

PROJECT: 38443 REFERENCE: B-4626

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4-5	CROSS SECTION(S)
6-7	BORE LOG(S)
8	SITE PHOTOGRAPHS)

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROWAN
 SITE DESCRIPTION BRIDGE NO. 3 ON NC 849 OVER
YADKIN RIVER AND WINSTON-SALEM
SOUTHBOUND RAILROAD

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4626	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

J.K. STICKNEY

C.L. SMITH

INVESTIGATED BY J.K. STICKNEY

DRAWN BY T.T. WALKER

CHECKED BY J.E. BEVERLY ^{DS} Feb

SUBMITTED BY K.B. MILLER

DATE APRIL 2019



Signed by:

[Signature]

957A789A ED 704CB

SIGNATURE

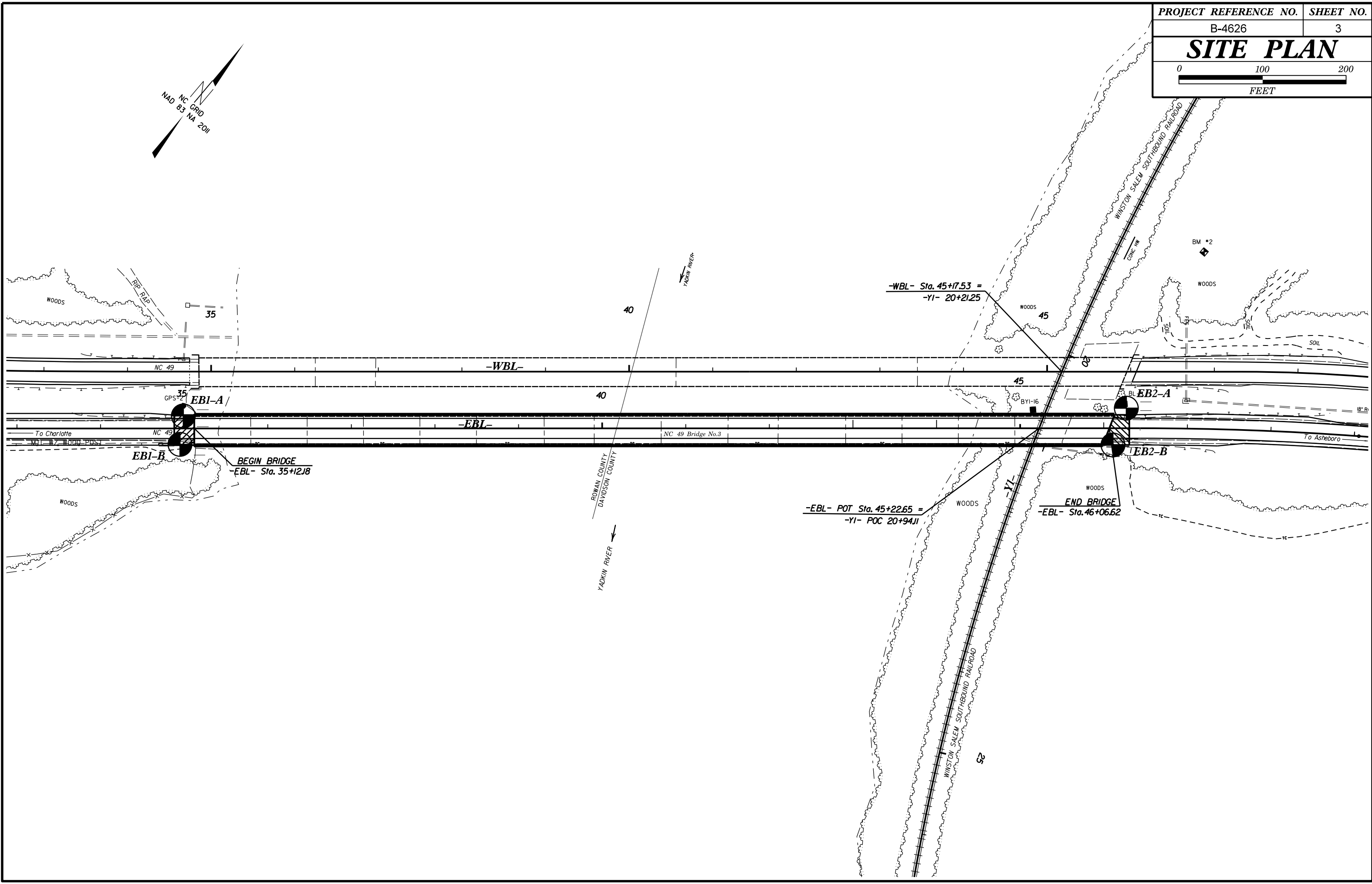
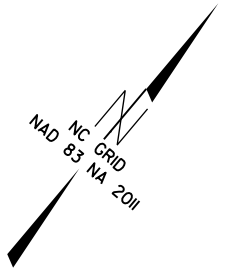
DATE

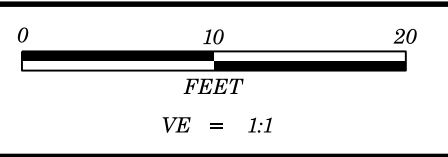
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION

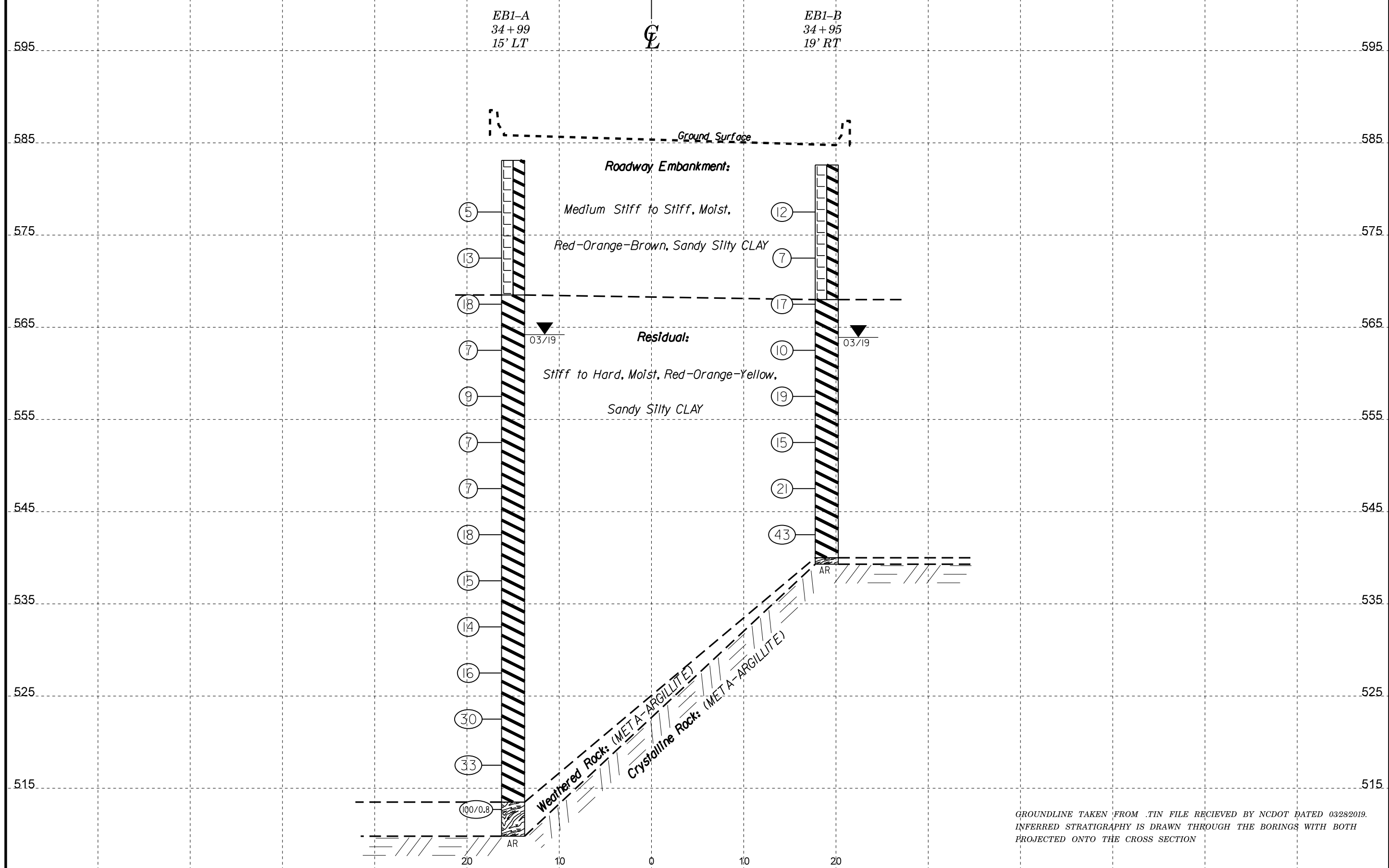
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

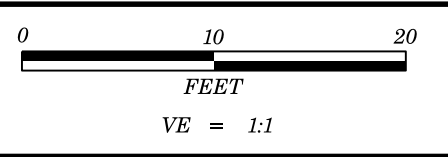
Main content table containing sections: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, CONSISTENCY OR DENSITY, TEXTURE OR GRAIN SIZE, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, and EQUIPMENT USED ON SUBJECT PROJECT.



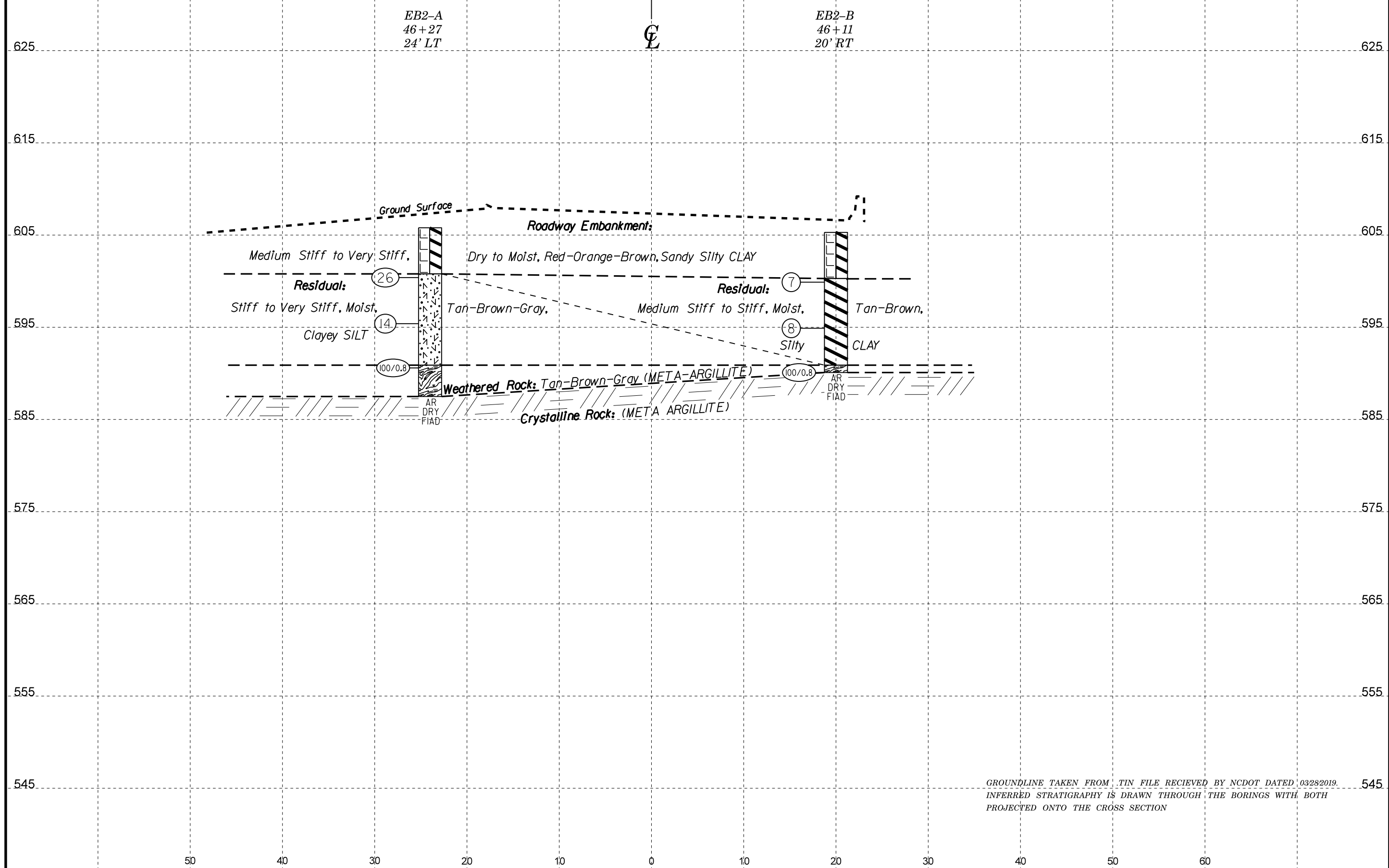


PROJECT REFERENCE NO.	SHEET NO.
B-4626	4
CROSS SECTION THROUGH END BENT 1	
AT -EBL- STATION 35+12.18	
SKEW=90°	





PROJECT REFERENCE NO.	SHEET NO.
B-4626	5
CROSS SECTION THROUGH END BENT 2	
AT -EBL- STATION 46+06.02	
SKEW=68.9°	



GROUNDLINE TAKEN FROM .TIN FILE RECEIVED BY NCDOT DATED 03/28/2019.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH
 PROJECTED ONTO THE CROSS SECTION

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 38443.1.FS2		TIP B-4626		COUNTY ROWAN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 3 NC 8/49 over Yadkin River and Winston-Salem Southbound Railroad							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 34+99		OFFSET 15 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 583.1 ft		TOTAL DEPTH 73.3 ft		NORTHING 640,815		EASTING 1,647,256										
DRILL RIG/HAMMER EFF./DATE HFC0070 CME-550X 81% 06/04/2018			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 03/11/19		COMP. DATE 03/11/19		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						
585														583.1	GROUND SURFACE	0.0
580	578.5	4.6	2	2	3								M	ROADWAY EMBANKMENT Red-Brown, Sandy Silty CLAY		
575	573.5	9.6	3	5	8								M			
570	568.5	14.6	5	8	10								M			
565	563.5	19.6	3	3	4								M	RESIDUAL Red-Orange-Yellow, Sandy Silty CLAY	14.6	
560	558.5	24.6	2	4	5								M			
555	553.5	29.6	2	3	4								M			
550	548.5	34.6	2	3	4								M			
545	543.5	39.6	3	8	10								M			
540	538.5	44.6	3	5	10								M			
535	533.5	49.6	3	6	8								M			
530	528.5	54.6	5	7	9								M			
525	523.5	59.6	6	11	19								M			
520	518.5	64.6	11	16	17								M			
515	513.5	69.6	36	64/0.3									M			
510														513.5	WEATHERED ROCK Brown-Gray (META-ARGILLITE)	69.6
														509.8	Boring Terminated by Auger Refusal at Elevation 509.8 ft on Non-Crystalline Rock (META-ARGILLITE)	73.3

NCDOT BORE DOUBLE B4626_GEO_BH_BRDG0003.GPJ NC_DOT_GDT_4/23/19

WBS 38443.1.FS2		TIP B-4626		COUNTY ROWAN		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 3 NC 8/49 over Yadkin River and Winston-Salem Southbound Railroad							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 34+95		OFFSET 19 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 582.6 ft		TOTAL DEPTH 43.3 ft		NORTHING 640,787		EASTING 1,647,276										
DRILL RIG/HAMMER EFF./DATE HFC0070 CME-550X 81% 06/04/2018			DRILL METHOD H.S. Augers			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 03/11/19		COMP. DATE 03/11/19		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						
585														582.6	GROUND SURFACE	0.0
580	578.5	4.1	3	5	7								M	ROADWAY EMBANKMENT Red-Orange-Brown, Sandy Silty CLAY		
575	573.5	9.1	3	3	4								M			
570	568.5	14.1	3	7	10								M			
565	563.5	19.1	3	3	7								M	RESIDUAL Red-Orange-Yellow, Sandy Silty CLAY	14.6	
560	558.5	24.1	7	9	10								M			
555	553.5	29.1	5	6	9								M			
550	548.5	34.1	5	8	13								M			
545	543.5	39.1	12	15	28								M			
540														540.0	WEATHERED ROCK Brown-Gray (META-ARGILLITE)	42.6
														539.3	Boring Terminated by Auger Refusal at Elevation 539.3 ft on Non-Crystalline Rock (META-ARGILLITE)	43.3

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 38443.1.FS2		TIP B-4626		COUNTY ROWAN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 3 NC 8/49 over Yadkin River and Winston-Salem Southbound Railroad							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 46+27		OFFSET 24 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 605.7 ft		TOTAL DEPTH 18.3 ft		NORTHING 641,549		EASTING 1,648,113									
DRILL RIG/HAMMER EFF./DATE HFC0070 CME-550X 81% 06/04/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C. L.		START DATE 03/12/19		COMP. DATE 03/12/19		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					
610															
605														605.7	0.0
600	601.3	4.4	16	14	12									600.7	5.0
595	596.3	9.4	4	6	8										
590	591.3	14.4	18	82/0.3										590.8	14.9
														587.4	18.3

WBS 38443.1.FS2		TIP B-4626		COUNTY ROWAN		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION Bridge No. 3 NC 8/49 over Yadkin River and Winston-Salem Southbound Railroad							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 46+11		OFFSET 20 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 605.2 ft		TOTAL DEPTH 15.2 ft		NORTHING 641,505		EASTING 1,648,129									
DRILL RIG/HAMMER EFF./DATE HFC0070 CME-550X 81% 06/04/2018				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C. L.		START DATE 03/12/19		COMP. DATE 03/12/19		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					
610															
605														605.2	0.0
600	600.8	4.4	2	3	4									600.2	5.0
595	595.8	9.4	4	3	5										
590	590.8	14.4	19	81/0.4										590.8	14.4
														590.0	15.2

NCDOT BORE DOUBLE B4626_GEO_BH_BRDG0003.GPJ NC_DOT_GDT 4/23/19

BRIDGE NO. 3 on NC 8/49 over Yadkin River and Winston Salem Southbound Railroad

Site Photographs



Photograph No. 1: Looking at End Bent 1 toward End Bent 2



Photograph No. 2: Looking at End Bent 1 to End Bent 2