SITE PHOTOGRAPH

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

CONTENTS

SHEET	DESCRIPTION	
1	TITLE SHEET	
2	LEGEND	STRUC
3	GEOTECHNICAL REPORT	
4	SITE PLAN	SUBSURFACE I
5	PROFILE(S)	
6,7	CROSS SECTION(S)	2/0// 11 /71.0
8-10	BORE LOG & CORE REPORT(S)	PROJ. REFERENCE NO. 34866.1.1 (U-2
II	SOIL TEST RESULTS	COUNTY CUMBERLAND

	STRU	CTURE	
SUBSUR.	FA CE	INVESTIGATION	

F.A. PROJ. **STP-1003(22)** -2810) PROJECT DESCRIPTION WIDENING AND REALIGNMENT OF SR 1003 (CAMDEN ROAD) FROM NC 59 (HOPE MILLS ROAD) TO NORTH OF SR 1007 (OWEN DRIVE) SITE DESCRIPTION BRIDGE NO. 194 ON -L- (SR 1003, CAMDEN ROAD) OVER CSXT RAILROAD AT STATION 115+52

N.C. 34866.1.1 (U-2810) 1

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 RALIGIOH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT,

CENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARLY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN STU UIN-PLACE TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABLITY INMERENT IN THE STANDARD TEST METHOD. THE OSSERVED WATER LEVELS OR SOIL MOSITURE 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 DEFEATMENT 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 OF 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.

PERSONNEL N. D. MOHS

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R. E. SMITH

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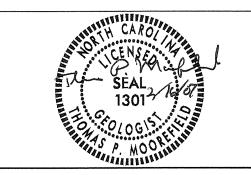
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INVESTIGATED BY T. P. MOOREFIELD

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FEBRUARY, 2007



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS GRADATION

<u>VELL GRADED</u> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE
<u>UNIFORM</u> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO ROCK DESCRIPTION

RAPO ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF 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 EDUAL. TO OR LESS THAN 61 FOOT PER 60 BLOWS. SOIL DESCRIPTION TERMS AND DEFINITIONS SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PERITATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 1408 BLOWS PER FOOT ACCORDING TO STANDARD PERICATION TEST GASHOT OZGE, GSTM D-1586J. SOIL ALLUVIUM (ALLUV.) - SDILS THAT HAVE BEEN TRANSPORTED BY WATER. ADUIFER - A WATER BEARING FORMATION OR STRATA. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZON CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANDULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ANGULARITY OF GRAINS WEATHERED ROCK ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, RGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS. WEATHERED HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES \gt 100 blows per foot if tested. VERY STIFF, GRASSETY CLASSICST WITH INTERBEDDED FINE SAND LAVERS, HIGHLY PLASTIC, A-7-C SUBANGULAR, SUBROUNDED, OR ROUNDED. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL MINERALOGICAL COMPOSITION SOIL LEGEND AND AASHTO CLASSIFICATION FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE TH MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE. GENERA WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. CLASS. (≤35% PASSING *200) (> 35% PASSING #200) CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. UNEISS, GABBRU, SCHIST, ETC.

FINE TO COARSE GRAIN METAMORPHIC AND NON-CDASTAL PLAIN

SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED, ROCK TYPE

INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.

COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD

SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED A-4 A-5 A-6 A-7 7 A-7-6 COMPRESSIBILITY A-1 A-3 A-2 A-1, A-2 A-4, A-5 NDN-CRYSTALLINE RDCK (NCR) GROUP COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM CLASS. A-1-0 A-1-b A-2-4 A-2-5 A-2-6 A-2-7 A-3 A-6, A-7 SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT FOHAL TO 31-50 SYMBOL 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. HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50 ROCK PASSING PERCENTAGE OF MATERIAL SHELL BEDS, ETC SILT- $\underline{\text{DIKE}}$ - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. WEATHERING * 10 MUCK CLAY SOILS ORGANIC MATERIAL SOILS PEAT OTHER MATERIAL SOILS SOILS ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER FRESH DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE RACE OF ORGANIC MATTER 2 - 3% 3 - 5% 3 - 5% 1 - 10% LITTLE ORGANIC MATTER 5 - 12% LITTLE 10 - 20% 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 18 MX 10 MX 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN IOUID LIMIT VERY SLIGHT ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. 10DERATELY ORGANIC SOLIS WITH 5 - 102 12 - 20% DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF HIGHLY DRGANIC HIGHLY (V SLI.) CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF 35% AND ABOVE THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. HIGH! GROUP INDEX 0 0 4 MX 8 MX 12 MX 16 MX No MX MODERATE GROUND WATER ORGANI FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE AMOUNTS OF ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO USUAL TYPES STONE FRAGS, FINE SILTY OR CLAYEY GRAVEL, AND SAND GRAVEL AND SAND SOILS SL1GH1 SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING SILTY CLAYEY SOILS ORGANIC (SUL) 1 INCH. OPEN JOINTS MAY CONTAIN CLAY, IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. MATTER FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. _ STATIC WATER LEVEL AFTER 24 HOURS SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN MODERATI LDAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM VPW. FAIR TO PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED SOME SHOW CLAY, ROCK HAS ARENT MATERIAL. EXCELLENT TO GOOD FAIR TO POOR POOR DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. ON P WITH FRESH BOCK. SPRING OR SEEP PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30 MODERATELY ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DIJLI CONSISTENCY OR DENSENESS MISCELLANEOUS SYMBOLS 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, FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN RANGE OF UNCONFINED RANGE OF STANDARD ENETRATION RESISTENCE SPT CPT
DPT DMT TEST BORING SAMPLE ROADWAY EMBANKMENT (RE) PRIMARY SOIL TYPE IF TESTED, WOULD YIELD SPT REFUSAL JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. DESIGNATIONS SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED S - BULK SAMPLE EDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO VERY LOOSE \oplus IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KADLINIZED TO SOME GENERALLY SOIL SYMBOL AUGER BORING (SEV.) TS LATERAL EXTENT. SS - SPLIT SPOON 4 TO 10 EXTENT, SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. GRANULAF MEDIUM DENSE N/A 10 TO 30 IF TESTED, YIELDS SPT N VALUES > 100 BPF ENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS MATERIA DENSE CORE BORING (NON-COHESIVE) THAN ROADWAY EMBANKMENT VERY SEVERE ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN VERY DENSE ST - SHELBY TUBE >50 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 OILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. INFERRED SOLI BOUNDARY SAMPLE VERY SOFT ERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN O <0.25 MONITORING WELL RS - ROCK SAMPLE GENERALLY 0.25 TO 0.50 0.5 TO 1.0 VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. IF TESTED, YIELDS SPT N VALUES (100 BPF ITERVENING IMPERVIOUS STRATUM. INFERRED ROCK LINE MEDIUM STIFF PIEZOMETER STUT-CLAY 4 TO 8 Δ RT - RECOMPACTED TRIAXIAL ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. STIFF 8 TO 15 INSTALLATION 1 TO 2 **** ALLUVIAL SOIL BOUNDARY SCATTERED CONCENTRATIONS, QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS VERY STIFF SAMPLE 15 TO 30 ROCK DUALITY 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 (COHESIVE) 2 TO 4 SLOPE INDICATOR ALSO AN EXAMPLE $\langle \rangle$ CBR - CALIFORNIA BEARING DIP & DIP DIRECTION OF INSTALLATION ROCK STRUCTURES ROCK HARDNESS RATIO SAMPLE XPRESSED AS A PERCENTAGE. TEXTURE OR GRAIN SIZE - SPT N-VALUE SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES . SOUNDING BOD U.S. STD. SIEVE SIZE REF- SPT REFUSAL OPENING (MM) 4.76 2.00 0.42 0.25 SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY, HARD HAMMER BLOWS REQUIRED **ABBREVIATIONS** RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. COARSE TO DETACH HAND SPECIMEN. (COB.) GRAVEI SILT (SL.) ROLLI DER w - MOISTURE CONTENT CLAY (CL.) HI. - HIGHLY MODERATELY CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GRODVES TO 0.25 INCHES DEEP CAN BE (GR.) BT - BORING TERMINATED MED. - MEDIUM V - VERY SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. CL. - CLAY MICA. - MICACEOUS VST - VANE SHEAR TEST EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK, HAND SPECIMENS CAN BE DETACHED 0.25 2.0 0.05 0.005 BY MODERATE BLOWS. CPT - CONE PENETRATION TEST MOD. - MODERATELY WEA. - WEATHERED SIZE IN. 12 STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH CSE. - CDARSE MEDIUM CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. NP - NON PLASTIC 7 - UNIT WEIGHT DMT - DILATOMETER TEST 7 DRY UNIT WEIGHT CAN BE EXCAVATED IN SMALL CHIPS TO PEICES I INCH MAXIMUM SIZE BY HARD BLOWS OF THE URE - CORRELATION OF TERMS ORG. - ORGANIC HARD SOIL MOIS 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER, SPT REFUSAL IS PENETRATION EDUAL TO OR LESS DPT - DYNAMIC PENETRATION TEST PRESSUREMETER TEST POINT OF A GEOLOGIST'S PICK. SOIL MOISTURE SCALE HAN 0.1 FOOT PER 60 BLOWS. GUIDE FOR FIELD MOISTURE DESCRIPTION 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 - VOID RATIO SAP. - SAPROLITIC (ATTERBERG LIMITS) DESCRIPTION STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. SD. - SAND, SAND FOSS. - FOSSILIFEROUS SL . - SUT. SUTY PIECES CAN BE BROKEN BY FINGER PRESSURE. SATURATED USUALLY LIQUID; VERY WET, USUALLY FRAC. - FRACTURED, FRACTURES SLI. - SLIGHTLY STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY (SAT.) FROM BELOW THE GROUND WATER TABLE CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH TOTAL LENGTH OF ROCK SEGMENTS WITHON A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. LIQUID LIMIT FRAGS. - FRAGMENTS TCR - TRICONE REFUSAL OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE, CAN BE SCRATCHED READILY BY LASTIC FINGERNATI SEMISOLID: REQUIRES DRYING TO RANGE - WET - (W) EQUIPMENT USED ON SUBJECT PROJECT TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. ATTAIN OPTIMUM MOISTURE FRACTURE SPACING PLASTIC LIMIT TERM THICKNESS BENCH MARK: (EBI) -BL- 14, 14+44 27' RT, 189.41' HAMMER TYPE: **TERM** SPACING ADVANCING TOOLS: DRILL UNITS: VERY THICKLY BEDDED > 4 FEET VERY WIDE MORE THAN 10 FEET SOLID: AT OR NEAR OPTIMUM MOISTURE - MOIST - (M) X AUTOMATIC MANUAL (EB2) TBM, II6+67 57' LT, I92.54' OM _ OPTIMUM MOISTURE THICKLY BEDDED 1.5 - 4 FEET X CLAY BITS 3 TO 10 FEET MOBILE B-FT. SHRINKAGE LIMIT ELEVATION: THINLY BEDDEC MODERATELY CLOSE VERY THINLY BEDDED 6' CONTINUOUS FLIGHT AUGER 0.03 - 0.16 FEET REQUIRES ADDITIONAL WATER TO CORE SIZE: 0.16 TO 1 FEET THICKLY LAMINATED
THINLY LAMINATED 0.008 - 0.03 FEET NOTES: - DRY - (D) BK-51 VERY CLOSE LESS THAN 0,16 FEET 8' HOLLOW AUGERS -B_ < 0.008 FEET INDURATION PLASTICITY HARD FACED FINGER BITS X CME-45B _____ FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. PLASTICITY INDEX (PI) DRY STRENGTH TUNG.-CARBIDE INSERTS ___-н____ CME-550 NONPLASTIC VERY LOW 0-5 RUBBING WITH FINGER FREES NUMEROUS GRAINS FRIABLE CASING W/ ADVANCER LOW PLASTICITY 6-15 SLIGHT GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. HAND TOOLS: MED. PLASTICITY 16-25 MEDIUM PORTABLE HOIST TRICONE____ *STEEL TEETH GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; 26 OR MORE POST HOLE DIGGER HIGH PLASTICITY HIGH MODERATELY INDURATED BREAKS EASILY WHEN HIT WITH HAMMER TRICONE HAND AUGER * TUNG.-CARB. COLOR GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; SOUNDING ROD CORE BIT DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). DIFFICULT TO BREAK WITH HAMMER. VANE SHEAR TEST MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE. SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE: EXTREMELY INDURATED SAMPLE BREAKS ACROSS GRAINS.

PROJECT REFERENCE NO.

34866.1.1 (U-2810)

SHEET NO.



STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT SECRETARY

February 2, 2007

STATE PROJECT: F.A. PROJECT:

34866.1.1 (U-2810) STP-1003 (22)

COUNTY:

Cumberland

DESCRIPTION:

Bridge No. 194 on -L- (SR 1003, Camden Road) over CSXT Railroad at Station

115+52

SUBJECT:

Geotechnical Report – Structure Inventory

Project Description

A single span bridge, of 208.0 feet in length and 118° skew, is to be constructed on new alignment -L- (SR 1003, Camden Road) over the CSXT Railroad located approximately 600 feet south of the existing structure. The new bridge is 81.6 feet wide and will accommodate four travel lanes. The project is located in southwestern Cumberland County between City of Fayetteville and Town of Hope Mills.

The subsurface investigation was conducted during December of 2006 using an ATV-mounted CME-45B drill machine. Standard Penetration Test borings were performed at each of the proposed end bent locations. All borings were terminated between elevations 64.5 feet and 84.3 feet. Representative soil samples were obtained for visual classification in the field and selected samples were sent to the Materials and Tests Unit for laboratory analysis.

Physiography and Geology

The project is located in the flat to gently rolling terrain of the Coastal Plain Physiographic province. The land use in the area consists of residential homes, a mobile home park and woods. Geologically, the site is underlain by Coastal Plain soils of the Cape Fear Formation. The Coastal Plain soils were derived from the multiple transgression and regression of sea level during the Cretaceous age.

Soil Properties

Soils encountered at the project site include Coastal Plain materials.

Coastal Plain material, of the Cape Fear Formation, was encountered from the ground surface to termination. The predominant soils are white to orange, moist to saturated, loose to medium dense, sand and silty sand (A-3, A-2-4), with lesser amounts of gray, moist, medium stiff to hard sandy silt and silty clay (A-4, A-7-6).

SHEET 3 OF 12 34866.1.1 (U-2810) Cumberland Co.

Groundwater

Groundwater was encountered at all boring locations. The groundwater elevation ranges from 176.6 feet at EB1-B to 182.4 feet at EB2-B.

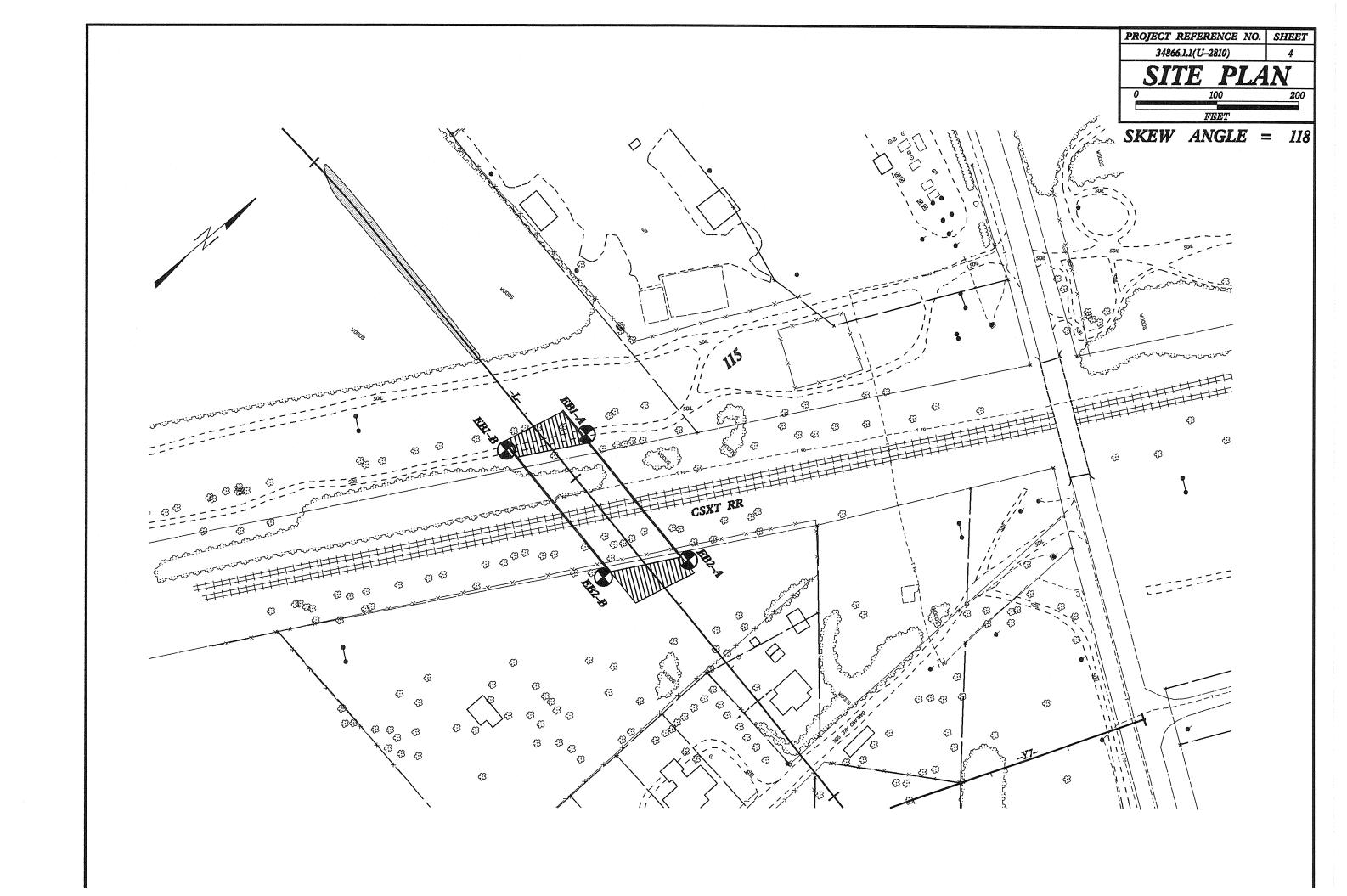
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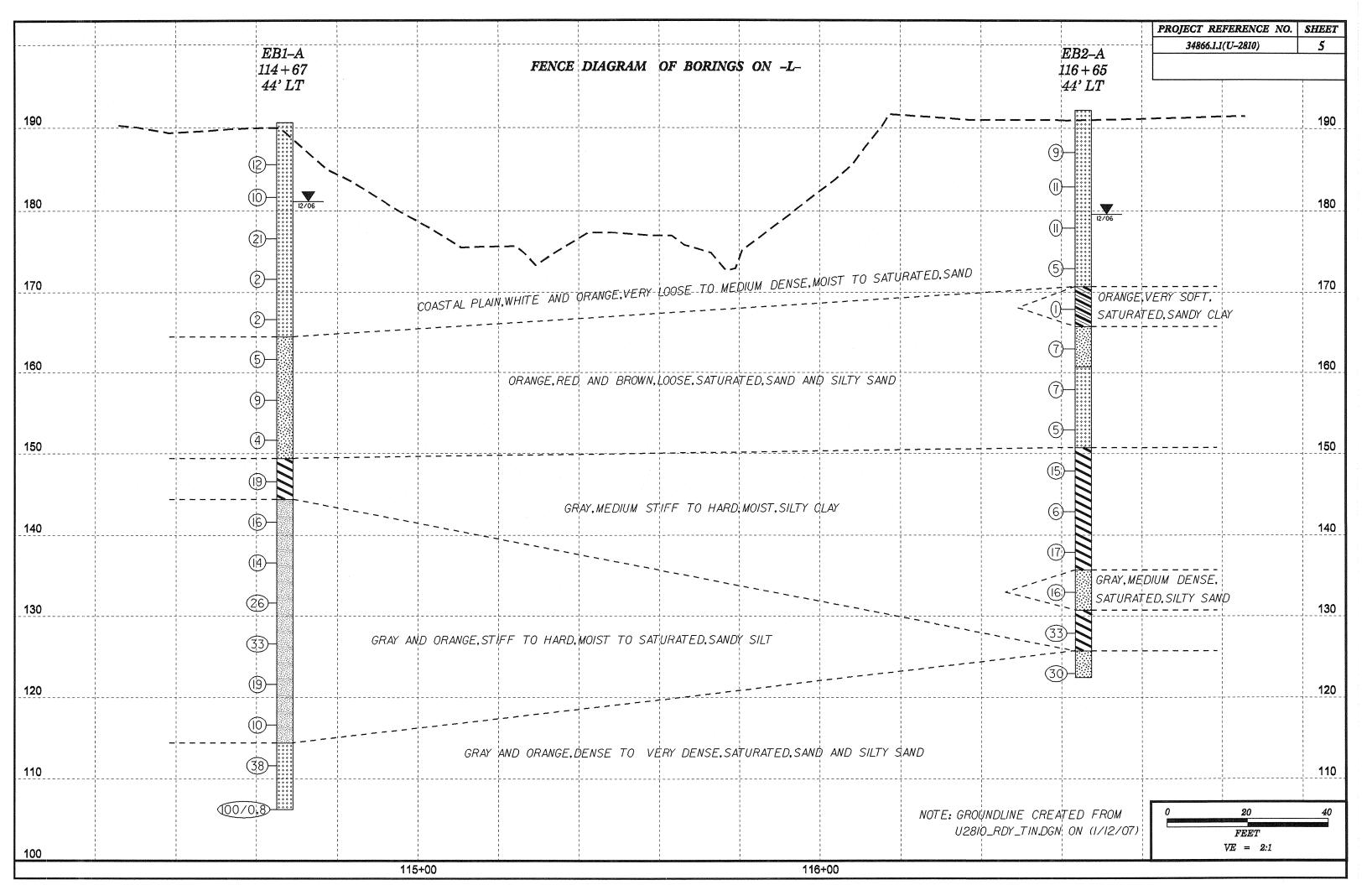
This Geotechnical foundation report is based on the Preliminary General Drawing dated August, 2006. If significant changes are made in the design or location of the proposed structure, the subsurface information should be reviewed and modified as necessary.

Prepared by

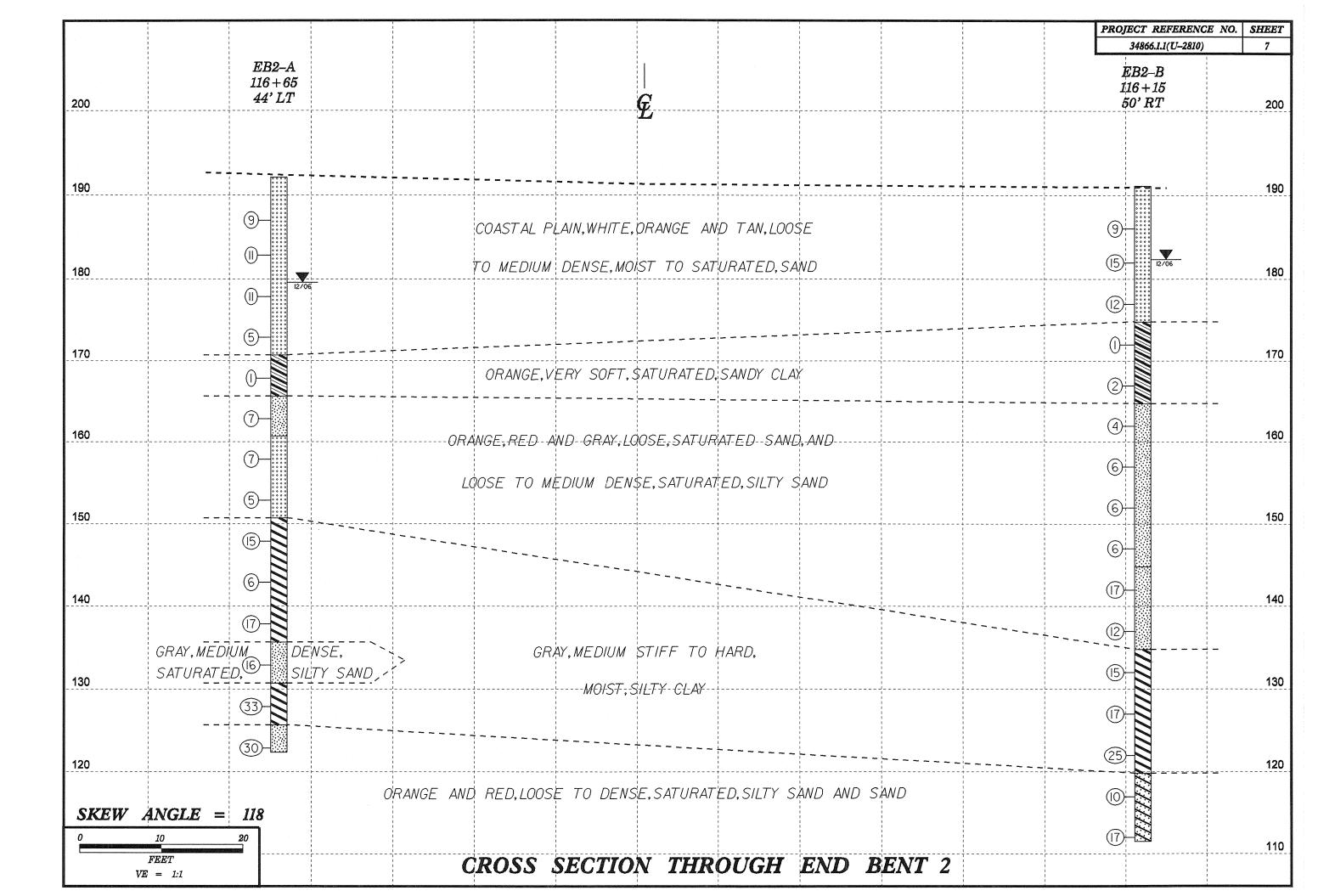
Nathan Mohs

Engineering Geologist

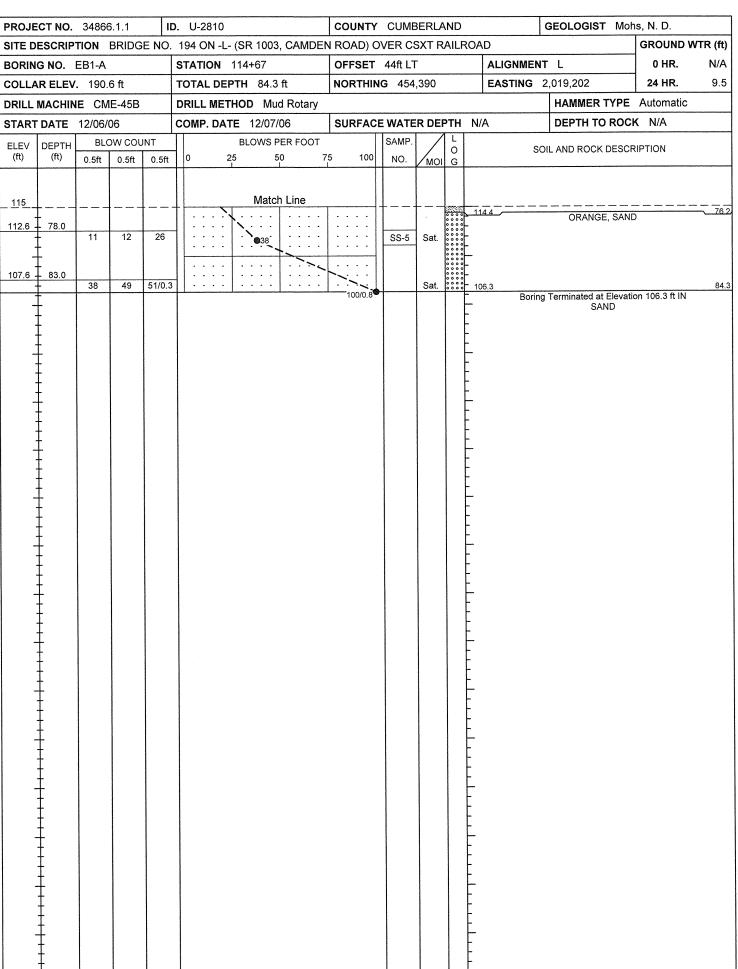




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		(<u>2</u>	400
12/06		(14)	180
2)-	COASTAL PLAIN, WHITE AND ORANGE, LOOSE TO	12/06	
0000 0000 0000 0000 0000	MEDIUM DENSE, MOIST TO SATURATED, SAND		
2			170
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(26)		(22)	; ; ;
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33-	GRAY AND ORANGE STIFE TO HARD.		1
		37-8	1 1 1 1
9-	MOIST TO SATURATED, SANDY SILT		120
			! ! !
			1 1 1
(38)	ORANCE DENSE TO VERY DENSE SATURATED SAND		
	UNANGE, DENSE IU VERI DENSE, SAI URAI ED, SAND	SKEW ANGLE	= 118 110
(100/0,8)		0 10	20
	CROSS SECTION THROUGH END BENT 1	FE	T
	114+67 44' LT (2) (0) (2) (2) (2) (3) (9) (4) (6) (6) (10) (10) (38)	## LT ## LT ## LT ## LT ## COASTAL PLAIN, WHITE AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, SAND ORANGE, RED, BROWN AND GRAY, LOOSE TO MEDIUM DENSE, SATURATED, SILTY SAND ## CORAN, VERY STIFF TO HARD, MOIST, SILTY CLAY ## CORAN AND ORANGE, STIFF TO HARD. ## ORANGE DENSE TO VERY DENSE SATURATED, SAND ORANGE DENSE TO VERY DENSE SATURATED, SAND	RBL-A 104-87 104-17 COASTAL PLANKWHITE AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, SAND ORANGE, RED, GROWN AND GRAY, LOOSE TO MEDIUM DENSE, SATURATED, SULY SAND ORANGE, RED, GROWN AND GRAY, LOOSE TO MEDIUM DENSE, SATURATED, SULY SAND ORANGE, RED, GROWN AND GRAY, LOOSE TO MEDIUM DENSE, SATURATED, SULY SAND ORANGE, RED, GROWN AND GRAY, LOOSE TO MEDIUM DENSE, SATURATED, SULY SAND ORANGE, TO HARD, MOIST, SILTY CLAY OFFICE ORANGE, DENSE, SATURATED, SAND SILT OFFICE ORANGE, DENSE, TO, VERY, DENSE, SATURATED, SAND SKEW ANGLE OFFICE ORANGE, DENSE, TO, VERY, DENSE, SATURATED, SAND SKEW ANGLE OFFICE ORANGE, DENSE, TO, VERY, DENSE, SATURATED, SAND



ROJE	CT NO.	34866	II	o. U-28	10			COUNTY	CUME	ERLA	ND	GEOLOGIST Mo	ohs, N. D.	
ITE D	ESCRIP	TION	BRIDG	E NO.	194 ON	1 -L- (S	R 1003	, CAMDE	N ROAD) C	VER CS	SXT R	AILR	OAD	GROUND WTR (ft
ORIN	G NO.	EB1-A			STATIC	N 11	4+67		OFFSET	44ft LT	•		ALIGNMENT L	0 HR. N/A
OLLA	R ELEV	. 190.	6 ft		TOTAL	DEPTI	1 84.3	ft	NORTHIN	G 454	,390		EASTING 2,019,202	24 HR. 9.5
RILL	MACHIN	IE CM	E-45B		DRILL I	WETHO	D Mu	d Rotary					HAMMER TYPE	Automatic
TART	DATE	12/06/	06		COMP.	DATE	12/07/	06	SURFAC	E WATE	R DE	PTH	N/A DEPTH TO RO	CK N/A
LEV	DEPTH	BLC	ow cou	INT		E	LOWS P	ER FOOT		SAMP.	V/	L O	SOIL AND ROCK DESC	CRIPTION
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	5	0 7	5 100	NO.	MOI		ELEV. (ft)	DEPTH (
195 _			-									 - -		105
-					+					 		::::	. 190.6 GROUND SURF COASTAL PLAIN, WHITE	
-	-					· - ·							SAND	
86.6 -	4.0	5	5	7	- : : i	12 .				SS-1	М	0000	•	
7	<u> </u>				1								- ·	
32.6 -	8.0	3	4	6	- 1 : 1				: : : :		√ M			
_	‡				1						×		-	
77.6 -	13.0				_ ::	X :			: : :			0000	•	
-	<u> </u>	7	10	11		21					W		•	
-	<u> </u>				1 ./	.							 ·	
72.6 -	18.0	1	1	1	2				: : :		w		•	
_	‡											0000	· -	
57.6 -	23.0				_							0000	•	
-	Ŧ	2	1	1	2						W	0000	· -	2
-	†		İ		1								ORANGE, RED, AND BR	
62.6 -	28.0	1	3	2	5					SS-2	Sat.		COARSE SAI	יטי
_	Ŧ												-	
57.6 -	33.0	3	3	6							Cot		<u>.</u>	
-	Ŧ			"	.1.						Sat.		<u>.</u> _	
52.6 -	38.0				/:								- -	
-		1	1	3	4:						Sat.		-	
-	‡				1								—149.4 - GRAY, SILTY C	:LAY
47.6 -	43.0	5	7	12	 ∷'	1 0			: : : :	SS-3	М		<u>.</u> -	
-	‡					ŤŤ			1		1		- 144.4	4
42.6 -	48.0					1:							GRAY AND ORANGE,	SANDY SILT
	‡	4	7	9		16			: : : :	SS-4	М		<u>-</u>	
	†					1.							- -	
37.6 -	53.0	3	6	8	 	14					w		···	
-	+					7.							- - -	
32.6	58.0	1	40	10	41::								<u>.</u>	
	Ŧ	9	10	16			6			-	Sat.		<u>-</u>	
- . 27.6	63.0					`\							- -	
21.0	I 33.0	9	16	17	11::		33				Sat.		- -	
_	Ŧ				1			<u> </u>	1				_ -	
22.6	68.0	4	8	11	41::						004		- -	
	Ī	"	"	1 "		9 19					Sat.		<u>-</u>	
17.6 -	73.0					1							<u>.</u> -	
	+	4	4	6	71.1	10					Sat.		_	



	T NO.				. U-281					COUNT						GLOLOGI	ST Mohs, N	1. D.		<u></u>	CT NO.				U-2810			i			BERLAN		GEOLOGIST		
SITE DE	SCRIPT	ION	BRIDG	E NO.	194 ON	-L- (SR 100	3, CAN	MDEN	ROAD)	OVE	R CS	XT RA	ILROA	D		GF	ROUND W	TR (ft)				BRIDG						ROAD) (GROUND	
BORING	NO. E	B1-B			STATIO	N 11	4+20			OFFSE						IMENT L		0 HR.	N/A	 	G NO.				STATION				OFFSET				ALIGNMENT L	0 HR.	N/.
COLLAF	R ELEV.	188.:	2 ft		TOTAL	DEPT	H 64.	5 ft		NORTH	ING	454,3	302		EASTI	NG 2,019,155	2	4 HR.	11.6		R ELEV				TOTAL DI				NORTHI	NG 454	,390		EASTING 2,019,400	24 HR.	12.
DRILL N	IACHINI	E CM	E-45B		DRILL N	IETH	OD M	ud Rot	tary							HAMME	R TYPE Au	tomatic			MACHIN				DRILL ME			<u>-</u>						YPE Automatic	
START I	DATE	12/07/0	06		COMP. I	DATE	12/07	7/06		SURFA	CEN	ATER	DEP	TH N/A	4	DEPTH '	TO ROCK I	V/A		START	DATE				COMP. DA				SURFAC		R DEP	TH N/A	A DEPTH TO I	ROCK N/A	
	DEPTH		ow cou				BLOWS				11	AMP.	'/ I	0		SOIL AND ROO	CK DESCRIPT	ION		ELEV (ft)	DEPTH (ft)		W COU		0	BLO\ 25	NS PER	FOOT	5 100	SAMP.		0	SOIL AND ROCK D	ESCRIPTION	
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25		50	75	10	1	NO.	MOI	G ELI	EV. (ft)				DEPTH (ft)	(19)	(14)	υ.5π	0.5ft	0.510	 				, ,,,,	INO.	MOI	G			
												1																							
190 📙														-		070111	D 011DE40E			195	-											F			
ŧ		-			· · · · · · · · · · · · · · · · · · ·			Т	• •		╫		8	188		COASTAL PLAIN,			0.0						<u> </u>							192			
‡						- 1		1				l	8			FINE TO C	COARSE SAND)		1.	<u> </u>						• • •				000		COASTAL PLAIN , WHI SANI		1
184.2	4.0	4	5	7		, .						1	М							188.1	4.0						: : :								
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180.2	8.0	5	6	8	1						$-\parallel$		W							183.9	8.2						_ -				0	000			
‡		J				14.		1					V								-	4	5	6	- 11						М				
175.2	13.0				::/:				::		1 1	-									Ŧ				- -						V				
+	10.0	6	5	5	. •10						1 1		Sat.							178.9	13.2	4	5	6							Sat.				
‡					:/: :				: :		-		000	000							Ŧ				. 7	: : :	.								
170.2	18.0	1	2	3		4					$-\Pi$		Sat.							173.9	T 18.2				- 						0				
‡		•	-		5.	- 1		1			.		8	16	7.0				21.2		-	2	2	3	9 5· ·						Sat.				
165.2	23.0					-								-		RANGE, RED AND	WHITE, SILT SAND	Y COARSE			Ŧ				j	.	ŧ				9	170	0.7 ORANGE, SAI	NDY CLAY	
100.2	20.0	2	2	3	\$ 5.			•			1 1	l	Sat.			`	67 (IND			168.9	23.2	1	1	0	I						Sat.		3,1,1,1,2,2,		
‡					;;			i			1 1										Ŧ	·	,		\						Juli	165	5.7		2
160.2	28.0	2	4	6	. \				• • •				Sat.	**						163.9	28.2				<u> </u>					$\left\{ \right\}$			ORANGE, SIL	TY SAND	
‡		2	"		- 1			- 1			1 1		Jai.							100.0	+	2	2	5	7		1			SS-9	Sat.	æ-E			
155.2	33.0				: 1			: : :			:	l									Ŧ						1					160	0.7 ORANGE, COA	RSE SAND	
100.2	33.0	3	7	5		2.		.					Sat.							158.9	33.2	3	3	4						SS-10	- 624		010/1102, 007		
1					:			.				1		*							‡				7 .		.			1 00-10	- Jan. 1	0000			
150.2	38.0	2	-	5	· j			. <i></i>					Sat	<u></u>	0.0				39.4	153.9	† + 38.2				-					11	1 1	0000			
1		3	3					: : :			1 1		Sat.	14	8.8	GRAY,	SILTY SAND		39.4	100.0	+ ***	3	2	3	65.						Sat.				
145.2	43.0				.			.			:										‡											15	50.7 GRAY, SILT	TY CLAY	
140.2	40.0	4	5	7		12.		.				SS-6	Sat.							148.9	43.2	3	6	9	1					SS-11	$+$ \wedge \uparrow		Orott, old		
‡					::			: : :	: : :		1 1			**							‡				/91					00-11	┨ ‴ ┠				
140.2	48.0	-	4	7	11:1			<u> </u>		• • • •			Cat							143 9	48.2				 										
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425.2	. 520					\.		· · ·	: : :						07.0	GRAY,	SILTY CLAY		01.2		‡														
135.2	. 33.0	5	8	14	 	22	2	. 				SS-7	м							138.9	53.2	5	7	10	7		-			11					
+					::	: :\		: : :	: : :		:										‡		′			17					101	12	35.7		
130.2	58.0				<u> </u>	• • \		-												122.0	58.2				<u> </u>								GRAY, SILT	TY SAND	
1		5	8	18		🕅	26	.			:		М							133.9	+ 50.2	3	7	9	: :	16 -				SS-12	Sat.	-			
405.0						: :	<u> </u>	: : :			1.1		ŀ								‡				:::	\						13	30.7 GRAY, SIL	TV CL AV	
125.2	63.0	5	10	27	 	†	. 37.						м	12	23.7				64.5	128.9	63.2		40	1 04	 	. \	.						GRAT, SIL	IT CLAT	
1														-		Boring Terminated SIL	d at Elevation 1 TY SAND	123.7 ft IN			‡	5	12	21			- 1				M		05.7		
1														E							‡					· · ·				_		- 12 -	GRAY, SIL	TY SAND	
7	•													F						123.9	68.2	10	14	16	: : :	30	}				Sat.	- - 12			
7														E							‡											F	Boring Terminated at I SILTY S		1
7	-				1.								l	F							‡											F			
1	•													H							†														

PROJE	CT NO.	34866	5.1.1	10	o. 1	U-2810	, , , , , , , , , , , , , , , , , , , ,		COUNTY	CUME	BERLA	ND		SEOLOGIST Moh	s, N. D.	
SITE D	ESCRIP	TION	BRIDGE	E NO.	194	4 ON -L-	(SR 1003	3, CAMDE	N ROAD) C	OVER C	SXTR	AILRO	DAD		GROUND V	VTR (ft)
BORIN	G NO.	EB2-B			STA	ATION 1	16+15		OFFSET	50ft R	Γ		ALIGNMENT	L	0 HR.	N/A
COLLA	R ELEV	. 191.	1 ft		TO	TAL DEP	TH 79.6	6 ft	NORTHIN	IG 454	,296		EASTING 2	,019,350	24 HR.	8.7
DRILL	MACHIN	IE CM	E-45B		DR	ILL METH	OD Mu	ıd Rotary						HAMMER TYPE	Automatic	
START	DATE	12/11/	06		СО	MP. DATI	E 12/11	/06	SURFAC	E WATE	R DE	PTH	N/A	DEPTH TO ROCI	K N/A	
ELEV	DEPTH	BLC	ow cour		\prod			PER FOOT		SAMP.	V/	L	SOI	L AND ROCK DESCF	RIPTION	
(ft)	(ft)	0.5ft	0.5ft	0.5ft	0	25	· · · · · · · · · · · · · · · · · · ·	50	75 100	NO.	MOI		ELEV. (ft)			DEPTH (
195 _	-											-				
	ļ.											F				
-	<u></u>				+-			 	 	 	<u> </u>		191.1 COASTA	GROUND SURFA L PLAIN, WHITE AN		0
-	<u> </u>							1				0000		,		
187.1	4.0	3	3	6	\parallel	.		: : : :	: : : :		М					
-	‡			J	11	• • • •		1			"		-			
183.0	8.1	6	6	9	4	::/::					M					
	‡			3							l W					
178.0	13.1												•			
	+	4	5	7	11	- 12-					w					
-	‡				\parallel	/			1				174.8	ORANGE, SANDY O	CLAY	16
173.0	18.1	2	0	1	-	/: : : :				SS-13	Sat.			010,4102, 07,4151		
	Ŧ	-				1				00-10	Journ					
168.0	23.1												•			
•	-	3	1	1	•	2		: : : :			Sat.					
-	‡				;			+					_164.8 TAN F	RED AND ORANGE,	SILTY SAND	26
163.0	28.1	1	2	2	- !					SS-14	Sat.		,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
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158.0	T 33.1					1 : : :						計				
	Ī	1	2	4		6					Sat.					
-	Ī					1		.	l				-			
153.0	38.1	4	2	4	$\exists \bot$	6					Sat.					
-	‡					1							_			
148.0	43.1					4					ļ ·					
	‡	2	2	4		6					Sat.					
440.0	‡ ,, .				1	\		+	 			計	_144.8	GRAY, SILTY SA	ND	46
143.0	48.1	5	7	10	\parallel			: : : :	: : : :	SS-15	Sat.	對				
-	‡] .			ļ · · · ·				-			
138.0	53.1	<u> </u>				:: <i>j</i> ::		: : : :								
	‡	4	5	7		12 .		: : : :			Sat.	對				-
-	<u> </u>				1			 	 				_134.8	GRAY, SILTY CL	AY	56
133.0	58.1	4	7	8	\parallel	· · • 15		: : : :			М					
_	‡					.			ļ · · · · ·							
128.0	63.1								: : : :							
	‡	3	7	10		17		: : : :			Sat.					
	†				1								-			
123.0	68.1	6	10	15	$\exists 1$	\	25	: : : :			Sat.					
_	‡					/							_119.8			7.
118.0	73.1					· · / · · · / ·							ORA	NGE AND RED, CLA	YEY SAND	
	+	4	4	6		- ø 10 -		1		SS-16	Sat.					

PROJEC	CT NO	34866	5.1.1	IC). U-2	 2810				COUNTY	CUM	BERLA	ND		GEOLOGIS	T Moh	s, N. D.	
							(SR 1	003, CAN	MDEN	ROAD) O				l Road			GROUND V	VTR (ft)
BORING						ION				OFFSET				ALIGNMEN	T L		0 HR.	N/A
COLLA			1 ft			L DEP				NORTHIN				EASTING			24 HR.	8.7
DRILL N								Mud Rot	arv	L						RTYPE	Automatic	
START					COMF					SURFACE	WATE	R DEI	PTH	N/A	DEPTH T			
T	DEPTH		ow cou	1	TT			VS PER FO	TOC		SAMP.							
(ft)	(ft)	0.5ft	0.5ft	0.5ft	1 0	2		50	75	5 100	NO.	мог	0 G	S	OIL AND ROC	K DESCR	IPTION	
								······································										
115							М	atch Line	•									
113.0	78.1				11-	7					†	T		OR	ANGE AND R	ED, CLAY	YEY SAND	
110.0	, 0.1	7	8	9		.) .				: : : :		Sat.		- - 111.5			444.5.61111	79.6
#	•													– Borin	g Terminated a S	at Elevatio AND	on 111.5 ft IN	
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EB1-A		den a de la composição de la composição de la composição de la composição de la composição de la composição de							Comments of the second						
			S	OIL 7	TE.	ST	RE	SUL	TS						
SAMPLE			DEPTH	AASHTO				% BY V	VEIGHT		% PAS	SING (S	IEVES)	%	%
NO.	OFFSET	STATION	INTERVAL	CLASS.	L.L.	P.I.	C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-1	44' LT	114+67	4.0-5.5	A-3(0)	21	NP	27.7	64.0	6.2	2.0	100	90	10	-	-
	4411	444.00	00 0 00 5	4 0 4/0)		-	CO 7	40.0	E 2	44.4	07	EA	47		

SS-2 44' LT 114+67 28.0-29.5 | A-2-4(0) | 22 | 5 | 69.7 | 13.9 | 5.3 | 11.1 | 97 | 51 | 17 | A-7-6(32) 57 31 3.4 6.6 25.6 64.3 99 97 92 SS-3 44' LT 114+67 43.0-44.5 A-4(0) 24 9 40.8 24.7 8.3 26.1 100 90 36 48.0-49.5 114+67 44' LT A-3(0) 21 NP 76.2 17.3 2.5 4.0 100 85 8 SS-5 44' LT 144+67 78.0-79.5

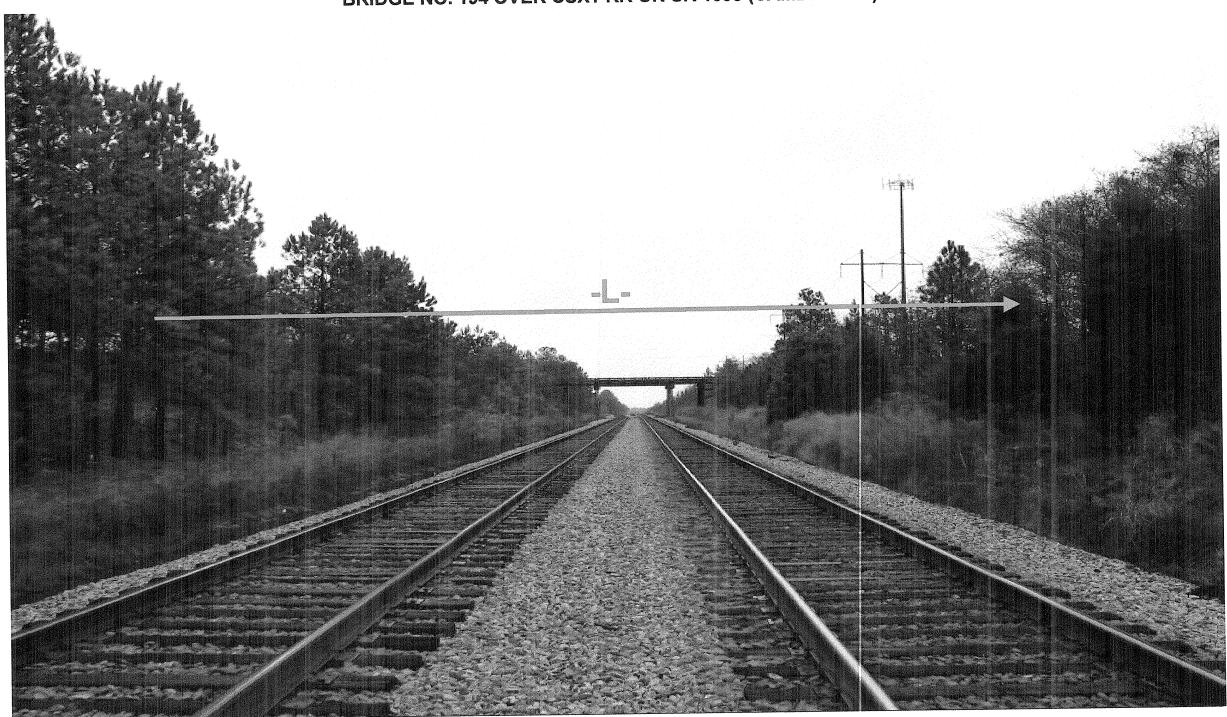
EB1-B SOIL TEST RESULTS AASHTO % BY WEIGHT % PASSING (SIEVES) DEPTH SAMPLE L.L. P.I. C.SAND F.SAND SILT CLAY OFFSET STATION 10 40 200 MOISTURE ORGANIC INTERVAL CLASS. NO. A-2-4(0) 22 6 37.4 32.8 9.7 20.1 100 97 32 114+20 43.0-44.5 SS-6 44' RT A-7-6(20) 44 22 1.8 20.3 31.7 46.2 100 99 88 44' RT 114+20 53.0-54.5 **S**S-7

EB2-A							Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra Alexandra			THE RESERVED AND PROPERTY AND PROPERTY.					
	SOIL TEST RESULTS														
SAMPLE			DEPTH	AASHTO				% BY W	EIGHT		% PAS	SING (S	IEVES)	%	%
NO.	OFFSET	STATION	INTERVAL	CLASS.	L.L.	P.I.	C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-8	44' LT	116+65	4.0-5.0	A-3(0)	23	NP	33.6	62.9	3.5	0.0	100	90	5	-	-
SS-9	44' LT	116+65	28.2-29.7	A-2-4(0)	25	8	57.9	14.7	9.3	18.1	100	85	32		-
SS-10	44' LT	116+65	33.2-34.7	A-3(0)	18	NP	83.0	9.9	2.0	5.0	100	65	8	-	-
SS-11	44' LT	116+65	43.2-44.7	A-7-6(39)	63	34	2.8	2.2	30.7	64.3	100	98	96	-	-
SS-12	44' LT	116+65	58.2-59.7	A-2-4(0)	22	NP	64.3	22.8	6.8	6.0	100	80	14		-

EB2-B															
	SOIL TEST RESULTS														
SAMPLE			DEPTH	AASHTO				% BY W	/EIGHT		% PAS	SING (S	IEVES)	%	%
NO.	OFFSET	STATION	INTERVAL	CLASS.	L.L.	P.I.	C.SAND	F.SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANI
SS-13	50' RT	116+65	18.1-19.6	A-6(1)	30	12	18.9	38.2	14.8	28.1	74	64	36		-
SS-14	50' RT	116+65	28.1-29.6	A-2-4(0)	25	NP	12.3	68.9	6.7	12.1	100	99	20		
SS-15	50' RT	116+15	48.1-49.6	A-2-4(0)	23	NP	47.8	36.5	7.6	8.0	99	89	17	-	-
SS-16	50' RT	116+15	73.1-74.6	A-2-6(0)	25	11	86.2	5.7	3.0	5.0	99	20	9		

SITE PHOTO

BRIDGE NO. 194 OVER CSXT RR ON SR 1003 (CAMDEN RD.)



LOOKING NORTH