

REFERENCE: U-4405

PROJECT: 39049

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY CUMBERLAND
 PROJECT DESCRIPTION US 401 (RAEFORD RD.) FROM
WEST OF HAMPTON OAKS DR. TO EAST OF
FAIRWAY DR.
 SITE DESCRIPTION BRIDGE NO. 440 ON -RPB-
(ALL AMERICAN FREEWAY) OVER ABERDEEN
AND ROCKFISH RAILROAD AT STA. 26 + 78

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	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

CONSULTANT:

S&ME

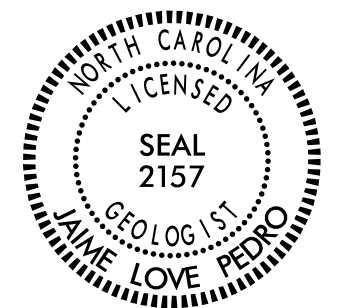
INVESTIGATED BY S&ME

DRAWN BY J. L. PEDRO

CHECKED BY N. T. ROBERSON

SUBMITTED BY N. T. ROBERSON

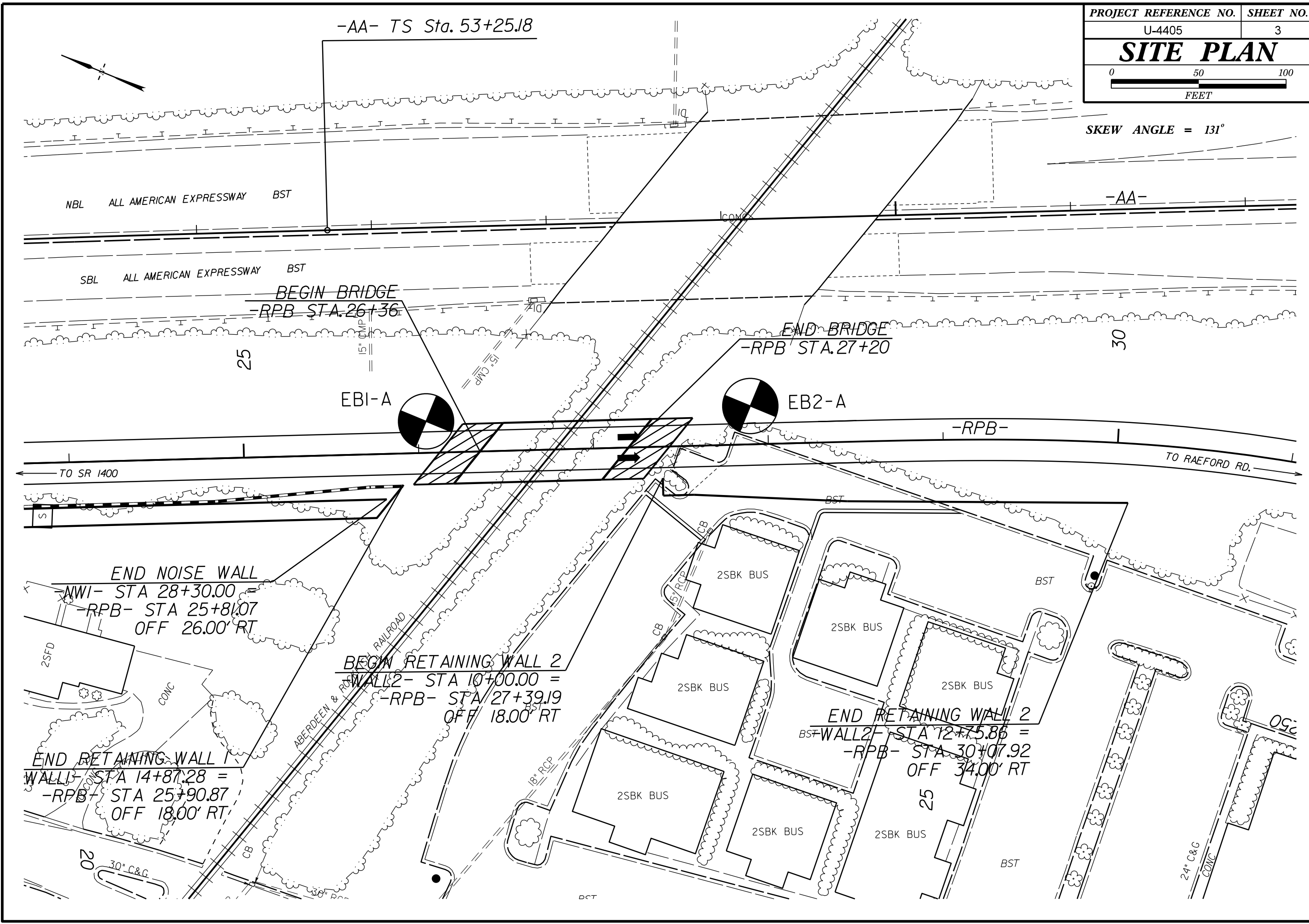
DATE NOVEMBER 2016



DocuSigned by:
Jaime Love Pedro 12/8/2016
 B93574039B884B5
 SIGNATURE DATE

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

SKEW ANGLE = 131°



-AA- TS Sta. 53+25.18

NBL ALL AMERICAN EXPRESSWAY BST

SBL ALL AMERICAN EXPRESSWAY BST

BEGIN BRIDGE
-RPB- STA. 26+36

END BRIDGE
-RPB- STA. 27+20

EBI-A

EB2-A

TO SR 1400

TO RAEFORD RD.

END NOISE WALL
-NWI- STA 28+30.00 =
-RPB- STA 25+81.07
OFF 26.00' RT

BEGIN RETAINING WALL 2
WALL 2- STA 10+00.00 =
-RPB- STA 27+39.19
OFF 18.00' RT

END RETAINING WALL 2
WALL 2- STA 12+75.85 =
-RPB- STA 30+07.92
OFF 34.00' RT

END RETAINING WALL 1
WALL 1- STA 14+87.28 =
-RPB- STA 25+90.87
OFF 18.00' RT

2SBK BUS

2SBK BUS

2SBK BUS

2SBK BUS

2SBK BUS

2SBK BUS

BST

30" C&G

24" C&G

25'

25'

25'

30'

2SFD

CONC

ABERDEEN & ROCK HILL RAILROAD

18" RCP

15" RCP

CB

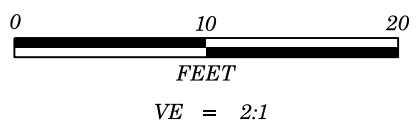
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BST

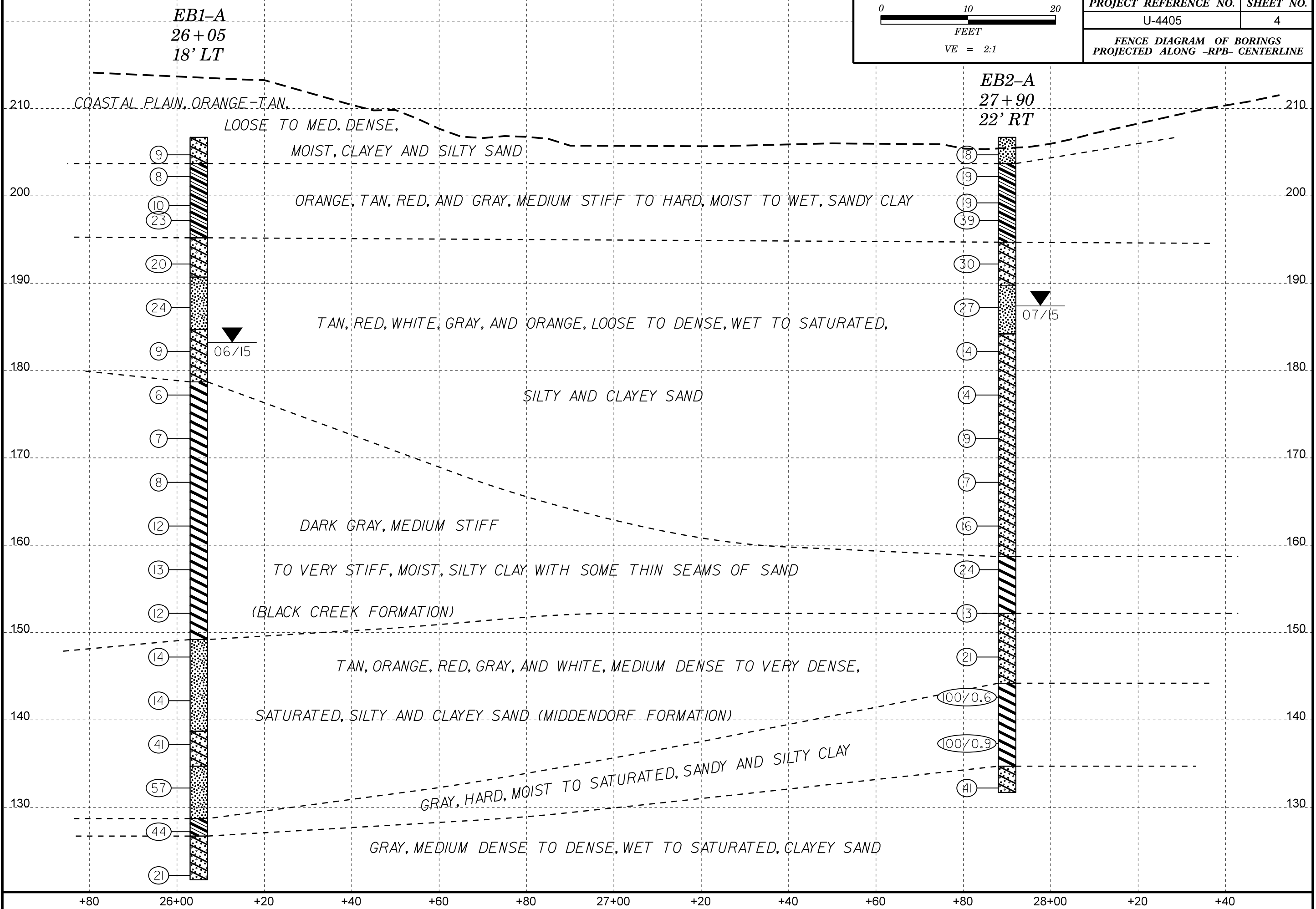
25'

24" C&G

DCT



PROJECT REFERENCE NO.	SHEET NO.
U-4405	4
FENCE DIAGRAM OF BORINGS PROJECTED ALONG -RPB- CENTERLINE	



GEOTECHNICAL BORING REPORT BORE LOG

WBS 39049.1.1	TIP U-4405	COUNTY CUMBERLAND	GEOLOGIST Riggs, A.					
SITE DESCRIPTION BRIDGE NO. 440 ON -RPB- OVER ABERDEEN AND ROCKFISH RAILROAD			GROUND WTR (ft)					
BORING NO. EB1-A	STATION 26+05	OFFSET 18 ft LT	ALIGNMENT -RPB-					
COLLAR ELEV. 206.7 ft	TOTAL DEPTH 85.0 ft	NORTHING 471,807	EASTING 2,017,711					
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 83% 08/07/2014		DRILL METHOD Wash Boring	HAMMER TYPE Automatic					
DRILLER M. Coogan	START DATE 06/30/15	COMP. DATE 06/30/15	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				
210								
							GROUND SURFACE	0.0
							COASTAL PLAIN	
205	205.7	1.0	4 5 4			M	ORANGE-TAN, CLAYEY SAND	3.0
	203.2	3.5	3 3 5			M	ORANGE-TAN, GRAY, AND RED, SANDY CLAY	
200	199.9	6.8	4 5 5			M		
	198.2	8.5	4 9 14			M		
195								
	193.2	13.5	8 12 8			W	TAN AND RED, CLAYEY SAND	11.5
190								
	188.2	18.5	8 11 13			Sat.	TAN AND WHITE, SILTY SAND	16.0
185								
	183.2	23.5	5 4 5			Sat.	TAN, GRAY, AND RED, CLAYEY SAND	22.0
180								
	178.2	28.5	1 3 3			M	DARK GRAY, SILTY CLAY WITH THIN SEAMS OF FINE SAND AND TRACE MICA AND WOOD FRAGMENTS (BLACK CREEK FORMATION)	28.0
175								
	173.2	33.5	3 3 4			M		
170								
	168.2	38.5	3 3 5			M		
165								
	163.2	43.5	4 6 6			M		
160								
	158.2	48.5	4 5 8			M		
155								
	153.2	53.5	4 5 7			M		
150								
	148.2	58.5	6 7 7			Sat.	TAN, ORANGE, AND GRAY, SILTY SAND WITH TRACE CLAY NODULES (MIDDENDORF FORMATION)	57.5
145								
	143.2	63.5	5 7 7			Sat.		
140								
	138.2	68.5	12 15 26			Sat.	DARK GRAY, CLAYEY SAND WITH TRACE MICA	68.0
135								
	133.2	73.5	18 27 30			Sat.	GRAY AND WHITE, SILTY SAND	72.0
130								

NCDOT BORE DOUBLE U4405_GEO_BRDG_BH.GPJ NC_DOT.GDT 11/30/16

WBS 39049.1.1	TIP U-4405	COUNTY CUMBERLAND	GEOLOGIST Riggs, A.					
SITE DESCRIPTION BRIDGE NO. 440 ON -RPB- OVER ABERDEEN AND ROCKFISH RAILROAD			GROUND WTR (ft)					
BORING NO. EB1-A	STATION 26+05	OFFSET 18 ft LT	ALIGNMENT -RPB-					
COLLAR ELEV. 206.7 ft	TOTAL DEPTH 85.0 ft	NORTHING 471,807	EASTING 2,017,711					
DRILL RIG/HAMMER EFF./DATE MID3964 CME-45C 83% 08/07/2014		DRILL METHOD Wash Boring	HAMMER TYPE Automatic					
DRILLER M. Coogan	START DATE 06/30/15	COMP. DATE 06/30/15	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				
130								
	128.2	78.5	19 17 27			W	GRAY AND WHITE, SILTY SAND <i>(continued)</i>	78.0
125								
	126.7						GRAY, SANDY CLAY WITH TRACE MICA	80.0
							GRAY, CLAYEY SAND	
	123.2	83.5	8 11 10			Sat.	Boring Terminated at Elevation 121.7 ft IN COASTAL PLAIN (CLAYEY SAND) (MIDDENDORF FORMATION)	85.0

SITE PHOTOGRAPH

Bridge No. 440 on -RPB- (All American Expressway) over Aberdeen & Rockfish Railroad



Looking West towards Proposed New Location