

REFERENCE: BR-0114

PROJECT: 67114

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
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3	SITE PLAN
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STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL ENGINEERING UNIT

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY Iredell  
 SITE DESCRIPTION Bridge No. 165 on SR 1601  
(Barnton Rd.) over Rocky Creek

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	BR-0114	1	7

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 (ON-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

B.E. Foster

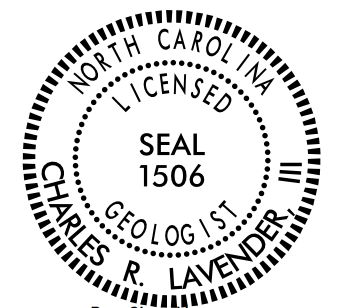
INVESTIGATED BY J.K. Stickney

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

CHECKED BY K.B. Miller

SUBMITTED BY C.R. Lavender, III

DATE November 2019



DocuSigned by:

*[Signature]*  
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11/26/2019

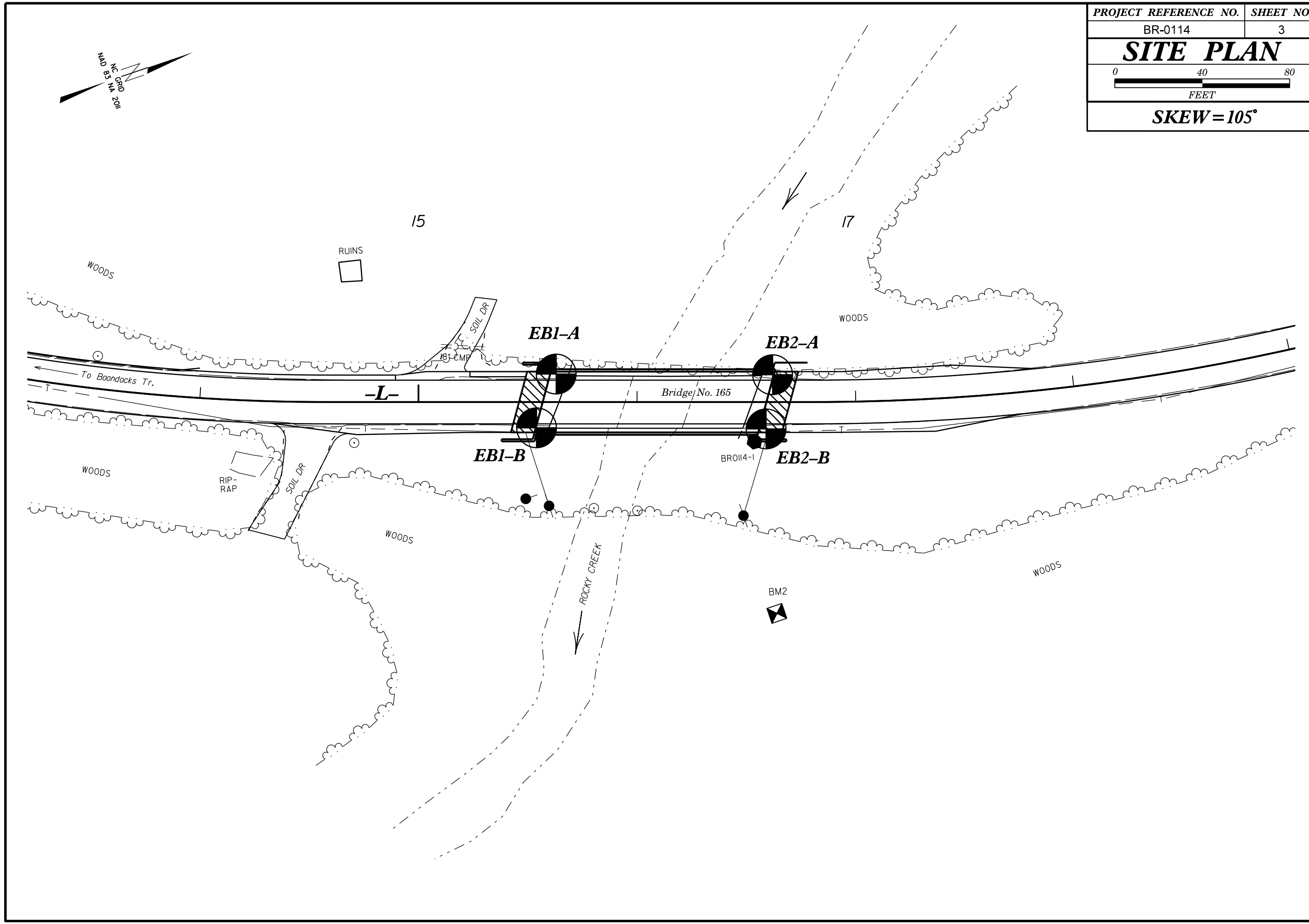
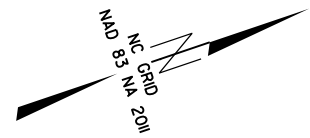
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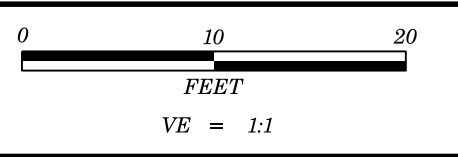
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
**GEOTECHNICAL ENGINEERING UNIT**  
**SUBSURFACE INVESTIGATION**  
 SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

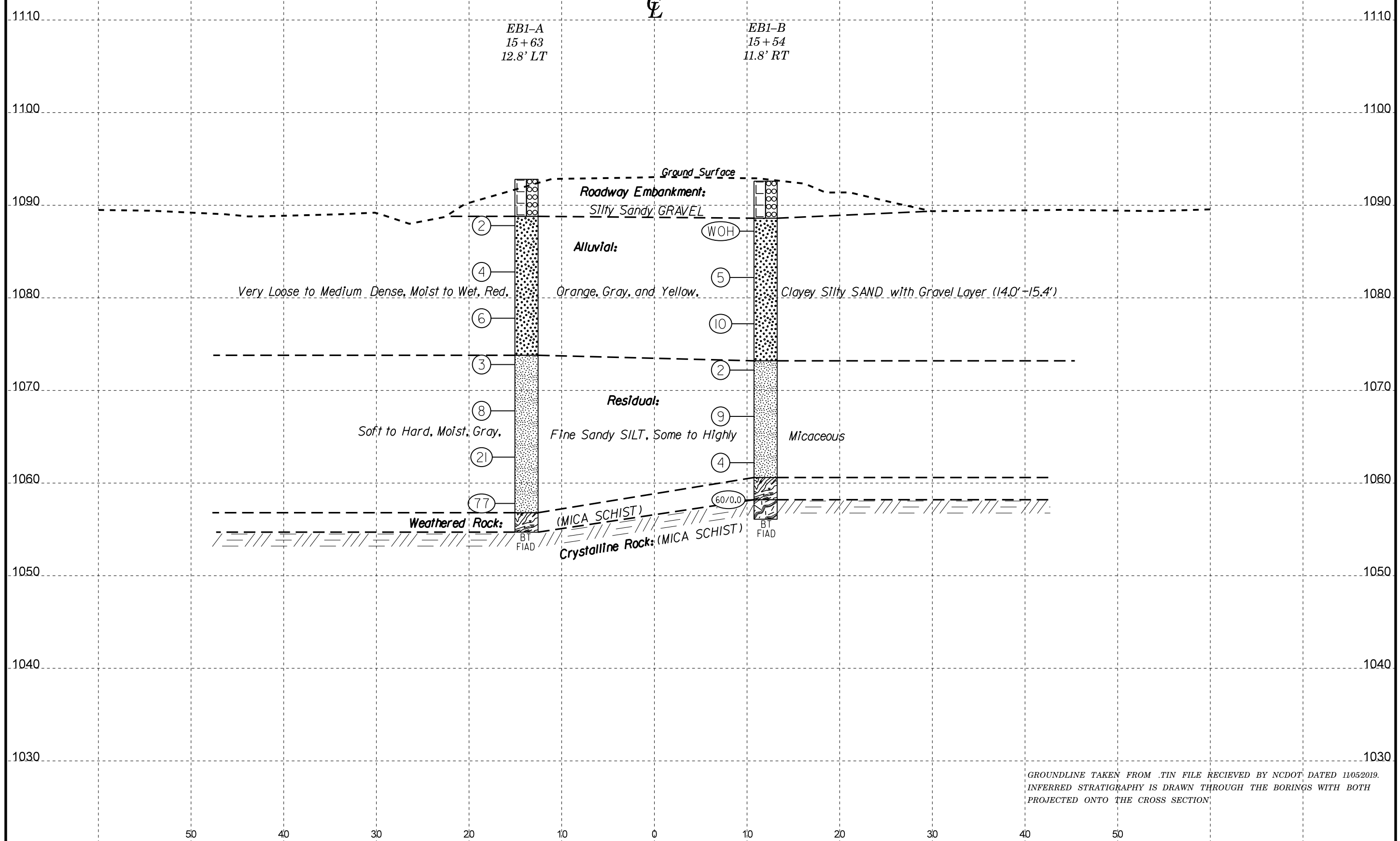
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 60 BLOWS PER FOOT IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)										ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRODUCED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										ROCK DESCRIPTION										TERMS AND DEFINITIONS									
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS										MINERALOGICAL COMPOSITION										WEATHERING										ROCK HARDNESS									
GROUP CLASS. A-1, A-1-b, A-3, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-1, A-2, A-3, A-4, A-5, A-6, A-7										COMPRESSIBILITY										FRESH										VERY HARD									
SYMBOL										PERCENTAGE OF MATERIAL										VERY SLIGHT (V SLI.)										HARD									
% PASSING #10, #40, #200										GROUND WATER										SLIGHT (SLI.)										MODERATELY HARD (MOD. SEV.)									
MATERIAL PASSING #40, LL, PI										MISCELLANEOUS SYMBOLS										MODERATE (MOD.)										SEVERE (SEV.)									
GROUP INDEX										RECOMMENDATION SYMBOLS										SEVERE (SEV.)										VERY HARD									
USUAL TYPES OF MAJOR MATERIALS										ABBREVIATIONS										COMPLETE										HARD									
GEN. RATING AS SUBGRADE										EQUIPMENT USED ON SUBJECT PROJECT										COMPLETE										HARD									
PI OF A-7-5 SUBGROUP IS <= LL - 30, PI OF A-7-6 SUBGROUP IS > LL - 30										SOIL MOISTURE - CORRELATION OF TERMS										COMPLETE										HARD									
CONSISTENCY OR DENSENESS										TEXTURE OR GRAIN SIZE										COMPLETE										HARD									
PRIMARY SOIL TYPE, COMPACTNESS OR CONSISTENCY, RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE), RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )										U.S. STD. SIEVE SIZE OPENING (MM)										COMPLETE										HARD									
GENERALY GRANULAR MATERIAL (NON-COHESIVE), GENERALY SILT-CLAY MATERIAL (COHESIVE)										BOULDER (BLDR.), COBBLE (COB.), GRAVEL (GR.), COARSE SAND (CSE. SD.), FINE SAND (F. SD.), SILT (SL.), CLAY (CL.)										COMPLETE										HARD									
GRAIN SIZE										GRAIN SIZE										COMPLETE										HARD									
SOIL MOISTURE - CORRELATION OF TERMS										SOIL MOISTURE - CORRELATION OF TERMS										COMPLETE										HARD									
SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION										SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION										COMPLETE										HARD									
LL, PL, OM, SL										LL, PL, OM, SL										COMPLETE										HARD									
PLASTICITY										PLASTICITY										COMPLETE										HARD									
NON PLASTIC, SLIGHTLY PLASTIC, MODERATELY PLASTIC, HIGHLY PLASTIC										NON PLASTIC, SLIGHTLY PLASTIC, MODERATELY PLASTIC, HIGHLY PLASTIC										COMPLETE										HARD									
COLOR										COLOR										COMPLETE										HARD									
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.										DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.										COMPLETE										HARD									

<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
BR-0114	3
<b>SITE PLAN</b>	
 0                      40                      80 FEET	
<b>SKEW = 105°</b>	

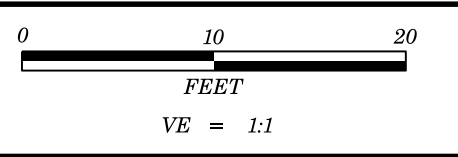




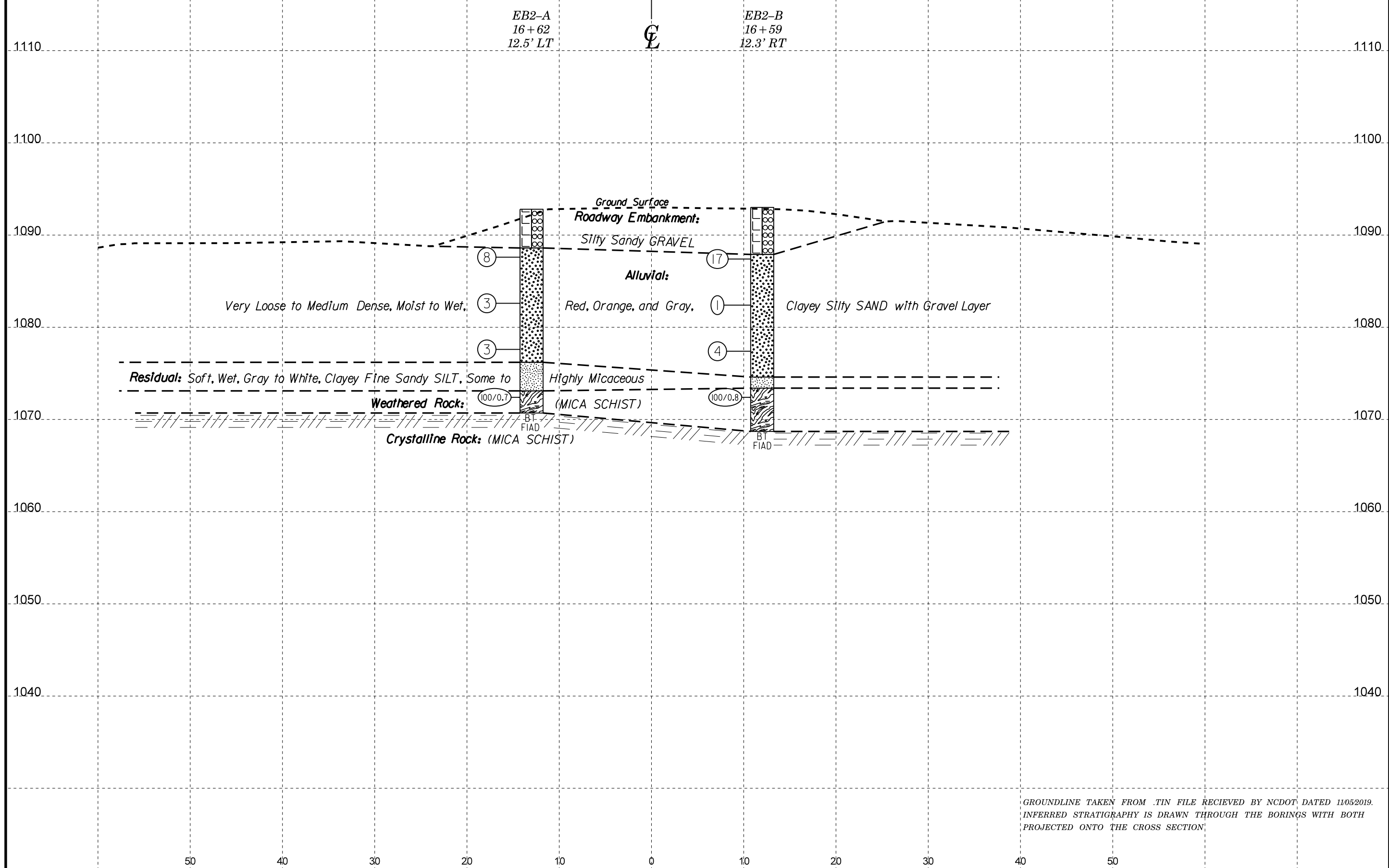
<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
BR-0114	4
<b>CROSS SECTION THROUGH END BENT 1</b>	
AT -L- STATION 15+56.84	
SKEW=105°	



GROUNDLINE TAKEN FROM .TIN FILE RECEIVED BY NCDOT DATED 11/05/2019.  
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH  
PROJECTED ONTO THE CROSS SECTION



<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
BR-0114	5
<b>CROSS SECTION THROUGH END BENT 2</b>	
AT -L- STATION 16+59.16	
SKEW=105°	



GROUNDLINE TAKEN FROM .TIN FILE RECEIVED BY NCDOT DATED 11/05/2019.  
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH  
PROJECTED ONTO THE CROSS SECTION

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67114.1.1		TIP BR-0114		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 165 on SR1601 (Barnton Rd.) over Rocky Creek							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 15+63		OFFSET 13 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,092.8 ft		TOTAL DEPTH 38.1 ft		NORTHING 831,909		EASTING 1,405,560										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ Advancer			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 10/08/19		COMP. DATE 10/09/19		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						
1095														1,092.8	GROUND SURFACE	0.0
1090	1,088.8	4.0	WOH	1	1								M	1,088.8	ROADWAY EMBANKMENT Silty sandy GRAVEL	4.0
1085	1,083.8	9.0		1	2								M		ALLUVIAL Red, orange clayey silty SAND	
1080	1,078.8	14.0		4	3								M			
1075	1,073.8	19.0		1	1								M	1,073.8	RESIDUAL Grayish white clayey fine sandy SILT with some mica	19.0
1070	1,068.8	24.0		3	4								M			
1065	1,063.8	29.0		8	9								M			
1060	1,058.8	34.0		11	18								M			
1055														1,056.8	WEATHERED ROCK (Mica schist)	36.0
														1,054.7	WEATHERED ROCK (Mica schist)	38.1
															Boring Terminated by Auger Refusal at Elevation 1,054.7 ft On Crystalline Rock (Mica schist)	

WBS 67114.1.1		TIP BR-0114		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 165 on SR1601 (Barnton Rd.) over Rocky Creek							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 15+54		OFFSET 12 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 1,092.6 ft		TOTAL DEPTH 36.5 ft		NORTHING 831,893		EASTING 1,405,580										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ Advancer			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 10/08/19		COMP. DATE 10/08/19		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						
1095														1,092.6	GROUND SURFACE	0.0
1090													M	1,088.6	ROADWAY EMBANKMENT Silty sandy GRAVEL	4.0
1085	1,088.2	4.4	WOH	WOH	WOH								M		ALLUVIAL Red, orange, gray and yellow clayey, silty SAND, with gravel layer at 14 to 15.4	
1080	1,083.2	9.4		1	2	3							M			
1075	1,078.2	14.4		7	6	4							W			
1070	1,073.2	19.4		1	1	1							M	1,073.2	RESIDUAL Gray clayey, fine sandy SILT, some to highly micaceous	19.4
1065	1,068.2	24.4		2	4	5							M			
1060	1,063.2	29.4		1	2	2							M			
														1,060.6	WEATHERED ROCK (Mica schist)	32.0
														1,058.2	CRYSTALLINE ROCK (Mica schist)	34.4
														1,056.1	CRYSTALLINE ROCK (Mica schist)	36.5
															Boring Terminated by Auger Refusal at Elevation 1,056.1 ft In Crystalline Rock (Mica schist)	

NCDOT BORE DOUBLE BR0114\_GEO\_BDRG0165\_BL.GPJ NC\_DOT.GDT 11/25/19

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 67114.1.1		TIP BR-0114		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 165 on SR1601 (Barnton Rd.) over Rocky Creek							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 16+62		OFFSET 13 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 1,092.8 ft		TOTAL DEPTH 22.1 ft		NORTHING 832,003		EASTING 1,405,592										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ Advancer			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 10/08/19		COMP. DATE 10/08/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1095														1,092.8	GROUND SURFACE	0.0
1090	1,088.6	4.2	2	4	4								M	1,088.6	ROADWAY EMBANKMENT Silty sandy GRAVEL	4.2
1085	1,083.6	9.2	1	1	2								M		ALLUVIAL Red, orange, and gray clayey, silty SAND, with gravel layer at 14 to 15.4	
1080	1,078.6	14.2	4	1	2								W		RESIDUAL Gray to white clayey, fine sandy SILT, some to highly micaceous	16.6
1075	1,073.6	19.2	4	53	47/2									1,073.1	WEATHERED ROCK (Mica schist)	19.7
														1,070.7	Boring Terminated by Auger Refusal at Elevation 1,070.7 ft On Crystalline Rock (Mica schist)	22.1

WBS 67114.1.1		TIP BR-0114		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION Bridge No. 165 on SR1601 (Barnton Rd.) over Rocky Creek							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 16+59		OFFSET 12 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 1,093.0 ft		TOTAL DEPTH 24.3 ft		NORTHING 831,992		EASTING 1,405,615										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 92% 08/15/2018			DRILL METHOD NW Casing w/ Advancer			HAMMER TYPE Automatic										
DRILLER Smith, C. L.		START DATE 10/08/19		COMP. DATE 10/08/19		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	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1095														1,093.0	GROUND SURFACE	0.0
1090	1,088.4	4.6	2	8	9								M	1,087.9	ROADWAY EMBANKMENT Silty sandy GRAVEL	5.1
1085	1,083.4	9.6	WOH	WOH	1								M		ALLUVIAL Red, orange, and gray clayey, silty SAND, with gravel layer at 14.4 to 15.1	
1080	1,078.4	14.6	5	2	2								W		RESIDUAL Gray to white clayey, fine sandy SILT, some to highly micaceous	18.4
1075	1,073.4	19.6	40	60/0.3										1,073.4	WEATHERED ROCK (Mica schist)	19.6
1070														1,068.7	Boring Terminated by Auger Refusal at Elevation 1,068.7 ft On Crystalline Rock (Mica schist)	24.3

NCDOT BORE DOUBLE BR0114\_GEO\_BDRG0165\_BL.GPJ NC\_DOT.GDT 11/24/19