

PROJECT: 35781.1.2 ID: U-3315

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

STRUCTURE
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 35781.1.2 (U-3315) F.A. PROJ. HPPSTP-0220(53)
 COUNTY PITT
 PROJECT DESCRIPTION STANTONSBURG ROAD - TENTH STREET
CONNECTOR FROM US13/NC 11 (MEMORIAL DRIVE) TO
SR 1702 (EVANS STREET)
 SITE DESCRIPTION RETAINING WALLS 1, 2, 3, & 4 AT BRIDGE ON -L-
(TENTH STREET) OVER -Y10- (SR 1531, DICKINSON AVENUE) AND
-Y11- (CSX RAILROAD)

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	35781.1.2 (U-3315)	1	36

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF PREPARING THE SCOPE OF WORK TO BE INCLUDED IN THE REQUEST FOR PROPOSAL. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED BY REQUEST BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT 1519 TOL-6550. THE SUBSURFACE PLANS, FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

SOIL AND ROCK BOUNDARIES WITHIN A BOREHOLE ARE BASED ON GEOTECHNICAL INTERPRETATION UNLESS ENCOUNTERED IN A SAMPLE. INTERPRETED BOUNDARIES MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN SAMPLED STRATA, AND BOREHOLE INFORMATION MAY NOT NECESSARILY REFLECT ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS. 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 RAO, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, OR THE OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT APPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT 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.

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DRAWN BY M. ALEXANDER

INVESTIGATED BY TERRACON CONSULTANTS

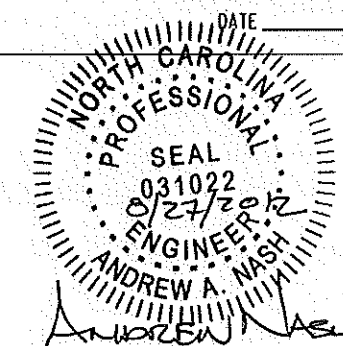
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DATE AUGUST 2012

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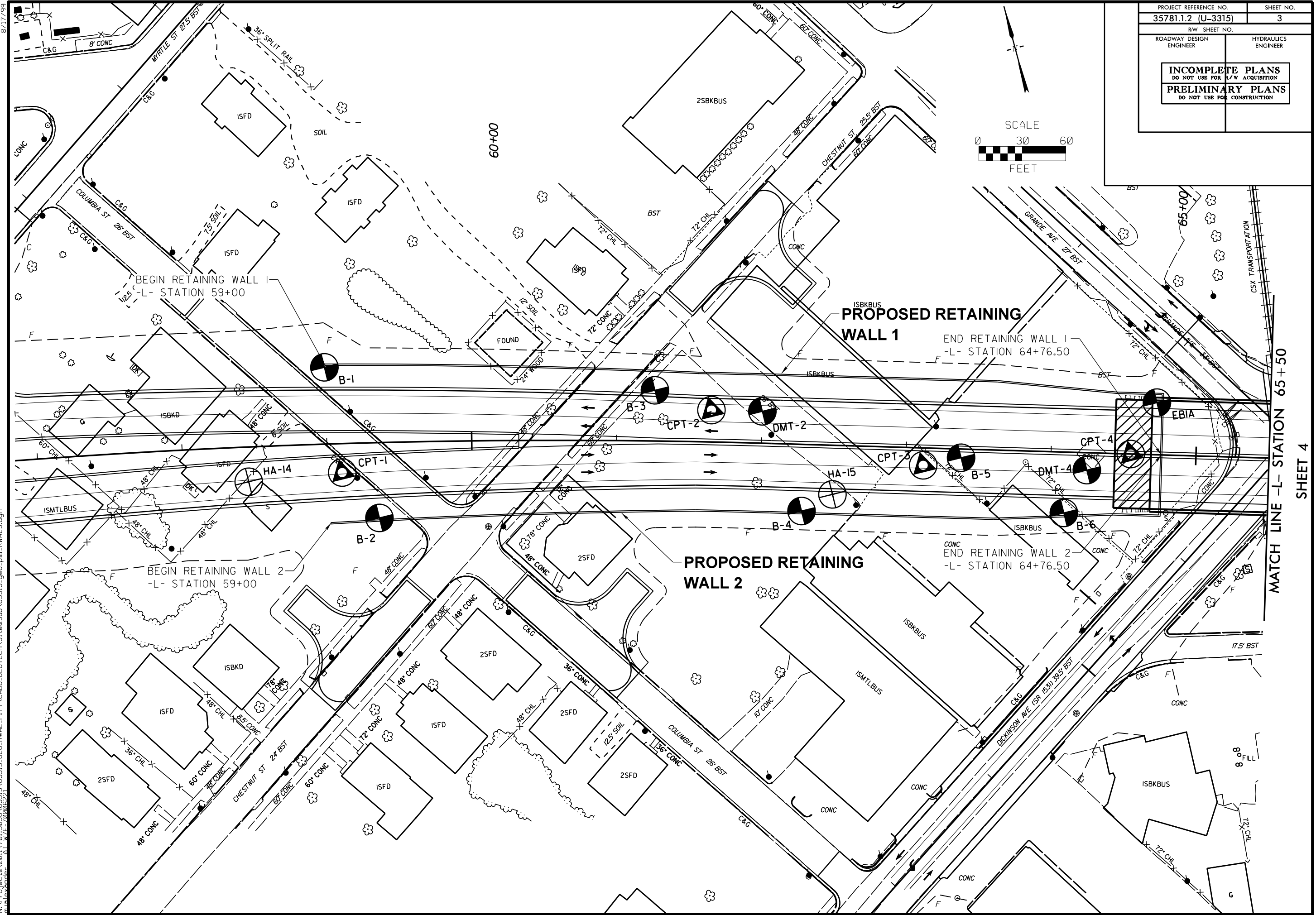
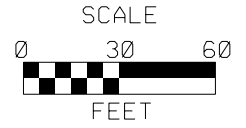
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

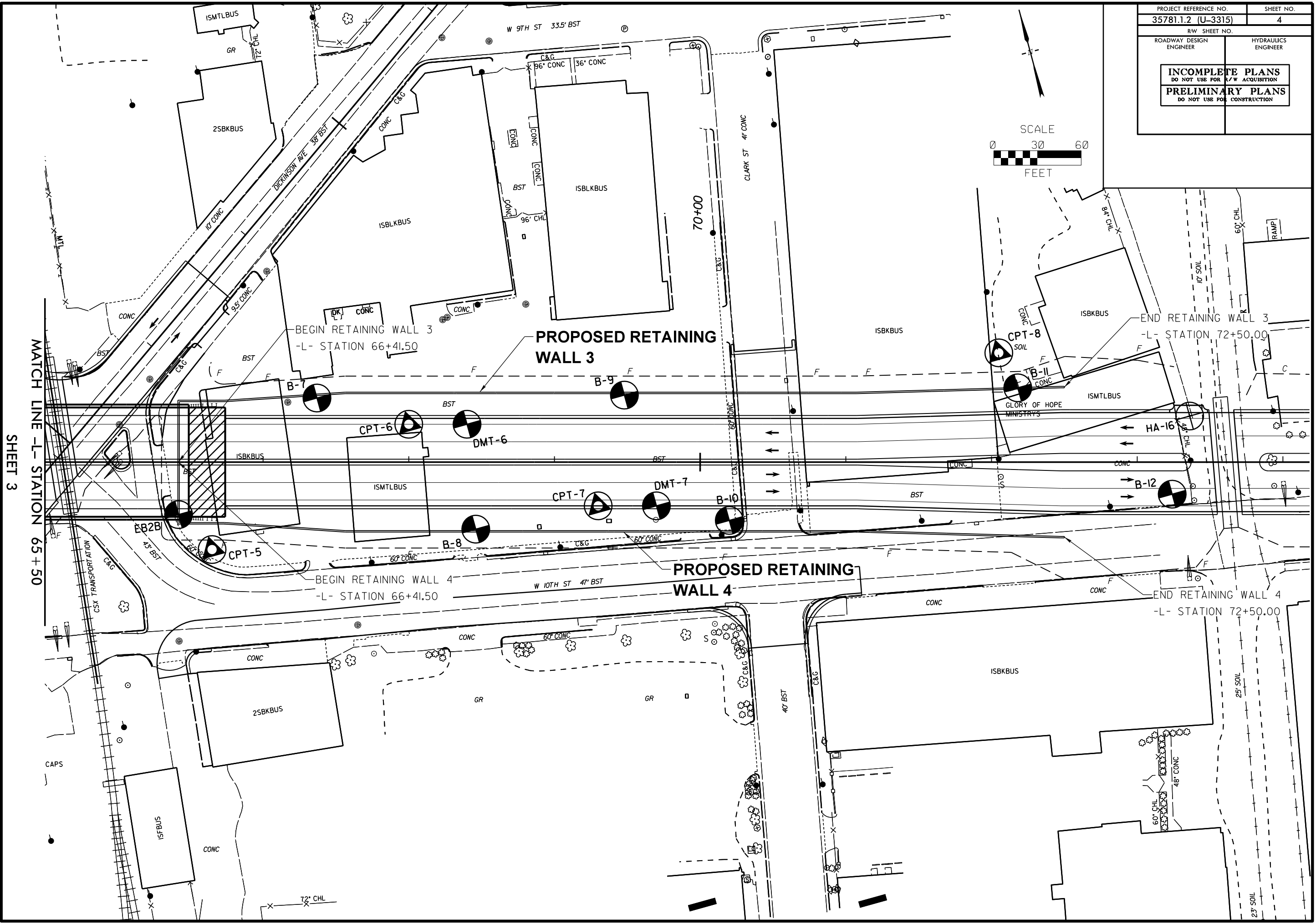
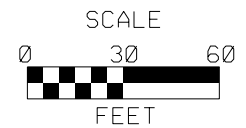
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED 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: <i>VERY STIFF, GRAY-SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. 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 .	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) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)	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 (MOTJ.) - 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 (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (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.
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-4, A-5 A-6, A-7 SYMBOL % PASSING 10 30 40 200 LIQUID LIMIT PLASTIC INDEX GROUP INDEX USUAL TYPES OF MAJOR MATERIALS GEN. RATING AS A SUBGRADE	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 MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE PERCENTAGE OF MATERIAL ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER LITTLE ORGANIC MATTER MODERATELY ORGANIC HIGHLY ORGANIC	WEATHERING FRESH VERY SLIGHT (V SLI.) SLIGHT (SLI.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (V SEV.) COMPLETE	
CONSISTENCY OR DENSENESS PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/F ²)	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 DIP & DIP DIRECTION OF ROCK STRUCTURES TEST BORING WITH CORE AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	
TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM) BOULDER (BLDR.) COBBLE (COB.) GRAVEL (GRV.) COARSE SAND (CSE, SD.) FINE SAND (F SD.) SILT (SL.) CLAY (CL.)	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 HL - HIGHLY MED. - MEDIUM MICA - MICA MOD. - MODERATELY NON - 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 W - UNIT WEIGHT W _d - DRY UNIT WEIGHT S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	
SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	EQUIPMENT USED ON SUBJECT PROJECT DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST CME-75(TER6847) PAGANI 220-73 ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE STEEL TEETH TRICONE 3 7/8" TUNG-CARB. CORE BIT CPT / DMT HAMMER TYPE: AUTOMATIC MANUAL CORE SIZE: B N H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	
PLASTICITY NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY PLASTICITY INDEX (PI) DRY STRENGTH 0-5 VERY LOW 6-15 SLIGHT 16-25 MEDIUM 26 OR MORE HIGH	FRACTURE SPACING TERM SPACING VERY WIDE WIDE MODERATELY CLOSE CLOSE VERY CLOSE BEDDING TERM THICKNESS VERY THICKLY BEDDED THICKLY BEDDED THINLY BEDDED VERY THINLY BEDDED THICKLY LAMINATED THINLY LAMINATED	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	BENCH MARK: SEE BELOW ELEVATION: FT.
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.	INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT	NOTES: PROFILES AND ELEVATIONS WERE DETERMINED USING THE PROVIDED TIN FILE DATED SEPTEMBER 28, 2011. FIAD - FILLED IN AFTER DRILLING

PROJECT REFERENCE NO.	SHEET NO.
35781.1.2 (U-3315)	3
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PROJECT REFERENCE NO. 35781.1.2 (U-3315)	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SHEET 3

MATCH LINE -L- STATION 65 + 50

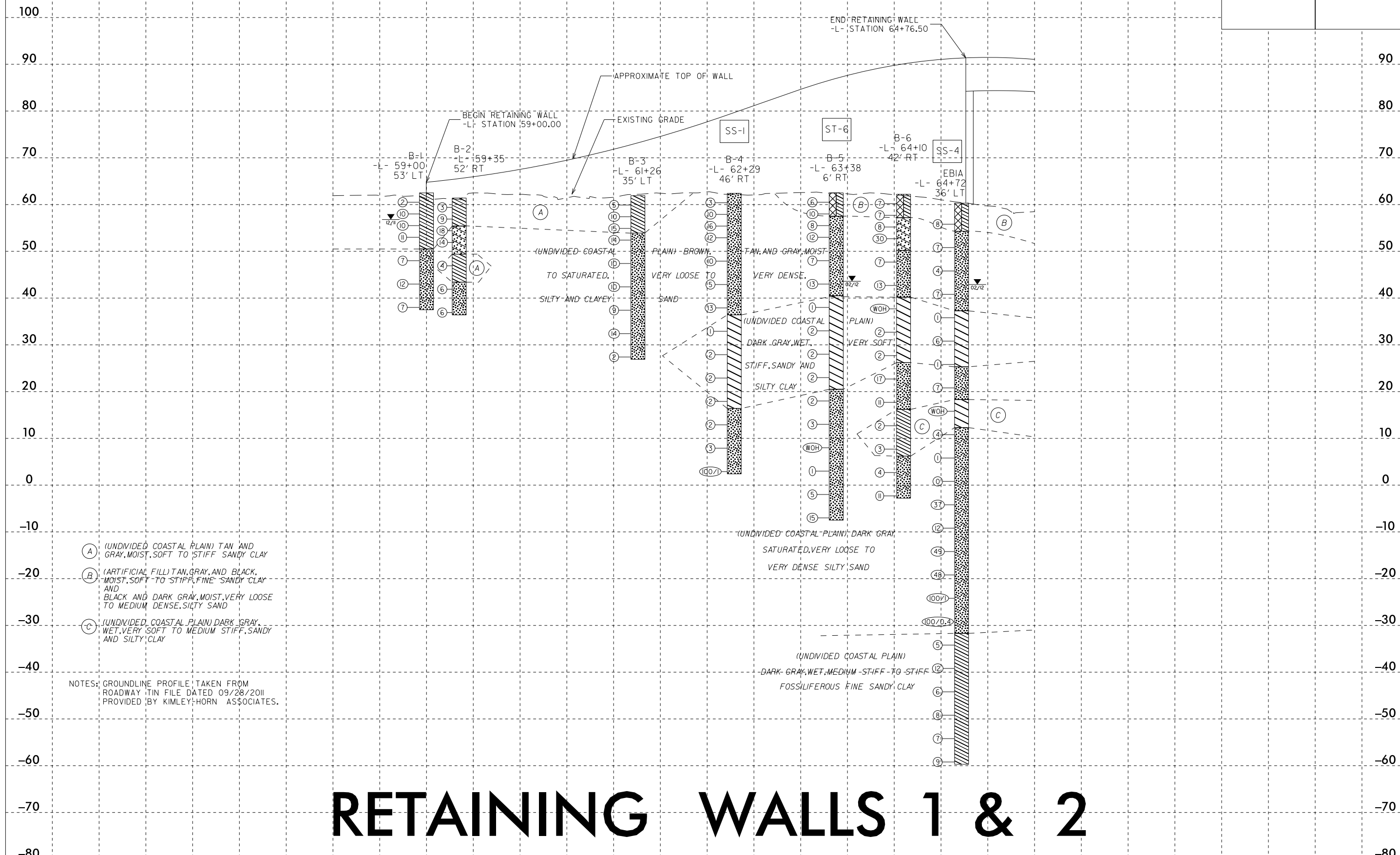
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5/14/99

PROJECT REFERENCE NO. 35781.1.2 (U-3315)	SHEET NO. 5
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PROFILE ALONG -L- FROM STATION 59+00 TO STATION 64+76.50

BORINGS PROJECTED TO -L-



- (A) (UNDIVIDED COASTAL PLAIN) TAN AND GRAY, MOIST, SOFT TO STIFF SANDY CLAY
- (B) (ARTIFICIAL FILL) TAN, GRAY, AND BLACK, MOIST, SOFT TO STIFF, FINE SANDY CLAY AND BLACK AND DARK GRAY, MOIST, VERY LOOSE TO MEDIUM DENSE, SILTY SAND
- (C) (UNDIVIDED COASTAL PLAIN) DARK GRAY, WET, VERY SOFT TO MEDIUM STIFF, SANDY AND SILTY CLAY

NOTES: GROUNDLINE PROFILE TAKEN FROM ROADWAY TIN FILE DATED 09/28/2011 PROVIDED BY KIMLEY-HORN ASSOCIATES.

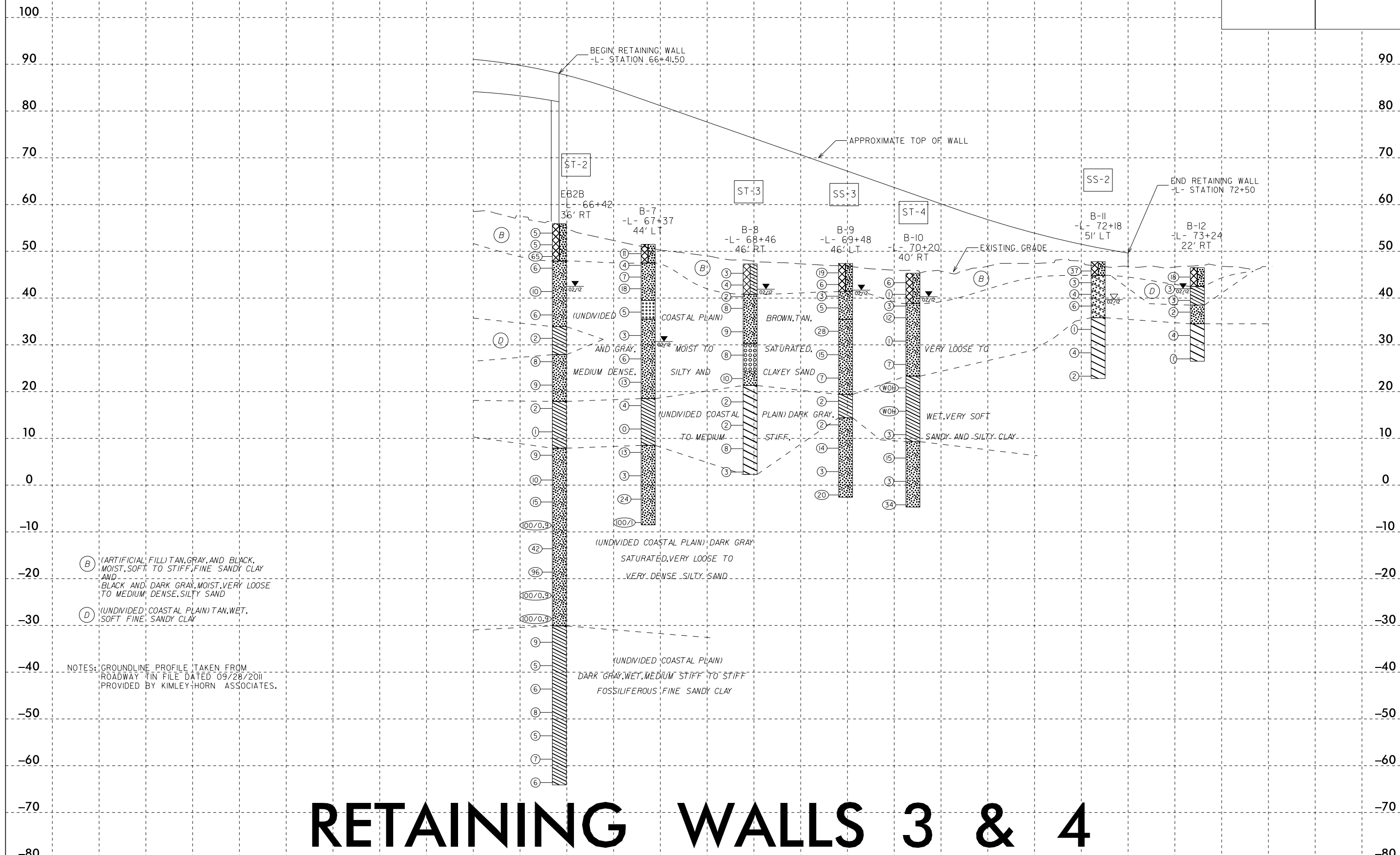
RETAINING WALLS 1 & 2

5/14/99

PROJECT REFERENCE NO. 35781.1.2 (U-3315)	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PROFILE ALONG -L- FROM STATION 66+41.50 TO STATION 72+50

BORINGS PROJECTED TO -L-



- (B) (ARTIFICIAL FILL) TAN, GRAY, AND BLACK, MOIST, SOFT TO STIFF, FINE SANDY CLAY AND BLACK AND DARK GRAY, MOIST, VERY LOOSE TO MEDIUM DENSE, SILTY SAND
- (D) (UNDIVIDED COASTAL PLAIN) TAN, WET, SOFT FINE, SANDY CLAY

NOTES: GROUNDLINE PROFILE TAKEN FROM ROADWAY TIN FILE DATED 09/28/2011 PROVIDED BY KIMLEY-HORN ASSOCIATES.

RETAINING WALLS 3 & 4

66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Tenth Street Connector - Retaining Wall - West Bridge Approach			GROUND WTR (ft)
BORING NO. B-6	STATION 64+10	OFFSET 42 ft RT	ALIGNMENT -L-
COLLAR ELEV. 62.2 ft	TOTAL DEPTH 65.0 ft	NORTHING 679,892	EASTING 2,481,354
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 02/03/12	COMP. DATE 02/03/12	SURFACE WATER DEPTH N/A

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Tenth Street Connector - Retaining Wall - West Bridge Approach			GROUND WTR (ft)
BORING NO. B-6	STATION 64+10	OFFSET 42 ft RT	ALIGNMENT -L-
COLLAR ELEV. 62.2 ft	TOTAL DEPTH 65.0 ft	NORTHING 679,892	EASTING 2,481,354
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 02/03/12	COMP. DATE 02/03/12	SURFACE WATER DEPTH N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
65														
60	61.2	1.0	2	3	4								62.2 GROUND SURFACE	0.0
	58.7	3.5	1	3	4								ARTIFICIAL FILL Tan and gray medium stiff fine sandy CLAY (A-6)	5.0
55	56.2	6.0	2	3	5								UNDIVIDED COASTAL PLAIN Tan and gray dense clayey fine SAND (A-2-6)	12.0
	53.7	8.5	5	18	12								Tan and red-brown loose to medium dense silty fine SAND (A-2-4)	22.0
50	48.7	13.5	2	4	3								Dark gray very soft silty CLAY (A-7)	36.0
45	43.7	18.5	2	8	5								Dark gray medium dense silty fine SAND (A-2-4)	46.0
40	38.7	23.5	WOH	WOH	WOH								Dark gray very soft to soft sandy CLAY (A-6)	56.0
35	33.7	28.5	WOH	WOH	2								Dark gray loose to medium dense silty fine SAND (A-2-4)	65.0
30	28.7	33.5	WOH	WOH	2								Boring Terminated at Elevation -2.8 ft in medium dense silty SAND.	
25	23.7	38.5	1	9	8								1) Advanced 3-1/4 HSA to a depth of 6 feet.	
20	18.7	43.5	5	5	6								2) Advanced 3-7/8 carbide tricone to 63.5 feet.	
15	13.7	48.5	1	1	1								3) Set 10 feet of NW casing.	
10	8.7	53.5	1	1	2								4) Used bentonite with water as drilling fluid.	
5	3.7	58.5	2	2	2								Other Samples:	
0	-1.3	63.5	4	5	6								M-9 (23.5 - 25.0)	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
-15													Match Line	
													M-10 (28.5 - 30.0)	
													M-11 (33.5 - 35.0)	
													M-12 (48.5 - 50.0)	
													M-13 (53.5 - 55.0)	

NCDOT BORE DOUBLE U3315_GEO_RWAL_PITT_GPJ_NC_DOT_GDT 5/22/12

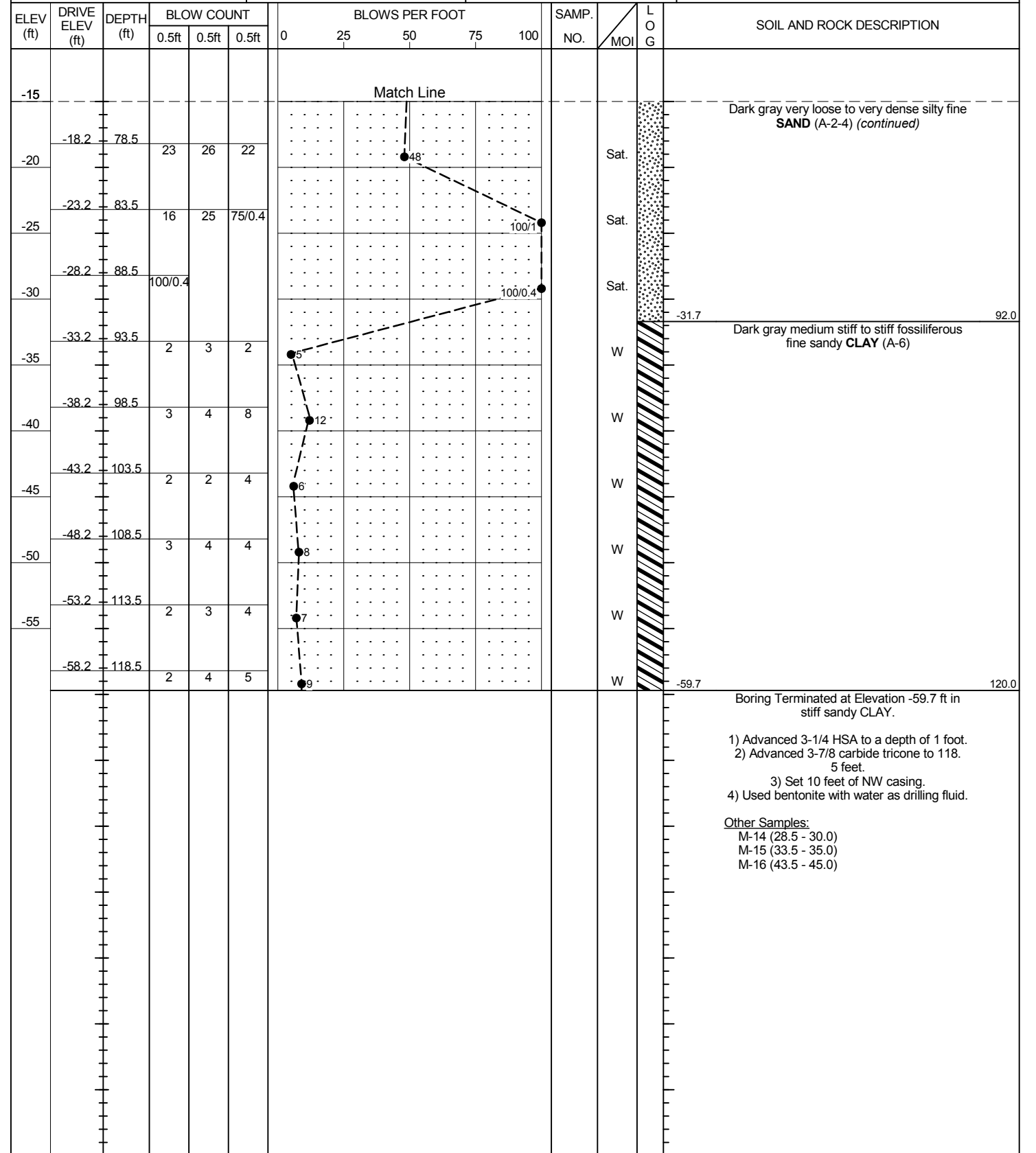
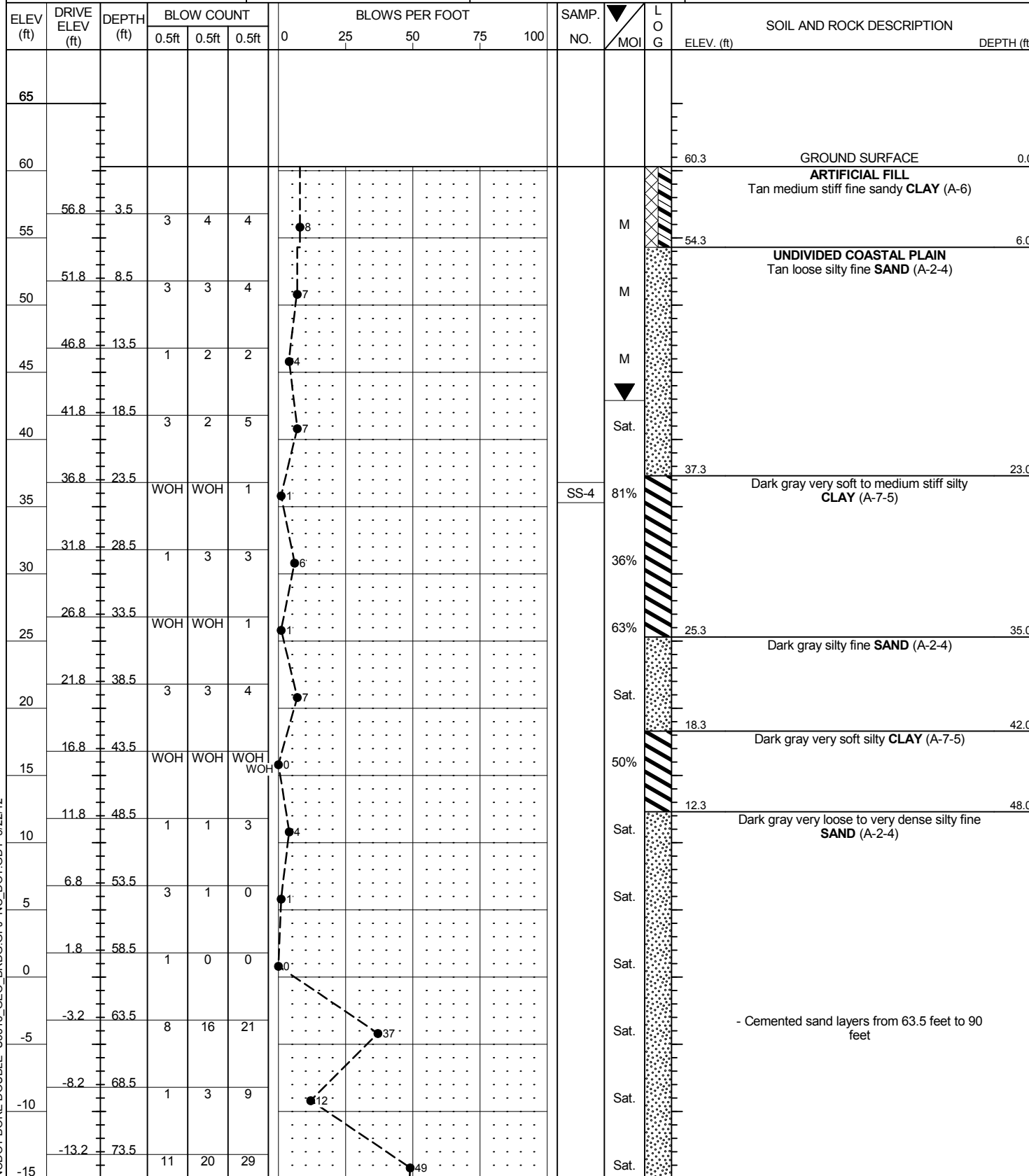


NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Bridge on -L- (Tenth Street) over -Y10- (SR 1531, Dickinson Avenue) and -Y11- (CSX Railroad)			GROUND WTR (ft)
BORING NO. EB1-A	STATION 64+72	OFFSET 36 ft LT	ALIGNMENT -L-
COLLAR ELEV. 60.3 ft	TOTAL DEPTH 120.0 ft	NORTHING 679,951	EASTING 2,481,435
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 01/30/12	COMP. DATE 01/31/12	SURFACE WATER DEPTH N/A

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Bridge on -L- (Tenth Street) over -Y10- (SR 1531, Dickinson Avenue) and -Y11- (CSX Railroad)			GROUND WTR (ft)
BORING NO. EB1-A	STATION 64+72	OFFSET 36 ft LT	ALIGNMENT -L-
COLLAR ELEV. 60.3 ft	TOTAL DEPTH 120.0 ft	NORTHING 679,951	EASTING 2,481,435
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 01/30/12	COMP. DATE 01/31/12	SURFACE WATER DEPTH N/A



NCDOT BORE DOUBLE U3315_GEO_BRDG.GPJ NC_DOT_GDT 5/22/12

Boring Terminated at Elevation -59.7 ft in stiff sandy CLAY.

- Advanced 3-1/4 HSA to a depth of 1 foot.
- Advanced 3-7/8 carbide tricone to 118.5 feet.
- Set 10 feet of NW casing.
- Used bentonite with water as drilling fluid.

Other Samples:
M-14 (28.5 - 30.0)
M-15 (33.5 - 35.0)
M-16 (43.5 - 45.0)

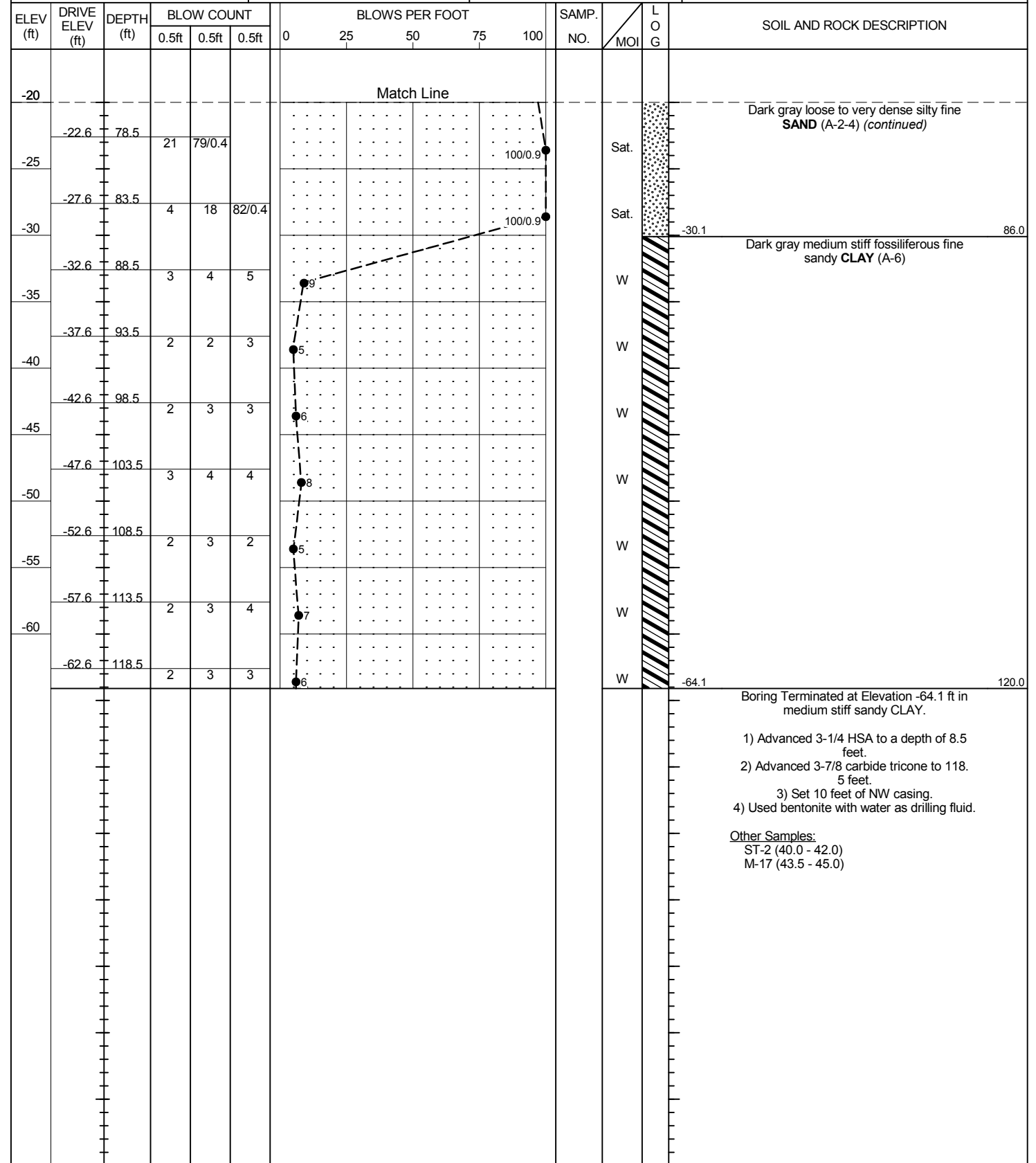
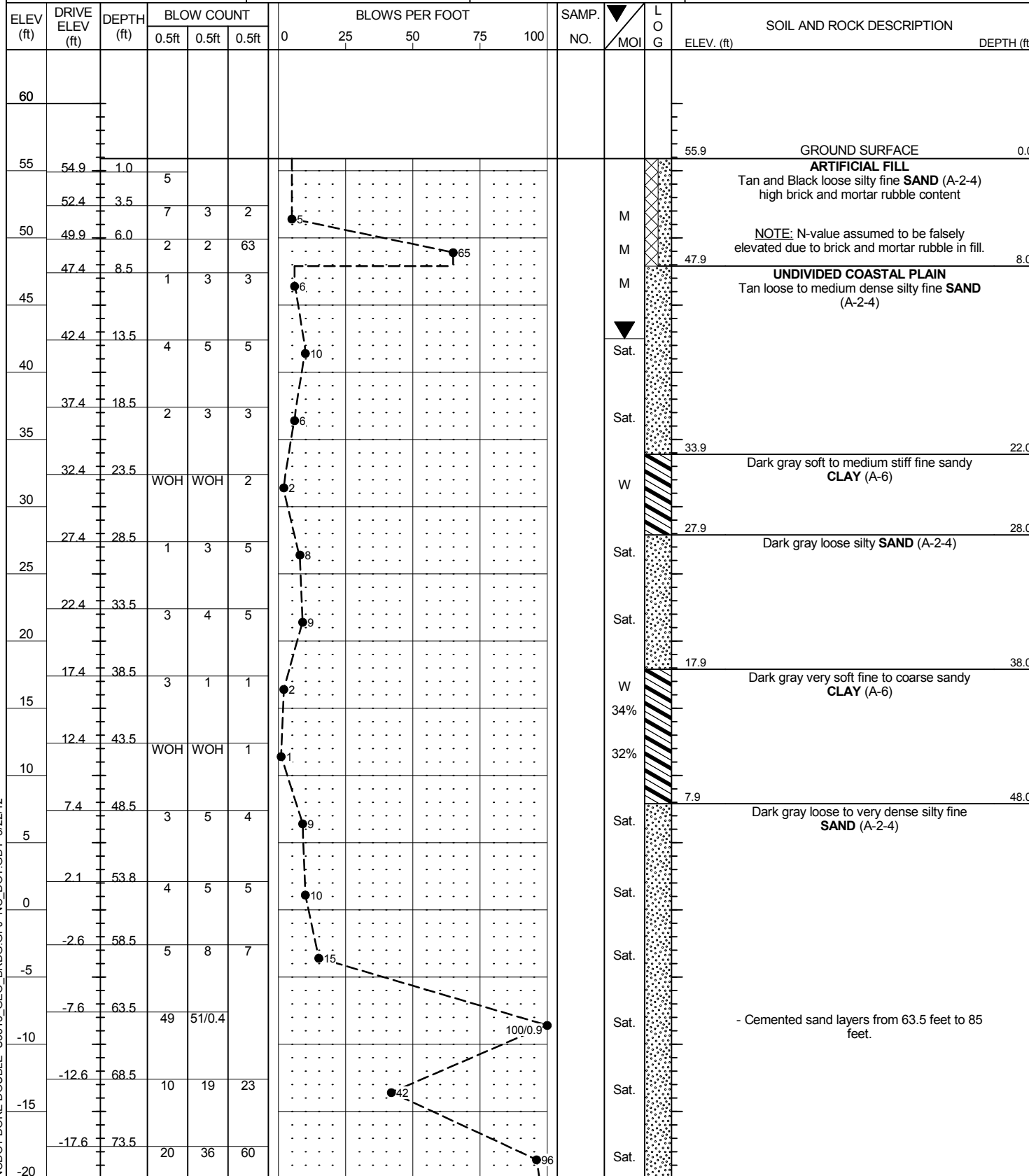


NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Bridge on -L- (Tenth Street) over -Y10- (SR 1531, Dickinson Avenue) and -Y11- (CSX Railroad)			GROUND WTR (ft)
BORING NO. EB2-B	STATION 66+42	OFFSET 36 ft RT	ALIGNMENT -L-
COLLAR ELEV. 55.9 ft	TOTAL DEPTH 120.0 ft	NORTHING 679,836	EASTING 2,481,579
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 01/31/12	COMP. DATE 02/01/12	SURFACE WATER DEPTH N/A

WBS 35781.1.2	TIP U-3315	COUNTY PITT	GEOLOGIST Bartlett, T. R.
SITE DESCRIPTION Bridge on -L- (Tenth Street) over -Y10- (SR 1531, Dickinson Avenue) and -Y11- (CSX Railroad)			GROUND WTR (ft)
BORING NO. EB2-B	STATION 66+42	OFFSET 36 ft RT	ALIGNMENT -L-
COLLAR ELEV. 55.9 ft	TOTAL DEPTH 120.0 ft	NORTHING 679,836	EASTING 2,481,579
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012		DRILL METHOD Mud Rotary	HAMMER TYPE Automatic
DRILLER Turnage, J. R.	START DATE 01/31/12	COMP. DATE 02/01/12	SURFACE WATER DEPTH N/A



NCDOT BORE DOUBLE U3315_GEO_BRDG.GPJ NC_DOT_GDT 5/22/12



NCDOT GEOTECHNICAL ENGINEERING UNIT

BORELOG REPORT

WBS 35781.1.2		TIP U-3315		COUNTY PITT		GEOLOGIST Bartlett, T. R.										
SITE DESCRIPTION Tenth Street Connector - Retaining Wall - East Bridge Approach							GROUND WTR (ft)									
BORING NO. B-9		STATION 69+48		OFFSET 46 ft LT		ALIGNMENT -L-										
COLLAR ELEV. 47.4 ft		TOTAL DEPTH 50.0 ft		NORTHING 679,833		EASTING 2,481,896										
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Turnage, J. R.		START DATE 02/01/12		COMP. DATE 02/02/12		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
50																
45	46.4	1.0	8	11	8									M	47.4	0.0
	43.9	3.5	6	2	4											
	41.4	6.0	2	2	1											
40	38.9	8.5	2	4	1									Sat.	41.4	6.0
35	33.9	13.5	10	12	16									Sat.	35.4	12.0
30	28.9	18.5	3	7	8									Sat.		
25	23.9	23.5	3	3	4									Sat.		
20	18.9	28.5	1	1	1									Sat.	19.4	28.0
15	13.9	33.5	1	1	1									Sat.	14.4	33.0
10	8.9	38.5	3	6	8									Sat.		
5	3.9	43.5	3	2	1									Sat.		
0	-1.1	48.5	6	7	13									Sat.	-2.6	50.0
<p>Boring Terminated at Elevation -2.6 ft in medium dense silty SAND.</p> <p>1) Advanced 3-1/4 HSA to a depth of 6 feet. 2) Advanced 3-7/8 carbide tricone to 48.5 feet. 3) Set 10 feet of NW casing. 4) Used bentonite with water as drilling fluid.</p>																

WBS 35781.1.2		TIP U-3315		COUNTY PITT		GEOLOGIST Bartlett, T. R.										
SITE DESCRIPTION Tenth Street Connector - Retaining Wall - East Bridge Approach							GROUND WTR (ft)									
BORING NO. B-10		STATION 70+20		OFFSET 40 ft RT		ALIGNMENT -L-										
COLLAR ELEV. 45.3 ft		TOTAL DEPTH 50.0 ft		NORTHING 679,731		EASTING 2,481,942										
DRILL RIG/HAMMER EFF./DATE TER6847 CME-75 91% 02/02/2012			DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Turnage, J. R.		START DATE 02/02/12		COMP. DATE 02/02/12		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
50																
45	44.3	1.0	2	3	3									M	45.3	0.0
	41.8	3.5	2	0	1											
40	39.3	6.0	1	1	2											
	36.8	8.5	1	7	5									Sat.	38.8	6.5
35	31.8	13.5	1	0	1									Sat.		
30	26.8	18.5	5	5	2									Sat.		
25	21.8	23.5	WOH	WOH	WOH									Sat.	23.3	22.0
20	16.8	28.5	WOH	WOH	WOH									Sat.		
15	11.8	33.5	1	1	2									Sat.		
10	6.8	38.5	5	7	8									Sat.		
5	1.8	43.5	2	1	2									Sat.		
0	-3.2	48.5	8	14	20									Sat.	-4.7	50.0
<p>Boring Terminated at Elevation -4.7 ft in dense silty SAND.</p> <p>1) Advanced 3-1/4 HSA to a depth of 6 feet. 2) Advanced 3-7/8 carbide tricone to 48.5 feet. 3) Set 10 feet of NW casing. 4) Used bentonite with water as drilling fluid.</p> <p>Other Samples: M-20 (23.5 - 25.0) ST-4 (25.0 - 27.0) M-21 (28.5 - 30.0) M-22 (33.5 - 35.0)</p>																

NCDOT BORE DOUBLE U3315_GEO_RWAL_GPJ_NC_DOT_GDT 5/22/12



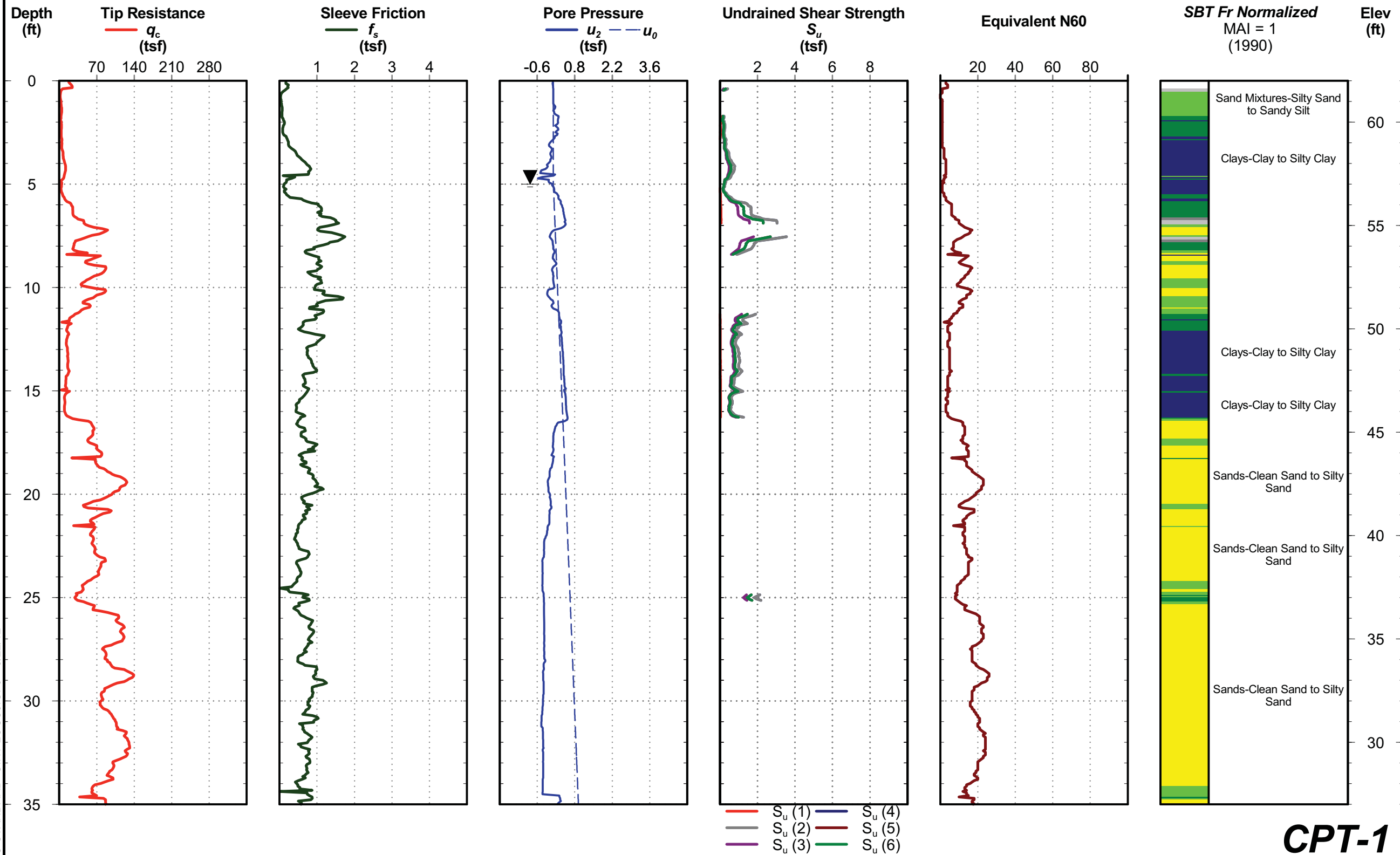
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-1**

Date: Feb. 27, 2012
Estimated Water Depth: 5 ft
Rig/Operator: J. Bandle

Northing: 680039
Easting: 2480877
Elevation: 62.0

Total Depth: 60.4 ft
Termination Criteria: Target Depth
Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-1



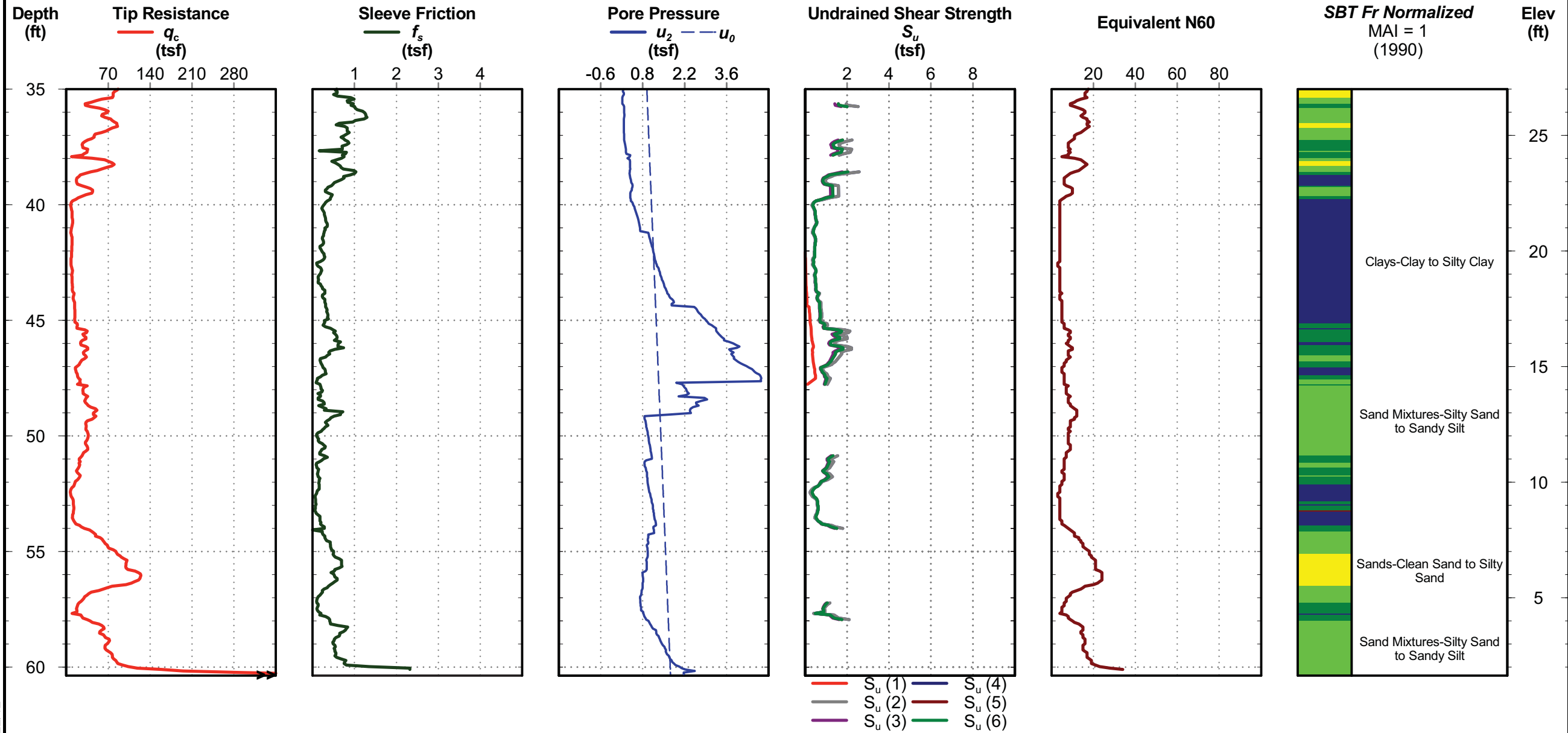
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-1**

Date: Feb. 27, 2012
 Estimated Water Depth: 5 ft
 Rig/Operator: J. Bandle

Northing: 680039
 Easting: 2480877
 Elevation: 62.0

Total Depth: 60.4 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



**U-3315 - Tenth Street Connector
(Pitt County, North Carolina)**

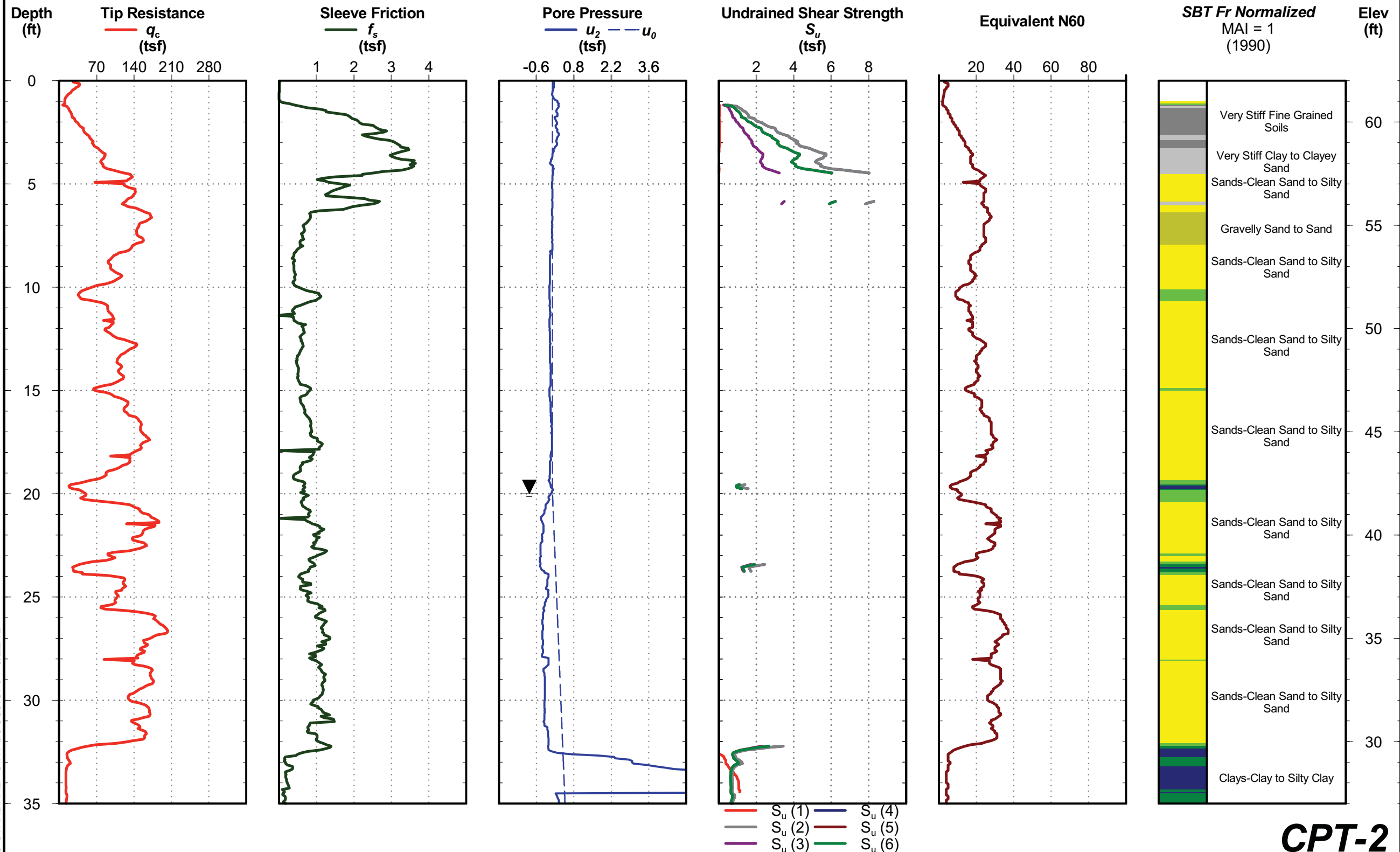
Project Number: 70115058

Cone Penetration Test CPT-2

Date: Feb. 27, 2012
 Estimated Water Depth: 20 ft
 Rig/Operator: J. Bandle

Northing: 680020
 Easting: 2481135
 Elevation: 62.0

Total Depth: 59.6 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-2



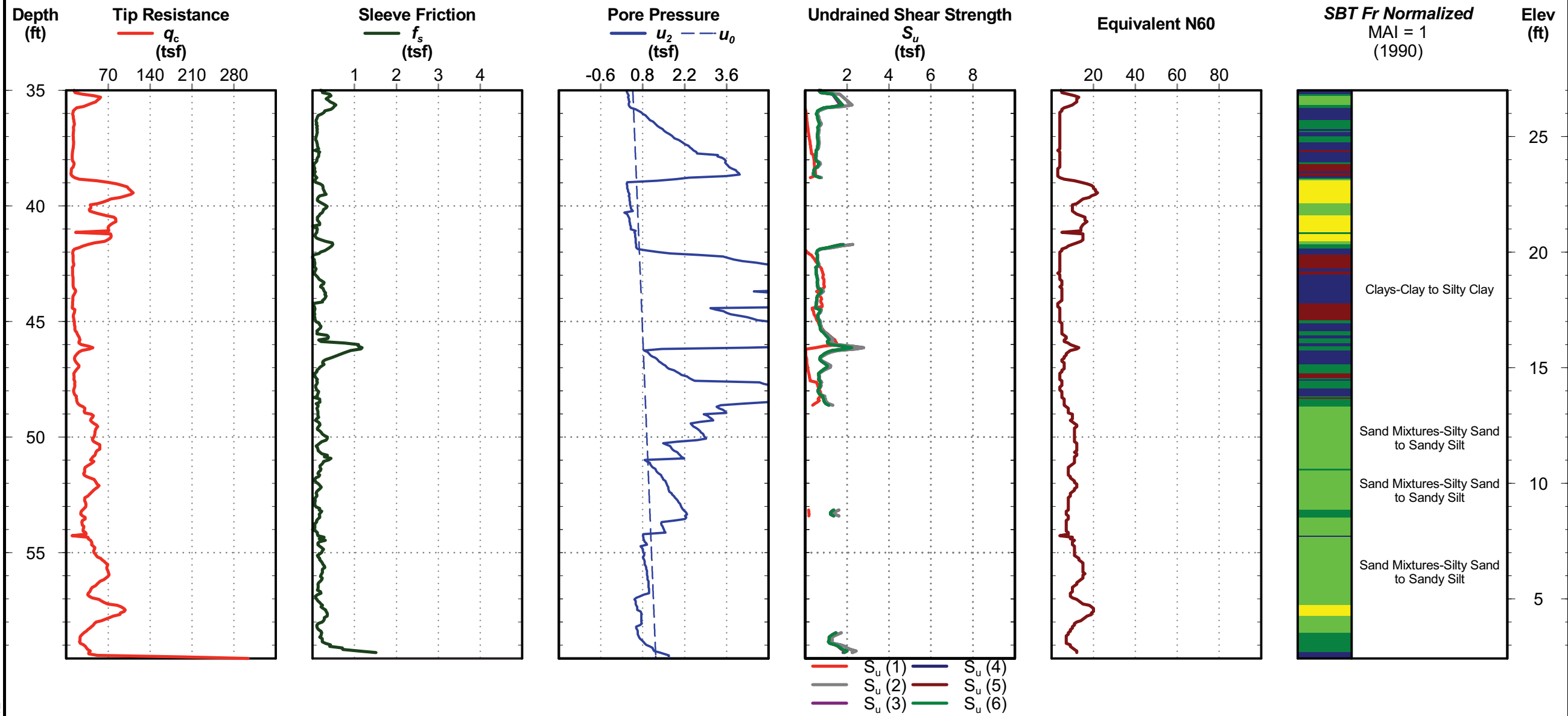
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-2**

Date: Feb. 27, 2012
 Estimated Water Depth: 20 ft
 Rig/Operator: J. Bandle

Northing: 680020
 Easting: 2481135
 Elevation: 62.0

Total Depth: 59.6 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



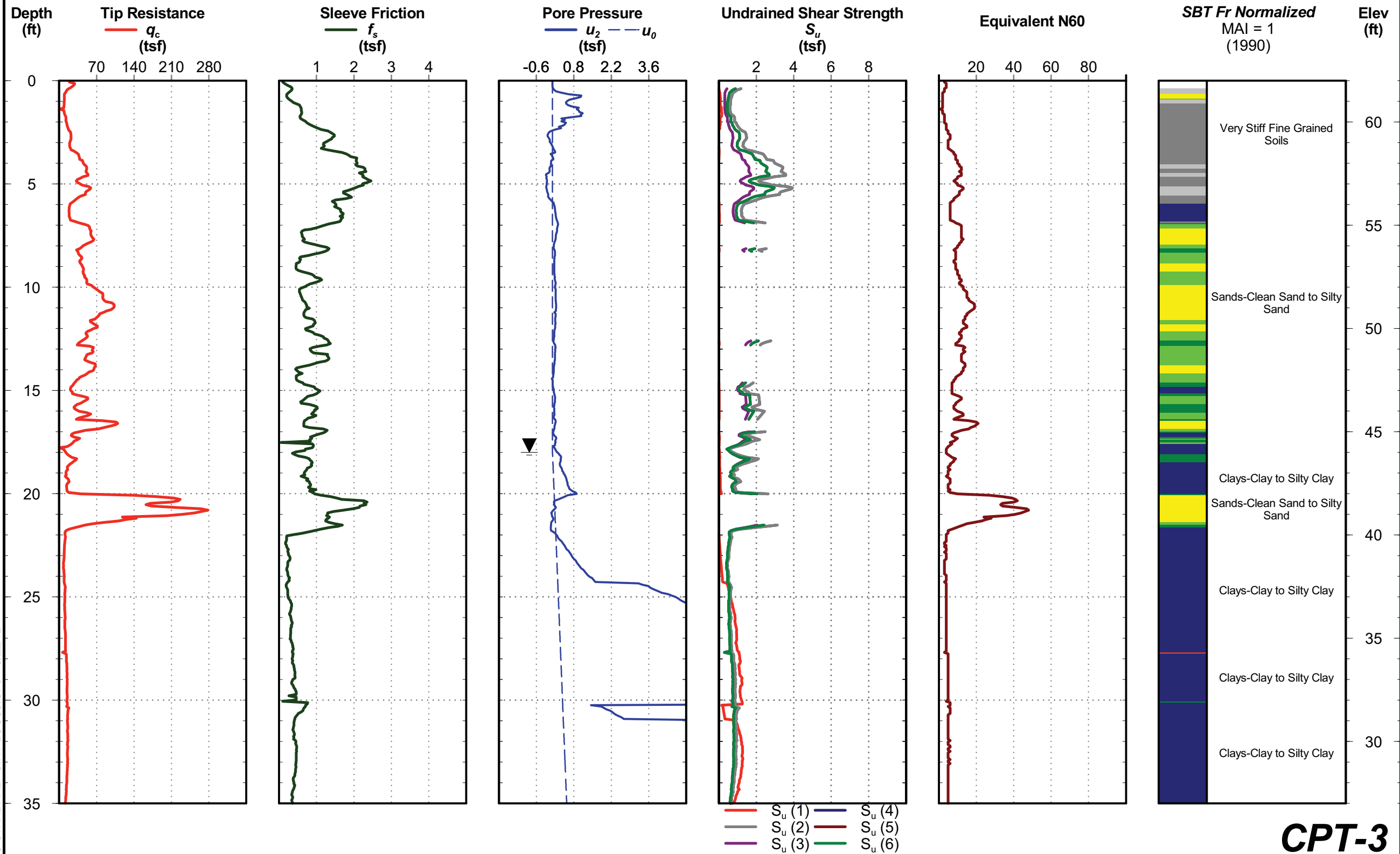
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-3**

Date: Feb. 27, 2012
Estimated Water Depth: 18 ft
Rig/Operator: J. Bandle

Northing: 679947
Easting: 2481268
Elevation: 62.0

Total Depth: 66.5 ft
Termination Criteria: Target Depth
Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-3



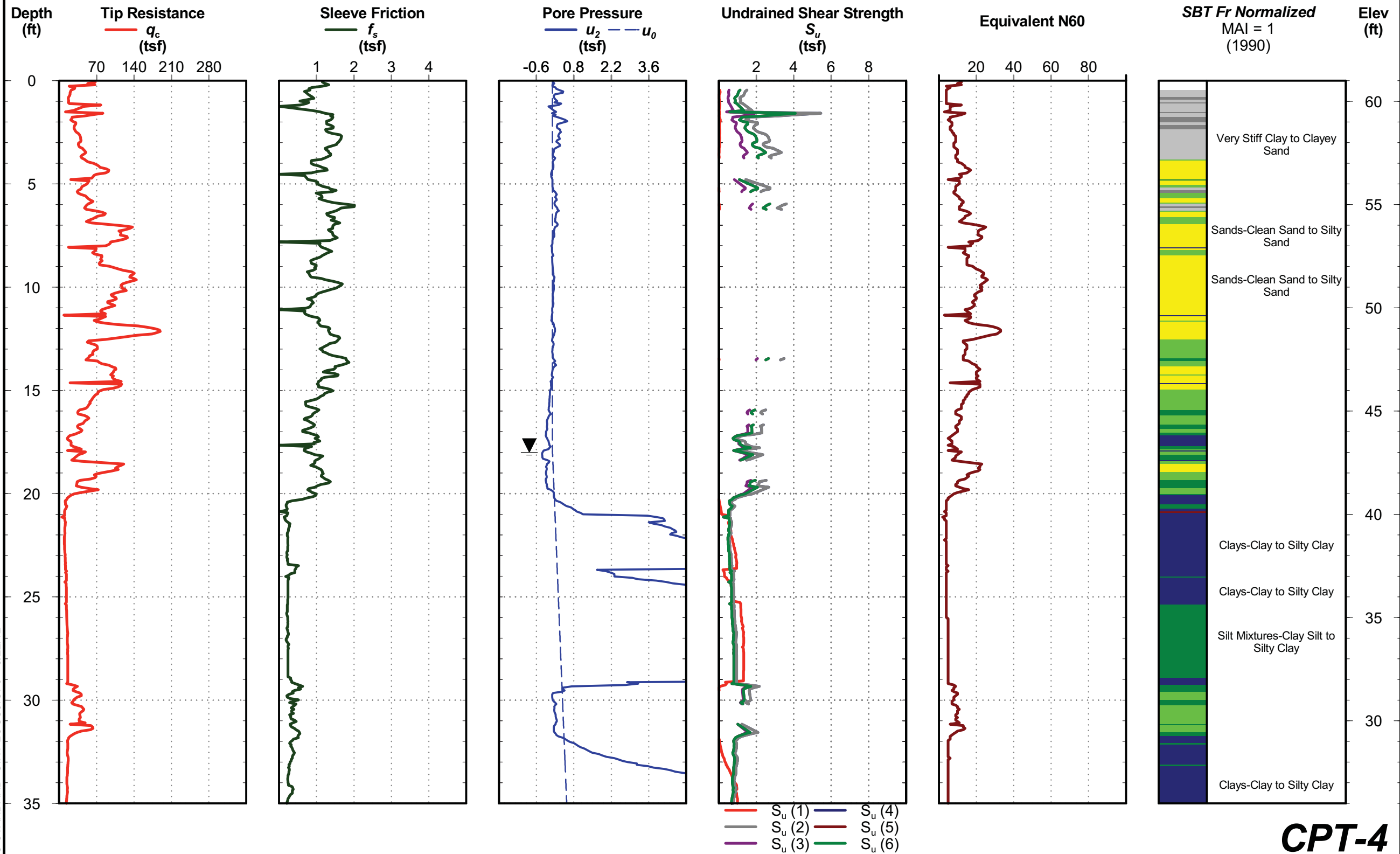
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-4**

Date: Feb. 28, 2012
Estimated Water Depth: 18 ft
Rig/Operator: J. Bandle

Northing: 679921
Easting: 2481408
Elevation: 61.0

Total Depth: 60.6 ft
Termination Criteria: Target Depth
Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-4



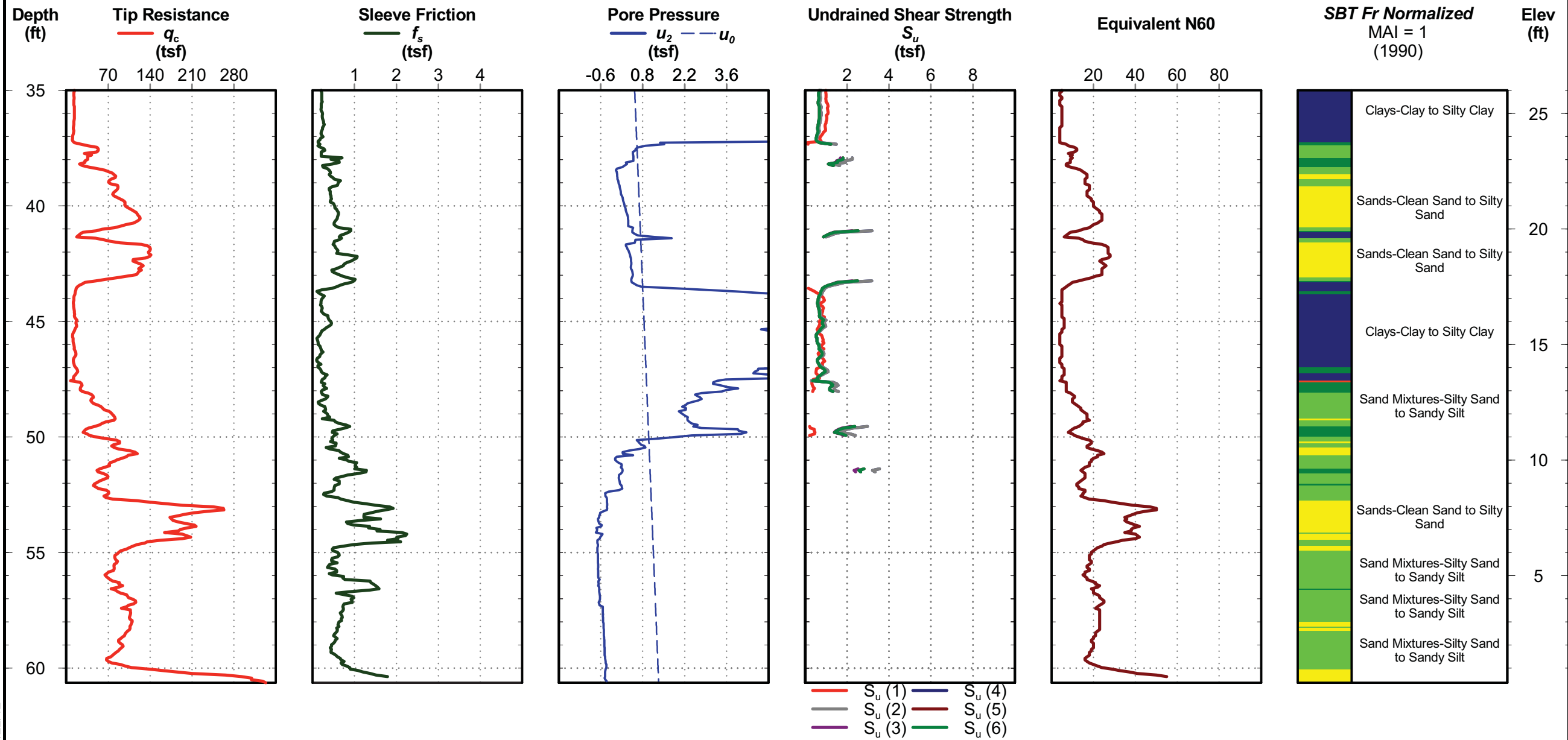
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test CPT-4

Date: Feb. 28, 2012
 Estimated Water Depth: 18 ft
 Rig/Operator: J. Bandle

Northing: 679921
 Easting: 2481408
 Elevation: 61.0

Total Depth: 60.6 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



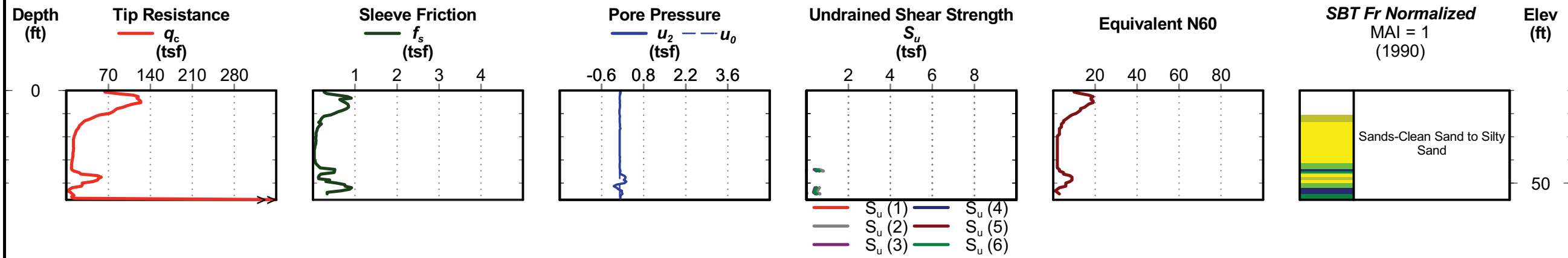
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-5**

Date: Feb. 28, 2012
Estimated Water Depth: Not Encountered
Rig/Operator: J. Bandle

Northing: 679807
Easting: 2481595
Elevation: 54.0

Total Depth: 4.7 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 10 cm²





**U-3315 - Tenth Street Connector
(Pitt County, North Carolina)**

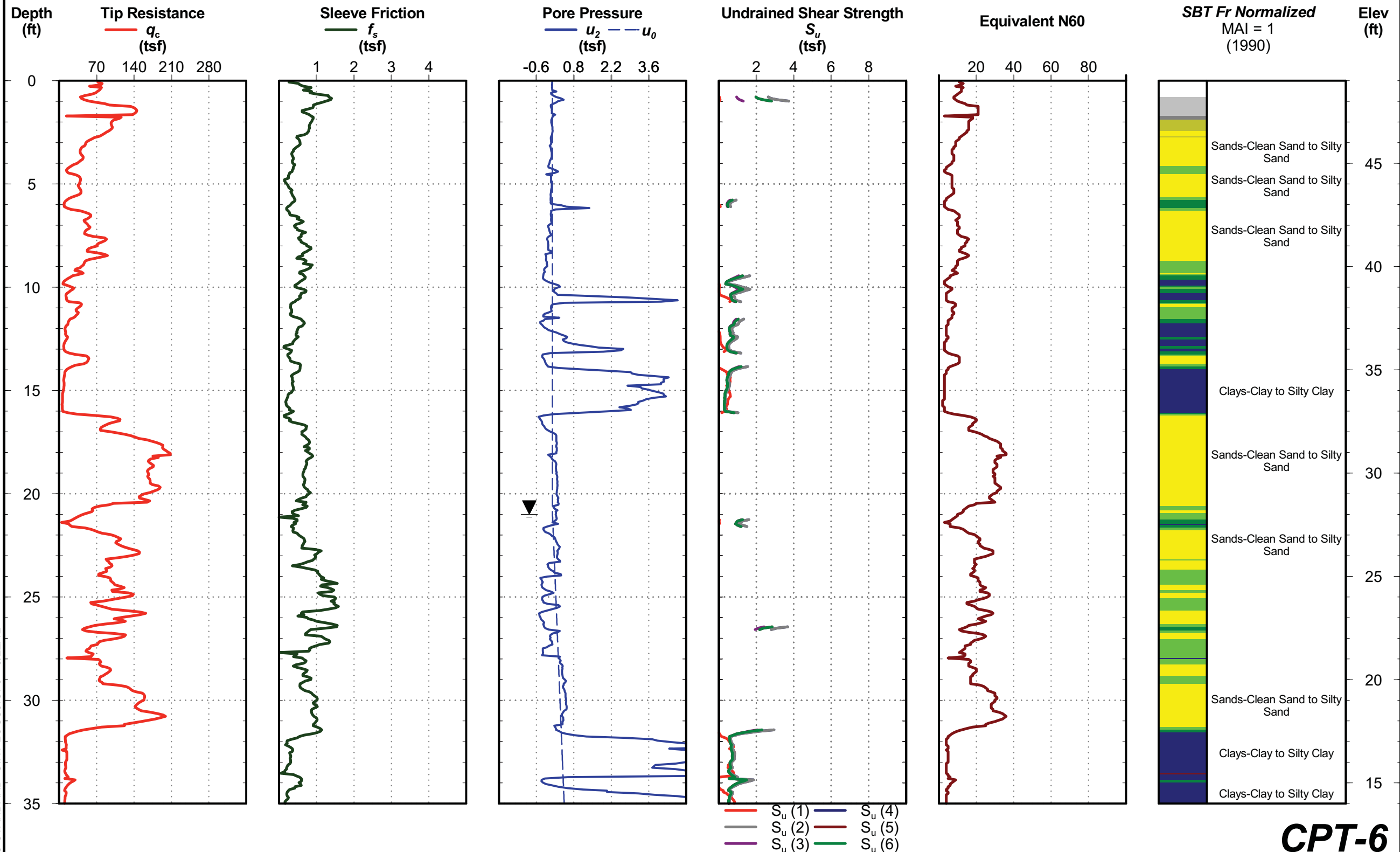
Project Number: 70115058

Cone Penetration Test CPT-6

Date: Feb. 29, 2012
 Estimated Water Depth: 21 ft
 Rig/Operator: J. Bandle

Northing: 679853
 Easting: 2481748
 Elevation: 49.0

Total Depth: 54.1 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



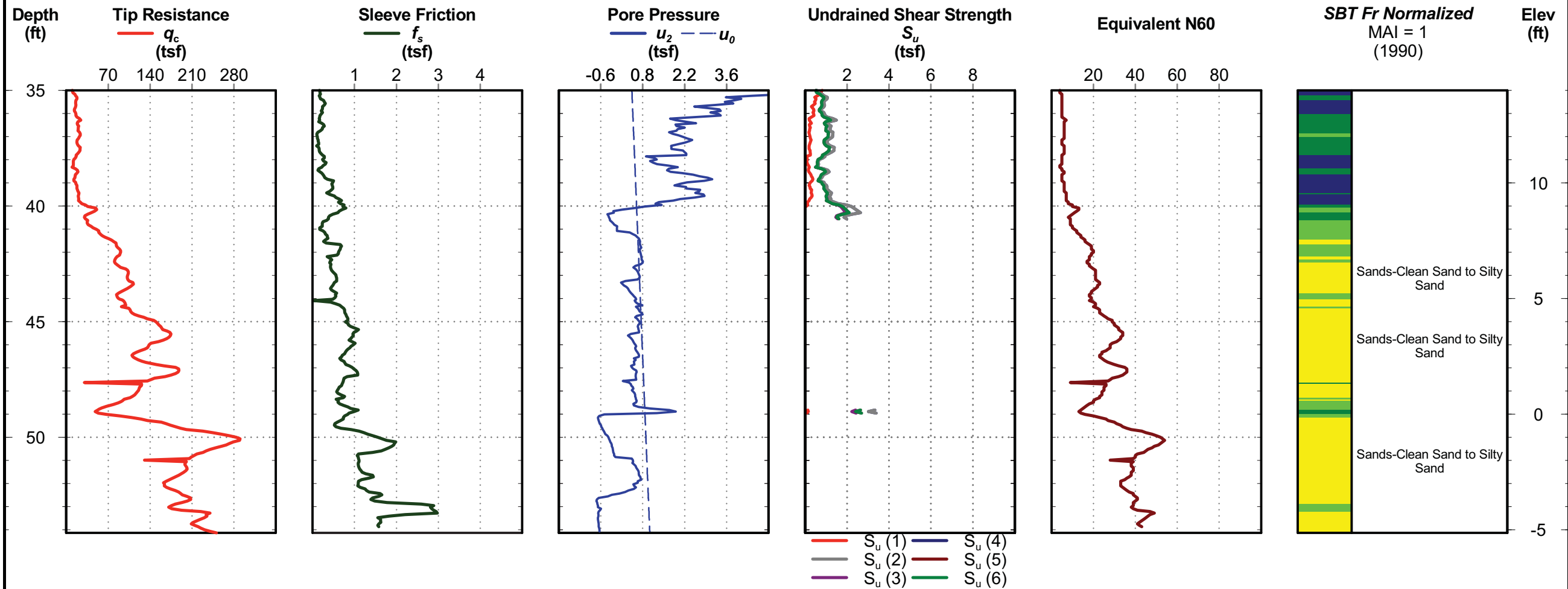
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test CPT-6

Date: Feb. 29, 2012
 Estimated Water Depth: 21 ft
 Rig/Operator: J. Bandle

Northing: 679853
 Easting: 2481748
 Elevation: 49.0

Total Depth: 54.1 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



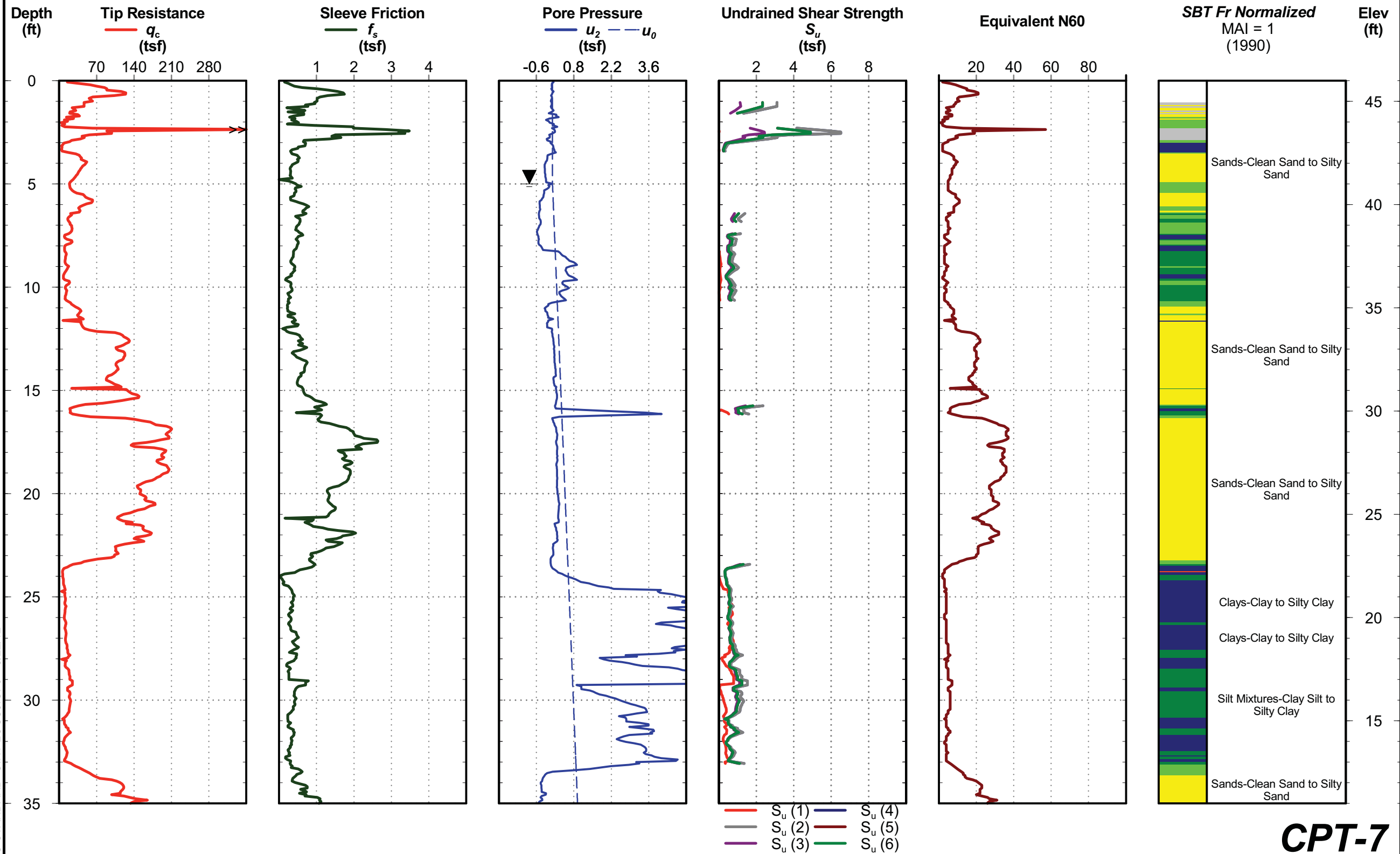
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test CPT-7

Date: Feb. 28, 2012
 Estimated Water Depth: 5 ft
 Rig/Operator: J. Bandle

Northing: 679765
 Easting: 2481858
 Elevation: 46.0

Total Depth: 47.6 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-7



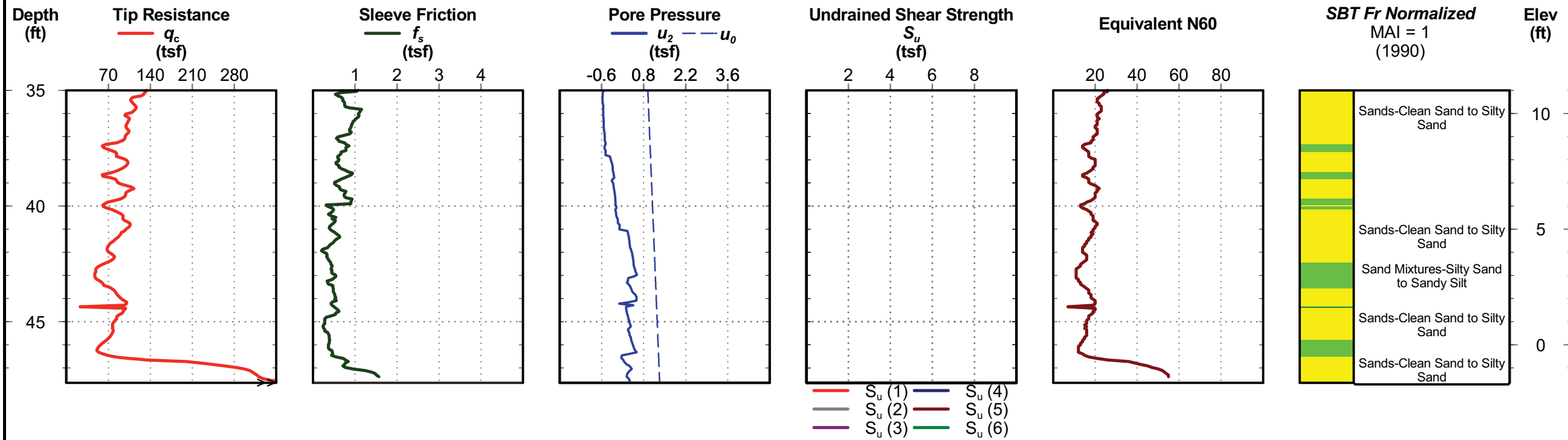
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test CPT-7

Date: Feb. 28, 2012
 Estimated Water Depth: 5 ft
 Rig/Operator: J. Bandle

Northing: 679765
 Easting: 2481858
 Elevation: 46.0

Total Depth: 47.6 ft
 Termination Criteria: Target Depth
 Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



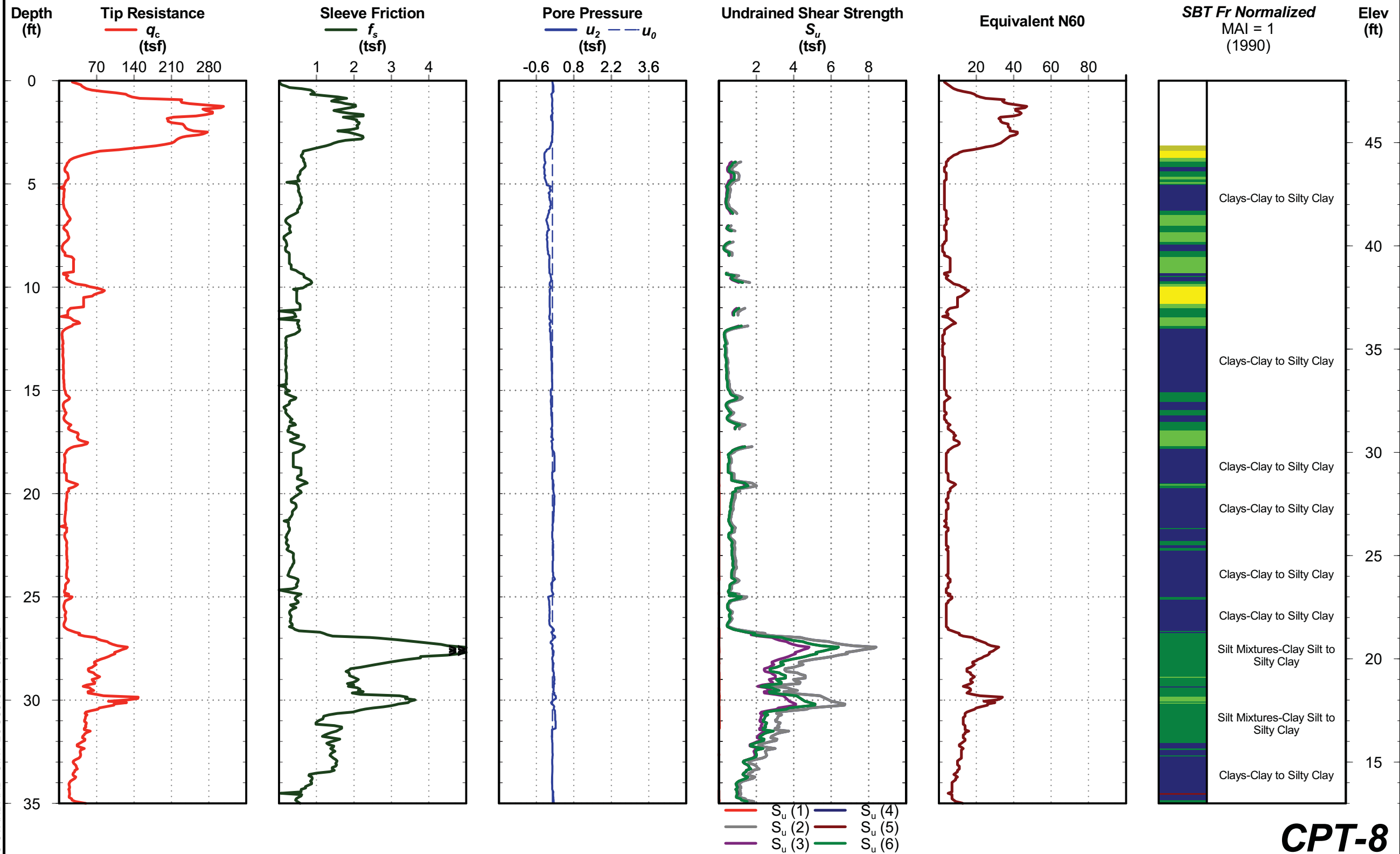
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test **CPT-8**

Date: Feb. 28, 2012
Estimated Water Depth: Not Encountered
Rig/Operator: J. Bandle

Northing: 679792
Easting: 2482151
Elevation: 48.0

Total Depth: 47.8 ft
Termination Criteria: Target Depth
Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12

CPT-8



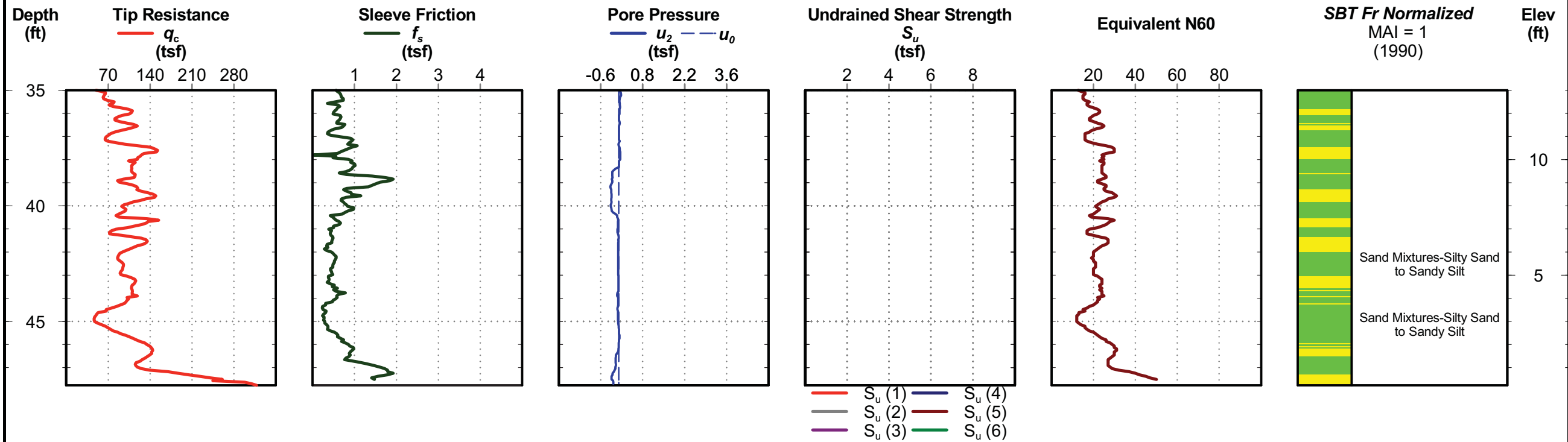
U-3315 - Tenth Street Connector
 (Pitt County, North Carolina)
 Project Number: 70115058

Cone Penetration Test CPT-8

Date: Feb. 28, 2012
Estimated Water Depth: Not Encountered
Rig/Operator: J. Bandle

Northing: 679792
Easting: 2482151
Elevation: 48.0

Total Depth: 47.8 ft
Termination Criteria: Target Depth
Cone Size: 10 cm²



WPC STANDARD GINT LOGS3.GPJ 5/22/12



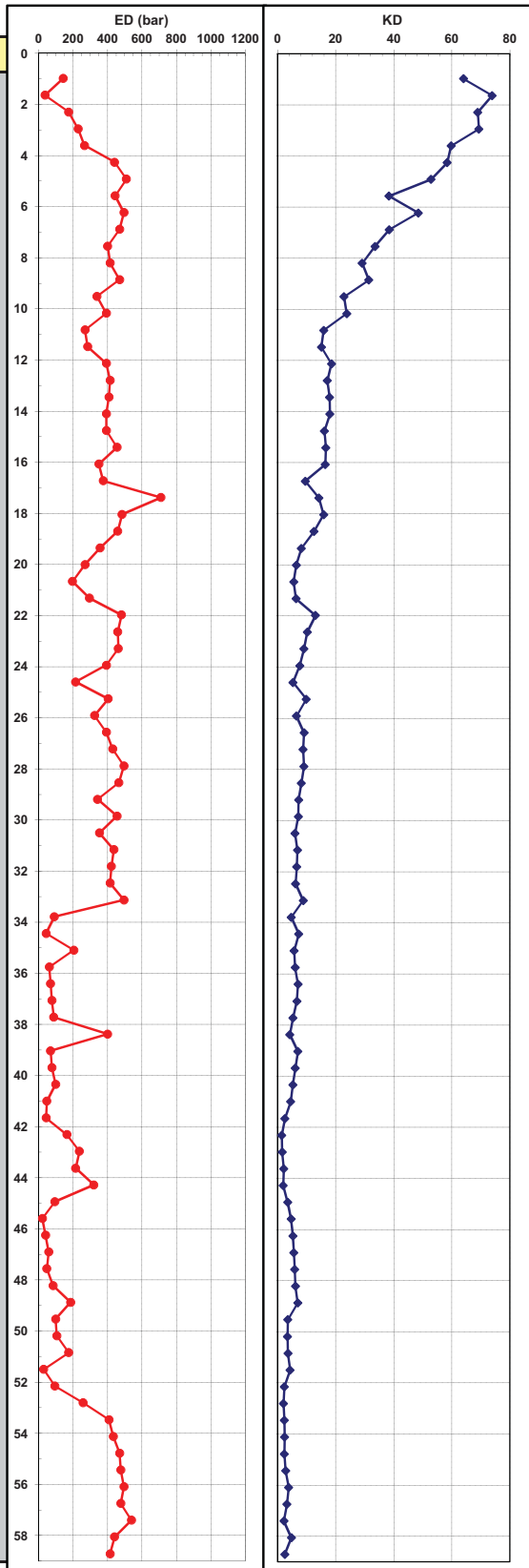
WBS: 35781.1.2
 TIP: U-3315
 County: Pitt
 Northing: 680010
 Easting: 2481169
 Elevation: 62
 Site Description: Stantonburg Road - Tenth Street Connector From US 13/NC 11 (Memorial Drive) to SR 1702 (Evans Street)

Test No.: DMT-2
 Rig: Pagani 220-73
 Operator: JMB
 Engineer: AAN
 Ground Wtr: 20.0 feet
 Date: 2/23/2012

	Before	After	Average
ΔA (bar)	0.1	0.1	0.1
ΔB (bar)	0.8	0.8	0.8
z _m (bar)	0	0	0

Increment	Depth (ft)	A (bar)	B (bar)
1	1.0	1.5	6.3
2	1.6	2.4	4.3
3	2.3	4.2	9.9
4	3.0	5.8	13.0
5	3.6	6.3	14.5
6	4.3	8.0	21.0
7	4.9	8.6	23.5
8	5.6	6.9	20.0
9	6.2	10.0	24.5
10	6.9	8.7	22.5
11	7.5	8.1	20.0
12	8.2	7.7	20.0
13	8.9	9.2	23.0
14	9.5	6.8	17.0
15	10.2	7.8	19.5
16	10.8	5.2	13.5
17	11.5	5.3	14.0
18	12.1	7.3	19.0
19	12.8	7.2	19.5
20	13.4	7.9	20.0
21	14.1	8.3	20.0
22	14.8	7.8	19.5
23	15.4	8.6	22.0
24	16.1	8.5	19.0
25	16.7	5.3	16.5
26	17.4	9.1	29.5
27	18.0	9.8	24.0
28	18.7	8.0	21.5
29	19.4	5.3	16.0
30	20.0	4.2	12.5
31	20.7	3.6	9.9
32	21.3	4.5	13.5
33	22.0	9.9	24.0
34	22.6	8.0	21.5
35	23.3	7.4	21.0
36	23.9	6.3	18.0
37	24.6	4.2	11.0
38	25.3	8.5	20.5
39	25.9	5.7	15.5
40	26.6	8.3	20.0
41	27.2	8.3	21.0
42	27.9	9.0	23.5
43	28.5	8.3	22.0
44	29.2	7.2	17.5
45	29.8	7.6	21.0
46	30.5	6.4	17.0
47	31.2	7.6	20.5
48	31.8	7.5	20.0
49	32.5	7.2	19.5
50	33.1	10.5	25.0
51	33.8	4.7	8.1
52	34.4	6.6	8.7
53	35.1	6.5	13.0
54	35.8	6.0	8.6
55	36.4	7.2	10.0
56	37.1	7.0	10.0
57	37.7	5.9	9.2
58	38.4	6.1	18.0
59	39.0	7.7	10.5
60	39.7	7.0	10.0
61	40.3	6.4	10.0
62	41.0	5.2	7.4
63	41.7	3.3	5.4
64	42.3	2.7	8.1
65	43.0	3.1	10.5
66	43.6	3.7	10.5
67	44.3	3.8	13.5
68	44.9	5.0	8.5
69	45.6	5.5	7.0
70	46.2	6.7	8.7
71	46.9	7.5	10.0
72	47.6	7.8	10.0
73	48.2	8.8	12.0
74	48.9	11.0	17.0
75	49.5	5.6	9.2
76	50.2	5.6	9.4
77	50.8	6.3	12.0
78	51.5	6.1	7.8
79	52.2	4.3	7.8
80	52.8	4.5	12.5
81	53.5	5.4	17.5
82	54.1	5.7	18.5
83	54.8	5.7	19.5
84	55.4	6.5	20.5
85	56.1	8.5	23.0
86	56.7	7.5	21.5
87	57.4	5.8	21.5
88	58.1	10.5	23.5
89	58.7	6.2	18.5

Soil Classification	E _D (bar)	K _D
Silty Sand	142	64
Silty Clay	36	74
Sandy Silt	175	69
Sandy Silt	230	69
Sandy Silt	266	60
Sandy Silt	441	58
Silty Sand	510	53
Silty Sand	445	38
Sandy Silt	496	48
Sandy Silt	470	38
Sandy Silt	401	34
Sandy Silt	415	29
Sandy Silt	470	31
Sandy Silt	339	23
Sandy Silt	393	24
Sandy Silt	270	16
Sandy Silt	284	15
Sandy Silt	393	19
Silty Sand	415	17
Sandy Silt	408	18
Sandy Silt	393	18
Sandy Silt	393	16
Sandy Silt	455	17
Sandy Silt	350	16
Silty Sand	375	10
Silty Sand	710	14
Sandy Silt	485	16
Silty Sand	459	13
Silty Sand	357	8
Silty Sand	270	6
Silty Sand	197	6
Silty Sand	295	6
Sandy Silt	481	13
Silty Sand	459	10
Silty Sand	463	9
Silty Sand	393	8
Silty Sand	215	5
Sandy Silt	404	10
Silty Sand	324	6
Sandy Silt	393	9
Sandy Silt	430	9
Silty Sand	496	9
Silty Sand	466	8
Sandy Silt	342	7
Silty Sand	455	7
Silty Sand	353	6
Silty Sand	437	7
Silty Sand	423	7
Silty Sand	415	6
Sandy Silt	496	9
Clayey Silt	91	5
Clay	44	7
Silt	204	6
Silty Clay	62	6
Clay	69	7
Silty Clay	77	7
Silty Clay	87	5
Silty Sand	401	4
Clay	69	7
Silty Clay	77	6
Silty Clay	98	5
Clay	47	5
Silty Clay	44	3
Sand	164	1
Sand	237	2
Silty Sand	215	2
Sand	321	2
Clayey Silt	95	3
Clay	22	5
Clay	40	5
Clay	58	6
Clay	47	6
Clay	84	6
Silty Clay	186	7
Clayey Silt	98	3
Clayey Silt	106	3
Silt	175	4
Clay	29	4
Silt	95	2
Silty Sand	259	2
Sand	408	2
Sand	434	2
Sand	470	2
Silty Sand	477	3
Silty Sand	496	4
Silty Sand	477	3
Sand	539	2
Sandy Silt	441	5
Silty Sand	415	2



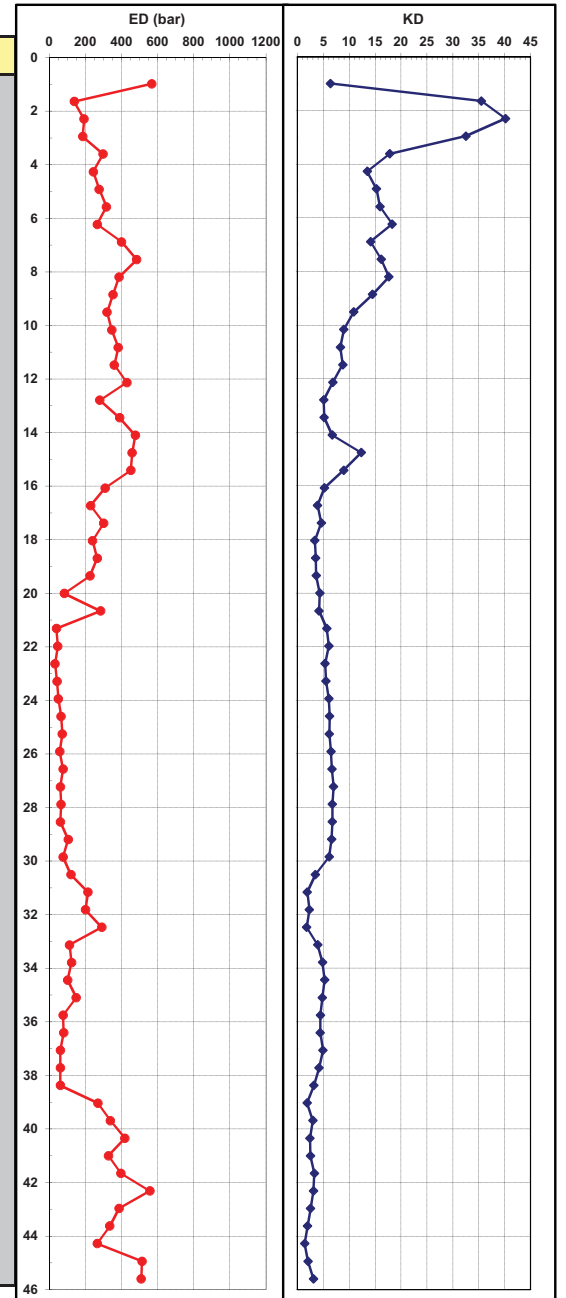
WBS: 35781.1.2
 TIP: U-3315
 County: Pitt
 Northing: 679917
 Easting: 2481376
 Elevation: 62
 Site Description: Stantonburg Road - Tenth Street Connector From US 13/NC 11 (Memorial Drive) to SR 1702 (Evans Street)

Test No.: DMT-4
 Rig: Pagani 220-73
 Operator: JMB
 Engineer: AAN
 Ground Wtr: 18.0 feet
 Date: #####

	Before	After	Average
ΔA (bar)	0.1	0.1	0.1
ΔB (bar)	0.8	0.8	0.8
z _m (bar)	0	0	0

Increment	Depth (ft)	A (bar)	B (bar)
1	1.0	1.0	17.5
2	1.6	3.2	7.9
3	2.3	5.3	11.5
4	3.0	5.5	11.5
5	3.6	3.9	13.0
6	4.3	3.4	11.0
7	4.9	4.5	13.0
8	5.6	5.4	15.0
9	6.2	6.8	15.0
10	6.9	6.1	18.0
11	7.5	7.8	22.0
12	8.2	9.0	20.5
13	8.9	7.9	18.5
14	9.5	6.3	16.0
15	10.2	5.6	16.0
16	10.8	5.6	17.0
17	11.5	6.2	17.0
18	12.1	5.3	18.0
19	12.8	3.9	12.5
20	13.4	4.4	16.0
21	14.1	6.1	20.1
22	14.8	11.5	25.0
23	15.4	8.7	22.0
24	16.1	5.1	14.5
25	16.7	3.8	11.0
26	17.4	4.8	14.0
27	18.0	3.5	11.0
28	18.7	3.8	12.0
29	19.4	3.9	11.0
30	20.0	4.3	7.5
31	20.7	4.8	13.5
32	21.3	5.6	7.6
33	22.0	6.2	8.4
34	22.6	5.4	7.2
35	23.3	5.8	7.9
36	23.9	6.6	8.9
37	24.6	7.0	9.7
38	25.3	7.1	10.0
39	25.9	7.5	10.0
40	26.6	8.0	11.0
41	27.2	8.4	11.0
42	27.9	8.3	11.0
43	28.5	8.4	11.0
44	29.2	8.7	12.5
45	29.8	8.0	11.0
46	30.5	4.8	9.0
47	31.2	3.0	9.8
48	31.8	3.6	10.0
49	32.5	3.1	12.0
50	33.1	5.7	9.7
51	33.8	7.2	11.5
52	34.4	7.8	11.5
53	35.1	7.5	12.5
54	35.8	6.6	9.6
55	36.4	6.7	9.8
56	37.1	7.4	10.0
57	37.7	6.4	9.0
58	38.4	5.0	7.6
59	39.0	3.7	12.0
60	39.7	5.8	16.0
61	40.3	5.1	17.5
62	41.0	5.1	15.0
63	41.7	6.7	18.5
64	42.3	6.8	23.0
65	43.0	5.5	17.0
66	43.6	4.4	14.5
67	44.3	3.3	11.5
68	44.9	5.0	20.0
69	45.6	7.1	22.0

Soil Classification	E _D (bar)	K _D
Sand	568	6
Sandy Silt	138	36
Silt	193	40
Silt	186	33
Silty Sand	299	18
Silty Sand	244	13
Silty Sand	277	15
Silty Sand	317	16
Silt	266	18
Silty Sand	401	14
Silty Sand	485	16
Sandy Silt	386	18
Sandy Silt	353	15
Sandy Silt	321	11
Silty Sand	346	9
Silty Sand	383	8
Sandy Silt	361	9
Silty Sand	430	7
Silty Sand	281	5
Silty Sand	390	5
Silty Sand	477	7
Sandy Silt	459	12
Sandy Silt	452	9
Silty Sand	310	5
Silty Sand	230	4
Silty Sand	302	5
Silty Sand	240	3
Silty Sand	266	4
Sandy Silt	226	4
Silty Clay	84	4
Silty Sand	284	4
Clay	40	6
Clay	47	6
Clay	33	5
Clay	44	6
Clay	51	6
Clay	66	6
Clay	73	6
Clay	58	6
Clay	77	7
Clay	62	7
Clay	66	7
Clay	62	7
Silty Clay	106	7
Clay	77	6
Clayey Silt	120	3
Silty Sand	215	2
Silty Sand	200	2
Sand	291	2
Clayey Silt	113	4
Silty Clay	124	5
Silty Clay	102	5
Clayey Silt	149	5
Silty Clay	77	4
Silty Clay	80	4
Clay	62	5
Clay	62	4
Silty Clay	62	3
Silty Sand	270	2
Silty Sand	339	3
Silty Sand	419	2
Silty Sand	328	3
Silty Sand	397	3
Silty Sand	557	3
Silty Sand	386	3
Silty Sand	335	2
Sand	266	1
Sand	514	2
Silty Sand	510	3





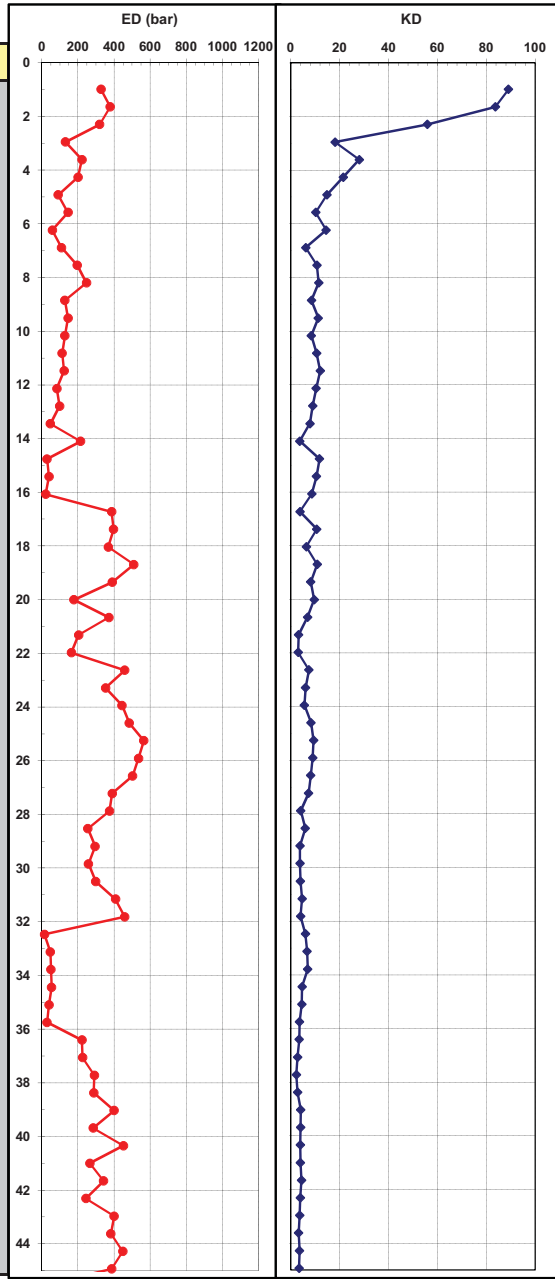
WBS: 35781.1.2
 TIP: U-3315
 County: Pitt
 Northing: 679843
 Easting: 2481786
 Elevation: 48
 Site Description: Stantonsburg Road - Tenth Street Connector From US 13/NC 11 (Memorial Drive) to SR 1702 (Evans Street)

Test No.: DMT-6
 Rig: Pagani 220-73
 Operator: JMB
 Engineer: AAN
 Ground Wtr: 21.0 feet
 Date: 2/23/2012

	Before	After	Average
ΔA (bar)	0.1	0.1	0.1
ΔB (bar)	0.8	0.8	0.8
z _m (bar)	0	0	0

Increment	Depth (ft)	A (bar)	B (bar)
1	1.0	2.6	12.5
2	1.6	4.2	15.5
3	2.3	3.8	13.5
4	3.0	1.3	5.8
5	3.6	2.8	9.8
6	4.3	2.5	8.9
7	4.9	1.7	5.1
8	5.6	1.5	6.4
9	6.2	2.0	4.5
10	6.9	1.1	5.0
11	7.5	2.3	8.6
12	8.2	2.8	10.5
13	8.9	2.0	6.4
14	9.5	2.9	7.8
15	10.2	2.3	6.7
16	10.8	3.0	7.0
17	11.5	3.7	8.0
18	12.1	3.2	6.4
19	12.8	3.0	6.6
20	13.4	2.5	4.7
21	14.1	1.8	8.6
22	14.8	3.9	5.6
23	15.4	3.8	5.8
24	16.1	3.0	4.5
25	16.7	2.5	14.0
26	17.4	6.2	18.0
27	18.0	4.0	15.0
28	18.7	7.1	22.0
29	19.4	5.4	17.0
30	20.0	5.7	11.5
31	20.7	4.9	16.0
32	21.3	2.4	8.9
33	22.0	2.3	7.7
34	22.6	6.0	19.5
35	23.3	4.9	15.5
36	23.9	4.9	18.0
37	24.6	7.3	21.5
38	25.3	8.6	25.0
39	25.9	8.4	24.0
40	26.6	7.8	22.5
41	27.2	6.9	18.5
42	27.9	4.3	15.5
43	28.5	5.6	13.5
44	29.2	4.0	13.0
45	29.8	4.0	12.0
46	30.5	4.4	13.5
47	31.2	5.4	17.5
48	31.8	5.0	18.5
49	32.5	4.5	5.8
50	33.1	5.9	8.1
51	33.8	6.3	8.6
52	34.4	4.5	6.9
53	35.1	4.3	6.3
54	35.8	3.5	5.2
55	36.4	4.5	11.5
56	37.1	3.9	11.0
57	37.7	3.6	12.5
58	38.4	4.2	13.0
59	39.0	6.1	18.0
60	39.7	5.8	14.5
61	40.3	6.2	19.5
62	41.0	5.8	14.0
63	41.7	6.7	17.0
64	42.3	5.9	13.5
65	43.0	6.1	18.0
66	43.6	5.6	17.0
67	44.3	6.3	19.5
68	44.9	6.0	17.5

Soil Classification	E _D (bar)	K _D
Sand	328	89
Silty Sand	379	84
Silty Sand	321	56
Sand	131	18
Silty Sand	222	28
Silty Sand	200	22
Sandy Silt	91	15
Sand	146	10
Silt	58	14
Sand	109	6
Silty Sand	197	11
Silty Sand	248	11
Silty Sand	128	9
Sandy Silt	146	11
Silty Sand	128	8
Silty Silt	113	11
Silt	124	12
Clayey Silt	84	10
Silt	98	9
Clayey Silt	47	8
Sand	215	4
Clay	29	12
Clay	40	11
Clay	22	9
Sand	386	4
Silty Sand	397	11
Sand	368	6
Silty Sand	510	11
Silty Sand	390	8
Silt	179	10
Silty Sand	372	7
Sand	204	3
Silty Sand	164	3
Silty Sand	459	7
Silty Sand	353	6
Sand	445	6
Silty Sand	485	8
Silty Sand	565	9
Silty Sand	536	9
Silty Sand	503	8
Silty Sand	390	7
Sand	375	4
Sandy Silt	255	6
Silty Sand	295	4
Silty Sand	259	4
Silty Sand	299	4
Silty Sand	408	5
Sand	459	4
Clay	15	6
Clay	47	7
Clay	51	7
Silty Clay	55	5
Clay	40	5
Clay	29	4
Silty Sand	222	3
Silty Sand	226	3
Sand	291	2
Silty Sand	288	3
Silty Sand	401	4
Silty Sand	284	4
Silty Sand	452	4
Sandy Silt	266	4
Silty Sand	342	4
Silty Silt	244	4
Silty Sand	401	4
Silty Sand	383	3
Silty Sand	448	4
Silty Sand	386	3



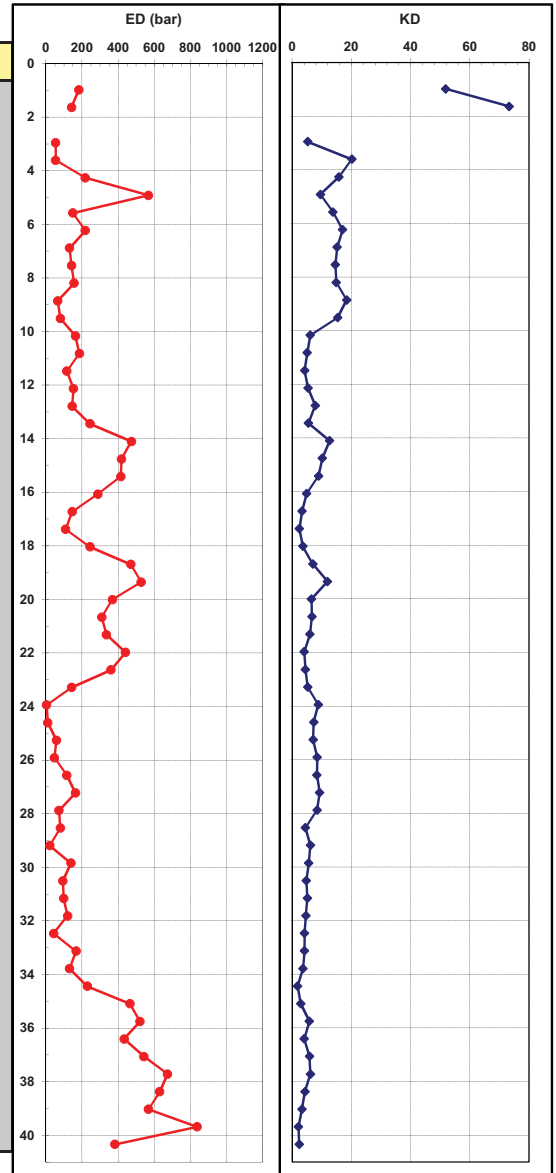
WBS: 35781.1.2
 TIP: U-3315
 County: Pitt
 Northing: 679754
 Easting: 2481897
 Elevation: 46
 Site Description: Stantonsburg Road - Tenth Street Connector From US 13/NC 11 (Memorial Drive) to SR 1702 (Evans Street)

Test No.: DMT-7
 Rig: Pagani 220-73
 Operator: JMB
 Engineer: AAN
 Ground Wtr: 5.0 feet
 Date: #####

	Before	After	Average
ΔA (bar)	0.1	0.1	0.1
ΔB (bar)	0.8	0.7	0.8
z _m (bar)	0	0	0

Increment	Depth (ft)	A (bar)	B (bar)
1	1.0	1.3	7.2
2	1.6	3.0	7.8
3	2.3	--	--
4	3.0	0.3	2.7
5	3.6	1.5	3.9
6	4.3	1.9	8.8
7	4.9	2.0	18.5
8	5.6	2.0	7.0
9	6.2	3.0	9.9
10	6.9	2.7	7.2
11	7.5	2.9	7.7
12	8.2	3.3	8.5
13	8.9	3.9	6.6
14	9.5	3.6	6.7
15	10.2	1.8	7.2
16	10.8	1.7	7.7
17	11.5	1.4	5.5
18	12.1	1.9	7.0
19	12.8	2.8	7.7
20	13.4	2.4	10.0
21	14.1	6.1	20.0
22	14.8	5.1	17.5
23	15.4	4.7	17.0
24	16.1	2.7	11.5
25	16.7	1.8	6.7
26	17.4	1.4	5.3
27	18.0	2.3	9.9
28	18.7	4.7	18.5
29	19.4	8.1	23.5
30	20.0	4.5	15.5
31	20.7	4.6	14.0
32	21.3	4.4	14.5
33	22.0	3.5	16.5
34	22.6	3.7	14.5
35	23.3	3.7	8.5
36	23.9	3.8	4.7
37	24.6	3.8	5.0
38	25.3	4.7	7.2
39	25.9	5.6	7.8
40	26.6	6.4	10.5
41	27.2	7.6	13.0
42	27.9	6.4	9.3
43	28.5	3.7	6.8
44	29.2	4.3	5.8
45	29.8	5.1	9.8
46	30.5	4.3	7.8
47	31.2	4.7	8.3
48	31.8	4.5	8.7
49	32.5	3.7	5.8
50	33.1	4.5	10.0
51	33.8	4.0	8.5
52	34.4	2.7	9.9
53	35.1	4.3	18.0
54	35.8	7.8	23.0
55	36.4	5.7	18.5
56	37.1	8.2	24.0
57	37.7	9.1	28.5
58	38.4	6.8	25.0
59	39.0	5.5	22.0
60	39.7	4.6	28.5
61	40.3	4.1	15.5

Soil Classification	E _D (bar)	K _D
Sand	182	52
Sandy Silt	142	73
Sand	55	5
Silt	55	20
Sand	219	16
Sand	568	10
Silty Sand	149	14
Silty Sand	219	17
Sandy Silt	131	15
Silty Silt	142	15
Sandy Silt	157	15
Silty Clay	66	18
Clayey Silt	80	15
Sand	164	6
Sand	186	5
Sand	117	4
Silty Sand	153	5
Silty Sand	146	8
Sand	244	5
Silty Sand	474	13
Silty Sand	419	10
Silty Sand	415	9
Sand	288	5
Sand	146	3
Sand	109	2
Sand	244	4
Sand	470	7
Silty Sand	528	12
Silty Sand	368	7
Silty Sand	310	7
Silty Sand	335	6
Sand	441	4
Sand	361	4
Sandy Silt	142	5
Sensitive Fine Grained	4	9
Sensitive Fine Grained	11	7
Silty Clay	58	7
Clay	47	8
Clayey Silt	117	8
Clayey Silt	164	9
Silty Clay	73	8
Clayey Silt	80	4
Clay	22	6
Silt	138	6
Clayey Silt	95	5
Clayey Silt	98	5
Silt	120	5
Silty Clay	44	4
Sandy Silt	168	4
Sandy Silt	131	4
Sand	230	2
Sand	466	3
Silty Sand	521	6
Silty Sand	434	4
Silty Sand	543	6
Silty Sand	674	6
Sand	630	4
Sand	568	3
Sand	838	2
Sand	383	2



Project No. 35781.1.2

ID U-3315

County Pitt

Description Stantonburg Road - Tenth Street Connector From US 13 / NC 11 (Memorial Drive) to SR 1702 (Evans Street)

Sample No.	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Passing (sieves)			% Moisture	% Organic
							Coarse Sand	Fine Sand	Silt	Clay	#10	#40	#200		
SS-1	62+29	46 RT	33.5 - 35.0	A-7-5 (52)	81	46	2.9	4.6	32.0	60.5	100	99	94	79.2	--
SS-2	72+18	51 LT	13.5 - 15.0	A-7-6 (30)	59	30	1.6	16.9	42.8	38.7	100	99	87	80.5	--
SS-3	69+48	46 LT	28.5 - 30.0	A-6 (3)	35	14	22.5	36.8	29.0	11.7	99	89	43	40.5	--
SS-4	64+72	36 LT	23.5 - 25.0	A-7-5 (41)	68	37	1.9	7.6	29.2	61.3	100	99	93	80.7	--
ST-2	66+42	36 RT	40.0 - 42.0	A-6 (1)	33	13	41.0	25.0	16.3	17.7	97	79	38	34.2	--
ST-3	68+46	46 RT	35.0 - 37.0	A-7-6 (5)	42	16	20.8	30.3	13.6	35.3	99	88	50	40.2	--
ST-4	70+20	40 RT	25.0 - 27.0	A-7-6 (36)	94	55	15.0	23.0	20.0	42.0	100	93	64	--	--
ST-6	63+38	6 RT	25.0 - 27.0	A-7-6 (74)	104	61	2.0	3.0	28.0	67.0	100	98	97	--	--

Stephanie E. Hardison

Certified Lab Technician Signature

114-01-1203

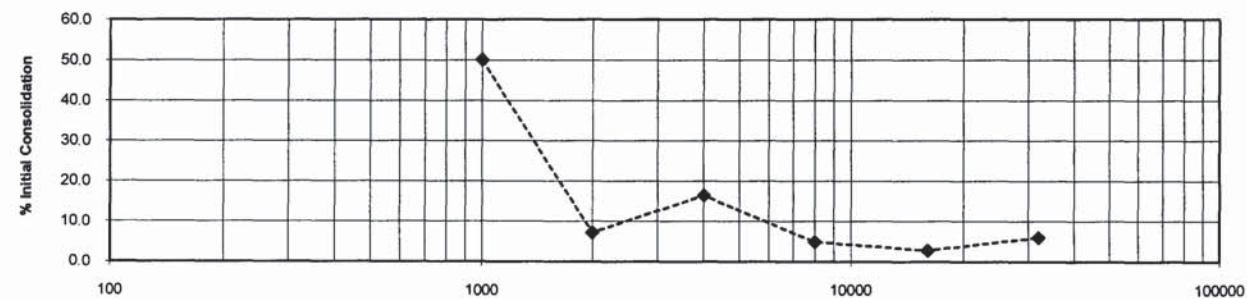
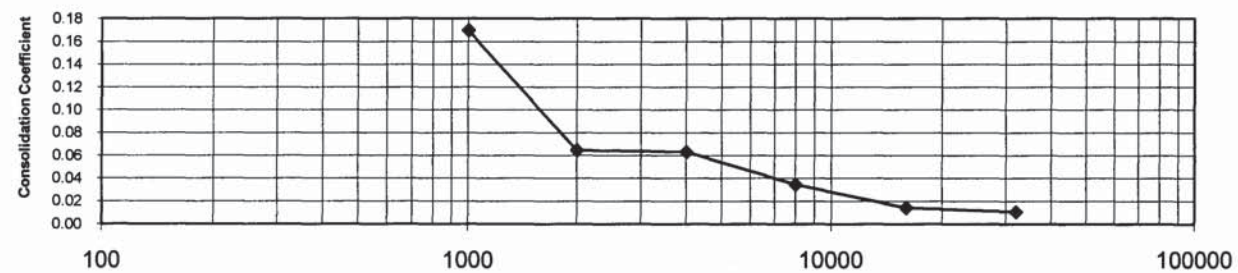
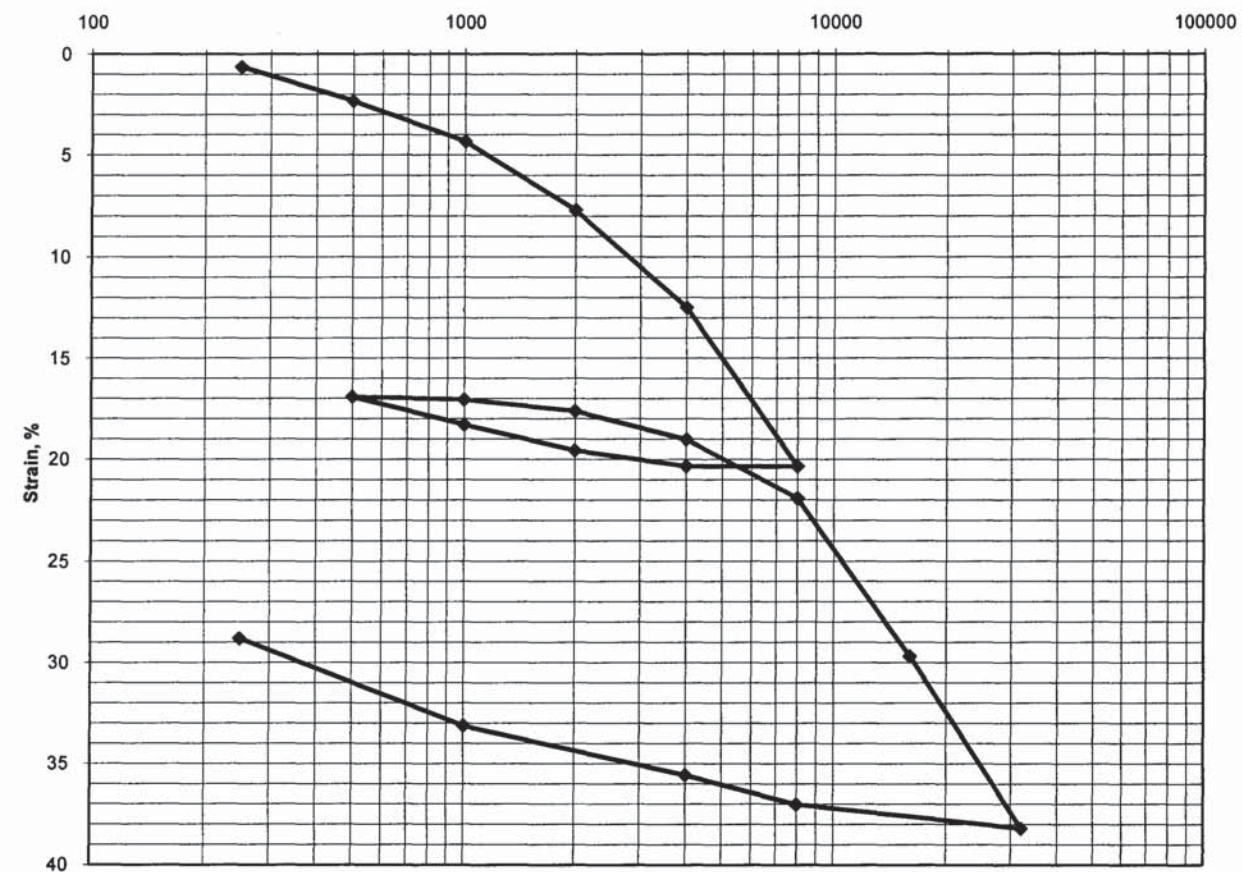
Certification Number

CONSOLIDATION CURVE

U-3315 ST-4 B-10

25' - 27'

Vertical Stress, PSF



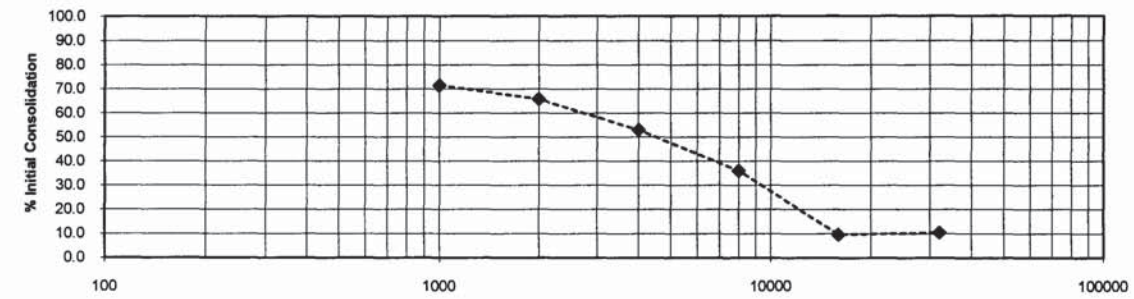
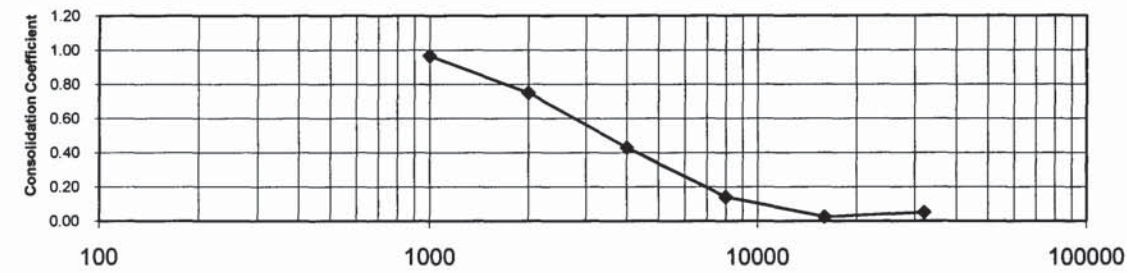
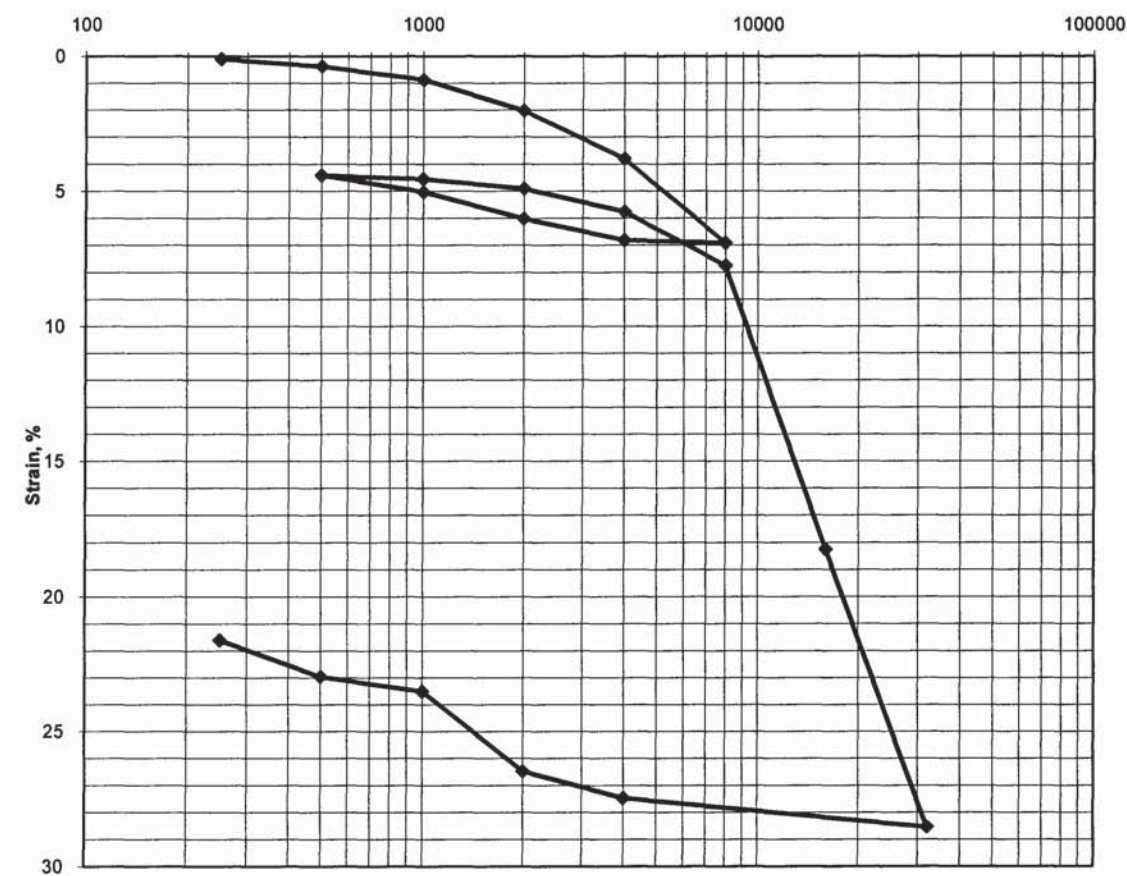
Note: Consolidation Coefficient in Square Feet Per Day

CONSOLIDATION CURVE

U-3315 ST-6 B-5

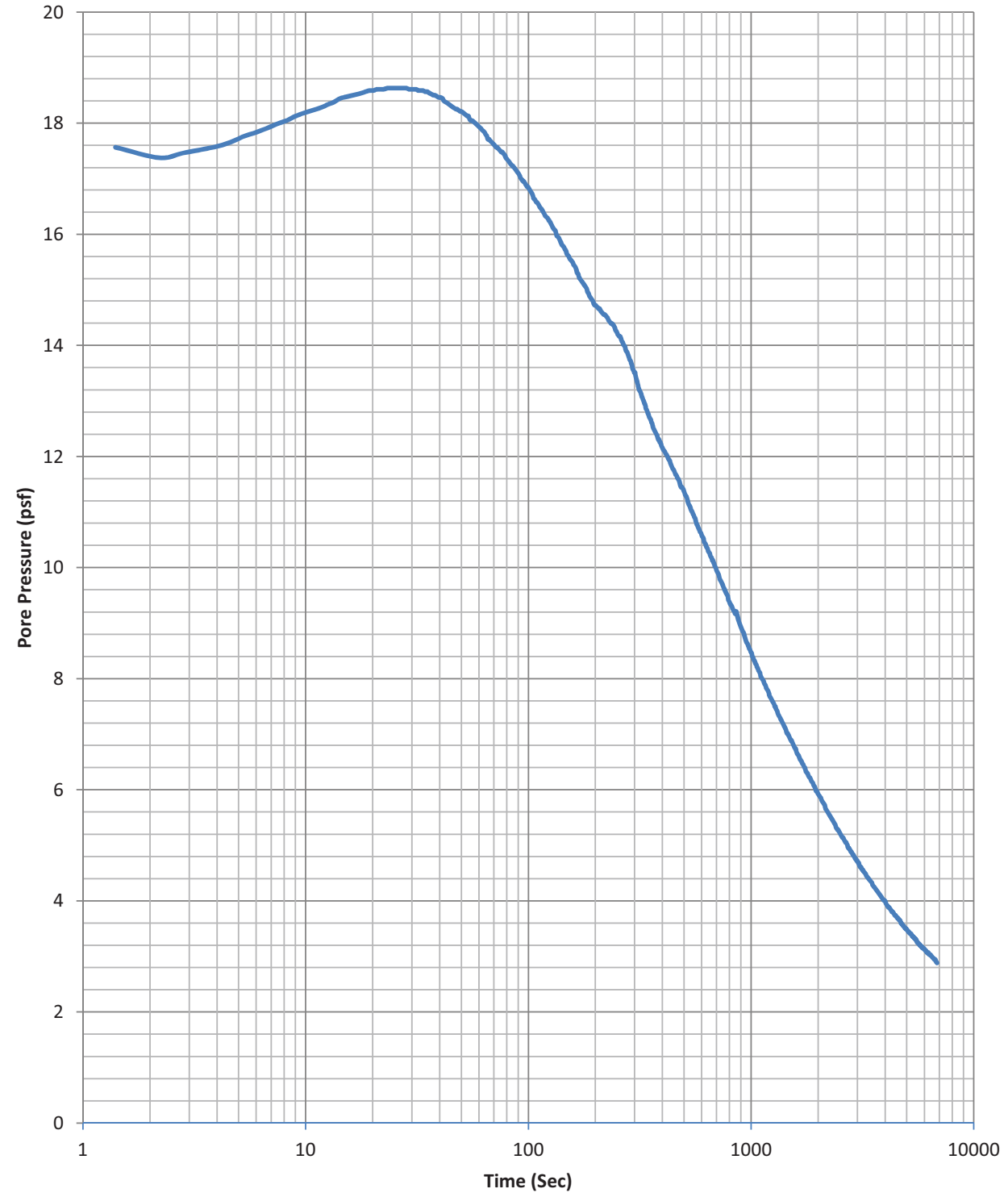
25' - 27'

Vertical Stress, PSF

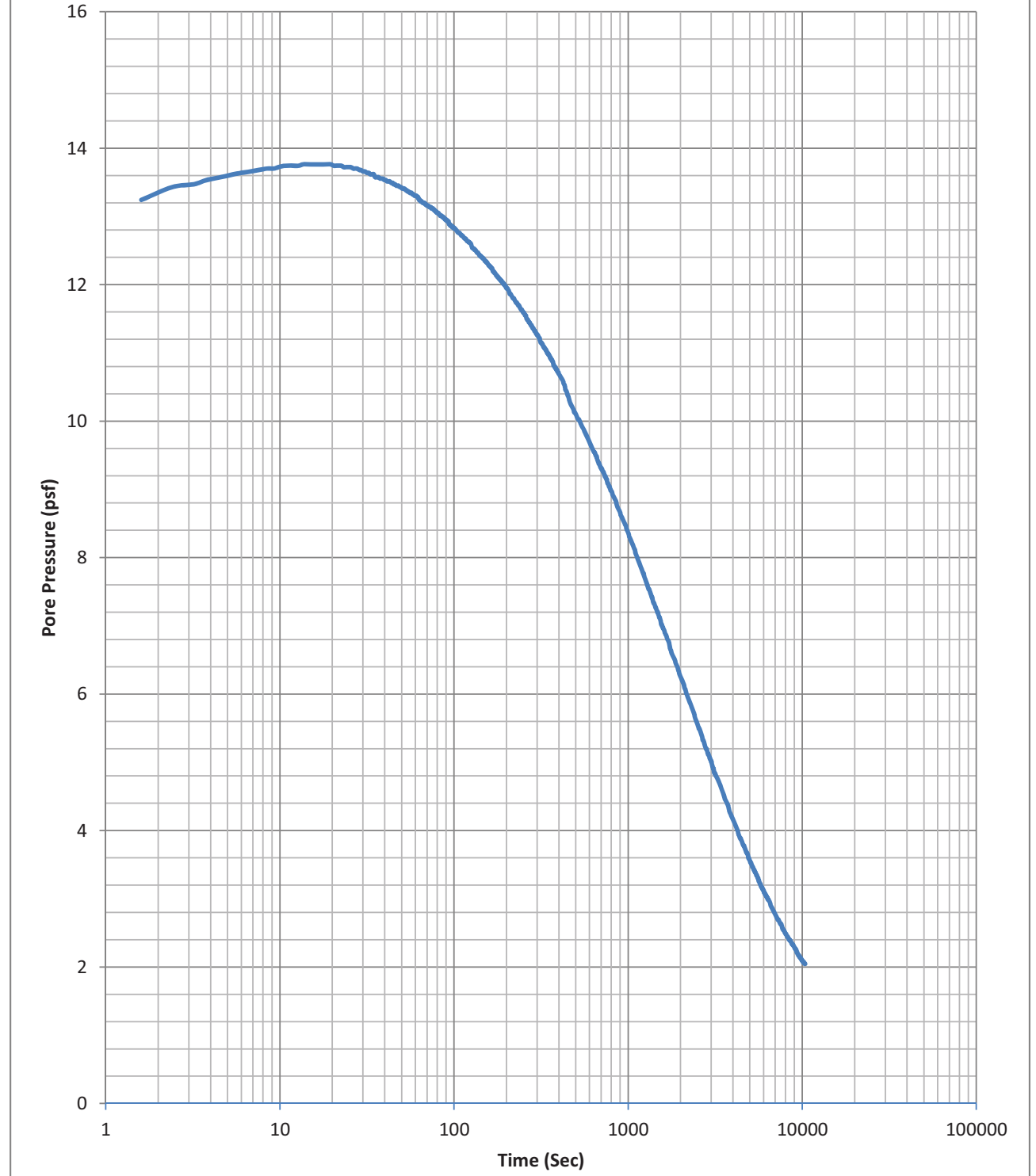


Note: Consolidation Coefficient in Square Feet Per Day

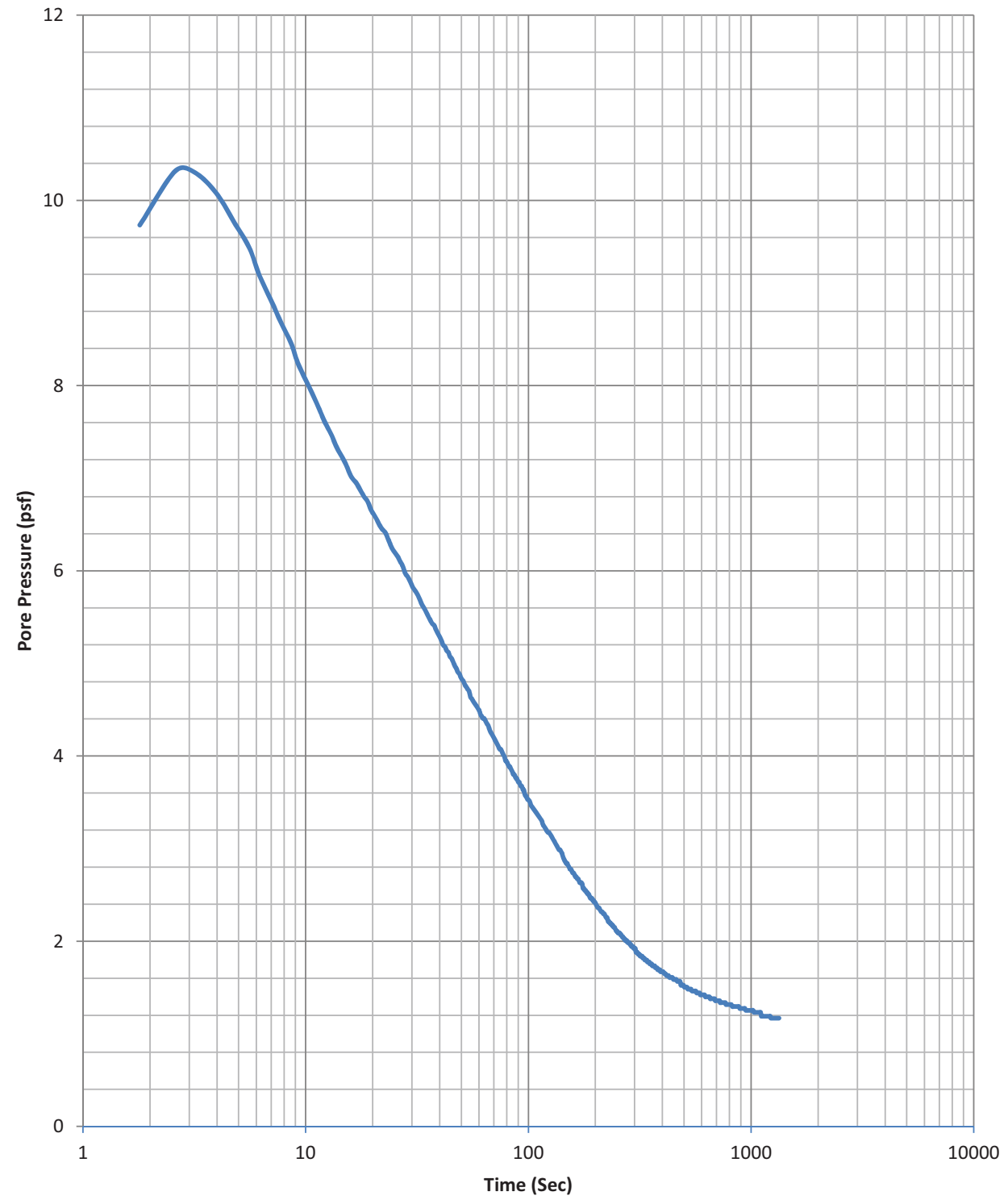
Dissipation CPT-3



Dissipation CPT-4



Dissipation CPT-6



Dissipation CPT-7

