REFERENCE: R-3300A

PROJECT: 40237

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-LI-	205+86 to 578+00	4-31	40-62, 65-67
-LIREV-	512+12 to 554+17	26-29	62-65
-Y33-	69+09 to 85+00	5,34	68-69
-Y33RPA-	5+00 to 33+78	5,34	70-72
-Y33RPB-	5+00 to 24+50	5-6,32	73-74
-Y33RPCA-	22+61 to 59+98	5-6,33	75-78
-Y33LPC-	5+00 to 21+45	5	79-80
-Y34-	11+50 to 36+20	14,35-36	81-82
-Y34DET-	11+32 to 36+18	14,35-36	83-84
-Y35-	13+00 to 37+25	27,37-38	85-86
-Y35DET-	12+93 to 19+39	27,37	87
-SRI-	10+12 to 23+00	14,35	87
-SR2-	10+12 to 14+68	36	88
-SR3-	10+10 to 18+34	38-39	89
-SR9-	10+00 to 15+39	36	89
-DRWI-	10+10 to 11+57	38	89

LINE	STATION	CROSS SECTIONS
-LI-	206+00	90
-LI-	208+00	91
-LI-	210+00	92
-LI-	212+00	93
-LI-	214+00	94
-LI-	216+00	95
-LI-	218+00	96
-LI-	250+00-260+50	97-107
-LI-	282+00-285+00	108-111
-LI-	290+00	112
-LI-	296+00	113
-LI-	298+00	114
-LI-	324+00	115
-LI-	326+00	116
-LI-	328+00	117
-LI-	332+00	118
-LI-	352+00-353+50	119-120
-LI-	364+00-371+50	121-128
-LI-	378+00	129
-LI-	380+00	130
-LI-	382+00-383+00	131-132
-LI-	386+00-386+50	133
-LI-	408+50-413+50	134-137
-LI-	418+00	138
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-LI-	424+50-426+00	140-141
-LI-	428+50-429+00	142
-LI-	442+50-444+00	143-144
-LI-	462+00	145
-LI-	464+00	146
-LI-	466+00	147
-LI-	476+00	148
-LI-	482+00	149
-LI-	488+00	150
-LI-	493+00-508+00	151-160
-LI-	565+00-568+50	161-164
-Y33RPA-	15+50-19+00	165-168
-Y33RPA-	23+50-26+50	169-173
-Y33RPB-	16+50-19+50	174-177
-Y34-	11+50-13+50	178-180
-Y34-	20+50-23+00	181-185
-Y34DET-	10+00-14+50	186-189
-Y34DET-	23+00-26+00	190-192
-Y34DET-	30+00-32+50	193-194
-SR2-	10+50-14+50	195-197

APPENDIX I	SHEETS
CPT LOGS	1-52

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *NEW HANOVER /PENDER*

PROJECT DESCRIPTION *NC 417 (HAMPSTEAD BYPASS)*
WILMINGTON BYPASS TO SOUTH OF NC 210

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300A	1	197

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

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

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

NOTES:
1. THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
2. BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

CATLIN PERSONNEL

NCDOT PERSONNEL

INVESTIGATED BY *S. Hudson, P.G.*

DRAWN BY *L. Stone, P.G.*

CHECKED BY *S. Hudson, P.G.*

SUBMITTED BY *L. Stone, P.G.*

DATE *April 2019*

CATLIN
Engineers and Scientists
Wilmington, North Carolina

NORTH CAROLINA LICENSED SEAL 2007 GEOLOGIST JOSEPH L STONE

DocuSigned by:
Joseph L Stone 7/29/2019
10FDBDD34BEE4C4...
SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE,
VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

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

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.00	0.42	0.25	0.075	0.053

BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F SD.)	SILT (SL.)	CLAY (CL.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE - CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.
UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE.
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31 - 50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT, DPT, DMT, VST, PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- UNDERCUT
- SHALLOW UNDERCUT
- UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE
- UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK
- UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL

ABBREVIATIONS

AR - AUGER REFUSAL
BT - BORING TERMINATED
CL. - CLAY
CPT - CONE PENETRATION TEST
CSE. - COARSE
DMT - DILATOMETER TEST
DPT - DYNAMIC PENETRATION TEST
e - VOID RATIO
F - FINE
FOSS. - FOSSILIFEROUS
FRAC. - FRACTURED, FRACTURES
FRAGS. - FRAGMENTS
HI. - HIGHLY
MED. - MEDIUM
MICA. - MICACEOUS
MOD. - MODERATELY
NP - NON PLASTIC
ORG. - ORGANIC
PMT - PRESSUREMETER TEST
SAP. - SAPROLITIC
SD. - SAND, SANDY
SL. - SILT, SILTY
SLI. - SLIGHTLY
TCR - TRICONE REFUSAL
w - MOISTURE CONTENT
V - VERY
VST - VANE SHEAR TEST
WEA. - WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] CME-45C
- [ ] CME-55
- [X] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] CME-45B
- [ ] _____

ADVANCING TOOLS:
- [X] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [ ] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [ ] W/ ADVANCER
- [X] TRICONE 2 15/16" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [X] CPT RIG

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [ ] -N _____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [X] SOIL PROBE

ROCK DESCRIPTION

HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK.
ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5 - 4 FEET
THINLY BEDDED	0.16 - 1.5 FEET
VERY THINLY BEDDED	0.03 - 0.16 FEET
THICKLY LAMINATED	0.008 - 0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.

AQUIFER - A WATER BEARING FORMATION OR STRATA.

ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.

ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.

ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.

CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.

COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.

CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.

DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.

DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.

FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.

FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.

FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.

FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.

FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.

JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.

LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.

LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.

MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.

PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.

RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.

ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.

SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.

SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.

SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.

STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.

STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.

STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.

TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.

BENCH MARK: r3300a_ls_tnl_l8041l.tin dated 8/4/2018

ELEVATION: FEET

NOTES:

U.C.P. = UNDIVIDED COASTAL PLAIN

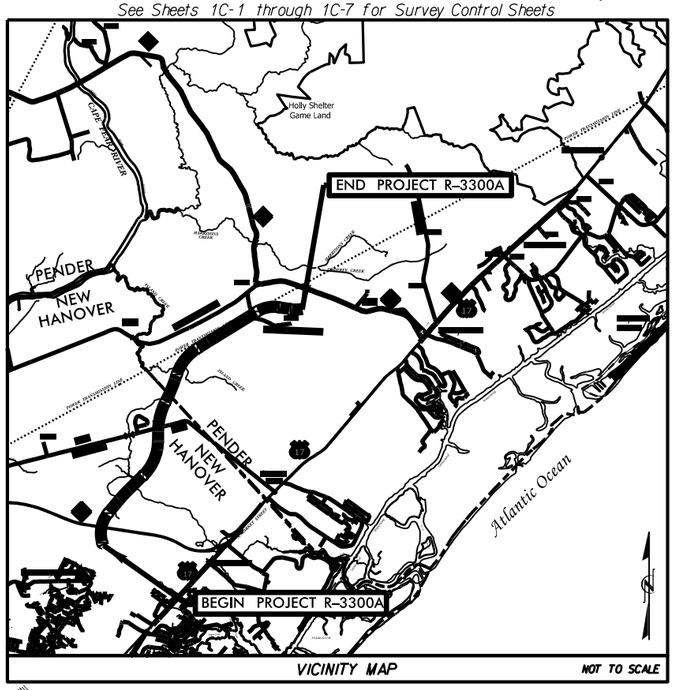
DATE: 8-15-14

09/08

See Sheet 1A For Index of Sheets See Sheet 1B for Conventional Symbols
See Sheets 1C-1 through 1C-7 for Survey Control Sheets

TIP PROJECT: R-3300A

CONTRACT:



VICINITY MAP NOT TO SCALE

FDFI PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

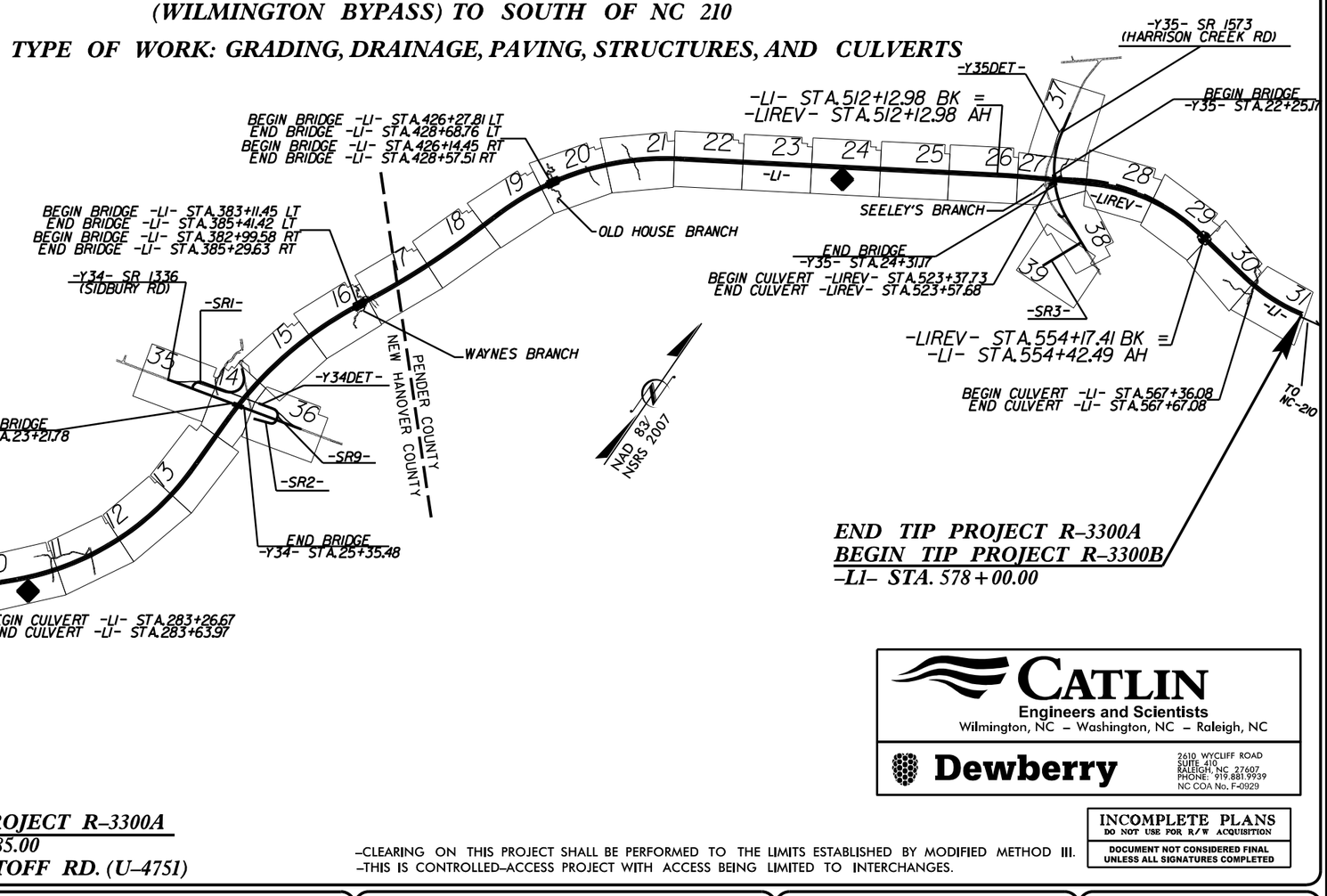
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3300A	3	197

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
40237.1.1	N/A	PE
40237.2.1	N/A	R/W
40237.2.U1	N/A	UTILITIES

NEW HANOVER & PENDER COUNTIES

LOCATION: NC 417 (HAMPSTEAD BYPASS) FROM I-140 (WILMINGTON BYPASS) TO SOUTH OF NC 210

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



BEGIN TIP PROJECT R-3300A
-LI- STA. 205+85.00
MILITARY CUTOFF RD. (U-4751)

END TIP PROJECT R-3300A
BEGIN TIP PROJECT R-3300B
-LI- STA. 578+00.00

-CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY MODIFIED METHOD III.
-THIS IS CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

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SUITE 410
RALEIGH, NC 27607
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NC COA No. F-0929

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GRAPHIC SCALES

50 0 50 100
PLANS

50 0 50 100
PROFILE (HORIZONTAL)

10 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2016 = N/A
ADT 2040 = 54,800
K = 8 %
D = 60 %
T = 6 % *
V = 70 MPH
*(TTST 2% + DUALS 4%)
FUNC CLASS = FREEWAY
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3300A = 6.897 MILES
LENGTH STRUCTURE TIP PROJECT R-3300A = 0.151 MILES
TOTAL LENGTH TIP PROJECT R-3300A = 7.044 MILES

PREPARED IN THE OFFICE OF:
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License No. F-0672
FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 1, 2019

LETTING DATE:
JULY 09, 2020

MICHAEL D. LINDGREN, P.E.
PROJECT ENGINEER

KATRINA N. HAZEL, P.E.
PROJECT DESIGN ENGINEER

TRACE HOWELL, P.E.
NCDOT DIVISION 3 CONTACT

HYDRAULICS ENGINEER

SIGNATURE: *P.E.*

ROADWAY DESIGN ENGINEER

SIGNATURE: *P.E.*

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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C:\Users\Lee Stone\Share\R3300A_GEO_RDWY\CADD_GEOTECH\Site&Sub\R3300A_rdy_tsh.dgn
Lee Stone AT LSTONE-CAD-PC

WBS Number: 40237.1.1
TIP Number: R-3300A
F.A .Project N/A
County: New Hanover / Pender
Description: NC 417 (Hampstead Bypass) from Wilmington Bypass to South of NC 210

CATLIN Number: 217059

SUBJECT: Geotechnical Inventory Report

Project Description

This project begins at the northern terminus of NCDOT TIP Project U-4751, north of Wilmington and extends northward for approximately 7± miles. This Geotechnical Investigation was confined to areas of proposed construction.

Fieldwork was conducted from February to August of 2018. Standard Penetration Tests (SPT) borings, Cone Penetration Tests (CPT) borings, hand auger borings, and soil probes were completed along and at various offsets from the proposed project alignments. Representative soil samples have been collected for visual classification in the field and for laboratory analysis.

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

Line	Station (±)
-L1-	205+86 to 578+00
-L1REV-	512+12 to 554+17
-Y33-	69+09 to 85+00
-Y33RPA-	5+00 to 33+78
-Y33RPB-	5+00 to 24+50
-Y33RPCA-	22+61 to 59+98
-Y33LPC-	5+00 to 21+45
-Y34-	11+50 to 36+20
-Y34DET-	11+32 to 36+18
-Y35-	13+00 to 37+25
-Y35DET-	12+93 to 19+39
-SR1-	10+12 to 23+00
-SR2-	10+12 to 14+68
-SR3-	10+10 to 18+34
-SR9-	10+00 to 15+39
-DRW1-	10+10 to 11+57

Areas of Special Geotechnical Interest

1) All but the following sections of the project exhibit high groundwater.

Line	Station (±)
-L1-	433+00 to 437+00
-L1REV-	543+00 to 545+00
-Y33RPA-	31+00 to 33+78
-Y33RPCA-	52+00 to 57+50

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

Line	Station (±)
-L1-	205+86 to 285+05
-L1-	291+00 to 293+00
-L1-	305+34 to 318+83
-L1-	325+38 to 328+81
-L1-	331+70 to 353+73
-L1-	355+00 to 373+37
-L1-	382+24 to 386+50
-L1-	389+46 to 390+94
-L1-	394+77 to 397+49
-L1-	399+73 to 402+67
-L1-	408+28 to 413+00
-L1-	425+63 to 429+11
-L1-	442+49 to 443+93
-L1-	446+51 to 451+22
-L1-	455+21 to 462+42
-L1-	473+00 to 529+19
-L1-	544+72 to 547+06
-L1-	564+53 to 568+26
-L1REV-	512+12 to 529+19
-L1REV-	544+48 to 546+78
-Y33-	69+09 to 85+00
-Y33RPA-	5+00 to 33+78
-Y33RPB-	5+00 to 24+50
-Y33RPCA-	22+61 to 32+39
-Y33RPCA-	43+71 to 59+98
-Y33LPC-	5+00 to 21+45

Line	Station (±)
-Y34-	20+13 to 25+17
-Y34-	31+03 to 32+49
-Y34DET-	20+74 to 25+72
-Y34DET-	30+00 to 31+41
-Y35-	20+33 to 24+61
-SR1-	16+45 to 19+22
-SR2-	10+00 to 14+73

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

Line	Station (±)
-L1-	208+91 to 211+01
-L1-	219+05 to 282+28
-L1-	284+08 to 307+78
-L1-	316+68 to 347+70
-L1-	353+17 to 457+79
-L1-	460+53 to 578+00
-L1REV-	512+12 to 554+17
-Y33RPA-	12+05 to 33+78
-Y33RPB-	10+04 to 18+76
-Y33RPCA-	24+64 to 32+57
-Y33RPCA-	43+63 to 57+92
-Y33LPC-	5+00 to 14+39
-Y34-	10+00 to 21+45
-Y34DET-	10+00 to 21+45
-Y35-	13+00 to 29+16
-SR1	10+00 to 18+67
-SR3-	13+78 to 16+52

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Ground elevations range from 3± to 47± feet above sea level.

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

Ground Water

Ground water data was collected from February through August of 2018, and was found to be within 6’ of natural ground throughout the majority of the project area.

Soils

Soils encountered along the project site include roadway embankment, artificial fill, alluvial, undivided coastal plain sediments, and those belonging to the Castle Hayne Formation.

Roadway Embankment soils were identified beneath and adjacent to existing roadways and consists of 1± to 6± feet of loose to medium dense, sand and silty sand (A-3 and A-2-4).

Artificial fill consisting of 1± to 3± feet of dense sand and gravel (A-3, A-1-b) was encountered along several soil roads that bisect the project area.

Alluvial soils were found adjacent to several creeks that cross the project corridor. These soils are composed of up to 12 feet of very loose to medium dense sands (A-2, A-3) with little to moderate organic content, very soft to stiff sandy silt (A-4) with little to moderate content, and 2± feet of very loose sand (A-3).

Undivided Coastal Plain (U.C.P) soils primarily consist of up to 25± feet of very loose to medium dense sand to silty sand (A-3 and A-2-4), with up to 17± of very soft to medium stiff silts and clays (A-4, A-6, A-7-6). Laboratory analysis of these cohesive soils returned moisture values ranging from 13% to 173%. Organic soils were also encountered throughout much of the project area. They are primarily comprised of 1± to 12± feet of very soft to stiff sandy silt with little to moderate organic matter along with 3± feet or less of very loose to medium dense silty sand with trace to little organic matter, and 3± feet or less of very soft muck. Laboratory analysis of these organic soils returned organic contents ranging from 1% up to 56%, and moisture values from 32% to 119%.

The Castle Hayne Formation underlies the U.C.P. soils throughout the project area. It is primarily composed of up to 17± feet of very soft to medium stiff silts and clays (A-4, A-6, A-7-6) and very loose to very dense sand (A-2-4, A-3), interbedded with very soft to very hard limestone. The thickness of the limestone layers ranges from 4± to 20± feet.

Undisturbed Samples

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

Sample No.	Station	Depth (ft)	Test
ST-01	-L1REV- 534+05 CL	8.0-9.8	Consolidation
ST-02	-L1- 231+00 CL	24.0 - 26.0	Consolidation
ST-03	-L1- 565+20 CL	8.5 - 10.4	Consolidation
ST-04	-Y33RPA- 24+95 CL	23.8 - 25.6	Consolidation
ST-05	-L1- 229+05 CL	28.0 - 30.0	Consolidation
ST-06	-L1- 242+05 CL	25.0 - 27.0	Consolidation
ST-07	-L1- 327+00 CL	15.0 - 17.0	Consolidation
ST-08	-L1- 370+05 CL	5.0 - 7.0	Consolidation
ST-09	-L1- 444+05 CL	12.0 – 14.0	Consolidation

Culvert at -L- Sta. 253+30±

Natural ground elevations range from 25± feet at the bottom of the ditch to 30'± feet along the adjacent floodplain. Borings completed in the vicinity show approximately 1± to 3± feet of very soft to stiff sandy silt with trace to little organic matter (A-4) and very loose to medium dense sand (A-2-4) with trace to little organic matter. Organic content within these soils are around 3%±. These soils are underlain by 9± feet of very loose to medium dense sands (A-2-4), and 7± feet of very soft to soft green sandy silt and sandy clay (A-4, A-6).

Culvert at -L- Sta. 283+45±

Natural ground elevations range from 18± feet at the bottom of the creek, to 25'± feet along the adjacent floodplain. Borings completed in the vicinity show approximately 2± feet of very loose to medium dense sand (A-2-4) with trace to little organic matter. Organic content within these soils are range from 1%± to 6%±. These soils are underlain by 9± feet of loose to medium dense sands (A-2-4), and soft limestone.

Culvert at -L- Sta. 305+99±

Natural ground elevations range from 26± feet at the bottom of the ditch, to 29'± feet along the adjacent floodplain. Borings completed in the vicinity show approximately 4± feet of very loose to medium dense sand (A-2-4) with trace to little organic matter. These soils are underlain by 11± feet of very loose to medium dense sands (A-2-4), and very soft to medium stiff green sandy silt (A-4).

Culvert at -L- Sta. 443+00±

Natural ground elevations range from 19± feet at the bottom of the creek, to 22'± feet along the adjacent floodplain. Borings completed in the vicinity show up to 3± feet of very loose to medium dense sand (A-2-4) with moderate organic matter. Organic content within these soils are around 8%±. These soils are underlain by 16± feet of very soft silty clay (A-7-6).

Culvert at -L- Sta. 523+47±

Natural ground elevations range from 26± feet at the bottom of the creek, to 30'± feet along the adjacent floodplain. Borings completed in the vicinity show up to 2± feet of very soft to stiff sandy silt and sandy clay with trace to little organic matter (A-4, A-6) and very loose to medium dense sand (A-2-4) with trace to little organic matter. Organic content within these soils are around 4%±. These soils are underlain by 3± feet of very loose to loose sand (A-3), 15± feet of very soft to medium stiff silts and clays (A-4, A-6, A-7-6), and up to 20± feet of very loose to dense sand (A-2-4, A-3) and 4± to 13 or more feet of moderately hard limestone (Castle Hayne Formation).

Culvert at -L- Sta. 567+63±

Natural ground elevations range from 17± feet at the bottom of the creek, to 28'± feet along the adjacent floodplain. Borings completed in the vicinity show up to 3± feet of very soft sandy silt with little organic matter (A-4). Organic content within these soils range between 8% and 9%. These soils are underlain by 8± feet of very soft silts and clays (A-4, A-6,), and up to 19 or more feet of moderately hard limestone (Castle Hayne Formation).

Culvert at -Y33RPCA- Sta. 49+88±

Natural ground elevations are 28'± feet in this area. Borings completed in the vicinity show up to 1± feet of very loose to medium dense silty sand (A-2-4) with trace to little organic matter, underlain 15± feet of loose to medium dense sand (A-2-4, A-3), 18± feet of very soft silts and clays (A-4, A-6, A-7-6) and soft limestone.

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

CATLIN Engineers and Scientists

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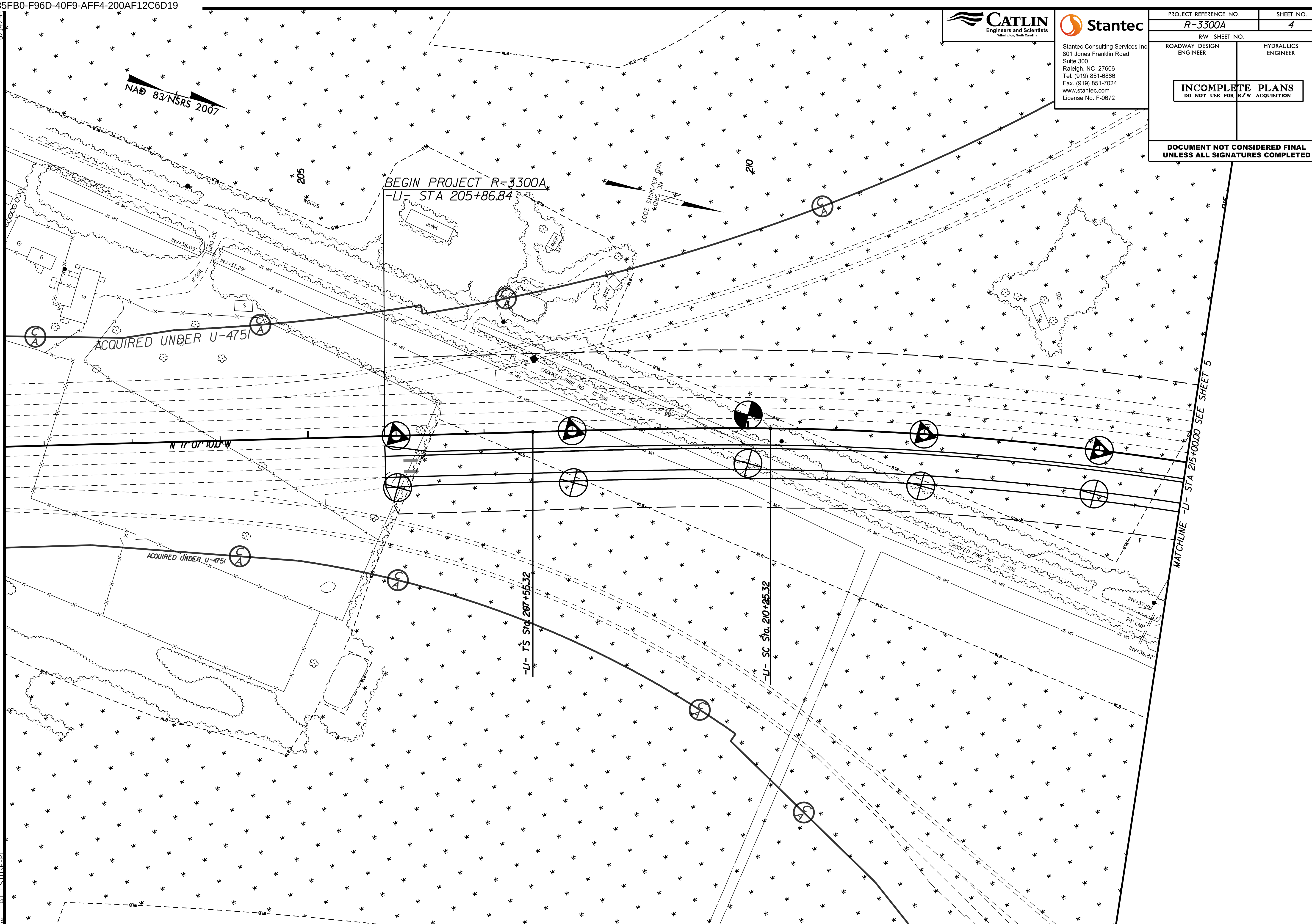

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R-3300A	6
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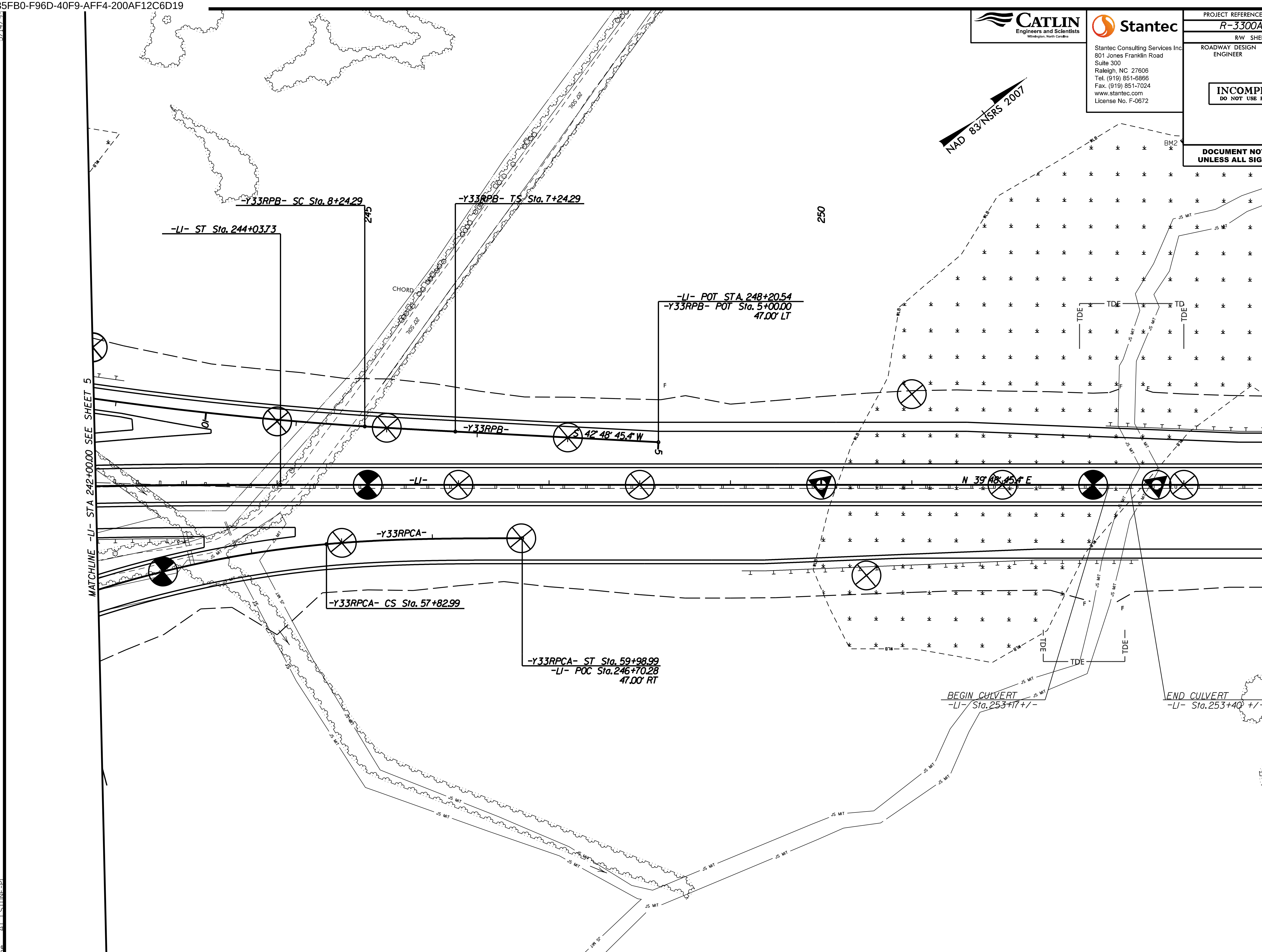
NAD 83/NSRS 2007
-Y33RPB- SC Sta. 8+24.29
-Y33RPB- TS Sta. 7+24.29
-LI- ST Sta. 244+03.73
245
250
255
CHORD
-LI- POT STA. 248+20.54
-Y33RPB- POT Sta. 5+00.00
47.00' LT
-Y33RPB-
S 42° 48' 45.4" W
-LI-
N 39° 48' 45.4" E
-Y33RPCA-
-Y33RPCA- CS Sta. 57+82.99
-Y33RPCA- ST Sta. 59+98.99
-LI- POC Sta. 246+70.28
47.00' RT
TDE
TD
BM2
BEGIN CULVERT
-LI- Sta. 253+17 +/-
END CULVERT
-LI- Sta. 253+40 +/-
MATCHLINE -LI- STA 242+00.00 SEE SHEET 5
MATCHLINE -LI- STA 255+00.00 SEE SHEET 7

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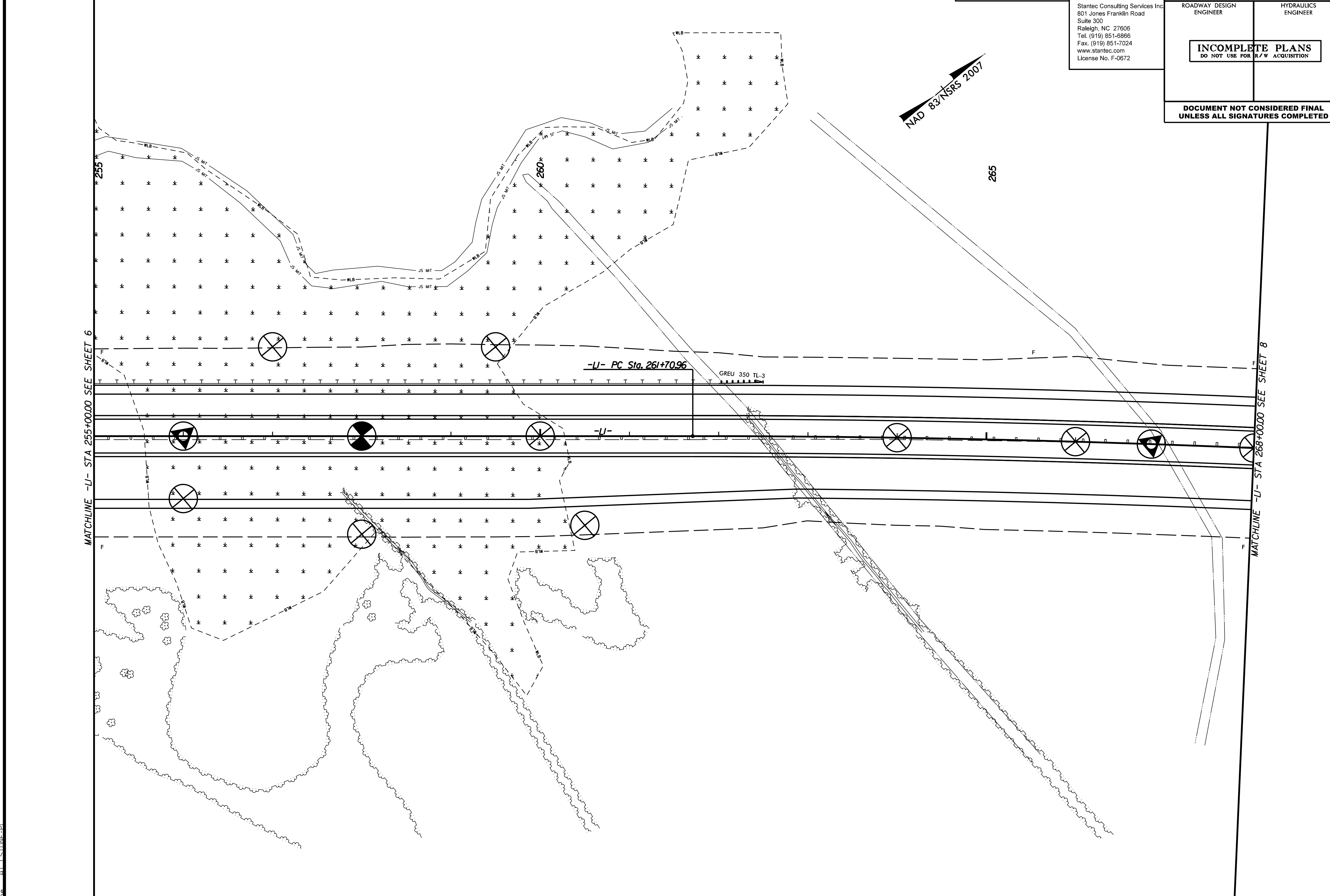

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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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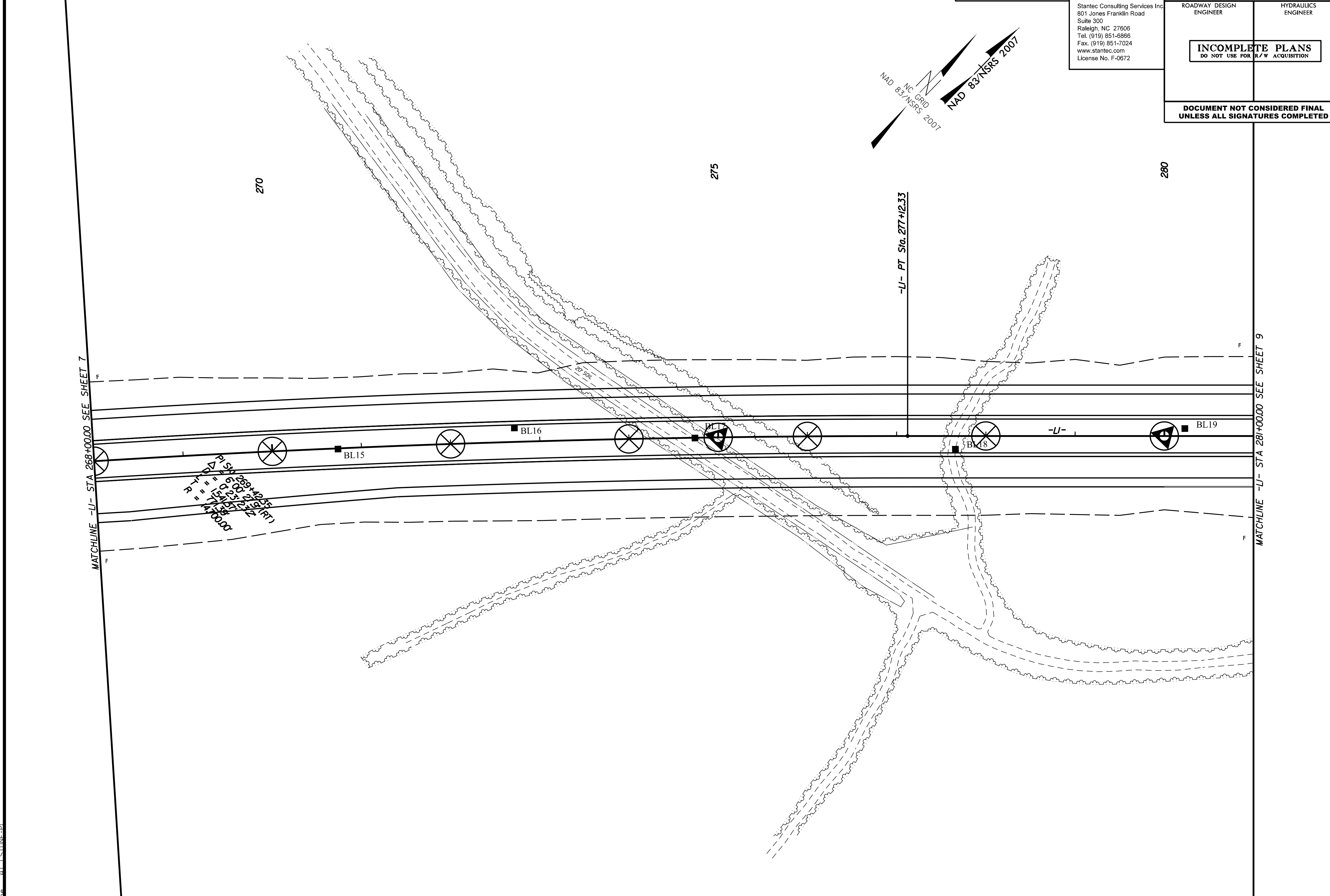

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NSRS 2007

285

290

BEGIN CULVERT
-LI- Sta.283+42 +/-

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

N 45° 49' 13.5" E -LI-

END CULVERT
-LI- Sta.283+66 +/-

MATCHLINE -LI- STA 281+00.00 SEE SHEET 8

MATCHLINE -LI- STA 294+00.00 SEE SHEET 10

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R-3300A	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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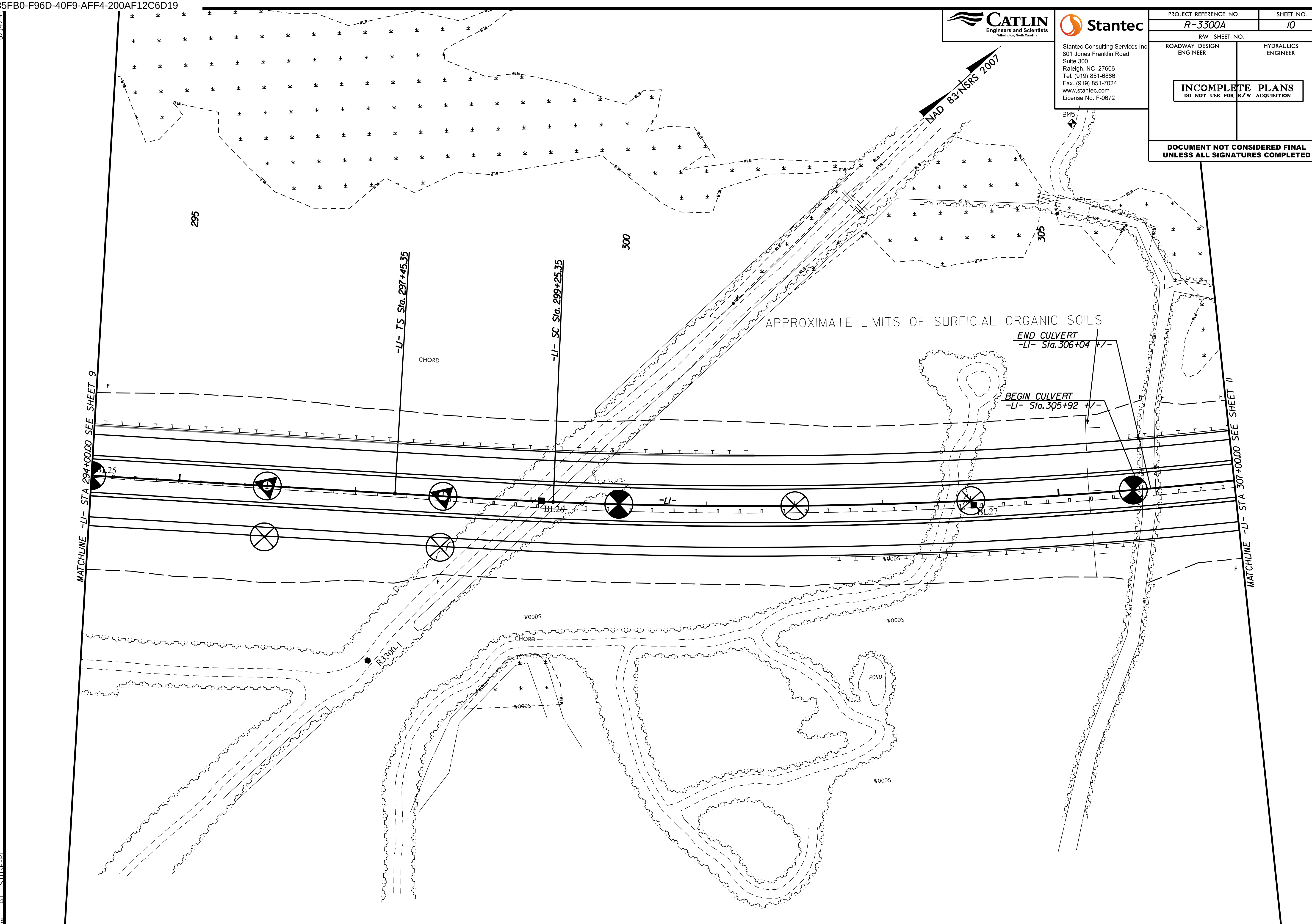

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R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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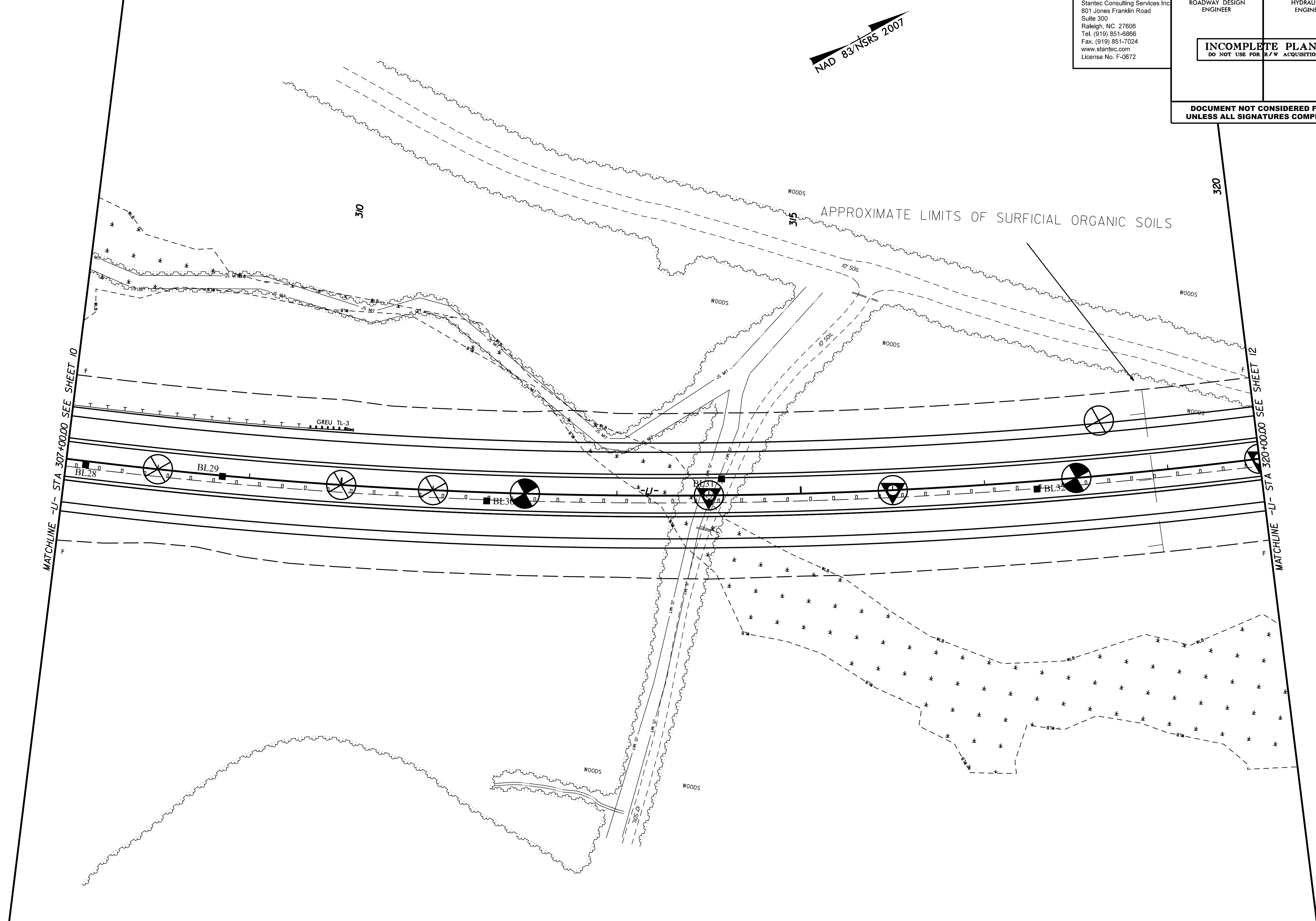

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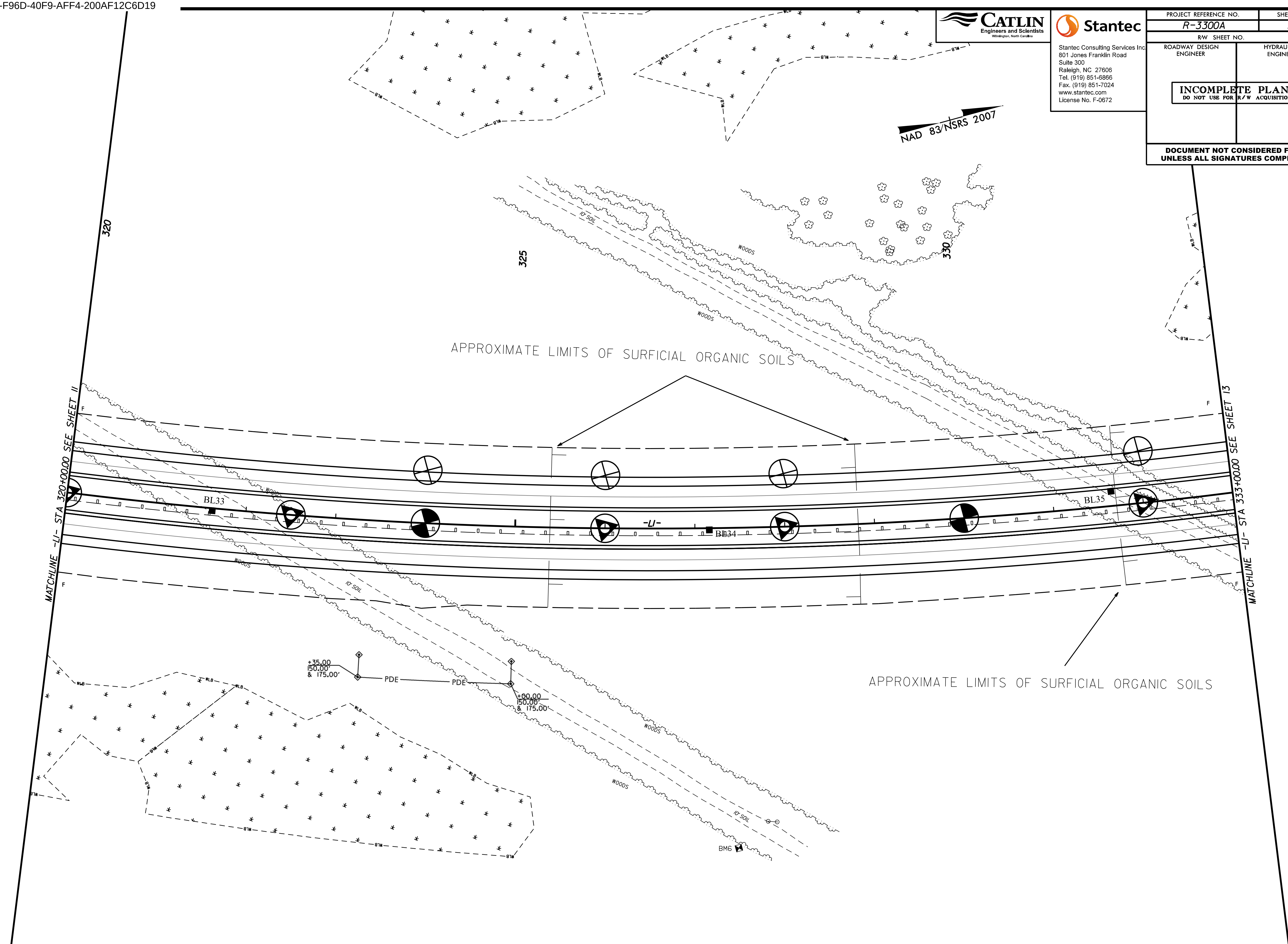
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



5/14/99
14-NOV-2018 13:45
10A_GEO_ROW\CADD_GEOTECH\Site&Sub\SHEETS\R3300A_geo_psh_12.dgn

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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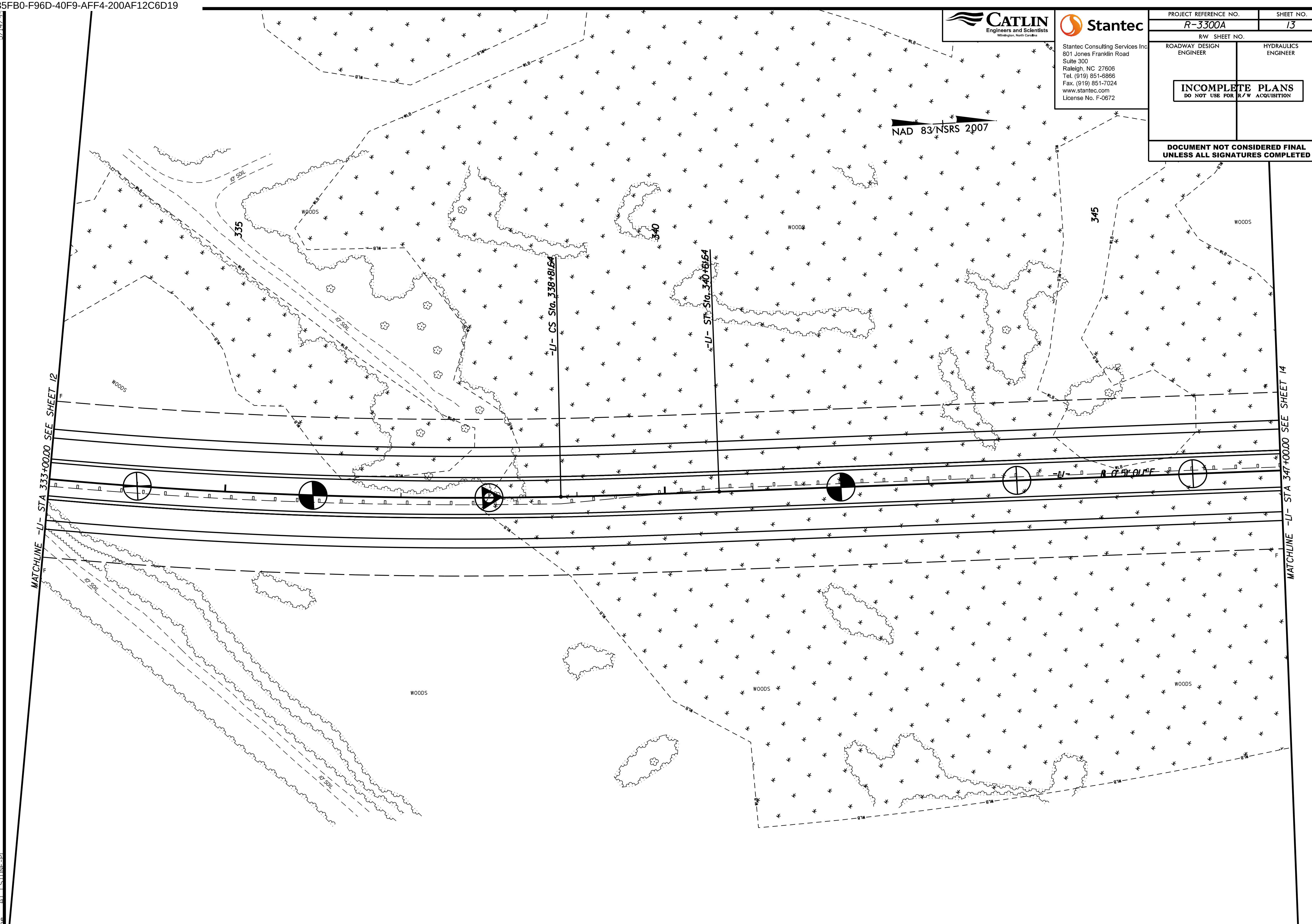

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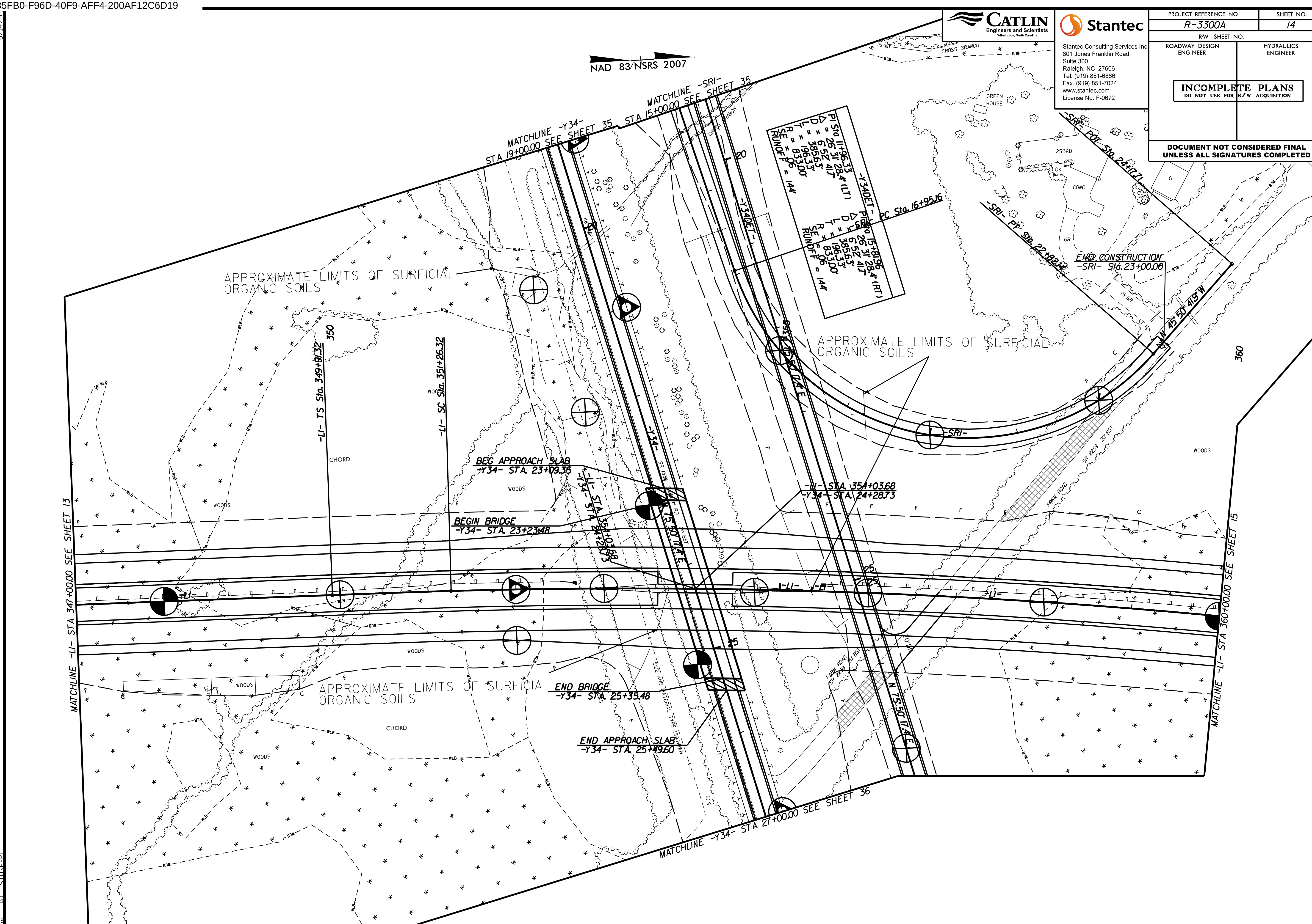
NAD 83/NSRS 2007
MATCHLINE -Y34- STA 19+00.00 SEE SHEET 35
MATCHLINE -SRI- STA 15+00.00 SEE SHEET 35
MATCHLINE -L1- STA 347+00.00 SEE SHEET 13
MATCHLINE -L1- STA 360+00.00 SEE SHEET 15
MATCHLINE -Y34- STA 27+00.00 SEE SHEET 36
APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS
PI Sta 11+96.33
Δ = 26° 31' 28.4" (LT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
-Y34DET- PI Sta 15+81.96
Δ = 26° 31' 28.4" (RT)
D = 6° 52' 41.7"
L = 385.63'
T = 196.33'
R = 833.00'
SE = .06
RUNOFF = 144'
PC Sta. 16+95.16
-Y34DET-
-SRI- POT Sta. 24+17.71
-SRI- PT Sta. 22+82.18
END CONSTRUCTION
-SRI- Sta. 23+00.00
N 45° 50' 41.9" W
-SRI-
-L1- TS Sta. 349+91.32
-L1- SC Sta. 351+26.32
BEG APPROACH SLAB
-Y34- STA. 23+09.35
BEGIN BRIDGE
-Y34- STA. 23+23.48
-L1- STA. 354+03.68
-Y34- STA. 24+28.73
-L1- STA. 354+03.68
-Y34- STA. 24+28.73
-Y34-
N 75° 50' 17.4" E
END BRIDGE
-Y34- STA. 25+35.48
END APPROACH SLAB
-Y34- STA. 25+49.60
SIZE AND MATERIAL TYPE UNKNOWN
FARM ROAD
SR 2259 20' BST
GREEN HOUSE
2SBKD
CONC
WOODS
CHORD
CROSS BRANCH
350
360
20
25
-L1-

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R-3300A	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	15
R/W SHEET NO.	

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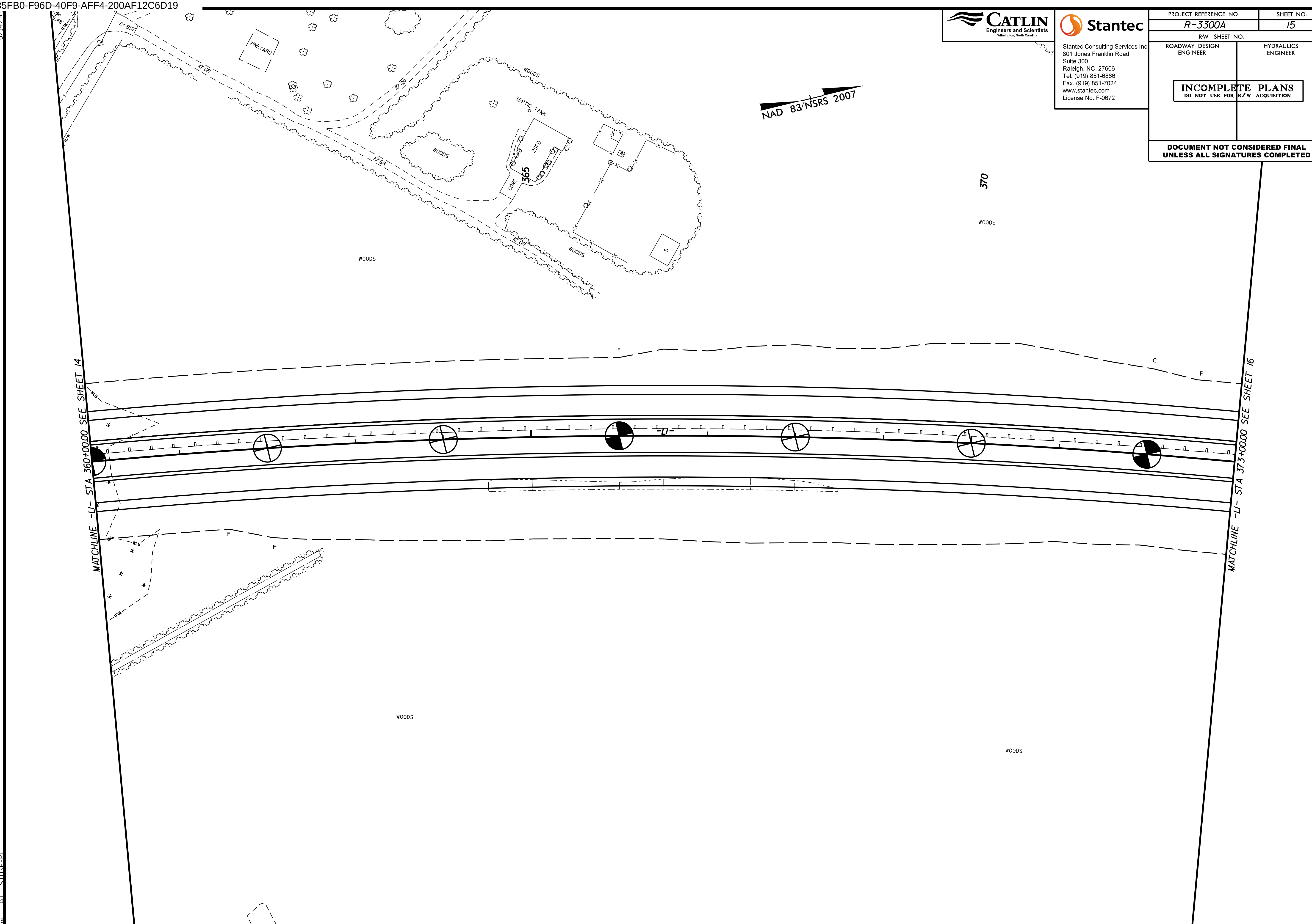

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	16

RW SHEET NO.

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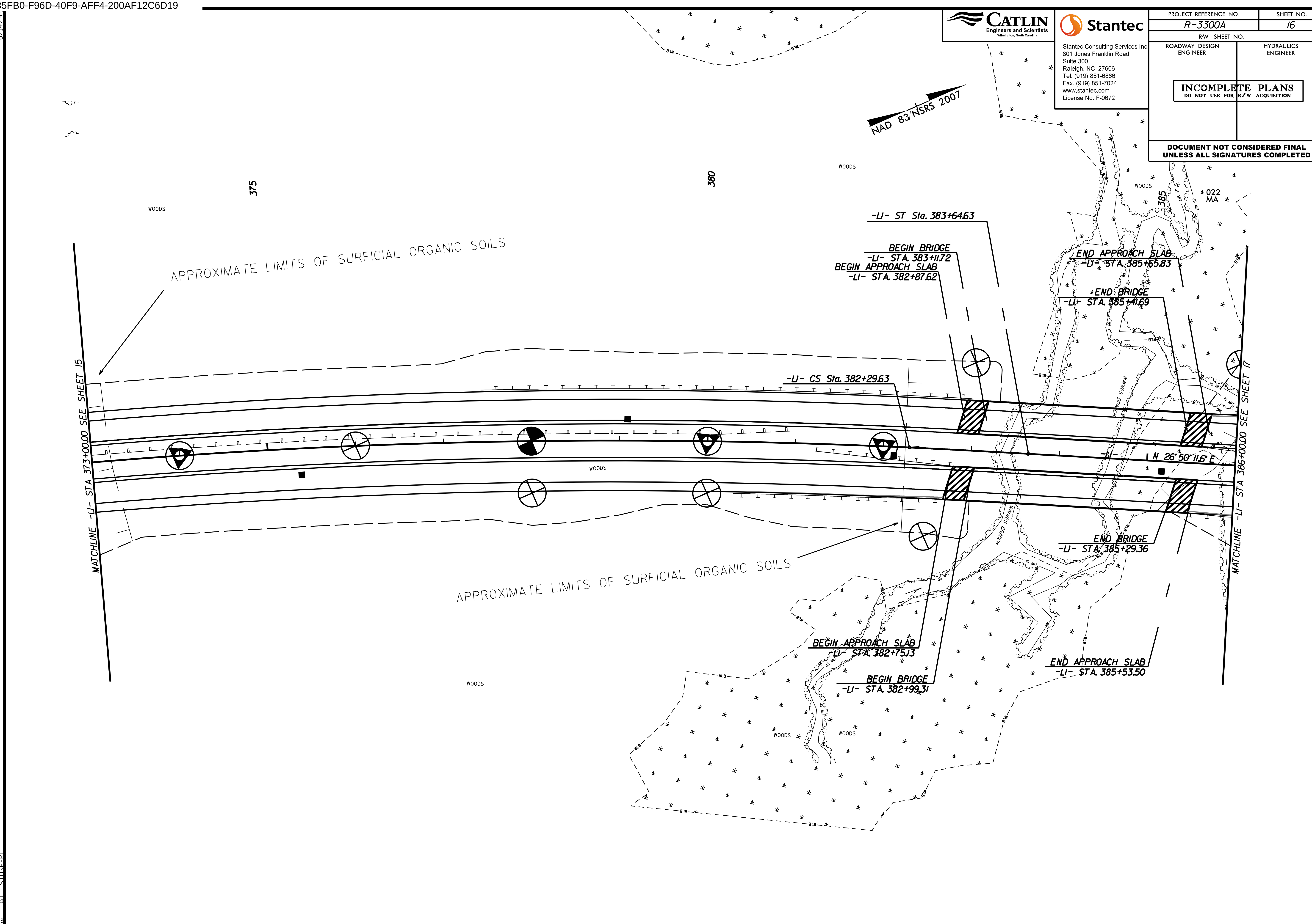
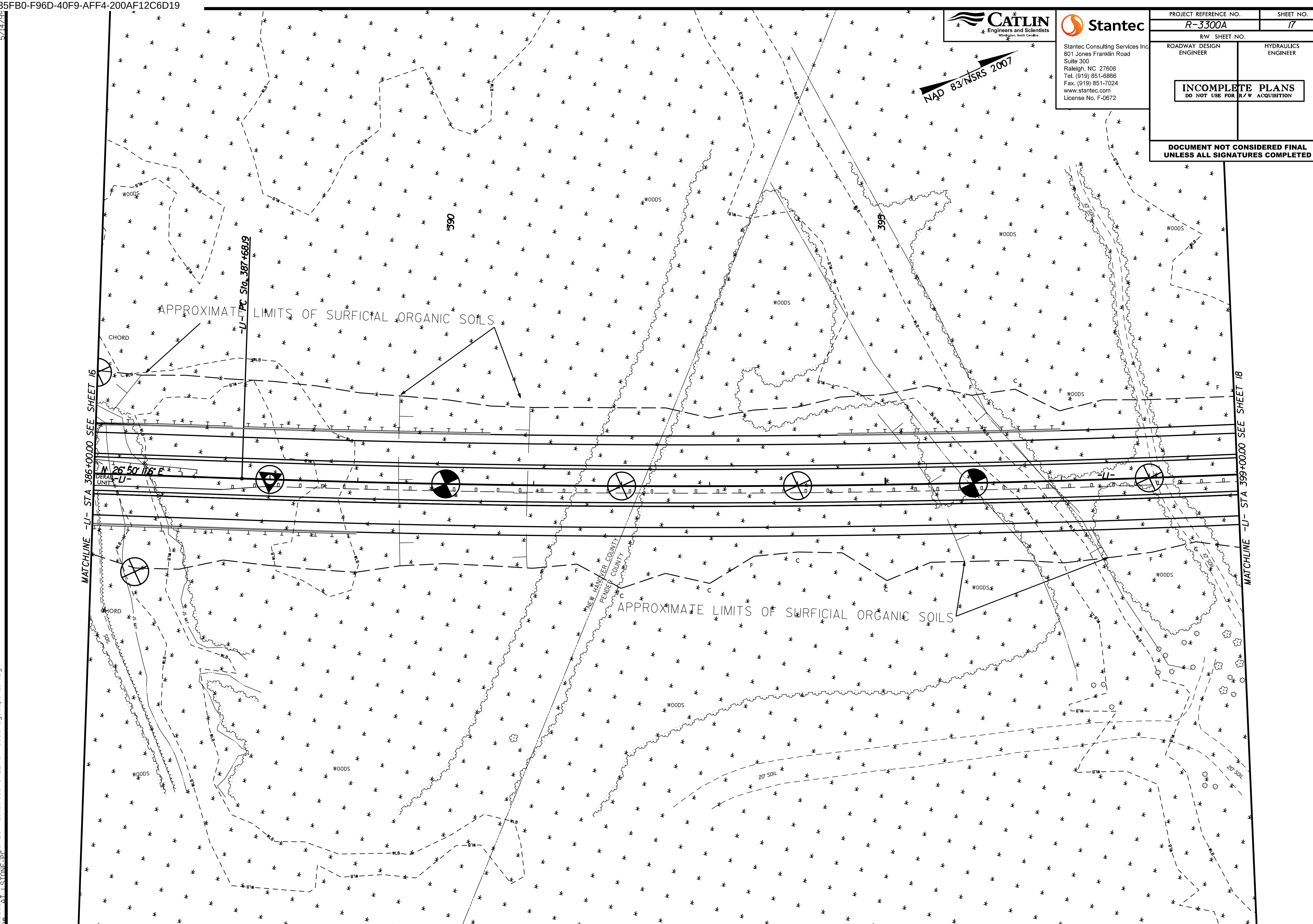

NAD 83/NSRS 2007
375
380
385
WOODS
APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS
APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS
MATCHLINE -L1- STA 373+00.00 SEE SHEET 15
MATCHLINE -L1- STA 386+00.00 SEE SHEET 17
-L1- ST Sta. 383+64.63
BEGIN BRIDGE
-L1- STA. 383+11.72
BEGIN APPROACH SLAB
-L1- STA. 382+87.62
END APPROACH SLAB
-L1- STA. 385+65.83
END BRIDGE
-L1- STA. 385+41.69
-L1- CS Sta. 382+29.63
-L1- N 26°50' 11.6" E
END BRIDGE
-L1- STA. 385+29.36
BEGIN APPROACH SLAB
-L1- STA. 382+75.13
BEGIN BRIDGE
-L1- STA. 382+99.31
END APPROACH SLAB
-L1- STA. 385+53.50
WAYNES BRANCH
022 MA



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NSRS 2007

-LI- PT Sta. 409+48.36

N 18° 20' 20" E

-LI-

MATCHLINE -LI- STA 399+00.00 SEE SHEET 17

MATCHLINE -LI- STA 412+00.00 SEE SHEET 19

400

405

410

WOODS

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

10' SOIL

MTL CONTAINER

INV. 20.59'

12" CMP

14-NOV-2018 13:45
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	19
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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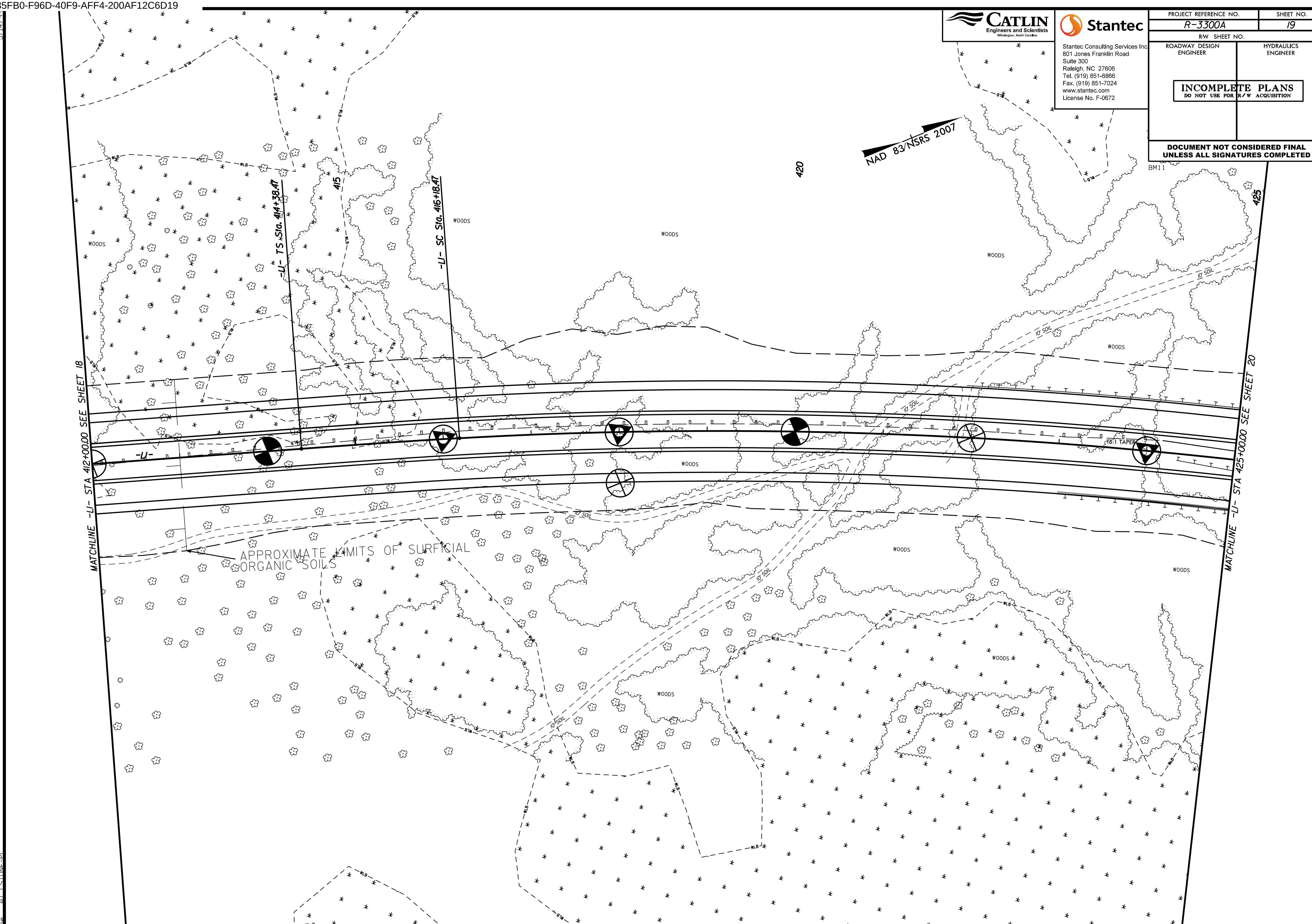

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	20
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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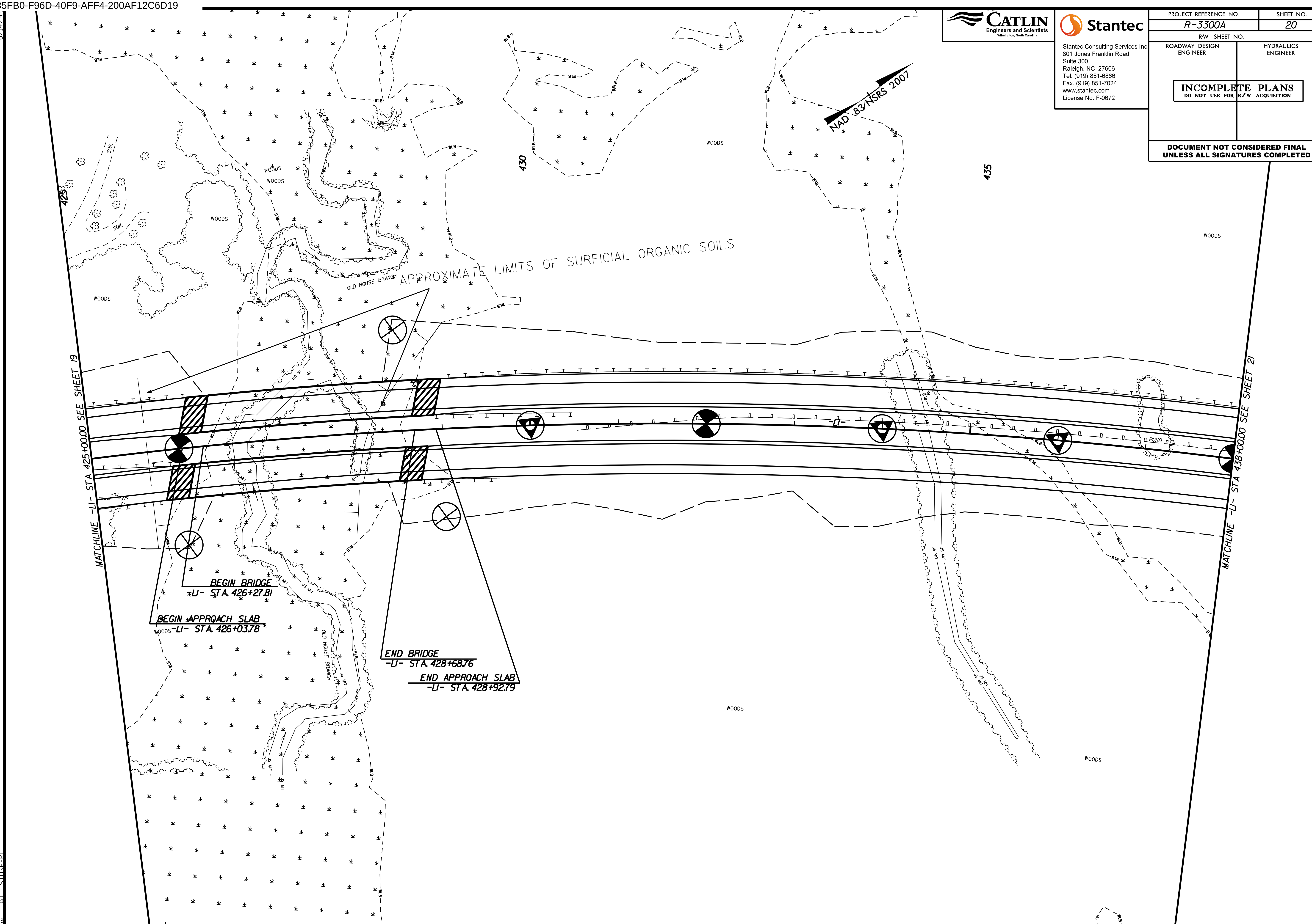

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	21

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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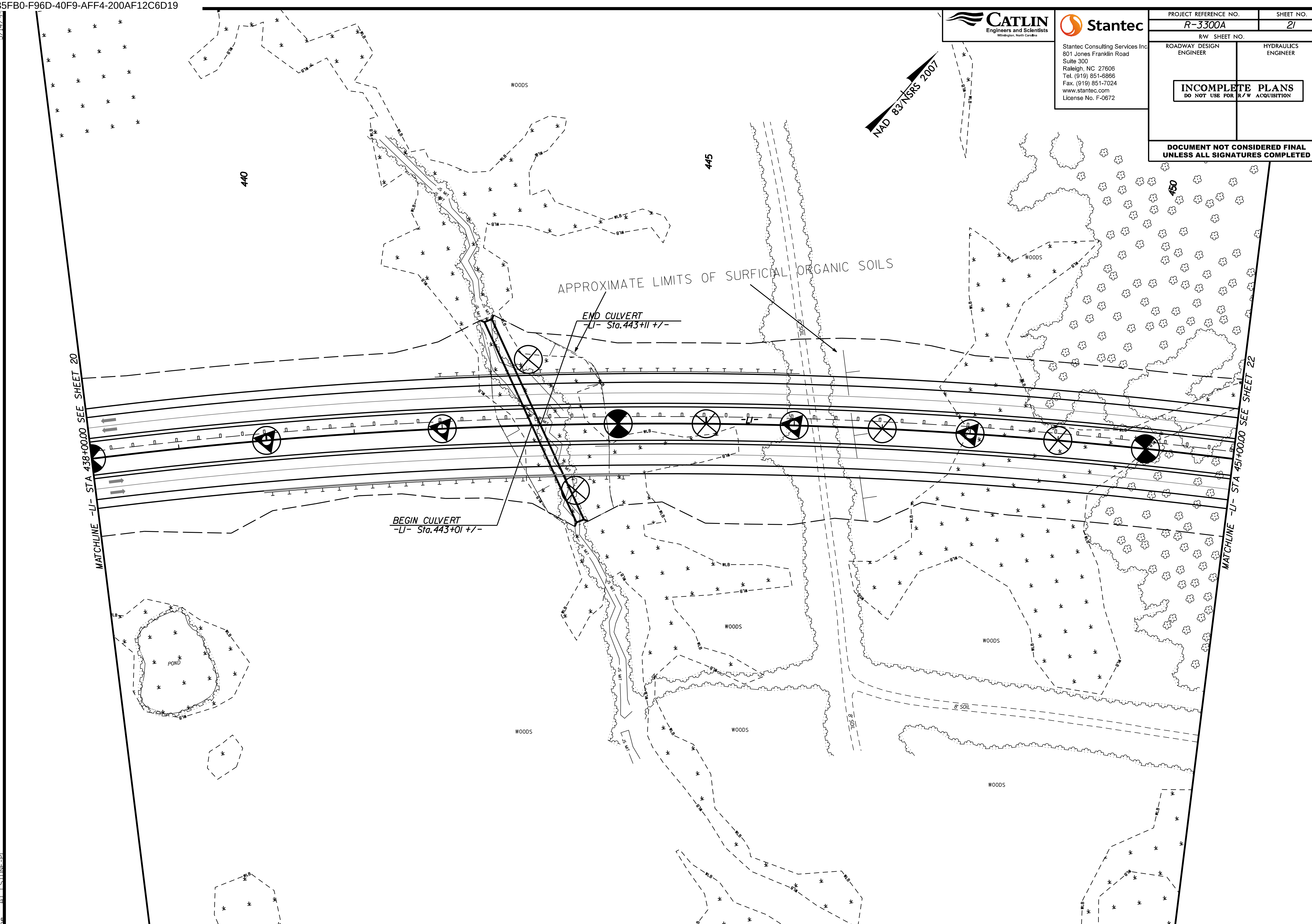
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

-L- CS Sta. 451+12.46

-L- ST Sta. 452+92.16

-L- STA 451+00.00 SEE SHEET 21

-L- STA 464+00.00 SEE SHEET 23

MATCHLINE -L- STA 451+00.00 SEE SHEET 21

MATCHLINE -L- STA 464+00.00 SEE SHEET 23

455

460

N 58° 16' 46.5" E

CHORD

WOODS

F

8" SOIL

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

14-NOV-2018 13:45
R-3300A_GEO_ROW_GEOTECH\Site&Sub\SHEETS\R3300A_geo_psh_22.dgn
User:
PSTime:

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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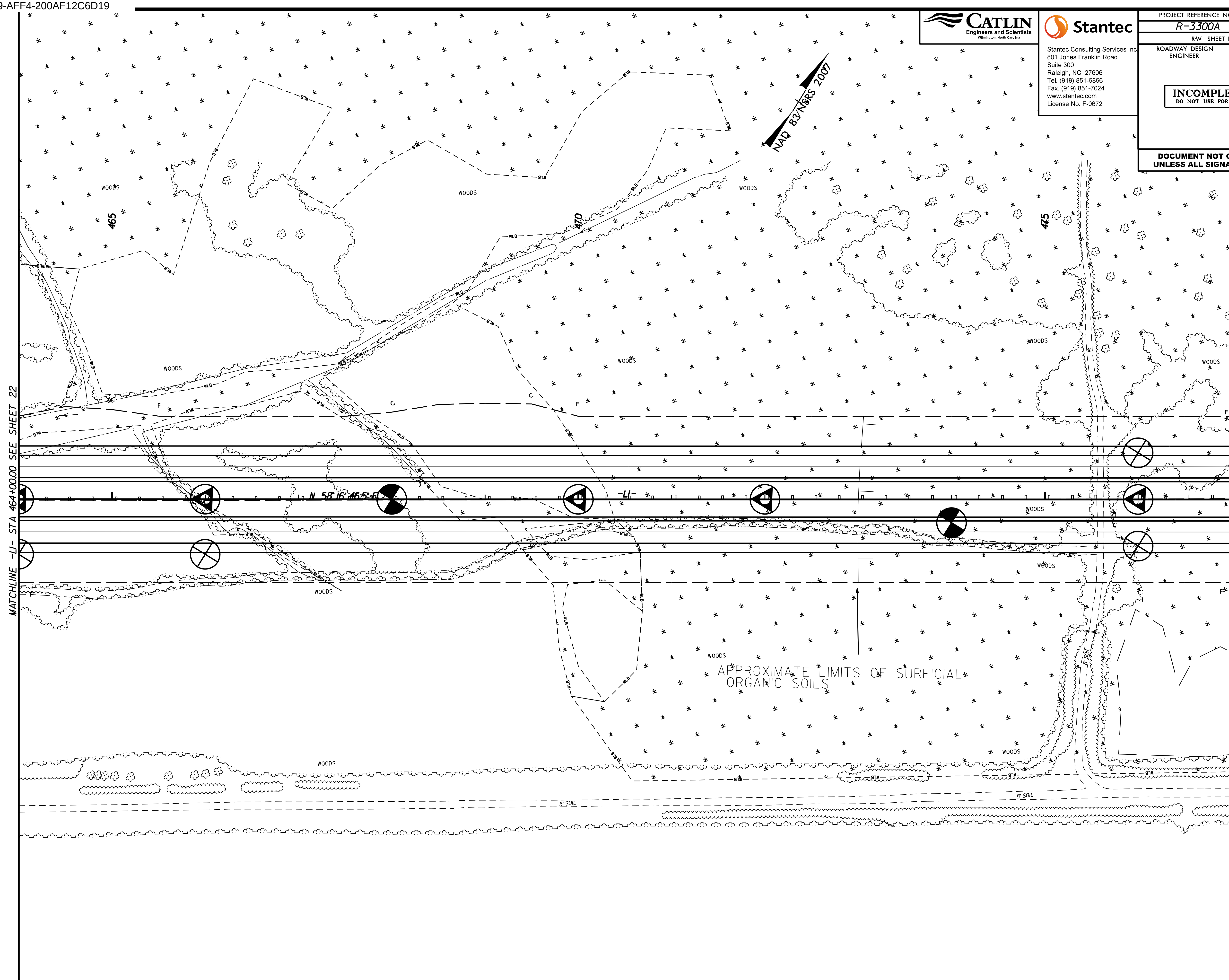

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	24
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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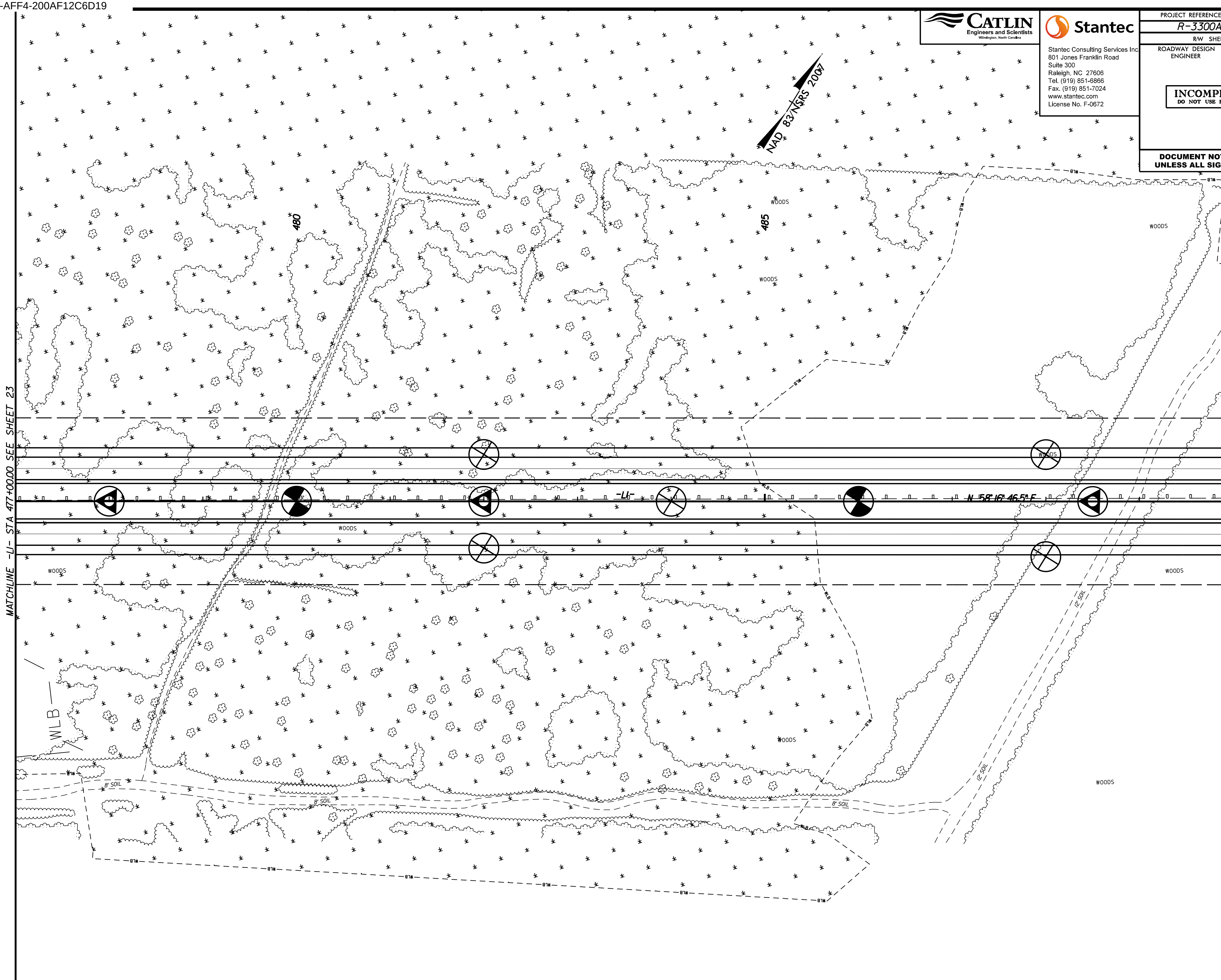

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	25

R/W SHEET NO.

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

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NAD 83/NSRS 2007

MATCHLINE -L1- STA 490+00.00 SEE SHEET 24

MATCHLINE -L1- STA 503+00.00 SEE SHEET 26

-L1-

N 58° 18' 46.5" E

490

495

500

WOODS

10' SOIL

8' SOIL

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	26
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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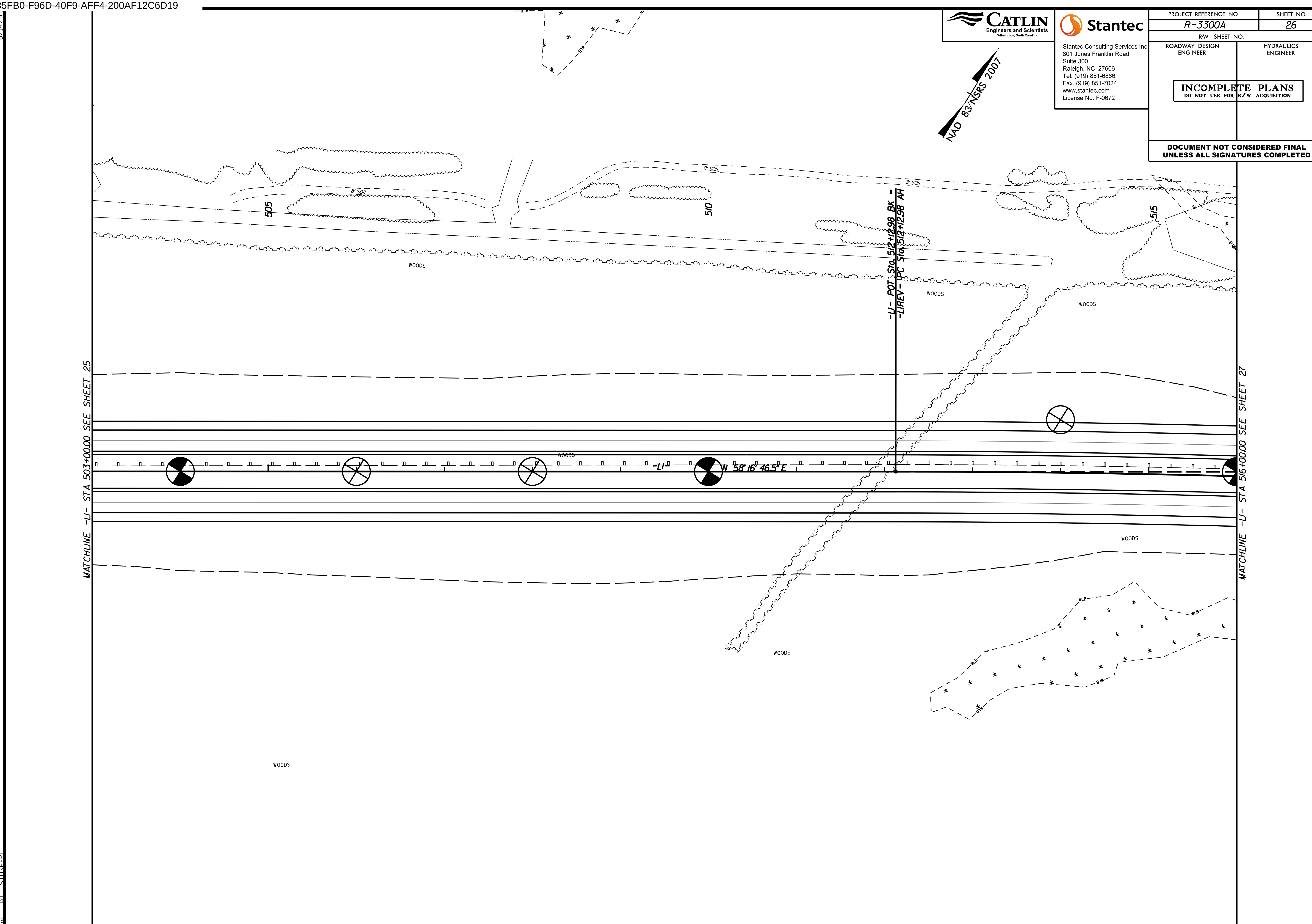

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	27
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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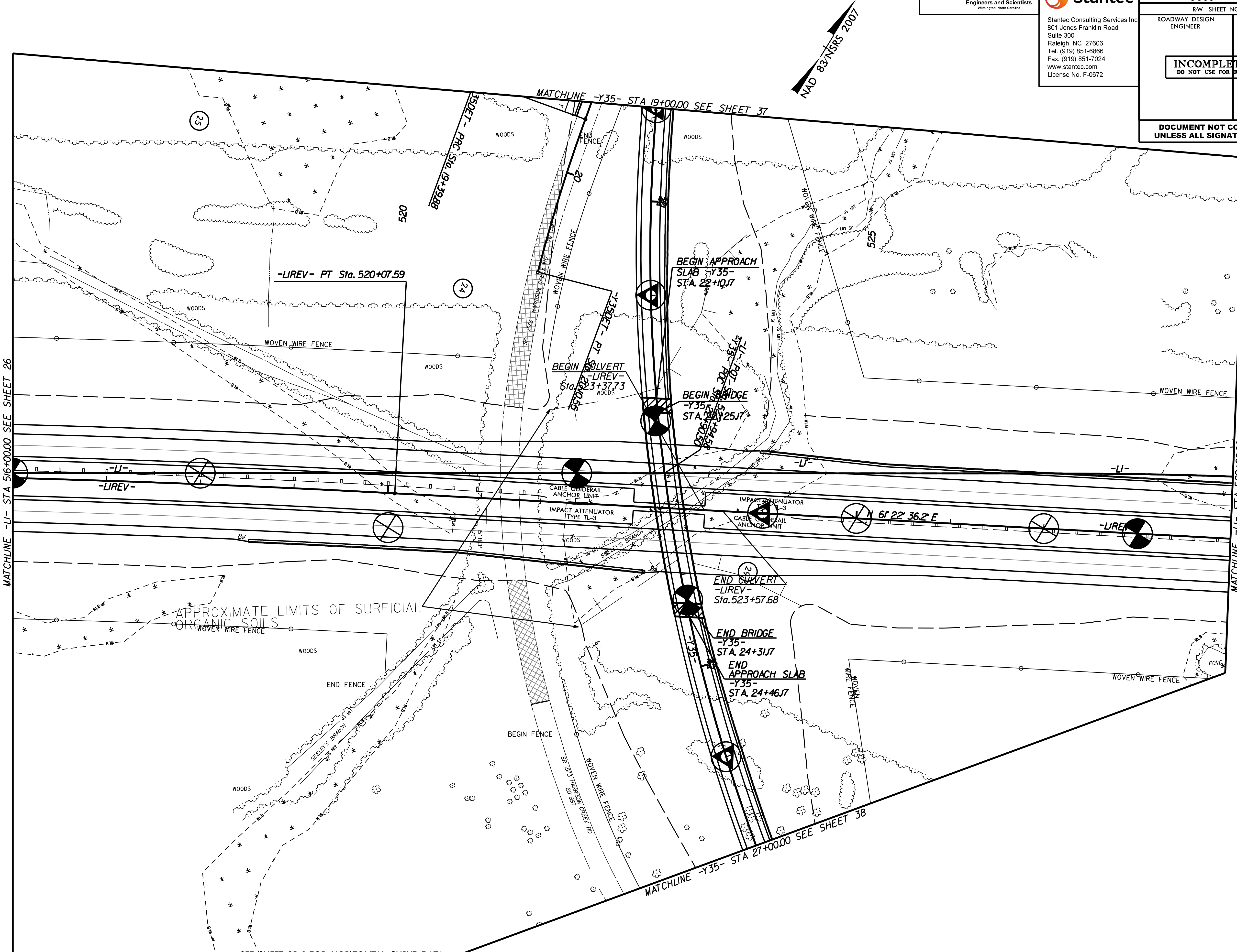

NAD 83/NSRS 2007
MATCHLINE -Y35- STA 19+00.00 SEE SHEET 37
MATCHLINE -LI- STA 516+00.00 SEE SHEET 26
MATCHLINE -LI- STA 529+00.00 SEE SHEET 28
MATCHLINE -Y35- STA 27+00.00 SEE SHEET 38
-LIREV- PT Sta. 520+07.59
BEGIN APPROACH SLAB -Y35- STA. 22+10.17
BEGIN CULVERT -LIREV- Sta. 523+37.73
BEGIN BRIDGE -Y35- STA. 22+25.17
END CULVERT -LIREV- Sta. 523+57.68
END BRIDGE -Y35- STA. 24+31.17
END APPROACH SLAB -Y35- STA. 24+46.17
CABLE GUIDERAIL ANCHOR UNIT
IMPACT ATTENUATOR TYPE TL-3
N 61° 22' 36.2" E
APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS
WOVEN WIRE FENCE
END FENCE
BEGIN FENCE
WOODS
SEELEY'S BRANCH
SR 1573 HARRISON CREEK RD
-LI-
-LIREV-
-Y35-
POND
520
525

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	28
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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5/14/2018

NAD 83/NSRS 2007

WOODS

WLB

GTW

8" SOIL

530

535

540

-LI- STA 529+00.00 SEE SHEET 27

-LI- STA 542+00.00 SEE SHEET 29

-LIREV-

-LIREV- TS Sta. 529+02.88

-LIREV- SC Sta. 531+72.88

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	29
R/W SHEET NO.	

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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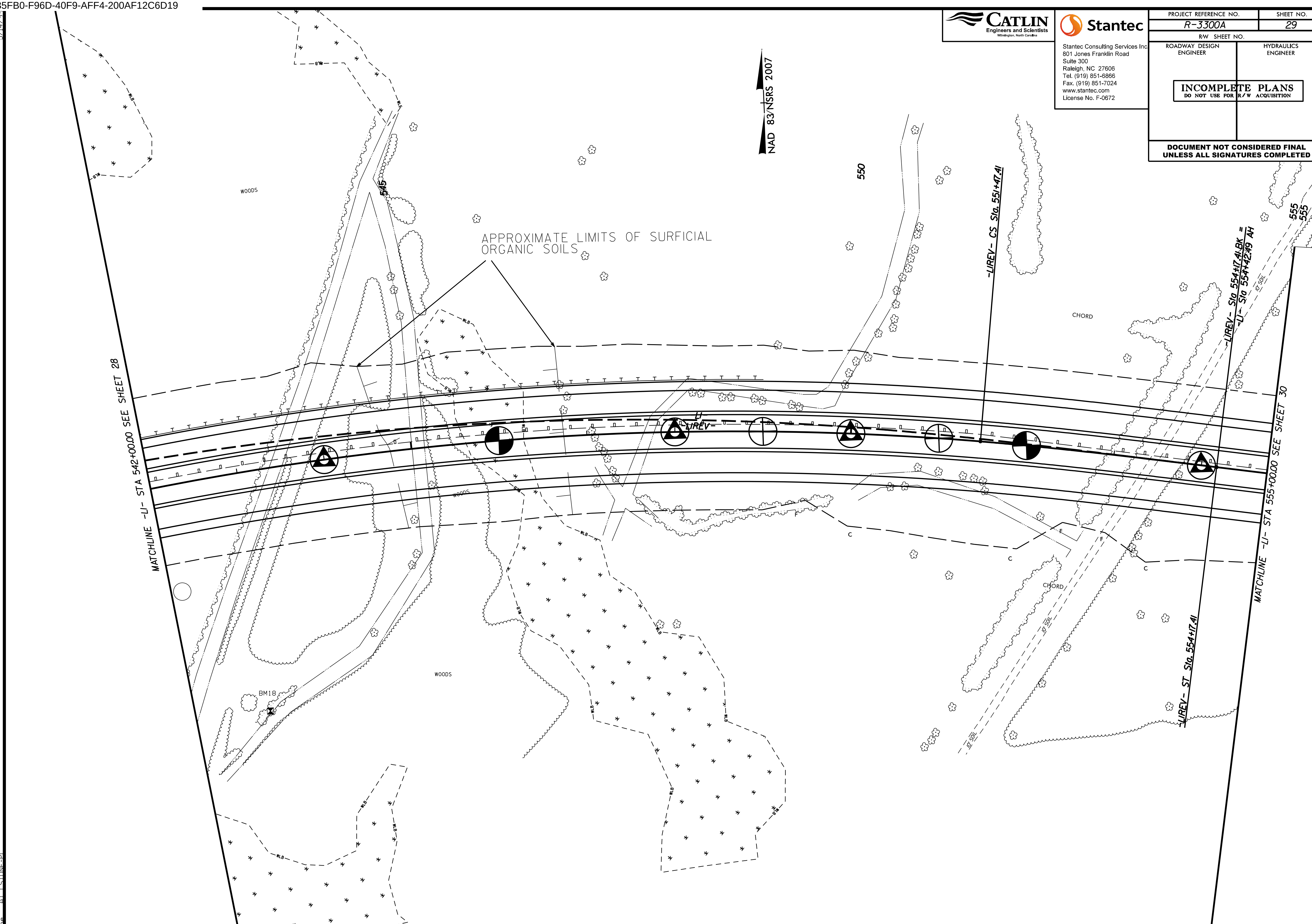

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	30
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NSRS 2007

555 560 565

-LI- TS Sta. 563+75.64

-LI- SC Sta. 566+75.64

-LI- STA 555+00.00 SEE SHEET 29

-LI- STA 567+00.00 SEE SHEET 31

MATCHLINE -LI- STA 555+00.00 SEE SHEET 29

MATCHLINE -LI- STA 567+00.00 SEE SHEET 31

S 80° 47' 56" E

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

WOODS

C F

WLB

JS M7

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	31
R/W SHEET NO.	

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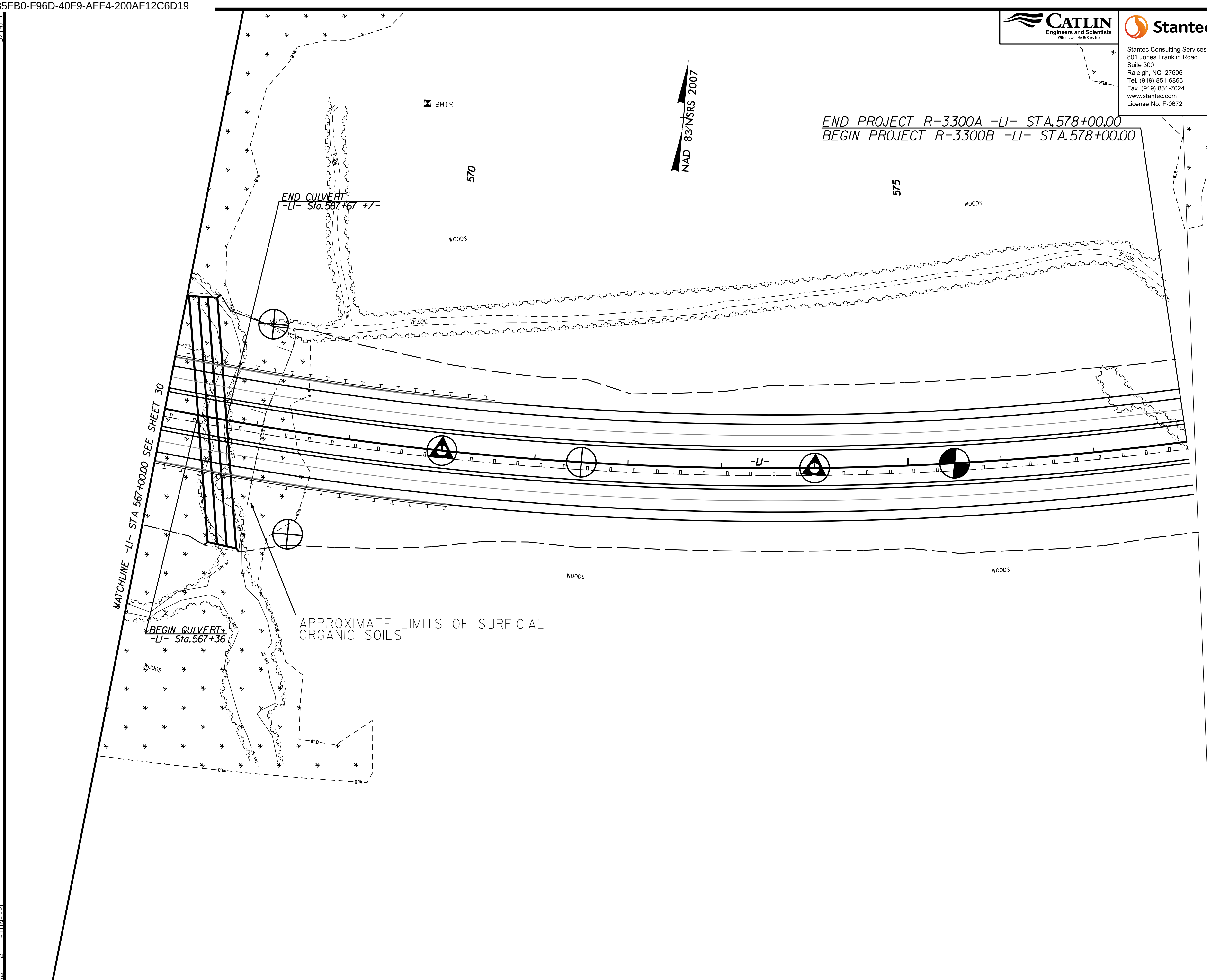

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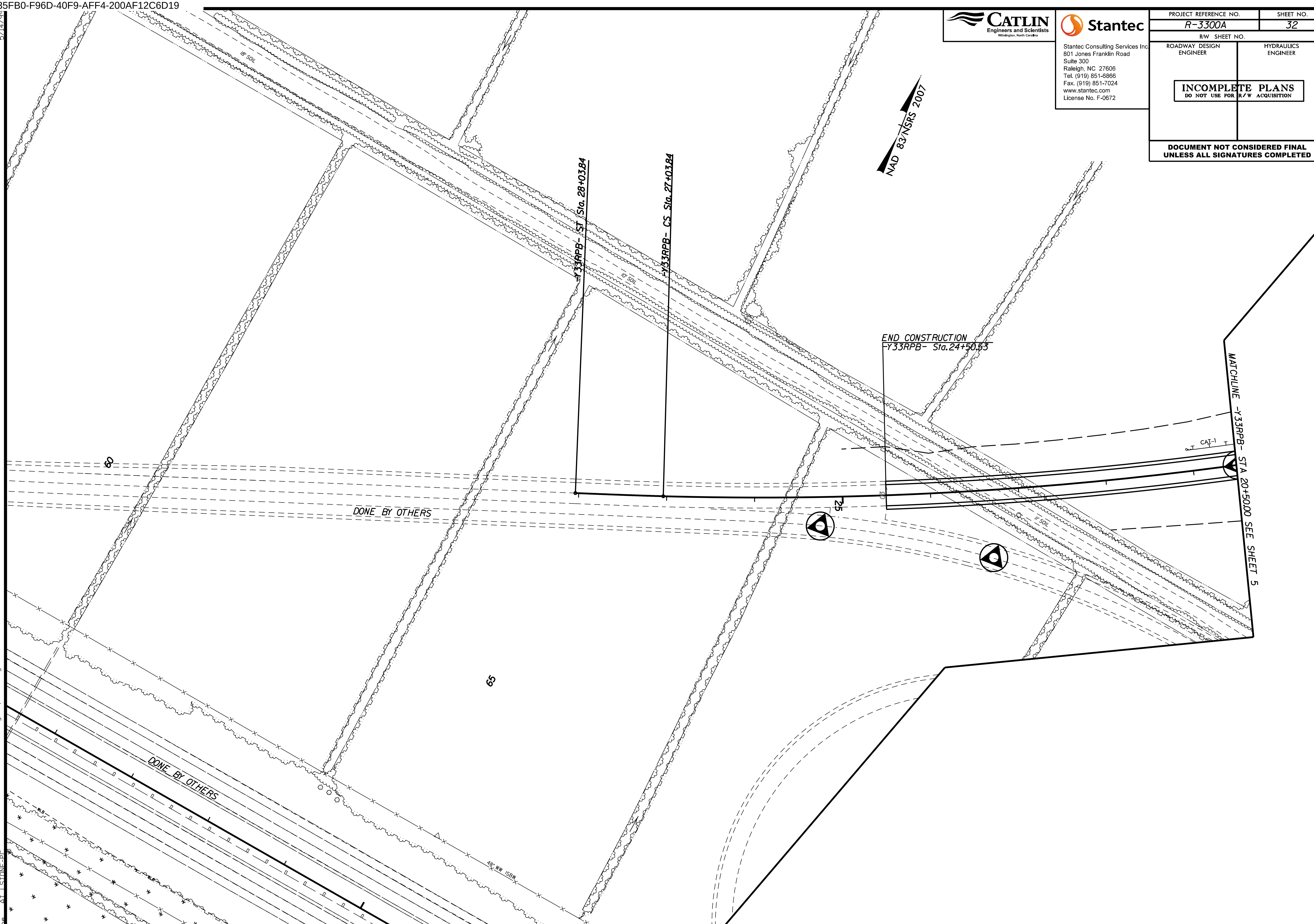
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	32
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	33
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

-Y33- L

-Y33RPCA- TS Sta.18+61.73

-Y33RPCA- SC Sta.20+05.73

BEGIN CONSTRUCTION
Y33RPCA STA 22+61.33

MATCHLINE -Y33RPCA- STA 25+00.00 SEE SHEET 5

S 50°13'47.4" E

DONE BY OTHERS

-Y33RPCA- CS Sta.13+67.73

-Y33RPCA- ST Sta.14+51.73

WILD MAGNOLIA RD

15' SOIL

9' SOIL

JS

JS MT

ISFD

25FD

CONC

14-NOV-2018 13:45
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CATLIN
Engineers and Scientists
Wilmington, North Carolina

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	34
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

MATCHLINE -Y33RPA- STA 22+00.00 SEE SHEET 5

-Y33RPA- SC Sta.13+73.89

-Y33RPA- TS Sta.12+73.89

NAD 83/NSRS 2007

90

85

021

ACQUIRED UNDER U-4751

48" WW ISBW

GREU TL

APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS

N 78° 50' 15.6" W

-Y33RPA-

US 17 / I-140 W 36'BST

S 81° 20' 15.6" E

-Y33-

US 17 / I-140 E 37'BST

+00.83 END CONST.

WLB

MATCHLINE -Y33- STA 96+00.00 SEE INSET

INSET

-Y33RPA- POT Sta.5+00.00
-Y33- POT Sta.100+00.00
47.00' LT

END CONSTRUCTION
-Y33- Sta.102+75.11

MATCHLINE -Y33- STA 96+00.00 SEE ABOVE

I-140 38' BST JOHN JAY BURNEY JR FREEWAY

I-140 37.5' BST JOHN JAY BURNEY JR FREEWAY

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	35
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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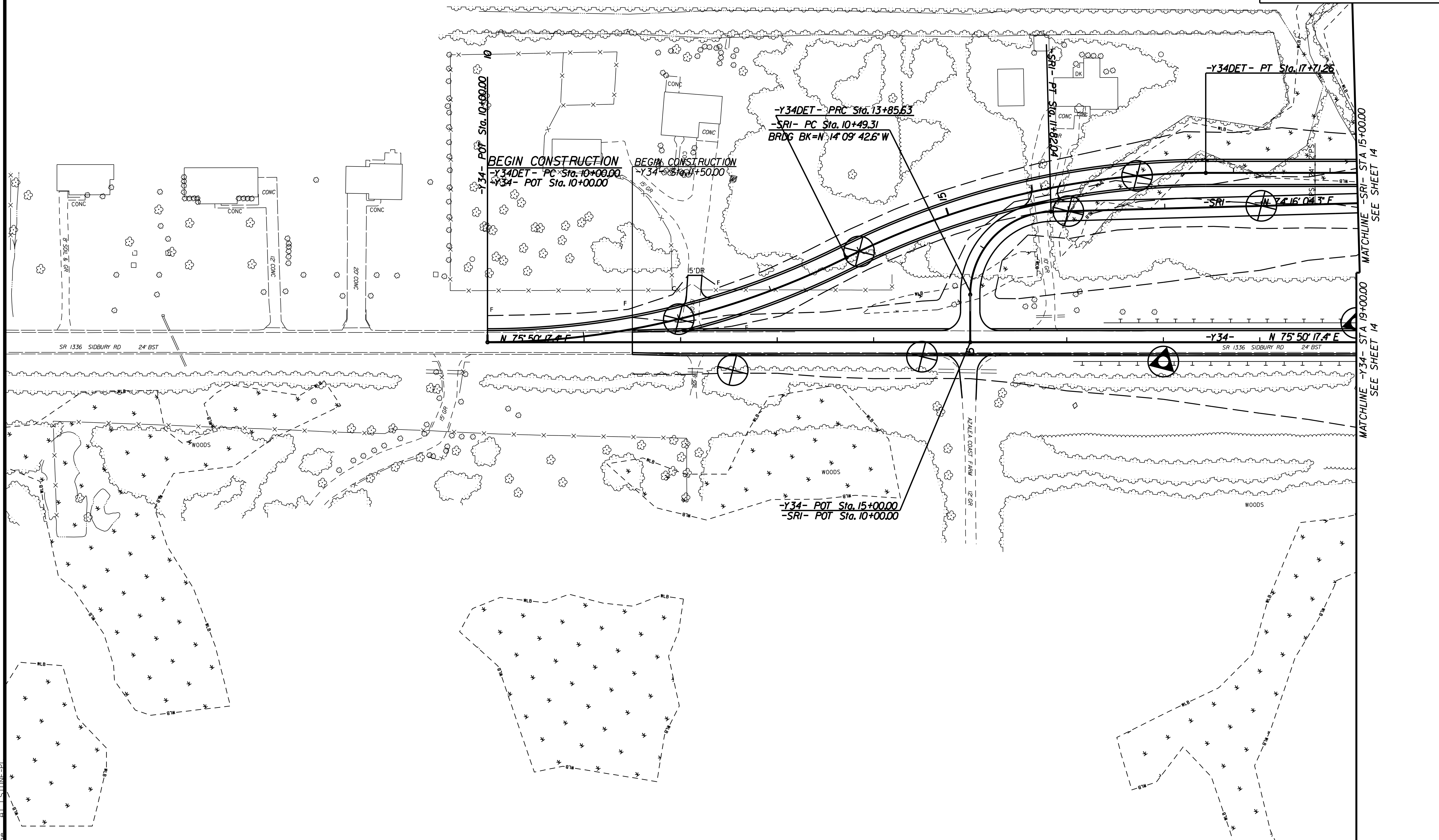
NAD 83/NSRS 2007



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	36
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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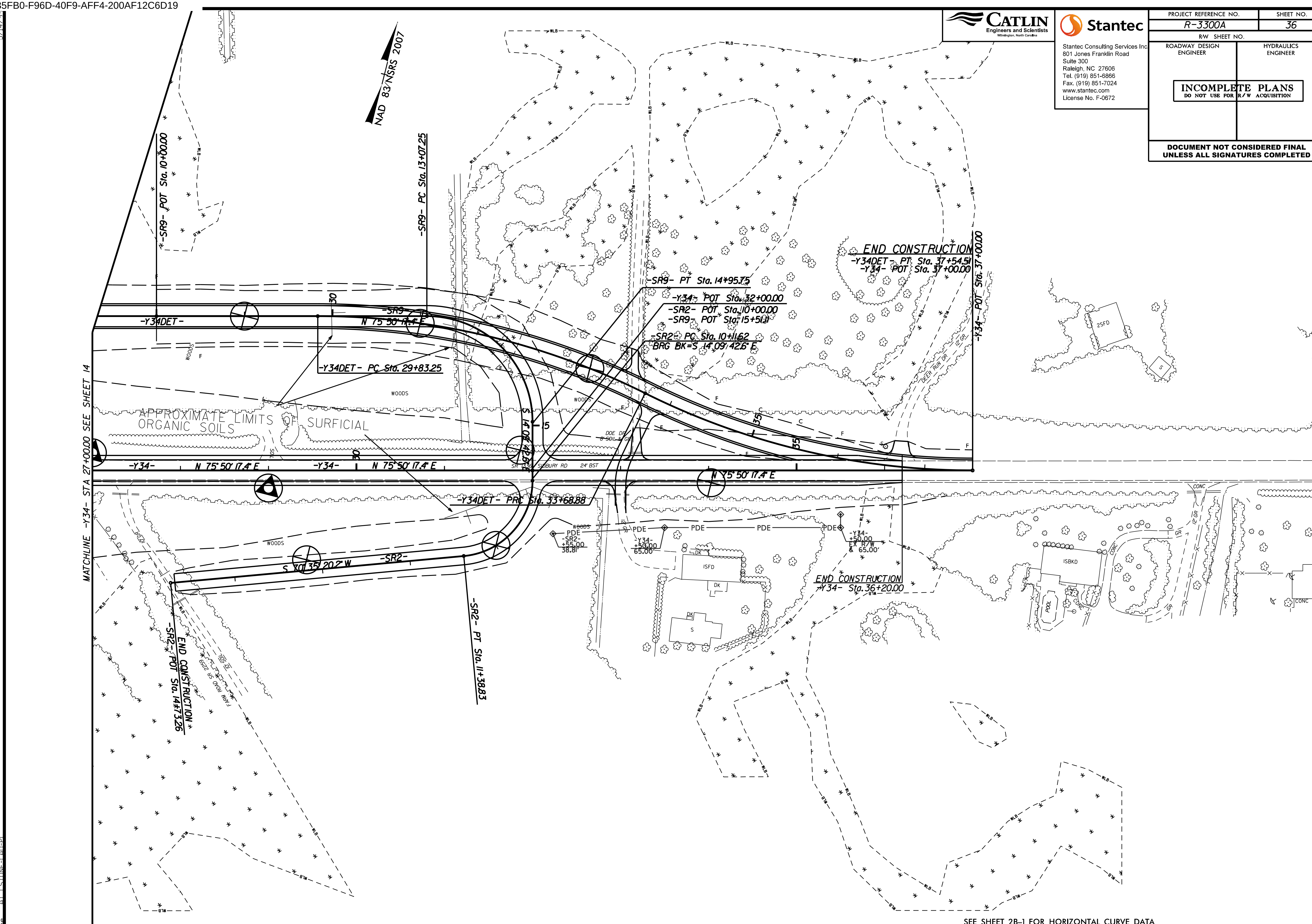
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED


NAD 83/NSRS 2007
-SR9- POT Sta. 10+00.00
-SR9- PC Sta. 13+07.25
-SR9- PT Sta. 14+95.75
-Y34- POT Sta. 32+00.00
-SR2- POT Sta. 10+00.00
-SR9- POT Sta. 15+50.11
-SR2- PC Sta. 10+11.62
BRG BK=S 14°09' 42.6" E
END CONSTRUCTION
-Y34DET- PT Sta. 37+54.51
-Y34- POT Sta. 37+00.00
-Y34- Sta. 37+00.00
-Y34DET-
N 75°50' 17.4" E
-Y34DET- PC Sta. 29+83.25
APPROXIMATE LIMITS OF SURFICIAL ORGANIC SOILS
WOODS
MATCHLINE -Y34- STA 27+00.00 SEE SHEET 14
-Y34-
N 75°50' 17.4" E
SR 1336 SIDBURY RD 24' BST
-Y34DET- PRC Sta. 33+68.88
S 30°35' 20.2" W
-SR2-
-SR2- PT Sta. 11+38.83
-SR2- POT Sta. 14+73.26
END CONSTRUCTION
PDE
-SR2- +55.00 38.81'
-Y34- +50.00 65.00'
-Y34- +50.00 EX R/W & 65.00'
END CONSTRUCTION
-Y34- Sta. 36+20.00
DEER RUN DR
2SFD
1SFD
1SBKD
POOL
CONC
GR

SEE SHEET 2B-1 FOR HORIZONTAL CURVE DATA

25-MAR-2019 10:35
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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	37
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
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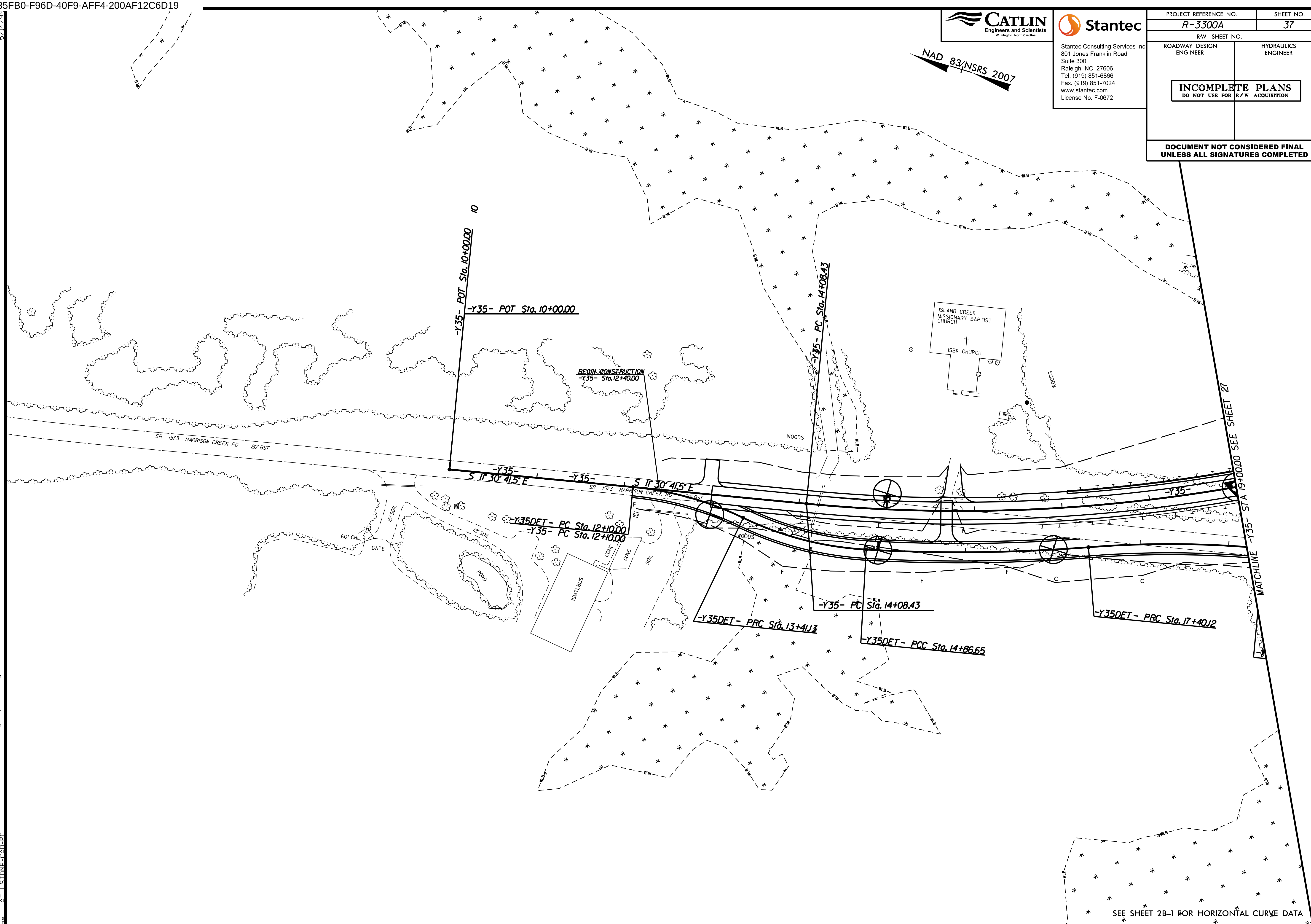

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	38
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/NSRS 2007

-Y35- POT Sta. 38+17.69

-SR3- POT Sta. 10+00.00
-Y35- POT Sta. 16+83.76

-Y35- PT Sta. 31+48.61

-DRW1- POT Sta. 10+00.00
-Y35- POC Sta. 30+38.00

MATCHLINE -Y35- STA 27+00.00 SEE SHEET 27

-Y35-
S 65° 59' 41.5" E

SR 1573 HARRISON CREEK DR 19.5' BST

GRED TL-3

CULTIVATED AREA

10' SOIL

8' SOIL

WOODS

GRAPEVINE

RUINS

-DRW1- PC Sta. 10+43.50
BRDG BK=
S 27° 43' 42.9" W

-DRW1- PCC Sta. 11+07.57

END CONSTRUCTION
-DRW1- PT Sta. 11+57.76

10' CONC

CONC

END CONSTRUCTION
-Y35- Sta. 37+25.00

S 24° 00' 18.5" W

MATCHLINE -SR3- STA 14+00.00 SEE SHEET 39

WLB

RW

5/14/2018

14-NOV-2018 13:45
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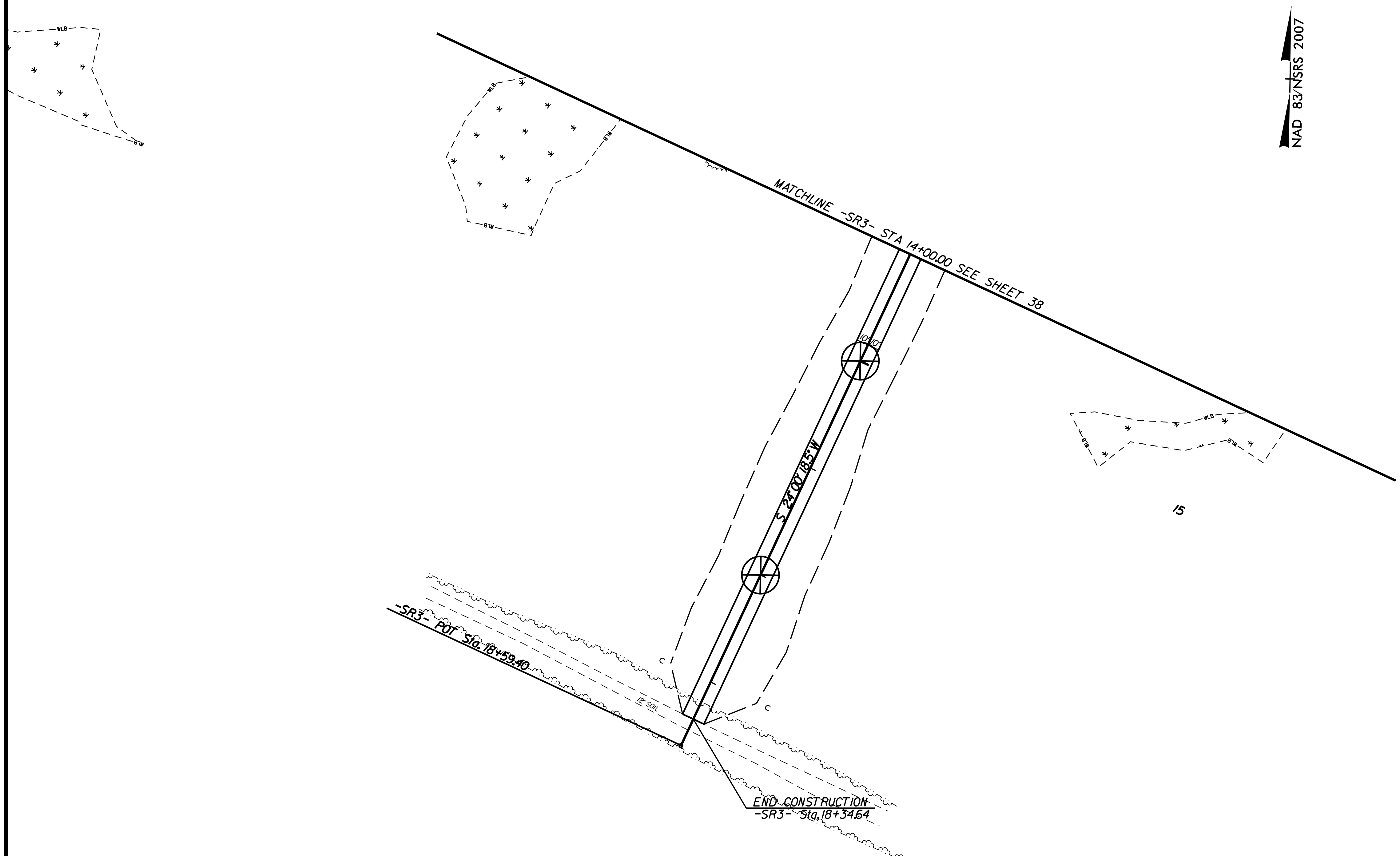
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	39
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



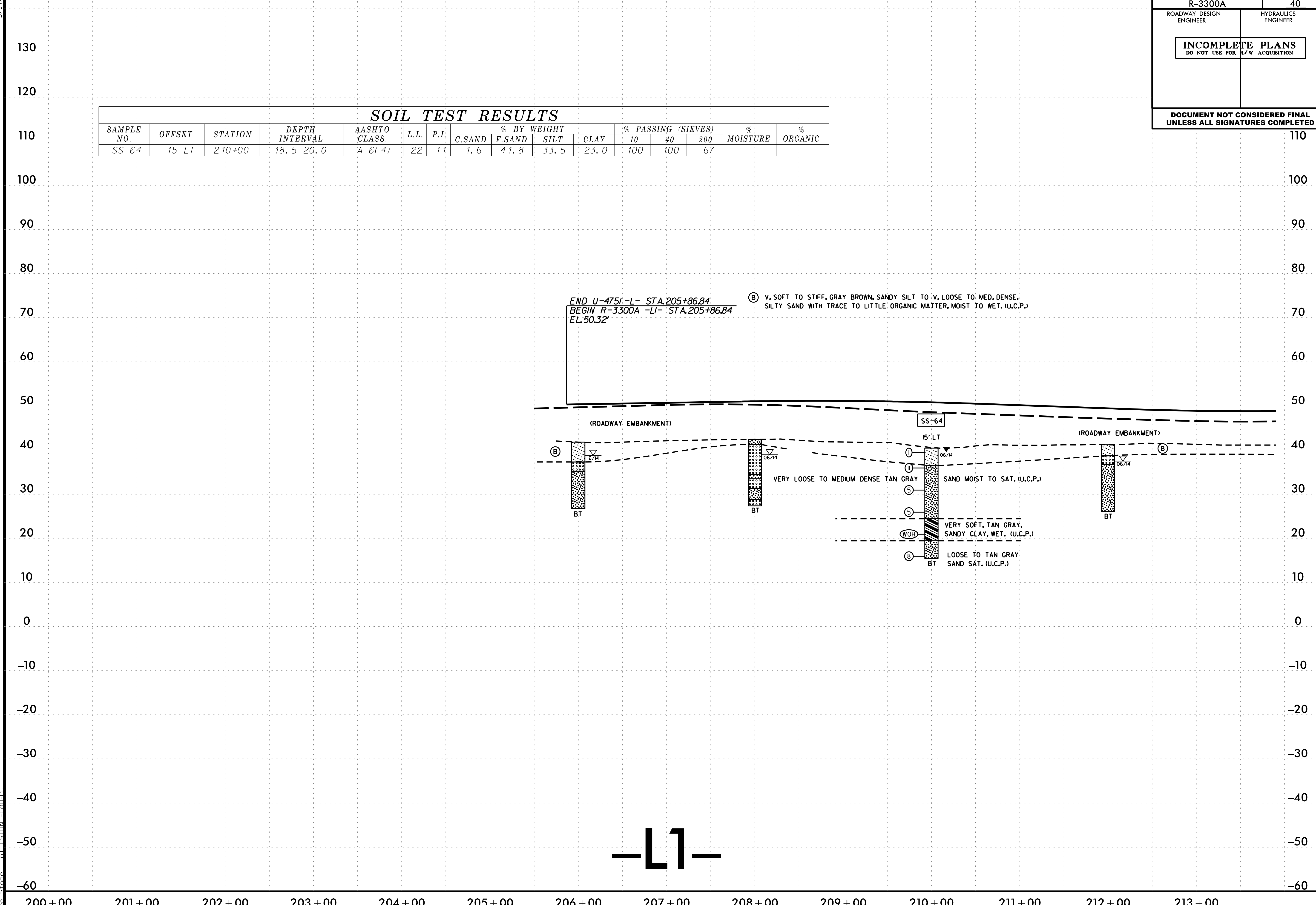
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-64	15 LT	210+00	18.5-20.0	A-6(4)	22	11	1.6	41.8	33.5	23.0	100	100	67	-	-


130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
END U-4751 -L- STA.205+86.84
BEGIN R-3300A -L1- STA.205+86.84
EL.50.32'
B V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)
SS-64
15' LT
(ROADWAY EMBANKMENT)
(ROADWAY EMBANKMENT)
VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)
VERY SOFT, TAN GRAY, SANDY CLAY, WET. (U.C.P.)
LOOSE TO TAN GRAY SAND SAT. (U.C.P.)
WOH
BT
06/14
200+00
201+00
202+00
203+00
204+00
205+00
206+00
207+00
208+00
209+00
210+00
211+00
212+00
213+00

-L1-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	41
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-73	CL	220+00	0.0-1.5	A-2-4(0)	18	NP	15.6	66.5	6.9	11.1	100	97	22	-	-
SS-74	CL	220+00	28.5-30.0	A-4(7)	31	9	8.1	28.3	50.9	12.7	100	95	83	-	-
SS-75	CL	220+00	36.6-37.0	***	-	-	-	-	-	-	-	-	-	-	-
SS-67	CL	224+50	18.5-20.0	A-4(2)	26	6	9.9	30.7	16.8	42.6	100	98	61	-	-
SS-68	CL	224+50	23.5-25.0	A-2-4(0)	19	7	11.7	62.8	6.5	19.0	100	97	31	-	-
SS-69	CL	224+50	28.5-30.0	A-6(7)	32	11	12.3	29.3	46.9	11.5	100	91	77	-	-
SS-70	CL	224+50	33.5-35.0	A-2-4(0)	19	1	50.7	34.7	5.3	9.3	100	78	20	-	-
SS-71	CL	224+50	37.3-38.6	A-1-a(0)	18	NP	60.0	21.0	2.2	16.8	37	20	8	-	-
SS-72	CL	224+50	43.5-44.5	A-1-a(0)	15	NP	61.8	20.6	2.8	14.7	32	16	6	-	-

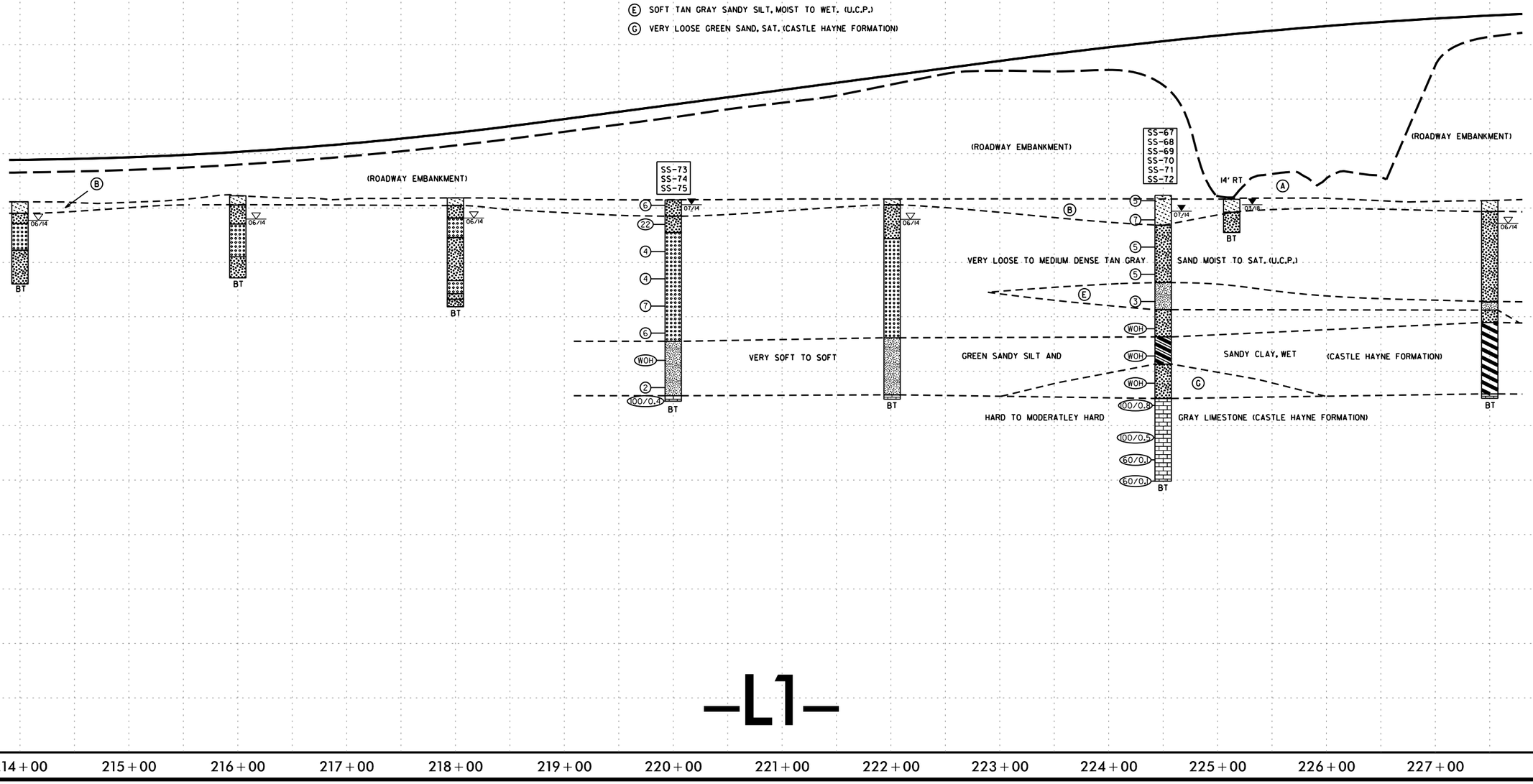
*** = INSUFFICIENT MATERIAL TO TEST SAMPLE

(A) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(E) SOFT TAN GRAY SANDY SILT, MOIST TO WET. (U.C.P.)

(G) VERY LOOSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)



-L1-

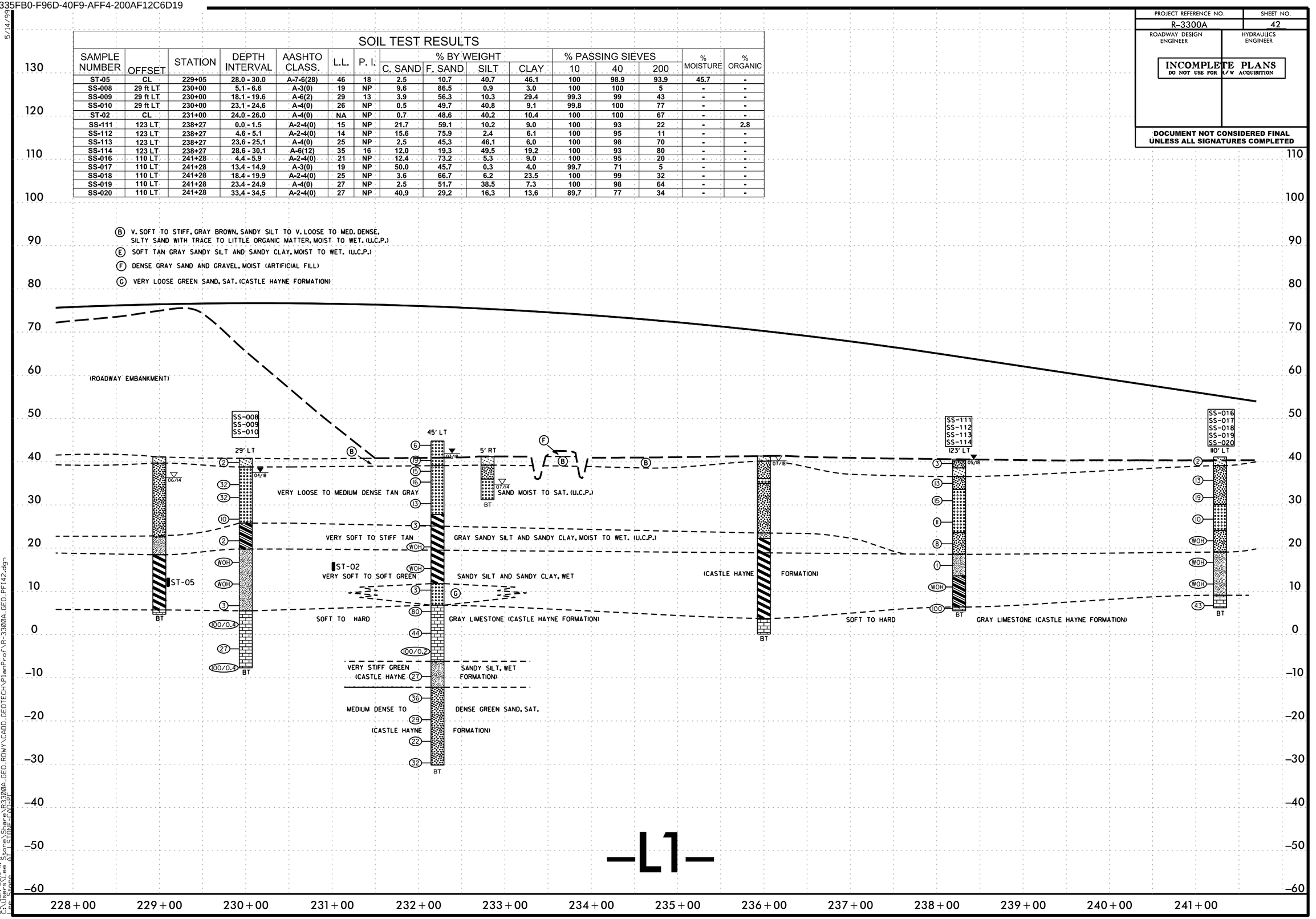
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	42
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
ST-05	CL	229+05	28.0 - 30.0	A-7-6(28)	46	18	2.5	10.7	40.7	46.1	100	98.9	93.9	45.7	-
SS-008	29 ft LT	230+00	5.1 - 6.6	A-3(0)	19	NP	9.6	86.5	0.9	3.0	100	100	5	-	-
SS-009	29 ft LT	230+00	18.1 - 19.6	A-6(2)	29	13	3.9	56.3	10.3	29.4	99.3	99	43	-	-
SS-010	29 ft LT	230+00	23.1 - 24.6	A-4(0)	26	NP	0.5	49.7	40.8	9.1	99.8	100	77	-	-
ST-02	CL	231+00	24.0 - 26.0	A-4(0)	NA	NP	0.7	48.6	40.2	10.4	100	100	67	-	-
SS-111	123 LT	238+27	0.0 - 1.5	A-2-4(0)	15	NP	21.7	59.1	10.2	9.0	100	93	22	-	2.8
SS-112	123 LT	238+27	4.6 - 5.1	A-2-4(0)	14	NP	15.6	75.9	2.4	6.1	100	95	11	-	-
SS-113	123 LT	238+27	23.6 - 25.1	A-4(0)	25	NP	2.5	45.3	46.1	6.0	100	98	70	-	-
SS-114	123 LT	238+27	28.6 - 30.1	A-6(12)	35	16	12.0	19.3	49.5	19.2	100	93	80	-	-
SS-016	110 LT	241+28	4.4 - 5.9	A-2-4(0)	21	NP	12.4	73.2	5.3	9.0	100	95	20	-	-
SS-017	110 LT	241+28	13.4 - 14.9	A-3(0)	19	NP	50.0	45.7	0.3	4.0	99.7	71	5	-	-
SS-018	110 LT	241+28	18.4 - 19.9	A-2-4(0)	25	NP	3.6	66.7	6.2	23.5	100	99	32	-	-
SS-019	110 LT	241+28	23.4 - 24.9	A-4(0)	27	NP	2.5	51.7	38.5	7.3	100	98	64	-	-
SS-020	110 LT	241+28	33.4 - 34.5	A-2-4(0)	27	NP	40.9	29.2	16.3	13.6	89.7	77	34	-	-



ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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SOIL TEST RESULTS

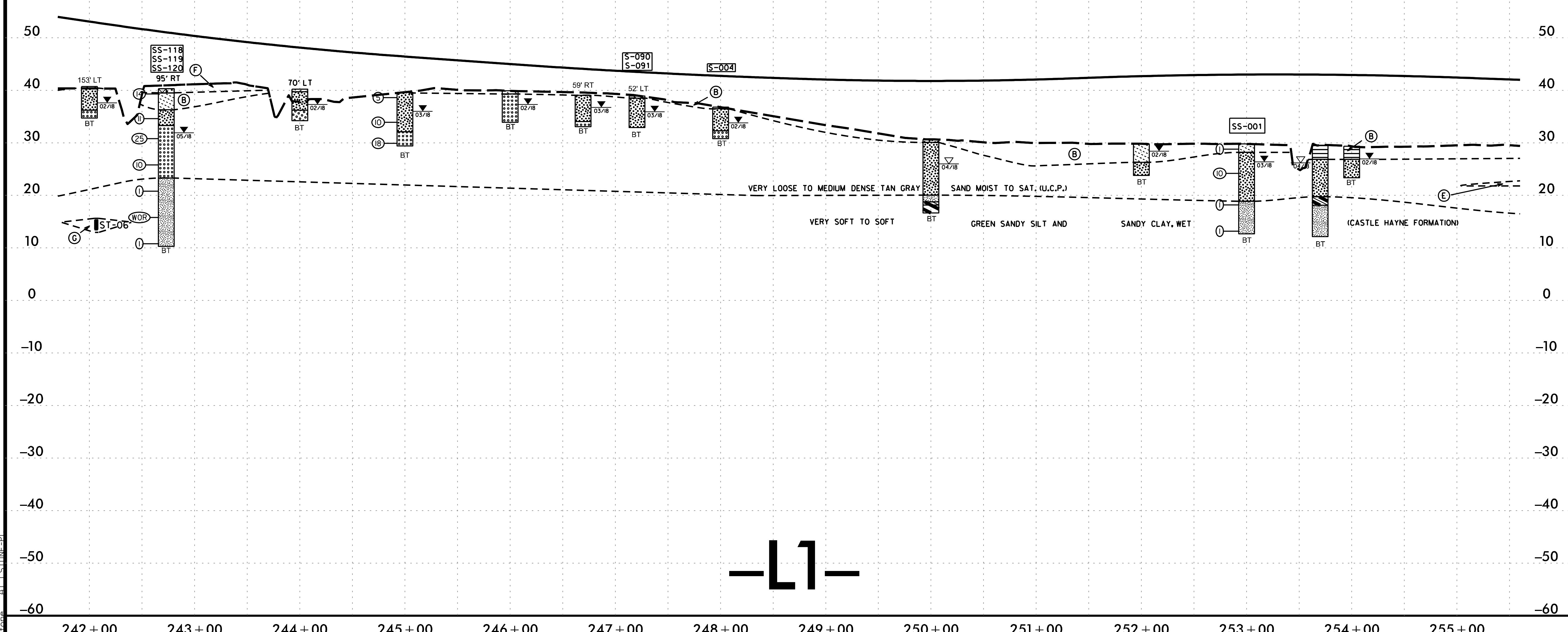
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
ST-06	CL	242+05	25.0 - 27.0	A-2-4(0)	NA	NP	7.8	81.3	4.5	6.5	99.8	98.3	13.5	-	3.2
SS-118	95 RT	242+73	0.8 - 1.5	A-2-4(0)	16	NP	14.7	66.5	15.2	3.6	100	96	23	-	3.2
SS-119	95 RT	242+73	4.7 - 5.3	A-2-4(0)	17	NP	6.1	77.1	7.8	9.0	100	98	23	-	-
SS-120	95 RT	242+73	18.5 - 20.0	A-4(0)	28	10	2.2	63.9	8.6	25.4	100	99	37	-	-
S-090	52 LT	247+20	0.4 - 4.0	A-2-4(0)	17	NP	13.5	68.6	5.7	12.2	100	96	21	-	-
S-091	52 LT	247+20	4.0 - 6.0	A-2-4(0)	25	NP	16.3	61.8	4.6	17.3	100	91	29	-	-
S-004	CL	248+00	3.0 - 4.0	A-2-4(0)	15	NP	15.3	68.6	4.9	11.2	100	94	20	20	-
SS-001	CL	253+00	10.9 - 12.1	A-4(0)	25	2	2.9	53.4	28.6	15.1	99.8	99	61	36	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(E) SOFT TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET. (U.C.P.)

(F) DENSE GRAY SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)

(G) VERY LOOSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)



-L1-

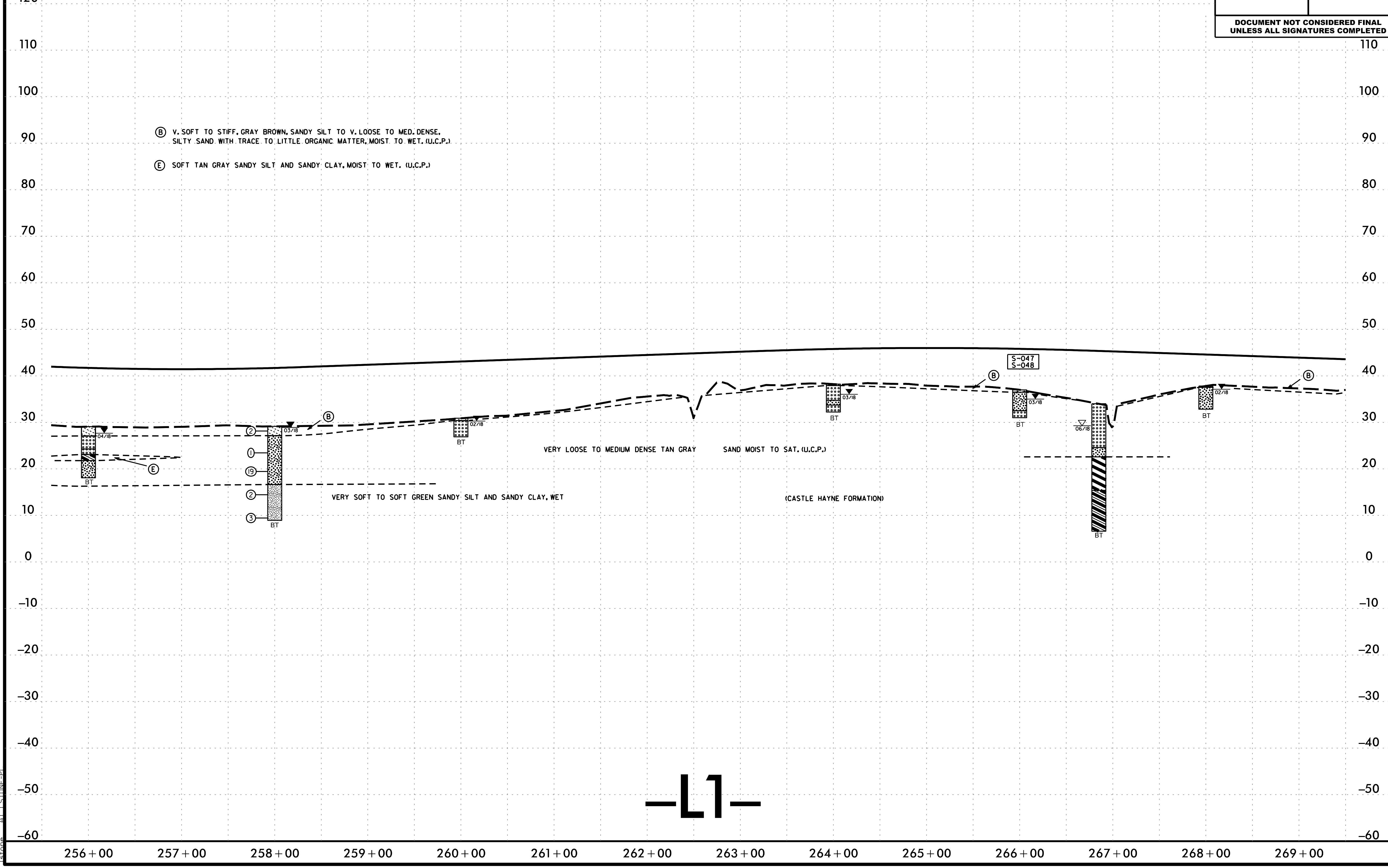
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	44
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-047	CL	266+00	1.0 - 1.5	A-2-4(0)	14	NP	43.1	46.0	4.2	6.6	100	89	13	18	-
S-048	CL	266+00	3.5 - 4.0	A-2-4(0)	12	NP	50.4	35.9	1.0	12.7	100	91	14	13	-



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	45
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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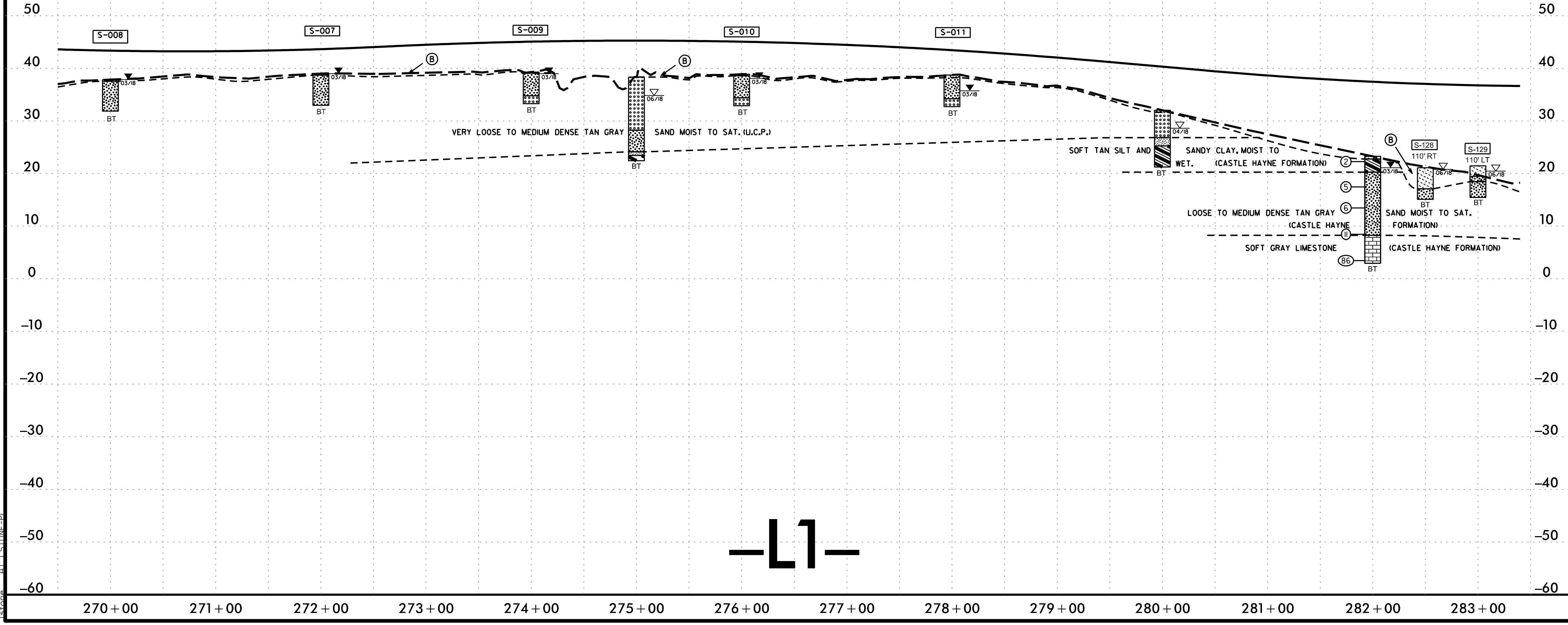
SOIL TEST RESULTS

SAMPLE NUMBER	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-008	CL	270+00	1.0 - 1.5	A-2-4(0)	14	NP	42.7	42.0	5.8	9.5	99.9	90	17	19	-
S-007	CL	272+00	3.0 - 3.5	A-2-4(0)	16	NP	39.6	48.2	6.0	6.2	99.9	89	16	19	-
S-009	CL	274+00	1.0 - 1.5	A-2-4(0)	14	NP	28.5	55.7	9.3	6.5	99.9	90	22	19	-
S-010	CL	276+00	4.5 - 5.0	A-3(0)	15	NP	55.8	39.6	0.6	4.0	100	92	5	23	-
S-011	CL	278+00	1.0 - 1.5	A-2-4(0)	17	NP	20.7	57.0	6.9	15.4	100	93	29	17	-
S-128	110 ft RT	282+50	0.5 - 1.0	A-2-4(0)	22	NP	26.2	56.7	13.1	4.0	99.4	90	23	23	5.8
S-129	110 ft LT	283+00	2.0 - 3.0	A-2-4(0)	15	NP	26.6	51.0	7.3	15.1	100	94	27	21	1.6

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



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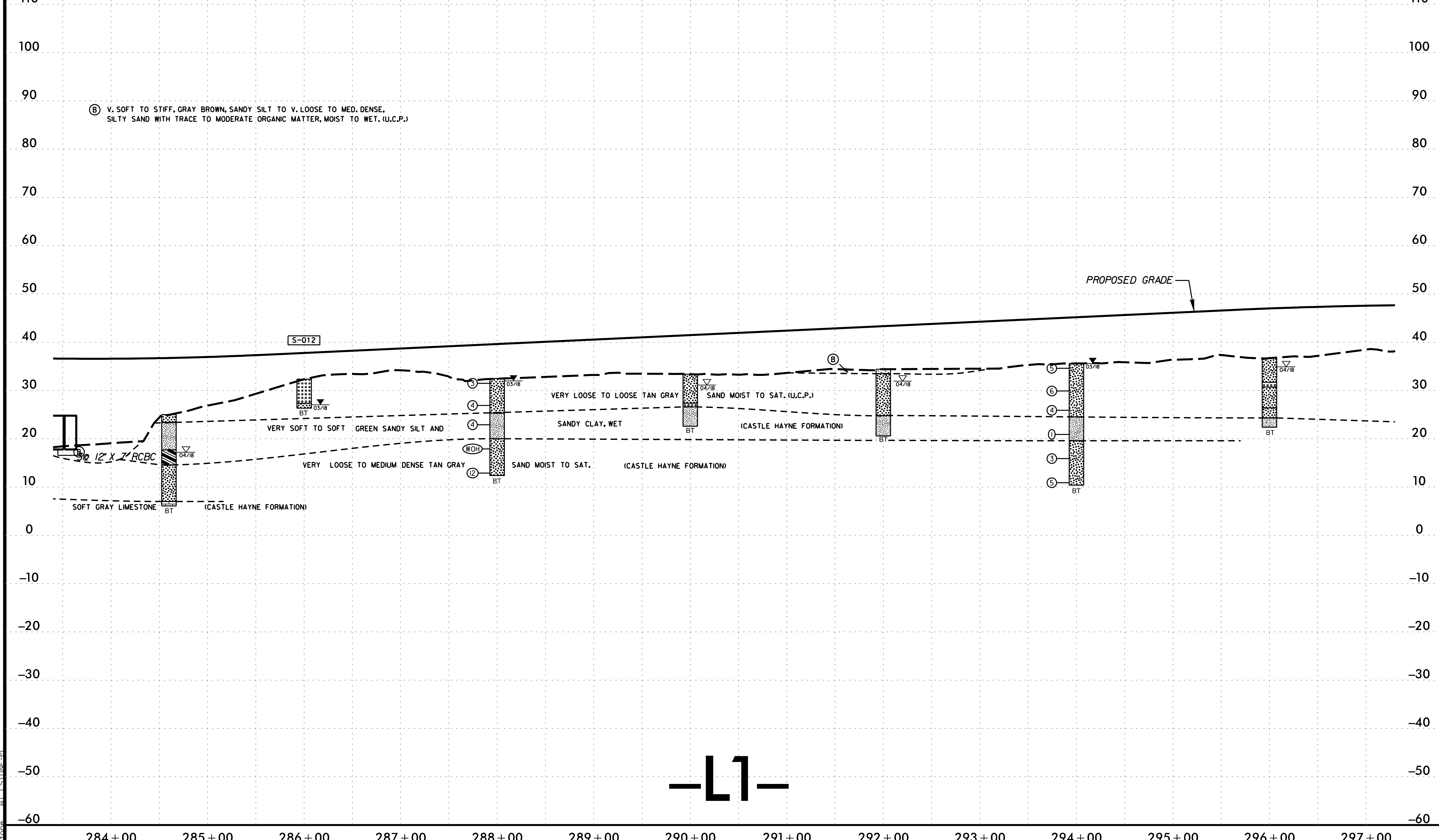
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	46
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-012	CL	286+00	4.0 - 4.5	A-3(0)	15	NP	65.8	27.1	0.8	6.3	99.3	83	7	18	-



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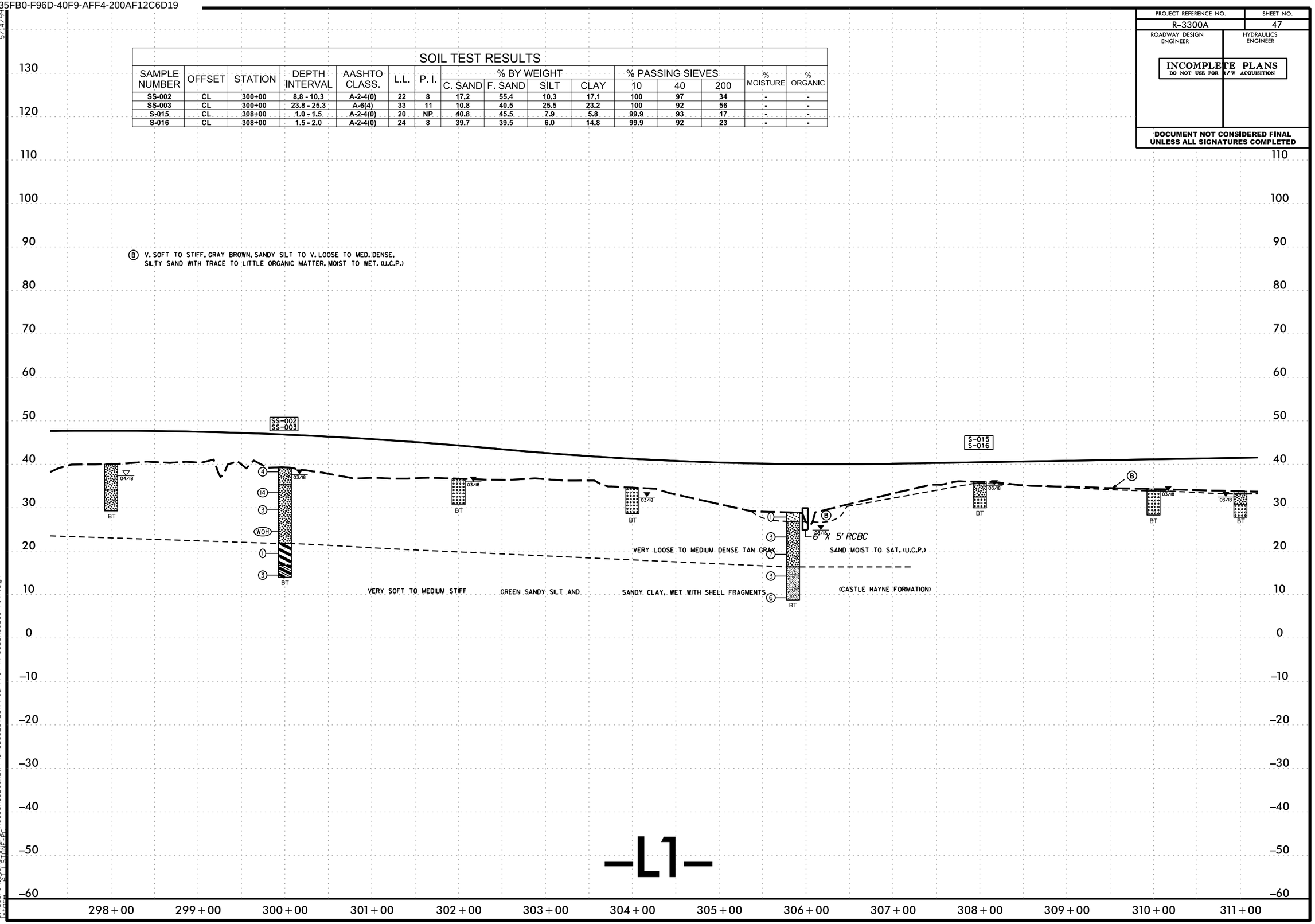
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	47
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-002	CL	300+00	8.8 - 10.3	A-2-4(0)	22	8	17.2	55.4	10.3	17.1	100	97	34	-	-
SS-003	CL	300+00	23.8 - 25.3	A-6(4)	33	11	10.8	40.5	25.5	23.2	100	92	56	-	-
S-015	CL	308+00	1.0 - 1.5	A-2-4(0)	20	NP	40.8	45.5	7.9	5.8	99.9	93	17	-	-
S-016	CL	308+00	1.5 - 2.0	A-2-4(0)	24	8	39.7	39.5	6.0	14.8	99.9	92	23	-	-



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	48
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-004	CL	312+00	8.5 - 10.0	A-2-4(0)	22	NP	10.4	61.2	14.9	13.5	100	98	31	-	-
SS-006	CL	318+00	4.7 - 6.2	A-2-6(0)	26	12	56.4	14.4	6.0	23.2	100	92	30	-	-
SS-007	CL	318+00	13.7 - 15.2	A-6(8)	38	13	3.6	34.9	31.5	30.0	100	99	67	53	-
S-017	60 ft LT	318+30	1.0 - 2.0	A-2-4(0)	19	NP	45.4	34.4	7.3	12.9	100	94	22	-	3.9
S-018	60 ft LT	318+30	3.0 - 3.5	A-2-4(0)	16	NP	48.1	30.1	3.9	17.9	100	93	23	-	-
SS-005	CL	324+00	8.5 - 10.0	A-6(8)	34	15	5.1	33.9	22.0	39.0	100	99	66	61	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) DENSE GRAY SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)

SS-004 | SS-006 SS-007 S-017 S-018 | SS-005

60' LT

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND AND CLAYEY SAND

MOIST TO SAT. (U.C.P.)

VERY SOFT TO MEDIUM STIFF GRAY GREEN SANDY CLAY, WET WITH SHELL FRAGMENTS (CASTLE HAYNE FORMATION)

BT

-L1-

312+00 313+00 314+00 315+00 316+00 317+00 318+00 319+00 320+00 321+00 322+00 323+00 324+00 325+00

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

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	49
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

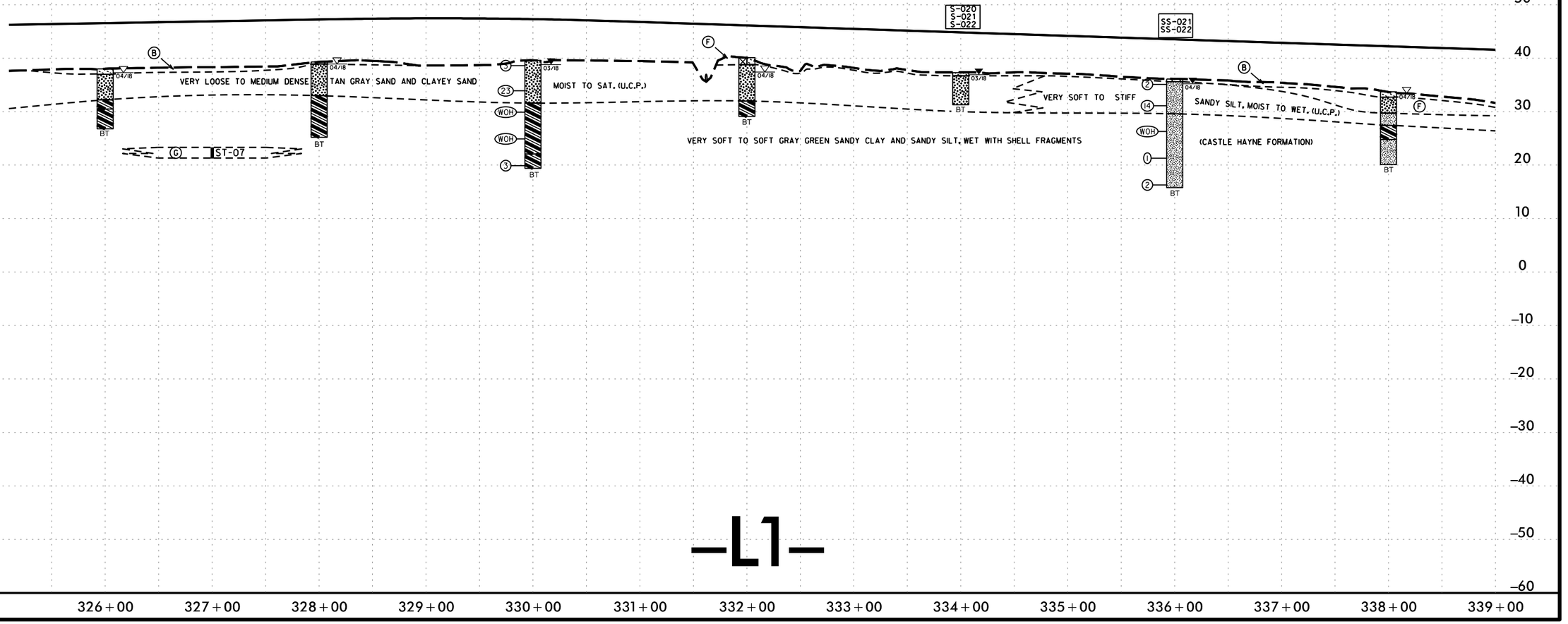
SOIL TEST RESULTS

SAMPLE NUMBER	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		
ST-07	CL	327+00	15.0 - 17.0	A-2-4(0)	18	1	10.5	69.6	7.6	12.3	100	97	25	18	-
S-020	CL	334+00	1.0 - 1.5	A-2-4(0)	14	NP	19.8	64.4	4.6	11.2	99	98	34	22	-
S-021	CL	334+00	1.5 - 2.0	A-2-4(0)	19	NP	10.6	60.9	9.1	19.4	100	99	32	29	-
S-022	CL	334+00	3.5 - 4.0	A-2-4(0)	24	7	7.2	63.4	6.8	22.6	100	99	34	34	-
SS-021	CL	336+00	4.0 - 5.5	A-4(0)	14	NP	15.6	68.5	6.5	9.4	100	98	38	-	-
SS-022	CL	336+00	8.8 - 10.3	A-4(0)	23	3	2.7	66.9	8.8	21.6	100	99	38	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) LOOSE GRAY SAND AND GRAVEL WITH LITTLE ORGANIC MATTER, MOIST (ARTIFICIAL FILL)

(G) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (CASTLE HAYNE FORMATION)



–L1–

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	50
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

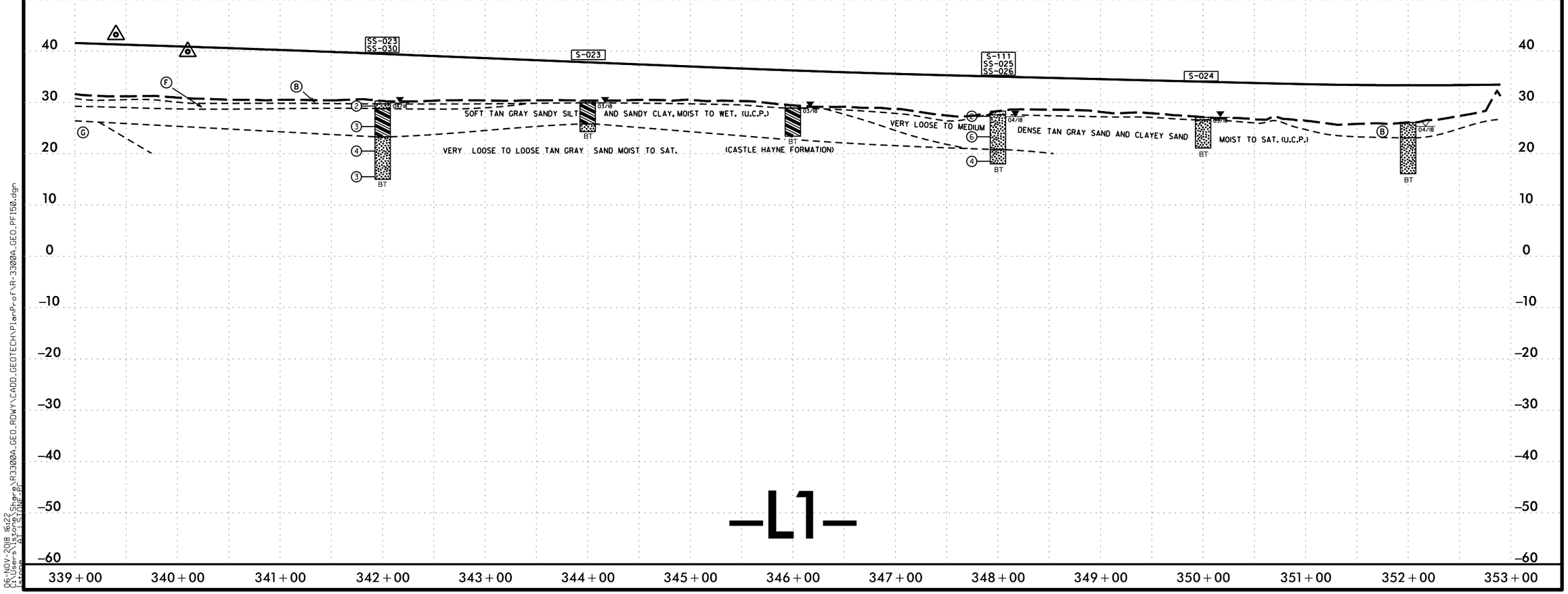
SOIL TEST RESULTS

SAMPLE NUMBER	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-023	CL	342+00	8.8 - 10.3	A-2-4(0)	22	NP	1.8	82.7	6.1	9.4	100	99	21	-	-
SS-030	CL	342+00	13.8 - 15.3	A-2-4(0)	20	NP	21.5	61.1	9.4	8.0	99.8	88	24	-	-
S-023	CL	344+00	1.5 - 2.0	A-6(0)	27	11	11.1	55.8	6.7	26.4	100	99	36	30	-
S-111	CL	348+00	0.0 - 1.0	A-2-4(0)	19	NP	11.7	65.2	15.3	7.8	99.6	97	28	26	3.8
SS-025	CL	348+00	4.0 - 5.5	A-2-4(0)	19	NP	1.4	75.1	6.0	17.5	100	100	29	-	-
SS-026	CL	348+00	8.8 - 10.3	A-2-4(0)	20	NP	1.0	80.7	5.9	12.4	100	100	24	-	-
S-024	CL	350+00	0.5 - 6.0	A-2-4(0)	22	6	8.3	65.7	8.1	17.9	100	98	30	26	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)

(C) VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET. (CASTLE HAYNE FORMATION)



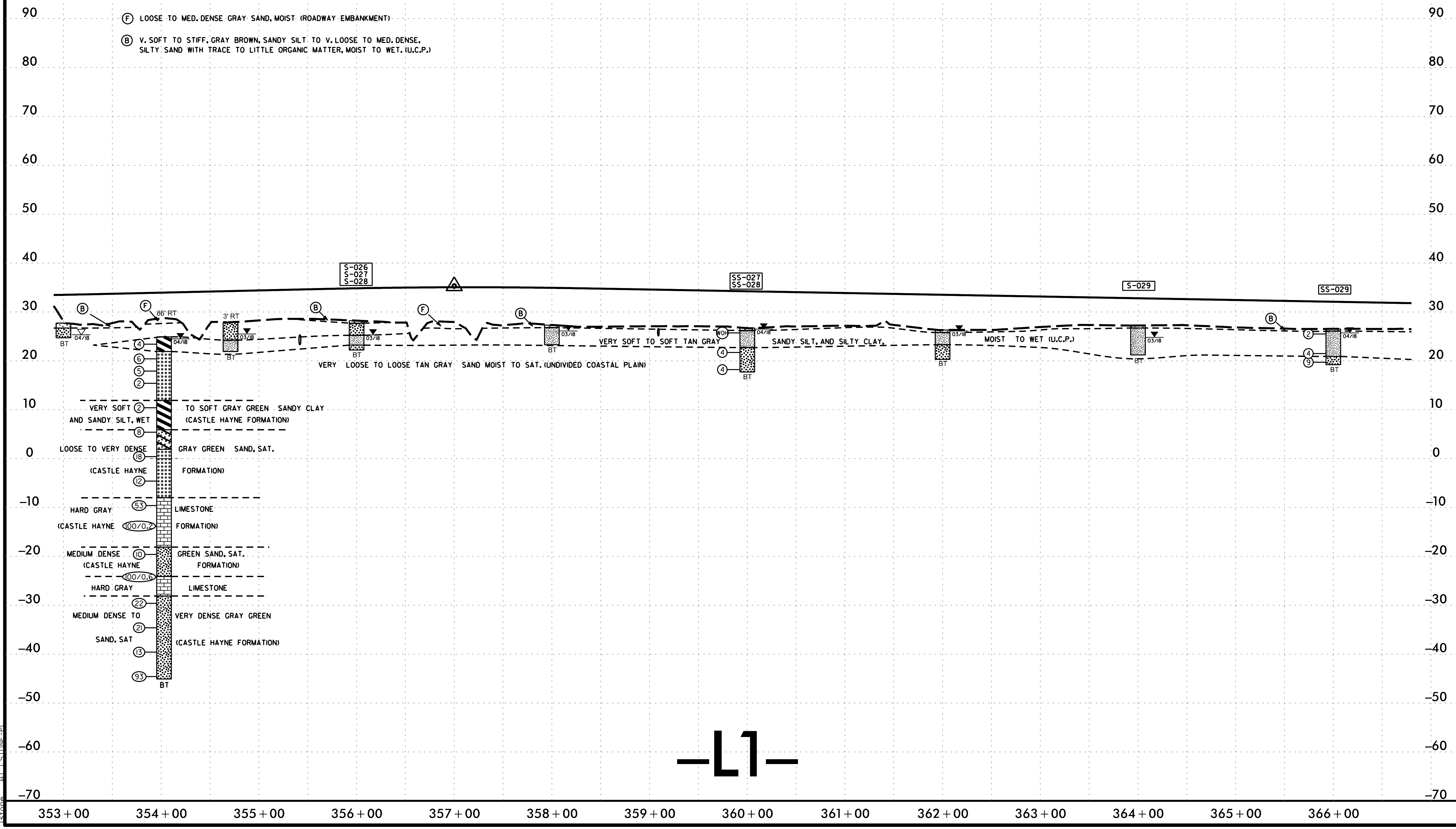
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	51
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-026	CL	356+00	0.0 - 3.0	A-2-4(0)	13	NP	13.6	69.8	7.8	8.8	99.9	98	20	-	-
S-027	CL	356+00	3.0 - 5.0	A-4(0)	26	10	5.8	60.1	8.1	26.0	100	99	37	-	-
S-028	CL	356+00	5.0 - 6.0	A-2-4(0)	17	NP	1.9	80.9	3.5	13.7	100	100	21	-	-
SS-027	CL	360+00	4.0 - 5.5	A-2-4(0)	18	NP	4.5	79.2	4.9	11.4	100	99	21	-	-
SS-028	CL	360+00	7.5 - 9.0	A-2-4(0)	17	NP	6.2	82.0	3.5	8.2	100	99	16	-	-
S-029	CL	364+00	0.0 - 6.0	A-4(0)	20	8	9.4	58.4	13.5	18.7	99.9	98	40	-	-
SS-029	CL	366+00	4.0 - 5.5	A-4(0)	21	6	11.4	55.3	16.2	17.1	100	97	46	-	-



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	52
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

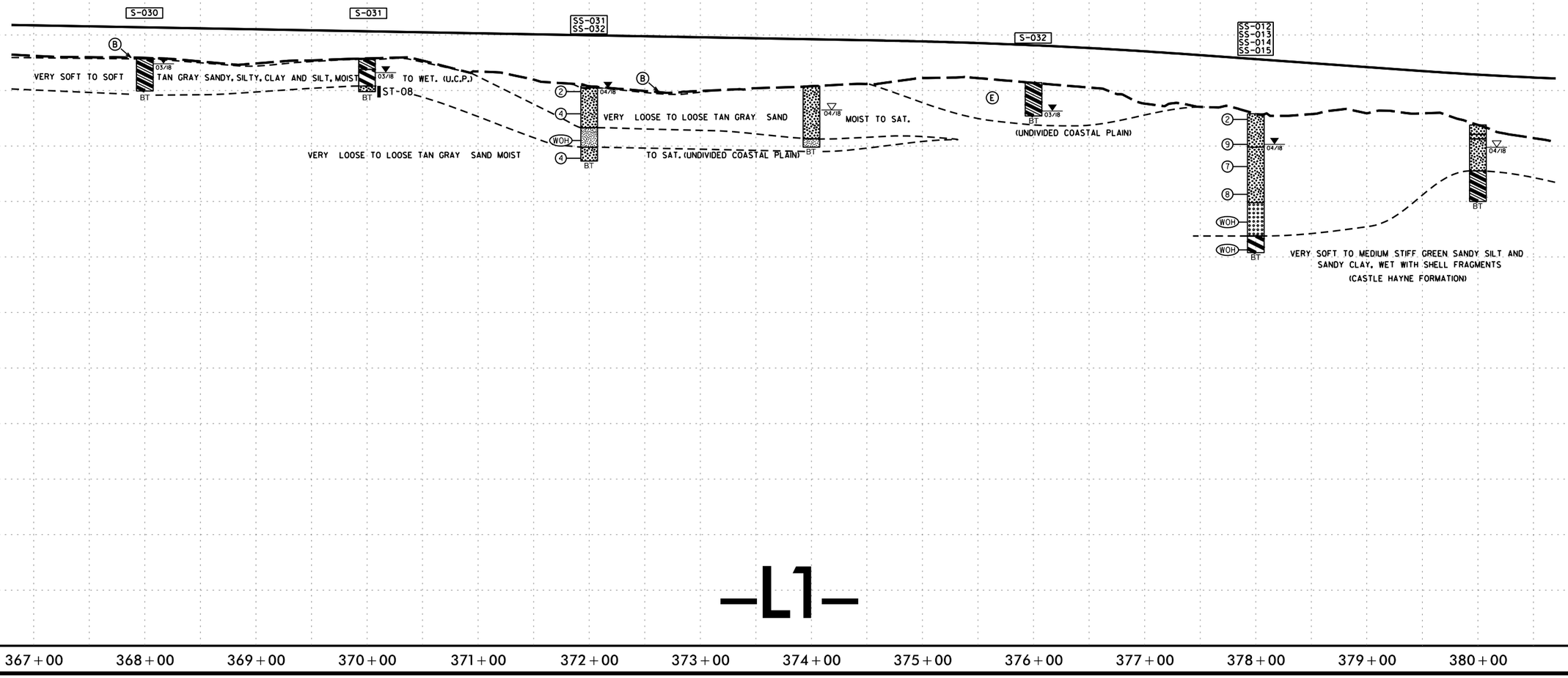
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-030	CL	368+00	0.0 - 6.0	A-6(7)	34	18	14.9	35.9	16.1	33.1	100	97	55	23	-
S-031	CL	370+00	2.0 - 5.0	A-7-6(13)	45	28	3.0	45.1	14.9	37.0	99.9	99	58	-	-
SS-031	CL	372+00	8.8 - 10.3	A-4(0)	23	3	4.4	62.3	12.9	20.4	100	99	47	-	-
ST-08	CL	370+05	5.0 - 7.0	A-2-4(0)	24	3	0.4	73.8	7.0	18.7	100	100	31	24	-
SS-032	CL	372+00	12.0 - 13.5	A-2-4(0)	21	NP	9.7	65.0	13.7	11.6	100	93	32	-	-
S-032	CL	376+00	4.0 - 6.0	A-6(1)	29	12	1.4	69.1	7.7	21.8	100	100	37	-	-
SS-012	CL	378+00	4.5 - 6.0	A-2-4(0)	17	NP	21.6	60.7	9.6	8.0	100	92	24	-	-
SS-013	CL	378+00	8.5 - 10.0	A-2-4(0)	26	NP	6.1	70.4	7.3	16.1	100	98	31	-	-
SS-014	CL	378+00	18.5 - 20.0	A-3(0)	23	NP	0.8	95.1	1.0	3.1	100	100	8	-	-
SS-015	CL	378+00	23.5 - 25.0	A-7-6(55)	89	65	4.6	19.6	7.4	68.4	100	97	79	139	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(E) SOFT TAN GRAY SANDY CLAY, MOIST TO WET. (U.C.P.)



–L1–

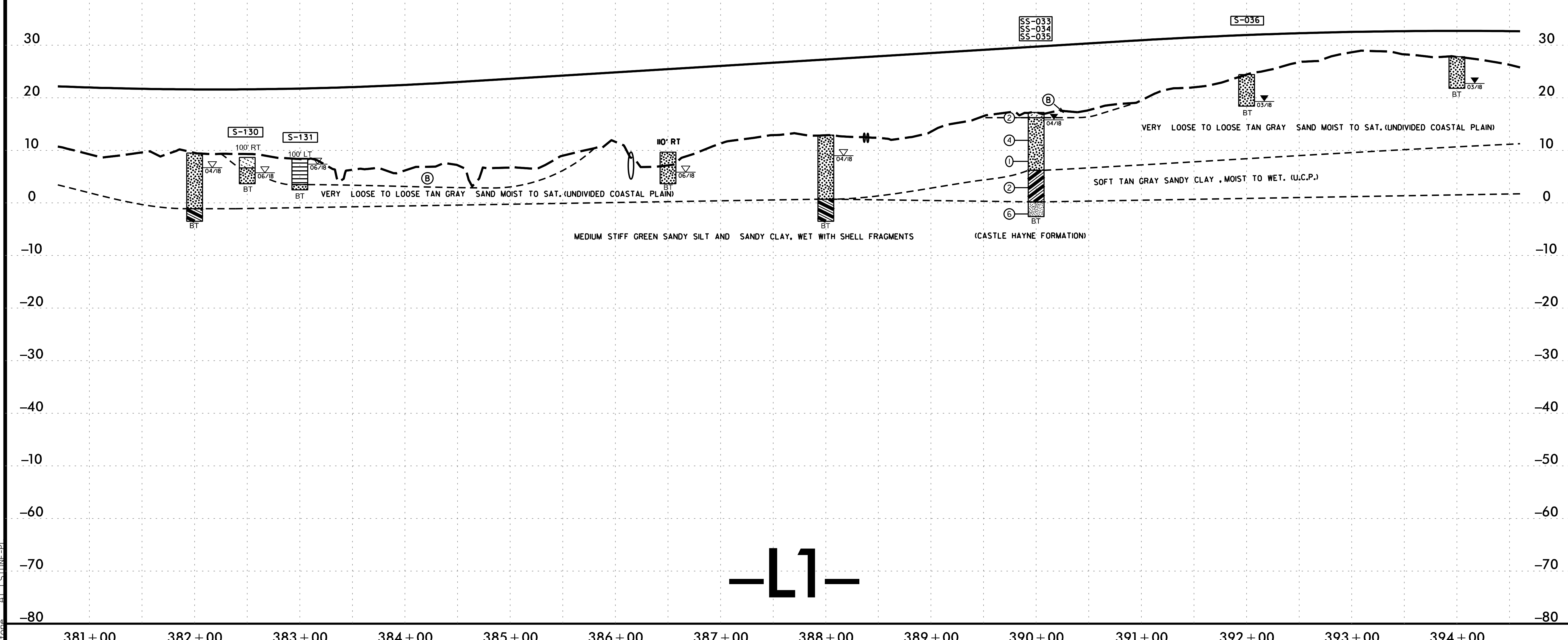
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-130	100 ft RT	382+50	0.5 - 1.0	A-2-4(0)	32	NP	7.6	76.6	12.5	3.3	99.0	97	24	62	5.7
S-131	100 ft LT	383+00	0.5 - 1.0	A-4(0)	39	NP	12.0	58.6	24.1	5.3	99.6	93	39	79	10.2
SS-033	CL	390+00	4.3 - 5.8	A-2-4(0)	20	NP	0.1	76.5	8.3	15.2	100	100	34	-	-
SS-034	CL	390+00	13.3 - 14.8	A-6(14)	34	18	5.4	20.6	38.0	36.0	100	96	83	52	-
SS-035	CL	390+00	18.3 - 19.8	A-4(0)	23	NP	50.0	17.7	22.1	10.2	63	58	35	-	-
S-036	CL	392+00	0.0 - 6.0	A-2-4(0)	24	NP	5.0	86.6	4.6	3.8	100	99	22	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE TO MODERATE ORGANIC MATTER, MOIST TO WET. (ALLUVIAL)



-L1-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	54
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

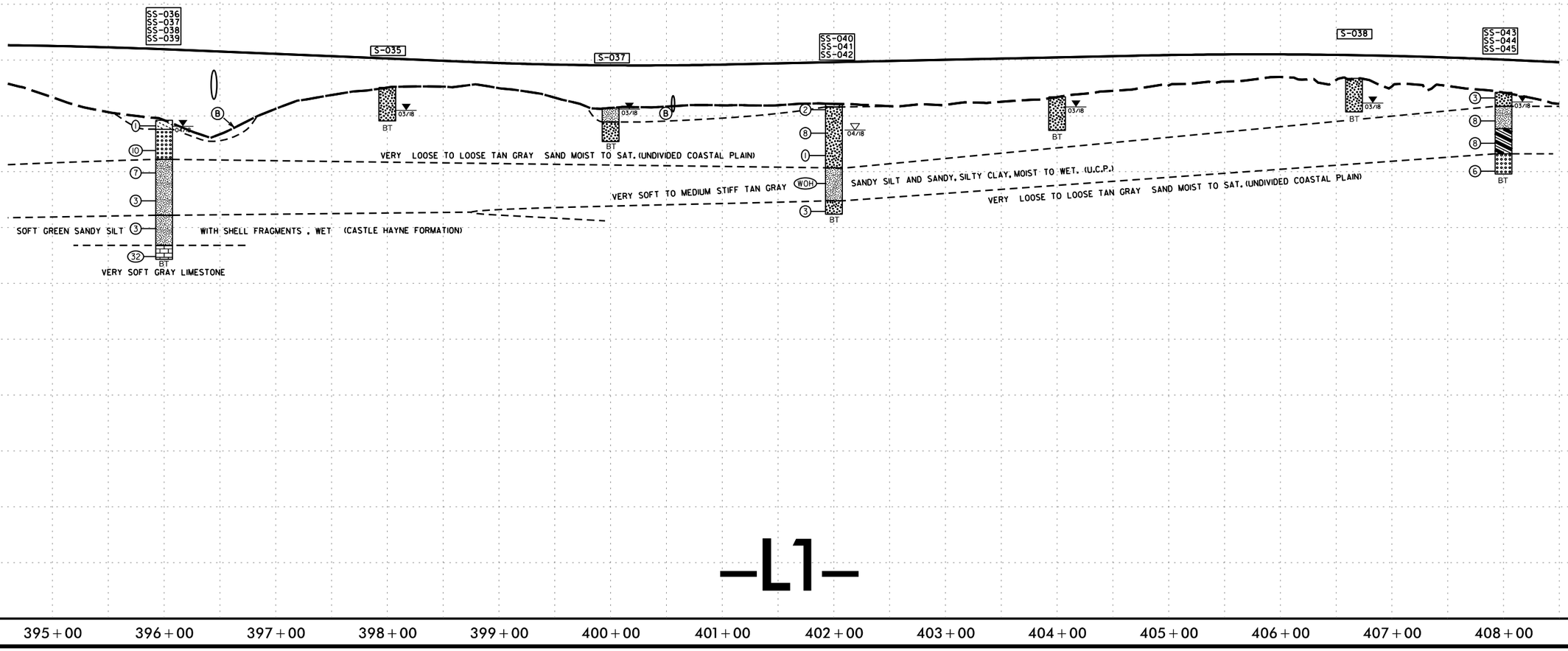
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-036	CL	396+00	4.4 - 5.9	A-3(0)	17	NP	78.8	17.0	0.2	4.0	100	81	5	-	-
SS-037	CL	396+00	8.4 - 9.9	A-4(0)	13	NP	14.6	61.2	13.1	11.1	100	98	35	-	-
SS-038	CL	396+00	18.4 - 19.9	A-4(1)	26	8	10.7	56.2	9.6	23.5	100	95	48	-	-
SS-039	CL	396+00	23.4 - 24.9	A-2-4(0)	19	NP	54.3	19.9	12.8	13.0	100	57	29	-	-
S-035	CL	398+00	0.0 - 6.0	A-2-4(0)	22	NP	0.9	89.7	6.4	3.0	100	100	23	-	-
S-037	CL	400+00	0.0 - 2.5	A-4(0)	23	NP	14.4	65.4	13.6	6.6	99.6	99	40	-	2.0
SS-040	CL	402+00	4.2 - 5.7	A-2-4(0)	12	NP	53.7	36.7	3.4	6.2	100	93	13	-	-
SS-041	CL	402+00	8.2 - 9.7	A-2-4(0)	15	NP	6.0	82.4	3.4	8.2	100	100	14	-	-
SS-042	CL	402+00	18.2 - 19.7	A-2-4(0)	11	NP	5.4	80.5	4.9	9.2	100	98	20	-	-
S-038	CL	406+66	0.0 - 6.0	A-2-4(0)	18	NP	2.4	90.1	3.9	3.6	100	100	23	-	-
SS-043	CL	408+00	4.1 - 5.6	A-4(0)	17	NP	1.0	79.7	15.3	4.0	100	100	44	-	-
SS-044	CL	408+00	8.1 - 9.6	A-6(5)	29	16	15.8	39.2	14.4	30.6	100	97	54	32	-
SS-045	CL	408+00	13.1 - 14.6	A-3(0)	14	NP	39.3	55.3	1.4	4.0	100	95	6	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	55
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

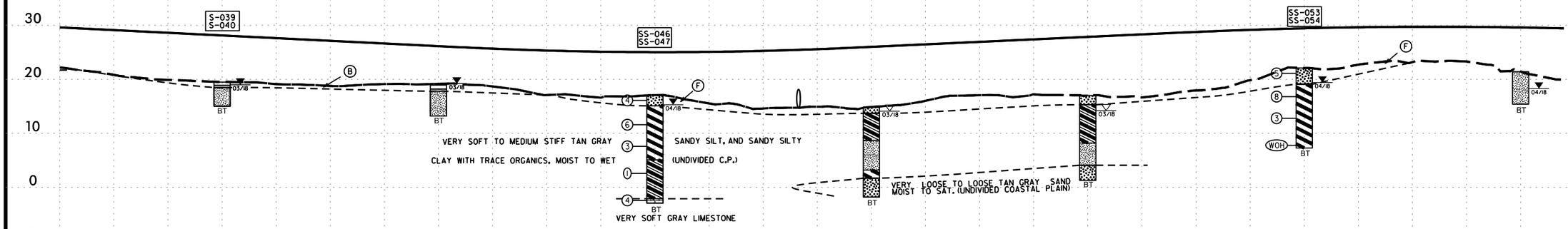
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-039	CL	410+00	0.0 - 1.0	A-4(0)	26	NP	10.1	67.8	12.4	9.7	99.7	97	42	-	6.6
S-040	CL	410+00	1.0 - 4.5	A-4(0)	19	NP	7.8	71.9	5.6	14.7	100	99	40	-	3.4
SS-046	CL	414+00	4.5 - 6.0	A-7-6(33)	54	32	0.9	7.6	35.8	55.8	100	100	94	62	-
SS-047	CL	414+00	13.5 - 15.0	A-6(2)	25	12	10.7	50.0	18.7	20.6	100	97	42	-	-
SS-053	CL	420+00	4.3 - 5.8	A-7-6(17)	49	32	3.9	37.4	13.9	44.8	100	100	62	40	-
SS-054	CL	420+00	13.3 - 14.8	A-7-6(24)	53	25	3.3	13.1	36.1	47.5	100	98	86	173	-

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT WITH LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

Ⓕ VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)



-L1-

120 110 100 90 80 70 60 50 40 30 20 10 0 −10 −20 −30 −40 −50 −60 −70

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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	56

ROADWAY DESIGN ENGINEER

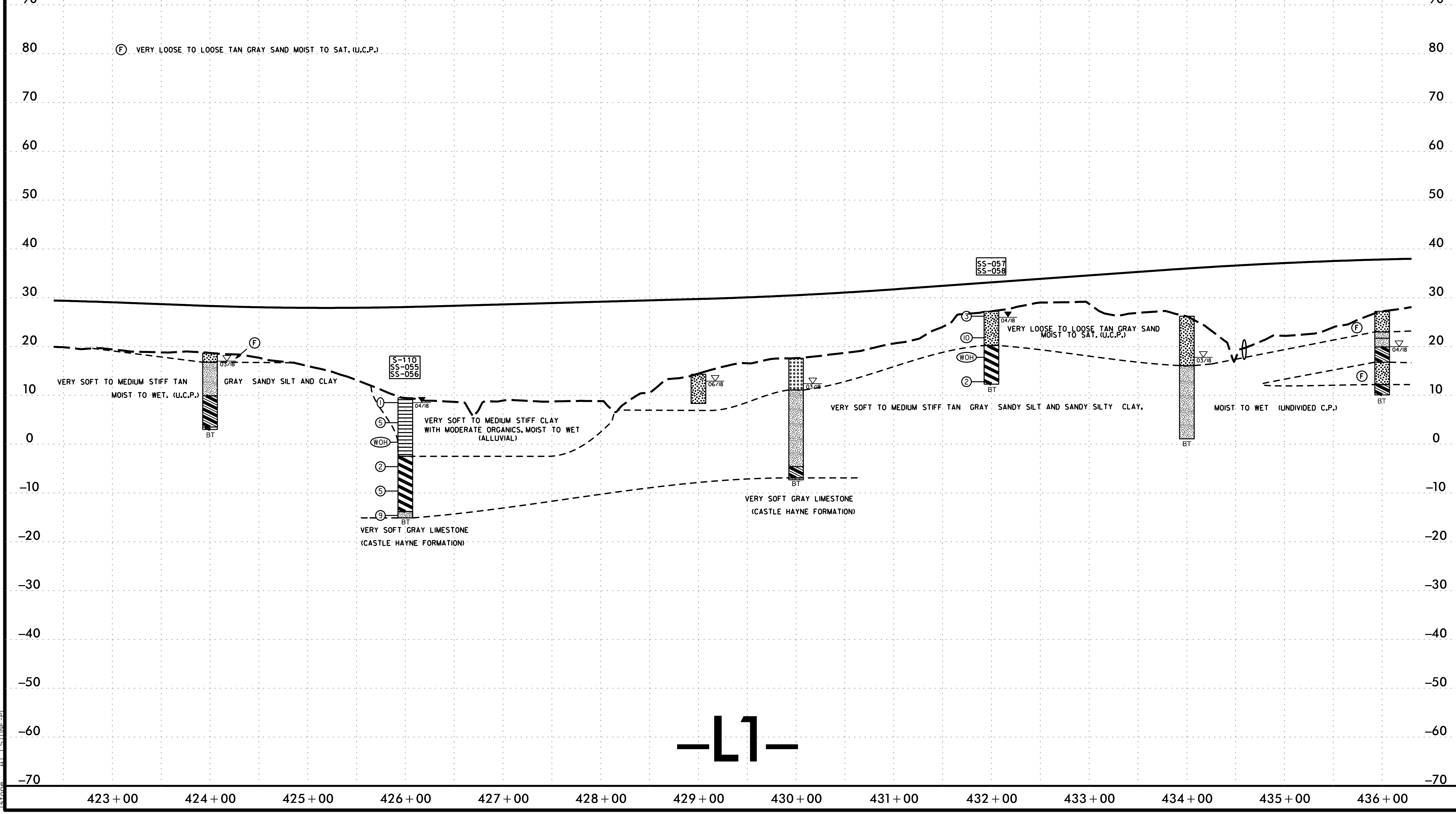
HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-110	CL	426+05	0.0 - 1.0	A-7-5(12)	47	16	6.8	27.0	49.2	16.9	97.7	97	71	37	10.9
SS-055	CL	426+00	13.1 - 14.6	A-7-6(54)	77	49	0.9	6.4	23.7	69.0	100	100	94	101	-
SS-056	CL	426+00	23.1 - 24.6	A-4(0)	22	NP	43.6	20.5	18.9	16.9	93.6	71	39	-	-
SS-057	CL	432+00	4.4 - 5.9	A-2-4(0)	22	NP	10.2	82.3	3.5	4.0	100	97	21	-	-
SS-058	CL	432+00	8.4 - 9.9	A-7-6(30)	53	35	5.1	14.2	25.2	55.6	100	99	82	48	-



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	57
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

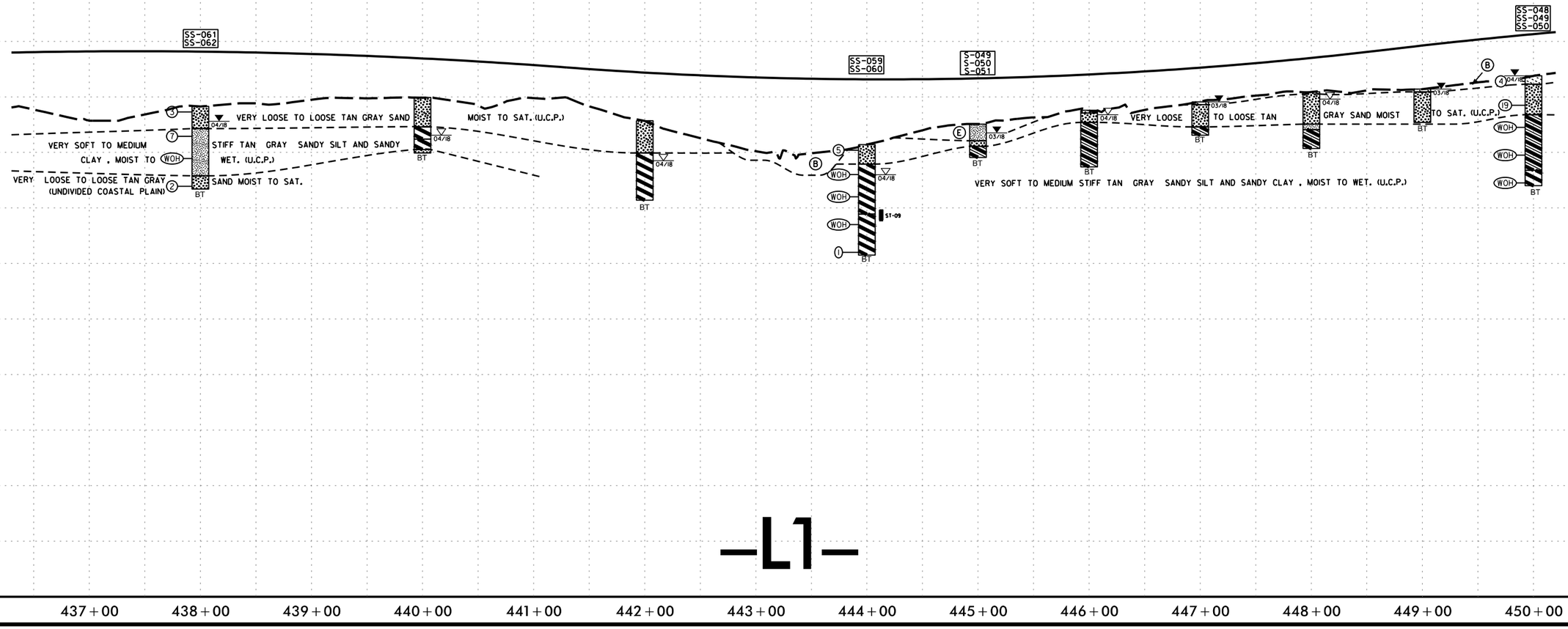
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-061	CL	438+00	4.4 - 5.9	A-4(0)	20	NP	0.1	51.2	31.6	17.1	100	100	77	-	-
SS-062	CL	438+00	13.4 - 14.9	A-2-4(0)	24	NP	4.9	86.0	6.1	3.0	100	99	27	-	-
SS-059	CL	444+00	4.4 - 5.9	A-7-6(20)	43	25	3.9	31.7	25.4	39.0	100	99	81	53	-
SS-060	CL	444+00	13.4 - 14.9	A-7-6(48)	67	43	0.1	4.3	35.2	60.4	100	100	98	105	-
ST-09	CL	445+05	12.0 - 14.0	A-7-6(67)	84	59	0.0	4.6	25.7	69.7	100	100	98.0	53	-
S-049	CL	445+00	1.0 - 1.5	A-4(0)	22	NP	1.8	71.6	18.4	8.2	100	99	60	28	-
S-050	CL	445+00	3.0 - 3.5	A-2-4(0)	19	NP	31.9	44.9	6.9	16.3	100	95	26	20	-
S-051	CL	445+00	4.0 - 4.5	A-6(3)	29	13	14.1	43.4	12.0	30.5	100	96	48	26	-
SS-048	CL	450+00	4.3 - 5.8	A-2-4(0)	13	NP	0.7	89.1	5.8	4.4	100	100	27	-	-
SS-049	CL	450+00	8.3 - 9.8	A-6(4)	27	15	7.8	42.7	18.6	30.9	100	98	52	-	-
SS-050	CL	450+00	18.3 - 19.8	A-7-6(34)	56	31	0.9	4.2	36.3	58.6	100	100	96	108	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(E) VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT , MOIST TO WET. (U.C.P.)



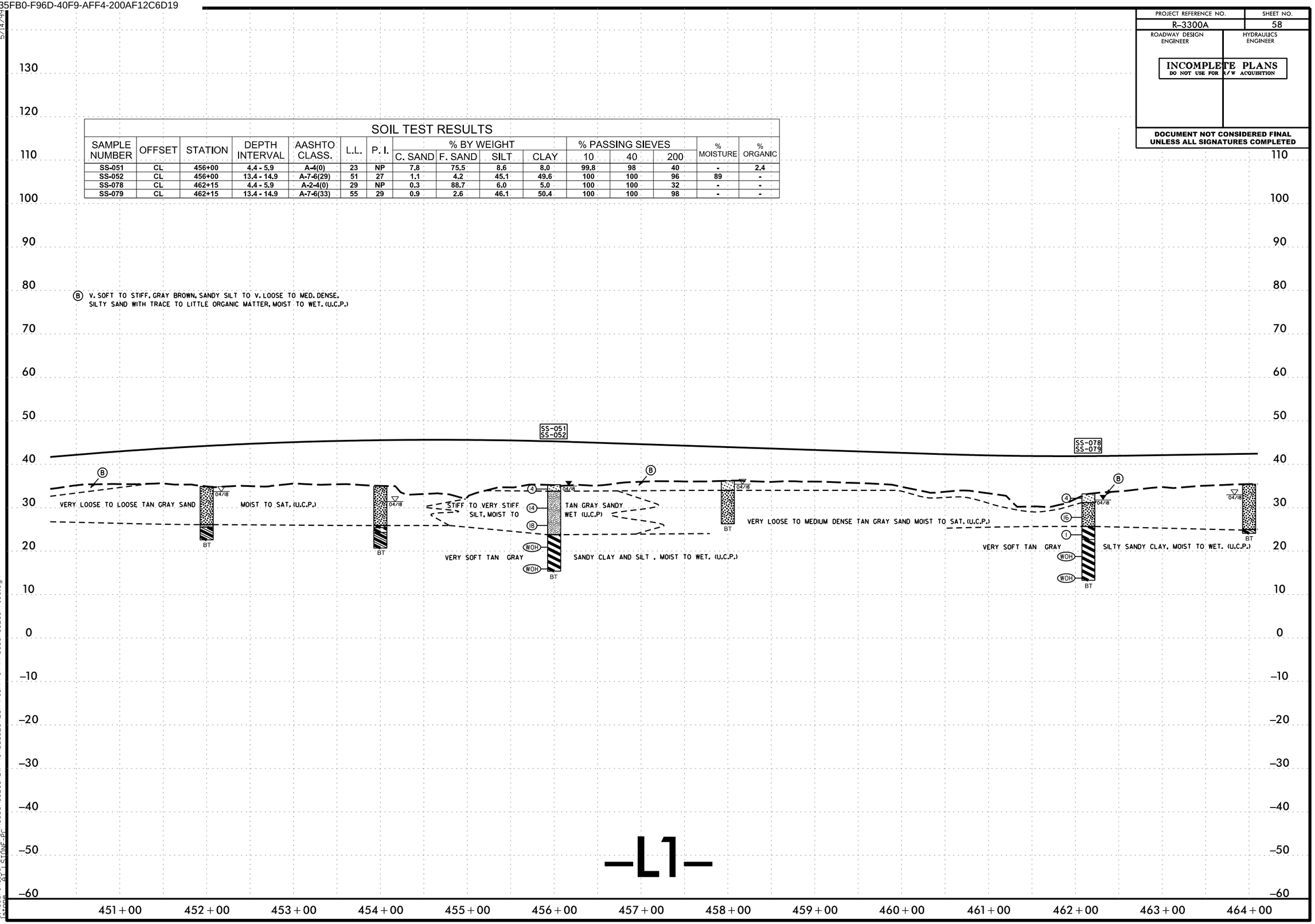
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	58
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-051	CL	456+00	4.4 - 5.9	A-4(0)	23	NP	7.8	75.5	8.6	8.0	99.8	98	40	-	2.4
SS-052	CL	456+00	13.4 - 14.9	A-7-6(29)	51	27	1.1	4.2	45.1	49.6	100	100	96	89	-
SS-078	CL	462+15	4.4 - 5.9	A-2-4(0)	29	NP	0.3	88.7	6.0	5.0	100	100	32	-	-
SS-079	CL	462+15	13.4 - 14.9	A-7-6(33)	55	29	0.9	2.6	46.1	50.4	100	100	98	-	-



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	59
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-097	CL	468+00	4.7 - 6.2	A-2-4(0)	23	NP	0.3	87.5	9.2	3.0	100	100	18	-	-
SS-098	CL	468+00	8.7 - 10.2	A-4(0)	19	NP	13.8	60.8	20.3	5.1	100	96	50	-	-
SS-099	CL	468+00	13.7 - 15.2	A-7-5(27)	58	28	10.8	8.1	41.3	39.7	100	93	84	85	-
SS-100	25 ft RT	474+00	4.6 - 6.1	A-2-4(0)	14	NP	0.5	85.7	8.8	5.0	100	100	24	-	-
SS-101	25 ft RT	474+00	8.6 - 10.1	A-4(0)	24	NP	4.5	65.2	25.0	5.3	100	99	68	-	-
S-122	CL	476+00	0.0 - 1.0	A-4(0)	21	NP	2.3	70.2	16.4	11.1	100	99	38	27	5.3

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

SS-097
SS-098
SS-099

SS-100
SS-101

S-122

25' RT

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)

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

-L1-

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

465+00 466+00 467+00 468+00 469+00 470+00 471+00 472+00 473+00 474+00 475+00 476+00 477+00 478+00

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ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

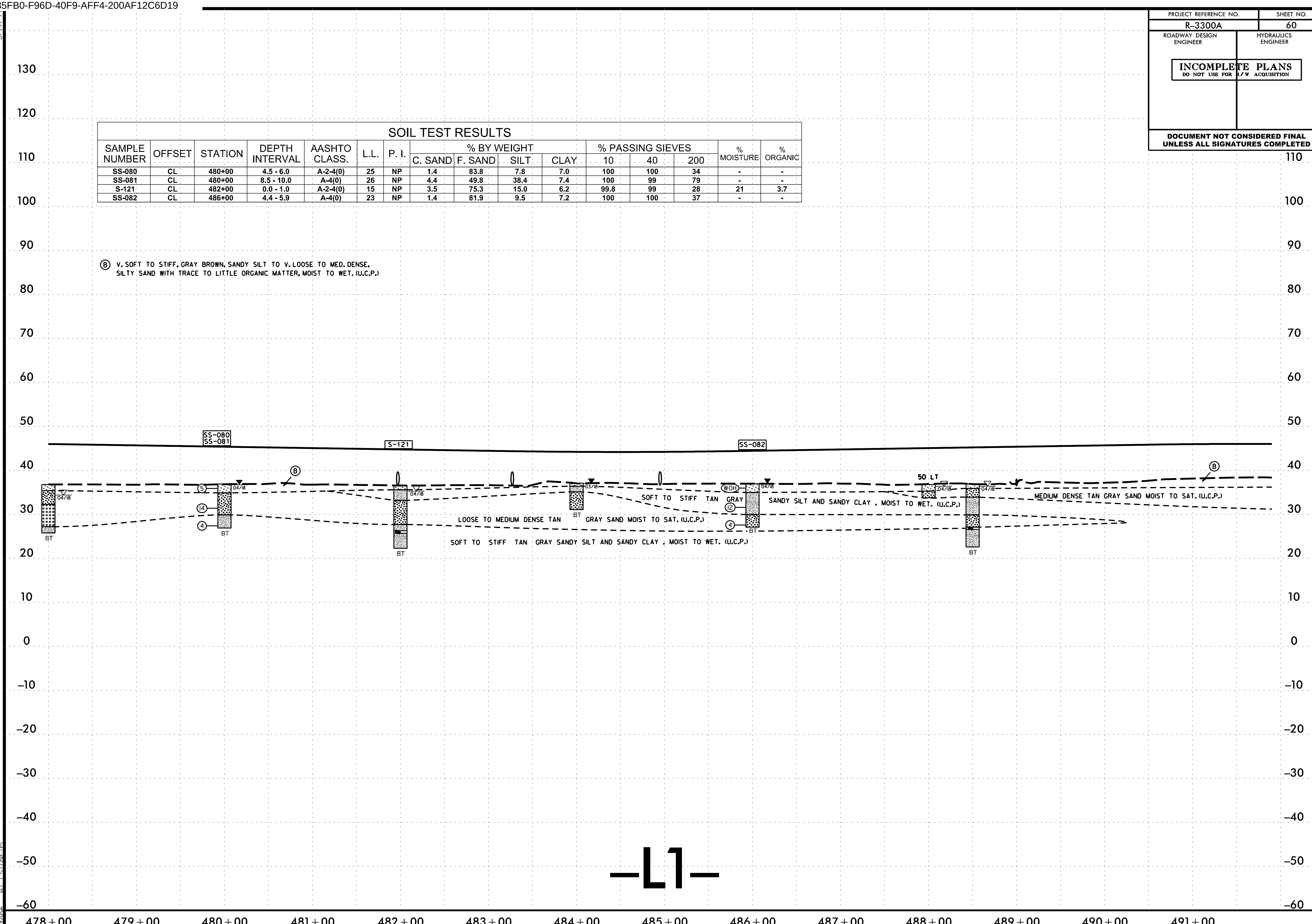
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
SS-080	CL	480+00	4.5 - 6.0	A-2-4(0)	25	NP	1.4	83.8	7.8	7.0	100	100	34	-	-
SS-081	CL	480+00	8.5 - 10.0	A-4(0)	26	NP	4.4	49.8	38.4	7.4	100	99	79	-	-
S-121	CL	482+00	0.0 - 1.0	A-2-4(0)	15	NP	3.5	75.3	15.0	6.2	99.8	99	28	21	3.7
SS-082	CL	486+00	4.4 - 5.9	A-4(0)	23	NP	1.4	81.9	9.5	7.2	100	100	37	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



-L1-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	61
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

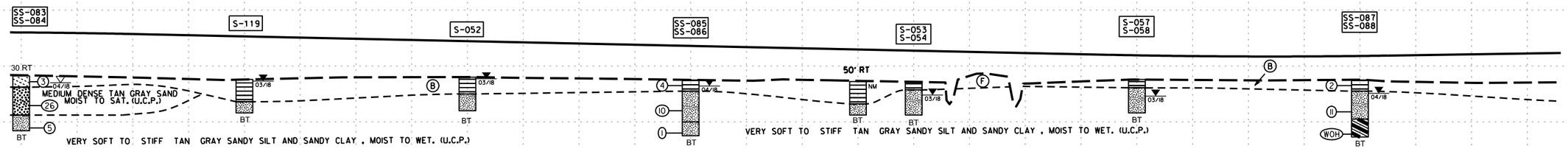
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-083	30 ft RT	492+00	4.3 - 5.8	A-2-4(0)	23	NP	1.5	88.0	6.3	4.2	100	100	20	-	-
SS-084	30 ft RT	492+00	8.3 - 9.8	A-4(0)	23	NP	1.7	67.4	23.9	7.0	100	99	72	-	-
S-119	CL	494+00	0.0 - 1.0	A-4(0)	28	NP	3.9	63.7	22.0	10.3	100	98	43	33	9.3
S-052	CL	496+00	0.6 - 1.0	A-4(0)	25	4	2.2	71.3	13.9	12.6	100	99	37	29	-
SS-085	CL	498+00	4.5 - 6.0	A-4(0)	22	NP	1.6	81.1	9.3	8.0	100	100	37	-	-
SS-086	CL	498+00	8.5 - 10.0	A-4(0)	25	NP	2.9	48.6	37.4	11.1	100	99	76	32	-
S-053	CL	500+00	0.6 - 1.0	A-4(0)	27	4	3.5	57.7	23.1	15.7	100	99	49	35	-
S-054	CL	500+00	4.0 - 4.5	A-4(0)	19	4	3.9	68.8	12.8	14.5	100	99	39	25	-
S-057	CL	502+00	0.5 - 1.0	A-5(0)	41	NP	10.1	56.1	25.3	8.5	99.8	94	44	75	16.9
S-058	CL	502+00	4.0 - 4.5	A-4(0)	18	NP	3.3	71.4	13.0	12.3	100	99	38	24	-
SS-087	CL	504+00	4.7 - 6.2	A-4(0)	19	NP	4.1	76.0	10.9	9.0	100	99	37	-	-
SS-088	CL	504+00	8.7 - 10.2	A-6(7)	28	11	8.8	28.7	39.2	23.3	100	96	79	40	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) DENSE GRAY SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)



-L1-

492+00 493+00 494+00 495+00 496+00 497+00 498+00 499+00 500+00 501+00 502+00 503+00 504+00 505+00

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

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	62
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-059	CL	506+00	1.0 - 1.5	A-4(0)	23	NP	7.5	67.2	13.2	12.1	100	98	35	29	4.1
S-060	CL	506+00	3.0 - 3.5	A-2-4(0)	17	NP	7.6	75.2	7.2	10.0	100	98	26	25	-
SS-089	CL	510+00	4.5 - 6.0	A-4(0)	16	NP	1.5	72.1	17.3	9.1	100	100	47	-	-
SS-090	CL	510+00	8.5 - 10.0	A-7-6(21)	46	24	6.4	12.3	32.8	48.5	100	97	85	-	-
SS-091	5 ft LT	516+00	4.7 - 6.2	A-4(0)	18	NP	1.7	59.9	26.2	12.1	100	99	67	-	-
SS-092	5 ft LT	516+00	13.7 - 15.2	A-4(0)	18	NP	7.6	66.1	10.1	16.2	100	95	35	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

-LI- STA. 509+90.00
-LIREV- STA. 509+90.00
ELEV. 43.60'

S-059
S-060

SS-089
SS-090

SS-091
SS-092

60 LT

5 LT

11 LT

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

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

506+00 507+00 508+00 509+00 510+00 511+00 512+00 513+00 514+00 515+00 516+00 517+00 518+00 519+00

–L1– /–L1REV–

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	63
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

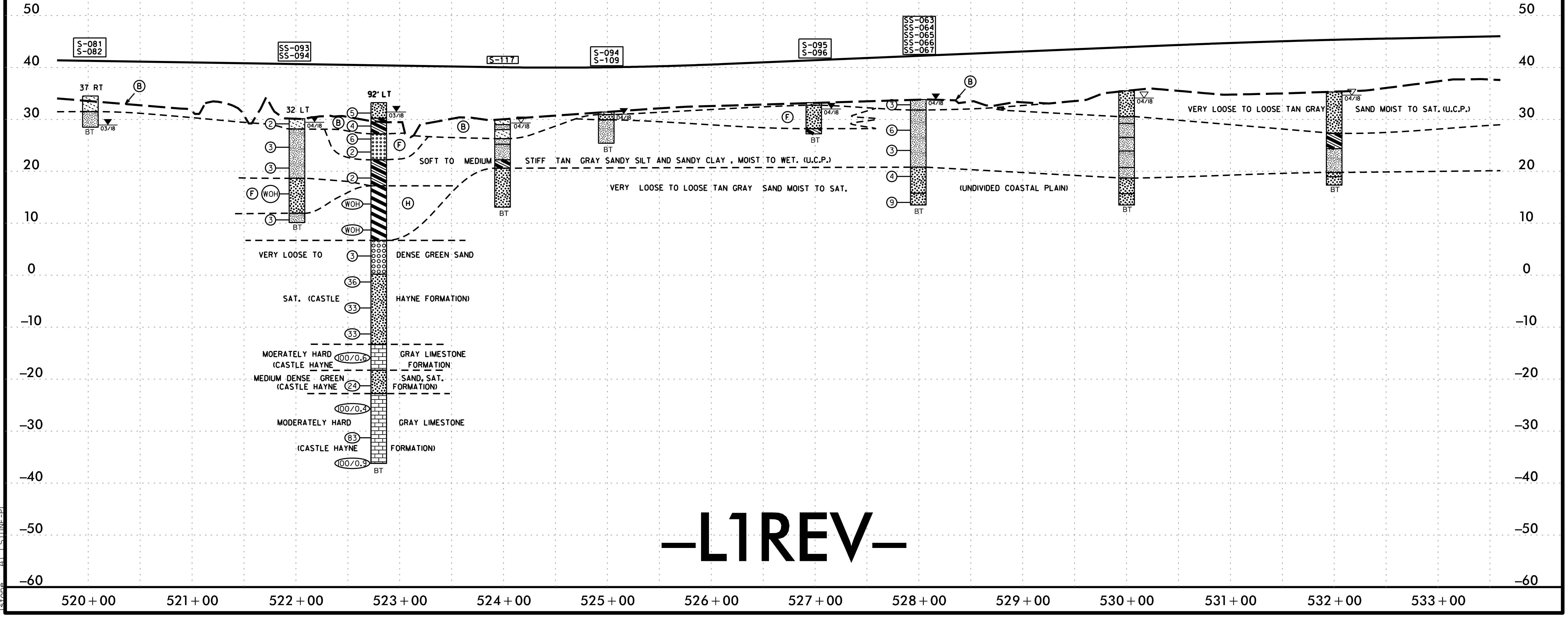
SOIL TEST RESULTS

SAMPLE NUMBER	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-081	37 ft RT	520+02	0.0 - 3.0	A-2-4(0)	21	NP	2.7	81.2	9.9	6.2	99.9	99	27	-	-
S-082	37 ft RT	520+02	3.0 - 6.0	A-4(0)	25	3	2.3	51.1	28.3	18.3	100	99	69	-	-
SS-093	32 ft LT	522+00	4.5 - 6.0	A-4(0)	23	4	3.6	53.4	26.8	16.1	100	99	61	-	-
SS-094	32 ft LT	522+00	13.5 - 15.0	A-2-4(0)	14	NP	2.7	72.4	9.8	15.2	100	99	35	-	-
S-117	CL	524+00	1.0 - 2.0	A-4(0)	17	NP	2.8	59.8	24.2	13.3	100	99	47	26	4.3
S-094	CL	525+00	3.5 - 4.0	A-4(0)	17	NP	2.4	69.8	17.8	10.0	100	99	43	-	-
S-109	CL	525+00	4.5 - 5.0	A-4(3)	26	7	3.6	45.2	32.0	19.2	100	99	68	-	-
S-095	CL	527+00	1.0 - 1.5	A-2-4(0)	14	NP	4.1	75.7	10.9	9.3	100	99	28	-	1.2
S-096	CL	527+00	5.0 - 5.5	A-6(12)	38	20	2.0	32.9	23.1	42.1	99.8	99	71	-	-
SS-063	CL	528+00	0.0 - 1.5	A-4(0)	16	NP	3.6	57.1	25.2	14.1	99.6	99	46	-	-
SS-064	CL	528+00	4.9 - 6.4	A-4(0)	22	NP	4.2	62.7	11.4	21.7	100	99	39	-	3.7
SS-065	CL	528+00	8.8 - 10.3	A-4(3)	25	9	7.4	41.1	27.2	24.3	100	96	67	-	-
SS-066	CL	528+00	13.8 - 15.3	A-2-4(0)	20	NP	0.6	84.2	5.1	10.1	100	100	23	-	-
SS-067	CL	528+00	18.8 - 20.3	A-2-4(0)	25	NP	2.0	77.8	7.0	13.1	100	100	24	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT AND SANDY CLAY TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)

(H) VERY SOFT TO SOFT GRAY GREEN SANDY CLAY AND SANDY SILT, WET WITH SHELL FRAGMENTS (CASTLE HAYNE FORMATION)



-L1REV-

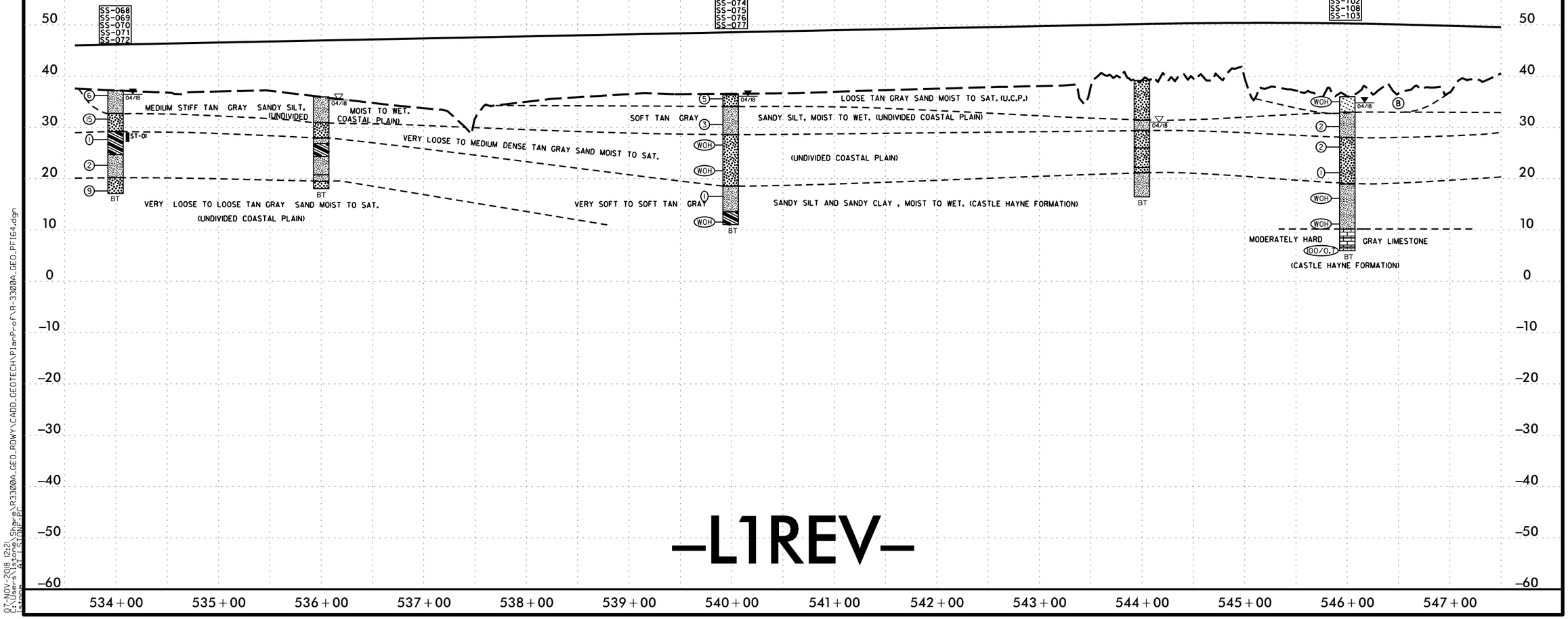
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	64
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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		
ST-01	CL	534+00	8.0 - 9.8	A-4(0)	NA	NP	1.2	46.0	37.6	15.2	100	99	77	-	-
SS-068	CL	534+00	0.0 - 1.5	A-4(0)	21	NP	1.7	75.3	14.0	9.0	99.9	99	38	-	-
SS-069	CL	534+00	4.6 - 6.1	A-2-4(0)	17	NP	3.8	86.6	5.1	4.5	100	98	13	-	-
SS-070	CL	534+00	8.6 - 10.1	A-6(6)	29	15	6.1	41.5	21.3	31.1	100	97	62	-	-
SS-071	CL	534+00	13.6 - 15.1	A-4(0)	19	NP	0.2	39.7	54.1	6.0	100	100	65	-	-
SS-072	CL	534+00	18.6 - 20.1	A-2-4(0)	26	NP	0.5	89.6	3.9	6.0	99.9	100	15	-	-
SS-073	CL	540+00	0.0 - 1.5	A-2-4(0)	20	NP	4.1	76.8	11.0	8.1	99.9	99	31	-	-
SS-074	CL	540+00	5.0 - 6.5	A-4(0)	21	NP	2.3	66.9	19.7	11.1	100	99	54	-	-
SS-075	CL	540+00	9.0 - 10.5	A-2-4(0)	23	NP	2.5	78.1	5.4	14.0	100	99	25	-	-
SS-076	CL	540+00	19.0 - 20.5	A-4(0)	23	2	3.6	67.0	18.3	11.1	100	99	44	-	-
SS-077	CL	540+00	24.0 - 25.5	A-6(11)	36	17	3.6	30.5	40.1	25.8	100	98	75	-	-
SS-102	CL	546+00	4.8 - 6.3	A-4(0)	21	NP	1.4	50.8	22.4	25.4	100	100	51	38	-
SS-108	CL	546+00	8.8 - 10.3	A-2-4(0)	20	NP	2.9	78.2	7.8	11.0	99.9	99	32	-	-
SS-103	CL	546+00	18.8 - 20.3	A-4(2)	28	5	2.5	53.9	33.1	10.4	100	98	65	37	-



-L1REV-

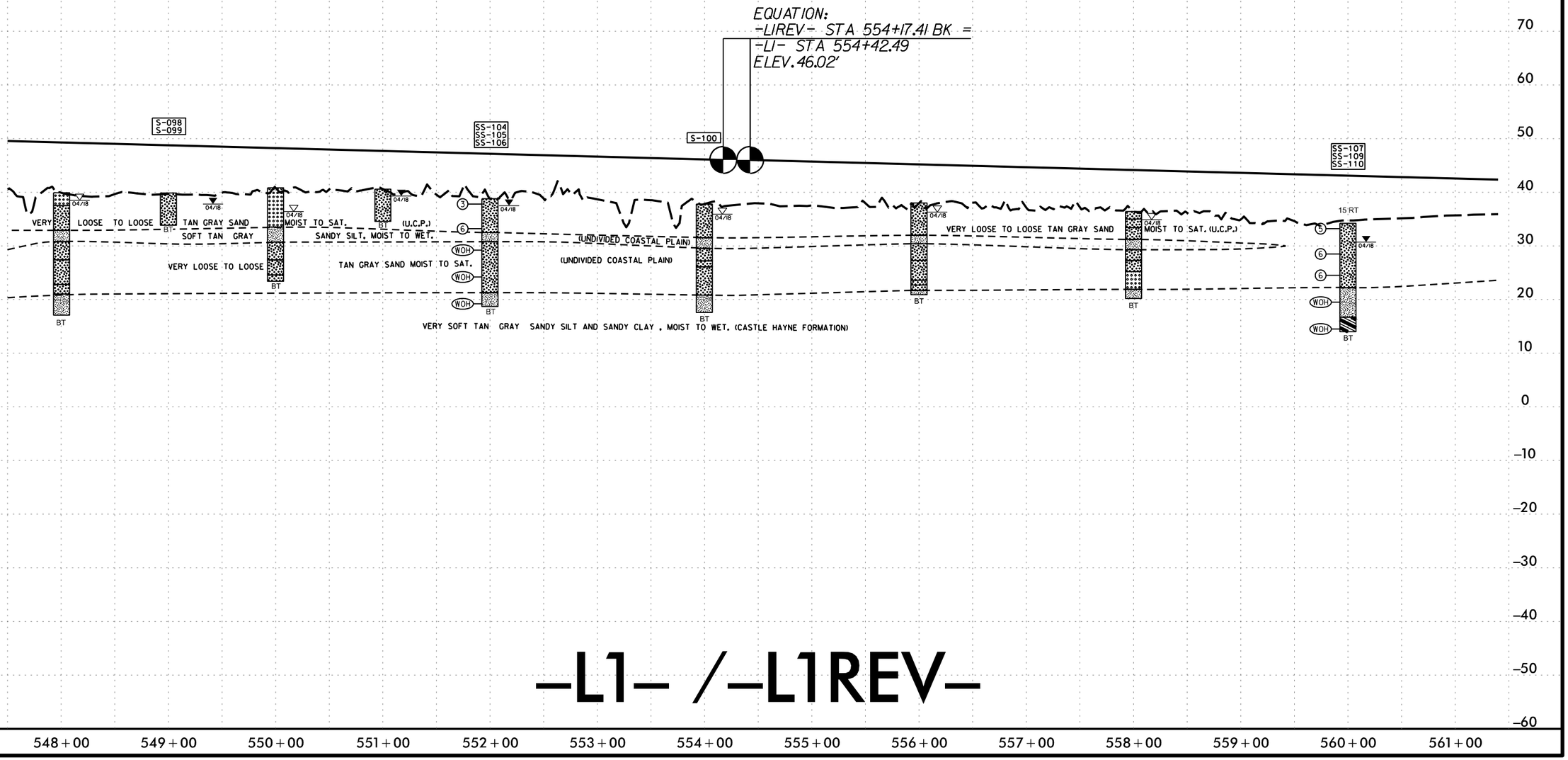
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	65
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-098	CL	549+00	2.0 - 2.5	A-2-4(0)	20	NP	8.5	74.3	8.2	9.0	100	98	27	-	-
S-099	CL	549+00	4.5 - 5.0	A-2-4(0)	17	NP	4.4	88.4	1.8	5.4	100	99	12	-	-
SS-104	CL	552+00	4.6 - 6.1	A-2-4(0)	20	NP	3.0	85.1	5.6	6.3	99.9	99	28	-	-
SS-105	CL	552+00	8.6 - 10.1	A-2-4(0)	21	NP	2.6	77.1	5.9	14.4	99.9	99	25	36	-
SS-106	CL	552+00	18.6 - 20.1	A-4(0)	27	NP	1.4	73.5	20.8	4.3	100	99	50	-	-
S-100	CL	554+00	1.5 - 2.0	A-2-4(0)	15	NP	5.5	72.2	8.8	13.5	100	99	32	-	1.5
SS-107	CL	560+00	4.7 - 6.2	A-2-4(0)	23	NP	3.8	74.3	6.5	15.4	100	99	26	-	-
SS-109	CL	560+00	13.7 - 15.2	A-4(0)	23	NP	1.6	68.5	22.5	7.4	100	99	52	-	-
SS-110	CL	560+00	18.7 - 20.2	A-6(10)	37	18	7.3	39.4	38.7	14.6	100	95	66	58	-



-L1- /-L1REV-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	66
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

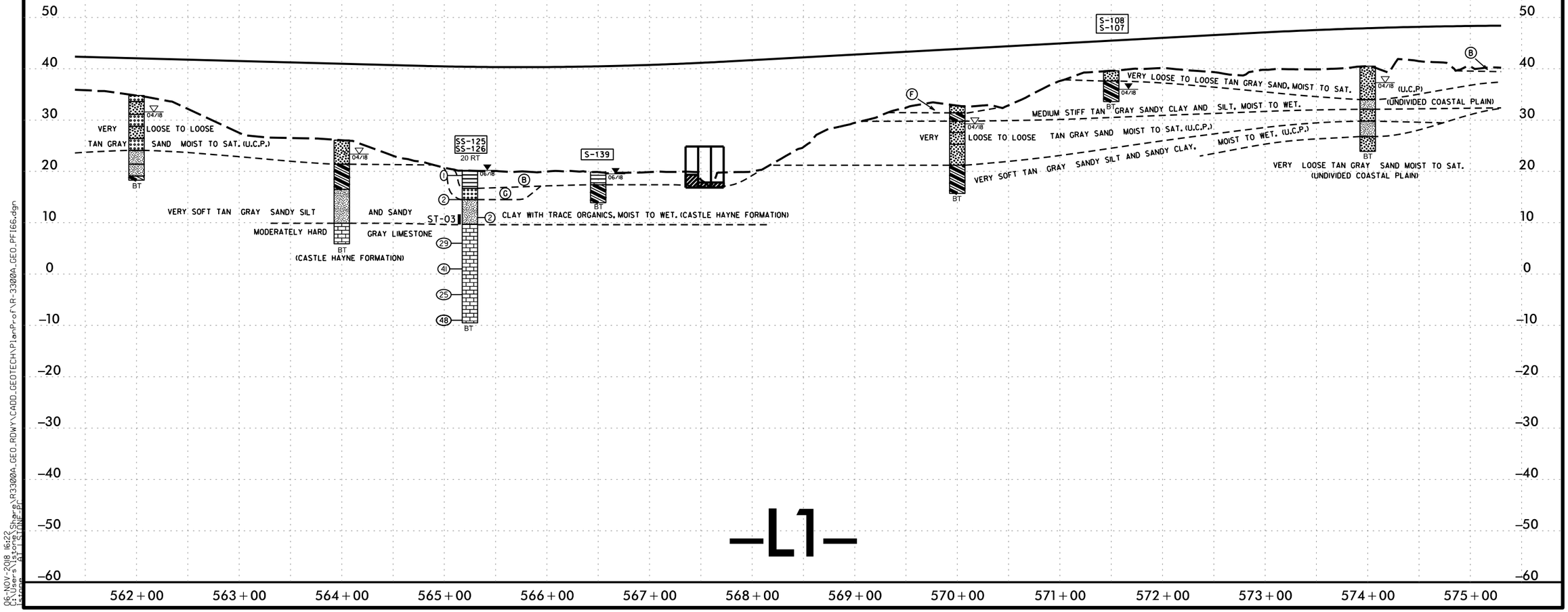
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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		
ST-03	CL	565+20	8.5 - 10.4	A-6 (6)	37	19	23.6	30.2	19.5	26.8	96.5	80.0	53.3	37	-
SS-125	20 ft RT	565+25	0.0 - 1.5	()	-	-	14.9	48.3	20.3	16.5	91.9	90	45	-	9.0
SS-126	20 ft RT	565+25	8.2 - 9.7	A-4(2)	28	10	19.0	39.7	25.6	15.8	98.7	89	48	-	-
S-139	CL	566+50	0.5 - 1.0	A-4(0)	31	NP	4.2	56.0	26.4	13.4	99.9	97	50	61	8.0
S-108	CL	571+50	2.0 - 2.5	A-6(2)	30	11	0.9	68.2	8.5	22.4	100	100	48	-	-
S-107	CL	571+50	3.5 - 4.0	A-6(11)	35	19	3.8	38.2	24.4	33.6	100	99	68	-	-

(B) VERY SOFT BROWN SANDY SILT AND SANDY CLAY WITH LITTLE ORGANIC MATTER, MOIST TO WET (ALLUVIAL)
(F) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)
(G) VERY LOOSE TO LOOSE LIGHT BROWN SAND, SAT. (ALLUVIAL)



-L1-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	67

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

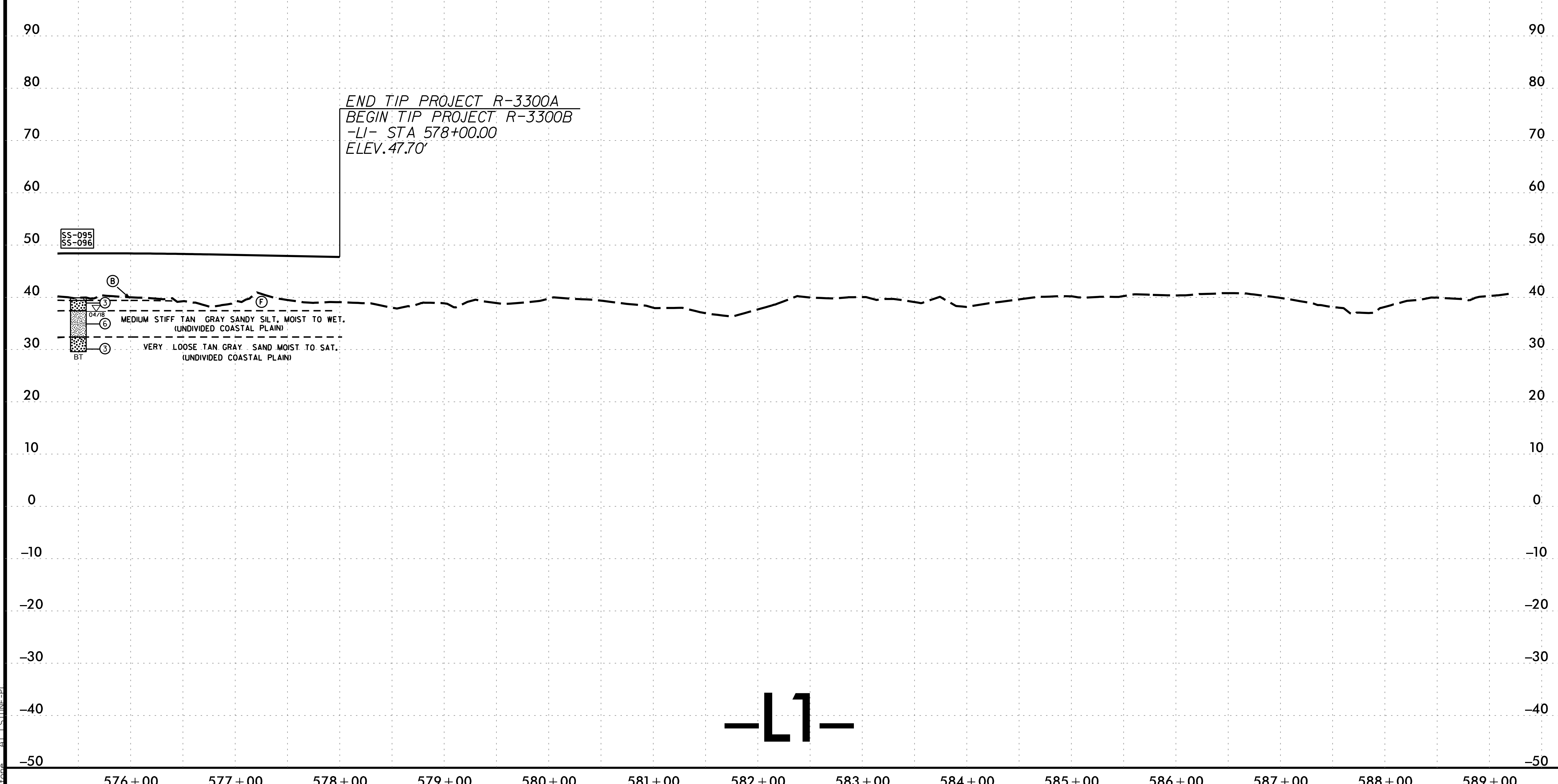
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-095	CL	575+50	4.0 - 5.5	A-4(0)	20	NP	0.3	73.3	9.1	17.3	100	100	50	-	-
SS-096	CL	575+50	8.8 - 10.3	A-2-4(0)	24	NP	10.0	74.7	2.8	12.5	100	98	19	-	-

(F) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	68
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

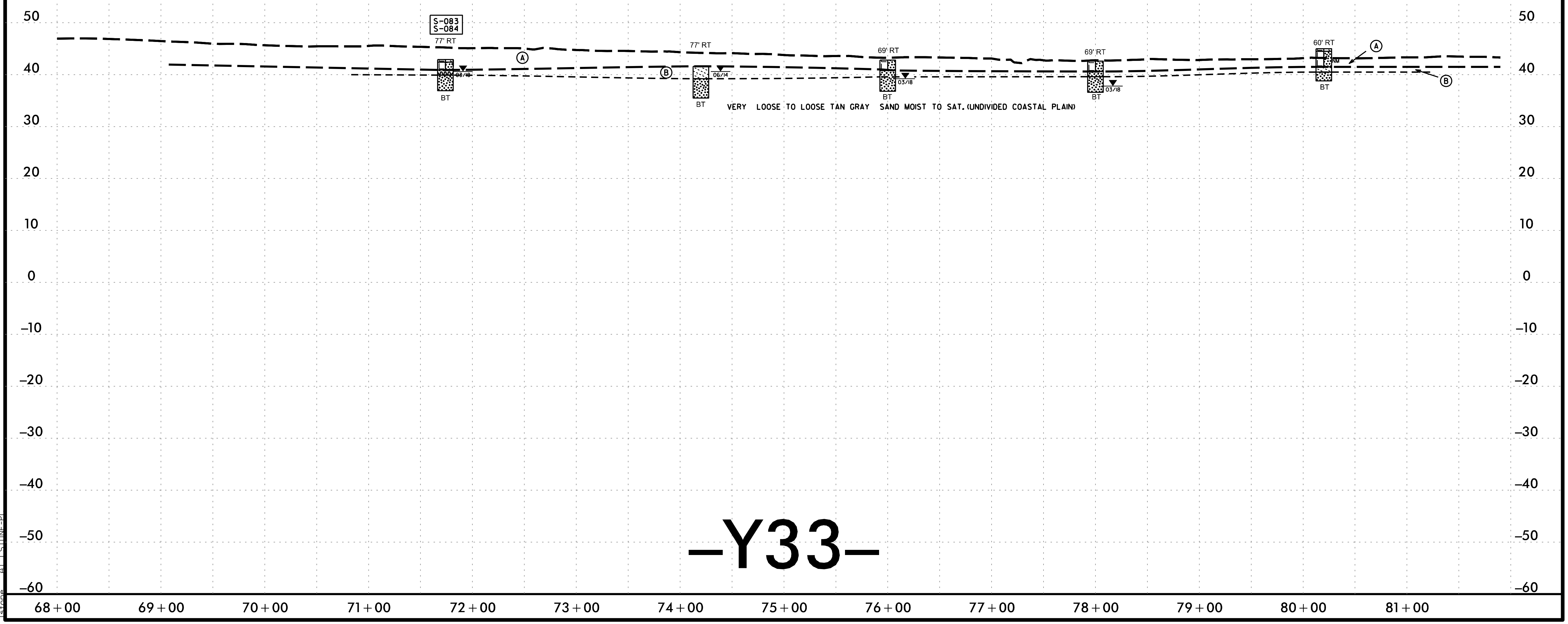
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-083	77 ft RT	71+74	2.0 - 3.0	A-2-4(0)	26	NP	15.4	66.8	13.5	4.2	99.5	97	21	-	10.7
S-084	77 ft RT	71+74	3.0 - 6.0	A-2-4(0)	17	NP	12.6	71.3	7.9	8.2	100	98	19	-	1.7

(A) V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET. (U.C.P.)



-Y33-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	69
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Ⓐ V. LOOSE TO LOOSE, TAN, BROWN, AND DARK GRAY, SAND TO SILTY/CLAYEY SAND, DRY TO MOIST (ROADWAY EMBANKMENT)

VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

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

82+00 83+00 84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+00 93+00 94+00 95+00

–Y33–

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	70
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

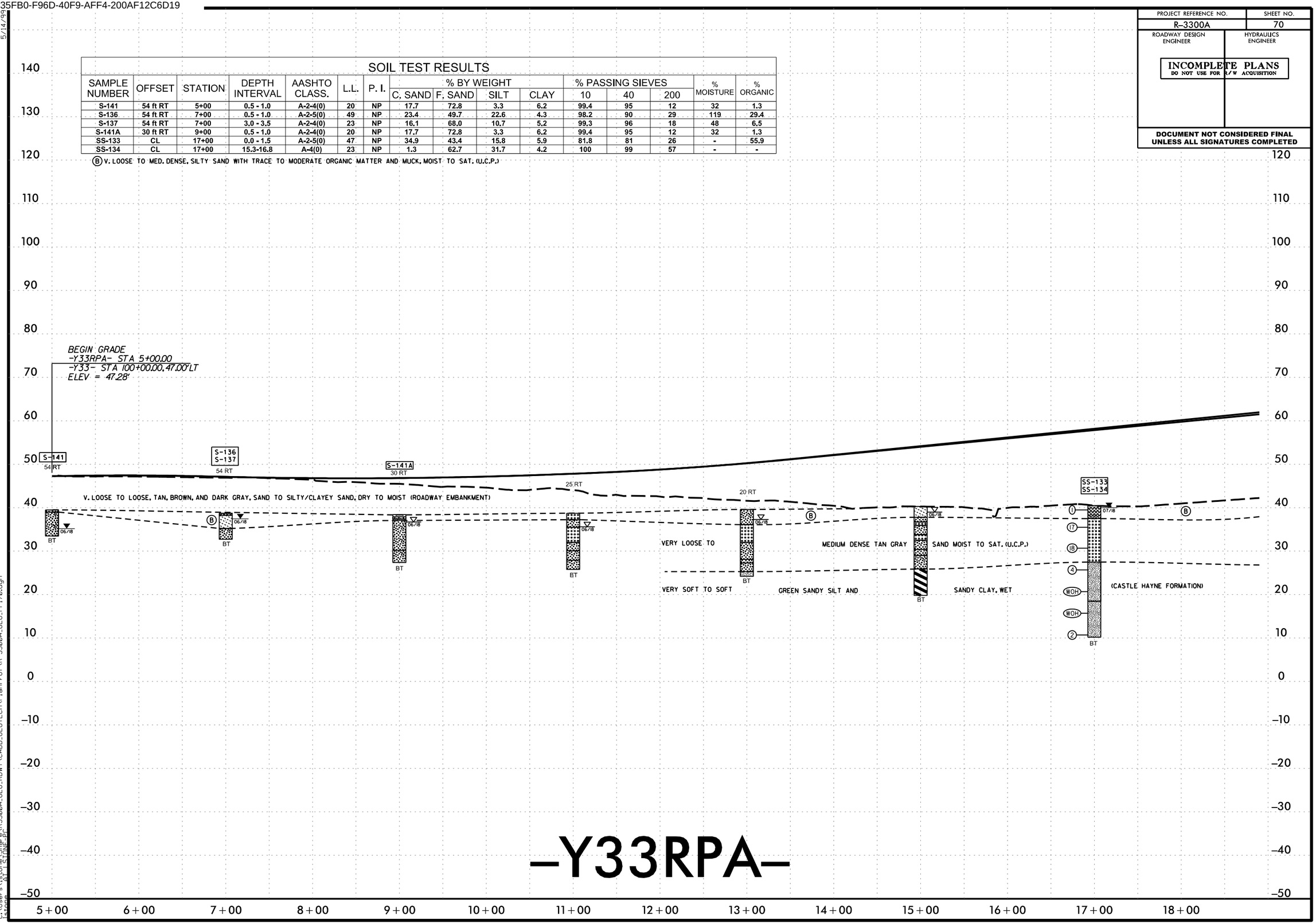
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-141	54 ft RT	5+00	0.5 - 1.0	A-2-4(0)	20	NP	17.7	72.8	3.3	6.2	99.4	95	12	32	1.3
S-136	54 ft RT	7+00	0.5 - 1.0	A-2-5(0)	49	NP	23.4	49.7	22.6	4.3	98.2	90	29	119	29.4
S-137	54 ft RT	7+00	3.0 - 3.5	A-2-4(0)	23	NP	16.1	68.0	10.7	5.2	99.3	96	18	48	6.5
S-141A	30 ft RT	9+00	0.5 - 1.0	A-2-4(0)	20	NP	17.7	72.8	3.3	6.2	99.4	95	12	32	1.3
SS-133	CL	17+00	0.0 - 1.5	A-2-5(0)	47	NP	34.9	43.4	15.8	5.9	81.8	81	26	-	55.9
SS-134	CL	17+00	15.3-16.8	A-4(0)	23	NP	1.3	62.7	31.7	4.2	100	99	57	-	-

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER AND MUCK, MOIST TO SAT. (U.C.P.)



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	71
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

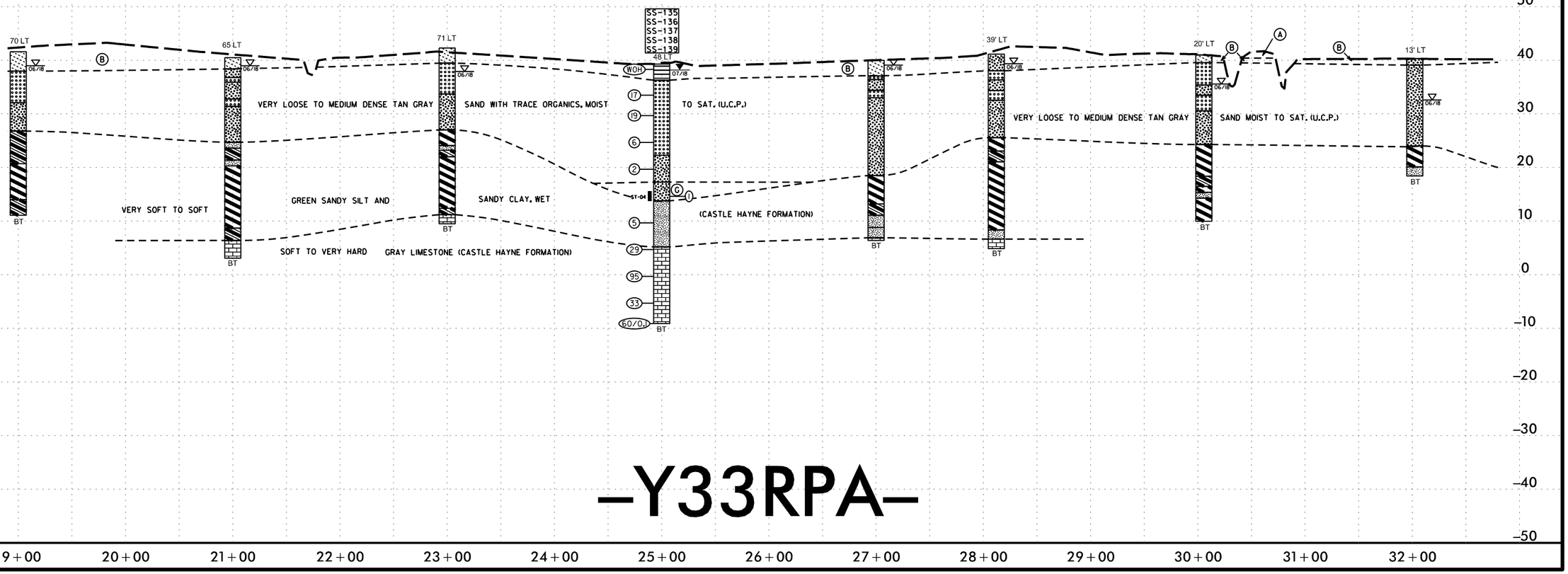
SOIL TEST RESULTS

SAMPLE NUMBER	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		
ST-04	CL	24+95	23.8 - 25.6	A-4(0)	30	6	7.0	57.3	15.0	20.7	99.8	95.8	40.7	29.7	-
SS-135	48 ft LT	25+00	0.0 - 1.5	A-4(0)	30	NP	14.5	51.1	28.9	5.5	99.0	93	37	-	14.2
SS-136	48 ft LT	25+00	4.8 - 6.3	A-3(0)	12	NP	62.6	27.9	1.3	8.2	99.7	68	10	-	1.7
SS-137	48 ft LT	25+00	13.6 - 15.1	A-3(0)	13	NP	12.6	84.0	0.2	3.2	100	94	4	-	-
SS-138	48 ft LT	25+00	18.6 - 20.1	A-2-4(0)	18	NP	14.5	67.5	10.8	7.2	99.9	95	30	-	-
SS-139	48 ft LT	25+00	23.8 - 25.1	A-2-4(0)	21	NP	4.8	68.2	16.6	10.4	100	98	34	-	-

(A) LOOSE TAN SAND, MOIST (ARTIFICIAL FILL)

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(C) VERY LOOSE GREEN SAND WITH SHELL FRAGMENTS, SAT. (CASTLE HAYNE FORMATION)



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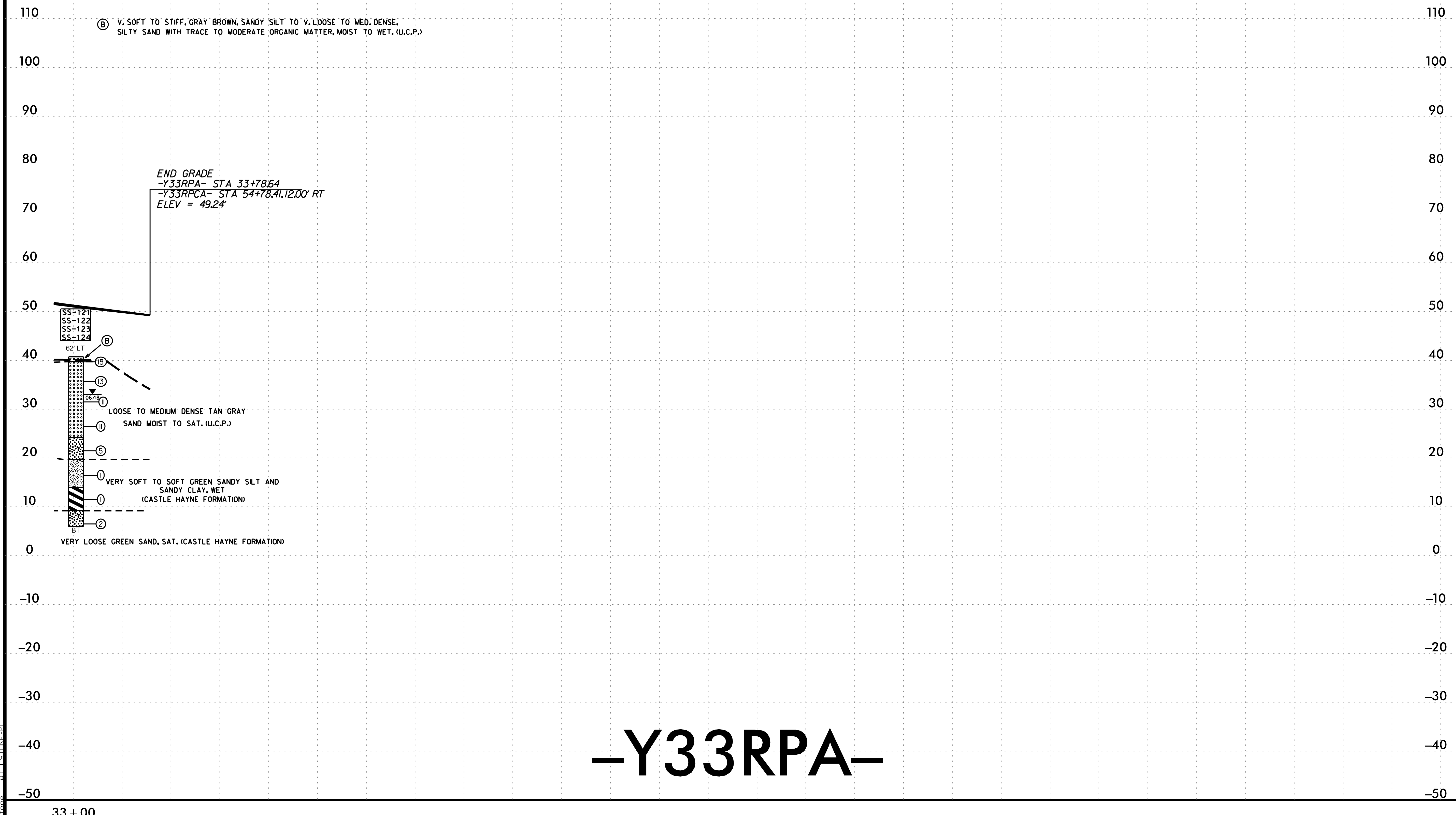
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	72
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-121	62 ft LT	33+01	18.2 - 19.7	A-2-4(0)	19	NP	15.4	59.2	13.1	12.2	99.6	92	29	-	-
SS-122	62 ft LT	33+01	23.2 - 24.7	A-4(0)	23	NP	3.1	50.2	39.4	7.3	99.9	98	62	46	-
SS-123	62 ft LT	33+01	28.2 - 29.7	A-7-6(20)	41	21	4.2	17.2	47.7	31.0	100	98	90	51	-
SS-124	62 ft LT	33+01	33.2 - 34.7	A-2-4(0)	23	NP	46.1	28.0	10.3	15.6	94.8	75	29	43	-



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PROJECT REFERENCE NO.	SHEET NO.
R-3300A	73
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

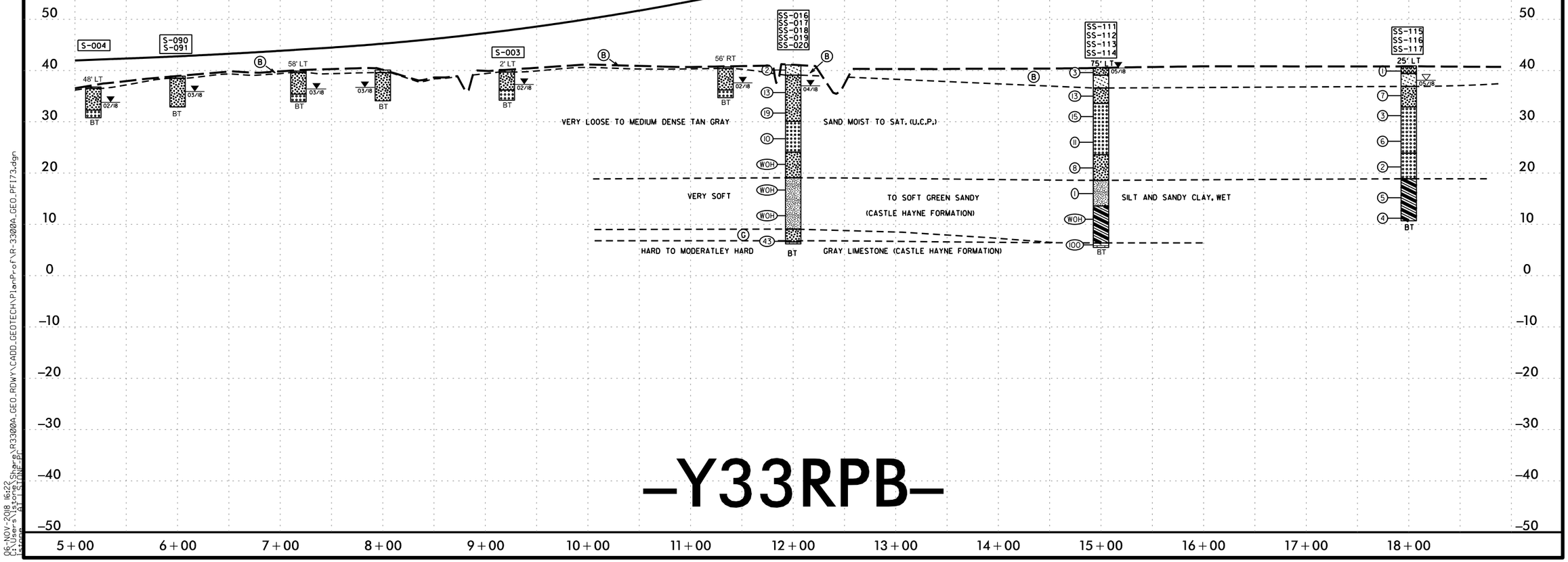
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-004	48 ft LT	5+18	3.0 - 4.0	A-2-4(0)	15	NP	15.3	68.6	4.9	11.2	100	94	20	20	-
S-090	CL	6+00	0.4 - 4.0	A-2-4(0)	17	NP	13.5	68.6	5.7	12.2	100	96	21	-	-
S-091	CL	6+00	4.0 - 6.0	A-2-4(0)	25	NP	16.3	61.8	4.6	17.3	100	91	29	-	-
S-003	2 ft LT	9+21	2.5 - 3.5	A-2-4(0)	18	NP	17.9	62.8	5.8	13.5	100	94	22	23	
SS-016	CL	12+00	4.4 - 5.9	A-2-4(0)	21	NP	12.4	73.2	5.3	9.0	100	95	20	-	-
SS-017	CL	12+00	13.4 - 14.9	A-3(0)	19	NP	50.0	45.7	0.3	4.0	99.7	71	5	-	-
SS-018	CL	12+00	18.4 - 19.9	A-2-4(0)	25	NP	3.6	66.7	6.2	23.5	100	99	32	-	-
SS-019	CL	12+00	23.4 - 24.9	A-4(0)	27	NP	2.5	51.7	38.5	7.3	100	98	64	-	-
SS-020	CL	12+00	33.4 - 34.5	A-2-4(0)	27	NP	40.9	29.2	16.3	13.6	89.7	77	34	-	-
SS-111	75 ft LT	15+00	0.0 - 1.5	A-2-4(0)	15	NP	21.7	59.1	10.2	9.0	100	93	22	-	2.8
SS-112	75 ft LT	15+00	4.6 - 5.1	A-2-4(0)	14	NP	15.6	75.9	2.4	6.1	100	95	11	-	-
SS-113	75 ft LT	15+00	23.6 - 25.1	A-4(0)	25	NP	2.5	45.3	46.1	6.0	100	98	70	-	-
SS-114	75 ft LT	15+00	28.6 - 30.1	A-6(12)	35	16	12.0	19.3	49.5	19.2	100	93	80	-	-
SS-115	25 ft LT	18+00	0.0 - 1.5	-	-	-	-	-	-	-	-	-	-	-	89.3
SS-116	25 ft LT	18+00	4.8 - 5.3	A-2-4(0)	16	NP	26.6	59.1	4.2	10.1	100	94	16	-	-
SS-117	25 ft LT	18+00	18.7 - 20.3	A-3(0)	12	NP	19.0	73.3	3.6	4.0	99.9	94	9	-	-

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET. (U.C.P.)

(G) VERY LOOSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)



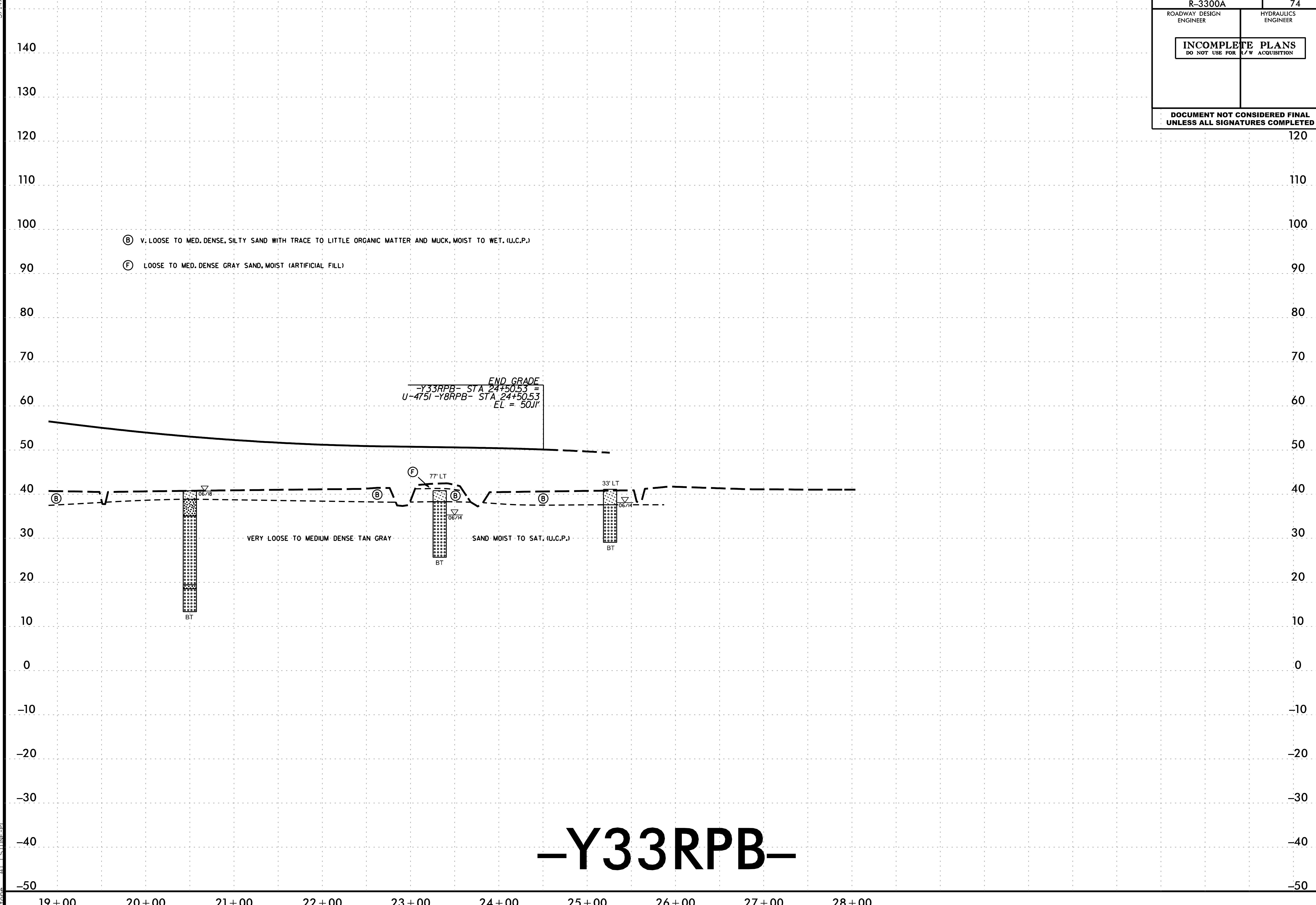
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	74

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
Ⓑ V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET. (U.C.P.)
Ⓕ LOOSE TO MED. DENSE GRAY SAND, MOIST (ARTIFICIAL FILL)
END GRADE
-Y33RPB- STA 24+50.53 =
U-4751 -Y8RPB- STA 24+50.53
EL = 50.11'
77' LT
33' LT
06/18
06/14
06/14
VERY LOOSE TO MEDIUM DENSE TAN GRAY
SAND MOIST TO SAT. (U.C.P.)
BT
BT
BT
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
-Y33RPB-

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ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

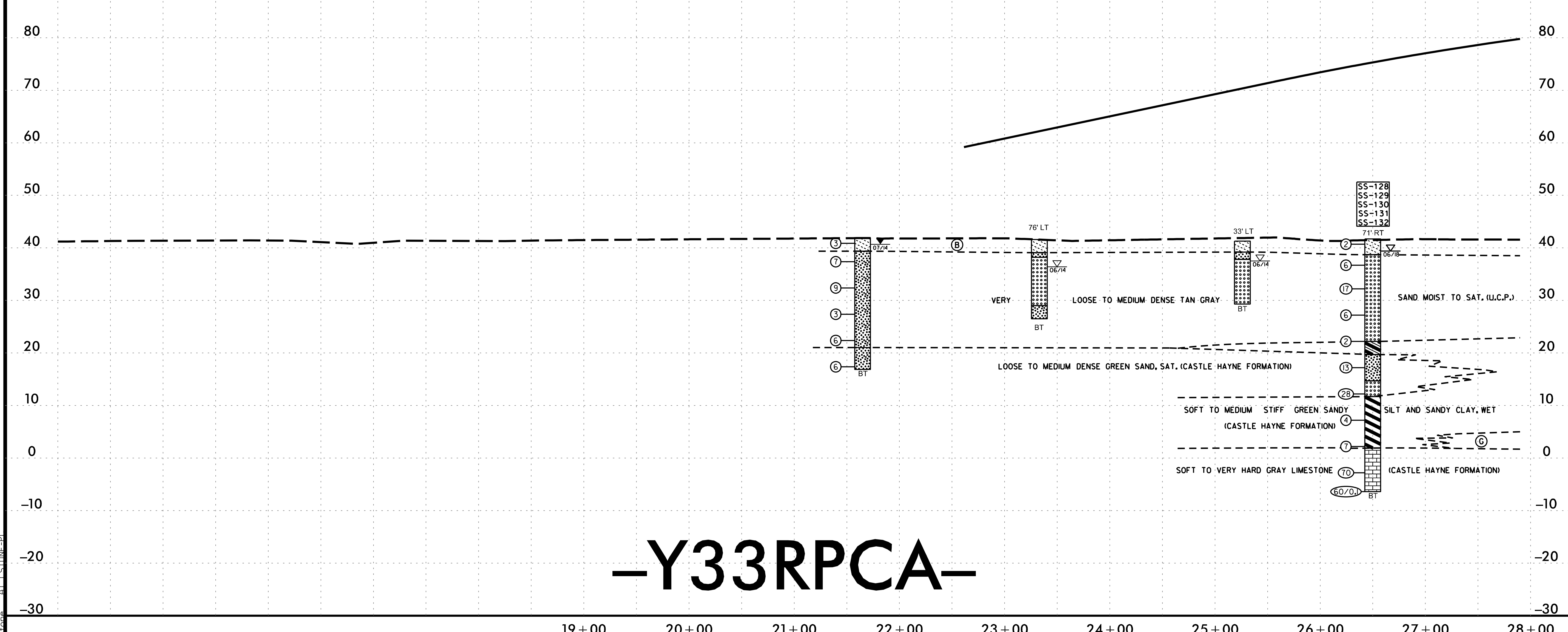
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-128	71 ft RT	26+50	4.0 - 5.5	A-2-4(0)	15	NP	16.1	70.3	4.7	8.9	100	98	14	-	-
SS-129	71 ft RT	26+50	13.5 - 15.0	A-3(0)	12	NP	8.7	89.3	0.2	1.8	100	99	2	-	-
SS-130	71 ft RT	26+50	18.5 - 20.0	A-2-4(0)	15	NP	28.8	45.3	12.2	13.7	99.9	81	28	-	-
SS-131	71 ft RT	26+50	23.5 - 25.0	A-2-4(0)	14	NP	3.2	74.0	6.6	16.1	100	99	28	-	-
SS-132	71 ft RT	26+50	33.5 - 35.0	A-6(14)	36	18	11.5	14.7	45.4	28.5	100	93	82	-	-

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(G) VERY LOOSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)



-Y33RPCA-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	76
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

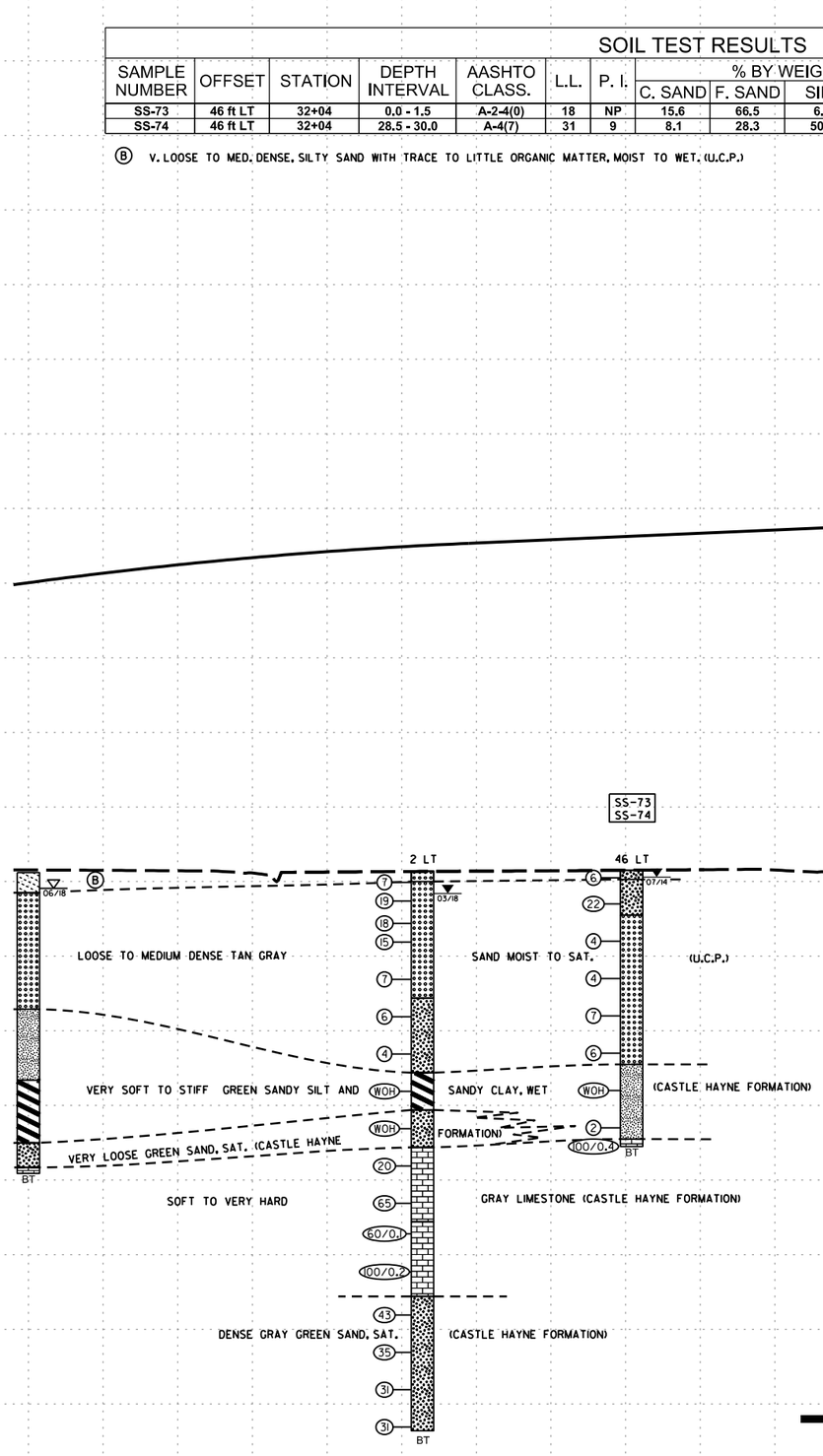
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-73	46 ft LT	32+04	0.0 - 1.5	A-2-4(0)	18	NP	15.6	66.5	6.9	11.1	100	97	22	-	-
SS-74	46 ft LT	32+04	28.5 - 30.0	A-4(7)	31	9	8.1	28.3	50.9	12.7	100	95	83	-	-

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



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

28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	77
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

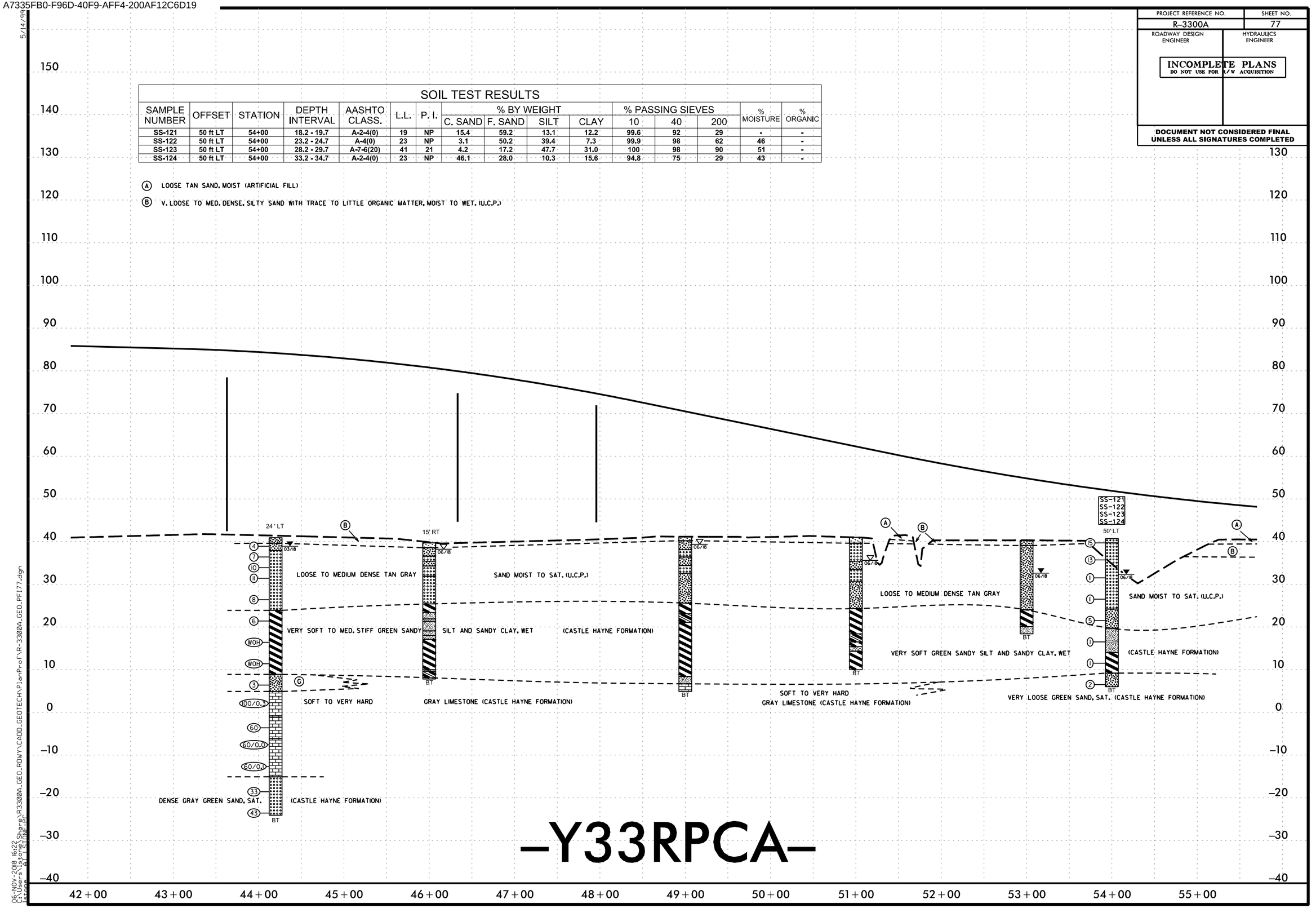
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-121	50 ft LT	54+00	18.2 - 19.7	A-2-4(0)	19	NP	15.4	59.2	13.1	12.2	99.6	92	29	-	-
SS-122	50 ft LT	54+00	23.2 - 24.7	A-4(0)	23	NP	3.1	50.2	39.4	7.3	99.9	98	62	46	-
SS-123	50 ft LT	54+00	28.2 - 29.7	A-7-6(20)	41	21	4.2	17.2	47.7	31.0	100	98	90	51	-
SS-124	50 ft LT	54+00	33.2 - 34.7	A-2-4(0)	23	NP	46.1	28.0	10.3	15.6	94.8	75	29	43	-

(A) LOOSE TAN SAND, MOIST (ARTIFICIAL FILL)

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	78
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

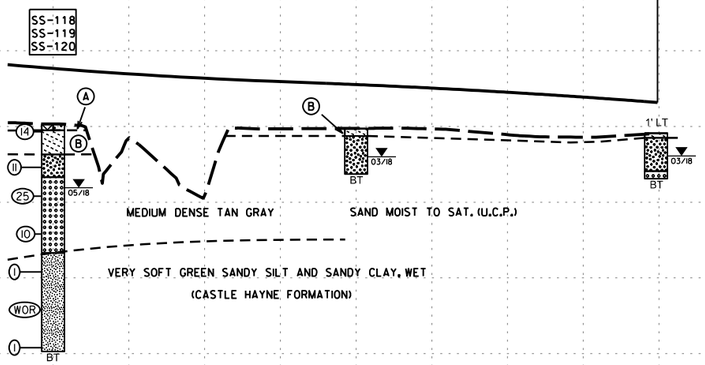
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-118	CL	56+00	0.8 - 1.5	A-2-4(0)	16	NP	14.7	66.5	15.2	3.6	100	96	23	-	3.2
SS-119	CL	56+00	4.7 - 5.3	A-2-4(0)	17	NP	6.1	77.1	7.8	9.0	100	98	23	-	-
SS-120	CL	56+00	18.5 - 20.0	A-4(0)	28	10	2.2	63.9	8.6	25.4	100	99	37	-	-

(A) LOOSE TAN SAND, MOIST (ARTIFICIAL FILL)

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)



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56+00 57+00 58+00 59+00

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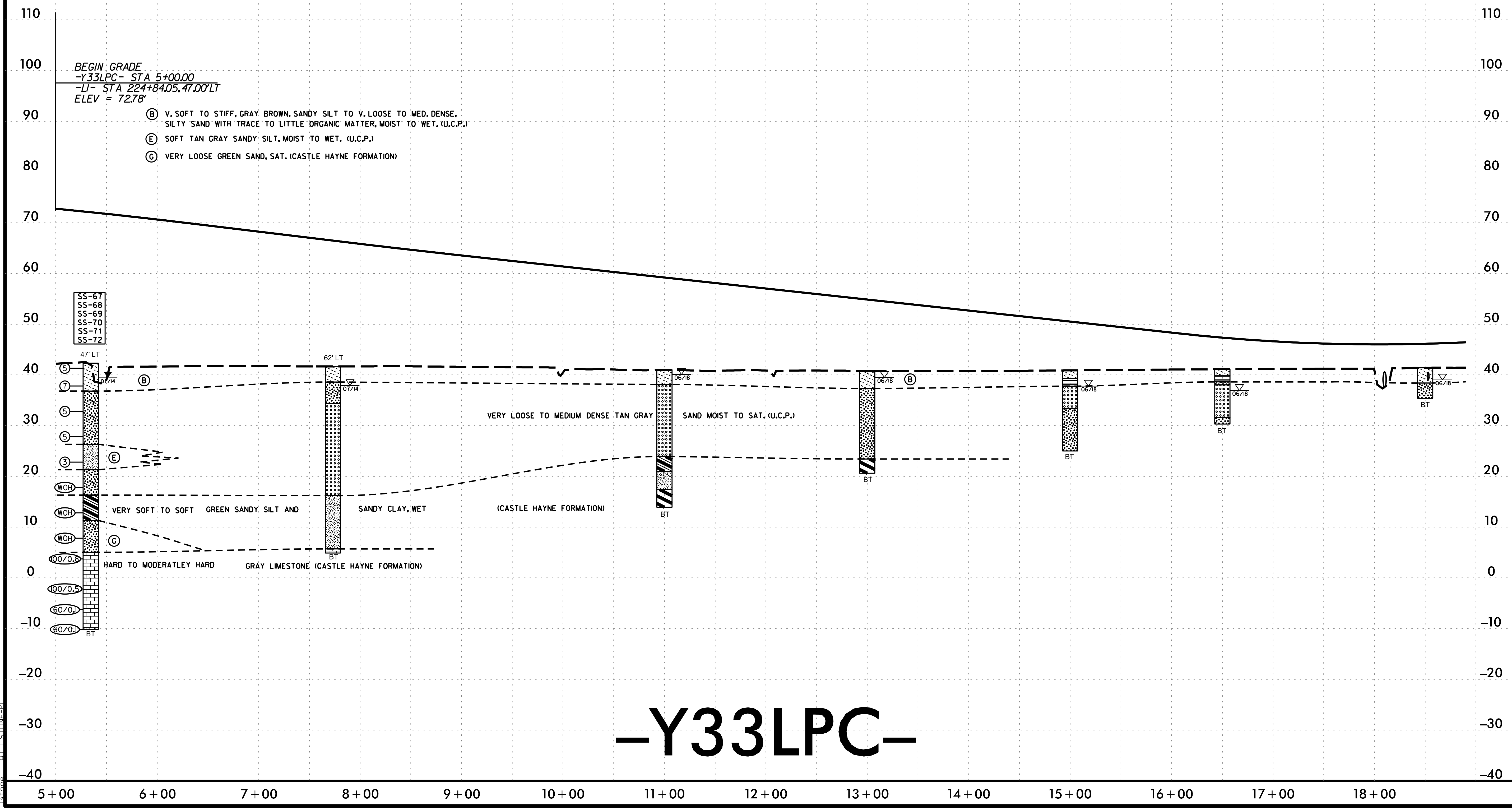
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	79
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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-67	47 LT	5+34	18.5-20.0	A-4(2)	26	6	9.9	30.7	16.8	42.6	100	98	61	-	-
SS-68	47 LT	5+34	23.5-25.0	A-2-4(0)	19	7	11.7	62.8	6.5	19.0	100	97	31	-	-
SS-69	47 LT	5+34	28.5-30.0	A-6(7)	32	11	12.3	29.3	46.9	11.5	100	91	77	-	-
SS-70	47 LT	5+34	33.5-35.0	A-2-4(0)	19	1	50.7	34.7	5.3	9.3	100	78	20	-	-
SS-71	47 LT	5+34	37.3-38.6	A-1-a(0)	18	NP	60.0	21.0	2.2	16.8	37	20	8	-	-
SS-72	47 LT	5+34	43.5-44.5	A-1-a(0)	15	NP	61.8	20.6	2.8	14.7	32	16	6	-	-



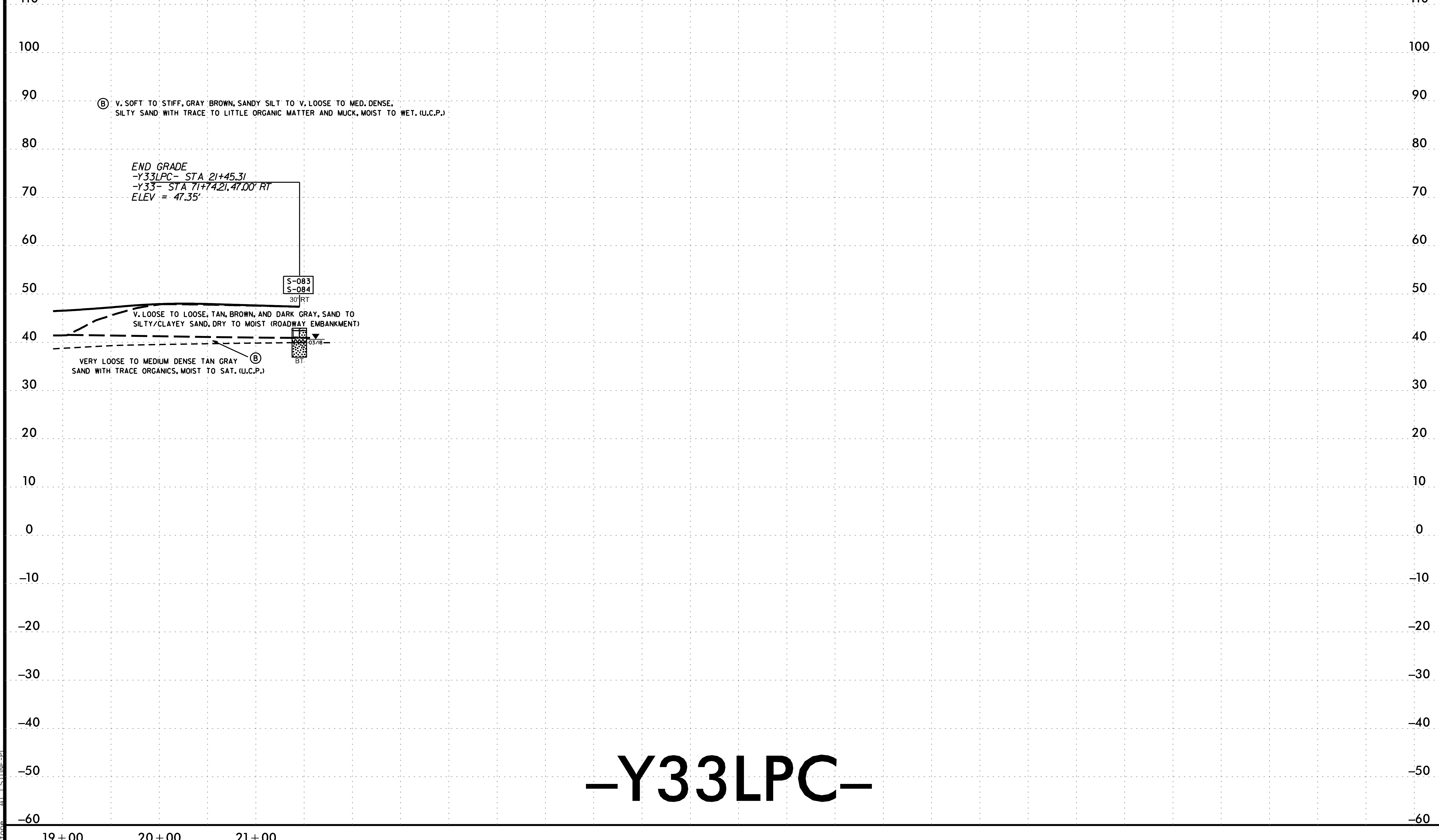
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	80
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-083	30 ft RT	21+45	2.0 - 3.0	A-2-4(0)	26	NP	15.4	66.8	13.5	4.2	99.5	97	21	-	10.7
S-084	30 ft RT	21+45	3.0 - 6.0	A-2-4(0)	17	NP	12.6	71.3	7.9	8.2	100	98	19	-	1.7



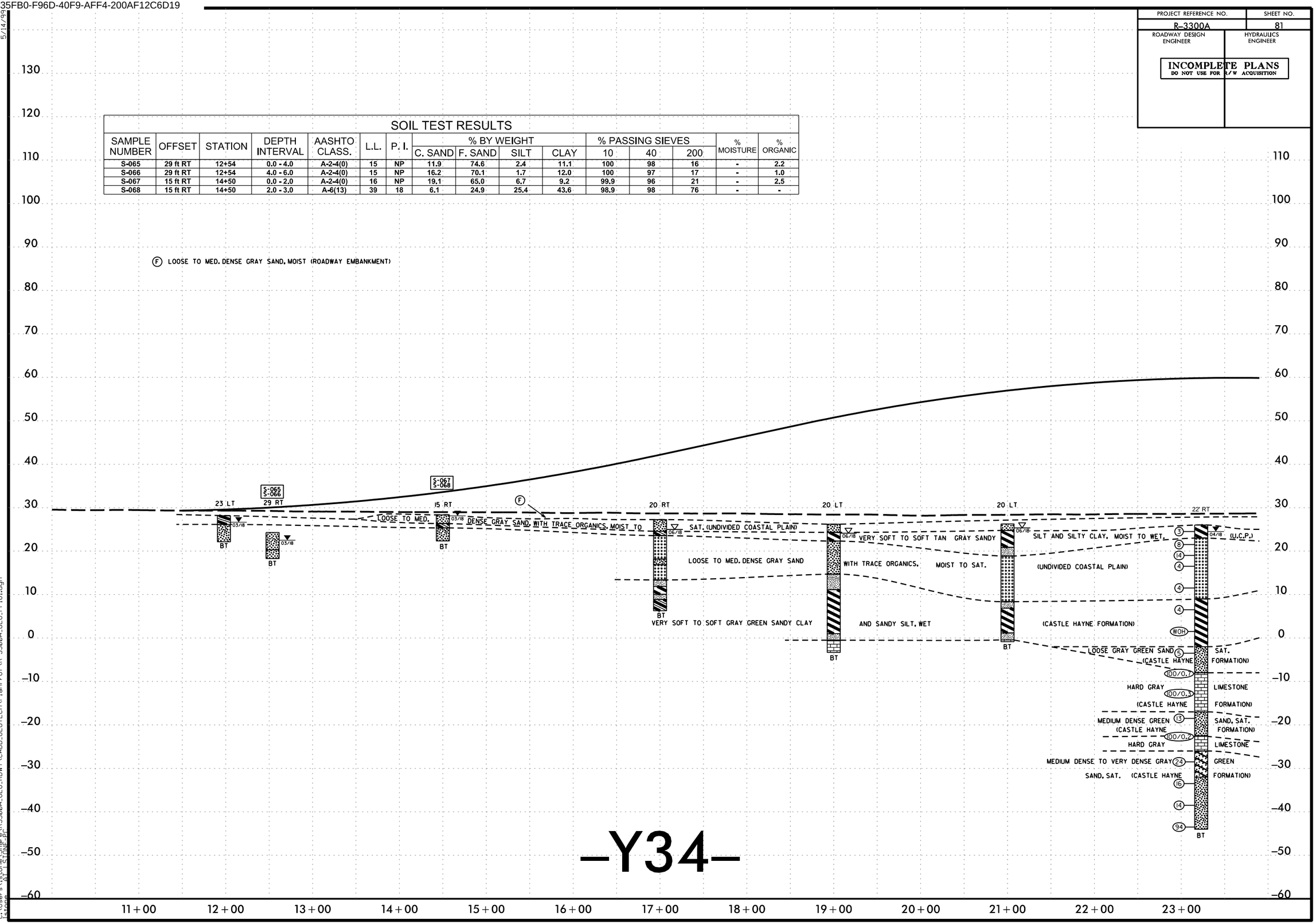
PROJECT REFERENCE NO.	SHEET NO.
R-3300A	81
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SOIL TEST RESULTS

SAMPLE NUMBER	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-065	29 ft RT	12+54	0.0 - 4.0	A-2-4(0)	15	NP	11.9	74.6	2.4	11.1	100	98	16	-	2.2
S-066	29 ft RT	12+54	4.0 - 6.0	A-2-4(0)	15	NP	16.2	70.1	1.7	12.0	100	97	17	-	1.0
S-067	15 ft RT	14+50	0.0 - 2.0	A-2-4(0)	16	NP	19.1	65.0	6.7	9.2	99.9	96	21	-	2.5
S-068	15 ft RT	14+50	2.0 - 3.0	A-6(13)	39	18	6.1	24.9	25.4	43.6	98.9	98	76	-	-

(F) LOOSE TO MED. DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)



—Y34—

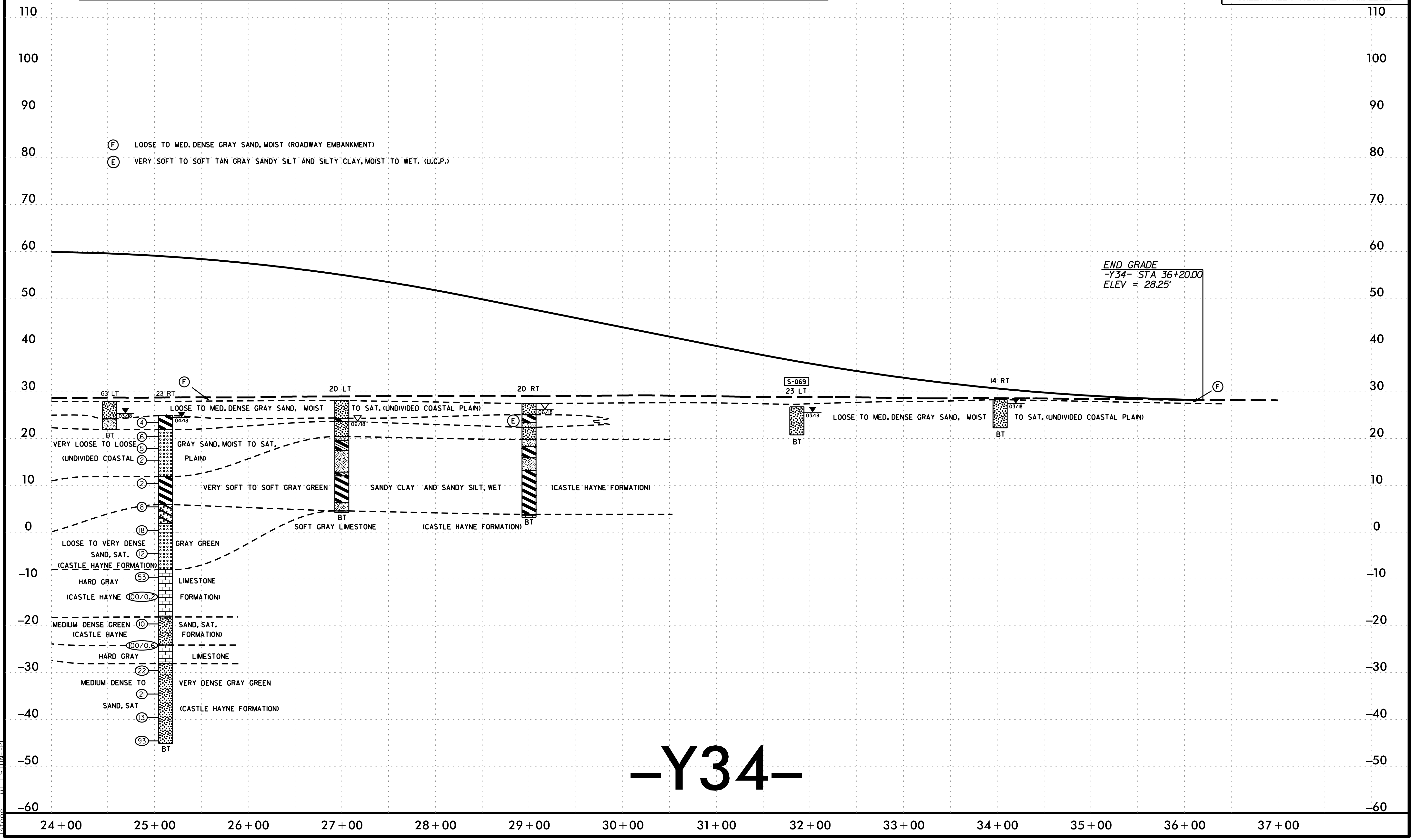
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-069	23 ft LT	31+86	0.5 - 6.0	A-2-4(0)	23	NP	1.2	76.4	7.3	15.1	100	100	29	-	-



Ⓕ LOOSE TO MED. DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)
Ⓔ VERY SOFT TO SOFT TAN GRAY SANDY SILT AND SILTY CLAY, MOIST TO WET. (U.C.P.)
END GRADE
-Y34- STA 36+20.00
ELEV = 28.25'
63' LT
23' RT
20 LT
20 RT
S-069
23 LT
14 RT
LOOSE TO MED. DENSE GRAY SAND, MOIST
TO SAT. (UNDIVIDED COASTAL PLAIN)
VERY LOOSE TO LOOSE
(UNDIVIDED COASTAL
GRAY SAND, MOIST TO SAT.
PLAIN)
VERY SOFT TO SOFT GRAY GREEN
SANDY CLAY AND SANDY SILT, WET
(CASTLE HAYNE FORMATION)
SOFT GRAY LIMESTONE
(CASTLE HAYNE FORMATION)
LOOSE TO VERY DENSE
GRAY GREEN
SAND, SAT.
(CASTLE HAYNE FORMATION)
HARD GRAY
LIMESTONE
(CASTLE HAYNE
FORMATION)
MEDIUM DENSE GREEN
SAND, SAT.
(CASTLE HAYNE
FORMATION)
HARD GRAY
LIMESTONE
MEDIUM DENSE TO
VERY DENSE GRAY GREEN
SAND, SAT
(CASTLE HAYNE FORMATION)
BT
130
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
24+00
25+00
26+00
27+00
28+00
29+00
30+00
31+00
32+00
33+00
34+00
35+00
36+00
37+00
-Y34-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	83
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

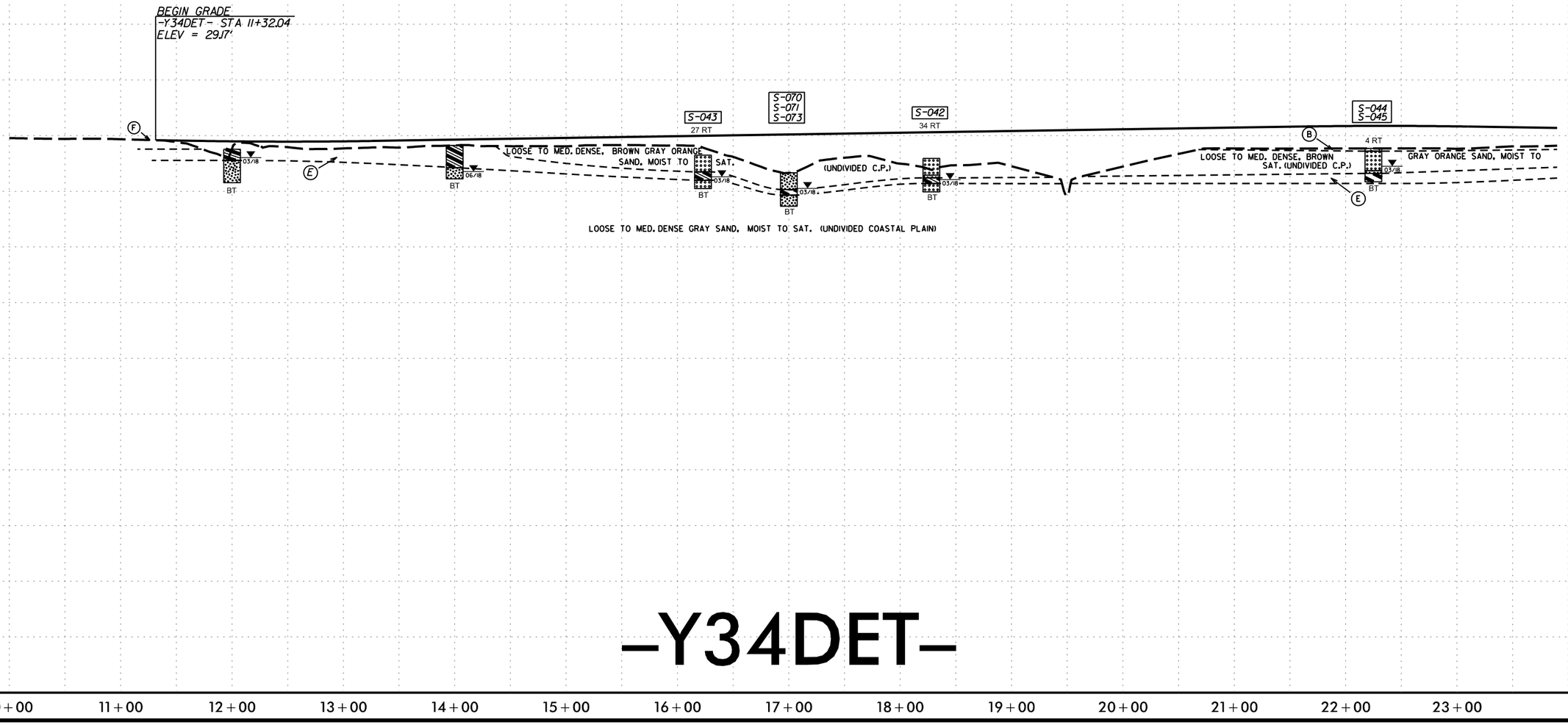
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-043	27 RT	16+23	3.0 - 3.5	A-6(3)	30	13	8.9	46.6	9.5	35.0	99.9	99	47	25	-
S-070	CL	17+00	0.0 - 3.0	A-2-4(0)	15	NP	13.0	68.1	6.6	12.3	100	98	24	-	-
S-071	CL	17+00	3.0 - 4.0	A-7-6(11)	42	26	1.3	50.1	12.1	36.5	100	100	55	-	-
S-073	CL	17+00	4.0 - 6.0	A-2-4(0)	21	NP	1.4	80.8	4.7	13.1	99.0	100	23	-	-
S-042	34 RT	18+28	3.5 - 4.0	A-6(4)	30	15	6.5	48.0	11.4	34.1	100	99	48	30	-
S-044	4 RT	22+25	4.0 - 4.5	A-2-4(0)	15	NP	13.0	66.1	7.2	13.7	100	97	32	22	-
S-045	4 RT	22+25	4.5 - 5.0	A-7-6(23)	55	31	10.2	23.2	22.3	44.3	99.9	97	74	45	-

(B) V. LOOSE TO MED. DENSE GRAY BROWN, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)
(E) SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)
(F) LOOSE TO MED. DENSE TAN SAND, MOIST (ROADWAY EMBANKMENT)



-Y34DET-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	84
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-026	11 LT	25+19	0.0 - 3.0	A-2-4(0)	13	NP	13.6	69.8	7.8	8.8	99.9	98	20	-	-
S-027	11 LT	25+19	3.0 - 5.0	A-4(0)	26	10	5.8	60.1	8.1	26.0	100	99	37	-	-
S-028	11 LT	25+19	5.0 - 6.0	A-2-4(0)	17	NP	1.9	80.9	3.5	13.7	100	100	21	-	-
S-114	CL	29+00	1.0 - 1.5	A-2-4(0)	18	NP	19.9	56.7	8.4	15.1	100	95	27	-	-
S-115	CL	29+00	3.5 - 4.0	A-4(6)	25	9	1.8	54.3	23.9	20.0	99.9	98	92	23	-

(B) V. LOOSE TO MED. DENSE GRAY BROWN, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(E) VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET. (U.C.P.)

(F) LOOSE TO MED. DENSE TAN SAND, MOIST (ARTIFICIAL FILL)

END GRADE
-Y34DET- STA 36+18.96
ELEV = 28.11'

S-026
S-027
S-028

S-114
S-115

11 LT

65 RT

VERY LOOSE TO MED. DENSE TAN GRAY SAND MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

VERY LOOSE TO MED. DENSE TAN GRAY SAND MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

BT 03/18 05/18 05/18 05/18 FIAD 03/18

-Y34DET-

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

24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	85
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

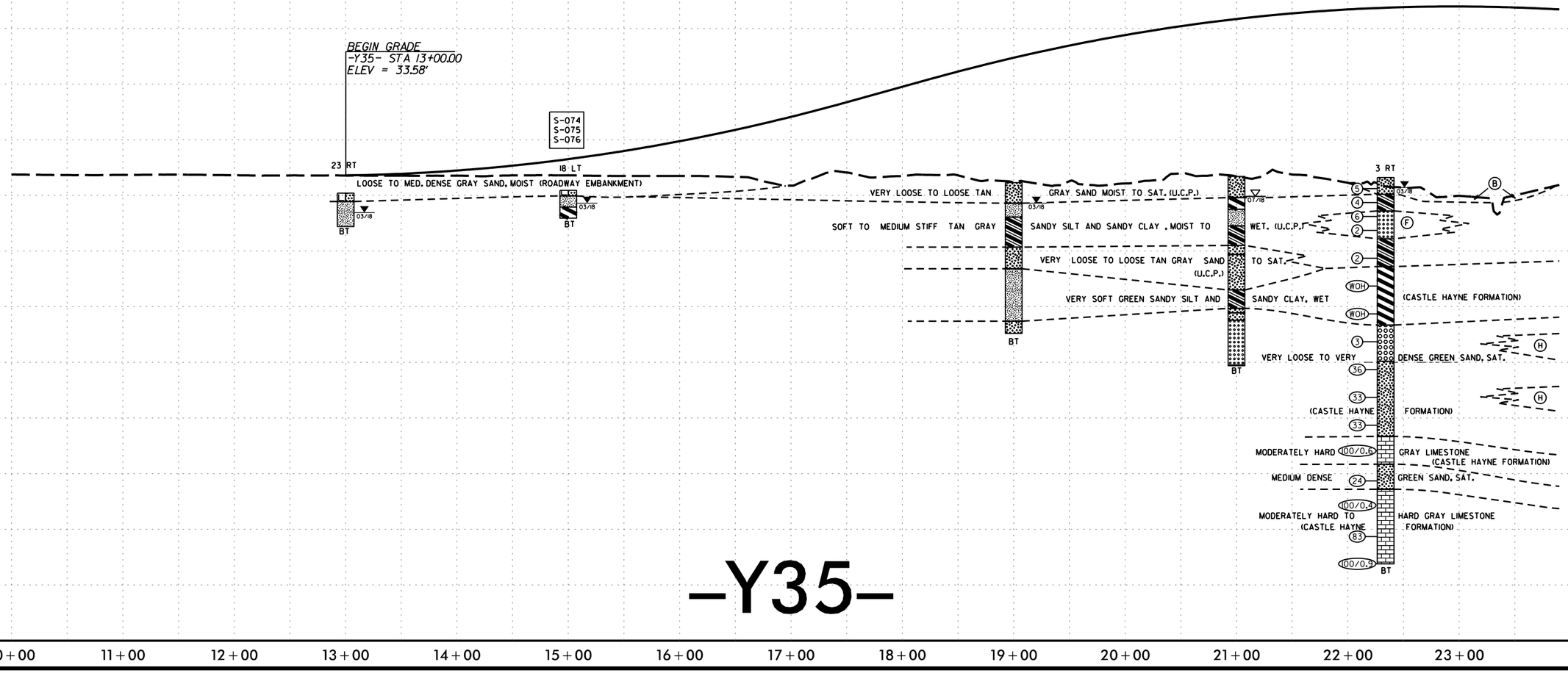
SOIL TEST RESULTS

SAMPLE NUMBER	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-074	18 ft LT	15+00	0.0 - 1.0	A-2-4(0)	24	NP	7.9	74.6	11.4	6.1	98.4	98	27	-	-
S-075	18 ft LT	15+00	1.0 - 3.0	A-4(0)	18	NP	4.2	66.1	15.2	14.5	100	98	43	-	-
S-076	18 ft LT	15+00	3.0 - 5.0	A-7-6(31)	56	39	3.2	22.8	26.1	47.9	100	99	80	-	-

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) VERY LOOSE TO LOOSE TAN GRAY SAND MOIST TO SAT. (U.C.P.)

(H) MODERATELY HARD TO HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)



PROJECT REFERENCE NO.	SHEET NO.
R-3300A	86
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-078	CL	32+00	0.0 - 6.0	A-2-4(0)	22	NP	0.3	79.7	11.8	8.2	100	100	34	-	1.0
S-142	26 ft LT	36+00	1.0 - 1.5	A-4(0)	23	NP	3.1	71.7	17.0	8.3	100	99	39	46	2.6

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TRACE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

END GRADE
-Y35- STA 37+25.00
ELEV = 39.30'

2 LT

S-078

16' LT

S-142
26' LT

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

VERY LOOSE TO LOOSE TAN GRAY SAND WITH TRACE ORGANICS MOIST TO SAT. (U.C.P.)

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

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

VERY SOFT GRAY SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

MEDIUM DENSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

MODERATELY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

VERY DENSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

MODERATELY HARD TO HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

DENSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

MODERATELY HARD TO HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

MEDIUM DENSE GREEN SAND, SAT.

HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

BT

-Y35-

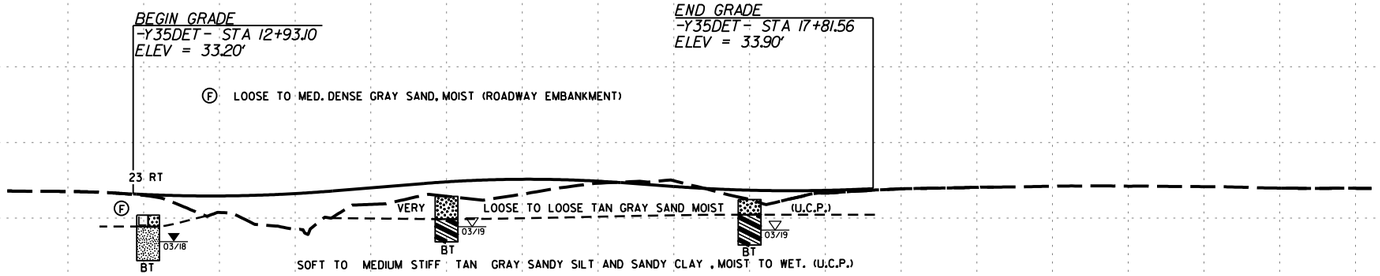
24+00 25+00 26+00 27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00

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

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	87
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



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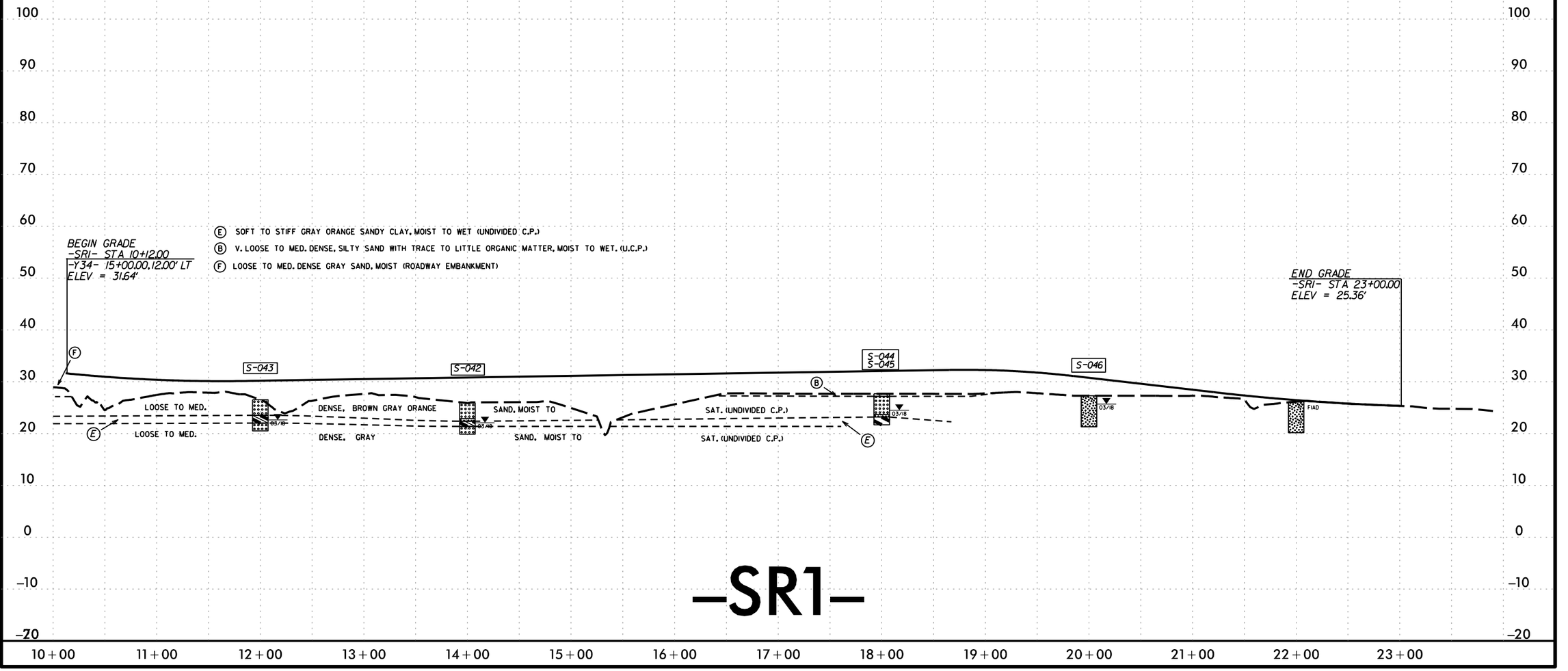


–SR1–

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	88
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

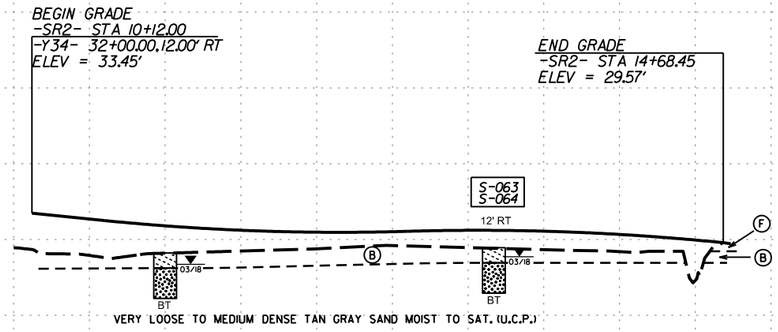
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SOIL TEST RESULTS

SAMPLE NUMBER	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-063	12 ft RT	13+17	0.0 - 2.0	A-2-4(0)	19	NP	5.7	72.3	9.9	12.1	100	99	28	-	3.3
S-064	12 ft RT	13+17	2.0 - 4.0	A-2-4(0)	15	NP	6.2	72.8	5.9	15.1	100	99	26	-	-

(B) V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

(F) LOOSE TO MED. DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)



-SR2-

PROJECT REFERENCE NO.	SHEET NO.
R-3300A	89
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

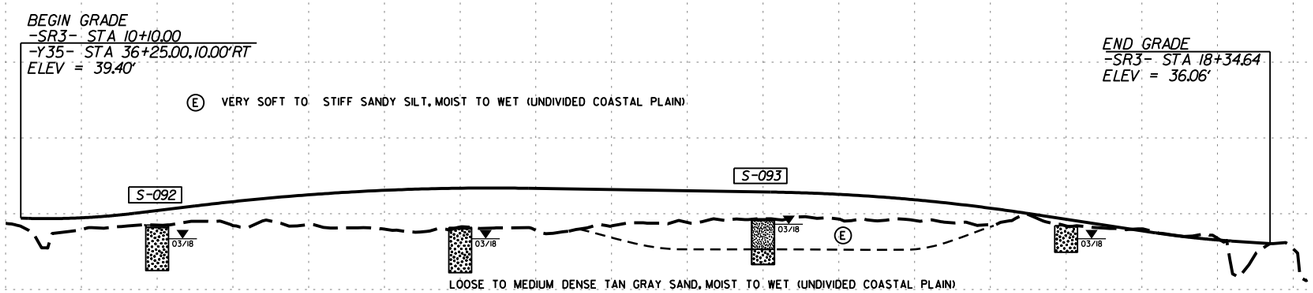
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

5/14/99

SOIL TEST RESULTS

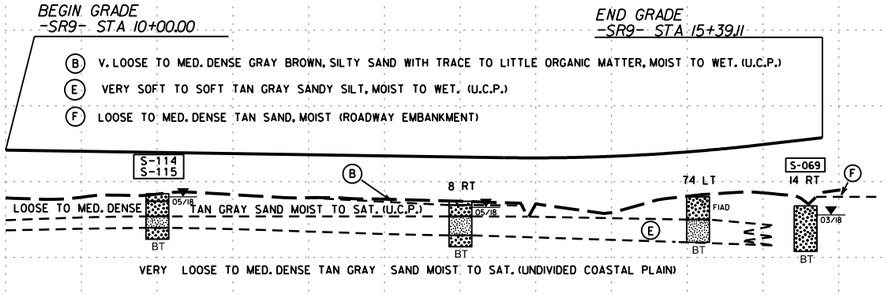
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-092	CL	11+00	0.3 - 4.0	A-2-4(0)	21	NP	3.2	82.1	8.5	6.2	100	99	29	-	-
S-093	CL	15+00	0.2 - 4.0	A-4(0)	18	NP	2.9	74.7	12.0	10.4	100	99	36	-	-



-SR3-

SOIL TEST RESULTS

SAMPLE NUMBER	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-114	CL	11+00	1.0 - 1.5	A-2-4(0)	18	NP	19.9	56.7	8.4	15.1	100	95	27	-	-
S-115	CL	11+00	3.5 - 4.0	A-4(6)	25	9	1.8	54.3	23.9	20.0	99.9	98	92	23	-
S-069	14 RT	15+28	0.5 - 6.0	A-2-4(0)	23	NP	1.2	76.4	7.3	15.1	100	100	29	-	-



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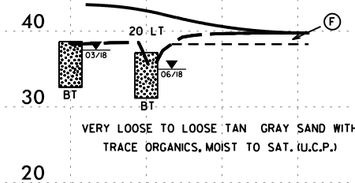

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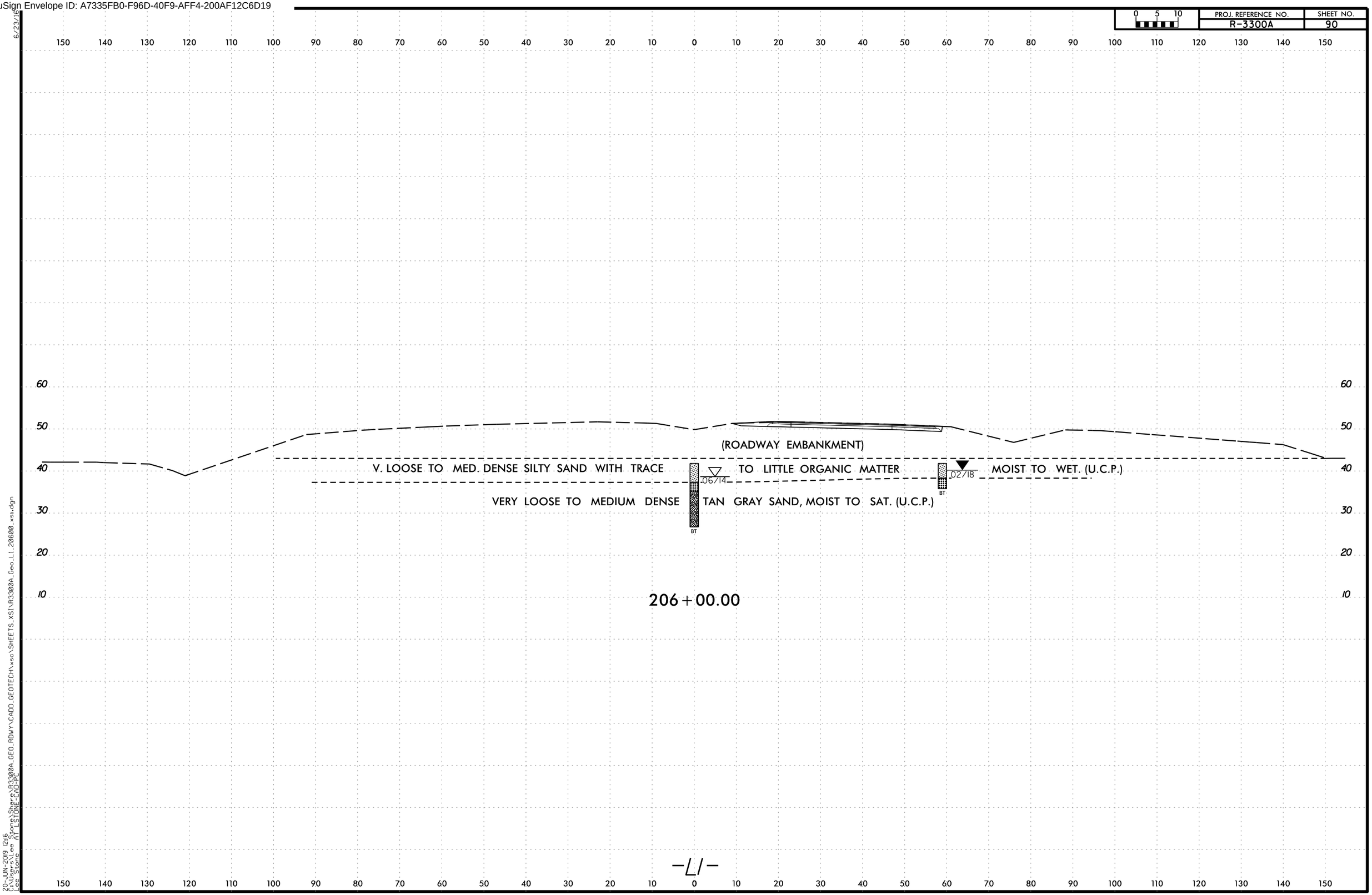

6/23/16

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	91

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

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Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(ROADWAY EMBANKMENT)

Ⓑ

06/14

02/18

BT

BT

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

208+00.00

-L/-

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

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Lee Stone AT LSTONE-CAD-PC

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-001	40 ft RT	210+00	2.5 - 3.5	A-2-4(0)	15	NP	20.4	56.7	10.5	12.4	100	96	25	14	-

60 50 40 30 20 10

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(ROADWAY EMBANKMENT)

S-001

(B) (I) (II) 07/14 (5) (5) (WOH) (8) BT

02/18 BT (B)

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

VERY SOFT, TAN GRAY, SANDY CLAY, WET (UNDIVIDED COASTAL PLAIN)

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

210+00.00

60 50 40 30 20 10

-L/-

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

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	93

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

60 50 40 30 20 10 0

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(B) (ROADWAY EMBANKMENT)

06/14 BT

02/18 BT

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

212+00.00

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

60

B V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

50

B

(ROADWAY EMBANKMENT)

40

06/14

02/18

BT

BT

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

30

20

10

0

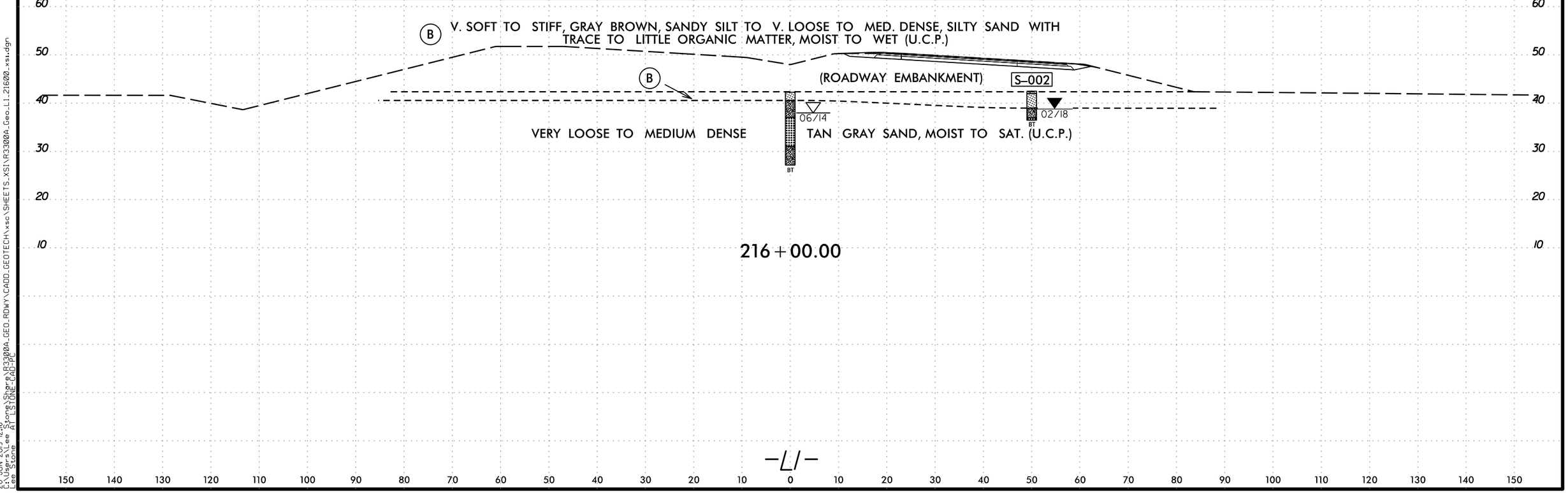
214+00.00

-L1-

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-002	50 ft RT	216+00	3.5 - 4.5	A-2-4(0)	20	NP	15.7	59.9	6.9	17.5	99.9	96	26	21	-



6/23/16

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PROJ. REFERENCE NO.	SHEET NO.
R-3300A	96

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70 60 50 40 30 20 10

B V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(ROADWAY EMBANKMENT)

B

06/14

02/18

BT

BT

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

218+00.00

-L1-

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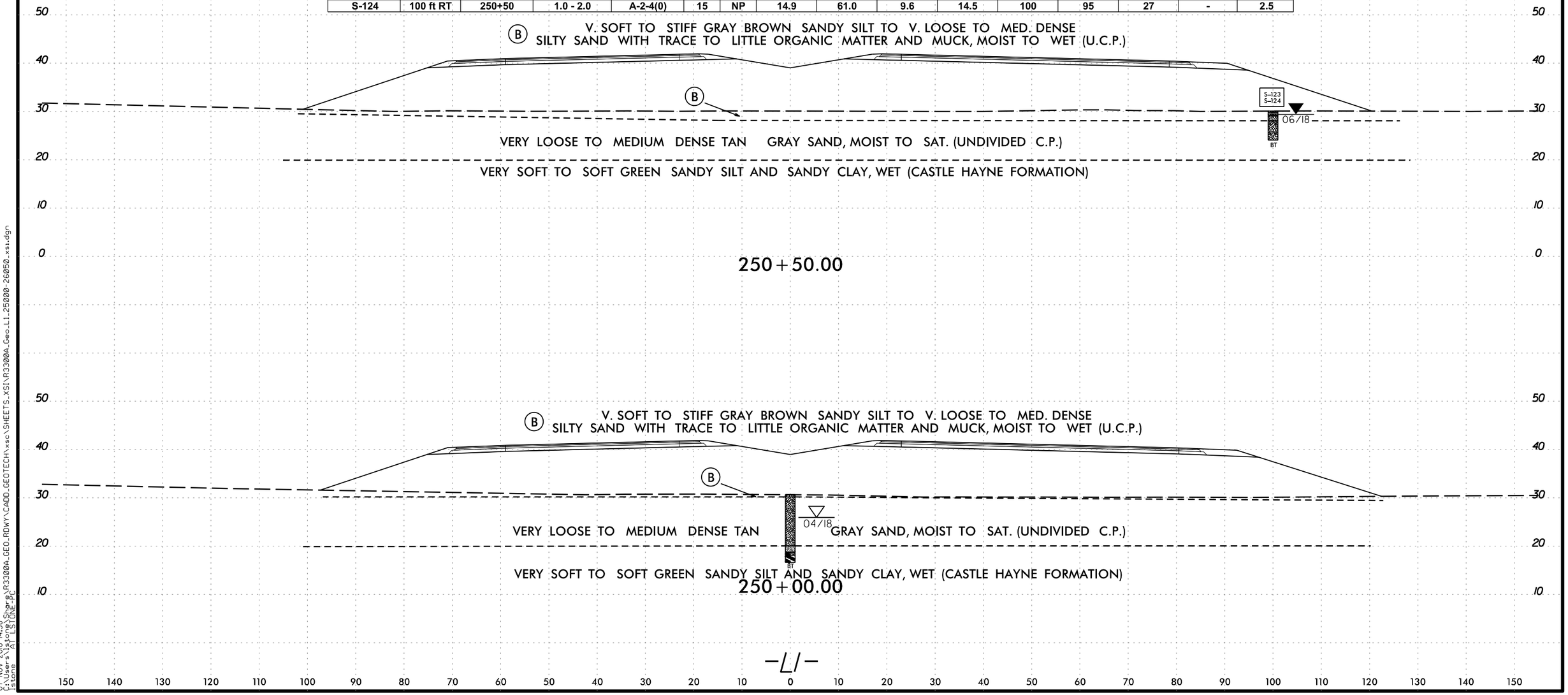
Lee Stone AT LSTONE-CAD-PC

SOIL TEST RESULTS

SAMPLE NUMBER	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-123	100 ft RT	250+50	0.5 - 1.0	A-2-4(0)	26	NP	17.5	58.3	20.6	3.5	99.4	93	27	-	10.8
S-124	100 ft RT	250+50	1.0 - 2.0	A-2-4(0)	15	NP	14.9	61.0	9.6	14.5	100	95	27	-	2.5



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lstone AT LSTONE-PC

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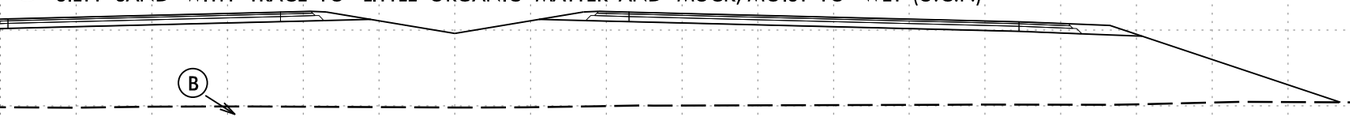
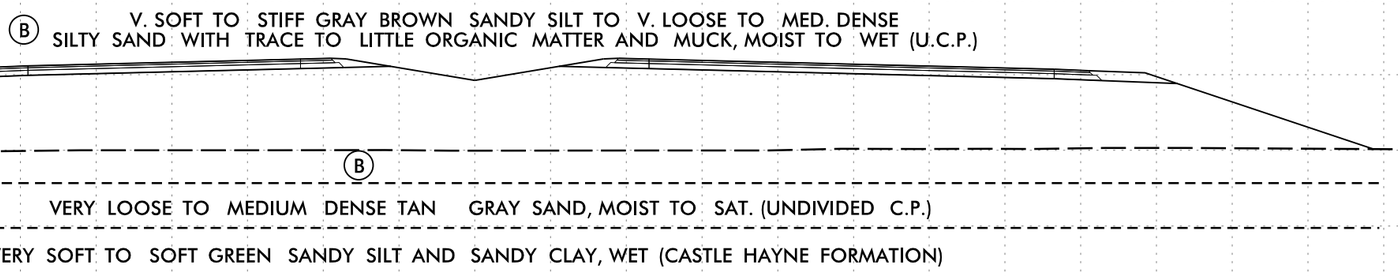


251+50.00



251+00.00

-L/-

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

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Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

Ⓑ

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

252+50.00

60
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30
20
10
0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

Ⓑ

02/18

BT

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

252+00.00

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

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	R-3300A	100

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

60 50 40 30 20 10

B V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

0.04 0.04

B B B

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

253+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-001	CL	253+00	10.9 - 12.1	A-4(0)	25	2	2.9	53.4	28.6	15.1	99.8	99	61	36	-

B V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

B SS-001 03/18 BT

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

253+00.00

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

60 50 40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

Ⓑ

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

254+50.00

60 50 40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE
SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO WET (U.C.P.)

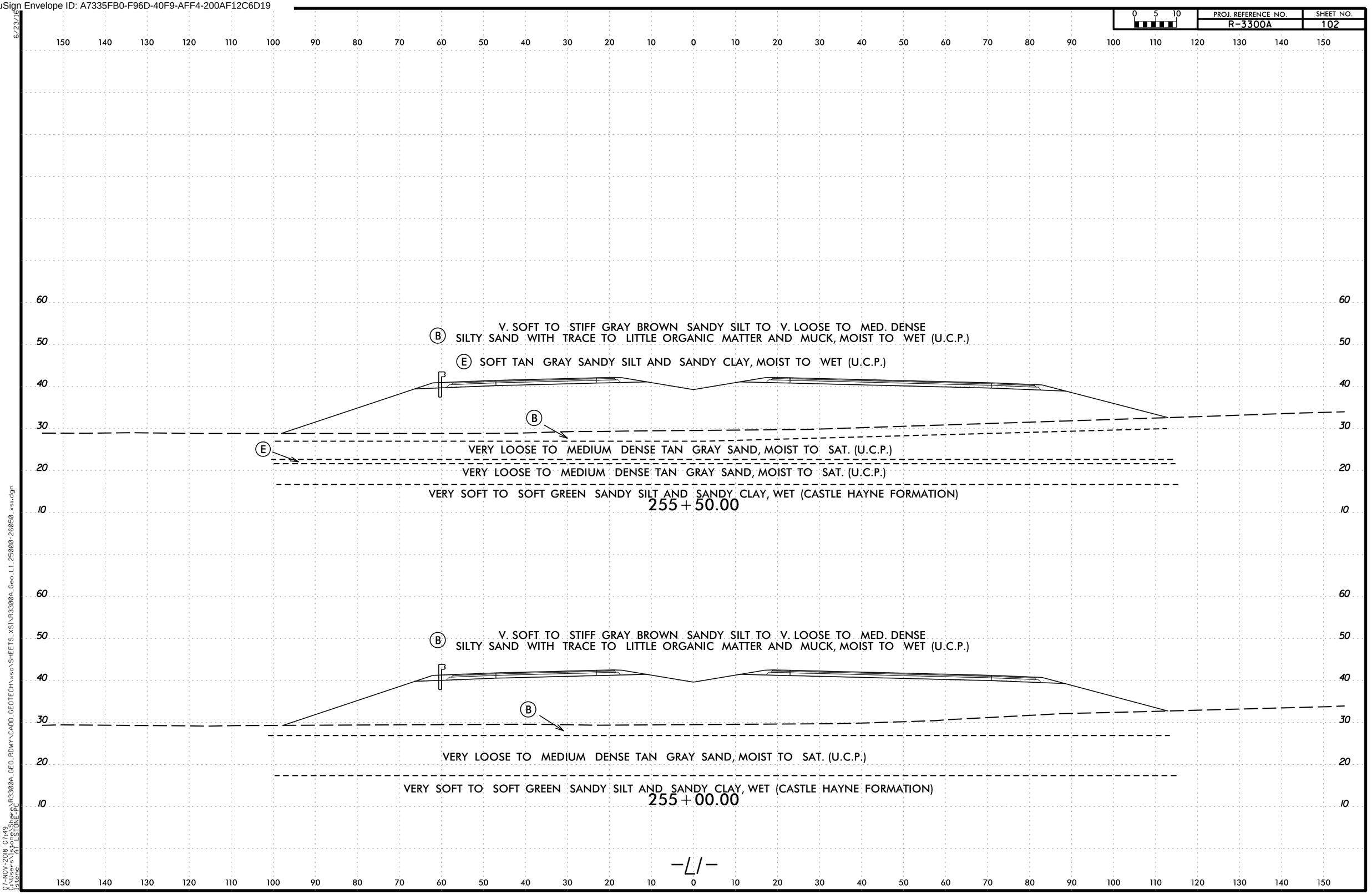
Ⓑ

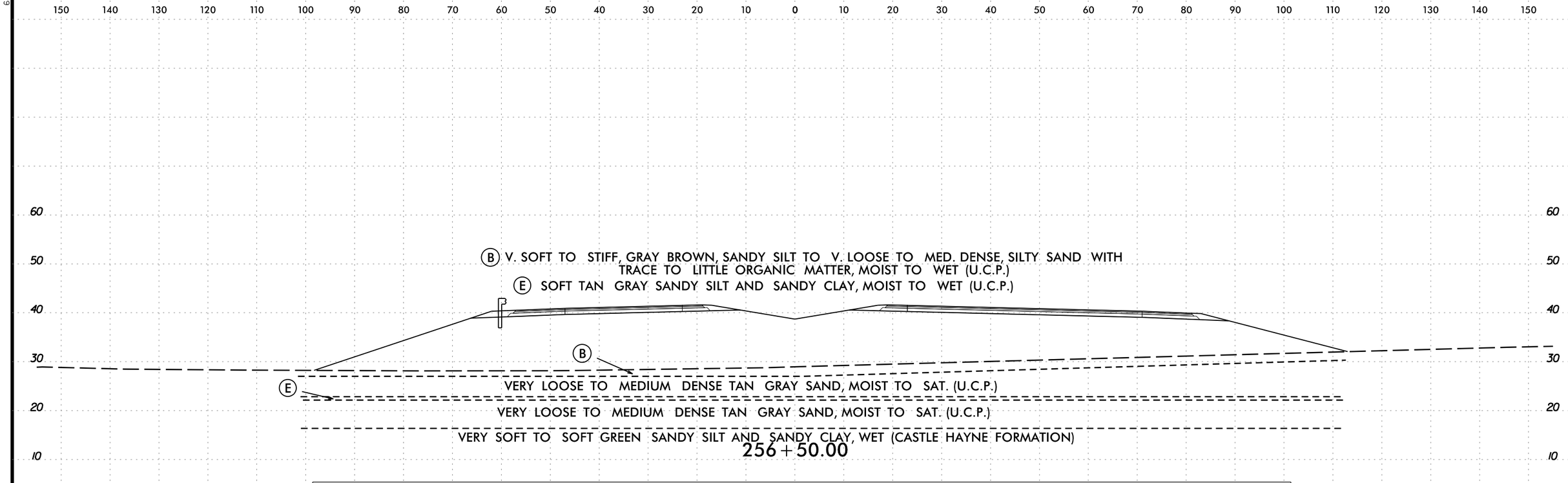
VERY LOOSE TO MEDIUM DENSE TAN 02/18 GRAY SAND, MOIST TO SAT. (U.C.P.)
BT

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

254+00.00

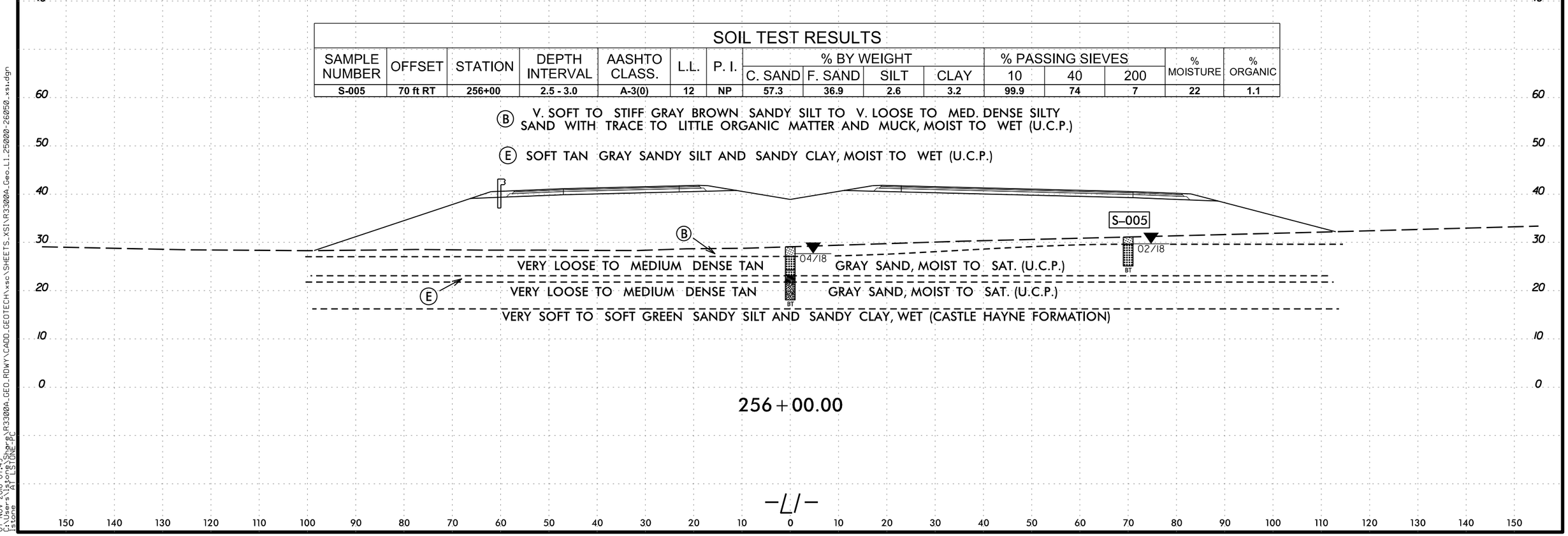
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150





SOIL TEST RESULTS

SAMPLE NUMBER	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-005	70 ft RT	256+00	2.5 - 3.0	A-3(0)	12	NP	57.3	36.9	2.6	3.2	99.9	74	7	22	1.1



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50 40 30 20 10

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓑ Ⓑ

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

257+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-125	100 ft LT	257+00	0.0 - 1.0	A-2-4(0)	22	NP	29.1	58.4	9.1	3.4	99.7	88	14	-	4.4

60 50 40 30 20 10 0

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

S-125 06/18 BT

Ⓑ Ⓑ

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

257+00.00

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

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

60 50 40 30 20 10

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓑ

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

258 + 50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-006	110 ft RT	258+00	4.0 - 5.0	A-6(4)	28	11	18.2	27.5	19.7	34.6	100	94	59	33	6.1

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

S-006

02/18

03/18

2 1 19 2 3 BT

Ⓑ

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

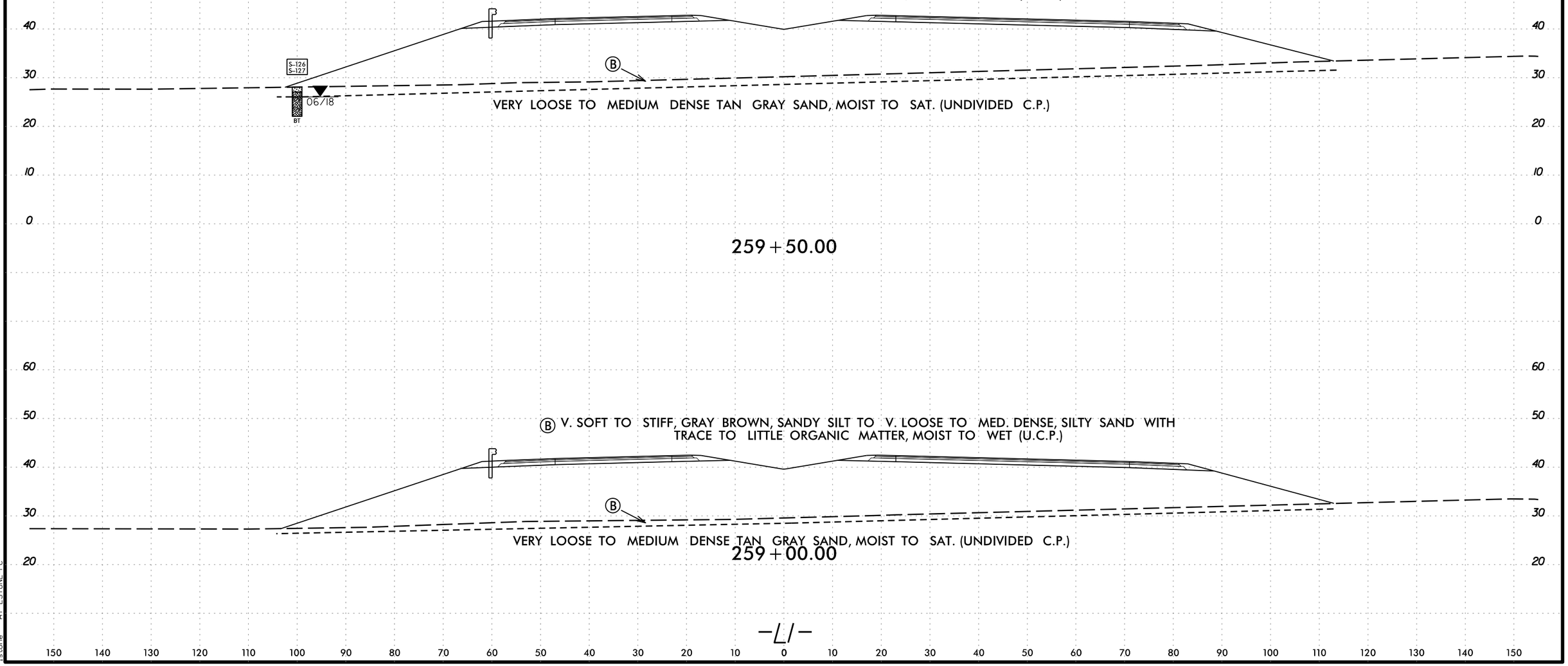
VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

258 + 00.00

-L1-

SOIL TEST RESULTS

SAMPLE NUMBER	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-126	100 ft LT	259+50	0.0 - 1.0	A-2-4(0)	19	NP	28.2	58.6	9.8	3.4	99.9	91	15	-	4.9
S-127	100 ft LT	259+50	1.5 - 2.0	A-2-4(0)	20	NP	24.1	57.2	6.2	12.5	100	93	20	-	2.9



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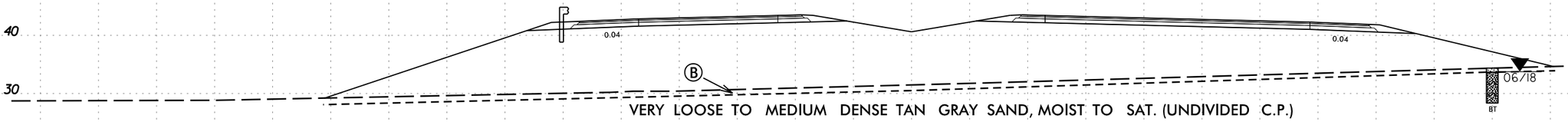
60 50 40 30 20 10 0

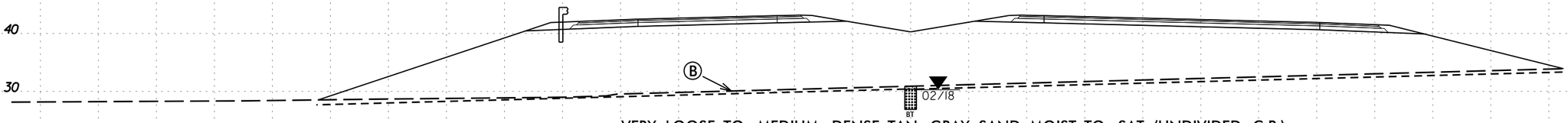
Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)



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

260+50.00

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE, SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)



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

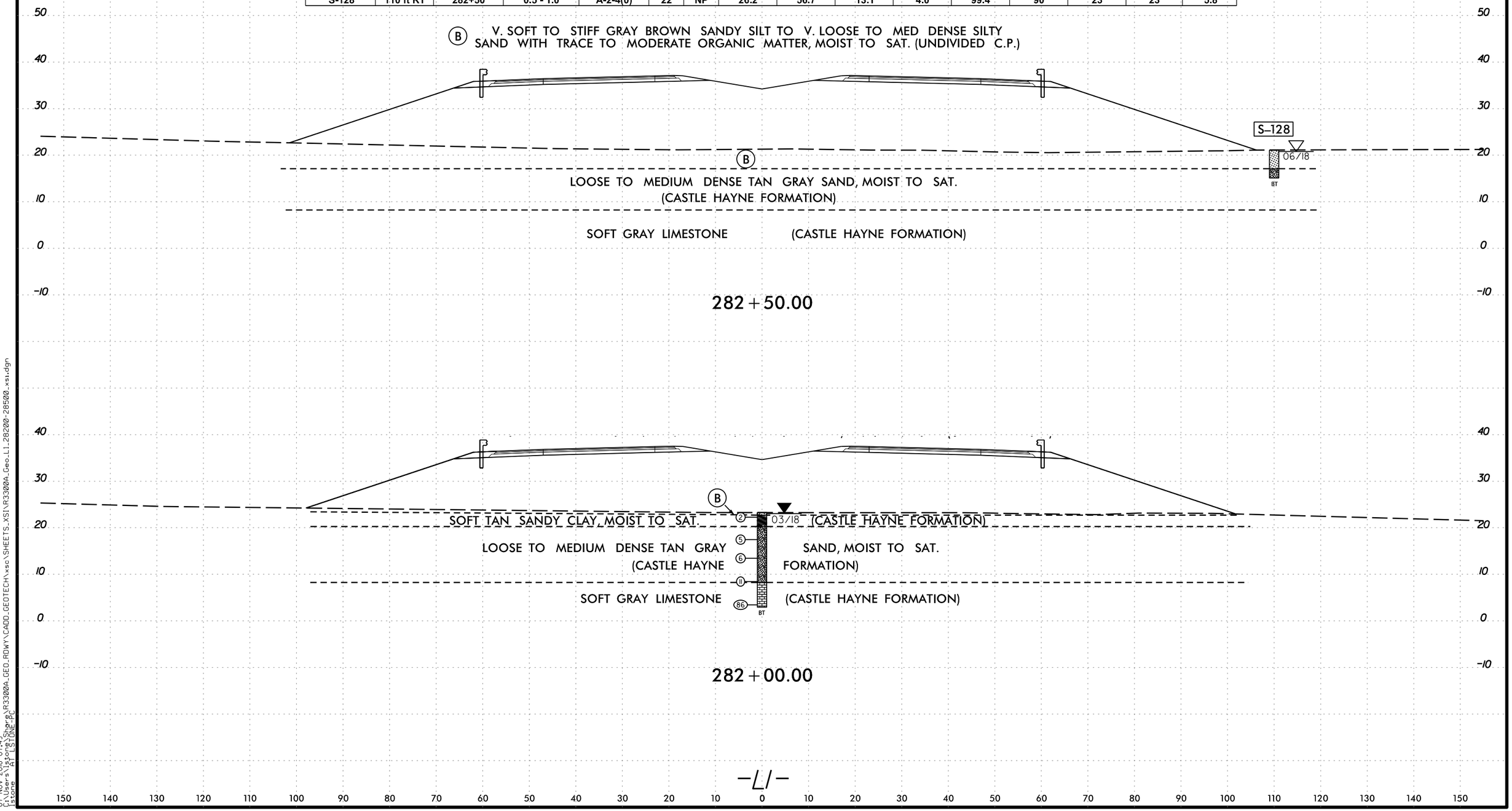
260+00.00

60 50 40 30 20 10 0

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-128	110 ft RT	282+50	0.5 - 1.0	A-2-4(0)	22	NP	26.2	56.7	13.1	4.0	99.4	90	23	23	5.8



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50 40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED C.P.)

Ⓑ

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (CASTLE HAYNE FORMATION)

SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

283+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-129	110 ft LT	283+00	2.0 - 3.0	A-2-4(0)	15	NP	26.6	51.0	7.3	15.1	100	94	27	21	1.6

50 40 30 20 10 0 -10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED C.P.)

S-129

06/18

BT

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LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (CASTLE HAYNE FORMATION)

SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

283+00.00

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

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

50 40 30 20 10 0 -10

B V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

284+60

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

06/18 BT B 04/18 BT

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (CASTLE HAYNE FORMATION)

SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

284+50.00

40 30 20 10 0

V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (CASTLE HAYNE FORMATION)

SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

284+00.00

-L1-

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

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B V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

B

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (CASTLE HAYNE FORMATION)

SOFT GRAY LIMESTONE (CASTLE HAYNE FORMATION)

285+00.00

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

04/08

03/18

BT

BT

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

290+00.00

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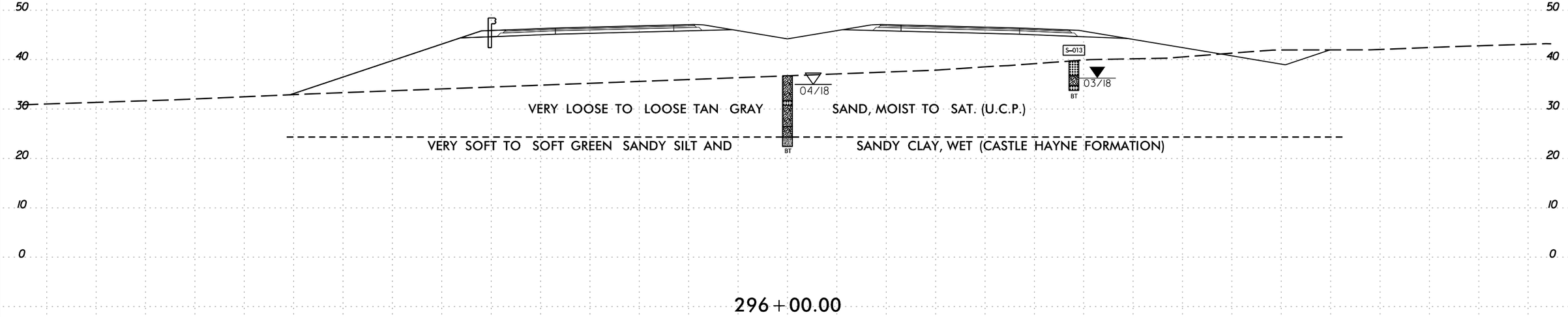
SOIL TEST RESULTS

SAMPLE NUMBER	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-013	58 ft RT	296+00	3.0 - 3.5	A-2-4(0)	17	NP	38.2	43.5	2.0	16.3	99.8	88	21	18	-



296+00.00

6/23/16

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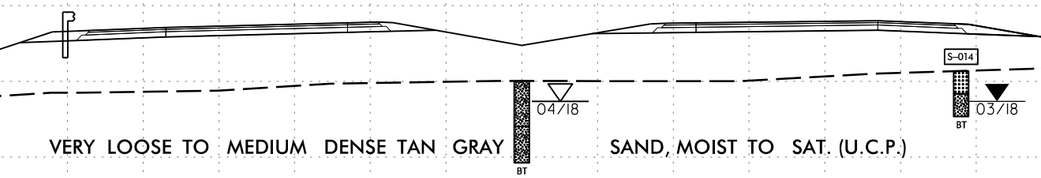
60 50 40 30 20 10 0

SOIL TEST RESULTS

SAMPLE NUMBER	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-014	58 ft RT	298+00	5.0 - 5.5	A-2-4(0)	18	NP	51.5	38.0	2.7	7.8	99.9	79	12	18	-



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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

298+00.00

-L1-

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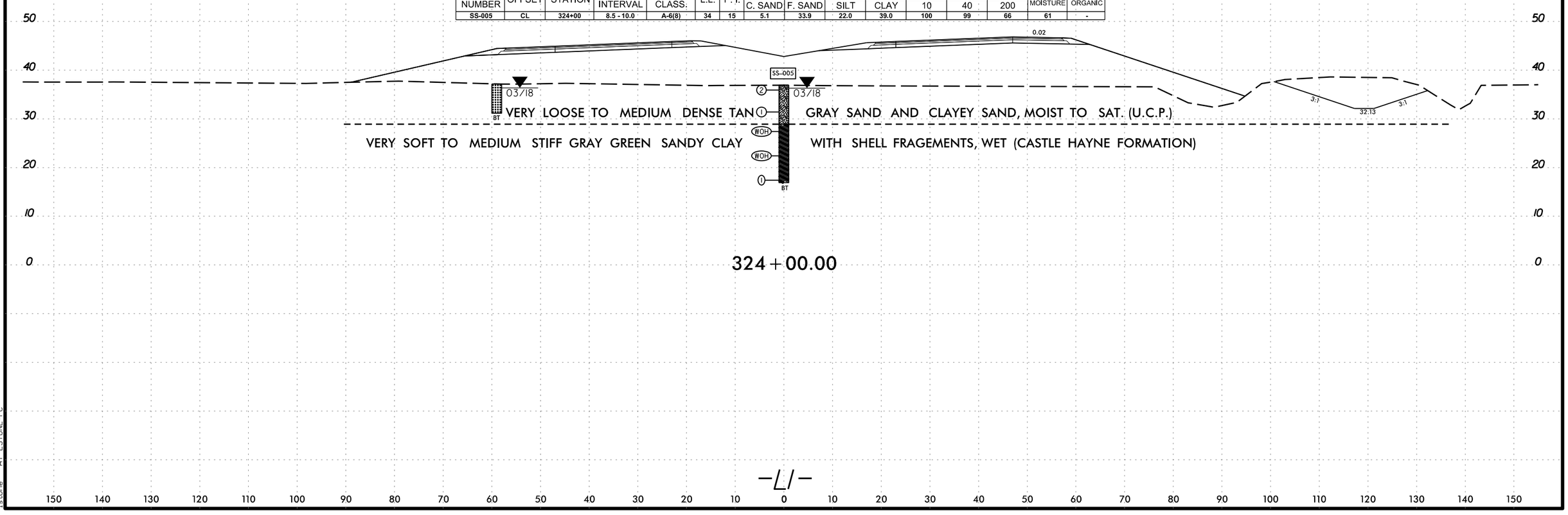
50 40 30 20 10 0

SOIL TEST RESULTS

SAMPLE NUMBER	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-005	CL	324+00	8.5 - 10.0	A-6(8)	34	15	5.1	33.9	22.0	39.0	100	99	66	61	-



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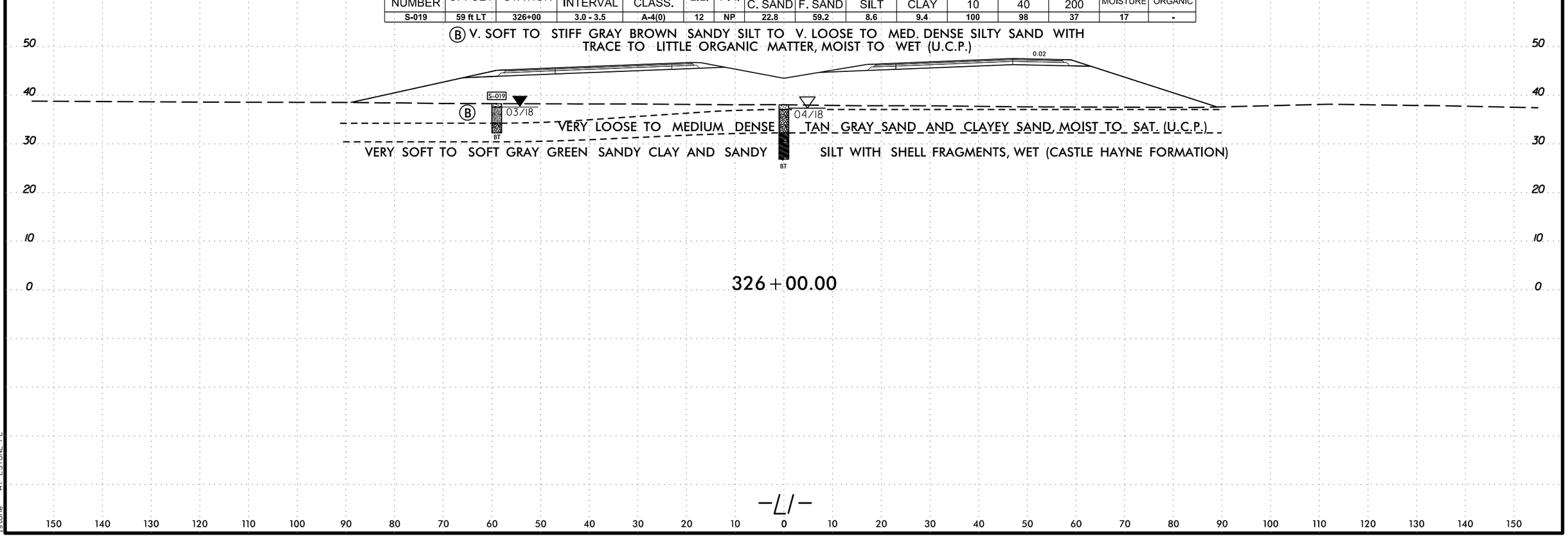
SOIL TEST RESULTS

SAMPLE NUMBER	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-019	59 ft LT	326+00	3.0 - 3.5	A-4(0)	12	NP	22.8	59.2	8.6	9.4	100	98	37	17	-



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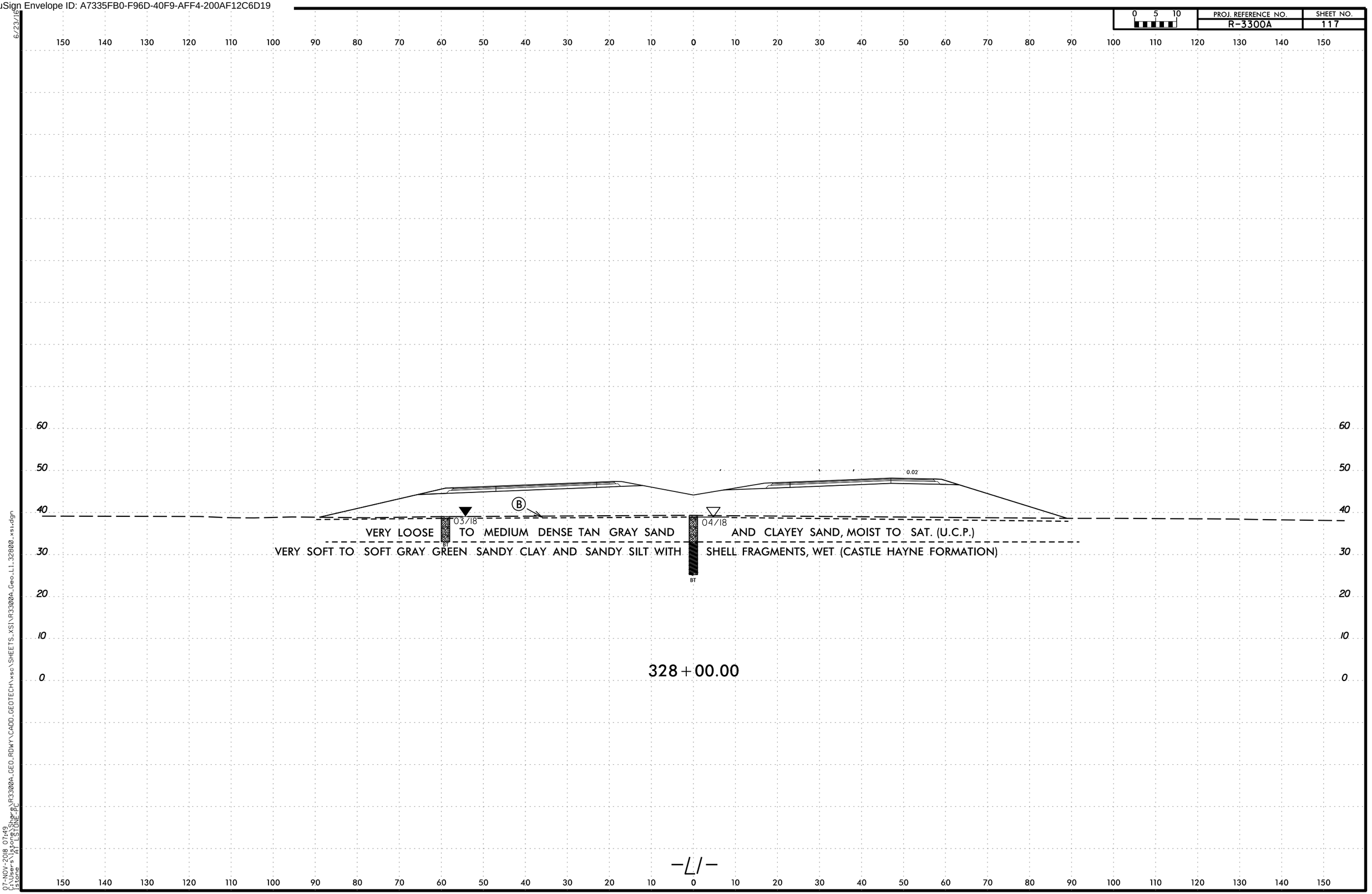

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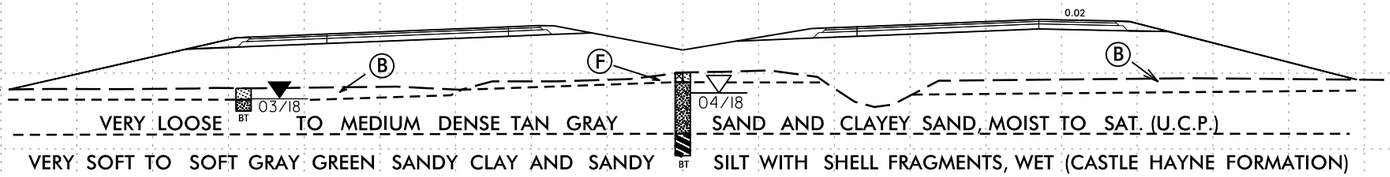
60 50 40 30 20 10 0

Ⓑ V. SOFT TO STIFF, GRAY BROWN, SANDY SILT TO V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓕ LOOSE GRAY SAND AND GRAVEL WITH LITTLE ORGANIC MATTER, MOIST (ARTIFICIAL FILL)



332+00.00

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

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30
20

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

0.03 0.04

(B)

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND AND CLAYEY SAND, MOIST TO SAT. (U.C.P.)

352+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-113	CL	352+00	0.0 - 1.0	A-2-4(0)	18	NP	8.7	76.3	8.2	6.8	99.9	98	21	24	2.1
S-025	58 ft RT	352+00	0.0 - 4.5	A-4(0)	39	NP	10.8	58.5	19.0	11.7	98.0	94	42	-	9.9

(B) V. SOFT TO STIFF, GRAY BROWN, SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET. (U.C.P.)

0.03 S-113 0.04 S-025

04/18 03/18

(B) (B)

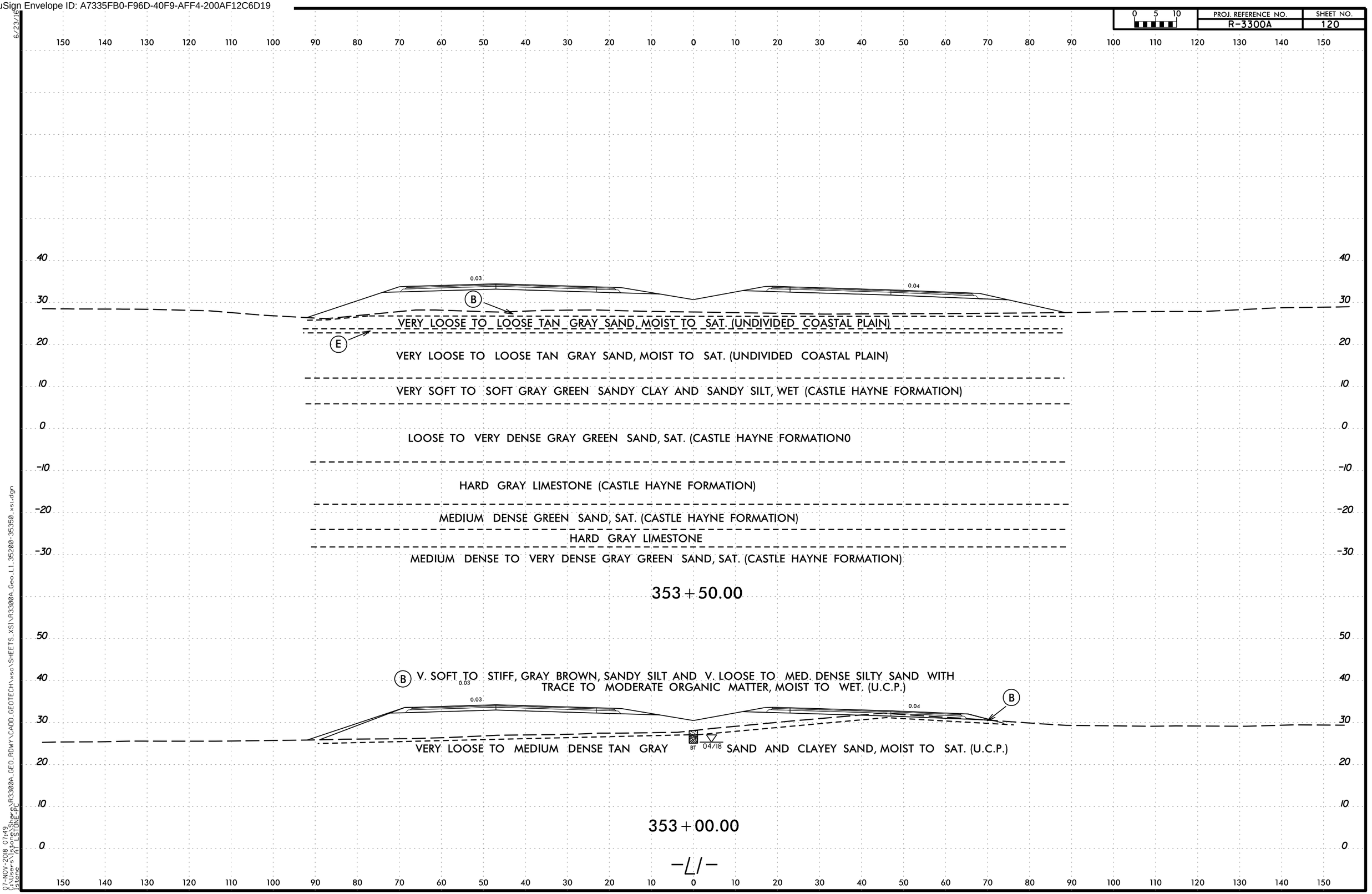
BT BT

VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND AND CLAYEY SAND, MOIST TO SAT. (U.C.P.)

352+00.00

40
30
20
10
0

-L1-



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50 40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

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

364+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-029	CL	364+00	0.0 - 6.0	A-4(0)	20	8	9.4	58.4	13.5	18.7	99.9	98	40	-	-

50 40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 S-029 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY 03/18 SANDY SILT, MOIST TO WET (U.C.P.)

BT

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

364+00.00

-L/-

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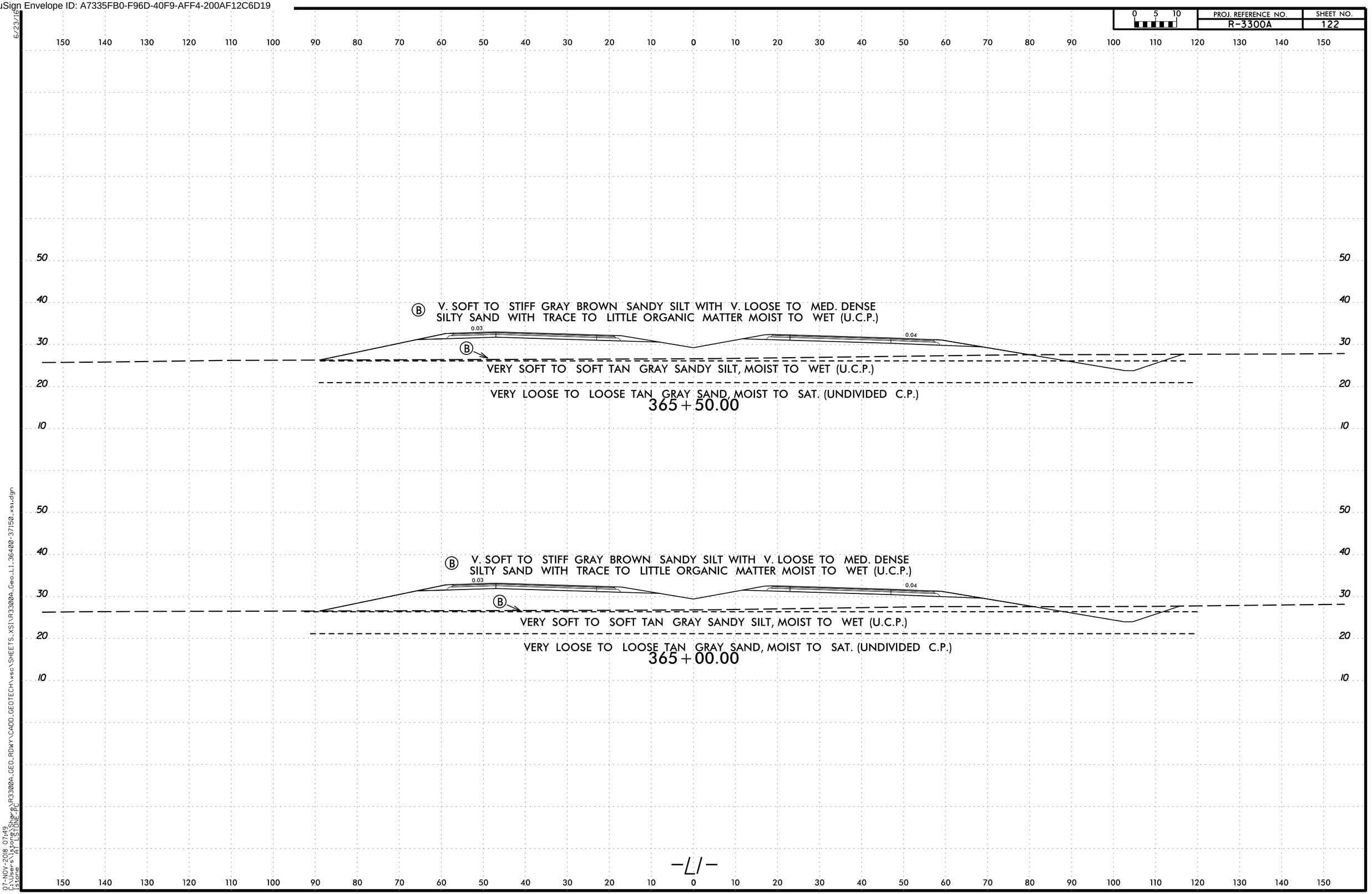

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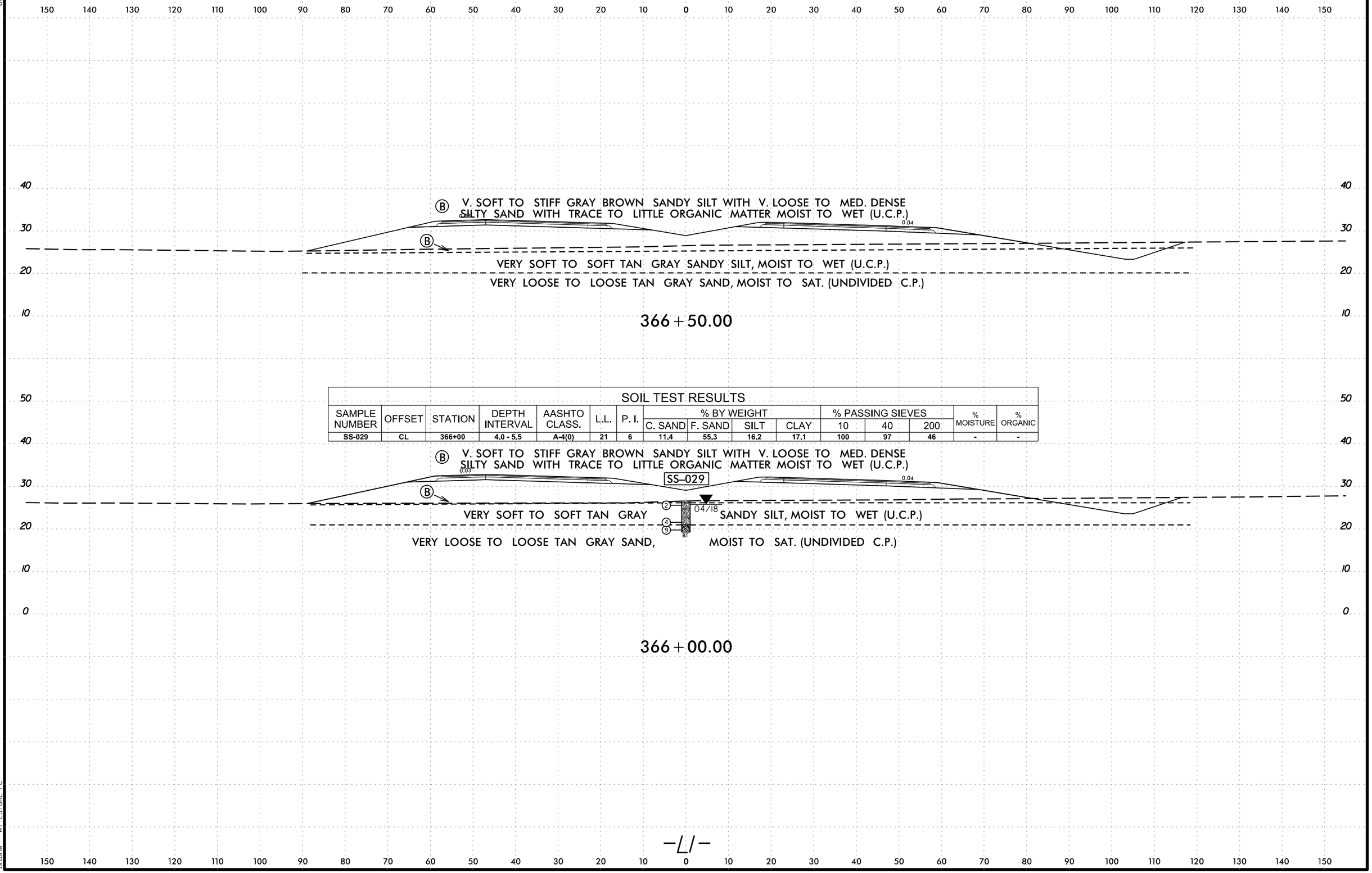

SOIL TEST RESULTS

SAMPLE NUMBER	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-029	CL	366+00	4.0 - 5.5	A-4(0)	21	6	11.4	55.3	16.2	17.1	100	97	46	-	-

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-030	CL	368+00	0.0 - 6.0	A-6(7)	34	18	14.9	35.9	16.1	33.1	100	97	55	23	-

40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

S-030

0.03 0.04

Ⓑ

03/18

BT

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

368+00.00

40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY SILTY CLAY, AND SILT, MOIST TO WET (U.C.P.)

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

367+50.00

40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

23.12

VERY SOFT TO SOFT TAN GRAY SANDY SILTY CLAY, AND SILT, MOIST TO WET (U.C.P.)

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

367+00.00

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

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

40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04 22.25

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

369+00.00

50 40 30 20 10

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

368+50.00

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-031	CL	370+00	2.0 - 5.0	A-7-6(13)	45	28	3.0	45.1	14.9	37.0	99.9	99	58	-	-

40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 S-031 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.) 03/18

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

BT

370+00.00

40 30 20 10 0

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

369+50.00

40 30 20 10 0

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

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

40
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0

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

0.03 0.04

Ⓕ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

371+00.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER MOIST TO WET (U.C.P.)

0.03 0.04

Ⓑ

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

370+50.00

6/23/16

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PROJ. REFERENCE NO.	SHEET NO.
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0.03

0.04

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

VERY SOFT TO SOFT TAN GRAY SANDY, SILTY CLAY AND SILT, MOIST TO WET (U.C.P.)

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

371+50.00

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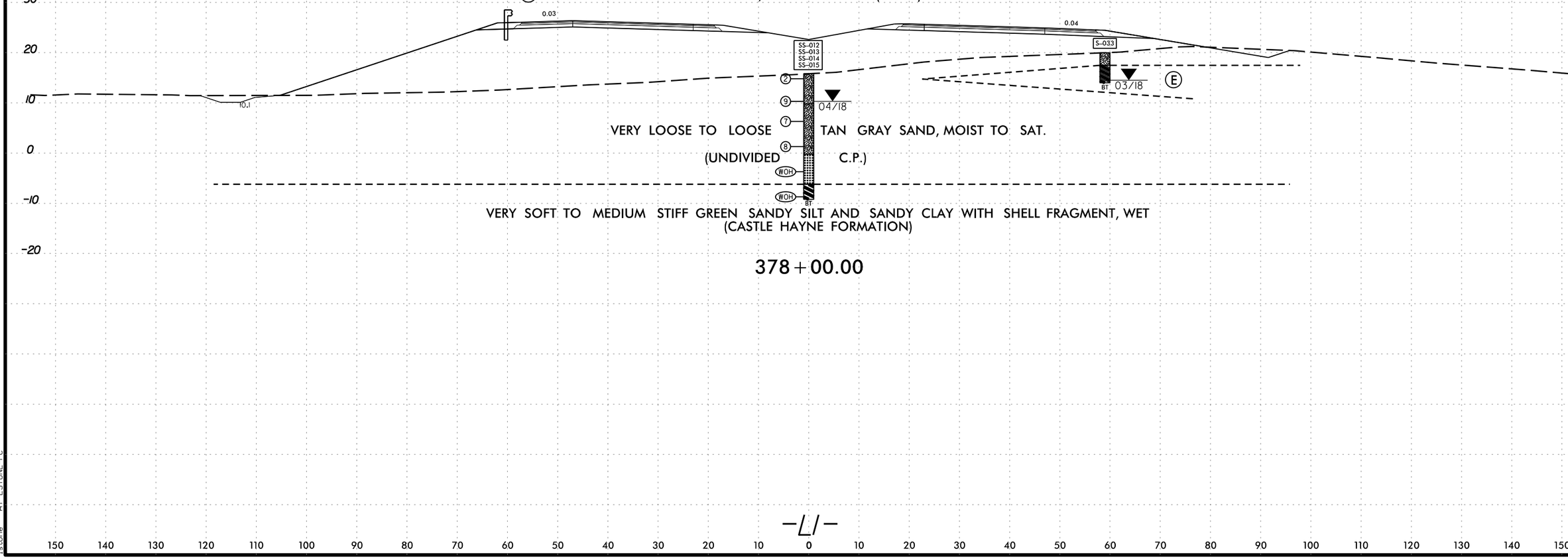
jstone AT LSTONE-PC

SOIL TEST RESULTS

SAMPLE NUMBER	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-012	CL	378+00	4.5 - 6.0	A-2-4(0)	17	NP	21.6	60.7	9.6	8.0	100	92	24	-	-
SS-013	CL	378+00	8.5 - 10.0	A-2-4(0)	26	NP	6.1	70.4	7.3	16.1	100	98	31	-	-
SS-014	CL	378+00	18.5 - 20.0	A-3(0)	23	NP	0.8	95.1	1.0	3.1	100	100	8	-	-
SS-015	CL	378+00	23.5 - 25.0	A-7-6(55)	89	65	4.6	19.6	7.4	68.4	99.6	97	79	139	-
S-033	59 ft RT	378+00	0.0 - 2.5	A-2-4(0)	16	NP	23.2	65.4	7.8	3.6	99.9	94	18	-	-



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

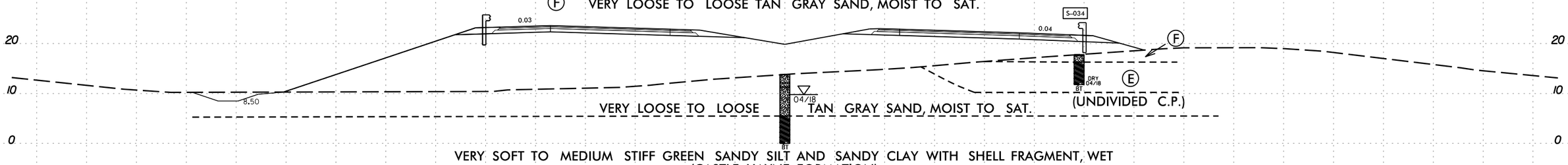
SOIL TEST RESULTS

SAMPLE NUMBER	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-034	59 ft RT	380+00	1.5 - 4.0	A-6(3)	34	17	0.9	65.4	7.6	26.1	100	100	41	-	-

40 30 20 10 0

Ⓔ SOFT TAN GRAY SANDY CLAY, MOIST TO WET (U.C.P.)

Ⓕ VERY LOOSE TO LOOSE TAN GRAY SAND, MOIST TO SAT.



VERY SOFT TO MEDIUM STIFF GREEN SANDY SILT AND SANDY CLAY WITH SHELL FRAGMENT, WET
(CASTLE HAYNE FORMATION)

380+00.00

-L1-

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

40 30 20 10 0 -10

SOIL TEST RESULTS

SAMPLE NUMBER	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-130	100 ft RT	382+50	0.5 - 1.0	A-2-4(0)	32	NP	7.6	76.6	12.5	3.3	99.0	97	24	62	5.7

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (U.C.P.)

0.034 0.04

Ⓑ S-130

6.50

06/18

BT

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

MEDIUM STIFF GREEN SANDY SILT AND SANDY CLAY WITH SHELL FRAGMENTS, WET (CASTLE HAYNE FORMATION)

382+50.00

0.03 0.04

6.90

04/18

BT

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

MEDIUM STIFF GREEN SANDY SILT AND SANDY CLAY WITH SHELL FRAGMENTS, WET (CASTLE HAYNE FORMATION)

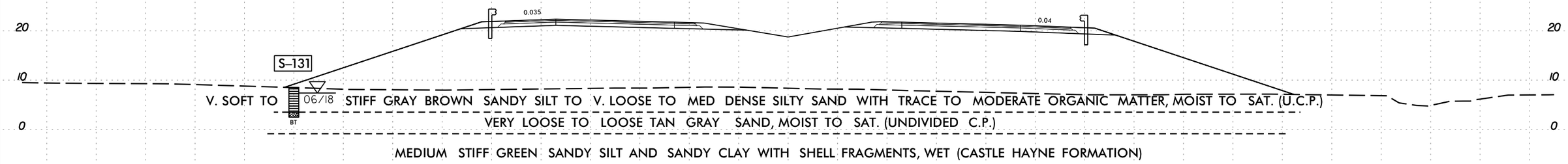
382+00.00

-L/-

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-131	100 ft LT	383+00	0.5 - 1.0	A-4(0)	39	NP	12.0	58.6	24.1	5.3	99.6	93	39	79	10.2



30 20 10 0 -10 -20

383+00.00

-L/-

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

30 20 10 0 -10 -20

0.04 0.04

NM

BT

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

MEDIUM STIFF GREEN SANDY SILT AND SANDY CLAY WITH SHELL FRAGMENTS, WET (CASTLE HAYNE FORMATION)

386+50.00

40 30 20 10 0 -10 -20

(B) V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO SAT. (U.C.P.)

0.035 0.04

06/18

(B)

BT

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

MEDIUM STIFF GREEN SANDY SILT AND SANDY CLAY WITH SHELL FRAGMENTS, WET (CASTLE HAYNE FORMATION)

386+00.00

-L/-

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(B) V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (U.C.P.)

0.04 0.04

(B)

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

409+50.00

0.04 0.04

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

409+00.00

(F) VERY LOOSE TO LOOSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

0.04 0.04

19.80

(F)

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

408+50.00

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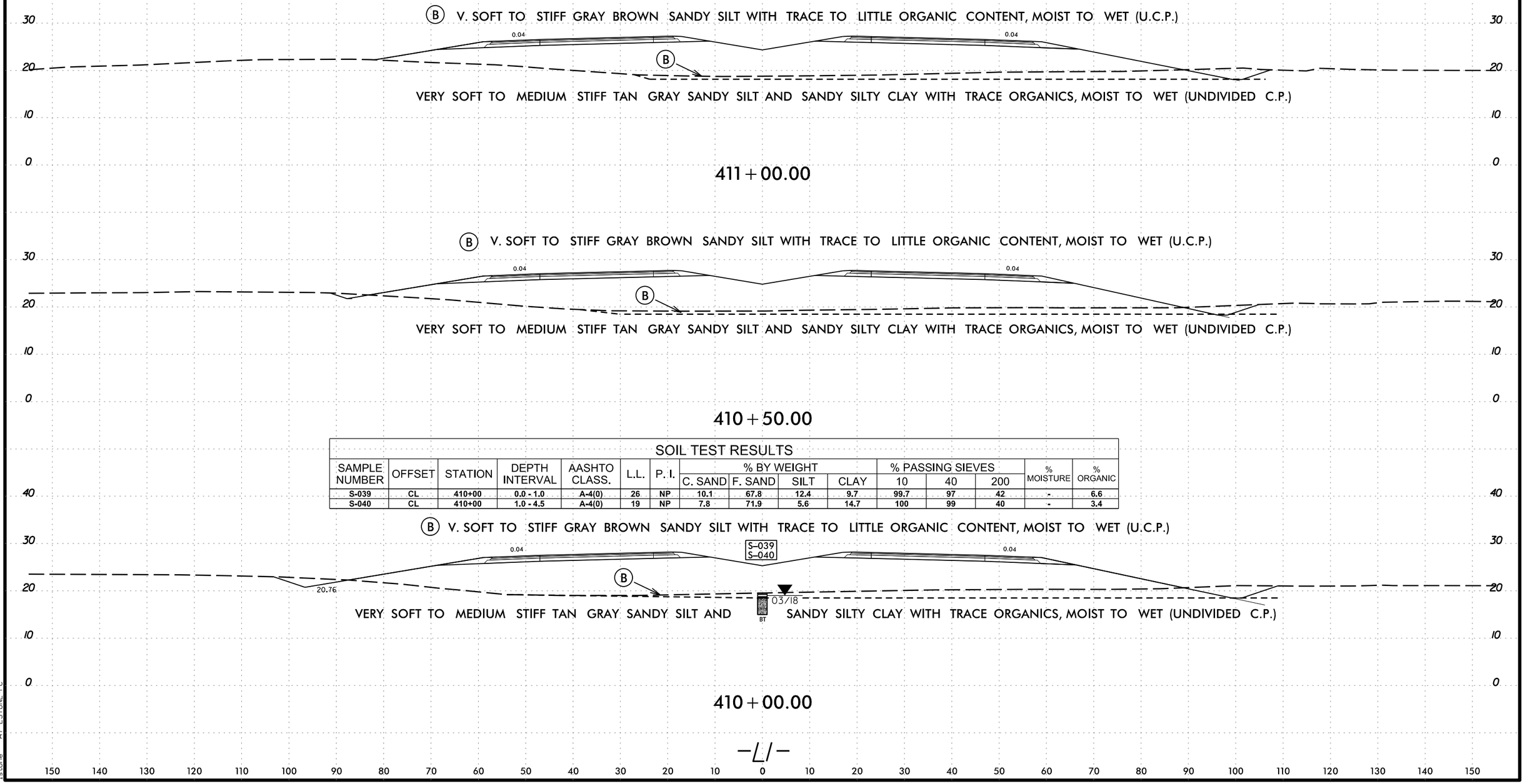

SOIL TEST RESULTS

SAMPLE NUMBER	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-039	CL	410+00	0.0 - 1.0	A-4(0)	26	NP	10.1	67.8	12.4	9.7	99.7	97	42	-	6.6
S-040	CL	410+00	1.0 - 4.5	A-4(0)	19	NP	7.8	71.9	5.6	14.7	100	99	40	-	3.4

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	136

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

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Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (U.C.P.)

0.04 0.04

Ⓑ

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

412 + 50.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (U.C.P.)

0.04 0.04

Ⓑ

03/18

BT

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

412 + 00.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT WITH TRACE TO LITTLE ORGANIC CONTENT, MOIST TO WET (U.C.P.)

0.04 0.04

Ⓑ

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

411 + 50.00

−L/−

6/23/16

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	137

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

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Ⓕ VERY LOOSE TO LOOSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

0.04 0.04

Ⓕ

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

413 + 50.00

40
30
20
10

Ⓕ VERY LOOSE TO LOOSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

0.04 0.04

Ⓕ

VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY SILTY CLAY WITH TRACE ORGANICS, MOIST TO WET (UNDIVIDED C.P.)

413 + 00.00

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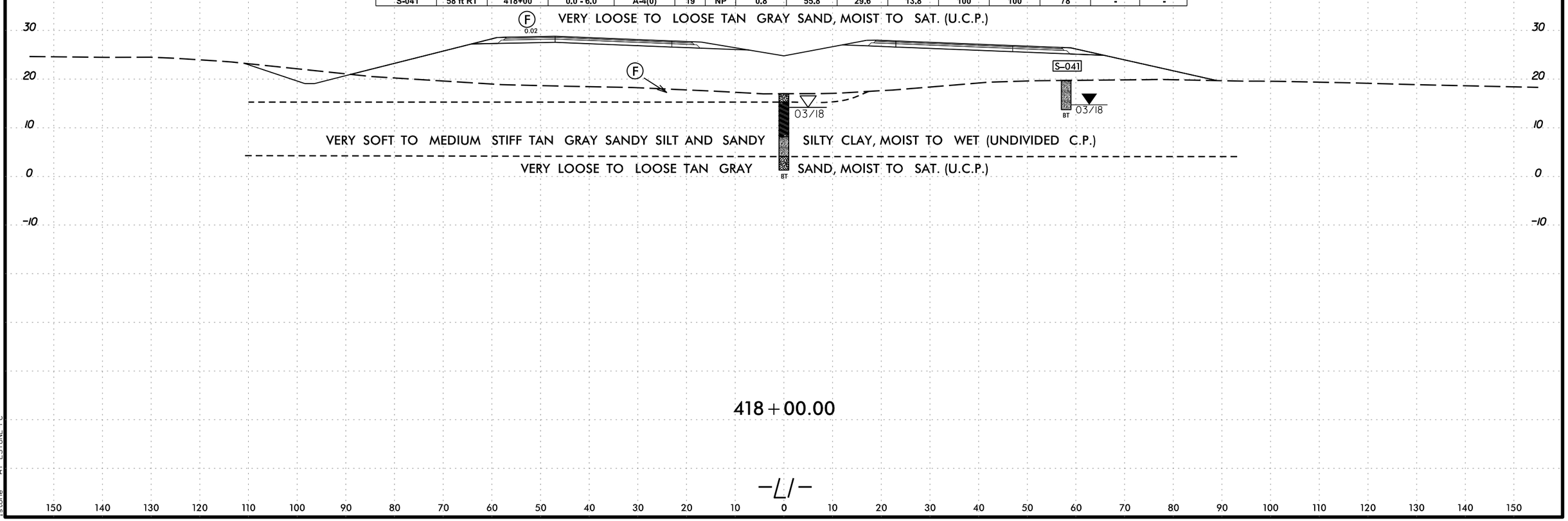
SOIL TEST RESULTS

SAMPLE NUMBER	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-041	58 ft RT	418+00	0.0 - 6.0	A-4(0)	19	NP	0.8	55.8	29.6	13.8	100	100	78	-	-



418+00.00

-L/-

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-053	CL	420+00	4.3 - 5.8	A-7-6(17)	49	32	3.9	37.4	13.9	44.8	100	100	62	40	-
SS-054	CL	420+00	13.3 - 14.8	A-7-6(24)	53	25	3.3	13.1	36.1	47.5	100	98	86	173	-

40 30 20 10 0

(F) VERY LOOSE TO LOOSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

0.02

SS-053
SS-054

(F)

VERY SOFT TO MEDIUM STIFF TAN GRAY SILTY CLAY, MOIST TO WET (U.C.P.)

5
8
3
WOH

04/18

BT

40 30 20 10 0

420+00.00

-L/-

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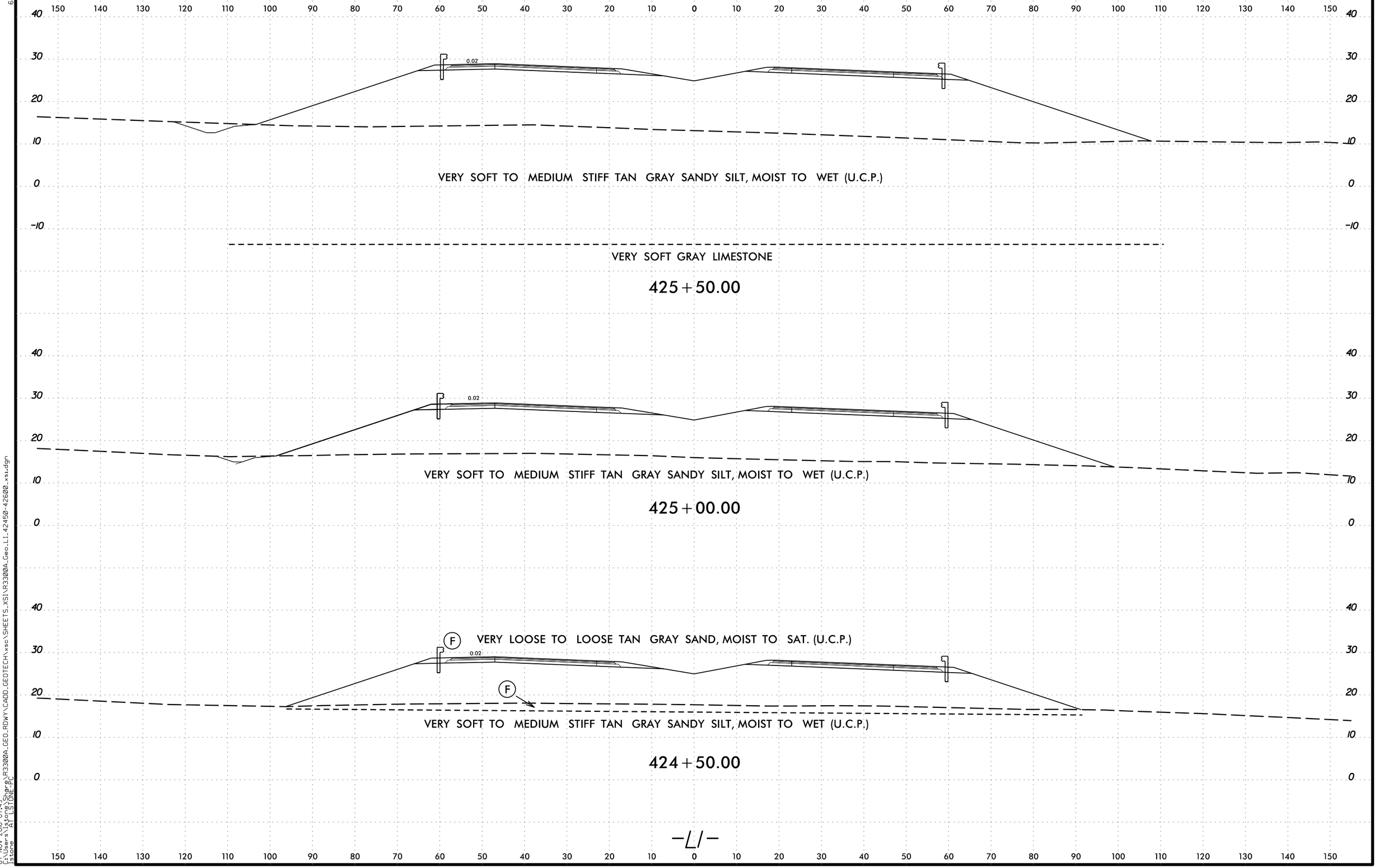

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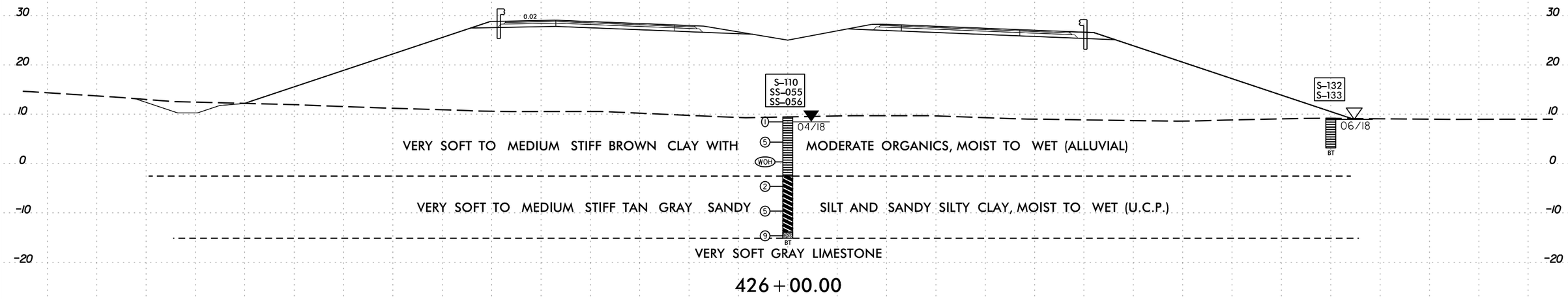
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SOIL TEST RESULTS

SAMPLE NUMBER	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-055	CL	426+00	13.1 - 14.6	A-7-6(54)	77	49	0.9	6.4	23.7	69.0	100	100	94	101	-
SS-056	CL	426+00	23.1 - 24.6	A-4(0)	22	NP	43.6	20.5	18.9	16.9	93.6	71	39	-	-
S-110	CL	426+00	0.0 - 1.0	A-7-5(12)	47	16	6.8	27.0	49.2	16.9	97.7	97	71	37	10.9
S-132	110 RT	426+00	0.3 - 1.3	-	29	NP	-	-	15.8	6.2	98.5	-	-	69	11
S-133	110 RT	426+00	2.0 - 3.0	-	25	8	-	-	11.9	23.7	99.5	-	-	59	7.2



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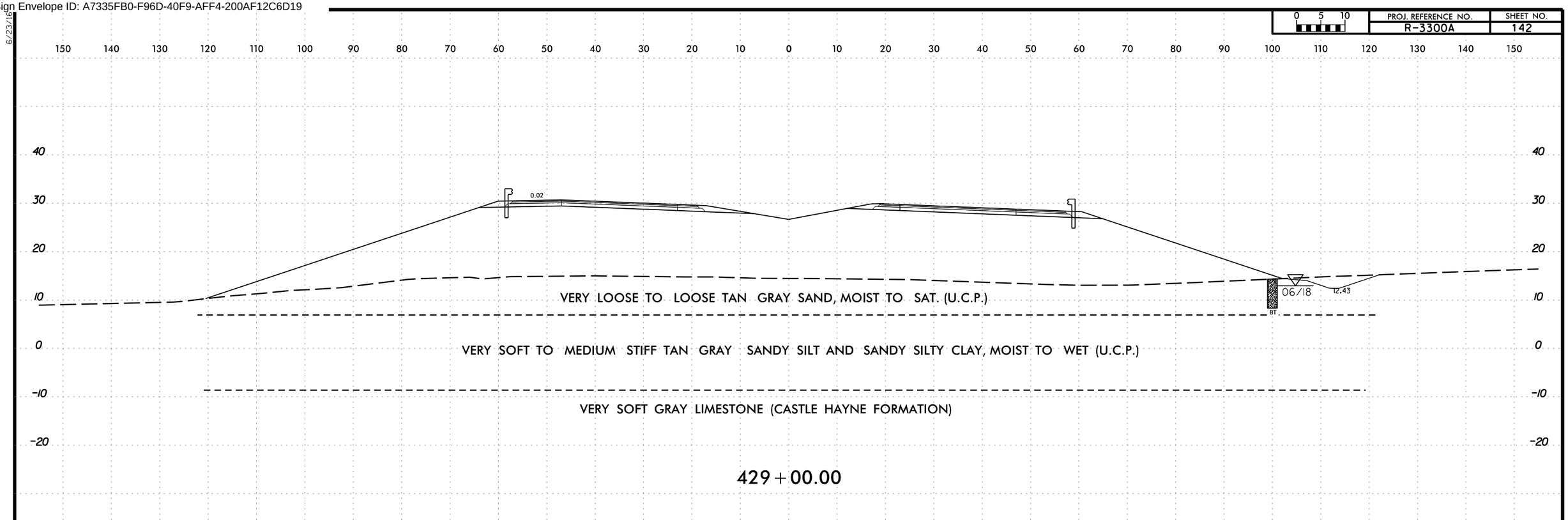
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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

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(B) VERY SOFT GRAY BROWN SANDY SILT AND VERY LOOSE SILTY SAND WITH MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

0.02

(B) (B)

06/18 VERY SOFT TO MEDIUM STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET. (U.C.P.)

BT

443+00.00

40
30
20
10

0.02

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

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

442+50.00

-L/-

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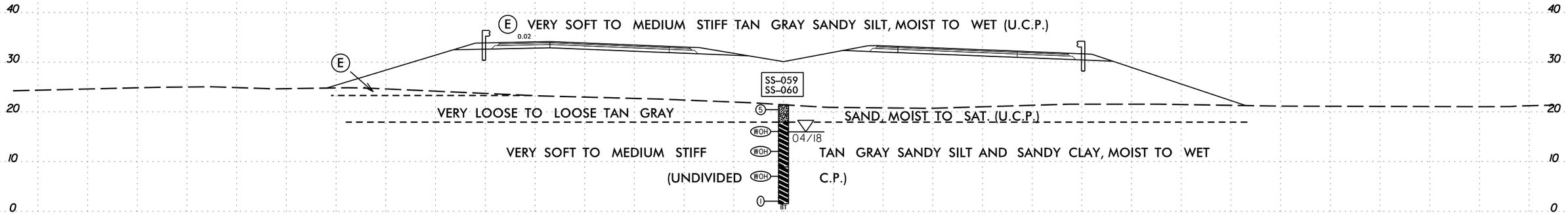
AT LSTONE-PC

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

SOIL TEST RESULTS

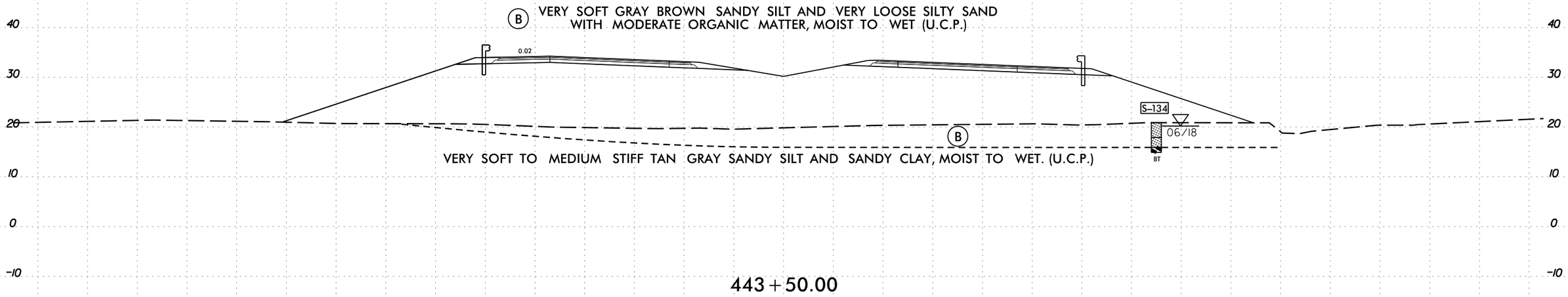
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-059	CL	444+00	4.4 - 5.9	A-7-6(20)	43	25	3.9	31.7	25.4	39.0	100	99	81	53	-
SS-060	CL	444+00	13.4 - 14.9	A-7-6(48)	67	43	0.1	4.3	35.2	60.4	100	100	98	105	-



444+00.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-134	75 ft RT	443+50	3.0 - 3.5	A-2-4(0)	34	NP	14.2	64.7	19.0	2.2	97.6	94	32	70	8



443+50.00

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-078	CL	462+00	4.4 - 5.9	A-2-4(0)	29	NP	0.3	88.7	6.0	5.0	100	100	32	-	-
SS-079	CL	462+00	13.4 - 14.9	A-7-6(33)	55	29	0.9	2.6	46.1	50.4	100	100	98	-	-
S-055	59 ft RT	466+00	1.0 - 1.5	A-2-4(0)	16	NP	4.1	76.5	7.3	12.1	100	99	25	23	-

6/23/16

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PROJ. REFERENCE NO.	SHEET NO.
R-3300A	146

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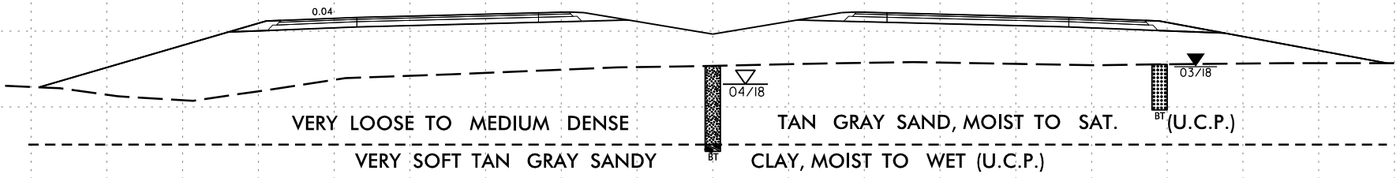

464+00.00

-L/-

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6/23/16

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	R-3300A	147

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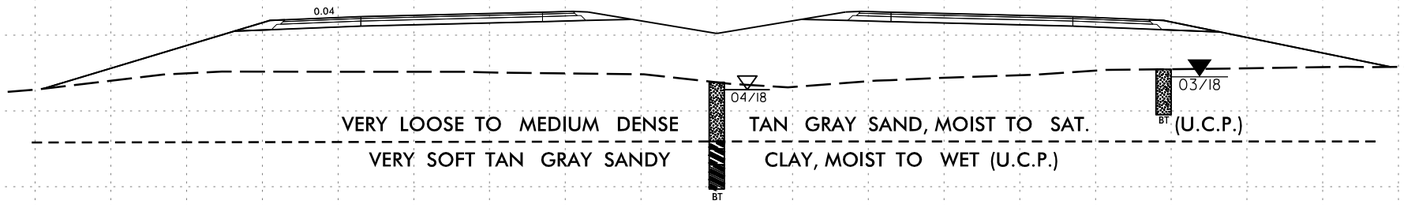

466+00.00

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

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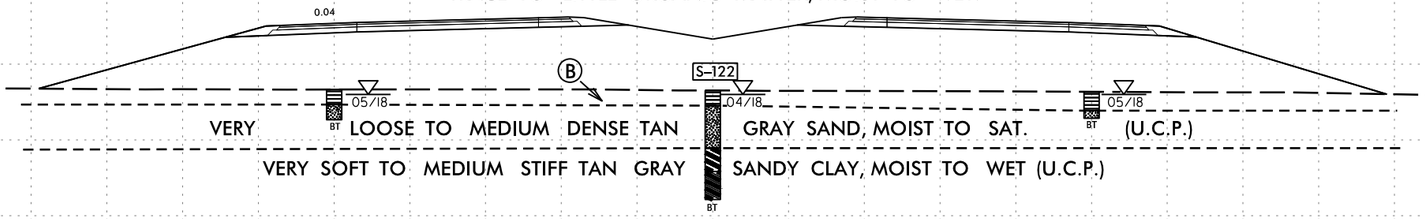
SOIL TEST RESULTS

SAMPLE NUMBER	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-122	CL	476+00	0.0 - 1.0	A-4(0)	21	NP	2.3	70.2	16.4	11.1	100	99	38	27	5.3

Ⓑ V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET.



476+00.00

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6/23/16

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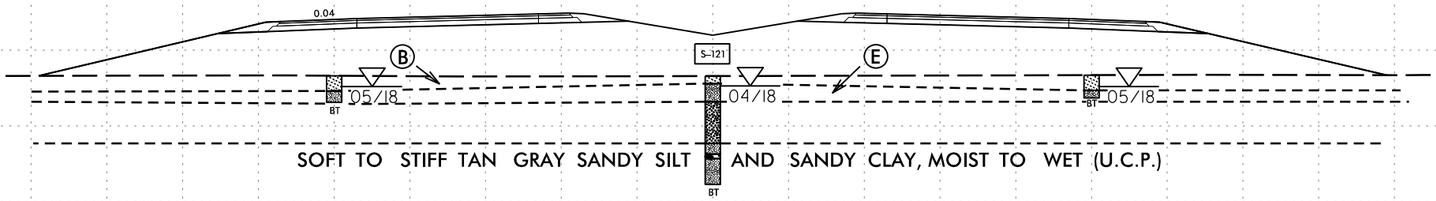
60 50 40 30 20 10 0

SOIL TEST RESULTS

SAMPLE NUMBER	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-121	CL	482+00	0.0 - 1.0	A-2-4(0)	15	NP	3.5	75.3	15.0	6.2	99.8	99	28	21	3.7

Ⓑ V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH V. LOOST TO MED. DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER, MOIST TO WET.

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

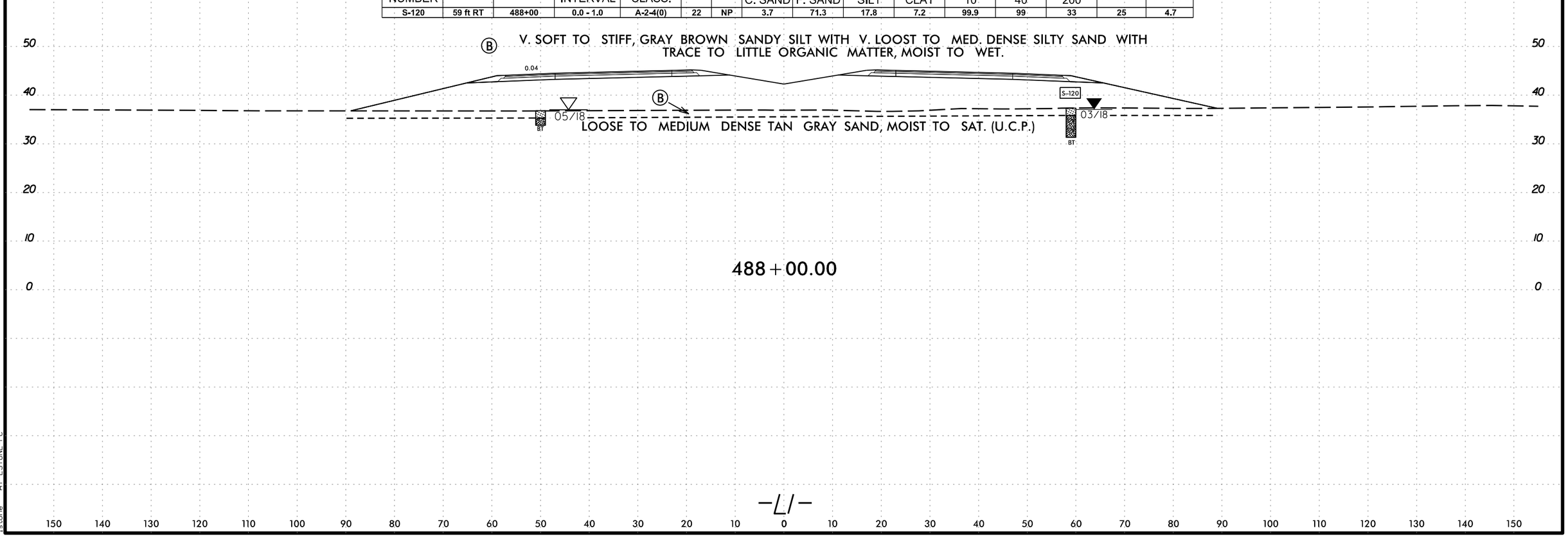


482+00.00

-L/-

SOIL TEST RESULTS

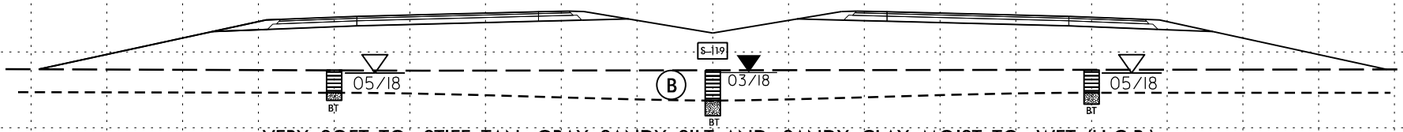
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-120	59 ft RT	488+00	0.0 - 1.0	A-2-4(0)	22	NP	3.7	71.3	17.8	7.2	99.9	99	33	25	4.7



SOIL TEST RESULTS

SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
S-119	CL	494+00	0.0 - 1.0	A-4(0)	28	NP	3.9	63.7	22.0	10.3	100	98	43	33	9.3

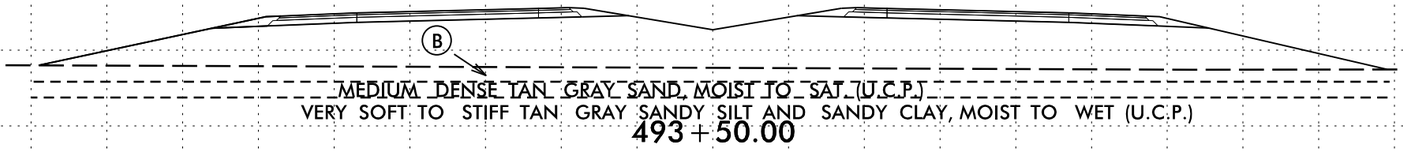
B V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH LITTLE ORGANIC MATTER, MOIST TO WET (U.C.P.)



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

494+00.00

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

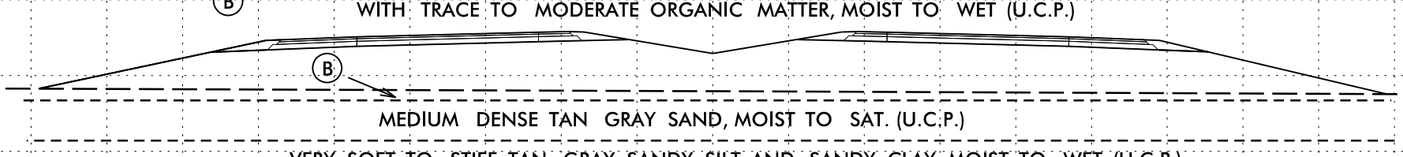


MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

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

493+50.00

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)



MEDIUM DENSE TAN GRAY SAND, MOIST TO SAT. (U.C.P.)

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

493+00.00

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

70 60 50 40 30

SOIL TEST RESULTS

SAMPLE NUMBER	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-052	CL	496+00	0.6 - 1.0	A-4(0)	25	4	2.2	71.3	13.9	12.6	100	99	37	29	-

S-052 03/18 BT

V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)
VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

496+00.00

V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)
VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

495+50.00

V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)
VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

495+00.00

V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)
VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

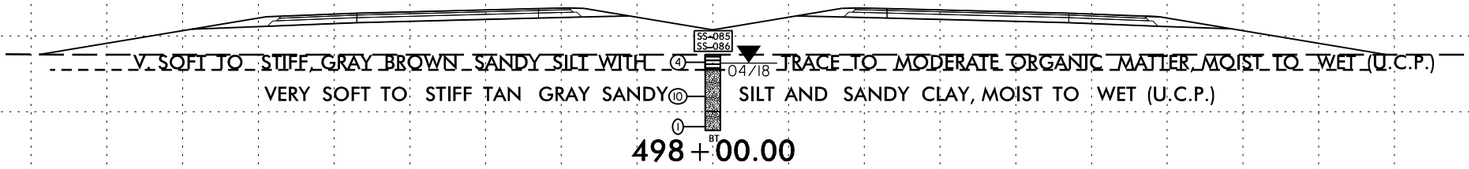
494+50.00

50 40 30 20

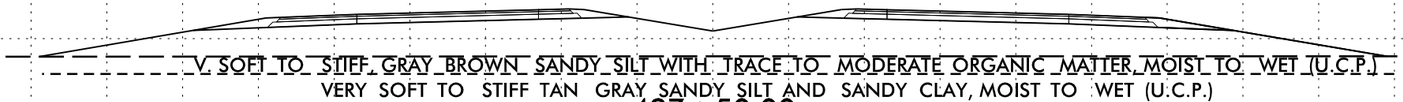
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SOIL TEST RESULTS

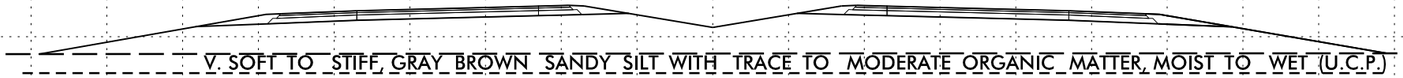
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT C. SAND	% BY WEIGHT F. SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES 10	% PASSING SIEVES 40	% PASSING SIEVES 200	% MOISTURE	% ORGANIC
SS-085	CL	498+00	4.5 - 6.0	A-4(0)	22	NP	1.6	81.1	9.3	8.0	100	100	37	-	-
SS-086	CL	498+00	8.5 - 10.0	A-4(0)	25	NP	2.9	48.6	37.4	11.1	100	99	76	32	-



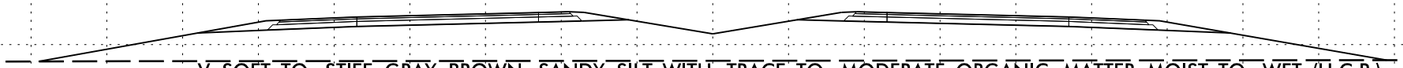
498+00.00



497+50.00

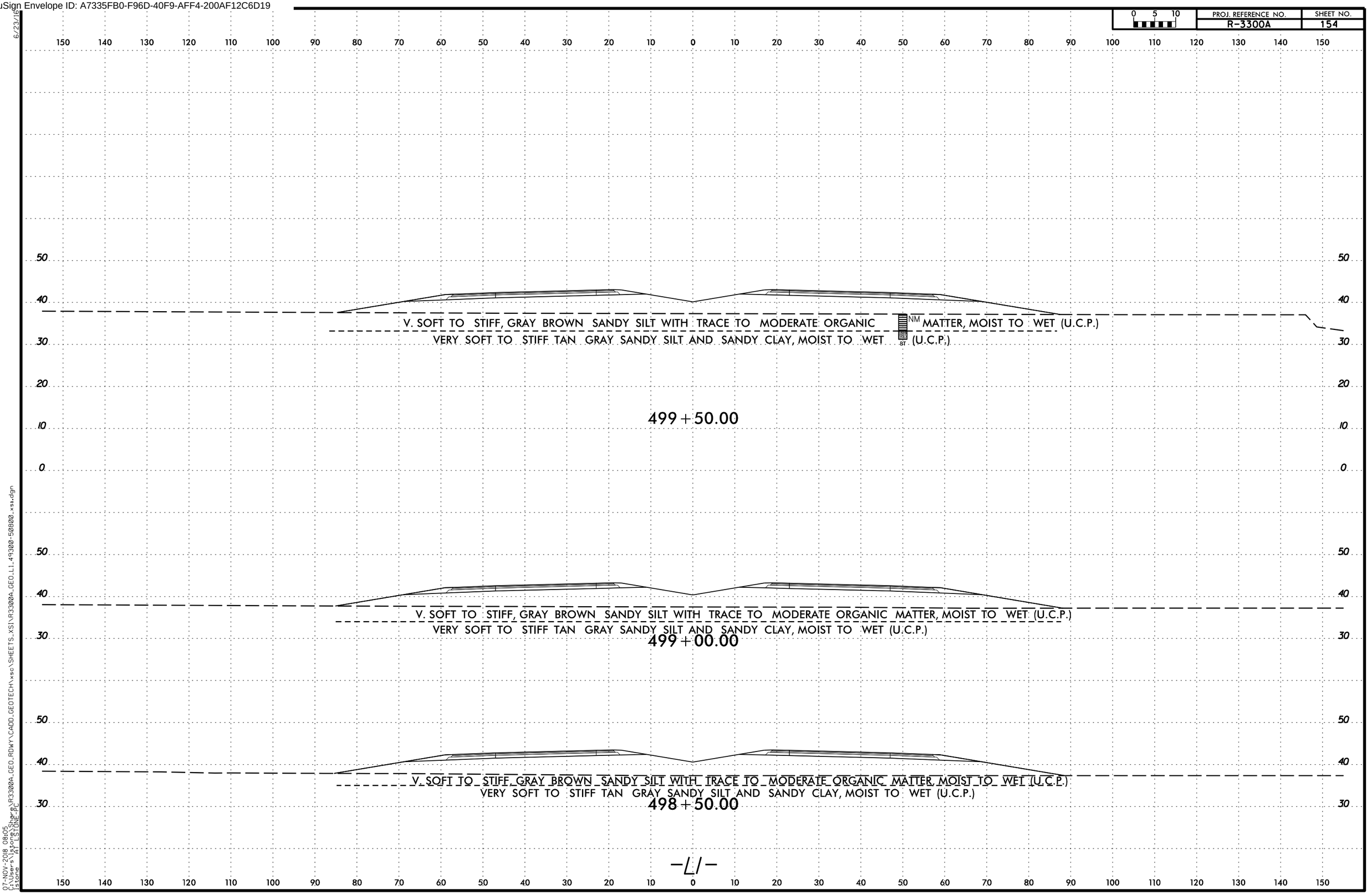


497+00.00



496+50.00

-L/-

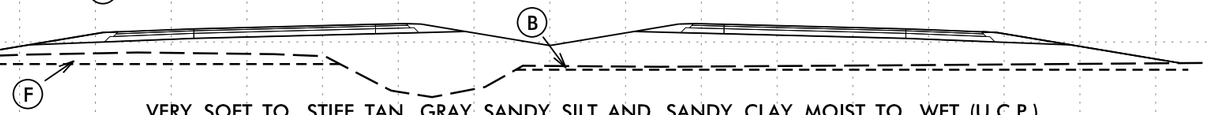


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

60 50 40 30 20

(B) V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(F) DENSE GRAY SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)

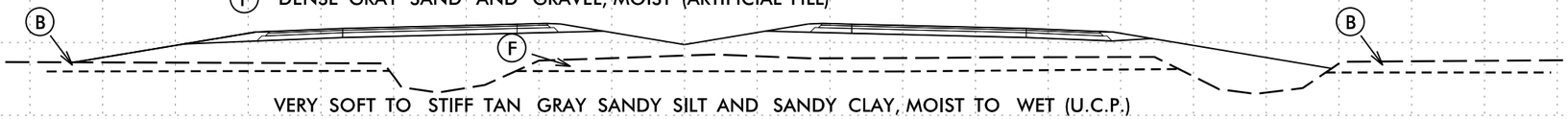


VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

501+00.00

(B) V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(F) DENSE GRAY SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)



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

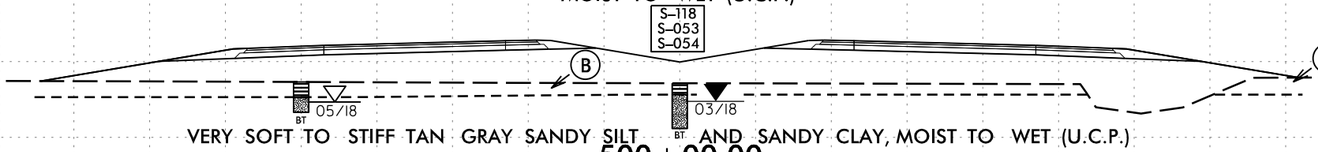
500+50.00

70 60 50 40 30 20

SOIL TEST RESULTS

SAMPLE NUMBER	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-118	5' LT	500+00	0.0 - 1.0	A-4(0)	30	NP	4.1	56.4	27.4	12.2	100	98	53	84	13.5
S-053	CL	500+00	0.6 - 1.0	A-4(0)	27	4	3.5	57.7	23.1	15.7	100	99	49	35	-
S-054	CL	500+00	4.0 - 4.5	A-4(0)	19	4	3.9	68.8	12.8	14.5	100	99	39	25	-

(B) V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)



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

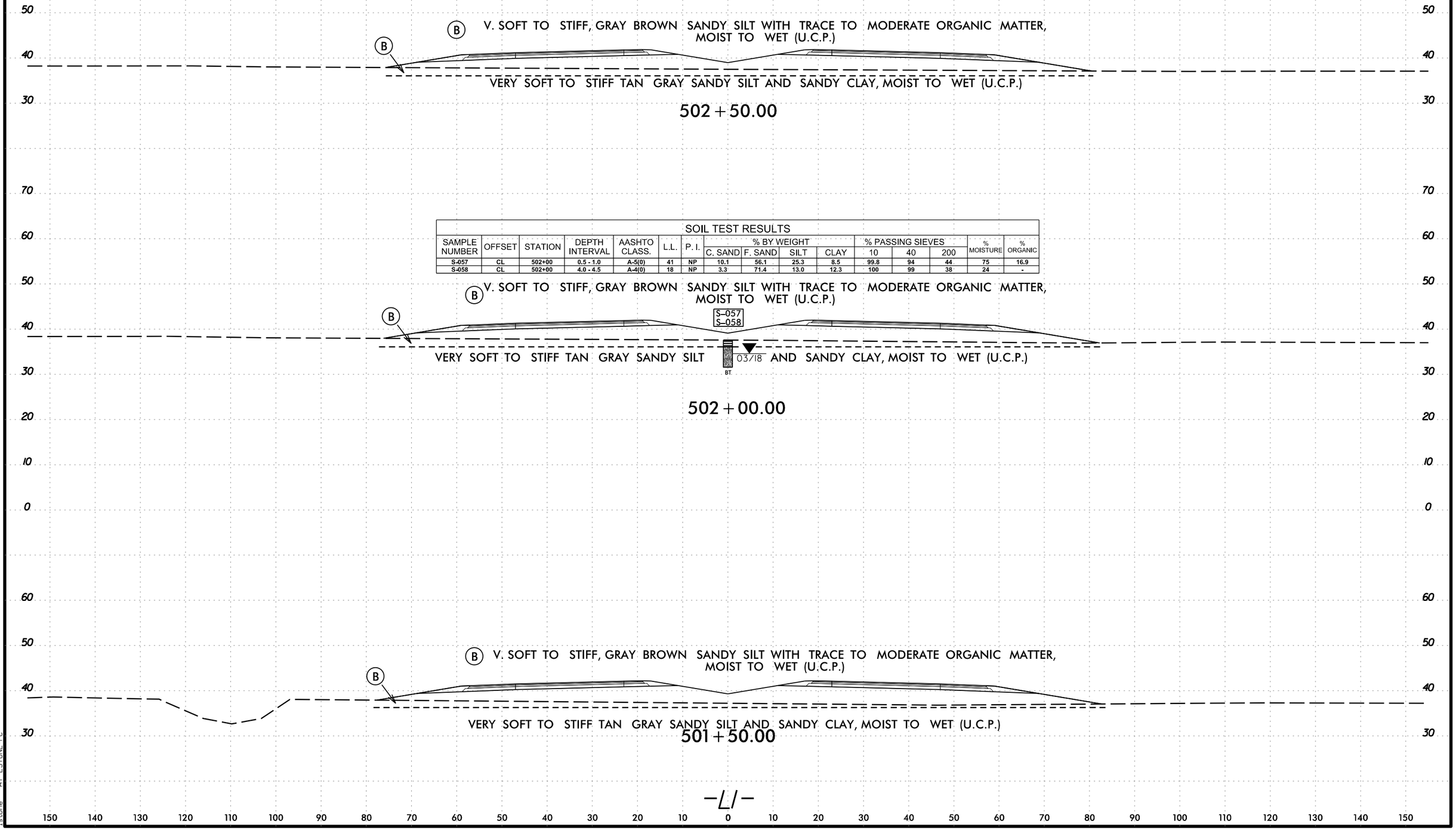
500+00.00

70 60 50 40 30 20

-L1-

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

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



SOIL TEST RESULTS

SAMPLE NUMBER	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-057	CL	502+00	0.5 - 1.0	A-5(0)	41	NP	10.1	56.1	25.3	8.5	99.8	94	44	75	16.9
S-058	CL	502+00	4.0 - 4.5	A-4(0)	18	NP	3.3	71.4	13.0	12.3	100	99	38	24	-

-//-

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

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

504+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-087	CL	504+00	4.7 - 6.2	A-4(0)	19	NP	4.1	76.0	10.9	9.0	100	99	37	-	-
SS-088	CL	504+00	8.7 - 10.2	A-6(7)	28	11	8.8	28.7	39.2	23.3	100	96	79	40	-

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

SS-087
SS-088

2
11
WOH
04/18
BT

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

504+00.00

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

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

503+50.00

B V. SOFT TO STIFF, GRAY BROWN SANDY SILT WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

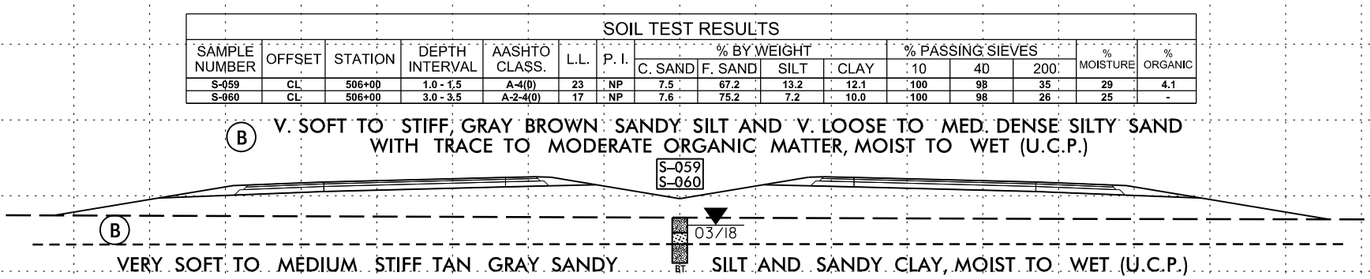
VERY SOFT TO STIFF TAN GRAY SANDY SILT AND SANDY CLAY, MOIST TO WET (U.C.P.)

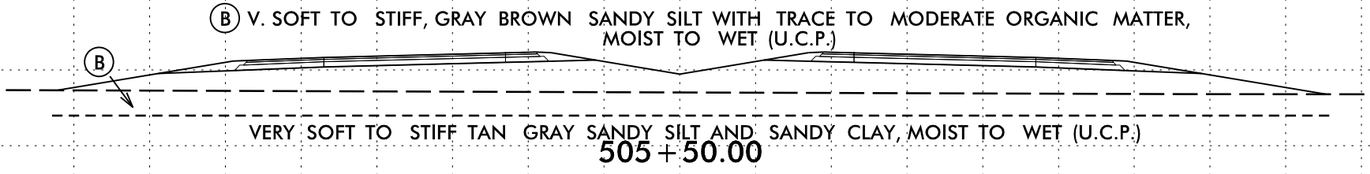
503+00.00

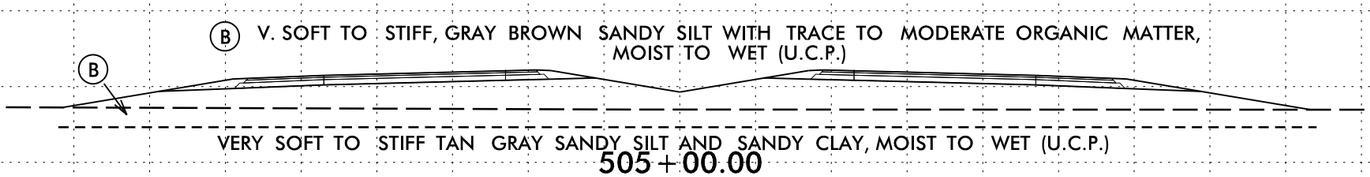
-L/-

SOIL TEST RESULTS

SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING SIEVES 10	40	200	% MOISTURE	% ORGANIC
S-059	CL	506+00	1.0 - 1.5	A-4(0)	23	NP	7.5	67.2	13.2	12.1	100	98	35	29	4.1
S-060	CL	506+00	3.0 - 3.5	A-2-4(0)	17	NP	7.6	75.2	7.2	10.0	100	98	26	25	-







-L/-

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PROJ. REFERENCE NO.	SHEET NO.
R-3300A	159

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

60 50 40 30

Ⓑ V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓑ

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

507+50.00

60 50 40 30 20

Ⓑ V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓑ

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

507+00.00

60 50 40 30 20

Ⓑ V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓑ

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

506+50.00

60 50 40 30 20

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

-L/-

6/23/16

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	160

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

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B V. SOFT TO STIFF, GRAY BROWN SANDY SILT AND V. LOOSE TO MED. DENSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

B

03/18

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

BT

508+00.00

-L/-

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

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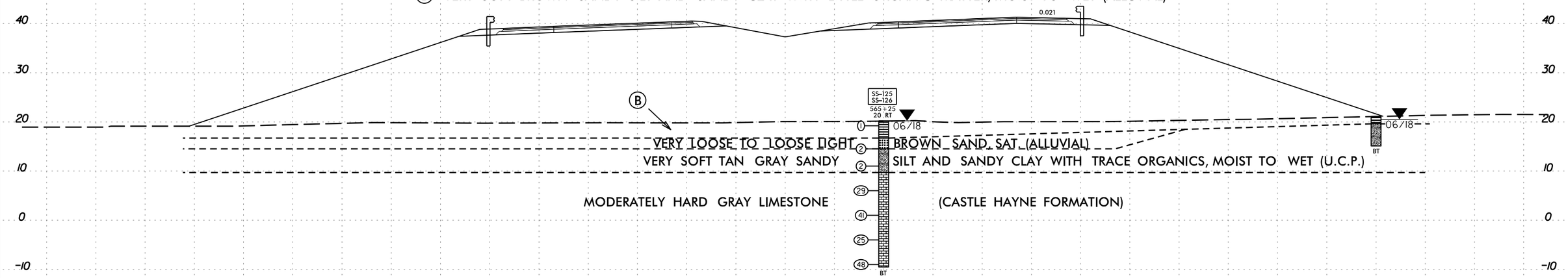
lstone AT LSTONE-PC

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

SOIL TEST RESULTS

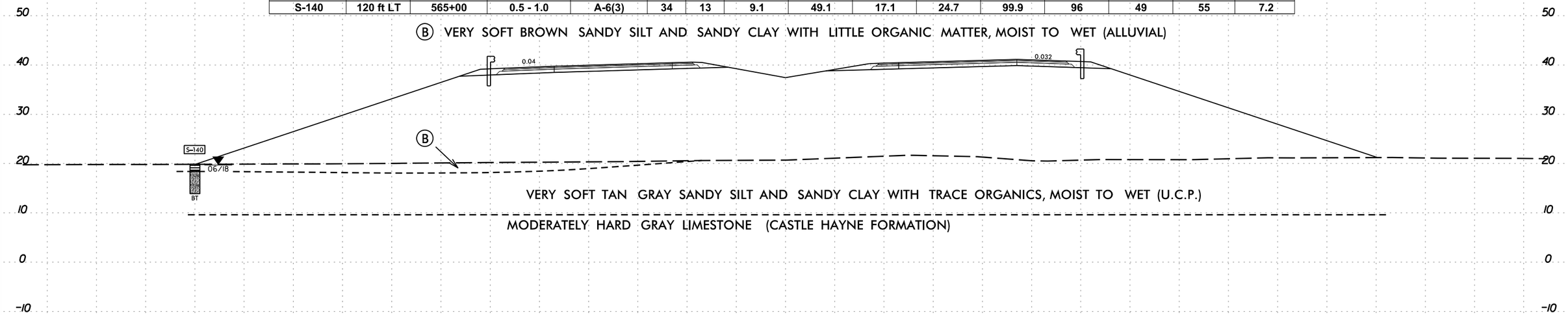
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-125	20 ft RT	565+25	0.0 - 1.5	()	-	-	14.9	48.3	20.3	16.5	91.9	90	45	-	9.0
SS-126	20 ft RT	565+25	8.2 - 9.7	A-4(2)	28	10	19.0	39.7	25.6	15.8	98.7	89	48	-	-



565+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-140	120 ft LT	565+00	0.5 - 1.0	A-6(3)	34	13	9.1	49.1	17.1	24.7	99.9	96	49	55	7.2

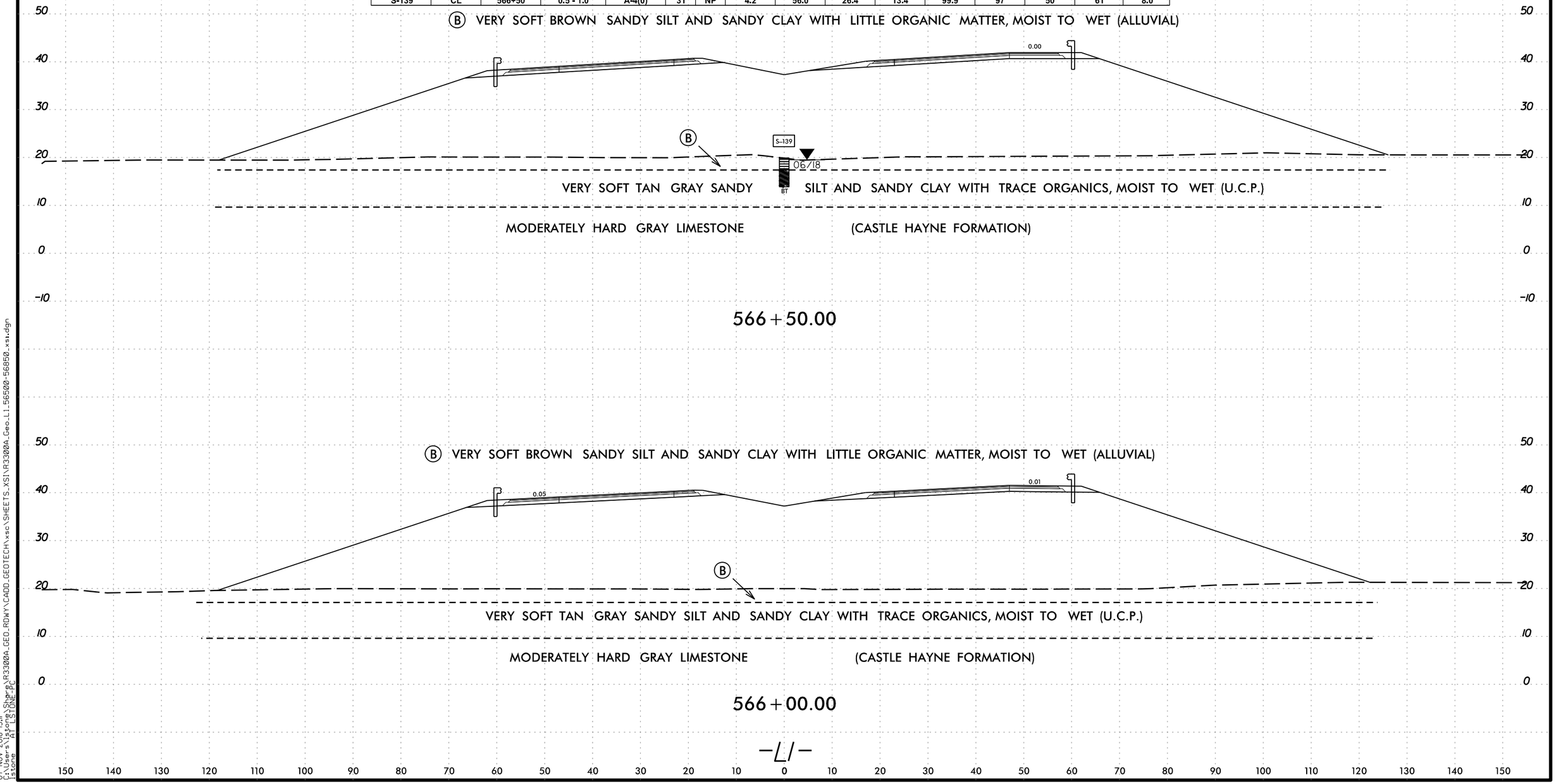


565+00.00

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-139	CL	566+50	0.5 - 1.0	A-4(0)	31	NP	4.2	56.0	26.4	13.4	99.9	97	50	61	8.0



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

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10
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Ⓑ VERY SOFT BROWN SANDY SILT AND SANDY CLAY WITH LITTLE ORGANIC MATTER, MOIST TO WET (ALLUVIAL)

0.00

Ⓑ

VERY SOFT TAN GRAY SANDY SILT AND SANDY CLAY WITH TRACE ORGANICS, MOIST TO WET (U.C.P.)

MODERATELY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

567+50.00

Ⓑ VERY SOFT BROWN SANDY SILT AND SANDY CLAY WITH LITTLE ORGANIC MATTER, MOIST TO WET (ALLUVIAL)

0.00

Ⓑ

VERY SOFT TAN GRAY SANDY SILT AND SANDY CLAY WITH TRACE ORGANICS, MOIST TO WET (U.C.P.)

MODERATELY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

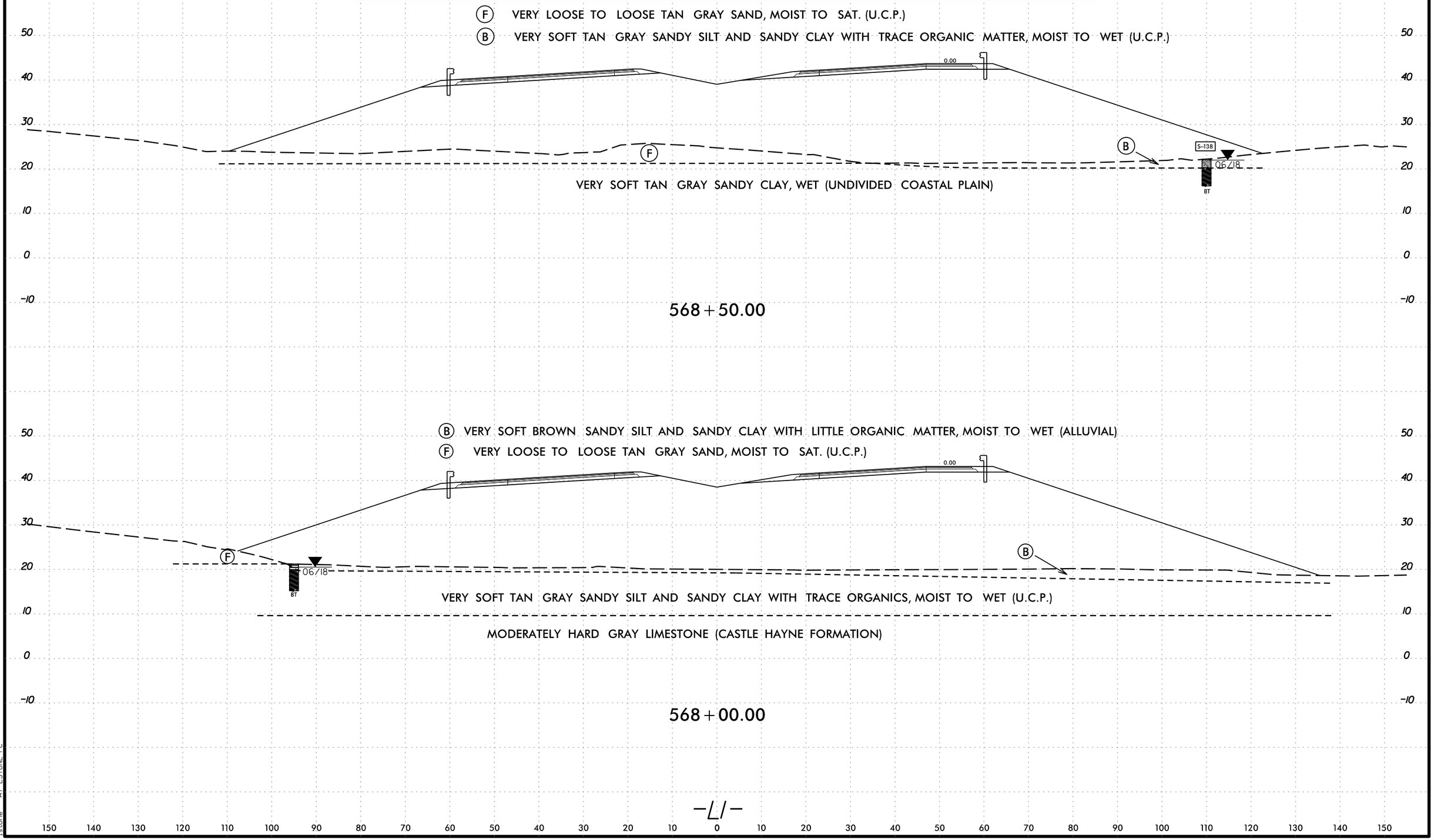
567+00.00

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

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

SOIL TEST RESULTS

SAMPLE NUMBER	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-138	110 ft RT	568+50	1.0 - 1.5	A-4(0)	22	NP	4.1	67.5	17.1	11.3	100	99	42	40	3.5



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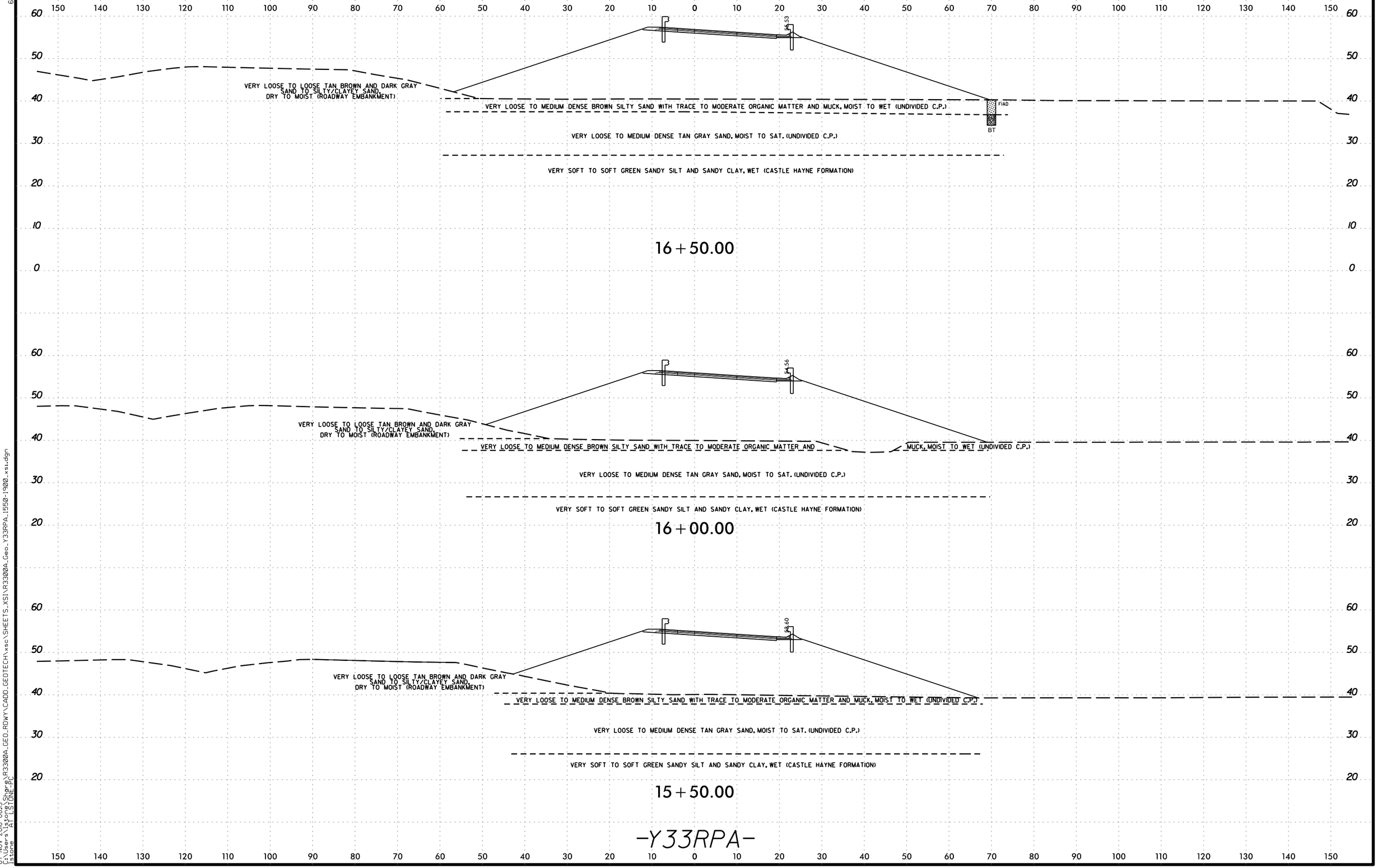
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	165



6/23/18

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	166

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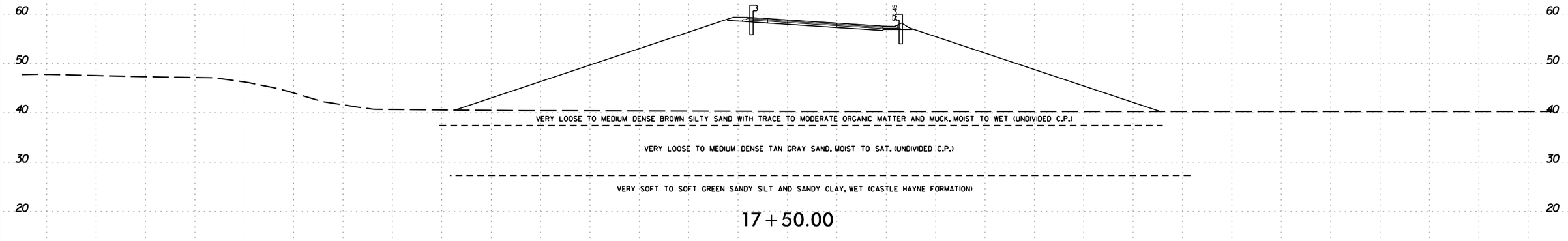
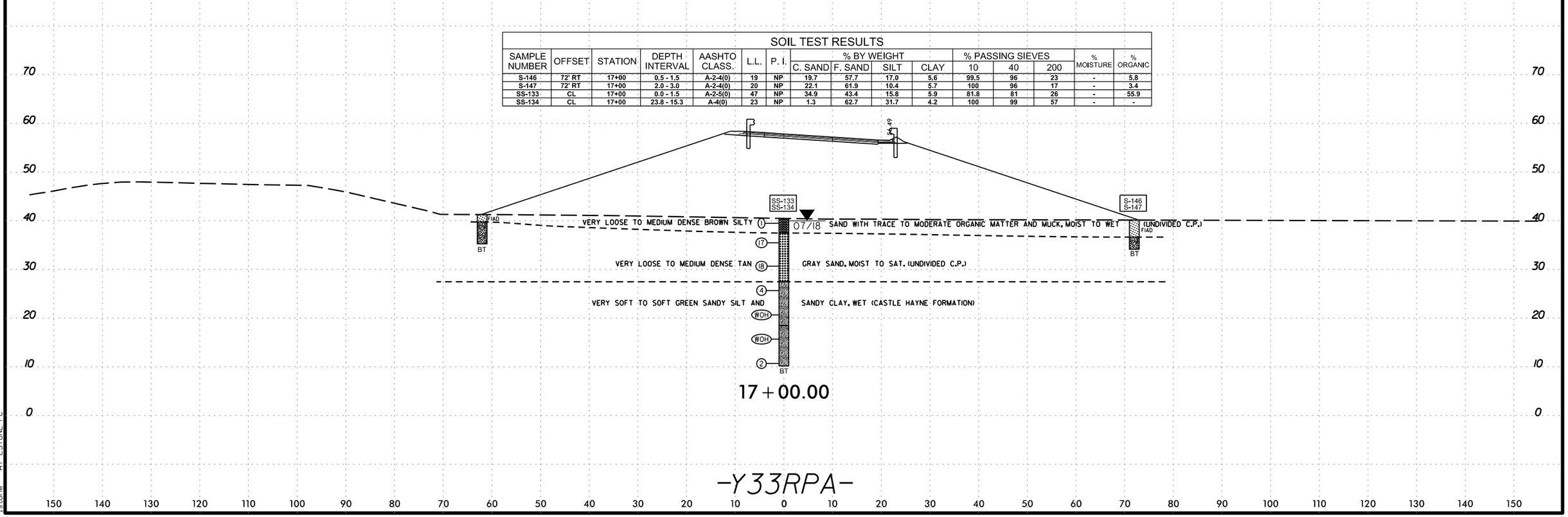


17+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-146	72' RT	17+00	0.5 - 1.5	A-2-4(0)	19	NP	19.7	57.7	17.0	5.6	99.5	96	23	-	5.8
S-147	72' RT	17+00	2.0 - 3.0	A-2-4(0)	20	NP	22.1	61.9	10.4	5.7	100	96	17	-	3.4
SS-133	CL	17+00	0.0 - 1.5	A-2-5(0)	47	NP	34.9	43.4	15.8	5.9	81.8	81	26	-	55.9
SS-134	CL	17+00	23.8 - 15.3	A-4(0)	23	NP	1.3	62.7	31.7	4.2	100	99	57	-	-



17+00.00

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

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	167

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

70 60 50 40 30 20

59.37

VERY LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER AND MUCK, MOIST TO WET (UNDIVIDED C.P.)

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

18+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-148	68' LT	18+00	1.0 - 2.0	A-2-4(0)	17	NP	21.3	54.9	15.2	8.6	99.6	94	25	-	4.6

58.41

S-148

FIAD

BT

VERY LOOSE TO MEDIUM DENSE BROWN SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER AND MUCK, MOIST TO WET (UNDIVIDED C.P.)

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

18+00.00

-Y33RPA-

6/23/16

0 5 10

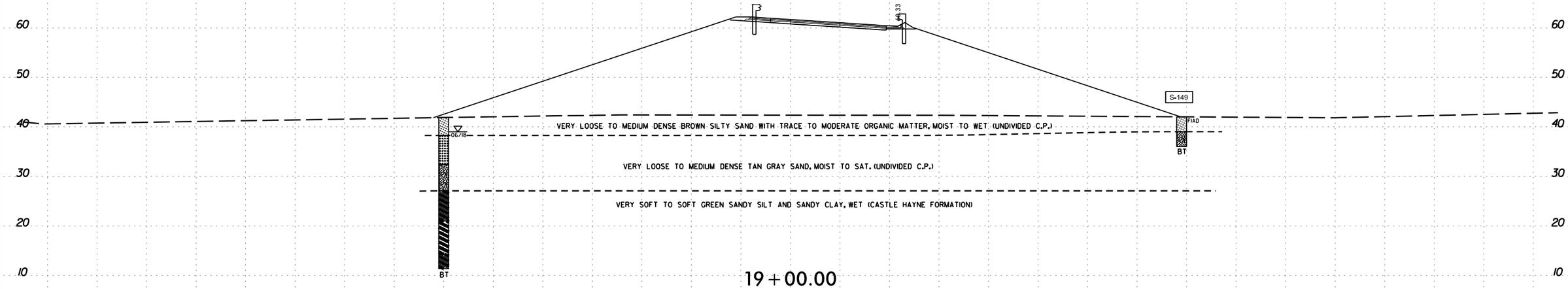
PROJ. REFERENCE NO.	SHEET NO.
R-3300A	168

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

80 70 60 50 40 30 20 10

SOIL TEST RESULTS

SAMPLE NUMBER	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-149	79' RT	19+00	2.0 - 3.0	A-2-4(0)	16	NP	23.7	54.8	9.8	11.7	99.8	95	22	-	3.0



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-Y33RPA-

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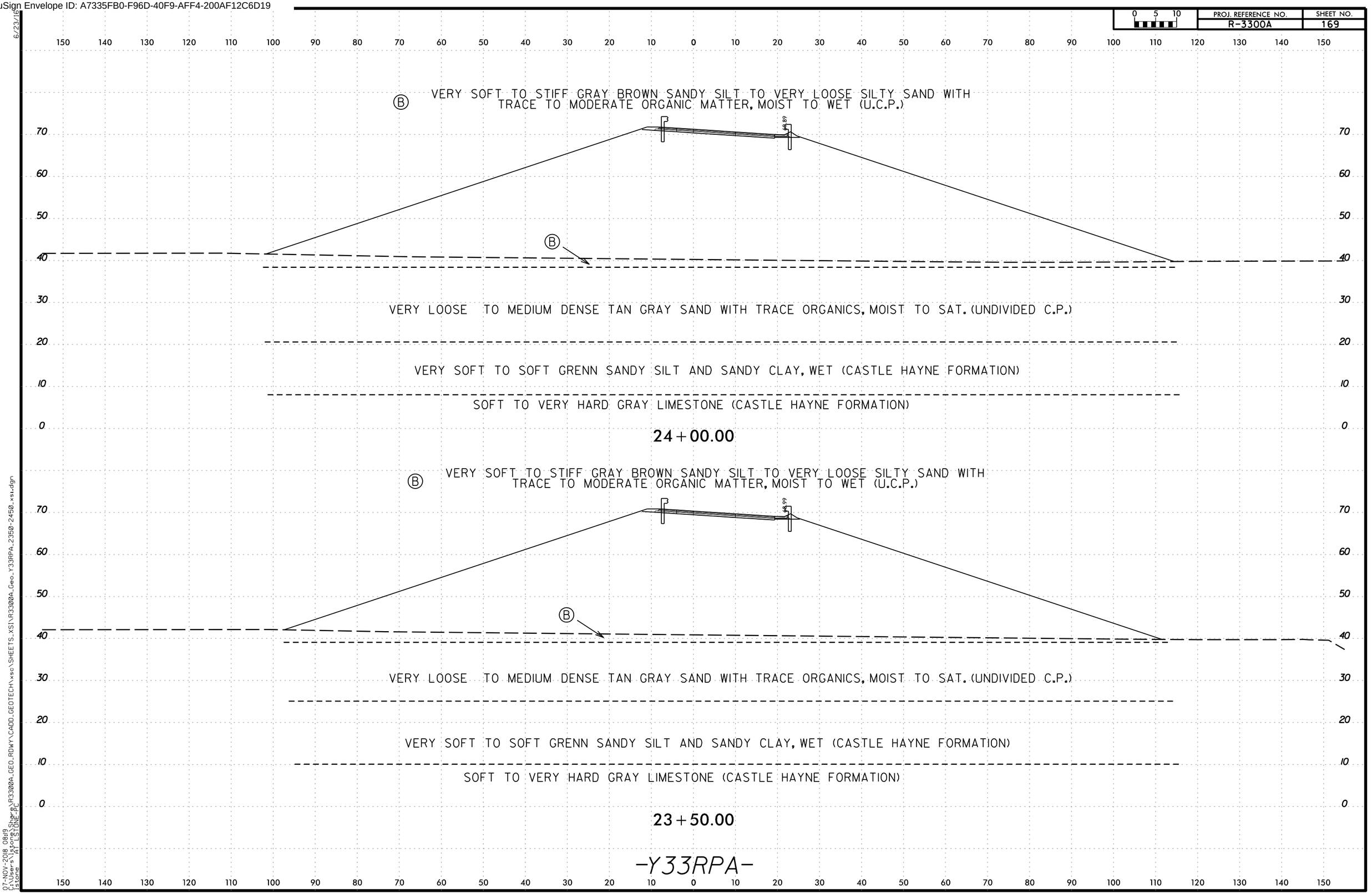
jstone AT LSTONE-PC

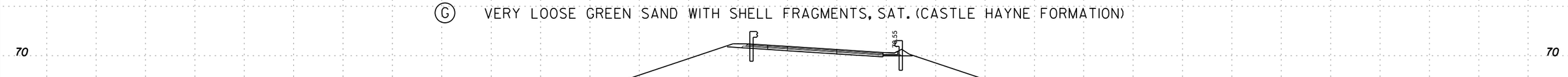


0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	170

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

Ⓑ VERY SOFT TO STIFF GRAY BROWN SANDY SILT TO VERY LOOSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓖ VERY LOOSE GREEN SAND WITH SHELL FRAGMENTS, SAT. (CASTLE HAYNE FORMATION)



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

VERY SOFT TO SOFT GRENN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

SOFT TO VERY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

24+50.00

-Y33RPA-

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

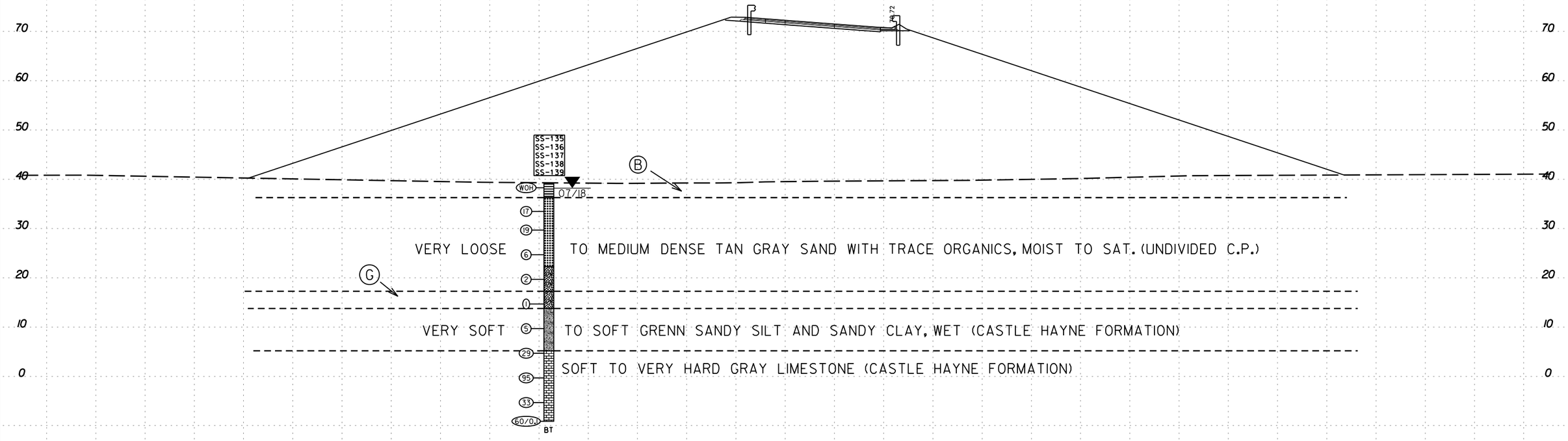
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SOIL TEST RESULTS

SAMPLE NUMBER	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-135	48 ft LT	25+00	0.0 - 1.5	A-4(0)	30	NP	14.5	51.1	28.9	5.5	99.0	93	37	-	14.2
SS-136	48 ft LT	25+00	4.8 - 6.3	A-3(0)	12	NP	62.6	27.9	1.3	8.2	99.7	68	10	-	1.7
SS-137	48 ft LT	25+00	13.6 - 15.1	A-3(0)	13	NP	12.6	84.0	0.2	3.2	100	94	4	-	-
SS-138	48 ft LT	25+00	18.6 - 20.1	A-2-4(0)	18	NP	14.5	67.5	10.8	7.2	99.9	95	30	-	-
SS-139	48 ft LT	25+00	23.8 - 25.1	A-2-4(0)	21	NP	4.8	68.2	16.6	10.4	100	98	34	-	-

Ⓑ VERY SOFT TO STIFF GRAY BROWN SANDY SILT TO VERY LOOSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓖ VERY LOOSE GREEN SAND WITH SHELL FRAGMENTS, SAT. (CASTLE HAYNE FORMATION)



25+00.00

-Y33RPA-

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

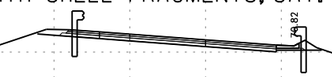
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	172

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

90 80 70 60 50 40 30 20 10 0

(B) VERY SOFT TO STIFF GRAY BROWN SANDY SILT TO VERY LOOSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

(G) VERY LOOSE GREEN SAND WITH SHELL FRAGMENTS, SAT. (CASTLE HAYNE FORMATION)



(B)

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

(G)

VERY SOFT TO SOFT GRENN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

SOFT TO VERY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

25+50.00

-Y33RPA-

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

6/23/16

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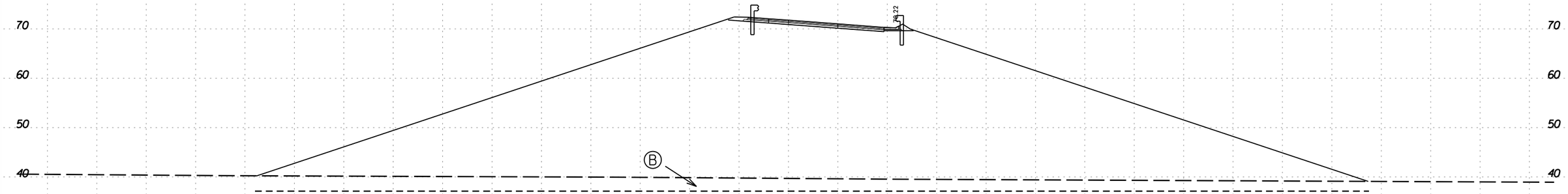
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Ⓑ VERY SOFT TO STIFF GRAY BROWN SANDY SILT TO VERY LOOSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)



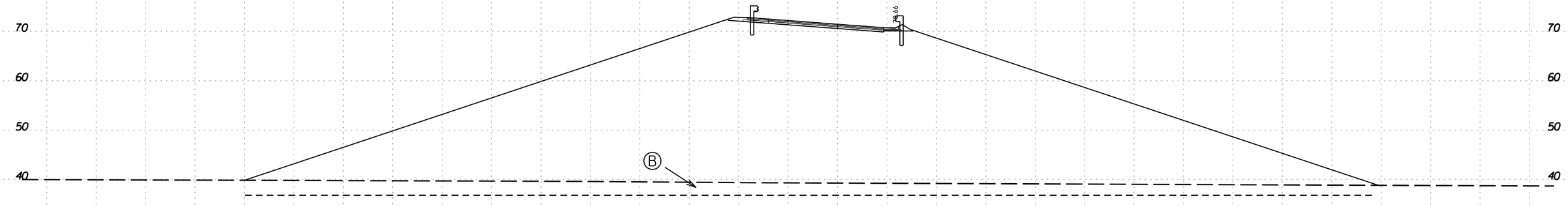
VERY LOOSE TO MEDIUM DENSE TAN GRAY SAND WITH TRACE ORGANICS, MOIST TO SAT. (UNDIVIDED C.P.)

VERY SOFT TO SOFT GRENN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

26+50.00

Ⓑ VERY SOFT TO STIFF GRAY BROWN SANDY SILT TO VERY LOOSE SILTY SAND WITH TRACE TO MODERATE ORGANIC MATTER, MOIST TO WET (U.C.P.)

Ⓒ VERY LOOSE GREEN SAND WITH SHELL FRAGMENTS, SAT. (CASTLE HAYNE FORMATION)



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

VERY SOFT TO SOFT GRENN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

SOFT TO VERY HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

26+00.00

-Y33RPA-

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

70 60 50 40 30 20 10 0

6/23/16

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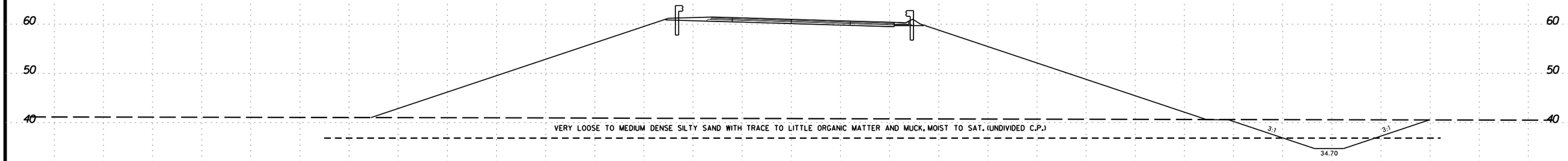
jstone AT LESTONE-PC

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	174

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

70 60 50 40 30 20 10

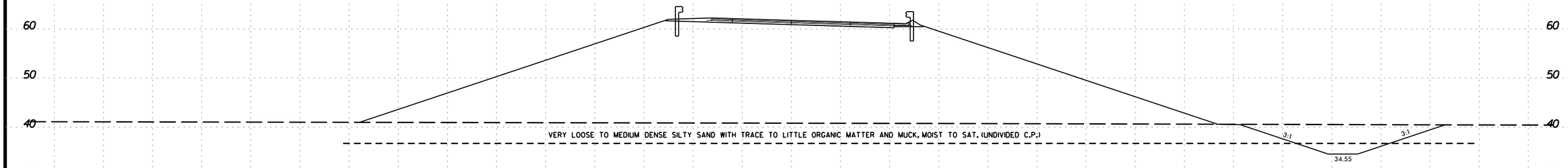


VERY LOOSE TO MEDIUM DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO SAT. (UNDIVIDED C.P.)

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

17+00.00



VERY LOOSE TO MEDIUM DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO SAT. (UNDIVIDED C.P.)

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

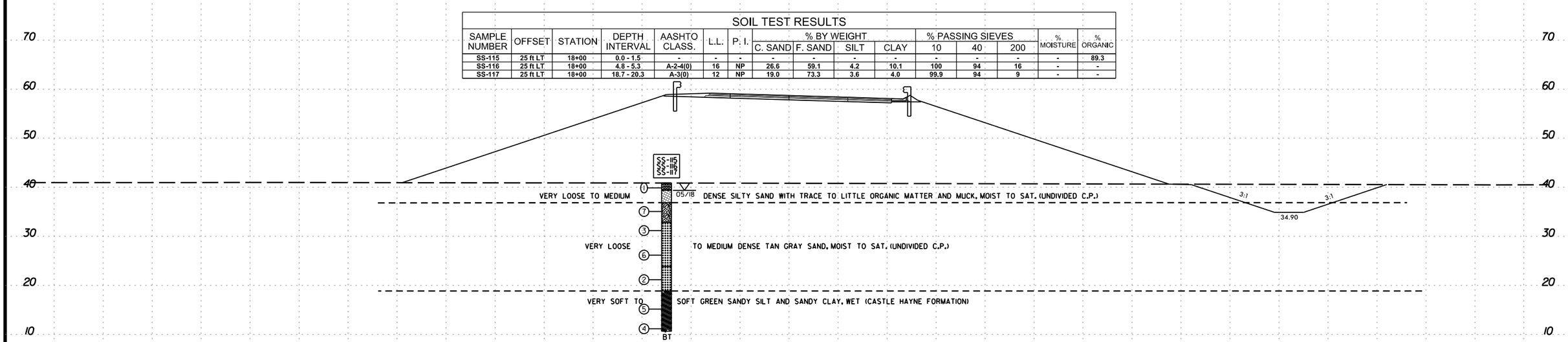
16+50.00

-Y33RPB-

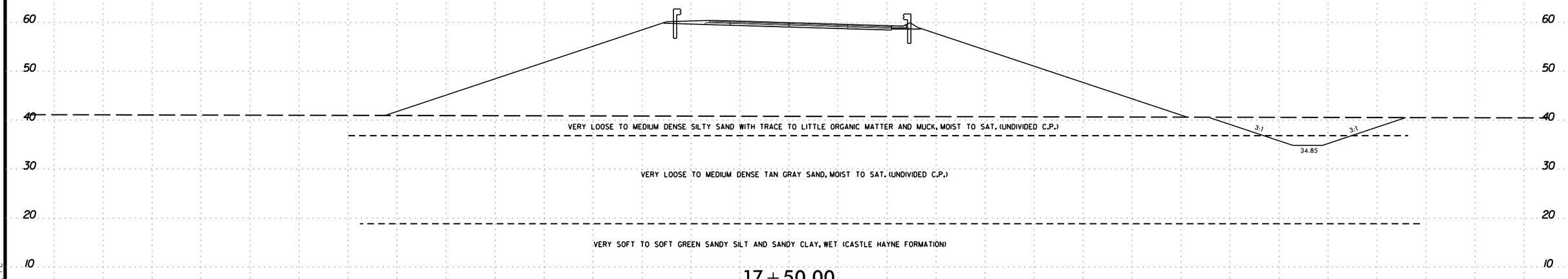
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	175

SOIL TEST RESULTS

SAMPLE NUMBER	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-115	25 ft LT	18+00	0.0 - 1.5	-	-	-	-	-	-	-	-	-	-	-	89.3
SS-116	25 ft LT	18+00	4.8 - 5.3	A-2-4(0)	16	NP	26.6	59.1	4.2	10.1	100	94	16	-	-
SS-117	25 ft LT	18+00	18.7 - 20.3	A-3(0)	12	NP	19.0	73.3	3.6	4.0	99.9	94	9	-	-



18+00.00



17+50.00

-Y33RPB-

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lstone AT LSTONE-PC

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	176

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

60
50
40
30

VERY LOOSE TO MEDIUM DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO SAT. (UNDIVIDED C.P.)

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

3:1 3:1

35.20

19+00.00

70
60
50
40
30
20
10

VERY LOOSE TO MEDIUM DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO SAT. (UNDIVIDED C.P.)

3:1 3:1

35.03

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

VERY SOFT TO SOFT GREEN SANDY SILT AND SANDY CLAY, WET (CASTLE HAYNE FORMATION)

18+50.00

-Y33RPB-

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

6/23/16

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lstone
AT LSTONE-PC

6/23/16

0 5 10

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	177

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

70
60
50
40
30

Ⓑ VERY LOOSE TO MEDIUM DENSE SILTY SAND WITH TRACE TO LITTLE ORGANIC MATTER AND MUCK, MOIST TO SAT. (UNDIVIDED C.P.)

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

38.58

3:1

3:1

35.35

19+50.00

-Y33RPB-

70
60
50
40
30

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

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jstone AT LSTONE-PC

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	178

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
35
30
25
20

Ⓕ LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)

11+98

03/18

VERY SOFT TO SOFT TAN GRAY SANDY CLAY, MOIST TO WET (U.C.P.)

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

BT

12+00.00

35
30
25
20

Ⓕ LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)

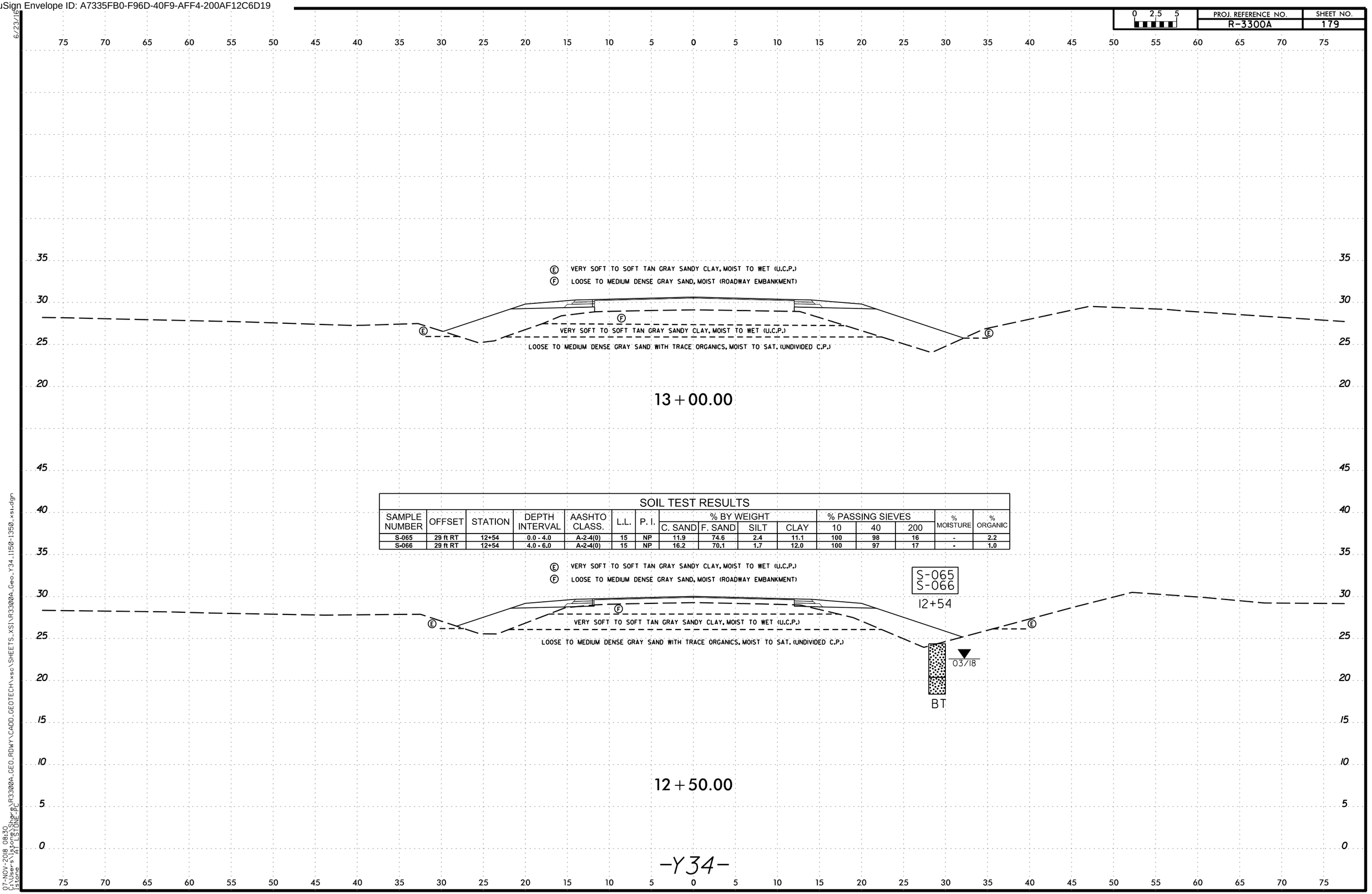
VERY SOFT TO SOFT TAN GRAY SANDY CLAY, MOIST TO WET (U.C.P.)

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

11+50.00

-Y34-

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



SOIL TEST RESULTS

SAMPLE NUMBER	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-065	29 ft RT	12+54	0.0 - 4.0	A-2-4(0)	15	NP	11.9	74.6	2.4	11.1	100	98	16	-	2.2
S-066	29 ft RT	12+54	4.0 - 6.0	A-2-4(0)	15	NP	16.2	70.1	1.7	12.0	100	97	17	-	1.0

6/23/16

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	180

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
35
30
25
20

Ⓔ VERY SOFT TO SOFT TAN GRAY SANDY CLAY, MOIST TO WET (U.C.P.)

Ⓕ LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)

Ⓕ VERY SOFT TO SOFT TAN GRAY SANDY CLAY, MOIST TO WET (U.C.P.)

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

13+50.00

-Y34-

40
35
30
25
20

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

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jstone AT LSTONE-PC

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

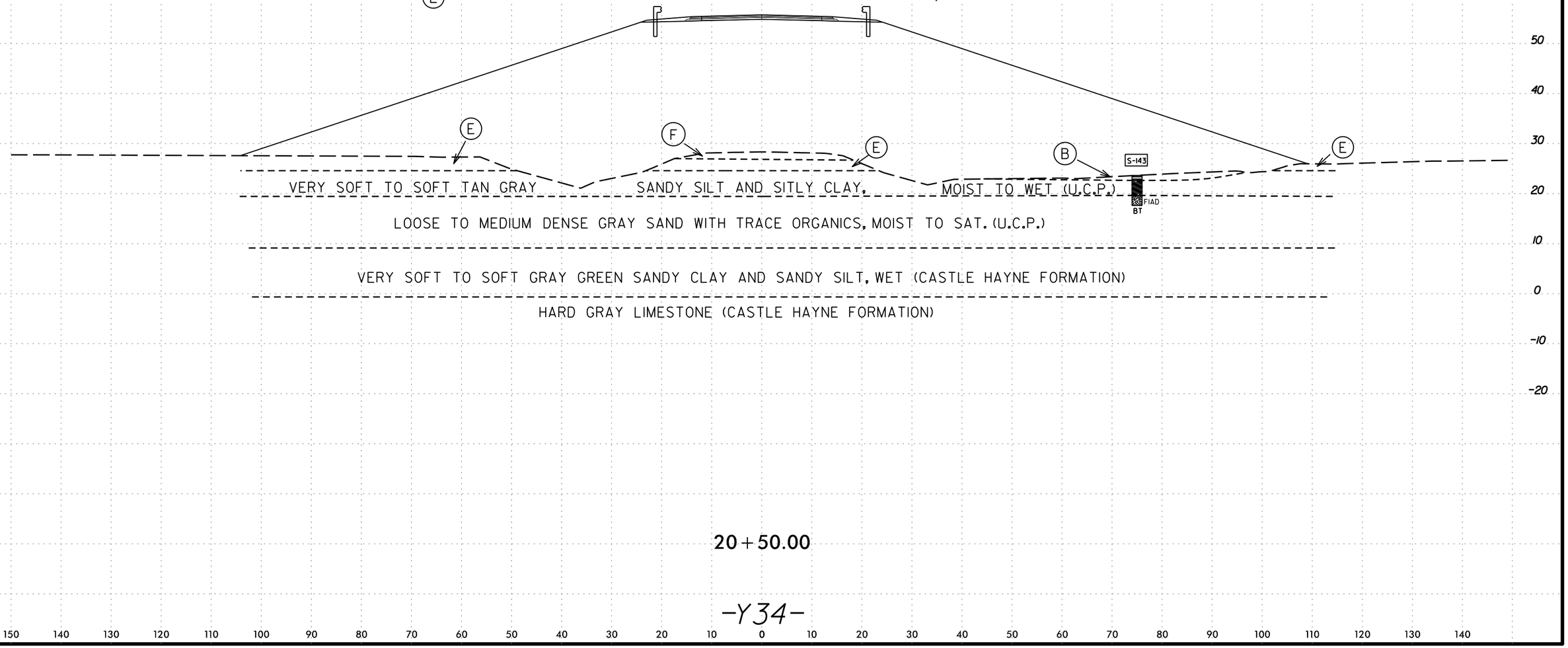
SOIL TEST RESULTS

SAMPLE NUMBER	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-143	75 ft RT	20+50	0.0 - 1.0	A-4(0)	26	6	7.5	59.4	14.5	18.5	99.4	98	37	49	7

(B) VERY SOFT BROWN SANDY SILT WITH LITTLE ORGANICS, MOIST TO WET (U.C.P.)

(F) LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)

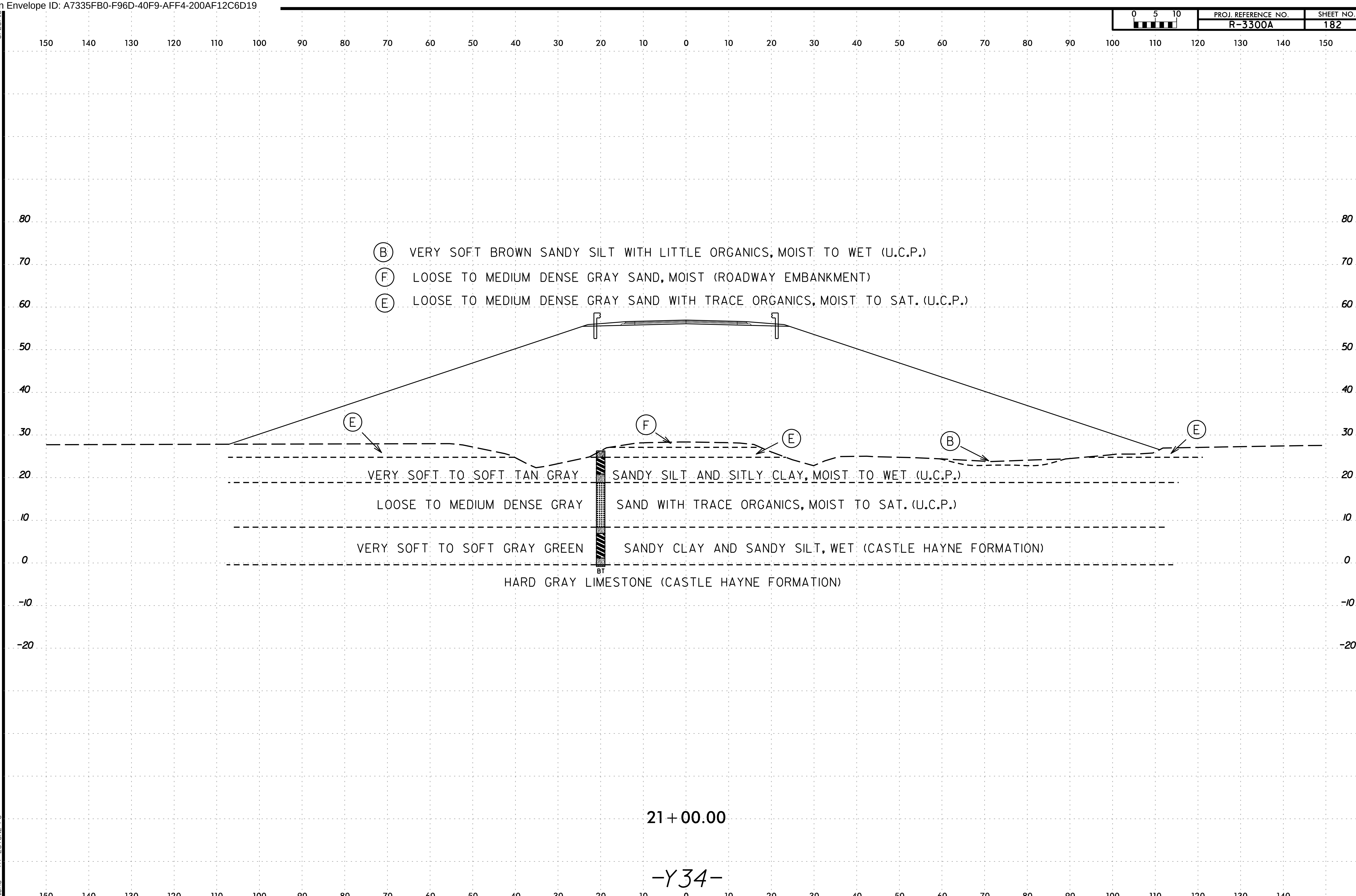
(E) LOOSE TO MEDIUM DENSE GRAY SAND WITH TRACE ORGANICS, MOIST TO SAT. (U.C.P.)



20+50.00

-Y34-

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



SOIL TEST RESULTS

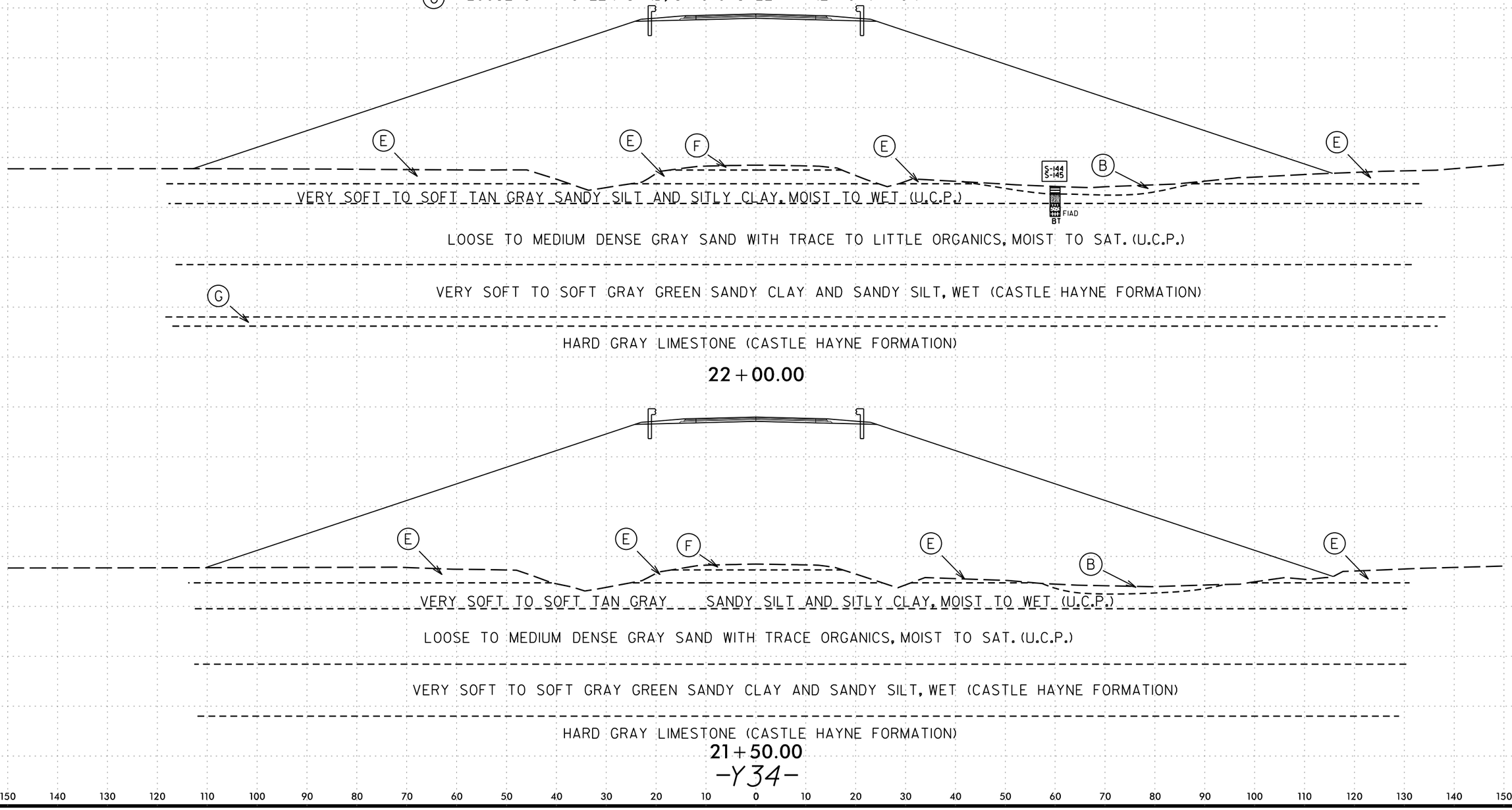
SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-144	60 ft RT	22+00	0.5 - 1.0	A-4(2)	35	9	9.1	48.4	26.0	16.5	99.4	97	46	26	10.5
S-145	60 ft RT	22+00	3.0 - 5.0	A-4(0)	21	6	7.0	54.1	13.4	25.6	96.8	99	43	-	4.4

(B) VERY SOFT BROWN SANDY SILT WITH LITTLE ORGANICS, MOIST TO WET (U.C.P.)

(F) LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)

(E) LOOSE TO MEDIUM DENSE GRAY SAND WITH TRACE ORGANICS, MOIST TO SAT. (U.C.P.)

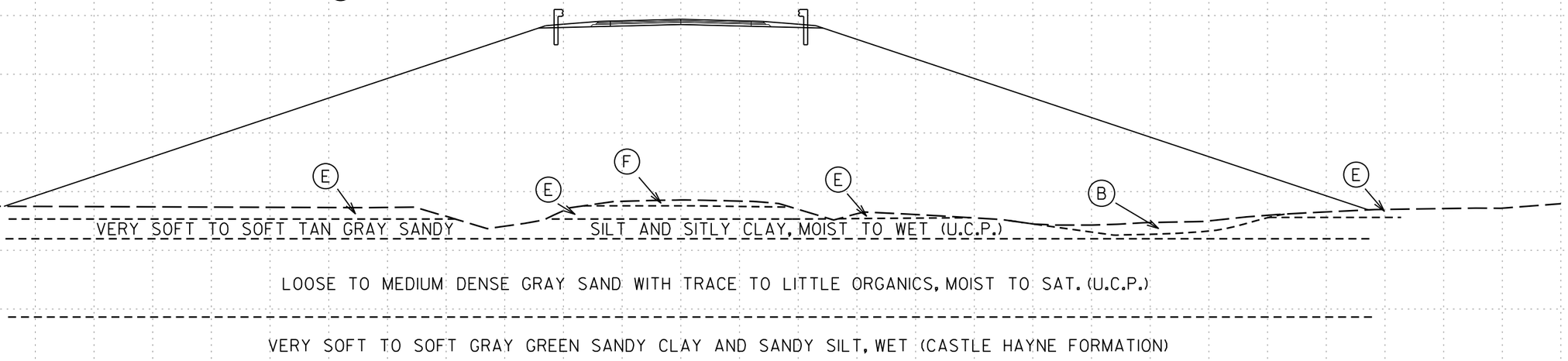
(G) LOOSE GRAY GREEN SAND, SAT. (CASTLE HAYNE FORMATION)



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

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

(B) VERY SOFT BROWN SANDY SILT WITH LITTLE ORGANICS, MOIST TO WET (U.C.P.)
(F) LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)
(E) LOOSE TO MEDIUM DENSE GRAY SAND WITH TRACE ORGANICS, MOIST TO SAT. (U.C.P.)



VERY SOFT TO SOFT TAN GRAY SANDY SILT AND SITLY CLAY, MOIST TO WET (U.C.P.)

LOOSE TO MEDIUM DENSE GRAY SAND WITH TRACE TO LITTLE ORGANICS, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT GRAY GREEN SANDY CLAY AND SANDY SILT, WET (CASTLE HAYNE FORMATION)

LOOSE GRAY GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

MEDIUM DENSE GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

HARD GRAY LIMESTONE (CASTLE HAYNE FORMATION)

MEDIUM DENSE TO VERY DENSE GRAY GREEN SAND, SAT. (CASTLE HAYNE FORMATION)

22+50.00

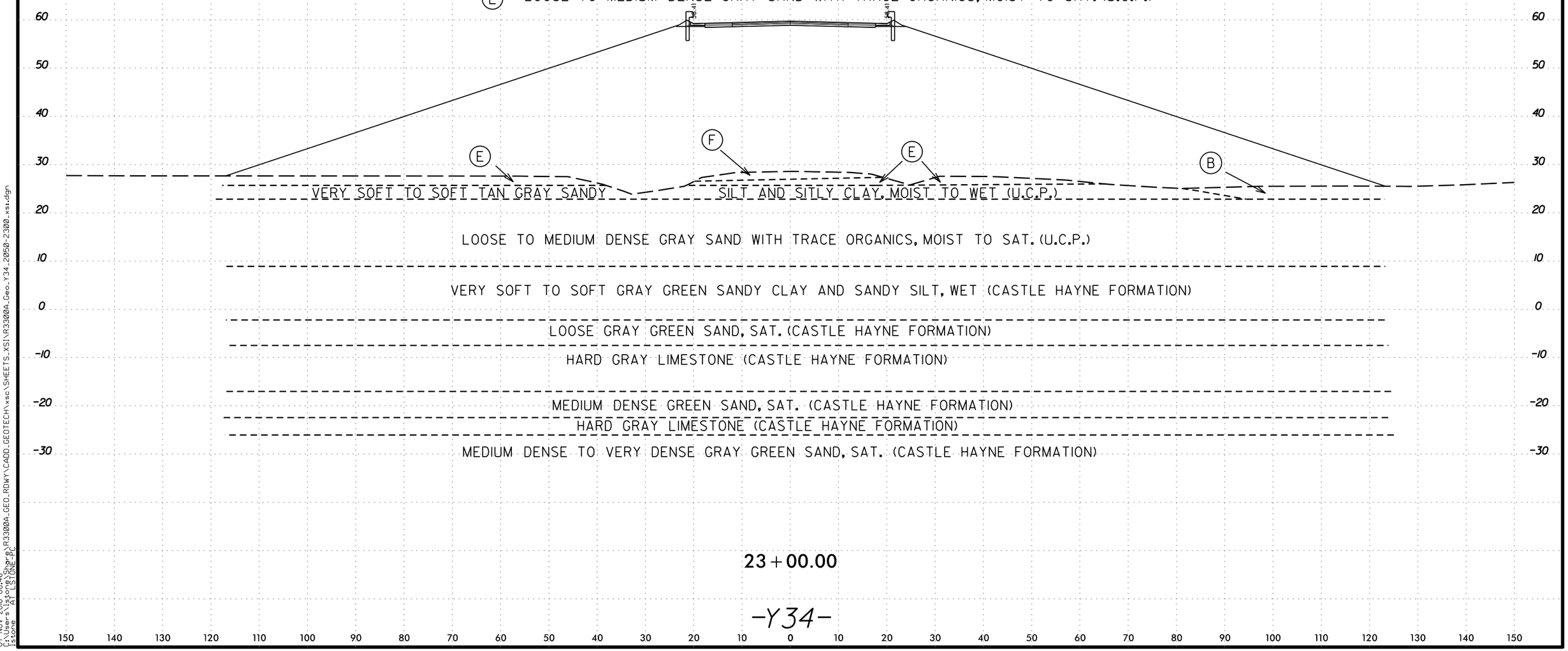
-Y34-

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

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

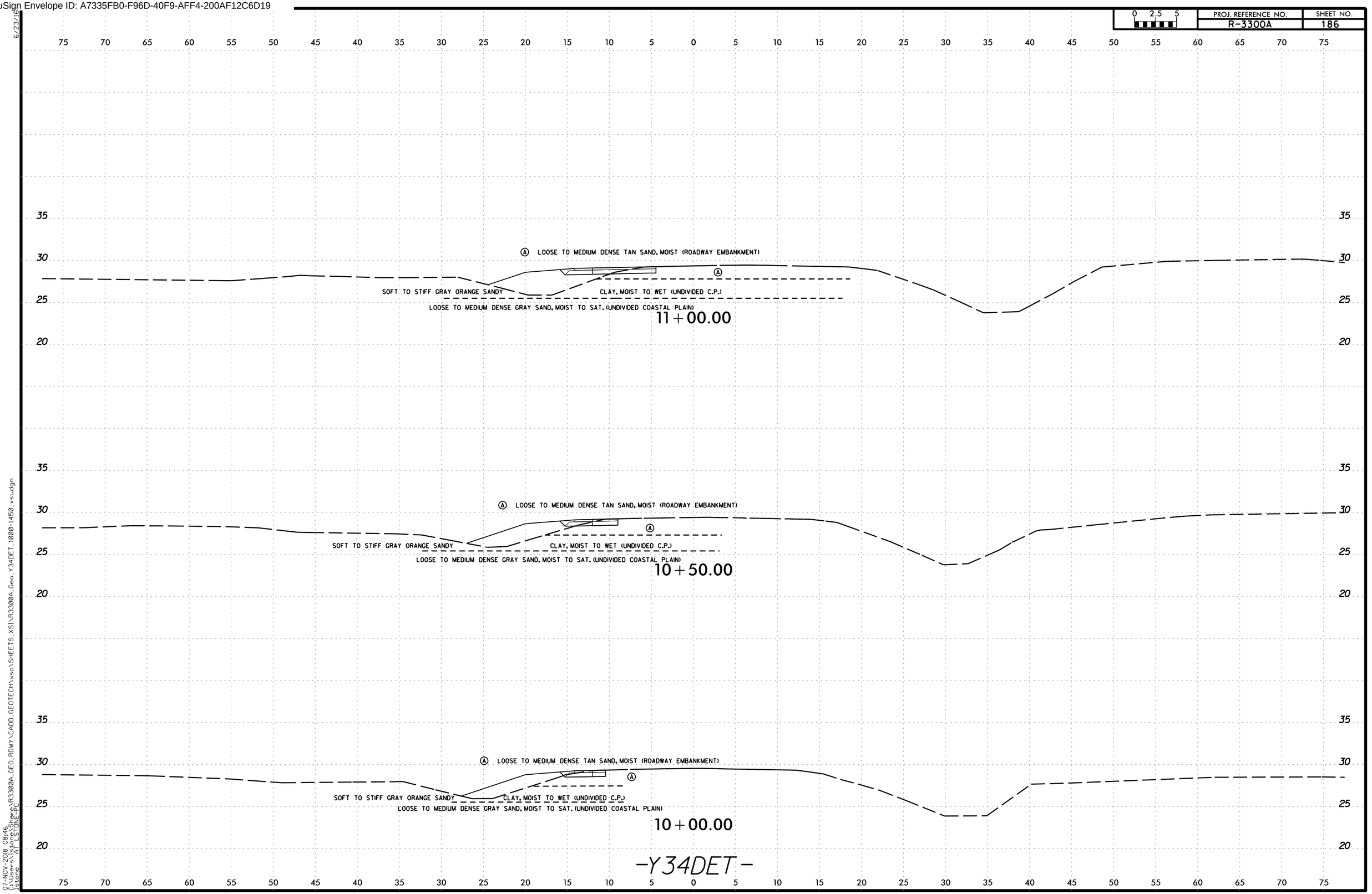
90 80 70 60 50 40 30 20 10 0 -10 -20 -30

(B) VERY SOFT BROWN SANDY SILT WITH LITTLE ORGANICS, MOIST TO WET (U.C.P.)
(F) LOOSE TO MEDIUM DENSE GRAY SAND, MOIST (ROADWAY EMBANKMENT)
(E) LOOSE TO MEDIUM DENSE GRAY SAND WITH TRACE ORGANICS, MOIST TO SAT. (U.C.P.)



23+00.00

-Y34-



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	187

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

35
30
25
20

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

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

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

Ⓐ SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

12 + 50.00

35
30
25
20
15

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

SOFT TO STIFF GRAY ORANGE SANDY

LOOSE TO MEDIUM DENSE GRAY SAND,

03/18

BT

CLAY, MOIST TO WET (UNDIVIDED C.P.)

MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

12 + 00.00

35
30
25
20

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

SOFT TO STIFF GRAY ORANGE SANDY

CLAY, MOIST TO WET (UNDIVIDED C.P.)

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

11 + 50.00

-Y34DET-

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

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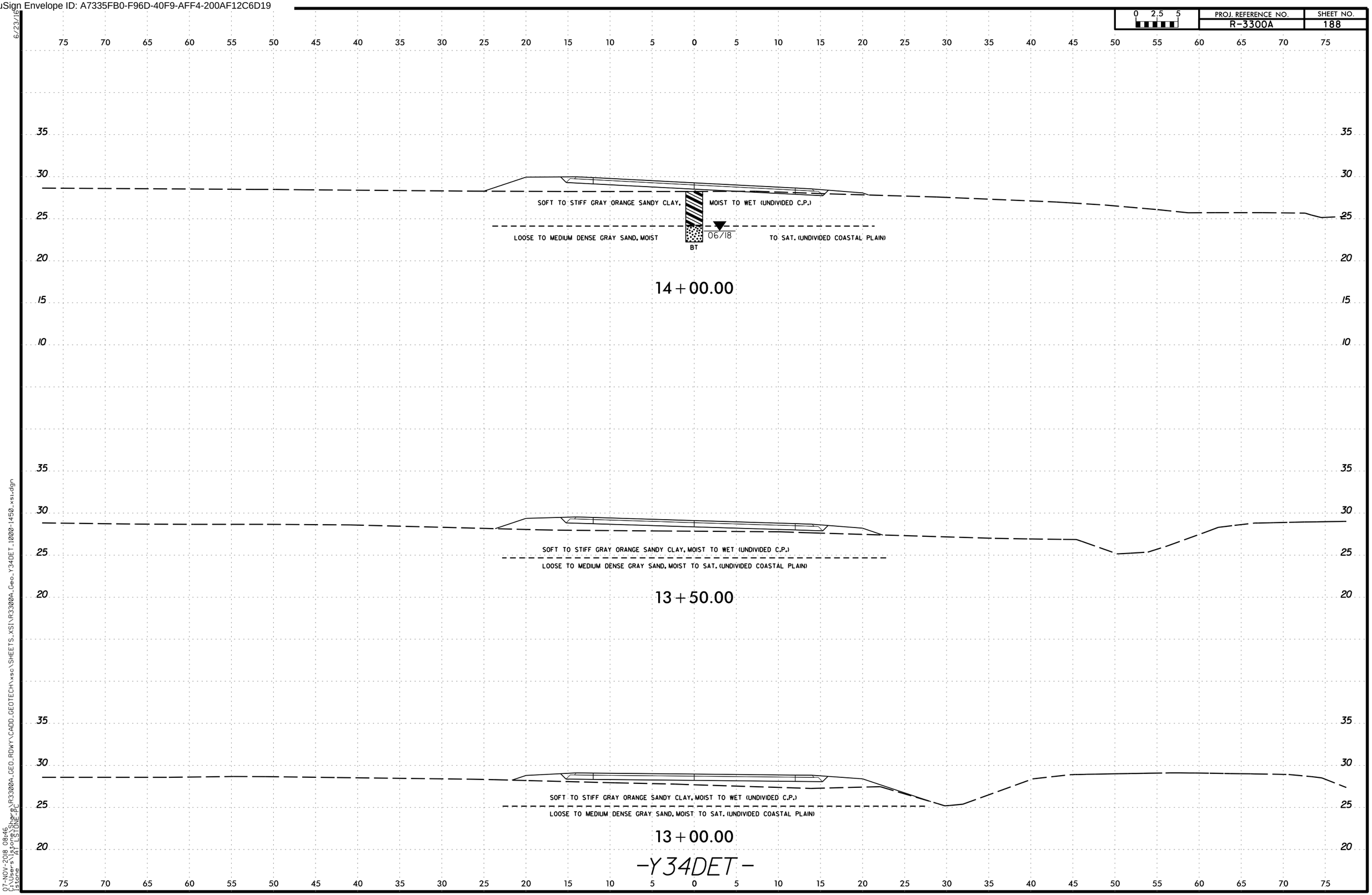
lstone AT LSTONE-PC



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	R-3300A	189

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35
30
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35
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LOOSE TO MEDIUM DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

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

14+50.00

-Y34DET-

35
30
25
20

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

6/23/16

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jstone AT LSTONE-PC

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

35 30 25 20

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

Ⓑ

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

24+00.00

35 30 25 20

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

Ⓑ

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

23+50.00

35 30 25 20 15

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

Ⓑ

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

23+00.00

-Y34DET-

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

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

35 30 25 20

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

25+50.00

SOIL TEST RESULTS

SAMPLE NUMBER	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-026	11 LT	25+19	0.0 - 3.0	A-2-4(0)	13	NP	13.6	69.8	7.8	8.8	99.9	98	20	-	-
S-027	11 LT	25+19	3.0 - 5.0	A-4(0)	26	10	5.8	60.1	8.1	26.0	100	99	37	-	-
S-028	11 LT	25+19	5.0 - 6.0	A-2-4(0)	17	NP	1.9	80.9	3.5	13.7	100	100	21	-	-

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

S-026
S-027
S-028

25+19

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

03/18

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BT BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

25+00.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

24+50.00

-Y34DET-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-3300A	192

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

35
30
25
20

Ⓕ LOOSE TO MED. DENSE TAN SAND, MOIST (ARTIFICIAL FILL)

Ⓕ LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

SOFT TO STIFF GRAY ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

26+00.00

-Y34DET-

35
30
25
20

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

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0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	193

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 35 30 25 20 15

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

Ⓑ

LOOSE TO MED. DENSE BROWN GRAY ORANGE — 05/18 SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

BT

31+00.00

35 30 25 20

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

Ⓑ

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

30+50.00

35 30 25 20

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

30+00.00

-Y34DET-

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

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jstone AT LSTONE-PC

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	194

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

35
30
25
20

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

32 + 50.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

32 + 00.00

Ⓑ V. SOFT TO STIFF GRAY BROWN SANDY SILT TO V. LOOSE TO MED DENSE SILTY SAND WITH TRACE TO LITTLE ORGANICS, MOIST (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

VERY SOFT TO SOFT TAN GRAY SANDY SILT, MOIST TO WET (U.C.P.)

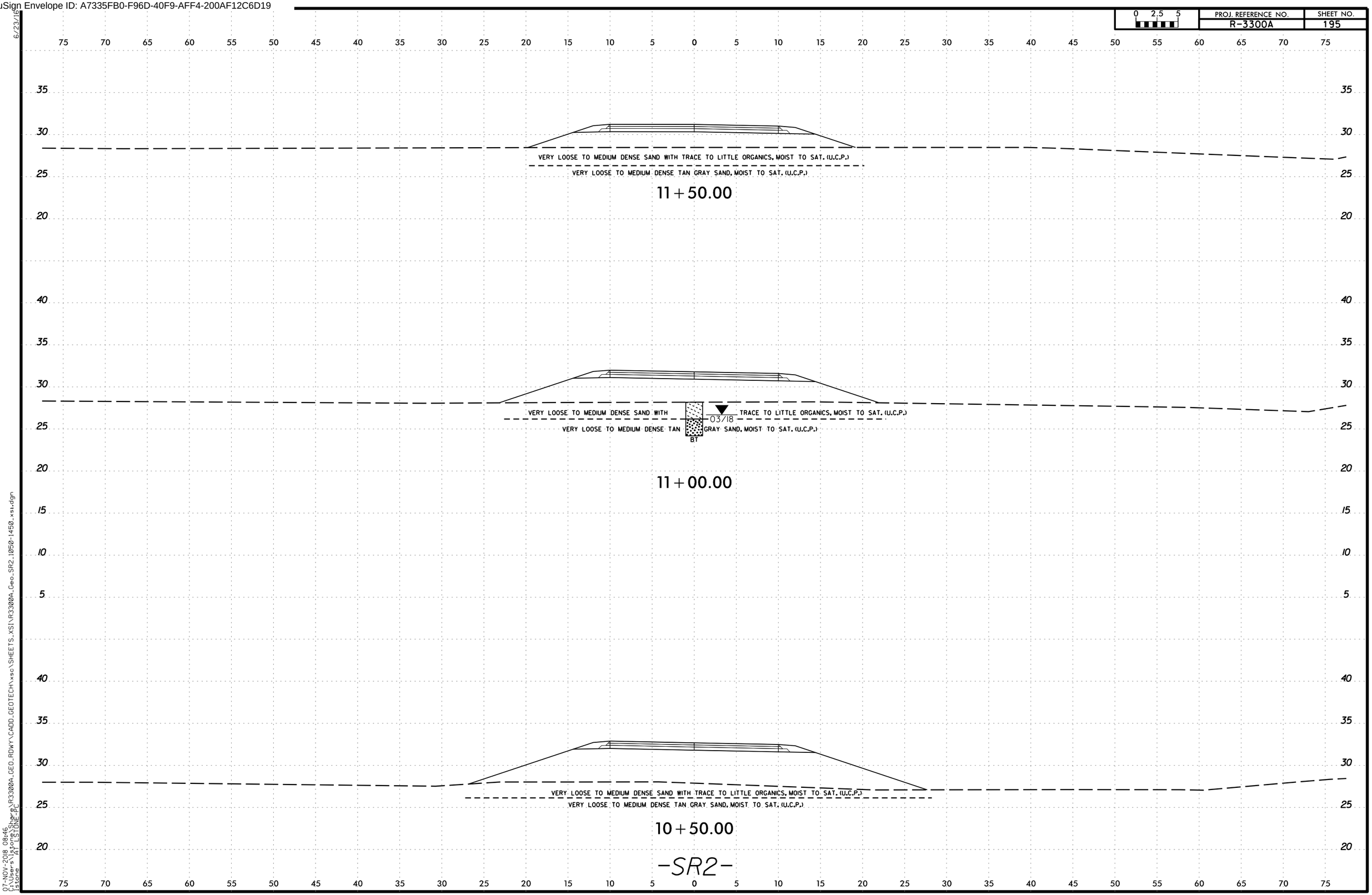
LOOSE TO MED. DENSE BROWN GRAY ORANGE SAND, MOIST TO SAT. (U.C.P.)

31 + 50.00

-Y34DET-

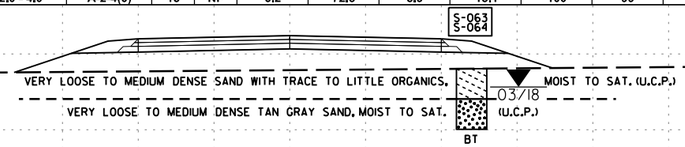
0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-3300A	195



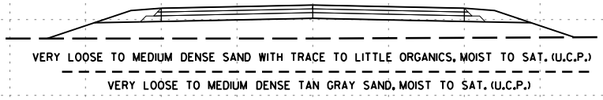
SOIL TEST RESULTS

SAMPLE NUMBER	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-063	12 ft RT	13+17	0.0 - 2.0	A-2-4(0)	19	NP	5.7	72.3	9.9	12.1	100	99	28	-	3.3
S-064	12 ft RT	13+17	2.0 - 4.0	A-2-4(0)	15	NP	6.2	72.8	5.9	15.1	100	99	26	-	-



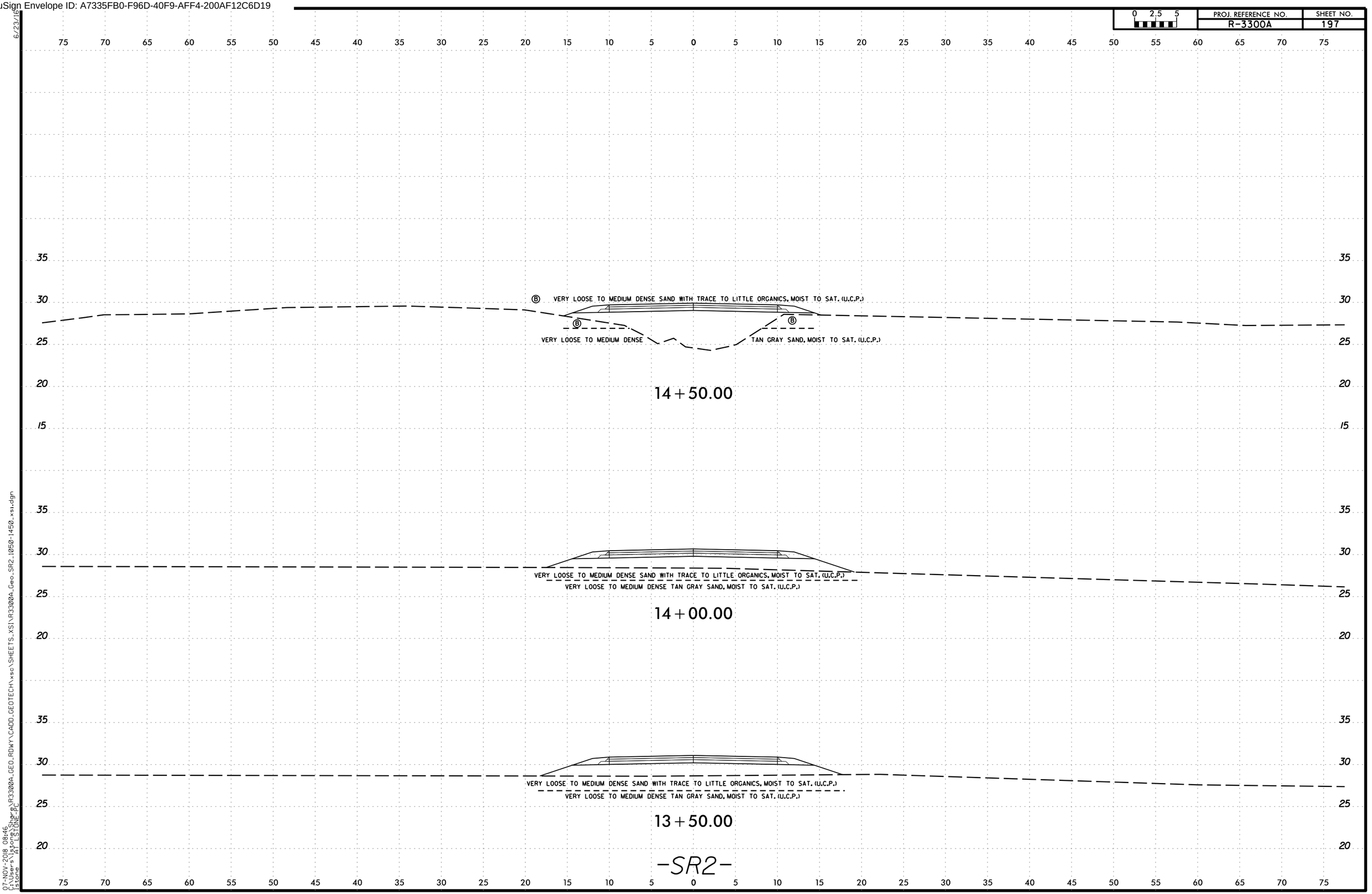
13 + 00.00

12 + 50.00



12 + 00.00

-SR2-



PROJECT REFERENCE NO.	SHEET NO.
R–3300A	1–52

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX I

CPT LOGS

REFERENCE: R–3300A

PROJECT: 40237

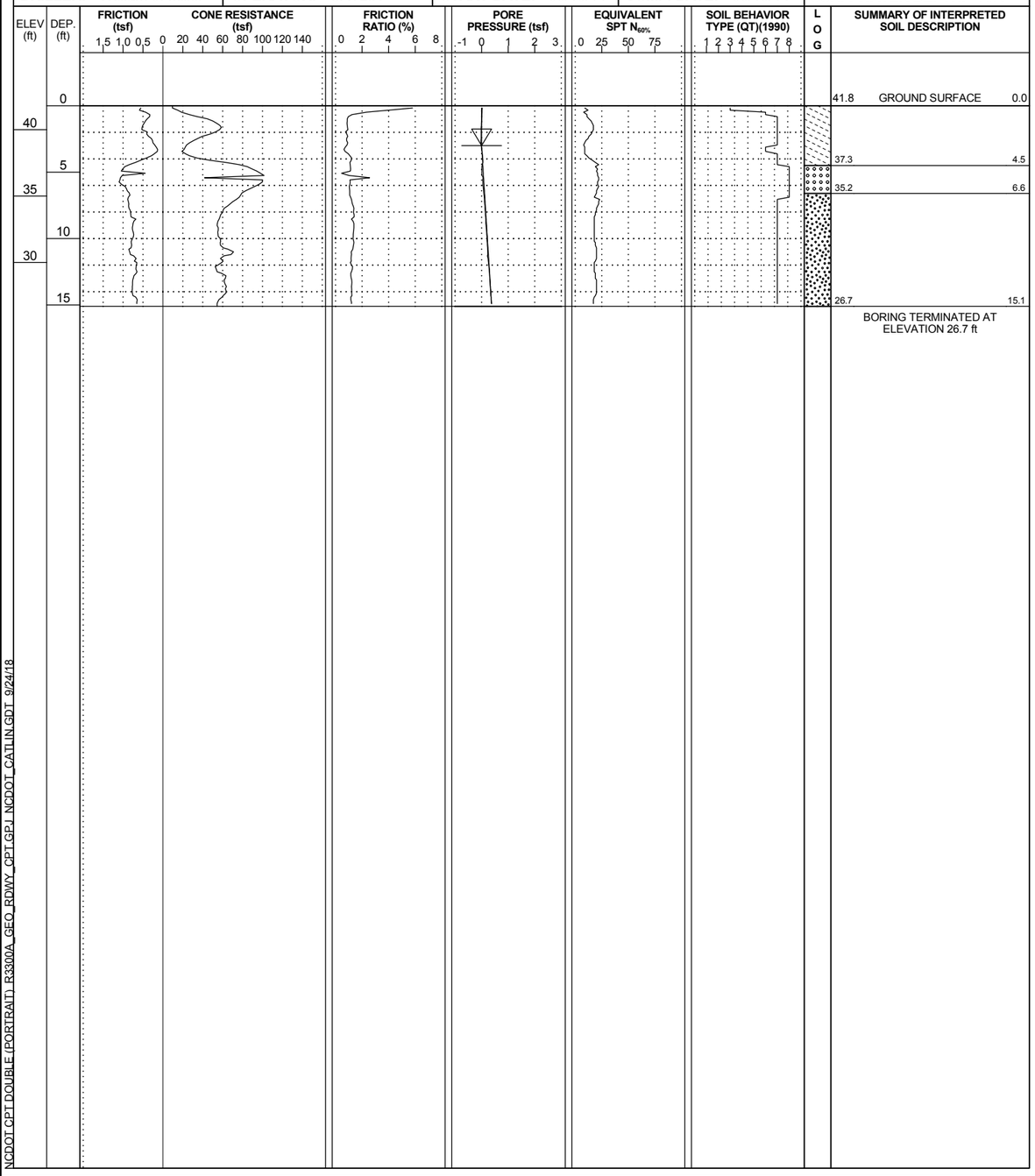
CATLIN
Engineers and Scientists
Wilmington, North Carolina

CONE PENETROMETER TEST BORING REPORT

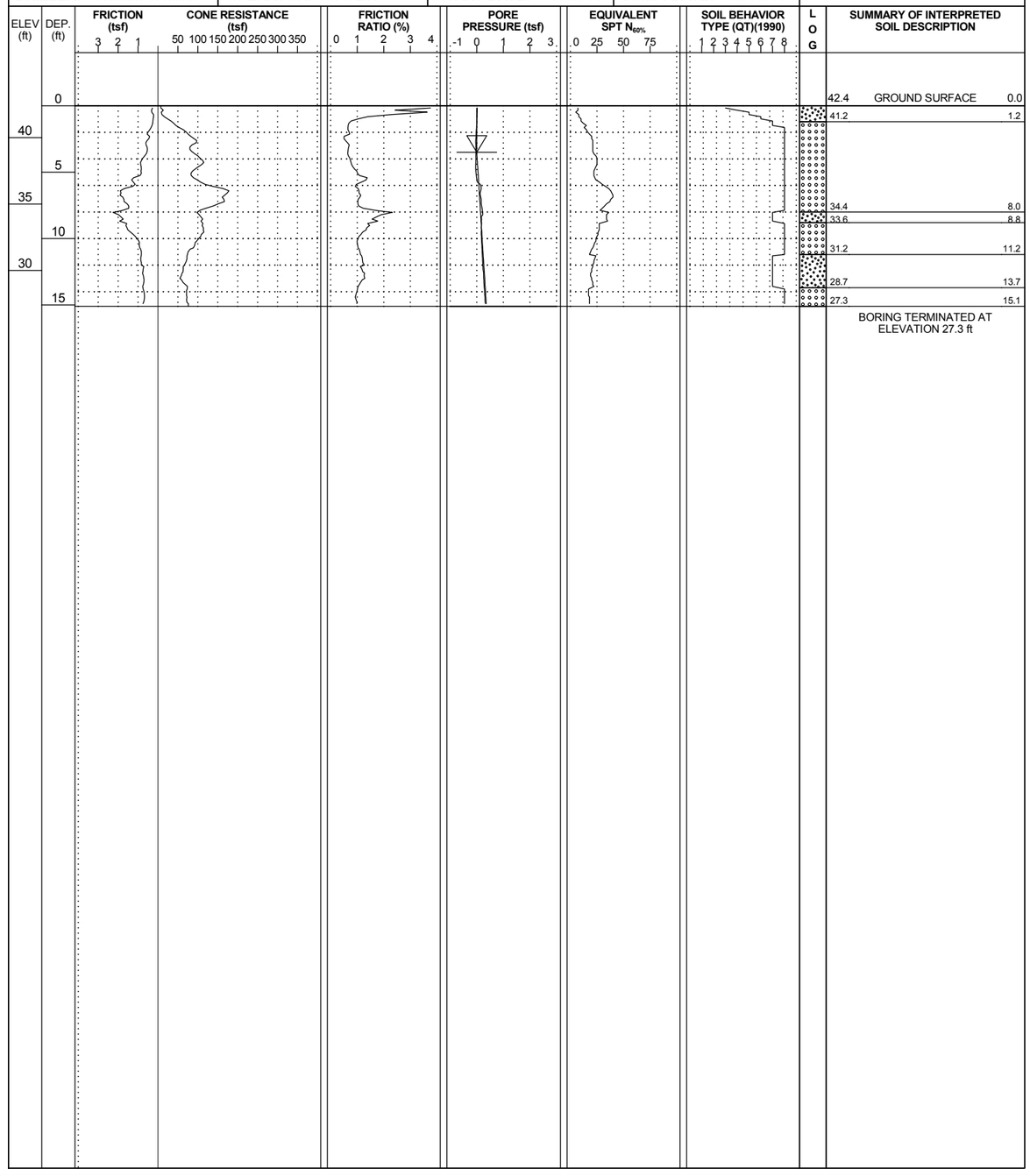
CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	1

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_20600_CL	**STATION:** 206+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.0
COLLAR ELEV.: 41.8 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 204,498	**EASTING:** 2,354,173	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_20800_CL	**STATION:** 208+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.5
COLLAR ELEV.: 42.4 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 204,689	**EASTING:** 2,354,114	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A

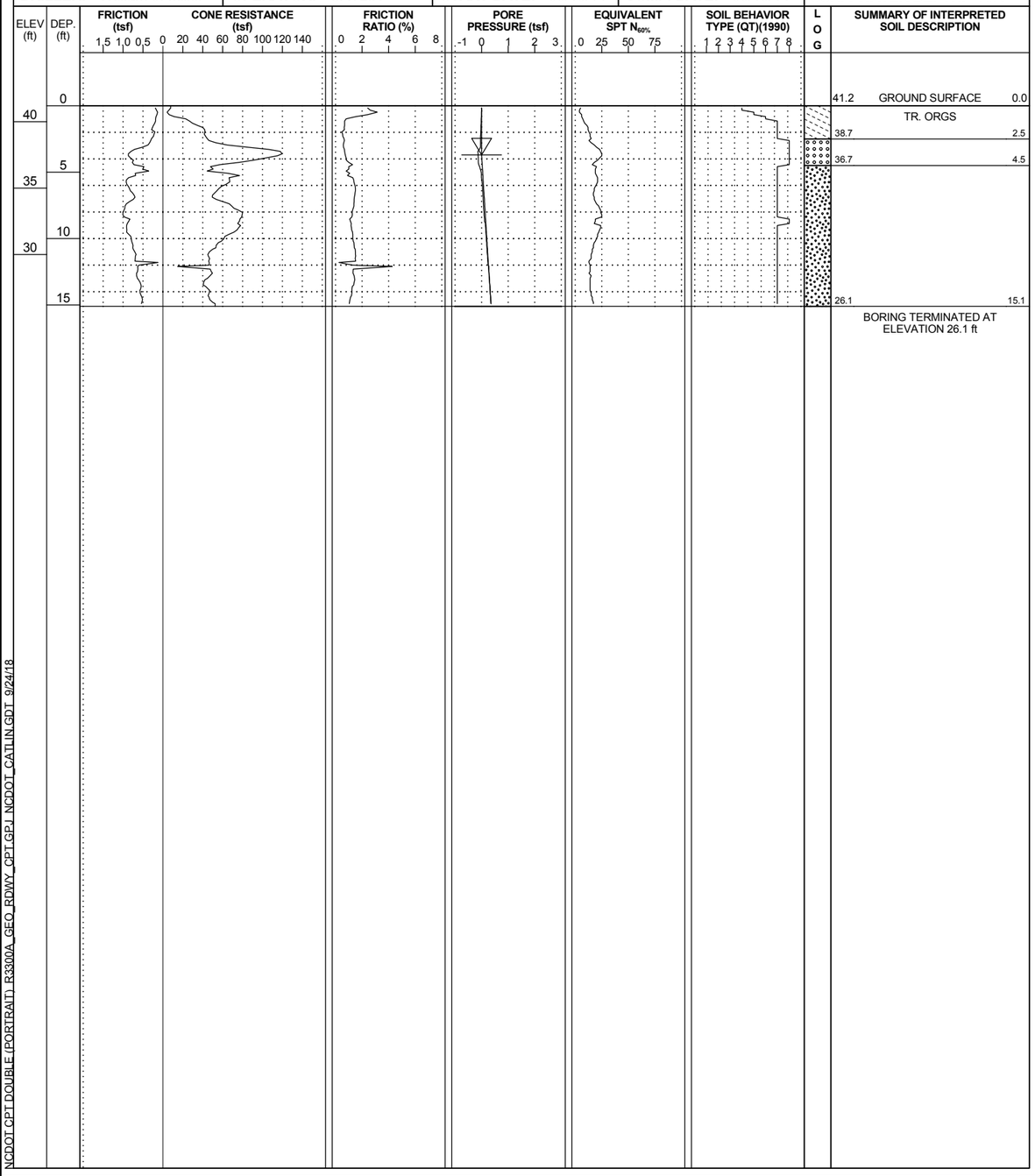


CONE PENETROMETER TEST BORING REPORT

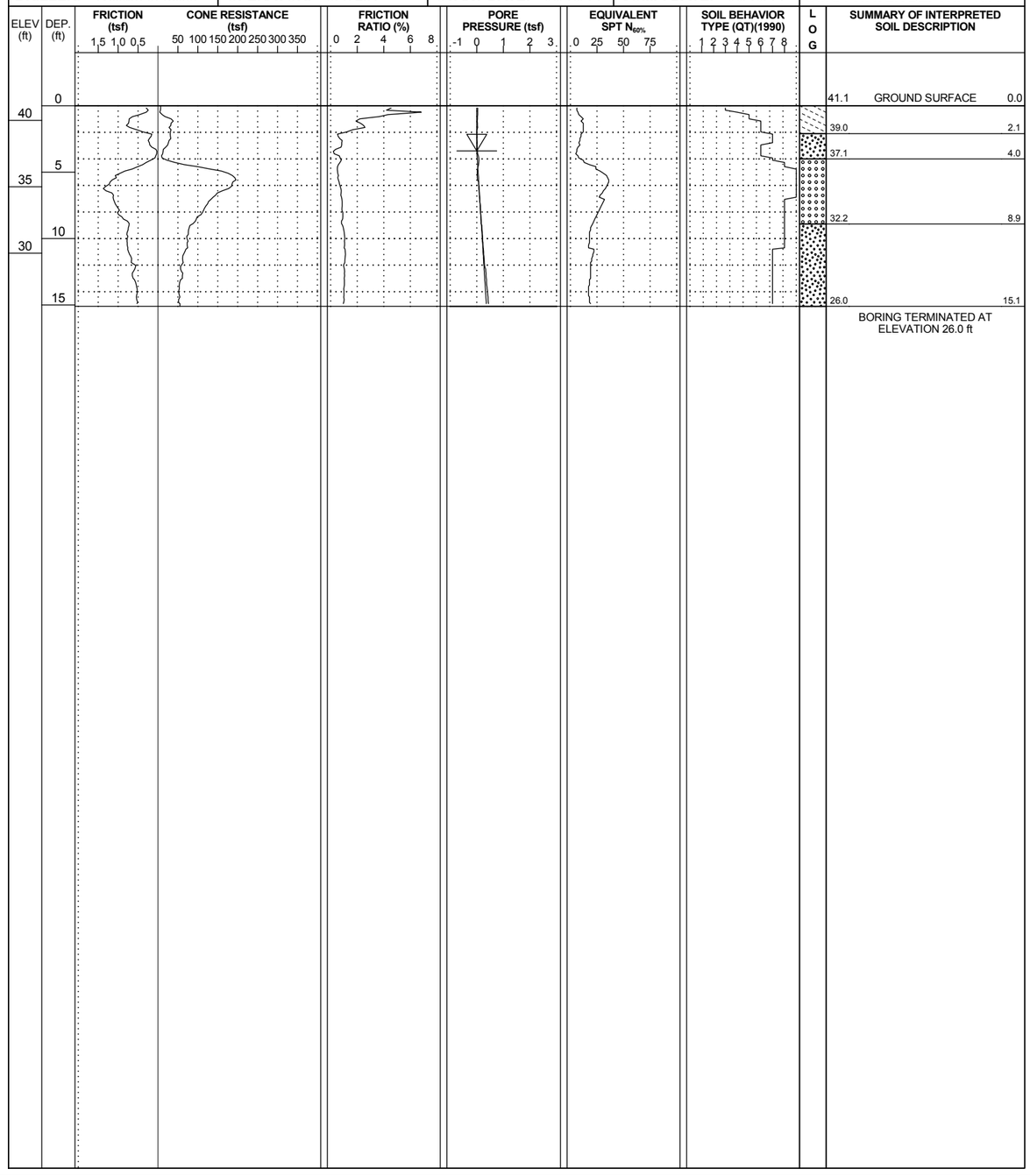
CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	2

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_21200_CL	**STATION:** 212+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.7
COLLAR ELEV.: 41.2 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 205,075	**EASTING:** 2,354,011	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_21400_CL	**STATION:** 214+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.4
COLLAR ELEV.: 41.1 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 205,272	**EASTING:** 2,353,976	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A

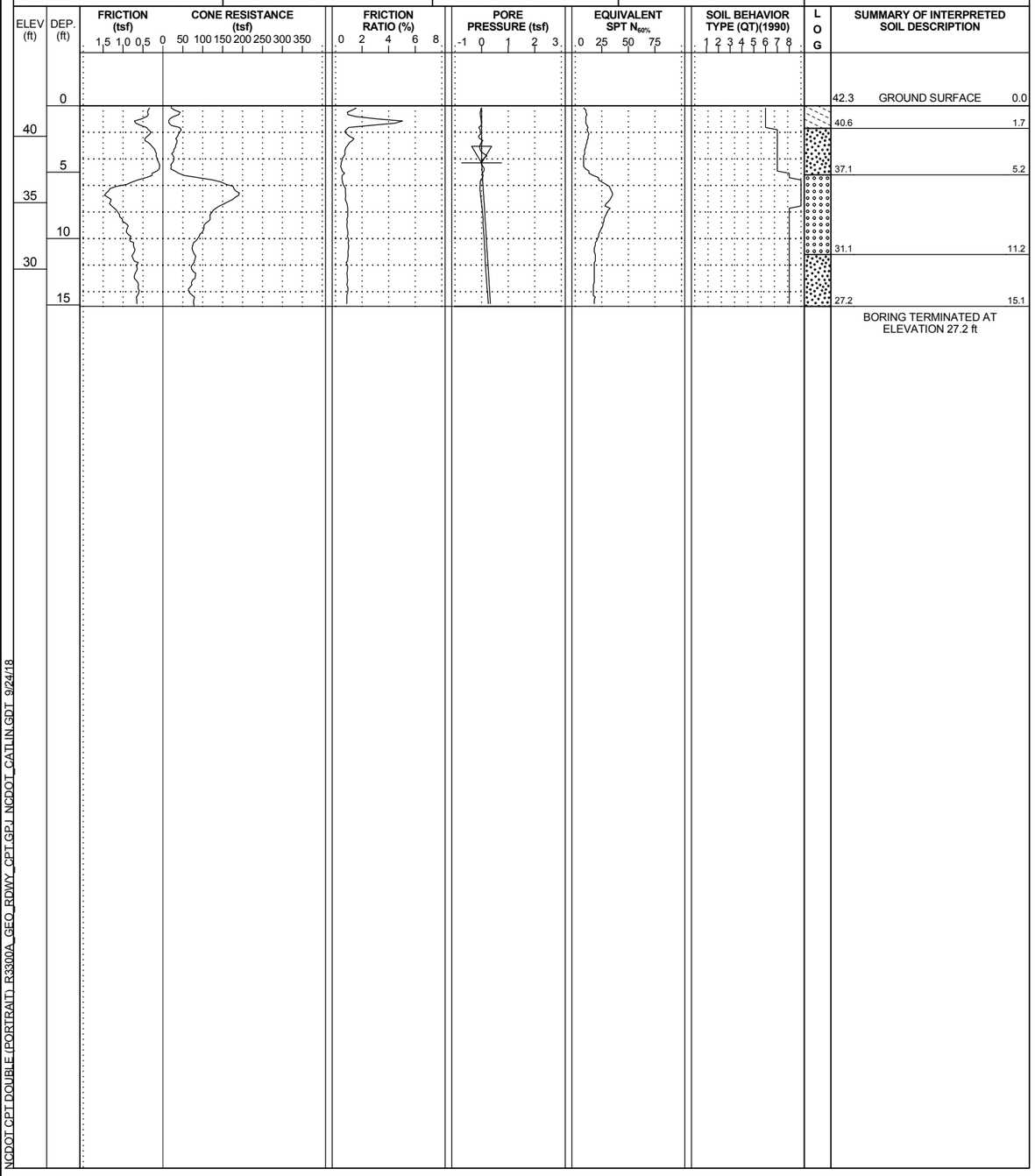


CONE PENETROMETER TEST BORING REPORT

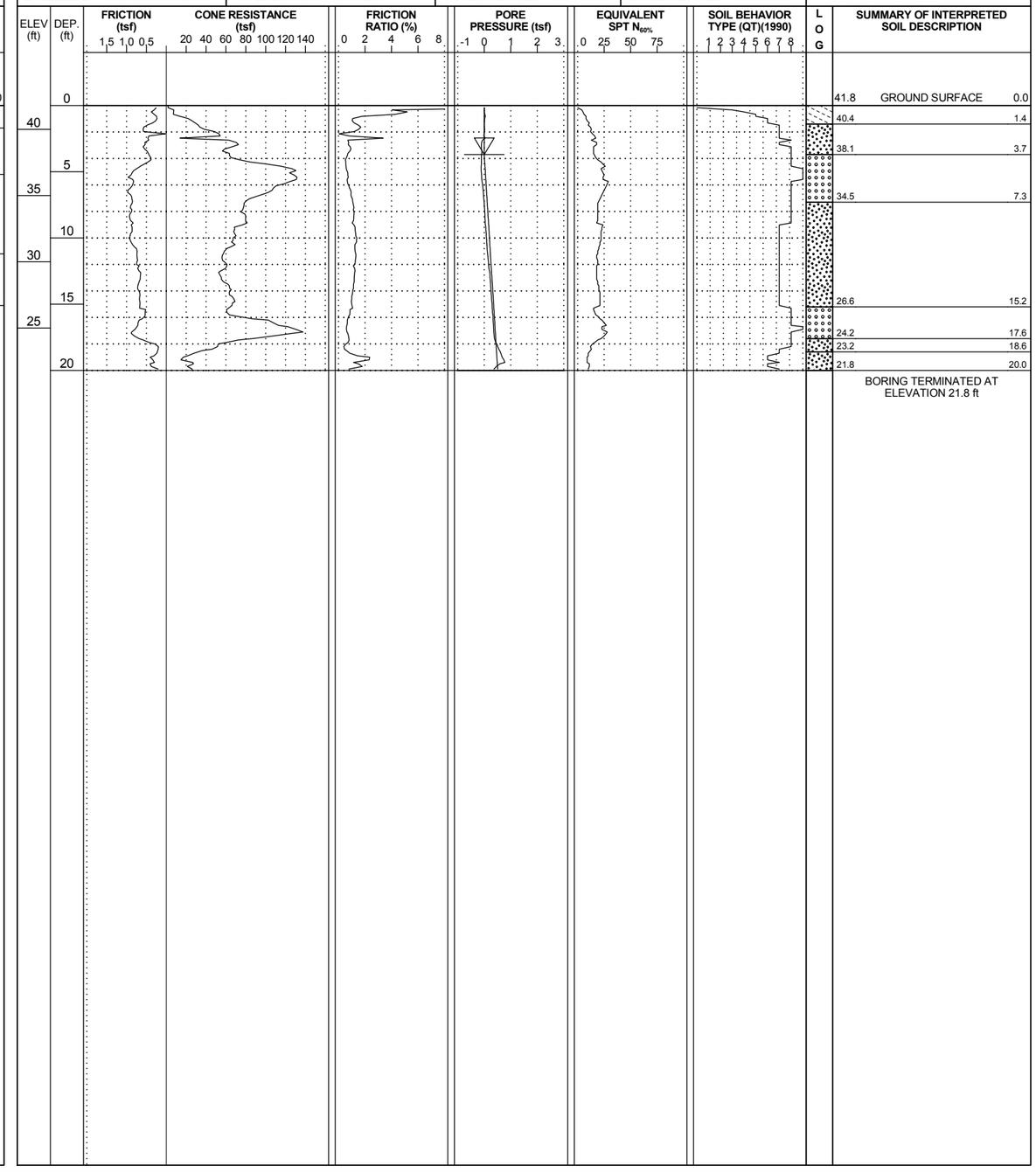
CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	3

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_21600_CL	**STATION:** 216+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 4.3
COLLAR ELEV.: 42.3 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 205,470	**EASTING:** 2,353,952	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_21800_CL	**STATION:** 218+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.7
COLLAR ELEV.: 41.8 ft	**TOTAL DEPTH:** 20.0 ft	**NORTHING:** 205,670	**EASTING:** 2,353,940	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A



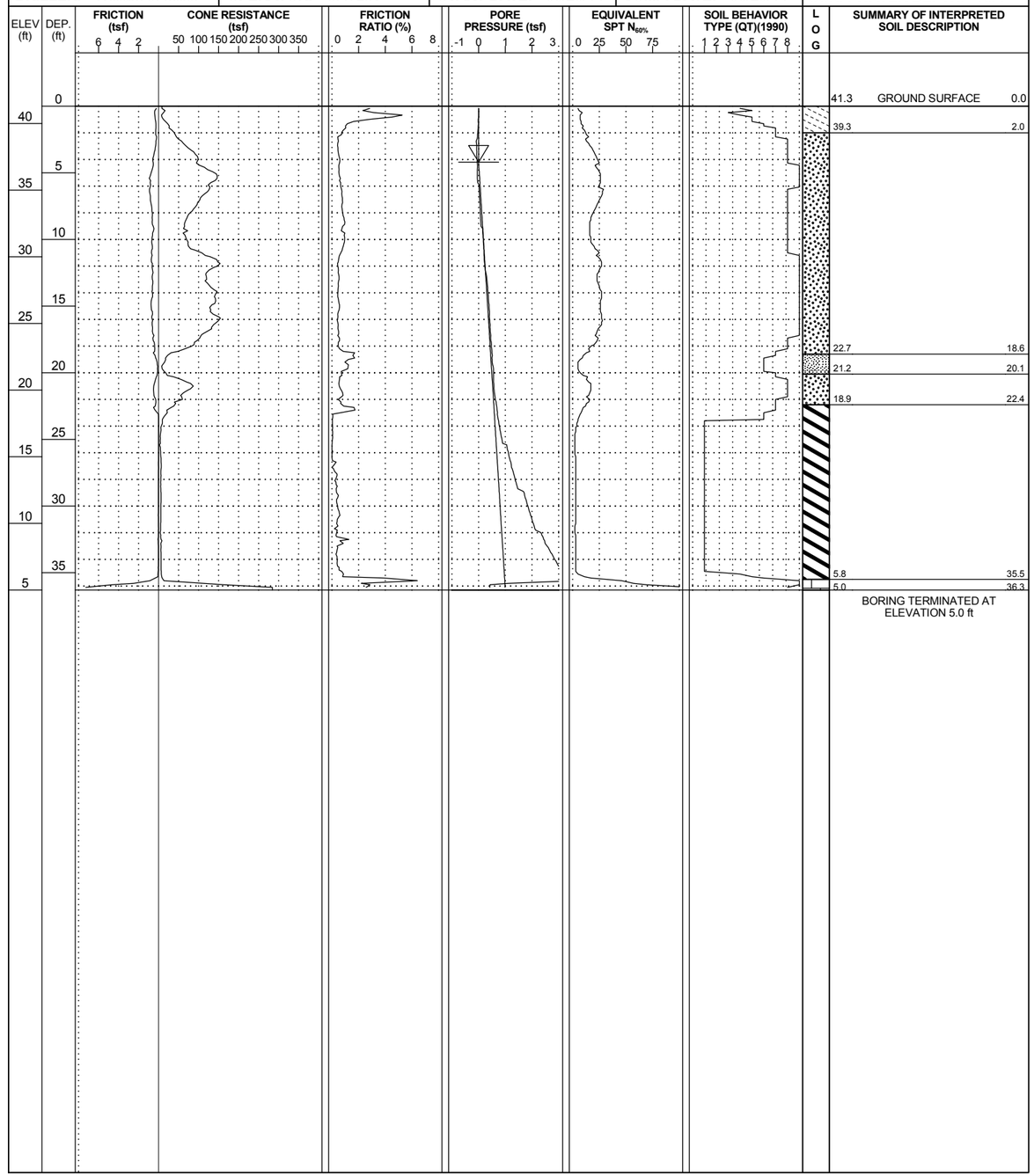
CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	4

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_22200_CL	**STATION:** 222+01	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 3.8
COLLAR ELEV.: 41.7 ft	**TOTAL DEPTH:** 36.8 ft	**NORTHING:** 206,070	**EASTING:** 2,353,951	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/13/14	**COMP. DATE:** 06/13/14	**SURF. WATER DEPTH:** N/A

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_22750_CL	**STATION:** 227+50	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 4.2
COLLAR ELEV.: 41.3 ft	**TOTAL DEPTH:** 36.3 ft	**NORTHING:** 206,611	**EASTING:** 2,354,042	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/25/14	**COMP. DATE:** 06/25/14	**SURF. WATER DEPTH:** N/A

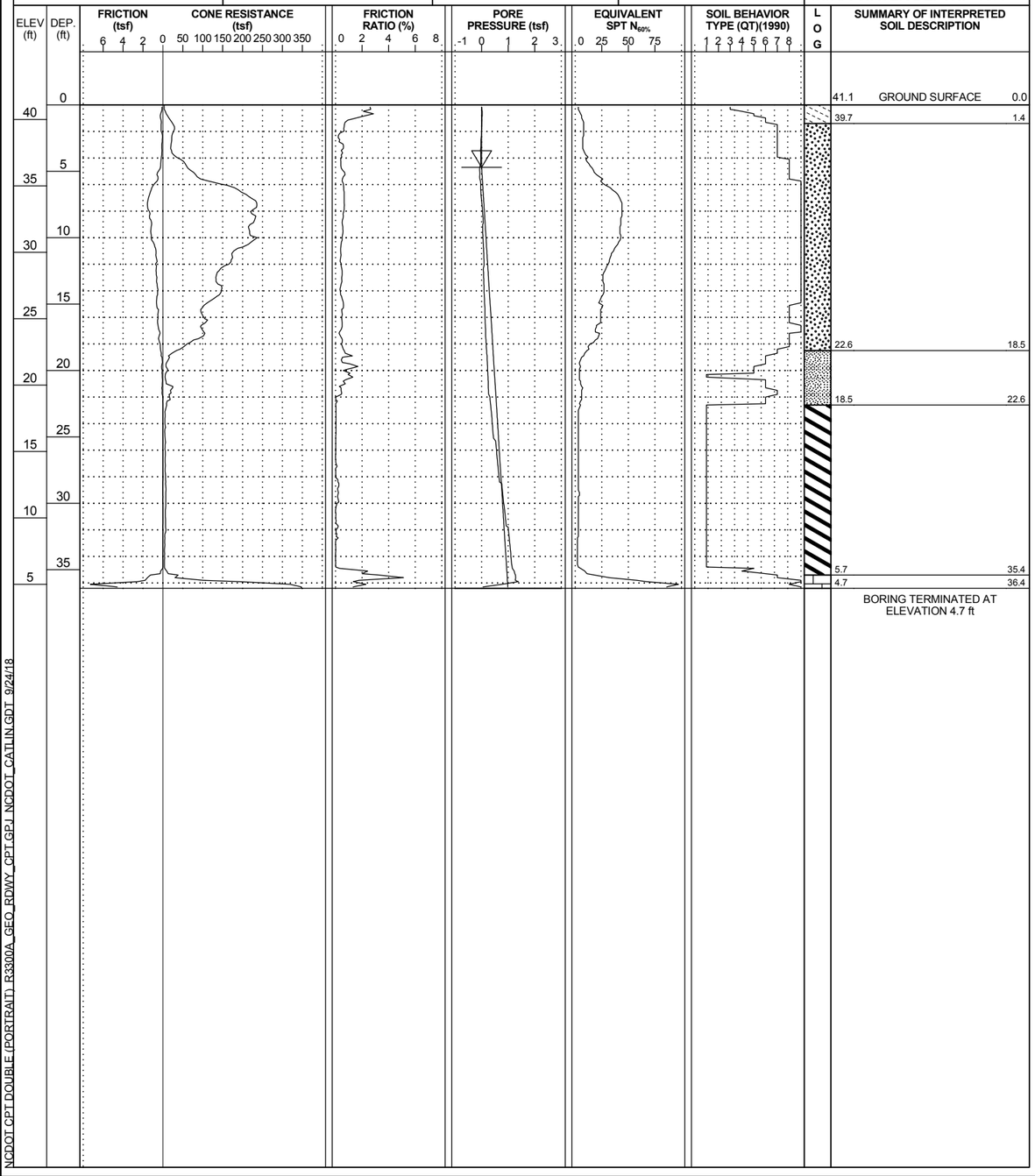


CONE PENETROMETER TEST BORING REPORT

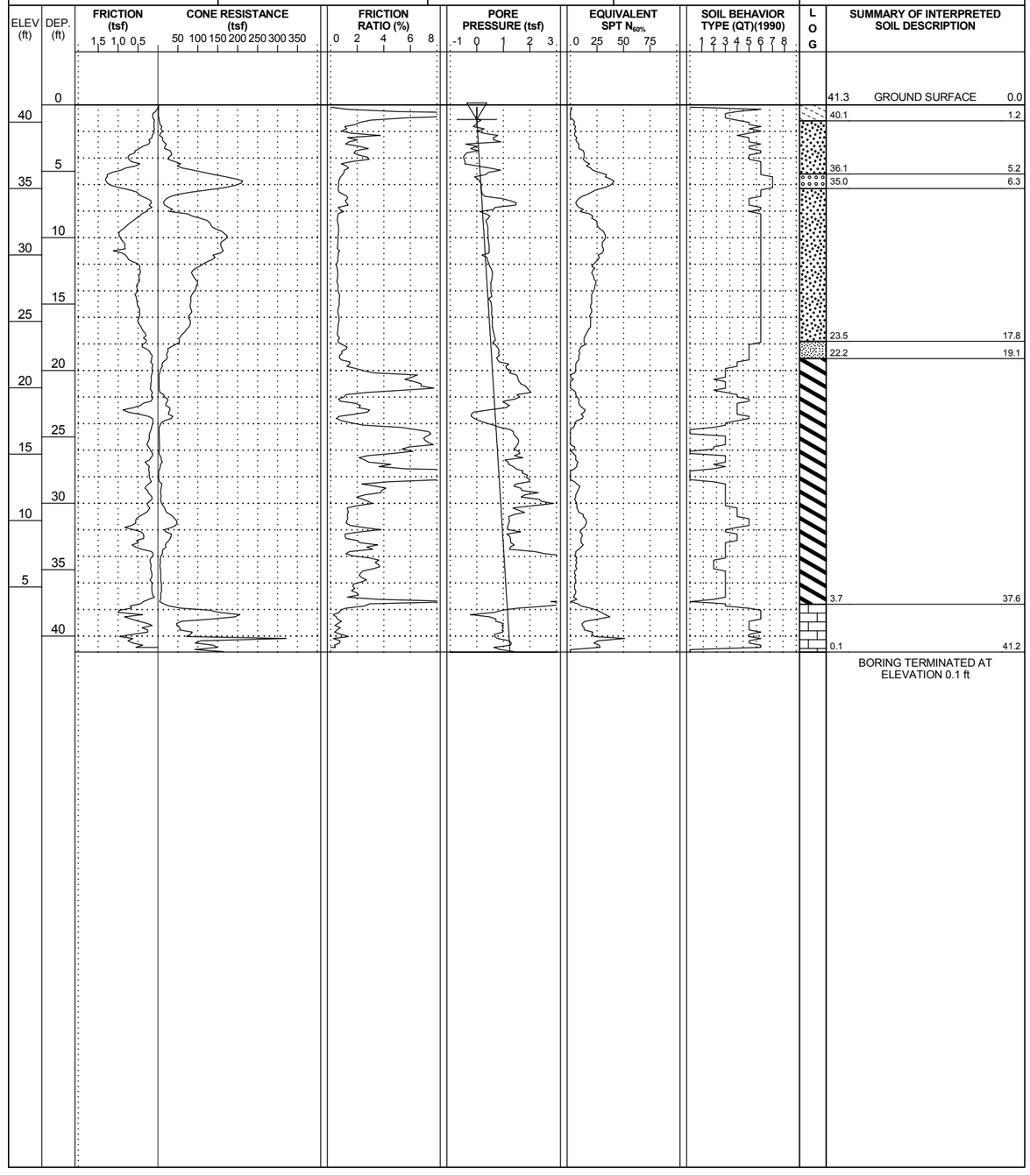
217059 CATLIN Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0585

PROJECT REFERENCE NO.	SHEET
R-3300A	5

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L_22900_CL	**STATION:** 229+00	**OFFSET:** CL	**ALIGNMENT:** -L-	**EST. 0 HR.** 4.7
COLLAR ELEV.: 41.1 ft	**TOTAL DEPTH:** 36.4 ft	**NORTHING:** 206,756	**EASTING:** 2,354,082	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/25/14	**COMP. DATE:** 06/25/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_23600	**STATION:** 236+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.1
COLLAR ELEV.: 41.3 ft	**TOTAL DEPTH:** 41.2 ft	**NORTHING:** 207,400	**EASTING:** 2,354,351	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 07/03/18	**COMP. DATE:** 07/03/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
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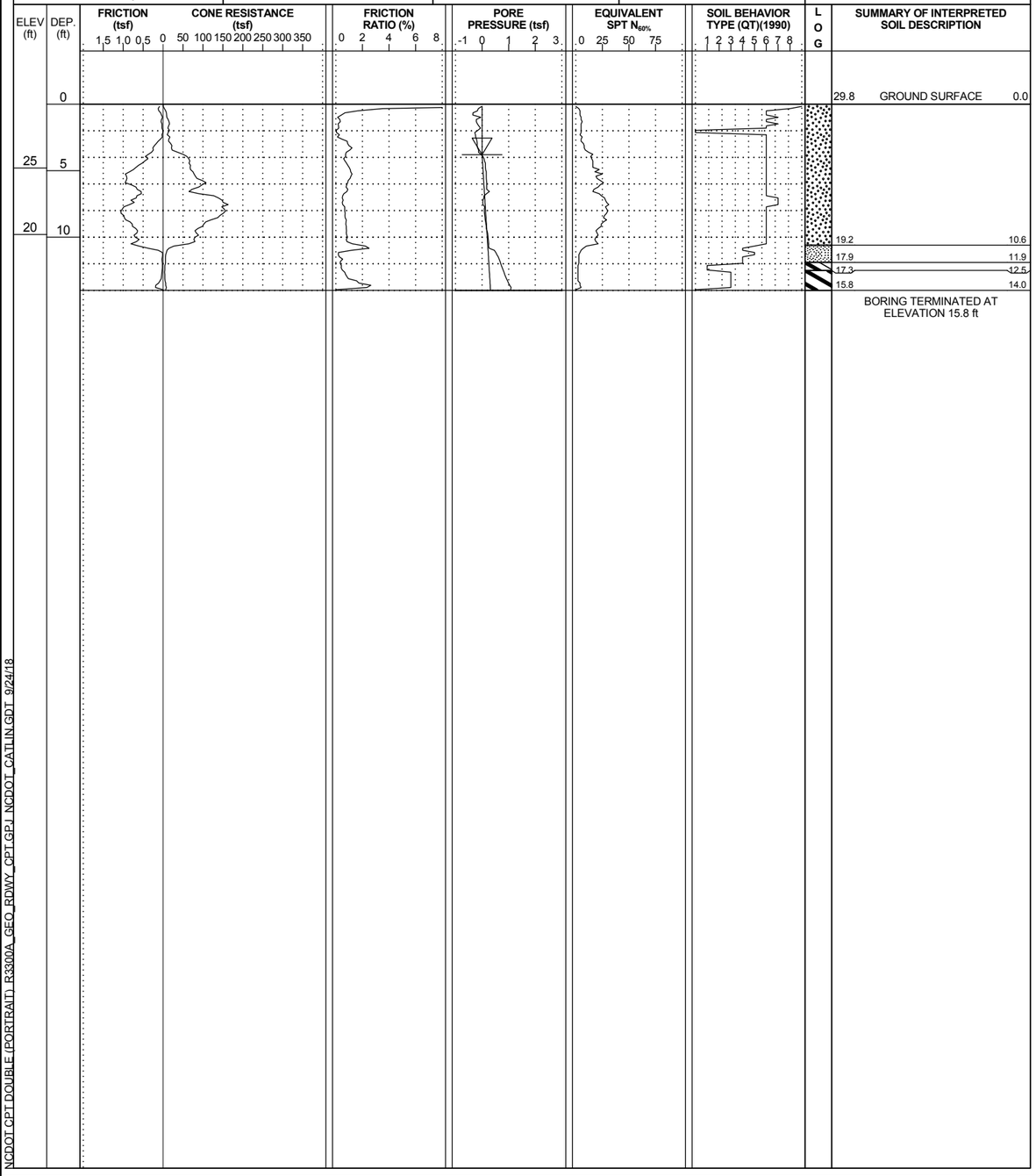
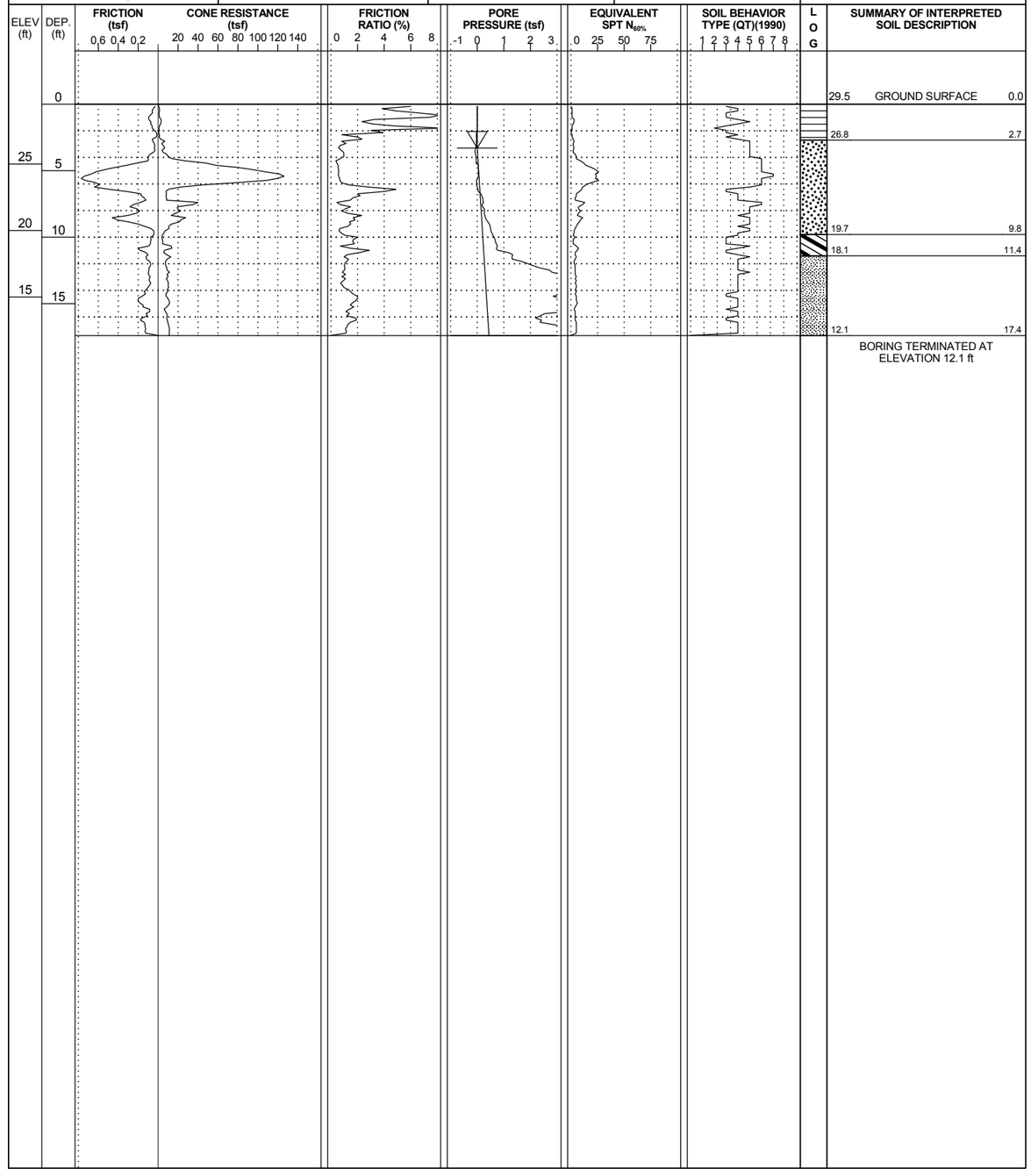
PROJECT REFERENCE NO.	SHEET
R-3300A	6

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_25000	**STATION:** 250+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.8
COLLAR ELEV.: 29.8 ft	**TOTAL DEPTH:** 14.0 ft	**NORTHING:** 208,515	**EASTING:** 2,355,194	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/05/18	**COMP. DATE:** 04/05/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_25370	**STATION:** 253+70	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.3
COLLAR ELEV.: 29.5 ft	**TOTAL DEPTH:** 17.4 ft	**NORTHING:** 208,800	**EASTING:** 2,355,431	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/05/18	**COMP. DATE:** 04/05/18	**SURF. WATER DEPTH:** N/A



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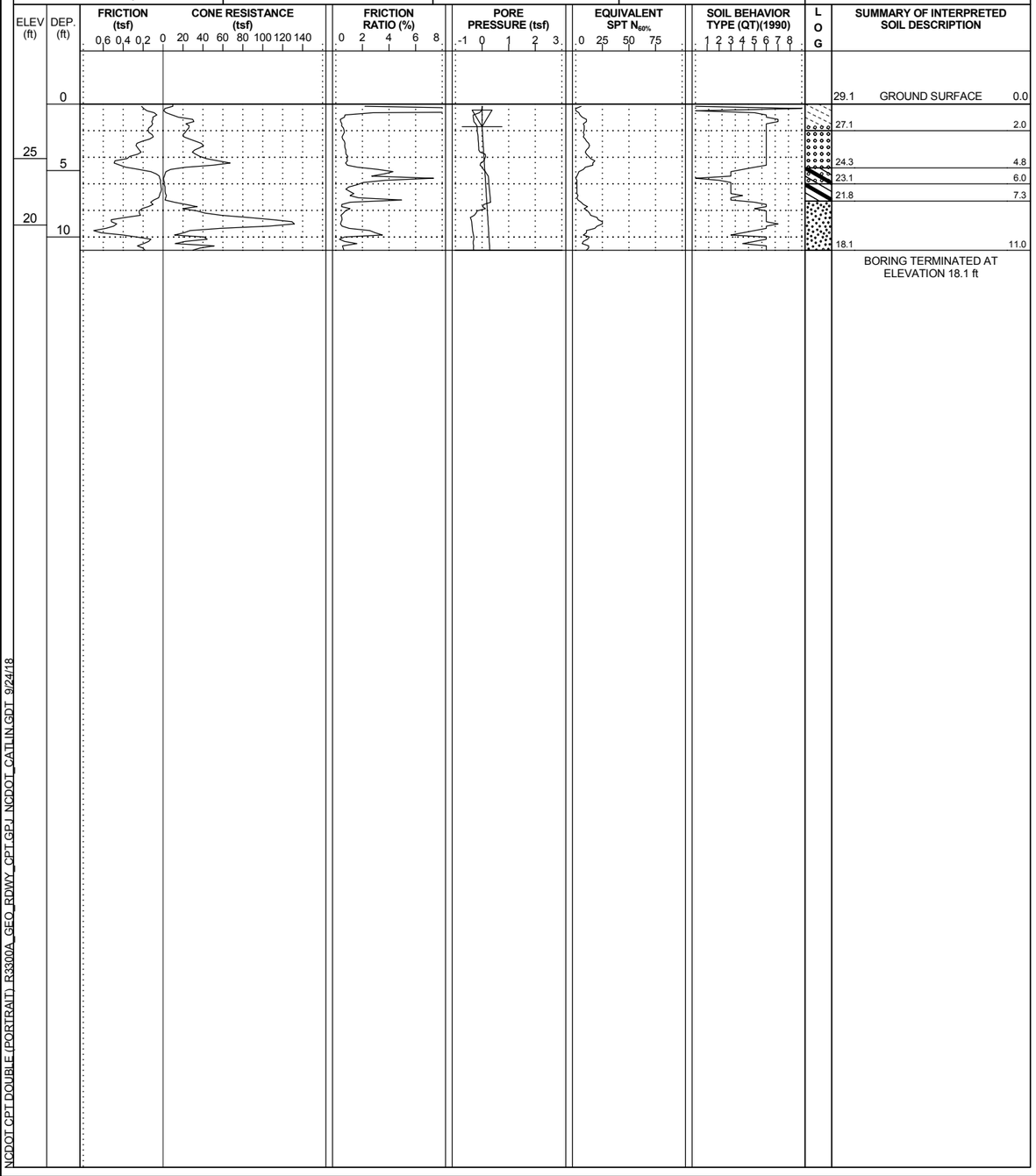
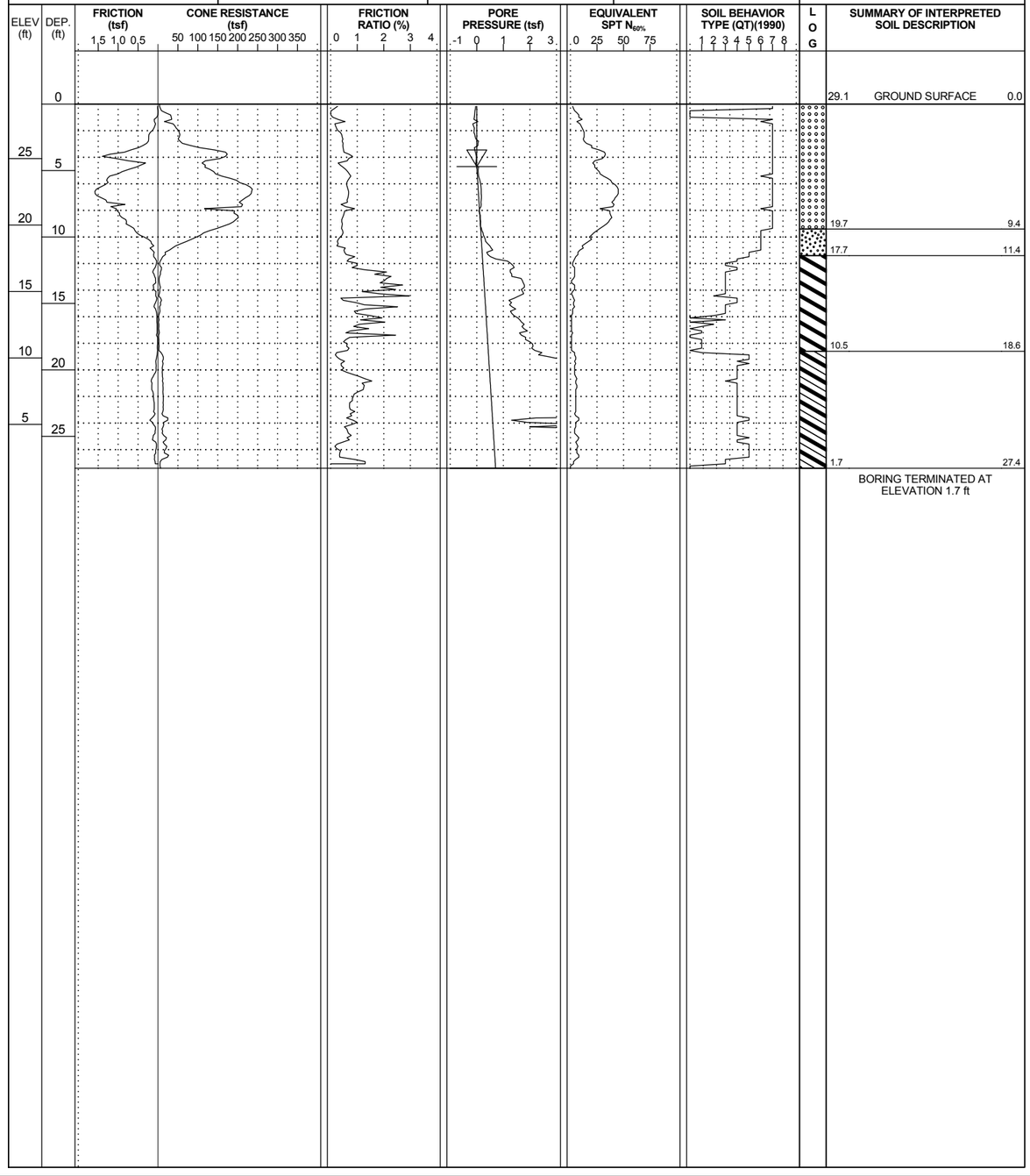
PROJECT REFERENCE NO.	SHEET
R-3300A	7

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_25600	**STATION:** 256+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.7
COLLAR ELEV.: 29.1 ft	**TOTAL DEPTH:** 11.0 ft	**NORTHING:** 208,976	**EASTING:** 2,355,578	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/05/18	**COMP. DATE:** 04/05/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_26700	**STATION:** 267+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 4.7
COLLAR ELEV.: 29.1 ft	**TOTAL DEPTH:** 27.4 ft	**NORTHING:** 209,814	**EASTING:** 2,356,289	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L. PUGE	**OPERATOR:** CATLIN	**START DATE:** 06/27/18	**COMP. DATE:** 06/27/18	**SURF. WATER DEPTH:** N/A



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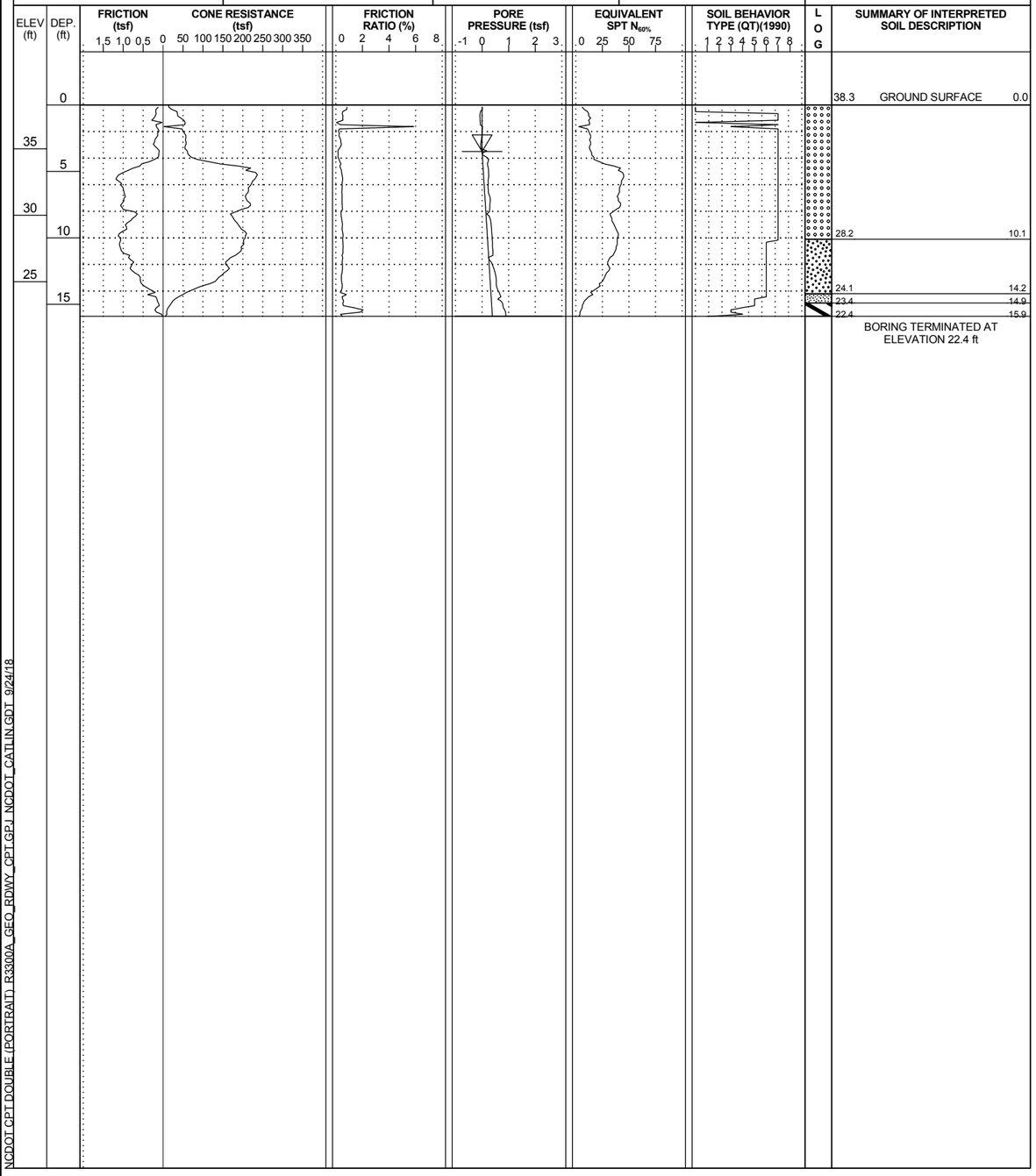
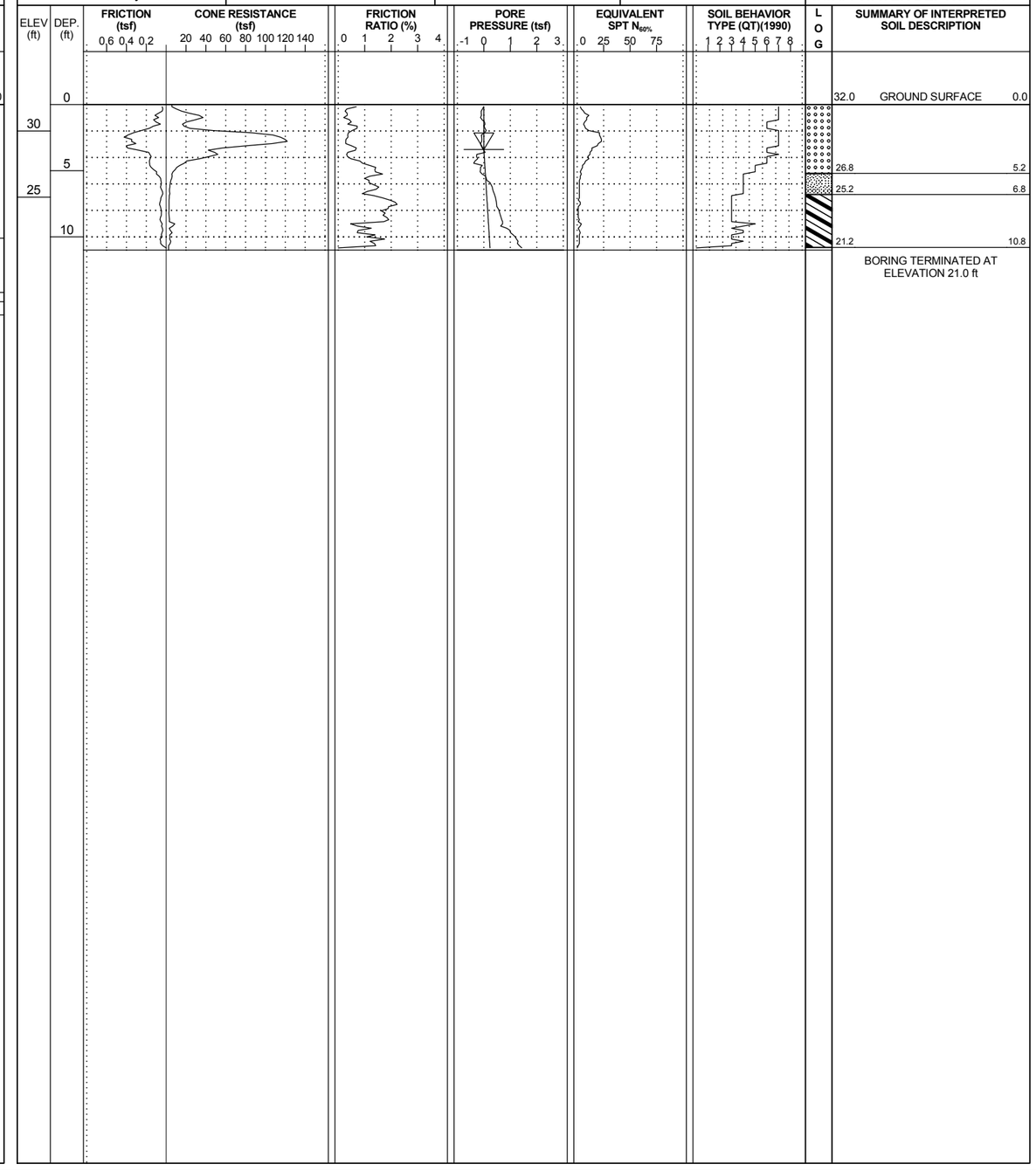
PROJECT REFERENCE NO.	SHEET
R-3300A	8

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L.PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_27500	**STATION:** 275+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.5
COLLAR ELEV.: 38.3 ft	**TOTAL DEPTH:** 15.9 ft	**NORTHING:** 210,395	**EASTING:** 2,356,839	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/27/18	**COMP. DATE:** 06/27/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_28000	**STATION:** 280+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.4
COLLAR ELEV.: 32.0 ft	**TOTAL DEPTH:** 11.0 ft	**NORTHING:** 210,745	**EASTING:** 2,357,197	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



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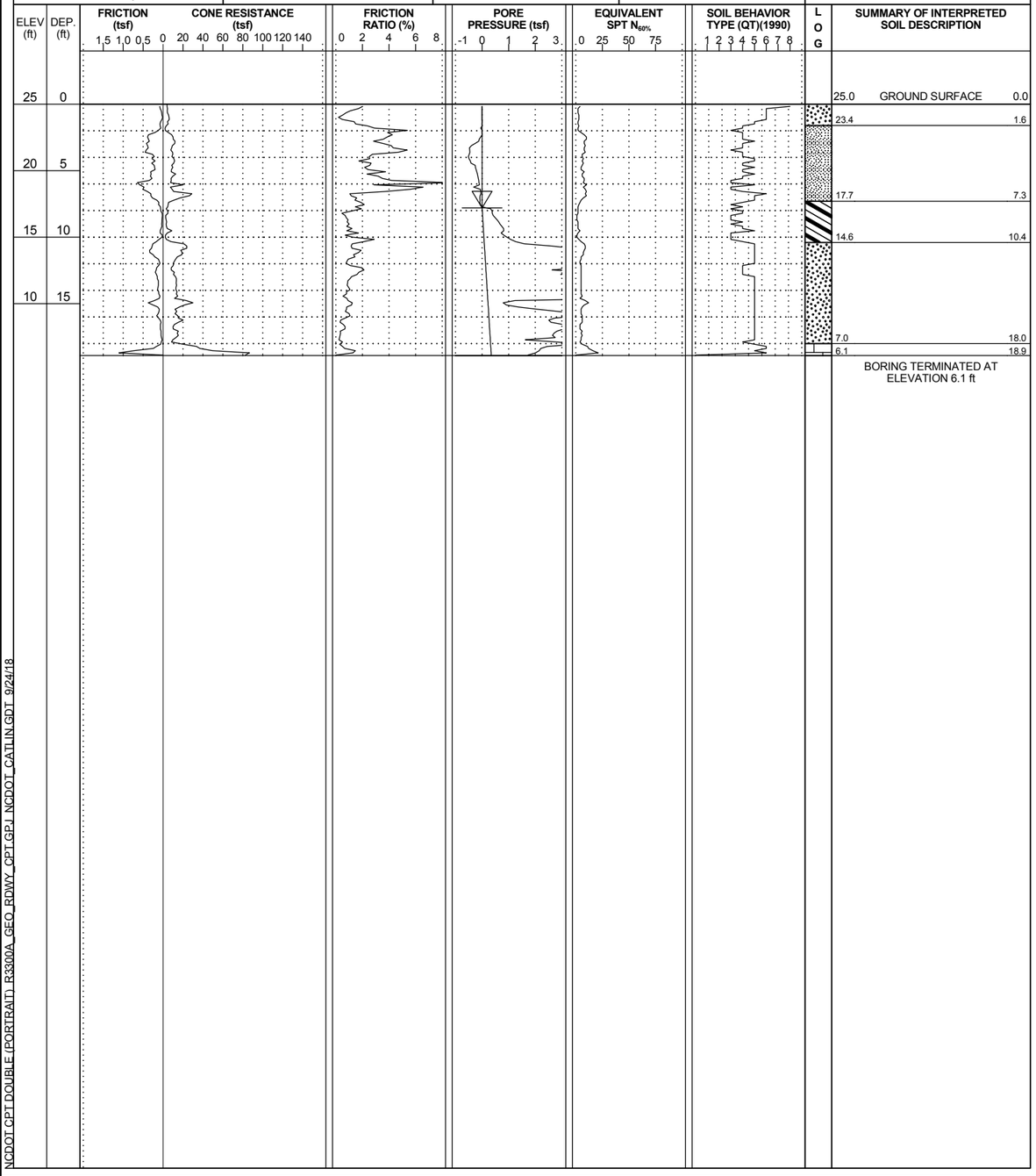
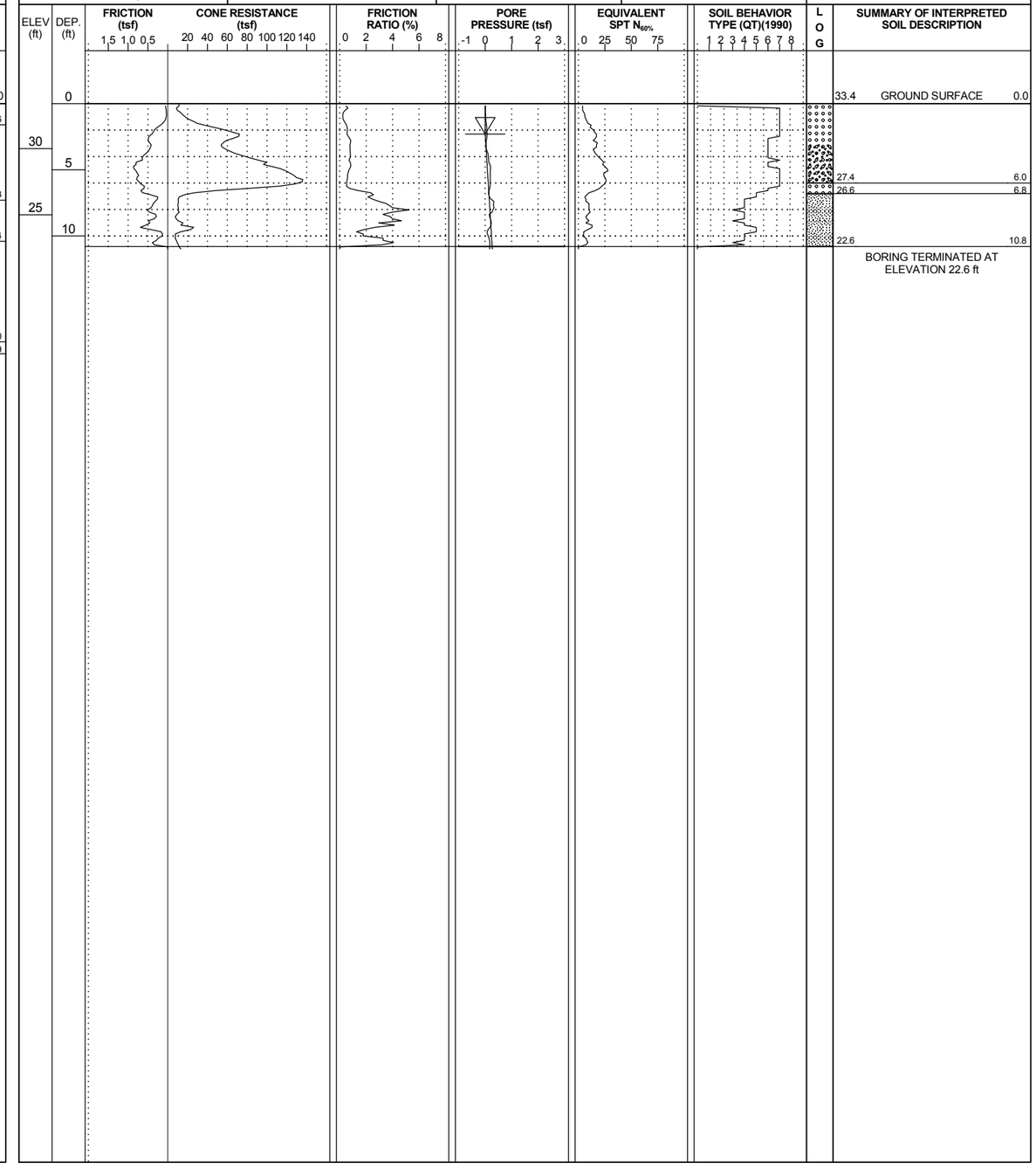
PROJECT REFERENCE NO.	SHEET
R-3300A	9

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_28400	**STATION:** 284+60	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 7.8
COLLAR ELEV.: 25.0 ft	**TOTAL DEPTH:** 18.9 ft	**NORTHING:** 211,066	**EASTING:** 2,357,527	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_29000	**STATION:** 290+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.3
COLLAR ELEV.: 33.4 ft	**TOTAL DEPTH:** 10.8 ft	**NORTHING:** 211,442	**EASTING:** 2,357,914	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
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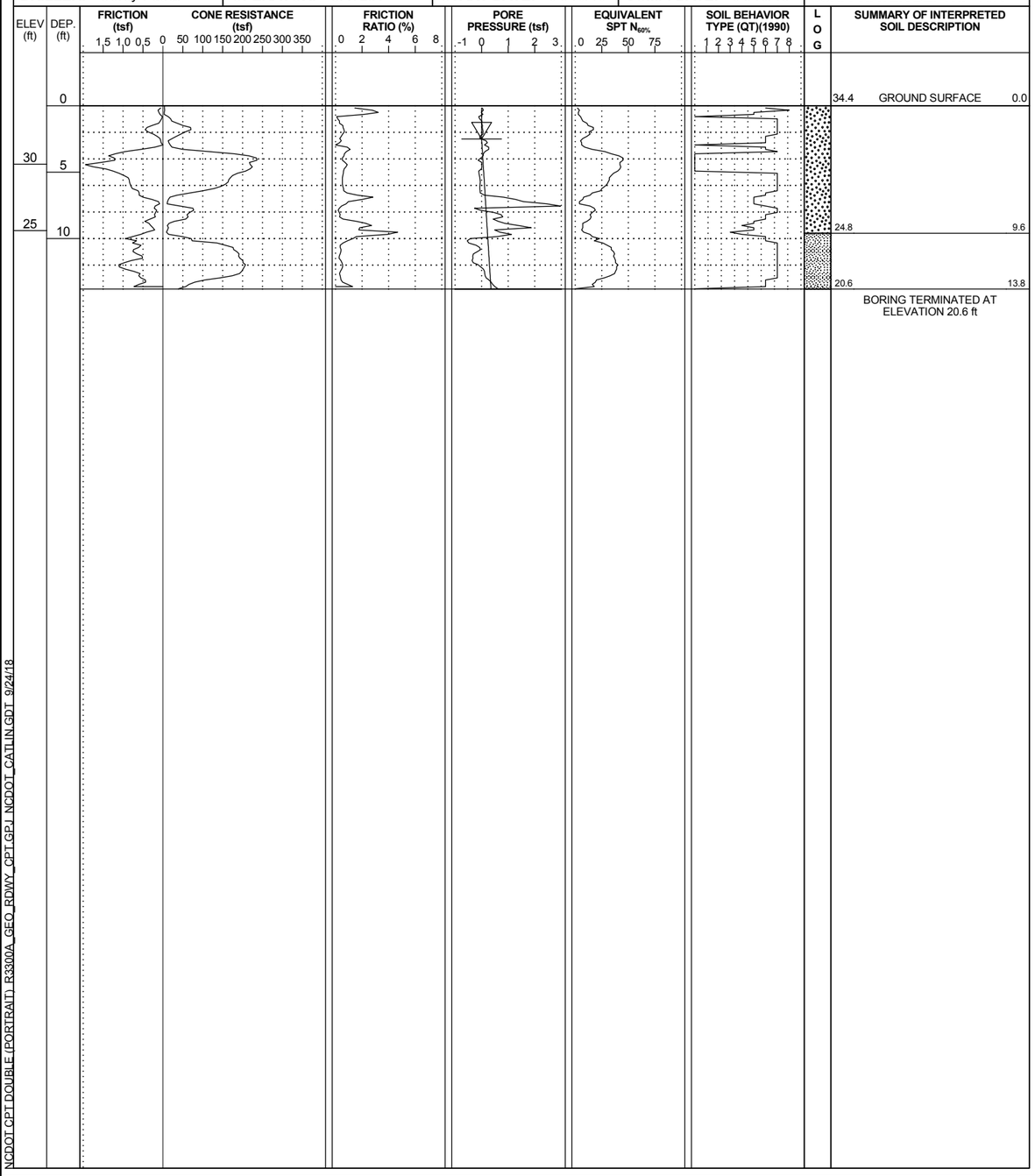
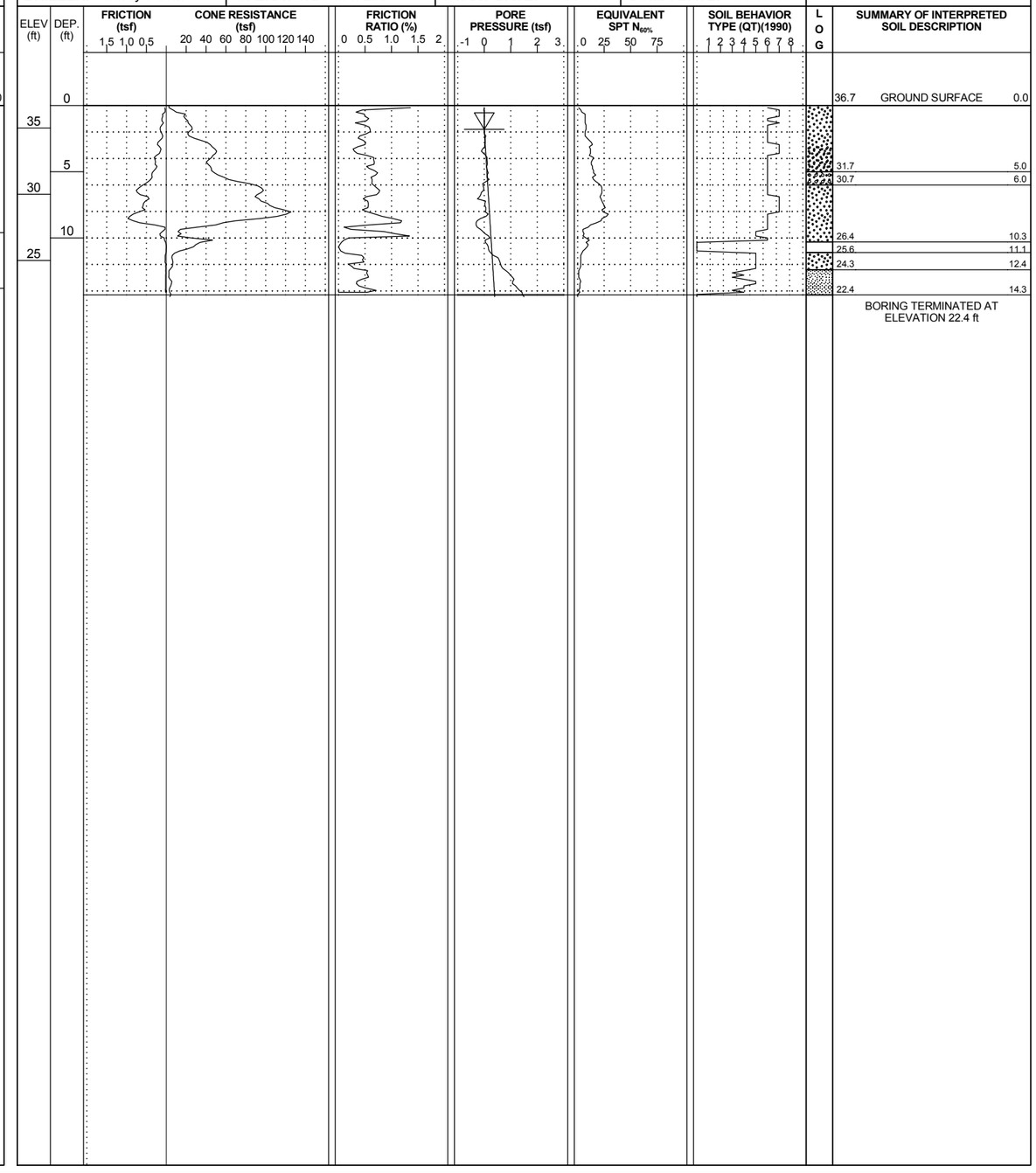
PROJECT REFERENCE NO.	SHEET
R-3300A	10

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_29200	**STATION:** 292+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.5
COLLAR ELEV.: 34.4 ft	**TOTAL DEPTH:** 13.8 ft	**NORTHING:** 211,582	**EASTING:** 2,358,058	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_29600	**STATION:** 296+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.8
COLLAR ELEV.: 36.7 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 211,860	**EASTING:** 2,358,344	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
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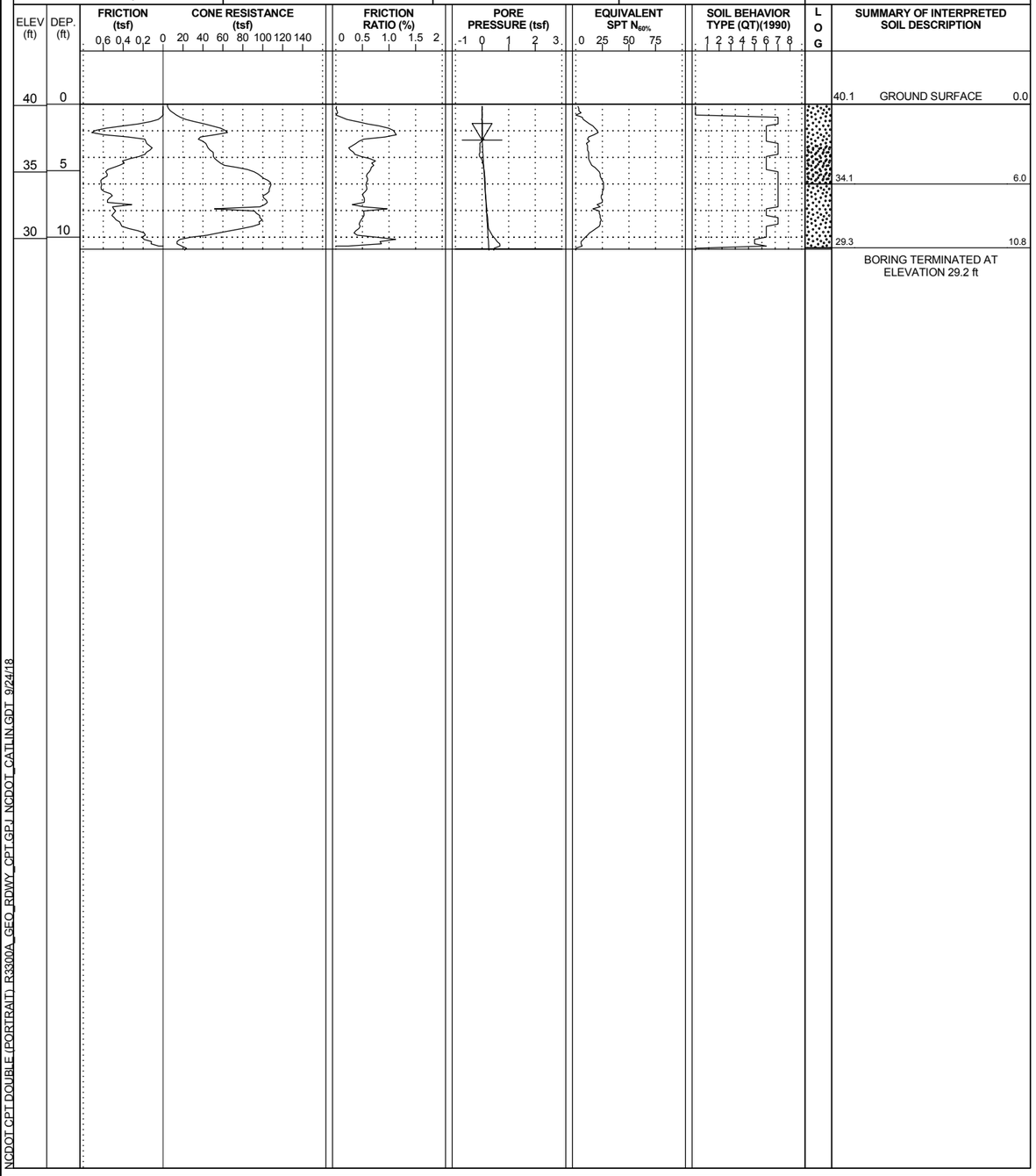
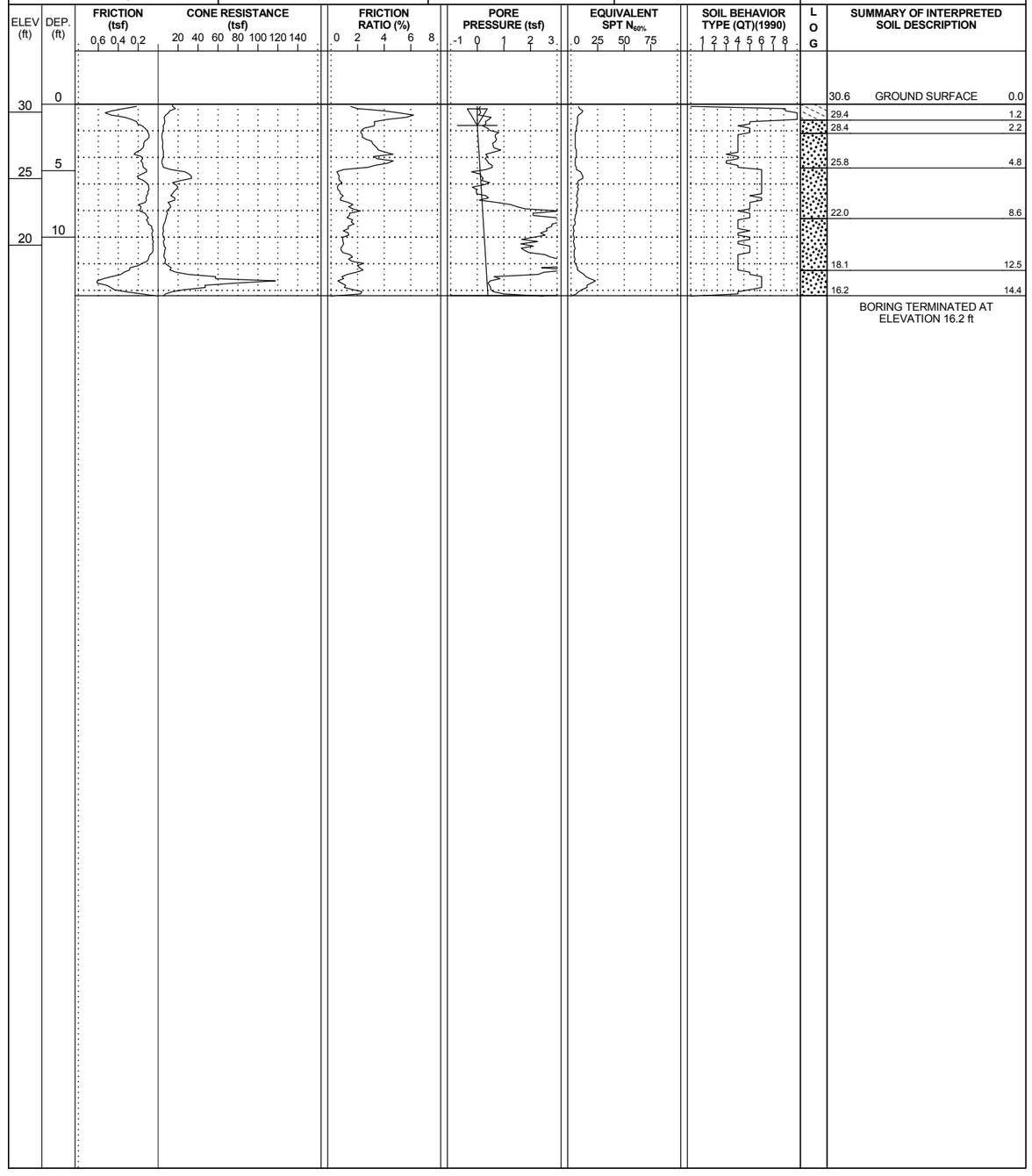
PROJECT REFERENCE NO.	SHEET
R-3300A	11

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_29800	**STATION:** 298+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.7
COLLAR ELEV.: 40.1 ft	**TOTAL DEPTH:** 10.9 ft	**NORTHING:** 212,000	**EASTING:** 2,358,488	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/10/18	**COMP. DATE:** 04/10/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_31400	**STATION:** 314+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.6
COLLAR ELEV.: 30.6 ft	**TOTAL DEPTH:** 14.4 ft	**NORTHING:** 213,264	**EASTING:** 2,359,458	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
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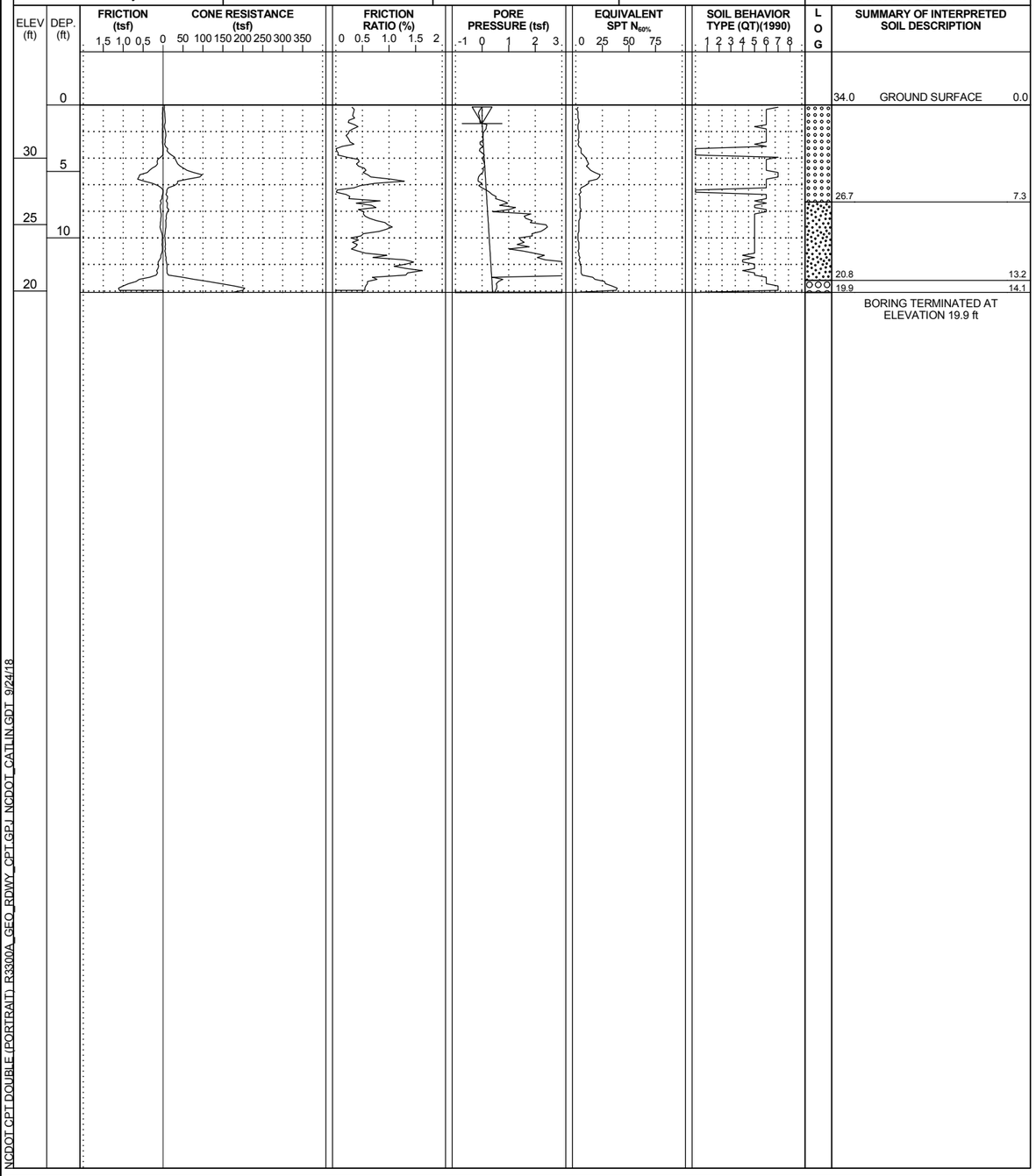
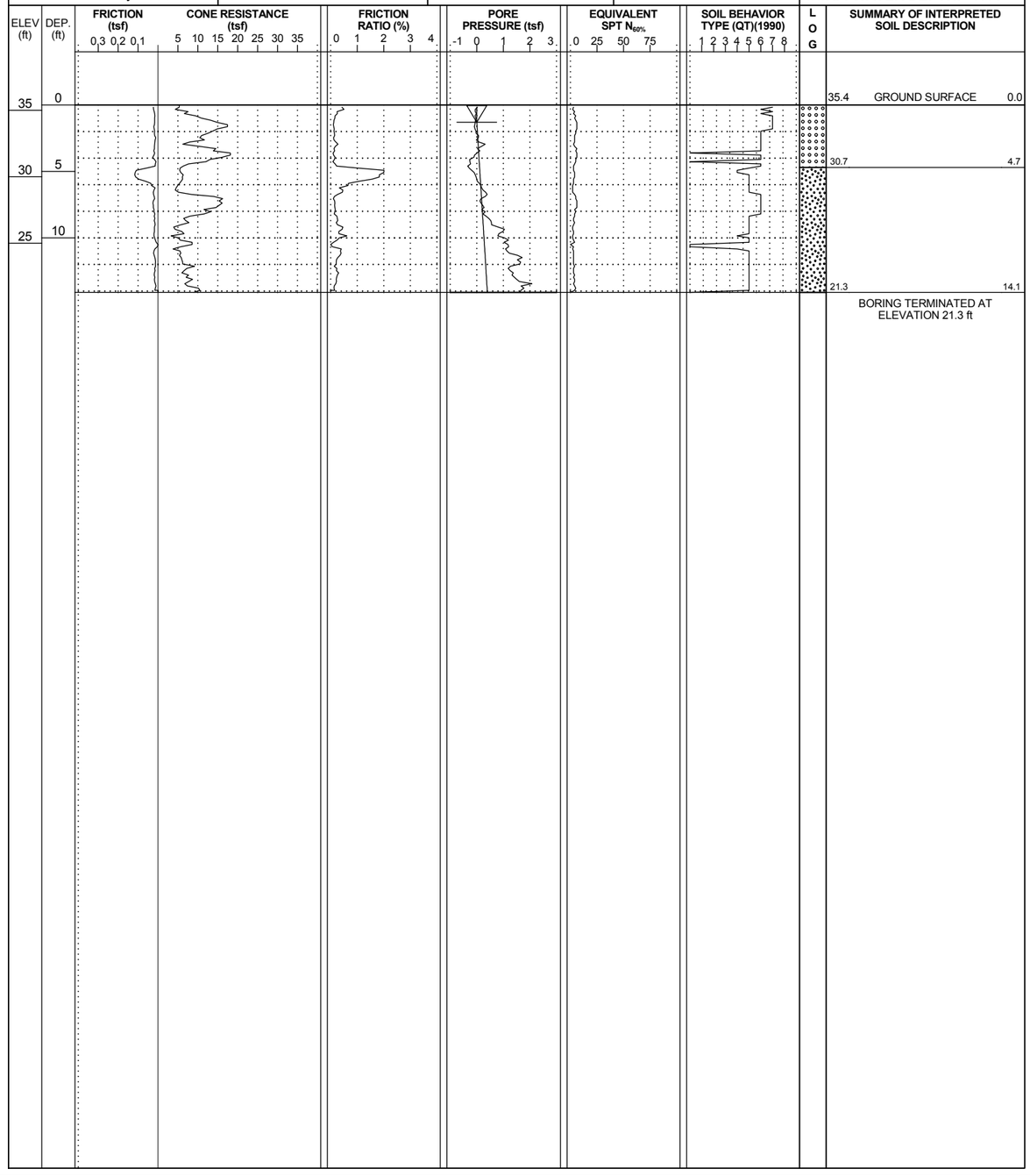
PROJECT REFERENCE NO.	SHEET
R-3300A	12

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_31600	**STATION:** 316+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.4
COLLAR ELEV.: 34.0 ft	**TOTAL DEPTH:** 14.1 ft	**NORTHING:** 213,442	**EASTING:** 2,359,551	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_32000	**STATION:** 320+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.3
COLLAR ELEV.: 35.4 ft	**TOTAL DEPTH:** 14.1 ft	**NORTHING:** 213,806	**EASTING:** 2,359,717	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



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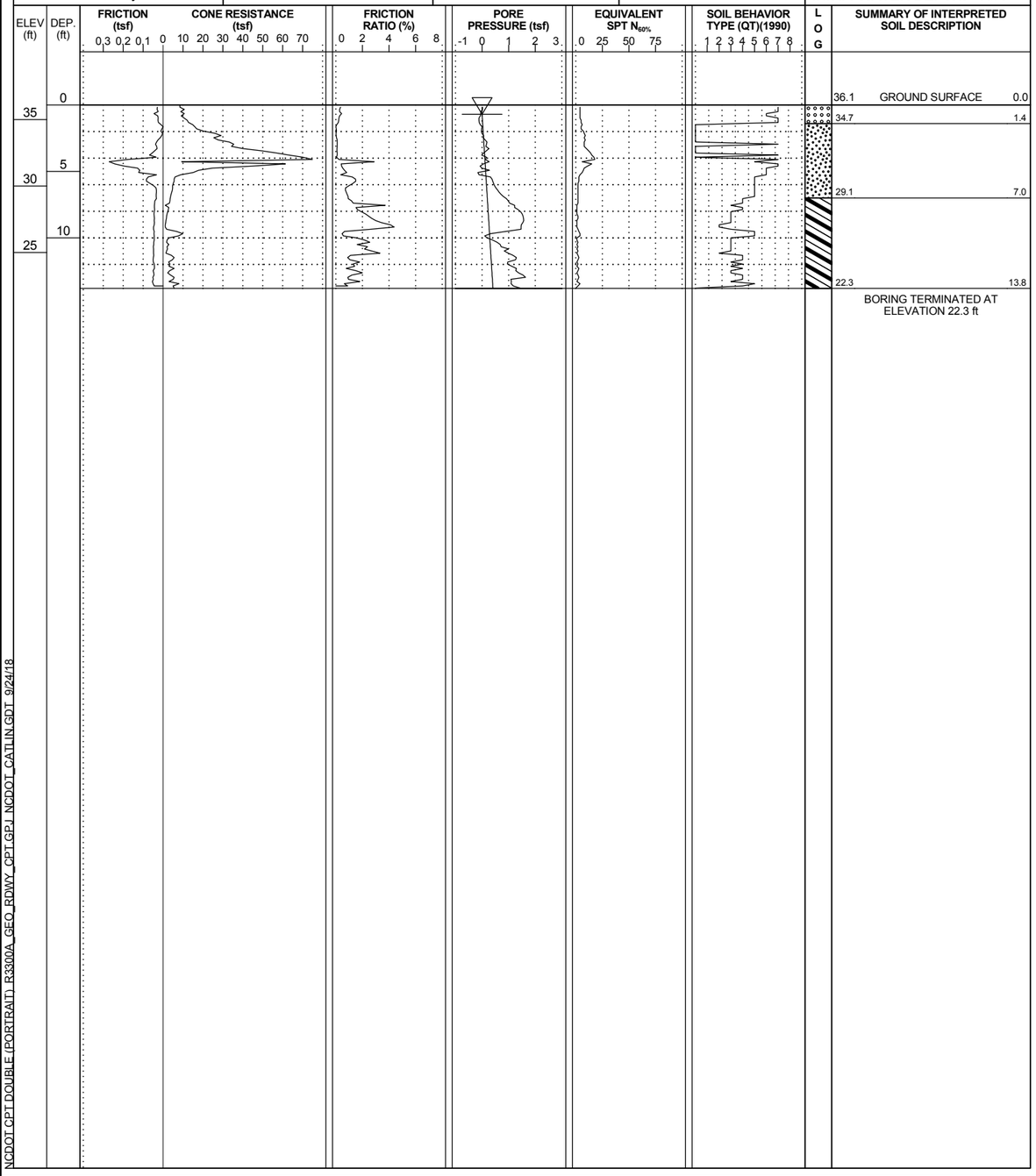
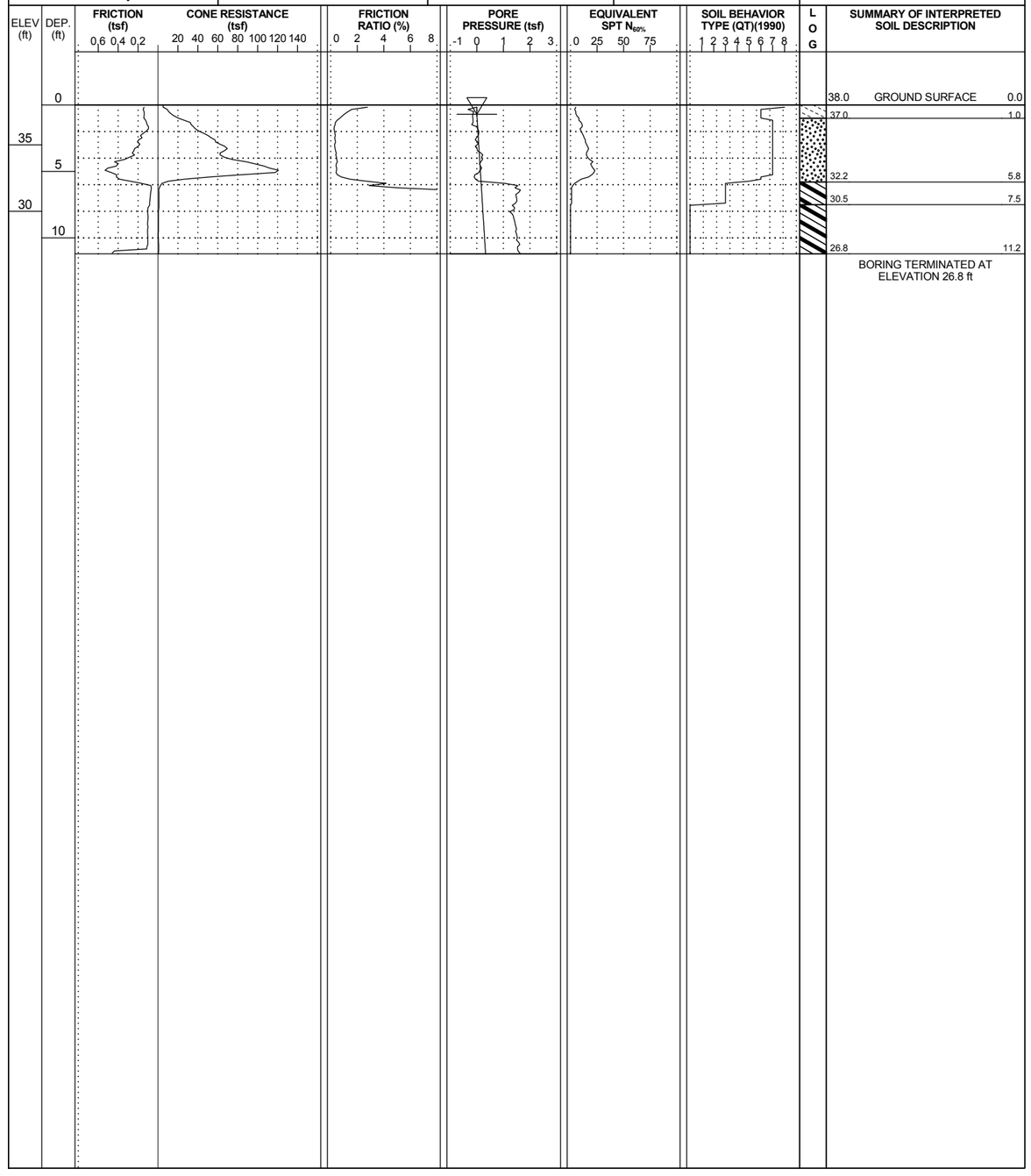
PROJECT REFERENCE NO.	SHEET
R-3300A	13

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_32250	**STATION:** 322+50	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.7
COLLAR ELEV.: 36.1 ft	**TOTAL DEPTH:** 13.8 ft	**NORTHING:** 214,039	**EASTING:** 2,359,806	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_32600	**STATION:** 326+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.7
COLLAR ELEV.: 38.0 ft	**TOTAL DEPTH:** 11.2 ft	**NORTHING:** 214,372	**EASTING:** 2,359,912	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
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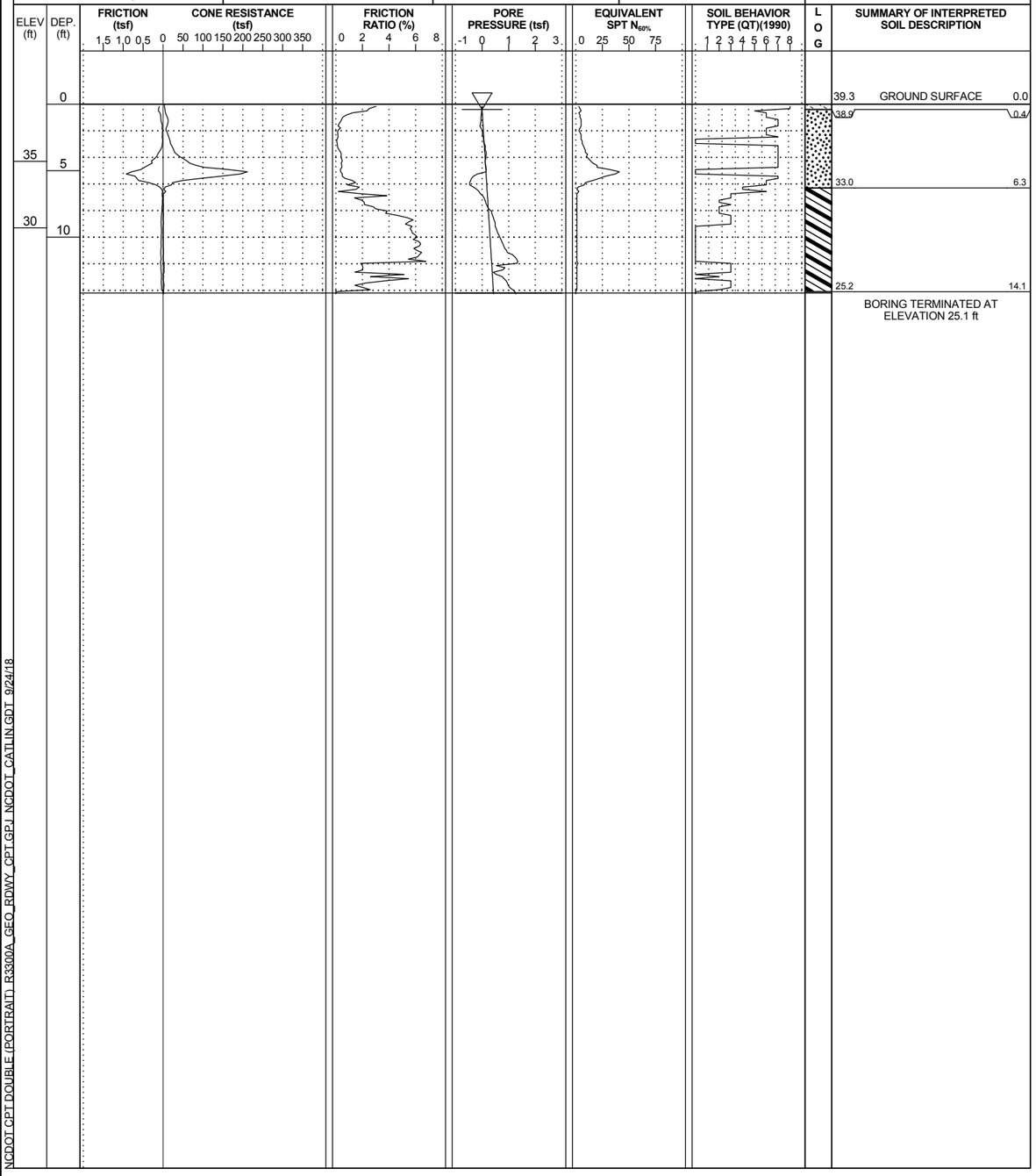
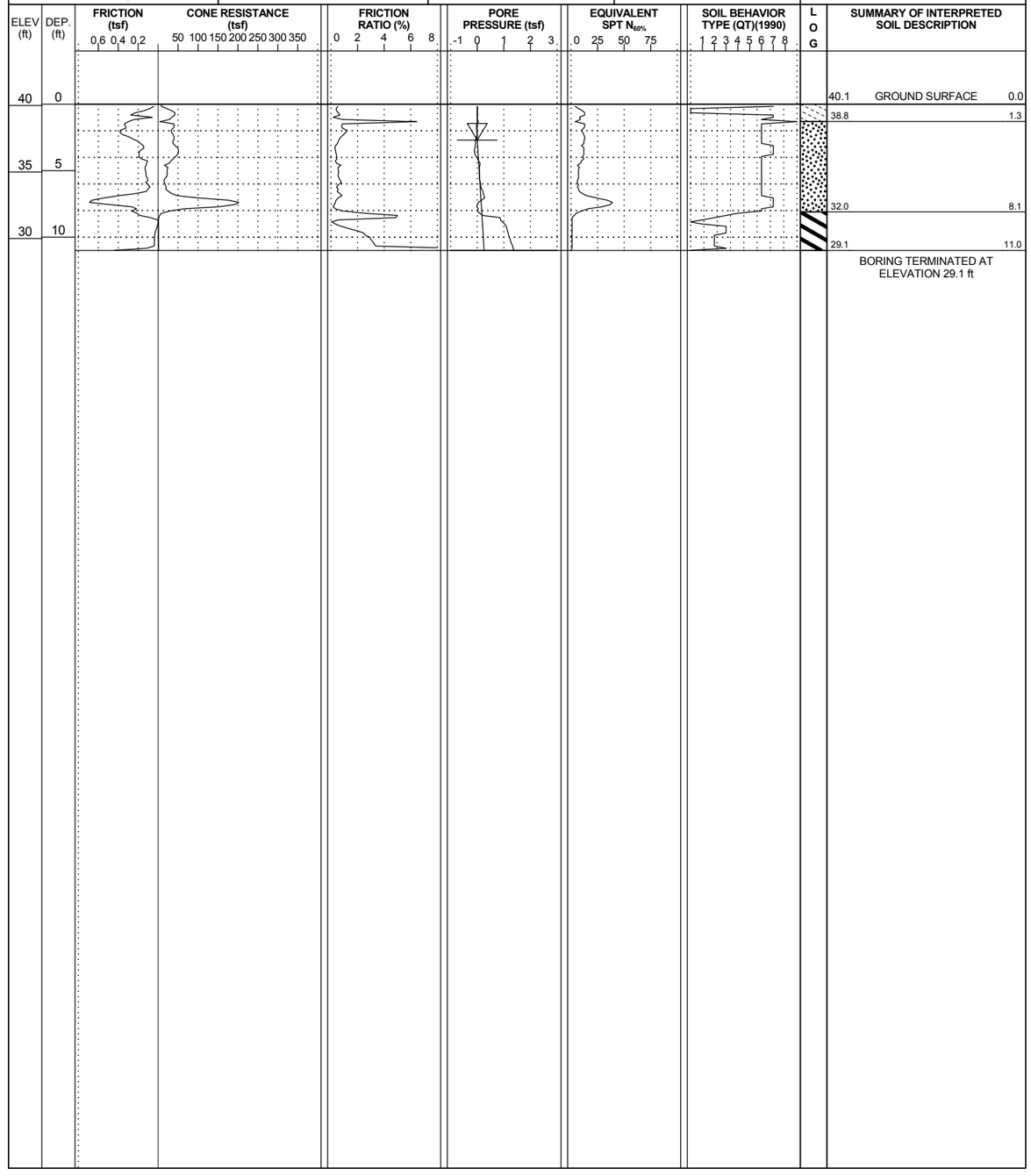
PROJECT REFERENCE NO.	SHEET
R-3300A	14

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_32800	**STATION:** 328+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.4
COLLAR ELEV.: 39.3 ft	**TOTAL DEPTH:** 14.2 ft	**NORTHING:** 214,566	**EASTING:** 2,359,963	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_33200	**STATION:** 332+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.7
COLLAR ELEV.: 40.1 ft	**TOTAL DEPTH:** 11.0 ft	**NORTHING:** 214,958	**EASTING:** 2,360,042	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



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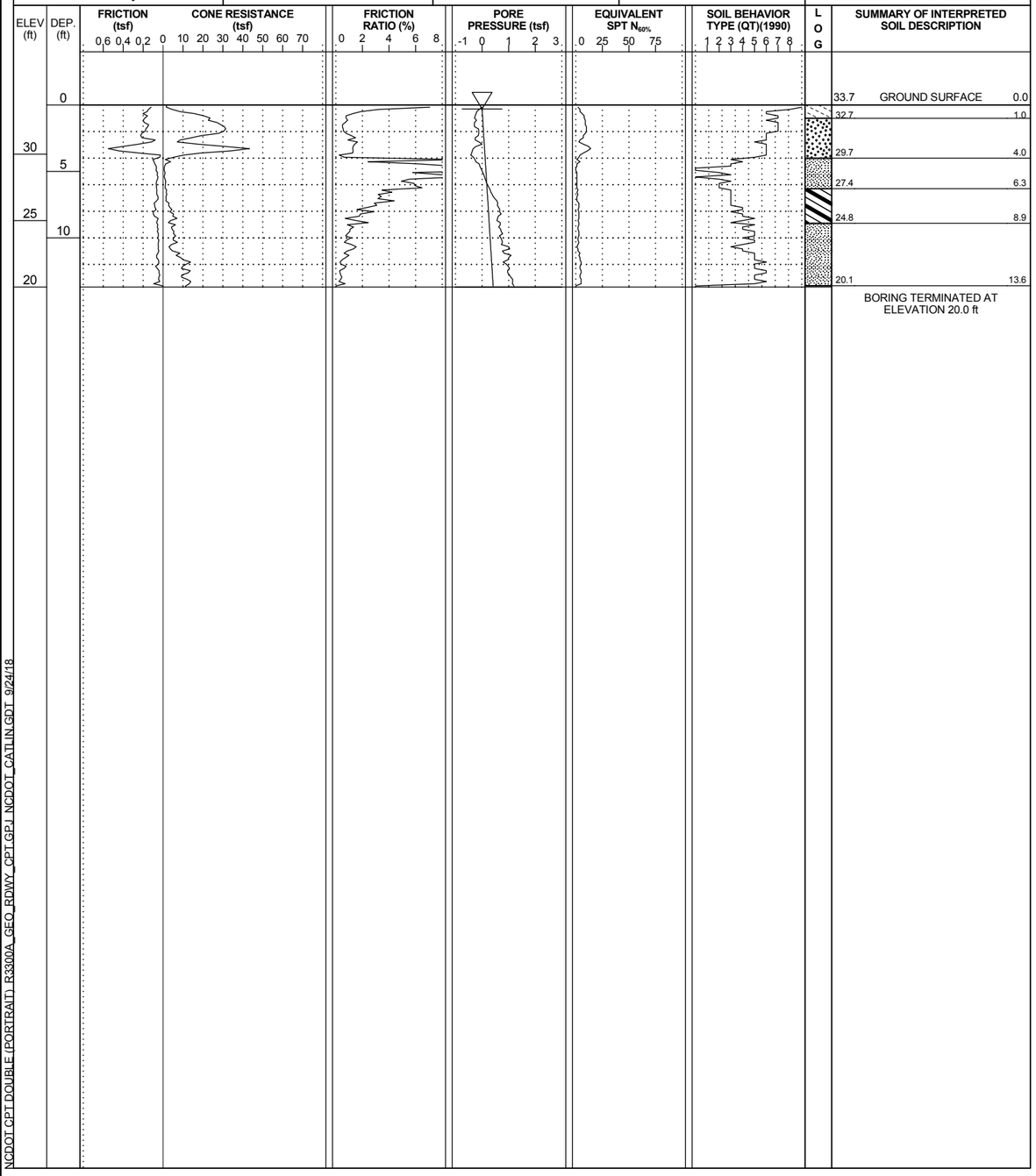
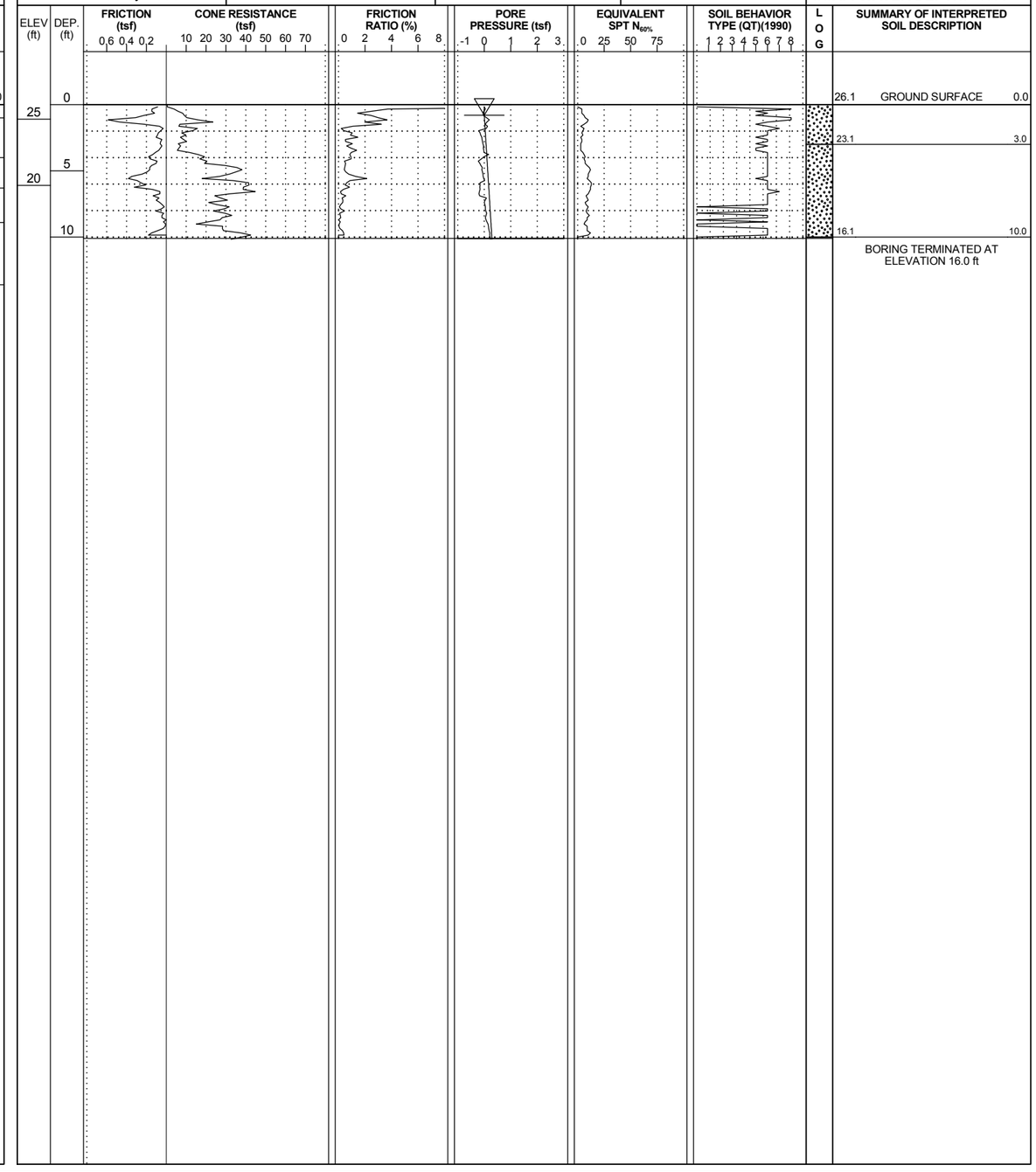
PROJECT REFERENCE NO.	SHEET
R-3300A	15

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_33800	**STATION:** 338+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.3
COLLAR ELEV.: 33.7 ft	**TOTAL DEPTH:** 13.7 ft	**NORTHING:** 215,554	**EASTING:** 2,360,104	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/11/18	**COMP. DATE:** 04/11/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_35200	**STATION:** 352+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.8
COLLAR ELEV.: 26.1 ft	**TOTAL DEPTH:** 10.1 ft	**NORTHING:** 216,954	**EASTING:** 2,360,130	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



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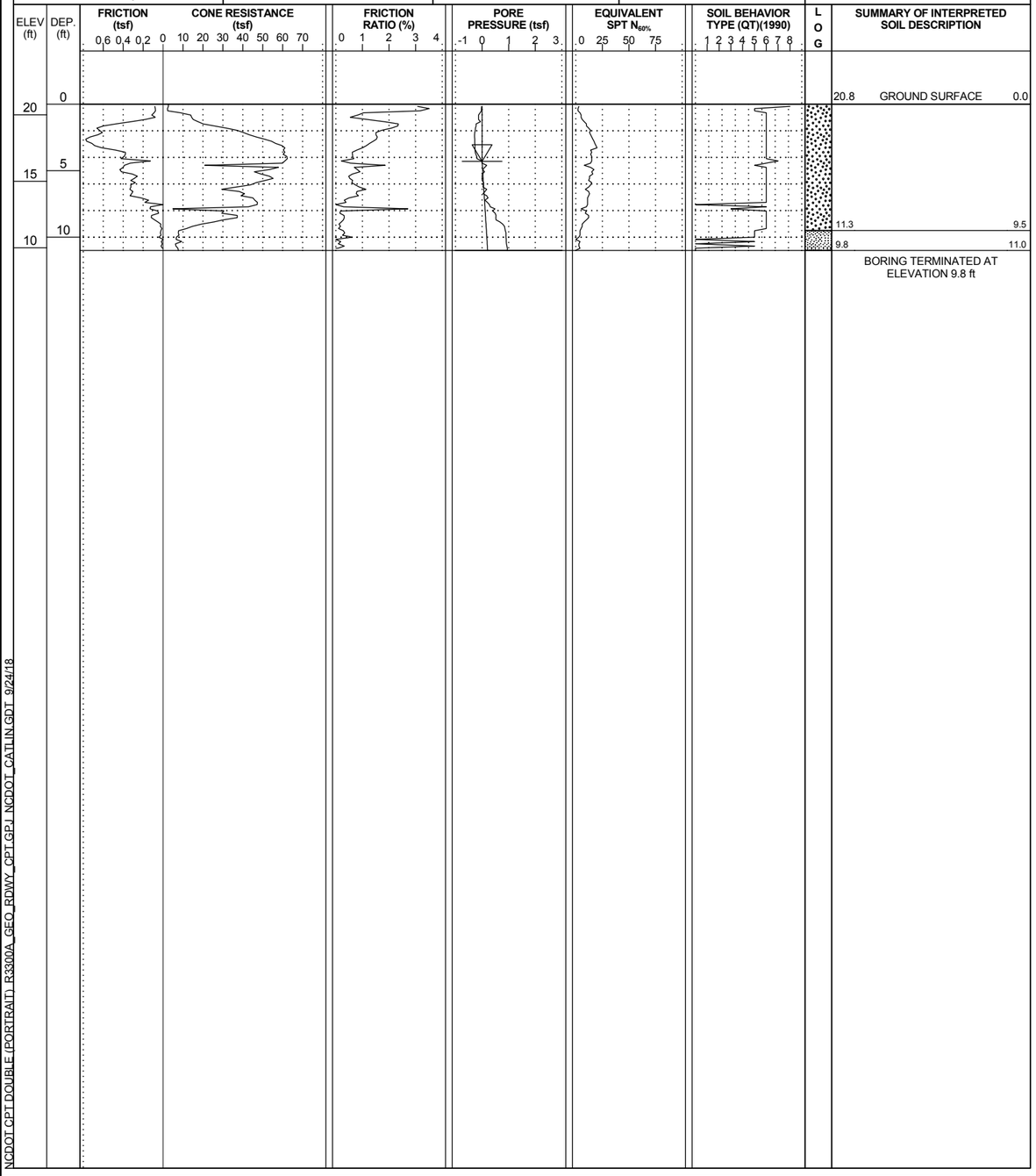
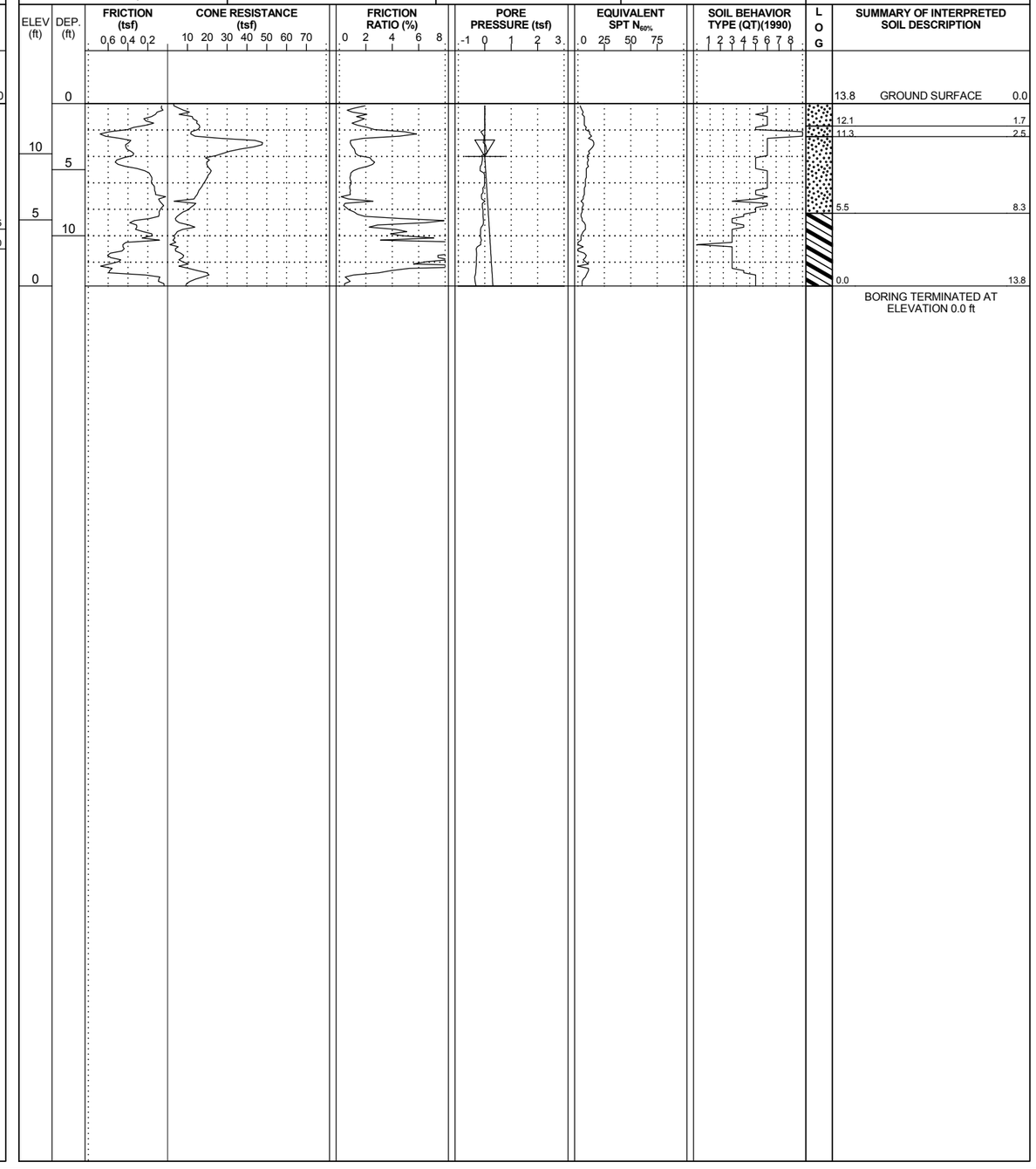
PROJECT REFERENCE NO.	SHEET
R-3300A	16

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_37400	**STATION:** 374+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 4.3
COLLAR ELEV.: 20.8 ft	**TOTAL DEPTH:** 11.0 ft	**NORTHING:** 219,106	**EASTING:** 2,360,541	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_38000	**STATION:** 380+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 4.0
COLLAR ELEV.: 13.8 ft	**TOTAL DEPTH:** 13.8 ft	**NORTHING:** 219,662	**EASTING:** 2,360,766	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



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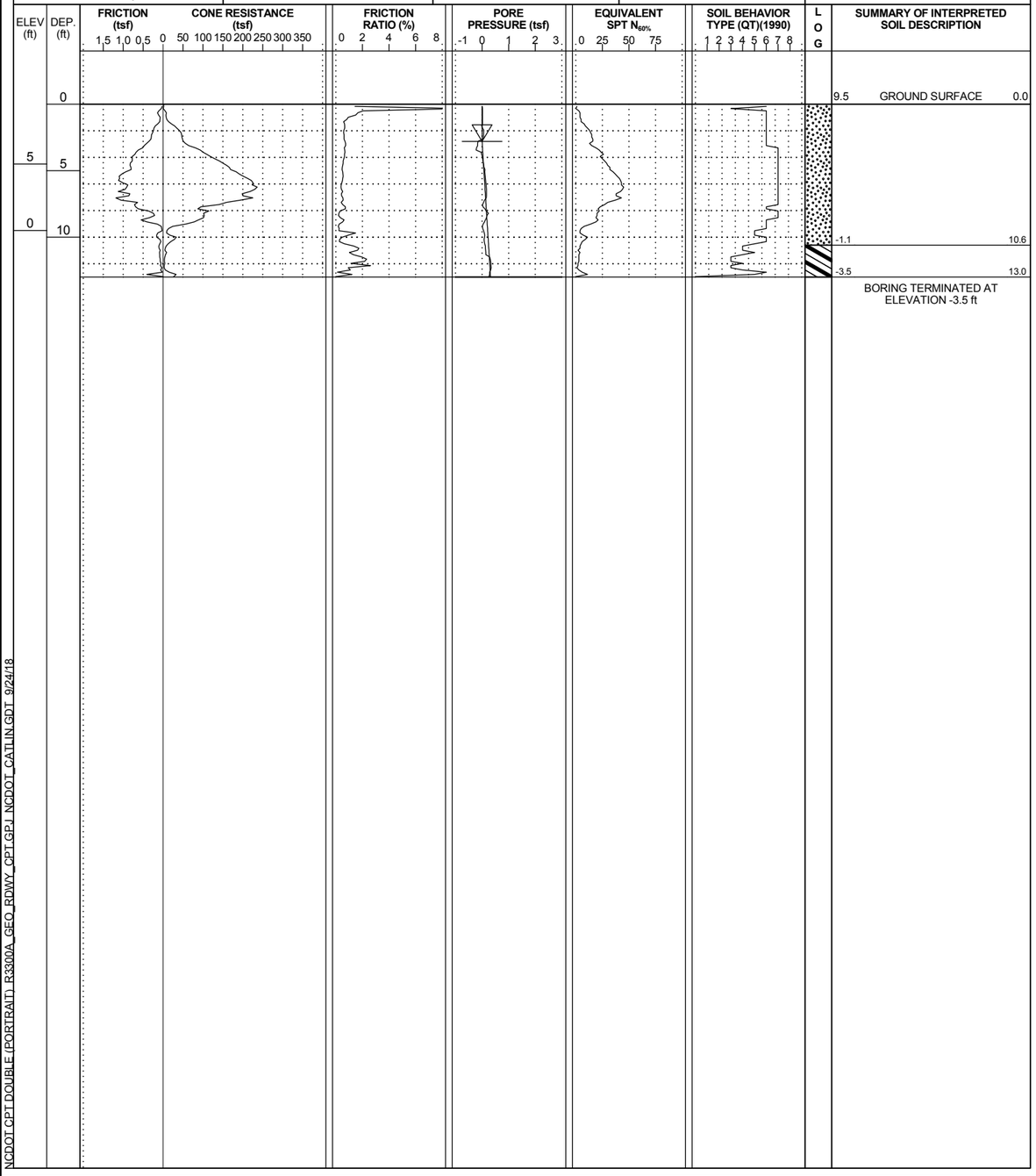
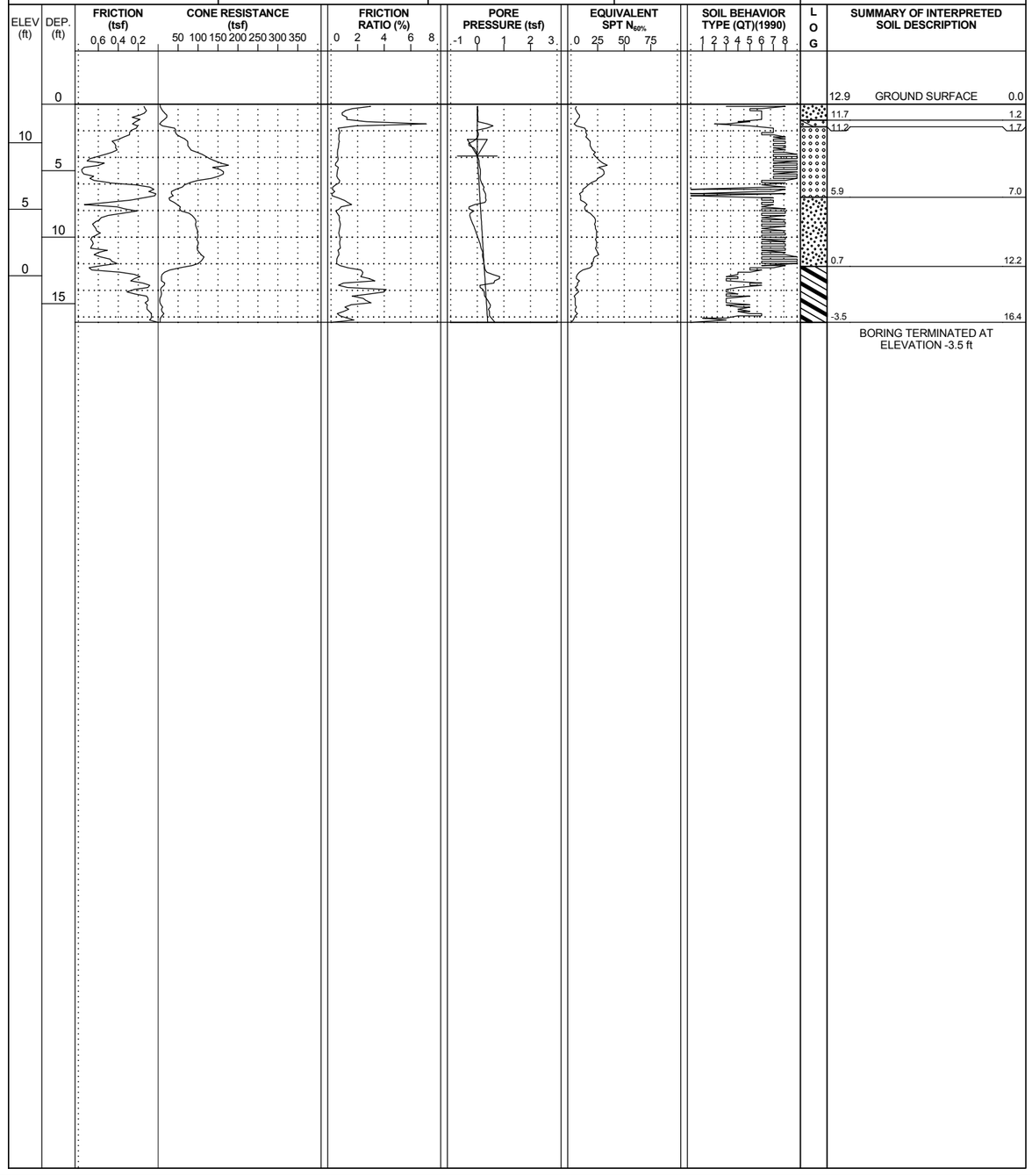
PROJECT REFERENCE NO.	SHEET
R-3300A	17

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_38200	**STATION:** 382+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.8
COLLAR ELEV.: 9.5 ft	**TOTAL DEPTH:** 13.0 ft	**NORTHING:** 219,843	**EASTING:** 2,360,851	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_38800	**STATION:** 388+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.9
COLLAR ELEV.: 12.9 ft	**TOTAL DEPTH:** 16.4 ft	**NORTHING:** 220,379	**EASTING:** 2,361,121	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/12/18	**COMP. DATE:** 03/12/18	**SURF. WATER DEPTH:** N/A



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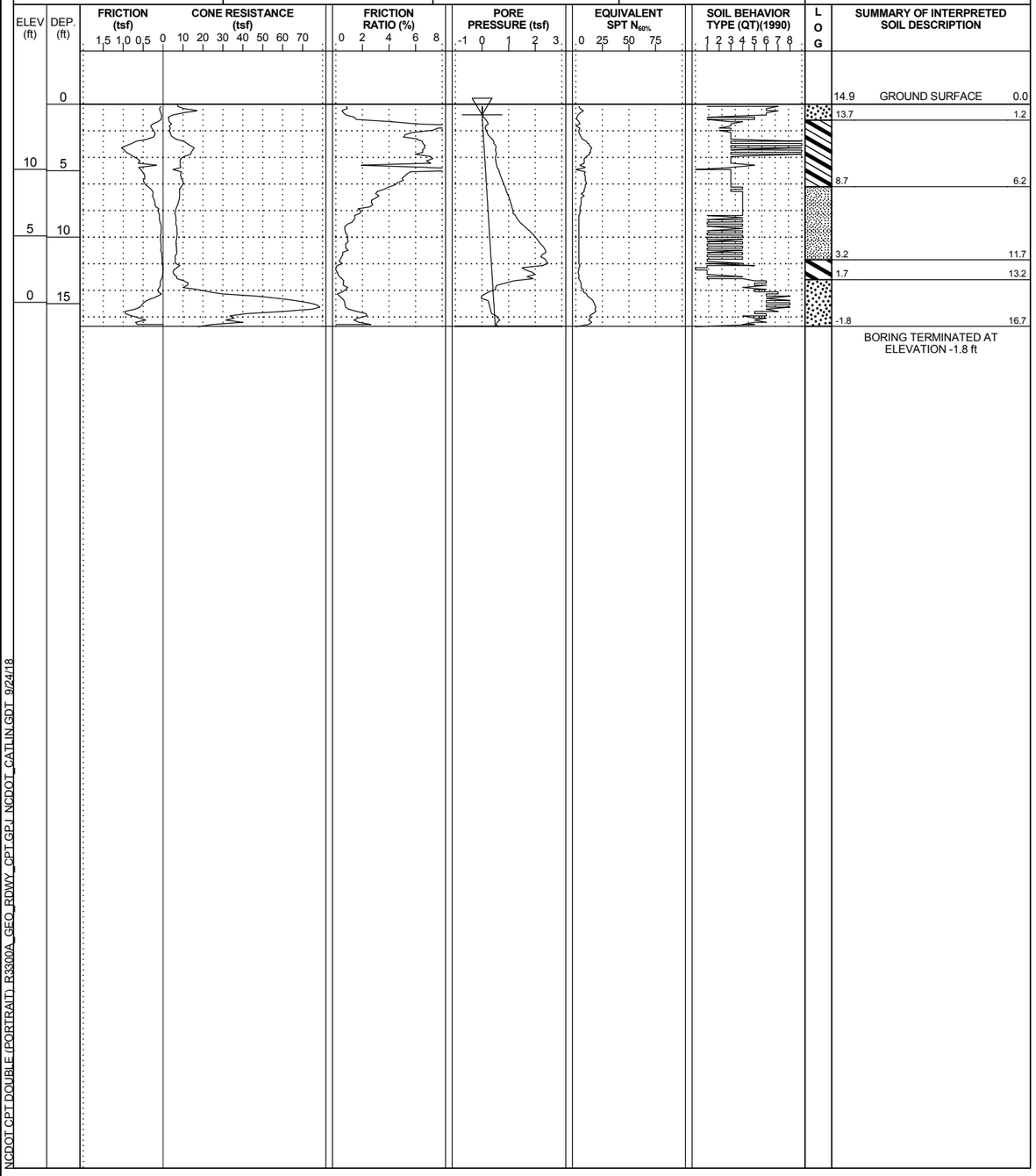
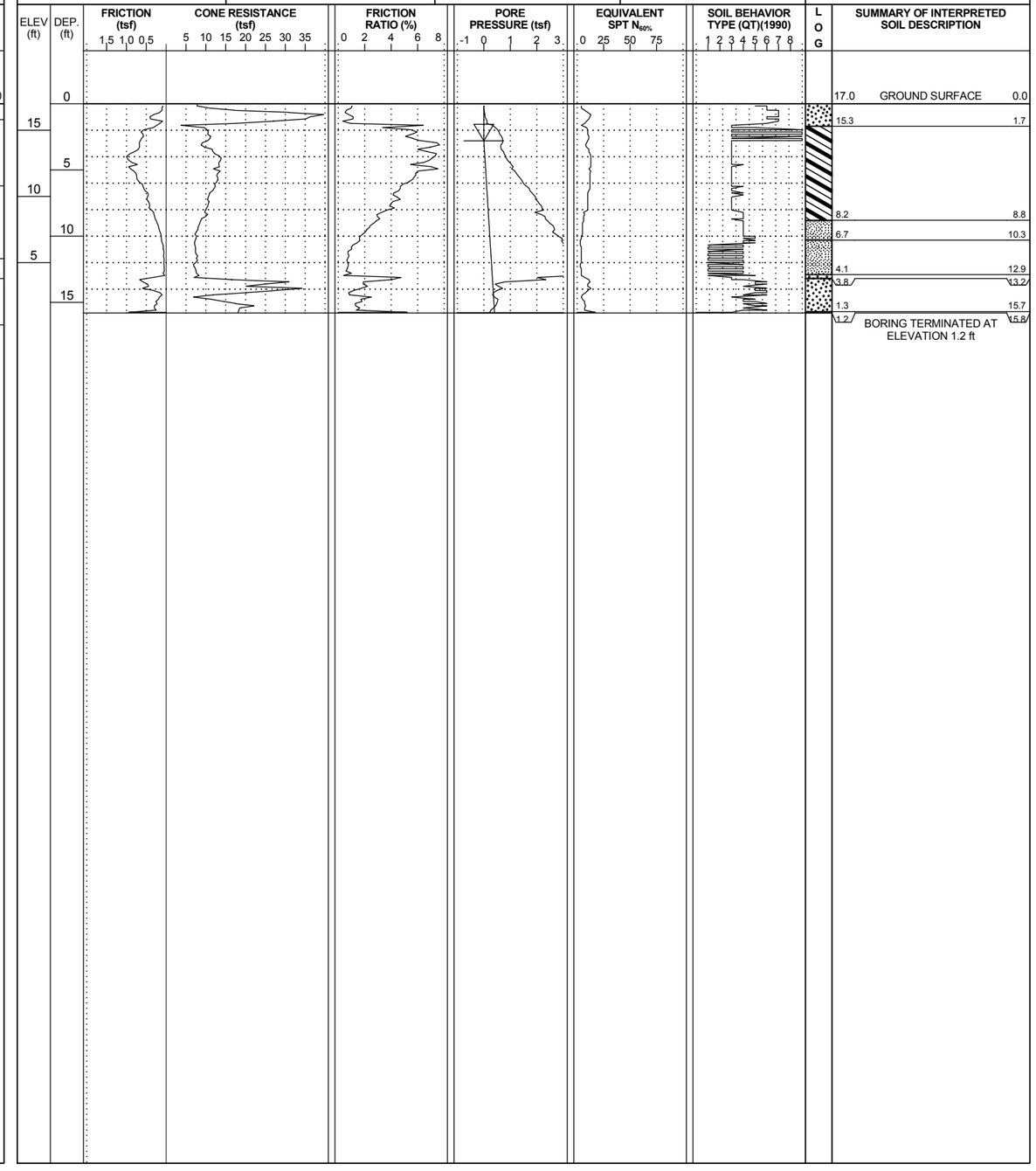
PROJECT REFERENCE NO.	SHEET
R-3300A	18

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_41600	**STATION:** 416+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.8
COLLAR ELEV.: 14.9 ft	**TOTAL DEPTH:** 16.7 ft	**NORTHING:** 222,980	**EASTING:** 2,362,149	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/12/18	**COMP. DATE:** 03/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_41800	**STATION:** 418+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.8
COLLAR ELEV.: 17.0 ft	**TOTAL DEPTH:** 15.8 ft	**NORTHING:** 223,168	**EASTING:** 2,362,218	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/12/18	**COMP. DATE:** 03/12/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

217059 CATLIN Engineers and Scientists
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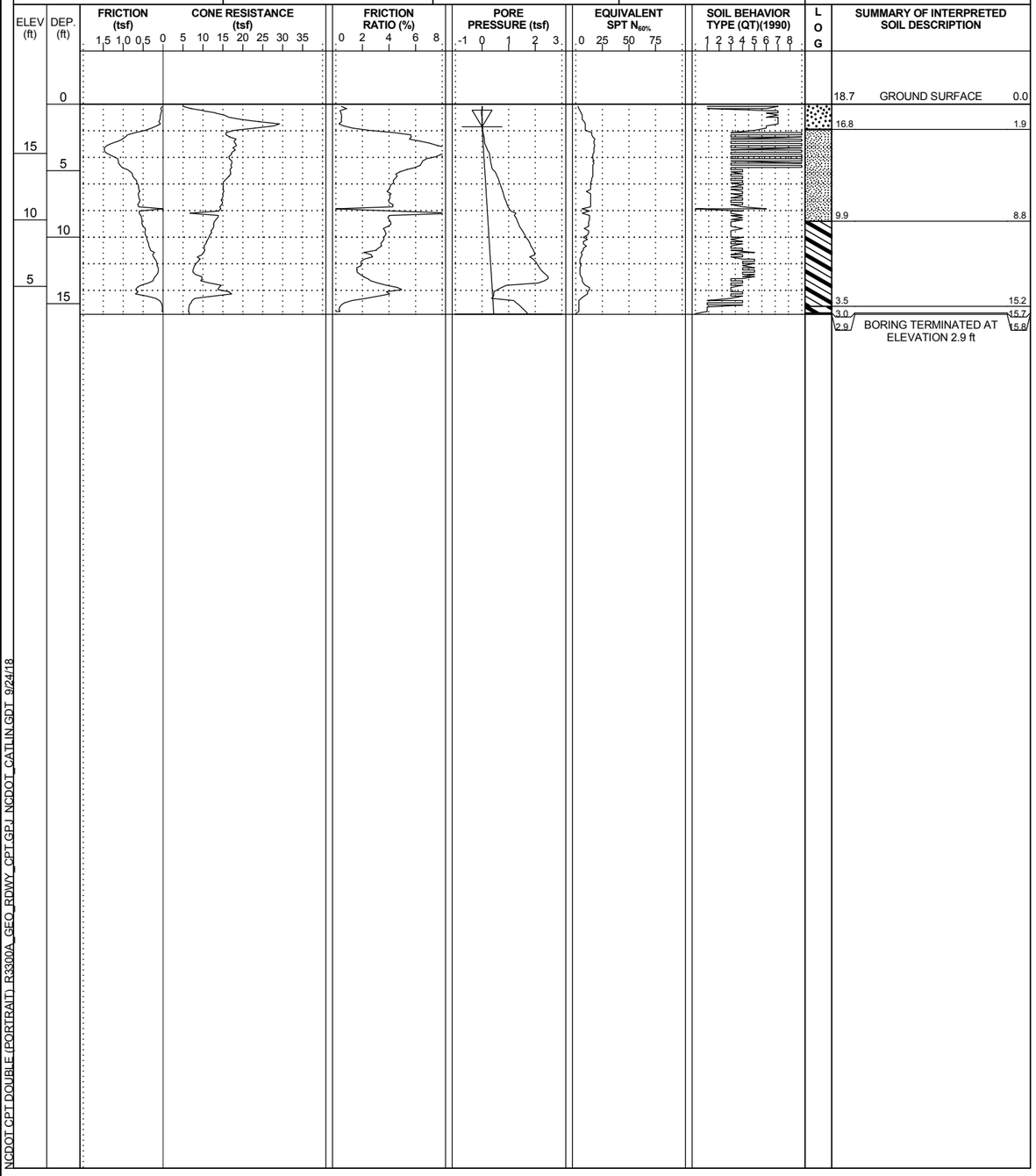
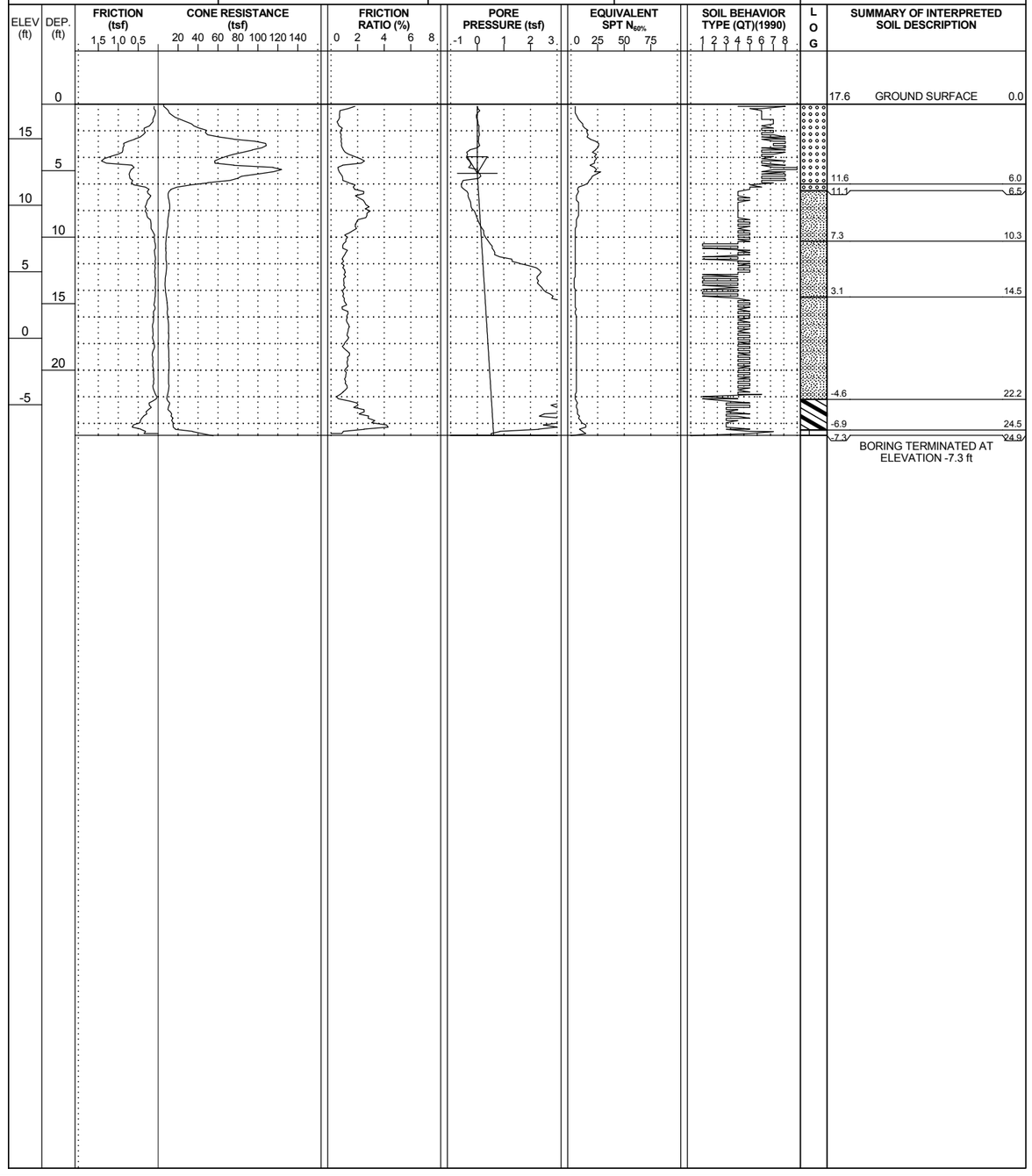
Corporate Licensure No. for Engineering Services C-0585

PROJECT REFERENCE NO.	SHEET
R-3300A	19

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_42400	**STATION:** 424+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.7
COLLAR ELEV.: 18.7 ft	**TOTAL DEPTH:** 15.8 ft	**NORTHING:** 223,713	**EASTING:** 2,362,468	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/12/18	**COMP. DATE:** 03/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_43000	**STATION:** 430+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 5.2
COLLAR ELEV.: 17.6 ft	**TOTAL DEPTH:** 24.9 ft	**NORTHING:** 224,227	**EASTING:** 2,362,777	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/12/18	**COMP. DATE:** 03/12/18	**SURF. WATER DEPTH:** N/A



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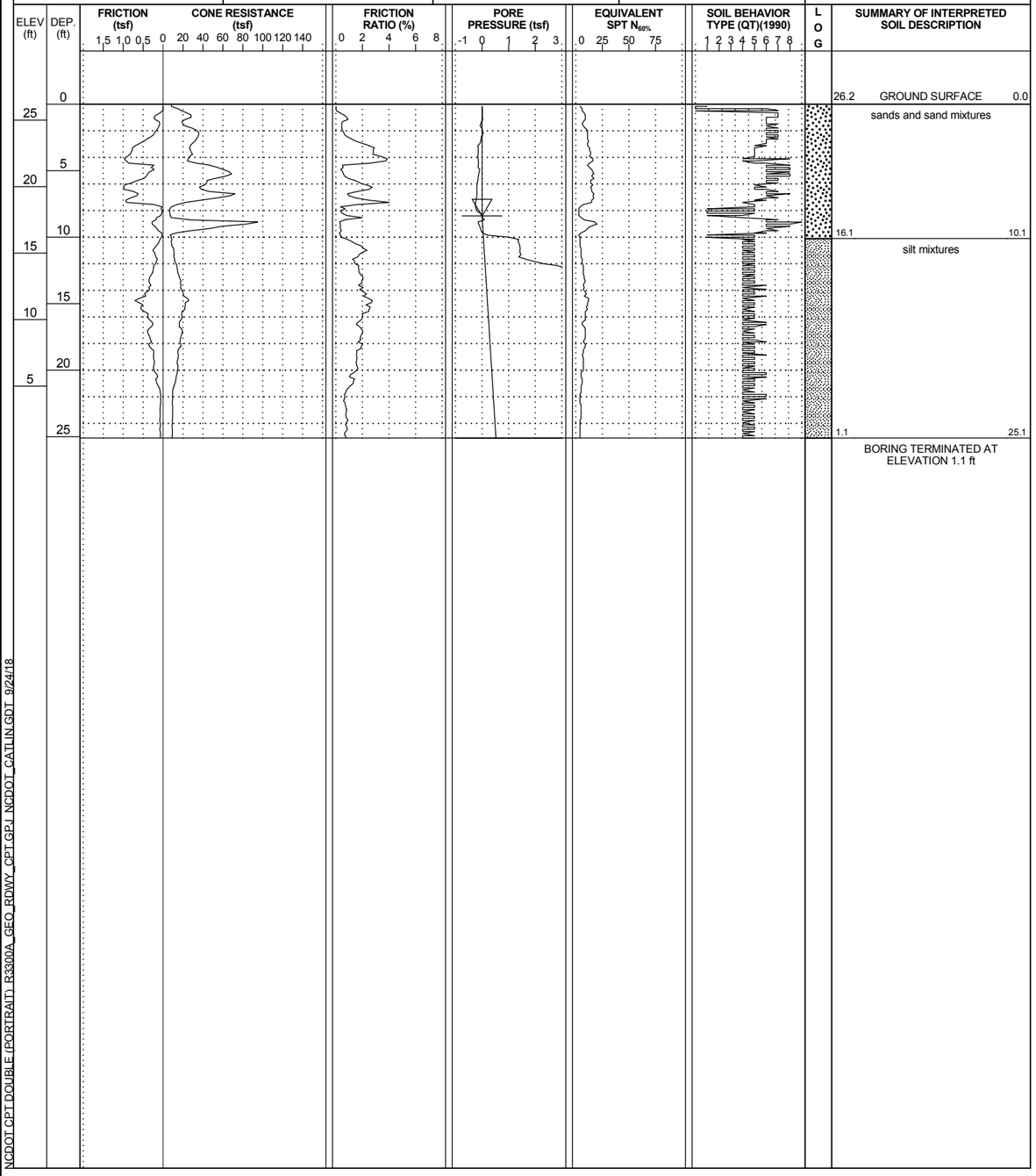
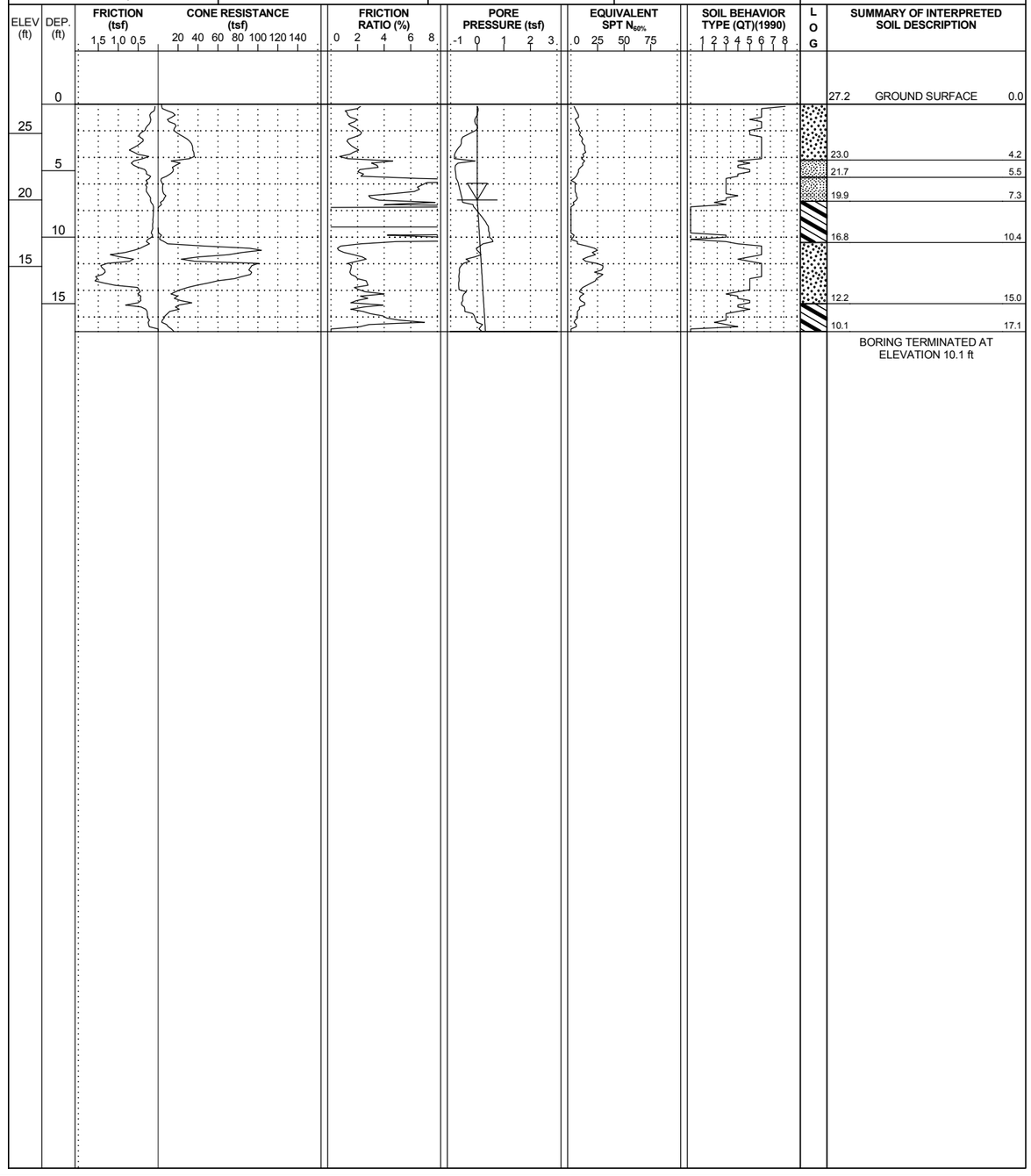
PROJECT REFERENCE NO.	SHEET
R-3300A	20

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_43400	**STATION:** 434+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 8.4
COLLAR ELEV.: 26.2 ft	**TOTAL DEPTH:** 25.1 ft	**NORTHING:** 224,548	**EASTING:** 2,363,015	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSG0867
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 03/13/18	**COMP. DATE:** 03/13/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_43600	**STATION:** 436+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 7.2
COLLAR ELEV.: 27.2 ft	**TOTAL DEPTH:** 17.1 ft	**NORTHING:** 224,702	**EASTING:** 2,363,143	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



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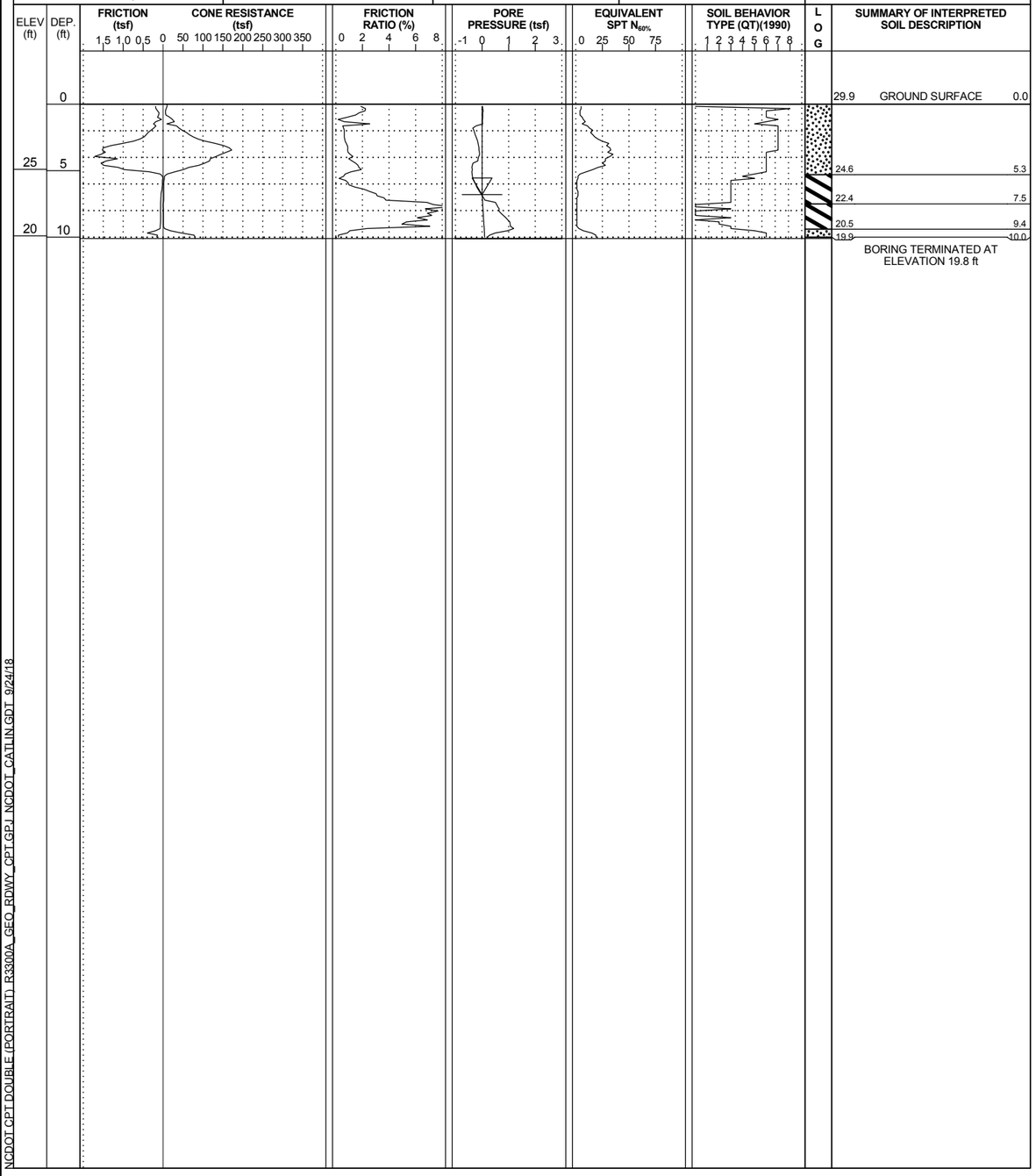
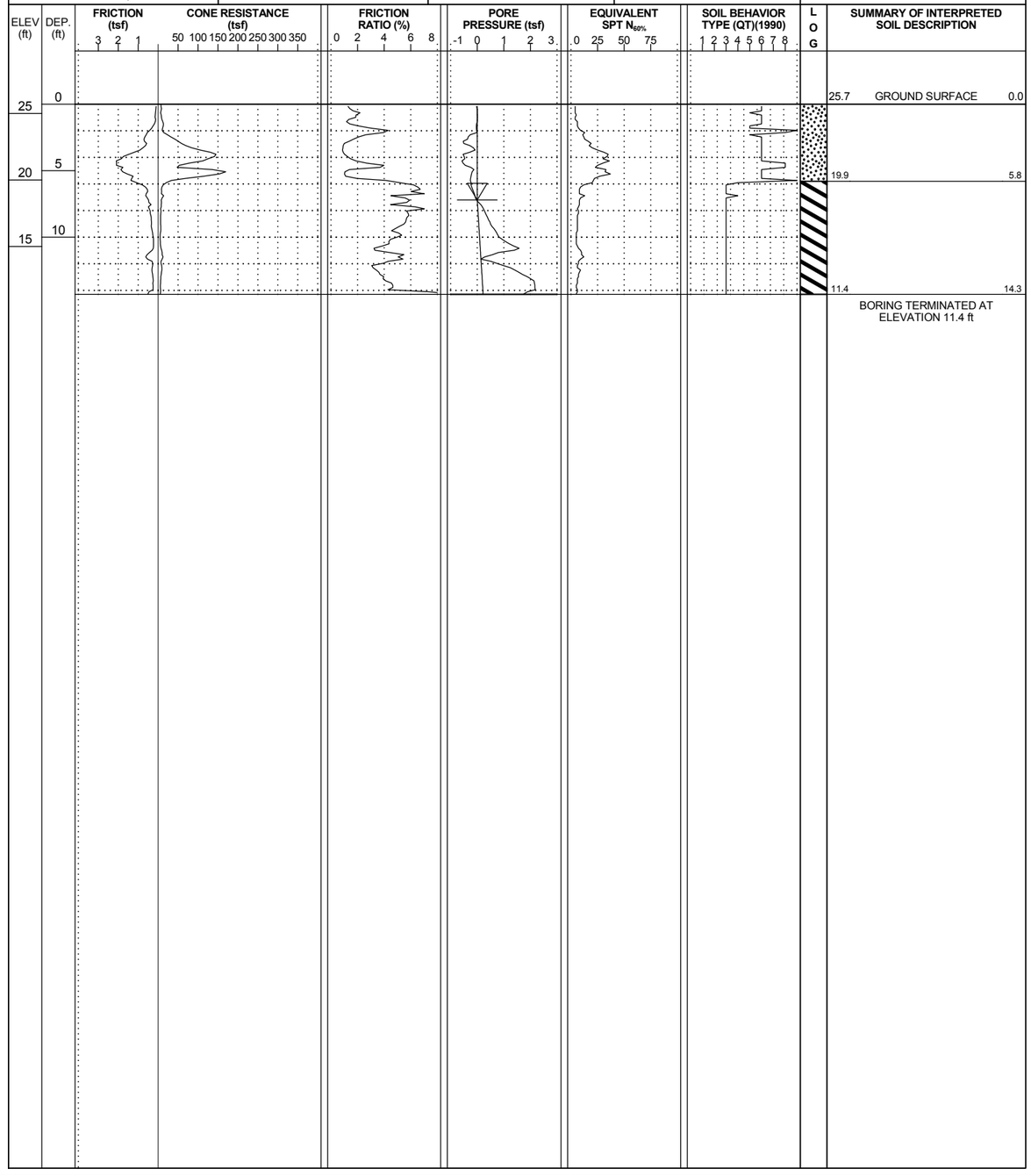
PROJECT REFERENCE NO.	SHEET
R-3300A	21

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_44000	**STATION:** 440+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 6.8
COLLAR ELEV.: 29.9 ft	**TOTAL DEPTH:** 10.1 ft	**NORTHING:** 224,994	**EASTING:** 2,363,416	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_44200	**STATION:** 442+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 7.2
COLLAR ELEV.: 25.7 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 225,132	**EASTING:** 2,363,561	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Corey Futral	**OPERATOR:** CATLIN	**START DATE:** 04/12/18	**COMP. DATE:** 04/12/18	**SURF. WATER DEPTH:** N/A



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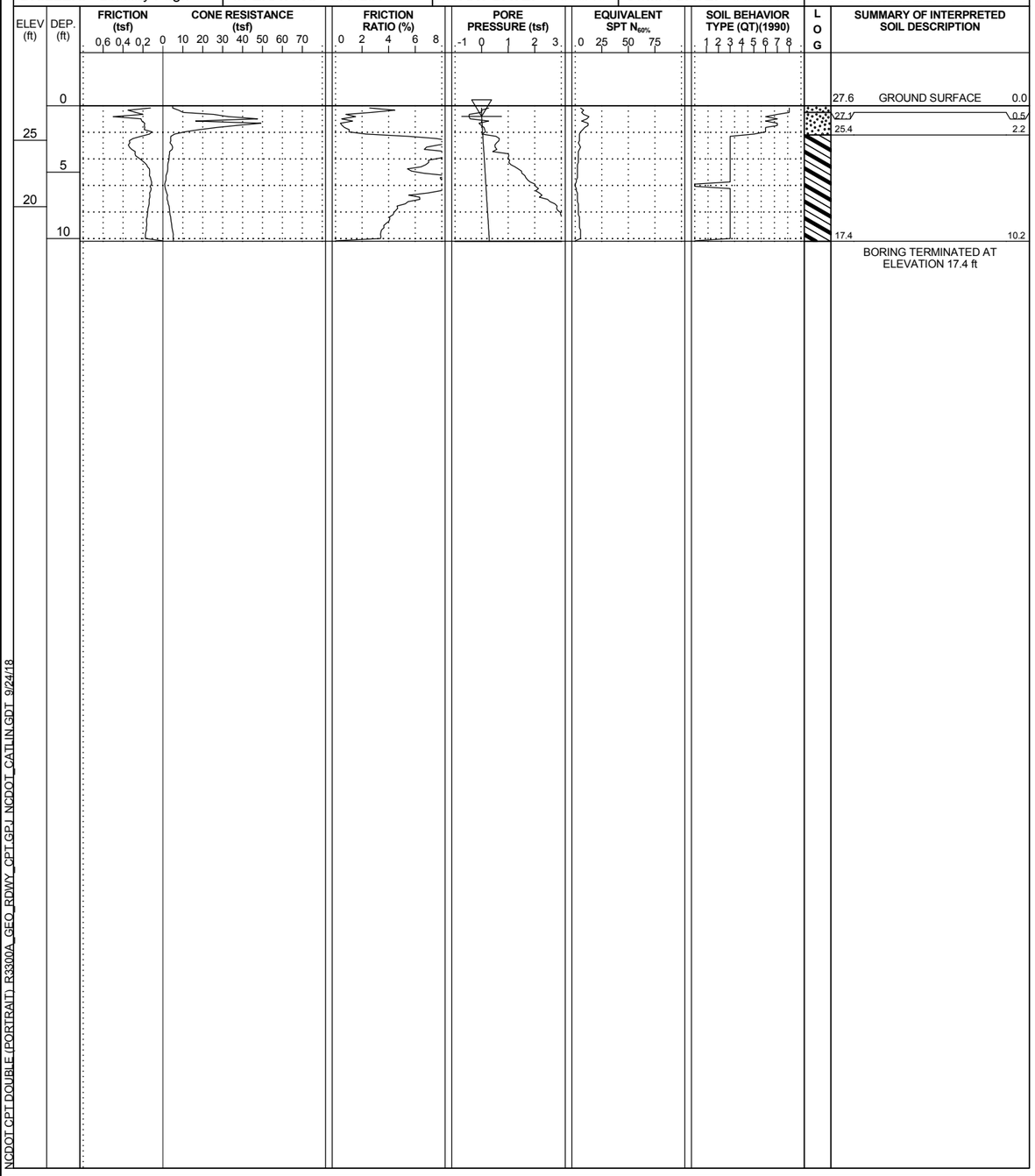
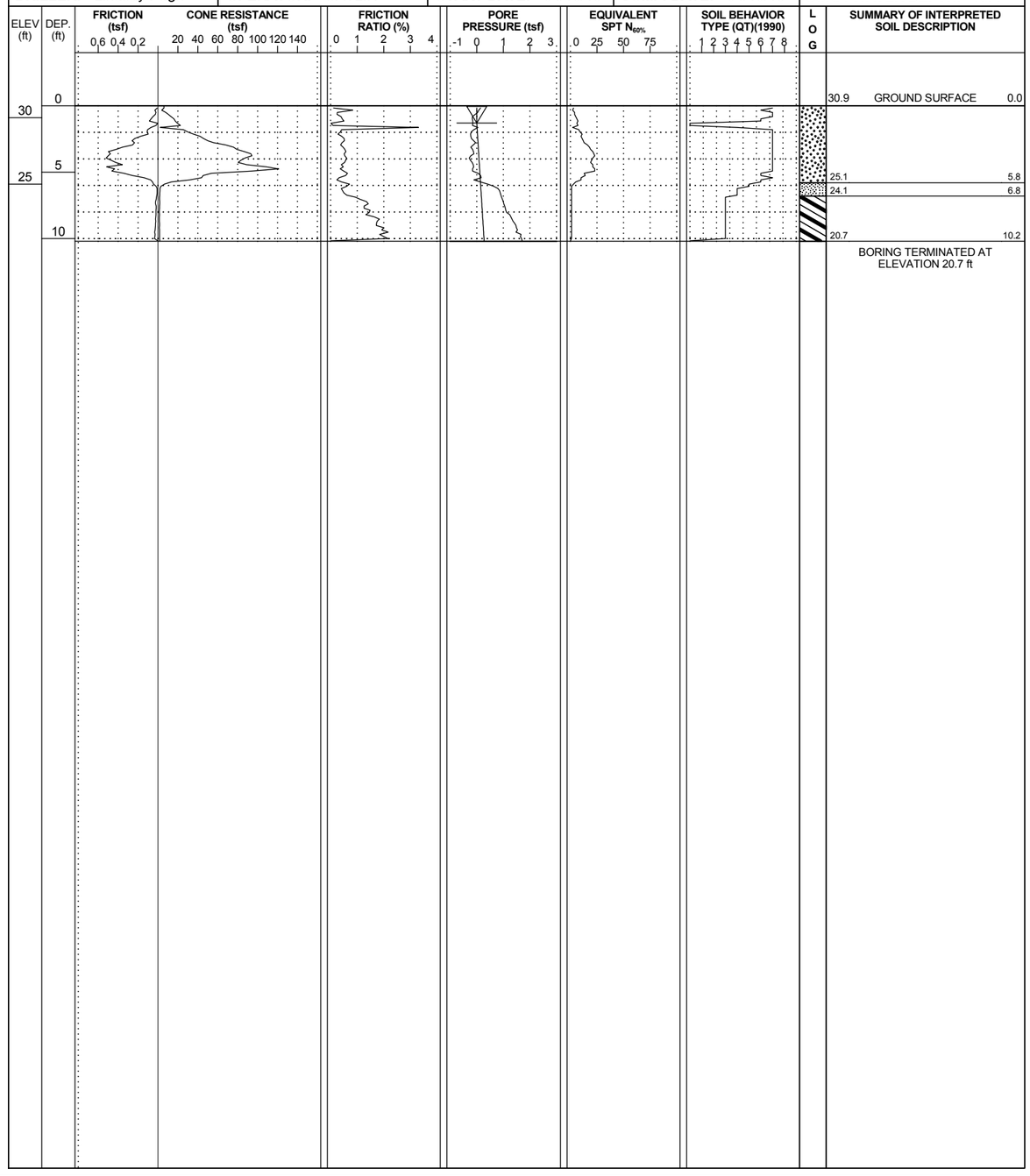
PROJECT REFERENCE NO.	SHEET
R-3300A	22

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_44600	**STATION:** 446+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.8
COLLAR ELEV.: 27.6 ft	**TOTAL DEPTH:** 10.2 ft	**NORTHING:** 225,392	**EASTING:** 2,363,865	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/16/18	**COMP. DATE:** 04/16/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_44800	**STATION:** 448+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.3
COLLAR ELEV.: 30.9 ft	**TOTAL DEPTH:** 10.2 ft	**NORTHING:** 225,513	**EASTING:** 2,364,024	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/16/18	**COMP. DATE:** 04/16/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
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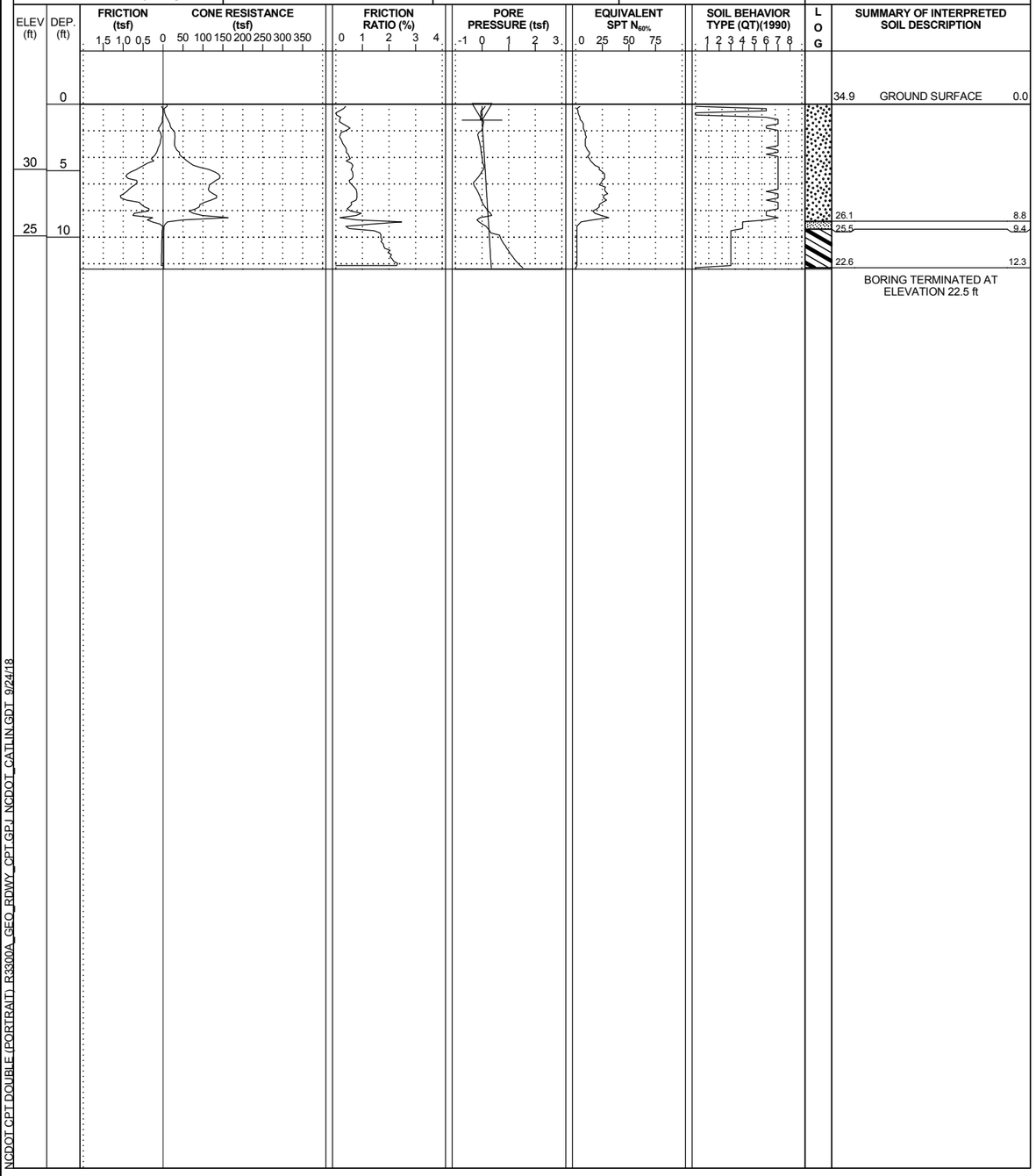
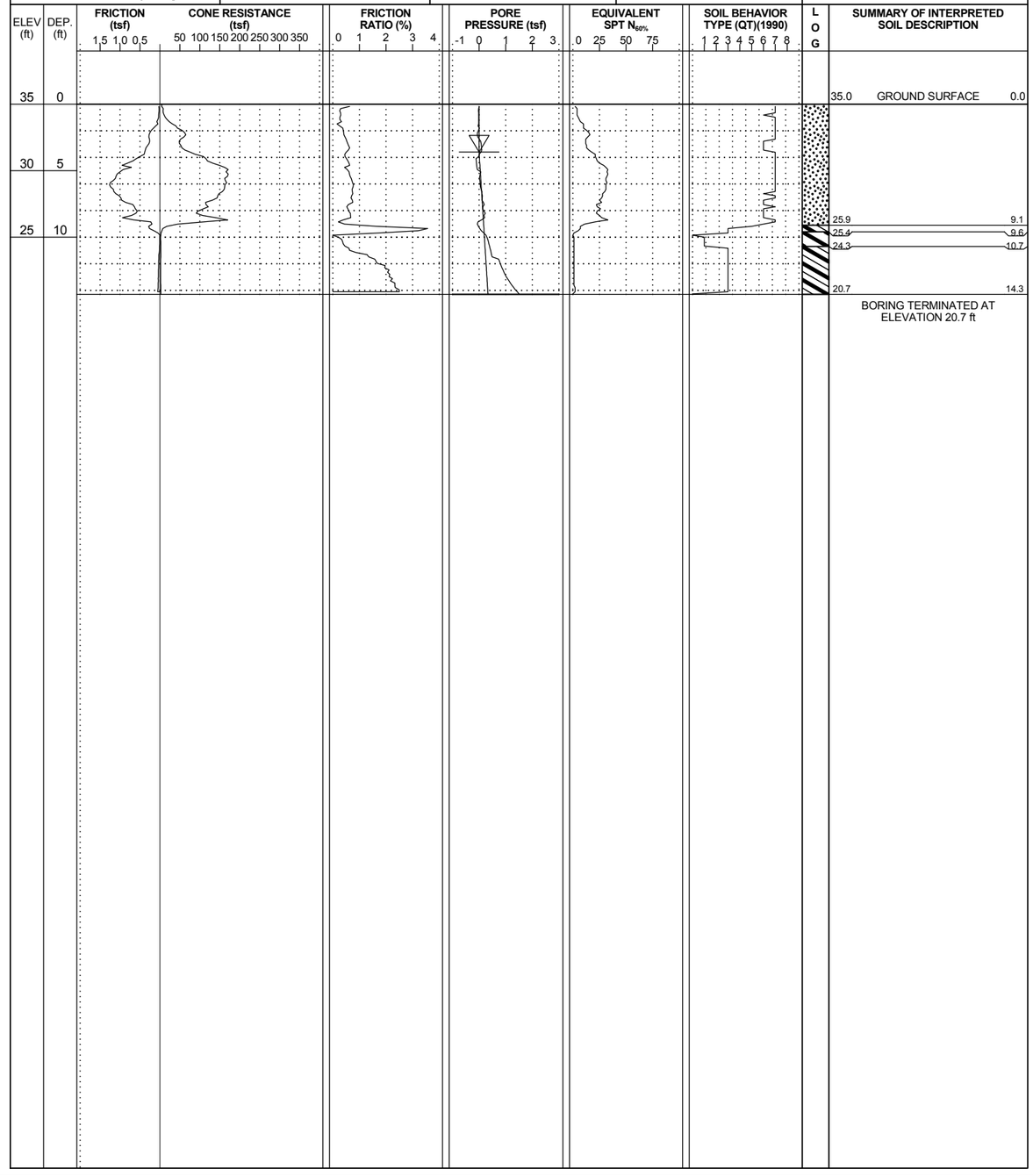
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	23

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_45200	**STATION:** 452+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.2
COLLAR ELEV.: 34.9 ft	**TOTAL DEPTH:** 12.4 ft	**NORTHING:** 225,736	**EASTING:** 2,364,356	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/16/18	**COMP. DATE:** 04/16/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_45400	**STATION:** 454+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.6
COLLAR ELEV.: 35.0 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 225,841	**EASTING:** 2,364,526	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/16/18	**COMP. DATE:** 04/16/18	**SURF. WATER DEPTH:** N/A



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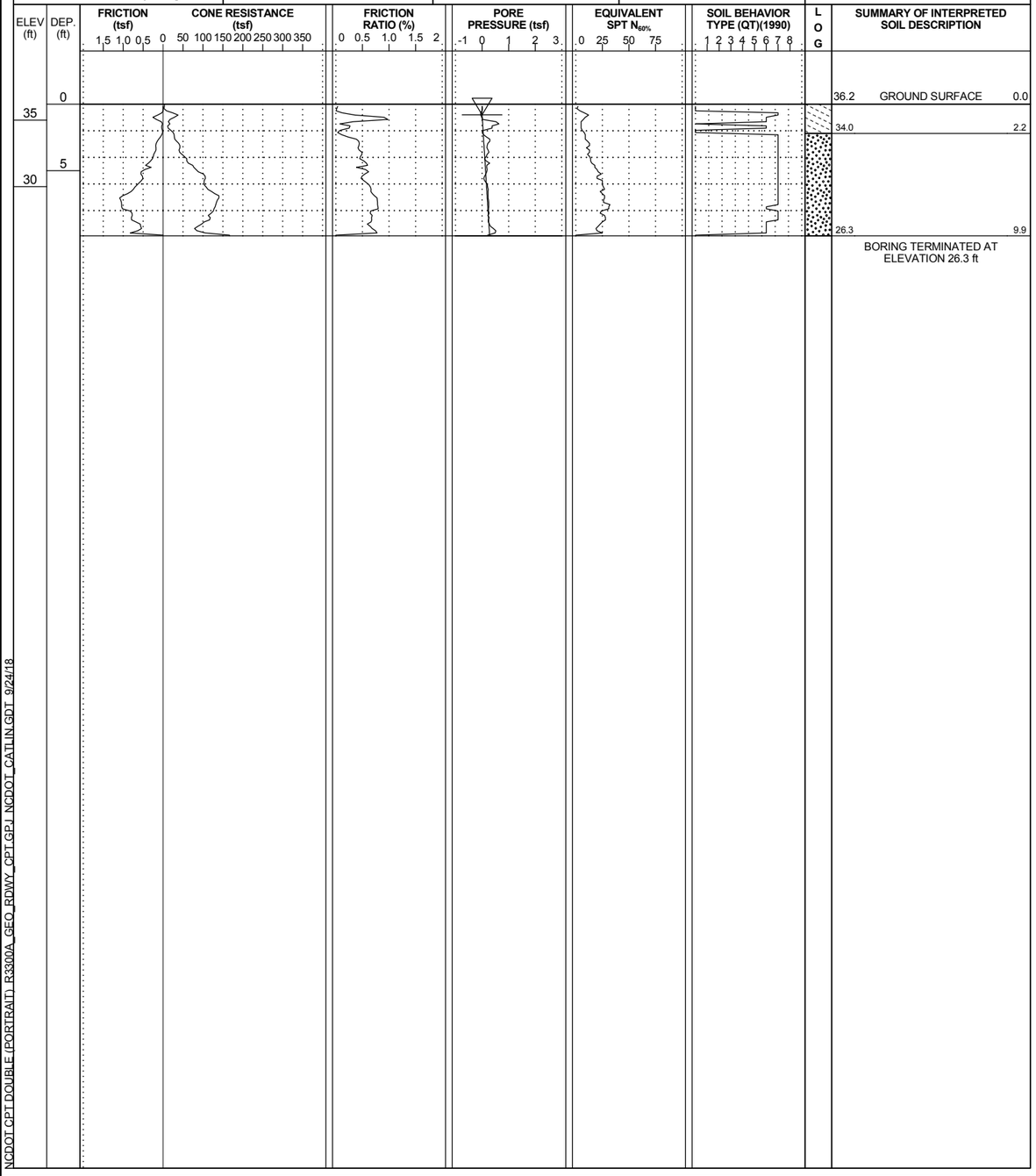
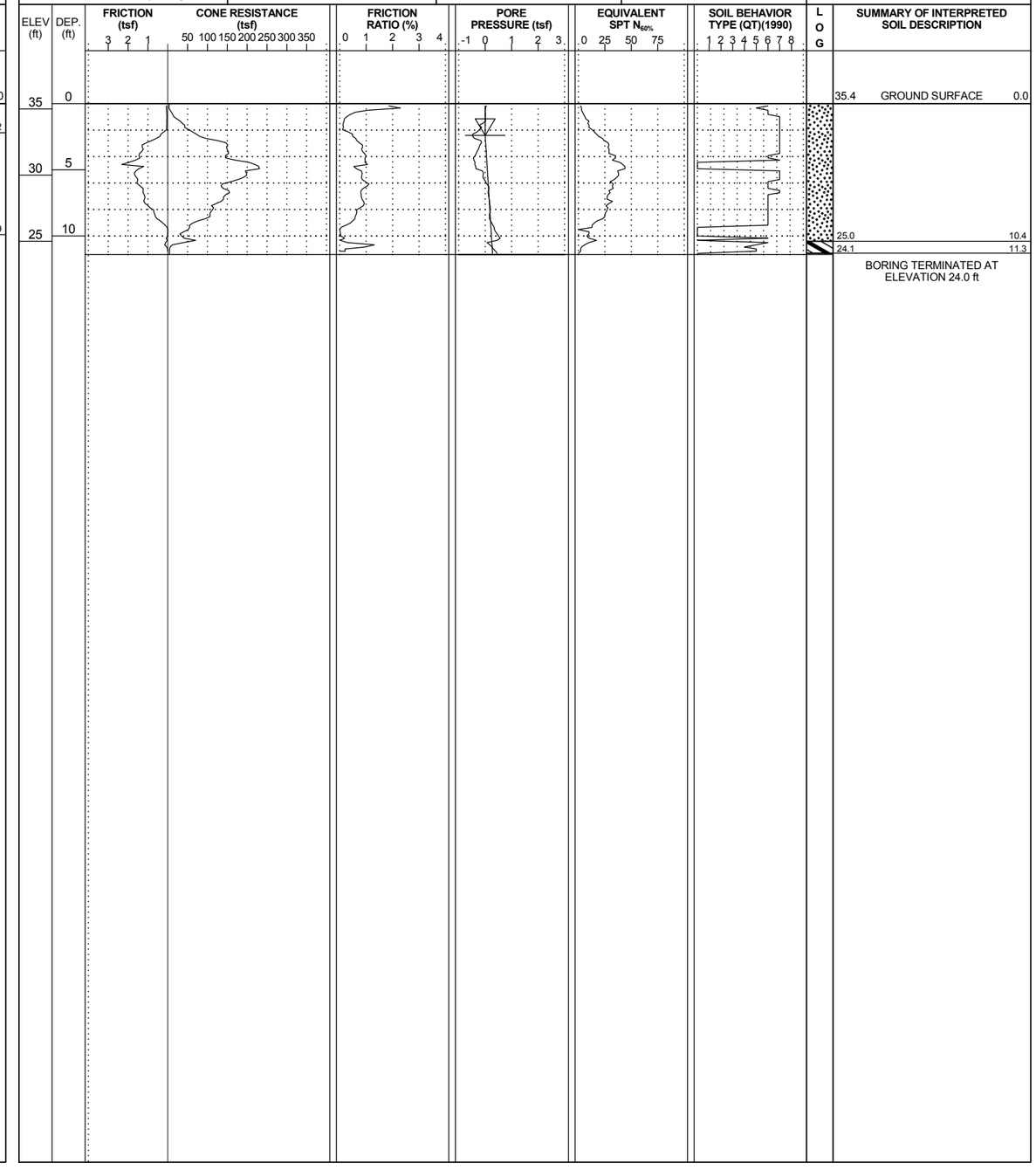
PROJECT REFERENCE NO.	SHEET
R-3300A	24

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_45800	**STATION:** 458+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.8
COLLAR ELEV.: 36.2 ft	**TOTAL DEPTH:** 9.9 ft	**NORTHING:** 226,052	**EASTING:** 2,364,866	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/16/18	**COMP. DATE:** 04/16/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_46400	**STATION:** 464+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.4
COLLAR ELEV.: 35.4 ft	**TOTAL DEPTH:** 11.4 ft	**NORTHING:** 226,367	**EASTING:** 2,365,377	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



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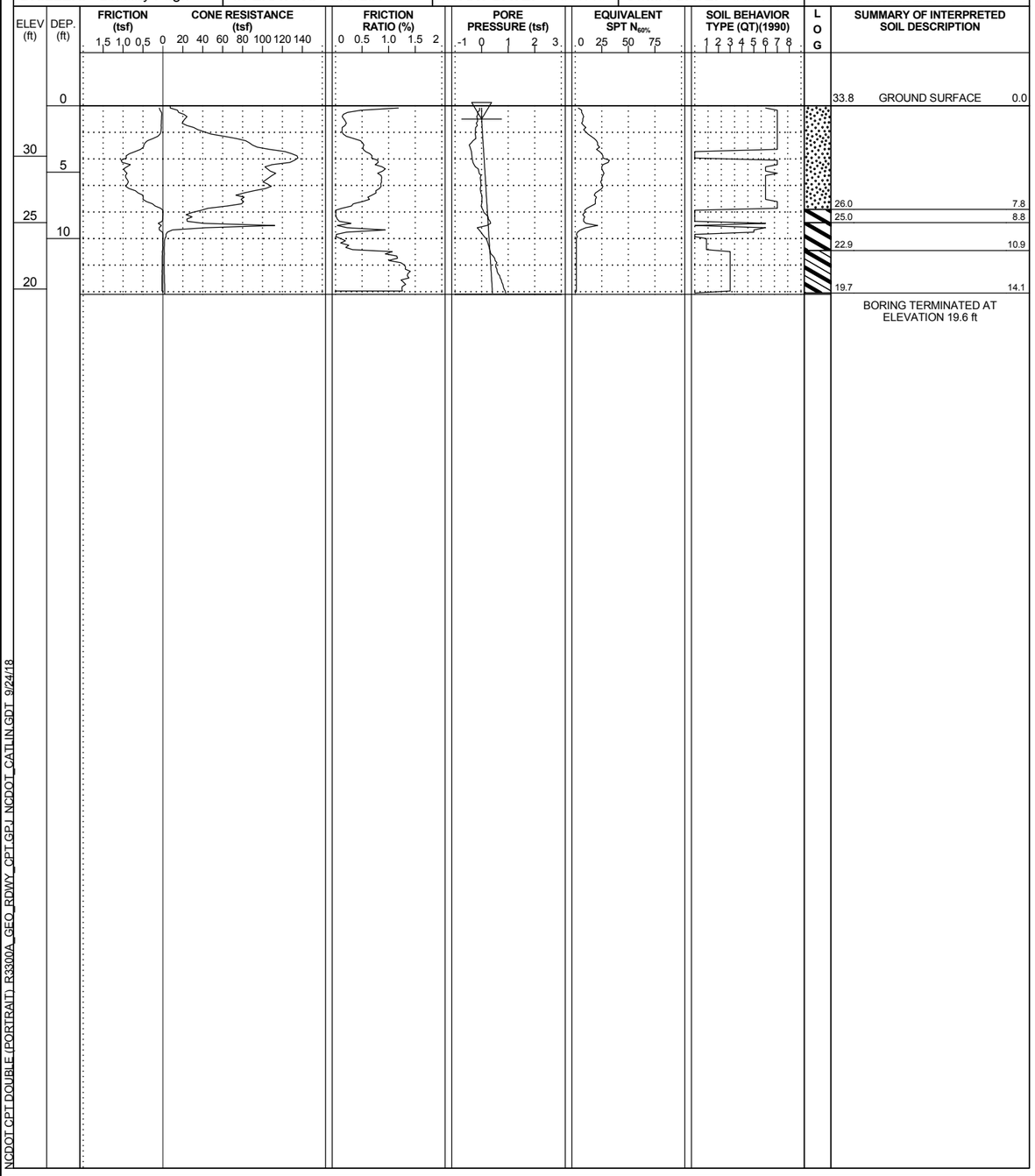
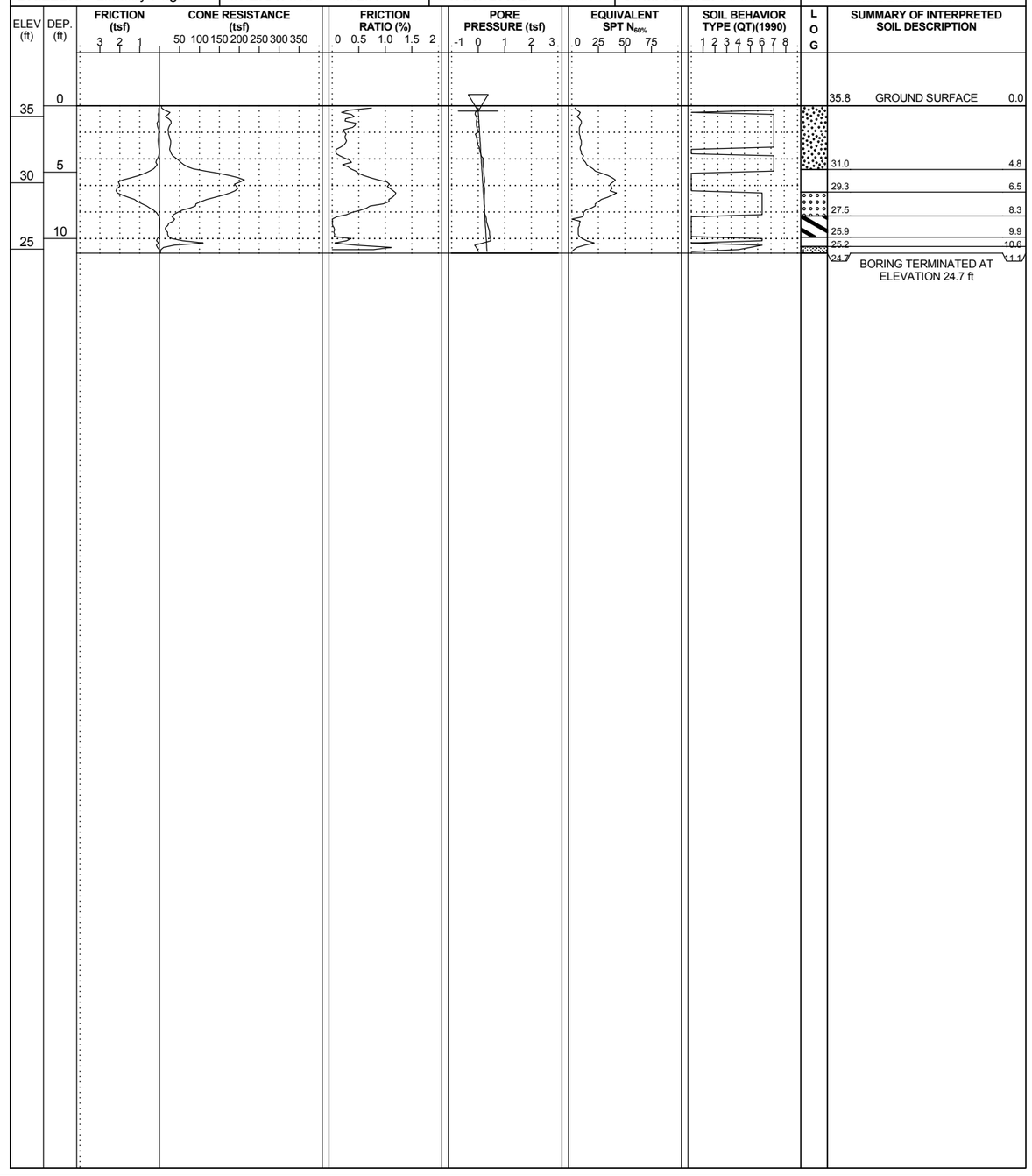
PROJECT REFERENCE NO.	SHEET
R-3300A	25

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_46600	**STATION:** 466+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.0
COLLAR ELEV.: 33.8 ft	**TOTAL DEPTH:** 14.2 ft	**NORTHING:** 226,472	**EASTING:** 2,365,547	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_47000	**STATION:** 470+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.4
COLLAR ELEV.: 35.8 ft	**TOTAL DEPTH:** 11.1 ft	**NORTHING:** 226,682	**EASTING:** 2,365,887	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



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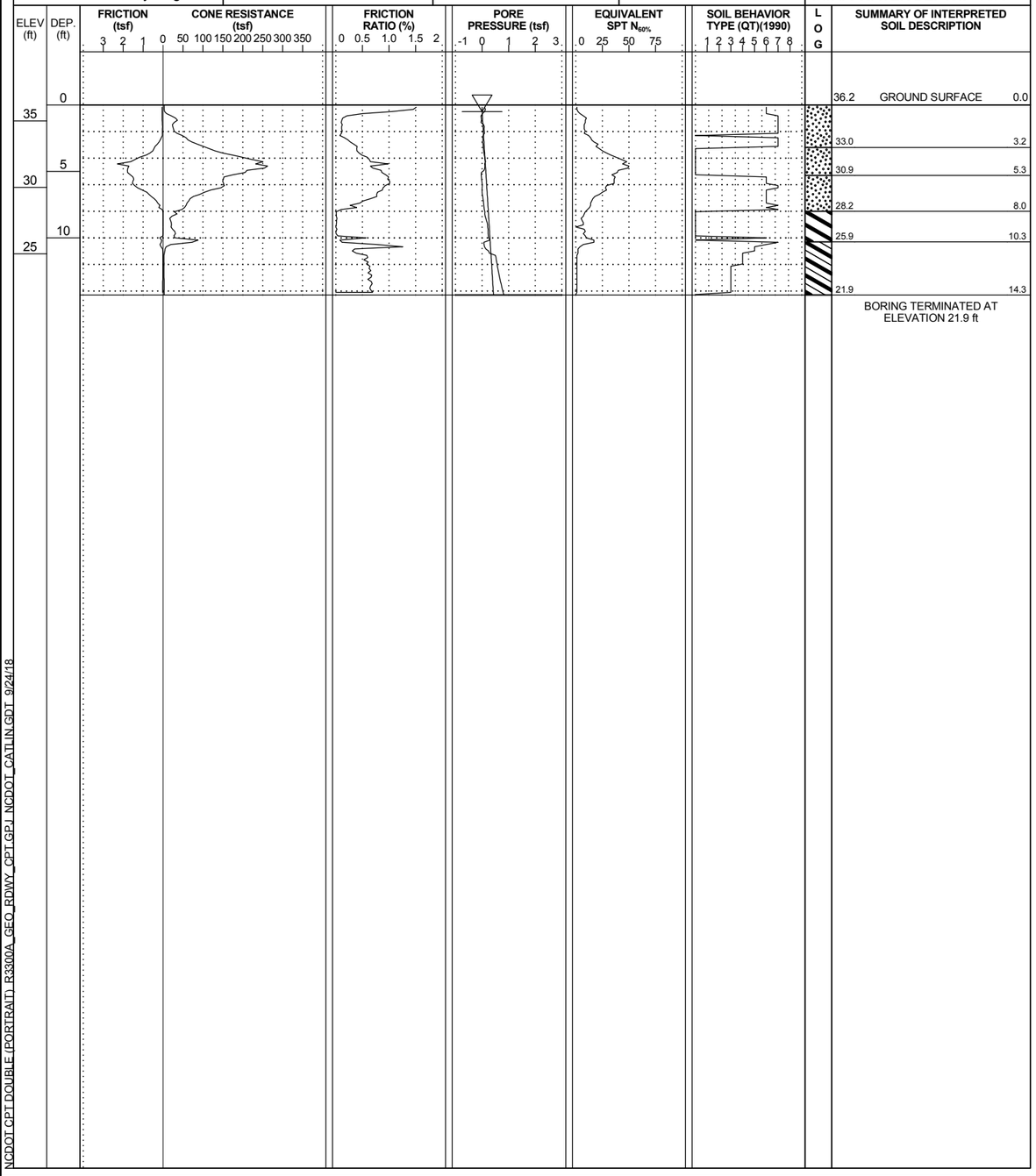
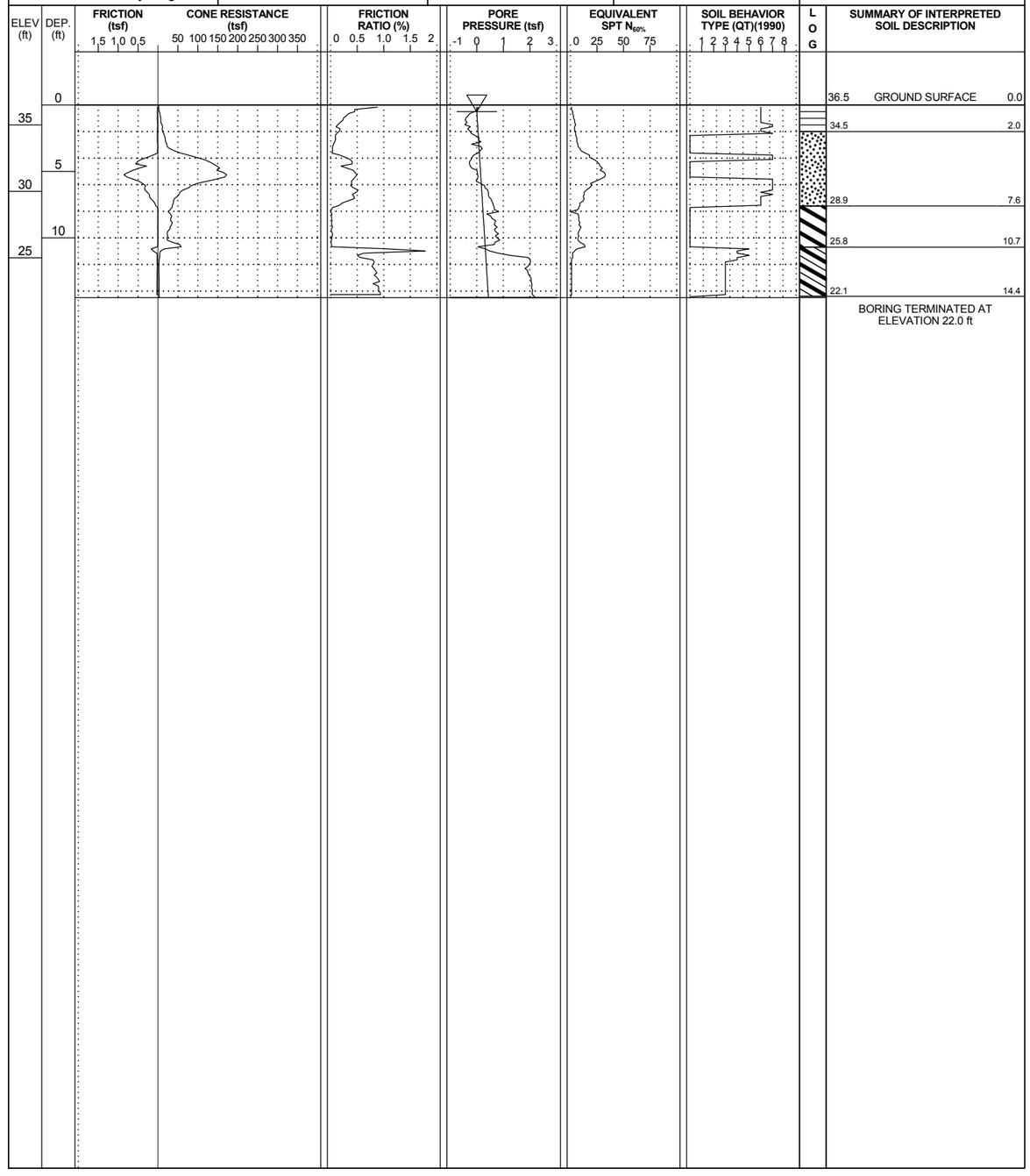
PROJECT REFERENCE NO.	SHEET
R-3300A	26

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_47200	**STATION:** 472+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.5
COLLAR ELEV.: 36.2 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 226,788	**EASTING:** 2,366,057	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_47600	**STATION:** 476+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.5
COLLAR ELEV.: 36.5 ft	**TOTAL DEPTH:** 14.5 ft	**NORTHING:** 226,998	**EASTING:** 2,366,397	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



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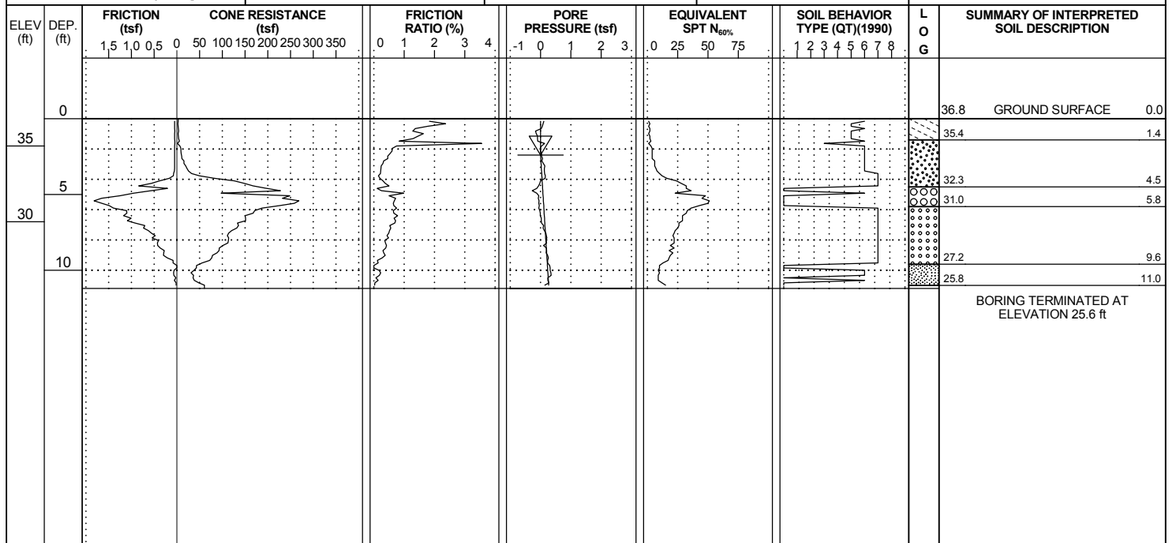
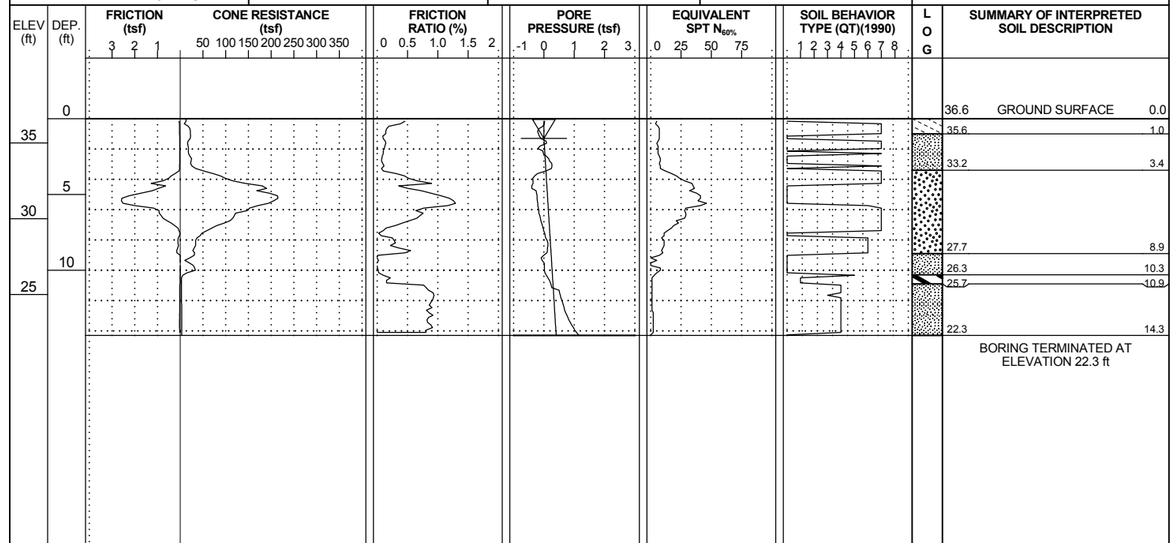
PROJECT REFERENCE NO.	SHEET
R-3300A	27

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_47800	**STATION:** 478+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.4
COLLAR ELEV.: 36.8 ft	**TOTAL DEPTH:** 11.2 ft	**NORTHING:** 227,103	**EASTING:** 2,366,568	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_48200	**STATION:** 482+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.3
COLLAR ELEV.: 36.6 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 227,313	**EASTING:** 2,366,908	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



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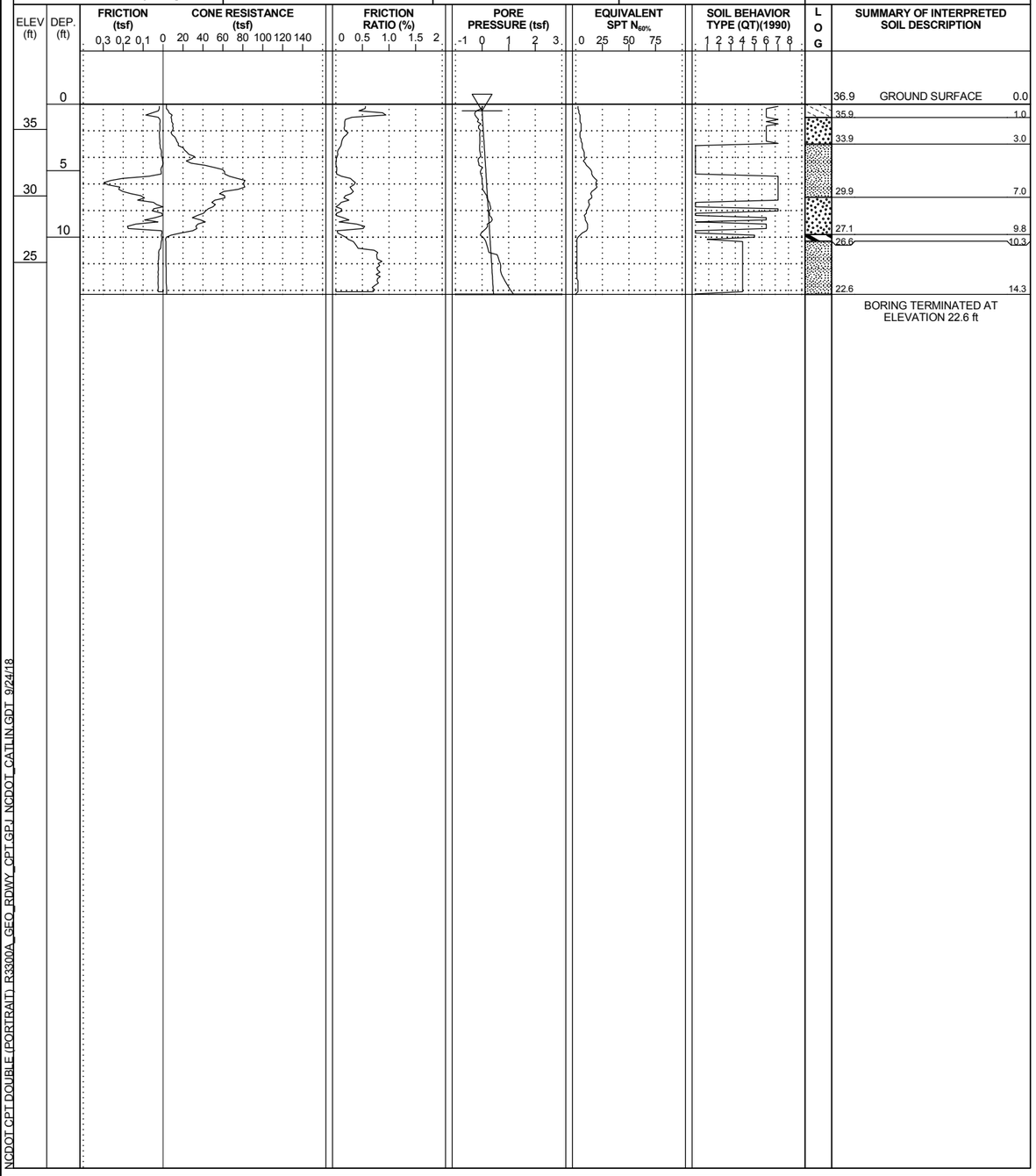
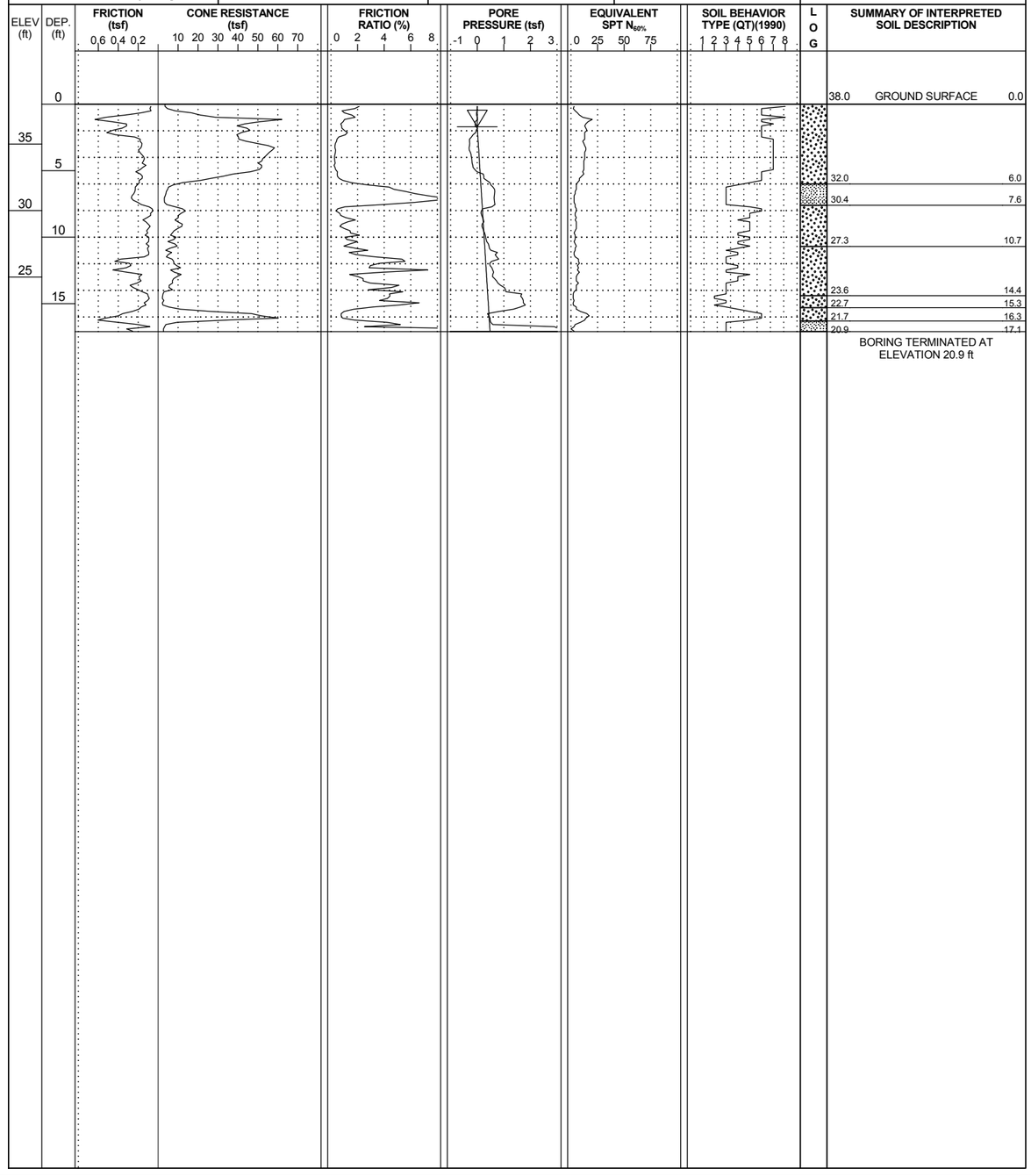
PROJECT REFERENCE NO.	SHEET
R-3300A	28

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_48850	**STATION:** 488+50	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 0.5
COLLAR ELEV.: 36.9 ft	**TOTAL DEPTH:** 14.3 ft	**NORTHING:** 227,655	**EASTING:** 2,367,461	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_55600	**STATION:** 556+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.7
COLLAR ELEV.: 38.0 ft	**TOTAL DEPTH:** 17.1 ft	**NORTHING:** 230,115	**EASTING:** 2,373,524	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



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217059 CATLIN Engineers and Scientists
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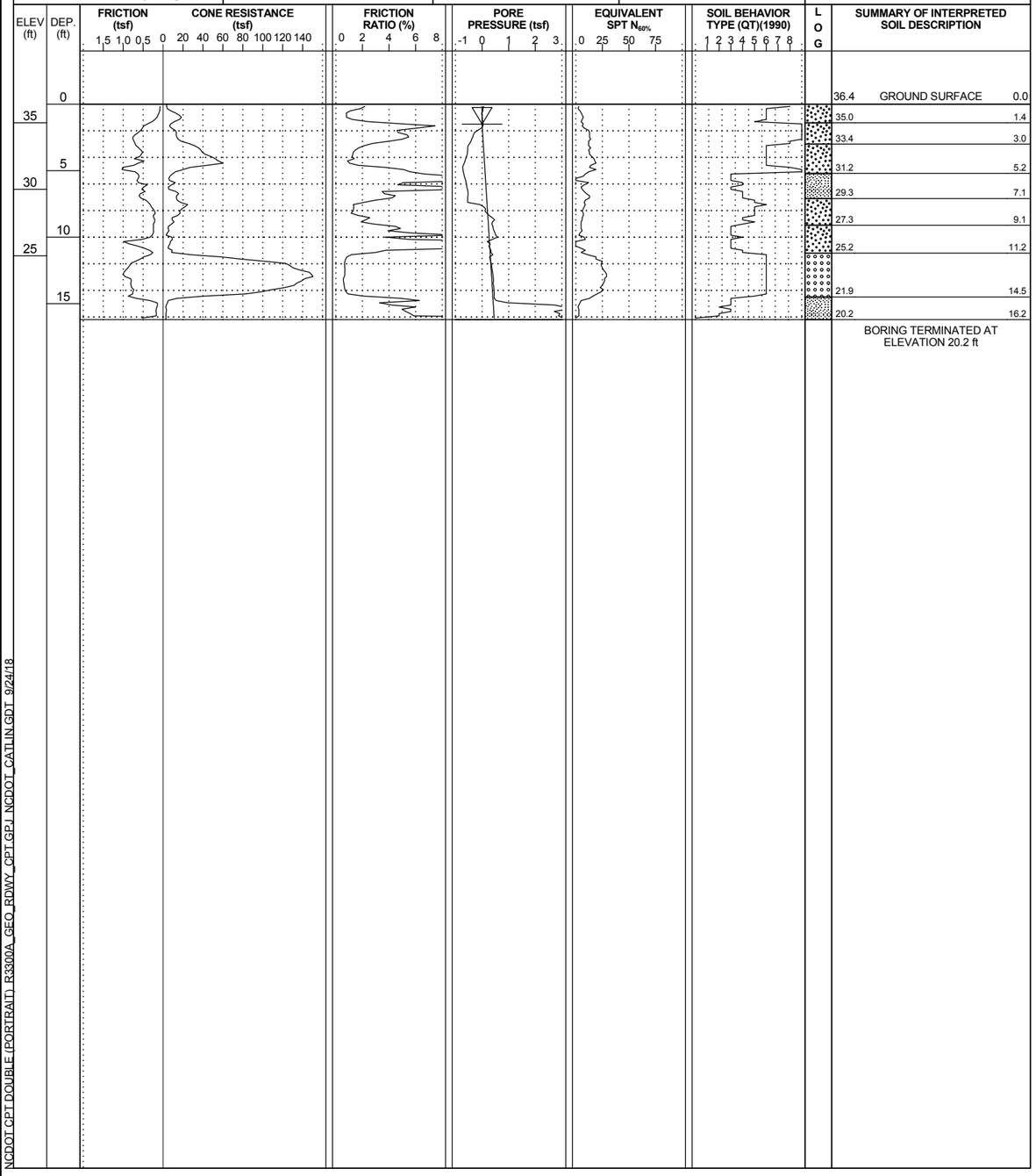
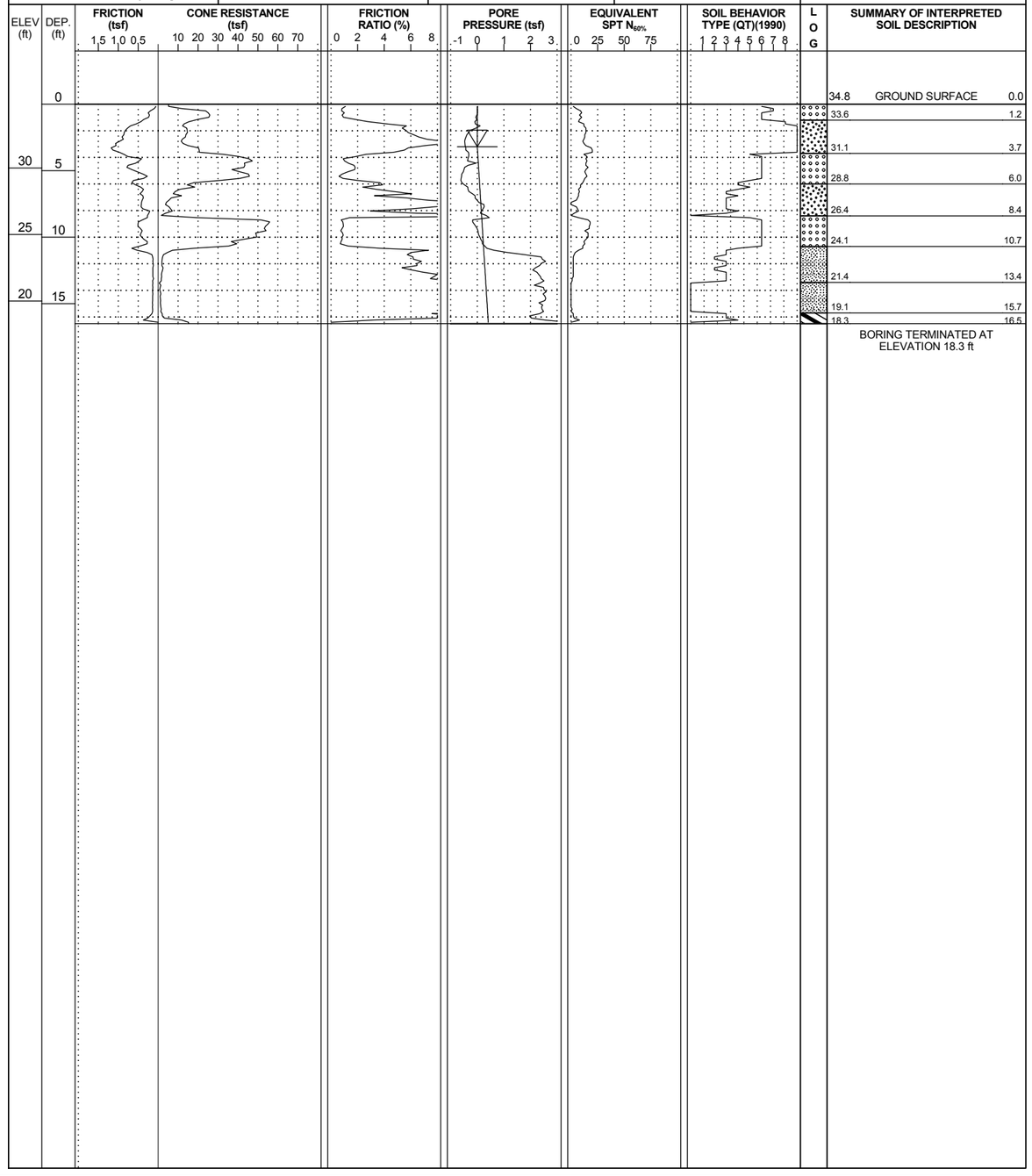
PROJECT REFERENCE NO.	SHEET
R-3300A	29

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_55800	**STATION:** 558+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 1.5
COLLAR ELEV.: 36.4 ft	**TOTAL DEPTH:** 16.2 ft	**NORTHING:** 230,084	**EASTING:** 2,373,721	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_56200	**STATION:** 562+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.2
COLLAR ELEV.: 34.8 ft	**TOTAL DEPTH:** 16.5 ft	**NORTHING:** 230,020	**EASTING:** 2,374,116	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



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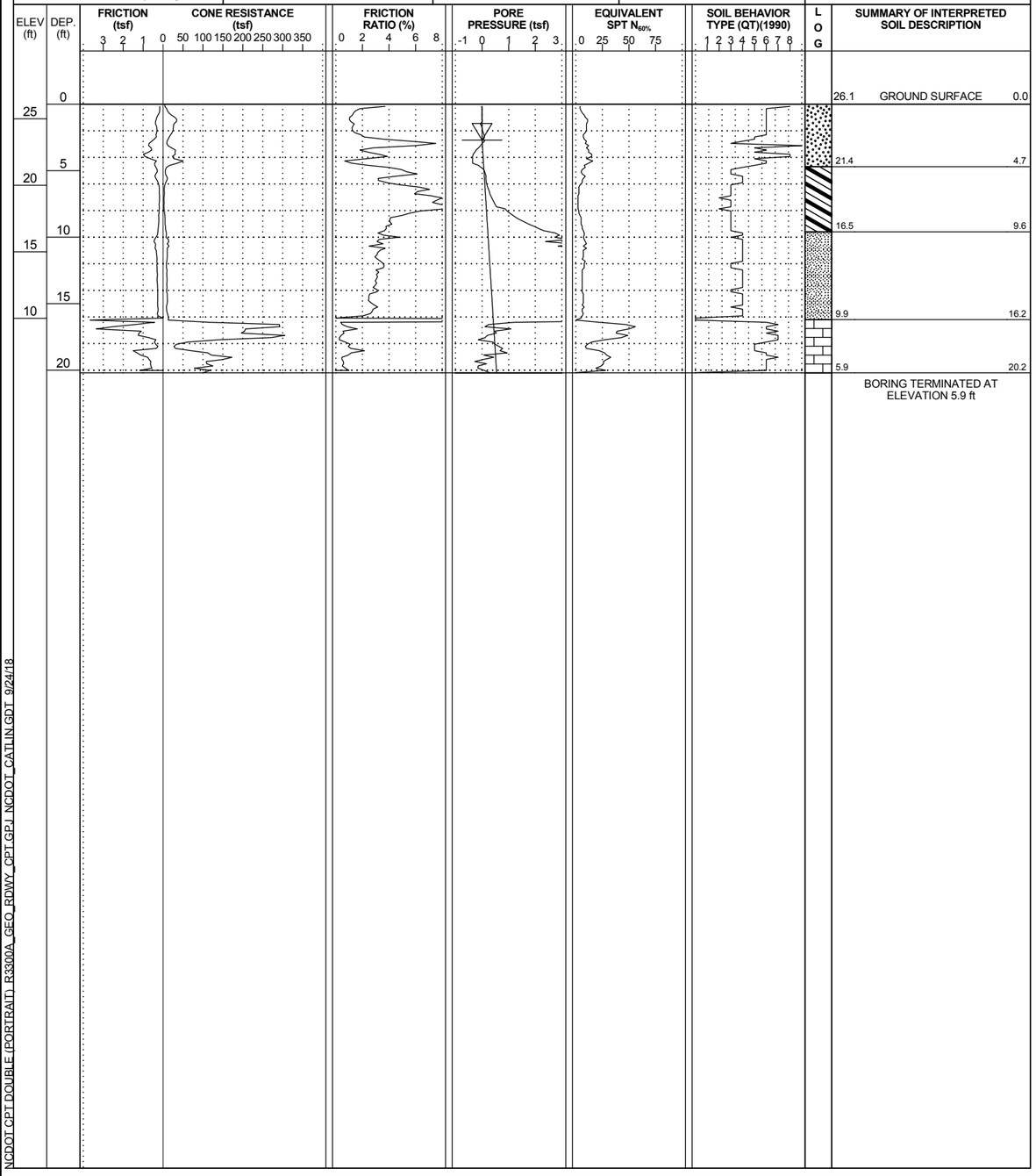
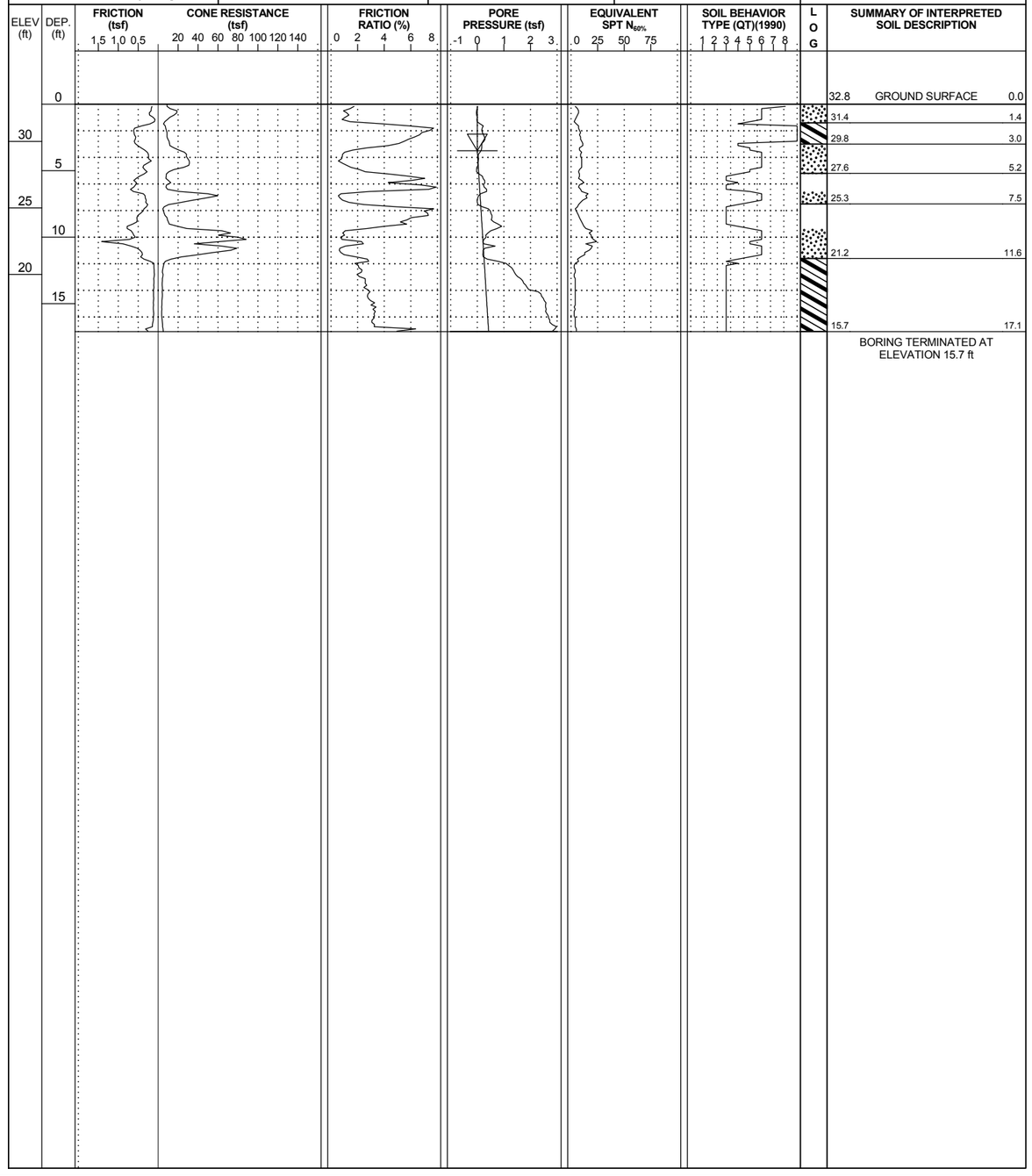
PROJECT REFERENCE NO.	SHEET
R-3300A	30

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_56400	**STATION:** 564+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 2.7
COLLAR ELEV.: 26.1 ft	**TOTAL DEPTH:** 20.2 ft	**NORTHING:** 229,988	**EASTING:** 2,374,313	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_57000	**STATION:** 570+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.5
COLLAR ELEV.: 32.8 ft	**TOTAL DEPTH:** 17.1 ft	**NORTHING:** 229,927	**EASTING:** 2,374,910	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



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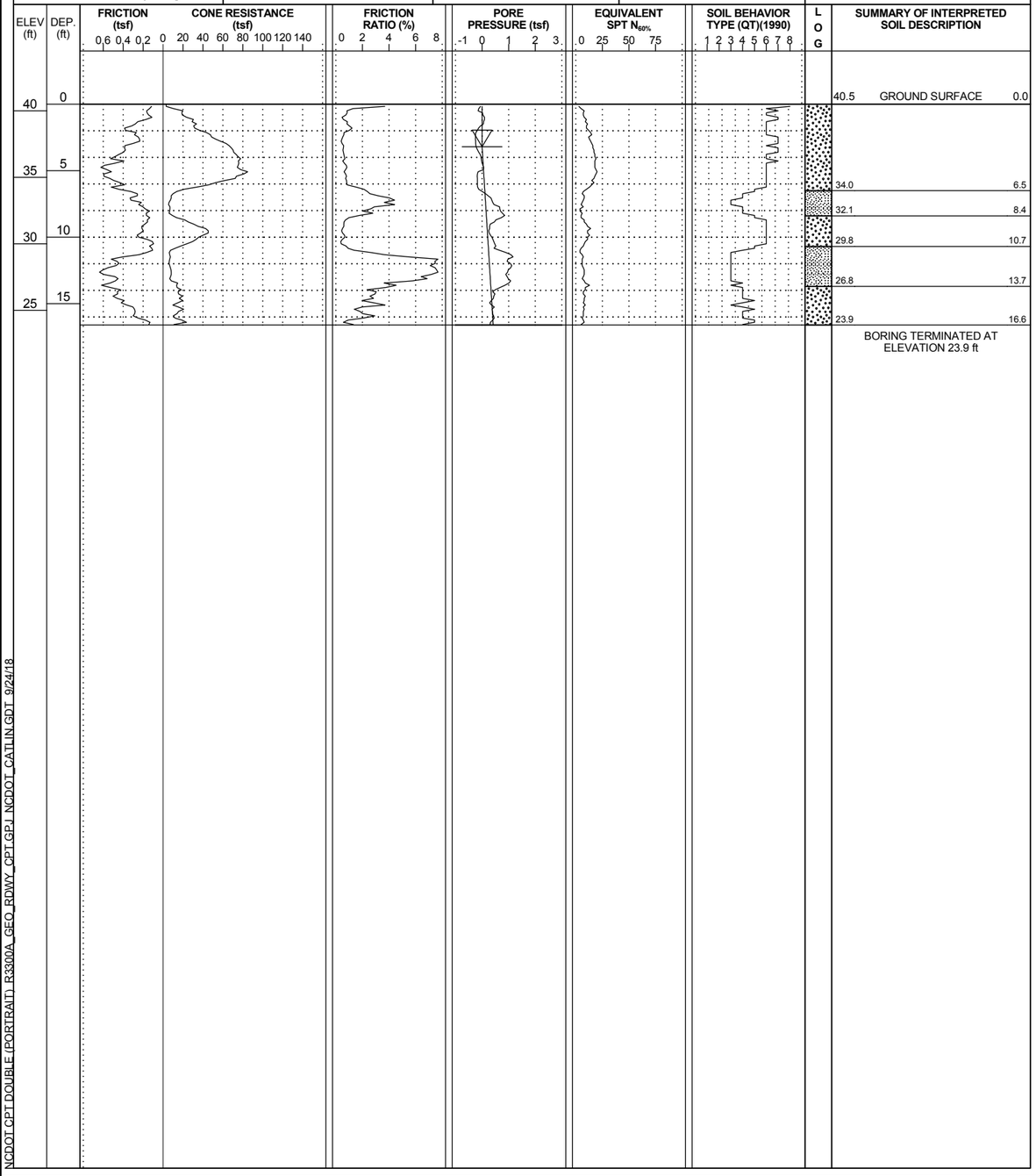
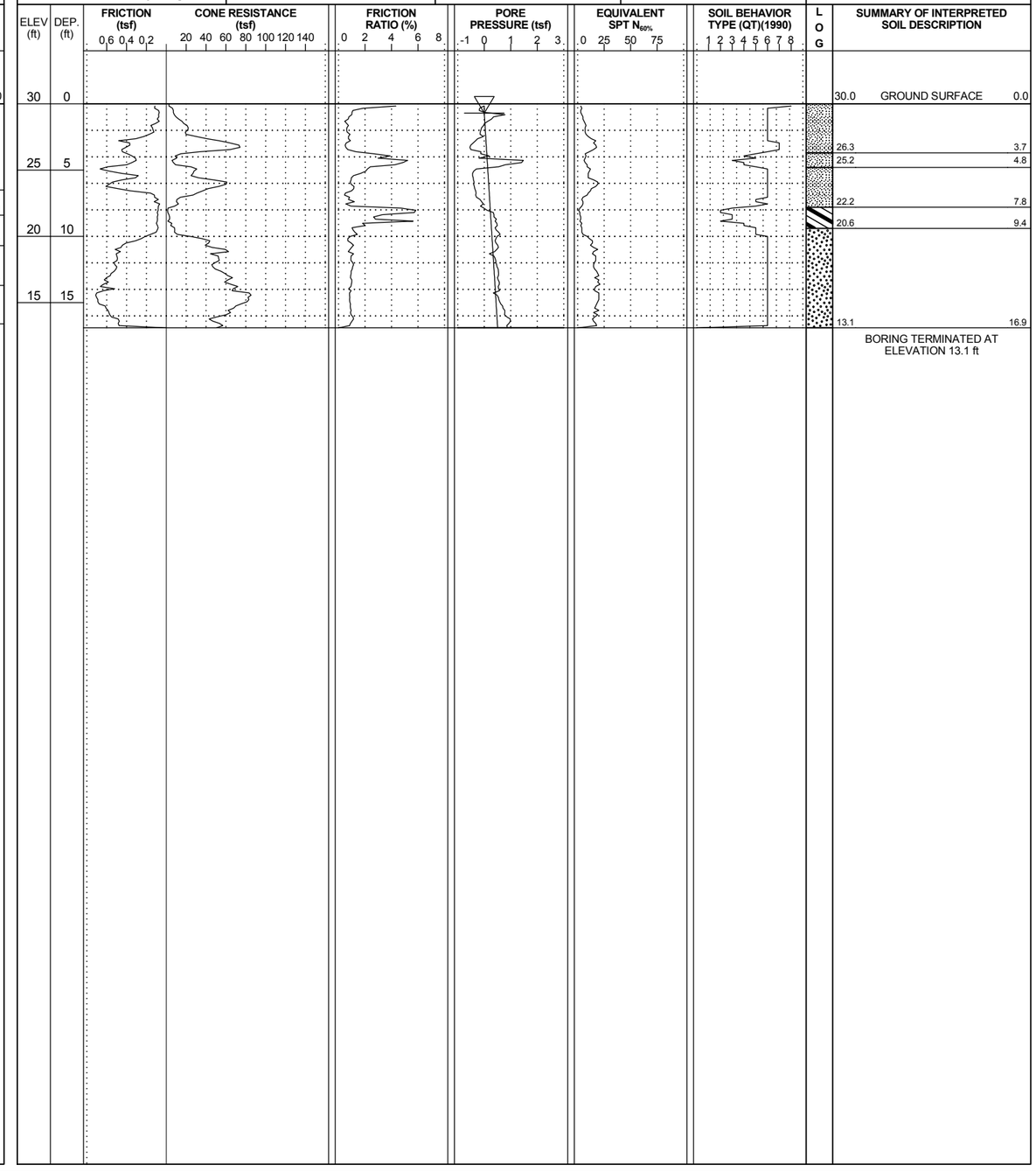
PROJECT REFERENCE NO.	SHEET
R-3300A	31

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1_57400	**STATION:** 574+00	**OFFSET:** CL	**ALIGNMENT:** -L1-	**EST. 0 HR.** 3.2
COLLAR ELEV.: 40.5 ft	**TOTAL DEPTH:** 16.6 ft	**NORTHING:** 229,944	**EASTING:** 2,375,309	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_52400	**STATION:** 524+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 0.7
COLLAR ELEV.: 30.0 ft	**TOTAL DEPTH:** 16.9 ft	**NORTHING:** 229,485	**EASTING:** 2,370,502	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/19/18	**COMP. DATE:** 04/19/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
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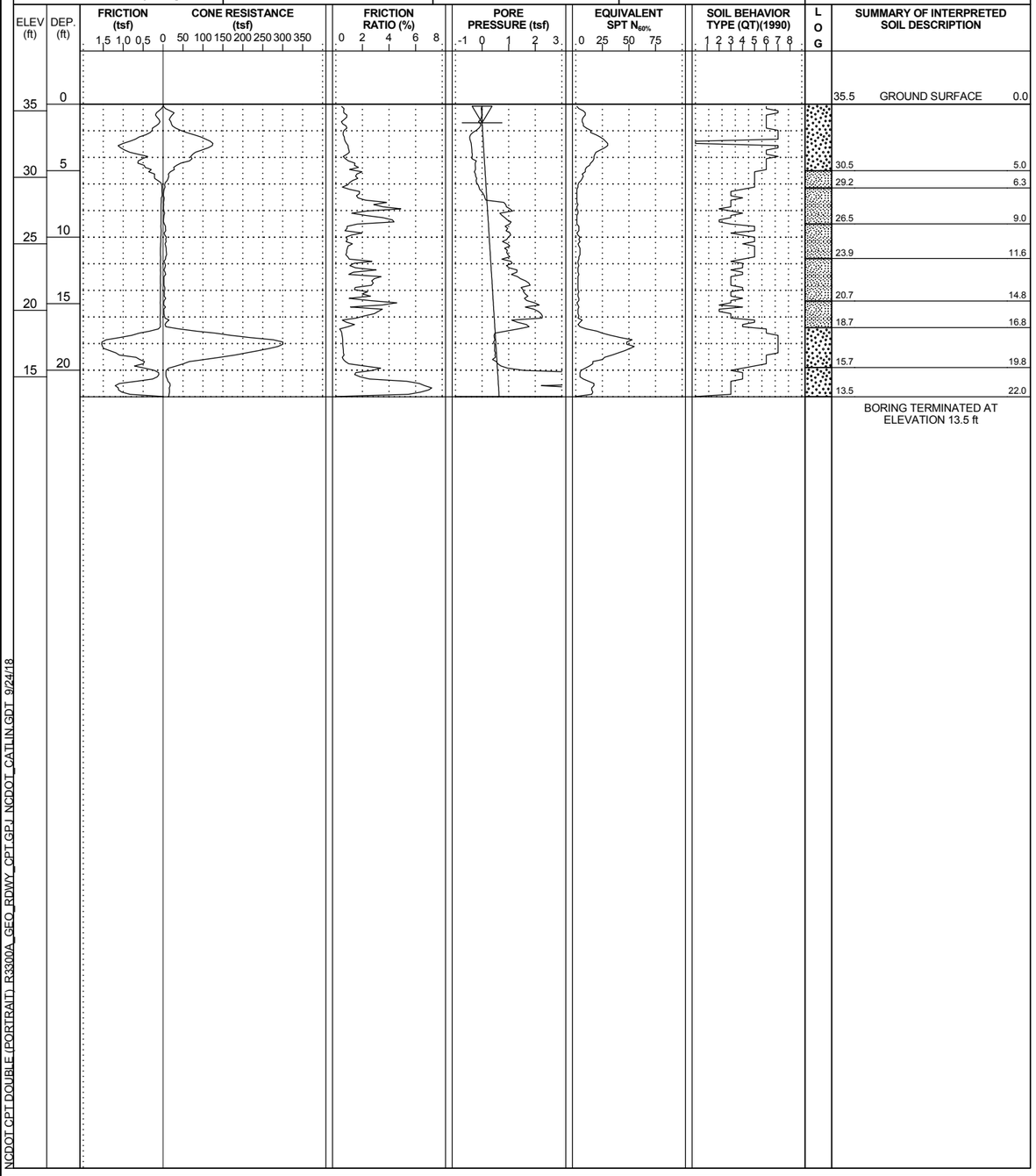
PROJECT REFERENCE NO.	SHEET
R-3300A	32

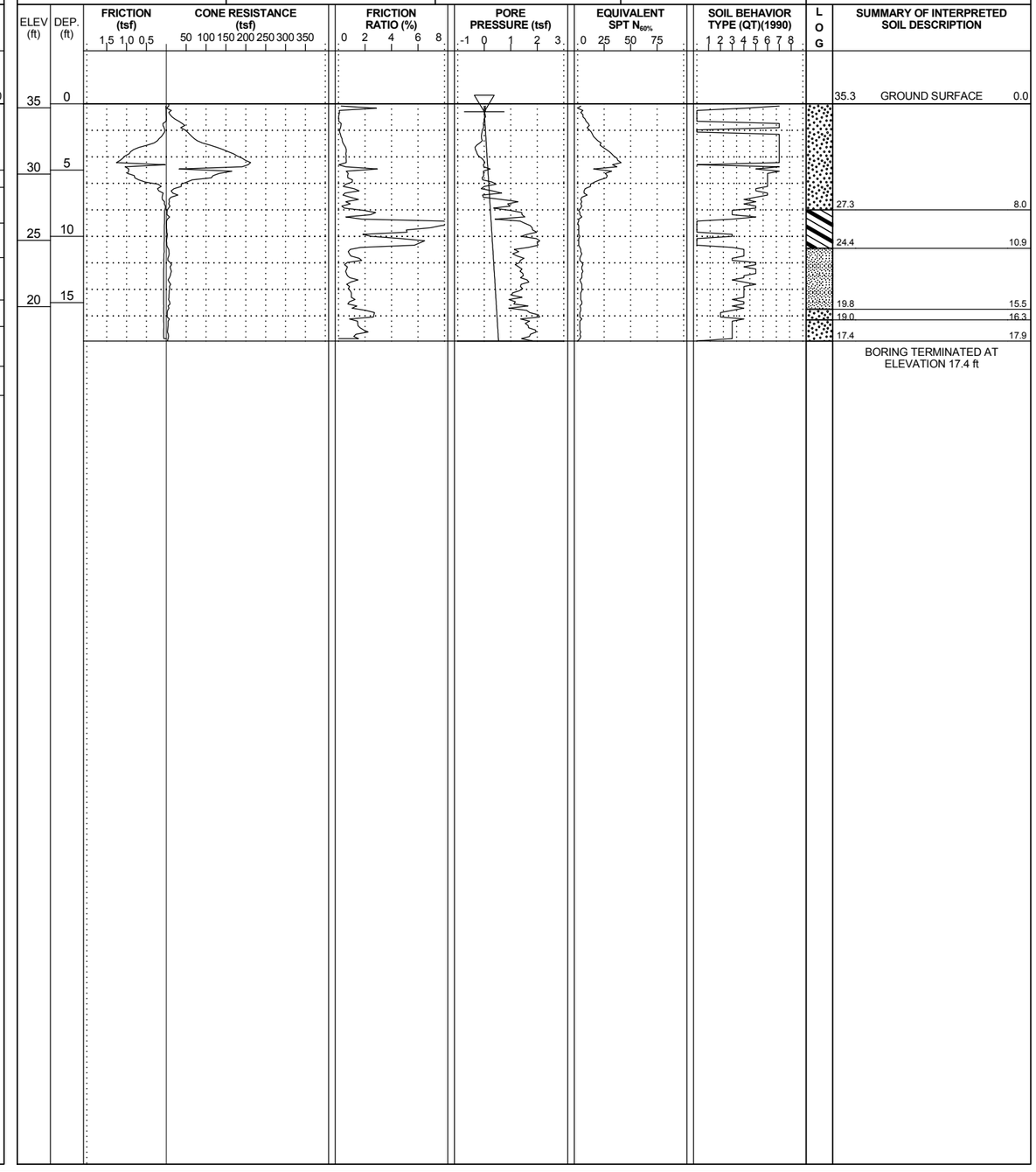
WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_53000	**STATION:** 530+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 1.4
COLLAR ELEV.: 35.5 ft	**TOTAL DEPTH:** 22.0 ft	**NORTHING:** 229,772	**EASTING:** 2,371,029	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/19/18	**COMP. DATE:** 04/19/18	**SURF. WATER DEPTH:** N/A



35.5	GROUND SURFACE	0.0
30.5		5.0
29.2		6.3
26.5		9.0
23.9		11.6
20.7		14.8
18.7		16.8
15.7		19.8
13.5		22.0

BORING TERMINATED AT ELEVATION 13.5 ft

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_53200	**STATION:** 532+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 0.6
COLLAR ELEV.: 35.3 ft	**TOTAL DEPTH:** 17.9 ft	**NORTHING:** 229,864	**EASTING:** 2,371,207	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 04/19/18	**COMP. DATE:** 04/19/18	**SURF. WATER DEPTH:** N/A



35.3	GROUND SURFACE	0.0
27.3		8.0
24.4		10.9
19.8		15.5
19.0		16.3
17.4		17.9

BORING TERMINATED AT ELEVATION 17.4 ft

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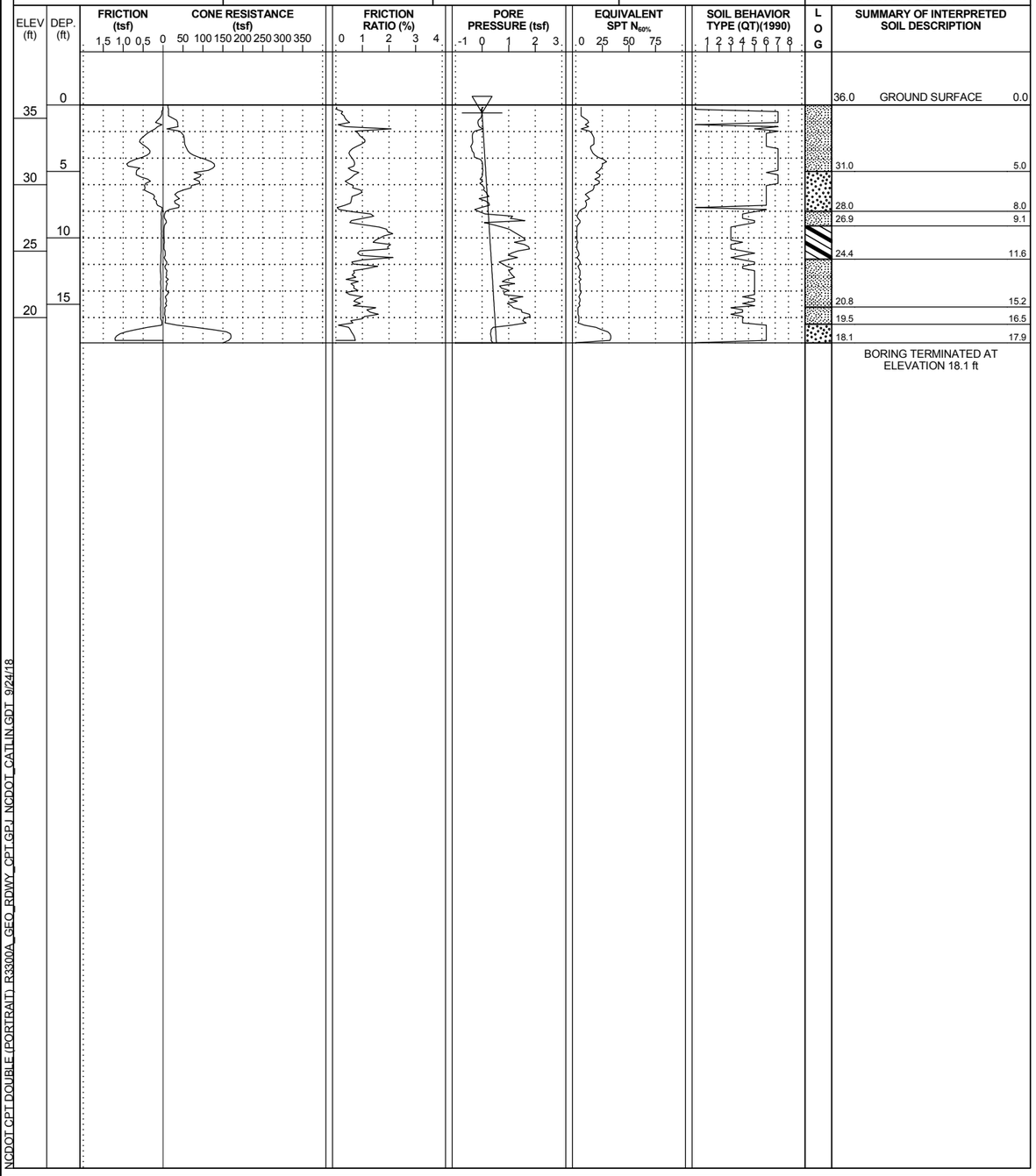
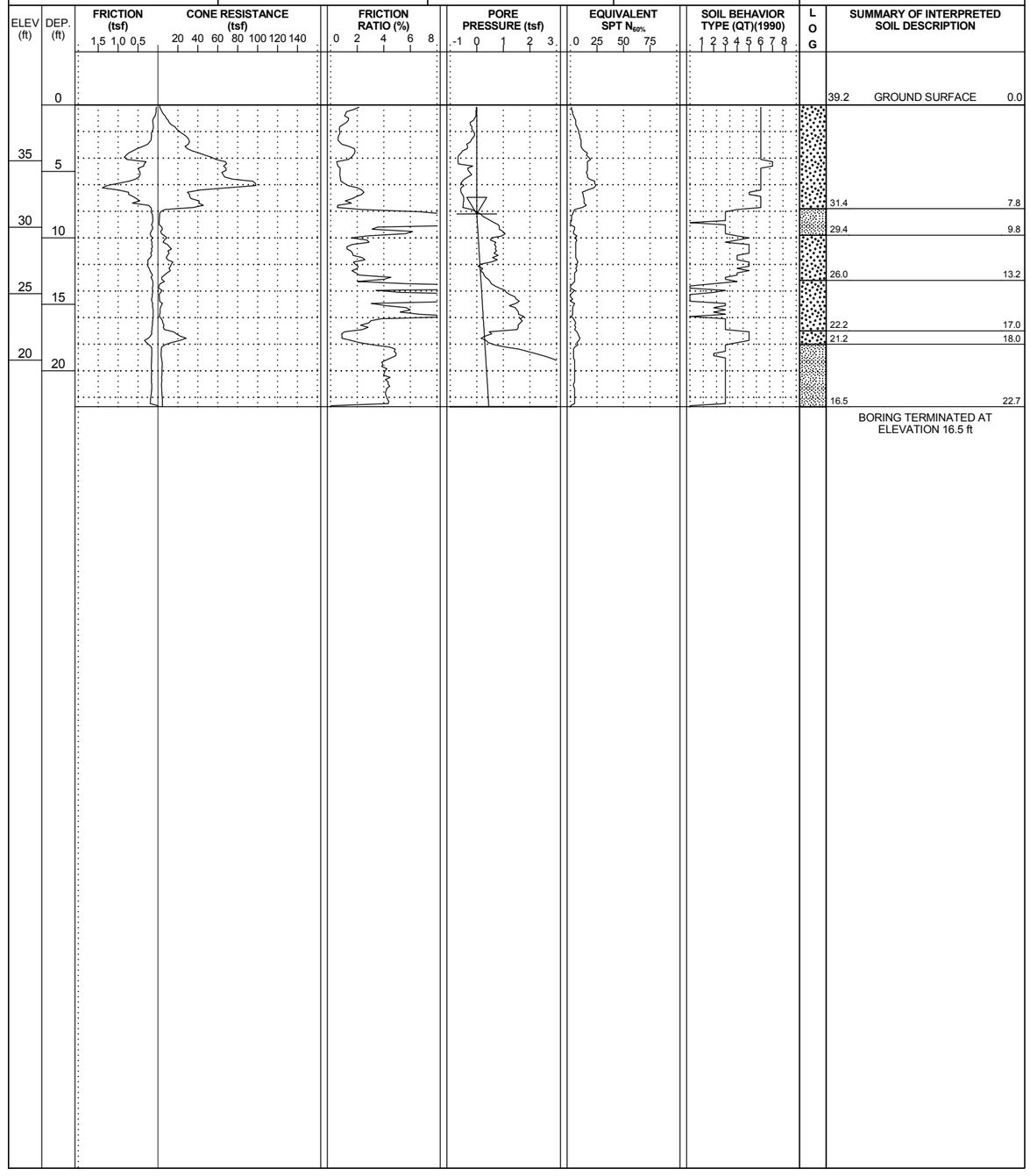
PROJECT REFERENCE NO.	SHEET
R-3300A	33

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_53600	**STATION:** 536+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 0.6
COLLAR ELEV.: 36.0 ft	**TOTAL DEPTH:** 17.9 ft	**NORTHING:** 230,017	**EASTING:** 2,371,576	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 04/19/18	**COMP. DATE:** 04/19/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_54400	**STATION:** 544+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 8.2
COLLAR ELEV.: 39.2 ft	**TOTAL DEPTH:** 22.7 ft	**NORTHING:** 230,188	**EASTING:** 2,372,355	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 04/25/18	**COMP. DATE:** 04/25/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

217059 CATLIN Engineers and Scientists
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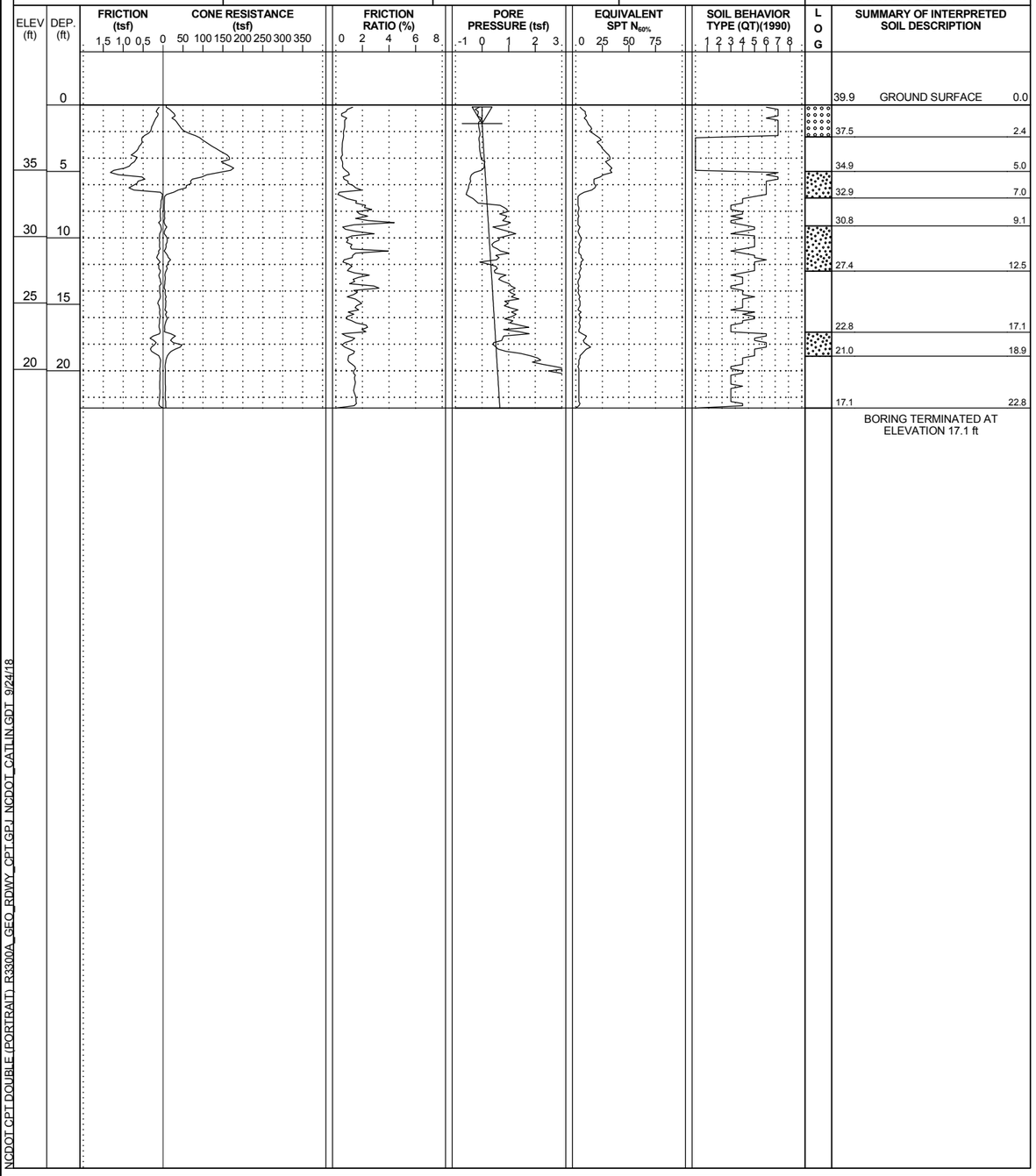
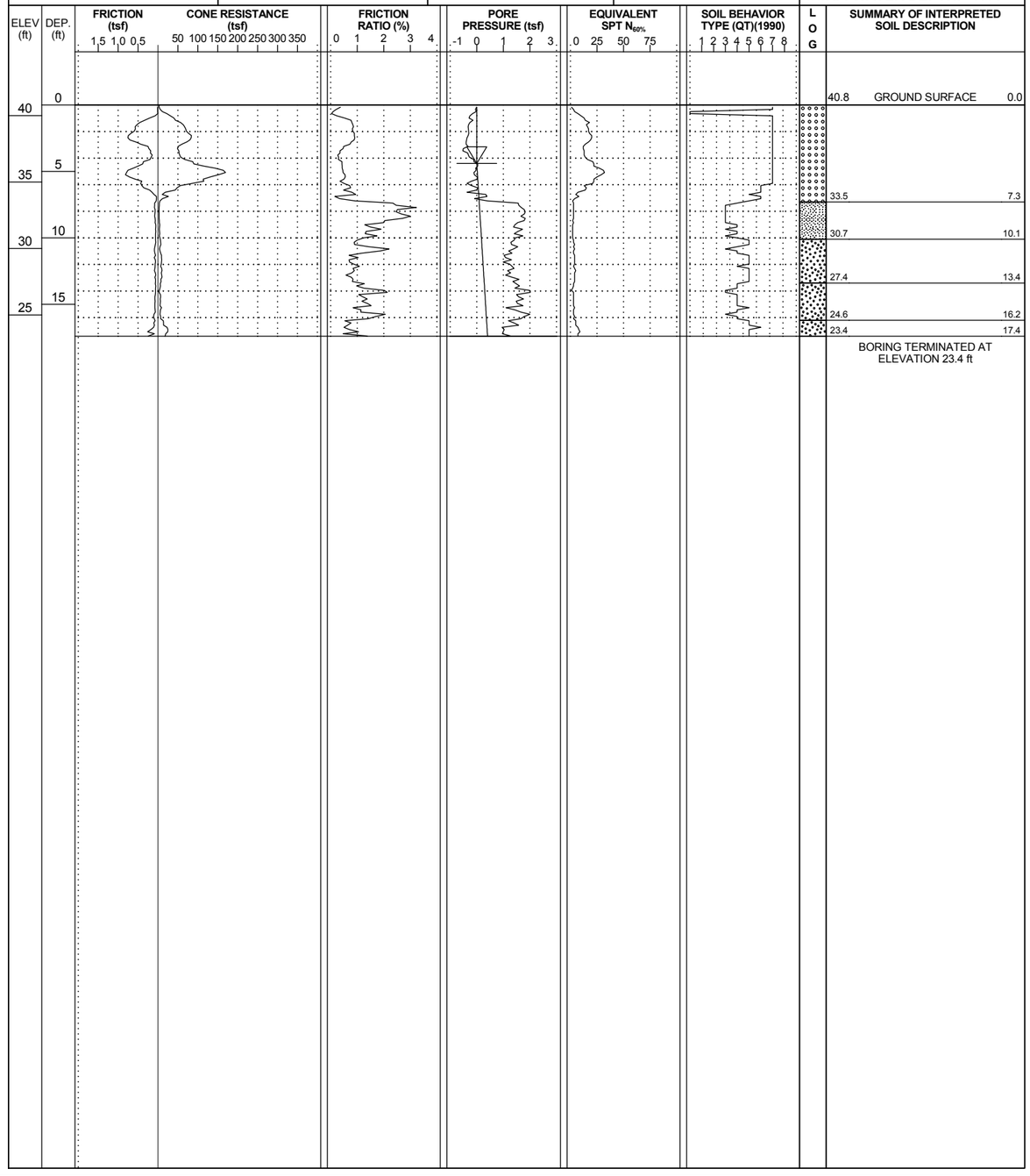
PROJECT REFERENCE NO.	SHEET
R-3300A	34

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_54800	**STATION:** 548+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 1.4
COLLAR ELEV.: 39.9 ft	**TOTAL DEPTH:** 22.8 ft	**NORTHING:** 230,204	**EASTING:** 2,372,755	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 04/25/18	**COMP. DATE:** 04/25/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_55000	**STATION:** 550+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 4.4
COLLAR ELEV.: 40.8 ft	**TOTAL DEPTH:** 17.4 ft	**NORTHING:** 230,195	**EASTING:** 2,372,955	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 04/25/18	**COMP. DATE:** 04/25/18	**SURF. WATER DEPTH:** N/A



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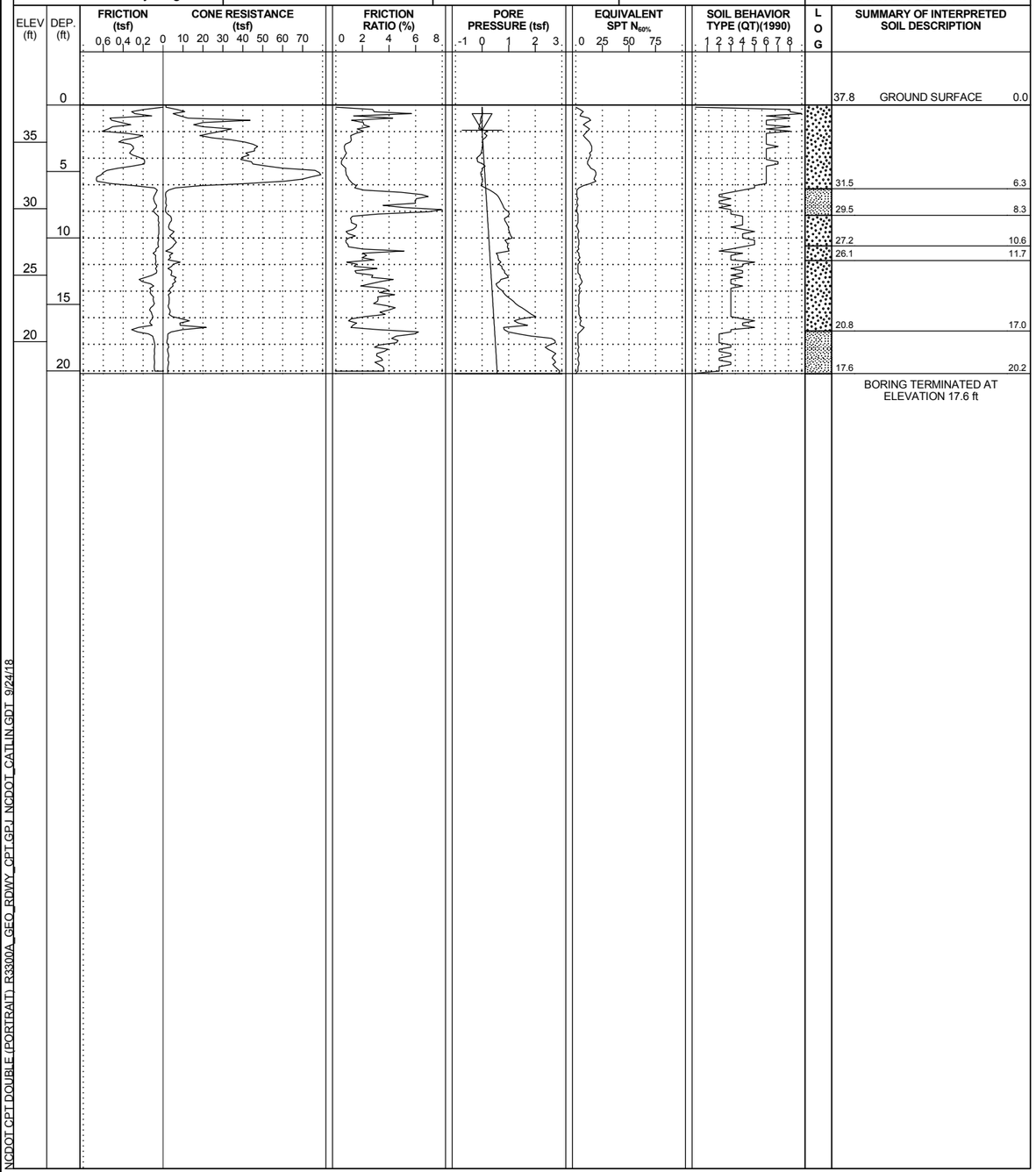
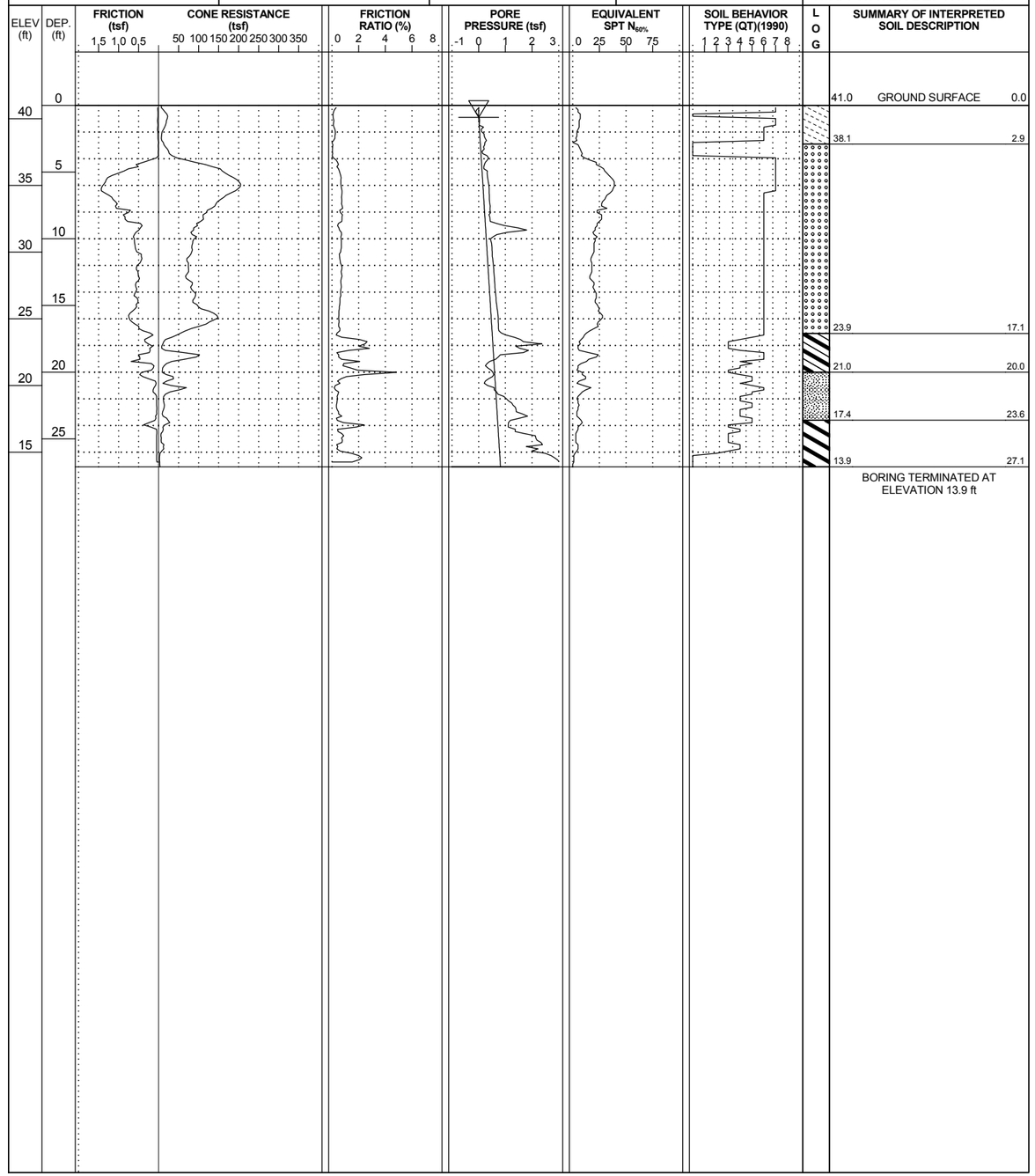
PROJECT REFERENCE NO.	SHEET
R-3300A	35

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: L1REV_55400	**STATION:** 554+00	**OFFSET:** CL	**ALIGNMENT:** -L1REV-	**EST. 0 HR.** 1.9
COLLAR ELEV.: 37.8 ft	**TOTAL DEPTH:** 20.2 ft	**NORTHING:** 230,143	**EASTING:** 2,373,351	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/26/18	**COMP. DATE:** 04/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33LPC_1100	**STATION:** 11+00	**OFFSET:** CL	**ALIGNMENT:** -Y33LPC-	**EST. 0 HR.** 0.9
COLLAR ELEV.: 41.0 ft	**TOTAL DEPTH:** 27.1 ft	**NORTHING:** 205,900	**EASTING:** 2,353,649	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hand Auger / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L.PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/12/18	**COMP. DATE:** 06/12/18	**SURF. WATER DEPTH:** N/A



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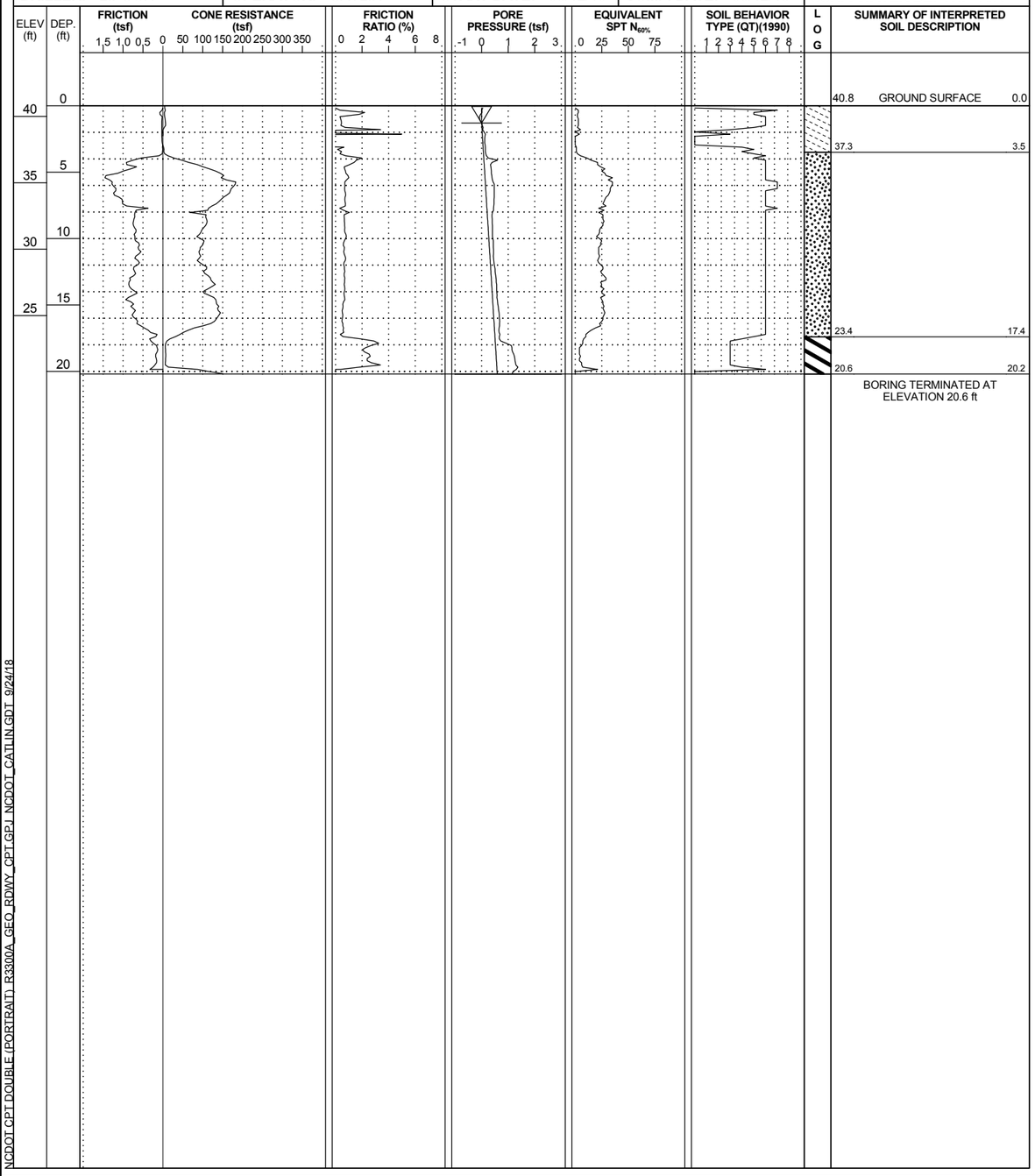
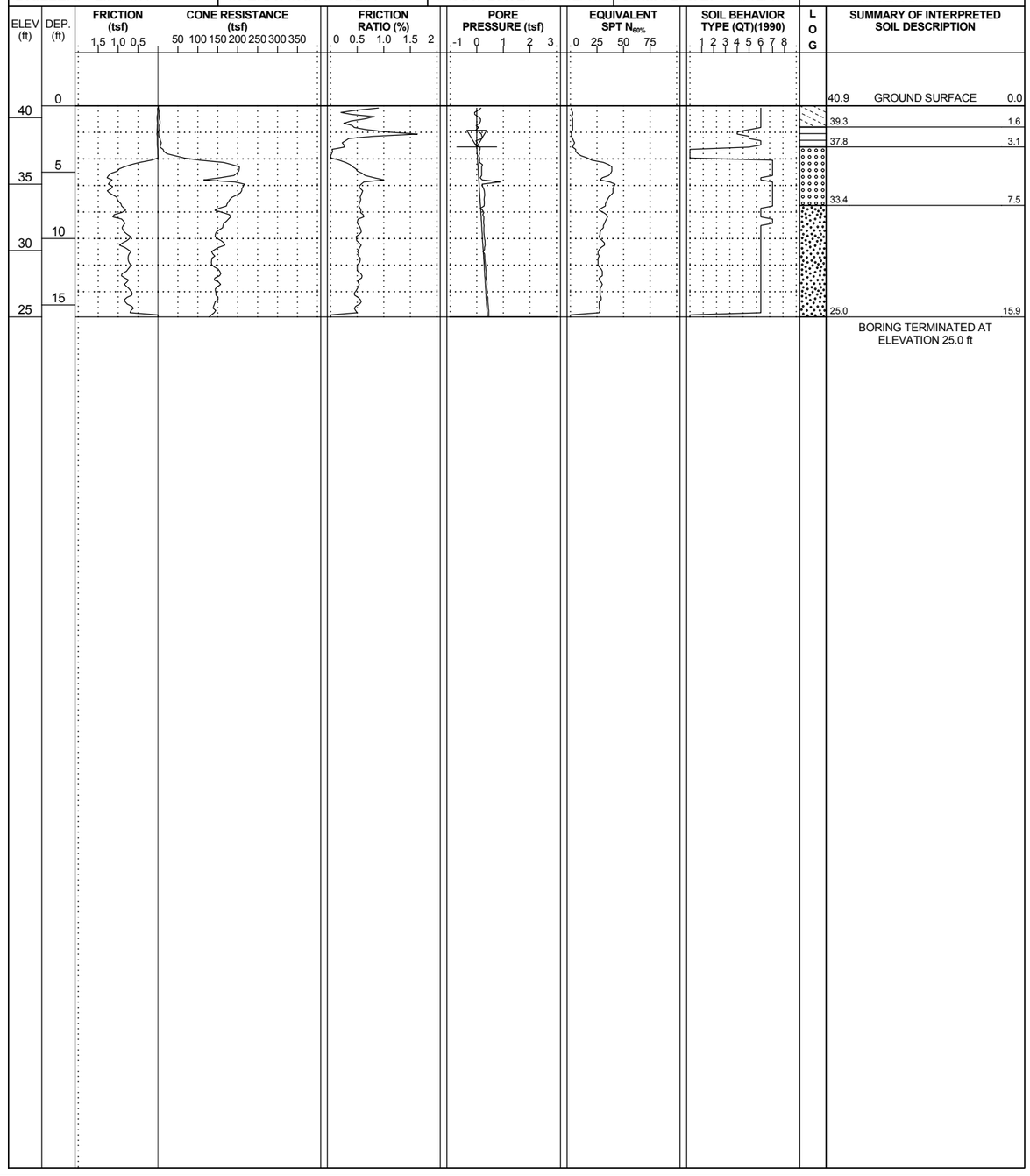
PROJECT REFERENCE NO.	SHEET
R-3300A	36

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33LPC_1300	**STATION:** 13+00	**OFFSET:** CL	**ALIGNMENT:** -Y33LPC-	**EST. 0 HR.** 1.3
COLLAR ELEV.: 40.8 ft	**TOTAL DEPTH:** 20.2 ft	**NORTHING:** 205,953	**EASTING:** 2,353,461	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hand Auger / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L.PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/12/18	**COMP. DATE:** 06/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L.PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33LPC_1500	**STATION:** 15+00	**OFFSET:** CL	**ALIGNMENT:** -Y33LPC-	**EST. 0 HR.** 3.1
COLLAR ELEV.: 40.9 ft	**TOTAL DEPTH:** 15.9 ft	**NORTHING:** 206,116	**EASTING:** 2,353,353	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L.PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/12/18	**COMP. DATE:** 06/12/18	**SURF. WATER DEPTH:** N/A



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220 Old Dairy Road
Wilmington, NC 28405
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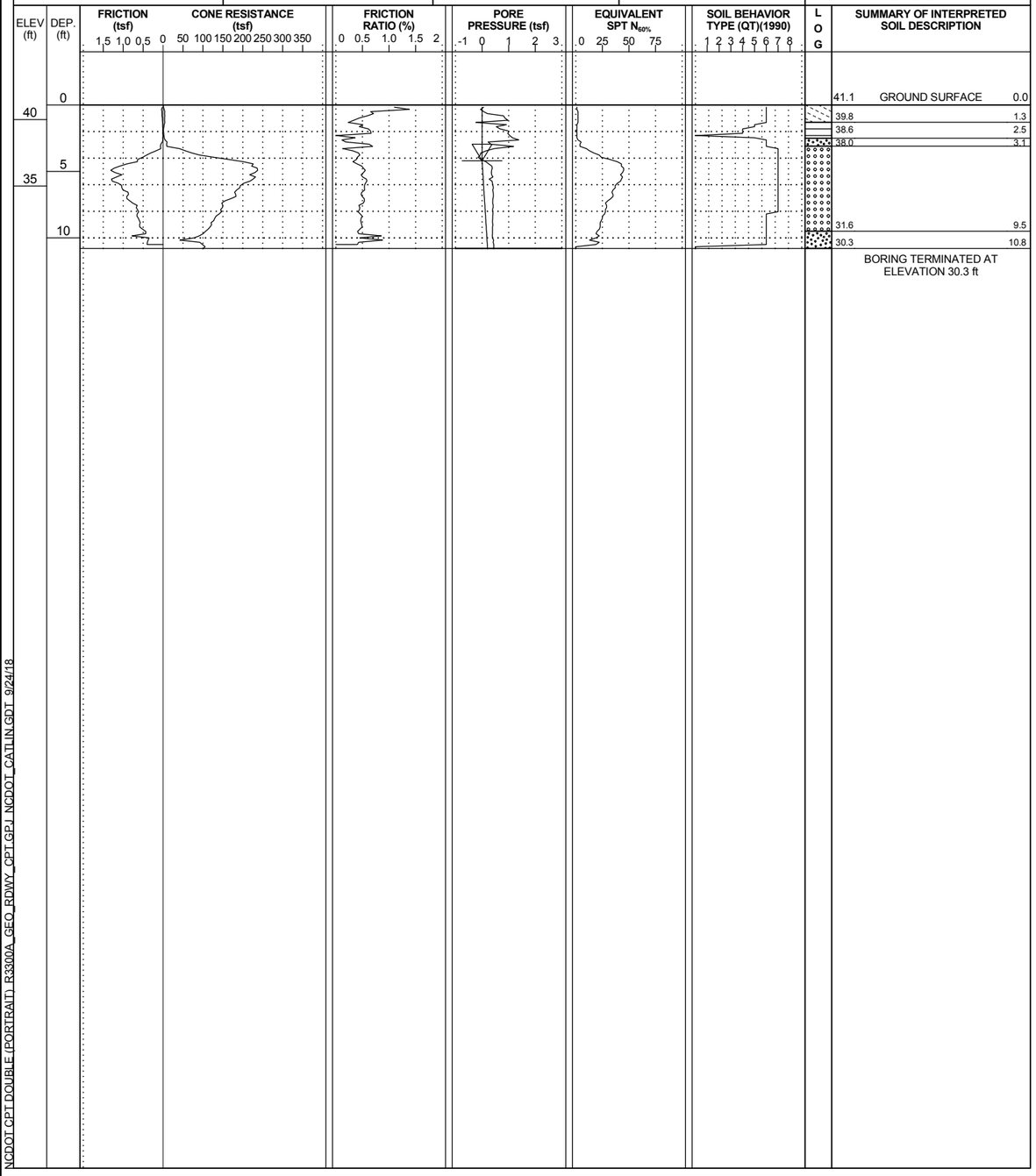
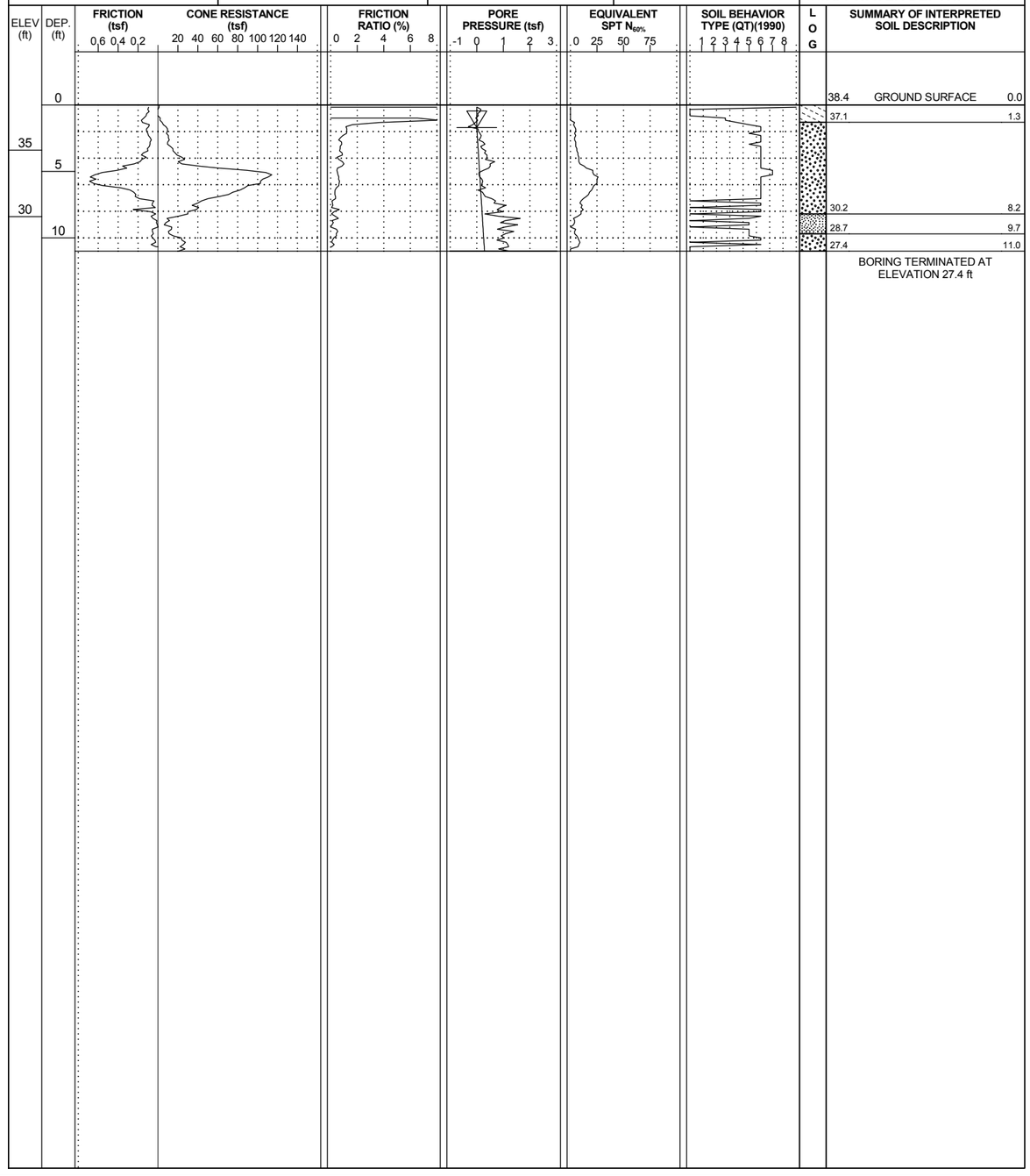
PROJECT REFERENCE NO.	SHEET
R-3300A	37

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L.PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33LPC_1650	**STATION:** 16+50	**OFFSET:** CL	**ALIGNMENT:** -Y33LPC-	**EST. 0 HR.** 4.2
COLLAR ELEV.: 41.1 ft	**TOTAL DEPTH:** 10.8 ft	**NORTHING:** 206,264	**EASTING:** 2,353,360	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L.PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/12/18	**COMP. DATE:** 06/12/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_0900	**STATION:** 9+00	**OFFSET:** 30 ft RT	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 1.7
COLLAR ELEV.: 38.4 ft	**TOTAL DEPTH:** 11.0 ft	**NORTHING:** 206,221	**EASTING:** 2,356,189	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L. PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/20/18	**COMP. DATE:** 06/20/18	**SURF. WATER DEPTH:** N/A



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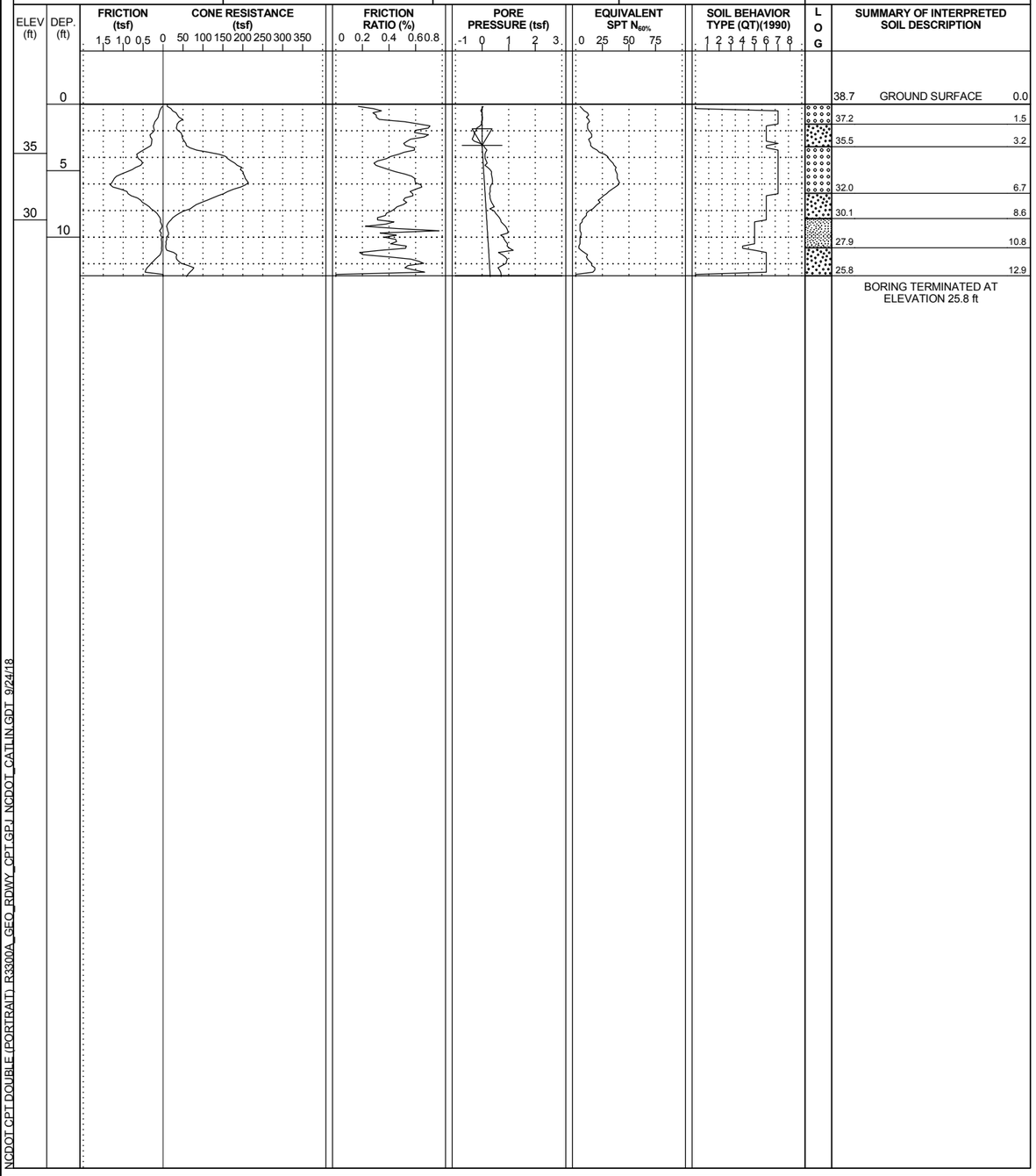
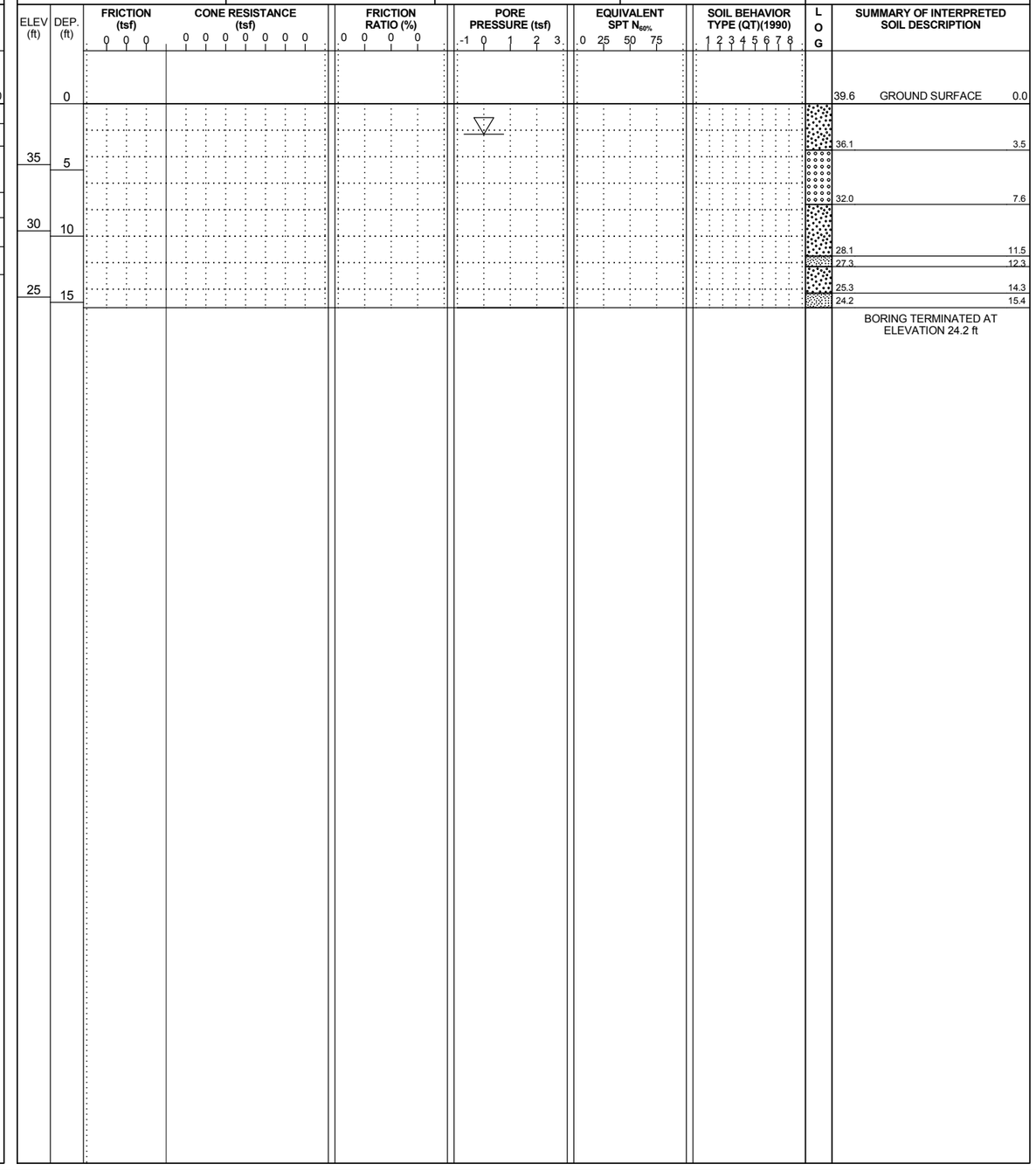
WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_1100	**STATION:** 11+00	**OFFSET:** 25 ft RT	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 3.1
COLLAR ELEV.: 38.7 ft	**TOTAL DEPTH:** 12.9 ft	**NORTHING:** 206,254	**EASTING:** 2,355,992	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L. PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/20/18	**COMP. DATE:** 06/20/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_1300	**STATION:** 13+00	**OFFSET:** 20 ft RT	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 2.3
COLLAR ELEV.: 39.6 ft	**TOTAL DEPTH:** 15.4 ft	**NORTHING:** 206,288	**EASTING:** 2,355,794	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L. PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/20/18	**COMP. DATE:** 06/20/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

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PROJECT REFERENCE NO.	SHEET
R-3300A	39

WBS: 40237.1.1 **TIP:** R-3300A **COUNTY:** PENDER **GEOLOGIST:** L. Pugh

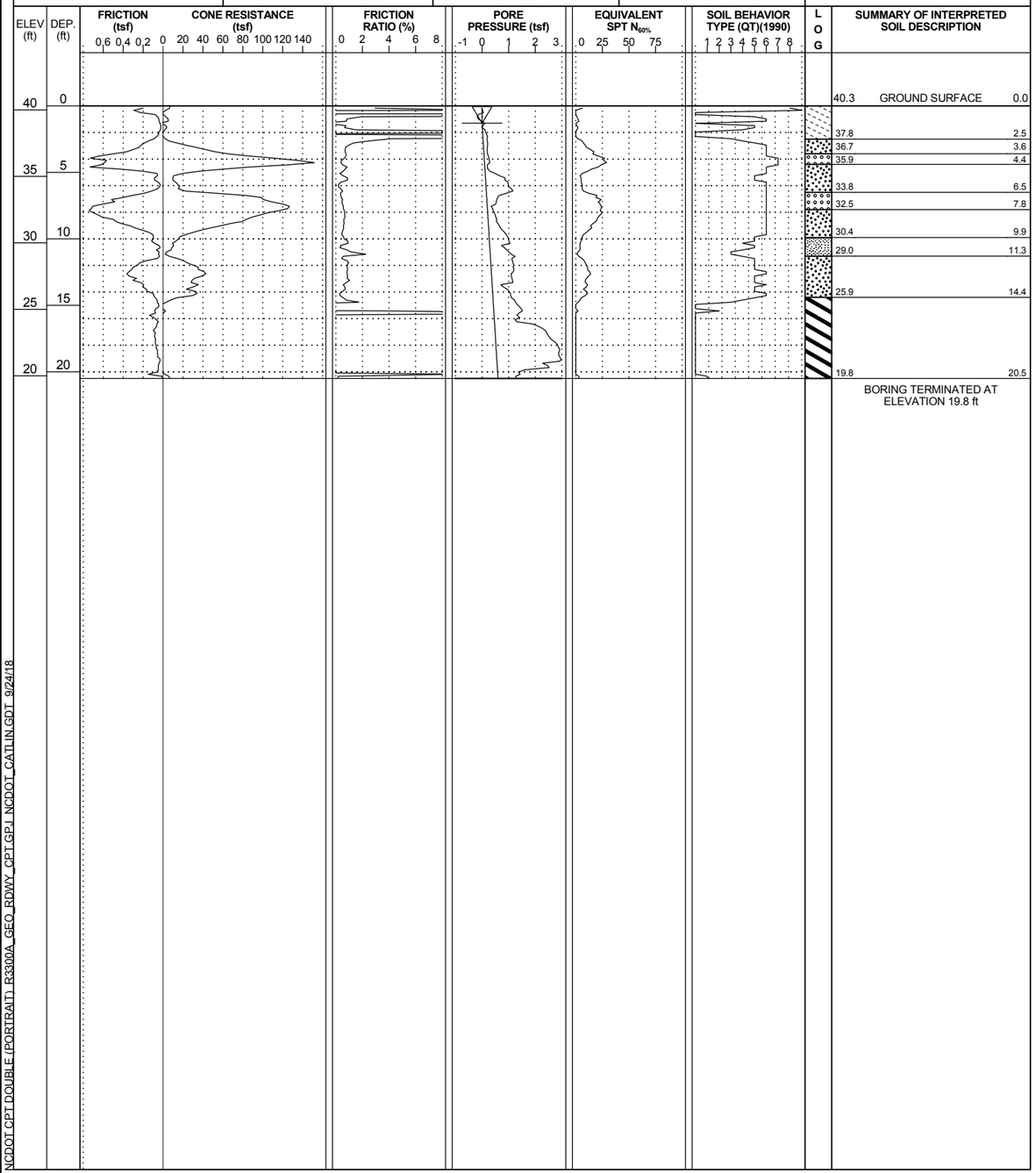
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210 **GROUND WTR (ft)**

BORING NO.: Y33RPA_1500 **STATION:** 15+00 **OFFSET:** CL **ALIGNMENT:** -Y33RPA- **EST. 0 HR.** 1.3

COLLAR ELEV.: 40.3 ft **TOTAL DEPTH:** 20.5 ft **NORTHING:** 206,318 **EASTING:** 2,355,597 **24 HR.** N/A

CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. **CONE TYPE:** TYPE II PIEZO **CONE ID:** DSA1123

DRILLER: L. PUGH **OPERATOR:** CATLIN **START DATE:** 06/20/18 **COMP. DATE:** 06/20/18 **SURF. WATER DEPTH:** N/A



WBS: 40237.1.1 **TIP:** R-3300A **COUNTY:** PENDER **GEOLOGIST:** L. Pugh

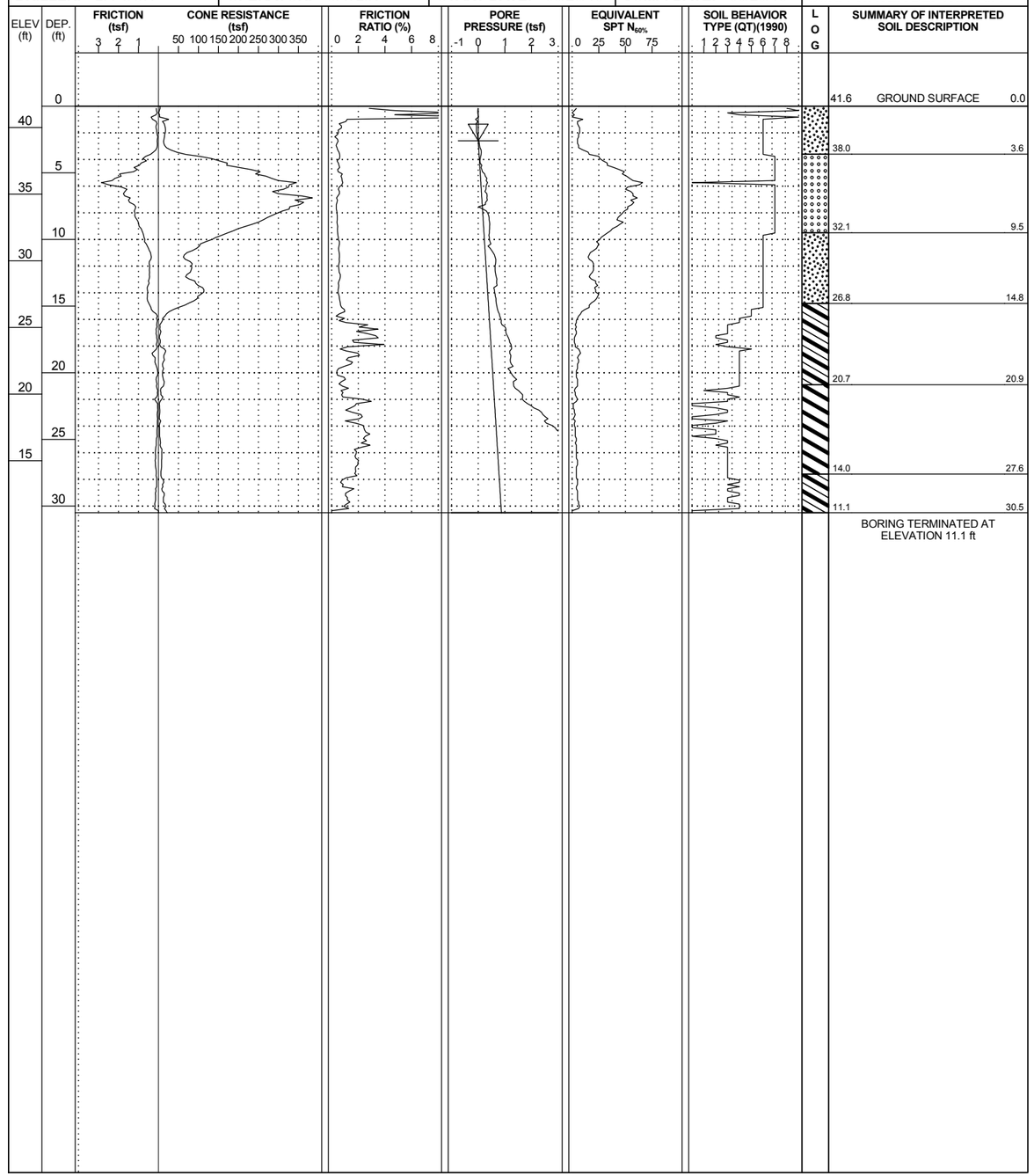
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210 **GROUND WTR (ft)**

BORING NO.: Y33RPA_1900 **STATION:** 19+00 **OFFSET:** 70 ft LT **ALIGNMENT:** -Y33RPA- **EST. 0 HR.** 2.6

COLLAR ELEV.: 41.6 ft **TOTAL DEPTH:** 30.5 ft **NORTHING:** 206,423 **EASTING:** 2,355,189 **24 HR.** N/A

CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. **CONE TYPE:** TYPE II PIEZO **CONE ID:** DSA1123

DRILLER: L. PUGH **OPERATOR:** CATLIN **START DATE:** 06/20/18 **COMP. DATE:** 06/20/18 **SURF. WATER DEPTH:** N/A



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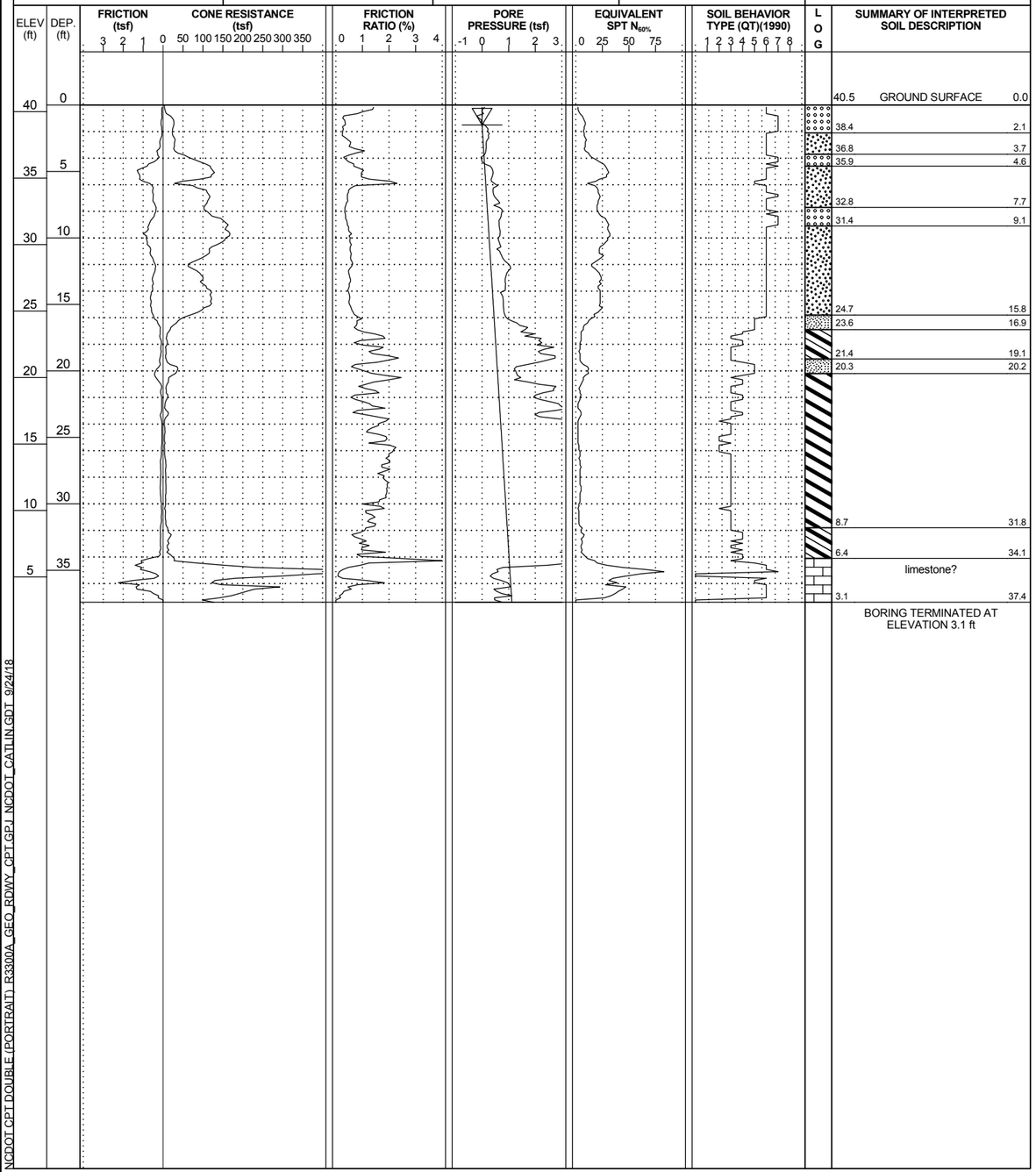
PROJECT REFERENCE NO.	SHEET
R-3300A	40

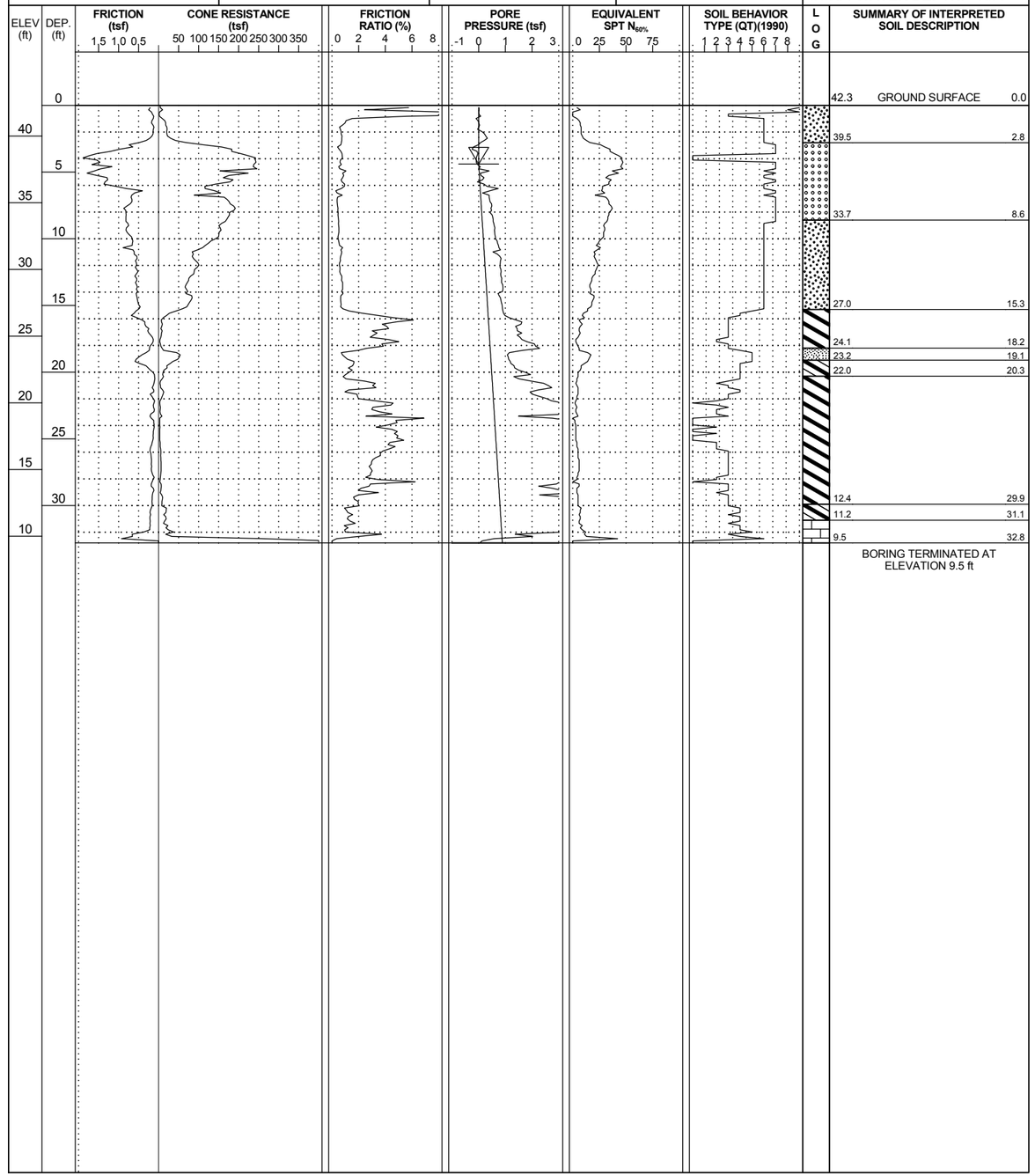
WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_2100	**STATION:** 21+00	**OFFSET:** 65 ft LT	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 1.5
COLLAR ELEV.: 40.5 ft	**TOTAL DEPTH:** 37.4 ft	**NORTHING:** 206,574	**EASTING:** 2,355,040	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: L. PUGH	**OPERATOR:** CATLIN	**START DATE:** 06/20/18	**COMP. DATE:** 06/20/18	**SURF. WATER DEPTH:** N/A



40.5	GROUND SURFACE	0.0
38.4		2.1
36.8		3.7
35.9		4.6
32.8		7.7
31.4		9.1
24.7		15.8
23.6		16.9
21.4		19.1
20.3		20.2
8.7		31.8
6.4		34.1
	limestone?	
3.1		37.4

BORING TERMINATED AT ELEVATION 3.1 ft

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_2300	**STATION:** 23+00	**OFFSET:** 71 ft LT	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 4.4
COLLAR ELEV.: 42.3 ft	**TOTAL DEPTH:** 32.8 ft	**NORTHING:** 206,724	**EASTING:** 2,354,893	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/25/18	**COMP. DATE:** 06/25/18	**SURF. WATER DEPTH:** N/A



42.3	GROUND SURFACE	0.0
39.5		2.8
33.7		8.6
27.0		15.3
24.1		18.2
23.2		19.1
22.0		20.3
12.4		29.9
11.2		31.1
9.5		32.8

BORING TERMINATED AT ELEVATION 9.5 ft

CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
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Corporate Licensure No. for Engineering Services C-0585
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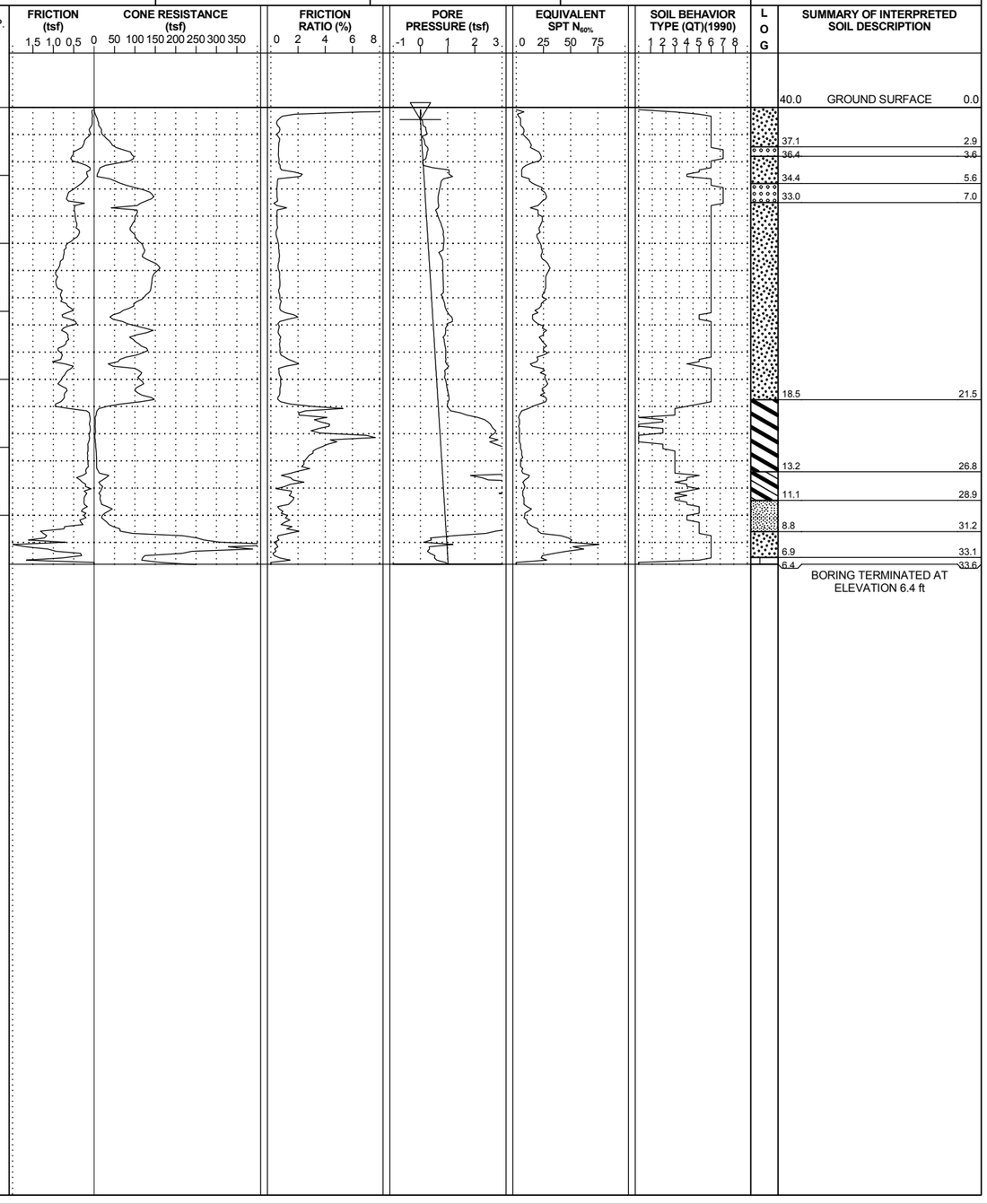
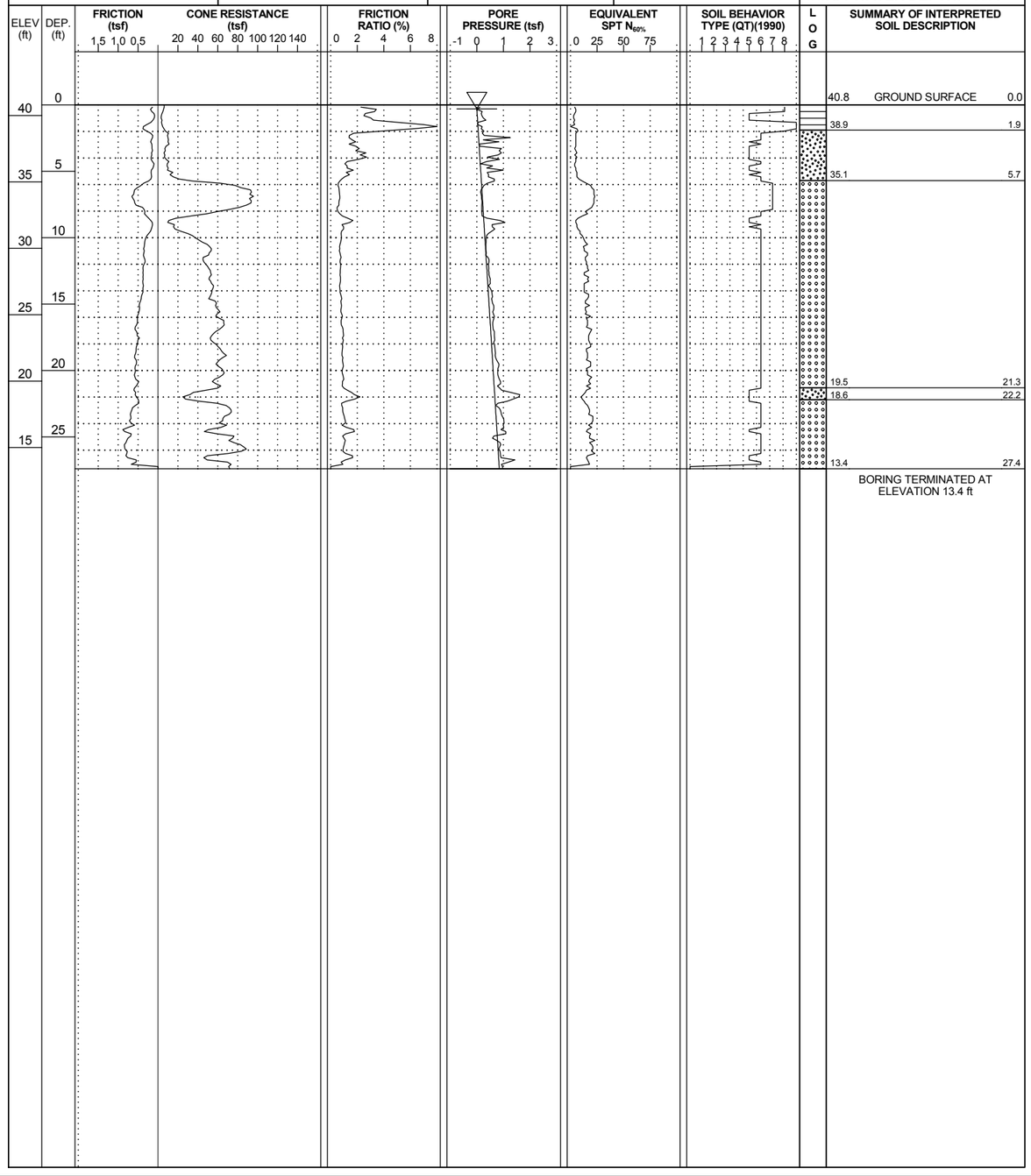
PROJECT REFERENCE NO.	SHEET
R-3300A	41

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPA_2700	**STATION:** 27+00	**OFFSET:** CL	**ALIGNMENT:** -Y33RPA-	**EST. 0 HR.** 0.9
COLLAR ELEV.: 40.0 ft	**TOTAL DEPTH:** 33.6 ft	**NORTHING:** 207,115	**EASTING:** 2,354,754	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/25/18	**COMP. DATE:** 06/25/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPB_2050	**STATION:** 20+50	**OFFSET:** CL	**ALIGNMENT:** -Y33RPB-	**EST. 0 HR.** 0.3
COLLAR ELEV.: 40.8 ft	**TOTAL DEPTH:** 27.4 ft	**NORTHING:** 207,423	**EASTING:** 2,353,856	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/27/18	**COMP. DATE:** 06/27/18	**SURF. WATER DEPTH:** N/A

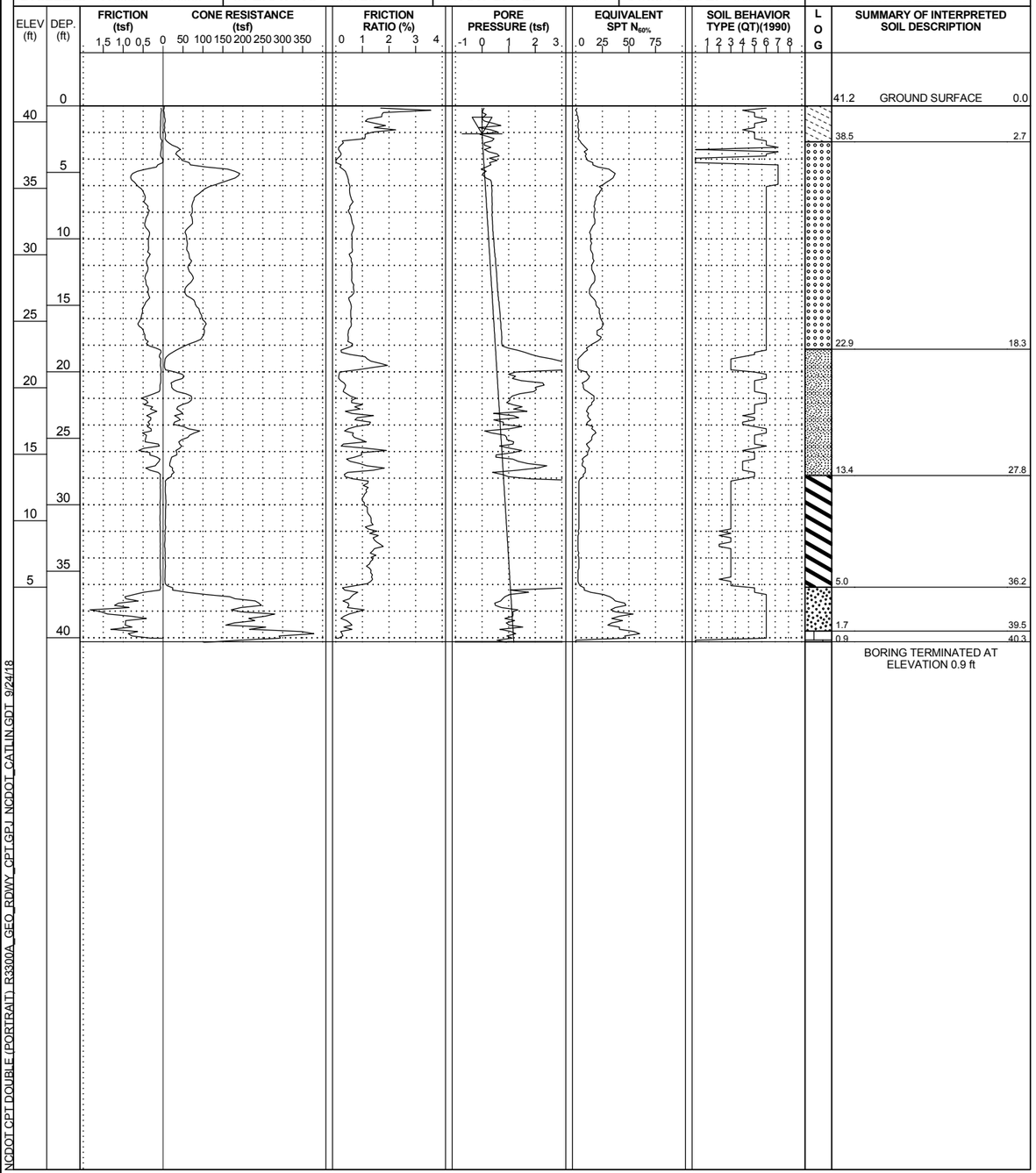


CONE PENETROMETER TEST BORING REPORT

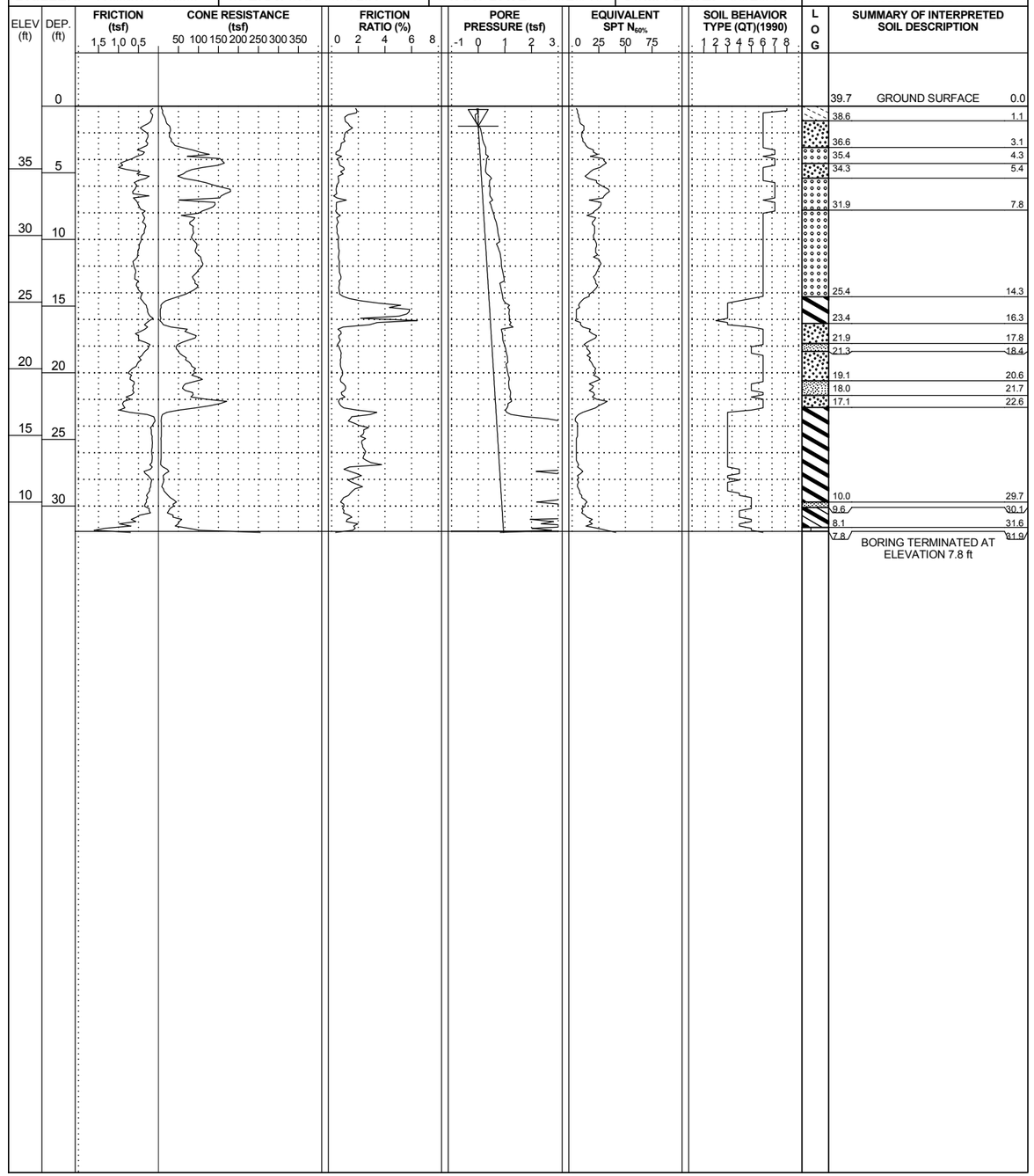
217059 CATLIN Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0585

PROJECT REFERENCE NO.	SHEET
R-3300A	42

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. PUGH	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPCA_2800	**STATION:** 28+00	**OFFSET:** CL	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 2.1
COLLAR ELEV.: 41.2 ft	**TOTAL DEPTH:** 40.3 ft	**NORTHING:** 205,742	**EASTING:** 2,353,563	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/19/18	**COMP. DATE:** 06/19/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPCA_4600	**STATION:** 46+00	**OFFSET:** 15 ft RT	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 1.5
COLLAR ELEV.: 39.7 ft	**TOTAL DEPTH:** 31.9 ft	**NORTHING:** 206,915	**EASTING:** 2,354,711	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/25/18	**COMP. DATE:** 06/25/18	**SURF. WATER DEPTH:** N/A



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217059 CATLIN Engineers and Scientists
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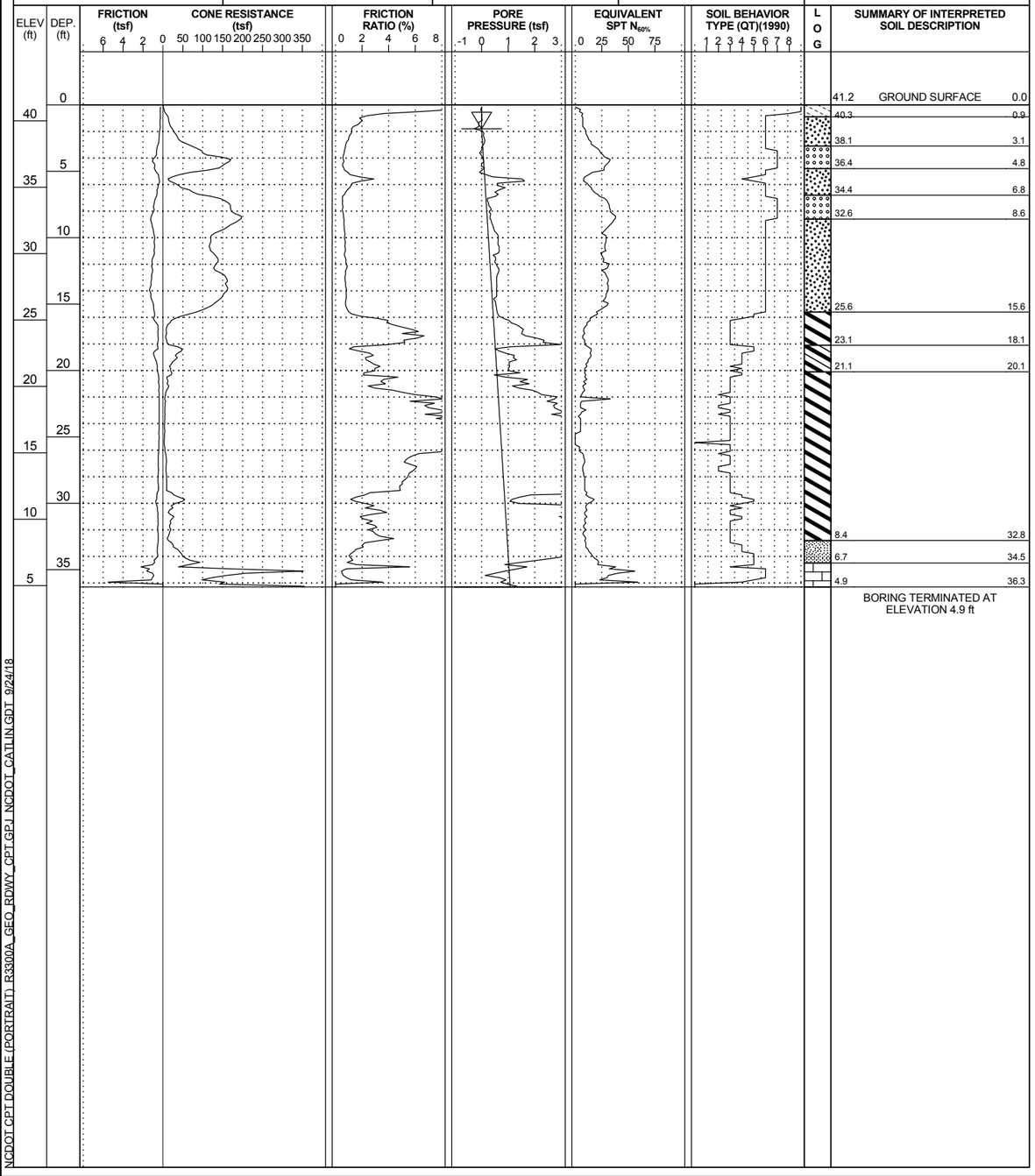
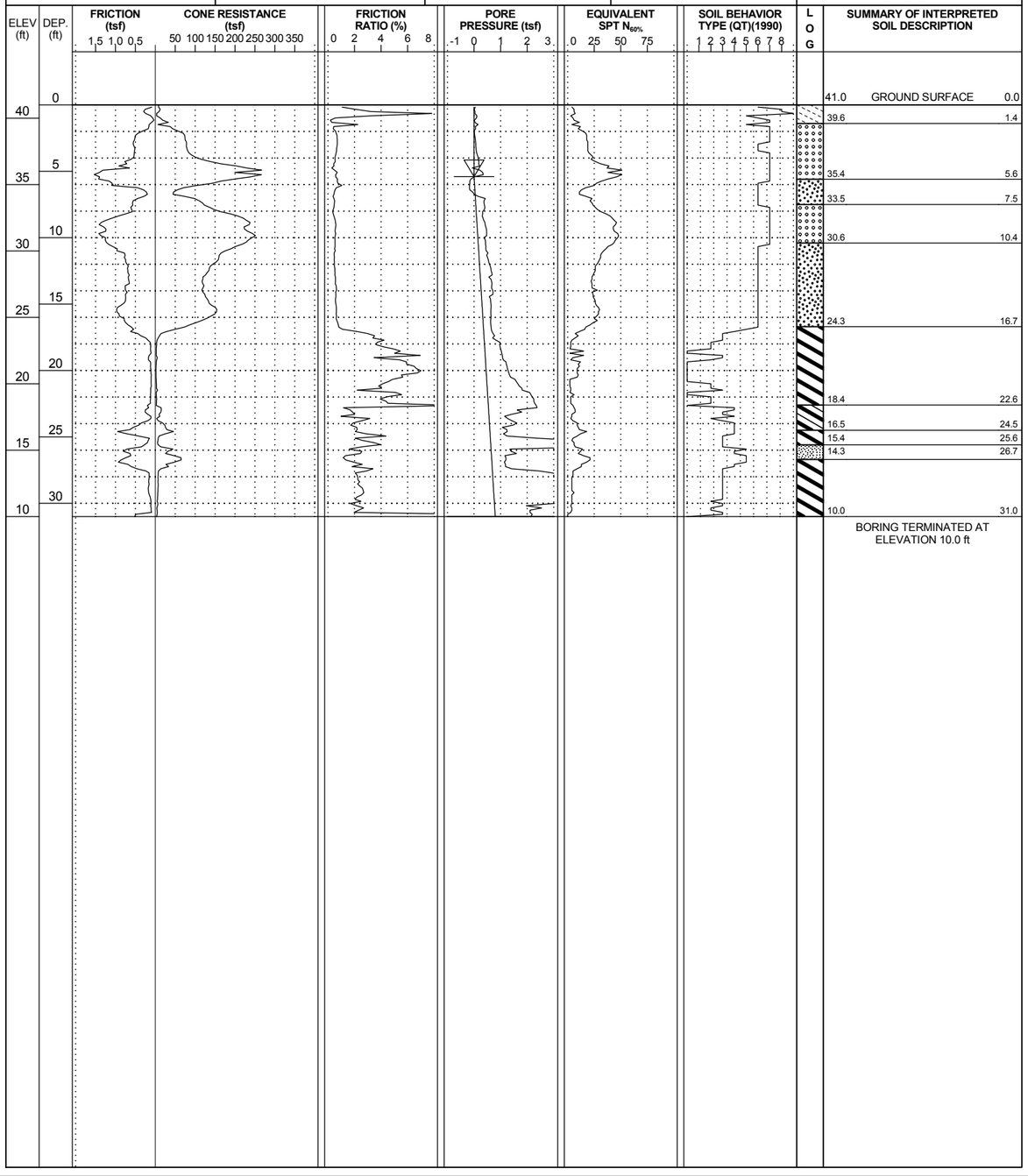
PROJECT REFERENCE NO.	SHEET
R-3300A	43

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPCA_4900	**STATION:** 49+00	**OFFSET:** CL	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 1.8
COLLAR ELEV.: 41.2 ft	**TOTAL DEPTH:** 36.3 ft	**NORTHING:** 207,215	**EASTING:** 2,354,686	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/26/18	**COMP. DATE:** 06/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPCA_5100	**STATION:** 51+00	**OFFSET:** CL	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 5.4
COLLAR ELEV.: 41.0 ft	**TOTAL DEPTH:** 31.0 ft	**NORTHING:** 207,415	**EASTING:** 2,354,683	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/26/18	**COMP. DATE:** 06/26/18	**SURF. WATER DEPTH:** N/A



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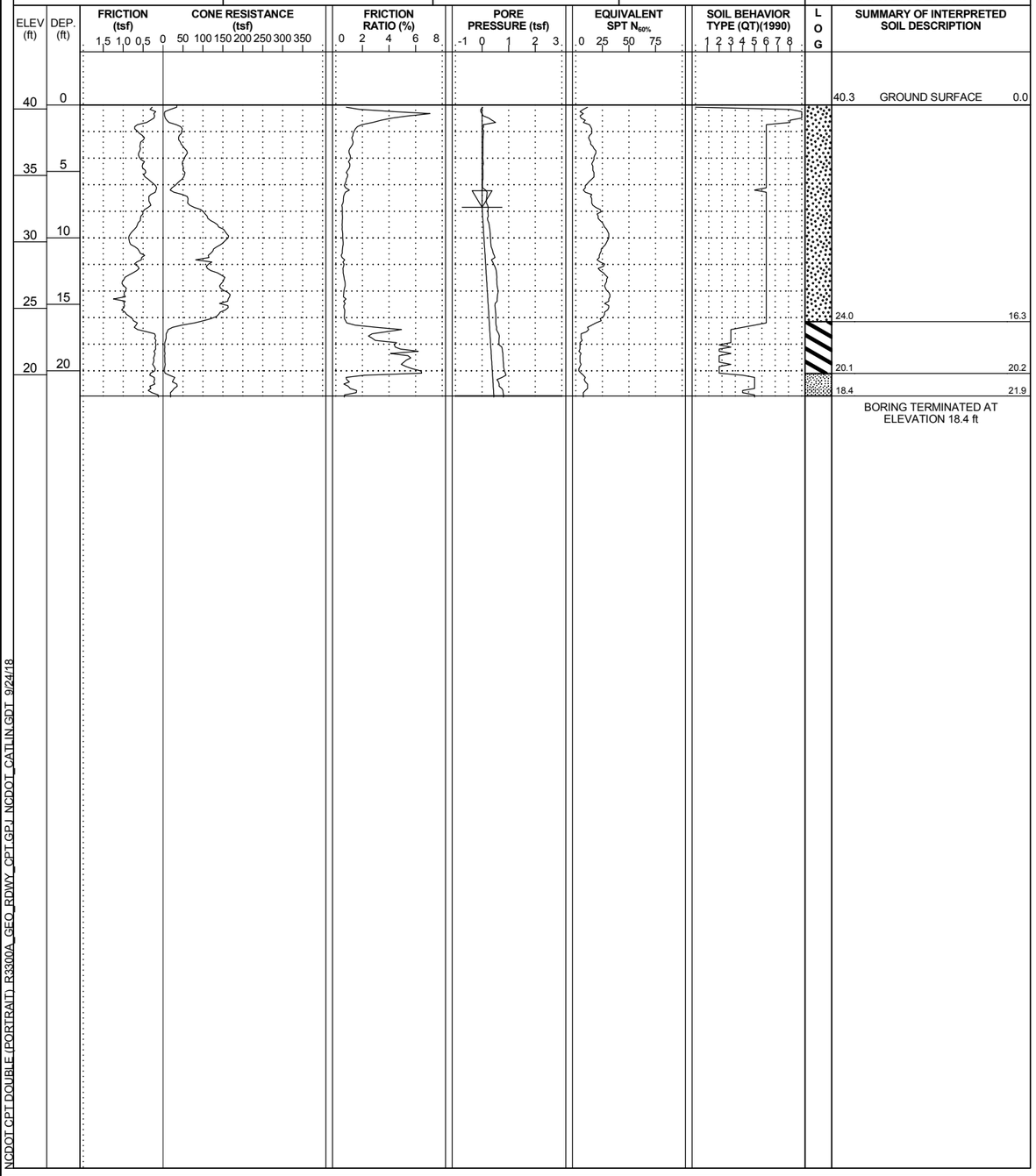
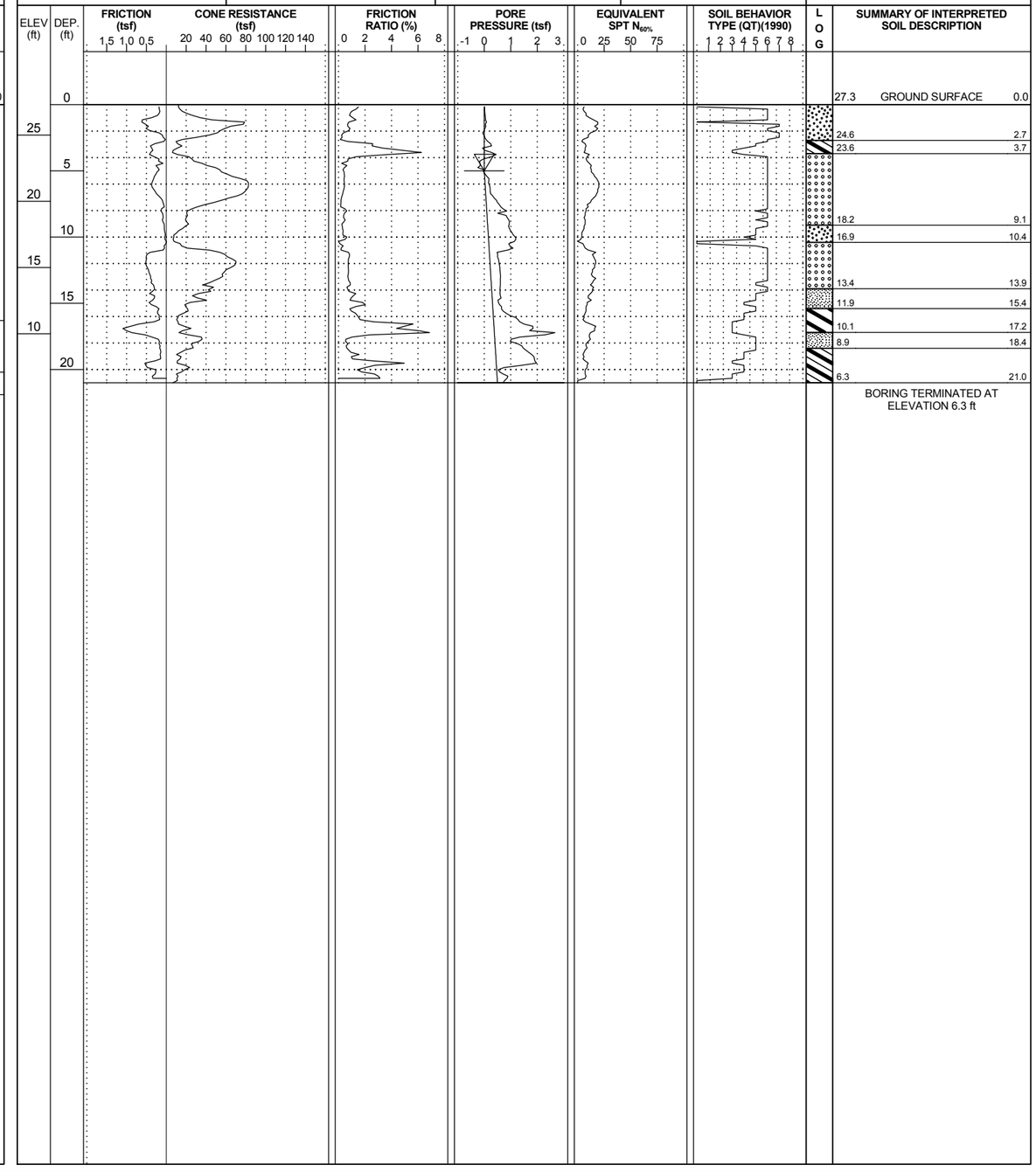
PROJECT REFERENCE NO.	SHEET
R-3300A	44

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** J. Holland	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y33RPCA_5300	**STATION:** 53+00	**OFFSET:** N/A	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 7.7
COLLAR ELEV.: 40.3 ft	**TOTAL DEPTH:** 21.9 ft	**NORTHING:** 207,613	**EASTING:** 2,354,706	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/26/18	**COMP. DATE:** 06/26/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y34_1700	**STATION:** 17+00	**OFFSET:** 20 ft RT	**ALIGNMENT:** -Y34-	**EST. 0 HR.** 5.0
COLLAR ELEV.: 27.3 ft	**TOTAL DEPTH:** 21.0 ft	**NORTHING:** 216,959	**EASTING:** 2,359,438	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/28/18	**COMP. DATE:** 06/28/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
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PROJECT REFERENCE NO.	SHEET
R-3300A	45

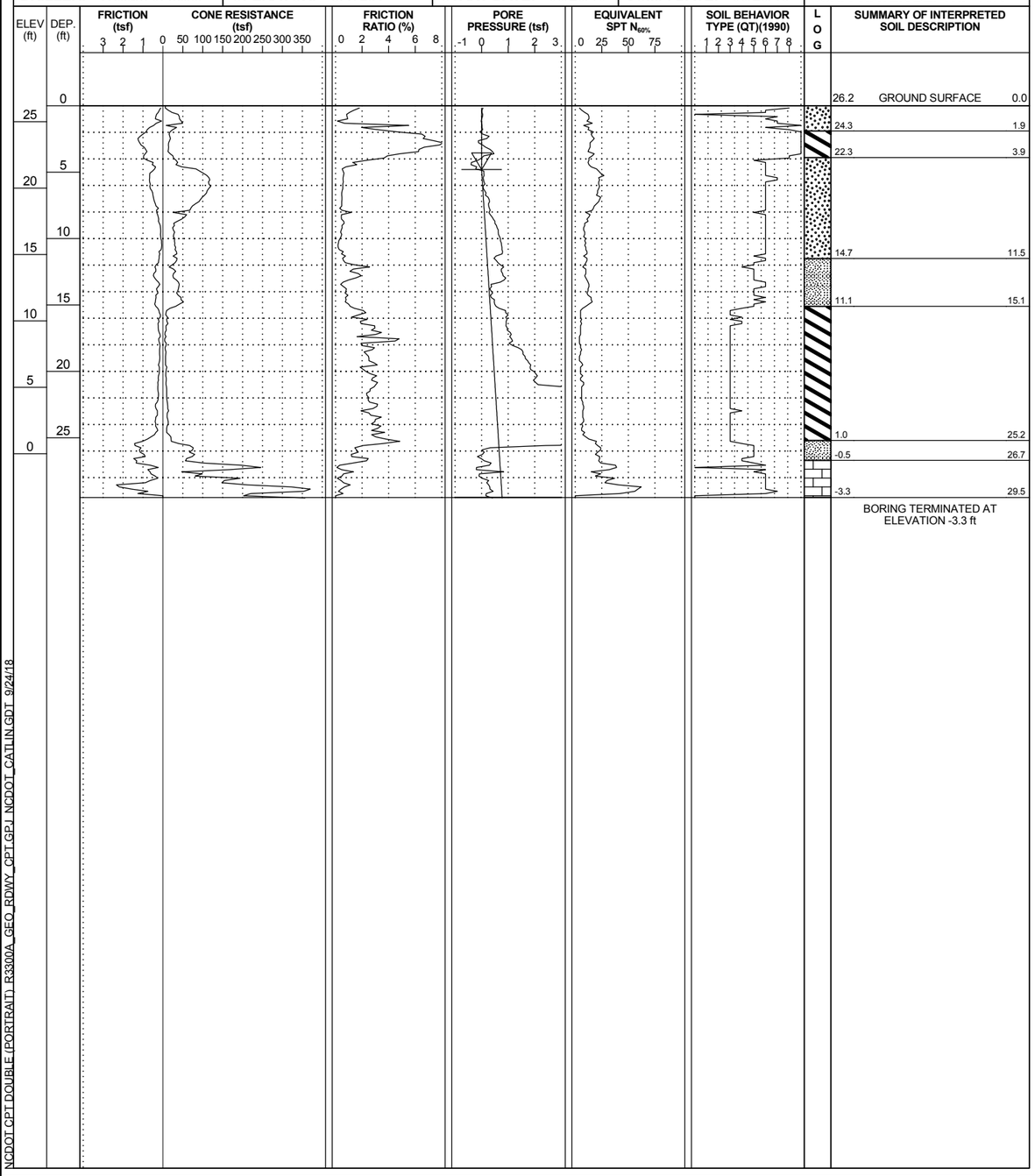
WBS:	TIP:	COUNTY:	GEOLOGIST:
40237.1.1	R-3300A	PENDER	L. Pugh

SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210

BORING NO.:	STATION:	OFFSET:	ALIGNMENT:	GROUND WTR (ft)
Y34_1900	19+00	20 ft LT	-Y34-	EST. 0 HR. 4.8
COLLAR ELEV.: 26.2 ft	**TOTAL DEPTH:** 29.5 ft	**NORTHING:** 217,047	**EASTING:** 2,359,622	24 HR. N/A

CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. **CONE TYPE:** TYPE II PIEZO **CONE ID:** DSA1123

DRILLER: William J. Miller **OPERATOR:** CATLIN **START DATE:** 06/28/18 **COMP. DATE:** 06/28/18 **SURF. WATER DEPTH:** N/A



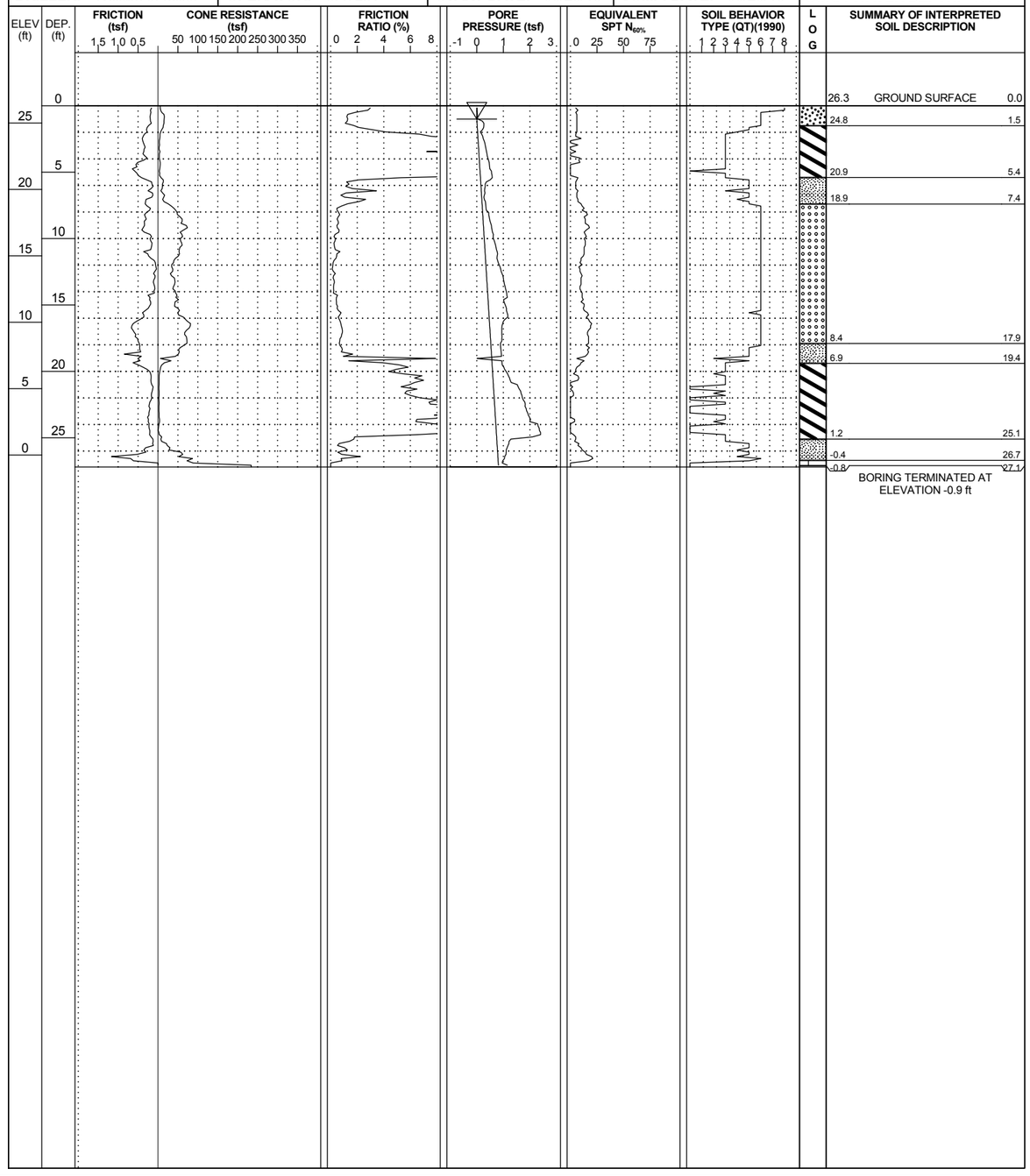
WBS:	TIP:	COUNTY:	GEOLOGIST:
40237.1.1	R-3300A	PENDER	L. Pugh

SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210

BORING NO.:	STATION:	OFFSET:	ALIGNMENT:	GROUND WTR (ft)
Y34_2100	21+00	20 ft LT	-Y34-	EST. 0 HR. 1.0
COLLAR ELEV.: 26.3 ft	**TOTAL DEPTH:** 27.2 ft	**NORTHING:** 217,096	**EASTING:** 2,359,816	24 HR. N/A

CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. **CONE TYPE:** TYPE II PIEZO **CONE ID:** DSA1123

DRILLER: William J. Miller **OPERATOR:** CATLIN **START DATE:** 06/28/18 **COMP. DATE:** 06/28/18 **SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
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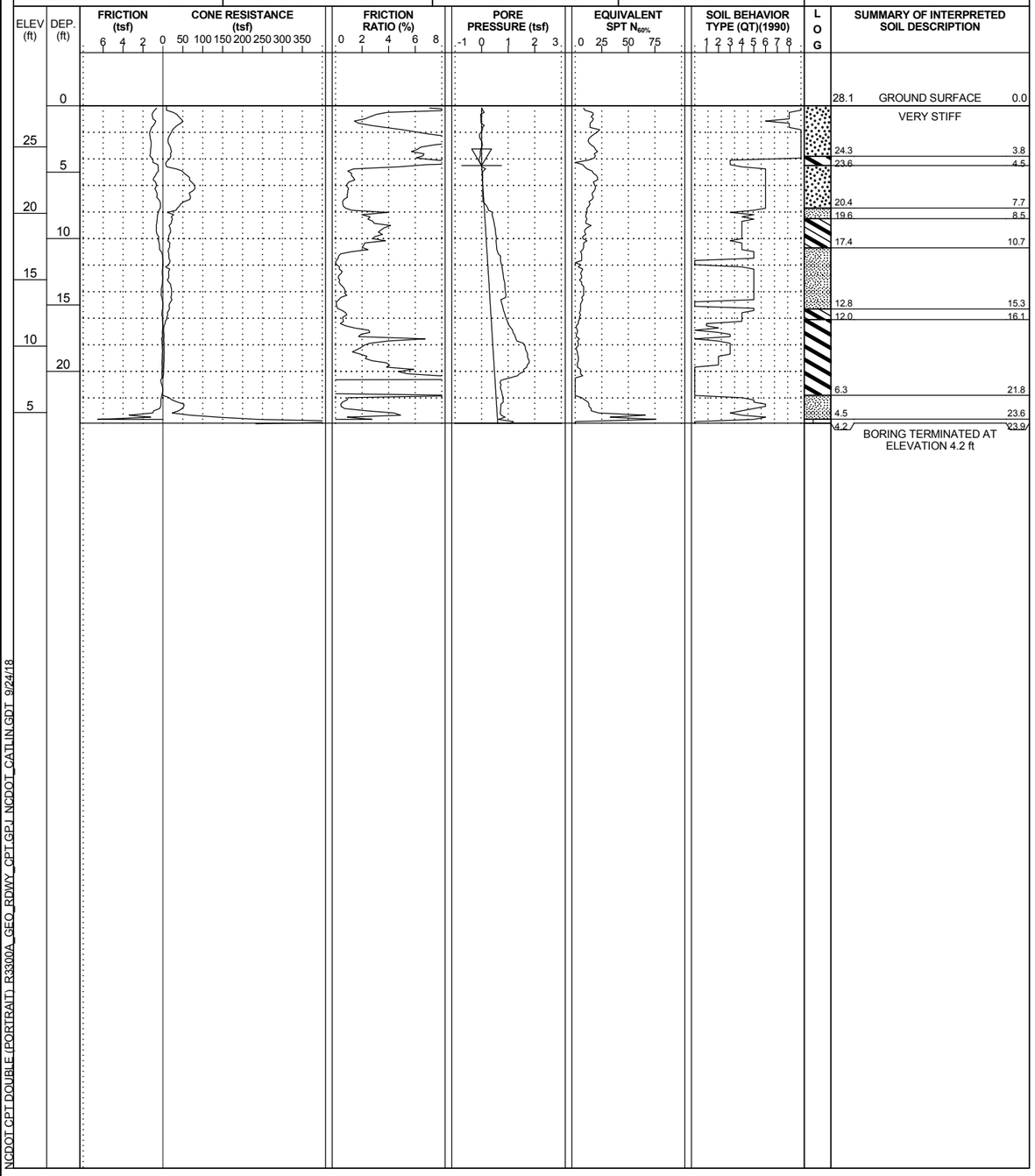
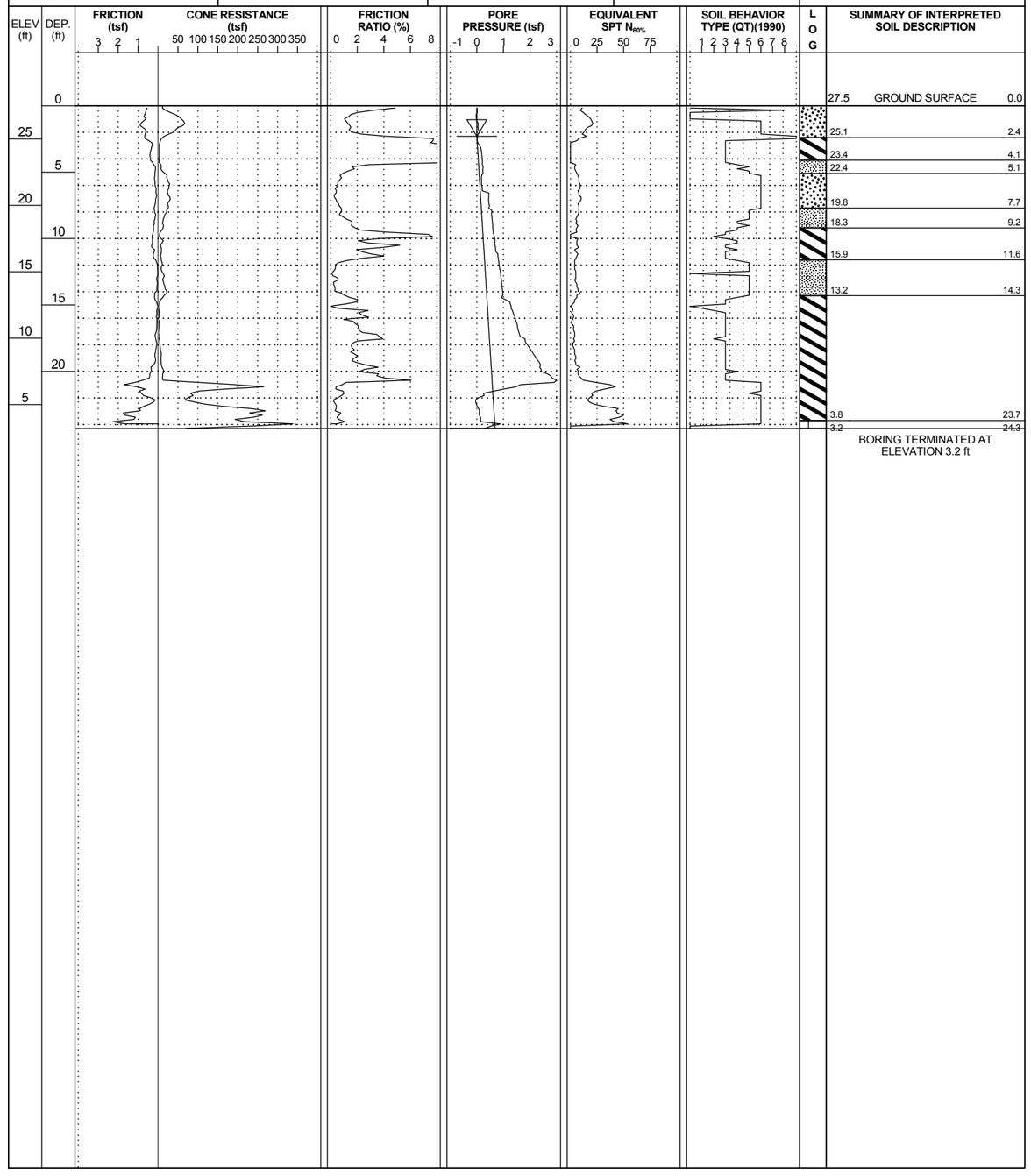
PROJECT REFERENCE NO.	SHEET
R-3300A	46

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y34_2700	**STATION:** 27+00	**OFFSET:** 20 ft LT	**ALIGNMENT:** -Y34-	**EST. 0 HR.** 4.5
COLLAR ELEV.: 28.1 ft	**TOTAL DEPTH:** 23.9 ft	**NORTHING:** 217,243	**EASTING:** 2,360,397	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/28/18	**COMP. DATE:** 06/28/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** L. Pugh	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y34_2900	**STATION:** 29+00	**OFFSET:** 20 ft RT	**ALIGNMENT:** -Y34-	**EST. 0 HR.** 2.3
COLLAR ELEV.: 27.5 ft	**TOTAL DEPTH:** 24.3 ft	**NORTHING:** 217,253	**EASTING:** 2,360,601	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: William J. Miller	**OPERATOR:** CATLIN	**START DATE:** 06/28/18	**COMP. DATE:** 06/28/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

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220 Old Dairy Road
Wilmington, NC 28405
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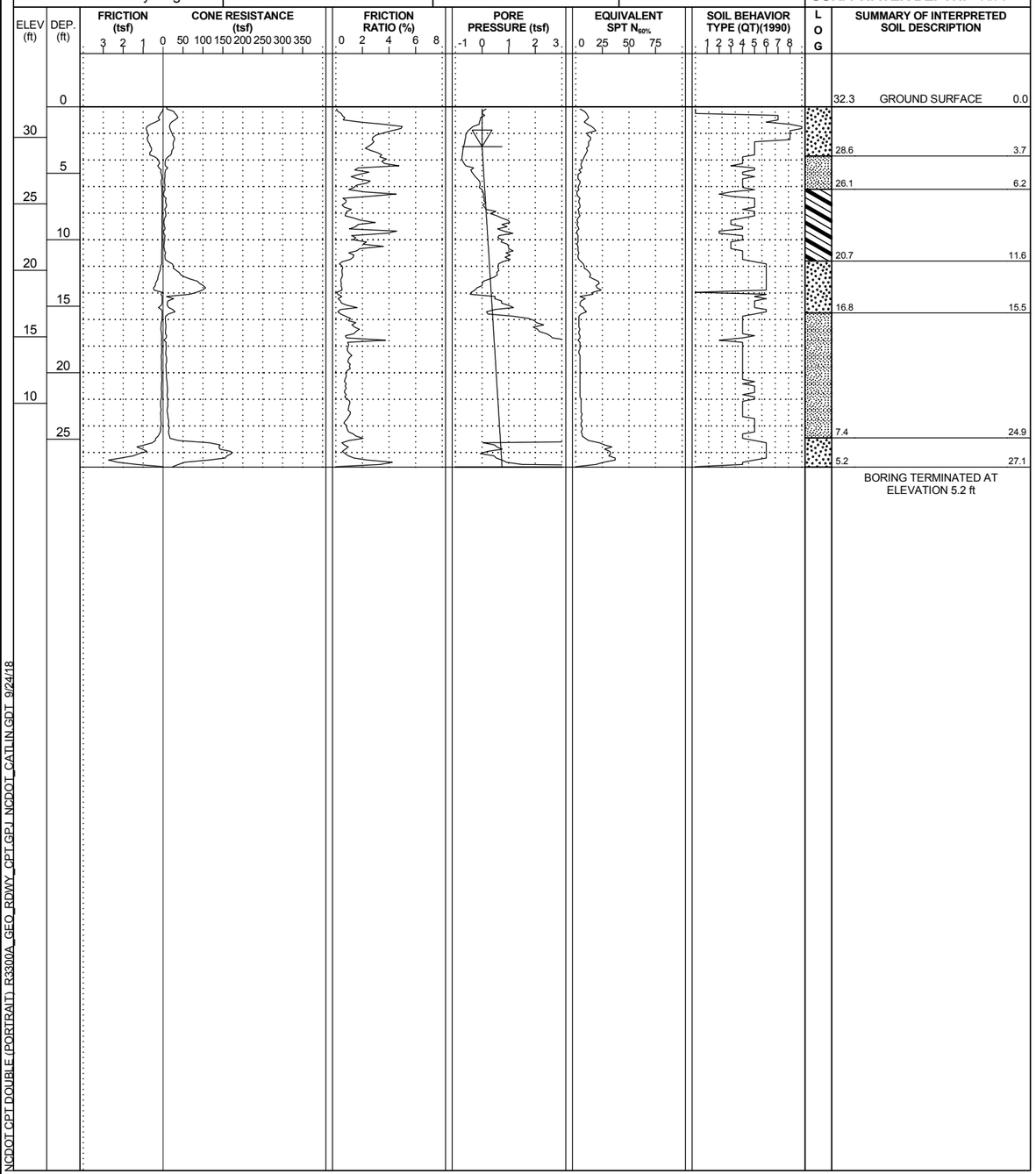
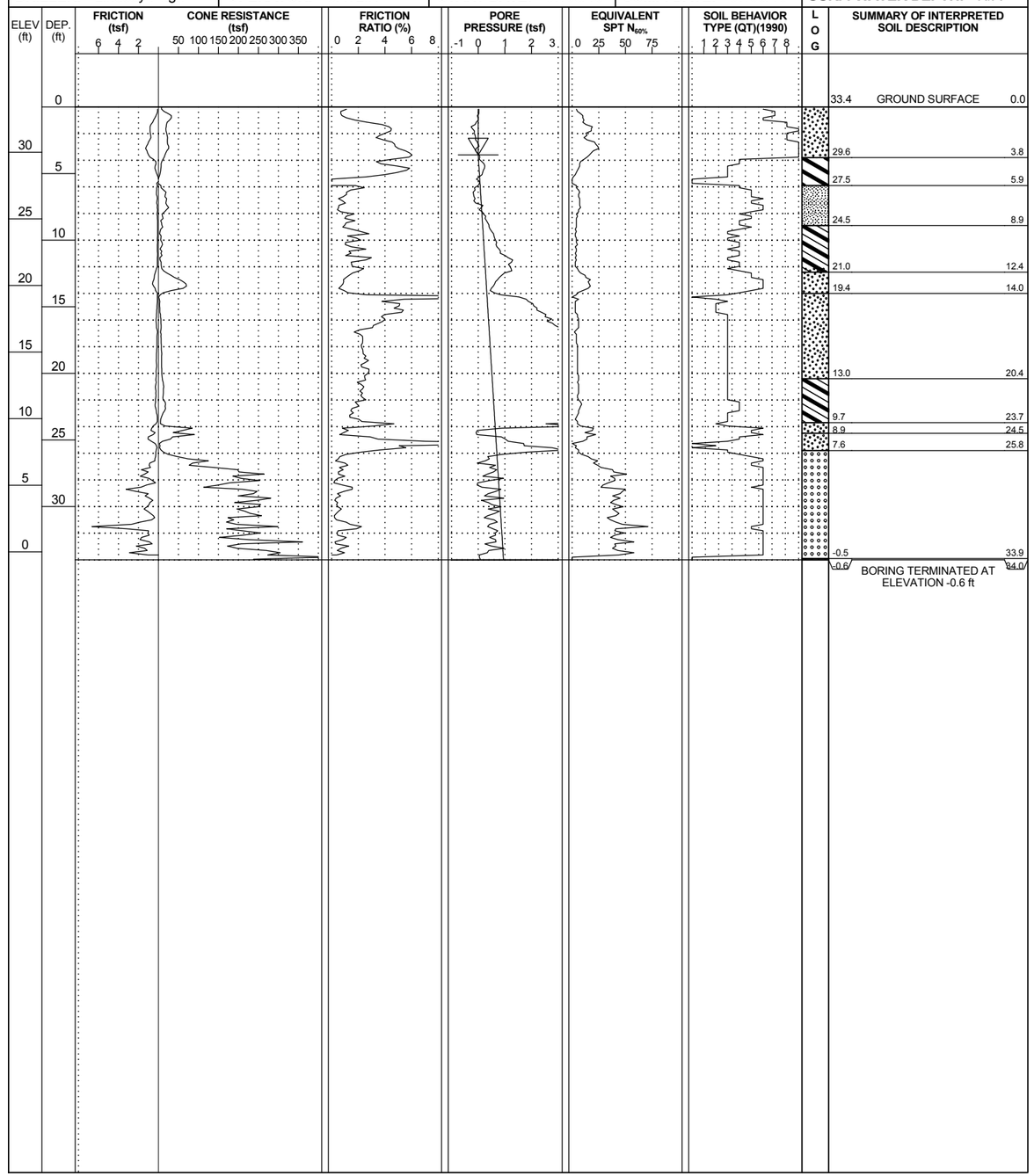
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	47

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y35_1900	**STATION:** 19+00	**OFFSET:** CL	**ALIGNMENT:** -Y35-	**EST. 0 HR.** 3.0
COLLAR ELEV.: 32.3 ft	**TOTAL DEPTH:** 27.1 ft	**NORTHING:** 229,793	**EASTING:** 2,370,178	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/17/18	**COMP. DATE:** 04/17/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y35_2100	**STATION:** 21+00	**OFFSET:** CL	**ALIGNMENT:** -Y35-	**EST. 0 HR.** 3.6
COLLAR ELEV.: 33.4 ft	**TOTAL DEPTH:** 34.0 ft	**NORTHING:** 229,619	**EASTING:** 2,370,278	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 07/03/18	**COMP. DATE:** 07/03/18	**SURF. WATER DEPTH:** N/A



CONE PENETROMETER TEST BORING REPORT

CATLIN Engineers and Scientists
220 Old Dairy Road
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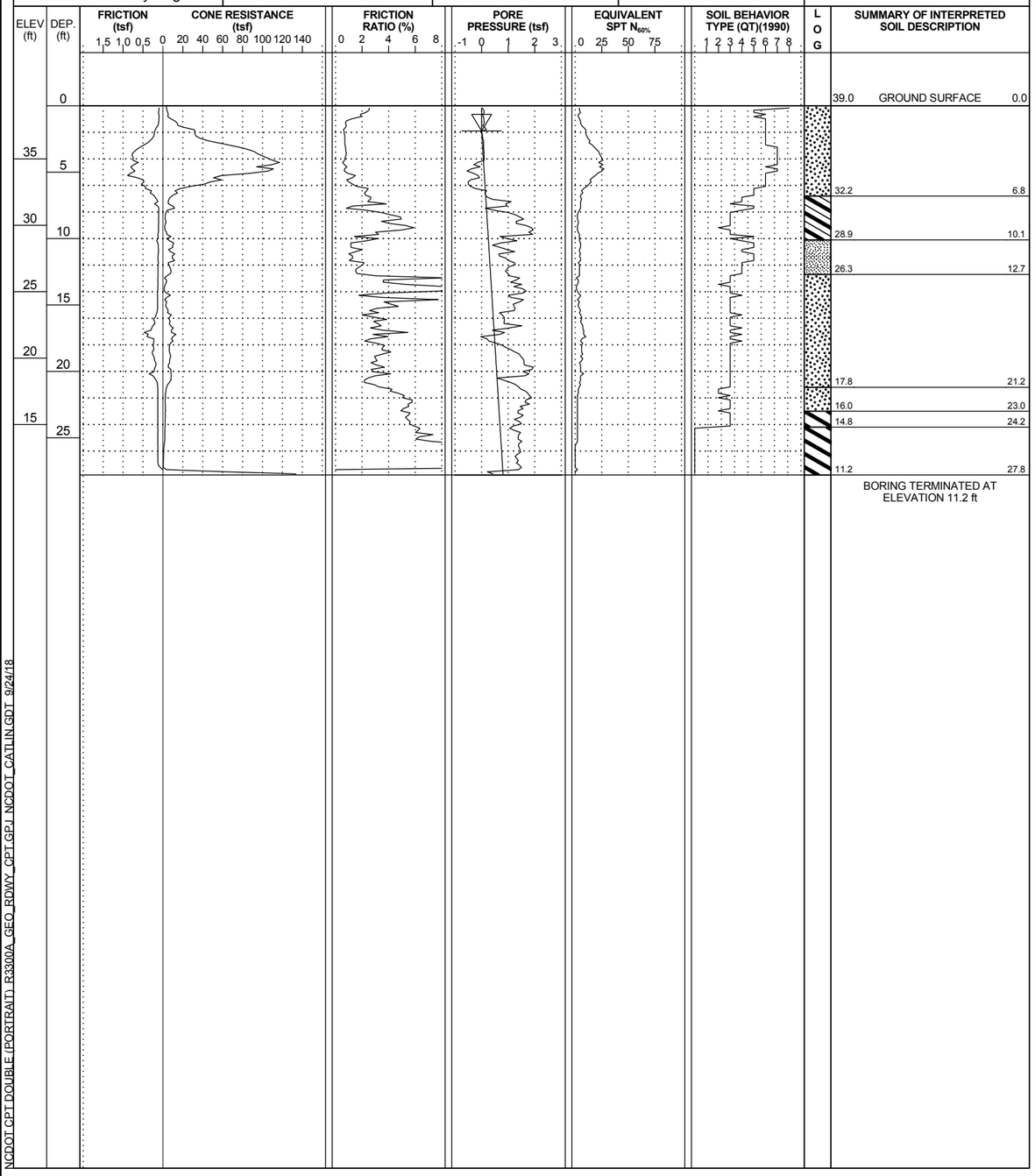
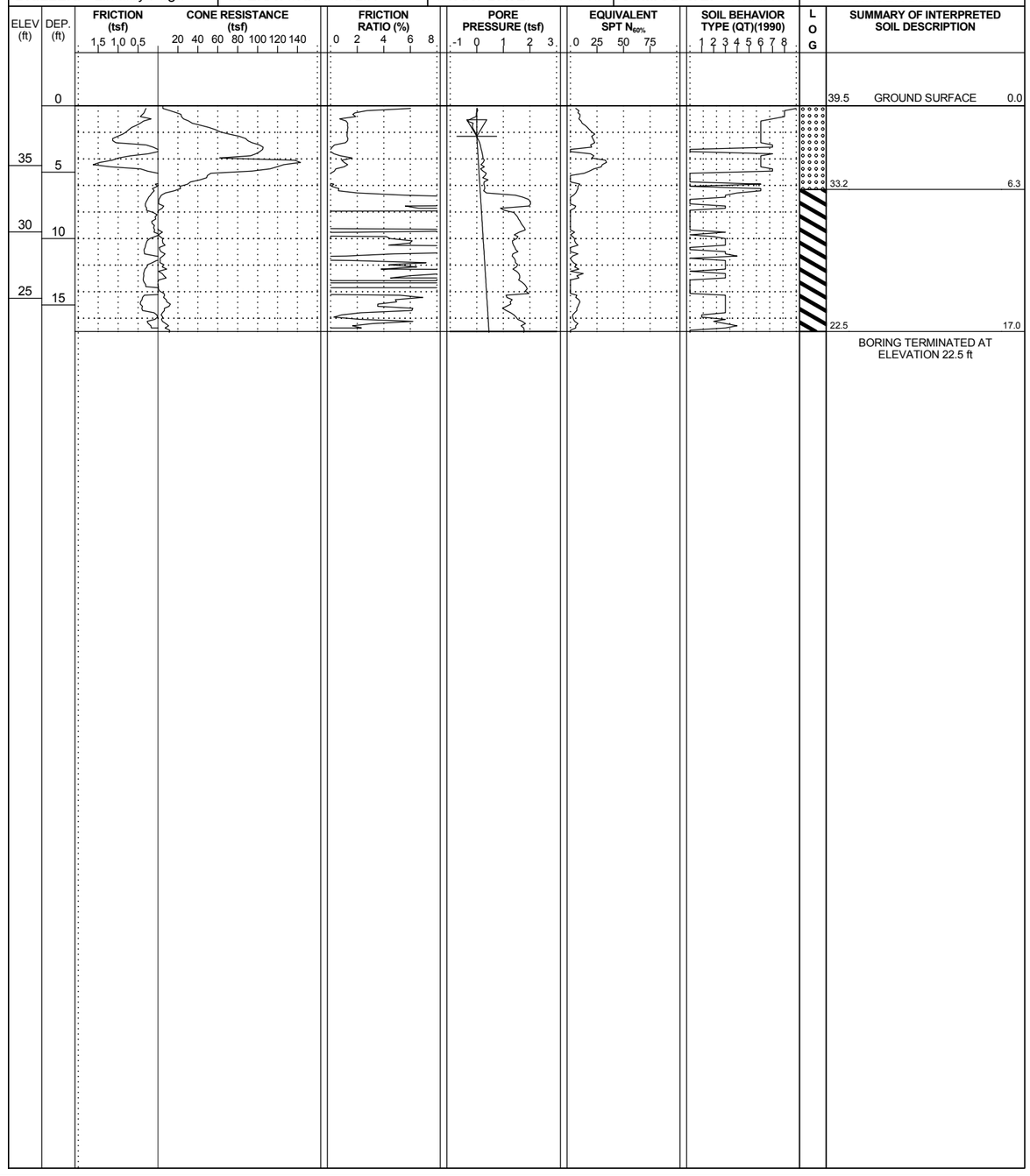
217059

PROJECT REFERENCE NO.	SHEET
R-3300A	48

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y35_2600	**STATION:** 26+00	**OFFSET:** CL	**ALIGNMENT:** -Y35-	**EST. 0 HR.** 1.9
COLLAR ELEV.: 39.0 ft	**TOTAL DEPTH:** 27.8 ft	**NORTHING:** 229,244	**EASTING:** 2,370,605	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 04/27/18	**COMP. DATE:** 04/27/18	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y35_2800	**STATION:** 28+00	**OFFSET:** CL	**ALIGNMENT:** -Y35-	**EST. 0 HR.** 2.3
COLLAR ELEV.: 39.5 ft	**TOTAL DEPTH:** 17.0 ft	**NORTHING:** 229,120	**EASTING:** 2,370,762	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS.		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** DSA1123
DRILLER: Lindsay Pugh	**OPERATOR:** CATLIN	**START DATE:** 07/03/18	**COMP. DATE:** 07/03/18	**SURF. WATER DEPTH:** N/A

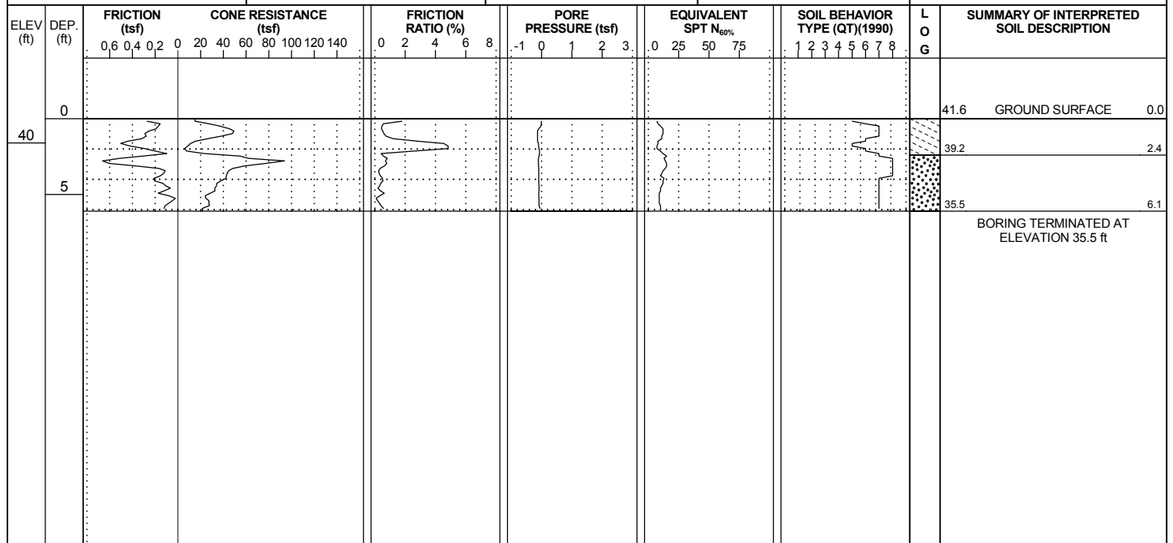


CONE PENETROMETER TEST BORING REPORT

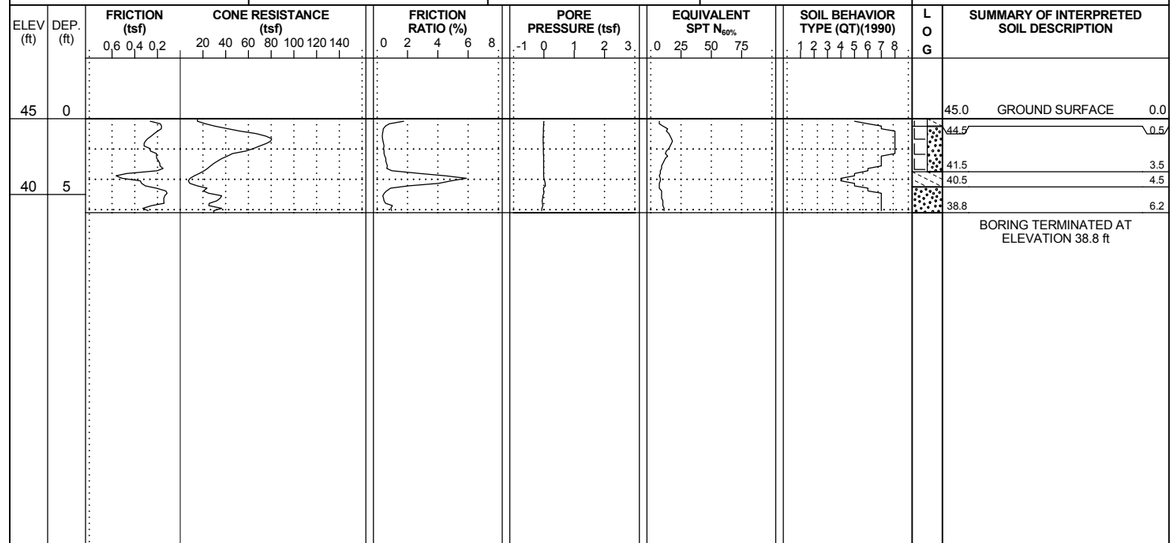
217059 CATLIN Engineers and Scientists
220 Old Dairy Road
Wilmington, NC 28405
Corporate Licensure No. for Engineering Services C-0585

PROJECT REFERENCE NO.	SHEET
R-3300A	49

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8_09200	**STATION:** 225+13	**OFFSET:** 14 ft RT	**ALIGNMENT:** -L1-	**EST. 0 HR.** N/A
COLLAR ELEV.: 41.6 ft	**TOTAL DEPTH:** 6.1 ft	**NORTHING:** 206,377	**EASTING:** 2,354,006	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 06/23/14	**COMP. DATE:** 06/23/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8_09800	**STATION:** 39+98	**OFFSET:** 68 ft RT	**ALIGNMENT:** -Y33PRPCA-	**EST. 0 HR.** N/A
COLLAR ELEV.: 45.0 ft	**TOTAL DEPTH:** 6.2 ft	**NORTHING:** 206,306	**EASTING:** 2,354,602	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 06/23/14	**COMP. DATE:** 06/23/14	**SURF. WATER DEPTH:** N/A



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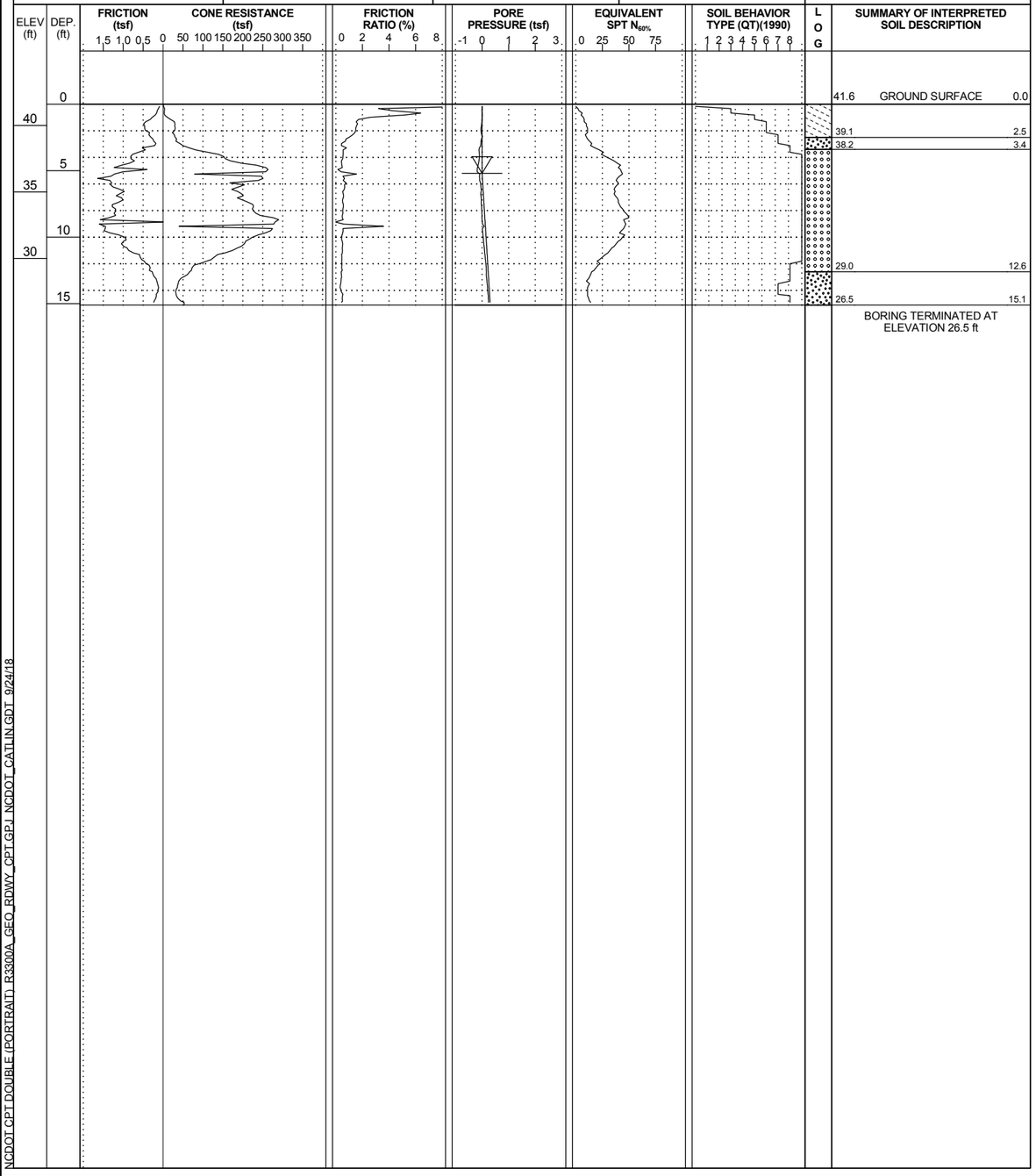
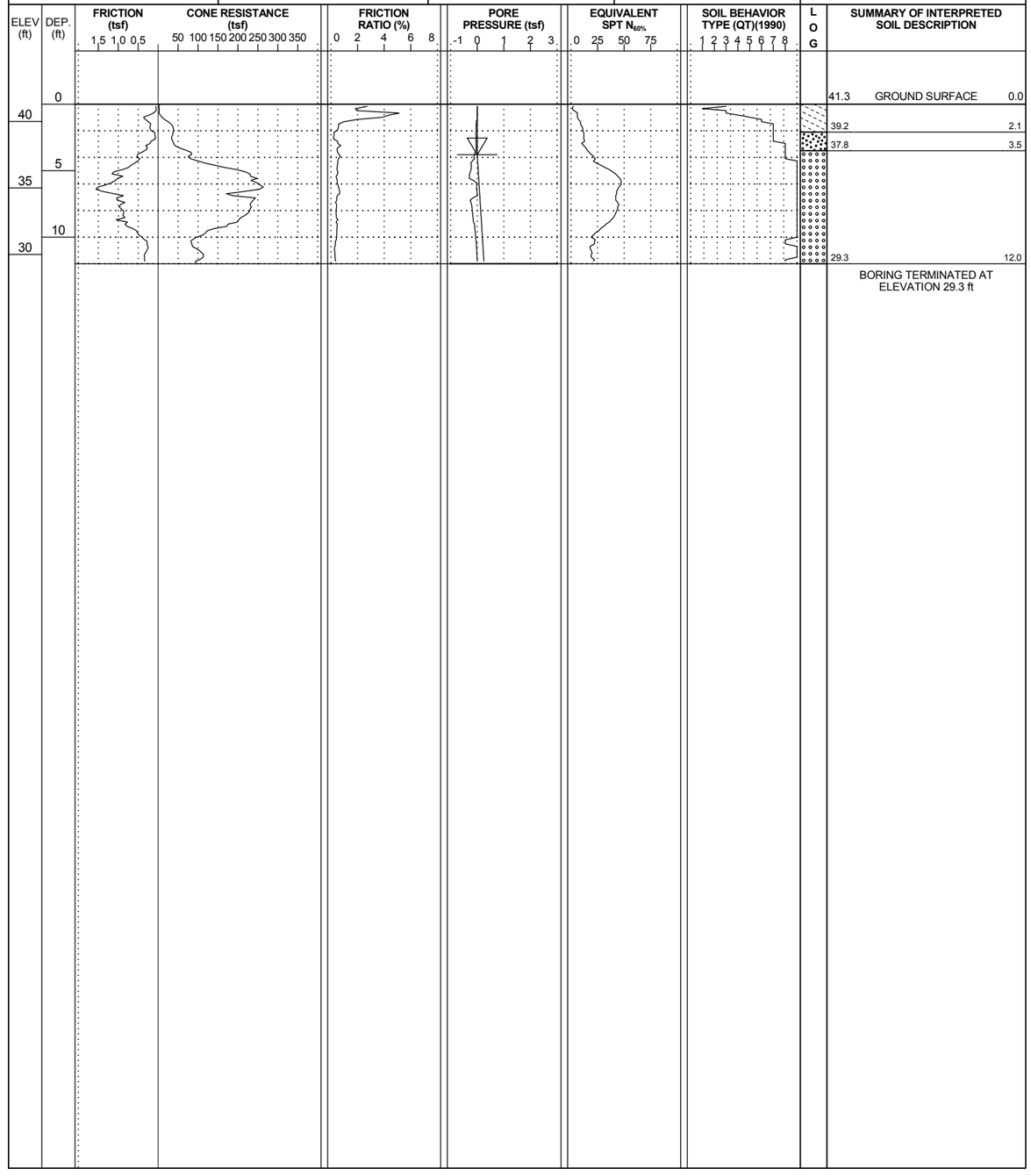
PROJECT REFERENCE NO.	SHEET
R-3300A	50

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8RPCA_5100	**STATION:** 23+33	**OFFSET:** 76 ft LT	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 5.2
COLLAR ELEV.: 41.6 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 205,994	**EASTING:** 2,352,785	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 06/19/14	**COMP. DATE:** 06/19/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8RPCA_5300	**STATION:** 25+26	**OFFSET:** 33 ft LT	**ALIGNMENT:** -Y33RPCA-	**EST. 0 HR.** 3.8
COLLAR ELEV.: 41.3 ft	**TOTAL DEPTH:** 12.0 ft	**NORTHING:** 206,121	**EASTING:** 2,352,631	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 06/19/14	**COMP. DATE:** 06/19/14	**SURF. WATER DEPTH:** N/A



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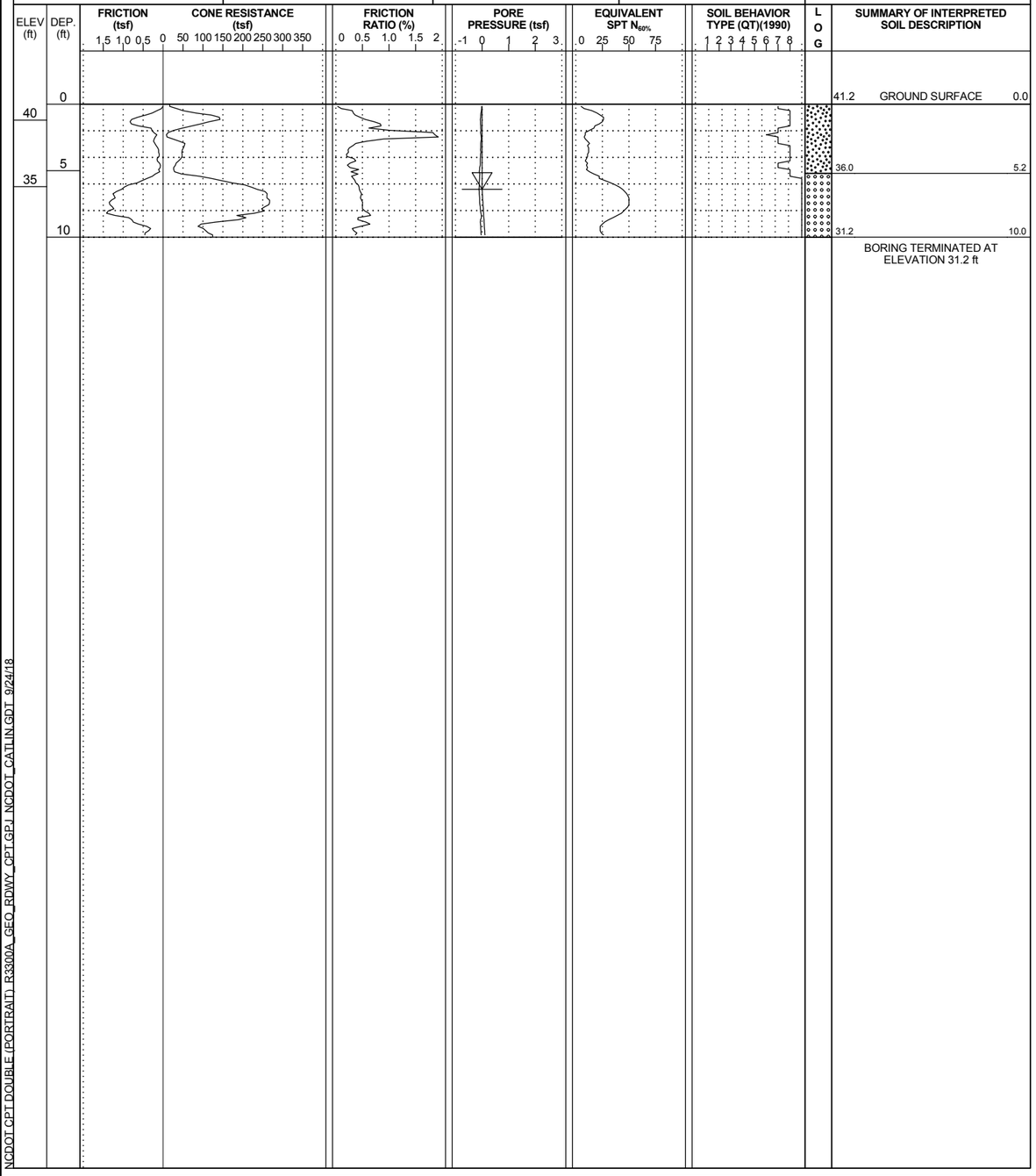
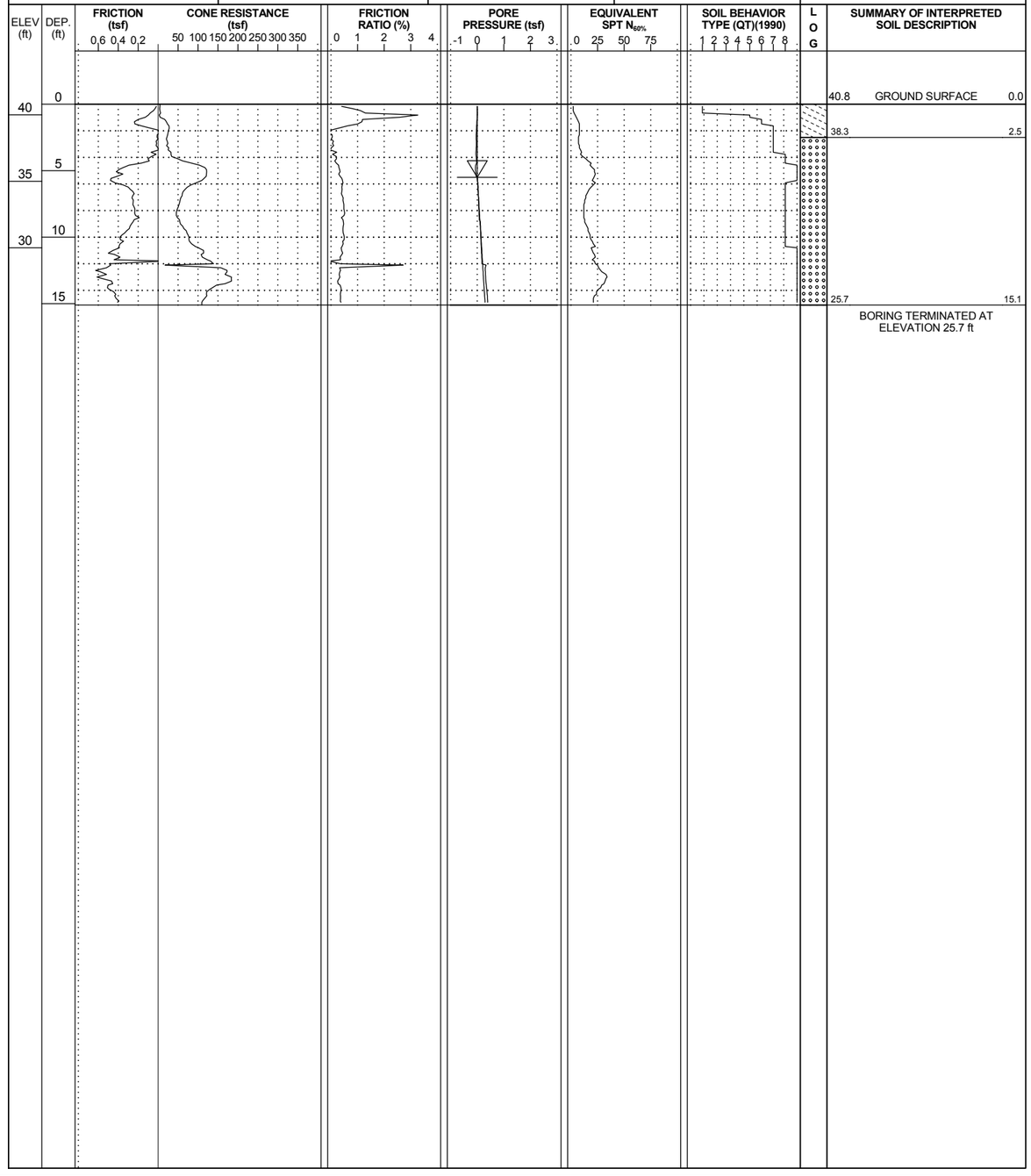
217059 CATLIN Engineers and Scientists 220 Old Dairy Road Wilmington, NC 28405 Corporate Licensure No. for Engineering Services C-0585

PROJECT REFERENCE NO.	SHEET
R-3300A	51

WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8RPDB_4500	**STATION:** 232+80	**OFFSET:** 5 ft RT	**ALIGNMENT:** -L1-	**EST. 0 HR.** 6.4
COLLAR ELEV.: 41.2 ft	**TOTAL DEPTH:** 10.0 ft	**NORTHING:** 207,111	**EASTING:** 2,354,217	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 07/02/14	**COMP. DATE:** 07/02/14	**SURF. WATER DEPTH:** N/A



WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8RPDB_5100	**STATION:** 23+33	**OFFSET:** 77 ft LT	**ALIGNMENT:** -Y33RPB-	**EST. 0 HR.** 5.5
COLLAR ELEV.: 40.8 ft	**TOTAL DEPTH:** 15.1 ft	**NORTHING:** 207,225	**EASTING:** 2,353,636	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 07/02/14	**COMP. DATE:** 07/02/14	**SURF. WATER DEPTH:** N/A



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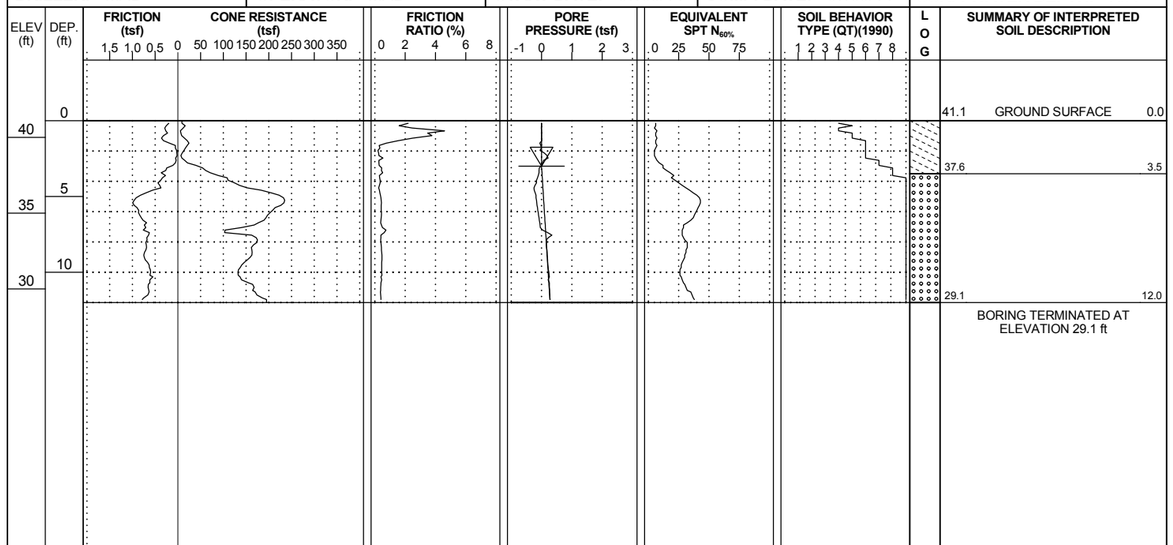
WBS: 40237.1.1	**TIP:** R-3300A	**COUNTY:** PENDER	**GEOLOGIST:** Steven Hudson	
SITE DESCRIPTION: NC 417 (HAMPSTEAD BYPASS) FROM WILMINGTON BYPASS TO SOUTH OF NC 210				**GROUND WTR (ft)**
BORING NO.: Y8RPDB_5300	**STATION:** 25+26	**OFFSET:** 33 ft LT	**ALIGNMENT:** -Y33RPB-	**EST. 0 HR.** 3.0
COLLAR ELEV.: 41.1 ft	**TOTAL DEPTH:** 12.0 ft	**NORTHING:** 207,188	**EASTING:** 2,353,439	**24 HR.** N/A
CPT RIG/MAX. DOWN PRESSURE: Hogentogler Track /		**CONE TYPE:** TYPE II PIEZO		**CONE ID:** M.A.D.
DRILLER: MAD	**OPERATOR:** MAD	**START DATE:** 07/09/14	**COMP. DATE:** 07/09/14	**SURF. WATER DEPTH:** N/A



ELEV (ft)	DEP. (ft)	LOG	SUMMARY OF INTERPRETED SOIL DESCRIPTION
41.1	0.0		GROUND SURFACE
37.6	3.5		
29.1	12.0		BORING TERMINATED AT ELEVATION 29.1 ft

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		R-3300A	52

NCDOT CPT DOUBLE (PORTRAIT) R3300A_GEO_RDWY_CPT.GPJ NCDOT_CATLIN.GDT 9/24/18