

REFERENCE: B-4830

PROJECT: 38600

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4830	1	8

CONTENTS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5	CROSS SECTIONS
6-7	BORE LOG REPORTS
8	SITE PHOTOGRAPH

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY WAKE
PROJECT DESCRIPTION REPLACE BRIDGE NO. 20 ON -L-
(NC 97) OVER MOCCASIN CREEK AT STA. 15+32.5

SITE DESCRIPTION _____

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.

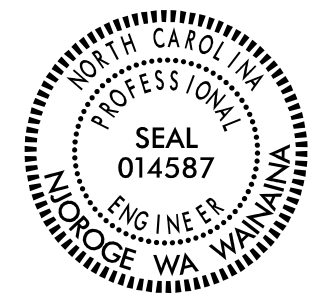
GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND 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
GEOSYNTEC
TRIGON

INVESTIGATED BY NJOROGE WAINAINA
DRAWN BY CHUCK TURLINGTON
CHECKED BY WESTON SHIN
SUBMITTED BY NJOROGE WAINAINA
DATE OCTOBER 2015



DocuSigned by:
Njoroge Wainaina 11/24/2015
AEC0C6E0A2E14F2
SIGNATURE DATE

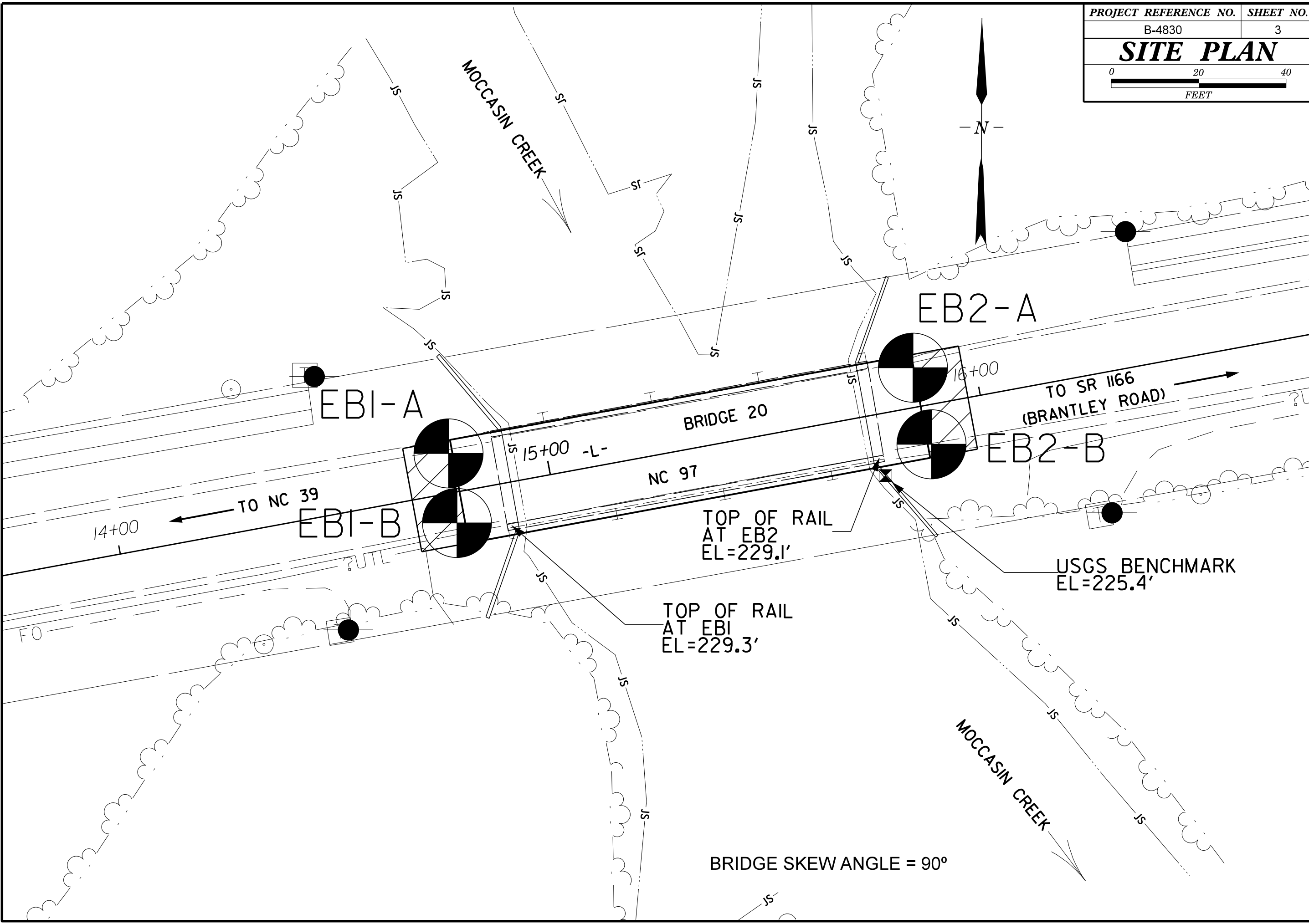
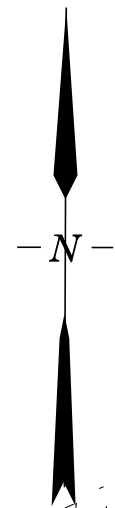
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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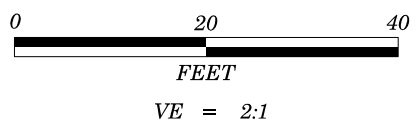
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

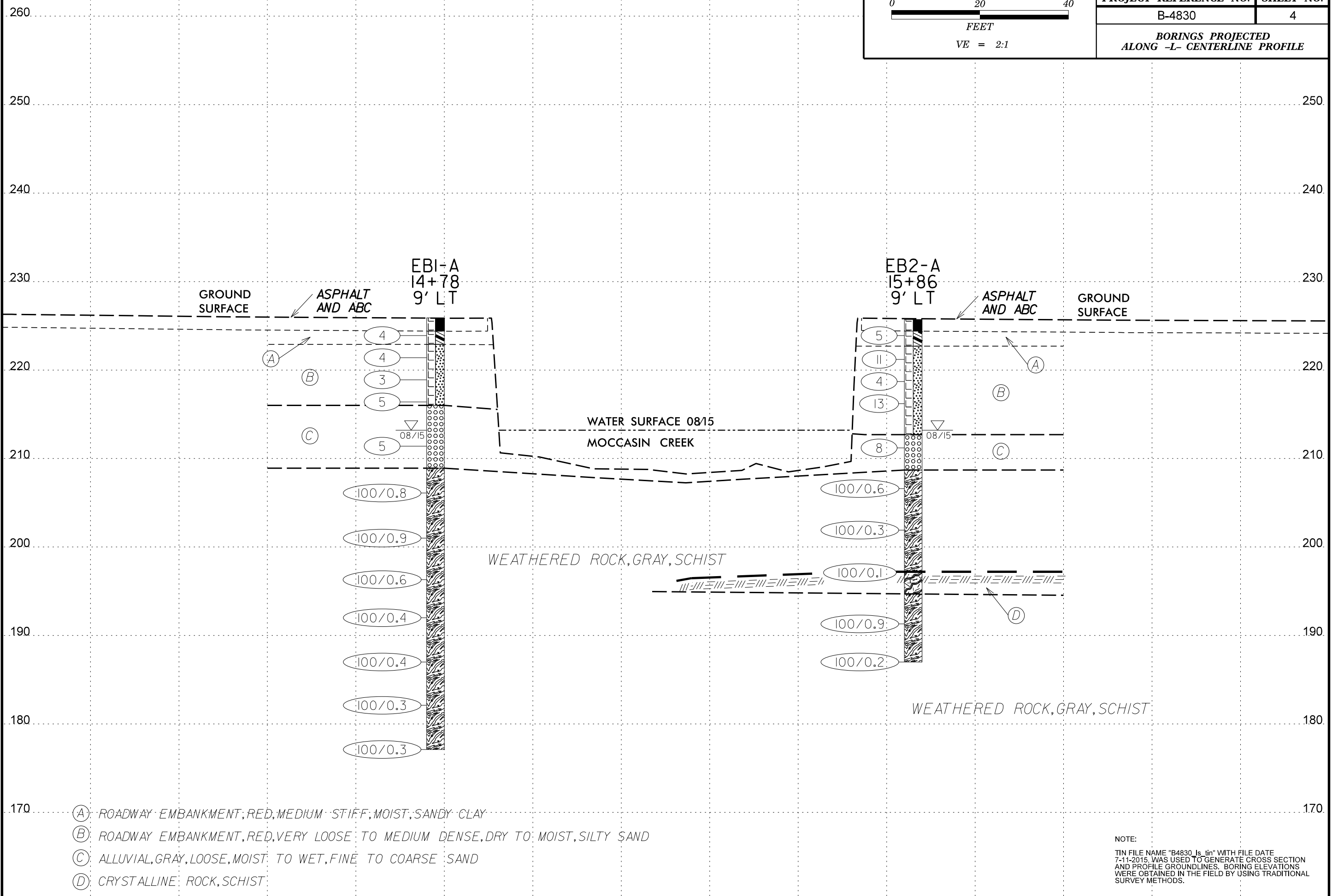
SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																											
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, 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 (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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>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.</p>										<p>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:</p>										<p>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 INTRUDED ROCKS. SLICKENISE - 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 (SROD) - 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.</p>																																																																																																																																																											
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<p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										COMPRESSIBILITY										NON-CRYSTALLINE ROCK (NCR)										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>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p>										<p>SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50</p>										COASTAL PLAIN SEDIMENTARY ROCK (CP)										COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.																																																																																																																																																											
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<p>WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING</p>										<p>STATIC WATER LEVEL AFTER 24 HOURS</p>										<p>PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA</p>										<p>SPRING OR SEEP</p>																																																																																																																																																											
MISCELLANEOUS SYMBOLS										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.																																																																																																																																																											
<p>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION</p>										<p>DIP & DIP DIRECTION OF ROCK STRUCTURES</p>										<p>SOIL SYMBOL</p>										<p>SLOPE INDICATOR INSTALLATION</p>																																																																																																																																																											
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<p>INFERRED SOIL BOUNDARY</p>										<p>AUGER BORING</p>										<p>TEST BORING WITH CORE</p>										<p>SPT N-VALUE</p>																																																																																																																																																											
<p>INFERRED ROCK LINE</p>										<p>CORE BORING</p>										<p>MONITORING WELL</p>										<p>PIEZOMETER INSTALLATION</p>																																																																																																																																																											
<p>ALLUVIAL SOIL BOUNDARY</p>										<p>UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE</p>										<p>UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</p>										<p>UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p>																																																																																																																																																											
TEXTURE OR GRAIN SIZE										ABBREVIATIONS										VERY HARD										HARD																																																																																																																																																											
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SOIL MOISTURE - CORRELATION OF TERMS										VERY HARD										HARD										MODERATELY HARD																																																																																																																																																											
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COLOR										VERY HARD										HARD										MODERATELY HARD																																																																																																																																																											
<p>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.</p>										<p>ADVANCING TOOLS:</p>										<p>HAMMER TYPE:</p>										<p>INDURATION</p>																																																																																																																																																											
<p>DRILL UNITS:</p>										<p>CLAY BITS</p>										<p>AUTOMATIC</p>										<p>FRIABLE</p>																																																																																																																																																											
<p>CME-45C</p>										<p>6" CONTINUOUS FLIGHT AUGER</p>										<p>MANUAL</p>										<p>MODERATELY INDURATED</p>																																																																																																																																																											
<p>CME-55</p>										<p>8" HOLLOW AUGERS</p>										<p>CORE SIZE:</p>										<p>INDURATED</p>																																																																																																																																																											
<p>CME-550</p>										<p>HARD FACED FINGER BITS</p>										<p>-B</p>										<p>EXTREMELY INDURATED</p>																																																																																																																																																											
<p>VANE SHEAR TEST</p>										<p>TUNG-CARBIDE INSERTS</p>										<p>-H</p>										<p>SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																																																																																																											
<p>PORTABLE HOIST</p>										<p>CASING w/ ADVANCER</p>										<p>-N</p>										<p>FRAGMENTS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p>																																																																																																																																																											
<p>TRICONE</p>										<p>TRICONE *STEEL TEETH</p>										<p>POST HOLE DIGGER</p>										<p>GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p>																																																																																																																																																											
<p>TRICONE</p>										<p>TRICONE *TUNG-CARB.</p>										<p>HAND AUGER</p>										<p>INDURATED</p>																																																																																																																																																											
<p>CORE BIT</p>										<p>CORE BIT</p>										<p>SOUNDING ROD</p>										<p>FRAGMENTS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p>																																																																																																																																																											
<p>2 1/4" HOLLOW AUGERS</p>										<p>2 1/4" HOLLOW AUGERS</p>										<p>VANE SHEAR TEST</p>										<p>EXTREMELY INDURATED</p>																																																																																																																																																											



BRIDGE SKEW ANGLE = 90°



PROJECT REFERENCE NO.	SHEET NO.
B-4830	4
BORINGS PROJECTED ALONG -L- CENTERLINE PROFILE	

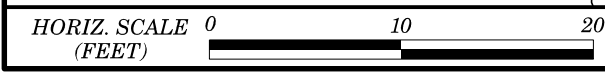
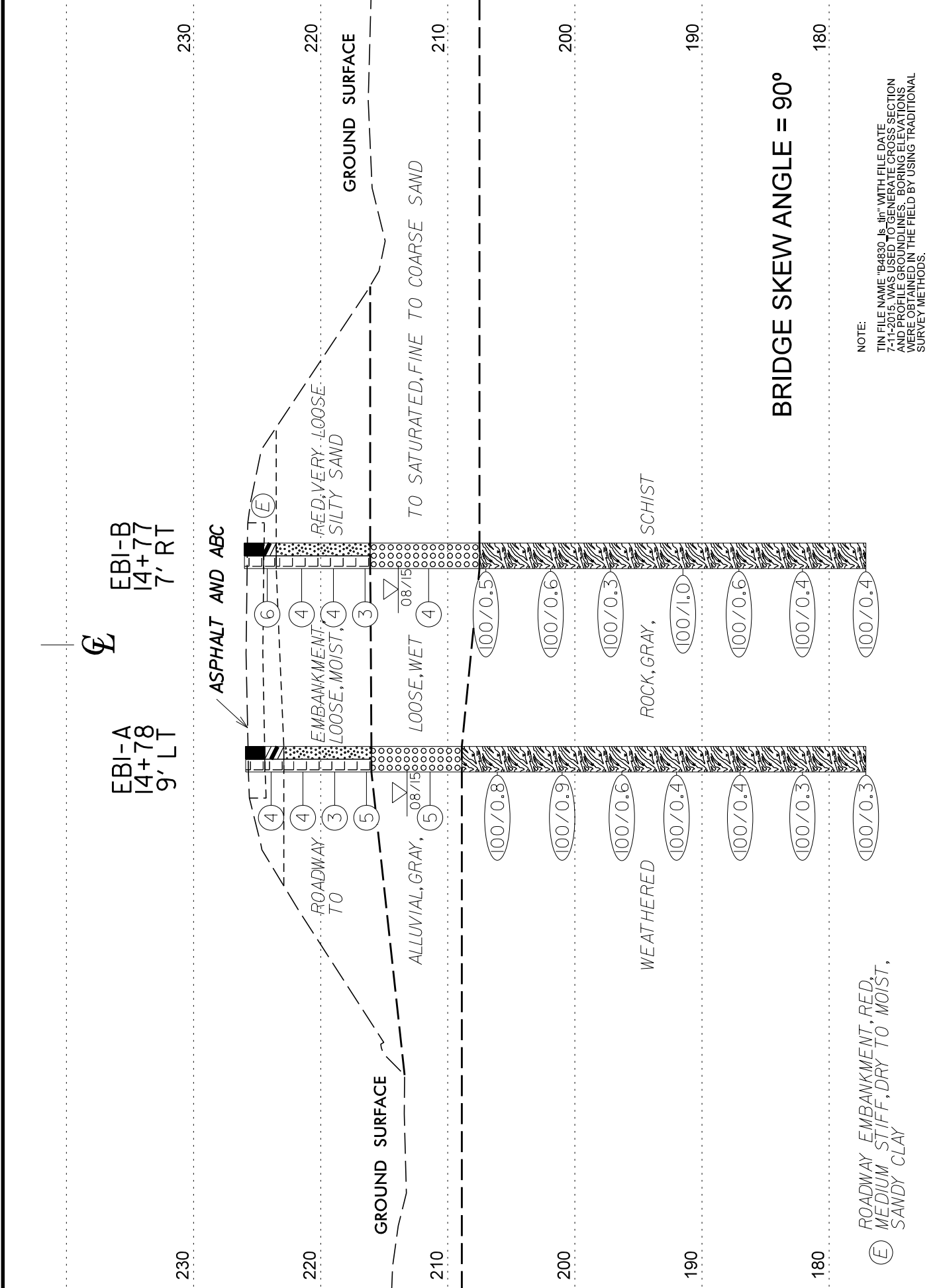


14+00

15+00

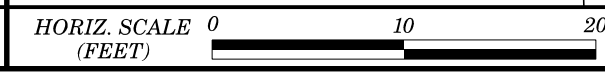
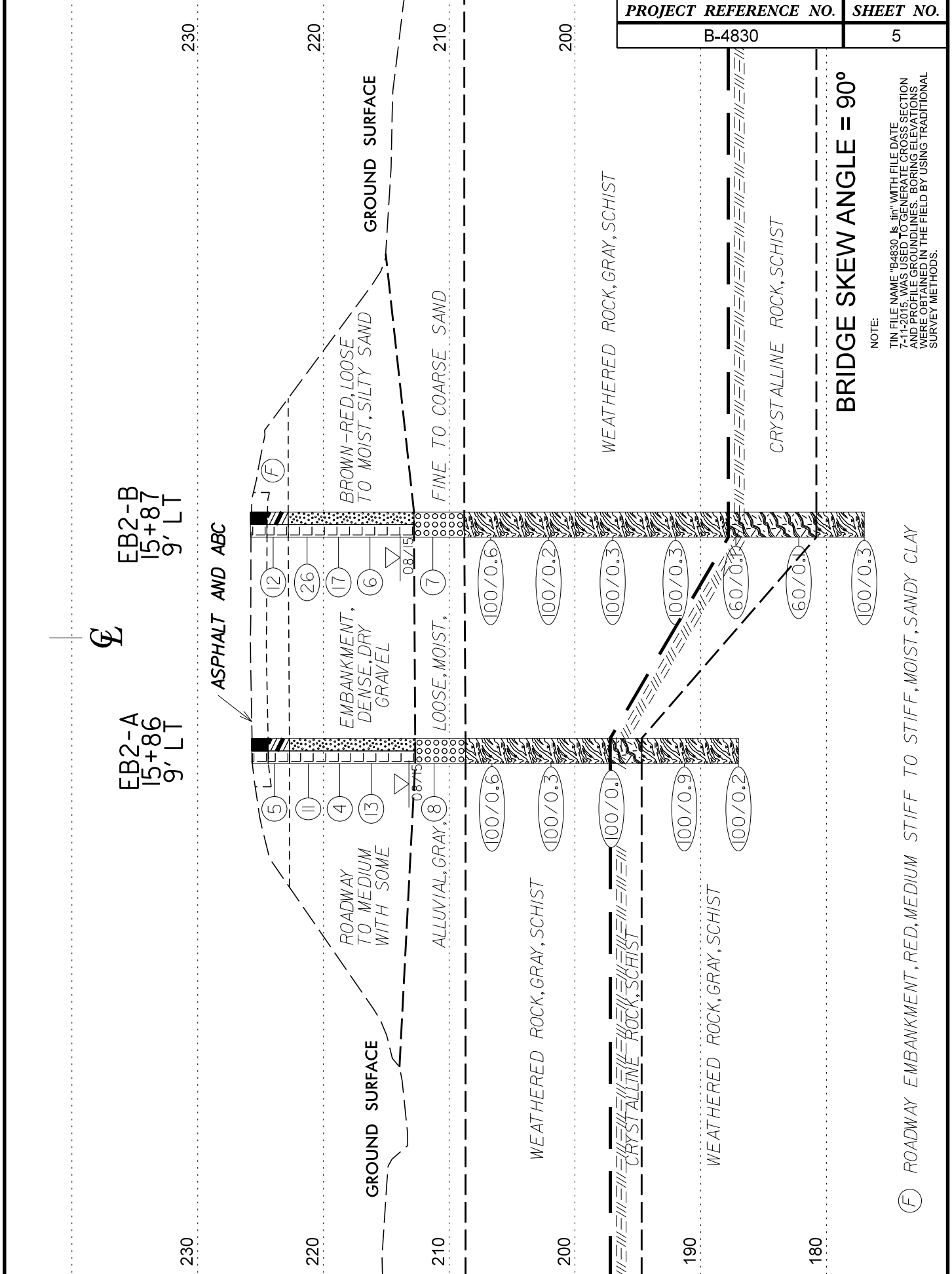
16+00

NOTE:
TIN FILE NAME "B4830_Is.tin" WITH FILE DATE 7-11-2015, WAS USED TO GENERATE CROSS SECTION AND PROFILE GROUNDLINES. BORING ELEVATIONS WERE OBTAINED IN THE FIELD BY USING TRADITIONAL SURVEY METHODS.



VE = 1:1

CROSS SECTION THROUGH END BENT 1



VE = 1:1

CROSS SECTION THROUGH END BENT 2

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS 38600.1.1		TIP B-4830		COUNTY WAKE		GEOLOGIST ROHIT WARRIER										
SITE DESCRIPTION REPLACE BRIDGE NO. 20 ON -L- (NC 97) OVER MOCCASIN CREEK							GROUND WTR (ft)									
BORING NO. EB1-A		STATION 14+78		OFFSET 9 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 225.9 ft		TOTAL DEPTH 48.8 ft		NORTHING 759,558		EASTING 2,219,014										
DRILL RIG/HAMMER EFF./DATE TRI249435 CME-55 84% 02/27/2015			DRILL METHOD H.S. Augers with SPT			HAMMER TYPE Automatic										
DRILLER WENDELL WHICHARD		START DATE 08/10/15		COMP. DATE 08/10/15		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	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
230																
225	224.9	1.0	4	2	2								M	225.9	0.0	GROUND SURFACE
													M	224.4	1.5	ROADWAY EMBANKMENT ASPHALT AND ABC
	222.4	3.5	2	2	2								M	222.9	3.0	RED, SANDY CLAY
													M			RED, SILTY SAND
220	219.9	6.0	4	1	2								M			
	217.4	8.5	2	2	3								M			
215	212.4	13.5	6	2	3								W	216.0	9.9	ALLUVIAL GRAY, FINE TO COARSE SAND
210	207.4	18.5	35	58	42/0.3								W	208.9	17.0	WEATHERED ROCK (SCHIST)
205	202.4	23.5	28	51	49/0.4											
200	197.4	28.5	55	64	36/0.1											
195	192.4	33.5	100/0.4													
190	187.4	38.5	100/0.4													
185	182.4	43.5	100/0.3													
180	177.4	48.5	100/0.3													

WBS 38600.1.1		TIP B-4830		COUNTY WAKE		GEOLOGIST ROHIT WARRIER										
SITE DESCRIPTION REPLACE BRIDGE NO. 20 ON -L- (NC 97) OVER MOCCASIN CREEK							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 14+77		OFFSET 7 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 226.0 ft		TOTAL DEPTH 48.9 ft		NORTHING 759,542		EASTING 2,219,016										
DRILL RIG/HAMMER EFF./DATE TRI249435 CME-55 84% 02/27/2015			DRILL METHOD H.S. Augers with SPT			HAMMER TYPE Automatic										
DRILLER WENDELL WHICHARD		START DATE 08/12/15		COMP. DATE 08/12/15		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	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
230																
225	225.2	0.8	7	3	3								D	226.0	0.0	GROUND SURFACE
													D	224.5	1.5	ROADWAY EMBANKMENT ASPHALT AND ABC
	222.5	3.5	3	2	2								D	223.5	2.5	RED, SANDY CLAY
													M			RED, SILTY SAND
220	220.0	6.0	3	2	2								M			
	217.5	8.5	1	1	2								M			
215	212.5	13.5	2	2	2								M	216.1	9.9	ALLUVIAL GRAY, COARSE SAND
210	207.5	18.5	100/0.5										Sat.	207.5	18.5	WEATHERED ROCK (SCHIST)
205	202.5	23.5	90	10/0.1									Sat.			
200	197.5	28.5	100/0.3													
195	192.5	33.5	35/5	65/0.5												
190	187.5	38.5	80	20/0.1												
185	182.5	43.5	100/0.4													
180	177.5	48.5	100/0.4													

NCDOT BORE DOUBLE B4830_GEO_BRDG20_BH.GPJ NC_DOT.GDT 10/5/15

NCDOT BORE DOUBLE B4830_GEO_BRDG20_BH.GPJ NC_DOT.GDT 10/5/15

GEOTECHNICAL BORING REPORT BORE LOG

GEOTECHNICAL BORING REPORT BORE LOG

WBS 38600.1.1		TIP B-4830		COUNTY WAKE		GEOLOGIST ROHIT WARRIER										
SITE DESCRIPTION REPLACE BRIDGE NO. 20 ON -L- (NC 97) OVER MOCCASIN CREEK							GROUND WTR (ft)									
BORING NO. EB2-A		STATION 15+86		OFFSET 9 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 225.7 ft		TOTAL DEPTH 38.7 ft		NORTHING 759,577		EASTING 2,219,120										
DRILL RIG/HAMMER EFF./DATE TRI249435 CME-55 84% 02/27/2015				DRILL METHOD H.S. Augers with SPT		HAMMER TYPE Automatic										
DRILLER WENDELL WHICHARD		START DATE 08/10/15		COMP. DATE 08/10/15		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						
230																
225	224.9	0.8	2	2	3									225.7	GROUND SURFACE	0.0
														224.4	ROADWAY EMBANKMENT ASPHALT AND ABC	1.3
														222.7	RED, SANDY CLAY	3.0
220	222.2	3.5	7	9	2										BROWN-RED, SILTY SAND WITH SOME GRAVEL	
	219.7	6.0	4	2	2											
	217.2	8.5	6	7	6											
215																
	212.2	13.5	1	2	6									212.7	ALLUVIAL GRAY, FINE TO COARSE SAND	13.0
210																
	207.2	18.5	80	20/0.1										208.7	WEATHERED ROCK (SCHIST)	17.0
205																
	202.2	23.5	100/0.3													
200																
	197.2	28.5	100/0.1											197.2	CRYSTALLINE ROCK (SCHIST)	28.5
195														194.7	WEATHERED ROCK (SCHIST)	31.0
	192.2	33.5	10	90/0.4												
190																
	187.2	38.5	100/0.2											187.0	Boring Terminated at Elevation 187.0 ft IN WEATHERED ROCK (SCHIST)	38.7

WBS 38600.1.1		TIP B-4830		COUNTY WAKE		GEOLOGIST ROHIT WARRIER										
SITE DESCRIPTION REPLACE BRIDGE NO. 20 ON -L- (NC 97) OVER MOCCASIN CREEK							GROUND WTR (ft)									
BORING NO. EB2-B		STATION 15+87		OFFSET 9 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 225.8 ft		TOTAL DEPTH 48.8 ft		NORTHING 759,560		EASTING 2,219,125										
DRILL RIG/HAMMER EFF./DATE TRI249435 CME-55 84% 02/27/2015				DRILL METHOD H.S. Augers with SPT		HAMMER TYPE Automatic										
DRILLER WENDELL WHICHARD		START DATE 08/12/15		COMP. DATE 08/12/15		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						
230																
225	225.0	0.8	8	5	7									225.8	GROUND SURFACE	0.0
														224.5	ROADWAY EMBANKMENT ASPHALT AND ABC	1.3
														222.8	RED, SANDY CLAY	3.0
220	222.3	3.5	4	19	7										BROWN-RED, SILTY SAND WITH SOME GRAVEL	
	219.8	6.0	7	6	11											
	217.3	8.5	3	3	3											
215																
	212.3	13.5	2	3	4									212.8	ALLUVIAL GRAY, FINE TO COARSE SAND WITH TRACE CLAY	13.0
210																
	207.3	18.5	70	30/0.1										208.8	WEATHERED ROCK (SCHIST)	17.0
205																
	202.3	23.5	100/0.2													
200																
	197.3	28.5	100/0.3											197.2	CRYSTALLINE ROCK (SCHIST)	28.5
195														194.7	WEATHERED ROCK (SCHIST)	31.0
	192.3	33.5	100/0.3													
190																
	187.3	38.5	60/0.1											187.8	CRYSTALLINE ROCK (SCHIST)	38.0
185																
	182.3	43.5	60/0.1											180.8	WEATHERED ROCK (SCHIST)	45.0
180																
	177.3	48.5	100/0.3											177.0	Boring Terminated at Elevation 177.0 ft IN WEATHERED ROCK (SCHIST)	48.8

SITE PHOTOGRAPH

BRIDGE NO. 20 ON -L- (NC 97) OVER
MOCCASIN CREEK

SHEET 8
38600.1.1 (B-4830)



LOOKING NORTH AT BRIDGE NO. 20