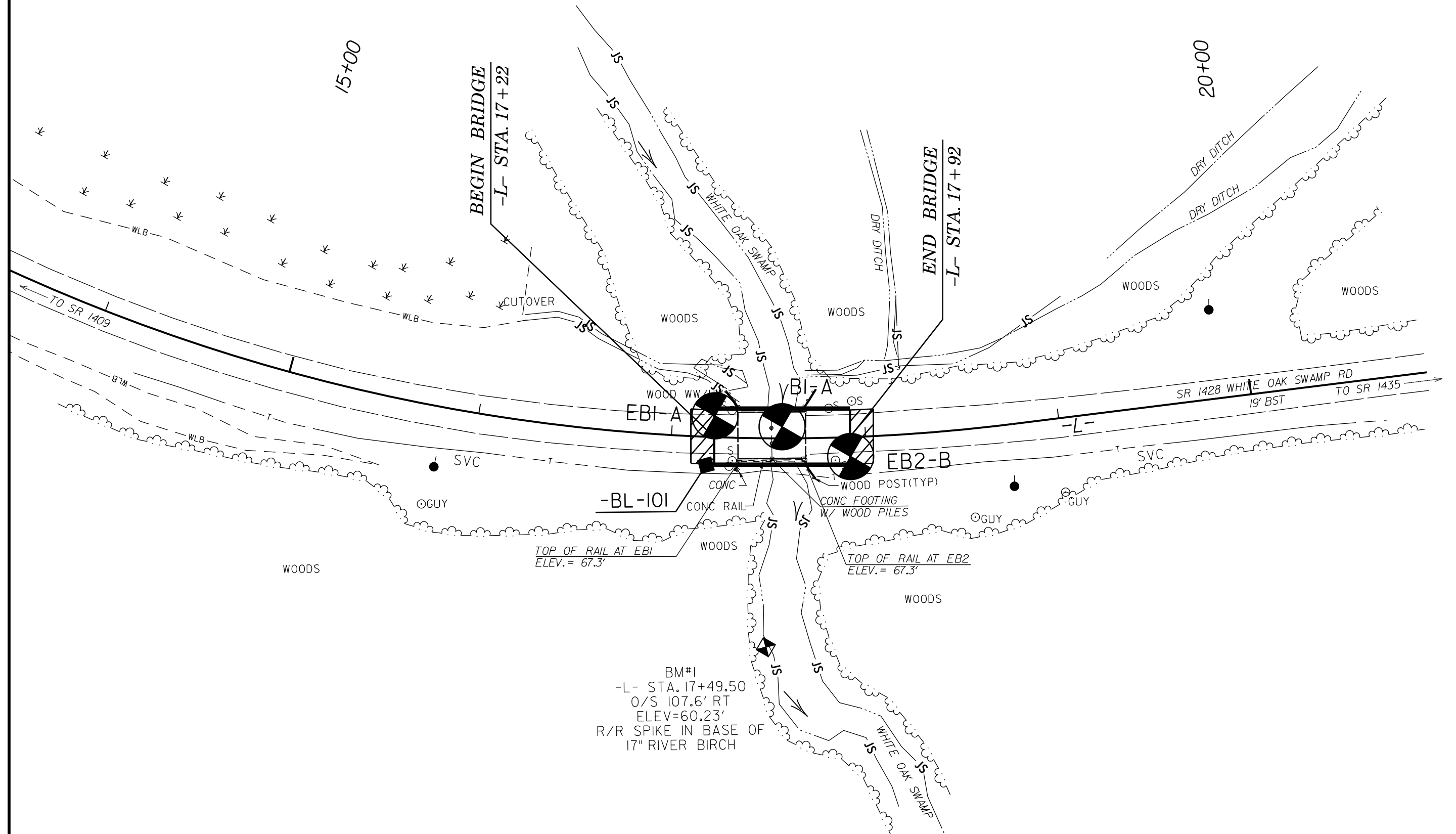
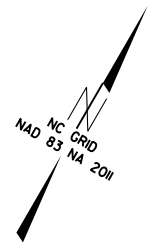
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

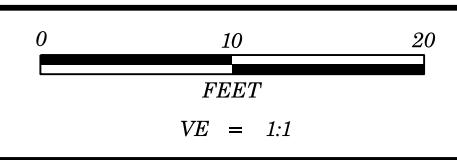
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table containing various sections: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, ROCK HARDNESS, FRACTURE SPACING, BEDDING, INDURATION, and NOTES.

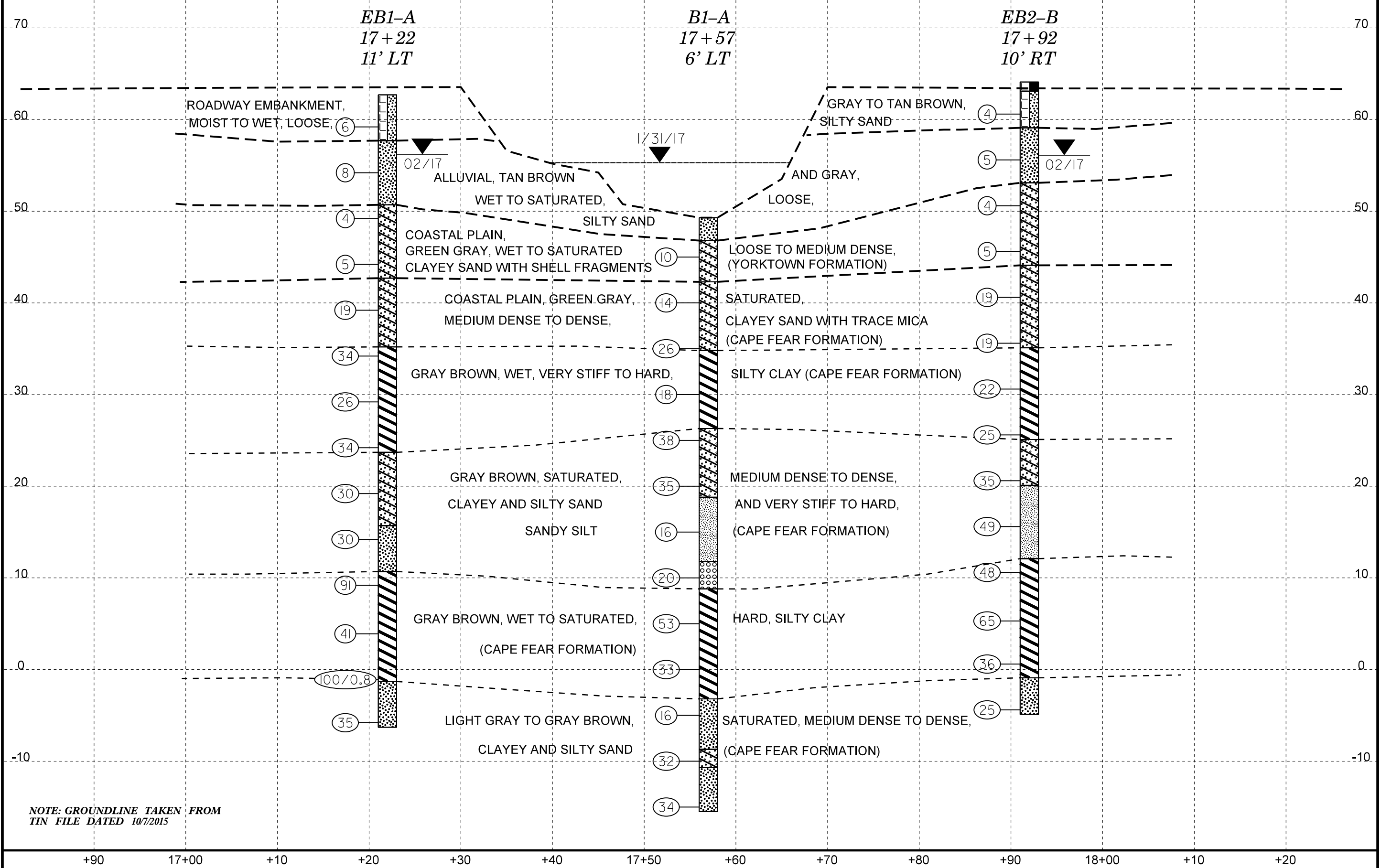
SKEW ANGLE = 90°



BM#1
 -L- STA. 17+49.50
 O/S 107.6' RT
 ELEV=60.23'
 R/R SPIKE IN BASE OF
 17" RIVER BIRCH



PROJECT REFERENCE NO.	SHEET NO.
320045	4
FENCE DIAGRAM OF BORINGS PROJECTED ALONG -L- CENTERLINE	



NOTE: GROUNDLINE TAKEN FROM TIN FILE DATED 10/7/2015

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.4.R.66		TIP SF-320045		COUNTY EDGECOMBE		GEOLOGIST Roberson, N. T.										
SITE DESCRIPTION BRIDGE NO. 45 ON SR 1428 OVER WHITE OAK SWAMP							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 17+22		OFFSET 11 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 62.7 ft		TOTAL DEPTH 69.0 ft		NORTHING 823,275		EASTING 2,408,270										
DRILL RIG/HAMMER EFF./DATE RFO0074 CME-55 90% 07/12/2016		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER Pinter, D. G.		START DATE 01/31/17		COMP. DATE 01/31/17		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						
65																
60	60.2	2.5	3	3	3								M	ROADWAY EMBANKMENT LIGHT GRAY, SILTY SAND	62.7	
55	55.2	7.5	3	4	4								W	ALLUVIAL LIGHT GRAY, FINE, SILTY SAND	57.7	
50	50.2	12.5	1	2	2								W	COASTAL PLAIN GREEN-GRAY, CLAYEY SAND WITH SHELL FRAGMENTS (YORKTOWN FORMATION)	50.7	
45	45.2	17.5	1	2	3								W		42.7	
40	40.2	22.5	5	8	11								Sat.	LIGHT GRAY, CLAYEY SAND WITH TRACE MICA (CAPE FEAR FORMATION)	42.7	
35	35.2	27.5	9	14	20								W	GRAY-BROWN, SILTY CLAY (CAPE FEAR FORMATION)	35.2	
30	30.2	32.5	6	12	14								W		26.3	
25	25.2	37.5	12	15	19								W		23.7	
20	20.2	42.5	11	15	15								Sat.	LIGHT GRAY, CLAYEY SAND (CAPE FEAR FORMATION)	23.7	
15	15.2	47.5	7	11	19								Sat.	LIGHT GRAY, SILTY, FINE SAND (CAPE FEAR FORMATION)	15.7	
10	10.2	52.5	27	47	44								Sat.	GREEN AND BROWN, SILTY CLAY (CAPE FEAR FORMATION)	10.7	
5	4.9	57.8	12	20	21								Sat.		91	
0	0.2	62.5	24	40	60/3								Sat.		41	
-5	-4.8	67.5	12	15	20								Sat.	GRAY BROWN, SILTY SAND (CAPE FEAR FORMATION)	-1.3	
													Sat.		100/0.8	
													Sat.	Boring Terminated at Elevation -6.3 ft IN COASTAL PLAIN (SILTY SAND)	-6.3	

WBS 17BP.4.R.66		TIP SF-320045		COUNTY EDGECOMBE		GEOLOGIST Roberson, N. T.										
SITE DESCRIPTION BRIDGE NO. 45 ON SR 1428 OVER WHITE OAK SWAMP							GROUND WTR (ft)									
BORING NO. B1-A		STATION 17+57		OFFSET 6 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 49.3 ft		TOTAL DEPTH 64.8 ft		NORTHING 823,287		EASTING 2,408,303										
DRILL RIG/HAMMER EFF./DATE RFO0074 CME-55 90% 07/12/2016		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic												
DRILLER Pinter, D. G.		START DATE 01/30/17		COMP. DATE 01/30/17		SURFACE WATER DEPTH 6.0ft										
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																
45	46.0	3.3	2	4	6								W	GROUND SURFACE	49.3	
40	41.0	8.3	5	6	8								Sat.	ALLUVIAL TAN BROWN, SILTY SAND	46.8	
35	36.0	13.3	6	7	19								W	COASTAL PLAIN GREEN-GRAY, CLAYEY SAND WITH SHELL FRAGMENTS (YORKTOWN FORMATION)	42.3	
30	31.0	18.3	5	8	10								Sat.	GRAY, CLAYEY SAND WITH TRACE MICA (CAPE FEAR FORMATION)	34.8	
25	26.0	23.3	12	15	23								W	GRAY, ORANGE AND BROWN, SILTY CLAY (CAPE FEAR FORMATION)	26.3	
20	21.0	28.3	8	16	19								W		18.8	
15	16.0	33.3	4	6	10								W	GREEN, GRAY AND BROWN, CLAYEY SAND (CAPE FEAR FORMATION)	11.8	
10	11.0	38.3	6	8	12								Sat.	GRAY, FINE SANDY SILT (CAPE FEAR FORMATION)	8.8	
5	6.0	43.3	10	20	33								W	GRAY, COARSE SAND AND GRAVEL (CAPE FEAR FORMATION)	3.2	
0	1.0	48.3	9	13	20								M	GRAY AND RED BROWN, SILTY CLAY (CAPE FEAR FORMATION)	-3.2	
-5	-4.0	53.3	6	7	9								Sat.	GRAY AND BROWN, SILTY SAND (CAPE FEAR FORMATION)	-8.7	
-10	-9.0	58.3	13	12	20								Sat.	RED AND GRAY, CLAYEY SAND (CAPE FEAR FORMATION)	-10.7	
-15	-14.0	63.3	11	13	21								Sat.	RED AND GRAY-BROWN, SILTY SAND WITH TRACE MICA (CAPE FEAR FORMATION)	-15.5	
													Sat.	Boring Terminated at Elevation -15.5 ft IN COASTAL PLAIN (SILTY SAND)		

NCDOT BORE DOUBLE 320045_GEO_BRDG.GPJ_NC_DOT.GDT 2/9/17

WBS 17BP.4.R.66		TIP SF-320045		COUNTY EDGECOMBE		GEOLOGIST Roberson, N. T.								
SITE DESCRIPTION BRIDGE NO. 45 ON SR 1428 OVER WHITE OAK SWAMP							GROUND WTR (ft)							
BORING NO. EB2-B		STATION 17+92		OFFSET 10 ft RT		ALIGNMENT -L-								
COLLAR ELEV. 64.1 ft		TOTAL DEPTH 69.0 ft		NORTHING 823,292		EASTING 2,408,341								
DRILL RIG/HAMMER EFF./DATE RFO0074 CME-55 90% 07/12/2016				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic								
DRILLER Pinter, D. G.		START DATE 02/01/17		COMP. DATE 02/01/17		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														64.1 GROUND SURFACE 0.0
	61.6	2.5	2	2	2	4							M	63.1 ROADWAY EMBANKMENT 1.0 ASPHALT AND ABC TAN BROWN, SILTY SAND
60														59.1 ALLUVIAL 5.0 TAN BROWN, SILTY SAND
	56.6	7.5	2	2	3	5							W	
55														53.1 COASTAL PLAIN 11.0 GREEN-GRAY, CLAYEY SAND WITH SHELL FRAGMENTS (YORKTOWN FORMATION)
	51.6	12.5	1	2	2	4							Sat.	
50														44.1 GREEN-GRAY, CLAYEY SAND 20.0 WITH TRACE MICA (CAPE FEAR FORMATION)
	46.6	17.5	1	2	3	5							Sat.	
45														44.1 GREEN-GRAY, CLAYEY SAND 20.0 WITH TRACE MICA (CAPE FEAR FORMATION)
	41.6	22.5	5	8	11	19							Sat.	
40														35.1 LIGHT GRAY, SILTY CLAY 29.0 (CAPE FEAR FORMATION)
	36.6	27.5	7	8	11	19							Sat.	
35														29.0 LIGHT GRAY, SILTY CLAY 29.0 (CAPE FEAR FORMATION)
	31.6	32.5	4	8	14	22							W	
30														25.1 GRAY BROWN, CLAYEY SAND 39.0 (CAPE FEAR FORMATION)
	26.6	37.5	8	12	13	25							W	
25														39.0 GRAY BROWN, CLAYEY SAND 39.0 (CAPE FEAR FORMATION)
	21.6	42.5	11	13	22	35							Sat.	
20														44.0 GRAY BROWN, SANDY SILT 44.0 (CAPE FEAR FORMATION)
	16.6	47.5	12	19	30	49							Sat.	
15														44.0 GRAY BROWN, SANDY SILT 44.0 (CAPE FEAR FORMATION)
	11.6	52.5	13	20	28	48							Sat.	
10														52.0 GRAY BROWN, SILTY CLAY 52.0 (CAPE FEAR FORMATION)
	6.3	57.8	12	25	40	65							Sat.	
5														52.0 GRAY BROWN, SILTY CLAY 52.0 (CAPE FEAR FORMATION)
	1.6	62.5	10	16	20	36							Sat.	
0														-0.9 LIGHT GRAY, SILTY SAND 65.0 (CAPE FEAR FORMATION)
	-3.4	67.5	7	10	15	25							Sat.	
														-4.9 Boring Terminated at Elevation -4.9 ft IN 69.0 COASTAL PLAIN (SILTY SAND)

SITE PHOTOGRAPH

Bridge No. 45 on -L- (SR 1428) over White Oak Swamp



Looking North towards End Bent 2