

REFERENCE: SF-950056

PROJECT: 17BP.4.R.73

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	SF-950056	1	13

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY WAYNE  
PROJECT DESCRIPTION BRIDGE NO. 56 ON SR 1342  
OVER GREAT SWAMP

**CONTENTS**

SHEET NO.	DESCRIPTION
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**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

JKC  
RES  
DGP  
JME

INVESTIGATED BY JL STONE  
DRAWN BY JL STONE  
CHECKED BY DN ARGENBRIGHT  
SUBMITTED BY DN ARGENBRIGHT  
DATE APRIL 2016

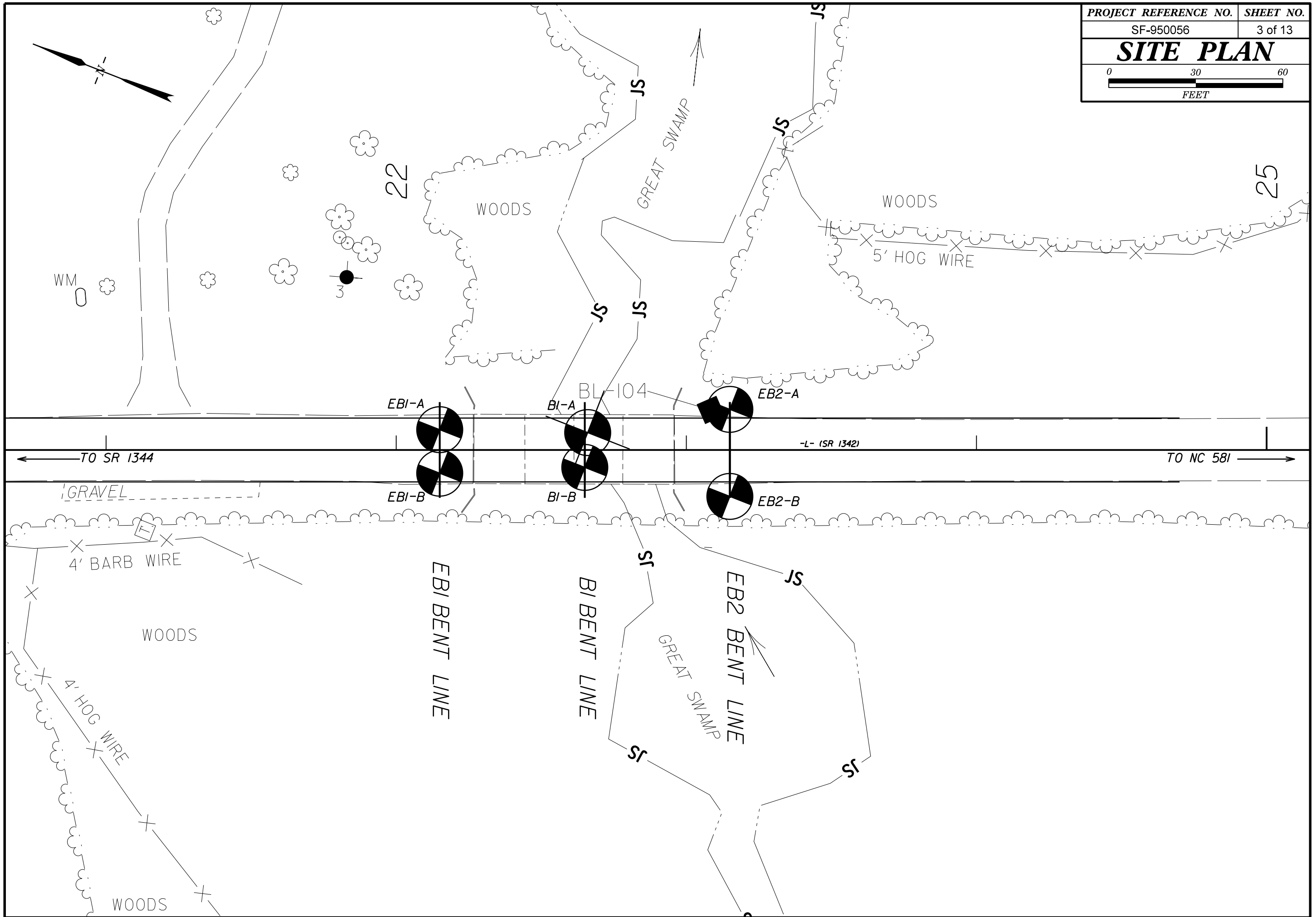


DocuSigned by:  
Joseph L Stone 5/13/2016  
4330580A87A24F5 SIGNATURE DATE

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

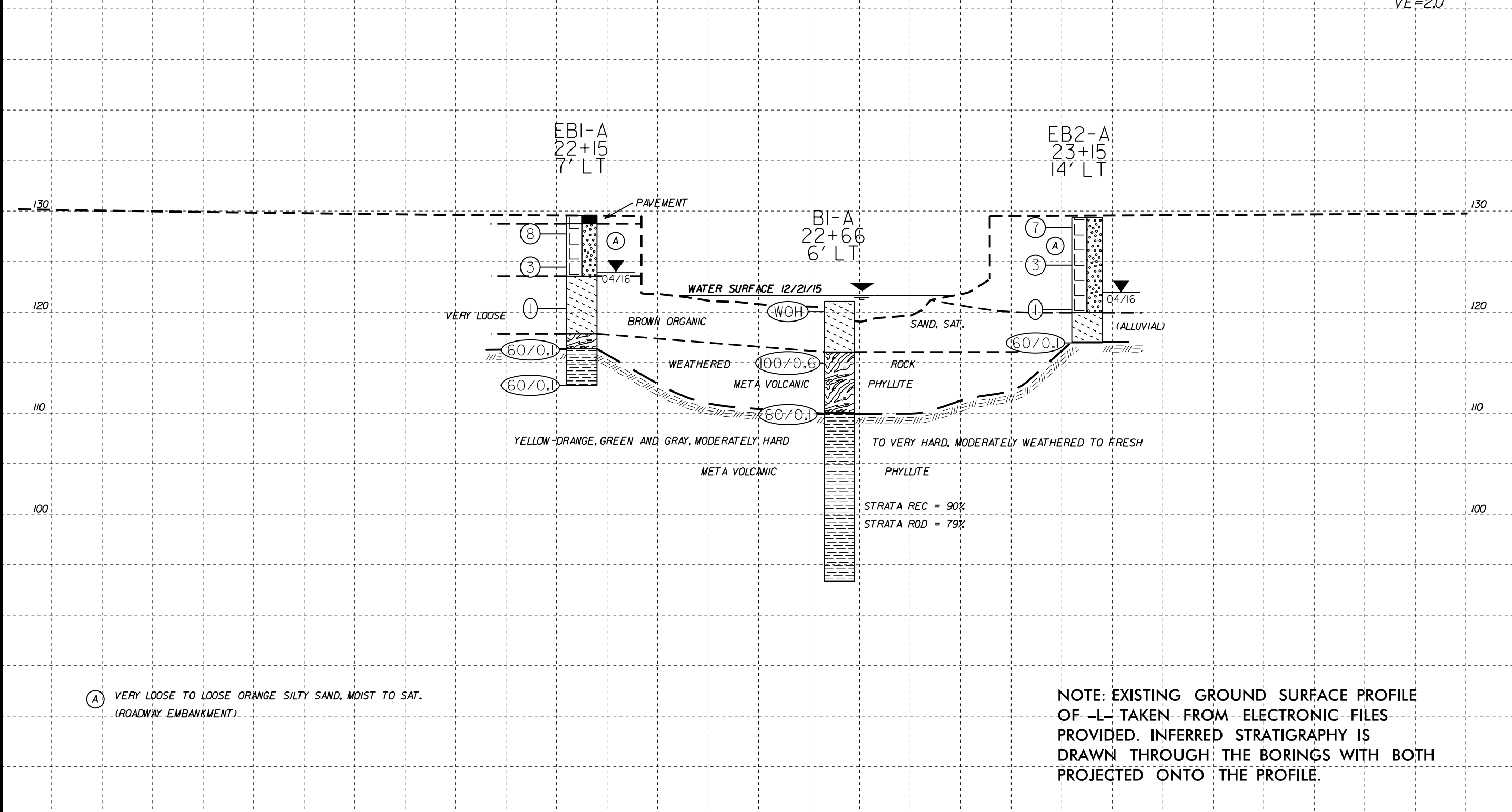
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION  
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										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 DISLOGGED 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 INTRUDED 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 (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.																																																																																																																																																										
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ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p><b>COMPRESSIBILITY</b></p> <p>SLIGHTLY COMPRESSIBLE LL &lt; 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL &gt; 50</p> <p><b>PERCENTAGE OF MATERIAL</b></p> <table border="1"> <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><b>GROUND WATER</b></p> <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>										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	<p><b>WEATHERED ROCK (WR)</b></p> <p> NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES &gt; 100 BLOWS PER FOOT IF TESTED.</p> <p><b>CRYSTALLINE ROCK (CR)</b></p> <p> 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></p> <p> 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></p> <p> COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.</p>									
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PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )																																																																																																																																																																																					
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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																																																																																																																																																																																					
<b>TEXTURE OR GRAIN SIZE</b>										<b>ABBREVIATIONS</b>										<b>INDURATION</b>																																																																																																																																																																				
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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.																																																																																																																																																																																								



PROFILE THROUGH BORINGS PROJECTED ALONG -L-

VE=2.0



(A) VERY LOOSE TO LOOSE ORANGE SILTY SAND, MOIST TO SAT.  
(ROADWAY EMBANKMENT)

NOTE: EXISTING GROUND SURFACE PROFILE OF -L- TAKEN FROM ELECTRONIC FILES PROVIDED. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

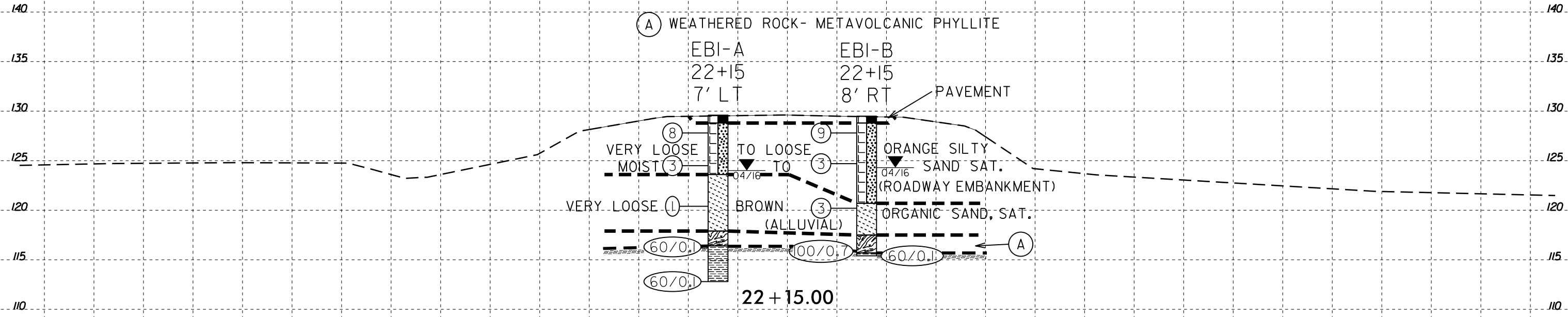
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 L:\REG\Greenville\_Investigation\TIP\SF950056-GEO-BRDG0056\CADD\_GEOTECH\PlanProf\950056-GEO-pfl.dgn

22+00

23+00

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

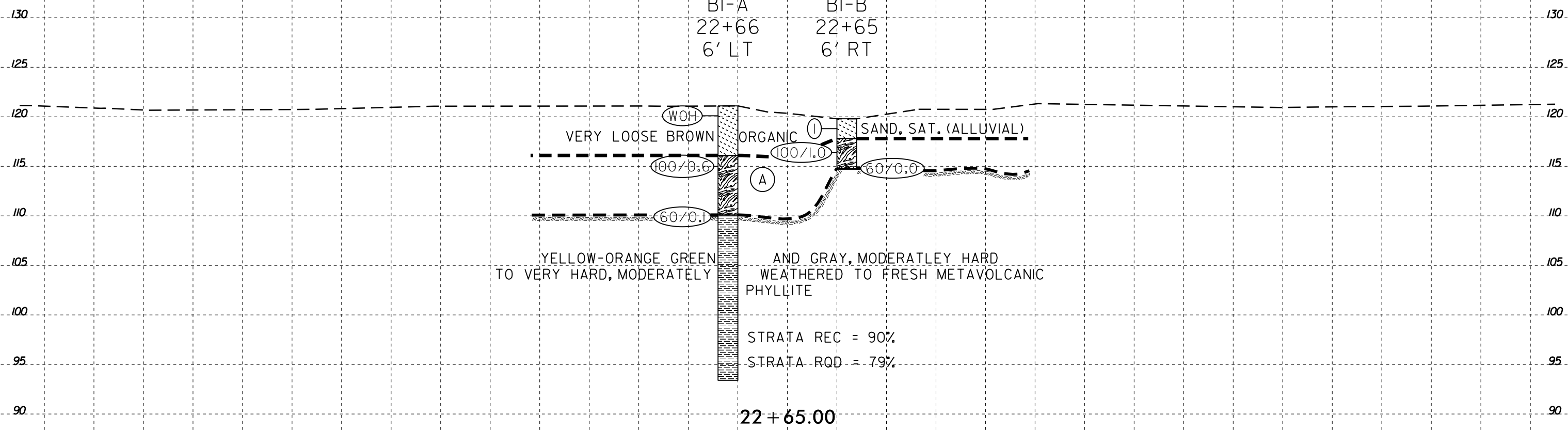
# CROSS SECTION THROUGH END BENT I



75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

# CROSS SECTION THROUGH BENT I



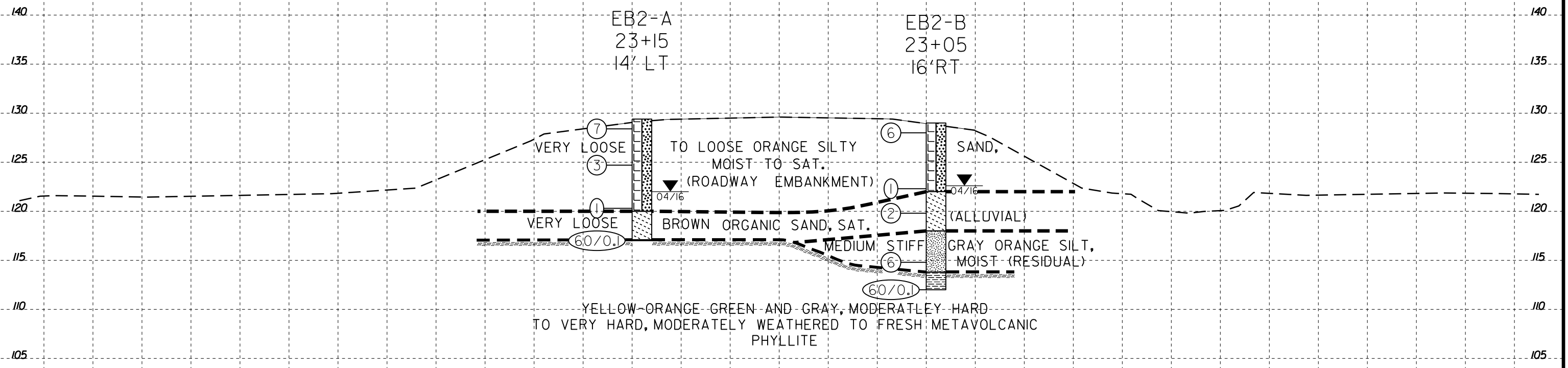
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

# CROSS SECTION THROUGH END BENT 2

EB2-A  
23+15  
14' LT

EB2-B  
23+05  
16' RT



23+15.00  
—┘—  
—┘—





# GEOTECHNICAL BORING REPORT

## BORE LOG

<b>WBS</b> 17BP.4.R.73		<b>TIP</b> SF-950056		<b>COUNTY</b> WAYNE		<b>GEOLOGIST</b> Crenshaw, J. K.										
<b>SITE DESCRIPTION</b> BRIDGE NO. 56 ON -L- (SR 1342) OVER GREAT SWAMP							<b>GROUND WTR (ft)</b>									
<b>BORING NO.</b> B1-A		<b>STATION</b> 22+66		<b>OFFSET</b> 6 ft LT		<b>ALIGNMENT</b> -L-										
<b>COLLAR ELEV.</b> 121.1 ft		<b>TOTAL DEPTH</b> 27.7 ft		<b>NORTHING</b> 656,873		<b>EASTING</b> 2,279,522										
<b>DRILL RIG/HAMMER EFF./DATE</b> RFO0067 CME-550X 86% 02/09/2015				<b>DRILL METHOD</b> Mud Rotary		<b>HAMMER TYPE</b> Automatic										
<b>DRILLER</b> Pinter, D. G.		<b>START DATE</b> 04/20/16		<b>COMP. DATE</b> 04/20/16		<b>SURFACE WATER DEPTH</b> 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)		
125																
120	121.1	0.0	WOH	WOH	WOH									121.1	GROUND SURFACE	0.0
115	116.0	5.1	75	25/0.1										116.1	ALLUVIAL BROWN ORGANIC SAND, SAT.	5.0
110	110.0	11.1	60/0.1											110.1	WEATHERED ROCK METAVOLCANIC PHYLLITE	11.0
105														110.0	NON-CRYSTALLINE ROCK	11.1
100															YELLOW-ORANGE, GREEN AND GRAY, MODERATELY HARD TO VERY HARD, MODERATELY WEATHERED TO FRESH, METAVOLCANIC PHYLLITE AVG REC = 90%, AVG RQD=79%	
95														93.4	Boring Terminated at Elevation 93.4 ft IN NONCRYSTALLINE ROCK	27.7
															BEGIN CORING AT 11.2'	

NCDOT BORE DOUBLE BORINGS.GPJ NC\_DOT.GDT 4/26/16

# GEOTECHNICAL BORING REPORT

## CORE LOG

WBS 17BP.4.R.73		TIP SF-950056		COUNTY WAYNE		GEOLOGIST Crenshaw, J. K.				
SITE DESCRIPTION BRIDGE NO. 56 ON -L- (SR 1342) OVER GREAT SWAMP							GROUND WTR (ft)			
BORING NO. B1-A		STATION 22+66		OFFSET 6 ft LT		ALIGNMENT -L-				
COLLAR ELEV. 121.1 ft		TOTAL DEPTH 27.7 ft		NORTHING 656,873		EASTING 2,279,522				
DRILL RIG/HAMMER EFF./DATE RFO0067 CME-550X 86% 02/09/2015				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic				
DRILLER Pinter, D. G.		START DATE 04/20/16		COMP. DATE 04/20/16		SURFACE WATER DEPTH N/A				
CORE SIZE NWD 3		TOTAL RUN 16.6 ft								
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		STRATA		LOG	DESCRIPTION AND REMARKS
					REC. (ft)	RQD (%)	REC. (ft)	RQD (%)		
109.9	109.9	11.2	1.6	1:18/1.0	(1.0)	(0.6)				Begin Coring @ 11.2 ft
	108.4	12.7		0:51/1.0	63%	38%				YELLOW-ORANGE, GREEN AND GRAY, MODERATELY HARD TO VERY HARD, MODERATELY WEATHERED TO FRESH, METAVOLCANIC PHYLLITE (continued)
	108.3	12.8	5.0	1:24/1.0	(4.2)	(2.8)				
				1:23/1.0	84%	56%				
				1:47/1.0						
	103.4	17.7		2:02/1.0						
			5.0	2:04/1.0	(5.0)	(5.0)				
				1:51/1.0	100%	100%				
				2:32/1.0						
				2:56/1.0						
	98.4	22.7		3:14/1.0						
			5.0	2:55/1.0	(4.7)	(4.7)				
				3:23/1.0	94%	94%				
				3:26/1.0						
				2:50/1.0						
	93.4	27.7		3:22/1.0						93.4
Boring Terminated at Elevation 93.4 ft IN NONCRYSTALLINE ROCK										
BEGIN CORING AT 11.2'										

NCDOT CORE DOUBLE BORINGS.GPJ NC\_DOT.GDT 4/26/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

<b>WBS</b> 17BP.4.R.73		<b>TIP</b> SF-950056		<b>COUNTY</b> WAYNE		<b>GEOLOGIST</b> Crenshaw, J. K.										
<b>SITE DESCRIPTION</b> BRIDGE NO. 56 ON -L- (SR 1342) OVER GREAT SWAMP							<b>GROUND WTR (ft)</b>									
<b>BORING NO.</b> B1-B		<b>STATION</b> 22+65		<b>OFFSET</b> 6 ft RT		<b>ALIGNMENT</b> -L-										
<b>COLLAR ELEV.</b> 119.8 ft		<b>TOTAL DEPTH</b> 5.0 ft		<b>NORTHING</b> 656,869		<b>EASTING</b> 2,279,510										
<b>DRILL RIG/HAMMER EFF./DATE</b> RFO0067 CME-550X 86% 02/09/2015				<b>DRILL METHOD</b> Mud Rotary		<b>HAMMER TYPE</b> Automatic										
<b>DRILLER</b> Pinter, D. G.		<b>START DATE</b> 04/20/16		<b>COMP. DATE</b> 04/20/16		<b>SURFACE WATER DEPTH</b> 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)		
120	119.8	0.0	WOH	WOH	1	1								119.8	0.0	GROUND SURFACE
	117.4	2.4				1								117.8	2.9	<b>ALLUVIAL</b> BROWN ORGANIC SAND, SAT.
			21	69	31/0.5											<b>WEATHERED ROCK</b> GRAY WHITE SILT, WET
115	114.8	5.0								100/1.0				114.8	5.0	<b>NON-CRYSTALLINE ROCK</b> METAVOLCANIC PHYLLITE Boring Terminated at Elevation 114.8 ft ON NONCRYSTALLINE ROCK
			60/0.0							60/0.0						

NCDOT BORE DOUBLE BORINGS.GPJ NC\_DOT.GDT 4/26/16

# GEOTECHNICAL BORING REPORT

## BORE LOG

<b>WBS</b> 17BP.4.R.73	<b>TIP</b> SF-950056	<b>COUNTY</b> WAYNE	<b>GEOLOGIST</b> Crenshaw, J. K.
<b>SITE DESCRIPTION</b> BRIDGE NO. 56 ON -L- (SR 1342) OVER GREAT SWAMP			<b>GROUND WTR (ft)</b>
<b>BORING NO.</b> EB2-A	<b>STATION</b> 23+15	<b>OFFSET</b> 14 ft LT	<b>ALIGNMENT</b> -L-
<b>COLLAR ELEV.</b> 129.4 ft	<b>TOTAL DEPTH</b> 12.4 ft	<b>NORTHING</b> 656,830	<b>EASTING</b> 2,279,547
<b>DRILL RIG/HAMMER EFF./DATE</b> GFO0075 CME-45C 83% 04/11/2016		<b>DRILL METHOD</b> Mud Rotary	<b>HAMMER TYPE</b> Automatic
<b>DRILLER</b> Smith, R. E.	<b>START DATE</b> 04/19/16	<b>COMP. DATE</b> 04/19/16	<b>SURFACE WATER DEPTH</b> 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			
130	129.4	0.0											129.4 GROUND SURFACE
			2	3	4								ROADWAY EMBANKMENT ORANGE SILTY SAND, MOIST TO WET
125	125.7	3.7	3	1	2								
			WOH	WOH	1								120.0 ALLUVIAL BROWN ORGANIC SAND, SAT.
120	121.3	8.1											117.1 NON-CRYSTALLINE ROCK METAVOLCANIC PHYLLITE Boring Terminated at Elevation 117.0 ft IN NONCRYSTALLINE ROCK
	117.1	12.3	60/0.1										117.0

<b>WBS</b> 17BP.4.R.73	<b>TIP</b> SF-950056	<b>COUNTY</b> WAYNE	<b>GEOLOGIST</b> Crenshaw, J. K.
<b>SITE DESCRIPTION</b> BRIDGE NO. 56 ON -L- (SR 1342) OVER GREAT SWAMP			<b>GROUND WTR (ft)</b>
<b>BORING NO.</b> EB2-B	<b>STATION</b> 23+15	<b>OFFSET</b> 16 ft RT	<b>ALIGNMENT</b> -L-
<b>COLLAR ELEV.</b> 129.0 ft	<b>TOTAL DEPTH</b> 17.0 ft	<b>NORTHING</b> 656,819	<b>EASTING</b> 2,279,519
<b>DRILL RIG/HAMMER EFF./DATE</b> GFO0075 CME-45C 83% 04/11/2016		<b>DRILL METHOD</b> Mud Rotary	<b>HAMMER TYPE</b> Automatic
<b>DRILLER</b> Smith, R. E.	<b>START DATE</b> 04/19/16	<b>COMP. DATE</b> 04/19/16	<b>SURFACE WATER DEPTH</b> 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			
130	129.0	0.0											129.0 GROUND SURFACE
			2	3	3								ROADWAY EMBANKMENT ORANGE SILTY SAND, MOIST TO WET
125	123.3	5.7	WOH	1	0								
			1	0	2								121.5 ALLUVIAL BROWN ORGANIC SAND, SAT.
120	120.8	8.2											118.0 RESIDUAL GRAY ORANGE SILT, WET
													113.8 NON-CRYSTALLINE ROCK METAVOLCANIC PHYLLITE
115	115.8	13.2	5	2	4								112.0 NON-CRYSTALLINE ROCK METAVOLCANIC PHYLLITE Boring Terminated at Elevation 112.0 ft IN NONCRYSTALLINE ROCK
	112.1	16.9	60/0.1										112.0

**CORE PHOTOGRAPHS**  
**B1-A BOXES 1 AND 2**  
11.2' TO 27.7'

