

REFERENCE: B-5626

PROJECT: 45581

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ONSLow
PROJECT DESCRIPTION BRIDGE NO. 31 ON -L- (NC 50)
OVER SANDY RUN CREEK AT -L- STA. 23+71.5

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STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5626	1	10

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

D.N. ARGENBRIGHT

S.N. ZIMARINO

R.E. SMITH

D.G. PINTER

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE JUNE 2019



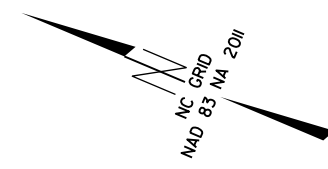
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Tyler Bottoms 9/16/2019
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SIGNATURE DATE

**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

Table with multiple columns: 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, EQUIPMENT USED ON SUBJECT PROJECT, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, FRACTURE SPACING, BEDDING, INDURATION.

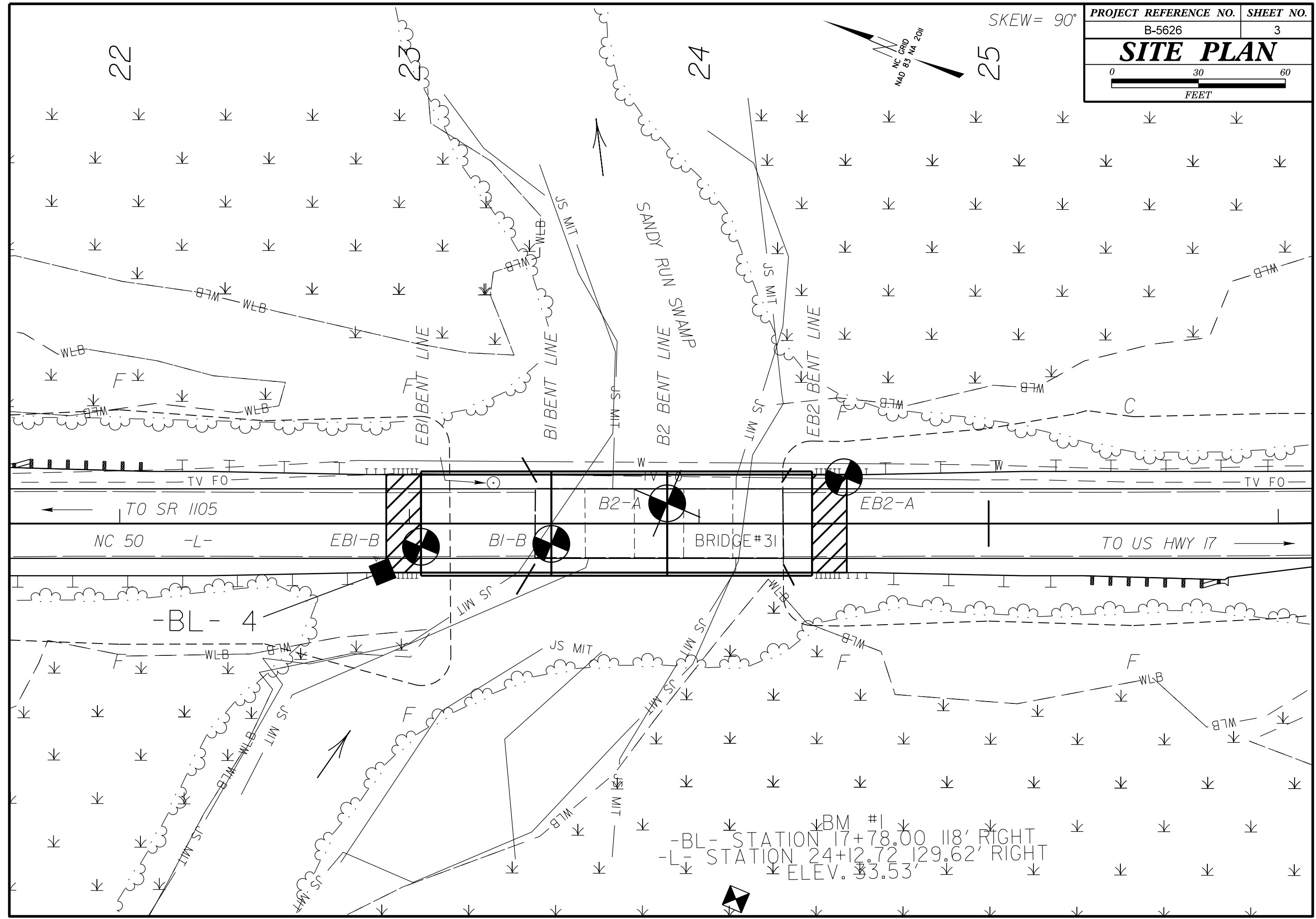
SKREW = 90°



22

24

25



TO SR 1105

NC 50 -L-

EBI-B

BI-B

BRIDGE #31

EB2-A

TO US HWY 17

-BL- 4

-BL- STATION 17+78.00 118' RIGHT
 -L- STATION 24+12.72 129.62' RIGHT
 ELEV. 33.53'

5/14/99

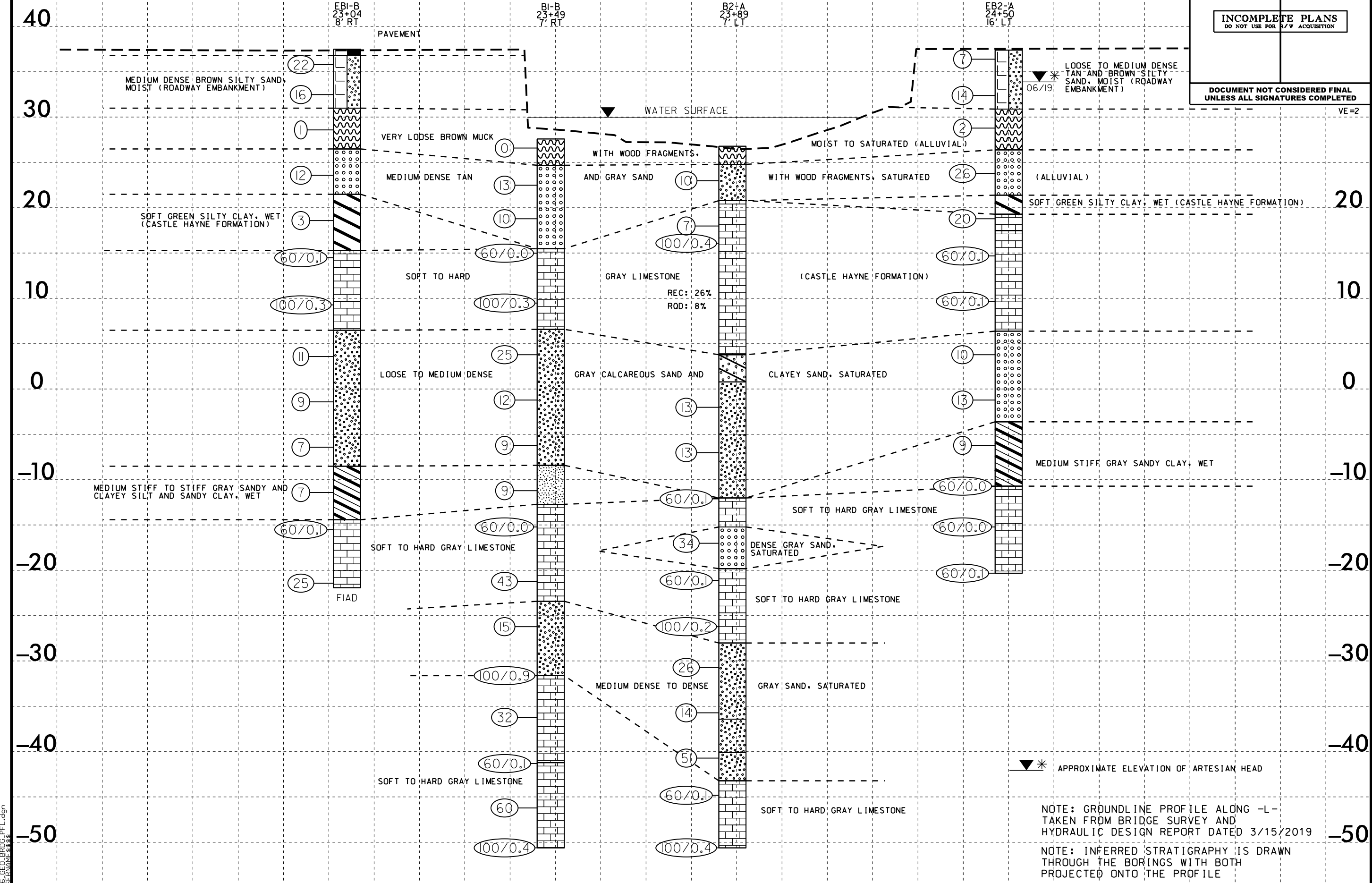
PROFILE THROUGH BORINGS PROJECTED ALONG -L-

PROJECT REFERENCE NO. *B-5626* 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



18-JUN-2019 14:55
 B5626-GEUBRDG-PFL.dgn
 SSS/STR/ANR/S&S

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 3/15/2019
 NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

23 24 25

VE=2

20

10

0

-10

-20

-30

-40

-50

GEOTECHNICAL BORING REPORT

BORE LOG

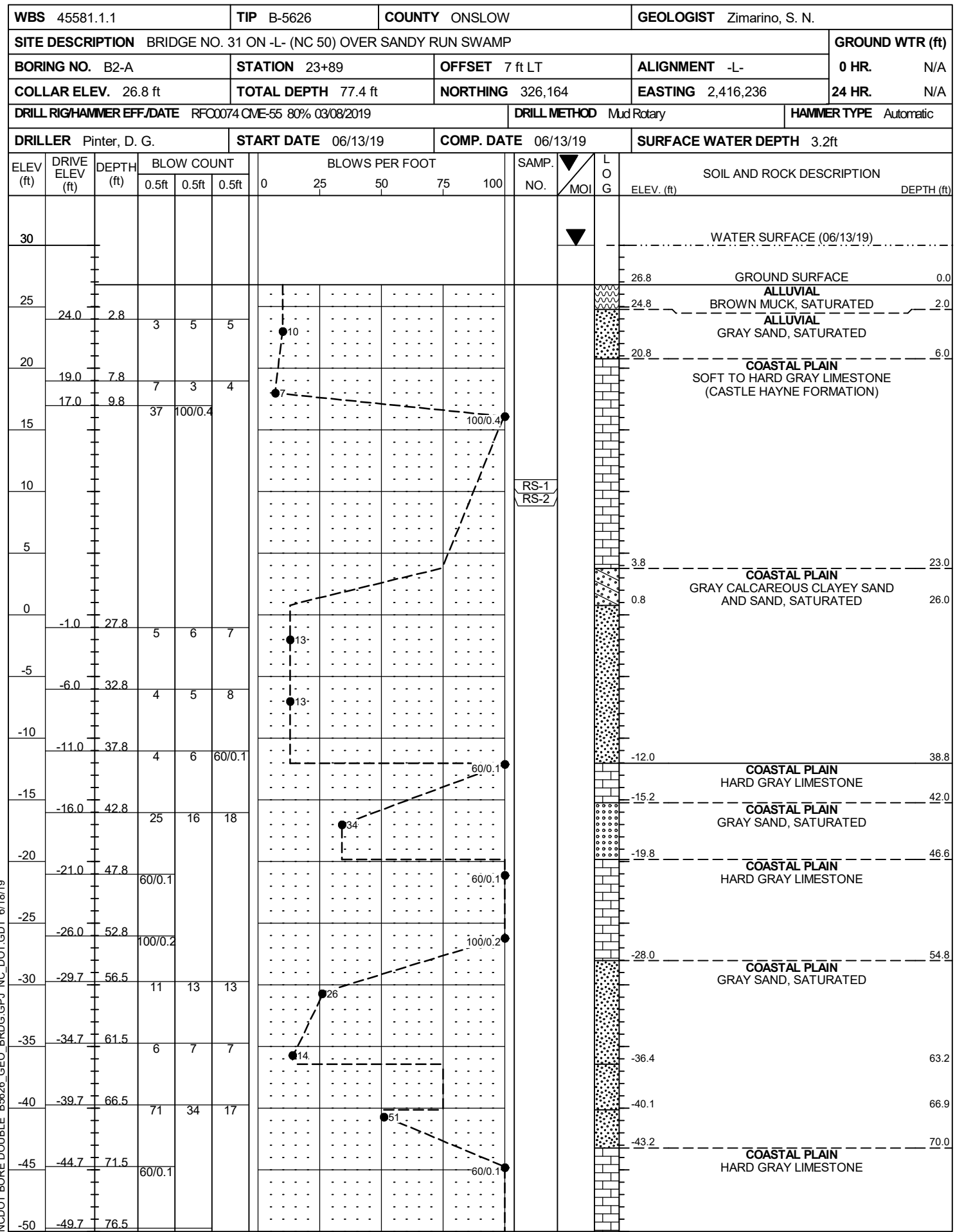
WBS 45581.1.1		TIP B-5626		COUNTY ONSLOW		GEOLOGIST Argenbright, D. N.								
SITE DESCRIPTION BRIDGE NO. 31 ON -L- (NC 50) OVER SANDY RUN SWAMP							GROUND WTR (ft)							
BORING NO. B1-B		STATION 23+49		OFFSET 7 ft RT		ALIGNMENT -L-								
COLLAR ELEV. 27.6 ft		TOTAL DEPTH 78.2 ft		NORTHING 326,196		EASTING 2,416,207								
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic								
DRILLER Smith, R. E.		START DATE 06/11/19		COMP. DATE 06/11/19		SURFACE WATER DEPTH 2.2ft								
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	0.0	1	0	0								WATER SURFACE (06/11/19)	
25	23.5	4.1	5	6	7								GROUND SURFACE	0.0
20	19.8	7.8	3	4	6								ALLUVIAL BROWN MUCK, SATURATED	2.9
15	15.0	12.6	60/0.0										ALLUVIAL TAN SAND WITH WOOD FRAGMENTS, SATURATED	
10	9.8	17.8	100/0.3										COASTAL PLAIN HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)	12.1
5	4.8	22.8	10	14	11								COASTAL PLAIN GRAY SAND, SATURATED	21.0
0	-0.2	27.8	4	5	7								COASTAL PLAIN GRAY SANDY AND CLAYEY SILT, WET	36.0
-5	-5.2	32.8	4	4	5								COASTAL PLAIN SOFT TO HARD GRAY LIMESTONE	40.3
-10	-10.2	37.8	4	4	5								COASTAL PLAIN GRAY SAND, SATURATED	51.0
-15	-15.2	42.8	60/0.0										COASTAL PLAIN SOFT TO HARD GRAY LIMESTONE	59.2
-20	-20.2	47.8	33	26	17									
-25	-25.2	52.8	6	7	8									
-30	-30.2	57.8	6	4	96/0.4									
-35	-35.2	62.8	13	19	13									
-40	-40.2	67.8	10	15	60/0.1									
-45	-45.2	72.8	75	38	22									
-50														

WBS 45581.1.1		TIP B-5626		COUNTY ONSLOW		GEOLOGIST Argenbright, D. N.									
SITE DESCRIPTION BRIDGE NO. 31 ON -L- (NC 50) OVER SANDY RUN SWAMP							GROUND WTR (ft)								
BORING NO. B1-B		STATION 23+49		OFFSET 7 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 27.6 ft		TOTAL DEPTH 78.2 ft		NORTHING 326,196		EASTING 2,416,207									
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018			DRILL METHOD Mud Rotary			HAMMER TYPE Automatic									
DRILLER Smith, R. E.		START DATE 06/11/19		COMP. DATE 06/11/19		SURFACE WATER DEPTH 2.2ft									
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					
-50	-50.2	77.8	100/0.4										Match Line		
														Boring Terminated at Elevation -50.6 ft in Limestone	78.2

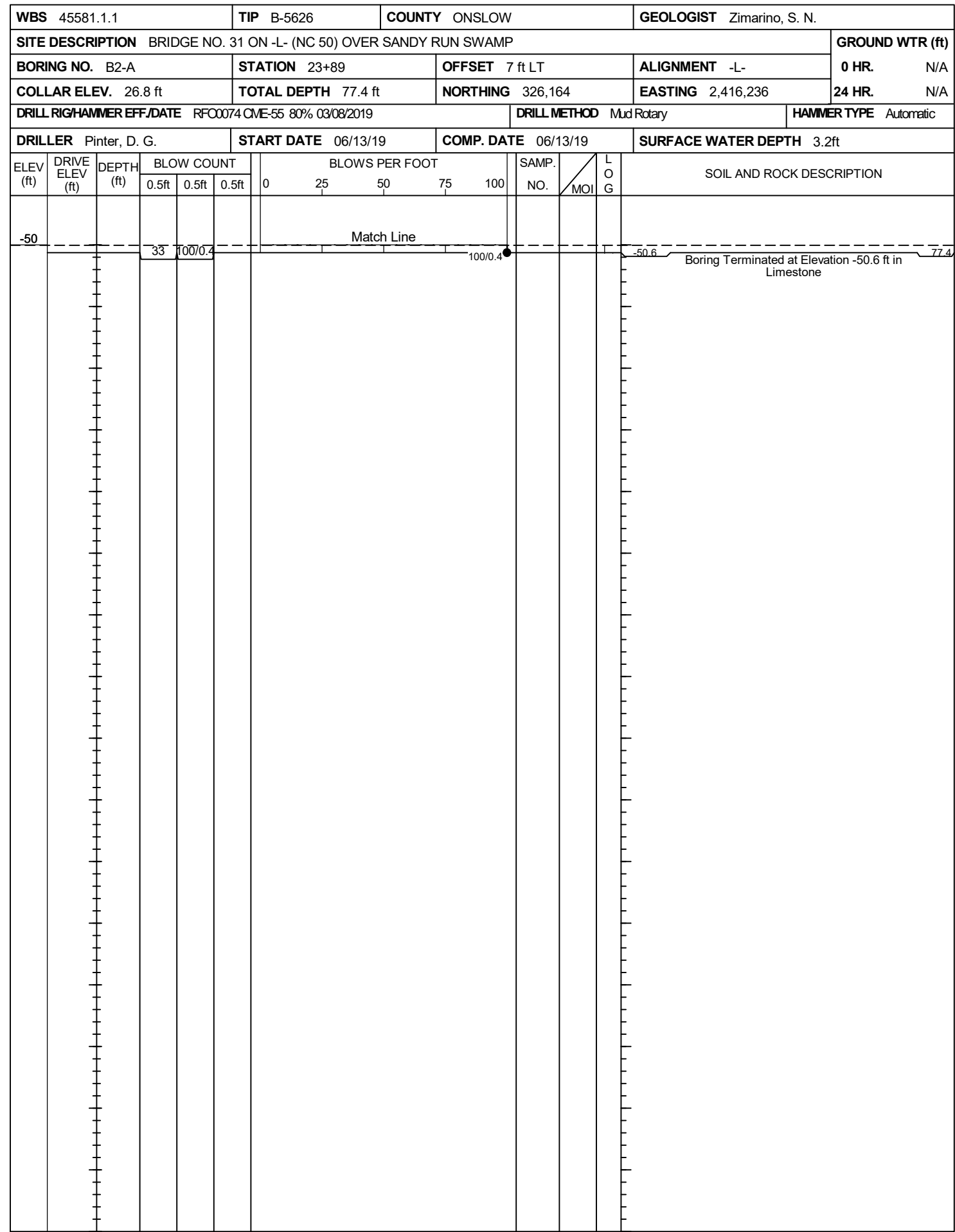
NCDOT BORE DOUBLE B5626_GEO_BRDG.GPJ NC_DOT.GDT 6/18/19

GEOTECHNICAL BORING REPORT

BORE LOG



NCDOT BORE DOUBLE B5626_GEO_BRDG.GPJ NC_DOT.GDT 6/18/19



GEOTECHNICAL BORING REPORT

CORE LOG

WBS 45581.1.1		TIP B-5626		COUNTY ONSLOW		GEOLOGIST Zimarino, S. N.						
SITE DESCRIPTION BRIDGE NO. 31 ON -L- (NC 50) OVER SANDY RUN SWAMP							GROUND WTR (ft)					
BORING NO. B2-A		STATION 23+89		OFFSET 7 ft LT		ALIGNMENT -L-						
COLLAR ELEV. 26.8 ft		TOTAL DEPTH 77.4 ft		NORTHING 326,164		EASTING 2,416,236						
DRILL RIGHAMMER EFF./DATE RFC0074 CME-55 80% 03/08/2019				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic						
DRILLER Pinter, D. G.		START DATE 06/13/19		COMP. DATE 06/13/19		SURFACE WATER DEPTH 3.2ft						
CORE SIZE NW		TOTAL RUN 13.9 ft										
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
20.79											Begin Coring @ 6.0 ft	
20								(4.5) 26%	(1.4) 8%		COASTAL PLAIN	6.0
											SOFT TO HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)	
15	15.9	10.9	3.9	N=7 N=100/0.4	00:05/1.0 00:09/1.0 00:17/1.0 00:44/0.9	(0.3) 8%	(0.0) 0%					
10	12.0	14.8	5.0		00:08/1.0 01:51/1.0 03:06/1.0 00:44/1.0 00:17/1.0	(2.6) 52%	(1.5) 30%					
5	7.0	19.8	5.0		00:27/1.0 00:07/1.0 00:44/1.0 00:06/1.0 00:03/1.0	(1.6) 32%	(0.4) 8%					
0	2.0	24.8									COASTAL PLAIN	23.0
											GRAY CALCAREOUS CLAYEY SAND AND SAND, SATURATED	26.0
-5				N=13								
-10				N=13								
-15				N=60/0.1								
											COASTAL PLAIN	38.8
											HARD GRAY LIMESTONE	
-20				N=34							COASTAL PLAIN	42.0
											GRAY SAND, SATURATED	
-25				N=60/0.1							COASTAL PLAIN	46.6
											HARD GRAY LIMESTONE	
-30				N=100/0.2							COASTAL PLAIN	54.8
											GRAY SAND, SATURATED	
-35				N=26								
-40				N=14								
-45				N=51								
-50				N=60/0.1							COASTAL PLAIN	70.0
											HARD GRAY LIMESTONE	
				N=100/0.4								
											Boring Terminated at Elevation -50.6 ft in Limestone	77.4

NCDOT CORE DOUBLE B5626_GEO_BRDG.GPJ NC_DOT.GDT 6/18/19

GEOTECHNICAL BORING REPORT BORE LOG

WBS 45581.1.1	TIP B-5626	COUNTY ONSLOW	GEOLOGIST Zimarino, S. N.
SITE DESCRIPTION BRIDGE NO. 31 ON -L- (NC 50) OVER SANDY RUN SWAMP			
BORING NO. EB2-A	STATION 24+50	OFFSET 16 ft LT	ALIGNMENT -L-
COLLAR ELEV. 37.4 ft	TOTAL DEPTH 57.7 ft	NORTHING 326,111	EASTING 2,416,268
DRILL RIGHAMMER EFF./DATE GFO075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Smith, R. E.		START DATE 06/12/19	COMP. DATE 06/12/19
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					ELEV. (ft)
40															
	37.4	0.0	2	3	4									37.4	0.0
	33.4	4.0	5	8	6										
	29.8	7.6	WOH	1	1									30.9	6.5
	24.8	12.6	10	14	12									26.4	11.0
	19.8	17.6	5	12	8									21.4	16.0
	14.8	22.6	60/0.1											19.3	18.1
														17.5	19.9
	9.8	27.6	60/0.1												
	4.8	32.6	6	4	6									6.4	31.0
	-0.2	37.6	5	5	8										
	-5.2	42.6	4	4	5									-3.6	41.0
	-10.2	47.6	3	60/0.0										-10.7	48.1
	-15.2	52.6	60/0.0												
	-20.2	57.6	60/0.1											-20.3	57.7
Boring Terminated at Elevation -20.3 ft in Limestone															
APPROXIMATE ELEVATION OF ARTESIAN HEAD: 33.9'															

NCDOT BORE DOUBLE B5626_GEO_BRDG.GPJ NC_DOT.GDT 6/18/19

CORE PHOTOGRAPH
B2-A
10.9' TO 24.8'

