

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

STRUCTURE SUBSURFACE INVESTIGATION

STATE PROJECT 33225.1.1 I.D. NO. B-3684
 F.A. PROJECT BRSTP-1565(4)
 COUNTY PITT
 PROJECT DESCRIPTION BRIDGE NO. 129
AND NO. 127 OVER THE TAR RIVER
AND OVERFLOW ON SR 1565

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	
N.C.	33225.1.1 (B-3684)	1	43
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
		P.E.	
		CONST.	

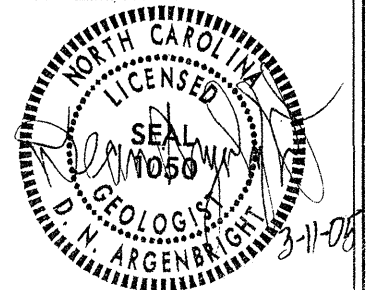
CAUTION NOTICE

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 (UN-PLACED) 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 K. B. MILLER PERSONNEL KBQ
 CHECKED BY D. N. ARGENBRIGHT MMH
 SUBMITTED BY D. N. ARGENBRIGHT LWD
 DATE MARCH 2005 WNC
RES
MACTECH
PERSONNEL



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.

CONTENTS:

SHEET	DESCRIPTION
1	TITLE SHEET
2	LEGEND
3	INVENTORY REPORT
4	SITE PLAN
5-8	PROFILES
9-11	CROSS SECTIONS
12-34	BORE LOG & CORE REPORTS
35	SCOUR REPORT
36-40	SOIL TEST RESULTS
41-42	CORE PHOTOGRAPHS
43	SITE PHOTOGRAPH






















DRAWN BY: ANK

CONTRACT: ID: B-3684

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																							
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 (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: <i>VERY STIFF, GRAY SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6</i>										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) GAP-GRADED: INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.										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:  WEATHERED ROCK (WR)  CRYSTALLINE ROCK (CR)  NON-CRYSTALLINE ROCK (NCR)  COASTAL PLAIN SEDIMENTARY ROCK (CPS)										ALLUVIUM (ALLUV.) - SOILS WHICH 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, AS SHALE, SLATE, ETC. 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. CALCAREOUS (CALC.) - SOILS WHICH 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 (F.P.) - 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, MOTTLED 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 SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. 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. SAPROLITE (SAP.) - RESIDUAL SOIL WHICH 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, WHICH 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 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. 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 (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. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																							
SOIL LEGEND AND AASHTO CLASSIFICATION										MINERALOGICAL COMPOSITION										WEATHERING																																																	
GENERAL CLASS. GRANULAR MATERIALS (>85% PASSING #200) SILT-CLAY MATERIALS (>85% PASSING #200) ORGANIC MATERIALS										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.										FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. 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. 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. 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. 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> 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> 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> 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.										COMPRESSION SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50										PERCENTAGE OF MATERIAL 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										GROUND WATER WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. STATIC WATER LEVEL AFTER 24 HOURS. PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA SPRING OR SEEPAGE										MISCELLANEOUS SYMBOLS  ROADWAY EMBANKMENT WITH SOIL DESCRIPTION  SOIL SYMBOL  ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS  INFERRED SOIL BOUNDARIES  INFERRED ROCK LINE  ALLUVIAL SOIL BOUNDARY  DIP/DIP DIRECTION OF ROCK STRUCTURES  SOUNDING ROD  SPT TEST BORING  AUGER BORING  CORE BORING  MONITORING WELL  PIEZOMETER INSTALLATION  SLOPE INDICATOR INSTALLATION  SPT N-VALUE  SPT REFUSAL  SAMPLE DESIGNATIONS S- BULK SAMPLE SS- SPLIT SPOON SAMPLE ST- SHELBY TUBE SAMPLE RS- ROCK SAMPLE RT- RECOMPACTED TRIAXIAL SAMPLE CBR - CBR SAMPLE									
TEXTURE OR GRAIN SIZE										ABBREVIATIONS										ROCK HARDNESS																																																	
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.0 0.42 0.25 0.075 0.053										AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED FRAGS. - FRAGMENTS MED. - MEDIUM PMT - PRESSUREMETER TEST SD - SAND, SANDY SL - SILT, SILTY SLI - SLIGHTLY TCR - TRICONE REFUSAL γ _d - UNIT WEIGHT γ _d - DRY UNIT WEIGHT w - MOISTURE CONTENT v - VERY VST - VANE SHEAR TEST										VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.																																																	
SOIL MOISTURE - CORRELATION OF TERMS										EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING										BEDDING																																							
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION										DRILL UNITS: <input type="checkbox"/> MOBILE B- <input checked="" type="checkbox"/> CME-45 <input checked="" type="checkbox"/> CME-45C <input checked="" type="checkbox"/> CME-55 <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> OTHER <input type="checkbox"/> OTHER										ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG.-CARBIDE INSERTS <input checked="" type="checkbox"/> CASING <input type="checkbox"/> w/ ADVANCER <input checked="" type="checkbox"/> TRICONE 2 5/16" * STEEL TEETH <input type="checkbox"/> TRICONE * TUNG.-CARB. <input checked="" type="checkbox"/> CORE BIT <input type="checkbox"/> OTHER										HAMMER TYPE: <input type="checkbox"/> AUTOMATIC <input checked="" type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> B- <input type="checkbox"/> N- <input checked="" type="checkbox"/> H-Q HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> OTHER										TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET TERM THICKNESS VERY THICKLY BEDDED > 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET																													
PLASTICITY										INDURATION										INDURATION																																																	
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY										FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.										BENCH MARK: BY-2 PINC 8+77.39 (-YI- 13+77.32 15.17' LT) ELEVATION: 5.96' NOTES:																																																	
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.																																																																					



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 11, 2005

STATE PROJECT: 33225.1.1 B-3684
FEDERAL PROJECT: BRSTP-1565 (4)
COUNTY: Pitt
DESCRIPTION: Bridges 127 & 129 Over the Tar River on SR 1565
SUBJECT: Geotechnical Report – Structure Inventory

Site Description

This project consists of a 1,952-foot long twenty span bridge over the Tar River and Tar River Overflow. The project is located in Pitt County approximately one mile northeast of the town of Grimesland. The proposed bridge has a 90° skew and will replace the existing bridges. The channel depth at the bridge site is maintained at elevation -25± feet by the USACE for navigation purposes. The area is mostly wooded west and east of the existing structures.

The geotechnical field investigation was conducted during the months of July through October 2004. Borings were advanced using bentonite drilling fluid and a CME-45 and a CME-55 drill machine with manual hammers. Standard Penetration Tests were performed at each bent location excluding Bents 12,14 and 16. In addition, core borings were taken at four locations. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit. Borings from Law Engineering's report "Bridge #127 on S.R. 1565 over Tar River Overflow Pitt County, North Carolina" dated May 18, 1998 were reproduced and utilized in this report.

Physiography and Geology

The project is located in flat to gently sloping terrain in the Coastal Plain Physiographic Province. The project occurs within an area where Coastal Plain sediments of the Pliocene age Yorktown Formation disconformably overlie Cretaceous sediments of the Peedee Formation. Surficial alluvial soils were encountered along the project and are underlain by the Peedee Formation.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

TELEPHONE: 919-250-4088
FAX: 919-250-4237
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

Soil Properties

Soils encountered at the project site include alluvial sediments and coastal plain deposits.

Alluvial deposits were encountered at all locations except EB1 and B1. Alluvial material within the Tar River at B2 and B3 consists of 5± feet of very loose to medium dense sand (A-2-4) as bedload. The alluvial deposits to the north of the river are consistent with multiple cut-and-fill episodes as the Tar River and its tributaries migrated to their present locations. These deposits are characterized by alternating beds of very soft to medium stiff sandy silt and sandy/silty clay (A-4, A-6, A-7-6) and very loose to dense fine to coarse sands (A-1-b, A-3, A-2-4). This sequence is 25± feet thick at B4 and thins to 10± feet at EB2.

Coastal Plain deposits at the site consist of the Pliocene age Yorktown Formation and the Cretaceous age Peedee Formation. The Yorktown Formation consists of twenty to twenty-five feet of very loose to medium dense sand (A-2-4, A-3) overlying a five- to nine-foot layer of medium stiff to stiff silty sandy clay (A-6). The Yorktown Formation was observed in borings EB1-A, B1-B and in outcrop along the bluff of the southern bank of the Tar River, but appears to be absent north of the river. Most likely, sediments of the Yorktown Formation were reworked and re-deposited as the river channel migrated to its present location. The Peedee Formation is primarily composed of interbedded medium dense to very dense sands (A-1-b, A-3, A-2-4), medium stiff to hard silt (A-4), stiff to hard sandy clay (A-6, A-7-6) and soft to hard sandy limestone. The limestone layers range in thickness from a few tenths of a foot to nearly two feet. Core borings were performed at Bent 3, Bent 4, Bent 6 and Bent 8 with poor to moderate recovery success. More detailed core information can be found in the core boring reports and photographs.

Groundwater

Water measurements were taken during a period of average to above average precipitation from July 2004 to October 2004. Groundwater elevations ranged from 9.3 feet to 19.1 feet in the upland area on the south side of the Tar River and from 0.4 feet to 3.5 feet in the flood plain on the north side of the river. The groundwater on the north side of the river was within 1.5 feet of the natural ground surface. The surface water elevation at Bent 11 and Bent 13 was noted at 2.3 feet. The water elevation of the river was measured at 1.3 feet in September 2003.

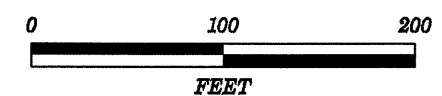
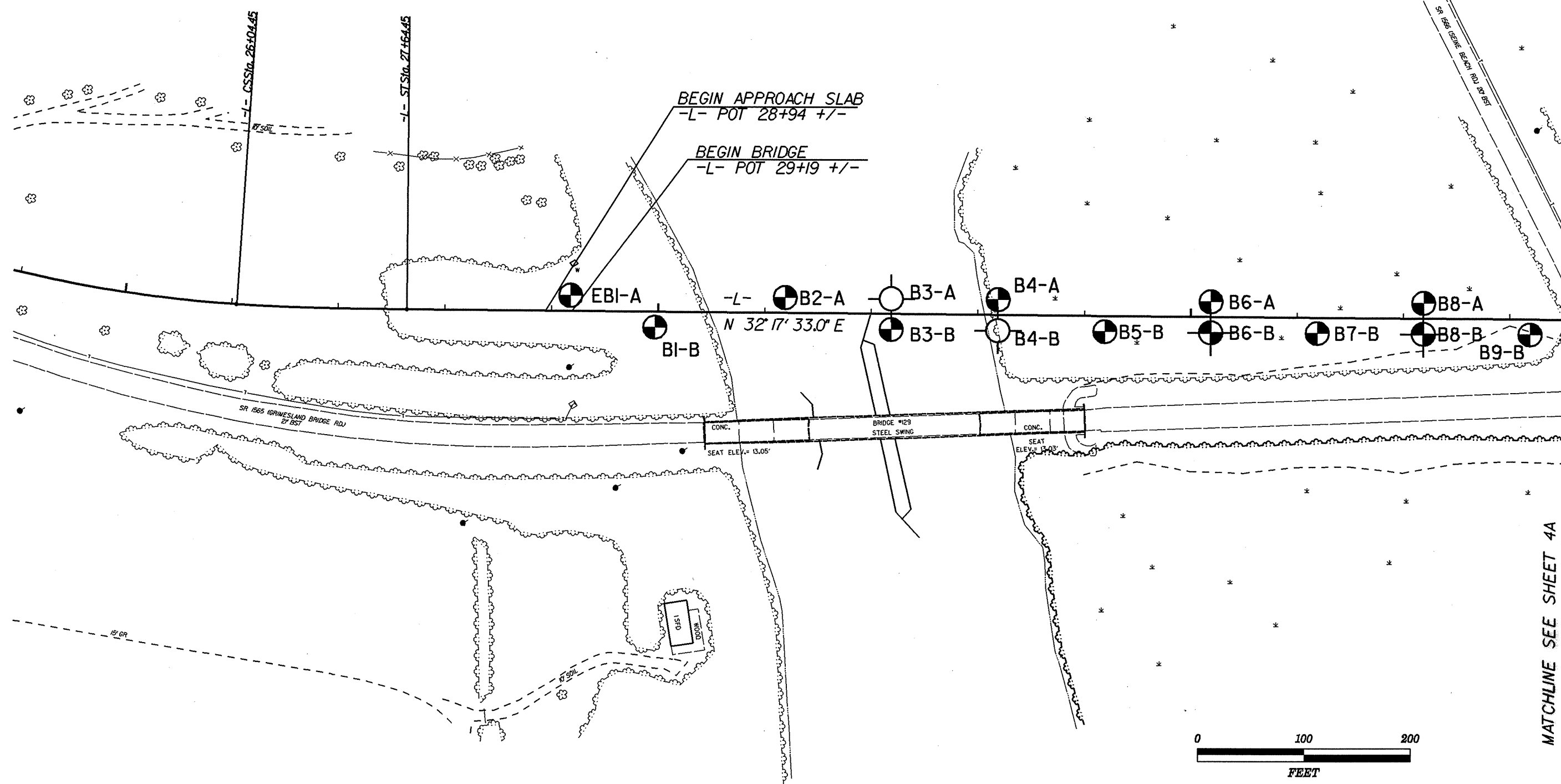
Notice

This Geotechnical foundation report is based on the bent locations provided in the memo "Request for Foundation Recommendations", dated May 14, 2004, and the revised Preliminary General Drawing dated June 2004. 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:

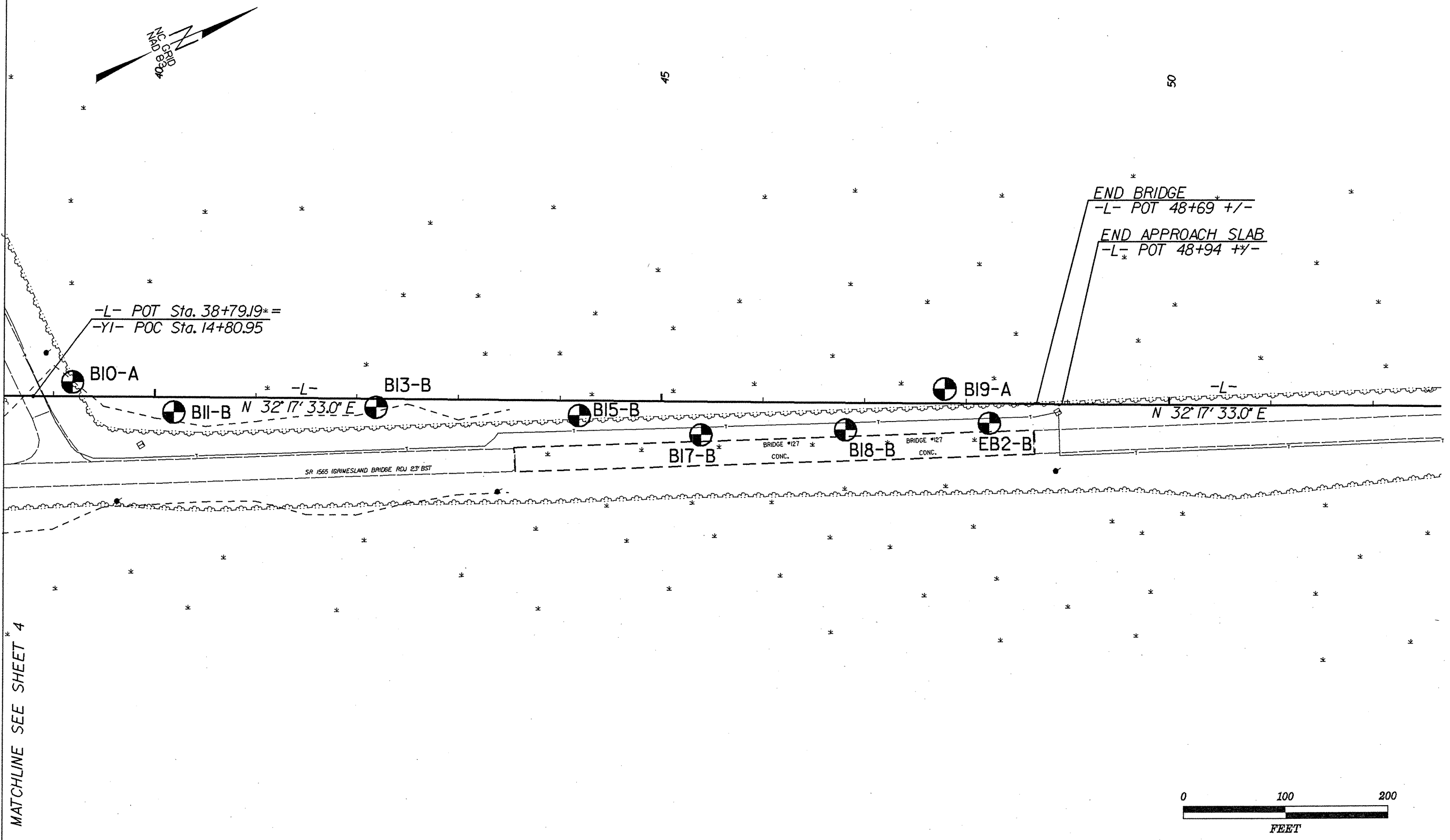
Kevin B. Miller
Engineering Geologist II

TEST SITE PLAN

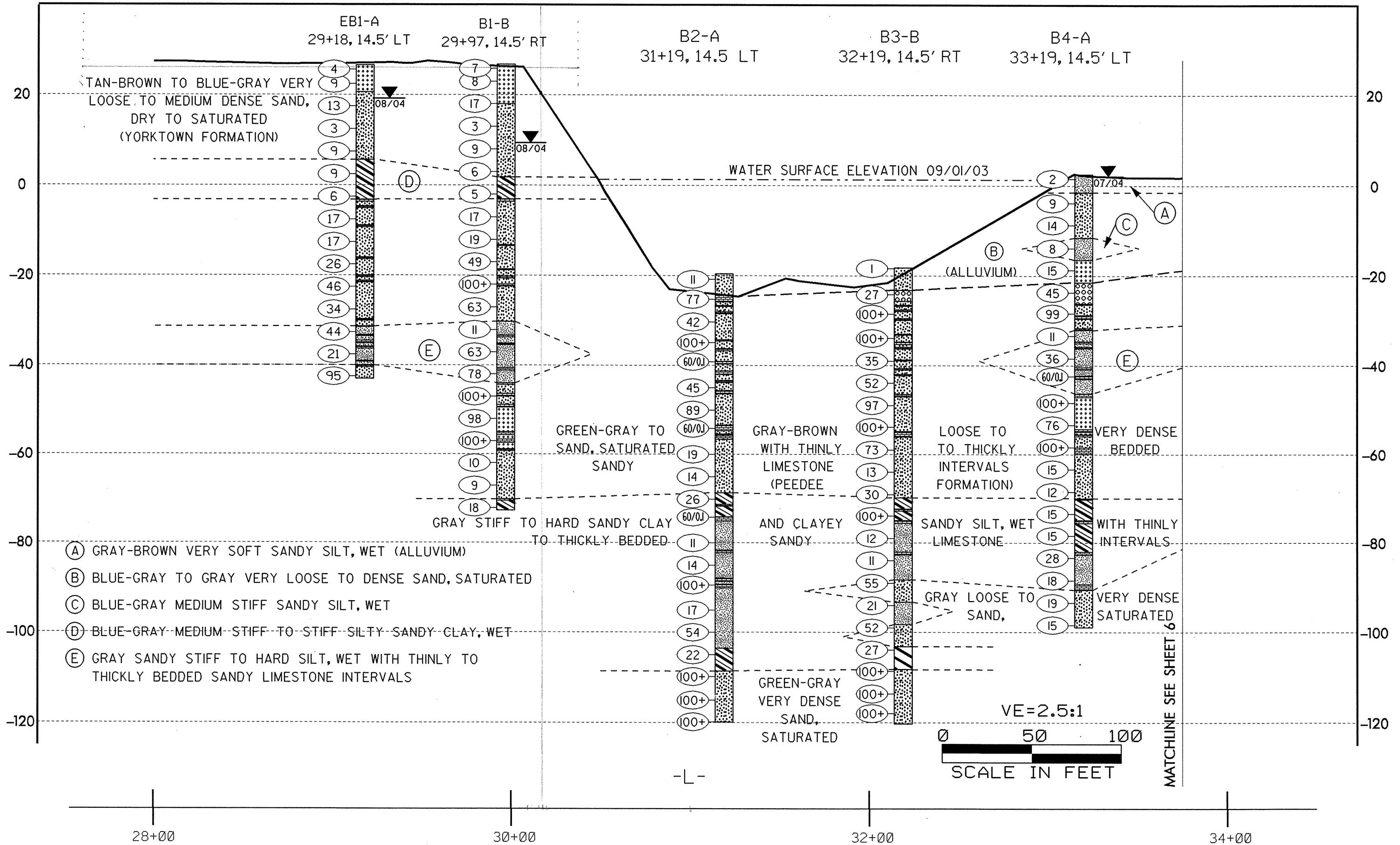


MATCHLINE SEE SHEET 4A

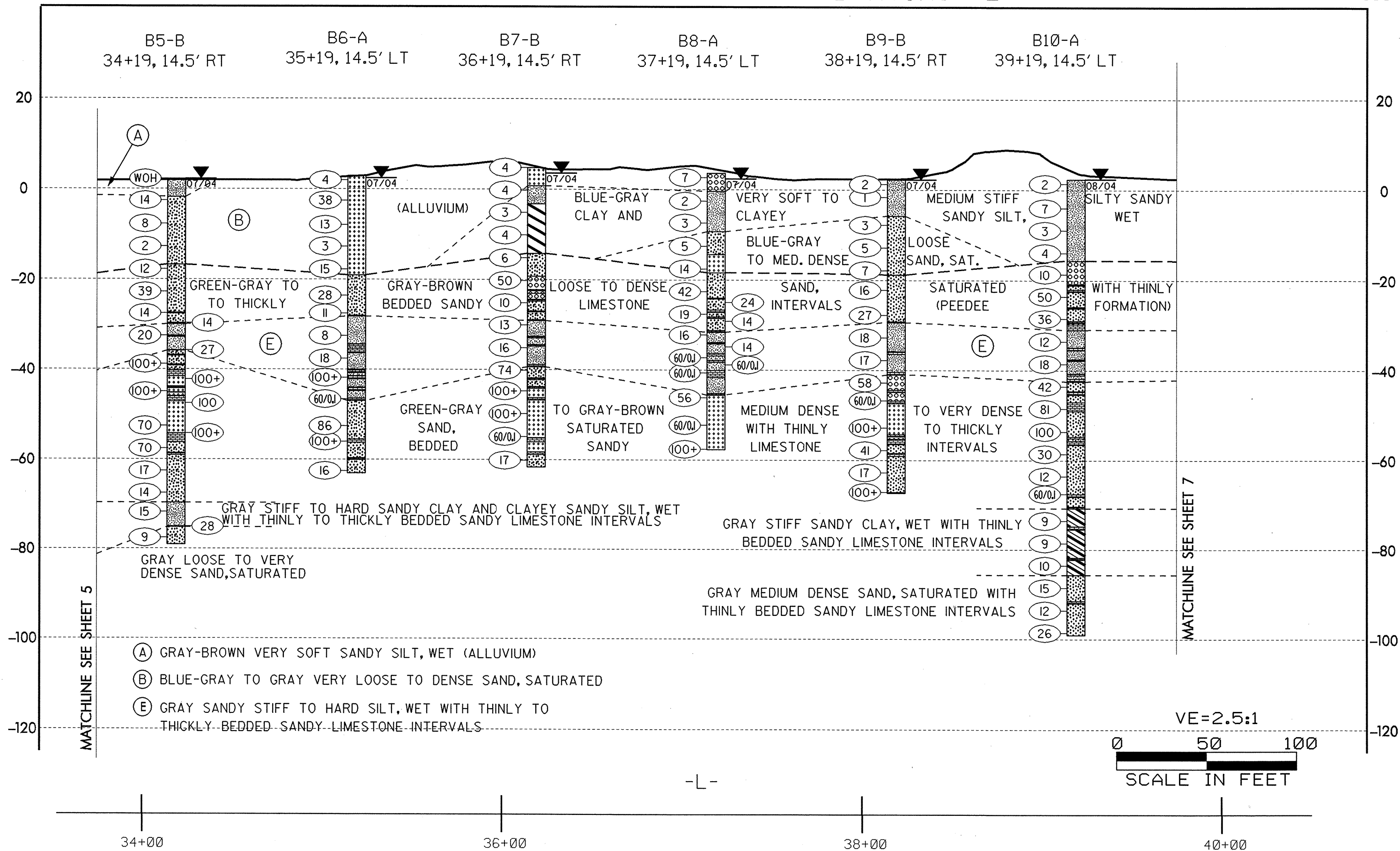
TEST SITE PLAN



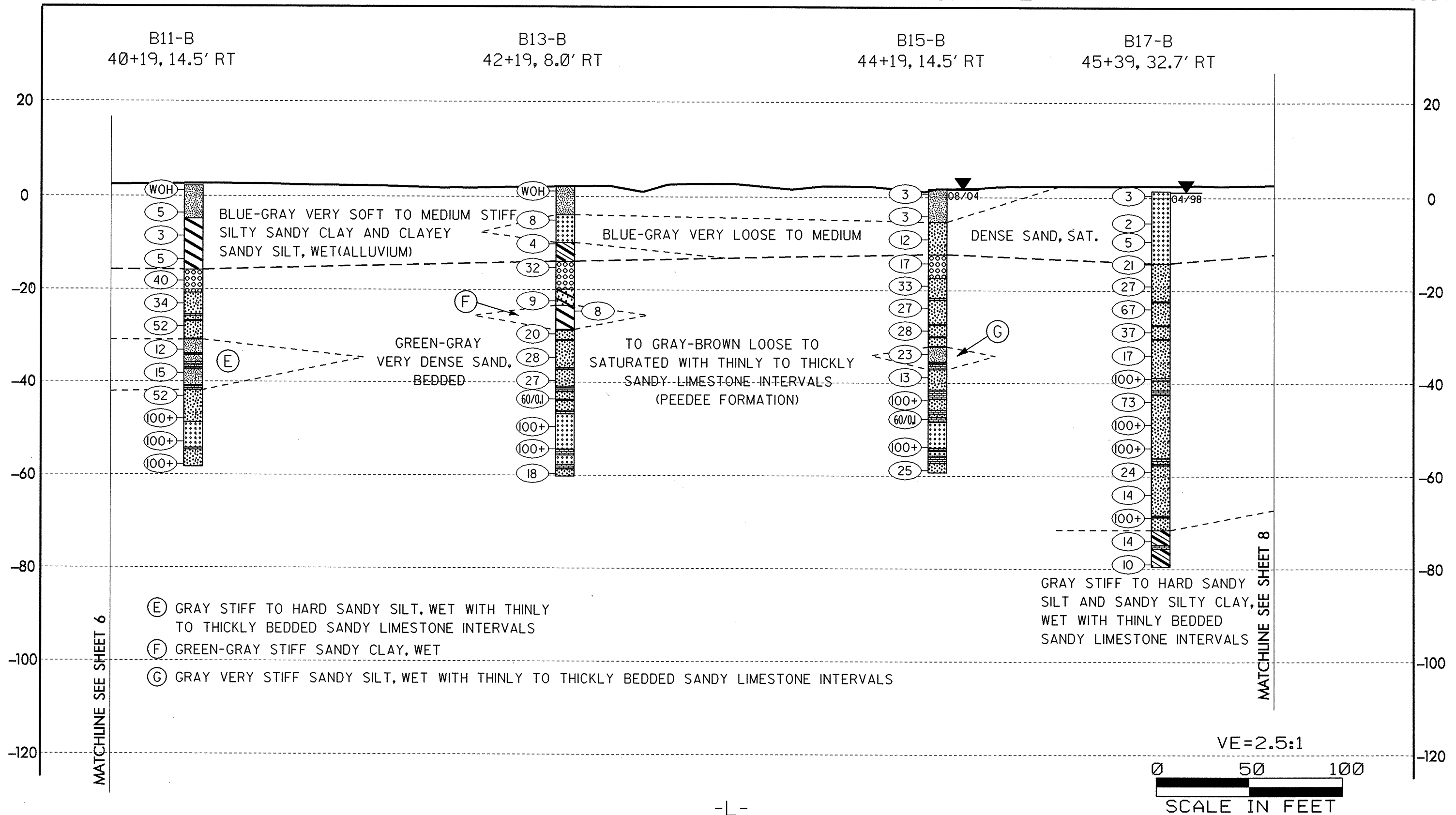
PROFILE THROUGH BORINGS PROJECTED ALONG -L-



PROFILE THROUGH BORINGS PROJECTED ALONG -L-



PROFILE THROUGH BORINGS PROJECTED ALONG -L-



B11-B
40+19, 14.5' RT

B13-B
42+19, 8.0' RT

B15-B
44+19, 14.5' RT

B17-B
45+39, 32.7' RT

- (WOH)
- (5)
- (3)
- (5)
- (40)
- (34)
- (52)
- (12)
- (15)
- (52)
- (100+)
- (100+)
- (100+)

BLUE-GRAY VERY SOFT TO MEDIUM STIFF SILTY SANDY CLAY AND CLAYEY SANDY SILT, WET (ALLUVIUM)

- (WOH)
- (8)
- (4)
- (32)
- (9)
- (20)
- (28)
- (27)
- (60/0)
- (100+)
- (100+)
- (100+)
- (18)

BLUE-GRAY VERY LOOSE TO MEDIUM

GREEN-GRAY VERY DENSE SAND, BEDDED

TO GRAY-BROWN LOOSE TO SATURATED WITH THINLY TO THICKLY SANDY LIMESTONE INTERVALS (PEEDEE FORMATION)

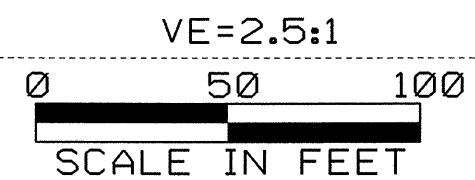
- (3)
- (3)
- (12)
- (17)
- (33)
- (27)
- (28)
- (23)
- (13)
- (100+)
- (60/0)
- (100+)
- (100+)
- (25)

DENSE SAND, SAT.

- (3)
- (2)
- (5)
- (21)
- (27)
- (67)
- (37)
- (17)
- (100+)
- (73)
- (100+)
- (100+)
- (100+)
- (24)
- (14)
- (100+)
- (14)
- (10)

GRAY STIFF TO HARD SANDY SILT AND SANDY SILTY CLAY, WET WITH THINLY BEDDED SANDY LIMESTONE INTERVALS

- (E) GRAY STIFF TO HARD SANDY SILT, WET WITH THINLY TO THICKLY BEDDED SANDY LIMESTONE INTERVALS
- (F) GREEN-GRAY STIFF SANDY CLAY, WET
- (G) GRAY VERY STIFF SANDY SILT, WET WITH THINLY TO THICKLY BEDDED SANDY LIMESTONE INTERVALS



MATCHLINE SEE SHEET 6

MATCHLINE SEE SHEET 8

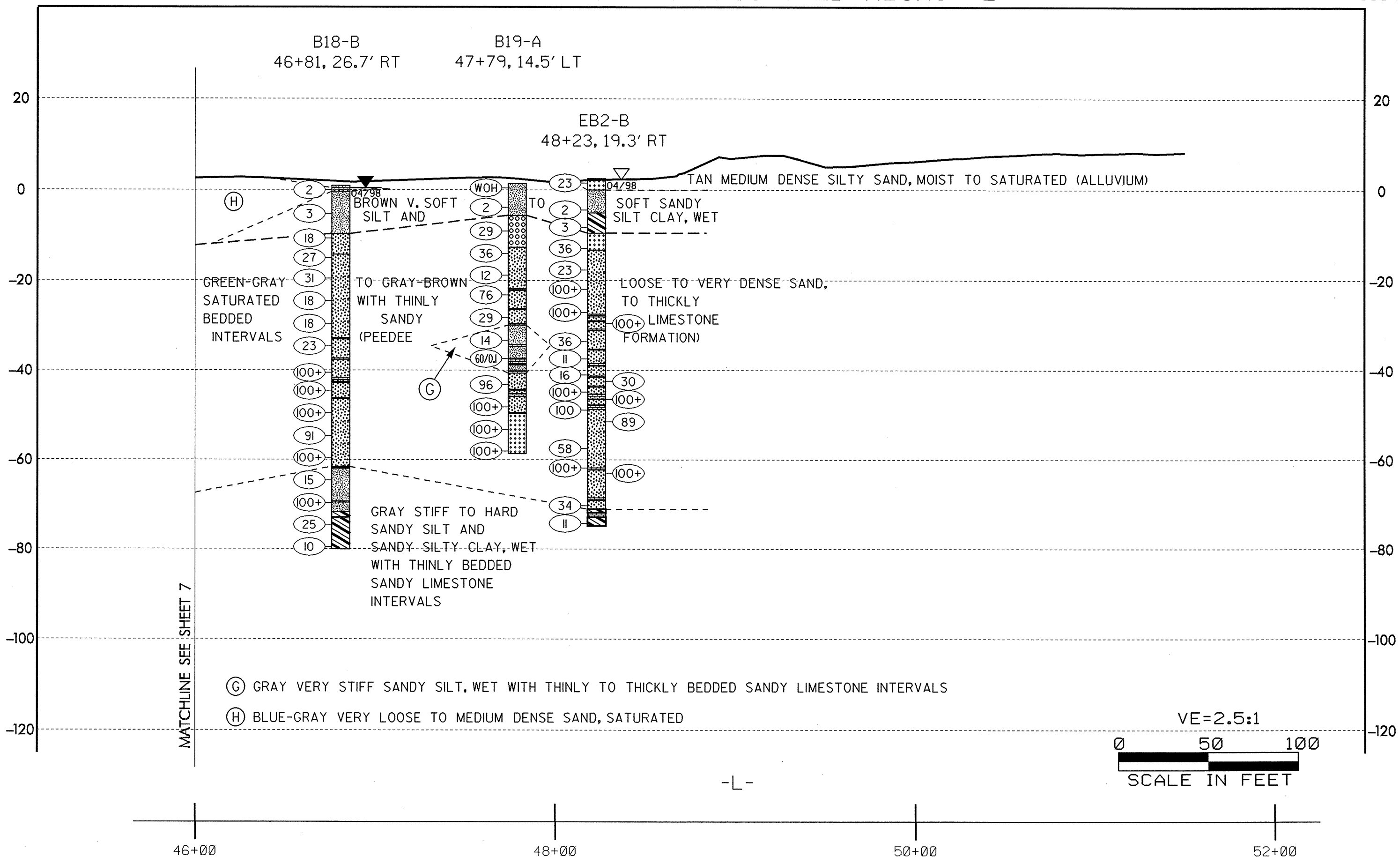
40+00

42+00

44+00

46+00

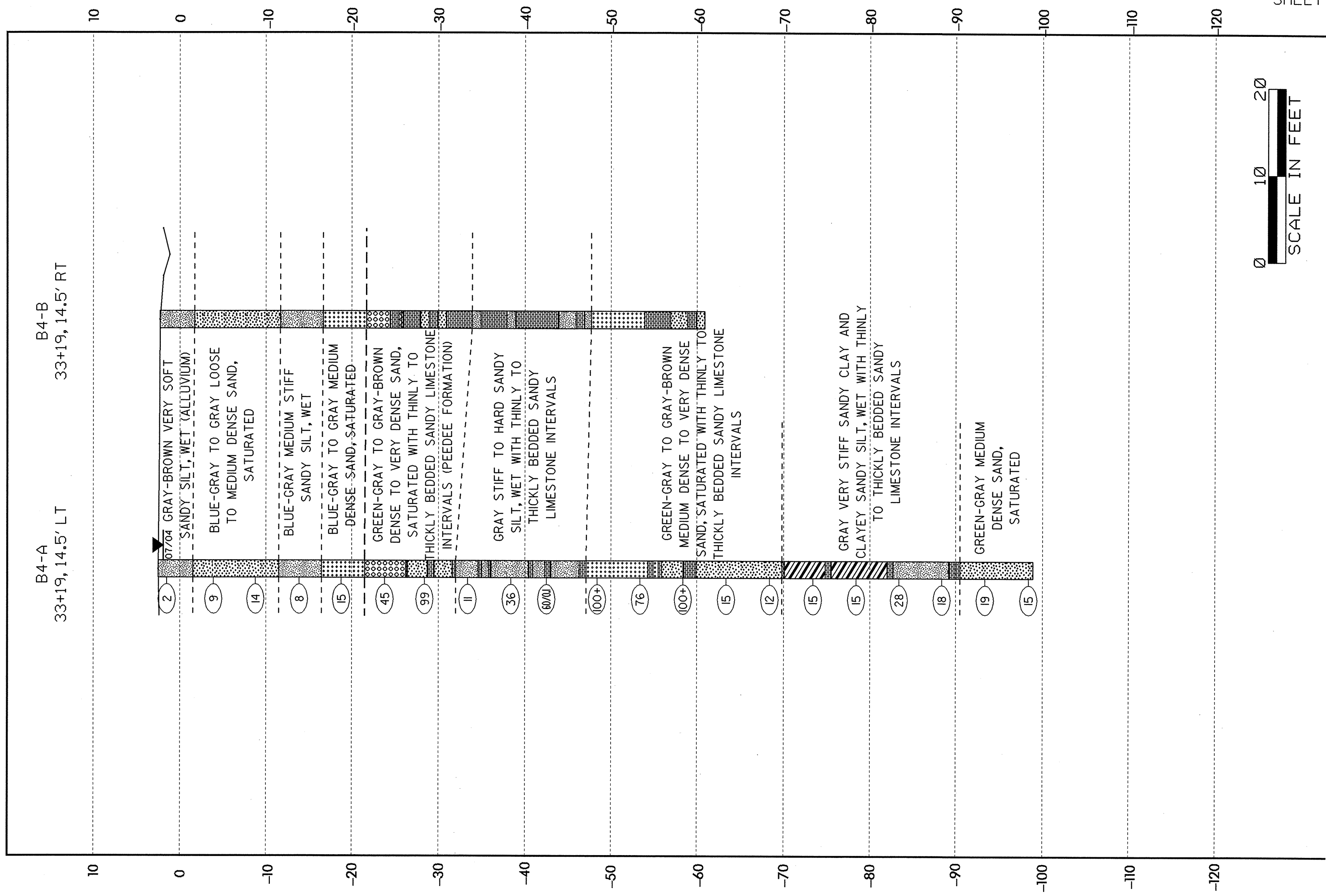
PROFILE THROUGH BORINGS PROJECTED ALONG -L-



CROSS SECTION THROUGH BENT 4

33225.1.1 (B-3684)

B4-A 33+19, 14.5' LT
 B4-B 33+19, 14.5' RT

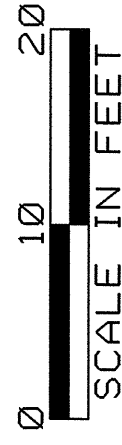
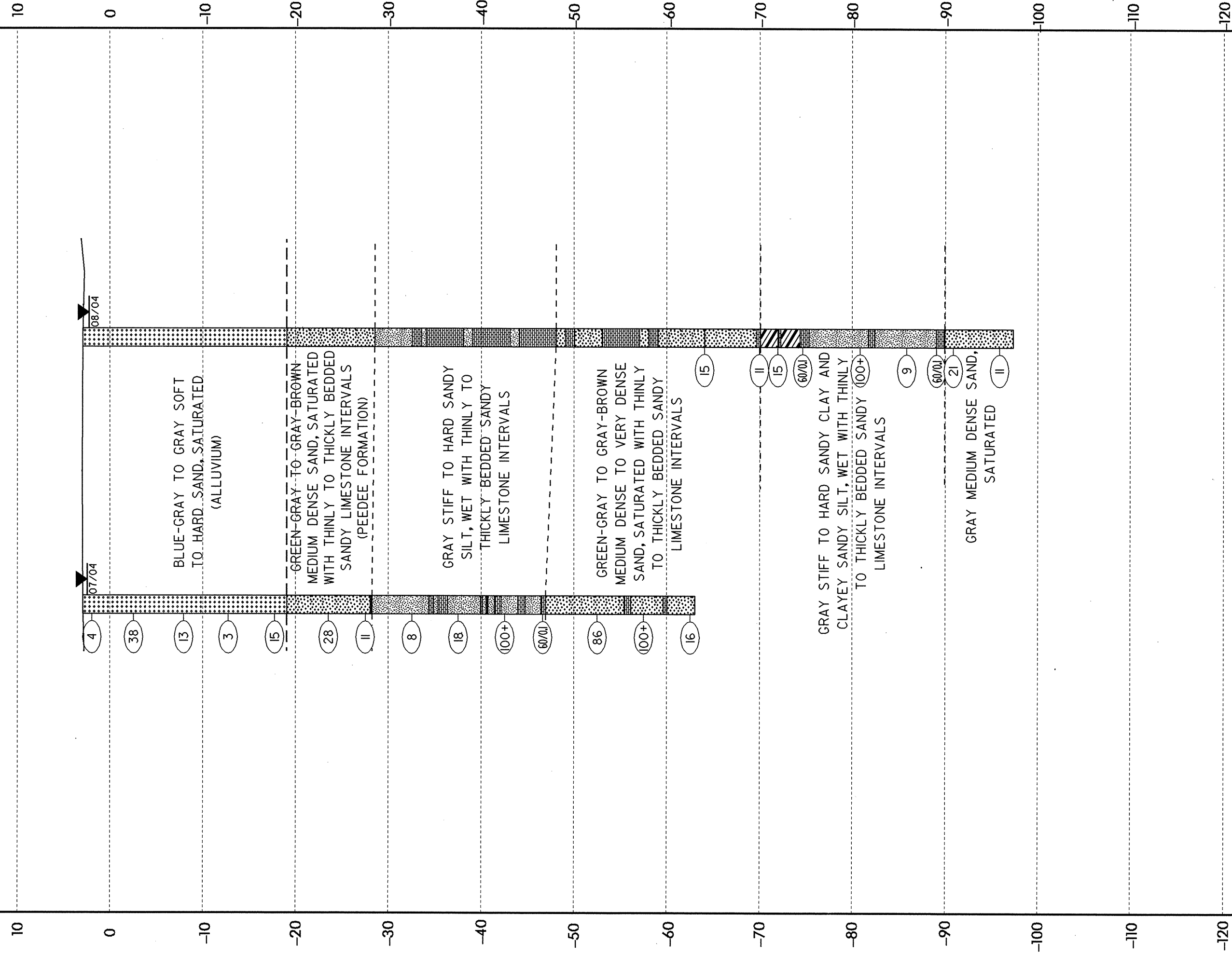


CROSS SECTION THROUGH BENT 6

33225.1.1 (B-3684)

B6-A
35+19, 14.5' LT

B6-B
35+19, 14.5' RT

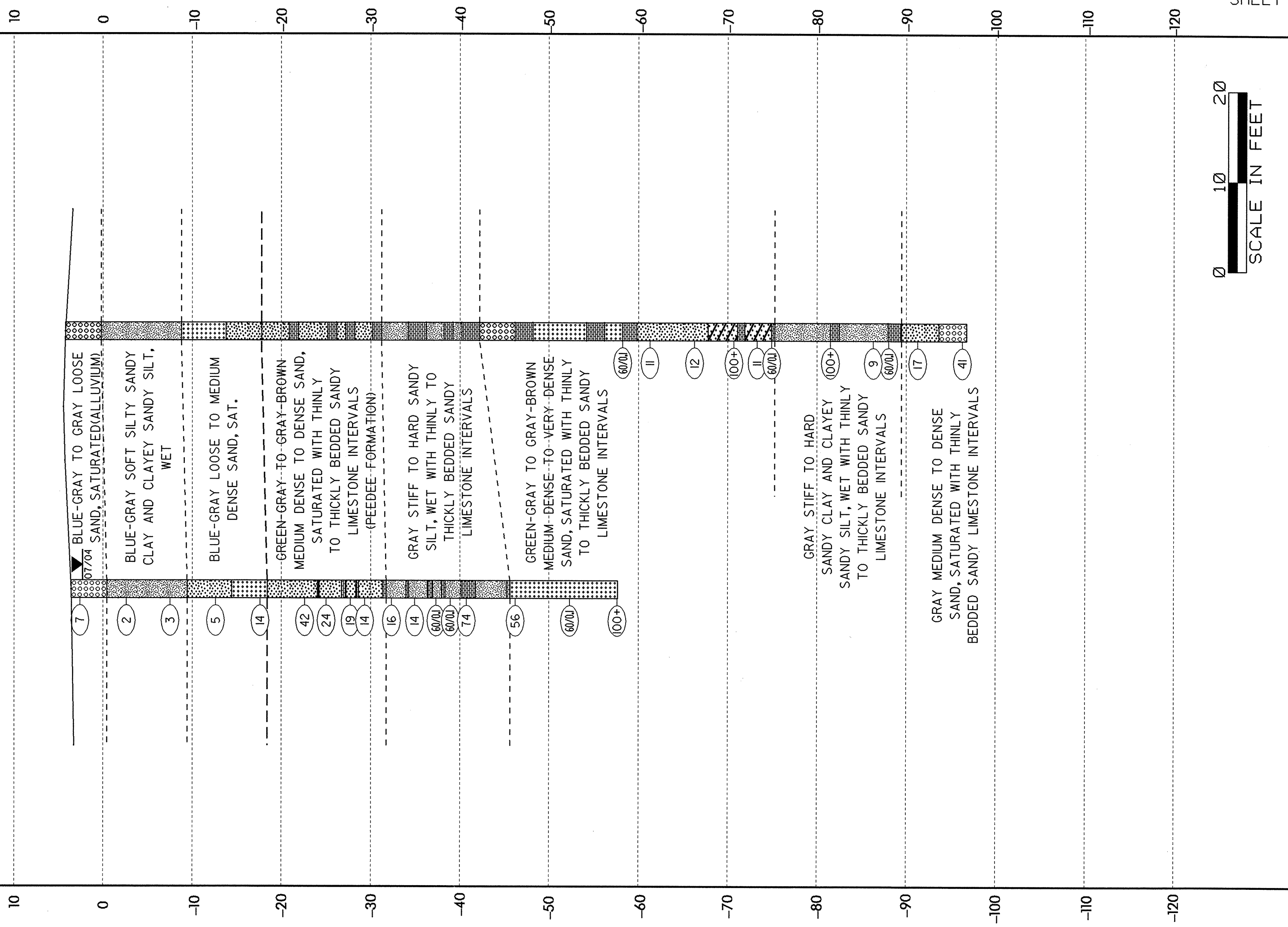


CROSS SECTION THROUGH BENT 8

33225.1.1 (B-3684)

B8-A
37+19, 14.5' LT

B8-B
37+19, 14.5' RT



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG**

SHEET 12

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. EBI-A		BORING LOCATION 29+18		OFFSET 14.5' LT		ALIGNMENT -L-								
COLLAR ELEVATION 26.6'		NORTHING 0.00		EASTING 0.00		0 HR. NM 24 HR. 7.5'								
TOTAL DEPTH 69.7'		DRILL MACHINE CME-45C		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 8/20/04		COMPLETION DATE 8/20/04		SURFACE WATER DEPTH N/A										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
26.6	0.0	2	2	2	1									
25.0	3.2	3	4	5	1							SS-105		
20.0	8.2	5	6	7	1							SS-106	▼	BROWN TO BLUE-GRAY FINE TO COARSE SAND, DRY TO SATURATED (YORKTOWN FORMATION)
15.0	13.2	2	1	2	1							SS-107		
10.0	18.2	4	5	4	1							SS-108		
5.0	23.2	4	4	5	1							SS-109	29%	BLUE-GRAY SILTY FINE SANDY CLAY, WET
0.0	28.2	3	3	3	1									
-5.0	33.2	11	7	10	1							SS-110		
-10.0	38.2	6	8	9	1							SS-111		
-15.0	43.2	8	14	12	1							SS-112		GREEN-TAN TO DARK GRAY SAND WITH SANDY LIMESTONE INTERVALS, SATURATED (PEEDEE FORMATION)
-20.0	48.2	9	10	36	1							SS-113		
-25.0	53.2	6	18	16	1							SS-114		
-30.0	58.2	4	5	39	1							SS-115		GRAY CLAYEY FINE TO COARSE SANDY SILT WITH SANDY LIMESTONE INTERVALS, SATURATED
-35.0	63.2	4	8	13	1									
-40.0	68.2	51	31	64	1									DARK GRAY FINE TO COARSE SAND, SATURATED
-45.0						BORING TERMINATED AT ELEVATION -43.1 FEET IN VERY DENSE FINE TO COARSE SAND (PEEDEE FORMATION)								

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

SHEET 14

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K.B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B2-A		BORING LOCATION 31+19		OFFSET 14.5' LT		ALIGNMENT -L-								
COLLAR ELEVATION -19.6'		NORTHING 0.00		EASTING 0.00		0 HR. N/A								
TOTAL DEPTH 100.3'		DRILL MACHINE CME-55		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 10/20/04		COMPLETION DATE 10/22/04		SURFACE WATER DEPTH 22.2'										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
-19.6	0.3	3	5	6	1									
-20.0														
-25.0	4.7	22	41	36	1									SS-127 GREEN-GRAY FINE TO COARSE SAND, SATURATED (ALLUVIUM)
-30.0	9.7	14	19	23	1									SS-128 GREEN-GRAY FINE TO COARSE SAND, SATURATED (ALLUVIUM)
-35.0	14.5	80	20		0.8									
-40.0	19.5	60			0.1									
-45.0	24.5	16	20	25	1									SS-129 GRAY TO GRAY-BROWN FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED (PEEDEE FORMATION)
-50.0	29.5	24	39	50	1									
-55.0	34.5	60			0.1									
-60.0	39.5	14	11	8	1									SS-130 GRAY TO GRAY-BROWN FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED (PEEDEE FORMATION)
-65.0	44.5	6	5	9	1									
-70.0	49.5	17	13	13	1									SS-131 GRAY FINE SANDY CLAY WITH SANDY LIMESTONE INTERVALS, WET
-75.0	54.5	60			0.1									
-80.0	59.5	4	6	5	1									SS-132 30% GRAY FINE SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET
-85.0	64.5	5	6	8	1									
-90.0	69.5	100			0.4									
	74.5	7	8	9	1									SS-133 GRAY FINE SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K.B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B2-A		BORING LOCATION 31+19		OFFSET 14.5' LT		ALIGNMENT -L-								
COLLAR ELEVATION -19.6'		NORTHING 0.00		EASTING 0.00		0 HR. N/A								
TOTAL DEPTH 100.3'		DRILL MACHINE CME-55		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 10/20/04		COMPLETION DATE 10/22/04		SURFACE WATER DEPTH 22.2'										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
95.0														
-100.0	79.5	21	28	26	1									SS-134 27% GRAY FINE SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET
-105.0	84.5	9	11	11	1									SS-135 32% GRAY SILTY FINE SANDY CLAY, WET
-110.0	89.5	49	51		0.8									SS-136 GREEN-GRAY FINE TO COARSE SAND, SATURATED
-115.0	94.5	42	58		0.9									
-120.0	99.5	50	50		0.8									
-125.0														
-130.0														
-135.0														
-140.0														
-145.0														
-150.0														
-155.0														
-160.0														
-165.0														
-170.0														

BORING TERMINATED AT ELEVATION -119.9 FEET IN VERY DENSE FINE TO COARSE SAND (PEEDEE FORMATION)

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 33225.I.I		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B3-A		BORING LOCATION 32+19		OFFSET 14.5' LT		ALIGNMENT -L-								
COLLAR ELEVATION -18.1'		NORTHING 0.00		EASTING 0.00		0 HR. N/A 24 HR. N/A								
TOTAL DEPTH 65.2'		DRILL MACHINE CME-55		DRILL METHOD ROTARY W/MUD/CORE		HAMMER TYPE MANUAL								
START DATE 10/26/04		COMPLETION DATE 10/27/04		SURFACE WATER DEPTH 20.7'										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
-18.1	0.0													
-20.0						WASH BORED TO BORING DEPTH								
-25.0	5.5					BEGIN BORING							GRAY SILTY FINE TO COARSE SAND, SATURATED (ALLUVIUM)	
-30.0														GREEN-GRAY TO BROWN-GRAY SAND WITH THINLY TO THICKLY BEDDED SANDY LIMESTONE, SATURATED (PEEDEE FORMATION)
-35.0														
-40.0														
-45.0														
-50.0														
-55.0														
-60.0														
-65.0														
-70.0														
-75.0														
-80.0														BROWN-GRAY SANDY CLAY WITH THICKLY BEDDED SANDY LIMESTONE, WET
-85.0	65.2													BROWN-GRAY CLAYEY SANDY SILT WITH THINLY BEDDED LIMESTONE, WET
-90.0						BORING TERMINATED AT ELEVATION -83.3 FEET IN SANDY LIMESTONE (PEEDEE FORMATION)								

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG SHEET 17

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK											
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER										
BORING NO. B4-A		BORING LOCATION 33+19		OFFSET 14.5' LT		ALIGNMENT -L-											
COLLAR ELEVATION 2.5'		NORTHING 0.00		EASTING 0.00		0 HR. NM											
TOTAL DEPTH 101.4'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL											
START DATE 7/29/04		COMPLETION DATE 7/29/04		SURFACE WATER DEPTH N/A													
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION			
		0.5'	0.5'	0.5'		0	25	50	75	100							
2.5	0.0	1	1	1	1												
0.0	5.4	3	4	5	1												
-5.0	10.3	4	7	7	1												
-10.0	15.4	3	2	6	1												
-15.0	20.3	5	8	7	1												
-20.0	25.3	6	19	26	1												
-25.0	29.9	5	8	91	1												
-30.0	34.9	3	4	7	1												
-35.0	39.9	7	8	28	1												
-40.0	44.9	60			0.1												
-45.0	49.9	22	34	66	0.9												
-50.0	54.9	25	35	41	1												
-55.0	59.9	8	20	80	0.8												
-60.0	64.9	5	7	8	1												
-65.0	69.9	5	5	7	1												
-70.0	74.9	6	7	8	1												

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK											
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER										
BORING NO. B4-A		BORING LOCATION 33+19		OFFSET 14.5' LT		ALIGNMENT -L-											
COLLAR ELEVATION 2.5'		NORTHING 0.00		EASTING 0.00		0 HR. NM											
TOTAL DEPTH 101.4'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL											
START DATE 7/29/04		COMPLETION DATE 7/29/04		SURFACE WATER DEPTH N/A													
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION			
		0.5'	0.5'	0.5'		0	25	50	75	100							
75.0	79.9	5	7	8	1												
-80.0	84.9	54	11	17	1												
-85.0	89.9	7	7	11	1												
-90.0	94.9	6	9	10	1												
-95.0	99.9	8	7	8	1												
-100.0	BORING TERMINATED AT ELEVATION 98.9 FEET IN MED. DENSE FINE SAND (PEEDEE FORMATION)																

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK									
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER								
BORING NO. B5-B		BORING LOCATION 34+19		OFFSET 14.5' RT		ALIGNMENT -L-									
COLLAR ELEVATION 2.2'		NORTHING 0.00		EASTING 0.00		0 HR. NM									
TOTAL DEPTH 81.3'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL									
START DATE 7/28/04		COMPLETION DATE 7/28/04		SURFACE WATER DEPTH N/A											
ELEV.	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100					
2.2	0.0	WOH	WOH	WOH	1	X 0									
0.0															
	4.8	5	7	7	1	X 14									BROWN-GRAY FINE SANDY CLAYEY SILT, WET (ALLUVIUM)
	-5.0														
	10.0	3	2	6	1	X 8									BLUE-GRAY FINE SAND, SATURATED
	-10.0														
	15.0	2	1	1	1	X 2									SS-33
	-15.0														
	20.0	4	1	11	1	X 12									SS-34
	-20.0														
	25.0	6	22	17	1	X 39									GRAY FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED (PEEDEE FORMATION)
	-25.0														
	29.8	14	6	8	1	X 14									
	-30.0														
	32.0	54	6	8	1	X 14									SS-36
	-30.0														
	34.8	29	12	8	1	X 20									GRAY SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET
	-35.0														
	38.0	10	7	20	1	X 27									SS-37
	-35.0														
	41.2	13	8	92	0.9										100+ X
	-40.0														
	44.8	24	66	34	0.7										100+ X
	-40.0														
	47.4	28	72		0.8										100+ X
	-45.0														
	49.8	17	31	69	1										100+ X
	-50.0														
	54.8	24	30	40	1										X 70
	-50.0														
	56.4	80	20		0.6										100+ X
	-55.0														
	59.8	8	19	51	1										X 70
	-55.0														
	64.8	6	8	9	1	X 17									SS-41
	-60.0														
	69.8	5	5	9	1	X 14									SS-42
	-65.0														
	74.1	9	9	6	1	X 15									29% BROWN-GRAY CLAYEY SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET
	-70.0														

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK									
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER								
BORING NO. B5-B		BORING LOCATION 34+19		OFFSET 14.5' RT		ALIGNMENT -L-									
COLLAR ELEVATION 2.2'		NORTHING 0.00		EASTING 0.00		0 HR. NM									
TOTAL DEPTH 81.3'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL									
START DATE 7/28/04		COMPLETION DATE 7/28/04		SURFACE WATER DEPTH N/A											
ELEV.	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100					
75.0	77.3	18	14	14	1	X 28									SS-43
	79.8	4	4	5	1	X 9									
	-80.0														
	-85.0														
	-90.0														
	-95.0														
	-100.0														
	-105.0														
	-110.0														
	-115.0														
	-120.0														
	-125.0														
	-130.0														
	-135.0														
	-140.0														
	-145.0														
	-150.0														

BORING TERMINATED AT ELEVATION -79.1 FEET IN LOOSE CLAYEY FINE SAND (PEEDEE FORMATION)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B7-B		BORING LOCATION 36+19		OFFSET 14.5' RT		ALIGNMENT -L-								
COLLAR ELEVATION 4.7'		NORTHING 0.00		EASTING 0.00		0 HR. NM 24 HR. 1.2'								
TOTAL DEPTH 66.4'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 7/23/04		COMPLETION DATE 7/23/04		SURFACE WATER DEPTH N/A										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
4.7	0.0	2	2	2	1									TAN FINE TO COARSE SAND, SATURATED (ALLUVIUM)
0.0	5.0	2	2	2	1									BROWN CLAYEY FINE SANDY SILT, WET
-5.0	9.9	2	2	1	1									BLUE-GRAY FINE SANDY SILTY CLAY, WET
-10.0	15.0	2	2	2	1								SS-17	
-15.0	20.0	4	4	2	1									SS-18
-20.0	25.0	14	19	31	1									SS-19
-25.0	29.9	5	5	5	1									SS-20
-30.0	34.9	8	6	7	1									SS-21
-35.0	39.9	7	6	10	1									SS-22
-40.0	44.9	28	25	49	1									SS-23
-45.0	49.9	28	23	77	0.6									SS-24
-50.0	54.9	63	37		0.7									
-55.0	59.9	60			0.1									
-60.0	64.9	7	8	9	1									
						BORING TERMINATED AT ELEVATION -61.7 FEET IN MEDIUM DENSE SAND (PEEDEE FORMATION)								

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B8-A		BORING LOCATION 37+19		OFFSET 14.5' LT		ALIGNMENT -L-								
COLLAR ELEVATION 3.6'		NORTHING 0.00		EASTING 0.00		0 HR. NM 24 HR. 1.3'								
TOTAL DEPTH 61.2'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 7/22/04		COMPLETION DATE 7/22/04		SURFACE WATER DEPTH N/A										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
3.6	0.0	2	3	4	1									TAN COARSE SAND, MOIST TO SATURATED (ALLUVIUM)
0.0	5.2	WOH	1	1	1									BROWN TO BLUE-GRAY CLAYEY FINE SANDY SILT, WET
-5.0	10.1	WOH	1	2	1								SS-10	36%
-10.0	15.2	2	2	3	1									SS-11
-15.0	20.2	5	6	8	1									SS-12
-20.0	25.2	18	10	32	1									SS-13
-25.0	27.6	11	11	13	1									SS-14
-30.0	30.3	33	11	8	1									SS-15
-35.0	31.9	18	6	8	1									SS-16
-40.0	34.9	57	7	9	1									
-45.0	37.5	22	9	5	1									
-50.0	39.9	60			0.1									
-55.0	41.5	60			0.1									
-60.0	43.7	59	14	60	0.6									
-45.0	48.8	56	24	32	1									
-50.0	55.3	11	60		0.6									
-55.0	60.3	44	56		0.9									
						BORING TERMINATED AT ELEVATION -57.6 FEET IN VERY DENSE FINE TO COARSE SAND (PEEDEE FORMATION)								

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG**

SHEET 24

PROJECT NO. 33225.1.1	ID. B-3684	COUNTY PITT	GEOLOGIST K. B. QUICK
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565			GROUND WATER
BORING NO. B9-B	BORING LOCATION 38+19	OFFSET 14.5' RT	ALIGNMENT -L-
COLLAR ELEVATION 2.3'		NORTHING 0.00	EASTING 0.00
TOTAL DEPTH 69.6'	DRILL MACHINE CME-45	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 7/21/04	COMPLETION DATE 7/22/04	SURFACE WATER DEPTH N/A	

ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	LOG MOI.	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100				
2.3	0.0	WOH	1	1	1	X 2								
0.0	2.9	WOHWOH	1	1	1	X 0								TAN-BROWN CLAYEY FINE SANDY SILT, WET (ALLUVIUM)
-5.0	9.1		1	2	1	1	X 3							
-10.0	14.1		1	2	3	1	X 5							BLUE-GRAY FINE TO COARSE SAND, SATURATED
-15.0	19.1		1	4	3	1	X 7				SS-1			
-20.0	23.4		8	8	8	1	X 16				SS-2			GREEN-GRAY FINE TO COARSE SAND, SATURATED WITH SANDY LIMESTONE INTERVAL (PEEDEE FORMATION)
-25.0	29.0		7	17	10	1	X 27				SS-3			
-30.0	34.0		5	5	13	1	X 18				SS-4			GREEN-GRAY CLAYEY SANDY SILT, WET WITH SANDY LIMESTONE INTERVALS
-35.0	39.0		14	7	10	1	X 17							
-40.0	44.0		24	35	23	1	X 58				SS-5			
-45.0	49.0		60			0.1								
-50.0	54.0		47	53		0.9								GREEN-GRAY TO GREEN-BROWN SAND, SATURATED WITH SANDY LIMESTONE INTERVALS
-55.0	59.0		23	19	22	1	X 41				SS-6			
-60.0	64.0		6	8	9	1	X 17				SS-7			
-65.0	69.0		36	64		0.6								
-70.0							BORING TERMINATED AT ELEVATION -67.5 FEET IN VERY DENSE SANDY LIMESTONE (PEEDEE FORMATION)							

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B11-B		BORING LOCATION 40+19		OFFSET 14.5' RT		ALIGNMENT -L-								
COLLAR ELEVATION 2.2'		NORTHING 0.00		EASTING 0.00		0 HR. NM								
TOTAL DEPTH 60.5'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 8/11/04		COMPLETION DATE 8/12/04		SURFACE WATER DEPTH 0.1'										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT				SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75					100
2.2	0.0	W	0	1	0									
0.0	4.8	1	3	2	1	X 5							BROWN CLAYEY FINE SANDY SILT, WET (ALLUVIUM)	
-5.0	9.8	2	2	1	1	X 3							BLUE-GRAY SILTY CLAY, WET (YORKTOWN FORMATION)	
-10.0	14.8	2	3	2	1	X 5				SS-75				
-15.0	19.4	8	13	27	1	X 40				SS-76			TAN COARSE SAND, SATURATED	
-20.0	24.4	17	13	21	1	X 34				SS-77			GREEN-TAN TO GRAY FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED (PEE DEE FORMATION)	
-25.0	29.4	5	15	37	1	X 52				SS-78				
-30.0	34.4	3	5	7	1	X 12				SS-79			GRAY FINE SANDY SILT WITH SANDY LIMESTONE INTERVALS, WET	
-35.0	39.4	14	7	8	1	X 15								
-40.0	44.4	10	21	31	1	X 52				SS-80				
-45.0	49.4	22	35	65	0.9				100 X				DARK GRAY TO GREEN-GRAY FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED	
-50.0	54.4	28	56	44	0.8				100 X					
-55.0	59.4	8	75	25	0.6				100 X					
BORING TERMINATED AT ELEVATION -58.3 FEET IN VERY DENSE FINE TO COARSE SAND (PEE-DEE FORMATION)														

PROJECT NO. 33225.1.1		ID. B-3684		COUNTY PITT		GEOLOGIST K. B. QUICK								
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565							GROUND WATER							
BORING NO. B13-B		BORING LOCATION 42+19		OFFSET 8		ALIGNMENT -L-								
COLLAR ELEVATION 2.1'		NORTHING 0.00		EASTING 0.00		0 HR. NM								
TOTAL DEPTH 62.3'		DRILL MACHINE CME-45		DRILL METHOD ROTARY W/MUD		HAMMER TYPE MANUAL								
START DATE 8/12/04		COMPLETION DATE 8/12/04		SURFACE WATER DEPTH 0.2'										
ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT				SAMPLE NUMBER	LOG MOI.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75					100
2.1	0.0	W	0	1	0									
0.0	6.2	4	5	3	1	X 8				SS-83			BROWN CLAYEY FINE SANDY SILT, WET (ALLUVIUM)	
-5.0	11.3	2	1	3	1	X 4				SS-84			BLUE-GRAY FINE SAND, SATURATED	
-10.0	16.4	14	15	17	1	X 32				SS-85			BLUE-GRAY FINE TO COARSE SANDY CLAY, WET	
-15.0	23.6	4	4	5	1	X 9				SS-86			TAN COARSE SAND, SATURATED (PEE DEE FORMATION)	
-20.0	25.8	3	3	5	1	X 8				SS-87			GREEN-DARK GRAY CLAYEY COARSE SAND, SATURATED	
-25.0	30.8	51	11	9	1	X 20							GREEN-GRAY COARSE SANDY CLAY, WET	
-30.0	35.8	5	6	22	1	X 28								
-35.0	40.8	11	15	12	1	X 27				SS-88				
-40.0	45.8	60			0.1				100+ X				GRAY FINE TO COARSE SAND WITH SANDY LIMESTONE INTERVALS, SATURATED	
-45.0	50.8	20	34	66	1				100+ X	SS-89				
-50.0	55.8	18	82		0.7				100+ X					
-55.0	60.8	15	9	9	1	X 18				SS-90				
BORING TERMINATED AT ELEVATION -60.2 FEET IN MED. DENSE FINE TO COARSE SAND (PEE-DEE FORMATION)														

GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 33225.1.1	ID. B-3684	COUNTY PITT	GEOLOGIST G. CHIANESE
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565			GROUND WATER
BORING NO. B17-B	BORING LOCATION 45+39	OFFSET 32.7 RT	ALIGNMENT -L-
COLLAR ELEVATION 1.4'		NORTHING 0.00	EASTING 0.00
TOTAL DEPTH 80.9'	DRILL MACHINE CME-45	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 04/15/98	COMPLETION DATE 04/17/98	SURFACE WATER DEPTH 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				
1.4	0.0	2	2	1	1	3								
0.0														
-5.0	5.9	1	1	1	1	2								ALLUVIUM, TAN TO LIGHT GRAY AND GREEN FINE TO COARSE SAND WITH GRAVEL (ALLUVIUM)
-10.0	9.9	5	2	3	1	5								
-15.0	14.8	18	11	10	1	21								
-20.0	19.4	7	7	20	1	27								
-25.0	24.4	27	53	14	1	67								
-30.0	29.4	5	27	10	1	37								
-35.0	34.4	11	9	8	1	17								
-40.0	39.4	6	94		0.8	100+								GREENISH GRAY TO LIGHT GRAY AND OLIVE GRAY, SILTY FINE TO COARSE SAND WITH SHELL FRAGMENTS AND 0.17' TO 1.0' THICK LENSES OF SANDSTONE (PEEDEE FORMATION)
-45.0	44.4	31	38	35	1	73								
-50.0	49.4	20	80		0.6	100+								
-55.0	54.4	31	54	46	0.5	100+								
-60.0	59.4	23	10	14	1	24								
-65.0	64.4	6	6	8	1	14								
-70.0	69.4	100			0.5	100+								
-75.0	74.4	6	7	7	1	14								OLIVE GRAY, FINE SANDY, SILTY CLAY WITH 0.75' THICK LENSE OF SANDSTONE
-80.0	79.4	3	4	6	1	10								

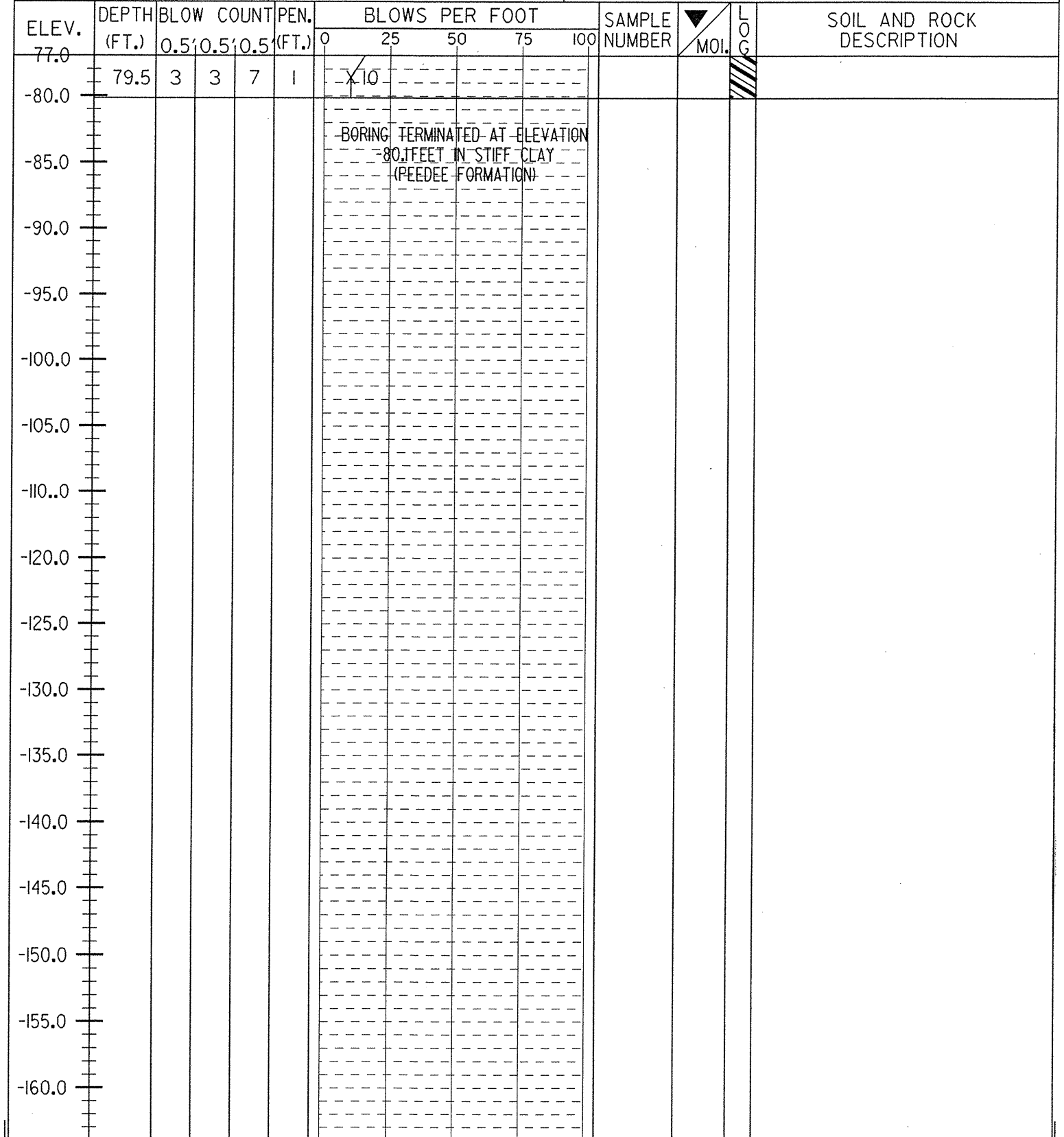
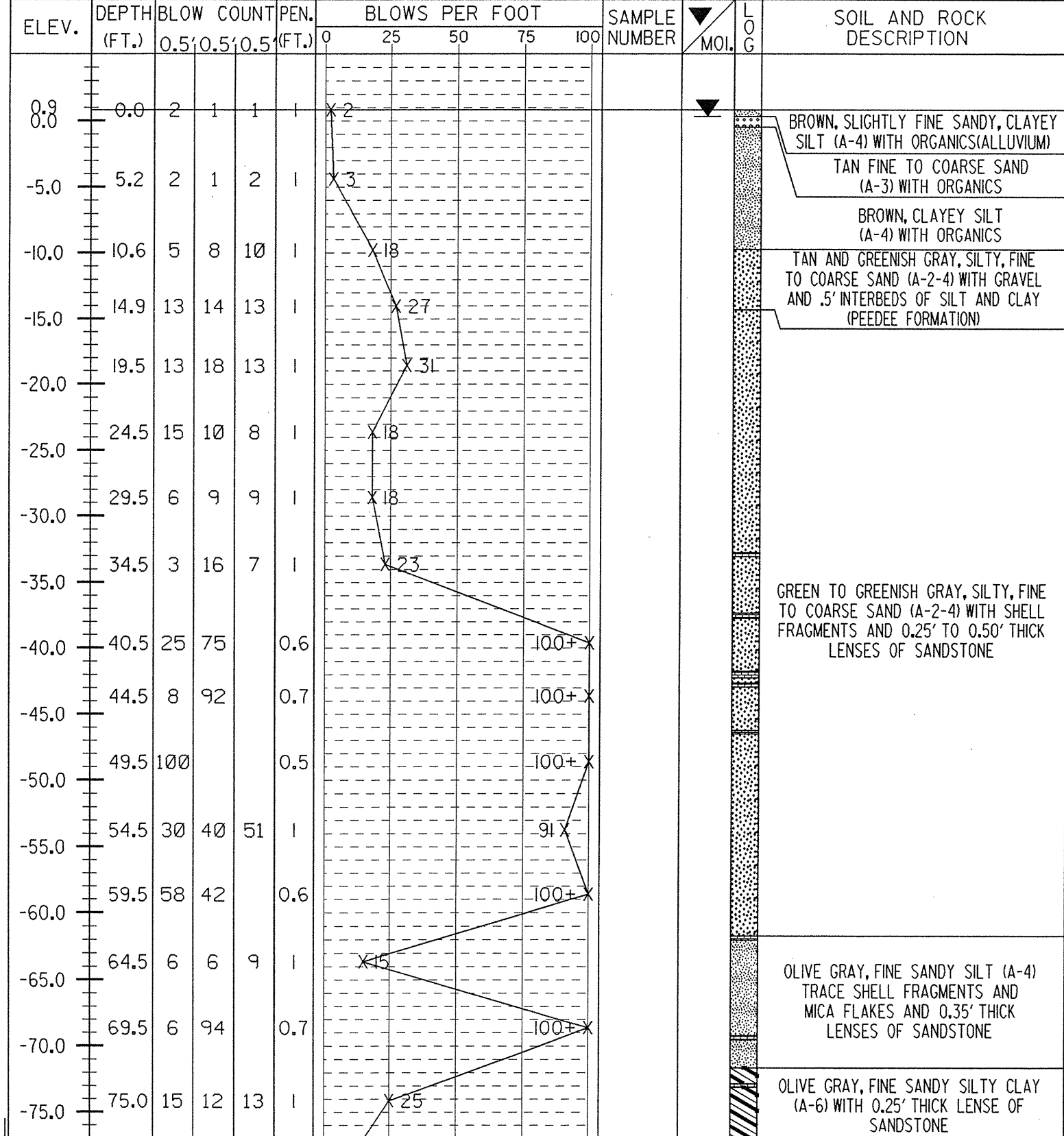
BORING TERMINATED AT ELEV. -79.5 FEET IN STIFF CLAY (PEEDEE FORMATION)

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 33225.1.1	ID. B-3684	COUNTY PITT	GEOLOGIST G. CHIANESE
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565			GROUND WATER
BORING NO. B18-B	BORING LOCATION 46+81	OFFSET 26.7' RT	ALIGNMENT -L-
COLLAR ELEVATION 0.9'	NORTHING 0.00	EASTING 0.00	0 HR. 0.0' 24 HR. 0.5'
TOTAL DEPTH 81.0'	DRILL MACHINE CME-45	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 4/15/98	COMPLETION DATE 4/16/98	SURFACE WATER DEPTH N/A	

PROJECT NO. 33225.1.1	ID. B-3684	COUNTY PITT	GEOLOGIST G. CHIANESE
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565			GROUND WATER
BORING NO. B18-B	BORING LOCATION 46+81	OFFSET 26.7' RT	ALIGNMENT -L-
COLLAR ELEVATION 0.9'	NORTHING 0.00	EASTING 0.00	0 HR. 0.0' 24 HR. 0.5'
TOTAL DEPTH 81.0'	DRILL MACHINE CME-45	DRILL METHOD ROTARY W/MUD	HAMMER TYPE MANUAL
START DATE 4/15/98	COMPLETION DATE 4/16/98	SURFACE WATER DEPTH N/A	



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL UNIT BORING LOG**

SHEET 31

PROJECT NO. 33225.1.1	ID. B-3684	COUNTY PITT	GEOLOGIST G. CHIANESE
SITE DESCRIPTION BRIDGE NO. 129 AND NO. 127 OVER THE TAR RIVER AND OVERFLOW ON SR 1565			GROUND WATER
BORING NO. EB2-B	BORING LOCATION 48+23	OFFSET 19.3' RT	ALIGNMENT -L-
COLLAR ELEVATION 2.5'	NORTHING 0.00	EASTING 0.00	0 HR. 0.3'
TOTAL DEPTH 77.3'		DRILL MACHINE CME-45	DRILL METHOD ROTARY W/MUD
START DATE 4/22/98		COMPLETION DATE 4/22/98	HAMMER TYPE MANUAL
SURFACE WATER DEPTH N/A			

ELEV. (FT.)	DEPTH (FT.)	BLOW COUNT			PEN. (FT.)	BLOWS PER FOOT					SAMPLE NUMBER	MOL.	LOG	SOIL AND ROCK DESCRIPTION	
		0.5'	0.5'	0.5'		0	25	50	75	100					
2.5	0.0	10	10	13	1										TAN TO YELLOWISH-ORANGE, SILTY, FINE TO COARSE SAND (A-3) (ALLUVIUM)
0.0															BROWN, SLIGHTLY FINE SANDY SILT (A-4) WITH ORGANICS
-5.0	5.9	1	1	1	1										LIGHT GRAY, SLIGHTLY FINE TO MEDIUM SANDY, SILTY CLAY (A-6) WITH WOOD
	9.6	1	1	2	1										LIGHT GRAY, FINE TO COARSE SAND (A-3) (PEEDEE FORMATION)
-10.0	14.4	9	15	21	1										
	19.2	10	8	15	1										
-15.0	24.2	32	68		0.7						100+	*			
	29.2	5	95		0.8						100+	*			
-20.0	30.6	6	94		0.6						100+	*			
	34.2	14	20	16	1										
-25.0	38.1	4	4	7	1										
	41.5	6	7	9	1										
-30.0	43.9	28	14	16	1										
	46.4	20	63	37	0.7						100+	*			
-35.0	48.9	27	29	71	0.7						100+	*			
	51.4	16	30	70	1						100	*			
-40.0	53.9	28	42	47	1										
	56.9	30	24	34	1										
-45.0	63.9	100			0.3										
	65.0	60	40		0.8						100+	*			
-50.0	71.7	11	16	18	1										
	75.8	4	5	6	1										
-55.0															
-60.0															
-65.0															
-70.0															
-75.0															

OLIVE GRAY AND GREENISH GRAY TO LIGHT GRAY, SILTY, FINE TO COARSE SAND (A-2-4) WITH SHELL FRAGMENTS

OLIVE GRAY, SLIGHTLY FINE SANDY SILTY CLAY WITH 1.2' THICK LENSE OF SANDSTONE

CORE BORING REPORT

SHEET 1 OF 2

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt BORING NO: B3-A
 DESCRIPTION: Bridge No. 129 and 127 over the Tar River and Tar River
Overflow on SR 1565
 LOCATION OF BORING: -L- STA 32+19 14.5' LT COMPLETION DATE: 10/27/04
 COLLAR or GROUND ELEVATION: -18.1 ft CORE SIZE: HQ GEOLOGIST: K. B. Quick
 CORE EQUIPMENT: CME-55, H-Casing DRILLER: David White

ELEV (ft)	DEPTH (ft)	DRILL RATE (min/ft)	RUN (ft)	REC (ft) (%)	RQD (ft) (%)	SAMPLE NUMBER	FIELD CLASSIFICATION and REMARKS
-23.6	5.5	0:19 0:22 0:55	3.0	0.0 (0%)	0.0 (0%)		No Recovery
-26.6	8.5						
-26.6	8.5	1:01 0:11 0:16 0:41	5.0	0.5 (10%)	0.0 (0%)		Gray, Sandy Limestone
-31.6	13.5	0:37					
-31.6	13.5	1:24 2:08 0:19 1:34	5.0	0.6 (12%)	0.0 (0%)		Gray, Sandy Limestone
-36.6	18.5	0:14					
-36.6	18.5	1:33 0:26 0:36 2:35	5.0	0.7 (14%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-41.6	23.5	2:41					
-41.6	23.5	2:29 0:18 3:15 0:48	5.0	0.6 (12%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-46.6	28.5	0:52					
-46.6	28.5	0:24 0:49 0:50 0:54	5.0	0.6 (12%)	0.0 (0%)		Gray, Phosphatic Calcareous Sandstone
-51.6	33.5	0:41					
-51.6	33.5	0:33 0:23	1.7	0.0 (0%)	0.0 (0%)		(Part of run No. 6 See Description Above)
-53.3	35.2						
-53.3	35.2	0:33 1:19 2:34 3:14	5.0	0.8 (16%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-58.3	40.2	0:16					
-58.3	40.2	1:18 0:30 0:18 0:11	5.0	0.0 (0%)	0.0 (0%)		No Recovery
-63.3	45.2	0:12					
							BOREHOLE TERMINATED AT ELEVATION OF -83.3 FEET, IN LIMESTONE.

CORE BORING REPORT

SHEET 2 OF 2

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt BORING NO: B3-A
 DESCRIPTION: Bridge No. 129 and 127 over the Tar River and Tar River
Overflow on SR 1565
 LOCATION OF BORING: -L- STA 32+19 14.5' LT COMPLETION DATE: 10/27/04
 COLLAR or GROUND ELEVATION: -18.1 ft CORE SIZE: HQ GEOLOGIST: K. B. Quick
 CORE EQUIPMENT: CME-55, H-Casing DRILLER: David White

ELEV (ft)	DEPTH (ft)	DRILL RATE (min/ft)	RUN (ft)	REC (ft) (%)	RQD (ft) (%)	SAMPLE NUMBER	FIELD CLASSIFICATION and REMARKS
-63.3	45.2	0:21 0:28 0:17 0:14	5.0	0.0 (0%)	0.0 (0%)		No Recovery
-68.3	50.2	0:14					
-68.3	50.2	0:19 0:31 2:32 1:16	5.0	0.9 (18%)	0.0 (0%)		Gray, Sandy Limestone
-73.3	55.2	2:00					
-73.3	55.2	0:36 1:16 4:31 0:52	5.0	0.5 (10%)	0.0 (0%)		Gray, Sandy Limestone to Calcareous Sandstone
-78.3	60.2	0:44					
-78.3	60.2	0:47 0:33 0:52 0:56	5.0	0.6 (12%)	0.0 (0%)		Gray, Sandy Limestone to Calcareous Sandstone
-83.3	65.2	4:52					
							BOREHOLE TERMINATED AT ELEVATION OF -83.3 FEET, IN LIMESTONE.

SHEET 1 OF 1

CORE BORING REPORT

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt BORING NO: B4-B

DESCRIPTION: Bridge No. 129 and 127 over the Tar River and Tar River
Overflow on SR 1565

LOCATION OF BORING: -L- STA 33+19 14.5' RT COMPLETION DATE: 07/30/04

COLLAR or GROUND ELEVATION: 2.3 ft CORE SIZE: HQ GEOLOGIST: K. B. Quick

CORE EQUIPMENT: CME-55, H-Casing DRILLER: David White

ELEV (ft)	DEPTH (ft)	DRILL RATE (min/ft)	RUN (ft)	REC (ft) (%)	RQD (ft) (%)	SAMPLE NUMBER	FIELD CLASSIFICATION and REMARKS
-23.4	25.7	0:21 0:53 0:10	2.5	0.1 (4%)	0.0 (0%)		Gray, Fossiliferous Sandy Limestone
-25.9	28.2						
-25.9	28.2	1:35 1:13 0:33 2:15	5.0	4.2 (84%)	0.0 (0%)		Gray, Calcareous Sandstone
-30.9	33.2	0:44					
-30.9	33.2	1:58 2:01 1:05 0:18	5.0	4.3 (86%)	0.0 (0%)		Gray, Calcareous Sandstone
-35.9	38.2	3:34					
-35.9	38.2	2:09 2:22 0:28 1:50	5.0	1.6 (32%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-40.9	43.2	1:17					
-40.9	43.2	4:03 1:11 1:02 0:55	5.0	0.4 (8%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-45.9	48.2	0:22					
-45.9	48.2	1:17 0:53 0:17 0:28	5.0	0.0 (0%)	0.0 (0%)		No Recovery
-50.9	53.2	0:21					
-50.9	53.2	0:24 0:19 0:35 1:46	5.0	0.2 (4%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-55.9	58.2	1:27					
-55.9	58.2	2:15 0:23 0:26 1:56	5.0	1.5 (29%)	0.0 (0%)		Gray, Sandy Moldic Limestone
-60.9	63.2	0:34					
							BOREHOLE TERMINATED AT ELEVATION OF -60.9 FEET, IN SAND.

SHEET 1 OF 1

CORE BORING REPORT

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt BORING NO: B6-B

DESCRIPTION: Bridge No. 129 and 127 over the Tar River and Tar River
Overflow on SR 1565

LOCATION OF BORING: -L- STA 35+19 14.5' RT COMPLETION DATE: 08/02/04

COLLAR or GROUND ELEVATION: 2.9 ft CORE SIZE: HQ GEOLOGIST: K. B. Quick / M. H. Hager

CORE EQUIPMENT: CME-55, H-Casing DRILLER: David White

ELEV (ft)	DEPTH (ft)	DRILL RATE (min/ft)	RUN (ft)	REC (ft) (%)	RQD (ft) (%)	SAMPLE NUMBER	FIELD CLASSIFICATION and REMARKS
-32.1	35.0	0:16 0:15	2.0	0.5 (25%)	0.0 (0%)		Gray, Fossiliferous Sandy Limestone
-34.1	37.0						
-34.1	37.0	2:32 1:19 4:15 3:51	5.0	0.6 (11%)	0.0 (0%)		Gray, Calcareous Sandstone
-39.1	42.0	0:19					
-39.1	42.0	2:46 3:35 1:12 2:18	5.0	1.5 (29%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone
-44.1	47.0	0:46					
-44.1	47.0	2:12 1:08 1:21 1:15	5.0	0.9 (18%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone
-49.1	52.0	0:38					
-49.1	52.0	1:25 0:43 0:23 0:28	5.0	1.2 (24%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone
-54.1	57.0	3:13					
-54.1	57.0	1:40 4:10 1:25 0:21	5.0	3.8 (76%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone to Sandy Limestone
-59.1	62.0	1:15					
-59.1	62.0	0:52 0:33 0:42 0:26	5.0	0.0 (0%)	0.0 (0%)		No Recovery
-64.1	67.0	0:30					
							BOREHOLE TERMINATED AT ELEVATION OF -97.4 FEET, IN SAND.

CORE BORING REPORT

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt BORING NO: B8-B

DESCRIPTION: Bridge No. 129 and 127 over the Tar River and Tar River
Overflow on SR 1565

LOCATION OF BORING: -L- STA 37+19 14.5' RT COMPLETION DATE: 08/05/04

COLLAR or GROUND ELEVATION: 4.2 ft CORE SIZE: HQ GEOLOGIST: K. B. Quick / M. H. Hager

CORE EQUIPMENT: CME-55, H-Casing DRILLER: David White

ELEV (ft)	DEPTH (ft)	DRILL RATE (min/ft)	RUN (ft)	REC (ft) (%)	RQD (ft) (%)	SAMPLE NUMBER	FIELD CLASSIFICATION and REMARKS
-20.9	25.1	1:06	2.3	0.3 (13%)	0.0 (0%)		Gray, Fossiliferous Sandy Limestone
		0:33					
		0:18					
-23.2	27.4	0:27	5.0	0.4 (7%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Sandy Limestone
		0:38					
		4:21					
-28.2	32.4	1:26	5.0	3.8 (75%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone
		2:49					
		0:19					
-33.2	37.4	1:12	5.0	2.3 (46%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Calcareous Sandstone
		0:40					
		2:48					
-38.2	42.4	0:45	5.0	1.7 (35%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Sandy Limestone
		1:59					
		1:23					
-43.2	47.4	1:42	5.0	0.7 (14%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Sandy Limestone
		0:33					
		0:37					
-48.2	52.4	1:27	5.0	0.0 (0%)	0.0 (0%)		No Recovery
		3:51					
		4:05					
-53.2	57.4	0:18	5.0	2.2 (44%)	0.0 (0%)		Gray, Fossiliferous Phosphatic Sandy Limestone
		1:40					
		5:04					
-58.2	62.4	2:02					
		0:16					
		0:23					
BOREHOLE TERMINATED AT ELEVATION OF -96.8 FEET, IN SAND.							

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt
 DESCRIPTION(1): Bridge No. 129 on SR 1565 over the Tar River

INFORMATION ON EXISTING BRIDGE

field inspection
 Information obtained from: microfilm (Reel: _____ Pos: _____)
 other: Hydro Report

BR. NO.: 129 BR. LENGTH: 256' NO. BENTS: 9 NO. BENTS IN: CHANNEL: 5 FLOODPLAIN: 4
 FOUNDATION TYPE: Concrete Piles in channel and Timber Piles in floodplain

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None noted.

INTERIOR BENTS: None visible, submerged.

CHANNEL BED: None visible, submerged.

CHANNEL BANKS: None noted.

EXISTING SCOUR PROTECTION:

TYPE(3): Rip rap slope protection at EB1 and concrete slope protection at EB2.

EXTENT(4): Approximately 20' outside existing bridge.

EFFECTIVENESS(5): Appears Satisfactory.

OBSTRUCTIONS(6) (DAMS, DEBRIS, ETC.): None noted.

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): (SS-127) Medium dense green-gray fine to coarse sand

CHANNEL BANK MATERIAL(8): (SS-44) Medium dense blue-gray fine sand

CHANNEL BANK COVER(9): Wooded

FLOOD PLAIN WIDTH(10): Approximately 2,600'

FLOOD PLAIN COVER(11): Wooded


DESIGN INFORMATION CONT.

STREAM IS: DEGRADING Slightly AGGRADING (12)
 OTHER OBSERVATIONS AND COMMENTS: Channel depth is maintained at elevation -25± by the USACE.

CHANNEL MIGRATION TENDENCY (13): Highly unlikely, channel is deeply entrenched.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

The Geotechnically Adjusted Scour Elevation (GASE) is -24.3' at Bent 2 and -25.6' at Bent 3. This is 22.4' higher at Bent 2 and 21.1' higher at Bent 3 than estimates indicated on the Bridge Survey & Hydraulic Design Report dated 1-11-04. The Geotechnical Engineering Unit agrees with all other computed scour elevations predicted by the Hydraulic Unit except for those outlined above.

REPORTED BY: 
 Kevin B. Miller

DATE: 4/27/2005

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE, INCLUDING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS, DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIP RAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (9) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, NONE, ETC.)
- (10) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (11) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (12) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (13) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (14) GIVE THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS THE RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY, CORE RECOVERY PERCENTAGE, PERCENTAGE RQD, DIFFERENTIAL WEATHERING, SHEAR STRENGTH, OBSERVATIONS AT EXISTING STRUCTURES, OTHER TESTS DEEMED APPROPRIATE, AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt
 DESCRIPTION(1): Bridge No. 129 on SR 1565 over the Tar River

INFORMATION ON EXISTING BRIDGE

- field inspection
 Information obtained from: microfilm (Reel: _____ Pos: _____)
 other: Hydro Report

BR. NO.: 129 BR. LENGTH: 256' NO. BENTS: 9 NO. BENTS IN: CHANNEL: 5 FLOODPLAIN: 4

FOUNDATION TYPE: Concrete Piles in channel and Timber Piles in floodplain

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None noted.

INTERIOR BENTS: None visable, submerged.

CHANNEL BED: None visable, submerged.

CHANNEL BANKS: None noted.

EXISTING SCOUR PROTECTION:

TYPE(3): Rip rap slope protection at EB1 and concrete slope protection at EB2.

EXTENT(4): Approximately 20' outside existing bridge.

EFFECTIVENESS(5): Appears Satisfactory.

OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None noted.

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): (SS-127) Medium dense green-gray fine to coarse sand

CHANNEL BANK MATERIAL(8): (SS-44) Medium dense blue-gray fine sand

CHANNEL BANK COVER(9): Wooded

FLOOD PLAIN WIDTH(10): Approximately 2,600'

FLOOD PLAIN COVER(11): Wooded

DESIGN INFORMATION CONT.

STREAM IS: DEGRADING Slightly AGGRADING (12)
 OTHER OBSERVATIONS AND COMMENTS: Channel depth is maintained at elevation -25± by the
USACE.

CHANNEL MIGRATION TENDENCY (13): Highly unlikely, channel is deeply entrenched.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

The Geotechnically Adjusted Scour Elevation (GASE) agrees with the Hydraulic Unit's estimates indicated on the Bridge Survey & Hydraulic Design Report dated 1-11-04.

< Void >

REPORTED BY: 
 Kevin B. Miller

DATE: 3/10/2005

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE, INCLUDING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS, DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIP RAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (9) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, NONE, ETC.)
- (10) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (11) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (12) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (13) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (14) GIVE THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS THE RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY, CORE RECOVERY PERCENTAGE, PERCENTAGE RQD, DIFFERENTIAL WEATHERING, SHEAR STRENGTH, OBSERVATIONS AT EXISTING STRUCTURES, OTHER TESTS DEEMED APPROPRIATE, AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.

PROJECT: 33225.1.1 ID: B-3684 COUNTY: Pitt
 DESCRIPTION(1): Bridge No. 127 on SR 1565 over the Tar River Overflow

INFORMATION ON EXISTING BRIDGE

- field inspection
 Information obtained from: microfilm (Reel: _____ Pos: _____)
 other: Hydro Report

BR. NO.: 127 BR. LENGTH: 510' NO. BENTS: 31 NO. BENTS IN: CHANNEL: 0 FLOODPLAIN: 31
 FOUNDATION TYPE: Timber Piles

EVIDENCE OF SCOUR(2):

ABUTMENTS OR END BENT SLOPES: None noted.
 INTERIOR BENTS: None noted.
 CHANNEL BED: None noted.
 CHANNEL BANKS: None noted.

EXISTING SCOUR PROTECTION:

TYPE(3): Rip rap end bent slopes.
 EXTENT(4): Approximately 20' from outside of existing bridge.
 EFFECTIVENESS(5): Appears satisfactory.
 OBSTRUCTIONS(6) (DAMS,DEBRIS,ETC.): None noted.

DESIGN INFORMATION

CHANNEL BED MATERIAL(7): (SS-64) Soft blue-gray clayey silt
 CHANNEL BANK MATERIAL(8): (SS-64) Soft blue-gray clayey silt
 CHANNEL BANK COVER(9): Wooded
 FLOOD PLAIN WIDTH(10): Approximately 2,600'
 FLOOD PLAIN COVER(11): Wooded


DESIGN INFORMATION CONT.

STREAM IS: DEGRADING Slightly AGGRADING (12)
 OTHER OBSERVATIONS AND COMMENTS: Mature, large hardwoods and bald cypress occupy overflow channel area upstream and downstream of existing structure.

CHANNEL MIGRATION TENDENCY (13): Unlikely.

GEOTECHNICALLY ADJUSTED SCOUR ELEVATIONS(14):

The Geotechnically Adjusted Scour Elevation (GASE) agrees with the Hydraulic Unit's estimates indicated on the Bridge Survey & Hydraulic Design Report dated 1-11-04.

REPORTED BY:  DATE: 3/10/2005
 Kevin B. Miller

INSTRUCTIONS

- (1) GIVE THE DESCRIPTION OF THE SPECIFIC SITE, INCLUDING ROUTE NUMBER AND BODY OF WATER CROSSED.
- (2) NOTE ANY EVIDENCE OF SCOUR AT THE EXISTING END BENTS OR ABUTMENTS (UNDERMINING, SLOUGHING, SCOUR LOCATIONS, DEGRADATIONS, ETC.)
- (3) NOTE ANY EXISTING SCOUR PROTECTION (RIP RAP, ETC.)
- (4) DESCRIBE THE EXTENT OF ANY EXISTING SCOUR PROTECTION.
- (5) DESCRIBE WHETHER OR NOT THE SCOUR PROTECTION APPEARS TO BE WORKING.
- (6) NOTE ANY DAMS, FALLEN TREES, DEBRIS AT BENTS, ETC.
- (7) DESCRIBE THE CHANNEL BED MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (8) DESCRIBE THE CHANNEL BANK MATERIAL BASED ON OBSERVATION AND/OR SAMPLES.
- (9) DESCRIBE THE BANK COVERING (GRASS, TREES, RIP RAP, NONE, ETC.)
- (10) GIVE THE APPROXIMATE FLOOD PLAIN WIDTH (ESTIMATE).
- (11) DESCRIBE THE FLOOD PLAIN COVERING (GRASS, TREES, CROPS, ETC.)
- (12) CHECK THE APPROPRIATE SPACE AS TO WHETHER THE STREAM IS DEGRADING OR AGGRADING.
- (13) DESCRIBE THE POTENTIAL OF THE BODY OF WATER TO MIGRATE Laterally DURING THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS).
- (14) GIVE THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION EXPECTED OVER THE LIFE OF THE BRIDGE (APPROXIMATELY 100 YEARS). THIS CAN BE GIVEN AS AN ELEVATION RANGE ACROSS THE SITE, OR ON A BENT BY BENT BASIS WHERE VARIATIONS EXIST. DISCUSS THE RELATIONSHIP BETWEEN THE HYDRAULICS THEORETICAL SCOUR AND THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION. IF THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS DEPENDENT ON SCOUR COUNTER MEASURES, EXPLAIN. (RIPRAP ARMORING ON SLOPES, ETC.) THE GEOTECHNICALLY ADJUSTED SCOUR ELEVATION IS BASED ON THE ERODABILITY OF MATERIALS WITH CONSIDERATION FOR JOINTING, FOLIATION, BEDDING ORIENTATION AND FREQUENCY, CORE RECOVERY PERCENTAGE, PERCENTAGE RQD, DIFFERENTIAL WEATHERING, SHEAR STRENGTH, OBSERVATIONS AT EXISTING STRUCTURES, OTHER TESTS DEEMED APPROPRIATE, AND OVERALL GEOLOGIC CONDITIONS AT THE SITE.

Wooded

B-3684
BRIDGE NO. 129 AND NO. 127
OVER TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
EB1-A	SS-105	100	96	7	36.4	58.0	2.6	3.0	19	NP	A-3(0)	3.2-4.7		
	SS-106	100	98	22	20.0	60.6	5.3	14.1	21	NP	A-2-4(0)	8.2-9.7		
	SS-107	100	97	19	36.4	46.1	8.5	9.1	23	NP	A-2-4(0)	13.2-14.7		
	SS-108	80	73	29	15.9	53.8	16.1	14.1	28	7	A-2-4(0)	18.2-19.7		
	SS-109	92	86	47	11.7	44.4	31.9	12.1	33	11	A-6(2)	23.2-24.7	28.8	
	SS-110	97	63	28	56.9	16.7	12.3	14.1	27	10	A-2-4(0)	33.2-34.7		
	SS-111	94	64	20	62.0	19.0	9.0	10.1	25	NP	A-2-4(0)	38.2-39.7		
	SS-112	96	70	20	61.4	18.8	9.8	10.1	28	NP	A-2-4(0)	48.2-49.7		
	SS-113	98	80	26	45.9	28.5	10.5	15.1	26	NP	A-2-4(0)	53.2-54.7		
	SS-114	100	90	40	29.8	32.8	17.2	20.2	33	8	A-4(0)	58.2-59.7		
	SS-115	84	61	14	50.5	34.7	7.8	7.1	19	NP	A-2-4(0)	68.2-69.7		
B1-B	SS-116	98	55	6	67.8	27.3	0.8	4.0	23	NP	A-3(0)	2.9-4.4		
	SS-117	100	96	17	36.9	47.4	3.6	12.1	22	NP	A-2-4(0)	12.9-14.1		
	SS-118	69	60	25	19.5	50.3	13.1	17.1	28	6	A-2-4(0)	17.9-19.4	32.2	
	SS-119	99	94	62	10.9	41.8	19.1	28.2	38	18	A-6(9)	27.9-29.4	34.5	
	SS-120	89	60	26	55.6	17.0	14.2	13.1	27	6	A-2-4(0)	32.9-34.4		
	SS-121	96	68	22	60.0	19.5	8.5	12.1	30	NP	A-2-4(0)	37.9-39.4		
	SS-122	91	69	23	51.7	24.4	9.8	14.1	28	NP	A-2-4(0)	52.9-54.4		
	SS-123	100	91	40	31.3	31.0	17.5	20.2	33	NP	A-4(0)	57.9-59.4		
	SS-124	100	82	9	53.6	38.7	2.6	5.0	21	NP	A-3(0)	77.9-79.4		
	SS-125	100	92	20	15.0	67.3	10.6	7.1	27	NP	A-2-4(0)	87.9-89.4		
	SS-126	100	96	42	12.1	49.2	10.5	28.2	30	12	A-6(2)	97.9-99.4	27.5	
B2-A	SS-127	97	72	23	57.6	20.0	11.3	11.1	28	3	A-2-4(0)	0.3-1.8		
	SS-128	33	23	12	43.8	23.2	18.8	14.1	20	NP	A-1-a(0)	4.7-6.2		
	SS-129	93	72	12	54.2	33.7	6.0	6.1	22	NP	A-2-4(0)	24.5-26.0		
	SS-130	98	83	20	30.2	50.4	8.3	11.1	24	NP	A-2-4(0)	39.5-41.0		
	SS-131	91	86	42	12.3	44.2	15.2	28.3	38	22	A-6(5)	49.5-51.0		
	SS-132	98	97	39	2.0	61.4	14.3	22.2	28	8	A-4(0)	59.5-61.0	29.8	
	SS-133	100	91	36	18.4	51.5	11.9	18.2	31	4	A-4(0)	74.5-76.0		
	SS-134	100	97	47	6.9	56.0	17.0	20.2	33	4	A-4(0)	79.5-81.0	27.0	
	SS-135	100	96	53	11.3	43.8	18.8	26.1	37	16	A-6(6)	84.5-86.0	32.2	
	SS-136	100	91	16	46.7	39.4	5.8	8.0	19	NP	A-2-4(0)	89.5-90.3		
SS-137	NO SAMPLE - SAMPLE NUMBER WAS INADVERTENTLY SKIPPED DURING SAMPLING													

B-3684
BRIDGE NO. 129 AND NO. 127
OVER TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
B3-B	SS-138	95	24	3	86.4	11.4	1.2	1.0	25	NP	A-1-b(0)	6.0-7.4		
	SS-139	80	61	15	45.6	37.5	7.7	9.1	23	NP	A-2-4(0)	20.8-22.3		
	SS-140	100	85	11	59.9	30.6	4.5	5.1	20	NP	A-2-4(0)	30.8-32.3		
	SS-141	95	79	26	33.8	40.7	13.3	12.2	20	NP	A-2-4(0)	40.8-42.3		
	SS-142	100	93	21	12.0	69.3	6.5	12.2	26	NP	A-2-4(0)	45.8-47.3		
	SS-143	97	92	42	12.2	46.7	10.6	30.5	34	16	A-6(3)	51.5-52.3	32.1	
	SS-144	100	99	39	1.4	62.6	9.6	26.4	29	7	A-4(0)	60.8-62.3	30.7	
	SS-145	100	97	35	5.5	65.0	11.2	18.3	27	NP	A-2-4(0)	70.8-72.3		
	SS-146	100	98	59	6.1	45.5	15.9	32.5	43	13	A-7-5(6)	85.8-87.3		
	SS-147	100	94	16	39.5	46.0	5.3	9.1	20	NP	A-2-4(0)	90.8-92.3		
B4-A	SS-44	100	100	25	10.4	69.4	8.0	12.2	21	NP	A-2-4(0)	5.4-6.9		
	SS-45	100	96	5	64.0	31.4	2.5	2.0	22	NP	A-3(0)	20.3-21.8		
	SS-46	100	48	4	79.3	17.6	2.0	1.0	19	NP	A-1-b(0)	25.3-26.8		
	SS-47	99	85	31	40.3	30.0	15.5	14.2	26	NP	A-2-4(0)	29.9-31.2		
	SS-48	100	91	38	29.0	34.2	18.5	18.2	29	NP	A-4(0)	34.9-36.4		
	SS-49	97	76	8	68.4	23.7	2.8	5.1	23	NP	A-3(0)	49.9-51.4		
	SS-50	91	72	22	40.1	37.5	10.2	12.2	21	NP	A-2-4(0)	59.9-61.4		
	SS-51	99	93	22	11.1	69.5	8.2	11.1	25	NP	A-2-4(0)	64.9-66.4		
	SS-52	98	93	43	14.4	45.0	16.3	24.3	31	13	A-6(2)	74.9-76.4		
	SS-53	100	98	42	3.4	61.6	16.7	18.2	25	NP	A-4(0)	89.9-91.4		
	SS-54	100	96	33	8.5	64.2	12.1	15.2	26	NP	A-2-4(0)	99.9-101.4		
B5-B	SS-32	100	100	34	5.6	68.3	12.0	14.2	19	NP	A-2-4(0)	4.8-6.3		
	SS-33	100	100	29	6.9	69.8	9.2	14.2	21	NP	A-2-4(0)	15.0-16.5		
	SS-34	100	95	18	16.9	67.5	6.5	9.1	20	NP	A-2-4(0)	20.0-21.5		
	SS-35	97	58	15	68.5	16.8	7.7	7.1	21	NP	A-2-4(0)	25.0-26.5		
	SS-36	100	84	38	36.7	26.5	28.7	8.1	30	NP	A-4(0)	32.3-33.5		
	SS-37	99	85	24	30.0	48.1	9.7	12.2	25	NP	A-2-4(0)	38.1-39.5		
	SS-38	87	60	7	58.6	33.9	2.4	5.1	22	NP	A-3(0)	44.8-46.0		
	SS-39	100	60	6	79.0	15.6	0.3	5.1	21	NP	A-3(0)	54.8-56.3		
	SS-40	100	81	23	41.5	36.7	5.5	16.3	25	3	A-2-4(0)	59.8-60.8		
	SS-41	99	92	21	11.8	69.4	6.6	12.2	26	NP	A-2-4(0)	64.8-66.3		
	SS-42	100	96	40	13.7	49.7	11.1	25.4	32	8	A-4(0)	74.1-75.6	28.9	
	SS-43	100	97	32	6.5	64.3	8.9	20.3	24	4	A-2-4(0)	77.4-78.8		

B-3684
BRIDGE NO. 129 AND NO. 127
OVER TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
B6-A	SS-25	100	51	1	84.4	14.6	0.0	1.0	22	NP	A-3(0)	1.0-1.5		
	SS-26	100	94	9	28.9	64.1	2.9	4.0	22	NP	A-3(0)	9.9-11.4		
	SS-27	100	86	31	42.3	30.0	12.5	15.2	30	NP	A-2-4(0)	29.5-31.0		
	SS-28	100	89	40	31.4	29.9	19.4	19.2	29	NP	A-4(0)	34.5-36.0	40.8	
	SS-29	72	49	20	50.4	24.3	15.3	10.1	19	NP	A-1-b(0)	44.5-45.1		
	SS-30	100	55	11	60.2	29.9	4.9	5.1	23	NP	A-2-4(0)	54.5-56.0		
	SS-31	100	94	29	20.3	52.0	15.6	12.1	24	NP	A-2-4(0)	59.5-60.9		
B6-B	SS-55	100	93	20	13.8	68.2	5.9	12.2	26	NP	A-2-4(0)	67.0-68.5		
	SS-56	100	96	41	10.9	49.8	10.8	28.4	35	15	A-6(2)	73.0-74.4	28.6	
	SS-57	100	99	41	2.0	61.0	12.7	24.3	27	6	A-4(0)	83.8-84.7		
	SS-58	100	95	28	7.1	69.2	11.6	12.2	25	NP	A-2-4(0)	93.8-95.3		
B7-B	SS-17	100	100	76	1.6	28.1	25.8	44.5	45	25	A-7-6(18)	15.0-16.5		
	SS-18	100	99	19	9.4	74.7	6.8	9.1	22	NP	A-2-4(0)	20.0-21.5		
	SS-19	72	49	18	58.3	18.8	12.7	10.1	26	NP	A-1-b(0)	25.0-26.5		
	SS-20	99	78	22	54.4	24.5	9.0	12.1	28	NP	A-2-4(0)	29.9-31.4		
	SS-21	100	89	39	32.6	29.6	18.6	19.2	30	6	A-4(0)	34.9-36.4		
	SS-22	73	53	14	47.5	34.5	9.9	8.1	21	NP	A-2-4(0)	44.9-46.4		
	SS-23	100	83	10	58.3	32.3	5.4	4.0	21	NP	A-3(0)	49.9-51.0		
	SS-24	100	88	19	22.3	60.2	6.4	11.1	25	NP	A-2-4(0)	64.9-66.4		
B8-A	SS-9	100	32	2	89.9	8.2	0.9	1.0	25	NP	A-1-b(0)	1.0-1.5		
	SS-10	100	100	62	1.3	43.2	21.1	34.4	27	10	A-4(4)	10.1-11.6	35.6	
	SS-11	100	100	25	9.6	69.6	6.7	14.2	20	NP	A-2-4(0)	15.2-16.7		
	SS-12	100	100	6	17.7	77.4	1.9	3.0	23	NP	A-3(0)	20.2-21.7		
	SS-13	87	61	23	54.4	21.4	13.0	11.1	22	NP	A-2-4(0)	27.6-29.1		
	SS-14	100	89	42	29.0	30.8	18.9	21.2	30	9	A-4(1)	35.3-36.4		
	SS-15	70	49	16	48.5	30.7	10.6	10.1	20	NP	A-1-b(0)	43.7-44.8		
	SS-16	87	67	10	54.9	34.6	4.4	6.1	22	NP	A-3(0)	48.8-50.3		
B8-B	SS-59	100	89	19	21.4	62.0	5.5	11.1	24	NP	A-2-4(0)	64.5-66.0		
	SS-60	83	77	35	14.9	45.9	12.9	26.3	35	19	A-2-6(2)	73.9-75.3		
	SS-61	100	99	43	2.4	58.8	12.5	26.3	28	8	A-4(1)	84.5-85.7		
	SS-62	100	96	28	6.7	70.5	12.7	10.1	26	NP	A-2-4(0)	94.5-96.0		
	SS-63	53	40	13	43.6	36.2	10.1	10.1	21	NP	A-1-b(0)	99.5-101.0		

B-3684
BRIDGE NO. 129 AND NO. 127
OVER TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
B9-B	SS-1	100	96	33	21.4	51.7	12.7	14.2	22	NP	A-2-4(0)	19.1-20.6		
	SS-2	94	67	24	56.3	19.9	12.6	11.1	26	NP	A-2-4(0)	23.4-24.9		
	SS-3	100	78	29	45.6	26.4	12.8	15.2	26	NP	A-2-4(0)	29.0-30.5		
	SS-4	100	89	40	31.9	30.2	17.7	20.2	29	6	A-4(0)	34.0-35.5		
	SS-5	69	50	15	49.7	30.5	10.6	9.1	21	NP	A-1-b(0)	44.0-45.5		
	SS-6	99	83	9	50.2	42.4	2.4	5.1	21	NP	A-3(0)	54.0-54.9		
	SS-7	99	80	17	47.4	36.1	5.4	11.1	23	NP	A-2-4(0)	59.0-60.5		
	SS-8	100	93	20	14.2	67.9	6.8	11.1	25	NP	A-2-4(0)	64.0-65.5		
B10-A	SS-64	100	99	92	2.2	10.1	35.2	52.5	33	NP	A-4(2)	10.4-11.9		
	SS-65	91	32	2	89.7	9.0	0.3	1.0	21	NP	A-1-b(0)	20.0-21.5		
	SS-66	74	58	22	48.3	23.3	14.2	14.1	26	NP	A-2-4(0)	24.9-26.4		
	SS-67	64	51	22	40.8	26.9	18.2	14.1	24	NP	A-2-4(0)	29.9-31.4		
	SS-68	100	90	40	31.1	30.9	19.8	18.2	31	7	A-4(0)	34.9-36.4		
	SS-69	90	64	11	55.2	33.6	5.2	6.1	23	NP	A-2-4(0)	44.9-46.4		
	SS-70	100	85	11	48.0	42.8	5.2	4.0	22	NP	A-2-4(0)	54.9-56.4		
	SS-71	98	80	23	43.0	35.4	7.5	14.1	22	NP	A-2-4(0)	59.9-61.4		
	SS-72	100	94	22	12.0	69.1	6.8	12.1	25	NP	A-2-4(0)	64.9-66.4		
	SS-73	100	95	44	15.2	44.6	11.9	28.3	34	13	A-6(2)	74.9-76.4	26.7	
	SS-74	100	97	31	4.8	69.3	11.7	14.1	24	NP	A-2-4(0)	89.9-91.4		
B11-B	SS-75	100	92	76	13.5	14.7	23.2	48.5	49	30	A-7-6(22)	14.8-16.3		
	SS-76	98	37	5	83.0	12.9	2.0	2.0	12	NP	A-1-b(0)	19.4-20.9		
	SS-77	86	59	27	53.0	18.5	22.4	6.1	23	NP	A-2-4(0)	24.4-25.9		
	SS-78	87	72	29	38.6	30.5	14.7	16.2	25	NP	A-2-4(0)	29.4-30.9		
	SS-79	100	92	40	27.3	35.4	19.2	18.2	28	3	A-4(0)	34.4-35.9		
	SS-80	88	64	11	55.9	32.3	5.8	6.1	23	NP	A-2-4(0)	44.4-45.9		
	SS-81	97	79	9	54.3	38.1	3.5	4.0	13	NP	A-3(0)	54.4-55.7		
	SS-82	97	79	21	42.1	38.4	7.4	12.1	19	NP	A-2-4(0)	59.4-60.5		

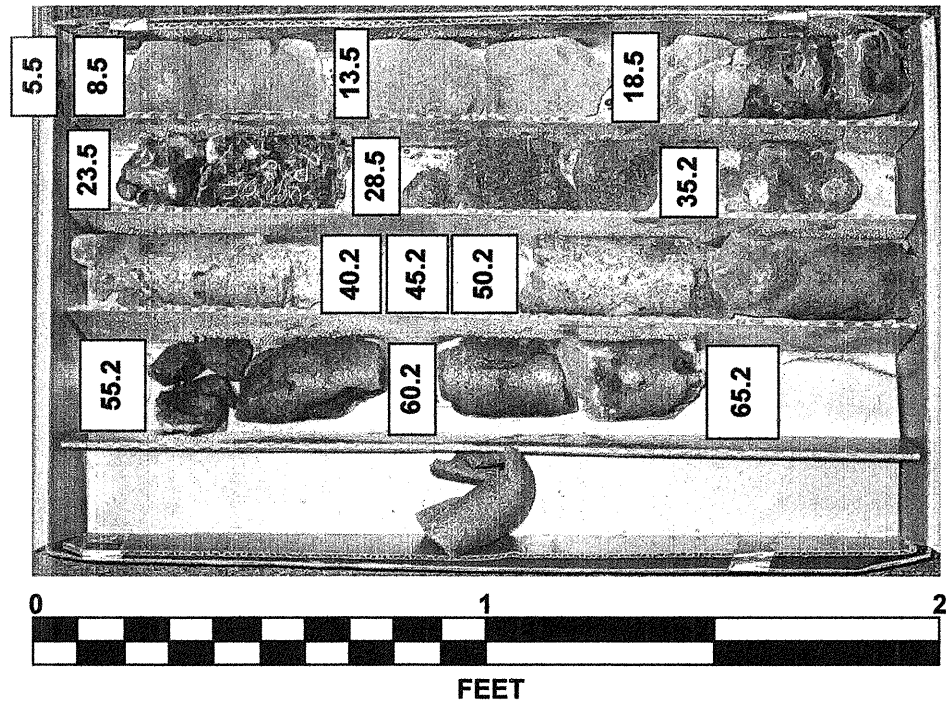
B-3684
BRIDGE NO. 129 AND NO. 127
OVER TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
B13-B	SS-83	100	99	10	14.2	77.9	3.8	4.0	18	NP	A-3(0)	6.2-7.7		
	SS-84	100	83	51	32.3	19.8	15.6	32.3	35	20	A-6(6)	12.0-12.8		
	SS-85	91	38	6	79.5	15.8	2.7	2.0	21	NP	A-1-b(0)	16.4-17.9		
	SS-86	100	69	28	59.8	13.3	3.6	23.2	41	26	A-2-7(2)	23.6-25.1		
	SS-87	100	87	40	44.1	17.0	7.6	31.3	44	21	A-7-6(4)	25.8-27.3		
	SS-88	73	59	19	39.0	38.2	13.7	9.1	21	NP	A-2-4(0)	40.8-42.3		
	SS-89	100	81	10	63.4	28.3	4.2	4.0	12	NP	A-3(0)	50.8-52.3		
	SS-90	99	82	21	33.2	47.0	9.7	10.1	20	NP	A-2-4(0)	60.8-62.3		
B15-B	SS-91	90	38	1	87.3	11.7	0.0	1.0	23	NP	A-1-b(0)	14.9-16.4		
	SS-92	100	65	16	68.5	16.8	6.7	8.1	29	NP	A-2-4(0)	19.7-21.2		
	SS-93	100	84	29	41.2	31.9	11.8	15.2	26	NP	A-2-4(0)	29.5-31.0		
	SS-94	100	89	41	30.5	30.7	20.5	18.2	30	8	A-4(0)	34.5-36.0		
	SS-95	97	87	24	28.6	49.6	10.6	11.1	27	NP	A-2-4(0)	39.5-41.0		
	SS-96	100	85	8	55.3	37.8	2.8	4.0	21	NP	A-3(0)	54.5-55.7		
	SS-97	99	82	21	42.0	38.1	5.8	14.2	26	3	A-2-4(0)	59.5-61.0		
B19-A	SS-98	99	45	7	82.5	12.4	2.0	3.0	20	NP	A-1-b(0)	9.5-11.0		
	SS-99	97	64	23	59.5	19.4	11.0	10.1	21	NP	A-2-4(0)	14.4-15.9		
	SS-100	99	58	17	69.4	14.3	8.3	8.1	27	5	A-2-4(0)	19.3-20.8		
	SS-101	99	79	28	43.4	29.7	11.7	15.2	25	NP	A-2-4(0)	28.7-30.2		
	SS-102	100	89	41	29.9	31.1	20.7	18.2	32	5	A-4(0)	33.7-35.2		
	SS-103	97	76	18	57.4	27.1	7.4	8.1	20	NP	A-2-4(0)	48.7-49.6		
	SS-104	100	85	9	61.7	31.3	2.9	4.0	20	NP	A-3(0)	53.7-54.6		

CORE PHOTOGRAPHS

B3-A

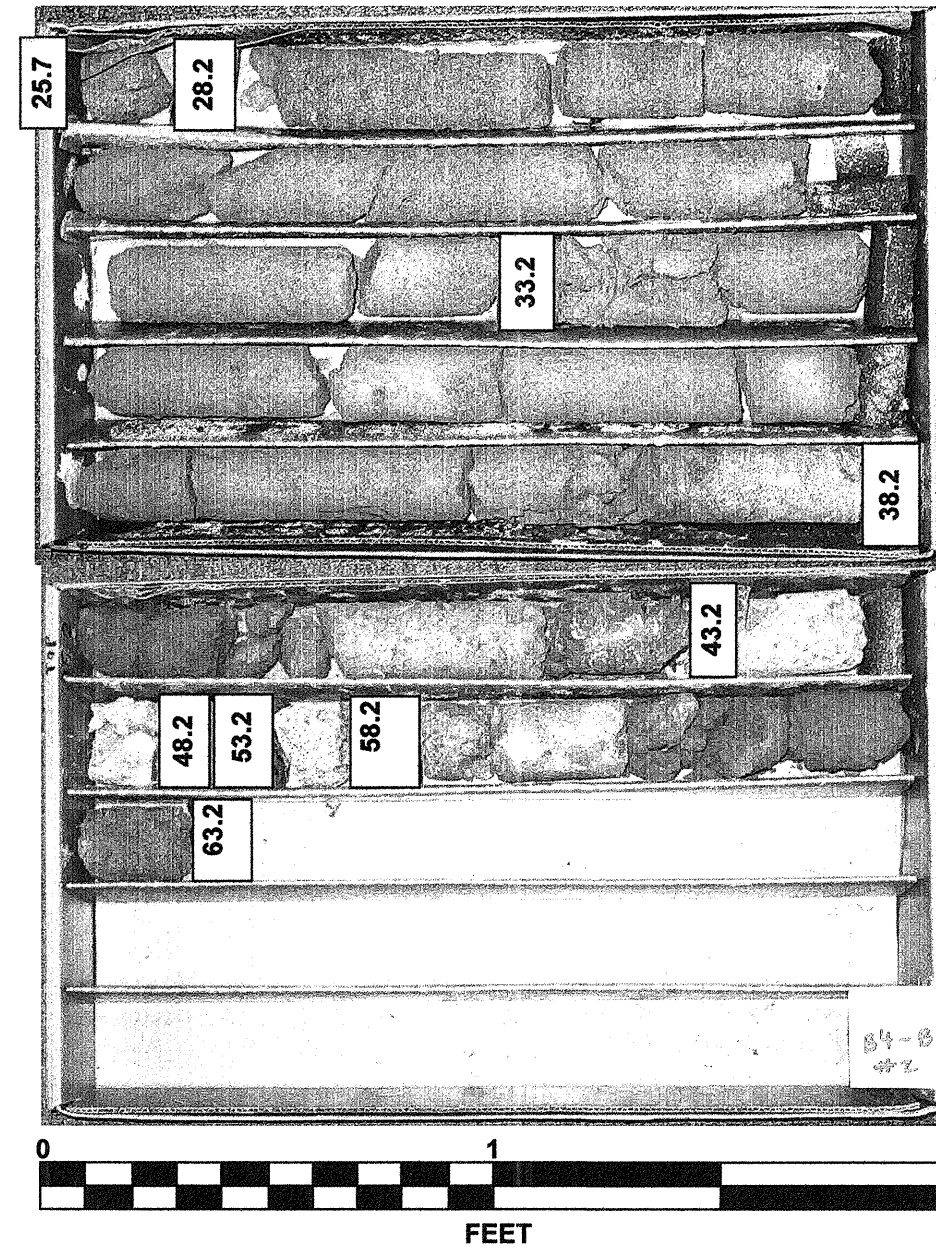
BOX 1: 5.5 TO 65.2 FEET



CORE PHOTOGRAPHS

B4-B

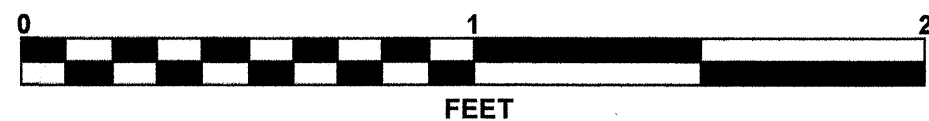
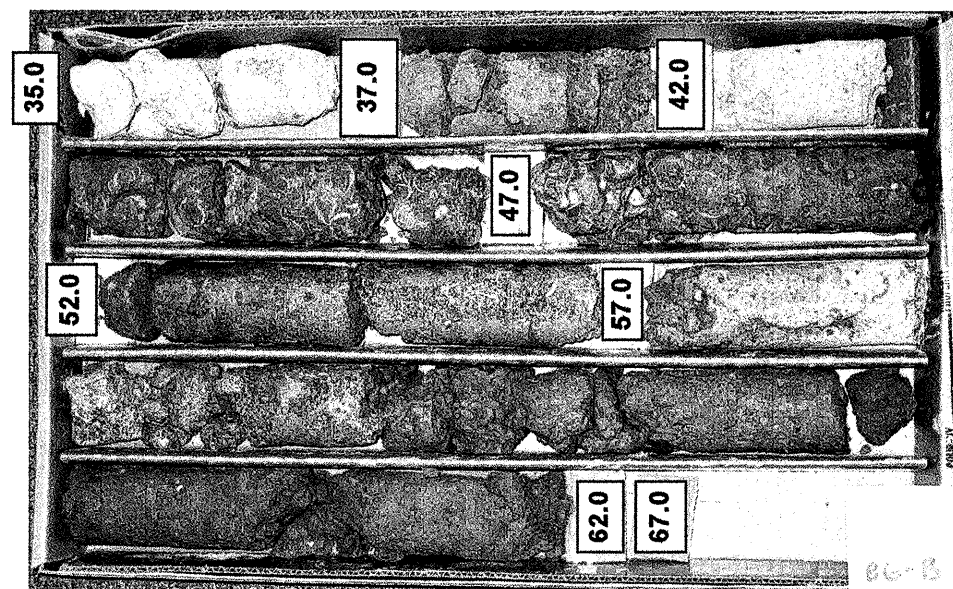
BOXES 1 AND 2: 25.7 TO 63.2 FEET



CORE PHOTOGRAPHS

B6-B

BOX 1: 35.0 TO 67.0 FEET



CORE PHOTOGRAPHS

B8-B

BOXES 1 AND 2: 25.1 TO 62.4 FEET



**BRIDGE NO. 129 AND 127
OVER THE TAR RIVER AND TAR RIVER OVERFLOW
ON SR 1565 (GRIMESLAND BRIDGE RD.)**

**SHEET 43
33225.1.1 (B-3684)
PITT CO.**



BRIDGE NO. 127 LOOKING SOUTH TOWARDS EB1



BRIDGE NO. 129 LOOKING SOUTH TOWARDS EB1