

























NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
B-4031	33398.1.1	2	14

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION				GRADATION				ROCK DESCRIPTION				TERMS AND DEFINITIONS																																																																																																																																																																																																																			
<p>SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T208, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:</p> <p align="center"><i>VERY STIFF, GRAY SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i></p>				<p>WELL GRADED: INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE UNIFORM. INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE, ALSO POORLY GRADED.</p> <p>GAP-GRADED: INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p align="center">ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: <u>ANGULAR</u>, <u>SUBANGULAR</u>, <u>SUBROUNDED</u>, OR <u>ROUNDED</u>.</p>				<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN TESTED, WOULD YIELD SPT REFUSAL. 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>WEATHERED ROCK (WR)  NON-COASTAL PLAIN MATERIAL THAT YIELDS SPT N VALUES > 100 BLOWS PER FOOT.</p> <p>CRYSTALLINE ROCK (CR)  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>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> <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.</p>				<p>ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER.</p> <p>AQUIFER - A WATER BEARING FORMATION OR STRATA.</p> <p>ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p>ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.</p> <p>ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.</p> <p>CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p>COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p>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.</p> <p>DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p>DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p>DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p>FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SLICES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p>FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p>FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.</p> <p>FLOOD PLAIN (F.P.) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p>FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p>JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p>LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p>LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p>MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p>PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p>RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p>ROCK QUALITY DESIGNATION (R.Q.D.) - 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>SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p>SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, WHICH HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.</p> <p>SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR B.P.F. 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 LESS THAN 0.1 FOOT PENETRATION WITH 60 BLOWS.</p> <p>STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p>STRATA ROCK QUALITY DESIGNATION (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.</p> <p>TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																																																																			
<p align="center">SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1"> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="7">GRANULAR MATERIALS (>85% PASSING #200)</th> <th colspan="7">SILT-CLAY MATERIALS (>85% PASSING #200)</th> <th colspan="3">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th> <th>A-3</th> <th colspan="2">A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-4, A-5</th> <th colspan="2">A-7-6</th> <th>A-7-5</th> <th>A-7-6</th> <th>A-7-5</th> <th>A-7-6</th> <th>A-7-5</th> <th>A-7-6</th> </tr> <tr> <th>GROUP CLASS.</th> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</td> <td>A-4</td> <td>A-5</td> <td>A-6</td> <td>A-7</td> <td>A-1, A-2</td> <td>A-4, A-5</td> <td>A-7-5</td> <td>A-7-6</td> <td>A-7-5</td> <td>A-7-6</td> <td>A-7-5</td> <td>A-7-6</td> </tr> <tr> <th>SYMBOL</th> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <th>% PASSING</th> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> <td>10</td> </tr> <tr> <th>LIQUID LIMIT PLASTIC INDEX</th> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> <td>6</td> </tr> <tr> <th>GROUP INDEX</th> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <th>USUAL TYPES OF MAJOR MATERIALS</th> <td>STONE FRAGS. 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A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1, A-2	A-4, A-5	A-7-5	A-7-6	A-7-5	A-7-6	A-7-5	A-7-6	SYMBOL																			% PASSING	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	LIQUID LIMIT PLASTIC INDEX	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	GROUP INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS		CLAYEY SOILS		SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER			HIGHLY ORGANIC SOILS			GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR			FAIR TO POOR	POOR	UNSATURABLE			P.I. OF A-7-5 ≤ L.L. - 30 ; P.I. OF A-7-6 > L.L. - 30																			<p align="center">MINERALOGICAL COMPOSITION</p> <p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p>				<p align="center">COMPRESSIBILITY</p> <p>SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50</p>				<p align="center">PERCENTAGE OF MATERIAL</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>>10%</td> <td>>20%</td> <td>HIGHLY 35% AND ABOVE</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	<p align="center">GROUND WATER</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 SEEPAGE</p>				<p align="center">WEATHERING</p> <p>FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.</p> <p>VERY SLIGHT (V. SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.</p> <p>SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH, OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p>MODERATE (MOD.) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.</p> <p>MODERATELY SEVERE (MOD. SEV.) 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>SEVERE (SEV.) ALL ROCKS 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, YIELDS SPT N VALUES > 100 BPF.</i></p> <p>VERY SEVERE (V. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES < 100 BPF.</i></p> <p>COMPLETE ROCK REDUCED TO SOIL, ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS ALSO AN EXAMPLE.</p>			
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EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																																																																																																																																																																																																																														
<p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL.-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>				<p align="right">REVISED 09/15/00</p>																																																																																																																																																																																																																											



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

P.O. BOX 25201, RALEIGH, N.C. 27611-5201

LYNDO TIPPETT
SECRETARY

May 11, 2006

STATE PROJECT: 33398.1.1 B-4031
F.A. PROJECT: BRSTP-0179 (2)
COUNTY: Brunswick
DESCRIPTION: Bridge No. 72 on NC 179 Over Jinnys Branch

SUBJECT: Geotechnical Report - Bridge Foundation Investigation for
NC 179 over Jinnys Branch at -L- Sta. 25+70.00

Site Description

The proposed bridge site is located at the existing NC 179 bridge over Jinnys Branch, approximately 4 miles south of Shallotte. The replacement structure will be built along the existing alignment. Based on the proposed design, the new structure will have four spans having a total length of 300 feet. The bents will have a skew of 90 degrees.

One Standard Penetration Test (SPT) boring was made at or near each proposed bent location to provide subsurface information relative to foundation design. In addition to Standard Penetration Tests, rock core was obtained from one interior bent location. The SPT borings were made with ATV mounted CME-550 and CME-45C drill machines and advanced by rotary drill methods using bentonite drilling fluid. A HQ core barrel with H casing was used to obtain the rock core.

The bridge site is located in the Coastal Plain Physiographic Province and is underlain by recent tidal marsh deposits and Cretaceous marine sediments of the Pee Dee Formation. Jinnys Branch is a tidal marsh channel, 20± feet wide and 2 to 4 feet deep. Topography along the project is nearly flat to gently sloping. Elevations at the site range from -3± feet along the streambed to 11± feet along the existing NC 179 embankment.

Ground water elevations range from 2± feet to 5± feet, whereas the surface of Jinnys Branch ranges from 0± to -1 ±feet.

Soil Description

Surficial soils generally consist of 5± to 14± feet of very loose to medium dense alluvial sand and silty sand (A-3, A-2-4) with 2± to 5± feet of very soft muck. These soils are underlain by the marine sediments of the Cretaceous age Pee Dee Formation. The Pee Dee Formation consists of 43+ feet of soft to hard green/gray, calcareous clayey silt (A-4) and sandy clay (A-6) with thin limestone layers.

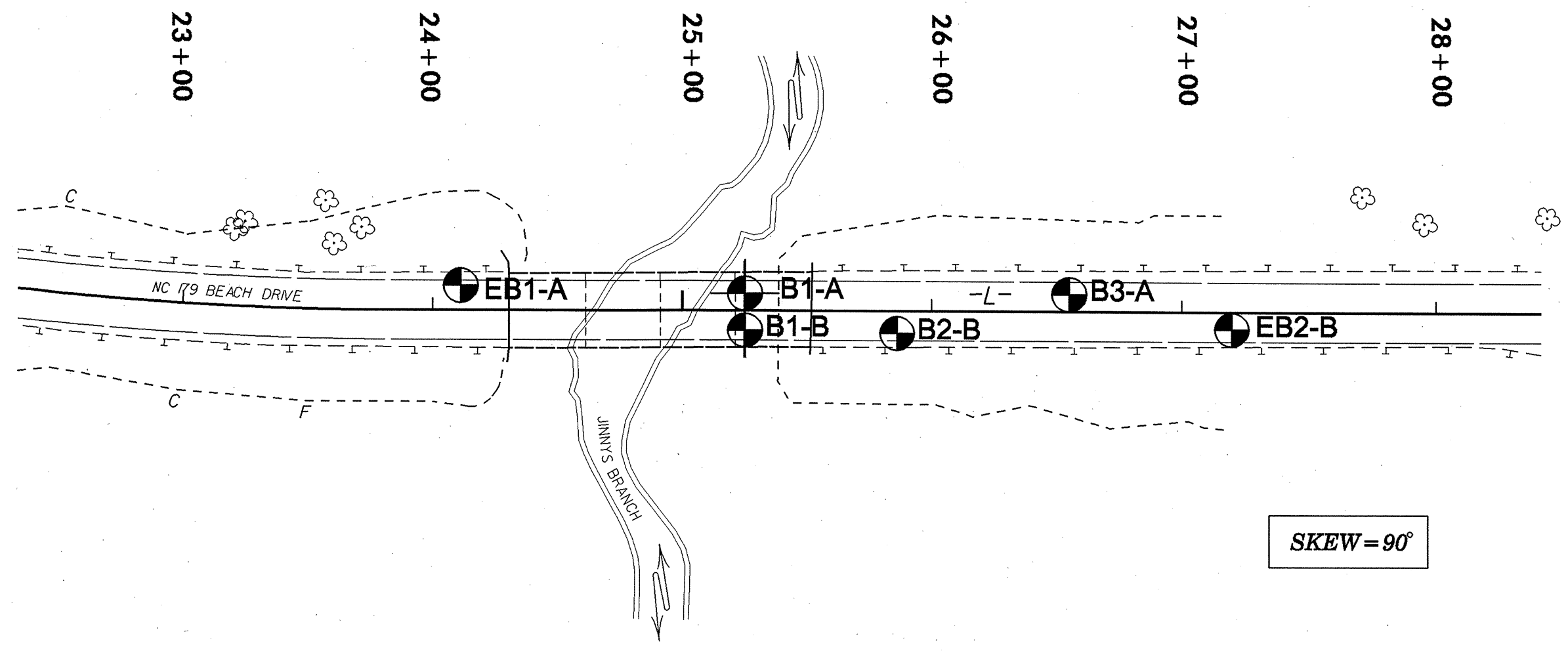
Based on the proposed design, the existing grade will be raised approximately 2± feet at the bridge site. The existing embankment material primarily consists of 4± feet to 7± feet of very loose to dense silty sand (A-2-4). The proposed end bent slopes will be mainly constructed within the existing embankment. Some additional fill will be required for construction of the end bent and side slopes. Borrow meeting Coastal Plain criteria is available in nearby areas.

This Geotechnical Foundation Report is based on the Bridge Survey and Hydraulic Design Report for Jinnys Branch dated December 8, 2005. If significant changes are made in the design or location of the proposed structure, the subsurface information should be reviewed and modified as necessary.

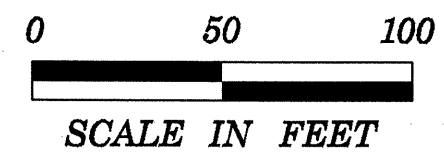
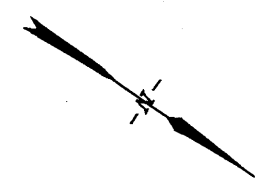
Prepared By:

Joseph L. Stone, L.G.
Engineering Geologist II

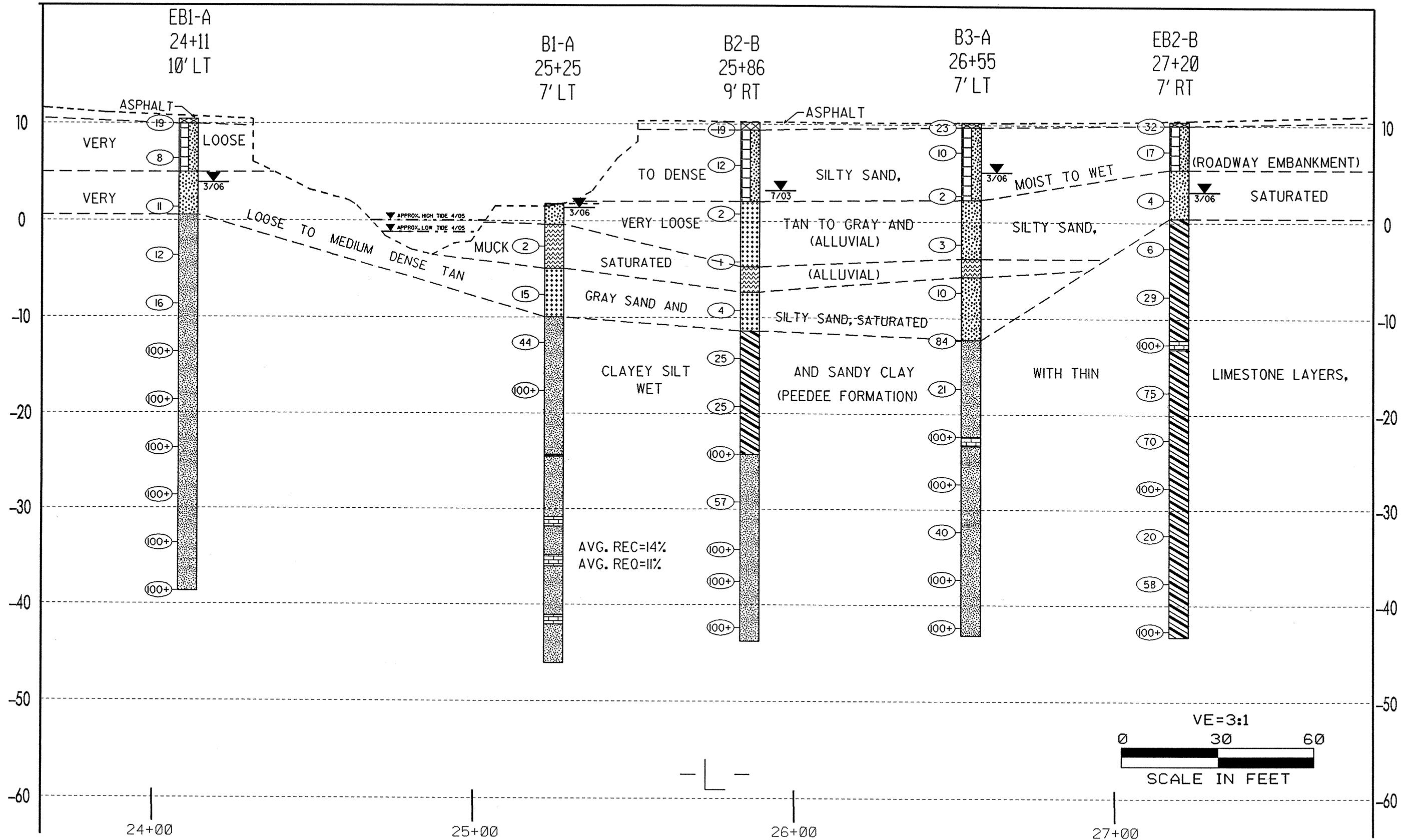
TEST SITE PLAN



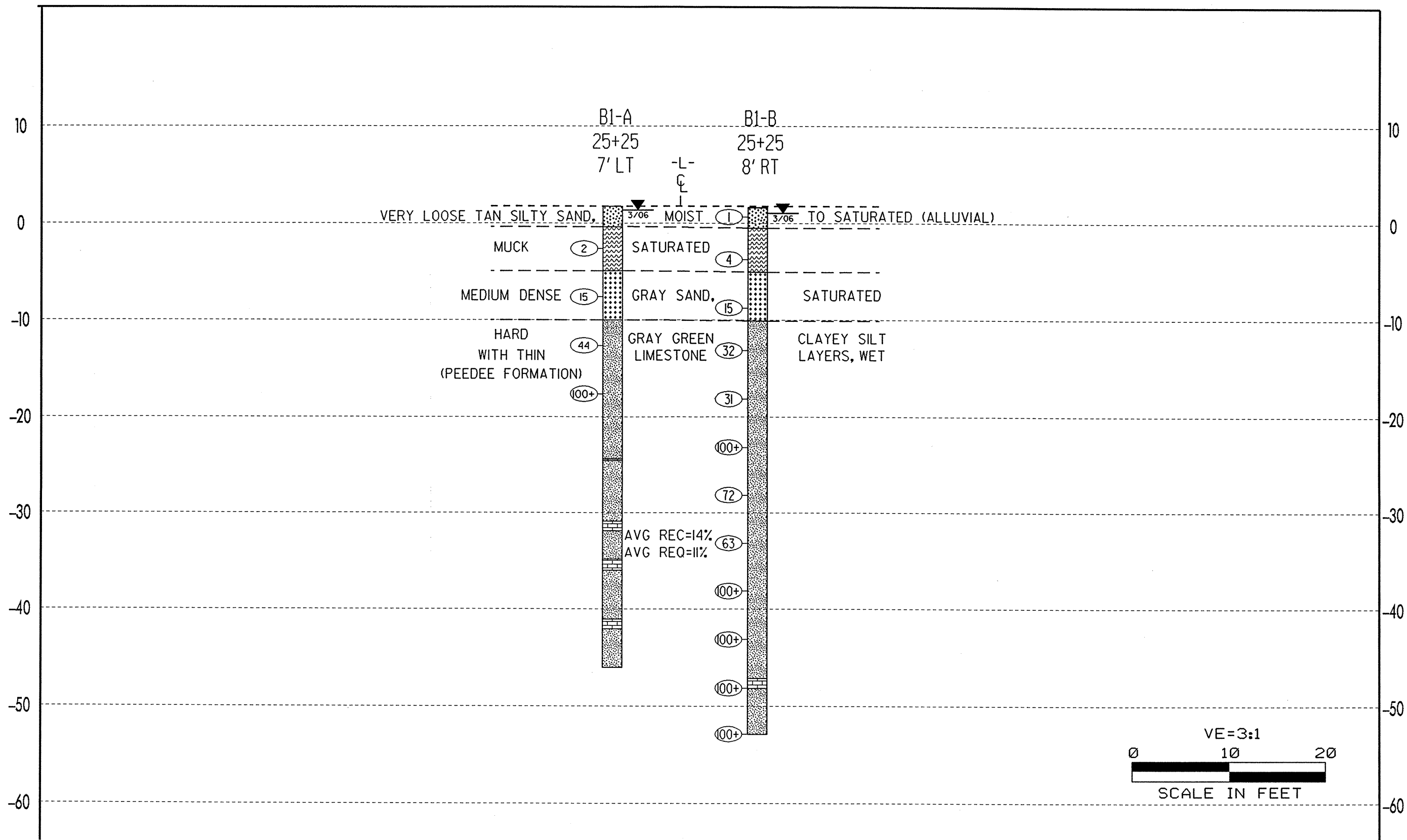
SKEW = 90°



PROFILE THROUGH BORINGS PROJECTED ALONG -L-



CROSS SECTION THROUGH BORINGS AT BENT 1



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

SHEET 7 OF 14

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST J. L. STONE							
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER						
BORING NO. EBI-A		BORING LOCATION 24+11		OFFSET 10' LT		ALIGNMENT -L-							
COLLAR ELEVATION 10.4'		NORTHING 63052.2009		EASTING 2179413.7877		0 HR. N.M.							
TOTAL DEPTH 49.1'		DRILL MACHINE CME-550		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL							
START DATE 03/16/06		COMPLETION DATE 03/16/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A							
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT				SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75				100
10.0	0.5	11	10	9	1.0							ASPHALT	
5.0	3.6	4	4	4	1.0							TAN SILTY SAND, MOIST (ROADWAY EMBANKMENT)	
	7.6	4	5	6	1.0							GRAY SILTY SAND, MOIST TO SATURATED (ALLUVIAL)	
	12.6	2	3	9	1.0							SS-15	
	17.6	4	7	9	1.0							SS-16	
	22.6	5	95		0.8					100+*		GRAY GREEN CLAYEY SILT WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION)	
	27.6	78	22		0.9					100+*			
	32.6	8	30	70	0.8					100+*			
	37.6	37	32	68	0.9					100+*			
	42.6	29	71		0.9					100+*			
	47.6	26	65	35	0.9					100+*			
						BORING TERMINATED AT ELEVATION -38.7 FEET IN HARD CLAYEY SILT							

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST J. L. STONE							
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER						
BORING NO. BI-A		BORING LOCATION 25+25		OFFSET 7' LT		ALIGNMENT -L-							
COLLAR ELEVATION 1.7'		NORTHING 63157.6509		EASTING 2179370.3677		0 HR. N.M.							
TOTAL DEPTH 47.8'		DRILL MACHINE CM-550		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL							
START DATE 03/15/06		COMPLETION DATE 03/16/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A							
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT				SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75				100
0.0												GRAY SILTY SAND, SATURATED (ALLUVIAL)	
	4.4	1	1	1	1.0							MUCK SATURATED	
	9.4	3	8	7	1.0							TAN SAND, SATURATED	
	14.4	12	28	16	1.0							GRAY GREEN CLAYEY SILT WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION) AVG. REC=14% AVG. ROD=11%	
	19.4	33	67		0.6					100+*			
						BORING TERMINATED AT ELEVATION -46.1 FEET IN HARD CLAYEY SILT							

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 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

SHEET 9 OF 14

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST J. L. STONE									
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER								
BORING NO. BI-B		BORING LOCATION 25+25		OFFSET 8' RT		ALIGNMENT -L-	0 HR. N.M.								
COLLAR ELEVATION 1.6'		NORTHING 63163.7250		EASTING 2179384.0829		24 HR. 0.6									
TOTAL DEPTH 54.5'		DRILL MACHINE CME-550		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL									
START DATE 03/14/06		COMPLETION DATE 03/15/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A									
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION		
		0.5'	0.5'	0.5'		0	25	50	75	100					
0.0	0.0	WOH	WOH	1	1.0									SS-7	GRAY SILTY SAND (ALLUVIAL) WET TO SATURATED
	4.4	1	2	2	1.0									SS-8	MUCK, SATURATED
-5.0	9.4	9	7	8	1.0									SS-9	TAN SAND, SATURATED
-10.0	13.8	8	19	13	1.0									SS-10	
-15.0	18.8	10	12	19	1.0										
-20.0	23.8	100			0.4									SS-11	
-25.0	28.8	7	34	38	1.0										GRAY GREEN CLAYEY SILT WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION)
-30.0	33.8	17	28	35	1.0										
-35.0	38.8	55	45		0.9									SS-12	
-40.0	43.8	64	36		0.9										
-45.0	48.8	60			0.1										
-50.0	53.8	6	94		0.7										
BORING TERMINATED AT ELEVATION -52.9 IN CLAYEY SILT															

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST K. B. MILLER										
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER									
BORING NO. B2-B		BORING LOCATION 25+86		OFFSET 9' RT		ALIGNMENT -L-	0 HR. N.M.									
COLLAR ELEVATION 10.2'		NORTHING 63219.9049		EASTING 2179360.2960		24 HR. 7.1										
TOTAL DEPTH 54.1'		DRILL MACHINE CME-45C		DRILL METHOD ROTARY W/MUD		HAMMER TYPE AUTOMATIC										
START DATE 07/22/03		COMPLETION DATE 07/22/03		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION			
		0.5'	0.5'	0.5'		0	25	50	75	100						
	0.8	7	9	10	1.0										SS-1	ASPHALT
	3.9	4	6	6	1.0											TAN BROWN SILTY SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)
-5.0	7.6	1	1	1	1.0									SS-2		
-10.0	12.6	WOH	WOH	1	1.0											TAN SAND, SATURATED (ALLUVIAL)
-15.0	17.6	1	2	2	1.0											MUCK, SATURATED
-20.0	22.6	25	10	15	1.0									SS-3		TAN SAND, SATURATED (ALLUVIAL)
-25.0	27.6	3	14	11	1.0									SS-4		
-30.0	32.6	100			0.4											
-35.0	37.6	10	14	43	1.0									SS-5		GRAY GREEN SANDY CLAY AND CLAYEY SILT WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION)
-40.0	42.6	4	100		0.9											
-45.0	47.6	100			0.4									SS-6		
-50.0	52.6	9	17	83	0.8											
BORING TERMINATED AT ELEVATION -43.9 FEET IN HARD CLAYEY SILT																

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

SHEET 10 OF 14

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST J. L. STONE	
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER
BORING NO. B3-A		BORING LOCATION 26+55		OFFSET 7' LT		ALIGNMENT -L-	
COLLAR ELEVATION 10.2'		NORTHING 63276.5156		EASTING 2179317.7257		0 HR. N.M.	
TOTAL DEPTH 53.4'		DRILL MACHINE CME-550		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL	
START DATE 03/22/06		COMPLETION DATE 03/22/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT	PEN. (FT.)	BLOWS PER FOOT	SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION
	0.5' 1.0' 1.5' 2.0'	0 5 10 15	0 0.5 1.0	0 25 50 75 100		MOI. G	
10.0	0.5	13	12	11	1.0		ASPHALT
5.0	3.1	4	5	5	1.0		TAN ORANGE SILTY SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)
0.0	7.6	1	1	1	1.0		GRAY SILTY SAND, SATURATED (ALLUVIAL)
-5.0	12.6	1	1	2	1.0		MUCK, SATURATED
-10.0	17.6	2	3	7	1.0		GRAY SILTY SAND, SATURATED (ALLUVIAL)
-15.0	22.6	21	56	28	1.0	18%	GRAY GREEN CLAYEY SILT WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION)
-20.0	27.6	7	9	12	1.0		
-25.0	32.6	60			0.1		
-30.0	37.6	100			0.4		
-35.0	42.6	8	20	20	1.0		
-40.0	47.6	76	24		0.9		
-45.0	52.6	11	89		0.8		
BORING TERMINATED AT ELEVATION -43.2 FEET IN CLAYEY SILT							

PROJECT NO. 33398.1.1		ID. B-4031		COUNTY BRUNSWICK		GEOLOGIST J. L. STONE	
SITE DESCRIPTION BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH							GROUND WATER
BORING NO. EB2-B		BORING LOCATION 27+20		OFFSET 7' RT		ALIGNMENT -L-	
COLLAR ELEVATION 10.4'		NORTHING 63341.6171		EASTING 2179304.2055		0 HR. N.M.	
TOTAL DEPTH 52.7'		DRILL MACHINE CME-550		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL	
START DATE 03/22/06		COMPLETION DATE 03/22/06		SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT	PEN. (FT.)	BLOWS PER FOOT	SAMPLE NUMBER	LOG	SOIL AND ROCK DESCRIPTION
	0.5' 1.0' 1.5' 2.0'	0 5 10 15	0 0.5 1.0	0 25 50 75 100		MOI. G	
10.0	0.4	23	12	20	1.0		ASPHALT
5.0	3.1	8	9	8	1.0		TAN SILTY SAND, MOIST (ROADWAY EMBANKMENT)
0.0	7.6	1	2	2	1.0		GRAY SILTY SAND, MOIST TO SATURATED (ALLUVIAL)
-5.0	12.6	2	2	4	1.0		
-10.0	17.6	19	18	11	1.0		
-15.0	22.6	60			0.0		
-20.0	27.6	19	44	31	1.0		GRAY GREEN SANDY CLAY WITH THIN LIMESTONE LAYERS, WET (PEEDEE FORMATION)
-25.0	32.6	16	11	59	1.0		
-30.0	37.6	24	76		0.7		
-35.0	42.6	6	8	12	1.0		
-40.0	47.6	42	15	43	1.0		
-45.0	52.6	60			0.1		
BORING TERMINATED AT ELEVATION -42.3 ON LIMESTONE							

B-4031
BRIDGE NO. 72 ON NC 179 OVER JINNYS BRANCH

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
B2-B	SS-1	100	95	15	12.4	74.2	3.8	9.6	15	NP	A-2-4(0)	1.0-2.3		
	SS-2	100	95	16	15.4	70.6	6.4	7.6	17	NP	A-2-4(0)	7.6-9.1		
	SS-3	99	68	8	48.0	45.0	1.4	5.6	22	NP	A-3(0)	17.6-19.1		
	SS-4	100	98	69	4.8	34.2	23.4	37.6	24	19	A-6(9)	22.0-24.1		
	SS-5	100	96	58	10.0	37.0	21.4	31.6	27	2	A-4(0)	37.6-39.1		
	SS-6	100	99	68	4.4	35.8	22.2	37.6	30	8	A-4(4)	47.6-49.1		
B1-B	SS-7	100	89	22	23.5	56.8	8.9	10.8	19	NP	A-2-4(0)	0.0-1.5		
	SS-8	100	98	11	7.8	83.5	5.9	2.8	26	NP	A-2-4(0)	4.4-5.9	36.6	26.6
	SS-9	98	79	6	34.5	60.6	4.1	0.8	23	NP	A-3(0)	9.4-10.9		
	SS-10	100	94	60	10.8	33.7	24.6	30.9	31	2	A-4(0)	13.8-15.3	11.5	
	SS-11	100	95	71	8.2	26.3	26.6	38.9	32	4	A-4(2)	23.8-24.2		
	SS-12	100	95	67	9.0	31.5	26.6	32.9	34	3	A-4(2)	38.8-39.7		
EB1-A	SS-13	100	97	14	9.4	79.6	4.1	6.8	19	NP	A-2-4(0)	0.5-2.0		
	SS-14	97	85	11	29.3	61.8	6.1	2.8	16	NP	A-2-4(0)	7.6-9.1		
	SS-15	100	100	56	7.0	38.7	21.4	32.9	29	4	A-4(1)	12.6-14.1		
	SS-16	100	95	57	10.8	37.1	19.2	32.9	35	6	A-4(2)	22.6-23.4		
	SS-17	100	89	64	15.0	26.5	22.0	36.5	33	4	A-4(2)	42.6-43.5		
B3-A	SS-18	100	95	25	11.0	68.0	10.5	10.4	18	NP	A-2-4(0)	3.1-4.6		
	SS-19	86	73	26	24.3	47.9	11.3	16.4	27	3	A-2-4(0)	12.6-14.1		
	SS-20	100	98	62	6.6	36.5	20.4	36.5	29	4	A-4(1)	22.6-24.1	17.7	
	SS-21	100	85	62	20.1	22.5	25.0	32.5	24	5	A-4(1)	37.6-38.0		
	SS-22	100	99	67	3.0	39.3	21.2	36.5	28	6	A-4(2)	52.6-53.4		
EB2-B	SS-23	100	97	25	7.0	72.6	9.9	10.4	18	NP	A-2-4(0)	0.4-1.9		
	SS-24	100	80	19	23.1	60.2	6.3	10.4	18	NP	A-2-4(0)	7.6-9.1		
	SS-25	100	99	58	8.8	34.7	13.9	42.5	32	12	A-6(5)	12.6-14.1		
	SS-26	93	89	66	6.8	26.9	35.8	30.5	30	11	A-6(5)	27.6-29.1		
	SS-27	100	97	67	5.8	35.5	22.2	36.5	30	12	A-6(6)	47.6-49.1		



**FIELD
SCOUR REPORT**

WBS: 33398.1.1 TIP: B-4031 COUNTY: BRUNSWICK

DESCRIPTION(1): BRIDGE NO. 72 ON NC 179 OVER JINNY'S BRANCH

EXISTING BRIDGE

Information from: Field Inspection Microfilm _____ (reel _____ pos: _____)
Other (explain) PROJECT WISE DATA BASE

Bridge No.: 72 Length: 125 Total Bents: 5 Bents in Channel: 3 Bents in Floodplain: 2
Foundation Type: TIMBER PILES

EVIDENCE OF SCOUR(2)

Abutments or End Bent Slopes: SOME SLUMPING OF END SLOPES

Interior Bents: NONE NOTED

Channel Bed: NONE NOTED

Channel Bank: SOME SLUMPING ALONG CHANNEL BANKS

EXISTING SCOUR PROTECTION

Type(3): 1) WOODED END WALLS 2) RIP RAP END SLOPES

Extent(4): 1) 4 FEET OUTSIDE EDGE OF BRIDGE 2) RIP RAP AT BOTH END SLOPES

Effectiveness(5): MODERATELY EFFECTIVE

Obstructions(6): NONE NOTED

INSTRUCTIONS

- 1 Describe the specific site's location, including route number and body of water crossed.
- 2 Note scour evidence at existing end bents or abutments (e.g. undermining, sloughing, degradations).
- 3 Note existing scour protection (e.g. rip rap).
- 4 Describe extent of existing scour protection.
- 5 Describe whether or not the scour protection appears to be working.
- 6 Note obstructions such as dams, fallen trees, debris at bents, etc.
- 7 Describe the channel bed material based on observation and/or samples. Include any lab results with report.
- 8 Describe the channel bank material based on observation and/or samples. Include any lab results with report.
- 9 Describe the material covering the banks (e.g. grass, trees, rip rap, none).
- 10 Determine the approximate floodplain width from field observation or a topographic map.
- 11 Describe the material covering the floodplain (e.g. grass, trees, crops).
- 12 Use professional judgement to specify if the stream is degrading, aggrading, or static.
- 13 Describe potential and direction of the stream to migrate laterally during the bridge's life (approx. 100 years).
- 14 Give the design scour elevation (DSE) expected over the life of the bridge (approx. 100 years). This elevation can be given as a range across the site, or for each bent. Discuss the relationship between the Hydraulics Unit theoretical scour and the DSE. If the DSE is dependent on scour counter measures, explain (e.g. rip rap armoring on slopes). The DSE is based on the erodability of materials, giving consideration to the influence of joints, foliation, bedding characteristics, % core recovery, % RQD, differential weathering, shear strength, observations at existing structures, other tests deemed appropriate, and overall geologic conditions at the site.

DESIGN INFORMATION

Channel Bed Material(7): SILTY SAND AND MUCK

Channel Bank Material(8): SILTY SAND(SS-7) AND MUCK (SS-8)

Channel Bank Cover(9): MARSH GRASS

Floodplain Width(10): APPROXIMATELY 300 FEET

Floodplain Cover(11): MARSH GRASS

Stream is(12): Aggrading _____ Degrading Static _____

Channel Migration Tendency(13): MODERATE TO THE SOUTH EAST

Observations and Other Comments: _____

DESIGN SCOUR ELEVATIONS(14)

Feet Meters _____

BENTS

	B1	B2	B3										
SB Lanes, Lt	-3.5	-0.5	0										
SB Lanes, Rt													
NB Lanes, Lt													
NB Lanes, Rt													

Comparison of DSE to Hydraulics Unit theoretical scour:

GEOTECHNICAL ANALYSIS AGREES WITH THE MAXIMUM THEORETICAL DESIGN SCOUR ELEVATIONS AS OUTLINED BY THE BRIDGE SURVEY AND HYDRAULIC REPORT.

SOIL ANALYSIS RESULTS FROM CHANNEL BED AND BANK MATERIAL

Bed or Bank													
Sample No.													
Retained #4													
Passed #10													
Passed #40													
Passed #200													
Coarse Sand													
Fine Sand													
Silt													
Clay													
LL													
PI													
AASHTO													
Station													
Offset													
Depth													

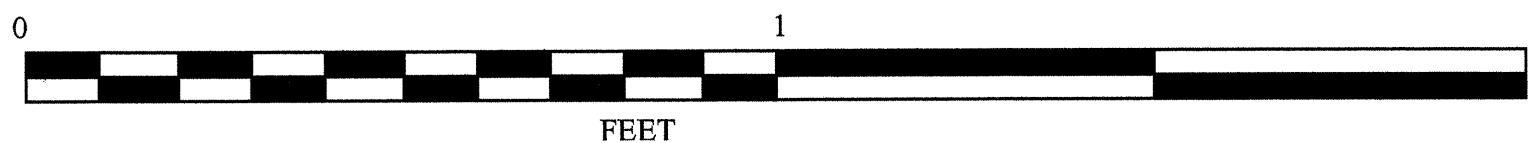
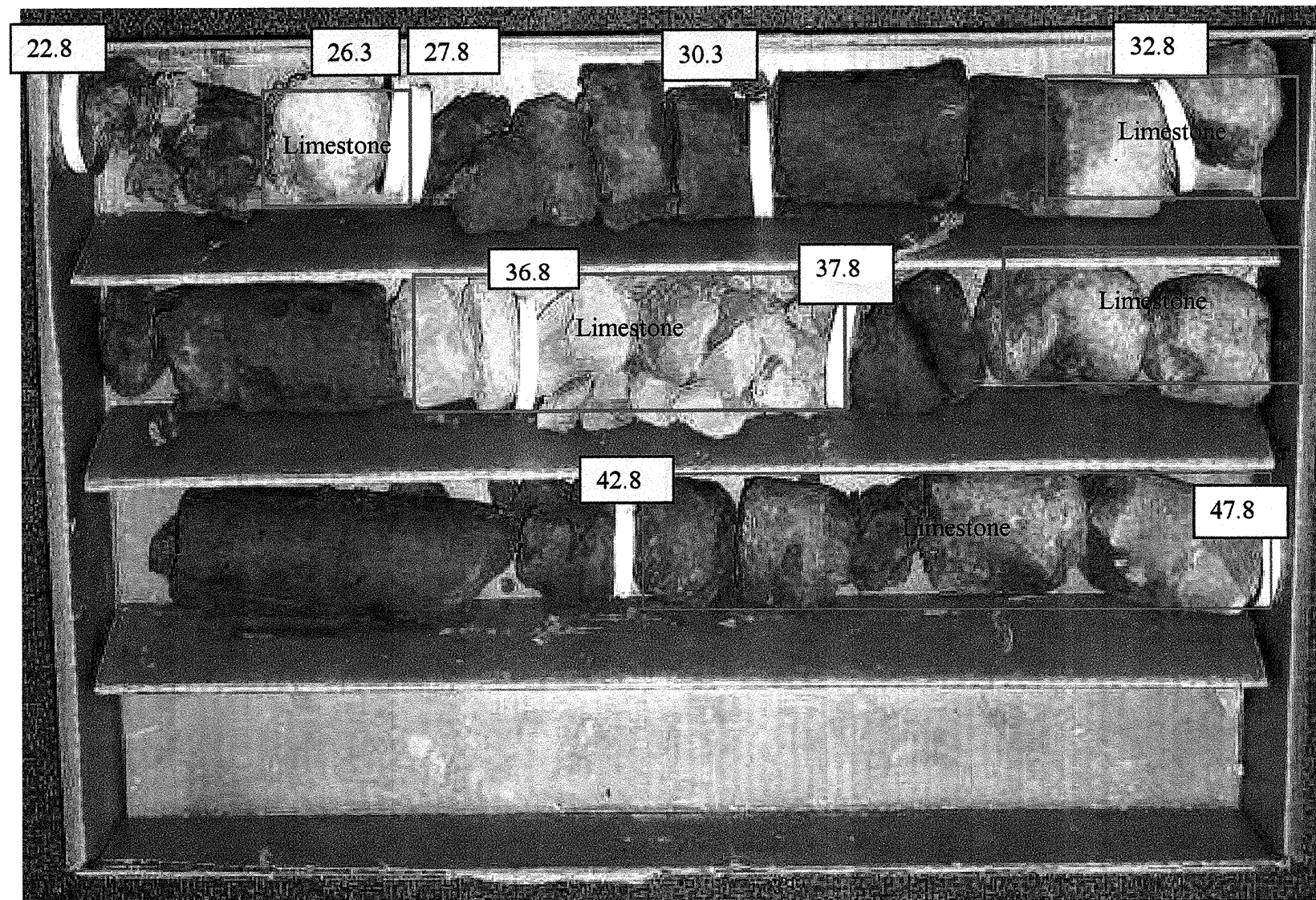
See Sheet 11,
"Soil Test Results",
for samples: SS-7, SS-8

Reported by:

Date: 5/11/2006

33398.1.1
B-4031
Bridge No 72 on NC 179 over Jinnys Branch

Core Photograph
B1-A Sta. 25+25 7 LT (20.2 feet to 47.8 feet)



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	33398.1.1 (B-4031)	1	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33398.1.1	BRSTP-0179 (2)	P.E.	
		CONST.	

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

STRUCTURE SUBSURFACE INVESTIGATION

STATE PROJECT 33398.1.1 I.D. NO. B-4031

F.A. PROJECT BRSTP-0179 (2)

COUNTY BRUNSWICK

PROJECT DESCRIPTION BRIDGE NO. 72

ON NC 179 OVER JINNYS BRANCH

AT -L- STATION 25+70.00

CONTENTS:

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	STRUCTURE INVENTORY REPORT
4	SITE PLAN
5	PROFILE
6	CROSS SECTION
7-10	BORE LOG & CORE REPORTS
11	SOIL TEST RESULTS
12	SCOUR REPORT
13	CORE PHOTOGRAPH
14	SITE PHOTOGRAPH

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS 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 UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

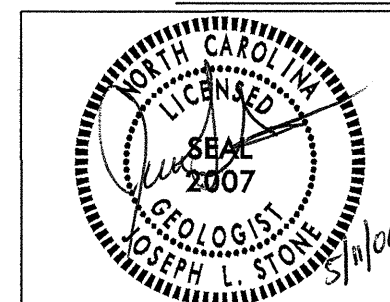
GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU ON-PLACE TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS 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.

INVESTIGATED BY J. L. STONE PERSONNEL KBM
 CHECKED BY D. N. ARGENBRIGHT MBO
 SUBMITTED BY D. N. ARGENBRIGHT ELD
 DATE MAY 2006 MACTEC

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.



DRAWN BY: C. M. KENT

PROJECT: 33398.1.1 ID: B-4031

33398.1.1
B-4031
Brunswick Co.

Bridge No. 72 on NC 179 over Jinnys Branch



Looking Southeast Toward End Bent 1