

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

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

**ROADWAY
SUBSURFACE INVESTIGATION**

COUNTY NEW HANOVER / PENDER
PROJECT DESCRIPTION I-40 FROM MILE
MARKER 413 TO 415

INVENTORY

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	PROJECT TITLE SHEET
4-5	PLAN SHEETS
6-7	PROFILES
8	BORE LOGS

PROJECT: 15403.1065018/15403.1071014 REFERENCE: N/A

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15403.1065018 / 15403.1071014	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

BUNCH, C. M.

TURNAGE, J. R.

COLON-MIRANDA, J.

INVESTIGATED BY BUNCH, C. M.

DRAWN BY FIELDS, W. D.

CHECKED BY NASH, A. A.

SUBMITTED BY RIGGS, Jr., A. F.

DATE OCTOBER 2019

Prepared in the Office of:

Terracon
Consulting Engineers and Scientists

2401 BRENTWOOD ROAD, SUITE 107
RALEIGH, NORTH CAROLINA 27604
NC REGISTERED ENGINEERING FIRM: P-0869
NC REGISTERED GEOLOGIC FIRM: C-387



DocuSigned by:

Abner F. Riggs, Jr.

7/31/2020

SIGNATURE DATE

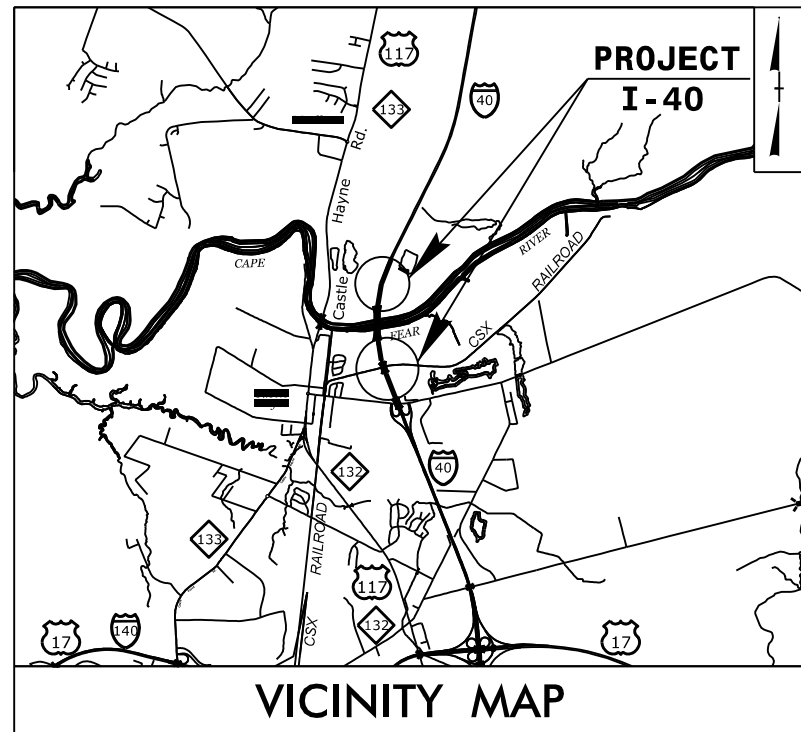
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT SUBSURFACE INVESTIGATION SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. Includes sub-sections like 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, and INDURATION.

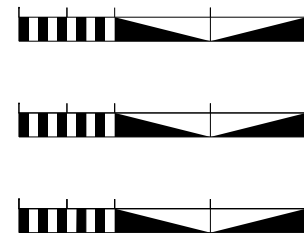
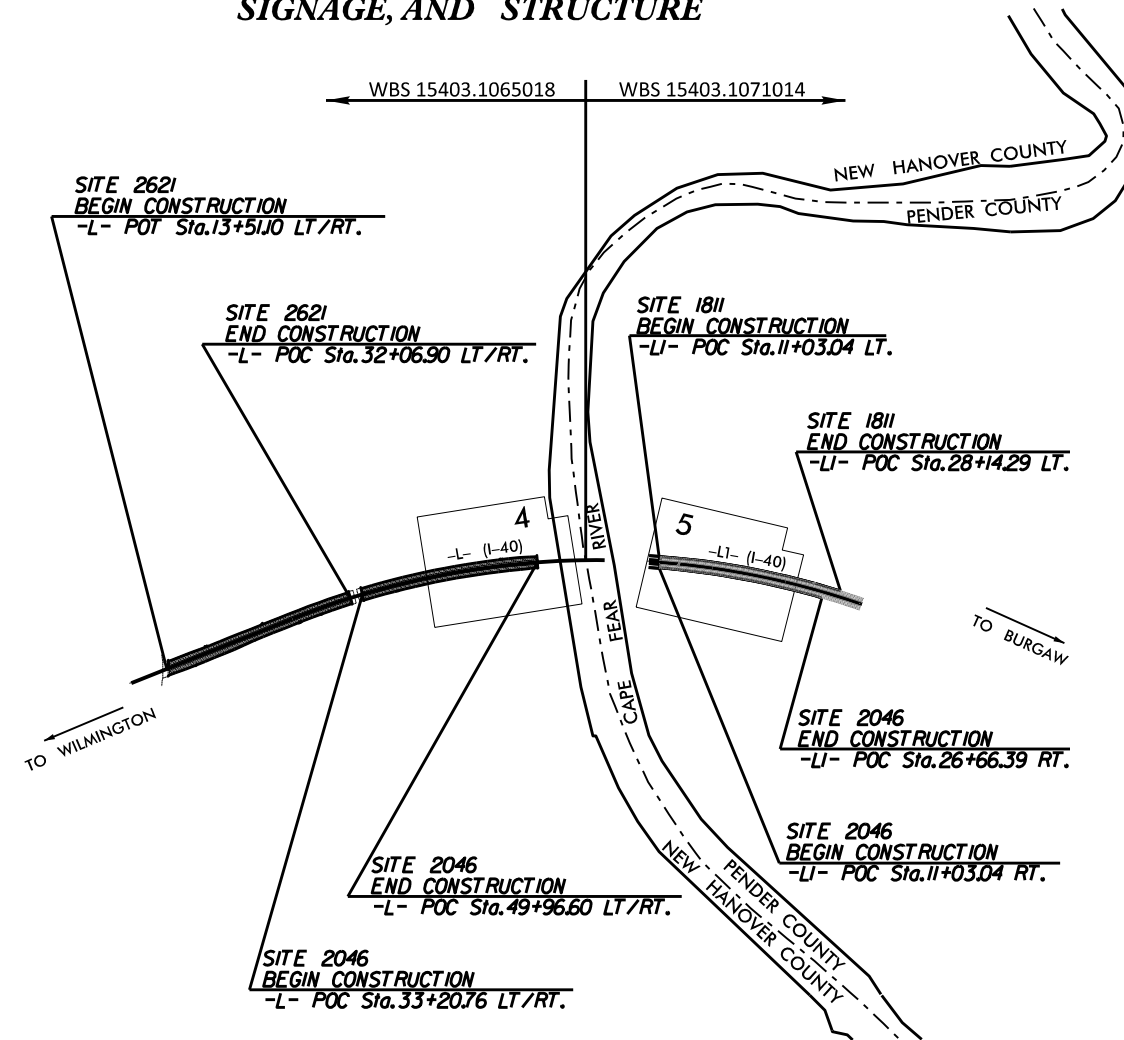
See Sheet 1-A For Index of Sheets
See Sheet 1B For Conventional Symbols

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	15403.1065018 / 15403.1071014	3	8



NEW HANOVER & PENDER COUNTY

I-40 FROM MILE MARKER 413 TO 415
GRADING, DRAINAGE, CULVERT, PAVING, SIGNAGE, AND STRUCTURE



2018 30500

FUNC CLASS = RURAL
INTERSTATE

LENGTH OF ROADWAY PROJECT I-40 (SITE 2621) = 0.351 MI.
LENGTH OF ROADWAY PROJECT I-40 (SITE 2046) = 0.351 MI.

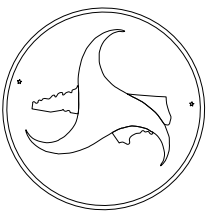
TOTAL LENGTH OF PROJECT I-40 = 0.324 MI.

Prepared for the North Carolina Department
of Transportation in the office of:

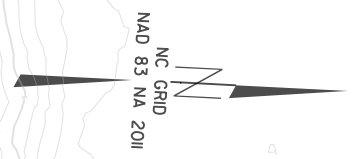


DAVID L. WILVER, PE

J. MATTHEW PICKENS, PE



PROJECT REFERENCE NO. 15403.1065018 / 15403.1071014	SHEET NO. 4
<p>0 100 200 FEET</p>	



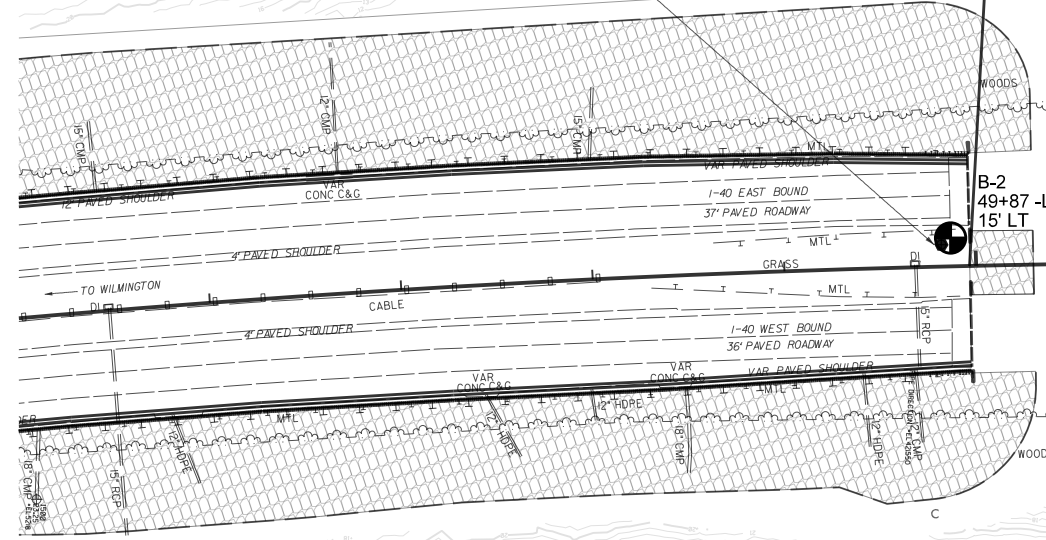
-L- POC Sta. 49+96.60
END WORK LT & RT

-7- 00+05

-7- 00+55

PT Sta. 56+28.45 -L-

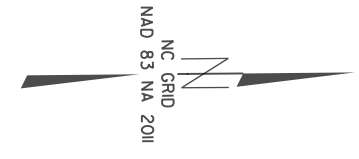
GPS20462
ELEV. 224.923
ELEV. 2435.508
ELEV. 39.69'



EXIST
↑↑

EXIST
↑

PROJECT REFERENCE NO.	SHEET NO.
15403.1065018 / 15403.1071014	5
F E E T	



-L1- 00+01

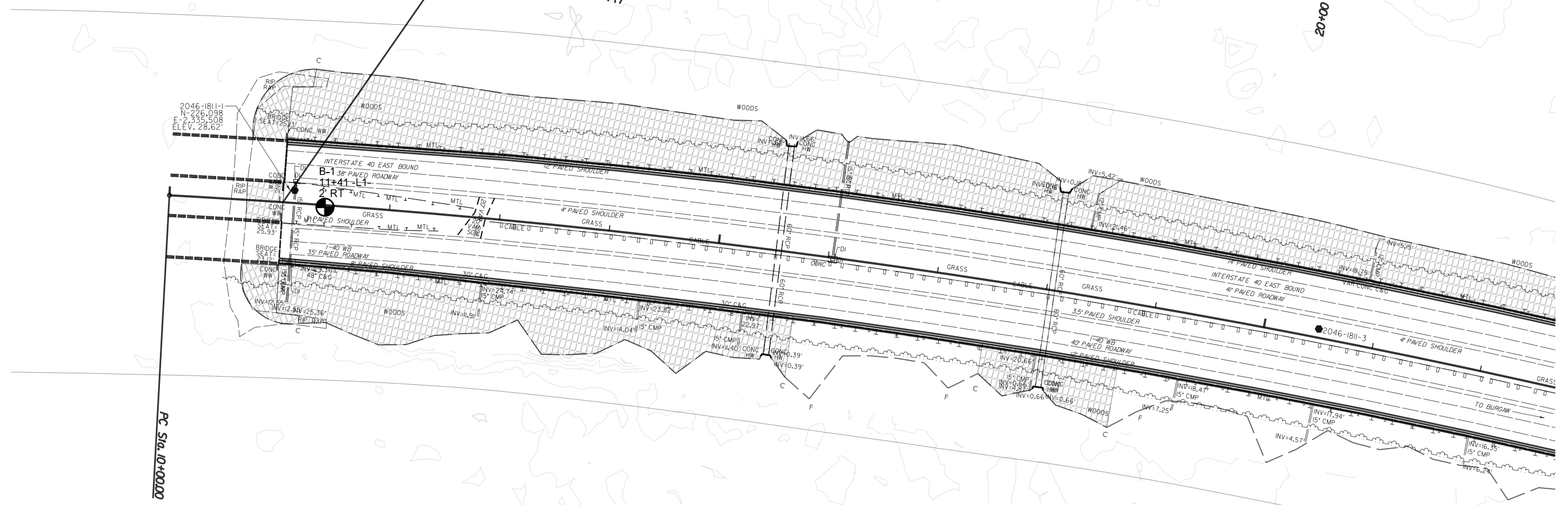
-L1- 15+00

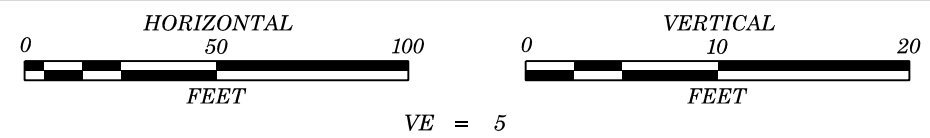
-L1- 20+00

-L1- POC Sta. 11+03.04
BEGIN WORK LT & RT

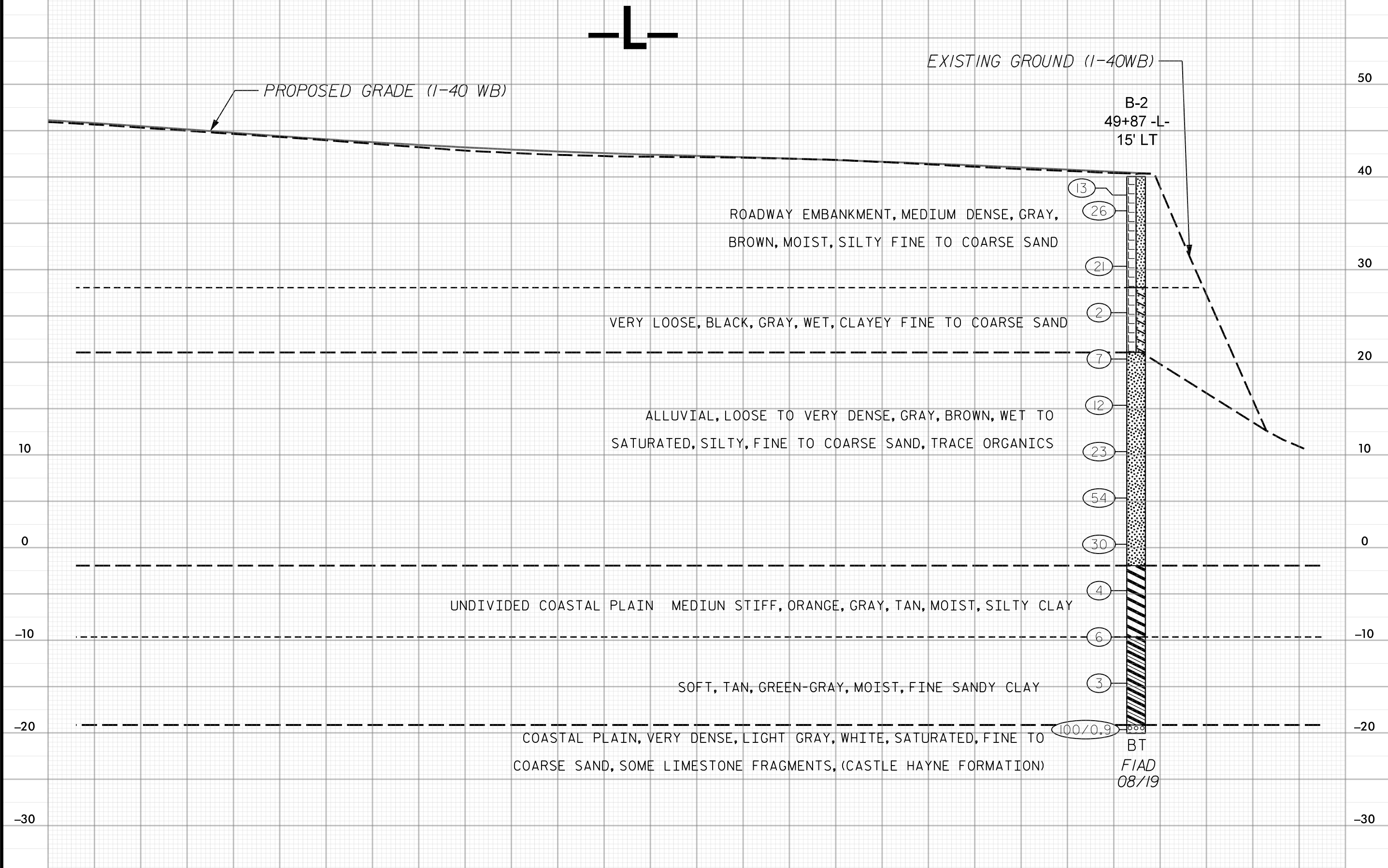
2046-1811-1
N=226,098
E=2,335,508
ELEV. 28.62

PC Sta. 10+00.00

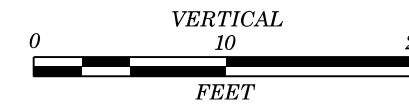




PROJECT REFERENCE NO.	SHEET NO.
15403.1065018/15403.1071014	6
CENTERLINE PROFILE ALONG -L- (I-40 WB)	



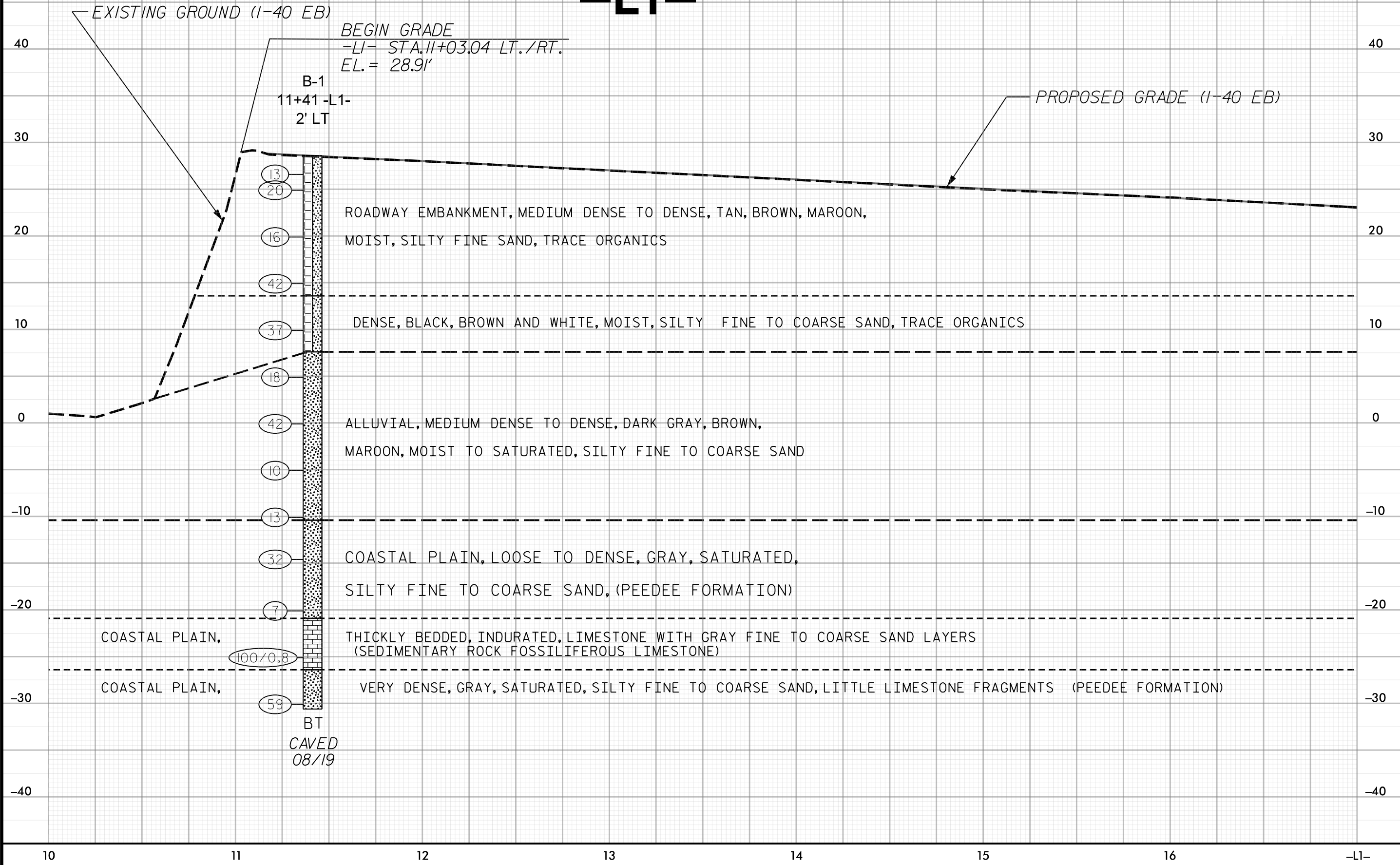
44 45 46 47 48 49 50 -L-



VE = 5

PROJECT REFERENCE NO.	SHEET NO.
15403.1065018/15403.1071014	7
CENTERLINE PROFILE ALONG -L1- (I-40 EB)	

-L1-





GEOTECHNICAL BORING REPORT

BORE LOG

WBS 15403.1065018		TIP N/A		COUNTY NEW HANOVER		GEOLOGIST POWELL, S.H.									
SITE DESCRIPTION I-40 STORM REPAIRS MILE MARKER 413 TO 415							GROUND WTR (ft)								
BORING NO. B-2		STATION 49+87		OFFSET 15 ft LT		ALIGNMENT L									
COLLAR ELEV. 40.1 ft		TOTAL DEPTH 60.1 ft		NORTHING 224,928		EASTING 2,335,503									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 84% 02/15/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER TURNAGE, J.		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 MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
45															
40	39.1	1.0	5	6	7									40.1	0.0
	37.4	2.7	12	14	12										
35															
30	31.4	8.7	10	10	11										
25	26.4	13.7	1	WOH	2										
20	21.4	18.7	2	2	5										
15	16.4	23.7	4	6	6										
10	11.4	28.7	9	11	12										
5	6.3	33.7	13	20	34										
0	1.3	38.7	9	11	19										
-5	-3.7	43.7	2	2	2										
-10	-8.7	48.7	2	2	4										
-15	-13.7	53.7	1	2	1										
-20	-18.7	58.7	39	42	58/0.4									59.2	60.1
															100/0.9

NCDOT BORE SINGLE I40 STORM REPAIRS NEW HANOVER CO. GEO. RDWY.GPJ NC_DOT.GDT 10/23/19



GEOTECHNICAL BORING REPORT

BORE LOG

WBS 15403.1071014		TIP N/A		COUNTY		GEOLOGIST POWELL, S.H.									
SITE DESCRIPTION I-40 STORM REPAIRS MILE MARKER 413 TO 415							GROUND WTR (ft)								
BORING NO. B-1		STATION 11+41		OFFSET 2 ft LT		ALIGNMENT L1									
COLLAR ELEV. 28.6 ft		TOTAL DEPTH 59.2 ft		NORTHING 226,126		EASTING 2,335,523									
DRILL RIG/HAMMER EFF./DATE TER373 DIEDRICH D-50 84% 02/15/2019		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER TURNAGE, J.		START DATE 08/21/19		COMP. DATE 08/21/19		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
30															
	27.6	1.0	9	6	7									28.6	0.0
	25.9	2.7	9	9	11										
25															
20	20.9	7.7	5	7	9										
15	15.9	12.7	15	20	22										
10	10.9	17.7	9	16	21										
5	5.9	22.7	6	8	10										
0	0.9	27.7	11	16	26										
-5	-4.1	32.7	4	5	5										
-10	-9.1	37.7	5	5	8										
	-13.6	42.2	11	14	18										
-15															
-20	-19.1	47.7	2	3	4										
-25	-24.1	52.7	70	30/0.3											
-30	-29.1	57.7	29	29	30										
															100/0.8

NCDOT BORE SINGLE I40 STORM REPAIRS NEW HANOVER CO. GEO. RDWY.GPJ NC_DOT.GDT 10/23/19