

REFERENCE: B-5391

PROJECT: 46106

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY ALEXANDER  
 SITE DESCRIPTION BRIDGE NO. 139 ON SR 1609 OVER  
GLADE CREEK

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5391	1	9

**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

M.R. MOORE

INVESTIGATED BY J.K. STICKNEY

DRAWN BY T.T. WALKER

CHECKED BY J.E. BEVERLY

SUBMITTED BY K.B. MILLER

DATE SEPTEMBER 2016



DocuSigned by

*[Signature]*

957A789AED704CB...

9/27/2016

SIGNATURE

DATE

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

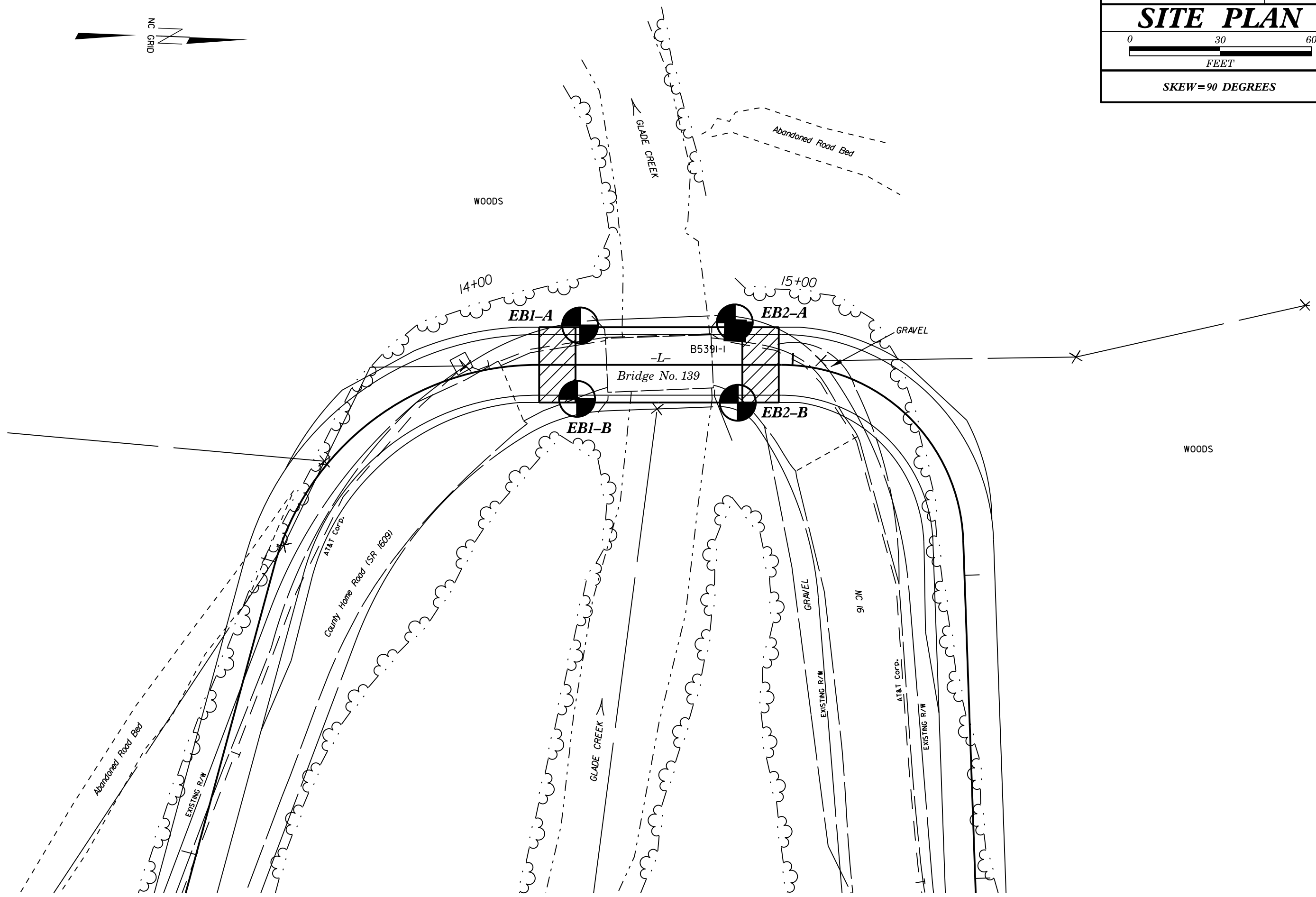
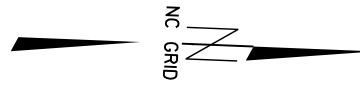
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

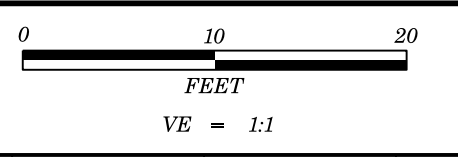
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

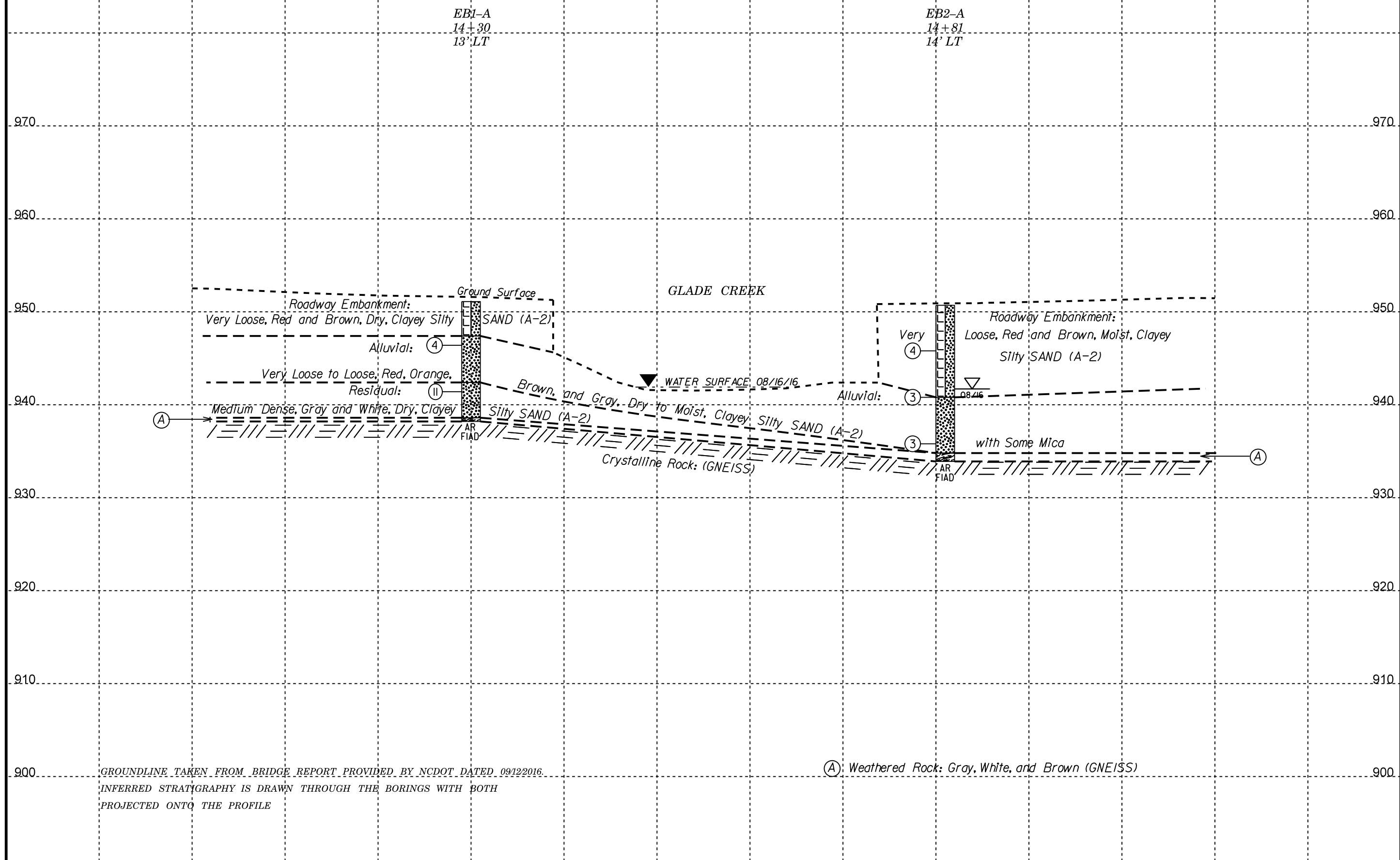
Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical specifications, classification charts, and symbols for soil and rock analysis.

PROJECT REFERENCE NO.	SHEET NO.
B-5391	3
<b>SITE PLAN</b>	
 0                      30                      60 FEET	
SKEW=90 DEGREES	





<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
B-5391	4
<b>PROFILE BORINGS PROJECTED ALONG -L-</b>	



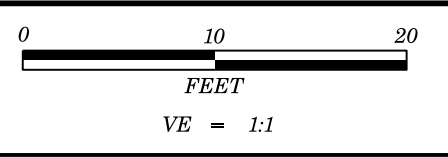
GROUNDLINE TAKEN FROM BRIDGE REPORT PROVIDED BY NCDOT DATED 09/12/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH  
 PROJECTED ONTO THE PROFILE

Ⓐ: Weathered Rock: Gray, White, and Brown (GNEISS)

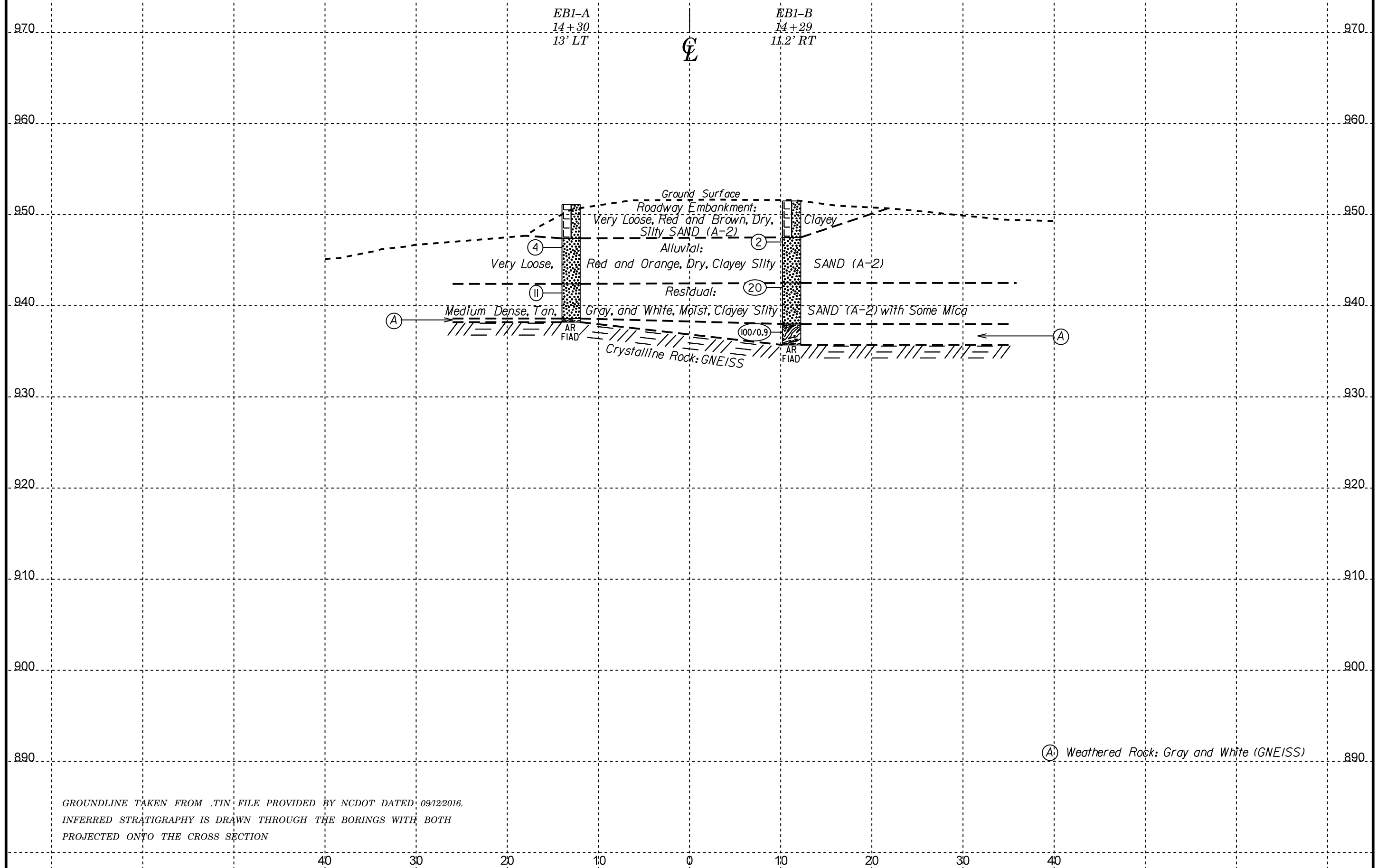
14+00

14+50

15+00



<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
B-5391	5
<b>SECTION THROUGH STA. 14+28.50</b> <b>SKEW=90 DEGREES</b>	



GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 09/12/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH  
 PROJECTED ONTO THE CROSS SECTION





# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 46106.1.1		TIP B-5391		COUNTY ALEXANDER		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 139 ON SR 1609 OVER GLADE CREEK							GROUND WTR (ft)								
BORING NO. EB2-A		STATION 14+81		OFFSET 14 ft LT		ALIGNMENT -L-									
COLLAR ELEV. 950.7 ft		TOTAL DEPTH 16.8 ft		NORTHING 775,884		EASTING 1,355,592									
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C.L.		START DATE 08/16/16		COMP. DATE 08/16/16		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					
955															
950														950.7	0.0
	946.8	3.9		2	2	2							M		
945															
	941.8	8.9		2	1	2							W		
940														940.8	9.9
	936.8	13.9		1	1	2							W		
935														934.8	15.9
														933.9	16.8

WBS 46106.1.1		TIP B-5391		COUNTY ALEXANDER		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 139 ON SR 1609 OVER GLADE CREEK							GROUND WTR (ft)								
BORING NO. EB2-B		STATION 14+82		OFFSET 13 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 950.8 ft		TOTAL DEPTH 13.6 ft		NORTHING 775,886		EASTING 1,355,619									
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 85% 05/20/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic									
DRILLER Smith, C.L.		START DATE 08/16/16		COMP. DATE 08/16/16		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					
955															
950														950.8	0.0
	946.7	4.1		3	3	3							M		
945															
	941.7	9.1		1	2	9							M		
940														941.7	9.1
	937.5													937.2	13.3
															13.6

NCDOT BORE DOUBLE B5391\_GEO\_BH\_BRDG0139.GPJ NC\_DOT\_GDT 9/14/16



### SITE PHOTOGRAPHS



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



**Photograph No. 2:** Looking Downstream