

REFERENCE: B-5301

PROJECT: 46015

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY PITT
PROJECT DESCRIPTION REPLACE BRIDGE NO. 730087
OVER NORFOLK SOUTHERN RAILROAD
ON NC 33
SITE DESCRIPTION BRIDGE NO. 730087 ON
(-L- Sta. 25 + 98.05, -Y- Sta. 15 + 79.73) OVER NORFOLK
SOUTHERN RAILROAD

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5-8	BORING LOGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5301	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:
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

GET SOLUTIONS

GOODNIGHT, D.W.

INVESTIGATED BY GOODNIGHT, D.W.

DRAWN BY HILL, M.J.

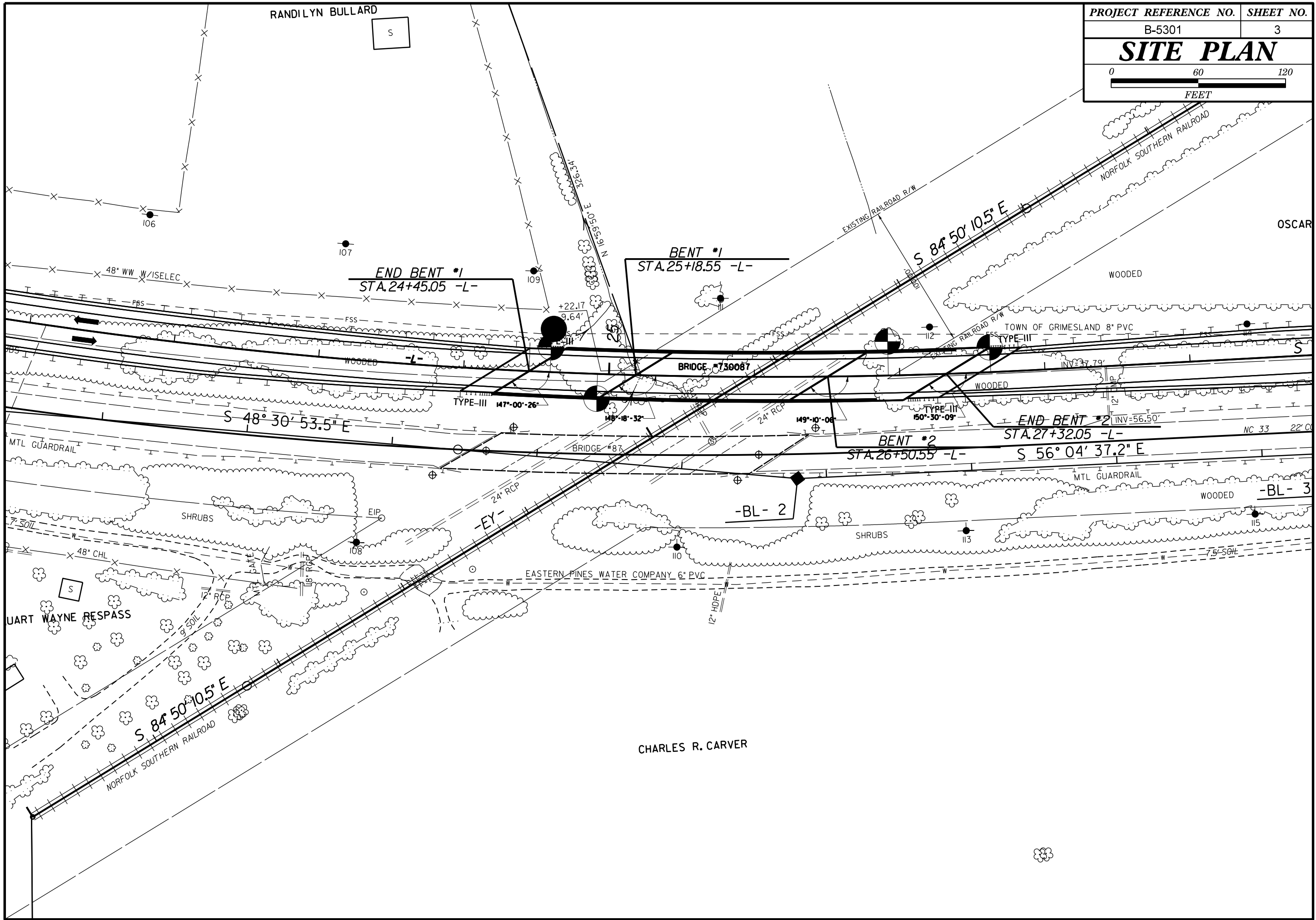
CHECKED BY HAMM, J.R.

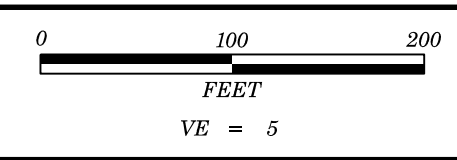
SUBMITTED BY FALCON ENG.

DATE AUGUST 2019



DocuSigned by:
W. Scott Hunsberger 12/30/2019

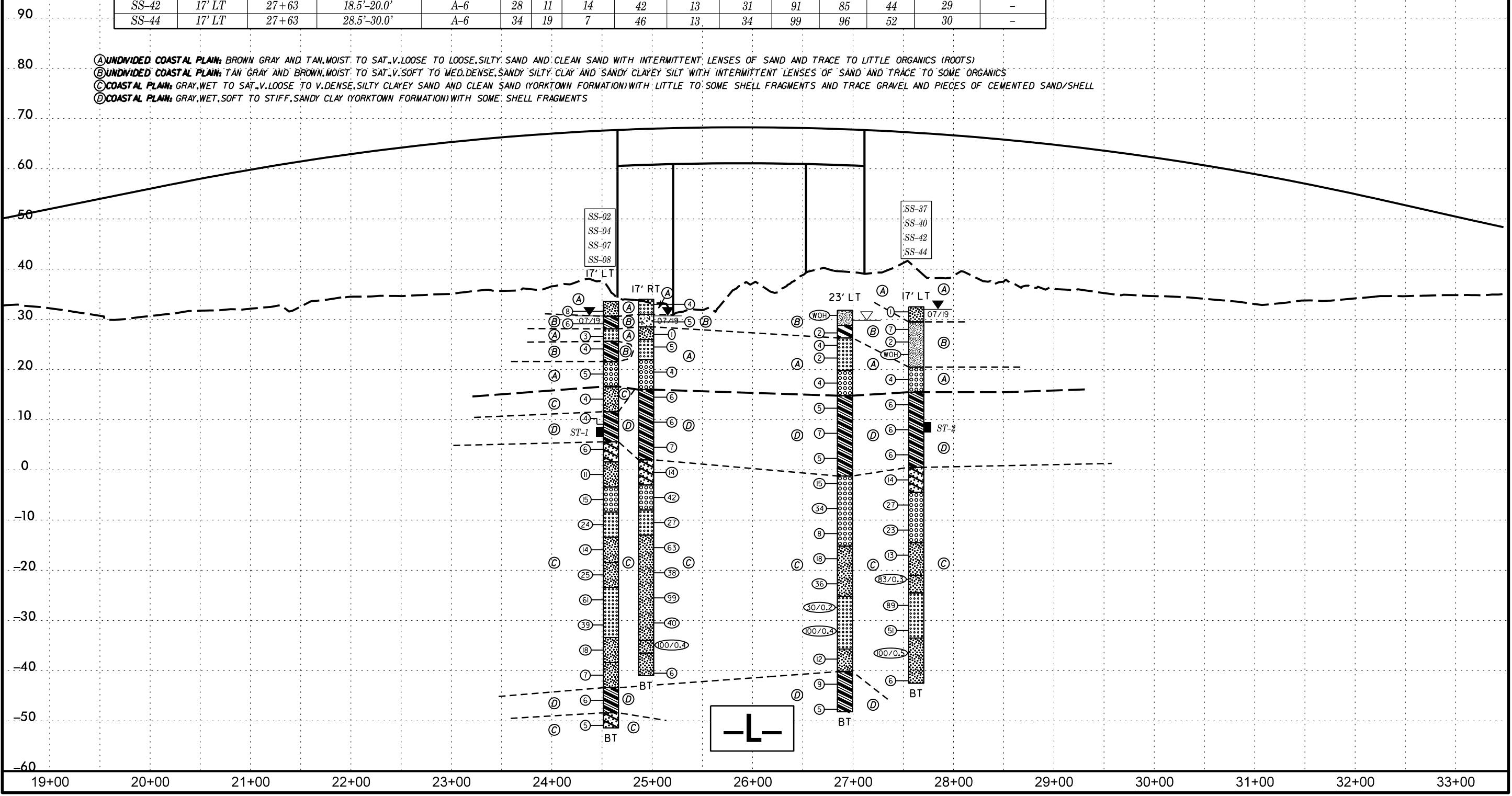




SOIL TEST RESULTS

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		
SS-02	17' LT	24+59	3.5'-5.0'	A-6	34	14	1	59	8	32	100	100	58	26	-
SS-04	17' LT	24+59	8.5'-10.0'	A-6	29	14	46	20	9	25	100	89	37	38	-
SS-07	17' LT	24+59	23.5'-25.0'	A-6	34	18	13	40	15	32	97	91	50	32	-
SS-08	17' LT	24+59	28.5'-30.0'	A-2-6	33	19	15	51	11	23	83	77	32	29	-
SS-37	17' LT	27+63	0.0'-1.5'	A-2-4	24	0	22	55	8	15	100	92	26	44	-
SS-40	17' LT	27+63	8.5'-10.0'	A-4	25	5	0	72	7	21	100	100	38	34	-
SS-42	17' LT	27+63	18.5'-20.0'	A-6	28	11	14	42	13	31	91	85	44	29	-
SS-44	17' LT	27+63	28.5'-30.0'	A-6	34	19	7	46	13	34	99	96	52	30	-

- Ⓐ UNDIVIDED COASTAL PLAIN: BROWN GRAY AND TAN, MOIST TO SAT. V. LOOSE TO LOOSE, SILTY SAND AND CLEAN SAND WITH INTERMITTENT LENSES OF SAND AND TRACE TO LITTLE ORGANICS (ROOTS)
- Ⓑ UNDIVIDED COASTAL PLAIN: TAN GRAY AND BROWN, MOIST TO SAT. V. SOFT TO MED. DENSE, SANDY SILTY CLAY AND SANDY CLAYEY SILT WITH INTERMITTENT LENSES OF SAND AND TRACE TO SOME ORGANICS
- Ⓒ COASTAL PLAIN: GRAY, WET TO SAT. V. LOOSE TO V. DENSE, SILTY CLAYEY SAND AND CLEAN SAND (YORKTOWN FORMATION) WITH LITTLE TO SOME SHELL FRAGMENTS AND TRACE GRAVEL AND PIECES OF CEMENTED SAND/SHELL
- Ⓓ COASTAL PLAIN: GRAY, WET, SOFT TO STIFF, SANDY CLAY (YORKTOWN FORMATION) WITH SOME SHELL FRAGMENTS



GEOTECHNICAL BORING REPORT BORE LOG

WBS 46015.1.1		TIP B-5301		COUNTY PITT		GEOLOGIST GOODNIGHT, D. J.									
SITE DESCRIPTION REPLACE BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33						GROUND WTR (ft)									
BORING NO. EB1		STATION 24+59		OFFSET 17 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 33.6 ft		TOTAL DEPTH 85.0 ft		NORTHING 667,254		EASTING 2,534,080									
DRILL RIG/HAMMER EFF./DATE GET4354 CME-45C 81% 01/06/2016			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Contract Driller		START DATE 07/08/19		COMP. DATE 07/08/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
35															
	32.6	1.0	3	3	5										
30	30.1	3.5	3	3	3										
	27.6	6.0	1	2	1										
25	25.1	8.5	WOH	1	3										
20	20.1	13.5		3	2	3									
15	15.1	18.5		2	2	2									
10	10.1	23.5		2	2	2									
5	5.1	28.5		4	2	4									
0	0.1	33.5		4	6	5									
-5	-4.9	38.5		7	7	8									
-10	-9.9	43.5		7	9	15									
-15	-14.9	48.5		20	7	7									
-20	-19.9	53.5		14	12	13									
-25	-24.9	58.5		18	24	37									
-30	-29.9	63.5		10	19	20									
-35	-34.9	68.5		10	10	8									
-40	-39.9	73.5		2	3	4									
-45	-44.9	78.5													

NCDOT BORE DOUBLE B5301_BRD0087_BORINGS.GPJ NC_DOT.GDT 8/1/19

WBS 46015.1.1		TIP B-5301		COUNTY PITT		GEOLOGIST GOODNIGHT, D. J.									
SITE DESCRIPTION REPLACE BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33						GROUND WTR (ft)									
BORING NO. EB1		STATION 24+59		OFFSET 17 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 33.6 ft		TOTAL DEPTH 85.0 ft		NORTHING 667,254		EASTING 2,534,080									
DRILL RIG/HAMMER EFF./DATE GET4354 CME-45C 81% 01/06/2016			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Contract Driller		START DATE 07/08/19		COMP. DATE 07/08/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)
-45															
			2	2	4										
-50	-49.9	83.5	3	2	3										

Match Line

GRAY, MED. STIFF, SANDY CLAY (A-6)
(continued)
DARK GRAY, LOOSE, CLAYEY F. SAND (A-2-6)

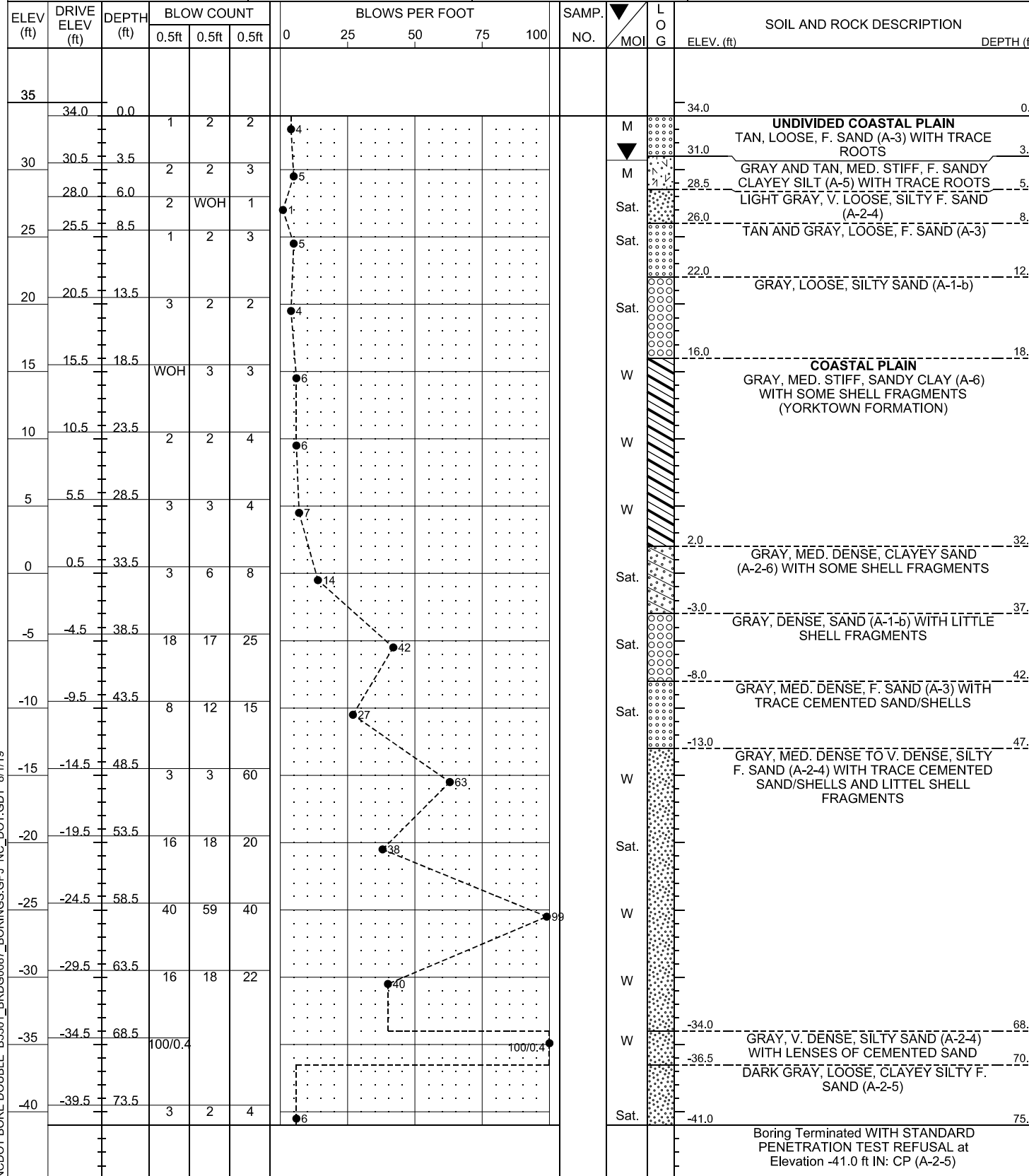
Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation -51.4 ft IN: CP (A-2-6)

Other Samples:
ST-1 (25.0 - 27.0)

GEOTECHNICAL BORING REPORT

BORE LOG

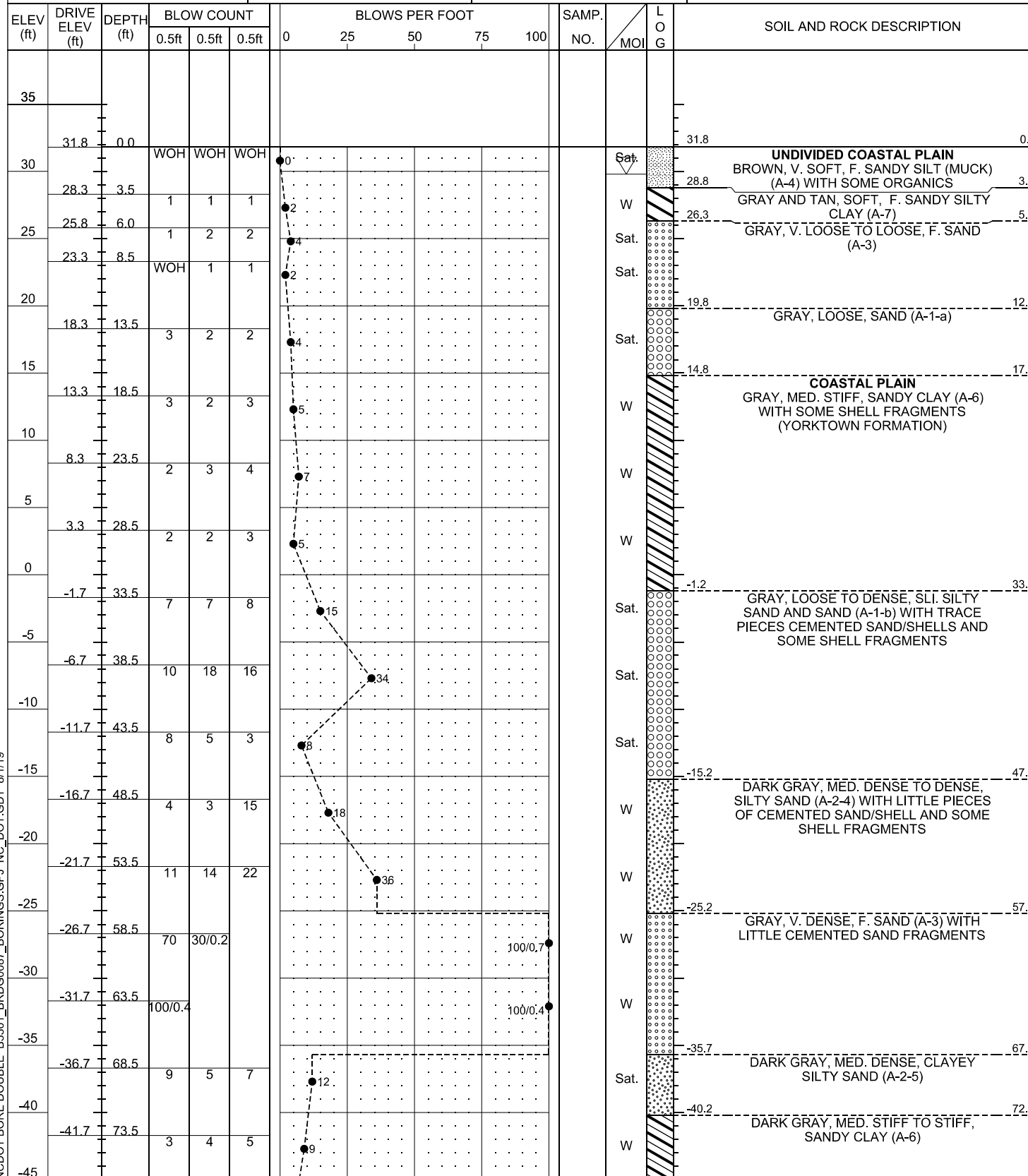
WBS 46015.1.1		TIP B-5301		COUNTY PITT		GEOLOGIST GOODNIGHT, D. J.	
SITE DESCRIPTION REPLACE BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33							GROUND WTR (ft)
BORING NO. B-1		STATION 24+94		OFFSET 17 ft RT		ALIGNMENT -L-	0 HR. 3.5
COLLAR ELEV. 34.0 ft		TOTAL DEPTH 75.0 ft		NORTHING 667,207		EASTING 2,534,084	24 HR. 3.3
DRILL RIG/HAMMER EFF./DATE GET4354 CME-45C 81% 01/06/2016				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic	
DRILLER Contract Driller		START DATE 07/09/19		COMP. DATE 07/09/19		SURFACE WATER DEPTH N/A	



NCDOT BORE DOUBLE B5301_BRDG0087_BORINGS.GPJ NC_DOT.GDT 8/1/19

GEOTECHNICAL BORING REPORT BORE LOG

WBS 46015.1.1	TIP B-5301	COUNTY PITT	GEOLOGIST GOODNIGHT, D. J.
SITE DESCRIPTION REPLACE BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33			GROUND WTR (ft)
BORING NO. B-2	STATION 26+92	OFFSET 23 ft LT	ALIGNMENT -L-
COLLAR ELEV. 31.8 ft	TOTAL DEPTH 80.0 ft	NORTHING 667,119	EASTING 2,534,268
DRILL RIG/HAMMER EFF./DATE GET4354 CME-45C 81% 01/06/2016		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Contract Driller	START DATE 07/10/19	COMP. DATE 07/10/19	SURFACE WATER DEPTH N/A



NCDOT BORE DOUBLE B5301_BRDG0087_BORINGS.GPJ NC_DOT_GDT 8/1/19

WBS 46015.1.1	TIP B-5301	COUNTY PITT	GEOLOGIST GOODNIGHT, D. J.
SITE DESCRIPTION REPLACE BRIDGE NO. 87 OVER NORFOLK SOUTHERN RAILROAD ON NC 33			GROUND WTR (ft)
BORING NO. B-2	STATION 26+92	OFFSET 23 ft LT	ALIGNMENT -L-
COLLAR ELEV. 31.8 ft	TOTAL DEPTH 80.0 ft	NORTHING 667,119	EASTING 2,534,268
DRILL RIG/HAMMER EFF./DATE GET4354 CME-45C 81% 01/06/2016		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Contract Driller	START DATE 07/10/19	COMP. DATE 07/10/19	SURFACE WATER DEPTH N/A

