

**This electronic collection of documents is provided
for the convenience of the user
and is Not a Certified Document –**

**The documents contained herein were originally issued
and sealed by the individuals whose names and license
numbers appear on each page, on the dates appearing
with their signature on that page.**

**This file or an individual page
shall not be considered a certified document.**

PROJECT: 42334 REFERENCE: B-5159

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5-6	CROSS SECTIONS
7-10	BORE LOGS & CORE REPORTS
11-12	CORE PHOTOGRAPHS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY JACKSON
 PROJECT DESCRIPTION BRG. NO. 101 ON SR-1740 (MOSES CREEK RD) OVER CANEY FORK ROAD

SITE DESCRIPTION _____

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5159 42334	1	12

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

DC ELLIOTT

DO CHEEK

CJ COFFEY

INVESTIGATED BY DC ELLIOTT

DRAWN BY DC ELLIOTT

CHECKED BY JC KUHNE

SUBMITTED BY DC ELLIOTT

DATE _____



DocuSigned by:

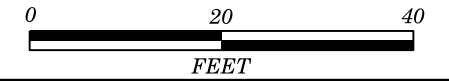
FD421F60CB0E40E... 7/27/2016
 SIGNATURE DATE

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

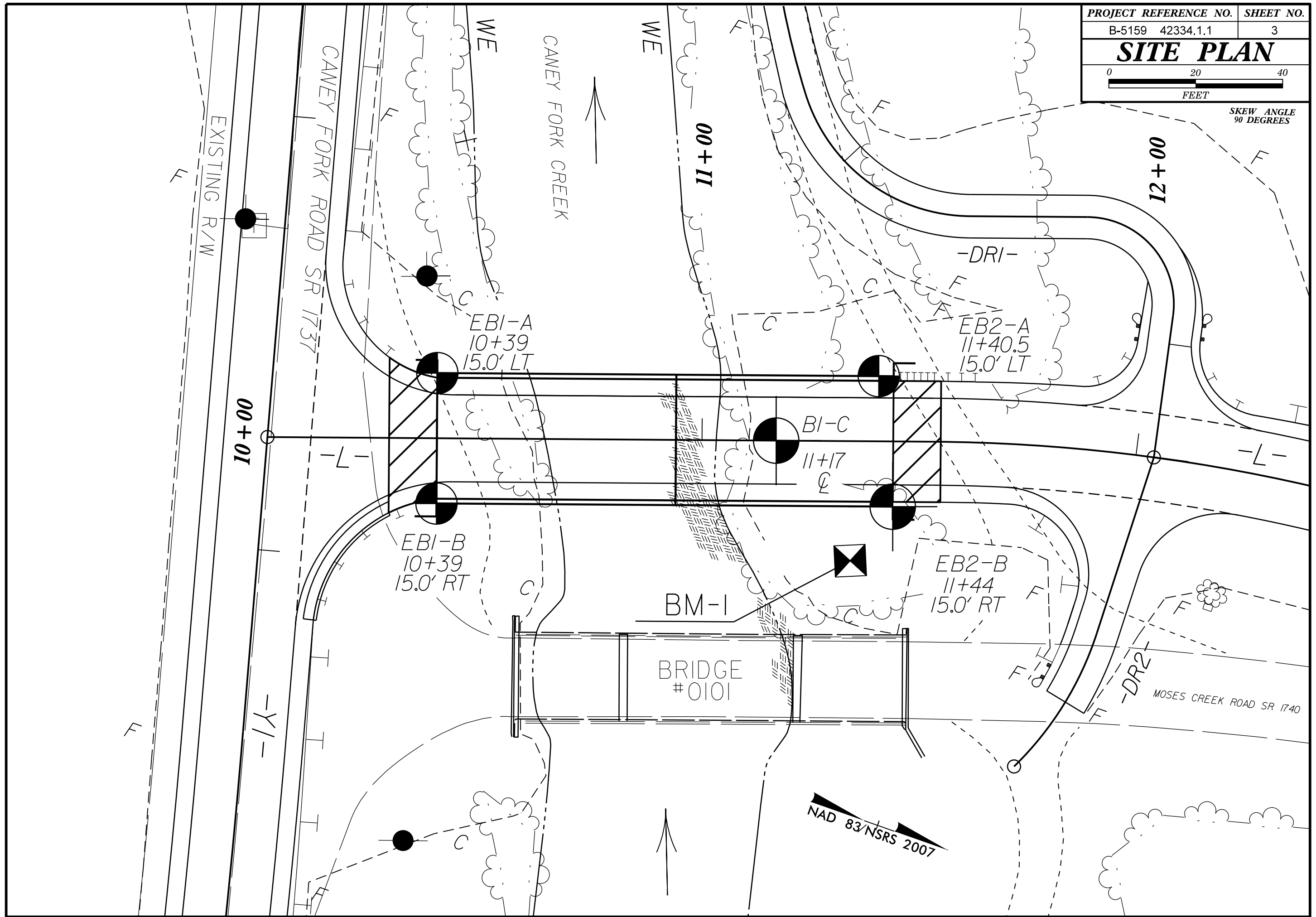
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

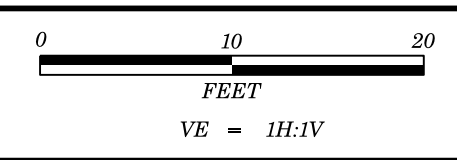
SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS	
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO 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 0.1 FOOT PER 60 BLOWS 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:		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 (ROD) - 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 0.1 FOOT PER 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		MINERALOGICAL COMPOSITION		WEATHERING			
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS		MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.		FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.			
GROUP CLASS. A-1, A-2, A-3, A-4, A-5, A-6, A-7, A-1-A, A-1-B, 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 SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50		VERY SLIGHT (V.SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.			
SYMBOL		PERCENTAGE OF MATERIAL ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC > 10%		SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY, IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.			
% PASSING #10 #40 #200		GROUND WATER WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP		MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.			
MATERIAL PASSING #40 LL PI		MISCELLANEOUS SYMBOLS ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY		SEVERE (SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF.			
GROUP INDEX		RECOMMENDATION SYMBOLS UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK		VERY SEVERE (V.SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF.			
USUAL TYPES OF MAJOR MATERIALS		ABBREVIATIONS AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO f - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HI - HIGHLY		COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.			
GEN. RATING AS SUBGRADE		EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: CME-45C CME-55 CME-550 VANE SHEAR TEST PORTABLE HOIST		ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD HARDER BLOWS REQUIRED TO DETACH HAND SPECIMEN.			
CONSISTENCY OR DENSENESS		TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM) BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GR.) COARSE SAND (CSE, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)		VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT			
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT ²)		SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.			
GENERALY GRANULAR MATERIAL (NON-COHESIVE) GENERALY SILT-CLAY MATERIAL (COHESIVE)		PLASTICITY NON PLASTIC SLIGHTLY PLASTIC MODERATELY PLASTIC HIGHLY PLASTIC		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.			
TEXTURE OR GRAIN SIZE		COLOR 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.					
						BENCH MARK: BM*1 -BL- STA. 6+08.18 48.60' LT ELEVATION: 2203.08 FEET	
						NOTES:	
						DATE: 8-15-14	

SITE PLAN

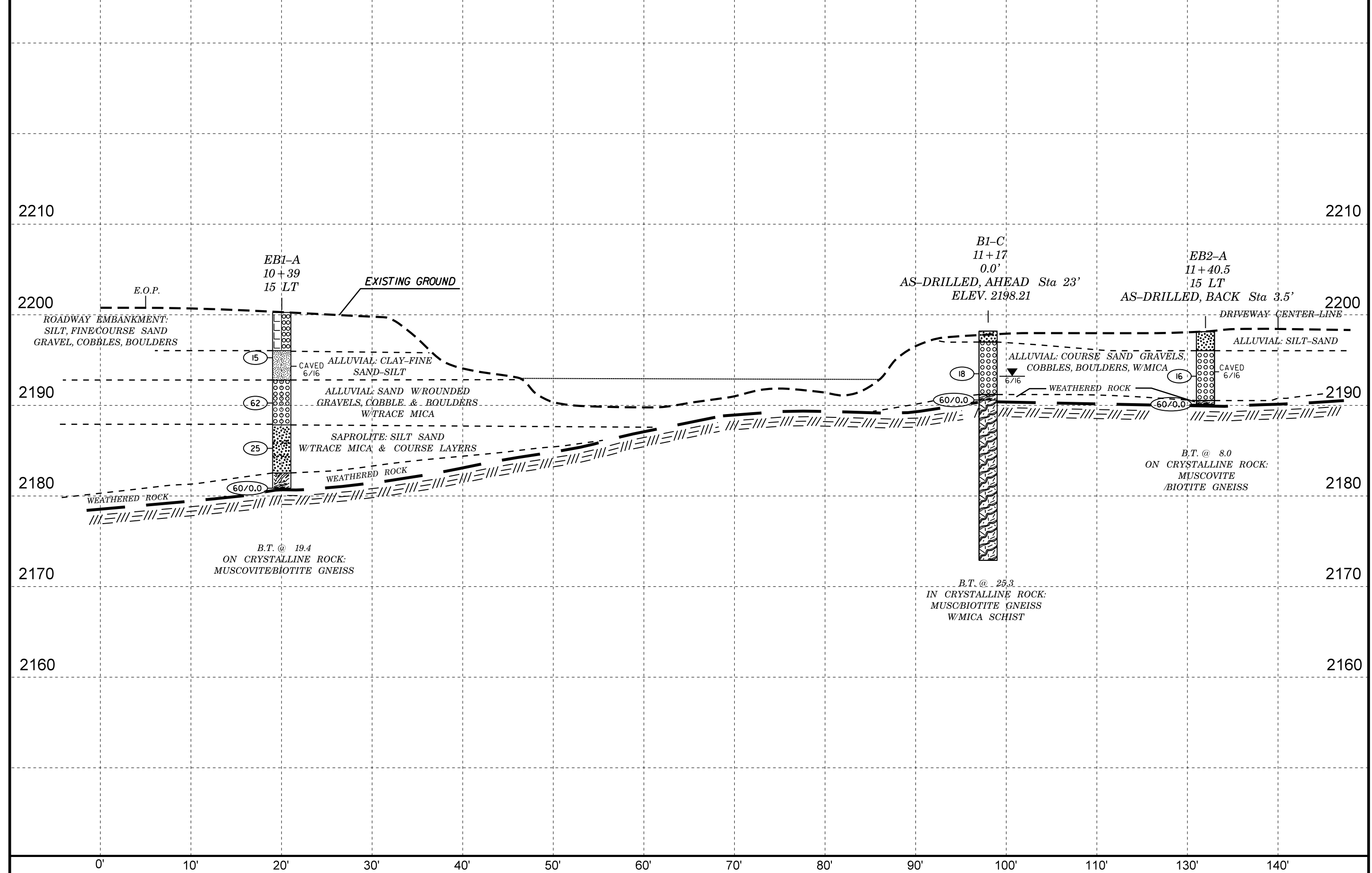


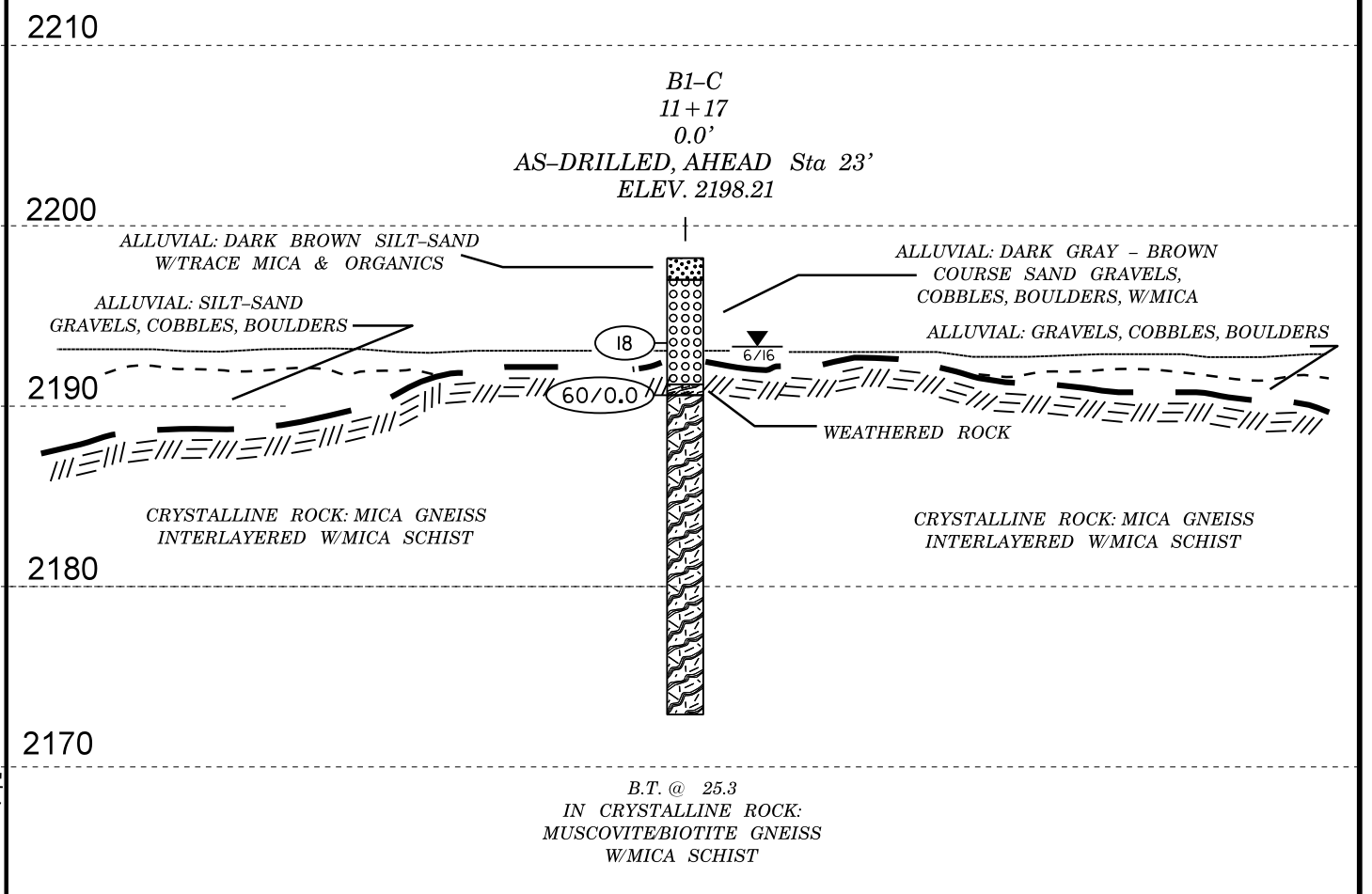
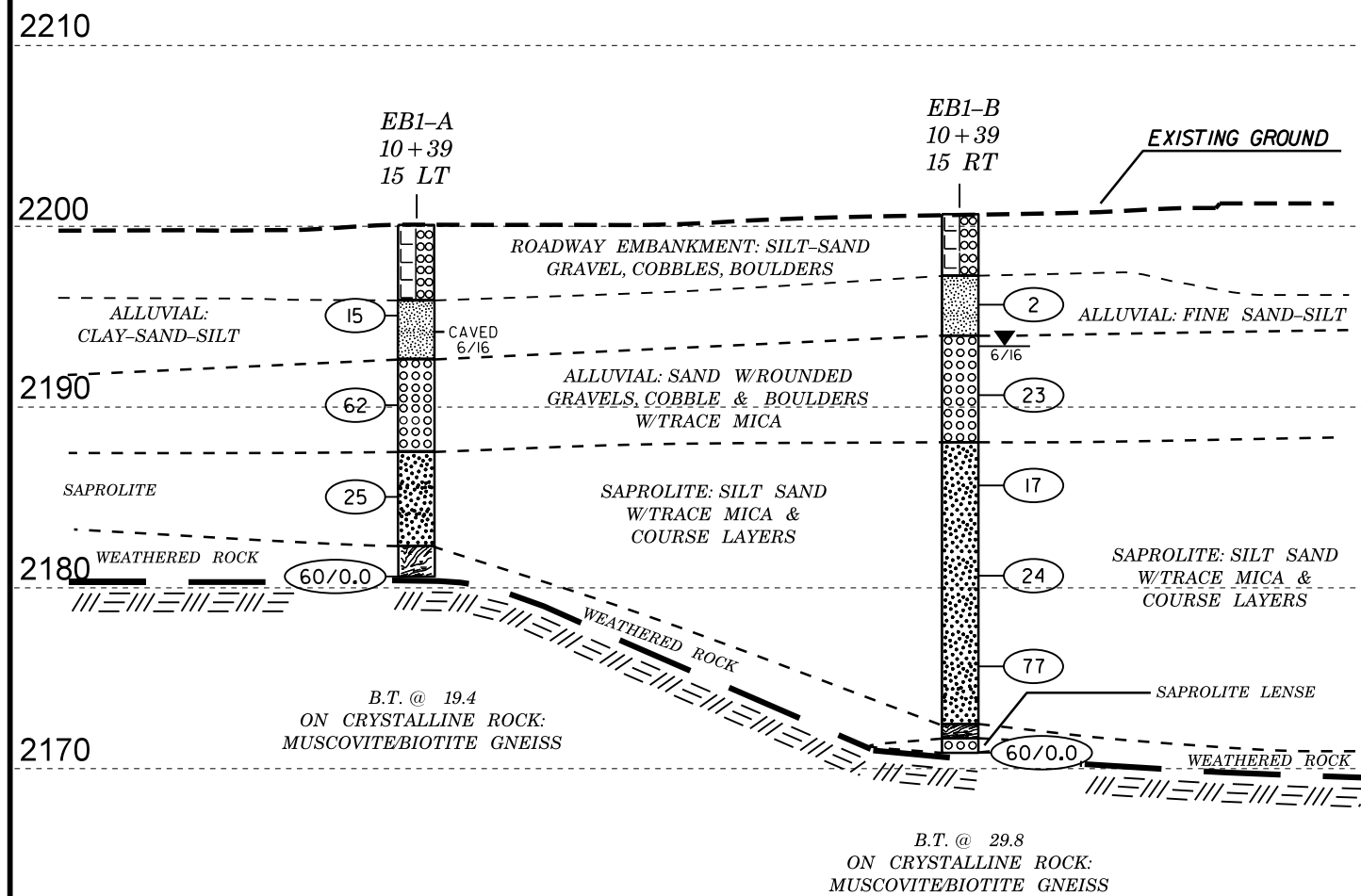
SKEW ANGLE
90 DEGREES



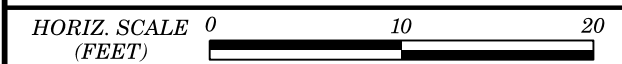


PROJECT REFERENCE NO.	SHEET NO.
B-5159 42334.1.1	4
PROFILE THROUGH LEFT-SIDE, A-SIDE	



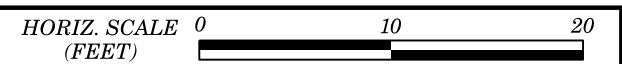


SKEW = 90



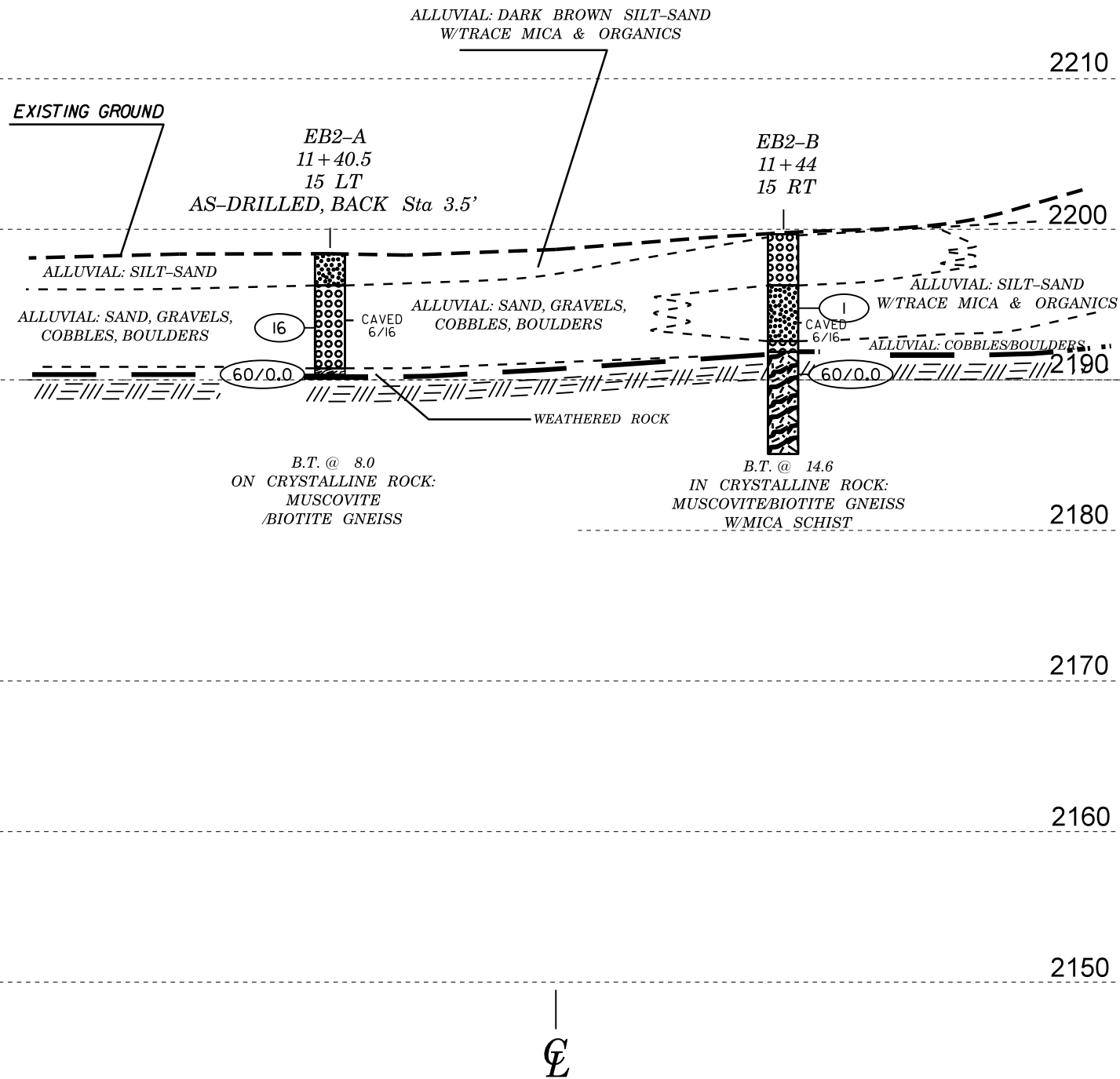
VE = 1H:1V

SECTION THROUGH END BENT 1



VE = 1H:1V

SECTION THROUGH BENT 1



SKEW = 90



VE = 1H:1V

SECTION THROUGH END BENT 2



VE = 1H:1V

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.				
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)			
BORING NO. EB1-A		STATION 10+39		OFFSET 15 ft LT		ALIGNMENT -L-				
COLLAR ELEV. 2,200.0 ft		TOTAL DEPTH 19.4 ft		NORTHING 769,334		EASTING 591,430				
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic						
DRILLER Cheek, D. O.		START DATE 06/20/16		COMP. DATE 06/20/16		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					
2205										
									2,200.0	GROUND SURFACE 0.0
									2,195.8	ROADWAY EMBANKMENT EMBANKMENT: DARK GRAY/GRAY FINE-TO-COURSE SAND & GRAVELS & COBBLE/BOULDERS 4.2
	2,195.0	5.0	1	5	10				2,192.6	ALLUVIAL ALLUVIAL: DARK BROWN CLAY-FINE SAND-SILT W/ TRACE ORGANICS, W/ MICA 7.4
	2,190.0	10.0	16	20	42				2,187.6	ALLUVIAL ALLUVIAL: DARK BROWN/DARK ORANGE/DARK GARY SILTY-FINE-TO-COURSE SAND W/ ROUNDED/SUB-ROUNDED GRAVELS & COBBLES, W/ MICA 12.4
	2,185.0	15.0	9	13	12				2,182.3	SAPROLITE SAPROLITE: DARK GRAY TO BLACK/DARK BROWN/DARK ORANGE SANDY-SILT TO SILTY-SAND W/ A FEW COURSE LAYERS, W/ MICA 17.7
	2,180.6	19.4	60/0.0						2,180.6	WEATHERED ROCK WEATHERED ROCK: HARD & CONSISTENT 19.4
										CRYSTALLINE ROCK CRYSTALLINE ROCK Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,180.6 ft on Crystalline Rock

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.				
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)			
BORING NO. EB1-B		STATION 10+39		OFFSET 15 ft RT		ALIGNMENT -L-				
COLLAR ELEV. 2,200.7 ft		TOTAL DEPTH 29.8 ft		NORTHING 769,362		EASTING 591,440				
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic						
DRILLER Cheek, D. O.		START DATE 06/20/16		COMP. DATE 06/20/16		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					
2205										
									2,200.7	GROUND SURFACE 0.0
									2,197.3	ROADWAY EMBANKMENT EMBANKMENT: ON SHOULDER, GRAVELS & COBBLES 3.4
									2,194.0	ALLUVIAL ALLUVIAL: DARK BROWN FINE SAND-SILT W/ SOME ORGANICS & CHARCOAL, TRACE MICA 6.7
									2,190.7	ALLUVIAL ALLUVIAL: DARK BROWN/DARK GRAY/DARK ORANGE SILTY FINE-TO-COURSE SAND W ROUNDED PEBBLES & GRAVELS & SOME COBBLE FRAGMENTS 12.6
									2,185.7	SAPROLITE SAPROLITE: DARK GRAY TO BLACK/DARK ORANGE SANDY-SILT TO SILTY-SAND W/ A FEW COURSE LAYERS, W/ MICA 17.7
									2,180.7	WEATHERED ROCK WEATHERED ROCK: HARD & CONSISTENT 19.4
									2,175.7	CRYSTALLINE ROCK CRYSTALLINE ROCK Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,170.9 ft on Crystalline Rock
									2,170.9	CRYSTALLINE ROCK CRYSTALLINE ROCK Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,170.9 ft on Crystalline Rock

GEOTECHNICAL BORING REPORT

BORE LOG

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.	
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)
BORING NO. B1-C		STATION 11+17		OFFSET CL		ALIGNMENT -L-	
COLLAR ELEV. 2,198.2 ft		TOTAL DEPTH 25.3 ft		NORTHING 769,323		EASTING 591,509	
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic			
DRILLER Cheek, D. O.		START DATE 06/21/16		COMP. DATE 06/21/16		SURFACE WATER DEPTH N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT		SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	
			0.5ft	0.5ft	0.5ft	0	100			ELEV. (ft)	DEPTH (ft)
2200										GROUND SURFACE	0.0
										2,198.2	0.0
										2,197.0	1.2
										ALLUVIAL: DARK BROWN/BROWN SILT-SAND W/ MICA	
										ALLUVIAL: DARK BROWN/DARK GRAY/TAN SILT FINE-TO-COURSE SAND ROUNDED/SUB-ROUNDED GRAVELS W/ COBBLES, BOULDERS	
										2,191.2	7.0
										2,190.6	7.6
										WEATHERED ROCK	
										CRYSTALLINE ROCK	
										60/0.0	
										2,172.9	25.3
										Boring Terminated at Elevation 2,172.9 ft in Crystalline Rock	

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.	
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)
BORING NO. B1-C		STATION 11+17		OFFSET CL		ALIGNMENT -L-	
COLLAR ELEV. 2,198.2 ft		TOTAL DEPTH 25.3 ft		NORTHING 769,323		EASTING 591,509	
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic			
DRILLER Cheek, D. O.		START DATE 06/21/16		COMP. DATE 06/21/16		SURFACE WATER DEPTH N/A	

ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	TOTAL RUN 17.7 ft		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS
					REC. (%)	ROD (%)		REC. (%)	ROD (%)		
2190.61											
	2,190.6	7.6	2.4	N=60/0.0 1:18/1.0	(1.5) 63%	(1.1) 46%					Begin Coring @ 7.6 ft
	2,188.2	10.0	5.3	1:37/1.0 0:52/0.4 1:27/1.0 1:19/1.0 1:38/1.0 1:27/1.0	(5.1) 96%	(3.8) 72%					CRYSTALLINE ROCK
	2,182.9	15.3	5.0	1:34/1.0 0:3/0.2 1:26/1.0 1:38/1.0 1:40/1.0 1:47/1.0	(5.0) 100%	(5.0) 100%					
	2,177.9	20.3	5.0	1:38/1.0 1:31/1.0 1:36/1.0 1:42/1.0 1:28/1.0	(5.0) 100%	(4.9) 98%					
	2,172.9	25.3		1:26/1.0							Boring Terminated at Elevation 2,172.9 ft in Crystalline Rock

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.	
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)
BORING NO. EB2-A		STATION 11+41		OFFSET 15 ft LT		ALIGNMENT -L-	
COLLAR ELEV. 2,198.2 ft		TOTAL DEPTH 8.0 ft		NORTHING 769,301		EASTING 591,526	
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing w/ SPT		HAMMER TYPE Automatic			
DRILLER Cheek, D. O.		START DATE 06/21/16		COMP. DATE 06/21/16		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	
			0.5ft	0.5ft	0.5ft					ELEV. (ft)	DEPTH (ft)
2200											
										2,198.2	GROUND SURFACE 0.0
											ALLUVIAL
										2,196.1	ALLUVIAL: BROWN SILT-SAND W/ MICA 2.1
											ALLUVIAL
											ALLUVIAL: DARK GRAY/DARK BROWN/TAN SILT FINE-TO-COURSE SAND GRAVEL COBBLE W/ TRACE MICA
	2,193.3	4.9	3	5	11						
	2,190.2	8.0	60/0.0								
										2,190.6	7.6
										2,190.2	8.0
											WEATHERED ROCK
											CRYSTALLINE ROCK
											Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,190.2 ft on Crystalline Rock

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.	
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)
BORING NO. EB2-B		STATION 11+44		OFFSET 15 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 2,199.8 ft		TOTAL DEPTH 14.6 ft		NORTHING 769,328		EASTING 591,539	
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic			
DRILLER Cheek, D. O.		START DATE 06/20/16		COMP. DATE 06/20/16		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	
			0.5ft	0.5ft	0.5ft					ELEV. (ft)	DEPTH (ft)
2200											
										2,199.8	GROUND SURFACE 0.0
										2,199.1	0.7
											ALLUVIAL
										2,196.4	3.4
											ALLUVIAL
											ALLUVIAL: DARK BROWN/BROWN SILT-SAND W/ TRACE MICA, ORGANICS
											ALLUVIAL
											ALLUVIAL: COBBLES & BOULDERS
											ALLUVIAL
											ALLUVIAL: DARK BROWN CLAY-FINE SAND-SILT W/ TRACE MICA & ORGANICS
											ALLUVIAL
											ALLUVIAL: COBBLES & BOULDERS
											CRYSTALLINE ROCK
											CRYSTALLINE ROCK: OUT OF BOULDERS INTO VERY HARD, CONSISTENT C.R.
										2,185.2	14.6
											Boring Terminated at Elevation 2,185.2 ft in Crystalline Rock

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 42334.1.1		TIP B-5159		COUNTY JACKSON		GEOLOGIST Elliott, D. C.					
SITE DESCRIPTION Brdg # 0101 on S.R.-1740 (Moses Crk Rd) over Caney Fork Creek							GROUND WTR (ft)				
BORING NO. EB2-B		STATION 11+44		OFFSET 15 ft RT		ALIGNMENT -L-					
COLLAR ELEV. 2,199.8 ft		TOTAL DEPTH 14.6 ft		NORTHING 769,328		EASTING 591,539					
DRILL RIG/HAMMER EFF./DATE AFO6744 CME - 45C 83% 01/29/2015		DRILL METHOD NW Casing W/SPT & Core		HAMMER TYPE Automatic							
DRILLER Cheek, D. O.		START DATE 06/20/16		COMP. DATE 06/20/16		SURFACE WATER DEPTH N/A					
CORE SIZE NXWL		TOTAL RUN 5.3 ft									
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		L O G	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	ROD (ft) %	SAMP. NO.	REC. (ft) %			
2190.47	2,190.5	9.3	5.3	N=60/0.0 .20/0.3 1:21/1.0 1:15/1.0 1:17/1.0 1:11/1.0 1:08/1.0	(5.0) 94%	(3.8) 72%				Begin Coring @ 9.3 ft CRYSTALLINE ROCK (continued)	
	2,185.2	14.6								Boring Terminated at Elevation 2,185.2 ft in Crystalline Rock	14.6

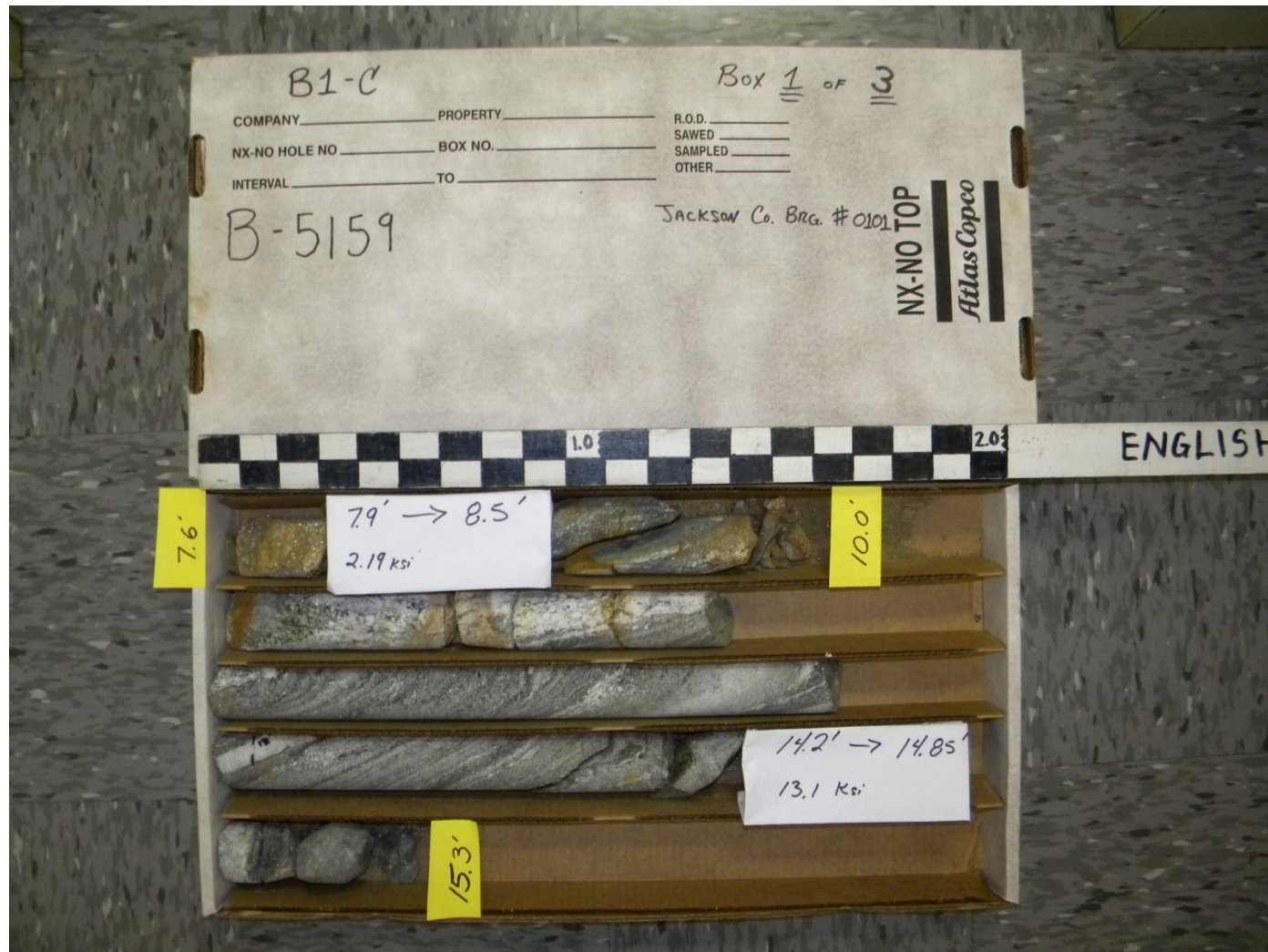
NCDOT CORE DOUBLE B5159_GEO_GINT.GPJ NC_DOT_GDT 7/26/16

B-5159 42334.1.1

BORING B1-C

BOX 1 OF 3

DEPTH: 7.6'-15.3'



B-5159 42334.1.1

BORING B1-C

BOX 2 OF 3

DEPTH: 15.3'-23.8'



B-5159 42334.1.1

BORING B1-C

BOX 3 OF 3

DEPTH: 23.8'-25.3'



B-5159 42334.1.1

BORING EB2-B

BOX 1 OF 1

DEPTH: 9.3'-14.6'

