

REFERENCE: U-4751

PROJECT: 40191

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4751	1	11

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**STRUCTURE
SUBSURFACE INVESTIGATION**

COUNTY NEW HANOVER
PROJECT DESCRIPTION SR 1409 (MILITARY CUT-OFF ROAD) TO US 17 IN WILMINGTON

SITE DESCRIPTION NOISE WALL 14 AT -L- STA. 129+00, RIGHT

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) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT 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 THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 2. 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.

PERSONNEL

- J. MUESSEN, EI
- MID-ATLANTIC
- A. FOWLER
- M. WIGGINS
- M. LOOGAN

INVESTIGATED BY D. BROWN, PE
 DRAWN BY D. BROWN, PE
 CHECKED BY E. MAYR, PE
 SUBMITTED BY D. BROWN, PE
 DATE MAY 2015



DocuSigned by:
 Donald W. Brown Jr. 6/9/2015
 056948D03967464 SIGNATURE DATE

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 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 THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

Table with columns for General Class, Granular Materials (A-1 to A-7), Silty-Clay Materials (A-1 to A-7), Organic Materials (A-1, A-2, A-3, A-4, A-5, A-6, A-7), and Soil Symbols. Includes rows for % Passing, Material Passing #40, #100, #200, Group Index, and Usual Types of Major Materials.

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

CONSISTENCY OR DENSENESS

Table mapping Primary Soil Type (e.g., Generally Granular Material, Silty-Clay Material) to Consistency (e.g., Very Loose, Medium Dense, Very Dense) and Range of Standard Penetration Resistance (N-value) and Unconfined Compressive Strength (tons/ft²).

TEXTURE OR GRAIN SIZE

Table showing U.S. Std. Sieve Size (mm and in) and corresponding grain size ranges for Boulder, Cobble, Gravel, Coarse Sand, Fine Sand, Silt, and Clay.

SOIL MOISTURE - CORRELATION OF TERMS

Table correlating Soil Moisture Scale (Atterberg Limits), Field Moisture Description (e.g., Saturated, Wet, Moist, Dry), and Guide for Field Moisture Description (e.g., Usually liquid, Semisolid, Solid).

PLASTICITY

Table showing Plasticity Index (PI) ranges (0-5 to 26 or more) and corresponding Dry Strength (Very Low, Slight, Medium, 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. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES 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 WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

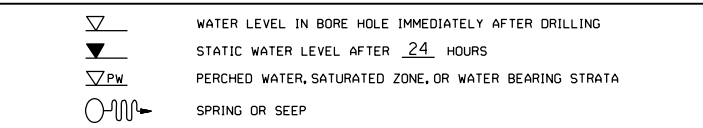
COMPRESSIBILITY

Table showing Slightly Compressible (LL < 31), Moderately Compressible (LL = 31 - 50), and Highly Compressible (LL > 50).

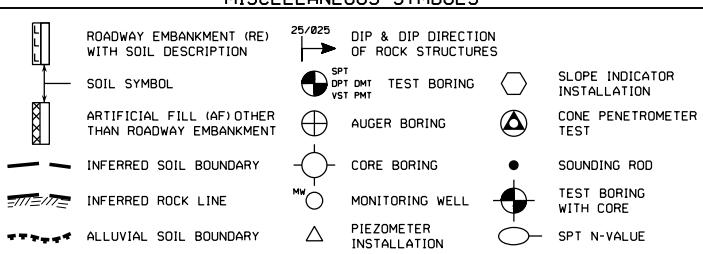
PERCENTAGE OF MATERIAL

Table showing percentages of Organic Material, Granular Soils, Silty-Clay Soils, and Other Material (Trace, Little, Moderately, Highly Organic).

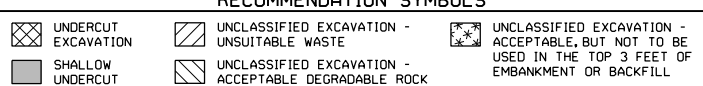
GROUND WATER



MISCELLANEOUS SYMBOLS



RECOMMENDATION SYMBOLS



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, FRAGS. - FRAGMENTS, HI. - HIGHLY, MED. - MEDIUM, MICA - MICACEOUS, MOD. - MODERATELY, NP - NON PLASTIC, ORG. - ORGANIC, PMT - PRESSUREMETER TEST, SAP. - SAPROLITIC, SD. - SAND, SANDY, SL. - SILTY, 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: CME-45, CME-55, CME-550, VANE SHEAR TEST, PORTABLE HOIST, DIEDRICH D-25, HOG, 10T CPT. ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, 8" HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG-CARBIDE INSERTS, CASING w/ ADVANCER, TRICONE 2 15/16" STEEL TEETH, TRICONE * TUNG-CARB., CORE BIT. HAMMER TYPE: AUTOMATIC, MANUAL. CORE SIZE: -B, -H, -N. HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST.

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. 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:

Table defining rock types: WEATHERED ROCK (WR), CRYSTALLINE ROCK (CR), NON-CRYSTALLINE ROCK (NCR), and COASTAL PLAIN SEDIMENTARY ROCK (CP). Includes descriptions and SPT values.

WEATHERING

Table defining weathering degrees: FRESH, VERY SLIGHT (V SLI), SLIGHT (SLI), MODERATE (MOD), MODERATELY SEVERE (MOD. SEV.), SEVERE (SEV), VERY SEVERE (V SEV), and COMPLETE. Includes descriptions of rock conditions and SPT values.

ROCK HARDNESS

Table defining rock hardness levels: VERY HARD, HARD, MODERATELY HARD, MEDIUM HARD, SOFT, and VERY SOFT. Includes descriptions of how the rock can be scratched or broken.

FRACTURE SPACING

Table mapping fracture spacing terms (Very Wide, Wide, Moderately Close, Close, Very Close) to spacing ranges (More than 10 feet to Less than 0.16 feet).

BEDDING

Table mapping bedding terms (Very thickly bedded, Thickly bedded, Thinly bedded, Very thinly bedded, Thickly laminated, Thinly laminated) to thickness ranges (4 feet to < 0.008 feet).

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. Includes descriptions for Friable, Moderately Indurated, Indurated, and Extremely Indurated.

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, SUCH 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 (ROQ) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROQ) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: BM#17 RR SPIKE IN 18-INCH PINEAT -BL- STA. 169+35, ELEVATION: 45.01 FEET

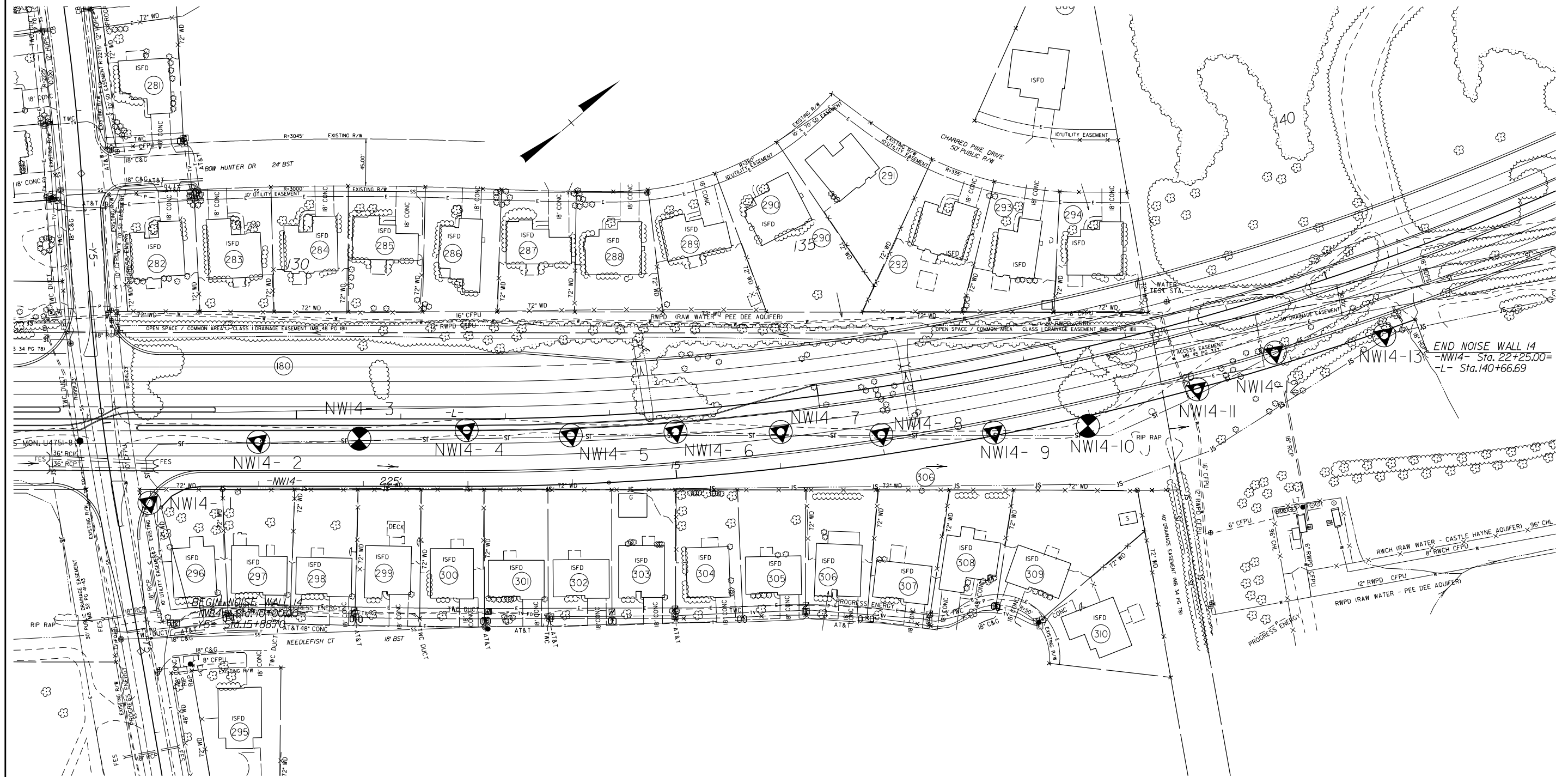
NOTES:

Area for handwritten notes and observations.

SITE PLAN

0 100 200

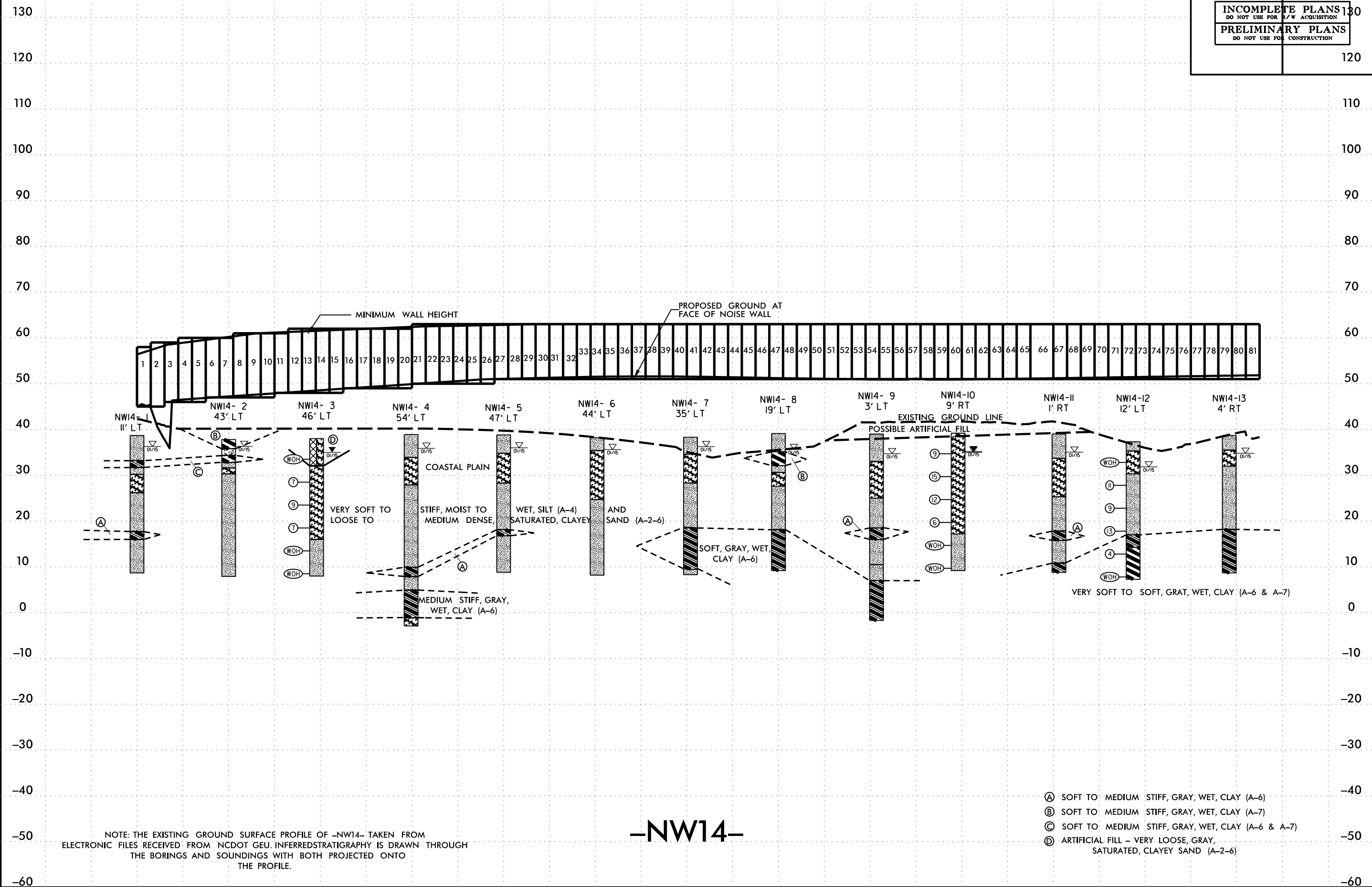
FEET



END NOISE WALL 14
 -NWI4- Sta. 22+25.00=
 -L- Sta. 140+66.69

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4751	4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTE: THE EXISTING GROUND SURFACE PROFILE OF -NW14- TAKEN FROM ELECTRONIC FILES RECEIVED FROM NCDOT GEU. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS AND SOUNDINGS WITH BOTH PROJECTED ONTO THE PROFILE.

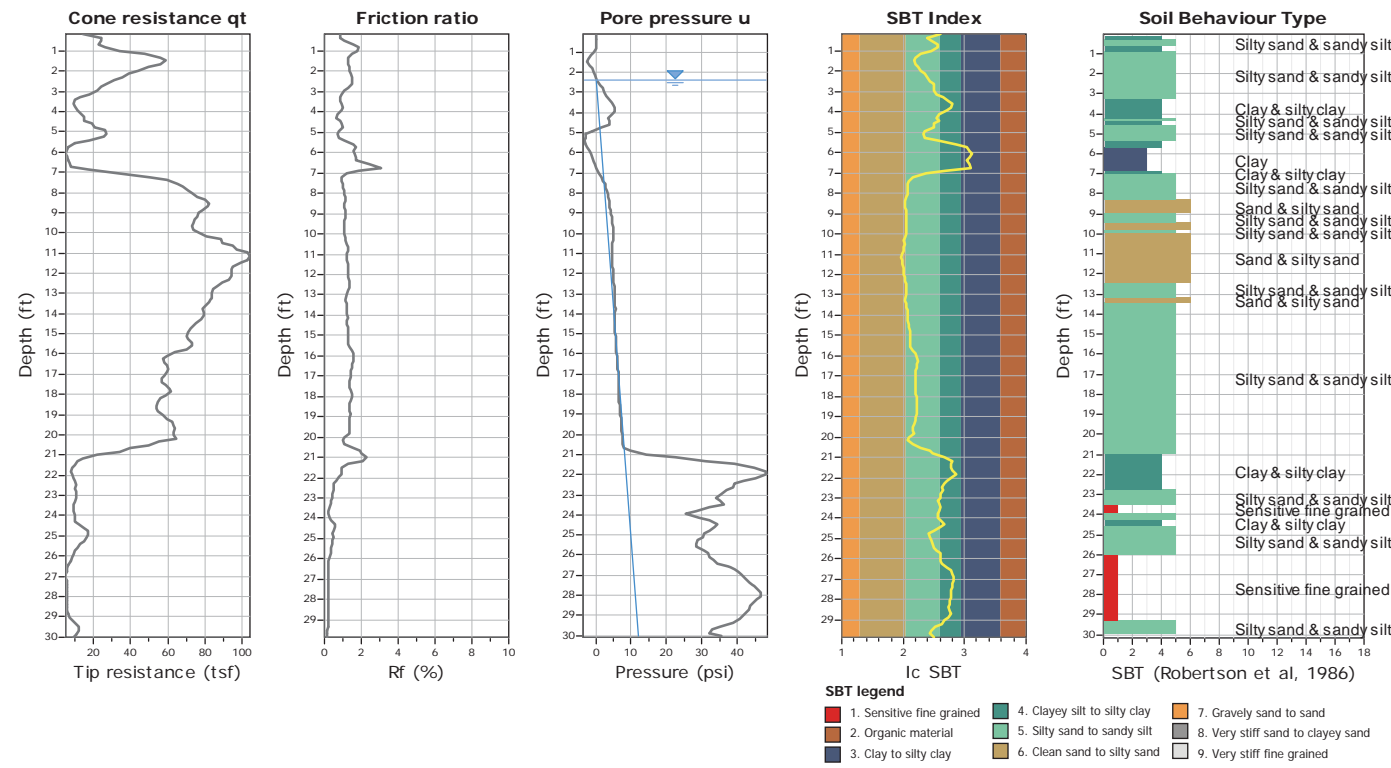
-NW14-

- (A) SOFT TO MEDIUM STIFF, GRAY, WET, CLAY (A-6)
- (B) SOFT TO MEDIUM STIFF, GRAY, WET, CLAY (A-7)
- (C) SOFT TO MEDIUM STIFF, GRAY, WET, CLAY (A-6 & A-7)
- (D) ARTIFICIAL FILL - VERY LOOSE, GRAY, SATURATED, CLAYEY SAND (A-2-6)

***APPENDIX A
CPT LOGS***

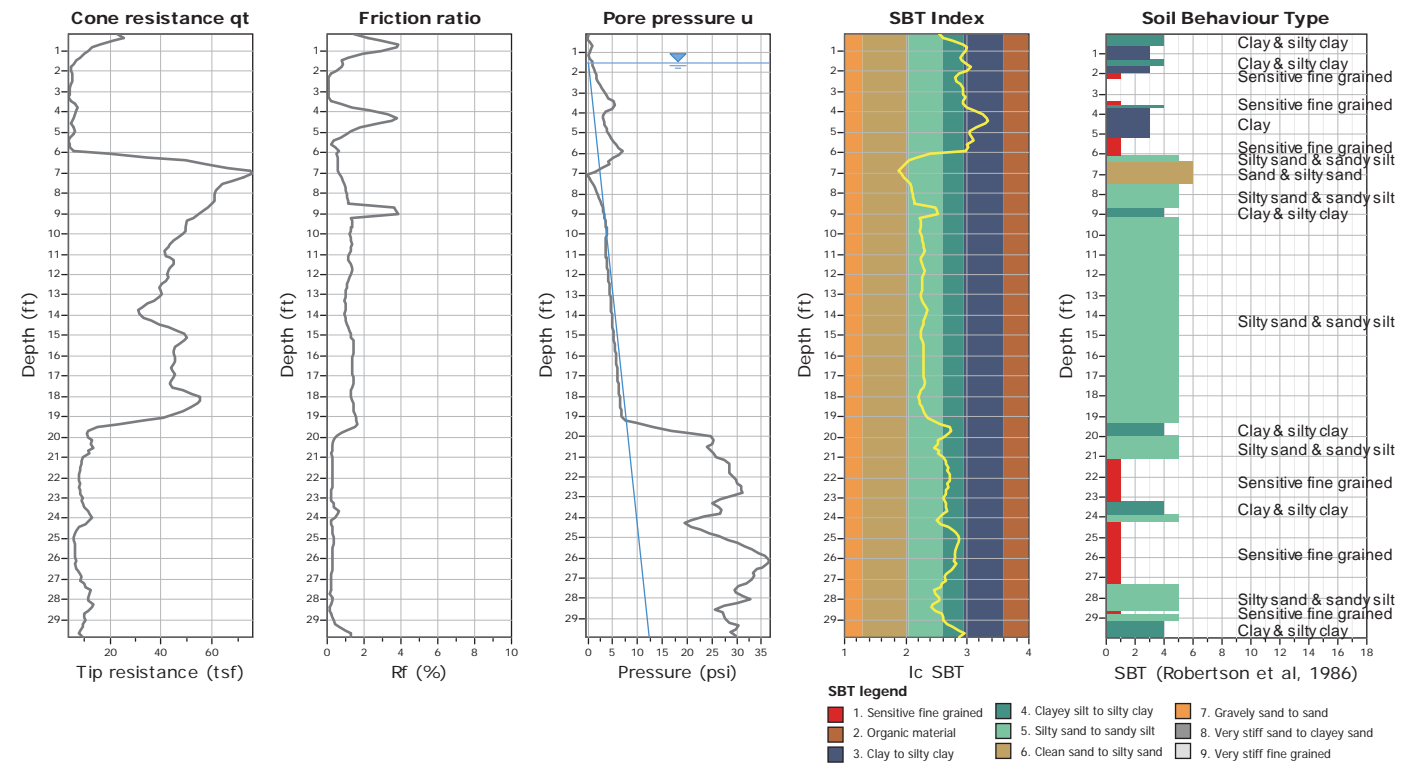
Project: U-4751 NOISE WALL 14
Location: NEW HANOVER CO.

CPT: NW14- 1
Total depth: 30.02 ft, Date: 1/7/2015
Cone Type: Hogentogler 10 Ton
Cone Operator: Mid-Atlantic Drilling



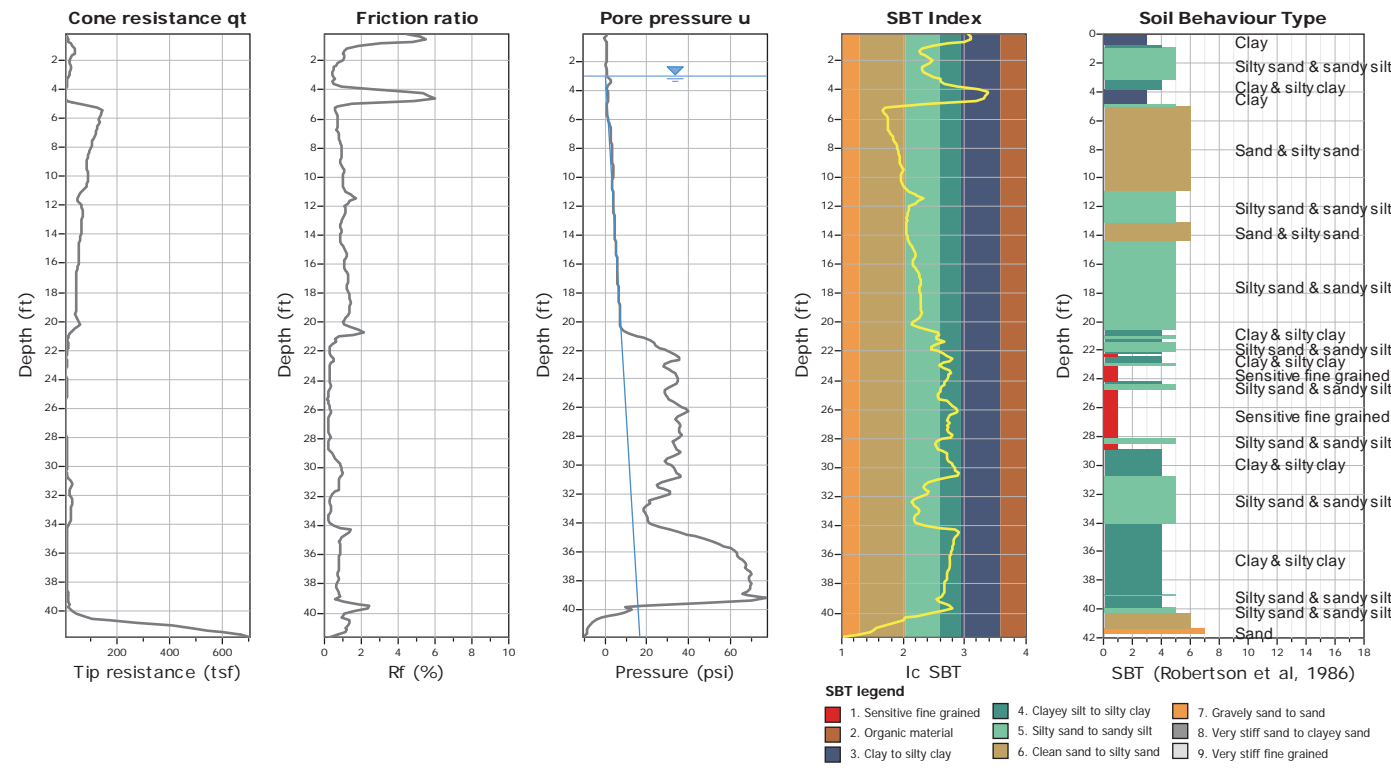
Project: U-4751 NOISE WALL 14
Location: NEW HANOVER CO.

CPT: NW14- 2
Total depth: 29.86 ft, Date: 1/7/2015
Cone Type: Hogentogler 10 Ton
Cone Operator: Mid-Atlantic Drilling



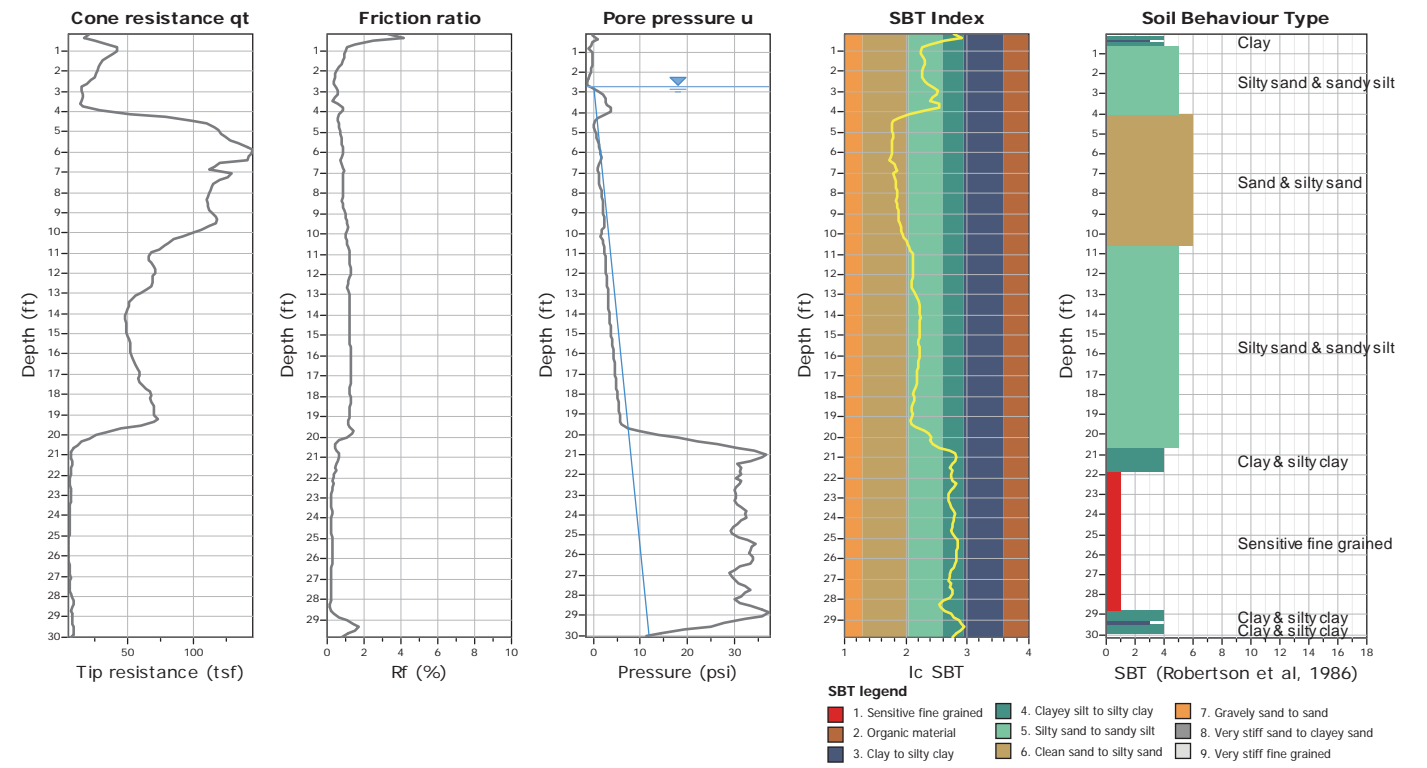
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 4
 Total depth: 41.83 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



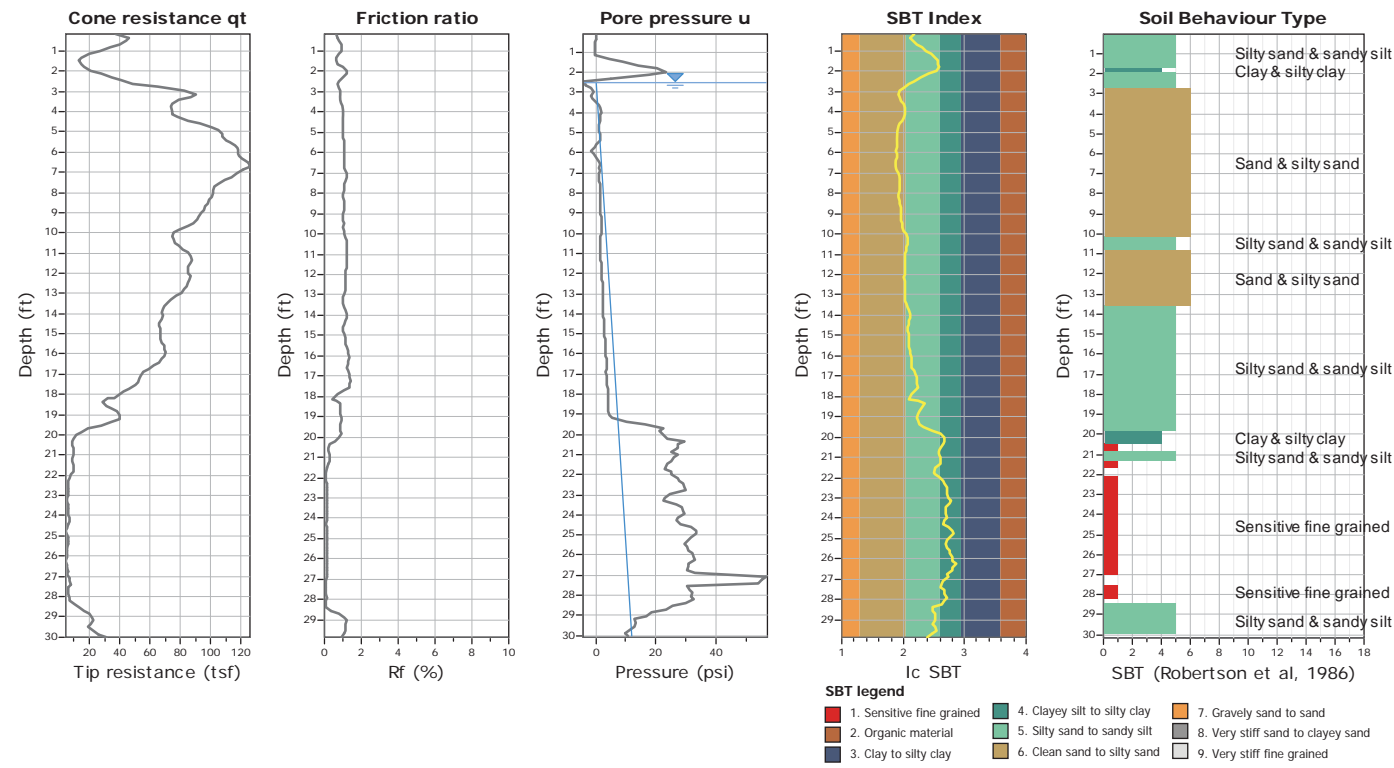
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 5
 Total depth: 30.02 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



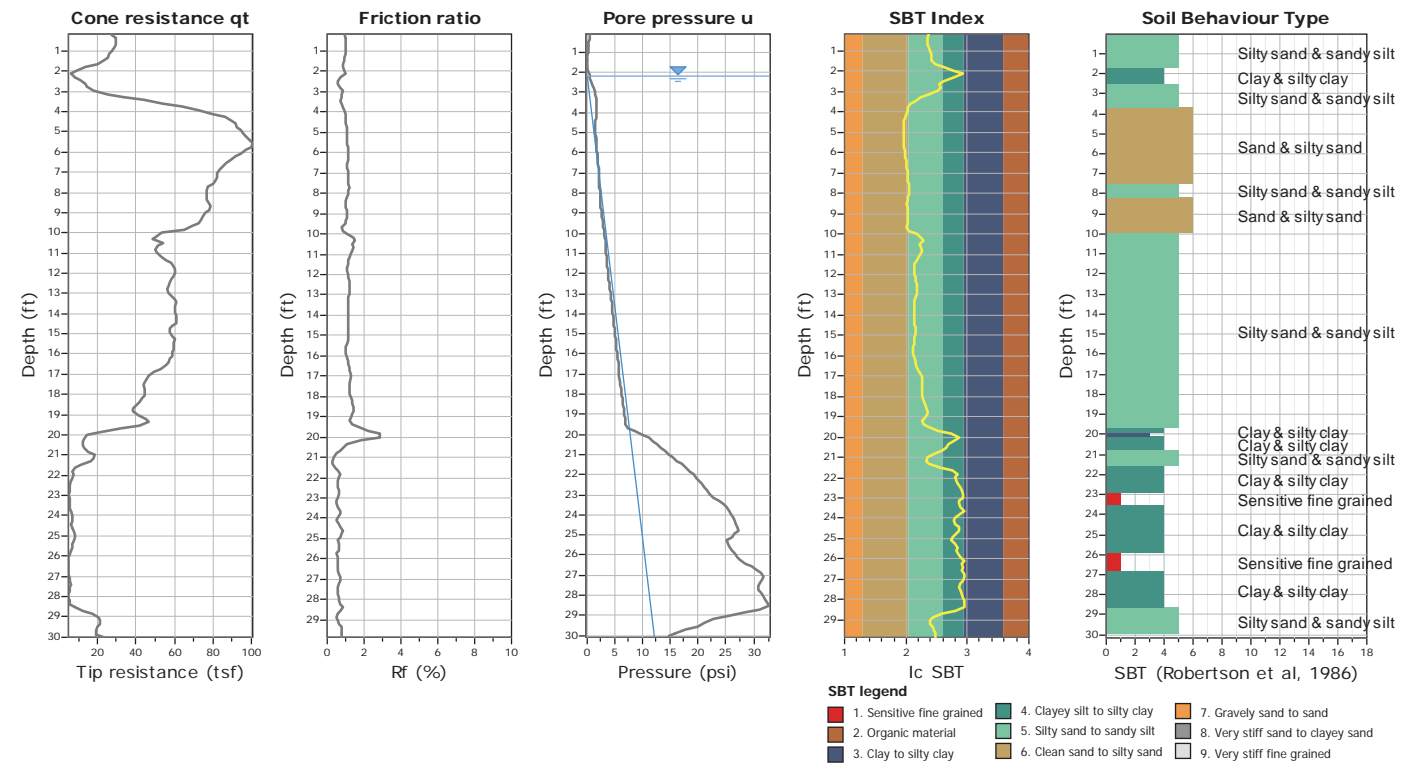
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 6
 Total depth: 30.02 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



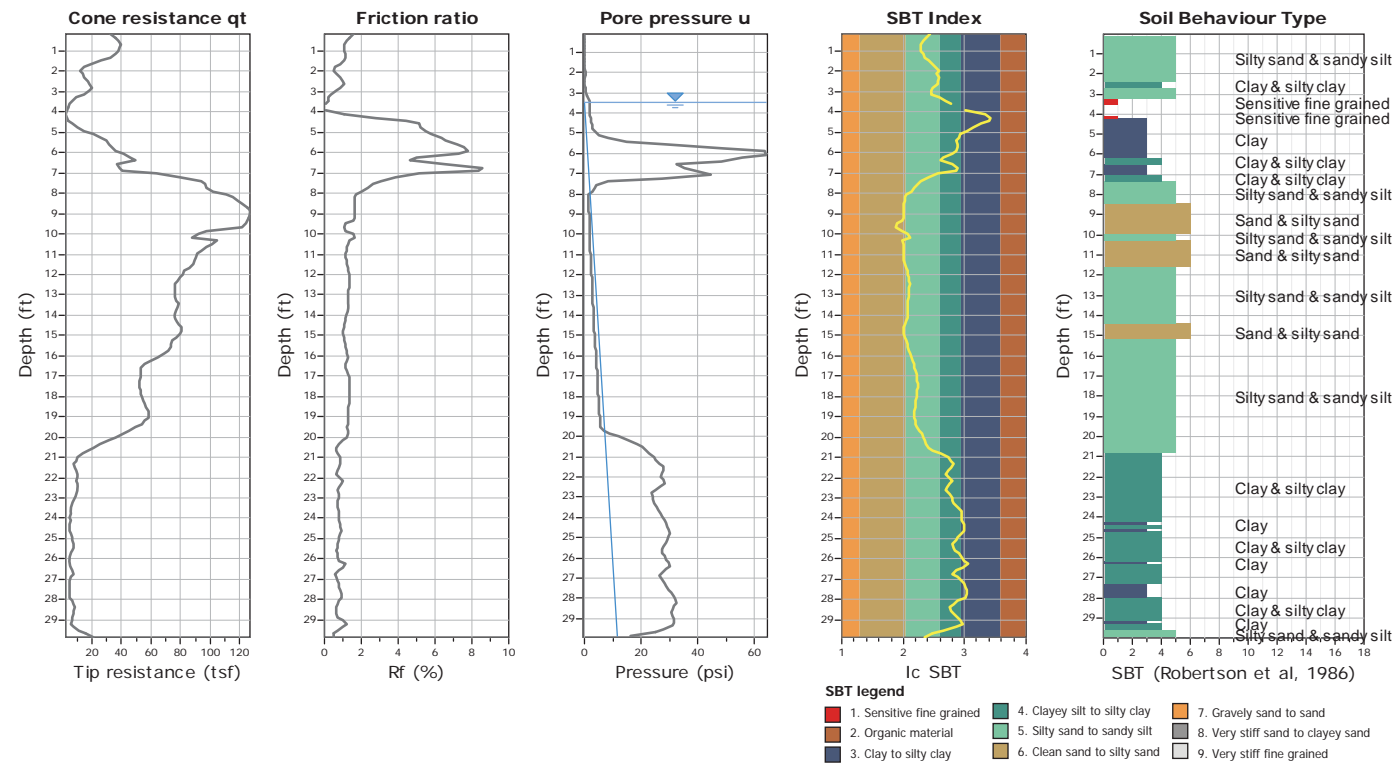
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 7
 Total depth: 30.02 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



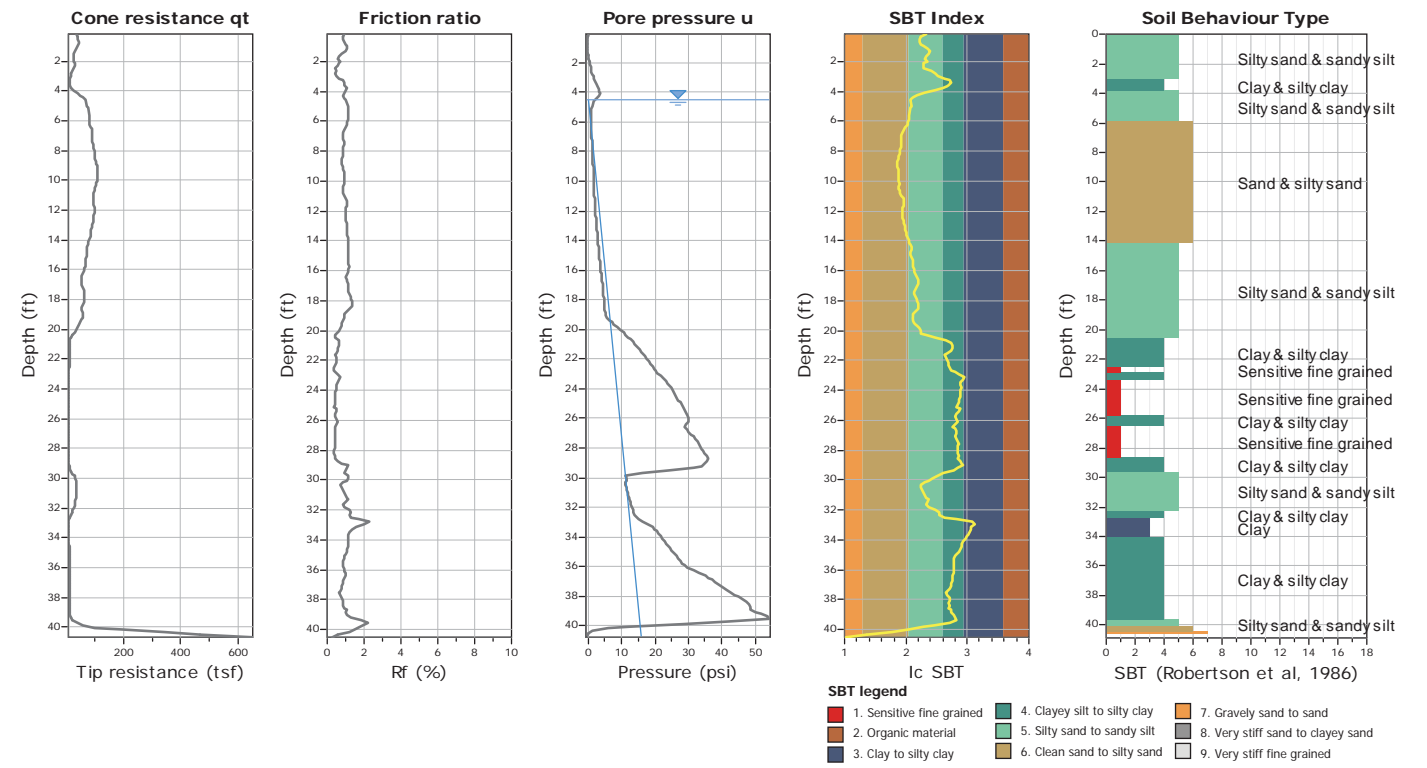
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 8
 Total depth: 29.86 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



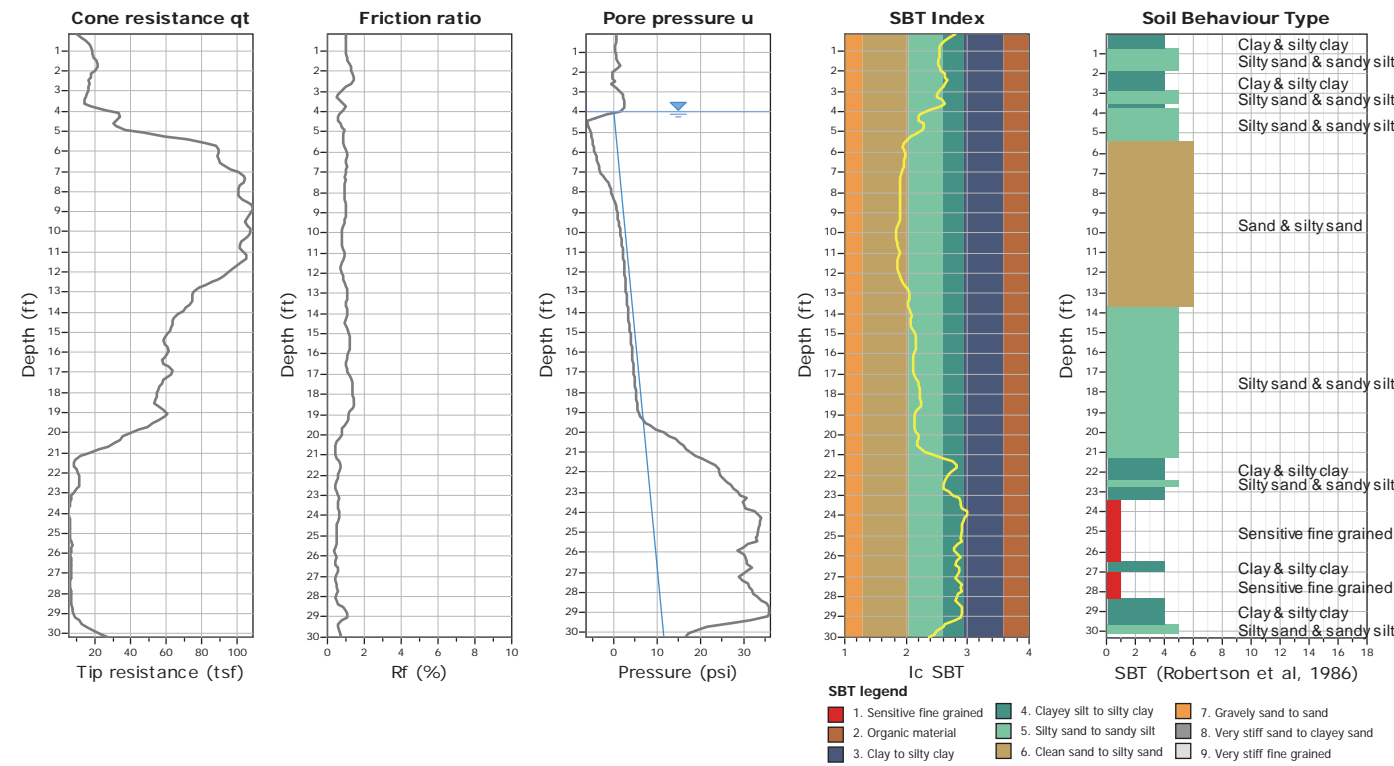
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14- 9
 Total depth: 40.68 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



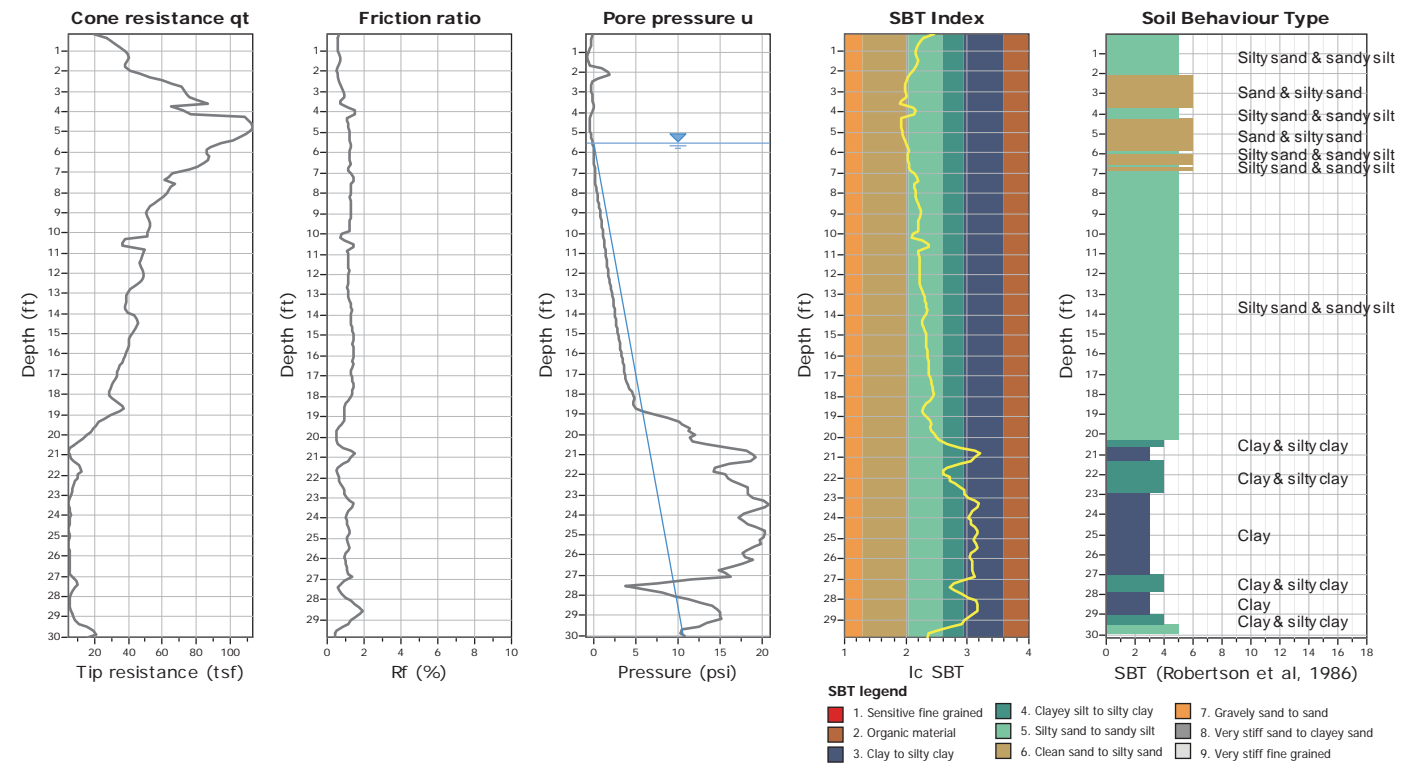
Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14-11
 Total depth: 30.18 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14-12
 Total depth: 30.02 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling



Project: U-4751 NOISE WALL 14
 Location: NEW HANOVER CO.

CPT: NW14-13
 Total depth: 30.02 ft, Date: 1/7/2015
 Cone Type: Hogentogler 10 Ton
 Cone Operator: Mid-Atlantic Drilling

