

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

CONTENTS SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS

PROJ. REFERENCE NO. 45348J14 (BD-5102N) F.A. PROJ. BRZ-2091(10)  
 COUNTY GREENE  
 PROJECT DESCRIPTION BRIDGE NO. 47 ON SR 1091 (SHADY GROVE  
CHURCH RD.) OVER RAINBOW CREEK AT -L- STA. 15+55.50

STATE	DATE PROJECT APPROVED	NO. 1
NC.	BD-5102N	6

**CAUTION NOTICE**

The information contained in this report is the property of the North Carolina Department of Transportation and is loaned to the contractor for use in the preparation of the project. It is the responsibility of the contractor to return the report to the North Carolina Department of Transportation when the project is completed. The report is to be used only for the purpose of the project and is not to be reproduced or distributed without the written consent of the North Carolina Department of Transportation. The report is to be returned to the North Carolina Department of Transportation at the end of the project. The report is to be used only for the purpose of the project and is not to be reproduced or distributed without the written consent of the North Carolina Department of Transportation. The report is to be returned to the North Carolina Department of Transportation at the end of the project.

PERSONNEL  
D.N. ARGANBRIGHT  
R.E. SMITH  
J.R. SPARLEY

INVESTIGATED BY D.N. ARGANBRIGHT  
 CHECKED BY D.N. ARGANBRIGHT  
 SUBMITTED BY D.N. ARGANBRIGHT  
 DATE MAY 2012



SUBSURFACE INVESTIGATION

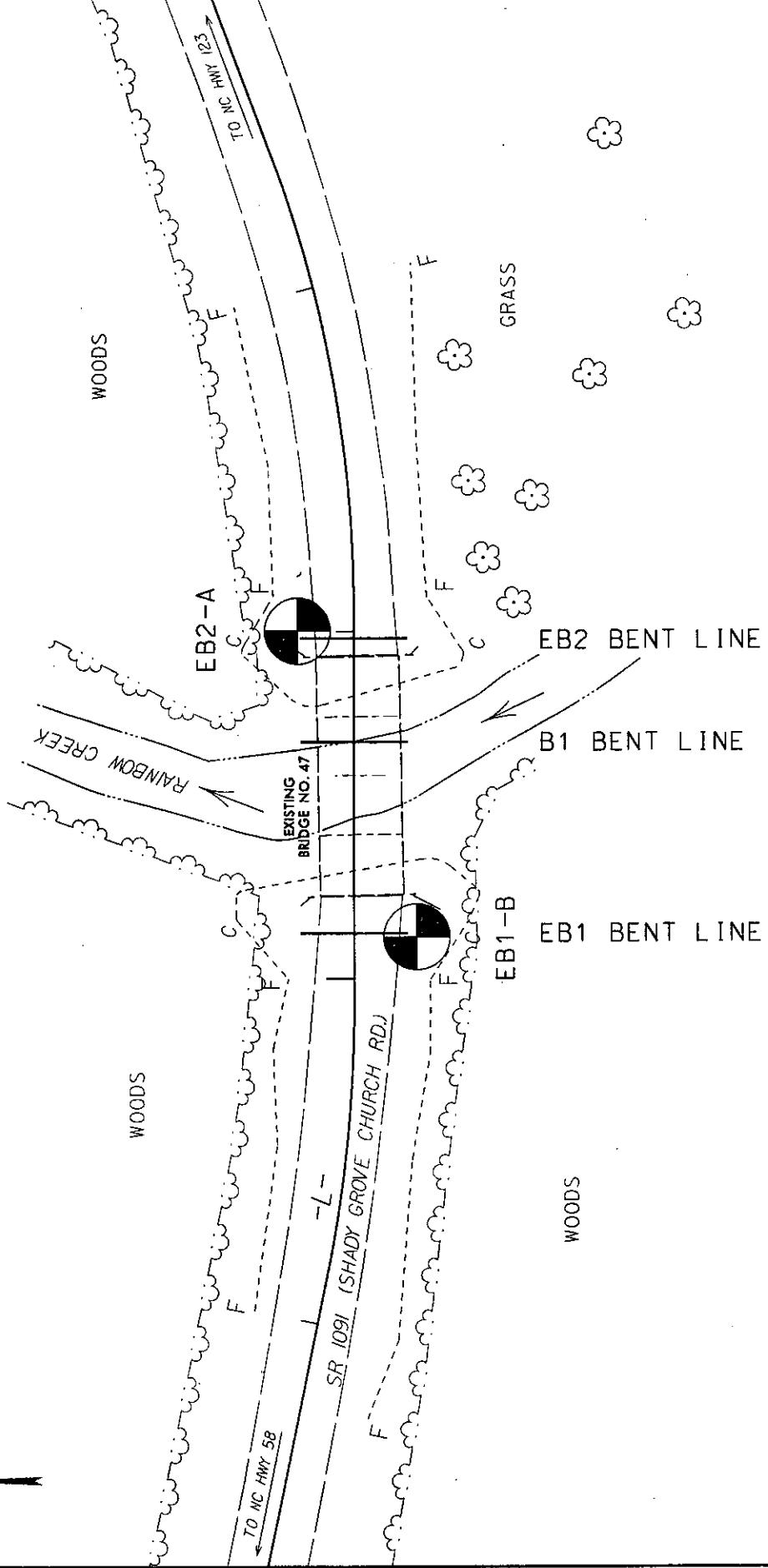
PROJECT REFERENCE NO.	SHEET
BD-SIGN	3 OF 6
<b>SITE PLAN</b>	
30	60
0	FEET

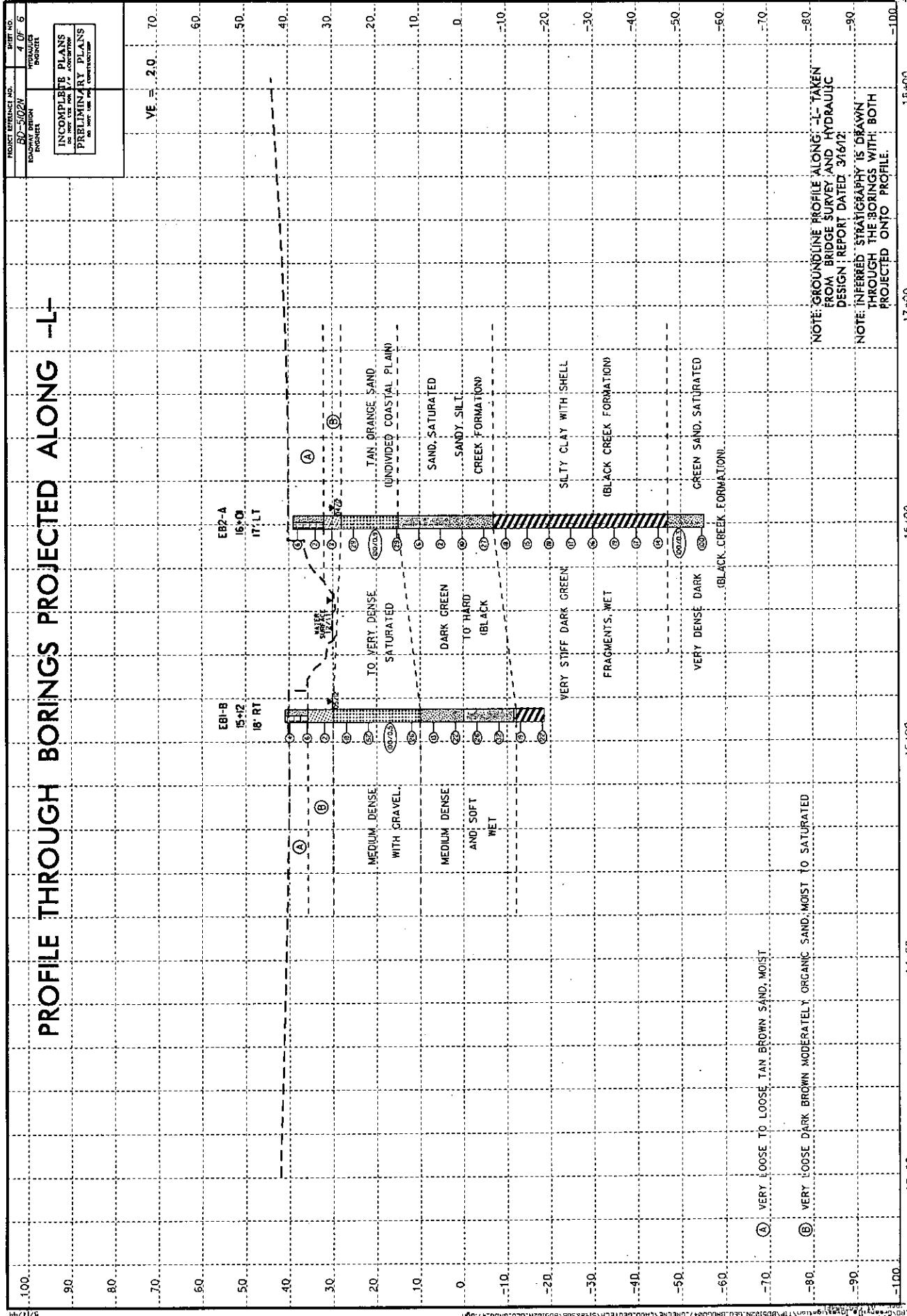
SKEW = 90°

11

15

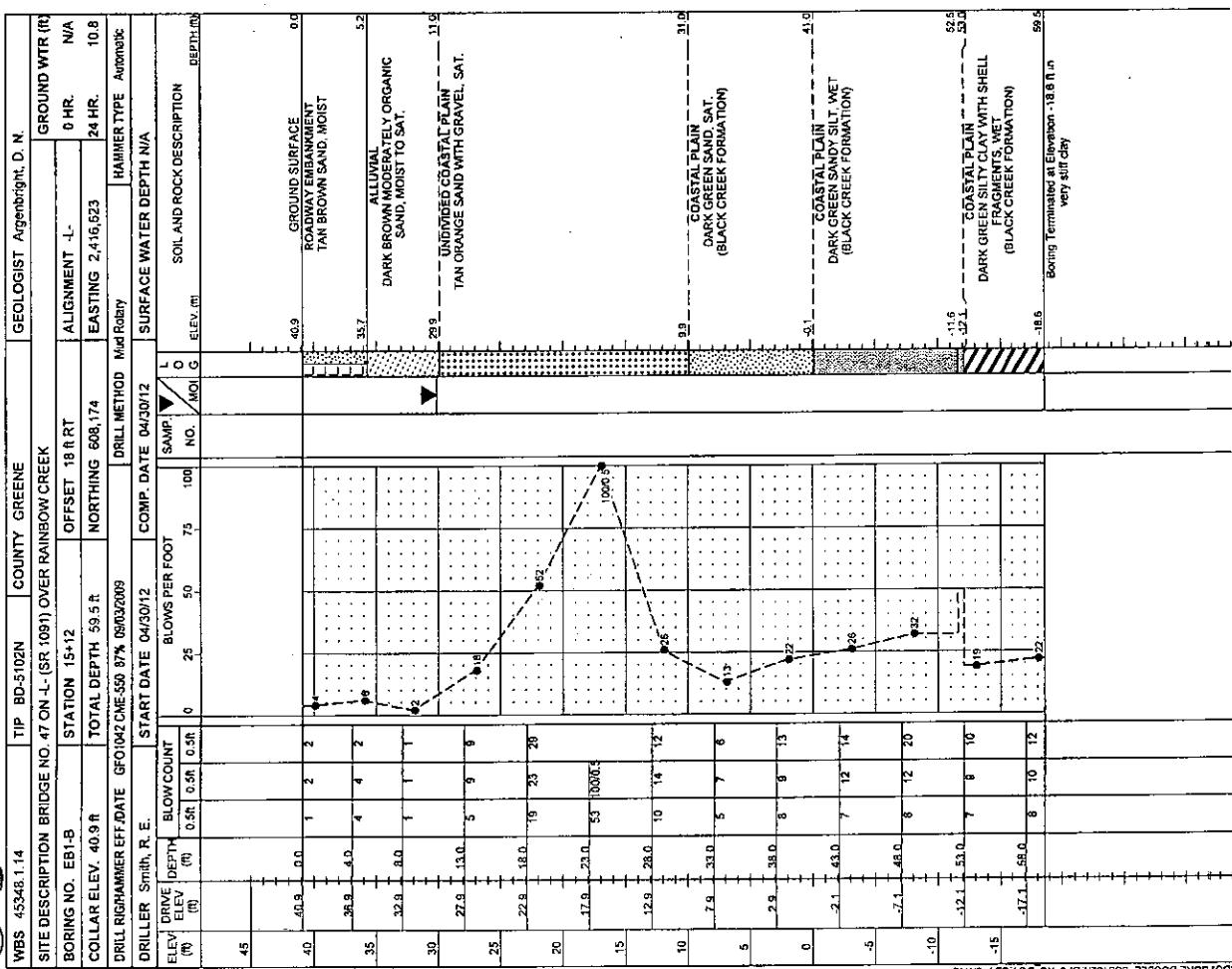
N






**NCDOT GEOTECHNICAL ENGINEERING UNIT**

SHEET 5 OF 6

**BORELOG REPORT**



**NCDOT GEOTECHNICAL ENGINEERING UNIT**

SHEET 6 OF 6

**BORELOG REPORT**

WBS 45348.1.14			TIP BD-5102N			COUNTY GREENE			GEOLOGIST White, C. M.			GROUND WTR (ft)		
SITE DESCRIPTION BRIDGE NO. 47 ON L-(SR 109) OVER RAINBOW CREEK			BOREING NO. EB2-A			TOTAL DEPTH 94.3 ft			STATION 16+01			TOTAL DEPTH 94.3 ft		
COLLAR ELEV. 39.0 ft			TOTAL DEPTH 94.3 ft			NORTHING 608.208			EASTING 2,416.711			NORTHING 608.208		
DRILL RIG/HAMMER/EFF/DATE GFO1042 CME-550 87% 09/03/2009			DRILL METHOD Mud Rotary			DRILLER Smith, R. E.			START DATE 04/26/12			COMP. DATE 04/26/12		
ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	START DATE 04/26/12	COMP. DATE 04/26/12	SURFACE WATER DEPTH N/A.	ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	DRIVE ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	DRIVE ELEV. (ft)	DEPTH (ft)	SURFACE WATER DEPTH N/A.
40	39.0	0.0												
35	35.0	4.0												
30	31.2	7.8												
25	26.2	12.8												
20	21.2	17.8												
15	16.2	22.8												
10	11.2	27.8												
5	6.2	32.8												
0	1.2	37.8												
.5	-3.8	42.8												
-1.0	-8.8	47.8												
-1.5	-13.8	52.8												
-2.0	-18.8	57.8												
-2.5	-23.8	62.8												
-3.0	-28.8	67.8												
-3.5	-33.8	72.8												

Geological Log:

- 0.0 - 39.0 ft: ROADWAY EMBANKMENT TAN SAND, MOIST
- 39.0 - 40.0 ft: GROUND SURFACE
- 40.0 - 43.8 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WEATHERED (BLACK CREEK FORMATION continued)
- 43.8 - 48.8 ft: COASTAL PLAIN DARK GREEN SAND, SAT. (BLACK CREEK FORMATION)
- 48.8 - 50.0 ft: ALLUVIAL DARK BROWN MODERATELY ORGANIC SAND, MOIST TO SAT.
- 50.0 - 53.8 ft: UNDIVIDED COASTAL PLAIN TAN SAND WITH GRAVEL, SAT.
- 53.8 - 55.0 ft: COASTAL PLAIN DARK GREEN SANDY SILT, WET (BLACK CREEK FORMATION)
- 55.0 - 56.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 56.0 - 57.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 57.0 - 58.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 58.0 - 59.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 59.0 - 60.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 60.0 - 61.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 61.0 - 62.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 62.0 - 63.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 63.0 - 64.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 64.0 - 65.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 65.0 - 66.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 66.0 - 67.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 67.0 - 68.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 68.0 - 69.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 69.0 - 70.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 70.0 - 71.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 71.0 - 72.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 72.0 - 73.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 73.0 - 74.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 74.0 - 75.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 75.0 - 76.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 76.0 - 77.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 77.0 - 78.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 78.0 - 79.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 79.0 - 80.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 80.0 - 81.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 81.0 - 82.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 82.0 - 83.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 83.0 - 84.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 84.0 - 85.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 85.0 - 86.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 86.0 - 87.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 87.0 - 88.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 88.0 - 89.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 89.0 - 90.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 90.0 - 91.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 91.0 - 92.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 92.0 - 93.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)
- 93.0 - 94.0 ft: COASTAL PLAIN DARK GREEN SILTY CLAY WITH SHELL FRAGMENTS, WET (BLACK CREEK FORMATION)

Notes:

- Match Line: A dashed line connecting specific points across the borehole sections.
- Very Dense Sand: A note indicating a layer of very dense sand at elevation 55.3 ft.
- Boring Terminated at Elevation 55.3 ft: A note indicating the boring was terminated at elevation 55.3 ft.