PROJECT: 33162.1.1 ID: B-3611

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3611	1	51

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

STRUCTURE SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. *33162.1.1 (B-3611)* F.A. PROJ. *BRSTP-99(3)*

COUNTY *BEAUFORT*

PROJECT DESCRIPTION *BRIDGE NO. 77 ON NC 99 OVER PANTEGO CREEK AT -L- STATION 43+25*

CONTENTS

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

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

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

PERSONNEL

T. C. BOTTOMS
C. M. WRIKE
J. R. SWARTLEY
S. C. DILLARD
S&ME PERSONNEL
MACTEC PERSONNEL

INVESTIGATED BY *F.M. WESCOTT III*
CHECKED BY *D.N. ARGENBRIGHT*
SUBMITTED BY *D.N. ARGENBRIGHT*
DATE *DECEMBER, 2008*

NORTH CAROLINA LICENSED GEOLOGIST SEAL 1050 D. N. ARGENBRIGHT

12-1-08

DRAWN BY: *C.P. TURNER*

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.

PROJECT REFERENCE NO.	SHEET NO.
B-3611	2 OF 51

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL 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, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6			
SYMBOL														
% PASSING # 10 # 40 # 200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT PLASTIC INDEX	6 MX		NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	No MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS., GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	<4 4 TO 10 10 TO 30 30 TO 50 >50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	<2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 >30	<0.25 0.25 TO 0.50 0.5 TO 1.0 1 TO 2 2 TO 4 >4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE MM 305 75 2.0 0.25 0.05 0.005
IN. 12 3

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

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 IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 31
MODERATELY COMPRESSIBLE	LIQUID LIMIT EQUAL TO 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%
MODERATELY ORGANIC	5 - 10%	12 - 20%
HIGHLY ORGANIC	>10%	>20%

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
HIGHLY	35% AND ABOVE

GROUND WATER

WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
STATIC WATER LEVEL AFTER 24 HOURS
PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
SPRING OR SEEP

MISCELLANEOUS SYMBOLS

ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
SOIL SYMBOL
ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
INFERRED SOIL BOUNDARY
INFERRED ROCK LINE
ALLUVIAL SOIL BOUNDARY
25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES
SOUNDING ROD

SPT DPT VST CPT DMT PMT TEST BORING
AUGER BORING
CORE BORING
MW MONITORING WELL
PIEZOMETER INSTALLATION
SLOPE INDICATOR INSTALLATION
SPT N-VALUE
REF SPT REFUSAL

SAMPLE DESIGNATIONS
S - BULK SAMPLE
SS - SPLIT SPOON SAMPLE
ST - SHELBY TUBE SAMPLE
RS - ROCK SAMPLE
RT - RECOMPACTED TRIAXIAL SAMPLE
CBR - CALIFORNIA BEARING RATIO SAMPLE

ABBREVIATIONS

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, FRACTURES
FRAGS. - FRAGMENTS

HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL

w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B-___
- [ ] BK-51
- [ ] CME-45C
- [X] CME-55
- [ ] PORTABLE HOIST
- [X] CME-45B
- [X] D-50

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [ ] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [ ] W/ ADVANCER
- [X] TRICONE $2\frac{15}{16}$" STEEL TEETH
- [ ] TRICONE ______" TUNG.-CARB.
- [ ] CORE BIT
- [ ] ______

HAMMER TYPE: [X] AUTOMATIC [X] MANUAL

CORE SIZE:
- [ ] -B______
- [ ] -N______
- [ ] -H______

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] ______

ROCK DESCRIPTION

HARD 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 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)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	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 (SLI.)	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. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK 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. *IF TESTED, YIELDS SPT N VALUES > 100 BPF*
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. *IF TESTED, YIELDS SPT N VALUES < 100 BPF*
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.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
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 PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	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 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 FINGERNAIL.

FRACTURE SPACING

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

BEDDING

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

INDURATION

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.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

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 A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

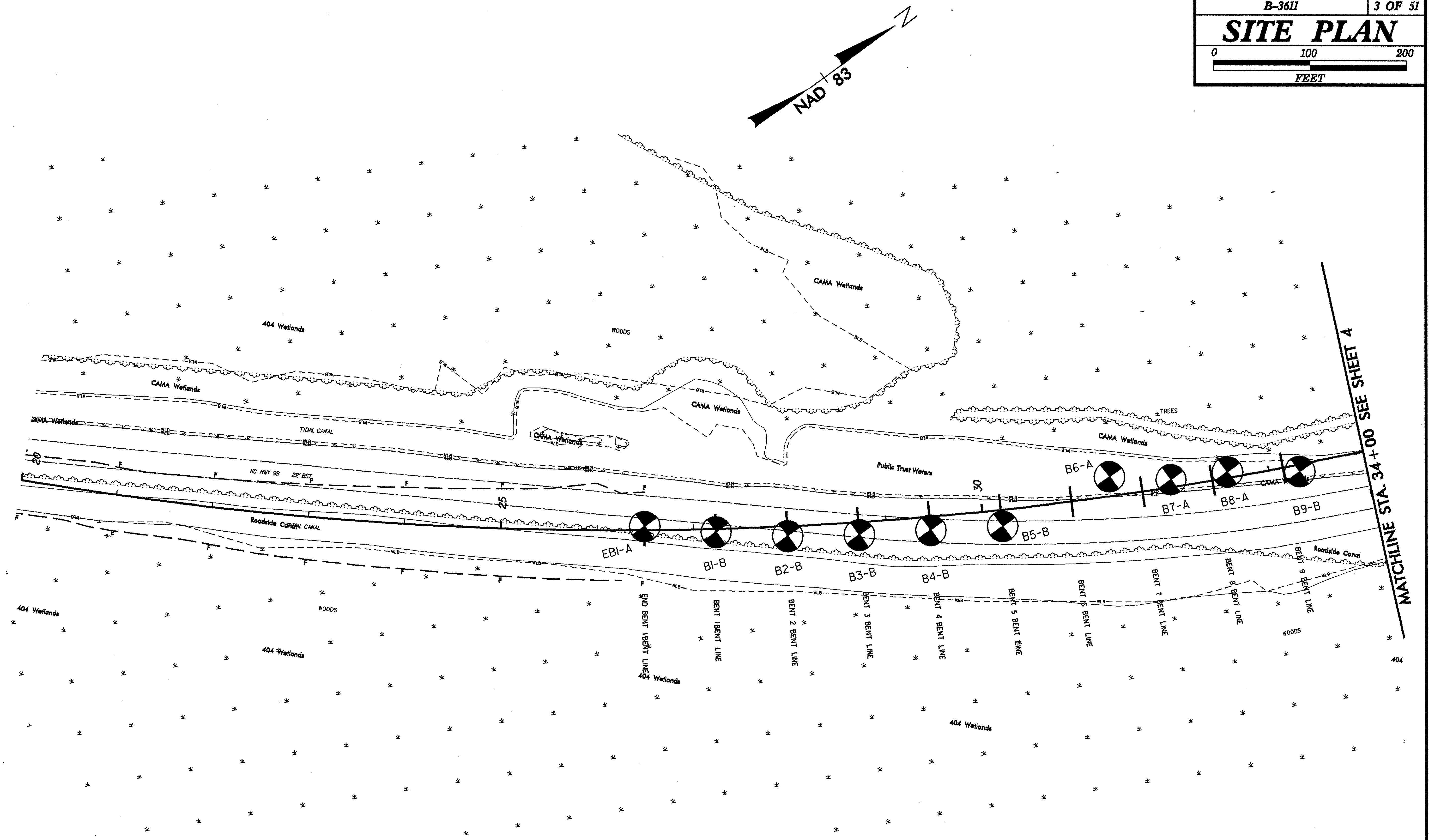
BENCH MARK: BM #1 -L- STATION 17+11, 26 RT R. R. SPIKE IN 24' PINE

ELEVATION: 3.61 FT.

NOTES:

PROJECT REFERENCE NO.	SHEET
B-3611	3 OF 51

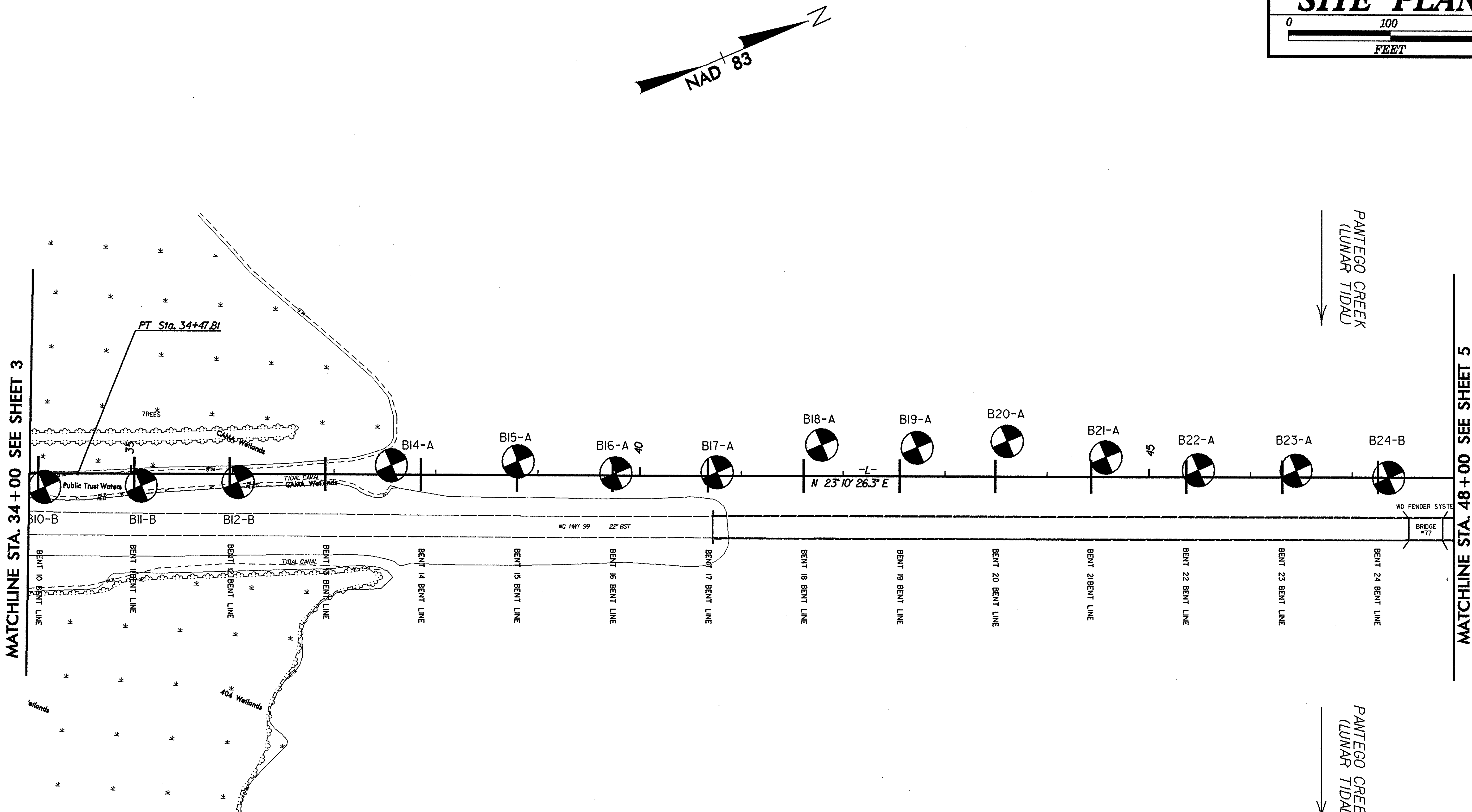
SITE PLAN



PROJECT REFERENCE NO.	SHEET
B-3611	4 OF 51

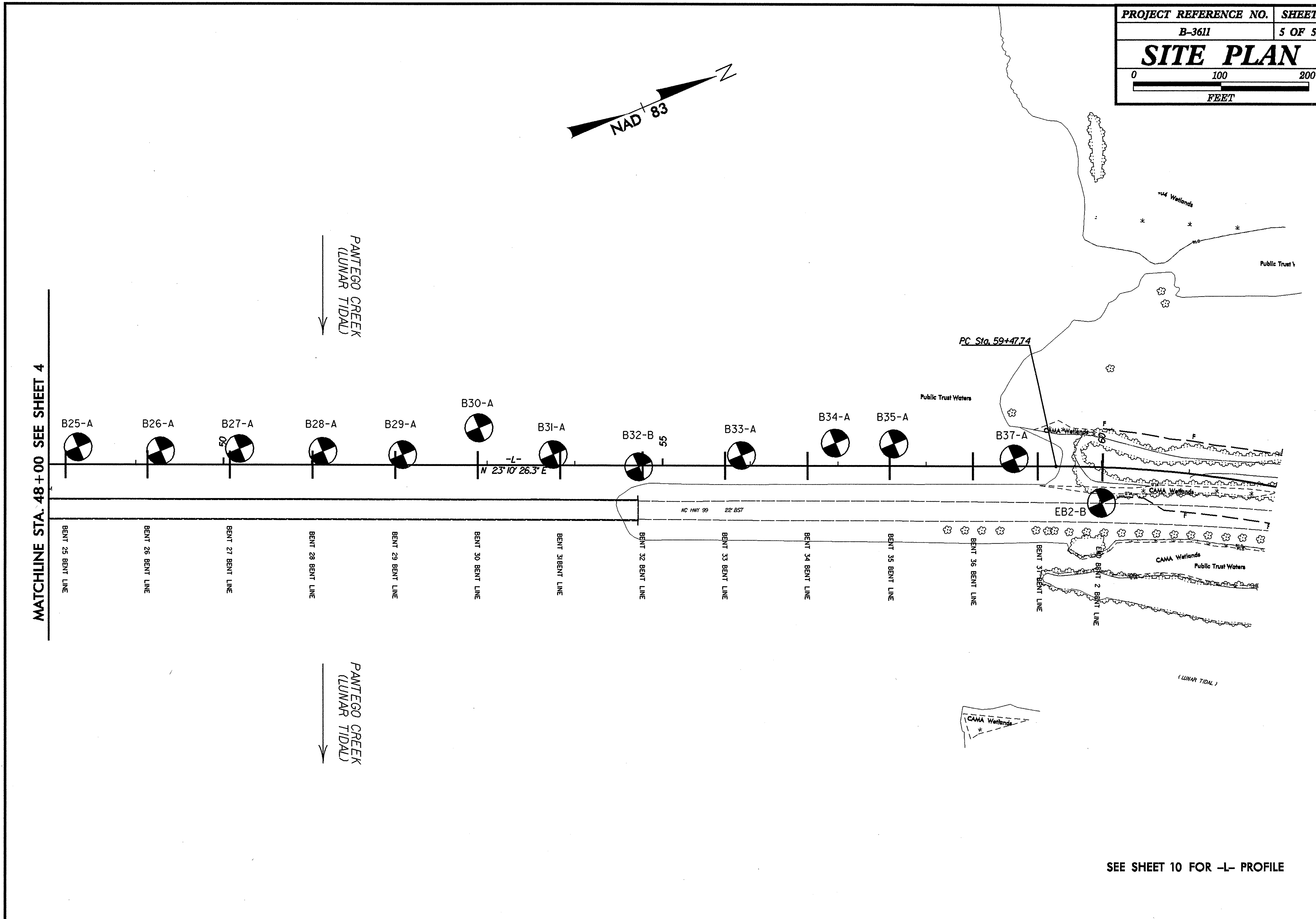
SITE PLAN

0 100 200
FEET



PROJECT REFERENCE NO.	SHEET
B-3611	5 OF 51

SITE PLAN



SEE SHEET 10 FOR -L- PROFILE

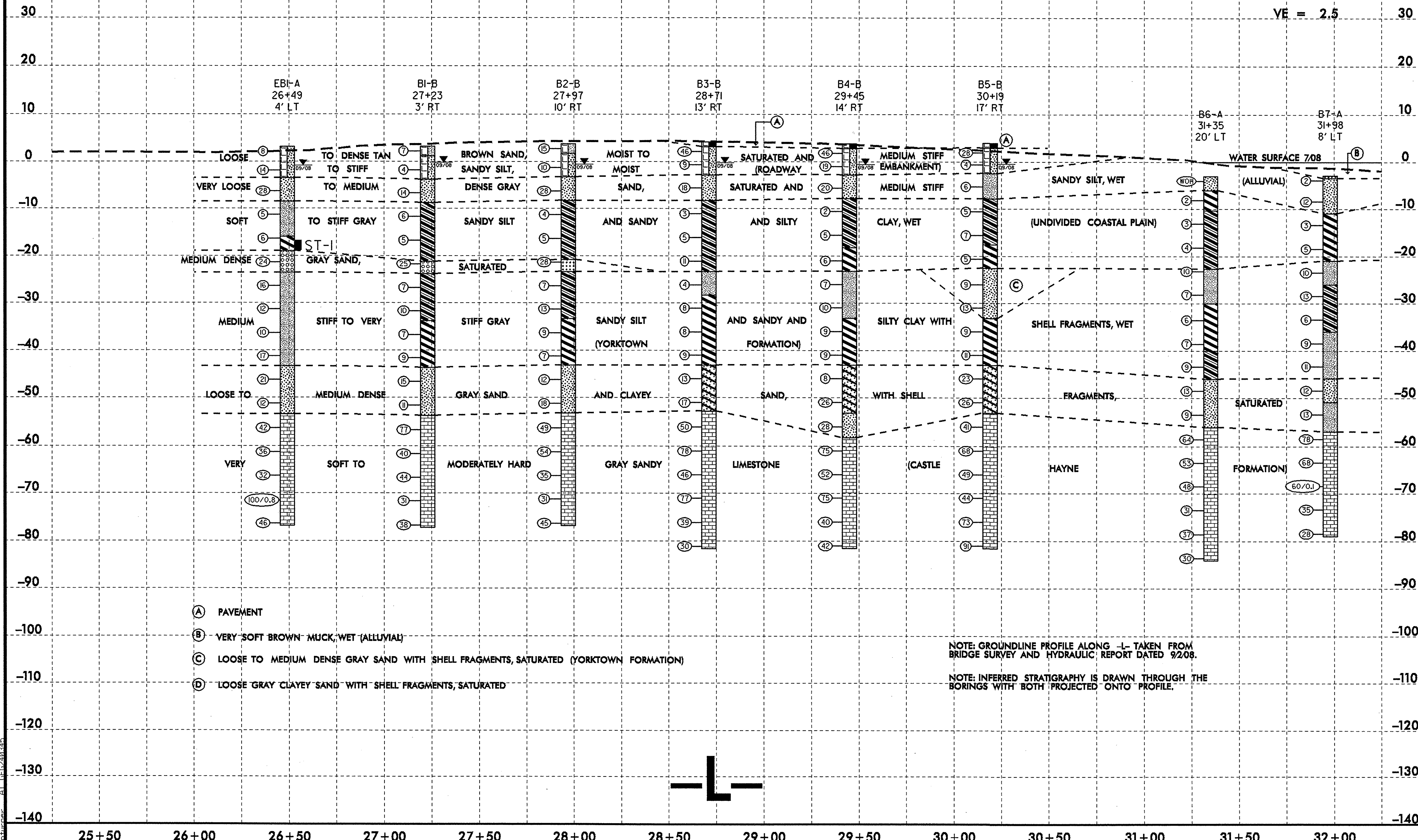
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROFILE OF BORINGS PROJECTED ALONG -L-



5/14/99

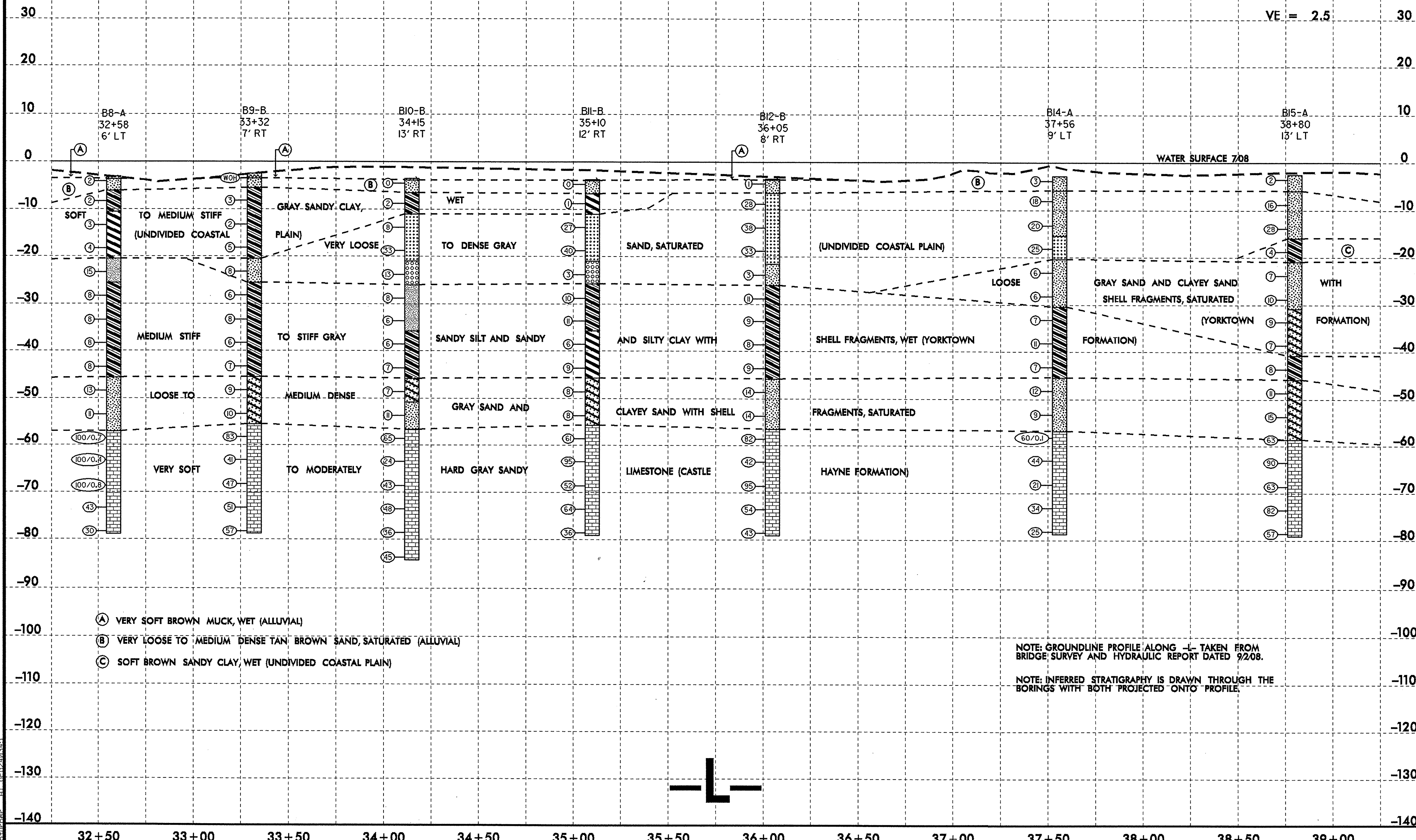
01-DEC-2008 10:30
I:\ero\greenville_investigation\tip\b3611_geo_brdg077\cadd_geotech\site&sub\B3611_GEO_brdg_pfl6.DGN

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROFILE OF BORINGS PROJECTED ALONG -L-



Ⓐ VERY SOFT BROWN MUCK, WET (ALLUVIAL)
Ⓑ VERY LOOSE TO MEDIUM DENSE TAN BROWN SAND, SATURATED (ALLUVIAL)
Ⓒ SOFT BROWN SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC REPORT DATED 9/2/08.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

-L-

5/14/99

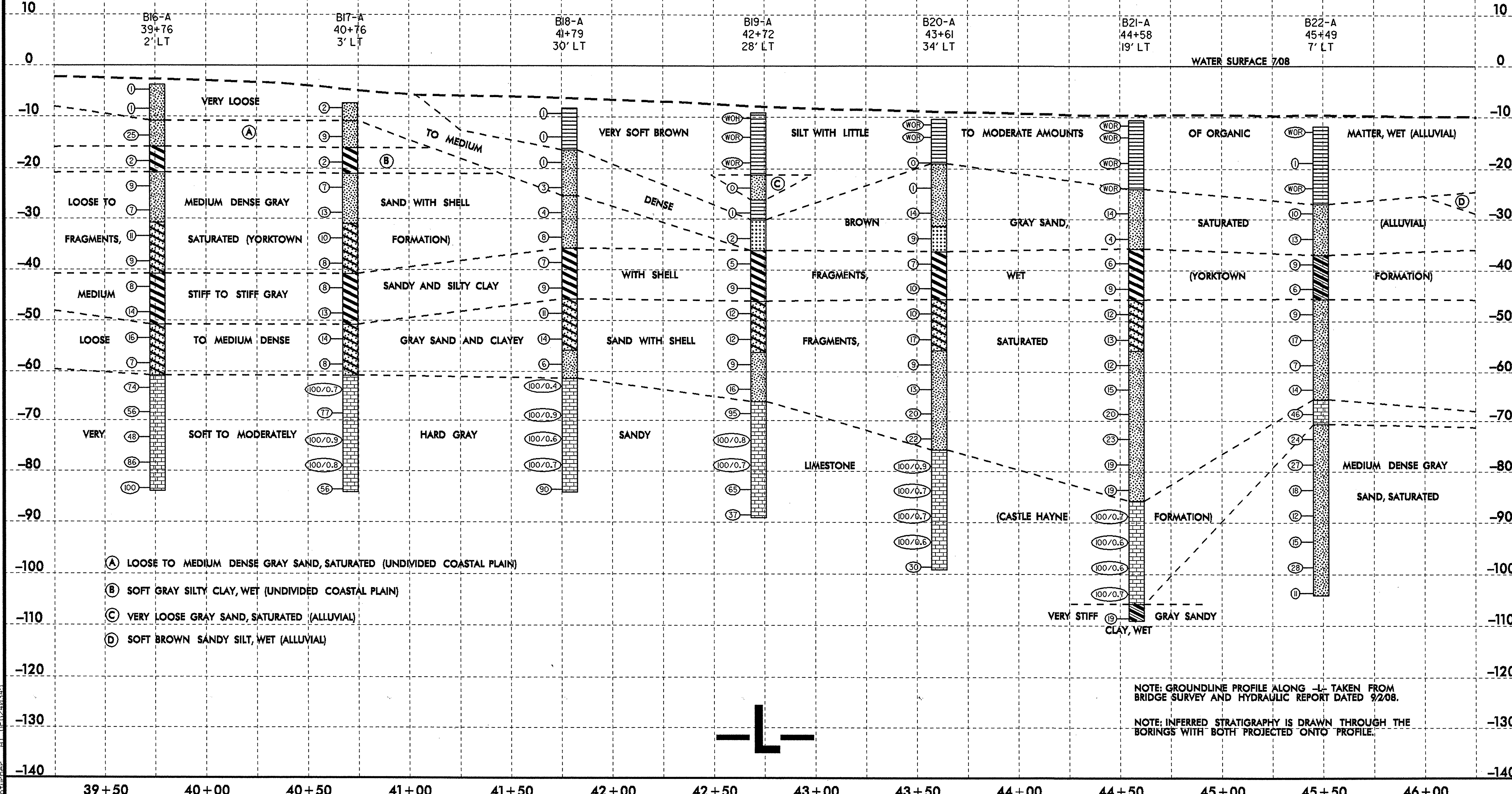
01-DEC-2008 10:13
I:\ero\greenville_investigation\tip\b3611_geo_brdg007\CADD_GEOTECH\Site&Sub\B3611_GEO_brdg_pf17.DGN

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROFILE OF BORINGS PROJECTED ALONG -L-

VE = 2.5



(A) LOOSE TO MEDIUM DENSE GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)

(B) SOFT GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

(C) VERY LOOSE GRAY SAND, SATURATED (ALLUVIAL)

(D) SOFT BROWN SANDY SILT, WET (ALLUVIAL)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC REPORT DATED 9/2/08.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

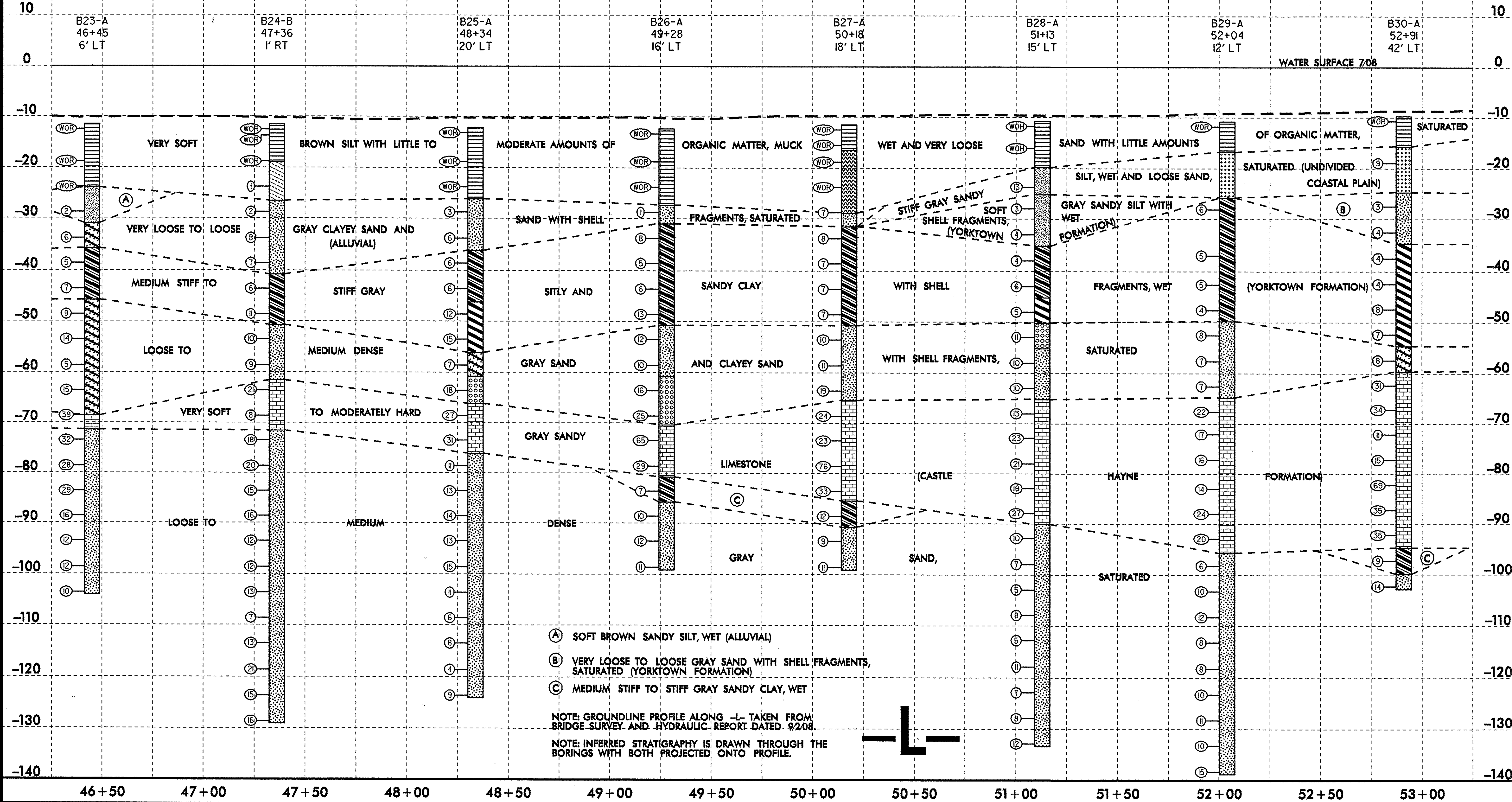
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/14/99

PROFILE OF BORINGS PROJECTED ALONG -L-

VE = 2.5



(A) SOFT BROWN SANDY SILT, WET (ALLUVIAL)

(B) VERY LOOSE TO LOOSE GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)

(C) MEDIUM STIFF TO STIFF GRAY SANDY CLAY, WET

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC REPORT DATED 9/2/08.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

01-DEC-2008 10:08
l:\ero_greenville_investigation\tip\b3611_geo_brdg0077\CADD_GEOTECH\Site&Sub\B3611_GEO_brdg_pf19.DGN
AT DFG24034S

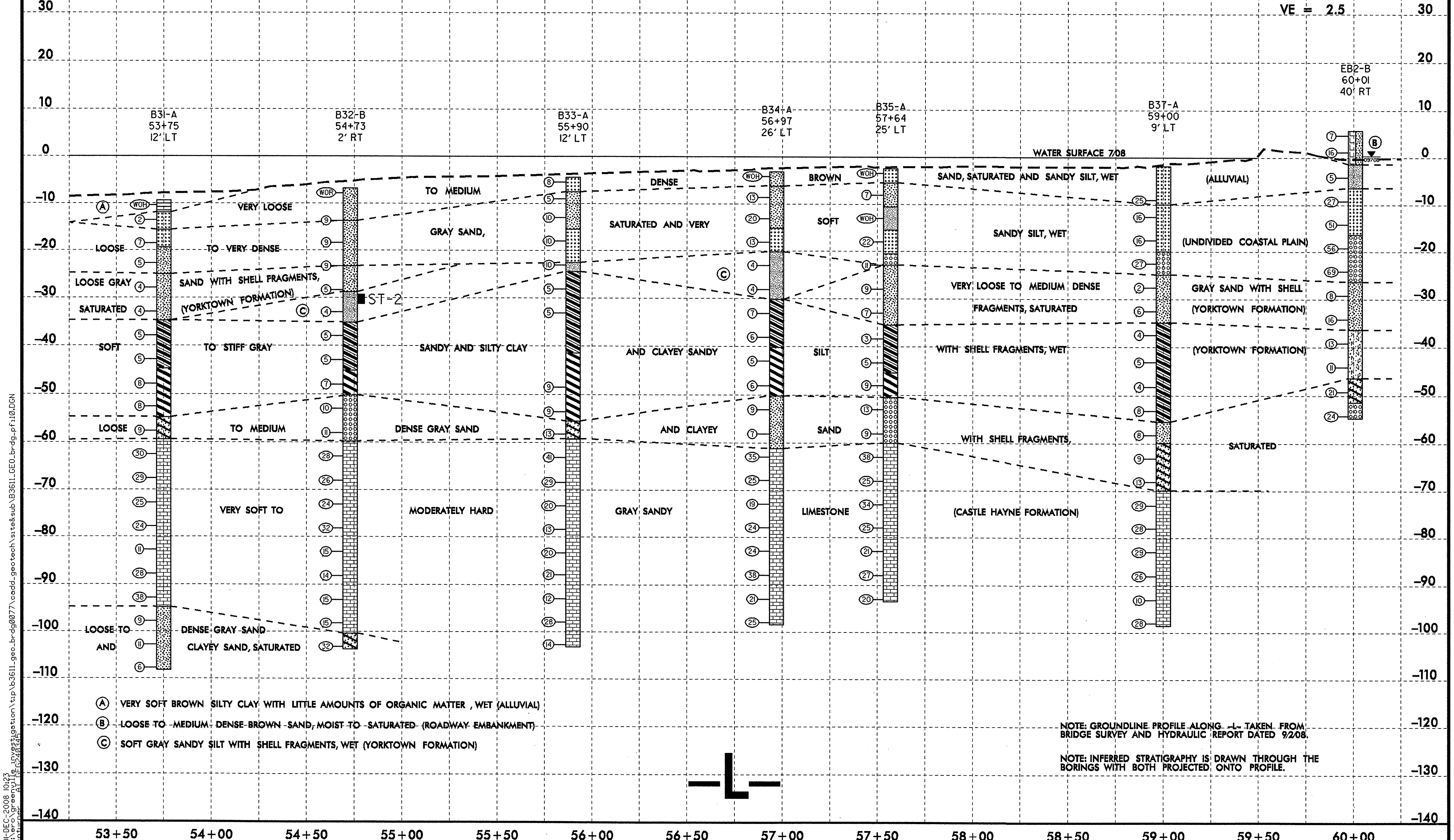
PROJECT REFERENCE NO.	SHEET NO.
B-3611	10 OF 51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROFILE OF BORINGS PROJECTED ALONG -L-

VE = 2.5



Ⓐ VERY SOFT BROWN SILTY CLAY WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)

Ⓑ LOOSE TO MEDIUM DENSE BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)

Ⓒ SOFT GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

NOTE: GROUNDLINE PROFILE ALONG -L- TAKEN FROM BRIDGE SURVEY AND HYDRAULIC REPORT DATED 9/2/08.

NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO PROFILE.

-L-

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. EB1-A	**STATION** 26+49	**OFFSET** 4ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. 3.1 ft	**TOTAL DEPTH** 79.9 ft	**NORTHING** 658,666	**EASTING** 2,702,010 / **24 HR.** 4.0
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/08/08	**COMP. DATE** 09/08/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 56.6 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
3.1	0.0	2	5	3	8	SS-1	
-0.9	4.0	7	7	7	14	SS-2	
-5.3	8.4	9	13	15	28		
-10.3	13.4	2	3	2	5	SS-3	22%
-15.3	18.4	1	3	3	6		
-20.3	23.4	11	14	10	24	SS-4	
-25.3	28.4	5	7	9	16	SS-5	
-30.3	33.4	4	5	7	12		
-35.3	38.4	4	5	5	10	SS-6	
-40.3	43.4	5	6	11	17		
-45.3	48.4	9	11	10	21	SS-7	
-50.3	53.4	4	5	7	12		
-55.3	58.4	60	19	23	42	SS-8	
-60.3	63.4	18	17	19	36		
-65.3	68.4	21	15	17	32	SS-9	
-70.3	73.4	25	21	79/0.3	100/0.8		
-75.3	78.4	15	28	18	46	SS-10	

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
3.1	GROUND SURFACE	0.0
	TAN BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)	
-3.5	GRAY SAND, SATURATED (ALLUVIAL)	6.6
-8.5	GRAY SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)	11.6
-15.9	GRAY SILTY CLAY, WET	19.0
-18.9	GRAY SAND, SATURATED	22.0
-23.5	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	26.6
-43.5	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	46.6
-53.5	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	56.6
-76.8	Boring Terminated at Elevation -76.8 ft in limestone	79.9

ST-1 pushed 19.9' to 21.9'

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B1-B	**STATION** 27+23	**OFFSET** 3ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 3.2 ft	**TOTAL DEPTH** 80.4 ft	**NORTHING** 658,722	**EASTING** 2,702,059 — **24 HR.** 3.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/09/08	**COMP. DATE** 09/09/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 57.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
3.2	0.0	5	4	3	7	SS-11
-0.8	4.0	1	1	3	4	SS-12
-5.7	8.9	7	6	8	14	
-10.7	13.9	2	3	3	6	SS-13
-15.7	18.9	2	2	3	5	
-20.7	23.9	10	13	12	25	SS-14
-25.7	28.9	3	3	4	7	SS-15
-30.7	33.9	5	5	5	10	
-35.7	38.9	3	4	3	7	SS-16
-40.7	43.9	4	4	5	9	
-45.7	48.9	5	7	8	15	SS-17
-50.7	53.9	5	6	5	11	
-55.7	58.9	26	40	37	77	SS-18
-60.7	63.9	18	24	16	40	SS-19
-65.7	68.9	8	31	13	44	
-70.7	73.9	16	16	15	31	SS-20

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	Description	DEPTH (ft)
3.2	GROUND SURFACE	0.0
	BROWN SANDY SILT, MOIST (ROADWAY EMBANKMENT)	
1.2		2.0
	TAN SAND, MOIST TO SATURATED	
-3.8		7.0
	GRAY SAND, SATURATED (ALLUVIAL)	
-8.8		12.0
	GRAY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)	
-21.2		24.4
	GRAY SAND, SATURATED	
-23.8		27.0
	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-33.8		37.0
-43.8		47.0
	GRAY SAND, SATURATED	
-53.8		57.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B1-B	**STATION** 27+23	**OFFSET** 3ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 3.2 ft	**TOTAL DEPTH** 80.4 ft	**NORTHING** 658,722	**EASTING** 2,702,059 — **24 HR.** 3.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/09/08	**COMP. DATE** 09/09/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 57.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-75.7	78.9	16	16	22	38	

ELEV. (ft)	Description	DEPTH (ft)
-77.2		80.4
	Boring Terminated at Elevation -77.2 ft in limestone	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B2-B	**STATION** 27+97	**OFFSET** 10ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. 3.7 ft	**TOTAL DEPTH** 80.5 ft	**NORTHING** 658,780	**EASTING** 2,702,106 / **24 HR.** 4.3
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/09/08	**COMP. DATE** 09/09/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 57.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
3.7	0.0	4	7	8	15	SS-21
-0.3	4.0	4	3	7	10	SS-22
-5.3	9.0	10	12	16	28	
-10.3	14.0	4	1	3	4	SS-23
-15.3	19.0	2	2	3	5	
-20.3	24.0	6	11	17	28	SS-24
-25.3	29.0	3	3	4	7	SS-25
-30.3	34.0	5	6	7	13	
-35.3	39.0	4	3	6	9	SS-26
-40.3	44.0	4	3	4	7	
-45.3	49.0	5	5	7	12	SS-27
-50.3	54.0	10	10	8	18	
-55.3	59.0	18	26	23	49	SS-28
-60.3	64.0	36	25	29	54	
-65.3	69.0	23	17	18	35	SS-29
-70.3	74.0	35	15	16	31	
-75.3	79.0	25	30	15	45	SS-30

Match Line

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
3.7	GROUND SURFACE	0.0
	BROWN SANDY SILT, MOIST (ROADWAY EMBANKMENT)	
1.7		2.0
	TAN SAND, MOIST TO SATURATED	
-3.3		7.0
	GRAY SAND, SATURATED (ALLUVIAL)	
-8.3		12.0
	GRAY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)	
-20.8		24.5
	GRAY SAND, SATURATED	
-23.3		27.0
	GRAY SILTY AND SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-33.3		37.0
-43.3		47.0
	GRAY SAND, SATURATED	
-53.3		57.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
-76.8		80.5

Boring Terminated at Elevation -76.8 ft in limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B3-B	**STATION** 28+71	**OFFSET** 13ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 4.1 ft	**TOTAL DEPTH** 85.7 ft	**NORTHING** 658,841	**EASTING** 2,702,148 — **24 HR.** 4.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/10/08	**COMP. DATE** 09/10/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 57.0 ft

Drive and Sample Record

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
3.1	1.0	8	16	30	46	SS-31
0.3	3.8	4	5	4	9	
-4.6	8.7	6	8	10	18	SS-32
-10.1	14.2	1	1	2	3	SS-33
-15.1	19.2	2	3	2	5	
-20.1	24.2	2	3	8	11	SS-34
-25.1	29.2	2	1	3	4	SS-35
-30.1	34.2	3	3	5	8	SS-36
-35.1	39.2	3	4	4	8	
-40.1	44.2	4	4	5	9	SS-37
-45.1	49.2	10	7	6	13	SS-38
-50.1	54.2	9	9	8	17	
-55.1	59.2	7	10	40	50	SS-39
-60.1	64.2	20	30	48	78	SS-40
-65.1	69.2	42	20	26	46	
-70.1	74.2	28	31	46	77	SS-41
-75.1	79.2	29	23	16	39	
-80.1	84.2	24	16	14	30	SS-42

Match Line

Soil and Rock Description

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
4.1	GROUND SURFACE	0.0
3.1	PAVEMENT	1.0
	BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)	
-2.9		7.0
	GRAY SAND, SATURATED (ALLUVIAL)	
-8.3		12.4
	GRAY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)	
-23.3		27.4
	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-28.3		32.4
	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	
-43.3		47.4
	GRAY CLAYEY SAND, SATURATED	
-52.9		57.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-81.6		85.7
	Boring Terminated at Elevation -81.6 ft in limestone	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B4-B	**STATION** 29+45	**OFFSET** 14ft RT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. 3.8 ft	**TOTAL DEPTH** 85.3 ft	**NORTHING** 658,904	**EASTING** 2,702,188 — **24 HR.** 4.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/11/08	**COMP. DATE** 09/11/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 62.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
2.8	1.0	18	29	17	46	SS-44
0.0	3.8	7	9	10	19	
-4.6	8.4	6	9	11	20	SS-45
-9.6	13.4	2	1	1	2	SS-46
-14.6	18.4	3	3	2	5	
-20.0	23.8	2	1	5	6	SS-47
-25.0	28.8	1	2	5	7	SS-48
-30.0	33.8	5	5	5	10	
-35.0	38.8	4	4	5	9	SS-49
-40.0	43.8	4	4	5	9	
-45.0	48.8	4	4	4	8	SS-50
-50.0	53.8	14	16	10	26	SS-51
-55.0	58.8	9	11	17	28	SS-52
-60.0	63.8	34	32	43	75	SS-53
-65.0	68.8	44	41	11	52	
-70.0	73.8	51	25	50	75	SS-54
-75.0	78.8	13	24	16	40	
-80.0	83.8	18	22	20	42	SS-55

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
3.8	GROUND SURFACE	0.0
2.8	PAVEMENT	1.0
	TAN BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)	
-2.8	GRAY SAND, SATURATED (ALLUVIAL)	6.6
-7.8	GRAY SANDY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)	11.6
-18.2		22.0
-23.2	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	27.0
-33.2	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	37.0
-43.2	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	47.0
-53.2	GRAY SAND, SATURATED	57.0
-58.2	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	62.0
	Match Line	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-81.5	Boring Terminated at Elevation -81.5 ft in limestone	85.3

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B4-B STATION 29+45 OFFSET 14ft RT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. 3.8 ft TOTAL DEPTH 85.3 ft NORTHING 658,904 EASTING 2,702,188 24 HR. 4.4
DRILL MACHINE Diedrich D-50 DRILL METHOD Mud Rotary HAMMER TYPE Manual
START DATE 09/11/08 COMP. DATE 09/11/08 SURFACE WATER DEPTH N/A DEPTH TO ROCK 62.0 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B5-B	**STATION** 30+19	**OFFSET** 17ft RT	**ALIGNMENT** -L- ; **0 HR.** N/A
COLLAR ELEV. 3.9 ft	**TOTAL DEPTH** 85.4 ft	**NORTHING** 658,966	**EASTING** 2,702,228 ; **24 HR.** 4.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/11/08	**COMP. DATE** 09/11/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** 57.1 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
2.9	1.0	17	13	15	28	SS-56
0.4	3.5	4	2	2	4	
-4.3	8.2	3	3	3	6	SS-57
-9.6	13.5	2	3	2	5	SS-58
-14.6	18.5	2	3	4	7	
-19.6	23.5	2	3	2	5	SS-59
-25.0	28.9	1	3	6	9	SS-60
-30.0	33.9	7	7	6	13	
-35.0	38.9	5	4	5	9	SS-61
-40.0	43.9	5	6	5	11	
-45.0	48.9	11	16	7	23	SS-62
-50.0	53.9	13	17	9	26	
-55.0	58.9	10	9	32	41	SS-63
-60.0	63.9	33	33	35	68	SS-64
-65.0	68.9	23	29	20	49	
-70.0	73.9	56	15	29	44	SS-65
-75.0	78.9	33	36	37	73	
-80.0	83.9	27	69	22	91	SS-66

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
3.9	GROUND SURFACE	0.0
2.9	PAVEMENT	1.0
	BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)	
-2.5	GRAY SANDY SILT, WET (ALLUVIAL)	6.4
-7.8	GRAY SANDY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)	11.7
-17.5		21.4
-22.5	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	26.4
-33.2	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	37.1
-43.2	GRAY CLAYEY SAND, SATURATED	47.1
-53.2	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	57.1
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-81.5	Boring Terminated at Elevation -81.5 ft in limestone	85.4

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B5-B STATION 30+19 OFFSET 17ft RT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. 3.9 ft TOTAL DEPTH 85.4 ft NORTHING 658,966 EASTING 2,702,228 24 HR. 4.4
DRILL MACHINE Diedrich D-50 DRILL METHOD Mud Rotary HAMMER TYPE Manual
START DATE 09/11/08 COMP. DATE 09/11/08 SURFACE WATER DEPTH N/A DEPTH TO ROCK 57.1 ft

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B6-A	STATION 31+35	OFFSET 20ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -3.0 ft	TOTAL DEPTH 81.0 ft	NORTHING 659,086	EASTING 2,702,252 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/15/08	COMP. DATE 09/15/08	SURFACE WATER DEPTH 3.0ft	DEPTH TO ROCK 53.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-3.0	0.0	WOH	WOH	WOH	0	SS-109
-7.1	4.1	WOH	WOH	2	2	SS-110
-12.1	9.1	1	1	2	3	SS-111
-17.1	14.1	1	2	2	4	
-22.1	19.1	1	6	4	10	SS-112
-27.1	24.1	3	4	3	7	
-32.5	29.5	4	3	3	6	SS-113
-37.5	34.5	3	3	4	7	
-42.5	39.5	4	4	5	9	SS-114
-47.5	44.5	7	5	8	13	SS-115
-52.5	49.5	6	4	5	9	SS-116
-57.5	54.5	22	29	35	64	SS-117
-62.5	59.5	15	31	22	53	
-67.5	64.5	17	20	28	48	SS-118
-72.5	69.5	9	12	19	31	
-77.5	74.5	14	17	20	37	SS-119

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/15/08)	
-3.0	GROUND SURFACE	0.0
	GRAY SAND, SATURATED (ALLUVIAL)	
-6.0		3.0
	ORANGE GRAY SILTY AND SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)	
-10.3		7.3
-22.6		19.6
	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-30.0		27.0
	GRAY SILTY AND SANDY CLAY WITH SHELL FRAGMENTS, WET	
-40.0		37.0
-46.0		43.0
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-56.0		53.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B6-A	STATION 31+35	OFFSET 20ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -3.0 ft	TOTAL DEPTH 81.0 ft	NORTHING 659,086	EASTING 2,702,252 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/15/08	COMP. DATE 09/15/08	SURFACE WATER DEPTH 3.0ft	DEPTH TO ROCK 53.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-82.5	79.5	9	17	13	30	

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-84.0		81.0
	Boring Terminated at Elevation -84.0 ft in limestone	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B7-A	**STATION** 31+98	**OFFSET** 8ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -2.9 ft	**TOTAL DEPTH** 76.0 ft	**NORTHING** 659,136	**EASTING** 2,702,292 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/15/08	**COMP. DATE** 09/15/08	**SURFACE WATER DEPTH** 2.9ft	**DEPTH TO ROCK** 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	BLOW COUNT 0.5ft	BLOW COUNT 0.5ft	BLOWS PER FOOT	SAMP. NO.
-2.9	0.0	1	1	1	2	SS-120
-7.4	4.5	1	4	8	12	
-12.4	9.5	1	1	2	3	SS-121
-17.4	14.5	1	2	3	5	
-22.4	19.5	4	4	6	10	SS-122
-27.4	24.5	5	6	7	13	SS-123
-32.4	29.5	3	3	3	6	
-37.4	34.5	3	4	5	9	SS-124
-42.4	39.5	3	4	7	11	
-47.4	44.5	6	6	6	12	SS-125
-52.4	49.5	5	6	7	13	SS-126
-57.4	54.5	35	51	27	78	SS-127
-62.4	59.5	15	22	46	68	
-67.4	64.5	60/0.1			60/0.1	
-72.4	69.5	15	12	23	35	SS-128
-77.4	74.5	25	16	12	28	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/15/08)	
-2.9	GROUND SURFACE	0.0
-3.4	BROWN MUCK, WET (ALLUVIAL)	0.5
	TAN SAND, SATURATED	
-10.9	GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)	8.0
-20.9	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	18.0
-25.9	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET	23.0
-35.9	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET	33.0
-45.9	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	43.0
-50.9	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET	48.0
-56.9	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	54.0
-78.9	Boring Terminated at Elevation -78.9 ft in	76.0

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B7-A	**STATION** 31+98	**OFFSET** 8ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -2.9 ft	**TOTAL DEPTH** 76.0 ft	**NORTHING** 659,136	**EASTING** 2,702,292 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/15/08	**COMP. DATE** 09/15/08	**SURFACE WATER DEPTH** 2.9ft	**DEPTH TO ROCK** 54.0 ft

Match Line (Elev. -80)

limestone

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B8-A	**STATION** 32+58	**OFFSET** 6ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.1 ft	**TOTAL DEPTH** 75.8 ft	**NORTHING** 659,188	**EASTING** 2,702,320 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/16/08	**COMP. DATE** 09/16/08	**SURFACE WATER DEPTH** 3.1ft	**DEPTH TO ROCK** 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-3.1	0.0	WOH	1	1	2	SS-129
-7.3	4.2	WOH	1	1	2	SS-130
-12.3	9.2	1	1	2	3	SS-131
-17.3	14.2	1	2	2	4	
-22.3	19.2	2	5	10	15	SS-132
-27.3	24.2	4	4	4	8	SS-133
-32.4	29.3	3	4	4	8	
-37.4	34.3	2	4	4	8	SS-134
-42.4	39.3	3	3	5	8	
-47.4	44.3	5	6	7	13	SS-135
-52.4	49.3	5	5	6	11	
-57.4	54.3	33	28	72/0.2	100/0.7	SS-136
-62.4	59.3	15	100/0.4		100/0.4	
-67.4	64.3	15	43	57/0.3	100/0.8	SS-137
-72.4	69.3	16	19	24	43	
-77.4	74.3	17	20	10	30	SS-138

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/16/08)	
-3.1	GROUND SURFACE	0.0
-3.6	BROWN MUCK, WET (ALLUVIAL)	0.5
-6.1	TAN SAND, SATURATED	3.0
-10.5	TAN GRAY SANDY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)	7.4
-20.5		17.4
-25.5	GRAY SANDY SILTY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	22.4
-45.6	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET	42.5
-57.1	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	54.0
-78.9	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	75.8
	Boring Terminated at Elevation -78.9 ft in	

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B8-A	**STATION** 32+58	**OFFSET** 6ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.1 ft	**TOTAL DEPTH** 75.8 ft	**NORTHING** 659,188	**EASTING** 2,702,320 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/16/08	**COMP. DATE** 09/16/08	**SURFACE WATER DEPTH** 3.1ft	**DEPTH TO ROCK** 54.0 ft

Match Line

limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B9-B	STATION 33+32	OFFSET 7ft RT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.5 ft	TOTAL DEPTH 76.3 ft	NORTHING 659,249	EASTING 2,702,364 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/16/08	COMP. DATE 09/16/08	SURFACE WATER DEPTH 2.5ft	DEPTH TO ROCK 53.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-2.5	0.0	WOH	WOH	WOH	0	SS-139
-7.2	4.7	1	1	2	3	SS-140
-12.2	9.7	1	1	1	2	SS-141
-17.2	14.7	2	2	3	5	
-22.2	19.7	2	3	5	8	SS-142
-27.2	24.7	4	3	3	6	SS-143
-32.3	29.8	4	4	4	8	
-37.3	34.8	2	3	3	6	SS-144
-42.3	39.8	3	3	4	7	
-47.3	44.8	4	4	5	9	SS-145
-52.3	49.8	7	5	5	10	
-57.3	54.8	38	43	40	83	SS-146
-62.3	59.8	15	19	22	41	
-67.3	64.8	23	31	16	47	SS-147
-72.3	69.8	27	22	29	51	
-77.3	74.8	32	39	18	57	SS-148

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/16/08)	
-2.5	GROUND SURFACE	0.0
-3.5	BROWN MUCK, WET (ALLUVIAL)	1.0
-5.5	TAN SAND, SATURATED	3.0
	GRAY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)	
-20.5	GRAY SAND, SATURATED	18.0
-25.5	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	23.0
-45.5	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	43.0
-55.5	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	53.0
-78.8	Boring Terminated at Elevation -78.8 ft in	76.3

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B9-B	STATION 33+32	OFFSET 7ft RT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.5 ft	TOTAL DEPTH 76.3 ft	NORTHING 659,249	EASTING 2,702,364 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/16/08	COMP. DATE 09/16/08	SURFACE WATER DEPTH 2.5ft	DEPTH TO ROCK 53.0 ft

ELEV (ft): -80, -85, -90, -95, -100, -105, -110, -115, -120, -125, -130, -135, -140, -145, -150, -155, -160

Match Line

limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B10-B	**STATION** 34+15	**OFFSET** 13ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.5 ft	**TOTAL DEPTH** 80.6 ft	**NORTHING** 659,323	**EASTING** 2,702,404 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/17/08	**COMP. DATE** 09/17/08	**SURFACE WATER DEPTH** 3.5ft	**DEPTH TO ROCK** 53.1 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION
							0 WATER SURFACE (09/17/08)
-3.5	0.0	1	0	0	0		-3.5 GROUND SURFACE 0.0; BROWN MUCK, WET (ALLUVIAL)
							-6.5 BROWN SAND, SATURATED 3.0; GRAY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)
-7.8	4.3	1	1	1	2	SS-149	
							-11.0 GRAY SAND, SATURATED 7.5
-12.8	9.3	10	4	4	8	SS-150	
-17.8	14.3	8	15	18	33		
							-21.0 17.5
-22.8	19.3	2	4	9	13	SS-151	
							-26.0 22.5 GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
-27.8	24.3	6	4	4	8	SS-152	
-32.6	29.1	2	3	3	6		
							-35.8 32.3 GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET
-37.6	34.1	3	3	3	6	SS-153	
-42.6	39.1	3	4	3	7		
							-45.8 42.3 GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED
-47.6	44.1	2	3	4	7	SS-154	
							-50.8 47.3 GRAY SAND WITH SHELL FRAGMENTS, SATURATED
-52.6	49.1	5	5	6	11	SS-155	
							-56.6 53.1 GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)
-57.6	54.1	14	20	45	65	SS-156	
-62.6	59.1	15	8	16	24		
-67.6	64.1	19	23	20	43	SS-157	
-72.6	69.1	12	24	24	48		
-77.6	74.1	6	20	16	36	SS-158	

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B10-B	**STATION** 34+15	**OFFSET** 13ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.5 ft	**TOTAL DEPTH** 80.6 ft	**NORTHING** 659,323	**EASTING** 2,702,404 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/17/08	**COMP. DATE** 09/17/08	**SURFACE WATER DEPTH** 3.5ft	**DEPTH TO ROCK** 53.1 ft

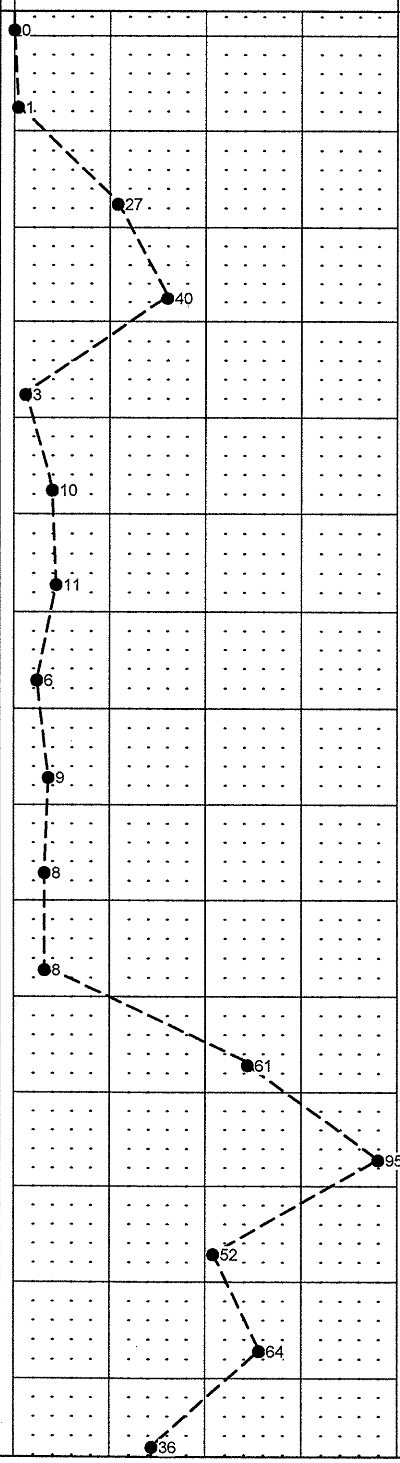
Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION
							GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*
-82.6	79.1	18	25	20	45		-84.1 80.6
							Boring Terminated at Elevation -84.1 ft in limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B11-B	**STATION** 35+10	**OFFSET** 12ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.7 ft	**TOTAL DEPTH** 75.4 ft	**NORTHING** 659,411	**EASTING** 2,702,440 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/17/08	**COMP. DATE** 09/17/08	**SURFACE WATER DEPTH** 3.7ft	**DEPTH TO ROCK** 52.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	Blow Count 0.5ft	0.5ft	0.5ft	Blows per Foot	SAMP. NO.
-3.7	0.0	1	0	0	0	
-7.8	4.1	1	0	1	1	SS-159
-12.8	9.1	8	11	16	27	SS-160
-17.8	14.1	11	19	21	40	
-22.8	19.1	1	1	2	3	SS-161
-27.8	24.1	5	6	4	10	SS-162
-32.6	28.9	4	5	6	11	
-37.6	33.9	3	3	3	6	SS-163
-42.6	38.9	3	4	5	9	
-47.6	43.9	4	3	5	8	SS-164
-52.6	48.9	6	4	4	8	
-57.6	53.9	24	32	29	61	SS-165
-62.6	58.9	43	30	65	95	
-67.6	63.9	27	9	43	52	SS-166
-72.6	68.9	17	41	23	64	
-77.6	73.9	20	15	21	36	SS-167



SOIL AND ROCK DESCRIPTION

ELEV. (ft)	Description	DEPTH (ft)
	WATER SURFACE (09/17/08)	
-3.7	GROUND SURFACE	0.0
	BROWN MUCK, WET (ALLUVIAL)	
-6.7	BROWN SAND, SATURATED	3.0
	TAN SILTY CLAY, WET	
-11.0	TAN GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	7.3
-21.0		17.3
-25.7	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	22.0
-35.7		32.0
-45.7	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	42.0
-55.7	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	52.0
-79.1	Boring Terminated at Elevation -79.1 ft in	75.4

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B11-B	**STATION** 35+10	**OFFSET** 12ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.7 ft	**TOTAL DEPTH** 75.4 ft	**NORTHING** 659,411	**EASTING** 2,702,440 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/17/08	**COMP. DATE** 09/17/08	**SURFACE WATER DEPTH** 3.7ft	**DEPTH TO ROCK** 52.0 ft

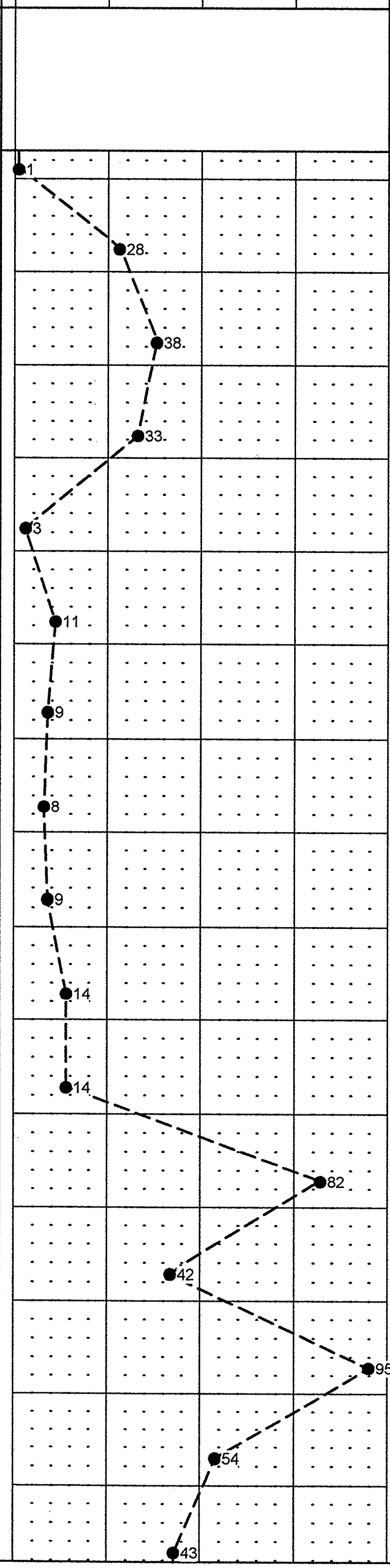
Match Line

limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B12-B	**STATION** 36+05	**OFFSET** 8ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.5 ft	**TOTAL DEPTH** 75.6 ft	**NORTHING** 659,500	**EASTING** 2,702,474 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/18/08	**COMP. DATE** 09/18/08	**SURFACE WATER DEPTH** 3.5ft	**DEPTH TO ROCK** 53.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-3.5	0.0	1	0	1	1	
-7.8	4.3	7	13	15	28	SS-168
-12.8	9.3	11	13	25	38	
-17.8	14.3	9	14	19	33	SS-169
-22.8	19.3	1	1	2	3	SS-170
-27.8	24.3	5	5	6	11	SS-171
-32.6	29.1	4	4	5	9	
-37.6	34.1	3	3	5	8	SS-172
-42.6	39.1	4	4	5	9	
-47.6	44.1	6	7	7	14	SS-173
-52.6	49.1	5	7	7	14	
-57.6	54.1	57	32	50	82	SS-174
-62.6	59.1	26	26	16	42	
-67.6	64.1	15	60	35	95	SS-175
-72.6	69.1	41	27	27	54	
-77.6	74.1	42	20	23	43	



SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/18/08)	
-3.5	GROUND SURFACE	0.0
	BROWN MUCK, WET (ALLUVIAL)	
-6.5	BROWN SAND, SATURATED	3.0
	TAN GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-21.5		18.0
-26.0	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	22.5
-45.8	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	42.3
-56.5	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	53.0
-79.1	Boring Terminated at Elevation -79.1 ft in	75.6

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B12-B	**STATION** 36+05	**OFFSET** 8ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.5 ft	**TOTAL DEPTH** 75.6 ft	**NORTHING** 659,500	**EASTING** 2,702,474 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/18/08	**COMP. DATE** 09/18/08	**SURFACE WATER DEPTH** 3.5ft	**DEPTH TO ROCK** 53.0 ft

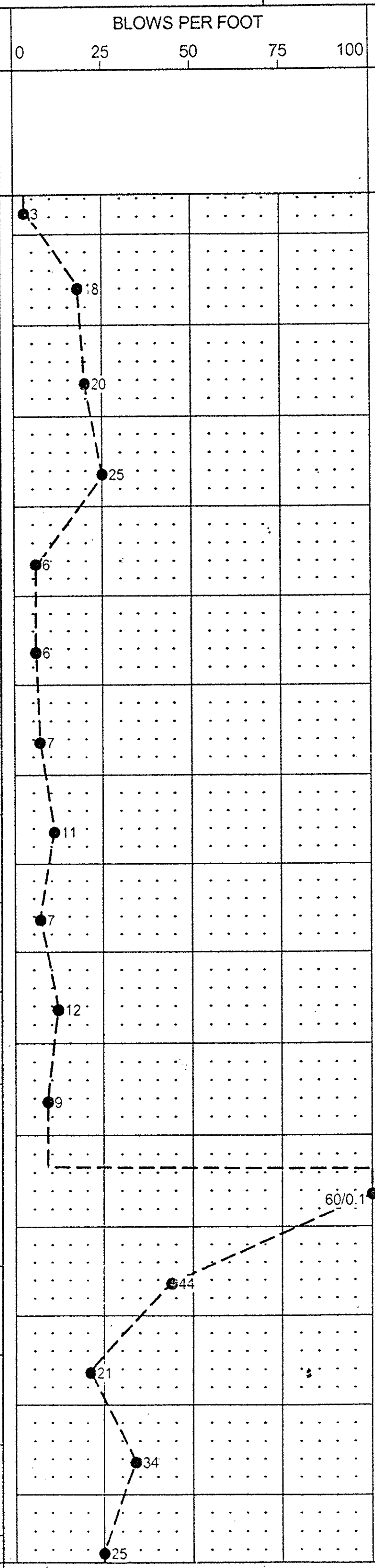
Match Line

limestone

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B14-A	STATION 37+56	OFFSET 9ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.8 ft	TOTAL DEPTH 75.9 ft	NORTHING 659,645	EASTING 2,702,518 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/10/08	COMP. DATE 09/12/08	SURFACE WATER DEPTH 2.8ft	DEPTH TO ROCK 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-2.8	0.0	1	1	2	3	SS-100
-7.0	4.2	9	9	9	18	SS-101
-12.2	9.4	6	8	12	20	
-17.2	14.4	12	12	13	25	SS-102
-22.2	19.4	4	2	4	6	SS-103
-27.2	24.4	4	3	3	6	
-32.2	29.4	4	4	3	7	SS-104
-37.2	34.4	3	4	7	11	
-42.2	39.4	3	3	4	7	SS-105
-47.2	44.4	6	6	6	12	SS-106
-52.2	49.4	8	5	4	9	
-57.2	54.4	60/0.1			60/0.1	
-62.2	59.4	19	32	12	44	SS-107
-67.2	64.4	10	11	10	21	
-72.2	69.4	12	19	15	34	SS-108
-77.2	74.4	29	13	12	25	



ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/10/08)	
-2.8	GROUND SURFACE	0.0
	GRAY SAND, SATURATED (ALLUVIAL)	
-5.8		3.0
	GRAY ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-15.4		12.6
-20.4		17.6
	GRAY SAND WITH SHELL FRAGMENTS, SATURATRED (YORKTOWN FORMATION)	
-30.4		27.6
	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET	
-45.4		42.6
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-56.8		54.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
-78.7		75.9
	Boring Terminated at Elevation -78.7 ft in	

ELEV (ft): 0, -5, -10, -15, -20, -25, -30, -35, -40, -45, -50, -55, -60, -65, -70, -75, -80

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Bottoms, T. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B14-A	STATION 37+56	OFFSET 9ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.8 ft	TOTAL DEPTH 75.9 ft	NORTHING 659,645	EASTING 2,702,518 / 24 HR. N/A
DRILL MACHINE CME-45B	DRILL METHOD Mud Rotary		HAMMER TYPE Manual
START DATE 09/10/08	COMP. DATE 09/12/08	SURFACE WATER DEPTH 2.8ft	DEPTH TO ROCK 54.0 ft

ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT 0.5ft 0.5ft 0.5ft | BLOWS PER FOOT 0 25 50 75 100 | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION ELEV. (ft) DEPTH (ft)

-80 Match Line

limestone

ELEV (ft): -85, -90, -95, -100, -105, -110, -115, -120, -125, -130, -135, -140, -145, -150, -155, -160

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B15-A	**STATION** 38+80	**OFFSET** 13ft LT / **ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -2.5 ft	**TOTAL DEPTH** 76.6 ft	**NORTHING** 659,761 / **EASTING** 2,702,563	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/18/08	**COMP. DATE** 09/18/08	**SURFACE WATER DEPTH** 2.5ft	**DEPTH TO ROCK** 56.1 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-2.5	0.0	WOH	1	1	2	
-7.8	5.3	7	8	8	16	SS-176
-12.8	10.3	8	8	20	28	
-17.8	15.3	1	1	3	4	SS-177
-22.8	20.3	3	3	4	7	SS-178
-27.8	25.3	4	5	5	10	
-32.6	30.1	5	5	4	9	SS-179
-37.6	35.1	3	3	4	7	
-42.6	40.1	4	4	4	8	SS-180
-47.6	45.1	6	5	6	11	SS-181
-52.6	50.1	7	8	7	15	
-57.6	55.1	4	13	50	63	SS-182
-62.6	60.1	37	28	62	90	
-67.6	65.1	26	30	33	63	SS-183
-72.6	70.1	22	30	52	82	
-77.6	75.1	36	22	35	57	SS-184

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/18/08)	
-2.5	GROUND SURFACE	0.0
	BROWN SAND, SATURATED (ALLUVIAL)	
-5.9	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	3.4
-15.9	GRAY SANDY CLAY, WET	13.4
-20.9	GRAY SAND AND CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	18.4
-30.8		28.3
-40.8	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET	38.3
-45.8	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	43.3
-58.6	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	56.1
-79.1	Boring Terminated at Elevation -79.1 ft in	76.6

Match Line

limestone

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B15-A	**STATION** 38+80	**OFFSET** 13ft LT / **ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -2.5 ft	**TOTAL DEPTH** 76.6 ft	**NORTHING** 659,761 / **EASTING** 2,702,563	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/18/08	**COMP. DATE** 09/18/08	**SURFACE WATER DEPTH** 2.5ft	**DEPTH TO ROCK** 56.1 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B16-A	**STATION** 39+76	**OFFSET** 2ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -3.8 ft	**TOTAL DEPTH** 80.1 ft	**NORTHING** 659,845	**EASTING** 2,702,611 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/19/08	**COMP. DATE** 09/19/08	**SURFACE WATER DEPTH** 3.8ft	**DEPTH TO ROCK** 57.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-3.8	0.0	1	0	1	1	
-7.6	3.8	1	0	1	1	SS-185
-12.6	8.8	10	13	12	25	SS-186
-17.6	13.8	1	1	1	2	SS-187
-22.6	18.8	4	5	4	9	SS-188
-27.4	23.6	4	3	4	7	
-32.4	28.6	5	6	5	11	SS-189
-37.4	33.6	3	4	5	9	
-42.4	38.6	4	4	4	8	SS-190
-47.4	43.6	5	7	7	14	
-52.4	48.6	7	8	8	16	SS-191
-57.4	53.6	5	3	4	7	
-62.4	58.6	55	46	28	74	
-67.4	63.6	63	28	28	56	SS-192
-72.4	68.6	31	26	22	48	
-77.4	73.6	60	18	68	86	SS-193
-82.4	78.6	35	54	46	100	

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/19/08)	
-3.8	GROUND SURFACE	0.0
	BROWN SAND, SATURATED (ALLUVIAL)	
-10.8		7.0
	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-15.8		12.0
	BROWN SILTY CLAY, WET	
-20.8		17.0
	GRAY SAND AND CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	
-30.8		27.0
-40.8		37.0
	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	
-50.8		47.0
	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	
-60.8		57.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-83.9		80.1
	Boring Terminated at Elevation -83.9 ft in limestone	

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B16-A STATION 39+76 OFFSET 2ft LT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. -3.8 ft TOTAL DEPTH 80.1 ft NORTHING 659,845 EASTING 2,702,611 24 HR. N/A
DRILL MACHINE CME-45B DRILL METHOD Mud Rotary HAMMER TYPE Manual
START DATE 09/19/08 COMP. DATE 09/19/08 SURFACE WATER DEPTH 3.8ft DEPTH TO ROCK 57.0 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort		**GEOLOGIST** Dillard, S. C.	
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK					**GROUND WTR (ft)**
BORING NO. B17-A	**STATION** 40+76	**OFFSET** 3ft LT	**ALIGNMENT** -L-		**0 HR.** N/A
COLLAR ELEV. -7.4 ft	**TOTAL DEPTH** 76.7 ft	**NORTHING** 659,937	**EASTING** 2,702,649		**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary			**HAMMER TYPE** Manual	
START DATE 09/19/08	**COMP. DATE** 09/19/08	**SURFACE WATER DEPTH** 7.4ft		**DEPTH TO ROCK** 53.4 ft	

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-7.4	0.0	1	1	1	2	
-12.8	5.4	6	5	4	9	SS-194
-17.8	10.4	1	1	1	2	SS-195
-22.8	15.4	3	3	4	7	SS-196
-27.8	20.4	9	6	7	13	
-32.8	25.4	4	5	5	10	SS-197
-37.8	30.4	3	4	4	8	
-42.6	35.2	3	4	4	8	SS-198
-47.6	40.2	7	6	7	13	
-52.6	45.2	8	7	7	14	SS-199
-57.6	50.2	4	4	4	8	
-62.6	55.2	90	55	45/0.2	100/0.7	SS-200
-67.6	60.2	29	39	38	77	
-72.6	65.2	47	52	48/0.4	100/0.9	SS-201
-77.6	70.2	43	60	40/0.3	100/0.8	
-82.6	75.2	29	29	27	56	SS-202

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/19/08)	
-7.4	GROUND SURFACE	0.0
	BROWN SAND, SATURATED (ALLUVIAL)	
-10.8		3.4
	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-16.0		8.6
	GRAY SILTY CLAY, WET	
-21.0		13.6
	GRAY SAND AND CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	
-31.0		23.6
-40.8		33.4
	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	
-50.8		43.4
	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	
-60.8		53.4
	GRAY SANDY LIMESTONE (CASTLE HATNE FORMATION)	
	GRAY SANDY LIMESTONE (CASTLE HATNE FORMATION)*(continued)*	
-84.1		76.7
	Boring Terminated at Elevation -84.1 ft in limestone	

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B17-A STATION 40+76 OFFSET 3ft LT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. -7.4 ft TOTAL DEPTH 76.7 ft NORTHING 659,937 EASTING 2,702,649 24 HR. N/A
DRILL MACHINE CME-45B DRILL METHOD Mud Rotary HAMMER TYPE Manual
START DATE 09/19/08 COMP. DATE 09/19/08 SURFACE WATER DEPTH 7.4ft DEPTH TO ROCK 53.4 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B18-A	**STATION** 41+79	**OFFSET** 30ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -8.4 ft	**TOTAL DEPTH** 75.7 ft	**NORTHING** 660,042	**EASTING** 2,702,665 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/22/08	**COMP. DATE** 09/22/08	**SURFACE WATER DEPTH** 8.4ft	**DEPTH TO ROCK** 53.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-8.4	0.0	1	0	1	1	
-12.8	4.4	1	0	1	1	SS-203
-17.8	9.4	1	0	1	1	SS-204
-22.8	14.4	6	2	1	3	
-27.8	19.4	3	2	2	4	SS-205
-32.6	24.2	3	3	5	8	
-37.6	29.2	2	3	4	7	SS-206
-42.6	34.2	3	4	5	9	
-47.6	39.2	4	5	6	11	SS-207
-52.6	44.2	7	7	7	14	
-57.6	49.2	4	3	3	6	SS-208
-62.6	54.2	100/0.4			100/0.4	
-67.6	59.2	32	43	57/0.4	100/0.9	SS-209
-72.6	64.2	37	90	10/0.1	100/0.6	
-77.6	69.2	46	70	30/0.2	100/0.7	
-82.6	74.2	42	40	50	90	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/22/08)	
-8.4	GROUND SURFACE	0.0
	BROWN SILT WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-16.4	BROWN GRAY SAND, SATURATED	8.0
-25.4	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	17.0
-35.8	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	27.4
-45.8	GRAY CLAYEY SAND AND SAND WITH SHELL FRAGMENTS, SATURATED	37.4
-55.8		47.4
-61.4	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	53.0
	Match Line	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-84.1		75.7
	Boring Terminated at Elevation -84.1 ft in limestone	

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B19-A	**STATION** 42+72	**OFFSET** 28ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -9.2 ft	**TOTAL DEPTH** 79.9 ft	**NORTHING** 660,127	**EASTING** 2,702,704 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/23/08	**COMP. DATE** 09/23/08	**SURFACE WATER DEPTH** 9.2ft	**DEPTH TO ROCK** 57.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-9.2	0.0	WOH	WOH	WOH	0	SS-210
-12.8	3.6	WOR	WOR	WOR	0	
-17.8	8.6	WOR	WOR	WOR	0	SS-211
-22.8	13.6	1	0	0	0	
-27.8	18.6	WOR	1	0	1	SS-212
-32.8	23.6	2	1	1	2	SS-213
-37.8	28.6	2	2	3	5	SS-214
-42.6	33.4	3	4	5	9	
-47.6	38.4	4	5	7	12	SS-215
-52.6	43.4	5	6	6	12	
-57.6	48.4	5	6	3	9	SS-216
-62.6	53.4	8	8	8	16	
-67.6	58.4	60	45	50	95	SS-217
-72.6	63.4	26	74	26/0.3	100/0.8	
-77.6	68.4	37	80	20/0.2	100/0.7	
-82.6	73.4	16	25	40	65	SS-218
-87.6	78.4	26	11	26	37	

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/23/08)	
-9.2	GROUND SURFACE	0.0
	BROWN SILT WITH LITTLE TO MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-21.2		12.0
	GRAY SAND, SATURATED	
-26.2		17.0
	BROWN SILT WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET	
-30.2		21.0
	GRAY SAND, SATURATED	
-36.2		27.0
	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-46.2		37.0
	GRAY CLAYEY SAND AND SAND WITH SHELL FRAGMENTS, SATURATED	
-56.2		47.0
-66.2		57.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-89.1		79.9
	Boring Terminated at Elevation -89.1 ft in limestone	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B20-A	**STATION** 43+61	**OFFSET** 34ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -10.4 ft	**TOTAL DEPTH** 88.7 ft	**NORTHING** 660,211	**EASTING** 2,702,733 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/24/08	**COMP. DATE** 09/24/08	**SURFACE WATER DEPTH** 10.4ft	**DEPTH TO ROCK** 65.4 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-10.4	0.0	WOR	WOR	WOR	0	
-12.8	2.4	WOR	WOR	WOR	0	
-17.8	7.4	1	0	0	0	
-22.8	12.4	WOR	1	0	1	SS-219
-27.8	17.4	6	4	10	14	
-32.8	22.4	7	4	5	9	SS-220
-37.8	27.4	3	3	4	7	SS-221
-42.6	32.2	4	5	5	10	
-47.6	37.2	5	5	5	10	SS-222
-52.6	42.2	8	10	7	17	
-57.6	47.2	3	4	5	9	SS-223
-62.6	52.2	8	6	7	13	
-67.6	57.2	9	7	13	20	SS-224
-72.6	62.2	10	11	11	22	SS-225A
-77.6	67.2	30	52	48/0.4	100/0.9	SS-225
-82.6	72.2	50	70	30/0.2	100/0.7	
-87.6	77.2	50	65	35/0.2	100/0.7	
-92.6	82.2	27	90	10/0.1	100/0.6	SS-226
-97.6	87.2	25	13	17	30	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/24/08)	
-10.4	GROUND SURFACE	0.0
	BROWN SILT WITH LITTLE TO MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-19.0		8.6
	BROWN GRAY SAND, SATURATED	
-31.4		21.0
-36.4		26.0
	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-45.8		35.4
	GRAY CLAYEY SAND AND SAND WITH SHELL FRAGMENTS, SATURATED	
-55.8		45.4
-75.8		65.4
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
	Match Line	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-99.1		88.7
	Boring Terminated at Elevation -99.1 ft in limestone	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B21-A	**STATION** 44+58	**OFFSET** 19ft LT	**ALIGNMENT** -L-
COLLAR ELEV. -10.5 ft	**TOTAL DEPTH** 98.6 ft	**NORTHING** 660,294	**EASTING** 2,702,785
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/24/08	**COMP. DATE** 09/24/08	**SURFACE WATER DEPTH** 10.5ft	**DEPTH TO ROCK** 75.3 ft

GROUND WTR (ft)	
0 HR.	N/A
24 HR.	N/A

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-10.5	0.0	WOR	WOR	WOR	0	
-12.8	2.3	WOR	WOR	WOR	0	
-17.8	7.3	WOR	WOR	WOR	0	
-22.8	12.3	WOR	WOR	WOR	0	
-27.8	17.3	4	6	8	14	SS-227
-32.8	22.3	7	1	3	4	
-37.6	27.1	2	3	3	6	SS-228
-42.6	32.1	3	4	5	9	
-47.6	37.1	4	6	6	12	SS-229
-52.6	42.1	6	6	7	13	
-57.6	47.1	5	5	7	12	SS-230
-62.6	52.1	8	7	8	15	
-67.6	57.1	12	9	11	20	SS-231
-72.6	62.1	11	12	11	23	SS-232
-77.6	67.1	6	12	7	19	

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-82.6	72.1	10	15	4	19	
-87.6	77.1	30	27	73/0.2	100/0.7	SS-233
-92.6	82.1	60	70	30/0.1	100/0.6	
-97.6	87.1	90	85	15/0.1	100/0.6	
-102.6	92.1	16	71	29/0.2	100/0.7	
-107.6	97.1	--	9	10	19	SS-234

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/24/08)	
-10.5	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-24.0	BROWN GRAY SAND, SATURATED	13.5
-35.8	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	25.3
-45.8	GRAY CLAYEY SAND AND SAND WITH SHELL FRAGMENTS, SATURATED	35.3
-55.8		45.3
-85.8	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	75.3
-105.8	GRAY SANDY CLAY, WET	95.3
-109.1	Boring Terminated at Elevation -109.1 ft in limestone	98.6

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B22-A	**STATION** 45+49	**OFFSET** 7ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -11.7 ft	**TOTAL DEPTH** 92.4 ft	**NORTHING** 660,373	**EASTING** 2,702,832 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/26/08	**COMP. DATE** 09/29/08	**SURFACE WATER DEPTH** 11.7ft	**DEPTH TO ROCK** 54.0 ft

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B22-A	**STATION** 45+49	**OFFSET** 7ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -11.7 ft	**TOTAL DEPTH** 92.4 ft	**NORTHING** 660,373	**EASTING** 2,702,832 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/26/08	**COMP. DATE** 09/29/08	**SURFACE WATER DEPTH** 11.7ft	**DEPTH TO ROCK** 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-11.7	0.0	WOR	WOR	WOR	0	SS-235	316%
-17.8	6.1	3	1	0	1		
-22.8	11.1	WOR	WOR	WOR	0	SS-236	202%
-27.8	16.1	4	5	5	10	SS-237	
-32.8	21.1	8	7	6	13		
-37.8	26.1	4	4	5	9	SS-238	
-42.6	30.9	2	2	4	6		
-47.6	35.9	3	5	4	9	SS-239	
-52.6	40.9	9	9	8	17		
-57.6	45.9	3	4	3	7	SS-240	
-62.6	50.9	7	8	6	14		
-67.6	55.9	22	27	19	46	SS-241	
-72.6	60.9	8	15	9	24	SS-242	
-77.6	65.9	10	11	16	27		
-82.6	70.9	12	5	13	18	SS-243	
-87.6	75.9	6	7	5	12		
-92.6	80.9	11	5	10	15	SS-244	
-97.6	85.9	18	19	9	28		
-102.6	90.9	8	5	6	11	SS-245	

Match Line

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/26/08)	
-11.7	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-27.0	GRAY SAND, SATURATED	15.3
-37.0	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	25.3
-45.7	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	34.0
-65.7	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	54.0
-70.7	GRAY SAND, SATURATED	59.0
	GRAY SAND, SATURATED *(continued)*	
-104.1	Boring Terminated at Elevation -104.1 ft in medium dense sand	92.4

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B23-A	**STATION** 46+45	**OFFSET** 6ft LT	**ALIGNMENT** -L- — **0 HR.** N/A
COLLAR ELEV. -11.5 ft	**TOTAL DEPTH** 92.6 ft	**NORTHING** 660,461	**EASTING** 2,702,870 — **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/29/08	**COMP. DATE** 09/29/08	**SURFACE WATER DEPTH** 11.5ft	**DEPTH TO ROCK** 57.1 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-11.5	0.0	WOR	WOR	WOR	0	SS-246	181%
-17.8	6.3	WOR	WOR	WOR	0		
-22.8	11.3	WOR	WOR	WOR	0		
-27.8	16.3	1	1	1	2	SS-247	
-32.8	21.3	2	3	3	6	SS-248	
-37.6	26.1	2	2	3	5	SS-249	
-42.6	31.1	2	3	4	7		
-47.6	36.1	4	4	5	9	SS-250	
-52.6	41.1	6	8	6	14		
-57.6	46.1	3	3	2	5	SS-251	
-62.6	51.1	7	7	8	15		
-67.6	56.1	3	8	31	39	SS-252	
-72.6	61.1	11	22	10	32		
-77.6	66.1	8	8	20	28	SS-253	
-82.6	71.1	13	12	17	29		
-87.6	76.1	6	5	11	16	SS-254	
-92.6	81.1	8	6	6	12		
-97.6	86.1	4	3	9	12		
-102.6	91.1	4	5	5	10	SS-255	

Match Line

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/29/08)	
-11.5	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-24.0	BROWN SANDY SILT, WET	12.5
-31.0	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, WET	19.5
-35.8	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	24.3
-45.8	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	34.3
-68.6	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	57.1
-71.5	GRAY SAND, SATURATED	60.0
	GRAY SAND, SATURATED *(continued)*	
-104.1		92.6
	Boring Terminated at Elevation -104.1 ft in medium dense sand	

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B23-A STATION 46+45 OFFSET 6ft LT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. -11.5 ft TOTAL DEPTH 92.6 ft NORTHING 660,461 EASTING 2,702,870 24 HR. N/A
DRILL MACHINE CME-45B DRILL METHOD Mud Rotary HAMMER TYPE Manual
START DATE 09/29/08 COMP. DATE 09/29/08 SURFACE WATER DEPTH 11.5ft DEPTH TO ROCK 57.1 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.	
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK				**GROUND WTR (ft)**
BORING NO. B24-B	**STATION** 47+36	**OFFSET** 1ft RT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -11.6 ft	**TOTAL DEPTH** 117.5 ft	**NORTHING** 660,542	**EASTING** 2,702,912	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual	
START DATE 09/30/08	**COMP. DATE** 09/30/08	**SURFACE WATER DEPTH** 11.6ft	**DEPTH TO ROCK** 50.0 ft	

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI	SOIL AND ROCK DESCRIPTION
								0 WATER SURFACE (09/30/08)
-11.6	0.0	WOR	WOR	WOR	0			-11.6 GROUND SURFACE 0.0
-12.8	1.2	WOR	WOR	WOR	0	SS-256	287%	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)
-17.8	6.2	WOR	WOR	WOR	0			-19.0 7.4 BROWN SAND WITH LITTLE AMOUNTS OF ORGANIC MATTER, SATURATED
-22.8	11.2	WOH	1	0	1	SS-257		-26.6 15.0 GRAY SAND WITH SHELL FRAGMENTS, SATURATED
-27.8	16.2	1	1	1	2			
-32.8	21.2	3	5	3	8	SS-258		
-37.6	26.0	2	3	4	7			-40.8 29.2 GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
-42.6	31.0	1	3	3	6	SS-259		
-47.6	36.0	3	5	6	11			-50.8 39.2 GRAY SAND WITH SHELL FRAGMENTS, SATURATED
-52.6	41.0	6	5	5	10	SS-260		
-57.6	46.0	4	5	4	9	SS-261		-61.6 50.0 GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)
-62.6	51.0	6	9	12	21			
-67.6	56.0	6	4	4	8	SS-262		-71.6 60.0 GRAY SAND, SATURATED
-72.6	61.0	10	8	10	18	SS-263		
-77.6	66.0	10	10	10	20			

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.	
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK				**GROUND WTR (ft)**
BORING NO. B24-B	**STATION** 47+36	**OFFSET** 1ft RT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -11.6 ft	**TOTAL DEPTH** 117.5 ft	**NORTHING** 660,542	**EASTING** 2,702,912	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual	
START DATE 09/30/08	**COMP. DATE** 09/30/08	**SURFACE WATER DEPTH** 11.6ft	**DEPTH TO ROCK** 50.0 ft	

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI	SOIL AND ROCK DESCRIPTION
								GRAY SAND, SATURATED *(continued)*
-82.6	71.0	11	9	6	15	SS-264		
-87.6	76.0	4	10	6	16			
-92.6	81.0	4	8	4	12	SS-265		
-97.6	86.0	4	6	6	12			
-102.6	91.0	5	7	6	13	SS-266		
-107.6	96.0	-	3	4	7			
-112.6	101.0	3	3	10	13	SS-267		
-117.6	106.0	5	8	13	21			
-122.6	111.0	7	5	10	15			
-127.6	116.0	6	6	10	16	SS-268		-129.1 117.5 Boring Terminated at Elevation -129.1 ft in medium dense sand

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B25-A	**STATION** 48+34	**OFFSET** 20ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -12.2 ft	**TOTAL DEPTH** 111.9 ft	**NORTHING** 660,640	**EASTING** 2,702,932 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/30/08	**COMP. DATE** 10/01/08	**SURFACE WATER DEPTH** 12.2ft	**DEPTH TO ROCK** 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-12.2	0.0	WOR	WOR	WOR	0	SS-269	190%
-17.8	5.6	WOR	WOR	WOR	0		
-22.8	10.6	WOR	WOR	WOR	0		
-27.8	15.6	1	1	2	3		
-32.8	20.6	2	3	3	6		
-37.6	25.4	2	3	3	6	SS-270	
-42.6	30.4	2	3	3	6		
-47.6	35.4	6	6	6	12	SS-271	
-52.6	40.4	6	8	7	15		
-57.6	45.4	5	4	3	7	SS-272	
-62.6	50.4	9	8	10	18	SS-273	
-67.6	55.4	6	12	15	27	SS-274	
-72.6	60.4	11	14	17	31		
-77.6	65.4	12	6	5	11	SS-275	

SOIL AND ROCK DESCRIPTION (ELEV. (ft) / DEPTH (ft))

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/30/08)	
-12.2	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-26.2	GRAY SAND, SATURATED	14.0
-36.2	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	24.0
-46.2		34.0
-56.2	GRAY CLAYEY SAND AND SAND WITH SHELL FRAGMENTS, SATURATED	44.0
-60.8		48.6
-66.2	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	54.0
-76.2	GRAY SAND,SATURATED	64.0

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B25-A	**STATION** 48+34	**OFFSET** 20ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -12.2 ft	**TOTAL DEPTH** 111.9 ft	**NORTHING** 660,640	**EASTING** 2,702,932 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/30/08	**COMP. DATE** 10/01/08	**SURFACE WATER DEPTH** 12.2ft	**DEPTH TO ROCK** 54.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-82.6	70.4	4	4	9	13	
-87.6	75.4	7	9	5	14	SS-276
-92.6	80.4	7	6	7	13	
-97.6	85.4	6	6	9	15	SS-277
-102.6	90.4	4	5	6	11	
-107.6	95.4	-	3	3	6	
-112.6	100.4	1	2	6	8	SS-278
-117.6	105.4	2	2	2	4	
-122.6	110.4	6	4	5	9	

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SAND,SATURATED *(continued)*	
-124.1		111.9
	Boring Terminated at Elevation -124.1 ft in loose sand	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.	
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK				**GROUND WTR (ft)**
BORING NO. B26-A	**STATION** 49+28	**OFFSET** 16ft LT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -12.4 ft	**TOTAL DEPTH** 86.7 ft	**NORTHING** 660,725	**EASTING** 2,702,973	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual	
START DATE 10/01/08	**COMP. DATE** 10/02/08	**SURFACE WATER DEPTH** 12.4ft	**DEPTH TO ROCK** 58.0 ft	

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT (0 25 50 75 100)	SAMP. NO.	MOI
-12.4	0.0	WOR	WOR	WOR	0	SS-279	314%
-17.8	5.4	WOR	WOR	WOR	0		
-22.8	10.4	WOR	WOR	WOR	0		
-27.8	15.4	WOR	WOR	1	1		
-32.8	20.4	5	5	3	8	SS-280	
-37.6	25.2	2	2	3	5		
-42.6	30.2	2	3	3	6	SS-281	
-47.6	35.2	5	6	7	13		
-52.6	40.2	4	6	6	12	SS-282	
-57.6	45.2	6	5	5	10		
-62.6	50.2	8	6	10	16	SS-283	
-67.6	55.2	13	10	15	25		
-72.6	60.2	15	34	31	65	SS-284	
-77.6	65.2	9	12	17	29		

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (10/01/08)	
-12.4	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-27.4		15.0
	BROWN SAND, SATURATED	
-31.0		18.6
	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-50.8		38.4
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-60.8		48.4
-70.4		58.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.	
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK				**GROUND WTR (ft)**
BORING NO. B26-A	**STATION** 49+28	**OFFSET** 16ft LT	**ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. -12.4 ft	**TOTAL DEPTH** 86.7 ft	**NORTHING** 660,725	**EASTING** 2,702,973	**24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual	
START DATE 10/01/08	**COMP. DATE** 10/02/08	**SURFACE WATER DEPTH** 12.4ft	**DEPTH TO ROCK** 58.0 ft	

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT (0 25 50 75 100)	SAMP. NO.	MOI
-82.6	70.2	4	3	4	7	SS-285	
-87.6	75.2	3	3	7	10	SS-286	
-92.6	80.2	10	6	6	12		
-97.6	85.2	4	6	5	11	SS-287	

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
-80.8	GRAY SANDY CLAY, WET	68.4
-85.8	GRAY SAND, SATURATED	73.4
-99.1		86.7
	Boring Terminated at Elevation -99.1 ft in medium dense sand	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B27-A	**STATION** 50+18	**OFFSET** 18ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -11.5 ft	**TOTAL DEPTH** 87.6 ft	**NORTHING** 660,809	**EASTING** 2,703,006 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 10/02/08	**COMP. DATE** 10/02/08	**SURFACE WATER DEPTH** 11.5ft	**DEPTH TO ROCK** 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI	SOIL AND ROCK DESCRIPTION
								0.0 WATER SURFACE (10/02/08)
-11.5	0.0	WOR	WOR	WOR	0	SS-288	226%	-11.5 GROUND SURFACE 0.0; BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)
-14.5	3.0	WOR	WOR	WOR	0			
-17.8	6.3	WOR	WOR	WOR	0	SS-289	169%	-16.5 (5.0) BROWN MUCK, WET
-22.8	11.3	WOR	WOR	WOR	0			
-27.8	16.3	2	5	2	7			-28.9 (17.4) BROWN SAND, SATURATED
-32.8	21.3	3	4	4	8	SS-290	39%	-31.5 (20.0) GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)
-37.6	26.1	2	3	4	7			
-42.6	31.1	3	3	4	7	SS-291		
-47.6	36.1	4	3	4	7			
-52.6	41.1	7	5	5	10	SS-292		-50.8 (39.3) GRAY SAND WITH SHELL FRAGMENTS, SATURATED
-57.6	46.1	7	6	5	11			
-62.6	51.1	10	8	11	19	SS-293		
-67.6	56.1	11	11	13	24			-65.5 (54.0) GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)
-72.6	61.1	10	13	10	23	SS-294		
-77.6	66.1	16	60	16	76	SS-295		

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B27-A	**STATION** 50+18	**OFFSET** 18ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -11.5 ft	**TOTAL DEPTH** 87.6 ft	**NORTHING** 660,809	**EASTING** 2,703,006 / **24 HR.** N/A
DRILL MACHINE CME-45B	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 10/02/08	**COMP. DATE** 10/02/08	**SURFACE WATER DEPTH** 11.5ft	**DEPTH TO ROCK** 54.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI	SOIL AND ROCK DESCRIPTION
-82.6	71.1	22	15	18	33			GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*
-87.6	76.1	2	4	8	12	SS-296		-85.5 (74.0) GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET
-92.6	81.1	5	6	3	9	SS-297		-90.8 (79.3) GRAY SAND, SATURATED
-97.6	86.1	4	5	6	11			-99.1 (87.6) Boring Terminated at Elevation -99.1 ft in medium dense sand

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B28-A	STATION 51+13	OFFSET 15ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -10.8 ft	TOTAL DEPTH 122.6 ft	NORTHING 660,895	EASTING 2,703,046 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/30/08	COMP. DATE 10/01/08	SURFACE WATER DEPTH 10.8ft	DEPTH TO ROCK 54.4 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-10.8	0.0	WOH	WOH	WOH	0	SS-596	72%
-15.1	4.3	WOH	WOH	WOH	0		
-22.7	11.9	1	5	8	13	SS-597	
-27.0	16.2	1	2	1	3	SS-598	
-32.0	21.2	3	2	2	4		
-37.0	26.2	1	2	2	4	SS-599	
-42.0	31.2	1	2	4	6		
-47.0	36.2	2	2	3	5	SS-600	
-52.0	41.2	6	5	6	11	SS-601	
-57.0	46.2	7	6	4	10	SS-602	
-62.0	51.2	6	6	4	10		
-67.0	56.2	11	8	5	13	SS-603	
-72.0	61.2	11	11	12	23		
-77.0	66.2	13	12	9	21	SS-604	

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/30/08)	
-10.8	GROUND SURFACE	0.0
	BROWN SILT WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-19.8		9.0
	GRAY SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)	
-25.2		14.4
	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-35.2		24.4
	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET	
-45.2		34.4
-50.2		39.4
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-55.2		44.4
-65.2		54.4
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B28-A	STATION 51+13	OFFSET 15ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -10.8 ft	TOTAL DEPTH 122.6 ft	NORTHING 660,895	EASTING 2,703,046 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/30/08	COMP. DATE 10/01/08	SURFACE WATER DEPTH 10.8ft	DEPTH TO ROCK 54.4 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-81.9	71.1	8	10	9	19		
-86.9	76.1	7	10	17	27	SS-605	
-91.9	81.1	2	4	6	10		
-96.9	86.1	4	3	4	7	SS-606	
-101.9	91.1	3	3	2	5		
-106.9	96.1	4	4	4	8	SS-607	
-111.9	101.1	2	2	3	5		
-116.9	106.1	WOR	3	8	11	SS-608	
-121.9	111.1	1	2	5	7		
-126.9	116.1	3	3	5	8	SS-609	
-131.9	121.1	5	5	7	12		

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-90.1		79.3
	GRAY SAND, SATURATED	
-133.4		122.6
	Boring Terminated at Elevation -133.4 ft in medium dense sand	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B29-A	STATION 52+04	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -10.8 ft	TOTAL DEPTH 128.0 ft	NORTHING 660,977	EASTING 2,703,085 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/24/08	COMP. DATE 09/30/08	SURFACE WATER DEPTH 10.8ft	DEPTH TO ROCK 54.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-10.8	0.0	WOR	WOR	WOR	0	SS-583
-27.1	16.3	2	2	4	6	SS-584
-36.0	25.2	2	1	4	5	
-41.6	30.8	2	2	3	5	SS-585
-46.6	35.8	2	1	3	4	
-51.6	40.8	5	3	5	8	SS-586
-56.6	45.8	5	4	3	7	
-61.6	50.8	5	3	4	7	SS-587
-66.6	55.8	8	14	8	22	
-71.2	60.4	9	9	8	17	SS-588
-76.2	65.4	8	8	8	16	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/24/08)	
-10.8	GROUND SURFACE	0.0
	BROWN SILT WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-16.8	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	6.0
-25.8	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	15.0
-49.8	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	39.0
-64.8	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	54.0

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B29-A	STATION 52+04	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -10.8 ft	TOTAL DEPTH 128.0 ft	NORTHING 660,977	EASTING 2,703,085 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/24/08	COMP. DATE 09/30/08	SURFACE WATER DEPTH 10.8ft	DEPTH TO ROCK 54.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-82.0	71.2	6	7	7	14	SS-589
-87.0	76.2	10	9	15	24	
-92.0	81.2	27	5	15	20	SS-590
-97.2	86.4	2	2	4	6	SS-591
-102.2	91.4	4	5	5	10	
-107.3	96.5	2	7	5	12	SS-592
-112.3	101.5	2	3	5	8	
-117.3	106.5	1	3	5	8	SS-593
-122.3	111.5	1	2	8	10	
-127.3	116.5	2	5	6	11	SS-594
-132.3	121.5	9	3	7	10	
-137.3	126.5	7	7	8	15	SS-595

SOIL AND ROCK DESCRIPTION

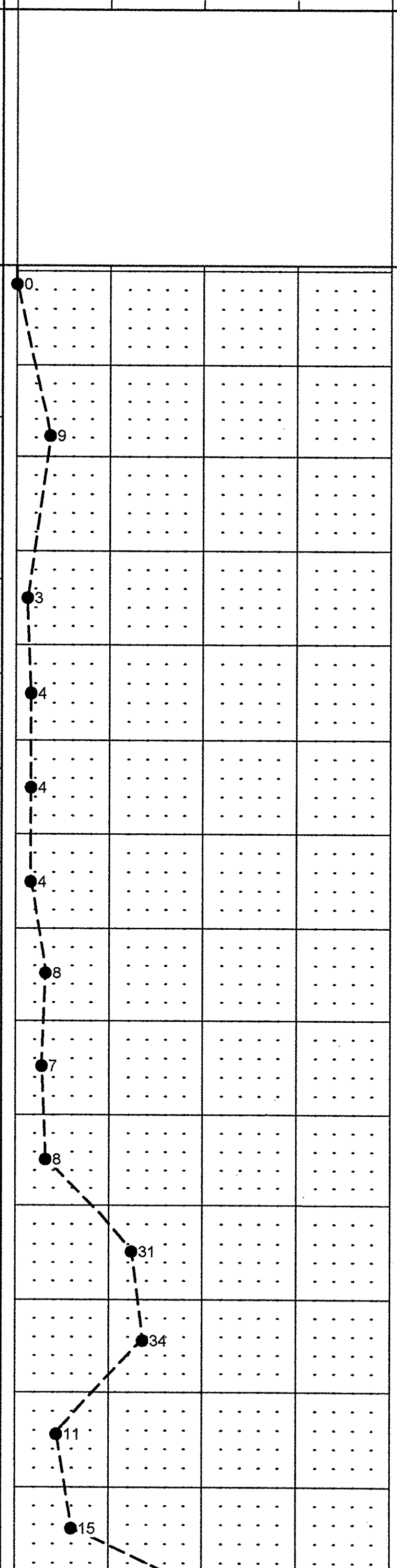
ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-95.8	GRAY SAND, SATURATED	85.0
-138.8	Boring Terminated at Elevation -138.8 ft in medium dense sand	128.0

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B30-A	**STATION** 52+91	**OFFSET** 42ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -9.7 ft	**TOTAL DEPTH** 93.0 ft	**NORTHING** 661,069	**EASTING** 2,703,091 / **24 HR.** N/A
DRILL MACHINE CME-55	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Automatic
START DATE 09/23/08	**COMP. DATE** 09/24/08	**SURFACE WATER DEPTH** 9.7ft	**DEPTH TO ROCK** 50.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-9.7	0.0	WOR	WOR	WOR	0	SS-571	
-17.9	8.2	4	4	5	9	SS-572	
-26.5	16.8	1	1	2	3	SS-573	
-31.5	21.8	2	2	2	4		
-36.5	26.8	1	2	2	4	SS-574	45%
-41.5	31.8	1	2	2	4		
-46.4	36.7	3	4	4	8	SS-575	
-51.4	41.7	4	3	4	7		
-56.4	46.7	6	4	4	8	SS-576	
-61.4	51.7	5	16	15	31	SS-577	
-66.2	56.5	24	19	15	34		
-71.2	61.5	7	3	8	11	SS-578	
-76.2	66.5	8	6	9	15		



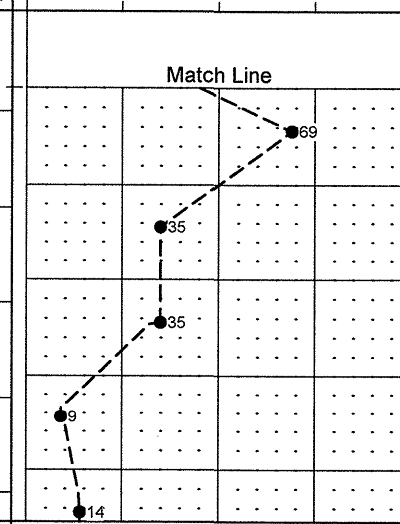
SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
0	WATER SURFACE (09/23/08)	
-9.7	GROUND SURFACE	0.0
	BROWN SILT WITH MODERATE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-15.7	ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	6.0
-24.7	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	15.0
-34.7	GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET	25.0
-54.7	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	45.0
-59.7	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	50.0

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B30-A	**STATION** 52+91	**OFFSET** 42ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -9.7 ft	**TOTAL DEPTH** 93.0 ft	**NORTHING** 661,069	**EASTING** 2,703,091 / **24 HR.** N/A
DRILL MACHINE CME-55	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Automatic
START DATE 09/23/08	**COMP. DATE** 09/24/08	**SURFACE WATER DEPTH** 9.7ft	**DEPTH TO ROCK** 50.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	MOI
-81.2	71.5	19	52	17	69	SS-579	
-86.2	76.5	25	20	15	35		
-91.2	81.5	17	16	19	35	SS-580	
-96.2	86.5	3	3	6	9	SS-581	
-101.2	91.5	4	5	9	14	SS-582	



SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-94.7	GRAY SANDY CLAY, WET	85.0
-99.7	GRAY SAND, SATURATED	90.0
-102.7	Boring Terminated at Elevation -102.7 ft in medium dense sand	93.0

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B31-A	STATION 53+75	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -9.4 ft	TOTAL DEPTH 98.9 ft	NORTHING 661,135	EASTING 2,703,152 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/22/08	COMP. DATE 09/23/08	SURFACE WATER DEPTH 9.4ft	DEPTH TO ROCK 50.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-9.4	0.0	WOH	WOH	WOH	0	SS-558
-12.6	3.2	4	1	1	2	SS-559
-17.5	8.1	8	3	4	7	SS-560
-21.8	12.4	3	2	3	5	SS-561
-26.9	17.5	2	1	3	4	SS-562
-31.9	22.5	3	2	2	4	
-36.9	27.5	2	2	3	5	SS-563
-41.9	32.5	1	2	3	5	
-46.9	37.5	3	3	5	8	SS-564
-51.6	42.2	6	4	4	8	
-56.6	47.2	6	5	4	9	SS-565
-61.6	52.2	11	21	9	30	
-66.6	57.2	37	11	18	29	SS-566
-71.8	62.4	16	14	11	25	
-76.8	67.4	15	11	13	24	SS-567

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/22/08)	
-9.4	GROUND SURFACE	0.0
	BROWN SILTY CLAY WITH LITTLE AMOUNTS OF ORGANIC MATTER, WET (ALLUVIAL)	
-11.9	BROWN SAND, SATURATED	2.5
-15.7	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	6.3
-19.4		10.0
-25.1	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	15.7
-34.8	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET	25.4
-44.8		35.4
-54.8	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	45.4
-59.4	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	50.0

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B31-A	STATION 53+75	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -9.4 ft	TOTAL DEPTH 98.9 ft	NORTHING 661,135	EASTING 2,703,152 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/22/08	COMP. DATE 09/23/08	SURFACE WATER DEPTH 9.4ft	DEPTH TO ROCK 50.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-81.8	72.4	12	7	4	11	
-86.8	77.4	13	15	13	28	SS-568
-91.8	82.4	12	12	26	38	
-96.8	87.4	25	5	4	9	SS-569
-101.8	92.4	3	3	8	11	SS-570
-106.8	97.4	3	3	3	6	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-94.8	GRAY SAND, SATURATED	85.4
-108.3		98.9
	Boring Terminated at Elevation -108.3 ft in loose sand	

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B32-B	**STATION** 54+73	**OFFSET** 2ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -6.8 ft	**TOTAL DEPTH** 96.9 ft	**NORTHING** 661,219	**EASTING** 2,703,203 / **24 HR.** N/A
DRILL MACHINE CME-55	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Automatic
START DATE 09/19/08	**COMP. DATE** 09/19/08	**SURFACE WATER DEPTH** 6.8ft	**DEPTH TO ROCK** 53.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION
							0 WATER SURFACE (09/19/08)
-6.8	0.0	WOR	WOR	WOR	0		-6.8 GROUND SURFACE 0.0 / BROWN SAND, SATURATED (ALLUVIAL)
-12.7	5.9	4	4	5	9	SS-547	-13.7 6.9 GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)
-17.4	10.6	4	5	4	9	SS-548	
-22.4	15.6	5	6	3	9		-23.4 16.6 GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)
-27.4	20.6	1	2	2	5	SS-549	-28.8 22.0 GRAY SANDY SILT WITH SHELL FRAGMENTS, WET
-32.0	25.2	1	2	2	4		-35.2 28.4 GRAY SILTY AND SANDY CLAY WITH SHELL FRAGMENTS, WET
-37.0	30.2	2	2	3	5	SS-550	
-42.0	35.2	1	2	3	5		-45.2 38.4
-47.0	40.2	1	2	5	7	SS-551	-50.2 43.4 GRAY COARSE SAND, SATURATED
-52.0	45.2	7	5	5	10	SS-552	
-57.0	50.2	5	5	6	11		-59.8 53.0 GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)
-62.0	55.2	10	15	13	28	SS-553	
-67.1	60.3	20	15	11	26		
-72.1	65.3	8	10	14	24	SS-554	
-77.2	70.4	11	12	20	32		

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B32-B	**STATION** 54+73	**OFFSET** 2ft RT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -6.8 ft	**TOTAL DEPTH** 96.9 ft	**NORTHING** 661,219	**EASTING** 2,703,203 / **24 HR.** N/A
DRILL MACHINE CME-55	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Automatic
START DATE 09/19/08	**COMP. DATE** 09/19/08	**SURFACE WATER DEPTH** 6.8ft	**DEPTH TO ROCK** 53.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION
							GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*
-82.2	75.4	5	5	10	15	SS-555	
-87.2	80.4	13	5	9	14		
-92.2	85.4	10	8	7	15	SS-556	
-97.2	90.4	13	9	6	15		-100.4 93.6 GRAY CLAYEY SAND, SATURATED
-102.2	95.4	3	15	17	32	SS-557	-103.7 96.9

Boring Terminated at Elevation -103.7 ft in dense clayey sand

ST-2 pushed 22.5' to 24.5'

NCDOT BORE DOUBLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 11/24/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B33-A	STATION 55+90	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -4.5 ft	TOTAL DEPTH 98.7 ft	NORTHING 661,332	EASTING 2,703,237 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/17/08	COMP. DATE 09/17/08	SURFACE WATER DEPTH 5.7ft	DEPTH TO ROCK 54.7 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-4.5	0.0	4	3	5	8	SS-535
-8.0	3.5	2	2	3	5	SS-536
-12.0	7.5	3	5	5	10	
-17.0	12.5	4	4	6	10	SS-537
-22.1	17.6	7	6	4	10	SS-538
-27.1	22.6	3	2	3	5	SS-539
-32.1	27.6	2	2	3	5	
-47.5	43.0	3	4	5	9	SS-540
-52.6	48.1	4	4	5	9	
-57.2	52.7	4	5	8	13	SS-541
-62.2	57.7	8	15	26	41	SS-542
-67.4	62.9	14	8	21	29	
-72.4	67.9	6	12	8	20	SS-543
-77.4	72.9	8	6	7	13	

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/17/08)	
-4.5	GROUND SURFACE	0.0
	BROWN SAND, SATURATED (ALLUVIAL)	
-7.5		3.0
	GRAY ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-15.5		11.0
-22.6		18.1
	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-24.5		20.0
	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET	
-41.5		37.0
-55.5		51.0
	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	
-59.2		54.7
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B33-A	STATION 55+90	OFFSET 12ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -4.5 ft	TOTAL DEPTH 98.7 ft	NORTHING 661,332	EASTING 2,703,237 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/17/08	COMP. DATE 09/17/08	SURFACE WATER DEPTH 5.7ft	DEPTH TO ROCK 54.7 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-82.4	77.9	8	8	12	20	SS-544
-86.9	82.4	15	7	14	21	
-91.9	87.4	6	5	7	12	SS-545
-96.9	92.4	12	14	14	28	
-101.7	97.2	8	7	7	14	SS-546

ELEV. (ft)	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-103.2		98.7
	Boring Terminated at Elevation -103.2 ft in limestone	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B34-A	STATION 56+97	OFFSET 26ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -3.2 ft	TOTAL DEPTH 95.2 ft	NORTHING 661,436	EASTING 2,703,266 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/11/08	COMP. DATE 09/16/08	SURFACE WATER DEPTH 3.2ft	DEPTH TO ROCK 58.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-3.2	0.0	WOH	WOH	WOH	0	SS-511
-7.6	4.4	5	6	7	13	SS-512
-12.1	8.9	5	9	11	20	
-17.1	13.9	5	4	9	13	SS-513
-22.1	18.9	4	2	2	4	SS-514
-27.1	23.9	3	2	2	4	
-32.1	28.9	1	3	4	7	SS-515
-37.1	33.9	2	3	3	6	
-42.1	38.9	1	2	3	5	SS-516
-47.1	43.9	2	2	4	6	
-52.1	48.9	4	4	5	9	SS-517
-57.1	53.9	5	3	4	7	
-62.0	58.8	19	13	22	35	SS-518
-66.9	63.7	14	8	17	25	
-71.9	68.7	9	9	10	19	SS-519
-76.9	73.7	8	13	11	24	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/11/08)	
-3.2	GROUND SURFACE	0.0
	BROWN SAND, SATURATED (ALLUVIAL)	
-6.2		3.0
	GRAY ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-15.2		12.0
-20.2		17.0
	GRAY SANDY SILT WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)	
-30.2		27.0
	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET	
-40.2		37.0
-50.2		47.0
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-61.2		58.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B34-A	STATION 56+97	OFFSET 26ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -3.2 ft	TOTAL DEPTH 95.2 ft	NORTHING 661,436	EASTING 2,703,266 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/11/08	COMP. DATE 09/16/08	SURFACE WATER DEPTH 3.2ft	DEPTH TO ROCK 58.0 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-81.9	78.7	9	9	15	24	SS-520
-86.9	83.7	16	14	24	38	
-91.9	88.7	7	13	8	21	SS-521
-96.9	93.7	11	17	8	25	

SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*	
-98.4		95.2
	Boring Terminated at Elevation -98.4 ft in limestone	

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B35-A	STATION 57+64	OFFSET 25ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.5 ft	TOTAL DEPTH 90.9 ft	NORTHING 661,497	EASTING 2,703,293 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/16/08	COMP. DATE 09/17/08	SURFACE WATER DEPTH 2.5ft	DEPTH TO ROCK 57.5 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION (ELEV. (ft) / DEPTH (ft))
							WATER SURFACE (09/16/08)
-2.5	0.0	WOH	WOH	WOH	0	SS-522	-2.5 GROUND SURFACE 0.0; BROWN SAND, SATURATED (ALLUVIAL); -5.5 / 3.0
-7.0	4.5	5	4	3	7	SS-523	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN); -10.5 / 8.0
-12.0	9.5	WOH	WOH	WOH	0	SS-524	GRAY SANDY SILT, WET; -15.5 / 13.0
-17.0	14.5	8	10	12	22	SS-525	GRAY SAND, SATURATED; -20.5 / 18.0
-22.0	19.5	6	6	5	11	SS-526	-23.0 / 20.5; GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)
-27.0	24.5	4	4	5	9	SS-527	
-32.0	29.5	2	3	4	7		-35.5 / 33.0
-37.4	34.9	3	1	2	3	SS-528	GRAY SANDY AND SILTY CLAY WITH SHELL FRAGMENTS, WET
-42.4	39.9	1	2	3	5		-45.5 / 43.0
-47.0	44.5	1	4	5	9	SS-529	-50.5 / 48.0
-52.0	49.5	4	5	8	13	SS-530	GRAY COARSE SAND WITH SHELL FRAGMENTS, SATURATED
-57.0	54.5	2	3	6	9		-60.0 / 57.5
-62.0	59.5	10	16	22	38	SS-531	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)
-67.0	64.5	10	14	11	25		
-72.0	69.5	12	16	18	34	SS-532	
-76.9	74.4	12	14	11	25		

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO.	ID. B-3611	COUNTY Beaufort	GEOLOGIST Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			GROUND WTR (ft)
BORING NO. B35-A	STATION 57+64	OFFSET 25ft LT	ALIGNMENT -L- / 0 HR. N/A
COLLAR ELEV. -2.5 ft	TOTAL DEPTH 90.9 ft	NORTHING 661,497	EASTING 2,703,293 / 24 HR. N/A
DRILL MACHINE CME-55	DRILL METHOD Mud Rotary		HAMMER TYPE Automatic
START DATE 09/16/08	COMP. DATE 09/17/08	SURFACE WATER DEPTH 2.5ft	DEPTH TO ROCK 57.5 ft

Match Line

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.	SOIL AND ROCK DESCRIPTION (ELEV. (ft) / DEPTH (ft))
-81.9	79.4	5	13	8	21	SS-533	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION) *(continued)*
-86.9	84.4	21	18	9	27		
-91.9	89.4	9	12	8	20	SS-534	-93.4 / 90.9

Boring Terminated at Elevation -93.4 ft in limestone

NCDOT BORE SINGLE B3611_GEO_BRDG.GPJ NC_DOT.GDT 12/1/08

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. B37-A	**STATION** 59+00	**OFFSET** 9ft LT	**ALIGNMENT** -L- / **0 HR.** N/A
COLLAR ELEV. -1.9 ft	**TOTAL DEPTH** 96.6 ft	**NORTHING** 661,616	**EASTING** 2,703,362 / **24 HR.** N/A
DRILL MACHINE CME-55	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Automatic
START DATE 09/10/08	**COMP. DATE** 09/11/08	**SURFACE WATER DEPTH** 1.9ft	**DEPTH TO ROCK** 68.0 ft

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
-8.0	6.1	15	17	8	25	SS-500
-11.6	9.7	7	8	8	16	
-16.6	14.7	5	9	7	16	SS-501
-21.6	19.7	6	12	15	27	SS-502
-26.6	24.7	1	1	1	2	SS-503
-31.5	29.6	2	3	3	6	
-36.5	34.6	1	1	3	4	SS-504
-42.2	40.3	1	2	3	5	
-47.2	45.3	3	2	2	4	SS-505
-52.2	50.3	2	3	5	8	
-57.2	55.3	3	3	5	8	SS-506
-62.2	60.3	5	4	5	9	SS-507
-67.1	65.2	5	6	7	13	
-72.1	70.2	9	12	17	29	SS-508
-77.0	75.1	15	15	13	28	
-82.0	80.1	9	11	18	29	SS-509
-87.0	85.1	10	15	11	26	
-92.0	90.1	5	4	6	10	
-97.0	95.1	19	18	10	28	SS-510

Match Line

SOIL AND ROCK DESCRIPTION

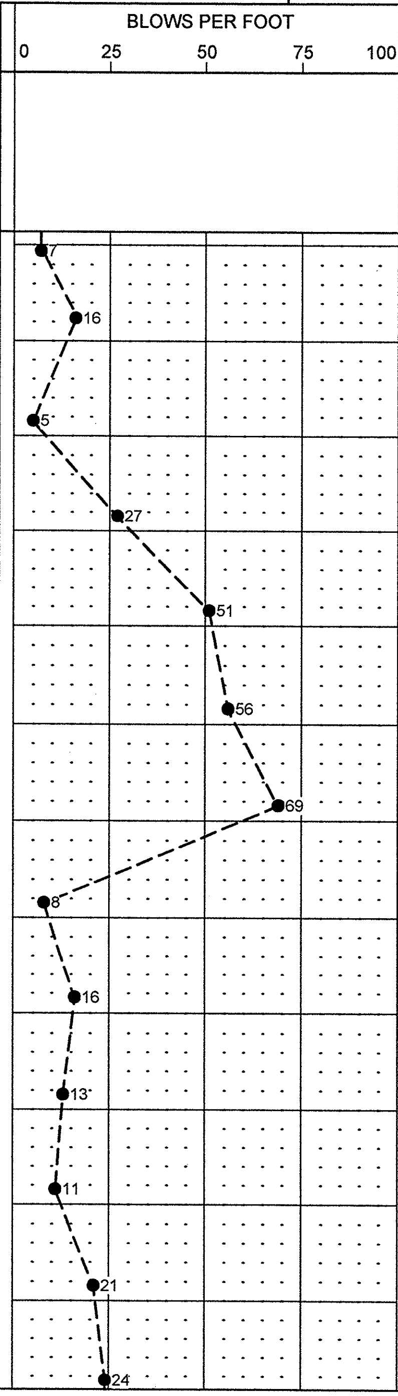
ELEV. (ft)	DESCRIPTION	DEPTH (ft)
	WATER SURFACE (09/10/08)	
-1.9	GROUND SURFACE	0.0
	BROWN GRAY SAND, SATURATED (ALLUVIAL)	
-9.9		8.0
	GRAY ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	
-19.9		18.0
-24.9		23.0
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	
-34.9		33.0
	GRAY SANDY CLAY WITH SHELL FRAGMENTS, WET	
-55.4		53.5
	GRAY SAND WITH SHELL FRAGMENTS, SATURATED	
-59.9		58.0
	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	
-69.9		68.0
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)	
	GRAY SANDY LIMESTONE (CASTLE HAYNE FORMATION)*(continued)*	
-98.5		96.6
	Boring Terminated at Elevation -98.5 ft in limestone	

PROJECT NO. 33162.1.1 ID. B-3611 COUNTY Beaufort GEOLOGIST Wrike, C. M.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK GROUND WTR (ft)
BORING NO. B37-A STATION 59+00 OFFSET 9ft LT ALIGNMENT -L- 0 HR. N/A
COLLAR ELEV. -1.9 ft TOTAL DEPTH 96.6 ft NORTHING 661,616 EASTING 2,703,362 24 HR. N/A
DRILL MACHINE CME-55 DRILL METHOD Mud Rotary HAMMER TYPE Automatic
START DATE 09/10/08 COMP. DATE 09/11/08 SURFACE WATER DEPTH 1.9ft DEPTH TO ROCK 68.0 ft

NCDOT GEOTECHNICAL ENGINEERING UNIT
BORELOG REPORT

PROJECT NO. 33162.1.1	**ID.** B-3611	**COUNTY** Beaufort	**GEOLOGIST** Dillard, S. C.
SITE DESCRIPTION BRIDGE NO. 77 ON -L- (NC 99) OVER PANTEGO CREEK			**GROUND WTR (ft)**
BORING NO. EB2-B	**STATION** 60+01	**OFFSET** 40ft RT / **ALIGNMENT** -L-	**0 HR.** N/A
COLLAR ELEV. 5.7 ft	**TOTAL DEPTH** 60.4 ft	**NORTHING** 661,688 / **EASTING** 2,703,447	**24 HR.** 5.4
DRILL MACHINE Diedrich D-50	**DRILL METHOD** Mud Rotary		**HAMMER TYPE** Manual
START DATE 09/12/08	**COMP. DATE** 09/12/08	**SURFACE WATER DEPTH** N/A	**DEPTH TO ROCK** N/A

DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT	SAMP. NO.
5.7	0.0	3	3	4	7	SS-67
2.2	3.5	5	7	9	16	
-3.2	8.9	2	2	3	5	SS-68
-8.2	13.9	11	15	12	27	SS-69
-13.2	18.9	14	23	28	51	
-18.2	23.9	13	20	36	56	SS-70
-23.2	28.9	17	37	32	69	SS-71
-28.2	33.9	5	4	4	8	SS-72
-33.2	38.9	6	7	9	16	
-38.2	43.9	6	6	7	13	SS-73
-43.2	48.9	5	5	6	11	
-48.2	53.9	11	10	11	21	SS-74
-53.2	58.9	14	11	13	24	SS-75



SOIL AND ROCK DESCRIPTION

ELEV. (ft)	DESCRIPTION	DEPTH (ft)
5.7	GROUND SURFACE	0.0
	BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)	
-1.4	GRAY SANDY SILT, WET (ALLUVIAL)	7.1
-6.4	GRAY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)	12.1
-16.4		22.1
-26.4	GRAY SAND WITH SHELL FRAGMENTS, SATURATED (YORKTOWN FORMATION)	32.1
-36.4	GRAY CLAYEY SANDY SILT WITH SHELL FRAGMENTS, WET	42.1
-46.4	GRAY CLAYEY SAND WITH SHELL FRAGMENTS, SATURATED	52.1
-51.4	GRAY SAND, SATURATED	57.1
-54.7		60.4
	Boring Terminated at Elevation -54.7 ft in medium dense sand	

SOIL TEST RESULTS

	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
EB1-A	SS-1	4 LT	26+49	1.0-1.5	A-2-4(0)	19	NP	26.9	51.1	14.0	8.0	75	66	19	-	-
	SS-2	4 LT	26+49	4.0-5.5	A-2-4(0)	18	NP	43.1	46.7	2.2	8.0	98	79	12	-	-
	SS-3	4 LT	26+49	13.4-14.9	A-4(9)	36	9	3.2	17.8	64.9	14.0	100	98	89	22.0	-
	ST-1	4 LT	26+49	19.9-21.9	A-7-6(19)	42	18	0.6	10.3	56.9	32.2	100	100	95	-	-
	SS-4	4 LT	26+49	23.4-24.9	A-1-b(0)	15	NP	58.5	36.1	3.4	2.0	100	48	7	-	-
	SS-5	4 LT	26+49	28.4-29.9	A-4(0)	38	7	31.5	29.7	20.8	18.0	79	60	37	-	-
	SS-6	4 LT	26+49	38.4-39.9	A-4(0)	35	7	28.3	34.5	21.2	16.0	80	63	38	-	-
	SS-7	4 LT	26+49	48.4-49.9	A-2-4(0)	34	8	51.9	21.4	12.6	14.0	61	36	18	-	-
	SS-8	4 LT	26+49	58.4-59.9	A-1-b(0)	19	NP	69.5	11.6	12.8	6.0	87	33	17	-	-
	SS-9	4 LT	26+49	68.4-69.9	A-1-b(0)	21	NP	68.9	12.6	14.4	4.0	84	41	18	-	-
	SS-10	4 LT	26+49	78.4-79.9	A-1-b(0)	22	NP	69.5	12.8	11.6	6.0	77	32	16	-	-
B1-B	SS-11	3 RT	27+23	1.0-1.5	A-4(0)	23	5	14.2	39.4	30.1	16.3	97	91	50	-	-
	SS-12	3 RT	27+23	4.0-5.5	A-2-4(0)	17	NP	33.5	51.8	1.4	13.2	100	88	16	-	-
	SS-13	3 RT	27+23	13.9-15.4	A-6(13)	37	13	1.8	12.0	61.8	24.4	100	99	93	-	-
	SS-14	3 RT	27+23	24.4-25.4	A-1-b(0)	33	NP	86.9	9.7	0.4	3.0	98	34	4	-	-
	SS-15	3 RT	27+23	28.9-30.4	A-6(2)	34	15	25.3	38.7	13.6	22.4	91	74	38	-	-
	SS-16	3 RT	27+23	38.9-40.4	A-7-6(12)	45	25	22.0	25.6	22.0	30.5	96	79	59	-	-
	SS-17	3 RT	27+23	48.9-50.4	A-2-4(0)	29	8	49.2	18.9	13.6	18.3	77	62	27	-	-
	SS-18	3 RT	27+23	58.9-60.4	A-2-4(0)	27	8	64.6	15.9	7.3	12.2	63	29	14	-	-
	SS-19	3 RT	27+23	63.9-65.4	A-1-b(0)	19	NP	71.1	11.1	10.7	7.1	85	41	17	-	-
	SS-20	3 RT	27+23	73.9-75.4	A-1-b(0)	17	NP	73.6	10.7	9.7	6.1	82	34	14	-	-
B2-B	SS-21	10 RT	27+97	1.0-1.5	A-4(0)	19	4	18.9	47.6	17.3	16.3	98	92	36	-	-
	SS-22	10 RT	27+97	4.0-5.5	A-2-4(0)	16	NP	24.1	57.7	4.0	14.2	100	94	19	-	-
	SS-23	10 RT	27+97	14.0-15.5	A-6(13)	35	14	3.3	13.0	57.3	26.4	100	98	91	-	-
	SS-24	10 RT	27+97	24.5-25.5	A-3(0)	15	NP	76.9	15.8	4.3	3.0	99	52	9	-	-
	SS-25	10 RT	27+97	29.0-30.5	A-6(1)	32	11	19.1	43.9	12.6	24.4	94	81	39	-	-
	SS-26	10 RT	27+97	39.0-40.5	A-7-6(16)	48	26	16.3	25.2	22.0	36.6	96	84	66	-	-
	SS-27	10 RT	27+97	49.0-50.5	A-2-4(0)	27	6	46.1	20.3	15.2	18.3	80	51	30	-	-
	SS-28	10 RT	27+97	59.0-60.5	A-1-b(0)	24	NP	66.7	13.9	9.4	10.0	79	33	17	-	-
	SS-29	10 RT	27+97	69.0-70.5	A-1-b(0)	22	NP	70.8	9.5	13.7	6.0	95	45	21	-	-
	SS-30	10 RT	27+97	79.0-80.5	A-1-b(0)	21	NP	69.9	9.9	13.2	7.0	92	43	20	-	-
B3-B	SS-31	13 RT	28+71	1.0-2.5	A-2-4(0)	15	NP	27.7	58.2	6.0	8.0	100	92	15	-	-
	SS-32	13 RT	28+71	8.7-10.2	A-2-4(0)	21	NP	35.0	50.8	3.1	11.0	95	81	16	-	-
	SS-33	13 RT	28+71	14.2-15.7	A-6(14)	38	14	0.8	14.7	60.4	24.1	100	100	92	-	-
	SS-34	13 RT	28+71	24.2-25.7	A-6(15)	39	20	14.7	8.8	52.4	24.1	100	88	80	-	-
	SS-35	13 RT	28+71	29.2-30.7	A-4(0)	26	5	7.2	59.9	12.8	20.1	100	97	38	-	-
	SS-36	13 RT	28+71	34.2-35.7	A-7-6(6)	43	20	26.3	24.8	17.8	31.1	88	71	47	-	-
	SS-37	13 RT	28+71	44.2-45.7	A-7-6(7)	42	25	30.2	24.4	17.3	28.1	90	69	46	-	-
	SS-38	13 RT	28+71	49.2-50.7	A-2-6(1)	33	13	43.2	20.9	14.9	21.1	82	55	32	-	-
	SS-39	13 RT	28+71	59.2-60.7	A-2-4(0)	31	10	43.9	20.5	14.6	21.1	83	55	32	-	-
	SS-40	13 RT	28+71	64.2-65.7	A-1-b(0)	21	NP	68.5	12.2	10.2	9.0	87	37	18	-	-
	SS-41	13 RT	28+71	74.2-75.7	A-1-b(0)	18	NP	67.8	11.1	13.1	8.0	90	41	21	-	-
	SS-42	13 RT	28+71	84.2-85.7	A-1-b(0)	21	NP	69.1	9.8	14.1	7.0	91	45	21	-	-
B4-B	SS-44	14 RT	29+45	1.0-2.5	A-2-4(0)	17	NP	25.5	59.1	3.3	12.0	100	94	17	-	-
	SS-45	14 RT	29+45	8.4-9.9	A-2-4(0)	18	NP	50.8	36.6	3.5	9.0	98	74	14	-	-
	SS-46	14 RT	29+45	13.4-14.9	A-6(10)	35	11	2.4	17.3	56.2	24.1	100	99	90	-	-
	SS-47	14 RT	29+45	23.8-25.3	A-7-6(22)	44	23	5.0	7.4	59.4	28.1	100	97	91	-	-
	SS-48	14 RT	29+45	28.8-30.3	A-4(0)	30	9	26.5	34.9	16.5	22.1	90	74	38	-	-
	SS-49	14 RT	29+45	38.8-40.3	A-7-6(12)	43	16	12.2	26.7	26.9	34.1	99	89	73	-	-
	SS-50	14 RT	29+45	48.8-50.3	A-2-7(1)	41	18	46.2	17.3	12.4	24.1	72	45	28	-	-
	SS-51	14 RT	29+45	53.8-55.3	A-2-6(0)	34	14	56.3	18.2	8.4	17.1	73	39	20	-	-
	SS-52	14 RT	29+45	58.8-60.3	A-2-4(0)	23	3	54.8	20.0	10.1	15.1	88	51	25	-	-
	SS-53	14 RT	29+45	63.8-65.3	A-1-b(0)	18	NP	65.9	13.5	12.7	8.0	80	38	18	-	-
	SS-54	14 RT	29+45	73.8-75.3	A-1-b(0)	19	NP	66.1	14.1	12.9	7.0	81	37	18	-	-
	SS-55	14 RT	29+45	83.8-85.3	A-1-b(0)	33	NP	64.3	12.8	16.0	7.0	90	42	23	-	-
B5-B	SS-56	17 RT	30+19	1.0-2.5	A-2-4(0)	17	NP	28.5	57.9	5.6	8.0	98	90	15	-	-
	SS-57	17 RT	30+19	8.2-9.7	A-4(0)	23	7	28.1	40.3	13.6	18.0	99	86	40	-	-
	SS-58	17 RT	30+19	13.5-15.0	A-6(11)	38	12	1.8	15.8	66.3	16.0	100	99	86	-	-
	SS-59	17 RT	30+19	23.5-25.0	A-7-6(21)	43	20	1.4	9.4	69.1	20.0	100	99	95	-	-
	SS-60	17 RT	30+19	28.9-30.4	A-2-4(0)	23	NP	30.3	46.3	13.4	10.0	85	67	24	-	-
	SS-61	17 RT	30+19	38.9-40.4	A-7-6(7)	43	17	9.4	30.3	32.3	28.1	69	64	54	-	-
	SS-62	17 RT	30+19	48.4-50.4	A-2-6(0)	35	14	42.1	18.8	23.0	16.0	60	41	25	-	-
	SS-63	17 RT	30+19	58.9-60.4	A-1-b(0)	26	NP	55.1	21.2	11.6	12.0	81	46	22	-	-
	SS-64	17 RT	30+19	63.9-65.4	A-1-b(0)	22	NP	66.7	15.0	12.2	6.0	65	32	14	-	-
	SS-65	17 RT	30+19	73.9-75.4	A-1-b(0)	17	NP	64.1	15.8	14.0	6.0	71	39	16	-	-
	SS-66	17 RT	30+19	83.9-85.4	A-1-b(0)	19	NP	62.1	17.4	12.4	8.0	57	29	13	-	-
B6-A	SS-109	20 LT	31+35	1.0-1.5	A-2-4(0)	19	NP	23.6	57.0	7.3	12.1	100	95	22	-	2.4
	SS-110	20 LT	31+35	4.1-5.6	A-7-6(20)	43	26	3.2	21.0	31.3	44.4	100	98	81	-	-
	SS-111	20 LT	31+35	9.1-10.6	A-6(19)	40	19	0.4	8.7	68.7	22.2	100	100	96	-	-
	SS-112	20 LT	31+35	19.6-20.6	A-4(0)	24	6	7.3	50.9	31.7	10.1	100	99	45	-	-
	SS-113	20 LT	31+35	29.5-31.0	A-7-6(9)	41	18	16.0	30.3	23.4	30.3	93	82	60	-	-
	SS-114	20 LT	31+35	39.5-41.0	A-6(2)	39	18	41.4	20.2	18.2	20.2	91	61	38	-	-
	SS-115	20 LT	31+35	44.5-46.0	A-2-4(0)	26	4	46.1	25.9	9.9	18.2	83	54	26	-	-
	SS-116	20 LT	31+35	49.5-51.0	A-2-4(0)	27	7	45.3	19.8	14.7	20.2	91	58	35	-	-
	SS-117	20 LT	31+35	54.5-56.0	A-1-b(0)	19	NP	66.7	14.5	10.7	8.1	71	31	15	-	-
	SS-118	20 LT	31+35	64.5-66.0	A-2-4(0)	15	NP	67.1	12.5	12.3	8.1	95	51	21	-	-
	SS-119	20 LT	31+35	74.5-76.0	A-1-b(0)	18	NP	73.0	9.4	12.5	5.1	94	40	18	-	-

SOIL TEST RESULTS

	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
B7-A	SS-120	8 LT	31+98	1.0-1.5	A-2-4(0)	18	NP	34.9	45.5	5.5	14.1	100	86	22	-	-
	SS-121	8 LT	31+98	9.5-11.0	A-7-6(18)	42	16	0.6	7.9	67.3	24.2	100	100	96	-	-
	SS-122	8 LT	31+98	19.5-21.0	A-4(0)	23	6	16.8	44.0	29.1	10.1	98	91	41	-	-
	SS-123	8 LT	31+98	24.5-26.0	A-6(6)	38	18	22.6	30.5	22.6	24.2	96	79	53	-	-
	SS-124	8 LT	31+98	34.5-36.0	A-4(2)	34	10	28.9	31.7	19.2	20.2	93	72	45	-	-
	SS-125	8 LT	31+98	44.5-46.0	A-2-4(0)	28	6	48.7	24.4	8.7	18.2	81	51	24	-	-
	SS-126	8 LT	31+98	49.5-51.0	A-4(0)	26	9	42.2	19.0	16.6	22.2	86	57	36	-	-
	SS-127	8 LT	31+98	54.5-56.0	A-1-b(0)	19	NP	64.8	15.4	9.7	10.1	53	24	12	-	-
	SS-128	8 LT	31+98	69.5-71.0	A-1-b(0)	18	NP	72.1	10.1	11.7	6.1	94	45	18	-	-
B8-A	SS-129	6 LT	32+58	1.0-1.5	A-2-4(0)	18	1	35.6	44.0	6.3	14.1	100	87	23	-	-
	SS-130	6 LT	32+58	4.2-5.7	A-6(9)	32	17	8.5	34.9	22.2	34.3	100	97	67	-	-
	SS-131	6 LT	32+58	9.2-10.7	A-7-6(18)	44	16	0.8	8.7	64.2	26.3	100	100	95	-	-
	SS-132	6 LT	32+58	19.2-20.7	A-4(1)	26	10	17.6	31.1	37.2	14.1	98	93	44	-	-
	SS-133	6 LT	32+58	24.2-25.7	A-6(1)	33	11	24.6	38.4	14.7	22.2	92	76	40	-	-
	SS-134	6 LT	32+58	34.3-35.8	A-6(4)	37	15	26.5	29.7	19.6	24.2	94	75	49	-	-
	SS-135	6 LT	32+58	44.3-45.8	A-2-4(0)	26	7	42.4	23.6	13.7	20.2	74	53	28	-	-
	SS-136	6 LT	32+58	54.3-55.5	A-1-b(0)	18	NP	72.2	11.9	8.8	7.1	82	30	14	-	-
	SS-137	6 LT	32+58	64.3-65.6	A-1-b(0)	20	NP	67.7	14.0	11.2	7.1	86	36	17	-	-
	SS-138	6 LT	32+58	74.3-75.8	A-1-b(0)	18	NP	70.4	10.6	11.9	7.1	93	42	20	-	-
B9-B	SS-139	7 RT	33+32	1.0-1.5	A-2-4(0)	22	NP	24.4	62.9	4.5	8.1	100	95	14	-	-
	SS-140	7 RT	33+32	4.7-6.2	A-6(14)	38	22	4.6	33.9	23.0	38.4	100	99	73	-	-
	SS-141	7 RT	33+32	9.7-11.2	A-6(14)	39	13	0.4	10.1	63.2	26.3	100	100	94	-	-
	SS-142	7 RT	33+32	19.7-21.2	A-2-4(0)	22	NP	57.0	21.5	13.4	8.1	97	59	27	-	-
	SS-143	7 RT	33+32	24.7-26.2	A-6(4)	39	16	23.3	31.6	20.8	24.3	89	73	47	-	-
	SS-144	7 RT	33+32	34.8-36.3	A-6(8)	38	15	16.8	27.8	27.1	28.4	96	84	63	-	-
	SS-145	7 RT	33+32	44.8-46.3	A-2-6(0)	32	11	42.6	25.1	12.1	20.3	71	48	26	-	-
	SS-146	7 RT	33+32	54.8-56.3	A-1-b(0)	19	NP	69.0	12.9	12.1	6.1	77	31	15	-	-
	SS-147	7 RT	33+32	64.8-66.3	A-1-b(0)	17	NP	71.1	10.6	13.2	5.1	82	38	16	-	-
	SS-148	7 RT	33+32	74.8-76.3	A-1-b(0)	19	NP	68.3	12.7	14.0	5.1	85	40	18	-	-
B10-B	SS-149	13 RT	34+15	4.3-5.8	A-6(11)	34	17	1.2	29.8	28.5	40.5	100	99	76	-	-
	SS-150	13 RT	34+15	9.3-10.8	A-3(0)	17	NP	66.4	29.6	1.0	3.0	97	67	5	-	-
	SS-151	13 RT	34+15	19.3-20.8	A-1-b(0)	20	3	71.8	15.3	8.8	4.1	94	45	15	-	-
	SS-152	13 RT	34+15	24.3-25.8	A-4(0)	33	10	25.8	36.7	15.2	22.3	83	67	36	-	-
	SS-153	13 RT	34+15	34.1-35.6	A-6(9)	37	19	18.7	27.8	25.2	28.4	96	83	61	-	-
	SS-154	13 RT	34+15	44.1-45.6	A-2-6(0)	34	11	51.5	19.7	9.6	19.3	76	45	24	-	-
	SS-155	13 RT	34+15	49.1-50.6	A-2-4(0)	25	7	48.1	18.5	14.1	19.3	86	53	31	-	-
	SS-156	13 RT	34+15	54.1-55.6	A-1-b(0)	19	NP	64.4	15.6	12.9	7.1	60	27	13	-	-
	SS-157	13 RT	34+15	64.1-65.6	A-1-b(0)	18	NP	63.8	16.0	14.1	6.1	62	29	14	-	-
	SS-158	13 RT	34+15	74.1-75.6	A-1-b(0)	20	NP	62.2	13.8	15.9	8.1	78	37	20	-	-
B11-B	SS-159	12 RT	35+10	4.1-5.6	A-7-6(23)	42	23	2.0	6.1	45.3	46.6	100	99	94	-	-
	SS-160	12 RT	35+10	9.1-10.6	A-3(0)	17	NP	38.1	54.3	2.5	5.1	95	80	8	-	-
	SS-161	12 RT	35+10	19.1-20.6	A-1-b(0)	20	NP	72.1	17.6	6.2	4.1	90	44	11	-	-
	SS-162	12 RT	35+10	24.1-25.6	A-6(3)	33	18	18.0	34.0	19.6	28.4	77	68	42	-	-
	SS-163	12 RT	35+10	33.9-35.4	A-7-6(10)	43	23	22.9	26.3	23.4	27.4	92	75	55	-	-
	SS-164	12 RT	35+10	43.9-45.4	A-2-6(1)	37	17	59.6	7.9	14.3	18.2	69	41	24	-	-
	SS-165	12 RT	35+10	53.9-55.4	A-1-b(0)	19	NP	66.3	15.0	10.6	8.1	56	25	11	-	-
	SS-166	12 RT	35+10	63.9-65.4	A-1-b(0)	19	NP	68.5	14.6	10.8	6.1	70	30	13	-	-
	SS-167	12 RT	35+10	73.9-75.4	A-1-b(0)	19	NP	64.9	14.1	15.9	5.1	76	34	18	-	-
B12-B	SS-168	8 RT	36+05	4.3-5.8	A-3(0)	20	NP	21.2	70.3	3.4	5.1	97	92	10	-	-
	SS-169	8 RT	36+05	14.3-15.8	A-3(0)	17	NP	69.7	26.2	2.0	2.0	97	76	5	-	-
	SS-170	8 RT	36+05	19.3-20.8	A-2-4(0)	22	NP	24.2	53.3	10.3	12.2	95	82	24	-	-
	SS-171	8 RT	36+05	24.3-25.8	A-6(5)	39	20	25.7	33.3	17.6	23.3	90	72	44	-	-
	SS-172	8 RT	36+05	34.1-35.6	A-6(6)	38	18	24.7	30.4	22.6	22.3	95	76	52	-	-
	SS-173	8 RT	36+05	44.1-45.6	A-2-4(0)	30	10	51.7	21.3	10.8	16.2	65	38	20	-	-
	SS-174	8 RT	36+05	54.1-55.6	A-1-b(0)	21	NP	66.9	15.6	9.4	8.1	59	26	11	-	-
	SS-175	8 RT	36+05	64.1-65.6	A-1-b(0)	18	NP	66.1	15.6	12.3	6.1	53	23	11	-	-
B14-A	SS-100	9 LT	37+56	1.0-1.5	A-2-4(0)	20	5	26.8	47.9	5.2	20.1	100	90	28	-	-
	SS-101	9 LT	37+56	4.2-5.7	A-2-4(0)	16	NP	9.9	80.0	4.0	6.0	100	97	14	-	-
	SS-102	9 LT	37+56	14.4-15.9	A-3(0)	13	NP	76.4	18.9	1.7	3.0	98	61	6	-	-
	SS-103	9 LT	37+56	19.4-20.9	A-2-4(0)	25	NP	20.6	54.7	9.6	15.1	95	82	28	-	-
	SS-104	9 LT	37+56	29.4-30.9	A-6(2)	36	16	32.1	27.4	14.4	26.1	83	62	39	-	-
	SS-105	9 LT	37+56	39.4-40.9	Sample		Destroyed								-	-
	SS-106	9 LT	37+56	44.4-45.9	A-2-4(0)	31	7	50.6	22.3	9.0	18.1	79	48	24	-	-
	SS-107	9 LT	37+56	59.4-60.9	A-1-b(0)	22	NP	67.2	13.8	10.0	9.0	81	33	17	-	-
	SS-108	9 LT	37+56	69.4-70.9	A-1-b(0)	21	NP	65.9	13.4	14.8	6.0	80	33	18	-	-
B15-A	SS-176	9 LT	38+80	5.3-6.8	A-2-4(0)	22	NP	12.9	77.2	2.8	7.1	100	97	14	-	-
	SS-177	9 LT	38+80	15.3-16.8	A-6(12)	37	17	3.0	35.1	33.5	28.4	100	98	76	-	-
	SS-178	9 LT	38+80	20.3-21.8	A-2-4(0)	29	7	26.5	45.0	6.3	22.2	91	73	30	-	-
	SS-179	9 LT	38+80	30.1-31.6	A-2-6(1)	37	17	40.8	25.3	5.6	28.3	78	53	31	-	-
	SS-180	9 LT	38+80	40.1-41.6	A-6(2)	38	17	47.5	14.9	13.3	24.3	90	61	37	-	-
	SS-181	9 LT	38+80	45.1-46.6	A-2-6(0)	34	14	53.5	20.1	6.2	20.3	77	44	23	-	-
	SS-182	9 LT	38+80	56.1-56.6	A-1-a(0)	23	NP	69.0	13.5	1.3	16.2	45	18	9	-	-
	SS-183	9 LT	38+80	65.1-66.6	A-1-a(0)	20	NP	68.1	14.0	1.7	16.2	47	19	9	-	-
	SS-184	9 LT	38+80	75.1-76.6	A-1-a(0)	18	NP	72.6	11.9	1.3	14.2	42	15	7	-	-

SOIL TEST RESULTS

	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
B16-A	SS-185	2 LT	39+76	3.8-5.3	A-2-4(0)	28	NP	24.3	57.8	1.7	16.2	98	86	20	-	-
	SS-186	2 LT	39+76	8.8-10.3	A-2-4(0)	15	NP	47.9	40.5	2.4	9.1	98	79	13	-	-
	SS-187	2 LT	39+76	13.8-15.3	A-7-6(12)	42	20	3.6	41.9	26.2	28.3	100	98	68	-	-
	SS-188	2 LT	39+76	18.8-20.3	A-2-4(0)	25	NP	28.5	48.9	4.3	18.2	79	63	20	-	-
	SS-189	2 LT	39+76	28.6-30.1	A-2-6(1)	36	17	37.2	25.1	9.4	28.3	70	49	30	-	-
	SS-190	2 LT	39+76	38.6-40.1	A-7-6(4)	42	21	34.5	23.0	14.3	28.3	90	65	42	-	-
	SS-191	2 LT	39+76	48.6-50.1	A-2-6(0)	36	15	56.1	18.7	5.0	20.2	71	35	20	-	-
	SS-192	2 LT	39+76	63.6-65.1	A-1-b(0)	22	NP	66.1	15.0	2.7	16.2	56	24	11	-	-
	SS-193	2 LT	39+76	73.6-75.1	A-1-b(0)	20	NP	65.9	15.6	2.3	16.2	56	25	11	-	-
B17-A	SS-194	3 LT	40+76	5.4-6.9	A-2-4(0)	17	NP	46.4	44.1	0.4	9.1	97	76	11	-	-
	SS-195	3 LT	40+76	10.4-11.9	A-7-6(36)	61	41	5.3	23.7	14.5	56.6	100	96	83	-	-
	SS-196	3 LT	40+76	15.4-16.9	A-2-4(0)	25	NP	31.0	47.2	3.5	18.2	84	65	21	-	-
	SS-197	3 LT	40+76	25.4-26.9	A-2-6(1)	37	19	39.9	23.8	9.0	27.3	68	46	28	-	-
	SS-198	3 LT	40+76	35.2-36.7	A-7-6(7)	44	25	32.1	23.9	13.8	30.3	92	69	45	-	-
	SS-199	3 LT	40+76	45.2-46.7	A-2-6(0)	39	18	57.9	16.5	5.4	20.2	70	36	19	-	-
	SS-200	3 LT	40+76	55.2-56.4	A-1-a(0)	20	NP	66.1	14.4	1.3	18.2	46	21	10	-	-
	SS-201	3 LT	40+76	65.2-66.6	A-1-b(0)	18	NP	69.8	12.4	6.7	11.1	69	27	13	-	-
	SS-202	3 LT	40+76	75.2-76.7	A-1-a(0)	19	4	64.7	14.6	0.5	20.2	29	14	6	-	-
B18-A	SS-203	30 LT	41+79	4.4-5.9			NOT ENOUGH MATERIAL								-	10.5
	SS-204	30 LT	41+79	9.4-10.9			NOT ENOUGH MATERIAL								-	2.0
	SS-205	30 LT	41+79	19.4-20.9	A-2-4(0)	28	8	24.7	47.2	9.9	18.2	86	70	29	-	-
	SS-206	30 LT	41+79	29.2-30.7	A-7-6(17)	49	28	10.9	25.1	27.6	36.4	87	80	67	-	-
	SS-207	30 LT	41+79	39.2-40.7	A-2-6(0)	37	17	50.4	19.2	10.2	20.2	65	39	22	-	-
	SS-208	30 LT	41+79	49.2-50.7	A-2-4(0)	24	5	41.9	24.1	15.9	18.2	84	64	32	-	-
	SS-209	30 LT	41+79	59.2-60.7	A-1-b(0)	18	NP	64.1	19.4	6.4	10.1	73	36	14	-	-
B19-A	SS-210	28 LT	42+72	1.0-1.5			NOT ENOUGH MATERIAL								-	9.7
	SS-211	28 LT	42+72	8.6-10.1			NOT ENOUGH MATERIAL								-	16.2
	SS-212	28 LT	42+72	18.6-20.1			NOT ENOUGH MATERIAL								-	9.2
	SS-213	28 LT	42+72	23.6-25.1	A-3(0)	18	NP	73.0	24.0	0.0	3.0	95	52	4	-	-
	SS-214	28 LT	42+72	28.6-30.1	A-7-6(12)	46	25	12.5	25.5	23.6	38.4	92	83	59	-	-
	SS-215	28 LT	42+72	38.4-39.9	A-2-6(0)	34	12	51.2	20.2	10.4	18.2	67	40	21	-	-
	SS-216	28 LT	42+72	48.4-49.9	A-2-4(0)	22	9	47.3	21.8	12.6	18.2	86	55	29	-	-
	SS-217	28 LT	42+72	58.4-59.9	A-1-b(0)	19	3	62.9	17.0	3.9	16.2	70	33	16	-	-
	SS-218	28 LT	42+72	73.4-74.9	A-2-4(0)	19	NP	52.6	28.5	8.8	10.1	83	58	18	-	-
B20-A	SS-219	34 LT	43+61	12.4-13.9	A-2-4(0)	23	NP	3.5	76.5	10.8	9.1	100	100	27	-	-
	SS-220	34 LT	43+61	22.4-23.9	A-3(0)	25	NP	19.4	77.2	0.3	3.0	100	98	4	-	-
	SS-221	34 LT	43+61	27.4-28.9	A-7-6(16)	44	26	10.3	28.3	27.0	34.4	90	83	68	-	-
	SS-222	34 LT	43+61	37.2-38.7	A-2-7(1)	41	18	46.3	19.8	11.6	22.2	71	46	26	-	-
	SS-223	34 LT	43+61	47.2-48.7	A-2-4(0)	25	7	45.7	21.8	12.2	20.2	88	57	31	-	-
	SS-224	34 LT	43+61	57.2-58.7	A-2-4(0)	17	NP	50.2	34.0	5.8	10.1	99	87	17	-	-
	SS-225-A	34 LT	43+61	62.2-63.7	A-2-4(0)	16	NP	59.0	20.6	8.2	12.1	100	88	21	-	-
	SS-225	34 LT	43+61	67.2-68.6	A-1-b(0)	21	NP	63.5	16.6	3.7	16.2	66	31	14	-	-
	SS-226	34 LT	43+61	82.2-83.3	A-1-b(0)	19	NP	73.4	13.1	3.3	10.1	73	27	11	-	-
B21-A	SS-227	19 LT	44+58	17.3-18.8	A-2-4(0)	16	NP	3.3	75.9	12.6	8.1	100	100	27	-	-
	SS-228	19 LT	44+58	27.1-28.6	A-7-6(11)	43	19	11.7	30.7	25.2	32.4	91	82	64	-	-
	SS-229	19 LT	44+58	37.1-38.6	A-2-6(1)	36	15	46.7	22.9	10.2	20.2	72	46	25	-	-
	SS-230	19 LT	44+58	47.1-48.6	A-2-4(0)	27	NP	45.9	24.9	11.0	18.2	91	59	30	-	-
	SS-231	19 LT	44+58	57.1-58.6	A-2-4(0)	19	NP	52.6	24.7	10.6	12.1	92	77	22	-	-
	SS-232	19 LT	44+58	62.1-63.6	A-2-4(0)	17	NP	49.7	34.4	7.8	8.1	100	93	16	-	-
	SS-233	19 LT	44+58	77.1-78.3	A-1-b(0)	27	NP	58.0	22.9	7.0	12.1	73	43	15	-	-
	SS-234	19 LT	44+58	97.1-98.6	A-6(3)	27	11	18.8	28.1	18.7	34.4	100	97	54	-	-
B22-A	SS-235	7 LT	45+49	1.0-1.5			NOT ENOUGH MATERIAL								316.4	-
	SS-236	7 LT	45+49	11.1-12.6			NOT ENOUGH MATERIAL								202.2	16.8
	SS-237	7 LT	45+49	16.1-17.6	A-2-4(0)	23	NP	5.5	82.8	5.7	6.1	100	100	16	-	-
	SS-238	7 LT	45+49	26.1-27.6	A-6(5)	36	15	16.5	37.6	21.7	24.1	90	78	53	-	-
	SS-239	7 LT	45+49	35.9-37.4	A-2-4(0)	32	10	52.1	22.3	11.5	14.1	80	47	23	-	-
	SS-240	7 LT	45+49	45.9-47.4	A-2-4(0)	33	10	45.9	23.3	10.7	20.1	84	54	29	-	-
	SS-241	7 LT	45+49	55.9-57.4	A-2-4(0)	20	NP	51.5	23.7	12.7	12.1	75	55	20	-	-
	SS-242	7 LT	45+49	60.9-62.4	A-2-4(0)	16	NP	51.7	25.4	12.9	10.1	96	84	23	-	-
	SS-243	7 LT	45+49	70.9-72.4	A-2-4(0)	17	NP	47.5	30.2	12.3	10.1	100	88	23	-	-
	SS-244	7 LT	45+49	80.9-82.4	A-2-4(0)	15	NP	31.6	42.3	14.1	12.1	100	95	27	-	-
	SS-245	7 LT	45+49	90.9-92.4	A-2-4(0)	19	NP	17.1	50.7	16.1	16.1	100	96	33	-	-
B23-A	SS-246	6 LT	46+45	1.0-1.5			NOT ENOUGH MATERIAL								181.3	17.3
	SS-247	6 LT	46+45	16.3-17.8	A-4(0)	20	NP	3.6	67.4	12.9	16.1	100	100	37	-	-
	SS-248	6 LT	46+45	21.3-22.8	A-2-6(1)	36	16	28.4	28.8	18.7	24.1	70	55	34	-	-
	SS-249	6 LT	46+45	26.1-27.6	A-6(7)	37	15	13.7	42.5	15.7	28.2	88	78	59	-	-
	SS-250	6 LT	46+45	36.1-37.6	A-2-6(0)	37	12	45.5	23.5	14.9	16.1	70	45	25	-	-
	SS-251	6 LT	46+45	46.1-47.6	A-2-6(0)	36	13	47.9	21.5	12.5	18.1	84	52	28	-	-
	SS-252	6 LT	46+45	57.1-57.6	A-1-b(0)	19	3	52.5	22.1	11.3	14.1	70	50	19	-	-
	SS-253	6 LT	46+45	66.1-67.6	A-2-4(0)	16	NP	44.9	28.4	16.7	10.1	99	91	27	-	-
	SS-254	6 LT	46+45	76.1-77.6	A-2-4(0)	16	NP	44.3	38.4	9.3	8.0	97	92	17	-	-
	SS-255	6 LT	46+45	91.1-92.6	A-2-4(0)	17	NP	21.3	55.9	10.7	12.1	100	98	23	-	-

SOIL TEST RESULTS

	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
B24-B	SS-256	1 RT	47+36	1.2-2.7			NOT ENOUGH MATERIAL								287.3	17.2
	SS-257	1 RT	47+36	11.2-12.7			NOT ENOUGH MATERIAL								-	3.5
	SS-258	1 RT	47+36	21.2-22.7	A-2-4(0)	32	10	29.6	29.8	18.5	22.1	73	57	34	-	-
	SS-259	1 RT	47+36	31.0-32.5	A-6(4)	37	17	24.5	32.4	20.9	22.1	89	72	45	-	-
	SS-260	1 RT	47+36	41.0-42.5	A-2-5(0)	55	NP	52.1	27.0	8.9	12.1	89	54	22	-	-
	SS-261	1 RT	47+36	46.0-47.5	A-2-4(0)	33	10	47.3	23.5	11.1	18.1	84	53	27	-	-
	SS-262	1 RT	47+36	56.0-57.5	A-2-4(0)	35	NP	54.3	27.0	8.7	10.1	85	53	18	-	-
	SS-263	1 RT	47+36	61.0-62.5	A-2-4(0)	18	NP	47.1	26.2	16.7	10.1	93	79	26	-	-
	SS-264	1 RT	47+36	71.0-72.5	A-2-4(0)	17	NP	54.9	23.5	11.5	10.1	100	86	22	-	-
	SS-265	1 RT	47+36	81.0-82.5	A-2-4(0)	19	NP	42.9	37.0	10.1	10.1	100	93	21	-	-
	SS-266	1 RT	47+36	91.0-92.5	A-2-4(0)	19	NP	27.6	53.3	11.1	8.0	100	99	20	-	-
	SS-267	1 RT	47+36	101.0-102.5	A-2-4(0)	20	NP	33.4	38.6	9.9	18.1	100	98	29	-	-
	SS-268	1 RT	47+36	116.0-117.5	A-2-4(0)	18	NP	44.5	32.4	13.1	10.1	100	93	24	-	-
B25-A	SS-269	20 LT	48+34	1.0-1.5			NOT ENOUGH MATERIAL								190.4	15.9
	SS-270	20 LT	48+34	25.4-26.9	A-6(6)	36	16	12.5	35.4	26.0	26.2	88	79	57	-	-
	SS-271	20 LT	48+34	35.4-36.9	A-7-6(2)	43	17	42.1	19.7	20.1	18.1	82	55	36	-	-
	SS-272	20 LT	48+34	45.4-46.9	A-2-6(0)	34	11	45.3	24.1	10.5	20.1	79	51	27	-	-
	SS-273	20 LT	48+34	50.4-51.9	A-1-b(0)	27	NP	61.4	21.7	6.8	10.1	77	41	15	-	-
	SS-274	20 LT	48+34	55.4-56.9	A-1-b(0)	25	6	57.6	17.6	4.6	20.2	82	46	22	-	-
	SS-275	20 LT	48+34	65.4-66.9	A-2-4(0)	17	NP	47.3	24.8	9.7	18.2	100	88	29	-	-
	SS-276	20 LT	48+34	75.4-76.9	A-2-4(0)	18	NP	47.3	30.7	5.9	16.2	100	90	23	-	-
	SS-277	20 LT	48+34	85.4-86.9	A-2-4(0)	18	NP	37.7	43.1	7.1	12.1	100	95	20	-	-
	SS-278	20 LT	48+34	100.4-101.9	A-2-4(0)	19	NP	13.3	58.2	6.3	22.2	100	99	29	-	-
B26-A	SS-279	16 LT	49+28	1.0-1.5			NOT ENOUGH MATERIAL								313.6	16.7
	SS-280	16 LT	49+28	20.4-21.9	A-6(2)	35	14	26.9	32.1	12.7	28.3	91	72	42	-	-
	SS-281	16 LT	49+28	30.2-31.7	A-6(3)	33	12	24.2	34.5	14.9	26.3	94	77	47	-	-
	SS-282	16 LT	49+28	40.2-41.7	A-2-4(0)	28	7	53.9	22.8	7.1	16.2	88	51	23	-	-
	SS-283	16 LT	49+28	50.2-51.7	A-1-b(0)	29	NP	64.2	20.6	1.0	14.1	96	49	16	-	-
	SS-284	16 LT	49+28	60.2-61.7	A-1-b(0)	20	NP	61.0	15.3	7.6	16.1	62	31	16	-	-
	SS-285	16 LT	49+28	70.2-71.7	A-6(10)	39	21	23.1	16.1	16.5	44.3	100	95	62	-	-
	SS-286	16 LT	49+28	75.2-76.7	A-2-4(0)	17	1	42.9	26.6	12.5	18.1	97	87	30	-	-
	SS-287	16 LT	49+28	85.2-86.7	A-2-4(0)	17	NP	32.0	41.9	8.0	18.1	100	96	27	-	-
B27-A	SS-288	18 LT	50+18	1.0-1.5			NOT ENOUGH MATERIAL								226.0	13.5
	SS-289	18 LT	50+18	6.3-7.8			NOT ENOUGH MATERIAL								168.8	36.6
	SS-290	18 LT	50+18	21.3-22.8	A-6(4)	34	15	23.7	31.6	16.5	28.2	93	77	47	38.8	-
	SS-291	18 LT	50+18	31.1-32.6	A-6(4)	35	15	22.7	35.0	18.1	24.1	93	77	48	-	-
	SS-292	18 LT	50+18	41.1-42.6	A-2-4(0)	28	5	51.9	25.2	8.9	14.1	92	57	24	-	-
	SS-293	18 LT	50+18	51.1-52.6	A-2-4(0)	27	NP	55.9	27.0	5.0	12.1	90	52	19	-	-
	SS-294	18 LT	50+18	61.1-62.6	A-1-b(0)	22	NP	69.4	14.9	5.6	10.1	73	29	13	-	-
	SS-295	18 LT	50+18	66.1-67.6	A-1-b(0)	18	NP	71.4	12.1	4.4	12.1	70	25	13	-	-
	SS-296	18 LT	50+18	76.1-77.6	A-6(11)	38	21	17.7	19.5	16.5	46.3	99	96	64	-	-
	SS-297	18 LT	50+18	81.1-82.6	A-2-4(0)	16	NP	48.3	27.0	10.7	14.1	96	89	25	-	-
B28-A	SS-596	15 LT	51+13	1.0-1.5			NOT ENOUGH MATERIAL								72.3	5.2
	SS-597	15 LT	51+13	11.9-13.4	A-4(0)	24	5	11.2	47.1	19.6	22.1	98	98	46	-	-
	SS-598	15 LT	51+13	16.2-17.7	A-4(1)	32	10	16.7	47.7	15.5	20.1	96	84	40	-	-
	SS-599	15 LT	51+13	26.2-27.7	A-6(9)	39	18	7.0	37.4	23.3	32.2	89	84	62	-	-
	SS-600	15 LT	51+13	36.2-37.7	A-7-6(2)	41	17	43.5	17.5	14.9	24.1	88	58	37	-	-
	SS-601	15 LT	51+13	41.2-42.7	A-1-b(0)	27	6	48.9	23.9	11.1	16.1	79	50	24	-	-
	SS-602	15 LT	51+13	46.2-47.7	A-2-4(0)	31	10	55.4	19.3	6.1	19.1	73	39	21	-	-
	SS-603	15 LT	51+13	56.2-57.7	A-1-b(0)	21	NP	65.7	18.1	6.0	10.2	92	47	16	-	-
	SS-604	15 LT	51+13	66.2-67.7	A-1-b(0)	17	NP	68.1	13.3	8.4	10.2	80	34	16	-	-
	SS-605	15 LT	51+13	76.1-77.6	A-1-b(0)	20	NP	66.4	13.1	10.3	10.2	69	29	15	-	-
	SS-606	15 LT	51+13	86.1-87.6	A-2-4(0)	16	NP	43.5	36.5	7.7	12.2	100	96	20	-	-
	SS-607	15 LT	51+13	96.1-97.6	A-2-4(0)	16	NP	34.2	40.2	12.4	13.2	100	96	26	-	-
	SS-608	15 LT	51+13	106.1-107.6	A-2-4(0)	18	NP	13.6	60.2	9.9	16.3	100	99	27	-	-
	SS-609	15 LT	51+13	116.1-117.6	A-2-4(0)	18	NP	27.7	47.4	12.7	12.2	100	97	26	-	-
B29-A	SS-583	12 LT	52+04	1.0-1.5			NOT ENOUGH MATERIAL								-	9.9
	SS-584	12 LT	52+04	16.3-17.8	A-6(3)	37	17	24.3	32.8	19.3	24.1	83	67	42	-	-
	SS-585	12 LT	52+04	30.8-32.3	A-6(4)	34	12	16.1	36.4	23.3	24.1	92	81	55	-	-
	SS-586	12 LT	52+04	40.8-42.3	A-2-4(0)	29	7	42.3	27.2	12.5	18.1	68	47	24	-	-
	SS-587	12 LT	52+04	50.8-52.3	A-2-4(0)	26	7	39.4	23.1	15.3	22.1	82	58	33	-	-
	SS-588	12 LT	52+04	60.4-61.9	A-2-4(0)	17	NP	55.1	22.5	8.2	14.1	87	65	20	-	-
	SS-589	12 LT	52+04	71.2-72.7	A-1-b(0)	23	NP	66.6	15.1	6.2	12.1	76	32	15	-	-
	SS-590	12 LT	52+04	81.2-82.7	A-1-b(0)	23	2	57.1	14.3	10.5	18.1	72	37	22	-	-
	SS-591	12 LT	52+04	86.4-87.9	A-2-4(0)	18	3	39.4	30.2	10.3	20.1	99	95	31	-	-
	SS-592	12 LT	52+04	96.5-98.0	A-2-4(0)	16	NP	30.8	46.5	6.6	16.1	100	97	23	-	-
	SS-593	12 LT	52+04	106.5-108.0	A-2-4(0)	20	NP	18.3	57.1	8.5	16.1	100	99	25	-	-
	SS-594	12 LT	52+04	116.5-118.0	A-2-4(0)	17	NP	31.2	42.5	10.3	16.1	100	96	27	-	-
	SS-595	12 LT	52+04	126.5-128.0	A-2-4(0)	15	NP	36.2	40.0	9.7	14.1	100	97	24	-	-

SOIL TEST RESULTS

BORING	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
B30-A	SS-571	42 LT	52+91	1.0-1.5		NOT ENOUGH MATERIAL									199.4	16.3
B30-A	SS-572	42 LT	52+91	8.2-9.7	A-3(0)	17	NP	44.7	47.5	0.8	7.0	96	79	9	-	-
B30-A	SS-573	42 LT	52+91	16.8-18.3	A-2-4(0)	28	8	23.3	42.9	13.7	20.1	81	66	31	-	-
B30-A	SS-574	42 LT	52+91	26.8-28.3	A-7-6(7)	41	18	19.7	32.6	19.5	28.2	91	77	53	45.0	-
B30-A	SS-575	42 LT	52+91	36.7-38.2	A-7-6(4)	41	23	39.4	19.9	16.5	24.1	83	57	38	-	-
B30-A	SS-576	42 LT	52+91	46.7-48.2	A-2-6(1)	37	16	47.5	22.9	7.4	22.1	73	46	24	-	-
B30-A	SS-577	42 LT	52+91	51.7-53.2	A-1-b(0)	21	NP	59.3	19.0	8.7	13.1	70	41	17	-	-
B30-A	SS-578	42 LT	52+91	61.5-63.0	A-2-4(0)	19	NP	60.3	21.4	7.2	11.1	88	63	17	-	-
B30-A	SS-579	42 LT	52+91	71.5-73.0	A-1-b(0)	17	NP	62.6	13.3	12.1	12.1	80	37	21	-	-
B30-A	SS-580	42 LT	52+91	81.5-83.0	A-1-b(0)	20	NP	70.8	12.0	7.1	10.1	75	30	14	-	-
B30-A	SS-581	42 LT	52+91	86.5-88.0	A-6(1)	27	11	36.2	23.1	16.5	24.1	96	82	40	-	-
B30-A	SS-582	42 LT	52+91	91.5-93.0	A-2-4(0)	17	NP	48.1	34.0	6.8	11.1	99	95	18	-	-
B31-A	SS-558	12 LT	53+75	1.0-1.5	A-7-5(4)	48	16	25.4	30.8	23.7	20.1	97	87	45	-	8.5
B31-A	SS-559	12 LT	53+75	3.2-4.7	A-3(0)	26	NP	57.1	35.4	1.4	6.0	100	78	9	-	-
B31-A	SS-560	12 LT	53+75	8.1-9.6	A-3(0)	23	NP	74.2	21.4	1.3	3.0	100	67	4	-	-
B31-A	SS-561	12 LT	53+75	12.4-13.9	A-2-4(0)	26	NP	18.0	60.9	11.1	10.1	100	95	26	-	-
B31-A	SS-562	12 LT	53+75	17.5-19.0	A-2-4(0)	31	6	24.1	44.3	13.5	18.1	79	63	29	-	-
B31-A	SS-563	12 LT	53+75	27.5-29.0	A-6(11)	39	20	8.0	35.2	26.6	30.2	93	87	65	-	-
B31-A	SS-564	12 LT	53+75	37.5-39.0	A-7-6(4)	44	19	40.2	18.1	17.5	24.1	92	63	41	-	-
B31-A	SS-565	12 LT	53+75	47.2-48.7	A-2-6(1)	34	16	44.7	21.9	7.2	26.2	76	48	28	-	-
B31-A	SS-566	12 LT	53+75	57.2-58.7	A-1-b(0)	16	NP	63.8	16.3	7.8	12.1	74	38	16	-	-
B31-A	SS-567	12 LT	53+75	67.4-68.9	A-1-b(0)	19	1	62.0	13.3	8.7	16.1	71	37	19	-	-
B31-A	SS-568	12 LT	53+75	77.4-78.9	A-1-b(0)	23	6	56.7	13.1	10.1	20.1	75	39	24	-	-
B31-A	SS-569	12 LT	53+75	87.4-88.9	A-2-4(0)	24	6	42.7	20.6	12.5	24.2	75	54	29	-	-
B31-A	SS-570	12 LT	53+75	92.4-93.9	A-2-4(0)	17	NP	37.5	34.5	9.9	18.1	100	97	29	-	-
B32-B	SS-547	2 RT	54+73	5.9-7.4	A-2-4(0)	22	NP	23.5	63.6	4.8	8.0	99	94	14	-	1.9
B32-B	SS-548	2 RT	54+73	10.6-12.1	A-2-4(0)	20	NP	65.2	22.9	0.8	11.1	100	88	13	-	-
B32-B	SS-549	2 RT	54+73	20.6-22.1	A-2-4(0)	30	8	27.2	42.5	10.3	20.1	79	62	27	-	-
B32-B	ST-2	2 RT	54+73	22.5-24.5	A-4(0)	31	8	23.6	42.1	14.2	20.1	90	73	37	-	-
B32-B	SS-550	2 RT	54+73	30.2-31.7	A-6(6)	36	11	8.2	37.0	22.5	32.2	92	86	64	-	-
B32-B	SS-551	2 RT	54+73	40.2-41.7	A-7-6(4)	41	16	37.6	19.1	17.1	26.2	93	65	44	-	-
B32-B	SS-552	2 RT	54+73	45.2-46.7	A-1-b(0)	27	2	43.9	24.1	9.9	22.1	64	43	22	-	-
B32-B	SS-553	2 RT	54+73	55.2-56.7	A-2-4(0)	19	2	48.5	21.9	7.4	22.1	76	54	24	-	-
B32-B	SS-554	2 RT	54+73	65.3-66.8	A-1-b(0)	19	NP	64.6	16.7	4.6	14.1	71	36	15	-	-
B32-B	SS-555	2 RT	54+73	75.4-76.9	A-2-4(0)	24	6	52.1	13.3	10.5	24.1	85	52	30	-	-
B32-B	SS-556	2 RT	54+73	85.4-86.9	A-1-b(0)	26	NP	64.0	12.3	13.7	10.1	84	36	22	-	-
B32-B	SS-557	2 RT	54+73	95.4-96.9	A-2-6(1)	30	14	43.5	20.3	8.0	28.2	82	54	32	-	-
B33-A	SS-535	12 LT	55+90	1.0-1.5	A-3(0)	18	NP	22.0	69.3	0.6	8.0	100	95	10	-	-
B33-A	SS-536	12 LT	55+90	3.5-5.0	A-2-4(0)	21	NP	38.9	45.1	0.0	16.1	100	88	18	-	-
B33-A	SS-537	12 LT	55+90	12.5-14.0	A-3(0)	20	NP	70.5	21.9	0.6	7.0	99	82	8	-	-
B33-A	SS-528	12 LT	55+90	18.1-19.1	A-4(1)	27	9	7.6	52.0	16.3	24.1	100	97	47	-	-
B33-A	SS-539	12 LT	55+90	22.6-24.1	A-6(1)	33	11	21.3	43.2	11.4	24.1	90	75	39	-	-
B33-A	SS-540	12 LT	55+90	43.0-44.5	A-7-6(5)	43	24	38.8	18.3	14.9	28.1	91	64	42	-	-
B33-A	SS-541	12 LT	55+90	52.7-54.2	A-2-6(1)	36	16	44.4	21.7	5.8	28.1	72	47	27	-	-
B33-A	SS-542	12 LT	55+90	57.7-59.2	A-1-b(0)	20	NP	64.1	16.5	7.4	12.0	72	39	15	-	-
B33-A	SS-543	12 LT	55+90	67.9-69.4	A-2-4(0)	17	NP	50.6	22.7	8.6	18.1	84	61	24	-	-
B33-A	SS-544	12 LT	55+90	77.9-79.4	A-1-b(0)	20	NP	73.3	10.8	1.8	14.1	82	28	15	-	-
B33-A	SS-545	12 LT	55+90	87.4-88.9	A-1-b(0)	25	NP	66.1	11.6	8.2	14.1	87	36	21	-	-
B33-A	SS-546	12 LT	55+90	97.2-98.7	A-1-b(0)	19	NP	67.5	12.9	7.6	12.0	90	37	20	-	-
B34-A	SS-511	26 LT	56+97	1.0-1.5	A-2-4(0)	18	NP	26.7	63.0	0.3	10.1	100	94	12	-	-
B34-A	SS-512	26 LT	56+97	4.4-5.9	A-2-4(0)	18	NP	45.9	43.5	1.6	9.1	100	84	12	-	-
B34-A	SS-513	26 LT	56+97	13.9-15.4	A-3(0)	19	NP	63.8	26.8	0.4	9.1	87	60	9	-	-
B34-A	SS-514	26 LT	56+97	18.9-20.4	A-4(0)	26	NP	7.2	61.4	17.3	14.1	100	98	38	-	-
B34-A	SS-515	26 LT	56+97	28.9-30.4	A-6(5)	38	19	20.7	30.2	18.9	30.2	84	71	47	-	-
B34-A	SS-516	26 LT	56+97	38.9-40.4	A-7-6(4)	41	21	37.6	18.9	19.3	24.1	88	62	41	-	-
B34-A	SS-517	26 LT	56+97	48.9-50.4	A-2-4(0)	30	10	41.0	24.5	12.3	22.1	67	47	25	-	-
B34-A	SS-518	26 LT	56+97	58.8-60.3	A-1-b(0)	19	NP	67.5	15.2	5.2	12.1	85	48	16	-	-
B34-A	SS-519	26 LT	56+97	68.7-70.2	A-1-b(0)	16	NP	63.6	16.3	10.1	10.1	72	40	16	-	-
B34-A	SS-520	26 LT	56+97	78.7-80.2	A-1-b(0)	16	3	56.9	16.3	8.7	18.1	78	48	22	-	-
B34-A	SS-521	26 LT	56+97	88.7-90.2	A-1-b(0)	20	NP	70.8	11.6	9.6	8.0	80	29	16	-	-
B35-A	SS-522	25 LT	57+64	1.0-1.5	A-3(0)	22	NP	36.8	56.8	2.4	4.0	98	92	5	-	-
B35-A	SS-523	25 LT	57+64	4.5-6.0	A-2-4(0)	20	NP	38.5	50.3	0.1	11.1	100	87	13	-	-
B35-A	SS-524	25 LT	57+64	9.5-11.0	A-4(1)	25	8	22.1	38.0	15.7	24.1	99	87	45	-	-
B35-A	SS-525	25 LT	57+64	14.5-16.0	A-3(0)	18	NP	56.7	38.3	1.0	4.0	93	77	6	-	-
B35-A	SS-526	25 LT	57+64	19.5-20.5	A-1-b(0)	28	NP	85.5	9.4	0.1	5.0	94	24	6	-	-
B35-A	SS-527	25 LT	57+64	24.5-26.0	A-2-4(0)	29	5	22.1	44.9	10.9	22.1	83	68	33	-	-
B35-A	SS-528	25 LT	57+64	34.9-36.4	A-6(2)	39	13	23.3	33.4	15.1	28.2	78	64	41	-	-
B35-A	SS-529	25 LT	57+64	44.5-46.0	A-7-6(4)	41	21	38.8	18.9	14.1	28.2	88	61	40	-	-
B35-A	SS-530	25 LT	57+64	49.5-51.0	A-1-b(0)	28	6	40.2	26.2	11.5	22.1	62	44	23	-	-
B35-A	SS-531	25 LT	57+64	59.5-61.0	A-1-b(0)	21	NP	62.2	17.9	3.8	16.1	80	47	18	-	-
B35-A	SS-532	25 LT	57+64	69.5-71.0	A-1-b(0)	19	NP	64.8	15.3	7.8	12.1	67	35	15	-	-
B35-A	SS-533	25 LT	57+64	79.4-80.9	A-2-4(0)	17	NP	56.9	19.3	7.6	16.1	79	52	20	-	-
B35-A	SS-534	25 LT	57+64	89.4-90.9	A-1-b(0)	23	NP	68.4	14.1	7.4	10.1	84	32	16	-	-

SOIL TEST RESULTS

BORING	SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
								C. SAND	F. SAND	SILT	CLAY	10	40	200		
B37-A	SS-500	9 LT	59+00	6.1-7.6	A-3(0)	18	NP	44.7	49.1	0.2	6.0	100	87	8	-	-
B37-A	SS-501	9 LT	59+00	14.7-16.2	A-3(0)	15	NP	39.0	54.2	0.7	6.0	100	85	9	-	-
B37-A	SS-502	9 LT	59+00	19.7-21.2	A-1-b(0)	20	NP	80.4	13.6	0.0	6.0	90	29	7	-	-
B37-A	SS-503	9 LT	59+00	24.7-26.2	A-2-4(0)	29	9	18.1	50.0	13.8	18.1	91	78	35	-	-
B37-A	SS-504	9 LT	59+00	34.6-36.1	A-6(10)	40	20	8.7	37.8	25.4	28.2	93	87	63	-	-
B37-A	SS-505	9 LT	59+00	45.3-46.8	A-6(4)	40	20	38.6	17.5	19.7	24.1	87	61	41	-	-
B37-A	SS-506	9 LT	59+00	55.3-56.8	A-2-4(0)	31	10	42.1	27.2	10.7	20.1	75	52	26	-	-
B37-A	SS-507	9 LT	59+00	60.3-61.8	A-2-6(0)	34	13	44.1	25.1	9.8	21.1	77	51	27	-	-
B37-A	SS-508	9 LT	59+00	70.2-71.7	A-1-b(0)	16	NP	69.6	11.3	10.1	9.1	85	48	18	-	-
B37-A	SS-509	9 LT	59+00	80.1-81.6	A-1-b(0)	20	NP	65.9	14.3	10.8	9.1	78	41	17	-	-
B37-A	SS-510	9 LT	59+00	95.1-96.6	A-1-b(0)	17	NP	69.7	12.1	8.1	10.1	68	27	13	-	-
EB2-B	SS-67	40 RT	60+01	1.0-1.5	A-2-4(0)	16	NP	14.8	69.9	7.2	8.0	90	87	15	-	-
EB2-B	SS-68	40 RT	60+01	8.9-10.4	A-4(1)	29	8	8.8	52.3	12.8	26.1	100	97	45	-	-
EB2-B	SS-69	40 RT	60+01	13.9-15.4	A-3(0)	17	NP	58.5	35.3	2.2	4.0	100	85	8	-	-
EB2-B	SS-70	40 RT	60+01	23.9-25.4	A-1-b(0)	14	NP	69.5	24.4	4.0	2.0	92	44	7	-	-
EB2-B	SS-71	40 RT	60+01	28.9-30.4	A-1-b(0)	13	NP	79.8	14.4	3.8	2.0	84	32	7	-	-
EB2-B	SS-72	40 RT	60+01	33.9-35.4	A-2-4(0)	30	NP	15.8	52.9	17.2	14.0	81	71	30	-	-
EB2-B	SS-73	40 RT	60+01	43.9-45.4	A-5(7)	41	10	9.0	32.7	32.3	26.1	94	87	70	-	-
EB2-B	SS-74	40 RT	60+01	53.9-55.4	A-2-6(0)	39	12	40.1	22.2	21.6	16.0	75	52	32	-	-
EB2-B	SS-75	40 RT	60+01	58.9-60.4	A-1-b(0)	32	NP	51.3	27.1	11.6	10.0	81	50	21	-	-

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT

FIELD SCOUR REPORT

WBS: 33162.1.1 TIP: B-3611 COUNTY: Beaufort

DESCRIPTION(1): Bridge No. 77 on NC 99 over Pantego Creek

EXISTING BRIDGE

Information from: Field Inspection X Microfilm ____ (reel ______ pos: ______)
Other (explain) ______

Bridge No.: 77 Length: 1400' Total Bents: 36 Bents in Channel: 36 Bents in Floodplain: 0
Foundation Type: Timber piles

EVIDENCE OF SCOUR(2)

Abutments or End Bent Slopes: None noted

Interior Bents: None noted

Channel Bed: None noted

Channel Bank: None noted

EXISTING SCOUR PROTECTION

Type(3): Concrete end wall and rip rap

Extent(4): End wall is 15' from outside edge of bridge. Rip rap extends from shore to and around end bents.

Effectiveness(5): Appears satisfactory

Obstructions(6): None noted

INSTRUCTIONS

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

DESIGN INFORMATION

Channel Bed Material(7): Silt with moderate amounts of organic matter (SS-235) and sand (SS-185)

Channel Bank Material(8): Sand (SS-109) and sandy silt (SS-57)

Channel Bank Cover(9): Wooded and marsh grasses

Floodplain Width(10): 1800+/- ft. south and 1500+/- ft. north of creek

Floodplain Cover(11): Woods, shrubs and marsh grass

Stream is(12): Aggrading ____ Degrading X Static ____

Channel Migration Tendency(13): Not likely, but possibly northeast toward End Bent 2

Observations and Other Comments: Flood plain north of creek has been filled in with artificial fill. Pantego Creek is affected by wind and lunar tide.

DESIGN SCOUR ELEVATIONS(14) Feet X Meters ____

BENTS

	B1	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**B8**	**B9**	**B10**	**B11**
Overtopping scour	-2	-1.5	-1.5	-2	-3.5	-4.5	-7	-8	-9	-7	-7
	B12	**B13**	**B14**	**B15**	**B16**	**B17**	**B18**	**B19**	**B20**	**B21**	**B22**
Overtopping scour	-8.5	-9	-8	-8	-8.2	-11	-12.5	-14	-15.5	-16	-16
	B23	**B24**	**B25**	**B26**	**B27**	**B28**	**B29**	**B30**	**B31**	**B32**	**B-33**
Overtopping scour	-16.5	-17	-17	-17	-16.3	-16	-15.8	-15.2	-14	-11.5	-10
	B34	**B35**	**B36**	**B37**							
Overtopping scour	-9	-8	-8	-6.5							

Comparison of DSE to Hydraulics Unit theoretical scour:
Design Scour Elevation agrees with the Hydraulics Unit's theoretical overtopping scour.

SOIL ANALYSIS RESULTS FROM CHANNEL BED AND BANK MATERIAL

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

See Sheets 48-50, "Soil Test Results", for samples:
Channel bed SS-185, SS-235
Channel bank SS-57, SS-109

Reported by: Dean N. Argenbright Date: 11/25/2008