

REFERENCE: SF-650045

PROJECT: BPI.R002

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

**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY NORTHAMPTON
PROJECT DESCRIPTION BRIDGE NO. 45 ON -L- (SR 1358)
OVER KIRBY'S CREEK AT STA. 13+68

REVISED

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<u>SHEET NO.</u>	<u>DESCRIPTION</u>
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2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-650045	1	6

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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:
1. 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.
 2. 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

S.N. ZIMARINO

T.W. MILLER

R.E. SMITH

C.M. WALKER

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY S.N. ZIMARINO

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE JANUARY 2023



DocuSigned by:
Tyler Bottoms 01/10/2023

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SIGNATURE DATE

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

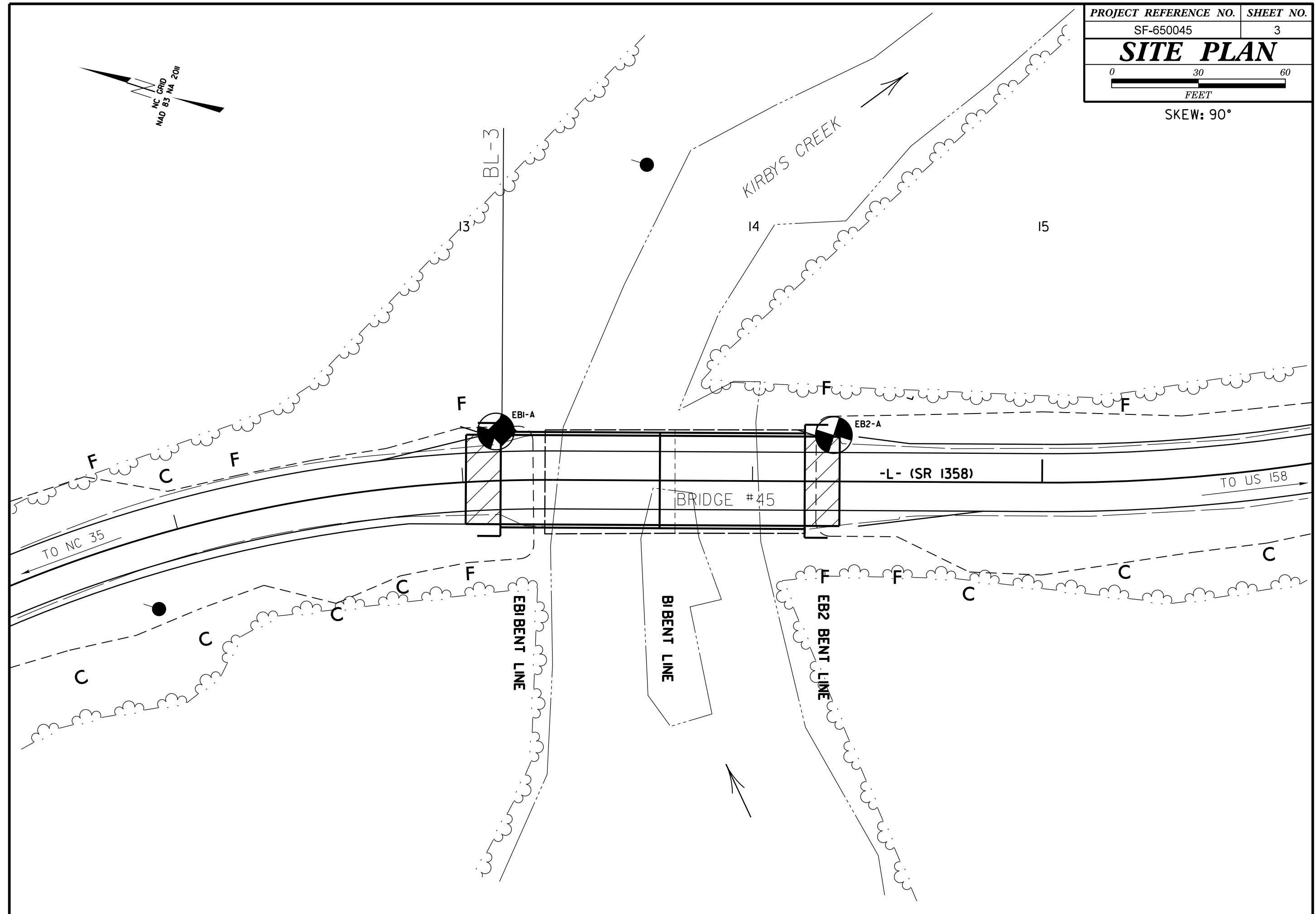
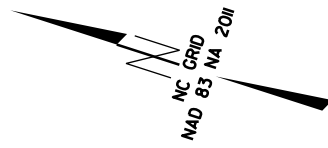
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Main content table containing 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, FRACTURE SPACING, BEDDING, INDURATION.

PROJECT REFERENCE NO.	SHEET NO.
SF-650045	3
SITE PLAN	
FEET	

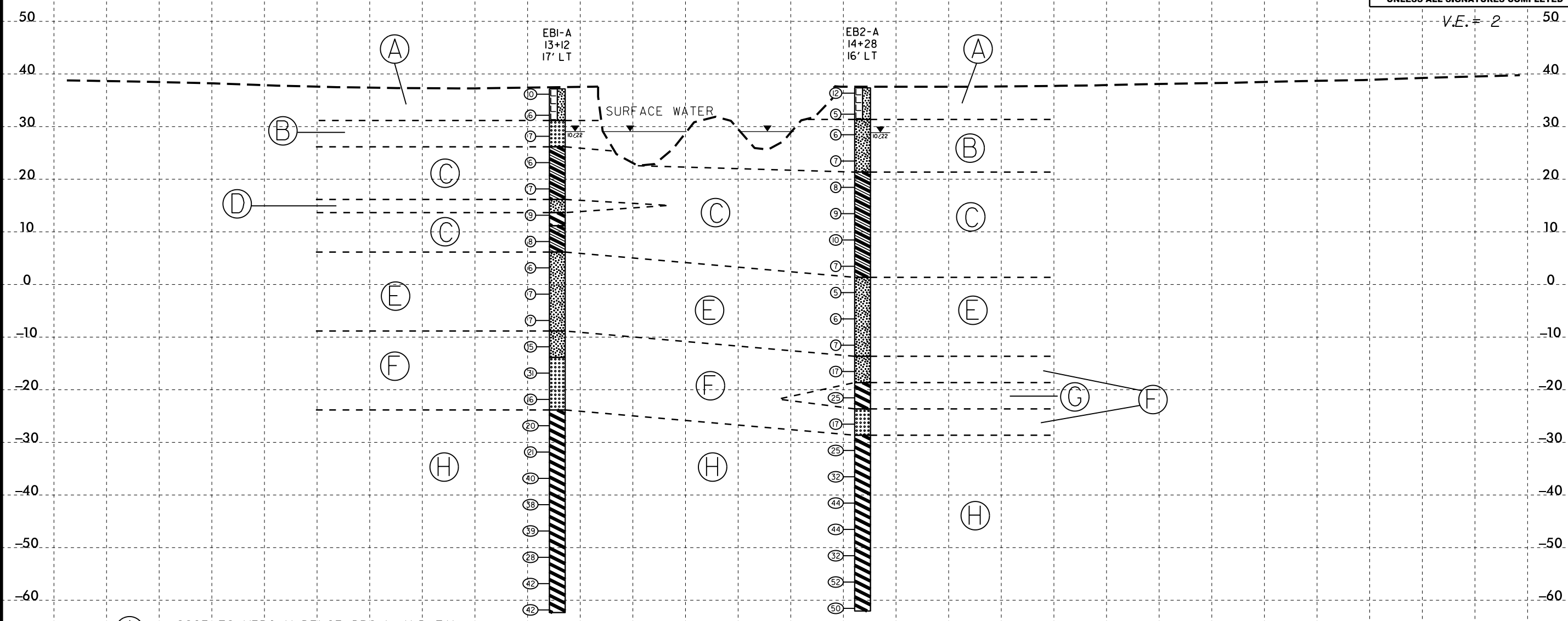
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PROJECT REFERENCE NO. SF-650045	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

PROFILE THROUGH BORINGS PROJECTED ALONG -L-



- (A) LOOSE TO MEDIUM DENSE BROWN AND TAN SILTY SAND, MOIST (ROADWAY EMBANKMENT)
- (B) LOOSE TAN AND GRAY SILTY SAND WITH GRAVEL AND WOOD FRAGMENTS, MOIST TO SATURATED (ALLUVIAL)
- (C) MEDIUM STIFF TO STIFF GRAY SILTY AND SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
- (D) LOOSE GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)
- (E) LOOSE GREENISH GRAY SILTY SAND, SATURATED (YORKTOWN FORMATION)
- (F) MEDIUM DENSE TO DENSE GRAY AND TAN SILTY MICACEOUS SAND WITH MOTTLED SILTY CLAY LAYERS, SATURATED (CAPE FEAR FORMATION)
- (G) VERY STIFF GRAY AND TAN MOTTLED SILTY CLAY, WET (CAPE FEAR FORMATION)

(H) VERY STIFF TO HARD GRAY, TAN, RED, AND PURPLE MOTTLED SILTY CLAY, WET (CAPE FEAR FORMATION)

NOTE: GROUNDLINE TAKEN FROM BRIDGE SURVEY AND HYDRAULIC REPORT DATED 9/26/22

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

NOTE: EXISTING BRIDGE IS CORED SLAB. NOT ABLE TO CUT THROUGH BRIDGE DECK. NO SUBSURFACE DATA COLLECTED FOR BENT 1.

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GEOTECHNICAL BORING REPORT BORE LOG

WBS BP1.R002.1		TIP SF-650045		COUNTY NORTHAMPTON		GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 45 ON -L- (SR 1358) OVER KIRBY'S CREEK							GROUND WTR (ft)
BORING NO. EB1-A		STATION 13+12		OFFSET 17 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 37.2 ft		TOTAL DEPTH 99.5 ft		NORTHING 987,921		EASTING 2,534,568	
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 87% 11/23/2021			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic	
DRILLER Walker, C. M.		START DATE 10/24/22		COMP. DATE 10/24/22		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			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
40																	
	37.2	0.0	3	5	5											37.2	0.0
35																	
	33.2	4.0	2	3	3												
30																	
	29.2	8.0	3	4	3												
25																	
	24.2	13.0	3	3	3												
20																	
	19.2	18.0	3	3	4												
15																	
	14.2	23.0	4	5	4												
10																	
	9.2	28.0	3	4	4												
5																	
	4.2	33.0	3	3	3												
0																	
	-0.8	38.0	2	3	4												
-5																	
	-5.8	43.0	3	3	4												
-10																	
	-10.8	48.0	6	7	8												
-15																	
	-15.8	53.0	14	15	16												
-20																	
	-20.8	58.0	6	8	8												
-25																	
	-25.8	63.0	5	10	10												
-30																	
	-30.8	68.0	8	11	10												
-35																	
	-35.8	73.0	12	16	24												
-40																	

WBS BP1.R002.1		TIP SF-650045		COUNTY NORTHAMPTON		GEOLOGIST Zimarino, S. N.	
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			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
-40																
	-40.8	78.0	12	18	20											
-45																
	-45.8	83.0	16	17	22											
-50																
	-50.8	88.0	8	14	14											
-55																
	-55.8	93.0	11	16	26											
-60																
	-60.8	98.0	15	18	24											

NCDOT BORE DOUBLE_SF650045.GPJ_NC_DOT.GDT 11/21/22

