

CONTRACT: ID: U-3338B

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.	SHEET NO.	TOTAL SHEETS
N.C.	34932.1.1 (U-3338B)	1	37
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34932.1.1	STP-1175(8)	P.E. RAW & UTIL.	

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+00 TO 91+20	4-10	14-16
-SRI-	10+00 TO 18+90	9-10	17
-Y-	11+00 TO 11+92	4	18
-YA-	10+00 TO 10+90	4	19
-YI-	12+80 TO 33+00	4,11	20
-Y2-	10+00 TO 12+57	5	21
-Y3-	14+86 TO 15+88	5	22
-Y4-	10+00 TO 11+01	6	23
-Y5-	11+36 TO 16+75	6	24
-Y5B-	10+00 TO 14+58	12	25
-Y6-	5+90 TO 34+70	7,12,13	26-27
-Y7-	10+11 TO 14+04	8	28
-Y7A-	10+00 TO 25+13	8,13	29
-Y8-	10+69 TO 17+02	8	30
-Y9-	10+00 TO 11+70	9	31
-Y10-	11+48 TO 14+00	9	32
-Y11-	12+60 TO 13+82	9	33
-Y12-	10+00 TO 11+37	9	34
-Y15-	12+01 TO 14+90	12	35
-Y16-	14+69 TO 17+85	13	36
-Y17-	10+00 TO 13+59	8	37

ROADWAY
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 34932.1.1 (U-3338B) F.A. PROJ. STP-1175(8)
 COUNTY NEW HANOVER
 PROJECT DESCRIPTION WILMINGTON - SR 1175 (KERR AVE.) FROM
RANDALL PARKWAY TO SR 2649 (MARTIN LUTHER KING, JR.
PARKWAY)

INVENTORY

APPENDIX 1
CPT LOGS

SHEET
1-55

CAUTION NOTICE

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

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

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

PERSONNEL

S.C. DILLARD

J.P. DELOATCH

R.E. SMITH

J.M. EDMONDSON

MIDATLANTIC PERSONNEL

CATLIN PERSONNEL

INVESTIGATED BY J.L. STONE

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE SEPTEMBER 2012

DRAWN BY: C.R. SUMNER, C.P. TURNER, J.L. STONE

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.



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

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

PROJECT REFERENCE NO. U-3338B	SHEET NO. 2
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SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS																																																																																																																									
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, MODERATE PLASTIC, A-7-6</i>		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)	ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																																																																																																									
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PLASTICITY <table border="1" style="width: 100%; font-size: small;"> <tr> <th>PLASTICITY INDEX (PI)</th> <th>DRY STRENGTH</th> </tr> <tr> <td>NONPLASTIC</td> <td>VERY LOW</td> </tr> <tr> <td>LOW PLASTICITY</td> <td>SLIGHT</td> </tr> <tr> <td>MED. PLASTICITY</td> <td>MEDIUM</td> </tr> <tr> <td>HIGH PLASTICITY</td> <td>HIGH</td> </tr> </table>				PLASTICITY INDEX (PI)	DRY STRENGTH	NONPLASTIC	VERY LOW	LOW PLASTICITY	SLIGHT	MED. PLASTICITY	MEDIUM	HIGH PLASTICITY	HIGH	ROCK HARDNESS VERY HARD HARD MODERATELY HARD MEDIUM HARD SOFT VERY SOFT CAN NOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.																																																																																																														
PLASTICITY INDEX (PI)	DRY STRENGTH																																																																																																																											
NONPLASTIC	VERY LOW																																																																																																																											
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MED. PLASTICITY	MEDIUM																																																																																																																											
HIGH PLASTICITY	HIGH																																																																																																																											
TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM) <table border="1" style="width: 100%; font-size: small;"> <tr> <th>BOULDER (BLDR.)</th> <th>COBBLE (COB.)</th> <th>GRAVEL (GR.)</th> <th>COARSE SAND (CSE. SD.)</th> <th>FINE SAND (F. SD.)</th> <th>SILT (SL.)</th> <th>CLAY (CL.)</th> </tr> <tr> <td>75 - 4.75</td> <td>4.75 - 0.425</td> <td>0.425 - 0.075</td> <td>0.075 - 0.025</td> <td>0.025 - 0.005</td> <td>>0.005</td> <td>>0.002</td> </tr> </table>				BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F. SD.)	SILT (SL.)	CLAY (CL.)	75 - 4.75	4.75 - 0.425	0.425 - 0.075	0.075 - 0.025	0.025 - 0.005	>0.005	>0.002	FRACURE SPACING <table border="1" style="width: 100%; font-size: small;"> <tr> <th>TERM</th> <th>SPACING</th> <th>THICKNESS</th> </tr> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>> 4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FEET</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>0.008 - 0.03 FEET</td> </tr> </table>			TERM	SPACING	THICKNESS	VERY WIDE	MORE THAN 10 FEET	> 4 FEET	WIDE	3 TO 10 FEET	1.5 - 4 FEET	MODERATELY CLOSE	1 TO 3 FEET	0.16 - 1.5 FEET	CLOSE	0.16 TO 1 FEET	0.03 - 0.16 FEET	VERY CLOSE	LESS THAN 0.16 FEET	0.008 - 0.03 FEET																																																																																						
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INDURATION FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE MODERATELY INDURATED INDURATED EXTREMELY INDURATED RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																																																																																																																												
			BENCH MARK: ELEVATION: _____ FT. NOTES: _____																																																																																																																									

09/08/99

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.	U-3338B	2A	37
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34932.1.1	STP-1175(8)	P.E.	

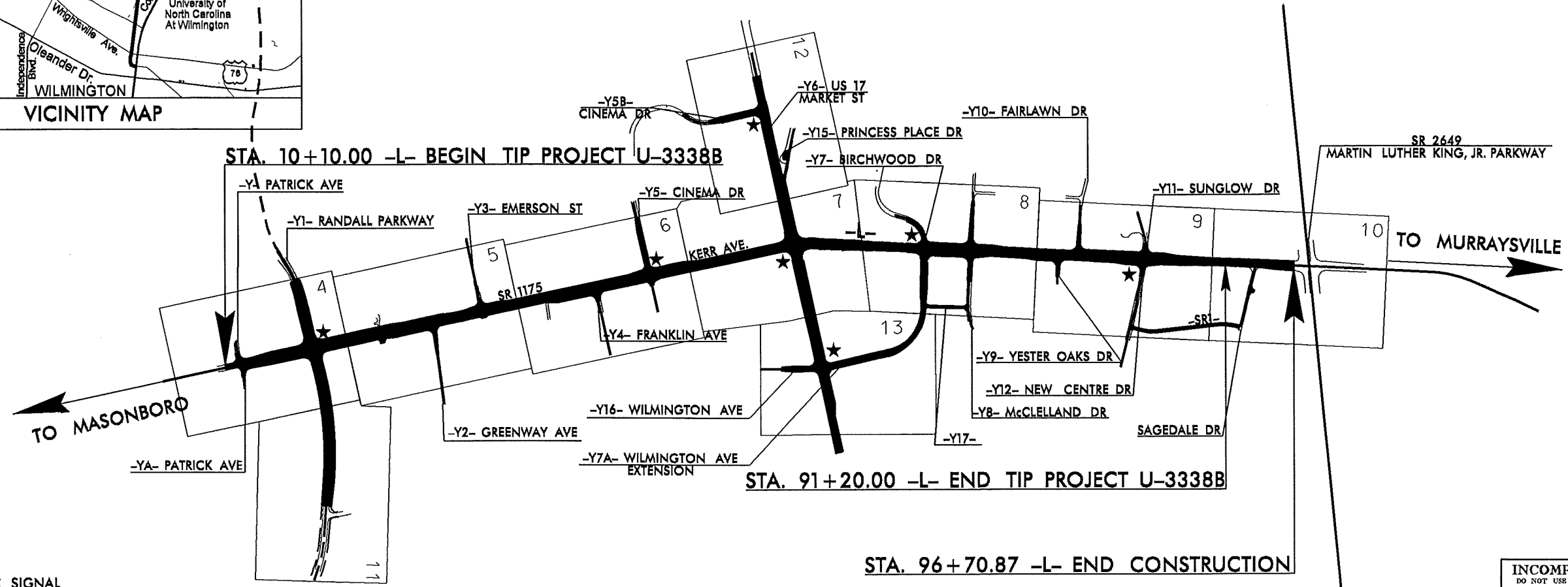
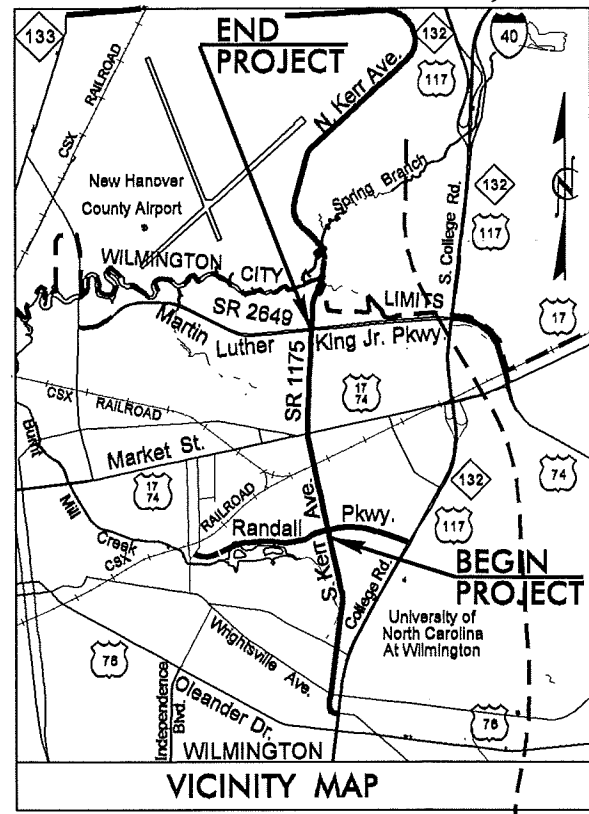
NEW HANOVER COUNTY

LOCATION: WILMINGTON - SR 1175 (KERR AVE) FROM RANDALL PARKWAY TO SR 2649 (MARTIN LUTHER KING, JR. PARKWAY)

TYPE OF WORK: GRADING, PAVING, RESURFACING, CURB & GUTTER, DRAINAGE, AND SIGNALS



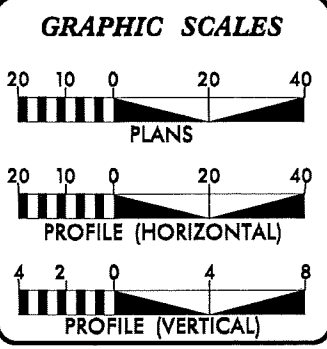
TIP PROJECT: U-3338B



★ TRAFFIC SIGNAL
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF WILMINGTON.
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

CONTRACT:



DESIGN DATA

ADT 2014	=	30,489
ADT 2034	=	30,786
DHV	=	9 %
D	=	55 %
T	=	5 % *
V	=	50 MPH
FUNC. CLASS = ARTERIAL		
* (TTST 1% + DUAL 4%)		
REGIONAL TIER		

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-3338B	=	1.54	MI
TOTAL LENGTH OF TIP PROJECT U-3338B	=	1.54	MI

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 02, 2012	BRENDA MOORE, PE PROJECT ENGINEER
LETTING DATE: MARCH 18, 2014	KATRINA N. WASHINGTON, PE PROJECT DESIGN ENGINEER


HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**



STATE HIGHWAY DESIGN ENGINEER P.E.

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CP Turner AT 09:25:46



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

September 13, 2012

STATE PROJECT: 34932.1.1 (U-3338B)
F.A. PROJECT: STP-1175(8)
COUNTY: New Hanover
DESCRIPTION: Wilmington-SR 1175 (Kerr Ave.) from Randall Parkway
To SR 2649 (MLK Parkway)
SUBJECT: Geotechnical Inventory

Project Description

This project begins approximately 100 feet south of the intersection of Kerr Ave. and Patrick Ave. in the city of Wilmington and extends northward approximately 1.6 miles ending at the intersection of Kerr Ave. and Martin Luther King Parkway. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in May of 2009 and July of 2011. Standard Penetration Test borings were advanced with a Diedrich D-50 drill machine with a manual hammer. Cone Penetration Test borings were completed with a 10 ton digital subtraction cone mounted on an ATV. Hand auger borings were also completed. 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-	10+00 to 91+20
-SR1-	10+00 to 18+90
-Y-	11+00 to 11+92
-YA-	10+00 to 10+90
-Y1-	12+80 to 33+00
-Y2-	10+00 to 12+57
-Y3-	14+86 to 15+88

<u>Line</u>	<u>Station(±)</u>
-Y4-	10+00 to 11+01
-Y5-	11+36 to 16+75
-Y5B-	10+00 to 14+58
-Y6-	5+90 to 34+70
-Y7-	10+11 to 14+04
-Y7A-	10+00 to 25+13
-Y8-	10+69 to 17+02
-Y9-	10+00 to 11+70
-Y10-	11+48 to 14+00
-Y11-	12+60 to 13+82
-Y12-	10+00 to 11+37
-Y15-	12+01 to 14+90
-Y16-	14+69 to 17+85
-Y17-	10+00 to 13+59

Areas of Special Geotechnical Interest

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

<u>Line</u>	<u>Station(±)</u>
-L-	11+40 to 15+50
-L-	17+50 to 18+50
-L-	21+50 to 24+50
-L-	25+50 to 27+00
-L-	33+00 to 37+00
-L-	51+00 to 54+50
-L-	73+50 to 75+50
-L-	78+00 to 79+00
-SR1-	12+50 to 14+00
-SR1-	16+00 to 17+50
-Y2-	10+50 to 12+57
-Y6-	27+00 to 29+00
-Y7-	10+11 to 13+50
-Y8-	14+00 to 17+00

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 21± to 41± feet above sea level

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

Surficial soils in this area are generally classified as undivided coastal plain sediments.

Ground Water

Ground water data was collected in May of 2009 and July of 2011, during a time of normal precipitation. Ground water elevations ranged from 22± to 33± feet above sea level.

Soils

Soils encountered within this project area have been divided into two categories, undivided coastal plain soils and artificial fill soils.

Soils classified as undivided coastal plain are comprised of 6± to 20± feet of very loose to dense sand (A-2-4, A-3) and 2± to 6± feet of soft to stiff sandy silt (A-4).

Soils classified as artificial fill are composed of 3± feet of dense gravel (A-1-b.)

Respectfully Submitted,



Joseph L. Stone, L.G.

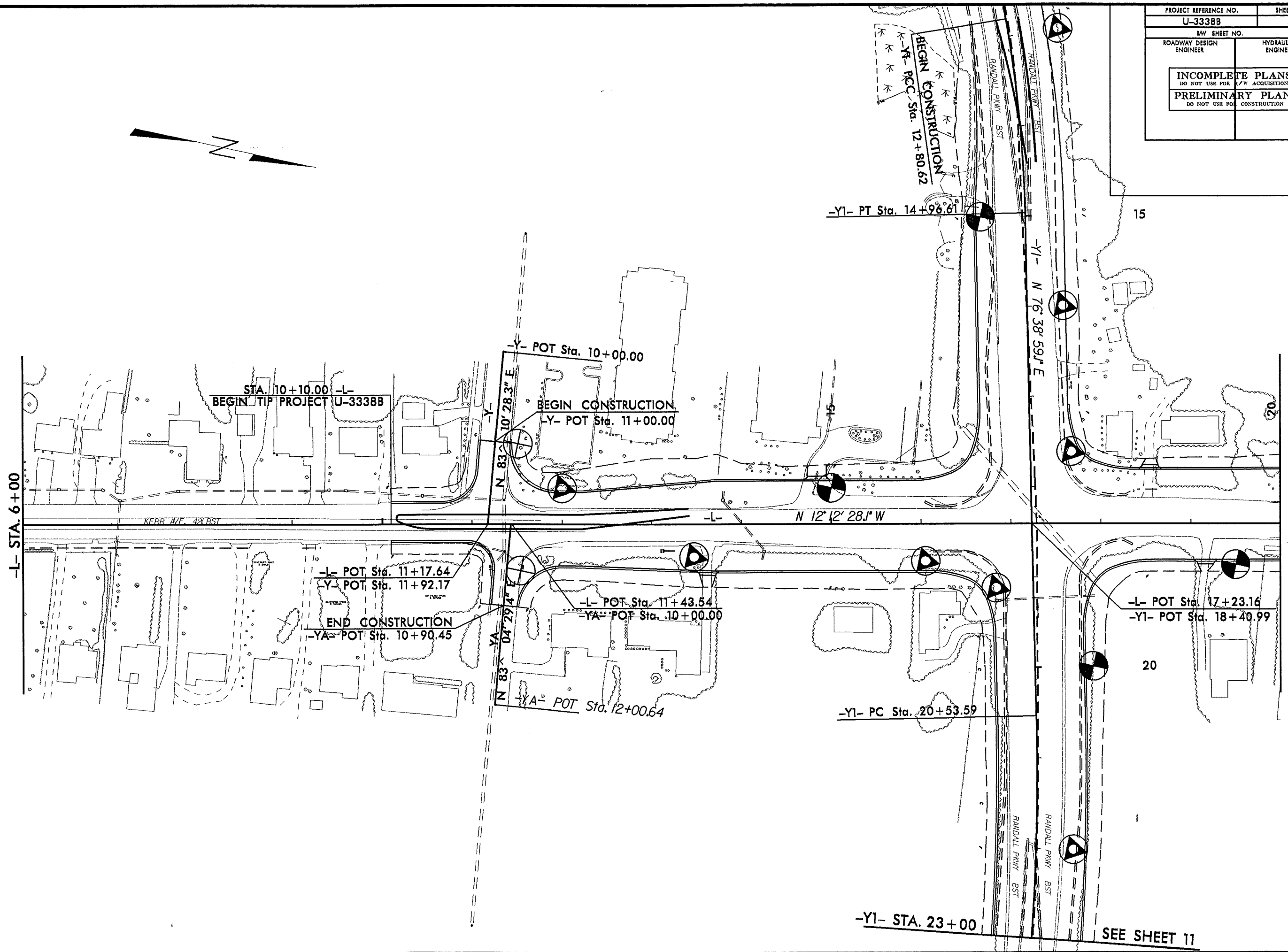
Project Engineering Geologist

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REVISIONS

PROJECT REFERENCE NO. U-3338B	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

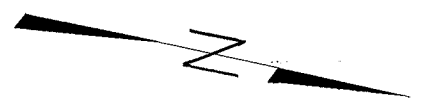
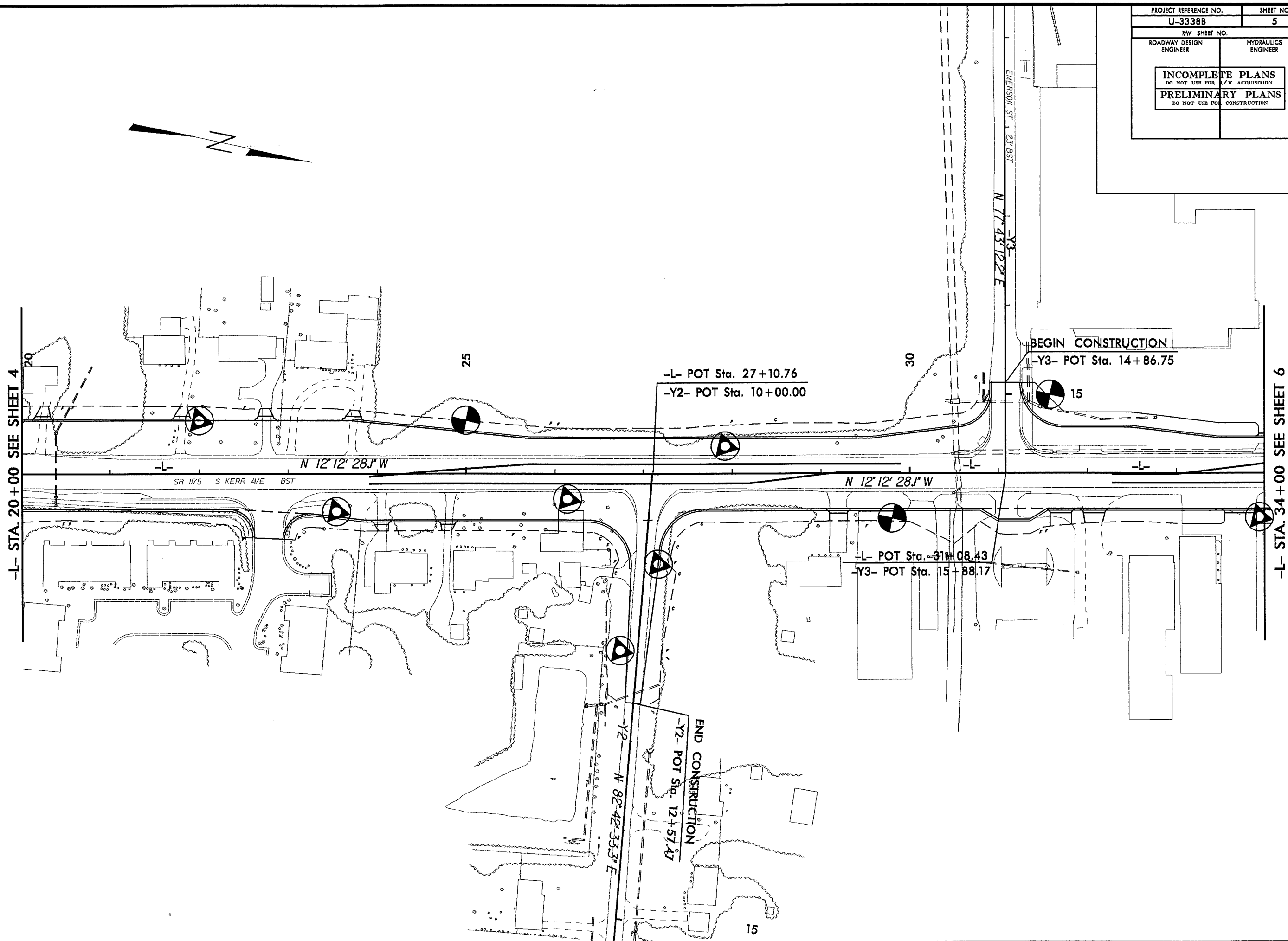


-L- STA. 20+00 SEE SHEET 5

SEE SHEET 11

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REVISIONS
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U-3338B

PROJECT REFERENCE NO.	SHEET NO.
U-3338B	5
RW SHEET NO.	
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

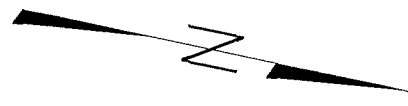
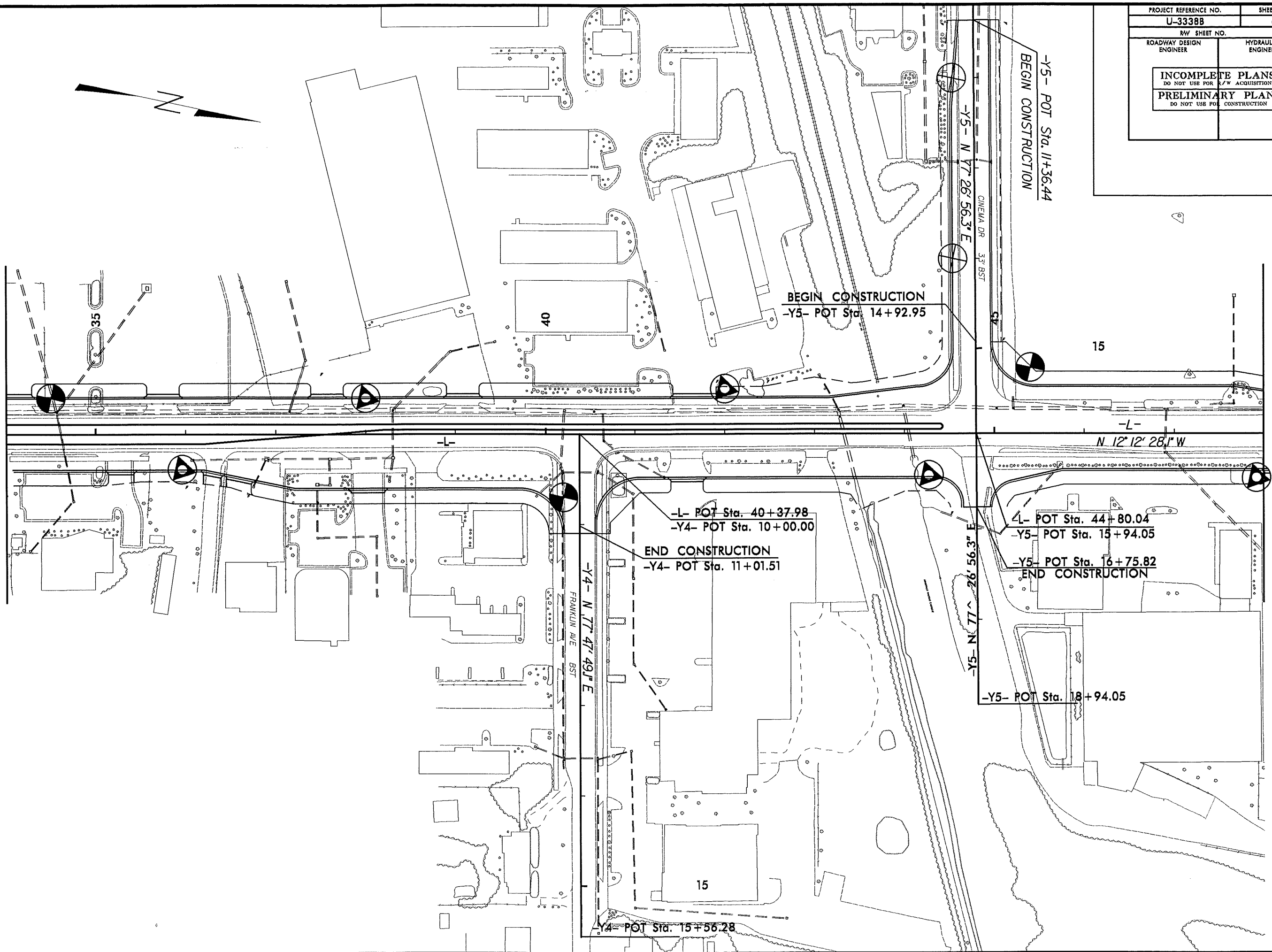


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REVISIONS

-L- STA. 34+00 SEE SHEET 5



PROJECT REFERENCE NO. U-3338B	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small> PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

-L- STA. 48+00 SEE SHEET 7

8/17/99

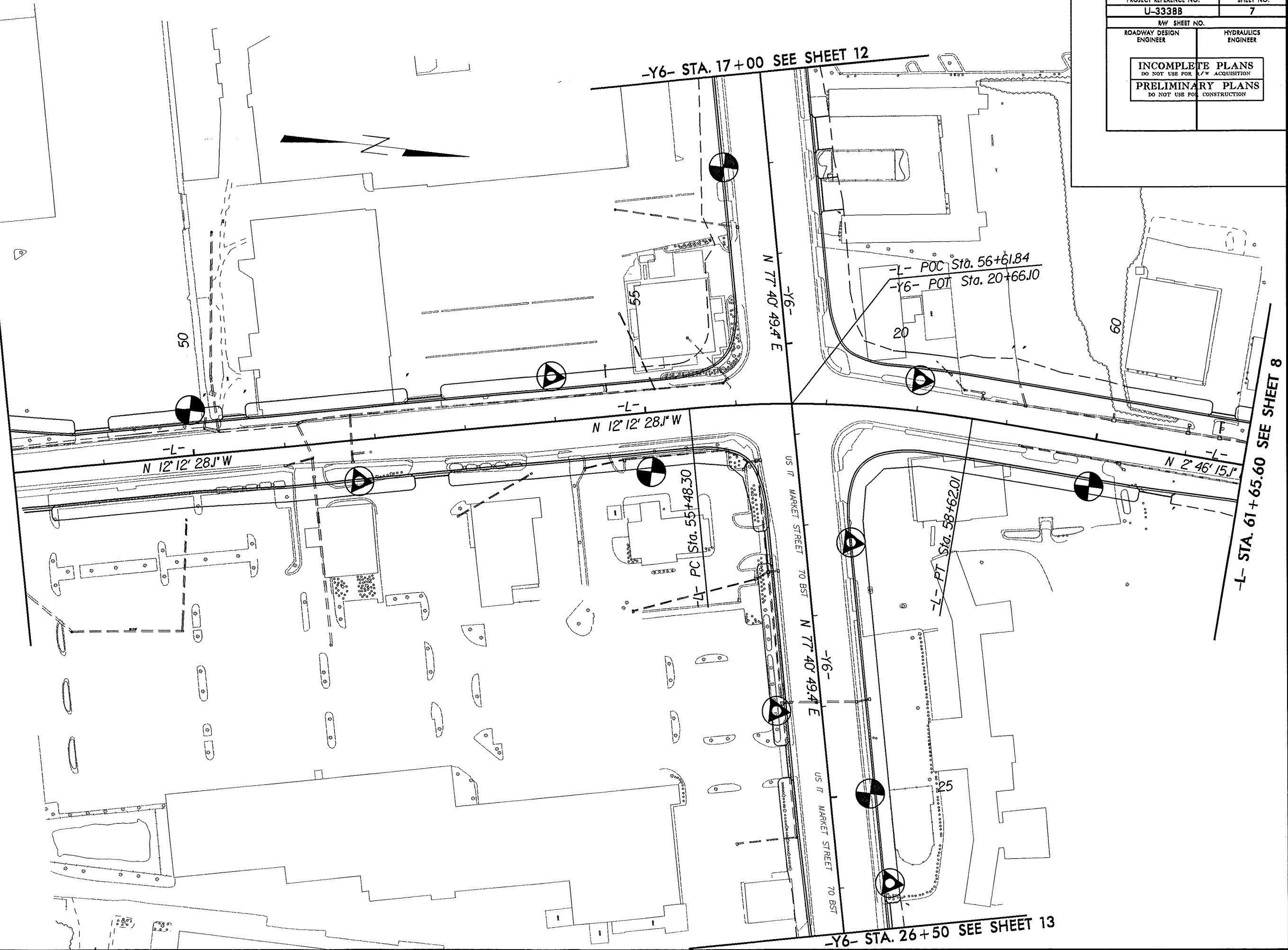
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REVISIONS

PROJECT REFERENCE NO. U-3338B	SHEET NO. 7
MW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR E/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-L- STA. 48+00 SEE SHEET 6

-Y6- STA. 17+00 SEE SHEET 12



-L- STA. 67+65.60 SEE SHEET 8

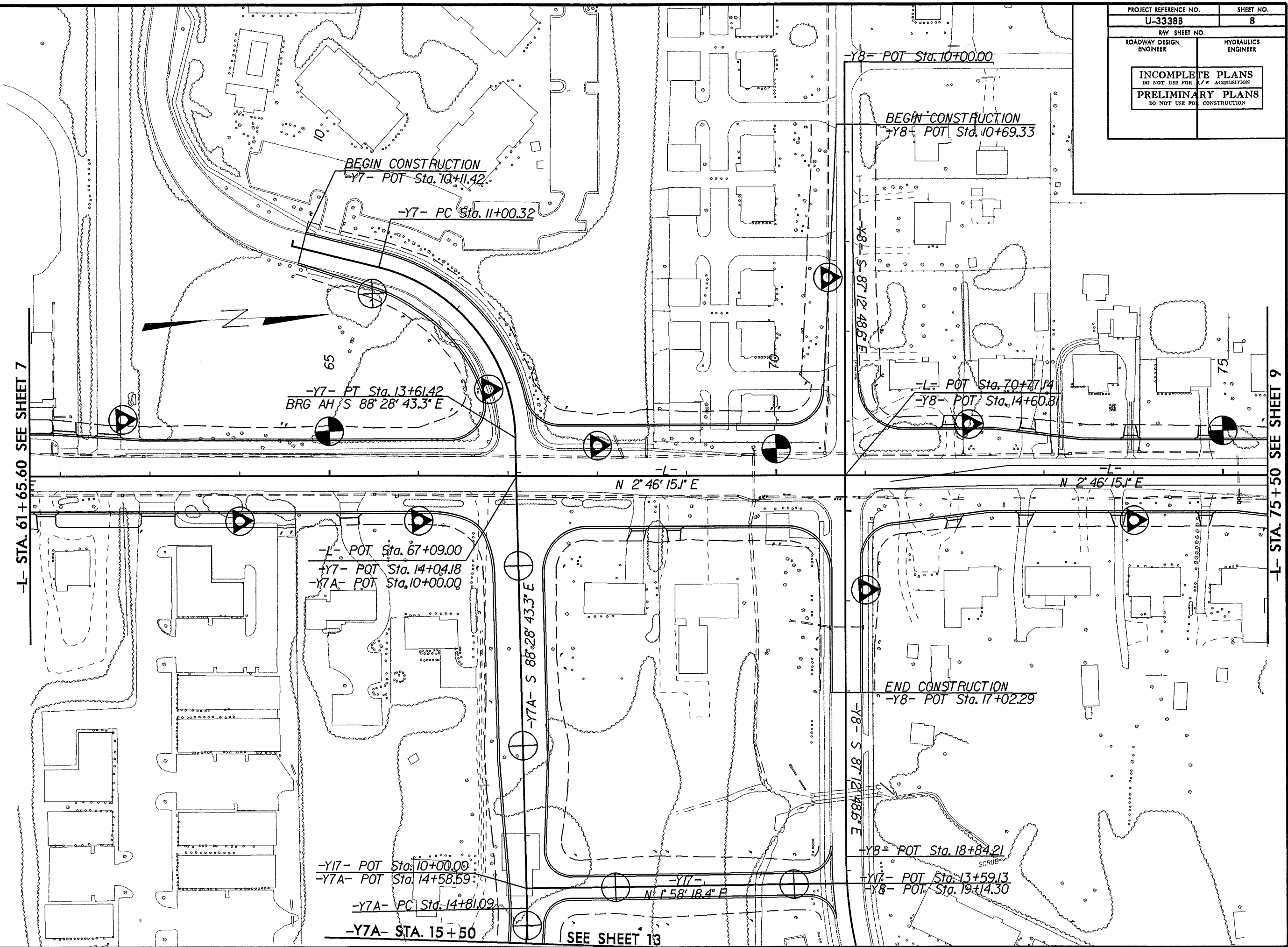
-Y6- STA. 26+50 SEE SHEET 13

8/17/99

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REVISIONS

PROJECT REFERENCE NO. U-3338B	SHEET NO. B
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR S/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SEE SHEET 13

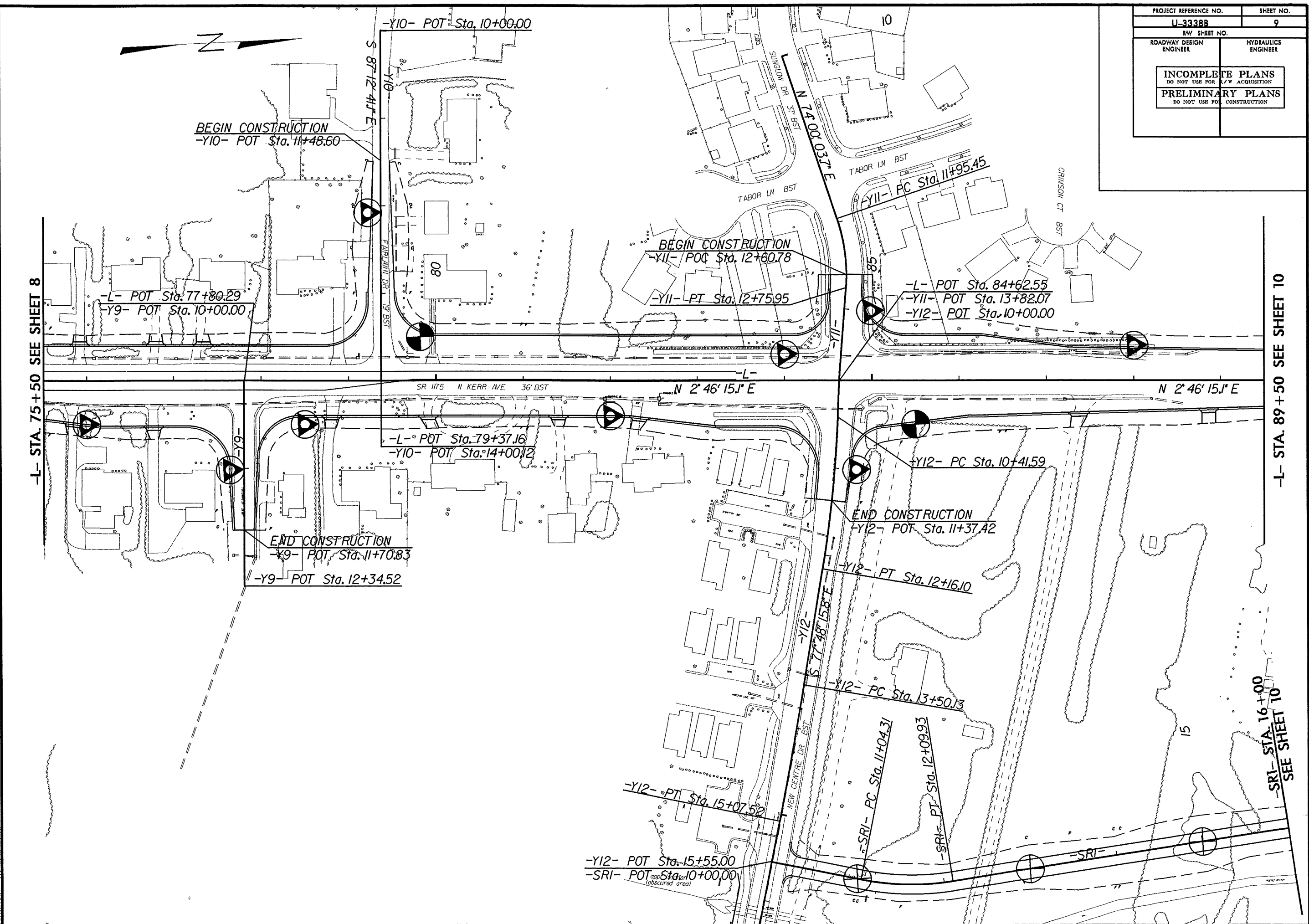
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REVISIONS

-L- STA. 75+50 SEE SHEET 8

-L- STA. 89+50 SEE SHEET 10



PROJECT REFERENCE NO.	SHEET NO.
U-33388	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

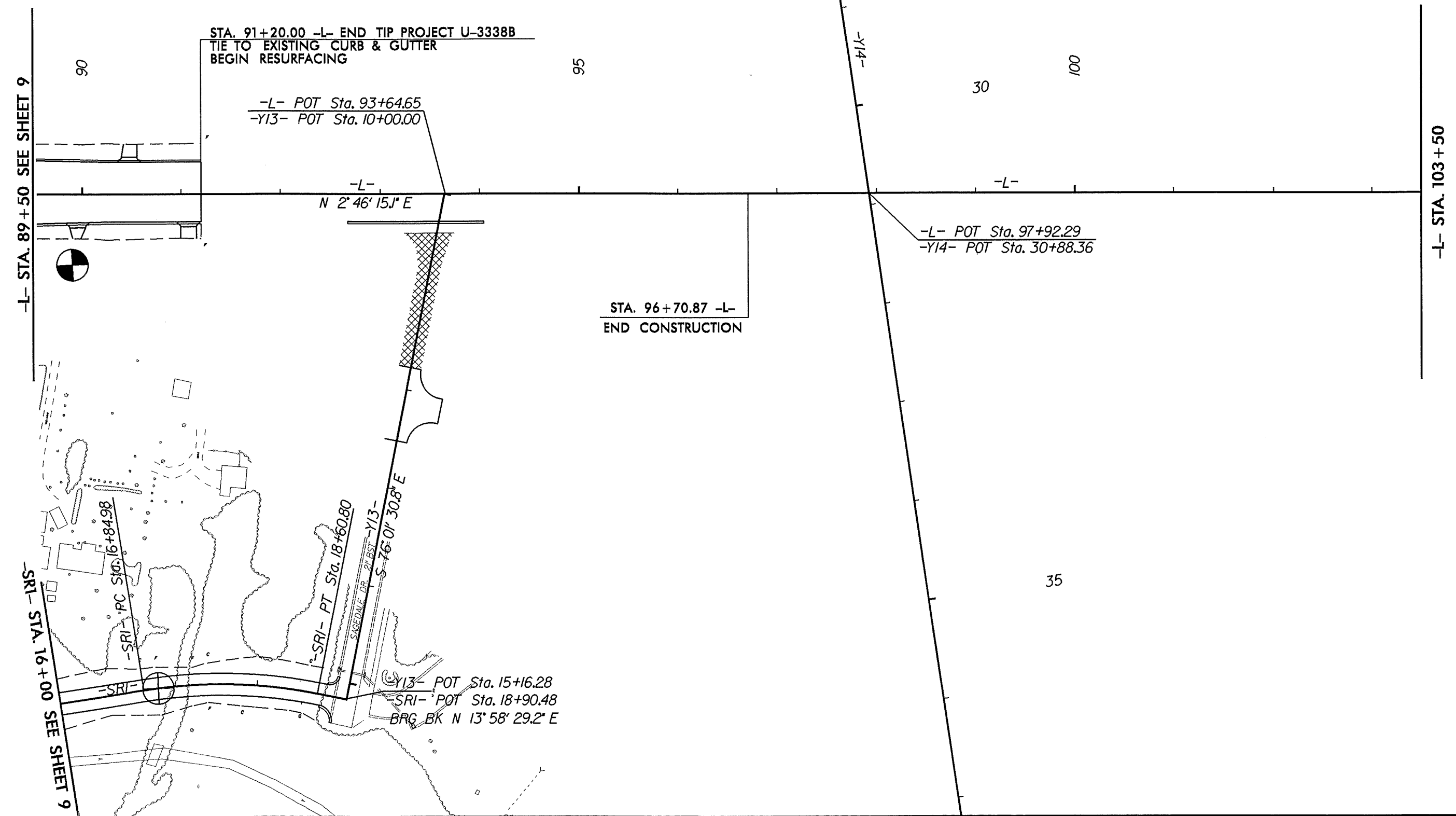
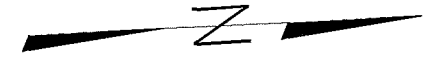
-SRI- STA. 16+00
SEE SHEET 10

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REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3338B	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



STA. 91+20.00 -L- END TIP PROJECT U-3338B
 TIE TO EXISTING CURB & GUTTER
 BEGIN RESURFACING

-L- POT Sta. 93+64.65
 -Y13- POT Sta. 10+00.00

-L-
 N 2° 46' 15" E

STA. 96+70.87 -L-
 END CONSTRUCTION

-L- POT Sta. 97+92.29
 -Y14- POT Sta. 30+88.36

-Y13- POT Sta. 15+16.28
 -SRI- POT Sta. 18+90.48
 BRG BK N 13° 58' 29.2" E

-L- STA. 89 + 50 SEE SHEET 9

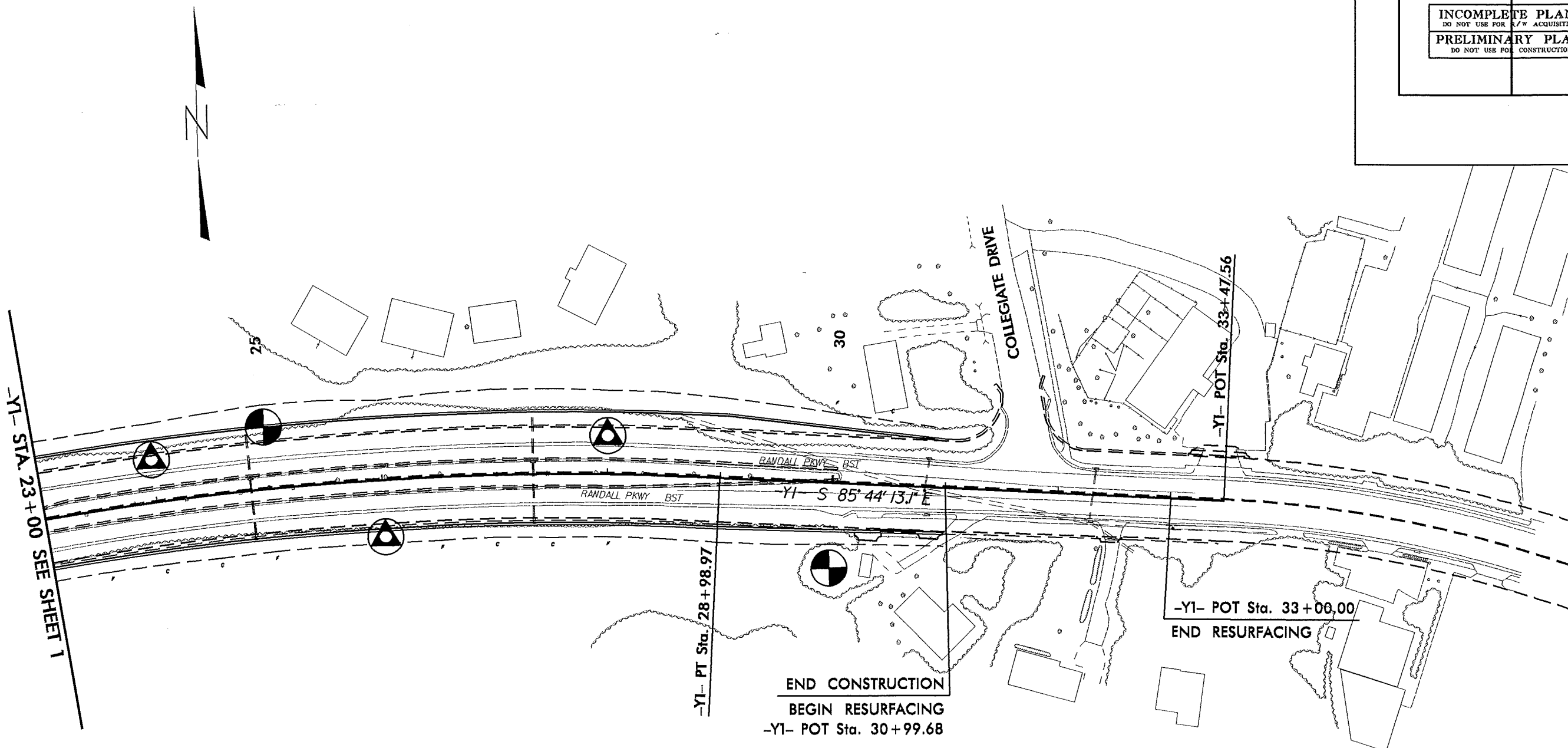
-SRI- STA. 16 + 00 SEE SHEET 9

-L- STA. 103 + 50

PROJECT REFERENCE NO.	SHEET NO.
U-3338B	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISIONS

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 Project: 31-01125451



END CONSTRUCTION
BEGIN RESURFACING
 -Y1- POT Sta. 30+99.68

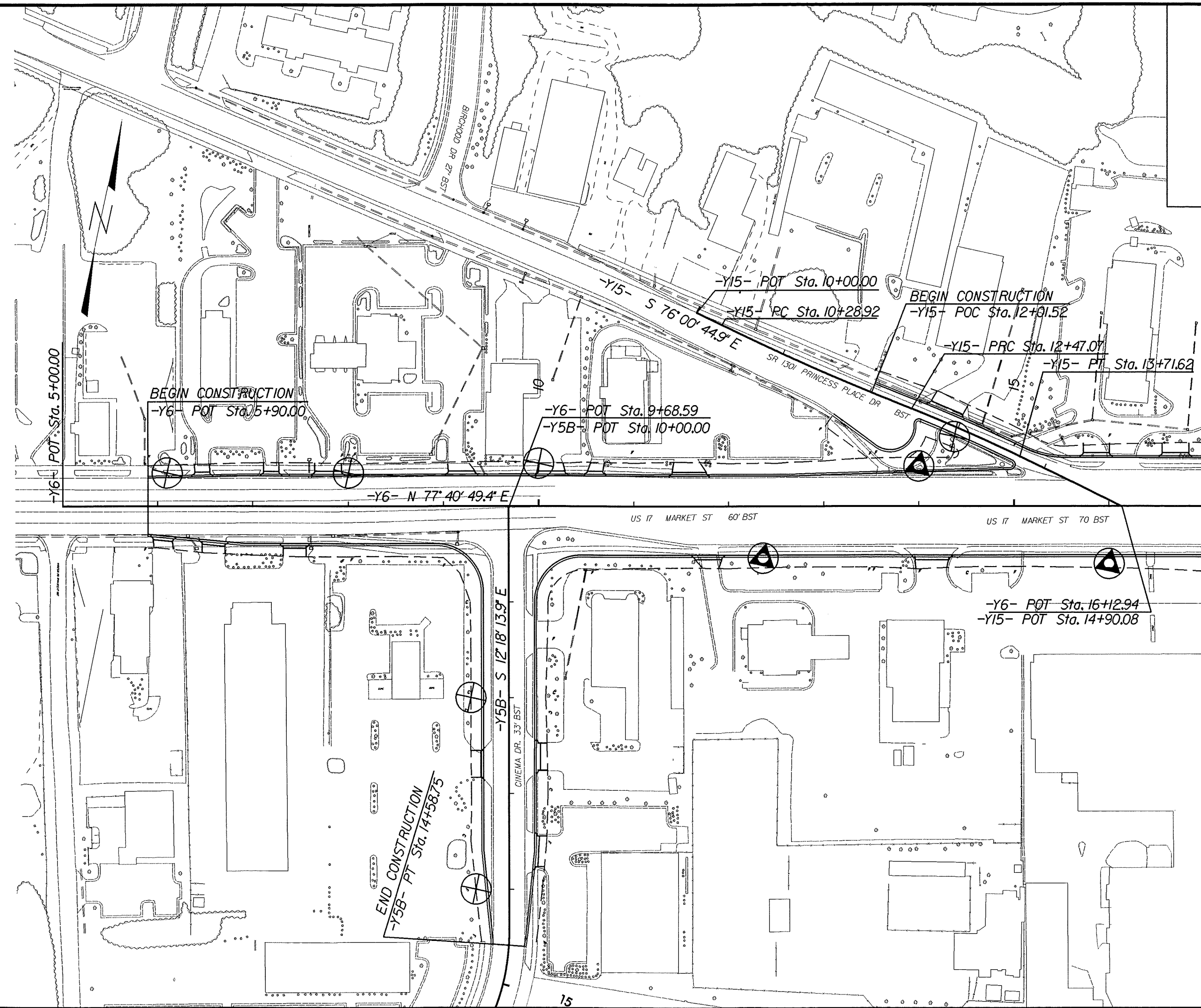
-Y1- POT Sta. 33+00.00
END RESURFACING

8/17/99

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Author: BT 12/24/01

REVISIONS

PROJECT REFERENCE NO. U-3338B	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR R/W ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



-Y6- STA. 17 + 00 SEE SHEET 7

PROJECT REFERENCE NO.	SHEET NO.
U-3338B	13
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y6- STA. 26+50 SEE SHEET 7

-Y7A- STA. 15+50 SEE SHEET 8

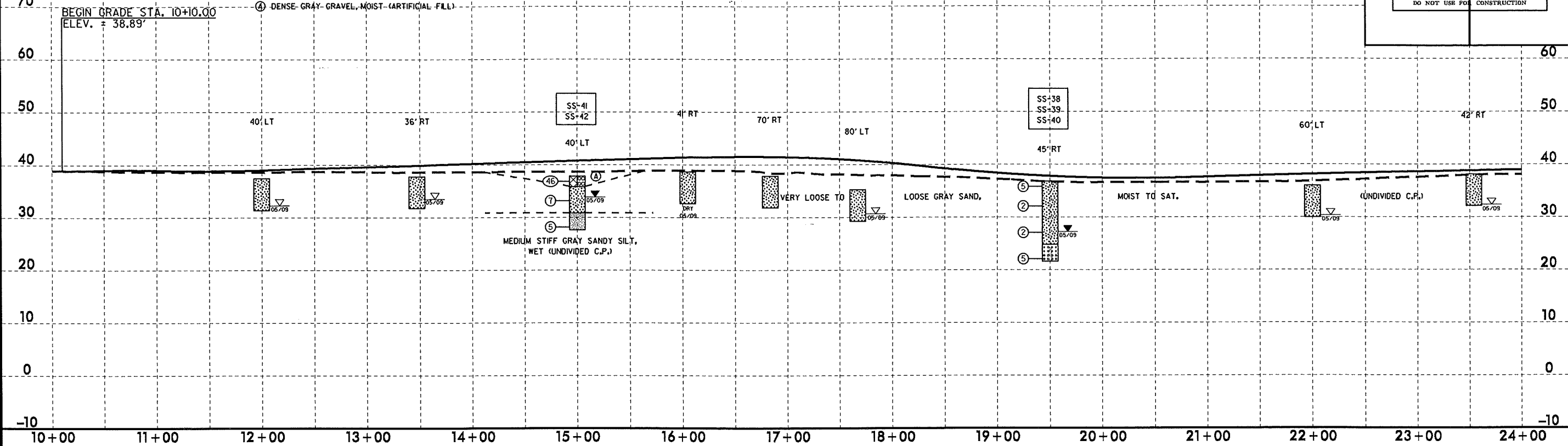


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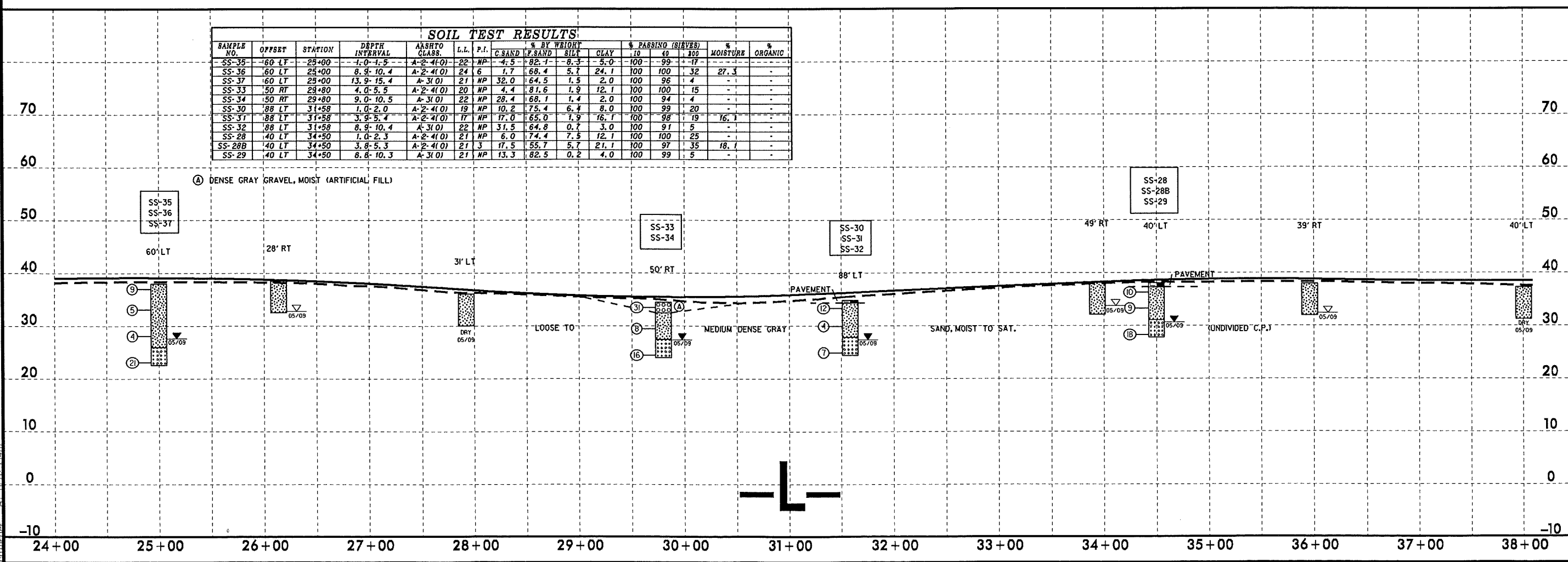
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SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	10	40	200		
SS-41	40' LT	15+00	3.7-5.2	A-2-M(0)	24	21	2.6	72.8	5.5	19.1	100	100	31	18.3
SS-42	40' LT	15+00	8.7-10.2	A-4(0)	27	9	4.1	67.9	4.8	29.1	100	99	37	-
SS-38	45' RT	19+50	1.0-1.5	A-2-M(0)	24	NP	2.5	84.1	8.3	5.0	100	99	17	-
SS-39	45' RT	19+50	9.2-10.2	A-2-M(0)	22	1	4.2	77.4	6.3	18.1	100	99	29	33.8
SS-40	45' RT	19+50	13.7-15.2	A-3(0)	23	NP	14.6	81.0	1.4	3.0	100	95	6	-

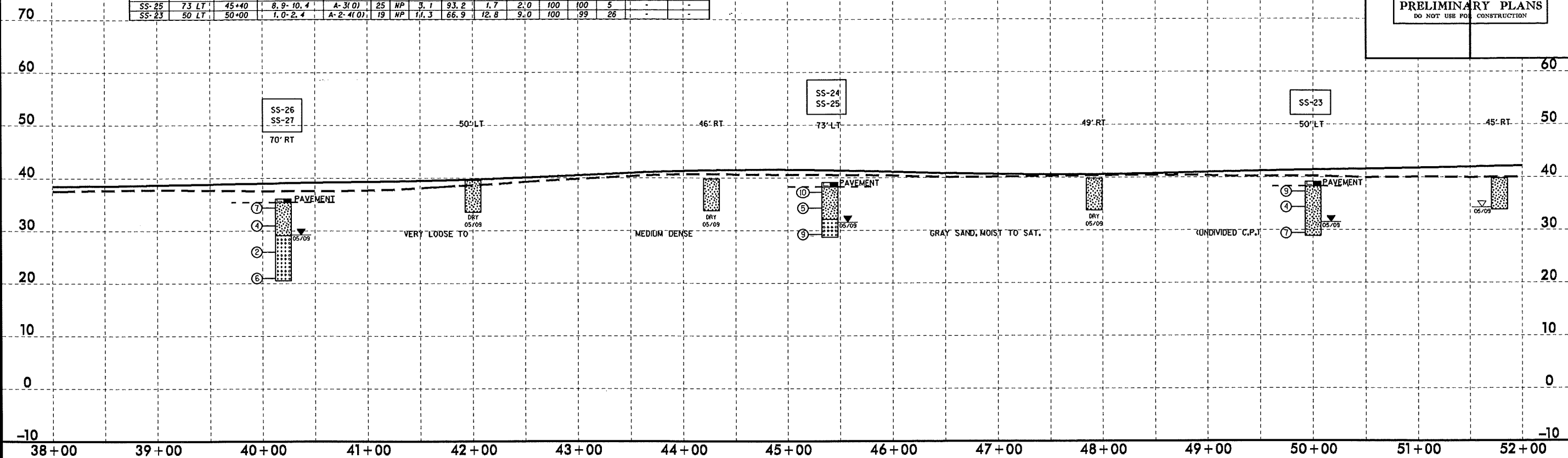


SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	10	40	200		
SS-35	60' LT	25+00	1.0-1.5	A-2-M(0)	22	NP	4.5	82.1	2.3	5.0	100	99	17	-
SS-36	60' LT	25+00	8.9-10.4	A-2-M(0)	24	6	1.7	68.4	5.7	24.1	100	100	32	27.3
SS-37	60' LT	25+00	13.9-15.4	A-3(0)	21	NP	32.0	64.5	1.5	2.0	100	96	4	-
SS-33	50' RT	29+80	4.0-5.5	A-2-M(0)	20	NP	4.4	81.6	1.9	12.1	100	100	15	-
SS-34	50' RT	29+80	9.0-10.5	A-2-M(0)	22	NP	28.4	68.1	1.4	2.0	100	94	4	-
SS-30	88' LT	31+58	1.0-2.0	A-2-M(0)	19	NP	10.2	75.4	6.4	8.0	100	93	20	-
SS-31	88' LT	31+58	3.9-5.4	A-2-M(0)	17	NP	17.0	65.0	1.9	16.1	100	96	19	16.1
SS-32	88' LT	31+58	8.9-10.4	A-3(0)	22	NP	31.5	64.8	0.7	3.0	100	91	5	-
SS-28	40' LT	34+50	1.0-2.3	A-2-M(0)	21	NP	6.0	74.4	7.5	12.1	100	100	25	-
SS-28B	40' LT	34+50	3.8-5.3	A-2-M(0)	21	3	17.5	55.7	5.7	21.1	100	97	35	18.1
SS-29	40' LT	34+50	8.8-10.3	A-3(0)	21	NP	13.3	82.5	0.2	4.0	100	99	5	-

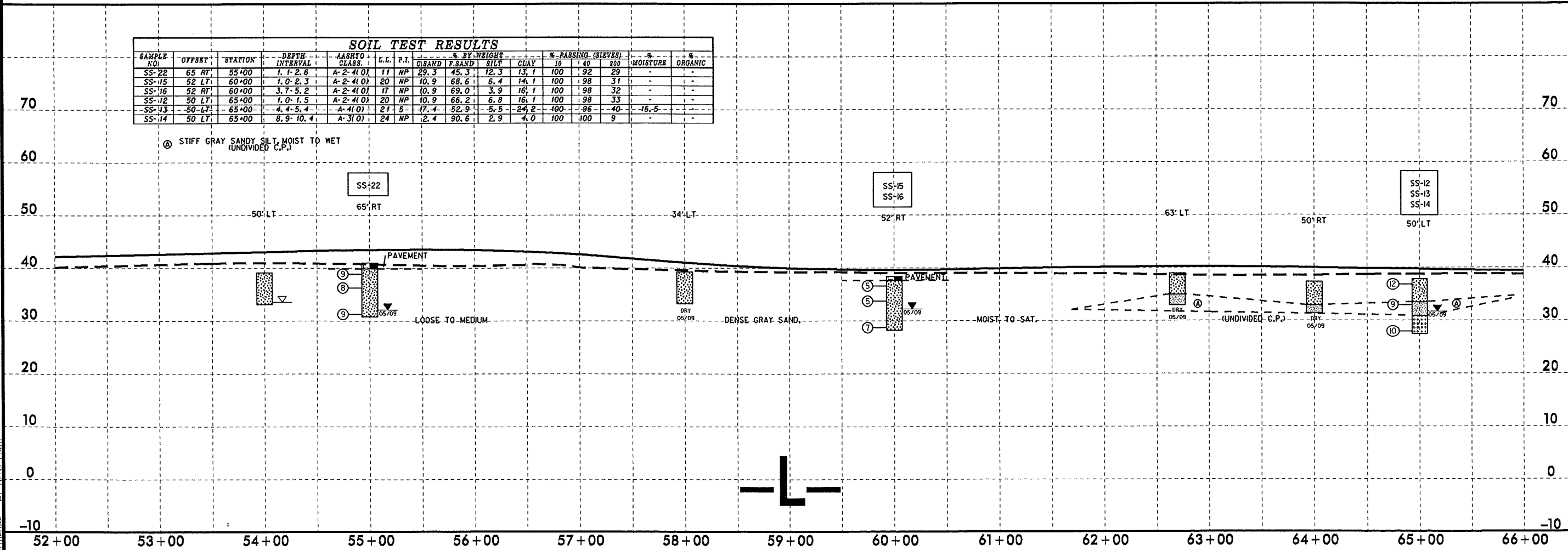


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C.SAND	F.SAND	SILT	10	40	200			
SS-26	70 RT	40+20	1.0-2.2	A-2-4(0)	19	NP	9.6	73.6	8.7	8.0	100	99	22	-	-
SS-27	70 RT	40+20	14.1-15.6	A-3(0)	22	NP	16.5	80.3	1.2	2.0	100	99	4	-	-
SS-24	73 LT	45+40	1.0-2.4	A-2-4(0)	16	NP	5.6	73.5	7.9	13.1	100	99	24	-	-
SS-25	73 LT	45+40	8.9-10.4	A-3(0)	25	NP	9.1	93.2	1.7	2.0	100	100	5	-	-
SS-23	50 LT	50+00	1.0-2.4	A-2-4(0)	19	NP	11.3	66.9	12.8	9.0	100	99	26	-	-



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-22	65 RT	55+00	1.1-2.6	A-2-4(0)	11	NP	29.3	45.3	12.3	13.1	100	92	29	-	-
SS-15	52 LT	60+00	1.0-2.3	A-2-4(0)	20	NP	10.9	68.6	6.4	14.1	100	98	31	-	-
SS-16	52 RT	60+00	3.7-5.2	A-2-4(0)	17	NP	10.9	69.0	3.9	16.1	100	98	32	-	-
SS-12	50 LT	65+00	1.0-1.5	A-2-4(0)	20	NP	10.9	66.2	6.8	16.1	100	98	33	-	-
SS-13	50 LT	65+00	4.4-5.4	A-4(0)	24	S	17.4	52.9	5.5	24.2	100	96	40	15.5	-
SS-14	50 LT	65+00	8.9-10.4	A-3(0)	24	NP	2.4	90.6	2.9	4.0	100	100	9	-	-

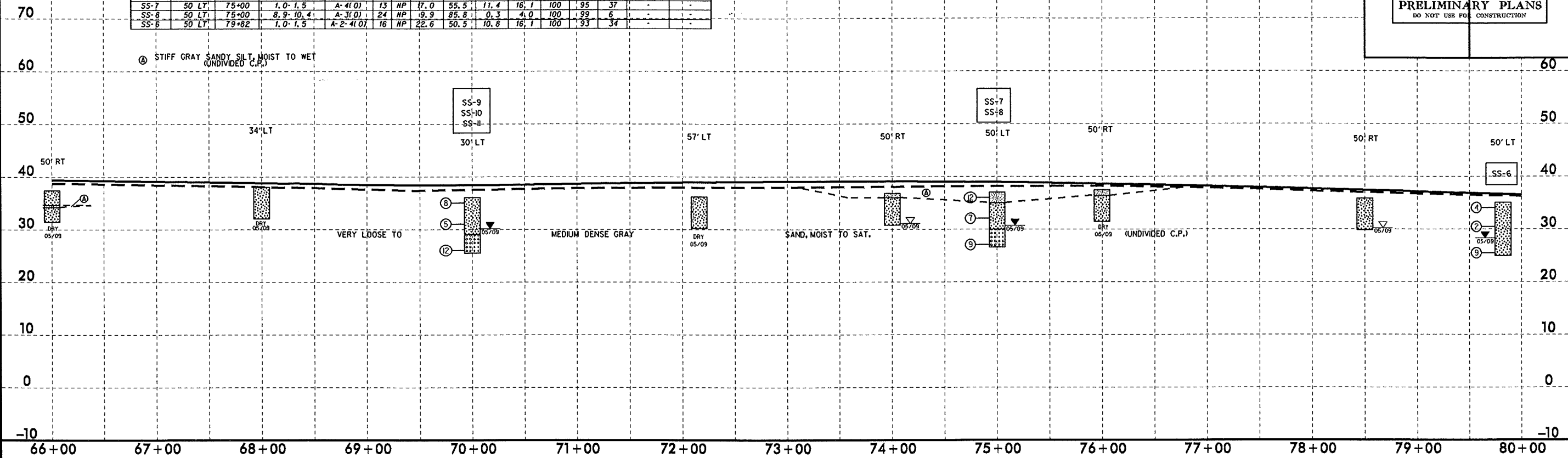


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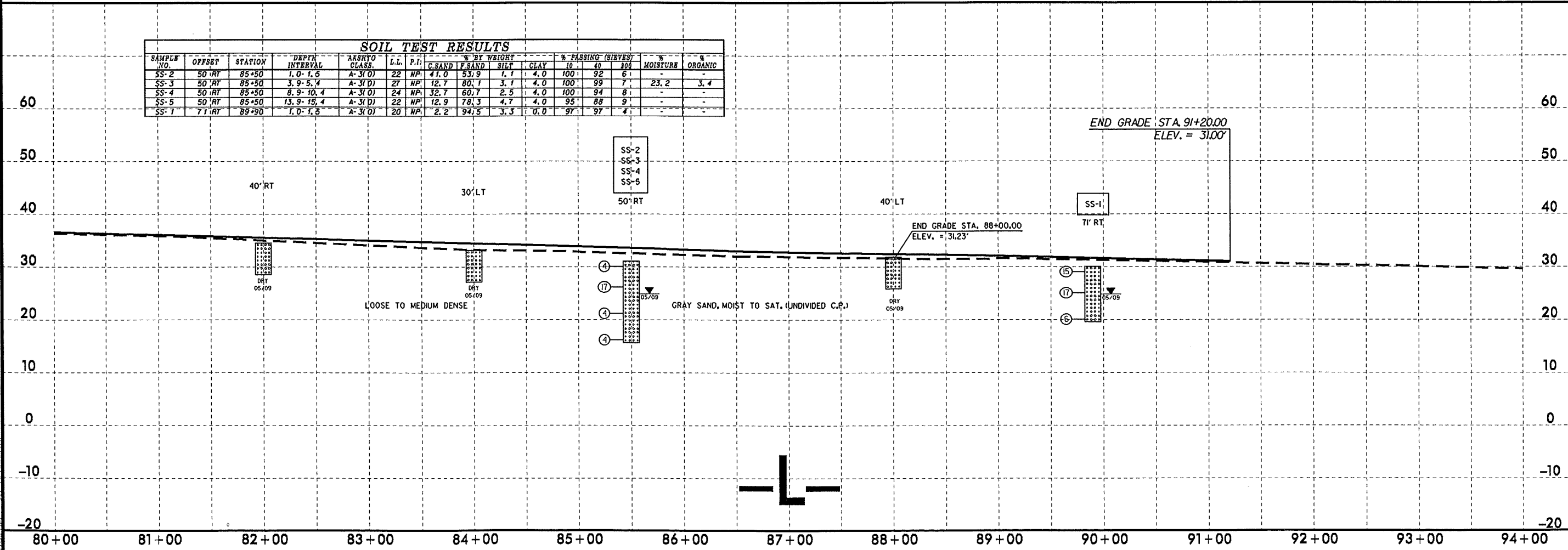
5/28/99

PROJECT REFERENCE NO. U-3338B	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	#10	#20		
SS-9	30' LT	70+00	1.0-1.5	A-2-4(0)	18	NP	36.9	49.2	3.7	10.1	77	64	14	-
SS-10	30' LT	70+00	4.0-5.5	A-2-4(0)	17	NP	16.7	60.3	5.3	18.2	100	96	33	15.6
SS-11	30' LT	70+00	9.0-10.5	A-3(0)	22	NP	15.7	67.8	2.5	4.0	100	100	9	-
SS-7	50' LT	75+00	1.0-1.5	A-4(0)	13	NP	17.0	55.5	11.4	16.1	100	95	37	-
SS-8	50' LT	75+00	8.9-10.4	A-3(0)	24	NP	19.9	85.8	0.3	4.0	100	99	6	-
SS-6	50' LT	79+82	1.0-1.5	A-2-4(0)	16	NP	22.6	50.5	10.8	16.1	100	93	34	-

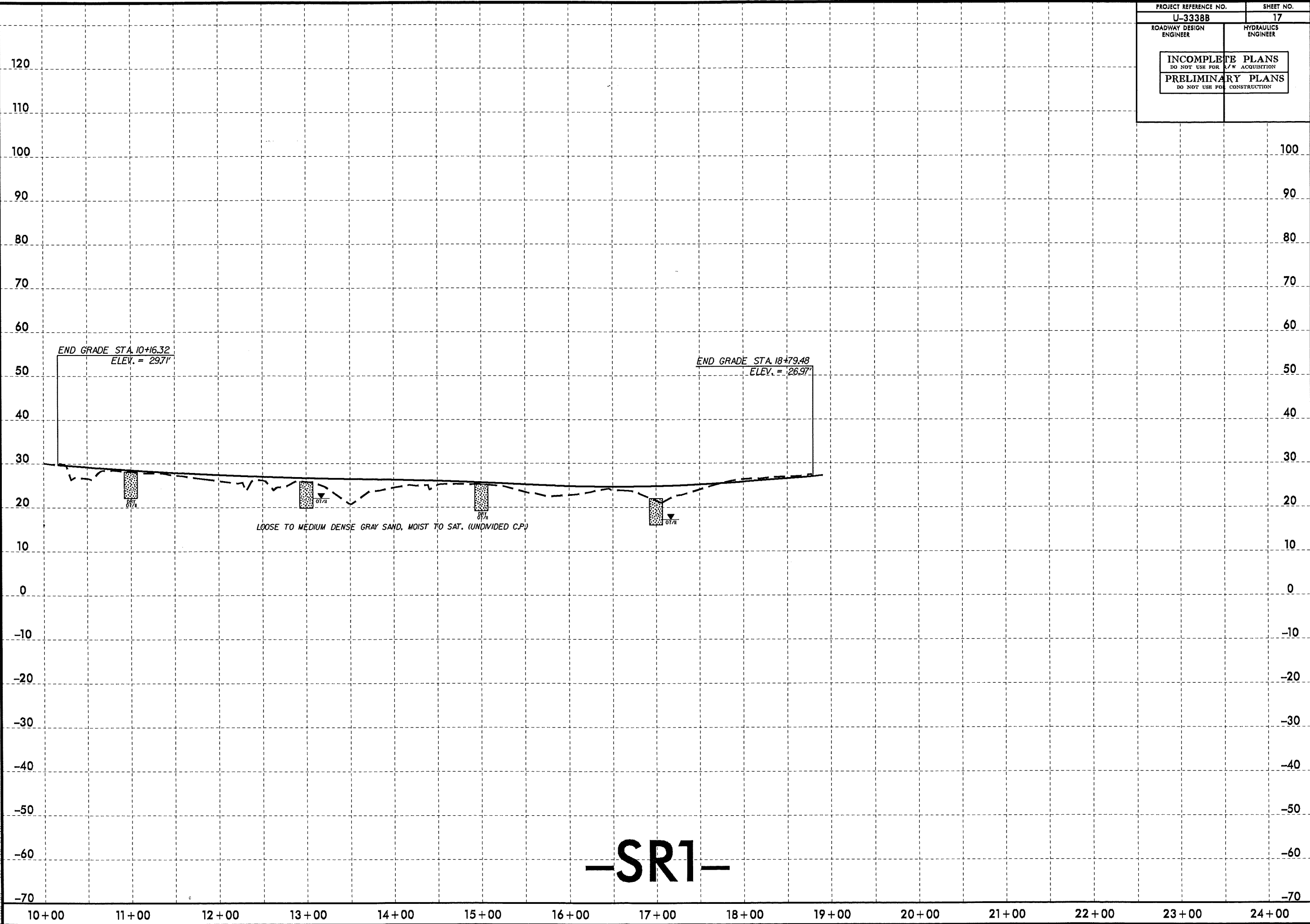


SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	#10	#20		
SS-2	50' RT	85+50	1.0-1.5	A-3(0)	22	NP	41.0	53.9	1.1	4.0	100	92	6	-
SS-3	50' RT	85+50	3.9-5.4	A-3(0)	27	NP	12.7	80.1	3.1	4.0	100	99	7	23.2
SS-4	50' RT	85+50	8.9-10.4	A-3(0)	24	NP	32.7	60.7	2.5	4.0	100	94	8	3.4
SS-5	50' RT	85+50	13.9-15.4	A-3(0)	22	NP	12.9	78.3	4.7	4.0	95	88	9	-
SS-1	71' RT	89+90	1.0-1.5	A-3(0)	20	NP	2.2	94.5	3.3	0.0	97	97	4	-



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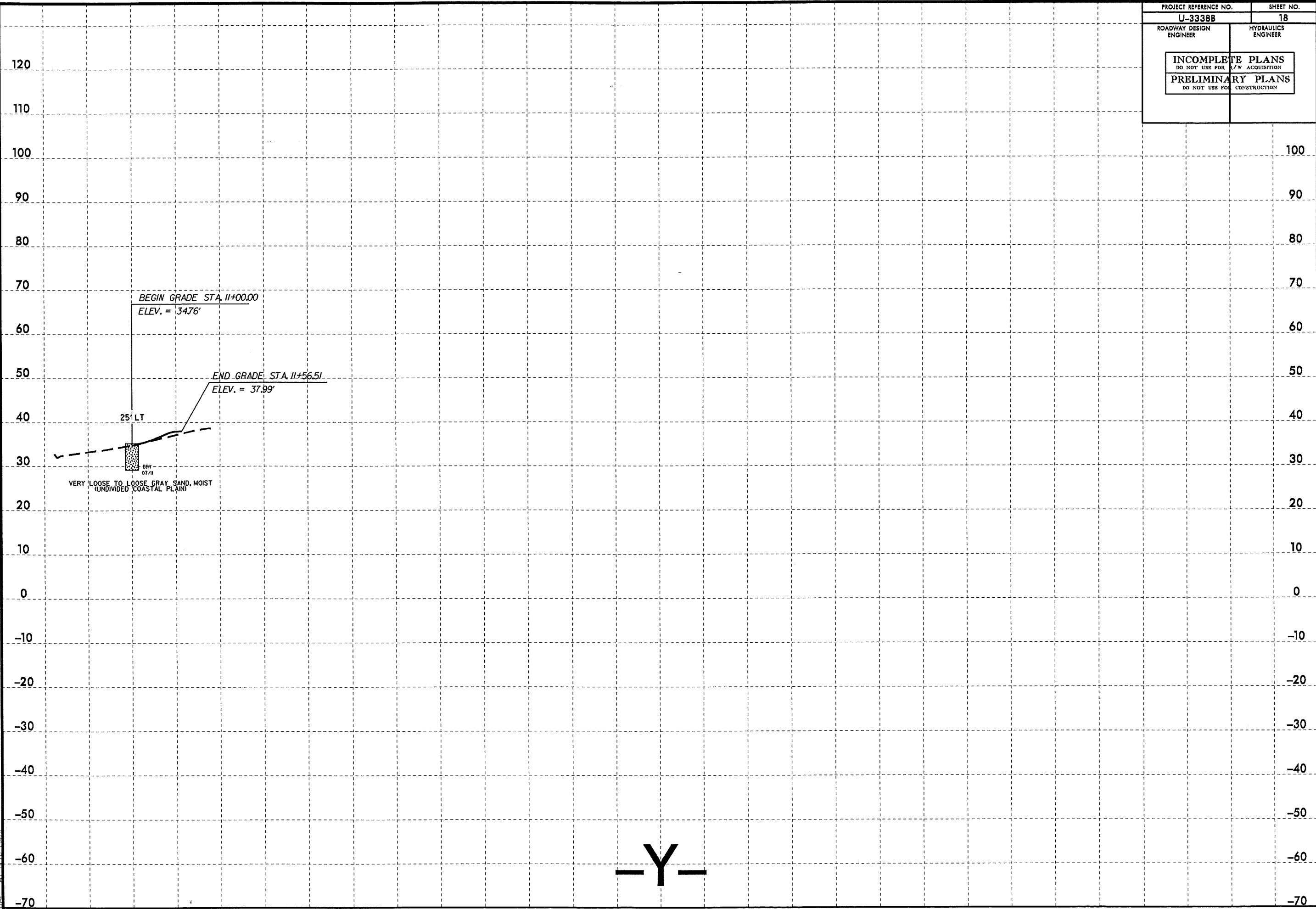
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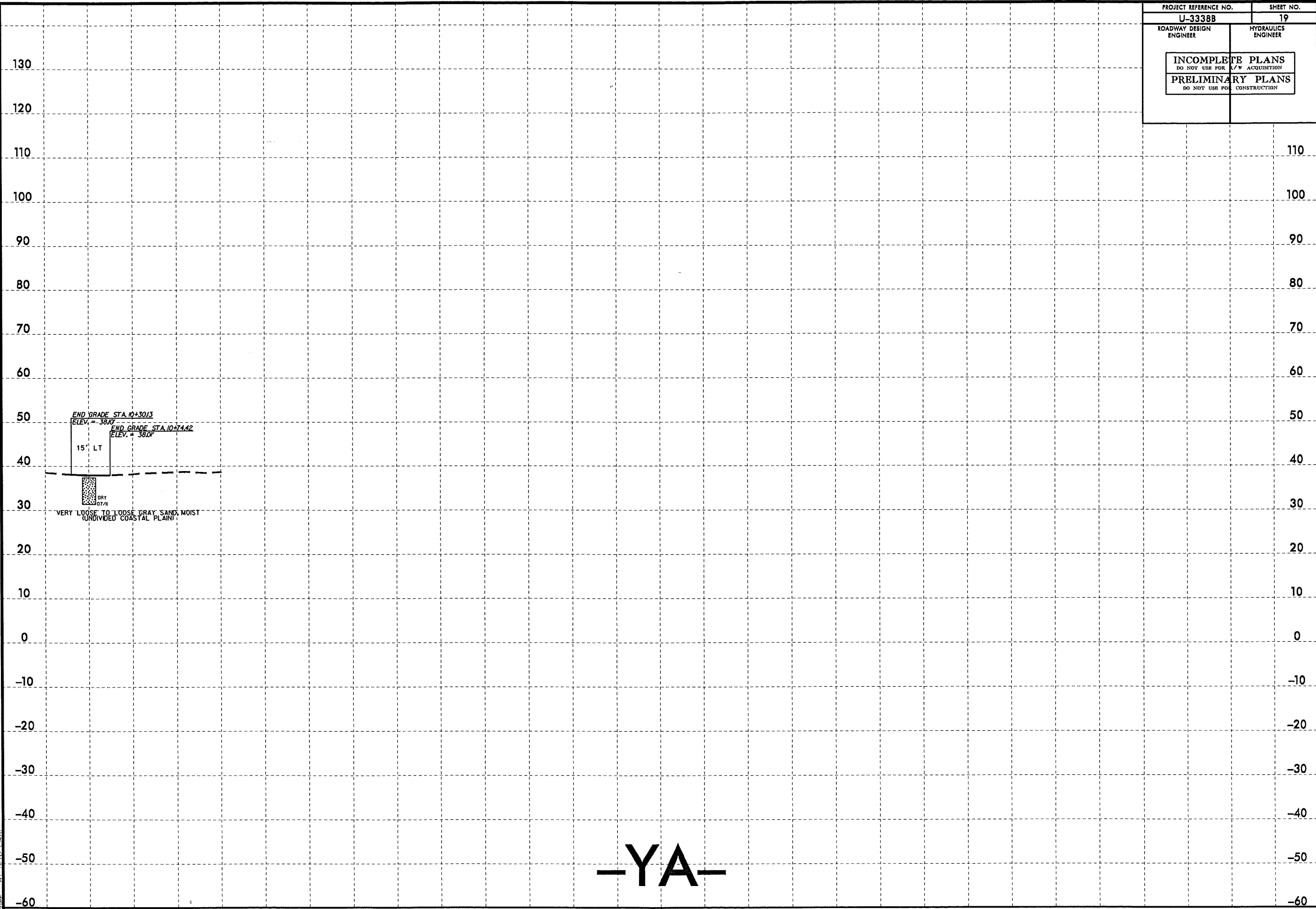
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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PROJECT REFERENCE NO.	SHEET NO.
U-3338B	19
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



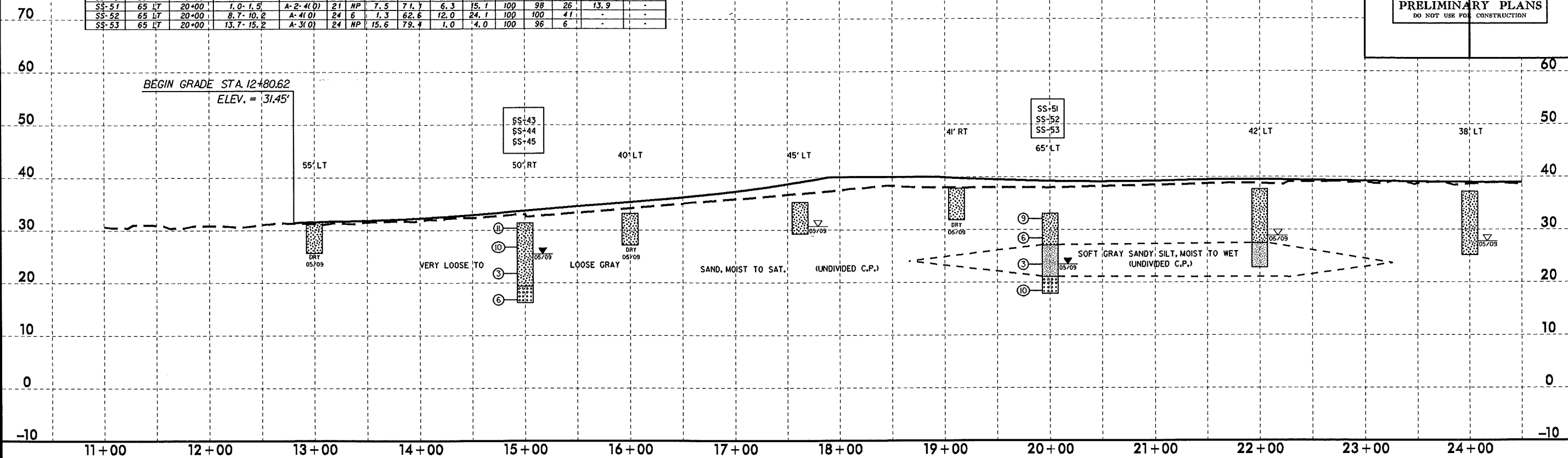
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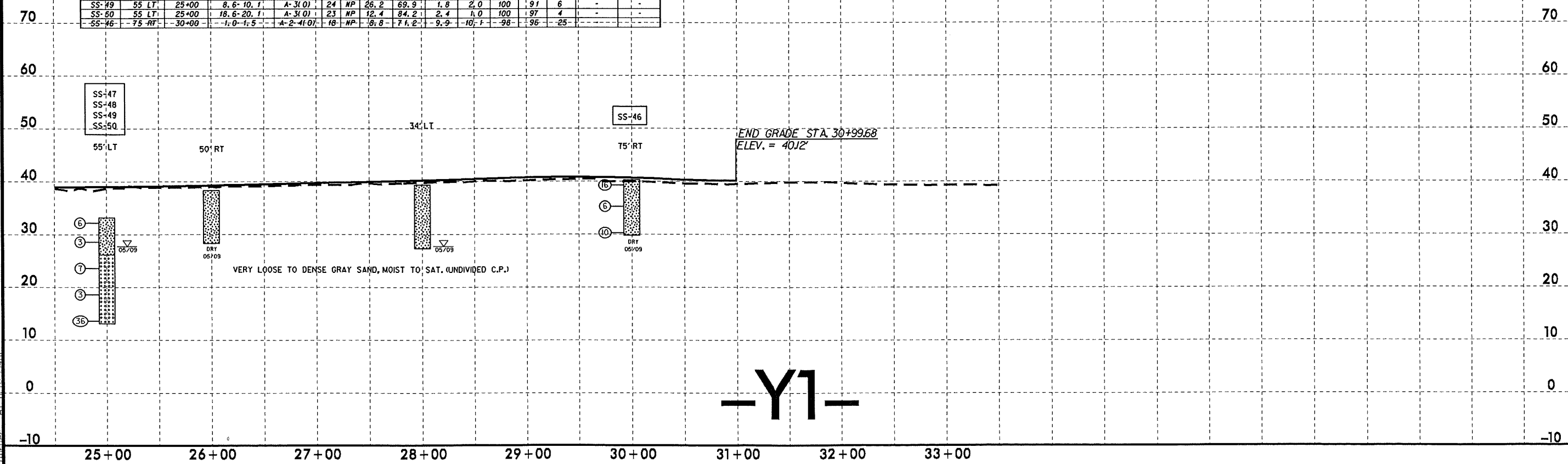
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-43	50 RT	15+00	1.0-1.5	A-2-4(0)	24	NP	28.3	58.3	7.3	6.0	100	94	15	-	-
SS-44	50 RT	15+00	8.6-10.1	A-2-4(0)	16	NP	3.2	71.8	5.9	19.1	100	99	28	27.2	-
SS-45	50 RT	15+00	13.6-15.1	A-3(0)	21	NP	30.2	67.0	0.8	12.0	100	90	3	-	-
SS-51	65 LT	20+00	1.0-1.5	A-2-4(0)	21	NP	7.5	71.1	6.3	15.1	100	98	26	13.9	-
SS-52	65 LT	20+00	8.7-10.2	A-4(0)	24	6	1.3	62.6	12.0	24.1	100	100	41	-	-
SS-53	65 LT	20+00	13.7-15.2	A-3(0)	24	NP	15.6	79.4	1.0	4.0	100	96	6	-	-



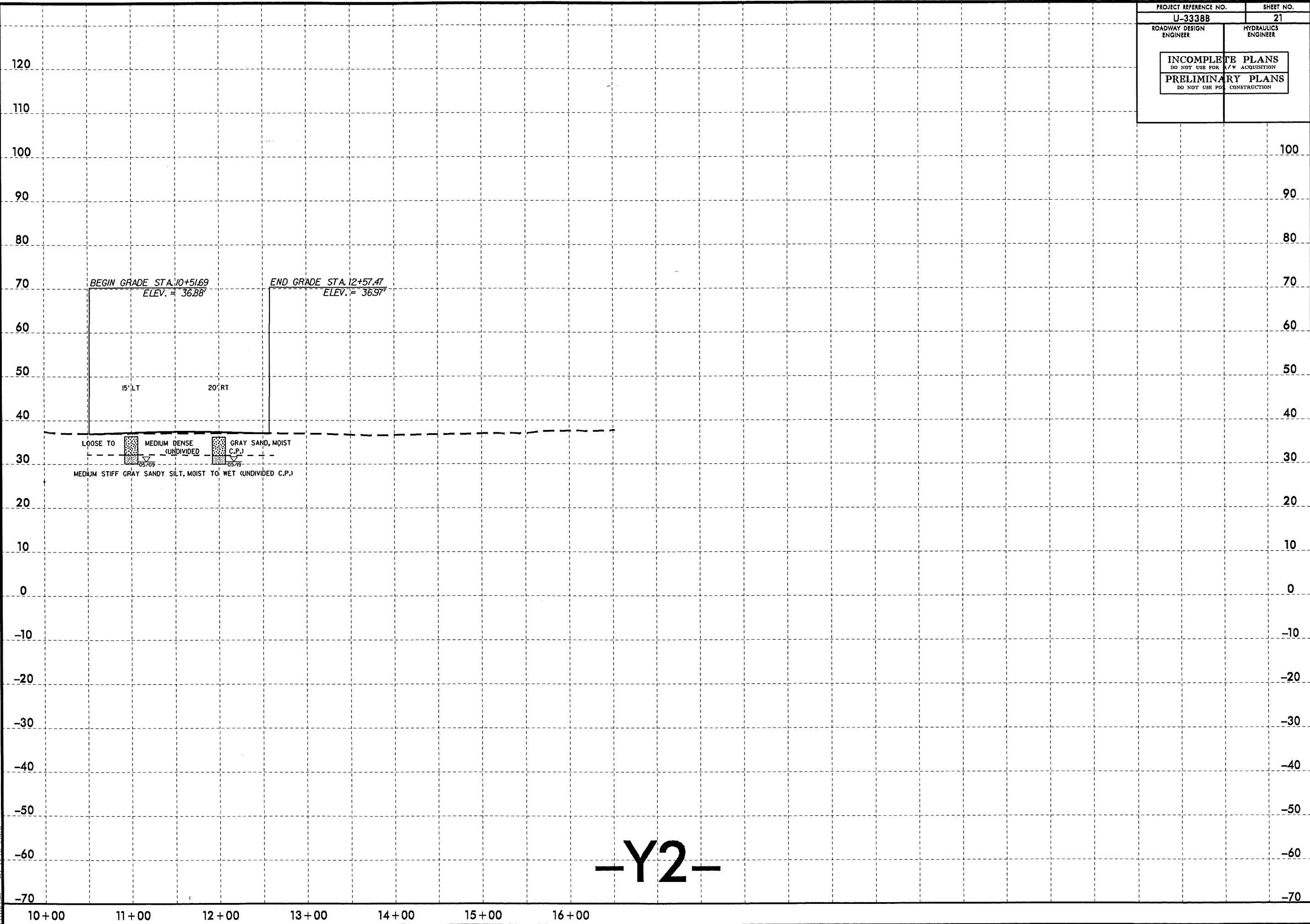
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-47	55 LT	25+00	1.0-1.5	A-2-4(0)	19	NP	2.1	75.7	10.2	12.1	98	97	26	-	-
SS-48	55 LT	25+00	3.6-5.1	A-2-4(0)	22	NP	0.2	77.2	4.5	18.1	100	100	25	-	-
SS-49	55 LT	25+00	8.6-10.1	A-3(0)	24	NP	26.2	69.9	1.8	2.0	100	91	6	-	-
SS-60	55 LT	25+00	18.6-20.1	A-3(0)	23	NP	12.4	84.2	2.4	1.0	100	97	4	-	-
SS-46	75 RT	30+00	1.0-1.5	A-2-4(0)	18	NP	8.8	71.2	9.9	10.1	98	96	25	-	-



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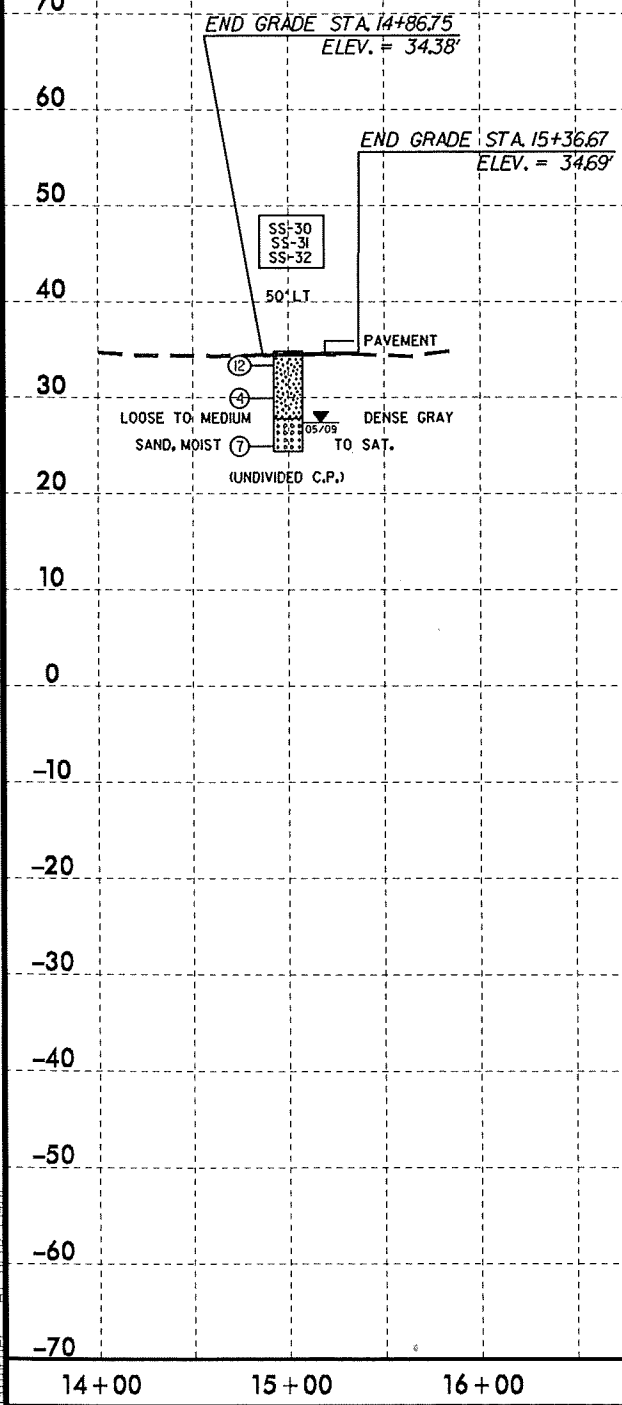
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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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		
SS-30	50 LT	15+00	1.0-2.0	A-2-4(0)	19	NP	10.2	75.4	6.4	8.0	100	99	20	-	-
SS-31	50 LT	15+00	3.9-5.4	A-2-4(0)	17	NP	17.0	65.0	1.9	16.1	100	98	19	16.1	-
SS-32	50 LT	15+00	8.9-10.4	A-3(0)	22	NP	31.5	64.8	0.7	3.0	100	91	5	-	-

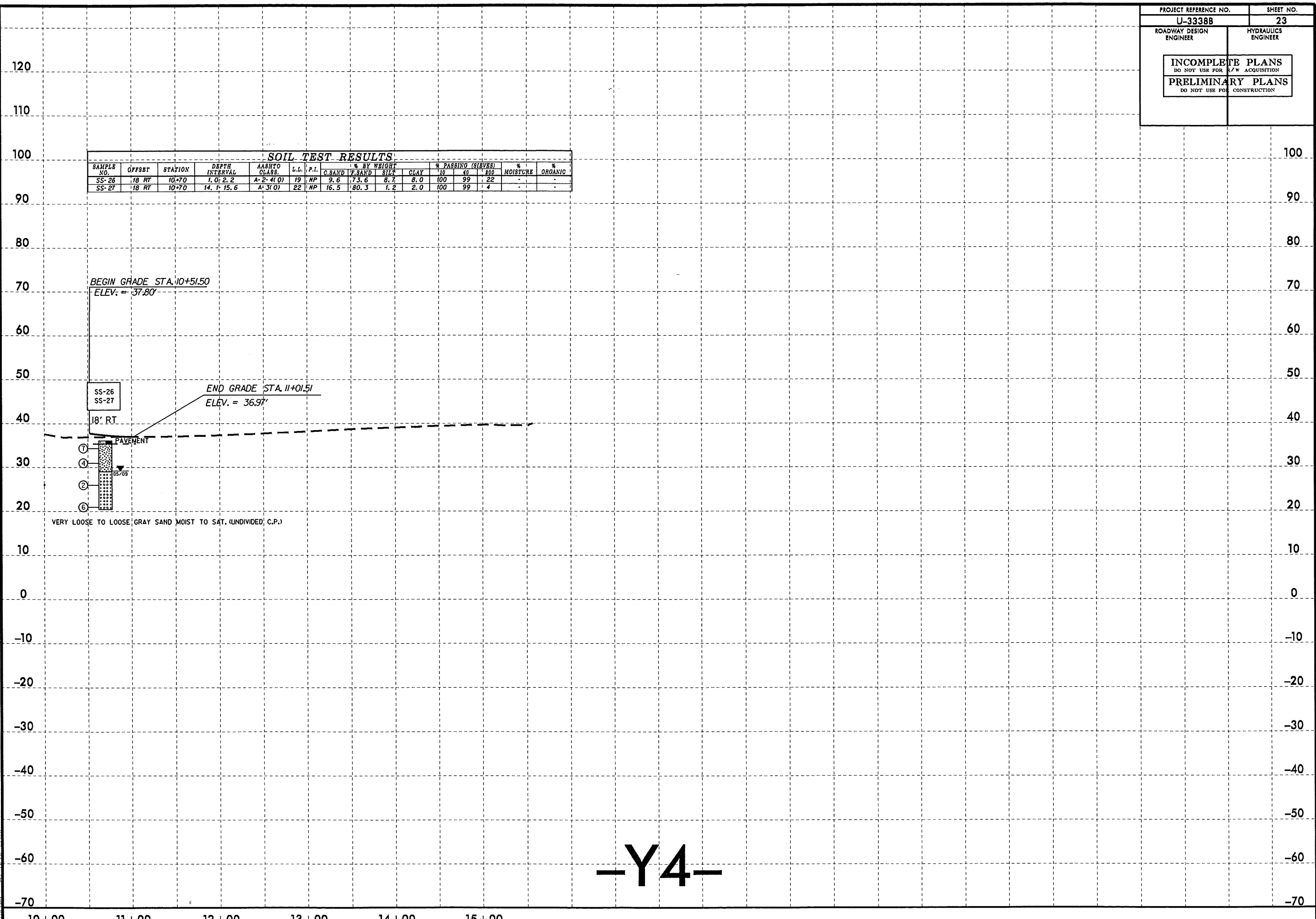


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PROJECT REFERENCE NO. U-3338B	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHFO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	#10	#40	#200		
SS-26	18 RT	10+70	1.0' - 2.2'	A-2-4(0)	19	NP	9.6	73.6	8.7	8.0	100	99	22	-	-
SS-27	18 RT	10+70	14.1' - 15.6'	A-3(0)	22	NP	16.5	80.3	1.2	2.0	100	99	4	-	-

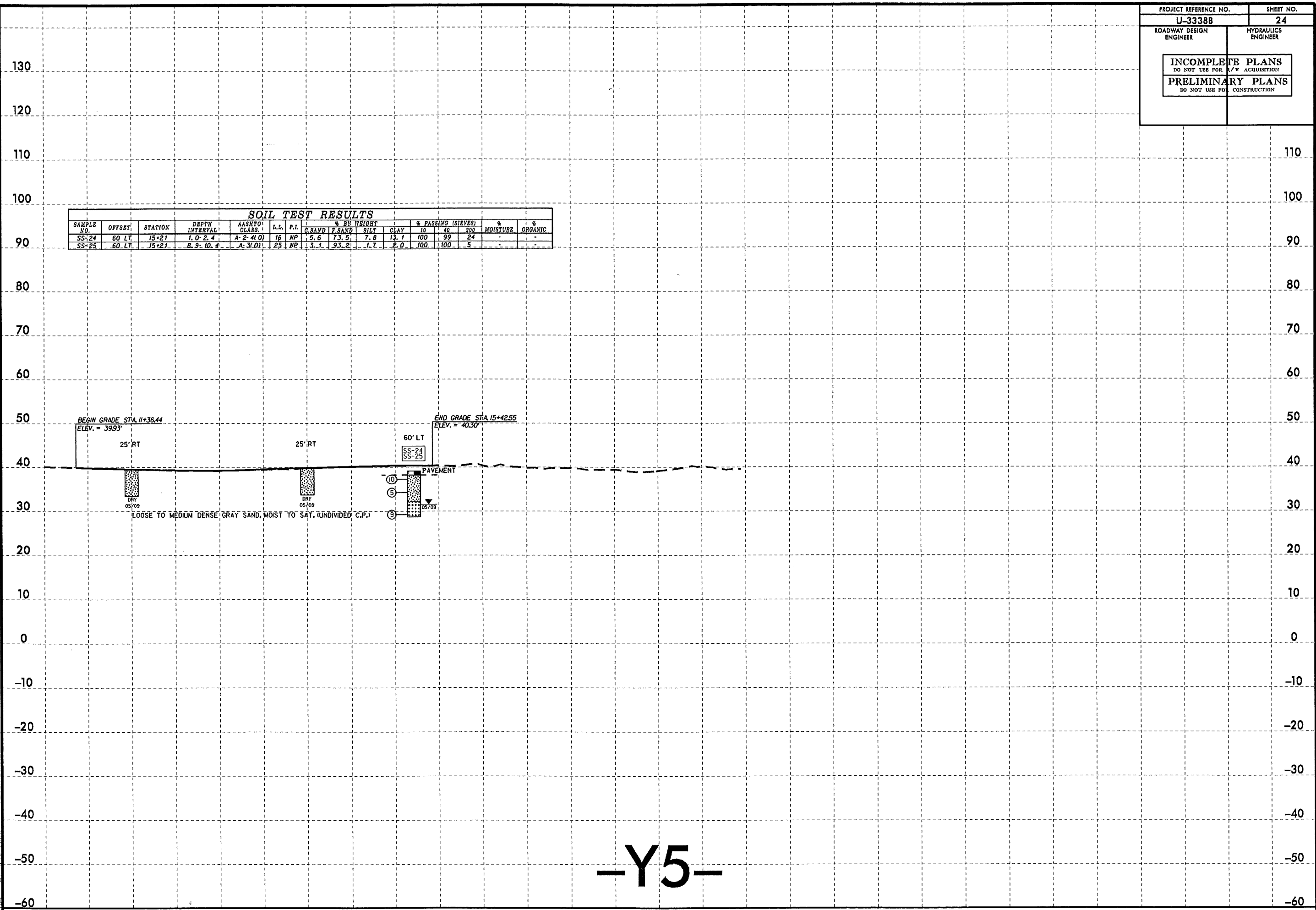


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PROJECT REFERENCE NO.	SHEET NO.
U-3338B	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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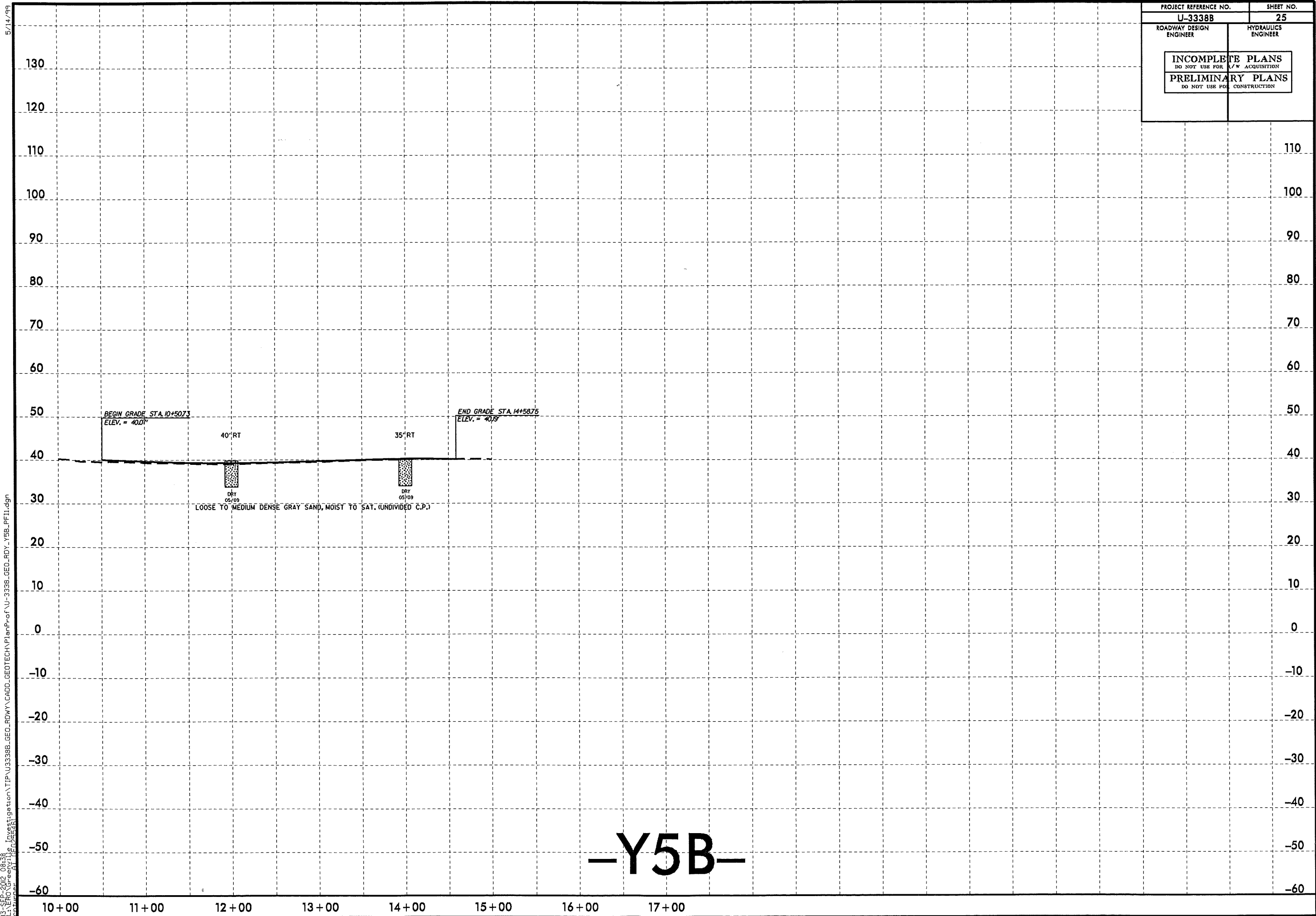
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-24	60 LT	15+21	1.0-2.4	A-2-4(0)	16	NP	5.6	73.5	7.8	13.1	100	99	24	-	-
SS-25	60 LT	15+21	8.9-10.4	A-3(0)	25	NP	3.1	93.2	1.7	2.0	100	100	5	-	-



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PROJECT REFERENCE NO. U-3338B	SHEET NO. 25
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INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

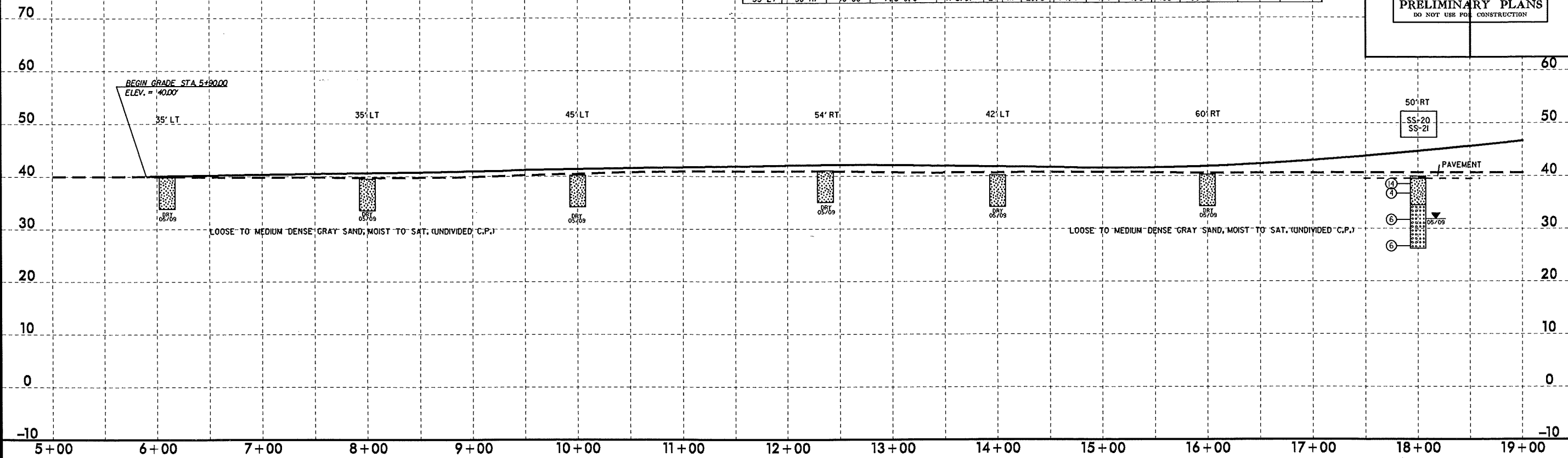


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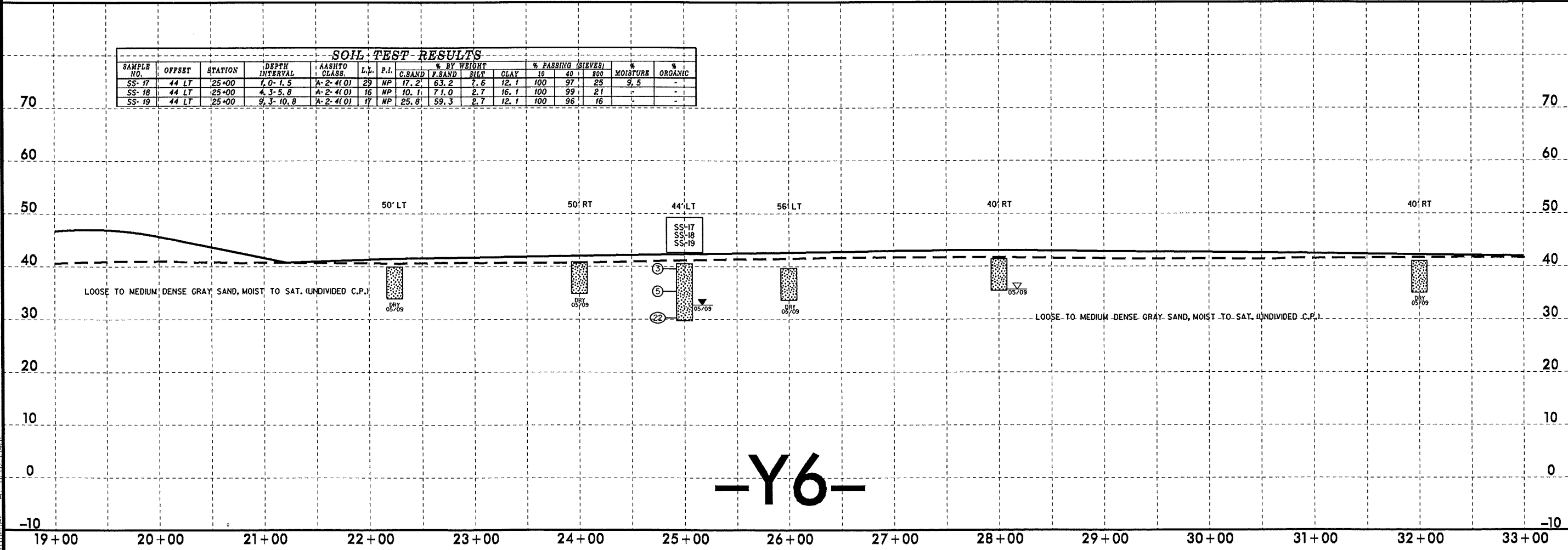
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PROJECT REFERENCE NO. U-3338B	SHEET NO. 26
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INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-20	50 RT	18+00	1.0-2.0	A-2-4(0)	20	NP	18.5	74.2	3.3	4.0	100	97	11	-	-
SS-21	50 RT	18+00	7.3-8.8	A-3(0)	21	NP	20.5	74.1	1.4	4.0	100	99	7	-	-



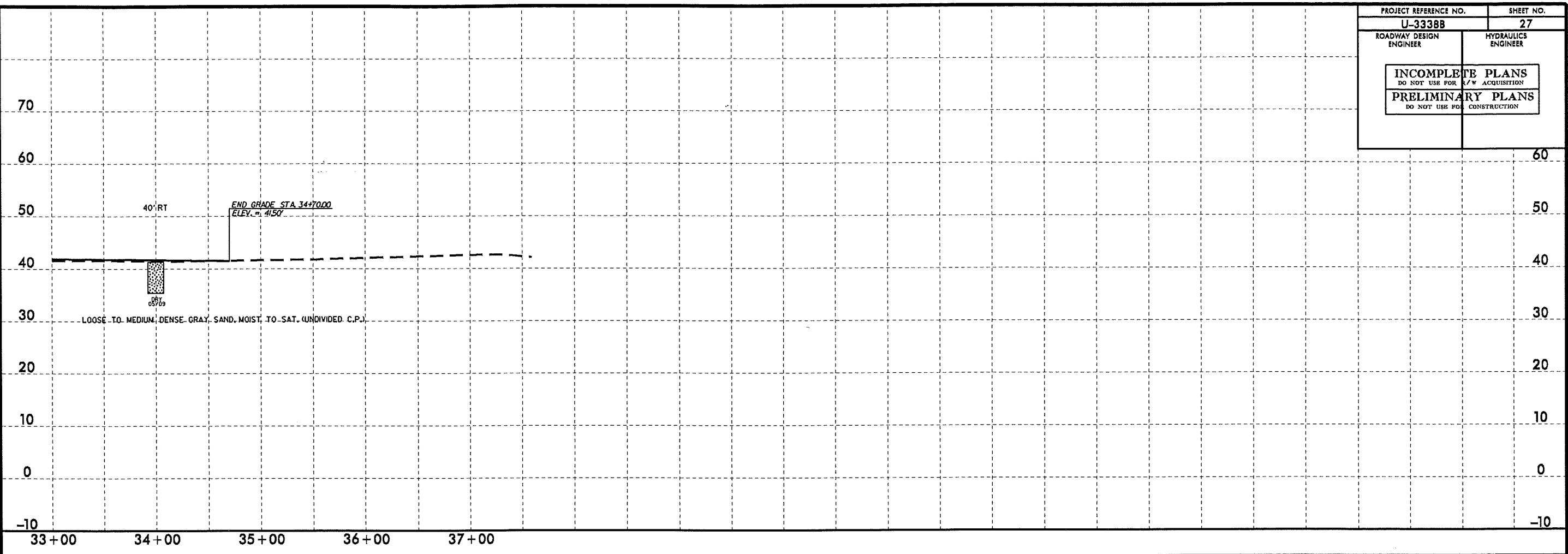
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-17	44 LT	25+00	1.0-1.5	A-2-4(0)	29	NP	17.2	63.2	7.6	12.1	100	97	25	9.5	-
SS-18	44 LT	25+00	4.3-5.8	A-2-4(0)	16	NP	10.1	71.0	2.7	16.1	100	99	21	-	-
SS-19	44 LT	25+00	9.3-10.8	A-2-4(0)	17	NP	25.8	59.3	2.7	12.1	100	96	16	-	-



-Y6-

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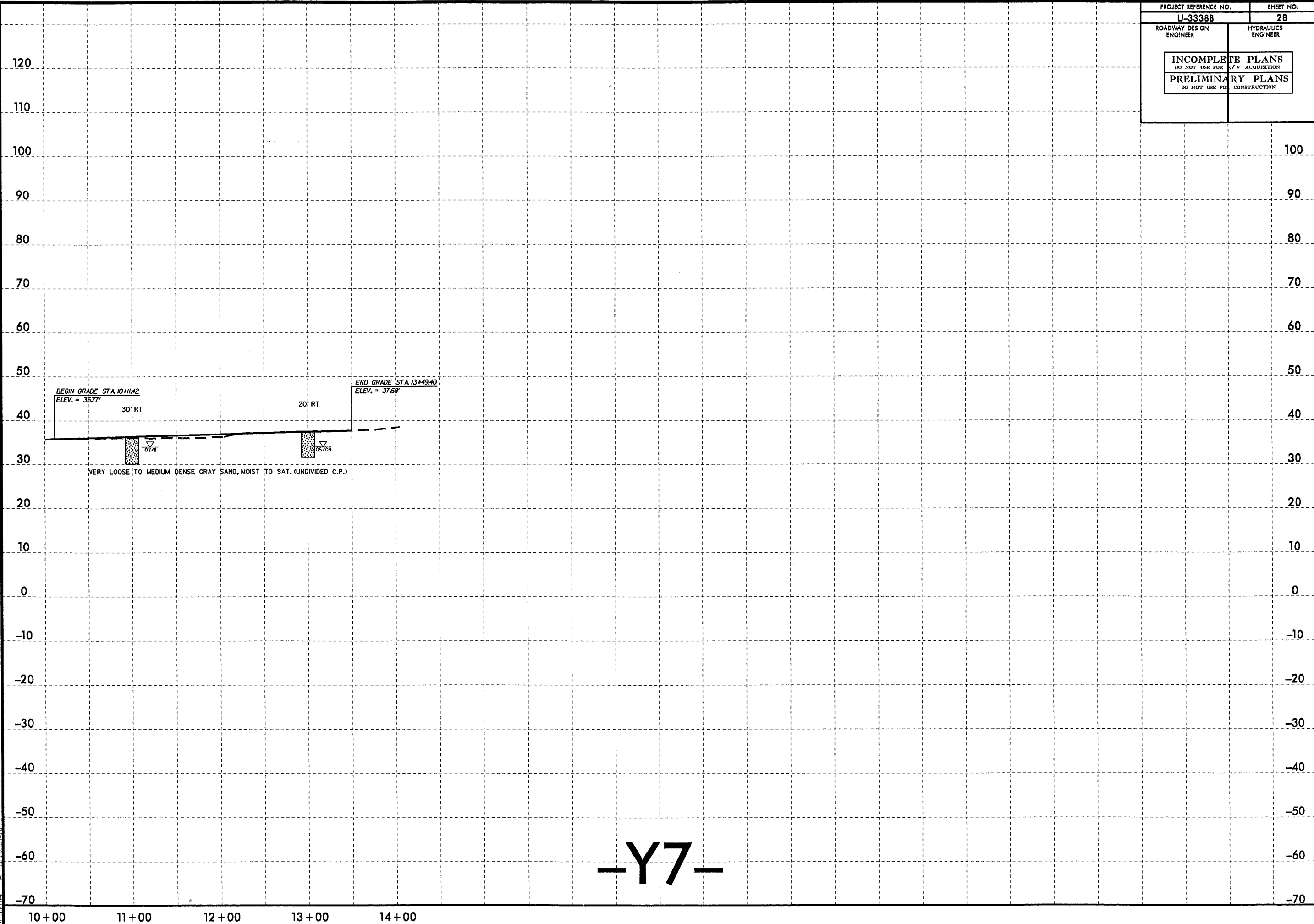
PROJECT REFERENCE NO.	SHEET NO.
U-3338B	27
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y6-

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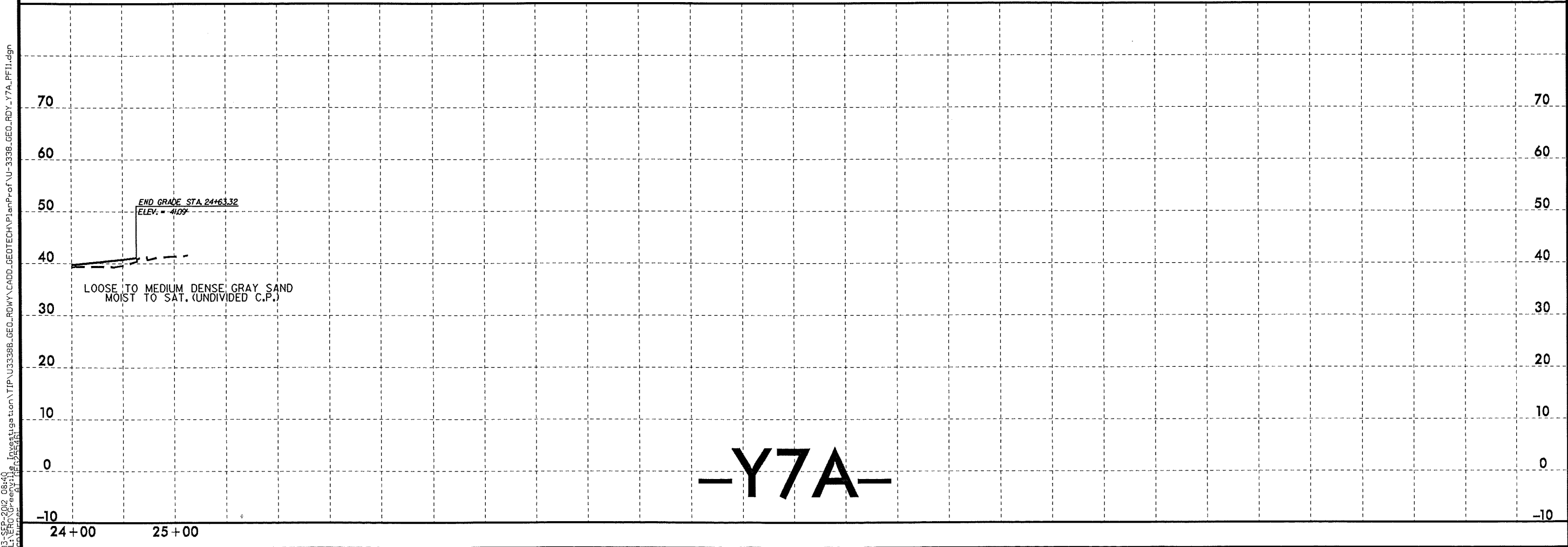
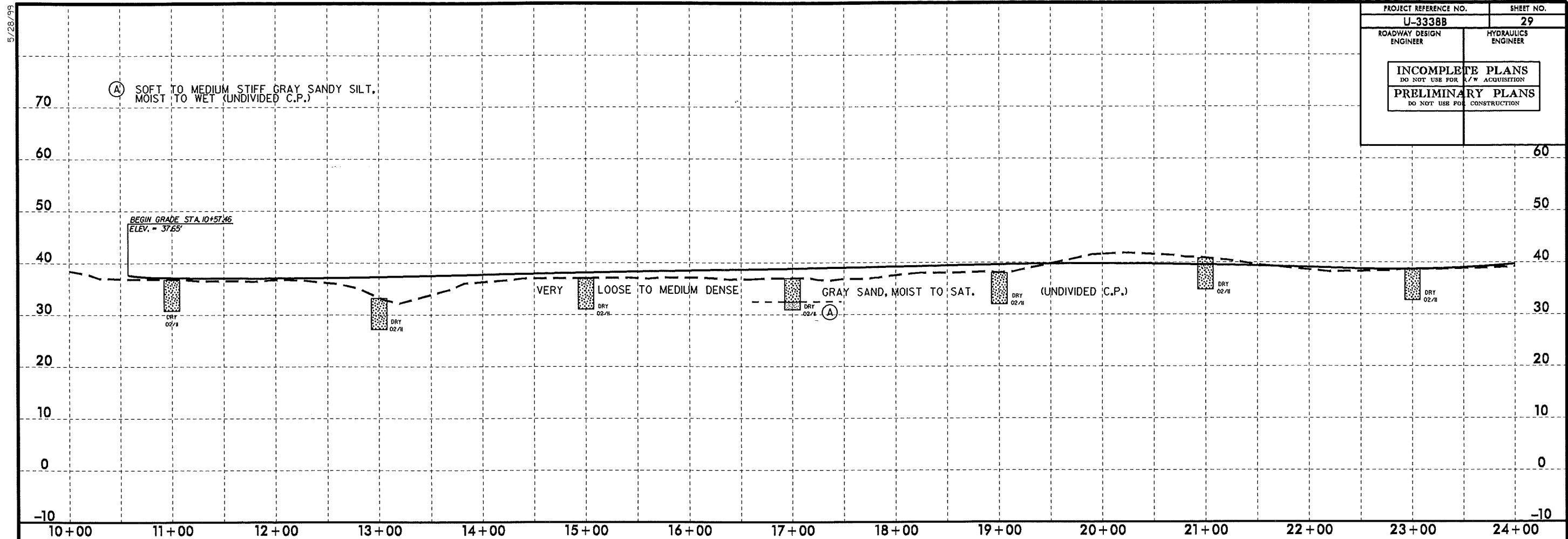
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



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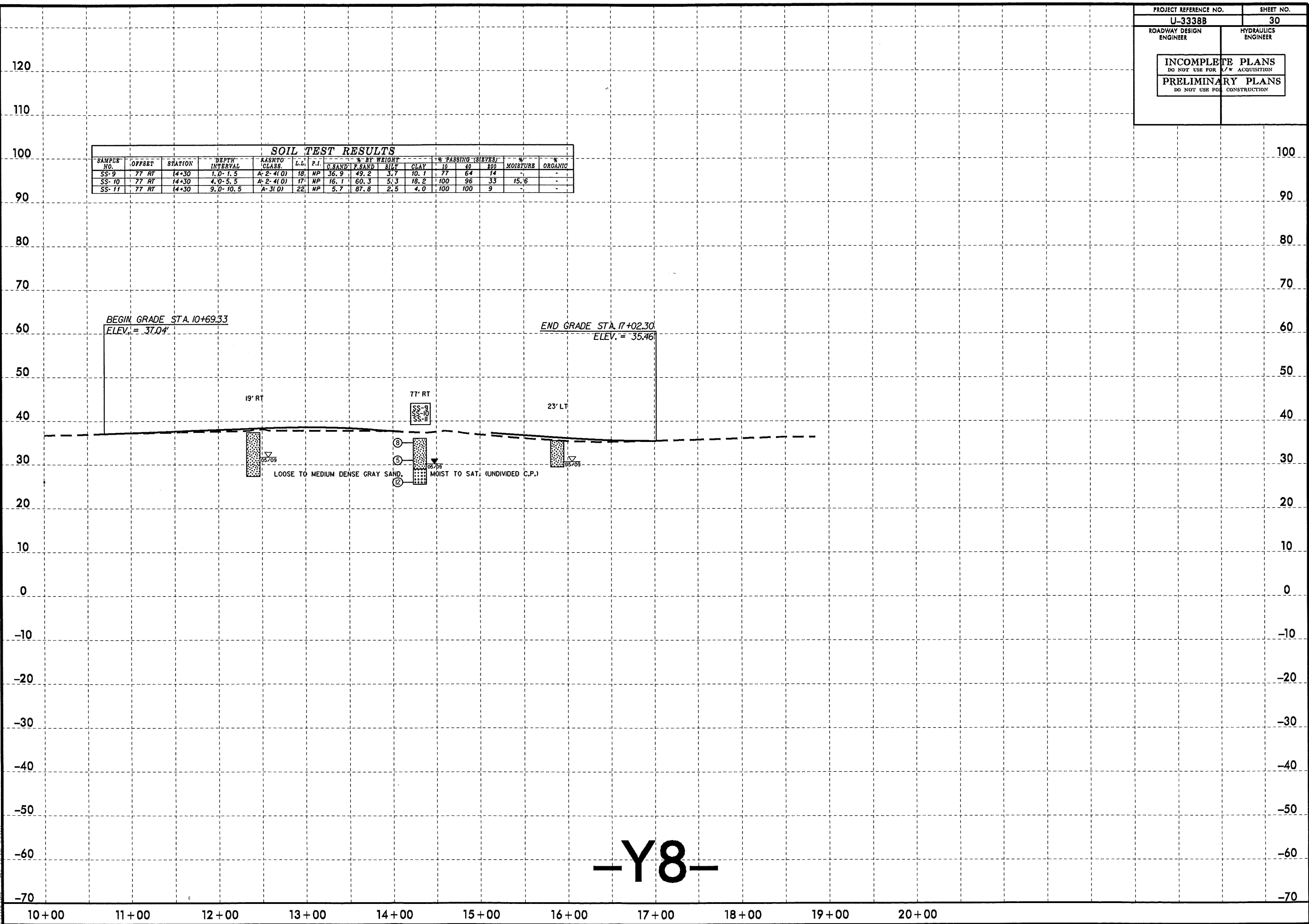
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U-3338B	29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y7A-

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASTM CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	100		
SS-9	77 RT	14+30	1.0-1.5	A-2-4(0)	18	HP	36.9	49.2	3.7	10.1	77	64	14	-	-
SS-10	77 RT	14+30	4.0-5.5	A-2-4(0)	17	HP	16.1	60.3	5.3	18.2	100	96	33	15.6	-
SS-11	77 RT	14+30	9.0-10.5	A-3(0)	22	HP	5.7	87.8	2.5	4.0	100	100	9	-	-



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-Y8-

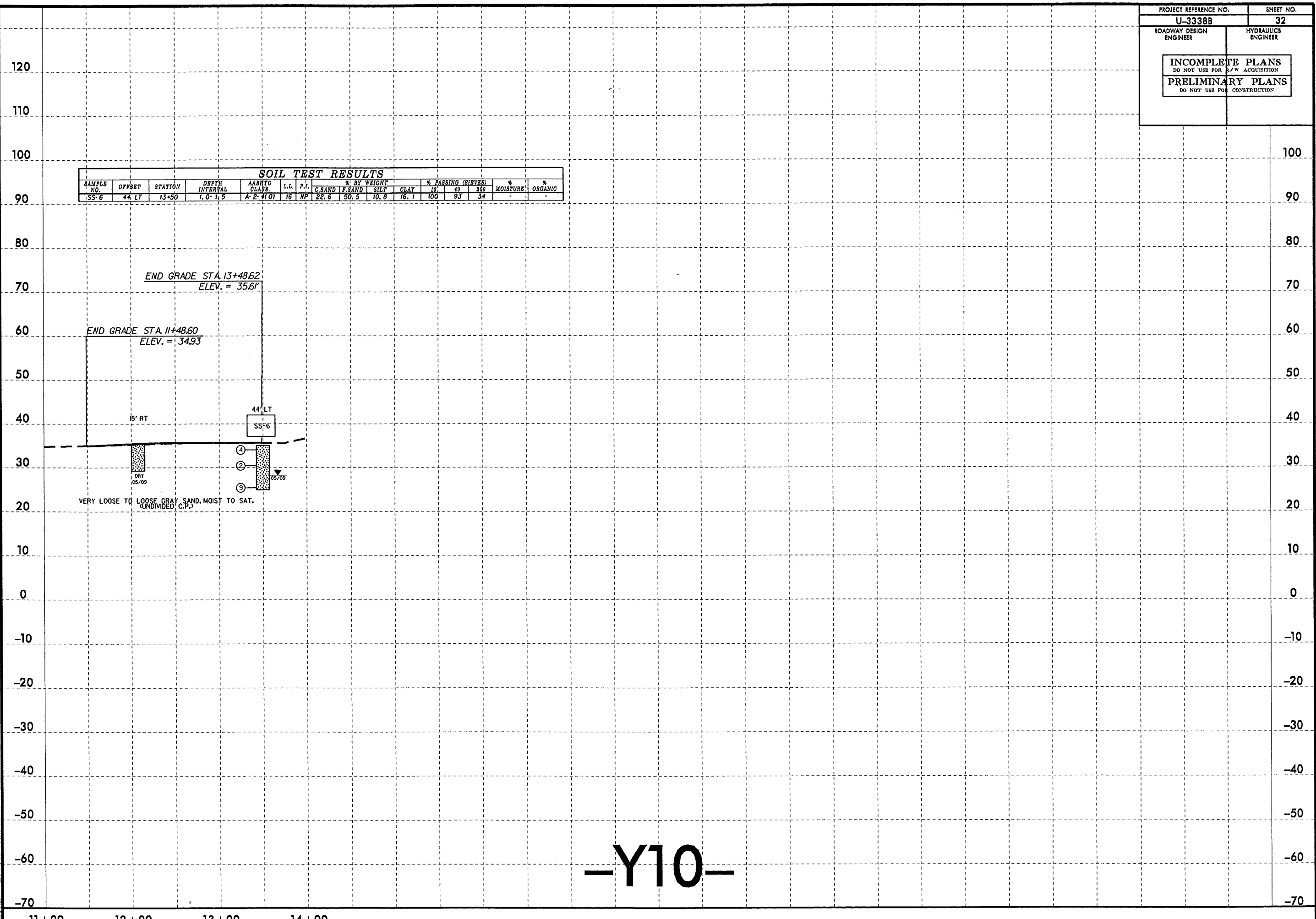
PROJECT REFERENCE NO.	SHEET NO.
U-3338B	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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-Y9-

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	60		
SS-6	44 LT	13+50	1.0'-1.5'	A-2-4(0)	16	NP	22.6	50.5	10.8	16.1	100	93	34	-



END GRADE STA. 13+48.62
ELEV. = 35.61'

END GRADE STA. 11+48.60
ELEV. = 34.93'

5' RT

44' LT
SS-6

DRY
05/09

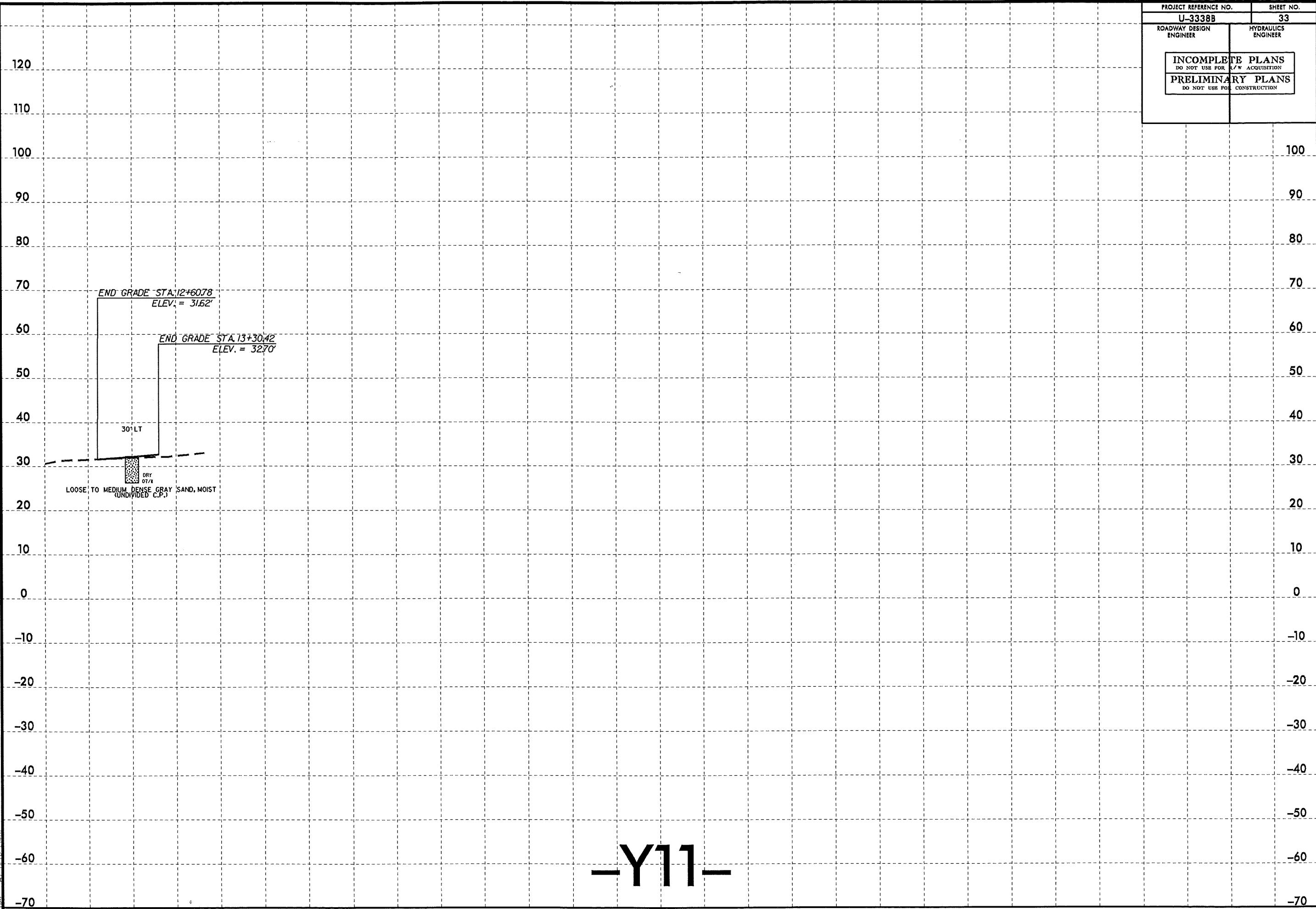
05/09

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

-Y10-

5/14/99
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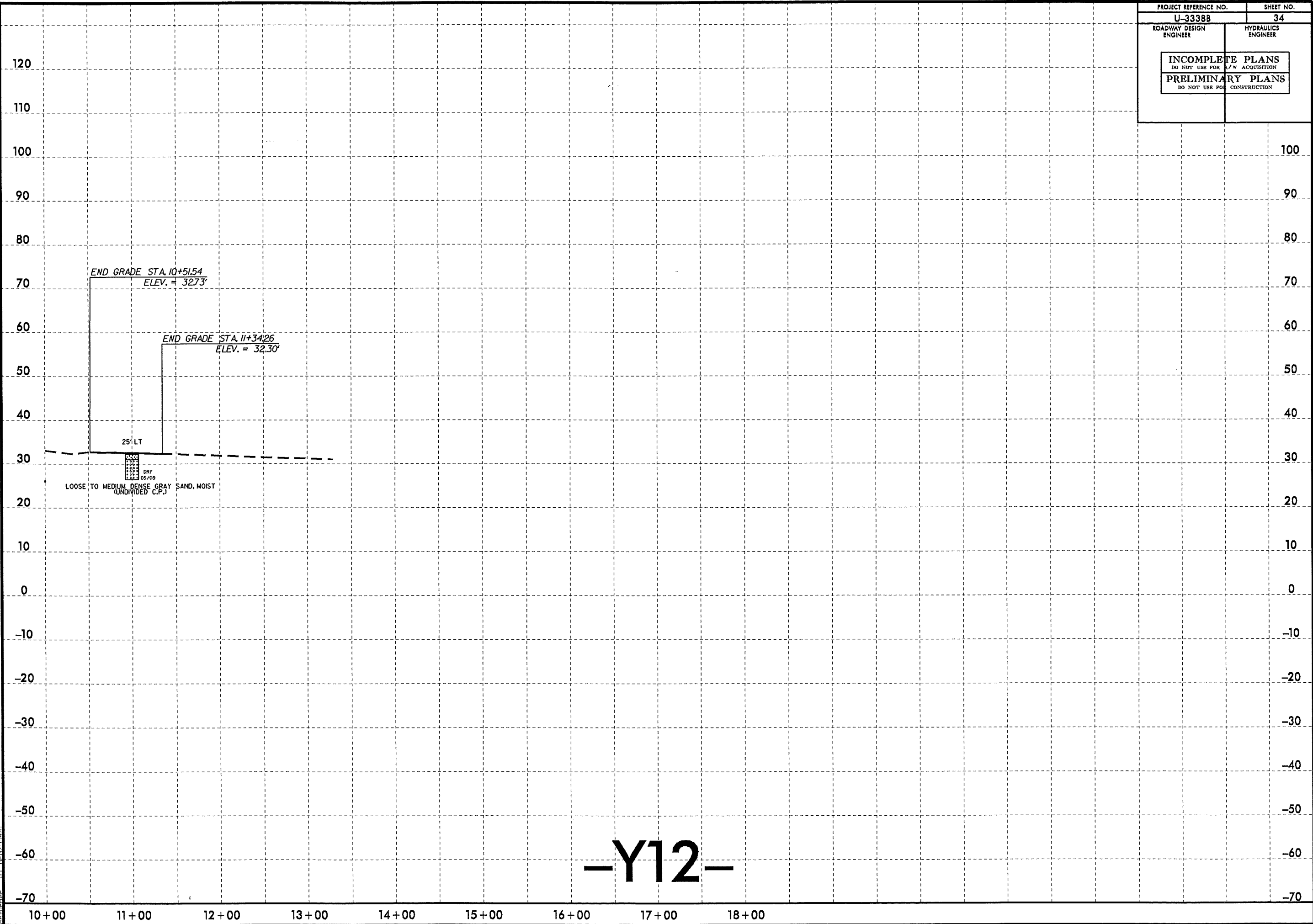
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U-3338B	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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-Y11-

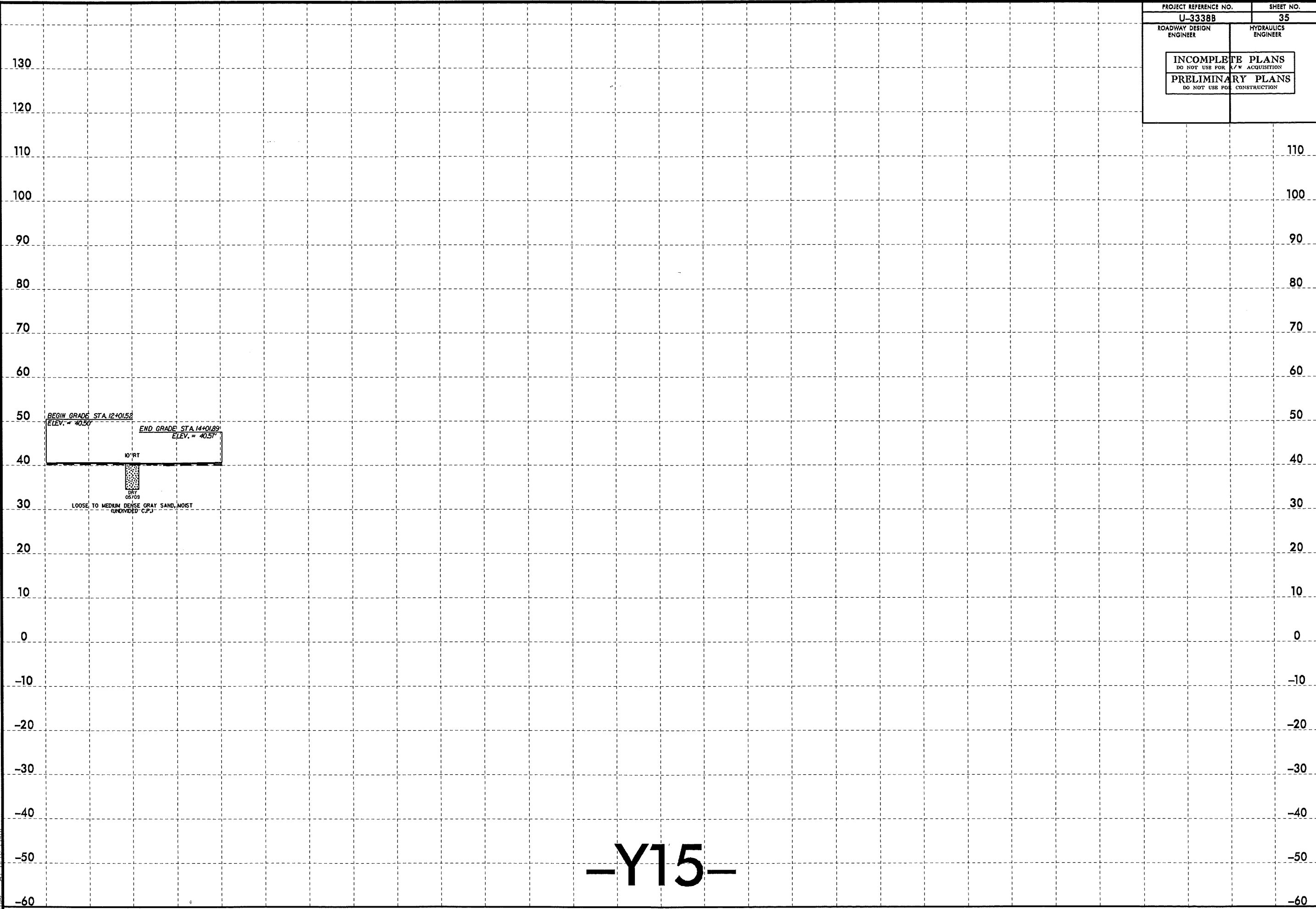
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS <small>DO NOT USE FOR ACQUISITION</small>	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



-Y12-

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 AT REFERENCE

PROJECT REFERENCE NO.	SHEET NO.
U-3338B	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



BEGIN GRADE STA. 12+01.52
 ELEV. = 40.50'

END GRADE STA. 14+01.89
 ELEV. = 40.57'

10' RT

DRY
 05709

LOOSE TO MEDIUM DENSE GRAY SAND, MOST UNOVIDED C.P.

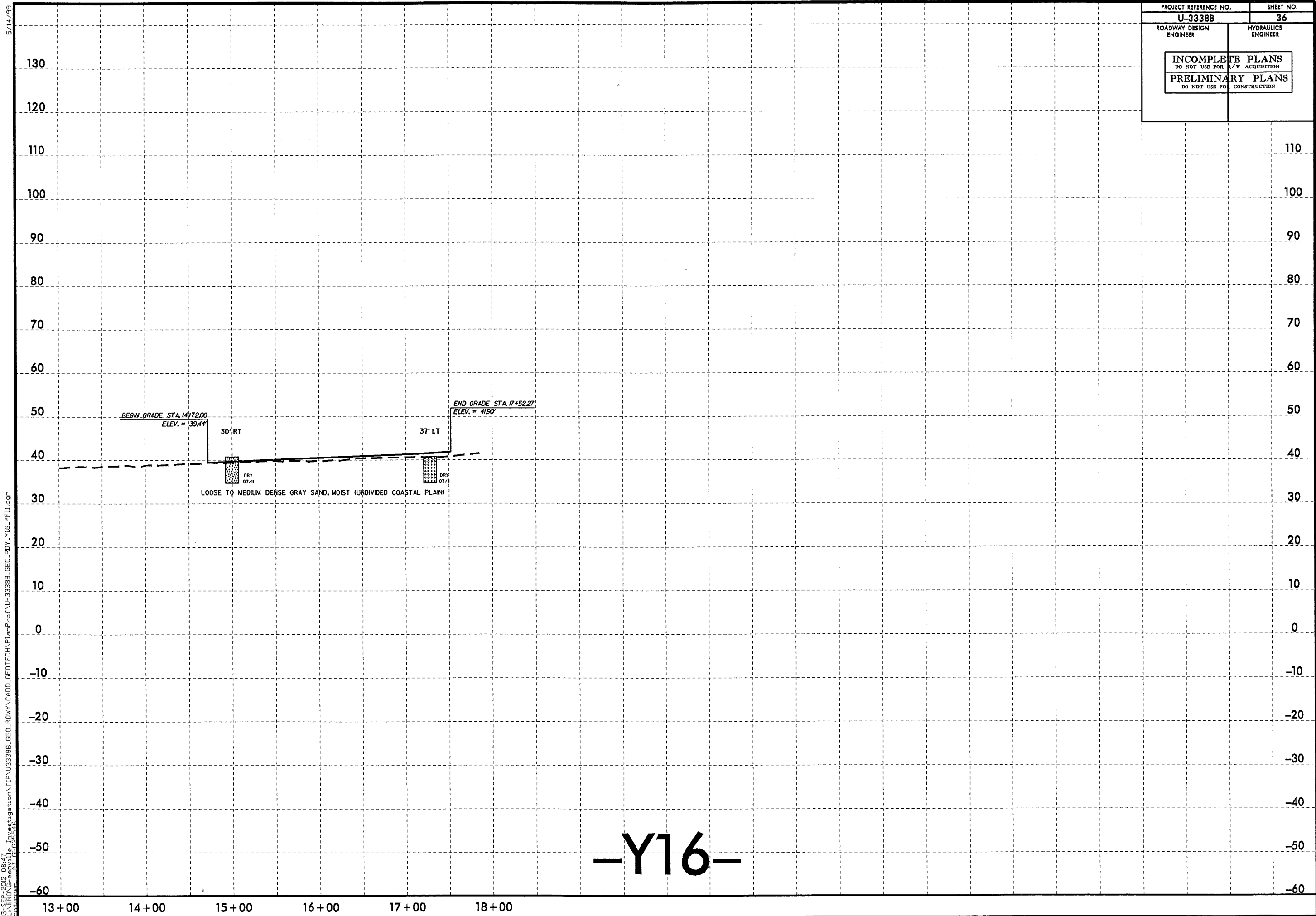
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 61 05/25/08

12 + 00 13 + 00 14 + 00

110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60

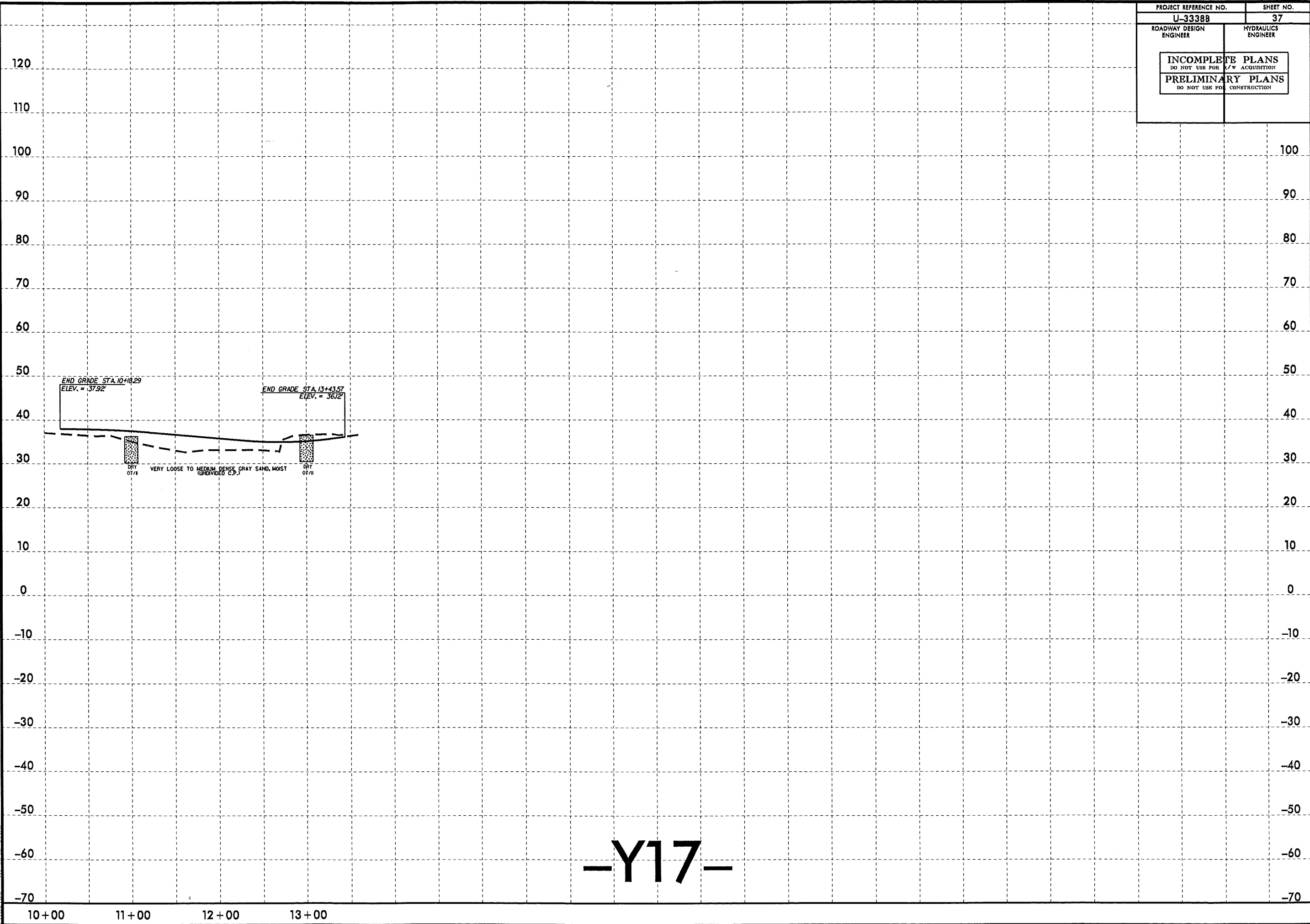
PROJECT REFERENCE NO. U-3338B	SHEET NO. 36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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-Y16-

PROJECT REFERENCE NO. U-3338B	SHEET NO. 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



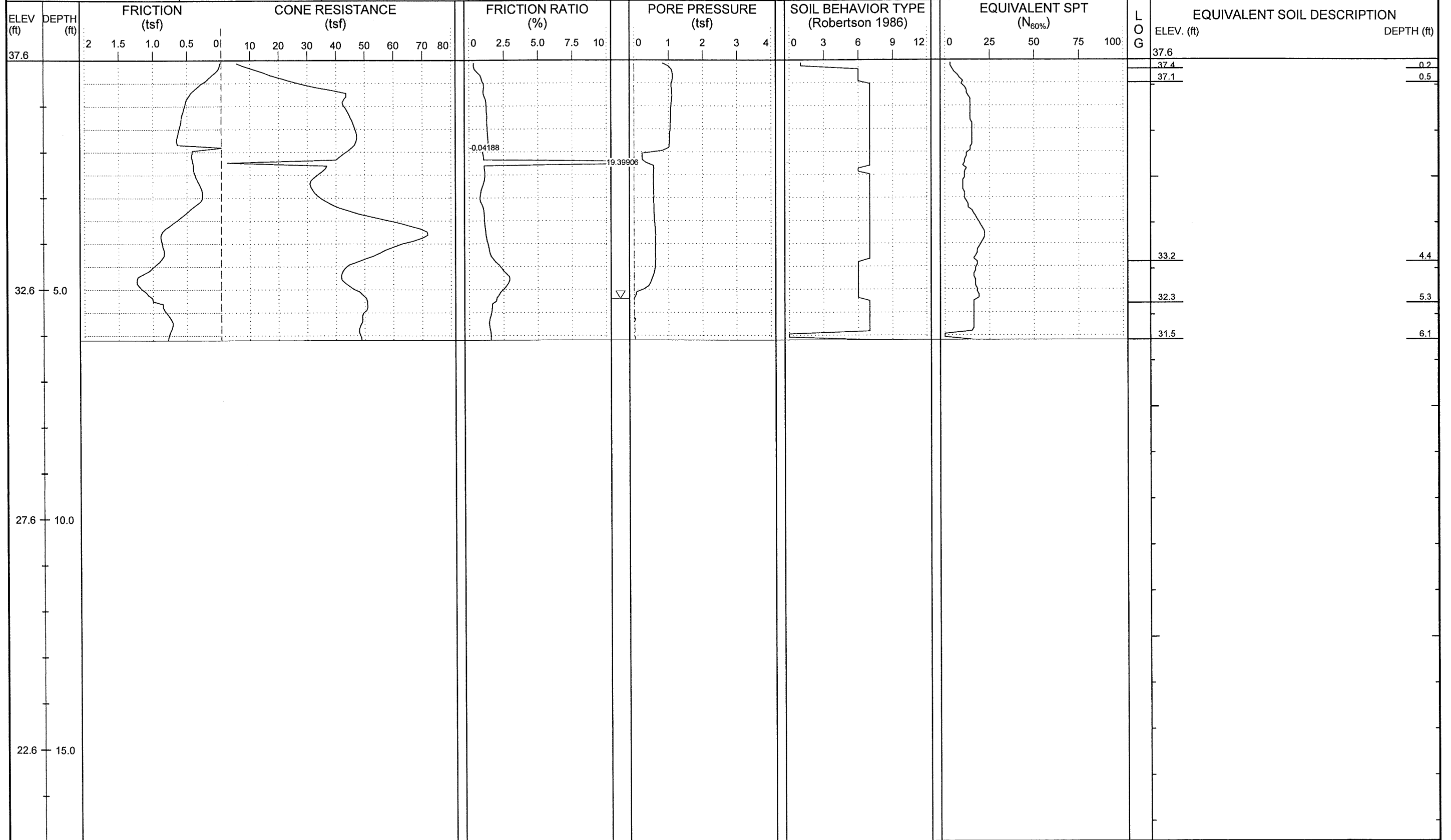
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NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.: 1
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-12	STATION: 12+00	OFFSET: 40ft LT	ALIGNMENT: -L-	0 HR. 5.2	ROD TYPE: N/A
COLLAR ELEV.: 37.6 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 176,831	EASTING: 2,336,350	24 HR. N/A	START DATE: 05/13/09
				CONC. DATE: 05/13/09	DRILLER: Donald Coogan
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	

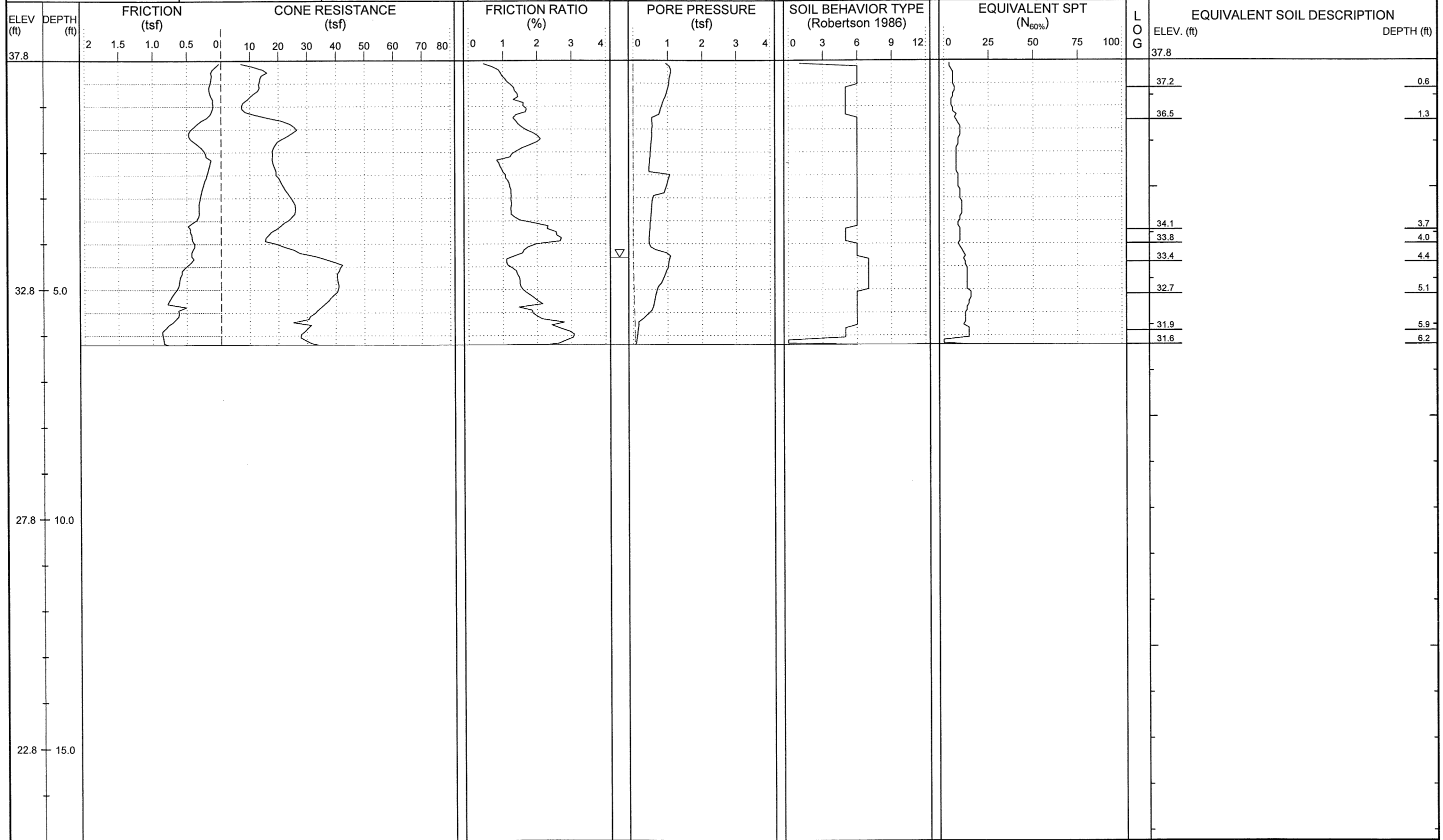




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 2
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 4.3, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-14	STATION: 13+47	OFFSET: 36ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 37.8 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 176,990	EASTING: 2,336,394	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

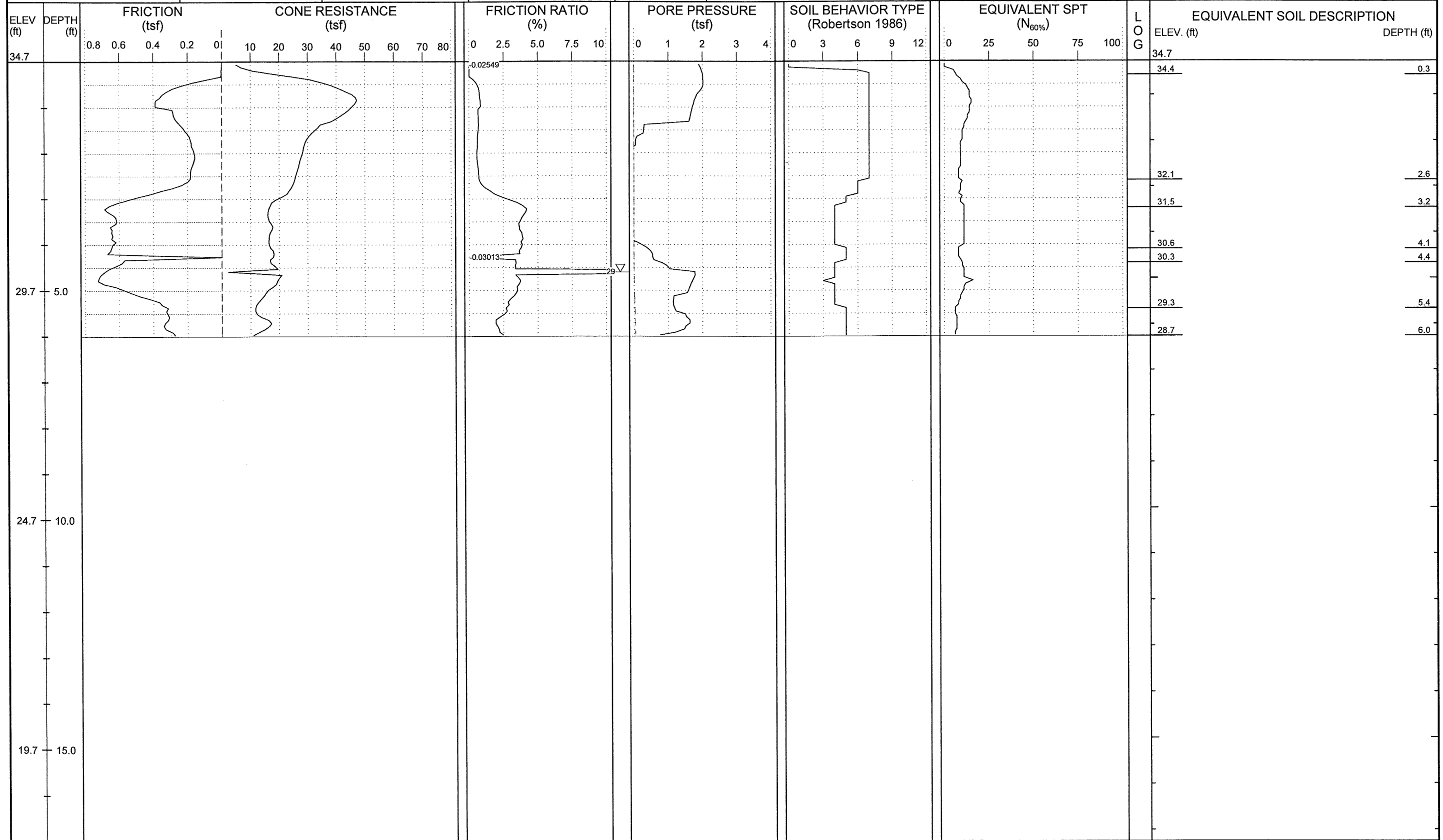




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH	SHEET NO.: 4
	PROJ. NO.: 34932.1.1
	TIP NO.: U-3338B
	COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 4.6, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-18	STATION: 17+67	OFFSET: 80ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 34.7 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 177,376	EASTING: 2,336,191	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

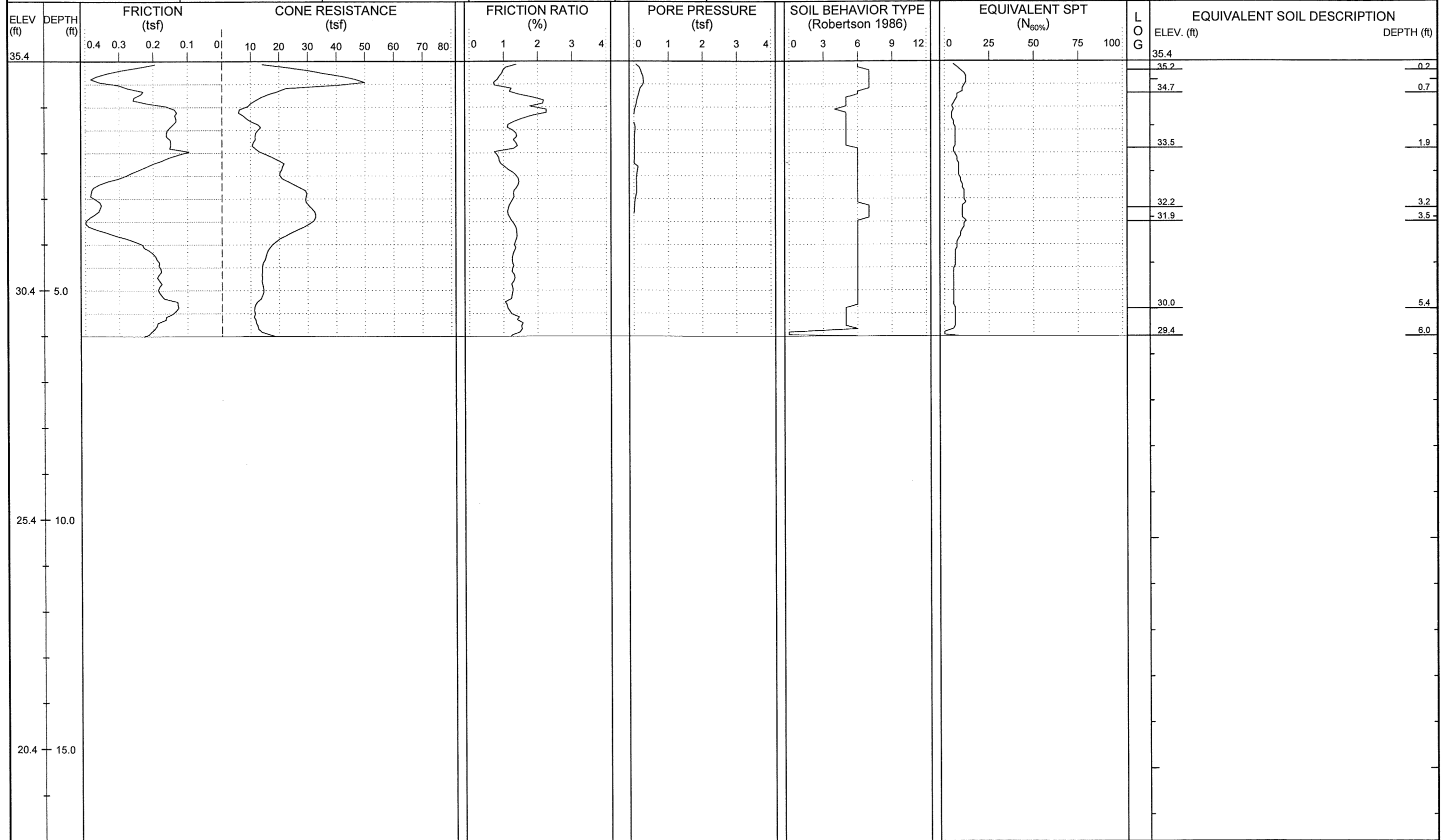




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 8
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-28	STATION: 27+92	OFFSET: 31ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 35.4 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 178,389	EASTING: 2,336,023	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



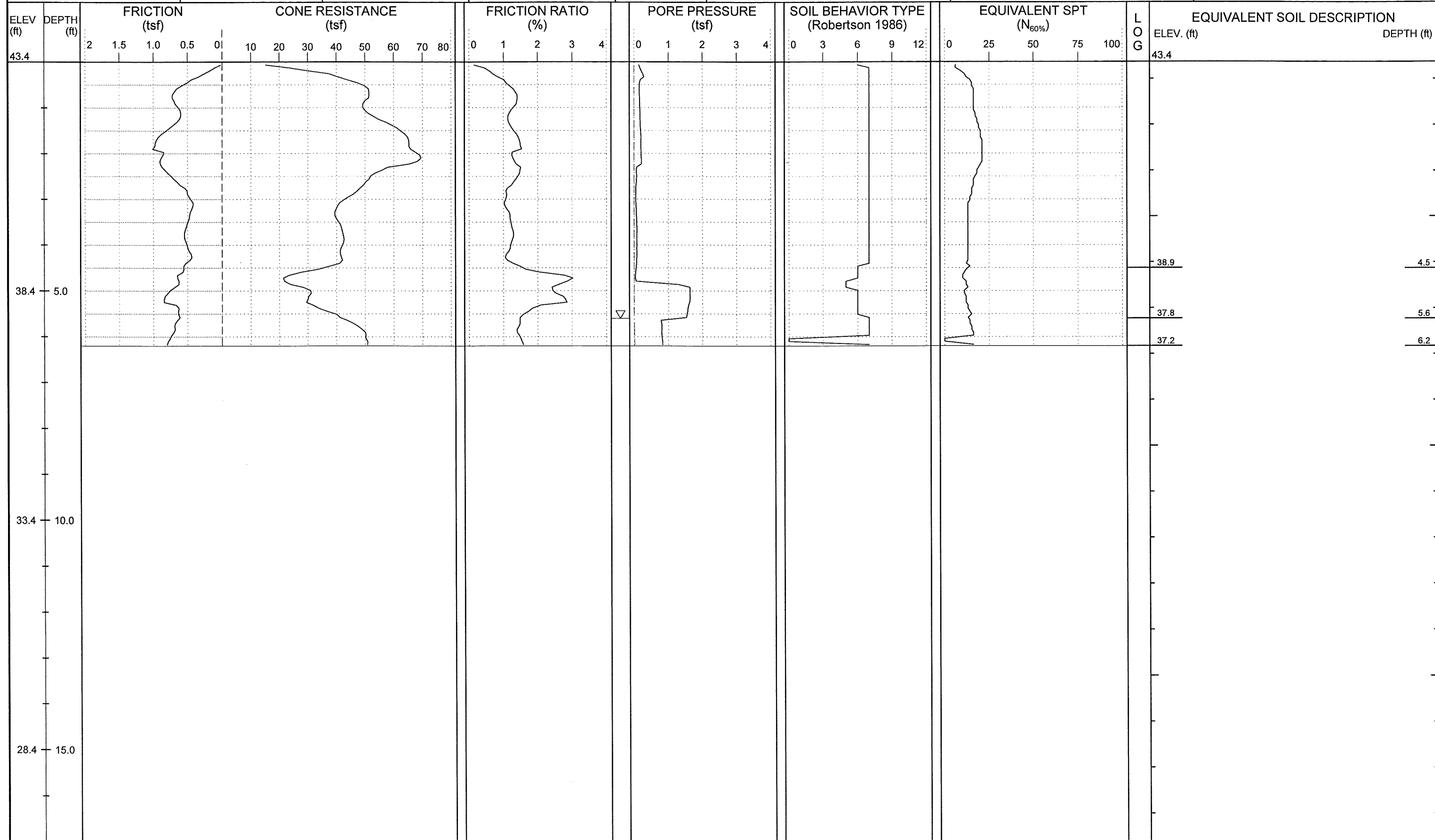


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 11
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 5.6	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-36	STATION: 35+96	OFFSET: 39ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 43.4 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 179,190	EASTING: 2,335,921	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

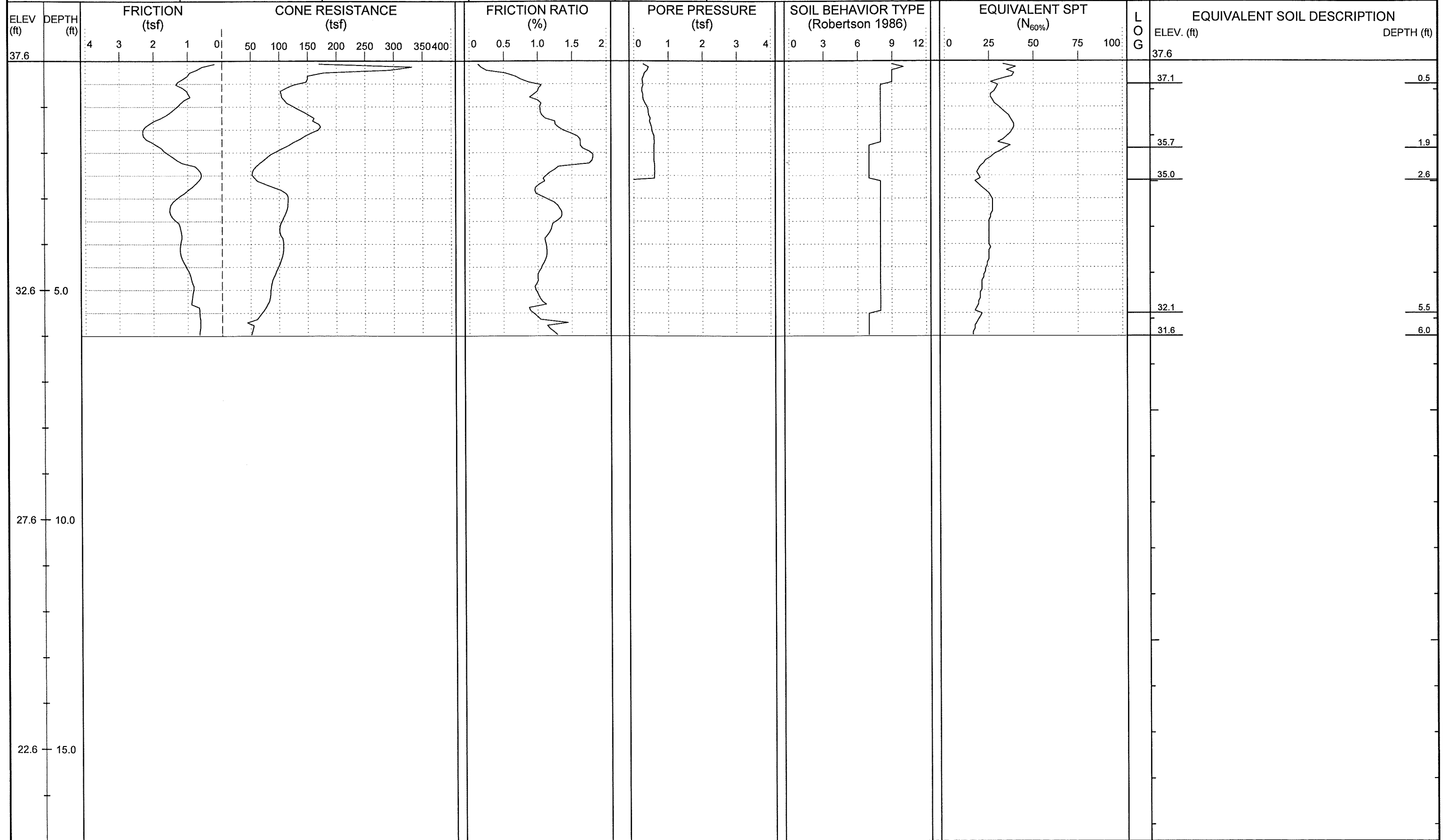




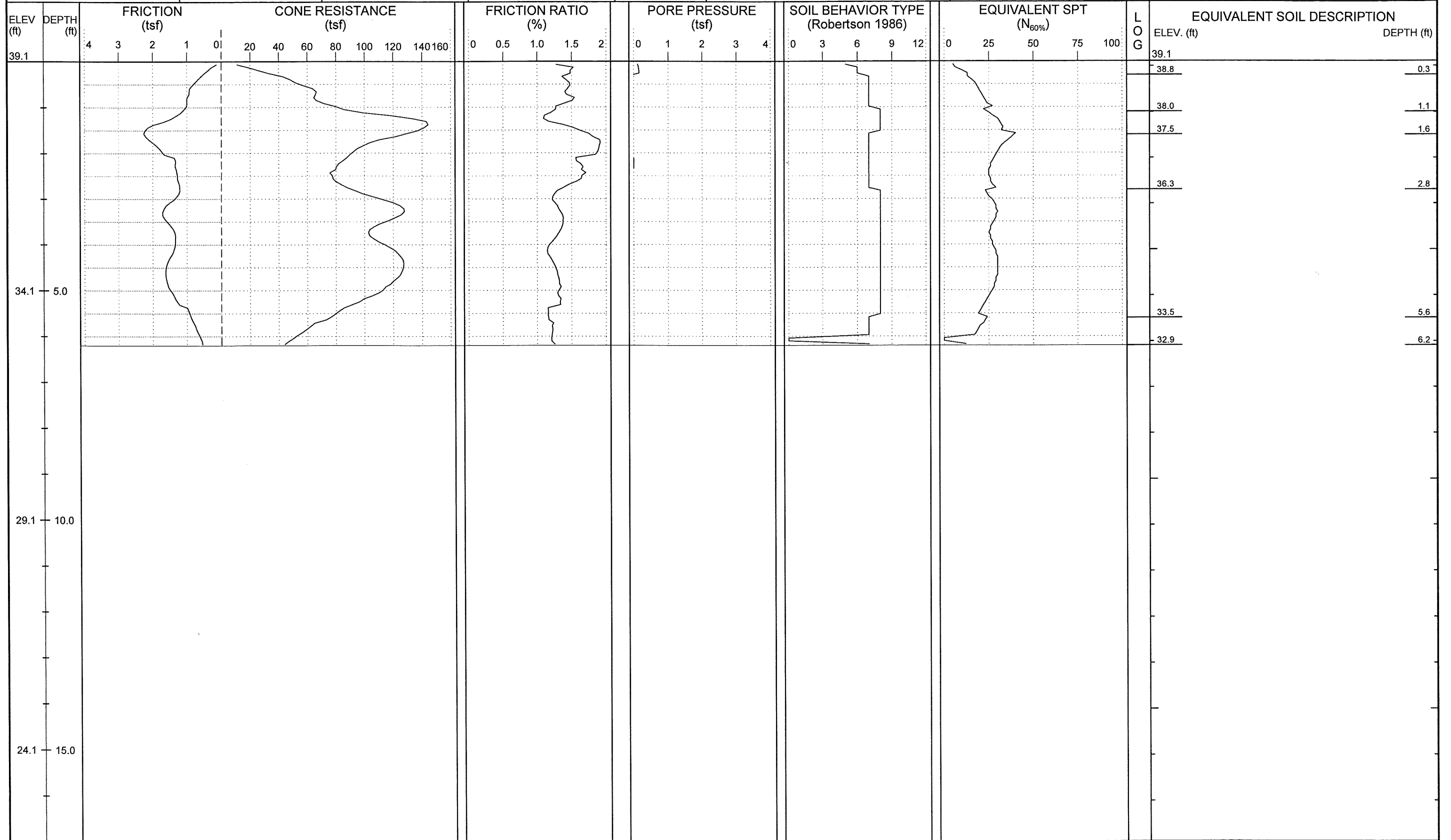
NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 12
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: L-38	STATION: 38+00	OFFSET: 40ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 37.6 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 179,372	EASTING: 2,335,800	START DATE: 05/12/09	CONE ID: DSA0866
				24 HR. N/A	DRILLER: Donald Coogan
				COMP. DATE: 05/12/09	TECHNICIAN: M.A.D.
				SURFACE WATER DEPTH: N/A	

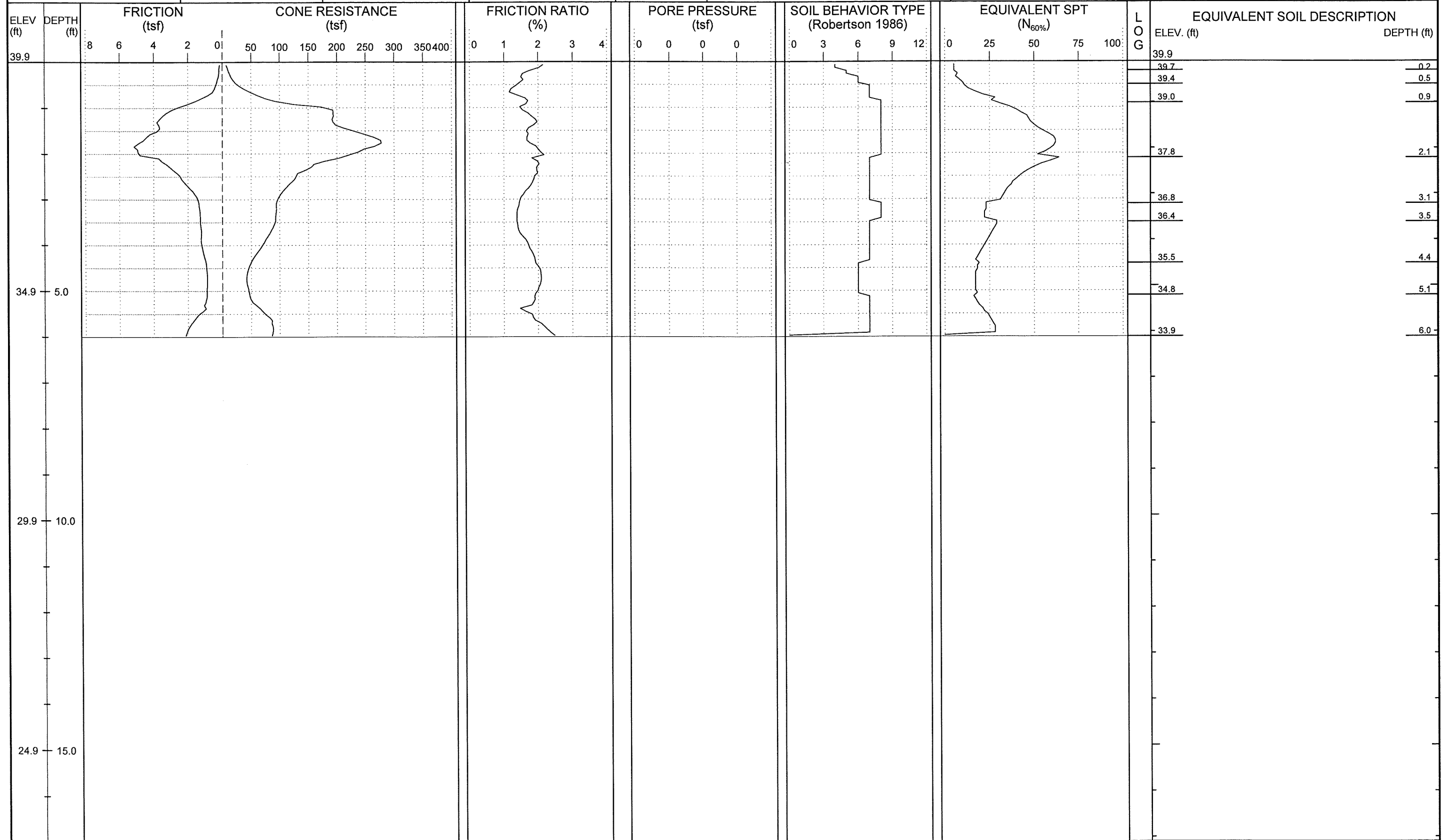


PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A, 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: L-42	STATION: 42+00	OFFSET: 50ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 39.1 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 179,761	EASTING: 2,335,706	START DATE: 05/12/09	CONE ID: DSA0866
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A
					COMP. DATE: 05/12/09





PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton	
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-48	STATION: 47+92	OFFSET: 49ft RT	ALIGNMENT: -L-	0 HR. N/A	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 39.9 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 180,361	EASTING: 2,335,676	24 HR. N/A	START DATE: 05/12/09	COMP. DATE: 05/12/09
						DRILLER: Donald Coogan
						TECHNICIAN: M.A.D.
						SURFACE WATER DEPTH: N/A



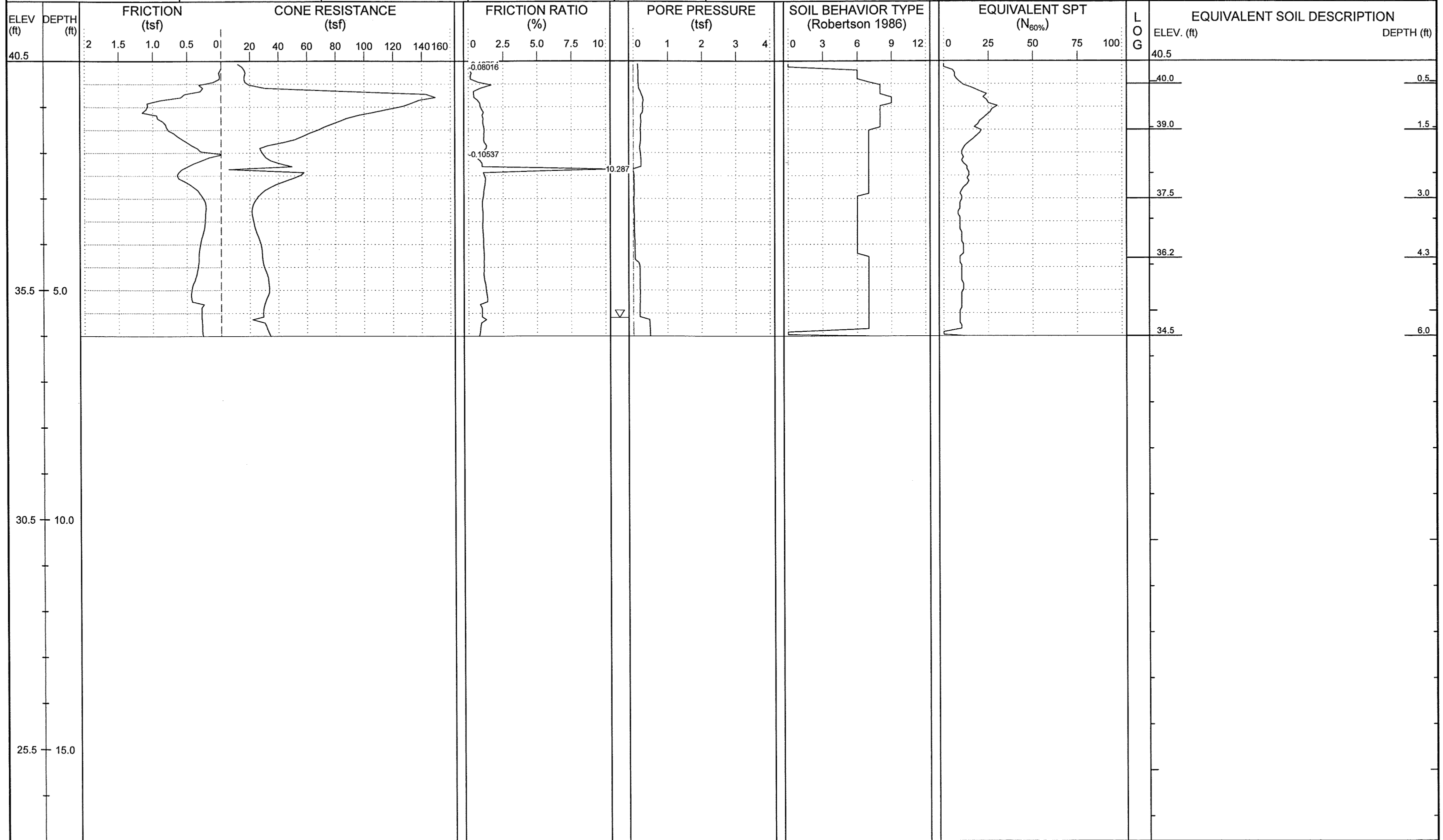


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 16
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 5.6, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-52	STATION: 51+78	OFFSET: 45ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 40.5 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 180,737	EASTING: 2,335,592	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



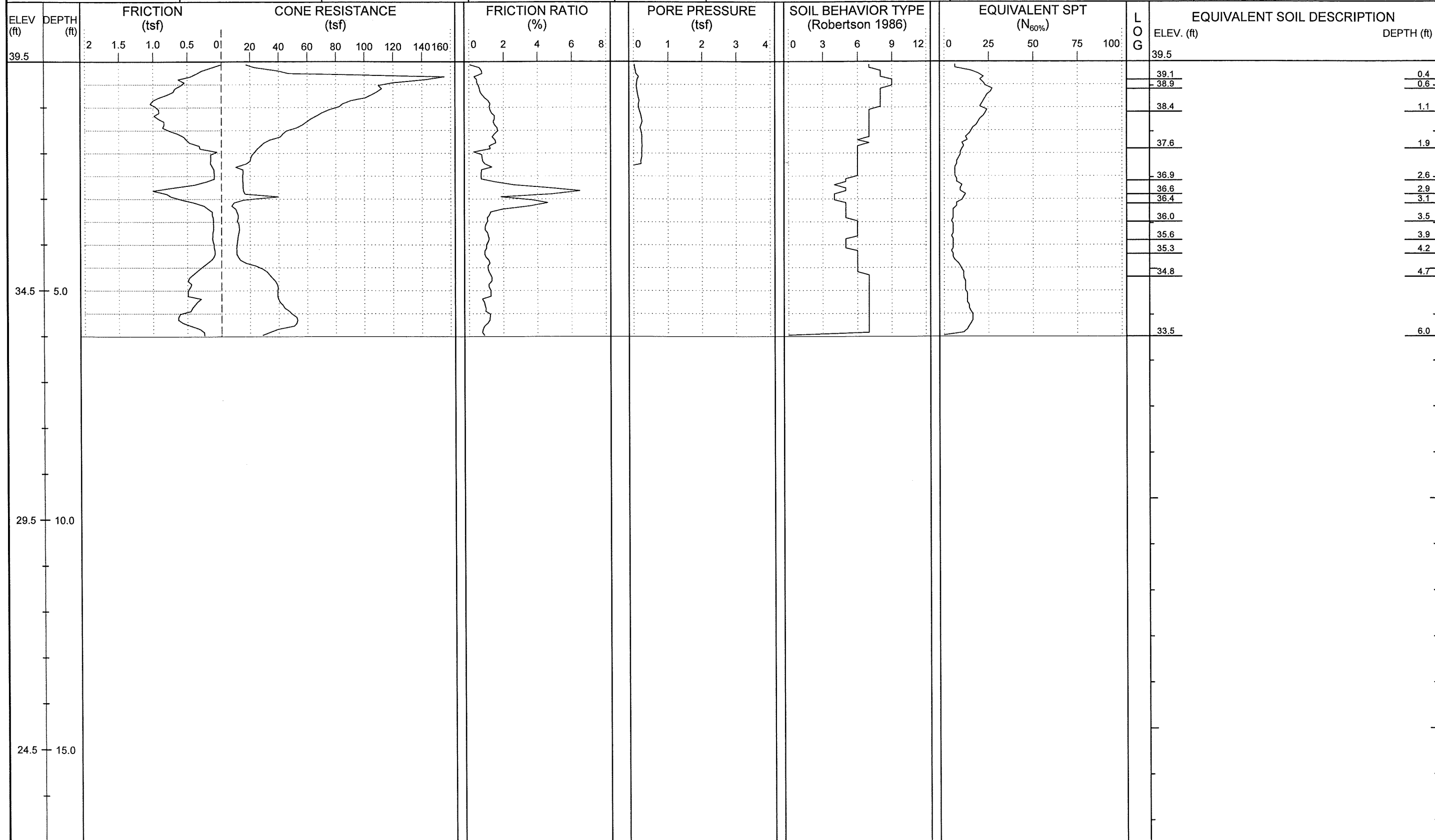


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 18
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-58	STATION: 58+00	OFFSET: 34ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 39.5 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 181,339	EASTING: 2,335,409	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

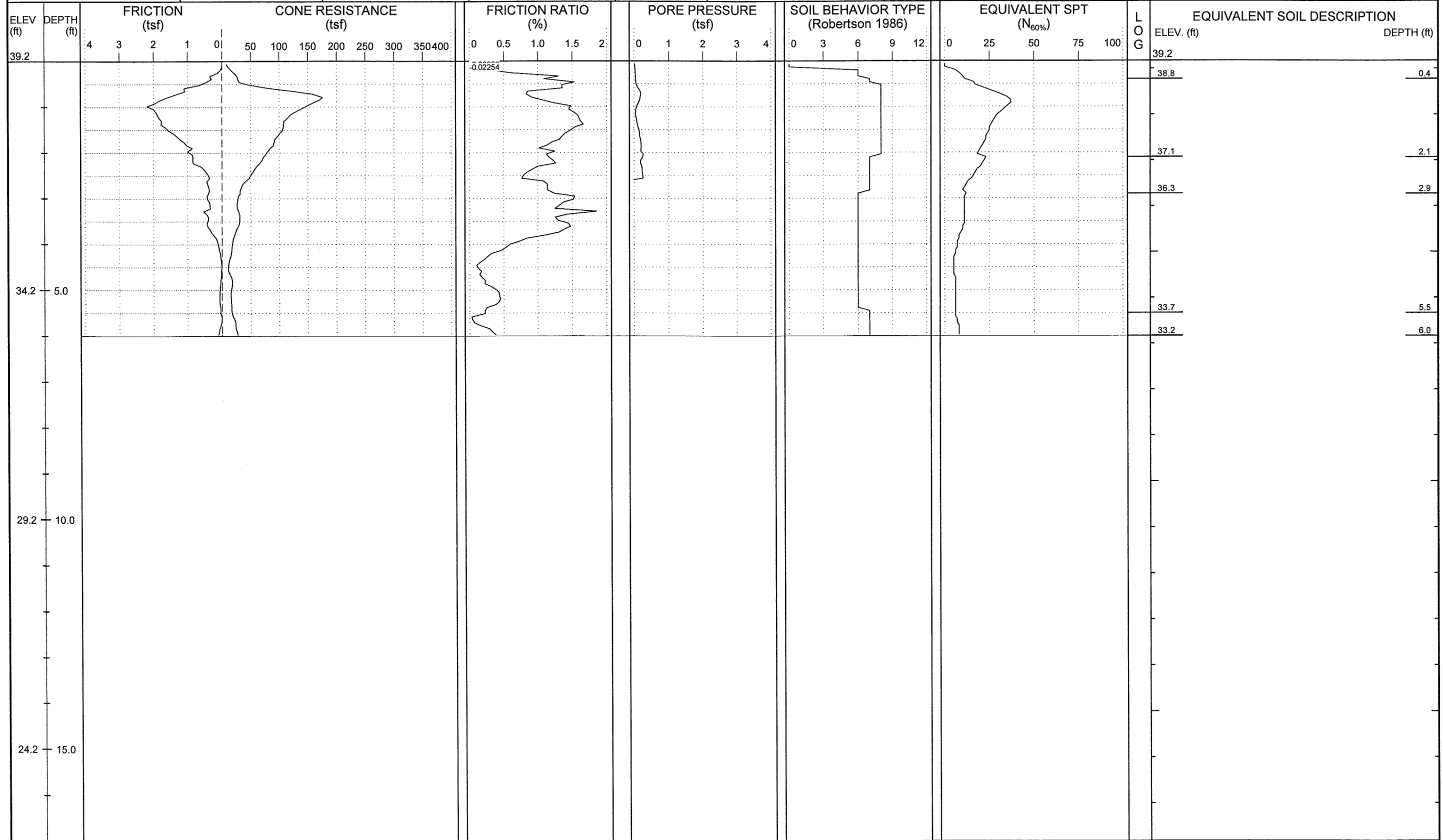




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH	SHEET NO.:	19
	PROJ. NO.:	34932.1.1
	TIP NO.:	U-3338B
	COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton		
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone	DRILLER: Donald Coogan	
BORING NO.: L-62	STATION: 62+70	OFFSET: 63ft LT	ALIGNMENT: -L-	0 HR. N/A	ROD TYPE: N/A	CONE ID: DSA0866	TECHNICIAN: M.A.D.
COLLAR ELEV.: 39.2 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 181,812	EASTING: 2,335,401	24 HR. N/A	START DATE: 05/12/09	COMP. DATE: 05/12/09	SURFACE WATER DEPTH: N/A

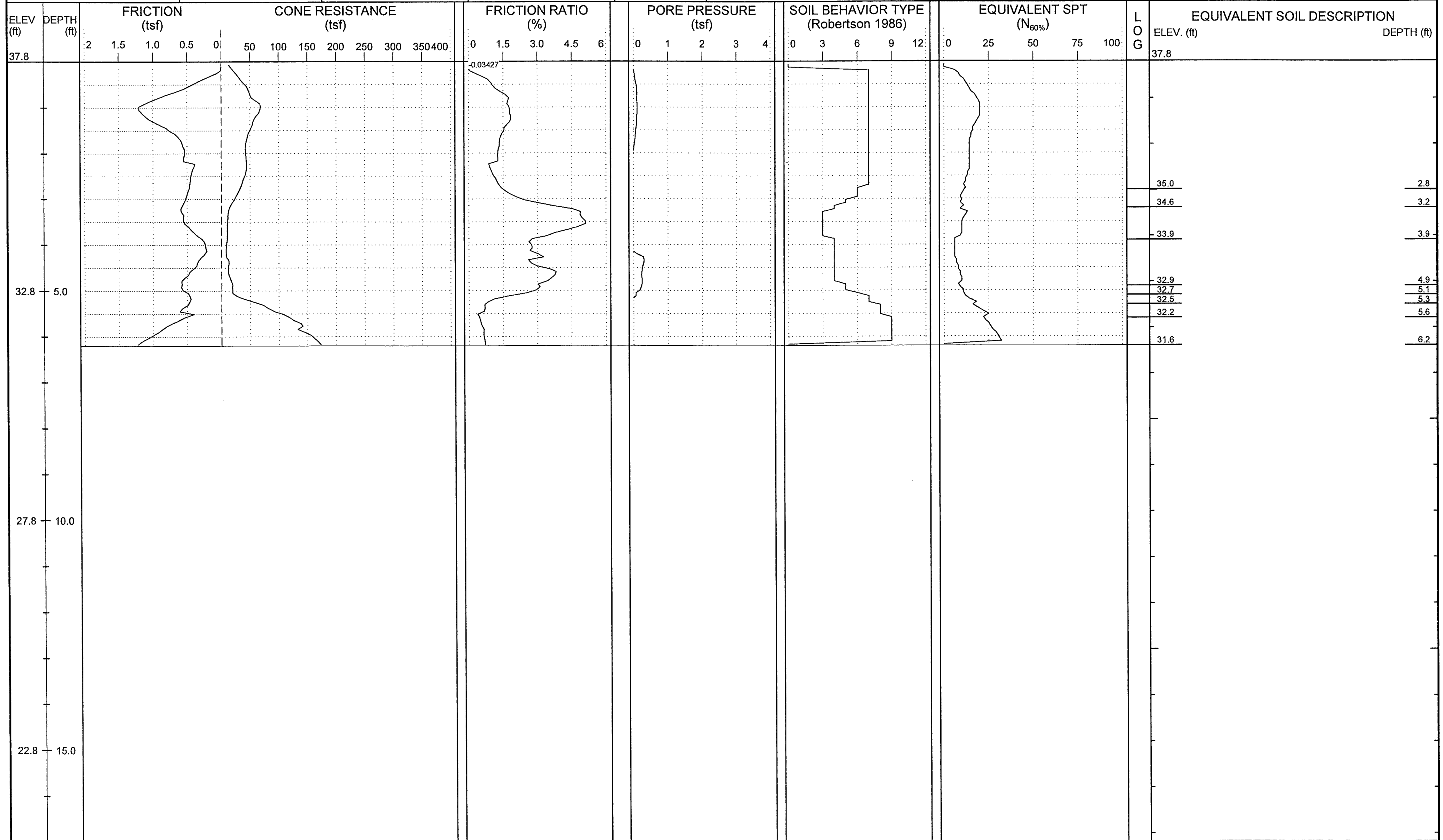




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 21
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: L-66	STATION: 66+00	OFFSET: 50ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 37.8 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 182,136	EASTING: 2,335,530	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



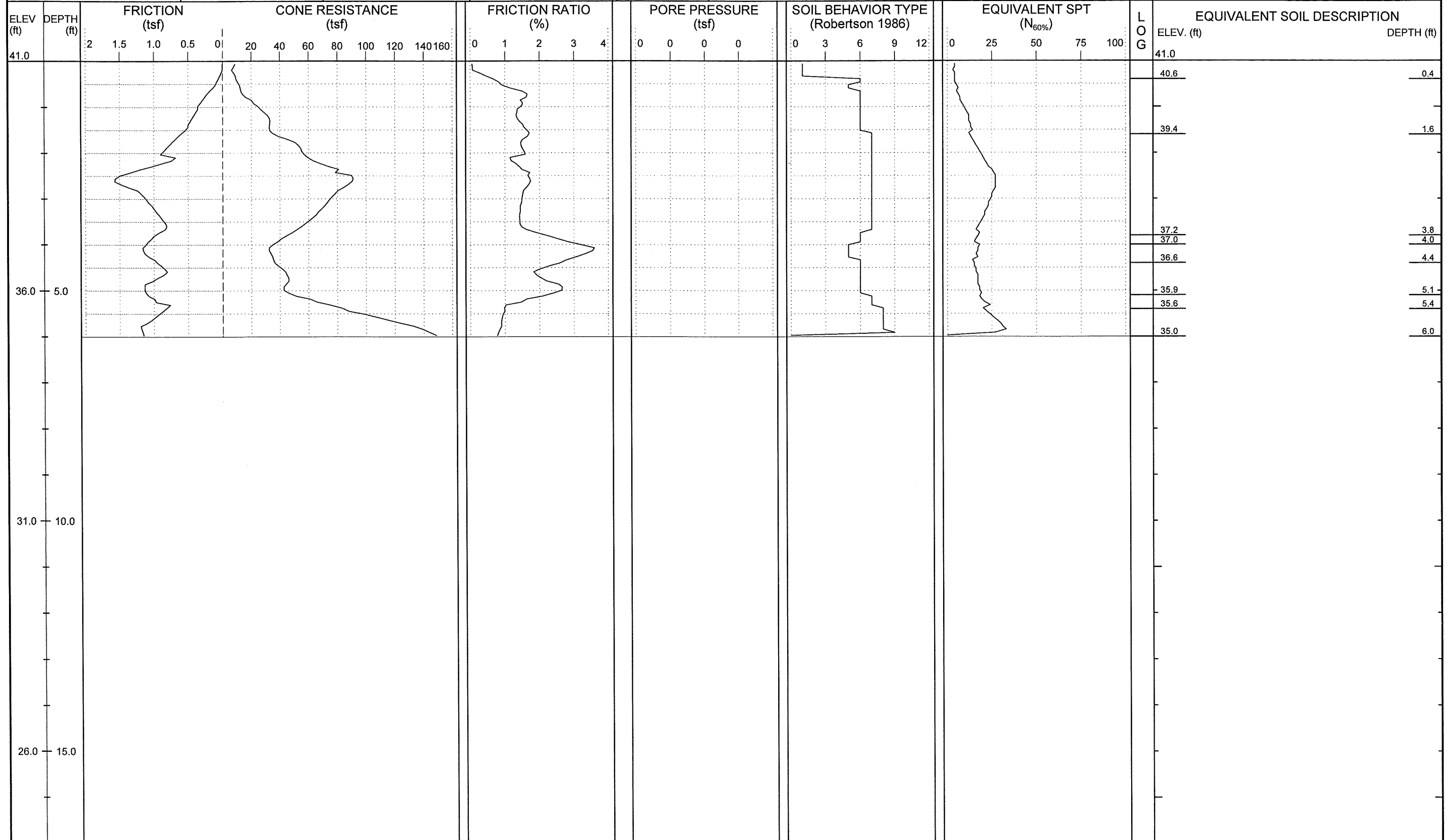


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 22
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: L-68	STATION: 68+00	OFFSET: 34ft LT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 41.0 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 182,340	EASTING: 2,335,455	START DATE: 05/12/09	CONE ID: DSA0866
				24 HR. N/A	DRILLER: Donald Coogan
				COMP. DATE: 05/12/09	TECHNICIAN: M.A.D.
				SURFACE WATER DEPTH: N/A	

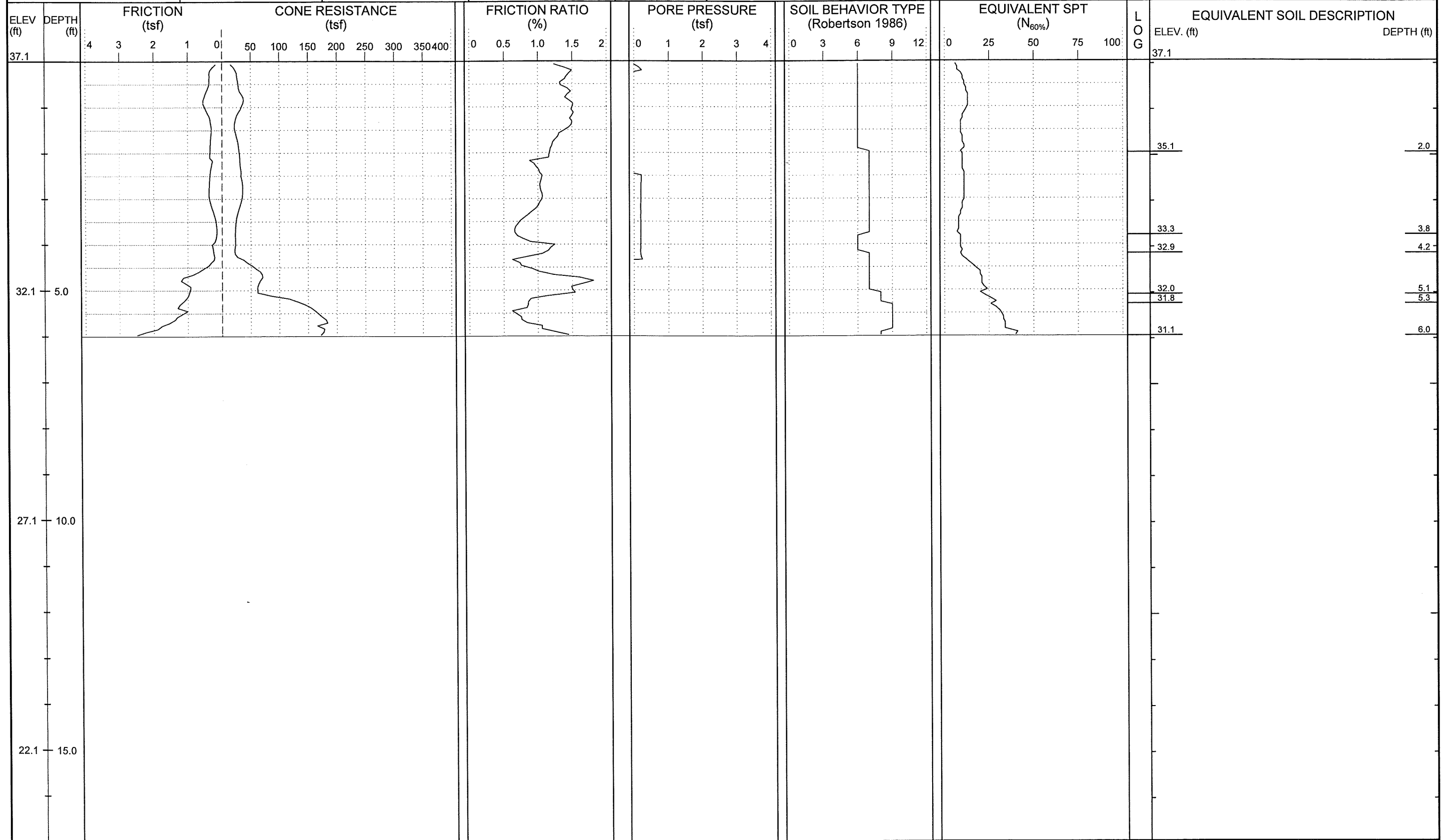




NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.:	23
PROJ. NO.:	34932.1.1
TIP NO.:	U-3338B
COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton		
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone	DRILLER: Donald Coogan
BORING NO.: L-72	STATION: 72+16	OFFSET: 57ft LT	ALIGNMENT: -L-	0 HR. N/A	ROD TYPE: N/A	CONE ID: DSA0866	TECHNICIAN: M.A.D.
COLLAR ELEV.: 37.1 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 182,756	EASTING: 2,335,452	24 HR. N/A	START DATE: 05/12/09	COMP. DATE: 05/12/09	SURFACE WATER DEPTH: N/A

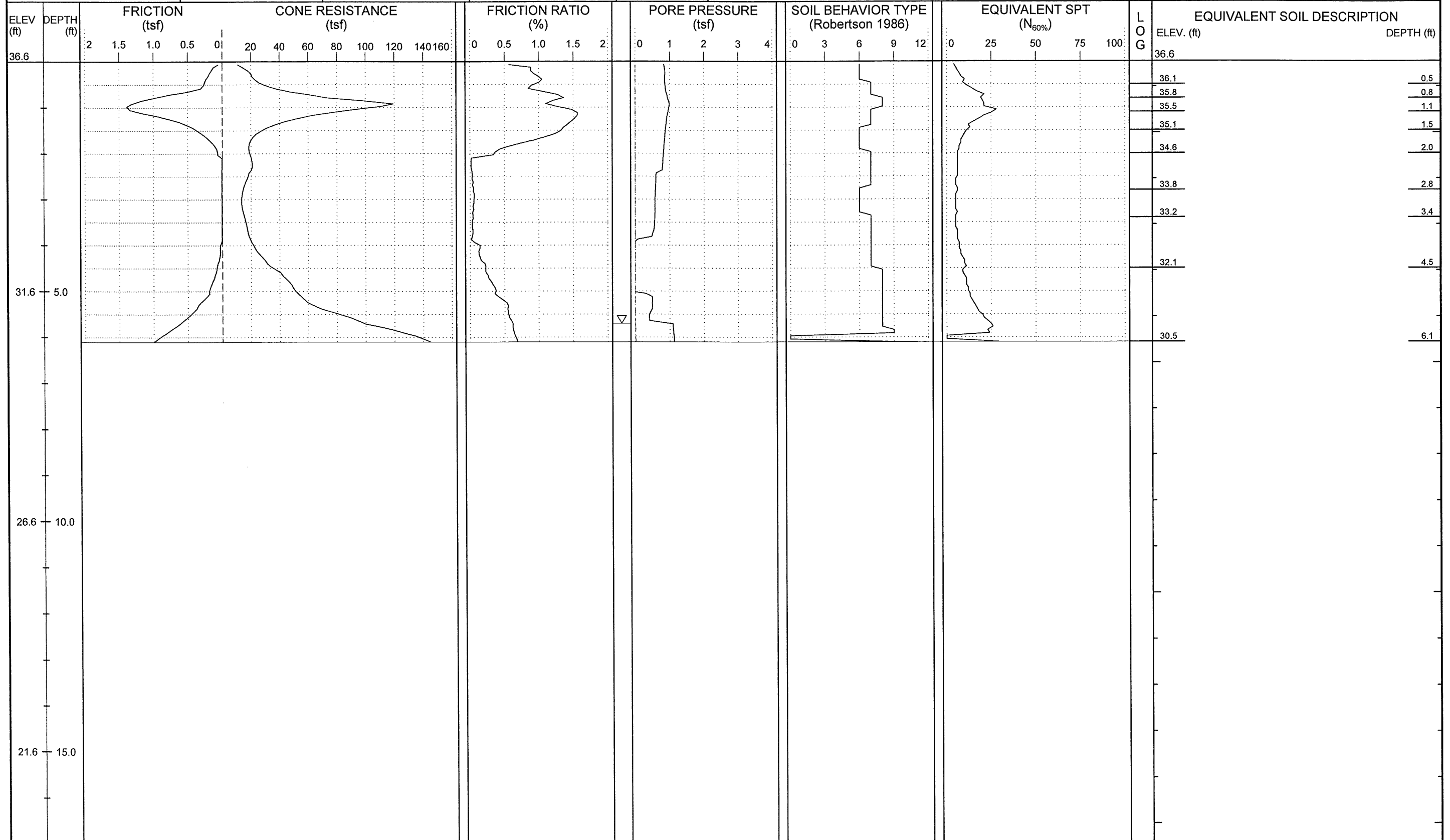




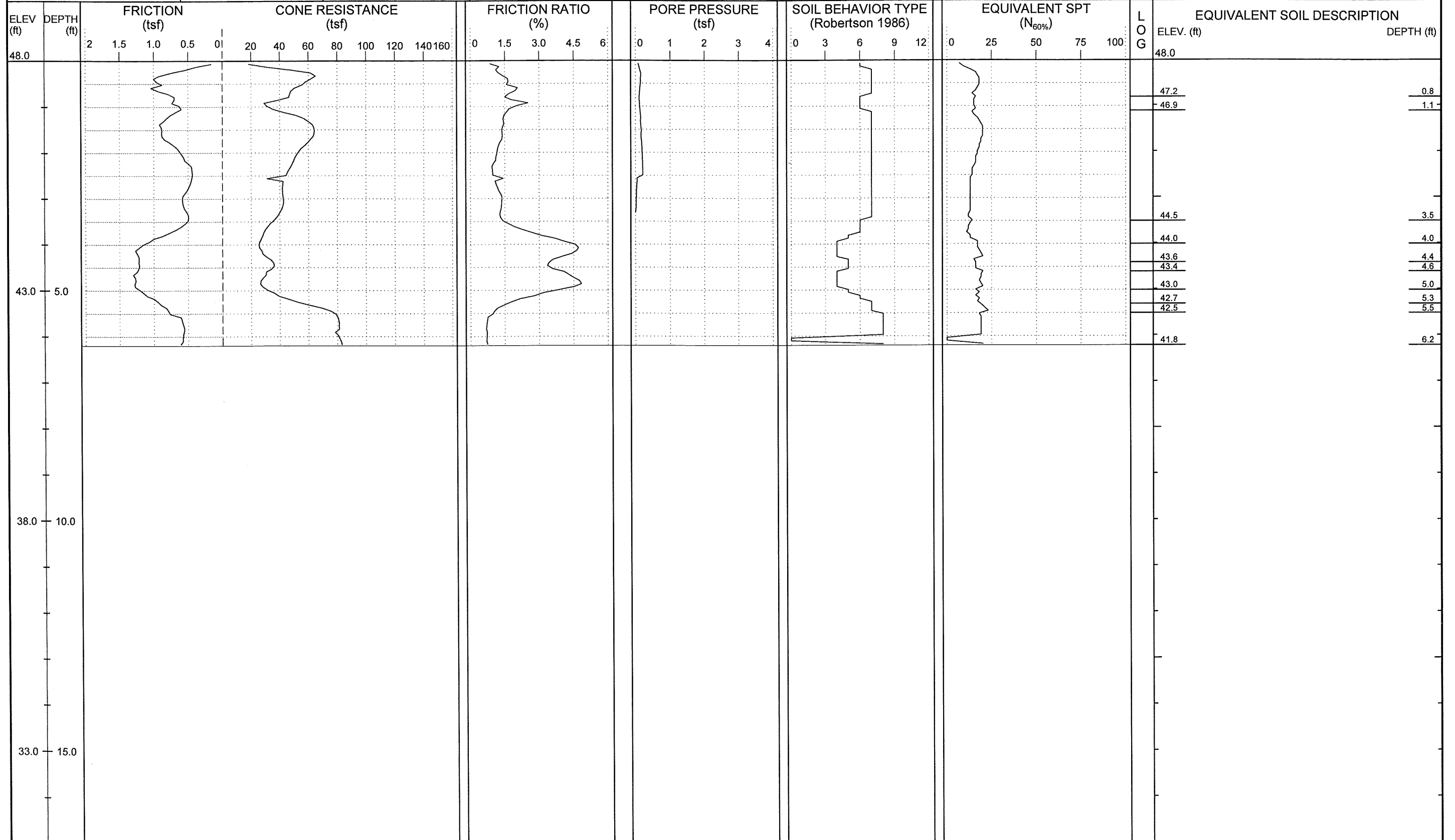
NCDOT GEOTECHNICAL ENGINEERING UNIT

	SHEET NO.: 24
	PROJ. NO.: 34932.1.1
	TIP NO.: U-3338B
	COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
			0 HR. 5.7	ROD TYPE: N/A	CONE ID: DSA0866
			24 HR. N/A	START DATE: 05/12/09	COMP. DATE: 05/12/09
BORING NO.: L-74	STATION: 74+00	OFFSET: 50ft RT	ALIGNMENT: -L-	DRILLER: Donald Coogan	
COLLAR ELEV.: 36.6 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 182,935	EASTING: 2,335,568	TECHNICIAN: M.A.D.	
					SURFACE WATER DEPTH: N/A



PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: L-76	STATION: 76+00	OFFSET: 50ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 48.0 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 183,135	EASTING: 2,335,578	START DATE: 05/12/09	CONE ID: DSA0866
				24 HR. N/A	COMP. DATE: 05/12/09
				DRILLER: Donald Coogan	
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	

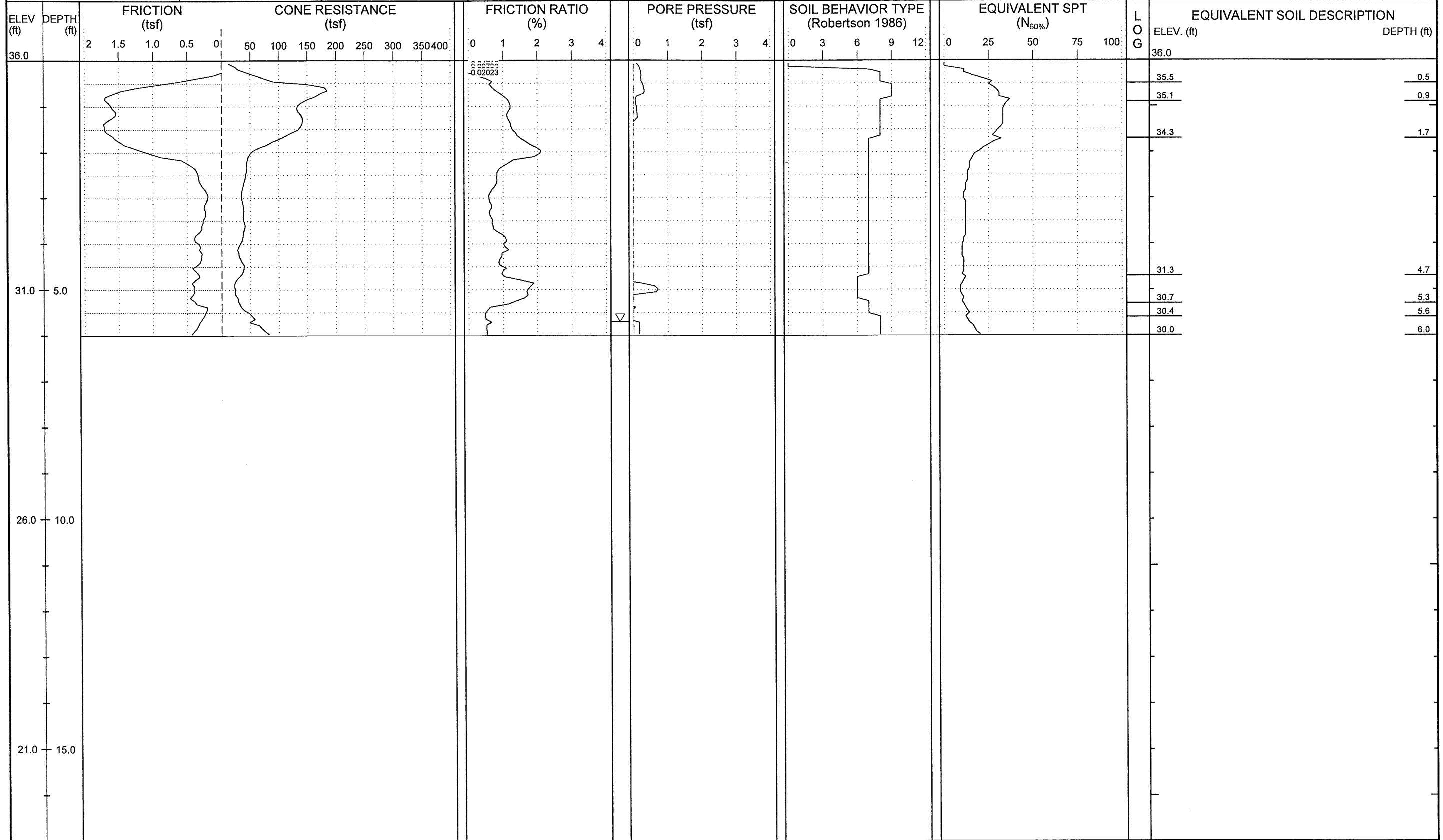




NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.:	26
PROJ. NO.:	34932.1.1
TIP NO.:	U-3338B
COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. 5.7 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: L-78.5	STATION: 78+50	OFFSET: 50ft RT	ALIGNMENT: -L-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 36.0 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 183,384	EASTING: 2,335,590	START DATE: 05/12/09	CONE ID: DSA0866
				COMP. DATE: 05/12/09	DRILLER: Donald Coogan
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	

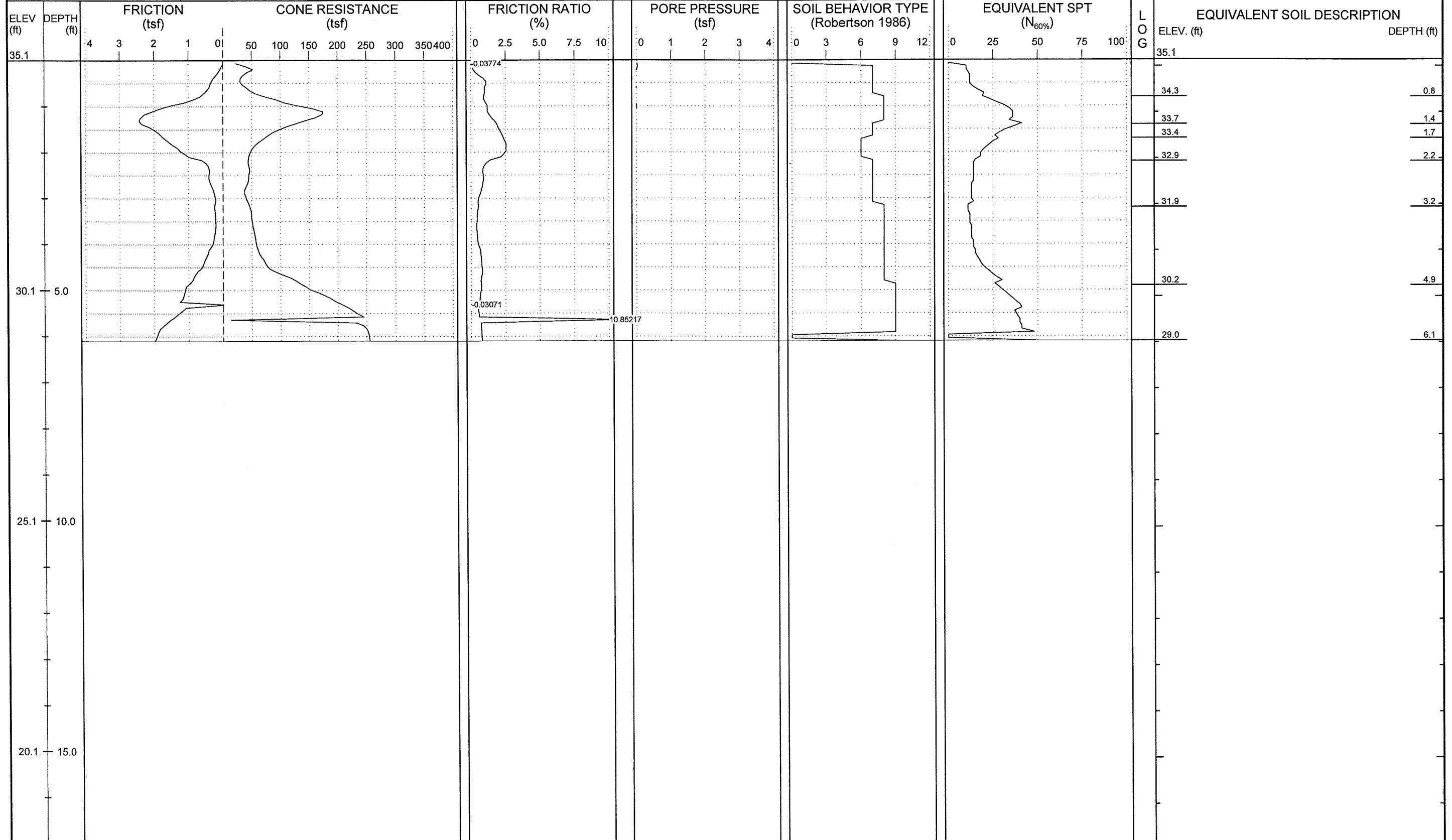




NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.: 30
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y10-12	STATION: 12+08	OFFSET: 15ft RT	ALIGNMENT: -Y10-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 35.1 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 183,468	EASTING: 2,335,352	START DATE: 05/12/09	COMP. DATE: 05/12/09
				DRILLER: Donald Coogan	TECHNICIAN: M.A.D.
				SURFACE WATER DEPTH: N/A	

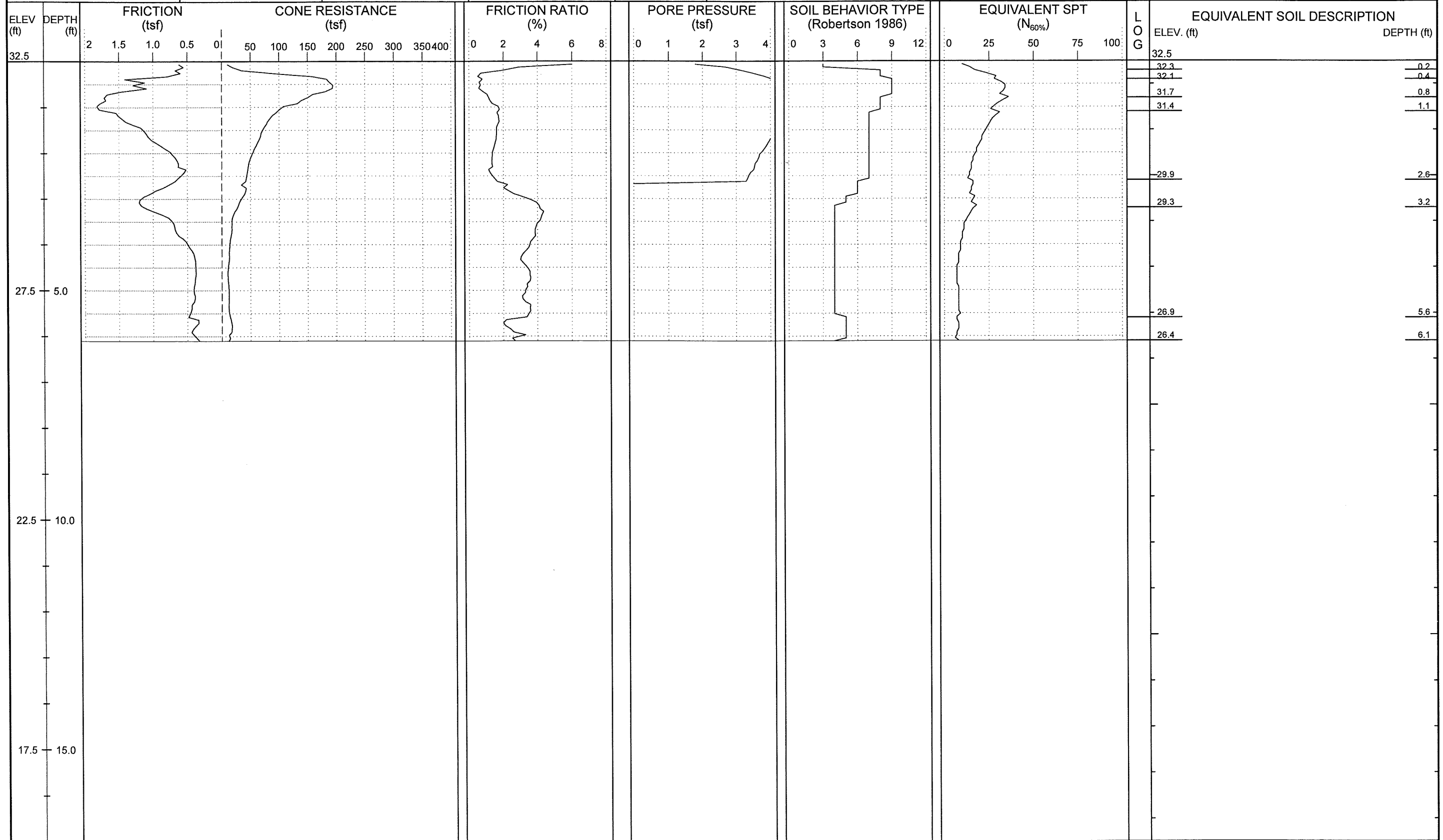




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 33
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y1-16	STATION: 16+00	OFFSET: 40ft LT	ALIGNMENT: -Y1-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 32.5 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 177,334	EASTING: 2,336,035	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

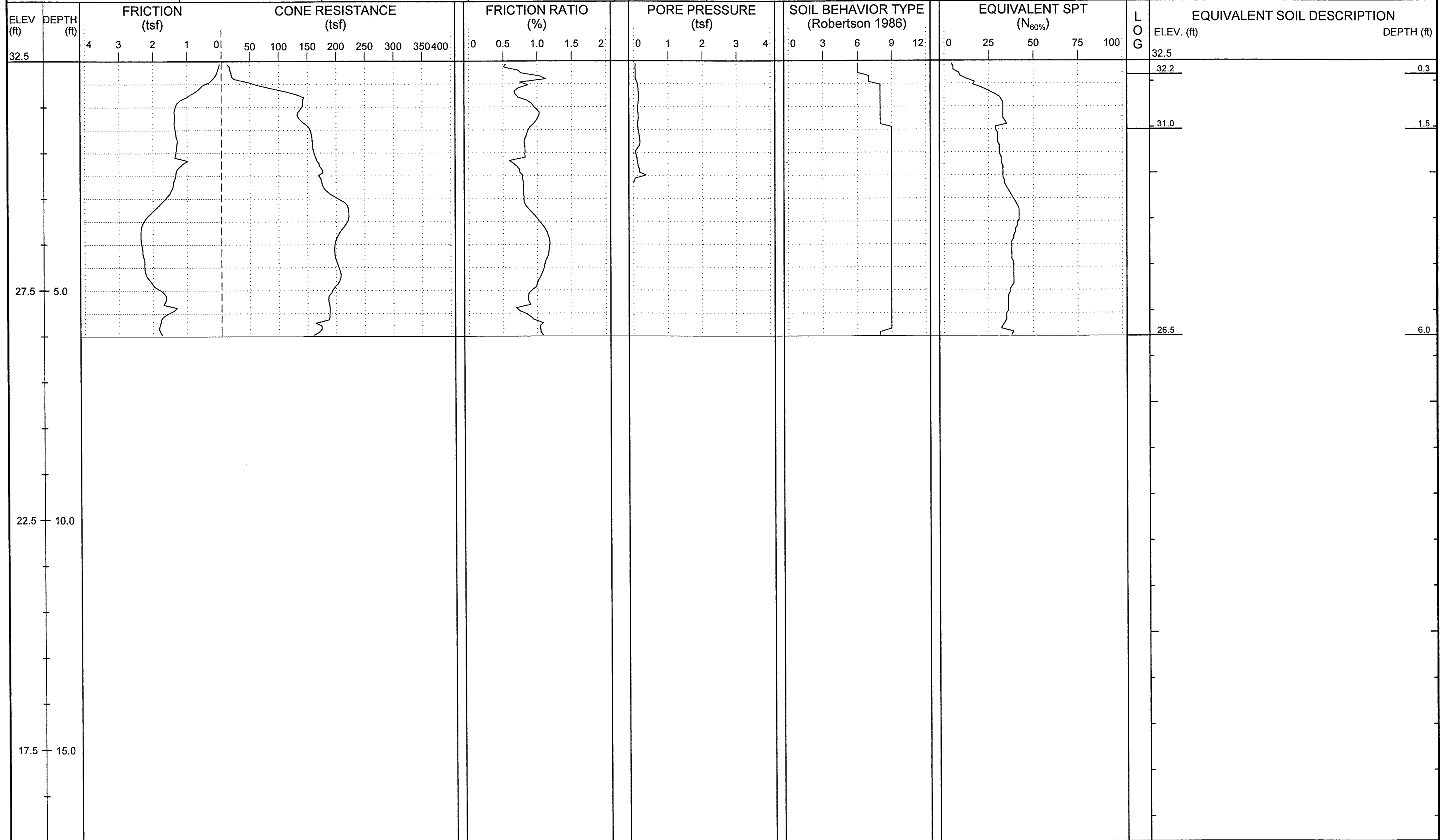




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 35
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y12-11	STATION: 11+00	OFFSET: 25ft LT	ALIGNMENT: -Y12-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 32.5 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 184,013	EASTING: 2,335,673	24 HR. N/A	CONE ID: DSA0866
				START DATE: 05/13/09	DRILLER: Donald Coogan
				COMP. DATE: 05/13/09	TECHNICIAN: M.A.D.
				SURFACE WATER DEPTH: N/A	

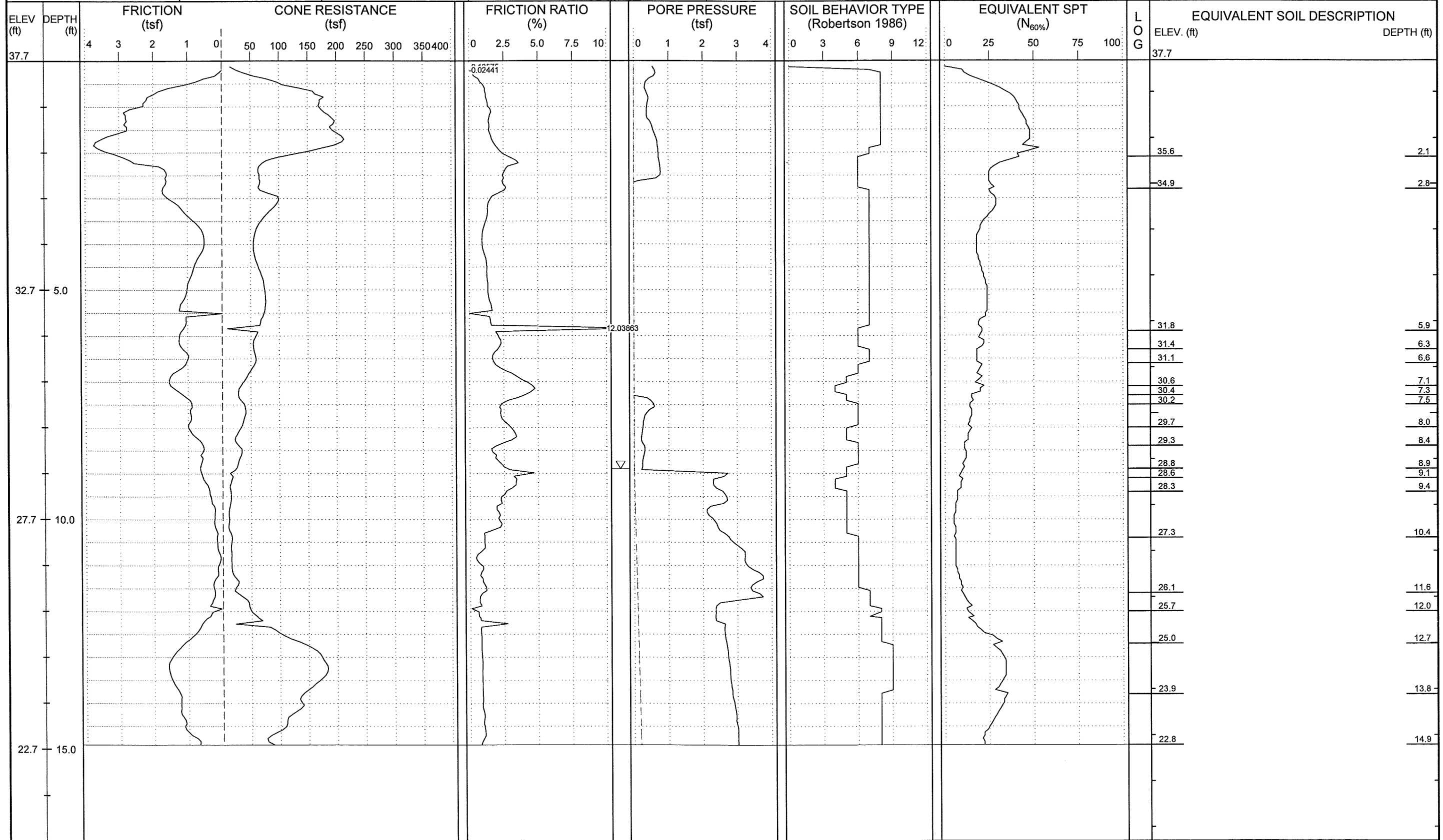




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH
 SHEET NO.: 36
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 8.9, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y1-22	STATION: 22+00	OFFSET: 42ft LT	ALIGNMENT: -Y1-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 37.7 ft	TOTAL DEPTH: 14.9 ft	NORTHING: 177,471	EASTING: 2,336,621	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



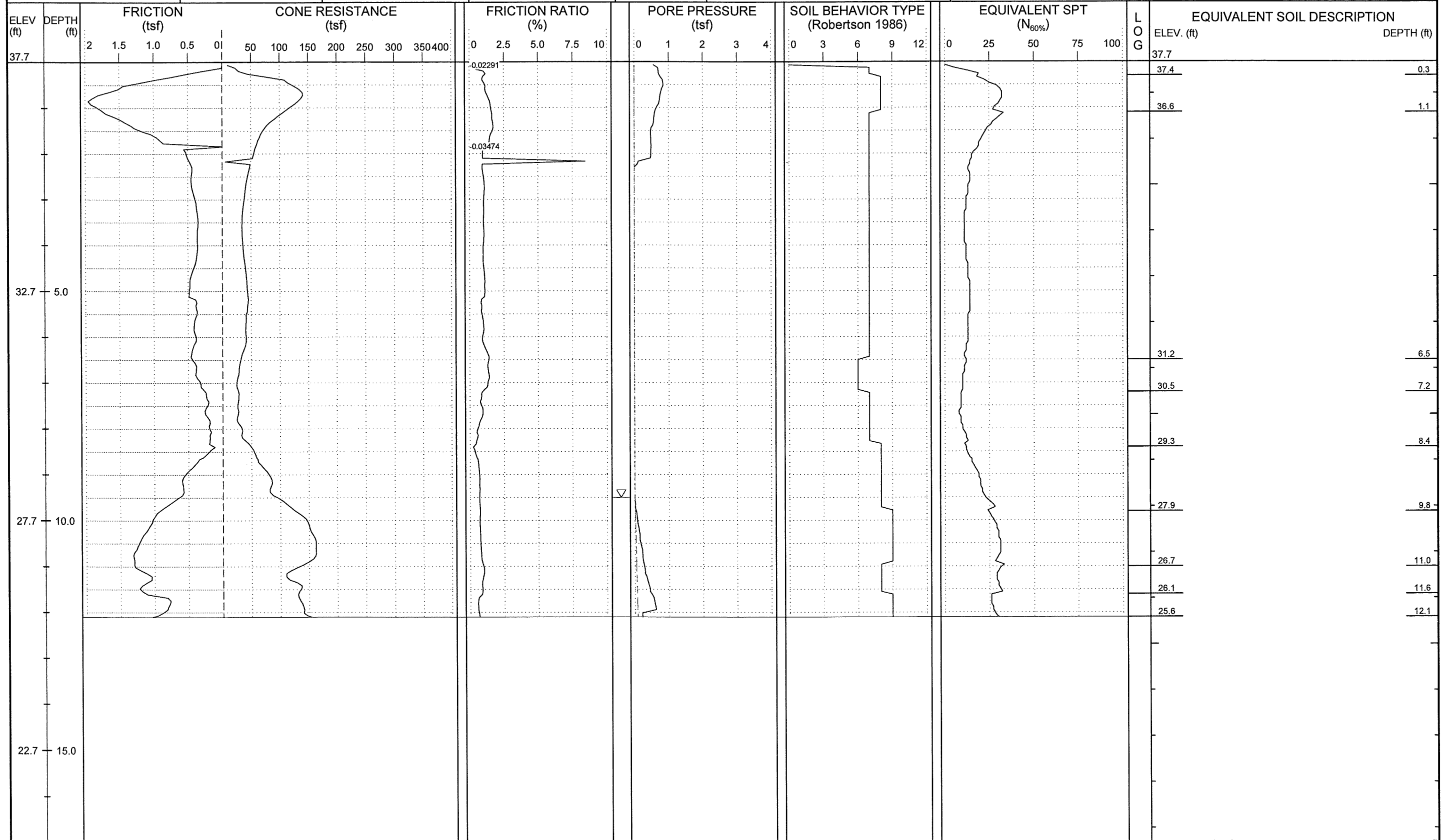


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 37
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 9.5, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y1-24	STATION: 24+00	OFFSET: 38ft LT	ALIGNMENT: -Y1-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 37.7 ft	TOTAL DEPTH: 12.1 ft	NORTHING: 177,496	EASTING: 2,336,823	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



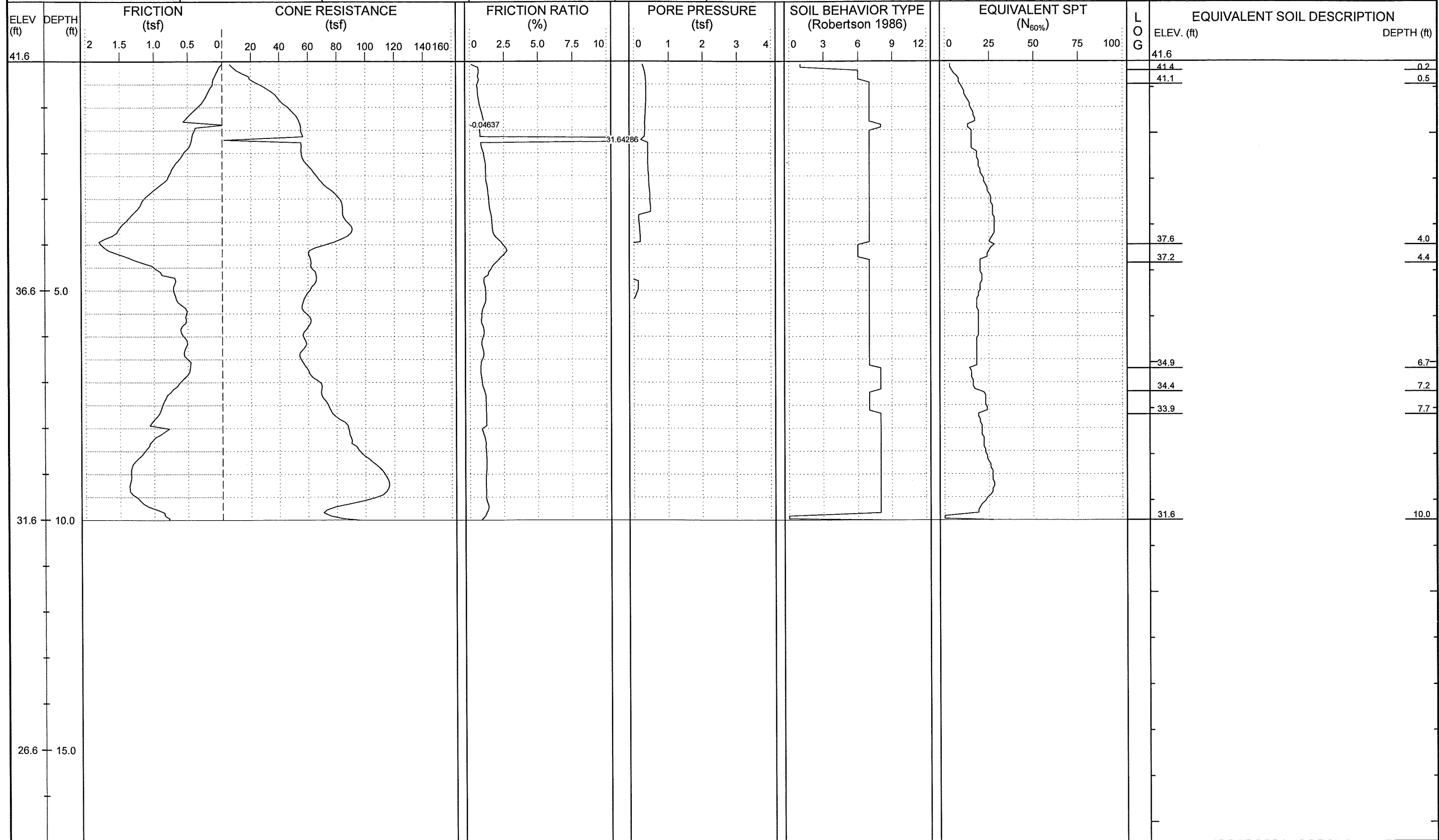


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 38
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y1-26	STATION: 26+00	OFFSET: 50ft RT	ALIGNMENT: -Y1-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 41.6 ft	TOTAL DEPTH: 10.0 ft	NORTHING: 177,423	EASTING: 2,337,028	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



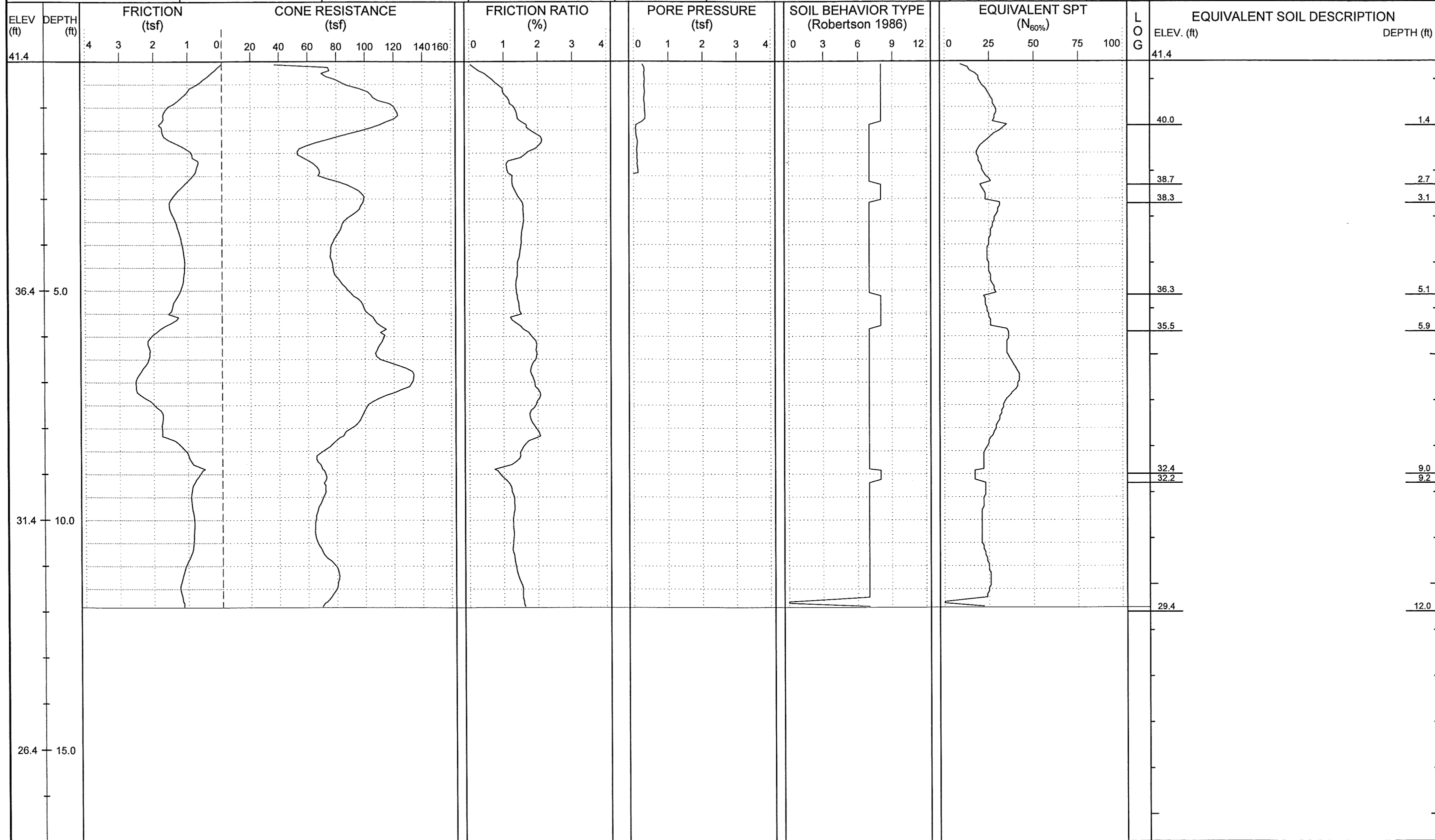


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 39
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft)	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y1-28	STATION: 28+00	OFFSET: 34ft LT	ALIGNMENT: -Y1-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 41.4 ft	TOTAL DEPTH: 11.9 ft	NORTHING: 177,506	EASTING: 2,337,227	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



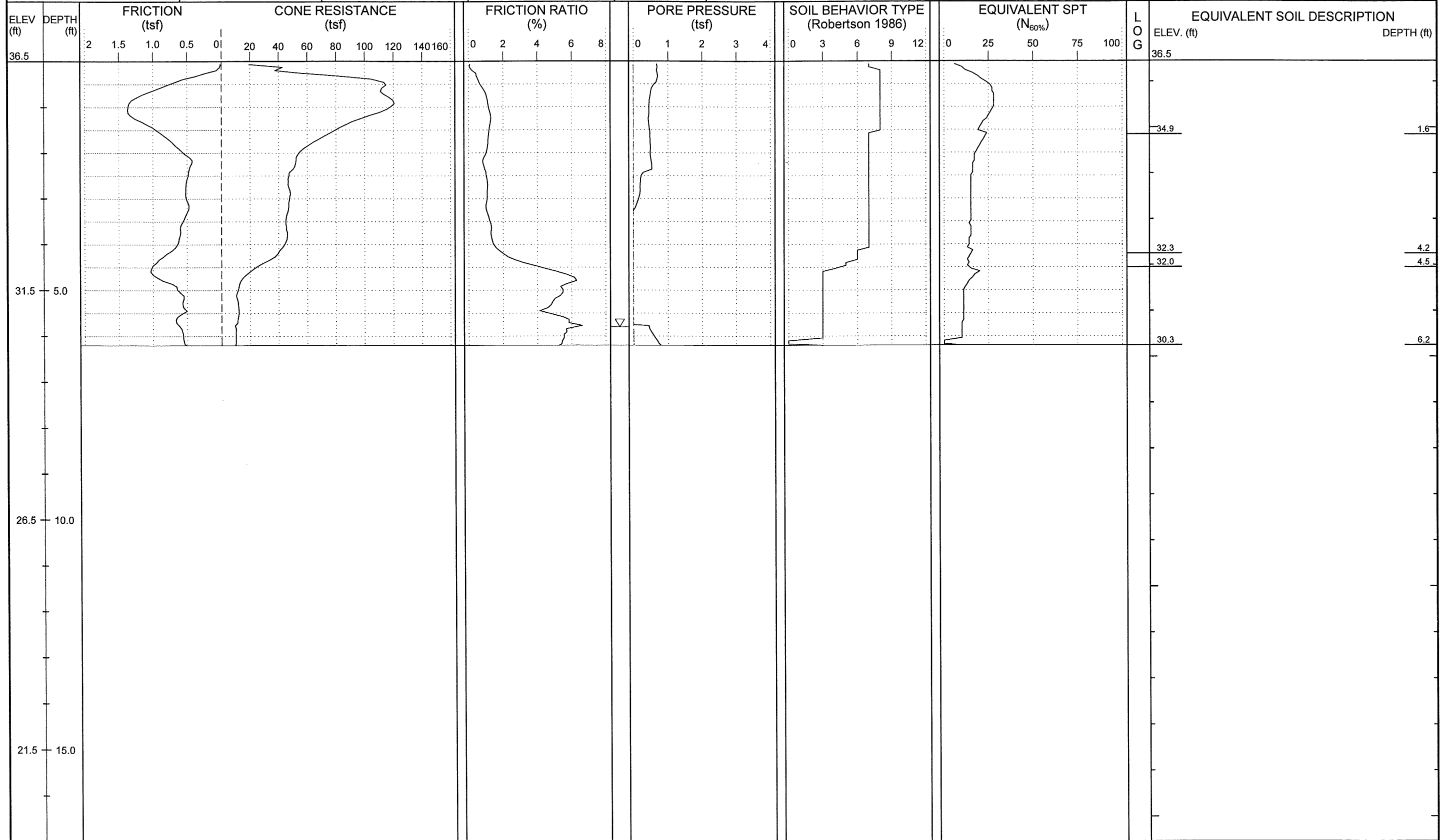


NCDOT GEOTECHNICAL ENGINEERING UNIT



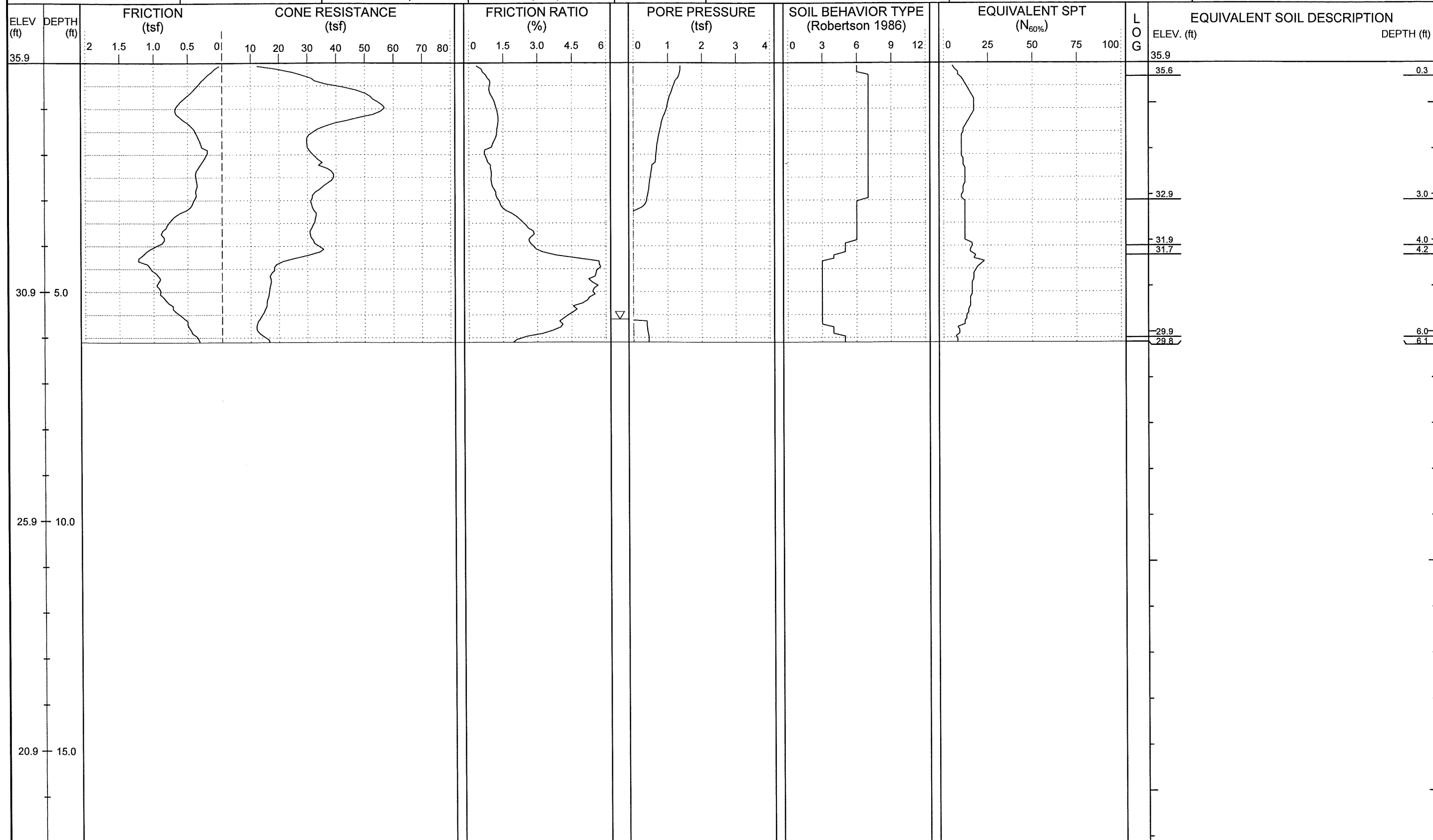
SHEET NO.: 40
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y2-11	STATION: 11+00	OFFSET: 15ft LT	ALIGNMENT: -Y2-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 36.5 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 178,343	EASTING: 2,336,167	START DATE: 05/13/09	CONE ID: DSA0866
				COMP. DATE: 05/13/09	DRILLER: Donald Coogan
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	





PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. 5.6 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y2-12	STATION: 12+00	OFFSET: 20ft RT	ALIGNMENT: -Y2-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 35.9 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 178,321	EASTING: 2,336,271	START DATE: 05/13/09	CONE ID: DSA0866
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					COMP. DATE: 05/13/09
					SURFACE WATER DEPTH: N/A



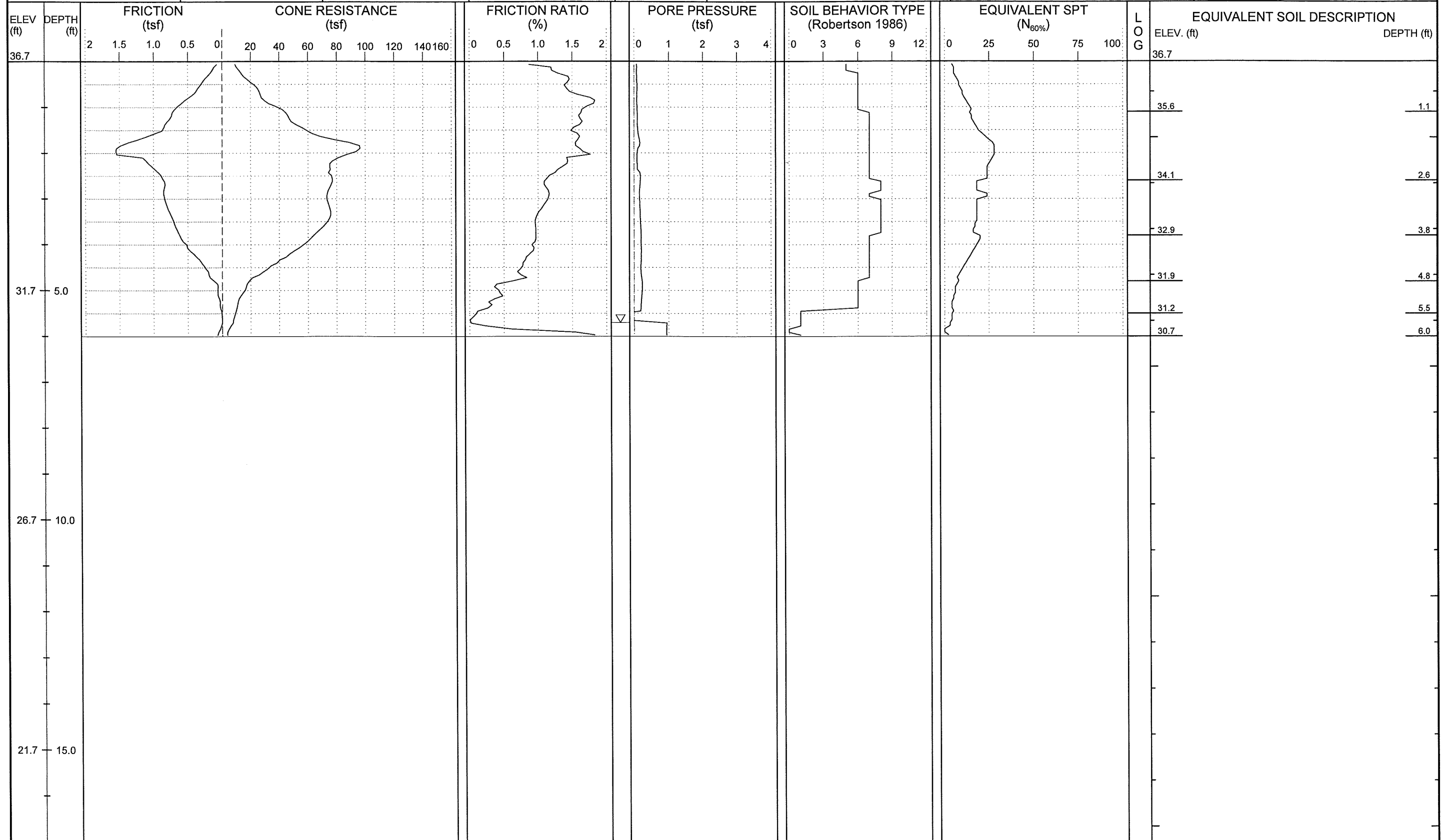


NCDOT GEOTECHNICAL ENGINEERING UNIT



SHEET NO.: 42
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 5.7, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y4-11	STATION: 11+00	OFFSET: 25ft RT	ALIGNMENT: -Y4-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 36.7 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 179,610	EASTING: 2,335,892	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

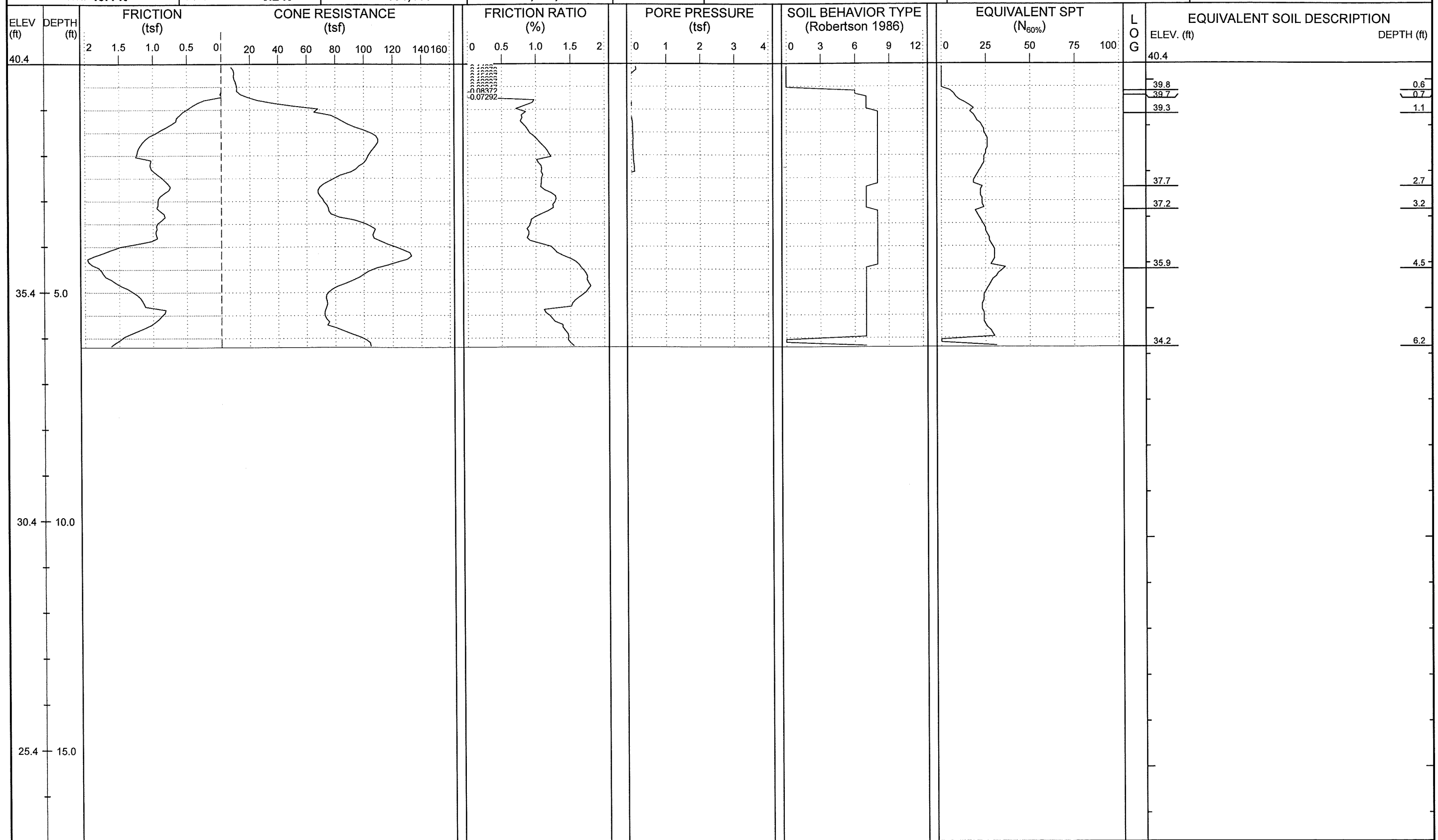




NCDOT GEOTECHNICAL ENGINEERING UNIT

ENGLISH	SHEET NO.:	44
	PROJ. NO.:	34932.1.1
	TIP NO.:	U-3338B
	COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y6-14	STATION: 14+00	OFFSET: 42ft LT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 40.4 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 181,100	EASTING: 2,334,791	START DATE: 05/13/09	CONE ID: DSA0866
				COMP. DATE: 05/13/09	DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

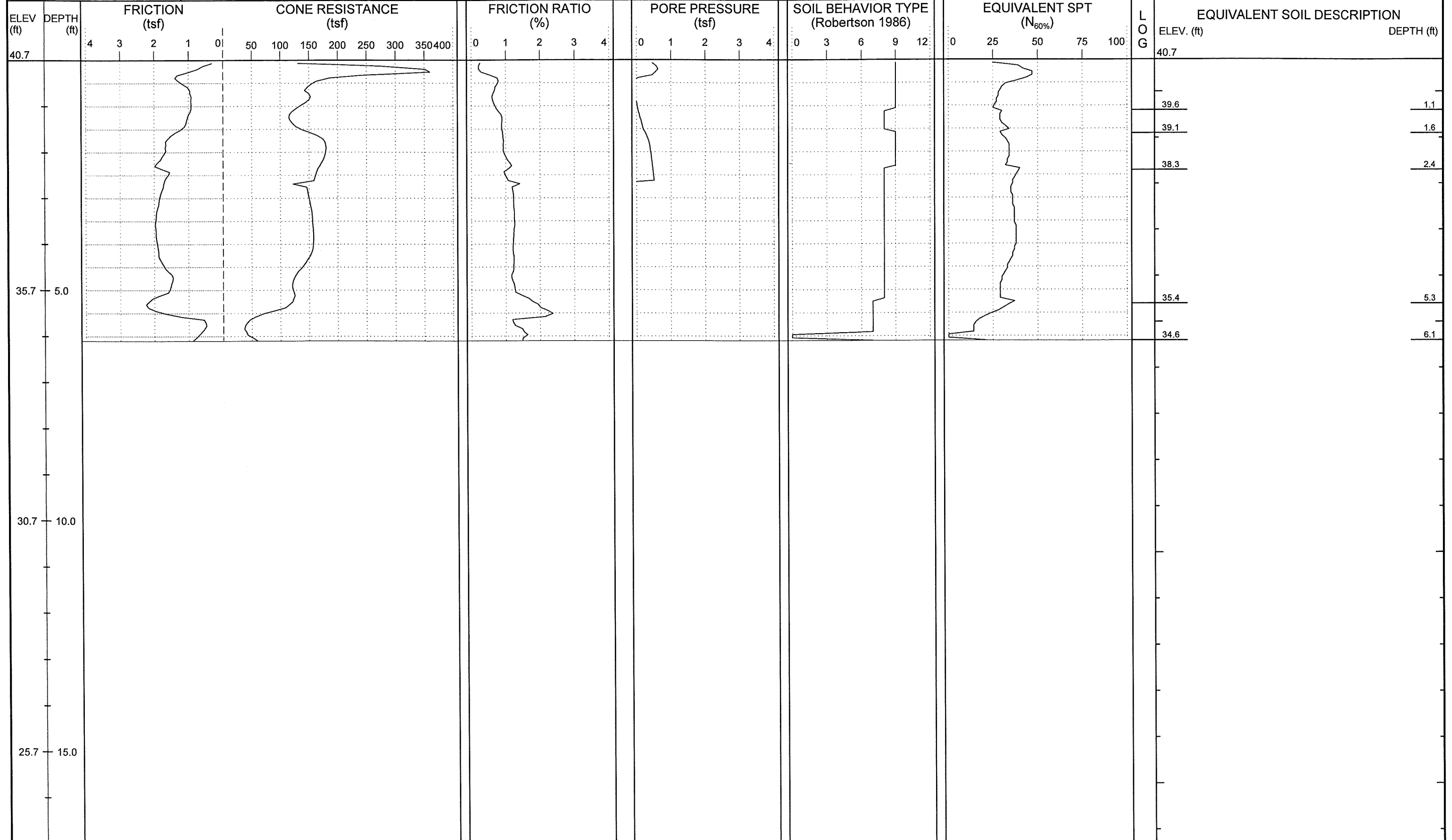




NCDOT GEOTECHNICAL ENGINEERING UNIT


SHEET NO.:	45
PROJ. NO.:	34932.1.1
TIP NO.:	U-3338B
COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y6-16	STATION: 16+00	OFFSET: 60ft RT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 40.7 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 181,043	EASTING: 2,335,009	START DATE: 05/13/09	CONE ID: DSA0866
				24 HR. N/A	COMP. DATE: 05/13/09
				DRILLER: Donald Coogan	
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	

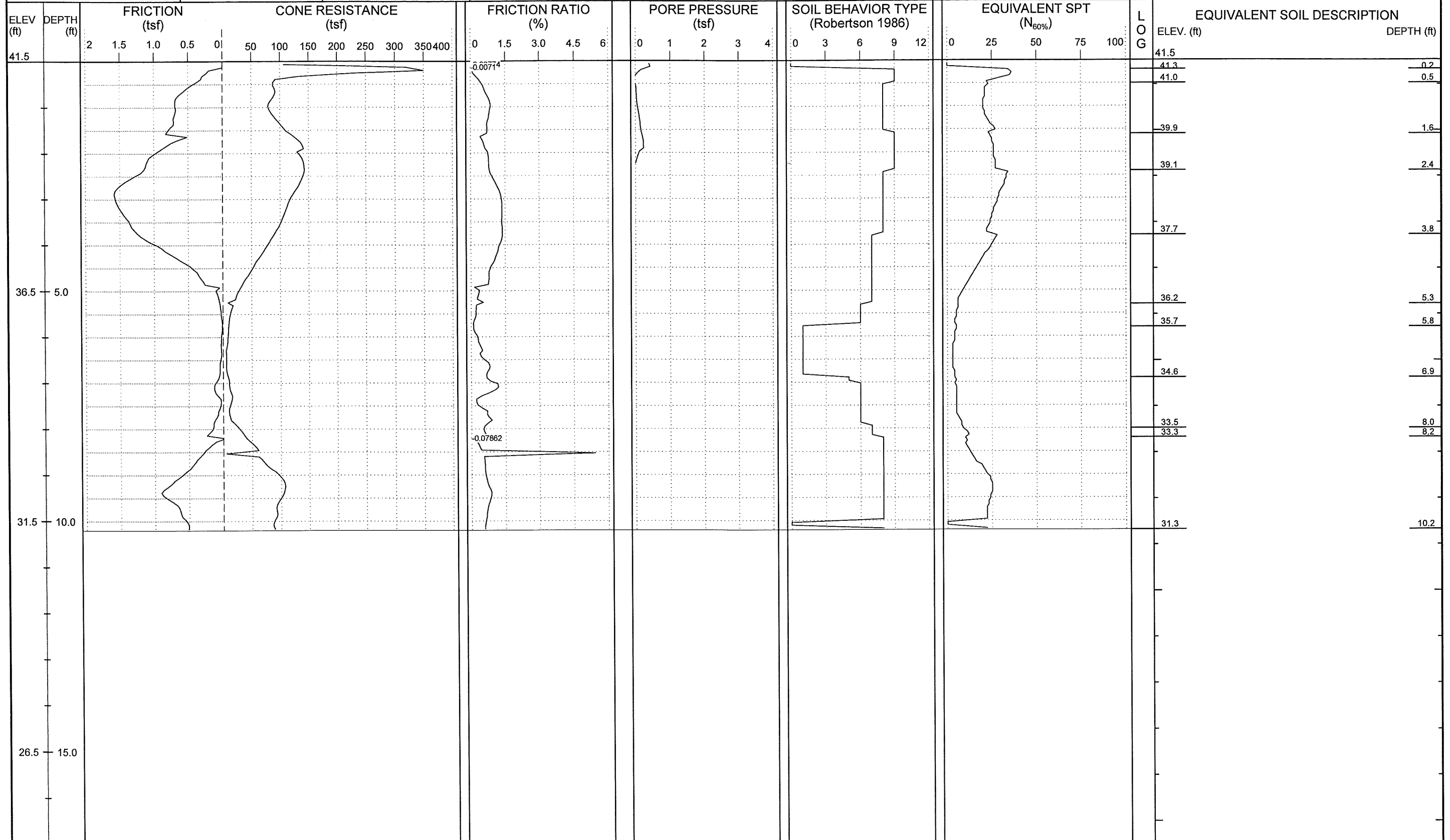




NCDOT GEOTECHNICAL ENGINEERING UNIT


 SHEET NO.: 46
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y6-18	STATION: 18+00	OFFSET: 50ft LT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 41.5 ft	TOTAL DEPTH: 10.2 ft	NORTHING: 181,203	EASTING: 2,335,178	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

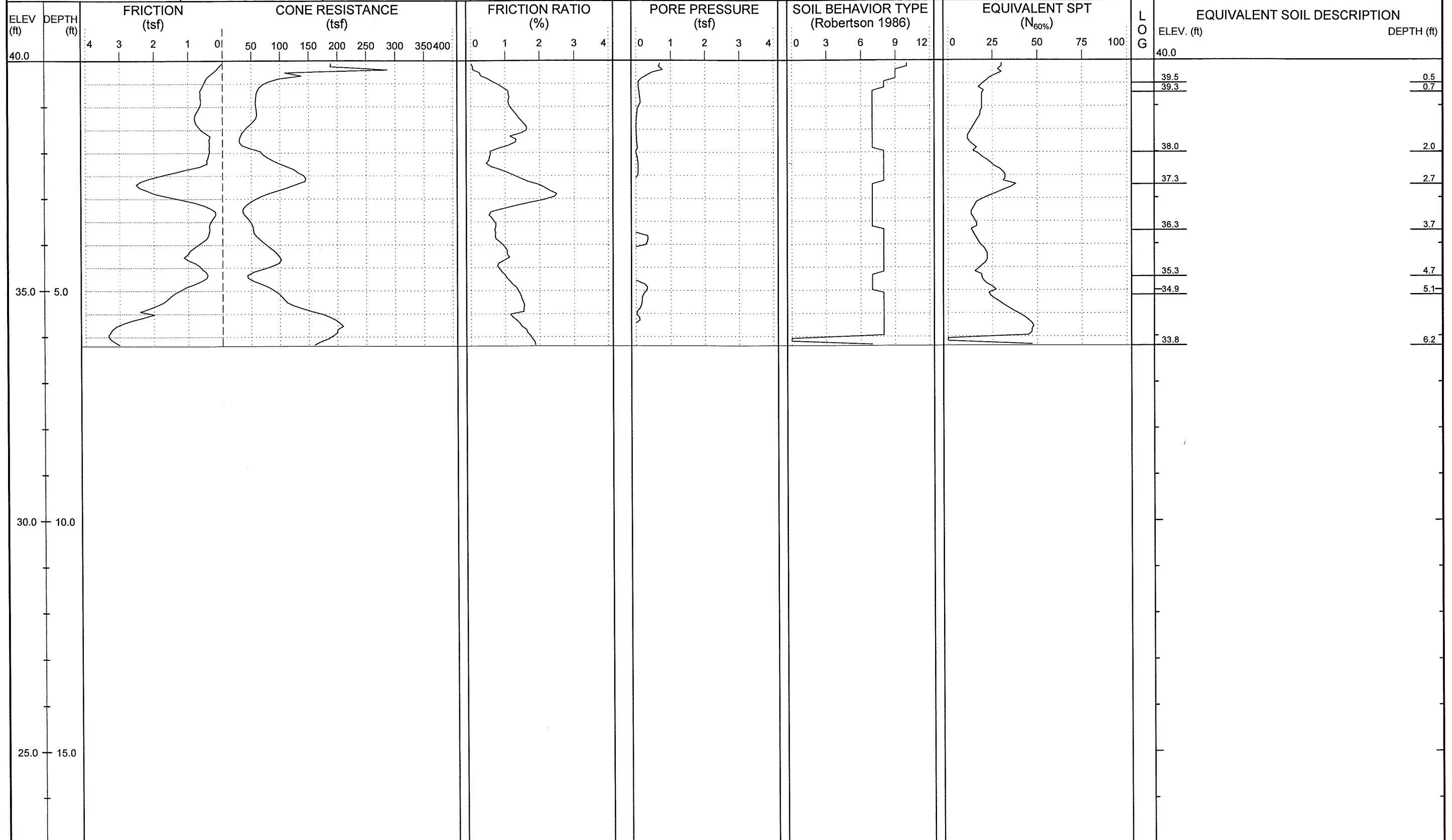




NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.: 47
 PROJ. NO.: 34932.1.1
 TIP NO.: U-3338B
 COUNTY: New Hanover

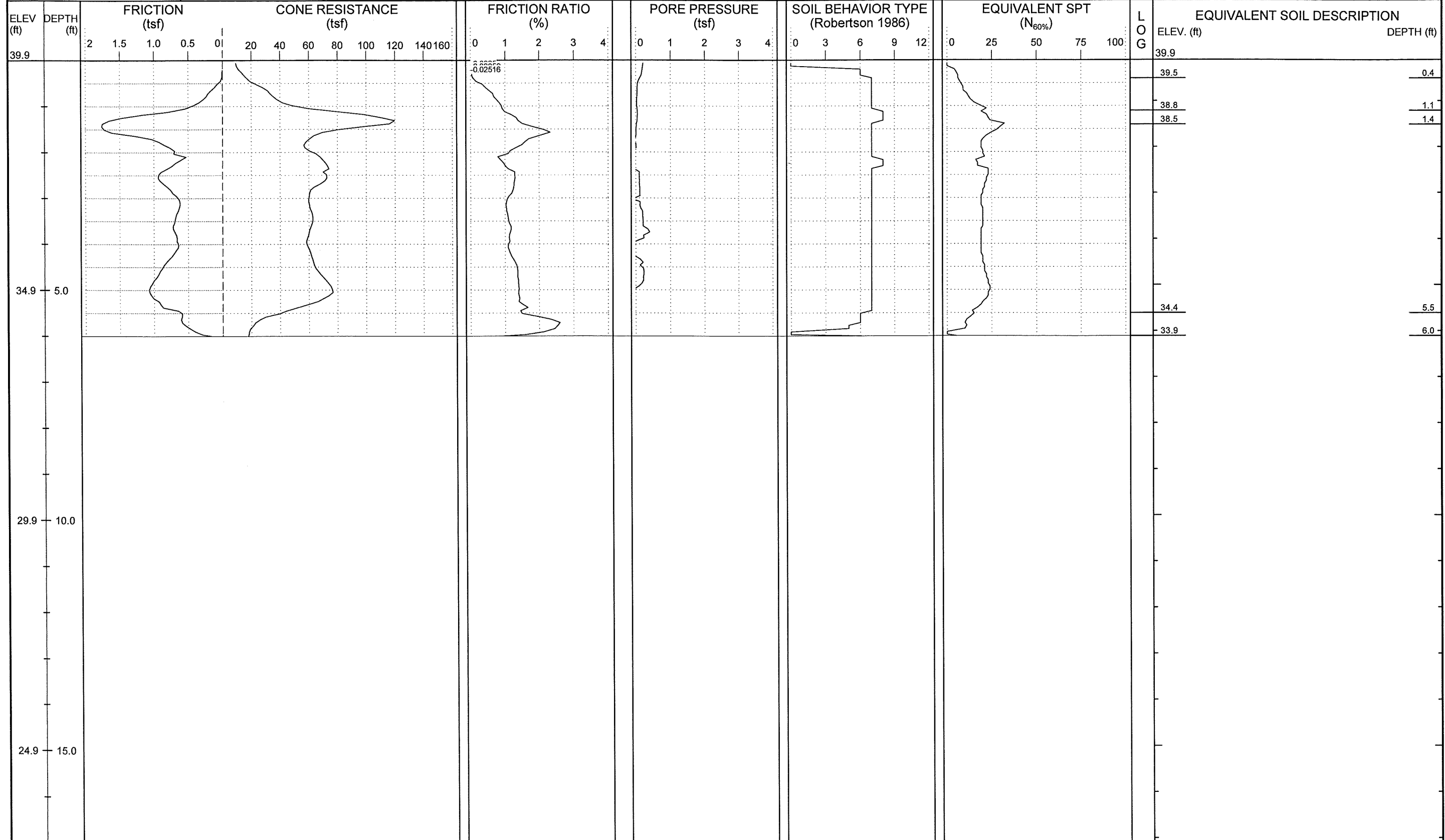
PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y6-22	STATION: 22+24	OFFSET: 50ft LT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 40.0 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 181,284	EASTING: 2,335,595	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A





NCDOT GEOTECHNICAL ENGINEERING UNIT

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y6-26	STATION: 26+00	OFFSET: 56ft LT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 39.9 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 181,370	EASTING: 2,335,961	START DATE: 05/13/09	COMP. DATE: 05/13/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

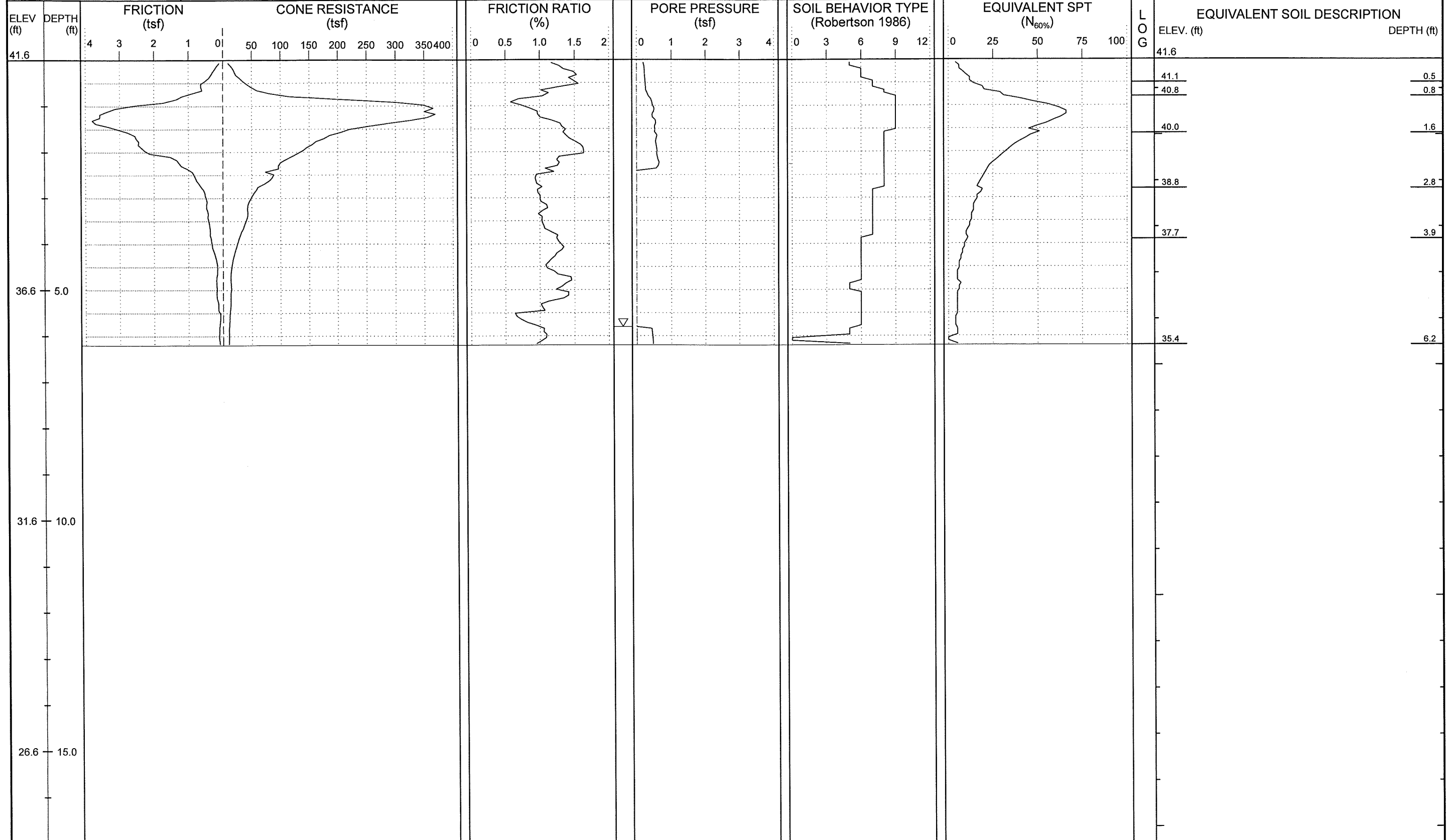




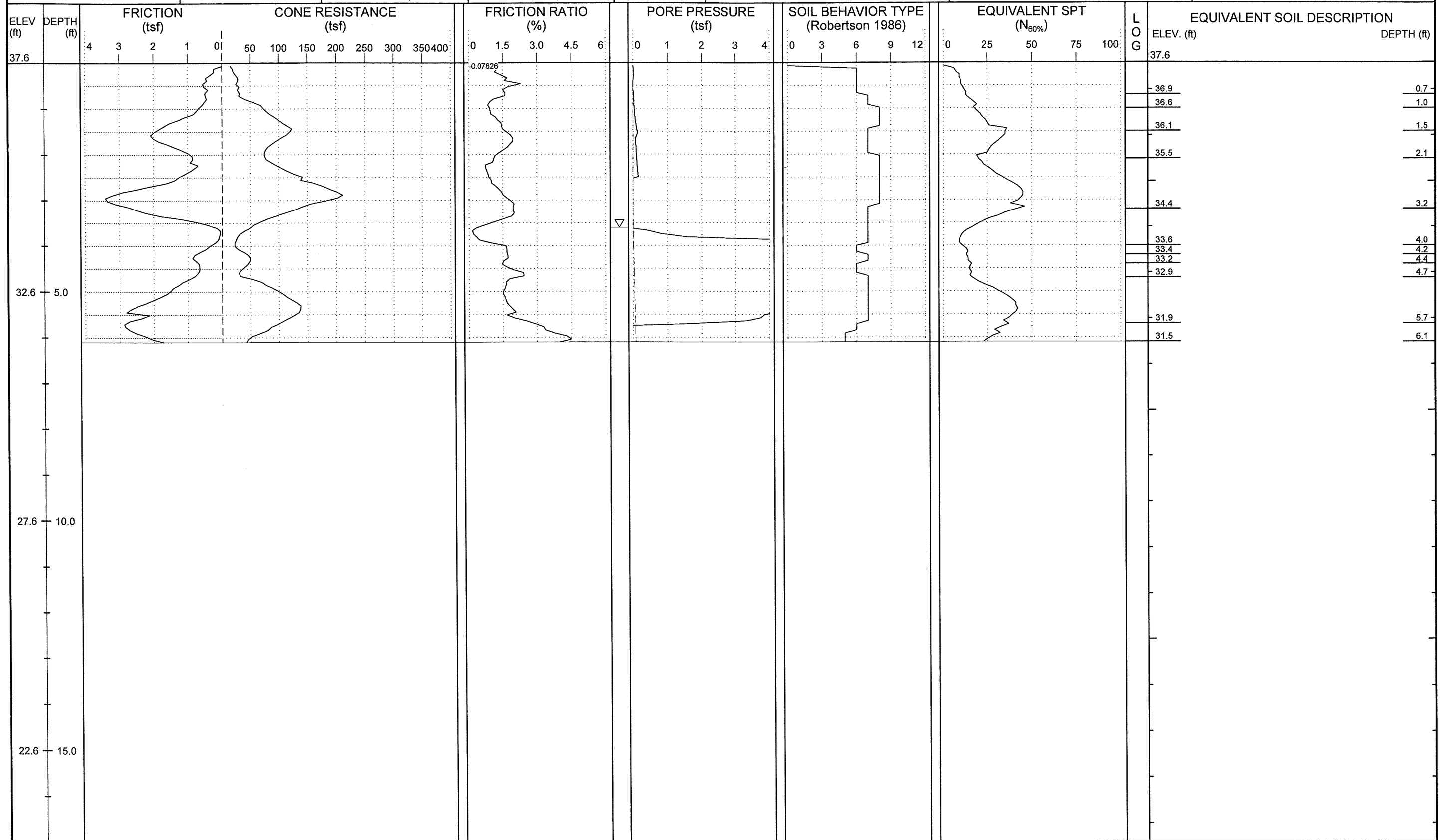
NCDOT GEOTECHNICAL ENGINEERING UNIT

SHEET NO.:	50
PROJ. NO.:	34932.1.1
TIP NO.:	U-3338B
COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. 5.8, 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y6-28	STATION: 28+00	OFFSET: 40ft RT	ALIGNMENT: -Y6-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 41.6 ft	TOTAL DEPTH: 6.2 ft	NORTHING: 181,319	EASTING: 2,336,177	START DATE: 05/13/09	CONE ID: DSA0866
				COMP. DATE: 05/13/09	DRILLER: Donald Coogan
				TECHNICIAN: M.A.D.	
				SURFACE WATER DEPTH: N/A	



PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 3.6, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y7-13	STATION: 13+00	OFFSET: 20ft RT	ALIGNMENT: -Y7-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 37.6 ft	TOTAL DEPTH: 6.1 ft	NORTHING: 182,221	EASTING: 2,335,387	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

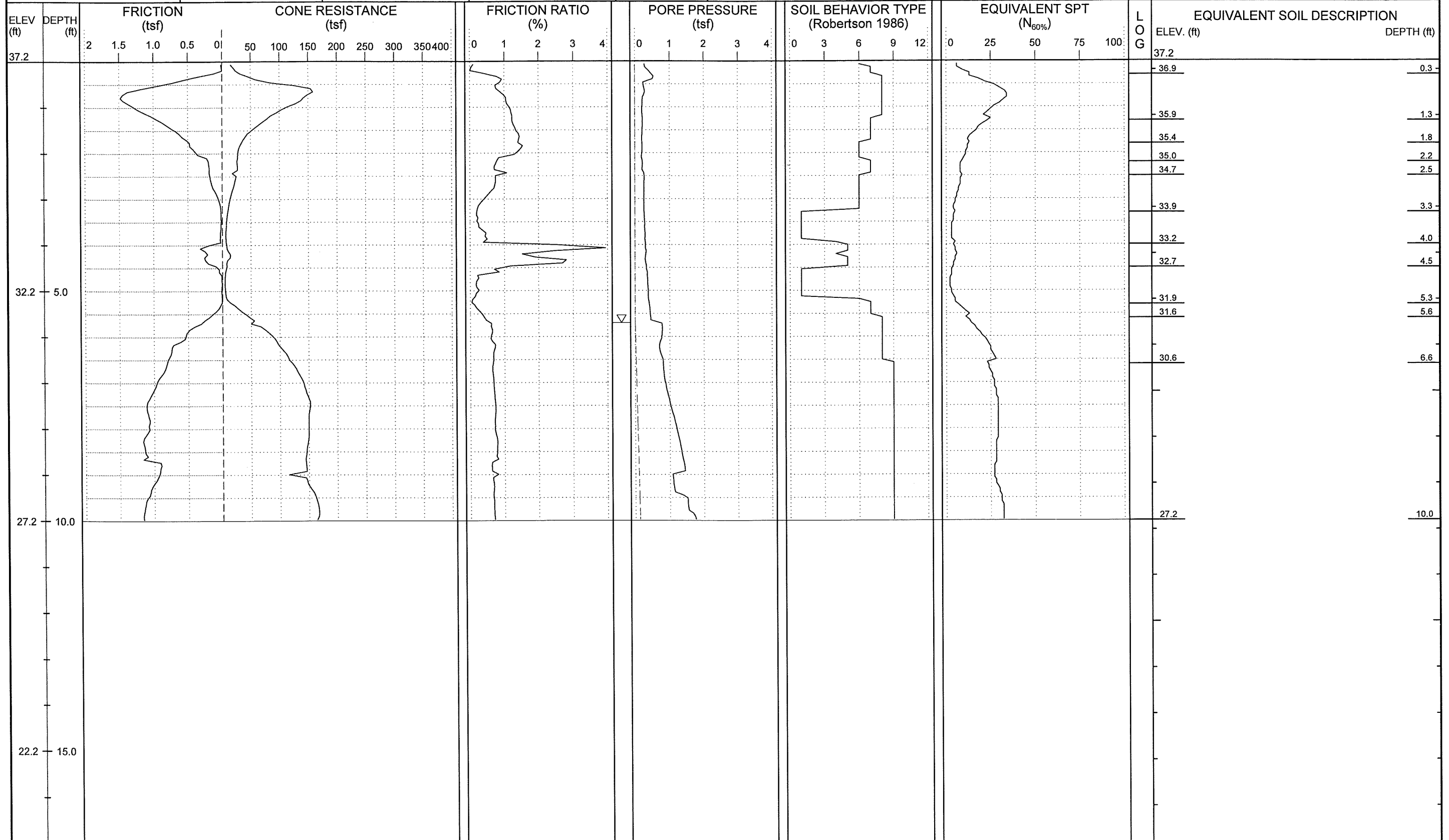




NCDOT GEOTECHNICAL ENGINEERING UNIT

	SHEET NO.:	52
	PROJ. NO.:	34932.1.1
	TIP NO.:	U-3338B
	COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)				GROUND WTR (ft): 0 HR. 5.7, 24 HR. N/A	DRILL METHOD: Direct Push
BORING NO.: Y8-12	STATION: 12+40	OFFSET: 19ft RT	ALIGNMENT: -Y8-	ROD TYPE: N/A	CONE TYPE: Piezocone
COLLAR ELEV.: 37.2 ft	TOTAL DEPTH: 10.0 ft	NORTHING: 182,607	EASTING: 2,335,282	START DATE: 05/12/09	CONE ID: DSA0866
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					COMP. DATE: 05/12/09
					SURFACE WATER DEPTH: N/A

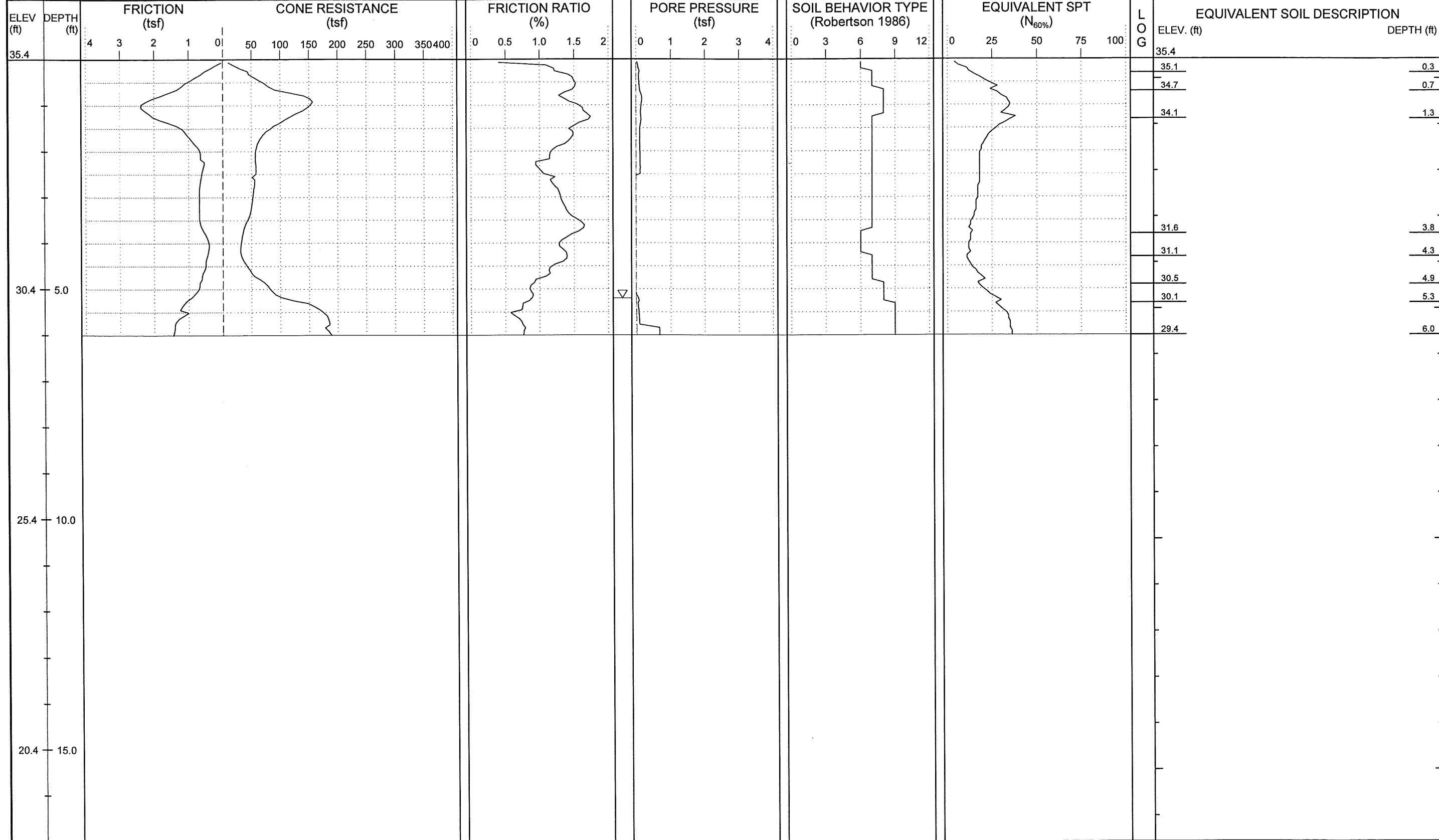




NCDOT GEOTECHNICAL ENGINEERING UNIT

	SHEET NO.:	53
	PROJ. NO.:	34932.1.1
	TIP NO.:	U-3338B
	COUNTY:	New Hanover

PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 5.2, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y8-14	STATION: 14+07	OFFSET: 33ft LT	ALIGNMENT: -Y8-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 35.4 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 182,651	EASTING: 2,335,451	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A



PROJECT NO.: 34932.1.1	ID.: U-3338B	COUNTY: New Hanover	GEOLOGIST: Steven Hudson	DRILL MACHINE: Hogentogler Track	MAX. DOWN PRESSURE: ~20 Ton
SITE DESCRIPTION: SR 1175 (Kerr Ave) from Randall Pky to SR 2649 (MLK Jr. Pky)			GROUND WTR (ft): 0 HR. 4.8, 24 HR. N/A	DRILL METHOD: Direct Push	CONE TYPE: Piezocone
BORING NO.: Y8-16	STATION: 15+88	OFFSET: 23ft LT	ALIGNMENT: -Y8-	ROD TYPE: N/A	CONE ID: DSA0866
COLLAR ELEV.: 35.6 ft	TOTAL DEPTH: 6.0 ft	NORTHING: 182,631	EASTING: 2,335,641	START DATE: 05/12/09	COMP. DATE: 05/12/09
					DRILLER: Donald Coogan
					TECHNICIAN: M.A.D.
					SURFACE WATER DEPTH: N/A

