PROJECT: C202599

ID: U-4438

NOTE: SEE SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	16+00 TO 33+15	4-5	8-9
-LI-	10+00 TO 24+84	5-6	10-11
-YI-	5+75 TO 11+88	4,7	12
-Y2-	10+00 TO 11+35	4	13
-Y3-	10+00 TO 11+13	4	14
-Y4-	10+00 TO 10+73	5	15
-Y5-	7+82 TO 13+89	5	16
-Y6-	10+00 TO 11+52	5	17
-Y7-	9+74 TO 13+45	5,7	18
-Y8-	11+02 TO 14+34	5	19

CROSS SECTIONS	STATION	SHEET
-L-	16+00 TO 33+15	20-53
-LI-	10+50 TO 12+10	54-57
-YI-	11+09 TO 11+38	58-59
-Y2-	10+50 TO 11+30	60
-Y3-	10+50 TO 11+08	61
-Y4-	10+49 TO 11+00	62-64
-Y5-	8+50 TO 12+80	65-69
-Y5-	13+25 TO 13+73	70-71
-Y6-	10+48 TO 11+47	72-75
-Y7-	9+40 TO 13+27	76-81
-Y8-	12+99 TO 13+66	82-84

CPT LOGS NOT SHOWN ON PROFILE OR CROSS SECTION

NUMBER	STATION	PLAN	BORELOG
CPT-12	NA	5	85
CPT-16	NA	5	86
CPT-20	-Y6- 12+00 6'LT	5	87
CPT-22	-Y5- 14+40 8'RT	5	88
CPT-26	-Y4- 11+94 5' RT	3	89
CPT-32	NA	4	90

APPENDIX

CPT LOGS (26)

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

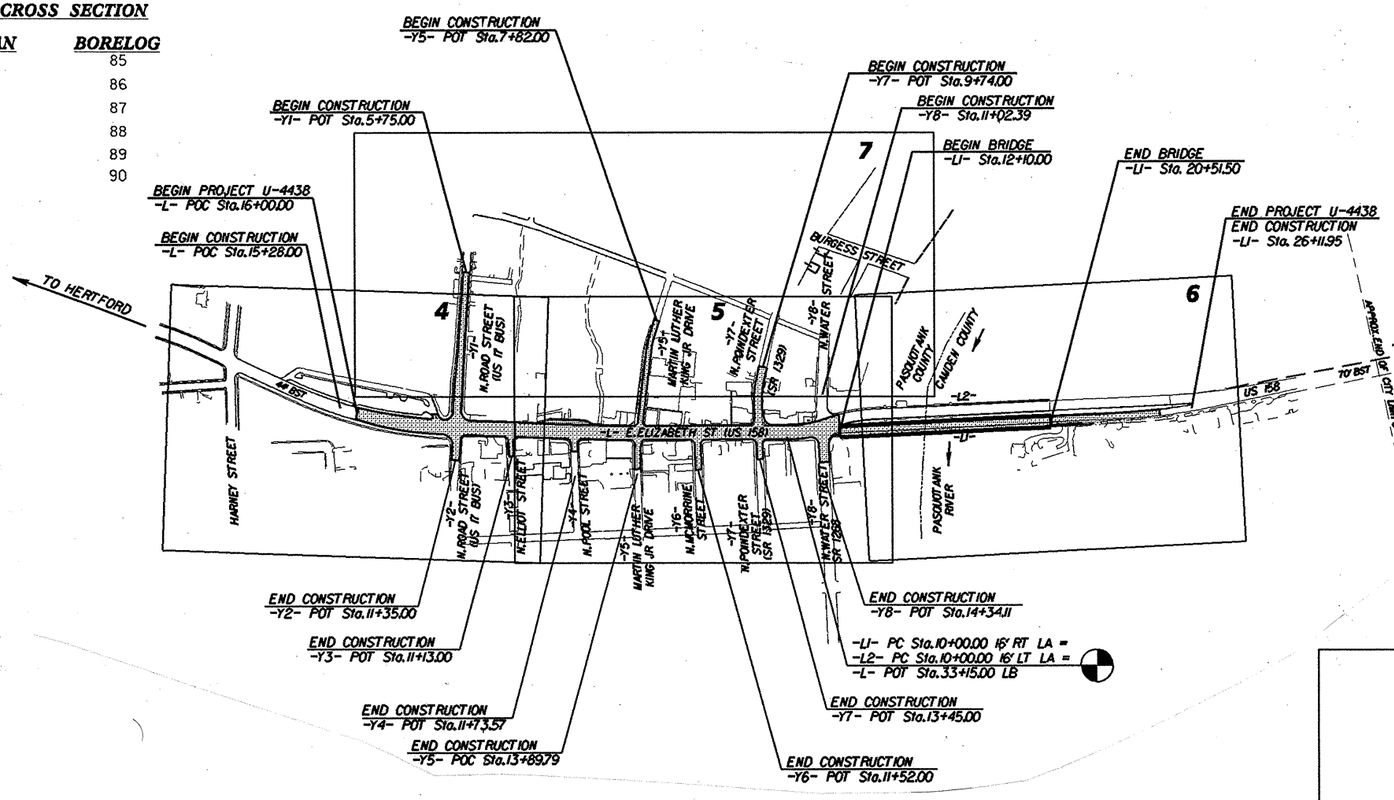
ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. ***35742.1.1 (U-4438)*** F.A. PROJ. ***STP-0158(31)***

COUNTY ***PASQUOTANK & CAMDEN COUNTIES***

PROJECT LOCATION ***US 158 (EAST ELIZABETH ST.) FROM US 17 BUSINESS (NORTH ROAD ST.) TO EAST OF PASQUOTANK RIVER***

INVENTORY



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4438	1	90

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35742.1.1	STP-0158(31)	P.E.
35742.2.1	STP-0158(50)	R/W & UTILITIES
35742.3.1	STP-0158(51)	CONSTRUCTION

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

TCB

JME

RES

JRS

S&ME PERSONNEL

INVESTIGATED BY ***J.L. STONE***

CHECKED BY ***D.N. ARGENBRIGHT***

SUBMITTED BY ***D.N. ARGENBRIGHT***

DATE ***OCTOBER 2010***

NORTH CAROLINA LICENSED SEAL 2007 GEOLOGIST JOSEPH L. STONE 10/22/10

DRAWN BY: ***C.R. SUMNER, J.L. STONE***

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.
U-4438	2 OF 90

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	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>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 (COBJ.)	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		
	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT		
	- 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	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	>10%	>20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- 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
- SPT / DPT / DMT / VST / PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING W/ CORE
- SPT N-VALUE
- REF — SPT REFUSAL

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
γd - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] MOBILE B- _
- [ ] BK-51
- [ ] CME-45B
- [X] CME-550
- [ ] PORTABLE HOIST
- [X] DIEDRICH D-50
- [X] MOBILE B-57

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 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: _

_ ELEVATION: _ FT.

NOTES:
-

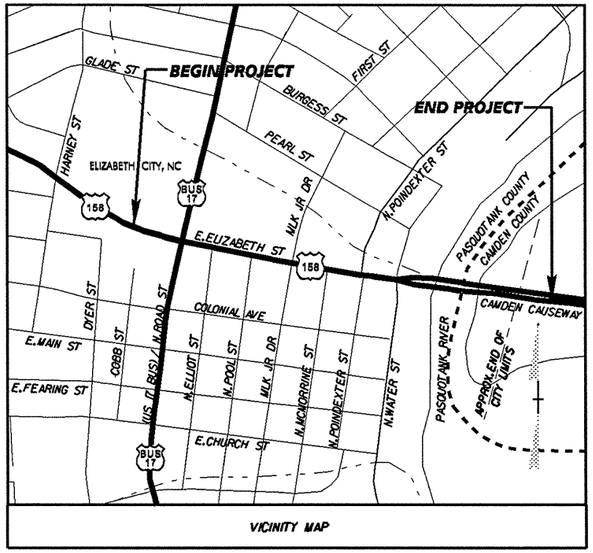
TIP PROJECT: U-4438

CONTRACT:

$FILE1$

$DATE$

SEE SHEET 1-A FOR INDEX OF SHEETS
SEE SHEET 1-B FOR CONVENTIONAL PLAN SHEET SYMBOLS



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PASQUOTANK & CAMDEN COUNTIES

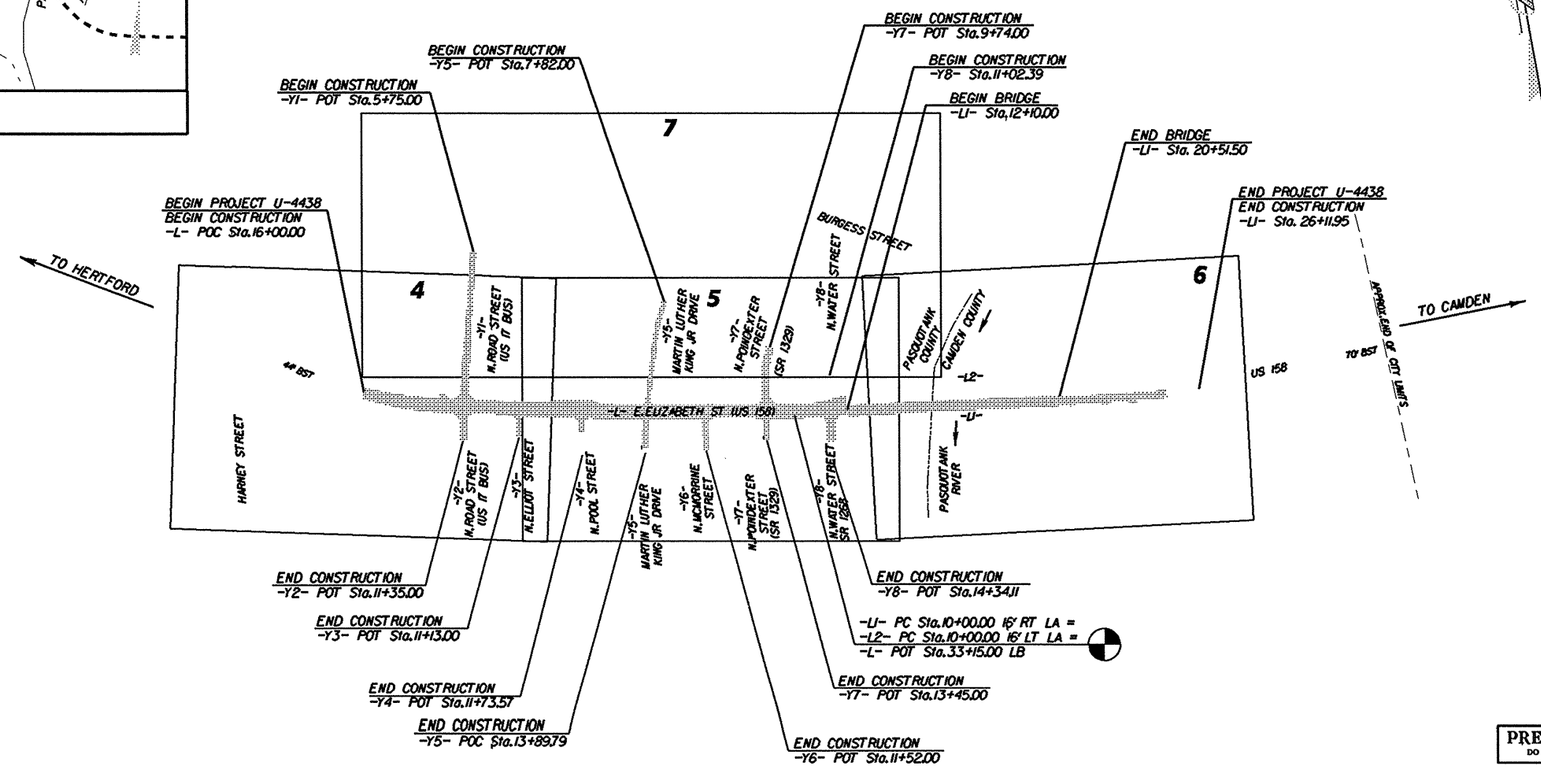
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4438	2A	90

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
35742.1.1	STP-0158(31)	P.E.
35742.2.1	STP-0158(50)	R/W & UTILITIES

LOCATION: *US 158 (EAST ELIZABETH STREET) FROM US 17 BUSINESS (NORTH ROAD STREET) TO EAST OF PASQUOTANK RIVER*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, SIGNALS, AND STRUCTURES*

NC GRID NAD 83'95



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NCDOT CONTACT:
DOUG TAYLOR, P.E.
PROJECT ENGINEER
ROADWAY DESIGN UNIT

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF ELIZABETH CITY

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2011 = 12,900 VPD
ADT 2030 = 18,800 VPD
DHV = 10%
D = 55%
T = 20% *
V = 40 MPH
* (TTST 11% + DUAL 9%)

CLASS = URBAN ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4438 = 0.471 MILES
LENGTH STRUCTURE TIP PROJECT U-4438 = 0.159 MILES
TOTAL LENGTH TIP PROJECT U-4438 = 0.630 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley-Horn and Associates, Inc.

Post Office Box 33068
Raleigh, North Carolina 27636
PE NO. P-0168

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: *JULY 16, 2010*

LETTING DATE: *APRIL 19, 2011*

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER

J. JASON PACE, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

P.E.
STATE HIGHWAY DESIGN ENGINEER

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

October 20, 2010

STATE PROJECT: 35742.1.1 (U-4438)
F.A. PROJECT: STP-0158 (31)
COUNTY: Pasquotank
DESCRIPTION: US 158 (Elizabeth Street) from US 17 Business (North Road Street) to East of Pasquotank River

SUBJECT: Geotechnical Inventory

Project Description

This project area lies along US 158 / NC 34 (Elizabeth Street) in downtown Elizabeth City in Pasquotank County. Proposed construction begins approximately 400 feet west of the intersection of Elizabeth Street and Road Street and extends eastward approximately 3,200 feet ending at a point approximately 430 feet east of the bridge over the Pasquotank River. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted in February 2007 and March 2010. SPT borings were advanced with a Diedrich D-50 drill machine with an automatic hammer, a Mobil B-57 drill machine with a manual hammer and a CME-550 with an automatic hammer. Cone Penetration Test borings were completed with a Vertek cone penetration machine mounted on a Diedrich ATV using a 1.75" diameter cone. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 0.563 miles were investigated. Subsurface profiles and cross sections of these alignments are included in this report.

Line	Station(±)
-L-	16+00 to 33+15
-L1-	10+00 to 24+84
-Y1-	5+75 to 11+88
-Y2-	10+00 to 11+35
-Y3-	10+00 to 11+13

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

TELEPHONE: 919-250-4088
FAX: 919-250-4237
Website: www.ncdot.org./doh

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

-Y4-	10+00 to 10+73
-Y5-	7+82 to 13+89
-Y6-	10+00 to 11+52
-Y7-	9+74 to 13+45
-Y8-	11+02 to 14+34

Areas of Special Geotechnical Interest

1) The entire project contains cohesive soils which have the potential to cause embankment stability and/or long term settlement problems:

2) All but the following sections contain organic soils, which have the potential for embankment stability and/or subgrade problems during construction.

Line	Station(±)
-Y5-	10+15 to11+75
-Y8-	13+35 to 13+66

2) The entire project was found to exhibit seasonal high ground water.

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations ranged from -37± feet below sea level along the bed of the Pasquotank River to 7± feet above sea level in Elizabeth City. The natural flood plain of the Pasquotank River lies at an elevation of 2± feet, east of the river.

Surficial soils in this area are generally classified as alluvial and undivided coastal plain sediments; all are underlain by the Yorktown Formation.

Ground Water

Ground water data was collected in February 2007 and March 2010, during a time of above normal precipitation. Ground water elevations ranged from -3± to 2± feet above sea level.

Soils

Soils within this project area have been divided into six categories, undivided coastal plain soils, alluvial soils, formational soils, artificial fill soils, and roadway embankment.

Soils classified as undivided coastal plain are comprised of 5± to 50± feet of very soft to hard sandy silty, silty sandy and silty clay (A-6, A-7-6), 3± to 30± feet of soft to very stiff sandy and sandy clayey silt (A-4, A-5), and 3 ± to 25± feet of very loose to very dense sand (A-2-4, A-3, A-1-b). Laboratory analysis of the cohesive components of this unit returned moisture contents ranging from 21% to 86%.

Alluvial soils encountered were comprised of 3± to 16± feet of very loose to medium dense sand (A-2-4, A-3) and 2± to 21± feet of sandy clay, sandy silty clay, silty clay, and sandy silt with little to moderate organic content (A-6, A-7-6, A-4, A-5), loose sand with trace to

moderate organic content (A-2-4, A-3) and highly organic muck. Laboratory analysis show that the organic content of these soils ranges from 2% to 48% and the moisture content ranges from 17% to 723%.

Soils that are described as formational have been identified as belonging to the Yorktown Formation. Where encountered, these deposits are composed of up to 21± feet of medium stiff to very stiff silty clay (A-7-6), with as much as 3± feet of medium dense sand (A-2-4).

Soils classified as roadway embankment are comprised of 2± to 21± feet of very loose to very dense sand (A-2-4, A-3). These soils were encountered beneath the existing US 158 alignment and associated intersecting streets throughout the project area.

Soils identified as artificial fill are comprised of 4± feet of soft sandy silt with trace organic matter (A-4) and 3± feet of loose (A-3). A moisture sample collected within the cohesive component of this group returned a 28% natural moisture content.

Undisturbed Samples

Undisturbed thin wall Shelby tube samples were collected at the following locations and submitted for testing.

Sample	Station	Depth	Test
*ST-1	-L- 26+79 CL	10.8-12.8	None
*ST-2	-L- 28+74 CL	25.8-27.8	None
ST-3	-L- 24+80 CL	28.6-30.6	Consolidation/Triaxial
ST-4	-L- 22+83 CL	13.8-15.8	Consolidation/Triaxial
ST-6	-L- 14+88 CL	24.8-26.8	Consolidation/Triaxial
ST-7	-Y5- 13+10 5 LT	14.8-16.8	Consolidation/Triaxial
ST-8	-L- 13+44 2 RT	39.8-41.8	Consolidation/Triaxial
ST-9	-L- 30+00 CL	14.2-16.2	Consolidation
ST-10	-L- 30+00 CL	19.2-21.2	Consolidation
ST-11	-Y6- 10+50 CL	19.8-21.8	Consolidation
ST-12	-Y6- 10+50 CL	21.8-23.8	Consolidation
ST-13	-L- 26+85 6 LT	10.0-12.0	Consolidation
ST-14	-L- 26+85 6 LT	29.0-31.0	Consolidation
ST-15	-L- 24+95 CL	13.0-15.0	Consolidation
ST-16	-L- 24+95 CL	30.0-32.0	Consolidation
ST-17	-L- 22+95 13 LT	10.0-12.0	Consolidation
ST-18	-L- 22+95 13 LT	30.0-32.0	Consolidation
ST-19	-L- 20+95 20 LT	8.0-10.0	Consolidation
ST-20	-L- 20+95 20 LT	30.0-32.0	Consolidation

*Not Submitted For Testing
ST-5: Not Collected

Respectfully Submitted,

Joseph L. Stone, L.G.
Project Geological Engineer

EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

PROJECT U-4438 COUNTY PASQUOTANK/CAMDEN DATE 02/07/11 SHEET 1 OF 1 SHEETS

LINE	STATION	STATION	EXCAVATION					EMBANKMENT				BORROW	WASTE			
			TOTAL (UNCL.)	ROCK	UNDERCUT	UNSUIT. (UNCL.)	SUITABLE (UNCL.)	TOTAL	ROCK	EARTH	EMBANK. 30%		ROCK	SUITABLE	UNSUIT.	TOTAL
L	16+00.00	33+15.00	593		21500	178	415	415		415	540	125		15050	6628	21678
L1	10+00.00	12+11.63	82			25	57	103		103	134	77			25	25
L1	20+51.50	24+84.00	62			19	43	29		29	38			5	19	24
Y1	5+75.00	11+61.00	164			49	115	72		72	94			21	49	70
Y2	10+27.00	11+30.00	32			10	22	6		6	8			14	10	24
Y3	10+27.07	11+08.00	19			6	13	7		7	9			4	6	10
Y4	10+27.06	10+80.00	8			2	6	2		2	3			3	2	5
Y5	7+82.00	12+01.45	72			22	50	340		340	442	392			22	22
Y5	12+55.83	13+73.00	31			9	22	16		16	21			1	9	10
Y6	10+27.01	11+47.00	26			8	18	22		22	29	11			8	8
Y7	9+74.00	12+05.60	40			12	28	295		295	384	356			12	12
Y7	12+59.64	13+40.00	16			5	11	13		13	17	6			5	5
Y8	12+55.01	13+66.00	25			8	17	10		10	13			4	8	12
Y9	18+32.78	21+37.46						503		503	654	654				
Y9	23+42.97	25+07.64						59		59	77	77				
TOTAL			1170		21500		817	1892		1892	2463	1698		15102	6803	21905
EARTH WASTE TO REPLACE BORROW												-1698		-1698		-1698
GRAND TOTALS			1170		21500		817	1892		1892	2463	0		13404	6803	20207
CONTINGENCY UNDERCUT					1030											
SAY			**1200**		**22530**											

SHALLOW UNDERCUT = 500 CY

SELECT GRANULAR MATERIAL = 1000 CY

CLASS IV SUBGRADE STABILIZATION = 1000 TONS

DDE = 5810 CY

SHOULDER BORROW = 1290 CY

*** EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.**

PROJECT REFERENCE NO.	SHEET NO.
U-4438	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.
CONST. REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS
DATE: - PARCELS 1-4; REVISED EASEMENTS
DATE: - PARCEL 3; REVISED PROPERTY OWNER
DATE: - PARCEL 4; REVISED NUMBER TO 28
DATE:

NAD 83/95

HARNEY STREET
10+00
HISTORIC PROPERTY
15+00
-L- PC Sta. 13+18.75
-L- POT Sta. 9+55.00
-BL-1
-L-
S 54° 48' 40.9" E
2 1/2" UNK. FUNCTION PIPE
24" RCP
8"TC
8"TC 200' TAPER (40:1)
BEGIN PROJECT U-4438
BEGIN CONSTRUCTION
-L- POC Sta. 16+00.00
HISTORIC PROPERTY (RETAIN)
CLEANOUT SILT IN PARKING LOT
REMOVE
RETAIN EXIST SIDEWALK
PUE
REMOVE EXIST SYSTEM
WM NO ASSOCIATED PIPING FOUND
E-METER
HISTORIC PROPERTY
ELIZABETH CITY HISTORIC DISTRICT BOUNDARY EXPANSION (NR)
MATCH LINE -Y1- STA 8+50 (SEE SHEET 7)
NOTE: (2) T(FO) LINES DOWN UTILITY POLE ASSOCIATED WITH BURIED ENCLOSURE AT BASE OF POLE.
US 17 BUS N.ROAD STREET (US 17 BUS) N.ROAD STREET
-Y1- PC Sta. 10+04.23
-Y1- PT Sta. 11+08.24
S 13° 06' 20.3" W
-L- POT Sta. 19+99.95 =
-Y1- POT Sta. 11+88.00
Δ = 90° 59' 52.5"
36" BYPASS PIPE -L- POT Sta. 22+15.03 =
JB407 INV= -1.86 -Y3- POT Sta. 10+00.00
CB430 INV= -1.93 Δ = 85° 44' 42.4"
-L- POT Sta. 20+03.85 =
-Y2- POT Sta. 10+00.00
Δ = 91° 00' 07.5"
END CONSTRUCTION
-Y2- POT Sta. 11+35.00
S 13° 06' 20.3" W
NOTE: RESET EXIST FENCE F. BEHIND SIDEWALK -Y3- STA 10+84 LT TO -L- STA 23+45 RT
END CONSTRUCTION
-Y3- POT Sta. 11+13.00
-Y3- POT Sta. 12+98.00
-Y2- POT Sta. 12+97.00
N.ELLIOT STREET
US 17 BUS N.ROAD STREET
ELIZABETH CITY HISTORIC DISTRICT BOUNDARY EXPANSION (NR)
MATCH LINE -L- STA 23+00 (SEE SHEET 5)

(6) RICHARD M. KING
(28) PASQUOTANK COUNTY

SS-1 TOP=6.38' INV=-3.17'	SS-2 TOP=5.87' INV=-2.58'	SS-3 TOP=6.63' INV=-0.81'	SS-4 TOP=5.47' INV=-2.30'	SS-5 TOP=5.15' INV UNKNOWN	SS-6 TOP=4.27' INV UNKNOWN	SS-7 TOP=4.59' INV=-1.74'	SS-8 TOP=5.26' INV UNKNOWN	SS-9 TOP=5.30' INV=0.34'	SS-10 TOP=5.35' INV=0.63"
SS-11 TOP=4.66' INV=1.41'	SS-12 TOP=5.29' INV=-0.42'	SS-13 TOP=2.62' INV=-0.86'	SS-14 TOP=2.85' INV=-0.85'	SS-15 TOP=4.99' INV=0.64'	SS-16 TOP=5.13' INV=0.99'	SS-17 TOP=4.95' INV=1.01'	SS-18 TOP=5.97' INV=1.33'	SS-19 TOP=1.90' INV=-1.91'	

CB-01 TOP = 6.08' INV (NE) = 1.26'	CB-08 TOP = 2.09' INV (W) =-4.38' INV (SE) =-4.36'	CB-15 TOP = 1.76' INV (NE) = -0.88'	DI-04 TOP = 2.38' INV (W) = -2.39'	SD-04 TOP = 5.25' INV (N) = UNKNOWN	
CB-02 TOP = 6.00' INV (SW) = 1.45' INV (E) = -0.08'	CB-09 TOP = 3.23' INV (SW) = -0.18'	CB-16 TOP = 1.23' INV (W) = -3.99' INV (SE) = -4.06' INV (SW) = -3.97' INV (N) = -4.28'	DI-05 TOP = UNKNOWN INV (N) = UNKNOWN	JB-01 TOP = UNKNOWN INV (NW) = UNKNOWN INV (SE) = UNKNOWN INV (SW) = UNKNOWN INV (NW) = UNKNOWN	
CB-03 TOP = 5.75' INV (W) = -0.38' INV (E) = -0.38'	CB-10 TOP = 1.73' INV (W) = -2.38' INV (E) =-2.36'	CB-17 TOP = 1.51' INV (S) = -1.92' INV (NE) = -1.80'	DI-06 TOP = 1.35' INV (W) = -3.62' INV (E) = -3.70'		
CB-04 TOP = 5.31' INV (SE) = 1.03' INV (NW) = 1.10'	CB-11 TOP = 1.52' INV (NW) = -3.28' INV (E) = -3.26' INV (S) = -3.23'	CB-18 TOP = 6.24' INV (S) = 4.12'	DI-07 TOP = 2.46' INV (E) = -1.20'	JB-02 (STORM SEWER VAULT) TOP = 2.76' 2 @ INV (E) = -1.57 (PLUGGED SYSTEM)	
CB-05 TOP = 5.66' INV (SE) = 1.21'	CB-12 TOP= UNKNOWN INV = UNKNOWN	DI-01 TOP = 4.73' INV (N) = 1.80'	SD-01 INV (N) = 0.81' INV (S) = 0.75' INV (SE) = -0.92' INV (E) = -1.15'		
CB-06 TOP = 3.15' INV (S) = 0.12' INV (E) = -0.72 INV (W) = -2.91'	CB-13 TOP = 1.02' INV (W) = -3.92' INV (E) = -3.96' INV (SE) = -4.25'	DI-02 TOP = 5.49' INV (S) = UNKNOWN INV (N) = 1.19'	SD-02 TOP = 5.23' INV (W) = UNKNOWN INV (SE) = UNKNOWN INV (E) = UNKNOWN INV (NE) = UNKNOWN		
CB-07 TOP = 3.23' INV (N) = -0.07' INV (W) = -2.68' INV (SE) = -2.73' INV (S) = UNKNOWN	CB-14 TOP = 1.50' INV (NW) = -1.59'	DI-03 TOP = 3.47' INV (E) = -1.92'	SD-03 TOP = 5.24' INV (W) = UNKNOWN		

-L-

PI Sta 16+35.30	PI Sta 24+42.82	PI Sta 26+77.44
Δ = 23° 05' 06.3" (LT)	Δ = 0° 44' 08.1" (LT)	Δ = 1° 33' 39.6" (LT)
D = 3° 41' 47.4"	D = 1° 08' 45.3"	D = 1° 54' 35.5"
L = 624.51'	L = 64.19'	L = 81.73'
T = 316.55'	T = 32.10'	T = 40.87'
R = 1,550.00'	R = 5,000.00'	R = 3,000.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

-L2-

PI Sta 10+81.35	PI Sta 12+59.76
Δ = 17° 21' 18.8" (LT)	Δ = 14° 56' 08.2" (RT)
D = 10° 44' 58.8"	D = 1° 38' 22.0"
L = 161.45'	L = 195.51'
T = 81.35'	T = 98.31'
R = 533.00'	R = 750.00'
SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS

-Y5-

PI Sta 8+75.32	PI Sta 10+18.76	PI Sta 13+05.07
Δ = 9° 39' 38.9" (LT)	Δ = 1° 03' 52.3" (LT)	Δ = 8° 26' 24.0" (LT)
D = 16° 22' 12.8"	D = 1° 38' 13.3"	D = 11° 27' 33.0"
L = 59.01'	L = 65.03'	L = 73.65'
T = 29.58'	T = 32.52'	T = 36.89'
R = 350.00'	R = 3,500.00'	R = 500.00'
SE = SEE PLANS	SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS	RO = SEE PLANS

-LI-

PI Sta 10+55.64	PI Sta 11+67.28
Δ = 11° 14' 55.1" (LT)	Δ = 8° 49' 44.5" (RT)
D = 10° 08' 27.0"	D = 7° 50' 55.5"
L = 110.92'	L = 112.49'
T = 55.64'	T = 56.36'
R = 565.00'	R = 730.00'
SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS

-Y7-

PI Sta 10+76.95
Δ = 15° 13' 26.0" (LT)
D = 14° 59' 56.0"
L = 101.50'
T = 51.05'
R = 382.00'
SE = SEE PLANS
RO = SEE PLANS

-Y1-

PI Sta 10+56.24	PI Sta 11+39.11
Δ = 0° 59' 35.5" (LT)	Δ = 5° 10' 41.4" (LT)
D = 0° 57' 17.7"	D = 5° 43' 46.5"
L = 104.01'	L = 90.38'
T = 52.01'	T = 45.22'
R = 6,000.00'	R = 1,000.00'
SE = SEE PLANS	SE = SEE PLANS
RO = SEE PLANS	RO = SEE PLANS

-Y8-

SEE SHEET 2-C FOR INTERSECTION DETAILS
SEE SHEET NO.8 FOR -L- PROFILE
SEE SHEET NO.9 FOR -Y1- PROFILE
SEE SHEET NO.10 FOR -Y2- & -Y3- PROFILES

$FILE$
$DATE$

NOTES

1. CONTRACTOR TO COMPLETELY REMOVE EXISTING BUSINESS AND CONCRETE SLAB ON PARCEL 18.CONSTRUCT BULKHEAD WITH PEDESTRIAN RAIL.

2. PROPOSED GRASS AREA AND EMERGENCY VEHICLE ACCESS AREA (SEE DETAIL ON SHEET 2-B).

3. TEMPORARY CONSTRUCTION EASEMENT ON PARCELS 4 & 9 ARE FROM RIGHT OF WAY TO PERMANENT UTILITY EASEMENT.

4. REMOVE EXISTING 2 @ 48" CMP'S. RETAIN EXISTING PUMP SYSTEM AND 24" OUTLET PIPES.CONSTRUCT NEW PUMP SYTEM.(SEE SHEET XX FOR DETAILS)

5. REMOVE EXISTING BULKHEAD AND CONSTRUCT NEW BULKHEAD TO TIE INTO EXISTING.

6. REMOVE EXISTING 9' X5'-6" CMPA

7. INSTALL 54" CHAIN LINK FENCE 1' FROM S/W STA 10+80 TO 11+58 (RT) AND STA 11+10 TO 12+00 (LT)

8. REMOVE EXISTING SYSTEM BETWEEN 557 - 558

9. TIE TO EXISTING CONCRETE WALL

10. TIE PROP BULKHEAD TO PROP ALUM ARCH CULVERT HW

11. REMOVE PARKING SLAB AND SAWCUT PIERS TO GROUND ELEVATION.12' BASE DITCH. PROPOSED BEGINNING INVERT = -4.56. GRADE TO DRAIN AT 0.10% SLOPE.

12. DO NOT DISTURB SIGN

REVISIONS

- PARCEL 4,6,11,17,21,25,29,33,37 REVISED EASEMENTS — DATE:
- PARCEL 4 REVISED NUMBER TO 28 — DATE:
- PARCEL 9,10,11,12 REVISED R/W AND EASEMENTS — DATE:
- PARCELS 10,14,15,18,21,34 REVISED PROPERTY OWNER — DATE:
- PARCEL 13,33,34 REVISED PARCEL AND EASEMENTS — DATE:
- PARCEL 28 REVISED NUMBER TO 4 — DATE:

PROJECT REFERENCE NO.	SHEET NO.
U-4438	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY ENV.
CONST. ENV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCH LINE -Y5- STA 7+50 (SEE SHEET 7)
MATCH LINE -Y9- STA 16+75 (SEE SHEET 7)
MATCH LINE -L- STA 23+00 (SEE SHEET 4)
MATCH LINE -L- STA 13+50 (SEE SHEET 6)

BEGIN CONSTRUCTION
-Y5- POT Sta.7+82.00
-Y5- PC Sta. 8+45.74
-Y5- PT Sta. 9+04.75
-Y9- POT Sta. 18+32.78
-Y9- POT Sta. 19+29.61
-Y9- POT Sta. 20+08.24
-Y9- POT Sta. 21+37.46
-Y5- PC Sta. 9+86.25
-L- POC Sta.24+65.15 =
-Y4- POT Sta. 10+00.00
Δ= 86° 21' 58.0"
-L- PT Sta. 24+74.92
-L- PC Sta. 24+10.72
-Y5-PT Sta. 10+51.28
S 16° 38' 15.4" W
-L- PC Sta. 26+36.57
-L- PT Sta. 27+18.30
-L- POT Sta. 27+21.58=
-Y5- POT Sta. 12+28.62
96° 39' 07.7"
-Y4- POT Sta. 11+73.57
-Y4- POT Sta. 12+20.00
-Y5- PC Sta. 12+68.18
-Y5- PT Sta. 13+41.83
-Y6- POT Sta. 11+52.00
-Y5- POT Sta. 13+89.79
-Y5- POT Sta. 15+18.00
-Y7- POT Sta. 9+00.00
BEGIN CONSTRUCTION
-Y7- POT Sta. 9+74.00
-Y7- PC Sta. 10+25.90
-Y9- POT Sta. 23+42.97
-L- POT Sta. 33+15.00
-L- POT Sta. 33+15.00(LB)=
-L2- PC Sta.10+00.00
16' LT (LA)
-Y7- PT Sta. 11+27.40
-L- POT Sta. 32+01.93=
-Y7- POT Sta. 12+32.62
Δ= 87° 53' 06.3"
END CONSTRUCTION
-Y7- POT Sta.13+45.00
-L- POT Sta. 29+57.97 =
-Y6- POT Sta. 10+00.00
Δ= 88° 18' 11.3"
-Y7- POT Sta. 15+26.00
-Y6- POT Sta. 12+90.00
-Y8- POT Sta. 10+00.00
-Y8- PC Sta. 10+93.89
BEGIN CONSTRUCTION
-Y8- POT Sta.11+02.39
-Y8- PT Sta. 11+84.26
-L2- POC Sta.11+42.89 =
-Y8- POT Sta. 12+09.43
Δ = 102° 49' 33.9"
-L2- PRC Sta. 11+61.45
-L2- POC Sta.12+09.55
TIE TO EXIST BRIDGE
-LI- POT Sta 12+23.41
BEGIN BRIDGE
-LI- POC Sta.12+10.00
-LI- PT Sta.13+00.00
-LI- PC Sta.10+00.00
16' RT (LA)
-LI- POC Sta.11+85.00
-LI- POC Sta.11+43.92 =
-Y8- POT Sta. 12+43.94
Δ = 96° 07' 29.6"
END CONSTRUCTION
-Y8- POT Sta.14+34.11
-Y8- POT Sta. 15+36.00
-L2- POT Sta.11+42.89 =
-Y8- POT Sta. 12+09.43
Δ = 102° 49' 33.9"
-L2- PRC Sta. 11+61.45
-L2- POC Sta.12+09.55
TIE TO EXIST BRIDGE
-LI- POT Sta 12+23.41
BEGIN BRIDGE
-LI- POC Sta.12+10.00
-LI- PT Sta.13+00.00
-LI- PC Sta.10+00.00
16' RT (LA)
-LI- POC Sta.11+85.00
-LI- POC Sta.11+43.92 =
-Y8- POT Sta. 12+43.94
Δ = 96° 07' 29.6"
END CONSTRUCTION
-Y8- POT Sta.14+34.11
-Y8- POT Sta. 15+36.00
-Y4- POT Sta.11+73.57
END CONSTRUCTION
-Y4- POT Sta. 12+20.00
-Y5- POT Sta.13+89.79
END CONSTRUCTION
-Y6- POT Sta.11+52.00
-Y5- POT Sta. 15+18.00
-Y7- POT Sta. 15+26.00
-Y6- POT Sta. 12+90.00
-Y7- POT Sta. 15+26.00
-Y6- POT Sta. 12+90.00
-Y7- POT Sta. 15+26.00
-Y6- POT Sta. 12+90.00

NORTHSIDE HISTORIC DISTRICT (NR)
ELIZABETH CITY HISTORIC DISTRICT BOUNDARY EXPANSION (NR)
ELIZABETH CITY HISTORIC DISTRICT (NR)
HISTORIC PROPERTY
POINDEXTER STREET
N. POOL STREET
MARTIN LUTHER KING JR DRIVE
N. MCMORRINE STREET
N. POINDEXTER STREET
N. WATER STREET SR 1268

(15) FOOTPRINT PROPERTIES LLC
(16) JOSEPH HUDAK ET UX
(17) A. JOSH TUNNELL ET UX
(18) MANN CAPITAL PROPERTIES LIMITED, GARY T MANN ET AL
(32) MANN CAPITAL PROPERTIES, LTD.
(37) MELVIN DONALD WATKINS
(39) PASSPORT RENT-A-CENTER
(44) RICHARD W. ALBURY, et ux
(46) WILLIAM R. & DARLENE M SANDERLIN

STANDARD BASE DITCH
DETAIL I
(Not to Scale)

Natural Ground — 2:1 — D — 2:1 — Natural Ground
Min. D= 1.0 Ft.
B= 12.0 Ft.
B

-Y9- STA 16+75.00 TO 17+64.70
-Y9- STA 18+32.78 TO 21+37.46

REMOVE AND OBLITERATE EXISTING ASPHALT PAVEMENT

SEE SHEET 2-C FOR INTERSECTION DETAILS
SEE SHEET 4 FOR CURVE DATA
SEE SHEET NO.8 FOR -L- PROFILE
SEE SHEET NO.9 FOR -LI- AND -L2- PROFILES
SEE SHEET NO.10 FOR -Y4-,-Y5-, AND -Y6- PROFILES
SEE SHEET NO.11 FOR -Y7- AND -Y8- PROFILES

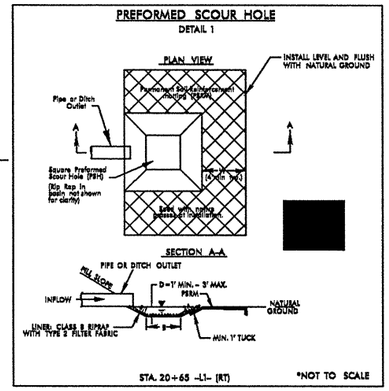
$FILE\$
$DATE\$

REVISIONS
- PARCELS 22,23,24,26,27 REVISED PROPERTY OWNER
- PARCEL 25 REVISED ACREAGE
- PARCEL 25B COMBINED PARCELS 25 AND 27
- PARCEL 27 ADDED PARCEL

DATE:
DATE:
DATE:
DATE:

$FILE1$
$DATE$

PREFORMED SCOUR HOLE
DETAIL 1



STA. 20+65 -L1- (RT) *NOT TO SCALE

MATCH LINE (SEE SHEET 7)

15+00 (-L1-)

20+00 (-L1-)

25+00 (-L1-)

PI Sta 25+13.47
Δ = 1° 56' 05.7" (LT)
D = 2° 29' 28.0"
L = 318.53'
T = 159.52'
R = 2,300.00'
SE = SEE PLANS
RO = SEE PLANS

PI Sta 26+67.81
Δ = 8° 27' 32.9" (LT)
D = 2° 36' 15.7"
L = 324.81'
T = 162.70'
R = 2,200.00'

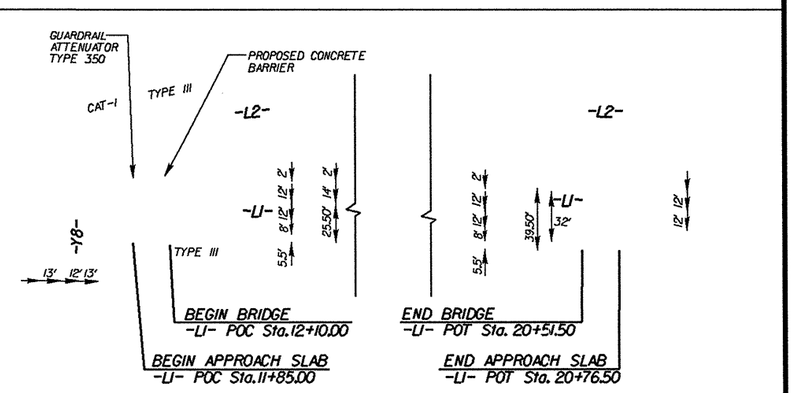
NAD 83/96

MATCH LINE -L1- STA 13+50 (SEE SHEET 5)

S 82° 36' 45.5" E

N 88° 55' 39" E

404 Wetland
EDGE OF WATER
CAMA Wetland
RETAIN GUARDRAIL
REMOVE AND RESET TO TIE INTO PROP CB
SYSTEM BY OTHERS
CLASS I RIP RAP
EST 1.8 TONS
EST 6.7 FF
REMOVE CB
CURB CONSTRUCTED BY OTHERS UNDER TIP PROJECT R-2414A
CB BUILT BY OTHERS
CONSTRUCT NEW VALLEY GUTTER IN DRIVEWAY ALONG CURBLINE
SAWCUT AND REPLACE CONCRETE MEDIAN
RETAIN
VALLEY GUTTER (BY OTHERS)
TRACE WIRE FROM (EO) TEST STATION ASSOCIATED WITH T(FO) LINE
TH 61
TH 62
TH 63 LINK SIZE
TH 64
TH 65
E-METER
(5) WM NO ASSOCIATED PIPING FOUND
(6) WM NO ASSOCIATED PIPING FOUND
(3) WM'S NO ASSOCIATED PIPING FOUND
MULTIPLE WM'S NO ASSOCIATED PIPING FOUND
NOTE: AIR RELEASE VALVES ASSOCIATED WITH THE 10" WATER LINE AND THE 6" FSS LINE WERE NOT FOUND IN THE FIELD. THE ADJACENT PROPERTY OWNER HAS STATED HE HAS NEVER WITNESSED SUCH VALVES, AND THAT THE AREA HAS BEEN BACKFILLED SEVERAL TIMES DUE TO GROUND SETTLEMENT.
NOTE: 6" SANITARY CLEAN OUT LOCATED UNDER WOODEN WALKWAY. SANITARY MANHOLE NOT FOUND. LINE ENDS AT CLEANOUT.
NOTE: 8" SANITARY LINE SNAKED FROM SANITARY MANHOLE TO THIS POINT.
TIE 8"X12" CURB TO EXIST CURB CONSTRUCTED UNDER R-2414A
RETAIN MAILBOXES
+23.70 39.07'
+12.58 49.87'
+12.30 58'
+11.66 75'
+52.78 174.49'
+69.12 200.81'
+30.08 55' RT
+29.67 EXIST
+01.89 96.85'
+65 59.75'
+11.75 EXIST
+11.95 50.16'
22
23
24
25
26



SKETCH SHOWING BRIDGE /PAVEMENT RELATIONSHIP

SEE SHEET NO.9 FOR -L1- PROFILE

Kimley-Horn and Associates, Inc.
P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY ENV.
CONST. ENV.

PROJECT REFERENCE NO.	SHEET NO.
U-4438	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROJECT REFERENCE NO.	SHEET NO.
U-4438	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Kimley-Horn
and Associates, Inc.

P.O. BOX 33068
RALEIGH, N.C. 27636-3068

RIGHT-OF-WAY REV.

CONST. REV.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS

DATE:______ - PARCEL 4,36,37,38; REVISED EASEMENTS
DATE:______ - PARCEL 28; REVISED NUMBER TO 4
DATE:______ - PARCEL 38; REVISED PROPERTY OWNER
DATE:______ - PARCEL 40,44; ADDED PARCEL

DI-01
TOP=1.88'
INV=-2.52'

DI-02
TOP=1.53'
INV=-1.50'

DI-03
TOP=1.72'
INV=-2.12'

DI-04
TOP=1.03'
INV=-1.79'

DI-05
TOP=1.08'
INV=UNKNOWN

DI-06
TOP=0.60'
INV=-0.59'

DI-07
TOP=2.46'
INV IN=-0.09'
INV IN=-0.14'
INV OUT=-0.18'

DI-08
TOP=0.85'
INV IN=UNKNOWN
INV OUT=-0.68'

DI-09
TOP=0.29'
INV IN=-0.96'
INV OUT=-0.98'

DI-10
TOP=-0.18'
INV=-1.28'

SS-01
TOP=2.28'
INV=-2.26'

SS-02
TOP=4.54'
INV=-1.70'

SS-03
TOP=4.98'
INV=-0.16'

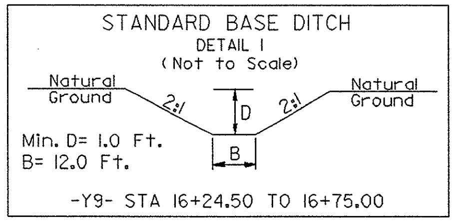
SS-04
TOP=5.94'
INV=0.30'

SS-05
TOP=6.16'
INV=0.12'

SS-06
TOP=4.96'
INV=0.52'

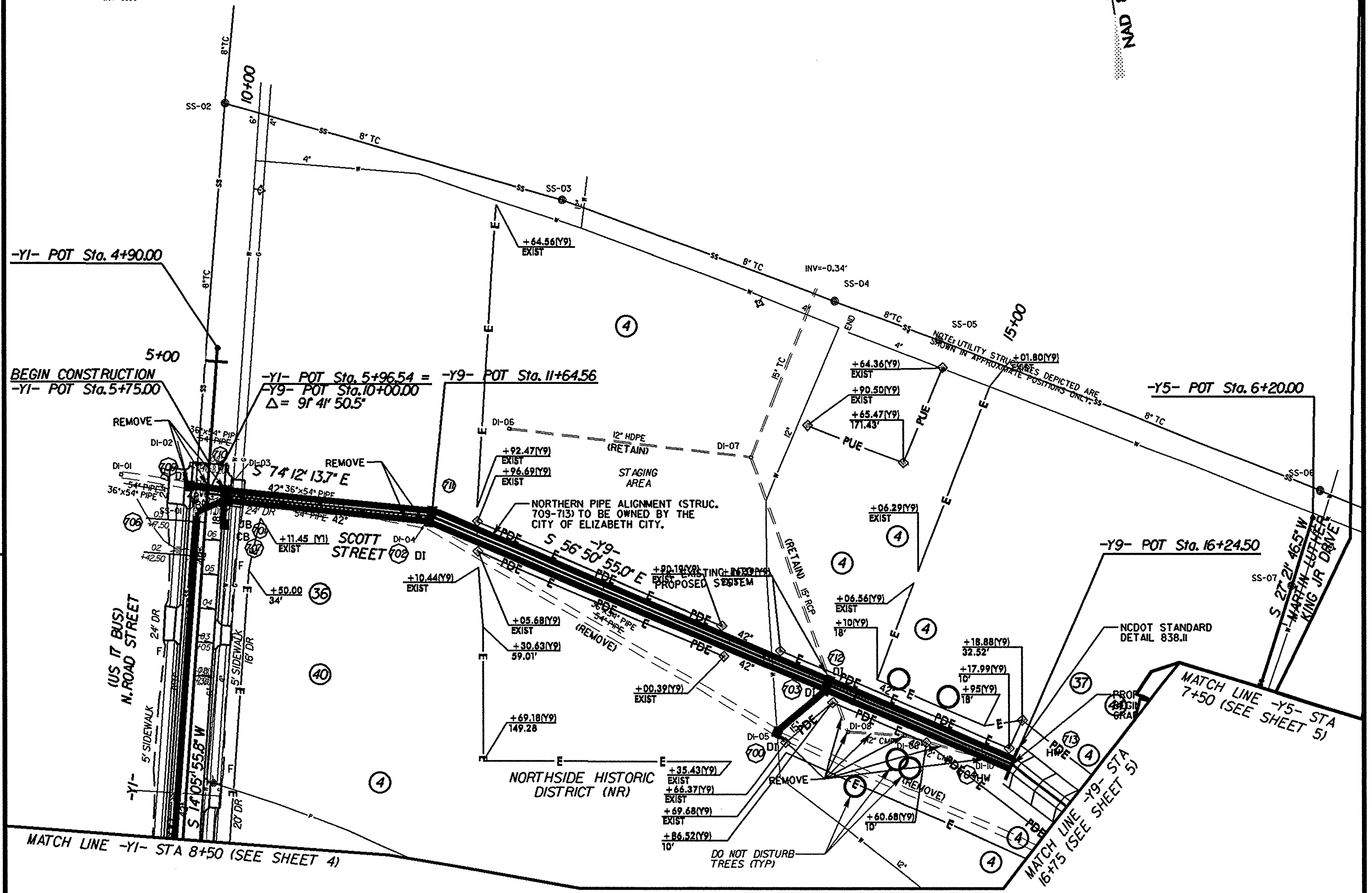
SS-07
TOP=4.89'
INV=0.95'

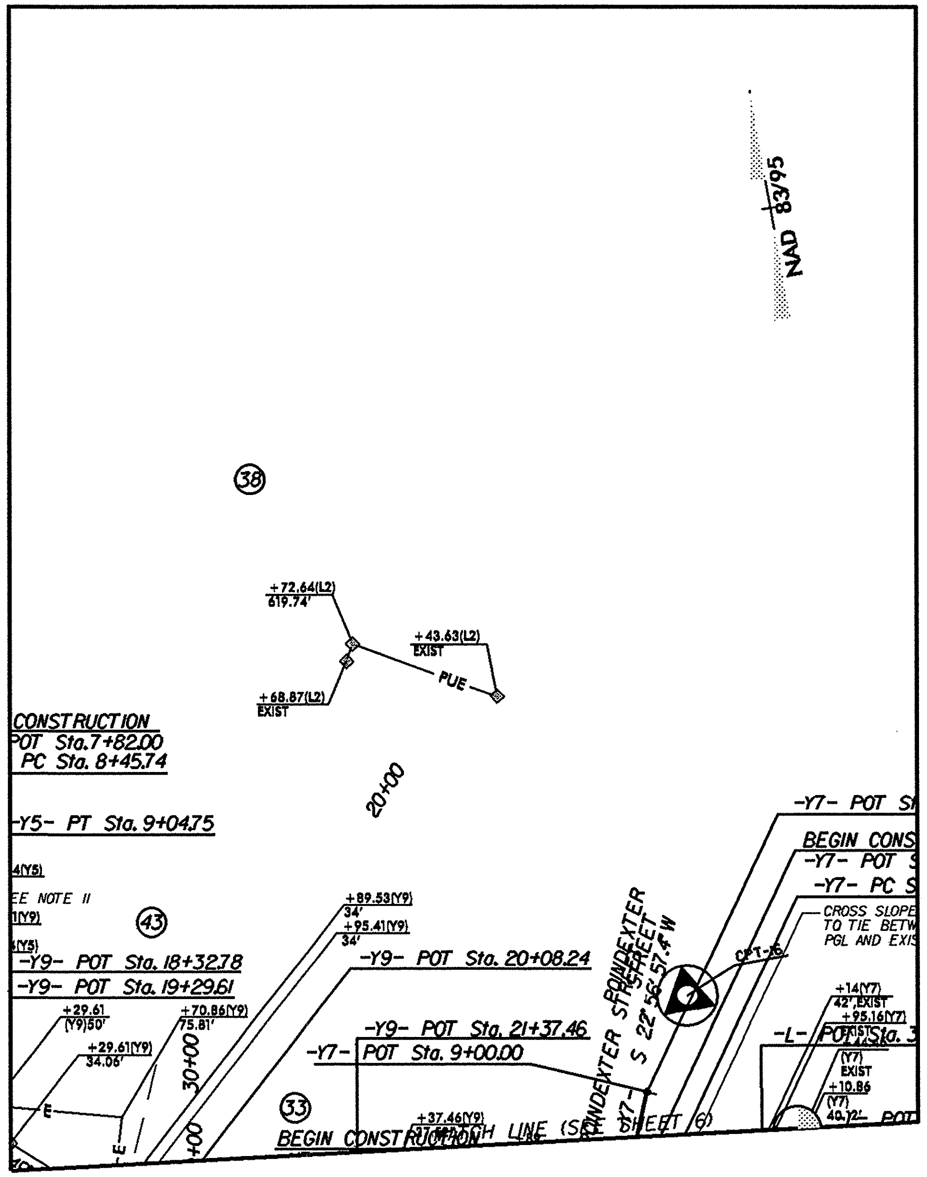
STANDARD BASE DITCH
DETAIL I
(Not to Scale)



Min. D= 1.0 Ft.
B= 12.0 Ft.

-Y9- STA 16+24.50 TO 16+75.00





(28) PASQUOTANK COUNTY
(44) RICHARD W. ALBURY, et ux

SEE SHEET NO.9 FOR -Y1- PROFILE

$FILE$

$DATE$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4438	8

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-59	CL	14+88	4.4- 5.9	A-2-4(0)	17	NP	16.0	74.2	6.2	3.6	100	97	11	-	-
SS-60	CL	14+88	14.4- 15.9	A-2-4(0)	19	NP	34.6	55.4	6.4	3.6	100	96	11	-	-
SS-61	CL	14+88	19.4- 20.9	A-2-4(0)	25	NP	33.8	43.6	15.0	7.6	100	91	26	-	-
SS-62	CL	14+88	39.4-40.9	A-4(0)	24	NP	10.0	58.8	17.6	13.6	100	98	43	-	-
SS-63	CL	14+88	44.4- 45.9	A-2-4(0)	18	NP	21.8	64.0	12.6	1.6	100	94	25	-	-
SS-64	CL	14+88	74.4-75.9	A-3(0)	15	NP	68.2	24.6	3.6	3.6	100	63	9	-	-
SS-52	CL	16+85	4.4- 5.9	A-3(0)	16	NP	55.2	39.0	0.2	5.6	100	90	7	-	-
SS-53	CL	16+85	14.4- 15.9	A-2-4(0)	28	7	25.8	47.8	16.8	9.6	78	65	27	-	-
SS-54	CL	16+85	34.4- 35.9	A-2-4(0)	20	NP	4.6	78.0	11.8	5.6	100	99	26	-	-
SS-55	CL	16+85	44.4-45.9	A-2-4(0)	19	NP	1.4	88.4	6.6	3.6	100	100	16	-	-
SS-56	CL	16+85	49.4- 50.9	A-7-6	29		2.2	34.4	47.8	15.6	100	99	84	28.2	-
SS-57	CL	16+85	54.4- 55.9	A-2-4(0)	17	NP	59.6	31.2	7.6	1.6	100	80	14	-	-
SS-58	CL	16+85	59.4-60.9	A-5(11)	48	9	8.2	13.2	41.0	37.6	100	96	84	-	-
SS-45	CL	18+77	4.4- 5.9	A-3(0)	16	NP	53.0	39.0	4.4	3.6	100	88	9	-	-
SS-46	CL	18+77	14.4- 15.9	A-3(0)	17	NP	28.6	62.4	7.4	1.6	100	93	10	-	-
SS-47	CL	18+77	24.4- 25.9	A-7-6	38	9	3.2	38.6	40.6	17.6	100	99	75	-	-
SS-48	CL	18+77	34.4- 35.9	A-4(0)	22	NP	1.2	61.2	26.0	11.6	100	100	50	-	-
SS-49	CL	18+77	59.4-60.9	A-2-4(0)	18	NP	63.6	20.6	8.2	7.6	100	61	19	-	-
SS-50	CL	18+77	74.4-75.9	A-3(0)	16	NP	48.8	43.2	6.4	1.6	100	72	10	-	-
SS-51	CL	18+77	99.4- 100.9	A-2-4(0)	18	NP	35.6	54.0	6.8	3.6	100	87	13	-	-
SS-37	CL	20+87	2.5-4.0	A-2-4(0)	13	NP	31.0	52.0	9.4	7.6	93	83	19	-	-
SS-38	CL	20+87	9.4- 10.9	A-1-b(0)	20	NP	46.8	38.4	11.6	3.2	50	39	9	-	-
SS-39	CL	20+87	19.4- 20.9	A-3(0)	20	NP	40.6	57.2	0.6	1.6	94	83	3	-	-
SS-40	CL	20+87	24.4- 25.9	A-7-6	23		12.2	38.4	37.8	11.6	100	95	63	-	-
SS-41	CL	20+87	44.4- 45.9	A-7-6	34		1.0	39.4	42.0	17.6	100	99	82	-	-
SS-42	CL	20+87	64.4- 65.9	A-7-6	53		4.0	9.4	49.0	37.6	100	97	90	-	-
SS-43	CL	20+87	74.4-75.9	A-2-4(0)	19	NP	73.4	16.6	4.2	5.8	100	51	11	-	-
SS-44	CL	20+87	79.4-79.9	A-7-6	40		1.2	6.8	60.4	31.6	100	99	97	-	-
SS-27	CL	22+83	4.3- 5.8	A-2-4(0)	16	NP	30.2	51.2	13.4	5.2	75	66	32	-	-
SS-28	CL	22+83	9.3- 10.8	A-1-b(0)	24	NP	34.2	45.6	13.0	7.2	49	42	12	-	-
SS-29	CL	22+83	19.3- 20.8	A-2-4(0)	22	NP	16.6	72.2	6.0	5.2	95	93	13	-	-
SS-30	CL	22+83	24.3- 25.8	A-7-6	29		6.8	30.6	43.4	19.2	100	98	75	-	-
SS-31	CL	22+83	34.3- 39.8	A-7-6	38		0.8	34.0	38.0	27.2	100	100	81	-	-
SS-32	CL	22+83	49.3- 50.8	A-7-6	39		0.8	9.0	57.0	33.2	100	100	95	-	-
SS-33	CL	22+83	54.3- 55.8	A-4(0)	26	NP	7.0	49.4	26.4	17.2	100	98	47	-	-
SS-34	CL	22+83	59.3- 60.8	A-4(0)	23	NP	43.4	17.0	38.4	1.2	100	64	41	-	-
SS-35	CL	22+83	69.3- 70.8	A-3(0)	15	NP	68.8	24.8	4.8	1.6	87	52	7	-	-
SS-36	CL	22+83	79.3- 80.8	A-7-6	39		4.2	6.8	62.4	29.6	100	99	97	-	-

(A) LOOSE BROWN SAND, SAT. (ALLUVIAL)

(B) MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

(C) SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT, WET, AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

BEGIN GRADE
-L- STA 16+00.00
ELEV = 3.56'

3' RT

PAVEMENT

1' RT

PAVEMENT

1' LT

PAVEMENT

1' LT

42' LT

LOOSE TO VERY LOOSE (ROADWAY EMBANKMENT)

TO LOOSE

BLUE GRAY SAND, SAT (UNDIVIDED C.P.)

BROWN SAND, MOIST TO SAT.

SILTY SAND, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SHELL FRAGMENTS

VERY SOFT TO HARD

BLUE GRAY SANDY SILTY, SILTY SAND, SILT, WITH SHELL

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO MEDIUM STIFF HARD BLUE TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS.

WET (YORKTOWN FORMATION)

MEDIUM DENSE GRAY SAND, SAT. (YORKTOWN FORMATION)

GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

ST-6 ST-19 ST-17 ST-4 ST-20 ST-18

SHELBY TUBE 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
ST-6	CL	14+88	25.9- 27.9	A-7-6(16)	41	20	0.6	28.4	38.6	32.4	100	100	82	85.8	-
ST-4(1)	CL	22+83	15.8- 17.8	A-4(0)	36	NP	54.4	21.9	17.5	6.2	97	59	37	121.6	19.4
ST-4(2)	CL	22+83	15.8- 17.8	A-2-5(0)	98	NP	43.7	31.0	23.3	2.1	100	72	27	121.6	47.8
ST-4(3)	CL	22+83	15.8- 17.8	A-3(0)	28	NP	43.3	54.3	1.4	1.0	98	86	3	121.6	2.0
ST-18	13 LT	22+95	30.0- 32.0	A-6(14)	37	16	0.2	28.7	38.8	32.3	100	100	89	57.4	2.7

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4438	9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-19	CL	24+80	4.3-5.8	A-2-4(0)	15	NP	34.8	52.6	9.4	3.2	100	87	16		+
SS-20	CL	24+80	9.3-10.8	A-1-a(0)				NOT	ENOUGH		SAMPLE				
SS-21	CL	24+80	14.3-15.8	A-1-a(0)				NOT	ENOUGH		SAMPLE				
SS-22	CL	24+80	19.3-20.8	A-2-4(0)	15	NP	19.6	71.6	7.6	1.2	100	96	11	-	-
SS-23	CL	24+80	24.5-25.8	A-7-6	32		0.8	36.8	41.2	21.2	100	100	82	29.0	-
SS-24	CL	24+80	44.3-45.8	A-2-4(0)	17	NP	35.0	45.8	12.0	7.2	100	84	25	-	-
SS-25	CL	24+80	54.3-55.8	A-4(0)	22	NP	0.8	63.6	16.4	19.2	100	100	46	-	-
SS-26	CL	24+80	69.3-70.8	A-1-b(0)	15	NP	74.8	19.6	4.4	1.2	100	49	8	-	-
SS-10	CL	26+79	4.3-5.8	A-2-4(0)	15	NP	33.2	44.4	13.2	9.2	100	86	27	-	-
SS-11	CL	26+79	9.3-10.8	A-2-5(0)	55	7	17.2	17.6	38.8	26.4	34	29	23	-	-
SS-12	CL	26+79	14.3-15.8	A-1-a(0)				NOT	ENOUGH		SAMPLE				
SS-13	CL	26+79	24.3-25.8	A-3(0)	20	NP	34.4	60.6	1.8	3.2	100	92	6	-	+
SS-14	CL	26+79	29.3-30.8	A-7-6	30		2.4	45.6	32.8	19.2	100	99	81	-	+
SS-15	CL	26+79	44.3-45.8	A-3(0)	17	NP	50.4	43.8	4.6	1.2	100	84	8	-	+
SS-16	CL	26+79	49.3-50.8	A-4(0)	27	NP	3.2	11.2	51.2	34.4	75	74	70	-	+
SS-17	CL	26+79	69.3-70.8	A-1-b(0)	17	NP	73.2	19.8	5.8	1.2	100	48	9	-	+
SS-18	CL	26+79	79.3-80.8	A-7-6	38		1.8	8.4	64.6	25.2	100	99	96	-	+
SS-1	CL	28+74	1.4-2.9	A-3(0)	20	NP	51.4	43.8	3.6	1.2	100	89	6	-	+
SS-2	CL	28+74	14.3-15.8	A-3(0)	14	NP	42.8	53.4	2.6	1.2	97	79	4	-	+
SS-3	CL	28+74	19.3-20.8	A-2-4(0)	19	NP	29.0	49.4	12.4	9.2	92	89	22	-	+
SS-4	CL	28+74	34.3-35.8	A-7-6	28		0.6	46.4	31.8	21.2	100	100	82	28.3	-
SS-5	CL	28+74	49.3-45.8	A-7-6	30		2.4	20.8	49.6	27.2	100	99	86	-	-
SS-6	CL	28+74	59.3-60.8	A-2-4(0)	18	NP	20.0	60.4	10.4	9.2	100	99	25	-	+
SS-7	CL	28+74	69.3-70.8	A-2-4(0)	19	NP	44.6	30.2	16.0	9.2	100	76	31	-	+
SS-8	CL	28+74	74.3-75.8	A-3(0)	14	NP	63.0	27.8	6.0	3.2	87	59	10	-	+
SS-9	CL	28+74	79.3-80.8	A-7-6	35		3.4	12.0	55.4	29.2	100	98	94	-	+
SS-121	CL	30+00	2.3-3.8	A-2-4(0)	17	NP	18.6	59.4	11.9	10.1	96	92	23	-	+
SS-122	CL	30+00	12.7-14.2					NOT	ENOUGH		SAMPLE			211.2	31
SS-123	CL	30+00	27.7-29.2	A-2-4(0)	18	NP	29.1	60.0	8.9	2.0	100	90	13	-	+
SS-124	CL	30+00	32.7-34.2	A-6(16)	39	18	0.4	29.1	38.2	32.3	100	100	87	-	+
SS-125	CL	30+00	47.7-49.2	A-7-6(26)	48	27	4.4	6.7	38.4	50.5	100	99	91	-	+
SS-126	CL	30+00	57.7-59.2	A-2-4(0)	19	NP	24.0	55.4	10.5	10.1	100	98	23	-	+
SS-127	CL	30+00	67.7-69.2	A-6(11)	33	14	1.6	27.5	40.6	30.3	100	99	84	-	+
SS-128	CL	30+00	72.7-74.2	A-1-b(0)	19	NP	74.7	18.0	5.3	2.0	92	41	8	-	+
SS-113	CL	32+86	2.4-3.9	A-2-4(0)	16	NP	17.8	52.3	27.9	2.0	99	97	34	-	+
SS-114	CL	32+86	22.7-24.2	A-6(4)	27	11	15.8	34.5	25.5	24.2	100	96	60	20.9	+
SS-115	CL	32+86	27.7-29.2	A-4(5)	29	7	0.4	37.2	40.2	22.2	100	100	83	-	+
SS-116	CL	32+86	32.7-34.2	A-7-6(24)	45	24	0.2	21.2	44.2	34.3	100	100	93	-	+
SS-117	CL	32+86	47.7-49.2	A-7-6(35)	58	33	0.6	8.3	38.6	52.5	100	100	94	-	+
SS-118	CL	32+86	57.7-59.2	A-3(0)	21	NP	27.9	63.6	2.4	6.1	100	98	10	-	+
SS-119	CL	32+86	62.7-63.7	A-7-6(44)	69	40	3.8	2.8	30.7	62.6	100	98	94	-	+
SS-120	CL	32+86	72.7-74.2	A-3(0)	19	NP	56.2	39.0	2.8	2.0	99	73	6	-	+

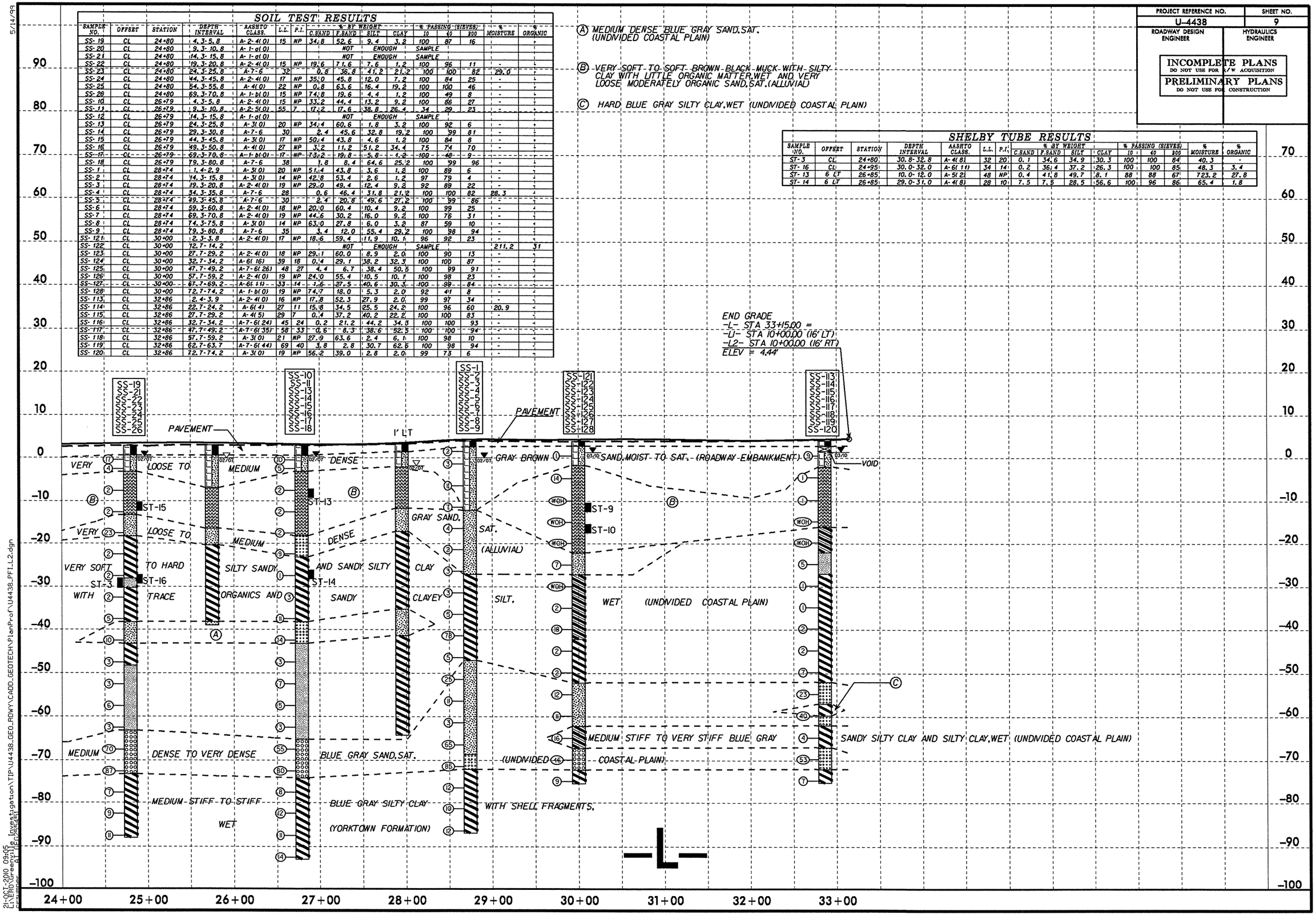
Ⓐ MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

Ⓑ VERY SOFT TO SOFT BROWN BLACK MUCK WITH SILTY CLAY WITH LITTLE ORGANIC MATTER, WET AND VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

Ⓒ HARD BLUE GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

SHELBY TUBE 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
ST-3	CL	24+80	30.8-32.8	A-4(8)	32	20	0.1	34.6	34.9	30.3	100	100	84	40.3	-
ST-16	CL	24+95	30.0-32.0	A-6(11)	34	14	0.2	36.4	37.2	26.3	100	100	85	48.3	3.4
ST-13	6 LT	26+85	10.0-12.0	A-5(2)	48	NP	0.4	41.8	49.7	8.1	88	88	67	723.2	27.8
ST-14	6 LT	26+85	29.0-31.0	A-4(8)	28	10	7.5	7.5	28.5	56.6	100	96	86	65.4	1.8



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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4438	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Ⓐ LOOSE TAN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

Ⓑ VERY LOOSE GRAY SAND,SAT.(ALLUVIAL)

Ⓒ VERY DENSE BLUE GRAY SAND,SAT. (UNDIVIDED COASTAL PLAIN)

Ⓓ LOOSE TAN SAND WITH SHELL FRAGMENTS,MOIST TO SAT.AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER,MOIST TO WET (ARTIFICIAL FILL)

BEGIN GRADE
-LI- STA 10+00.00 =
-L- STA 33+15.00 (16' RT)
ELEV = 4.04'

SS-17A
SS-18A
SS-19A
SS-20A
SS-21A
SS-22A
SS-23A
SS-24A
SS-25A
5' RT

SS-55A
SS-56A
SS-57A
SS-57B
SS-58A
SS-59A
SS-60A
SS-61A
SS-62A
SS-63A
SS-64A
SS-65A
SS-66A
SS-67A
SS-68A
SS-69A
SS-70A
SS-71A
40' RT

BEGIN BRIDGE
-LI- STA 12+10.25
ELEV = 6.54'

PAVEMENT

PROPOSED
154' BASCULE BRIDGE

OBSERVED HIGH WSEL = 1.7' (03-17-2010)

VERY SOFT TO MEDIUM STIFF BROWN BLACK SANDY SILTY CLAY,AND SANDY CLAY WITH LITTLE ORGANIC — MODERATELY ORGANIC MATTER,WET (ALLUVIAL)

VERY SOFT TO SANDY SILTY CLAY, WITH SHELL FRAGMENTS — MEDIUM SANDY CLAY, (UNDIVIDED — STIFF GRAY AND CLAYEY SANDY SILT,WET COASTAL PLAIN)

MEDIUM DENSE (54) TO VERY (32) (UNDIVIDED — DENSE GRAY SAND,SAT. COASTAL PLAIN)

SOFT TO MEDIUM STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY,WET (UNDIVIDED C.P.)

SOFT TO VERY SANDY CLAY,SILTY CLAY, WITH SHELL FRAGMENTS,WET — STIFF BLUE GRAY AND SANDY SILTY CLAY (YORKTOWN FORMATION)

MEDIUM DENSE TO WITH SHELL FRAGMENTS, (YORKTOWN — DENSE GRAY SAND SAT. FORMATION)

-LI-

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
SS-17A	5 RT	11+37	12.9-14.4	A-7-6(17)	52	25	7.3	15.0	22.8	54.8	90	87	70	78.7	6.5
SS-18A	5 RT	11+37	17.9-19.4	A-2-4(0)	20	NP	24.4	59.7	5.8	10.2	98	92	17	-	-
SS-19A	5 RT	11+37	22.9-24.4	A-7-6(17)	43	22	1.0	35.5	24.9	38.6	100	100	78	68.7	-
SS-20A	5 RT	11+37	32.9-34.4	A-4(6)	32	9	0.4	38.0	37.3	24.4	100	100	87	-	-
SS-21A	5 RT	11+37	47.9-49.4	A-7-6(25)	51	29	0.4	22.9	27.9	48.7	100	100	83	-	-
SS-22A	5 RT	11+37	57.9-59.4	A-7-6(20)	45	25	2.8	23.8	26.7	46.7	100	98	81	-	-
SS-23A	5 RT	11+37	62.9-64.4	A-3(0)	18	NP	44.7	49.6	2.6	3.0	100	91	8	-	-
SS-24A	5 RT	11+37	68.9-69.4	A-6(9)	33	12	6.7	19.5	47.4	26.4	100	96	84	-	-
SS-25A	5 RT	11+37	77.9-79.4	A-6(17)	39	23	6.7	21.7	35.0	36.5	100	95	80	-	-
SS-55A	40 RT	12+10	1.0-1.5	A-3(0)	17	NP	44.2	48.7	3.1	4.1	100	86	10	-	-
SS-56A	40 RT	12+10	3.8-5.3	A-4(7)	28	10	5.3	17.3	44.9	32.6	100	98	87	28.0	4.5
SS-57A	40 RT	12+10	18.7-20.2	A-7-5(17)	65	26	13.0	25.2	23.1	38.7	100	96	64	-	-
SS-58A	40 RT	12+10	23.7-25.2	A-7-6(23)	45	25	0.4	21.6	29.2	48.8	100	100	87	-	-
SS-59A	40 RT	12+10	33.7-35.2	A-4(7)	32	8	0.2	36.0	35.3	28.5	100	100	86	-	-
SS-60A	40 RT	12+10	43.7-45.2	A-6(11)	37	21	8.7	31.3	25.3	34.6	98	94	64	-	-
SS-61A	40 RT	12+10	53.7-55.2	A-7-6(28)	46	25	0.2	15.5	39.6	44.8	100	100	95	-	-
SS-62A	40 RT	12+10	63.7-65.2	A-2-4(0)	18	NP	29.4	61.3	5.2	4.1	100	98	13	-	-
SS-63A	40 RT	12+10	73.7-75.2	A-2-4(0)	21	NP	12.8	79.2	7.8	9.2	100	96	23	-	-
SS-64A	40 RT	12+10	78.7-80.2	A-6(21)	40	22	0.2	18.5	40.6	40.7	100	100	92	-	-
SS-65A	40 RT	12+10	88.7-90.2	A-7-6(28)	48	26	0.8	5.5	51.0	42.7	100	99	97	-	-
SS-66A	40 RT	12+10	98.7-100.2	A-6(4)	30	15	7.7	48.2	15.6	28.5	93	88	50	-	-
SS-67A	40 RT	12+10	108.7-110.2	A-4(1)	29	10	20.1	44.2	17.4	18.3	97	87	40	-	-
SS-68A	40 RT	12+10	113.7-115.2	A-2-4(0)	25	2	24.8	49.7	11.2	14.2	96	89	27	-	-
SS-69A	40 RT	12+10	123.7-125.2	A-2-4(0)	26	4	18.1	47.4	18.2	16.3	90	80	35	-	-
SS-70A	40 RT	12+10	113.7-135.2	A-2-4(0)	22	NP	18.7	51.5	14.5	15.3	95	86	31	-	-
SS-71A	40 RT	12+10	143.7-145.2	A-2-4(0)	26	1	10.0	60.3	14.4	15.3	98	96	34	-	-

40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140 -150

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4438	11

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SS-72A
SS-73A
SS-74A
SS-75A
SS-76A
SS-77A
SS-78A
SS-79A
SS-80A
SS-81A
SS-82A
SS-83A
SS-84A
SS-85A
SS-86A
SS-87A
SS-88A
20' LT

END BRIDGE
-L1- STA 20+51.50
ELEV = 6.97'

-L1- STA 26+29.86 =
-L1- STA 8+89.128 (R-2414A)
ELEV = 8.36'

END GRADE
-L1- STA 24+84.00
ELEV = 7.64'
TIE TO EXIST PAVEMENT

04/10

VERY SOFT BROWN SANDY SILT, MOIST, AND VERY LOOSE TO LOOSE TAN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)

VERY LOOSE TO MEDIUM DENSE GRAY SAND AND CLAYEY SAND, SATURATED (UNDIVIDED COASTAL PLAIN)

SOFT TO MEDIUM STIFF GRAY SILTY AND SANDY CLAY, SANDY SILTY CLAY, SILTY SANDY CLAY AND CLAYEY SANDY SILT, WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF GRAY SANDY AND SILTY CLAY, SILTY CLAY AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE TO VERY DENSE GRAY SAND WITH SHELL FRAGMENTS, SAT. (YORKTOWN FORMATION)

MEDIUM STIFF TO VERY STIFF GRAY SANDY SILT, SILTY CLAY AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

-L1-

Ⓐ VERY SOFT TO SOFT BROWN MUCK, MODERATELY ORGANIC SILTY CLAY, SILTY CLAY WITH LITTLE ORGANIC MATTER, WET, AND VERY LOOSE BROWN MUCK AND MODERATELY ORGANIC SAND, SATURATED (ALLUVIAL)

Ⓑ STIFF GRAY CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

Ⓒ VERY SOFT GRAY SANDY SILT, CLAYEY SANDY SILT AND SILTY CLAY, WET (ALLUVIAL)

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
SS-72A	20 LT	20+51	1.0- 1.5	A-4(0)	20	2	14.4	40.5	30.8	14.2	99	95	53	-	-
SS-73A	20 LT	20+51	3.8- 5.3	A-2-4(0)	18	NP	13.1	65.6	14.1	7.1	100	96	26	-	-
SS-74A	20 LT	20+51	13.8- 15.3	A-3(0)	19	NP	5.5	93.2	0.3	1.0	100	100	2	-	-
SS-75A	20 LT	20+51	23.8- 25.3	A-3(0)	24	NP	7.0	90.8	1.1	1.0	100	100	4	-	-
SS-76A	20 LT	20+51	33.8- 35.3	A-3(0)	26	NP	53.2	42.7	1.0	3.1	100	83	5	-	-
SS-77A	20 LT	20+51	43.8- 45.3	A-3(0)	24	NP	16.0	79.7	2.3	2.0	100	99	8	-	-
SS-78A	20 LT	20+51	54.3- 55.3	A-2-4(0)	18	NP	56.2	23.8	9.9	10.2	99	84	23	-	-
SS-79A	20 LT	20+51	58.8- 60.3	A-7-6(22)	46	25	3.5	22.6	31.2	42.7	100	99	84	73.5	-
SS-80A	20 LT	20+51	68.8- 70.3	A-6(18)	37	21	21.0	16.5	42.8	38.7	100	99	88	-	-
SS-81A	20 LT	20+51	73.8- 75.3	A-2-4(0)	19	NP	23.9	68.1	4.0	4.1	100	93	11	-	-
SS-82A	20 LT	20+51	83.8- 85.3	A-6(13)	34	13	0.8	8.3	58.3	32.6	100	99	98	-	-
SS-83A	20 LT	20+51	93.8- 95.3	A-7-6(25)	45	26	3.1	9.6	44.7	42.7	100	98	91	-	-
SS-84A	20 LT	20+51	103.8- 105.3	A-6(9)	34	18	5.1	38.2	22.4	34.3	94	91	64	-	-
SS-85A	20 LT	20+51	113.8- 115.3	A-2-4(0)	26	4	30.1	43.9	8.8	17.2	95	83	27	-	-
SS-86A	20 LT	20+51	123.8- 125.3	A-2-4(0)	24	NP	38.5	35.5	12.9	13.1	93	74	27	-	-
SS-87A	20 LT	20+51	133.8- 135.3	A-2-4(0)	23	1	22.8	45.5	15.6	16.2	93	82	33	-	-
SS-88A	20 LT	20+51	143.8- 145.2	A-4(0)	22	1	12.3	52.7	20.8	14.1	100	97	40	-	-

19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4438	12

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Ⓐ MEDIUM DENSE TO DENSE GRAY SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

Ⓑ VERY SOFT TO MEDIUM STIFF BROWN MUCK, SAT.

Ⓒ LOOSE BROWN SAND, SAT. (ALLUVIAL)

BEGIN GRADE
-Y1- STA 5+75.00
ELEV = 3.17'

BEGIN GRADE
-Y1- STA 11+09.00
ELEV = 4.33'

PAVEMENT

14' LT

27' RT

END GRADE
-Y1- STA 11+61.00 =
-L- STA 20+00.43 (27' LT)
ELEV = 3.15'

-Y1- STA 11+88.00 =
-L- STA 19+99.96
ELEV = 3.42'

VERY SOFT BLUE GRAY WET

TO MEDIUM SILTY CLAY, (UNDIVIDED

STIFF AND SANDY CLAYEY SILT, COASTAL PLAIN)

MEDIUM DENSE GRAY SAND, SAT., (UNDIVIDED COASTAL PLAIN)

-Y1-

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4438	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

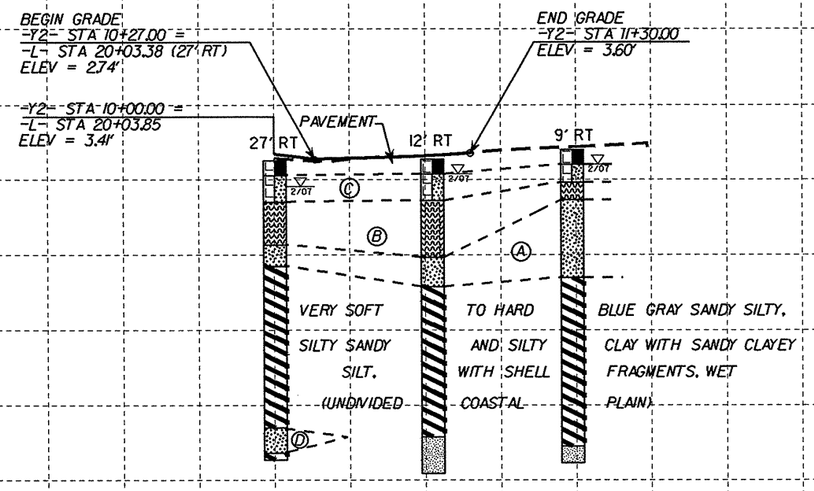
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Ⓐ LOOSE BROWN SAND,SAT.(ALLUVIAL)

Ⓑ SOFT TO MEDIUM STIFF BROWN BLACK MUCK,SAT.(ALLUVIAL)

Ⓒ MEDIUM DENSE TO DENSE TAN BROWN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

Ⓓ MEDIUM DENSE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)



-Y2-

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

10+00 11+00 12+00

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PROJECT REFERENCE NO.	SHEET NO.
U-4438	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Ⓐ LOOSE BROWN SAND,SAT.(ALLUVIAL)

Ⓑ SOFT TO MEDIUM STIFF BROWN BLACK MUCK,SAT.(ALLUVIAL)

Ⓒ MEDIUM DENSE TO DENSE TAN BROWN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

Ⓓ VERY LOOSE TO HARD BLUE GRAY SAND,SAT. (UNDIVIDED COASTAL PLAIN)

BEGIN GRADE
-Y3- STA 10+27.07
-L- STA 22+17.04 (27' RT)
ELEV = 2.56'

-Y3- STA 10+00.00 =
-L- STA 22+15.03
ELEV = 3.25'

PAVEMENT

6' RT

6' LT

END GRADE
-Y3- STA 11+08.00
ELEV = 3.74'

02/07

VERY SOFT SILTY SANDY SILT. (UNDIVIDED

TO HARD AND SILTY WITH SHELL COASTAL PLAIN)

BLUE GRAY SANDY SILTY. CLAY WITH SANDY CLAYEY FRAGMENTS, WET

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS,WET (YORKTOWN FORMATION)

-Y3-

90 80 70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100

10+00 11+00 12+00

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4438	15

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

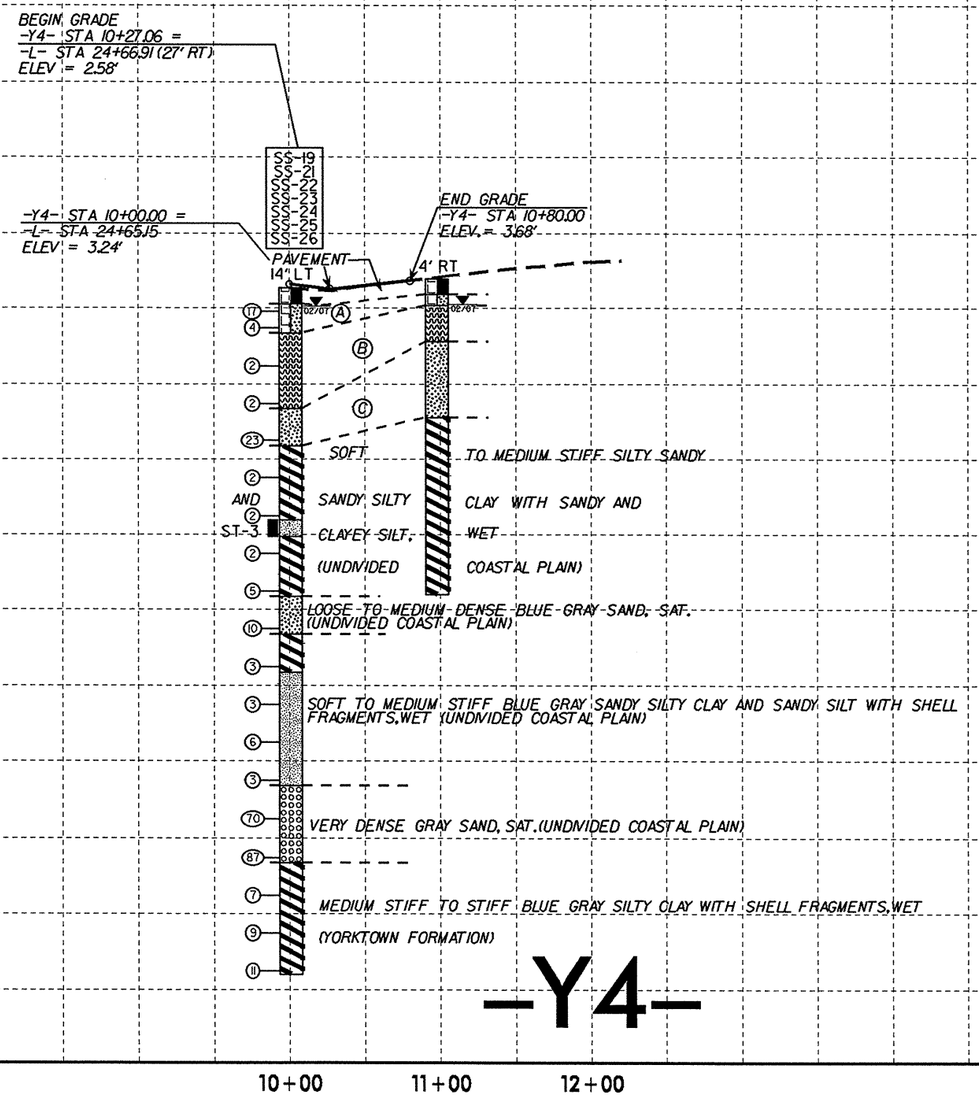
SOIL TEST RESULTS

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
SS-19	14 LT	10+00	4.3-5.8	A-2-4(0)	15	NP	34.8	52.6	9.4	3.2	100	87	16	-	-
SS-20	14 LT	10+00	9.3-10.8	A-1-a(0)	NOT ENOUGH SAMPLE										
SS-21	14 LT	10+00	14.3-15.8	A-1-a(0)	NOT ENOUGH SAMPLE										
SS-22	14 LT	10+00	19.3-20.8	A-2-4(0)	15	NP	19.6	71.6	7.6	1.2	100	96	11	-	-
SS-23	14 LT	10+00	24.3-25.8	A-7-6	32		0.8	36.8	41.2	21.2	100	100	82	-	-
SS-24	14 LT	10+00	44.3-45.8	A-2-4(0)	17	NP	35.0	45.8	12.0	7.2	100	84	25	-	-
SS-25	14 LT	10+00	54.3-55.8	A-4(0)	22	NP	0.8	63.6	16.4	19.2	100	100	46	-	-
SS-26	14 LT	10+00	69.3-70.8	A-1-b(0)	15	NP	74.8	19.6	4.4	1.2	100	49	8	-	-

(A) VERY LOOSE TO MEDIUM DENSE SAND, MOIST TO SAT.(ROADWAY EMBANKMENT)

(B) VERY SOFT TO SOFT BROWN BLACK MUCK, SAT.(ALLUVIAL)

(C) VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT.(ALLUVIAL)



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PROJECT REFERENCE NO.	SHEET NO.
U-4438	16

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-503	13 RT	8+93	4.0- 5.5	NOT ENOUGH SAMPLE											7.3
SS-500	9 RT	9+50	12.9- 14.4	A-7-5(18)	64	25	16.5	16.3	27.0	40.2	98	88	67	-	16.7
SS-65	1 LT	11+97	0.8- 2.3	A-2-4(0)	15	NP	50.8	31.4	12.2	5.6	100	83	21	-	-
SS-67	1 LT	11+97	9.2- 10.7	A-3(0)	13	NP	21.2	77.6	1.2	0.0	100	97	1	-	-
SS-68	1 LT	11+97	19.2- 20.7	A-7-6	34	8	3.0	21.2	66.2	9.6	100	99	84	-	-
SS-69	1 LT	11+97	34.2- 35.7	A-7-6	34	8	0.4	38.8	43.2	17.7	100	100	84	-	-
SS-70	1 LT	11+97	39.2- 40.7	A-2-4(0)	25	NP	0.6	83.7	12.0	3.6	100	100	29	-	-
SS-71	1 LT	11+97	54.2- 55.7	A-2-4(0)	22	NP	14.7	63.6	20.3	1.6	100	94	30	-	-
SS-72	1 LT	11+97	64.2- 65.7	A-7-6	29	4	1.8	47.4	37.1	13.7	100	99	72	-	-
SS-74	5 LT	13+10	14.2- 15.7	A-3(0)	18	NP	57.0	36.1	5.2	1.6	100	71	9	-	-
SS-75	5 LT	13+10	24.2- 25.7	A-2-4(0)	22	NP	28.1	62.9	7.4	1.6	100	93	11	-	-
SS-76	5 LT	13+10	29.2- 30.7	A-7-6	30	3	0.4	51.6	34.3	13.7	100	100	79	-	-
SS-77	5 LT	13+10	49.2- 50.7	A-7-6	35	-	9.2	13.5	63.7	13.7	100	94	84	-	-
SS-78	5 LT	13+10	69.2- 70.7	A-3(0)	19	NP	66.1	26.1	4.2	1.6	100	57	8	-	-

SHELBY TUBE 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
ST-7	5 LT	13+10	14.8- 16.8	A-7-6(0)	30	NP	29.9	57.2	8.8	4.1	93	86	14	24.6	5.4
ST-7	5 LT	13+10	14.8- 16.8	A-3(0)	24	NP	22.3	72.7	4.0	1.0	100	95	7	18.4	0.9
ST-7	5 LT	13+10	14.8- 16.8	A-3(0)	28	NP	24.5	66.9	5.5	3.0	99	94	10	17.9	3.2

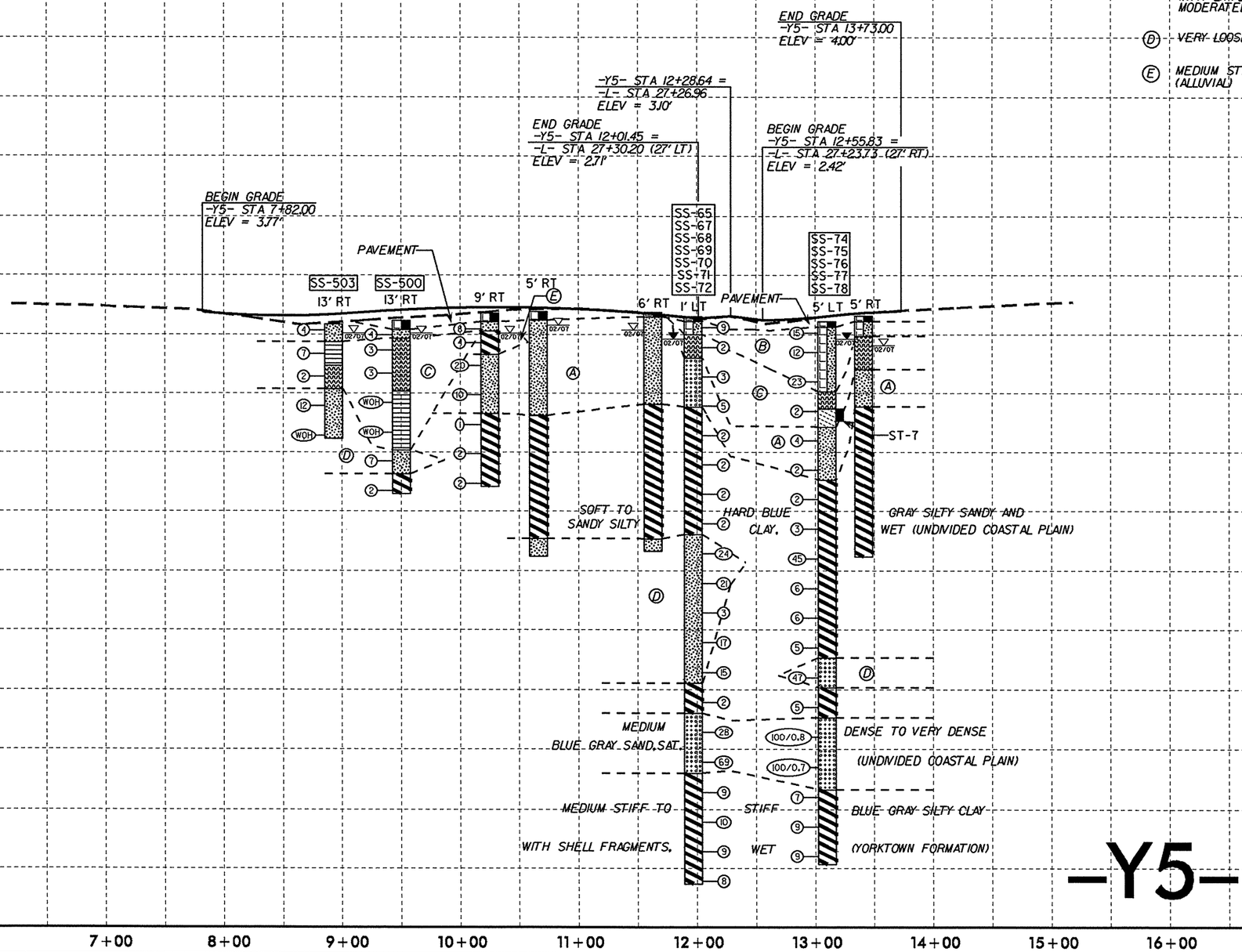
Ⓐ VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (ALLUVIAL)

Ⓑ MEDIUM DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

Ⓒ SOFT BROWN BLACK MUCK, MOIST TO SAT. WITH SANDY CLAY WITH LITTLE ORGANIC MATTER AND VERY LOOSE LITTLE TO MODERATELY ORGANIC SAND SAT. (ALLUVIAL)

Ⓓ VERY LOOSE TO DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

Ⓔ MEDIUM STIFF GRAY SANDY CLAY, MOIST TO WET (ALLUVIAL)



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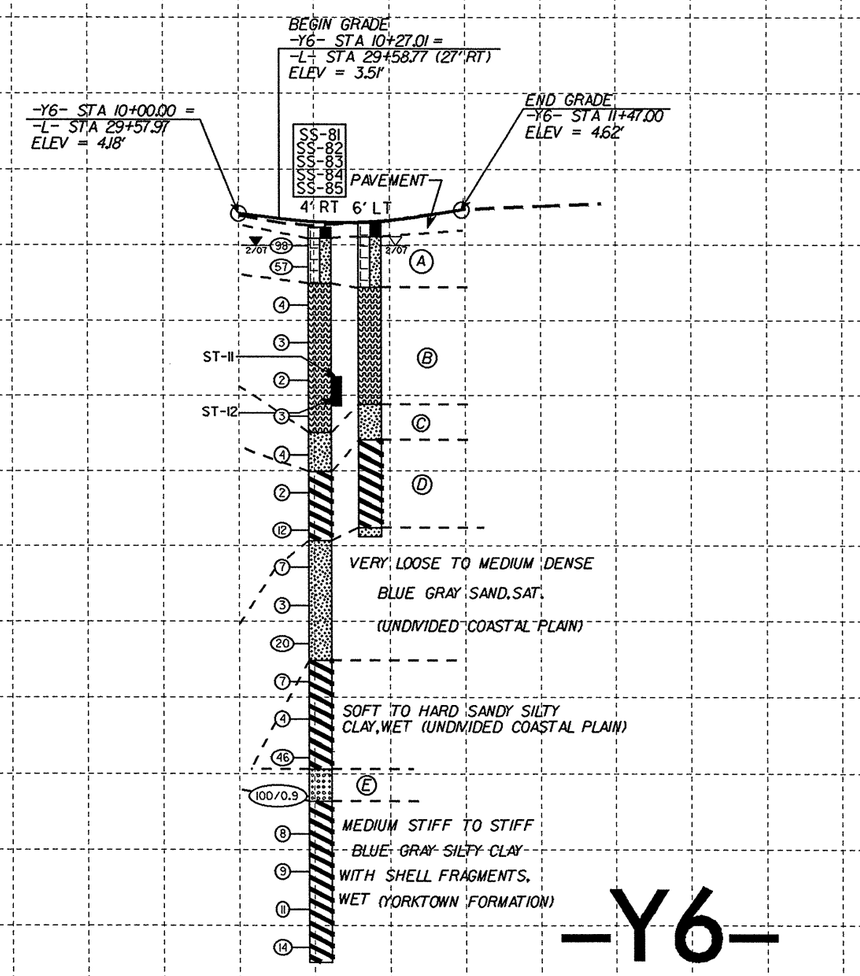
PROJECT REFERENCE NO.	SHEET NO.
U-4438	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-81	4 RT	10+54	29.3-30.8	A-2-4(0)	19	NP	13.7	72.3	12.4	1.6	100	99	21	-	-
SS-82	4 RT	10+54	34.3-35.8	A-7-6	32	-	0.4	42.8	39.2	17.7	100	100	64	-	-
SS-83	4 RT	10+54	44.3-45.8	A-2-4(0)	22	NP	17.7	59.0	21.7	1.6	100	95	26	-	-
SS-84	4 RT	10+54	64.3-65.8	A-7-6	31	-	0.8	38.2	59.4	1.6	100	99	78	-	-
SS-85	4 RT	10+54	74.3-75.8	A-3(0)	16	NP	13.5	25.7	0.8	0.0	100	52	6	-	-



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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4438	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-86	11 LT	11+67	19.6-21.1	A-5(8)	71	9	34.1	8.8	45.8	11.2	100	71	59	-	-
SS-87	11 LT	11+67	24.6-26.1	A-4(0)	31	NP	25.3	40.0	25.1	9.6	100	89	36	-	-
SS-88	11 LT	11+67	29.6-31.1	A-7-6	29		1.8	46.8	37.8	13.7	100	99	74	-	-
SS-89	11 LT	11+67	34.6-36.1	A-7-6	31		0.4	44.4	39.6	15.7	100	100	79	-	-
SS-90	11 LT	11+67	59.6-61.1	A-2-4(0)	22	NP	48.0	31.1	19.3	1.6	100	79	30	-	-
SS-91	11 LT	11+67	69.6-71.1	A-4(0)	32	NP	24.3	34.1	29.9	11.6	100	80	48	-	-
SS-92	11 LT	11+67	79.6-81.1	A-7-6	39		0.4	24.5	45.4	29.7	100	100	87	-	-
SS-93	CL	13+01	14.2-15.7	A-3(0)	21	NP	15.5	78.3	6.2	0.0	100	92	8	-	-
SS-94	CL	13+01	19.2-20.7	A-4(0)	21	NP	13.9	50.4	20.1	15.7	100	99	52	-	-
SS-95	CL	13+01	39.2-40.7	A-6(10)	36	11	0.6	33.9	45.8	19.7	100	100	84	-	-
SS-96	CL	13+01	59.2-60.7	A-3(0)	14	NP	31.7	62.0	6.2	0.0	100	99	7	-	-
SS-97	CL	13+01	69.2-70.7	A-7-6	50		20.1	8.0	56.6	15.3	100	82	75	-	-

Ⓐ SOFT TO STIFF, BROWN-BLACK MUCK, SAT. (ALLUVIAL)

Ⓑ LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

Ⓒ LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

BEGIN GRADE
-Y7- STA 9+40.00
ELEV = 4.15'

END GRADE
-Y7- STA 12+05.60 =
-L- STA 32+00.95 (27' LT)
ELEV = 3.78'

-Y7- STA 12+32.62 =
-L- STA 32+01.93
ELEV = 4.05'

BEGIN GRADE
-Y7- STA 12+59.64 =
-L- STA 32+02.91 (27' RT)
ELEV = 3.38'

END GRADE
-Y7- STA 13+40.00
ELEV = 4.77'

SS-86
SS-87
SS-88
SS-89
SS-90
SS-91
SS-92

SS-93
SS-94
SS-95
SS-96
SS-97

8' LT
11' LT
8' LT
2' LT

PAVEMENT
PAVEMENT

02/01

LOOSE TO DENSE BROWN SAND WITH (ROADWAY EMBANKMENT)

WOOD

MOIST TO SAT.

LOOSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY

SANDY SILT AND (UNDIVIDED COASTAL PLAIN)

SANDY SILTY CLAY, WET

LOOSE TO VERY (UNDIVIDED) STIFF BLUE GRAY

DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY WITH SHELL FRAGMENTS (YORKTOWN FORMATION)

SILTY CLAY

-Y7-

10+00 11+00 12+00 13+00 14+00

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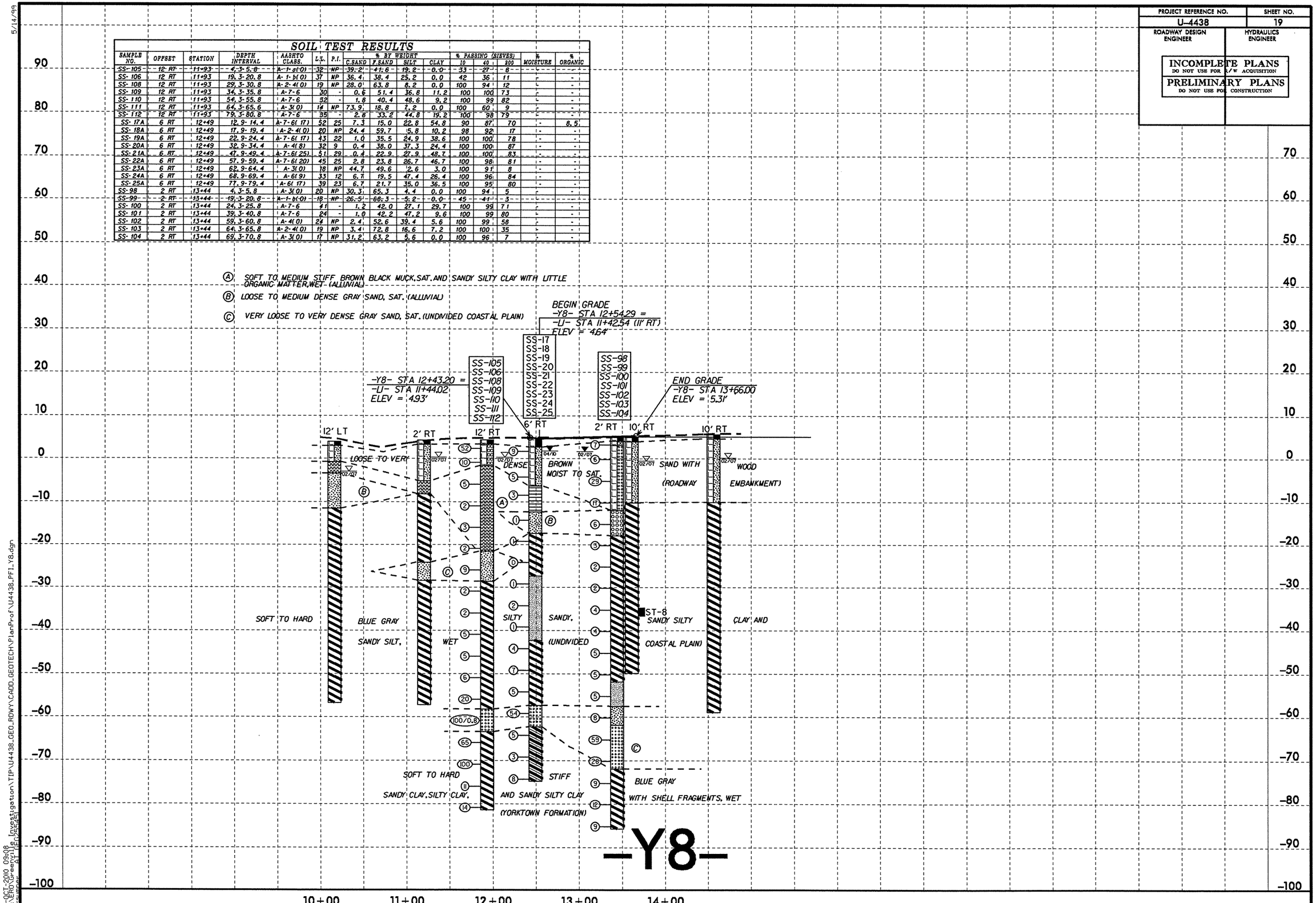
PROJECT REFERENCE NO.	SHEET NO.
U-4438	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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
SS-105	12 RT	11+93	4.3-5.8	A-1-a(0)	32	NP	39.2	41.6	19.2	0.0	33	27	8	-	-
SS-106	12 RT	11+93	19.3-20.8	A-1-b(0)	37	NP	36.4	38.4	25.2	0.0	42	36	11	-	-
SS-108	12 RT	11+93	29.3-30.8	A-2-4(0)	19	NP	28.0	63.8	8.2	0.0	100	94	12	-	-
SS-109	12 RT	11+93	34.3-35.8	A-7-6	30	-	0.6	51.4	36.8	11.2	100	100	73	-	-
SS-110	12 RT	11+93	54.3-55.8	A-7-6	32	-	1.8	40.4	48.6	9.2	100	99	82	-	-
SS-111	12 RT	11+93	64.3-65.6	A-3(0)	14	NP	73.9	18.8	7.2	0.0	100	60	9	-	-
SS-112	12 RT	11+93	79.3-80.8	A-7-6	35	-	2.8	33.2	44.8	19.2	100	98	79	-	-
SS-17A	6 RT	12+49	12.9-14.4	A-7-6(17)	52	25	7.3	15.0	22.8	54.8	90	87	70	-	8.5
SS-18A	6 RT	12+49	17.9-19.4	A-2-4(0)	20	NP	24.4	59.7	5.8	10.2	98	92	17	-	-
SS-19A	6 RT	12+49	22.9-24.4	A-7-6(17)	43	22	1.0	35.5	24.9	38.6	100	100	78	-	-
SS-20A	6 RT	12+49	32.9-34.4	A-4(8)	32	9	0.4	38.0	37.3	24.4	100	100	87	-	-
SS-21A	6 RT	12+49	47.9-49.4	A-7-6(25)	51	29	0.4	22.9	27.9	48.7	100	100	83	-	-
SS-22A	6 RT	12+49	57.9-59.4	A-7-6(20)	45	25	2.8	23.8	26.7	46.7	100	98	81	-	-
SS-23A	6 RT	12+49	62.9-64.4	A-3(0)	18	NP	44.7	49.6	2.6	3.0	100	91	8	-	-
SS-24A	6 RT	12+49	68.9-69.4	A-6(9)	33	12	6.7	19.5	47.4	26.4	100	96	84	-	-
SS-25A	6 RT	12+49	77.9-79.4	A-6(17)	39	23	6.7	21.7	35.0	36.5	100	95	80	-	-
SS-98	2 RT	13+44	4.3-5.8	A-3(0)	20	NP	30.3	65.3	4.4	0.0	100	94	5	-	-
SS-99	2 RT	13+44	19.3-20.8	A-1-b(0)	18	NP	26.5	66.3	5.2	0.0	45	41	3	-	-
SS-100	2 RT	13+44	24.3-25.8	A-7-6	41	-	1.2	42.0	27.1	29.7	100	99	71	-	-
SS-101	2 RT	13+44	39.3-40.8	A-7-6	24	-	1.0	42.2	47.2	9.6	100	99	80	-	-
SS-102	2 RT	13+44	59.3-60.8	A-4(0)	24	NP	2.4	52.6	39.4	5.6	100	99	58	-	-
SS-103	2 RT	13+44	64.3-65.8	A-2-4(0)	19	NP	3.4	72.8	16.6	7.2	100	100	35	-	-
SS-104	2 RT	13+44	69.3-70.8	A-3(0)	17	NP	31.2	63.2	5.6	0.0	100	96	7	-	-



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	U-4438	20

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT.
(ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT.
(UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

16+50.00

Ⓐ MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT.
(ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT.
(UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

Ⓐ VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

16+00.00

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	U-4438	21

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT, WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

17+00.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	22

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

0 -10 -20 -30 -40 -50 -60

17+50.00

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	U-4438	23

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Ⓐ VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

Ⓐ

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE GRAY SAND, SAT. (YORKTOWN FORMATION)

18+00.00

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AT (GEOPAK)

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	24

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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Ⓐ VERY LOOSE TO LOOSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

Ⓐ

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE GRAY SAND, SAT. (YORKTOWN FORMATION)

18+50.00

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-70
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-90

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE GRAY SAND, SAT. (YORKTOWN FORMATION)

19+05.00
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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	26

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0
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-20
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-40
-50
-60
-70
-80
-90

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE GRAY SAND, SAT. (YORKTOWN FORMATION)

19+55.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	27

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

10 0 -10 -20 -30 -40 -50 -60 -70 -80

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

20+05.00

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	U-4438	28

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PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ALLUVIAL)

-10

-20

-30

-40

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

-50

-60

-70

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

-80

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

20+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	29

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

21+00.00

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	U-4438	30

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10 0 -10 -20 -30 -40 -50 -60 -70 -80

PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT, WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

21+50.00

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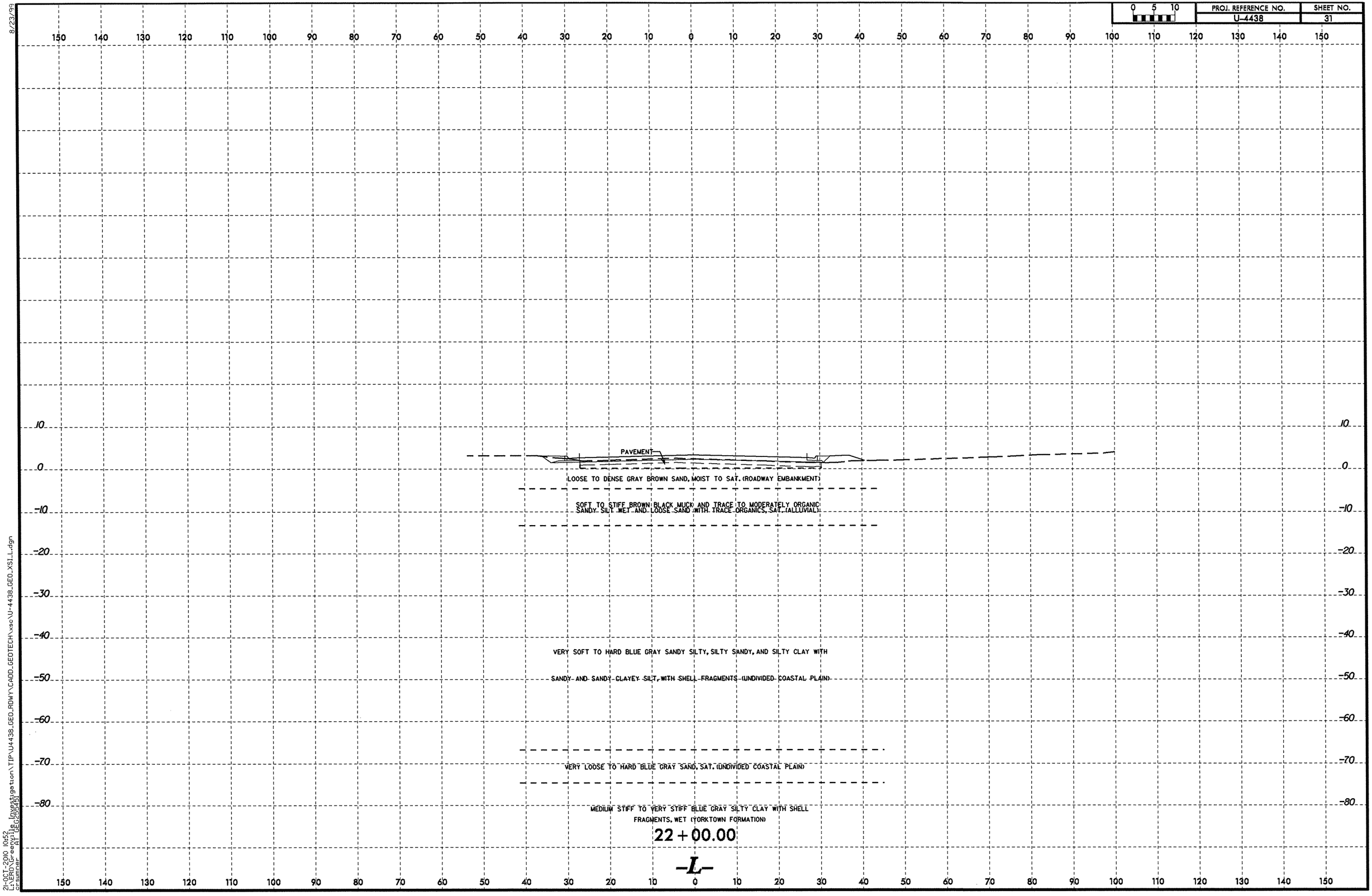

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	32

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

22 + 69.01

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	U-4438	33

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET, AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET. (YORKTOWN FORMATION)

23+05.00

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PAVEMENT

LOOSE TO DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND TRACE TO MODERATELY ORGANIC SANDY SILT WET AND LOOSE SAND WITH TRACE ORGANICS, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

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23+55.00

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	U-4438	35

PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

24+00.00

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-70
-80

PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

24+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	37

PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

25+00.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

25+50.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

26+12.18

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

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26+55.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

27+00.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

27+50.00

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	U-4438	43

PAVEMENT — 27+95

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

02/07

VERY SOFT TO SOFT BROWN BLACK ORGANIC MATTER, WET WITH VERY LOOSE MUCK AND SILTY CLAY WITH LITTLE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO HARD BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

27+98.10

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

28+55.00

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PAVEMENT

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VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

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VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

-20

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

-30

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

-40

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

-50

-60

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

-70

-80

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

29+05.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

29+50.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

30+08.10

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

30+65.00

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Consumer, Al Gregory

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

31+05.00

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	U-4438	50

PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

31+50.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

32+00.00

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

HARD BLUE GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

32 + 52.80

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PAVEMENT

VERY LOOSE TO MEDIUM DENSE GRAY BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK AND SILTY CLAY WITH LITTLE ORGANIC MATTER, WET WITH VERY LOOSE MODERATELY ORGANIC SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY, AND SILTY CLAY WITH

SANDY AND SANDY CLAYEY SILT, WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

HARD BLUE GRAY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SANDY SILTY CLAY AND SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO VERY STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

33+15.00

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crsumner
AT (GEOPAK)

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	54

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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-60
-70

PAVEMENT

LOOSE TAN SAND WITH SHELL FRAGMENTS, MOIST TO SAT. AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER, MOIST TO WET (ROADWAY EMBANKMENT)

VERY SOFT TO MEDIUM STIFF BROWN BLACK MODERATELY ORGANIC SANDY SILTY CLAY, AND SANDY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

VERY LOOSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO MEDIUM STIFE GRAY SANDY SILTY CLAY, SANDY CLAY, AND CLAYEY SANDY SILT, WET WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE GRAY SAND, SAT. (UNIVIDED COASTAL PLAIN)

SOFT TO VERY STIFF SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

11+00.00

Ⓐ VERY LOOSE GRAY SAND, SAT. (ALLUVIAL)

PAVEMENT

LOOSE TAN SAND WITH SHELL FRAGMENTS, MOIST TO SAT. AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER, MOIST TO WET (ROADWAY EMBANKMENT)

VERY SOFT TO MEDIUM STIFF BROWN BLACK MODERATELY ORGANIC SANDY SILTY CLAY, AND SANDY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

VERY SOFT TO MEDIUM STIFF GRAY SANDY SILTY CLAY, SANDY CLAY, AND CLAYEY SANDY SILT, WET WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE GRAY SAND, SAT. (UNIVIDED COASTAL PLAIN)

SOFT TO VERY STIFF SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

10+50.00

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orsumner AT GEOPAK[1]

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	55

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
SS-17A	5 RT	11+37	12.9-14.4	A-7-6(17)	52	25	7.3	15.0	22.8	54.8	90	87	70	-	-
SS-18A	5 RT	11+37	17.9-19.4	A-2-4(0)	20	NP	24.4	59.7	5.8	10.2	98	92	17	-	-
SS-19A	5 RT	11+37	22.9-24.4	A-7-6(17)	43	22	1.0	35.5	24.9	38.6	100	100	78	-	-
SS-20A	5 RT	11+37	32.9-34.4	A-4(8)	32	9	0.4	38.0	37.3	24.4	100	100	87	-	-
SS-21A	5 RT	11+37	47.9-49.4	A-7-6(25)	51	29	0.4	22.9	27.9	48.7	100	100	83	-	-
SS-22A	5 RT	11+37	57.9-59.4	A-7-6(20)	45	25	2.8	23.8	26.7	46.7	100	98	81	-	-
SS-23A	5 RT	11+37	62.9-64.4	A-3(0)	18	NP	44.7	49.6	2.6	3.0	100	91	8	-	-
SS-24A	5 RT	11+37	68.9-69.4	A-6(9)	33	12	6.7	19.5	47.4	26.4	100	96	84	-	-
SS-25A	5 RT	11+37	77.9-79.4	A-6(17)	39	23	6.7	21.7	35.0	36.5	100	95	80	-	-

SS-17A
SS-18A
SS-19A
SS-20A
SS-21A
SS-22A
SS-23A
SS-24A
SS-25A

PAVEMENT

11+37

LOOSE TAN SAND WITH SHELL FRAGMENTS, MOIST TO SAT. AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER, MOIST TO WET (ROADWAY EMBANKMENT)

VERY SOFT TO MEDIUM STIFF BROWN BLACK MODERATELY ORGANIC SANDY SILTY CLAY, AND SANDY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

VERY LOOSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO MEDIUM STIFF GRAY SANDY SILTY CLAY, SANDY CLAY, AND CLAYEY SANDY SILT, WET WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO VERY STIFF SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

11+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	56

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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LOOSE TAN SAND WITH SHELL FRAGMENTS MOIST TO SAT. AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER, MOIST TO WET (ARTIFICIAL FILL)

VERY SOFT TO MEDIUM STIFF BROWN BLACK MODERATELY ORGANIC SANDY SILTY CLAY, AND SANDY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

VERY SOFT TO MEDIUM STIFF GRAY SANDY SILTY CLAY, SANDY CLAY, AND CLAYEY SANDY SILT WET WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE GRAY SAND, SAT. (UNIVIDED COASTAL PLAIN)

SOFT TO VERY STIFF SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

12+00.00

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crsumner
AT GEOPAK(45)

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	57

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-55A	40 RT	12+10	1.0- 1.5	A-1-b (1)	17	NP	44.2	48.7	3.1	4.1	100	86	10	-	-
SS-56A	40 RT	12+10	3.8- 5.3	A-4(7)	28	10	5.3	17.3	44.9	32.6	100	98	87	-	-
SS-57A	40 RT	12+10	18.7- 20.2	A-7-5(17)	65	26	13.0	25.2	23.1	38.7	100	96	64	-	-
SS-57B	20 RT	12+10	18.7- 20.2	A-7-5(6)	51	20	20.8	31.5	19.8	28.5	94	87	47	-	-
SS-58A	40 RT	12+10	23.7- 25.2	A-7-6(23)	45	25	0.1	21.6	29.8	48.5	100	100	87	-	-
SS-59A	40 RT	12+10	33.7- 35.2	A-4(7)	32	8	0.2	36.0	35.3	28.5	100	100	86	-	-
SS-60A	40 RT	12+10	43.7- 45.2	A-6(11)	37	21	8.7	31.3	25.3	34.6	98	94	64	-	-
SS-61A	40 RT	12+10	53.7- 55.2	A-7-6(28)	46	25	0.2	16.5	39.8	44.8	100	100	95	-	-
SS-62A	40 RT	12+10	63.7- 65.2	A-2-4(0)	18	NP	59.4	61.3	5.2	4.1	100	98	13	-	-
SS-63A	40 RT	12+10	73.7- 75.2	A-2-4(0)	21	NP	12.8	70.2	7.8	9.2	100	96	23	-	-
SS-64A	40 RT	12+10	78.7- 80.2	A-6(21)	40	22	0.2	18.5	40.6	40.7	100	100	92	-	-
SS-65A	40 RT	12+10	88.7- 90.2	A-7-6(28)	48	28	0.2	5.5	51.0	42.7	100	99	92	-	-
SS-66A	40 RT	12+10	98.7- 100.2	A-6(4)	30	15	7.7	48.2	15.6	28.5	93	88	50	-	-
SS-67A	40 RT	12+10	108.7- 110.2	A-4(1)	29	10	20.1	44.2	17.4	18.3	97	87	40	-	-
SS-68A	40 RT	12+10	113.7- 115.2	A-2-4(0)	25	2	24.8	49.7	11.2	14.2	96	89	27	-	-
SS-69A	40 RT	12+10	123.7- 125.2	A-2-4(0)	26	4	18.1	47.4	18.8	15.7	90	80	35	-	-
SS-70A	40 RT	12+10	133.7- 135.2	A-2-4(0)	22	NP	18.9	51.6	14.9	15.3	95	86	31	-	-
SS-71A	40 RT	12+10	143.7- 145.2	A-2-4(0)	26	7	10.0	60.3	14.4	15.3	98	96	34	-	-

SS-55A
SS-56A
SS-57A
SS-57B
SS-58A
SS-59A
SS-60A
SS-61A
SS-62A
SS-63A
SS-64A
SS-65A
SS-66A
SS-67A
SS-68A
SS-69A
SS-70A
SS-71A

LOOSE TAN SAND WITH SHELL FRAGMENTS, MOIST TO SAT. AND SOFT BROWN CLAYEY SILT WITH TRACE ORGANIC MATTER, MOIST TO WET. (ARTIFICIAL FILL)

VERY SOFT TO MEDIUM STIFF BROWN BLACK MODERATELY ORGANIC SANDY SILTY CLAY, AND SANDY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

VERY SOFT TO MEDIUM STIFF GRAY SANDY SILTY CLAY, SANDY CLAY, AND CLAYEY SANDY SILT, WET WITH SHELL FRAGMENTS (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO VERY STIFF SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

MEDIUM DENSE TO DENSE GRAY SAND WITH SHELL FRAGMENTS, SAT. (YORKTOWN FORMATION)

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12+10.25

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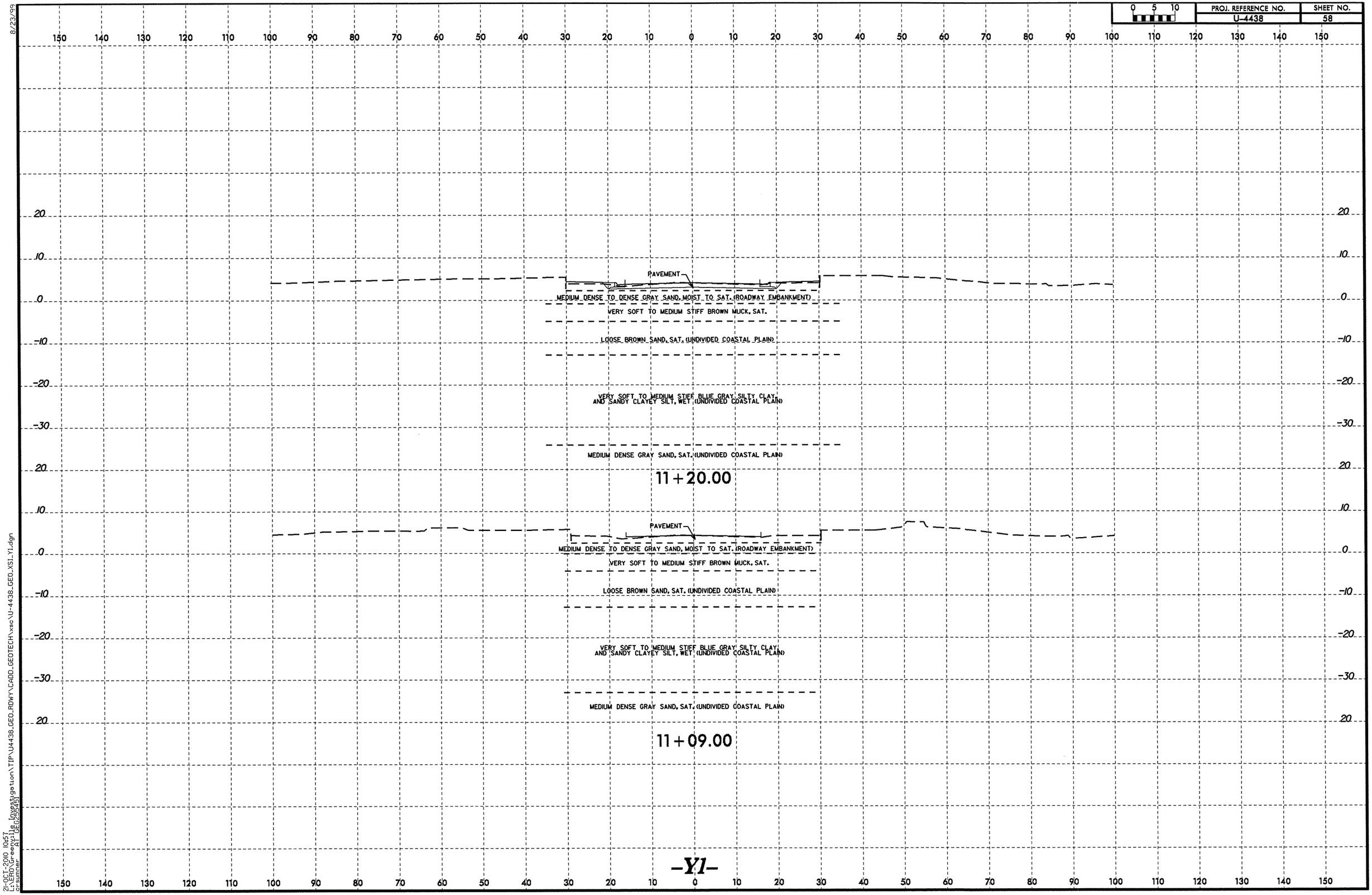

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PROJ. REFERENCE NO.	SHEET NO.
U-4438	59

PAVEMENT

MEDIUM DENSE TO DENSE GRAY SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO MEDIUM STIFF BROWN MUCK, SAT.

LOOSE BROWN SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO MEDIUM STIFF BLUE GRAY SILTY CLAY AND SANDY CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

11+38.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	60

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10 0 -10 -20 -30 -40

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT, WITH SHELL FRAGEMENTS (UNDIVIDED COASTAL PLAIN)

11+30.00

PAVEMENT

11+05

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT, WITH SHELL FRAGEMENTS (UNDIVIDED COASTAL PLAIN)

11+00.00

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT, WITH SHELL FRAGEMENTS (UNDIVIDED COASTAL PLAIN)

10+77.00

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT, WITH SHELL FRAGEMENTS (UNDIVIDED COASTAL PLAIN)

10+50.00

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AT GEOPAK

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	61

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT WITH SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

11+08.00

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT WITH SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

11+00.00

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT WITH SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

10+75.00

PAVEMENT

MEDIUM DENSE TO DENSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE BROWN SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD BLUE GRAY SANDY SILTY, SILTY SANDY AND SILTY CLAY WITH SANDY CLAYEY SILT WITH SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

10+50.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	62

PAVEMENT

VERY LOOSE TO MEDIUM DENSE SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD SILTY SANDY AND SANDY SILTY CLAY
WITH SANDY AND CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO MEDIUM STIFF BLUE GRAY SANDY SILTY CLAY AND SANDY SILT WITH
SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS,
WET (YORKTOWN FORMATION)

10+49.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	63

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PAVEMENT

VERY LOOSE TO MEDIUM DENSE SAND MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD SILTY SANDY AND SANDY SILTY CLAY
WITH SANDY AND CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

10+80.00

PAVEMENT

VERY LOOSE TO MEDIUM DENSE SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD SILTY SANDY AND SANDY SILTY CLAY
WITH SANDY AND CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO MEDIUM STIFF BLUE GRAY SANDY SILTY CLAY AND SANDY SILT WITH
SHELL FRAGMENTS, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS,
WET (YORKTOWN FORMATION)

10+59.00

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crsumner AT (GEO255451)

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	64

10+98

PAVEMENT

VERY LOOSE TO MEDIUM DENSE SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT TO SOFT BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO HARD SILTY SANDY AND SANDY SILTY CLAY WITH SANDY AND CLAYEY SILT, WET (UNDIVIDED COASTAL PLAIN)

11+00.00

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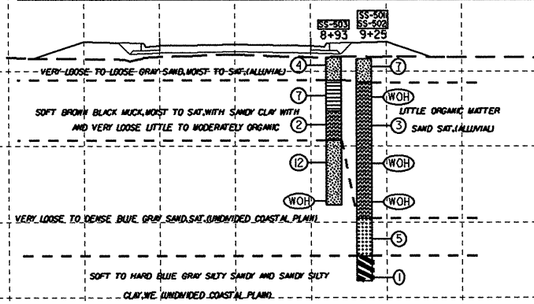
8/23/99

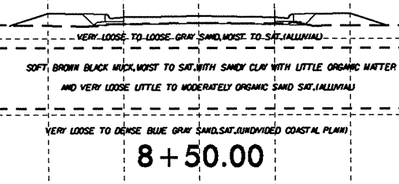
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	65

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT G.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES #10	% PASSING SIEVES #40	% PASSING SIEVES #200	% MOISTURE	% ORGANIC
SS-503	13 RT	8+93	4.0-5.3	NOT ENOUGH SAMPLE											3.3
SS-501	13 RT	9+25	12.8-14.3	NOT ENOUGH SAMPLE											24.5
SS-502	13 RT	9+25	17.8-19.3	A-5(9)	98	8	35.5	9.7	22.6	32.3	97	69	54		



9+00.00



8+50.00

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	66

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10
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-10
-20

Ⓐ VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

PAVEMENT — 10+25

8
4
20 — VERY LOOSE TO LOOSE GRAY TO SATURATED — SAND,MOIST (ALLUVIAL)
10
1 — SOFT TO HARD BLUE GRAY SILTY CLAY,WET — SILTY SANDY AND SANDY (UNDIVIDED COASTAL PLAIN)
2
2

VERY LOOSE TO DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

10+50.00

PAVEMENT

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

SOFT BROWN BLACK MUCK,MOIST TO SAT,WITH SANDY CLAY WITH LITTLE ORGANIC MATTER AND VERY LOOSE LITTLE TO MODERATELY ORGANIC SAND SAT.(ALLUVIAL)

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WE (UNDIVIDED COASTAL PLAIN)

10+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-500	9 RT	9+50	12.9-14.4	A-7-5(18)	64	25	16.5	16.3	27.0	40.2	98	88	67	-	16.7

SS-500

PAVEMENT

4 — VERY LOOSE TO LOOSE GRAY SAND, — MOIST TO SAT.(ALLUVIAL)
3
3 — SOFT BROWN BLACK MUCK,MOIST — TO SAT,WITH SANDY CLAY WITH
WOH — LITTLE ORGANIC MATTER AND — VERY LOOSE LITTLE TO MODERATELY
WOH — ORGANIC SAND — SAT.(ALLUVIAL)
7 — VERY LOOSE TO DENSE BLUE GRAY SAND, — SAT.(UNDIVIDED COASTAL PLAIN)
2 — SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WE (UNDIVIDED COASTAL PLAIN)

9+50.00

-Y5-

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	67

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0
-10
-20
-30
-40
-50
-60
-70
-80

PAVEMENT

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SATURATED (ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS,WET (YORKTOWN FORMATION)

11+50.00

10
0
-10
-20

PAVEMENT

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SATURATED (ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

11+00.00

VERY LOOSE TO DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

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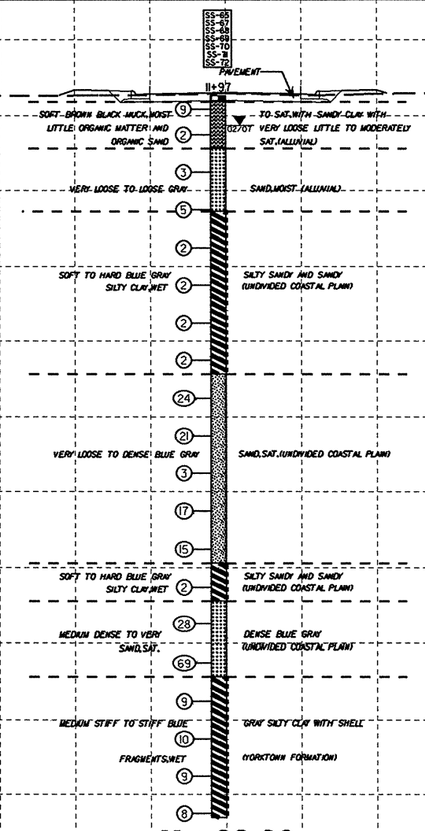
cr-sumner AT [GEO255451]

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	68

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-65	1 LT.	11+97	0.8-2.3	A-2-4(0)	15	NP	50.8	31.4	12.2	5.6	100	83	21	-	-.
SS-67	1 LT.	11+97	9.2-10.7	A-3(0)	13	NP	21.2	77.6	1.2	0.0	100	97	1	-	-.
SS-68	1 LT.	11+97	19.2-20.7	A-7-6	34	8	1.0	21.2	64.2	9.6	100	99	84	-	-.
SS-69	1 LT.	11+97	34.2-35.7	A-7-6	34	8	0.4	38.9	43.2	17.7	100	100	84	-	-.
SS-70	1 LT.	11+97	39.2-40.7	A-2-4(0)	25	NP	0.6	63.7	12.0	5.6	100	100	29	-	-.
SS-71	1 LT.	11+97	54.2-55.7	A-2-4(0)	22	NP	14.7	63.5	20.3	1.6	100	94	30	-	-.
SS-72	1 LT.	11+97	64.2-65.7	A-7-6	29	4	1.8	47.4	37.1	13.7	100	99	72	-	-.



11+83.00

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drsumner
AT GEOPAK

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	69

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 -10 -20 -30 -40 -50 -60 -70 -80

PAVEMENT

MEDIUM DENSE BROWN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

SOFT BROWN-BLACK MUCK,MOIST TO SAT.WITH SANDY CLAY WITH LITTLE ORGANIC MATTER AND VERY LOOSE LITTLE TO MODERATELY ORGANIC SAND SAT.(ALLUVIAL)

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND,SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE/GRAY SILTY CLAY WITH SHELL FRAGMENTS,WET YORKTOWN FORMATION)

12+80.00

-Y5-

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crsumner
AT GEOPAK

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	70

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 -10 -20 -30

PAVEMENT

13+40

MEDIUM DENSE BROWN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

SOFT BROWN BLACK MUCK,MOIST TO SAT.WITH SANDY CLAY WITH LITTLE ORGANIC MATTER AND ORGANIC SAND

VERY LOOSE LITTLE TO MODERATELY SAT.(ALLUVIAL)

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY CLAY,WET

SILTY SANDY AND SANDY (UNDIVIDED COASTAL PLAIN)

13+50.00

PAVEMENT

MEDIUM DENSE BROWN SAND,MOIST TO SAT.(ROADWAY EMBANKMENT)

SOFT BROWN BLACK MUCK,MOIST TO SAT.WITH SANDY CLAY WITH LITTLE ORGANIC MATTER AND ORGANIC SAND

VERY LOOSE TO MODERATELY SAT.(ALLUVIAL)

VERY LOOSE TO LOOSE GRAY SAND,MOIST TO SAT.(ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO DENSE BLUE GRAY SAND,SAT.(UNDIVIDED COASTAL PLAIN)

SOFT TO HARD BLUE GRAY SILTY SANDY AND SANDY SILTY CLAY,WET (UNDIVIDED COASTAL PLAIN)

MEDIUM DENSE TO VERY DENSE BLUE GRAY SAND,SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL FRAGMENTS,WET (YORKTOWN FORMATION)

13+25.00

-Y5-

0 -10 -20 -30 -40 -50 -60 -70 -80

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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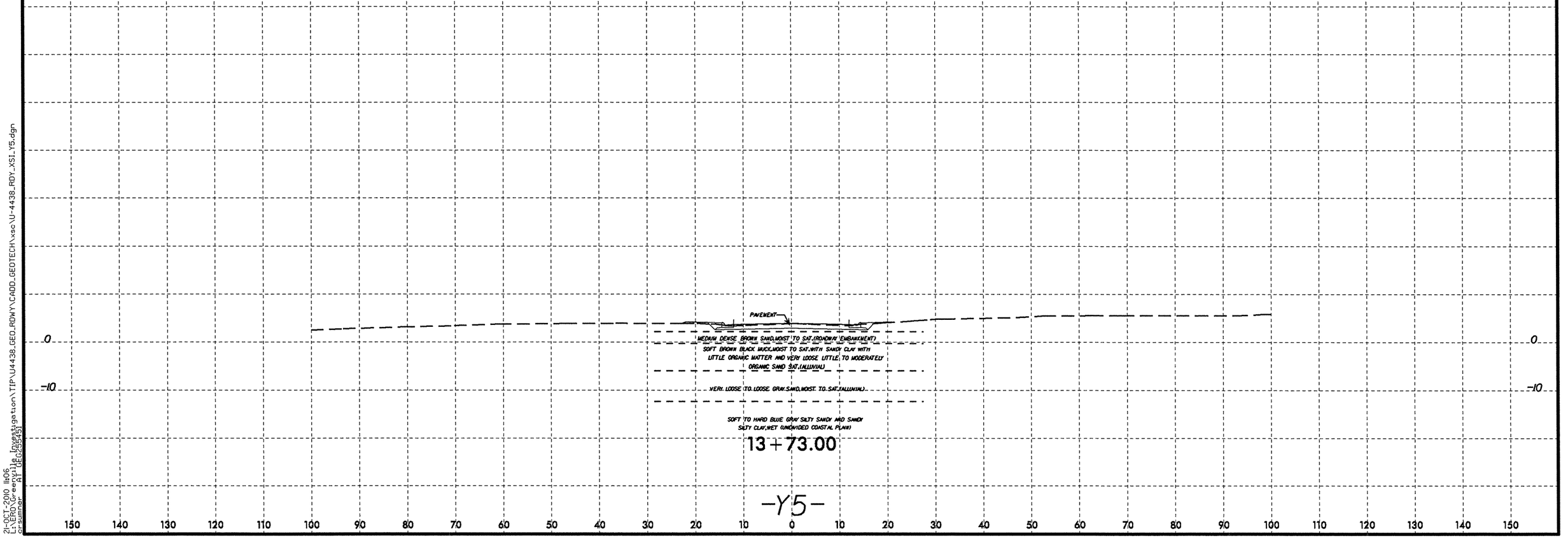
crsumner AT GEO25545

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	71

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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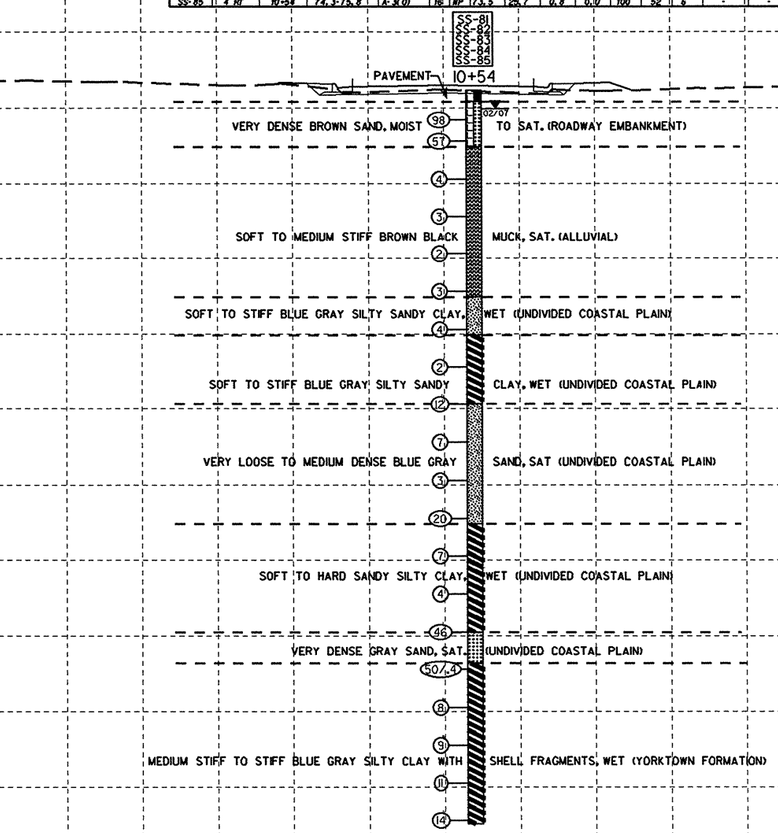
crsumner
AT (GEOPAK)

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	72

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVE) 10	40	200	% MOISTURE	% ORGANIC
SS-81	4 RT	10+54	29.3-30.8	A-2-4(0)	19	NP	13.7	72.3	12.4	1.6	100	99	21	-	-
SS-82	4 RT	10+54	34.3-35.8	A-7-6	32	-	0.4	42.8	39.2	17.7	100	100	84	-	-
SS-83	4 RT	10+54	44.3-45.8	A-2-4(0)	22	NP	17.7	59.0	21.7	1.6	100	95	26	-	-
SS-84	4 RT	10+54	64.3-65.8	A-7-6	33	-	0.8	38.2	59.4	1.6	100	99	78	-	-
SS-85	4 RT	10+54	74.3-75.8	A-3(0)	16	NP	73.5	25.7	0.8	0.0	100	52	6	-	-



10+48.00

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PROJ. REFERENCE NO.	SHEET NO.
U-4438	73

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

10

0

-10

-20

-30

-40

-50

-60

-70

-80

PAVEMENT

VERY DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN, BLACK MUCK, SAT. (ALLUVIAL)

LOOSE GRAY SAND, SAT. (ALLUVIAL)

SOFT TO STIFF BLUE GRAY SILTY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT.
(UNDIVIDED COASTAL PLAIN)

SOFT TO HARD SANDY SILTY CLAY, WET
(UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL
FRAGMENTS, WET (YORKTOWN FORMATION)

10+75.00

-Y6-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	74

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

10 0 -10 -20 -30 -40 -50 -60 -70

PAVEMENT

VERY DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE GRAY SAND, SAT. (ALLUVIAL)

SOFT TO STIFF BLUE GRAY SILTY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT.
(UNDIVIDED COASTAL PLAIN)

SOFT TO HARD SANDY SILTY CLAY, WET
(UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF BLUE GRAY SILTY CLAY WITH SHELL
FRAGMENTS, WET (YORKTOWN FORMATION)

11+00.00

-Y6-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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AT GEO25545

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	75

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

10
0
-10
-20
-30
-40
-50
-60

PAVEMENT

VERY DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE GRAY SAND, SAT. (ALLUVIAL)

SOFT TO STIFF BLUE GRAY SILTY SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO MEDIUM DENSE BLUE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO HARD SANDY, SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

11+47.00

-Y6-

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crsumner
AT GEOPAK(US)

8/23/99

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
U-4438	76

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0
-10
-20
-30
-40

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

10+00.00

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

9+40.00

-Y7-

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	77

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 -10 -20 -30 -40 -50 -60 -70

PAVEMENT 10+79

09/10

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK AND MODERATELY ORGANIC SILTY CLAY, WET (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND (UNDIVIDED COASTAL PLAIN) SANDY SILTY CLAY, WET

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDYSILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

PAVEMENT 10+80

09/10

30 7 3

2 1 2 4 WOH

LOOSE GRAY SAND, SAT. (ALLUVIAL)

10+63.00

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

10+25.00

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	78

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF WITH SHELL FRAGMENTS (YORKTOWN FORMATION)

11+36.00

Ⓐ LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

Ⓐ

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

11+00.00

-Y7-

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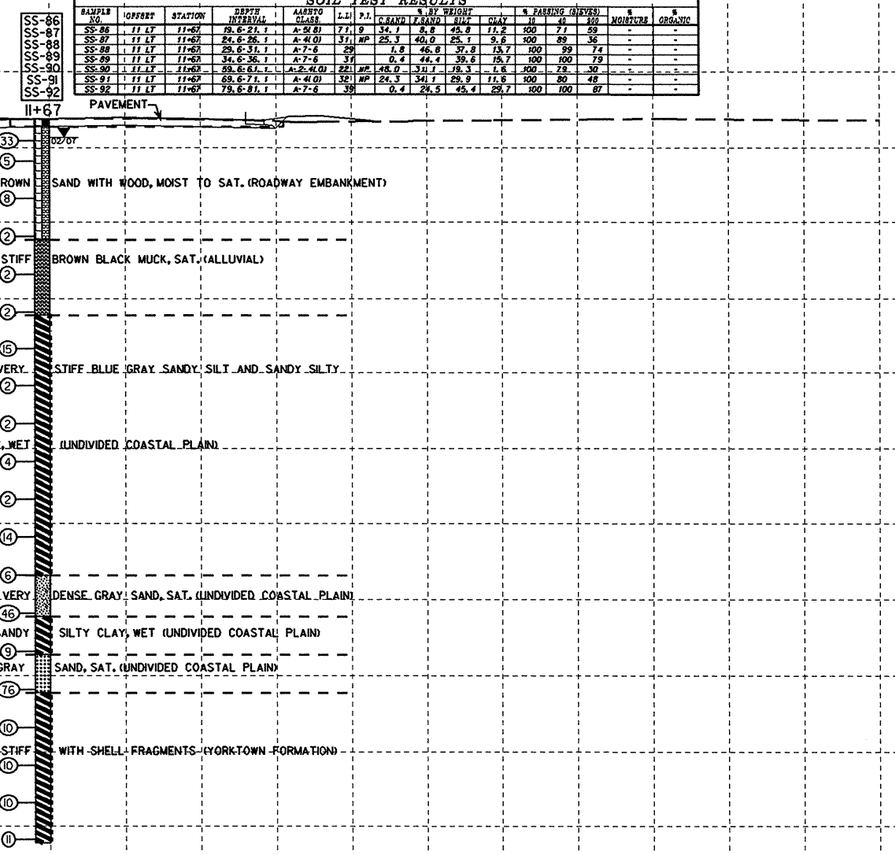
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	79

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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
SS-86	11 LT	11+67	19.6-21.1	A-5(8)	71	9	34.1	9.8	45.8	11.2	100	71	59	-	-
SS-87	11 LT	11+67	24.6-26.1	A-4(0)	31	NP	25.3	40.0	25.1	9.6	100	89	36	-	-
SS-88	11 LT	11+67	29.6-31.1	A-7-6	29		1.8	46.8	37.8	13.7	100	99	74	-	-
SS-89	11 LT	11+67	34.6-36.1	A-7-6	31		0.4	44.4	39.6	15.7	100	100	79	-	-
SS-90	11 LT	11+67	59.6-61.1	A-2-4(0)	22	NP	48.0	31.1	19.3	1.6	100	79	30	-	-
SS-91	11 LT	11+67	69.6-71.1	A-4(0)	32	NP	24.3	34.1	29.9	11.6	100	80	48	-	-
SS-92	11 LT	11+67	79.6-81.1	A-7-6	39		0.4	24.5	45.4	29.7	100	100	87	-	-



11+68.00

-Y7-

0 -10 -20 -30 -40 -50 -60 -70 -80 -90

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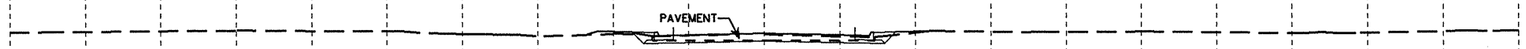
crsumner AT GEO29545

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	80

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF, WITH SHELL FRAGMENTS (YORKTOWN FORMATION)

0 -10 -20 -30 -40 -50 -60 -70 -80

12 + 80.00

-Y7-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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A1 (GEOPAK)

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	U-4438	81

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10
0
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-70

PAVEMENT

LOOSE TO DENSE BROWN SAND WITH WOOD, MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO STIFF BROWN BLACK MUCK, SAT. (ALLUVIAL)

LOOSE GRAY SAND, SAT. (ALLUVIAL)

VERY SOFT TO VERY STIFF BLUE GRAY SANDY, SILT AND SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

STIFF BLUE GRAY SANDY SILTY CLAY, WET (UNDIVIDED COASTAL PLAIN)

VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

MEDIUM STIFF TO STIFF WITH SHELL FRAGMENTS (YORKTOWN FORMATION)

13+27.00

-Y7-

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	82

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10
0
-10
-20
-30
-40
-50
-60
-70

Ⓐ LOOSE TO VERY DENSE BROWN SAND WITH WOOD
MOIST TO SAT. (ARTIFICIAL FILL)
PAVEMENT

Ⓐ

LOOSE TO VERY DENSE BROWN SAND WITH WOOD
MOIST TO SAT. (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF BROWN BLACK MUCK, SAT. AND SANDY SILTY CLAY WITH LITTLE ORGANIC MATTER, WET (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY SAND, SAT. (ALLUVIAL)

SOFT TO HARD BLUE GRAY SILTY

SANDY AND SANDY SILTY CLAY AND SANDY

SILT, WET (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO VERY DENSE GRAY SAND, SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO HARD STIFF BLUE GRAY SANDY CLAY, SILTY CLAY, AND SANDY SILTY CLAY WITH SHELL FRAGMENTS, WET (YORKTOWN FORMATION)

12+99.00

-Y8-

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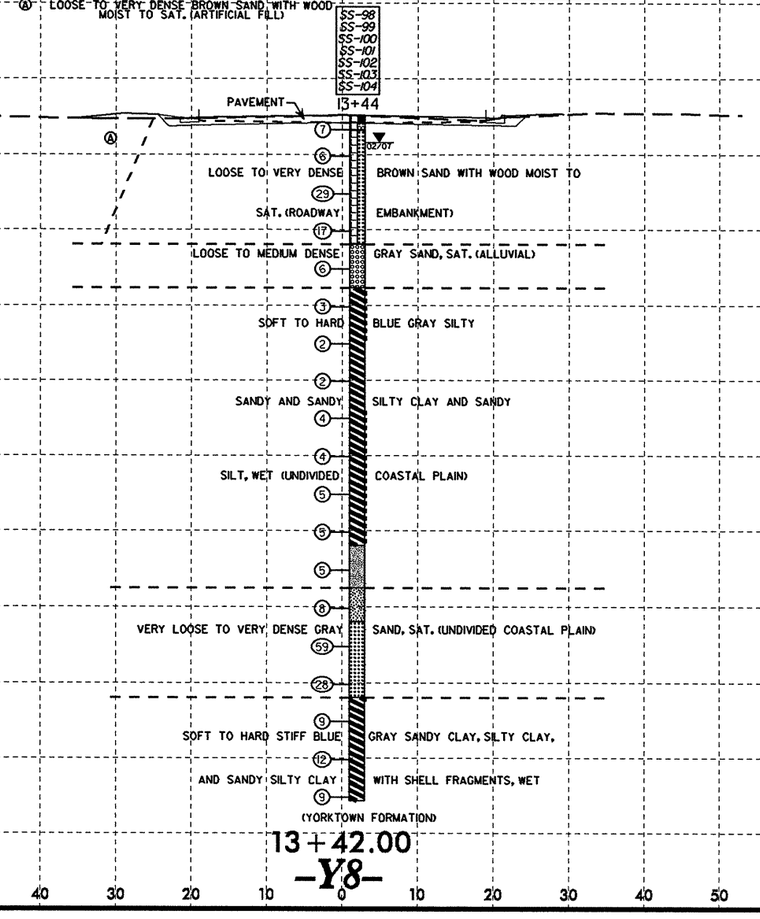
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4438	83

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT GRAVEL	% BY WEIGHT SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-98	2 RT	13+44	4.3-5.8	A-3(0)	20	NP	30.3	65.3	4.4	0.0	100	94	5	-	-
SS-99	2 RT	13+44	19.3-20.8	A-1-b(0)	18	NP	26.8	68.3	5.2	0.0	45	41	3	-	-
SS-100	2 RT	13+44	24.3-25.8	A-7-6	41	-	1.2	48.0	27.1	23.7	100	99	71	-	-
SS-101	2 RT	13+44	39.3-40.8	A-7-6	24	-	1.0	48.2	41.2	9.6	100	99	80	-	-
SS-102	2 RT	13+44	59.3-60.8	A-4(0)	24	NP	2.4	52.6	39.4	5.6	100	99	58	-	-
SS-103	2 RT	13+44	64.3-65.8	A-2-4(0)	19	NP	5.4	72.8	16.6	7.2	100	100	35	-	-
SS-104	2 RT	13+44	69.3-70.8	A-3(0)	17	NP	31.2	63.2	5.6	0.0	100	96	7	-	-



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consumer AT&T Globalnet

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	U-4438	84

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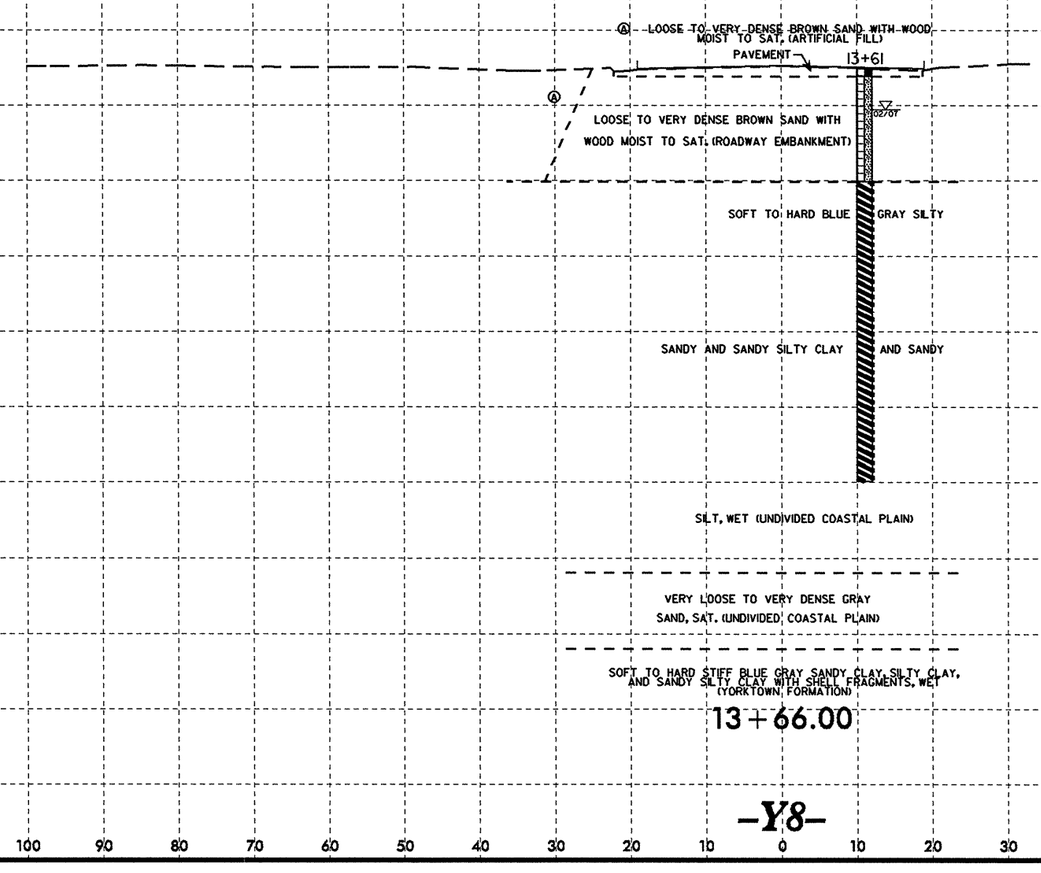
10 0 -10 -20 -30 -40 -50 -60 -70



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crsumner AT GEO285451

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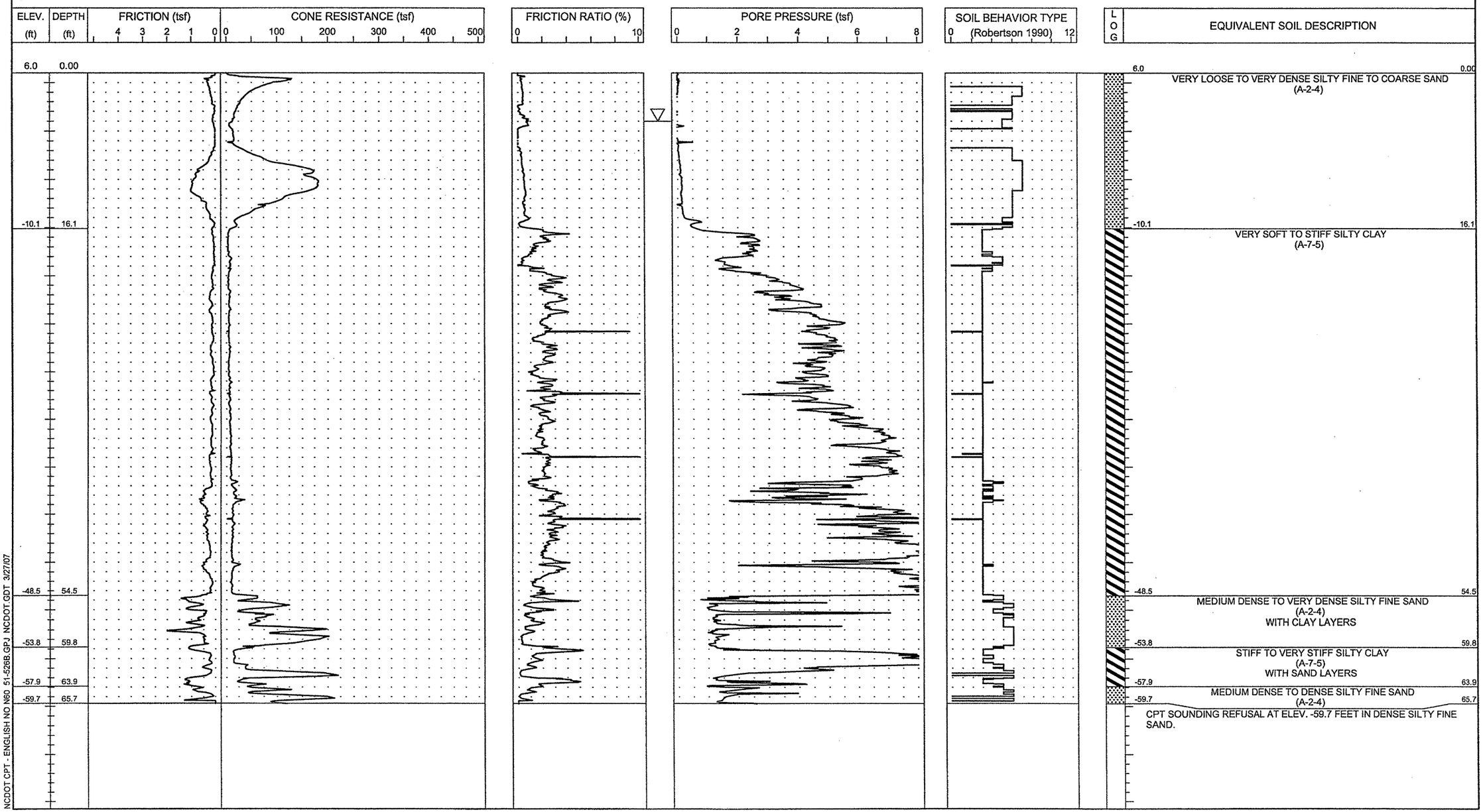
BORING LOG

SHEET 85

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 65.7 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-12	**BORING LOCATION**	**OFFSET**	**ALIGNMENT**	**0 HR.** 5.0	**DATE STARTED** 2/14/07	**COMPLETED** 2/14/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 6.0 ft	**NORTHING** 940,414.1	**EASTING** 2,819,663.2		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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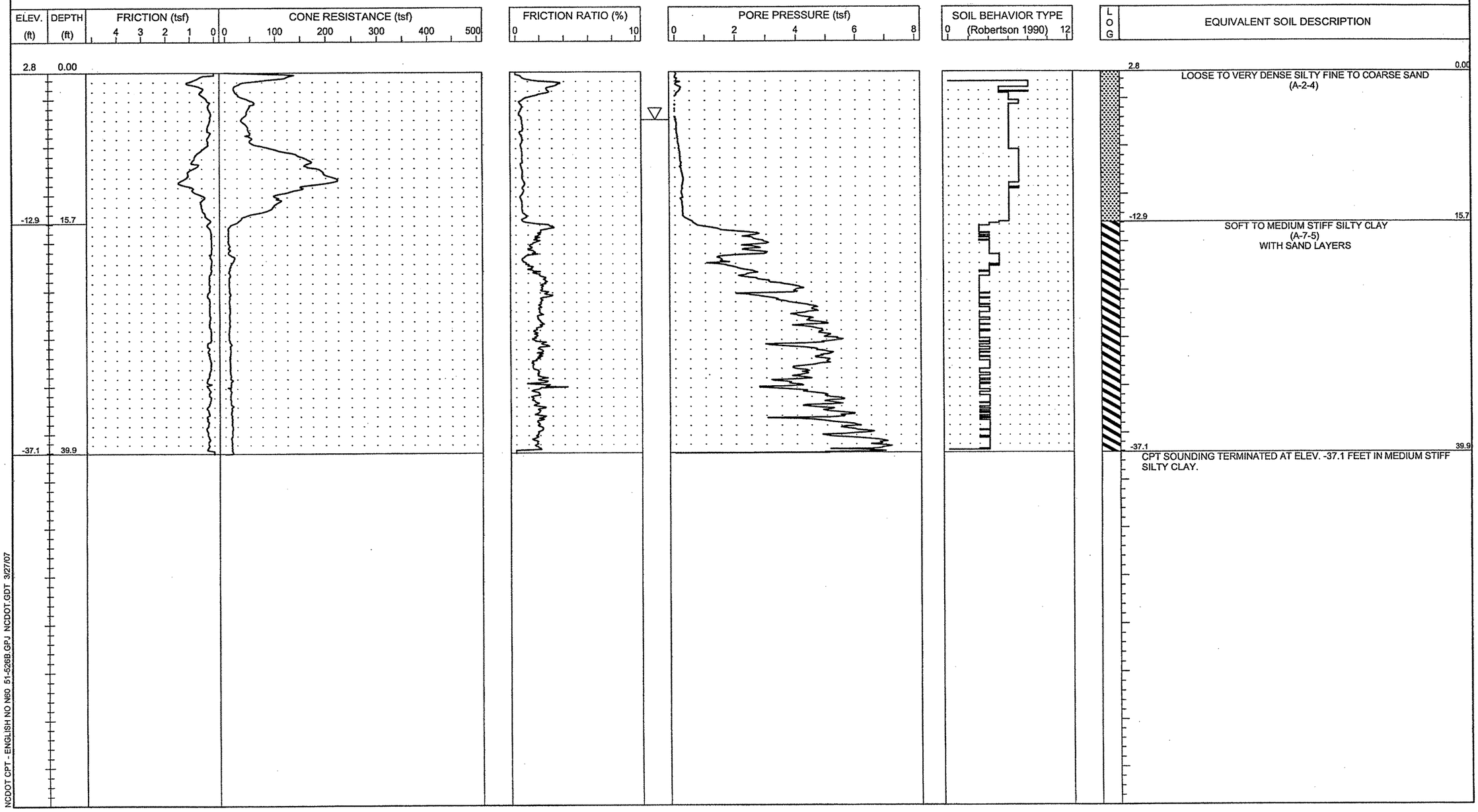
SHEET 86

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**		**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-16	**BORING LOCATION**	**OFFSET**	**ALIGNMENT**	**0 HR.** 5.0	**DATE STARTED** 2/12/07	**COMPLETED** 2/12/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 2.8 ft	**NORTHING** 940,476.5	**EASTING** 2,819,469.7		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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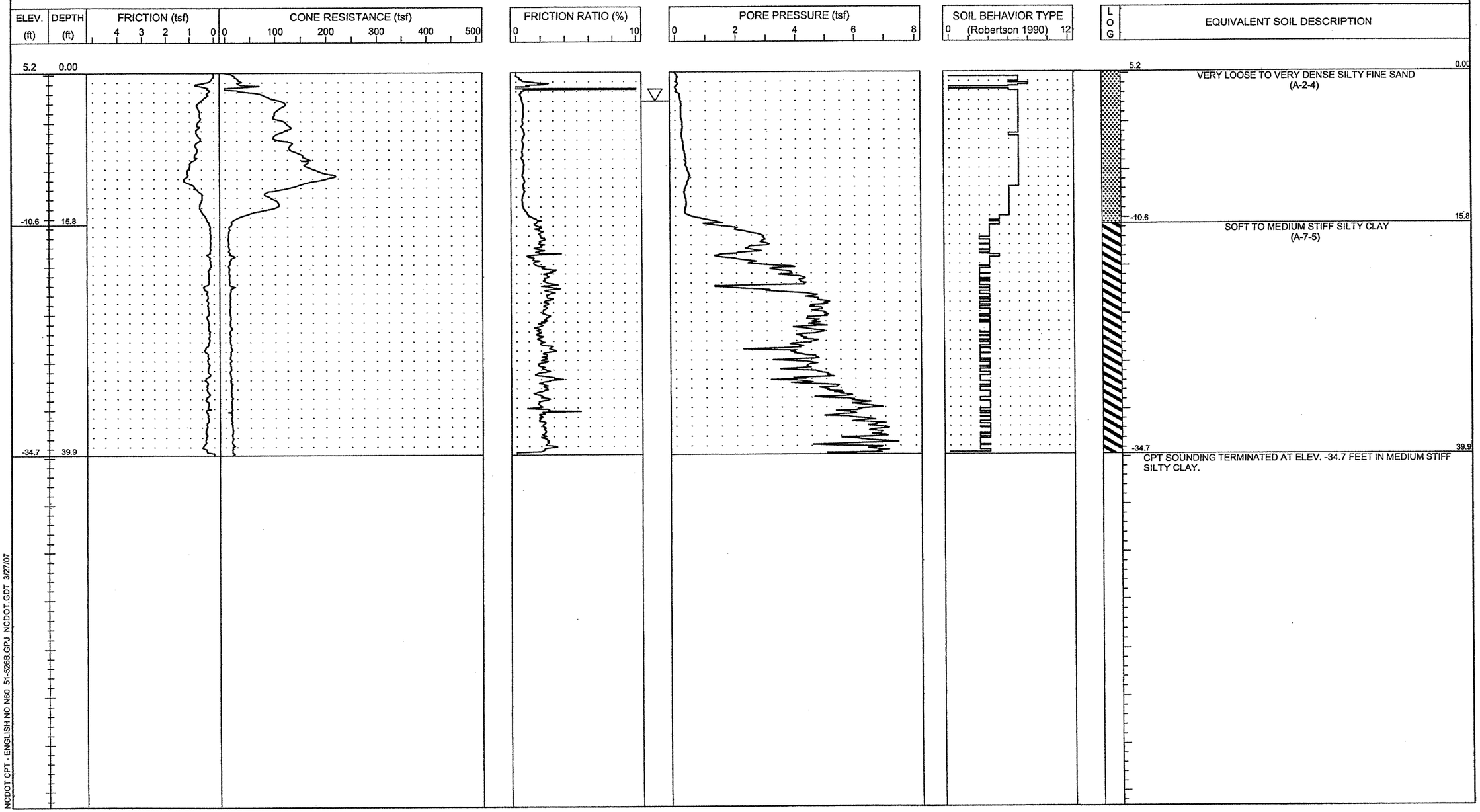
SHEET 87

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-20	**BORING LOCATION** 12 + 00	**OFFSET** 6' LT	**ALIGNMENT** - Y6 -	**0 HR.** 3.0	**DATE STARTED** 2/13/07	**COMPLETED** 2/13/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 5.2 ft	**NORTHING** 939,955.7	**EASTING** 2,819,088.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



NCDOT CPT - ENGLISH NO N60 51-526B.GPJ NCDOT.GDT 3/27/07

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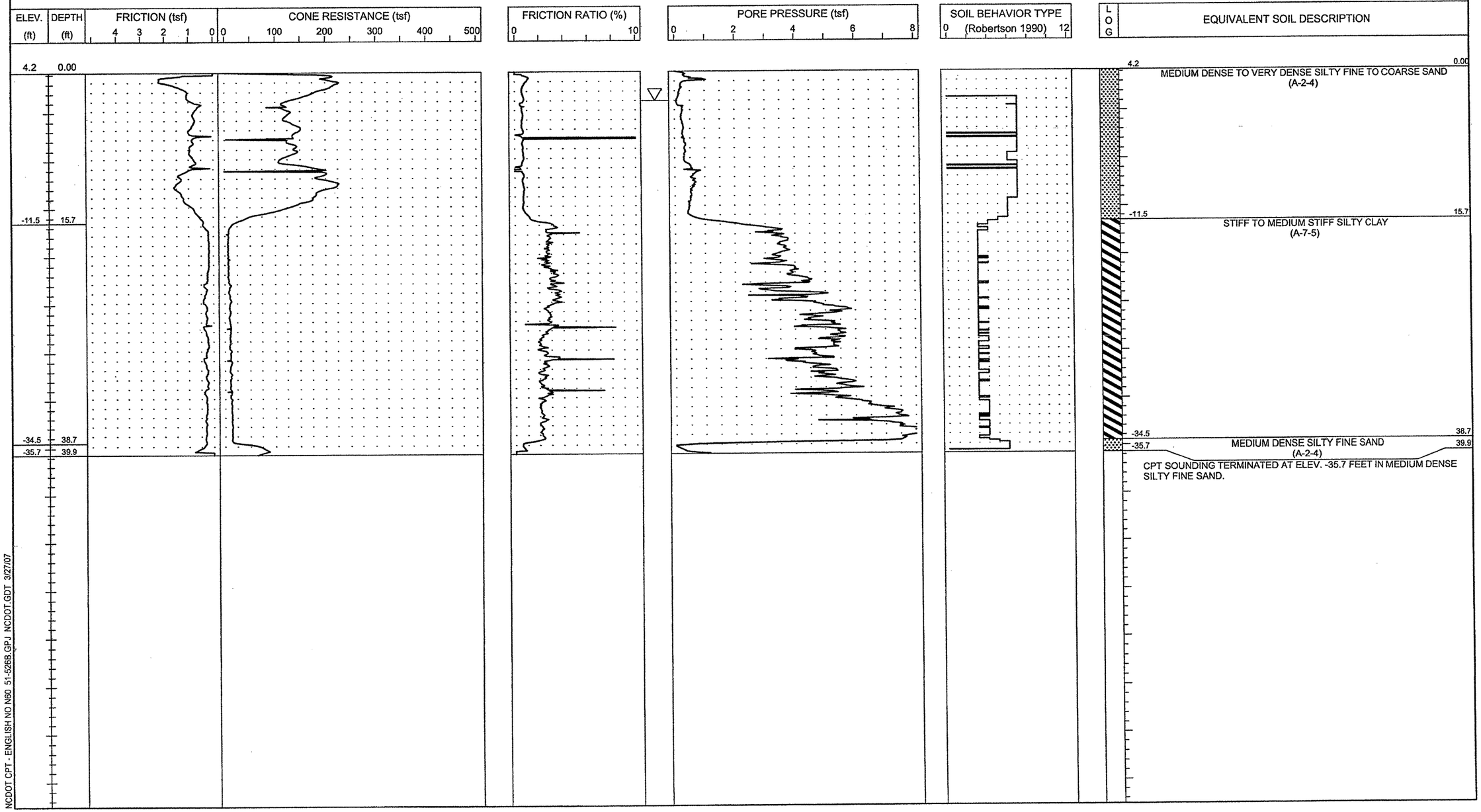
BORING LOG

SHEET 88

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-22	**BORING LOCATION** 14 + 40	**OFFSET** 8' RT	**ALIGNMENT** - Y5 -	**0 HR.** 3.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.2 ft	**NORTHING** 940,006.6	**EASTING** 2,818,835.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



LOG

EQUIVALENT SOIL DESCRIPTION

4.2 0.00
MEDIUM DENSE TO VERY DENSE SILTY FINE TO COARSE SAND
(A-2-4)

-11.5 15.7
STIFF TO MEDIUM STIFF SILTY CLAY
(A-7-5)

-34.5 38.7
-35.7 39.9
MEDIUM DENSE SILTY FINE SAND
(A-2-4)

CPT SOUNDING TERMINATED AT ELEV. -35.7 FEET IN MEDIUM DENSE SILTY FINE SAND.

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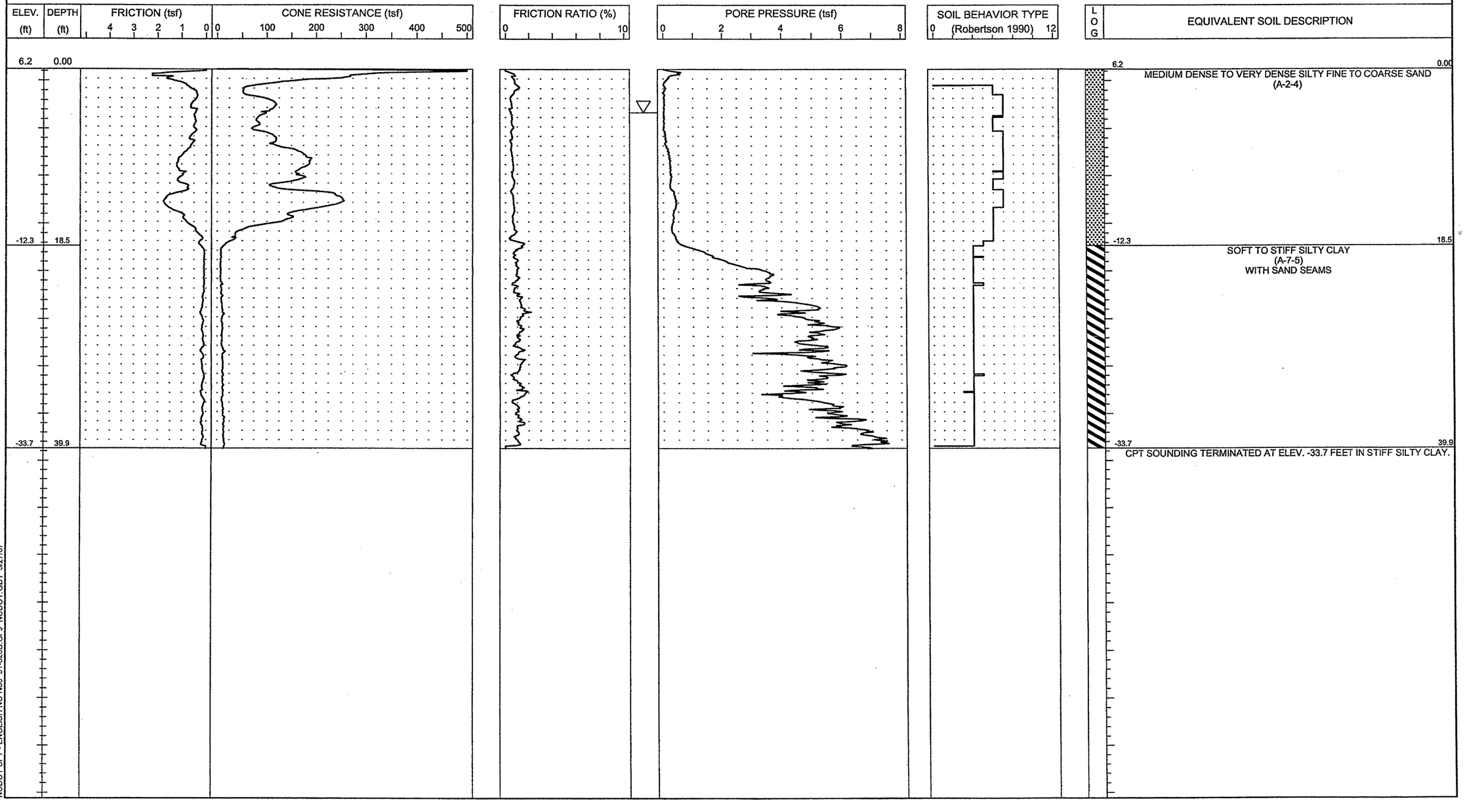
SHEET 89

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-26	**BORING LOCATION** 11 + 94	**OFFSET** 5' RT	**ALIGNMENT** - Y4 -	**0 HR.** 4.5	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 6.2 ft	**NORTHING** 940,052.9	**EASTING** 2,818,594.9		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



NCDOT CPT - ENGLISH NO N60 51-526B.GPJ NCDOT.GDT 3/27/07

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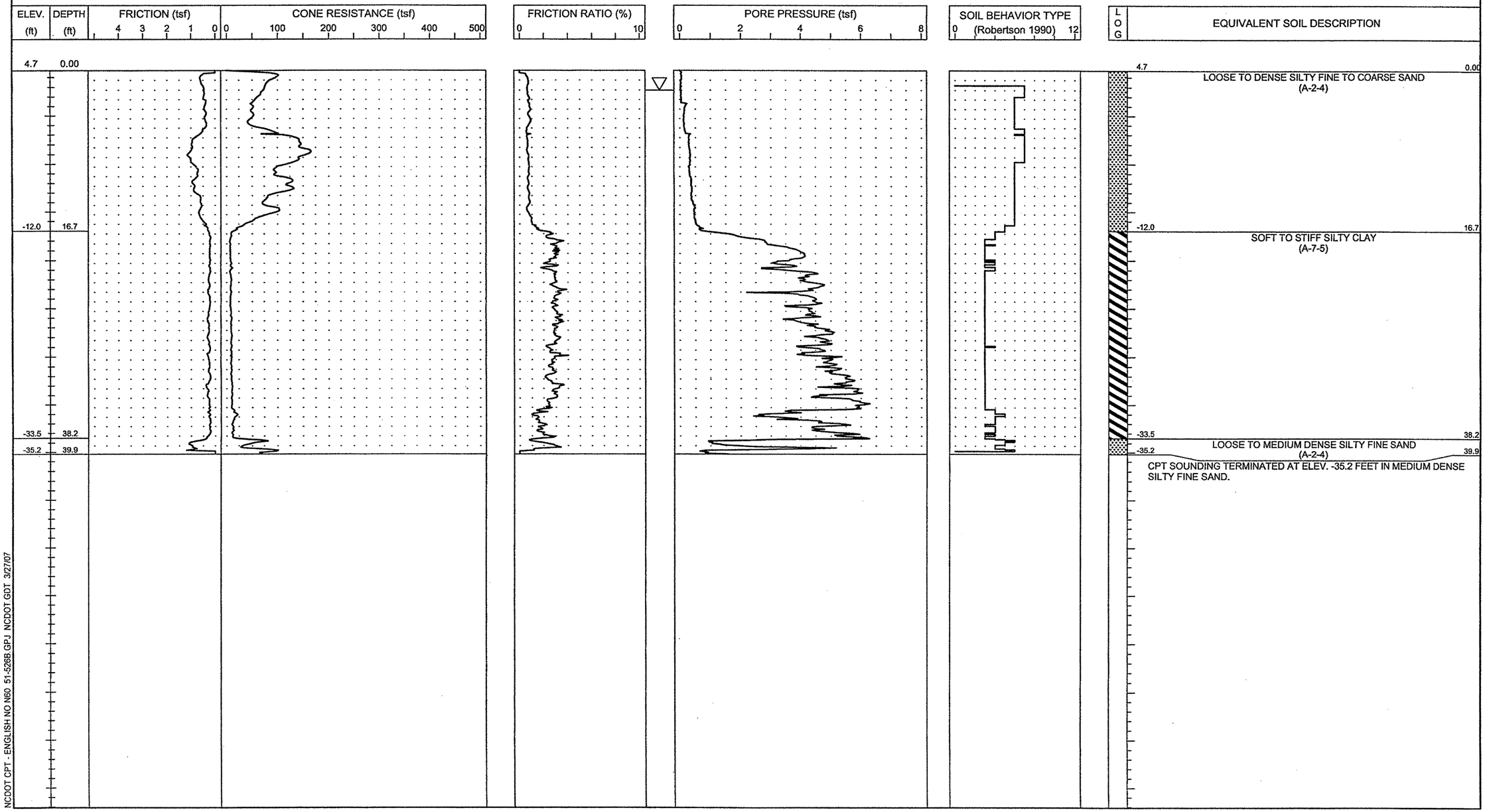
SHEET 90

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-32	**BORING LOCATION**	**OFFSET**	**ALIGNMENT**	**0 HR.** 2.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.7 ft	**NORTHING** 940,544.8	**EASTING** 2,818,229.9		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



PROJECT REFERENCE NO.
U-4438

APPENDIX I
CPT FIELD LOGS

Note: SOIL DESCRIPTIONS SHOWN ON CPT LOGS MAY OR MAY NOT AGREE WITH THE PROFILES AND CROSS SECTIONS CONTAINED WITHIN THIS REPORT.

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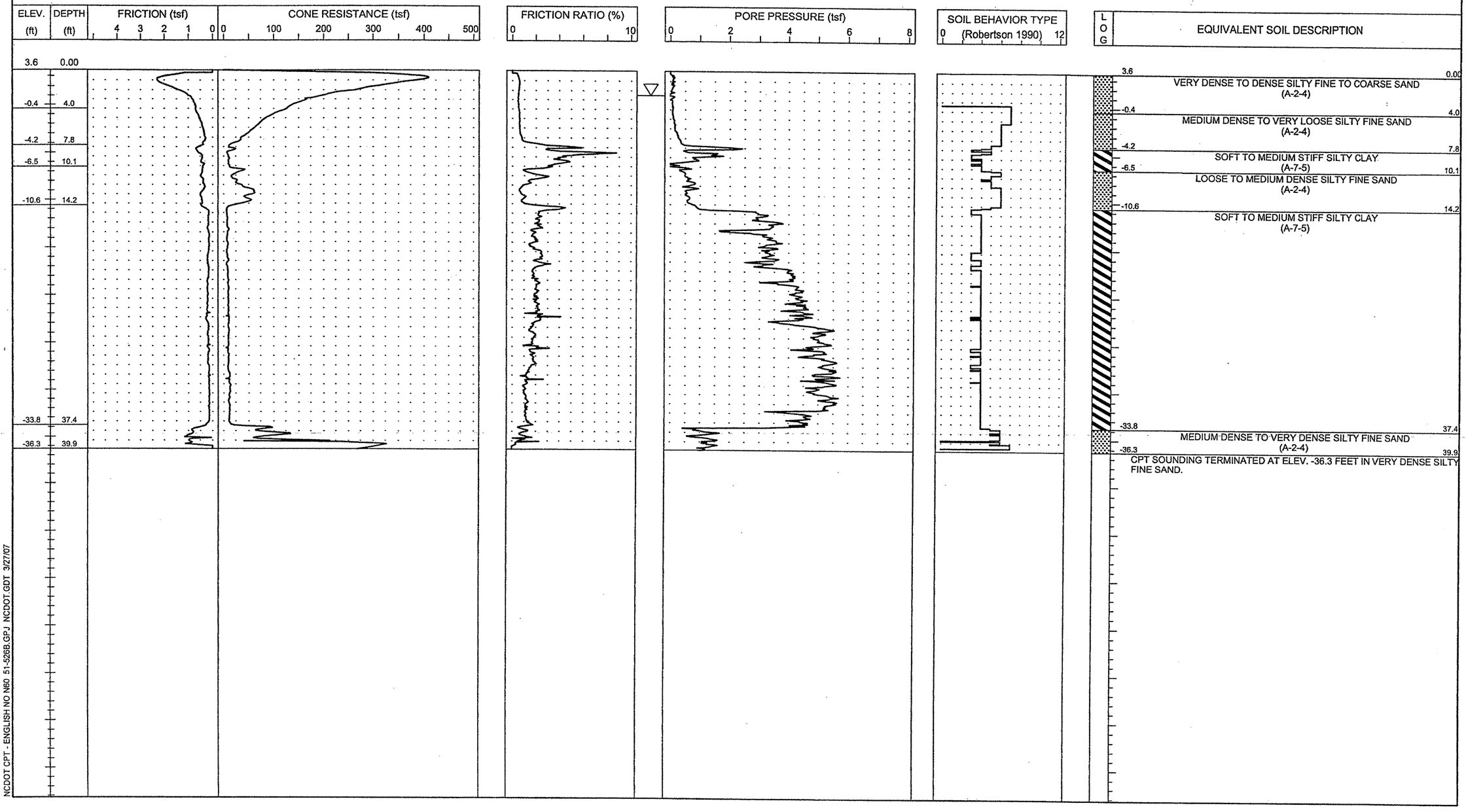
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 1	**BORING LOCATION** 15 + 84	**OFFSET** 4' RT	**ALIGNMENT** - L -	**0 HR.** 2.5	**DATE STARTED** 2/9/07	**COMPLETED** 2/9/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 3.6 ft	**NORTHING** 940,464.3	**EASTING** 2,817,775.0		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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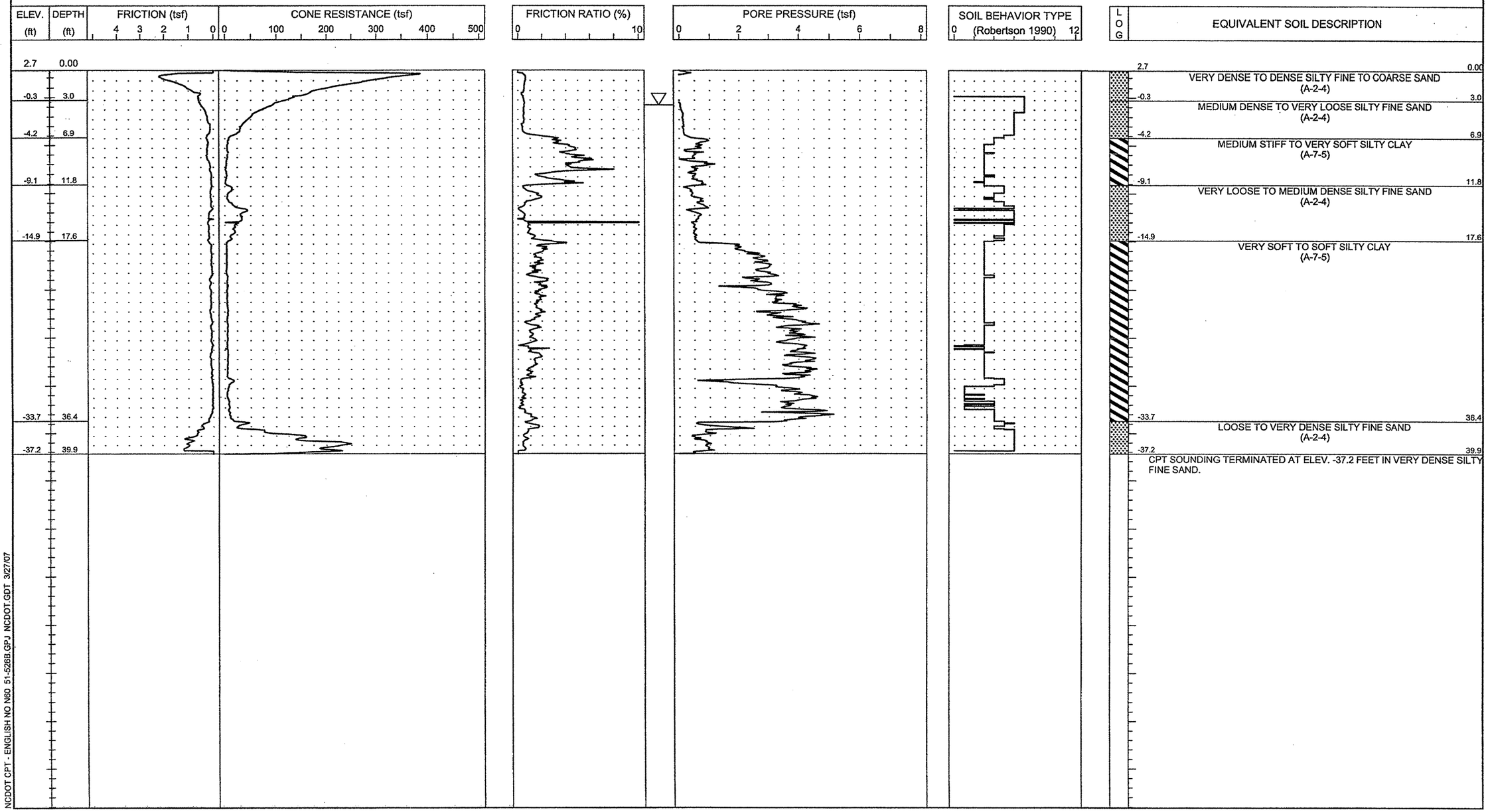
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 2	**BORING LOCATION** 17 + 80	**OFFSET** 1' RT	**ALIGNMENT** - L -	**0 HR.** 3.5	**DATE STARTED** 2/9/07	**COMPLETED** 2/9/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.7 ft	**NORTHING** 940,394.8	**EASTING** 2,817,958.3		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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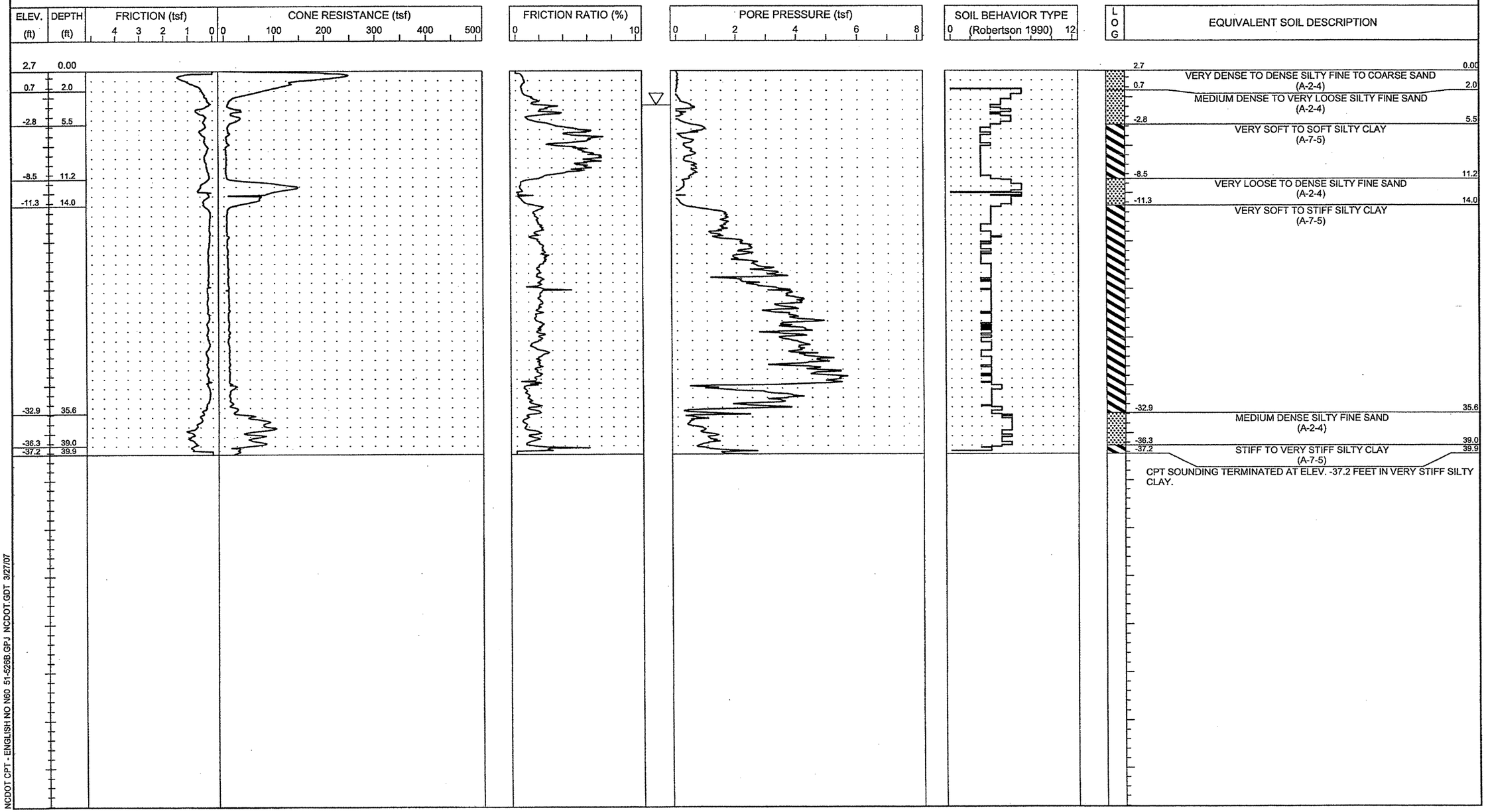
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 3	**BORING LOCATION** 19 +76	**OFFSET** 1' RT	**ALIGNMENT** - L -	**0 HR.** 3.5	**DATE STARTED** 2/9/07	**COMPLETED** 2/9/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.7 ft	**NORTHING** 940,345.5	**EASTING** 2,818,148.3		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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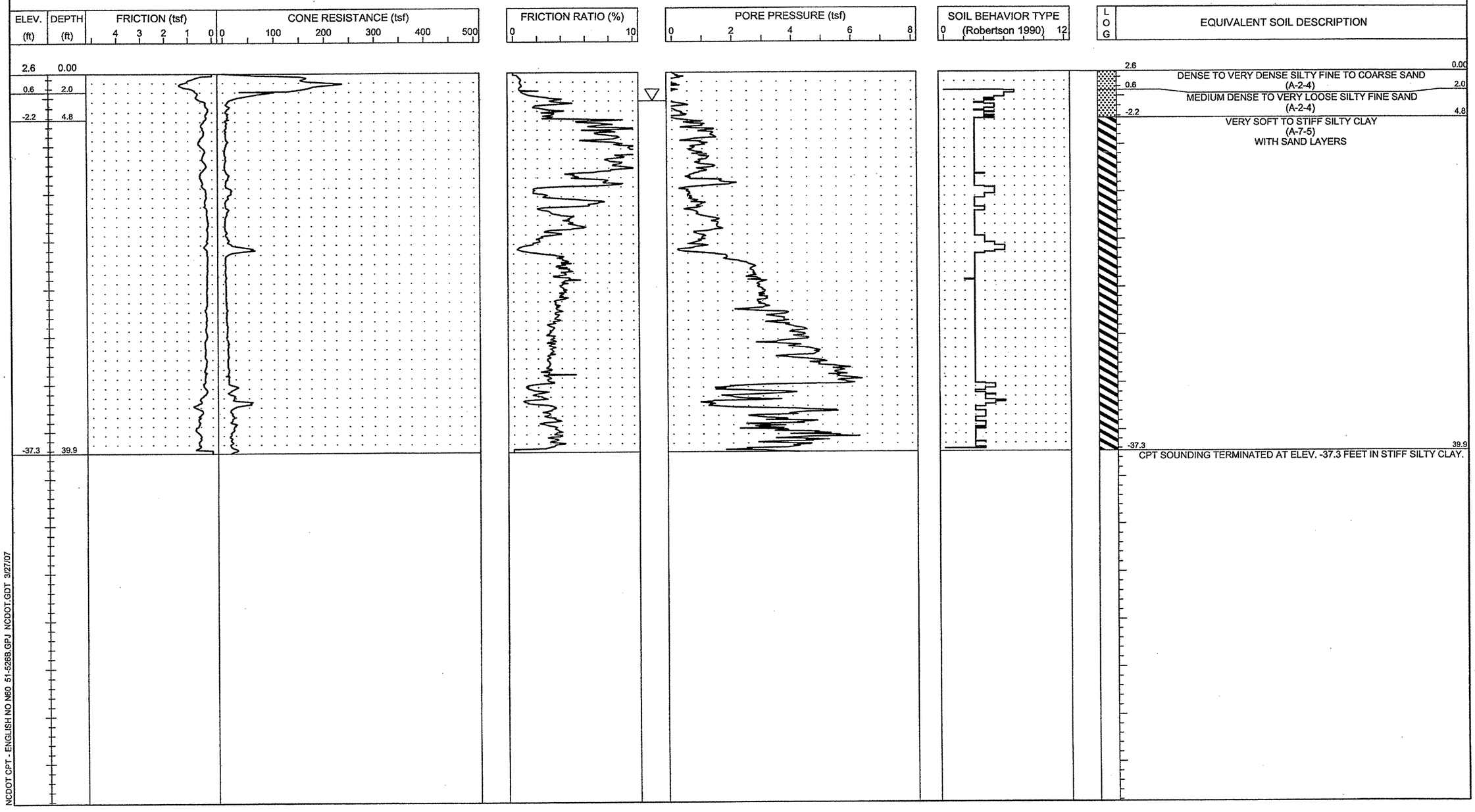
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 4	**BORING LOCATION** 21 + 77	**OFFSET** 2' LT	**ALIGNMENT** - L -	**0 HR.** 3.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 2.6 ft	**NORTHING** 940,306.5	**EASTING** 2,818,345.4		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



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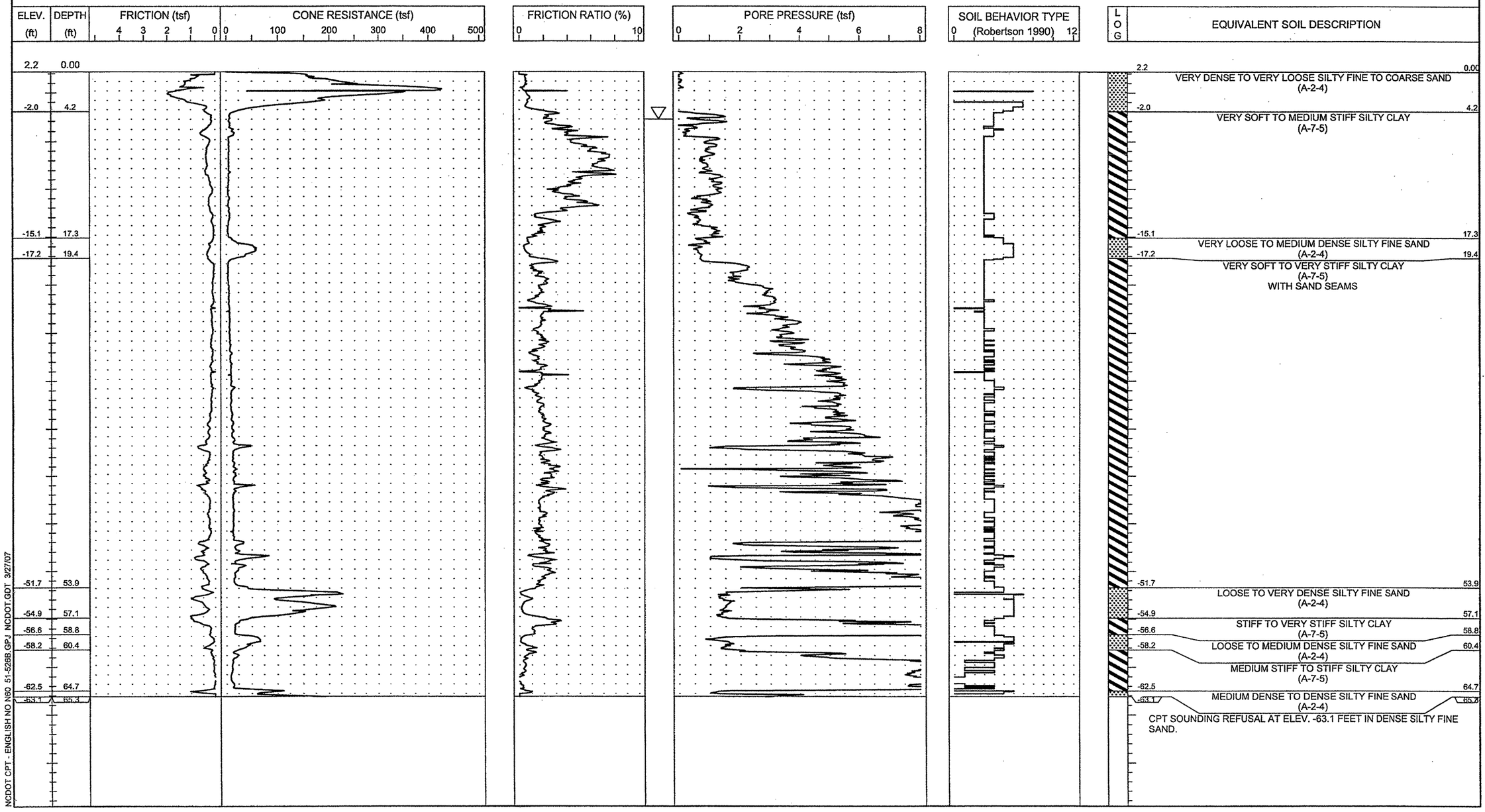
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 65.3 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 5	**BORING LOCATION** 23 + 87	**OFFSET** 42' LT	**ALIGNMENT** - L -	**0 HR.** 5.0	**DATE STARTED** 2/15/07	**COMPLETED** 2/15/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.2 ft	**NORTHING** 940,303.1	**EASTING** 2,818,558.5		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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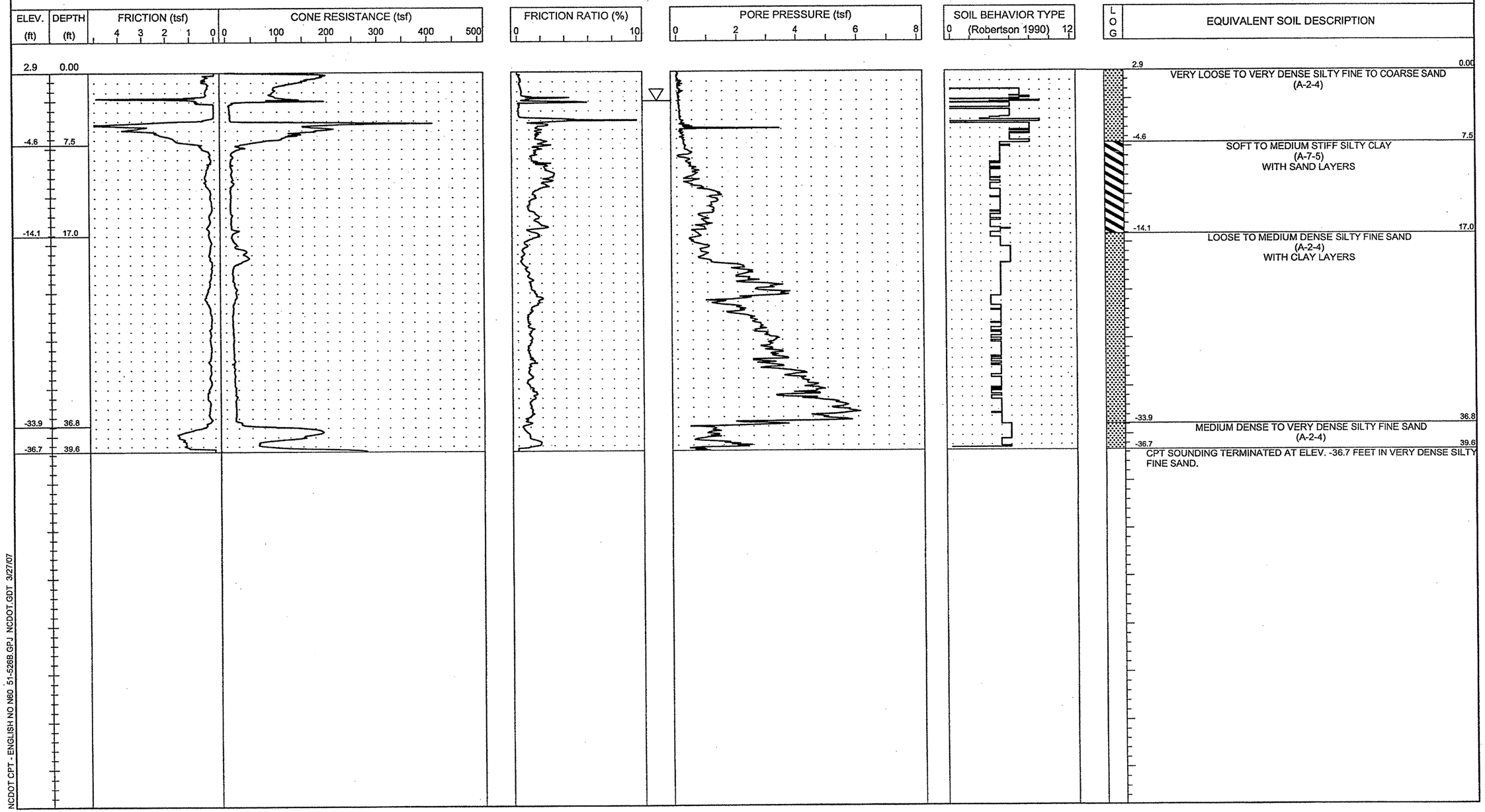
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.6 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 6	**BORING LOCATION** 25 + 75	**OFFSET** 1' LT	**ALIGNMENT** - L -	**0 HR.** 3.0	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.9 ft	**NORTHING** 940,223.8	**EASTING** 2,818,734.1		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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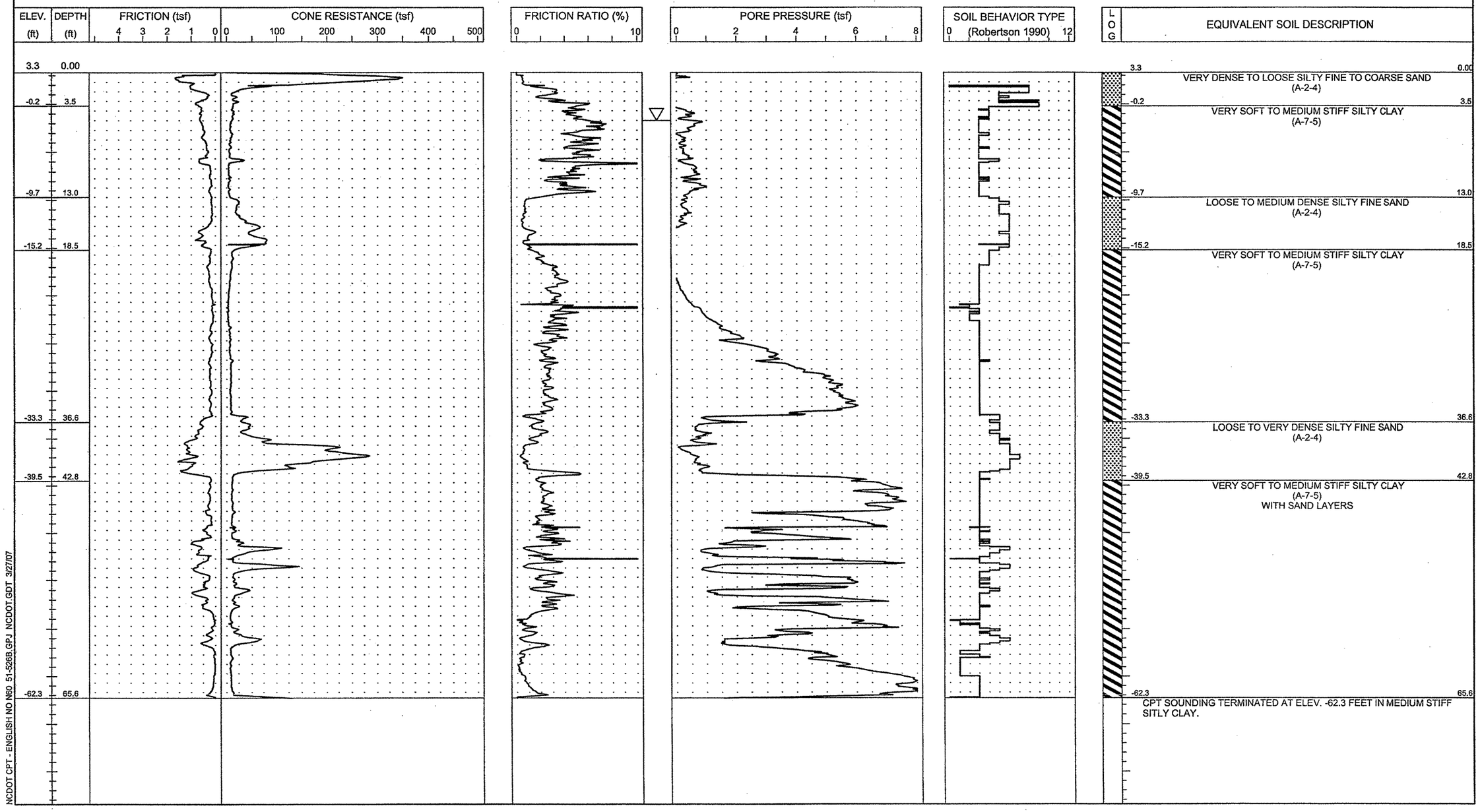
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 65.6 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 7	**BORING LOCATION** 27 + 95	**OFFSET** 6' LT	**ALIGNMENT** - L -	**0 HR.** 5.0	**DATE STARTED** 2/15/07	**COMPLETED** 2/15/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 3.3 ft	**NORTHING** 940,189.4	**EASTING** 2,818,952.1		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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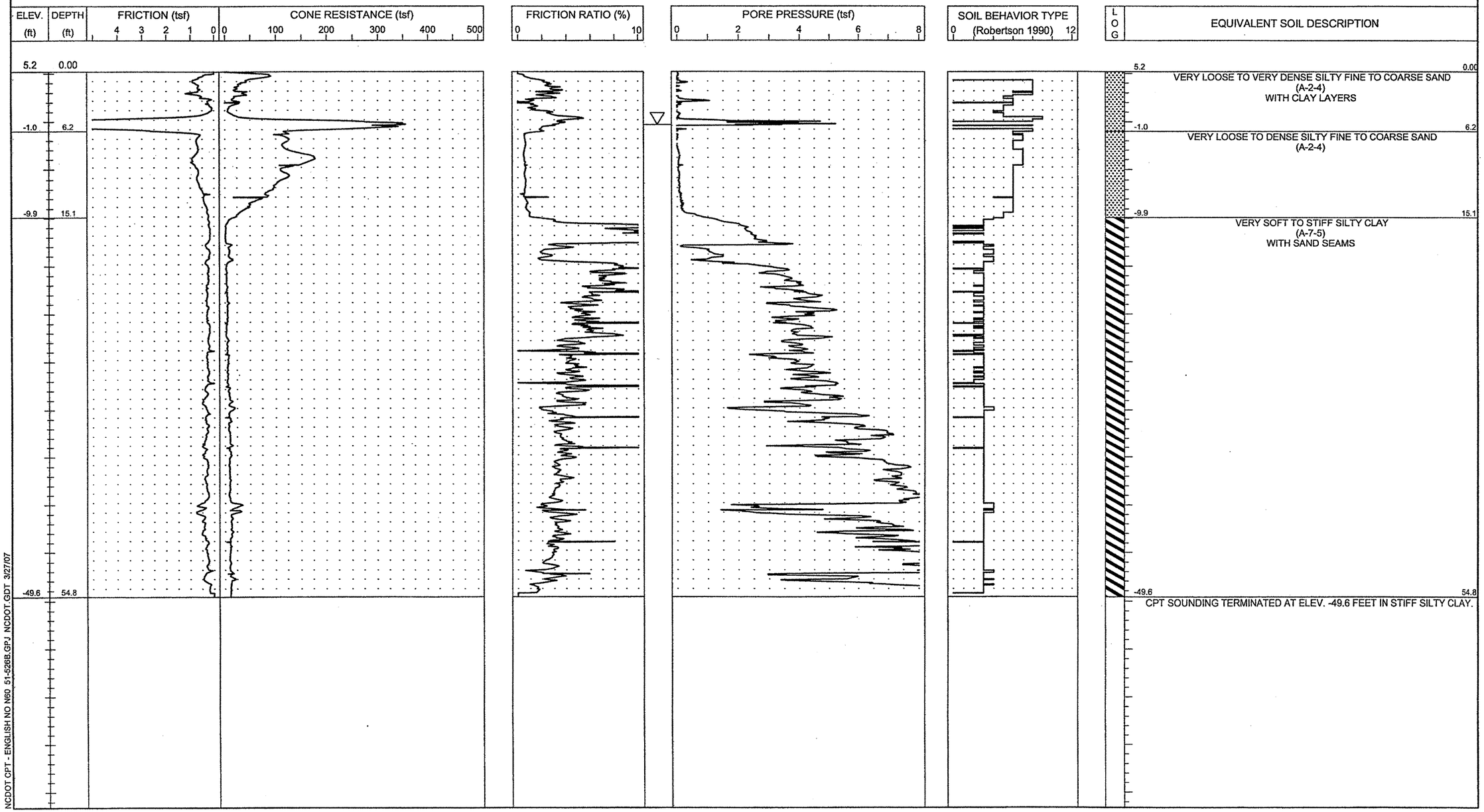
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 54.8 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 8	**BORING LOCATION** 13 + 61	**OFFSET** 11' RT	**ALIGNMENT** - Y8	**0 HR.** 5.5	**DATE STARTED** 2/14/07	**COMPLETED** 2/14/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 5.2 ft	**NORTHING** 939,973.7	**EASTING** 2,819,579.0		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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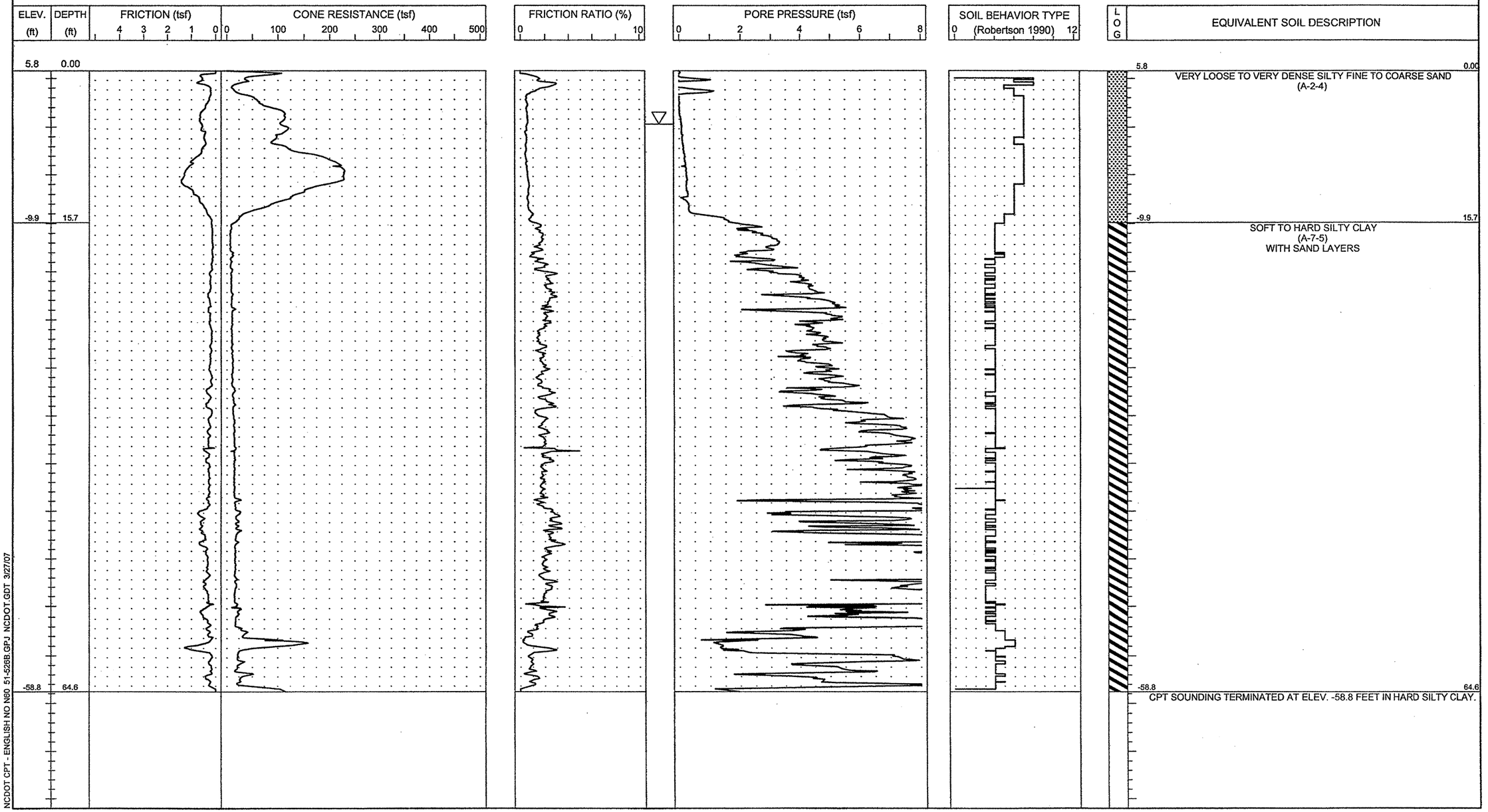
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 64.6 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT- 9	**BORING LOCATION** 14 + 56	**OFFSET** 9' RT	**ALIGNMENT** - Y8 -	**0 HR.** 5.5	**DATE STARTED** 2/14/07	**COMPLETED** 2/14/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 5.8 ft	**NORTHING** 939,879.1	**EASTING** 2,819,569.3		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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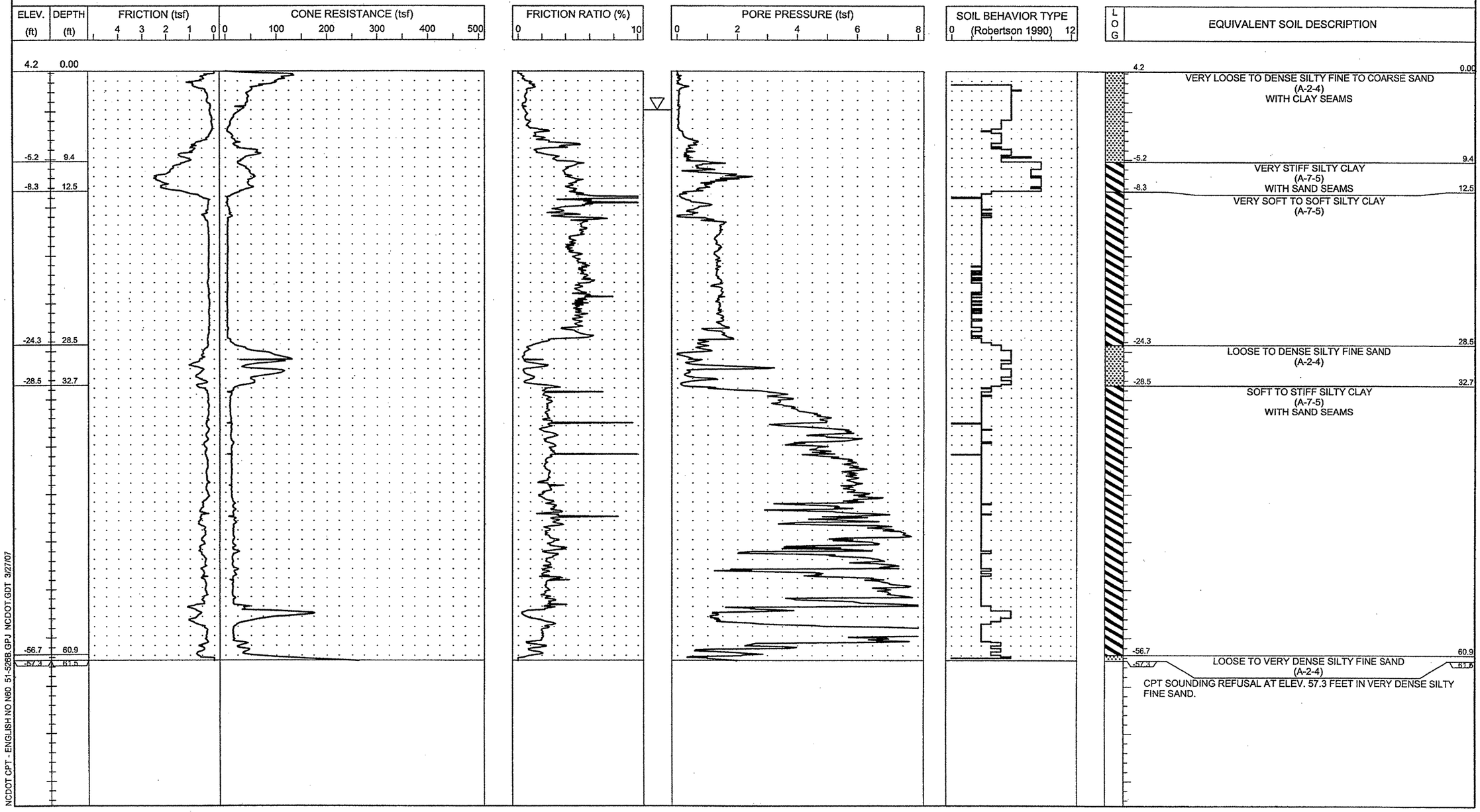
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 61.5 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-10	**BORING LOCATION** 11 + 20	**OFFSET** 2' RT	**ALIGNMENT** - Y8 -	**0 HR.** 4.0	**DATE STARTED** 2/14/07	**COMPLETED** 2/14/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.2 ft	**NORTHING** 940,210.7	**EASTING** 2,819,621.7		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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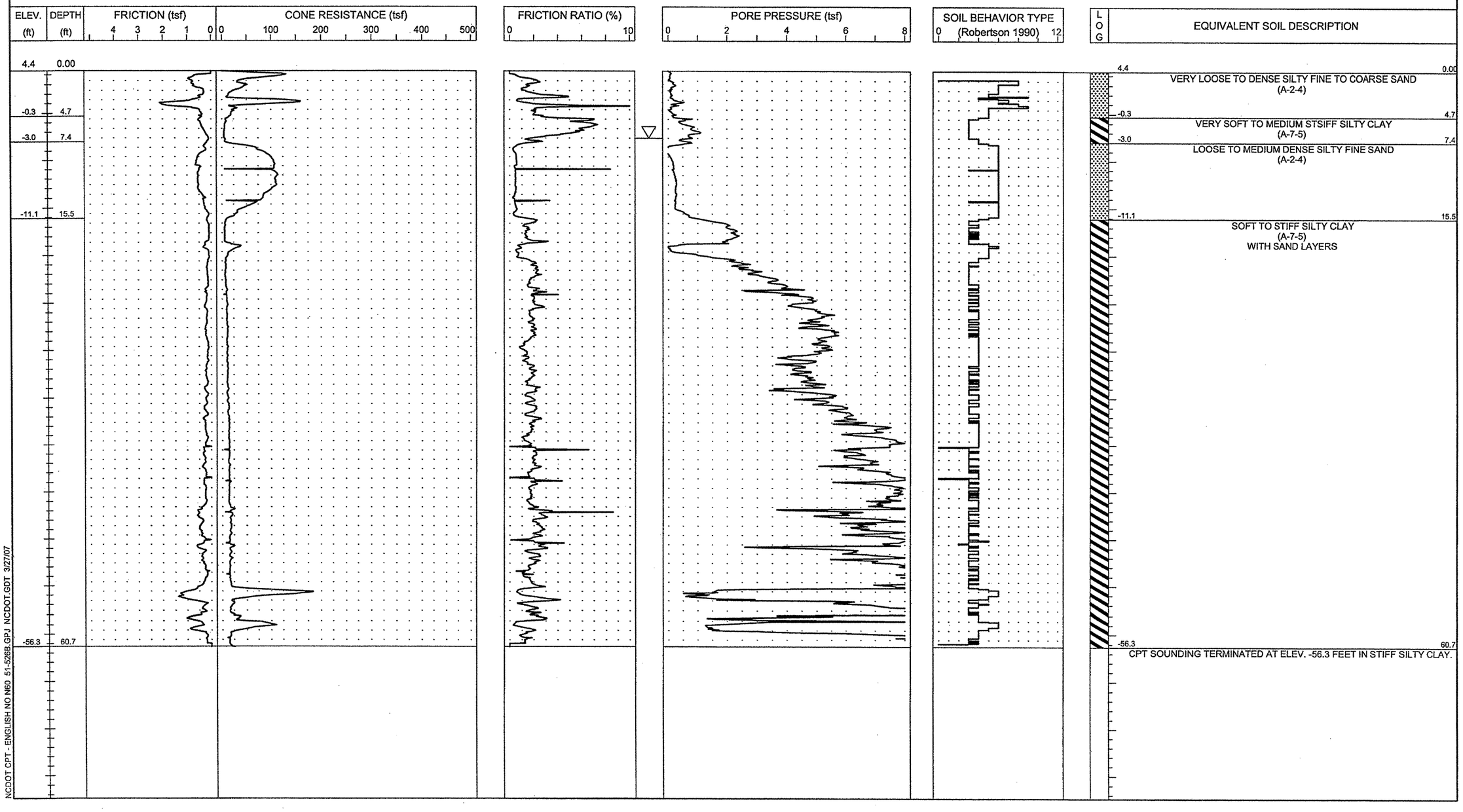
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 60.7 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-11	**BORING LOCATION** 10 + 16	**OFFSET** 12' LT	**ALIGNMENT** - Y8 -	**0 HR.** 7.0	**DATE STARTED** 2/14/07	**COMPLETED** 2/14/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 4.4 ft	**NORTHING** 940,309.7	**EASTING** 2,819,659.1		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



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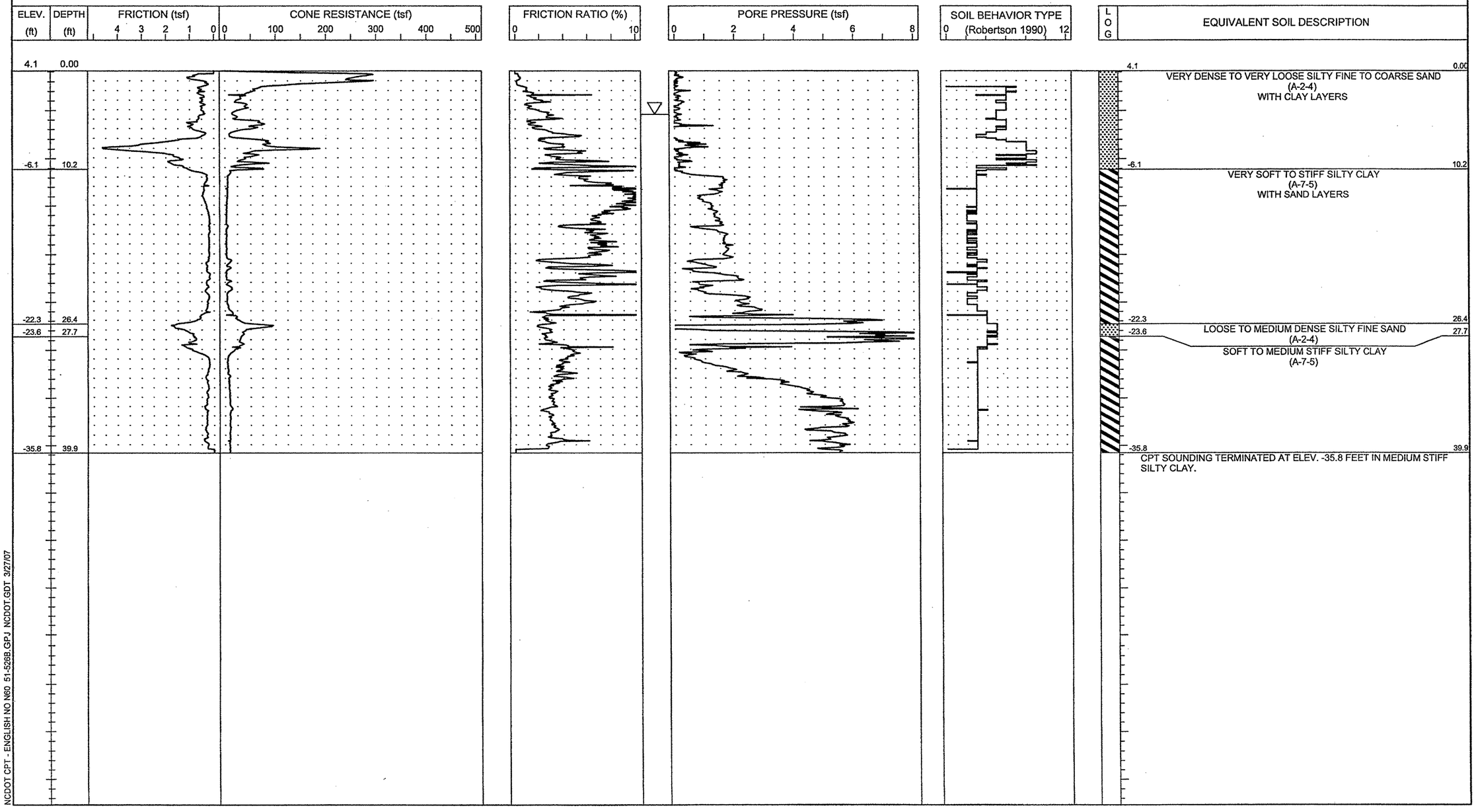
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-13	**BORING LOCATION** 11 + 67	**OFFSET** 7' LT	**ALIGNMENT** - Y7 -	**0 HR.** 4.5	**DATE STARTED** 2/13/07	**COMPLETED** 2/13/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.1 ft	**NORTHING** 940,190.9	**EASTING** 2,819,367.5		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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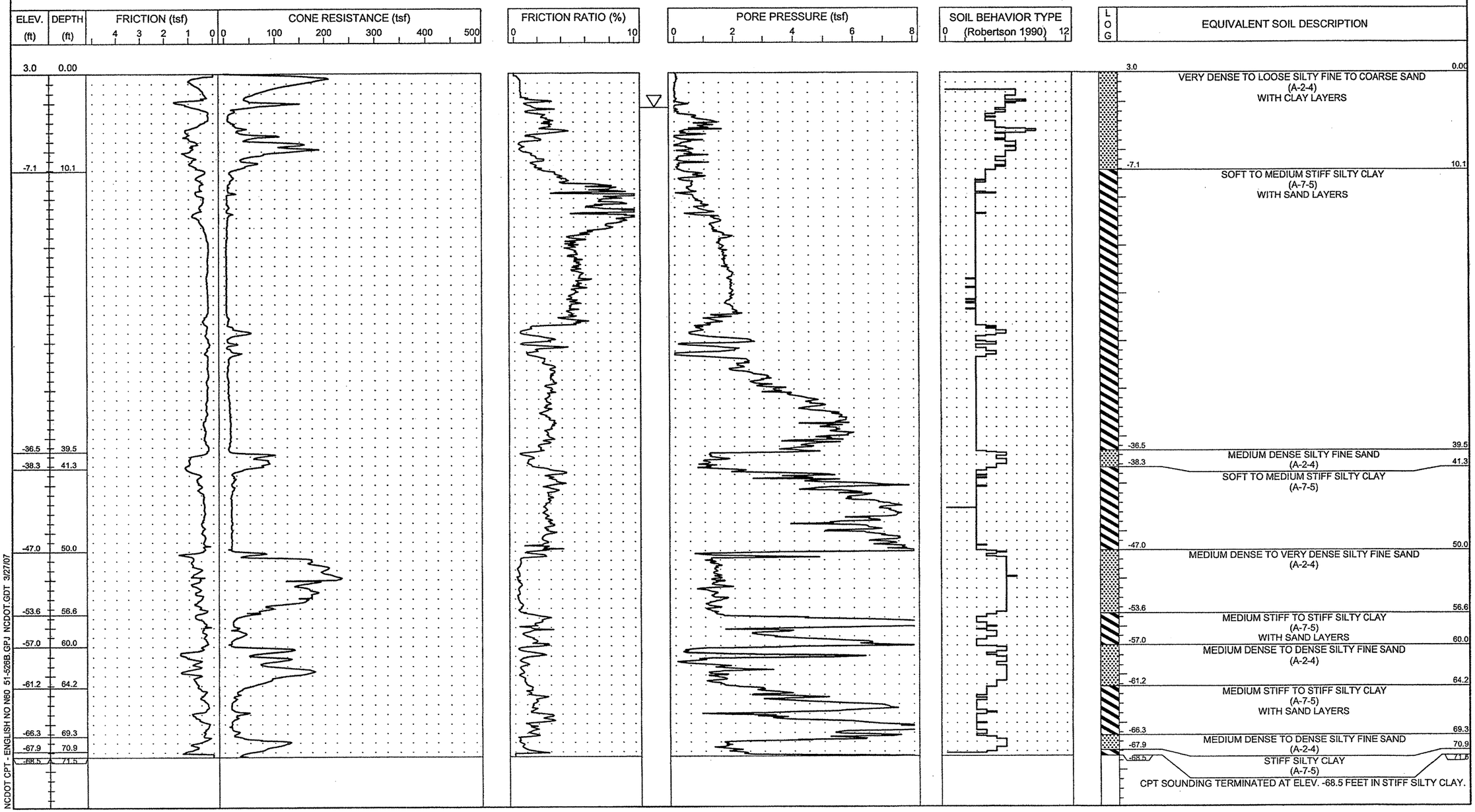
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 71.5 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-14	**BORING LOCATION** 10 + 79	**OFFSET** CL	**ALIGNMENT** - Y7 -	**0 HR.** 3.5	**DATE STARTED** 2/15/07	**COMPLETED** 2/15/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 3.0 ft	**NORTHING** 940,278.4	**EASTING** 2,819,376.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



NCDOT CPT - ENGLISH NO N60 51-526B.GPJ NCDOT.GDT 3/27/07

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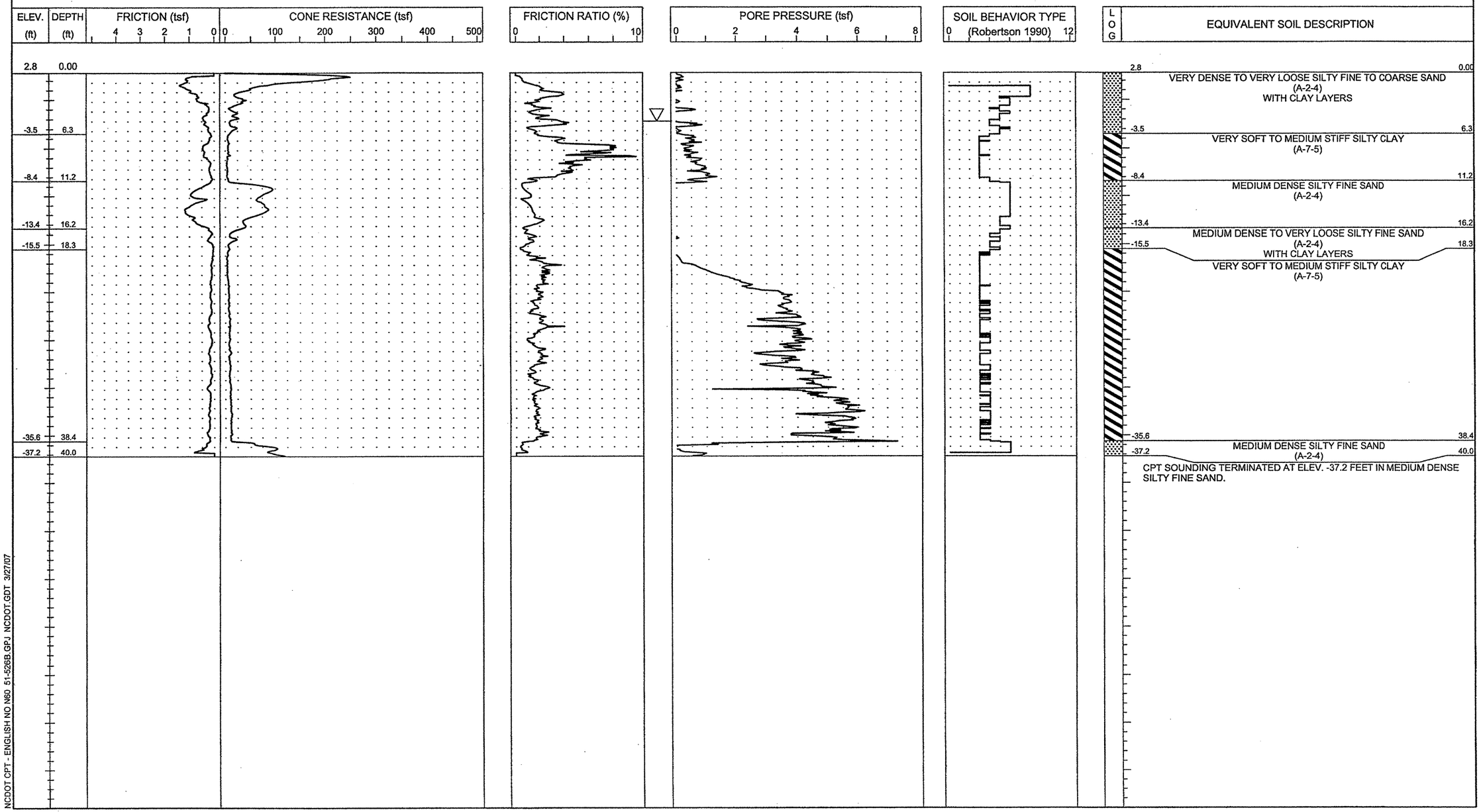
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 40.0 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-15	**BORING LOCATION** 9 + 47	**OFFSET** 8' LT	**ALIGNMENT** - Y7 -	**0 HR.** 5.0	**DATE STARTED** 2/12/07	**COMPLETED** 2/12/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 2.8 ft	**NORTHING** 940,384.7	**EASTING** 2,819,429.9		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



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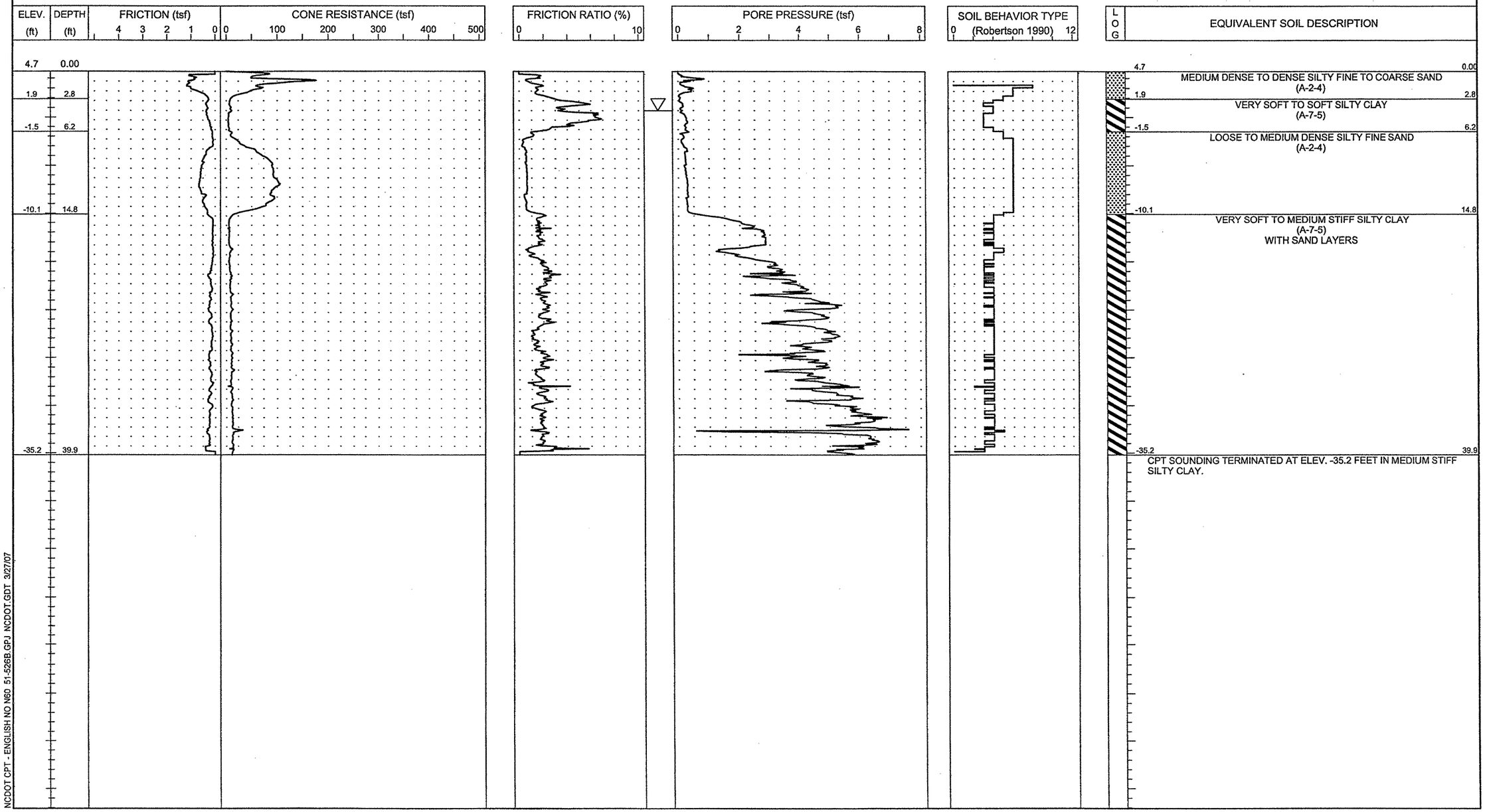
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-17	**BORING LOCATION** 13 + 44	**OFFSET** 9' LT	**ALIGNMENT** - Y7 -	**0 HR.** 4.0	**DATE STARTED** 2/13/07	**COMPLETED** 2/13/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 4.7 ft	**NORTHING** 940,014.9	**EASTING** 2,819,346.7		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



EQUIVALENT SOIL DESCRIPTION

4.7 — 0.00
MEDIUM DENSE TO DENSE SILTY FINE TO COARSE SAND
(A-2-4)
1.9 — 2.8
VERY SOFT TO SOFT SILTY CLAY
(A-7-5)
-1.5 — 6.2
LOOSE TO MEDIUM DENSE SILTY FINE SAND
(A-2-4)
-10.1 — 14.8
VERY SOFT TO MEDIUM STIFF SILTY CLAY
(A-7-5)
WITH SAND LAYERS
-35.2 — 39.9
CPT SOUNDING TERMINATED AT ELEV. -35.2 FEET IN MEDIUM STIFF SILTY CLAY.

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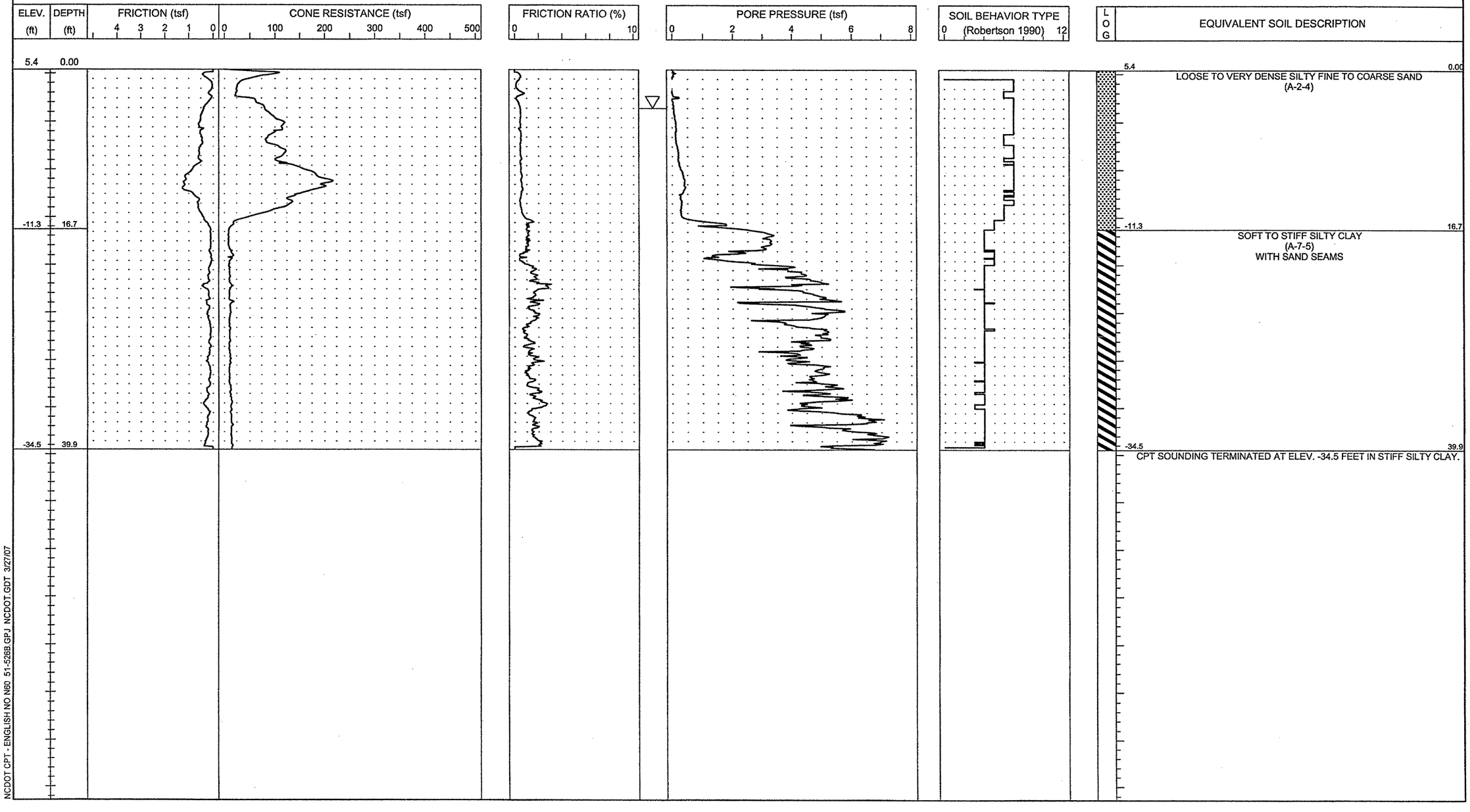
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-18	**BORING LOCATION** 14 + 55	**OFFSET** 2' LT	**ALIGNMENT** - Y7 -	**0 HR.** 4.0	**DATE STARTED** 2/13/07	**COMPLETED** 2/13/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 5.4 ft	**NORTHING** 939,906.3	**EASTING** 2,819,326.1		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



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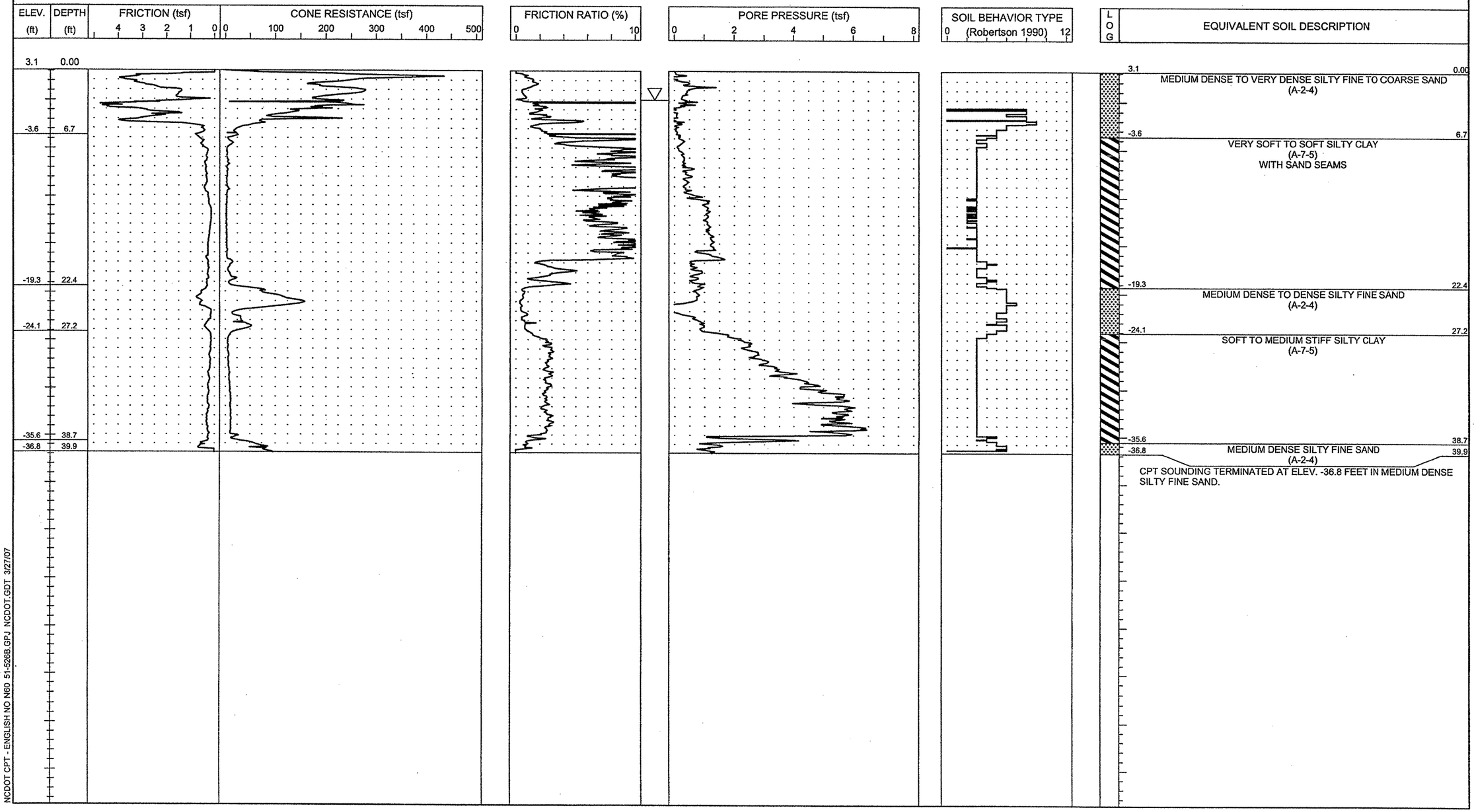
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON		**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus				**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-19	**BORING LOCATION** 10 + 87	**OFFSET** 6' LT	**ALIGNMENT** -Y6 -	**0 HR.** 3.0	**DATE STARTED** 2/13/07	**COMPLETED** 2/13/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 3.1 ft	**NORTHING** 940,067.8	**EASTING** 2,819,104.3		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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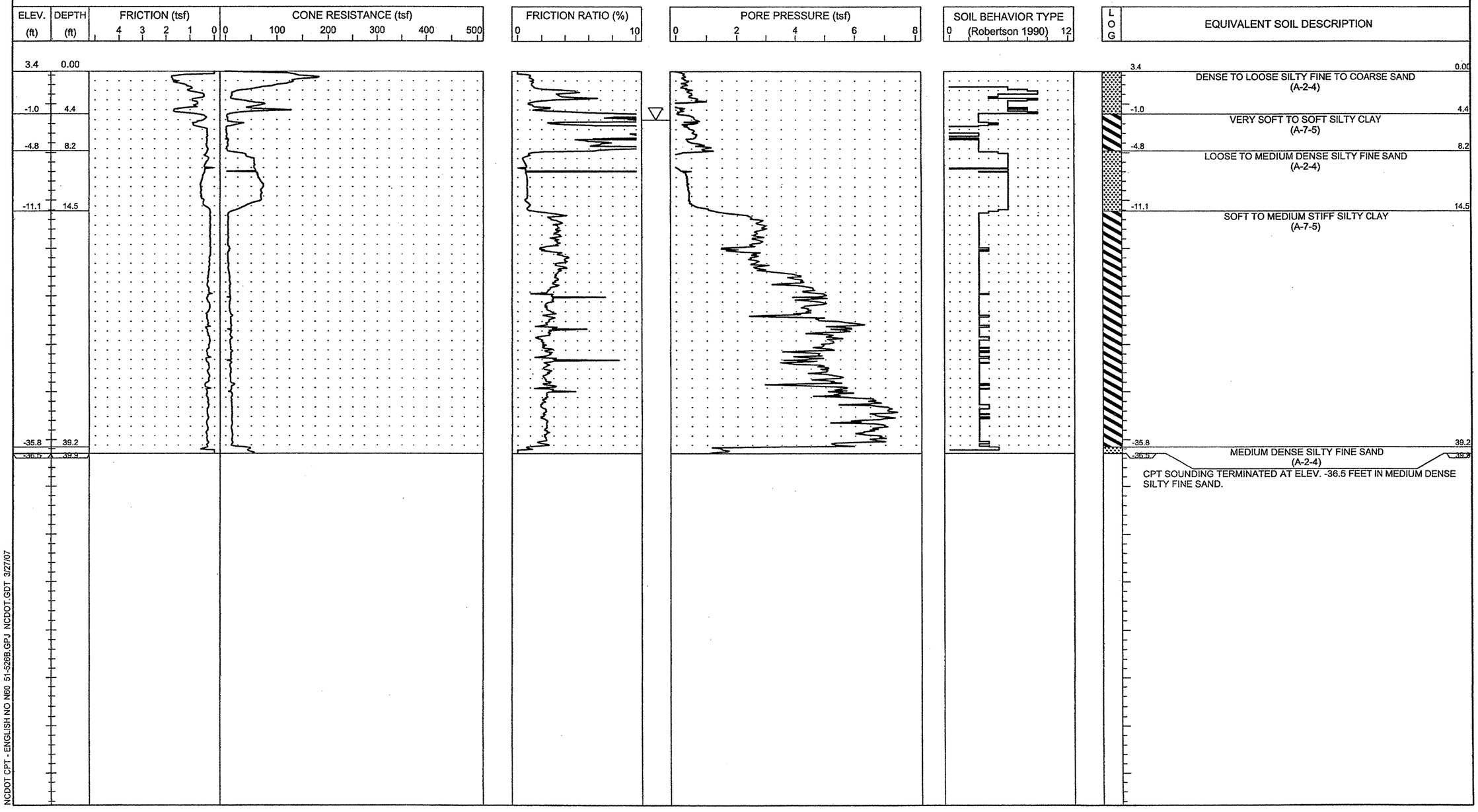
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 in. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-21	**BORING LOCATION** 13 + 41	**OFFSET** 5' RT	**ALIGNMENT** - Y5 -	**0 HR.** 5.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 3.4 ft	**NORTHING** 940,104.5	**EASTING** 2,818,853.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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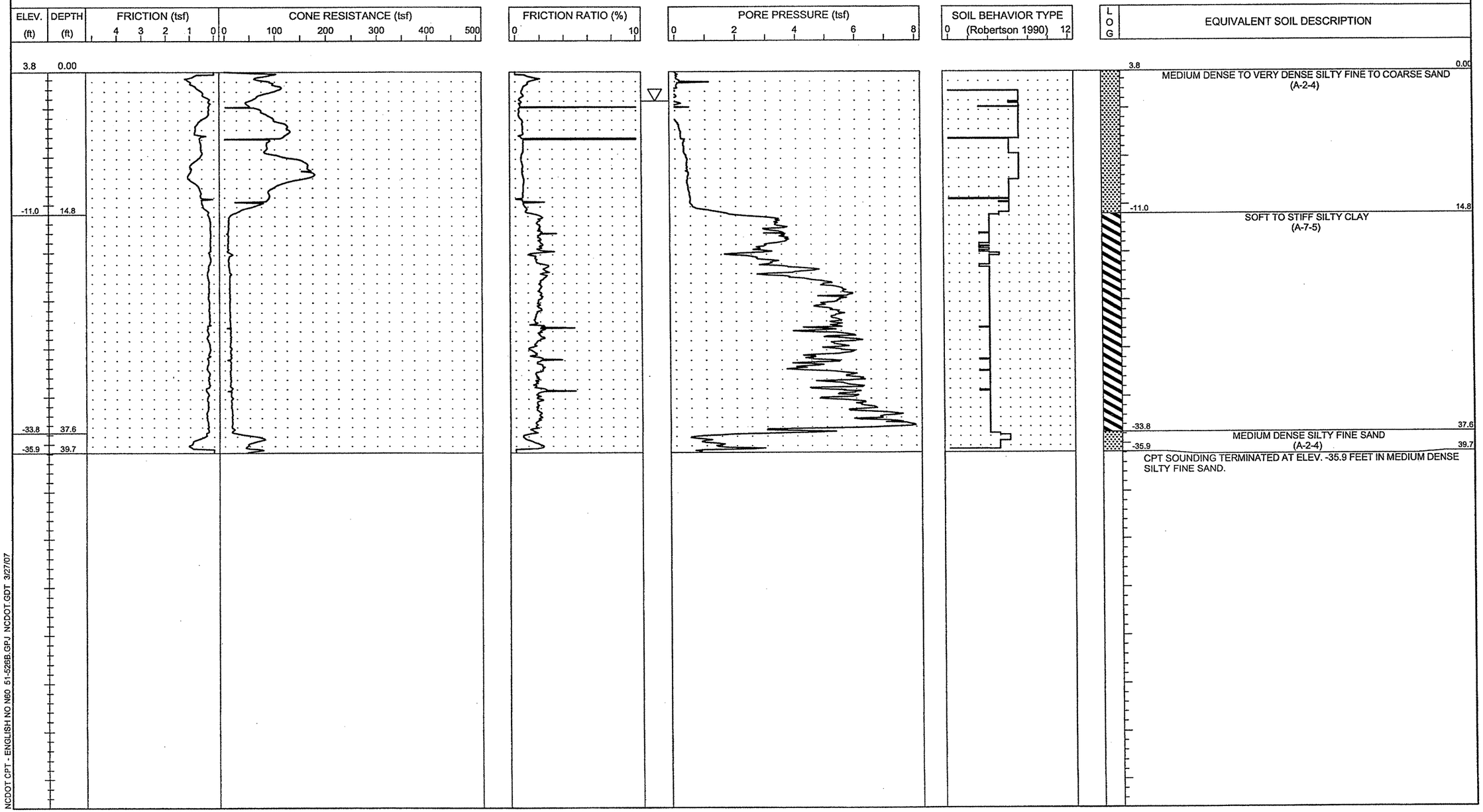
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 in. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.7 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-23	**BORING LOCATION** 11 + 63	**OFFSET** 5' RT	**ALIGNMENT** - Y5 -	**0 HR.** 3.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 3.8 ft	**NORTHING** 940,277.2	**EASTING** 2,818,901.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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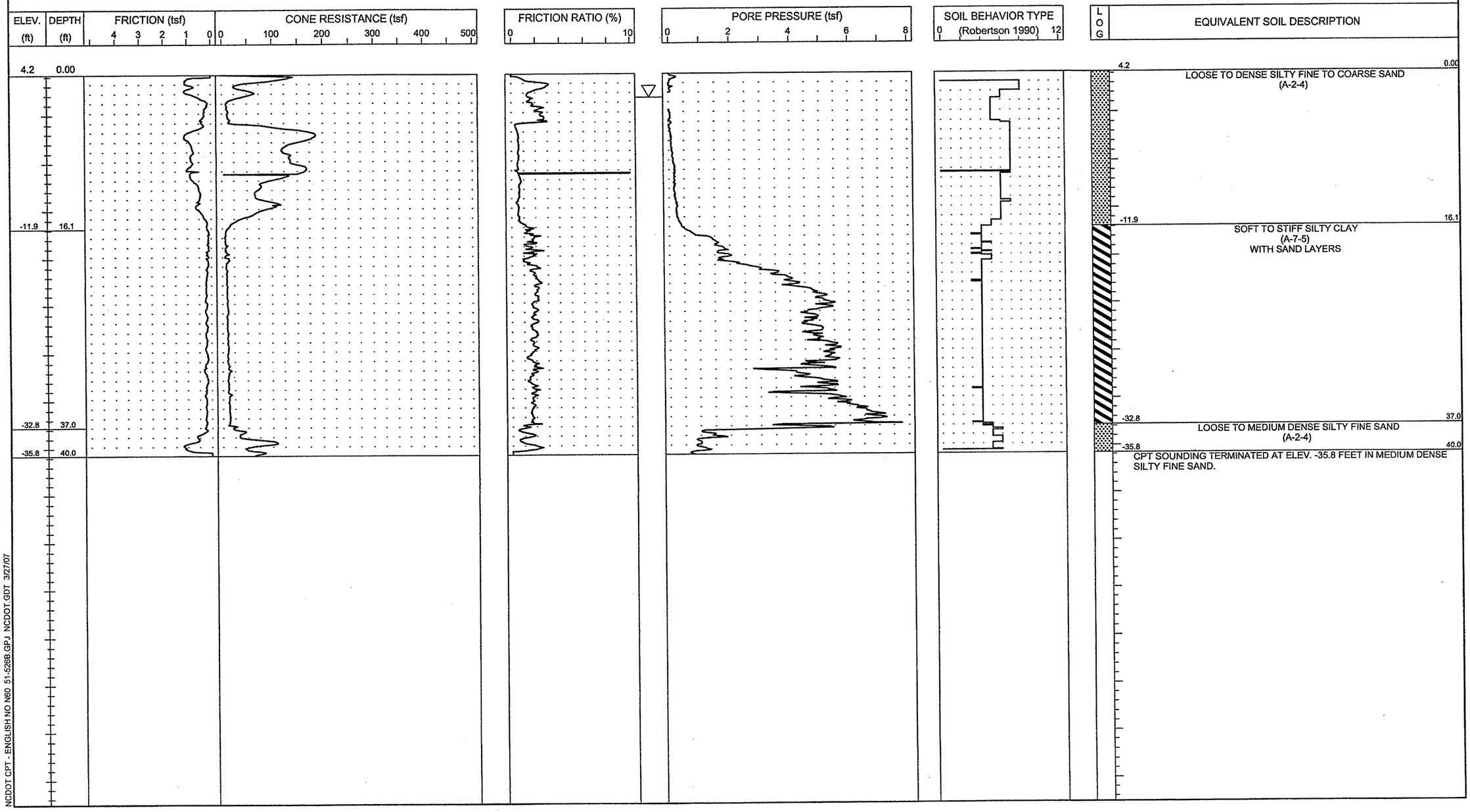
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 40.0 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-24	**BORING LOCATION** 10 + 66	**OFFSET** 5' LT	**ALIGNMENT** - Y5 -	**0 HR.** 2.5	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.2 ft	**NORTHING** 940,367.2	**EASTING** 2,818,940.0		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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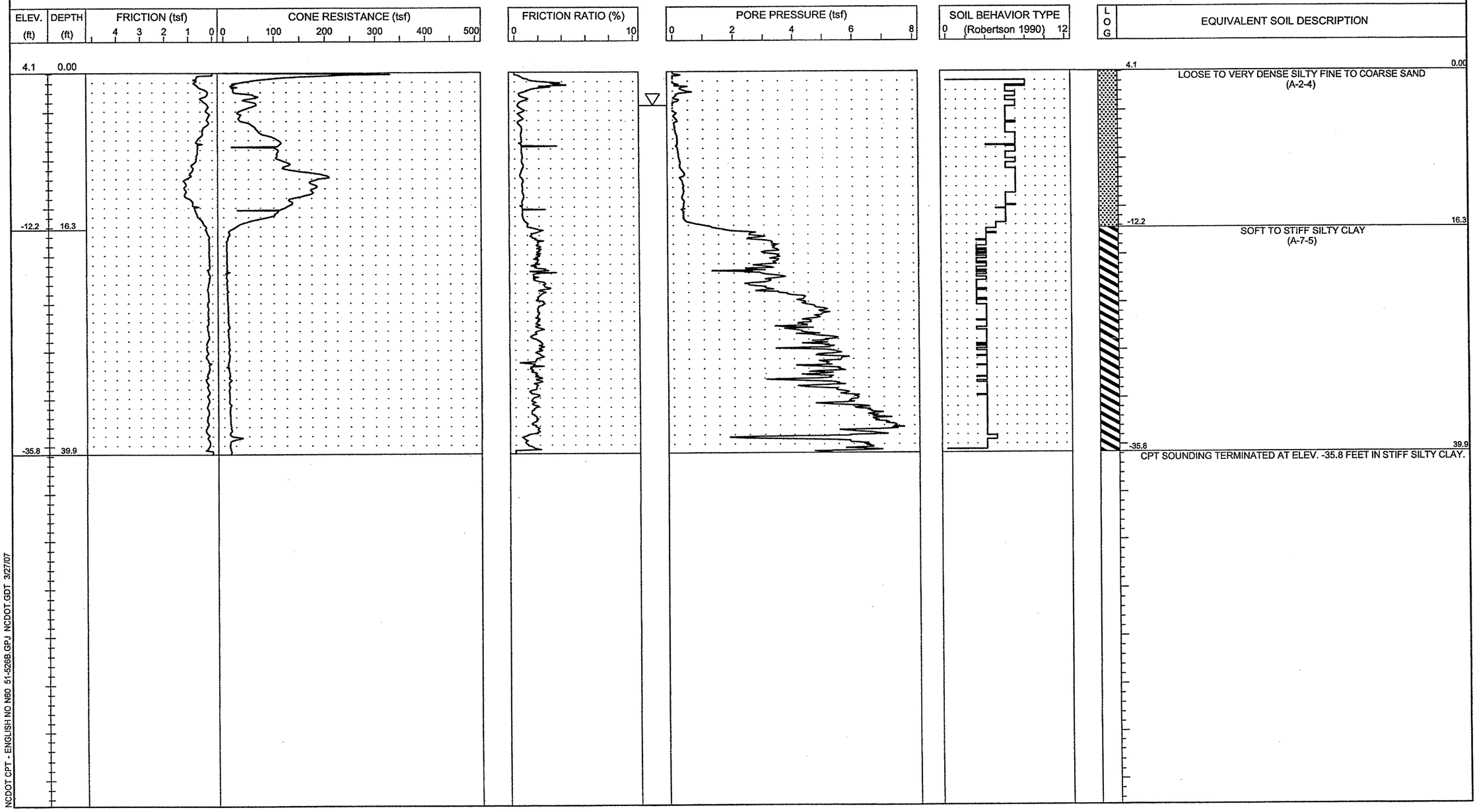
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-25	**BORING LOCATION** 10 + 98	**OFFSET** 4' RT	**ALIGNMENT** - Y4 -	**0 HR.** 3.5	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.1 ft	**NORTHING** 940,148.4	**EASTING** 2,818,608.6		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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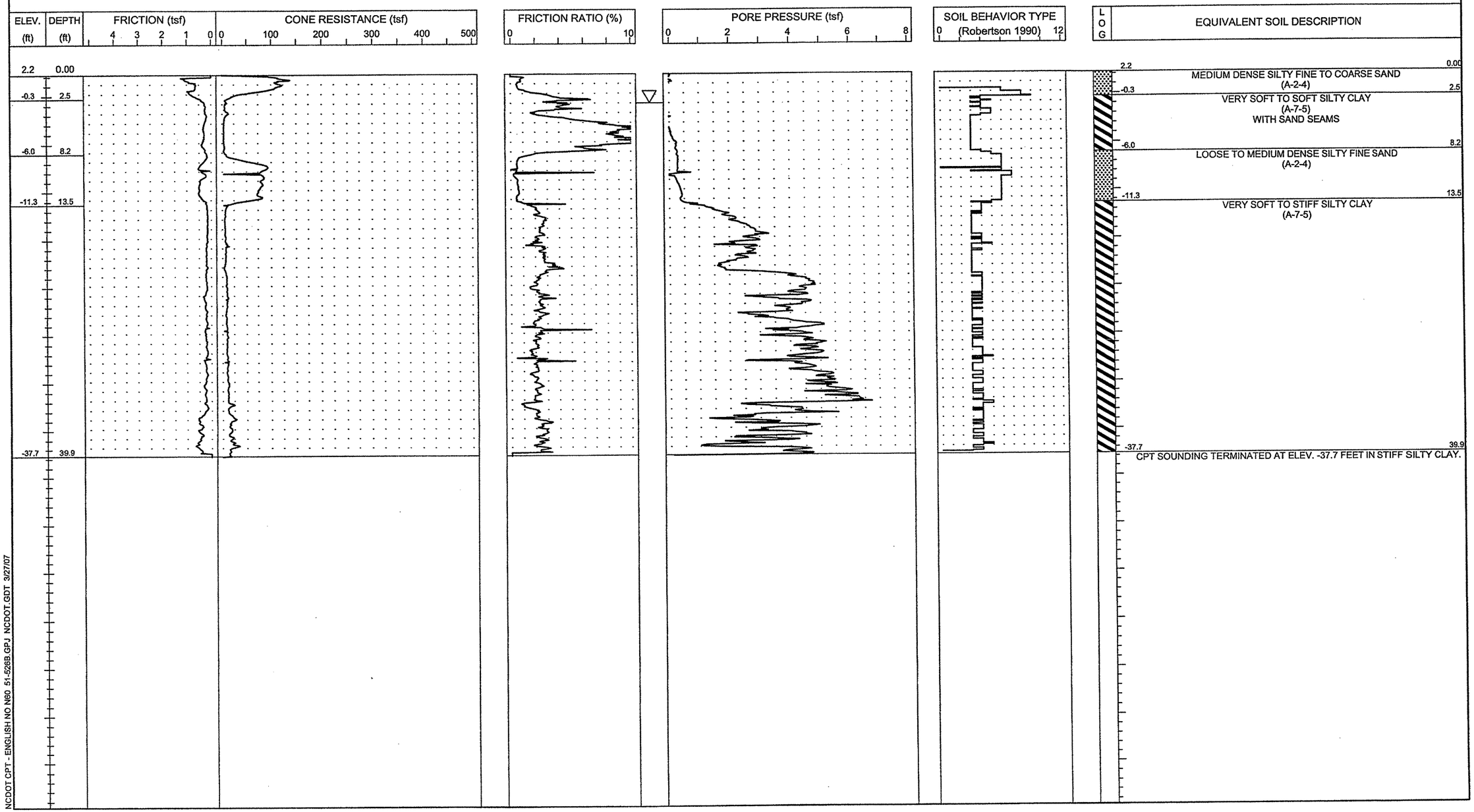
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-27	**BORING LOCATION** 10 + 43	**OFFSET** 6' RT	**ALIGNMENT** - Y3 -	**0 HR.** 3.0	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.2 ft	**NORTHING** 940,254.6	**EASTING** 2,818,369.4		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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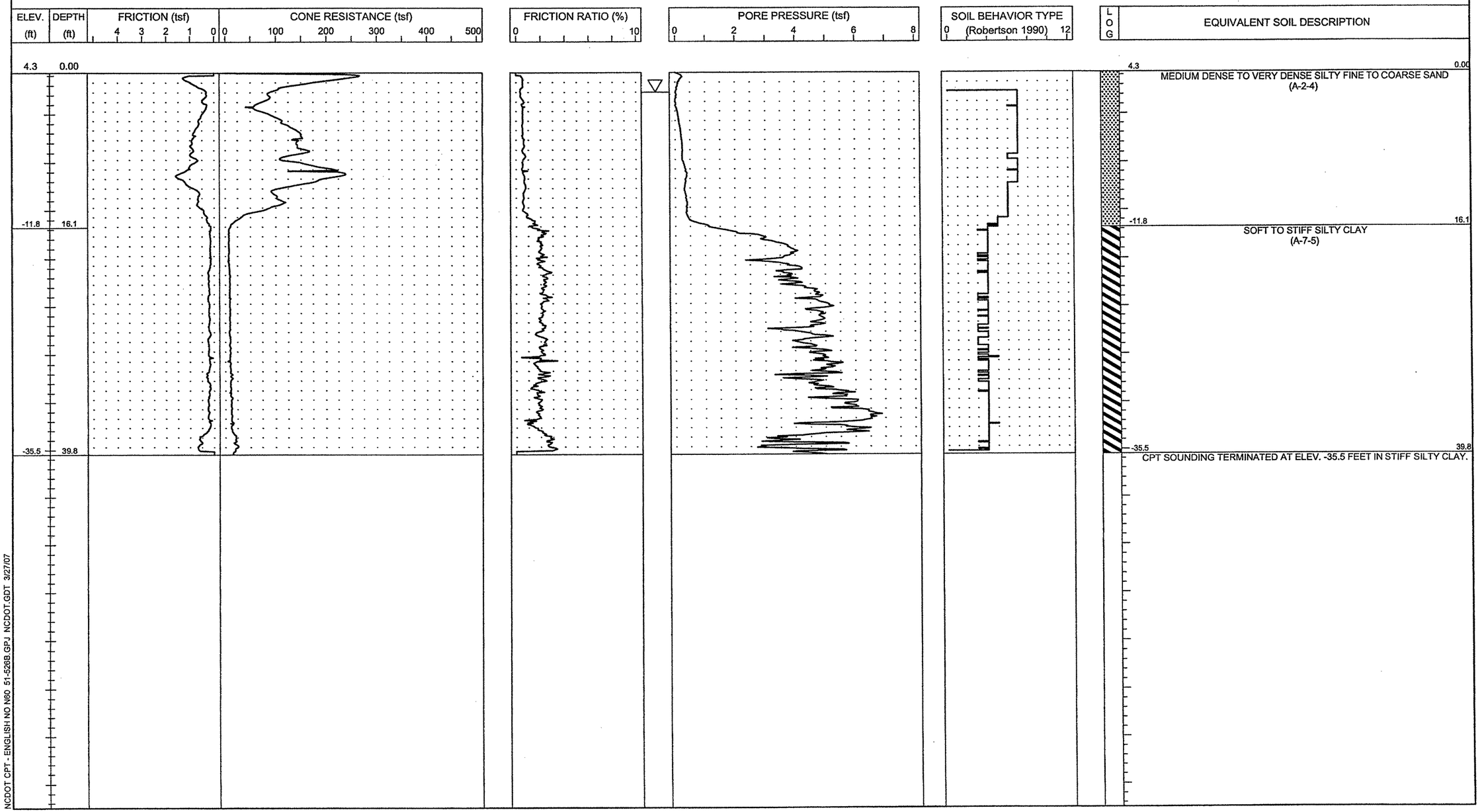
PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.8 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-28	**BORING LOCATION** 11 + 39	**OFFSET** 6' LT	**ALIGNMENT** - Y3 -	**0 HR.** 2.0	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.3 ft	**NORTHING** 940,158.4	**EASTING** 2,818,369.3		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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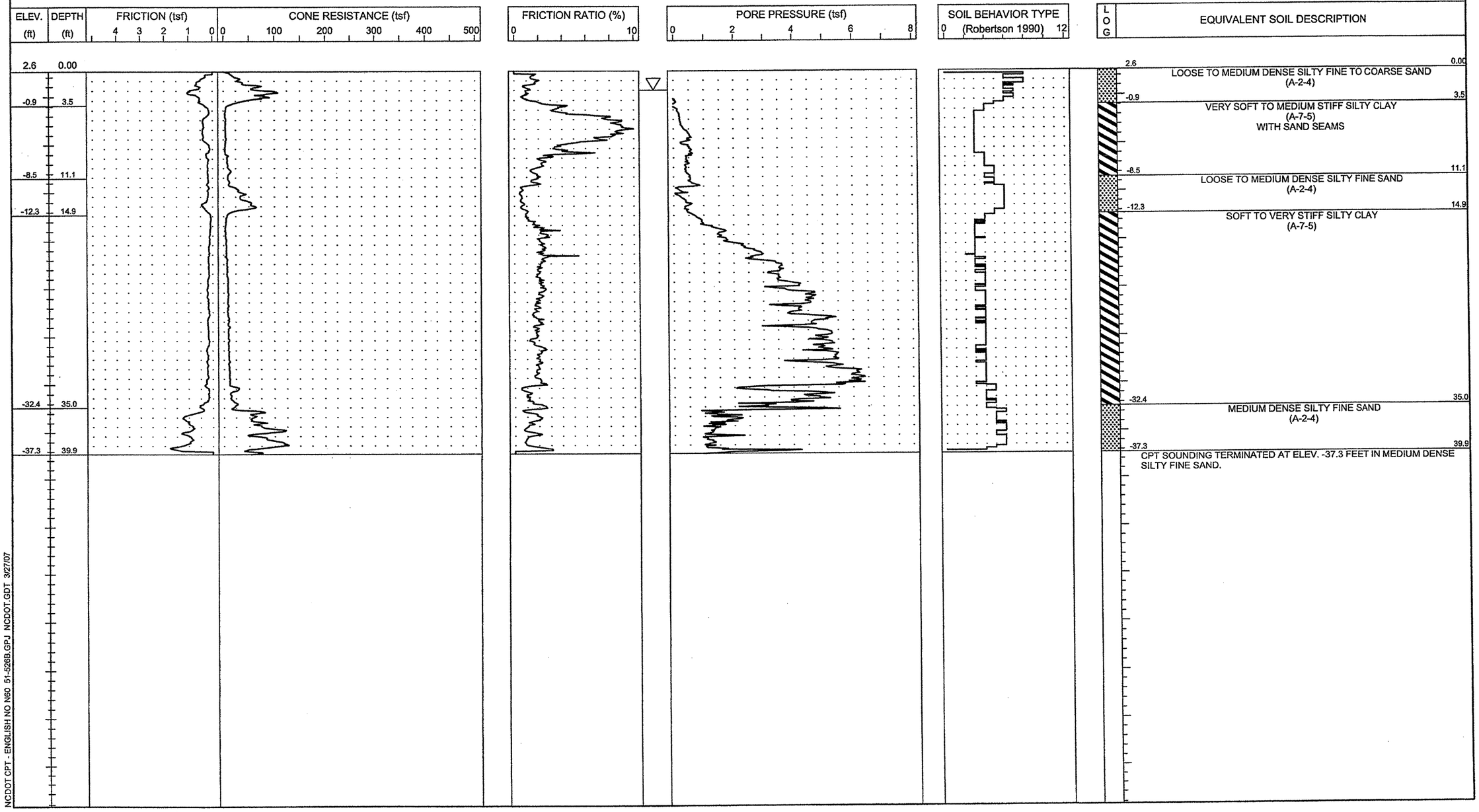
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-29	**BORING LOCATION** 11 + 04	**OFFSET** 12' RT	**ALIGNMENT** - Y2 -	**0 HR.** 2.0	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 2.6 ft	**NORTHING** 940,242.3	**EASTING** 2,818,139.1		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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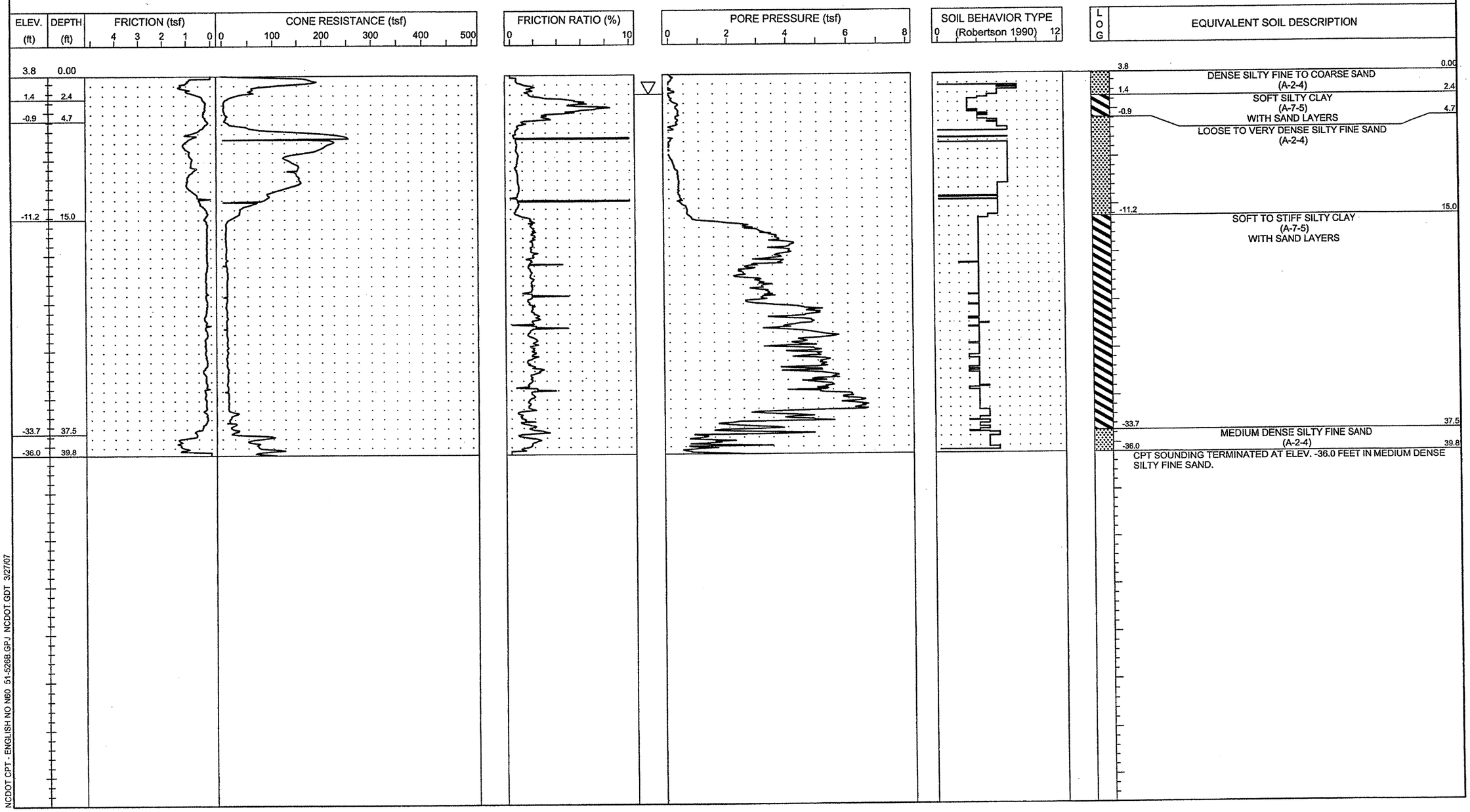
BORING LOG
SHEET 25 of 26

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.8 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-30	**BORING LOCATION** 11 + 97	**OFFSET** 10' RT **ALIGNMENT** - Y2 -	**0 HR.** 2.0	**DATE STARTED** 2/7/07	**COMPLETED** 2/7/07	**SURFACE WATER DEPTH** N/A	
COLLAR ELEV. 3.8 ft	**NORTHING** 940,150.6	**EASTING** 2,818,121.2	**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA		



L O G

EQUIVALENT SOIL DESCRIPTION

3.8 — 0.00

DENSE SILTY FINE TO COARSE SAND
(A-2-4)

1.4 — 2.4

SOFT SILTY CLAY
(A-7-5)
WITH SAND LAYERS

-0.9 — 4.7

LOOSE TO VERY DENSE SILTY FINE SAND
(A-2-4)

-11.2 — 15.0

SOFT TO STIFF SILTY CLAY
(A-7-5)
WITH SAND LAYERS

-33.7 — 37.5

MEDIUM DENSE SILTY FINE SAND
(A-2-4)

-36.0 — 39.8

CPT SOUNDING TERMINATED AT ELEV. -36.0 FEET IN MEDIUM DENSE SILTY FINE SAND.

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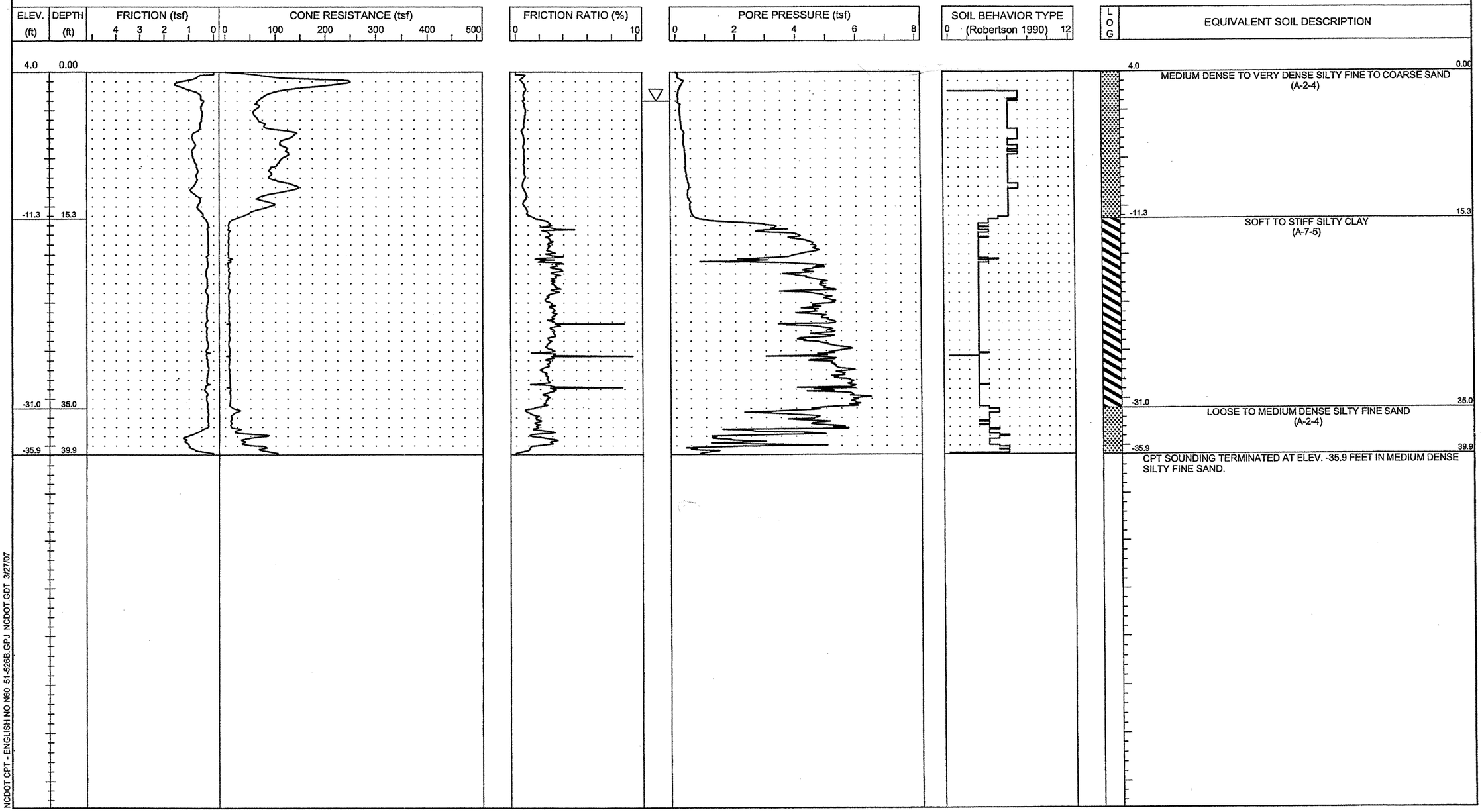
BORING LOG

PROJECT NO. 35742.1.1	**ID.** U-4438	**COUNTY** Pasquotank	**GEOLOGIST** S. JOHNSON	**TYPE OF CONE** 1.75 In. PEIZO CONE	**ROD TYPE** 1.75 in Dia.	**MAXIMUM DOWN PRESSURE** Approximately 920 tsf	
SITE DESCRIPTION US 158 From NC 34 to US 17 Bus			**GROUND WATER (ft)**	**TOTAL DEPTH** 39.9 ft	**DRILL MACHINE** CPT-ATV	**DRILL METHOD** Direct Push	**HAMMER TYPE** N/A
BORING NO. CPT-31	**BORING LOCATION** 10 + 99	**OFFSET** 14' LT	**ALIGNMENT** - Y1 -	**0 HR.** 3.0	**DATE STARTED** 2/8/07	**COMPLETED** 2/8/07	**SURFACE WATER DEPTH** N/A
COLLAR ELEV. 4.0 ft	**NORTHING** 940,447.4	**EASTING** 2,818,209.8		**24 HR.** N/M	**DRILLER:** M.COX	**TECHNICIAN** M. SCHUYTEMA	



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