

PROJECT: 17BP.12.R.45 REFERENCE: N/A

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

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY IREDELL  
 SITE DESCRIPTION BRIDGE NO. 260 ON SR 1862 OVER  
ROCKY CREEK

**CONTENTS**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE(S)
5-8	CROSS SECTION(S)
9-18	BORE LOG(S), CORE REPORT(S), & CORE PHOTOGRAPH(S)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	17BP.12.R.45	1	18

**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 RELED 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

M.R. MOORE

INVESTIGATED BY J.K. STICKNEY

DRAWN BY T.T. WALKER

CHECKED BY J.E. BEVERLY <sup>OS</sup> JEB

SUBMITTED BY E.N. WILLIAMS

DATE MAY 2016



DocuSigned by:  
*Eric N. Williams*

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5/9/2016

SIGNATURE

DATE

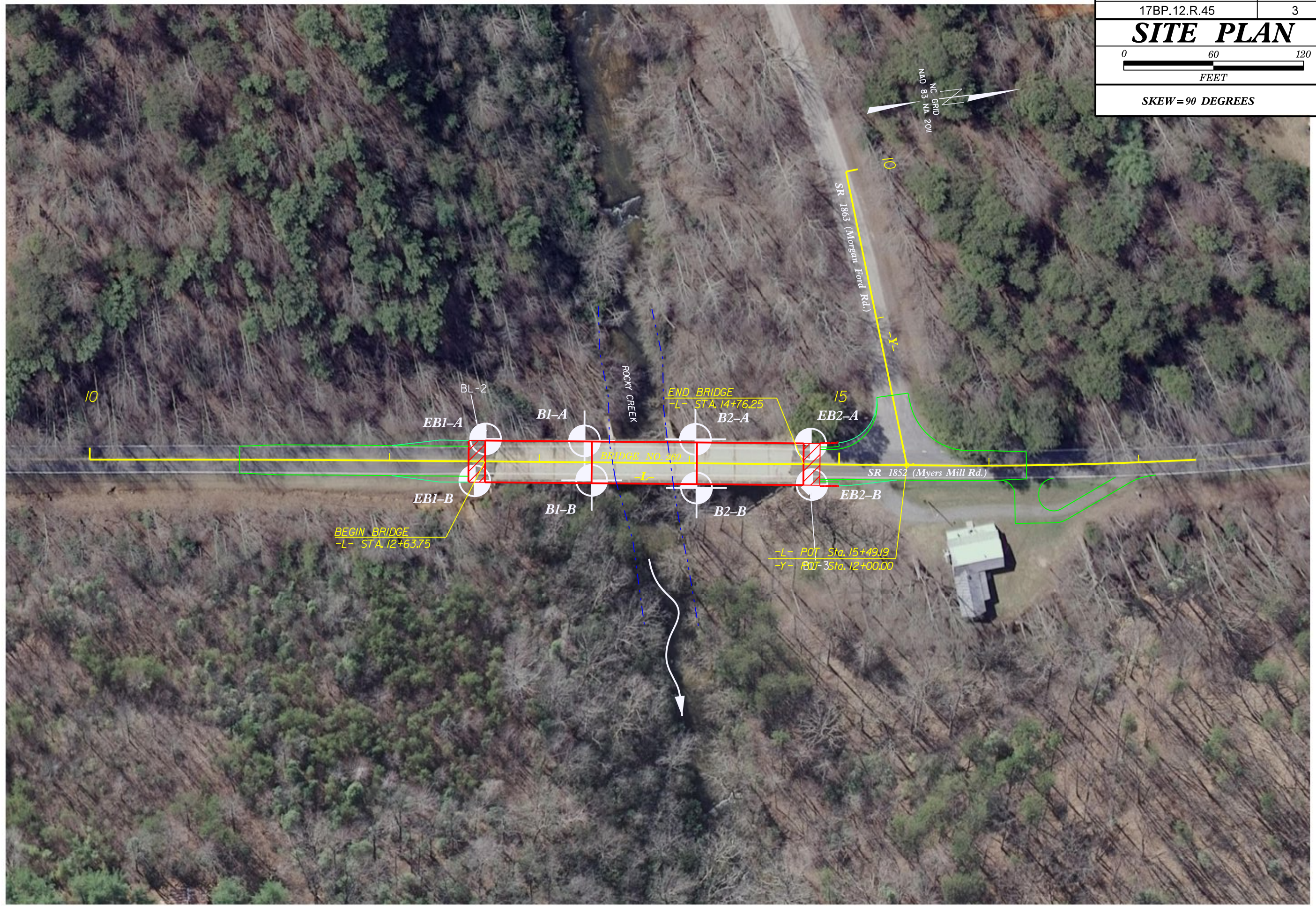
**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

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

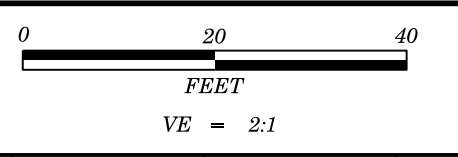
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS																																																																																																																																																																																																																																																																																																																																																																																																																																				
<p>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 (ASHTO T 208, 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</p>	<p><b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.  <b>UNIFORMLY GRADED</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.  <b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p> <p style="text-align: center;"><b>ANGULARITY OF GRAINS</b></p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p> <p style="text-align: center;"><b>MINERALOGICAL COMPOSITION</b></p> <p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p style="text-align: center;"><b>COMPRESSIBILITY</b></p> <p>SLIGHTLY COMPRESSIBLE LL &lt; 31          MODERATELY COMPRESSIBLE LL = 31 - 50          HIGHLY COMPRESSIBLE LL &gt; 50</p> <p style="text-align: center;"><b>PERCENTAGE OF MATERIAL</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>ORGANIC MATERIAL</th> <th>GRANULAR SOILS</th> <th>SILT - CLAY SOILS</th> <th>OTHER MATERIAL</th> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE 1 - 10%</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE 10 - 20%</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME 20 - 35%</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>&gt; 10%</td> <td>&gt; 20%</td> <td>HIGHLY 35% AND ABOVE</td> </tr> </table> <p style="text-align: center;"><b>GROUND WATER</b></p> <p> 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</p> <p style="text-align: center;"><b>MISCELLANEOUS SYMBOLS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td> ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</td> <td> DIP &amp; DIP DIRECTION OF ROCK STRUCTURES</td> <td> SLOPE INDICATOR INSTALLATION</td> </tr> <tr> <td> SOIL SYMBOL</td> <td> TEST BORING</td> <td> CONE PENETROMETER TEST</td> </tr> <tr> <td> ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT</td> <td> AUGER BORING</td> <td> SOUNDING ROD</td> </tr> <tr> <td> INFERRERD SOIL BOUNDARY</td> <td> CORE BORING</td> <td> TEST BORING WITH CORE</td> </tr> <tr> <td> INFERRERD ROCK LINE</td> <td> MONITORING WELL</td> <td> SPT N-VALUE</td> </tr> <tr> <td> ALLUVIAL SOIL BOUNDARY</td> <td> PIEZOMETER INSTALLATION</td> <td></td> </tr> </table>	ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE 1 - 10%	LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE 10 - 20%	MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME 20 - 35%	HIGHLY ORGANIC	> 10%	> 20%	HIGHLY 35% AND ABOVE	ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION	DIP & DIP DIRECTION OF ROCK STRUCTURES	SLOPE INDICATOR INSTALLATION	SOIL SYMBOL	TEST BORING	CONE PENETROMETER TEST	ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT	AUGER BORING	SOUNDING ROD	INFERRERD SOIL BOUNDARY	CORE BORING	TEST BORING WITH CORE	INFERRERD ROCK LINE	MONITORING WELL	SPT N-VALUE	ALLUVIAL SOIL BOUNDARY	PIEZOMETER INSTALLATION		<p><b>HARD ROCK</b> IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRERD 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:</p> <p><b>WEATHERED ROCK (WR)</b>  NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES &gt; 100 BLOWS PER FOOT IF TESTED.</p> <p><b>CRYSTALLINE ROCK (CR)</b>  FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p> <p><b>NON-CRYSTALLINE ROCK (NCR)</b>  FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</p> <p><b>COASTAL PLAIN SEDIMENTARY ROCK (CPS)</b>  COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p> <p style="text-align: center;"><b>WEATHERING</b></p> <p><b>FRESH</b> ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p><b>VERY SLIGHT (V SL.)</b> 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.</p> <p><b>SLIGHT (SL.)</b> 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.</p> <p><b>MODERATE (MOD.)</b> 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.</p> <p><b>MODERATELY SEVERE (MOD. SEV.)</b> ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i></p> <p><b>SEVERE (SEV.)</b> 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. <i>IF TESTED, WOULD YIELD SPT N VALUES &gt; 100 BPF</i></p> <p><b>VERY SEVERE (V SEV.)</b> 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. <i>IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</i></p> <p><b>COMPLETE</b> 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.</p> <p style="text-align: center;"><b>ROCK HARDNESS</b></p> <p><b>VERY HARD</b> CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</p> <p><b>HARD</b> CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</p> <p><b>MODERATELY HARD</b> CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.</p> <p><b>MEDIUM HARD</b> CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</p> <p><b>SOFT</b> CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.</p> <p><b>VERY SOFT</b> CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.</p> <p style="text-align: center;"><b>ROCK HARDNESS</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>TERM</th> <th>SPACING</th> <th>TERM</th> <th>THICKNESS</th> </tr> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td></td> <td></td> <td>THINLY LAMINATED</td> <td>&lt; 0.008 FEET</td> </tr> </table> <p style="text-align: center;"><b>INDURATION</b></p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p><b>FRIABLE</b> RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p><b>MODERATELY INDURATED</b> GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p><b>INDURATED</b> GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p><b>EXTREMELY INDURATED</b> SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>	TERM	SPACING	TERM	THICKNESS	VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET	WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET	MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET	CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET	VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET			THINLY LAMINATED	< 0.008 FEET	<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.</p> <p><b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA.</p> <p><b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p><b>ARGILLACEOUS</b> - 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.</p> <p><b>ARTESIAN</b> - 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.</p> <p><b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p><b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p><b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p><b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p><b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p><b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p><b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p><b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p><b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.</p> <p><b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p><b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p><b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p><b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p><b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p><b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p><b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p><b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p><b>ROCK QUALITY DESIGNATION (RQD)</b> - 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.</p> <p><b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p><b>SILL</b> - 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 INTRUDED ROCKS.</p> <p><b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p><b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - 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.</p> <p><b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p><b>STRATA ROCK QUALITY DESIGNATION (SROQ)</b> - 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.</p> <p><b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p> <p><b>BENCH MARK: BL-3; N: 830271.265, E: 1435607.482, STA. 14+79.73, 15.45' RT</b>  <b>ELEVATION: 982.65 FEET</b></p> <p><b>BENCH MARK: BL-2; N: 830057.685, E: 1435543.659, STA. 12+59.65, 19.95' LT</b>  <b>ELEVATION: 985.34 FEET</b></p> <p><b>NOTES:</b>          F.I.A.D. = FILLED IMMEDIATELY AFTER DRILLING</p>																																																																																																																																																																																																																																																																																																																																																																		
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MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>	GENERAL CLASS.	GRANULAR MATERIALS (<= 3% PASSING #200)						SILT-CLAY MATERIALS (> 3% PASSING #200)						ORGANIC MATERIALS			A-1	A-1-b	A-3	A-2-4	A-2-5	A-2-6	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7				GROUP CLASS.	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7				SYMBOL																		% PASSING	50 MX	30 MX	50 MX	50 MX	50 MX	50 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	35 MX	*10																		*40																		*200																		MATERIAL PASSING #40	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER																	GROUP INDEX	HIGHLY ORGANIC SOILS																	USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL, AND SAND			FINE SAND			SILTY OR CLAYEY GRAVEL AND SAND			SILTY SOILS			CLAYEY SOILS						GEN. 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MATERIAL PASSING #40	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER																																																																																																																																																																																																																																																																																																																																																																																																																																						
GROUP INDEX	HIGHLY ORGANIC SOILS																																																																																																																																																																																																																																																																																																																																																																																																																																						
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS, GRAVEL, AND SAND			FINE SAND			SILTY OR CLAYEY GRAVEL AND SAND			SILTY SOILS			CLAYEY SOILS																																																																																																																																																																																																																																																																																																																																																																																																																										
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR						FAIR TO POOR		POOR		UNSATURABLE																																																																																																																																																																																																																																																																																																																																																																																																																						
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30																																																																																																																																																																																																																																																																																																																																																																																																																																							
PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )																																																																																																																																																																																																																																																																																																																																																																																																																																				
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A																																																																																																																																																																																																																																																																																																																																																																																																																																				
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4																																																																																																																																																																																																																																																																																																																																																																																																																																				
U.S. STD. SIEVE OPENING (MM)	4	10	40	60	200	270																																																																																																																																																																																																																																																																																																																																																																																																																																	
	4.75	2.00	0.42	0.25	0.075	0.053																																																																																																																																																																																																																																																																																																																																																																																																																																	
BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F. SD.)	SILT (SL.)	CLAY (CL.)																																																																																																																																																																																																																																																																																																																																																																																																																																	
GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005																																																																																																																																																																																																																																																																																																																																																																																																																																
IN.	12	3																																																																																																																																																																																																																																																																																																																																																																																																																																					
SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION																																																																																																																																																																																																																																																																																																																																																																																																																																					
LL - LIQUID LIMIT PL - PLASTIC LIMIT	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE																																																																																																																																																																																																																																																																																																																																																																																																																																					
	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																																					
OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																																					
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																																																																																																																																																																																																																																																																																																					
NON PLASTIC	PLASTICITY INDEX (PI)	DRY STRENGTH																																																																																																																																																																																																																																																																																																																																																																																																																																					
VERY LOW	0-5	VERY LOW																																																																																																																																																																																																																																																																																																																																																																																																																																					
SLIGHTLY PLASTIC	6-15	SLIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																					
MODERATELY PLASTIC	16-25	MEDIUM																																																																																																																																																																																																																																																																																																																																																																																																																																					
HIGHLY PLASTIC	26 OR MORE	HIGH																																																																																																																																																																																																																																																																																																																																																																																																																																					
UNDERCUT	UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE	UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK	UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL																																																																																																																																																																																																																																																																																																																																																																																																																																				
AR - AUGER REFUSAL	MED. - MEDIUM	VST - VANE SHEAR TEST																																																																																																																																																																																																																																																																																																																																																																																																																																					
BT - BORING TERMINATED	MICA - MICACEOUS	WEA. - WEATHERED																																																																																																																																																																																																																																																																																																																																																																																																																																					
CL - CLAY	MOD. - MODERATELY	W - UNIT WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																					
CPT - CONE PENETRATION TEST	NP - NON PLASTIC	W - DRY UNIT WEIGHT																																																																																																																																																																																																																																																																																																																																																																																																																																					
CSE. - COARSE	ORG. - ORGANIC																																																																																																																																																																																																																																																																																																																																																																																																																																						
DMT - DILATOMETER TEST	PMT - PRESSUREMETER TEST																																																																																																																																																																																																																																																																																																																																																																																																																																						
DPT - DYNAMIC PENETRATION TEST	SAP. - SAPROLITIC																																																																																																																																																																																																																																																																																																																																																																																																																																						
e - VOID RATIO	SD. - SAND, SANDY																																																																																																																																																																																																																																																																																																																																																																																																																																						
F - FINE	SL. - SILT, SILTY																																																																																																																																																																																																																																																																																																																																																																																																																																						
FOSS. - FOSSILIFEROUS	SLL. - SLIGHTLY																																																																																																																																																																																																																																																																																																																																																																																																																																						
FRAC. - FRACTURED, FRACTURES	TCR - TRICONE REFUSAL																																																																																																																																																																																																																																																																																																																																																																																																																																						
FRAGS. - FRAGMENTS	w - MOISTURE CONTENT																																																																																																																																																																																																																																																																																																																																																																																																																																						
HL. - HIGHLY	V - VERY																																																																																																																																																																																																																																																																																																																																																																																																																																						
DRILL UNITS:	ADVANCING TOOLS:	HAMMER TYPE:																																																																																																																																																																																																																																																																																																																																																																																																																																					
<input type="checkbox"/> CME-45C	<input type="checkbox"/> CLAY BITS	<input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL																																																																																																																																																																																																																																																																																																																																																																																																																																					
<input type="checkbox"/> CME-55	<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER																																																																																																																																																																																																																																																																																																																																																																																																																																						
<input type="checkbox"/> CME-55B	<input checked="" type="checkbox"/> 8" HOLLOW AUGERS																																																																																																																																																																																																																																																																																																																																																																																																																																						
<input type="checkbox"/> VANE SHEAR TEST	<input type="checkbox"/> HARD FACED FINGER BITS																																																																																																																																																																																																																																																																																																																																																																																																																																						
<input type="checkbox"/> PORTABLE MOIST	<input type="checkbox"/> TUNG.-CARBIDE INSERTS																																																																																																																																																																																																																																																																																																																																																																																																																																						
<input checked="" type="checkbox"/> CME-550X	<input checked="" type="checkbox"/> CASING <input checked="" type="checkbox"/> W/ ADVANCER																																																																																																																																																																																																																																																																																																																																																																																																																																						
	<input type="checkbox"/> TRICONE _____ *STEEL TEETH																																																																																																																																																																																																																																																																																																																																																																																																																																						
	<input type="checkbox"/> TRICONE _____ *TUNG.-CARB.																																																																																																																																																																																																																																																																																																																																																																																																																																						
	<input checked="" type="checkbox"/> CORE BIT																																																																																																																																																																																																																																																																																																																																																																																																																																						
TERM	SPACING	TERM	THICKNESS																																																																																																																																																																																																																																																																																																																																																																																																																																				
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				
		THINLY LAMINATED	< 0.008 FEET																																																																																																																																																																																																																																																																																																																																																																																																																																				



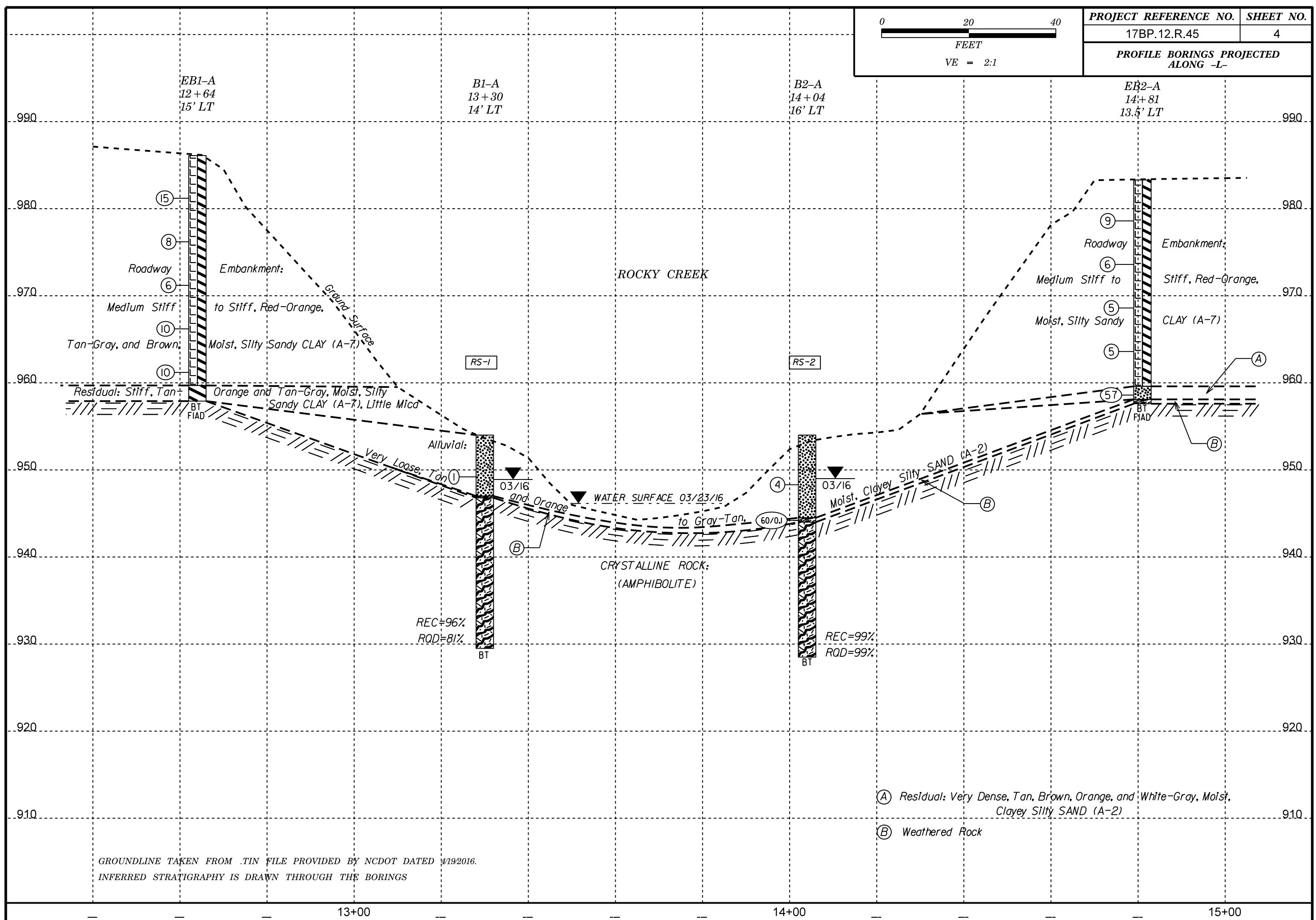
PROJECT REFERENCE NO.	SHEET NO.
17BP.12.R.45	3
<b>SITE PLAN</b>	
 0                      60                      120 FEET	
SKEW = 90 DEGREES	







PROJECT REFERENCE NO.	SHEET NO.
17BP.12.R.45	4
PROFILE BORINGS PROJECTED ALONG -L-	



EB1-A  
12+64  
15' LT

15  
8  
6  
10  
10

Roadway Embankment

Medium Stiff to Stiff, Red-Orange,  
Tan-Gray, and Brown, Moist, Silty Sandy CLAY (A-7)

Residual: Stiff, Tan and Orange and Tan-Gray, Moist, Silty Sandy CLAY (A-7), Little Mica

BT FIAD

B1-A  
13+30  
14' LT

RS-1

REC=96%  
RQD=81%

BT

B2-A  
14+04  
16' LT

RS-2

REC=99%  
RQD=99%

BT

EB2-A  
14+81  
13.5' LT

9  
6  
5  
5

Roadway Embankment

Medium Stiff to Stiff, Red-Orange,  
Moist, Silty Sandy CLAY (A-7)

BT FIAD

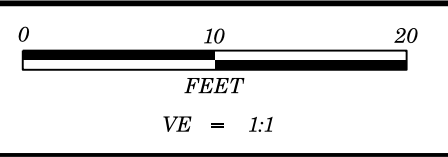
- (A) Residual: Very Dense, Tan, Brown, Orange, and White-Gray, Moist, Clayey Silty SAND (A-2)
- (B) Weathered Rock

GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 4/19/2016.  
INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS

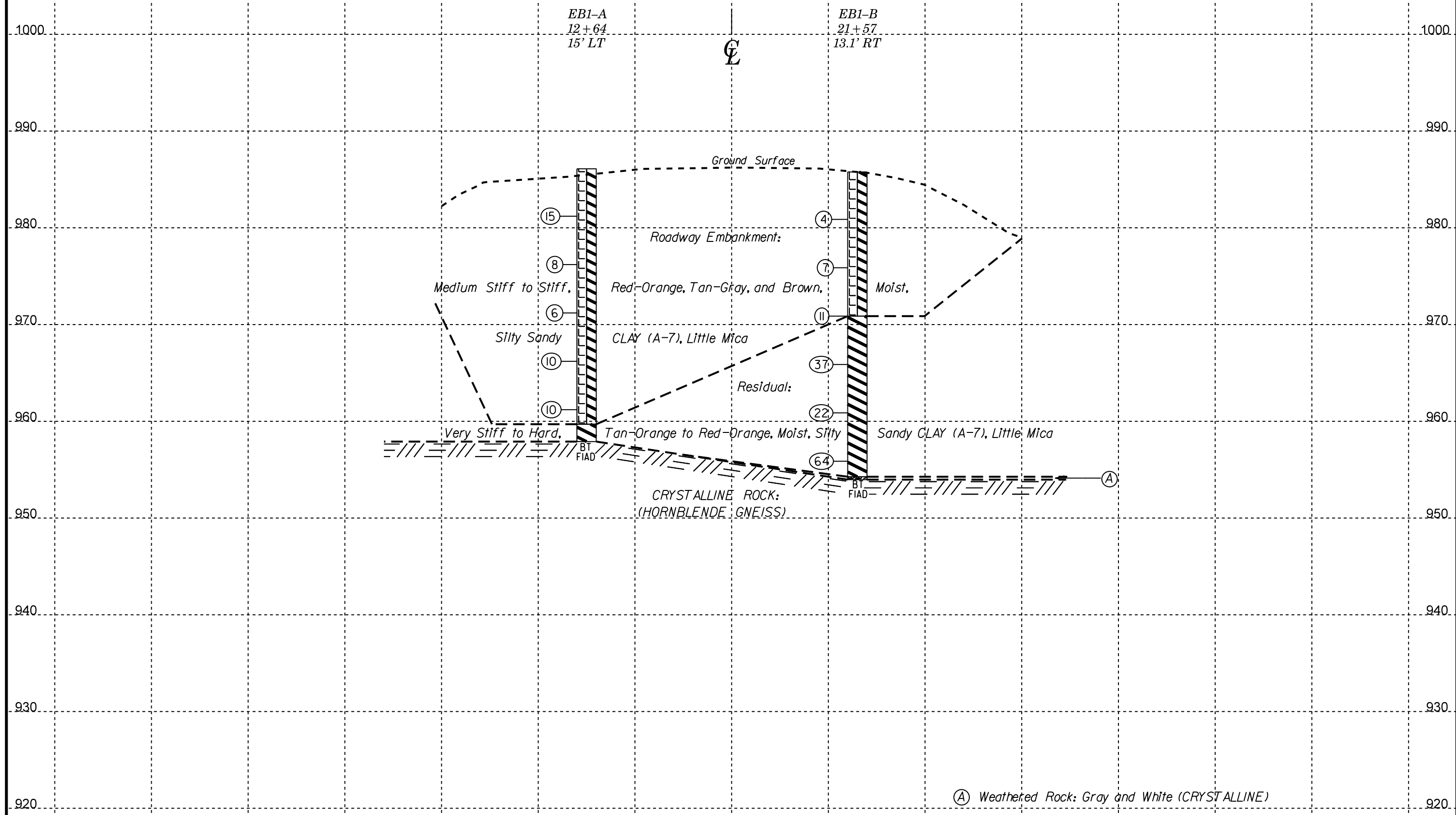
13+00

14+00

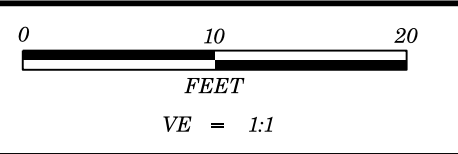
15+00



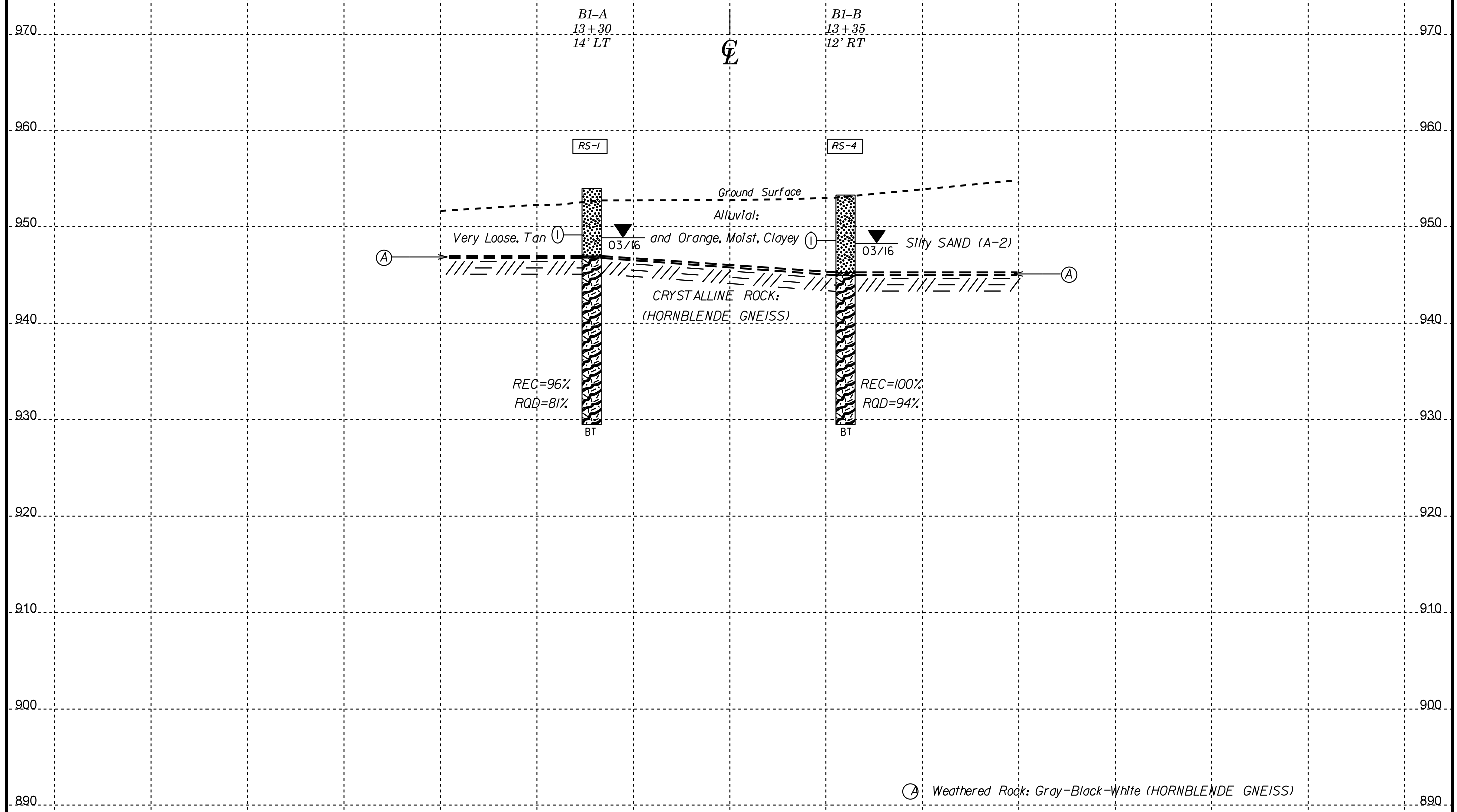
<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
17BP.12.R.45	5
<b>SECTION THROUGH END BENT 1</b>	
STA. 12+63.75	
SKEW=90 DEGREES	



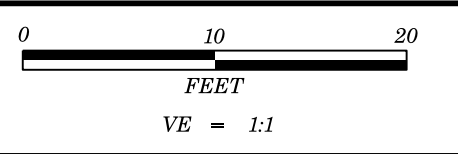
GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED: 4/19/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS



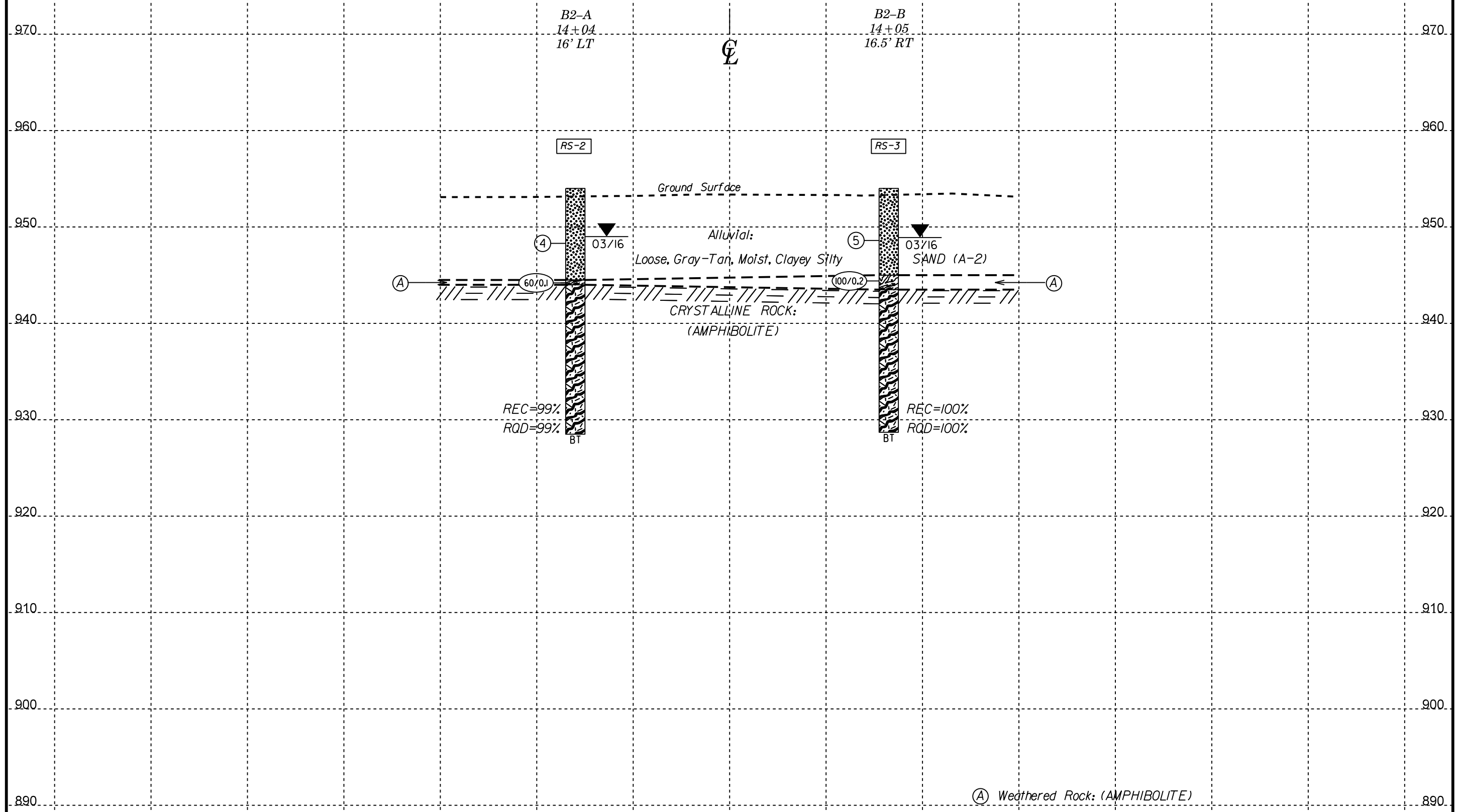
<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
17BP.12.R.45	6
<b>SECTION THROUGH BENT 1</b>	
STA. 13+34.94	
SKEW=90 DEGREES	



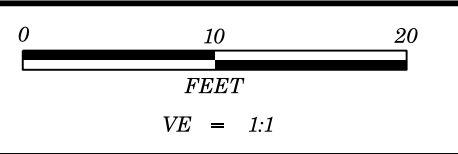
GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 4/19/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS



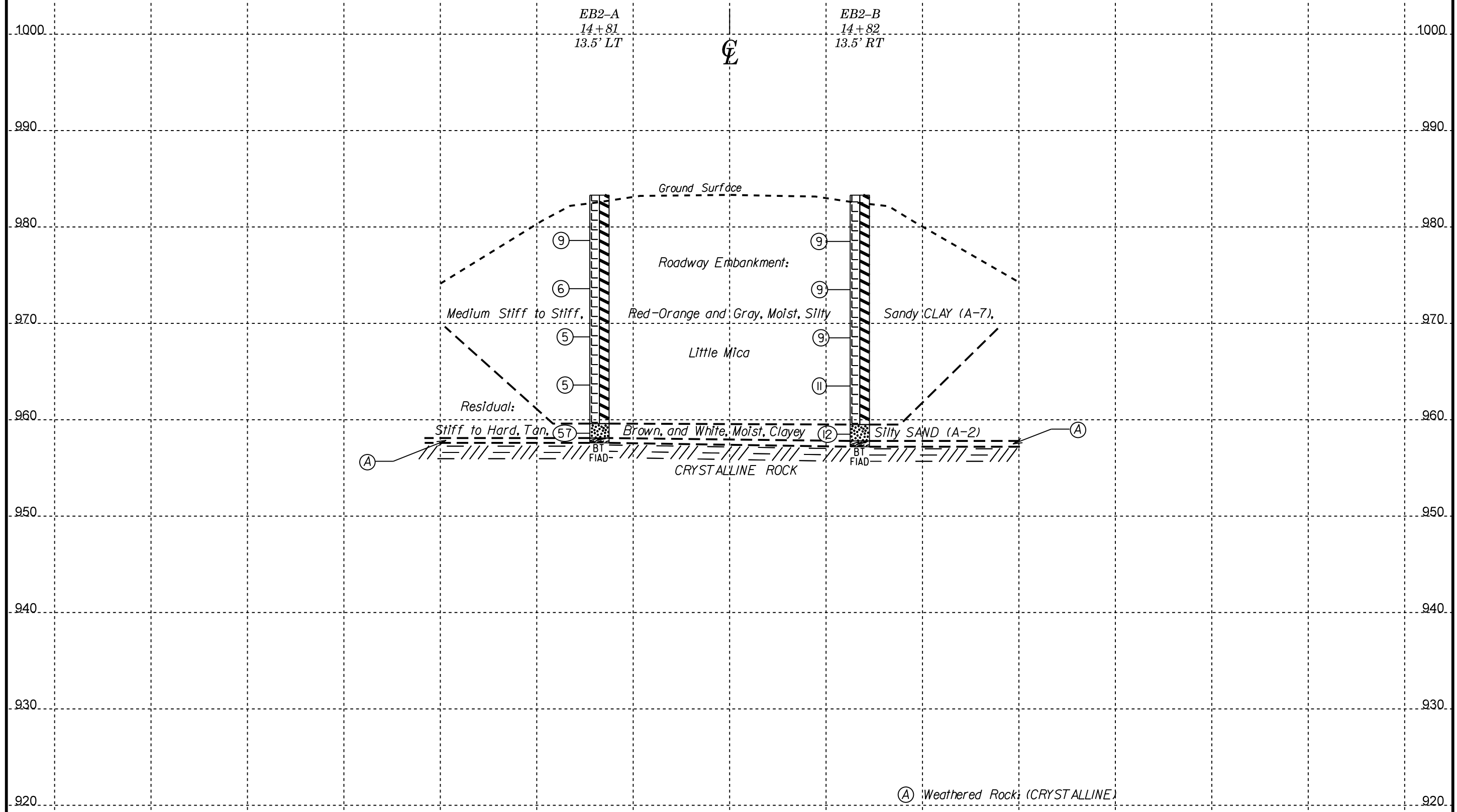
PROJECT REFERENCE NO.	SHEET NO.
17BP.12.R.45	7
SECTION THROUGH BENT 2 STA. 14 + 05.06 SKEW = 90 DEGREES	



GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED: 4/19/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS



<b>PROJECT REFERENCE NO.</b>	<b>SHEET NO.</b>
17BP.12.R.45	8
<b>SECTION THROUGH END BENT 2</b>	
STA. 14 + 76.25	
SKEW = 90 DEGREES	



GROUNDLINE TAKEN FROM .TIN FILE PROVIDED BY NCDOT DATED 4/19/2016.  
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS

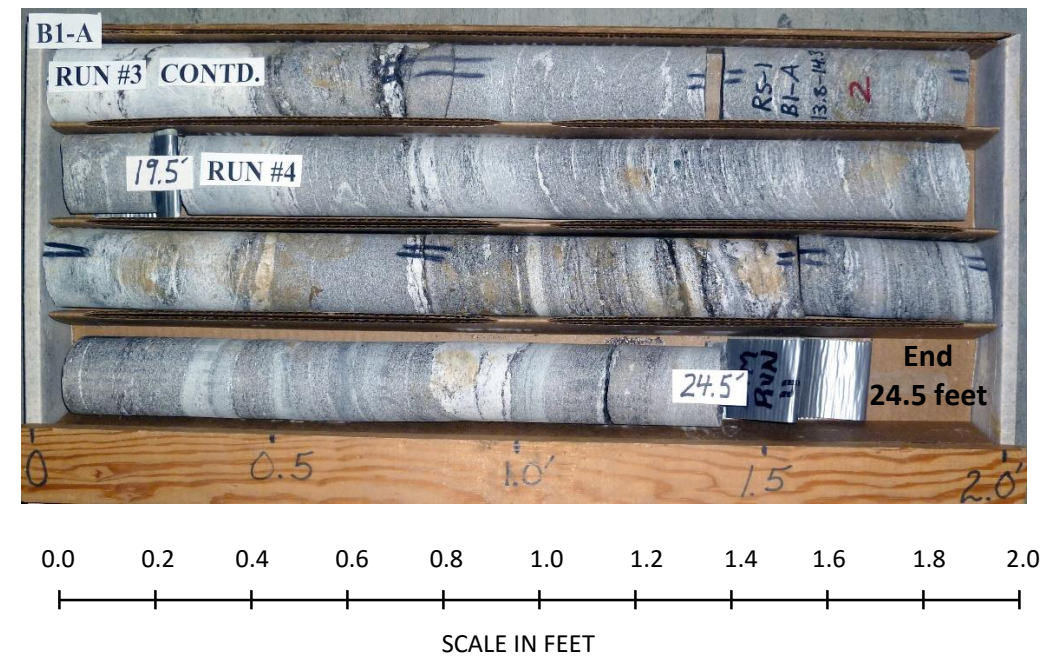
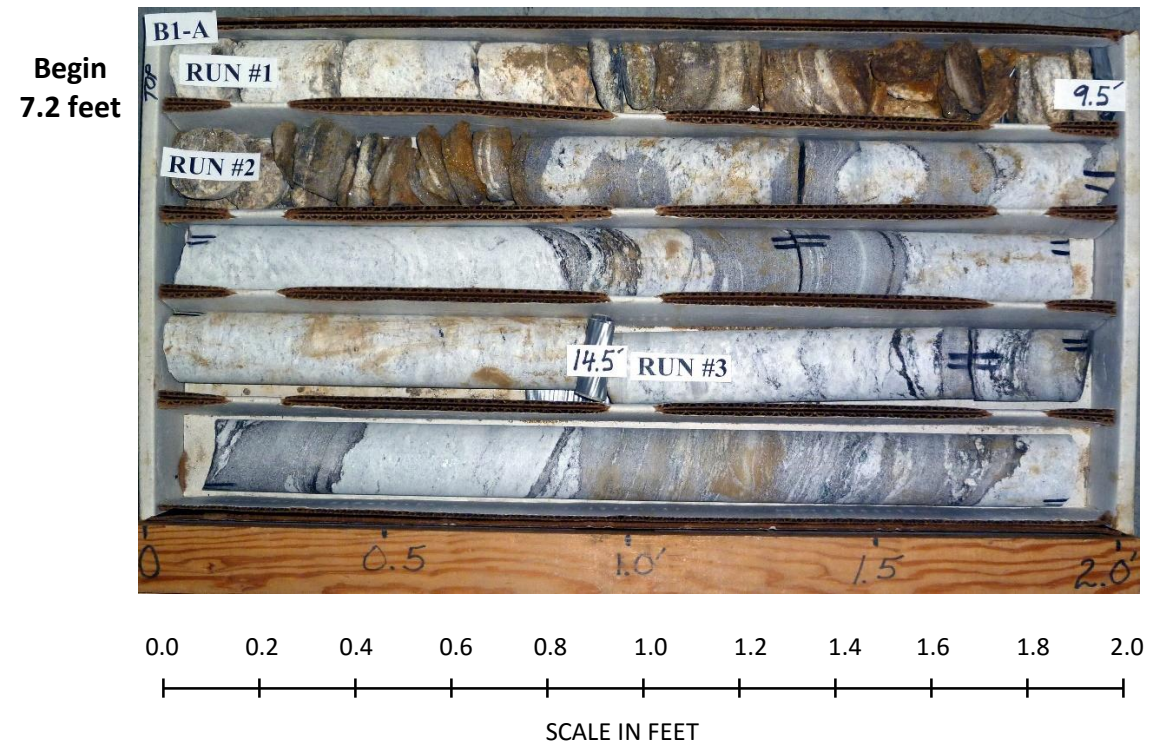








### CORE PHOTOGRAPHS: Bridge No. 260 on SR 1862 over Rocky Creek, B1-A 13+30, 14' LT





# GEOTECHNICAL BORING REPORT BORE LOG

# GEOTECHNICAL BORING REPORT CORE LOG

WBS 17BP.12.R.45		TIP N/A		COUNTY IREDELL		GEOLOGIST Stickney, J. K.									
SITE DESCRIPTION BRIDGE NO. 260 ON SR 1862 OVER ROCKY CREEK							GROUND WTR (ft)								
BORING NO. B1-B		STATION 13+35		OFFSET 12 ft RT		ALIGNMENT -L-									
COLLAR ELEV. 953.3 ft		TOTAL DEPTH 23.8 ft		NORTHING 830,128		EASTING 1,435,585									
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015				DRILL METHOD NW Casing WSPT & Core		HAMMER TYPE Automatic									
DRILLER Smith, C.L.		START DATE 03/22/16		COMP. DATE 03/22/16		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														GROUND SURFACE	0.0
950	949.6	3.7	WOH	WOH	1									ALLUVIAL Tan-Orange, Clayey Silty SAND (A-2)	
945														WEATHERED ROCK (GRANITE and HORNBLLENDE GNEISS)	8.0
940														CRYSTALLINE ROCK Gray-Black-White (AMPHIBOLITE and HORNBLLENDE GNEISS)	8.3
935															
930															929.5
Boring Terminated at Elevation 929.5 ft in Crystalline Rock															

NCDOT BORE DOUBLE BRDG00260.GPJ NC\_DOT.GDT 5/4/16

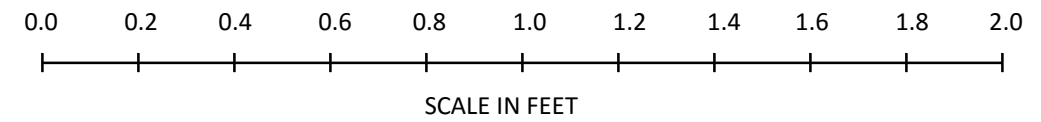
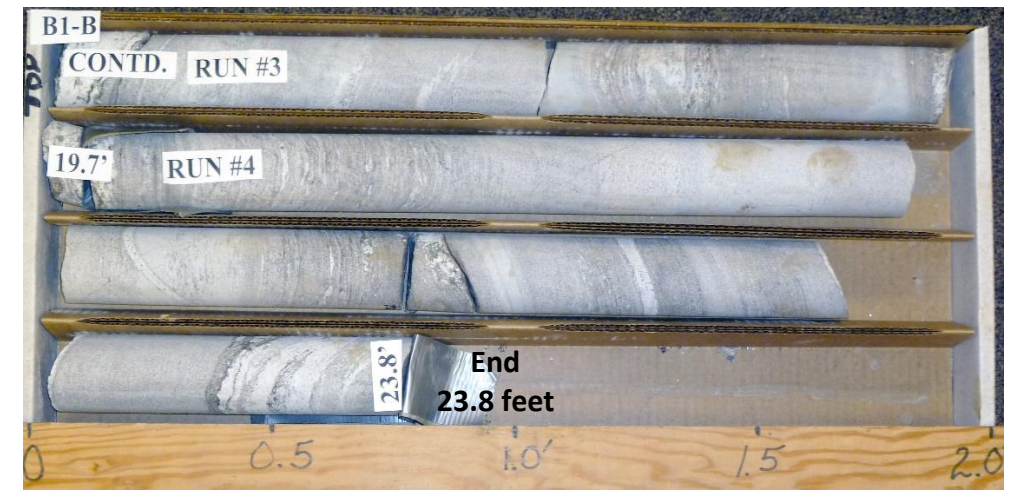
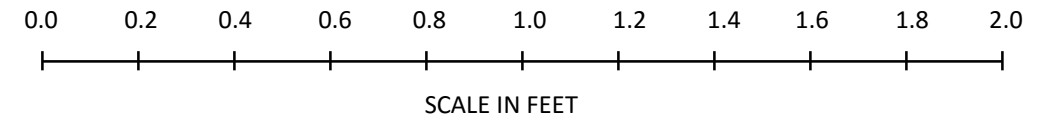
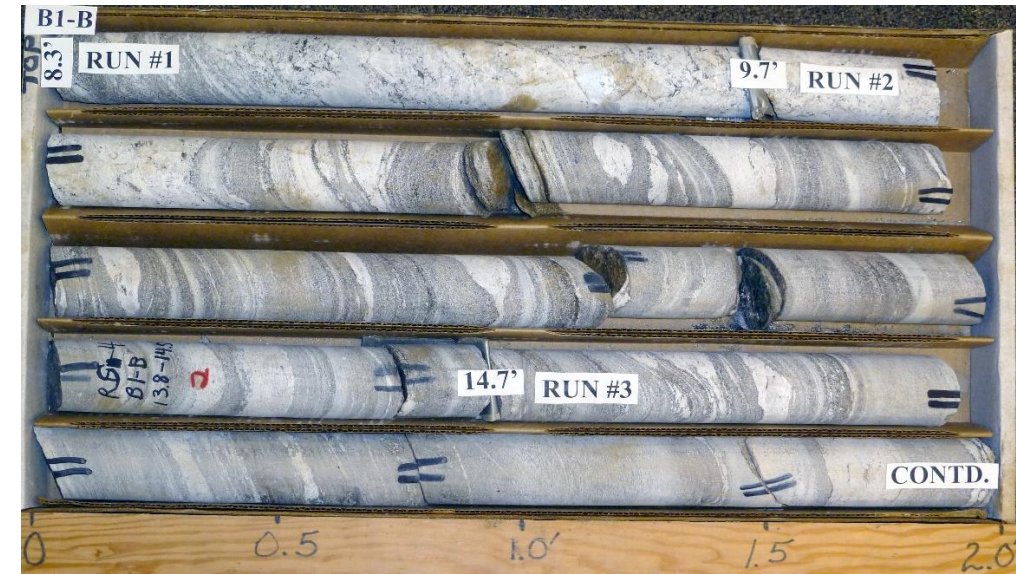
WBS 17BP.12.R.45		TIP N/A		COUNTY IREDELL		GEOLOGIST Stickney, J. K.	
SITE DESCRIPTION BRIDGE NO. 260 ON SR 1862 OVER ROCKY CREEK							GROUND WTR (ft)
BORING NO. B1-B		STATION 13+35		OFFSET 12 ft RT		ALIGNMENT -L-	
COLLAR ELEV. 953.3 ft		TOTAL DEPTH 23.8 ft		NORTHING 830,128		EASTING 1,435,585	
DRILL RIG/HAMMER EFF./DATE HFO0072 CME-550X 84% 05/15/2015				DRILL METHOD NW Casing WSPT & Core		HAMMER TYPE Automatic	
DRILLER Smith, C.L.		START DATE 03/22/16		COMP. DATE 03/22/16		SURFACE WATER DEPTH N/A	
CORE SIZE NX		TOTAL RUN 15.5 ft		L O G		DESCRIPTION AND REMARKS	
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	REC. (%)	RQD (%)	SAMP. NO.
945	945.0	8.3	1.4	1:35/0.4	(1.4)	(1.4)	
	943.8		5.0	1:39/1.0	100%	100%	
940				1:41/1.0	(5.0)	(4.5)	
	938.6	14.7	5.0	1:41/1.0	100%	90%	RS-4
				1:41/1.0			
935				1:46/1.0	(5.0)	(4.7)	
	933.6	19.7	4.1	1:46/1.0	100%	94%	
				1:46/1.0			
930				1:38/1.0	(4.1)	(3.9)	
	929.5	23.8		1:38/1.0	100%	95%	
				1:38/0.1			
Boring Terminated at Elevation 929.5 ft in Crystalline Rock							

NCDOT BORE DOUBLE BRDG00260.GPJ NC\_DOT.GDT 5/4/16



### CORE PHOTOGRAPHS: Bridge No. 260 on SR 1862 over Rocky Creek, B1-B 13+35, 12' RT

Begin  
8.3 feet



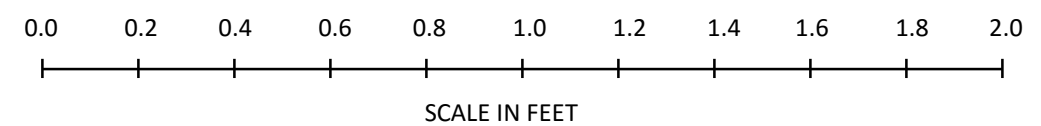
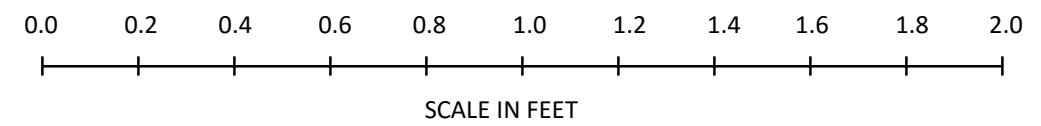






### CORE PHOTOGRAPHS: Bridge No. 260 on SR 1862 over Rocky Creek, B2-A 14+04, 16' LT

Begin  
10.0 feet

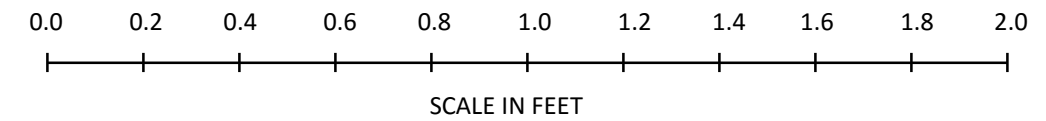
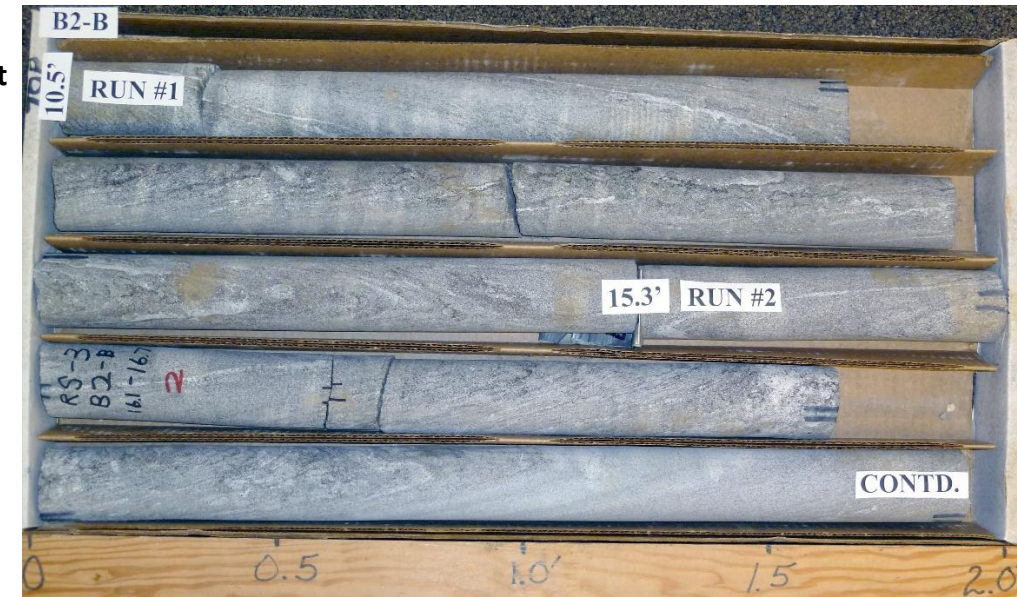




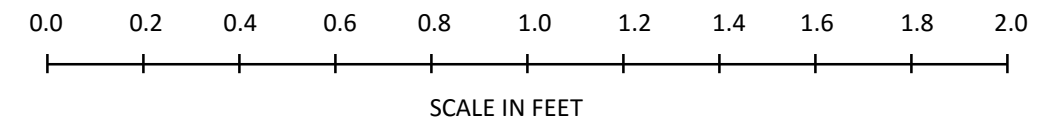


### CORE PHOTOGRAPHS: Bridge No. 260 on SR 1862 over Rocky Creek, B2-B 14+05, 17' RT

Begin  
10.5 feet



End  
25.3 feet





# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 17BP.12.R.45		TIP N/A		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 260 ON SR 1862 OVER ROCKY CREEK							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 14+81		OFFSET 14 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 983.3 ft		TOTAL DEPTH 25.7 ft		NORTHING 830,276		EASTING 1,435,579										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 84% 05/15/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Smith, C.L.		START DATE 03/24/16		COMP. DATE 03/24/16		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						
985														983.3	0.0	GROUND SURFACE
980	979.6	3.7	3	4	5	•							M			ROADWAY EMBANKMENT Red-Orange, Silty Sandy CLAY (A-7), Little Mica
975	974.6	8.7	3	3	3	•							M			
970	969.6	13.7	4	3	2	•							M			
965	964.6	18.7	2	2	3	•							M			
960	959.6	23.7	15	16	41	•							M			
						•							M			
														959.6	23.7	RESIDUAL
														958.1	25.2	Tan, Brown, Orange, and White-Gray, Clayey Silty SAND (A-2), Little Mica
														957.6	25.7	WEATHERED ROCK (CRYSTALLINE)
																Boring Terminated by Auger Refusal at Elevation 957.6 ft on Crystalline Rock

WBS 17BP.12.R.45		TIP N/A		COUNTY IREDELL		GEOLOGIST Stickney, J. K.										
SITE DESCRIPTION BRIDGE NO. 260 ON SR 1862 OVER ROCKY CREEK							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 14+82		OFFSET 14 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 983.3 ft		TOTAL DEPTH 26.1 ft		NORTHING 830,274		EASTING 1,435,606										
DRILL RIG/HAMMER EFF./DATE HFC0072 CME-550X 84% 05/15/2015				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER Smith, C.L.		START DATE 03/24/16		COMP. DATE 03/24/16		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						
985														983.3	0.0	GROUND SURFACE
980	979.5	3.8	7	4	5	•							M			ROADWAY EMBANKMENT Red, Orange, and Gray, Silty Sandy CLAY (A-7), Little Mica
975	974.5	8.8	4	4	5	•							M			
970	969.5	13.8	7	4	5	•							M			
965	964.5	18.8	4	6	5	•							M			
960	959.5	23.8	4	5	7	•							M			
						•							M			
														959.5	23.8	RESIDUAL
														957.8	25.5	Tan, Brown, Orange, and White, Clayey Silty SAND (A-2), Little Mica
														957.2	26.1	WEATHERED ROCK (CRYSTALLINE)
																Boring Terminated by Auger Refusal at Elevation 957.2 ft on Crystalline Rock