

PROJECT: 17BP.1.R.76 REFERENCE: SF-360020

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4	PROFILE
5-6	BORE LOGS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY GATES
 PROJECT DESCRIPTION BRIDGE NO. 20 ON -L- (SR 1308)
OVER GOODMAN SWAMP

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-360020	1	6

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

C.J. CORNETTE

S.N. ZIMARINO

R.E. SMITH

J.M. EDMONDSON

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY T.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE OCTOBER 2017

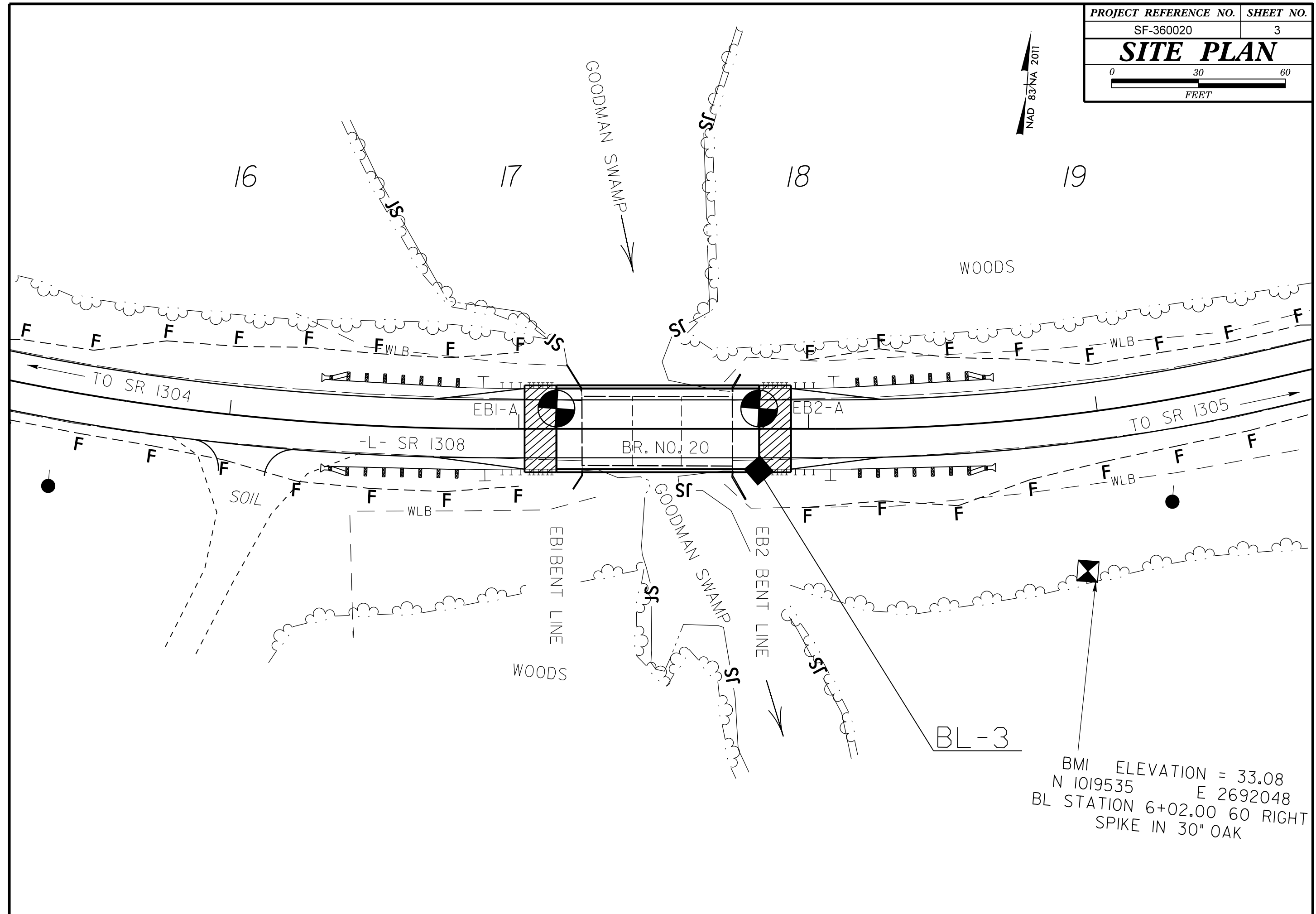


DocuSigned by:
Tyler Bottoms 10/17/2017
 48A2D3BD08CF4A6... DATE

**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

Main technical table containing sections: SOIL DESCRIPTION, SOIL LEGEND AND AASHTO CLASSIFICATION, GRADATION, MINERALOGICAL COMPOSITION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, CONSISTENCY OR DENSENESS, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, ROCK HARDNESS, FRACTURE SPACING, BEDDING, and INDURATION.

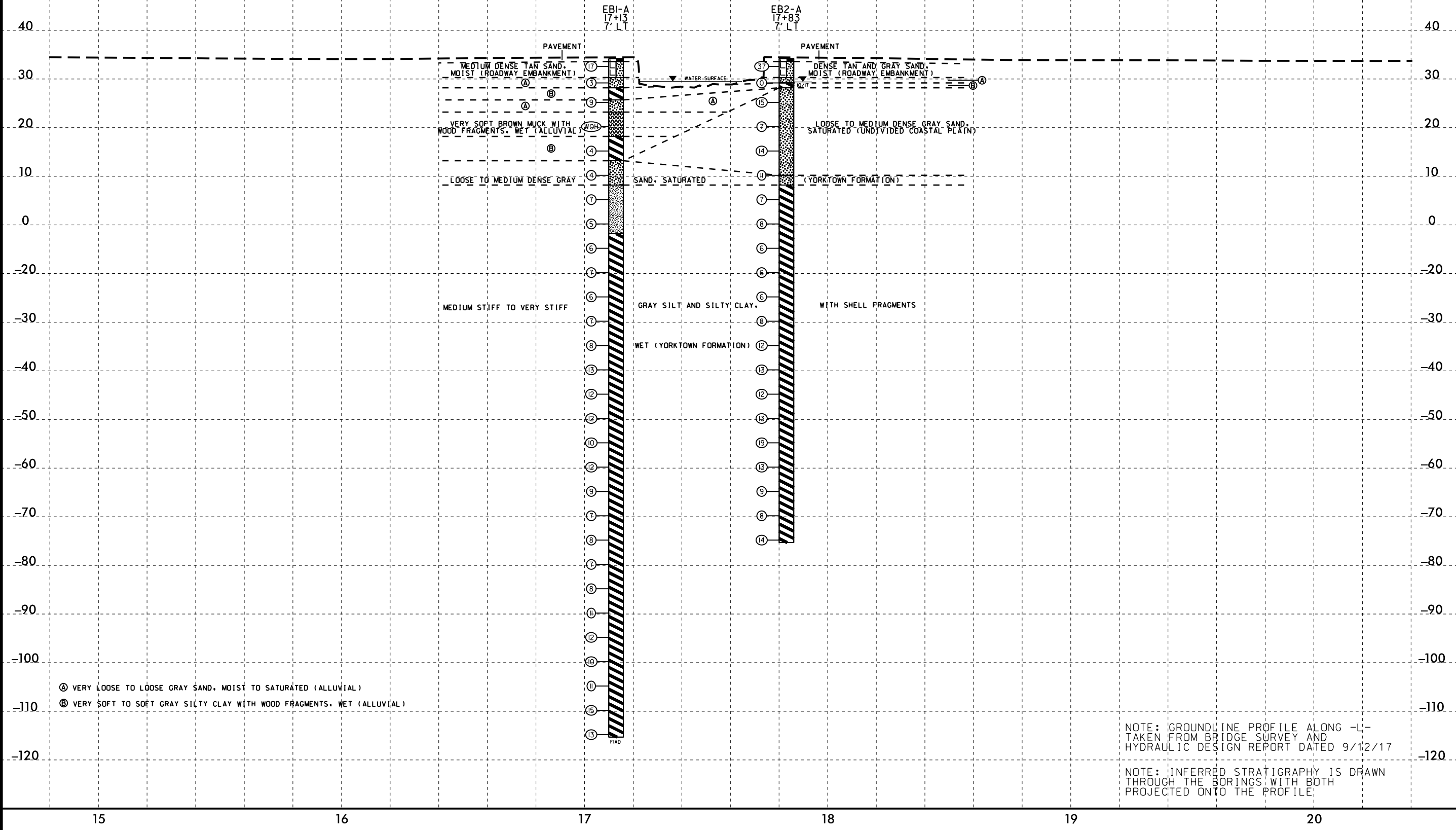


5/14/99

PROJECT REFERENCE NO. SF-360020	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 DATED 9/12/17

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE

17-OCT-2017 11:43 S:\ER\Greenville_Investigation\TIP_SF360020_GEO_BRDG_0020\CADD_GEO\TECHN\Plan\Prof\360020_rdy.pfl.dgn

GEOTECHNICAL BORING REPORT BORE LOG

WBS 17BP.1.R.86		TIP SF-360020		COUNTY GATES		GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 20 ON -L- (SR 1308) OVER GOODMAN SWAMP							GROUND WTR (ft)
BORING NO. EB1-A		STATION 17+13		OFFSET 7 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 34.2 ft		TOTAL DEPTH 139.5 ft		NORTHING 1,019,577		EASTING 2,691,860	
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 85% 07/12/2016			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Edmondson, J. M.		START DATE 10/10/17		COMP. DATE 10/10/17		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
35															34.2
	33.6	0.6	13	8	9										35.6
30	30.2	4.0	1	2	1										30.3
	26.2	8.0	1	3	6										28.2
25															25.7
	21.2	13.0	WOH	WOH	WOH										23.2
20															18.2
	16.2	18.0	2	1	3										13.2
15															8.2
	11.2	23.0	1	2	2										-1.8
10															
	6.2	28.0	3	3	4										
5															
	1.2	33.0	2	2	3										
0															
	-3.8	38.0	2	3	3										
-5															
	-8.8	43.0	2	3	4										
-10															
	-13.8	48.0	2	3	3										
-15															
	-18.8	53.0	3	3	4										
-20															
	-23.8	58.0	3	3	5										
-25															
	-28.8	63.0	3	6	7										
-30															
	-33.8	68.0	3	5	7										
-35															
	-38.8	73.0	3	5	7										
-40															
	-43.8	78.0	3	4	6										
-45															

WBS 17BP.1.R.86		TIP SF-360020		COUNTY GATES		GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 20 ON -L- (SR 1308) OVER GOODMAN SWAMP							GROUND WTR (ft)
BORING NO. EB1-A		STATION 17+13		OFFSET 7 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 34.2 ft		TOTAL DEPTH 139.5 ft		NORTHING 1,019,577		EASTING 2,691,860	
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 85% 07/12/2016			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic		
DRILLER Edmondson, J. M.		START DATE 10/10/17		COMP. DATE 10/10/17		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
-45															Match Line
	-48.8	83.0	2	4	8										
-50															
	-53.8	88.0	2	4	5										
-55															
	-58.8	93.0	2	2	5										
-60															
	-63.8	98.0	2	4	4										
-65															
	-68.8	103.0	2	3	4										
-70															
	-73.8	108.0	1	3	5										
-75															
	-78.8	113.0	2	4	7										
-80															
	-83.8	118.0	3	5	7										
-85															
	-88.8	123.0	2	4	6										
-90															
	-93.8	128.0	3	3	8										
-95															
	-98.8	133.0	3	5	10										
-100															
	-103.8	138.0	3	6	7										
-105															

COASTAL PLAIN
GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION) (continued)

Boring Terminated at Elevation -105.3 ft in Stiff Silty Clay

NCDOT BORE DOUBLE SF360020.GPJ_NC_DOT.GDT 10/17/17

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 17BP.1.R.86		TIP SF-360020	COUNTY GATES	GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 20 ON -L- (SR 1308) OVER GOODMAN SWAMP					GROUND WTR (ft)
BORING NO. EB2-A	STATION 17+83	OFFSET 7 ft LT	ALIGNMENT -L-	0 HR.	N/A
COLLAR ELEV. 34.2 ft	TOTAL DEPTH 99.5 ft	NORTHING 1,019,582	EASTING 2,691,930	24 HR.	4.8
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 85% 07/12/2016		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic		
DRILLER Edmondson, J. M.		START DATE 10/09/17	COMP. DATE 10/09/17	SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
35	33.6	0.6	15	24	13											
30	30.2	4.0	1	0	0											
25	26.2	8.0	3	8	7											
20	21.2	13.0	2	3	4											
15	16.2	18.0	7	6	8											
10	11.2	23.0	10	7	4											
5	6.2	28.0	3	3	4											
0	1.2	33.0	2	4	4											
-5	-3.8	38.0	2	3	3											
-10	-8.8	43.0	2	3	3											
-15	-13.8	48.0	3	3	3											
-20	-18.8	53.0	2	4	4											
-25	-23.8	58.0	4	6	6											
-30	-28.8	63.0	3	6	7											
-35	-33.8	68.0	4	5	7											
-40	-38.8	73.0	4	6	7											
-45	-43.8	78.0	7	8	11											

WBS 17BP.1.R.86		TIP SF-360020	COUNTY GATES	GEOLOGIST Zimarino, S. N.	
SITE DESCRIPTION BRIDGE NO. 20 ON -L- (SR 1308) OVER GOODMAN SWAMP					GROUND WTR (ft)
BORING NO. EB2-A	STATION 17+83	OFFSET 7 ft LT	ALIGNMENT -L-	0 HR.	N/A
COLLAR ELEV. 34.2 ft	TOTAL DEPTH 99.5 ft	NORTHING 1,019,582	EASTING 2,691,930	24 HR.	4.8
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 85% 07/12/2016		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic		
DRILLER Edmondson, J. M.		START DATE 10/09/17	COMP. DATE 10/09/17	SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100								
-45								Match Line										
-50	-48.8	83.0	3	6	7													
-55	-53.8	88.0	2	3	6													
-60	-58.8	93.0	3	3	5													
-65	-63.8	98.0	3	5	9													

GROUND SURFACE 34.2

PAVEMENT 33.6

ROADWAY EMBANKMENT 30.3

TAN AND GRAY SAND, MOIST 29.2

UNDIVIDED COASTAL PLAIN 28.2

GRAY SAND, MOIST TO SATURATED 26.2

UNDIVIDED COASTAL PLAIN 24.0

GRAY SAND, SATURATED (YORKTOWN FORMATION) 26.0

UNDIVIDED COASTAL PLAIN 24.0

GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

NCDOT BORE DOUBLE SF360020.GPJ_NC_DOT.GDT 10/17/17