

**CONTRACT: ID: R-2514B**

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

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

|                 |                             |                    |              |
|-----------------|-----------------------------|--------------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SUBST NO.          | TOTAL SHEETS |
| N.C.            | R-2514B                     | 1                  | 151          |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION        |              |
| 34442.1.2       | NHF-17(7)                   | P.E.<br>RW & UTIL. |              |
|                 |                             |                    |              |
|                 |                             |                    |              |

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# ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34442.1.2 (R-2514B) F.A. PROJ. NHF-17(7)  
 COUNTY ONslow & JONES  
 PROJECT DESCRIPTION US 17 FROM SOUTH OF BELGRADE AT  
 SR 1330/SR 1439 TO NORTH OF MAYSVILLE

## INVENTORY

**CROSS SECTIONS**

| LINE  | STATION          | SHEET   |
|-------|------------------|---------|
| -L-   | 12+00 TO 13+50   | 48      |
| -L-   | 20+50 TO 22+50   | 49      |
| -L-   | 29+00 TO 32+00   | 50-51   |
| -L-   | 71+50 TO 77+50   | 52-54   |
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| -L-   | 181+00 TO 185+00 | 77-78   |
| -L-   | 197+00 TO 203+00 | 79-81   |
| -L-   | 207+00 TO 211+50 | 82-84   |
| -L-   | 217+00 TO 231+00 | 85-92   |
| -Y1-  | 13+00 TO 15+50   | 93-94   |
| -Y2-  | 12+50 TO 15+00   | 95-96   |
| -Y2A- | 11+00 TO 25+50   | 97-104  |
| -Y2A- | 30+00 TO 32+00   | 105-106 |
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| -Y2B- | 11+50 TO 12+50   | 113     |
| -Y2D- | 11+56 TO 25+50   | 114-121 |
| -Y2E- | 10+50 TO 14+50   | 122-124 |
| -Y3-  | 11+00 TO 11+50   | 125     |
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| -Y3E- | 10+50 TO 12+50   | 150-151 |

**APPENDIX**

CPT LOGS

DRAWN BY: C.P. TURNER

**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) 707-6650, 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  
J.R. SWARTLEY  
C.M. WRIKE  
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D.G. PINTER

CATLIN PERSONNEL  
MID-ATLANTIC PERSONNEL

INVESTIGATED BY J.L. STONE  
 CHECKED BY D.N. ARGENBRIGHT  
 SUBMITTED BY D.N. ARGENBRIGHT  
 DATE FEBRUARY 2014



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.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

## SUBSURFACE INVESTIGATION

### SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

| SOIL DESCRIPTION  | GRADATION  | ROCK DESCRIPTION   | TERMS AND DEFINITIONS  |
|---|--|--|--|
| SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (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:<br><i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i> | WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)<br>GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.<br><br>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.                         | HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 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:<br><br>WEATHERED ROCK (WR)<br>CRYSTALLINE ROCK (CR)<br>NON-CRYSTALLINE ROCK (NCR)<br>COASTAL PLAIN SEDIMENTARY ROCK (CP)  | ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.<br>ADJUFER - A WATER BEARING FORMATION OR STRATA.<br>ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.<br>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.<br>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.<br>CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.<br>COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.<br>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.<br>DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.<br>DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.<br>DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.<br>FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.<br>FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.<br>FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL.<br>FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.<br>FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.<br>JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.<br>LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.<br>LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.<br>MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.<br>PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.<br>RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.<br>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.<br>SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.<br>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 INTRODUCED ROCKS.<br>SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.<br>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 60 BLOWS.<br>STRATA CORE RECOVERY (SCREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.<br>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.<br>TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. |
| <b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>  | <b>MINERALOGICAL COMPOSITION</b>   | <b>WEATHERING</b>  |  |
| GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS  | MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.  | FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.<br>VERY SLIGHT (V SL.) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.<br>SLIGHT (SL.) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.<br>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.<br>MODERATELY SEVERE (MOD. SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i><br>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. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF</i><br>VERY SEVERE (V SEV.) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i><br>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. |  |
| GROUP CLASS. A-1, A-2, A-3, A-4, A-5, A-6, A-7  | <b>COMPRESSIBILITY</b><br>SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31<br>MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50<br>HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50   |  |  |
| SYMBOL  | <b>PERCENTAGE OF MATERIAL</b>  |  |  |
| % PASSING #10, #40, #200  | ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL<br>TRACE OF ORGANIC MATTER 2-3% 3-5% TRACE 1-10%<br>LITTLE ORGANIC MATTER 3-5% 5-12% LITTLE 10-25%<br>MODERATELY ORGANIC 5-10% 12-20% SOME 20-35%<br>HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE  |  |  |
| LIQUID LIMIT, PLASTIC INDEX, GROUP INDEX  | <b>GROUND WATER</b>  |  |  |
| USUAL TYPES OF MAJOR MATERIALS  | WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING<br>STATIC WATER LEVEL AFTER 24 HOURS<br>PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA<br>SPRING OR SEEP   |  |  |
| GEN. RATING AS A SUBGRADE   | <b>MISCELLANEOUS SYMBOLS</b>   |  |  |
| EXCELLENT TO GOOD, FAIR TO POOR, POOR, UNSUITABLE   | ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION<br>SOIL SYMBOL<br>ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT<br>INFERRED SOIL BOUNDARY<br>INFERRED ROCK LINE<br>ALLUVIAL SOIL BOUNDARY<br>DIP & DIP DIRECTION OF ROCK STRUCTURES   | SPT TEST BORING<br>AUGER BORING<br>CORE BORING<br>MONITORING WELL<br>PIEZOMETER INSTALLATION<br>SLOPE INDICATOR INSTALLATION<br>CONE PENETROMETER TEST<br>SOUNDING ROD   |  |
| PI OF A-7-5 SUBGROUP IS <= LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30   | <b>ABBREVIATIONS</b>   |  |  |
| <b>CONSISTENCY OR DENSITY</b>   | AR - AUGER REFUSAL<br>BT - BORING TERMINATED<br>CL - CLAY<br>CPT - CONE PENETRATION TEST<br>CSE - COARSE<br>DMT - DILATOMETER TEST<br>DPT - DYNAMIC PENETRATION TEST<br>F - FINE<br>FOSS - FOSSILIFEROUS<br>FRAC - FRACTURED, FRACTURES<br>FRAGS - FRAGMENTS<br>HL - HIGHLY  | SPT TEST BORING<br>AUGER BORING<br>CORE BORING<br>MONITORING WELL<br>PIEZOMETER INSTALLATION<br>SLOPE INDICATOR INSTALLATION<br>CONE PENETROMETER TEST<br>SOUNDING ROD   |  |
| PRIMARY SOIL TYPE, COMPACTNESS OR CONSISTENCY, RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE), RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )   | MEG - MEDIUM<br>MICA - MICACEOUS<br>MOD - MODERATELY<br>NP - NON PLASTIC<br>ORG - ORGANIC<br>PMT - PRESSUREMETER TEST<br>SAP - SAPROLITIC<br>SD - SAND, SANDY<br>SL - SILT, SILTY<br>SLI - SLIGHTLY<br>TCR - TRICONE REFUSAL<br>W - MOISTURE CONTENT<br>V - VERY   | VST - VANE SHEAR TEST<br>WEA - WEATHERED<br>W - UNIT WEIGHT<br>W <sub>d</sub> - DRY UNIT WEIGHT  |  |
| VERY LOOSE, MEDIUM DENSE, DENSE, VERY DENSE   | SOIL MOISTURE - CORRELATION OF TERMS   | <b>SAMPLE ABBREVIATIONS</b><br>S - BULK<br>SS - SPLIT SPOON<br>ST - SHELBY TUBE<br>RS - ROCK<br>RT - RECOMPACTED TRIAXIAL<br>CBR - CALIFORNIA BEARING RATIO  |  |
| VERY SOFT, SOFT, MEDIUM STIFF, STIFF, VERY STIFF, HARD  | SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION   |  |  |
| TEXTURE OR GRAIN SIZE   | LL - LIQUID LIMIT<br>PL - PLASTIC LIMIT<br>OM - OPTIMUM MOISTURE<br>SL - SHRINKAGE LIMIT   |  |  |
| U.S. STD. SIEVE SIZE OPENING (MM), BOULDER (BLOR), COBBLE (COB), GRAVEL (GR), COARSE SAND (CSE, SD), FINE SAND (F SD), SILT (SL), CLAY (CL)   | <b>PLASTICITY</b>  |  |  |
| GRAIN SIZE  | NONPLASTIC, LOW PLASTICITY, MED. PLASTICITY, HIGH PLASTICITY   |  |  |
| SOIL MOISTURE - CORRELATION OF TERMS  | <b>COLOR</b>   |  |  |
| DRILL UNITS, ADVANCING TOOLS, HAMMER TYPE, CORE SIZE, HAND TOOLS  | 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.   |  |  |
| DRILL UNITS: MOBILE B, BK-51, CME-45B, CME-550, PORTABLE HDIST  | <b>EQUIPMENT USED ON SUBJECT PROJECT</b>   | <b>INDURATION</b>  |  |
| 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   | FRACURE SPACING, BEDDING, INDURATION   | FRACURE SPACING: TERM, SPACING<br>BEDDING: TERM, THICKNESS<br>INDURATION: FRIABLE, MODERATELY INDURATED, INDURATED, EXTREMELY INDURATED  |  |
| MOBILE B, BK-51, CME-45B, CME-550, PORTABLE HDIST   | FRACURE SPACING: VERY WIDE, WIDE, MODERATELY CLOSE, CLOSE, VERY CLOSE<br>BEDDING: VERY THICKLY BEDDED, THICKLY BEDDED, THINLY BEDDED, VERY THINLY BEDDED, THICKLY LAMINATED, THINLY LAMINATED  | INDURATION: FRIABLE, MODERATELY INDURATED, INDURATED, EXTREMELY INDURATED  |  |
|   | INDURATION: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.<br>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.<br>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.<br>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS. |  |  |
|   | <b>NOTES:</b><br>UNDIVIDED C.P. = UNDIVIDED COASTAL PLAIN<br><br>APPROXIMATE LIMIT OF ORGANIC SOILS<br><br>VST = VANE SHEAR TEST   |  |  |

09/08/19

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

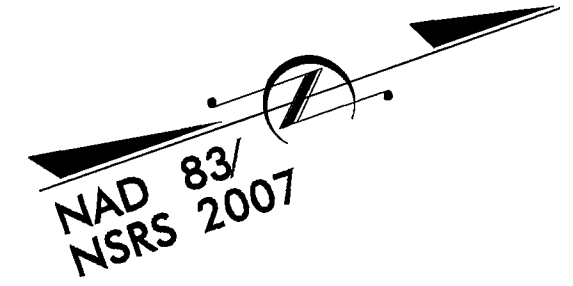
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

|                 |                             |             |              |
|-----------------|-----------------------------|-------------|--------------|
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
| N.C.            | R-2514B                     | 2A          | 151          |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 34442.1.2       | NHF-17(7)                   | PE          |              |
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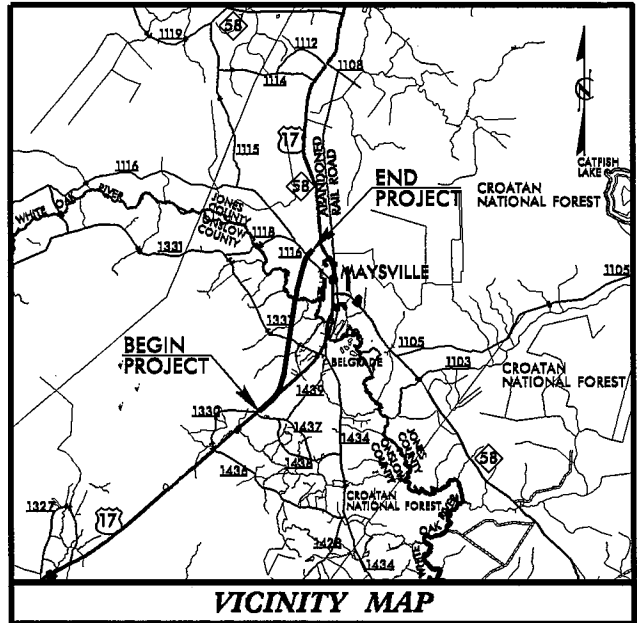
**ONSLOW & JONES COUNTIES**

LOCATION: US 17 FROM SOUTH OF BELGRADE AT  
SR 1330/SR 1439 TO NORTH OF MAYSVILLE

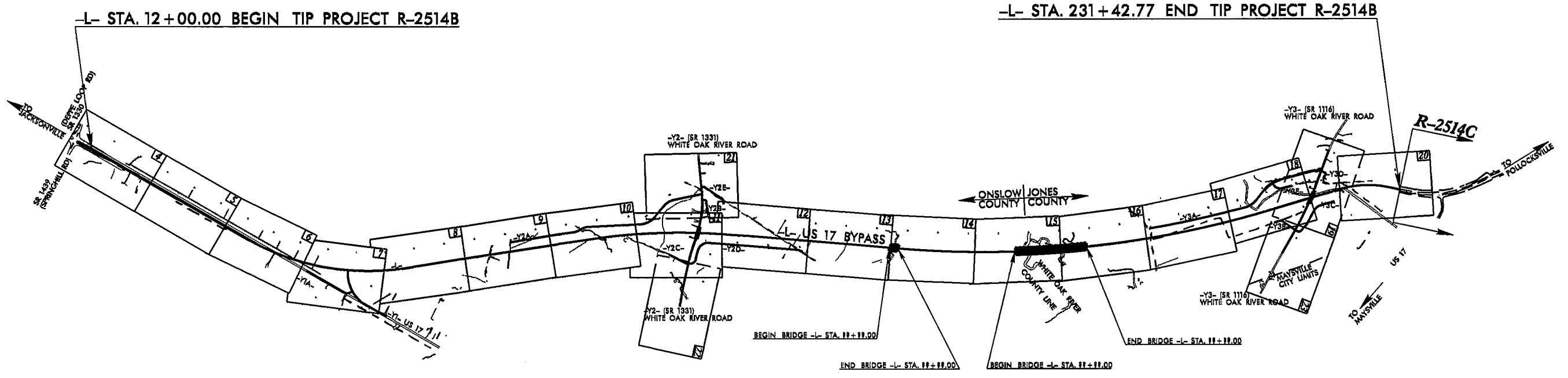
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES



**TIP PROJECT: R-2514B**

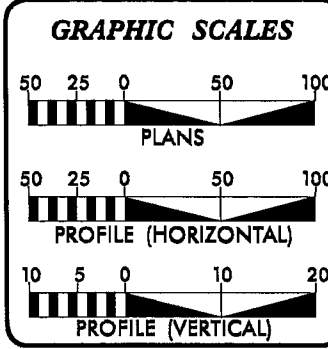


VICINITY MAP



\*DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVE K FACTORS AND STOPPING SIGHT DISTANCE (-Y2- & -Y3-)  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
THIS IS A FULL CONTROLLED-ACCESS PROJECT WITH ACCESS AS SHOWN ON PLANS.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD

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



**DESIGN DATA**

|                |              |
|----------------|--------------|
| ADT 2015 =     | 6800 vpd     |
| ADT 2035 =     | 11400 vpd    |
| DHV =          | 7 %          |
| D =            | 65 %         |
| T =            | 7 % *        |
| V =            | 70 MPH       |
| * TTST =       | 4% DUAL = 3% |
| FUNC CLASS =   | FREWAY       |
| STATEWIDE TIER |              |

**PROJECT LENGTH**

|   |             |
|---|-------------|
| LENGTH ROADWAY OF TIP PROJECT R-2514B =   | ???? MILES  |
| LENGTH STRUCTURE OF TIP PROJECT R-2514B = | ???? MILES  |
| TOTAL LENGTH OF TIP PROJECT R-2514B =     | 4.156 MILES |

Prepared In the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
DECEMBER 20, 2013

LETTING DATE:  
JULY 17, 2018

JAMES A. SPEER, PE  
PROJECT ENGINEER

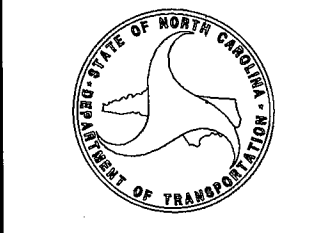
JOHN LANSFORD, PE  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



18-JUL-2013 14:30  
L:\ERO\Greenville\_Investigation\TIP\R2514B\_GEO\_RDWY\CADD\_GEO\TECH\Site&Sub\R2514B\_GEO\_RDY\_TITLE.dgn  
cbturner AT GEG25546

**CONTRACT:**



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

February 28, 2014

STATE PROJECT: 34442.1.3 (R-2514B)  
F.A. PROJECT: NHF-17(7)  
COUNTY: Jones  
DESCRIPTION: US 17 from South of Belgrade at SR1330/SR 1439 to North of Maysville

SUBJECT: Geotechnical Inventory Report

**Project Description**

This project begins south of Maysville in Onslow County, just north of the existing US 17/ SR 1330-SR1437 intersection and extends north for approximately 4.2 miles. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in August of 2012 through September 2012. CPT, SPT, and hand auger borings were completed at various offsets along the project corridor. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignments were investigated. Subsurface profiles and selected cross sections of these alignments are included in this report.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 12+00 to 231+42   |
| -Y1-        | 10+00 to 17+25    |
| -Y1A-       | 10+00 to 18+46    |
| -Y2-        | 12+00 to 32+00    |
| -Y2A-       | 10+00 to 43+00    |
| -Y2B-       | 10+00 to 12+75    |
| -Y2C-       | 10+00 to 13+51    |
| -Y2D-       | 10+00 to 30+62    |

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -Y2E-       | 10+00 to 14+65    |
| -Y3-        | 10+50 to 27+50    |
| -Y3A-       | 10+00 to 40+35    |
| -Y3B-       | 10+00 to 13+10    |
| -Y3C-       | 10+00 to 18+70    |
| -Y3D-       | 10+00 to 12+68    |
| -Y3E-       | 10+00 to 13+00    |

**Areas of Special Geotechnical Interest**

1) The following sections were found to exhibit seasonal high ground water.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 12+00 to 45+00    |
| -L-         | 55+00 to 80+00    |
| -L-         | 85+00 to 91+00    |
| -L-         | 97+00 to 168+00   |
| -L-         | 209+00 to 231+42  |
| -Y1-        | 10+00 to 17+25    |
| -Y1A-       | 10+00 to 18+46    |
| -Y2-        | 12+00 to 32+00    |
| -Y2A-       | 10+00 to 21+50    |
| -Y2A-       | 25+00 to 35+00    |
| -Y2A-       | 37+00 to 43+00    |
| -Y2B-       | 10+00 to 12+75    |
| -Y2C-       | 10+00 to 13+51    |
| -Y2D-       | 10+00 to 12+00    |
| -Y2D-       | 19+50 to 30+62    |
| -Y2E-       | 10+00 to 14+65    |
| -Y3-        | 14+00 to 27+50    |
| -Y3A-       | 10+00 to 40+35    |
| -Y3C-       | 12+00 to 18+70    |

2) All but the following sections contain cohesive soils which have the potential to cause embankment/subgrade and or slope stability problems during construction.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 97+75 to 103+25   |
| -L-         | 144+10 to 151+10  |
| -Y2-        | 25+10 to 32+00    |
| -Y2A-       | 25+40 to 33+40    |

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

TELEPHONE: 919-707-6850  
FAX: 919-250-4237

WEBSITE: WWW.DOH.DOT.STATE.NC.US

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



| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -Y2C-       | 10+00 to 13+51    |
| -Y2D-       | 10+00 to 11+70    |
| -Y2D-       | 25+10 to 30+62    |

3) The following sections contain organic soils that have the potential to cause embankment/subgrade and or slope stability problems during construction.

| <u>Line</u> | <u>Station(±)</u> |
|-------------|-------------------|
| -L-         | 71+71 to 77+29    |
| -L-         | 99+05 to 101+26   |
| -L-         | 128+30 to 131+60  |
| -L-         | 147+27 to 149+26  |
| -Y2A-       | 30+20 to 31+95    |

**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 5± to 46± feet above sea level.

Surficial soils in this area are generally classified as undivided coastal plain sediments and are underlain by formational soils belonging to the Belgrade and River Bend Formation.

**Ground Water**

Ground water data was collected from August 2012 through September 2012. Ground water elevations ranged from 11± to 43± feet above sea level.

**Soils**

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

Surficial alluvial organic soils were also identified. These soils were typically 1± to 5± feet thick and composed of very soft muck, very soft silts (A-5), along with very loose sands (A-2-4). Lab analysis of these soils returned organic percentages ranging from 2% to 19% and moisture contents ranging from 16% to 60%.

Soils identified as undivided coastal plain are composed of 4± to 25± feet of very loose to dense sand (A-2-6, A-2-4, A-3, A-1-b), with 2± to 9± feet of soft to stiff sandy clay (A-6, A-7-6) and sandy silt (A-4). Moisture samples taken within these cohesive units returned a natural moisture content ranging from 21% to 23%. Vane shear tests completed within these soils show shear strength values ranging from 753 psf to 4343 psf.

Formational soils belonging to the Belgrade Formation and the River Bend Formation were also encountered. The Belgrade Formation was found to be 12± feet of very loose to medium dense sand (A-2-4) and 3± feet of very stiff sandy silt (A-4); whereas the underlying River Bend Formation was composed of 11± feet of soft limestone underlain by dense sand (A-2-4).

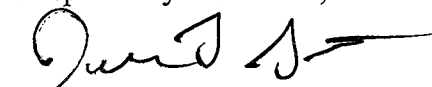
Roadway embankment soils were found along the existing US 17 corridor and associated intersecting roads. Where encountered it was composed of 1± to 3± feet of loose to medium dense sand (A-2-4) with 2± feet of medium stiff sandy clay (A-6) and sandy silt (A-4).

**Undisturbed Samples**

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

| <u>Sample No.</u> | <u>Station</u>      | <u>Depth</u> | <u>Test</u>   |
|-------------------|---------------------|--------------|---------------|
| ST-1              | -L- STA. 60+05, CL  | 2.0-4.0      | Consolidation |
| ST-2              | -L- STA. 90+05, CL  | 3.0-5.0      | Consolidation |
| ST-3              | -L- STA. 130+05, CL | 8.0-10.0     | Consolidation |
| ST-4              | -L- STA. 220+05, CL | 6.5-8.5      | Consolidation |

Respectfully Submitted,



Joseph L. Stone, L.G.  
Project Engineering Geologist

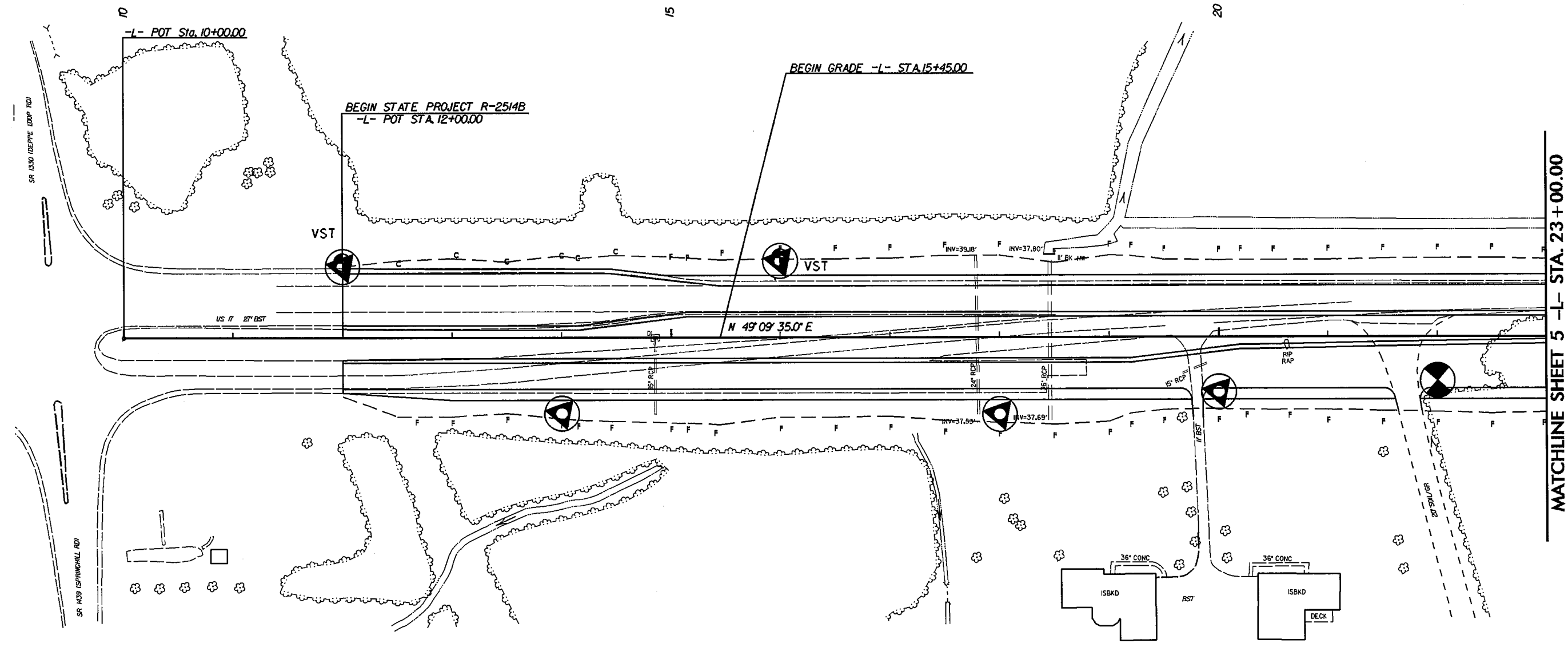
8/17/09

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REVISIONS



|  |                       |
|--|-----------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>4</b> |
| RW SHEET NO.   |                       |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER   |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                       |

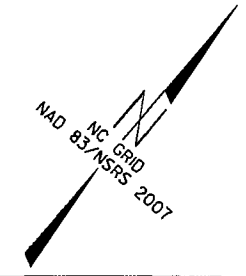


MATCHLINE SHEET 5 -L- STA. 23+00.00

8/17/99

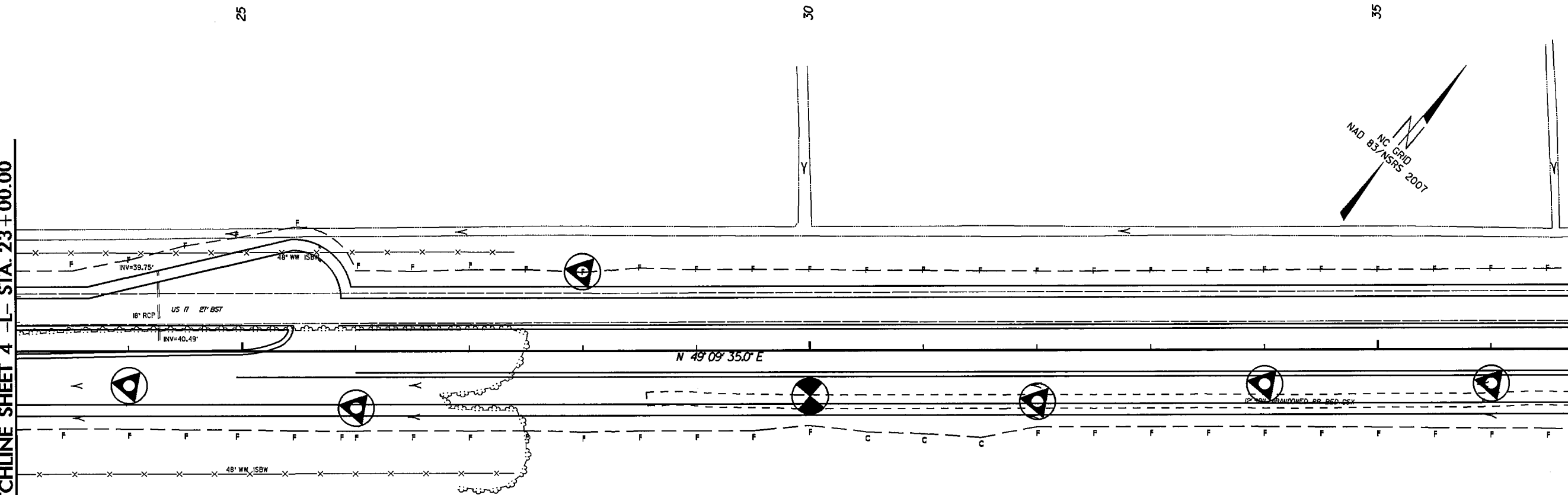
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| PROJECT REFERENCE NO.                          |  | SHEET NO.  |  |
| R-2514B  |  | 5  |  |
| RW SHEET NO.                                   |  |  |  |
| ROADWAY DESIGN ENGINEER                        |  | HYDRAULICS ENGINEER                              |  |
| INCOMPLETE PLANS<br>DO NOT USE FOR ACQUISITION |  | PRELIMINARY PLANS<br>DO NOT USE FOR CONSTRUCTION |  |
|  |  |  |  |



MATCHLINE SHEET 4 -L- STA. 23+00.00

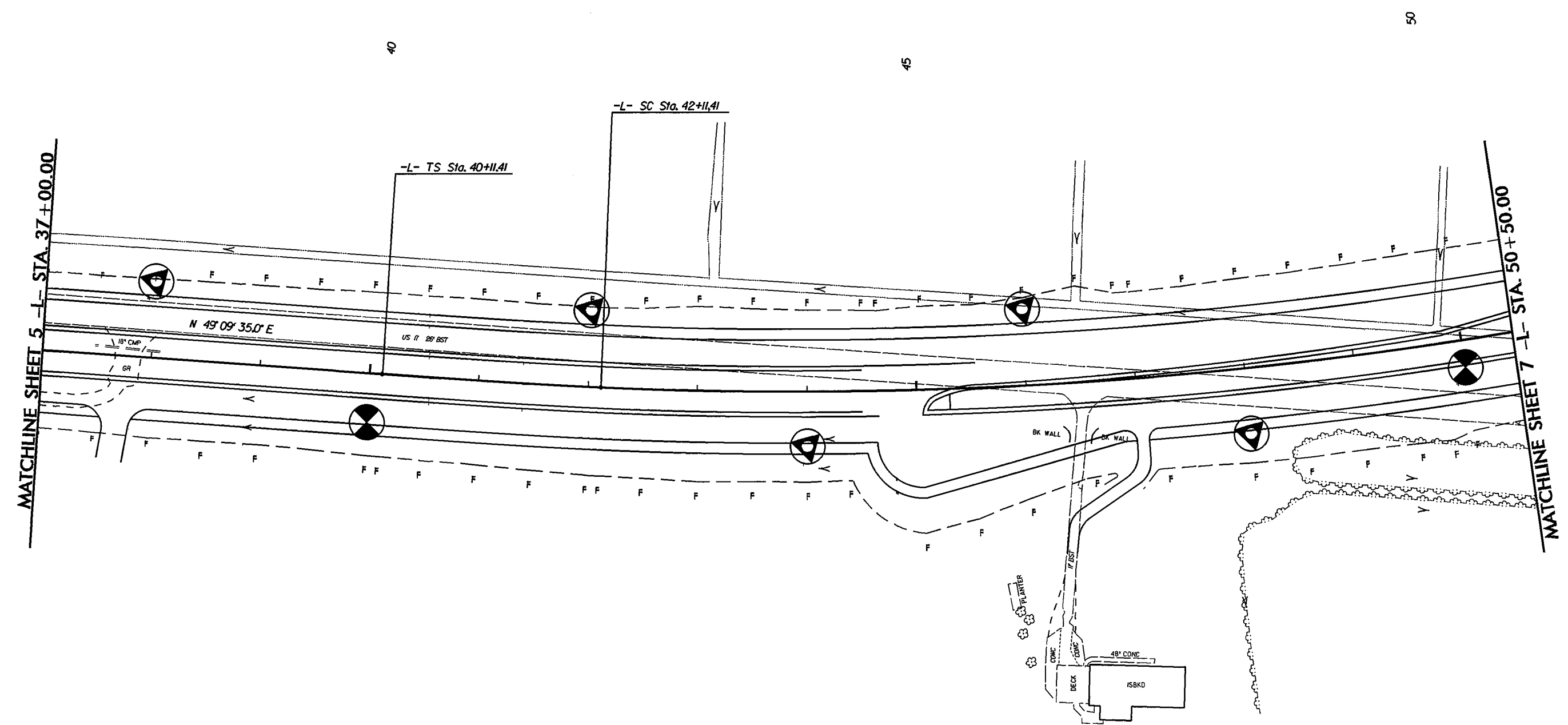
MATCHLINE SHEET 6 -L- STA. 37+00.00



REVISIONS

CONCRETE ISLAND

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| PROJECT REFERENCE NO.<br>R-2514B   | SHEET NO.<br>6      |
| RAW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR R/W ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |



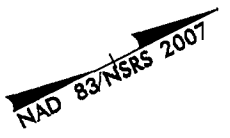
-L-

|                                 |                                     |                                 |
|---------------------------------|-------------------------------------|---------------------------------|
| Pls Sta 41+44.75                | PI Sta 55+14.14                     | Pls Sta 67+96.88                |
| $\theta_s = 1^\circ 25' 56.6''$ | $\Delta = 36^\circ 04' 44.8''$ (LT) | $\theta_s = 1^\circ 25' 56.6''$ |
| $L_s = 200.00'$                 | $D = 1^\circ 25' 56.6''$            | $L_s = 200.00'$                 |
| $LT = 133.34'$                  | $L = 2,518.80'$                     | $LT = 133.34'$                  |
| $ST = 66.67'$                   | $T = 1,302.73'$                     | $ST = 66.67'$                   |
|                                 | $R = 4,000.00'$                     |                                 |
|                                 | $SE = 0.04$                         |                                 |

CONCRETE ISLAND  
 PROP. PAVEMENT REMOVAL

REVISIONS  
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|  |                     |
|--|---------------------|
| PROJECT REFERENCE NO.<br>R-2514B   | SHEET NO.<br>7      |
| RAW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |



|                        |                   |
|------------------------|-------------------|
| -L-                    |                   |
| PI Sta 55+14.14        | PIs Sta 67+96.88  |
| Δ = 36° 04' 44.8" (LT) | Θs = 1° 25' 56.6" |
| D = 1° 25' 56.6"       | Ls = 200.00'      |
| L = 2,518.80'          | LT = 133.34'      |
| T = 1,302.73'          | ST = 66.67'       |
| R = 4,000.00'          |                   |
| SE = 0.04              |                   |

-L- POC STA. 58+77.28  
 -YI- POT Sta. 10+00.00

MATCHLINE SHEET 6 -L- STA. 50+50.00

MATCHLINE SHEET 8 -L- STA. 63+50.00

-YIA- POT Sta. 18+46.89

BEGIN WIDENING  
 AND RESURFACING  
 -YIA- POT Sta. 16+40.00  
 (C/L Cul-de-Sac at 17+00.00 -YIA-)

-YI- PC Sta. 10+17.20

S 9° 52' 02.7" E  
 -YIA- PC Sta. 10+39.01

-YI- POC Sta. 13+56.81  
 -YIA- POT Sta. 10+00.00

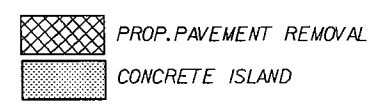
END GRADE  
 BEGIN RESURFACING  
 -YIA- POT Sta. 13+50.00

|                        |                        |
|------------------------|------------------------|
| -YIA-                  | -YI-                   |
| PI Sta 10+95.62        | PI Sta 13+82.20        |
| Δ = 59° 01' 37.8" (RT) | Δ = 64° 46' 49.0" (LT) |
| D = 57° 17' 44.8"      | D = 9° 57' 52.1"       |
| L = 103.02'            | L = 650.45'            |
| T = 56.61'             | T = 365.00'            |
| R = 100.00'            | R = 575.00'            |
| SE = 0.02              | SE = 0.06              |



-YIA- PT Sta. 11+42.04

-YI- PT Sta. 16+67.64  
 END CONST.  
 -YI- POT Sta. 17+25.00



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| PROJECT REFERENCE NO.<br>R-2514B   | SHEET NO.<br>8      |
| RAW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

NAD 83/NSRS 2007

-L-

|                                       |                                   |
|---------------------------------------|-----------------------------------|
| PI Sta 55+14.14                       | PIs Sta 67+96.88                  |
| $\Delta = 36^{\circ} 04' 44.8''$ (LT) | $\Theta_s = 1^{\circ} 25' 56.6''$ |
| D = 125' 56.6"                        | Ls = 200.00'                      |
| L = 2,518.80'                         | LT = 133.34'                      |
| T = 1,302.73'                         | ST = 66.67'                       |
| R = 4,000.00'                         |                                   |
| SE = 0.04                             |                                   |

65

70

75

MATCHLINE SHEET 7 -L- STA. 63+50.00

MATCHLINE SHEET 9 -L- STA. 77+50.00

-L- CS Sta. 67+30.21

-L- ST Sta. 69+30.21

APPROXIMATE LIMIT OF ORGANIC SOILS

N 10° 12' 57.0" E

APPROXIMATE LIMIT OF ORGANIC SOILS

CONCRETE ISLAND

REVISIONS

8/17/99

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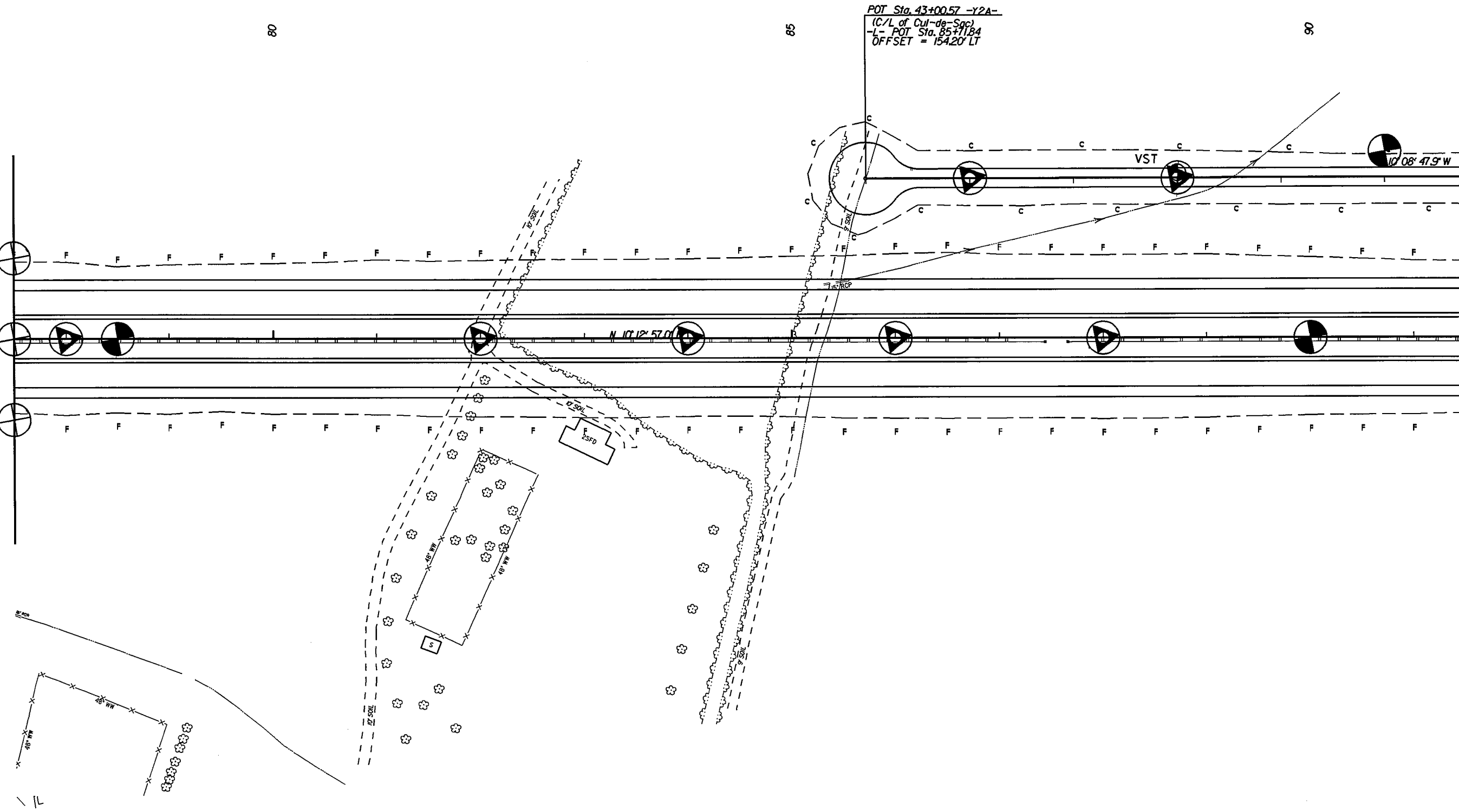
REVISIONS

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|--|---------------------|
| PROJECT REFERENCE NO.<br>R-2514B   | SHEET NO.<br>9      |
| RW SHEET NO.   |                     |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

NAD 83/NSRS 2007

MATCHLINE SHEET 8 -L- STA. 77 +50.00

MATCHLINE SHEET 10 -L- STA. 91 +50.00  
MATCHLINE SHEET 10 -Y2A- STA. 37 +25.00



8/17/99

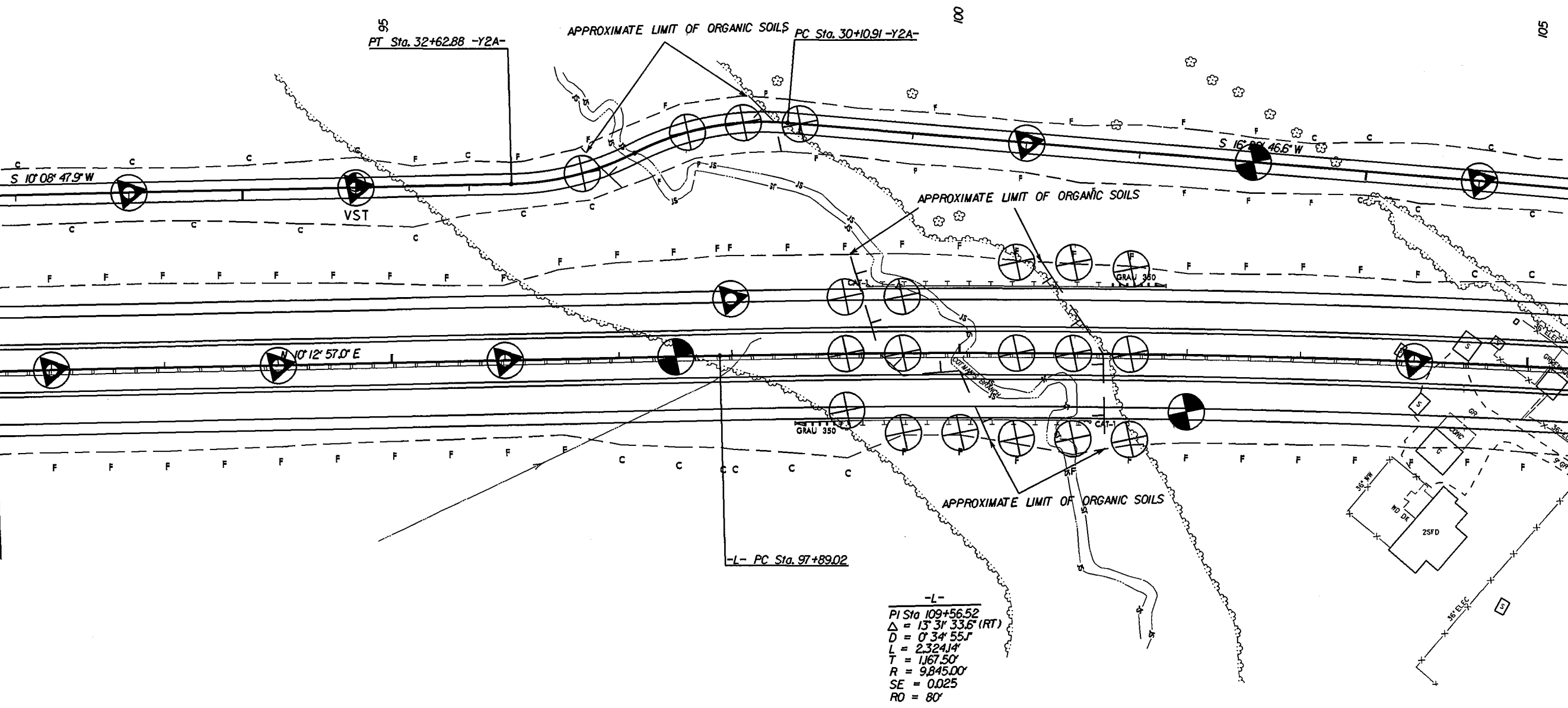
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|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.                         | SHEET NO.           |
| R-2514B                                       | 10                  |
| RW SHEET NO.                                  |                     |
| ROADWAY DESIGN ENGINEER                       | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b>                       |                     |
| <small>DO NOT USE FOR A/W ACQUISITION</small> |                     |
| <b>PRELIMINARY PLANS</b>                      |                     |
| <small>DO NOT USE FOR CONSTRUCTION</small>    |                     |

NAD 83/NSRS 2007

|                                      |                                      |
|--------------------------------------|--------------------------------------|
| -Y2A-                                |                                      |
| PI Sta. 32+07.62                     | PI Sta. 30+82.54                     |
| $\Delta = 25^{\circ} 46' 25.1" (RT)$ | $\Delta = 31^{\circ} 58' 23.8" (LT)$ |
| $D = 22^{\circ} 55' 05.9"$           | $D = 22^{\circ} 55' 05.9"$           |
| $L = 112.46'$                        | $L = 139.51'$                        |
| $T = 57.20'$                         | $T = 71.62'$                         |
| $R = 250.00'$                        | $R = 250.00'$                        |
| $SE = .04$                           | $SE = .04$                           |
| $RO = 60'$                           | $RO = 60'$                           |

MATCHLINE SHEET 9  
 -L- STA. 91+50.00  
 -Y2A- STA. 37+25.00  
 MATCHLINE SHEET 11  
 -L- STA. 105+50.00  
 -Y2A- STA. 23+00.00



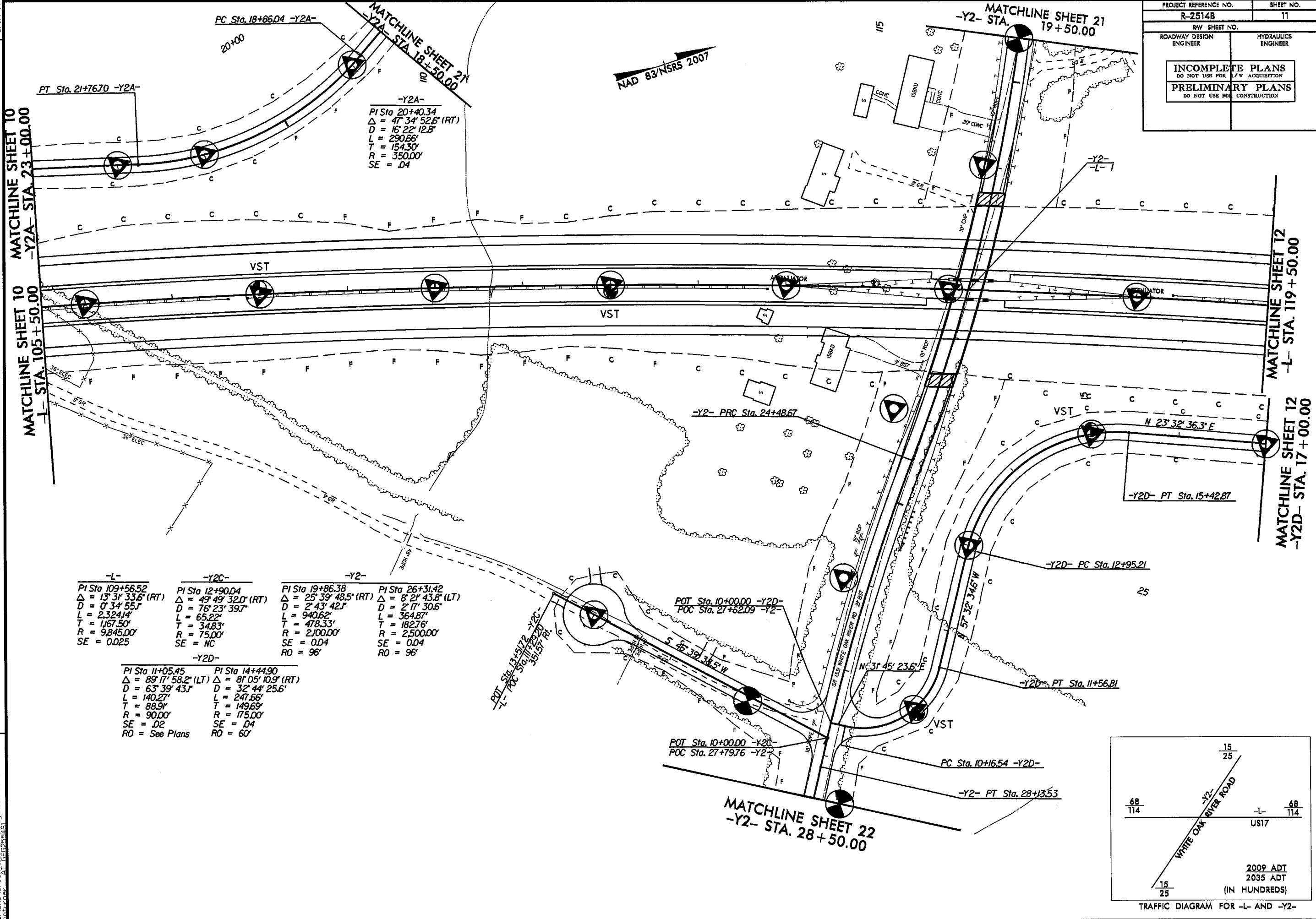
|                                      |  |
|--------------------------------------|--|
| -L-                                  |  |
| PI Sta. 109+56.52                    |  |
| $\Delta = 13^{\circ} 31' 33.6" (RT)$ |  |
| $D = 0^{\circ} 34' 55.1"$            |  |
| $L = 2,324.14'$                      |  |
| $T = 1,167.50'$                      |  |
| $R = 9,845.00'$                      |  |
| $SE = 0.025$                         |  |
| $RO = 80'$                           |  |

REVISIONS

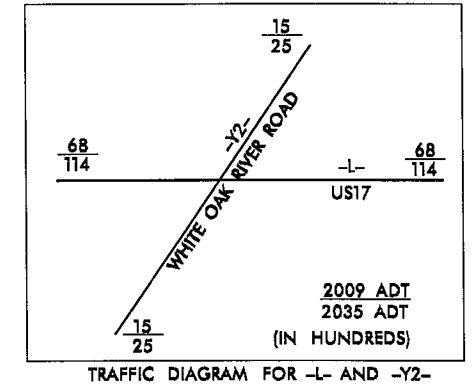


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|--|---------------------|
| PROJECT REFERENCE NO.<br>R-2514B                   | SHEET NO.<br>11     |
| RAW SHEET NO.                                      |                     |
| ROADWAY DESIGN ENGINEER                            | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS<br>DO NOT USE FOR A/W ACQUISITION |                     |
| PRELIMINARY PLANS<br>DO NOT USE FOR CONSTRUCTION   |                     |

8/17/99  
 REVISIONS  
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|                        |                        |                        |                       |
|------------------------|------------------------|------------------------|-----------------------|
| <b>-L-</b>             | <b>-Y2C-</b>           | <b>-Y2-</b>            |                       |
| PI Sta 109+56.52       | PI Sta 12+90.04        | PI Sta 19+86.38        | PI Sta 26+31.42       |
| Δ = 13° 31' 33.6" (RT) | Δ = 49° 49' 32.0" (RT) | Δ = 25° 39' 48.5" (RT) | Δ = 8° 21' 43.8" (LT) |
| D = 0° 34' 55.1"       | D = 76° 23' 39.7"      | D = 2° 43' 42.1"       | D = 2° 17' 30.5"      |
| L = 2,324.14'          | L = 65.22'             | L = 940.62'            | L = 364.87'           |
| T = 1,167.50'          | T = 34.83'             | T = 478.33'            | T = 182.76'           |
| R = 9,845.00'          | R = 75.00'             | R = 2,100.00'          | R = 2,500.00'         |
| SE = 0.025             | SE = NC                | SE = 0.04              | SE = 0.04             |
|                        |                        | RO = 96'               | RO = 96'              |
| <b>-Y2D-</b>           |                        |                        |                       |
| PI Sta 11+05.45        | PI Sta 14+44.90        |                        |                       |
| Δ = 89° 17' 58.2" (LT) | Δ = 8° 05' 10.9" (RT)  |                        |                       |
| D = 63° 39' 43.1"      | D = 32° 44' 25.6"      |                        |                       |
| L = 140.27'            | L = 247.66'            |                        |                       |
| T = 88.91'             | T = 149.69'            |                        |                       |
| R = 90.00'             | R = 175.00'            |                        |                       |
| SE = .02               | SE = .04               |                        |                       |
| RO = See Plans         | RO = 60'               |                        |                       |



8/17/99

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|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.                                     | SHEET NO.           |
| R-2514B   | 12                  |
| RW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                     |

NAD 83/NRS 2007

-L-  
 PI Sta 109+56.52  
 $\Delta = 13^{\circ} 31' 33.6''$  (RT)  
 $D = 0^{\circ} 34' 55.1''$   
 $L = 2,324.14'$   
 $T = 1,167.50'$   
 $R = 9,845.00'$   
 $SE = 0.025$   
 $RO = 80'$

-L- PT Sta. 121+13.17

N 23° 44' 30.6" E

N 23° 32' 36.3" E

-Y2D-DR-  
 PI Sta 30+01.38  
 $\Delta = 27^{\circ} 44' 17.7''$  (RT)  
 $D = 63^{\circ} 39' 43.1''$   
 $L = 43.57'$   
 $T = 22.22'$   
 $R = 90.00'$   
 $SE = NC$

C/L CUL-DE-SAC  
 -Y2D-DR- POT Sta. 28+20.00  
 -Y2D-DR- PC Sta. 29+79.15  
 -Y2D-DR- PT Sta. 30+22.73

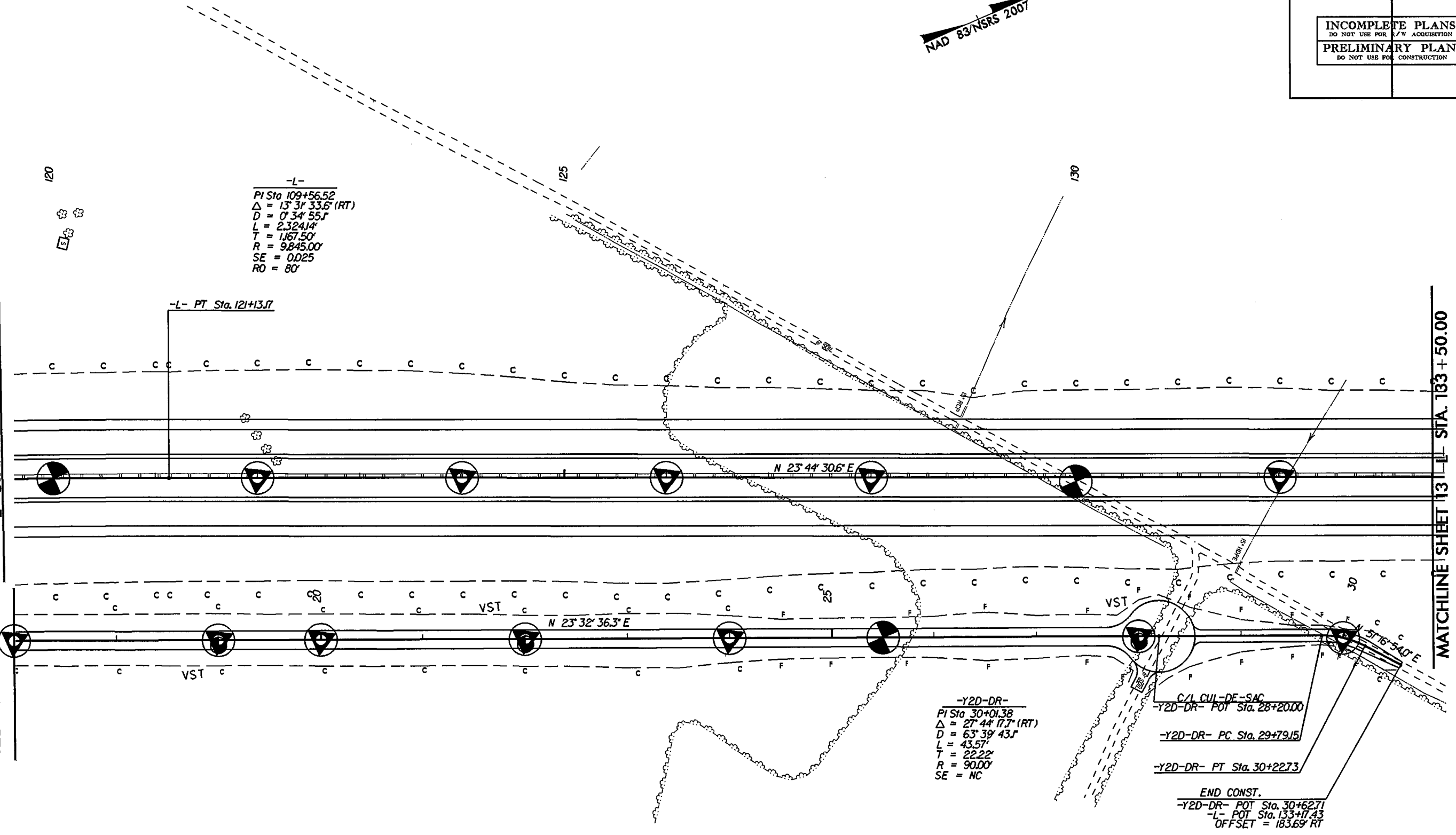
END CONST.  
 -Y2D-DR- POT Sta. 30+62.71  
 -L- POT Sta. 133+17.43  
 OFFSET = 183.69' RT

MATCHLINE SHEET 11  
-L- STA. 119 + 50.00

MATCHLINE SHEET 11  
-Y2D- STA. 17 + 00.00

MATCHLINE SHEET 13  
-L- STA. 133 + 50.00

REVISIONS

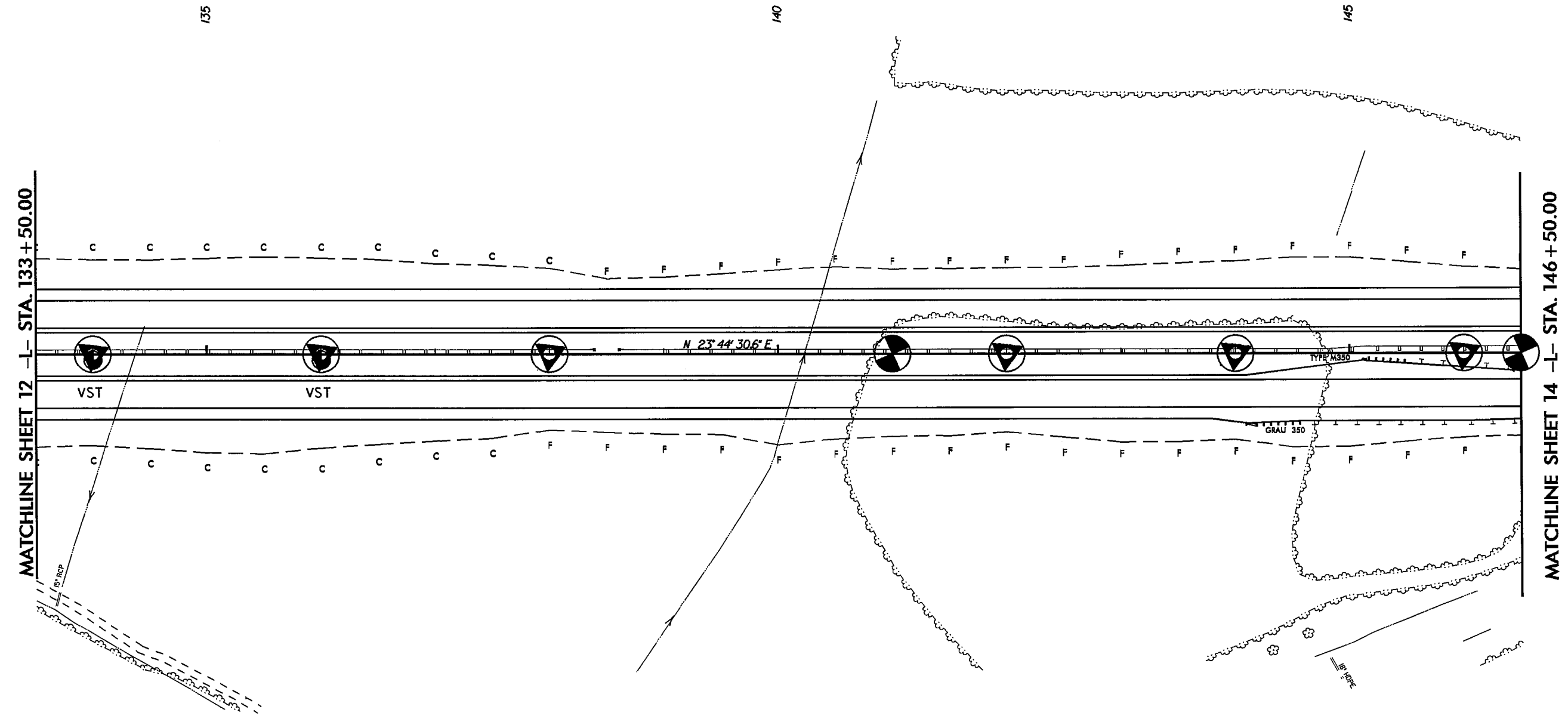


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REVISIONS

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|--|---------------------|
| PROJECT REFERENCE NO.                            | SHEET NO.           |
| R-2514B  | 13                  |
| RW SHEET NO.                                     |                     |
| ROADWAY DESIGN ENGINEER                          | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS<br>DO NOT USE FOR ACQUISITION   |                     |
| PRELIMINARY PLANS<br>DO NOT USE FOR CONSTRUCTION |                     |

NAD 83/NSRS 2007



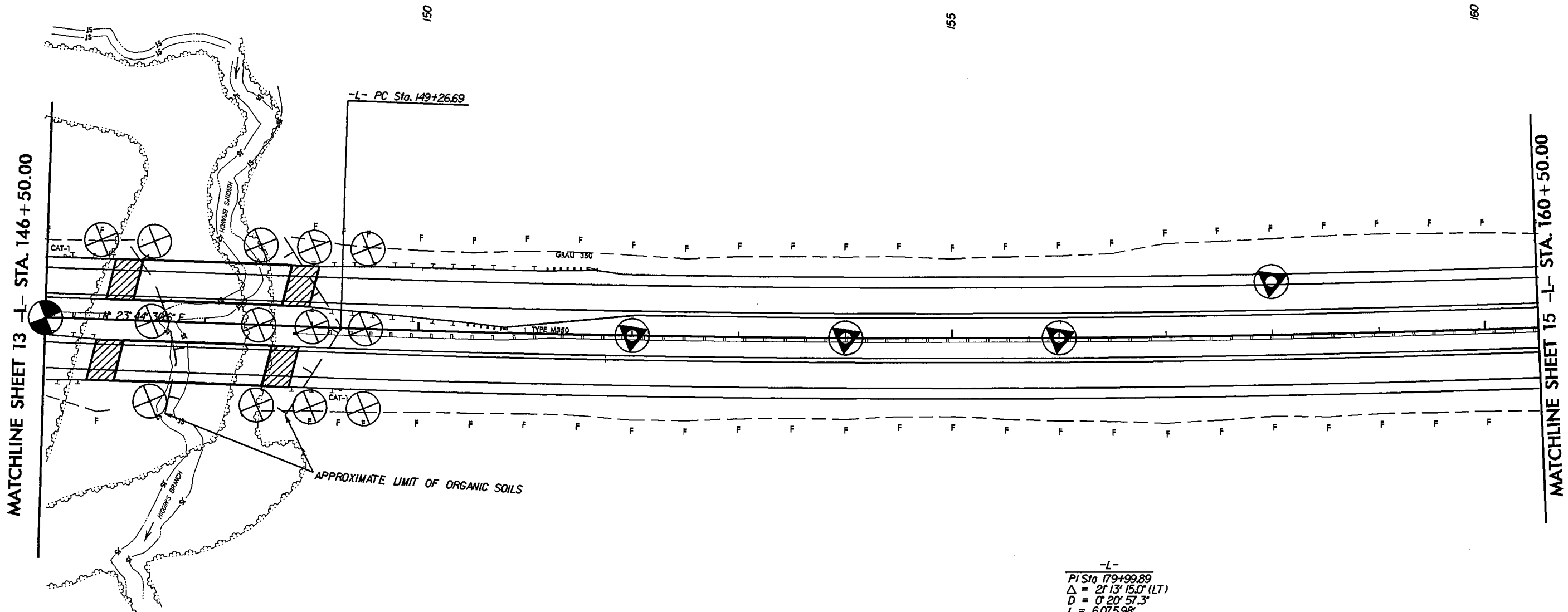
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REVISIONS

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| PROJECT REFERENCE NO.                              |  | SHEET NO.  |  |
| R-2514B  |  | 14   |  |
| RW SHEET NO.                                       |  |  |  |
| ROADWAY DESIGN ENGINEER                            |  | HYDRAULICS ENGINEER                              |  |
| INCOMPLETE PLANS<br>DO NOT USE FOR A/W ACQUISITION |  | PRELIMINARY PLANS<br>DO NOT USE FOR CONSTRUCTION |  |
|  |  |  |  |

NAD 83/NSRS 2007

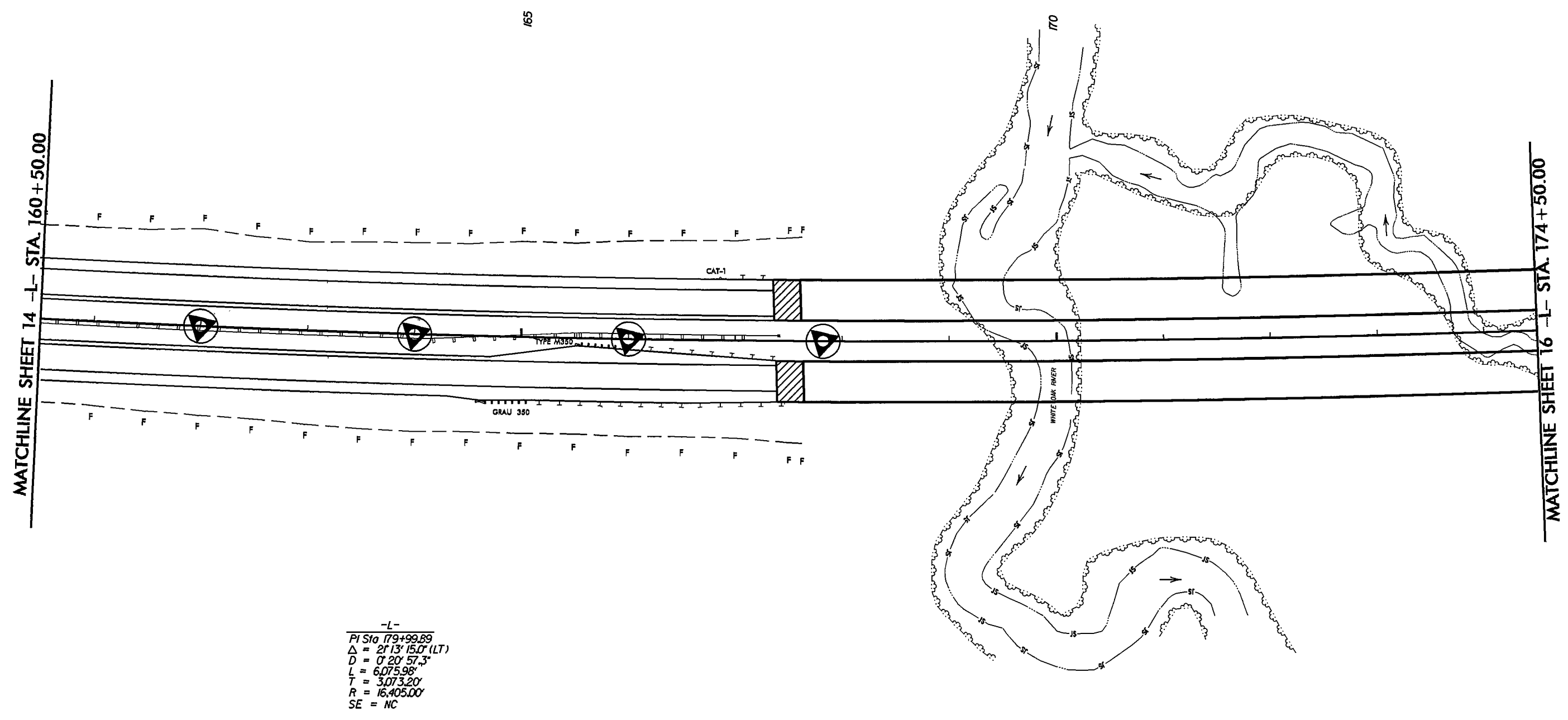


-L-  
 PI Sta 179+99.89  
 $\Delta = 21' 13" 15.0" (LT)$   
 $D = 0' 20" 57.3"$   
 $L = 6,075.98'$   
 $T = 3,073.20'$   
 $R = 16,405.00'$   
 SE = NC

8/17/99  
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|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.                                   | SHEET NO.           |
| R-2514B   | 15                  |
| RW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

NAD 83/NSRS 2007



|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.<br>R-2514B                          | SHEET NO.<br>16     |
| RW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                     |

MAD 83/NSRS 2007

MATCHLINE SHEET 15 -L- STA. 174+50.00

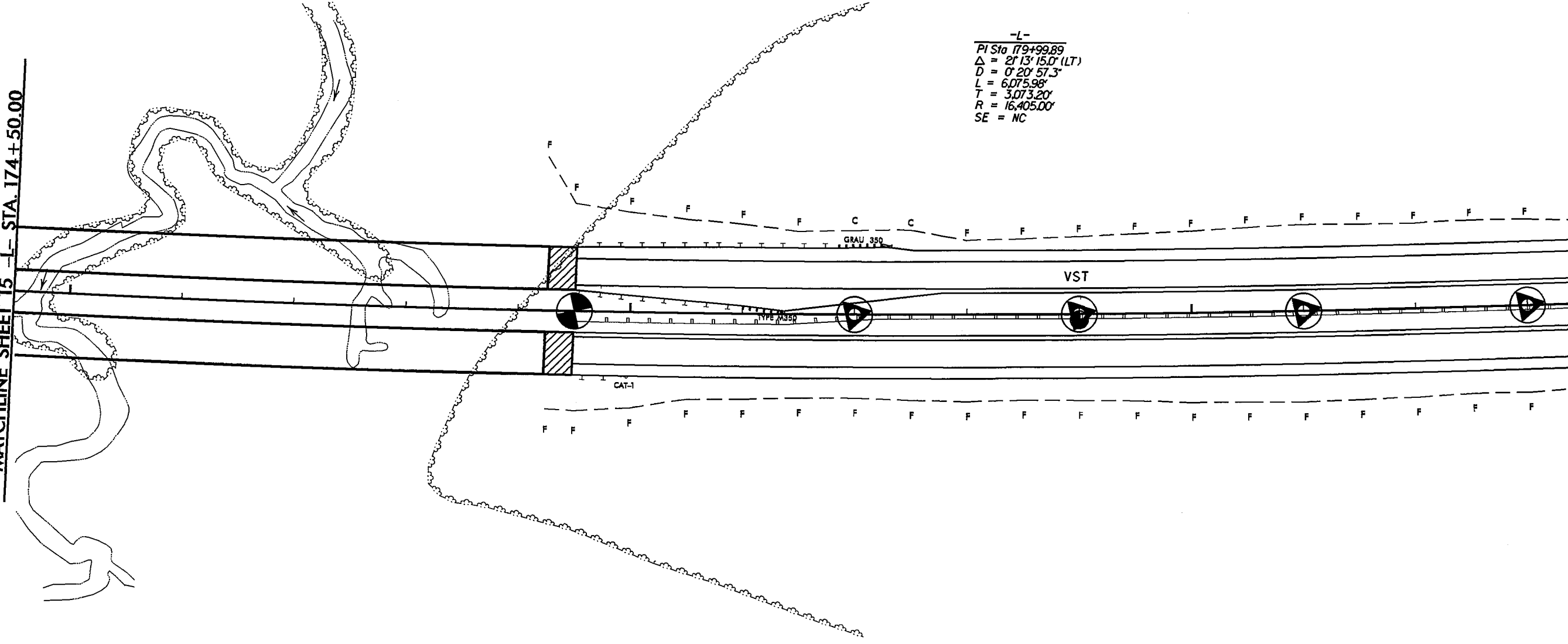
MATCHLINE SHEET 17 -L- STA. 188+50.00

75

180

185

-L-  
 PI Sta 179+99.89  
 $\Delta = 2' 13' 15.0" (LT)$   
 $D = 0' 20' 57.3"$   
 $L = 6,075.98'$   
 $T = 3,073.20'$   
 $R = 16,405.00'$   
 SE = NC



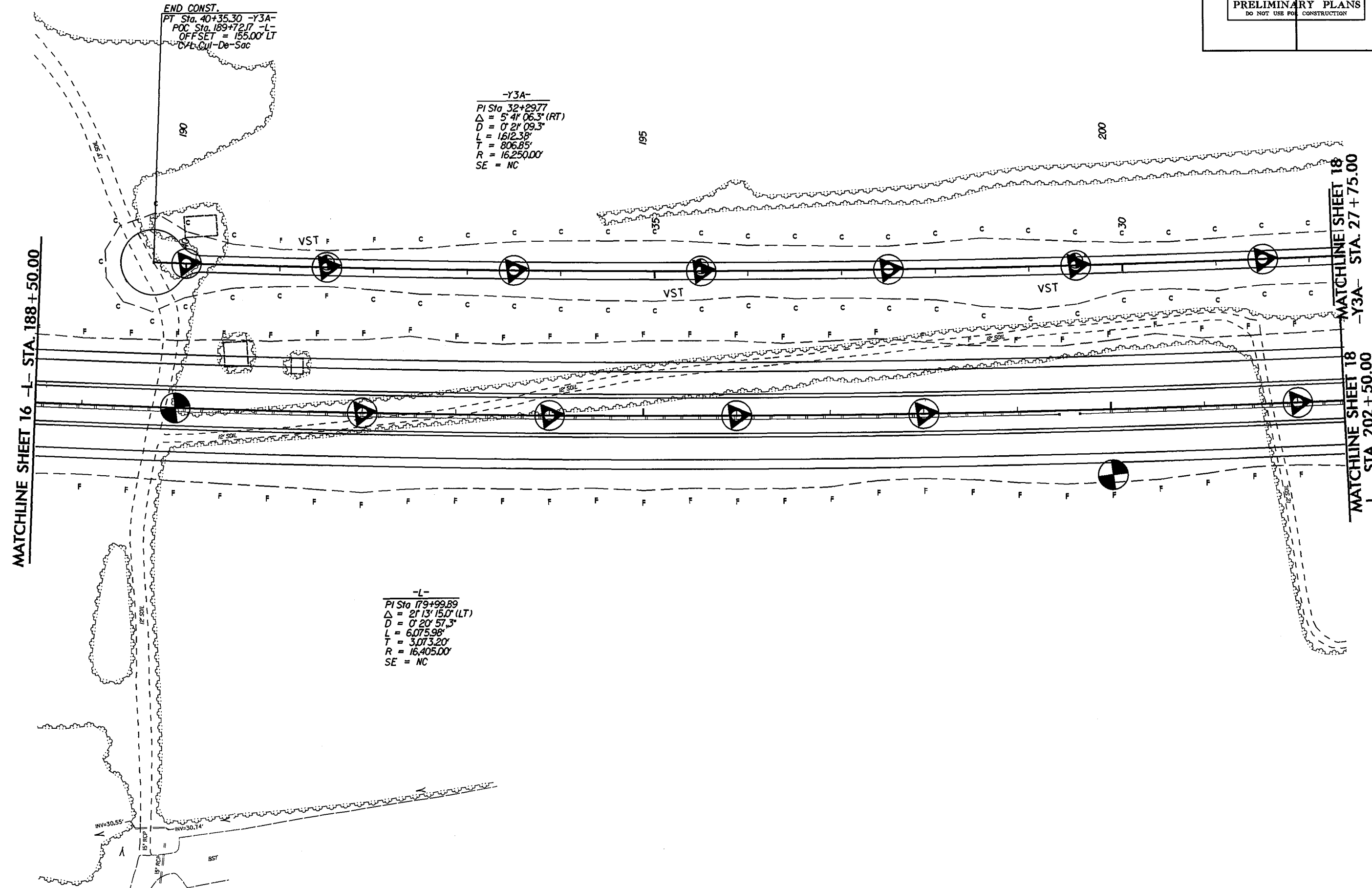
REVISIONS

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|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.                                     | SHEET NO.           |
| R-2514B   | 17                  |
| RW SHEET NO.  |                     |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                     |

NAD 83/NSRS 2007



END CONST.  
 PT Sta. 40+35.30 -Y3A-  
 POC Sta. 189+72.17 -L-  
 OFFSET = 155.00' LT  
 CUL-De-Sac

-Y3A-  
 PI Sta 32+29.77  
 $\Delta = 5^\circ 41' 06.3''$  (RT)  
 $D = 0^\circ 21' 09.3''$   
 $L = 1612.38'$   
 $T = 806.85'$   
 $R = 16,250.00'$   
 SE = NC

-L-  
 PI Sta 179+99.89  
 $\Delta = 2^\circ 13' 15.0''$  (LT)  
 $D = 0^\circ 20' 57.3''$   
 $L = 6,075.98'$   
 $T = 3,073.20'$   
 $R = 16,405.00'$   
 SE = NC

REVISIONS

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 8/17/09

**-Y3A-**

|                        |                        |
|------------------------|------------------------|
| PI Sta 23+15.07        | PI Sta 18+47.39        |
| Δ = 36° 36' 23.8" (RT) | Δ = 37° 21' 13.2" (LT) |
| D = 16° 22' 12.8"      | D = 11° 27' 33.0"      |
| L = 223.62'            | L = 325.97'            |
| T = 115.77'            | T = 169.02'            |
| R = 350.00'            | R = 500.00'            |
| SE = .04               | SE = .04               |
| RO = 60'               | RO = 60'               |

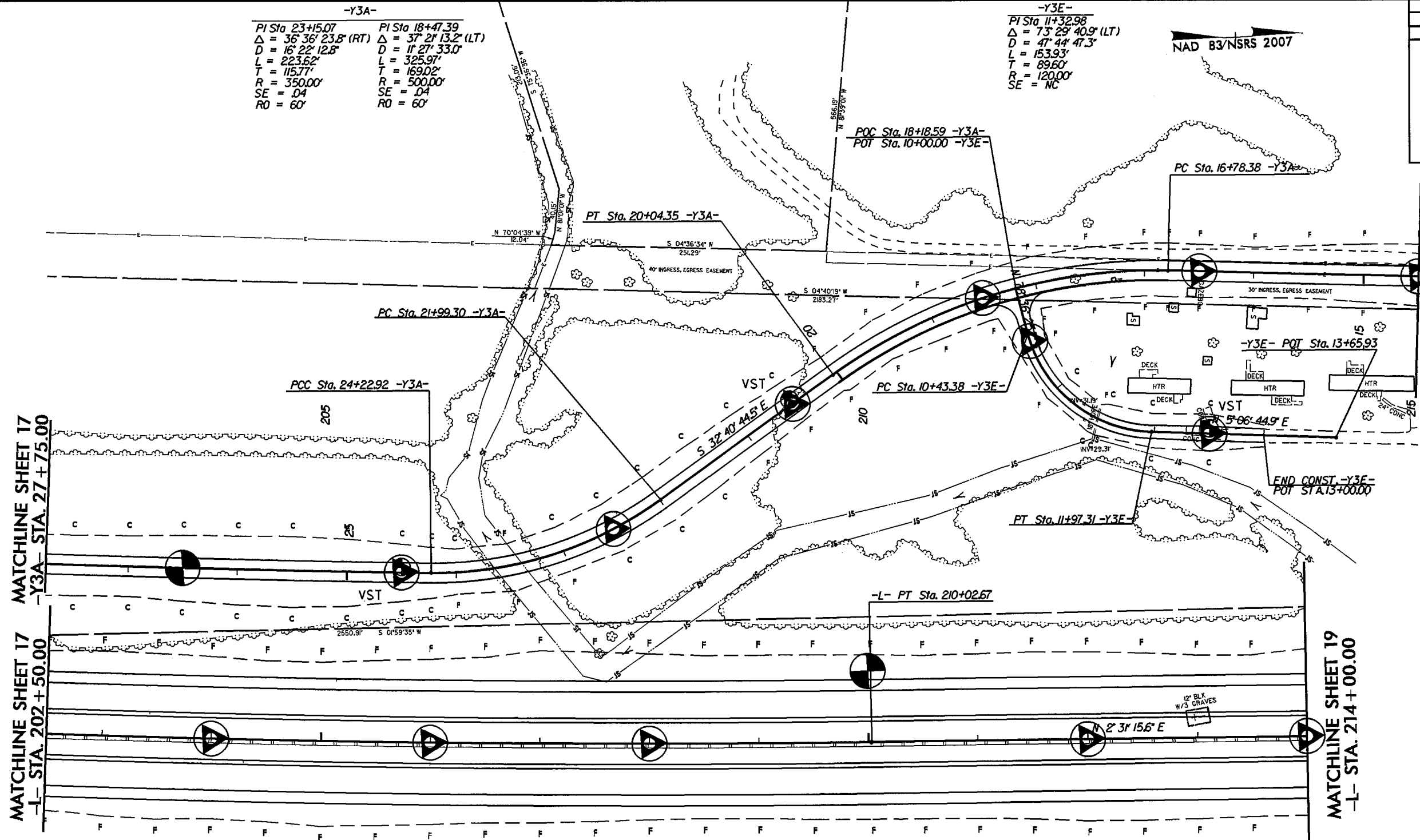
**-Y3E-**

|                        |
|------------------------|
| PI Sta 11+32.98        |
| Δ = 73° 29' 40.9" (LT) |
| D = 47° 44' 47.3"      |
| L = 153.93'            |
| T = 89.60'             |
| R = 120.00'            |
| SE = NC                |

**-L-**

|                        |
|------------------------|
| PI Sta 179+99.89       |
| Δ = 21° 13' 15.0" (LT) |
| D = 0° 20' 57.3"       |
| L = 6,075.98'          |
| T = 3,073.20'          |
| R = 16,405.00'         |
| SE = NC                |

|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.<br>R-2514B                          | SHEET NO.<br>18     |
| RDW SHEET NO.   | HYDRAULICS ENGINEER |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                     |



REVISIONS





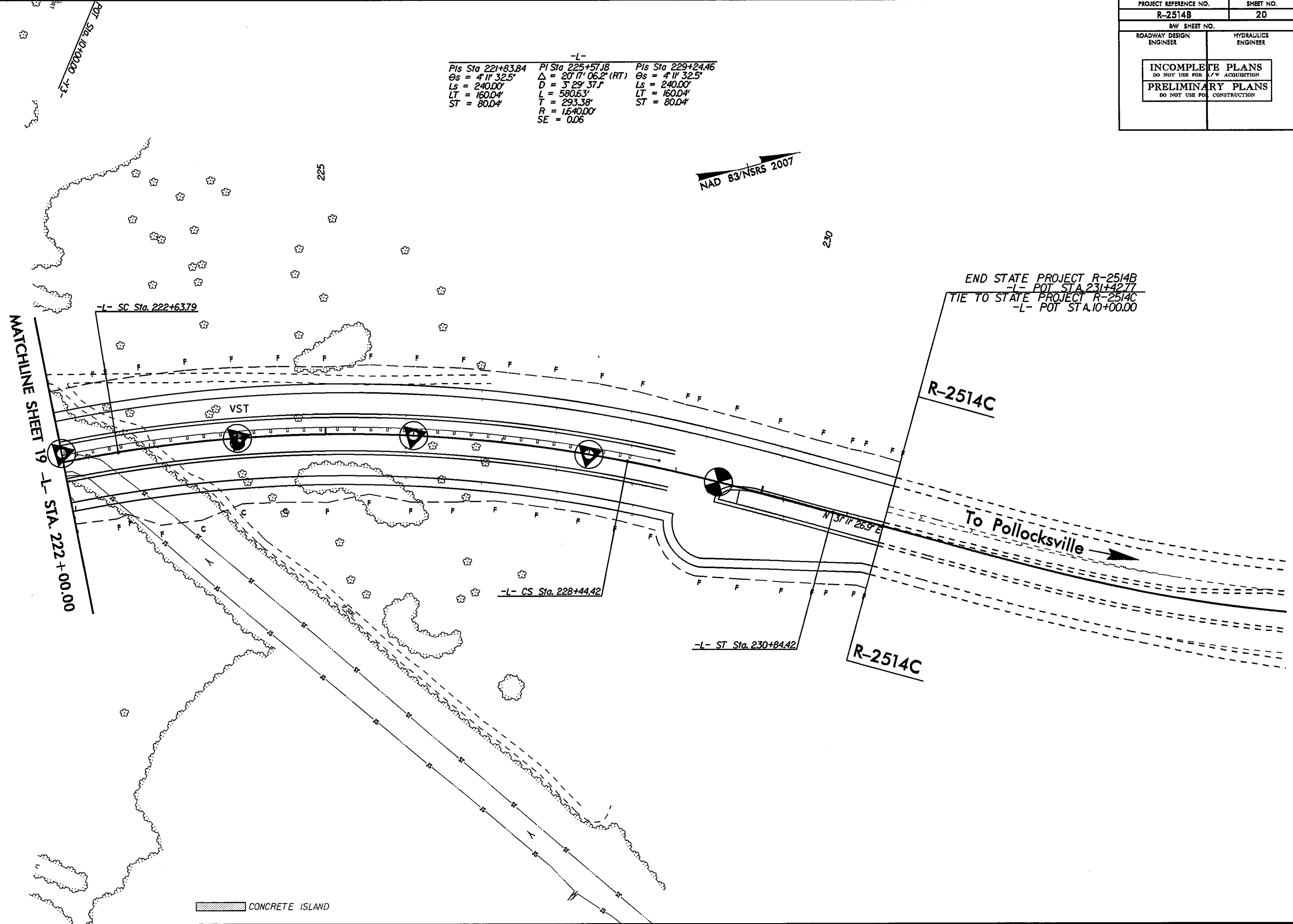
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|  |                        |
|--|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>20</b> |
| RAW SHEET NO.  |                        |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

-L-

|   |  |   |
|---|--|---|
| PIs Sta 221+83.84<br>θs = 4° 11' 32.5"<br>Ls = 240.00'<br>LT = 160.04'<br>ST = 80.04' | PI Sta 225+57.18<br>Δ = 20° 17' 06.2" (RT)<br>D = 3° 29' 37.1"<br>L = 580.63'<br>T = 293.38'<br>R = 1,640.00'<br>SE = 0.06 | PIs Sta 229+24.46<br>θs = 4° 11' 32.5"<br>Ls = 240.00'<br>LT = 160.04'<br>ST = 80.04' |
|---|--|---|

NAD 83/NSRS 2007



END STATE PROJECT R-2514B  
 -L- POT STA 231+42.77  
 TIE TO STATE PROJECT R-2514C  
 -L- POT STA 10+00.00

CONCRETE ISLAND

REVISIONS





8/17/99  
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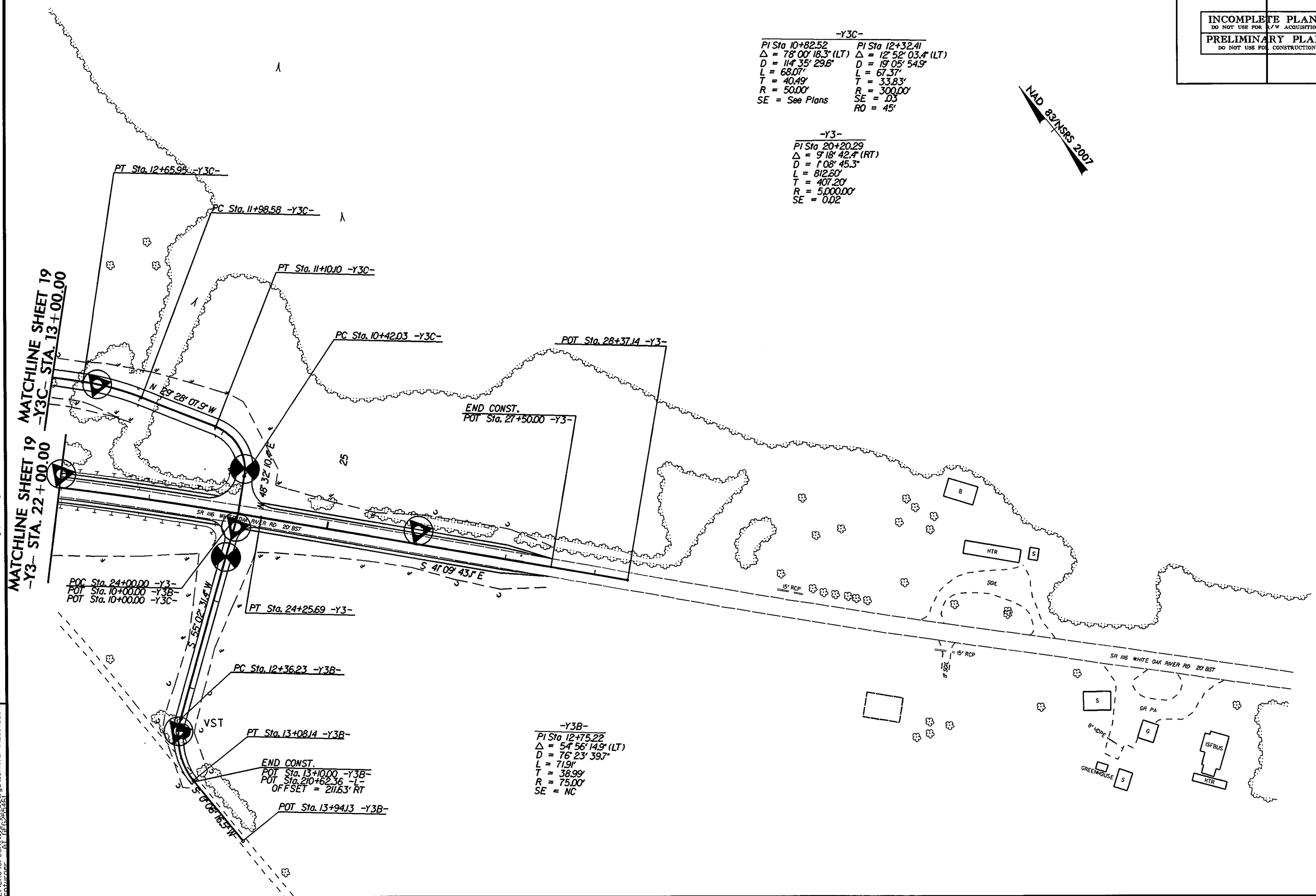
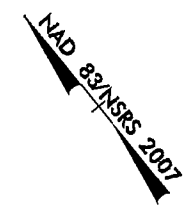
|  |                     |
|--|---------------------|
| PROJECT REFERENCE NO.  | SHEET NO.           |
| R-2514B  | 23                  |
| RW SHEET NO.   |                     |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

-Y3C-

|                                    |                                    |
|------------------------------------|------------------------------------|
| PI Sta 10+82.52                    | PI Sta 12+32.41                    |
| $\Delta = 78^{\circ}00'18.3"$ (LT) | $\Delta = 12^{\circ}52'03.4"$ (LT) |
| D = 114'35"29.6"                   | D = 19'05"54.9"                    |
| L = 68.07'                         | L = 67.37'                         |
| T = 40.49'                         | T = 33.83'                         |
| R = 50.00'                         | R = 300.00'                        |
| SE = See Plans                     | SE = 03                            |
|                                    | RO = 45'                           |

-Y3-

|                                   |
|-----------------------------------|
| PI Sta 20+20.29                   |
| $\Delta = 9^{\circ}18'42.4"$ (RT) |
| D = 108'45.3"                     |
| L = 812.60'                       |
| T = 407.20'                       |
| R = 5,000.00'                     |
| SE = 0.02                         |



-Y3B-

|                                    |
|------------------------------------|
| PI Sta 12+75.22                    |
| $\Delta = 54^{\circ}56'14.9"$ (LT) |
| D = 76'23"39.7"                    |
| L = 71.91'                         |
| T = 38.99'                         |
| R = 75.00'                         |
| SE = NC                            |

5/28/99

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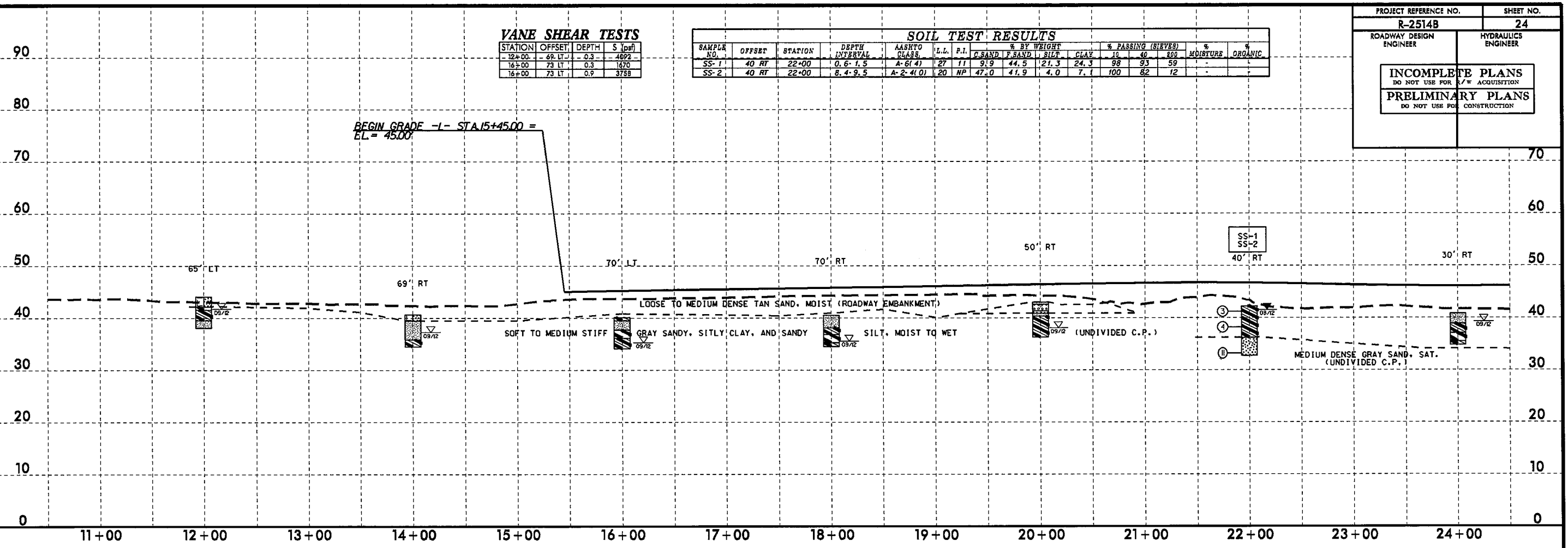
|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                   | SHEET NO.<br><b>24</b> |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psi) |
|---------|--------|-------|---------|
| 12+00   | 69' LT | 0.3   | 4892    |
| 16+00   | 73' LT | 0.3   | 1470    |
| 16+00   | 73' LT | 0.9   | 3758    |

**SOIL TEST RESULTS**

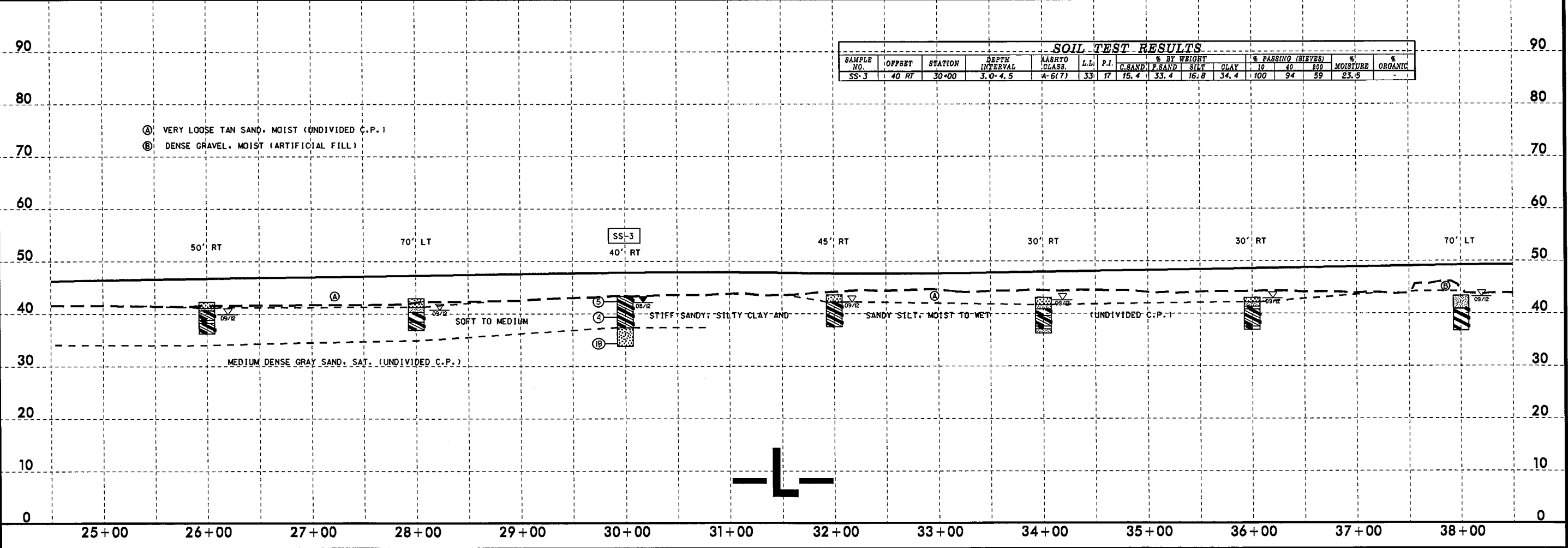
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 200 |            |           |
| SS-1       | 40' RT | 22+00   | 0.6-1.5        | A-6(4)        | 27   | 11   | 9.9         | 44.5    | 21.3 | 24.3 | 98                 | 93  | 59         | -         |
| SS-2       | 40' RT | 22+00   | 8.4-9.5        | A-2-4(0)      | 20   | NP   | 47.0        | 41.9    | 4.0  | 7.1  | 100                | 82  | 12         | -         |



**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 200 |            |           |
| SS-3       | 40' RT | 30+00   | 3.0-4.5        | A-6(7)        | 33   | 17   | 15.4        | 33.4    | 16.8 | 34.4 | 100                | 94  | 59         | 23.5      |

- Ⓐ VERY LOOSE TAN SAND, MOIST (UNDIVIDED C.P.)
- Ⓑ DENSE GRAVEL, MOIST (ARTIFICIAL FILL)

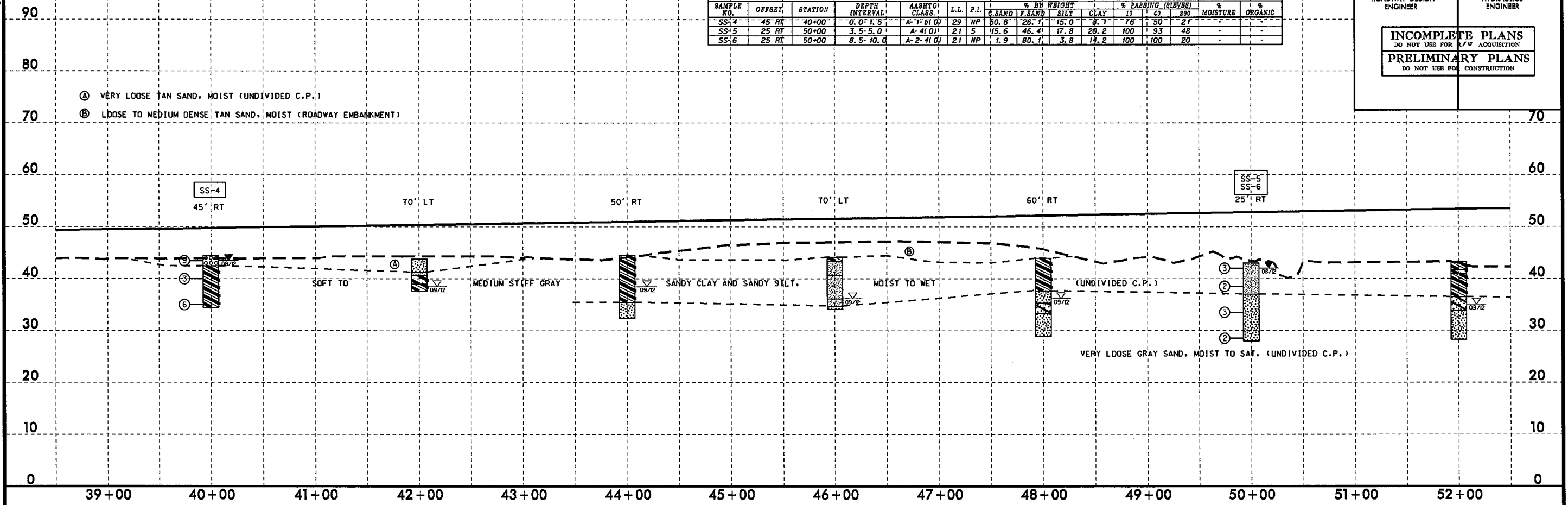


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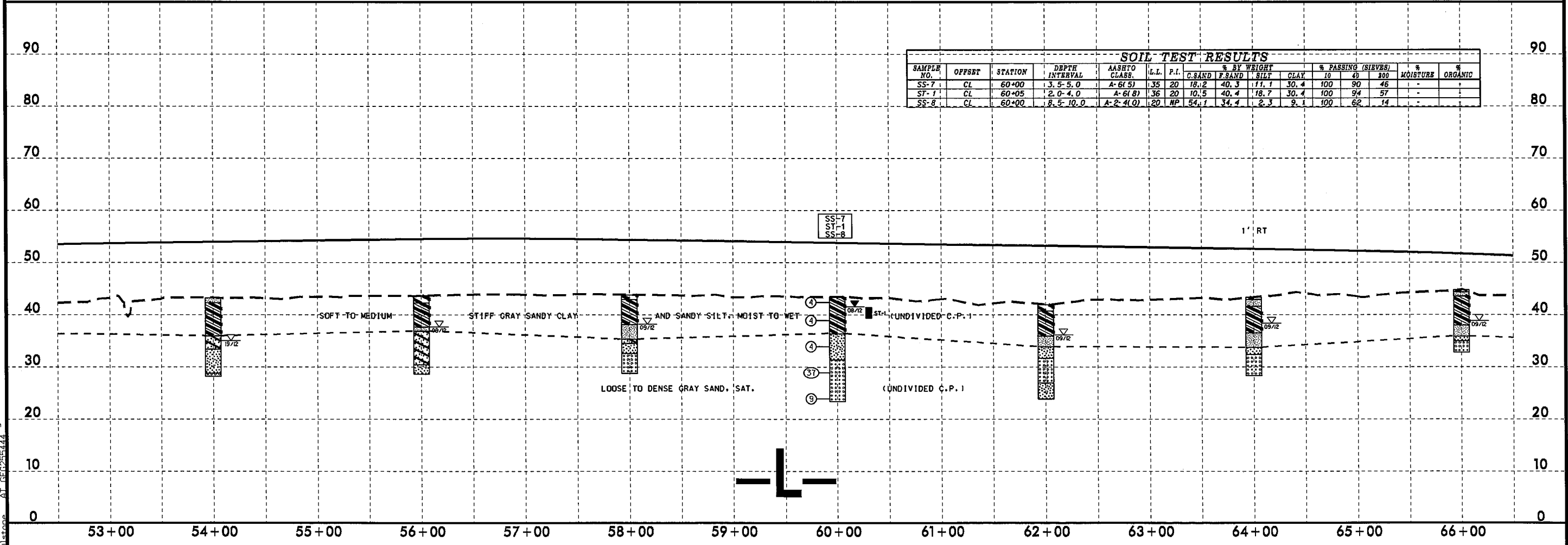
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|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-25148</b>                   | SHEET NO.<br><b>25</b> |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                        |

| SOIL TEST RESULTS |        |         |                |               |      |      |             |        |      |      |                    |     |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40  |            |           |
| SS-4              | 45' RT | 40+00   | 0.0-1.5        | A-7(6)0       | 29   | NP   | 50.8        | 26.1   | 15.0 | 8.1  | 76                 | 50  | 21         | -         |
| SS-5              | 25' RT | 50+00   | 3.5-5.0        | A-4(0)        | 21   | 5    | 15.6        | 46.4   | 17.8 | 20.2 | 100                | 93  | 48         | -         |
| SS-6              | 25' RT | 50+00   | 8.5-10.0       | A-2-4(0)      | 21   | NP   | 1.9         | 80.1   | 3.8  | 14.2 | 100                | 100 | 20         | -         |



| SOIL TEST RESULTS |        |         |                |               |      |      |             |        |      |      |                    |    |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 |            |           |
| SS-7              | CL     | 60+00   | 3.5-5.0        | A-6(5)        | 35   | 20   | 18.2        | 40.3   | 11.1 | 30.4 | 100                | 90 | 46         | -         |
| ST-1              | CL     | 60+05   | 2.0-4.0        | A-6(8)        | 36   | 20   | 10.5        | 40.4   | 18.7 | 30.4 | 100                | 94 | 57         | -         |
| SS-8              | CL     | 60+00   | 8.5-10.0       | A-2-4(0)      | 20   | NP   | 54.1        | 34.4   | 2.3  | 9.1  | 100                | 62 | 14         | -         |

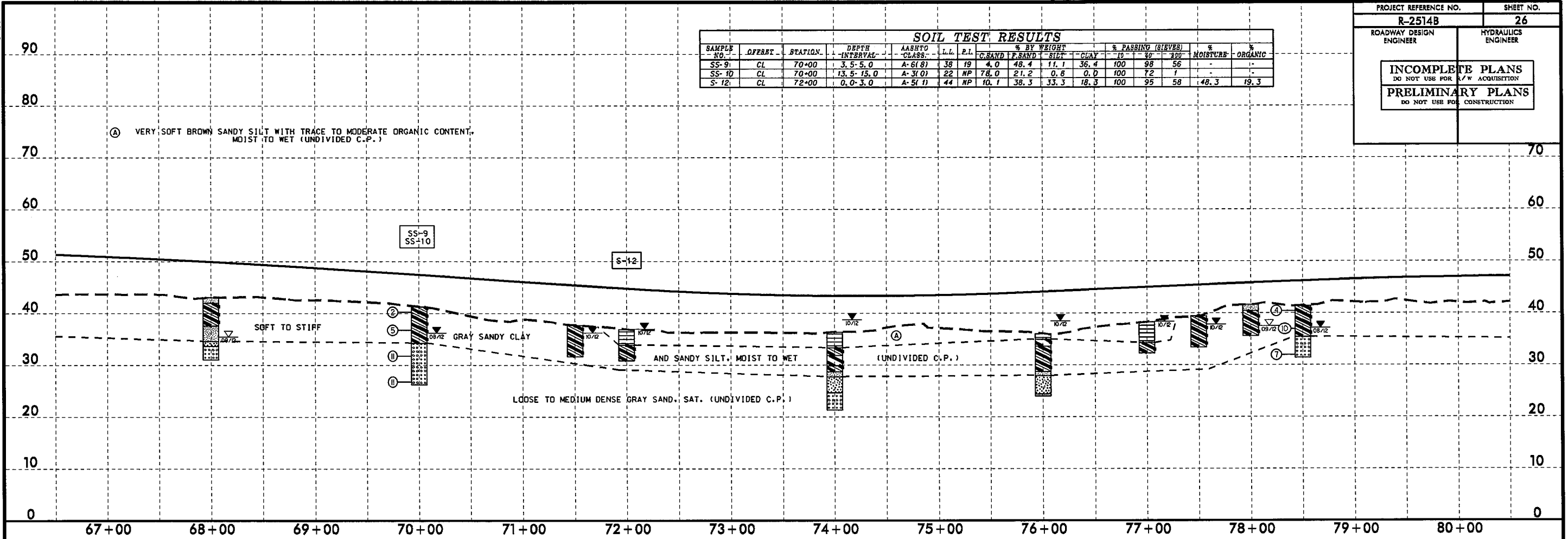


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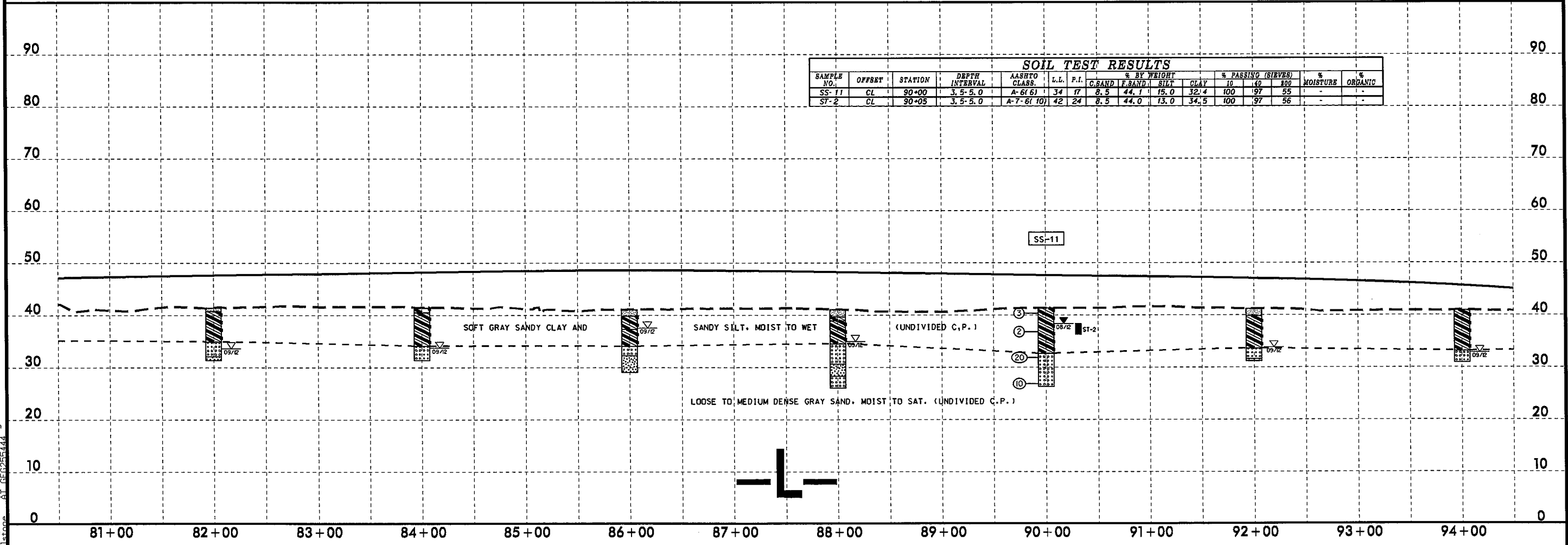
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|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-25148</b>                 | SHEET NO.<br><b>26</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

| SOIL TEST RESULTS |        |         |                |               |      |      |             |         |      |                    |     |     |            |           |      |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|--------------------|-----|-----|------------|-----------|------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      | % PASSING (SIEVES) |     |     | % MOISTURE | % ORGANIC |      |
|                   |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | 10                 | 40  | 200 |            |           |      |
| SS-9              | CL     | 70+00   | 3.5-5.0        | A-6(8)        | 38   | 19   | 4.0         | 48.4    | 11.1 | 36.4               | 100 | 98  | 56         | -         | -    |
| SS-10             | CL     | 70+00   | 13.5-15.0      | A-3(0)        | 22   | NP   | 78.0        | 21.2    | 0.8  | 0.0                | 100 | 72  | 1          | -         | -    |
| S-12              | CL     | 72+00   | 0.0-3.0        | A-5(1)        | 44   | NP   | 10.1        | 38.3    | 33.3 | 18.3               | 100 | 95  | 58         | 48.3      | 19.3 |



| SOIL TEST RESULTS |        |         |                |               |      |      |             |         |      |                    |     |     |            |           |   |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|--------------------|-----|-----|------------|-----------|---|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      | % PASSING (SIEVES) |     |     | % MOISTURE | % ORGANIC |   |
|                   |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | 10                 | 40  | 200 |            |           |   |
| SS-11             | CL     | 90+00   | 3.5-5.0        | A-6(6)        | 34   | 17   | 8.5         | 44.1    | 15.0 | 32.4               | 100 | 97  | 55         | -         | - |
| ST-2              | CL     | 90+05   | 3.5-5.0        | A-7-6(10)     | 42   | 24   | 8.5         | 44.0    | 13.0 | 34.5               | 100 | 97  | 56         | -         | - |





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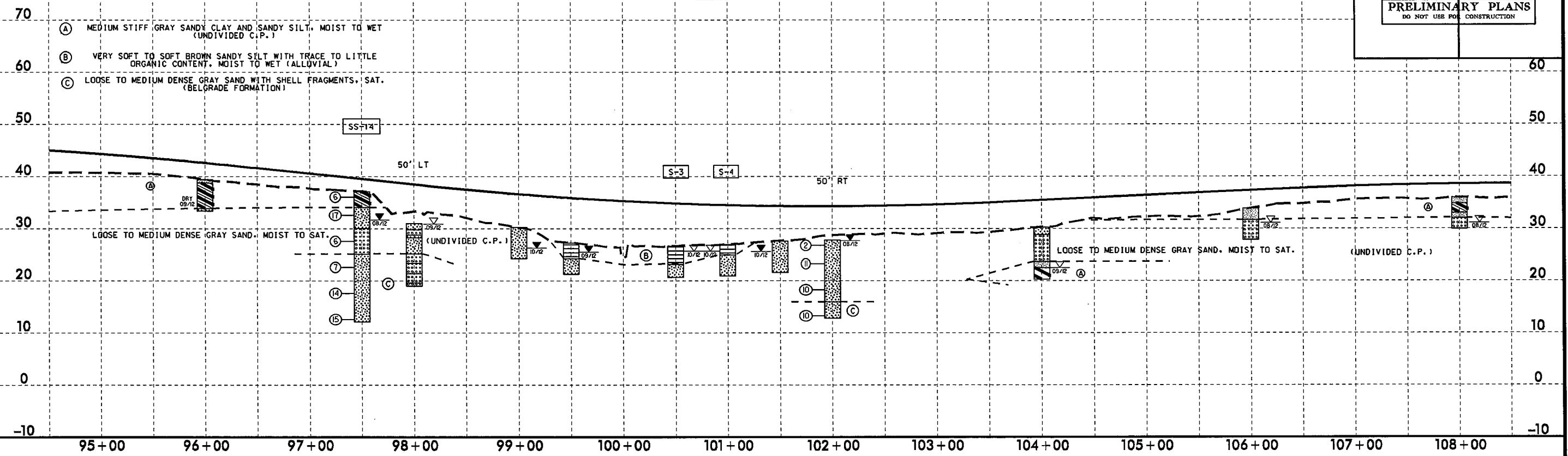
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|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>27</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 108+00  | 7 LT   | 0.3   | 4343    |

**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
|            |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | -10                | -40 | -200 |            |           |
| SS-14      | CL     | 97+50   | 13.5-15.0      | A-2-4(0)      | 26   | NP   | 41.1        | 46.0   | 2.8  | 10.1 | 90                 | 68  | 14   | -          | -         |
| S-3        | CL     | 100+50  | 0.0-3.4        | A-4(2)        | 33   | 9    | 17.3        | 40.3   | 30.3 | 12.1 | 95                 | 89  | 46   | -          | 7.4       |
| S-4        | CL     | 101+00  | 0.0-2.0        | A-2-4(0)      | 18   | NP   | 31.1        | 53.0   | 7.7  | 8.1  | 99                 | 87  | 21   | 16.5       | 2.5       |

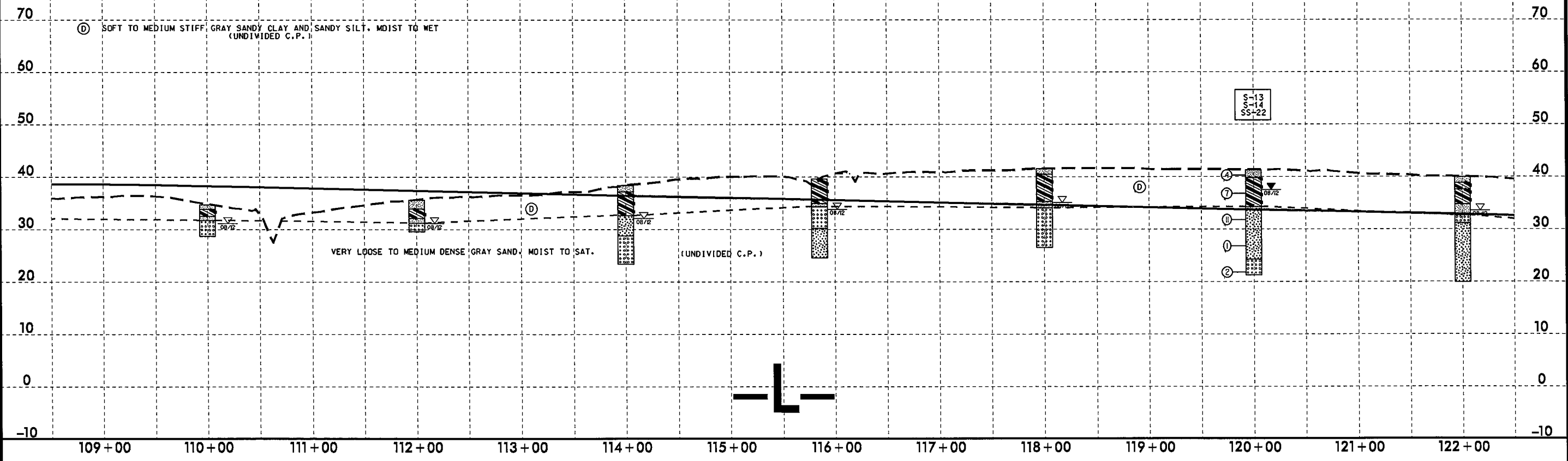


**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 112+00  | 7 RT   | 0.3   | 2756    |

**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
|            |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | -10                | -40 | -200 |            |           |
| S-13       | 2 RT   | 120+00  | 0.0-1.5        | A-4(0)        | 22   | NP   | 19.1        | 52.8   | 24.2 | 4.0  | 100                | 93  | 40   | -          | -         |
| S-14       | 2 RT   | 120+00  | 1.5-6.0        | A-6(8)        | 33   | 16   | 13.0        | 33.1   | 21.8 | 32.1 | 100                | 95  | 63   | -          | -         |
| SS-22      | CL     | 120+00  | 13.5-15.0      | A-2-4(0)      | 22   | NP   | 19.0        | 69.2   | 2.6  | 9.1  | 100                | 92  | 14   | -          | -         |



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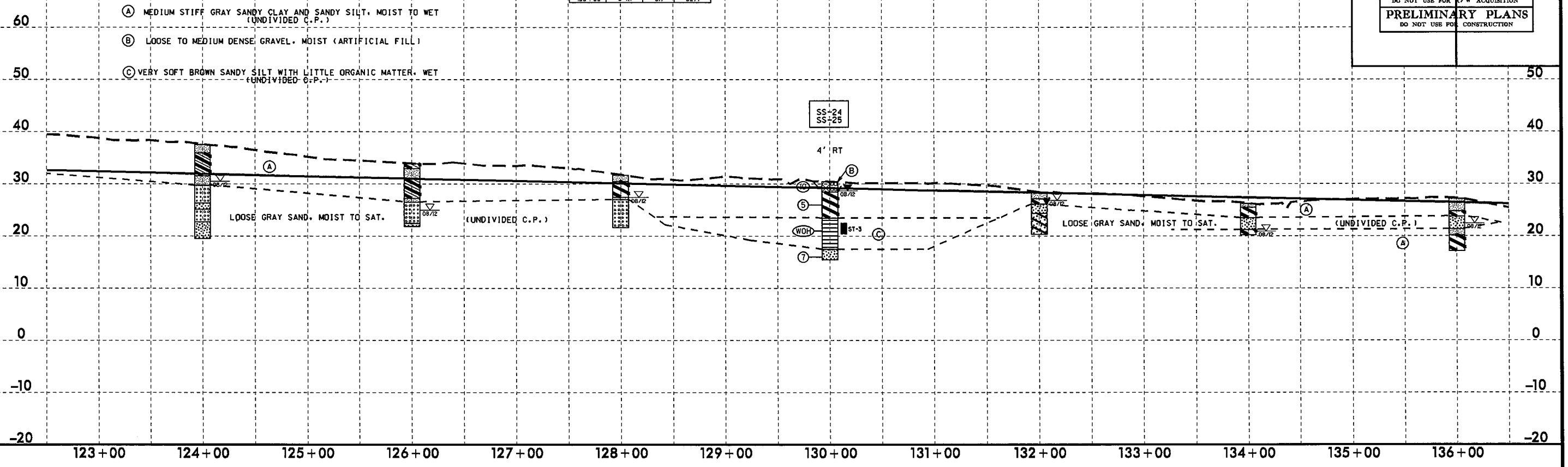
VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 134+00  | 4 RT   | 0.3   | 1128    |
| 134+00  | 5 RT   | 0.9   | 1629    |
| 136+00  | 5 RT   | 0.3   | 2004    |
| 136+00  | 5 RT   | 0.9   | 3299    |

SOIL TEST RESULTS

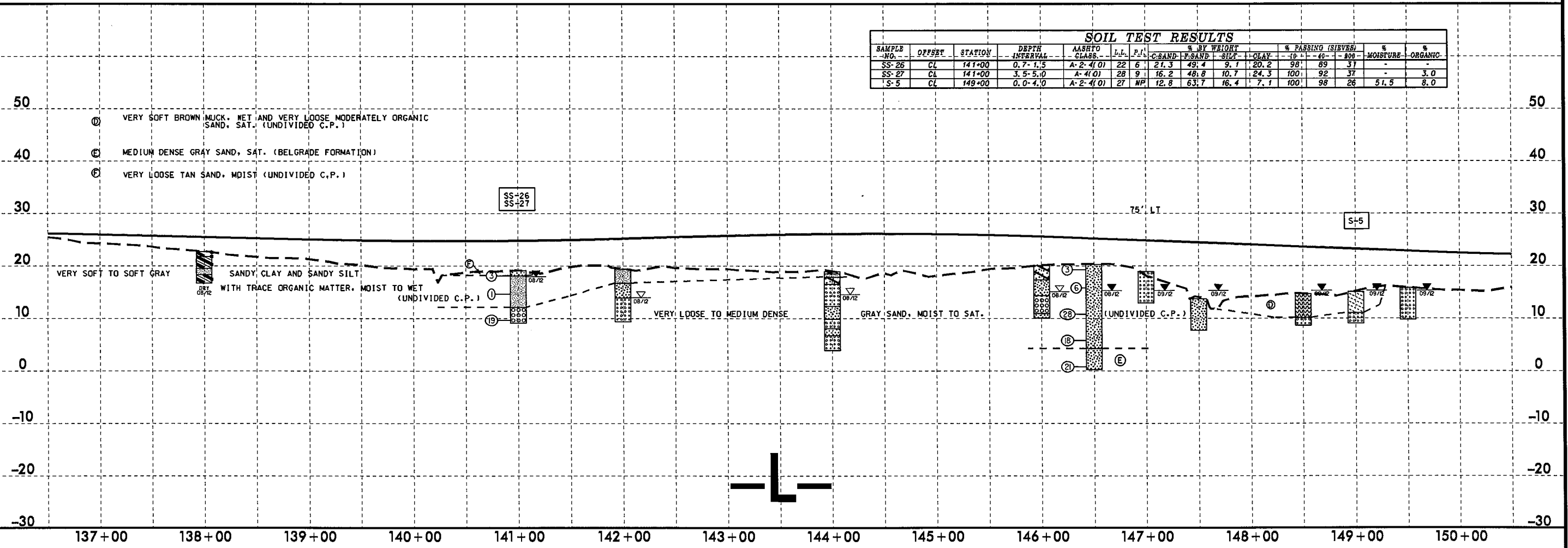
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    | % MOISTURE |      | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|------------|------|-----------|
|            |        |         |                |               |      |      | C-SAND      | F-SAND | SILT | CLAY | 10                 | 20 | 10         | 40   |           |
| SS-24      | 4 RT   | 130+00  | 3.5-5.0        | A-7-G(12)     | 50   | 28   | 36.8        | 7.5    | 11.1 | 44.5 | 94                 | 74 | 54         | -    | -         |
| SS-25      | 4 RT   | 130+00  | 8.5-10.0       | A-4(O)        | 34   | NP   | 20.2        | 39.9   | 25.7 | 14.2 | 100                | 92 | 44         | 60.0 | 10.1      |

|  |                        |
|--|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>28</b> |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



SOIL TEST RESULTS

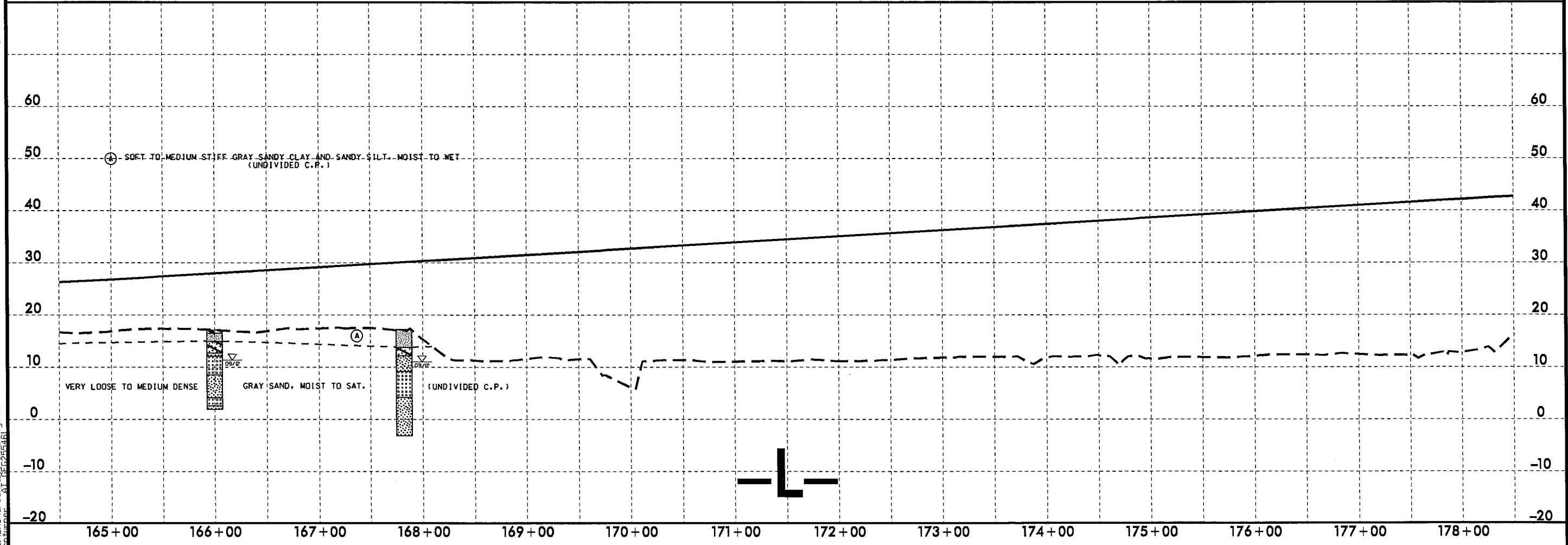
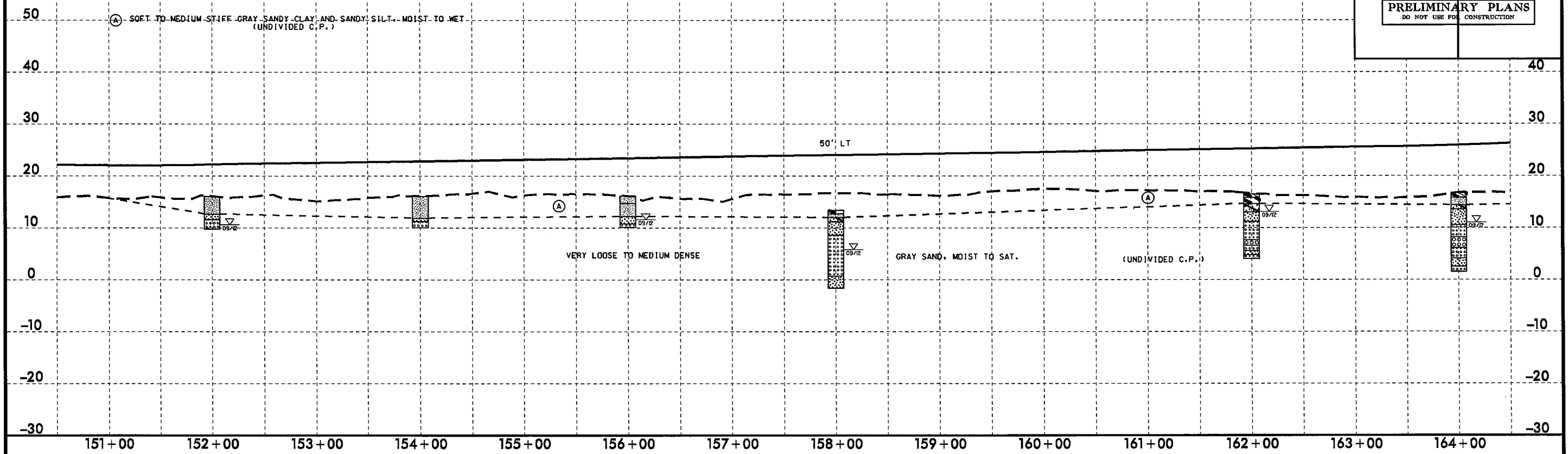
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    | % MOISTURE |      | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|------------|------|-----------|
|            |        |         |                |               |      |      | C-SAND      | F-SAND | SILT | CLAY | 10                 | 40 | 10         | 40   |           |
| SS-26      | CL     | 141+00  | 0.7-1.5        | A-2-4(O)      | 22   | 6    | 21.3        | 49.4   | 9.1  | 20.2 | 98                 | 89 | 37         | -    | -         |
| SS-27      | CL     | 141+00  | 3.5-5.0        | A-4(O)        | 28   | 9    | 16.2        | 48.8   | 10.7 | 24.3 | 100                | 92 | 37         | -    | 3.0       |
| S-5        | CL     | 149+00  | 0.0-4.0        | A-2-4(O)      | 27   | NP   | 12.8        | 63.7   | 16.4 | 7.1  | 100                | 98 | 26         | 51.5 | 8.0       |



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|--|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>29</b> |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



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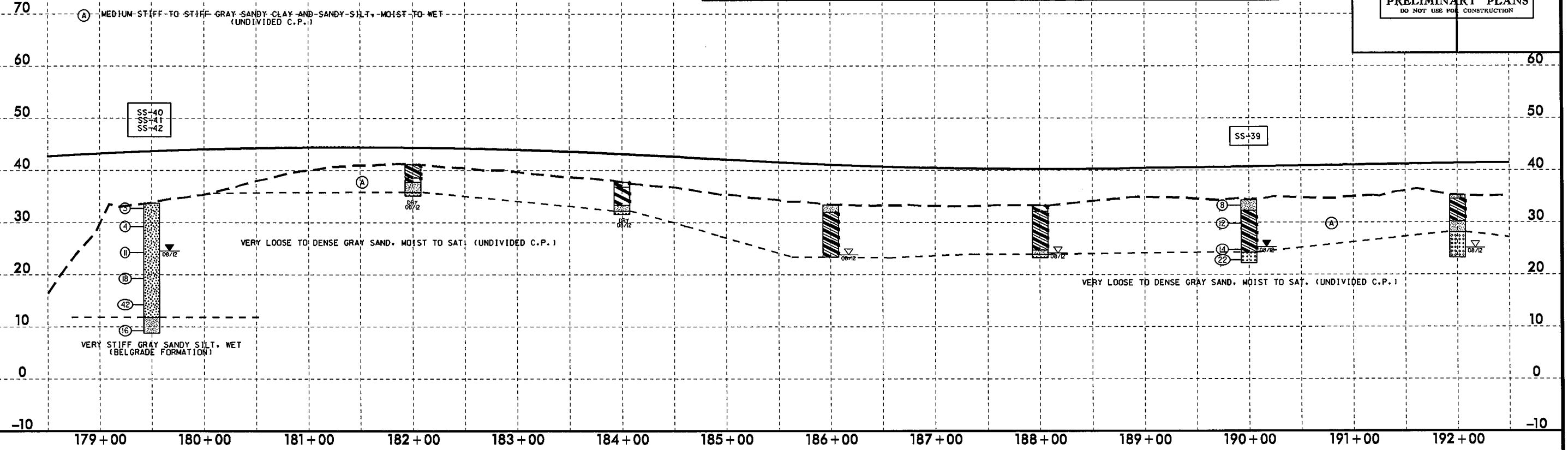
**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psi) |
|---------|--------|-------|---------|
| 184+00  | 5' RT  | 0.3   | 3253    |
| 184+00  | 5' RT  | 0.3   | 2881    |
| 184+00  | 5' RT  | 1.3   | 3090    |

**SOIL TEST RESULTS**

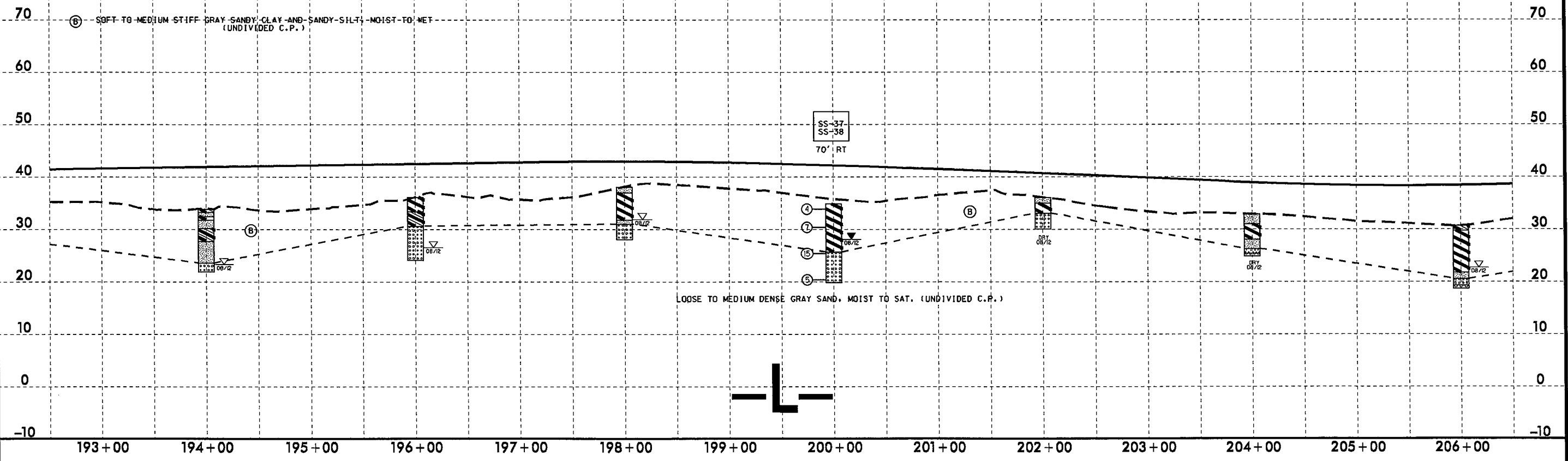
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |    | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 60 |            |           |
| SS-40      | CL     | 179+50  | 0.0-1.5        | A-2-4(0)      | 18   | NP   | 37.7        | 46.0    | 7.3  | 3.1  | 100                | 86 | 18 | -          | -         |
| SS-41      | CL     | 179+50  | 8.5-10.0       | A-2-4(0)      | 31   | 8    | 35.7        | 45.0    | 5.1  | 14.2 | 100                | 84 | 21 | -          | -         |
| SS-42      | CL     | 179+50  | 23.5-25.0      | A-4(0)        | 25   | 8    | 35.8        | 18.6    | 27.3 | 18.2 | 91                 | 72 | 43 | -          | -         |
| SS-39      | CL     | 190+00  | 0.0-1.5        | A-4(0)        | 15   | 2    | 27.9        | 36.4    | 23.5 | 18.1 | 98                 | 86 | 39 | -          | -         |

|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                   | SHEET NO.<br><b>30</b> |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                        |



**SOIL TEST RESULTS**

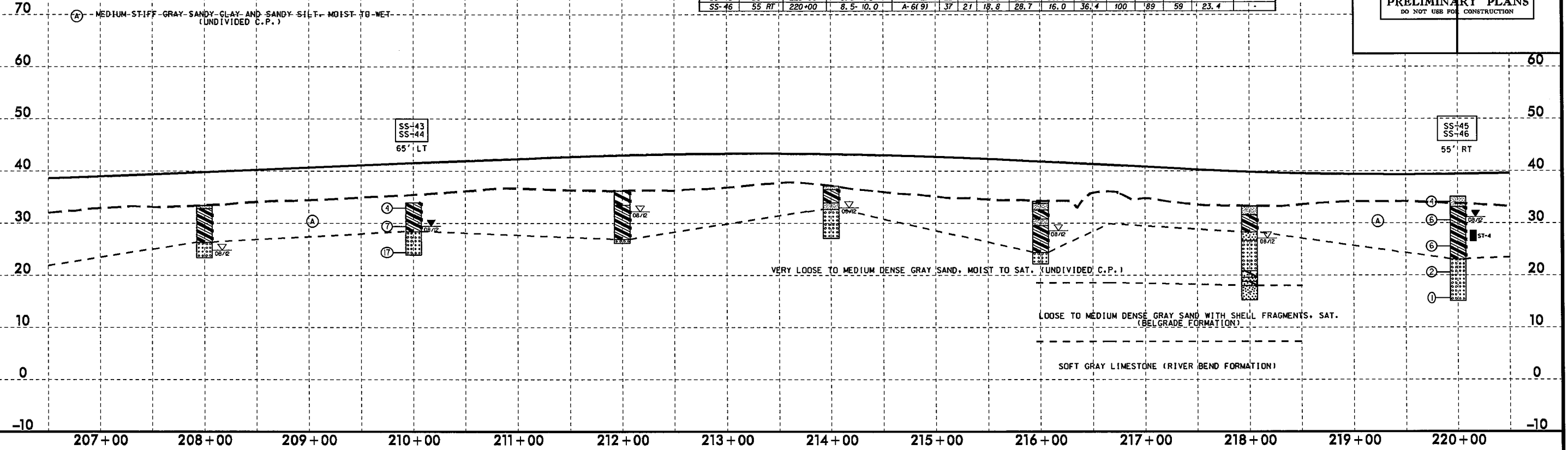
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |    | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 60 |            |           |
| SS-37      | 70' RT | 200+00  | 3.5-5.0        | A-7-6(18)     | 47   | 31   | 15.8        | 22.3    | 19.4 | 42.5 | 100                | 92 | 65 | -          | -         |
| SS-38      | 70' RT | 200+00  | 9.2-10.0       | A-3(0)        | 18   | NP   | 52.7        | 38.6    | 1.6  | 7.1  | 100                | 74 | 8  | -          | -         |



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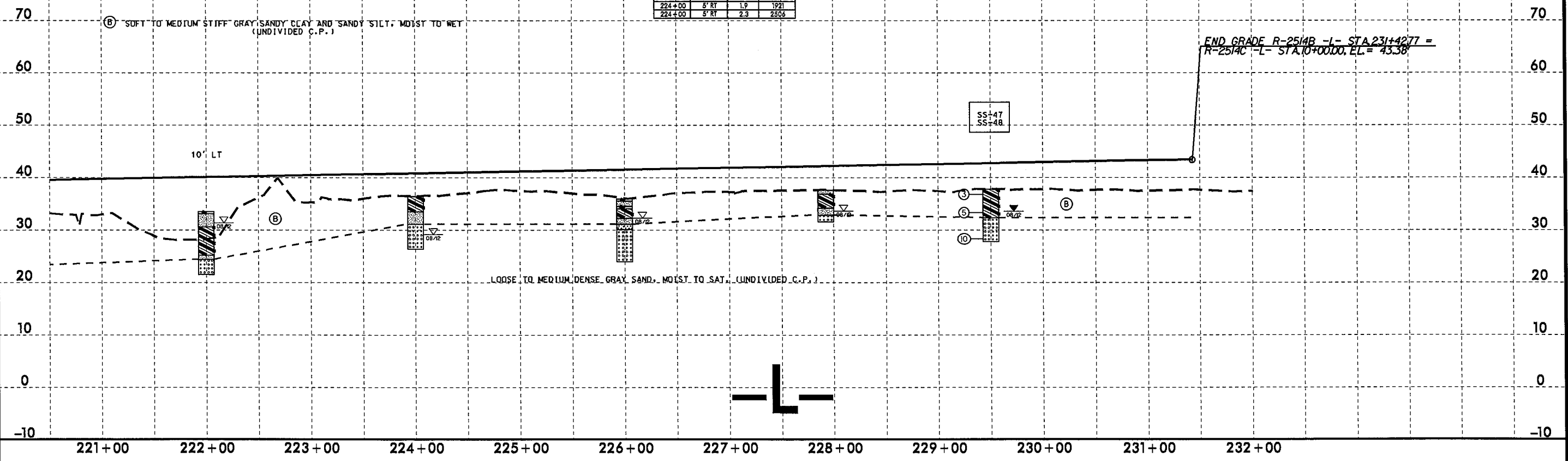
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| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>31</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40  |            |           |
| SS-43      | 65' LT | 210+00  | 0.6-1.5        | A-6(5)        | 33   | 18   | 23.7        | 30.8    | 13.8 | 32.4 | 100                | 187 | 49         | -         |
| SS-44      | 65' LT | 210+00  | 3.5-5.0        | A-6(6)        | 39   | 25   | 28.5        | 30.6    | 12.6 | 28.3 | 100                | 183 | 44         | -         |
| SS-45      | 55' RT | 220+00  | 0.5-1.5        | A-4(2)        | 25   | 7    | 18.6        | 27.1    | 30.0 | 24.3 | 100                | 190 | 61         | -         |
| SS-46      | 55' RT | 220+00  | 8.5-10.0       | A-6(9)        | 37   | 21   | 18.8        | 28.7    | 16.0 | 36.4 | 100                | 189 | 59         | 23.4      |



| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 224+00  | 8' RT  | 0.3   | 1086    |
| 224+00  | 8' RT  | 0.9   | 1293    |
| 224+00  | 8' RT  | 1.3   | 2547    |
| 224+00  | 8' RT  | 1.9   | 1921    |
| 224+00  | 8' RT  | 2.3   | 2506    |

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 |            |           |
| SS-47      | CL     | 229+50  | 0.6-1.5        | A-6(6)        | 30   | 14   | 16.4        | 26.9    | 28.3 | 100  | 91                 | 60 | -          |           |
| SS-48      | CL     | 229+50  | 8.5-10.0       | A-3(0)        | 20   | NP   | 50.5        | 43.0    | 1.4  | 5.1  | 100                | 97 | 7          |           |



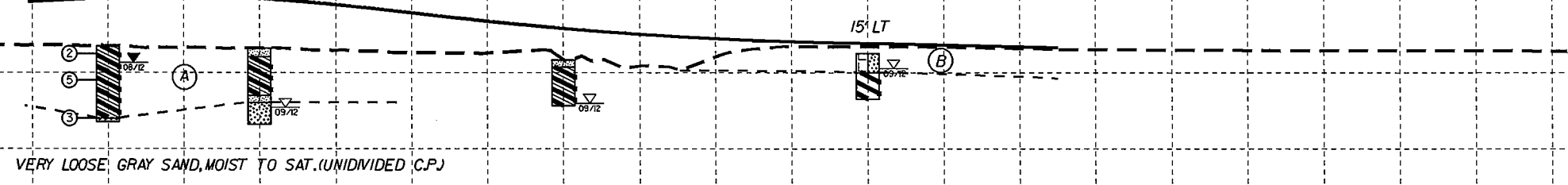
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|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>32</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S <sub>v</sub> (psf) |
|---------|--------|-------|----------------------|
| 14+00   | 7 RT   | 0.3   | 2673                 |
| 14+00   | 7 RT   | 0.9   | 2798                 |

- (A) SOFT TO MEDIUM STIFF TAN GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)
- (B) MEDIUM-DENSE TAN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)



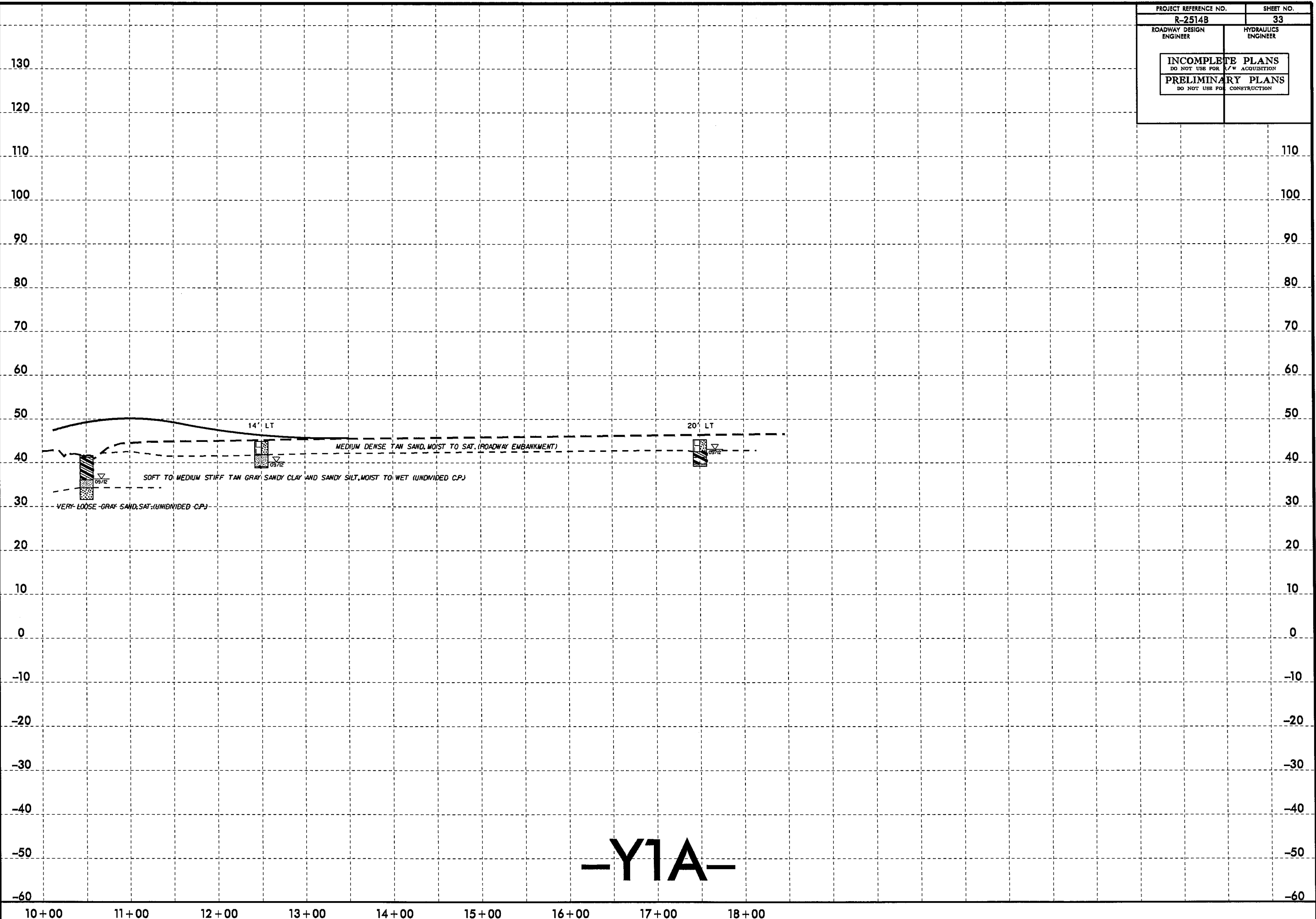
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|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>33</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



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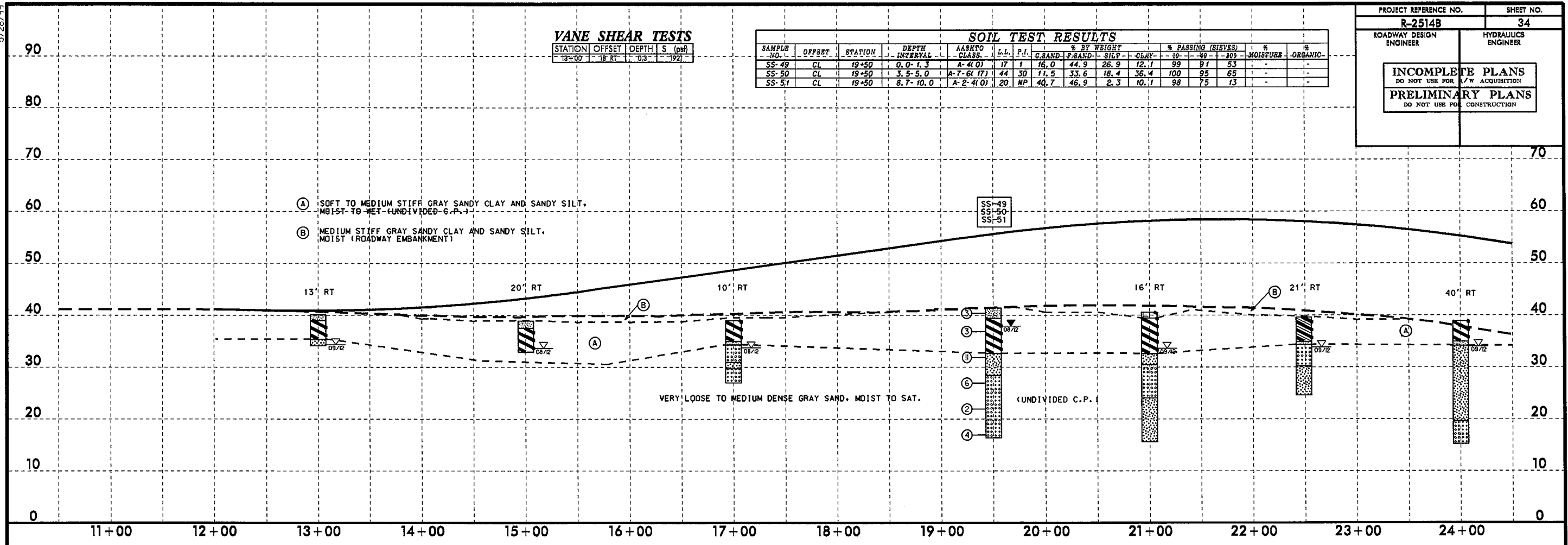
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| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>34</b> |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psi) |
|---------|--------|-------|---------|
| 13+00   | 18' RT | 0.3'  | 192     |

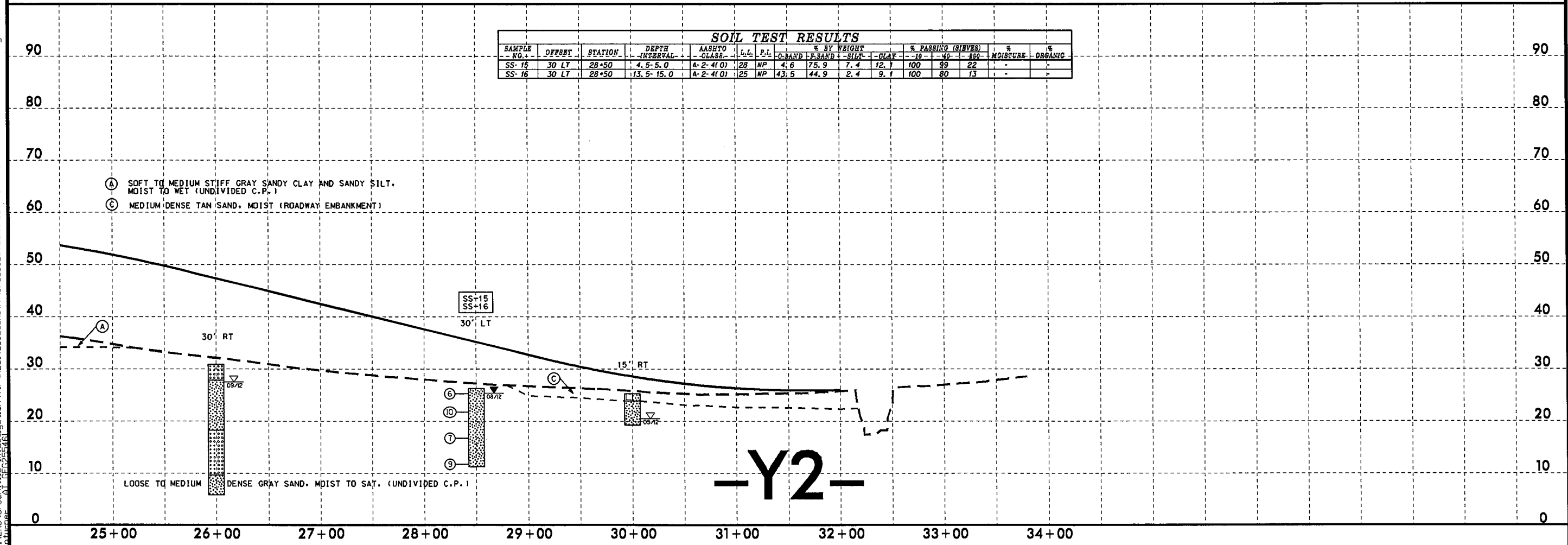
**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.L. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
|            |        |         |                |               |      |      | G.SAND      | F.SAND | SILT | CLAY | -10                | -40 | -200 |            |           |
| SS-49      | CL     | 19+50   | 0.0-1.3        | A-4(0)        | 17   | 1    | 16.0        | 44.9   | 26.9 | 12.1 | 99                 | 91  | 53   | -          | -         |
| SS-50      | CL     | 19+50   | 3.5-5.0        | A-7-6(17)     | 44   | 30   | 11.5        | 33.6   | 18.4 | 36.4 | 100                | 95  | 65   | -          | -         |
| SS-51      | CL     | 19+50   | 8.7-10.0       | A-2-4(0)      | 20   | NP   | 40.7        | 46.9   | 2.3  | 10.1 | 98                 | 75  | 13   | -          | -         |



**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.L. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
|            |        |         |                |               |      |      | G.SAND      | F.SAND | SILT | CLAY | -10                | -40 | -200 |            |           |
| SS-15      | 30' LT | 28+50   | 4.5-5.0        | A-2-4(0)      | 28   | NP   | 4.6         | 75.9   | 7.4  | 12.7 | 100                | 99  | 22   | -          | -         |
| SS-16      | 30' LT | 28+50   | 13.5-15.0      | A-2-4(0)      | 25   | NP   | 43.5        | 44.9   | 2.4  | 9.1  | 100                | 80  | 13   | -          | -         |



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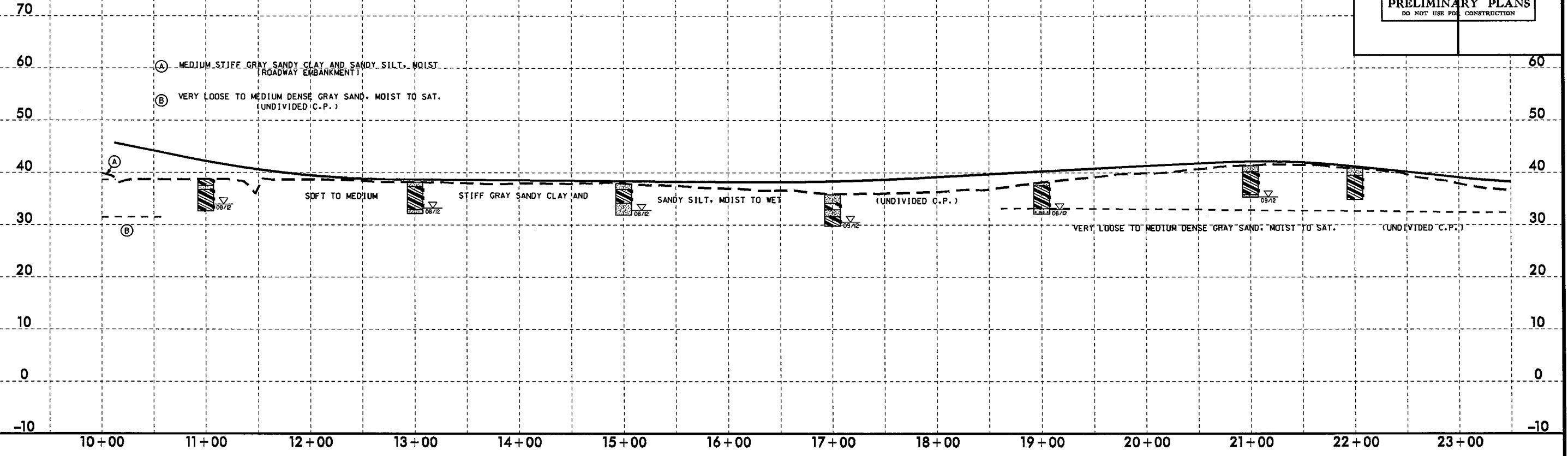


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|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-25148</b>                 | SHEET NO.<br><b>35</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 11+00   | 5 RT   | 0.3'  | 2380    |
| 11+00   | 5 RT   | 0.9'  | 3550    |

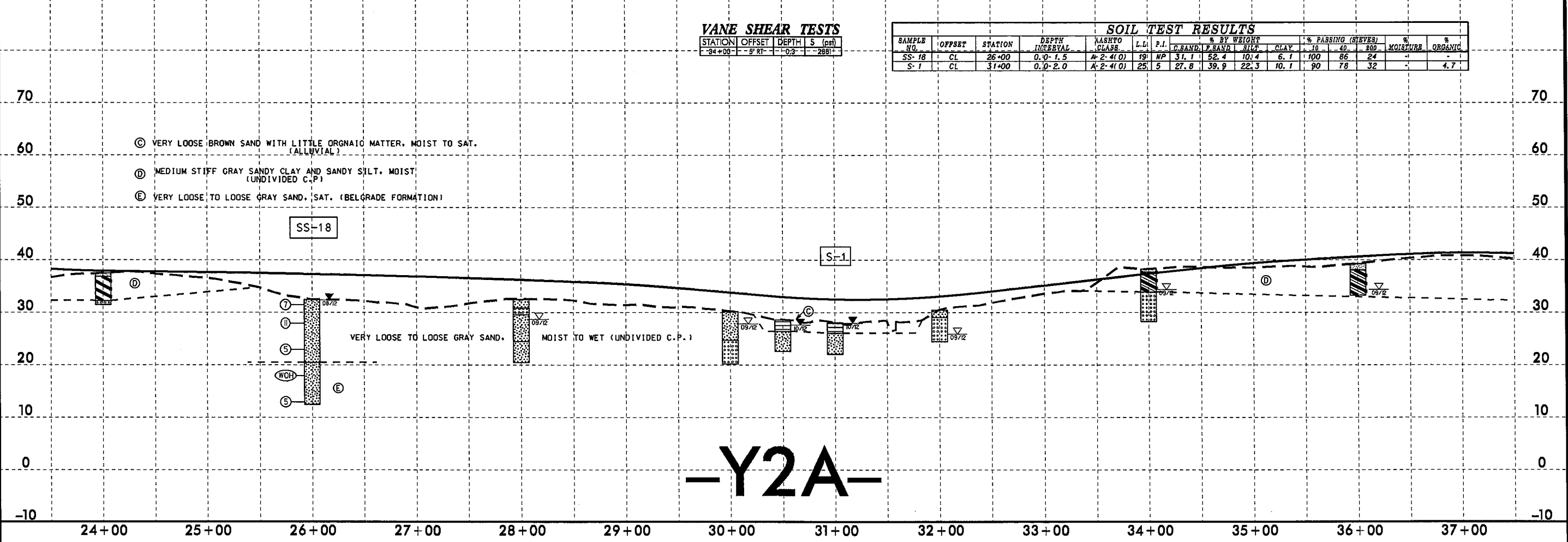


**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 34+00   | 5 RT   | 0.3'  | 2881    |

**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASTHO CLASS. | L.L. | P.L. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|--------------|------|------|-------------|--------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |              |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-18      | CL     | 26+00   | 0.0-1.5        | A-2-4(0)     | 19   | NP   | 31.1        | 52.4   | 10.4 | 6.1  | 100                | 86 | 24  | -          | -         |
| S-1        | CL     | 31+00   | 0.0-2.0        | A-2-4(0)     | 25   | S    | 27.8        | 39.9   | 22.3 | 10.1 | 90                 | 78 | 32  | -          | 4.7       |



**-Y2A-**

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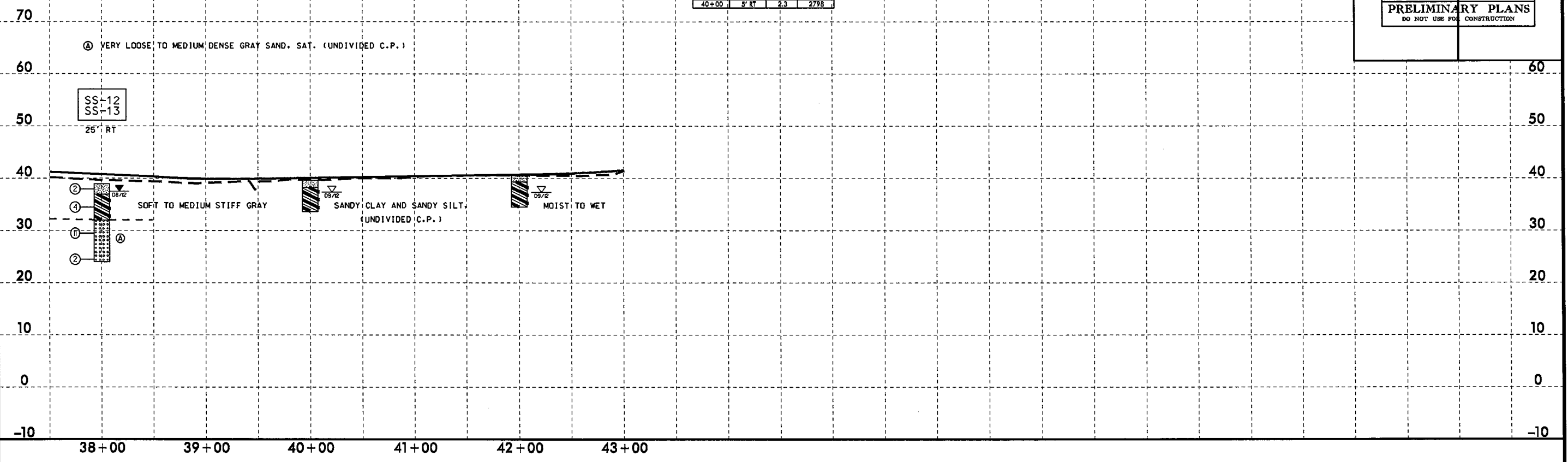
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| SOIL TEST RESULTS |        |         |                |               |      |      |             |         |      |      |                    |     |      |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|-----|------|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.F. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | G. SAND     | F. SAND | SILT | CLAY | #10                | #40 | #200 |            |           |
| SS-12             | 25 RT  | 38+00   | 0.0-1.5        | A-4(0)        | 17   | 2    | 22.7        | 44.7    | 15.0 | 18.2 | 100                | 88  | 40   | -          | -         |
| SS-13             | 25 RT  | 38+00   | 3.5-5.0        | A-6(5)        | 33   | 17   | 17.0        | 38.7    | 14.0 | 30.4 | 100                | 92  | 50   | -          | -         |

| VANE SHEAR TESTS |        |       |   |         |
|------------------|--------|-------|---|---------|
| STATION          | OFFSET | DEPTH | S | S (pcf) |
| 40+00            | 5' RT  | 0.3   | - | 2218    |
| 40+00            | 5' RT  | 0.9   | - | 3508    |
| 40+00            | 5' RT  | 1.3   | - | 1963    |
| 40+00            | 5' RT  | 1.9   | - | 1754    |
| 40+00            | 5' RT  | 2.3   | - | 2798    |

|  |                        |
|--|------------------------|
| PROJECT REFERENCE NO.<br><b>R-25148</b>  | SHEET NO.<br><b>36</b> |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

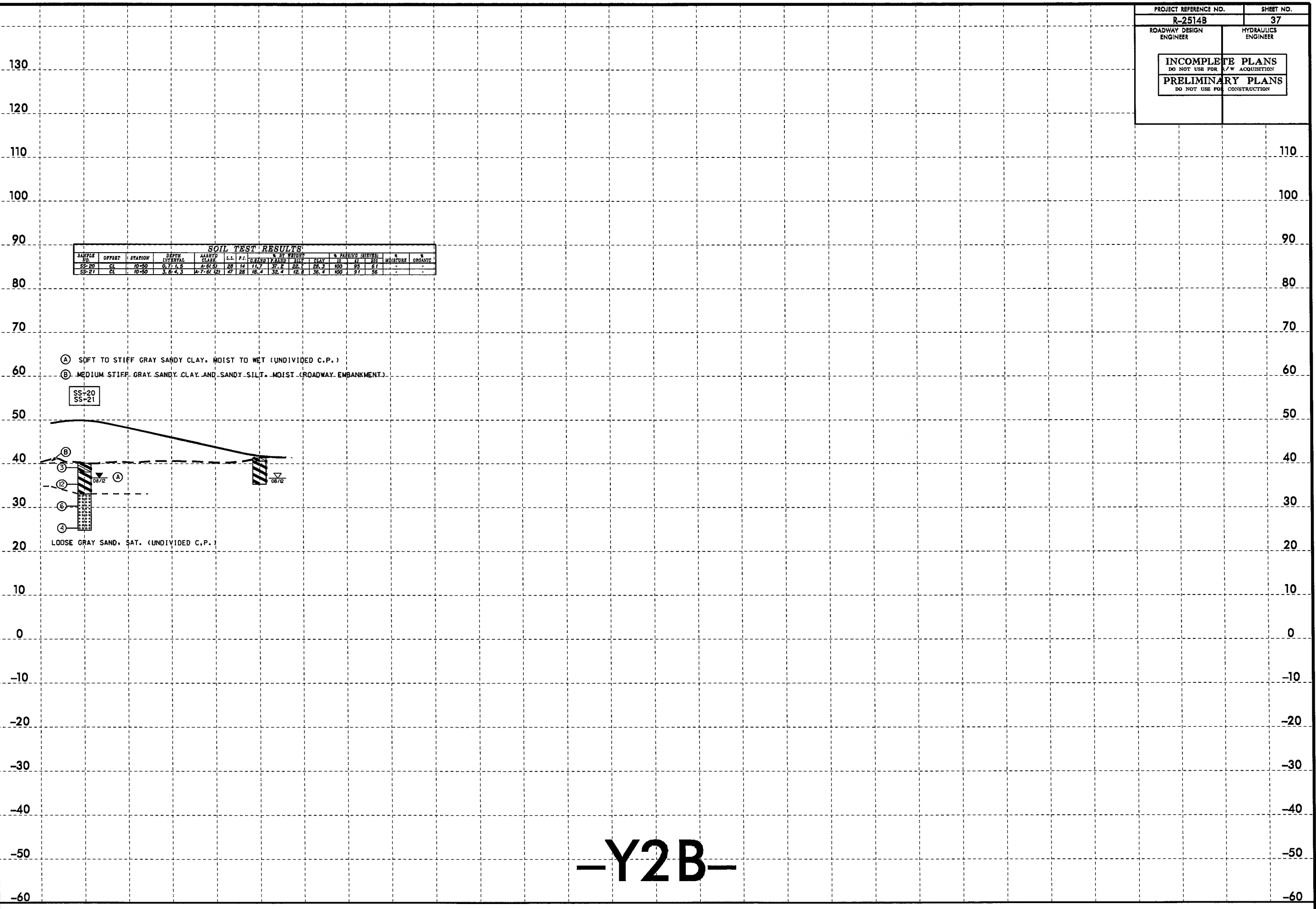


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|  |                        |
|--|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>  | SHEET NO.<br><b>37</b> |
| ROADWAY DESIGN ENGINEER  | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION<br><b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



| SOIL TEST RESULTS |        |         |                |             |      |      |             |           |      |                    |        |         |            |           |
|-------------------|--------|---------|----------------|-------------|------|------|-------------|-----------|------|--------------------|--------|---------|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | ASTM CLASS. | L.L. | P.L. | % BY WEIGHT |           |      | % PASSING (SIEVES) |        |         | % MOISTURE | % ORGANIC |
|                   |        |         |                |             |      |      | SAND        | FINE SAND | SILT | NO. 10             | NO. 40 | NO. 100 |            |           |
| SS-20             | C      | 10+30   | 0.7-2.5        | 4-BL        | 28   | 14   | 11.1        | 37.2      | 22.2 | 66.3               | 100    | 95      | 61         | -         |
| SS-21             | CL     | 10+50   | 1.8-4.1        | 4-F-OL (2)  | 27   | 28   | 16.4        | 32.4      | 12.4 | 36.4               | 100    | 91      | 56         | -         |

- (A) SOFT TO STIFF GRAY SANDY CLAY. MOIST TO WET (UNDIVIDED C.P.)
- (B) MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT. MOIST (ROADWAY EMBANKMENT)

SS-20  
SS-21

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

**-Y2B-**

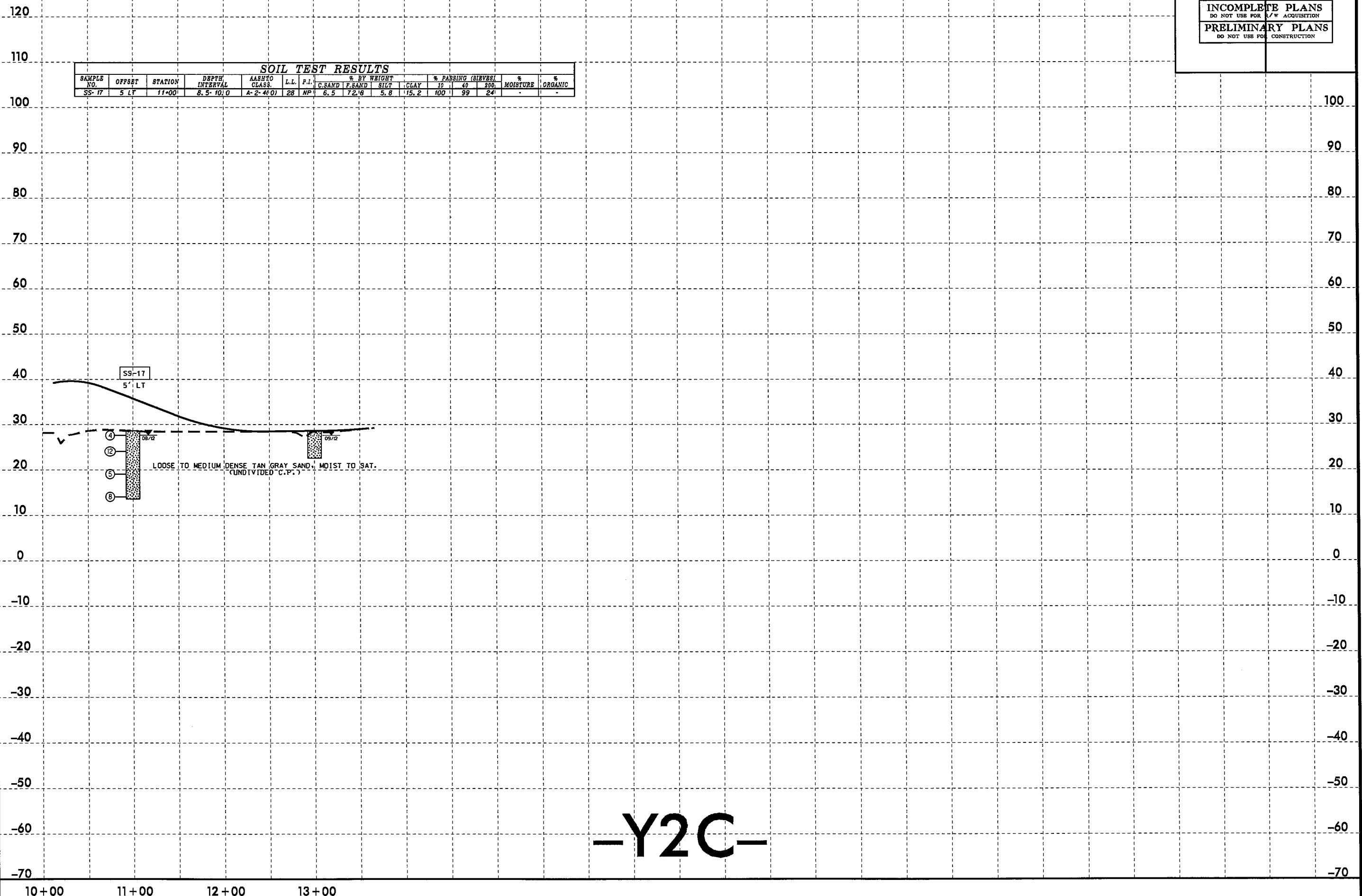
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|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>38</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

| SOIL TEST RESULTS |        |         |                |            |      |      |             |        |      |      |                    |    |     |            |           |
|-------------------|--------|---------|----------------|------------|------|------|-------------|--------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | ASTM CLASS | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|                   |        |         |                |            |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-17             | 5 LT   | 11+00   | 8.5-10.0       | A-2-4(0)   | 28   | NP   | 6.5         | 72.6   | 5.8  | 15.2 | 100                | 99 | 24  | -          | -         |



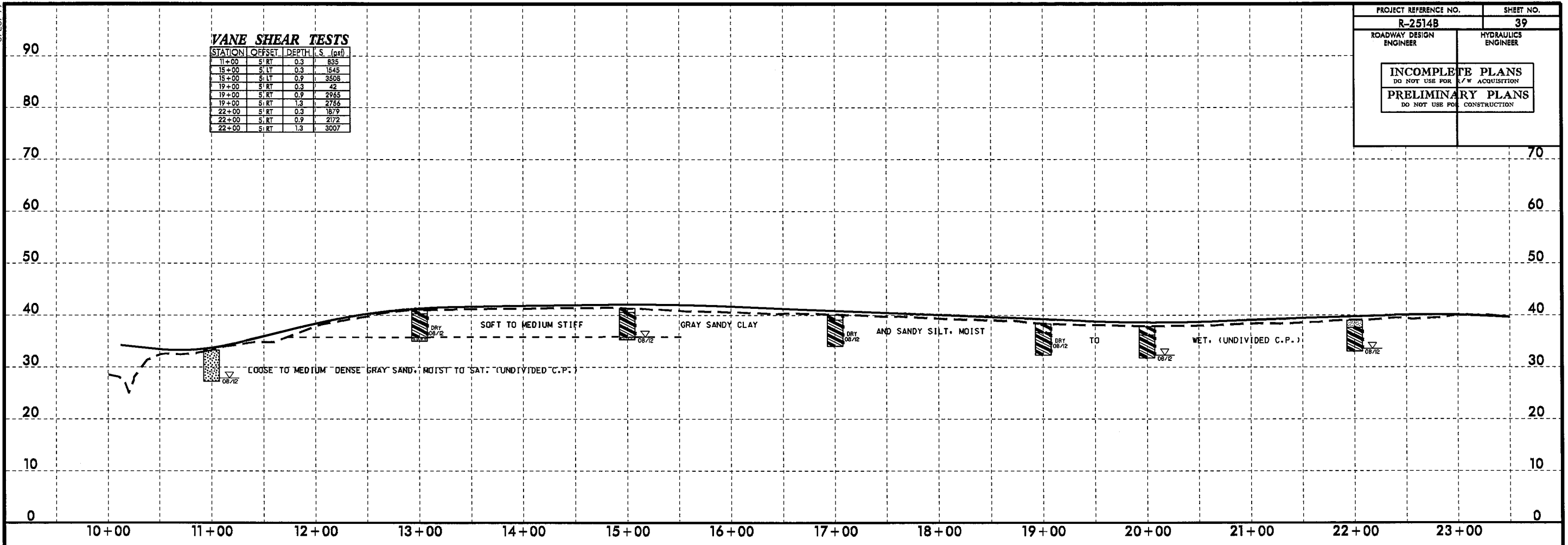
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|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>39</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 11+00   | 5' RT  | 0.3   | 835     |
| 15+00   | 5' LT  | 0.3   | 1545    |
| 15+00   | 5' LT  | 0.9   | 3508    |
| 19+00   | 5' RT  | 0.3   | 42      |
| 19+00   | 5' RT  | 0.9   | 2965    |
| 19+00   | 5' RT  | 1.3   | 2766    |
| 22+00   | 5' RT  | 0.3   | 1879    |
| 22+00   | 5' RT  | 0.9   | 2172    |
| 22+00   | 5' RT  | 1.3   | 3007    |



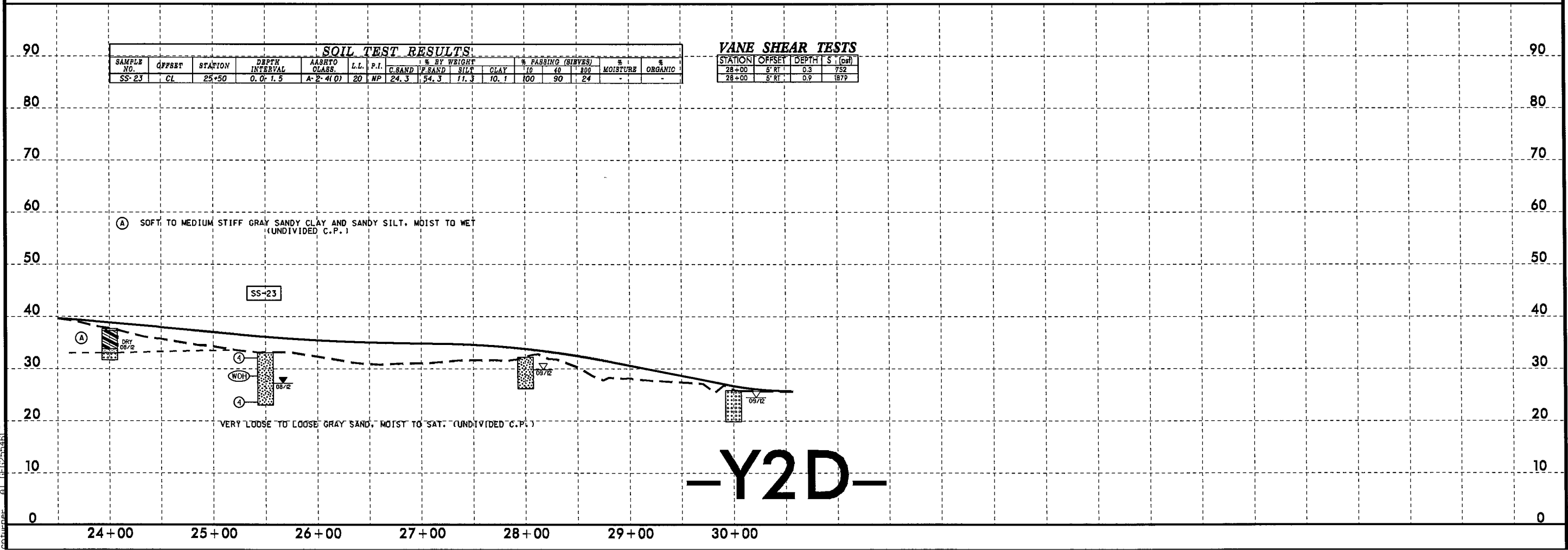
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**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASTRO GLASS | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|-------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |             |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-23      | CL     | 25+50   | 0.0' - 1.5'    | A-2-4(0)    | 20   | NP   | 24.3        | 54.3    | 11.3 | 10.1 | 100                | 90 | 24  | -          | -         |

**VANE SHEAR TESTS**

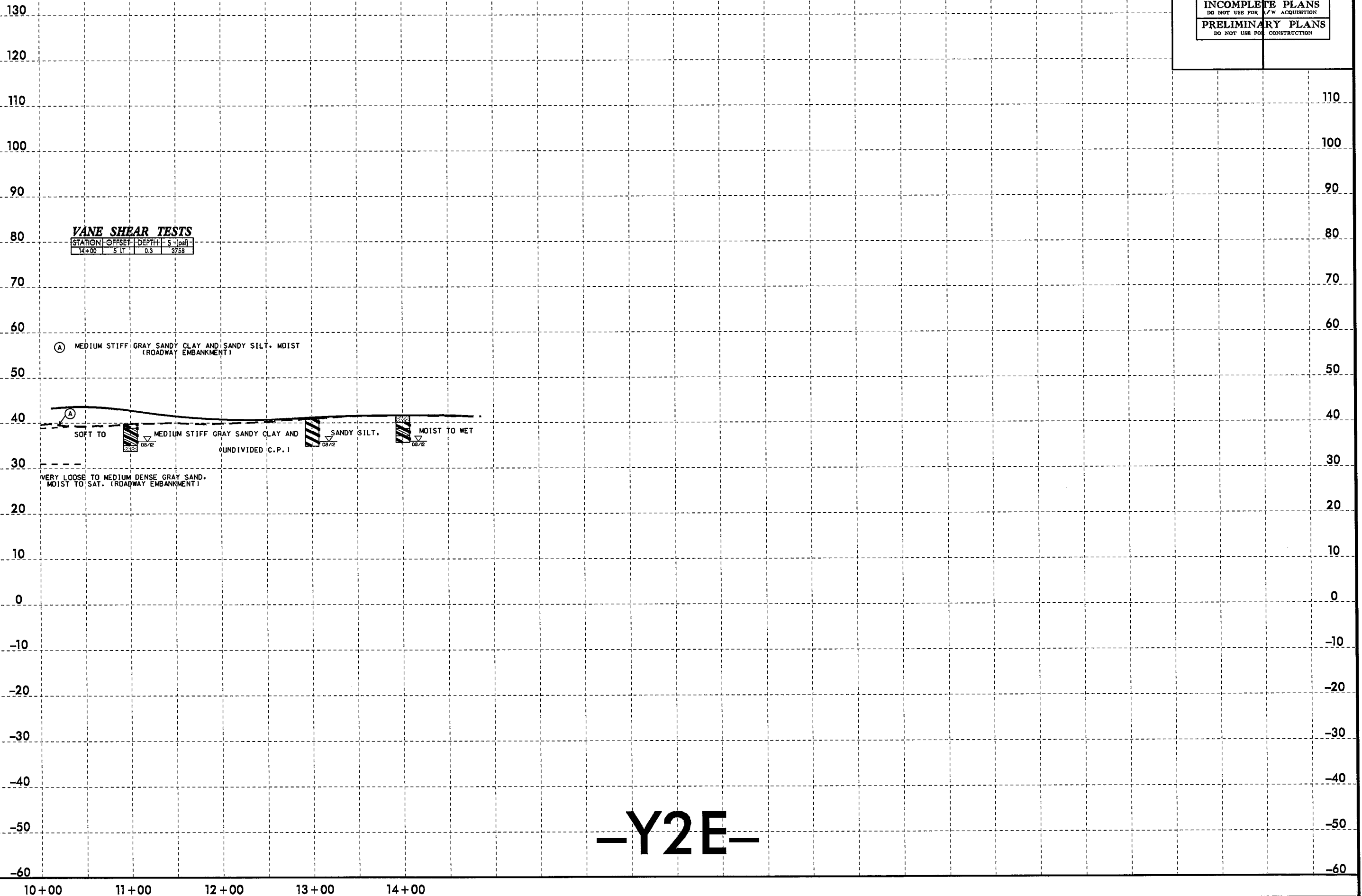
| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 28+00   | 5' RT  | 0.3   | 752     |
| 28+00   | 5' RT  | 0.9   | 1879    |



**-Y2D-**

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|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>40</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



-Y2E-

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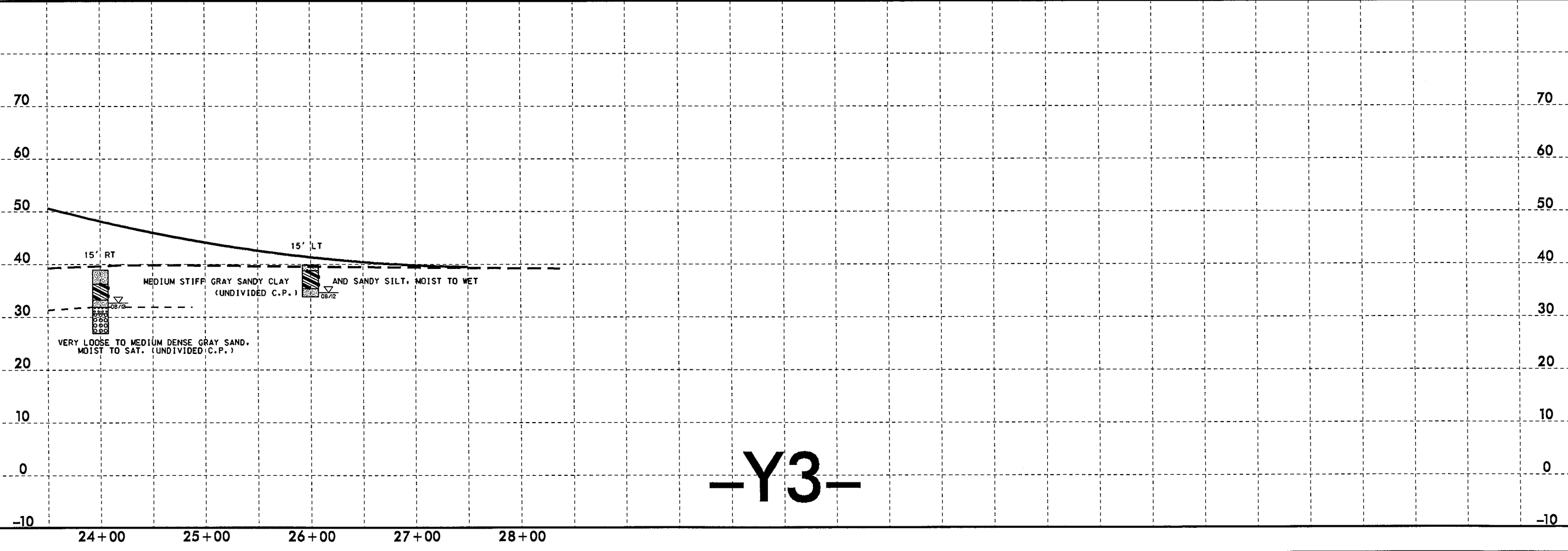
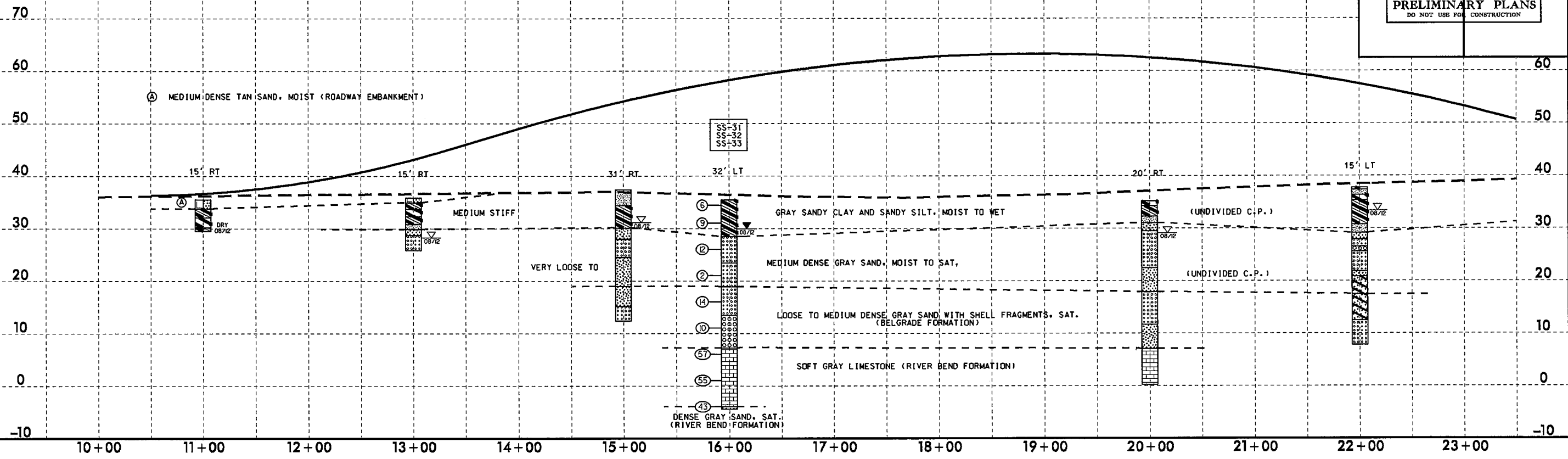
### VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 11+00   | 17' RT | 0.3   | 2464    |
| 11+00   | 17' RT | 1.3   | 2088    |
| 11+00   | 17' RT | 1.9   | 1629    |
| 11+00   | 17' RT | 2.3   | 2004    |

### SOIL TEST RESULTS

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      | % PASSING (SIEVES) |     |    | % MOISTURE | % ORGANIC |     |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|--------------------|-----|----|------------|-----------|-----|
|            |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY               | 10  | 40 |            |           | 200 |
| SS-31      | 32' LT | 16+00   | 0.5-1.5        | A-6(15)       | 39   | 23   | 8.9         | 23.5   | 27.1 | 40.5               | 100 | 95 | 74         | -         | -   |
| SS-32      | 32' LT | 16+00   | 3.4-4.9        | A-6(5)        | 32   | 16   | 19.2        | 36.6   | 15.8 | 28.3               | 100 | 91 | 50         | -         | -   |
| SS-33      | 32' LT | 16+00   | 23.4-24.9      | A-1(60)       | 19   | NP   | 83.9        | 13.8   | 2.3  | 0.0                | 93  | 47 | 3          | -         | -   |

|   |                        |
|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>41</b> |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER    |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



# -Y3-

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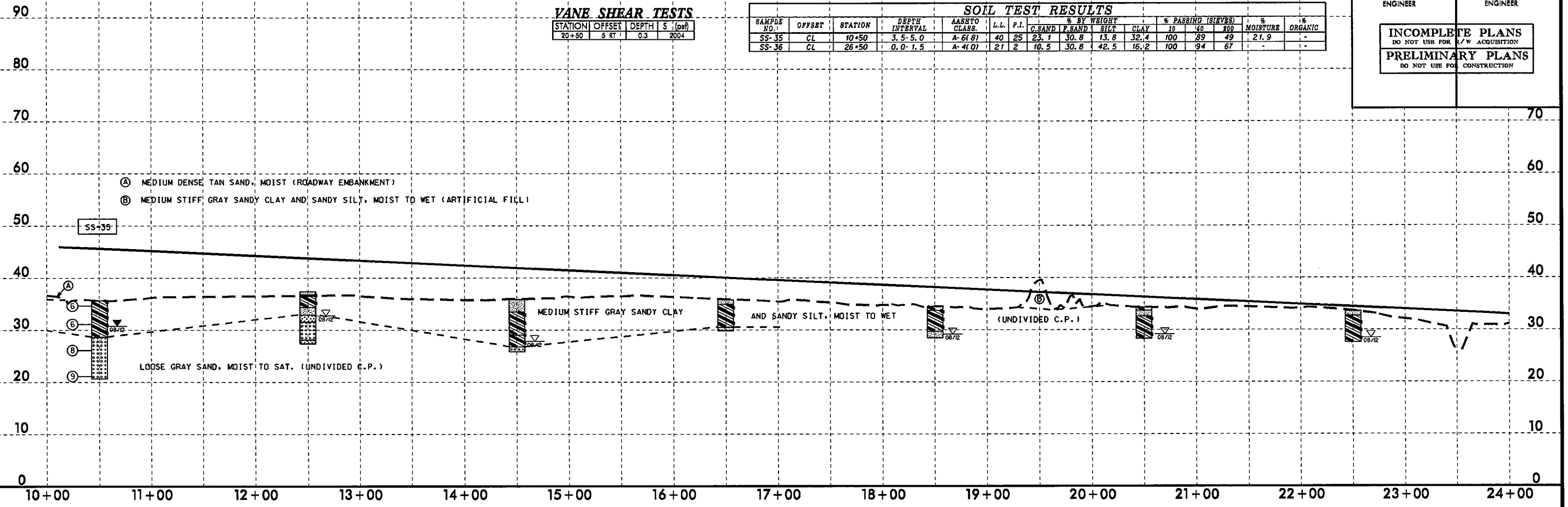
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| PROJECT REFERENCE NO.                          |  | SHEET NO.  |  |
| R-2514B  |  | 42   |  |
| ROADWAY DESIGN ENGINEER                        |  | HYDRAULICS ENGINEER                              |  |
| INCOMPLETE PLANS<br>DO NOT USE FOR ACQUISITION |  | PRELIMINARY PLANS<br>DO NOT USE FOR CONSTRUCTION |  |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (pcf) |
|---------|--------|-------|---------|
| 20+50   | 5' RT  | 0.3   | 2004    |

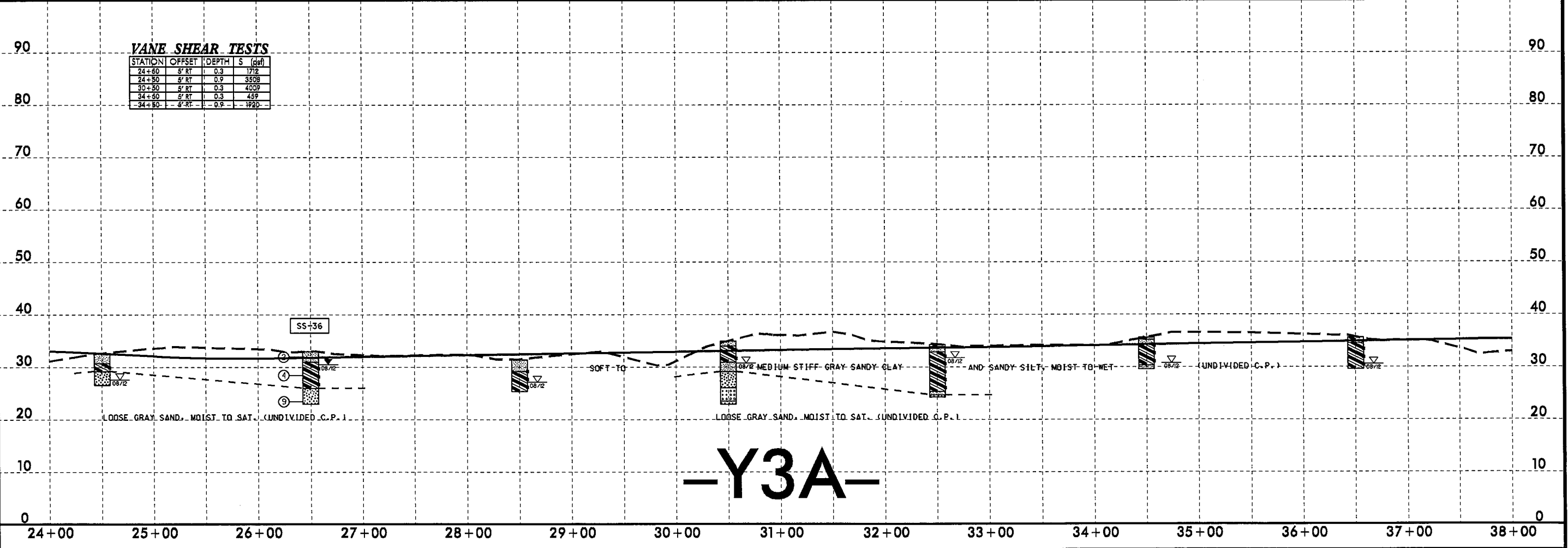
**SOIL TEST RESULTS**

| 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-35      | CL     | 10+50   | 3.5-5.0        | A-6(8)        | 40   | 25   | 23.1        | 30.8    | 13.8 | 32.4 | 100                | 89 | 49  | 21.9       | -         |
| SS-36      | CL     | 26+50   | 0.0-1.5        | A-4(0)        | 21   | 2    | 10.5        | 30.8    | 42.5 | 16.2 | 100                | 94 | 67  | -          | -         |



**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (pcf) |
|---------|--------|-------|---------|
| 24+50   | 5' RT  | 0.3   | 1712    |
| 24+50   | 5' RT  | 0.9   | 3508    |
| 30+50   | 5' RT  | 0.3   | 4009    |
| 34+50   | 5' RT  | 0.3   | 459     |
| 34+50   | 5' RT  | 0.9   | 1920    |



**-Y3A-**

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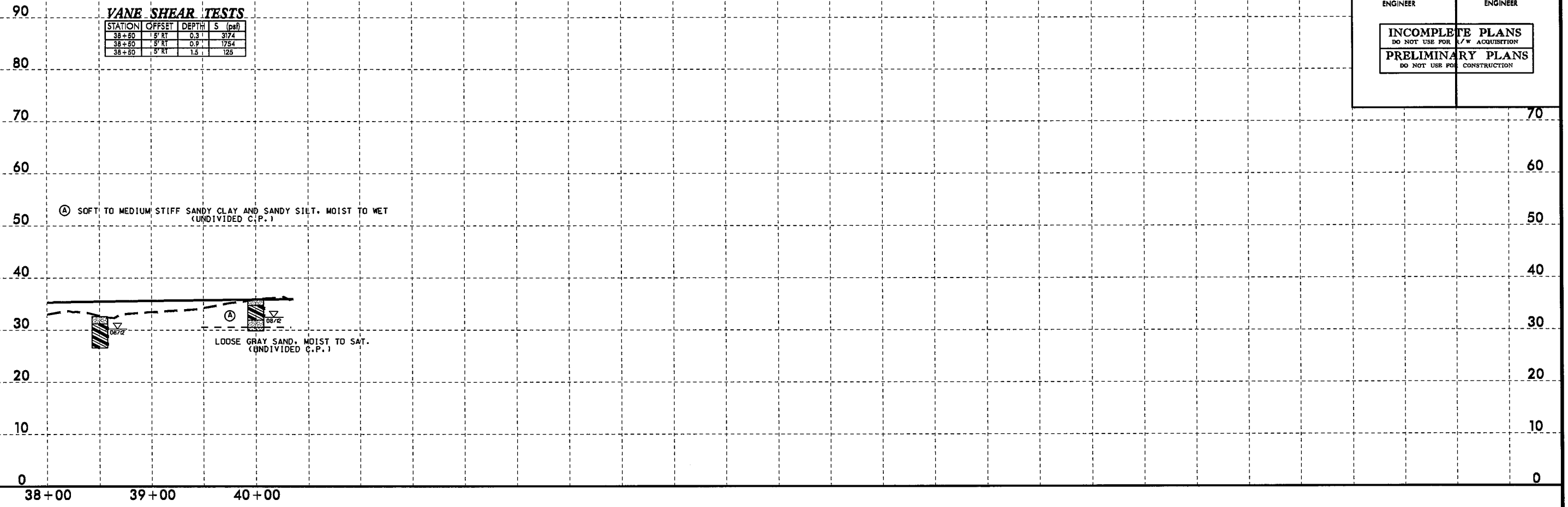
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|   |                     |
|---|---------------------|
| PROJECT REFERENCE NO.                                   | SHEET NO.           |
| R-2514B   | 43                  |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/CQUISITION  |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 38+50   | 5 RT   | 0.3   | 374     |
| 38+50   | 5 RT   | 0.9   | 1754    |
| 38+50   | 5 RT   | 1.5   | 125     |



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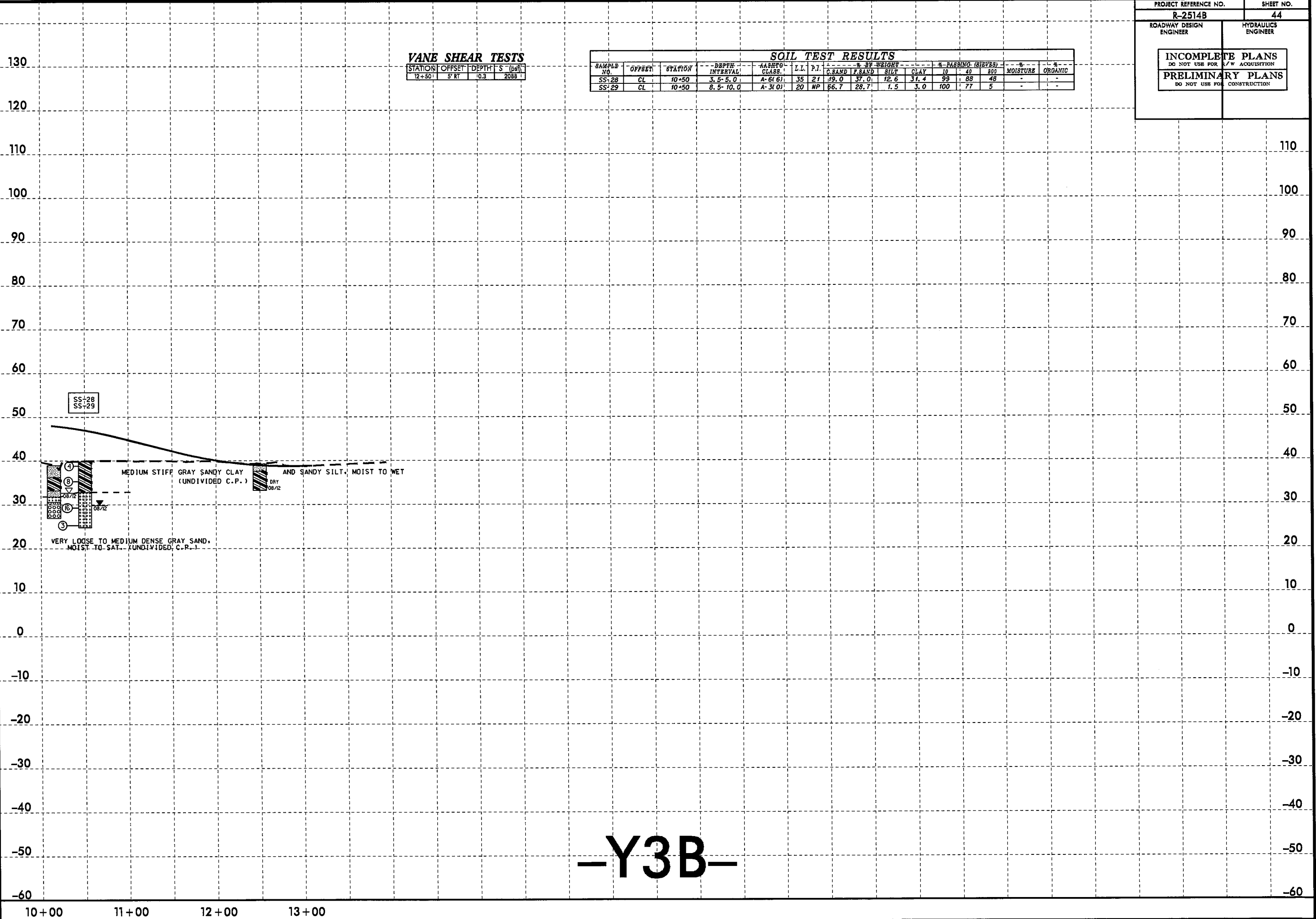
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| PROJECT REFERENCE NO.                                   | SHEET NO.           |
| R-2514B   | 44                  |
| ROADWAY DESIGN ENGINEER                                 | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                     |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 12+50   | 5' RT  | 0.3   | 2088    |

**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASTM CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    | MOISTURE | ORGANIC |     |
|------------|--------|---------|----------------|-------------|------|------|-------------|---------|------|------|--------------------|----|----------|---------|-----|
|            |        |         |                |             |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 |          |         | 600 |
| SS-28      | CL     | 10+50   | 3.5-5.0        | A-6(6)      | 35   | 21   | 19.0        | 37.0    | 12.6 | 31.4 | 99                 | 88 | 48       | -       | -   |
| SS-29      | CL     | 10+50   | 8.5-10.0       | A-3(0)      | 20   | NP   | 66.7        | 28.7    | 1.5  | 3.0  | 100                | 77 | 5        | -       | -   |



-Y3B-

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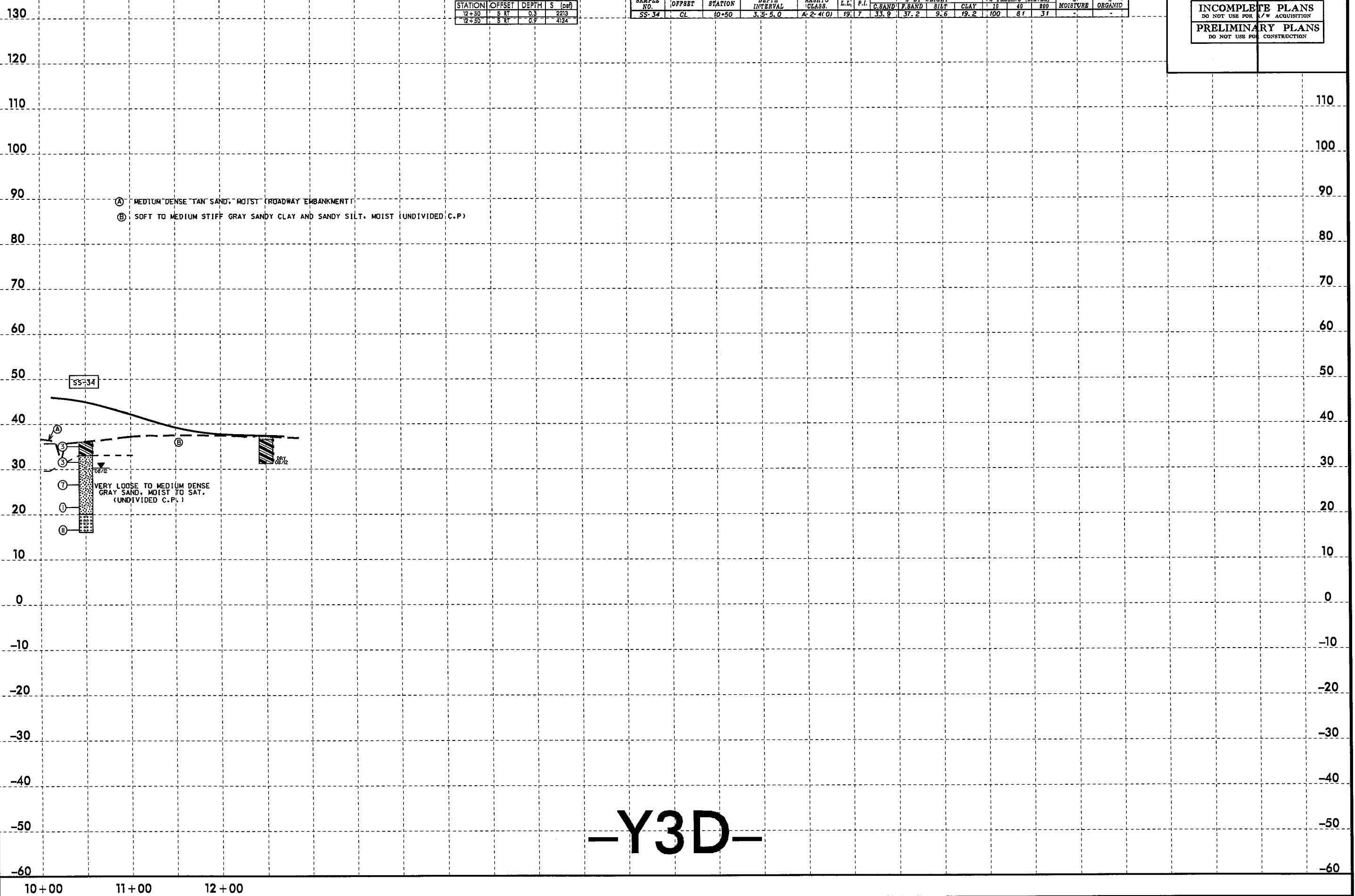
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|---|---------------------|
| PROJECT REFERENCE NO.                                     | SHEET NO.           |
| R-2514B   | 46                  |
| ROADWAY DESIGN ENGINEER                                   | HYDRAULICS ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR A/W ACQUISITION |                     |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION   |                     |

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (pcf) |
|---------|--------|-------|---------|
| 12+50   | 5 RT   | 0.3   | 2213    |
| 12+50   | 5 RT   | 0.9   | 4134    |

**SOIL TEST RESULTS**

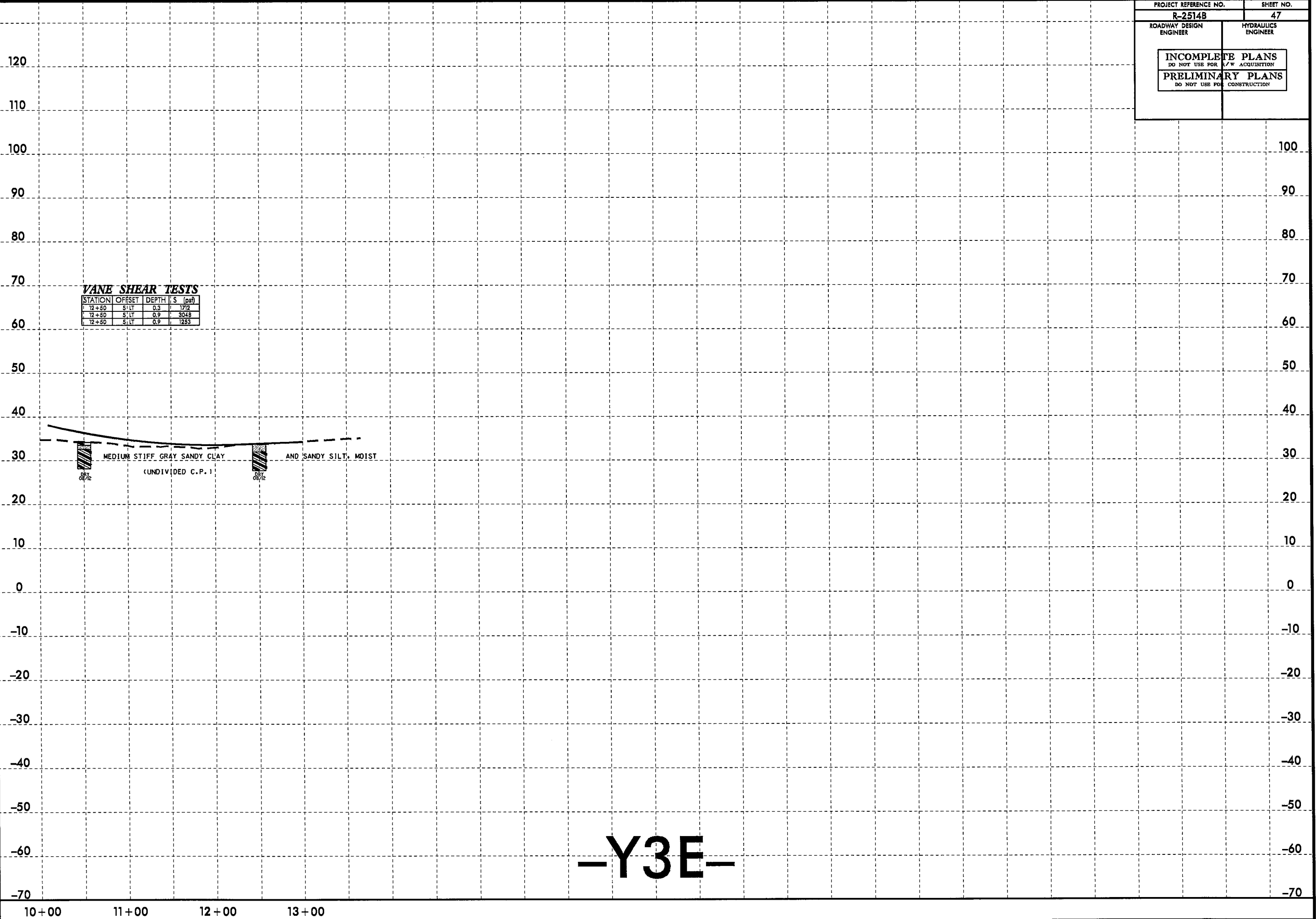
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-34      | CL     | 10+50   | 3.5-5.0        | A-2-4(0)      | 19.7 | 7    | 33.9        | 37.2    | 9.6  | 19.2 | 100                | 81 | 31  | -          | -         |



-Y3D-

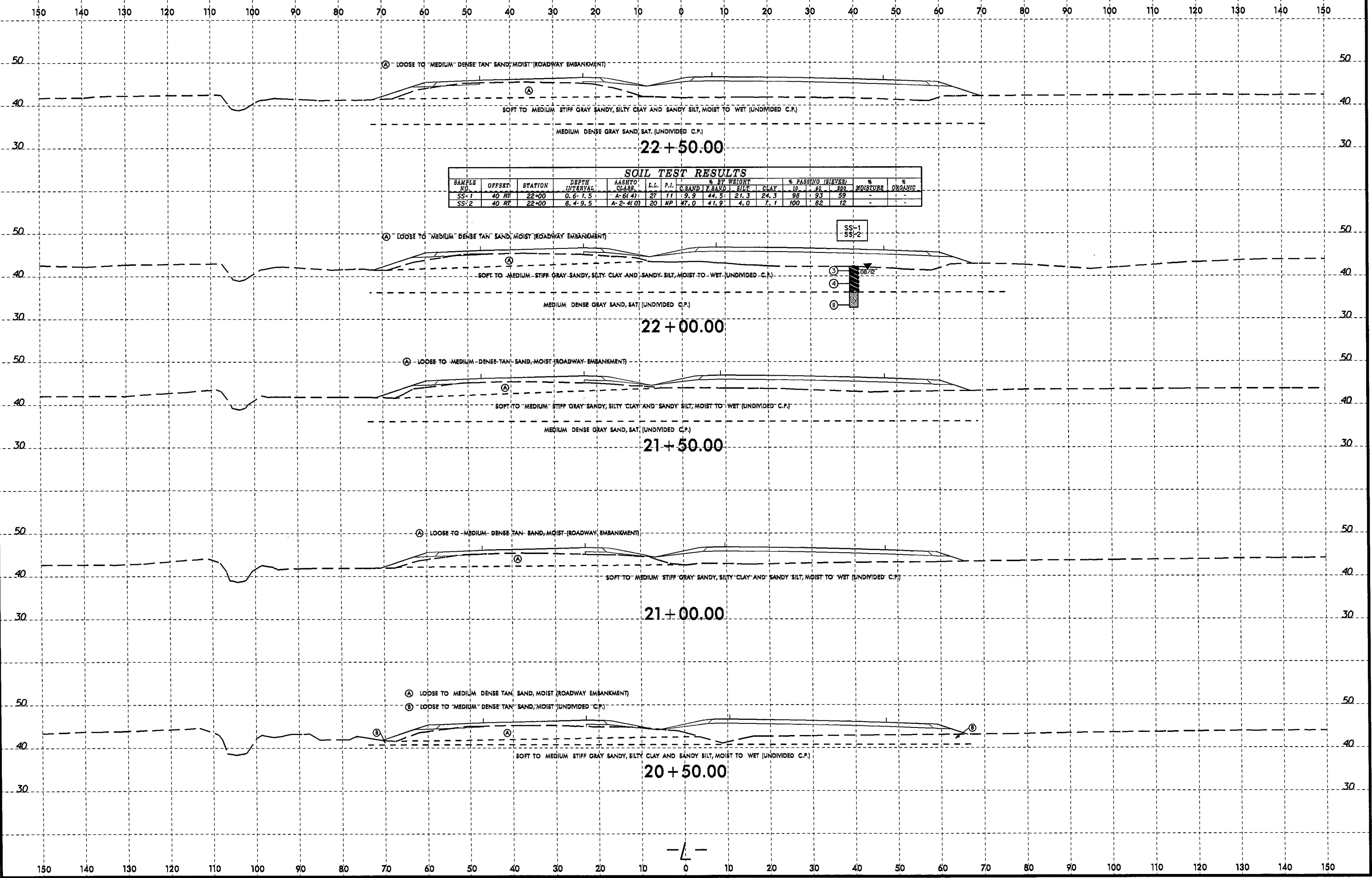
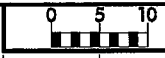
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|---|------------------------|
| PROJECT REFERENCE NO.<br><b>R-2514B</b>                 | SHEET NO.<br><b>47</b> |
| ROADWAY DESIGN<br>ENGINEER                              | HYDRAULICS<br>ENGINEER |
| <b>INCOMPLETE PLANS</b><br>DO NOT USE FOR ACQUISITION   |                        |
| <b>PRELIMINARY PLANS</b><br>DO NOT USE FOR CONSTRUCTION |                        |



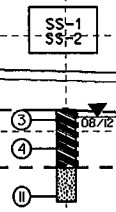
-Y3E-



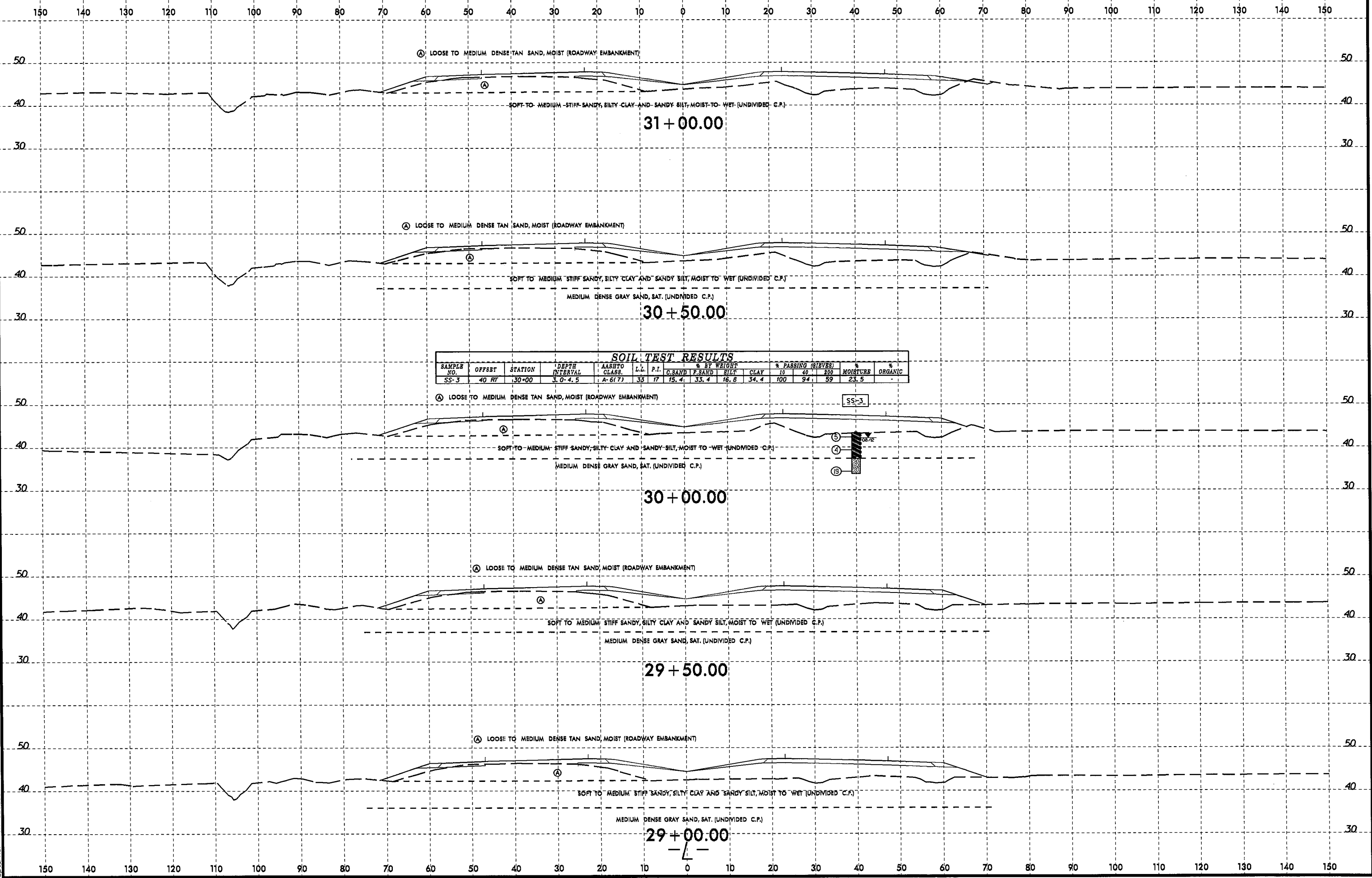


**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |             | % PASSING (SIEVES) |     | % MOISTURE | % ORGANIC |   |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|-------------|--------------------|-----|------------|-----------|---|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT & CLAY | #10                | #40 |            |           |   |
| SS-1       | 40 FT  | 22+00   | 0.6'-1.5'      | A-6(4)        | 27   | 11   | 19.9        | 44.5    | 21.3        | 24.3               | 98  | 93         | 59        | - |
| SS-2       | 40 FT  | 22+00   | 8.4'-9.5'      | A-2(40)       | 20   | NP   | 47.0        | 41.9    | 4.0         | 7.1                | 100 | 82         | 12        | - |



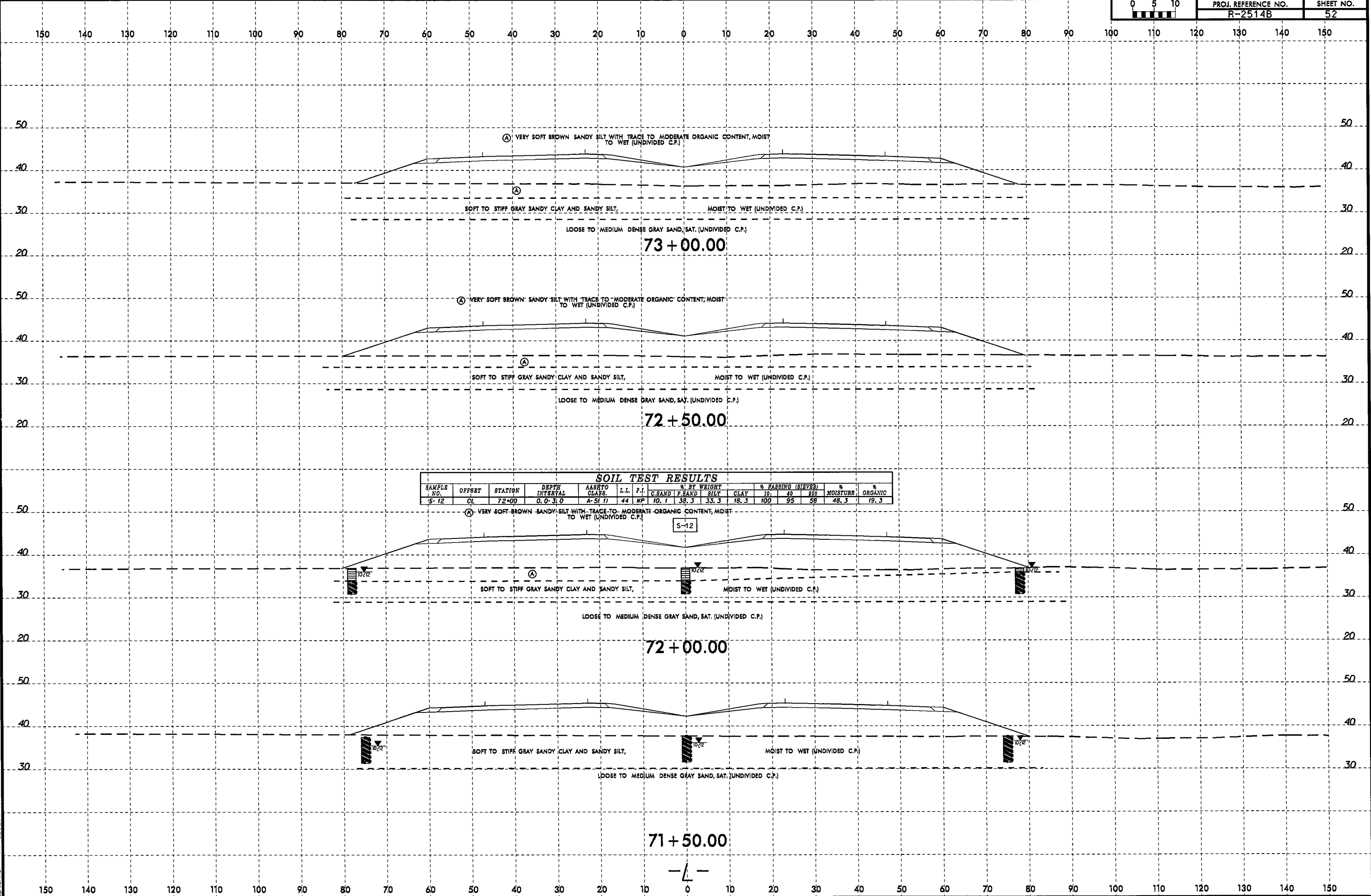
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 SP Turner AT GEG55761







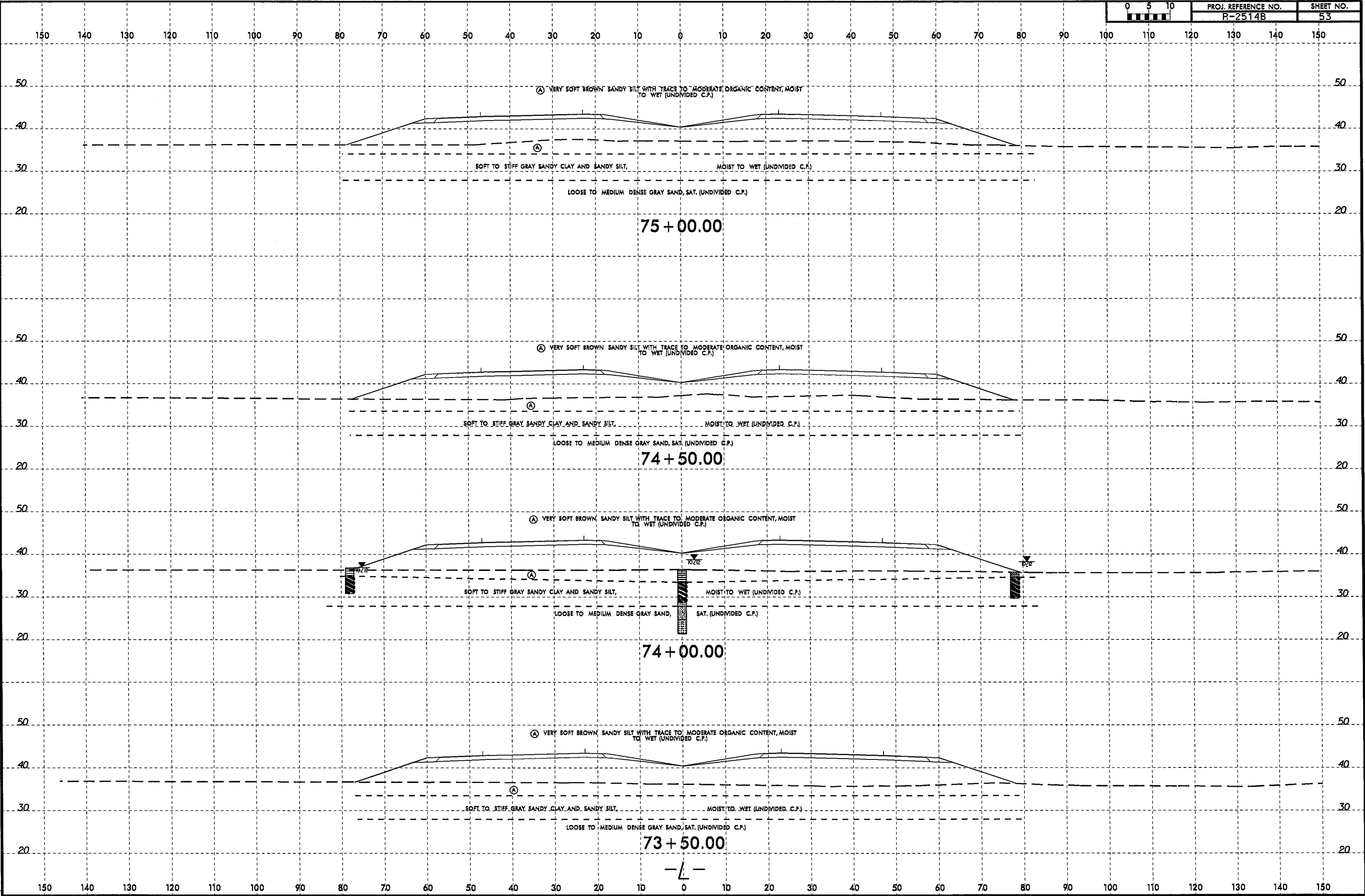
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 gp.kurner AT GEO255461



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| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 53        |



75 + 00.00

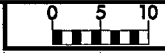
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74 + 00.00

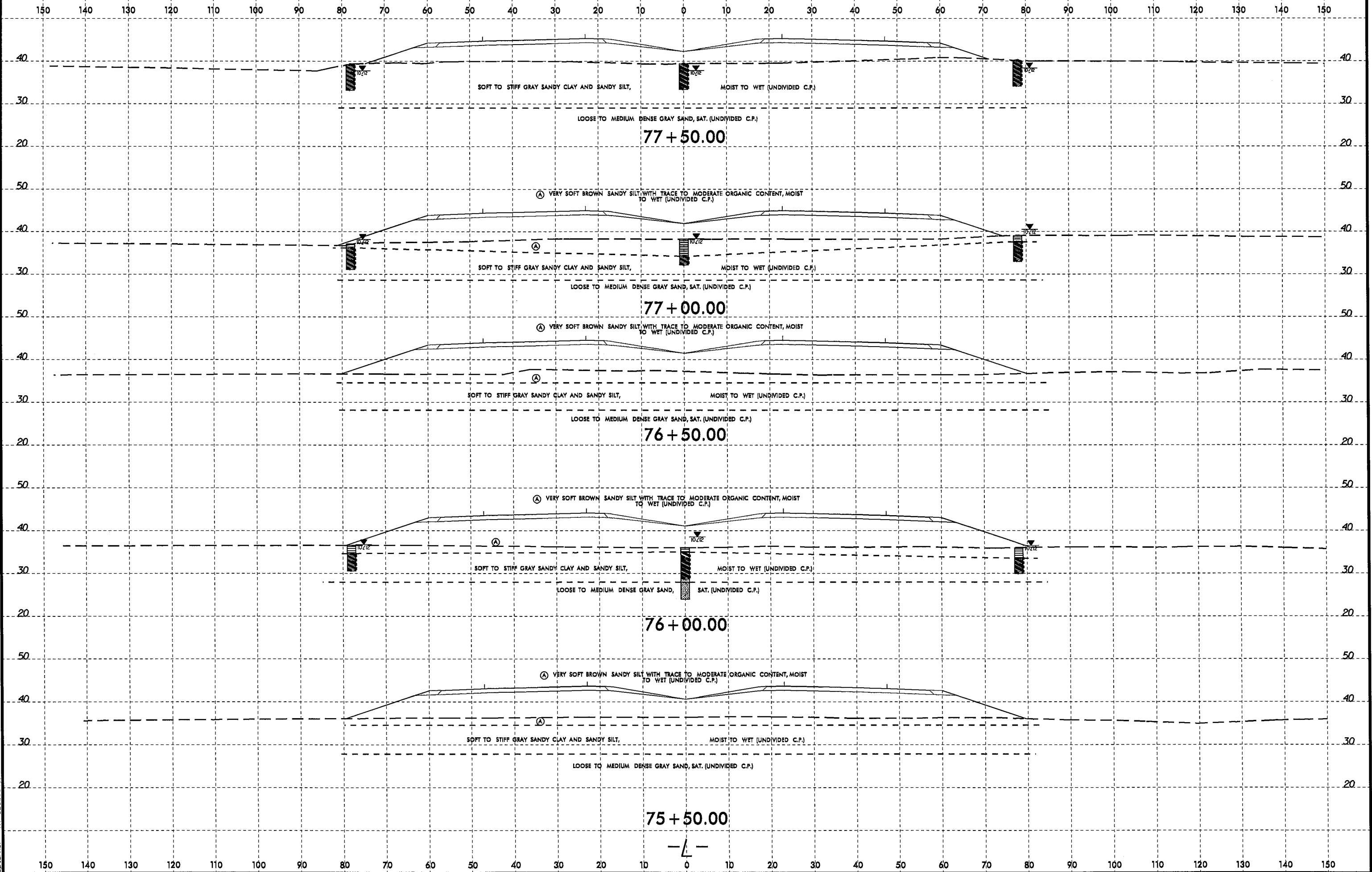
73 + 50.00

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8/23/99



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| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 54        |



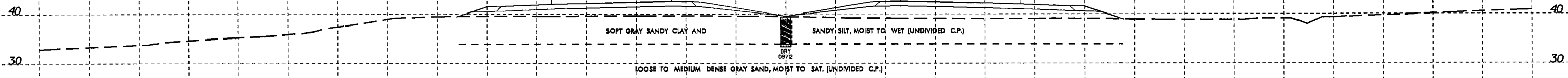
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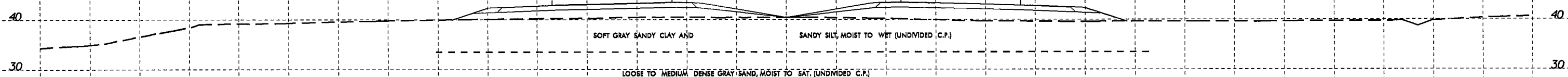


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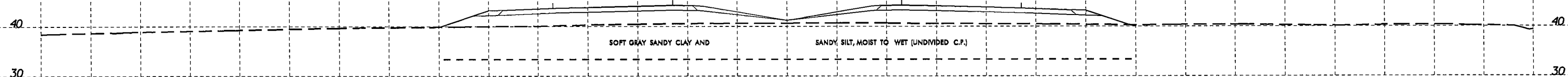
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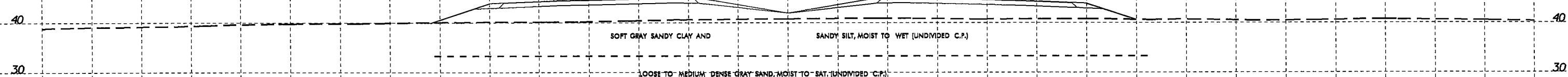
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95 + 50.00



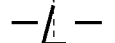
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94 + 50.00



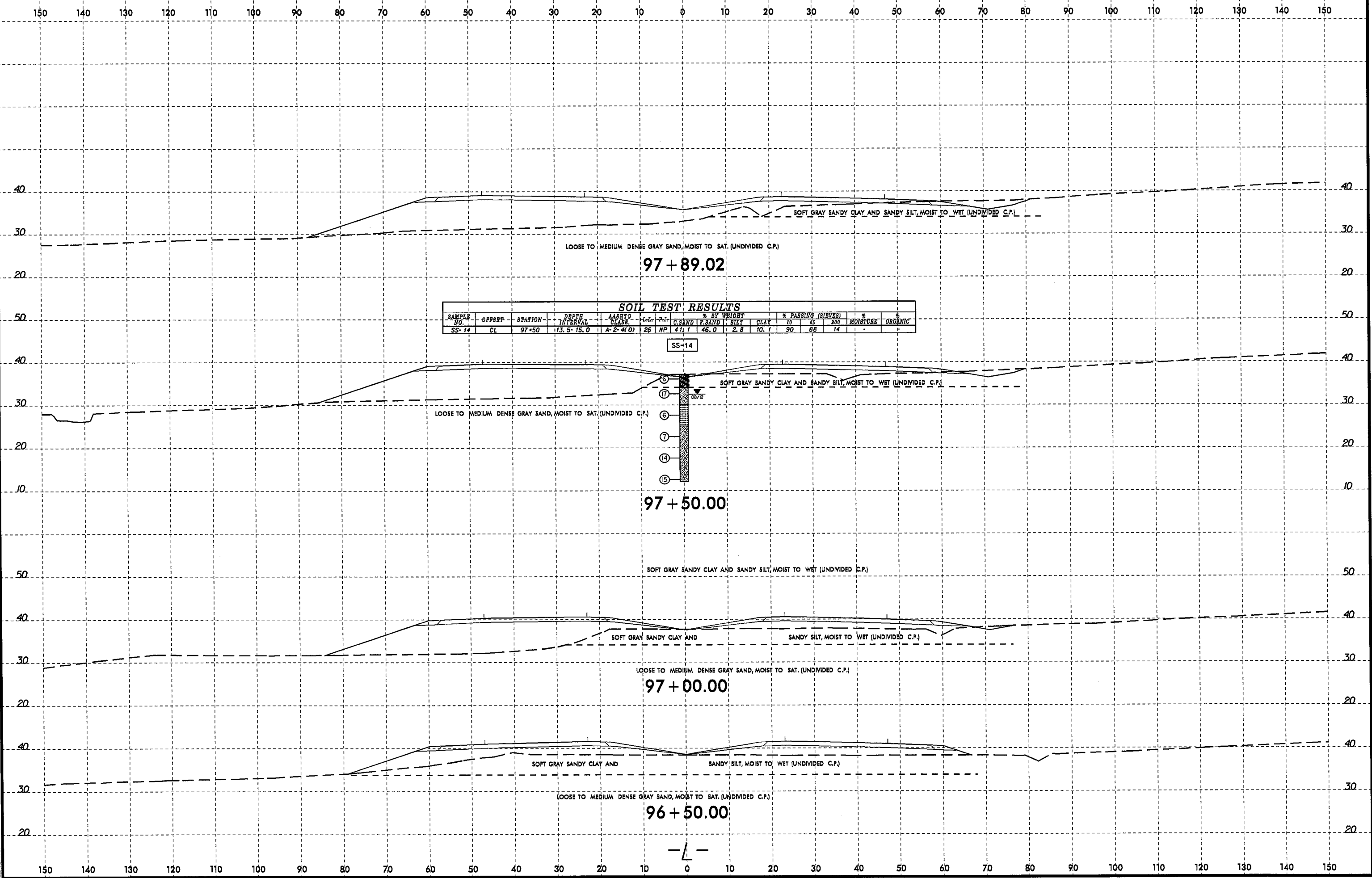
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 cbturner AT GEO255461



**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | ASTM CLASS | Lr | Pi | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|------------|----|----|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |            |    |    | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-14      | CL     | 97+50   | 13.5-15.0      | A-2-4(0)   | 26 | NP | 41          | 1       | 46.0 | 2.8  | 10.1               | 90 | 68  | 14         | -         |

SS-14

97 + 50.00

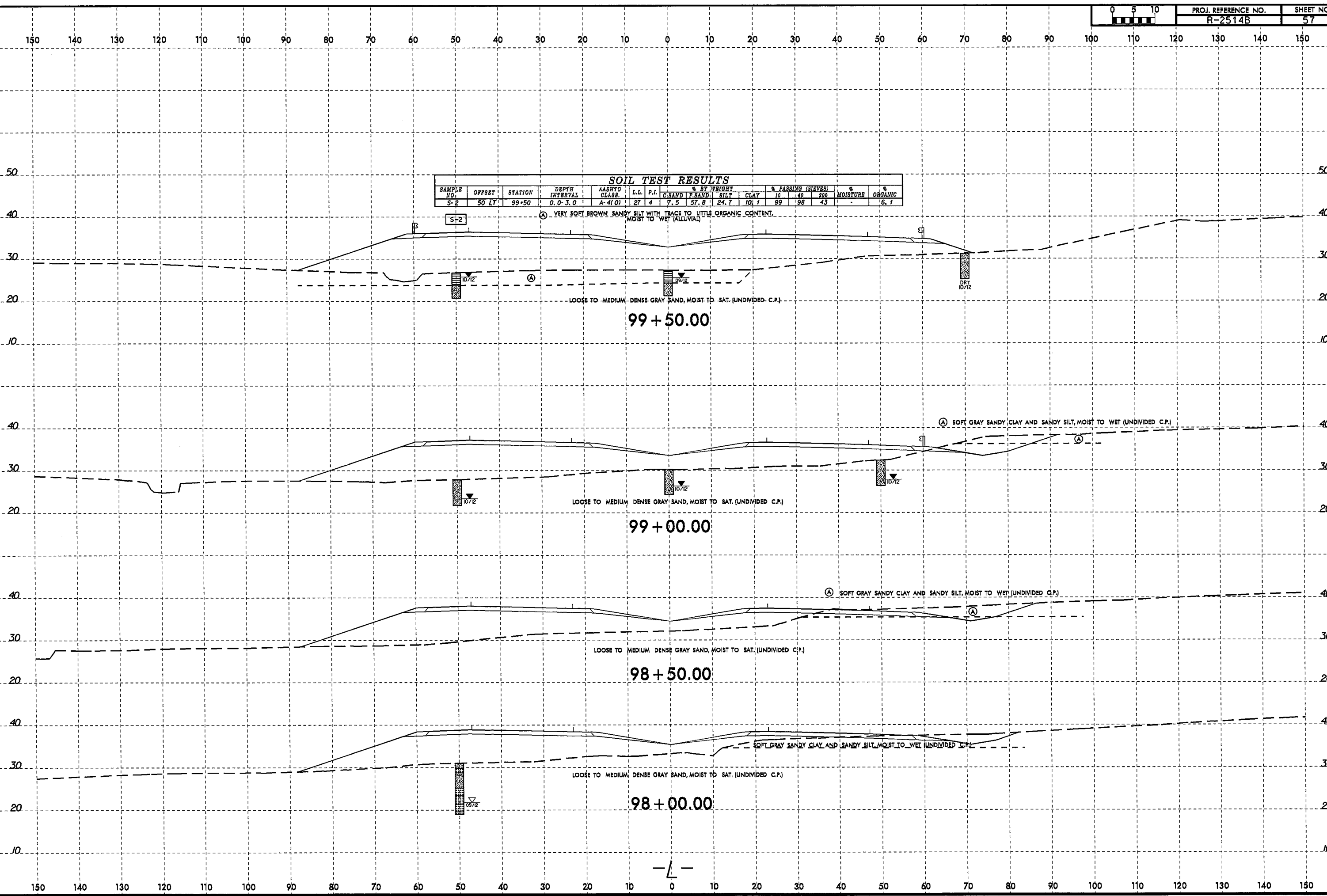
97 + 00.00

96 + 50.00

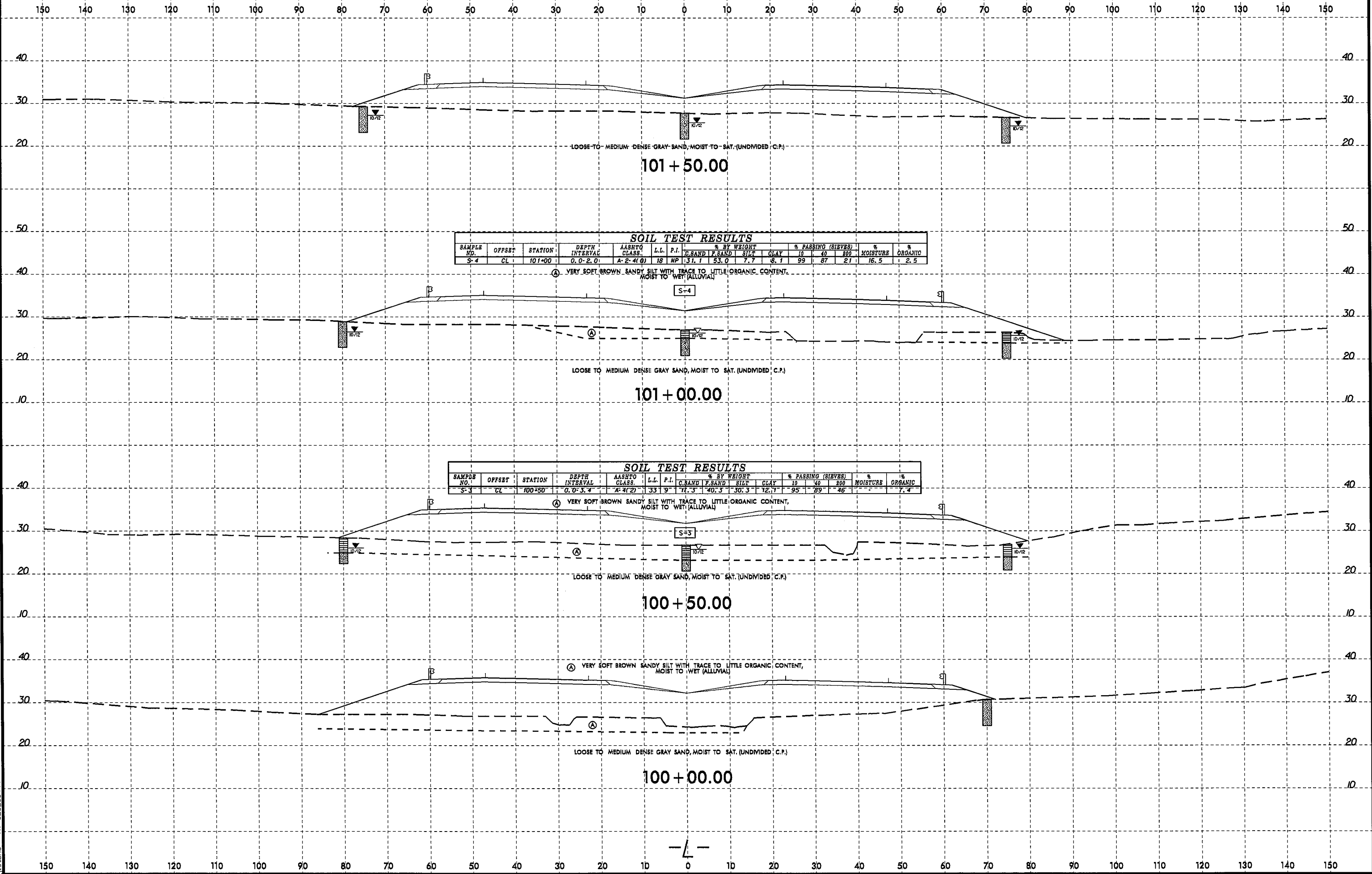
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 SP Turner

| 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                 | 200 |            |           |
| S-2               | 50 LT  | 99+50   | 0.0-3.0        | A-4(O)        | 27   | 4    | 7.5         | 57.8    | 24.7 | 10.1 | 99                 | 98  | 43         | 6.1       |



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**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| S-4        | CL     | 101+00  | 0.0-2.0        | A-2-4(0)      | 18   | NP   | 13.1        | 53.0    | 7.7  | 8.1  | 99                 | 87 | 21  | 16.5       | 2.5       |

VERY SOFT BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (ALLUVIAL)

S-4

LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED, C.P.)

101+00.00

**SOIL TEST RESULTS**

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| S-3        | CL     | 100+50  | 0.0-3.4        | A-2(2)        | 33   | 9    | 14.3        | 40.3    | 36.3 | 12.7 | 95                 | 89 | 46  | -          | 7.4       |

VERY SOFT BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (ALLUVIAL)

S-3

LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED, C.P.)

100+50.00

VERY SOFT BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (ALLUVIAL)

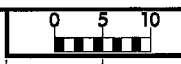
LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED, C.P.)

100+00.00

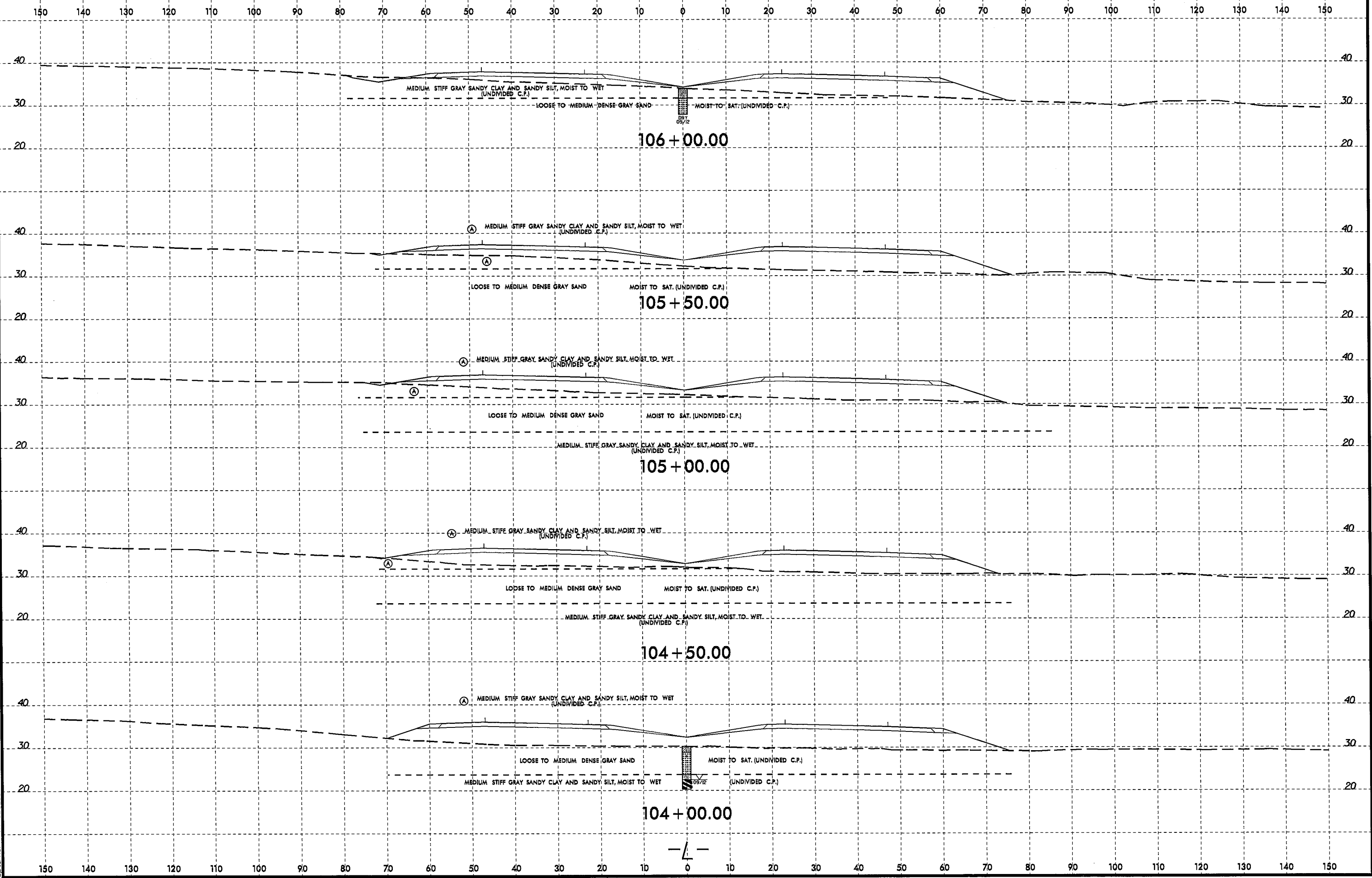
-L-



8/23/99



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| R-2514B             | 59        |



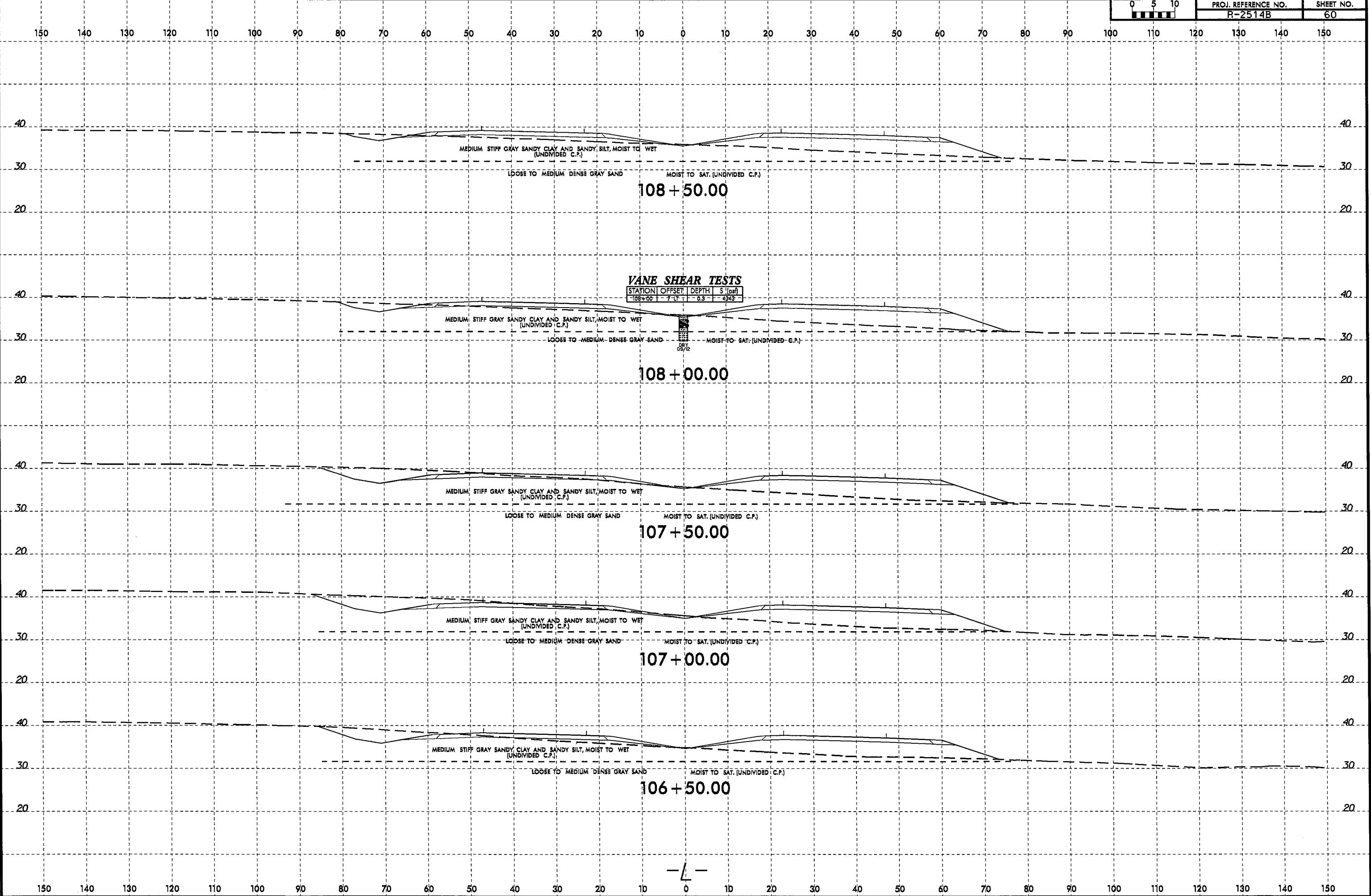
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SP Turner AT GEG55761

8/23/99

25-JUL-2013 11:39 L:\ERO\B-rev\116\_01\investigation\TIP\2514B\_GEO\_ROWY\_CADD.GEOTECH\XSC\2514B\_GEO\_ROWY\_L-10400\14250\_xai.dgn gpturner AT 06252461

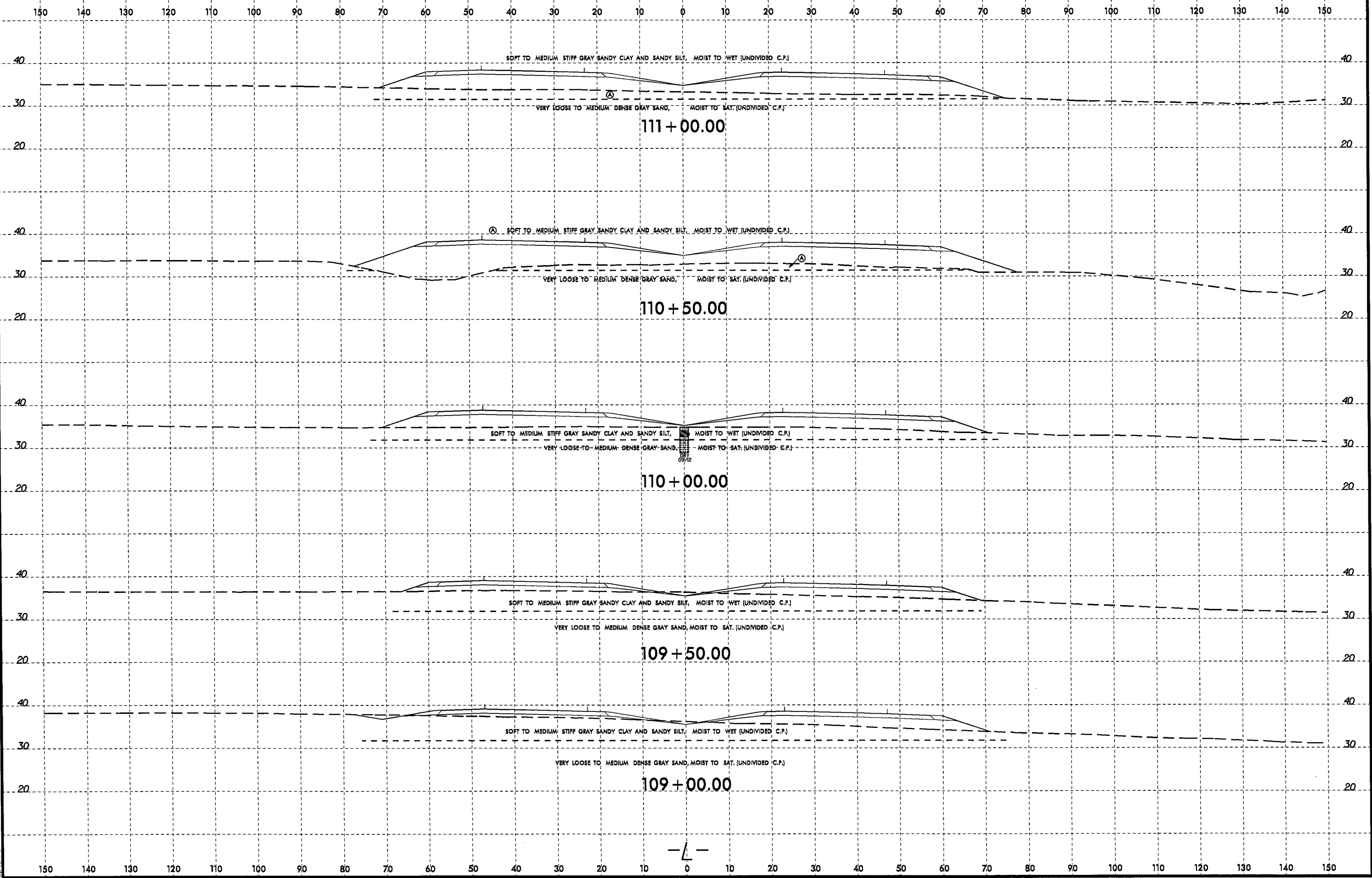


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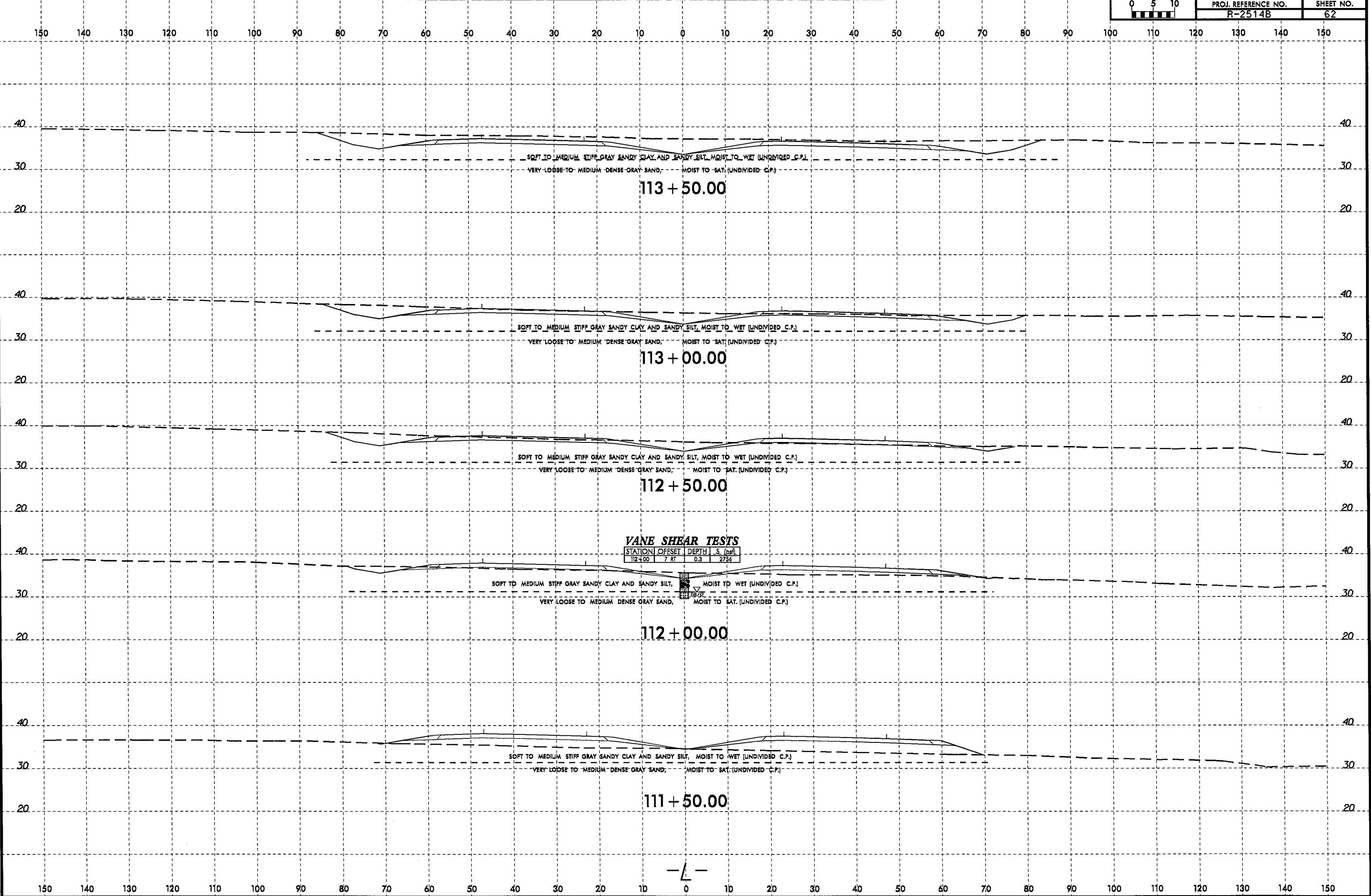


8/23/99

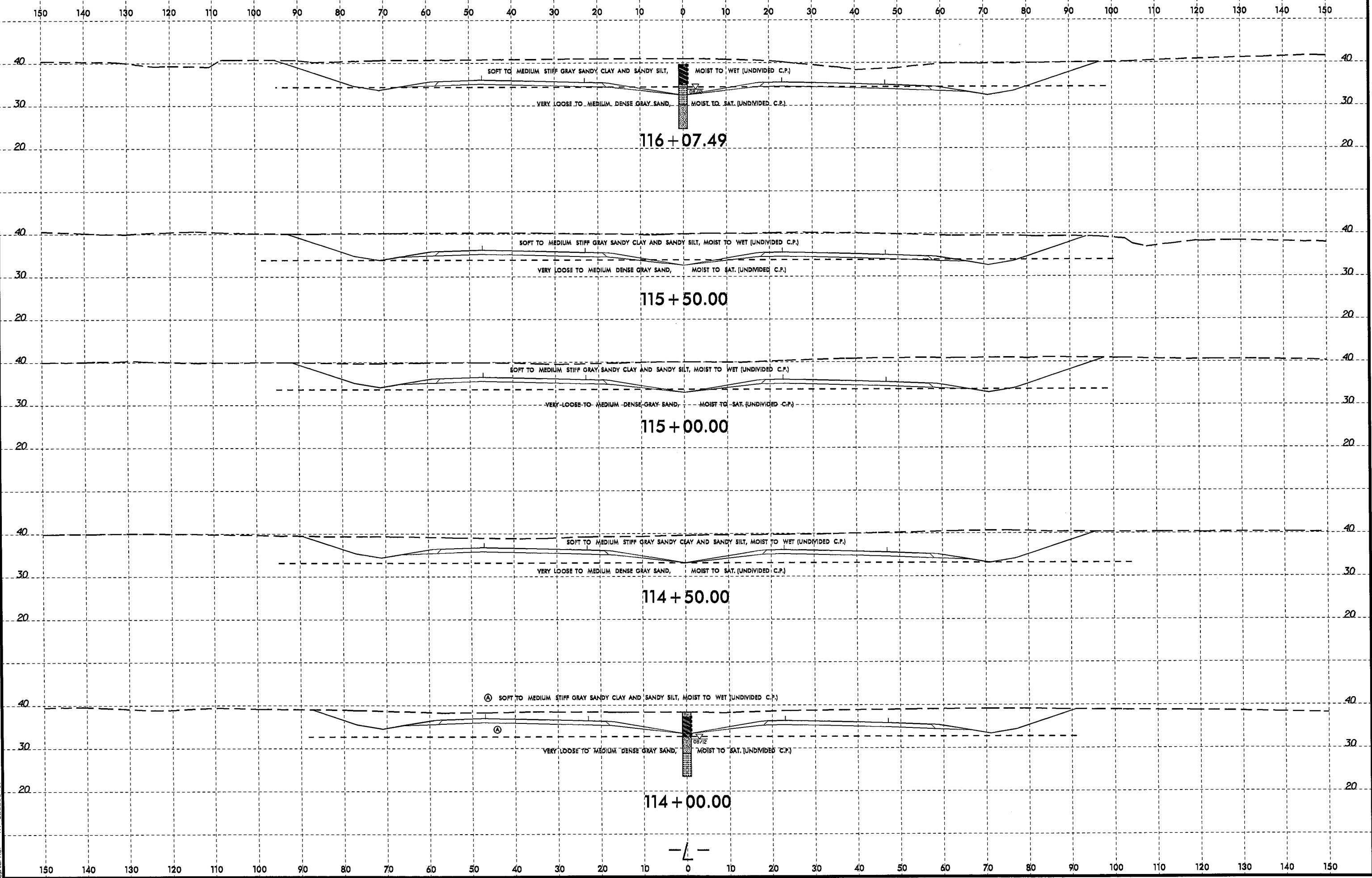
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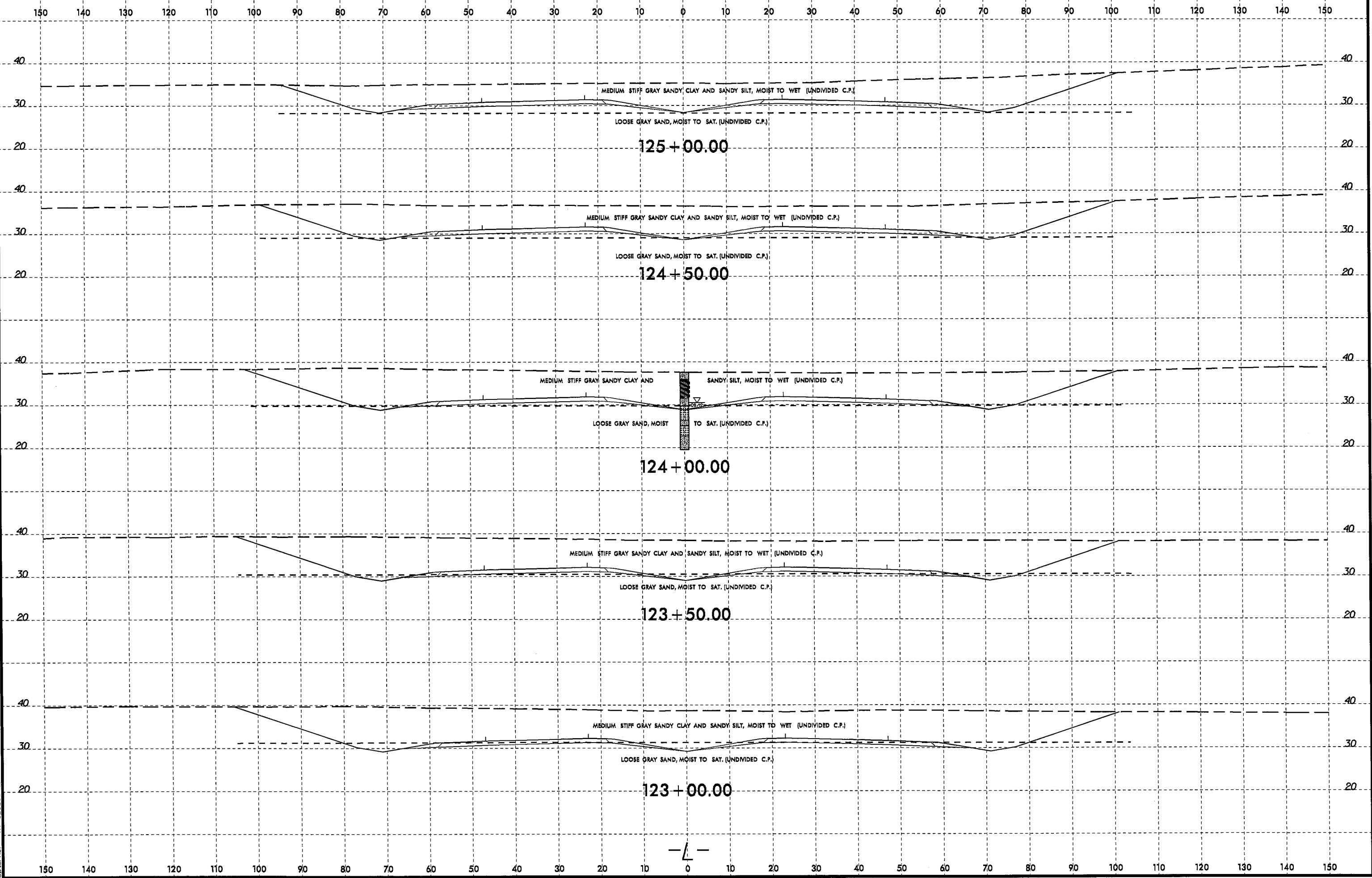








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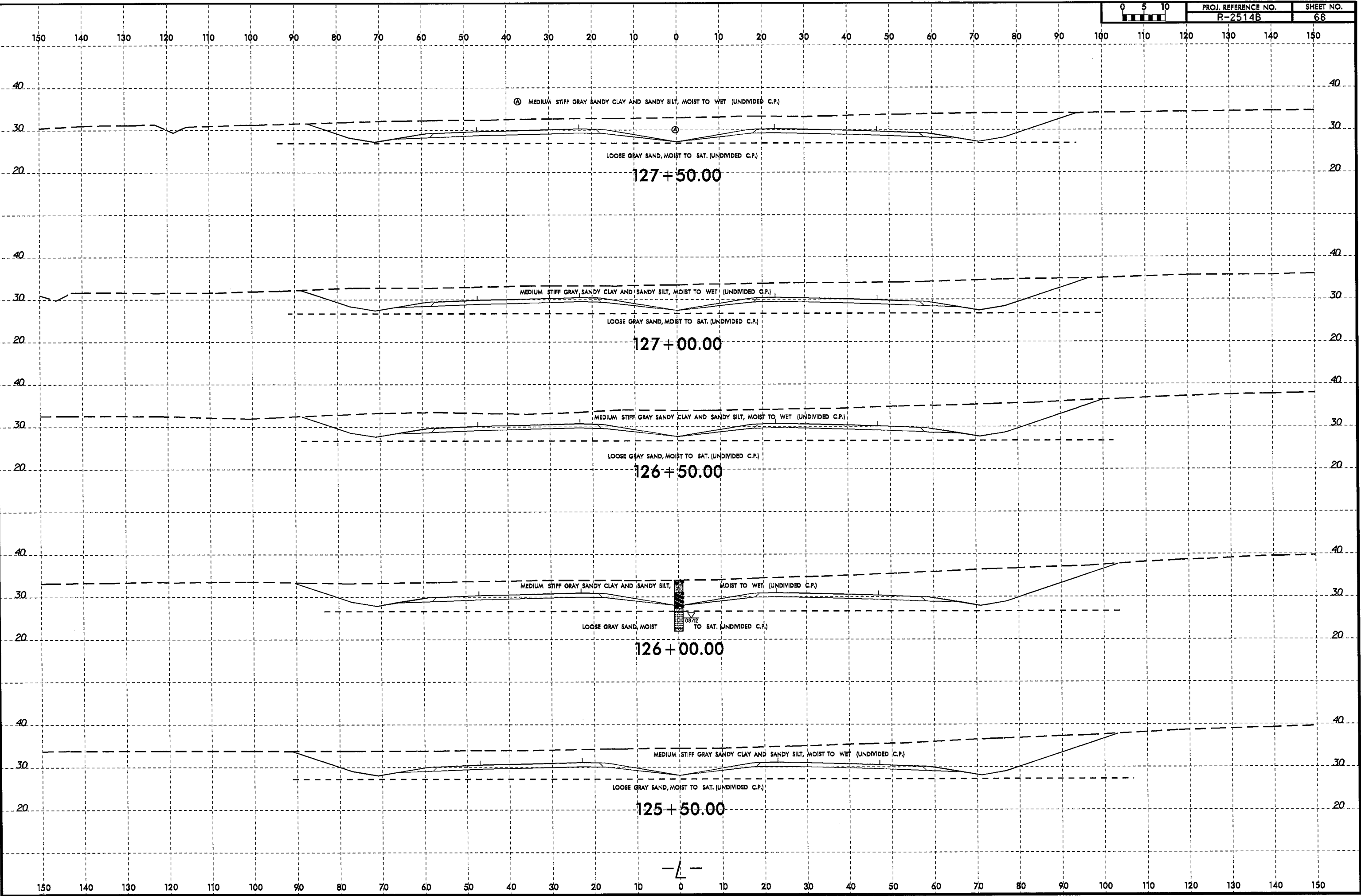
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PROJ. REFERENCE NO.  
R-2514B

SHEET NO.  
68

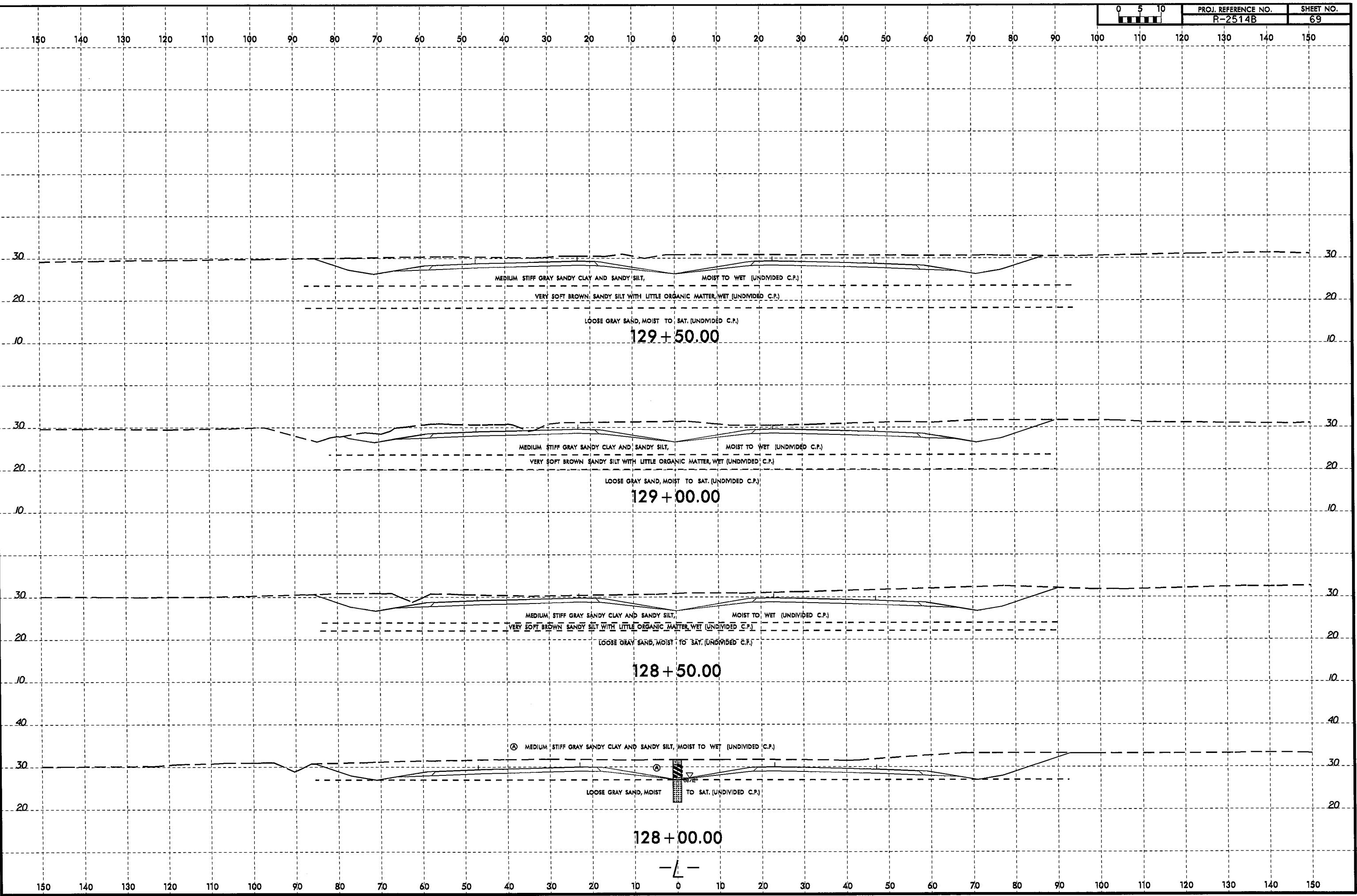
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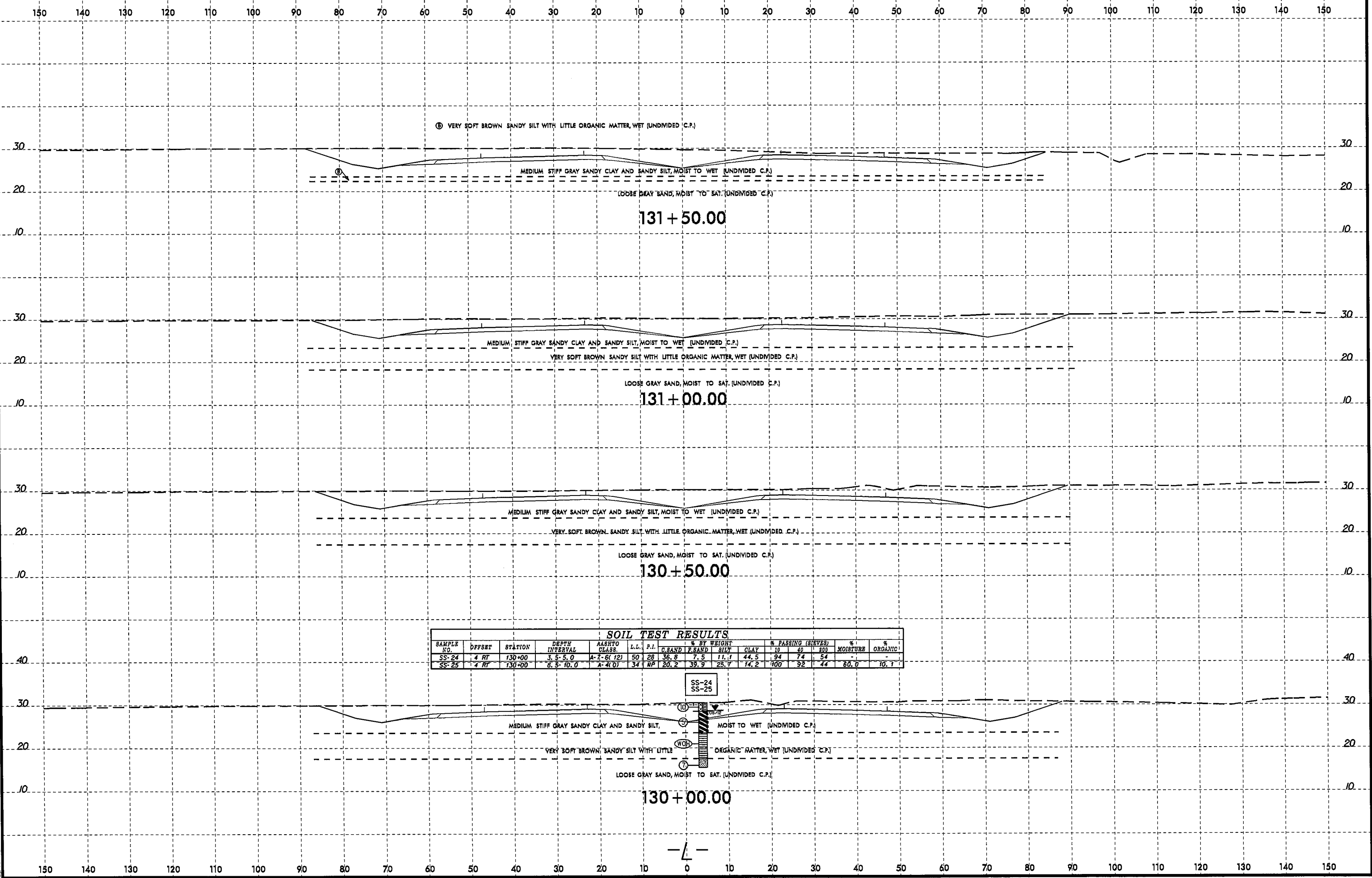
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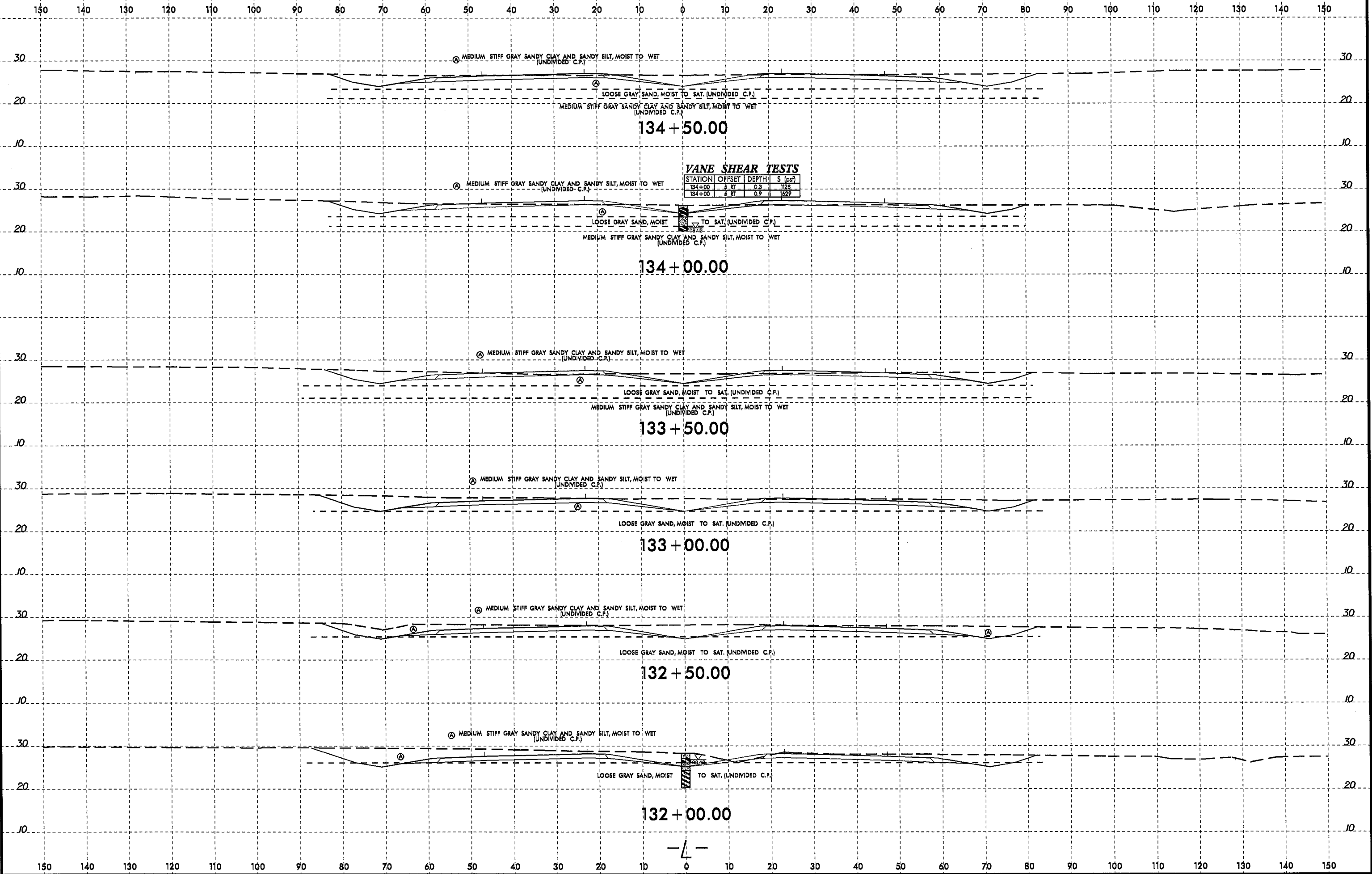
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8/23/99



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| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 71        |



**VANE SHEAR TESTS**

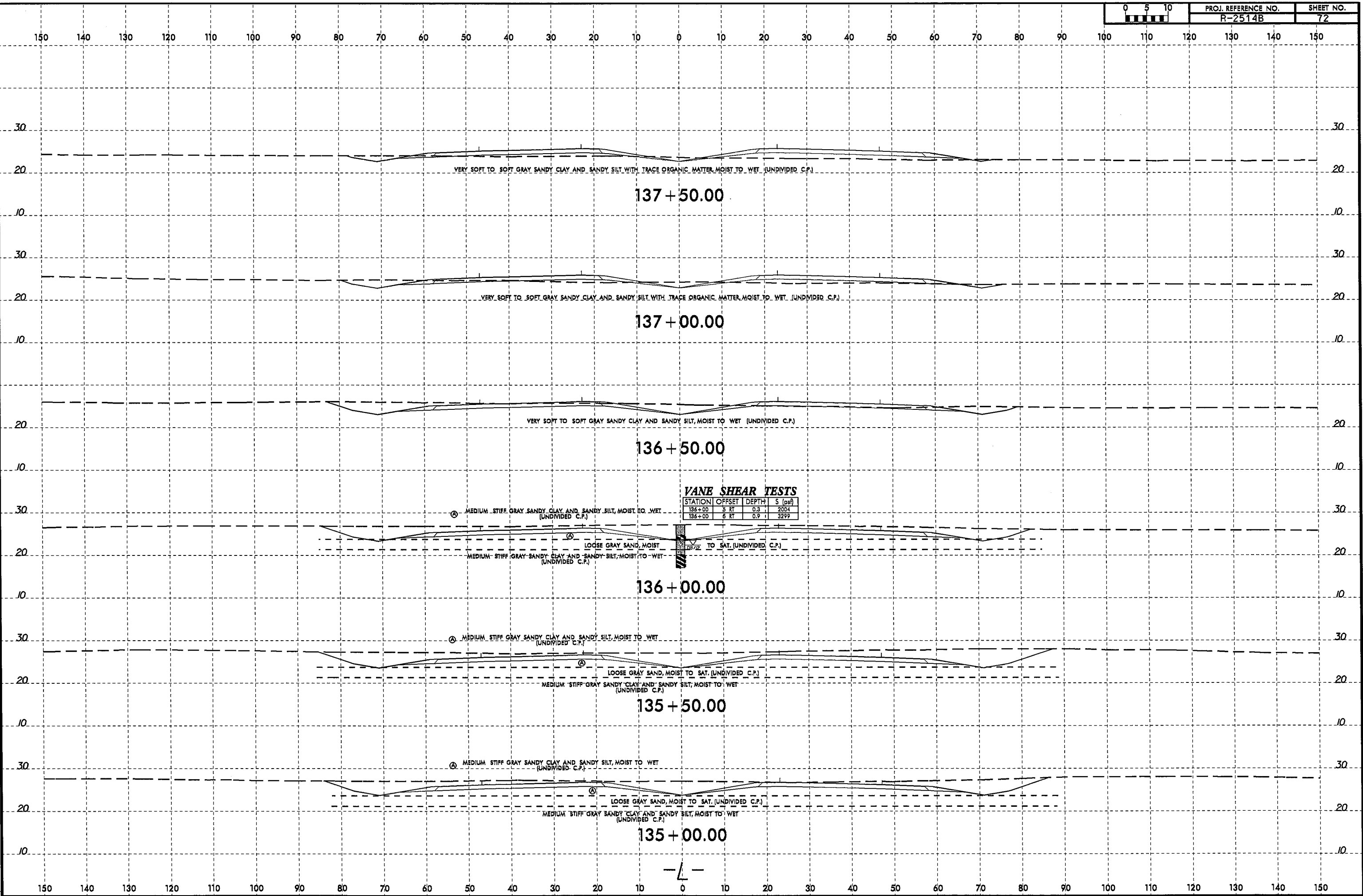
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| 134+00  | 5 RT   | D.9   | 629     |

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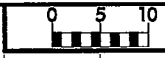
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| R-2514B             | 72        |

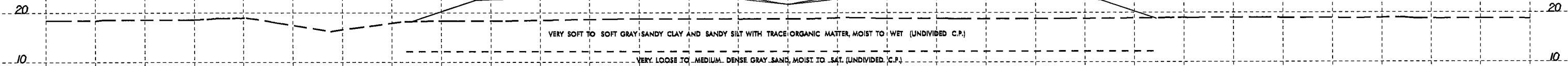


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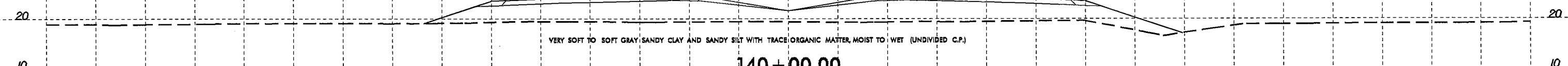


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R-2514B SHEET NO.  
73

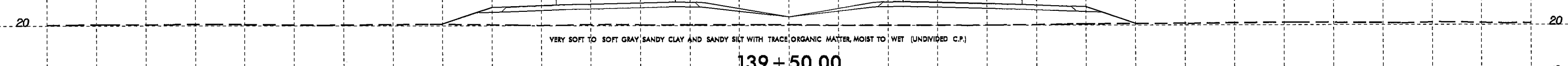
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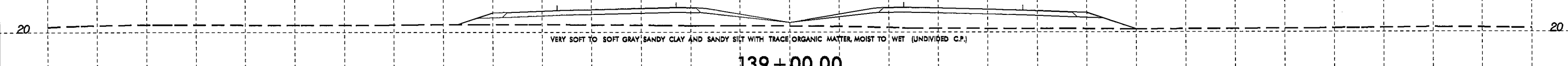
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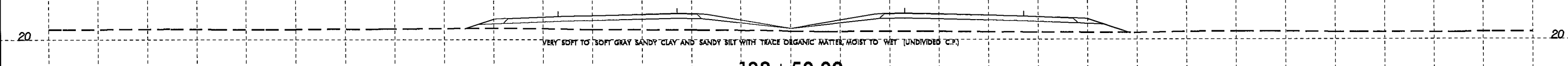
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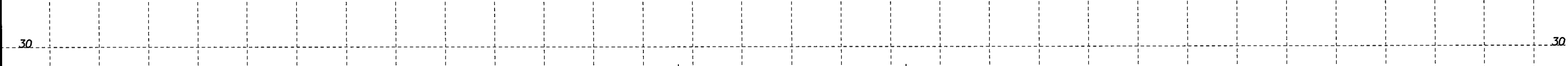
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139 + 00.00



138 + 50.00



138 + 00.00

DRY  
08/12

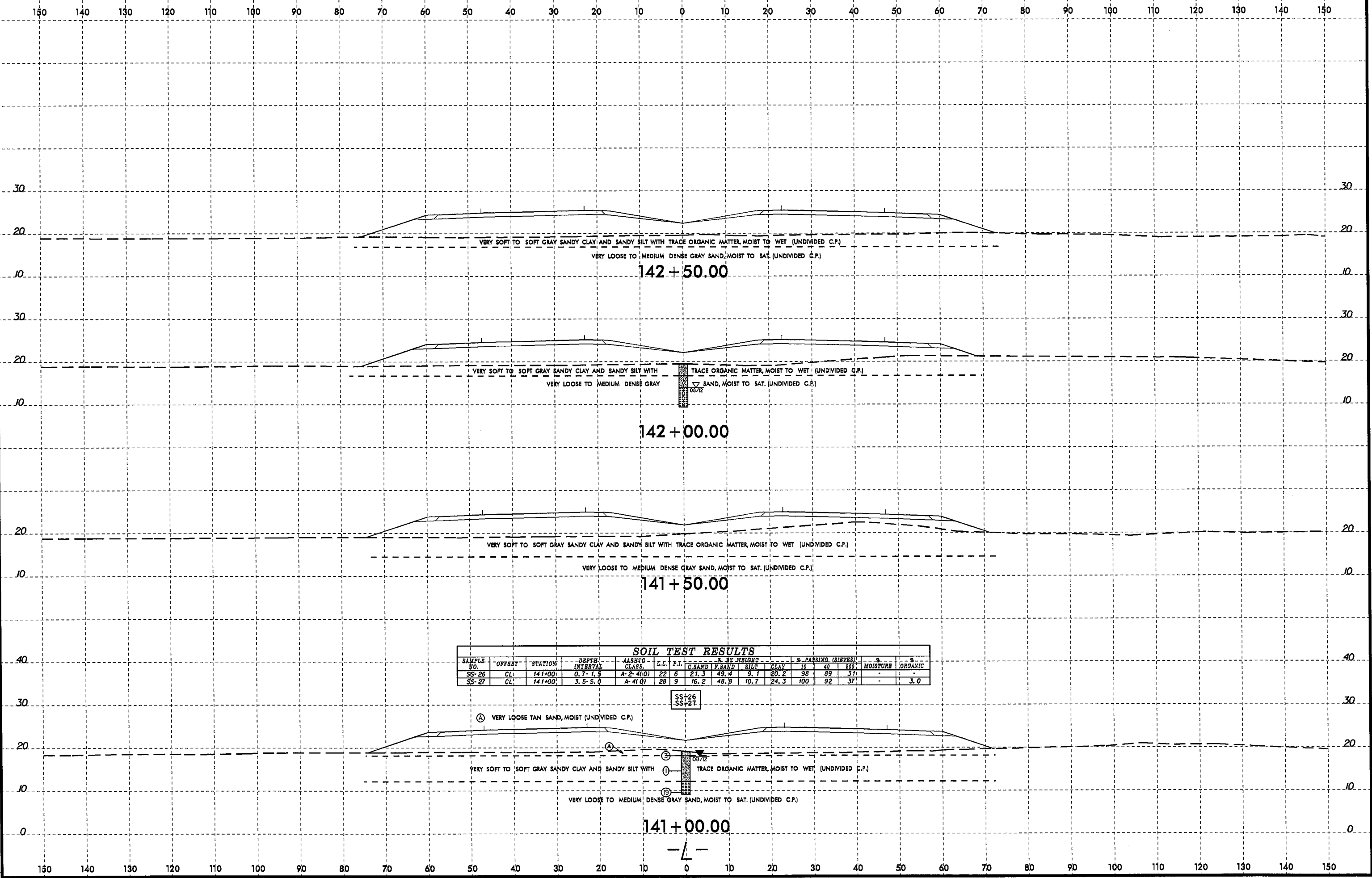
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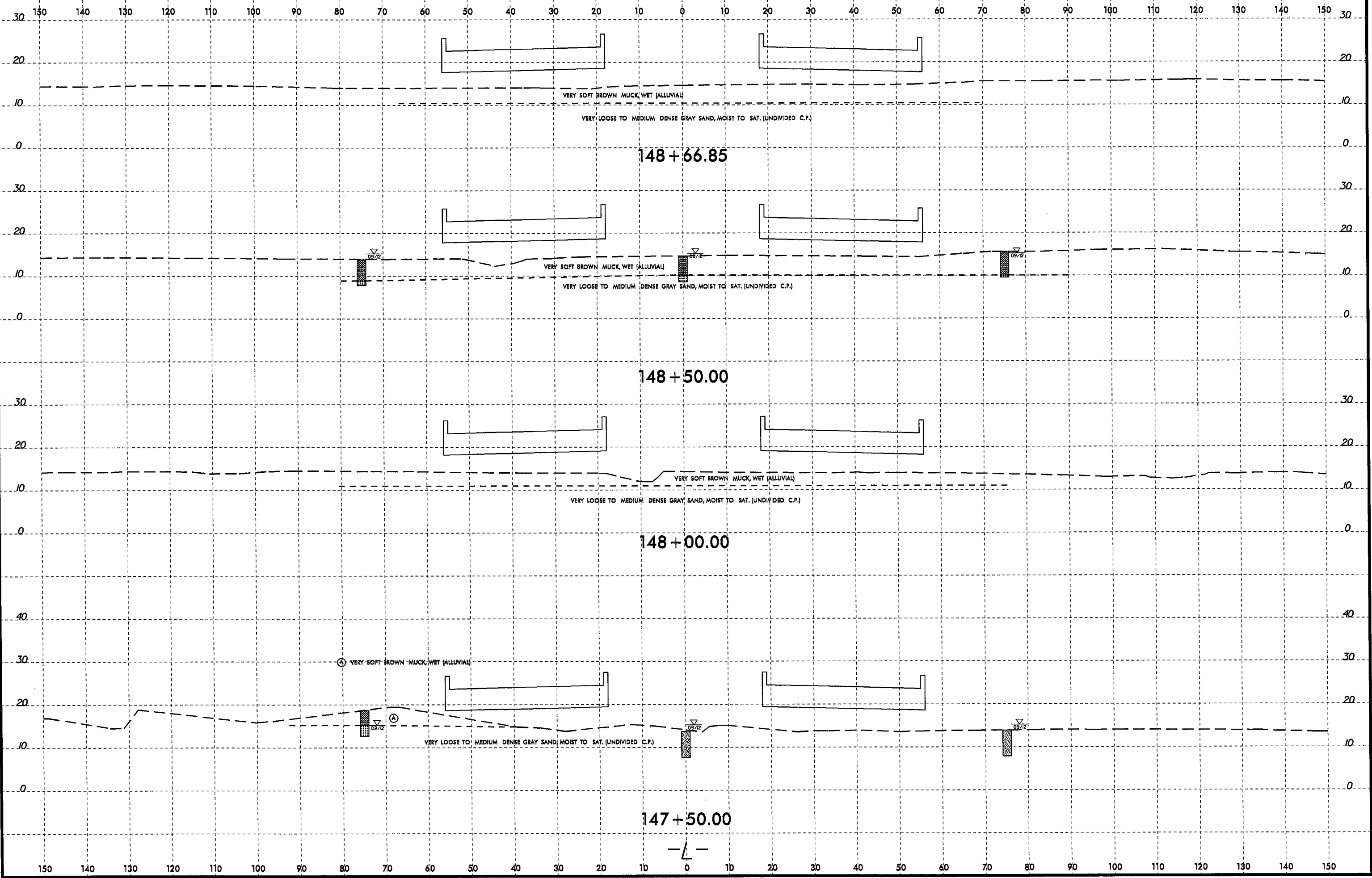
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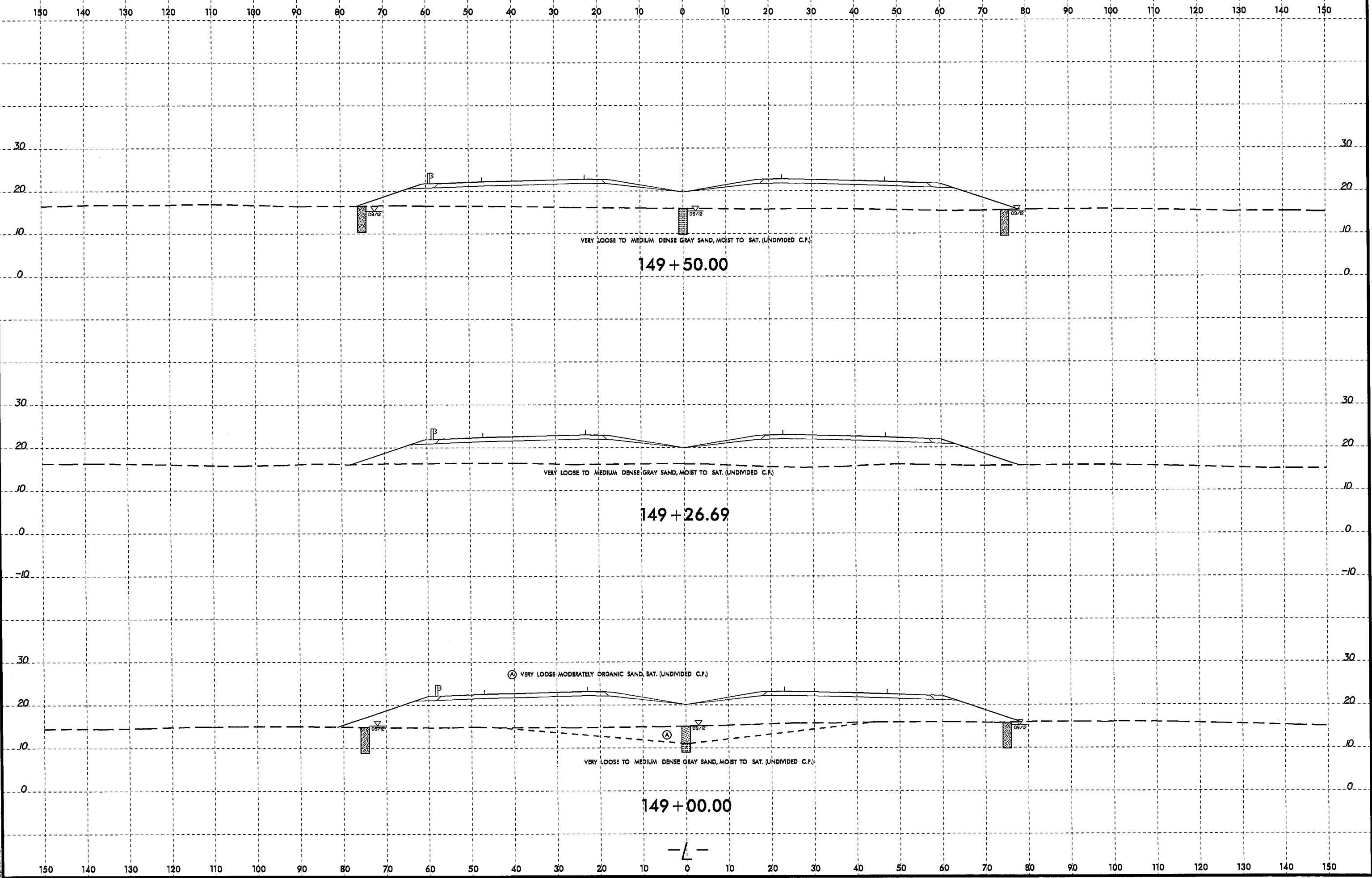


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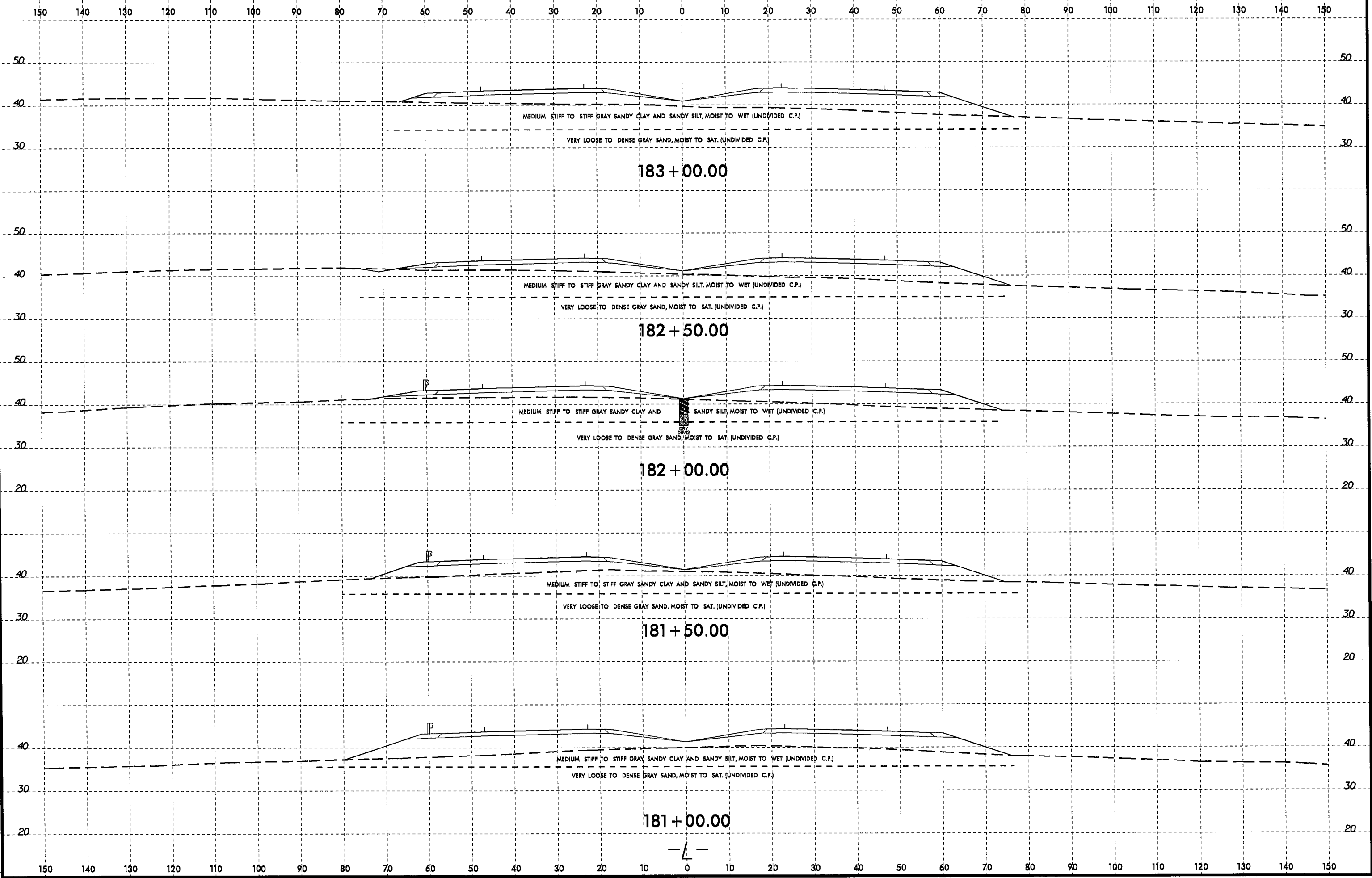
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8/23/99  
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SP Turner



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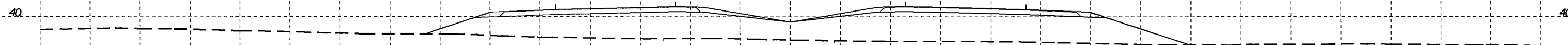


8/23/99



|                     |           |
|---------------------|-----------|
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| R-2514B             | 78        |

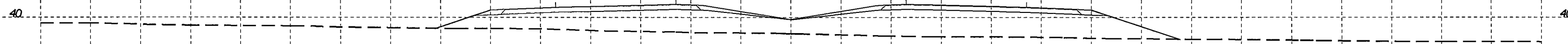
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MEDIUM STIFF TO STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

185 + 00.00



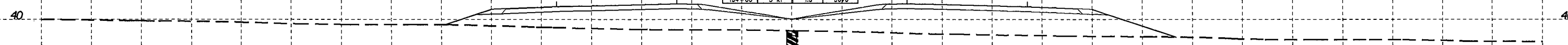
MEDIUM STIFF TO STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

184 + 50.00

**VANE SHEAR TESTS**

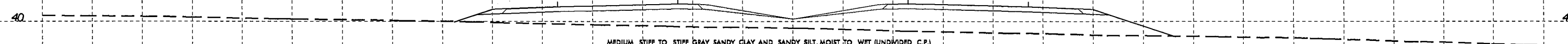
| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 184+00  | 5 RT   | 0.3   | 1253    |
| 184+00  | 5 RT   | 0.9   | 2881    |
| 184+00  | 5 RT   | 1.3   | 3090    |



MEDIUM STIFF TO STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

184 + 00.00



MEDIUM STIFF TO STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

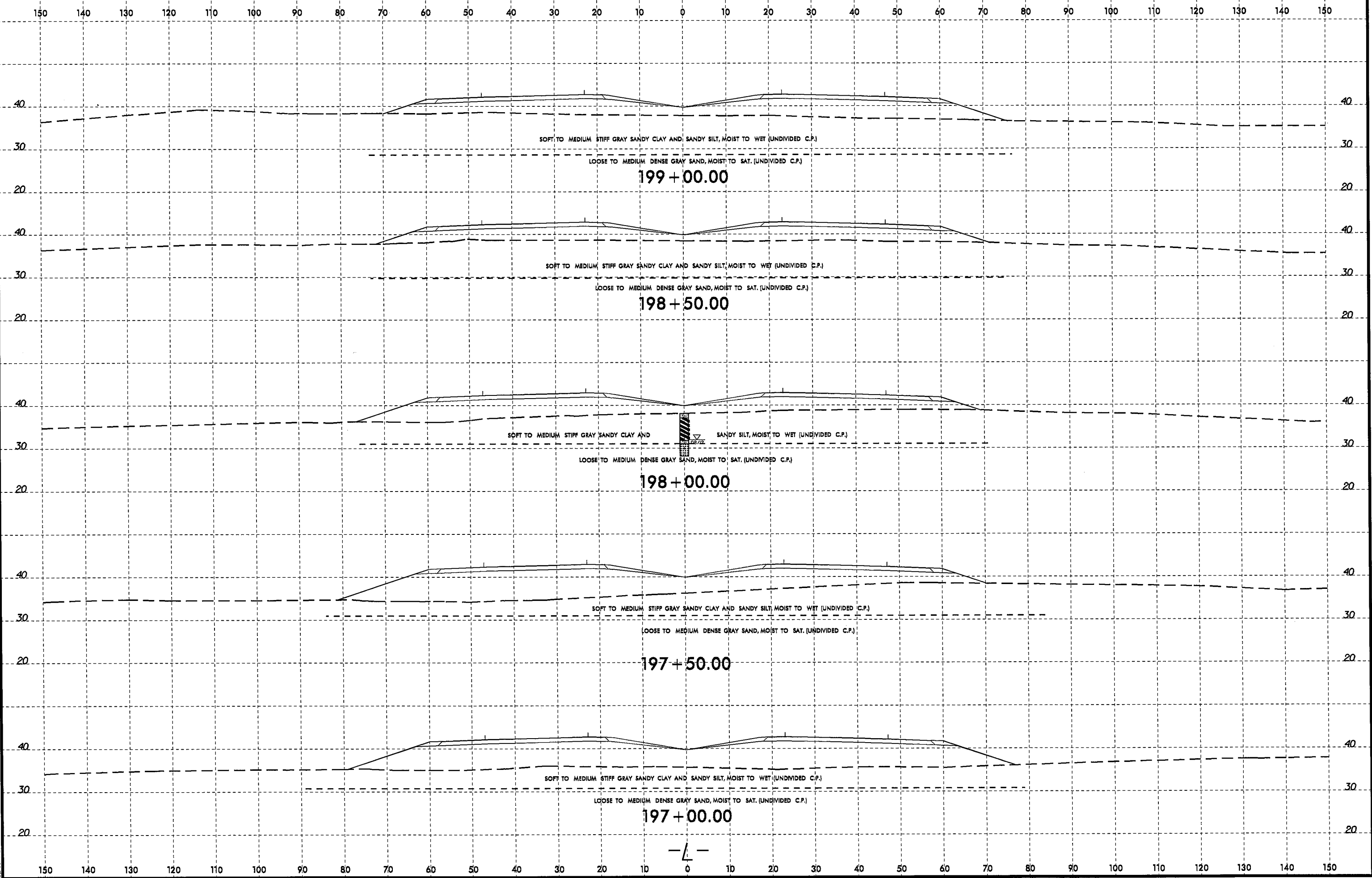
183 + 50.00

-L-

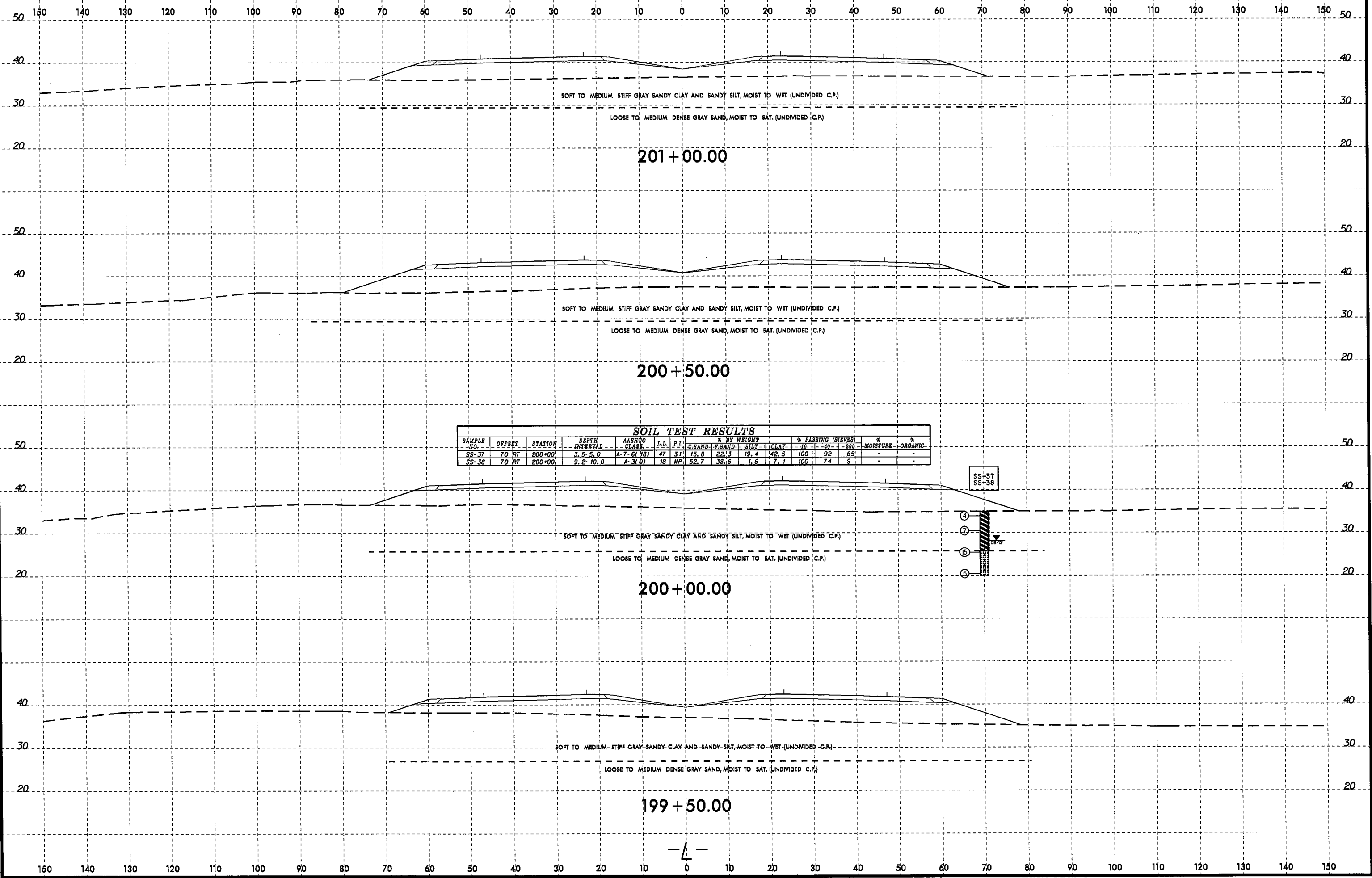
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8/23/99  
22-JUL-2013 15:44  
C:\E:\0\Greenville\_joy\investigation\TIP\VR2514B\_GEO\_RDWY\_CADD\_GEO\TECH\asc\VR2514B\_GEO\_RDWY\_L\_19700to20300\_x.s1.dgn  
cbturner AT 66255461



-L-



201+00.00

200+50.00

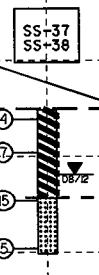
200+00.00

199+50.00

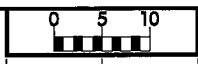
-L-

**SOIL TEST RESULTS**

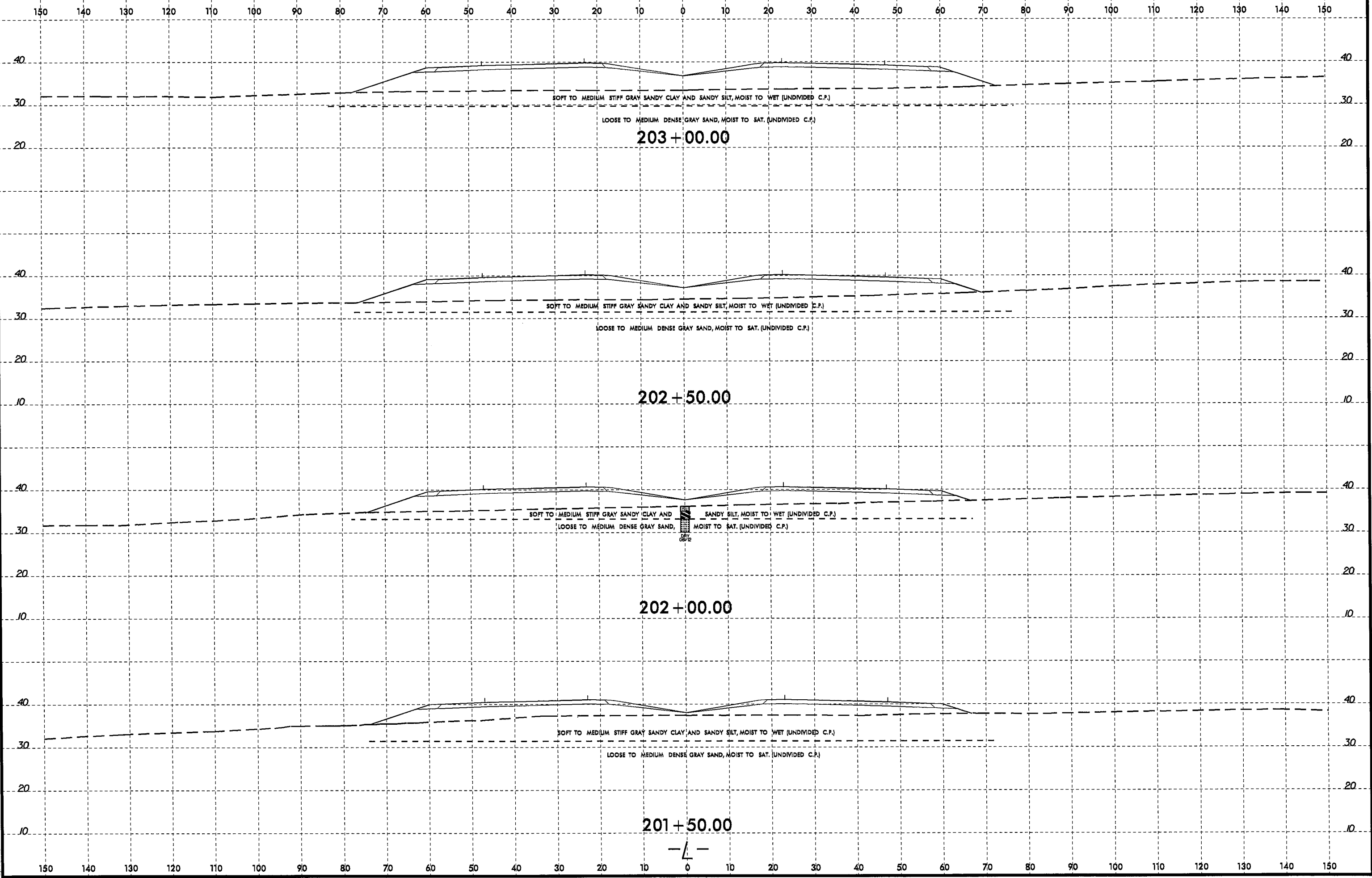
| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |     |      | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|-----|------|------------|-----------|
|            |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | -10                | -60 | -200 |            |           |
| SS-37      | 70 RT  | 200+00  | 3.5-5.0        | A-7-6(18)     | 47   | 31   | 15.8        | 22.3   | 19.4 | 42.5 | 100                | 92  | 65   | -          | -         |
| SS-38      | 70 RT  | 200+00  | 9.2-10.0       | A-3(0)        | 18   | NP   | 52.7        | 38.6   | 1.6  | 7.1  | 100                | 74  | 9    | -          | -         |



8/23/99

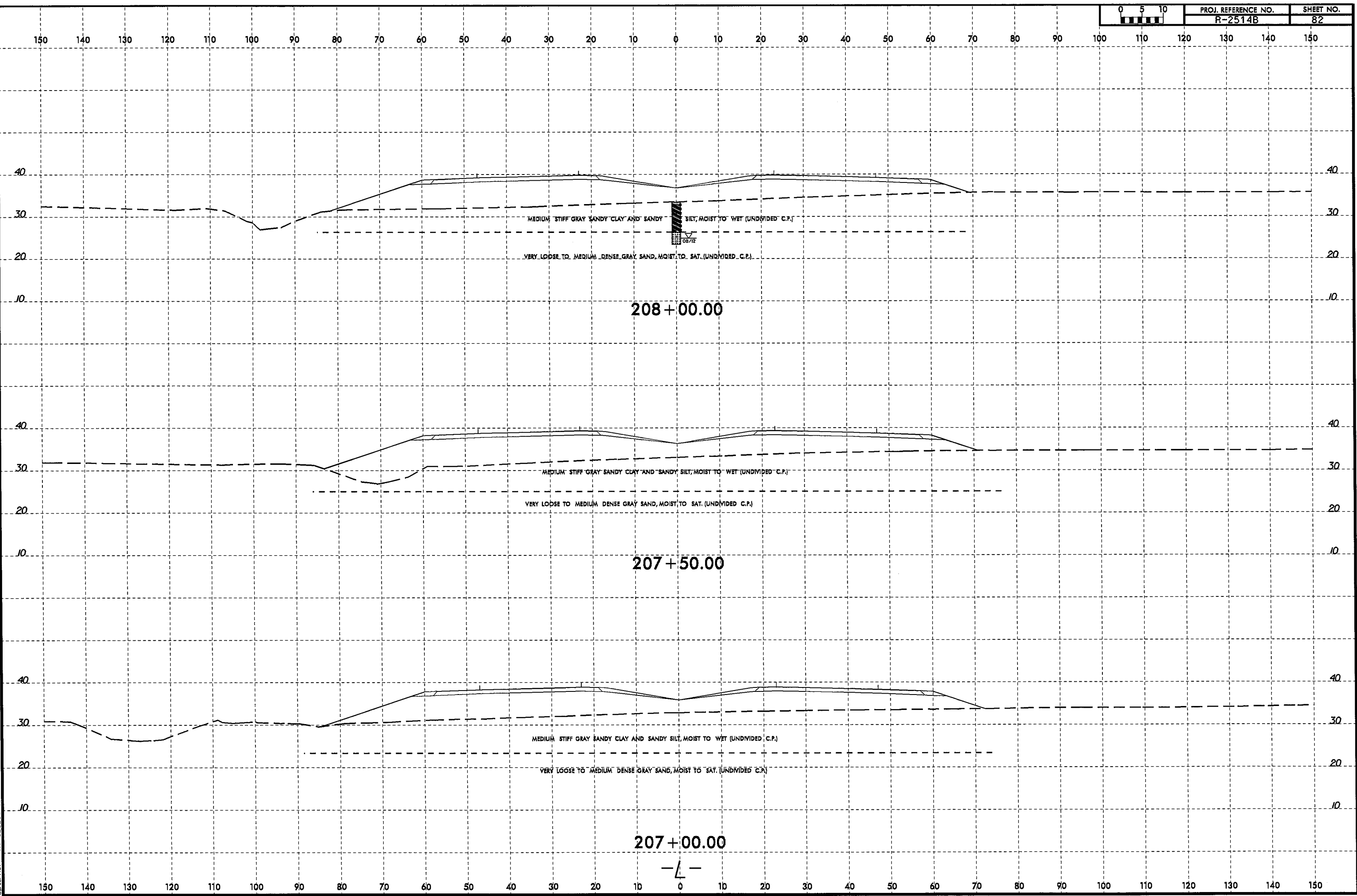


|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 81        |



22-JUL-2013 15:44  
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 cputner AT GEG55461

8/23/99



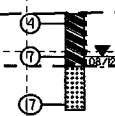
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 G.P. Turner AT 6625481





| SOIL TEST RESULTS |        |         |                |               |      |      |             |         |      |      |                    |    |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|---------|------|------|--------------------|----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING (SIEVES) |    | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10                 | 40 |            |           |
| SS-43             | 65 LT  | 210+00  | 0.6-1.5        | A-6(5)        | 33   | 18   | 23.1        | 30.8    | 13.8 | 32.4 | 100                | 87 | 49         | -         |
| SS-44             | 65 LT  | 210+00  | 3.5-5.0        | A-6(6)        | 39   | 25   | 28.5        | 30.6    | 12.6 | 28.3 | 100                | 83 | 44         | -         |

210+00  
SS-43  
SS-44



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

210+02.67

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

209+50.00

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

209+00.00

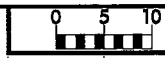
MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

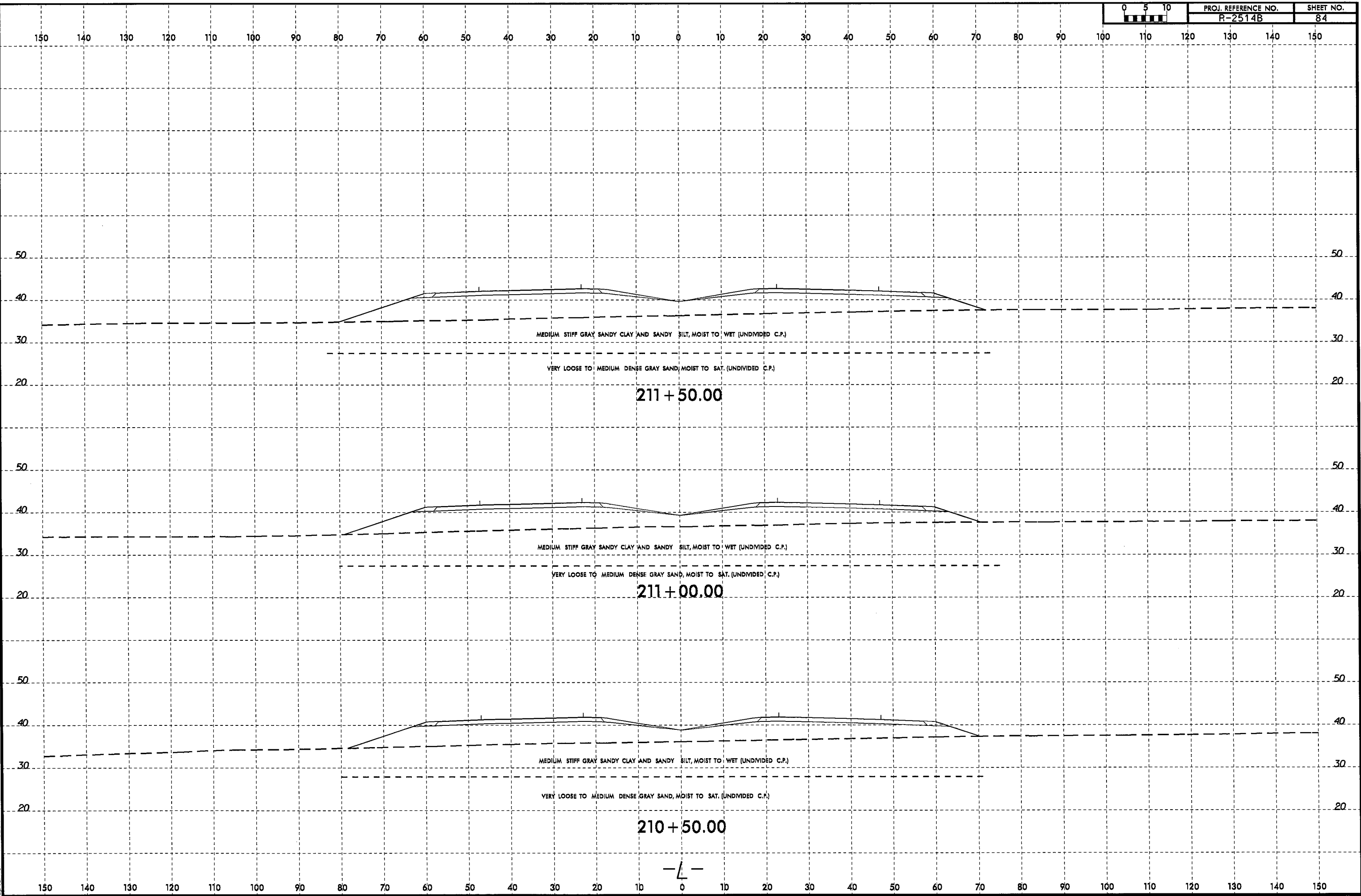
208+50.00

-L-

8/23/99  
22-JUL-2013 15:44  
L:\ERD\Green\11e\_investigation\TIP\R2514B\_GEO\_RDWY\_CADD\_GEO\TECH\asc\R2514B\_GEO\_RDY\_L\_20700to21150\_xsi.dgn  
capture AT: BEG25461



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 84        |

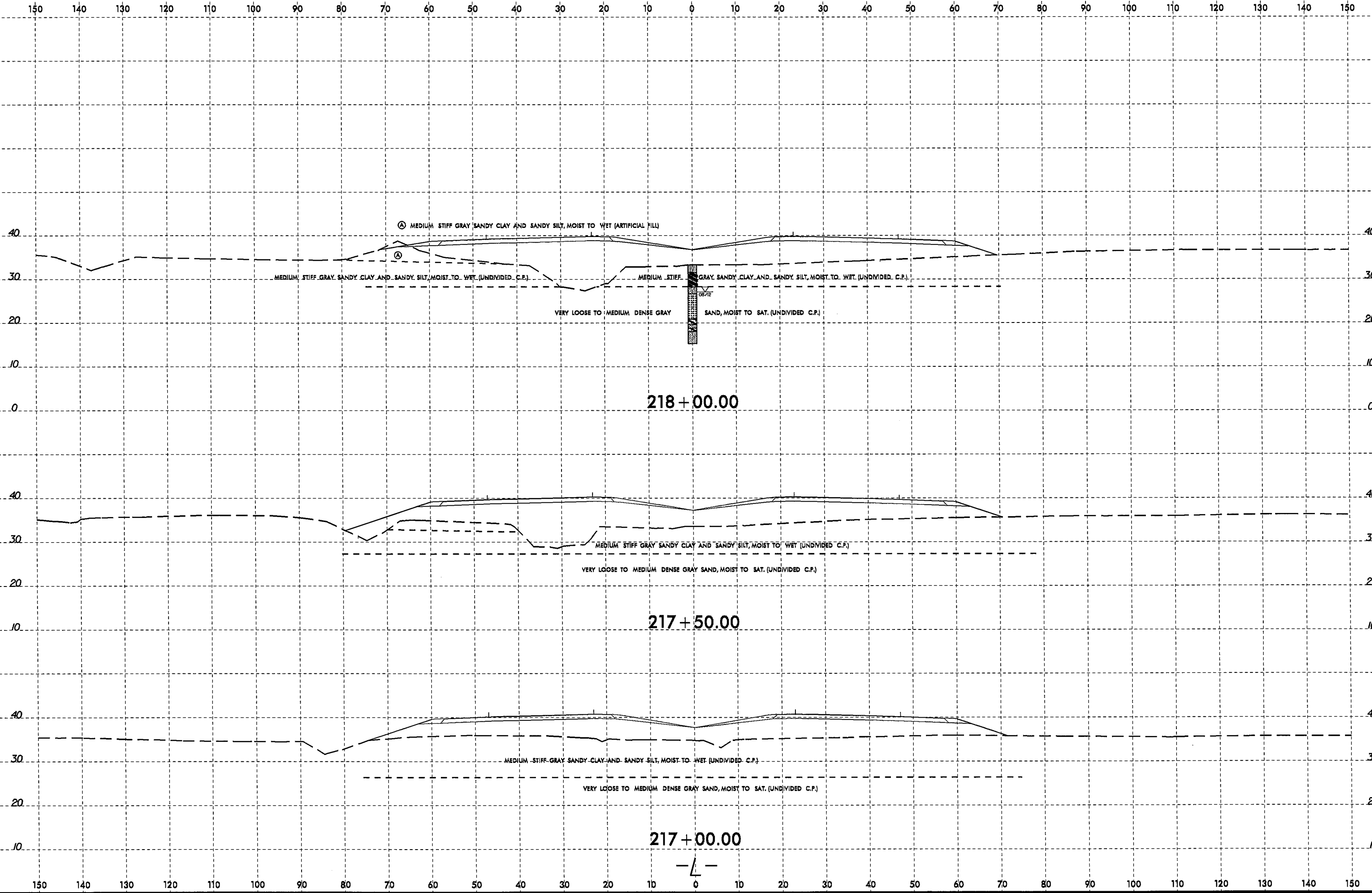
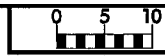


211 + 50.00

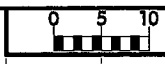
211 + 00.00

210 + 50.00

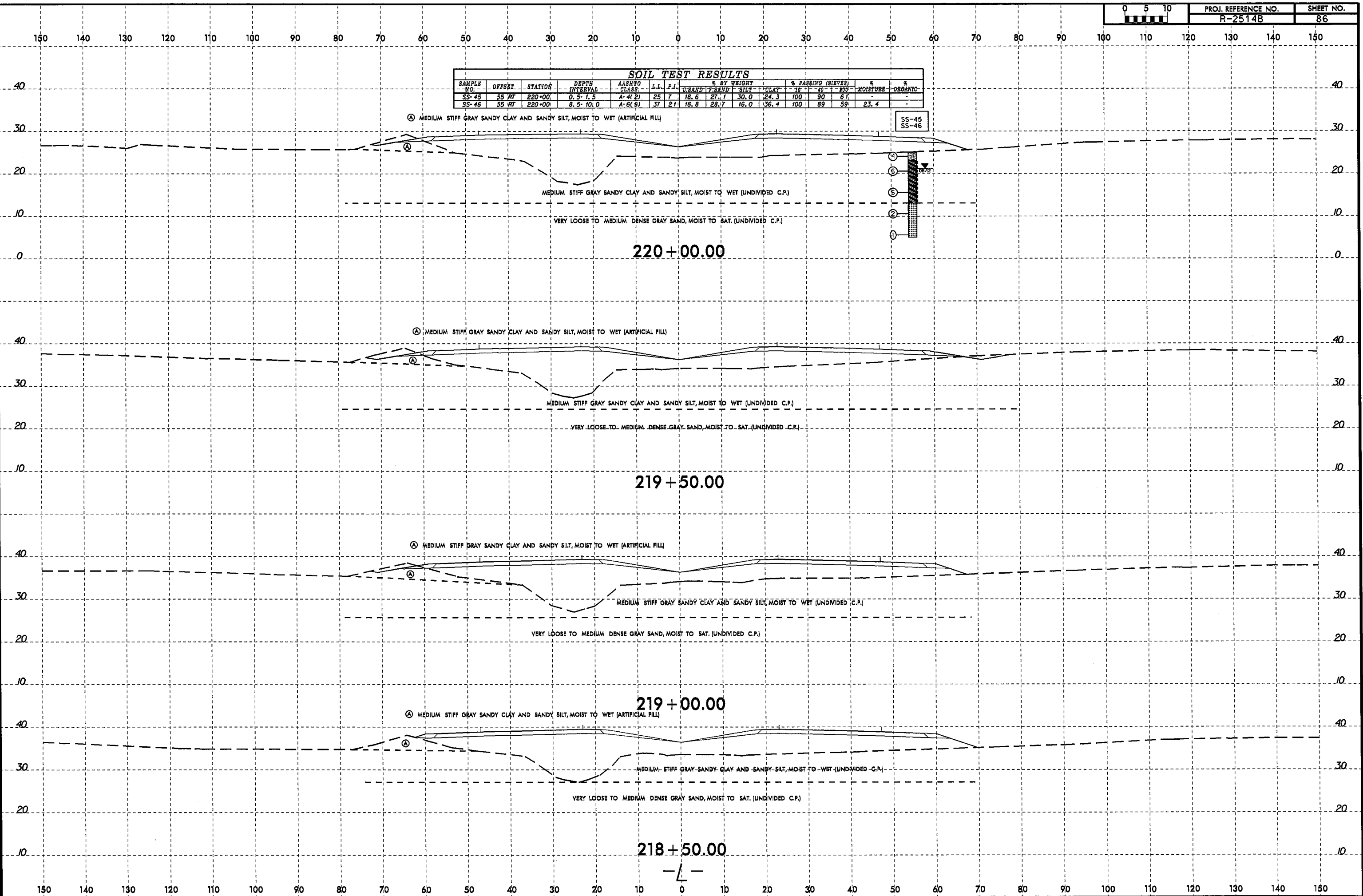
-L-



8/23/99

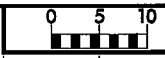


| SOIL TEST RESULTS |       |         |                |        |    |    |             |      |      |      |                    |     |    |            |           |
|-------------------|-------|---------|----------------|--------|----|----|-------------|------|------|------|--------------------|-----|----|------------|-----------|
| SAMPLE NO.        | DEPTH | STATION | DEPTH INTERVAL | AASHTO |    |    | % BY WEIGHT |      |      |      | % PASSING (SIEVES) |     |    | % MOISTURE | % ORGANIC |
|                   |       |         |                | CLASS. | LL | PI | SAND        | SILT | CLAY | 10   | 40                 | 200 |    |            |           |
| SS-45             | 55 RT | 220+00  | 0.5-1.5        | A-1(2) | 25 | 7  | 18.6        | 27.1 | 30.0 | 24.3 | 100                | 90  | 61 | -          | -         |
| SS-46             | 55 RT | 220+00  | 8.5-10.0       | A-6(9) | 37 | 21 | 18.8        | 28.7 | 16.0 | 36.4 | 100                | 89  | 59 | 23.4       | -         |



22-JUL-2013 8:44  
 L:\ERO\Green\116\_01\2514B\_GEO\RDWY\CADD\_GEO\TECH\XSC\R2514B\_GEO.RDY.L\_21700.co23100\_x.svdgn  
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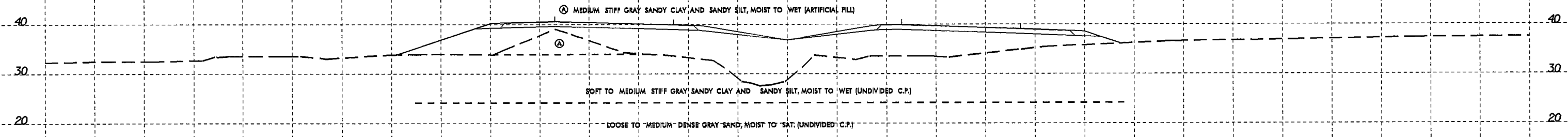
8/23/99



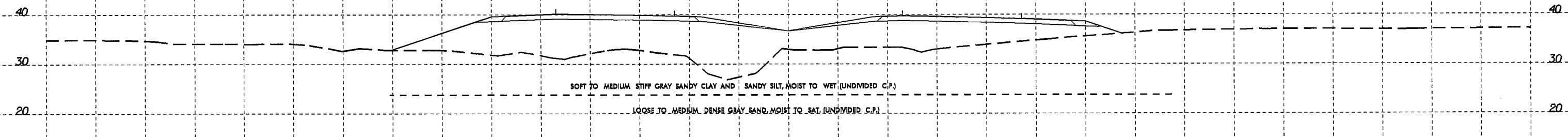
PROJ. REFERENCE NO.  
R-2514B

SHEET NO.  
87

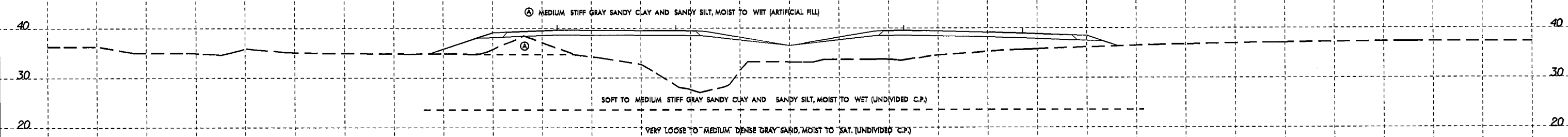
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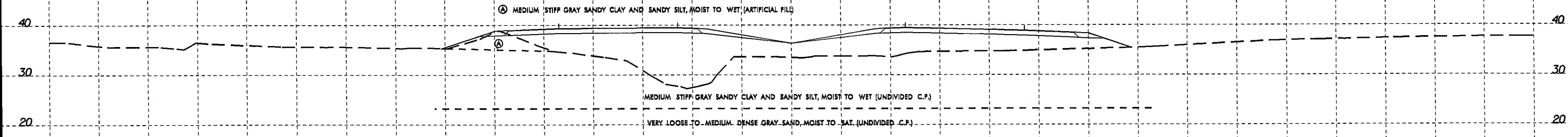
221+50.00



221+00.00



220+50.00



220+23.79

-L-

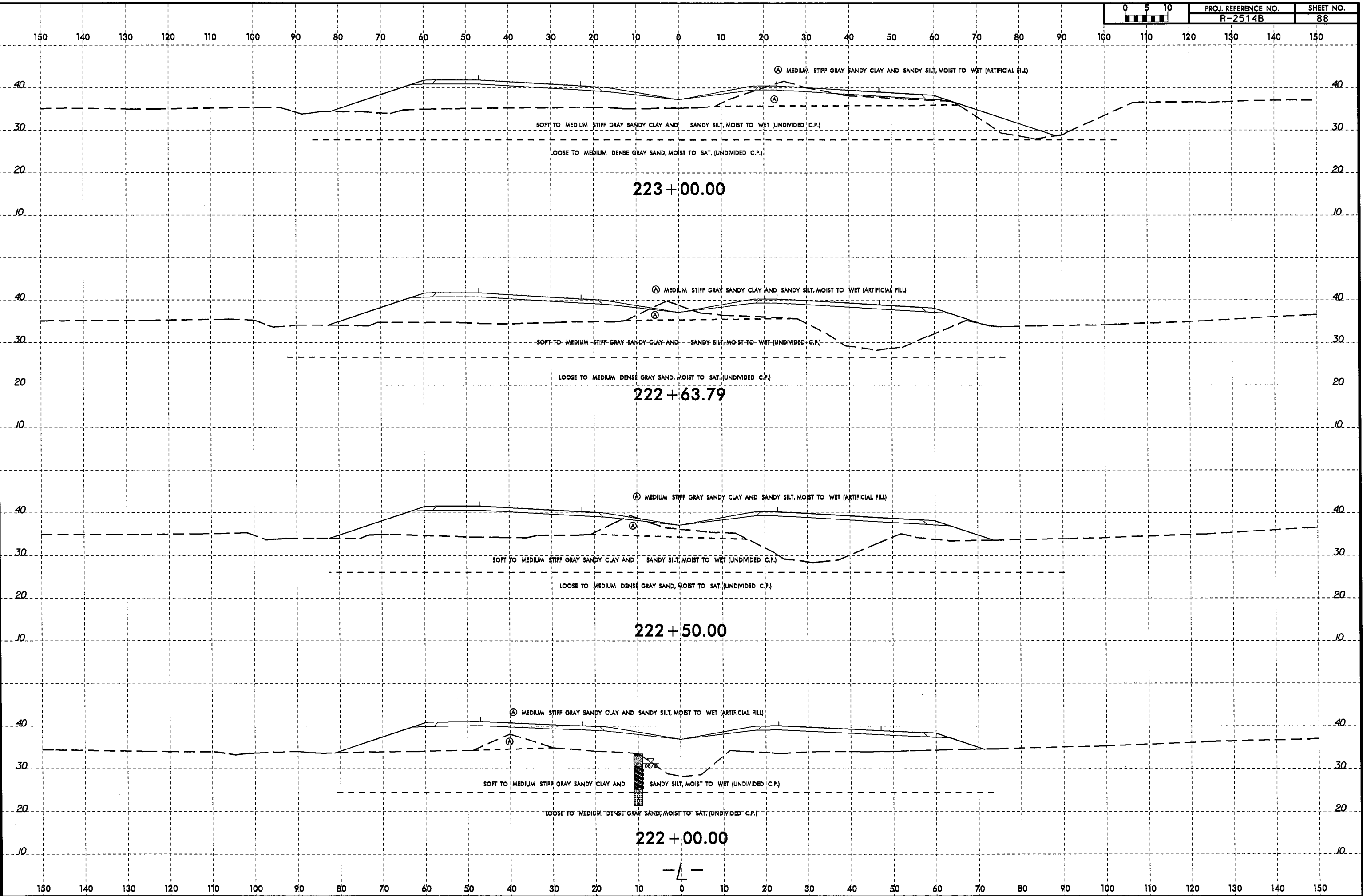
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spturner AT 0625481

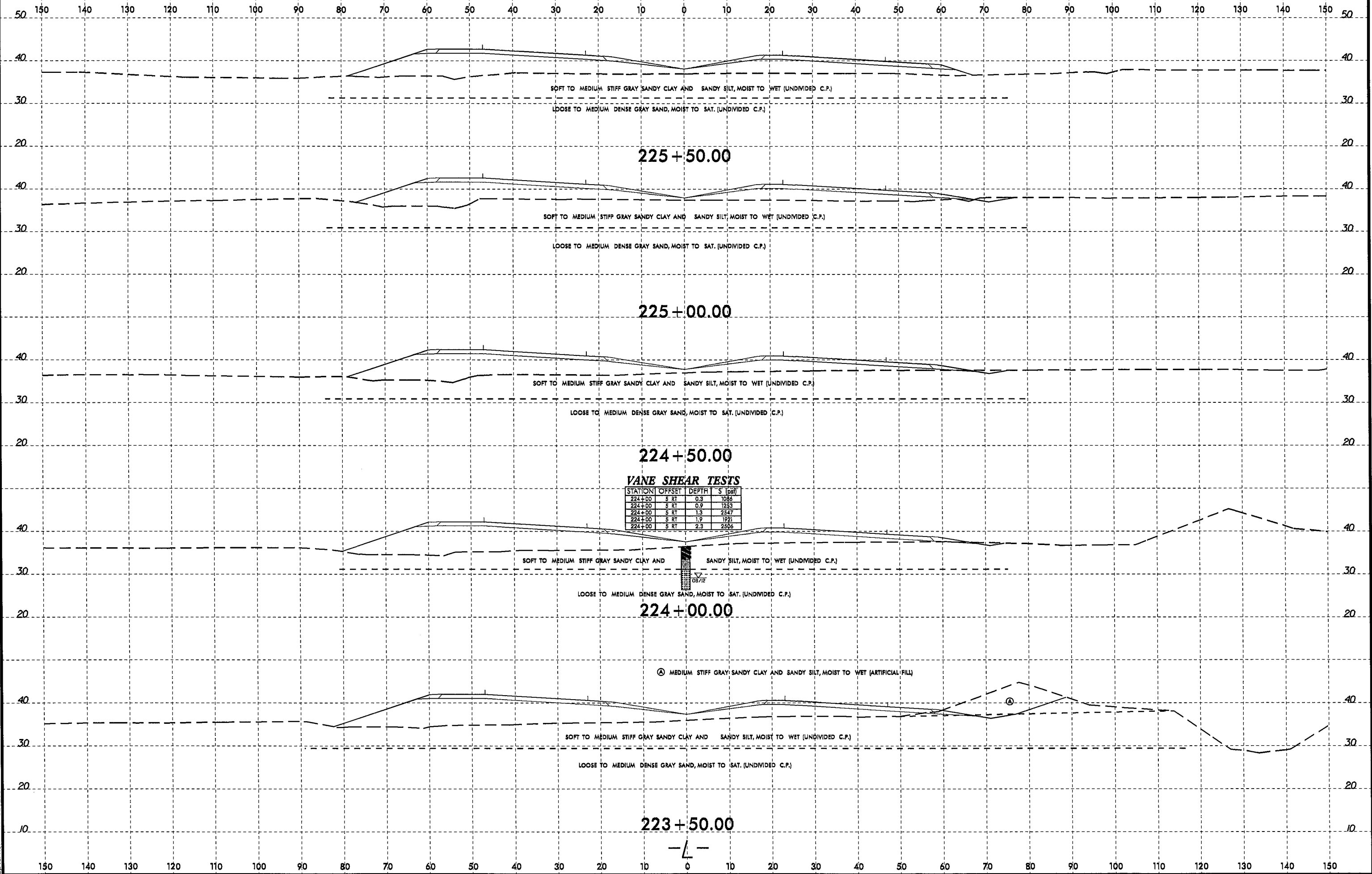
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cbturner AT 06255451



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 88        |



8/23/99



225 + 50.00

225 + 00.00

224 + 50.00

224 + 00.00

223 + 50.00

VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 224+00  | 5 RT   | 0.3   | 1084    |
| 224+00  | 5 RT   | 0.9   | 1253    |
| 224+00  | 5 RT   | 1.5   | 2547    |
| 224+00  | 5 RT   | 1.9   | 1921    |
| 224+00  | 5 RT   | 2.3   | 2506    |

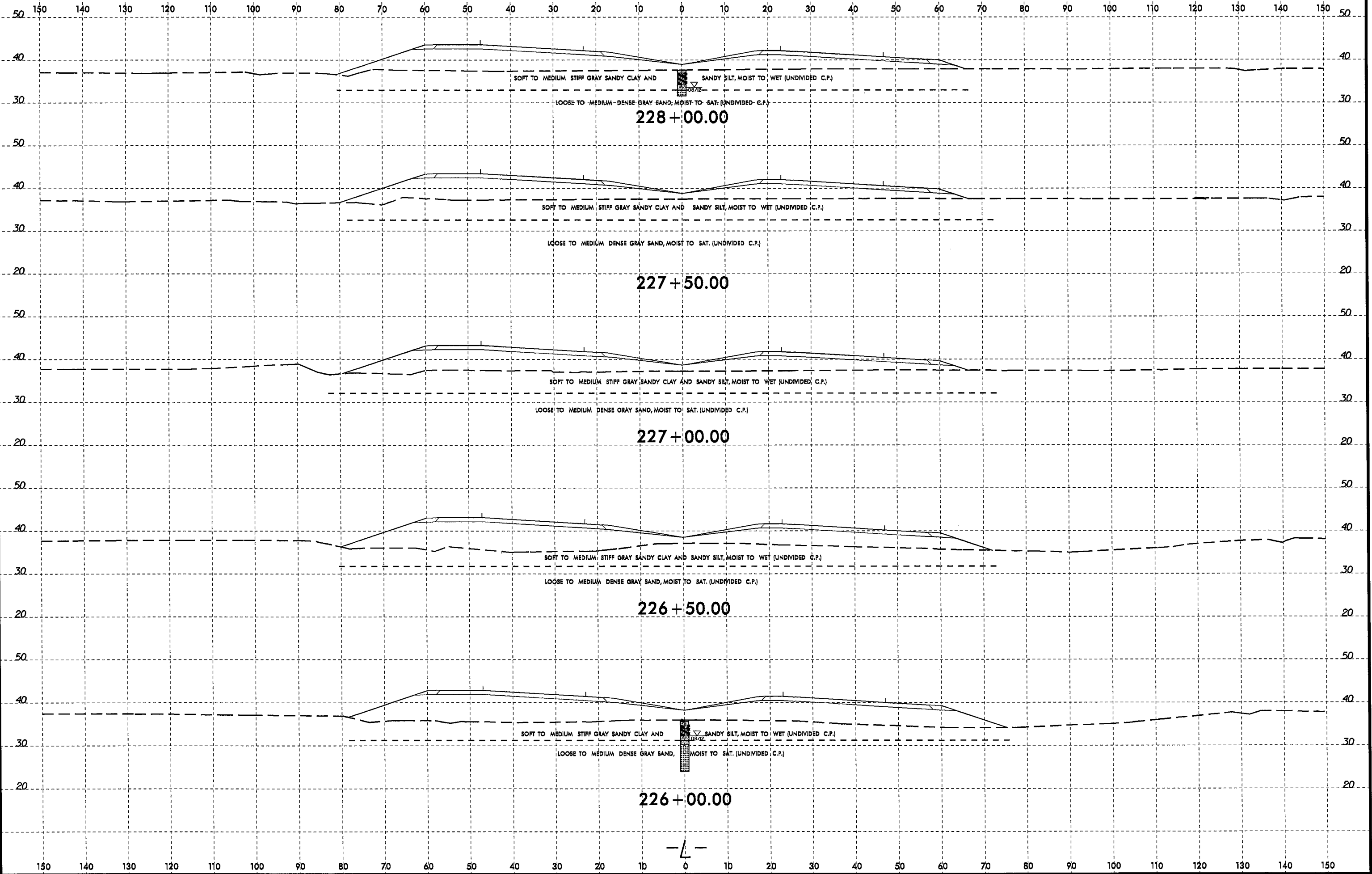
Ⓐ MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (ARTIFICIAL FILL)

25-JUL-2013 11:43 C:\FPO\perryville\_investigation\TIP\R2514B\_GEO\_ROW\Y\_CADD\_GEO\TECH\XSC\R2514B\_GEO\_ROW\_L\_21700to23100\_xsi.dgn c:\perry AT:GEO255461

8/23/99



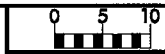
|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 90        |



22-JUL-2013 15:44  
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 spturner RT DEC2514B



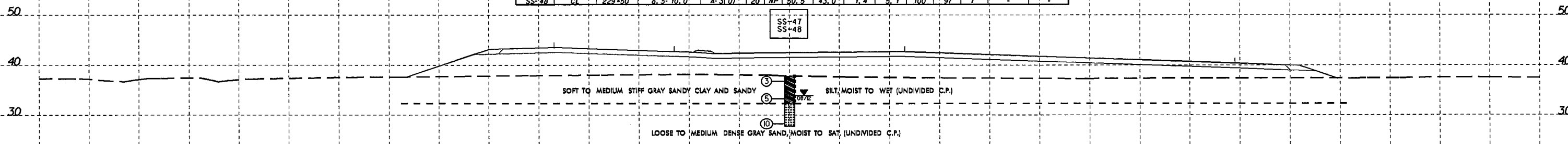
8/23/99



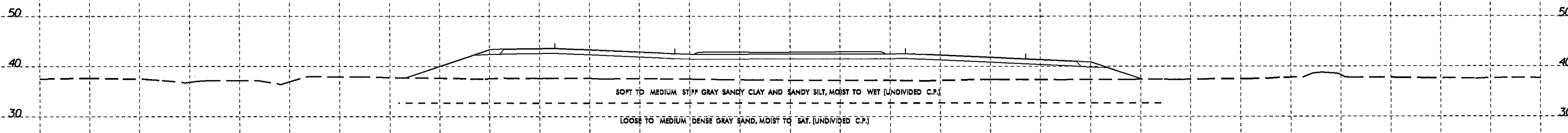
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| SOIL TEST RESULTS |        |         |                |               |      |      |             |        |      |      |                    |    |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 |            |           |
| SS-47             | CL     | 229+50  | 0.6-1.5        | A-6(6)        | 30   | 14   | 16.4        | 26.9   | 28.3 | 28.3 | 100                | 97 | 60         | -         |
| SS-48             | CL     | 229+50  | 8.5-10.0       | A-3(0)        | 20   | NP   | 50.5        | 43.0   | 1.4  | 5.1  | 100                | 97 | 7          | -         |

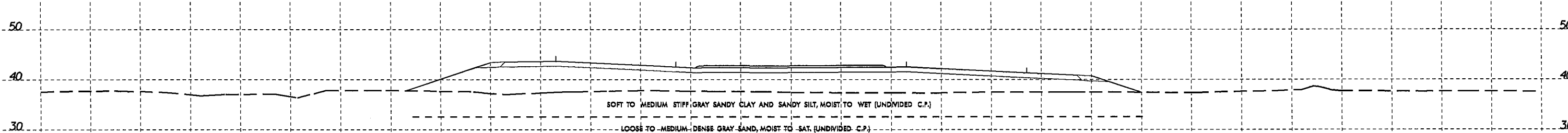
SS-47  
SS-48



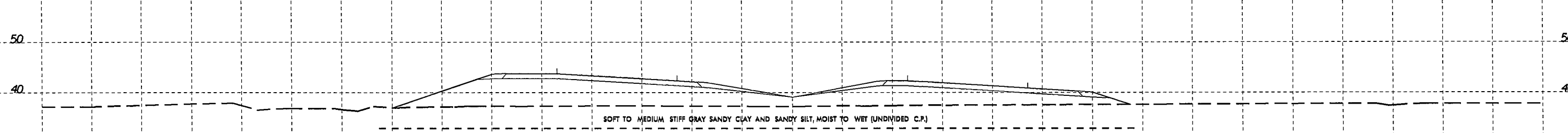
229 + 50.50



229 + 07.70



228 + 95.00



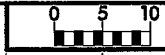
228 + 44.42

-L-

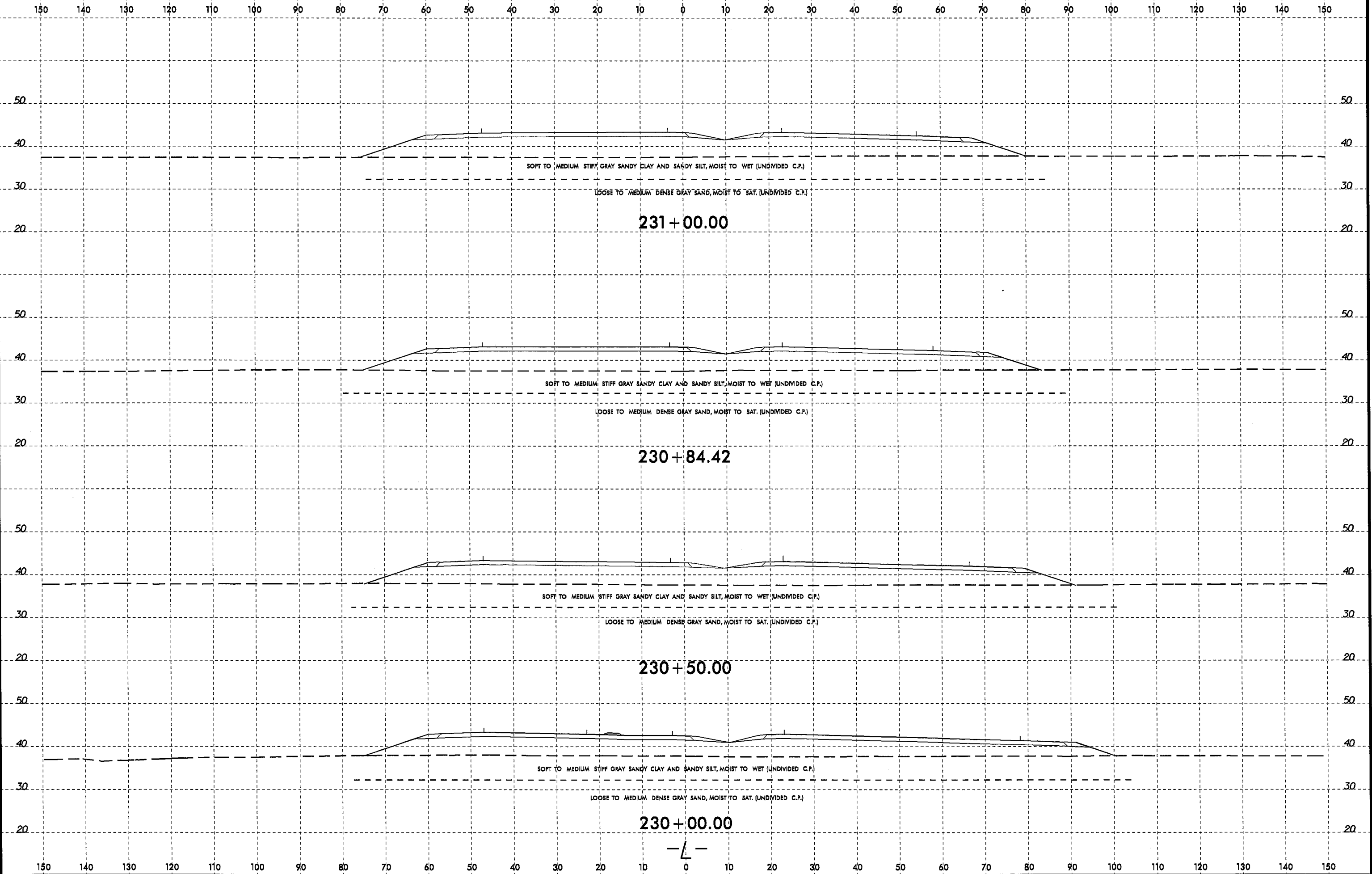
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8/23/99



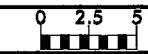
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| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 92        |



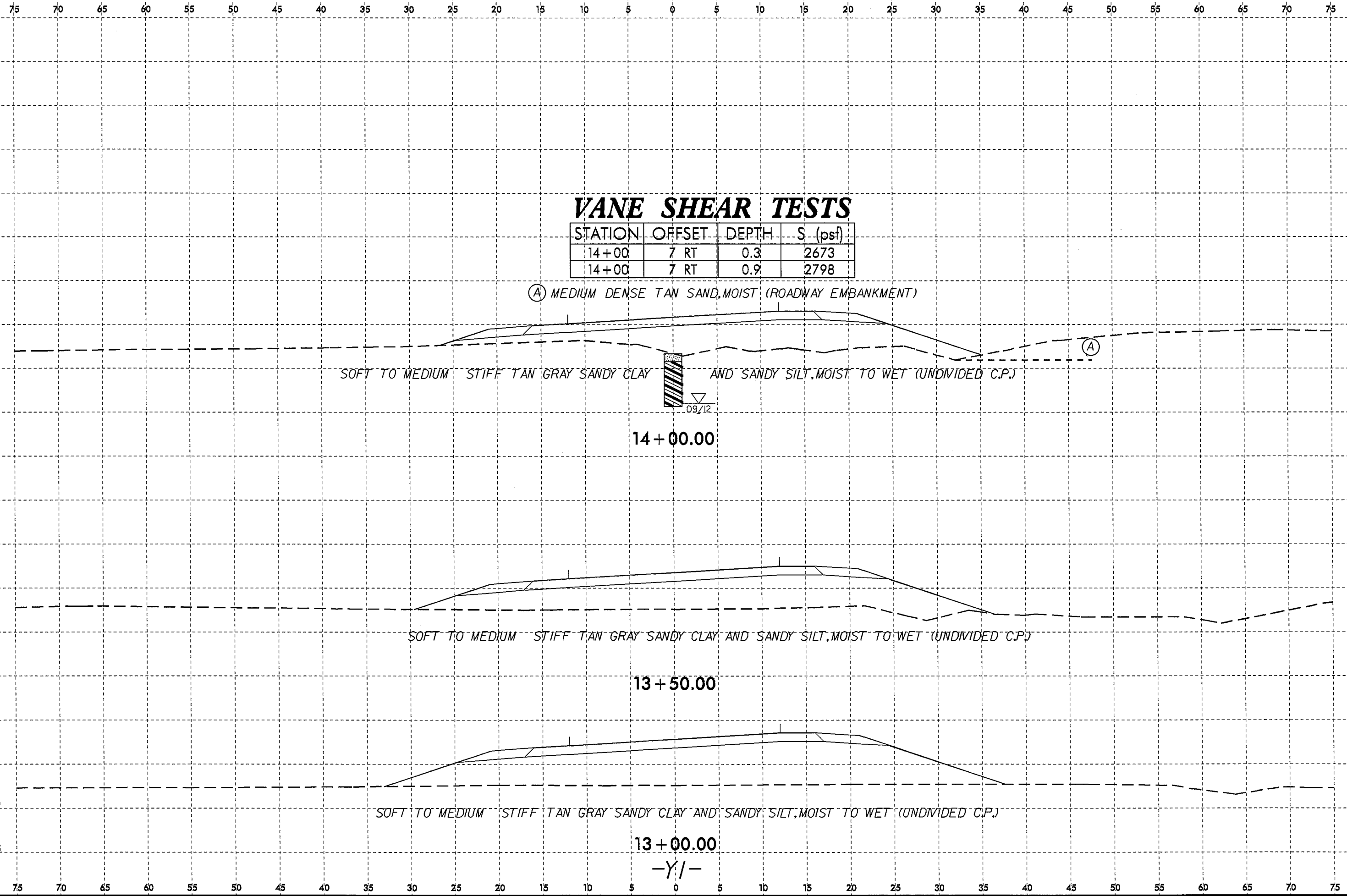
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 spturner AT 06/25/06

-L-

8/23/99



PROJ. REFERENCE NO. R-2514B SHEET NO. 93



# VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 14+00   | 7 RT   | 0.3   | 2673    |
| 14+00   | 7 RT   | 0.9   | 2798    |

(A) MEDIUM DENSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

SOFT TO MEDIUM STIFF TAN GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

0.9/12

14+00.00

SOFT TO MEDIUM STIFF TAN GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

13+50.00

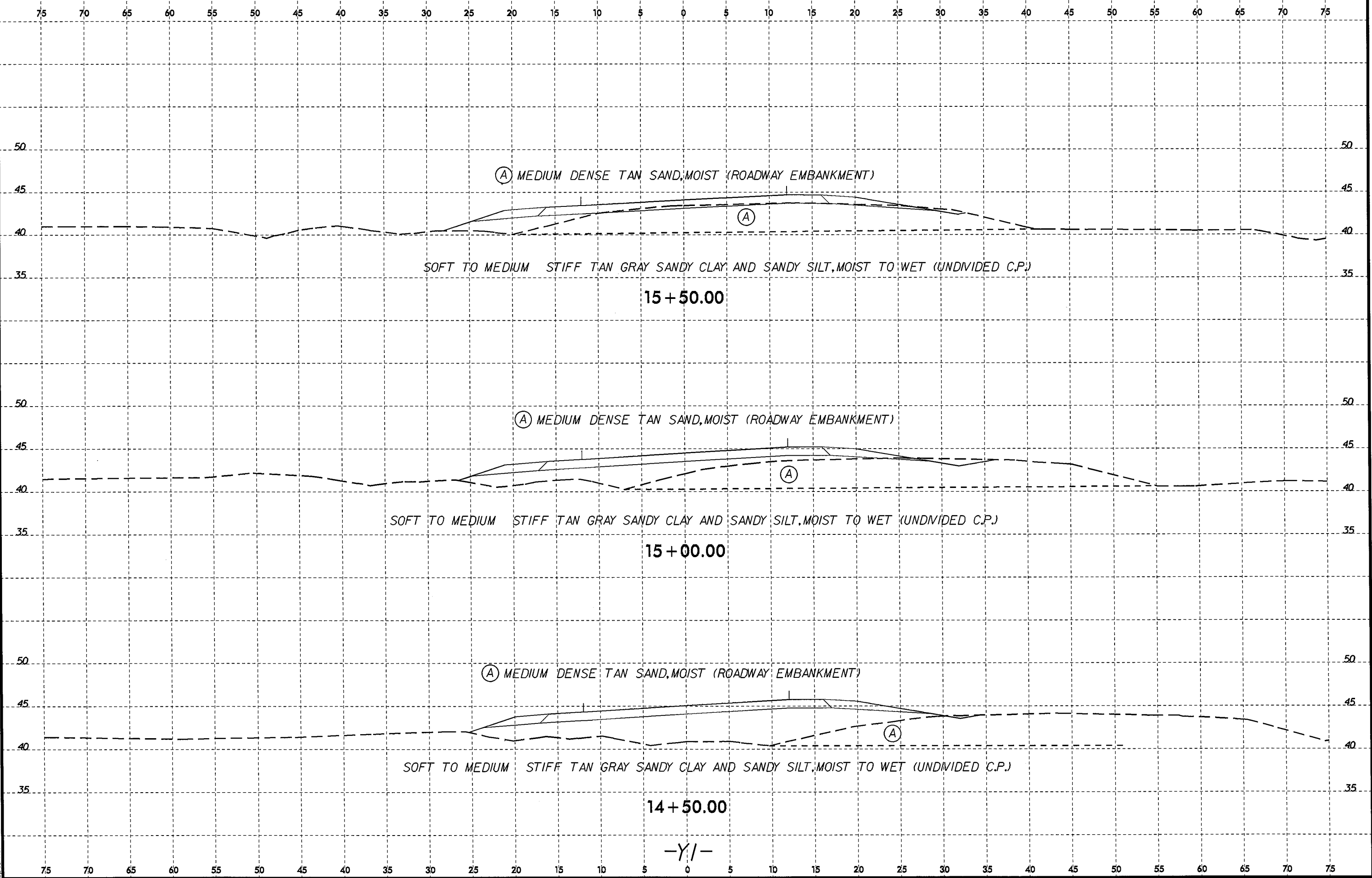
SOFT TO MEDIUM STIFF TAN GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

13+00.00

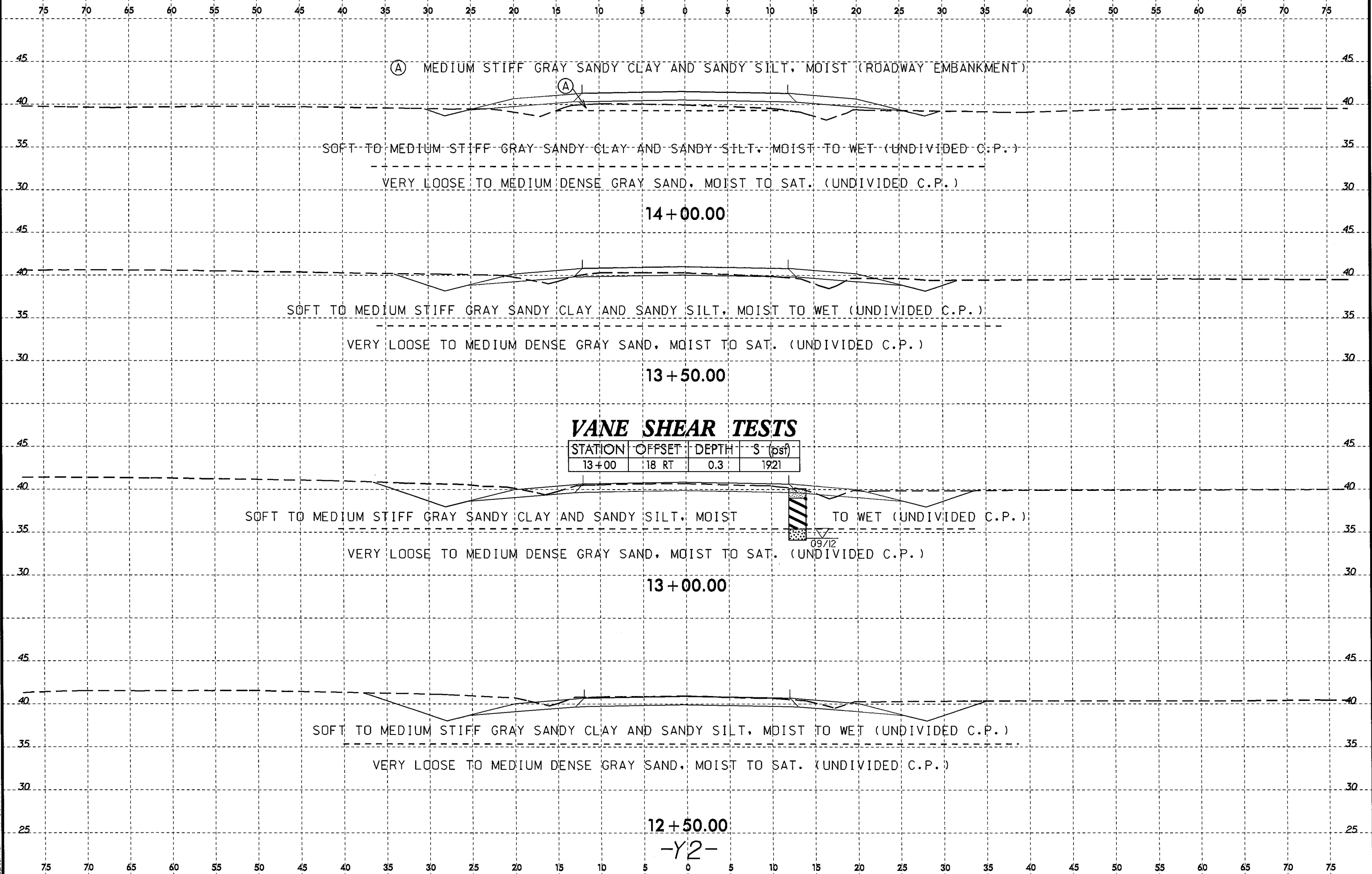
-Y/-

25-JUL-2013 11:48 L:\FERD\perry\11e\_j\investigation\TIP\R2514B\_GEO\_ROWY\CAADD\_GEO\TECH\sc\R2514B\_GEO\_ROWY\_Y113000to1550\_xsi.dgn cbrturner

8/23/99  
22-JUL-2013 15:54  
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c:\turner AT 0602546



8/23/99  
25-JUL-2013 14:49  
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c:\turner AT GE025461



① MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (ROADWAY EMBANKMENT)

①

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

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

14+00.00

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

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

13+50.00

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 13+00   | 18 RT  | 0.3   | 1921    |

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

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

13+00.00



09/12

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

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

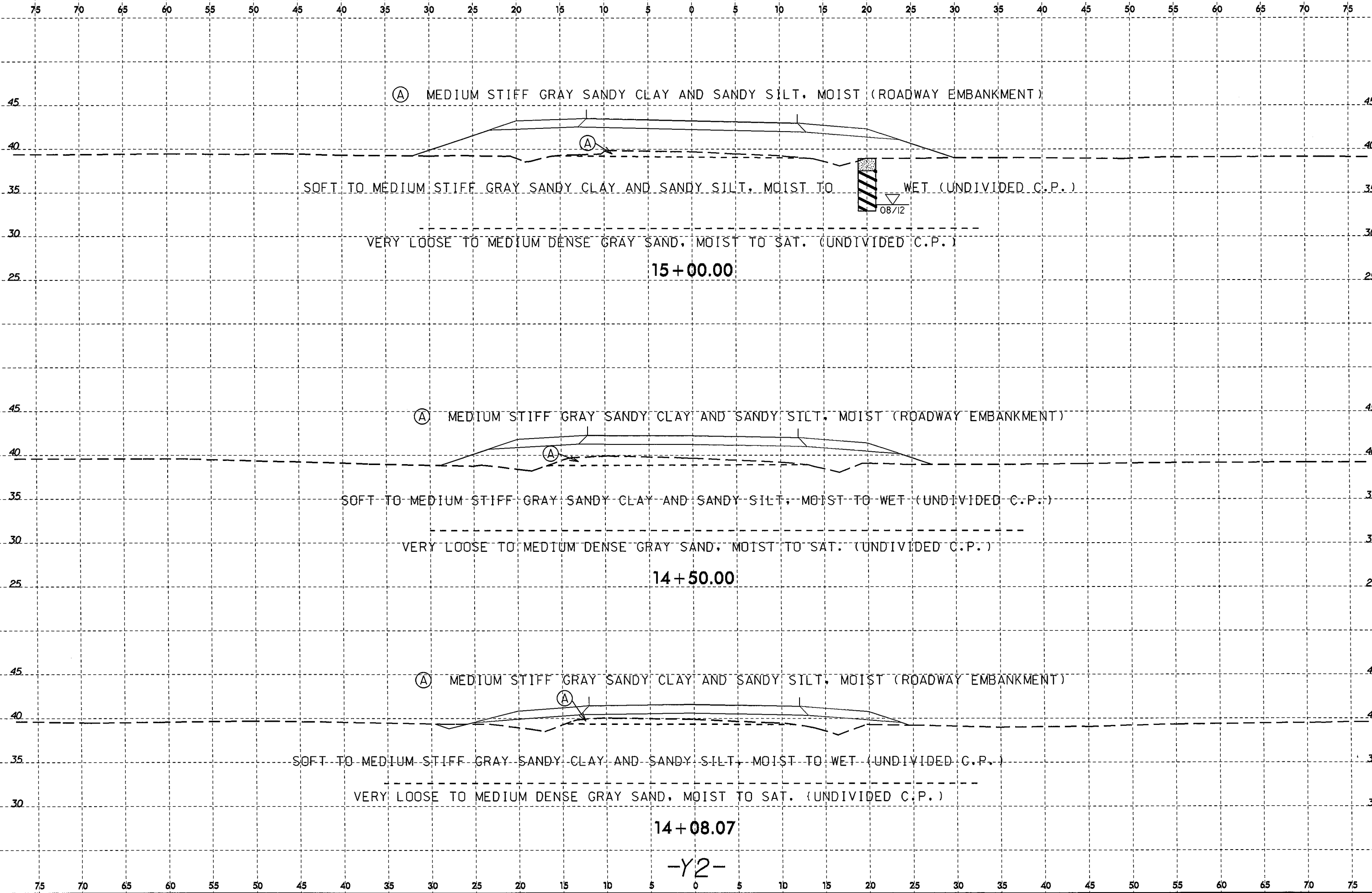
12+50.00

-Y2-

8/23/99



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 96        |

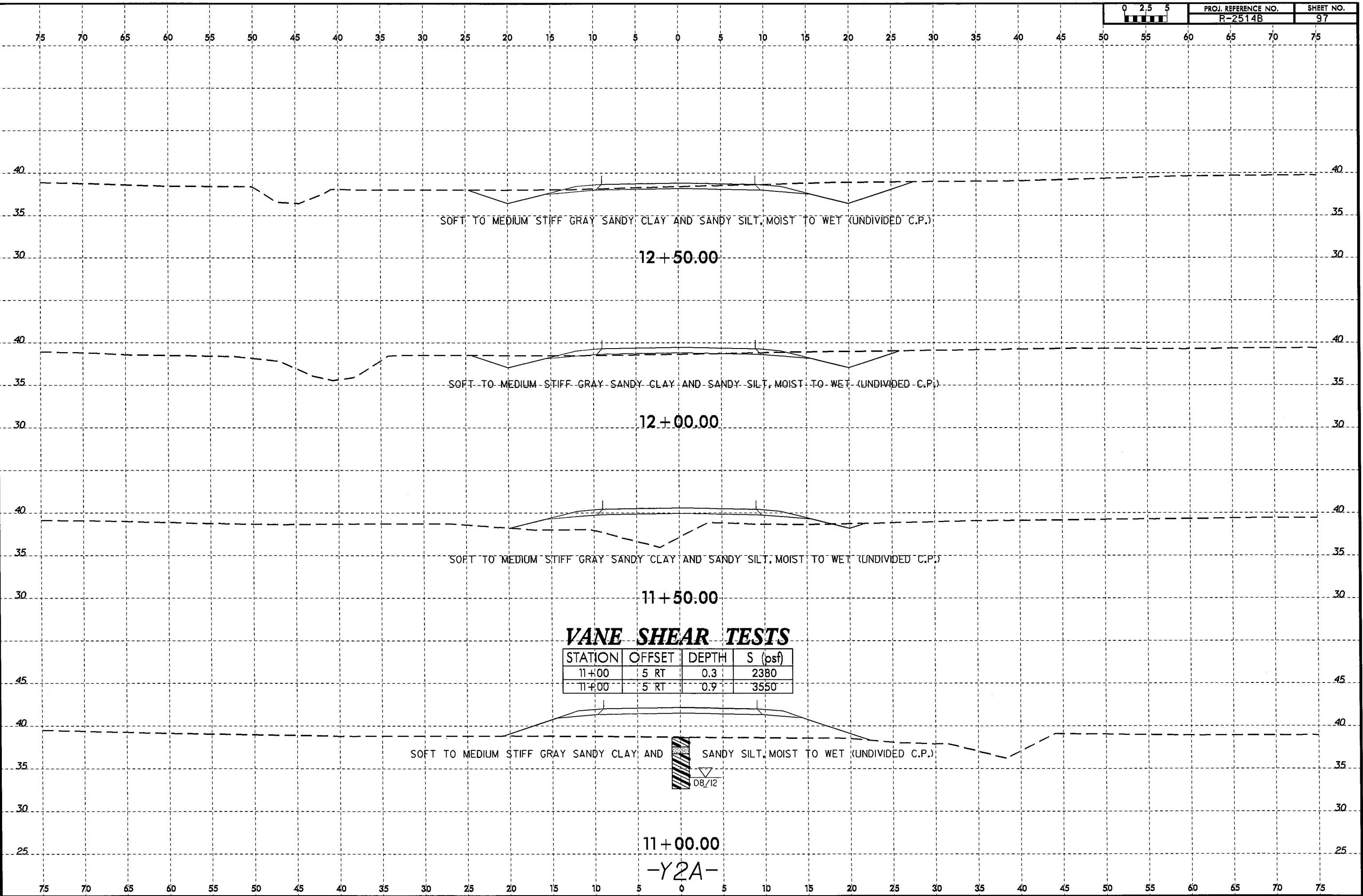


14+08.07

-Y2-

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cputner AT GEG25461

8/23/99  
 25-JUL-2013 14:50  
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 copturner RT (GEO25548)



**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 11+00   | 5 RT   | 0.3   | 2380    |
| 11+00   | 5' RT  | 0.9   | 3550    |



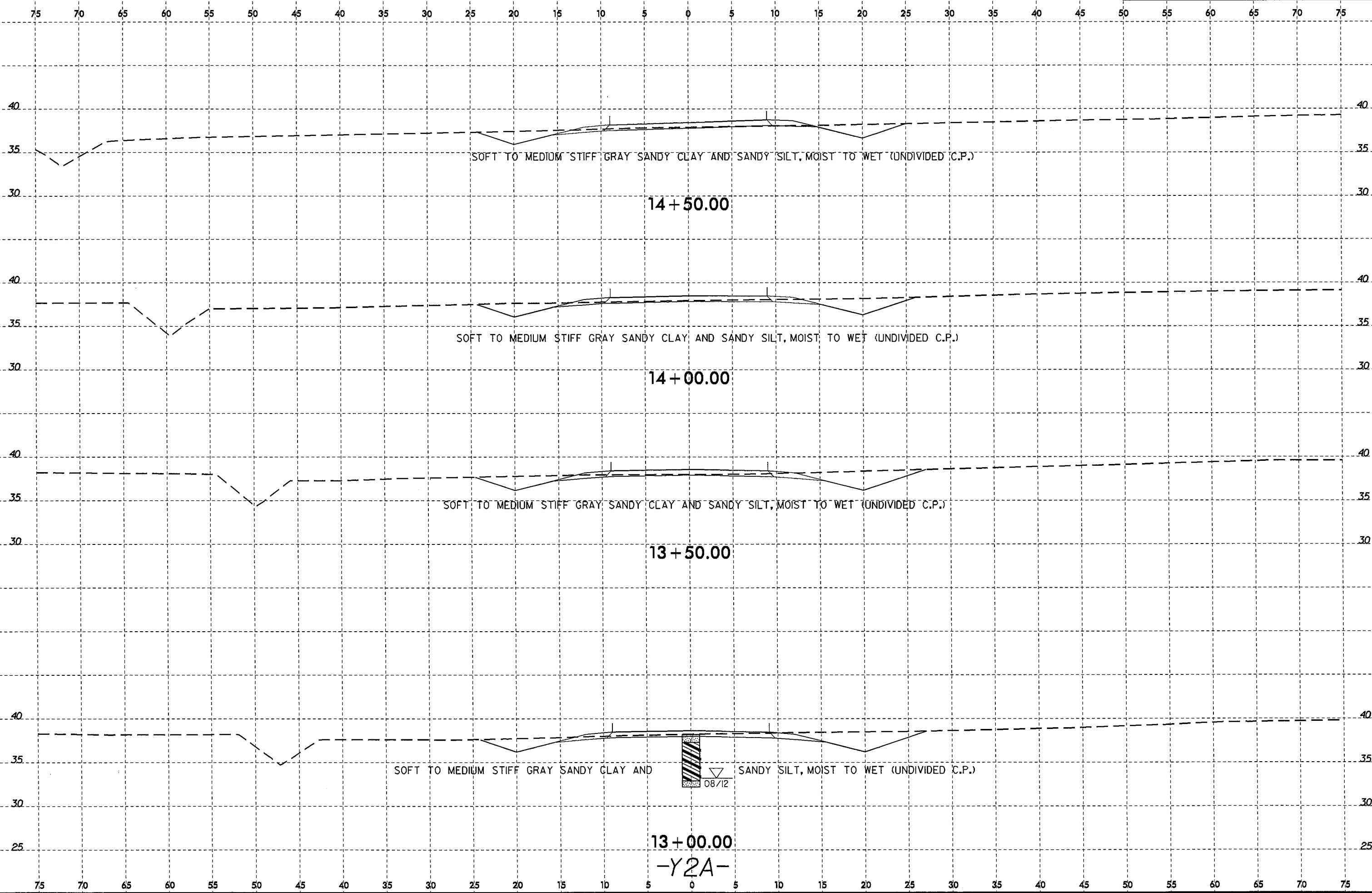
11+00.00  
-Y2A-

8/23/99  
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Cpturner



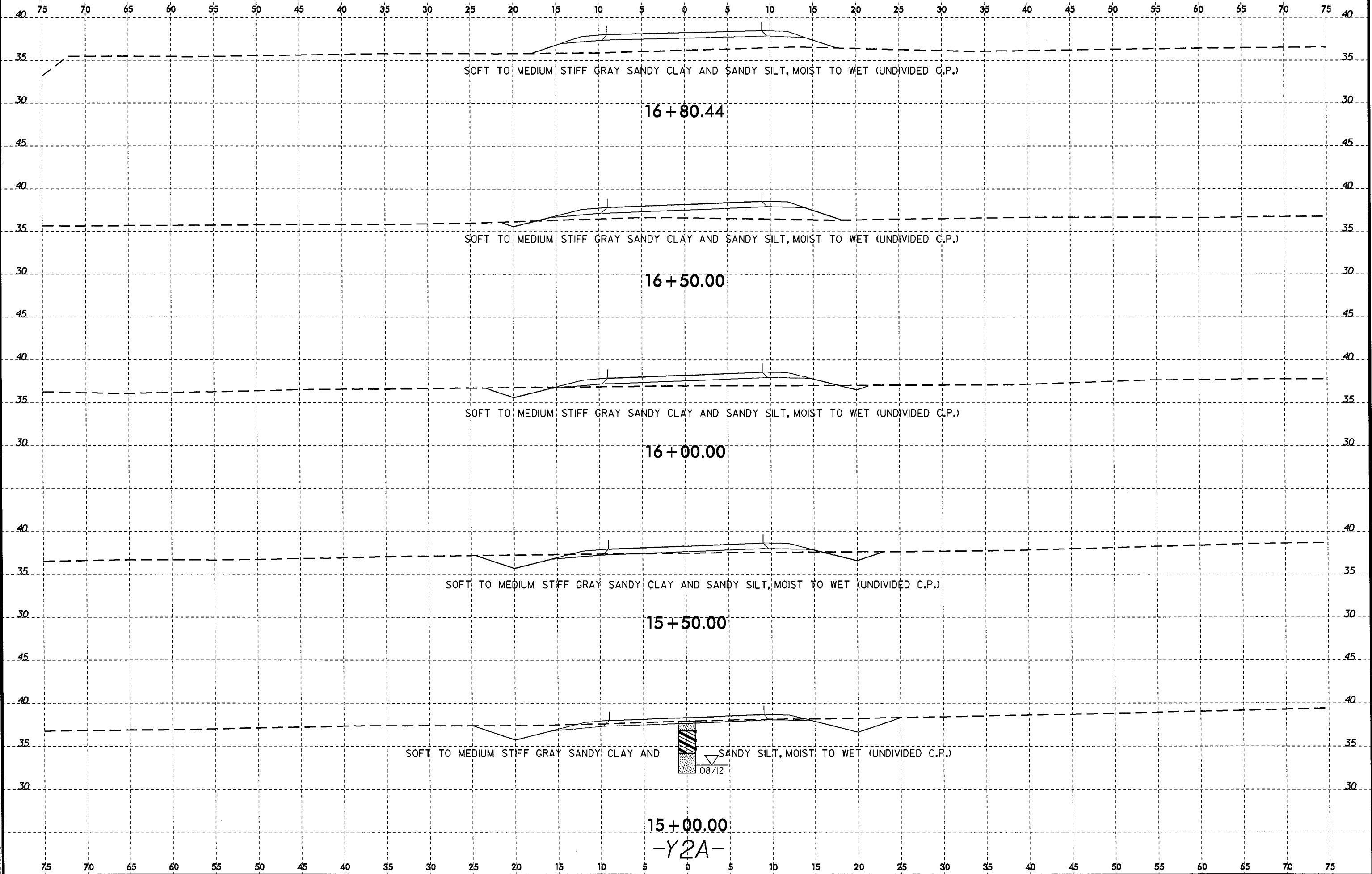
PROJ. REFERENCE NO.  
R-2514B

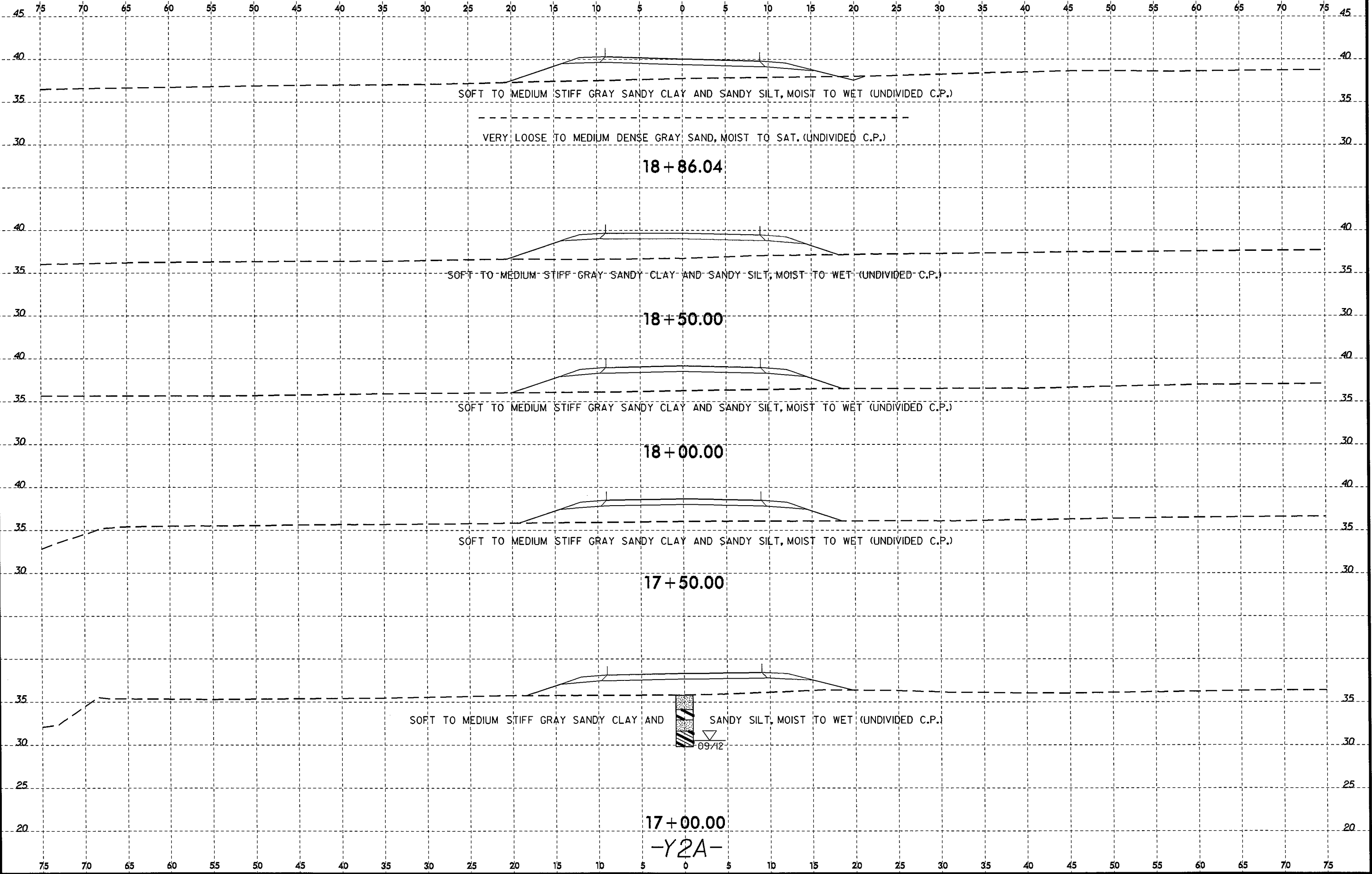
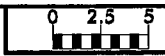
SHEET NO.  
98



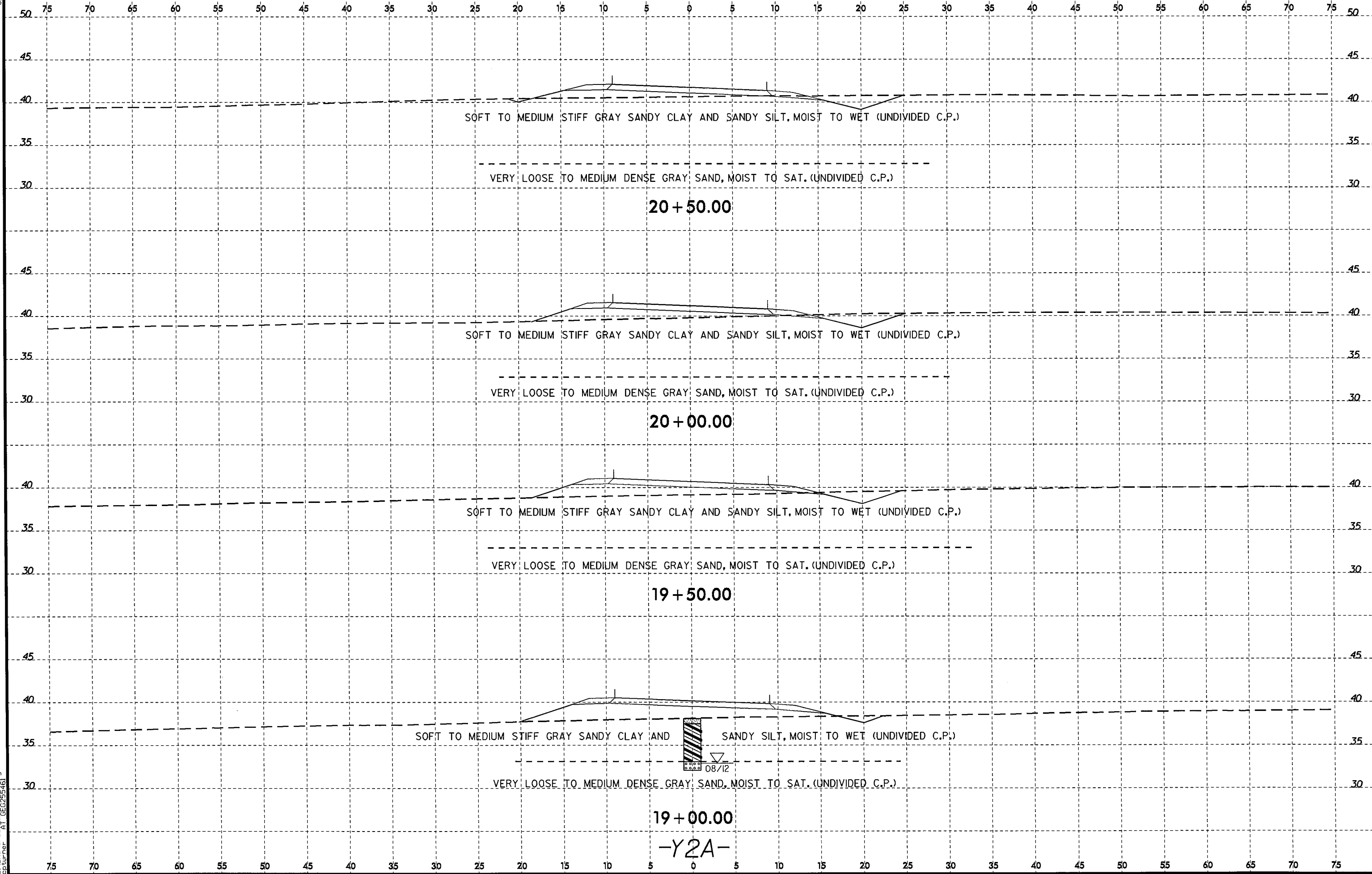


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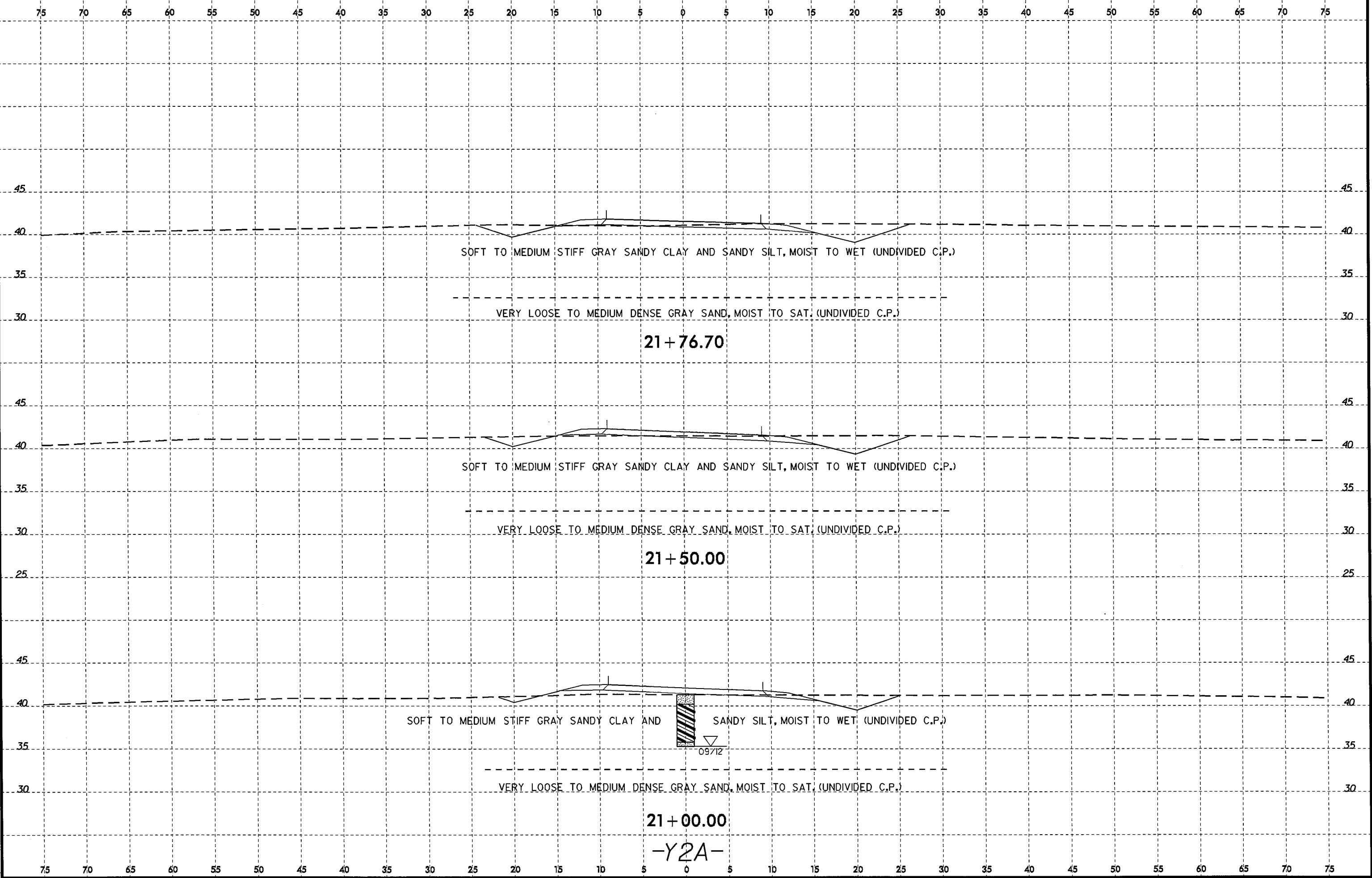


8/23/99



22-JUL-2013 15:54  
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8/23/99  
22-JUL-2013 15:54  
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21+76.70

21+50.00

21+00.00

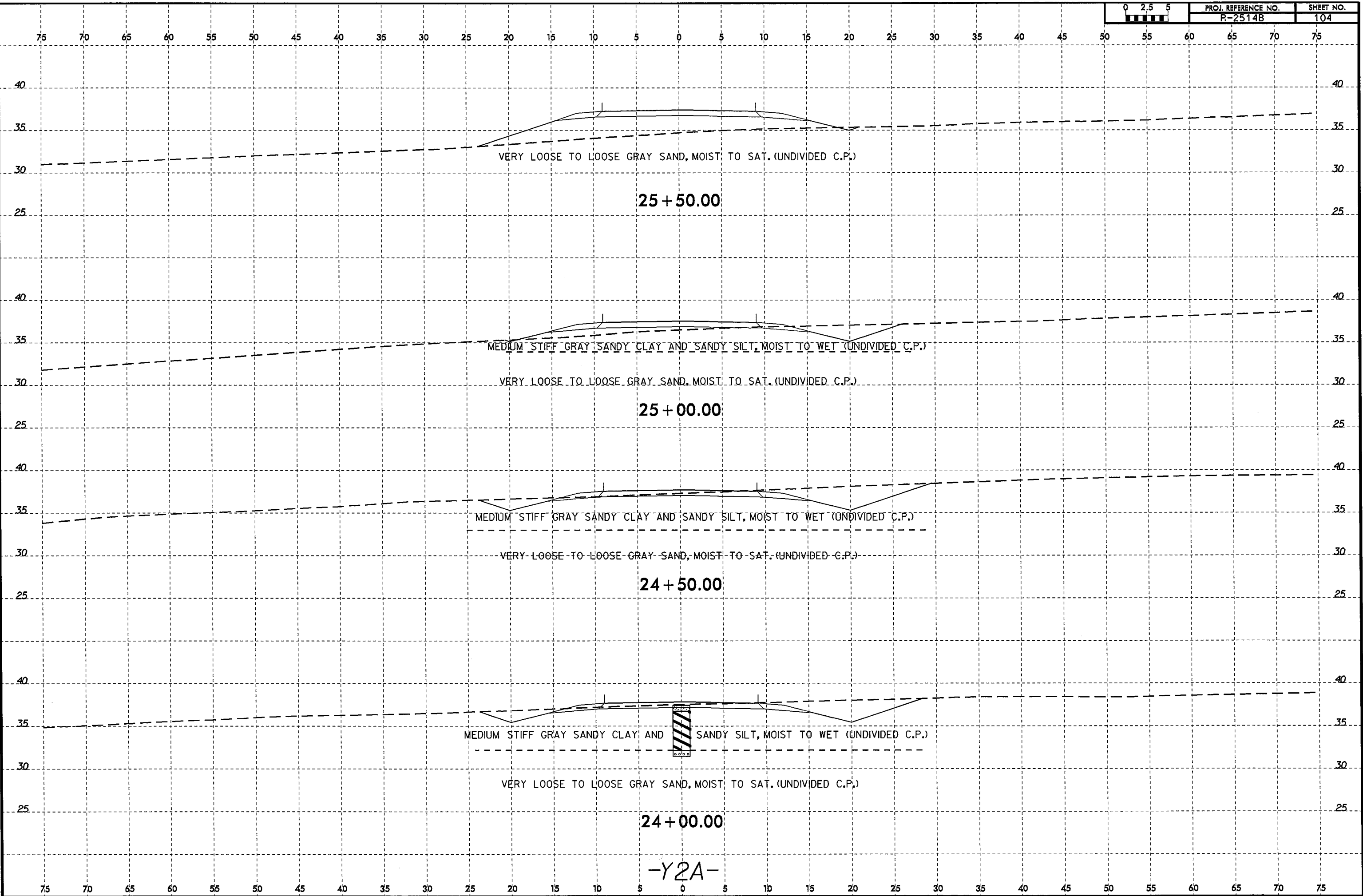
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cpturner AT GEO25461



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 104       |



VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 + 50.00

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 + 00.00

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

24 + 50.00

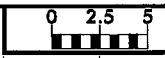
MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

24 + 00.00

-Y2A-

8/23/99

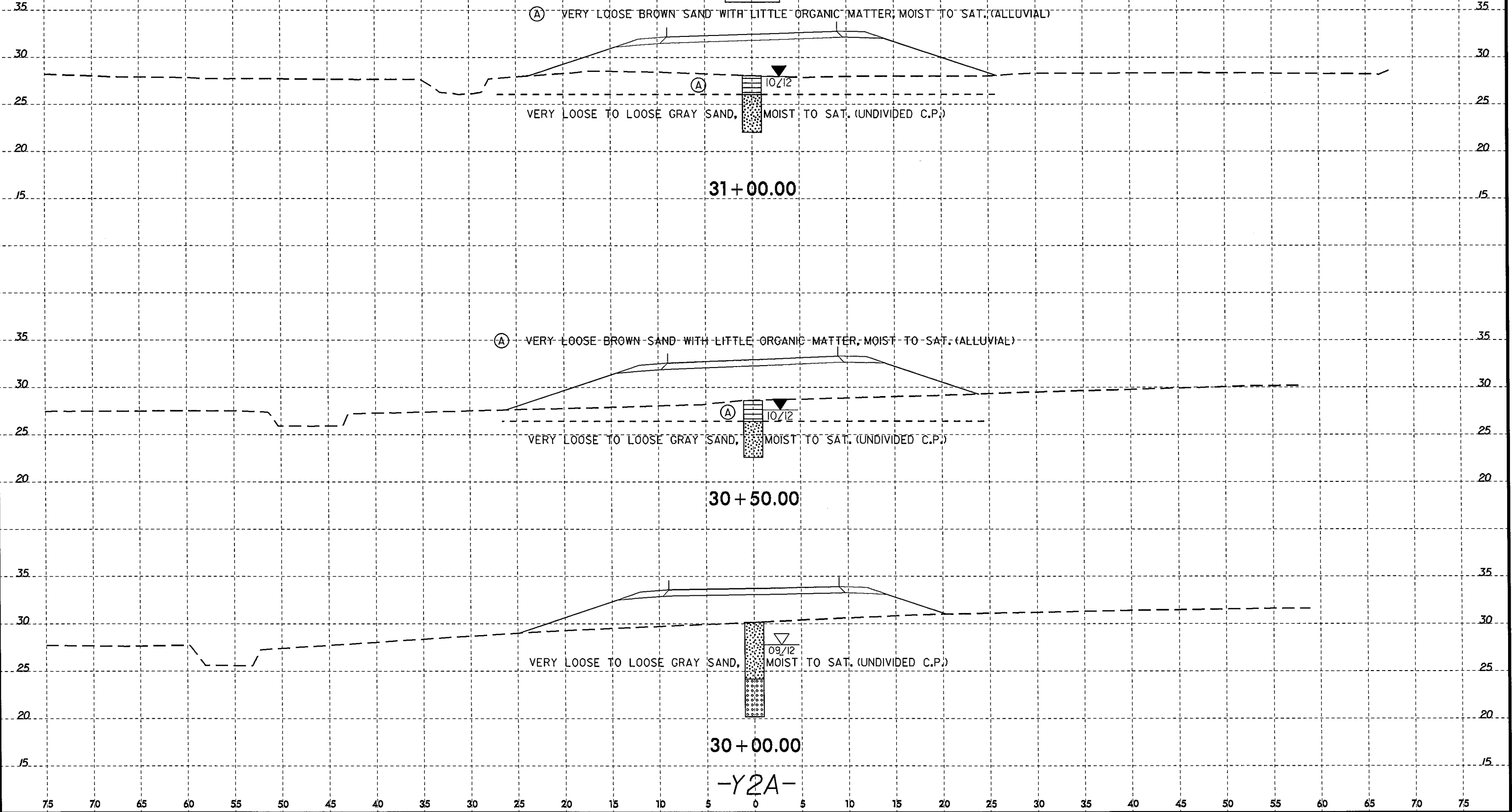


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| PROJ. REFERENCE NO.<br>R-2514B | SHEET NO.<br>105 |
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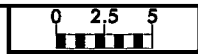
| SOIL TEST RESULTS |        |         |                |               |      |      |             |        |      |      |                    |    |     |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| S-1               | CL     | 31+00   | 0.0-2.0        | A-2-4(0)      | 25   | 5    | 27.8        | 39.9   | 22.3 | 10.1 | 90                 | 78 | 32  | -          | 4.7       |

S-1

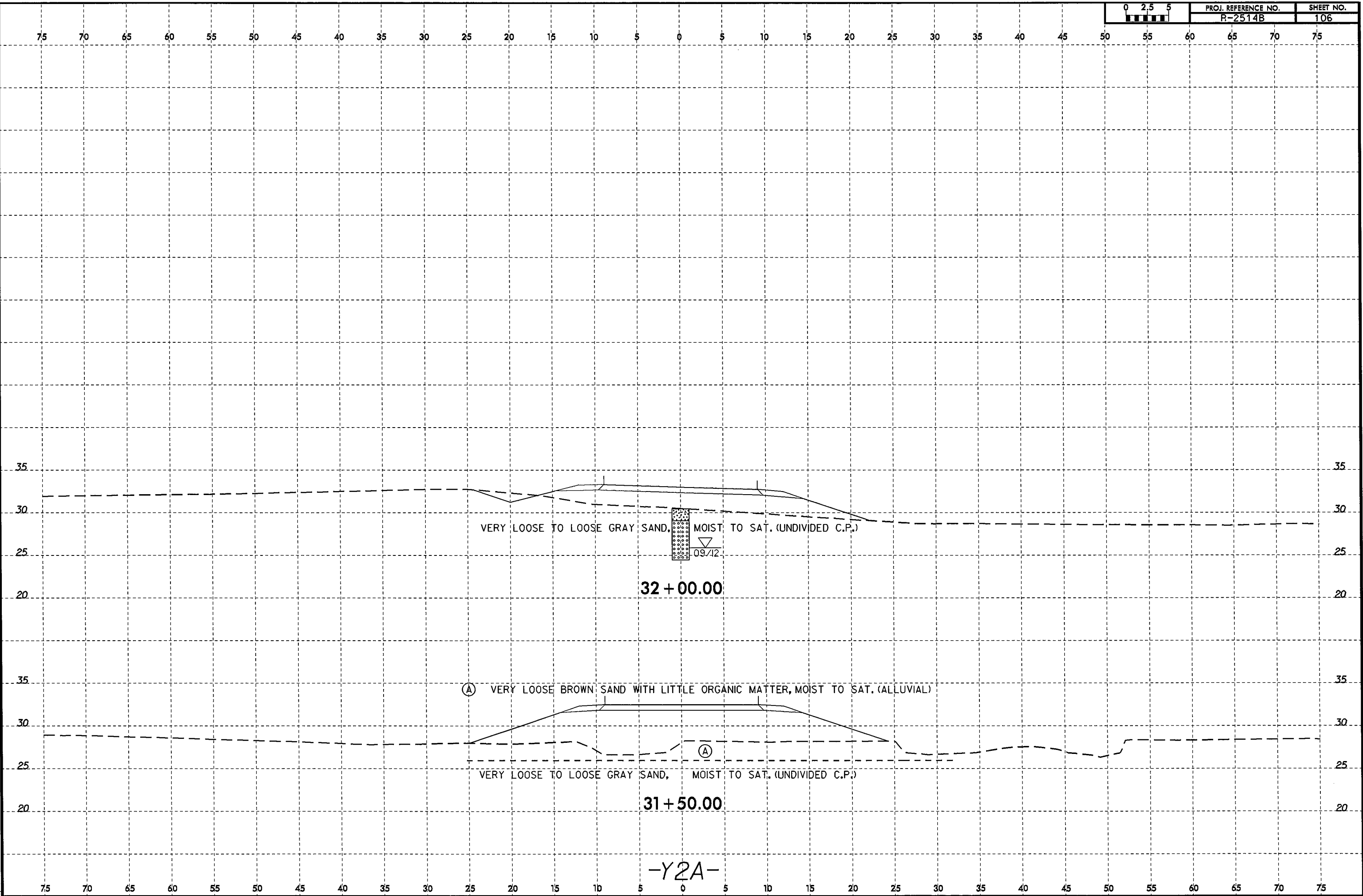


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 spurner - AT - GEG2514B1

8/23/99  
22-JUL-2013 15:54  
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cputner AT GED25461



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 106       |



32 + 00.00

31 + 50.00

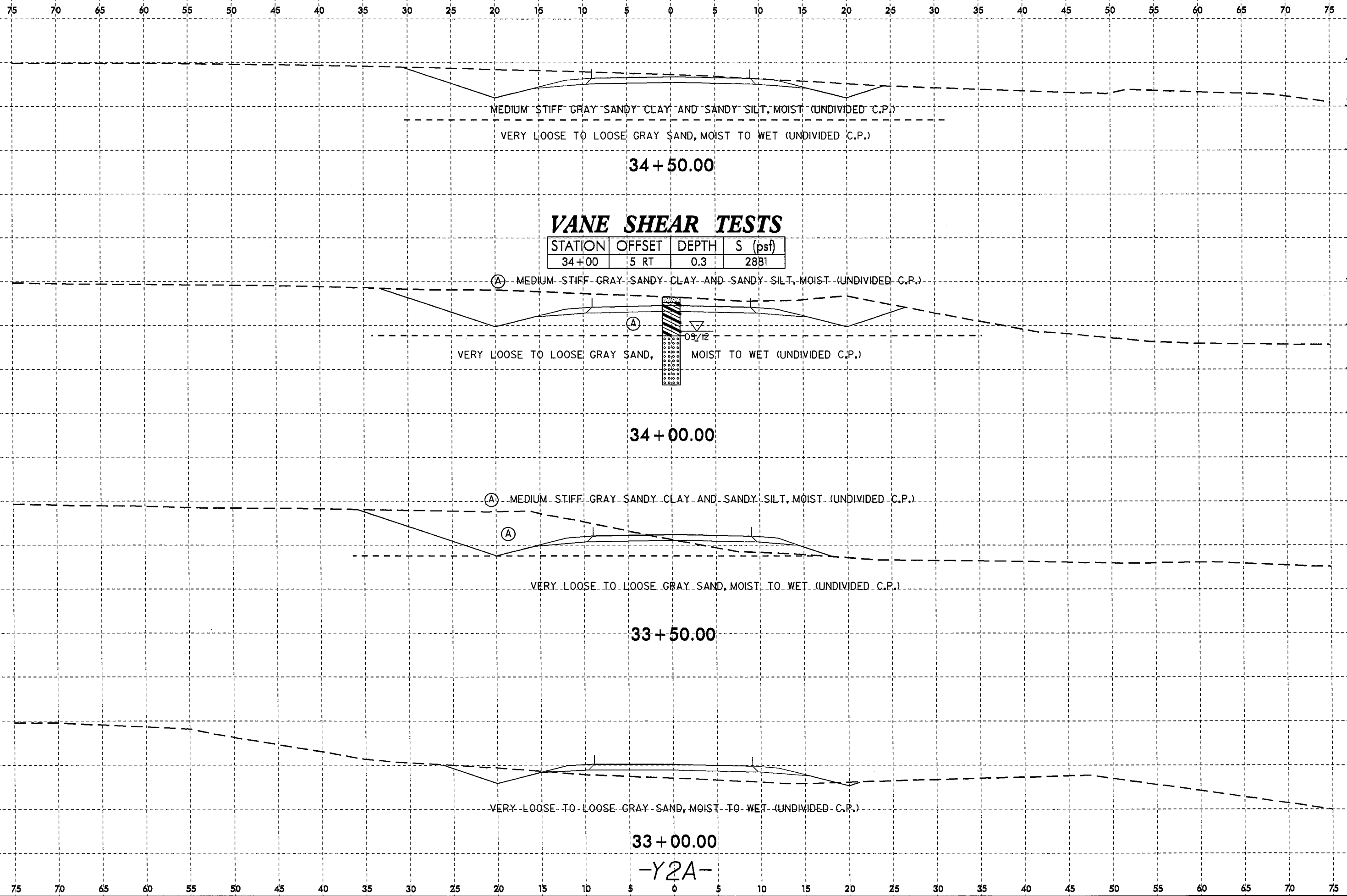
-Y2A-



8/23/99



PROJ. REFERENCE NO. R-2514B SHEET NO. 107



### VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 34+00   | 5 RT   | 0.3   | 2881    |

34 + 50.00

34 + 00.00

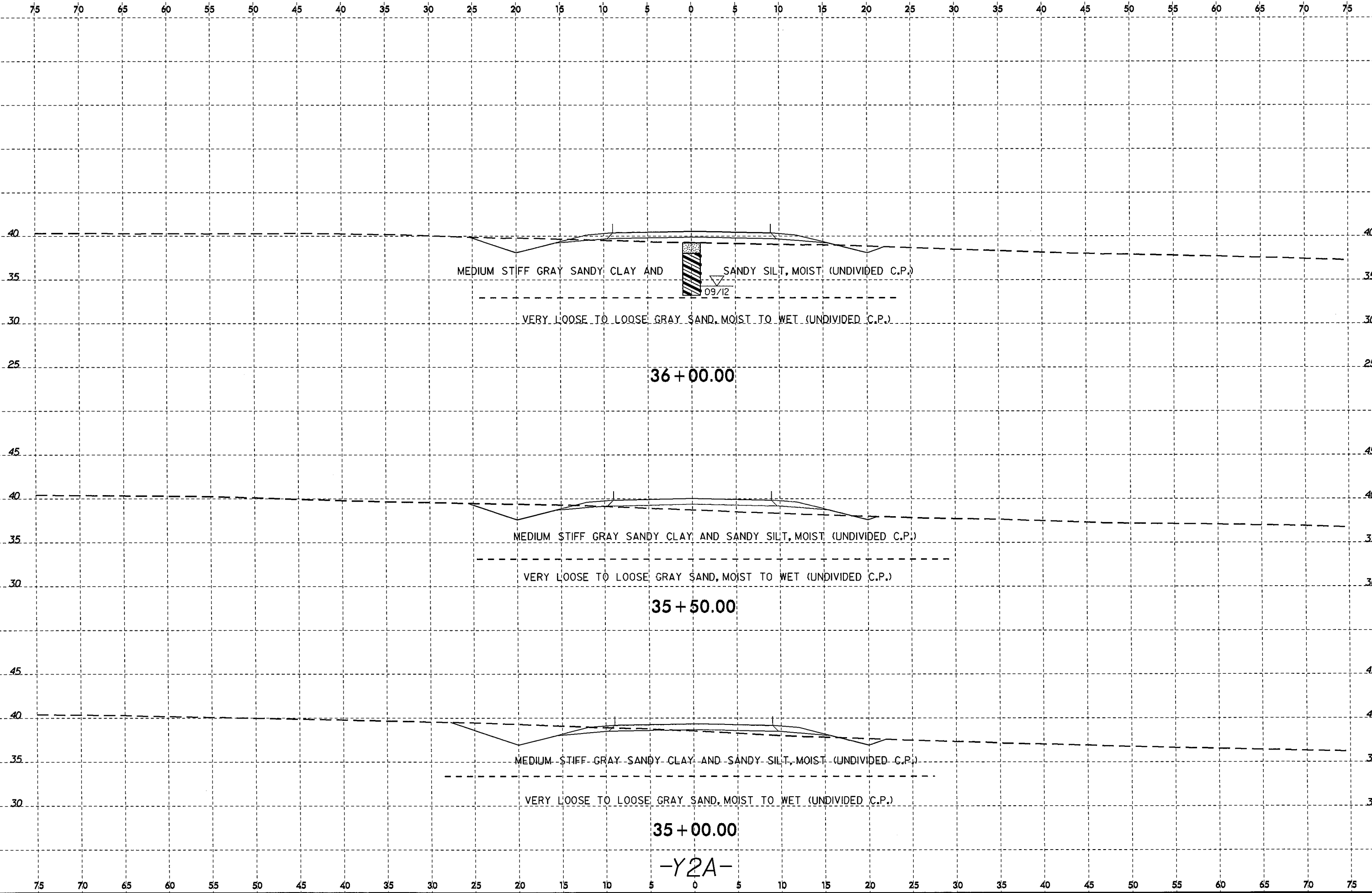
33 + 50.00

33 + 00.00

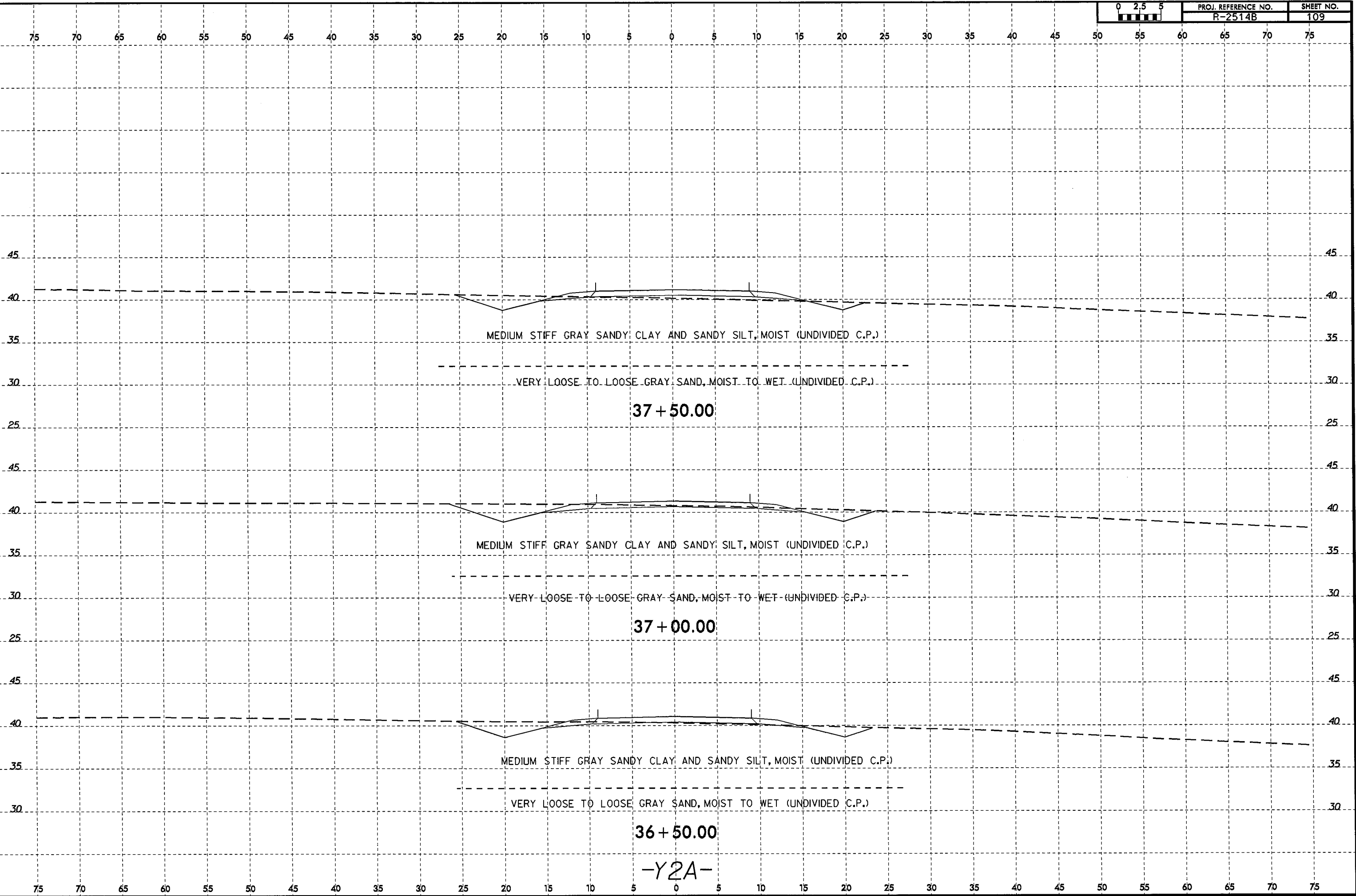
-Y2A-

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8/23/99  
22-JUL-2013 15:54  
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cpturner AT GEO25481



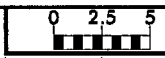
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gpturner AT GEO25461



-Y2A-

8/23/99

25-JUL-2013 11:51 L:\ERD\B-rep\11g\_05\investigation\TIP\R2514B\_GEO\_RDWY\_CADD\_GEDTECH\asc\R2514B\_GEO\_RDWY\_Y2A\_3300 to 4300\_xsi.dgn spturner RT 06/25/2013



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

39 + 00.00

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

38 + 50.00

### SOIL TEST RESULTS

| SAMPLE NO. | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|-----|------------|-----------|
|            |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-12      | 25 RT  | 38+00   | 0.0-1.5        | A-4(0)        | 17   | 2    | 22.7        | 44.1   | 15.0 | 18.2 | 100                | 88 | 40  | -          | -         |
| SS-13      | 25 RT  | 38+00   | 3.5-5.0        | A-6(5)        | 33   | 17   | 17.0        | 38.7   | 14.0 | 30.4 | 100                | 92 | 50  | -          | -         |

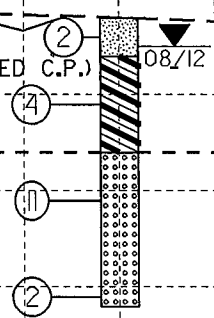
SS-12  
SS-13

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

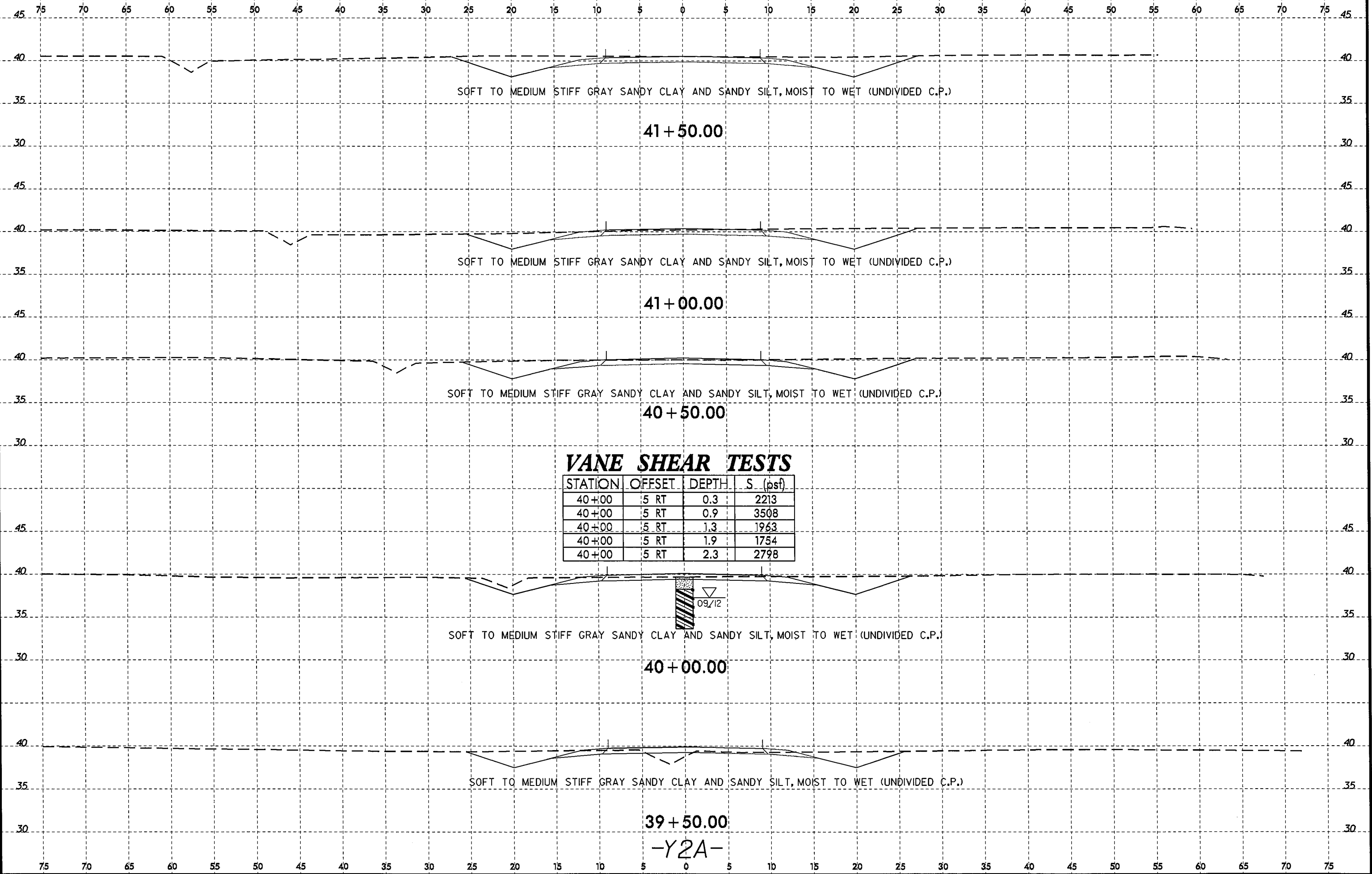
VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO WET (UNDIVIDED C.P.)

38 + 00.00

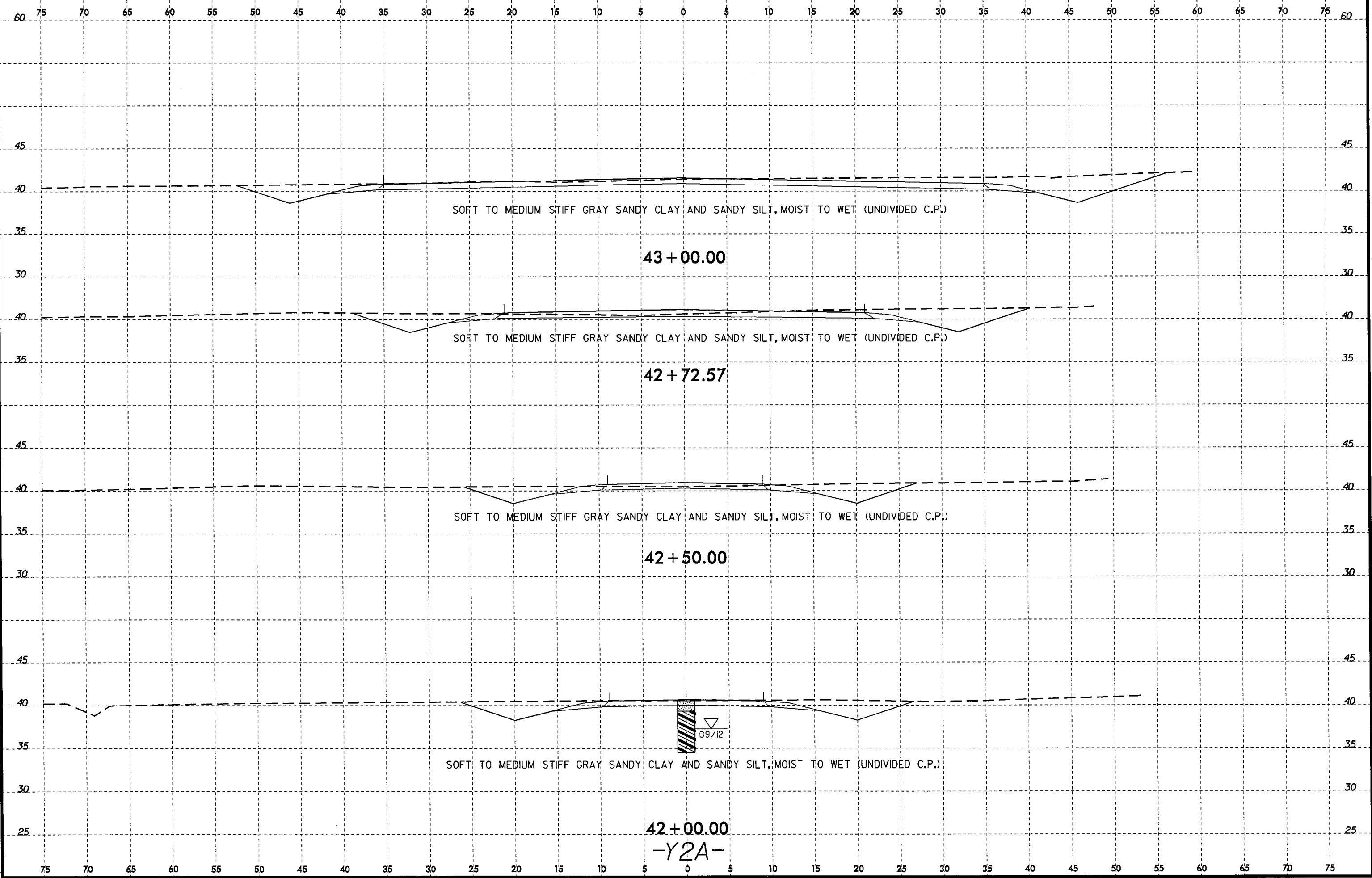
-Y2A-



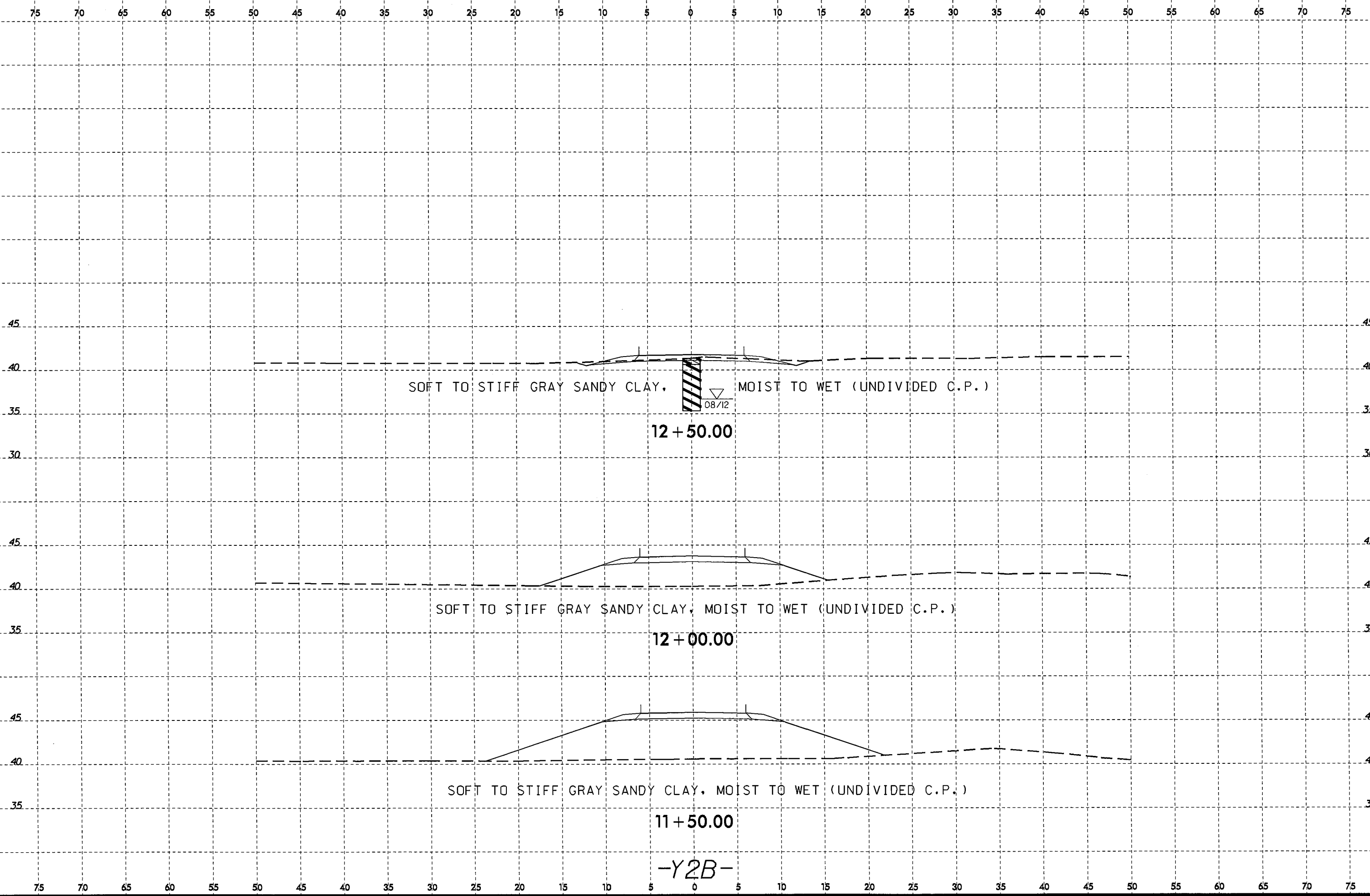
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 spturner AT 06255481



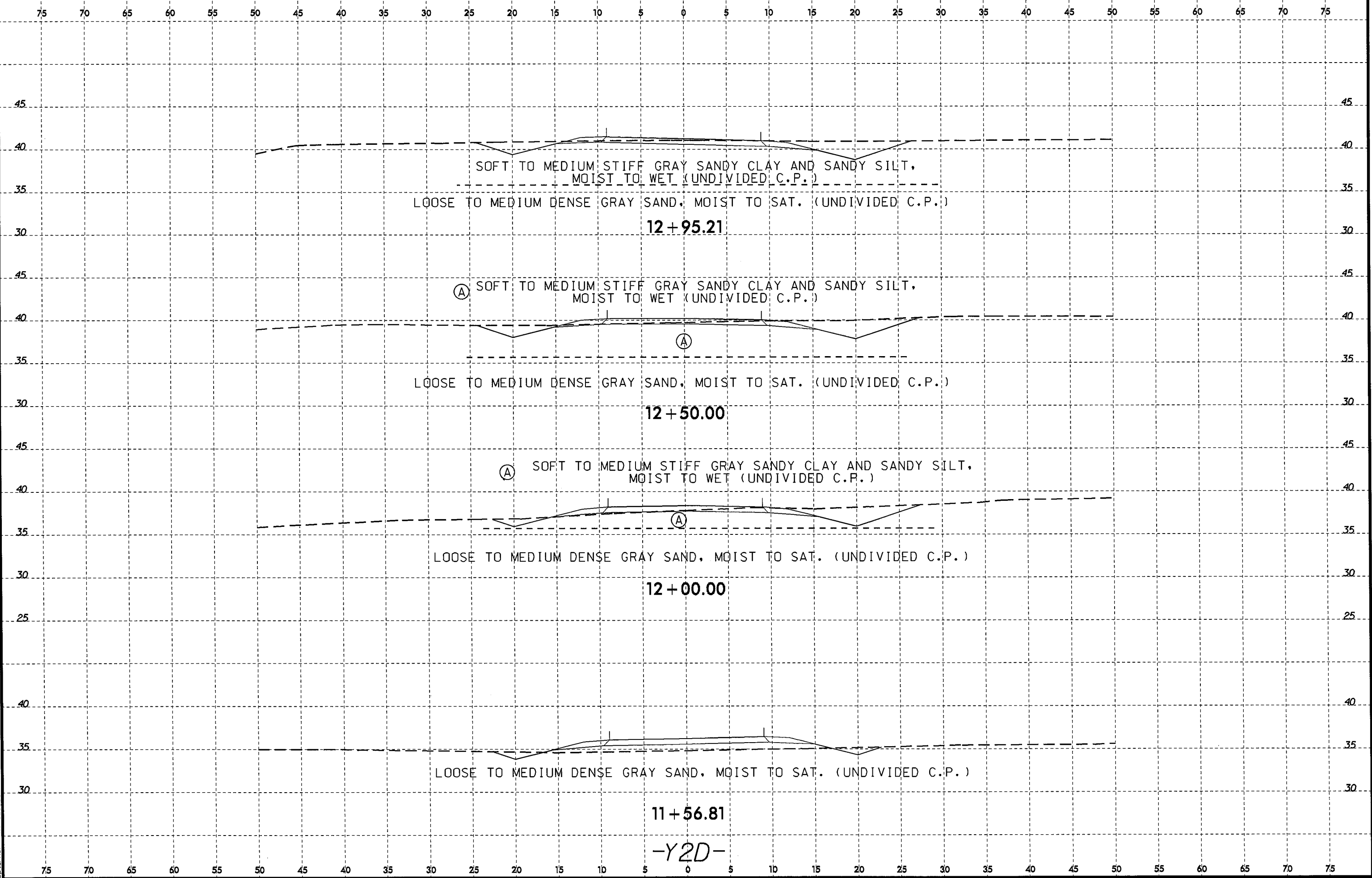
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cbturner AT GEG55461



8/23/99  
22-JUL-2013 15:54  
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CPTURNER

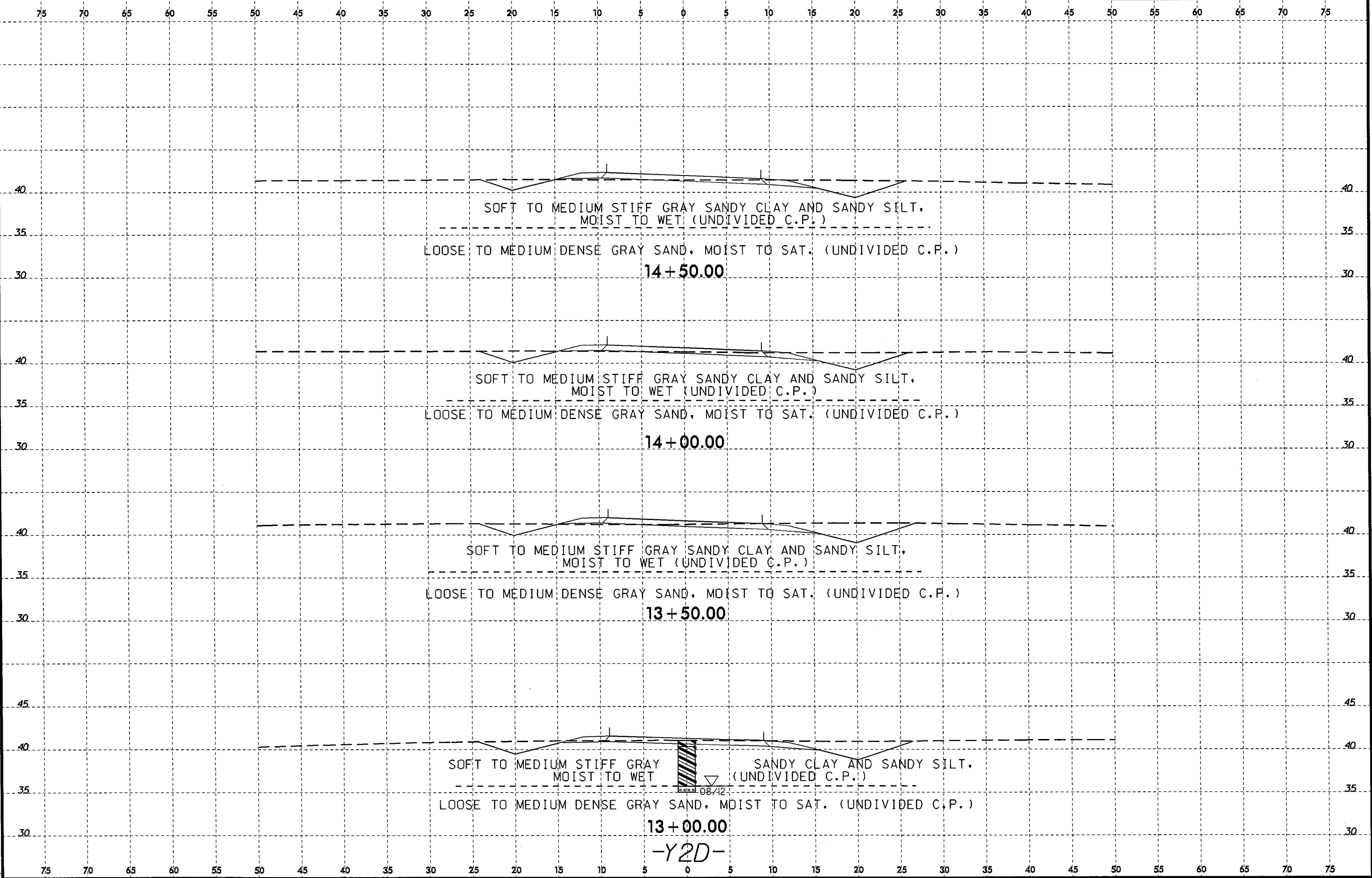


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c:\pturner

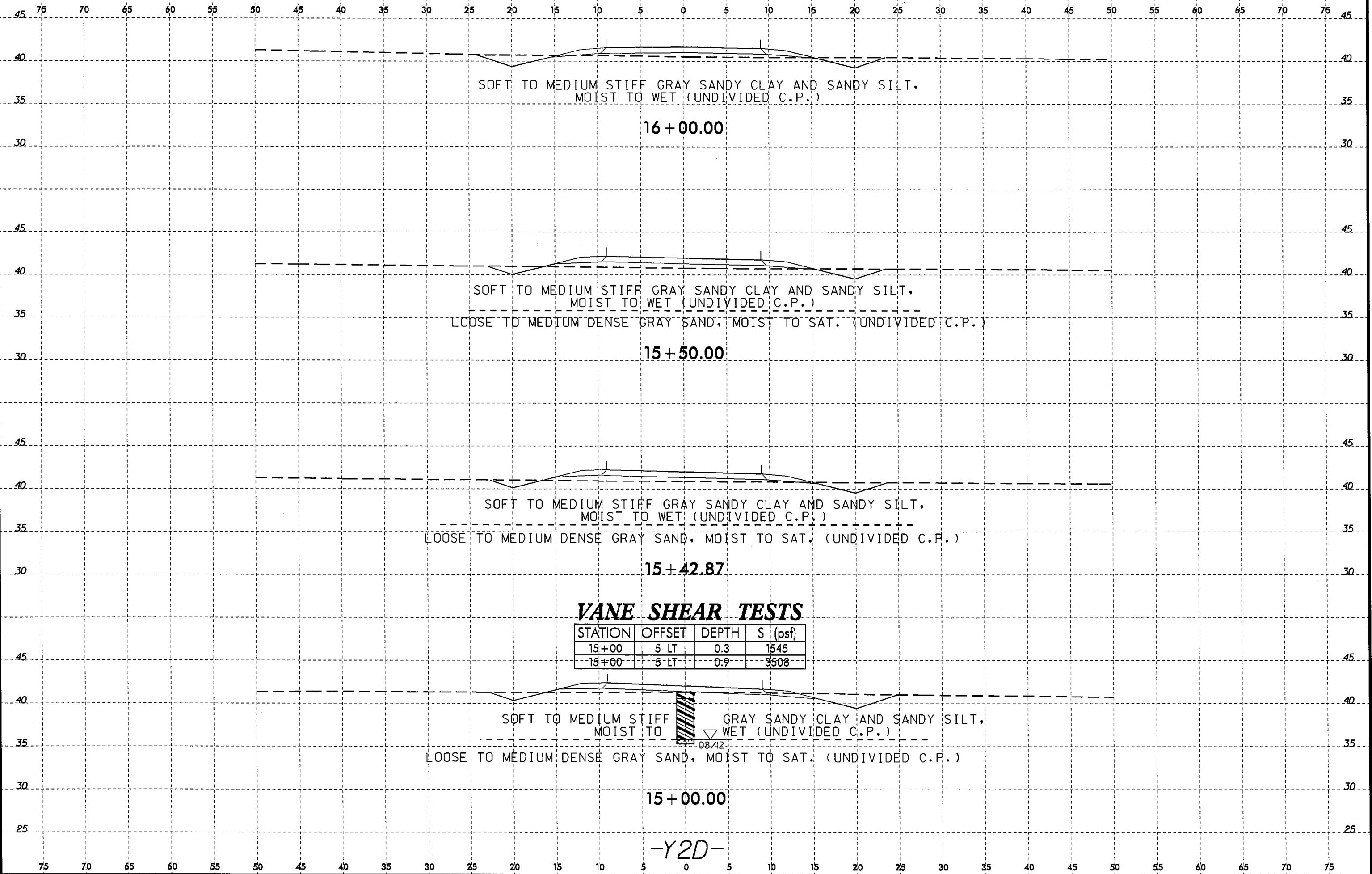




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cpturner AT 060255461



8/23/99



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

16 + 00.00

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

LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

15 + 50.00

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

LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

15 + 42.87

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 15+00   | 5 LT   | 0.3   | 1545    |
| 15+00   | 5 LT   | 0.9   | 3508    |

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

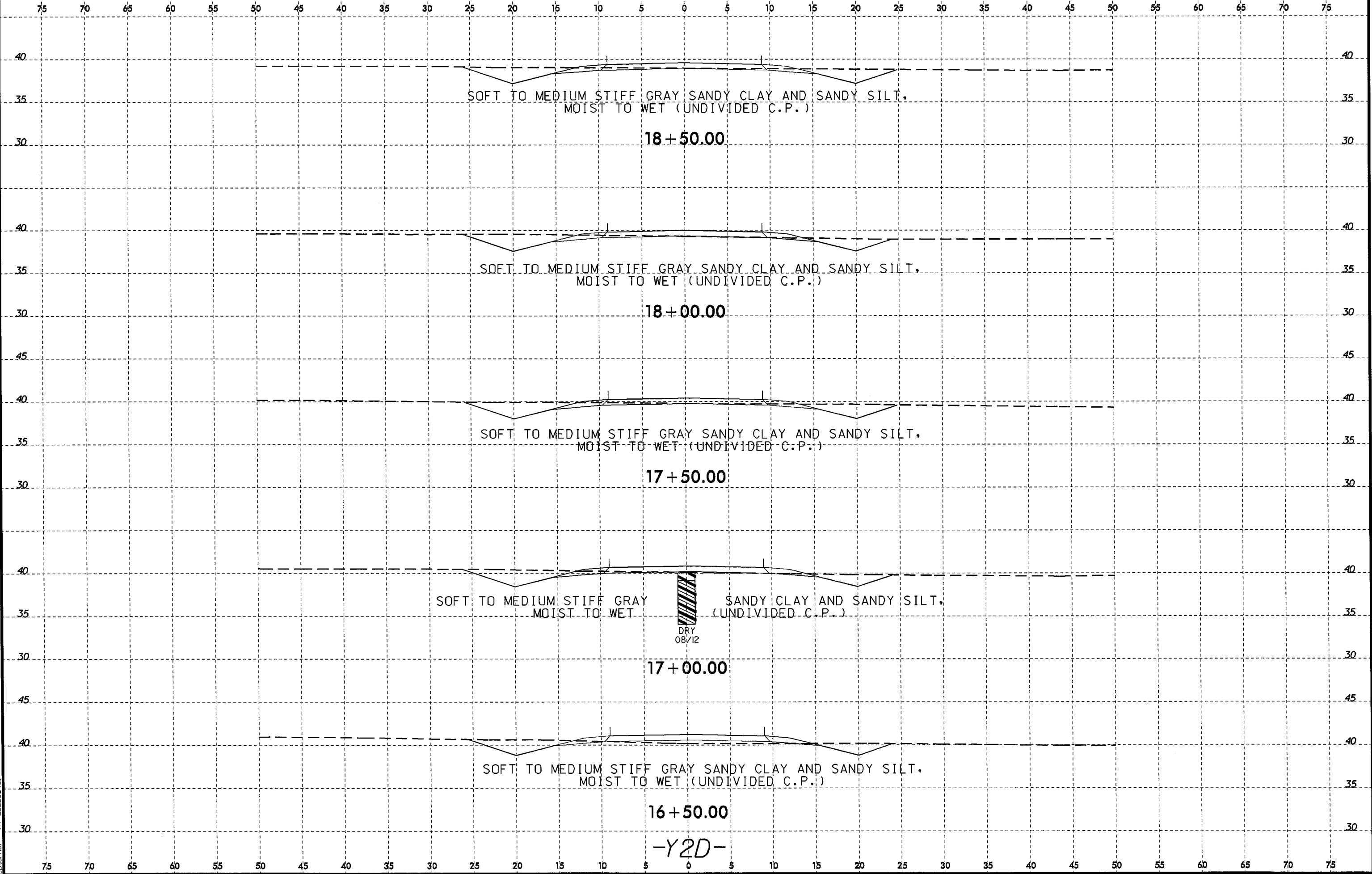
LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

15 + 00.00

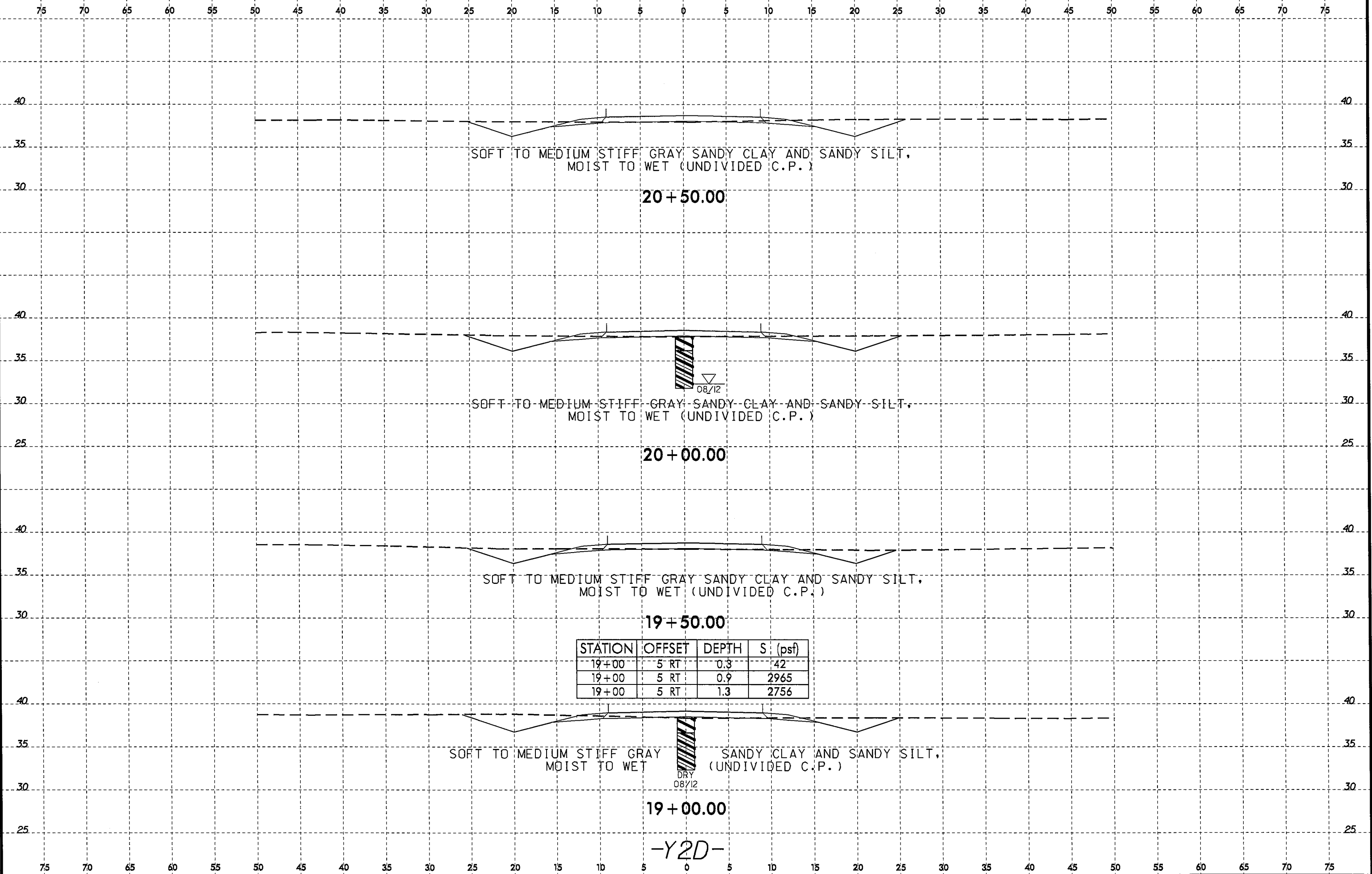
-Y2D-

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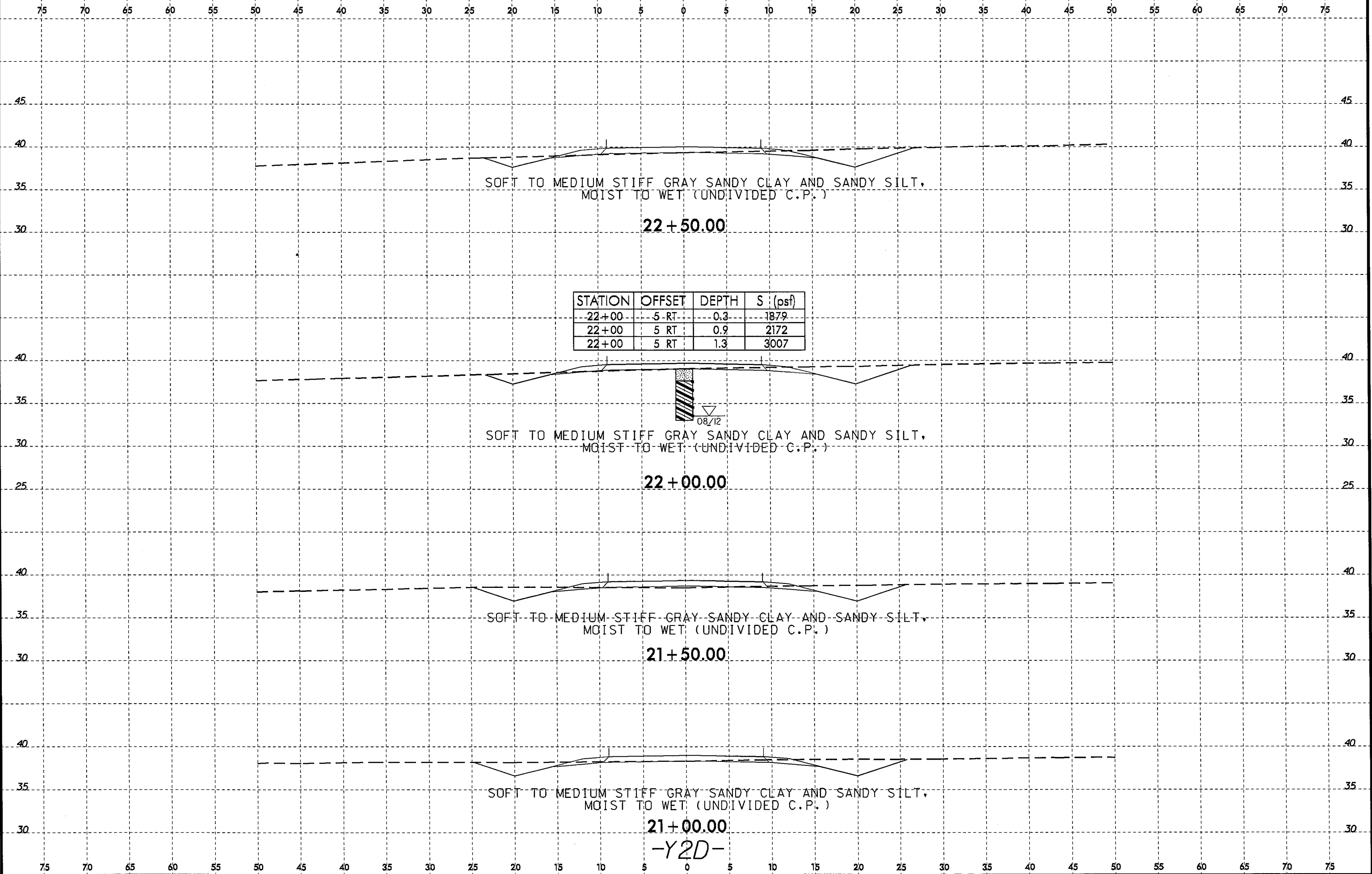
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C:\P016\proj\2514B.GEO\ROWY\CADD.GEOTECH\XSC\R2514B\_GEO\_ROWY\_Y2D\_1150x2550\_xa.dgn  
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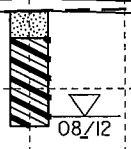
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8/23/99  
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gpturner AT 06295461



| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 22+00   | 5 RT   | 0.3   | 1879    |
| 22+00   | 5 RT   | 0.9   | 2172    |
| 22+00   | 5 RT   | 1.3   | 3007    |



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

22+50.00

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

22+00.00

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

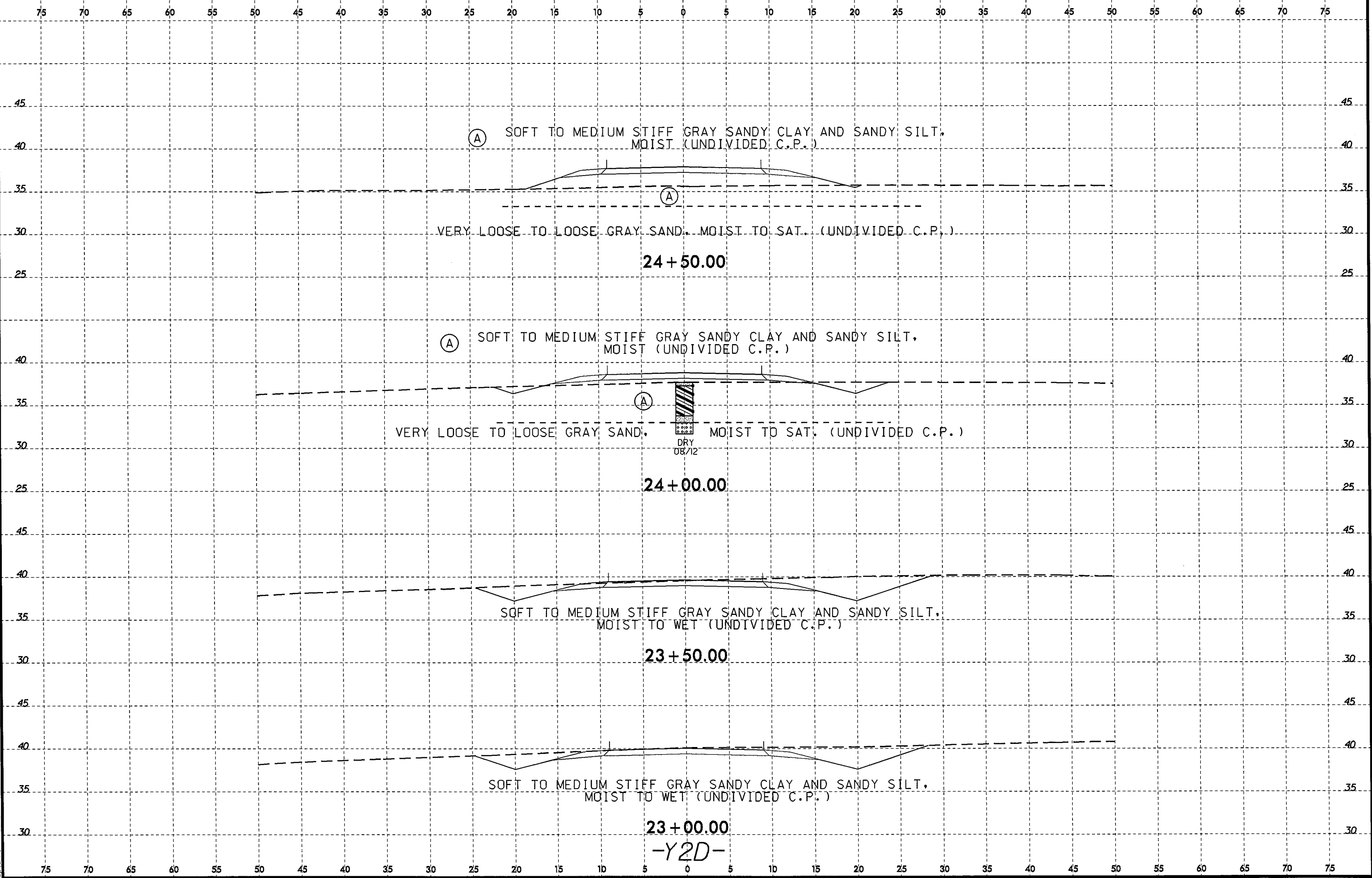
21+50.00

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

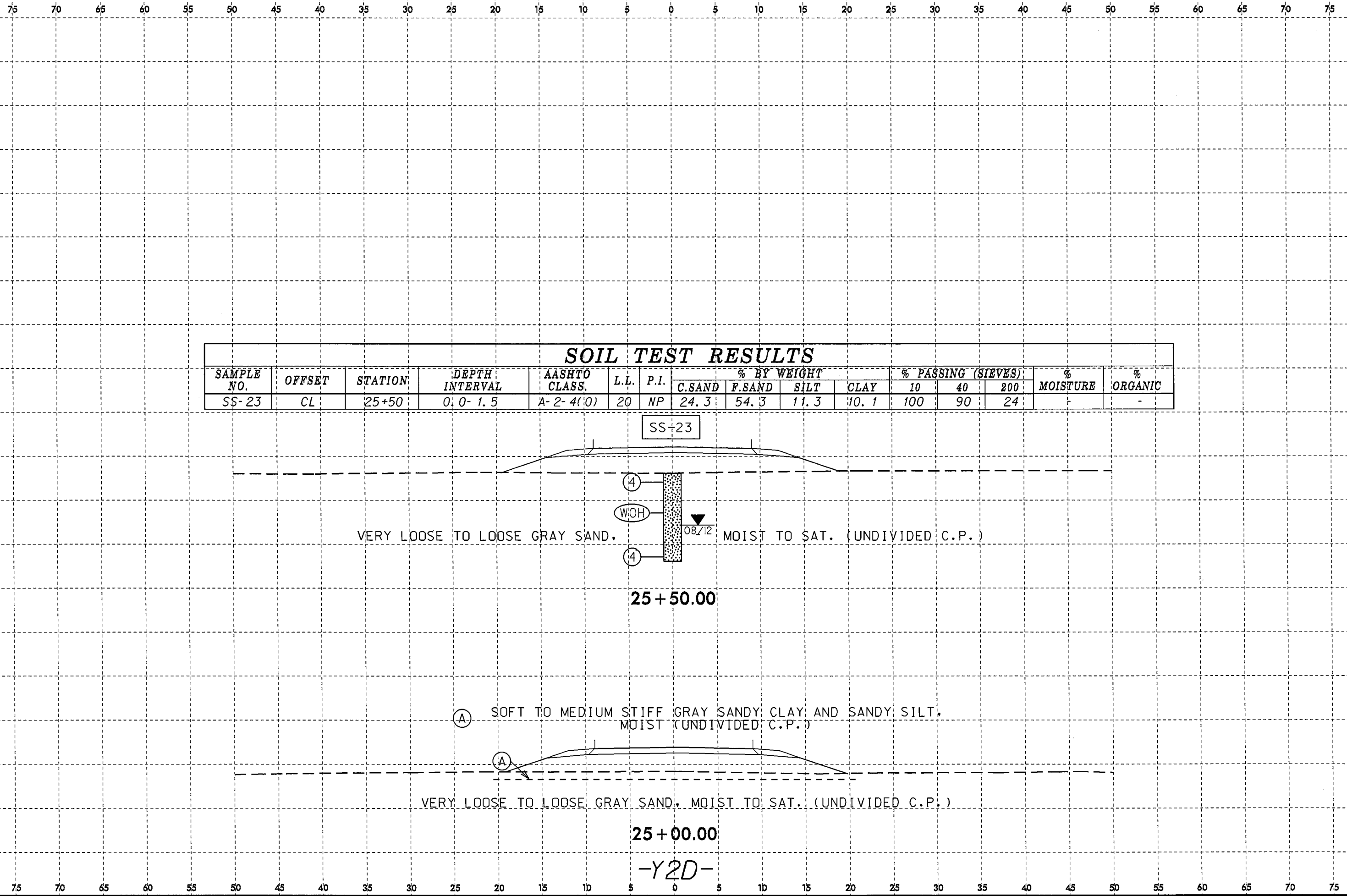
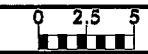
21+00.00

-Y2D-

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cptrner



8/23/99  
 25-JUL-2013 11:55  
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 c:\turner AT 0255461



| SOIL TEST RESULTS |        |         |                |               |      |      |             |        |      |      |                    |    |     |            |           |
|-------------------|--------|---------|----------------|---------------|------|------|-------------|--------|------|------|--------------------|----|-----|------------|-----------|
| SAMPLE NO.        | OFFSET | STATION | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |        |      |      | % PASSING (SIEVES) |    |     | % MOISTURE | % ORGANIC |
|                   |        |         |                |               |      |      | C.SAND      | F.SAND | SILT | CLAY | 10                 | 40 | 200 |            |           |
| SS-23             | CL     | 25+50   | 0.0-1.5        | A-2-4(0)      | 20   | NP   | 24.3        | 54.3   | 11.3 | 10.1 | 100                | 90 | 24  | -          | -         |

SS-23

VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 + 50.00

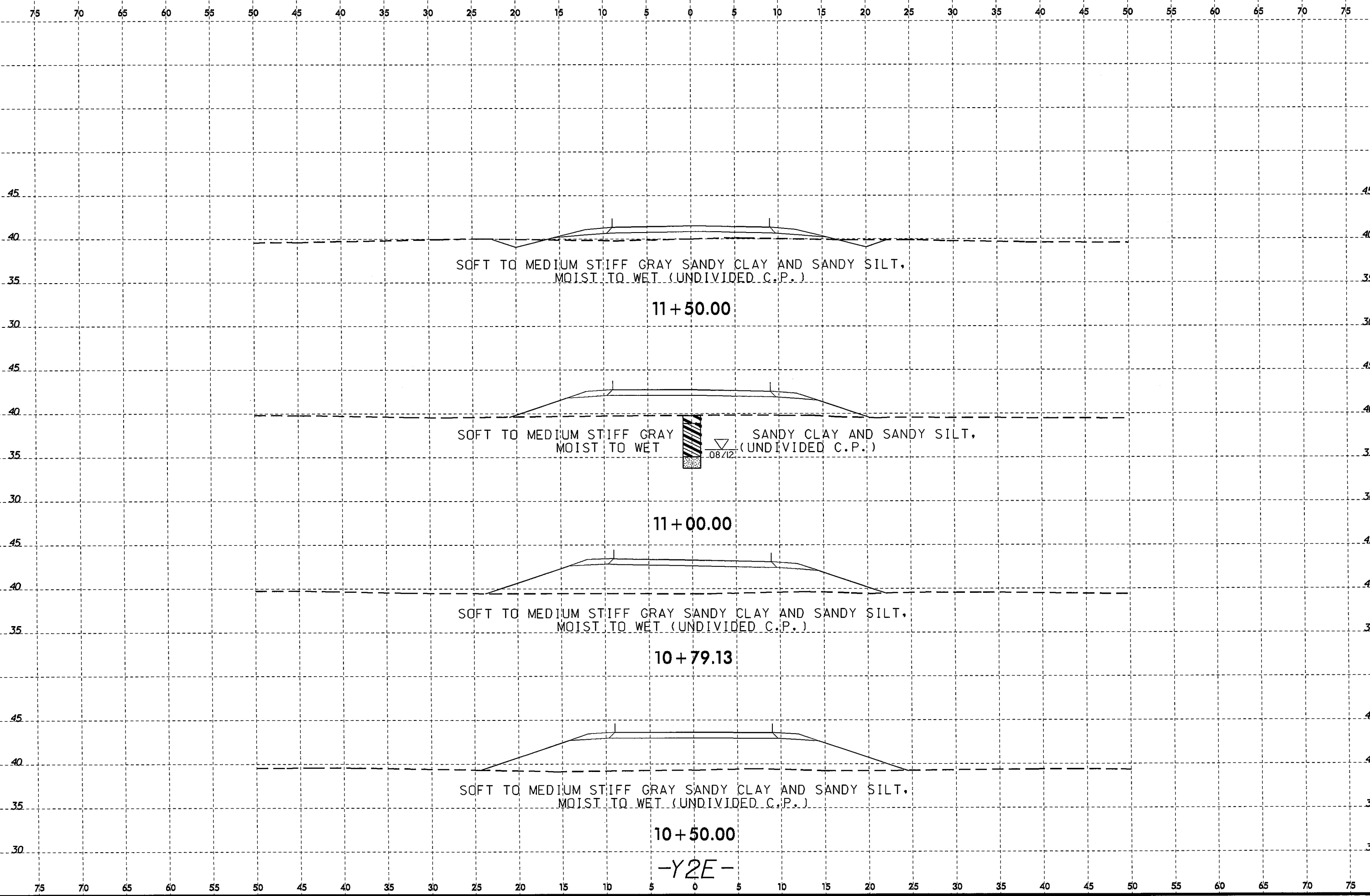
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

VERY LOOSE TO LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 + 00.00

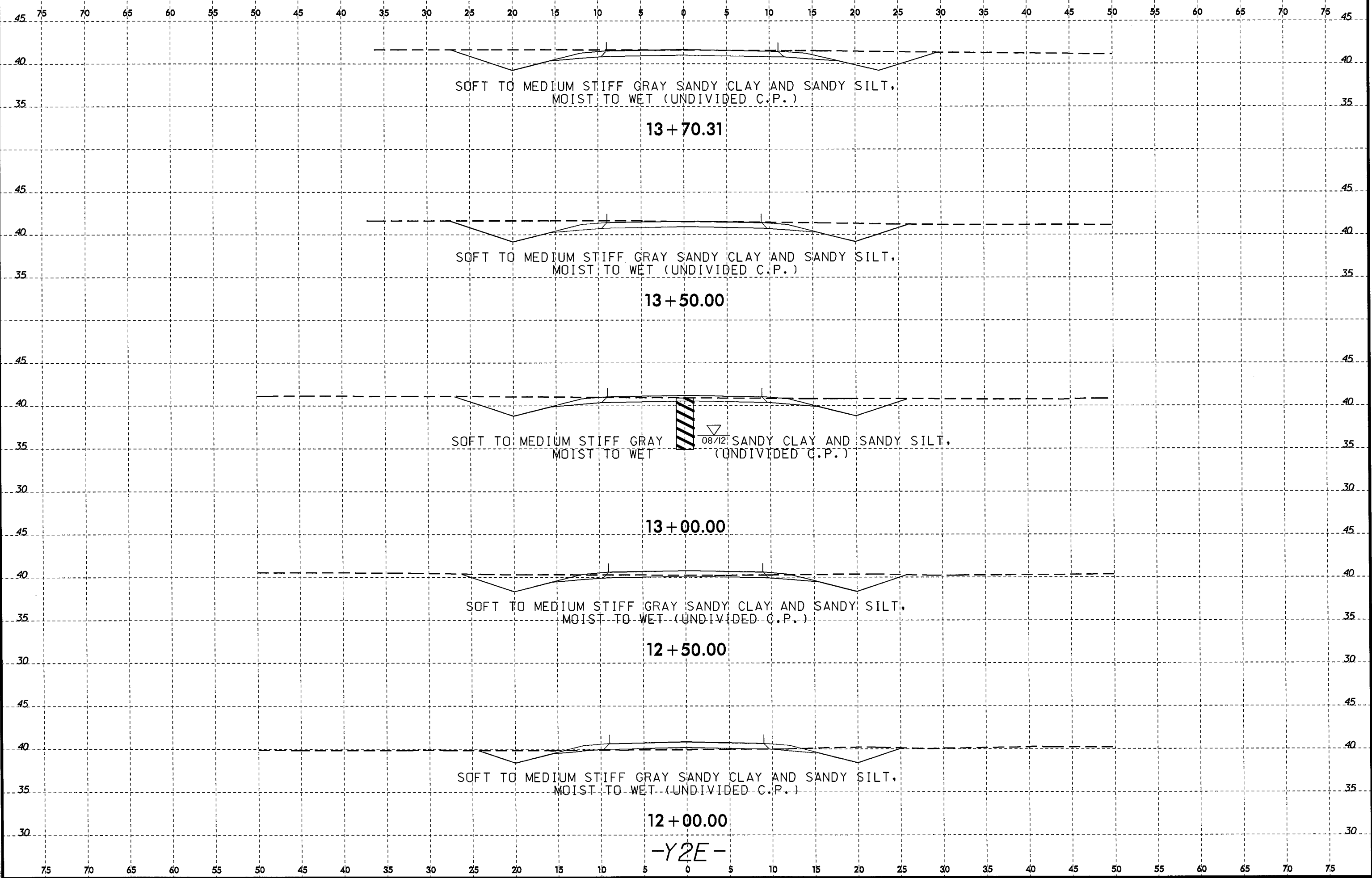
-Y2D-

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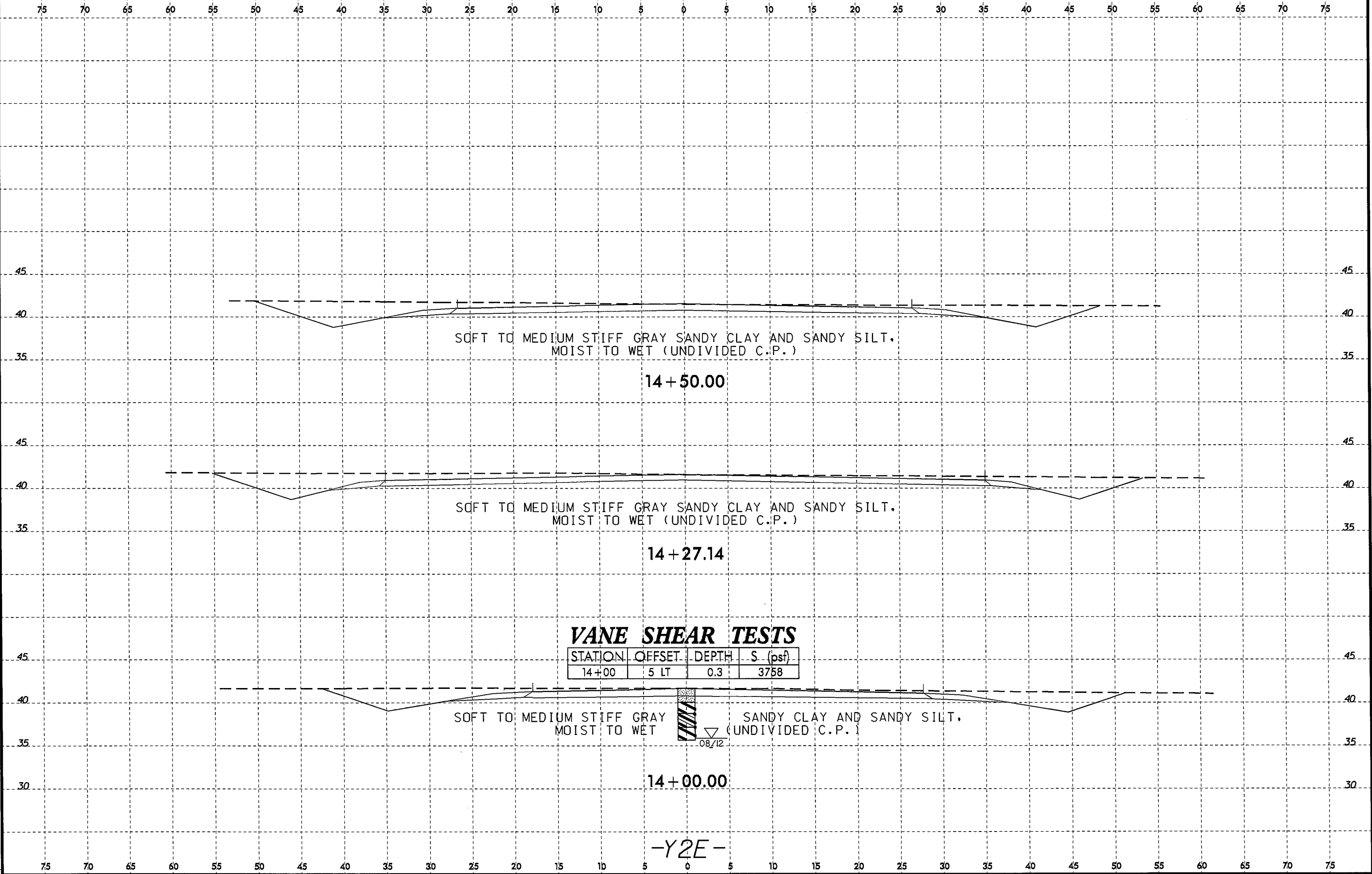




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8/23/99  
25-JUL-2013 11:56  
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c:\turner AT GEO25481



SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT.  
MOIST TO WET (UNDIVIDED C.P.)

14 + 50.00

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT.  
MOIST TO WET (UNDIVIDED C.P.)

14 + 27.14

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 14 + 00 | 5 LT   | 0.3   | 3758    |

SOFT TO MEDIUM STIFF GRAY  
MOIST TO WET

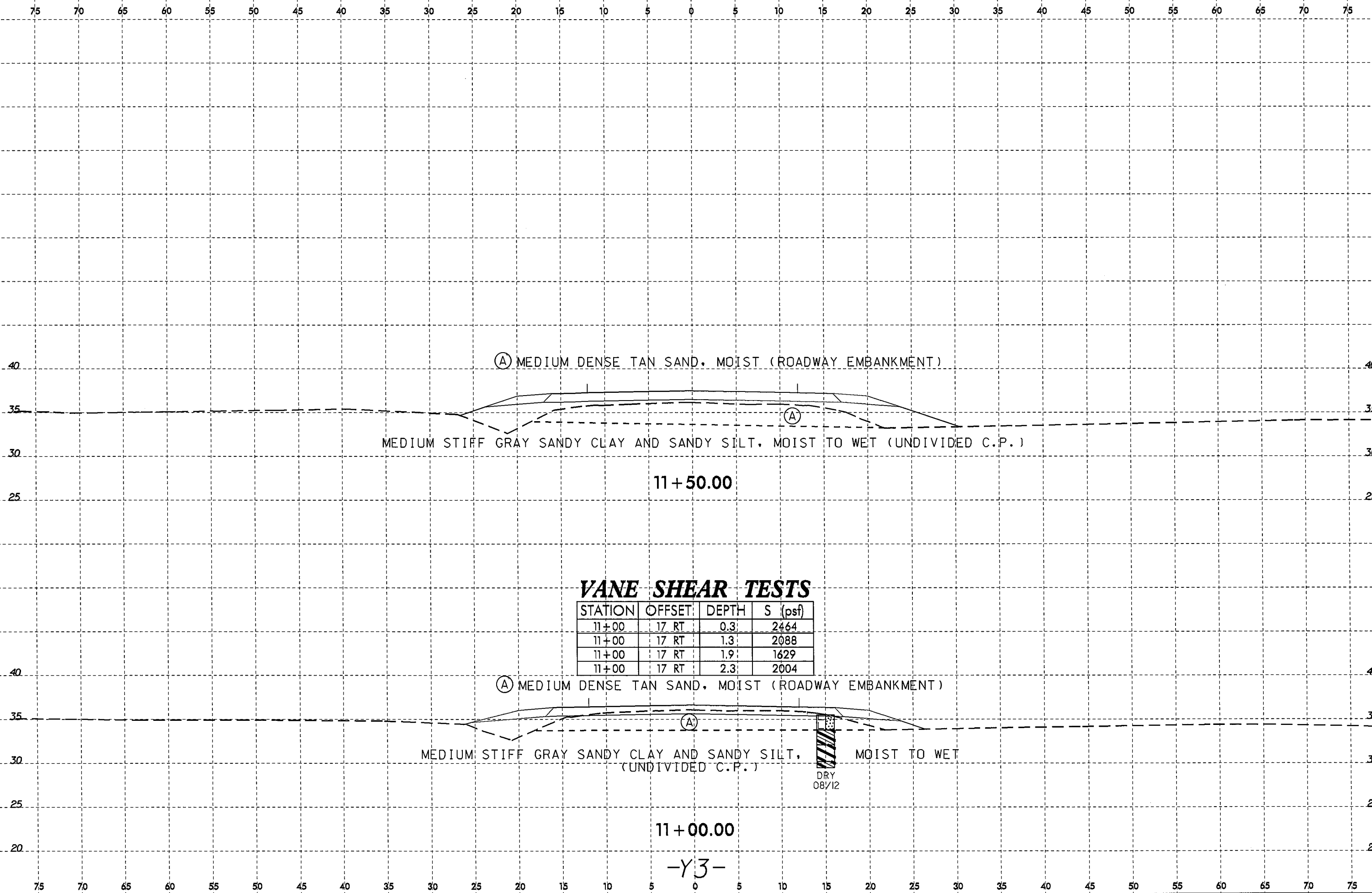
SANDY CLAY AND SANDY SILT,  
(UNDIVIDED C.P.)

0.08/12

14 + 00.00

-Y2E-

8/23/99  
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 cp:turner AT GEO255461



Ⓐ MEDIUM DENSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

11+50.00

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 11+00   | 17 RT  | 0.3   | 2464    |
| 11+00   | 17 RT  | 1.3   | 2088    |
| 11+00   | 17 RT  | 1.9   | 1629    |
| 11+00   | 17 RT  | 2.3   | 2004    |

Ⓐ MEDIUM DENSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

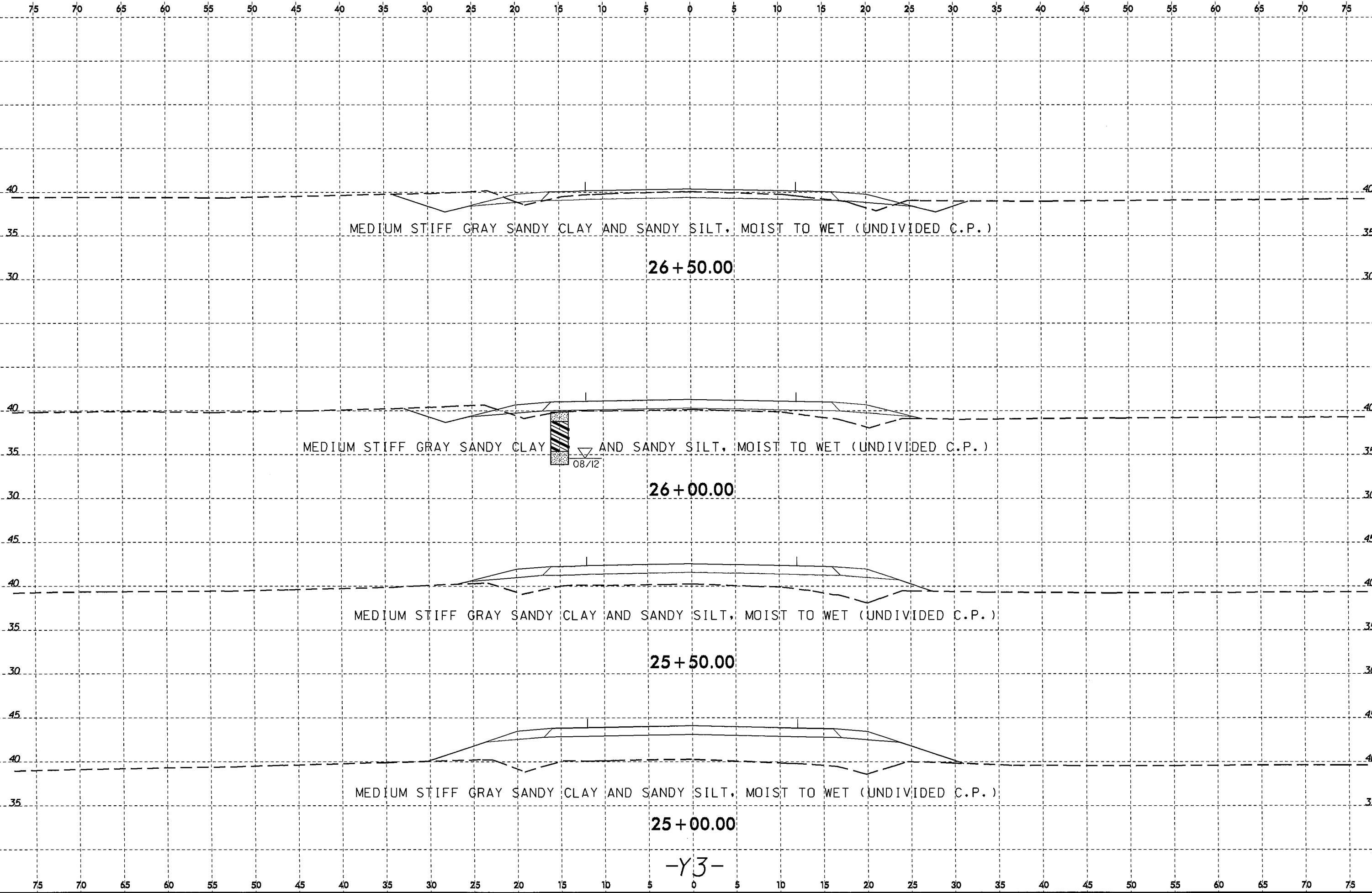
MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

DRY  
08/12

11+00.00

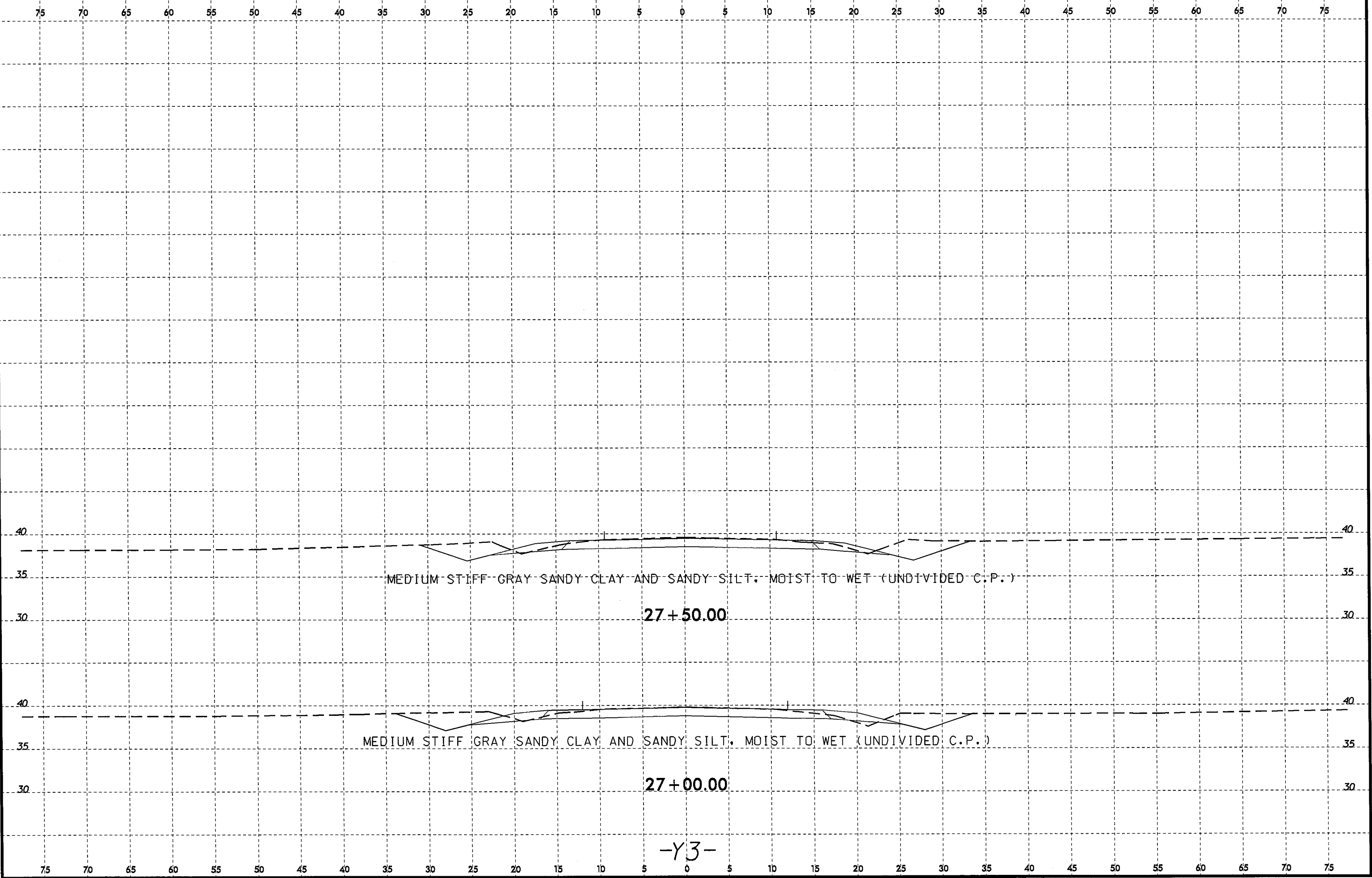
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spturner AT 0625461

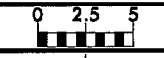


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cbturner AT GEO25461

|         |                                |                  |
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| 0 2.5 5 | PROJ. REFERENCE NO.<br>R-2514B | SHEET NO.<br>127 |
|---------|--------------------------------|------------------|

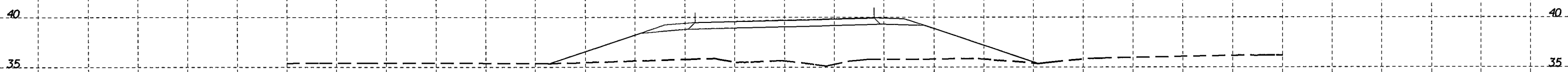


8/23/99



|                                |                  |
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|--------------------------------|------------------|

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)  
 LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

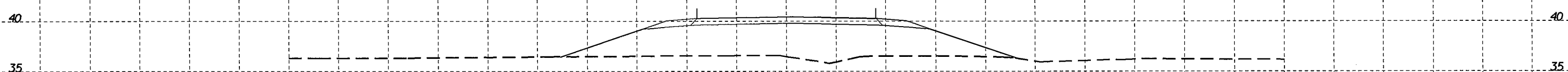
16+78.38



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)  
 LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

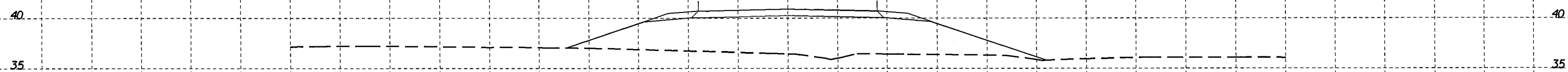
DRY  
08/12

16+50.00



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)  
 LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

16+00.00



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)  
 LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

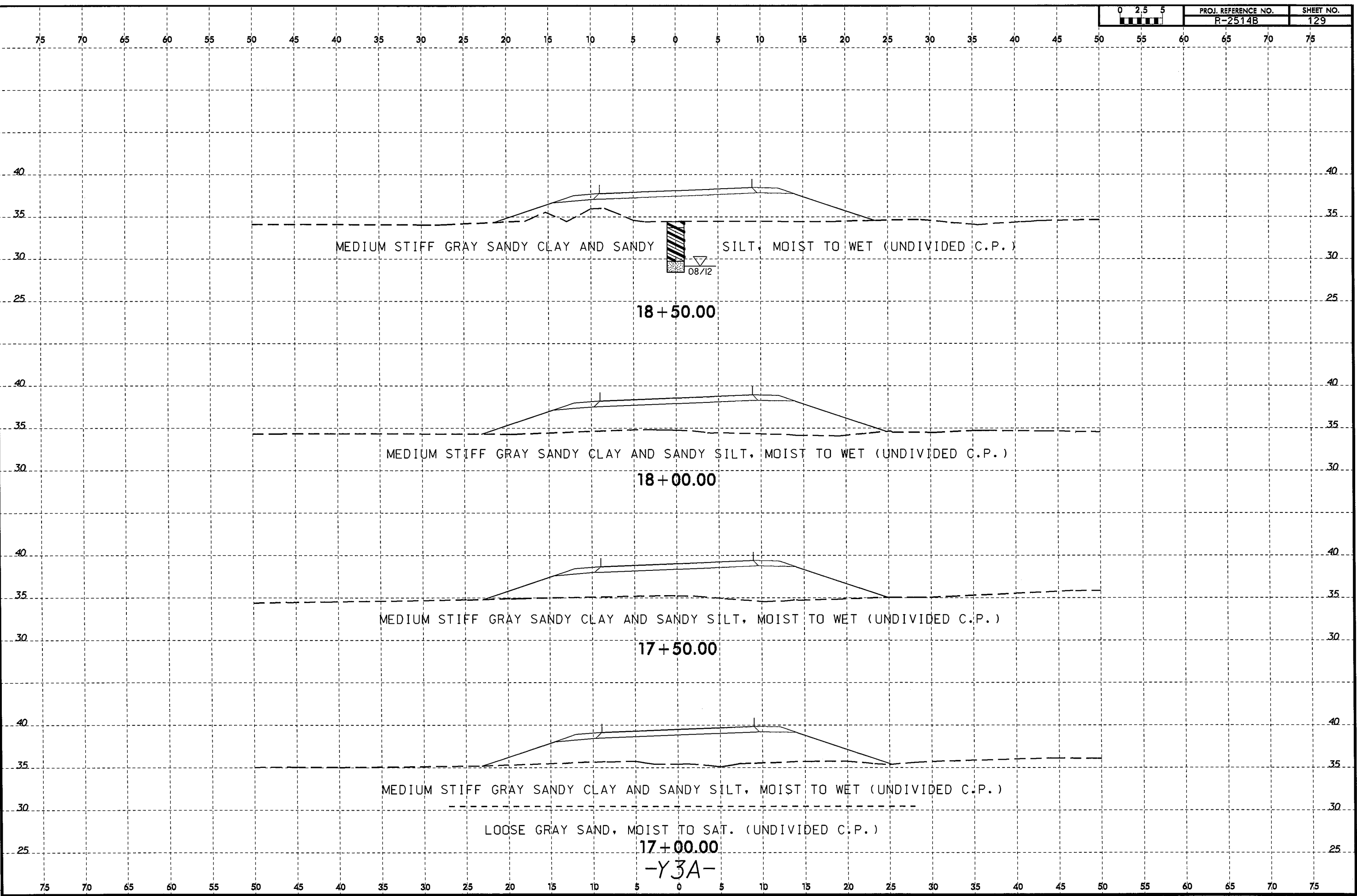
15+50.00

-Y3A-

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22-JUL-2013 15:55  
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 spturner AT GEG55461

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8/23/99

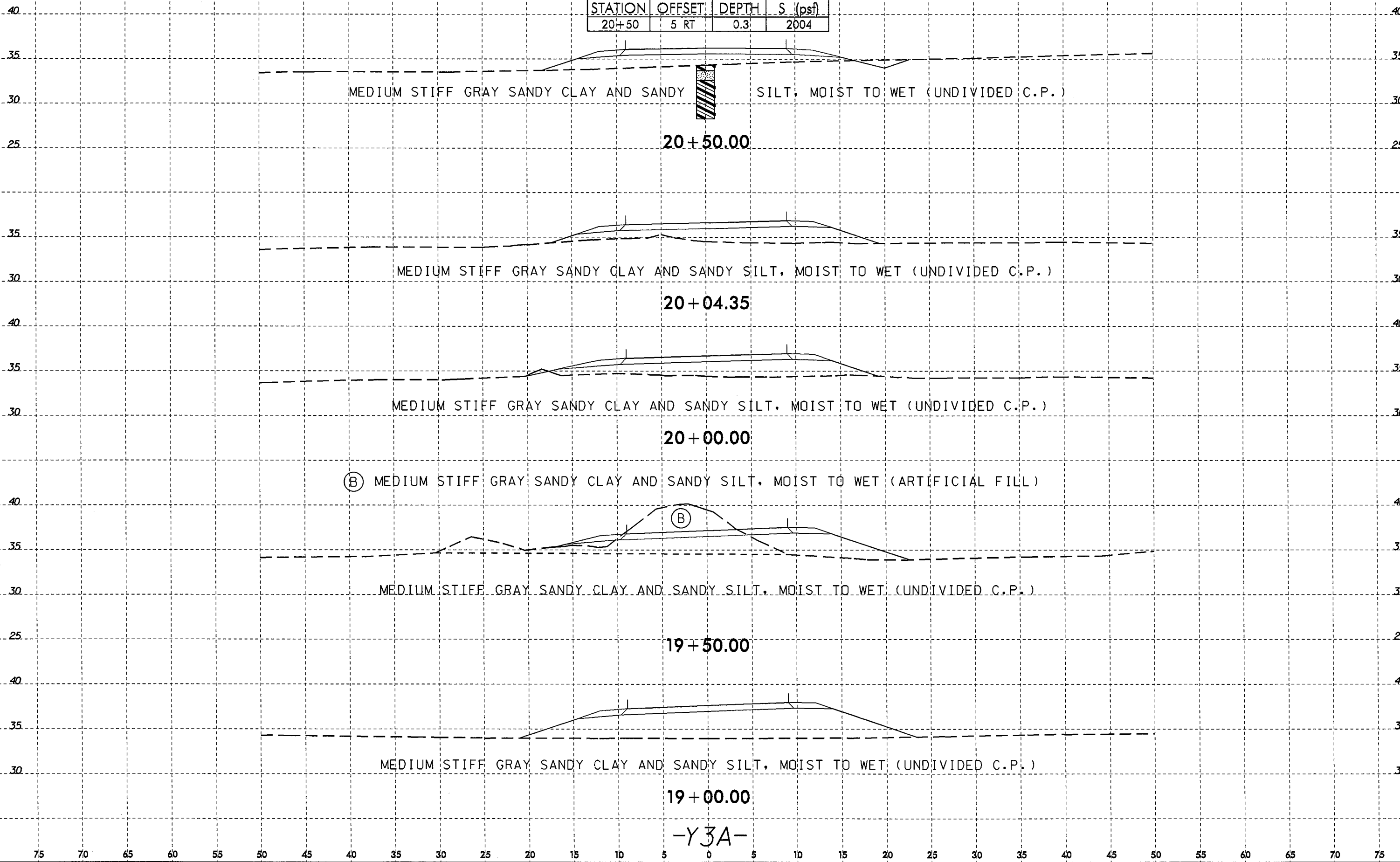


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| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 130       |

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### VANE SHEAR TESTS

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|---------|--------|-------|---------|
| 20+50   | 5 RT   | 0.3   | 2004    |

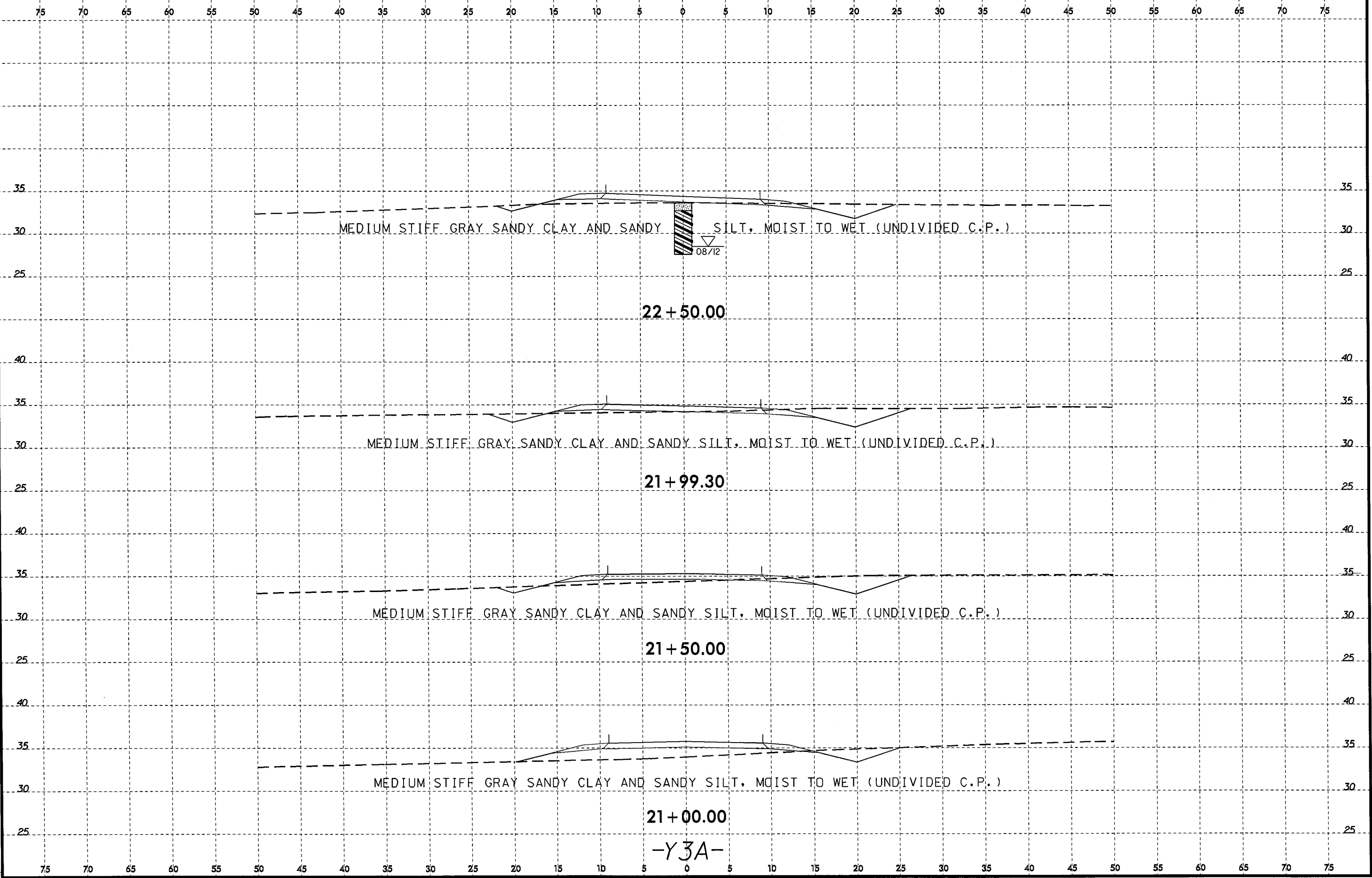


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 cpturner AT 06255461

-Y3A-

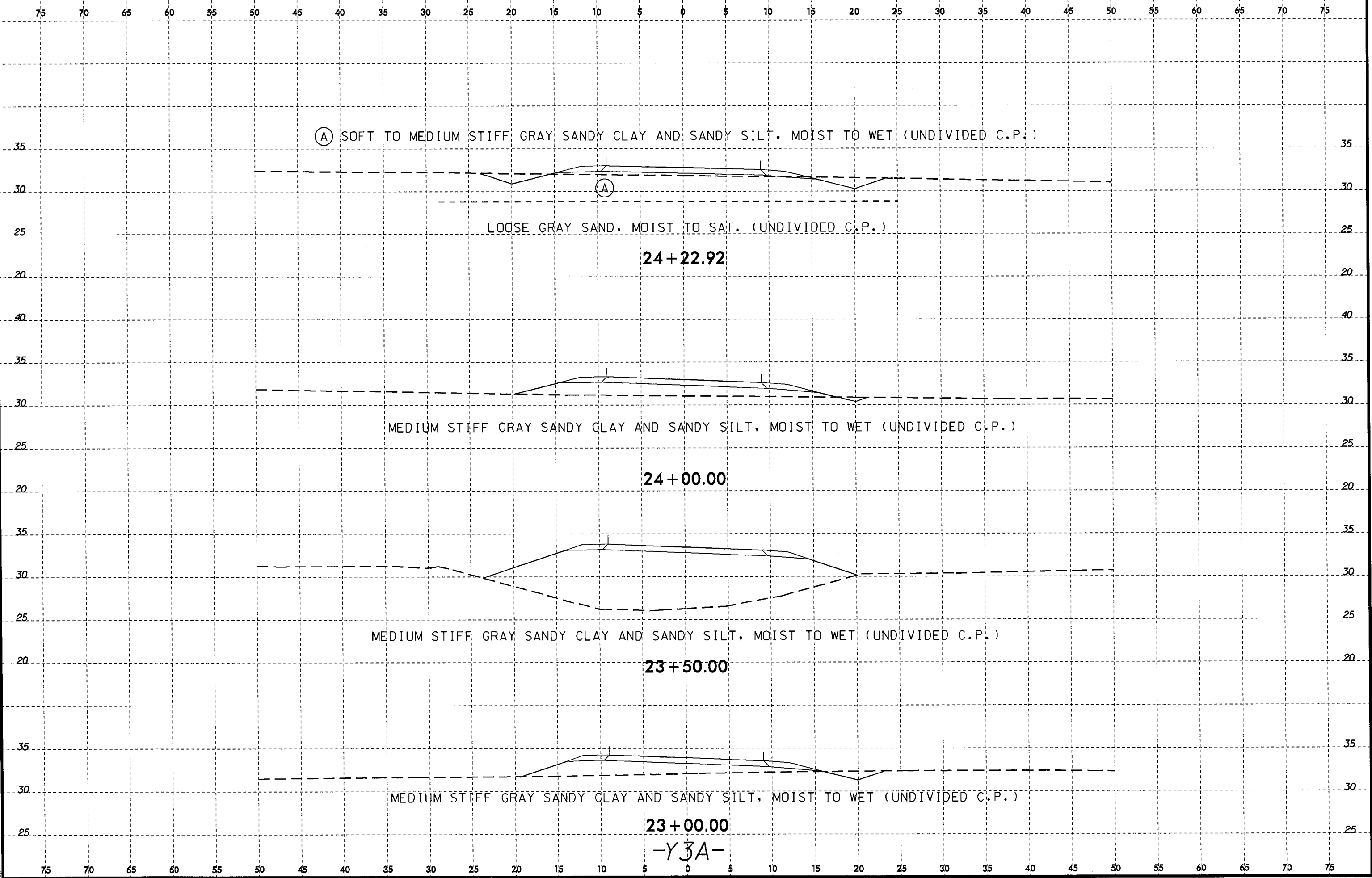


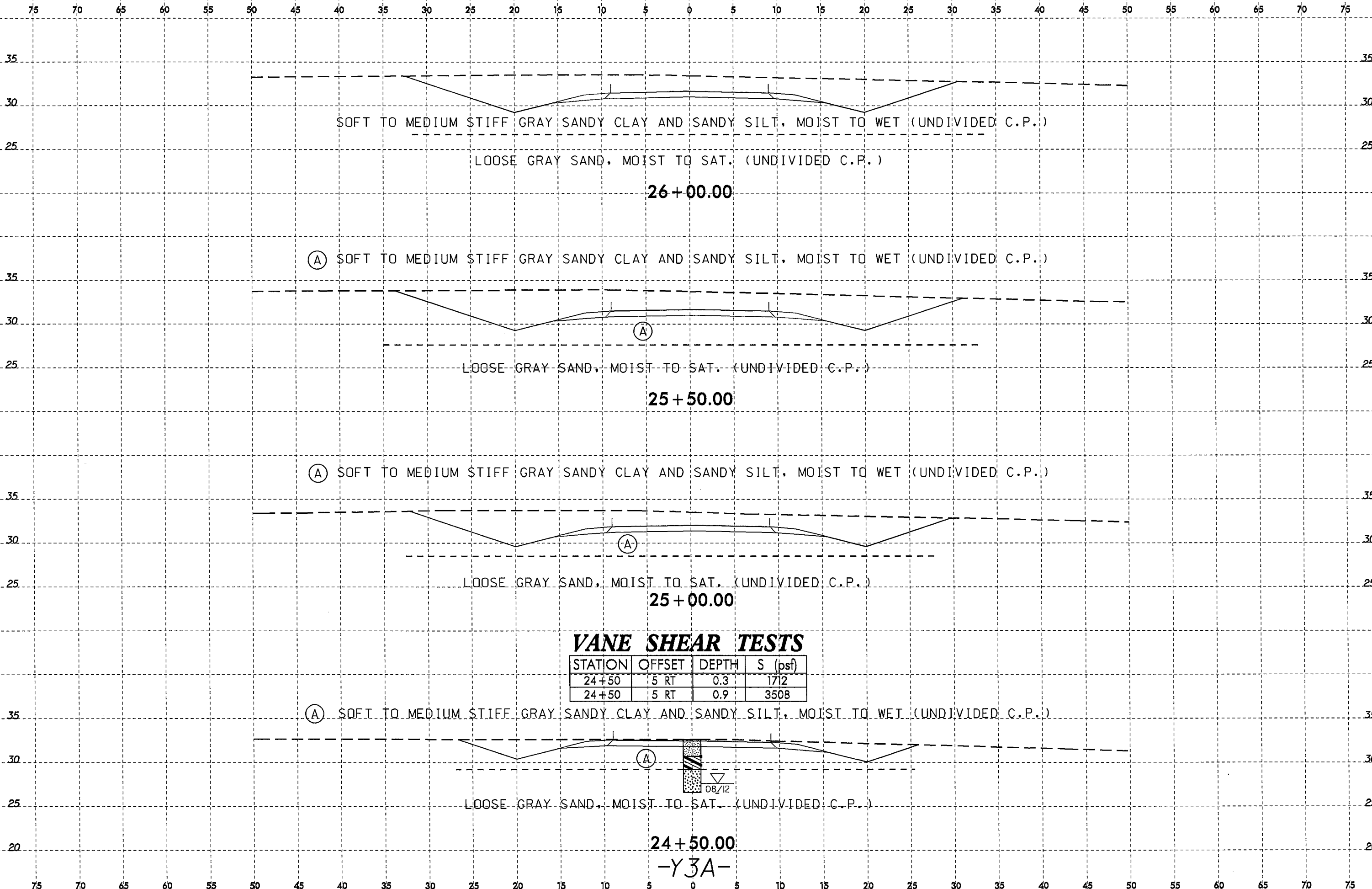
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cbturner AT GEG25461



-Y3A-

8/23/99  
22-JUL-2013 15:55  
C:\FRO\Greenville\Investigation\TIP\VR2514B\_GEO\_RDWY\_CADD\GEO\TECH\XSC\VR2514B\_GEO\_RDWY\_1550 to 4050\_xsi.dgn  
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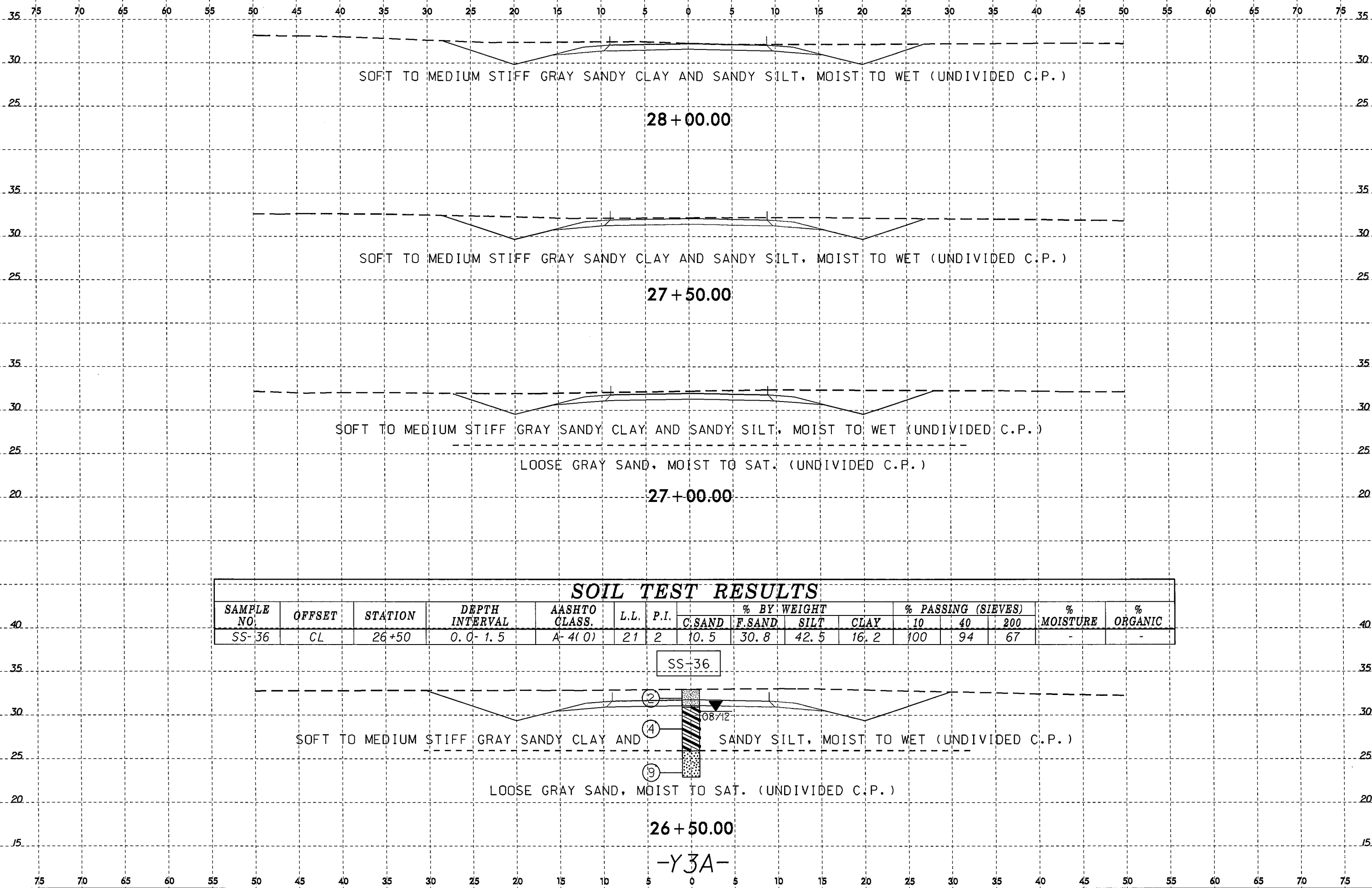


**VANE SHEAR TESTS**

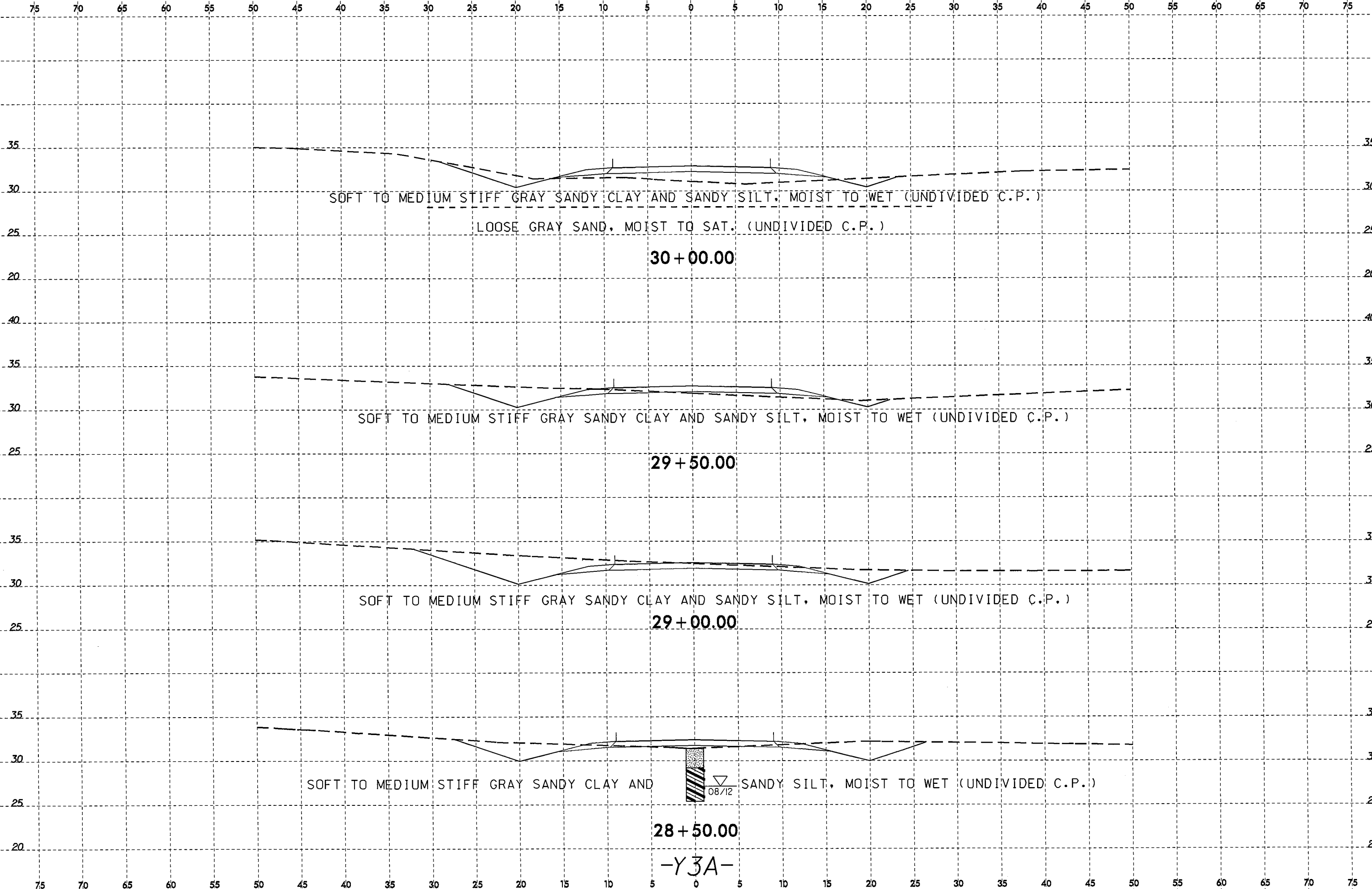
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|---------|--------|-------|---------|
| 24+50   | 5 RT   | 0.3   | 1712    |
| 24+50   | 5 RT   | 0.9   | 3508    |

24+50.00  
-Y3A-

8/23/99  
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 AT 08025444



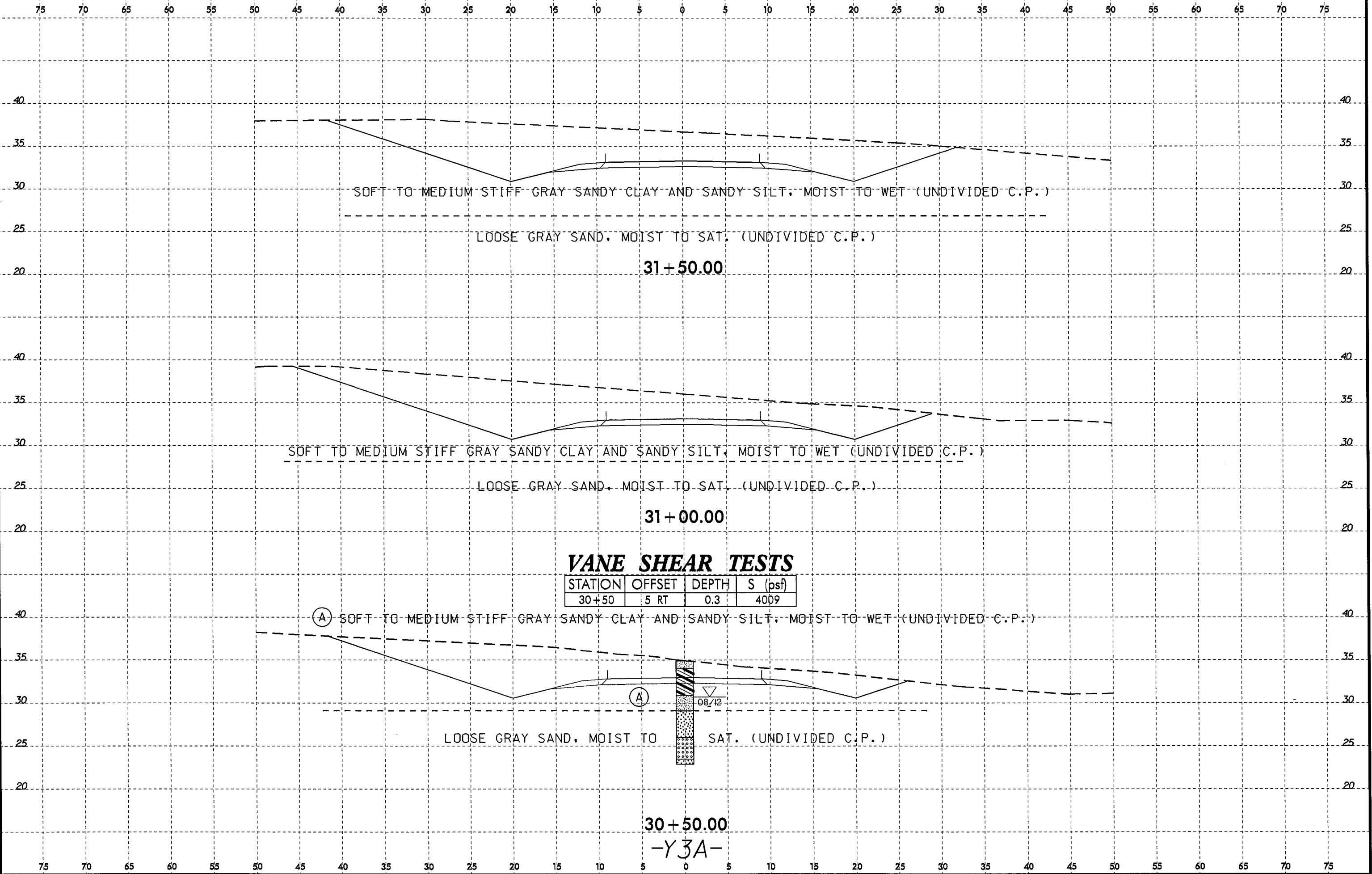
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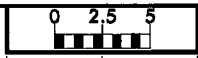
28+50.00

-Y3A-

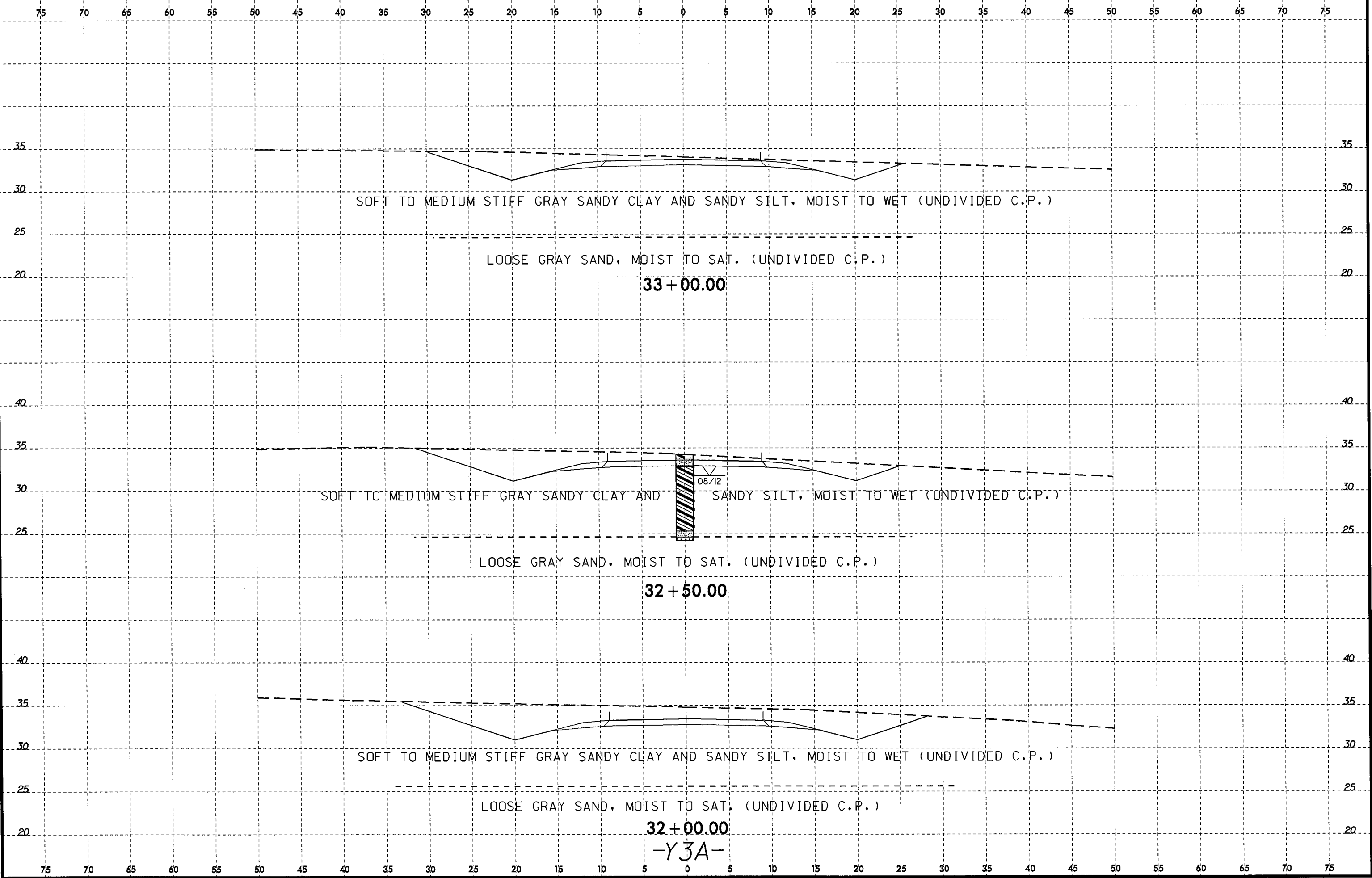
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8/23/99  
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copturner AT BEG255461



PROJ. REFERENCE NO.  
R-2514B  
SHEET NO.  
137



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

LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

33+00.00

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

LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

32+50.00

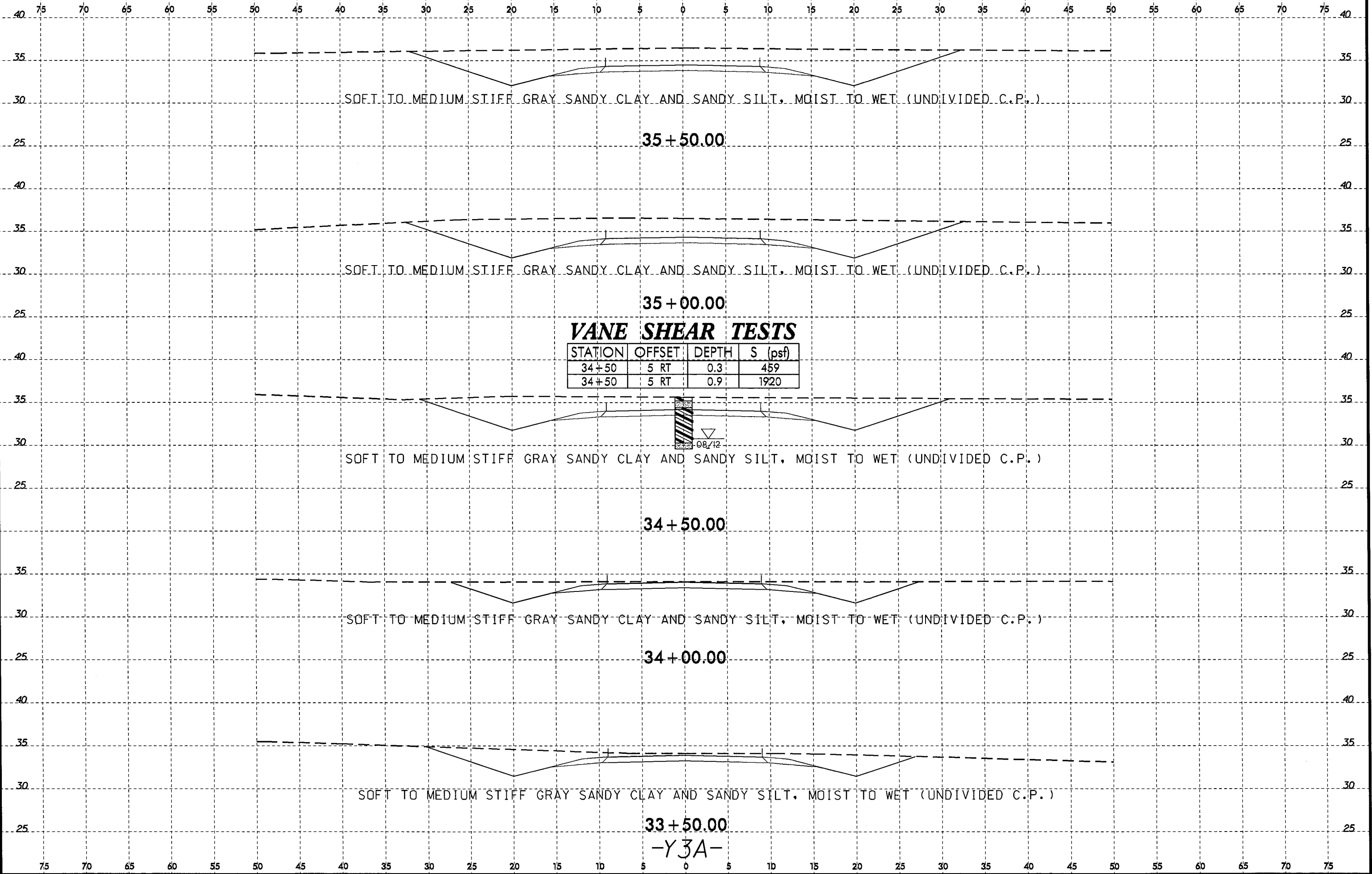
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

32+00.00

-Y3A-

8/23/99  
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 spturner RT 06/25/13



**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 34+50   | 5 RT   | 0.3   | 459     |
| 34+50   | 5 RT   | 0.9   | 1920    |

08.12

35+50.00

35+00.00

34+50.00

34+00.00

33+50.00

-Y3A-

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

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

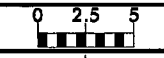
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

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

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

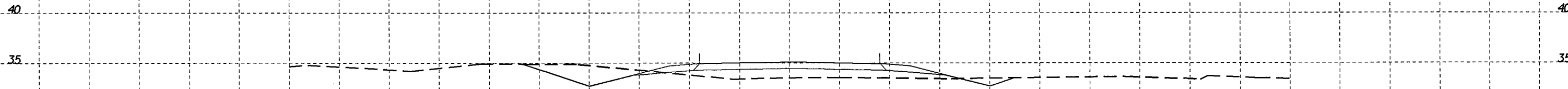


8/23/99



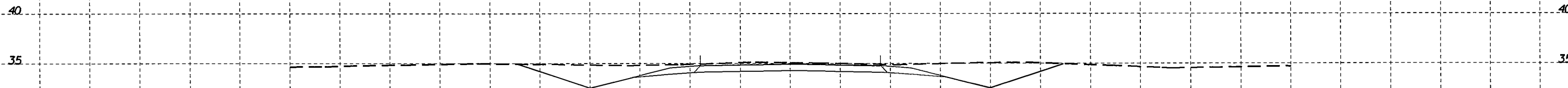
PROJ. REFERENCE NO. R-2514B SHEET NO. 139

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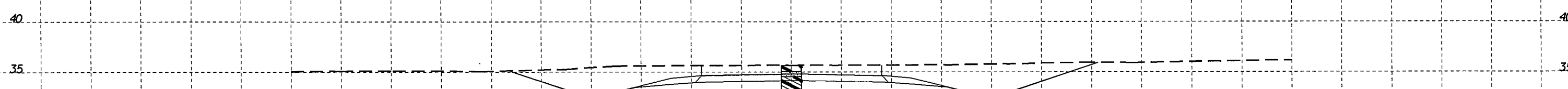
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

37 + 50.00



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

37 + 00.00

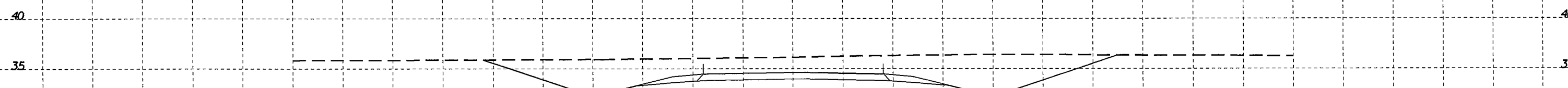


SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)



08/12

36 + 50.00



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

36 + 00.00

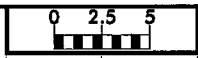
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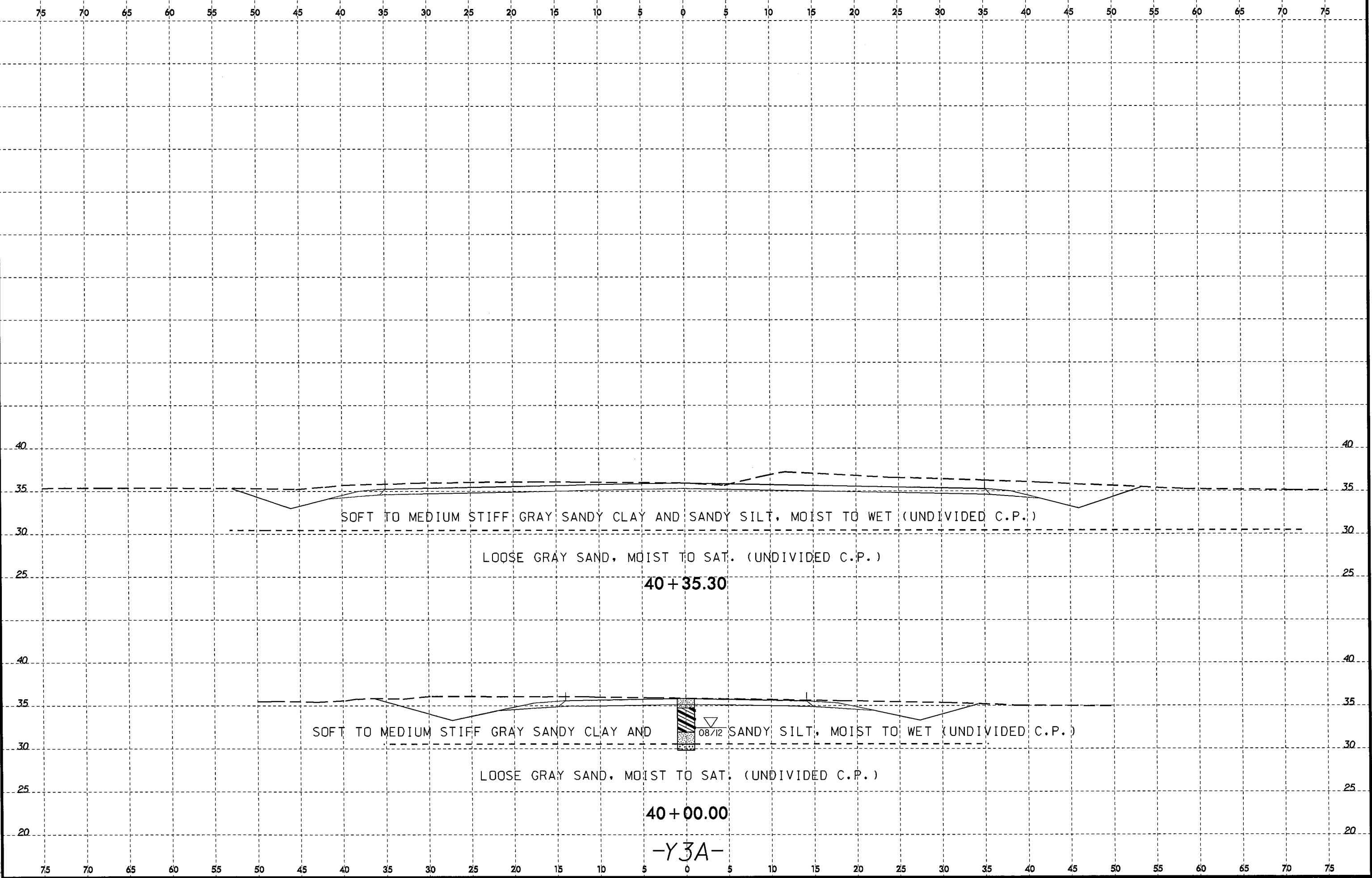
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8/23/99  
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C:\turner AT BEG255461



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 141       |



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

LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

40 + 35.30

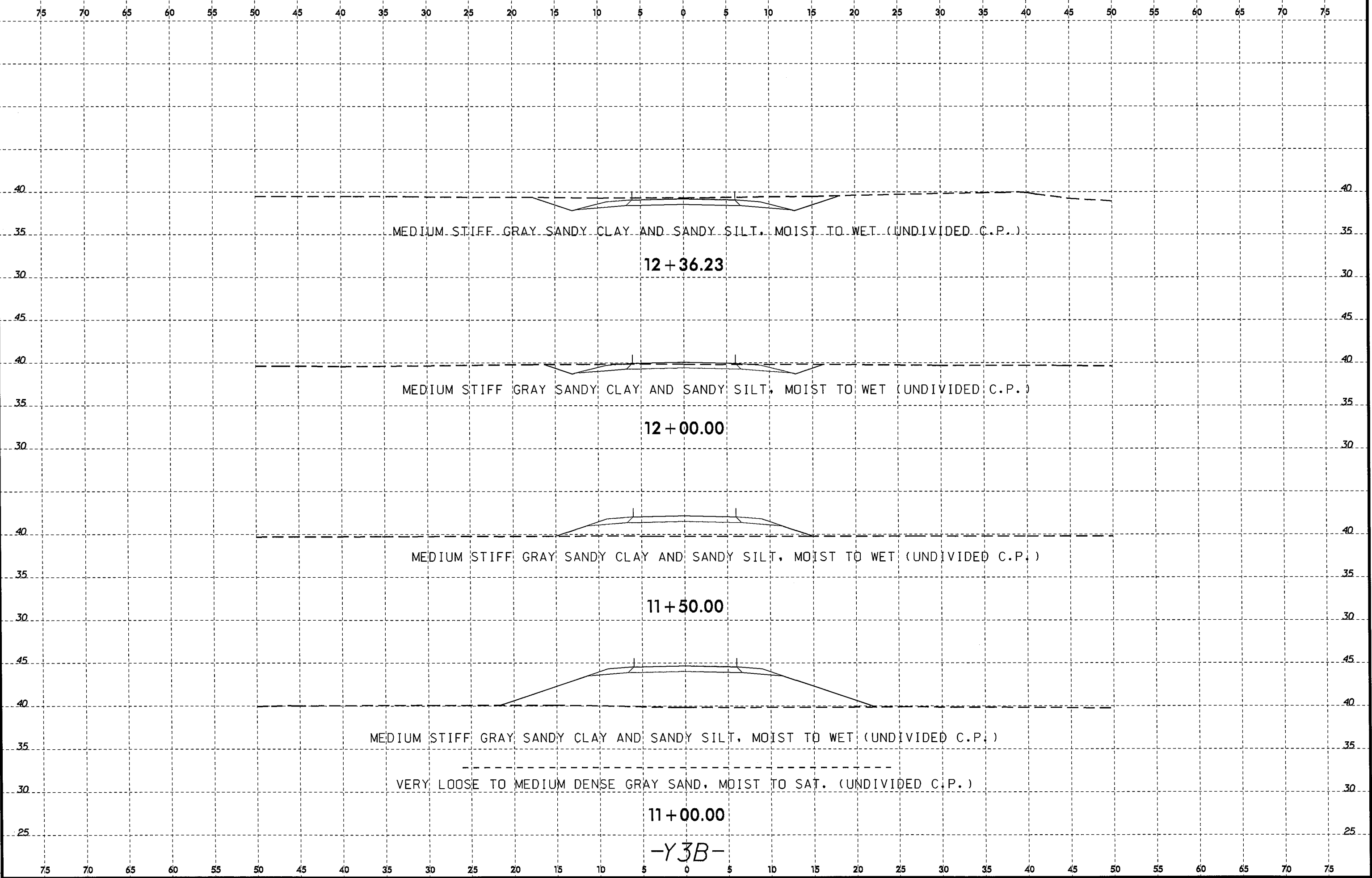
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

LOOSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

40 + 00.00

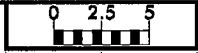
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cbturner AT GEO25461

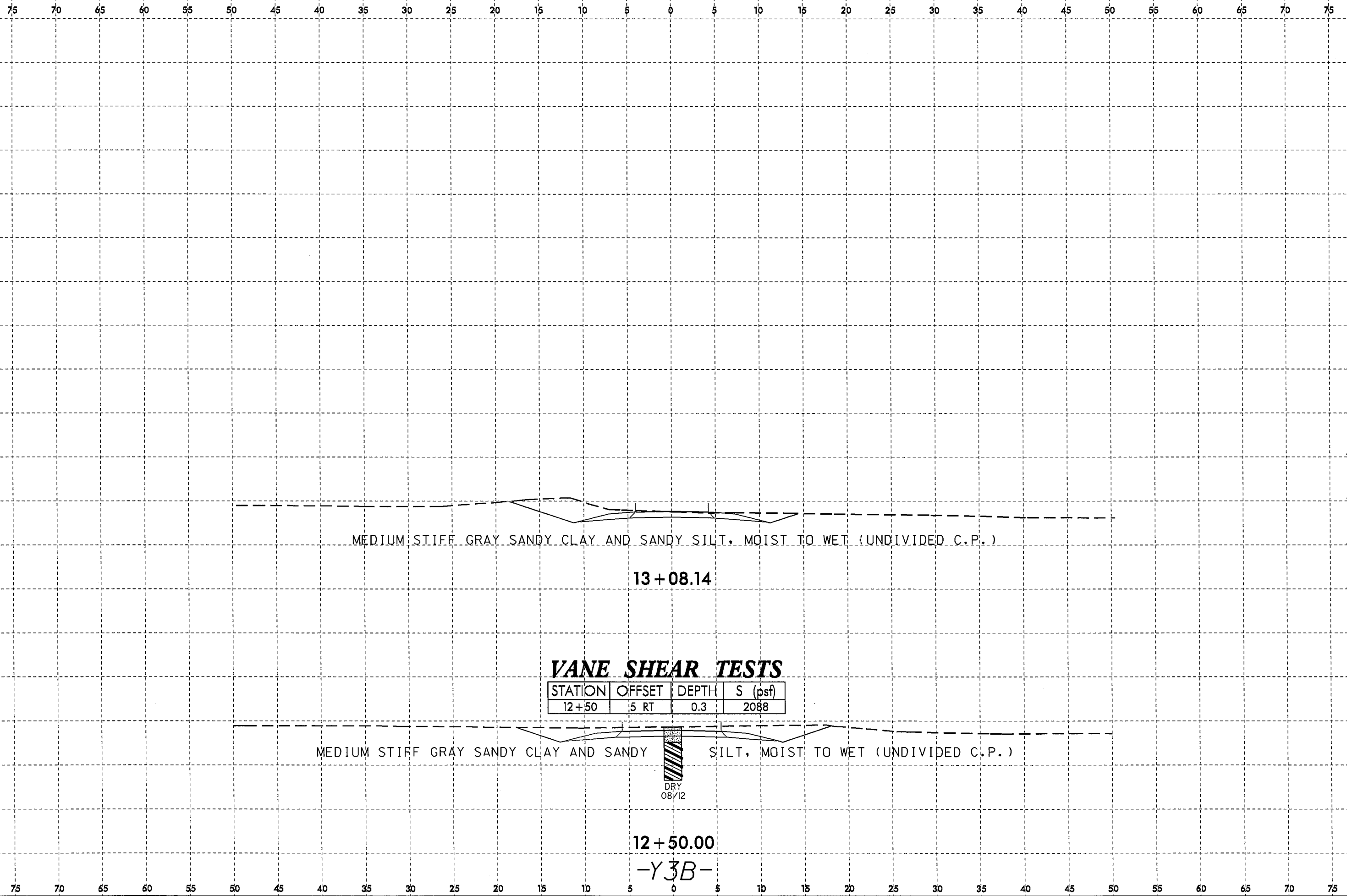


8/23/99

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|                                |                  |
|--------------------------------|------------------|
| PROJ. REFERENCE NO.<br>R-2514B | SHEET NO.<br>143 |
|--------------------------------|------------------|



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

13 + 08.14

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 12 + 50 | 5 RT   | 0.3   | 2088    |

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

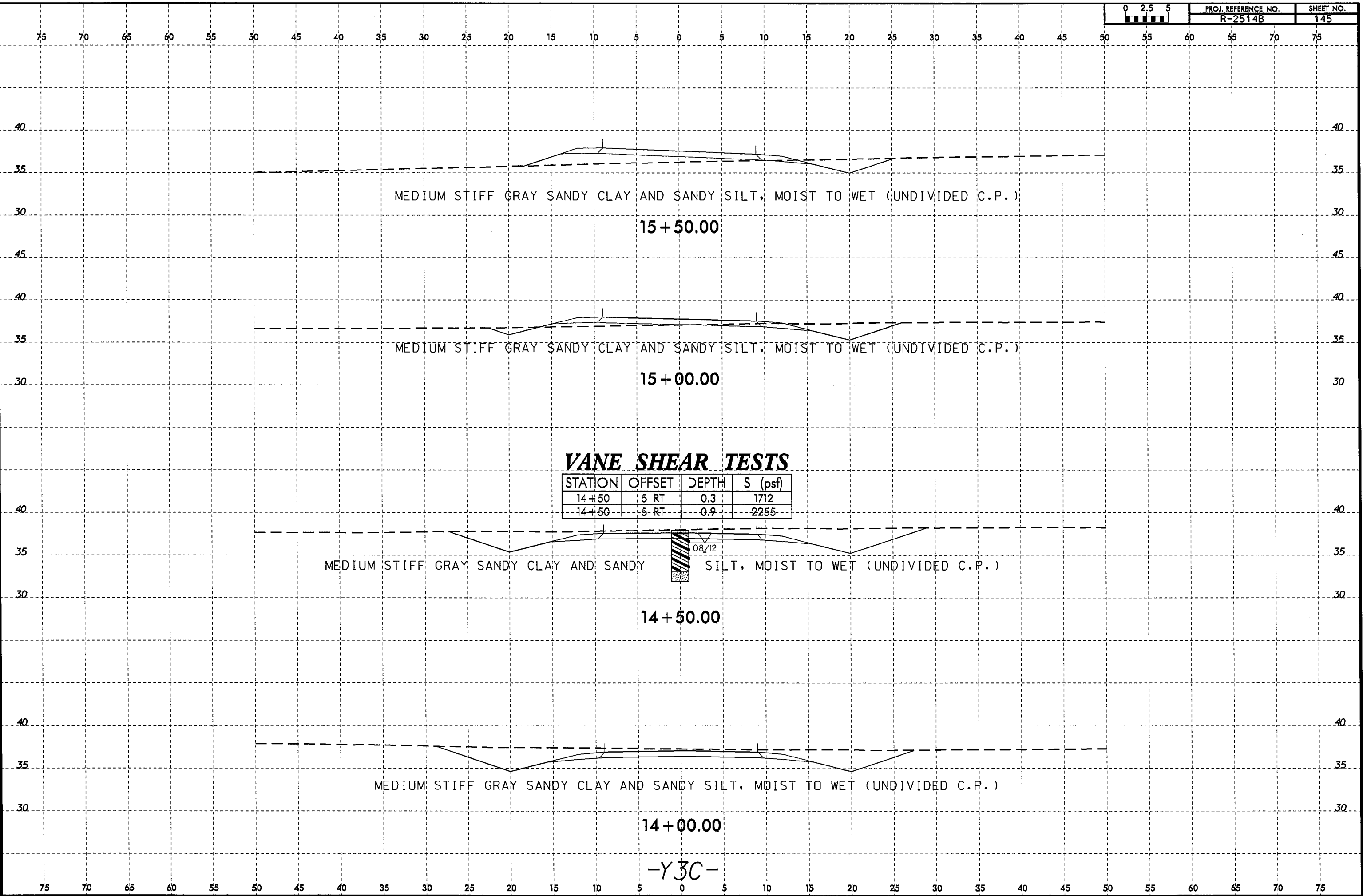
DRY  
08/12

12 + 50.00

-Y3B-



8/23/99  
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 cbturner A1 GEG55461



MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

15+50.00

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

15+00.00

**VANE SHEAR TESTS**

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 14+50   | 5 RT   | 0.3   | 1712    |
| 14+50   | 5-RT   | 0.9   | 2255    |

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

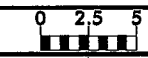
14+50.00

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

14+00.00

-Y3C-

8/23/99



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 146       |

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

40 40

35 35

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

30 30

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 25

17+00.00

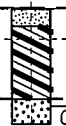
40 40

35 35

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

30 30

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)



16+50.00

40 40

35 35

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

30 30

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 25

16+38.61

40 40

35 35

MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST TO WET (UNDIVIDED C.P.)

30 30

VERY LOOSE TO MEDIUM DENSE GRAY SAND, MOIST TO SAT. (UNDIVIDED C.P.)

25 25

16+00.00

-Y3C-

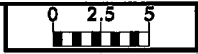
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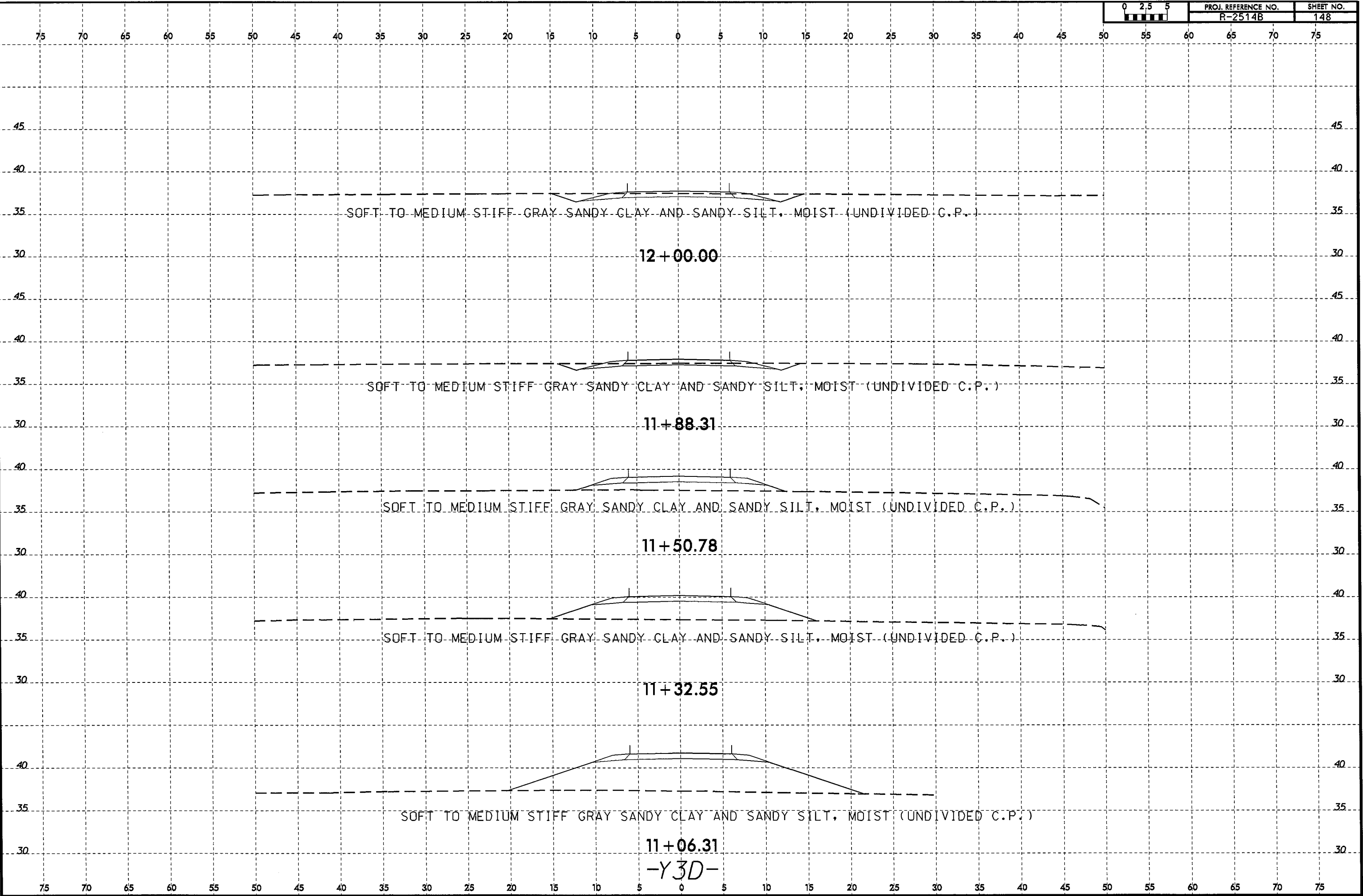




8/23/99  
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cputner AT 06255481



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 148       |



SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

12+00.00

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

11+88.31

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

11+50.78

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

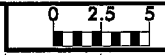
11+32.55

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

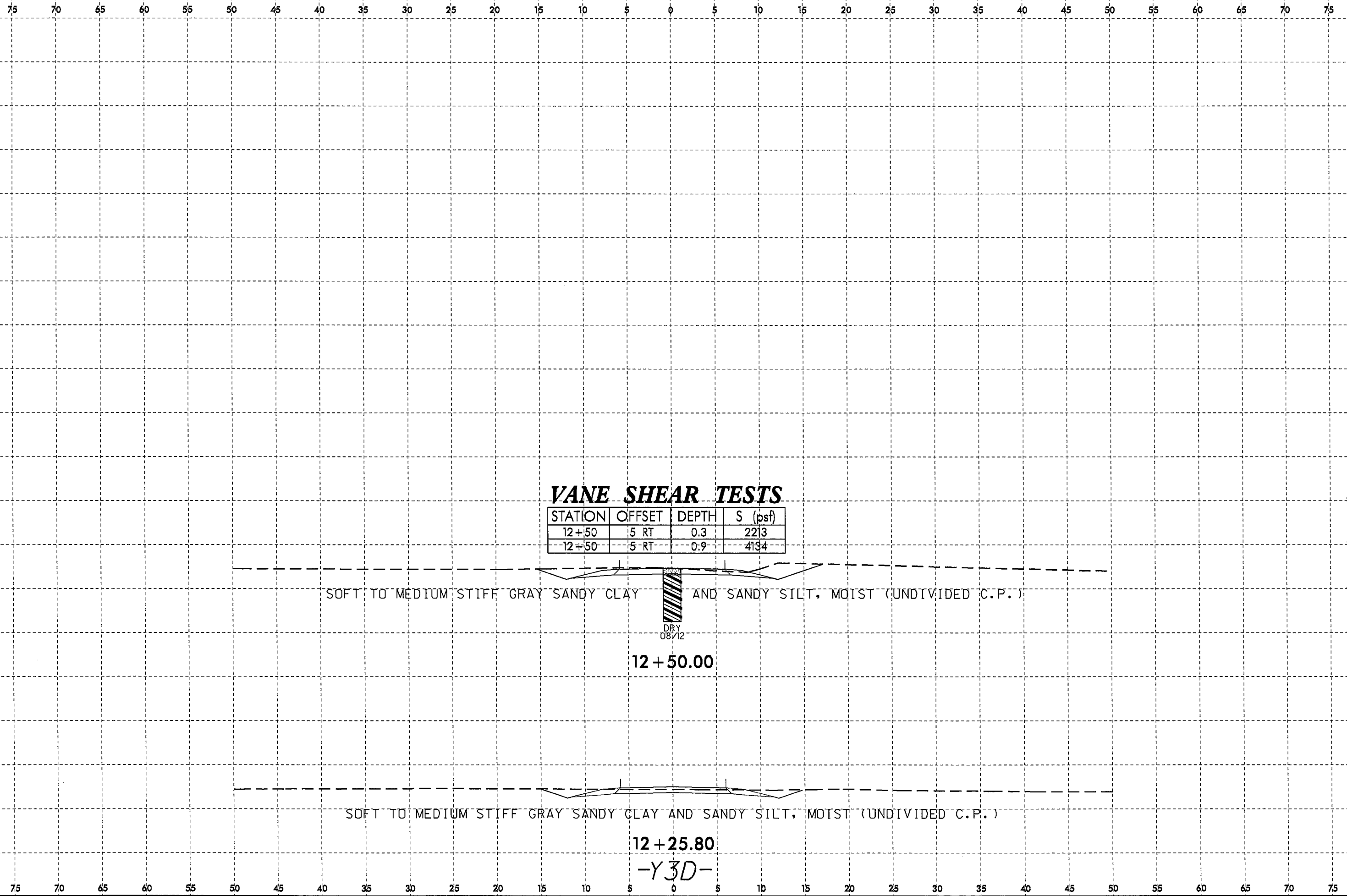
11+06.31

-Y3D-

8/23/99



|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| R-2514B             | 149       |



### VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 12+50   | 5 RT   | 0.3   | 2213    |
| 12+50   | 5 RT   | 0.9   | 4134    |

SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)



12 + 50.00

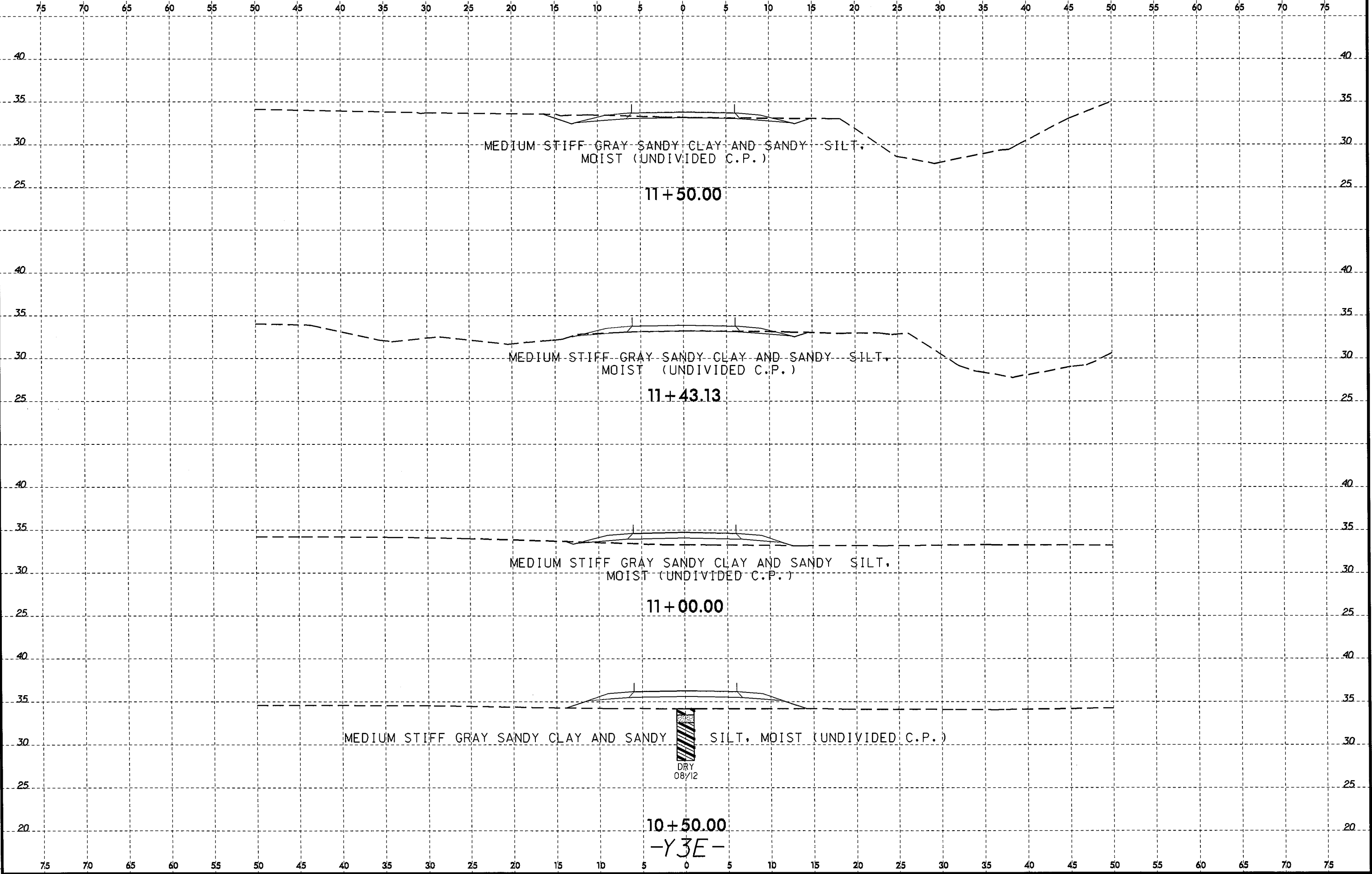
SOFT TO MEDIUM STIFF GRAY SANDY CLAY AND SANDY SILT, MOIST (UNDIVIDED C.P.)

12 + 25.80

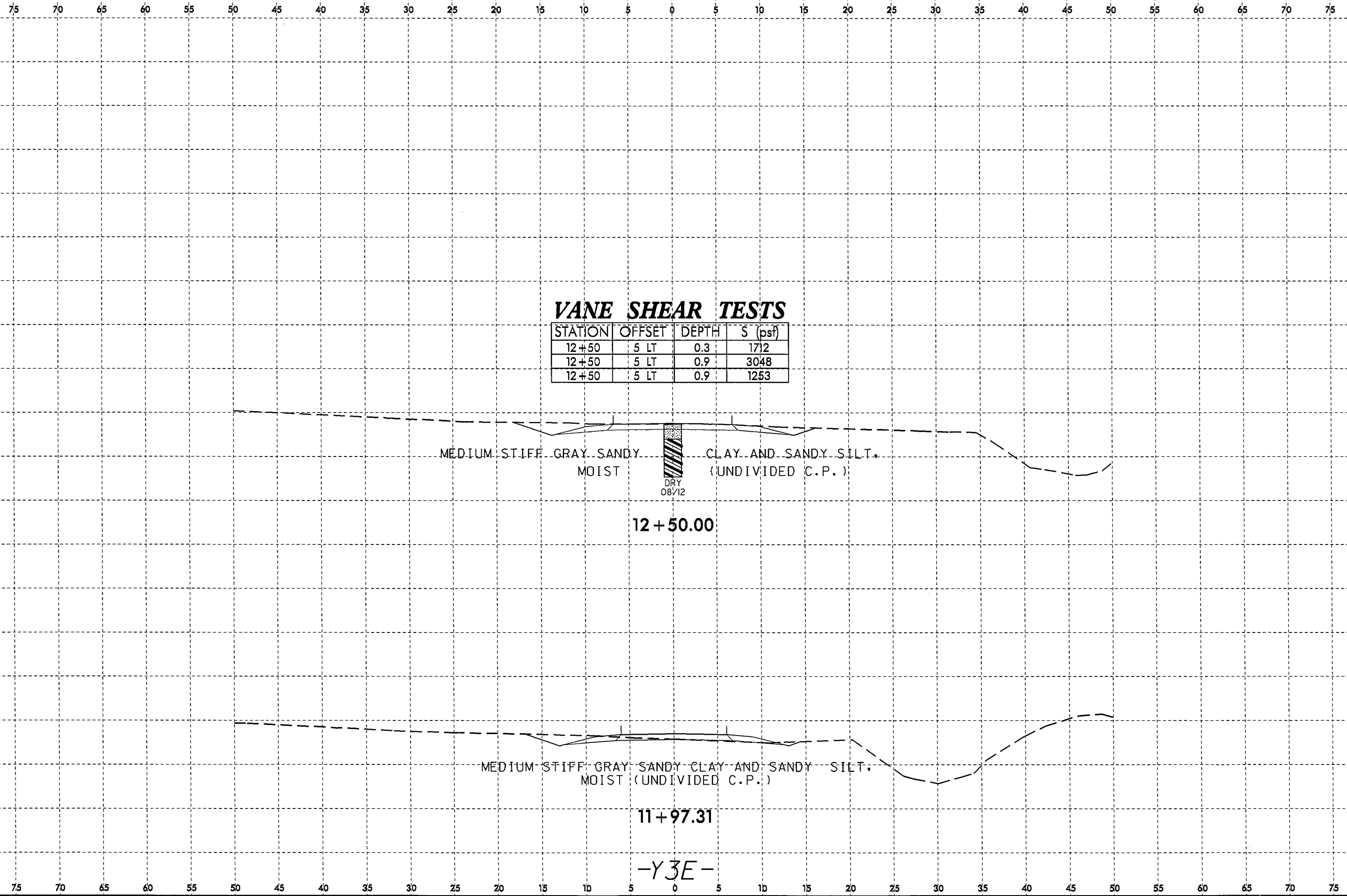
-Y3D-

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 spturner AT 06/25/13

8/23/99  
22-JUL-2013 15:55  
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25-JUL-2013 12:35  
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 cturner AT GEO255461



### VANE SHEAR TESTS

| STATION | OFFSET | DEPTH | S (psf) |
|---------|--------|-------|---------|
| 12+50   | 5 LT   | 0.3   | 1712    |
| 12+50   | 5 LT   | 0.9   | 3048    |
| 12+50   | 5 LT   | 0.9   | 1253    |

MEDIUM STIFF GRAY SANDY MOIST      CLAY AND SANDY SILT.  
 (UNDIVIDED C.P.)

DRY  
08/12

12 + 50.00

MEDIUM STIFF GRAY SANDY MOIST      CLAY AND SANDY SILT.  
 (UNDIVIDED C.P.)

11 + 97.31

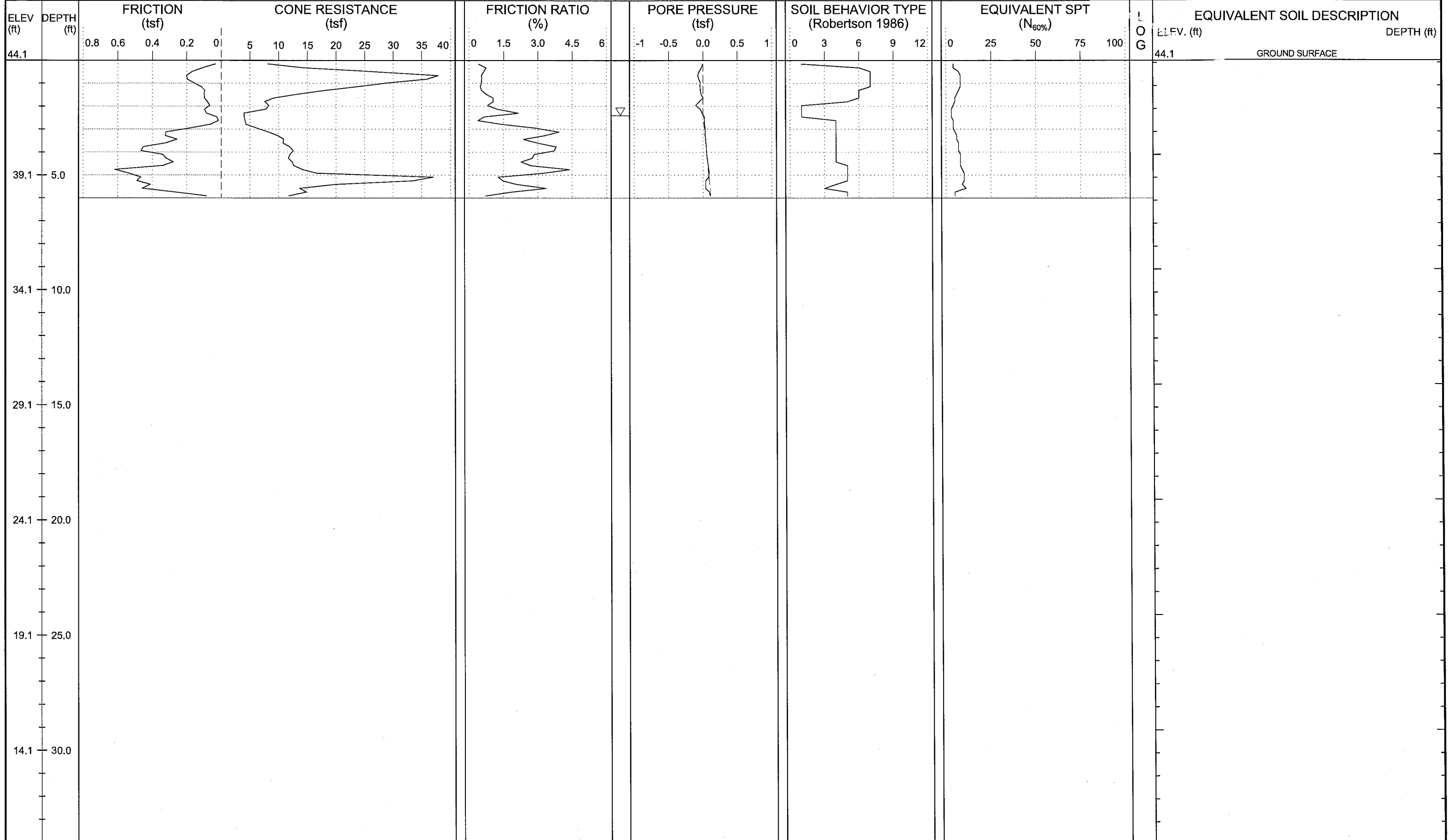
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**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH  
 SHEET NO.: 1  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

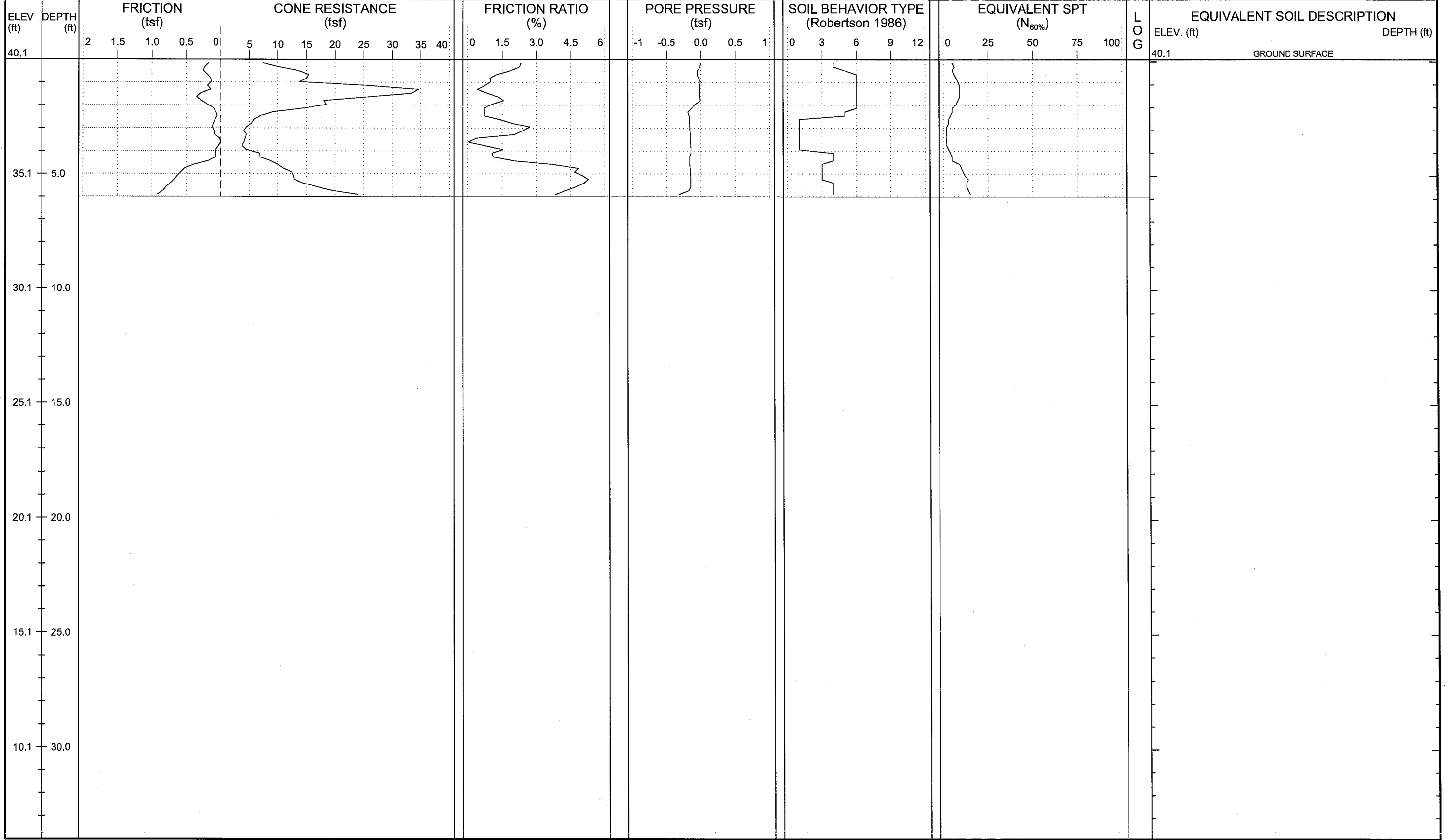
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|---|---------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|-----------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 2.4, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison |
| BORING NO.: L-012   | STATION: 12+00      | OFFSET: 65ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                       |
| COLLAR ELEV.: 44.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 409,115    | EASTING: 2,520,792       | START DATE: 09/11/12                   | COMP. DATE: 09/11/12       | SURFACE WATER DEPTH: N/A         |                       |







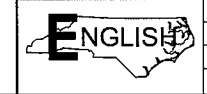
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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-016   | STATION: 16+00      | OFFSET: 70ft LT      | ALIGNMENT: -L-           | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 40.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 409,380    | EASTING: 2,521,091       | 24 HR. N/A                       | START DATE: 09/11/12             |
|   |                     |                      |                          | CONC. DATE: 09/11/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |





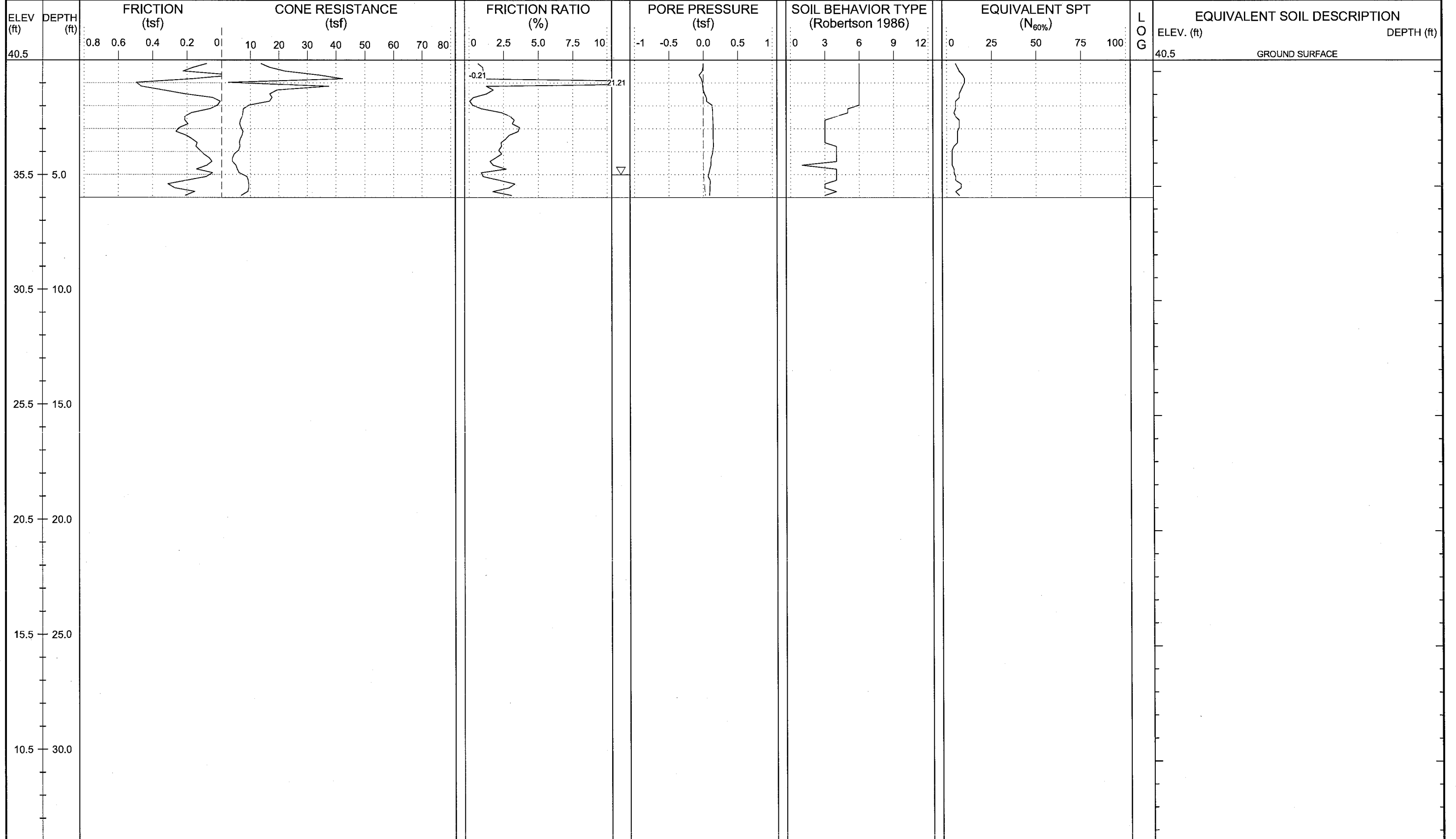


# NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 4  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.0       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-018   | STATION: 18+00      | OFFSET: 70ft RT      | ALIGNMENT: -L-           | 24 HR. N/A                       | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 40.5 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 409,405    | EASTING: 2,521,334       | START DATE: 09/11/12             | CONE ID: DSA1123                 |
|   |                     |                      |                          |                                  | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



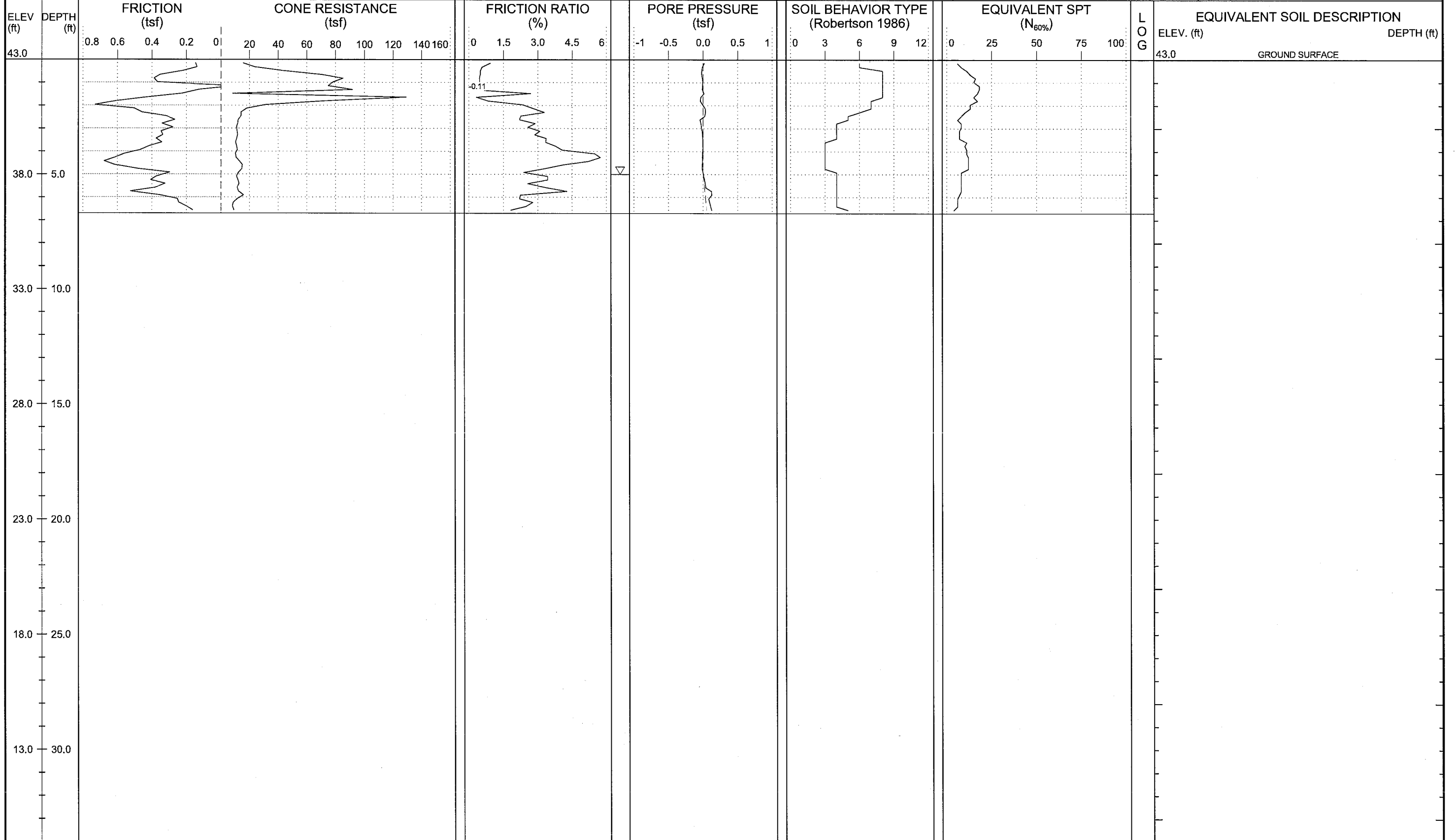


WBS: 34442.1.2    TIP: R-2514B    COUNTY: JONES/ONSLOW    GEOLOGIST: Steven Hudson    DRILL MACHINE: Hogentogler Track    MAX. DOWN PRESSURE: 10 Ton

SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville    GROUND WTR (ft)    DRILL METHOD: CPT / DPT    CONE TYPE: 1.44 Vertek Piezocone    DRILLER: Cory Robison

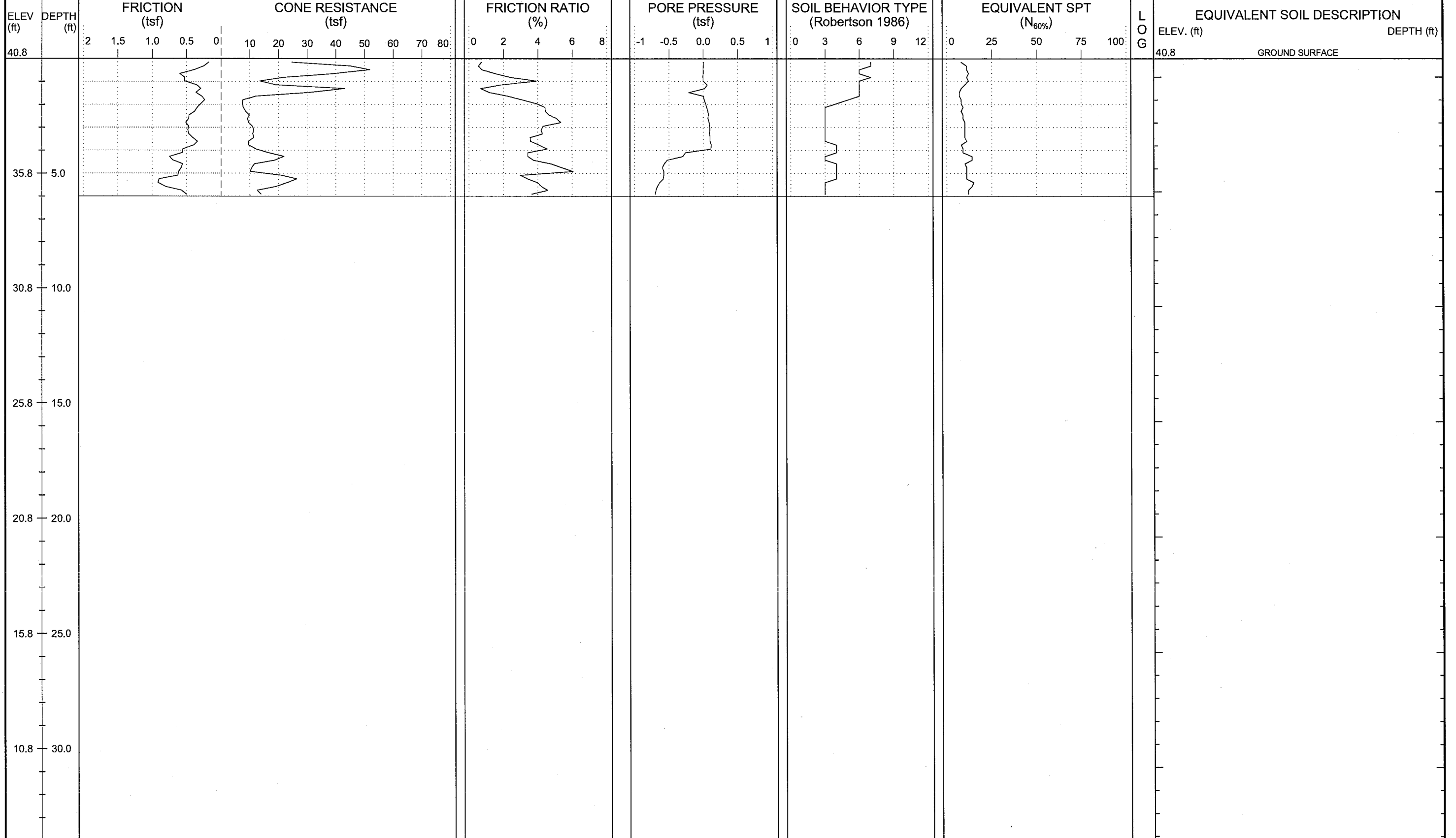
BORING NO.: L-020    STATION: 20+00    OFFSET: 50ft RT    ALIGNMENT: -L-    0 HR. 5.0    ROD TYPE: Pre-strung    CONE ID: DSA1123    TECHNICIAN: M.A.D.

COLLAR ELEV.: 43.0 ft    TOTAL DEPTH: 6.7 ft    NORTHING: 409,551    EASTING: 2,521,472    24 HR. N/A    START DATE: 09/11/12    COMP. DATE: 09/11/12    SURFACE WATER DEPTH: N/A





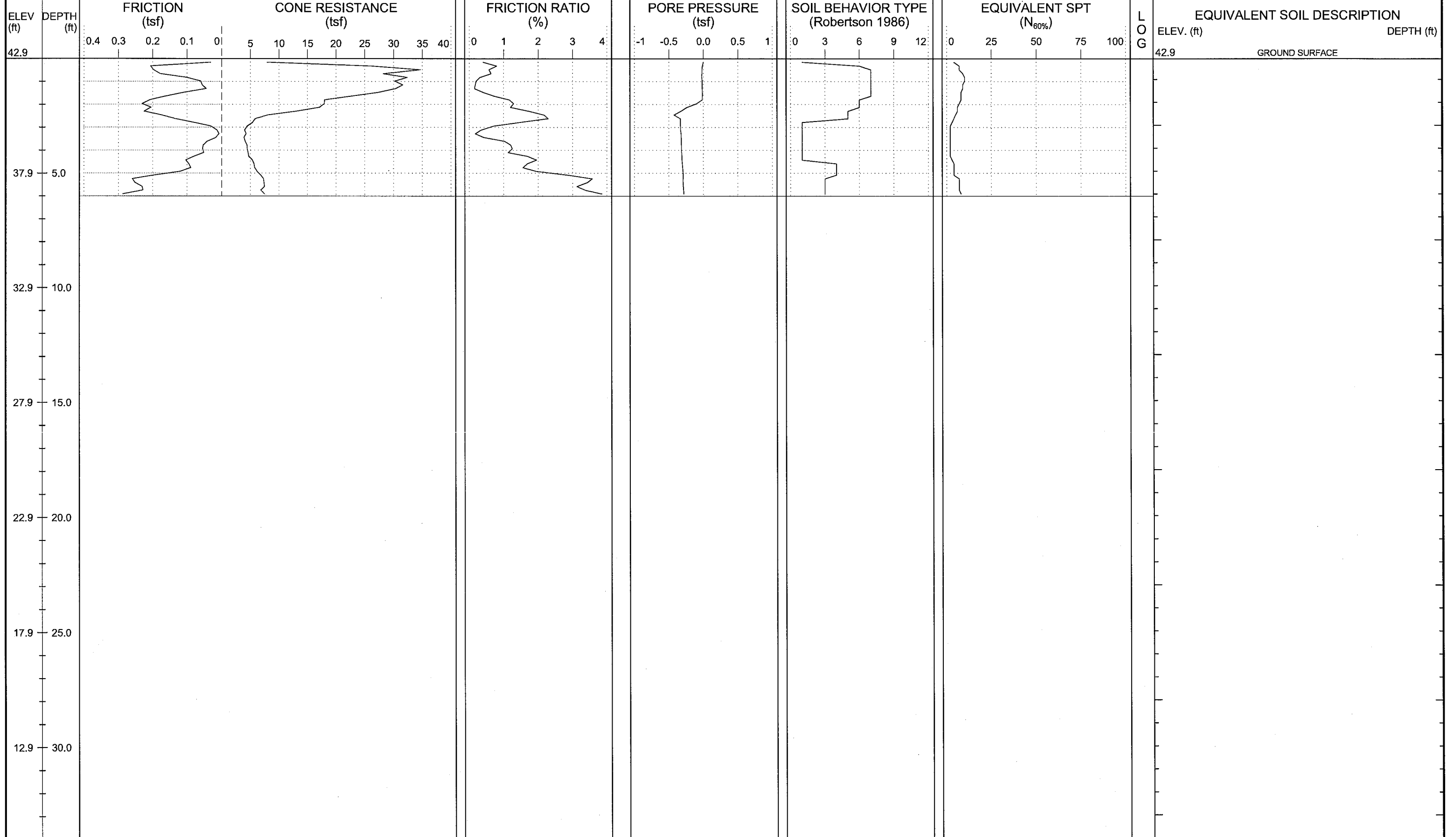
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|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-024   | STATION: 24+00      | OFFSET: 30ft RT      | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 40.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 409,828    | EASTING: 2,521,762                     | START DATE: 09/11/12             | COMP. DATE: 09/11/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |







|   |                     |                      |                          |   |                                  |
|---|---------------------|----------------------|--------------------------|---|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track        | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry / 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-028   | STATION: 28+00      | OFFSET: 70ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                    | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 42.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 410,165    | EASTING: 2,521,999       | START DATE: 09/11/12                    | CONE ID: DSA1123                 |
|   |                     |                      |                          | COMP. DATE: 09/11/12                    | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                      |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A                |                                  |



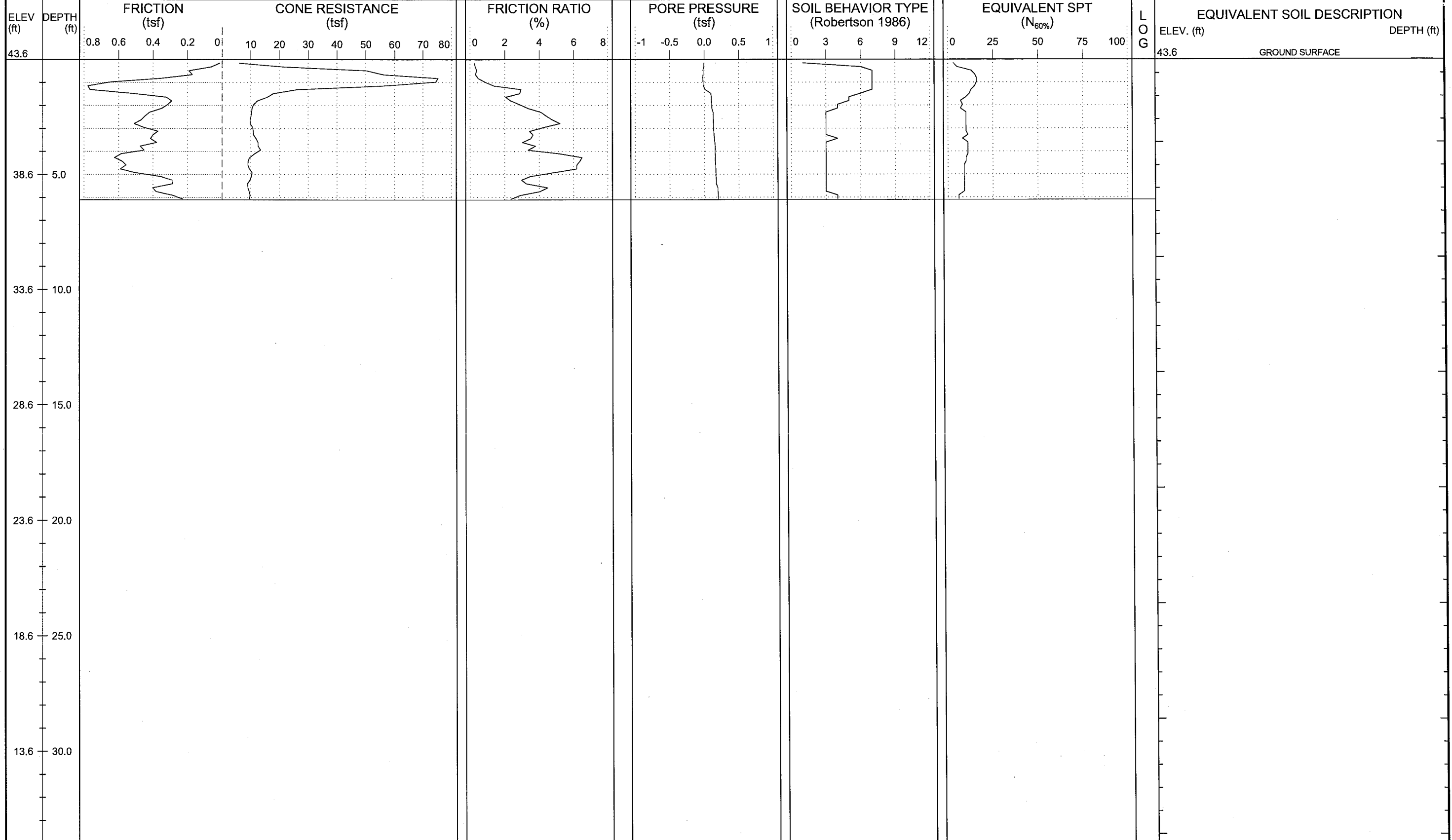


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 9            |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                     |                      |                          |   |                            |                                  |                      |
|---|---------------------|----------------------|--------------------------|---|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track        | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry / 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-032   | STATION: 32+00      | OFFSET: 45ft RT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                    | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 43.6 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 410,340    | EASTING: 2,522,377       | START DATE: 09/10/12                    | COMP. DATE: 09/10/12       | SURFACE WATER DEPTH: N/A         |                      |

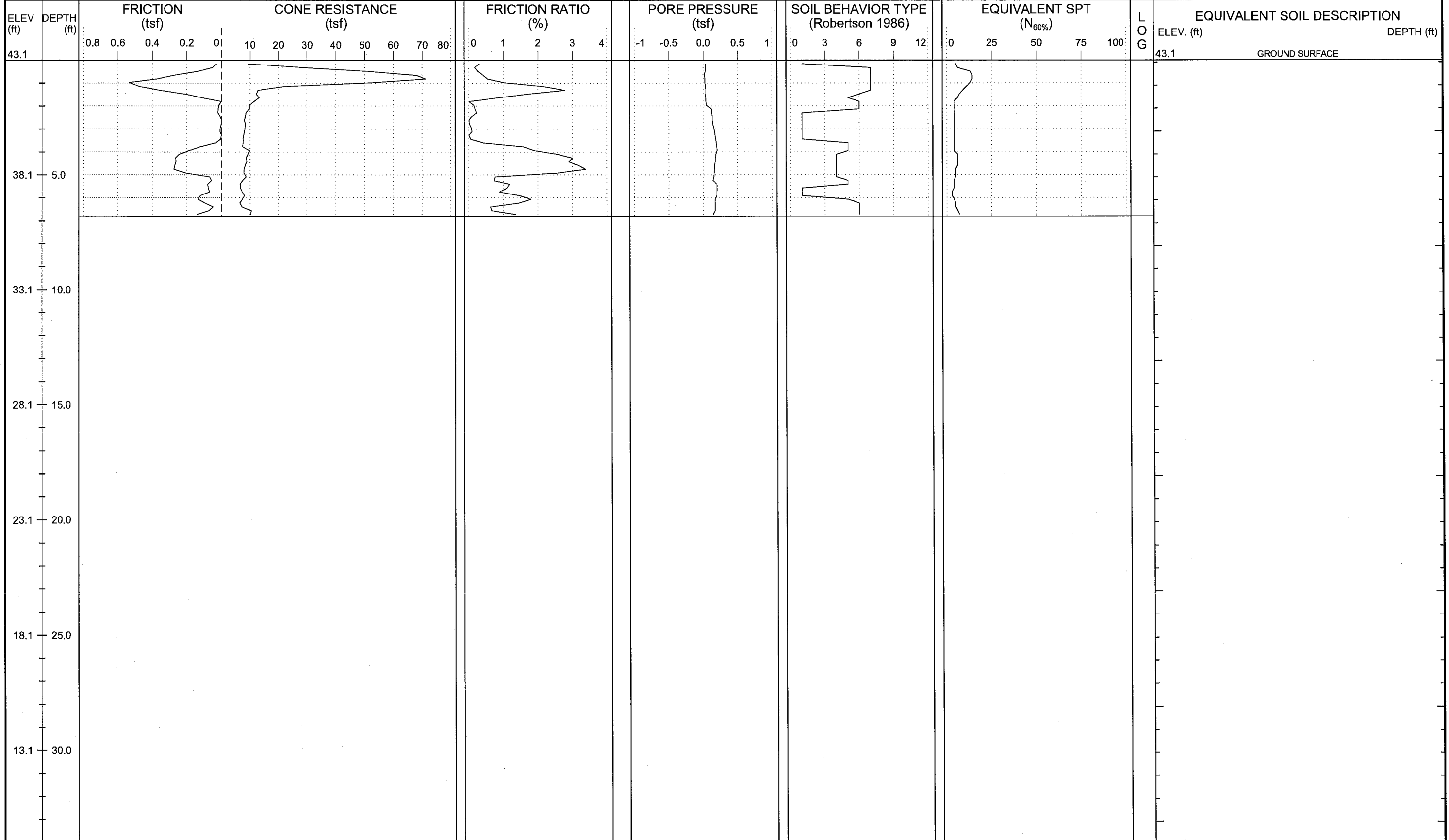




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 10        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLow |

|   |                     |                      |                          |                                  |                            |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT    |
| BORING NO.: L-034   | STATION: 34+00      | OFFSET: 30ft RT      | ALIGNMENT: -L-           | 24 HR. N/A                       | DRILLER: Ron Stewart       |
| COLLAR ELEV.: 43.1 ft   | TOTAL DEPTH: 6.8 ft | NORTHING: 410,482    | EASTING: 2,522,518       | START DATE: 09/10/12             | CONC. DATE: 09/10/12       |
|   |                     |                      |                          | ROD TYPE: Pre-strung             | TECHNICIAN: M.A.D.         |
|   |                     |                      |                          | CONC. ID: DSA1123                | SURFACE WATER DEPTH: N/A   |

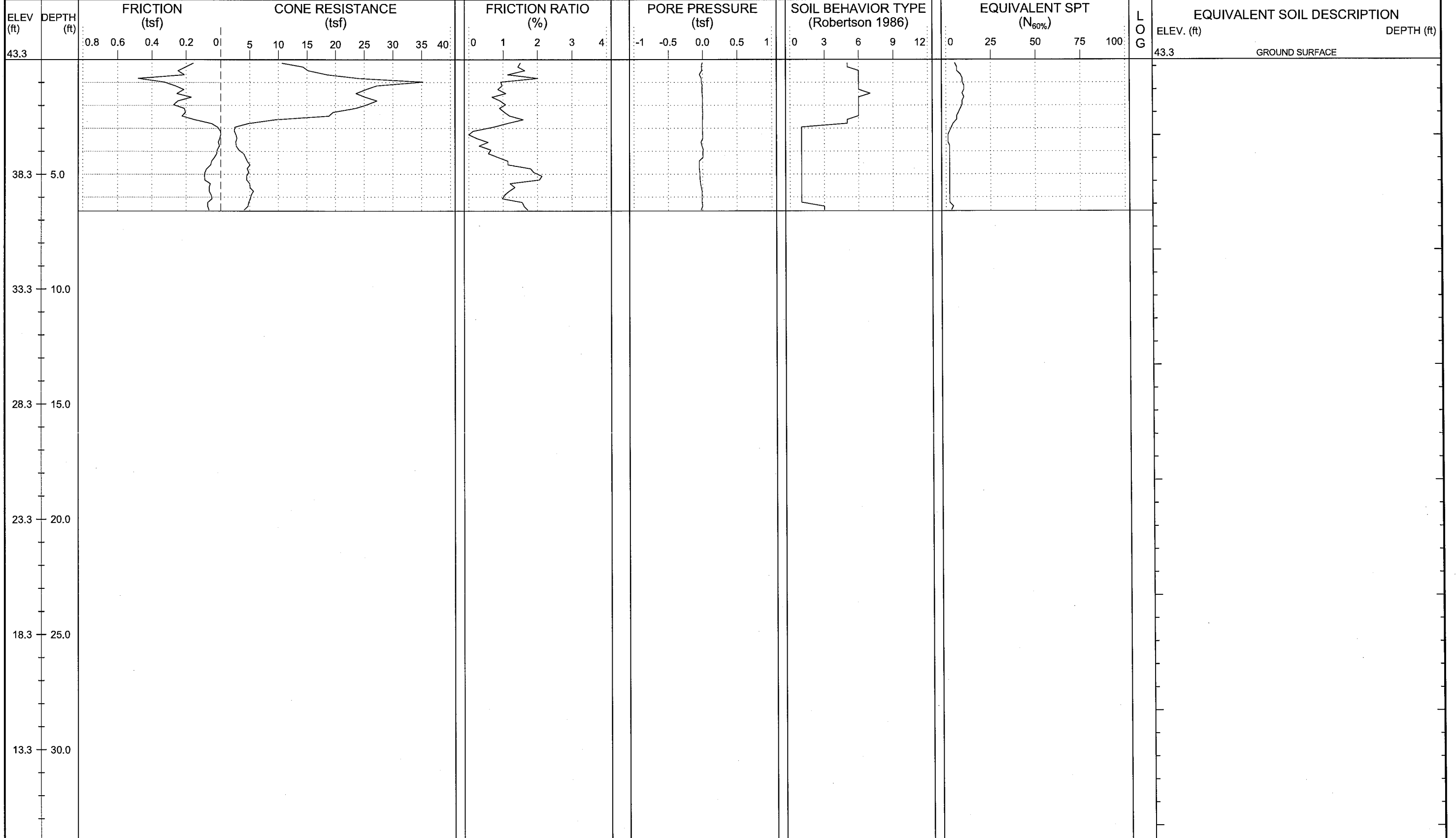








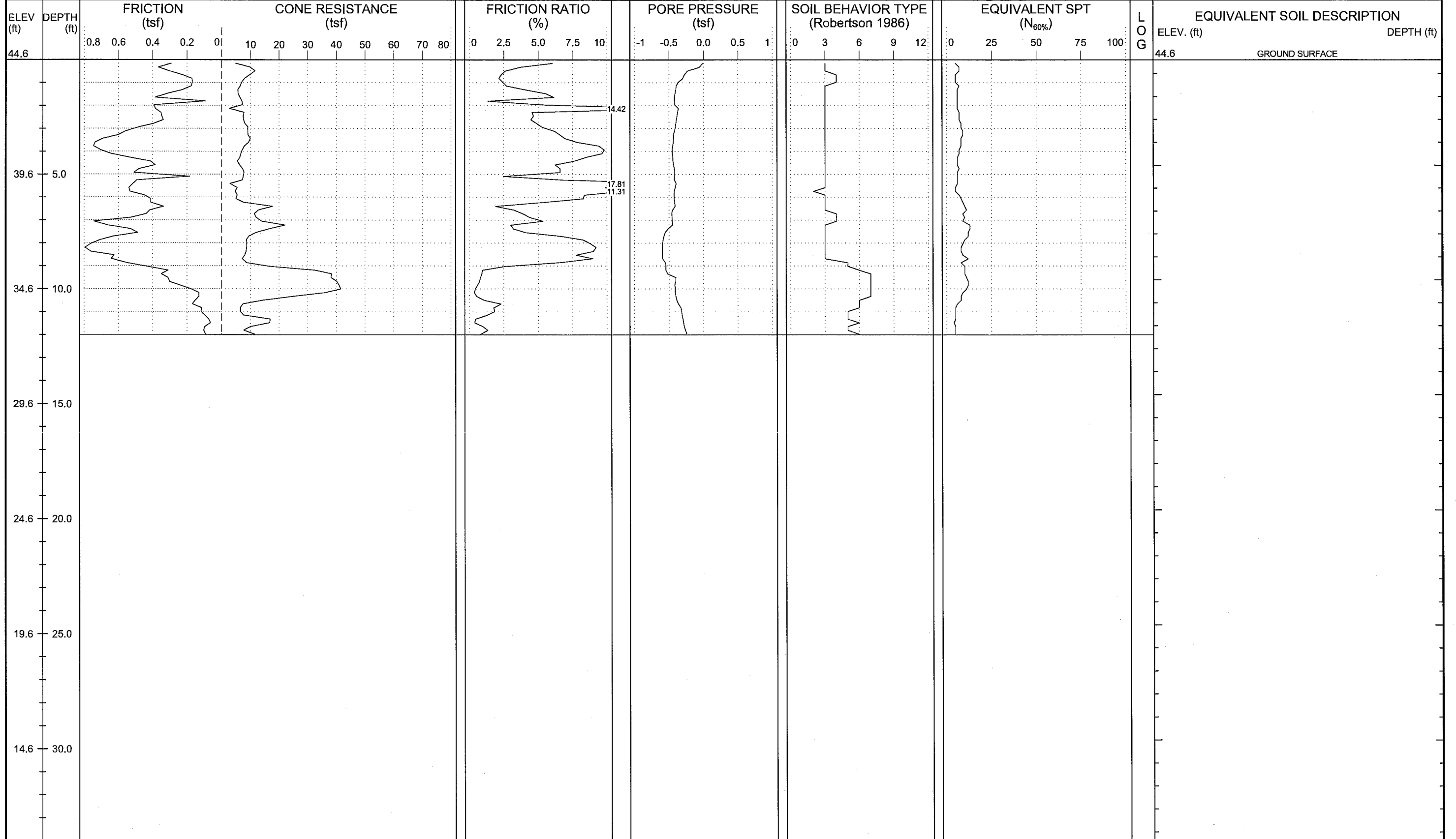
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|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-038   | STATION: 38+00      | OFFSET: 70ft LT      | ALIGNMENT: -L-             | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 43.3 ft   | TOTAL DEPTH: 6.6 ft | NORTHING: 410,819    | EASTING: 2,522,756         | START DATE: 09/10/12             | COMP. DATE: 09/10/12             |
|   |                     |                      |                            |                                  | DRILLER: Ron Stewart             |
|   |                     |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |





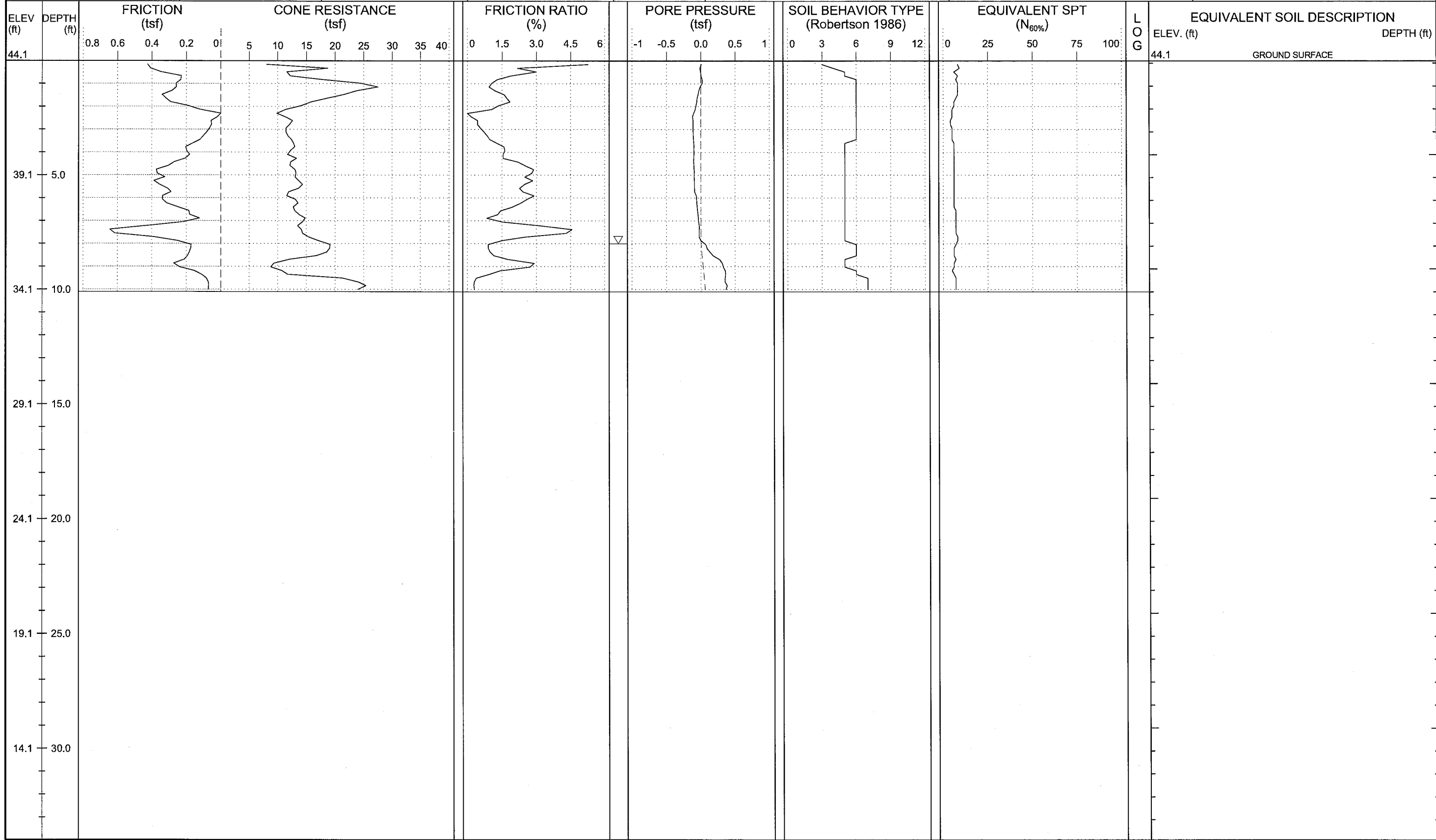


|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-044   | STATION: 44+00       | OFFSET: 50ft RT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 44.6 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 411,131    | EASTING: 2,523,283       | START DATE: 09/10/12             | CONE ID: DSA1123                 |
|   |                      |                      |                          | 24 HR. N/A                       | COMP. DATE: 09/10/12             |
|   |                      |                      |                          | DRILLER: Ron Stewart             |                                  |
|   |                      |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |





|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-046   | STATION: 46+00       | OFFSET: 70ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 44.1 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 411,358    | EASTING: 2,523,334       | START DATE: 09/10/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | COMP. DATE: 09/10/12             |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



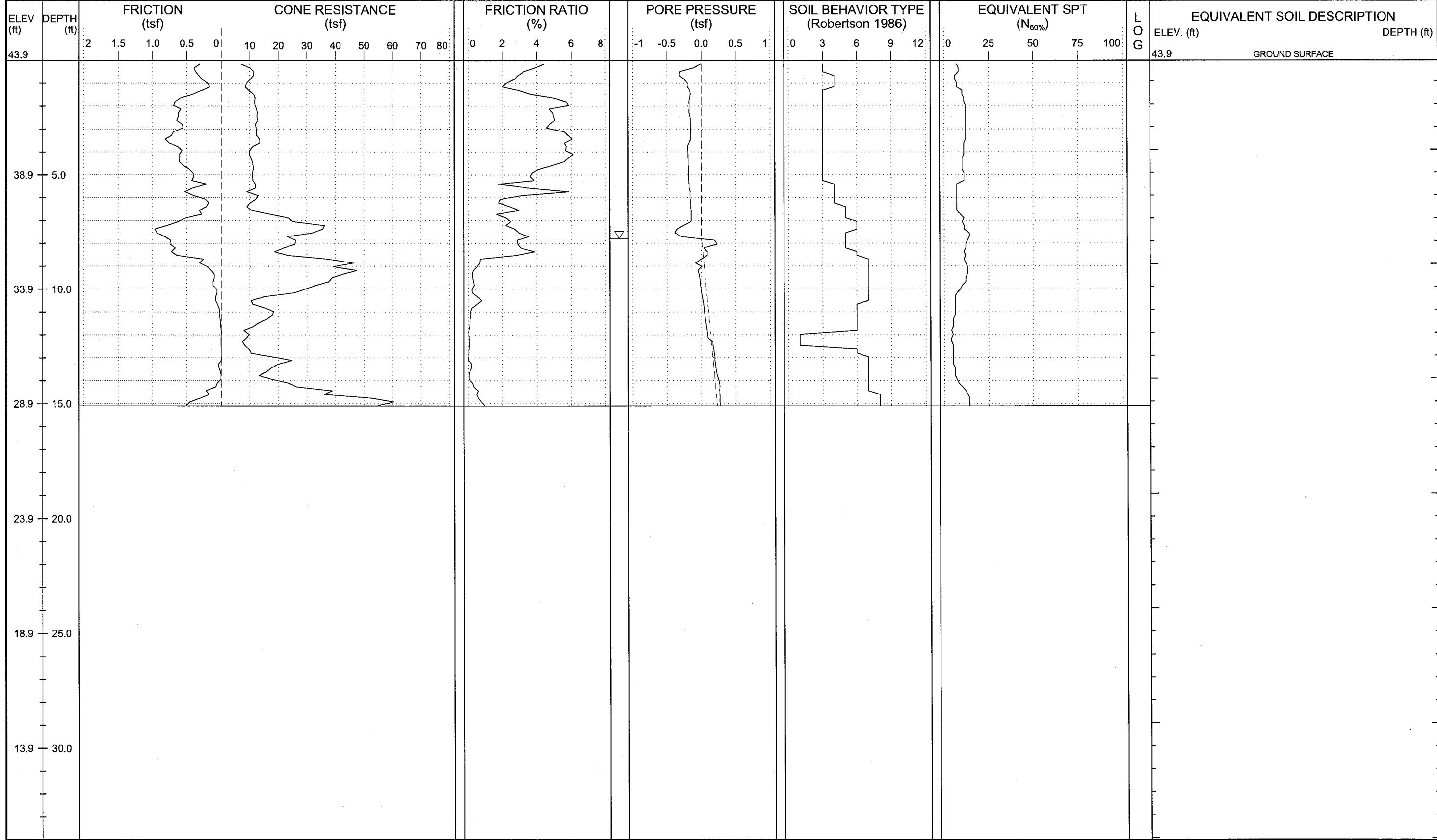


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 16  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-048   | STATION: 48+00       | OFFSET: 60ft RT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.9 ft   | TOTAL DEPTH: 15.1 ft | NORTHING: 411,425    | EASTING: 2,523,563       | START DATE: 09/10/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/10/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



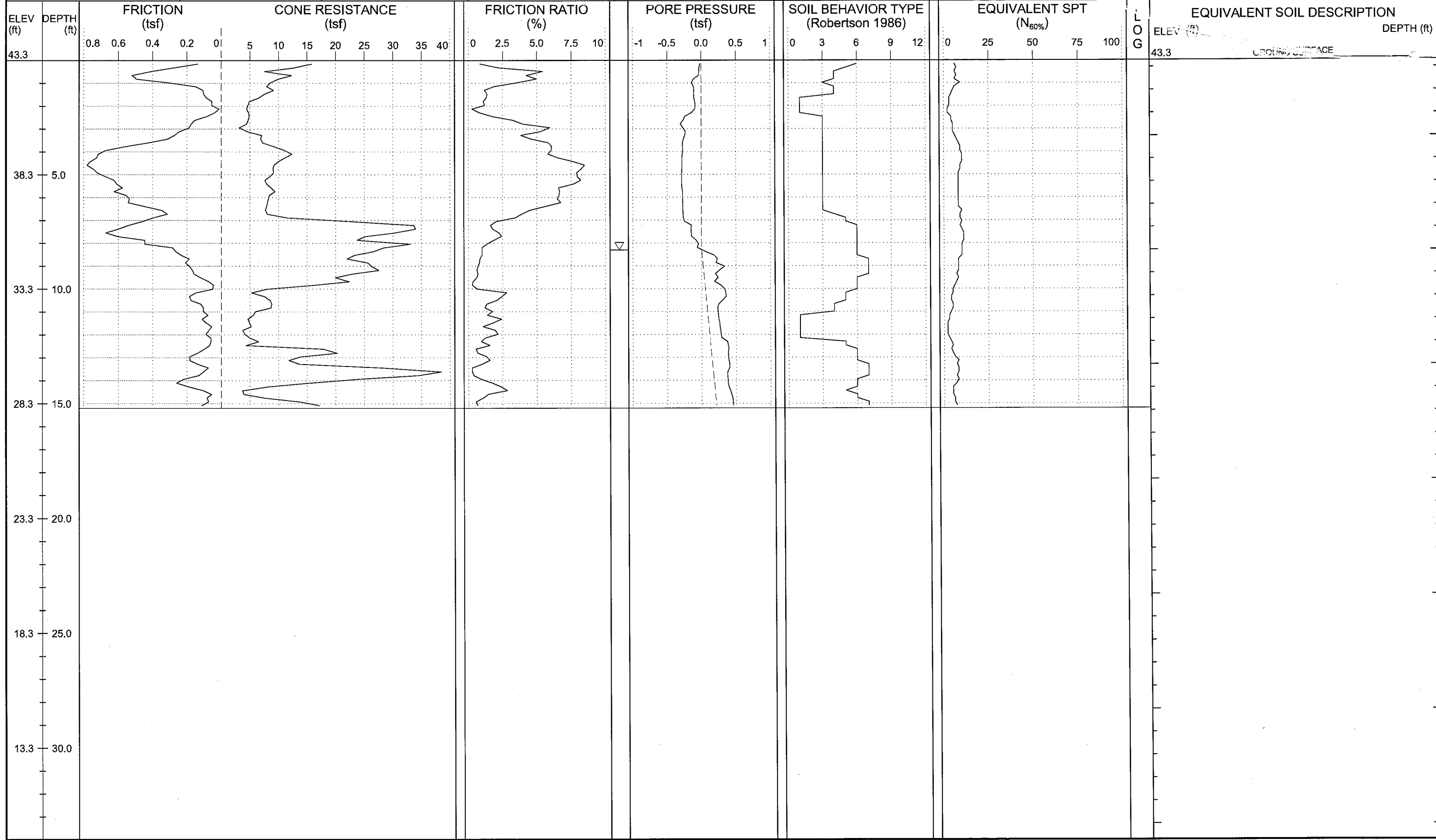


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

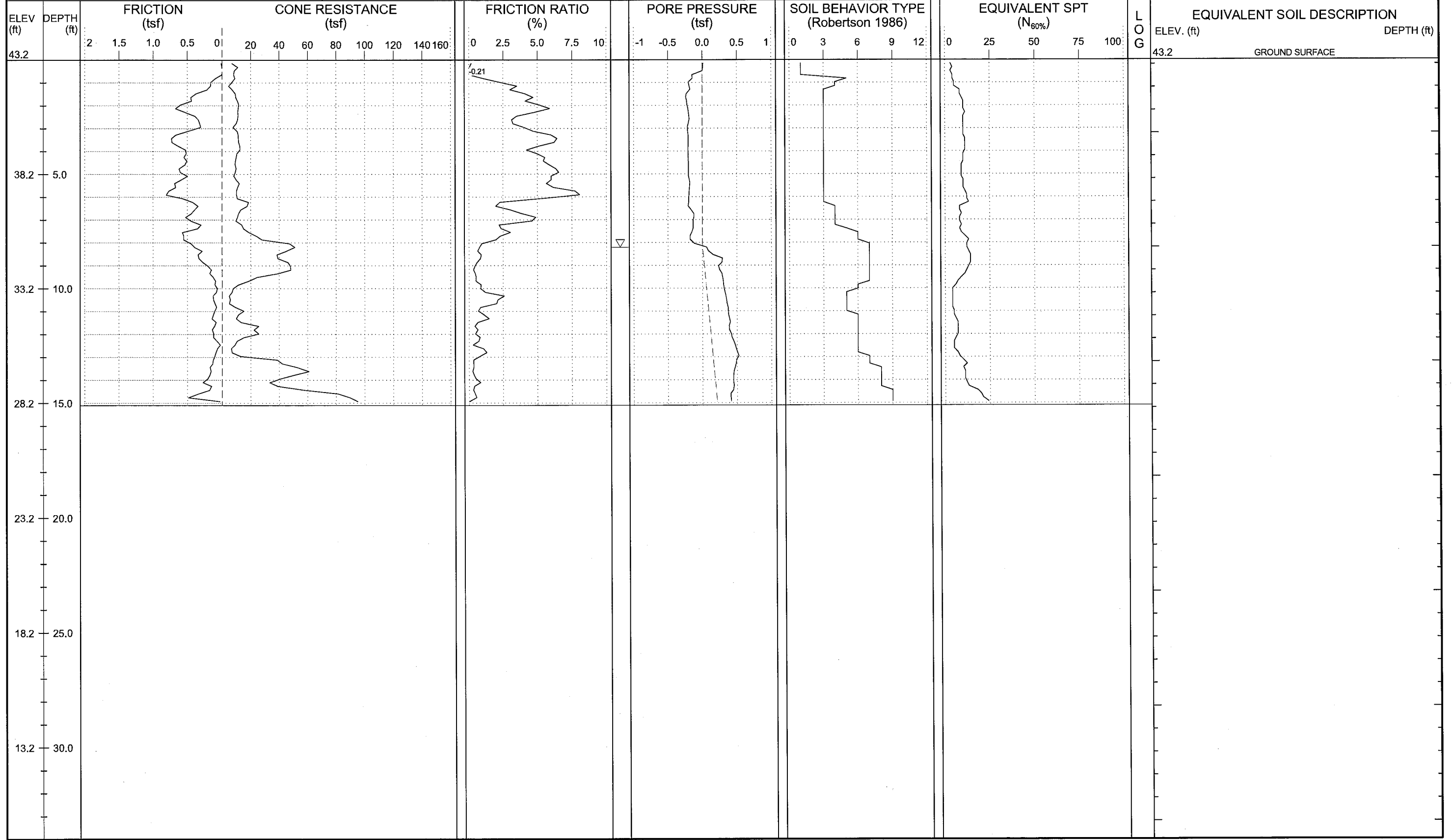
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|------------|--------------|
| SHEET NO.: | 17           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLOW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-052   | STATION: 52+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.3 ft   | TOTAL DEPTH: 15.2 ft | NORTHING: 411,785    | EASTING: 2,523,754       | START DATE: 09/07/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/07/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



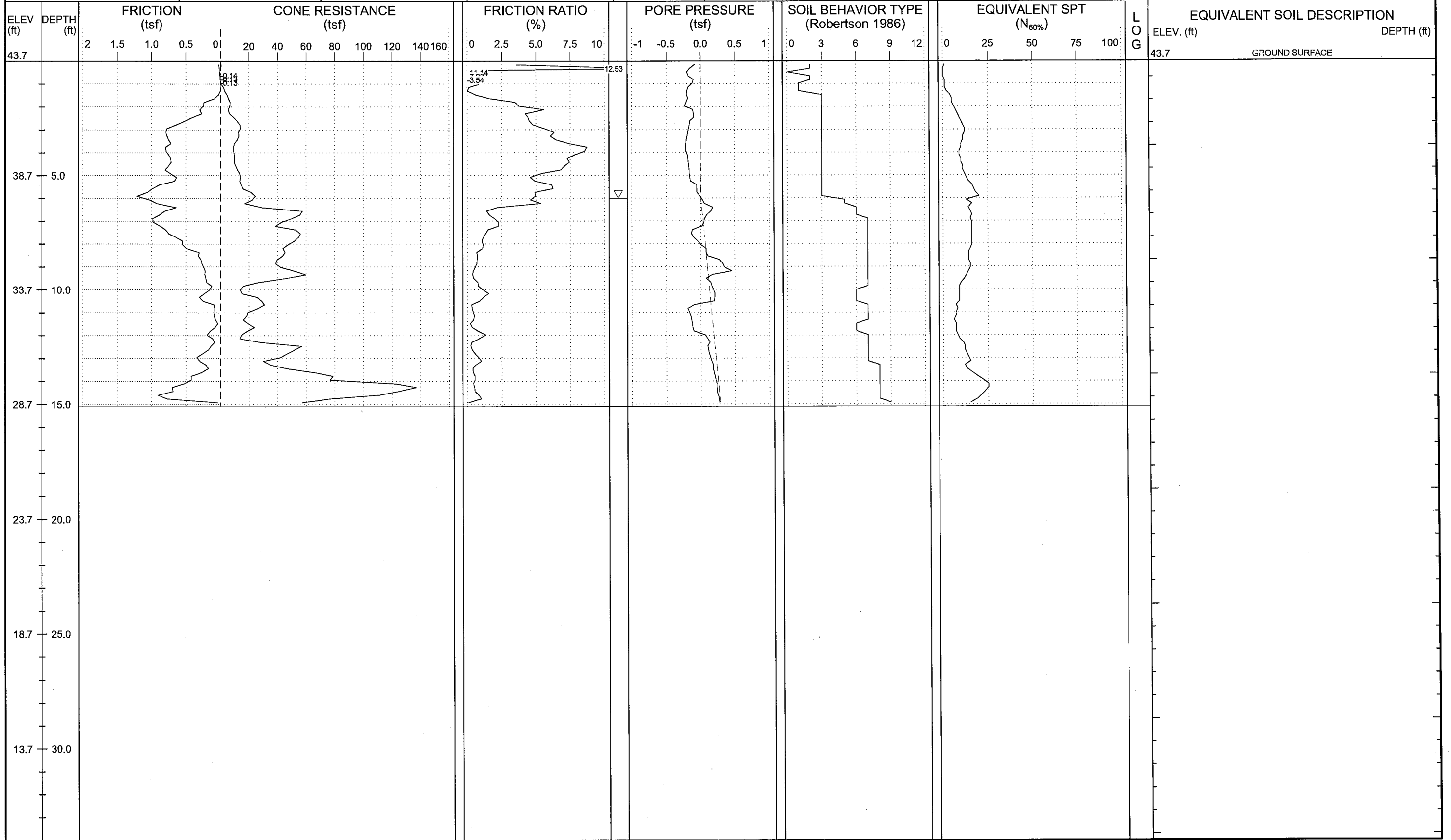


|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-054   | STATION: 54+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.2 ft   | TOTAL DEPTH: 15.1 ft | NORTHING: 411,954    | EASTING: 2,523,860       | START DATE: 09/07/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/07/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 6.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-056   | STATION: 56+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 43.7 ft   | TOTAL DEPTH: 15.1 ft | NORTHING: 412,128    | EASTING: 2,523,958                     | START DATE: 09/07/12             | COMP. DATE: 09/07/12             |
|   |                      |                      |  |                                  | DRILLER: Ron Stewart             |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





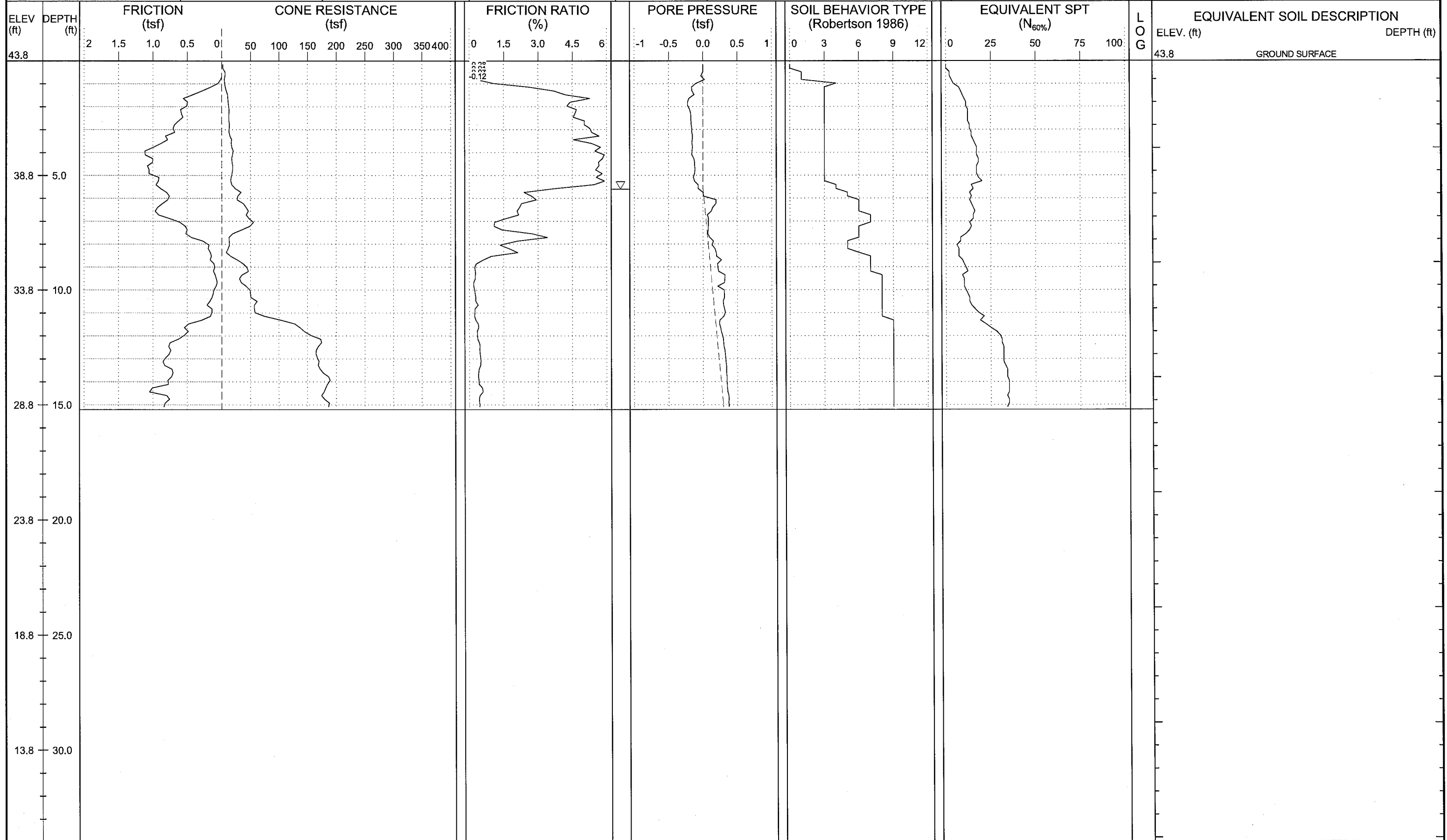


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 20  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.6, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-058   | STATION: 58+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.8 ft   | TOTAL DEPTH: 15.2 ft | NORTHING: 412,308    | EASTING: 2,524,047       | START DATE: 09/07/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/07/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



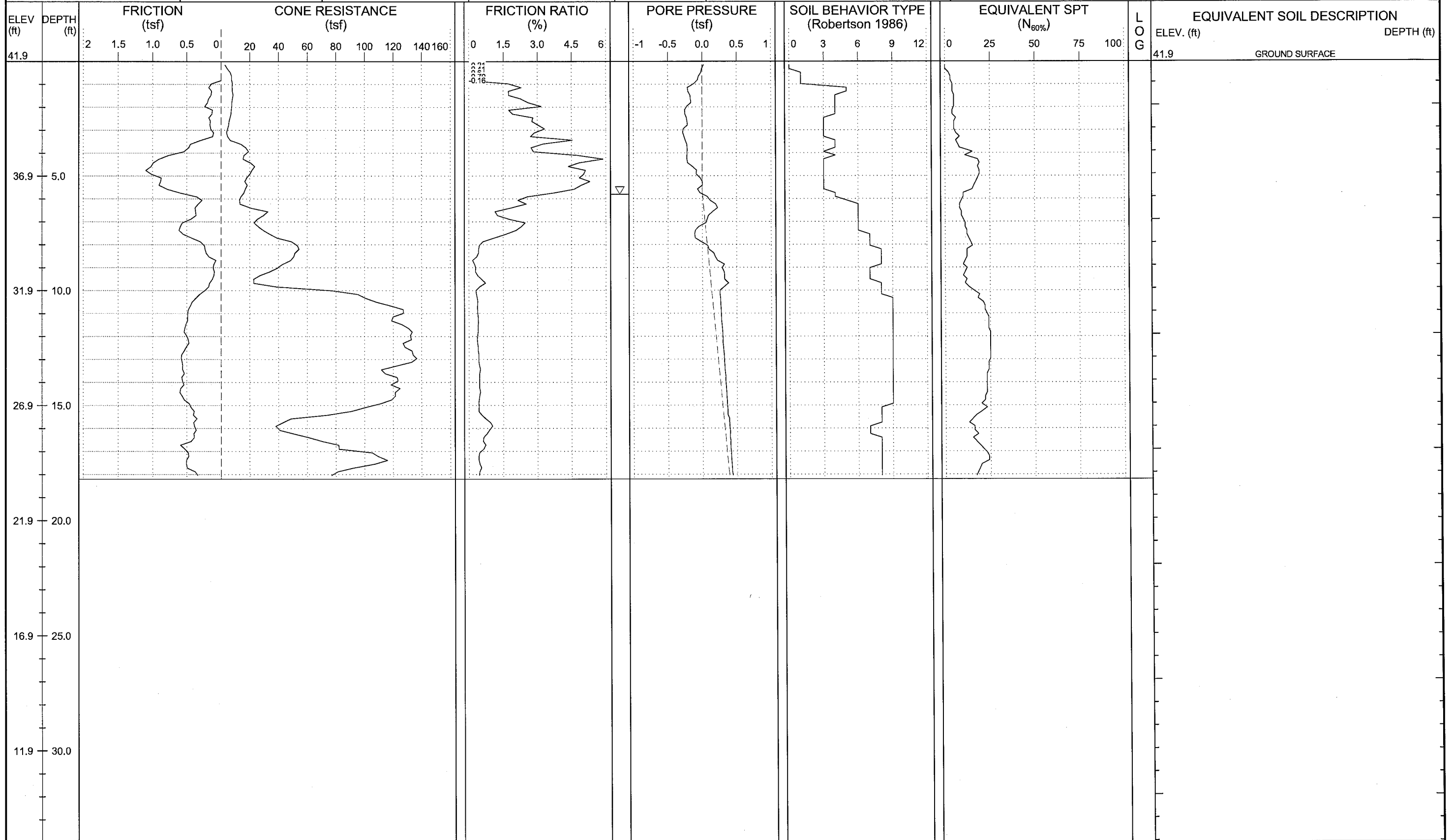


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 21  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-062   | STATION: 62+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. 5.8                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 41.9 ft   | TOTAL DEPTH: 18.2 ft | NORTHING: 412,678    | EASTING: 2,524,197       | 24 HR. N/A                       | START DATE: 09/07/12             |
|   |                      |                      |                          | CONC. DATE: 09/07/12             | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



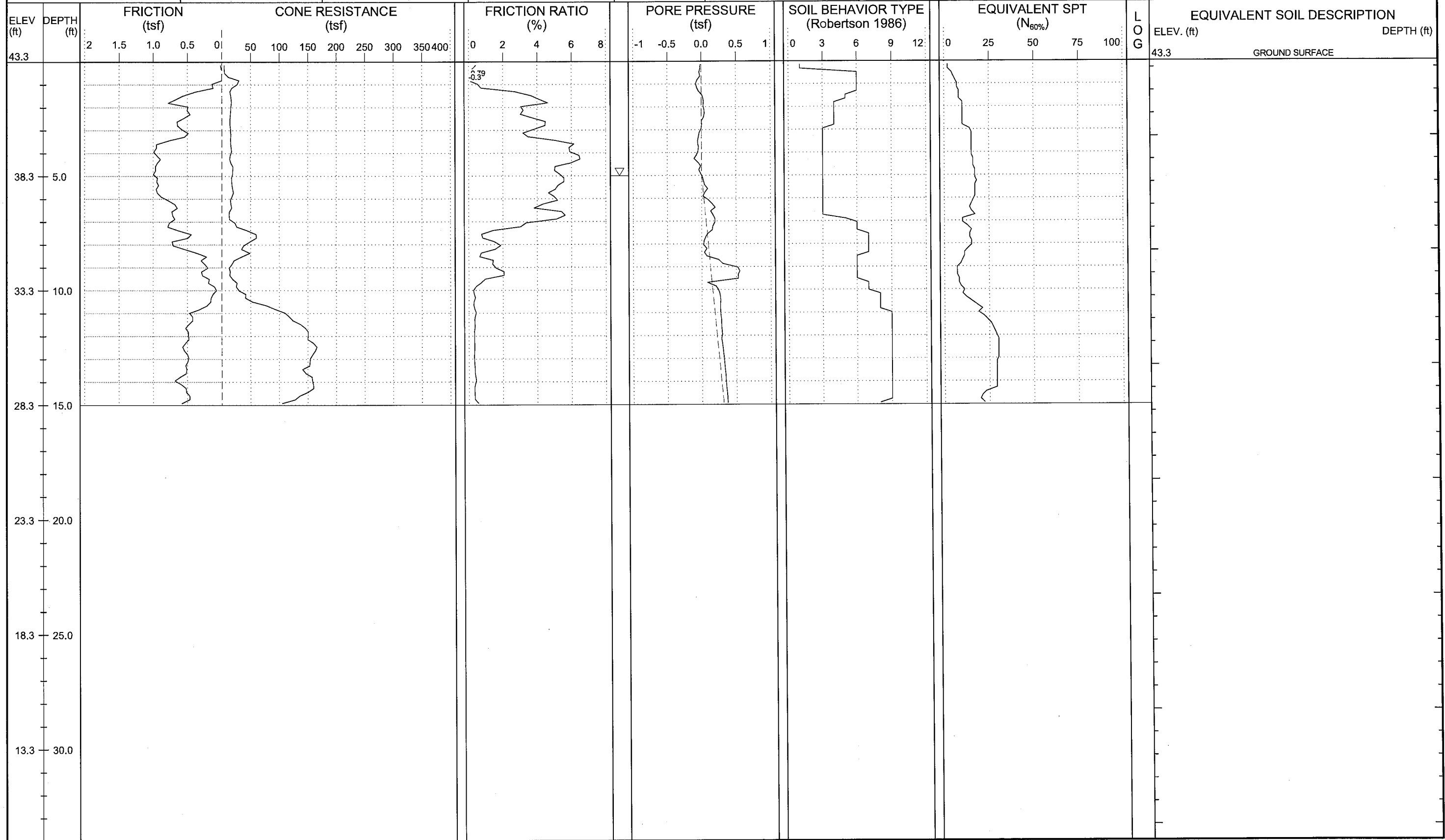


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 22  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONslow

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONslow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-064   | STATION: 64+00       | OFFSET: 1ft RT       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.3 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 412,868    | EASTING: 2,524,260       | START DATE: 09/07/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/07/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |

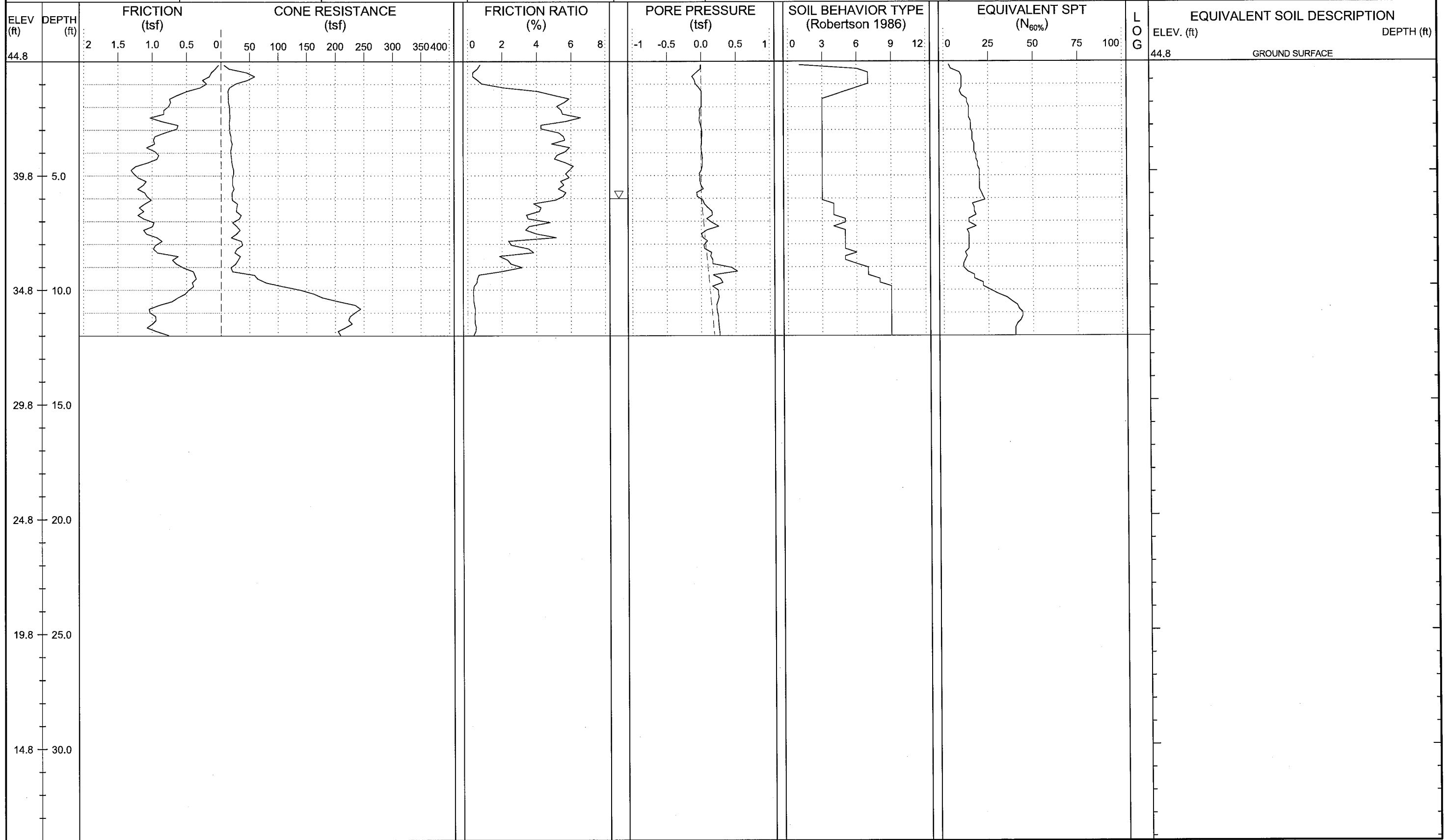




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 23           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-066   | STATION: 66+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. 6.0                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 44.8 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 413,062    | EASTING: 2,524,310       | 24 HR. N/A                       | START DATE: 09/07/12             |
|   |                      |                      |                          | CONC. DATE: 09/07/12             | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



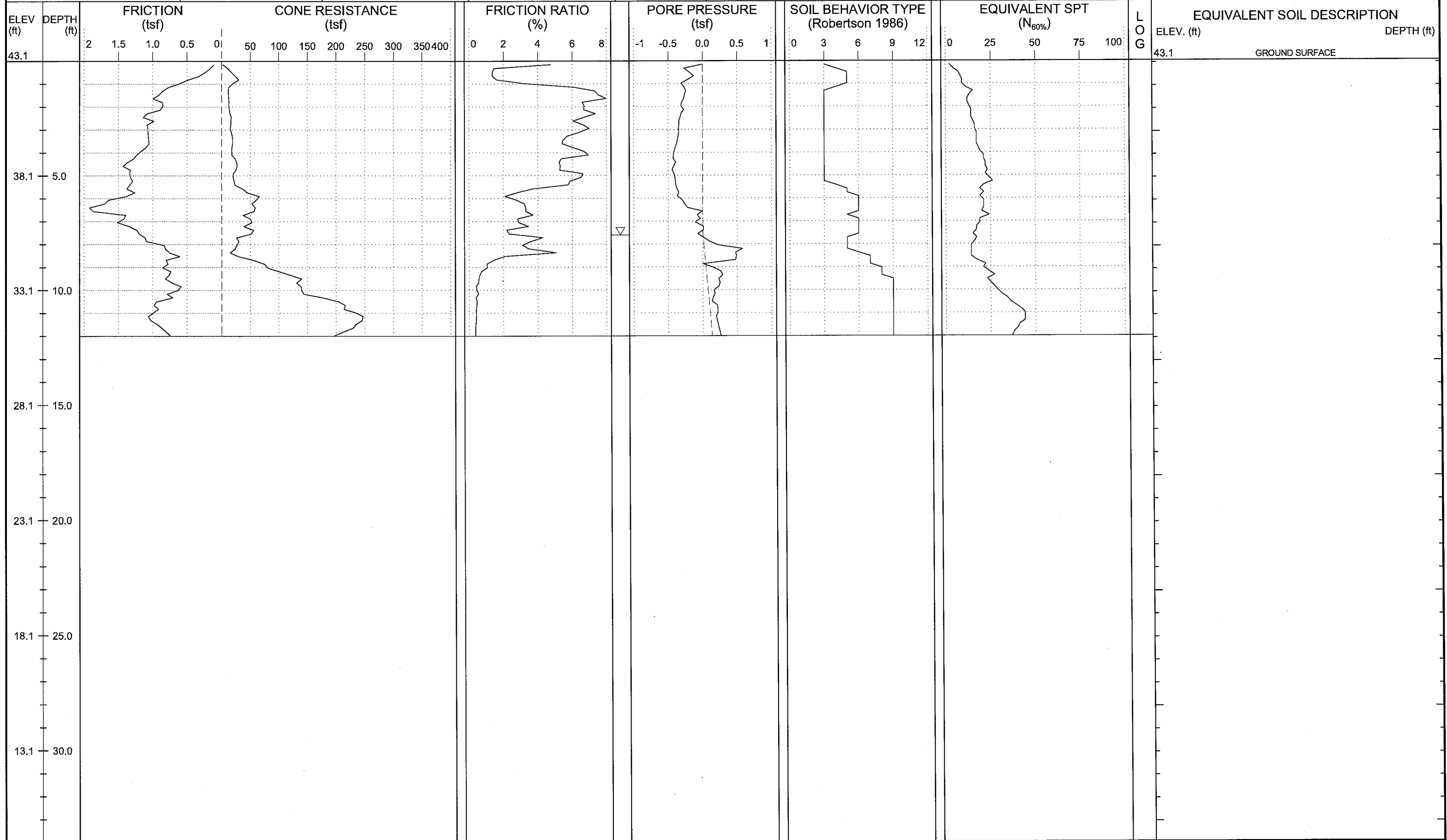


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

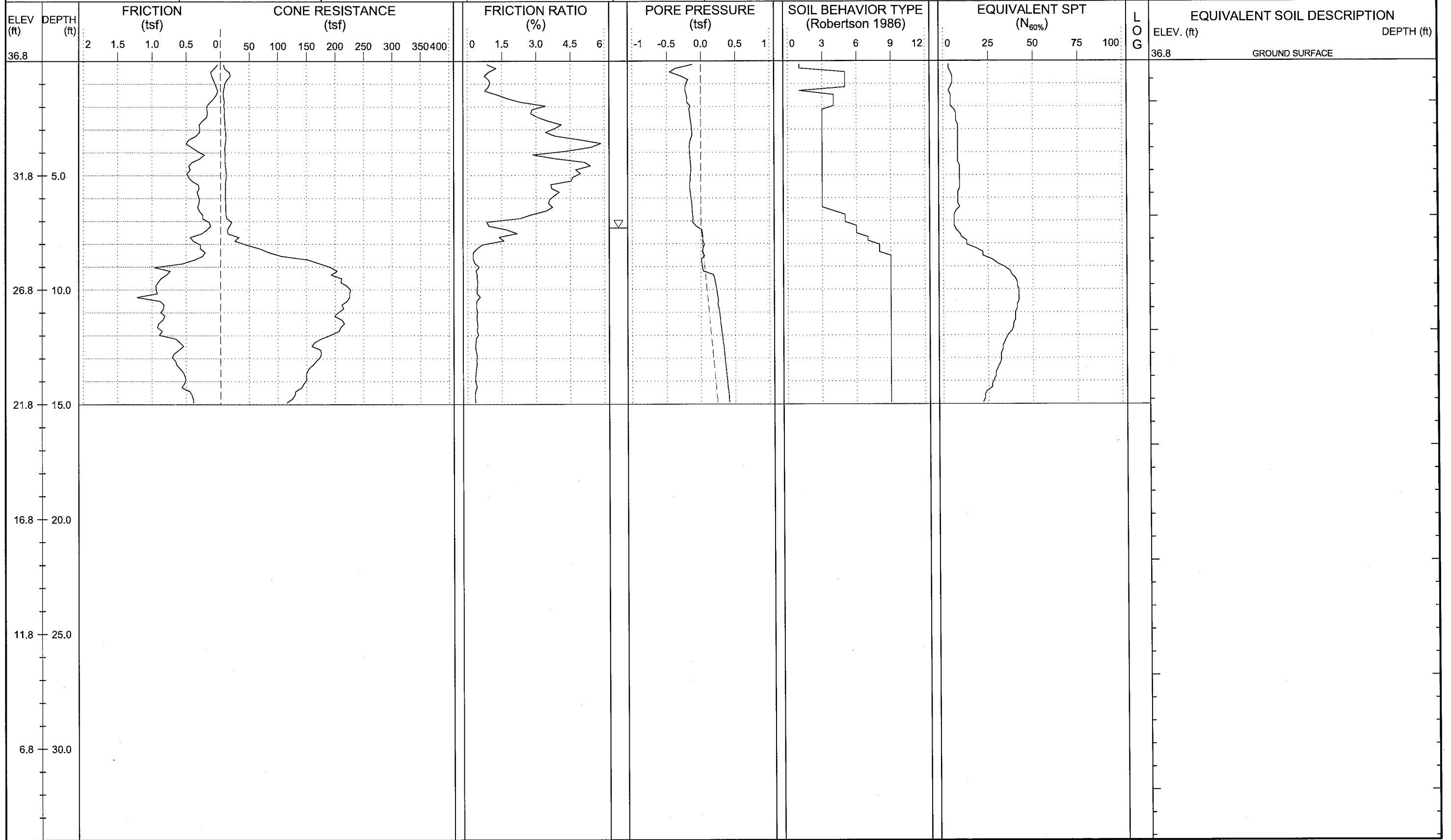
SHEET NO.: 24  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                      |                      |                          |  |                            |                                  |                      |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.6, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-068   | STATION: 68+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 43.1 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 413,257    | EASTING: 2,524,352       | START DATE: 09/07/12                   | COMP. DATE: 09/07/12       | SURFACE WATER DEPTH: N/A         |                      |





|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-072   | STATION: 72+00       | OFFSET: 1ft LT       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 36.8 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 413,651    | EASTING: 2,524,422       | START DATE: 09/11/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/11/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |

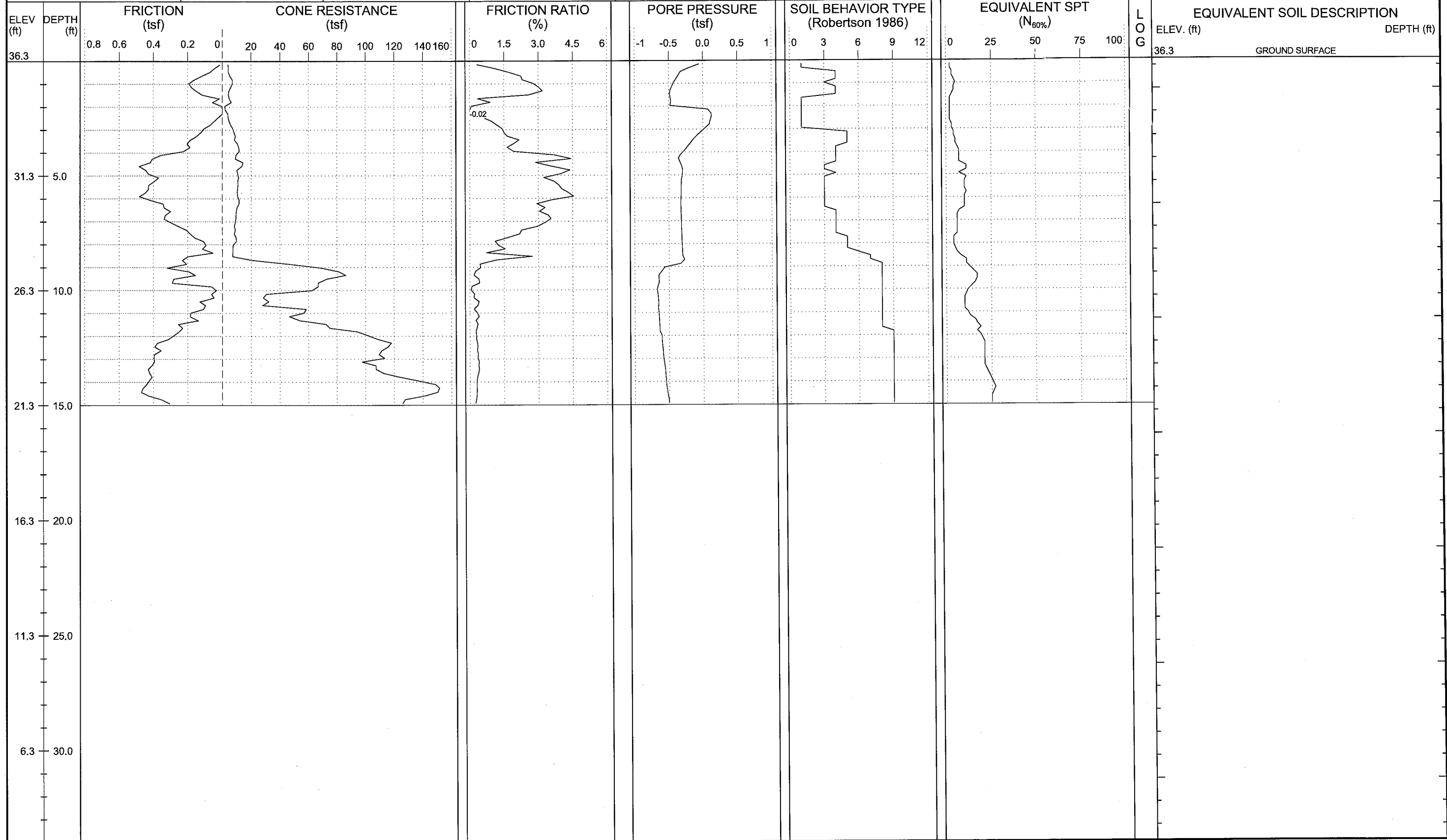




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 26        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLow |

|   |                      |                      |                          |   |                                  |
|---|----------------------|----------------------|--------------------------|---|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track        | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. Dry / 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-074   | STATION: 74+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                    | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 36.3 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 413,848    | EASTING: 2,524,459       | START DATE: 09/11/12                    | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/11/12                    | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                      |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A                |                                  |







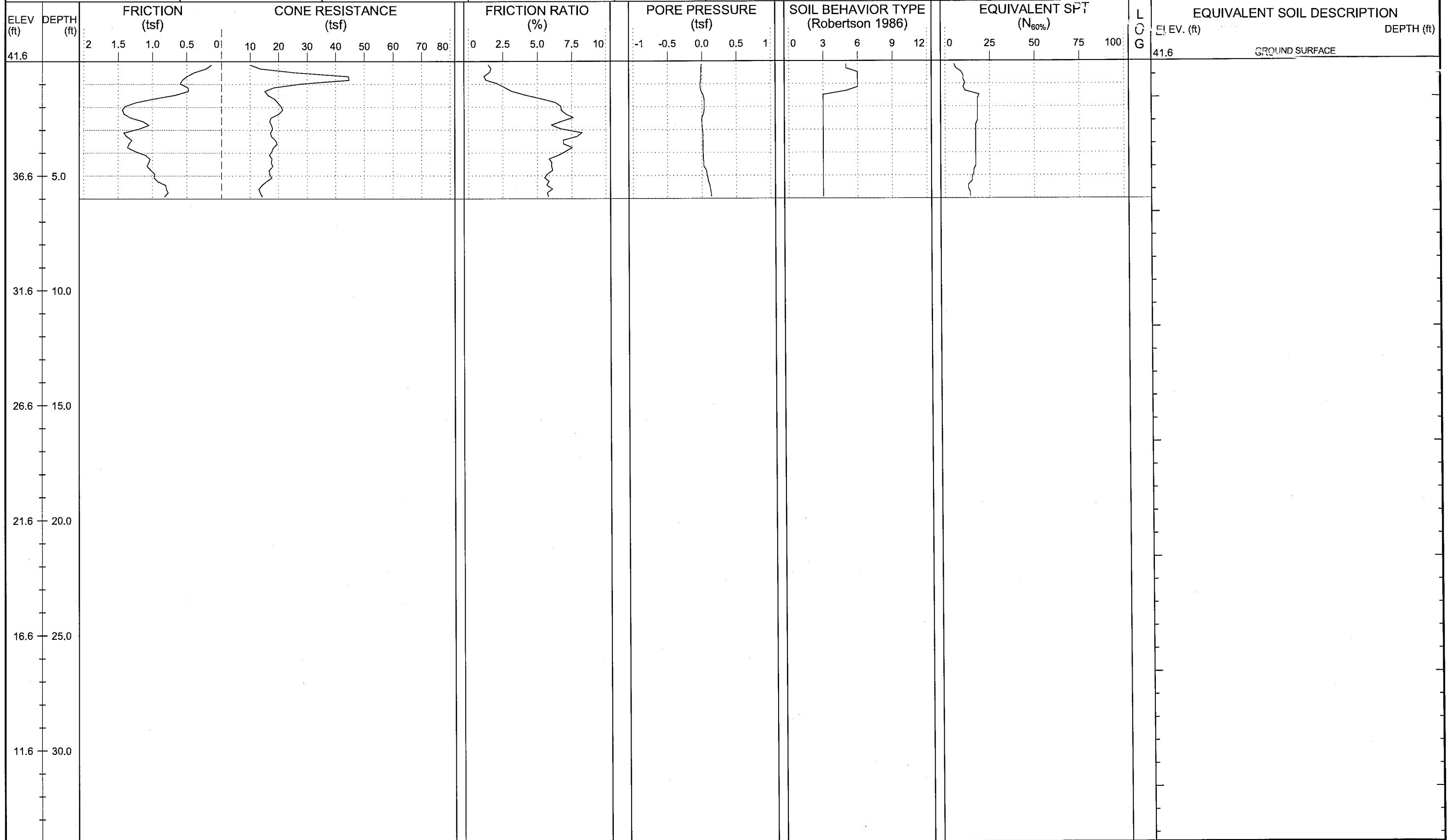


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 28           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-078   | STATION: 78+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 414,241    | EASTING: 2,524,530       | 24 HR. N/A                       | START DATE: 09/06/12             |
|   |                     |                      |                          | COMP. DATE: 09/06/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

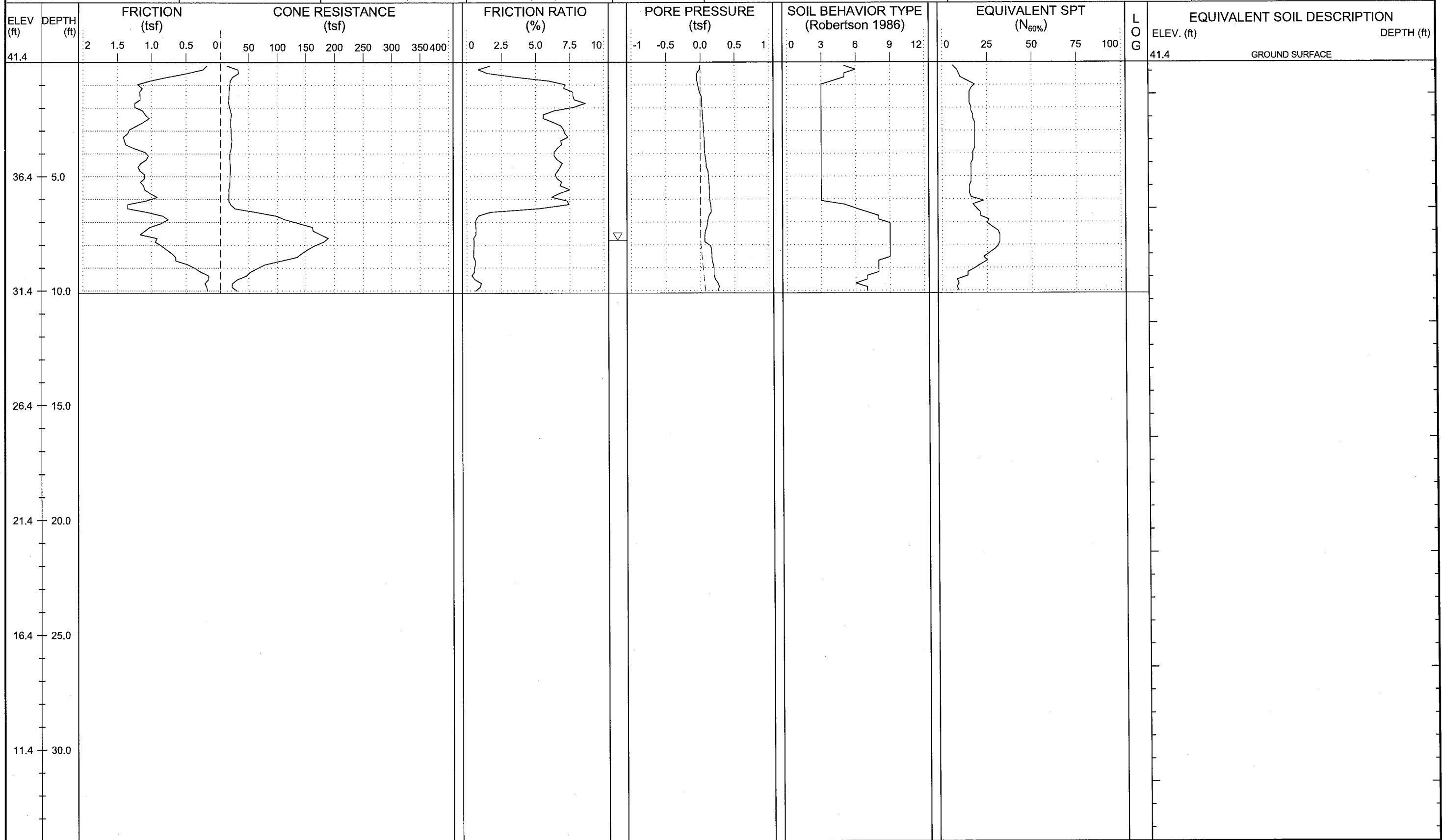




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 29           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                            |                                  |                       |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|-----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.8, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison |
| BORING NO.: L-082   | STATION: 82+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSG0867           | TECHNICIAN: M.A.D.               |                       |
| COLLAR ELEV.: 41.4 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 414,635    | EASTING: 2,524,601       | START DATE: 09/06/12                   | COMP. DATE: 09/06/12       | SURFACE WATER DEPTH: N/A         |                       |

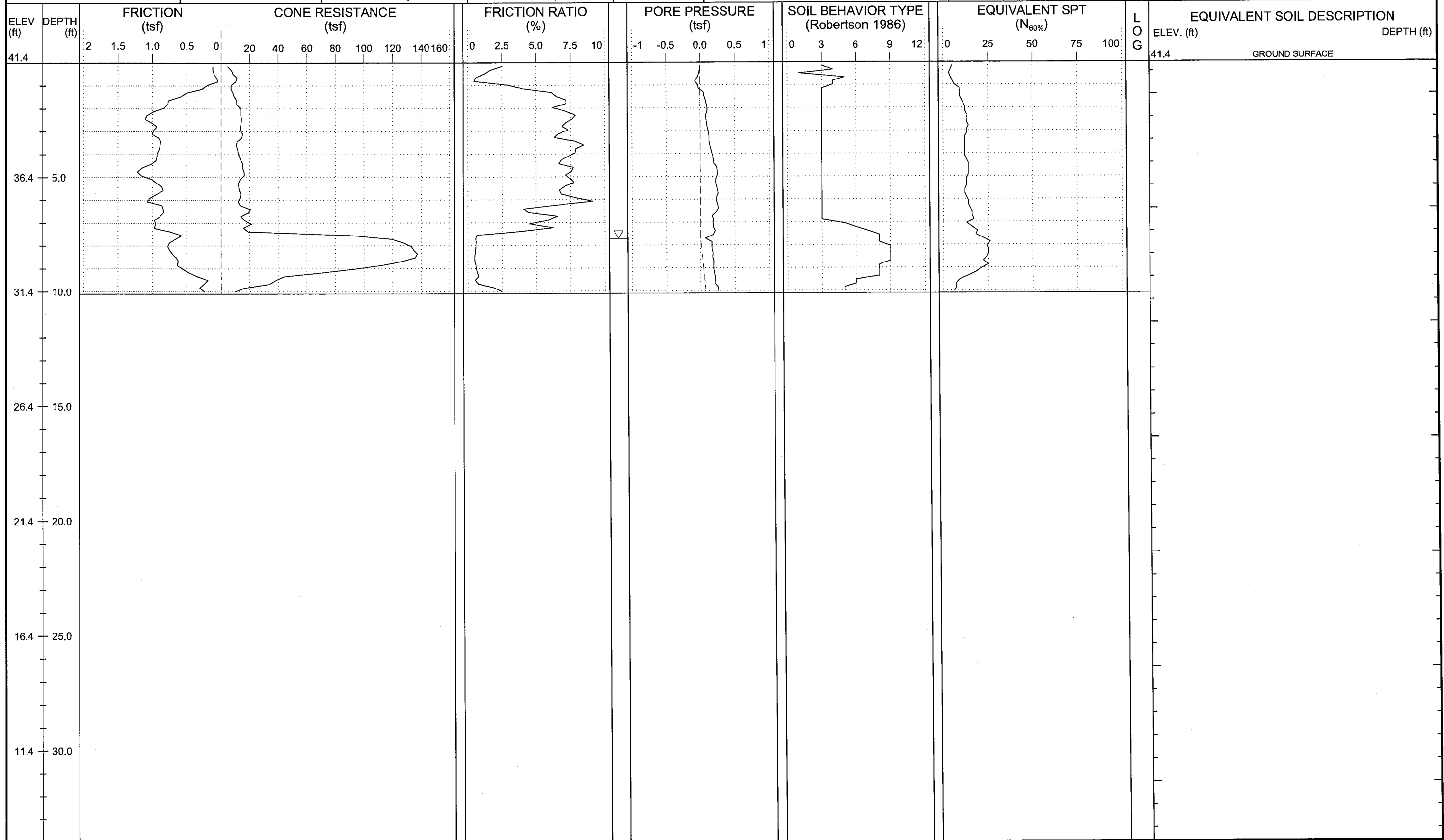




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 30           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.7, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-084   | STATION: 84+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.4 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 414,832    | EASTING: 2,524,636       | START DATE: 09/06/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Cory Robison            |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |
|   |                      |                      |                          |  | COMP. DATE: 09/06/12             |



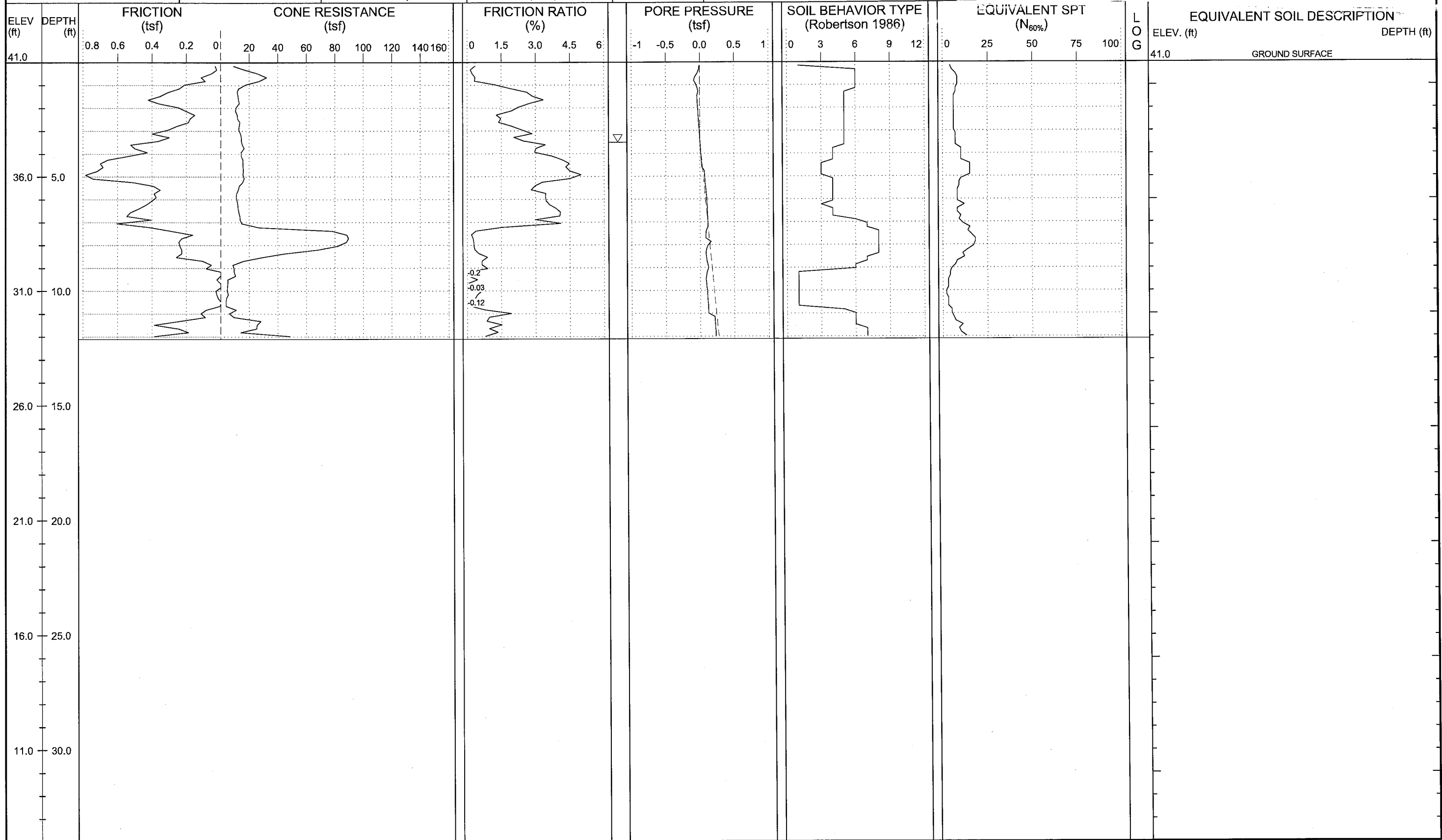


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 31           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 3.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-086   | STATION: 86+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.0 ft   | TOTAL DEPTH: 12.1 ft | NORTHING: 415,029    | EASTING: 2,524,672       | START DATE: 09/05/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



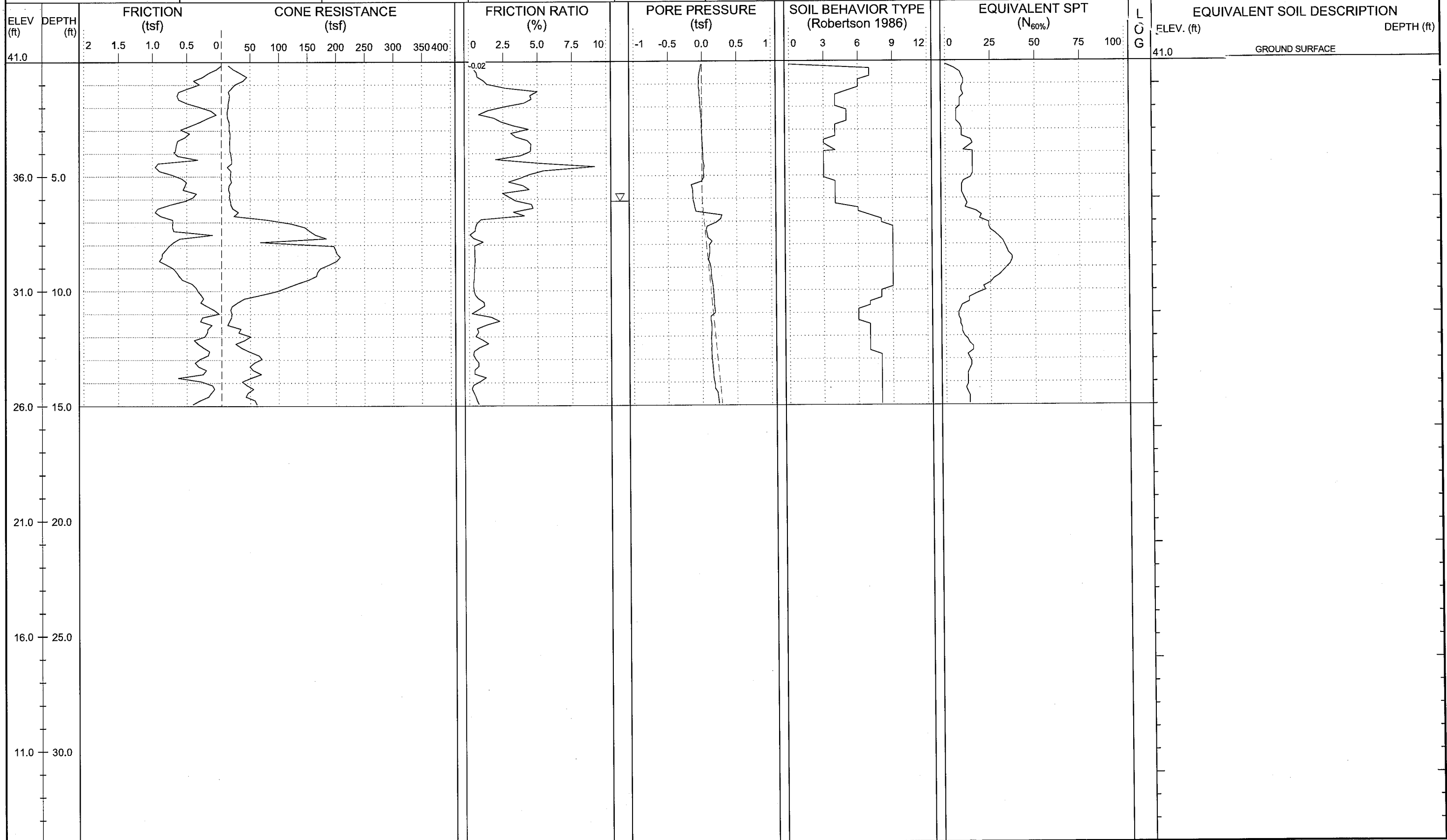


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 32  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-088   | STATION: 88+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.0 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 415,225    | EASTING: 2,524,707       | START DATE: 09/05/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |





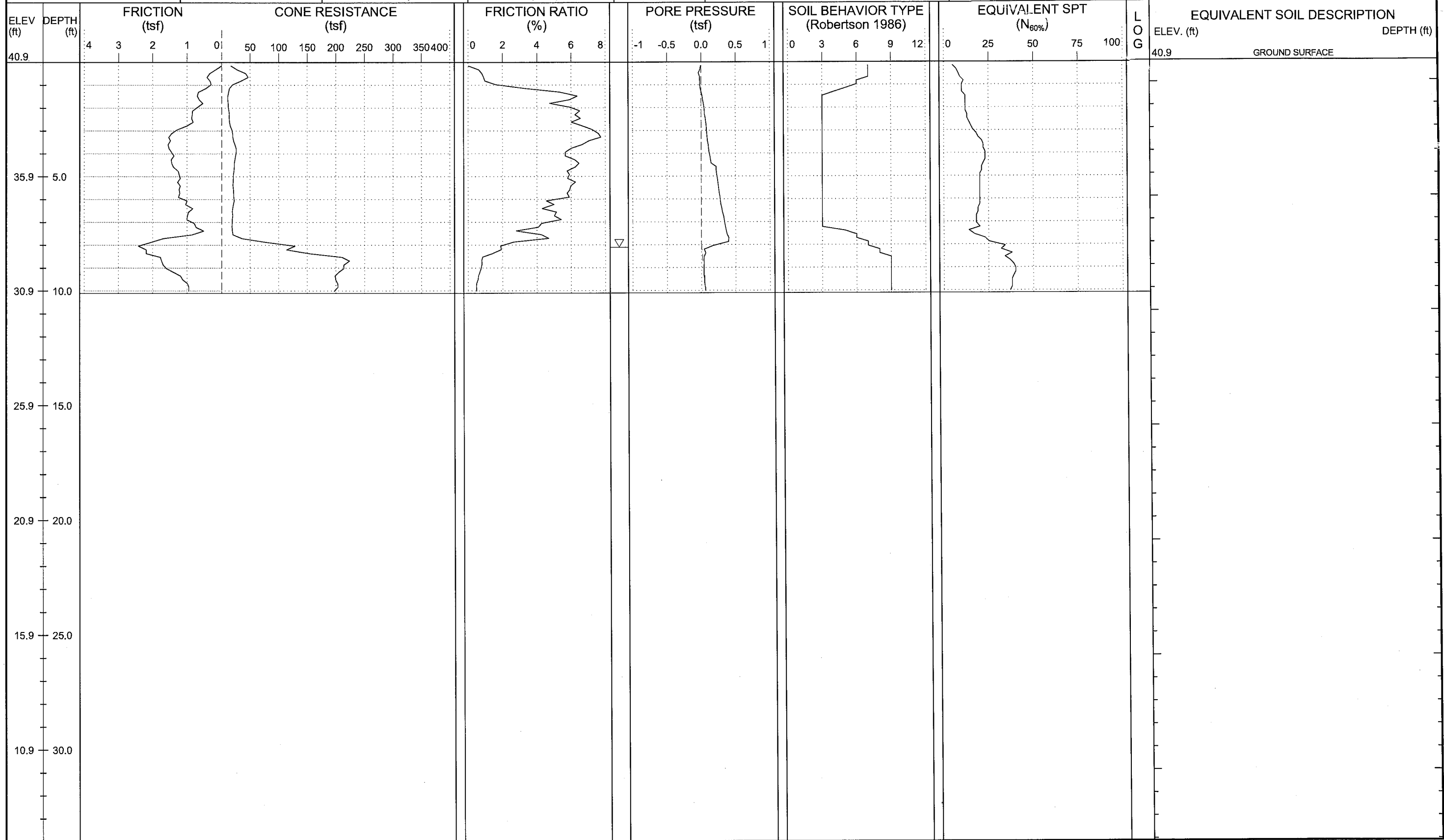


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 34  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONslow

|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONslow | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 8.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-094   | STATION: 94+00       | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 40.9 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 415,816    | EASTING: 2,524,814                     | START DATE: 09/06/12             | COMP. DATE: 09/06/12             |
|   |                      |                      |  |                                  | DRILLER: Cory Robison            |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



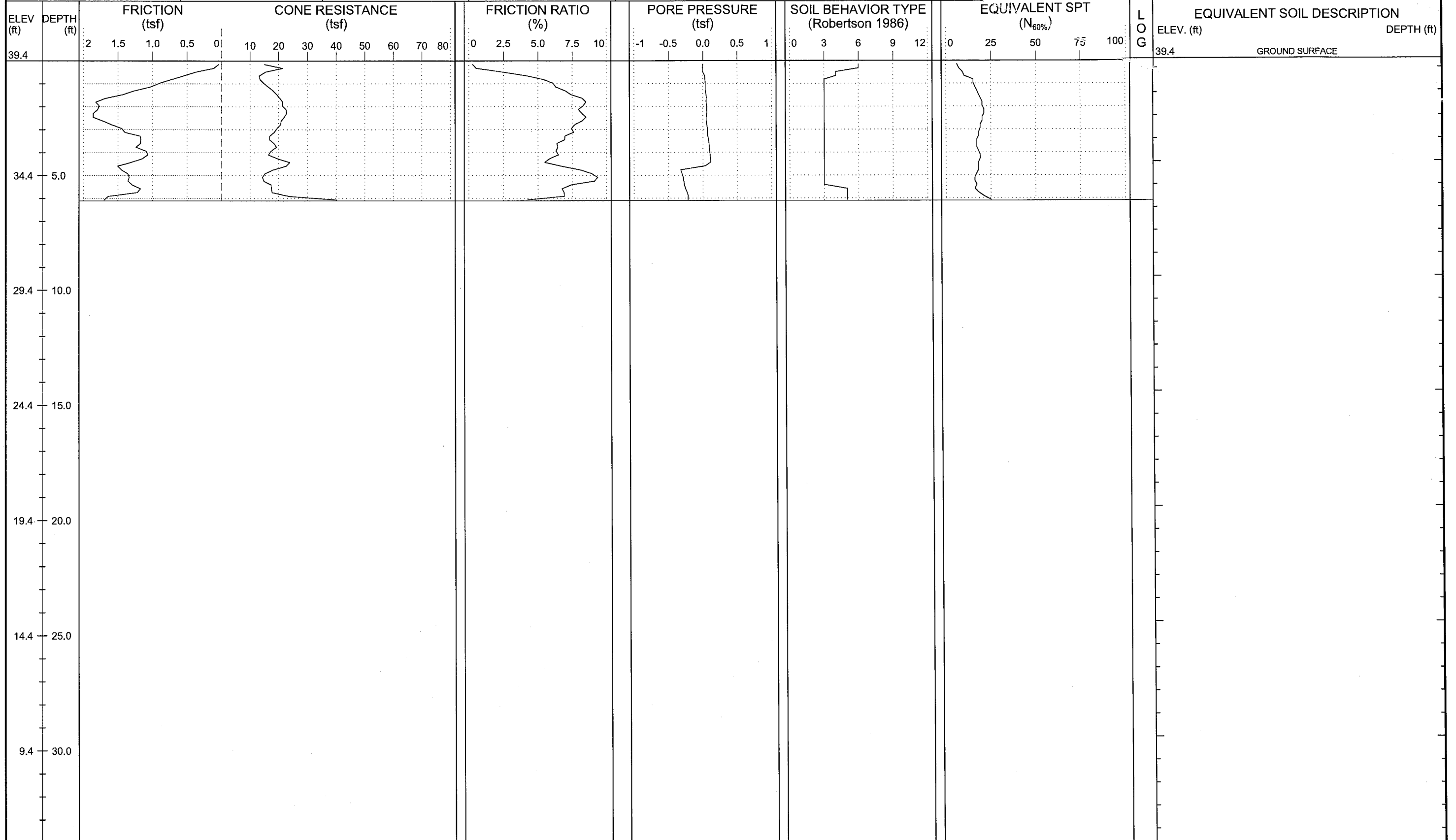


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 35  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-096   | STATION: 96+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 39.4 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 416,013    | EASTING: 2,524,849       | 24 HR. N/A                       | START DATE: 09/06/12             |
|   |                     |                      |                          | CONC. DATE: 09/06/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |





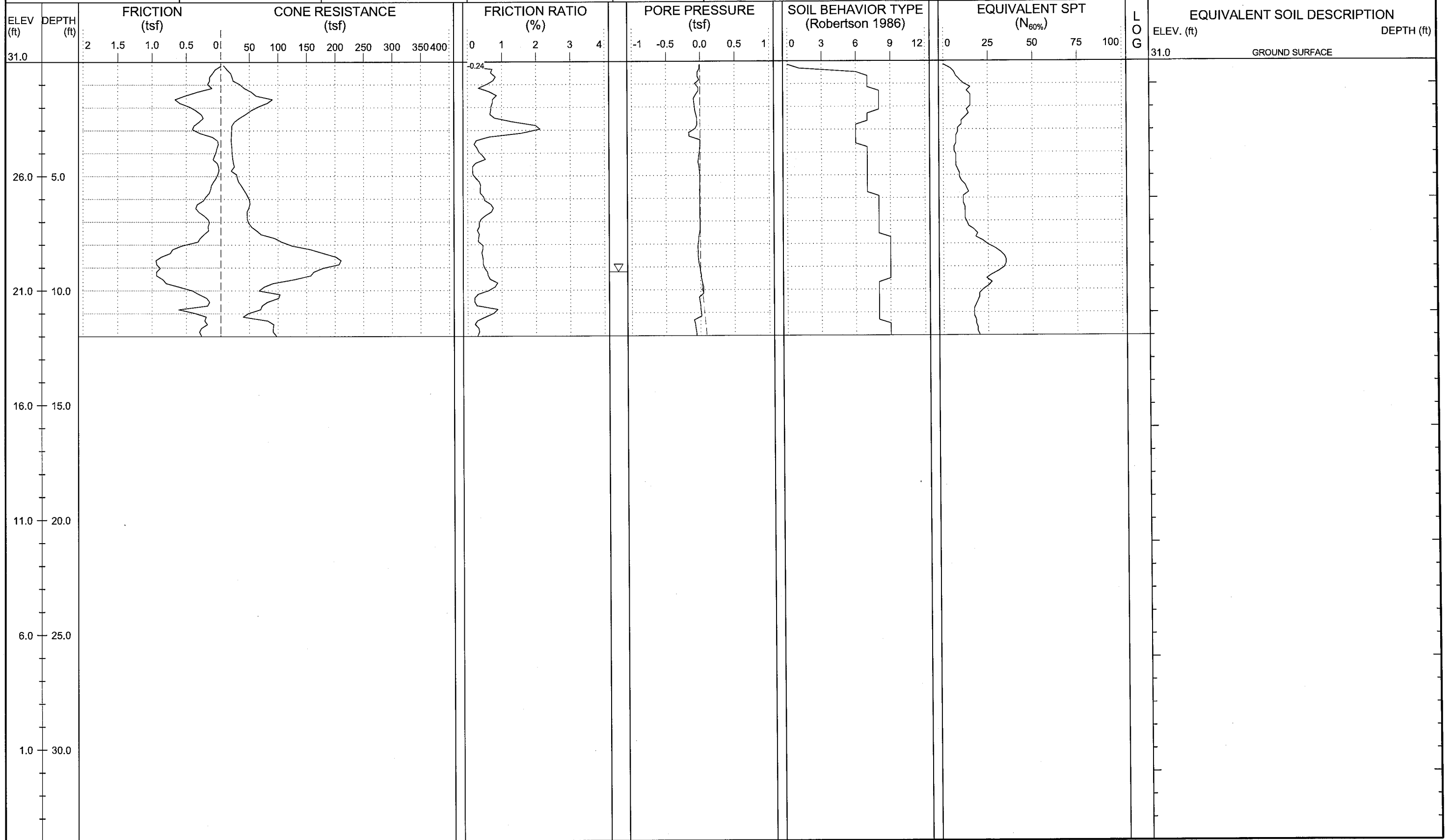


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 36  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |                                  |                            |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | DRILL METHOD: CPT / DPT          | DRILLER: Ron Stewart       |
| BORING NO.: L-098   | STATION: 98+00       | OFFSET: 50ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | TECHNICIAN: M.A.D.         |
| COLLAR ELEV.: 31.0 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 416,218    | EASTING: 2,524,835       | START DATE: 09/05/12             | SURFACE WATER DEPTH: N/A   |

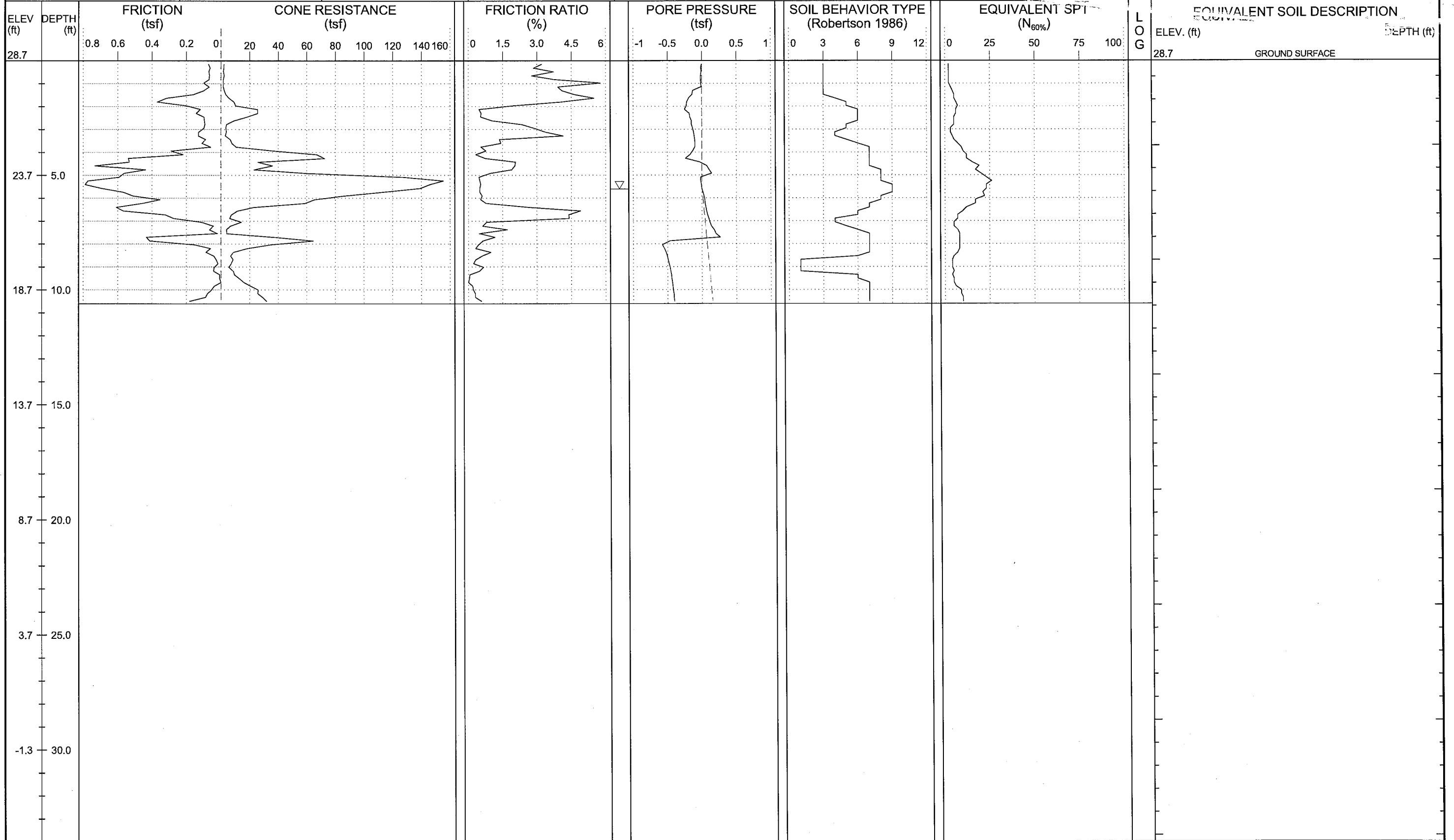




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 37        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.6, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-102   | STATION: 102+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 28.7 ft   | TOTAL DEPTH: 10.6 ft | NORTHING: 416,602    | EASTING: 2,524,964       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | COMP. DATE: 09/04/12             |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



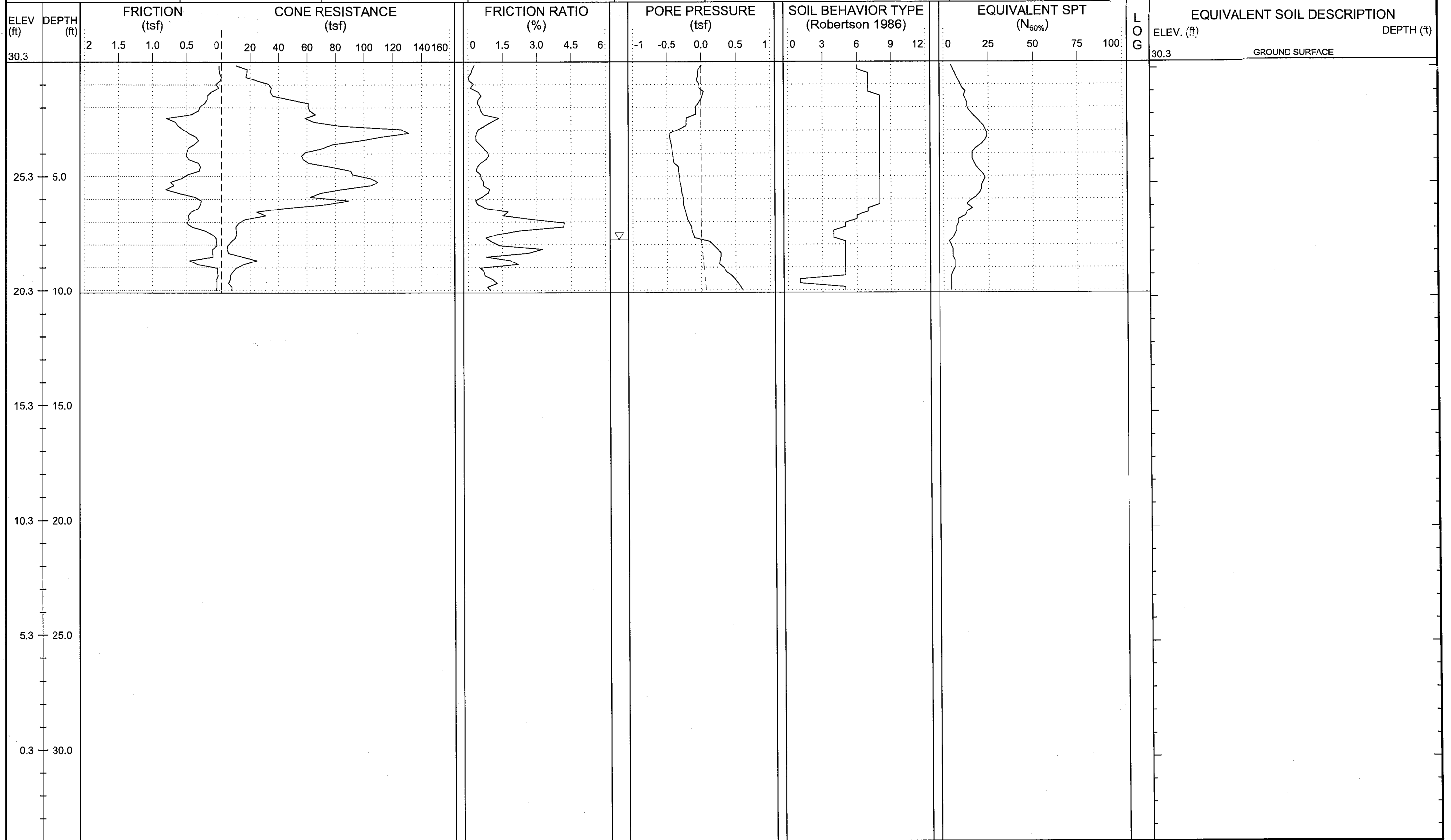


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 38           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-104   | STATION: 104+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 30.3 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 416,796    | EASTING: 2,525,010       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 09/04/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



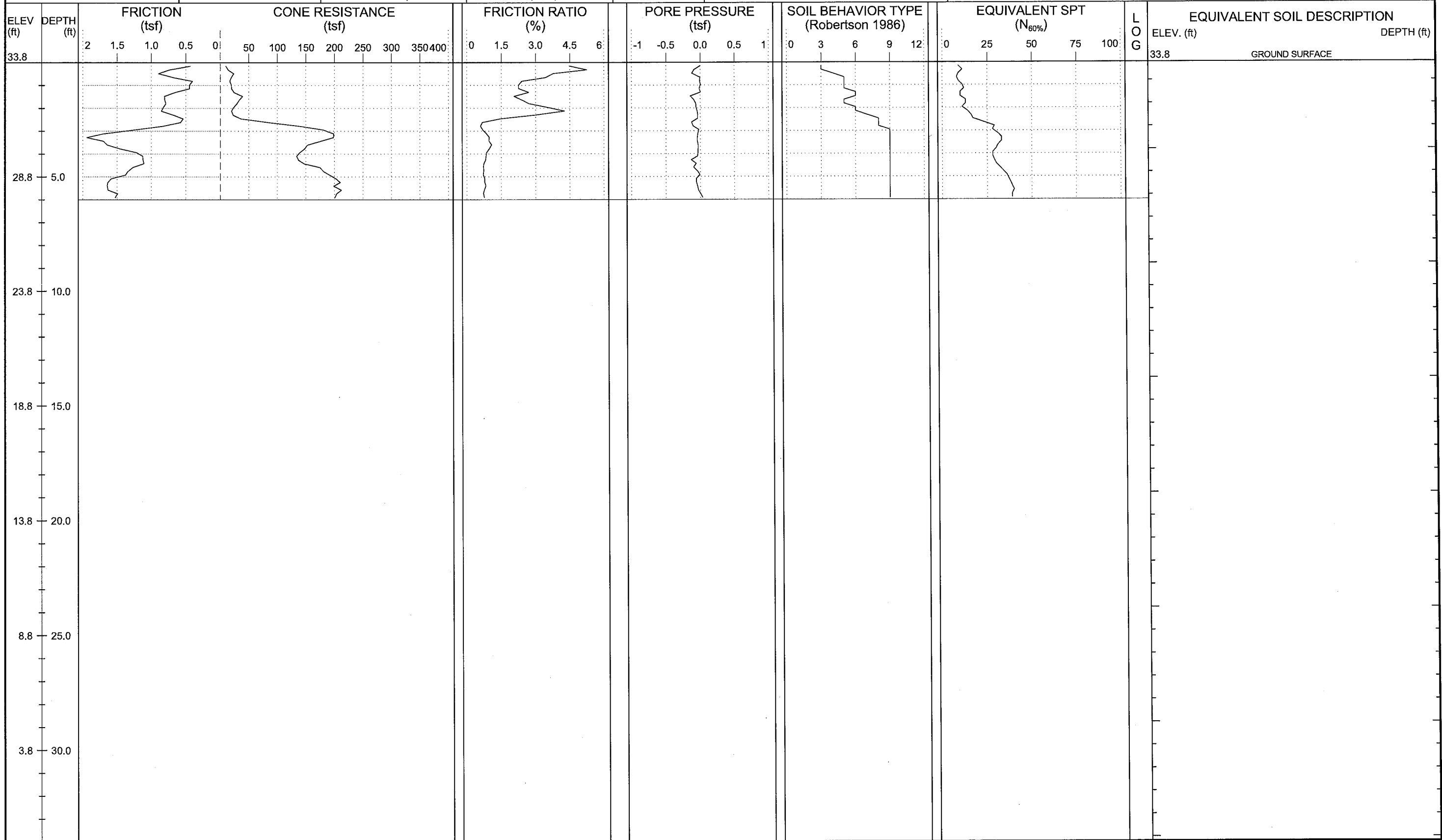


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 39  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-106   | STATION: 106+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 416,990    | EASTING: 2,525,059       | START DATE: 08/30/12             | CONE ID: DSG0867                 |
|   |                     |                      |                          | 24 HR. N/A                       | COMP. DATE: 09/04/12             |
|   |                     |                      |                          | DRILLER: Ron Stewart             |                                  |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



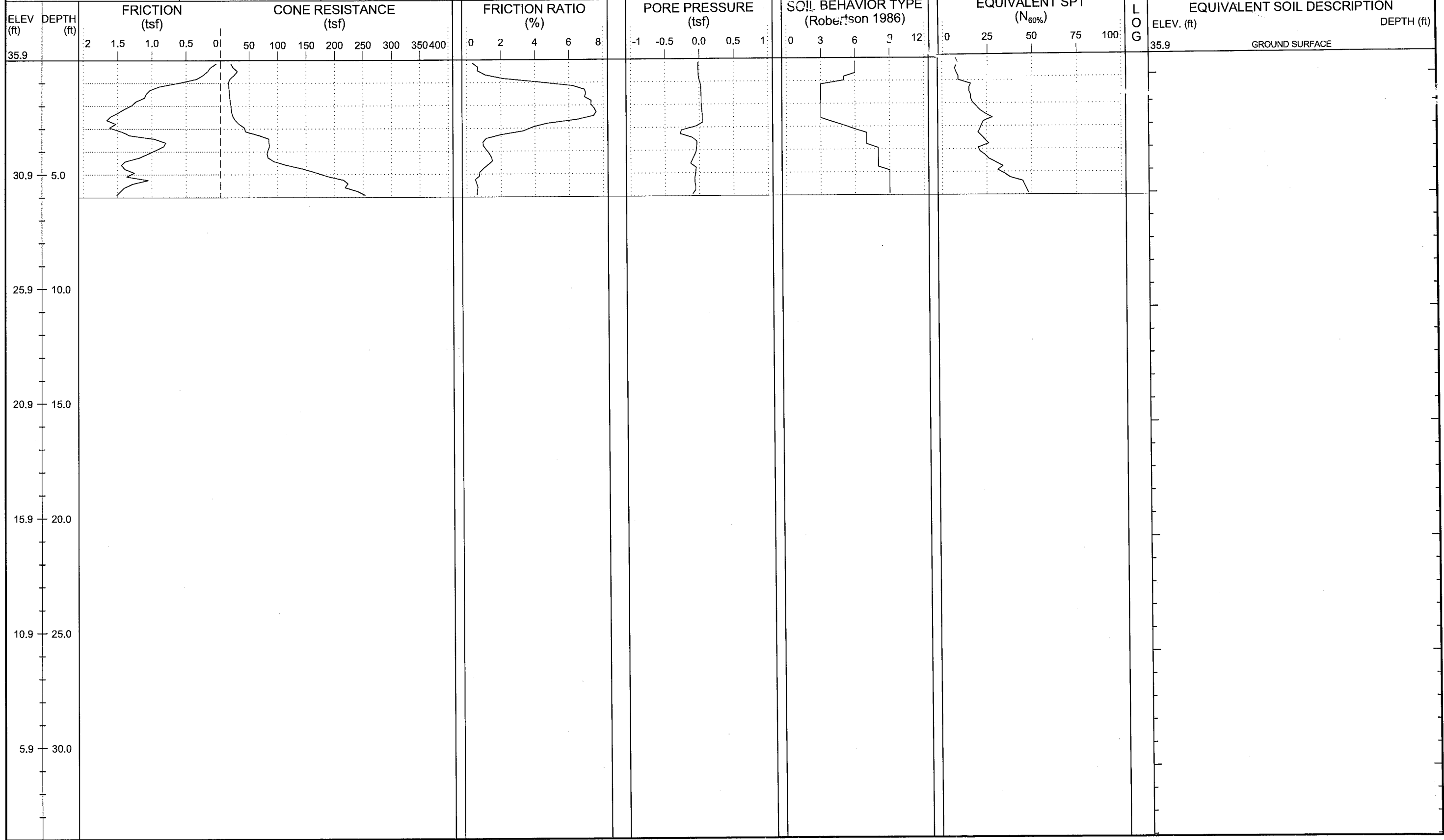


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 40  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                     |                      |                          |                                  |                            |                                  |                          |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------|----------------------------------|--------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton |                                  |                          |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft)                  | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison    |
| BORING NO.: L-108   | STATION: 108+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. Dry                        | ROD TYPE: Pre-strung       | CONE ID: DSG0867                 | TECHNICIAN: M.A.D.       |
| COLLAR ELEV.: 35.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,183    | EASTING: 2,525,113       | 24 HR. N/A                       | START DATE: 08/30/12       | COMP. DATE: 08/30/12             | SURFACE WATER DEPTH: N/A |



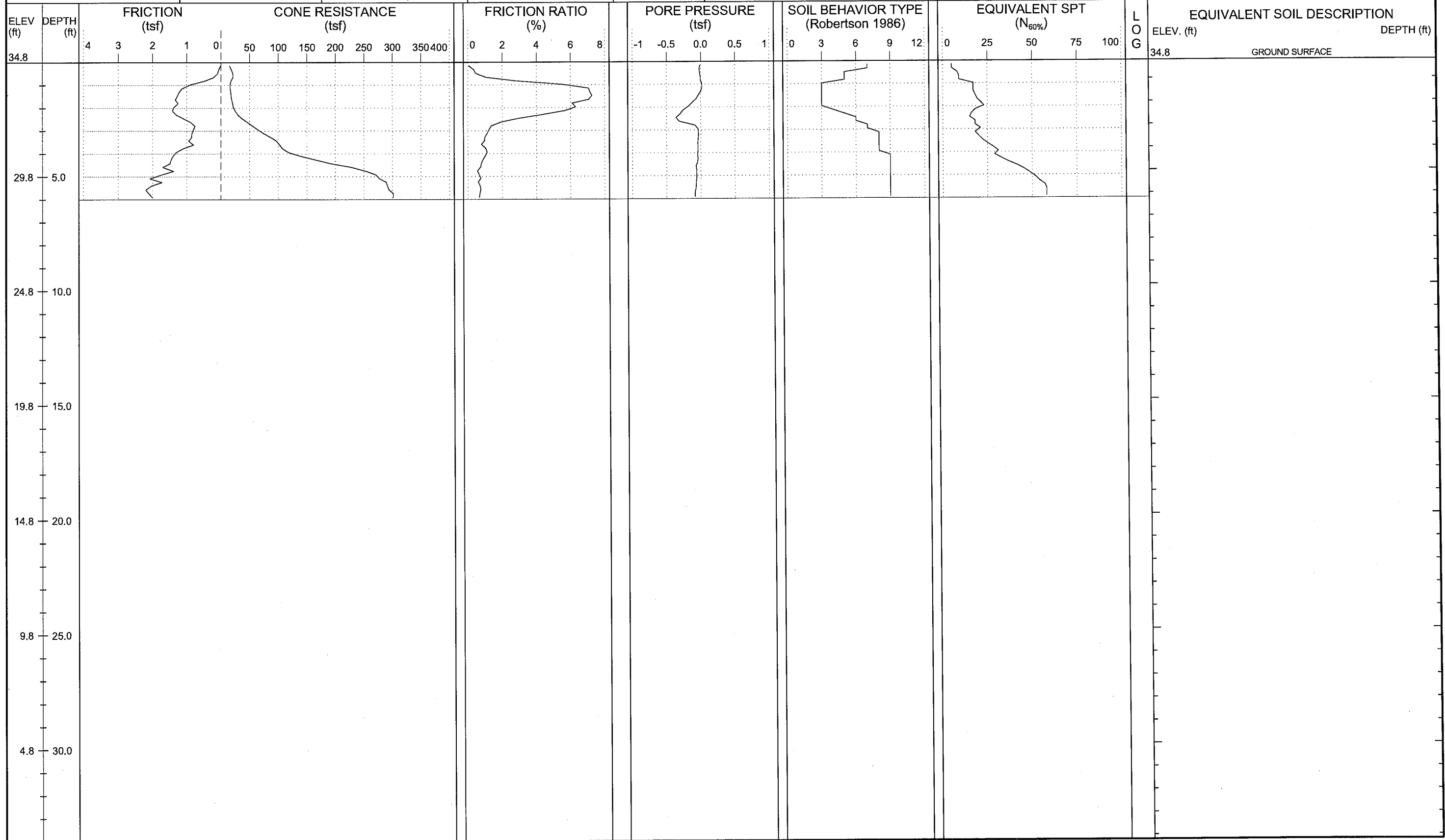


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 41  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONslow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONslow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-110   | STATION: 110+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 34.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,374    | EASTING: 2,525,170       | START DATE: 08/30/12             | CONE ID: DSG0867                 |
|   |                     |                      | 24 HR. N/A               | COMP. DATE: 08/30/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



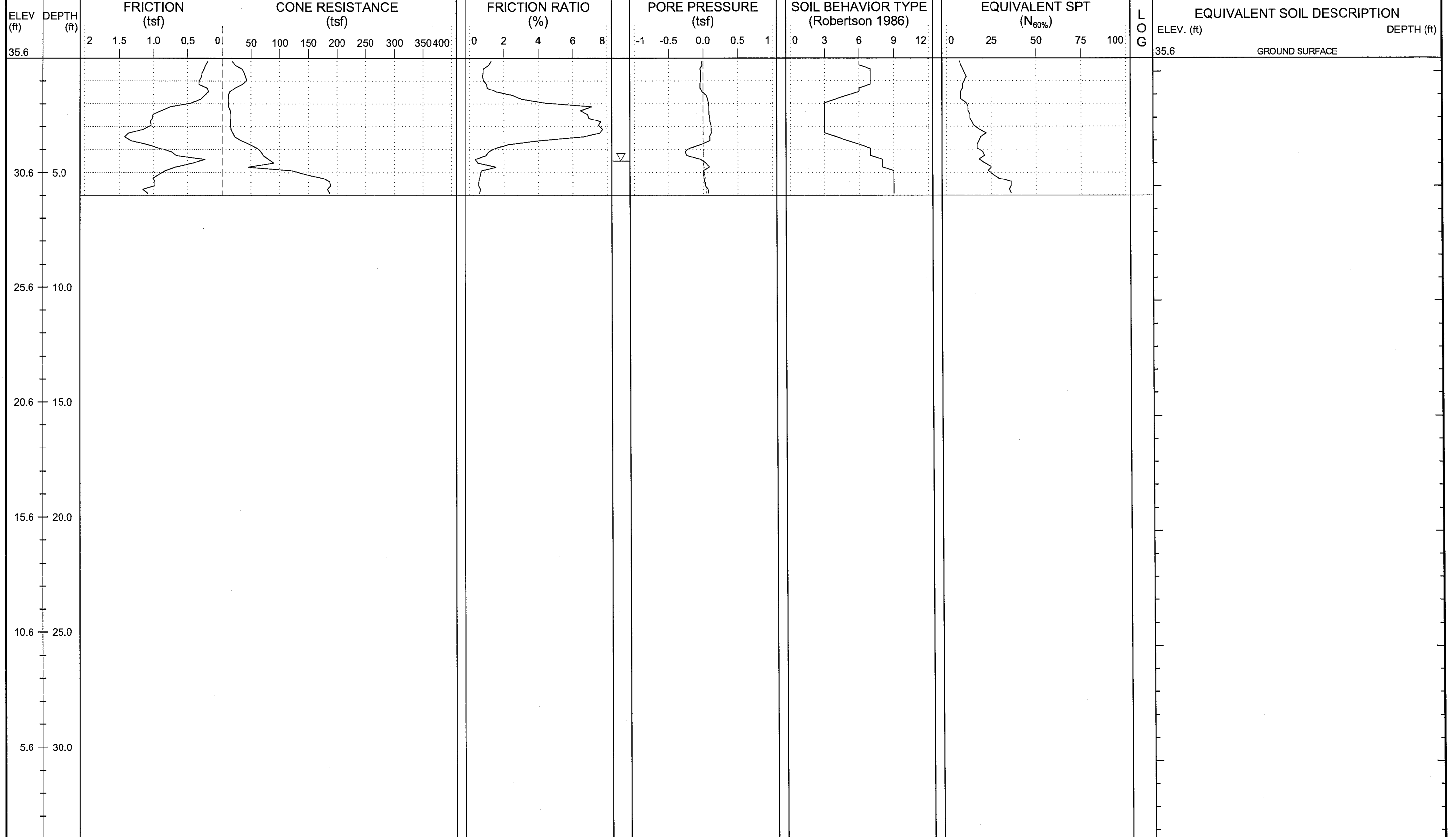


**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 42           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 4.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-112   | STATION: 112+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 35.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,565    | EASTING: 2,525,231                     | START DATE: 08/30/12             | COMP. DATE: 08/30/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



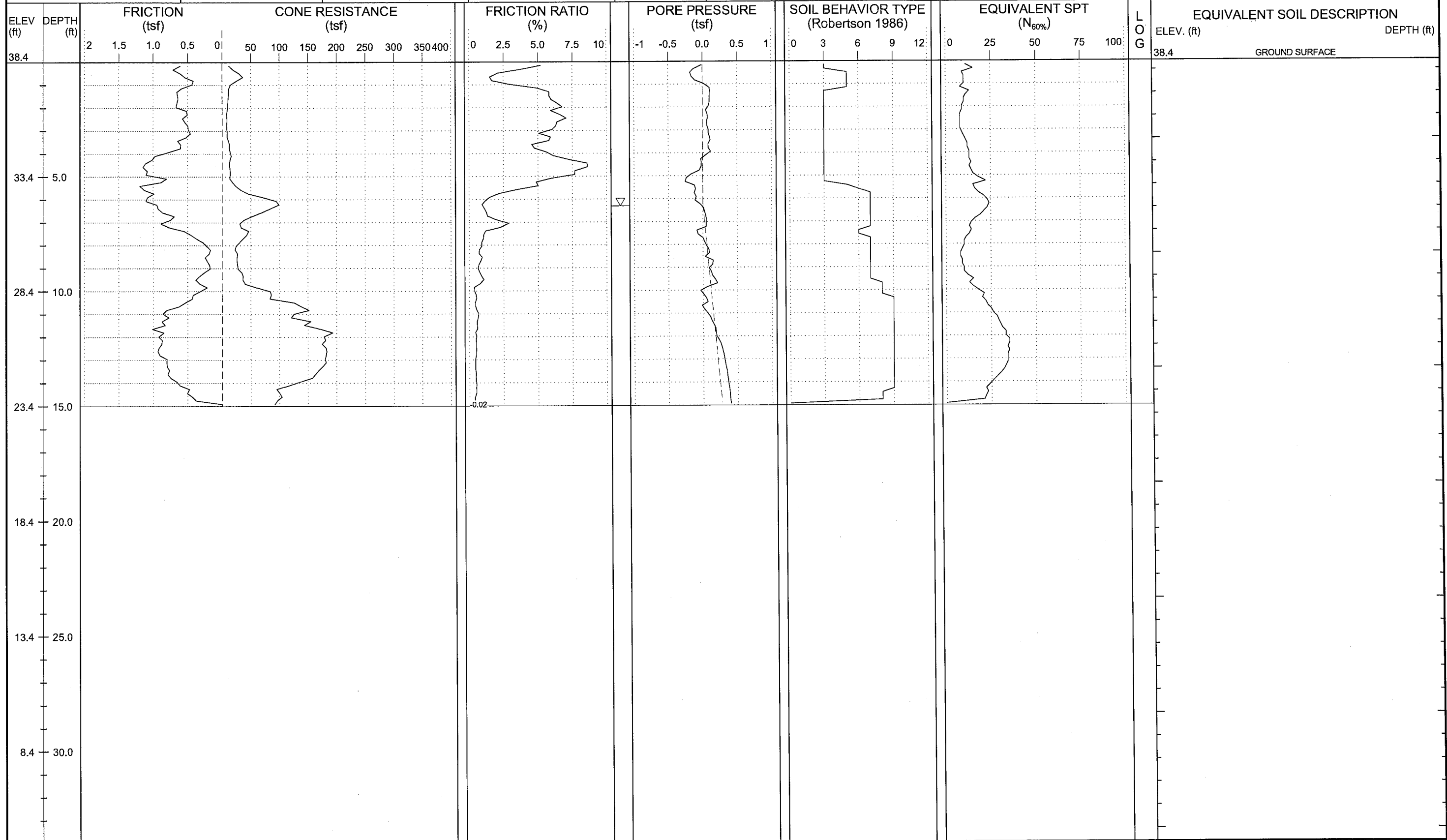


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 43           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

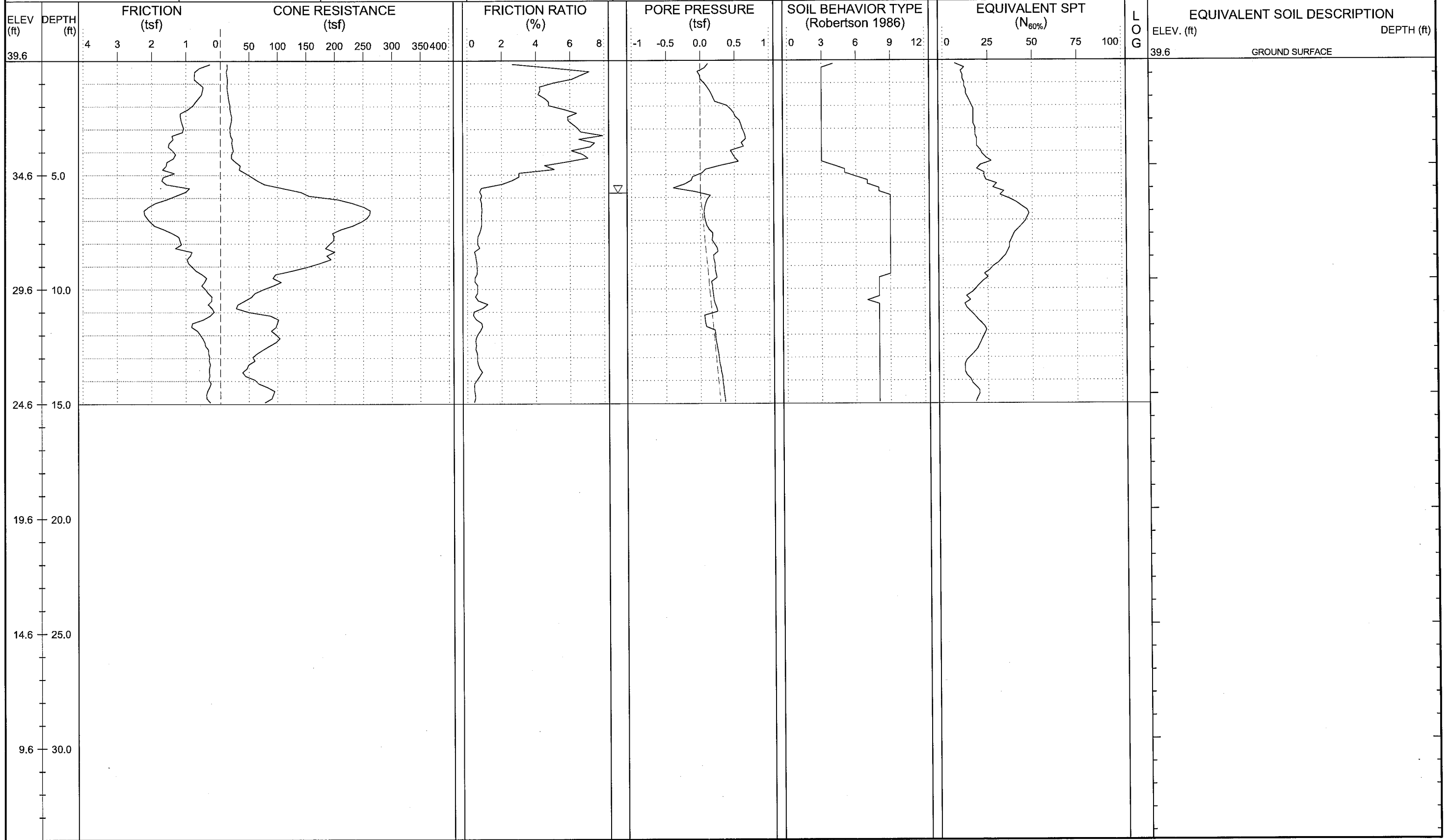
|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-114   | STATION: 114+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 38.4 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 417,754    | EASTING: 2,525,297       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/30/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |







|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-116   | STATION: 115+85      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 39.6 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 417,927    | EASTING: 2,525,360       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Cory Robison            |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



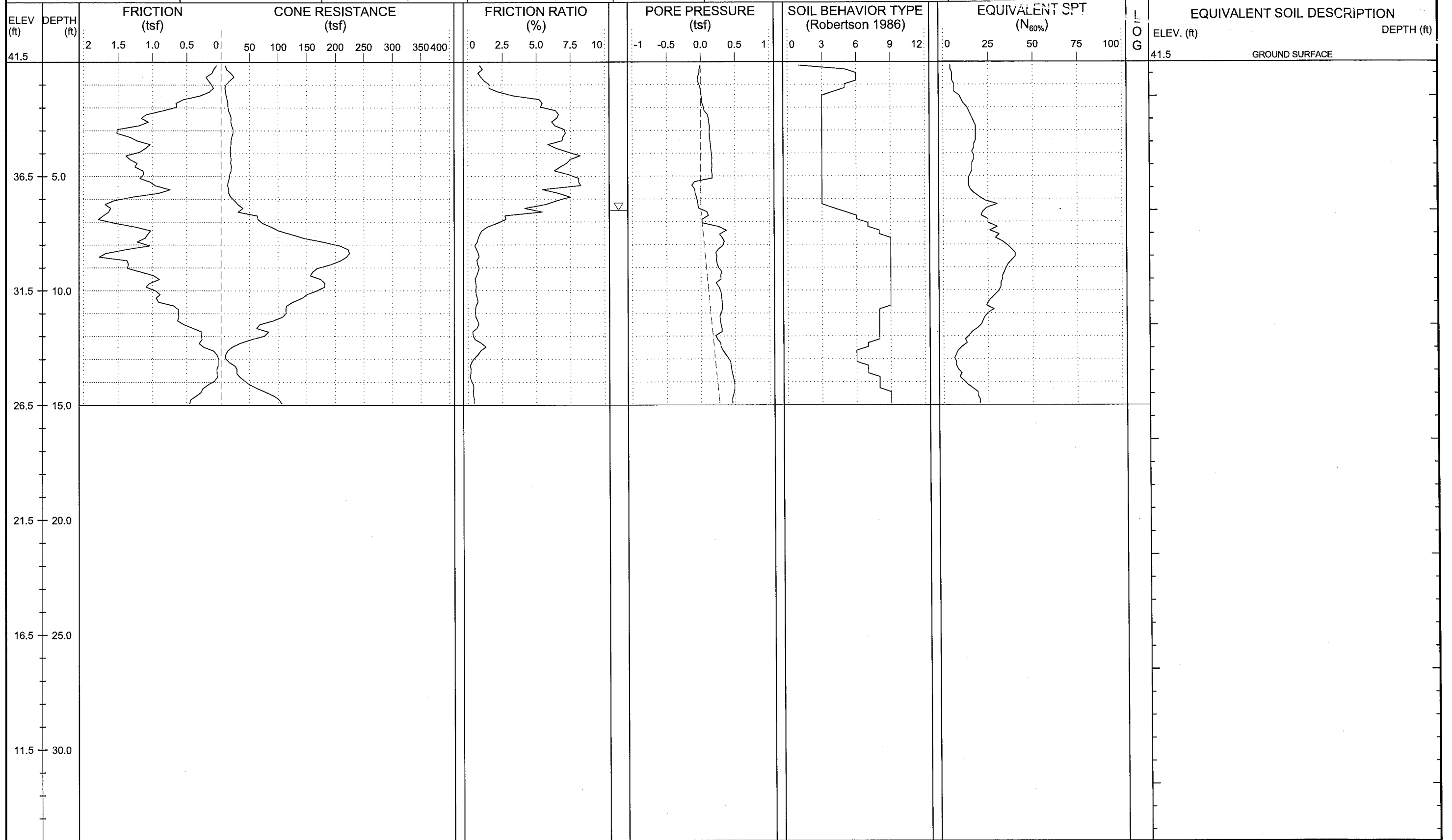


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 45  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-118   | STATION: 118+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.5 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 418,128    | EASTING: 2,525,438       | START DATE: 08/29/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/29/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



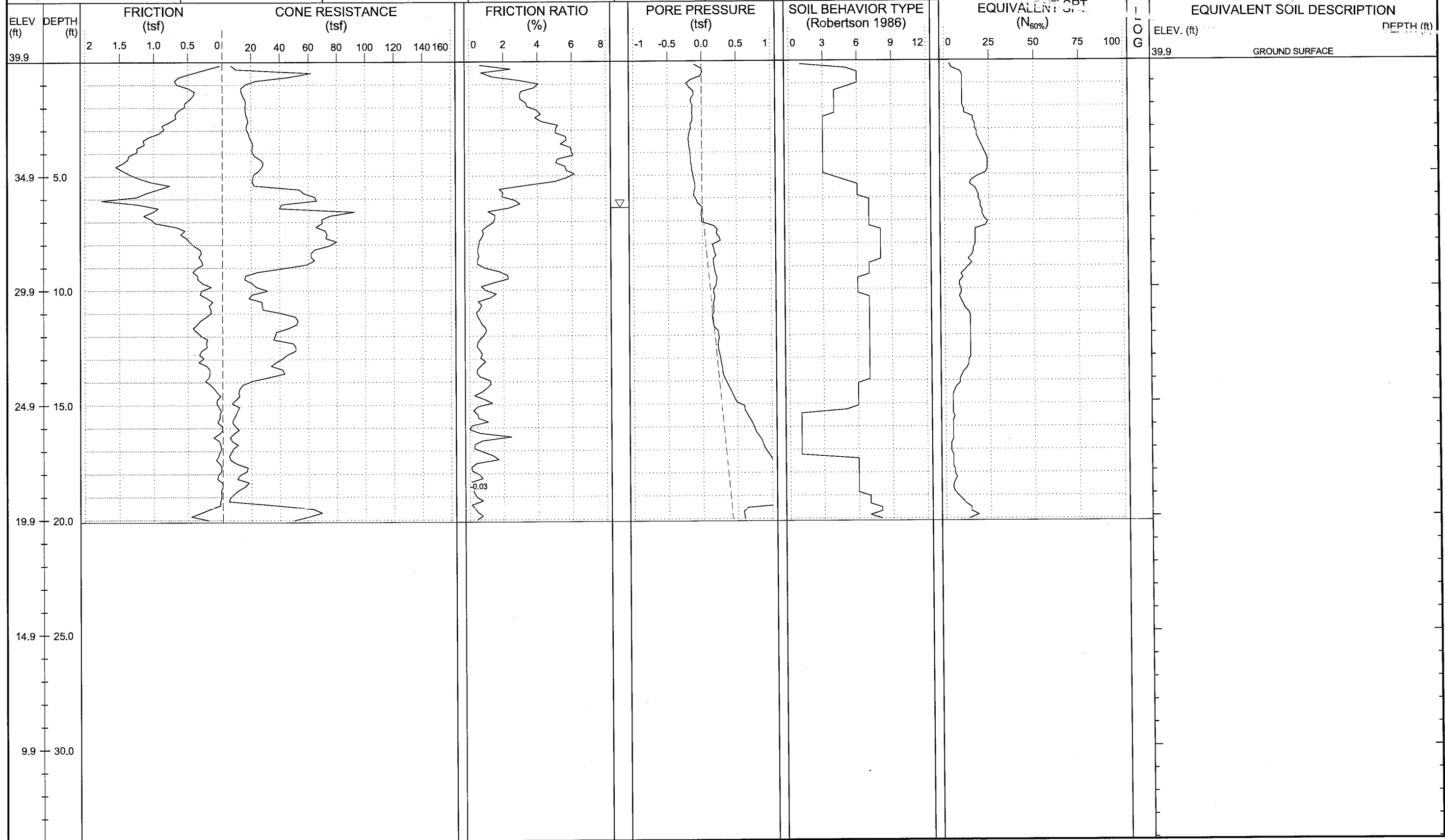


# NCDOT GEOTECHNICAL ENGINEERING UNIT

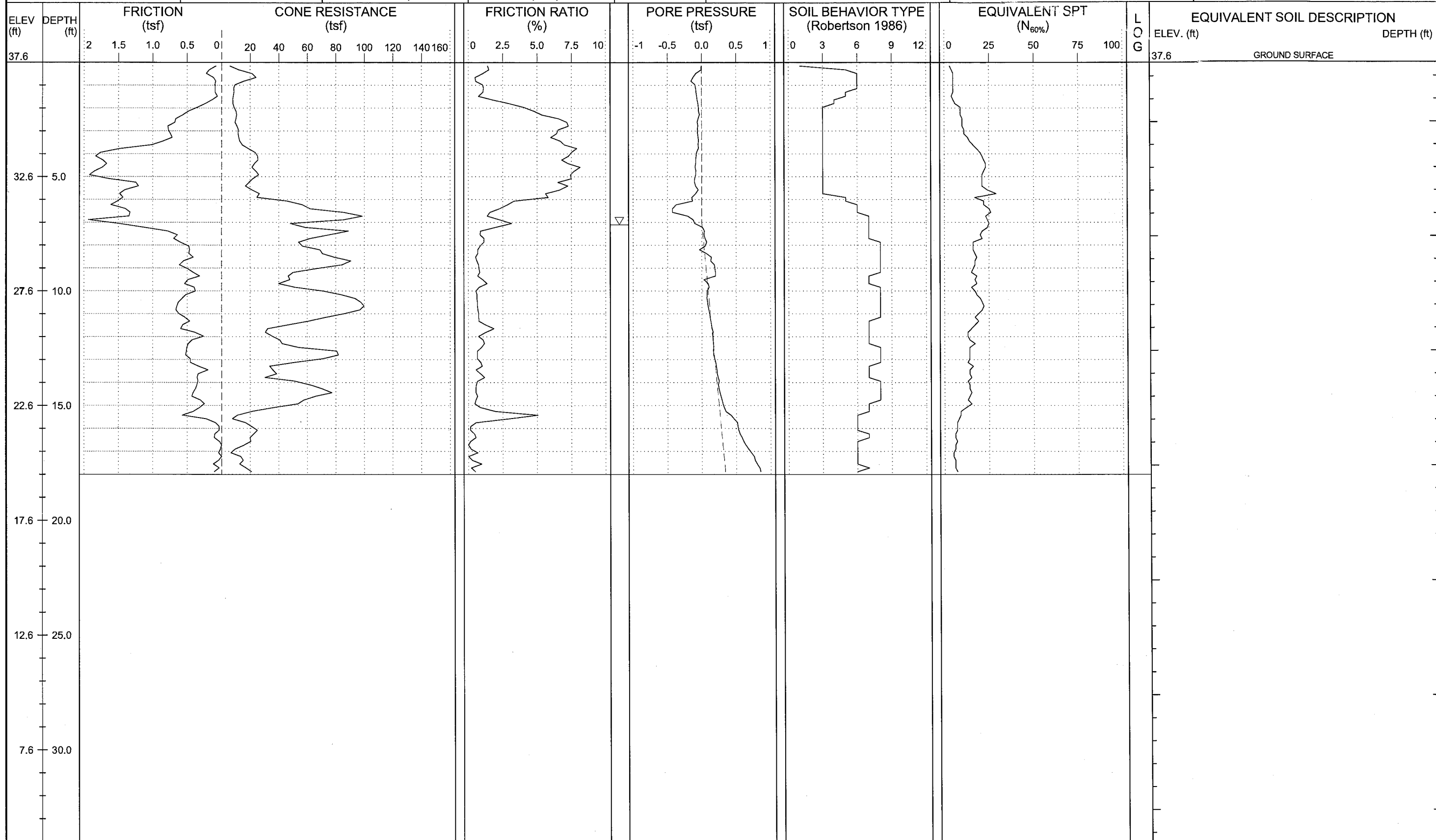
ENGLISH

SHEET NO.: 46  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-122   | STATION: 122+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 39.9 ft   | TOTAL DEPTH: 20.1 ft | NORTHING: 418,496    | EASTING: 2,525,595       | START DATE: 08/28/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Cory Robison            |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 7.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-124   | STATION: 124+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 37.6 ft   | TOTAL DEPTH: 18.0 ft | NORTHING: 418,679    | EASTING: 2,525,675                     | START DATE: 08/28/12             | COMP. DATE: 08/28/12             |
|   |                      |                      |  |                                  | DRILLER: Cory Robison            |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



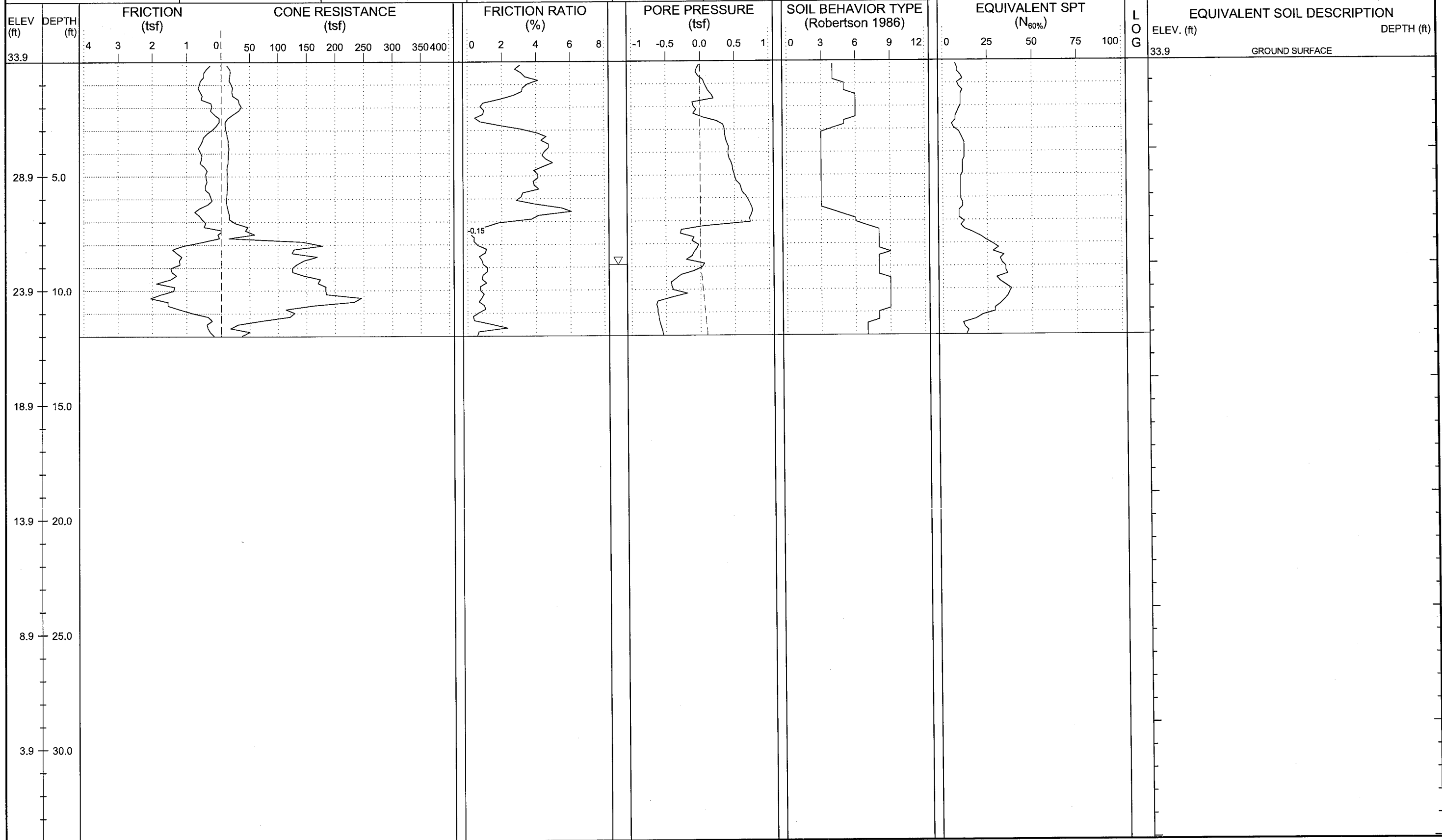


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 48  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.9, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-126   | STATION: 126+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.9 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 418,862    | EASTING: 2,525,756       | START DATE: 08/28/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/28/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



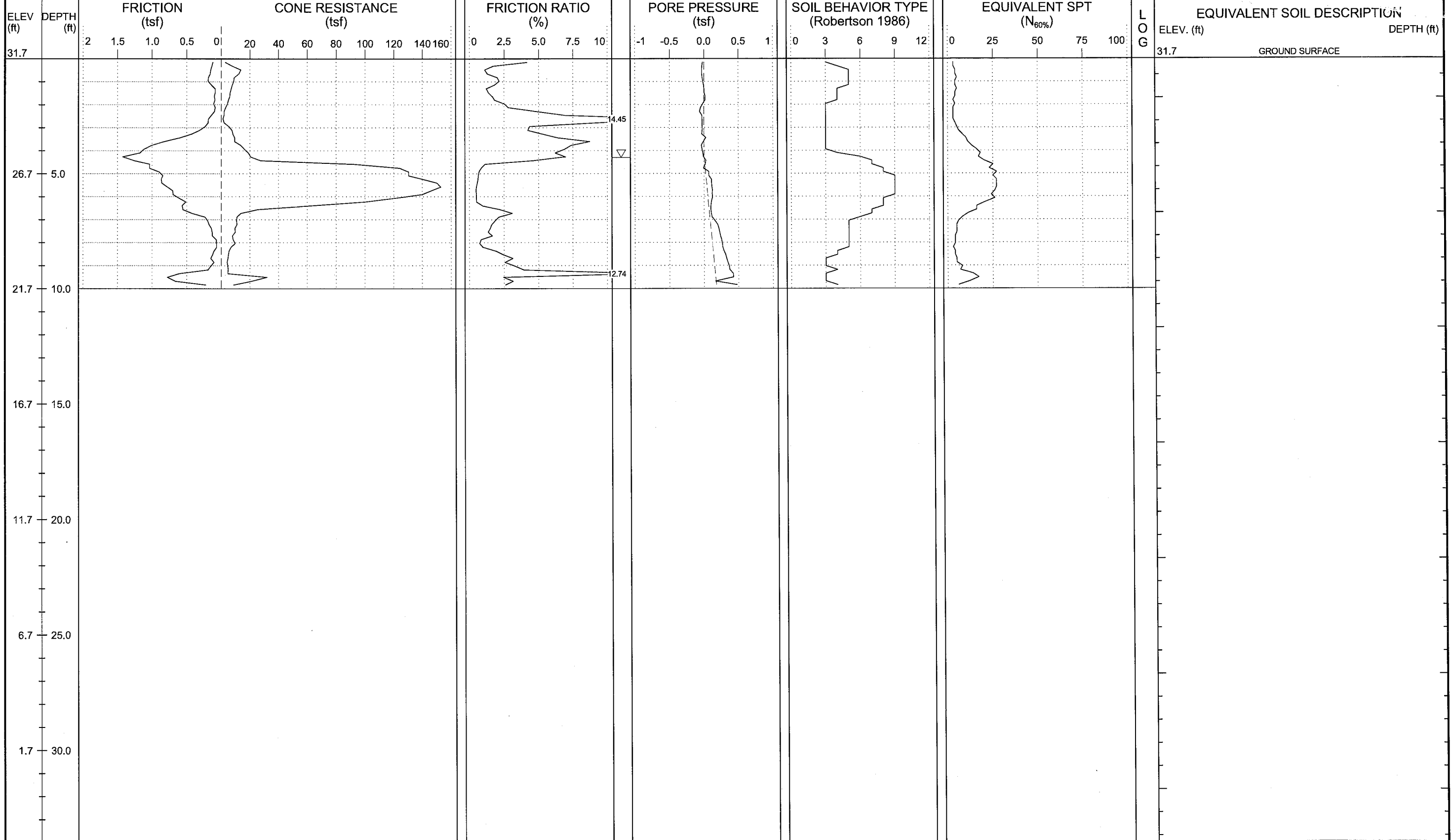


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

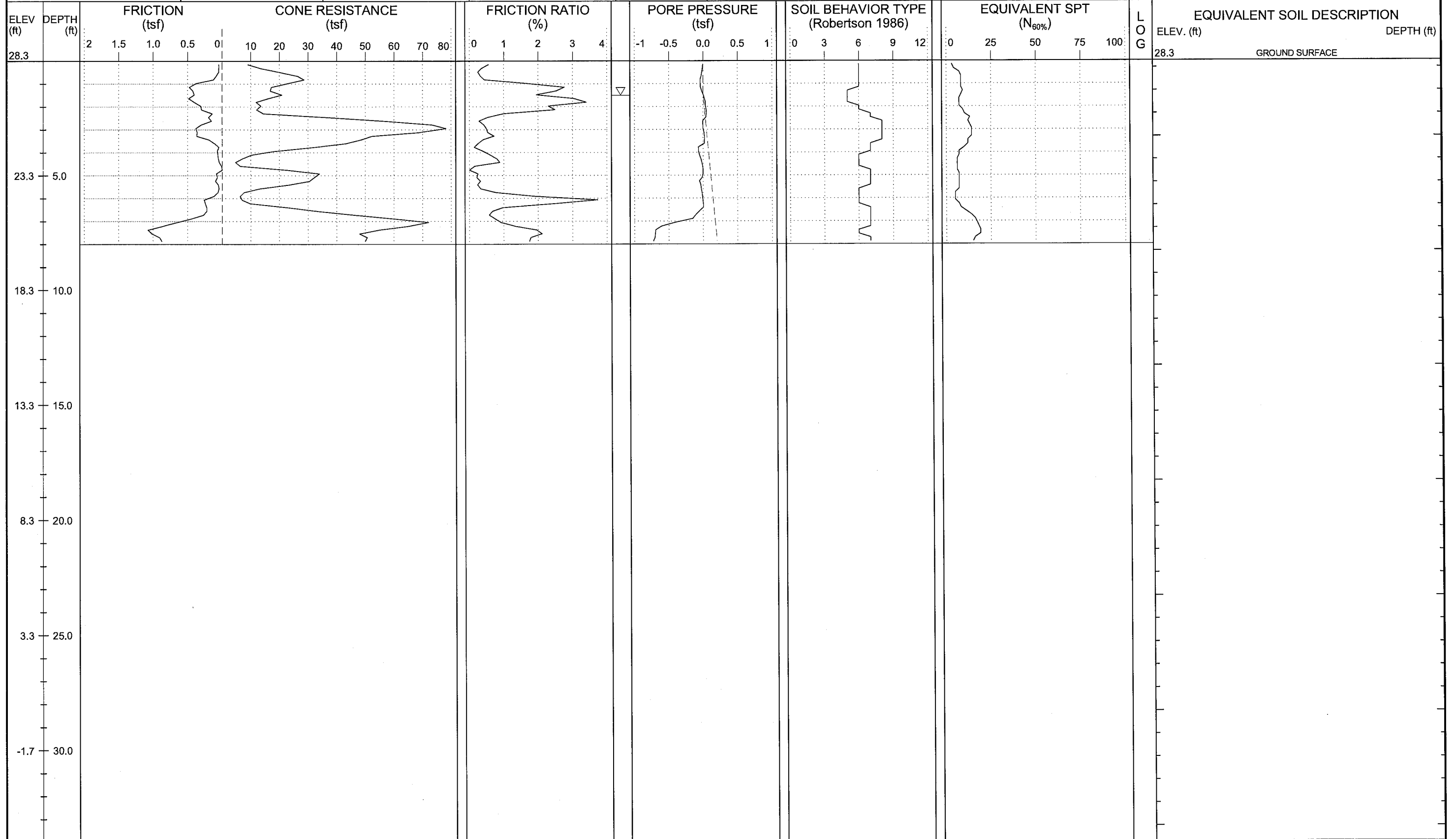
|            |              |
|------------|--------------|
| SHEET NO.: | 49           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                            |                                  |                       |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|-----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogier Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 4.3, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison |
| BORING NO.: L-128   | STATION: 128+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSG0867           | TECHNICIAN: M.A.D.               |                       |
| COLLAR ELEV.: 31.7 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 419,045    | EASTING: 2,525,836       | START DATE: 08/28/12                   | COMP. DATE: 08/28/12       | SURFACE WATER DEPTH: N/A         |                       |





|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 1.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-132   | STATION: 132+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 28.3 ft   | TOTAL DEPTH: 8.0 ft | NORTHING: 419,411    | EASTING: 2,525,997                     | START DATE: 08/27/12             | COMP. DATE: 08/27/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



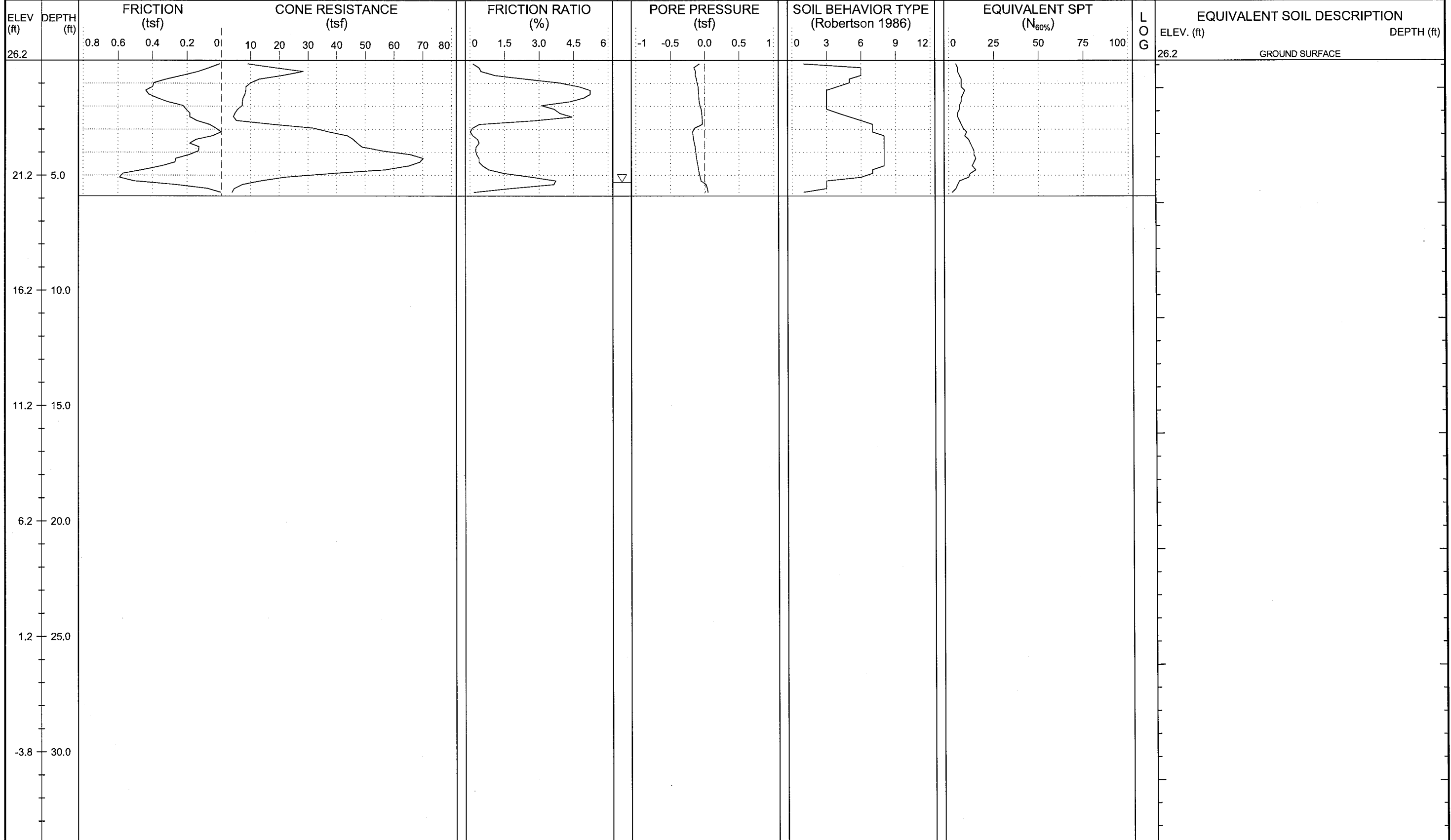


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 51           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-134   | STATION: 134+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. 5.3                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 26.2 ft   | TOTAL DEPTH: 5.9 ft | NORTHING: 419,594    | EASTING: 2,526,078       | 24 HR. N/A                       | START DATE: 08/27/12             |
|   |                     |                      |                          | CONC. DATE: 08/27/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



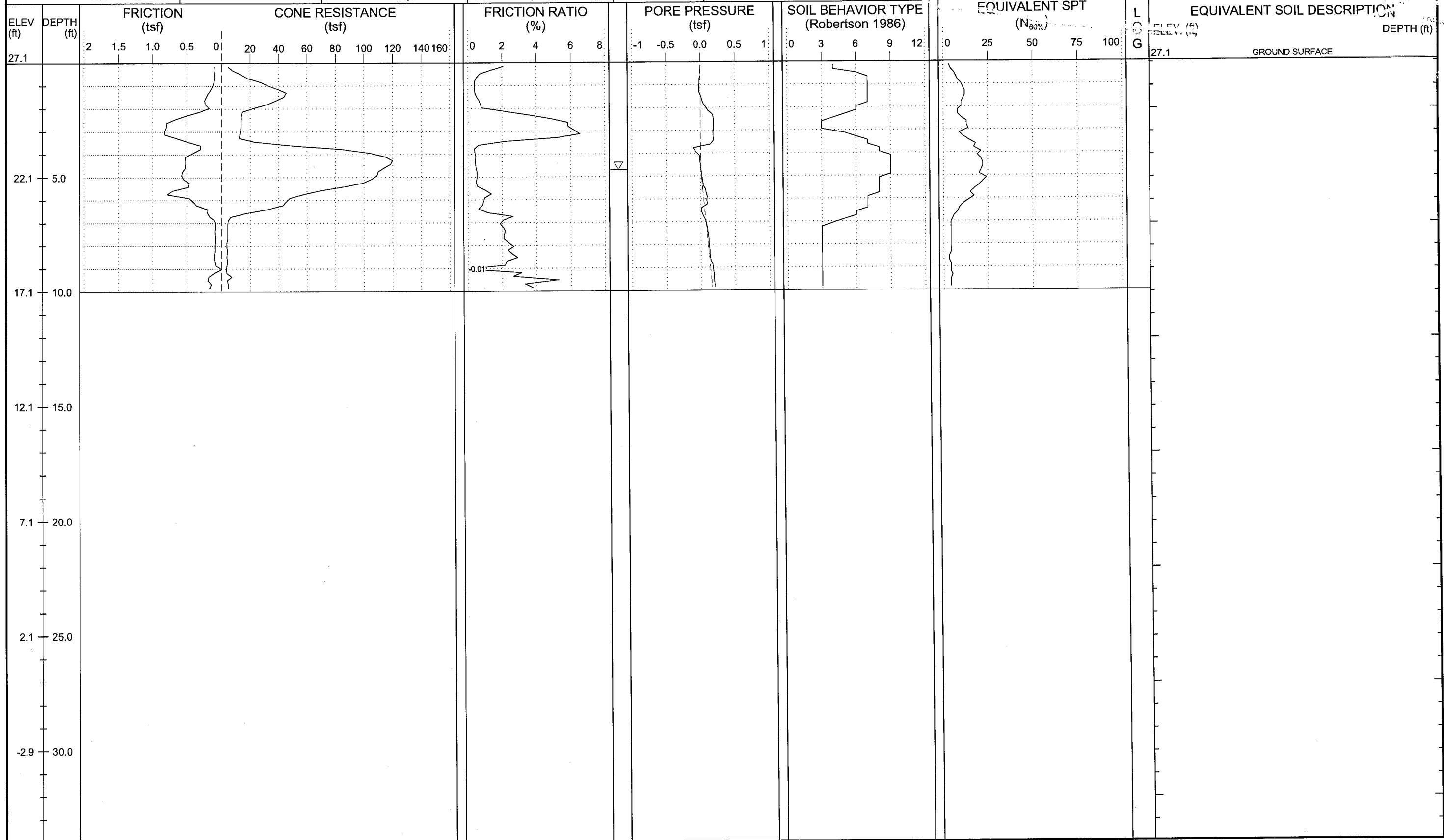




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 52           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 4.7, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-136   | STATION: 136+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 27.1 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 419,777    | EASTING: 2,526,158       | START DATE: 08/27/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Cory Robison            |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



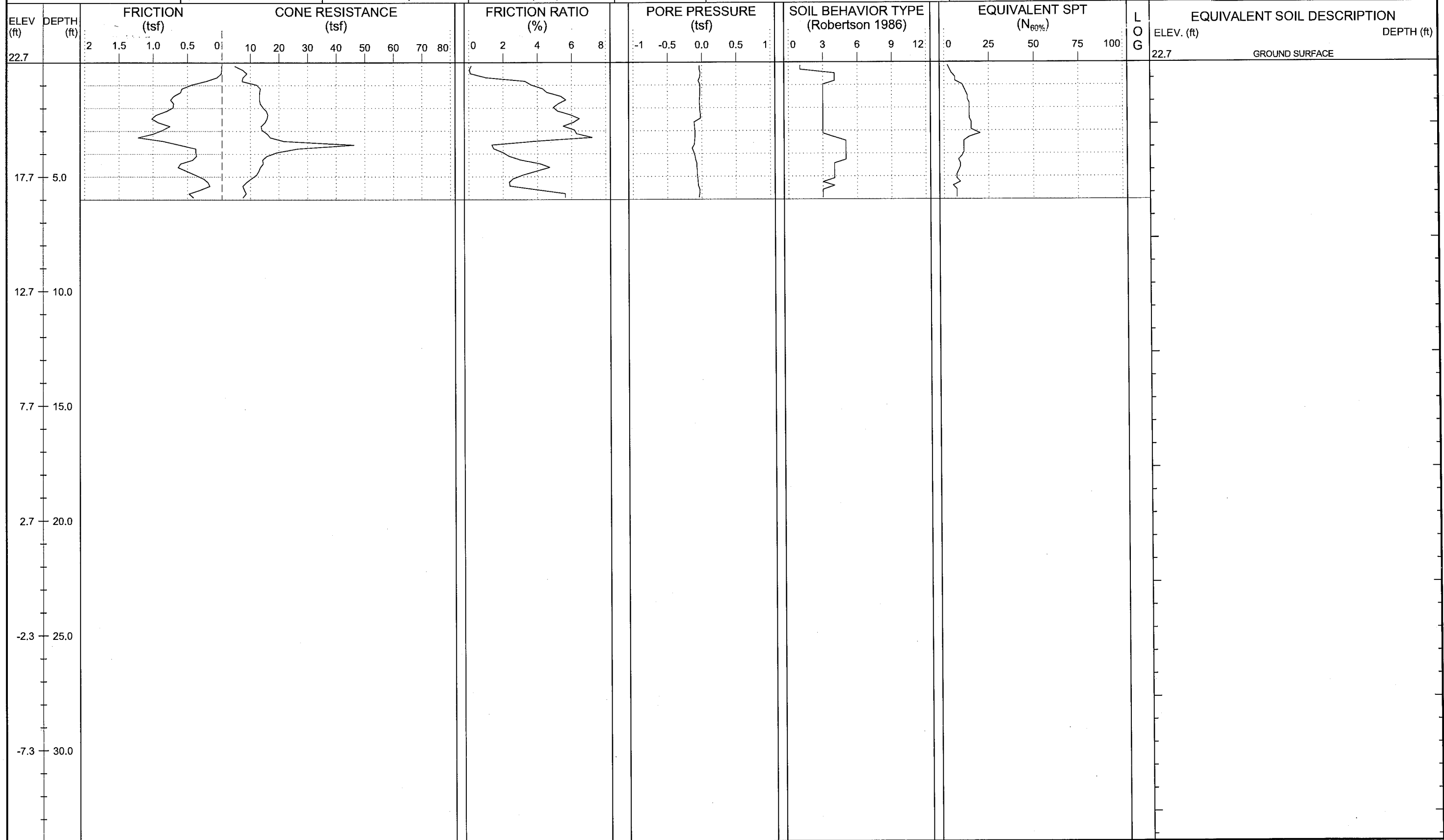


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 53  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-138   | STATION: 138+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 22.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 419,960    | EASTING: 2,526,239       | 24 HR. N/A                       | START DATE: 08/27/12             |
|   |                     |                      |                          | DRILLER: Cory Robison            | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | COMP. DATE: 08/27/12             | SURFACE WATER DEPTH: N/A         |



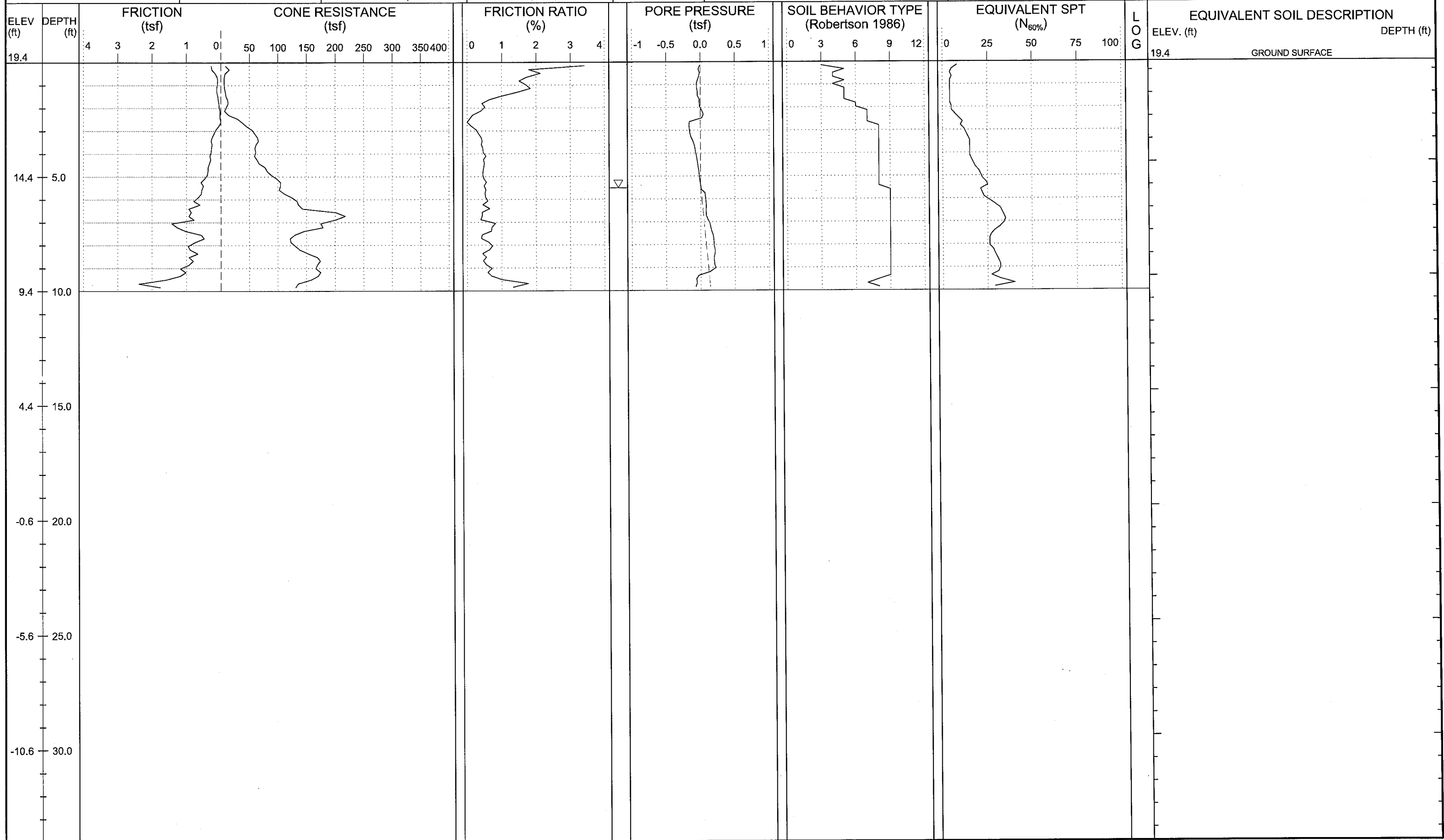


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

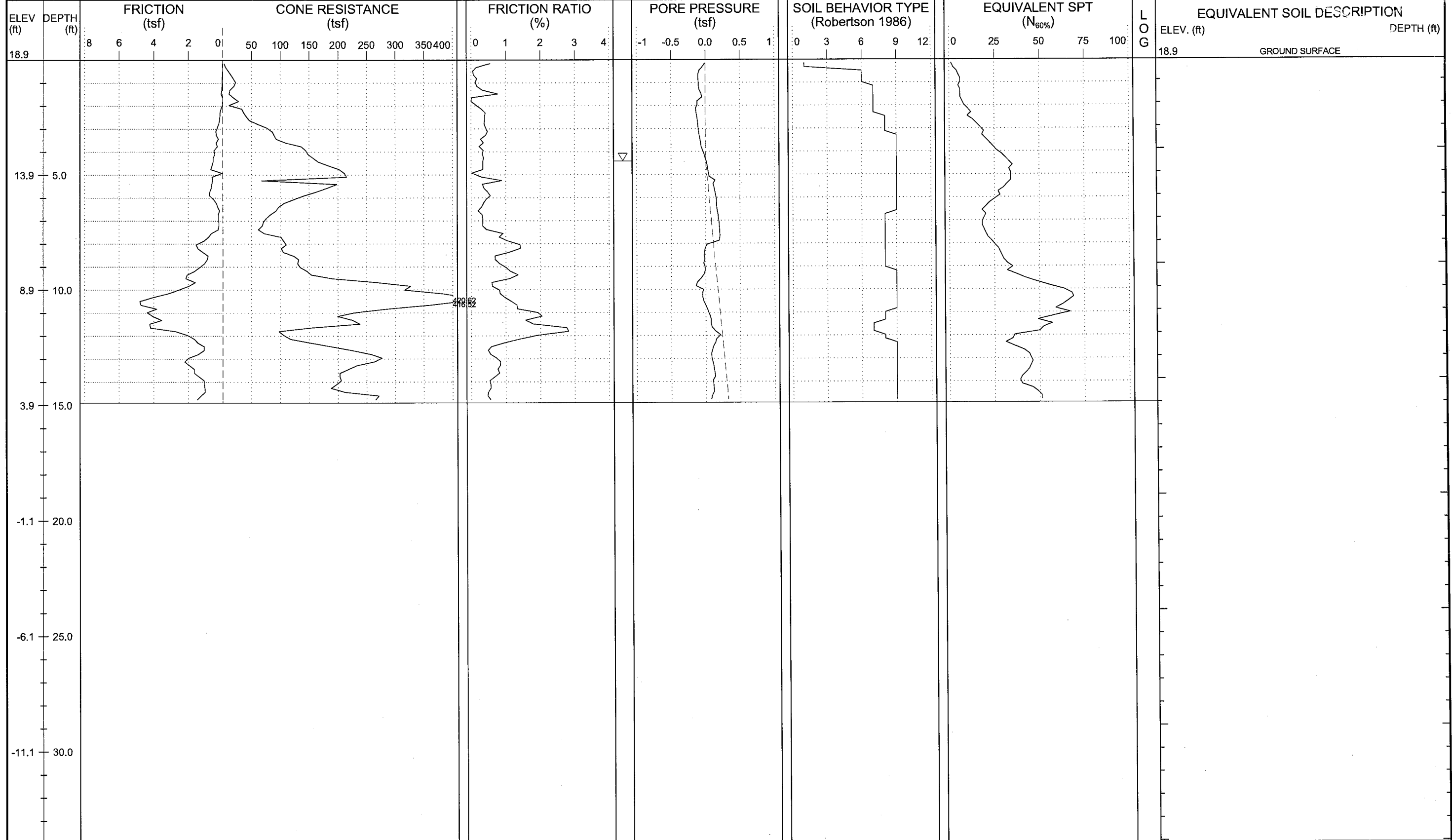
|            |              |
|------------|--------------|
| SHEET NO.: | 54           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-142   | STATION: 142+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 19.4 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 420,327    | EASTING: 2,526,400       | START DATE: 08/27/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/27/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 4.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-144   | STATION: 144+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 18.9 ft   | TOTAL DEPTH: 14.9 ft | NORTHING: 420,510    | EASTING: 2,526,480       | START DATE: 08/27/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Cory Robison            |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



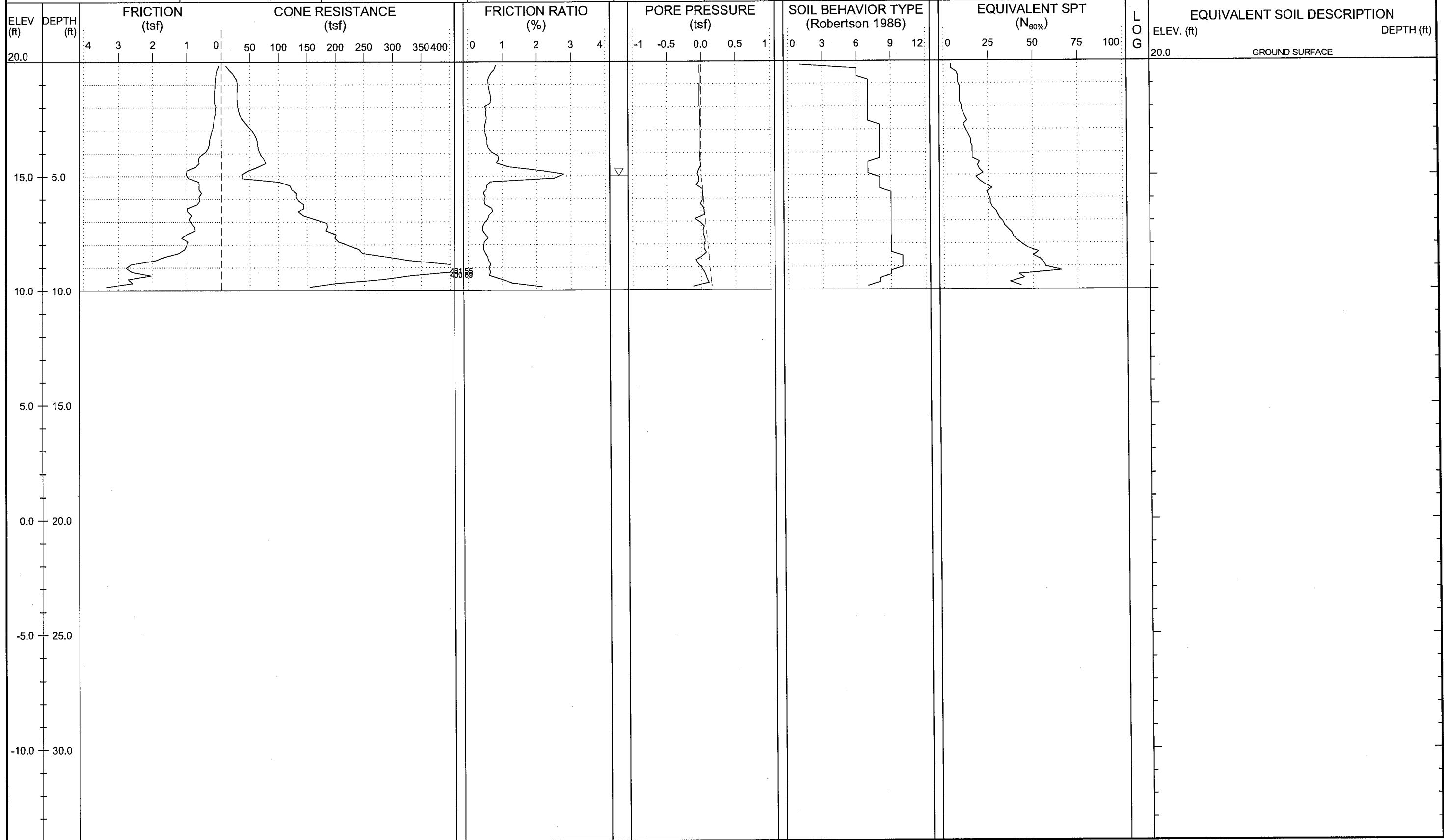


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

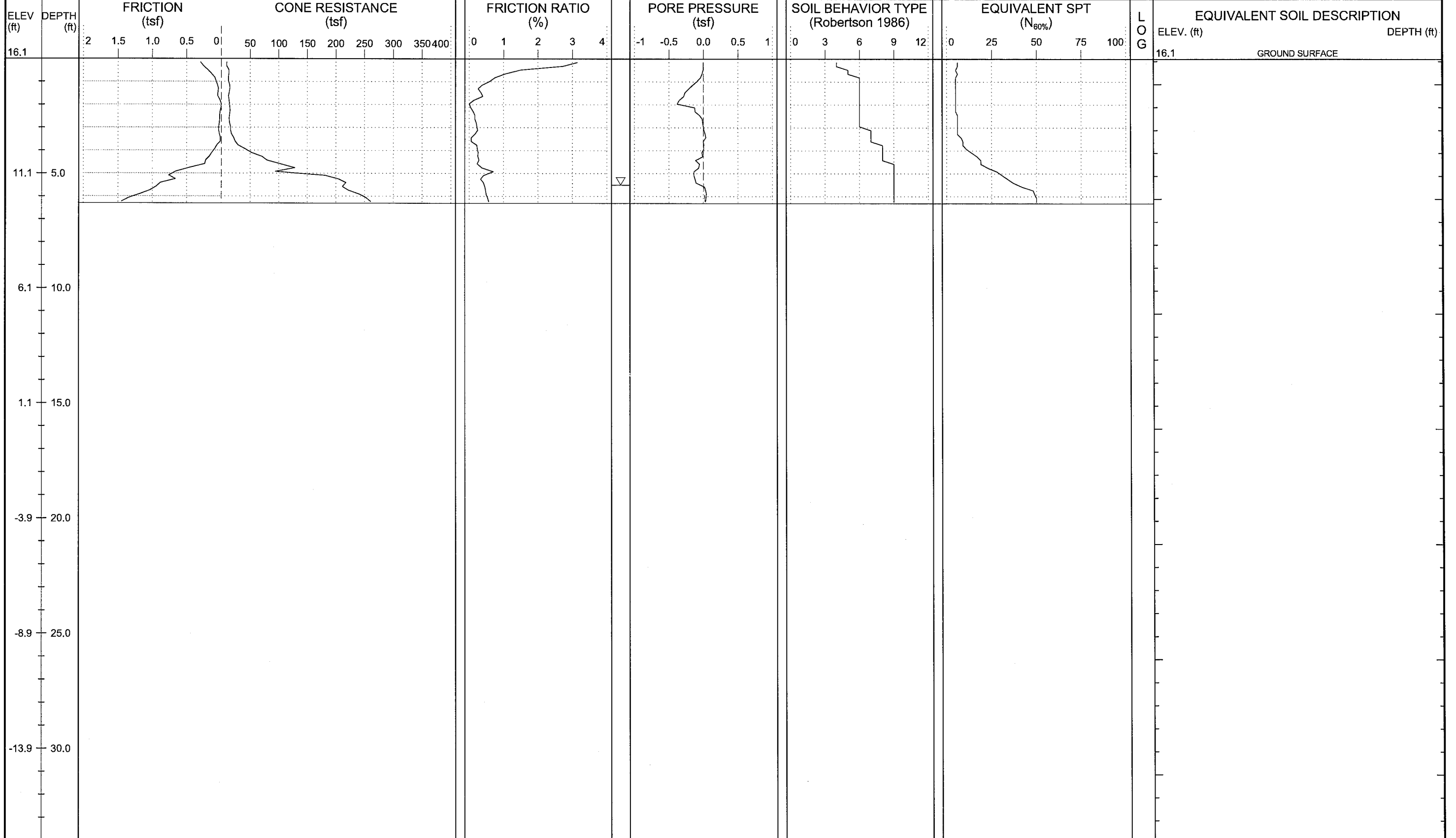
|            |              |
|------------|--------------|
| SHEET NO.: | 56           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-146   | STATION: 146+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 20.0 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 420,693    | EASTING: 2,526,561       | START DATE: 08/27/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/27/12                   | DRILLER: Cory Robison            |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 5.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-152   | STATION: 152+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-                         | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 16.1 ft   | TOTAL DEPTH: 6.3 ft | NORTHING: 421,243    | EASTING: 2,526,800                     | START DATE: 09/12/12             | COMP. DATE: 09/12/12             |
|   |                     |                      |  |                                  | DRILLER: Ron Stewart             |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





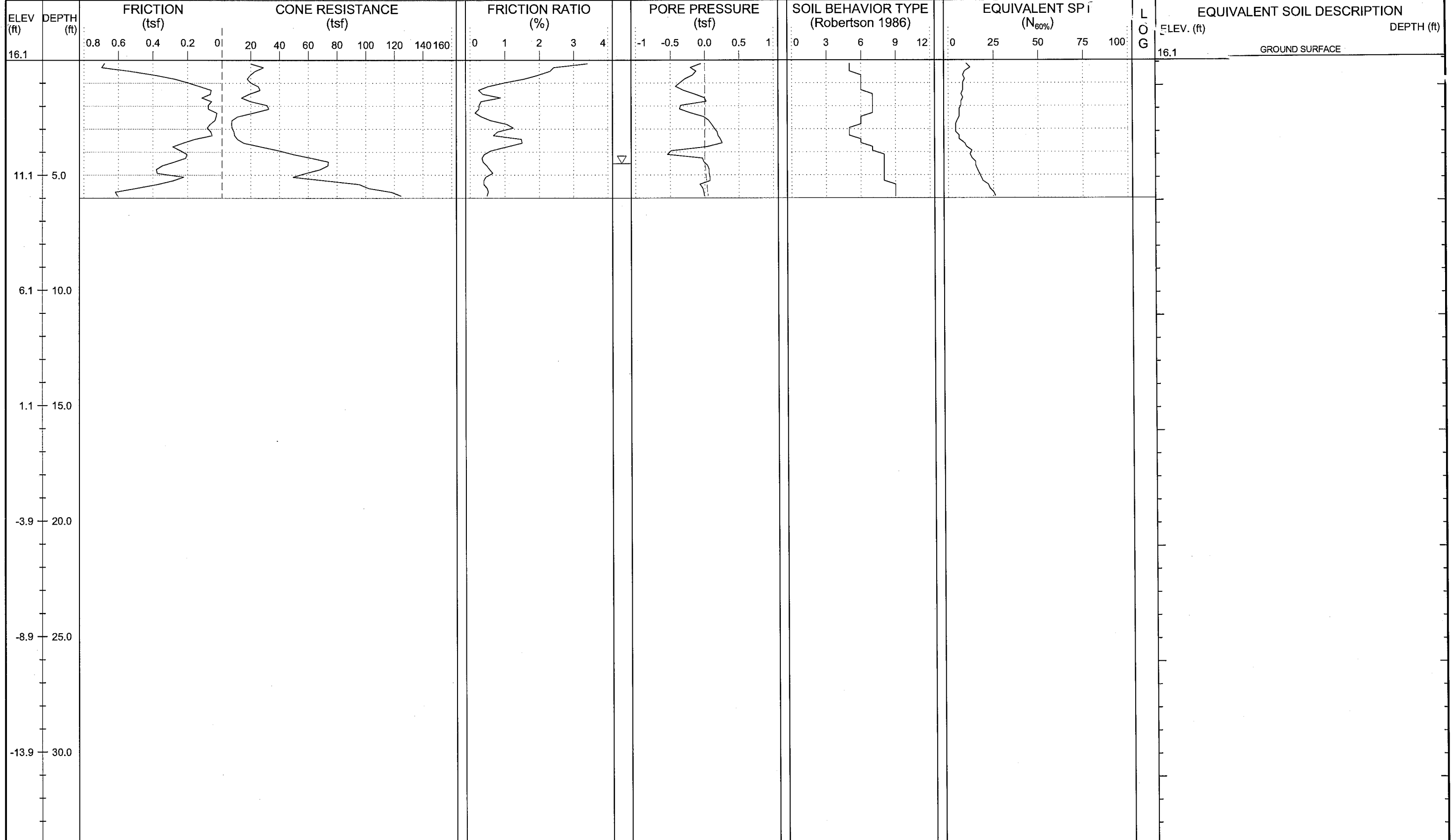


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 59  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                     |                      |                          |  |                            |                                  |                      |
|---|---------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 4.5, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-156   | STATION: 156+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 16.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 421,614    | EASTING: 2,526,951       | START DATE: 09/12/12                   | COMP. DATE: 09/12/12       | SURFACE WATER DEPTH: N/A         |                      |





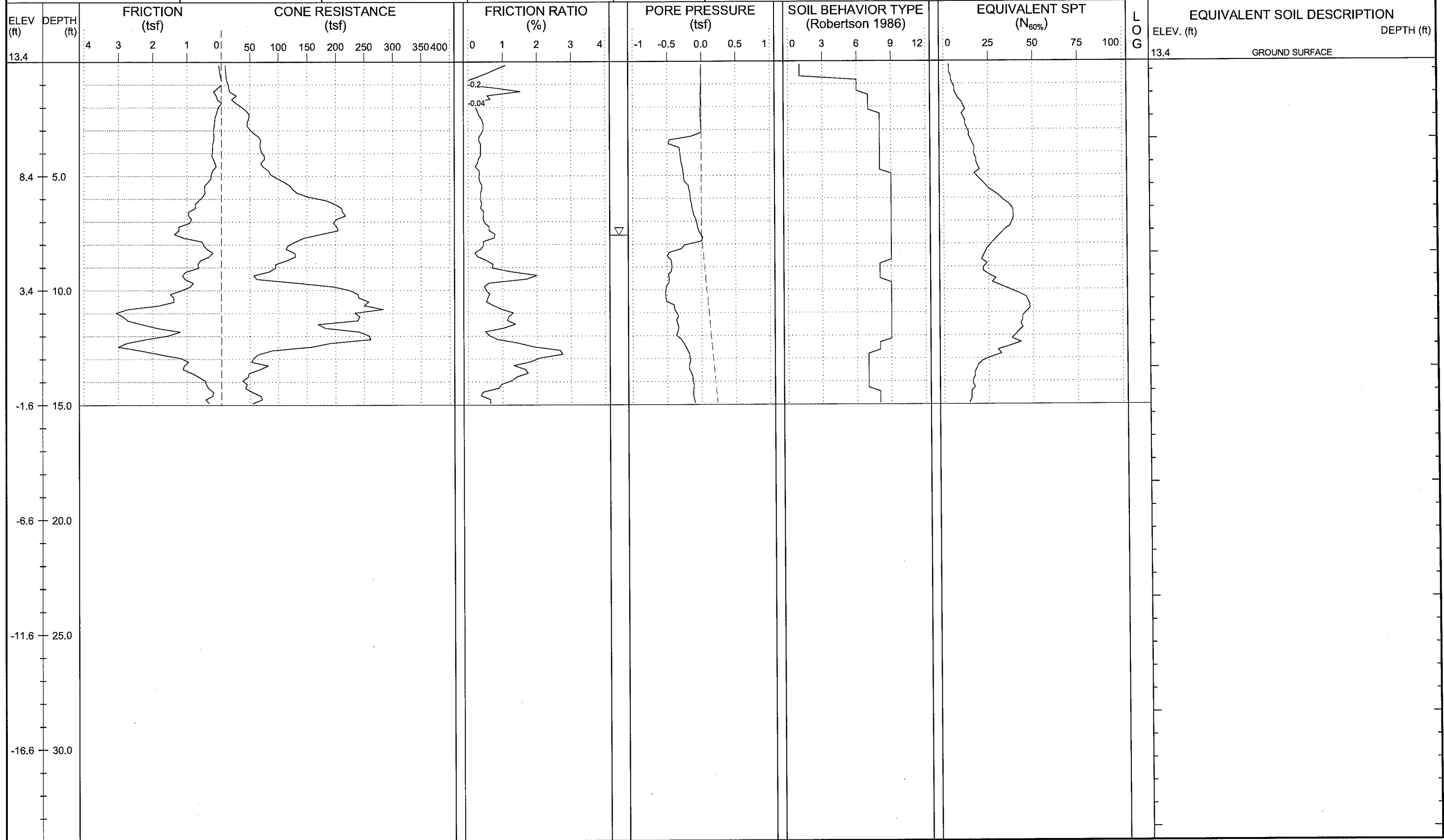


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

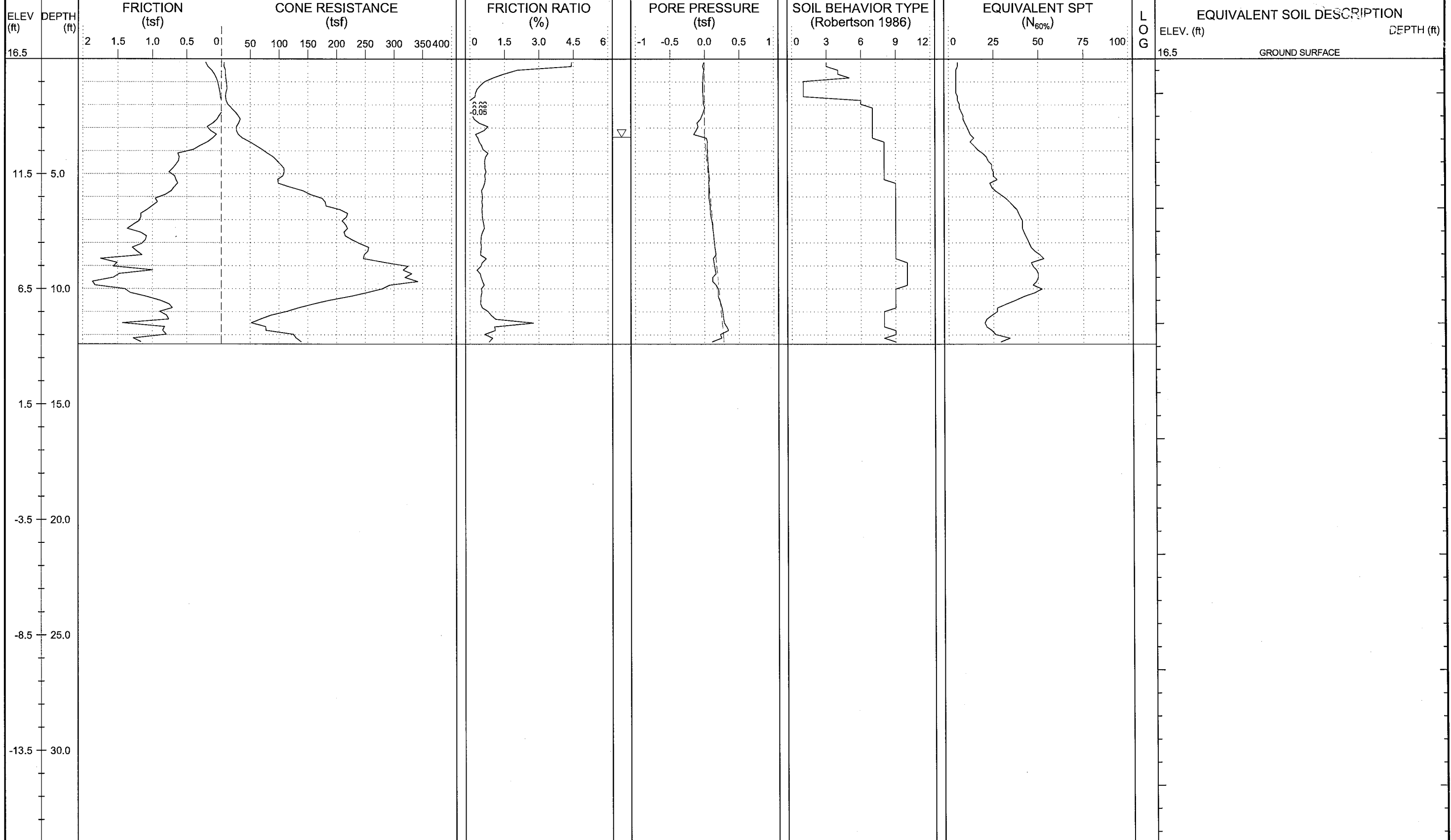
SHEET NO.: 60  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.6, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-158   | STATION: 158+00      | OFFSET: 50ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 13.4 ft   | TOTAL DEPTH: 15.0 ft | NORTHING: 421,818    | EASTING: 2,526,976       | START DATE: 09/12/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 09/12/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 3.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-162   | STATION: 162+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 16.5 ft   | TOTAL DEPTH: 12.4 ft | NORTHING: 422,176    | EASTING: 2,527,159       | START DATE: 09/12/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |





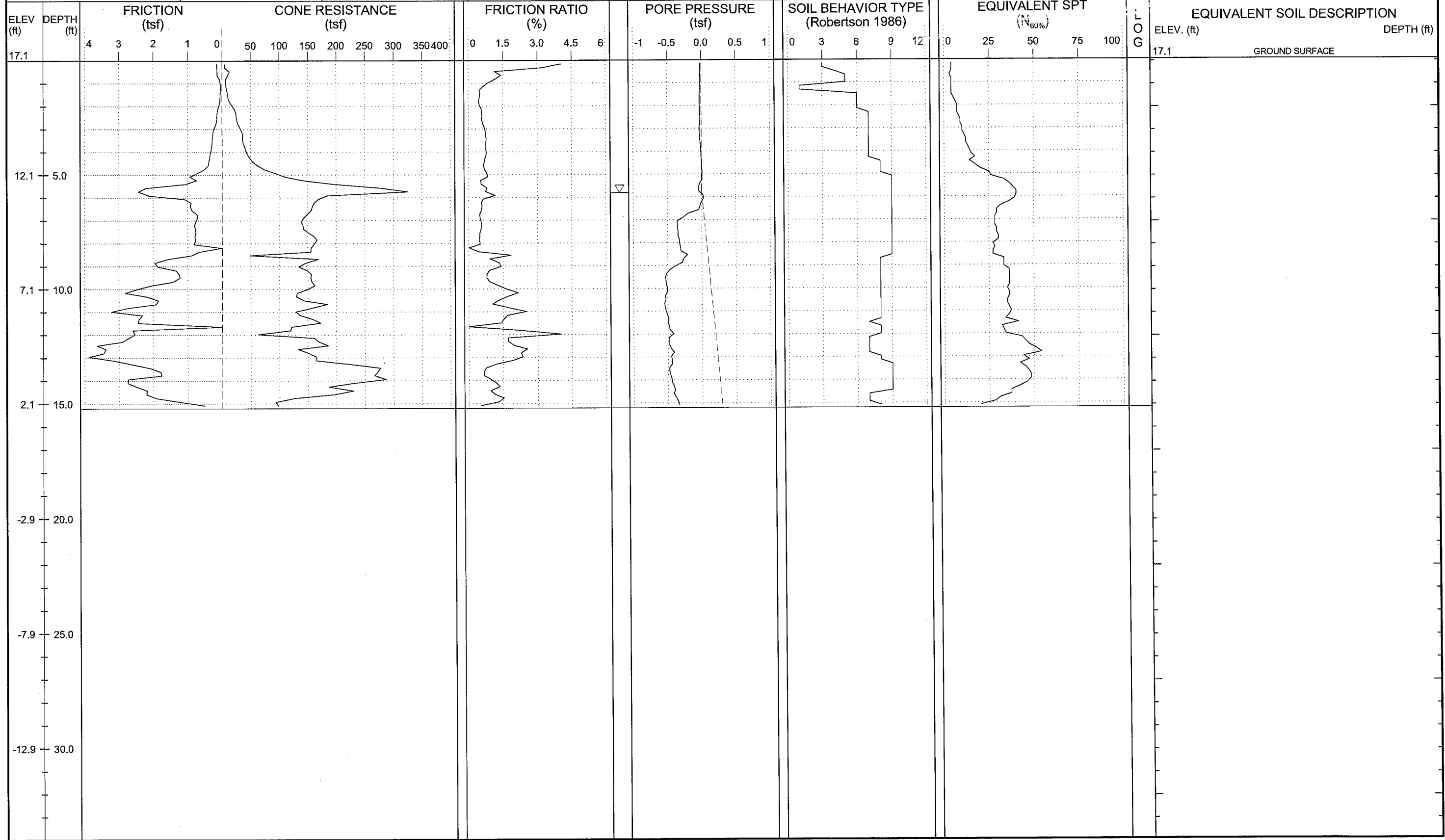


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 63  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-166   | STATION: 166+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 17.1 ft   | TOTAL DEPTH: 15.2 ft | NORTHING: 422,555    | EASTING: 2,527,287       | START DATE: 09/12/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |

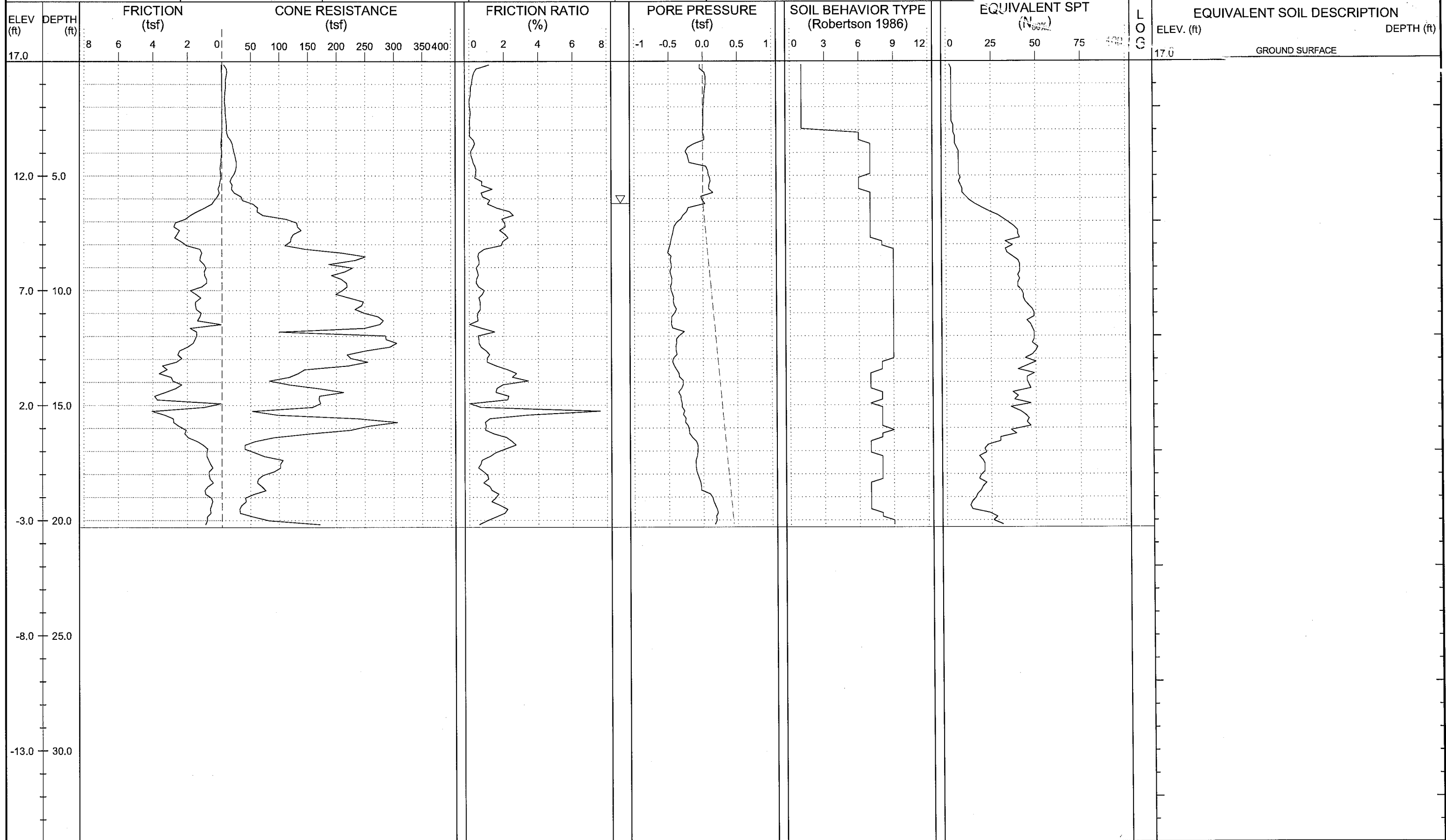




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 64        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLOW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-168   | STATION: 167+82      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 17.0 ft   | TOTAL DEPTH: 20.3 ft | NORTHING: 422,729    | EASTING: 2,527,342       | START DATE: 09/12/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



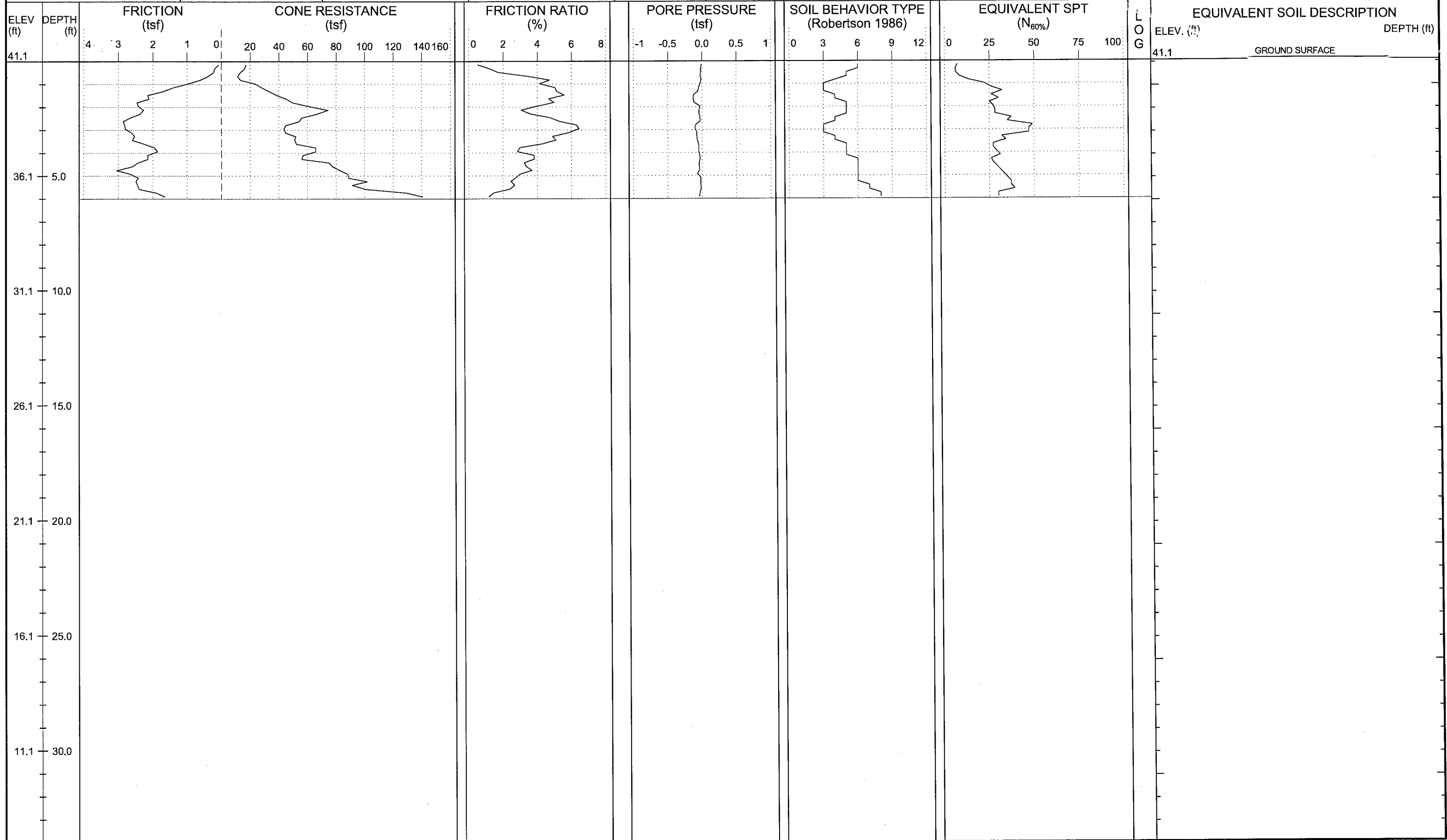


**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 65           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-182   | STATION: 182+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 424,099    | EASTING: 2,527,704       | START DATE: 08/24/12             | CONE ID: DSA1123                 |
|   |                     |                      |                          | 24 HR. N/A                       | COMP. DATE: 08/24/12             |
|   |                     |                      |                          | DRILLER: Ron Stewart             |                                  |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



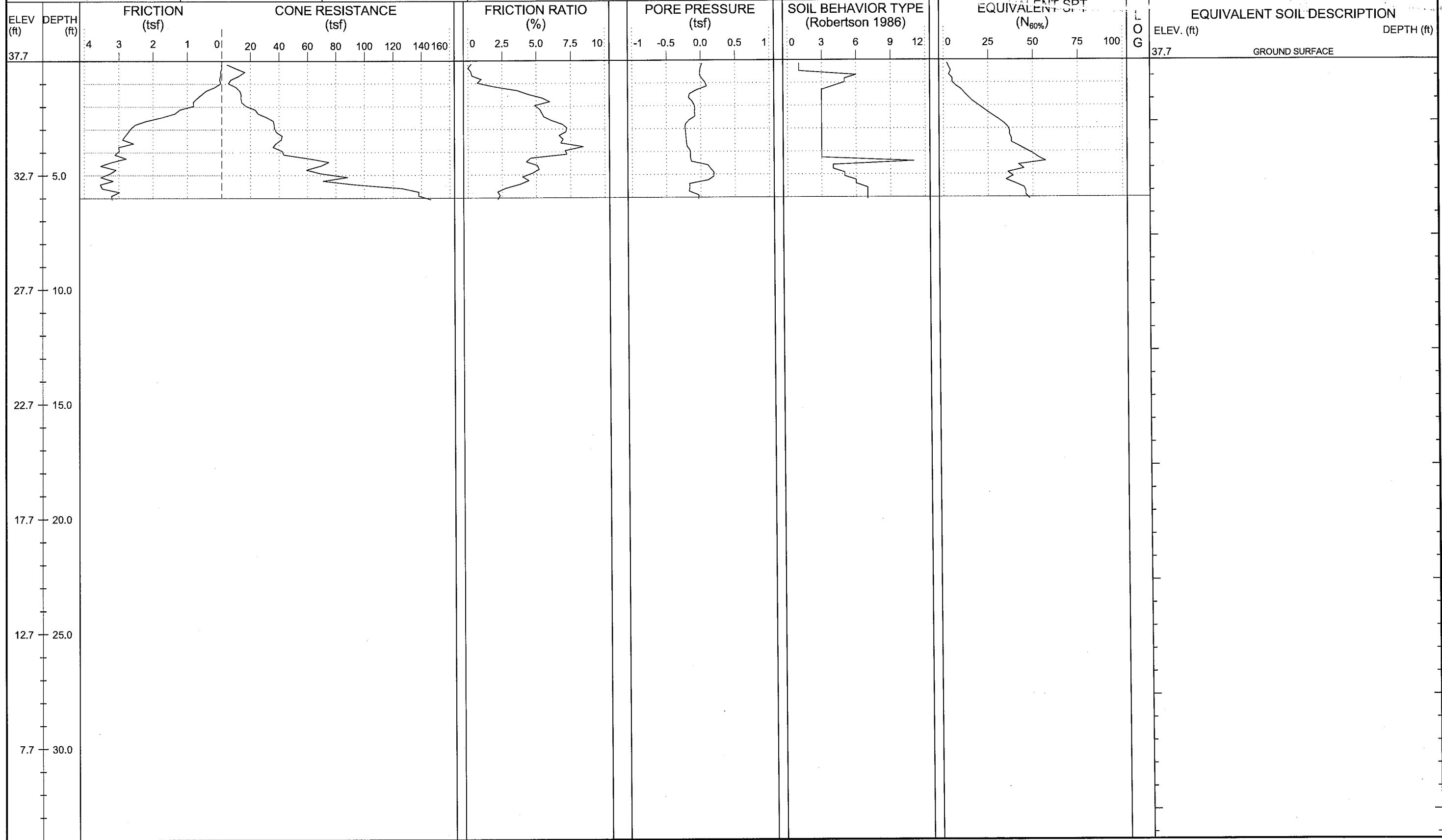


**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 66           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-184   | STATION: 184+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 37.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 424,295    | EASTING: 2,527,745       | 24 HR. N/A                       | START DATE: 08/24/12             |
|   |                     |                      |                          | CONE ID: DSA1123                 | DRILLER: Ron Stewart             |
|   |                     |                      |                          | COMP. DATE: 08/24/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

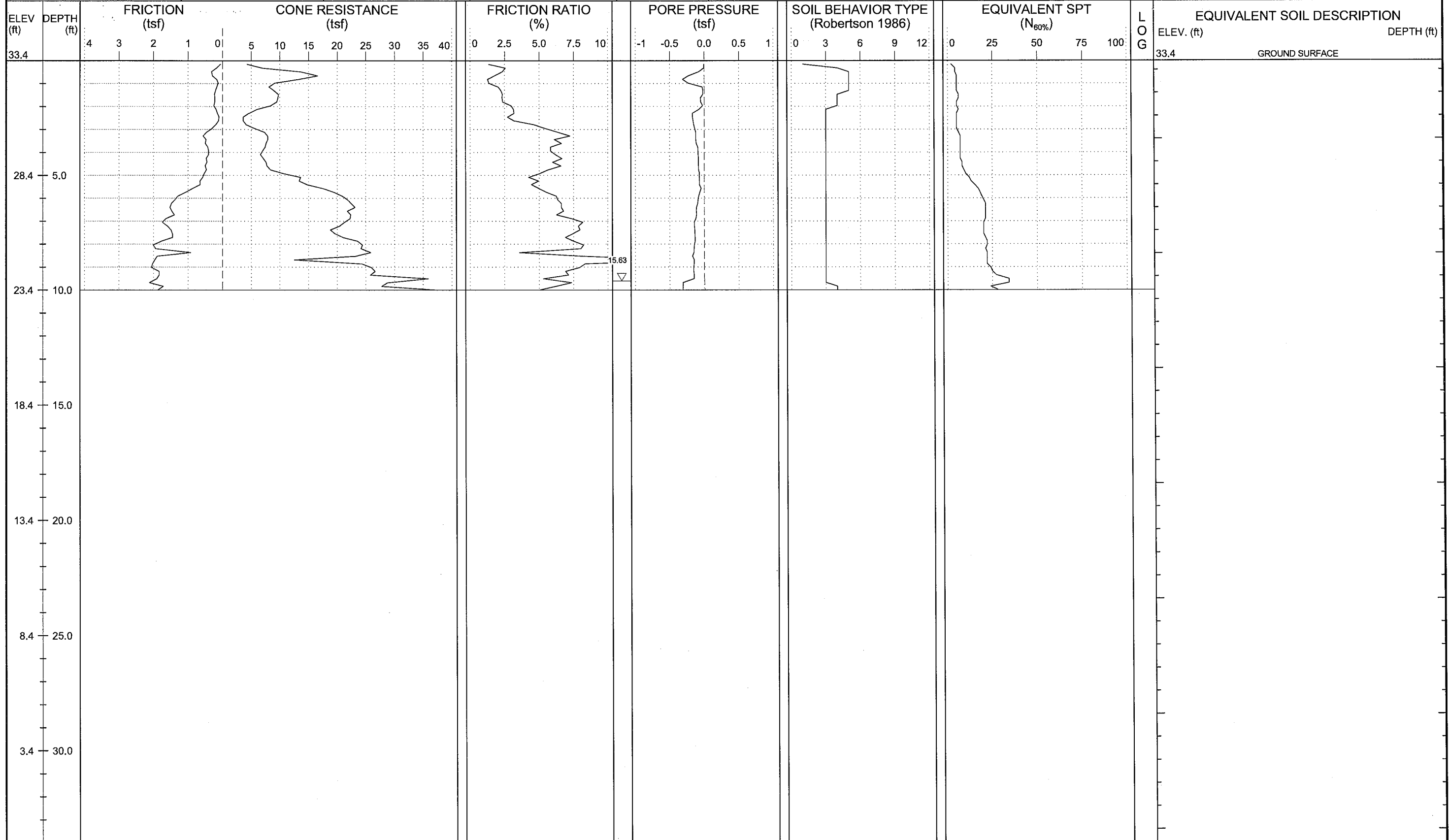




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 67        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 9.6, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-186   | STATION: 184+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.4 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 424,491    | EASTING: 2,527,784       | START DATE: 08/24/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 08/24/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





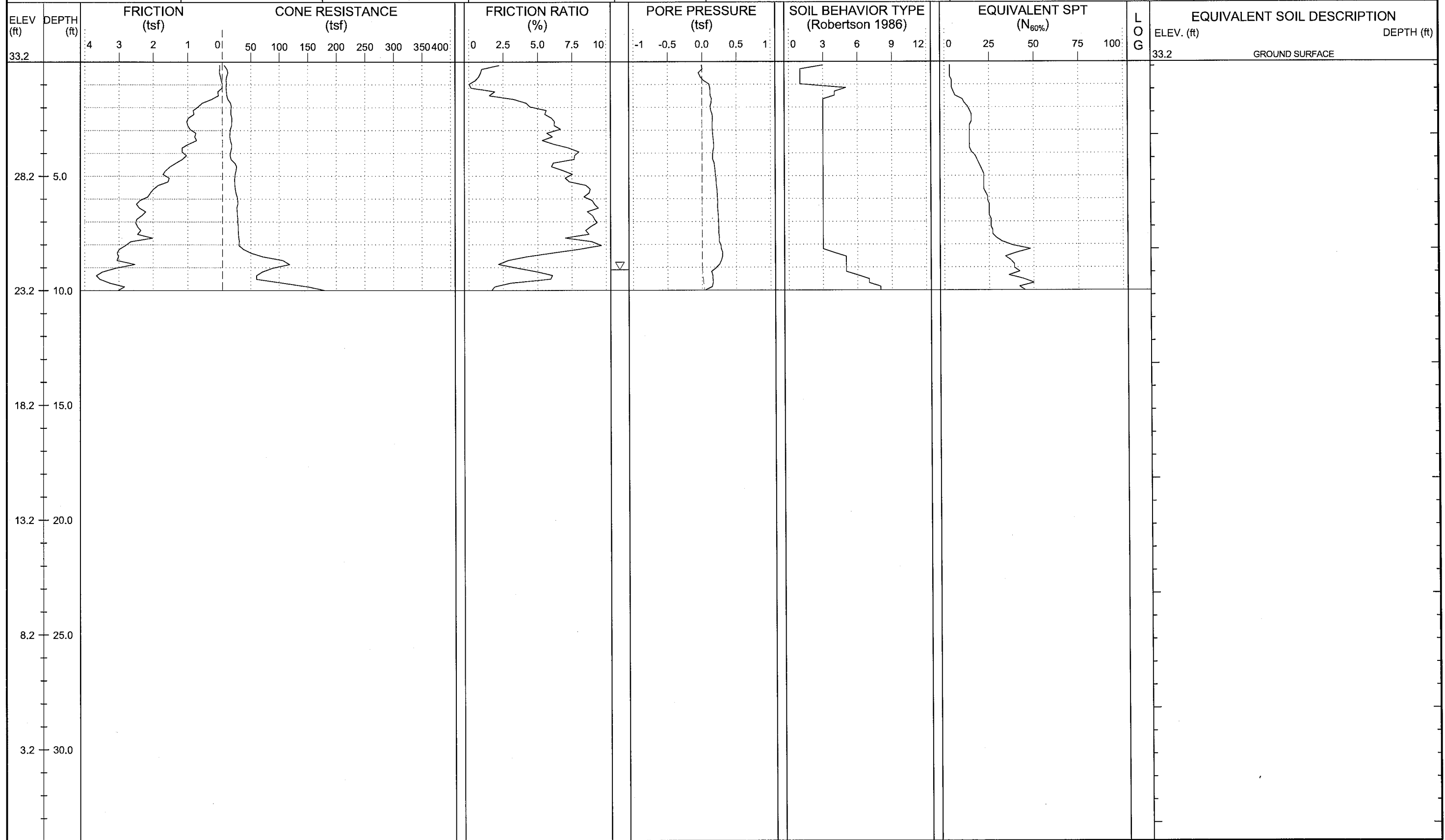


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 68  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 9.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-188   | STATION: 184+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.2 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 424,688    | EASTING: 2,527,821       | START DATE: 08/23/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 08/23/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



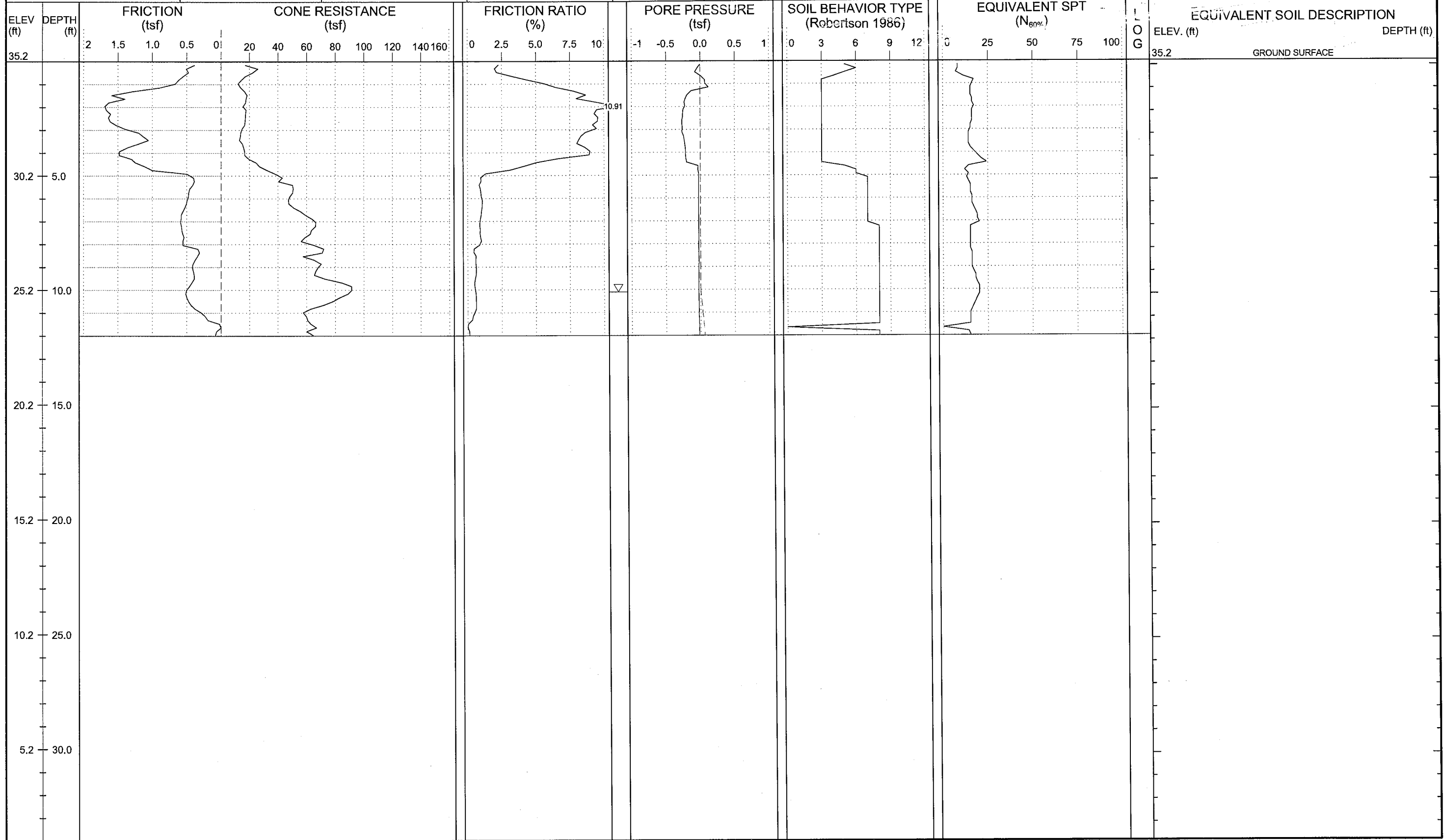


**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH

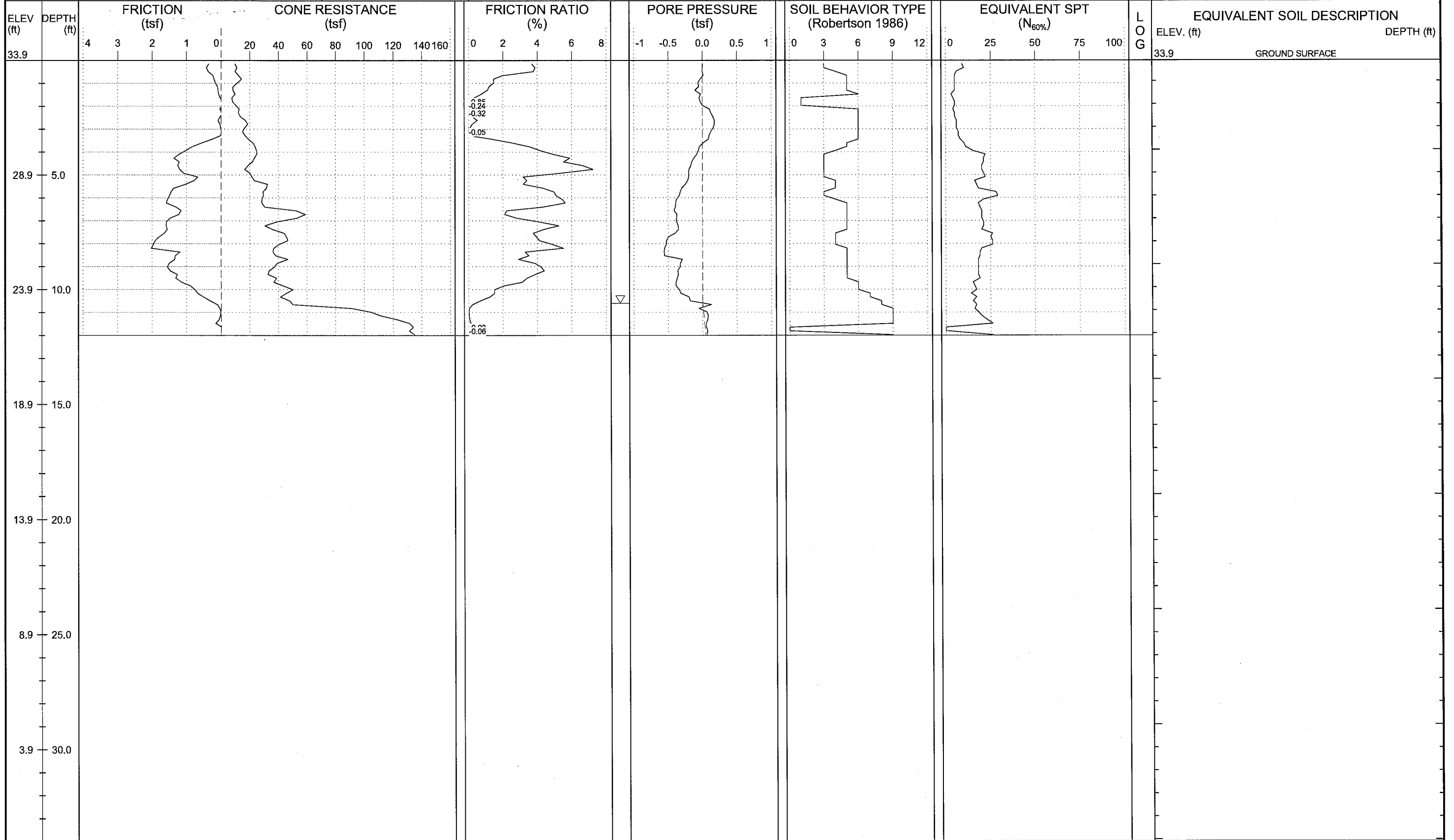
|            |              |
|------------|--------------|
| SHEET NO.: | 69           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |                                  |                            |                                  |                          |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------|----------------------------------|--------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton |                                  |                          |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft)                  | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart     |
| BORING NO.: L-192   | STATION: 192+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. 10.1                       | ROD TYPE: Pre-strung       | CONE ID: DSA1123                 | TECHNICIAN: M.A.D.       |
| COLLAR ELEV.: 35.2 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 425,082    | EASTING: 2,527,887       | 24 HR. N/A                       | START DATE: 08/23/12       | COMP. DATE: 08/23/12             | SURFACE WATER DEPTH: N/A |





|   |                      |                      |   |                                  |                                  |
|---|----------------------|----------------------|---|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson                | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 10.6, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-194   | STATION: 194+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-                          | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 33.9 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 425,280    | EASTING: 2,527,917                      | START DATE: 08/23/12             | COMP. DATE: 08/23/12             |
|   |                      |                      |   |                                  | DRILLER: Ron Stewart             |
|   |                      |                      |   |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |   |                                  | SURFACE WATER DEPTH: N/A         |

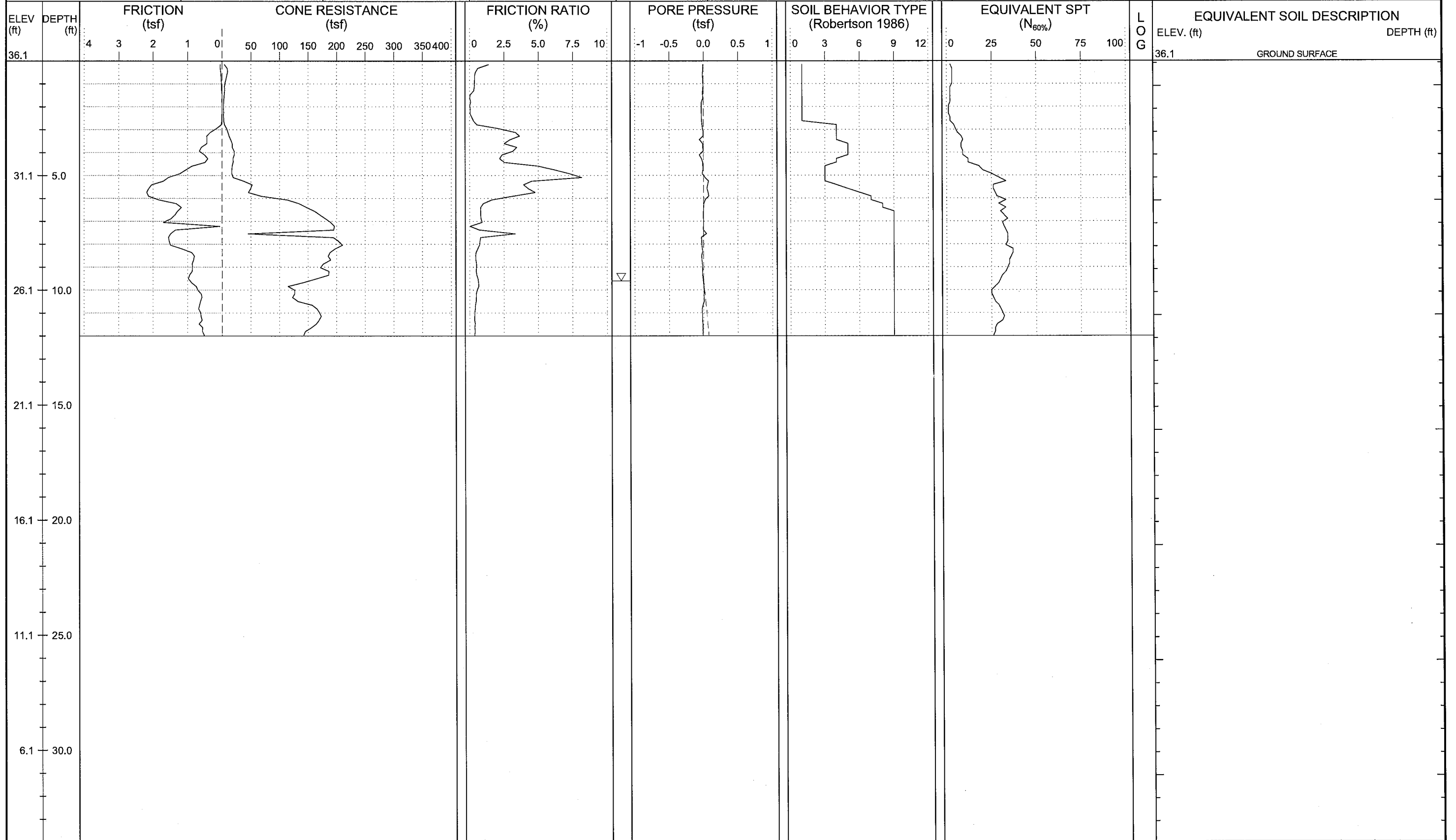




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 71           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                      |                      |                          |  |                            |                                  |                      |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 9.6, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-196   | STATION: 196+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 36.1 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 425,478    | EASTING: 2,527,944       | START DATE: 08/23/12                   | COMP. DATE: 08/23/12       | SURFACE WATER DEPTH: N/A         |                      |



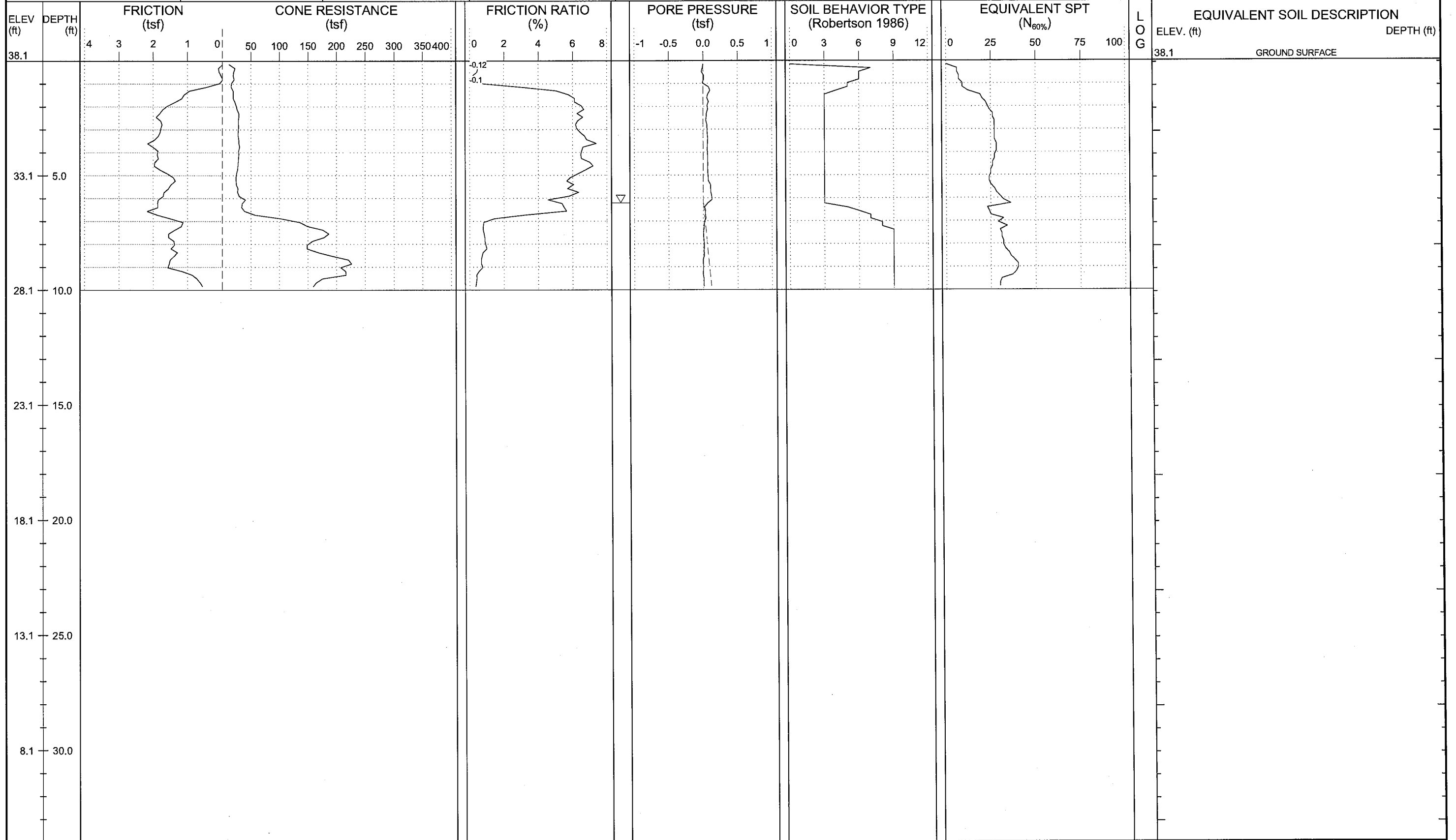


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

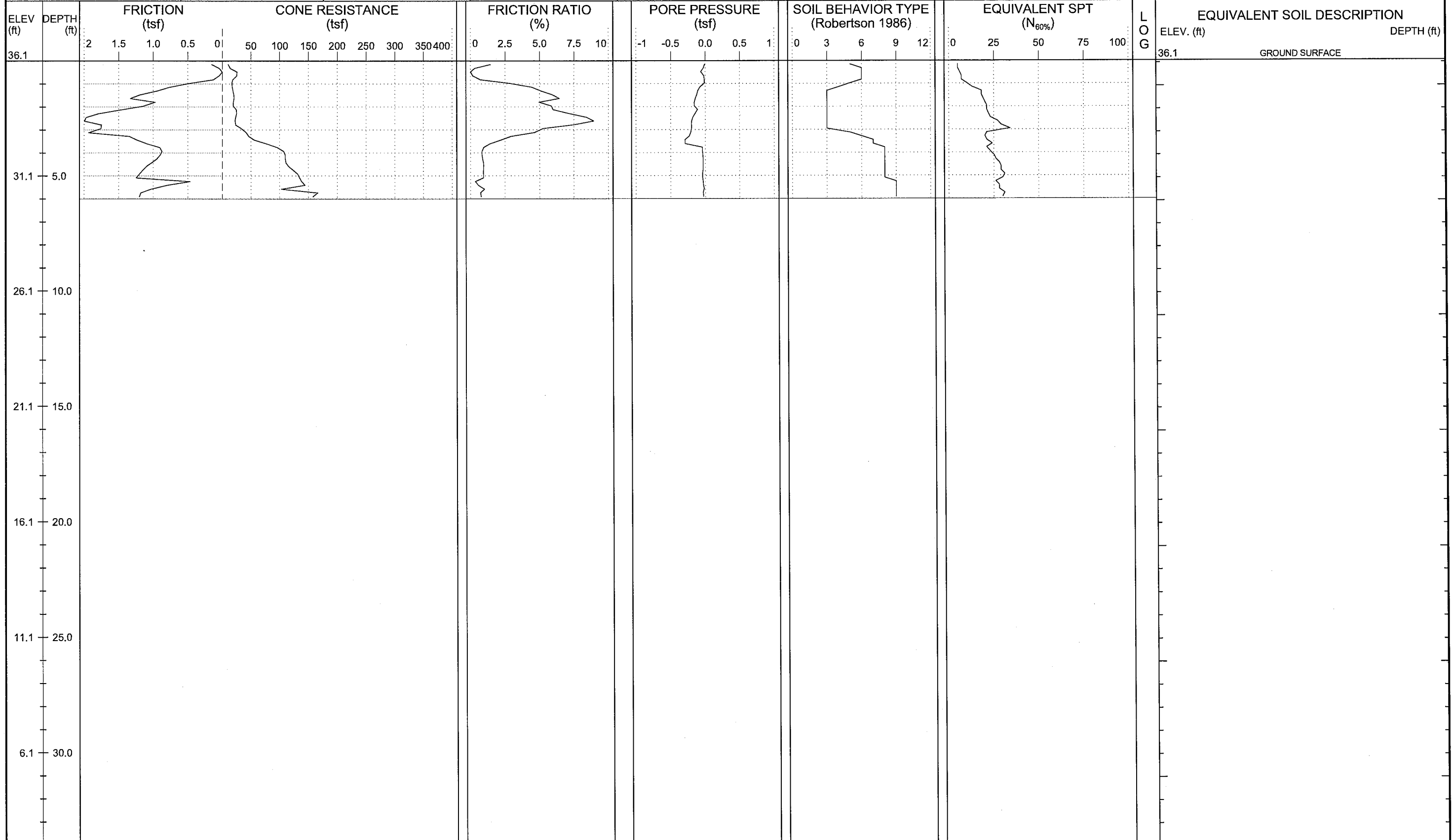
SHEET NO.: 72  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-198   | STATION: 198+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 38.1 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 425,677    | EASTING: 2,527,968       | START DATE: 08/23/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 08/23/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-202   | STATION: 202+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 36.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 426,074    | EASTING: 2,528,010       | 24 HR. N/A                       | START DATE: 08/23/12             |
|   |                     |                      |                          | COMP. DATE: 08/23/12             | DRILLER: Ron Stewart             |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



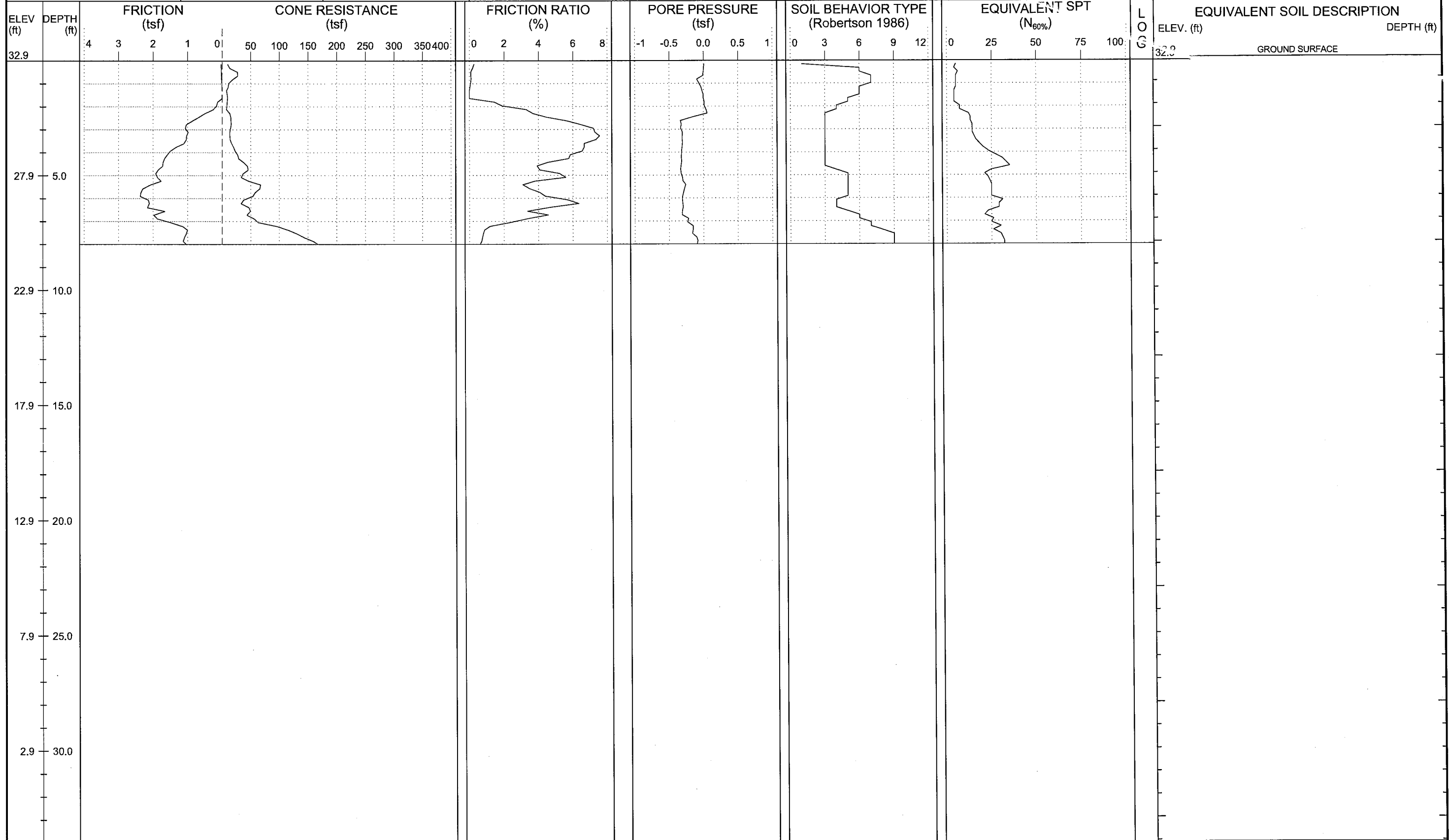


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 74  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |   |                                  |
|---|---------------------|----------------------|--------------------------|---|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track        | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry / 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-204   | STATION: 204+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                    | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 32.9 ft   | TOTAL DEPTH: 8.0 ft | NORTHING: 426,274    | EASTING: 2,528,027       | START DATE: 08/22/12                    | DRILLER: Ron Stewart             |
|   |                     |                      |                          | COMP. DATE: 08/22/12                    | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A                |                                  |



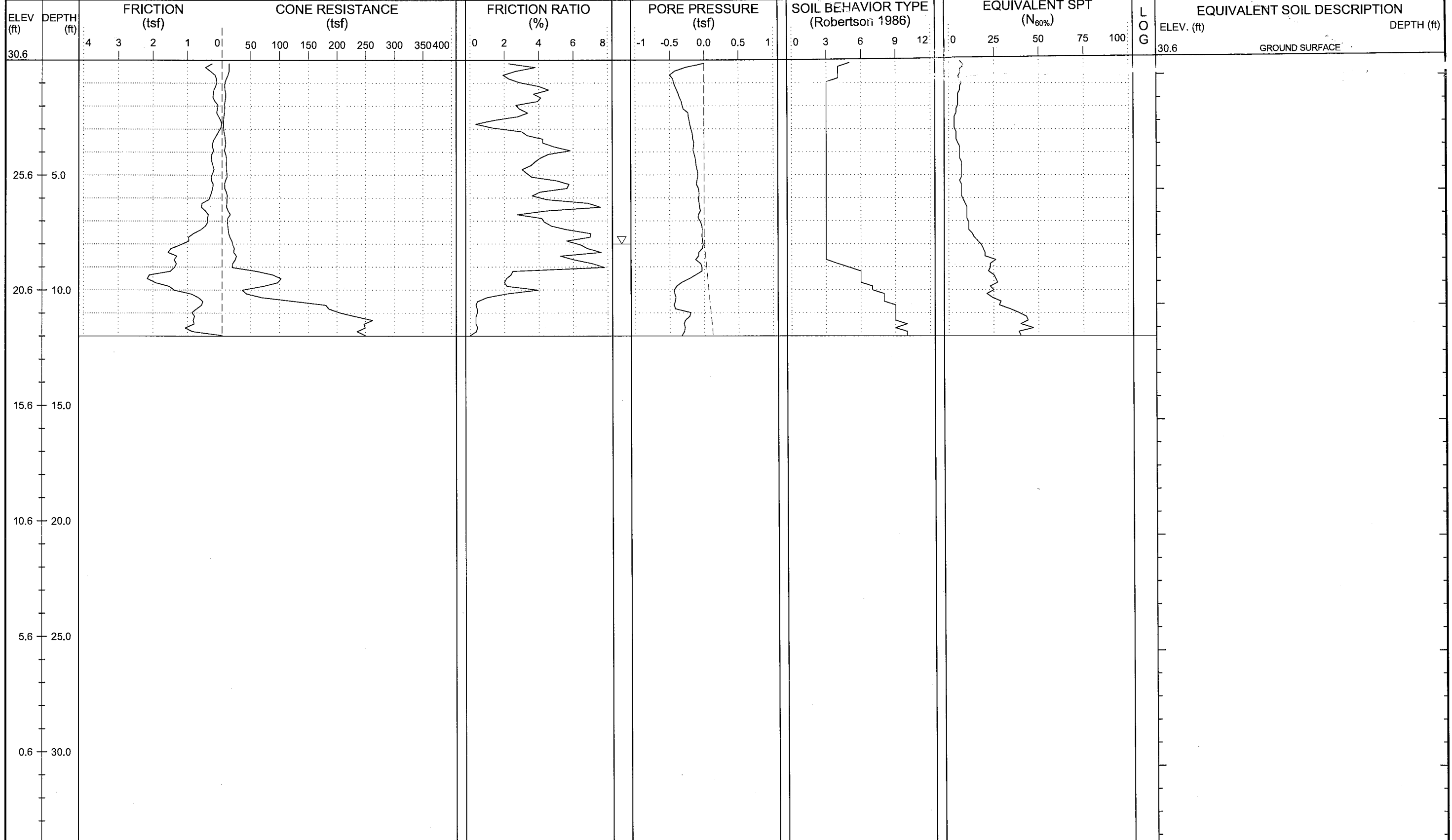


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 75           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLOW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-206   | STATION: 206+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 30.6 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 426,473    | EASTING: 2,528,042       | START DATE: 08/22/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



**EQUIVALENT SOIL DESCRIPTION**

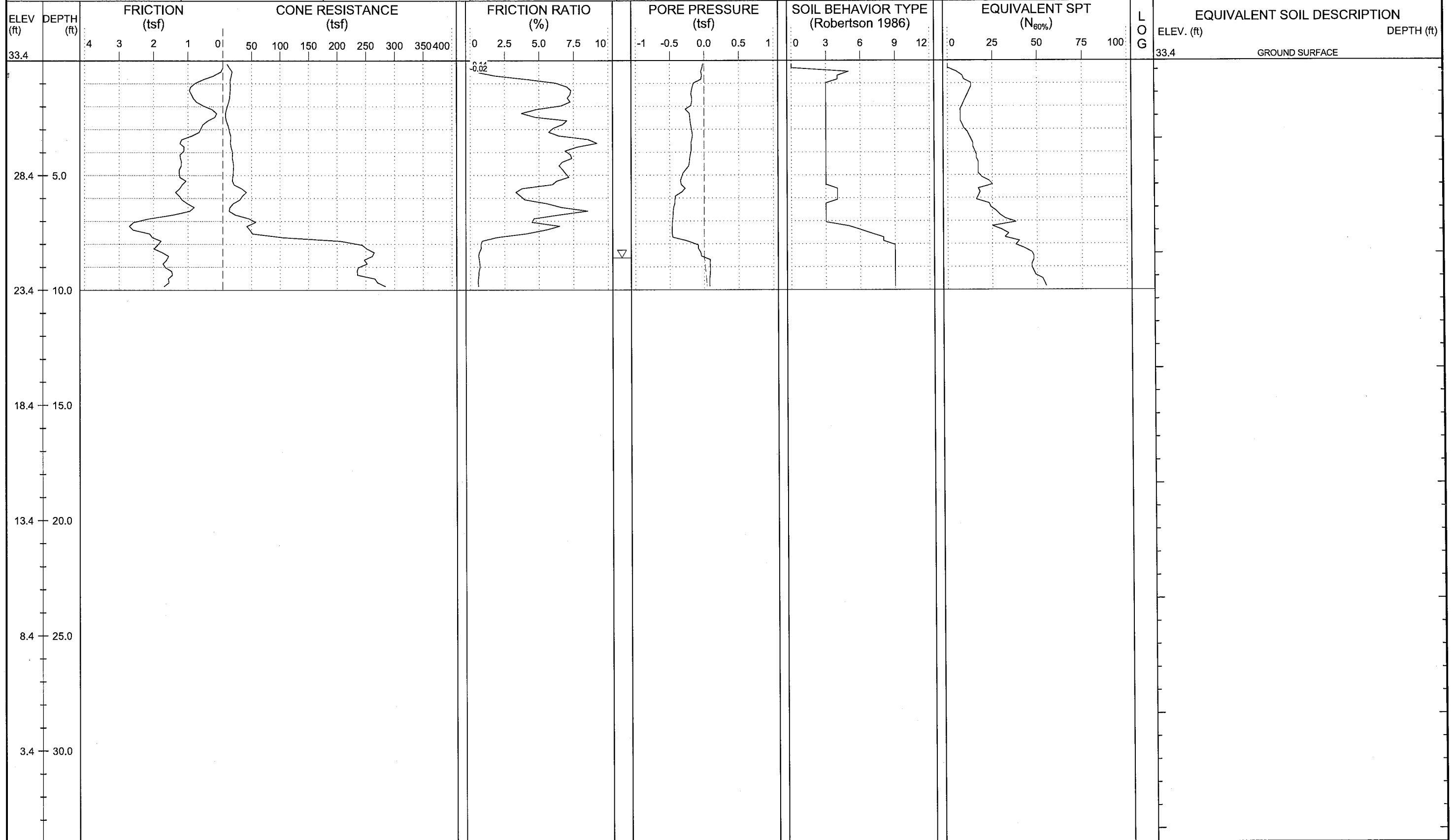
ELEV. (ft)      DEPTH (ft)

30.6      GROUND SURFACE





|   |                      |                      |                          |  |                            |                                  |                      |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 8.6, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-208   | STATION: 208+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 33.4 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 426,673    | EASTING: 2,528,055       | START DATE: 08/22/12                   | COMP. DATE: 08/22/12       | SURFACE WATER DEPTH: N/A         |                      |

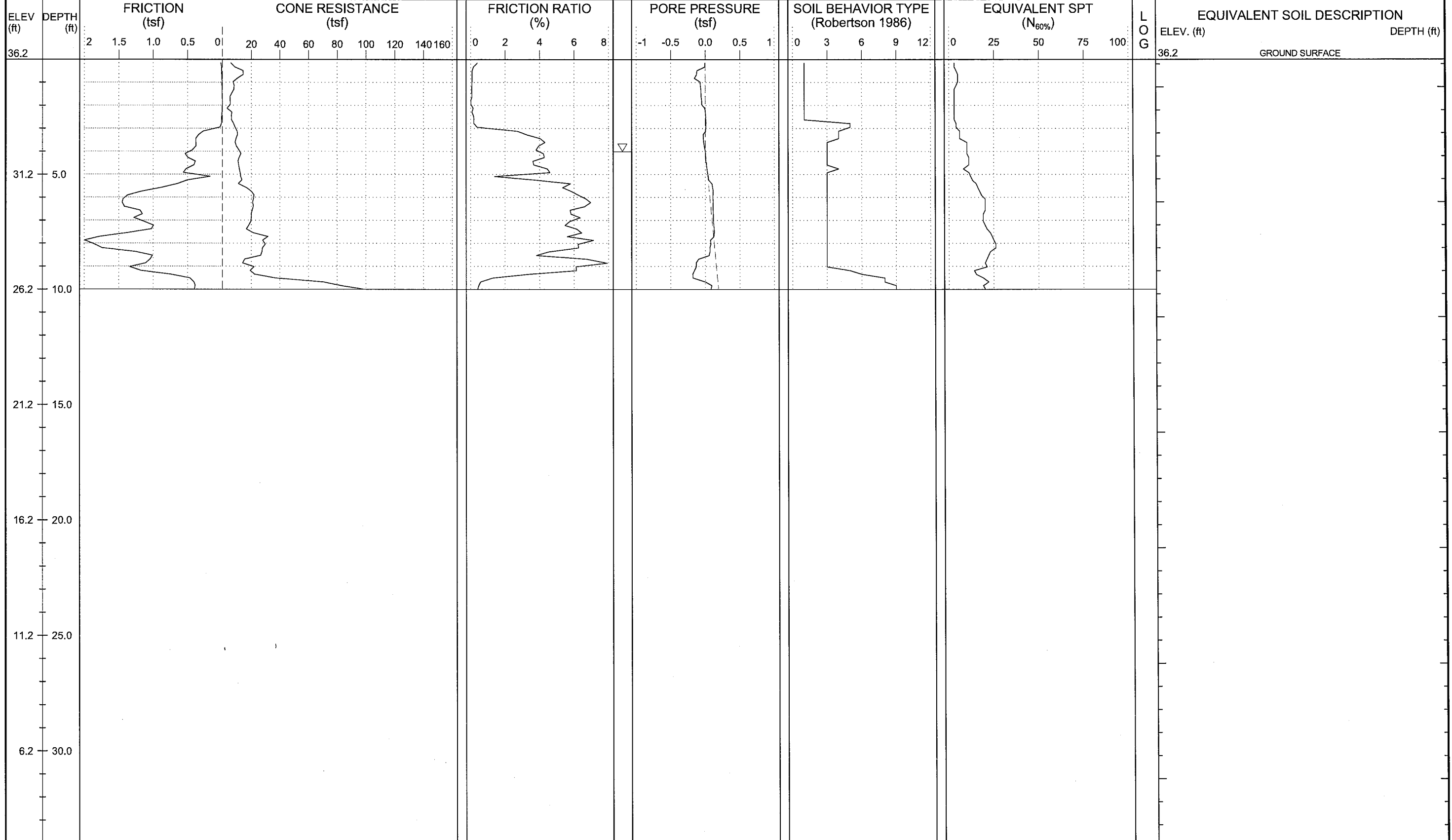




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 77        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLAW |

|   |                      |                      |                          |  |                            |                                  |                      |
|---|----------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|----------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                      |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 4.0, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Ron Stewart |
| BORING NO.: L-212   | STATION: 212+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                      |
| COLLAR ELEV.: 36.2 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 427,072    | EASTING: 2,528,074       | START DATE: 08/22/12                   | COMP. DATE: 08/22/12       | SURFACE WATER DEPTH: N/A         |                      |





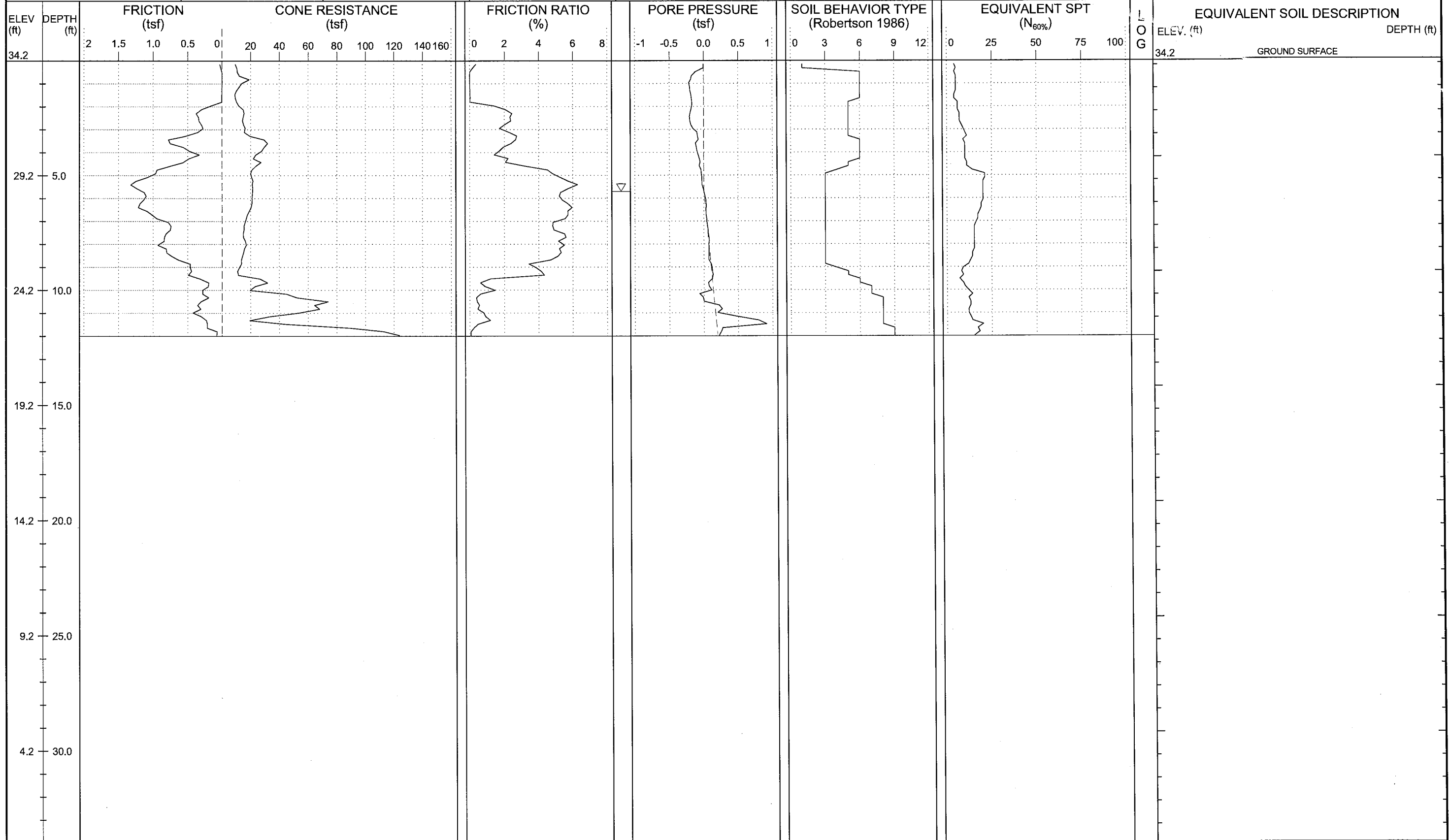


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

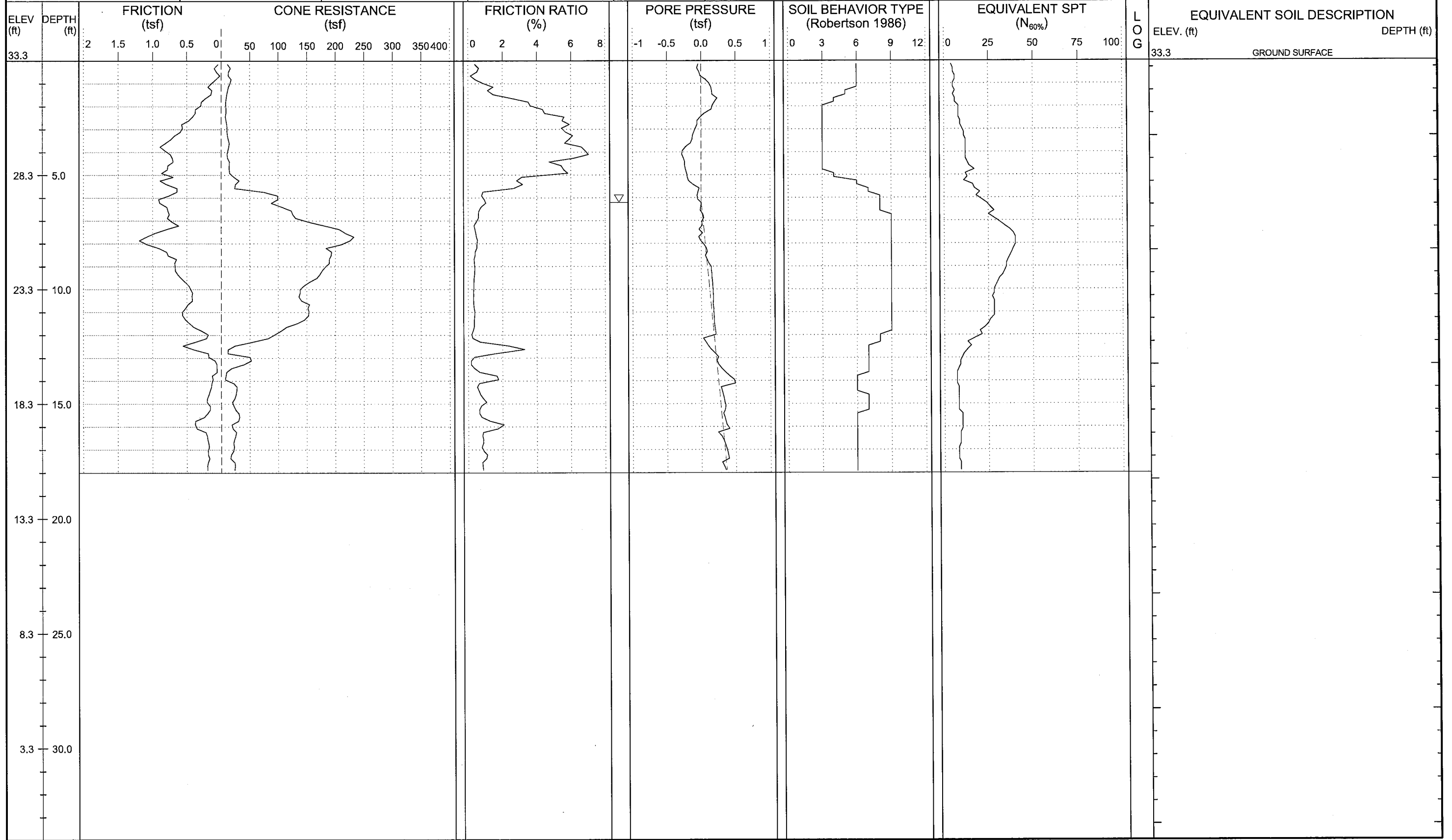
SHEET NO.: 79  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.7, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-216   | STATION: 216+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 34.2 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 427,472    | EASTING: 2,528,091       | START DATE: 08/22/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     | SURFACE WATER DEPTH: N/A         |





|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-218   | STATION: 218+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.3 ft   | TOTAL DEPTH: 18.0 ft | NORTHING: 427,672    | EASTING: 2,528,100       | START DATE: 08/20/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



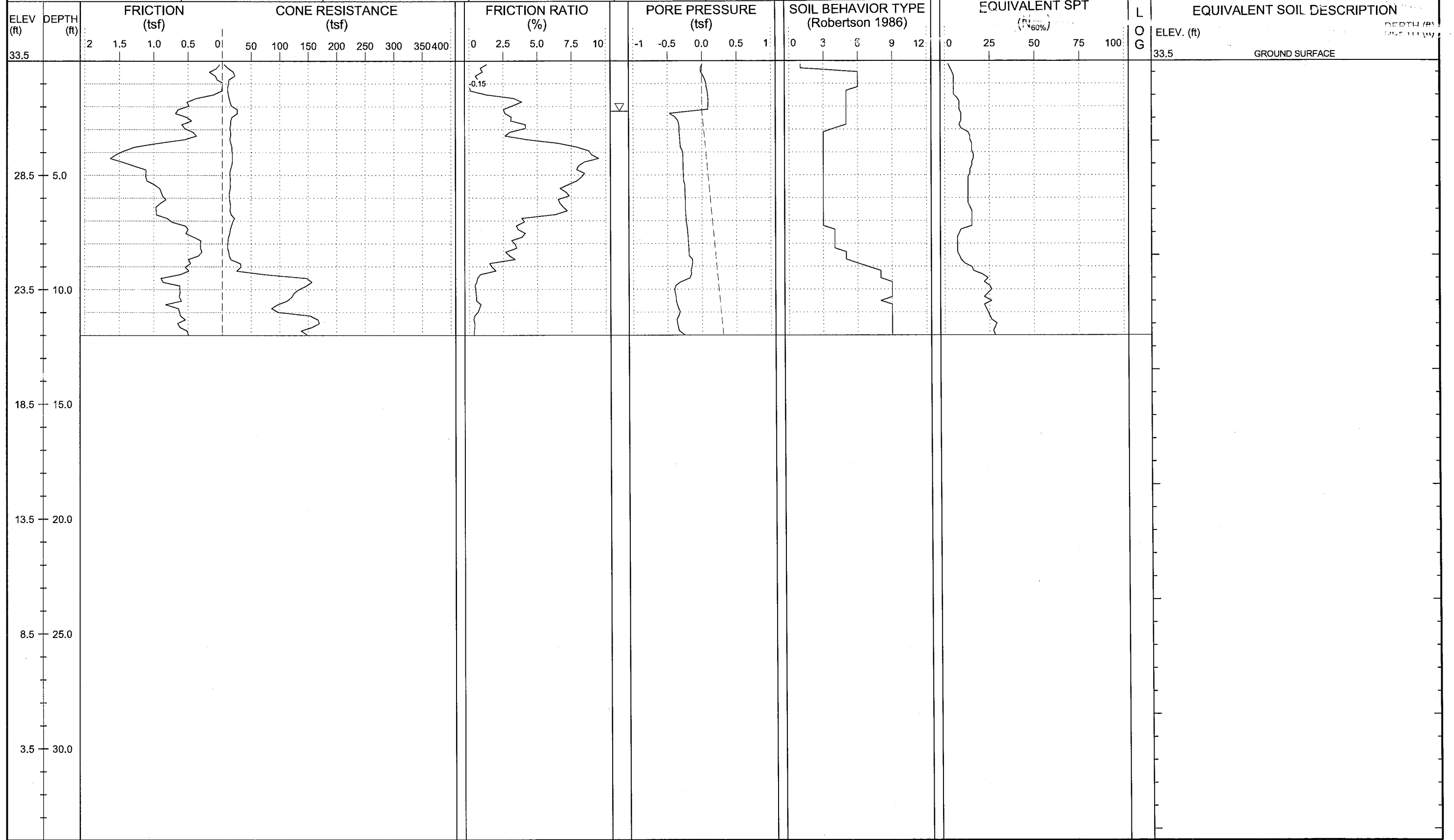


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

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|------------|--------------|
| SHEET NO.: | 81           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 2.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-222   | STATION: 222+00      | OFFSET: 10ft LT      | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.5 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 428,072    | EASTING: 2,528,110       | START DATE: 08/17/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |



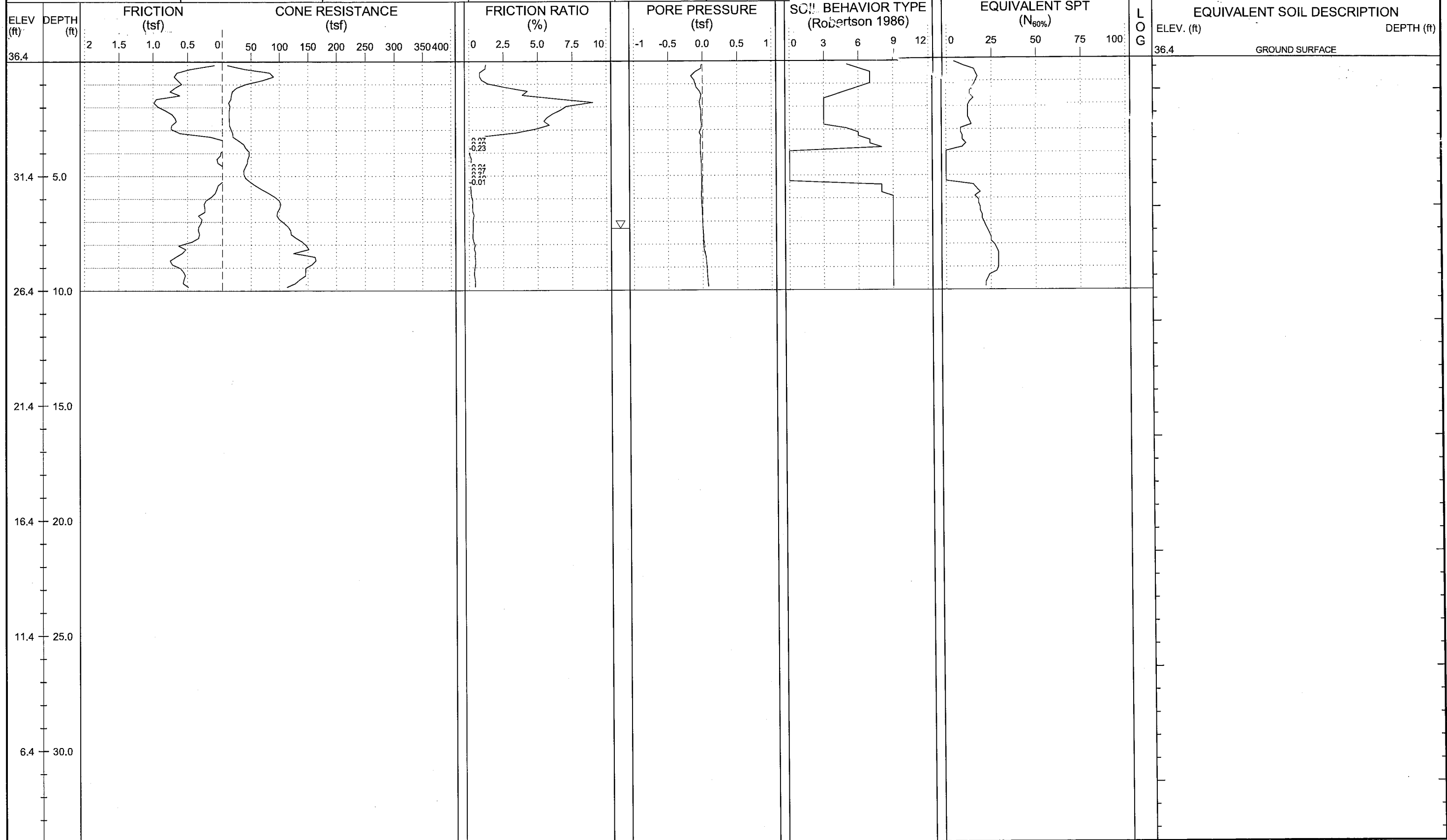


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

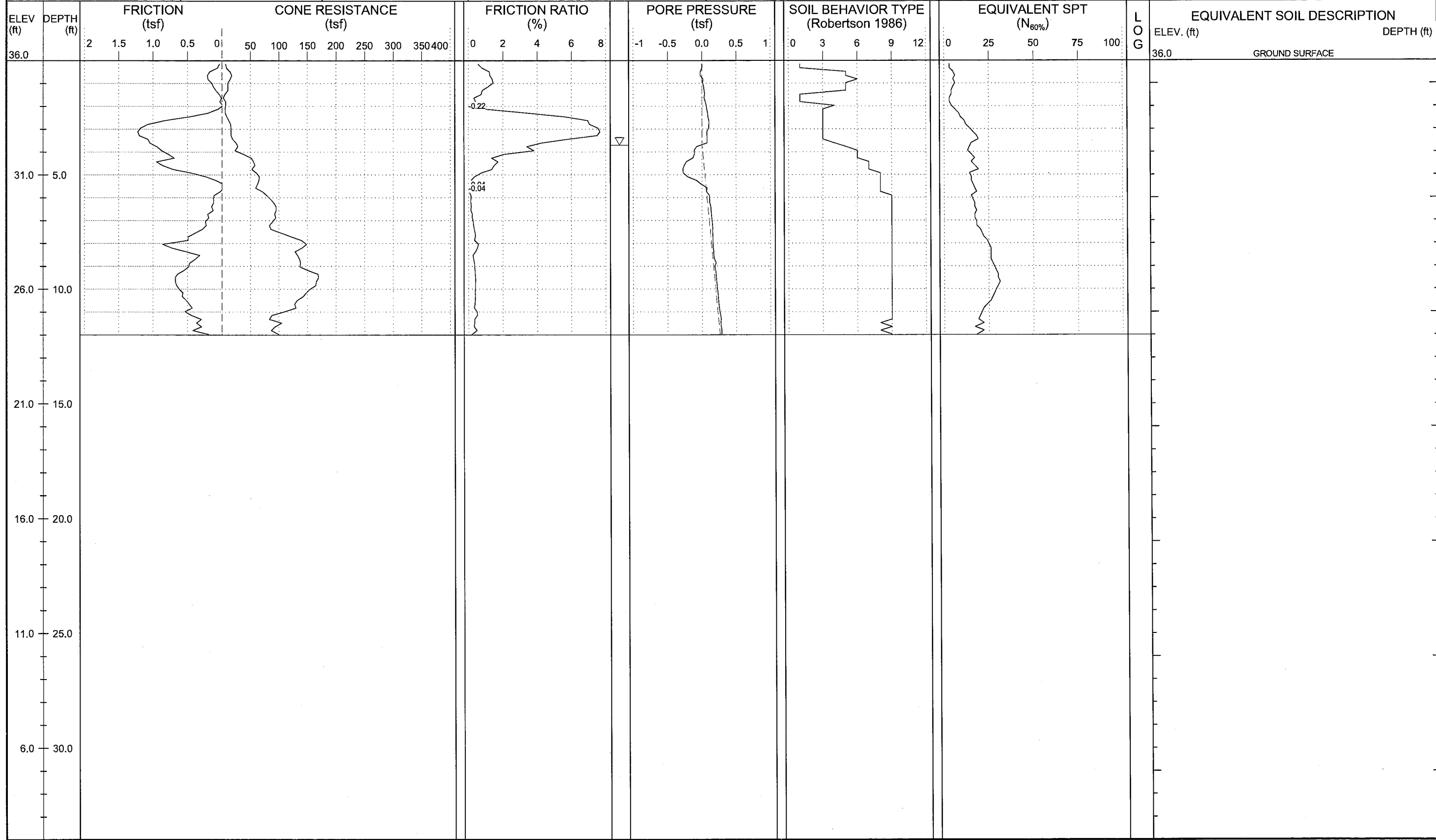
|            |              |
|------------|--------------|
| SHEET NO.: | 82           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-224   | STATION: 224+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 36.4 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 428,269    | EASTING: 2,528,148       | START DATE: 08/17/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     | SURFACE WATER DEPTH: N/A         |





|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: L-226   | STATION: 226+00      | OFFSET: 0ft CL       | ALIGNMENT: -L-           | 0 HR. 3.7                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 36.0 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 428,462    | EASTING: 2,528,199       | 24 HR. N/A                       | START DATE: 08/17/12             |
|   |                      |                      |                          | COMP. DATE: 08/17/12             | DRILLER: Ron Stewart             |
|   |                      |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



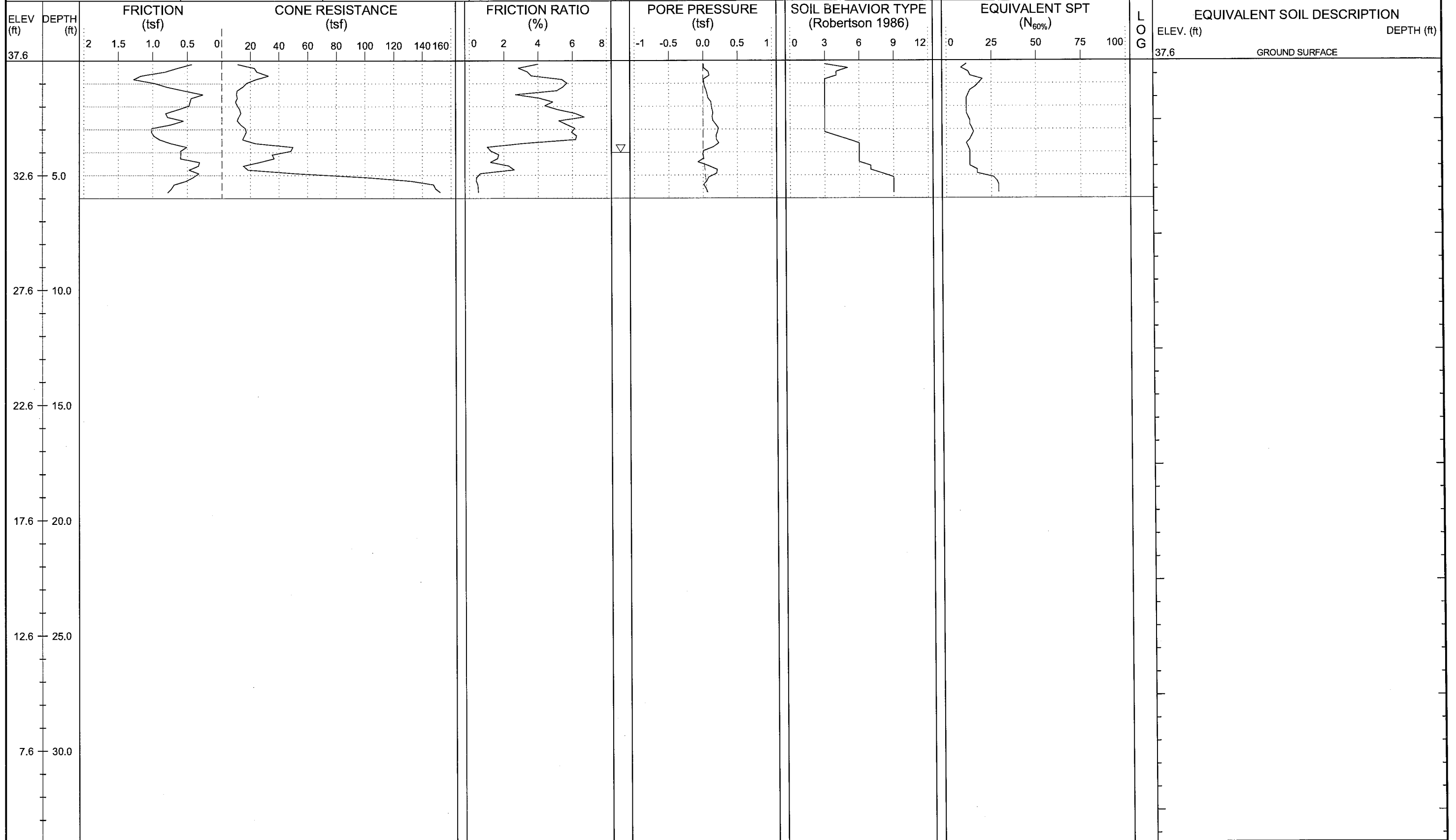




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 84           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 4.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: L-228   | STATION: 228+00     | OFFSET: 0ft CL       | ALIGNMENT: -L-           | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 37.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 428,648    | EASTING: 2,528,274       | START DATE: 08/17/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/17/12                   | DRILLER: Ron Stewart             |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



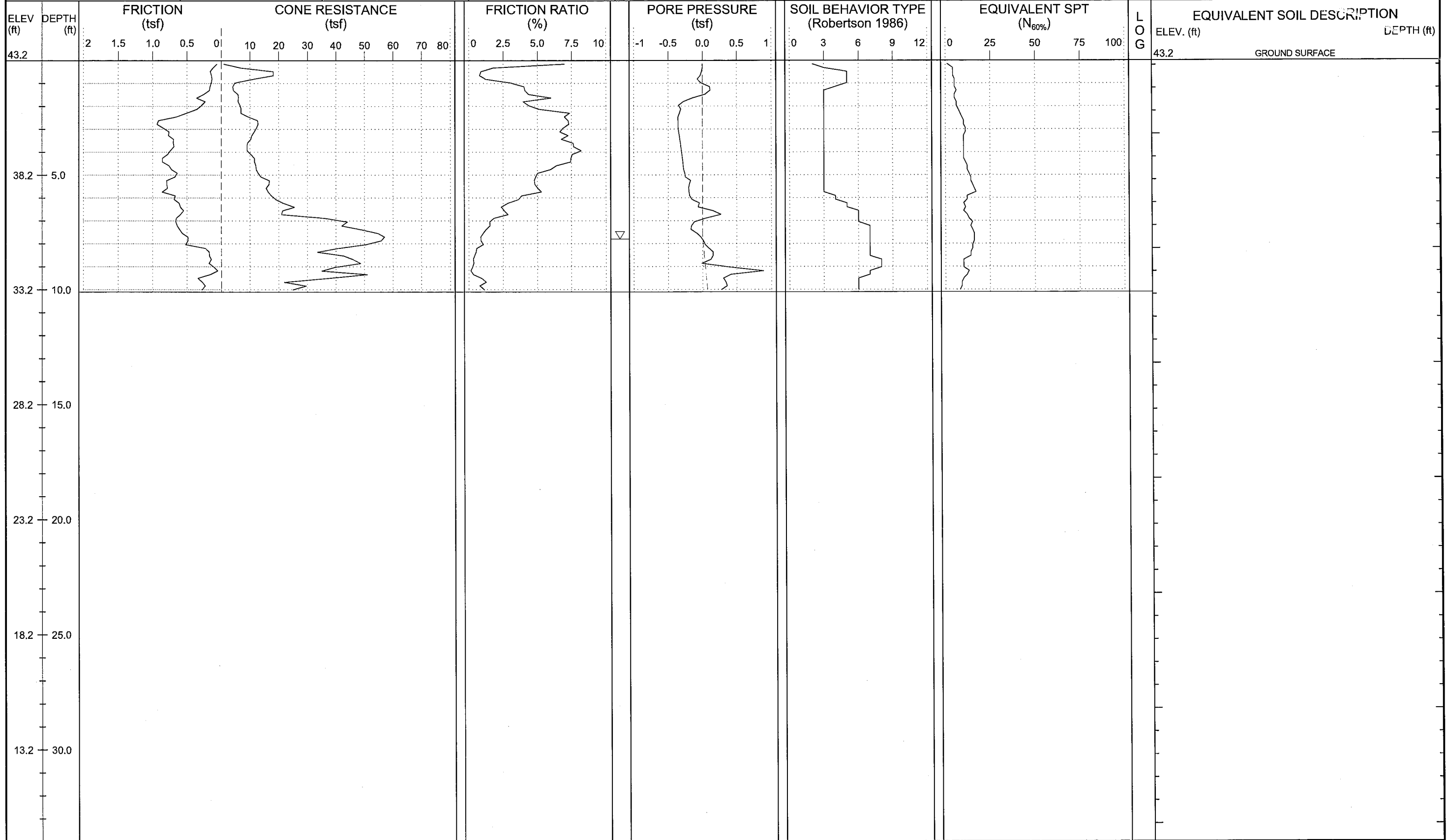


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 85           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y1-12   | STATION: 12+00       | OFFSET: 0ft CL       | ALIGNMENT: -Y1-          | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 43.2 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 412,324    | EASTING: 2,524,271       | START DATE: 09/10/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |





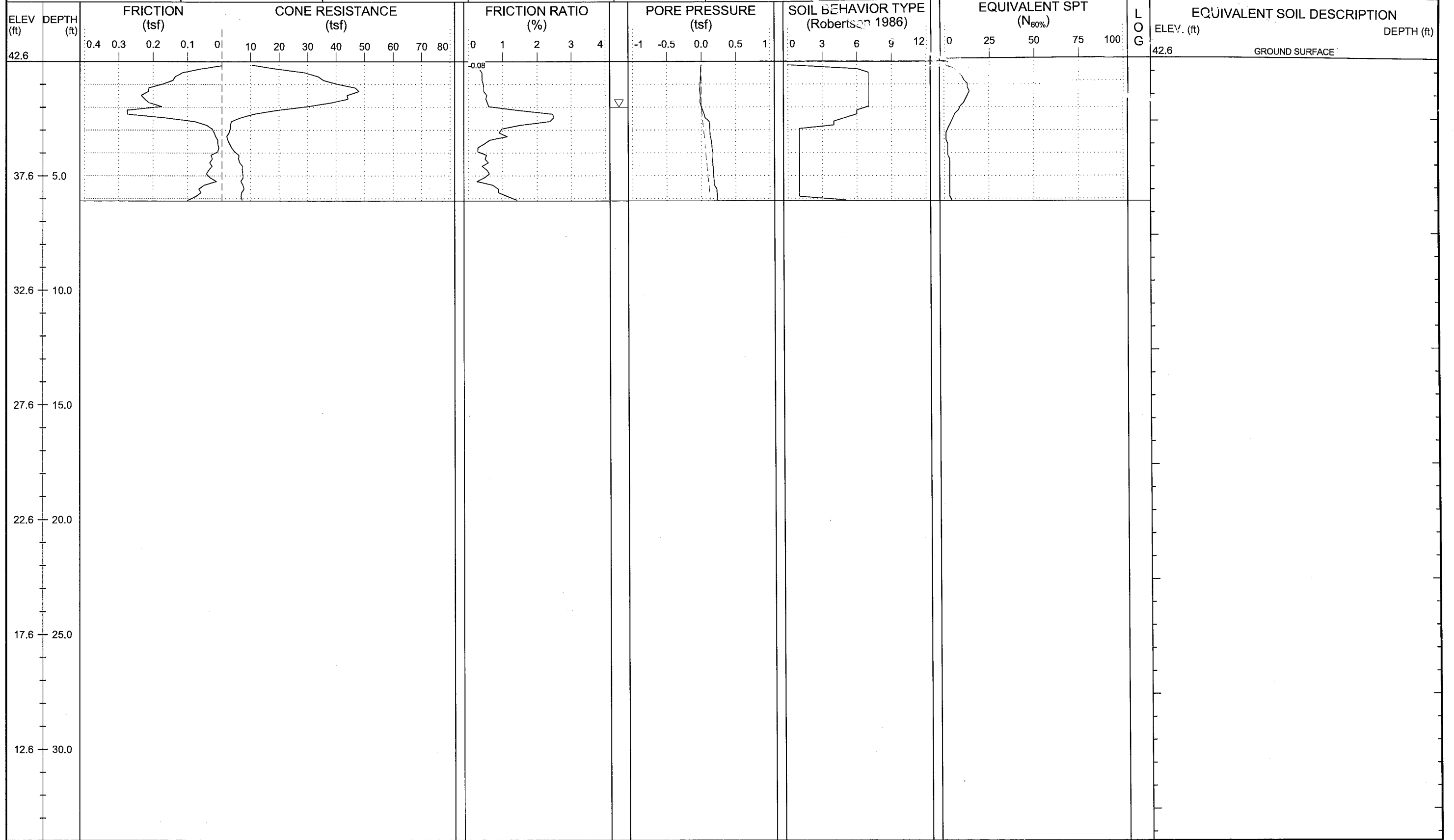


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 87           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 2.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y1-16   | STATION: 16+00      | OFFSET: 15ft LT      | ALIGNMENT: -Y1-          | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 42.6 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 412,433    | EASTING: 2,524,642       | START DATE: 09/10/12                   | CONE ID: DSA1123                 |
|   |                     |                      |                          |  | DRILLER: Ron Stewart             |
|   |                     |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |  | COMP. DATE: 09/10/12             |
|   |                     |                      |                          |  | SURFACE WATER DEPTH: N/A         |



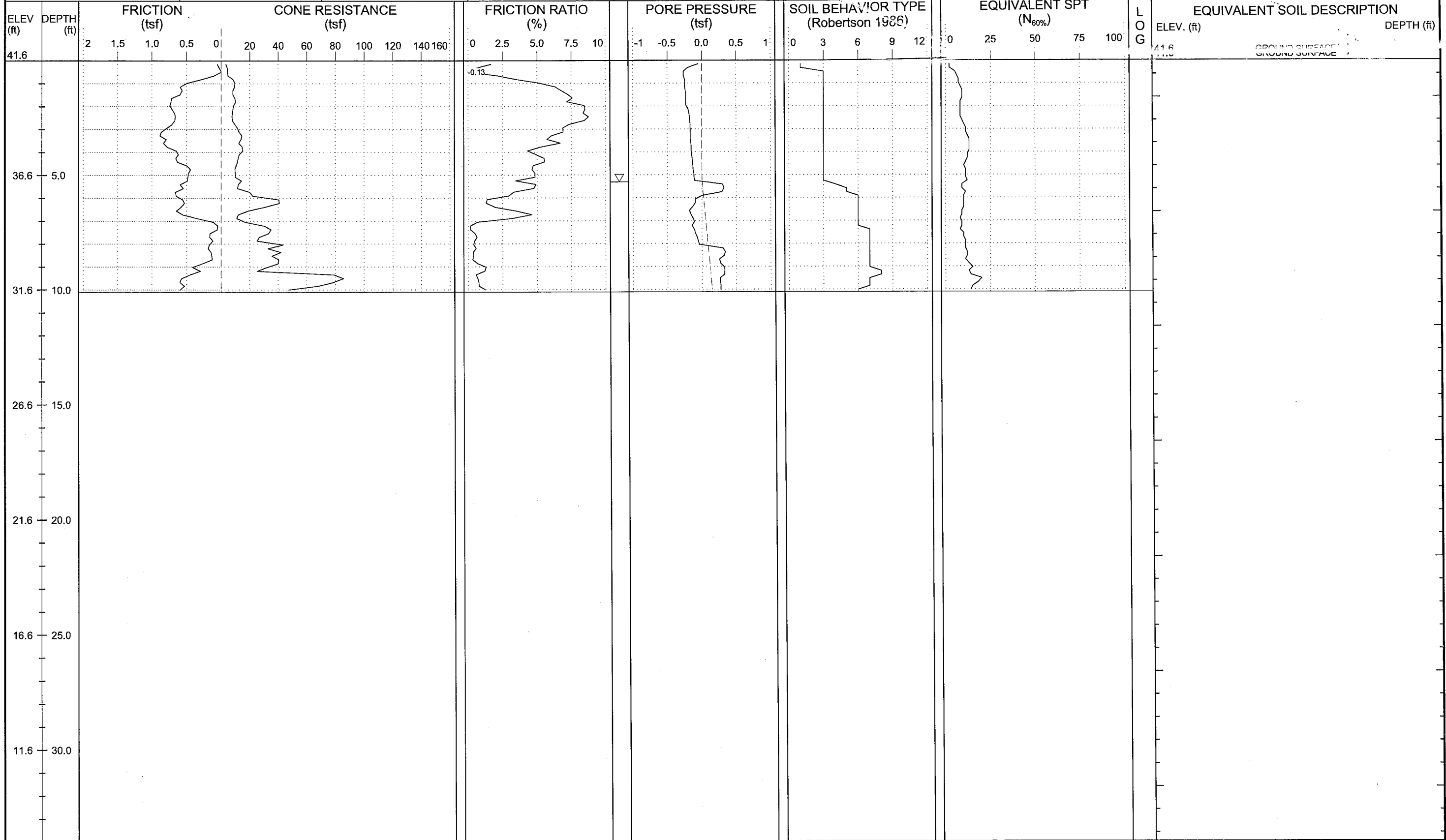


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

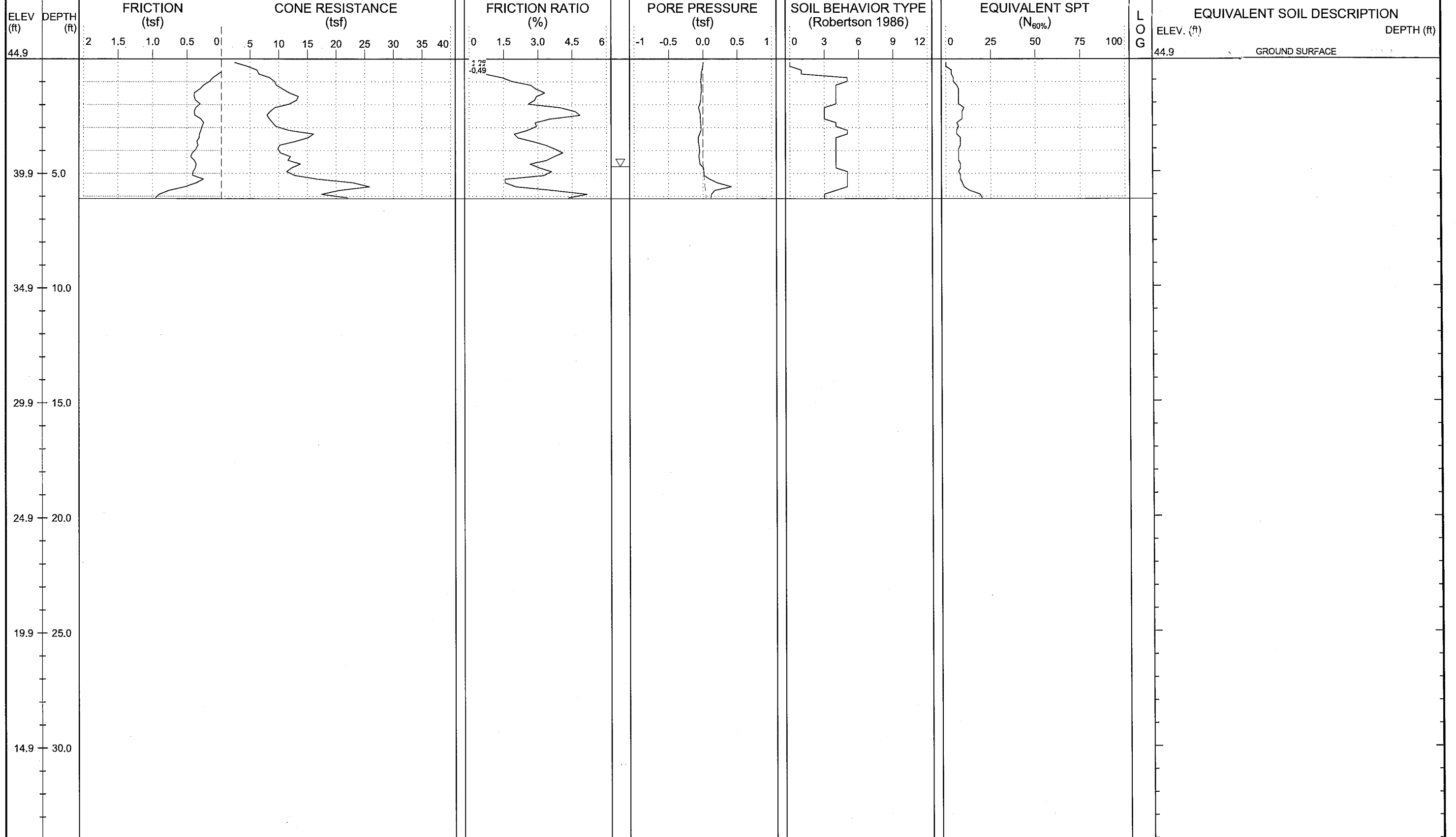
|            |              |
|------------|--------------|
| SHEET NO.: | 88           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLAW |

|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y1A-1050  | STATION: 10+50       | OFFSET: 0ft CL       | ALIGNMENT: -Y1A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.6 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 412,280    | EASTING: 2,524,435       | START DATE: 09/10/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          |  | DRILLER: Ron Stewart             |
|   |                      |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |  | SURFACE WATER DEPTH: N/A         |





|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y1A-1250  | STATION: 12+50      | OFFSET: 14ft LT      | ALIGNMENT: -Y1A-         | 0 HR. 4.7                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 44.9 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 412,117    | EASTING: 2,524,328       | 24 HR. N/A                       | START DATE: 09/10/12             |
|   |                     |                      |                          | COMP. DATE: 09/10/12             | DRILLER: Ron Stewart             |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |

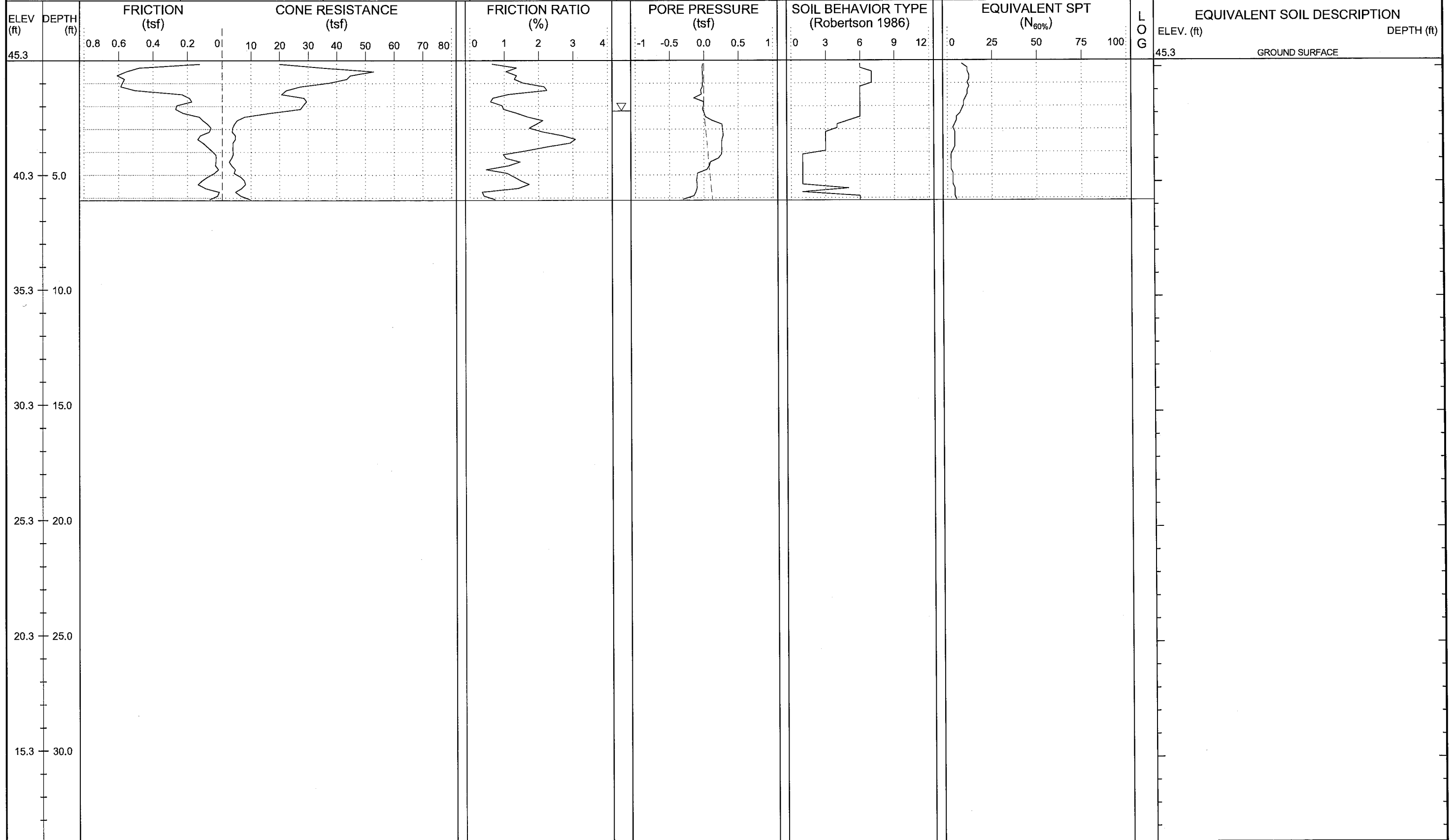




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|            |              |
|------------|--------------|
| SHEET NO.: | 90           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                            |                                  |                                  |
|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 2.2 | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y1A-1750  | STATION: 17+50      | OFFSET: 20ft LT      | ALIGNMENT: -Y1A-           | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 45.3 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 411,786    | EASTING: 2,523,953         | START DATE: 09/10/12             | COMP. DATE: 09/10/12             |
|   |                     |                      |                            | DRILLER: Ron Stewart             |                                  |
|   |                     |                      |                            | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                            | SURFACE WATER DEPTH: N/A         |                                  |



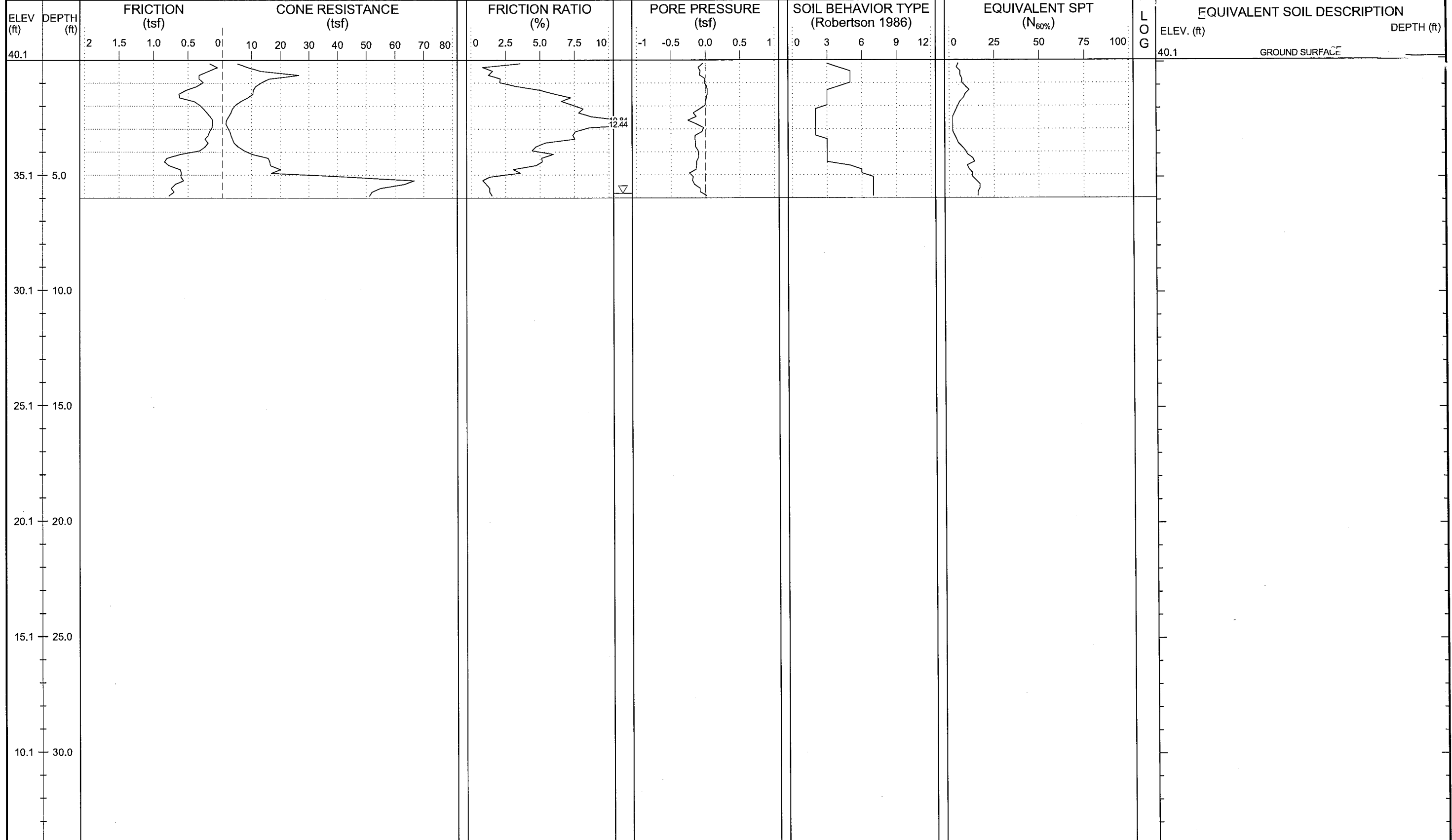


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 91  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                     |                      |                          |  |                            |                                  |                       |
|---|---------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|-----------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison |
| BORING NO.: Y2-13   | STATION: 13+00      | OFFSET: 13ft RT      | ALIGNMENT: -Y2-          | ROD TYPE: Pre-strung                   | CONE ID: DSG0867           | TECHNICIAN: M.A.D.               |                       |
| COLLAR ELEV.: 40.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,287    | EASTING: 2,524,496       | START DATE: 08/29/12                   | COMP. DATE: 08/29/12       | SURFACE WATER DEPTH: N/A         |                       |

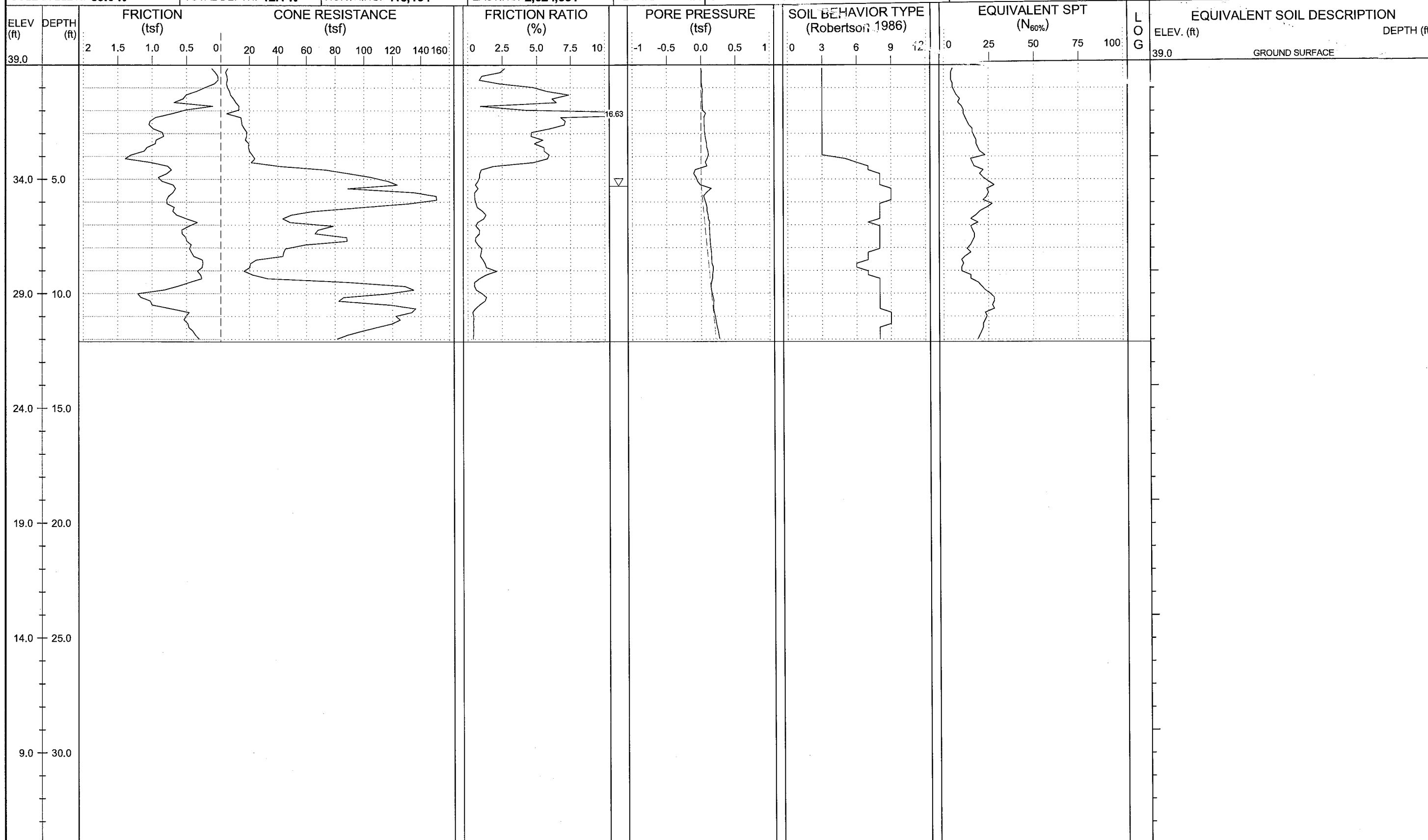








|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 5.3       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2-17   | STATION: 17+00       | OFFSET: 10ft RT      | ALIGNMENT: -Y2-          | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 39.0 ft   | TOTAL DEPTH: 12.1 ft | NORTHING: 418,184    | EASTING: 2,524,881       | 24 HR. N/A                       | START DATE: 08/30/12             |
|   |                      |                      |                          | DRILLER: Cory Robison            | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          | COMP. DATE: 08/30/12             | SURFACE WATER DEPTH: N/A         |

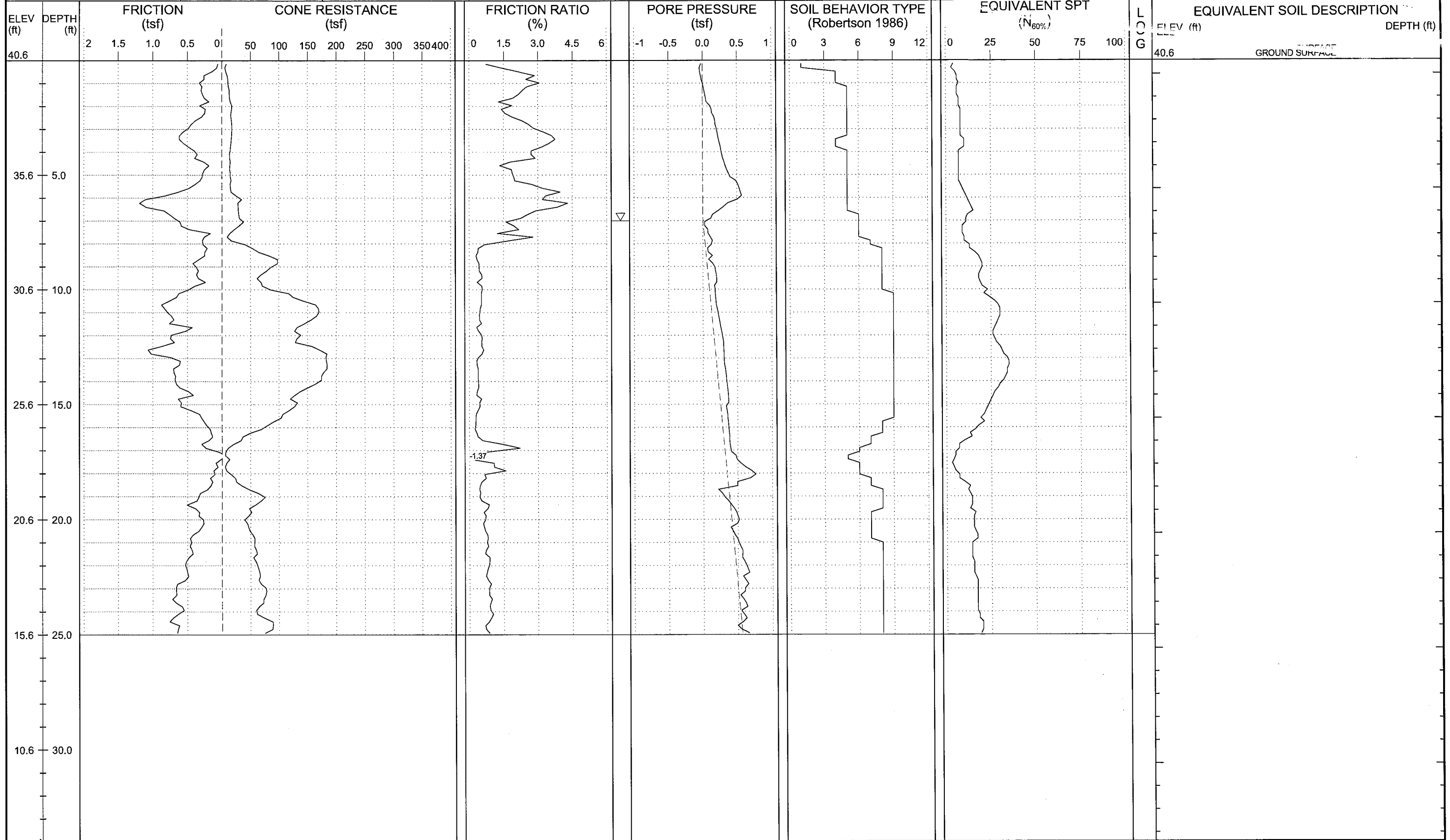




# NCDOT GEOTECHNICAL ENGINEERING UNIT

|         |                      |
|---------|----------------------|
| ENGLISH | SHEET NO.: 94        |
|         | PROJ. NO.: 34442.1.2 |
|         | TIP NO.: R-2514B     |
|         | COUNTY: JONES/ONSLAW |

|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 7.0       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2-21   | STATION: 21+00       | OFFSET: 16ft RT      | ALIGNMENT: -Y2-          | 0 HR. 7.0                        | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 40.6 ft   | TOTAL DEPTH: 25.0 ft | NORTHING: 418,011    | EASTING: 2,525,239       | 24 HR. N/A                       | ROD TYPE: Pre-strung             |
|   |                      |                      |                          | START DATE: 08/30/12             | CONE ID: DSG0867                 |
|   |                      |                      |                          |                                  | DRILLER: Cory Robison            |
|   |                      |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



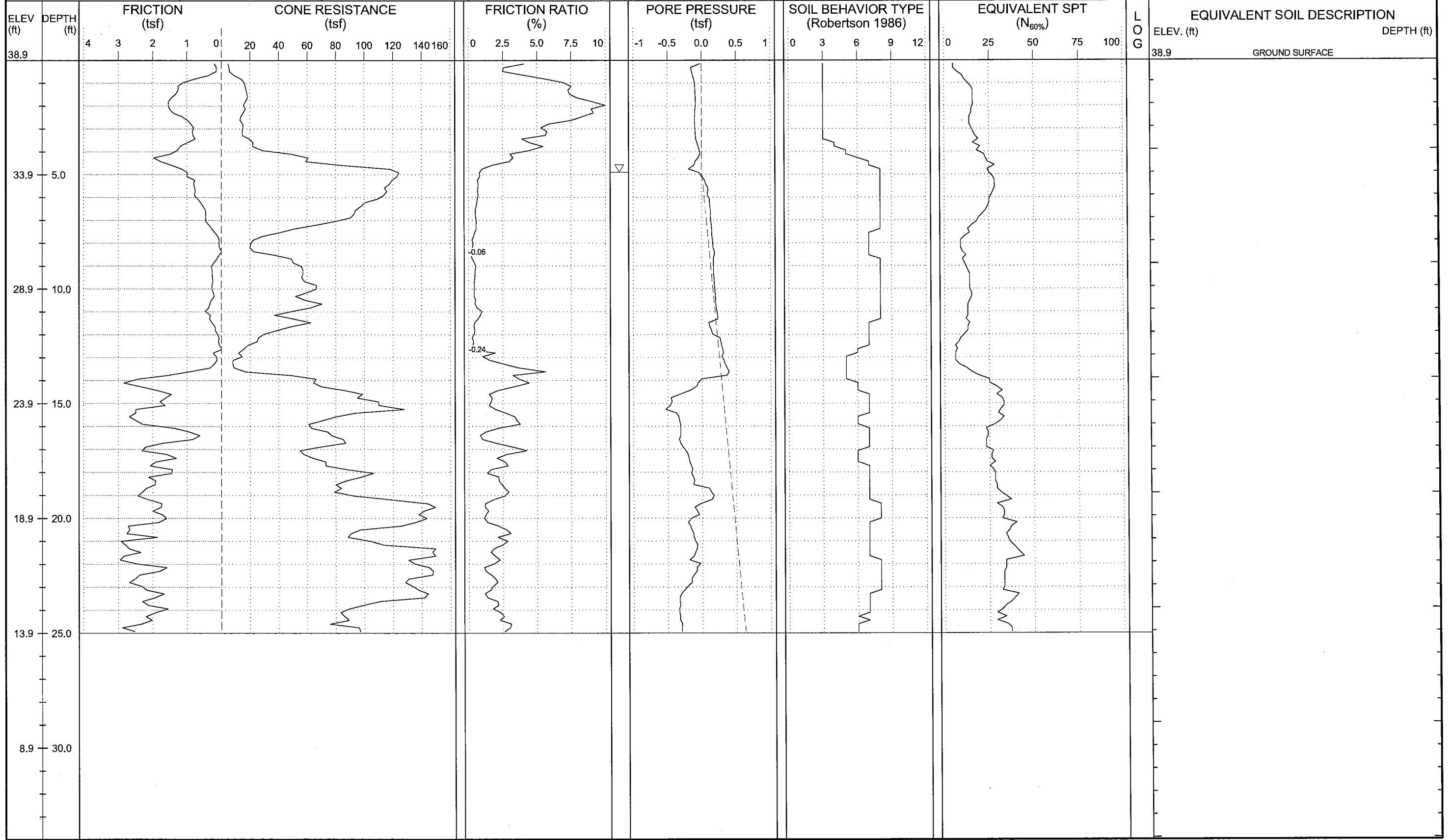


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 95  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLOW

|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 4.9, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2-24   | STATION: 24+00       | OFFSET: 40ft RT      | ALIGNMENT: -Y2-                        | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 38.9 ft   | TOTAL DEPTH: 25.0 ft | NORTHING: 417,824    | EASTING: 2,525,469                     | START DATE: 08/29/12             | COMP. DATE: 08/29/12             |
|   |                      |                      |  |                                  | DRILLER: Cory Robison            |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



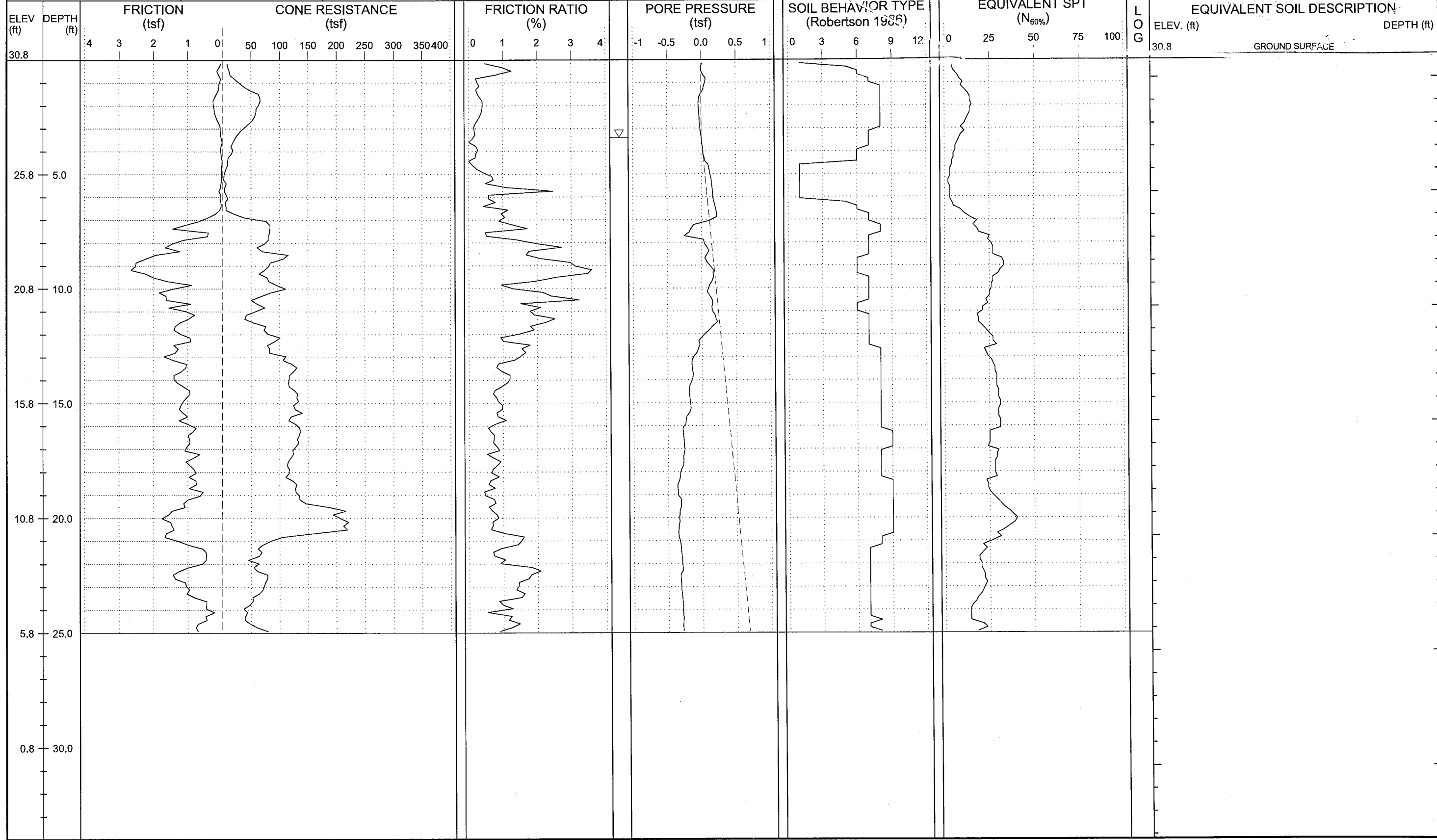


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 96  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 3.4       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2-26   | STATION: 26+00       | OFFSET: 30ft RT      | ALIGNMENT: -Y2-          | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 30.8 ft   | TOTAL DEPTH: 25.0 ft | NORTHING: 417,707    | EASTING: 2,525,633       | 24 HR. N/A                       | START DATE: 09/04/12             |
|   |                      |                      |                          | DRILLER: Ron Stewart             | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          | COMP. DATE: 09/04/12             | SURFACE WATER DEPTH: N/A         |



LOG

ELEV. (ft) 30.8

DEPTH (ft)

GROUND SURFACE



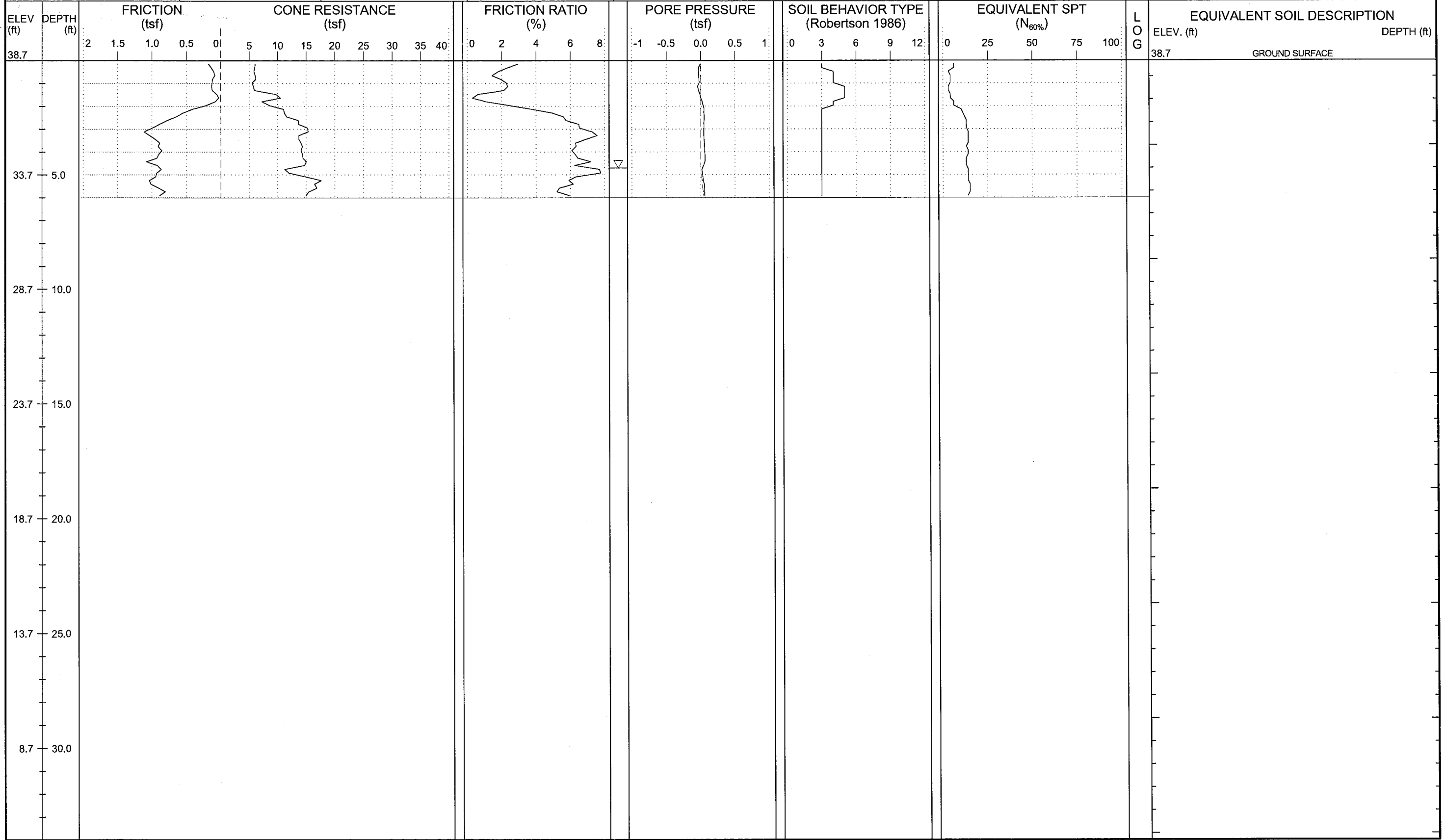


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 98  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 4.7, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2A-11  | STATION: 11+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 38.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,123    | EASTING: 2,524,783       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/30/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



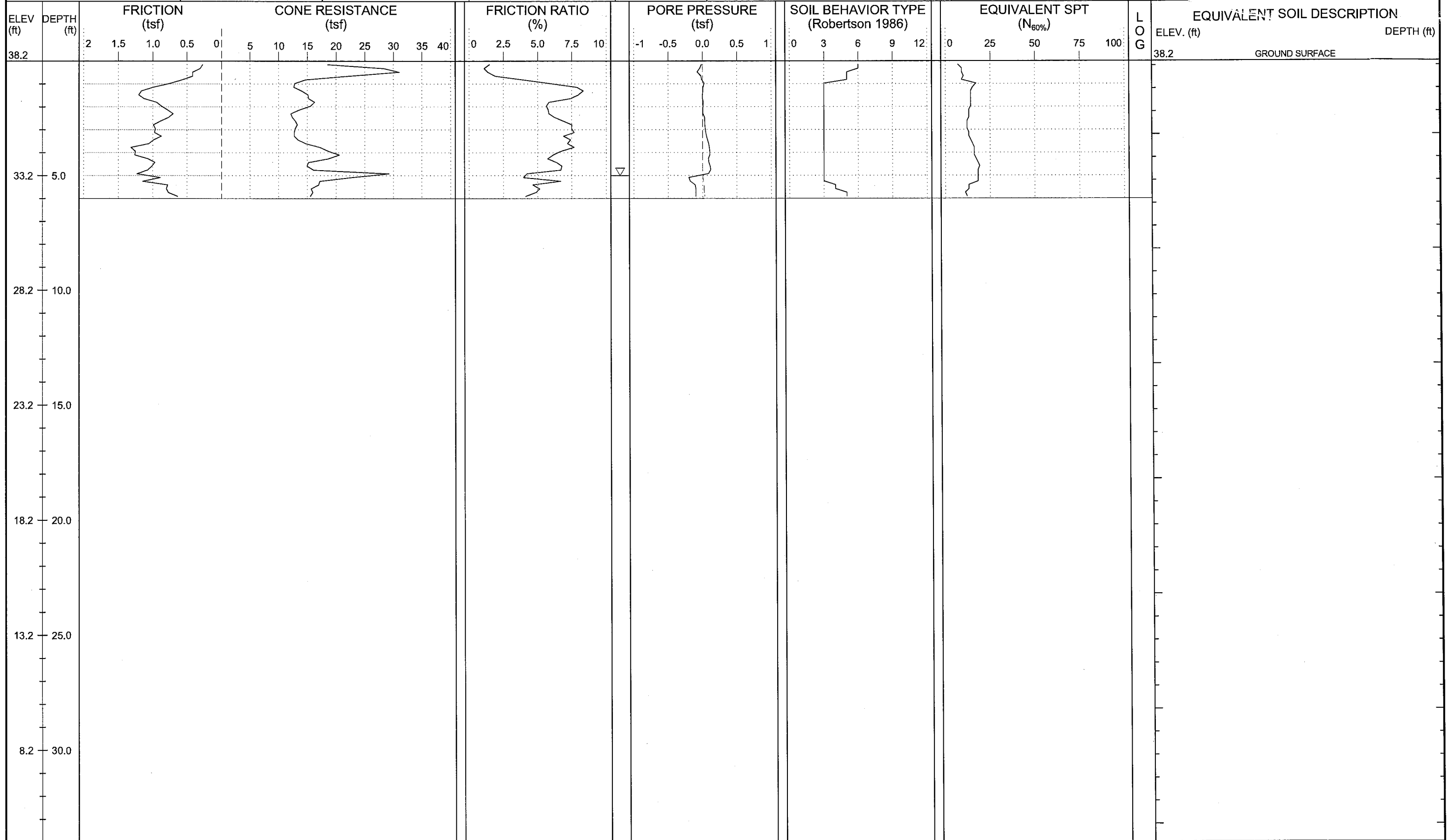


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 99           |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLow |

|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2A-13  | STATION: 13+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 38.2 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,925    | EASTING: 2,524,756       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/30/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





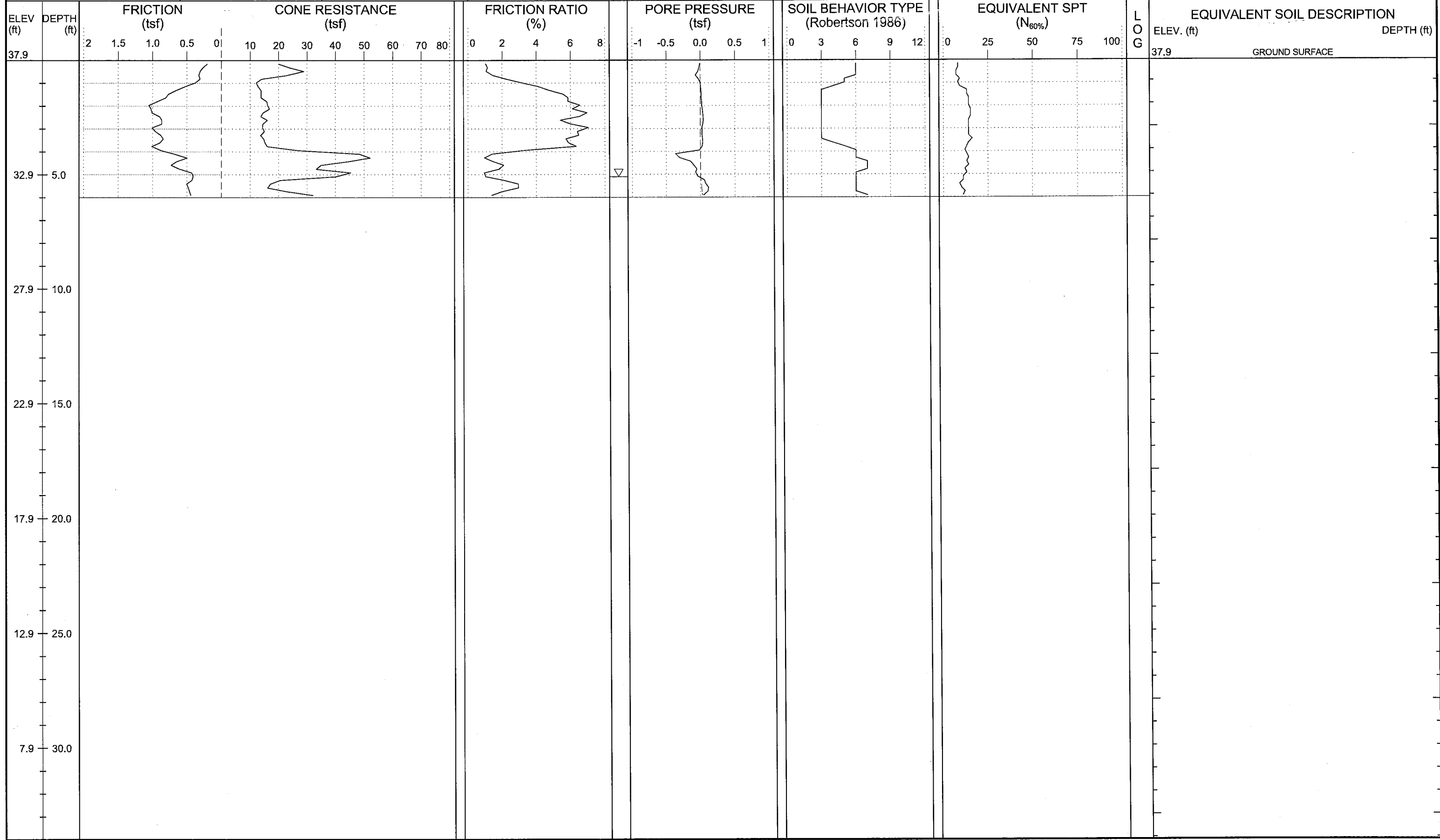


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 100  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-15  | STATION: 15+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. 5.1                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 37.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,726    | EASTING: 2,524,734       | 24 HR. N/A                       | START DATE: 08/30/12             |
|   |                     |                      |                          | CONC. DATE: 08/30/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



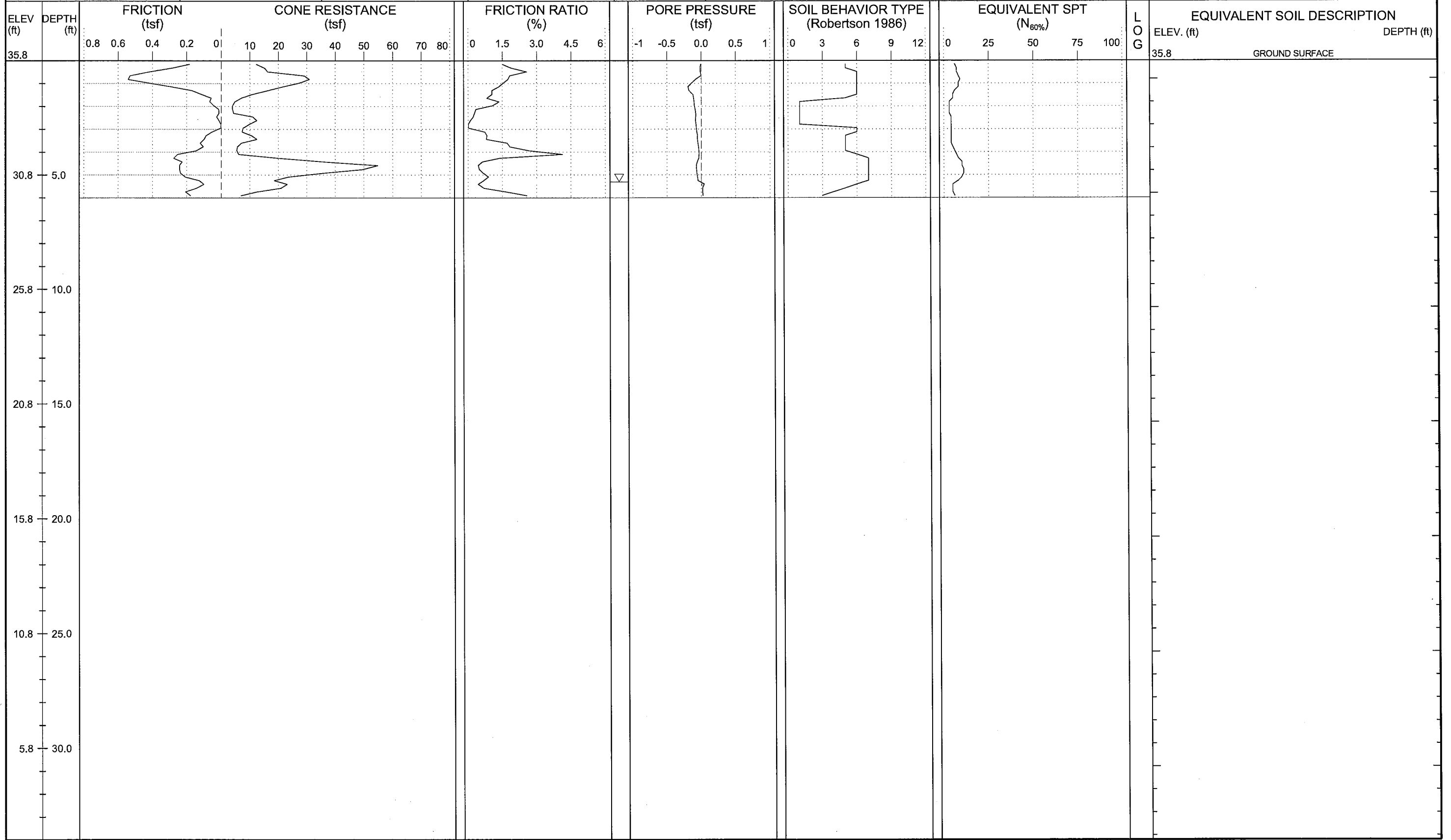


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

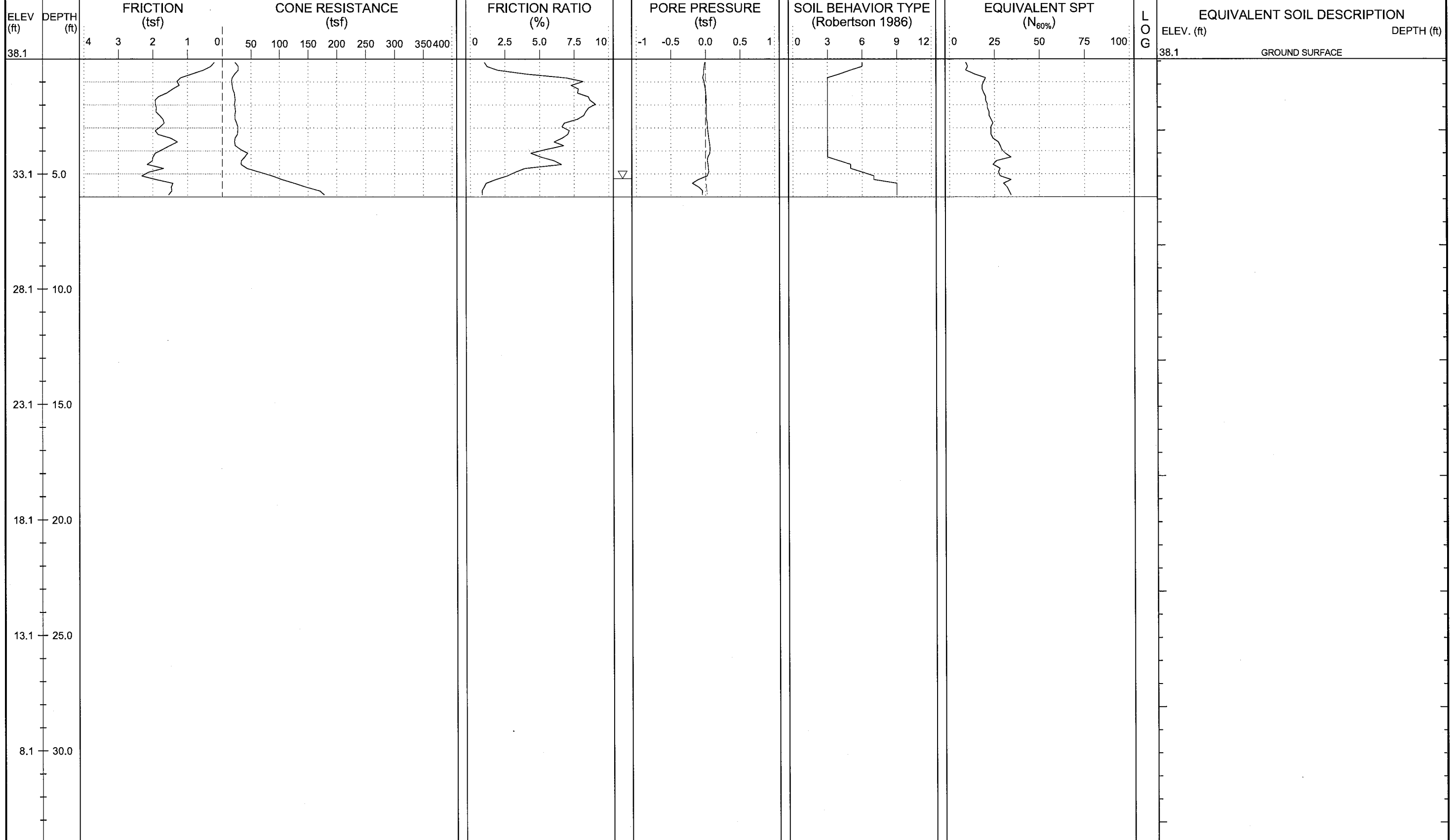
SHEET NO.: 101  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-17  | STATION: 17+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. 5.3                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 35.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,538    | EASTING: 2,524,795       | 24 HR. N/A                       | START DATE: 08/30/12             |
|   |                     |                      |                          | CONC. DATE: 08/30/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



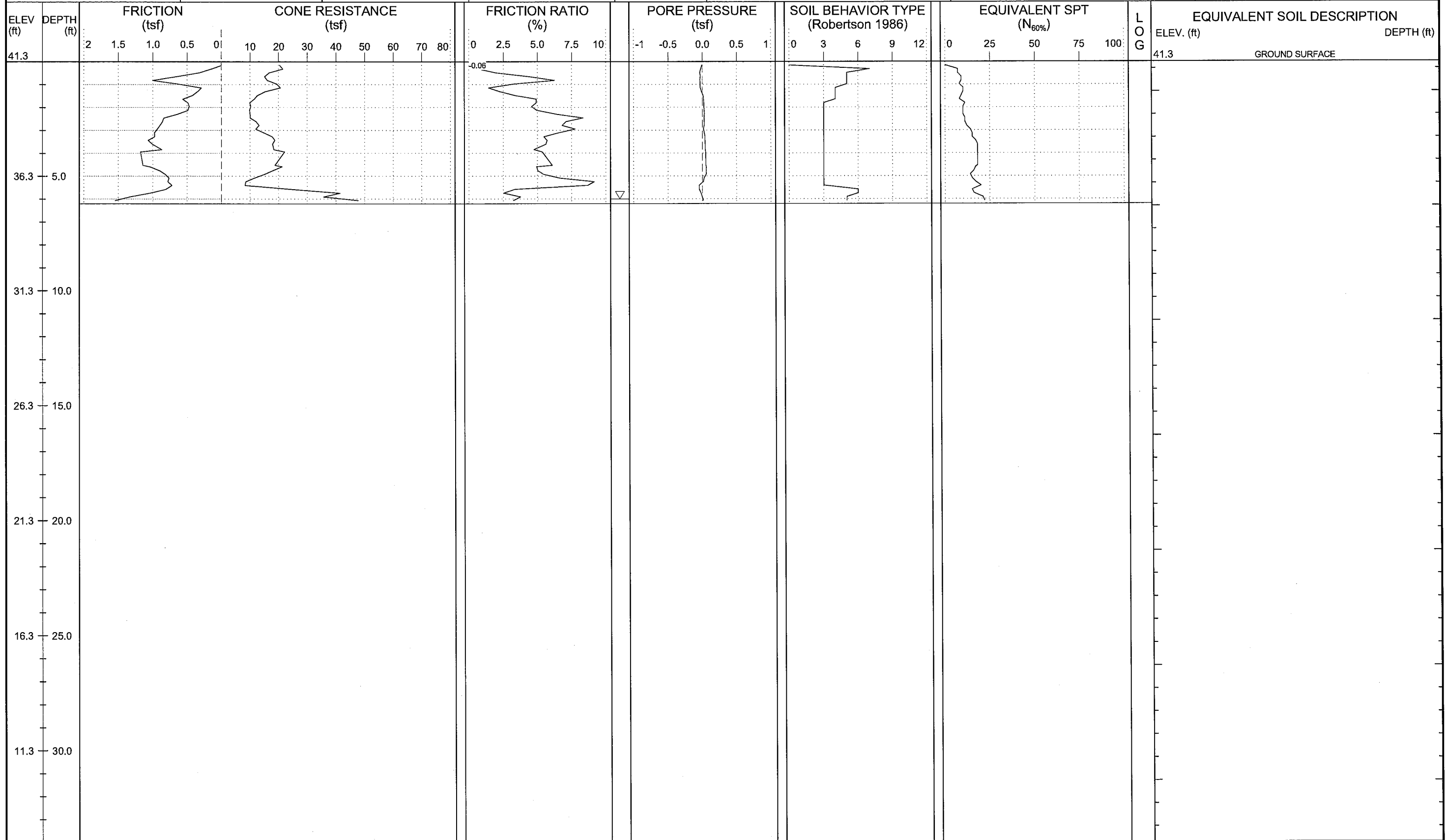


|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2A-19  | STATION: 19+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 38.1 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,367    | EASTING: 2,524,899       | START DATE: 08/30/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          |  | DRILLER: Cory Robison            |
|   |                     |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |  | COMP. DATE: 08/30/12             |
|   |                     |                      |                          |  | SURFACE WATER DEPTH: N/A         |





|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-21  | STATION: 21+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. 6.0                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 41.3 ft   | TOTAL DEPTH: 6.2 ft | NORTHING: 417,175    | EASTING: 2,524,942       | 24 HR. N/A                       | START DATE: 08/30/12             |
|   |                     |                      |                          | CONC. DATE: 09/04/12             | DRILLER: Ron Stewart             |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

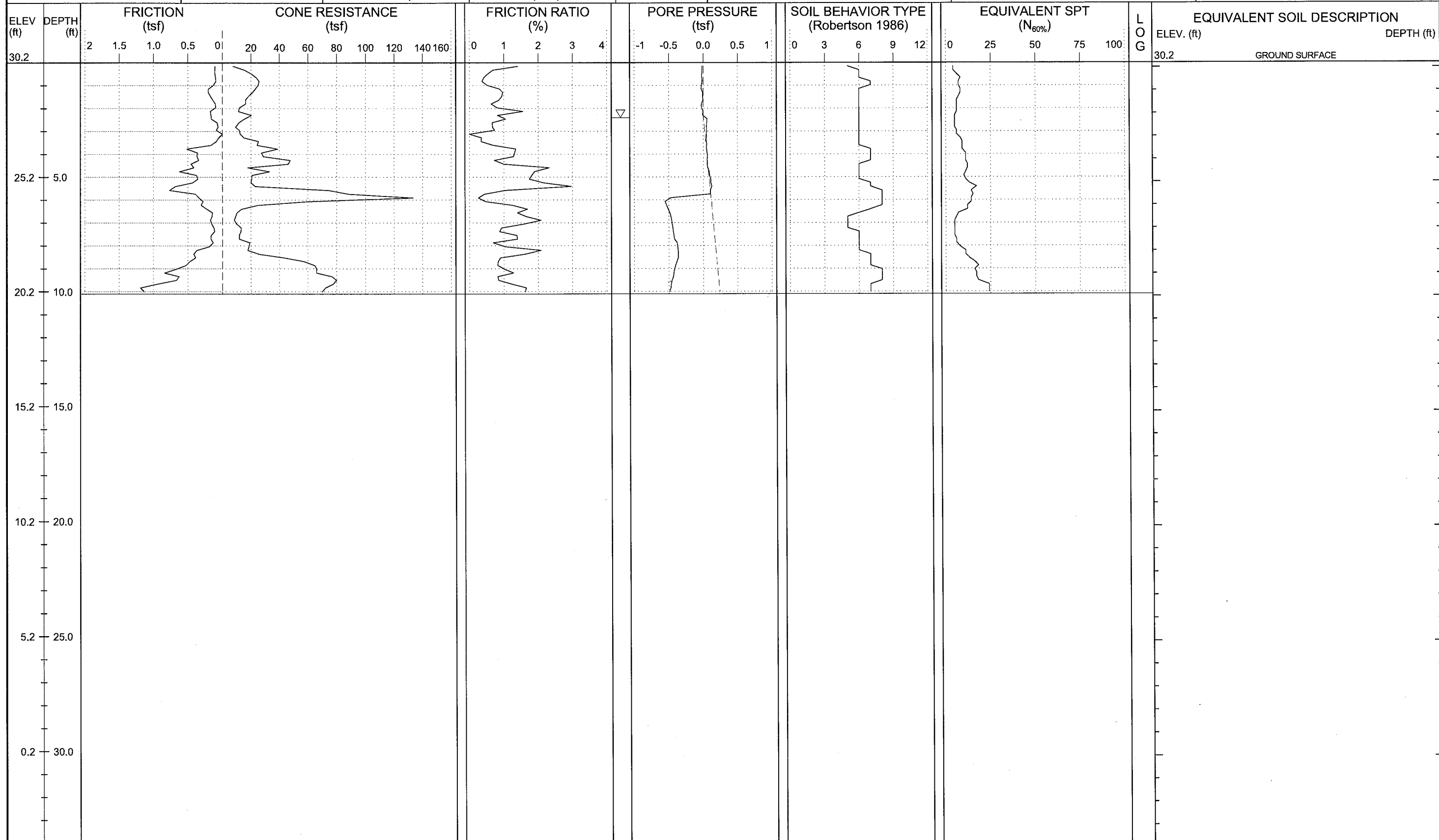








|   |                      |                      |                          |                                  |                                  |
|---|----------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-30  | STATION: 30+00       | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. 2.4                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 30.2 ft   | TOTAL DEPTH: 10.1 ft | NORTHING: 416,309    | EASTING: 2,524,696       | 24 HR. N/A                       | START DATE: 09/04/12             |
|   |                      |                      |                          | CONC. DATE: 09/04/12             | DRILLER: Ron Stewart             |
|   |                      |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |









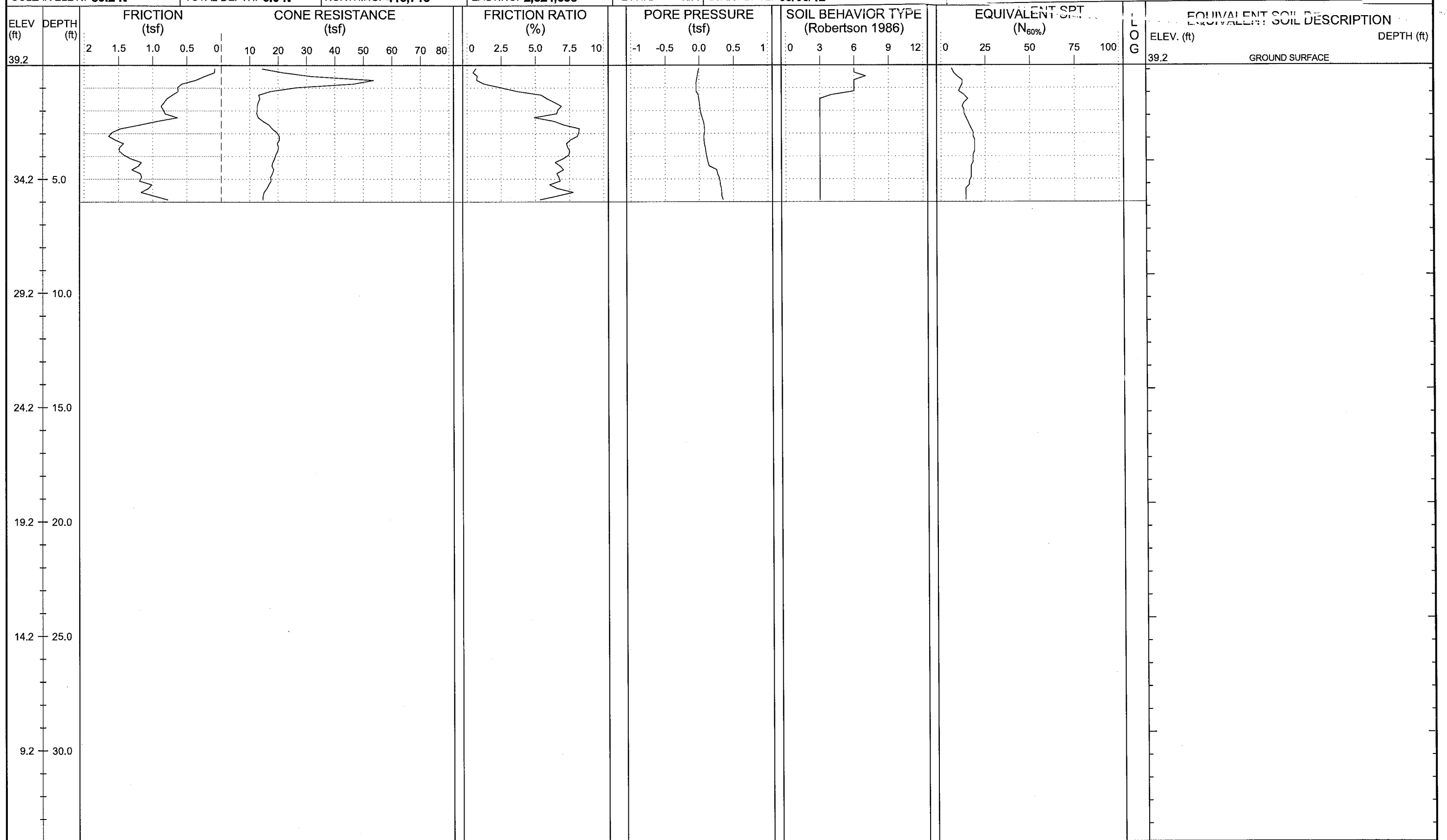


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

|            |              |
|------------|--------------|
| SHEET NO.: | 110          |
| PROJ. NO.: | 34442.1.2    |
| TIP NO.:   | R-2514B      |
| COUNTY:    | JONES/ONSLOW |

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2A-36  | STATION: 36+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 24 HR. N/A                       | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 39.2 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 415,718    | EASTING: 2,524,638       | START DATE: 09/06/12             | CONC. DATE: 09/06/12             |
|   |                     |                      |                          |                                  | CONE TYPE: 1.44 Vertek Piezocone |
|   |                     |                      |                          |                                  | CONE ID: DSG0867                 |
|   |                     |                      |                          |                                  | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



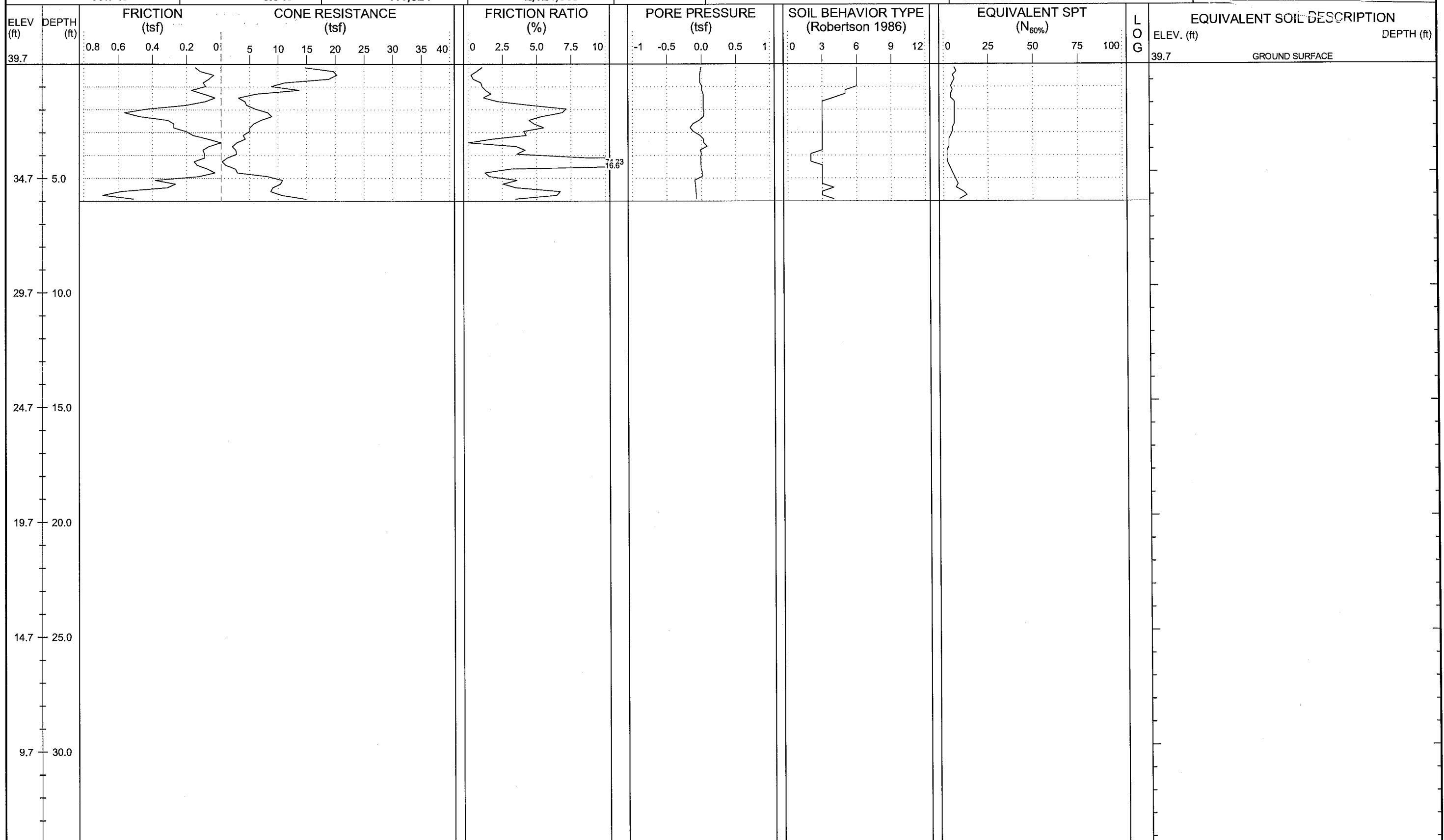


# NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH

SHEET NO.: 111  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLow

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-40  | STATION: 40+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 39.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 415,324    | EASTING: 2,524,568       | 24 HR. N/A                       | START DATE: 09/05/12             |
|   |                     |                      |                          | CONE ID: DSG0867                 | DRILLER: Ron Stewart             |
|   |                     |                      |                          | COMP. DATE: 09/05/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

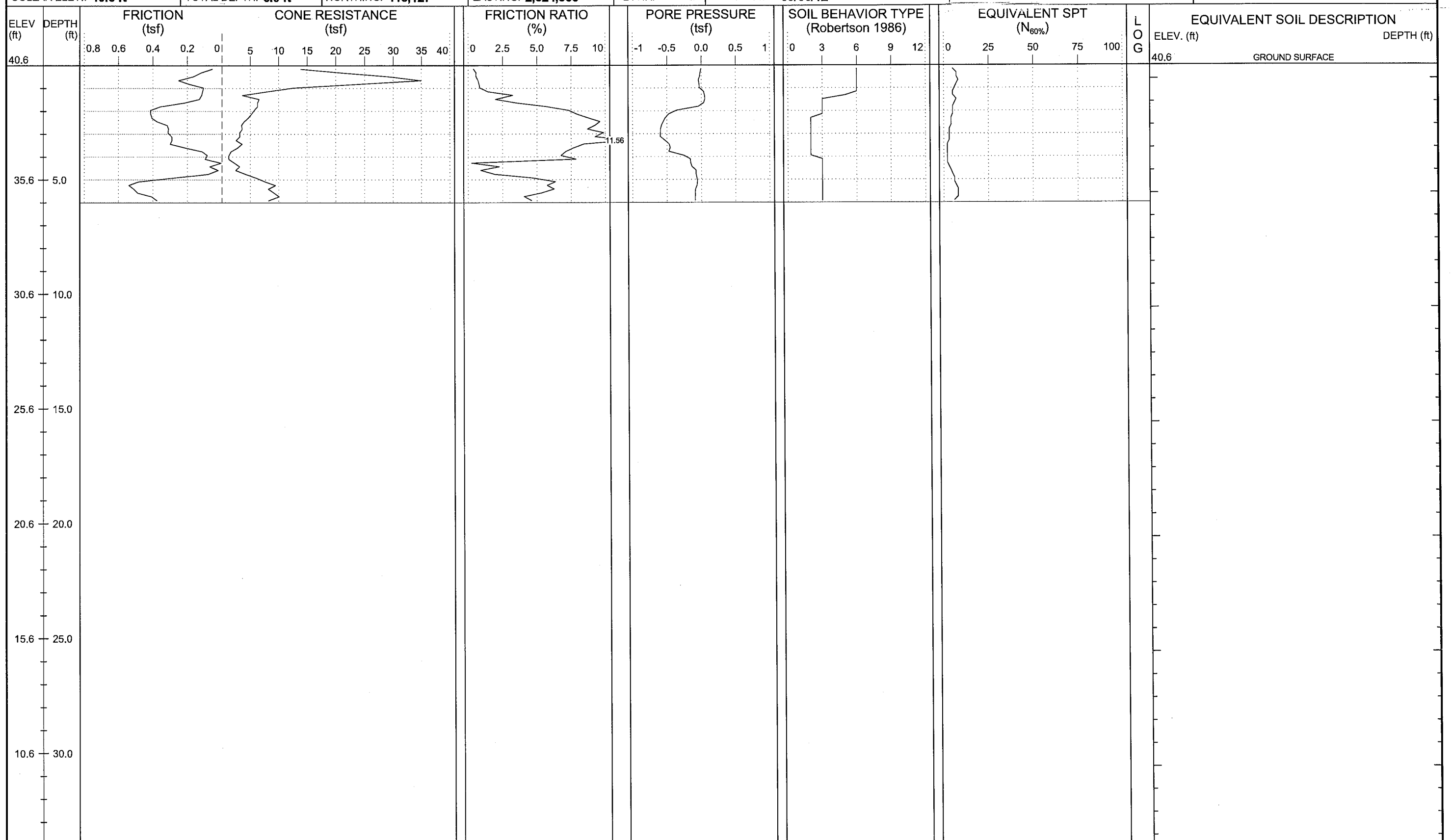




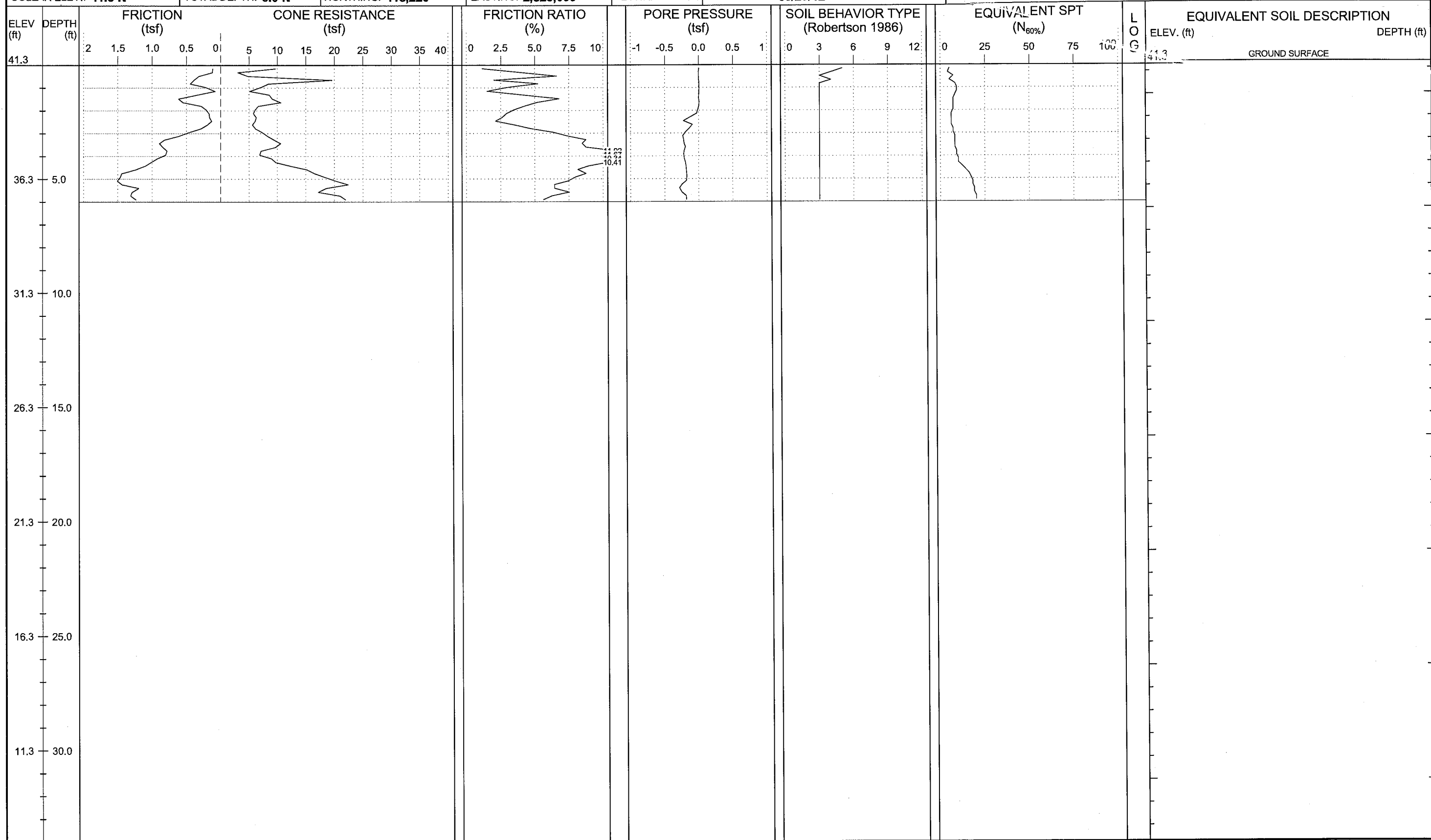
**NCDOT GEOTECHNICAL ENGINEERING UNIT**

ENGLISH  
 SHEET NO.: 112  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2A-42  | STATION: 42+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2A-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 40.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 415,127    | EASTING: 2,524,533       | 24 HR. N/A                       | START DATE: 09/06/12             |
|   |                     |                      |                          | CONE ID: DSG0867                 | DRILLER: Cory Robison            |
|   |                     |                      |                          | COMP. DATE: 09/06/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



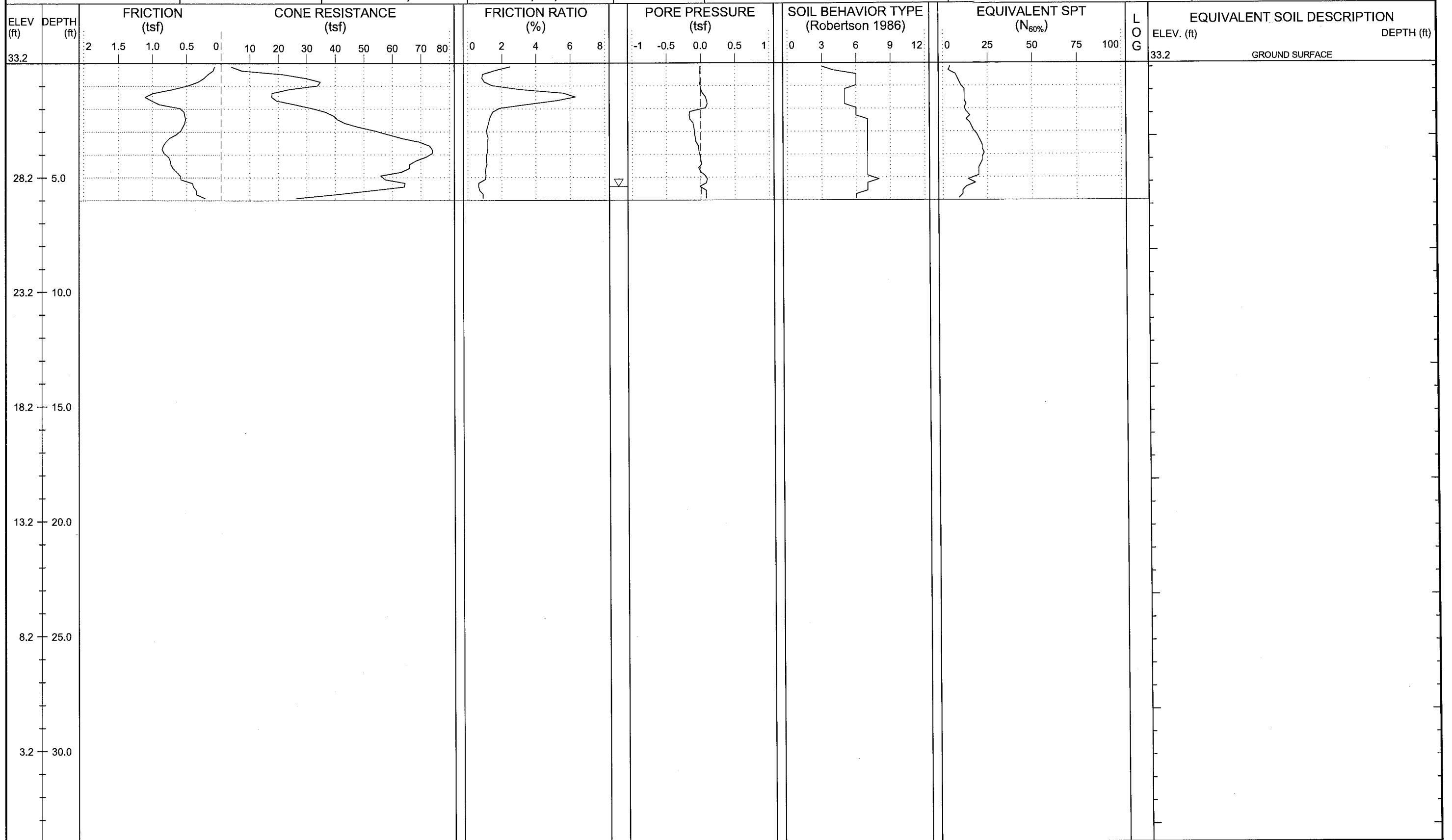
|   |                     |                      |                            |                                  |                                  |
|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2B-1250  | STATION: 12+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y2B-           | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 41.3 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,220    | EASTING: 2,525,099         | START DATE: 08/29/12             | COMP. DATE: 08/29/12             |
|   |                     |                      |                            |                                  | DRILLER: Cory Robison            |
|   |                     |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |







|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2D-11  | STATION: 11+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.2 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 417,734    | EASTING: 2,525,800       | START DATE: 08/29/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/29/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |

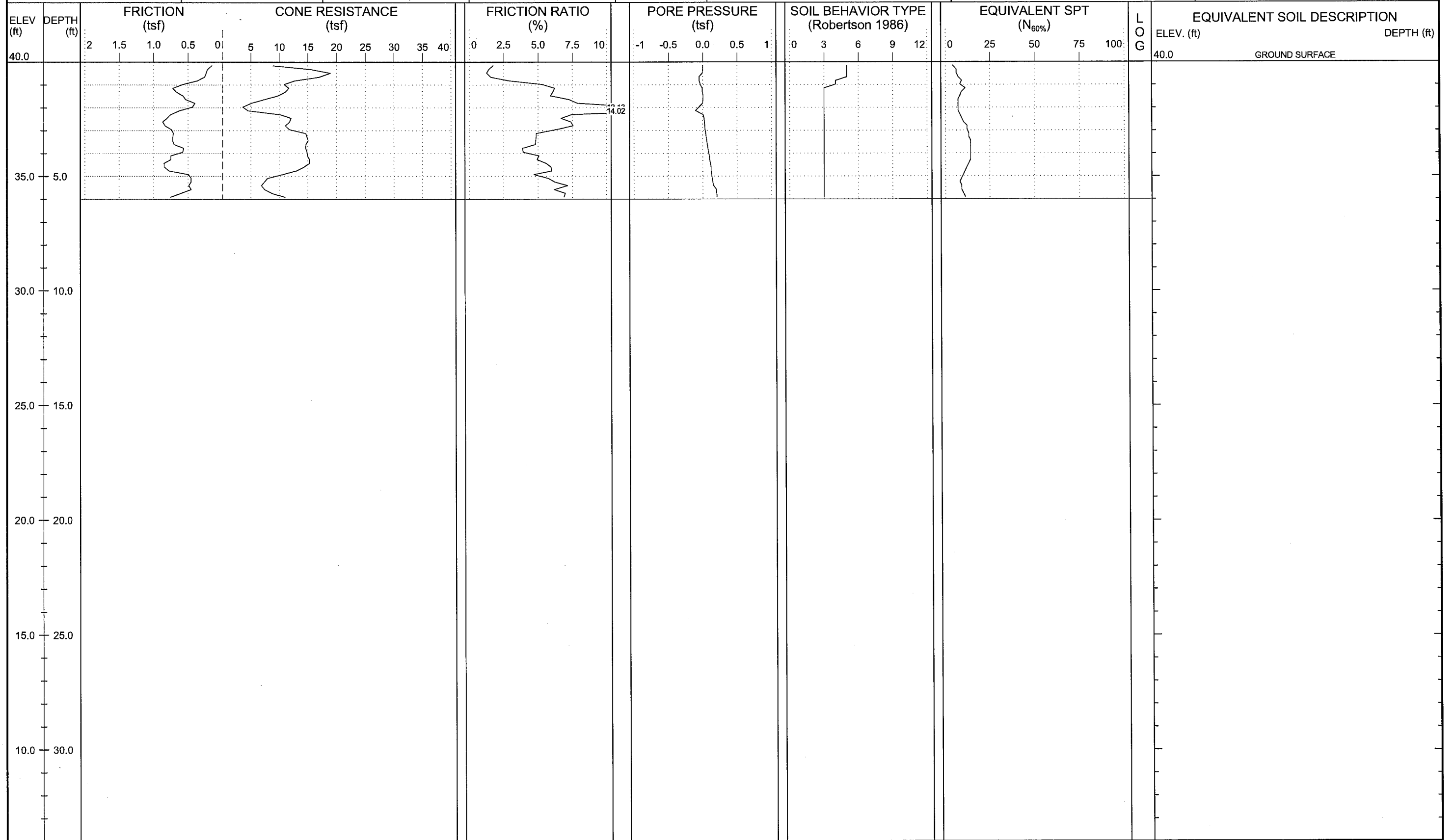






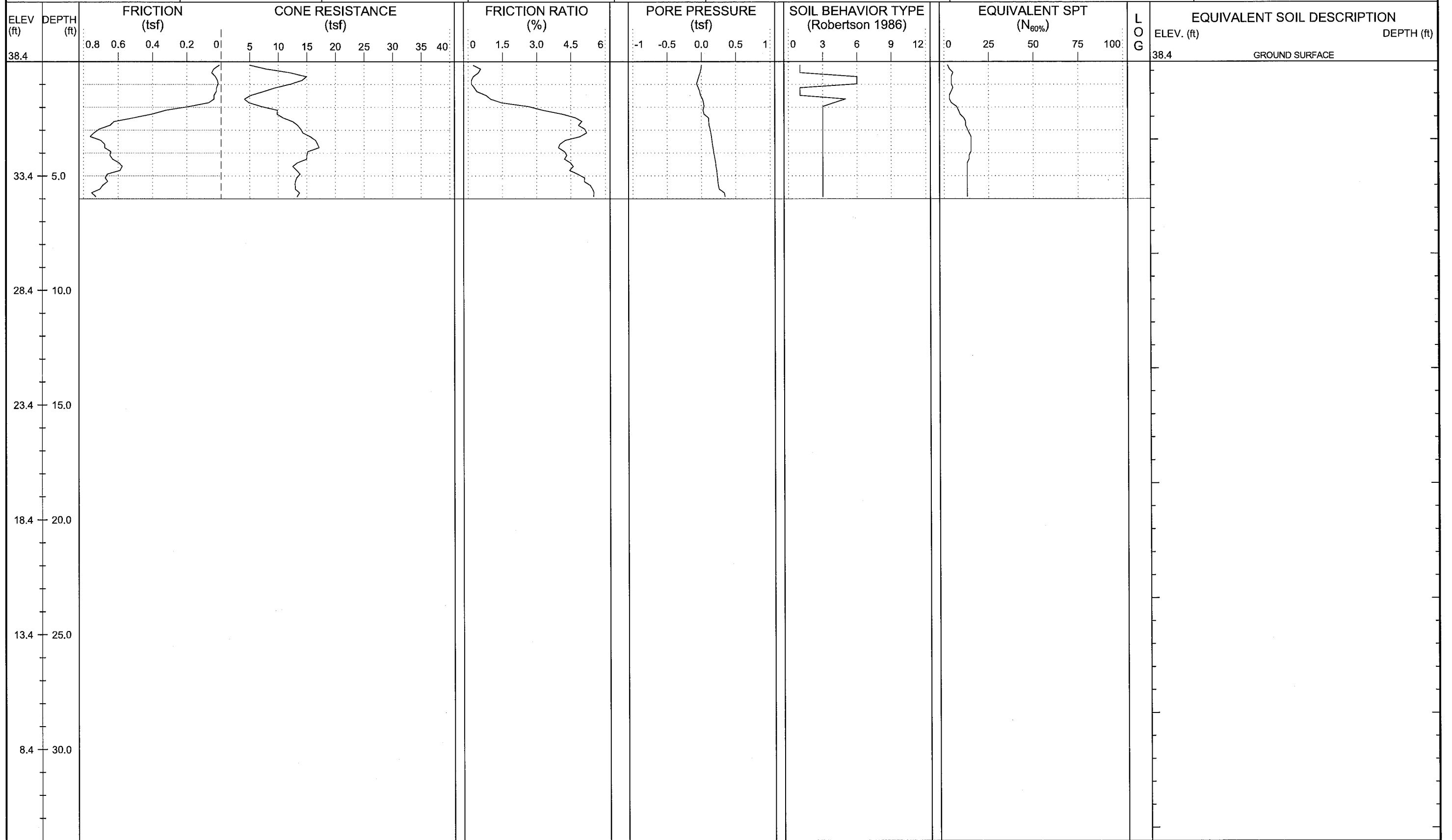


|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2D-17  | STATION: 17+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 40.0 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,213    | EASTING: 2,525,644       | 24 HR. N/A                       | START DATE: 08/29/12             |
|   |                     |                      |                          | CONC. DATE: 08/29/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



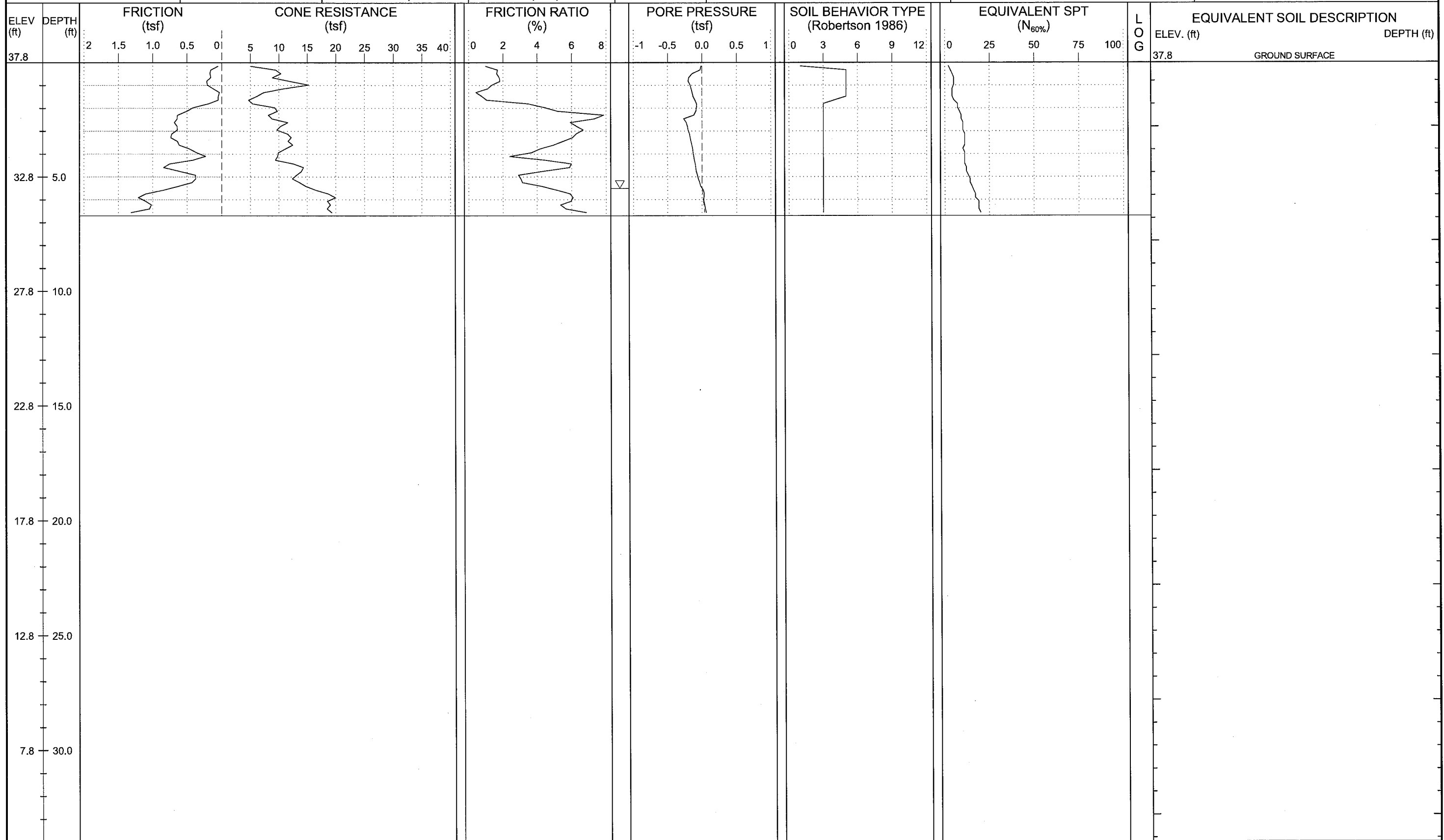


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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2D-19  | STATION: 19+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 38.4 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,396    | EASTING: 2,525,724       | 24 HR. N/A                       | START DATE: 08/29/12             |
|   |                     |                      |                          | CONC. DATE: 08/29/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



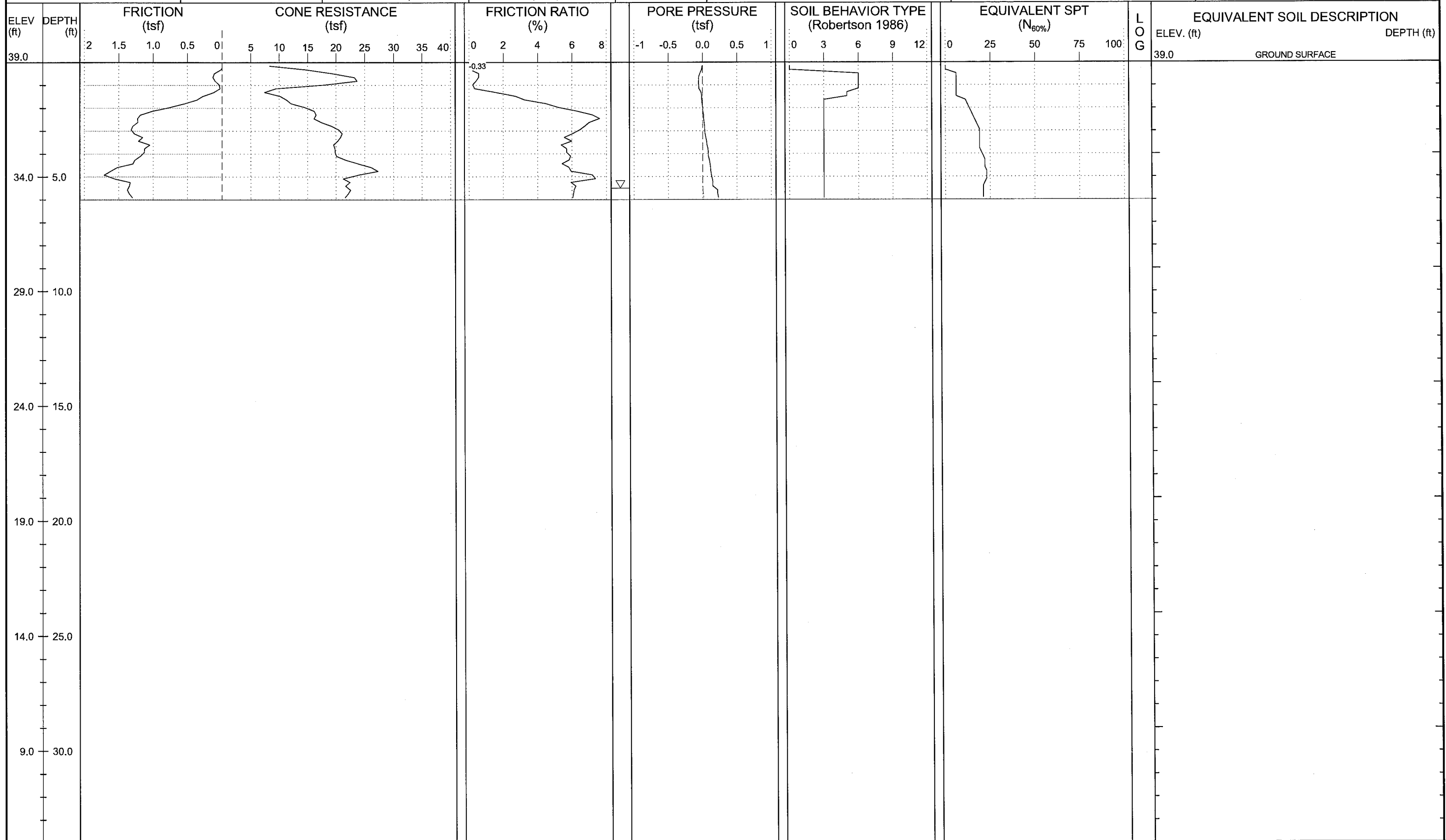


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|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2D-20  | STATION: 20+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 37.8 ft   | TOTAL DEPTH: 6.7 ft | NORTHING: 418,488    | EASTING: 2,525,764       | START DATE: 08/29/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/29/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



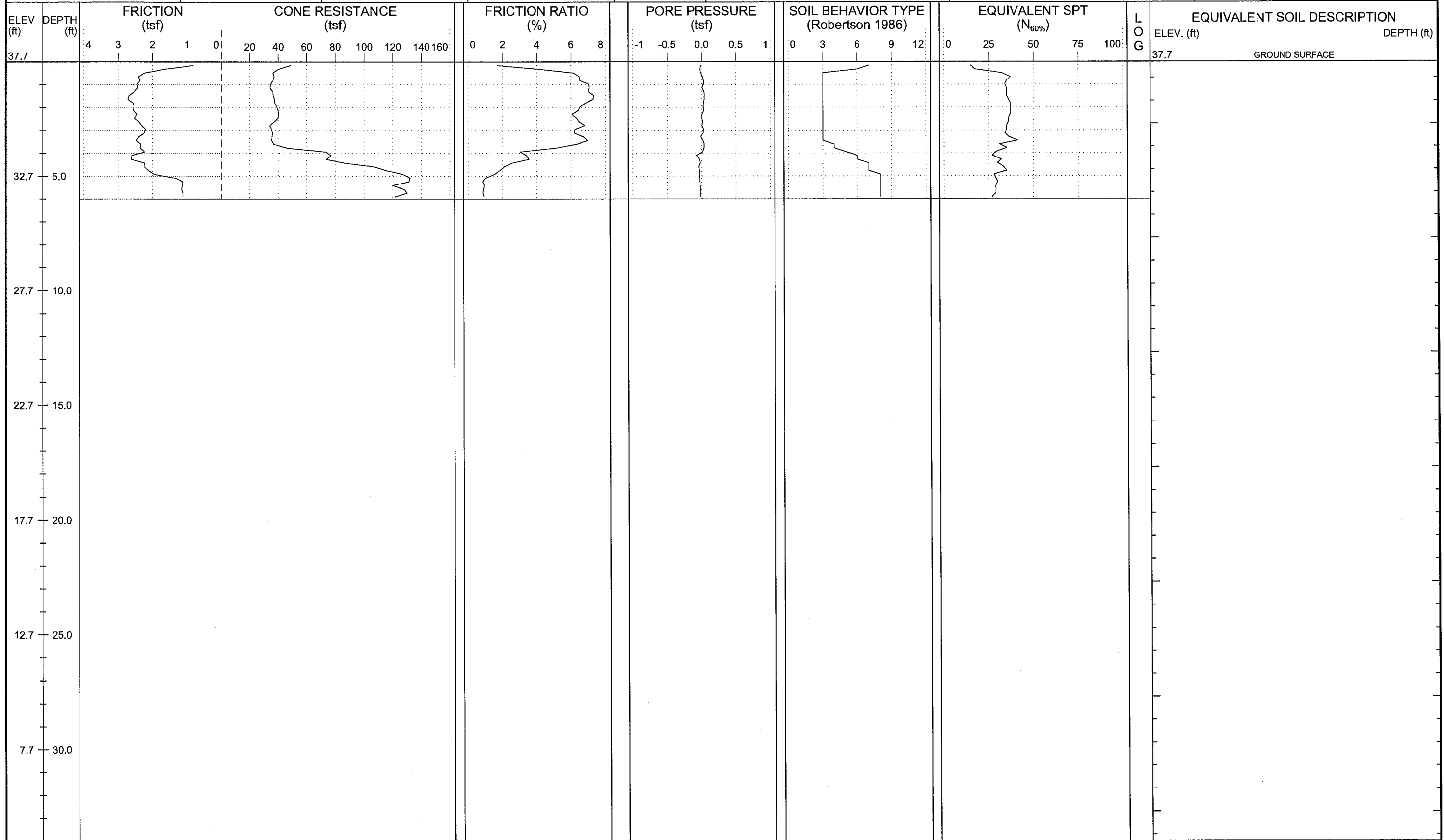


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|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 5.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2D-22  | STATION: 22+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-                       | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 39.0 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,671    | EASTING: 2,525,844                     | START DATE: 08/29/12             | COMP. DATE: 08/29/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2D-24  | STATION: 24+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 37.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,855    | EASTING: 2,525,924       | 24 HR. N/A                       | CONE ID: DSG0867                 |
|   |                     |                      |                          | START DATE: 08/28/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          | COMP. DATE: 08/28/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

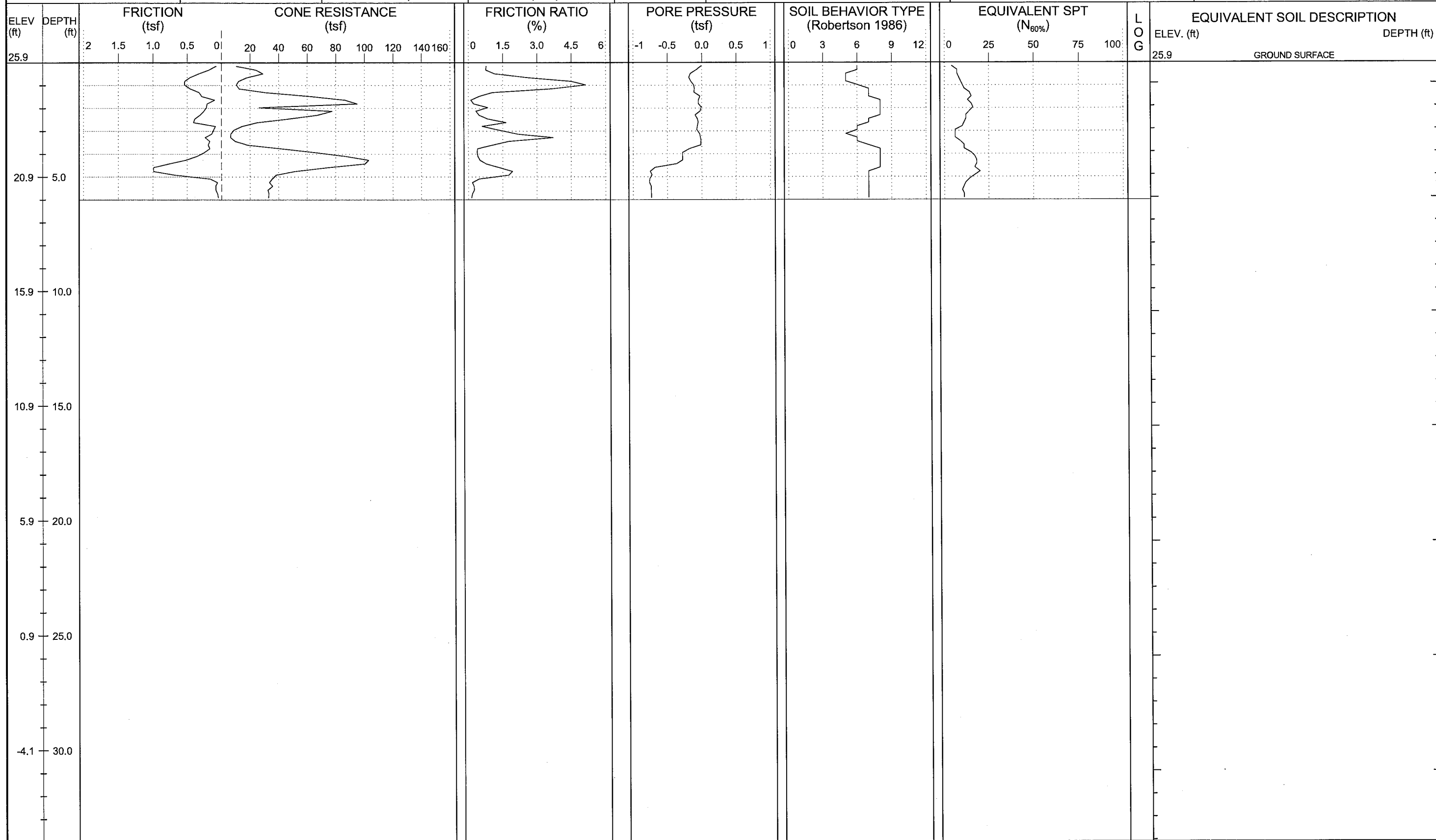






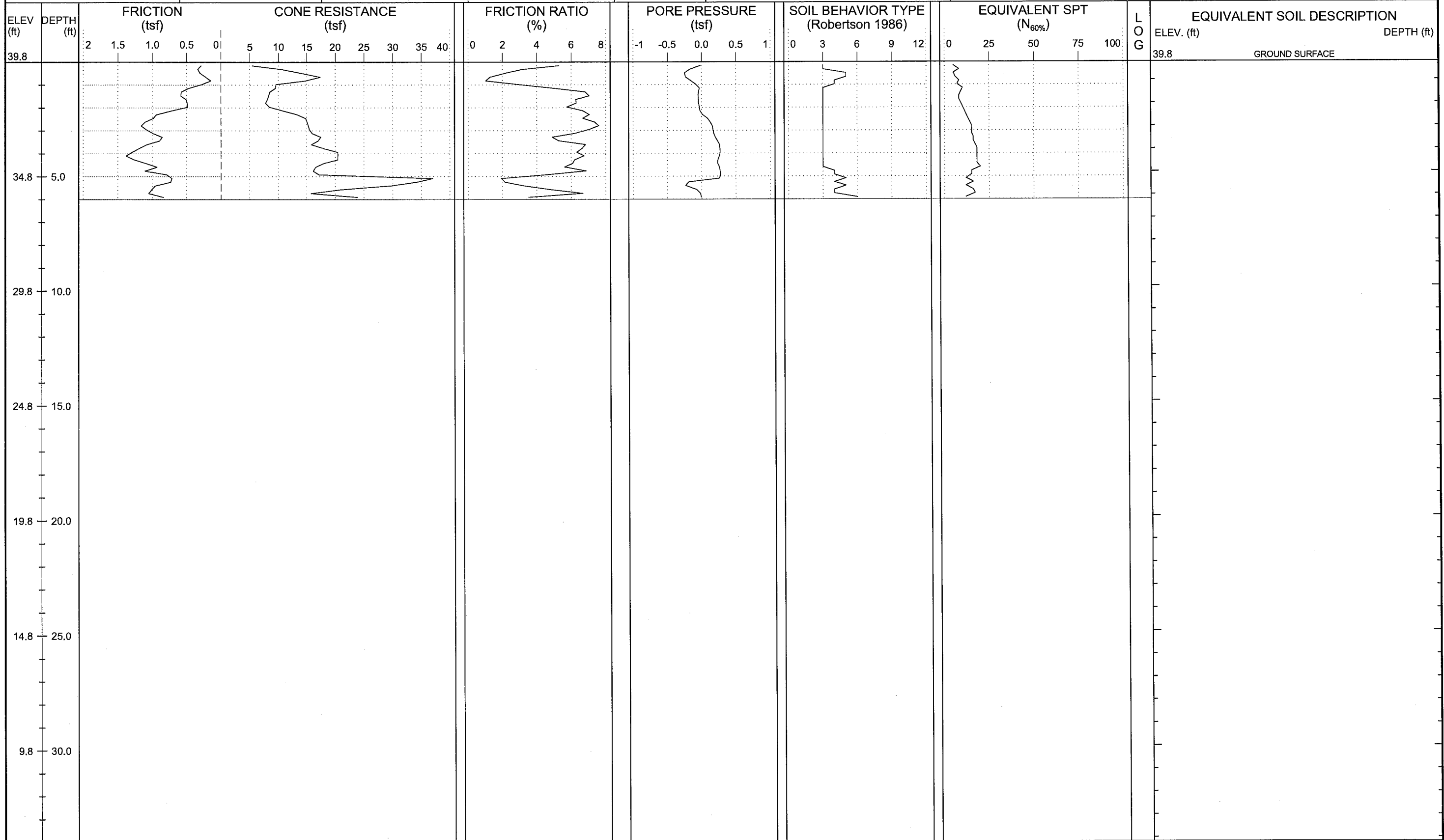


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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2D-30  | STATION: 30+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2D-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 25.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 419,403    | EASTING: 2,526,166       | 24 HR. N/A                       | START DATE: 08/28/12             |
|   |                     |                      |                          | CONE ID: DSG0867                 | DRILLER: Cory Robison            |
|   |                     |                      |                          | COMP. DATE: 08/28/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



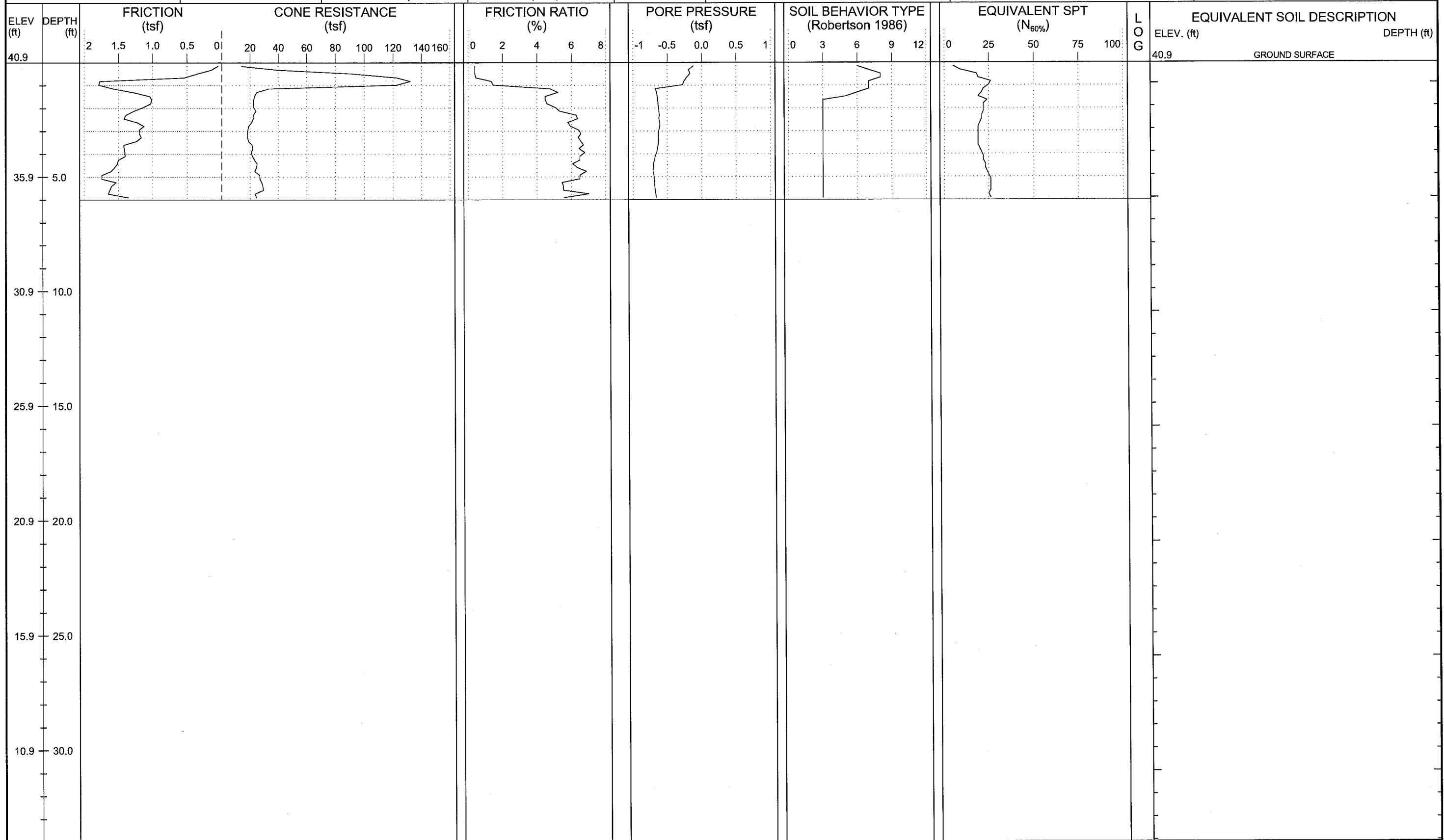


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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry       | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2E-11  | STATION: 11+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2E-         | ROD TYPE: Pre-strung             | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 39.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,334    | EASTING: 2,524,736       | START DATE: 08/29/12             | CONE ID: DSG0867                 |
|   |                     |                      |                          | 24 HR. N/A                       | COMP. DATE: 08/29/12             |
|   |                     |                      |                          | DRILLER: Cory Robison            |                                  |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



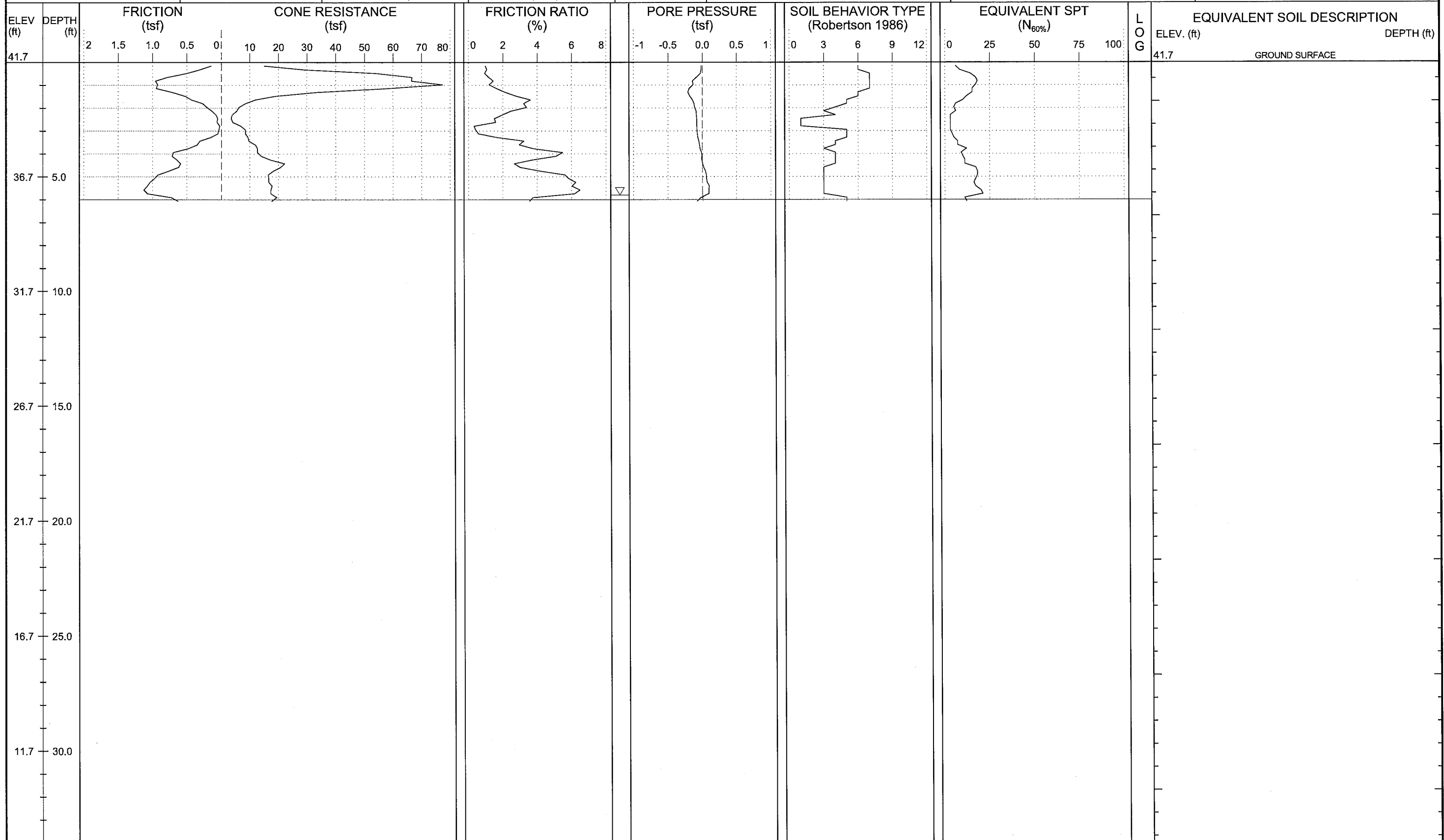


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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y2E-13  | STATION: 13+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2E-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 40.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,454    | EASTING: 2,524,896       | 24 HR. N/A                       | START DATE: 08/28/12             |
|   |                     |                      |                          | CONE ID: DSG0867                 | DRILLER: Cory Robison            |
|   |                     |                      |                          | COMP. DATE: 08/28/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



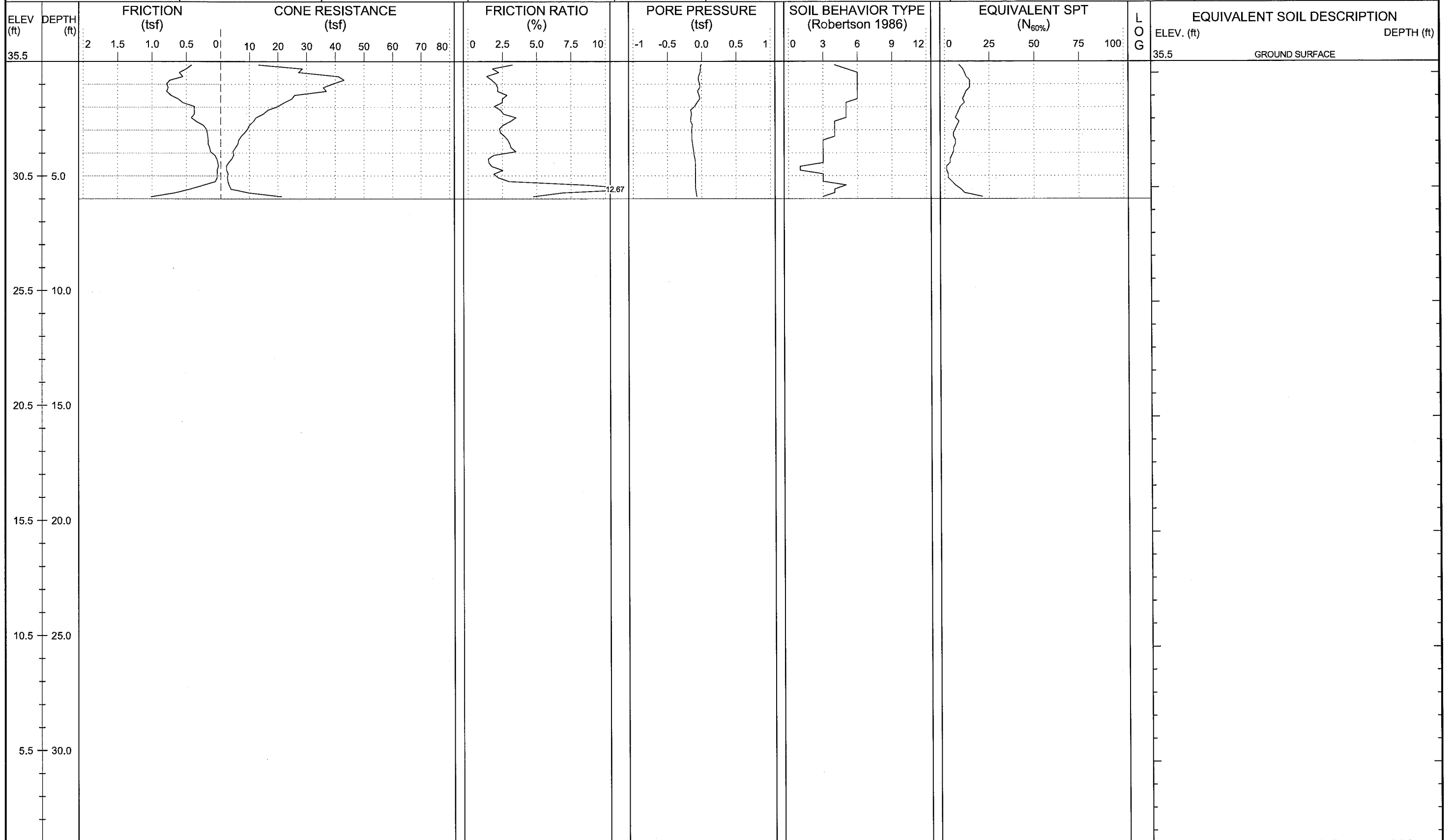


|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y2E-14  | STATION: 14+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y2E-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 41.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 418,509    | EASTING: 2,524,979       | START DATE: 08/28/12                   | CONE ID: DSG0867                 |
|   |                     |                      |                          | COMP. DATE: 08/28/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





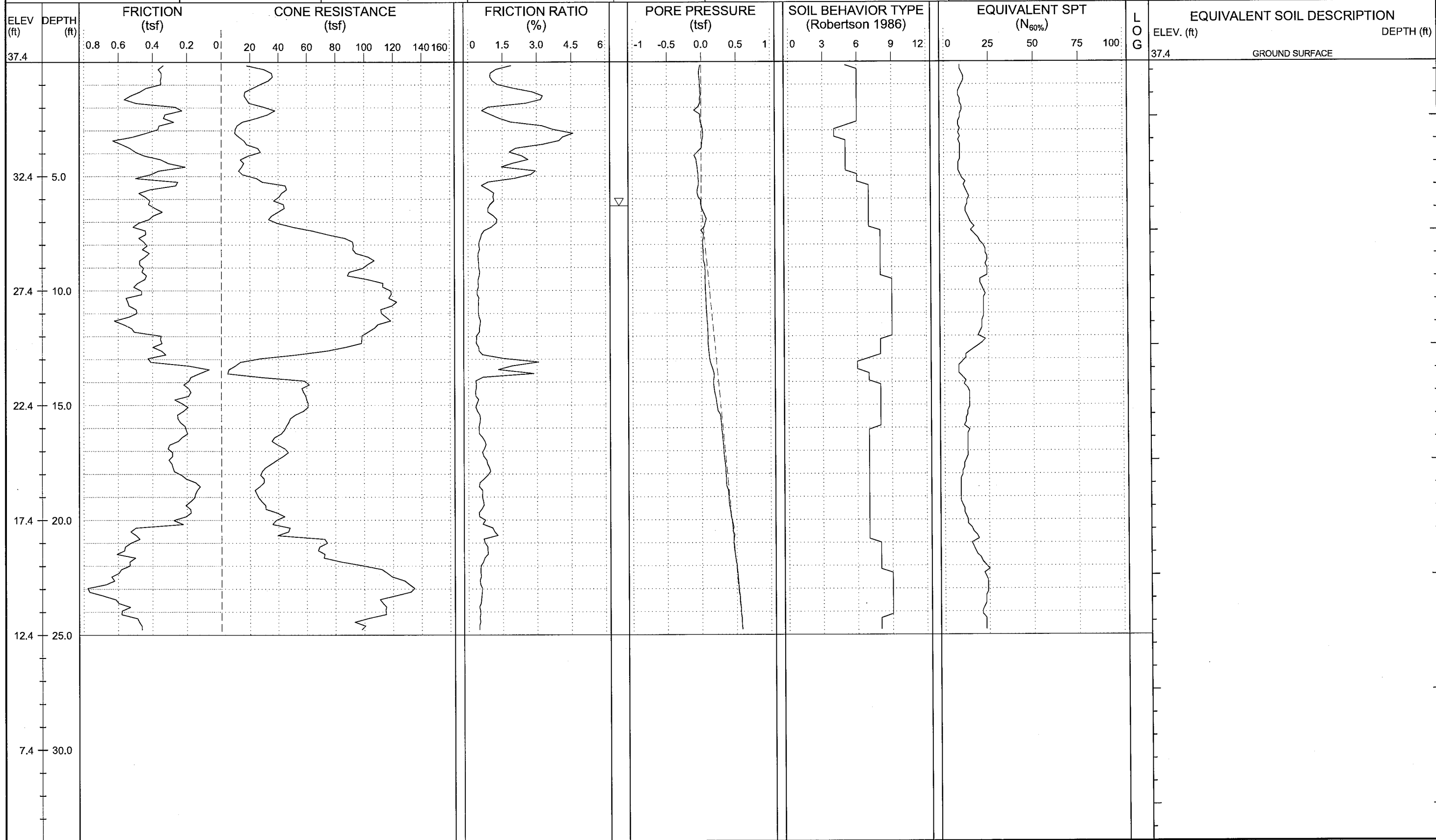
|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3-11   | STATION: 11+00      | OFFSET: 15ft RT      | ALIGNMENT: -Y3-          | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 35.5 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,985    | EASTING: 2,527,534       | 24 HR. N/A                       | START DATE: 08/17/12             |
|   |                     |                      |                          | CONE ID: DSG0867                 | DRILLER: Ron Stewart             |
|   |                     |                      |                          | COMP. DATE: 08/17/12             | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |



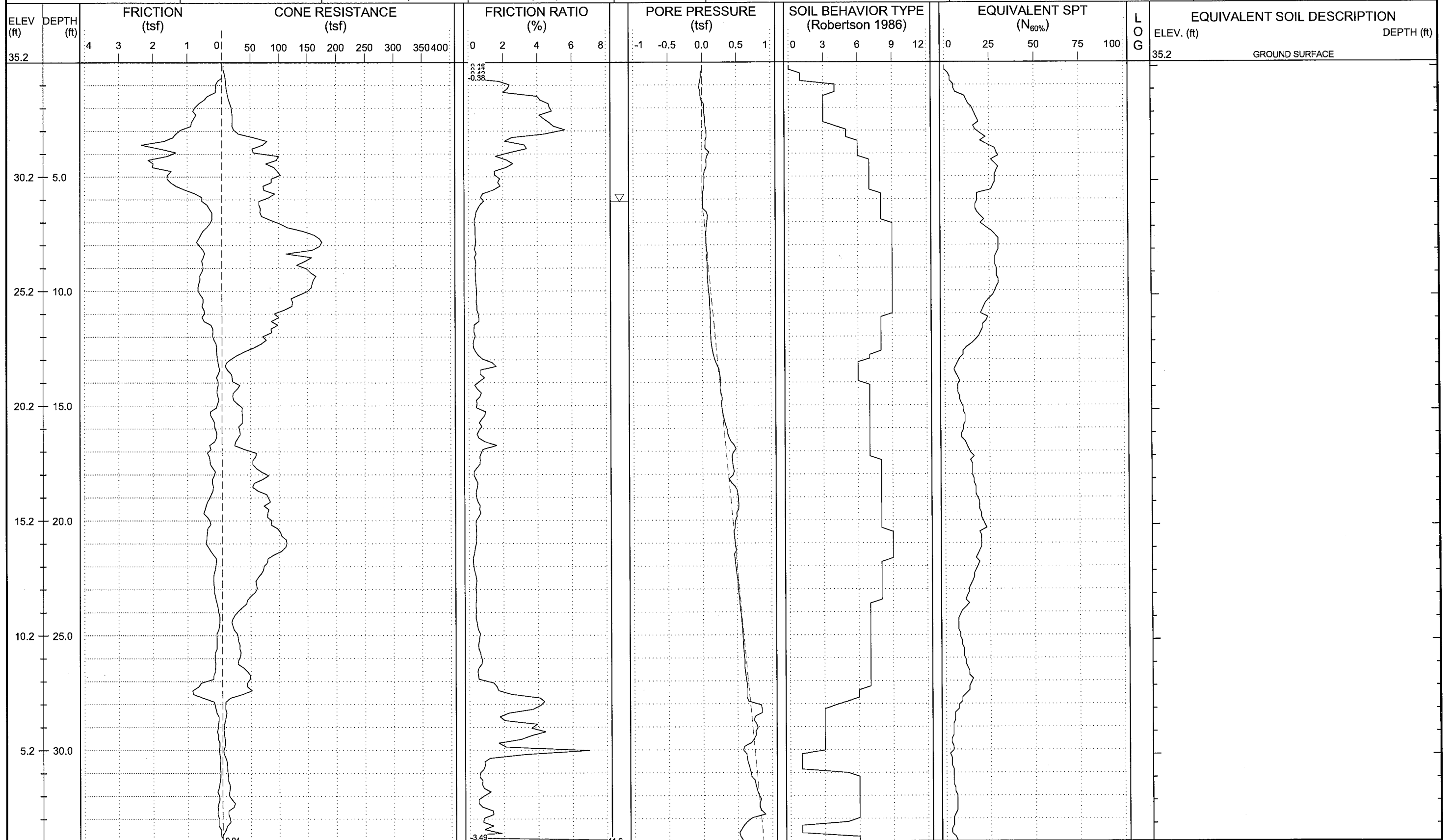




|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 6.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3-15   | STATION: 15+00       | OFFSET: 31ft RT      | ALIGNMENT: -Y3-          | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 37.4 ft   | TOTAL DEPTH: 25.0 ft | NORTHING: 427,718    | EASTING: 2,527,833       | START DATE: 08/17/12                   | CONE ID: DSG0867                 |
|   |                      |                      |                          | COMP. DATE: 08/17/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



|   |                      |                      |                            |                                  |                                  |
|---|----------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 6.1 | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3-20   | STATION: 20+00       | OFFSET: 20ft RT      | ALIGNMENT: -Y3-            | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 35.2 ft   | TOTAL DEPTH: 35.0 ft | NORTHING: 427,398    | EASTING: 2,528,214         | START DATE: 08/22/12             | COMP. DATE: 08/22/12             |
|   |                      |                      |                            |                                  | DRILLER: Ron Stewart             |
|   |                      |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |

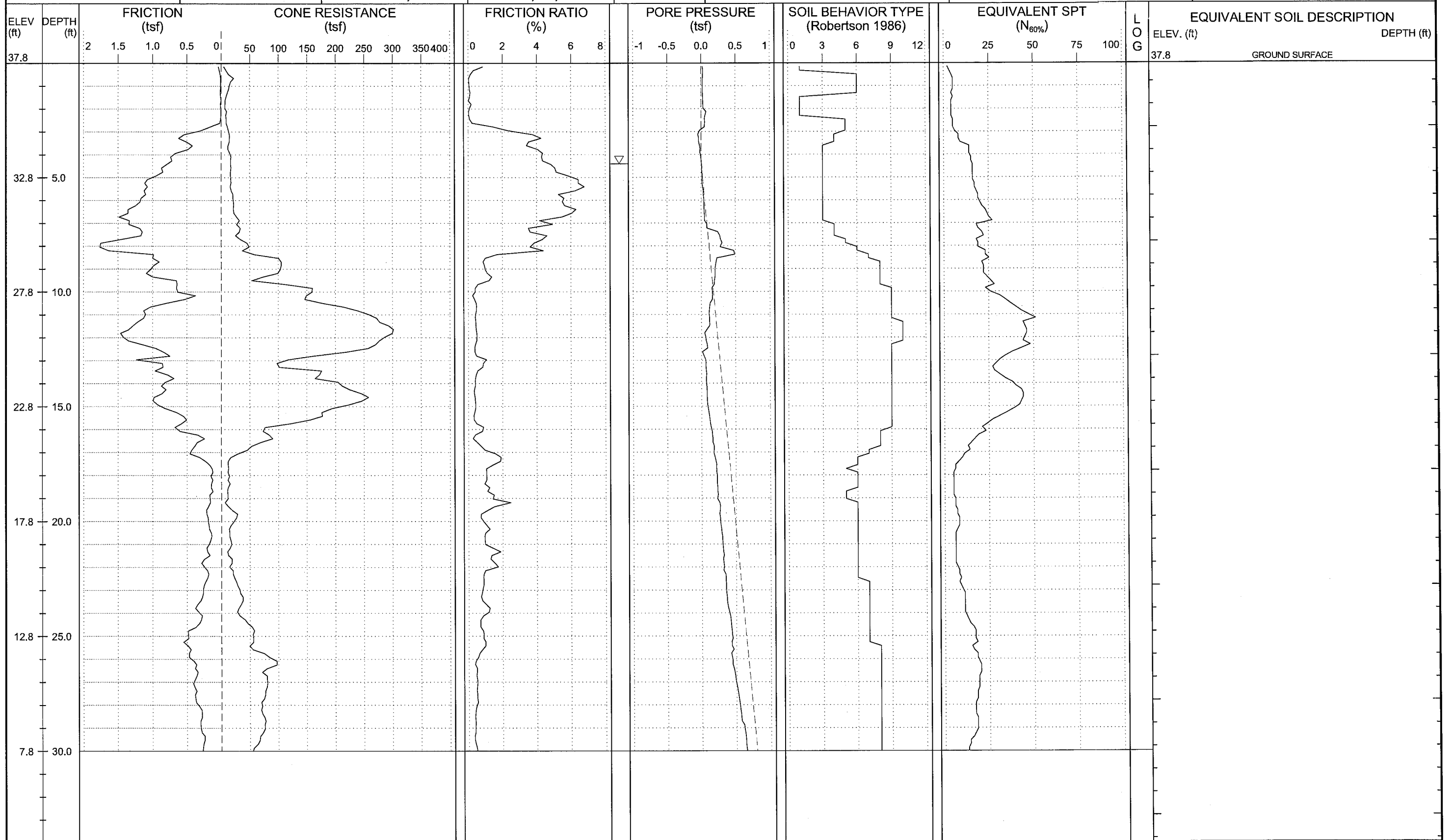




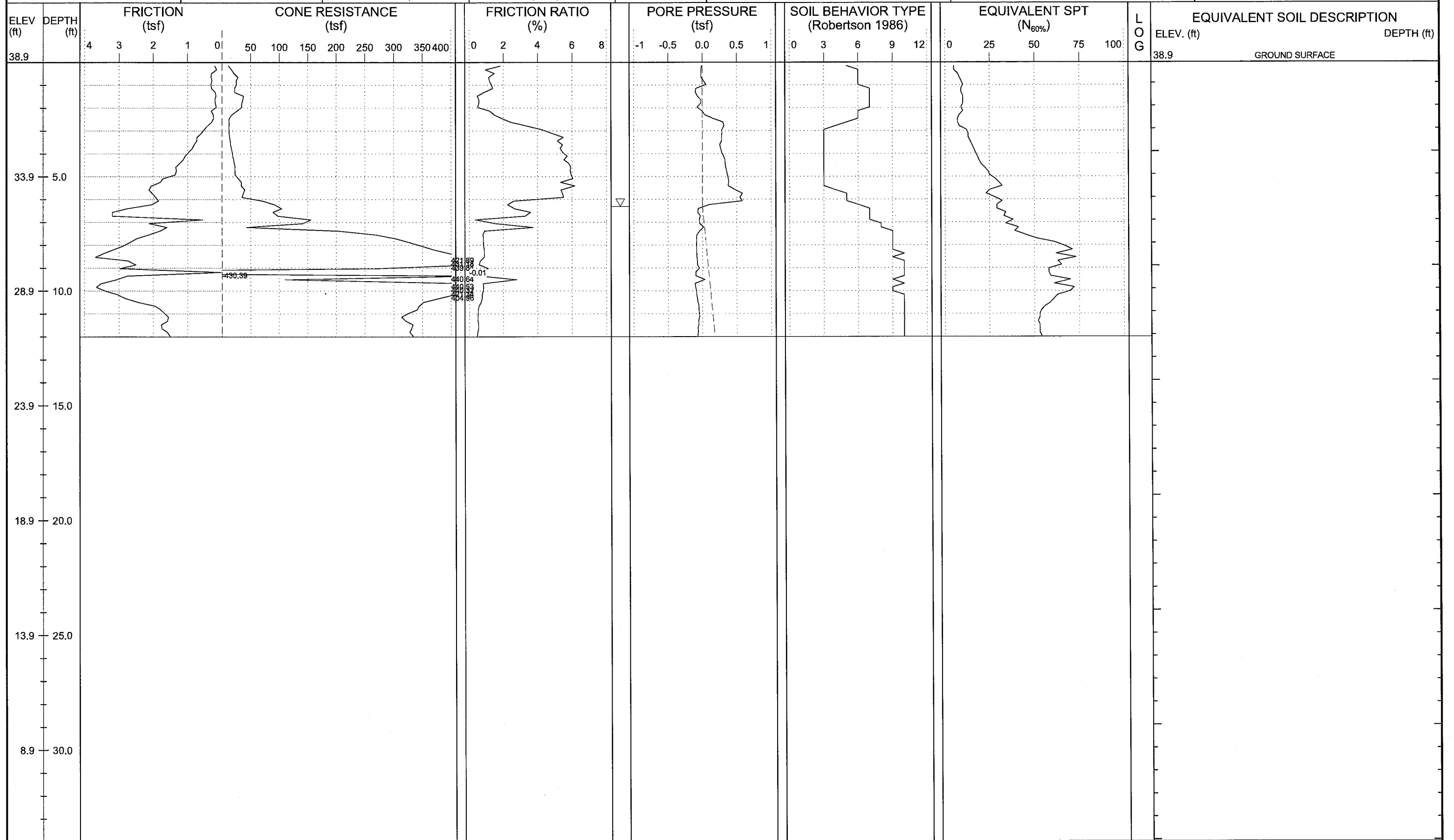




|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 4.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3-22   | STATION: 22+00       | OFFSET: 15ft LT      | ALIGNMENT: -Y3-                        | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 37.8 ft   | TOTAL DEPTH: 30.0 ft | NORTHING: 427,282    | EASTING: 2,528,380                     | START DATE: 08/22/12             | COMP. DATE: 08/22/12             |
|   |                      |                      |  |                                  | DRILLER: Ron Stewart             |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |

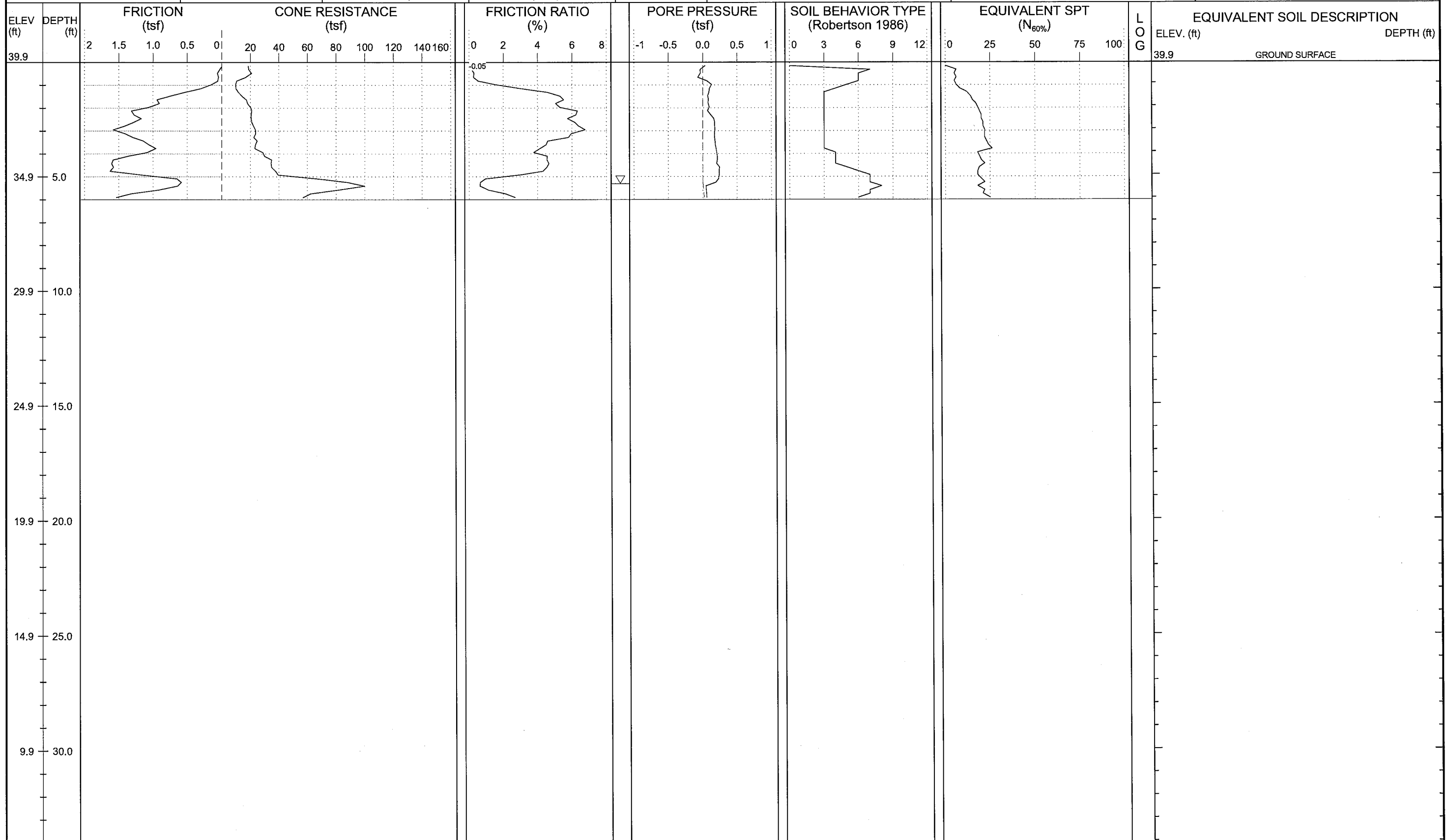


|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 6.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3-24   | STATION: 24+00       | OFFSET: 15ft RT      | ALIGNMENT: -Y3-                        | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 38.9 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 427,114    | EASTING: 2,528,493                     | START DATE: 08/22/12             | COMP. DATE: 08/22/12             |
|   |                      |                      |  |                                  | DRILLER: Ron Stewart             |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





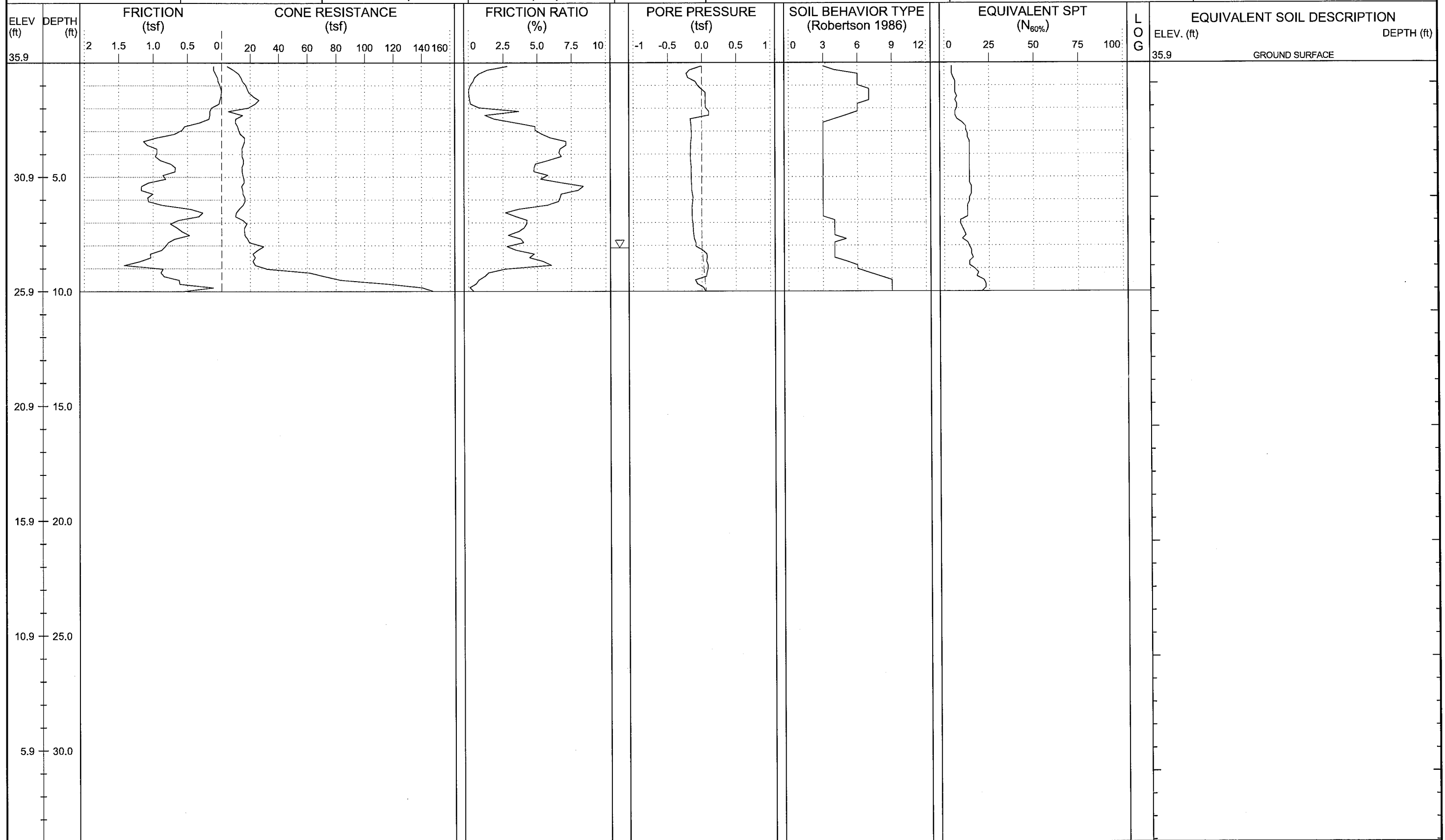
|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3-26   | STATION: 26+00      | OFFSET: 15ft LT      | ALIGNMENT: -Y3-          | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 39.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 426,983    | EASTING: 2,528,648       | START DATE: 08/22/12                   | CONE ID: DSA1123                 |
|   |                     |                      |                          | COMP. DATE: 08/22/12                   | DRILLER: Ron Stewart             |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |





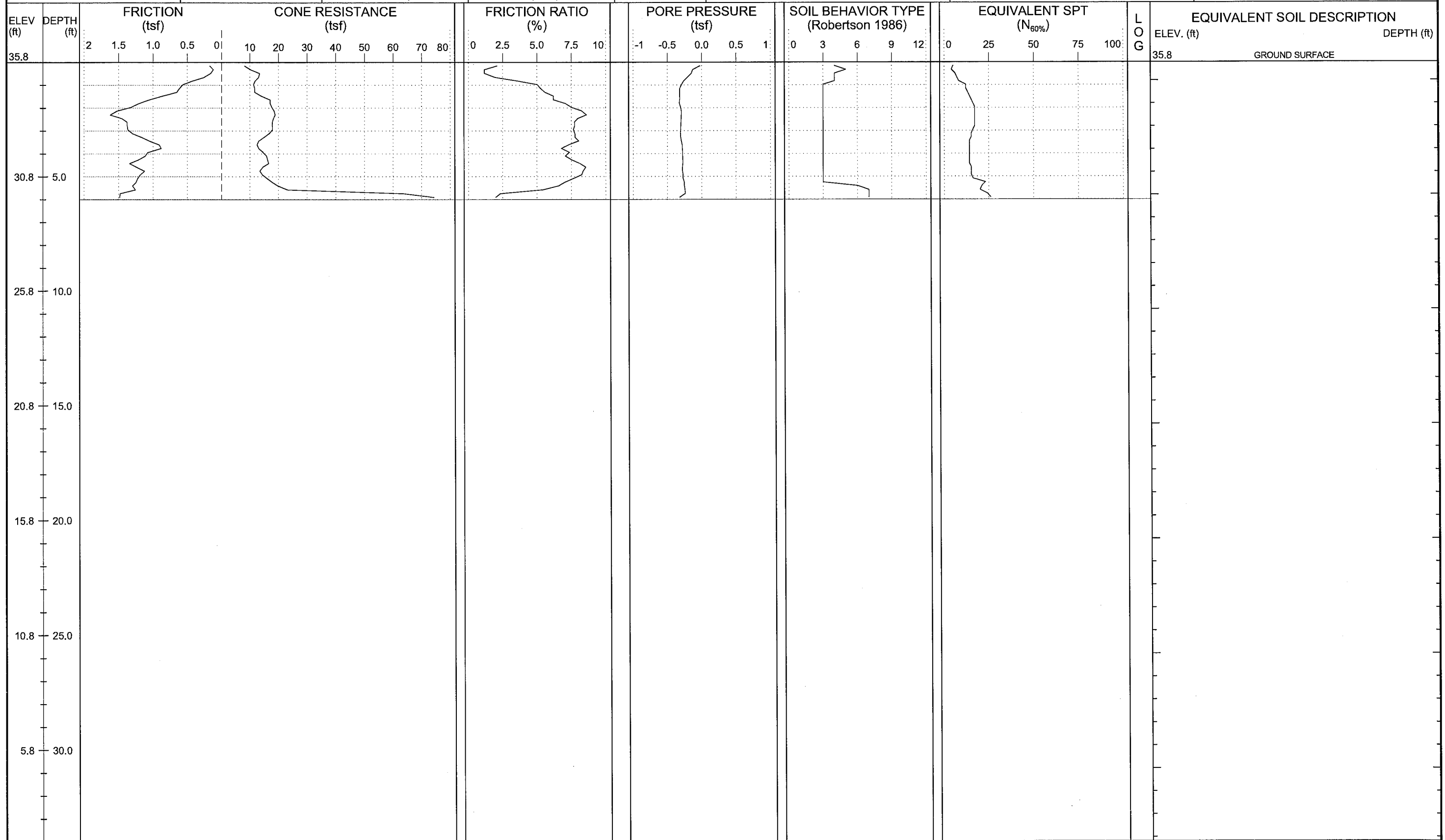


|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 8.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-1450  | STATION: 14+50       | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-                       | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 35.9 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 427,399    | EASTING: 2,527,669                     | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                      |                      |  |                                  | DRILLER: Cory Robison            |
|   |                      |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



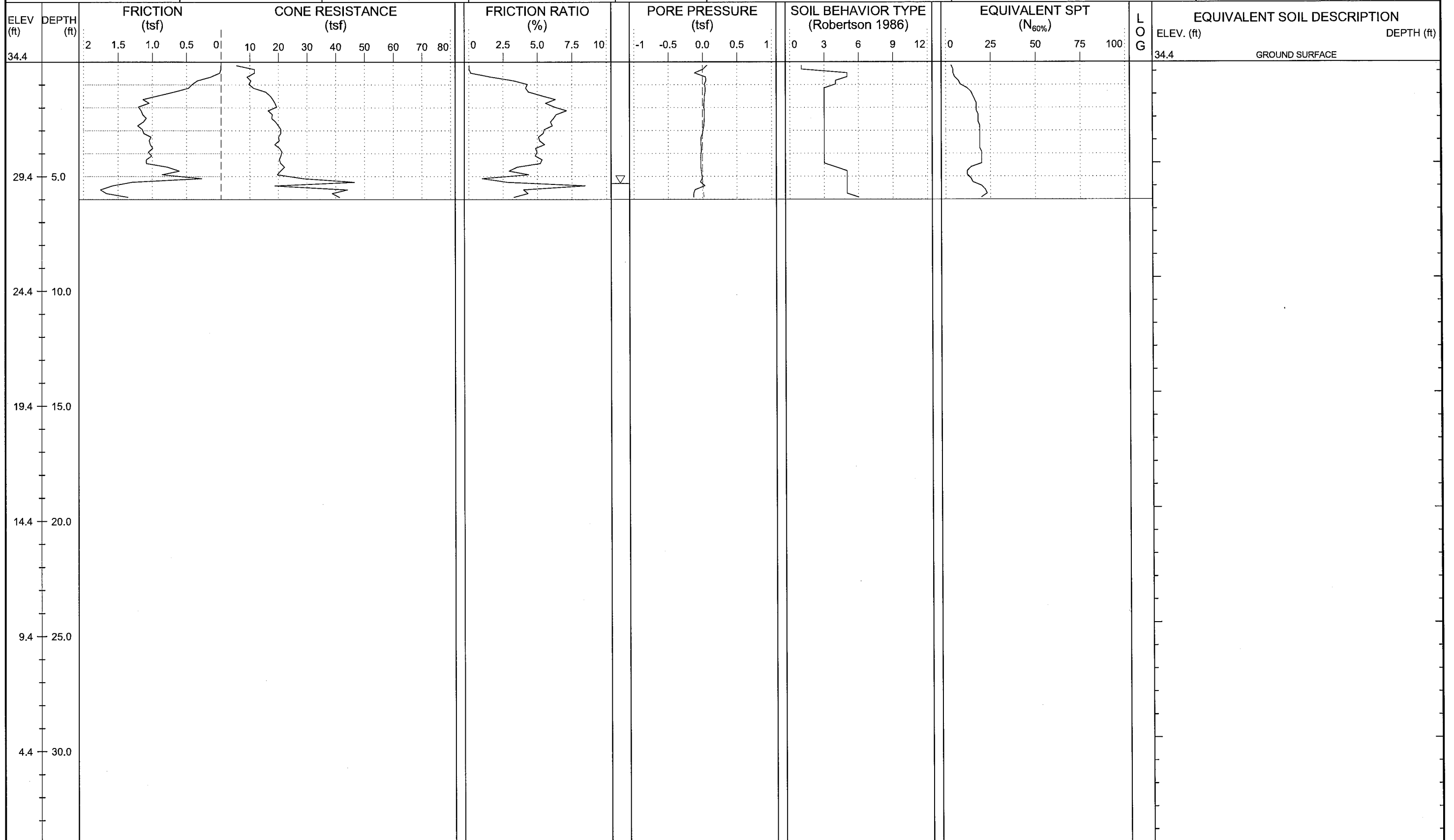


|   |                     |                      |                            |                                  |                                  |
|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-1650  | STATION: 16+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-           | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 35.8 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,200    | EASTING: 2,527,653         | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                     |                      |                            |                                  | DRILLER: Cory Robison            |
|   |                     |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |






|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 5.3, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3A-1850  | STATION: 18+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 34.4 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,001    | EASTING: 2,527,666       | START DATE: 08/20/12                   | CONE ID: DSA1123                 |
|   |                     |                      |                          | COMP. DATE: 08/20/12                   | DRILLER: Cory Robison            |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |



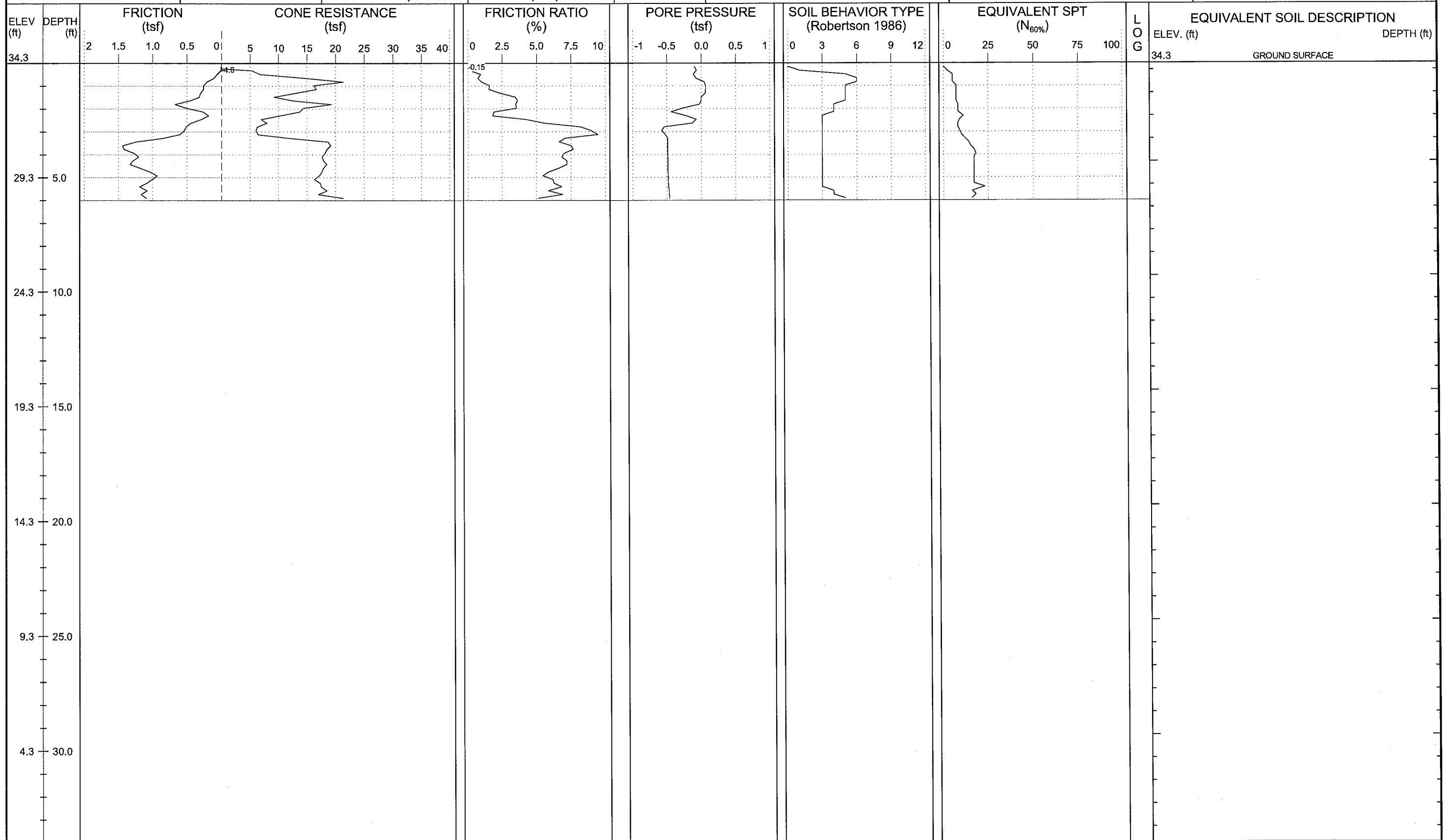




# NCDOT GEOTECHNICAL ENGINEERING UNIT

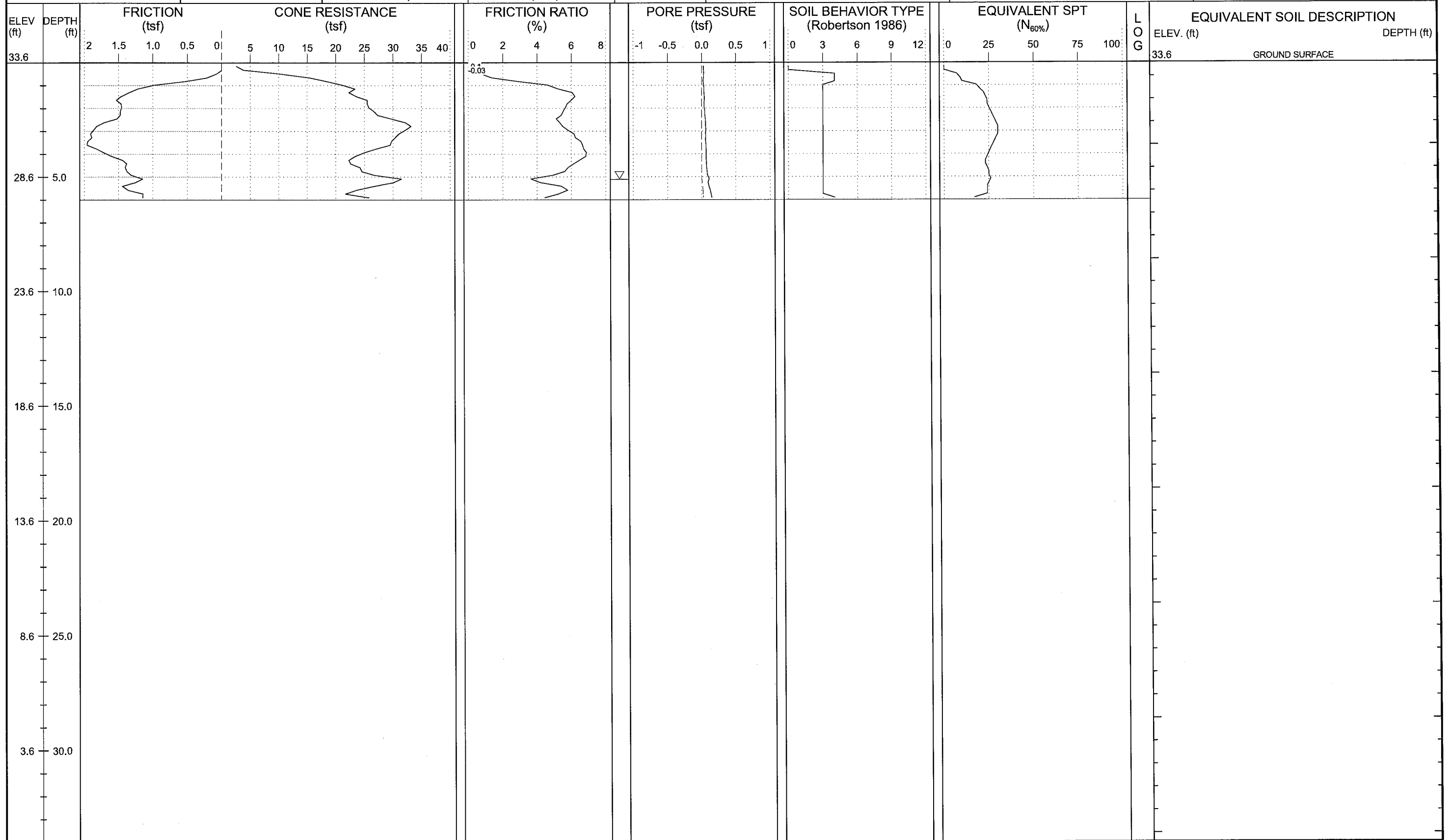

 SHEET NO.: 140  
 PROJ. NO.: 34442.1.2  
 TIP NO.: R-2514B  
 COUNTY: JONES/ONSLAW

|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-2050  | STATION: 20+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-         | 0 HR. Dry                        | ROD TYPE: Pre-strung             |
| COLLAR ELEV.: 34.3 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 426,822    | EASTING: 2,527,753       | 24 HR. N/A                       | START DATE: 08/20/12             |
|   |                     |                      |                          | CONC. DATE: 08/20/12             | DRILLER: Cory Robison            |
|   |                     |                      |                          |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |



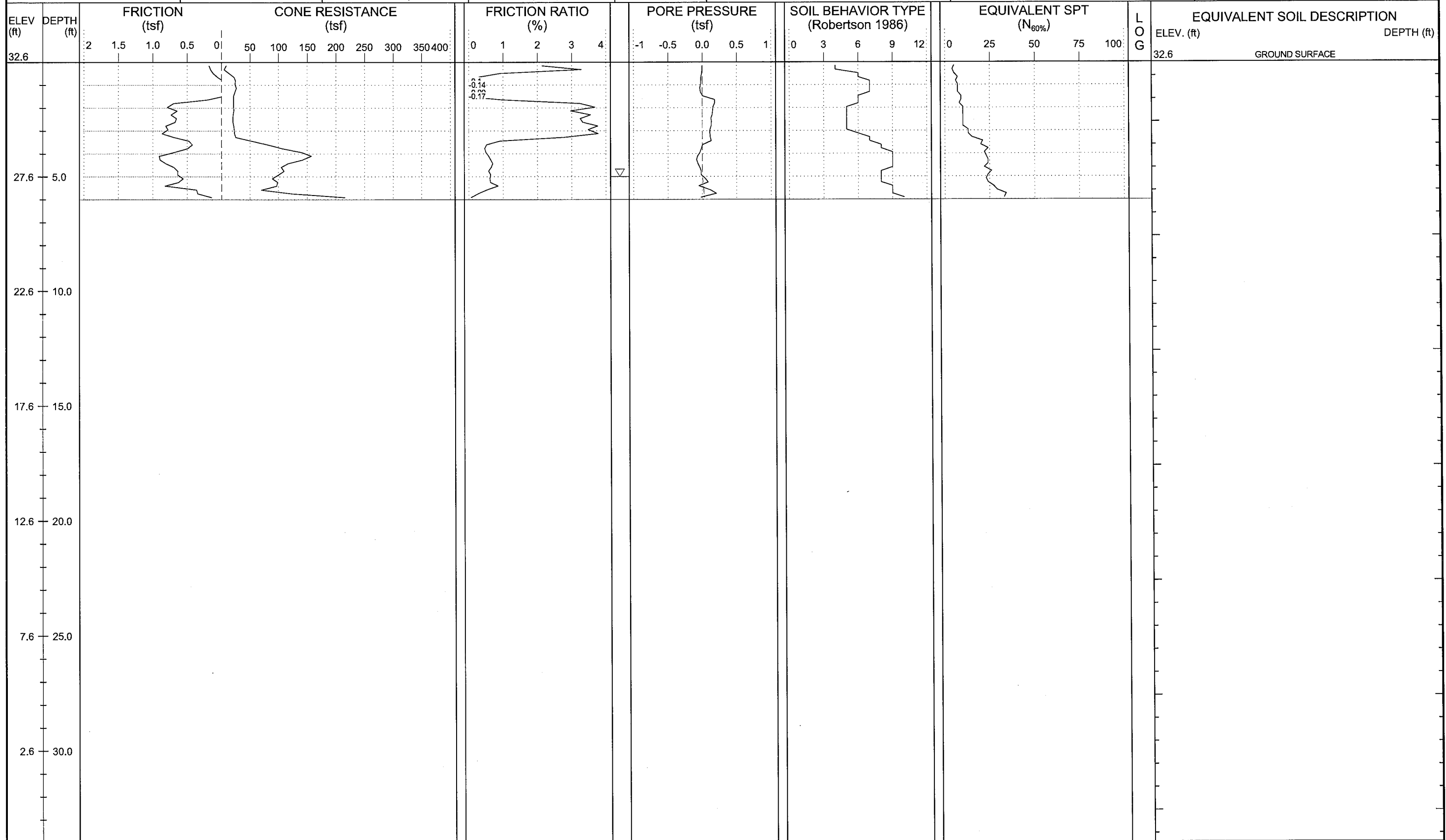


|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 5.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-2250  | STATION: 22+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-                       | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 33.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 426,652    | EASTING: 2,527,857                     | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





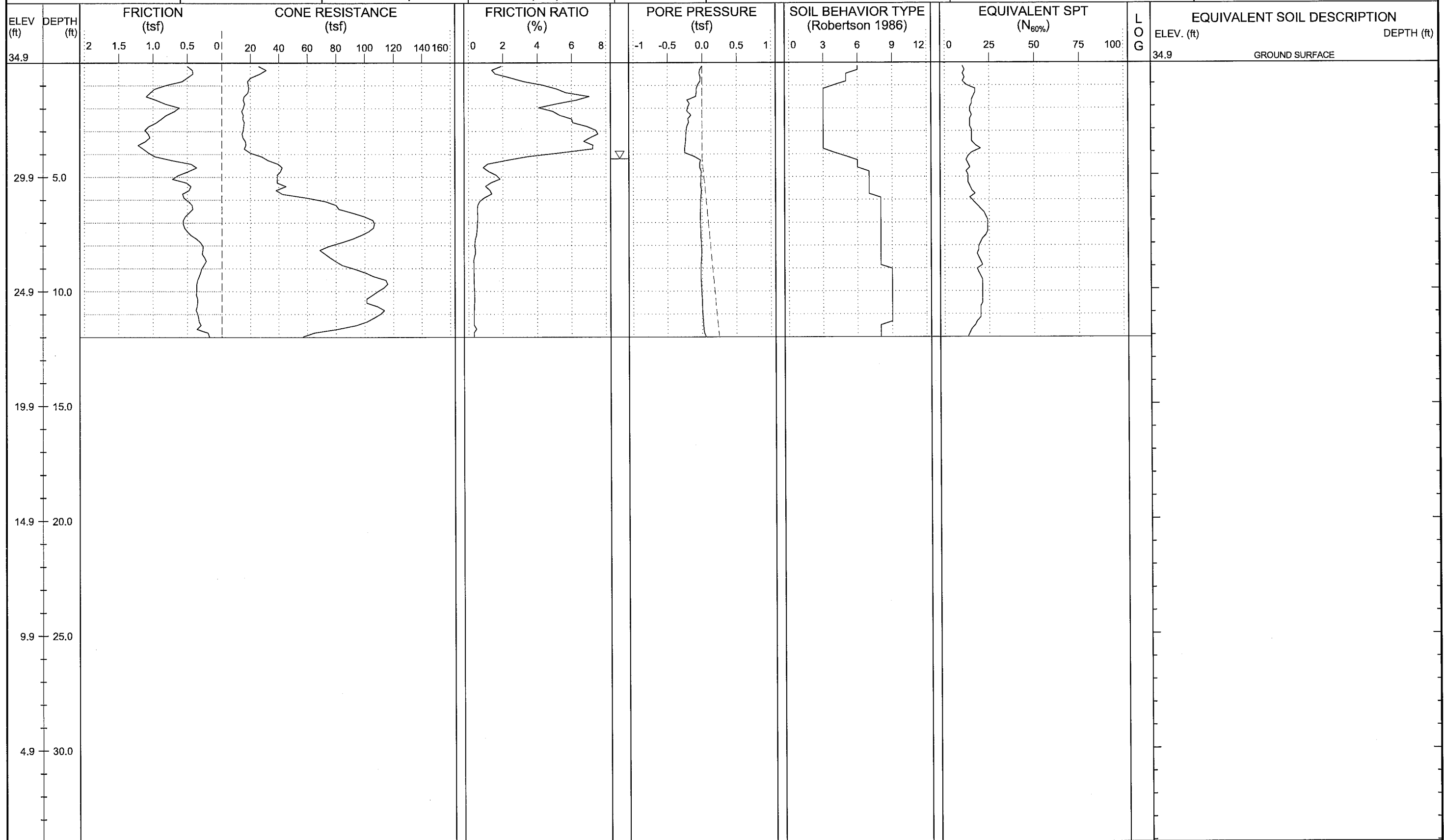
|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 5.0, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-2450  | STATION: 24+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-                       | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 32.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 426,457    | EASTING: 2,527,886                     | START DATE: 08/23/12             | COMP. DATE: 08/23/12             |
|   |                     |                      |  |                                  | DRILLER: Ron Stewart             |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |



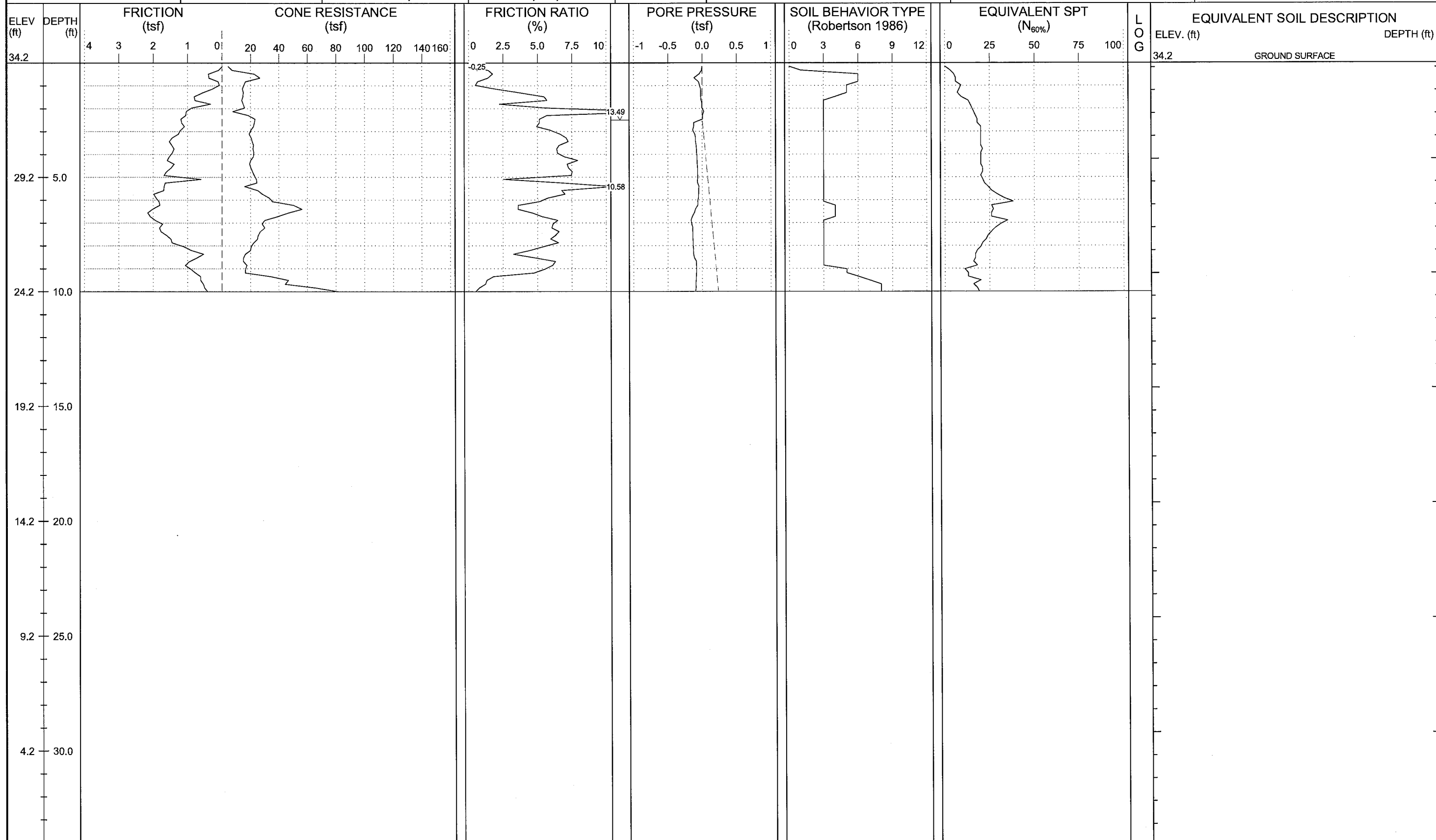




|   |                      |                      |                          |  |                                  |
|---|----------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      |                          | GROUND WTR (ft): 0 HR. 4.2, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3A-3050  | STATION: 30+50       | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 34.9 ft   | TOTAL DEPTH: 12.0 ft | NORTHING: 425,859    | EASTING: 2,527,833       | START DATE: 08/23/12                   | CONE ID: DSA1123                 |
|   |                      |                      |                          | COMP. DATE: 08/23/12                   | DRILLER: Ron Stewart             |
|   |                      |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                      |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |

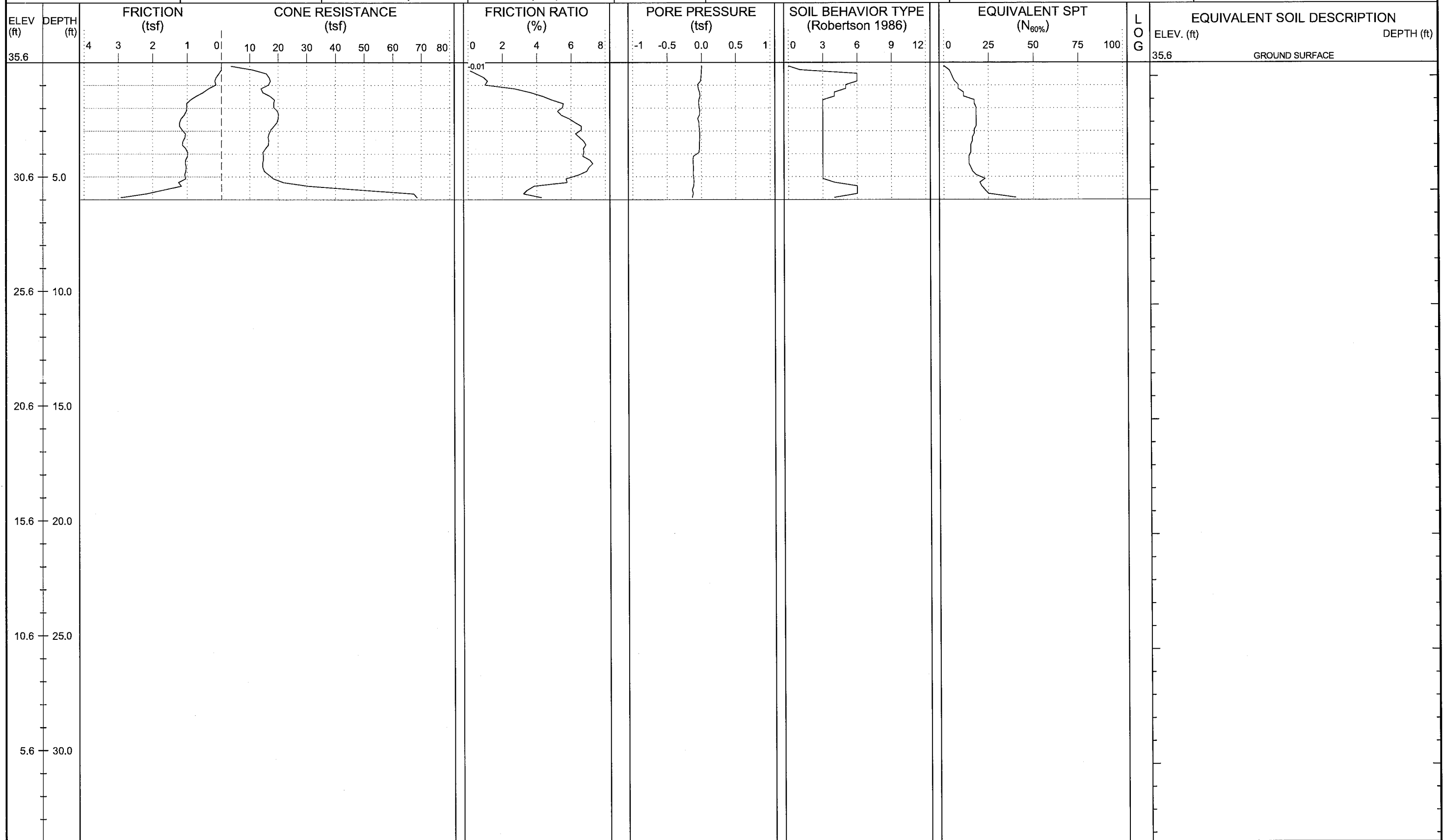


|   |                      |                      |  |                                  |                                  |
|---|----------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B         | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                      |                      | GROUND WTR (ft): 0 HR. 2.5, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3A-3250  | STATION: 32+50       | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-                       | ROD TYPE: Pre-strung             | DRILLER: Ron Stewart             |
| COLLAR ELEV.: 34.2 ft   | TOTAL DEPTH: 10.0 ft | NORTHING: 425,660    | EASTING: 2,527,810                     | START DATE: 08/23/12             | TECHNICIAN: M.A.D.               |
|   |                      |                      |  |                                  | COMP. DATE: 08/23/12             |
|   |                      |                      |  |                                  | SURFACE WATER DEPTH: N/A         |





|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLOW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. Dry, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3A-3450  | STATION: 34+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-         | DRILL METHOD: CPT / DPT                | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 35.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 425,462    | EASTING: 2,527,785       | ROD TYPE: Pre-strung                   | CONE ID: DSA1123                 |
|   |                     |                      |                          | START DATE: 08/23/12                   | COMP. DATE: 08/23/12             |
|   |                     |                      |                          |  | DRILLER: Ron Stewart             |
|   |                     |                      |                          |  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |  | SURFACE WATER DEPTH: N/A         |



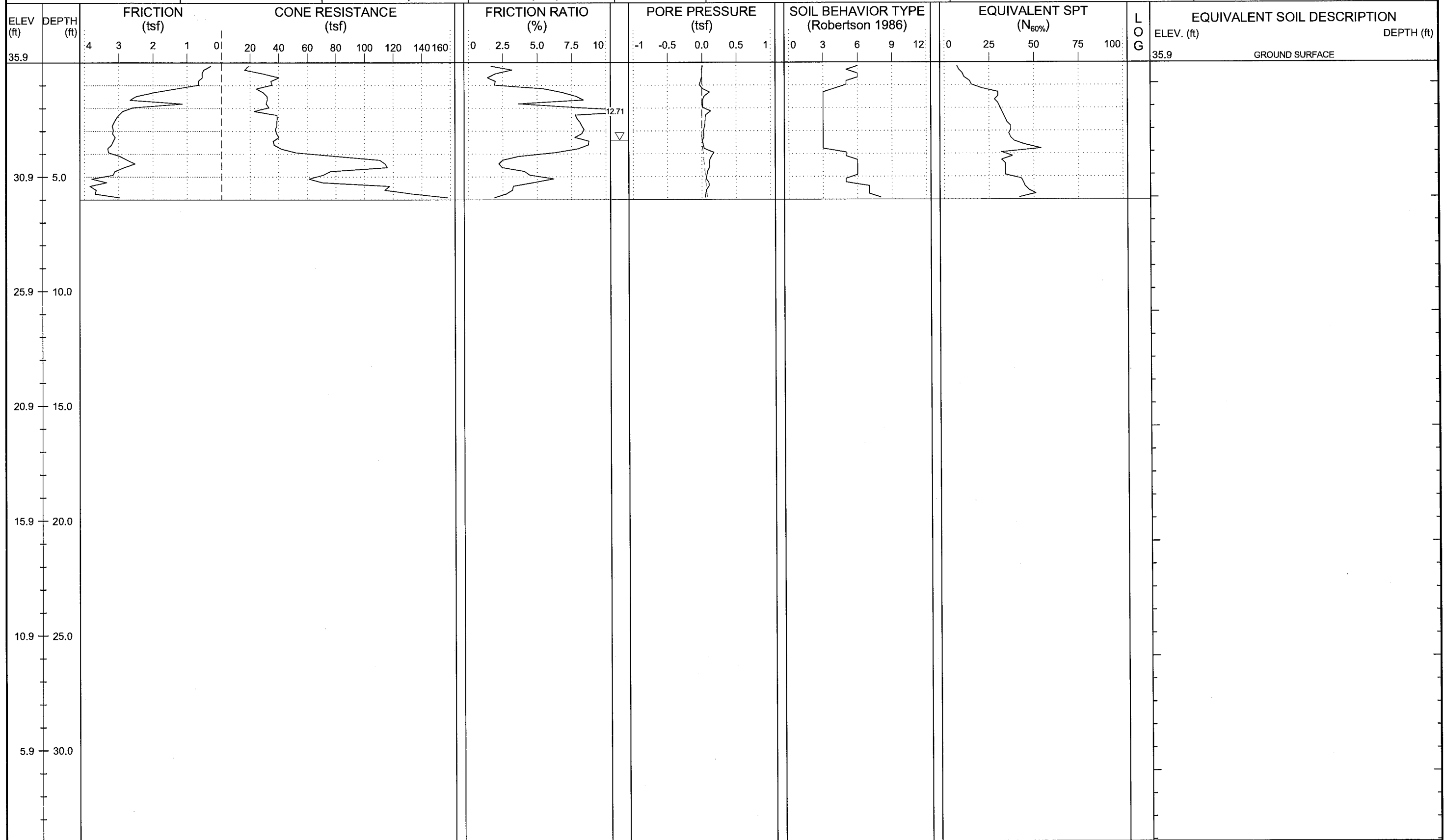




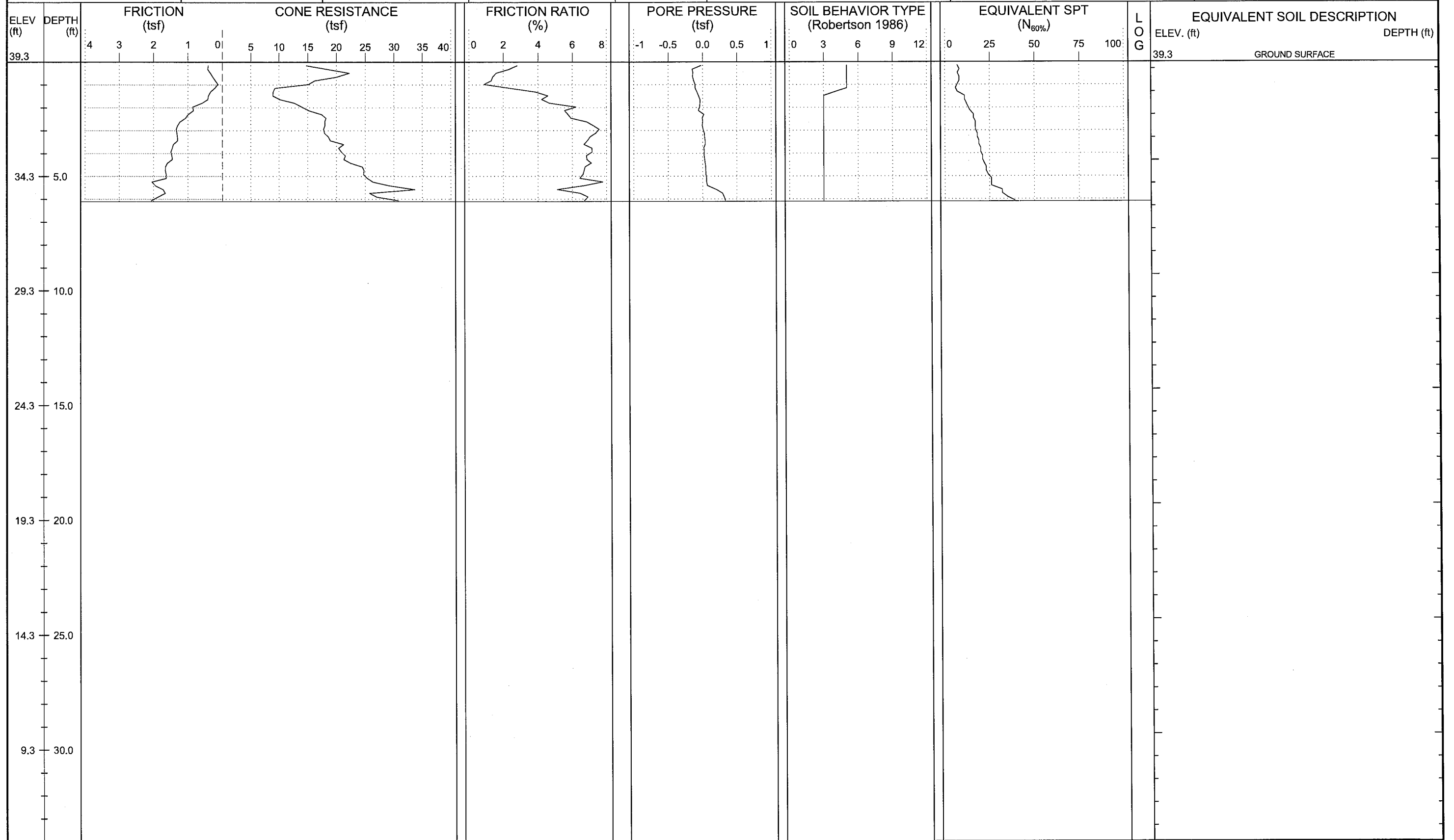




|   |                     |                      |                          |  |                                  |
|---|---------------------|----------------------|--------------------------|--|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 3.4, 24 HR. N/A | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3A-4000  | STATION: 40+00      | OFFSET: 0ft CL       | ALIGNMENT: -Y3A-         | ROD TYPE: Pre-strung                   | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 35.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 424,918    | EASTING: 2,527,704       | START DATE: 08/24/12                   | CONE ID: DSA1123                 |
|   |                     |                      |                          | COMP. DATE: 08/24/12                   | DRILLER: Ron Stewart             |
|   |                     |                      |                          | TECHNICIAN: M.A.D.                     |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A               |                                  |

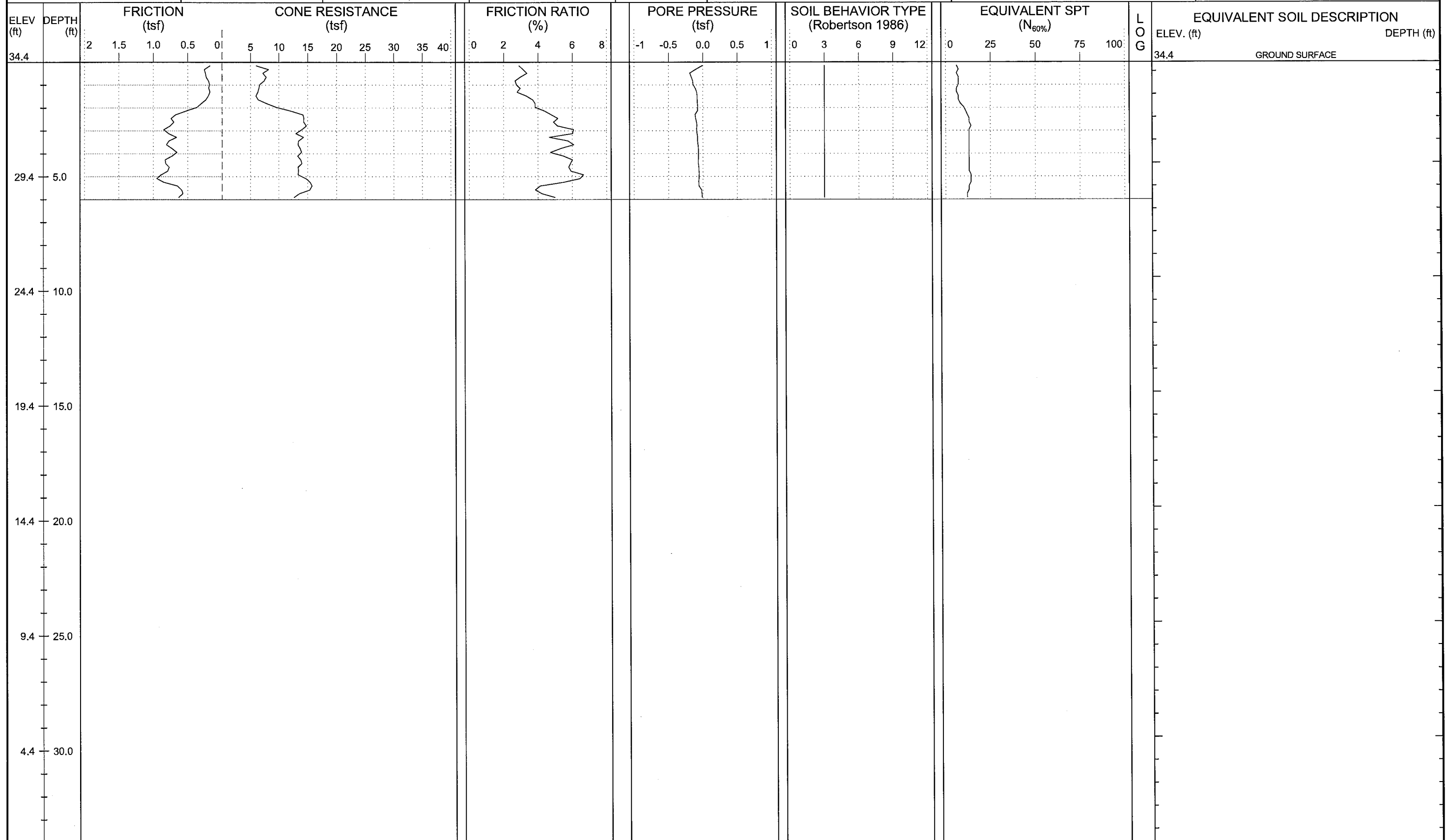


|   |                     |                      |                            |                                  |                                  |
|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3B-1250  | STATION: 12+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3B-           | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 39.3 ft   | TOTAL DEPTH: 6.1 ft | NORTHING: 426,980    | EASTING: 2,528,301         | START DATE: 08/22/12             | COMP. DATE: 08/22/12             |
|   |                     |                      |                            |                                  | DRILLER: Ron Stewart             |
|   |                     |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |



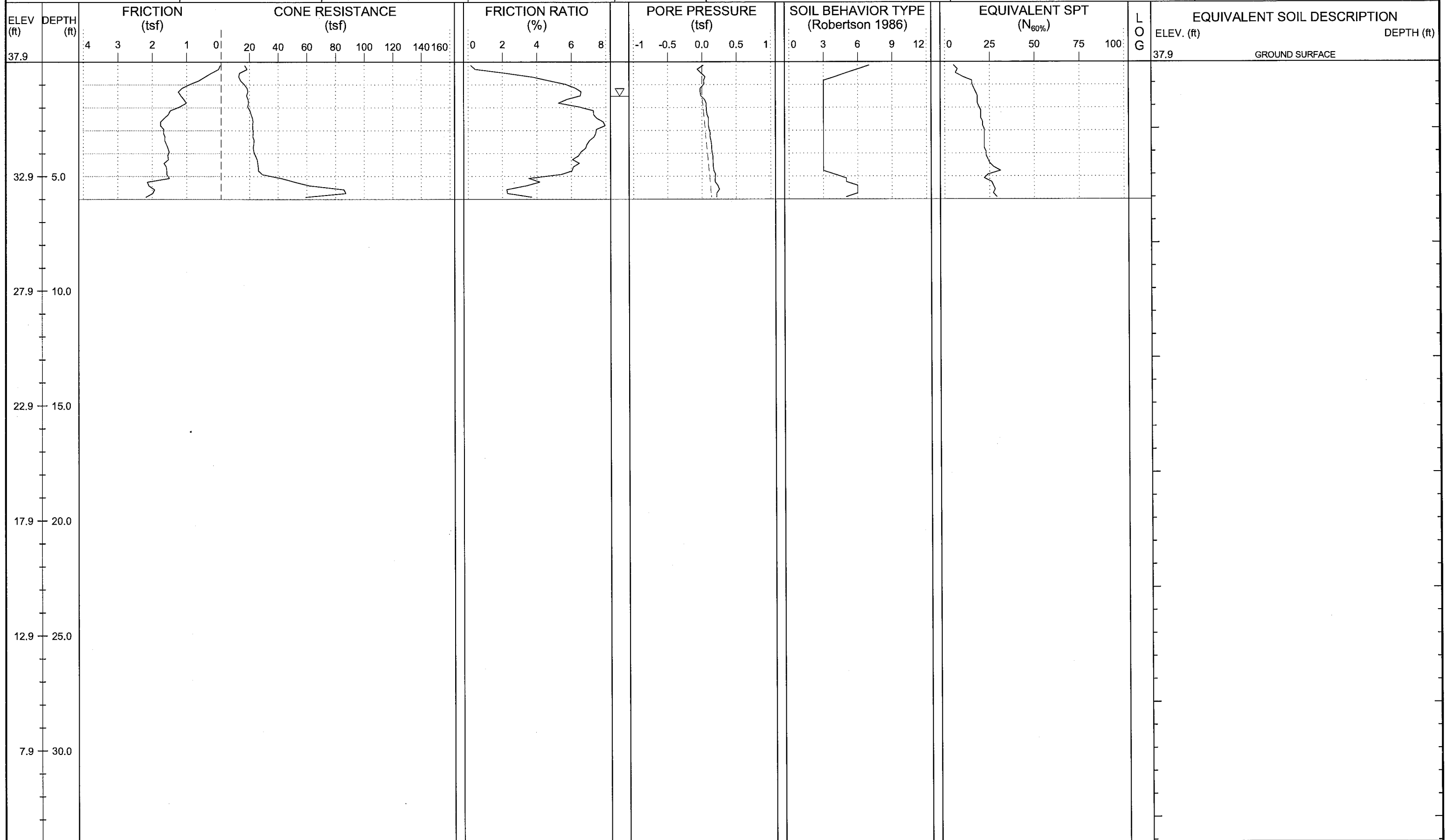


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|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft)          | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3C-1250  | STATION: 12+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3C-         | 0 HR. Dry                        | CONE ID: DSA1123                 |
| COLLAR ELEV.: 34.4 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,333    | EASTING: 2,528,474       | 24 HR. N/A                       | START DATE: 08/22/12             |
|   |                     |                      | COMP. DATE: 08/22/12     |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                          |                                  | SURFACE WATER DEPTH: N/A         |

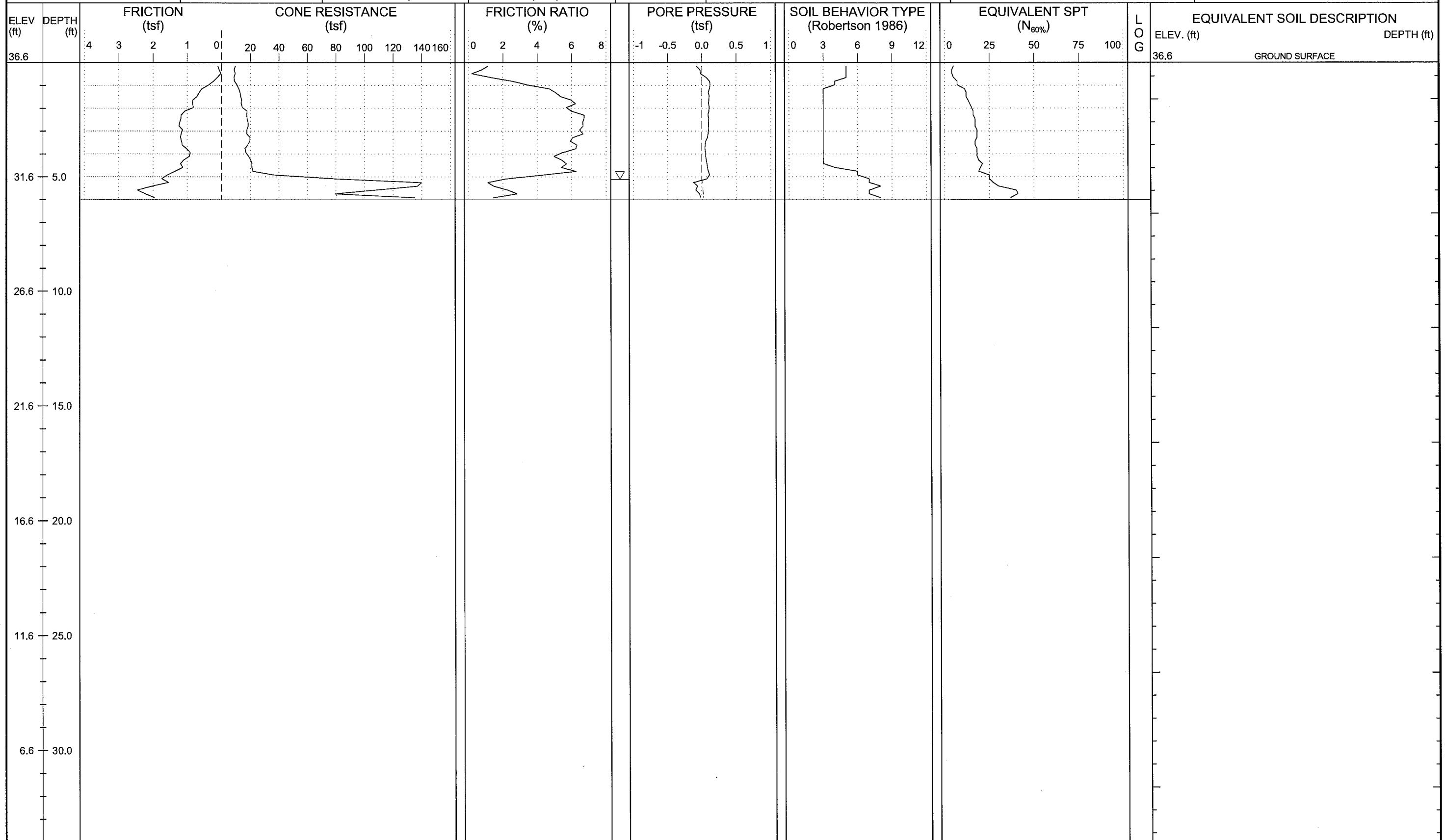




|   |                     |                      |                          |  |                            |                                  |                       |
|---|---------------------|----------------------|--------------------------|--|----------------------------|----------------------------------|-----------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track       | MAX. DOWN PRESSURE: 10 Ton |                                  |                       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft): 0 HR. 1.5, 24 HR. N/A | DRILL METHOD: CPT / DPT    | CONE TYPE: 1.44 Vertek Piezocone | DRILLER: Cory Robison |
| BORING NO.: Y3C-1450  | STATION: 14+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3C-         | START DATE: 08/20/12                   | CONE ID: DSA1123           | TECHNICIAN: M.A.D.               |                       |
| COLLAR ELEV.: 37.9 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,481    | EASTING: 2,528,340       | COMP. DATE: 08/20/12                   | SURFACE WATER DEPTH: N/A   |                                  |                       |



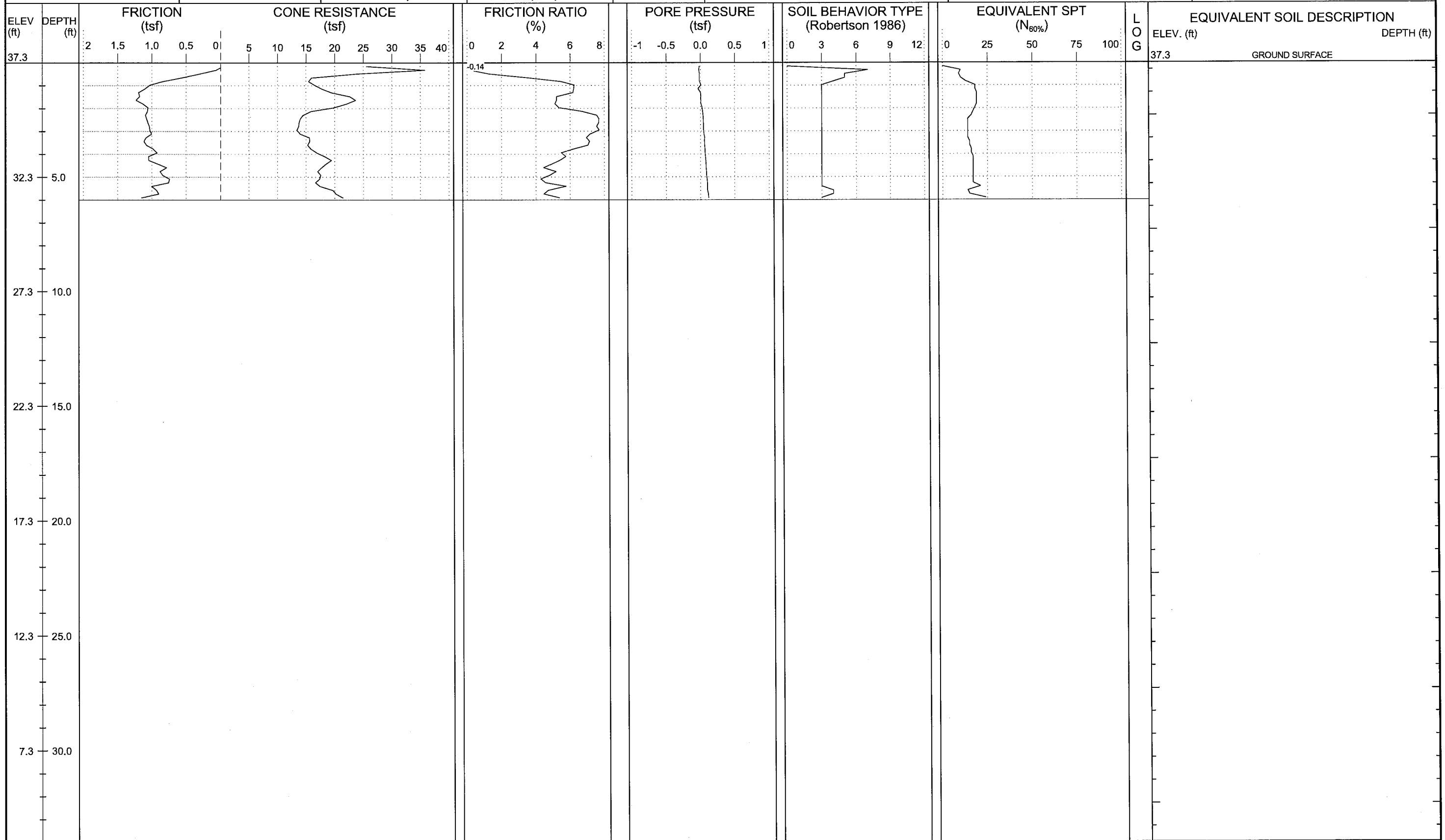
|   |                     |                      |  |                                  |                                  |
|---|---------------------|----------------------|--|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson               | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. 5.1, 24 HR. N/A | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3C-1650  | STATION: 16+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3C-                       | ROD TYPE: Pre-strung             | CONE ID: DSA1123                 |
| COLLAR ELEV.: 36.6 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,657    | EASTING: 2,528,261                     | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                     |                      |  |                                  | DRILLER: Cory Robison            |
|   |                     |                      |  |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |  |                                  | SURFACE WATER DEPTH: N/A         |







|   |                     |                      |                            |                                  |                                  |
|---|---------------------|----------------------|----------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLow | GEOLOGIST: Steven Hudson   | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      | GROUND WTR (ft): 0 HR. Dry | DRILL METHOD: CPT / DPT          | CONE TYPE: 1.44 Vertek Piezocone |
| BORING NO.: Y3D-1250  | STATION: 12+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3D-           | ROD TYPE: Pre-strung             | CONE ID: DSG0867                 |
| COLLAR ELEV.: 37.3 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,830    | EASTING: 2,527,940         | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                     |                      |                            |                                  | DRILLER: Ron Stewart             |
|   |                     |                      |                            |                                  | TECHNICIAN: M.A.D.               |
|   |                     |                      |                            |                                  | SURFACE WATER DEPTH: N/A         |









|   |                     |                      |                          |                                  |                                  |
|---|---------------------|----------------------|--------------------------|----------------------------------|----------------------------------|
| WBS: 34442.1.2  | TIP: R-2514B        | COUNTY: JONES/ONSLAW | GEOLOGIST: Steven Hudson | DRILL MACHINE: Hogentogler Track | MAX. DOWN PRESSURE: 10 Ton       |
| SITE DESCRIPTION: US 17 from South of Belgrade at SR 1330 to North of Maysville |                     |                      |                          | GROUND WTR (ft)                  | DRILL METHOD: CPT / DPT          |
| BORING NO.: Y3E-1250  | STATION: 12+50      | OFFSET: 0ft CL       | ALIGNMENT: -Y3E-         | 0 HR. Dry                        | CONE TYPE: 1.44 Vertek Piezocone |
| COLLAR ELEV.: 33.7 ft   | TOTAL DEPTH: 6.0 ft | NORTHING: 427,200    | EASTING: 2,527,802       | 24 HR. N/A                       | CONE ID: DSA1123                 |
|   |                     |                      |                          | START DATE: 08/20/12             | COMP. DATE: 08/20/12             |
|   |                     |                      |                          | DRILLER: Cory Robison            |                                  |
|   |                     |                      |                          | TECHNICIAN: M.A.D.               |                                  |
|   |                     |                      |                          | SURFACE WATER DEPTH: N/A         |                                  |

