

REFERENCE: B-5769

PROJECT: 45725

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY ROWAN
PROJECT DESCRIPTION BRIDGE NO. 200 ON SR 2539
(PEACH ORCHARD RD.) OVER TOWN CREEK

CONTENTS

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5769	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 1991 T07-6850. 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

J.K. STICKNEY

C.L. SMITH

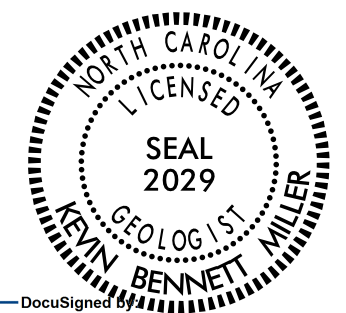
INVESTIGATED BY J.K. STICKNEY

DRAWN BY T.T. WALKER, F&R Inc.

CHECKED BY K.B. MILLER

SUBMITTED BY K.B. MILLER

DATE June 2017



DocuSigned by

[Signature]

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6/7/2017

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

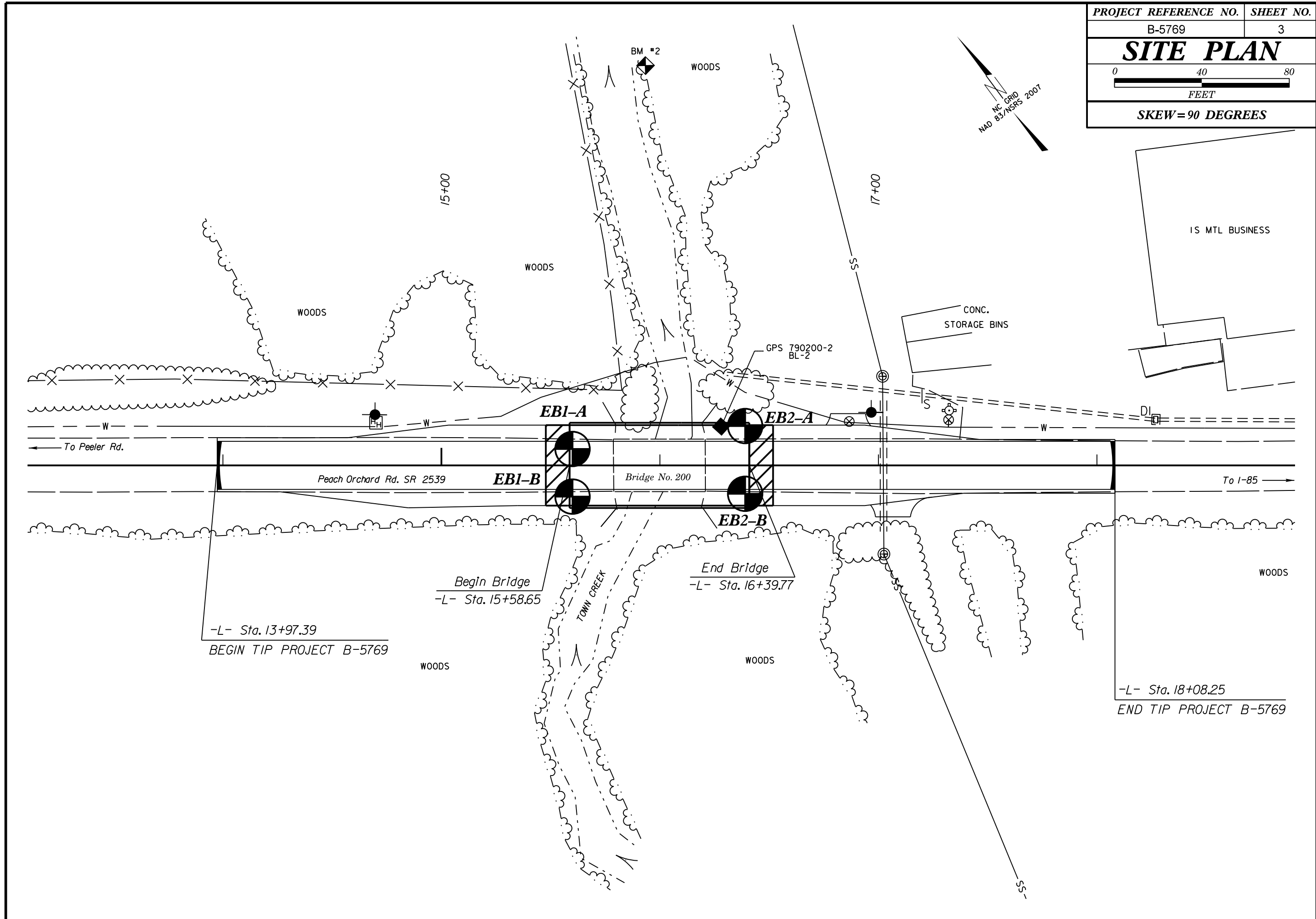
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

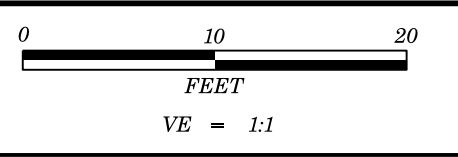
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

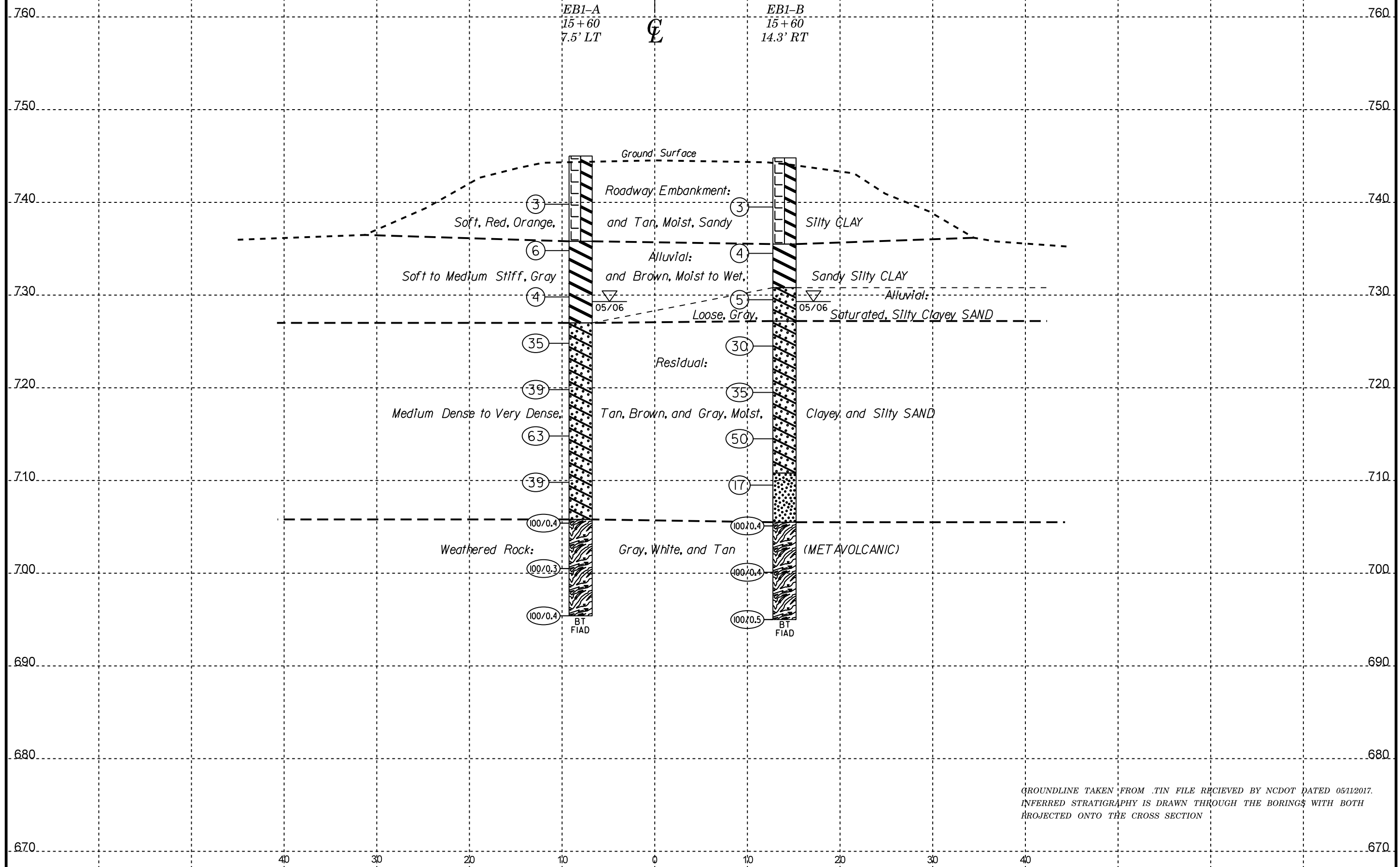
Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical specifications, classification charts, and symbols for soil and rock analysis.

PROJECT REFERENCE NO.	SHEET NO.
B-5769	3
SITE PLAN	
SKEW = 90 DEGREES	

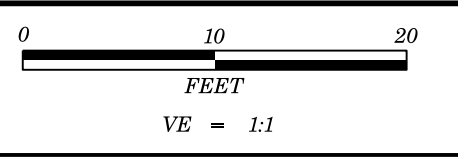




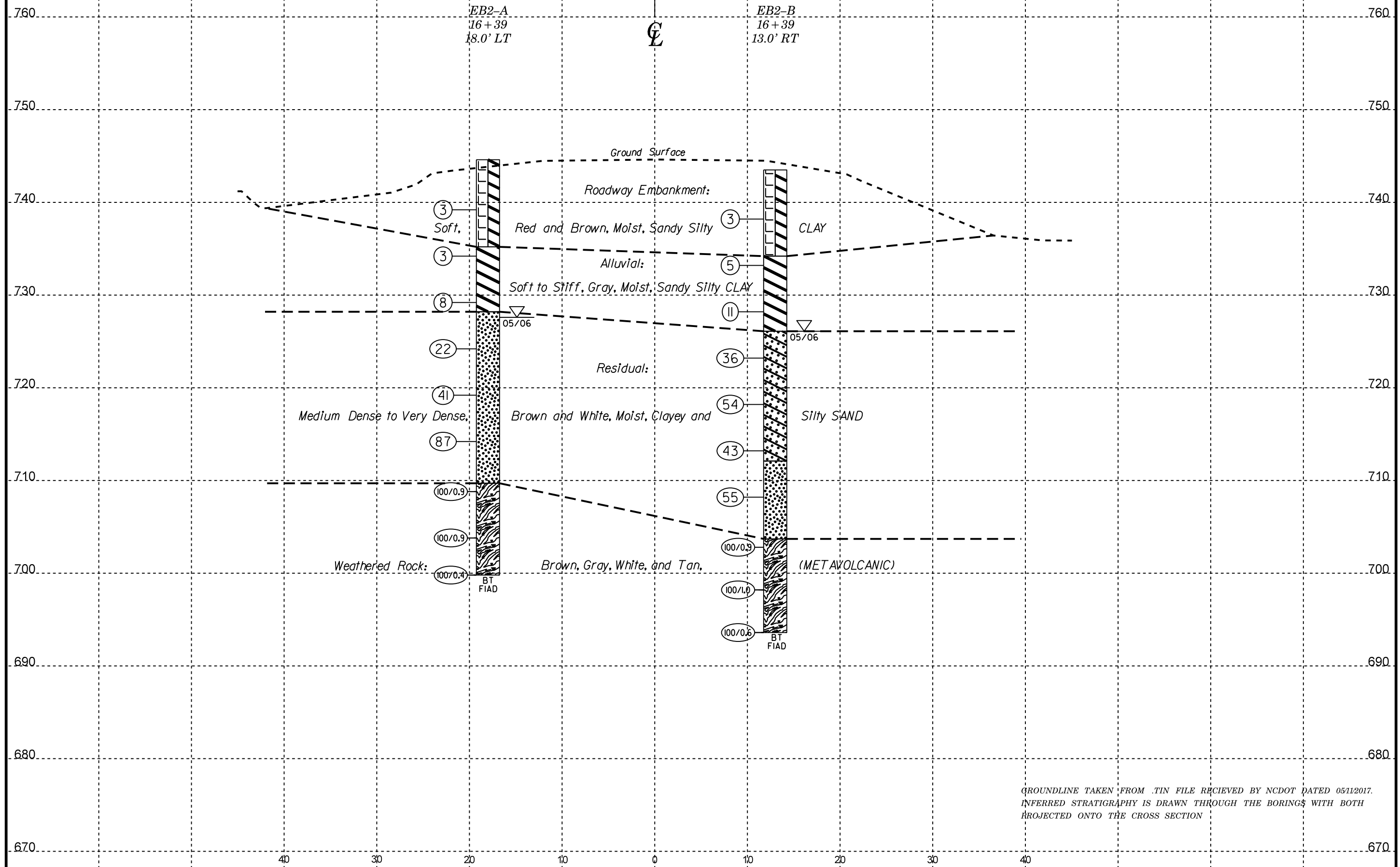
PROJECT REFERENCE NO.	SHEET NO.
B-5769	4
CROSS SECTION THROUGH END BENT 1	
AT -L- STATION 15+58.65	
SKEW=90°	



GROUNDLINE TAKEN FROM .TIN FILE RECEIVED BY NCDOT DATED 05/11/2017.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH
 PROJECTED ONTO THE CROSS SECTION



PROJECT REFERENCE NO.	SHEET NO.
B-5769	5
CROSS SECTION THROUGH END BENT 2	
AT -L- STATION 16+40.90	
SKEW=90°	



GROUNDLINE TAKEN FROM .TIN FILE RECEIVED BY NCDOT DATED 05/11/2017.
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH
 PROJECTED ONTO THE CROSS SECTION

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 45725.1.1		TIP B-5769		COUNTY ROWAN			GEOLOGIST Stickney, J. K.								
SITE DESCRIPTION Bridge No. 200 SR 2539 (Peach Orchard Rd.) over Town Creek							GROUND WTR (ft)								
BORING NO. EB1-A		STATION 15+60		OFFSET 8 ft LT		ALIGNMENT -L-		0 HR. 15.7							
COLLAR ELEV. 745.0 ft		TOTAL DEPTH 49.6 ft		NORTHING 685,206		EASTING 1,549,633		24 HR. FIAD							
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016				DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic								
DRILLER Smith, C. L.		START DATE 05/02/17		COMP. DATE 05/02/17		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 ELEV. (ft) DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
745															745.0 GROUND SURFACE ROADWAY EMBANKMENT Red, Orange, and Tan, Silty CLAY
740	740.8	4.2	1	1	2								M		
735	735.8	9.2	3	3	3								M	735.8 ALLUVIAL Gray, Silty CLAY	
730	730.8	14.2	2	2	2								M	727.0 RESIDUAL Tan, Brown, and Gray, Clayey SAND	
725	725.8	19.2	10	12	23								M		
720	720.8	24.2	13	18	21								M		
715	715.8	29.2	27	34	29								M		
710	710.8	34.2	15	18	21								M		
705	705.8	39.2	100/0.4										M	705.8 WEATHERED ROCK Gray, White, and Tan (METAVOLCANIC)	
700	700.8	44.2	100/0.3										M		
	695.8	49.2	100/0.4											695.4 Boring Terminated at Elevation 695.4 ft in Weathered Rock (METAVOLCANIC)	

NCDOT BORE DOUBLE B-5769_GEO_BH_BRD0200.GPJ NC_DOT_GDT 6/2/17

WBS 45725.1.1		TIP B-5769		COUNTY ROWAN			GEOLOGIST Stickney, J. K.								
SITE DESCRIPTION Bridge No. 200 SR 2539 (Peach Orchard Rd.) over Town Creek							GROUND WTR (ft)								
BORING NO. EB1-B		STATION 15+60		OFFSET 14 ft RT		ALIGNMENT -L-		0 HR. 15.5							
COLLAR ELEV. 744.8 ft		TOTAL DEPTH 49.8 ft		NORTHING 685,188		EASTING 1,549,620		24 HR. FIAD							
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016				DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic								
DRILLER Smith, C. L.		START DATE 05/01/17		COMP. DATE 05/01/17		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 ELEV. (ft) DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
745															744.8 GROUND SURFACE ROADWAY EMBANKMENT Red and Orange, Silty CLAY
740	740.5	4.3	WOH	1	2								M		
735	735.5	9.3	WOH	2	2								M	735.5 ALLUVIAL Brown and Gray, Silty CLAY	
730	730.5	14.3		1	2	3							M	730.8 ALLUVIAL Gray, Silty Clayey SAND	
725	725.5	19.3		6	13	17							M	727.2 RESIDUAL Tan, Brown, and Gray, Clayey and Silty SAND	
720	720.5	24.3		17	15	20							M		
715	715.5	29.3		25	25	25							M		
710	710.5	34.3		7	7	10							M		
705	705.5	39.3	100/0.4										M	705.5 WEATHERED ROCK Tan, Gray, and White (METAVOLCANIC)	
700	700.5	44.3	100/0.4										M		
	695.5	49.3	100/0.5											695.0 Boring Terminated at Elevation 695.0 ft in Weathered Rock (METAVOLCANIC)	

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 45725.1.1		TIP B-5769		COUNTY ROWAN		GEOLOGIST Stickney, J. K.	
SITE DESCRIPTION Bridge No. 200 SR 2539 (Peach Orchard Rd.) over Town Creek							GROUND WTR (ft)
BORING NO. EB2-A		STATION 16+39		OFFSET 18 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 744.6 ft		TOTAL DEPTH 44.8 ft		NORTHING 685,167		EASTING 1,549,703	
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic	
DRILLER Smith, C. L.		START DATE 05/02/17		COMP. DATE 05/02/17		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
745														744.6	0.0
GROUND SURFACE ROADWAY EMBANKMENT Red and Brown, Sandy Silty CLAY															
740	740.2	4.4												740.0	
ROADWAY EMBANKMENT Red and Brown, Sandy Silty CLAY															
735	735.2	9.4	1	1	2									735.2	9.4
ALLUVIAL Gray, Sandy Silty CLAY															
730	730.2	14.4	2	3	5									728.2	16.4
RESIDUAL Brown and White, Clayey and Silty SAND															
725	725.2	19.4	8	10	12									725.2	
720	720.2	24.4	9	19	22									720.2	
715	715.2	29.4	16	31	56									715.2	
710	710.2	34.4	24	43	57/0.4									710.2	
705	705.2	39.4	25	31	69/0.4									705.2	
700	700.2	44.4												700.2	
WEATHERED ROCK Brown, Gray, and White (METAVOLCANIC)															
														709.7	34.9
Boring Terminated at Elevation 699.8 ft in Weathered Rock (METAVOLCANIC)															
														699.8	44.8

WBS 45725.1.1		TIP B-5769		COUNTY ROWAN		GEOLOGIST Stickney, J. K.	
SITE DESCRIPTION Bridge No. 200 SR 2539 (Peach Orchard Rd.) over Town Creek							GROUND WTR (ft)
BORING NO. EB2-B		STATION 16+39		OFFSET 13 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 743.5 ft		TOTAL DEPTH 49.9 ft		NORTHING 685,142		EASTING 1,549,685	
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016			DRILL METHOD NW Casing w/ SPT			HAMMER TYPE Automatic	
DRILLER Smith, C. L.		START DATE 05/01/17		COMP. DATE 05/01/17		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	ELEV. (ft)	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
745														743.5	0.0
GROUND SURFACE ROADWAY EMBANKMENT Red and Brown, Sandy Silty CLAY															
740	739.2	4.3												740.0	
ROADWAY EMBANKMENT Red and Brown, Sandy Silty CLAY															
735	734.2	9.3	1	2	3									734.2	9.3
ALLUVIAL Gray, Sandy Silty CLAY															
730	729.2	14.3	1	4	7									729.2	
725	724.2	19.3	13	16	20									726.1	17.4
RESIDUAL Brown and White, Clayey and Silty SAND															
720	719.2	24.3	12	24	30									720.0	
715	714.2	29.3	12	18	25									715.0	
710	709.2	34.3	25	19	36									710.0	
705	704.2	39.3	43	54	46/0.4									705.0	
700	699.2	44.3	39	61/0.5										700.0	
695	694.2	49.3	52	48/0.1										695.0	
WEATHERED ROCK Gray, White, and Tan (METAVOLCANIC)															
														703.7	39.8
Boring Terminated at Elevation 693.6 ft in Weathered Rock (METAVOLCANIC)															
														693.6	49.9

NCDOT BORE DOUBLE B-5769_GEO_BH_BRDG0200.GPJ NC_DOT.GDT 6/2/17

SITE PHOTOGRAPHS



Photograph No. 1: At End Bent 2 looking towards End Bent 1



Photograph No. 2: Looking Downstream