

REFERENCE: SF-060159

PROJECT: 17BP.2.R.86

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-060159	1	8

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-8	BORE LOGS

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY BEAUFORT
PROJECT DESCRIPTION BRIDGE NO. 159 ON -L-
(SR 1611) OVER PUNGO SWAMP AT STA. 17+36

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

D.N. ARGENBRIGHT

C.J. CORNETTE

S.N. ZIMARINO

R.E. SMITH

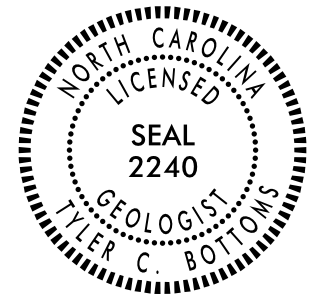
INVESTIGATED BY T.C. BOTTOMS

DRAWN BY S.N. ZIMARINO

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE JANUARY 2018



DocuSigned by:

Tyler Bottoms

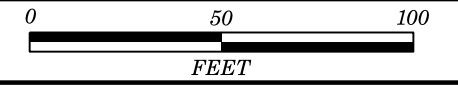
3/13/2019

48A2D3BD08CF4A6...
SIGNATURE

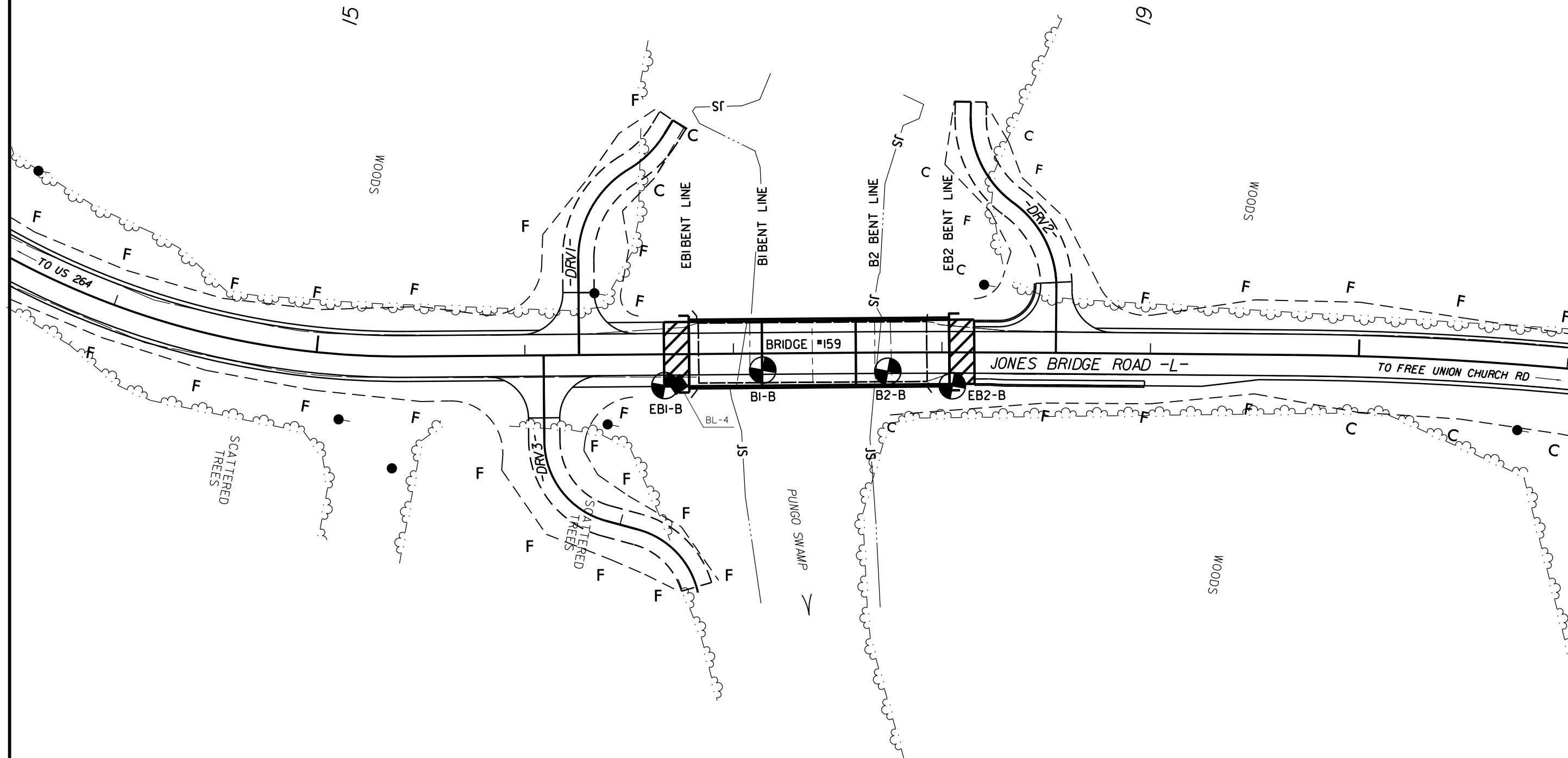
DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

SITE PLAN



SKREW: 90°

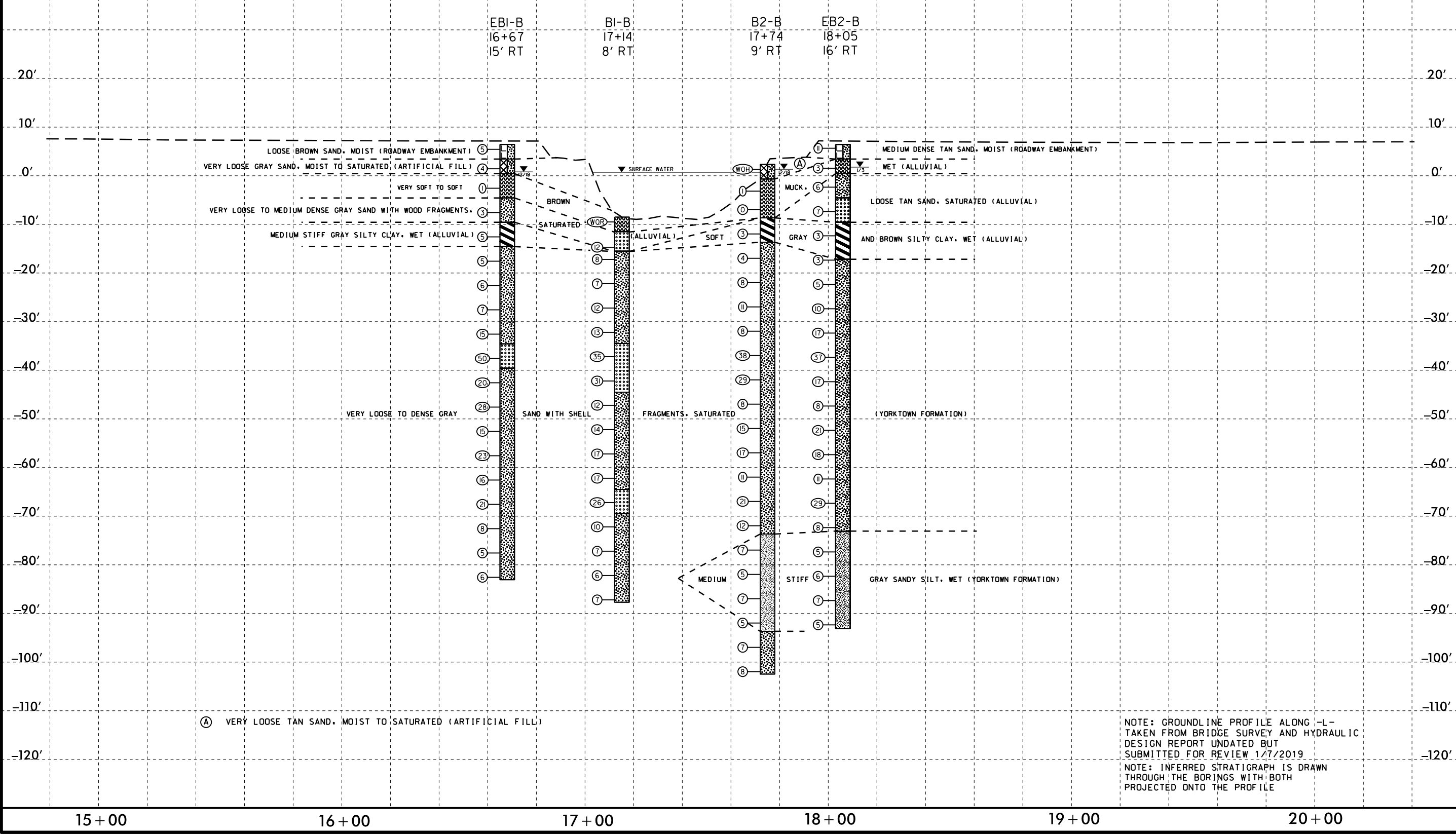


5/14/99
09-JAN-2019 13:18
S:\ERU\Greenville_Investigation\TIP\SF060159_GEO_BRD00159\CADD_GEO\TECH\Plan\Prof\SF060159_GEO_BRD00159_PFL.dgn

PROJECT REFERENCE NO. <i>SF-060159</i>	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	

PROFILE THROUGH BORINGS PROJECTED ALONG -L-

VE: 2



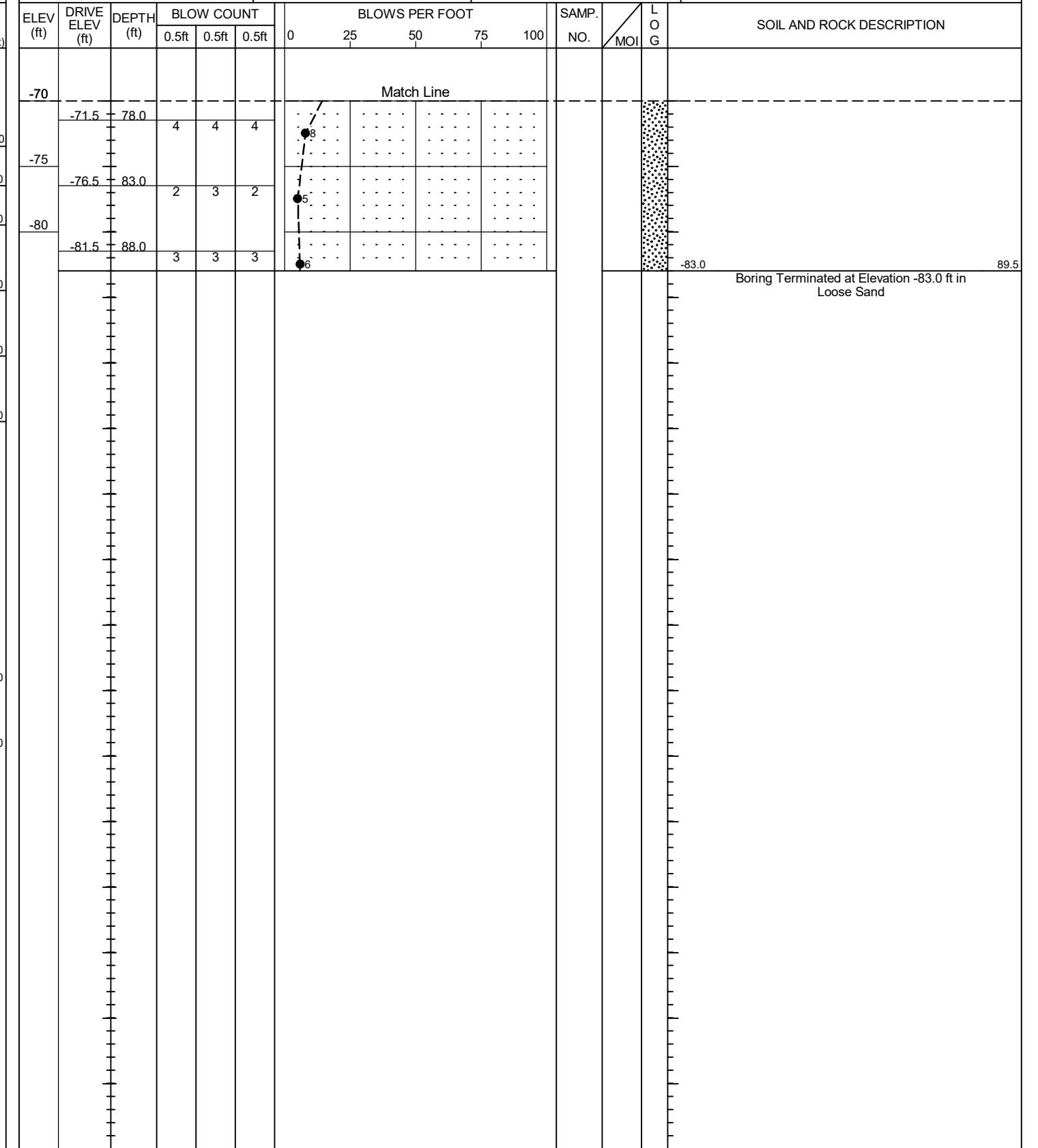
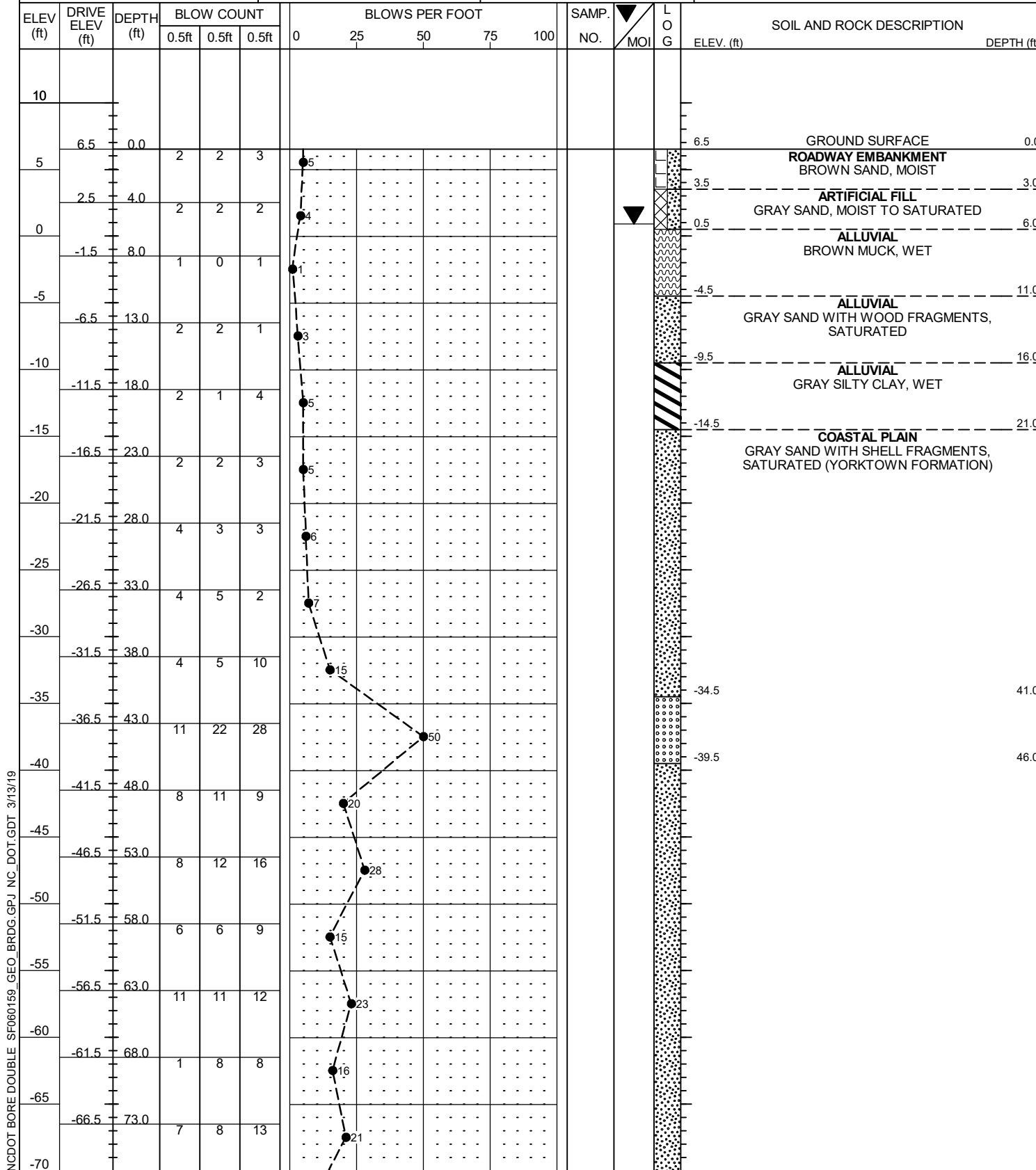
NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT UNDATED BUT SUBMITTED FOR REVIEW 1/7/2019
NOTE: INFERRED STRATIGRAPH IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.2.R.86	TIP SF-060159	COUNTY BEAUFORT	GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36				GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+67	OFFSET 15 ft RT	ALIGNMENT -L-	0 HR. N/A
COLLAR ELEV. 6.5 ft	TOTAL DEPTH 89.5 ft	NORTHING 657,383	EASTING 2,662,159	24 HR. 5.6
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic	
DRILLER Smith, R. E.	START DATE 12/18/18	COMP. DATE 12/18/18	SURFACE WATER DEPTH N/A	

WBS 17BP.2.R.86	TIP SF-060159	COUNTY BEAUFORT	GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36				GROUND WTR (ft)
BORING NO. EB1-B	STATION 16+67	OFFSET 15 ft RT	ALIGNMENT -L-	0 HR. N/A
COLLAR ELEV. 6.5 ft	TOTAL DEPTH 89.5 ft	NORTHING 657,383	EASTING 2,662,159	24 HR. 5.6
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic	
DRILLER Smith, R. E.	START DATE 12/18/18	COMP. DATE 12/18/18	SURFACE WATER DEPTH N/A	



NCDOT BORE DOUBLE SF060159_GEO_BRDG.GPJ_NC_DOT.GDT 3/13/19

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.2.R.86	TIP SF-060159	COUNTY BEAUFORT	GEOLOGIST Zimarino, S. N.		
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36					
BORING NO. B1-B	STATION 17+14	OFFSET 8 ft RT	ALIGNMENT -L-	GROUND WTR (ft)	
COLLAR ELEV. -8.5 ft	TOTAL DEPTH 79.2 ft	NORTHING 657,519	EASTING 2,662,134	0 HR. N/A	24 HR. N/A
DRILL RIGHAMMER EFF/DATE GFC0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic	
DRILLER Smith, R. E.		START DATE 12/13/18	COMP. DATE 12/13/18	SURFACE WATER DEPTH 9.3ft	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
25																
20																
15																
10																
5																
0																
-5																
-8.5	0.0															
-10			WOR	WOR	WOR											
-13.7	5.2															
-16.2	7.7		4	7	5											
-20			1	3	5											
-21.2	12.7		4	3	4											
-25			5	7	5											
-26.2	17.7															
-30			5	6	7											
-31.2	22.7															
-35			14	17	18											
-36.2	27.7															
-40			13	16	15											
-41.2	32.7															
-45			3	4	8											
-46.2	37.7															
-50			6	5	9											
-51.2	42.7															
-55																

WBS 17BP.2.R.86	TIP SF-060159	COUNTY BEAUFORT	GEOLOGIST Zimarino, S. N.		
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36					
BORING NO. B1-B	STATION 17+14	OFFSET 8 ft RT	ALIGNMENT -L-	GROUND WTR (ft)	
COLLAR ELEV. -8.5 ft	TOTAL DEPTH 79.2 ft	NORTHING 657,519	EASTING 2,662,134	0 HR. N/A	24 HR. N/A
DRILL RIGHAMMER EFF/DATE GFC0075 CME-45C 89% 08/13/2018		DRILL METHOD Mud Rotary		HAMMER TYPE Automatic	
DRILLER Smith, R. E.		START DATE 12/13/18	COMP. DATE 12/13/18	SURFACE WATER DEPTH 9.3ft	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-55																
-56.2	47.7		6	6	11											
-60			5	6	11											
-61.2	52.7															
-65			8	10	16											
-66.2	57.7															
-70			3	4	6											
-71.2	62.7															
-75			2	3	4											
-76.2	67.7															
-80			2	3	3											
-81.2	72.7															
-85			3	3	4											
-86.2	77.7															

Match Line

NCDOT BORE DOUBLE SF060159 GEO BRDG.GPJ NC_DOT.GDT 3/13/19

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.2.R.86		TIP SF-060159		COUNTY BEAUFORT		GEOLOGIST Argenbright, D. N.										
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36							GROUND WTR (ft)									
BORING NO. B2-B		STATION 17+74		OFFSET 9 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 2.4 ft		TOTAL DEPTH 104.8 ft		NORTHING 657,489		EASTING 2,662,133										
DRILL RIG/HAMMER EFF./DATE GFC0075 CME-45C 89%/08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 12/17/18		COMP. DATE 12/17/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
5	2.4	0.0														
0	-2.1	4.5	WOH	WOH	WOH											
-5	-5.9	8.3	1	0	0											
-10	-10.9	13.3	1	1	2											
-15	-15.9	18.3	3	2	2											
-20	-20.9	23.3	4	4	4											
-25	-25.9	28.3	7	6	5											
-30	-30.9	33.3	4	3	5											
-35	-35.9	38.3	13	19	19											
-40	-40.9	43.3	10	12	17											
-45	-45.9	48.3	4	3	5											
-50	-50.9	53.3	6	7	8											
-55	-55.9	58.3	5	6	11											
-60	-60.9	63.3	4	4	7											
-65	-65.9	68.3	6	7	14											
-70	-70.9	73.3	3	5	7											
-75																

WBS 17BP.2.R.86		TIP SF-060159		COUNTY BEAUFORT		GEOLOGIST Argenbright, D. N.										
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36							GROUND WTR (ft)									
BORING NO. B2-B		STATION 17+74		OFFSET 9 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 2.4 ft		TOTAL DEPTH 104.8 ft		NORTHING 657,489		EASTING 2,662,133										
DRILL RIG/HAMMER EFF./DATE GFC0075 CME-45C 89%/08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 12/17/18		COMP. DATE 12/17/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
-75	-75.9	78.3	2	4	3											
-80	-80.9	83.3	3	3	2											
-85	-85.9	88.3	2	3	4											
-90	-90.9	93.3	2	2	3											
-95	-95.9	98.3	3	3	4											
-100	-100.9	103.3	6	4	4											

NCDOT BORE DOUBLE SF060159 GEO BRDG.GPJ NC_DOT.GDT 3/13/19

**GEOTECHNICAL BORING REPORT
BORE LOG**

WBS 17BP.2.R.86		TIP SF-060159		COUNTY BEAUFORT		GEOLOGIST Cornette, C. J.											
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36							GROUND WTR (ft)										
BORING NO. EB2-B		STATION 18+05		OFFSET 16 ft RT		ALIGNMENT -L-											
COLLAR ELEV. 6.5 ft		TOTAL DEPTH 99.5 ft		NORTHING 657,428		EASTING 2,662,143											
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Smith, R. E.		START DATE 12/19/18		COMP. DATE 01/02/19		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							
10																	
5	6.5	0.0	3	5	6									6.5	GROUND SURFACE	0.0	
														3.5	ROADWAY EMBANKMENT TAN SAND, MOIST	3.0	
0	2.4	4.1	2	1	2									0.5	ALLUVIAL BROWN MUCK, MOIST TO WET	6.0	
-5	-1.6	8.0	1	3	3										ALLUVIAL TAN SAND, SATURATED		
-10	-6.6	13.0	3	2	5									-4.6		11.0	
-15	-11.6	18.0	1	1	2									-9.6	ALLUVIAL BROWN AND GRAY SILTY CLAY, WET	16.0	
-20	-16.6	23.0	WOH	1	2									-17.2		23.6	
															COASTAL PLAIN GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)		
-25	-21.6	28.0	1	2	3												
-30	-26.6	33.0	5	6	4												
-35	-31.6	38.0	10	9	8												
-40	-36.6	43.0	10	19	18												
-45	-41.6	48.0	9	10	7												
-50	-46.6	53.0	2	4	4												
-55	-51.6	58.0	4	10	11												
-60	-56.6	63.0	8	8	10												
-65	-61.6	68.0	4	4	7												
-70	-66.6	73.0	5	12	17												

WBS 17BP.2.R.86		TIP SF-060159		COUNTY BEAUFORT		GEOLOGIST Cornette, C. J.										
SITE DESCRIPTION BRIDGE NO. 159 ON -L- (SR 1611) OVER PUNGO SWAMP AT STA. 17+36							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 18+05		OFFSET 16 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 6.5 ft		TOTAL DEPTH 99.5 ft		NORTHING 657,428		EASTING 2,662,143										
DRILL RIGHAMMER EFF./DATE GFC0075 CME-45C 89% 08/13/2018				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Smith, R. E.		START DATE 12/19/18		COMP. DATE 01/02/19		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						
-70																
	-71.6	78.0	3	4	4										Match Line	
-75	-76.6	83.0	2	2	3									-74.6	COASTAL PLAIN GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION) <i>(continued)</i>	81.0
-80	-81.6	88.0	2	3	3										COASTAL PLAIN GRAY SANDY SILT, WET (YORKTOWN FORMATION)	
-85	-86.6	93.0	2	3	4											
-90	-91.6	98.0	2	2	3											
														-93.1	Boring Terminated at Elevation -93.1 ft in Medium Stiff Silt	99.5

NCDOT BORE DOUBLE SF060159 GEO BRDG.GPJ NC_DOT.GDT 3/13/19