This electronic collection of documents is provided for the convenience of the user and is Not a Certified Document –

The documents contained herein were originally issued and sealed by the individuals whose names and license numbers appear on each page, on the dates appearing with their signature on that page.
This file or an individual page shall not be considered a certified document.

REFERENCE: U-3334B

PROJECT: 34929

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	15+56 TO 127+73	4-12	15-19
-Y-	18+07 TO 22+15	5	-
-Y1-	10+75 TO 11+72	7	-
-Y2-	10+65 TO 11+40	7	-
-Y3-	13+25 TO 14+27	8	-
-Y4-	10+00 TO 11+75	8,13	-
-Y5-	10+00 TO 20+00	9,14	20
-Y6-	10+00 TO 12+75	14	20
-Y7-	11+62 TO 17+01	8,14	-
-Y8-	14+80 TO 17+72	12	-

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	38+00 TO 52+50	21-31
-L-	67+50 TO 73+50	32-38
-L-	84+00 TO 117+50	39-73
-L-	119+50 TO 127+00	74-80
-Y-	20+50 TO 21+50	81

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *JOHNSTON*

PROJECT DESCRIPTION *SR 1923 EXTENSION (BOOKER DAIRY RD.) FROM SR 1003 (BUFFALO RD.) TO US 301 (BRIGHTLEAF BLVD.)*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334B	1	81

CAUTION NOTICE

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

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

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

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

PERSONNEL

J. L. PEDRO

O. B. OTI

D. G. PINTER

J. R. MATULA

CONSULTANT:

TERRACON

INVESTIGATED BY *J. L. PEDRO*

DRAWN BY *J. L. PEDRO*

CHECKED BY *N. T. ROBERSON*

SUBMITTED BY *N. T. ROBERSON*

DATE *JANUARY 2017*

NORTH CAROLINA LICENSED SEAL 2157 GEOLOGIST JAIME LOVE PEDRO

DocuSigned by: Jaime Love Pedro 2/28/2017

B9357 1039B884B5

SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	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	50 MX													
#40	30 MX	50 MX	51 MN											
#200	15 MX	25 MX	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	—		—	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	40 MX	41 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
PI	6 MX		NP	10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MN	11 MN			
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	< 4	
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	> 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	< 2	< 0.25
	SOFT	2 TO 4	0.25 TO 0.5
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	> 30	> 4

TEXTURE OR GRAIN SIZE

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

BOULDER (BLDR.)	COBBLE (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	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL — SHRINKAGE LIMIT		
	- 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 EXCAVATION
- 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
- [ ] CME-550
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] D-50
- [ ] _____

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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

ROCK DESCRIPTION

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

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:

ELEVATION: FEET

NOTES:

FIAD - FILLED IN AFTER DRILLING

DATE: 8-15-14

TIP PROJECT: U-3334B

CONTRACT:

REVISED 65% PLANS

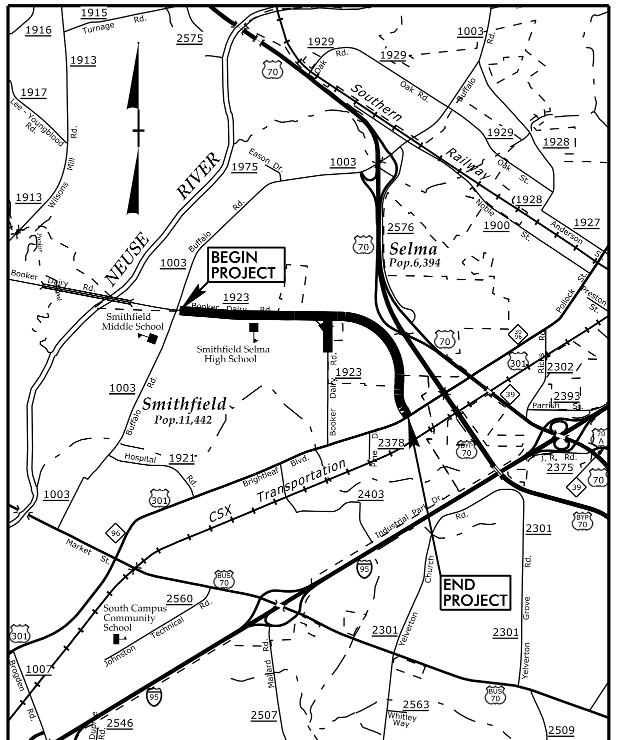
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3334B	3	81

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34929.1.3	STP-1923(12)	P.E.
34929.2.5	STP-1923(12)	R/W

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

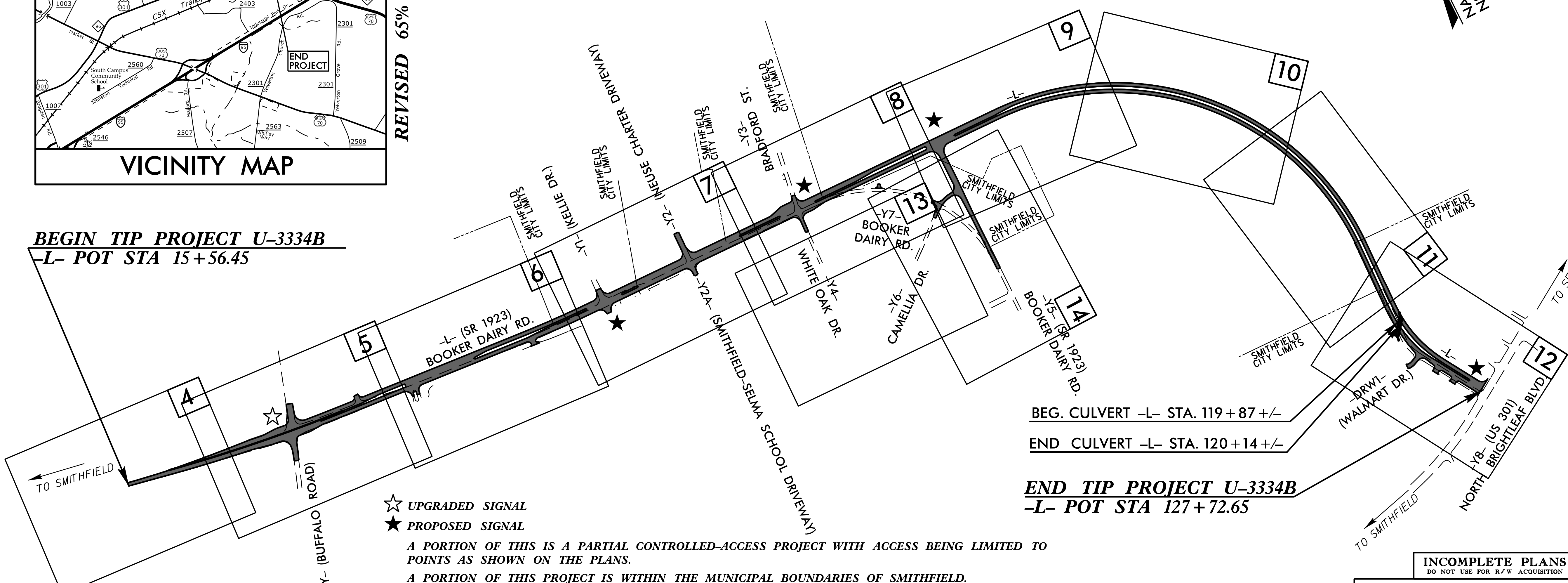
See Sheet 1-B for Conventional Symbols
See Sheets 1-C thru 1-D for Survey Control Sheets



VICINITY MAP

LOCATION: ***SR 1923 EXTENSION (BOOKER DAIRY ROAD) FROM SR 1003 (BUFFALO ROAD) TO US 301 (BRIGHTLEAF BOULEVARD)***

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERT, AND SIGNAL



☆ *UPGRADED SIGNAL*
★ *PROPOSED SIGNAL*

A PORTION OF THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF SMITHFIELD.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100 — PLANS

50 25 0 50 100 — PROFILE (HORIZONTAL)

10 5 0 10 20 — PROFILE (VERTICAL)

DESIGN DATA

ADT 2017 = 10,609
ADT 2037 = 18,155
K = 9 %
D = 55 %
T = 3 % *
V = 50 MPH
* (1% TTST + 2% DUALS)
FUNC CLASS = URBAN COLLECTOR SUBREGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-3334B = 2.123 MILES

LENGTH OF STRUCTURE TIP PROJECT U-3334B = 0.01 MILES

TOTAL LENGTH OF TIP PROJECT U-3334B = 2.124 MILES

Prepared In the Office of:

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866 Fax. (919) 851-7024 www.stantec.com License No. F-0672

for the North Carolina Department of Transportation

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 20, 2016

LETTING DATE:
JANUARY 16, 2018

STANTEC CONTACT
STEVE SMALLWOOD, P.E.
PROJECT ENGINEER

NCDOT CONTACT:
REKHA PATEL, P.E.

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

09/08/99

26-JAN-2017 08:02
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_tsh.dgn
$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

January 25, 2017

STATE PROJECT: 34929.1.3 (U-3334B)
FEDERAL PROJECT: STP-1923(12)
COUNTY: Johnston

DESCRIPTION: Smithfield – SR 1923 Extension (Booker Dairy Rd.) from west of SR 1003 (Buffalo Rd.) to US 301 (Brightleaf Blvd.)

SUBJECT: Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a subsurface investigation for this project and presents the following inventory.

Project Description

This project consists of widening existing Booker Dairy Road (-L-) from just west of Buffalo Road to Bradford Street (-Y3-)/White Oak Drive (-Y4-) and realigning existing Booker Dairy Road to a new location from -Y3/Y4- to existing Ava Gardner Drive, which connects to US 301 (North Brightleaf Blvd., -Y8-). The types of work included in the project are grading, paving, drainage, and signals.

A geotechnical investigation was conducted during May of 2014 and August of 2015. Hand augers were performed by the Geotechnical Engineering Unit on the widening portion of the project. Standard Penetration Tests were performed along the new location by Terracon, using a D-50, track mounted drill machine with an automatic hammer. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 2.7 miles, were investigated. Subsurface plans, profiles and cross sections of these alignments are included in this report.

Line	Stations
-L-	15+56 to 127+73
-Y-	18+07 to 22+15
-Y5-	10+00 to 20+00
-Y6-	10+00 to 12+75

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
GEOTECHNICAL ENGINEERING UNIT
1589 MAIL SERVICE CENTER
RALEIGH NC 27699-1589

Telephone: 919-707-6850
Fax: 919-250-4237
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

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

Physiography and Geology

The project is located along the northeastern city limits of the town of Smithfield, and at the boundary of the Piedmont Physiographic Province and the Coastal Plain Province. At the boundary, Terrace deposits and Upland sediments along with clays and sands of the Yorktown Formation overlay residual soils derived from underlying felsic metavolcanic rock of the Eastern Slate Belt. The terrain is relatively flat with some low-lying wetland areas. The widening area is a mixture of small businesses, school facilities, and single family dwellings. The new location section of the project consists of woods and wetlands to fallow pastures and cultivated fields.

Soils Properties

Soils encountered during this investigation are roadway embankment, artificial fill, Coastal Plain, and residual. These soils are described as follows:

Roadway Embankment soils are present along existing Booker Diary Rd. where the widened portion of the alignment changes over to the new alignment. These soils consist of brown and orange, loose to medium dense, moist, silty sand (A-2-4).

Artificial fill soils primarily consist of tan, brown, orange, and gray, very loose to medium dense, moist to wet, silty and clayey sand (A-2-4, A-2-6) with some gravel. Smaller amounts of orange-brown and gray, medium stiff to stiff, moist to wet, sandy clay and highly plastic, silty clay (A-6, A-7-6) is also present. Plastic indices for these soils range from 26 to 28. An area of artificial fill along -L- is related to backfill of a trench along an 8-inch sewer line. Another area of artificial fill present along Ava Gardner Dr. is within a trench for the sewer line and left and right of the existing centerline as backfill for the curb and gutter next to the existing road. One area of artificial fill is present in front of the Smithfield Recreation and Aquatics Center (SRAC) along the right of -L- Sta. 41+60 to 45+70. This fill was constructed to separate the driveway in front of the SRAC from the existing roadway and consists of tan-orange, loose to medium dense, moist to wet, silty sand (A-2-4).

Coastal Plain soils are present throughout the project corridor. These soils are characterized by surficial silty and sandy clays with some sandy silt on top of wet to saturated, coarse sand with some silty and clayey sand. The soils in the surface layer consist of tan, gray, orange, and brown, very soft to stiff, moist to wet, silty and sandy clay (A-7-6 and A-6) and sandy silt (A-4) with some highly plastic, silty clay. The plastic indices of these clayey soils range from 22 to 35. Underneath the surficial clays and silts are tan, gray, and white, very loose to loose, wet to saturated, coarse sand (A-1-b), silty sand (A-2-4), and clayey sand (A-2-6).

Residual soils were encountered beneath Coastal Plain soils from -L- Sta. 69+00 to 78+50 and along the -Y6- alignment. These soils consist of green-gray and gray, soft to hard, moist to wet, clayey and sandy silt (A-5 and A-4).

Rock Properties

Weathered rock was encountered at -Y5- Sta. 14+00 and is 18.0 feet from the existing ground surface. Weathered rock in the Eastern Slate Belt is derived from the underlying felsic metavolcanic rock.

Groundwater

Groundwater measurements were taken in May 2014 and August 2015 during average rainfall conditions. Groundwater ranges from 1.5 to 5.0 feet from the surface except in low-lying areas. The low-lying wetland

area occurs where the project transitions from widening to new location and continues into the fallow pasture areas. Groundwater in this area is at or near the ground surface along the -L- alignment from Sta. 75+00 to 85+00, and the -Y5- alignment from Sta. 10+00 to 15+00.

Areas of Special Geotechnical Interest

1) Highly Plastic Clays: Highly plastic clays (PI > 25) were encountered on the project at the following locations:

Line	Stations	Offsets
-L-	70+00 to 74+00	LT to RT
-L-	84+25 to 116+75	LT to RT
-L-	119+25 to 127+40	LT to CL
-Y5-	15+50 to 20+00	CL

A discussion of these highly plastic clay soils is located in the section titled “Soil Properties”.

2) High Groundwater: The following areas exhibit groundwater within 6.0 feet of proposed grade:

Line	Stations	Offsets
-L-	32+50	50’ RT
-L-	37+50 to 44+00	LT to RT
-L-	48+00	25’ LT
-L-	53+00 to 58+00	LT to RT
-L-	59+50 to 127+00	LT to RT

A discussion of these areas is located in the section titled “Groundwater”.

3) Water Wells: Water wells were noted within or in close proximity to the construction limits at the following locations:

Line	Stations	Offsets
-L-	47+66	55’ LT
-L-	65+17	125’ RT
-Y-	21+18	70’ LT
-Y-	21+19	104’ LT
-Y4-	12+35	42’ RT

4) Artificial Fill: Areas of artificial fill are present along the following alignments:

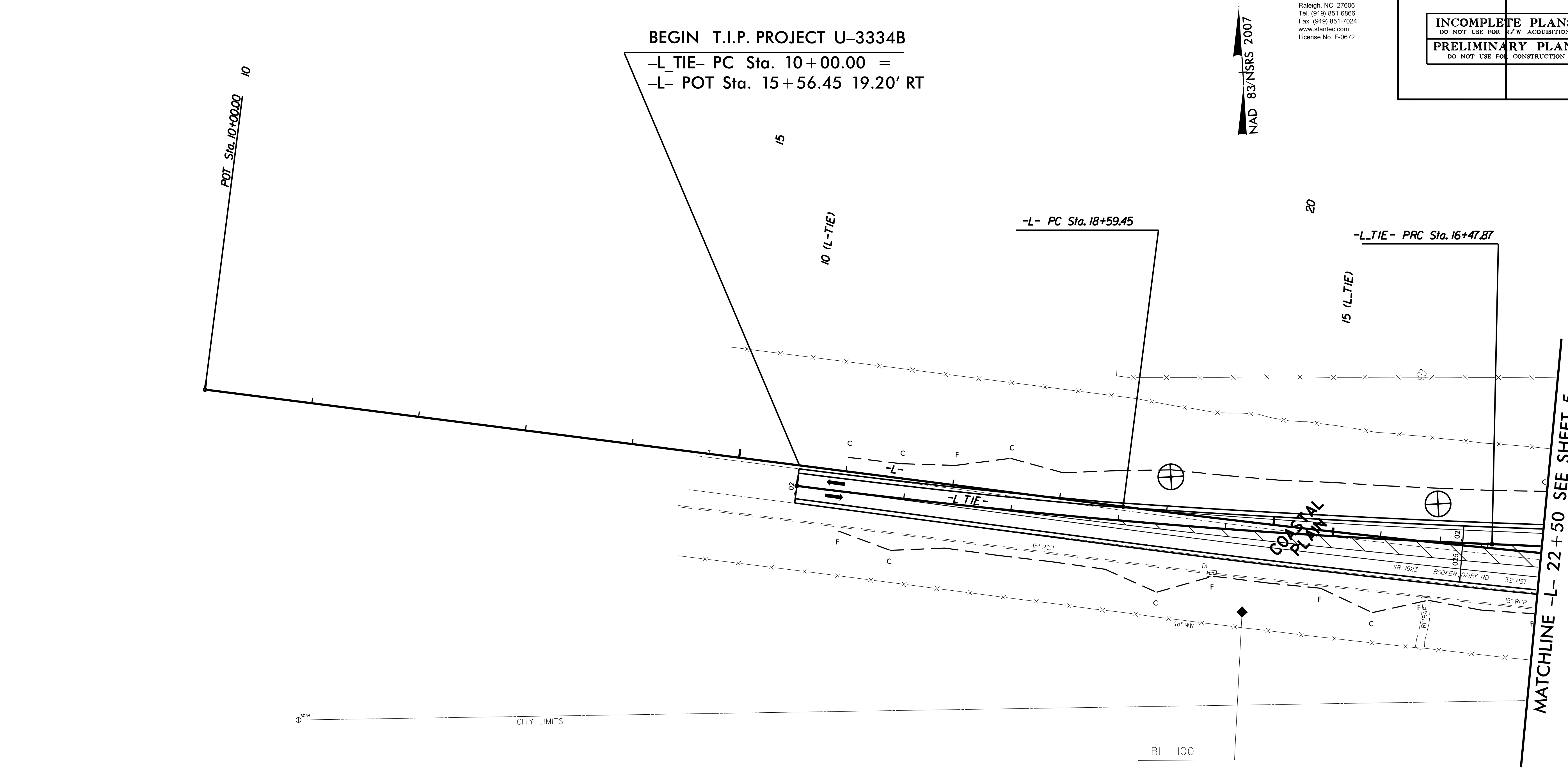
Line	Stations	Offsets
-L-	38+40 to 52+20	LT
-L-	116+73 to 127+68	LT to RT

PROJECT REFERENCE NO.	SHEET NO.
U–3334B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672



REVISIONS

8/17/99

16-FEB-2017 09:16

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/NSRS 2007

REVISIONS 8/17/99

-L_TIE- PT Sta. 19+14.15 =
-L- POC Sta. 24+70.00 11.5' LT

-Y- PC Sta. 18+76.56

-L- POC Sta 27+89.21 =
-Y- POC Sta. 19+95.90

BEGIN CONSTRUCTION
-Y- POT Sta. 18+07.09

-L- PT Sta. 31+81.57

MATCHLINE -L- 22+50 SEE SHEET 4

MATCHLINE -L- 35+50 SEE SHEET 6

END PAVING
-Y- POC Sta. 22+14.82

END CONSTRUCTION
-Y- POC Sta. 22+30.00

-Y- PT Sta. 24+43.92

GPS B334B-1

-BL- 101

BM#2

EXIST SIGNAL

ISBKD

CABINET

ELEC METER

RETENTION POND

DRAIN BOX

UNDERGROUND JUNCTION BOX POSSIBLE

RIP RAP

SR 1923 BOOKER DAIRY RD

SR 1003 BUFFALO RD

CITY LIMITS

CULTIVATED

WOODS

HTR

COASTAL PLAIN

ARTIFICIAL FILL

25

30

35

20

16-FEB-2017 09:16
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY_ADD_GEOTECH\PlanProf\U3334B_geo_psh_005.dgn
$$$$USERNAME$$$$

Stantec

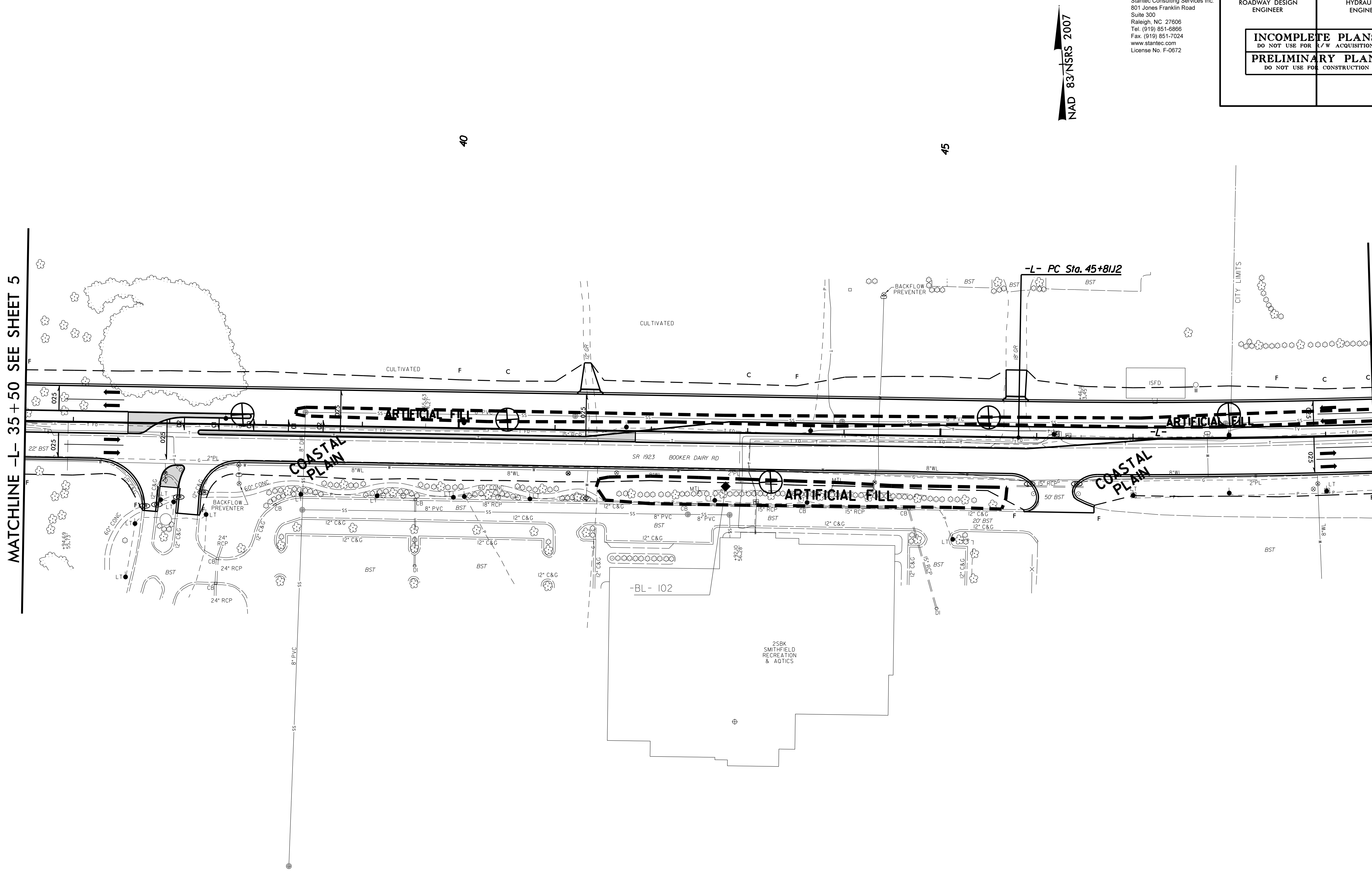
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS



8/17/99

16-FEB-2017 09:16
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_psh_006.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NAD 83/NSRS 2007

REVISIONS 8/17/99

-L- 49+50 SEE SHEET 6

MATCHLINE -L- 63+50 SEE SHEET 8

50 55 60

CITY LIMITS

-Y1- POT Sta. 10+00.00

-L- PT Sta. 50+68.17

BEGIN CONSTRUCTION
-Y1- Sta. 10+75.00

-Y2- POT Sta.9+00.00

BEGIN CONSTRUCTION
-Y2- Sta. 9+20.00

END MILLING
BEGIN GRADE
-Y2- Sta. 10+20.00

TOP=157.64'
INVERT IN=149.04'
INVERT OUT=148.34'

ISBKBUS

BST

WOODS

ARTERIAL FILL

ARTIFICIAL FILL

COASTAL PLAIN

SR 1923 BOOKER DAIRY RD

ELEC PED

ISFD

BM # 3

-BL- 103

-BL- 104

-Y1A-

-Y2-

-Y2A-

-Y1A- POT Sta. 11+71.96

-L- POT Sta 51+96.52 =
-Y1- POT Sta. 11+71.96
-Y1A- POT Sta. 10+00.00

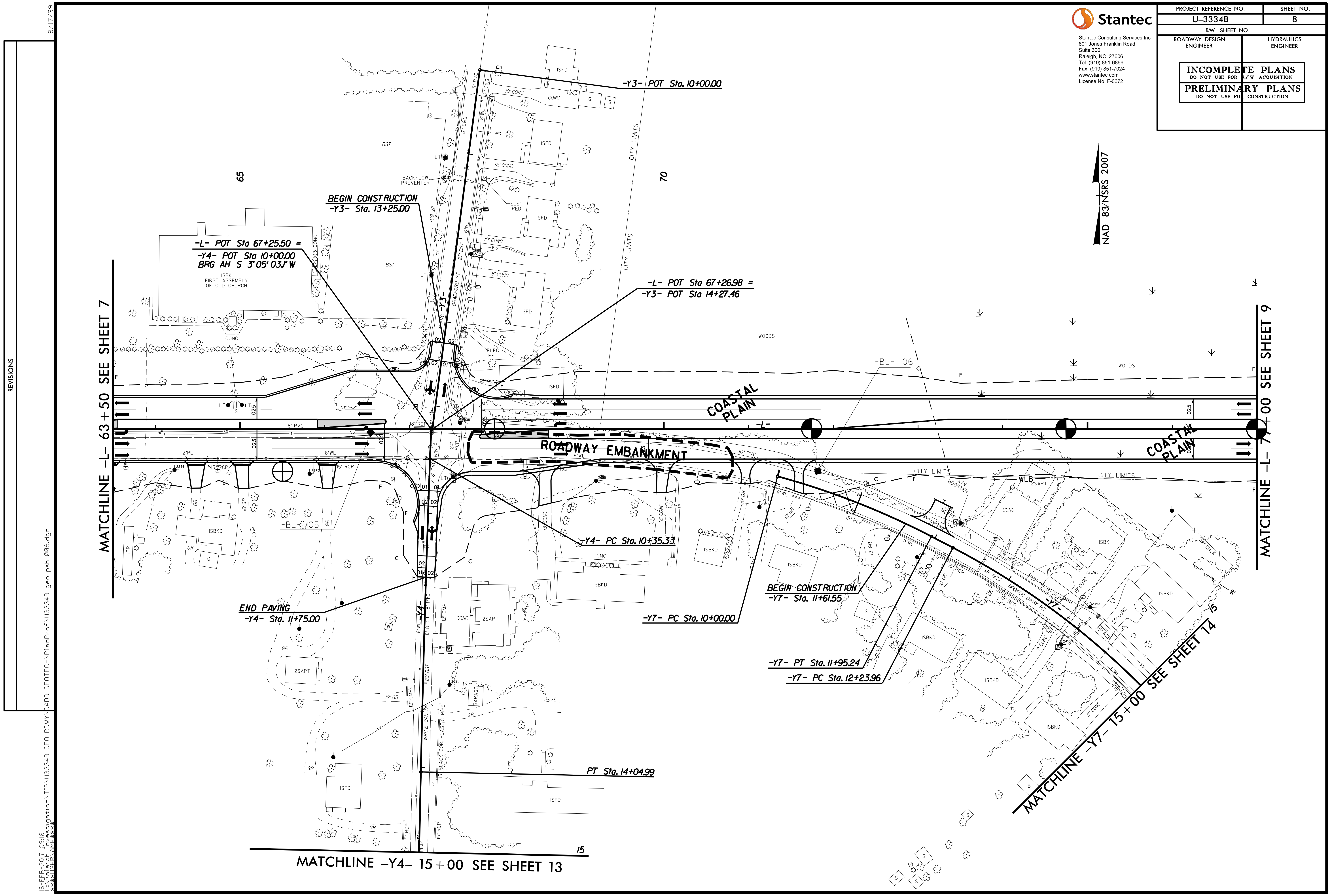
END CONSTRUCTION
-Y1A- POT Sta 10+87.51

-L- POT Sta 58+72.10=
-Y2- POT Sta. 11+39.65
-Y2A- POT Sta.10+00.00

END CONSTRUCTION
-Y2A- POT Sta 11+13.00

-Y2A- POT Sta. 11+17.65

16-FEB-2017 09:16
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_psh_007.dgn
$$$$USERNAME$$$$


PROJECT REFERENCE NO.
SHEET NO.
U-3334B
8
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672
NAD 83/NSRS 2007
REVISIONS
8/17/99
-Y3- POT Sta. 10+00.00
BEGIN CONSTRUCTION
-Y3- Sta. 13+25.00
-L- POT Sta 67+25.50 =
-Y4- POT Sta 10+00.00
BRG AH S 3°05'03.1" W
FIRST ASSEMBLY OF GOD CHURCH
-L- POT Sta 67+26.98 =
-Y3- POT Sta 14+27.46
CITY LIMITS
WOODS
-BL- 106
-BL- 105
COASTAL PLAIN
ROADWAY EMBANKMENT
-Y4- PC Sta. 10+35.33
END PAVING
-Y4- Sta. 11+75.00
BEGIN CONSTRUCTION
-Y7- Sta. 11+61.55
-Y7- PC Sta. 10+00.00
-Y7- PT Sta. 11+95.24
-Y7- PC Sta. 12+23.96
PT Sta. 14+04.99
BRADFORD ST
WHITE OAK DR
SR 1523 BOOKER DAIRY RD
MATCHLINE -L- 63+50 SEE SHEET 7
MATCHLINE -L- 77+00 SEE SHEET 9
MATCHLINE -Y4- 15+00 SEE SHEET 13
MATCHLINE -Y7- 15+00 SEE SHEET 14
16-FEB-2017 09:16

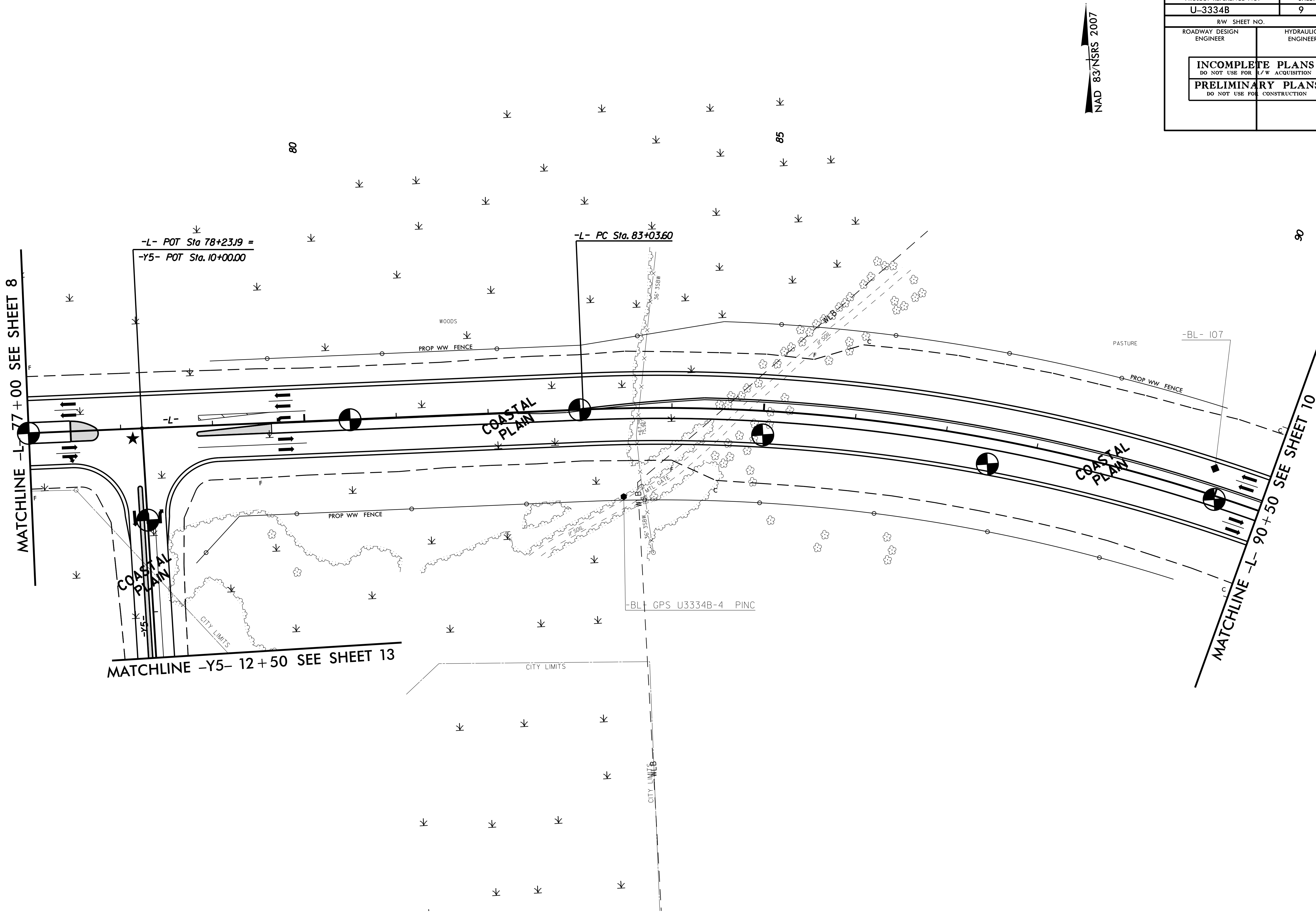
PROJECT REFERENCE NO.	SHEET NO.
U-3334B	9

RW SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS

8/17/99

16-FEB-2017 09:16
L:\Raleigh\Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_psh_009.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

NAD 83/NSRS 2007

95

100

BM#5

-BL- 108

-BL- 109

PROP WW FENCE

COASTAL PLAIN

COASTAL PLAIN

PASTURE

CULTIVATED

MATCHLINE -L- 90+50 SEE SHEET 9

MATCHLINE -L- 104+00 SEE SHEET 11

REVISIONS

8/17/99

16-FEB-2017 09:16
L:\Traffic Investigation\TIP\U3334B_GEO_RDWY_ADD_GEOTECH\PlanProf\U3334B_geo_psh_010.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

8/17/99

REVISIONS

105

110

115

NAD 83/NSRS 2007

-BL- 110

-L- PT Sta. 113+84.63

CITY LIMITS

10' SOIL

JS MT

PROP WW FENCE

COASTAL PLAIN

CULTIVATED

ARTIFICIAL FILL

BLOW-OFF

48" WW

MATCHLINE -L- 104+00 SEE SHEET 10

MATCHLINE -L- 117+50 SEE SHEET 12

16-FEB-2017 09:16
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY_ADD_GEOTECH\PlanProf\U3334B_geo_psh_011.dgn
$$$$USERNAME$$$$

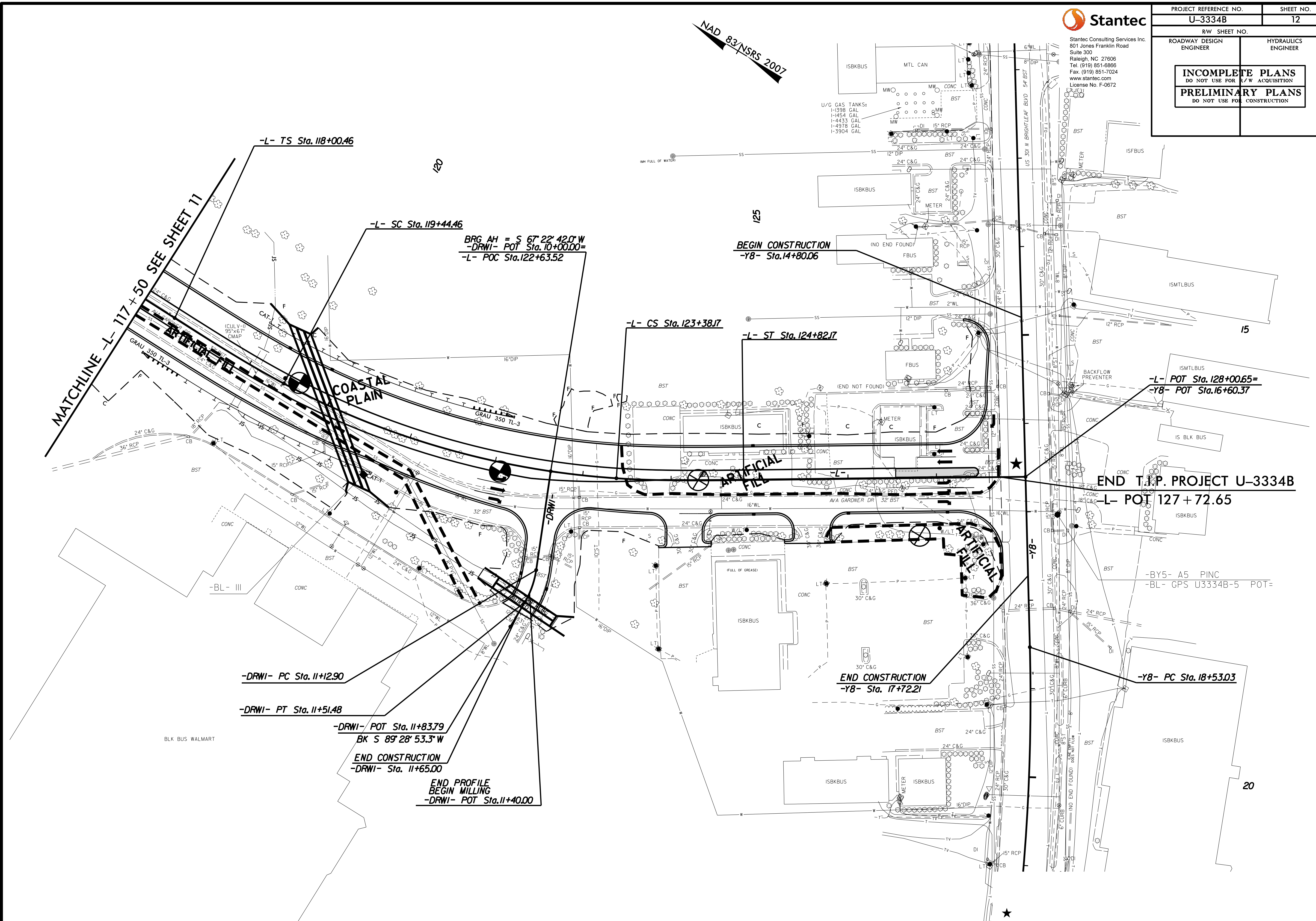
PROJECT REFERENCE NO.	SHEET NO.
U-3334B	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISIONS


NAD 83/NSRS 2007
MATCHLINE -L- 117+50 SEE SHEET 11
-L- TS Sta. 118+00.46
-L- SC Sta. 119+44.46
BRG AH = S 67° 22' 42.0" W
-DRWI- POT Sta. 10+00.00=
-L- POC Sta.122+63.52
BEGIN CONSTRUCTION
-Y8- Sta.14+80.06
-L- CS Sta. 123+38.17
-L- ST Sta. 124+82.17
-L- POT Sta. 128+00.65=
-Y8- POT Sta.16+60.37
END T.I.P. PROJECT U-3334B
-L- POT 127+72.65
COASTAL PLAIN
ARTIFICIAL FILL
ARTIFICIAL FILL
-DRWI- PC Sta. 11+12.90
-DRWI- PT Sta. 11+51.48
-DRWI- POT Sta. 11+83.79
BK S 89° 28' 53.3" W
END CONSTRUCTION
-DRWI- Sta. 11+65.00
END PROFILE
BEGIN MILLING
-DRWI- POT Sta.11+40.00
END CONSTRUCTION
-Y8- Sta. 17+72.21
-Y8- PC Sta. 18+53.03
US 301 N BRIGHTLEAF BLVD
AVA GARDNER DR
U/G GAS TANKS:
1-1398 GAL
1-1454 GAL
1-4433 GAL
1-4978 GAL
1-3904 GAL
BLK BUS WALMART
-BY5- A5 PINC
-BL- GPS U3334B-5 POT=
120
125
15
20

Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

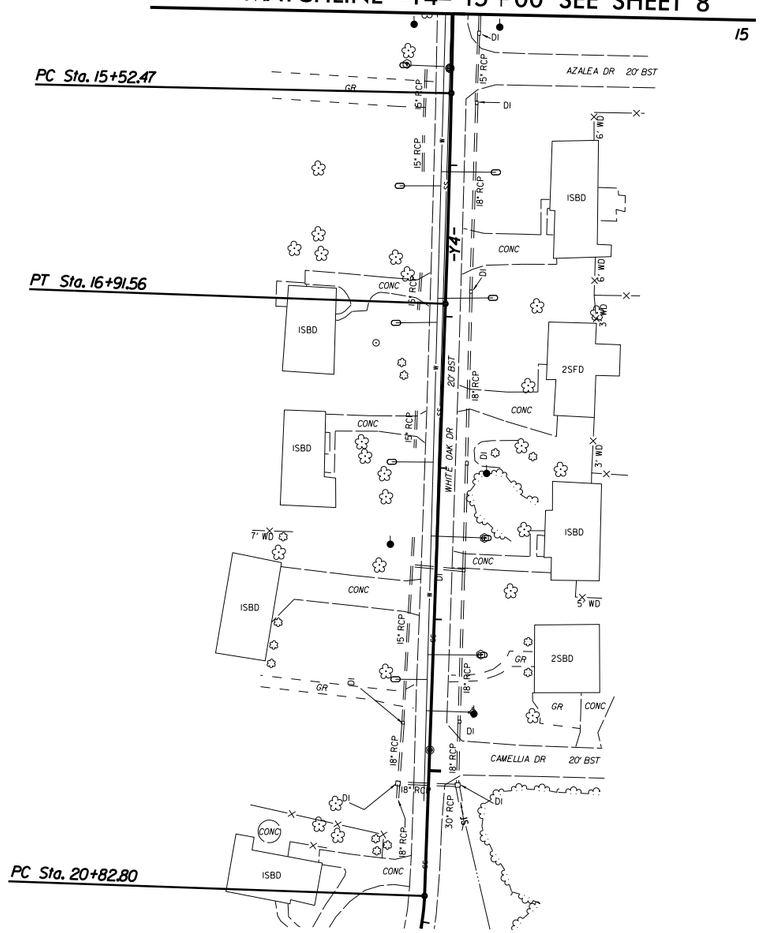
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/NSRS 2007

REVISIONS
8/17/99

MATCHLINE -Y4- 15+00 SEE SHEET 8

15



20

16-FEB-2017 09:16
L:\Raleigh_Projects\Transportation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_psh_013.dgn
$$$$USERNAME$$$$

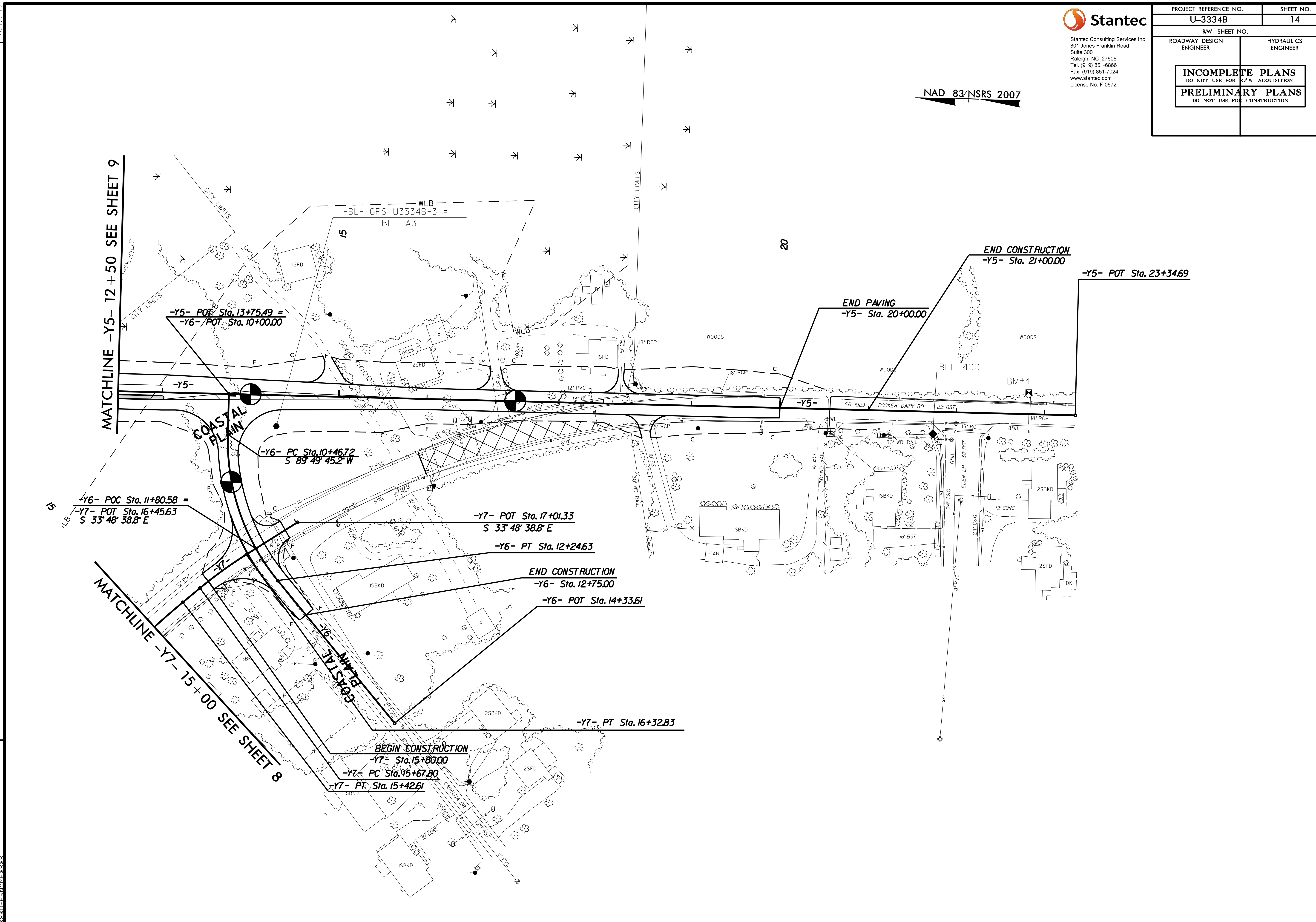
Stantec

Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-6866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/NSRS 2007
MATCHLINE -Y5- 12+50 SEE SHEET 9
MATCHLINE -Y7- 15+00 SEE SHEET 8
-BL- GPS U3334B-3 =
-BLI- A3
WLB
CITY LIMITS
-Y5- POT Sta. 13+75.49 =
-Y6- POT Sta. 10+00.00
-Y6- PC Sta. 10+46.72
S 89° 49' 45.2" W
-Y6- POC Sta. 11+80.58 =
-Y7- POT Sta. 16+45.63
S 33° 48' 38.8" E
-Y7- POT Sta. 17+01.33
S 33° 48' 38.8" E
-Y6- PT Sta. 12+24.63
END CONSTRUCTION
-Y6- Sta. 12+75.00
-Y6- POT Sta. 14+33.61
-Y7- PT Sta. 16+32.83
BEGIN CONSTRUCTION
-Y7- Sta. 15+80.00
-Y7- PC Sta. 15+67.80
-Y7- PT Sta. 15+42.61
END PAVING
-Y5- Sta. 20+00.00
END CONSTRUCTION
-Y5- Sta. 21+00.00
-Y5- POT Sta. 23+34.69
COASTAL PLAIN
-Y5-
-Y6-
-Y7-
-BLI- 400
BM#4
SR 1923 BOOKER DAIRY RD
EDEN DR
CAMELLIA DR
WOODS
1SFD
2SFD
1SBKD
2SBKD
CAN
DECK
DK
30' WD RAIL
REVISIONS

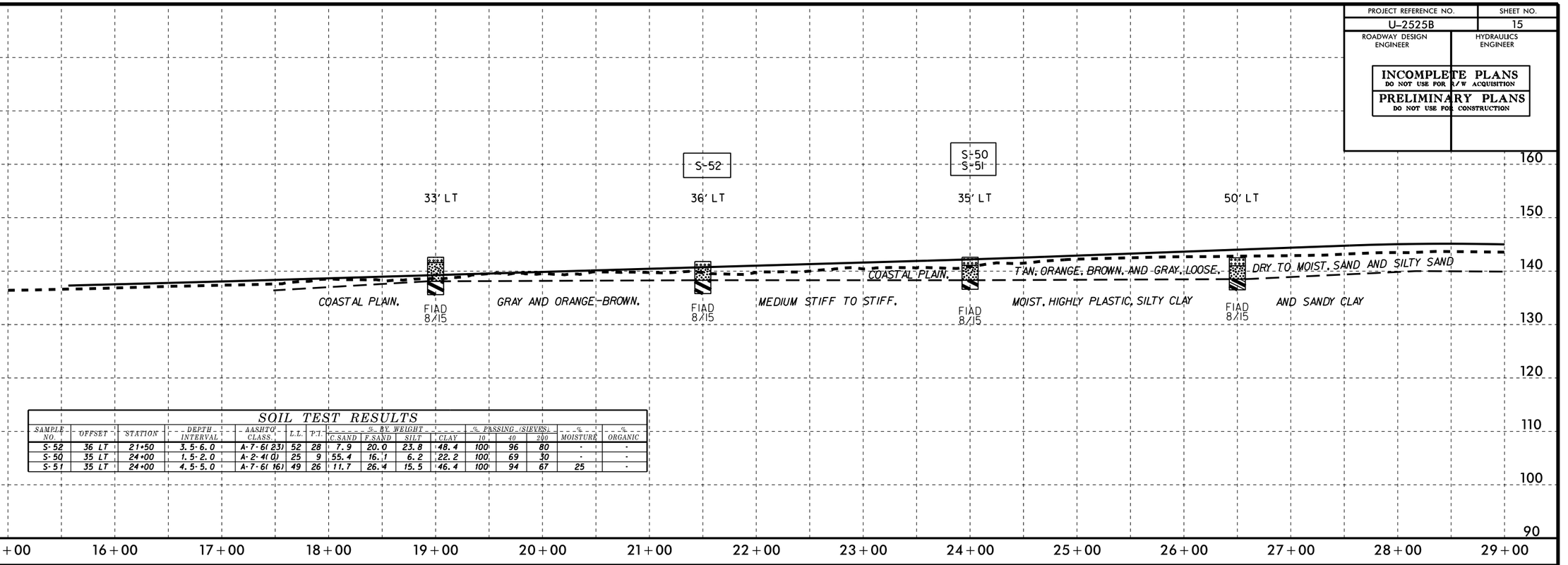
16-FEB-2017 09:16
U3334B_geo_psh_014.dgn
8/17/99

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

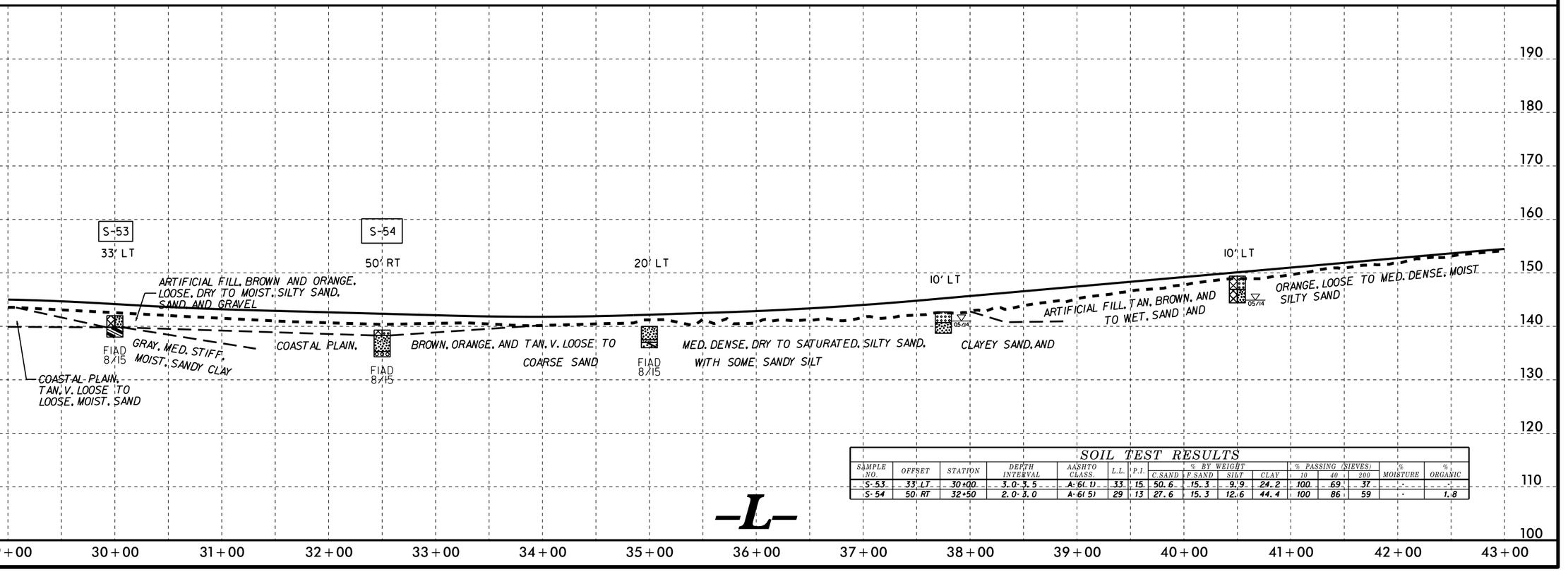
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C SAND	% BY WEIGHT F SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-52	36 LT	21+50	3.5-6.0	A-7-6(23)	52	28	7.9	20.0	23.8	48.4	100	96	80	-	-
S-50	35 LT	24+00	1.5-2.0	A-2-4(0)	25	9	55.4	16.1	6.2	22.2	100	69	30	-	-
S-51	35 LT	24+00	4.5-5.0	A-7-6(16)	49	26	11.7	26.4	15.5	46.4	100	94	67	25	-



SOIL TEST RESULTS

SAMPLE NO	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-53	33' LT	30+00	3.0-3.5	A-6(1)	33	15	50.6	15.3	9.9	24.2	100	69	37	-	-
S-54	50' RT	32+50	2.0-3.0	A-6(5)	29	13	27.6	15.3	12.6	44.4	100	86	59	-	1.8

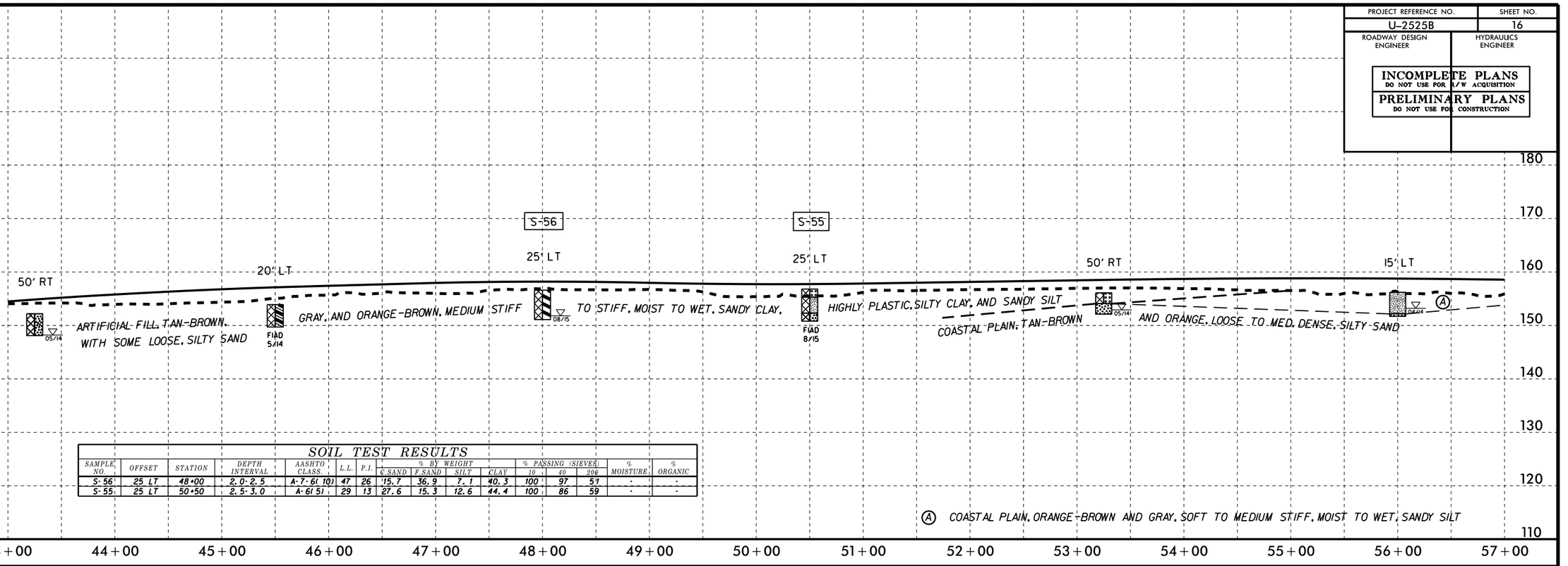
-L-

08-AUG-2016 11:24
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_prf_L_revised.dgn
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

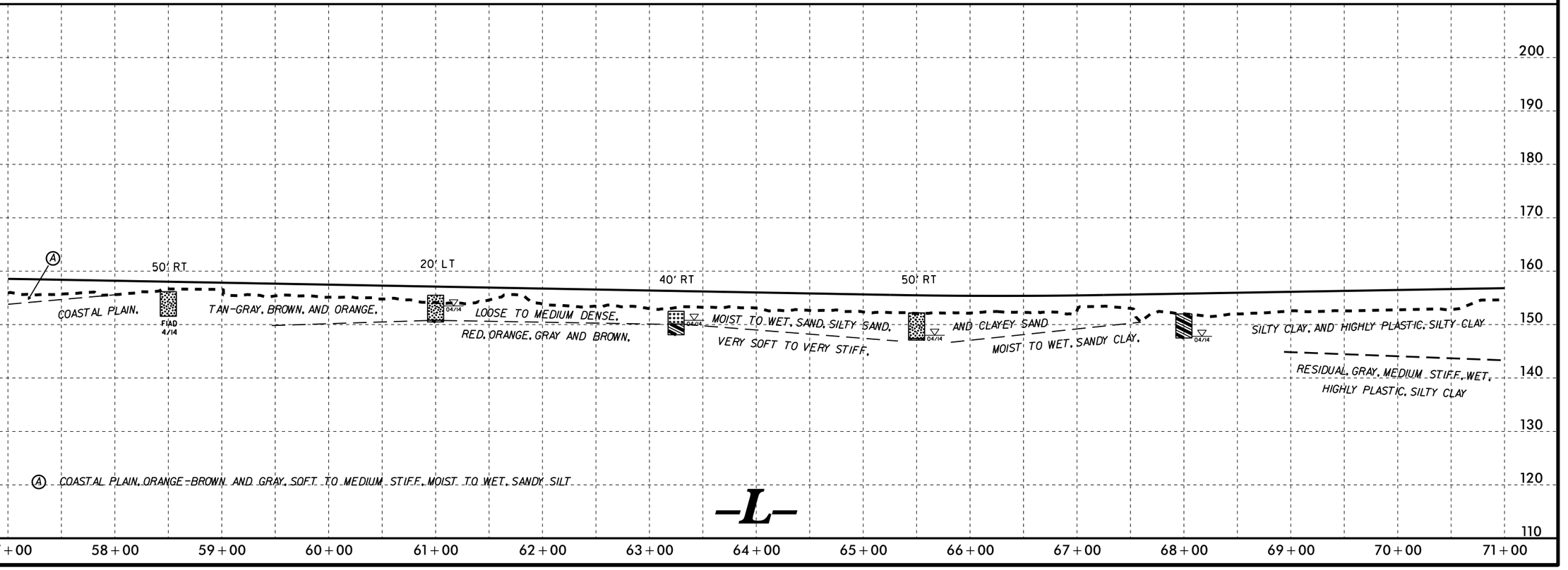
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



SOIL TEST RESULTS

SAMPLE NO	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT C SAND	% BY WEIGHT F SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-56	25 LT	48+00	2.0-2.5	A-7-6(10)	47	26	15.7	36.9	7.1	40.3	100	97	51	-	-
S-55	25 LT	50+50	2.5-3.0	A-6(5)	29	13	27.6	15.3	12.6	44.4	100	86	59	-	-



-L-

5/28/99

08-AUG-2016 11:24
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_prfL_revised.dgn
$$$$USERNAME$$$$

5/28/99

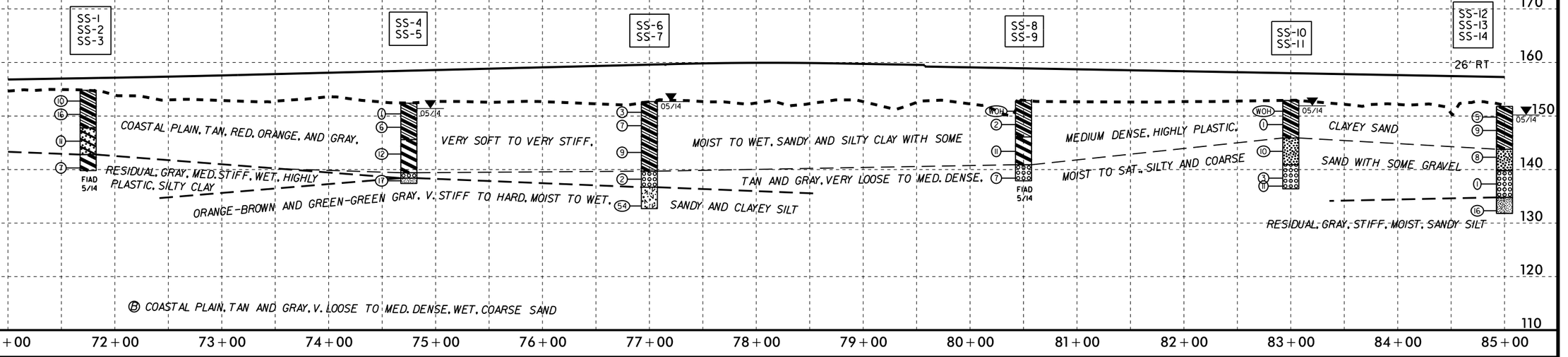
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

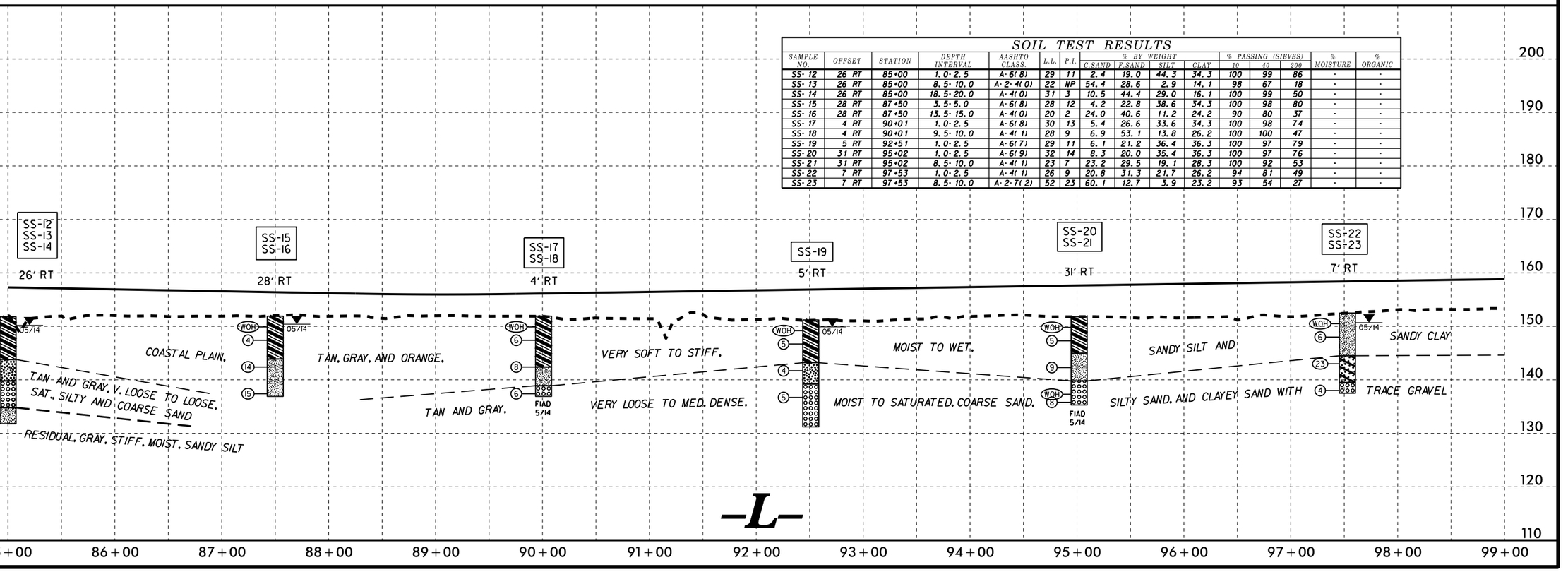
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-1	CL	71+75	1.0-2.5	A-6(5)	29	13	27.6	15.3	12.6	44.4	100	86	59	-	-
SS-2	CL	71+75	8.5-10.0	A-2-7(3)	55	32	55.6	12.9	5.2	26.2	89	52	29	-	-
SS-3	CL	71+75	13.5-15.0	A-7-5(46)	84	34	1.6	2.0	17.7	78.7	100	99	97	-	-
SS-4	CL	74+75	1.0-2.5	A-6(14)	32	21	7.3	19.4	37.0	36.3	100	96	79	-	-
SS-5	CL	74+75	8.5-10.0	A-7-6(35)	60	35	3.4	11.9	34.2	50.5	100	98	90	-	-
SS-6	CL	77+00	1.0-2.5	A-6(14)	37	18	3.8	18.4	33.4	44.4	100	98	82	-	-
SS-7	CL	77+00	18.5-20.0	A-5(8)	43	5	2.2	15.9	65.7	16.1	100	99	89	-	-
SS-8	CL	80+50	1.0-2.5	A-6(8)	31	13	4.8	28.7	32.2	34.3	100	98	74	-	-
SS-9	CL	80+50	8.5-10.0	A-7-6(15)	43	22	9.5	22.6	23.5	44.4	100	97	74	-	-
SS-10	CL	83+00	8.5-10.0	A-2-4(0)	22	3	15.3	61.8	4.7	18.2	100	100	26	-	-
SS-11	CL	83+00	13.5-15.0	A-1-b(0)	36	NP	75.0	12.0	0.9	12.1	90	30	13	-	-
SS-12	26 RT	85+00	1.0-2.5	A-6(8)	29	11	2.4	19.0	44.3	34.3	100	99	86	-	-
SS-13	26 RT	85+00	8.5-10.0	A-2-4(0)	22	NP	54.4	28.6	2.9	14.1	98	67	18	-	-
SS-14	26 RT	85+00	18.5-20.0	A-4(0)	31	3	10.5	44.4	29.0	16.1	100	99	50	-	-



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-12	26 RT	85+00	1.0-2.5	A-6(8)	29	11	2.4	19.0	44.3	34.3	100	99	86	-	-
SS-13	26 RT	85+00	8.5-10.0	A-2-4(0)	22	NP	54.4	28.6	2.9	14.1	98	67	18	-	-
SS-14	26 RT	85+00	18.5-20.0	A-4(0)	31	3	10.5	44.4	29.0	16.1	100	99	50	-	-
SS-15	28 RT	87+50	3.5-5.0	A-6(8)	28	12	4.2	22.8	38.6	34.3	100	98	80	-	-
SS-16	28 RT	87+50	13.5-15.0	A-4(0)	20	2	24.0	40.6	11.2	24.2	90	80	37	-	-
SS-17	4 RT	90+01	1.0-2.5	A-6(8)	30	13	5.4	26.6	33.6	34.3	100	98	74	-	-
SS-18	4 RT	90+01	9.5-10.0	A-4(1)	28	9	6.9	53.1	13.8	26.2	100	100	47	-	-
SS-19	5 RT	92+51	1.0-2.5	A-6(7)	29	11	6.1	21.2	36.4	36.3	100	97	79	-	-
SS-20	31 RT	95+02	1.0-2.5	A-6(9)	32	14	8.3	20.0	35.4	36.3	100	97	76	-	-
SS-21	31 RT	95+02	8.5-10.0	A-4(1)	23	7	23.2	29.5	19.1	28.3	100	92	53	-	-
SS-22	7 RT	97+53	1.0-2.5	A-4(1)	26	9	20.8	31.3	21.7	26.2	94	81	49	-	-
SS-23	7 RT	97+53	8.5-10.0	A-2-7(2)	52	23	60.1	12.7	3.9	23.2	93	54	27	-	-



08-AUG-2016 11:25
L:\Raleigh Investigation\TIP\U3334B_GEO.RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_pfil_revised.dgn
$$$$USERNAME$$$$

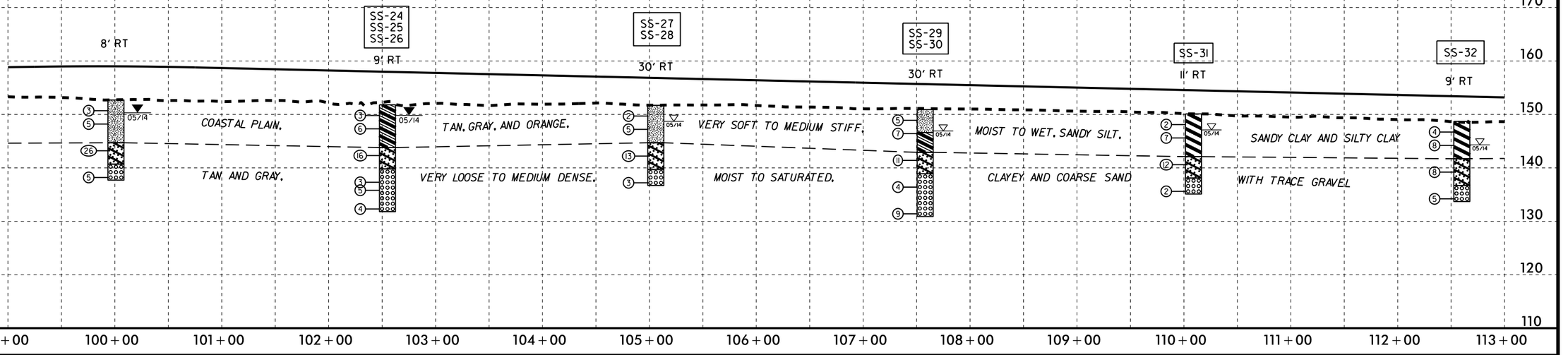
PROJECT REFERENCE NO.	SHEET NO.
U-2525B	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

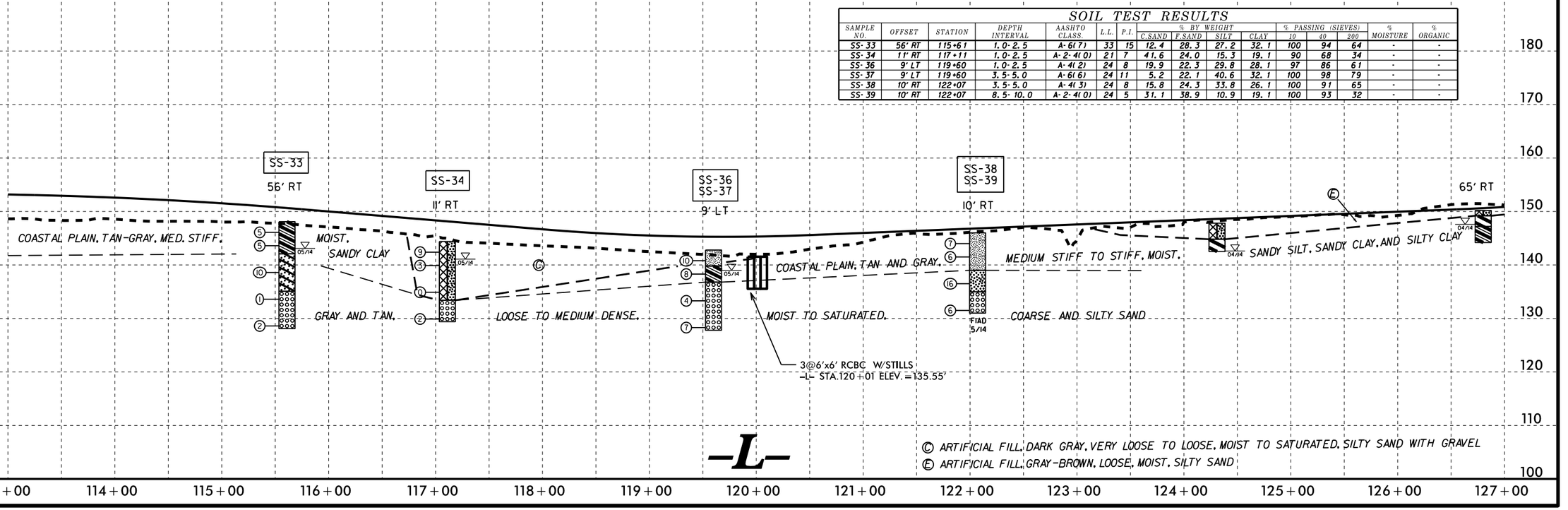
SOIL TEST RESULTS

SAMPLE NO	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-24	9 RT	102+55	1.0-2.5	A-6(4)	29	12	22.8	23.4	25.5	28.3	97	83	57	-	-
SS-25	9 RT	102+55	8.5-10.0	A-2-7(1)	48	22	62.7	13.0	3.1	21.2	87	50	22	-	-
SS-26	9 RT	102+55	13.5-15.0	A-1-b(0)	24	NP	77.6	11.7	1.6	9.0	88	43	10	-	-
SS-27	30' RT	105+06	1.0-2.5	A-4(3)	24	10	25.5	18.9	27.6	28.1	99	85	58	-	-
SS-28	30' RT	105+06	8.5-10.0	A-2-7(2)	48	27	55.5	15.3	4.1	25.1	90	56	28	-	-
SS-29	30' RT	107+58	3.5-5.0	A-6(11)	38	18	19.3	15.4	27.2	38.1	99	86	68	-	-
SS-30	30' RT	107+58	8.5-10.0	A-2-7(1)	42	22	59.4	14.5	2.0	24.1	94	60	26	-	-
SS-31	11' RT	110+09	3.5-5.0	A-7-6(13)	45	24	25.5	11.4	23.0	40.1	96	81	62	-	-
SS-32	9' RT	112+60	8.5-10.0	A-2-6(0)	33	14	65.4	14.5	4.0	16.0	97	59	21	-	-



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-33	56' RT	115+61	1.0-2.5	A-6(7)	33	15	12.4	28.3	27.2	32.1	100	94	64	-	-
SS-34	11' RT	117+11	1.0-2.5	A-2-4(0)	21	7	41.6	24.0	15.3	19.1	90	68	34	-	-
SS-36	9' LT	119+60	1.0-2.5	A-4(2)	24	8	19.9	22.3	29.8	28.1	97	86	61	-	-
SS-37	9' LT	119+60	3.5-5.0	A-6(6)	24	11	5.2	22.1	40.6	32.1	100	98	79	-	-
SS-38	10' RT	122+07	3.5-5.0	A-4(3)	24	8	15.8	24.3	33.8	26.1	100	91	65	-	-
SS-39	10' RT	122+07	8.5-10.0	A-2-4(0)	24	5	31.1	38.9	10.9	19.1	100	93	32	-	-



© ARTIFICIAL FILL, DARK GRAY, VERY LOOSE TO LOOSE, MOIST TO SATURATED, SILTY SAND WITH GRAVEL

Ⓔ ARTIFICIAL FILL, GRAY-BROWN, LOOSE, MOIST, SILTY SAND

5/28/99

08-AUG-2016 11:25
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_prf_L_revised.dgn
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-2525B	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

190
180
170
160
150
140
130
120
110
100

Ⓔ

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SILTY AND SANDY CLAY

Ⓔ ARTIFICIAL FILL, GRAY-BROWN, LOOSE, MOIST, SILTY SAND

-L-

127+00 128+00

08-AUG-2016 11:25
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_prfL_revised.dgn
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-3334B	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

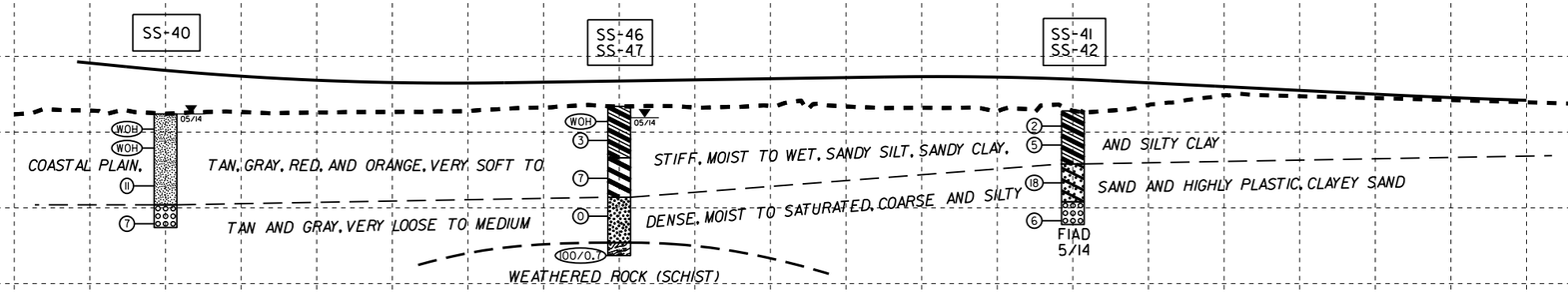
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-40	CL	11+00	8.5-10.0	A-4(0)	28	10	23.5	43.2	10.2	23.1	100	92	38	-	-
SS-46	CL	14+00	8.5-10.0	A-7-6(3)	41	21	42.8	20.5	3.6	33.1	100	94	38	-	-
SS-47	CL	14+00	13.5-15.0	A-2-4(0)	25	4	35.1	41.8	5.0	18.1	96	82	24	-	-
SS-41	CL	17+00	1.0-2.5	A-6(8)	30	13	5.0	29.1	35.8	30.1	100	98	74	-	-
SS-42	CL	17+00	8.5-10.0	A-2-7(2)	50	30	59.1	15.2	2.6	23.1	100	63	27	-	-

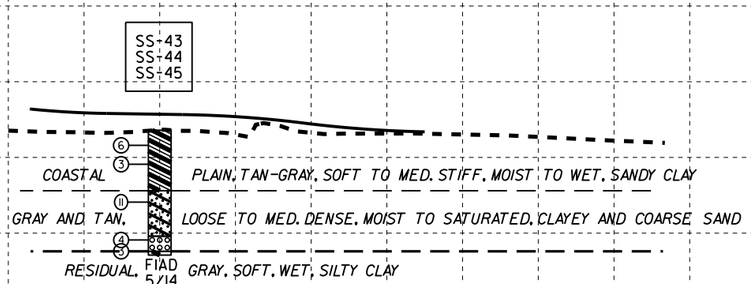
-Y5-



SOIL TEST RESULTS

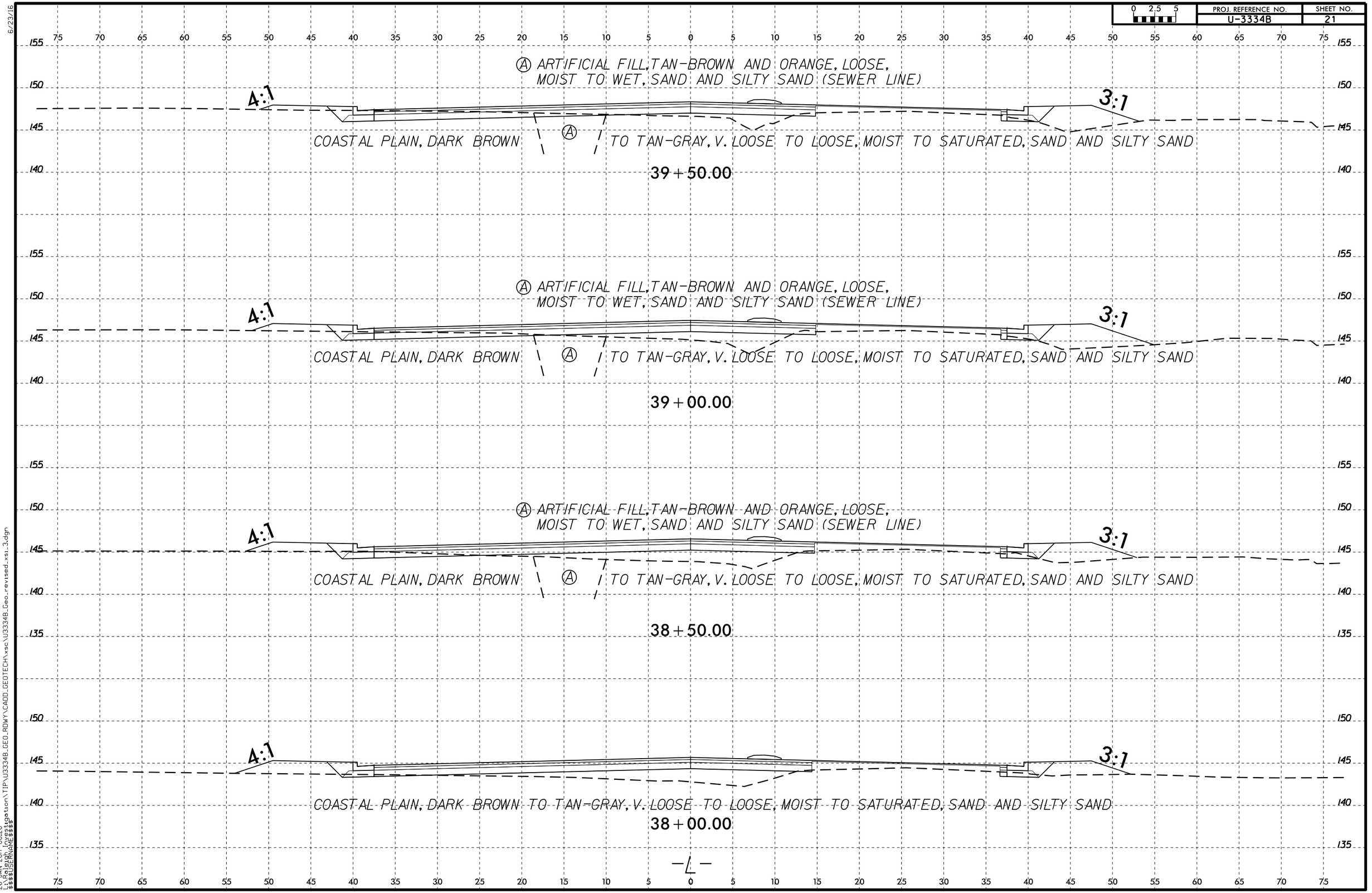
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-43	CL	11+00	1.0-2.5	A-6(7)	31	14	12.6	25.1	30.2	32.1	100	93	68	-	-
SS-44	CL	11+00	13.5-14.0	A-2-6(1)	33	16	59.9	16.9	6.2	17.1	94	50	24	-	-
SS-45	CL	11+00	16.0-16.5	A-7-6(18)	41	20	8.6	7.2	40.0	44.1	100	92	87	-	-

-Y6-



08-AUG-2016 11:25
I:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\PlanProf\U3334B_geo_pfi_Ys.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	21



6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	22

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

160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

4:1

3:1

COASTAL PLAIN, ORANGE-BROWN Ⓐ AND TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

41+00.00

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

4:1

3:1

Ⓐ

05/14

COASTAL PLAIN, DARK BROWN TO TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

40+50.00

155 150 145 140 135 130

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

4:1

3:1

Ⓐ

COASTAL PLAIN, DARK BROWN TO TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

40+00.00

—L—

155 150 145 140

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

26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	23

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

165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

3.03:1

Ⓐ

3.03:1

Ⓑ

COASTAL PLAIN, ORANGE-BROWN AND TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

42+50.00

165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

3.03:1

Ⓐ

3.03:1

Ⓑ

COASTAL PLAIN, ORANGE-BROWN AND TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

42+00.00

160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

4:1

3.91% DRIVEWAY GRADE

Ⓐ

3:1

COASTAL PLAIN, ORANGE-BROWN AND TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

41+50.00

—L—

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

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	24

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

165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

3.03:1

Ⓑ

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

43+50.00

165 160 155 150 145 140 135

Ⓐ ARTIFICIAL FILL, TAN-BROWN AND ORANGE, LOOSE, MOIST TO WET, SAND AND SILTY SAND (SEWER LINE)

3.03:1

43+25

3.03:1

COASTAL PLAIN, ORANGE-BROWN Ⓐ AND TAN-GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND AND SILTY SAND

Ⓑ

05/14

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

43+00.00

—L—

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

26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	25

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

165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN, ORANGE, AND GRAY, LOOSE, MOIST TO WET, SILTY SAND AND MED. STIFF, SANDY CLAY (SEWER LINE)

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

Ⓑ

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

44+50.00

Ⓐ ARTIFICIAL FILL, TAN-BROWN, ORANGE, AND GRAY, LOOSE, MOIST TO WET, SILTY SAND AND MED. STIFF, SANDY CLAY (SEWER LINE)

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

Ⓑ

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

44+00.00

—L—

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

26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	26

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

170 165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY (SEWER LINE)

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

FIAD
8/15

Ⓑ

45+50.00

135 165 160 155 150 145 140

Ⓐ ARTIFICIAL FILL, TAN-BROWN, ORANGE, AND GRAY, LOOSE, MOIST TO WET, SILTY SAND AND MED. STIFF, SANDY CLAY (SEWER LINE)

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

Ⓑ

Ⓑ ARTIFICIAL FILL, TAN-ORANGE, LOOSE TO MED. DENSE, MOIST TO WET, SILTY SAND

45+00.00

—L—

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

26-JAN-2017 08:21
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	27

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

170 165 160 155 150 145

Ⓐ ARTIFICIAL FILL, RED, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY (SEWER LINE)

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

47+00.00

Ⓐ ARTIFICIAL FILL, RED, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY (SEWER LINE)

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

46+50.00

Ⓐ ARTIFICIAL FILL, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY (SEWER LINE)

16.39% DRIVEWAY GRADE

3.03:1

3.03:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

46+00.00

-L-

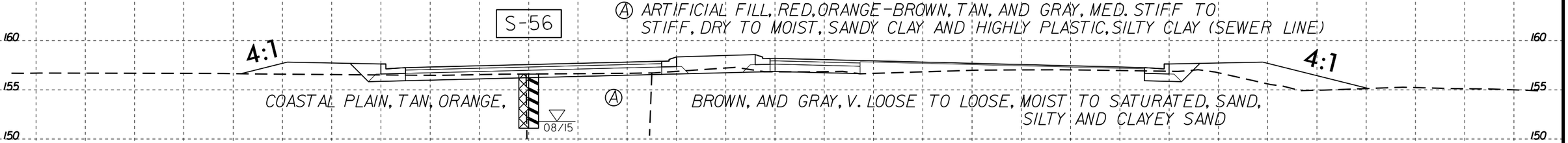
26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

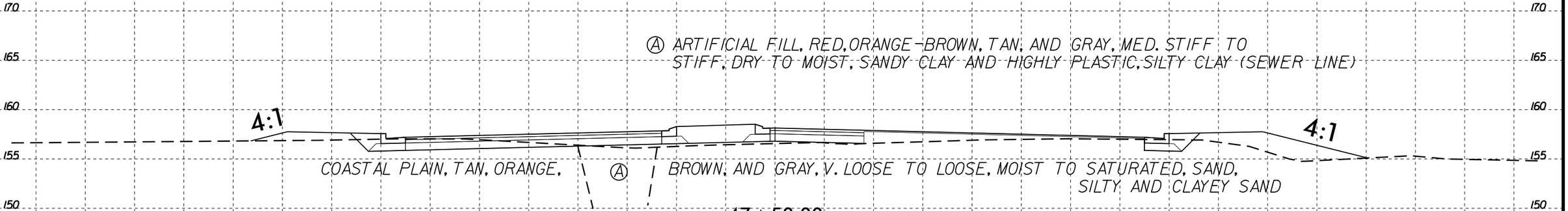
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	28

SOIL TEST RESULTS

SAMPLE NO.	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-56	25 LT	48+00	2.0-2.5	A-7-6(10)	47	26	15.7	36.9	7.1	40.3	100	97	51	-	-



48+00.00



47+50.00

—L—

26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	29

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

170 165 160 155 150

Ⓐ ARTIFICIAL FILL, RED, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY AND SANDY SILT (SEWER LINE)

4:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

4:1

49+50.00

170 165 160 155 150

Ⓐ ARTIFICIAL FILL, RED, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY (SEWER LINE)

4:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

4:1

49+00.00

165 160 155 150

Ⓐ ARTIFICIAL FILL, RED, ORANGE-BROWN, TAN, AND GRAY, MED. STIFF TO STIFF, DRY TO MOIST, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY (SEWER LINE)

4:1

COASTAL PLAIN, TAN, ORANGE, Ⓐ BROWN, AND GRAY, V. LOOSE TO LOOSE, MOIST TO SATURATED, SAND, SILTY AND CLAYEY SAND

4:1

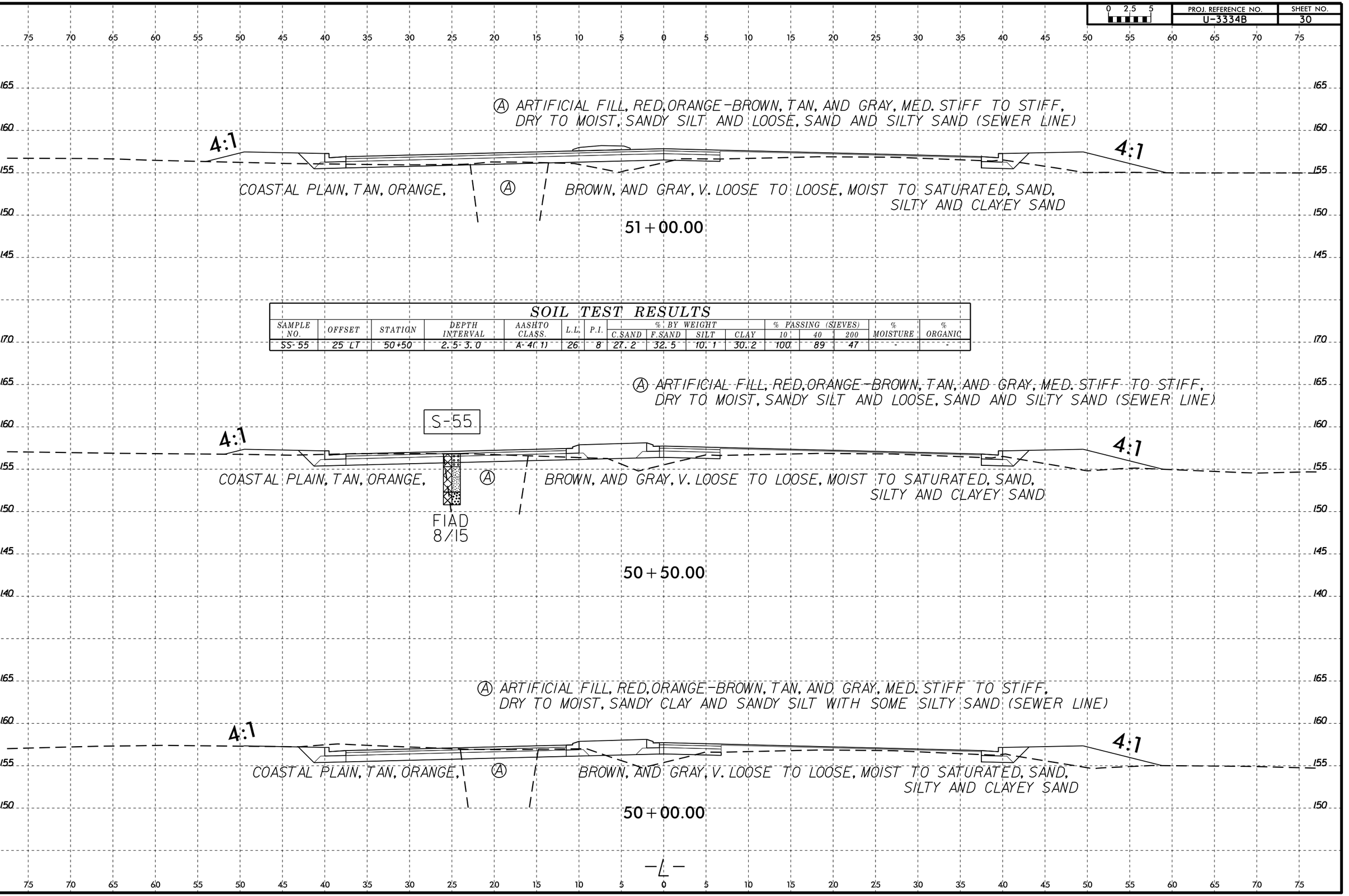
48+50.00

℄

165 160 155 150 145

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

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	30

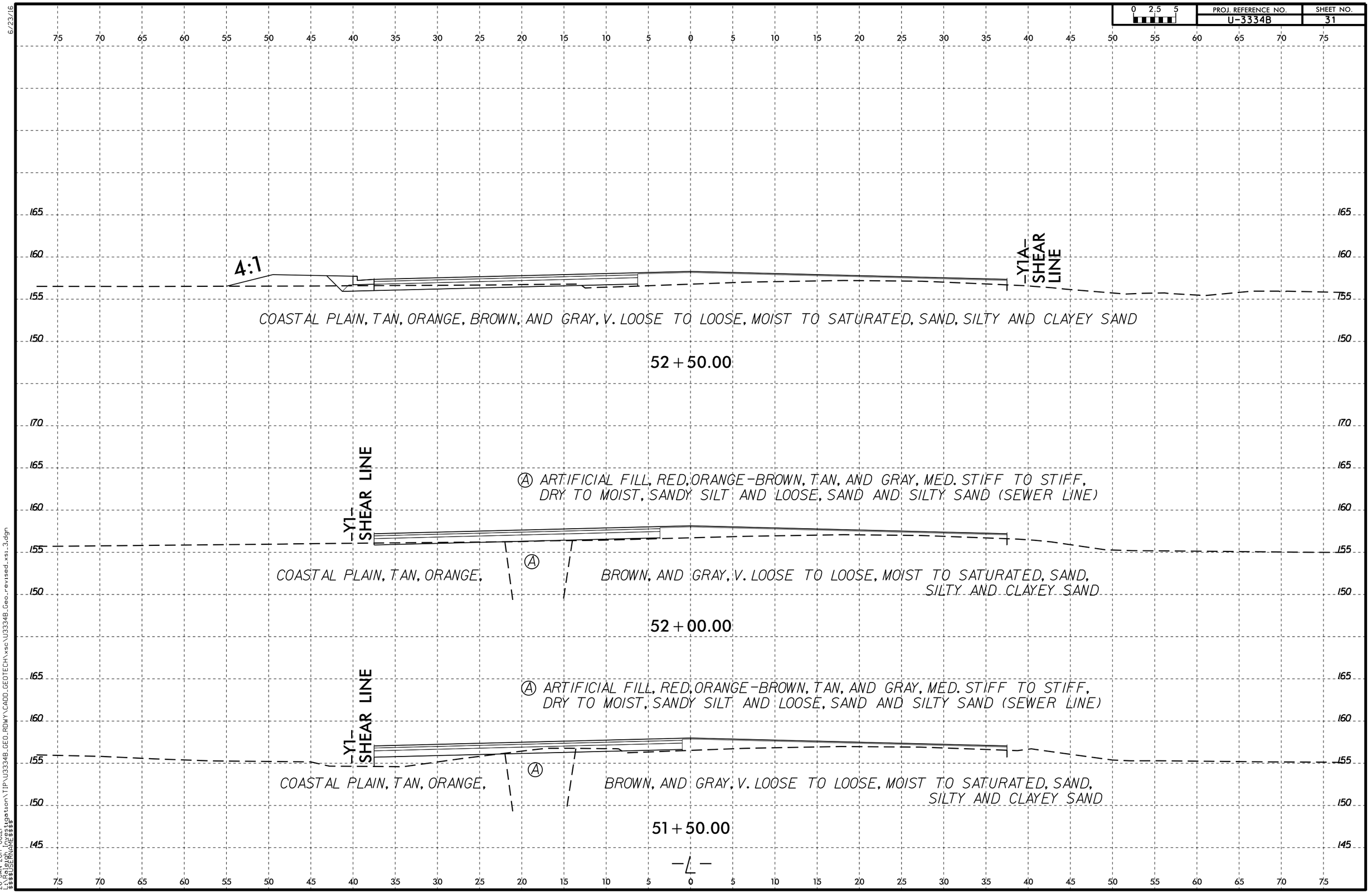


SOIL TEST RESULTS

SAMPLE NO.	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-55	25 LT	50+50	2.5-3.0	A-4(1)	26	8	27.2	32.5	10.1	30.2	100	89	47	-	-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	31



26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	32

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

165 160 155 150 145 140

3.03:1

-Y3-
SHEAR LINE

ROADWAY EMBANKMENT, BROWN AND ORANGE, LOOSE, MOIST, SILTY SAND

4:1

COASTAL PLAIN, GRAY-BROWN TO ORANGE-BROWN, SOFT TO MED. STIFF, MOIST TO WET, SANDY CLAY

04/14

68+00.00

-Y3-
SHEAR LINE

-Y4-
SHEAR LINE

COASTAL PLAIN, GRAY, BROWN, AND ORANGE, LOOSE TO MED. DENSE, MOIST, SILTY AND CLAYEY SAND

GRAY-BROWN TO ORANGE-BROWN, SOFT TO MED. STIFF, MOIST TO WET, SANDY CLAY

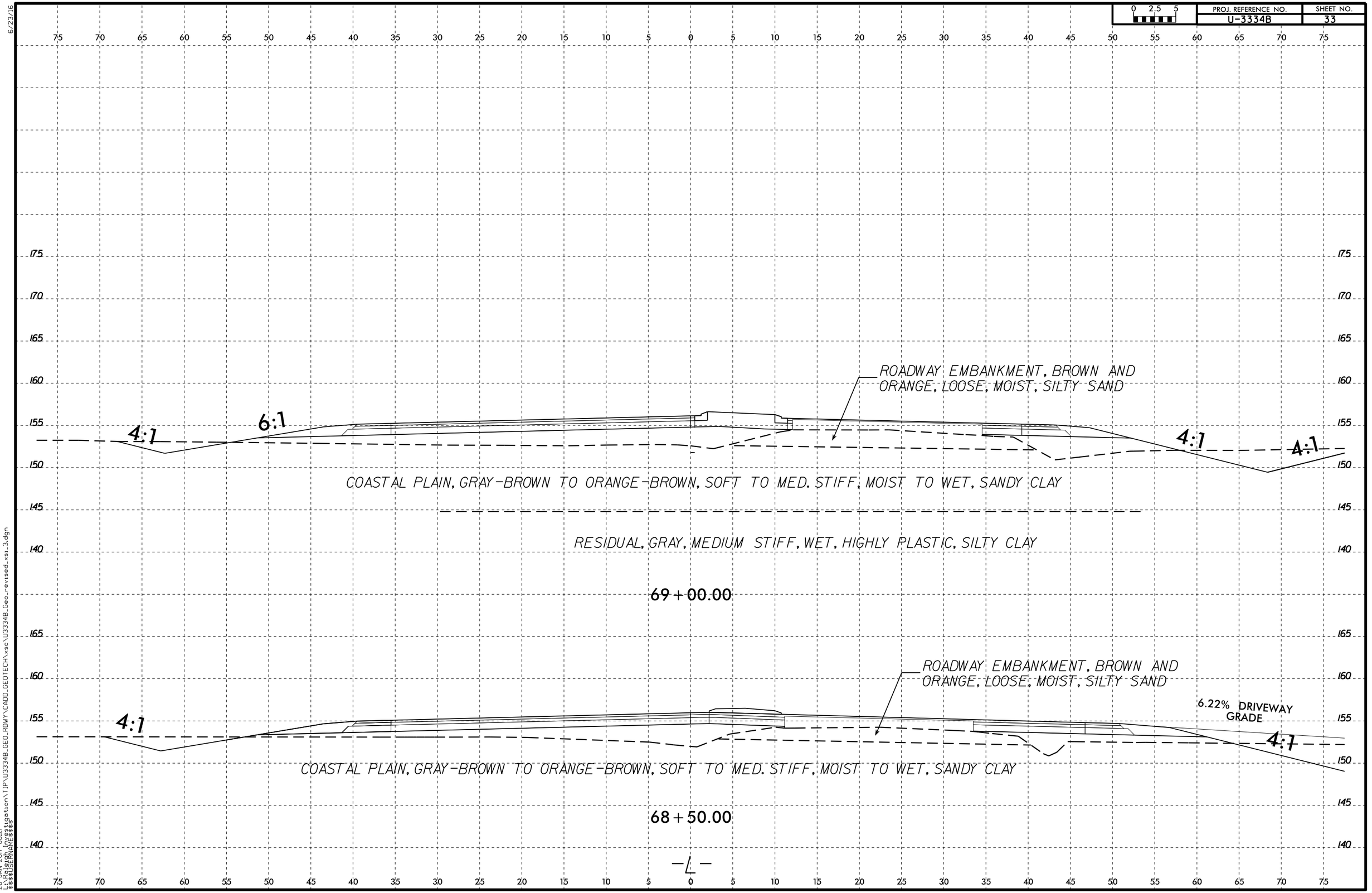
67+50.00

-L-

26-JAN-2017 08:21
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

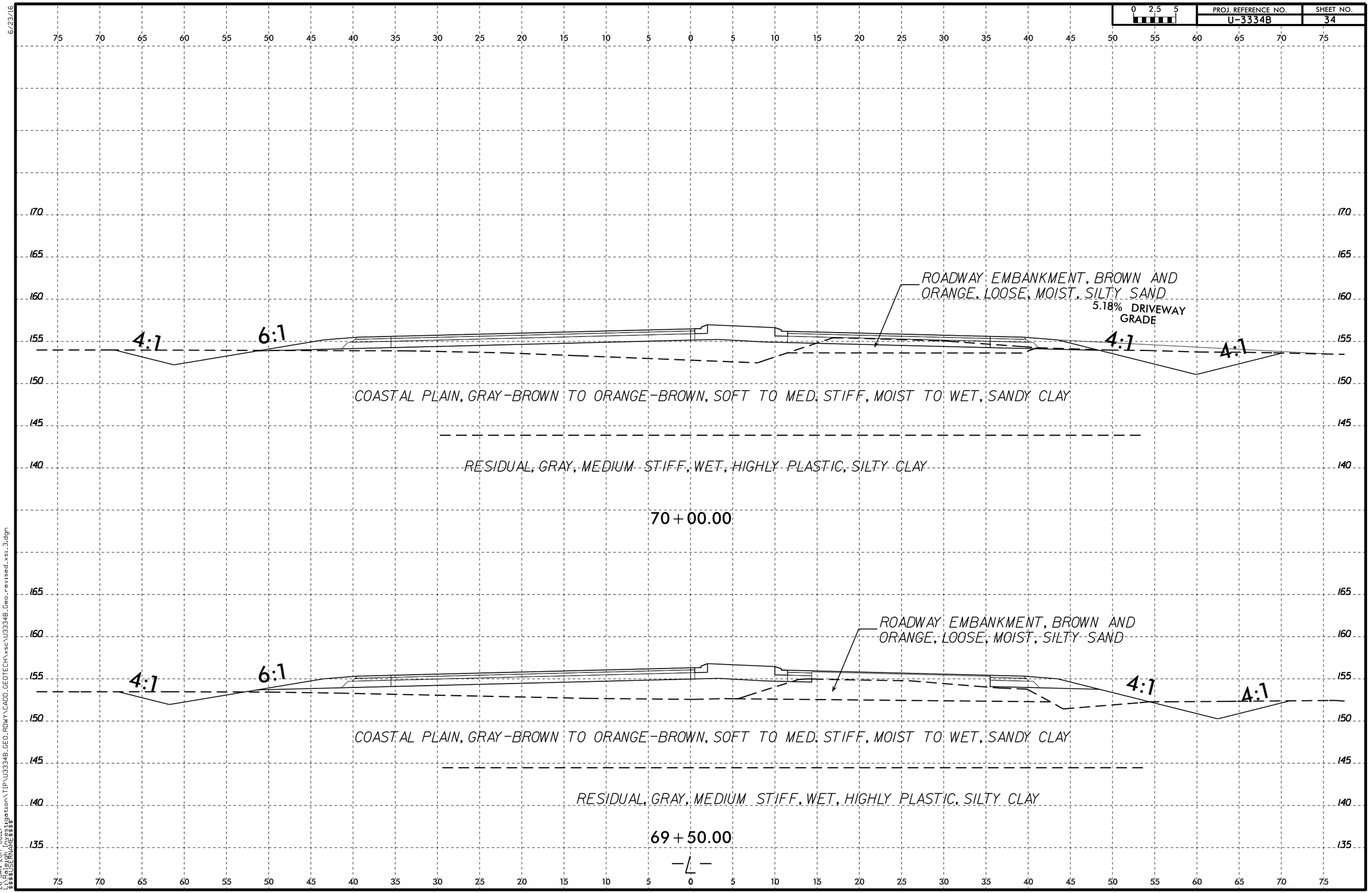
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	33



26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	34



26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	35

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

165 160 155 150 145 140

4:1 6:1 5.00% DRIVEWAY GRADE 4:1 4:1

COASTAL PLAIN, TAN, RED, ORANGE, AND GRAY, STIFF TO VERY STIFF, MOIST TO WET, SANDY CLAY AND MEDIUM DENSE, HIGHLY PLASTIC, CLAYEY SAND

RESIDUAL, GRAY, MEDIUM STIFF, WET, HIGHLY PLASTIC, SILTY CLAY

71+00.00

ROADWAY EMBANKMENT, BROWN AND ORANGE, LOOSE, MOIST, SILTY SAND

4:1 6:1 4:1 4:1

COASTAL PLAIN, TAN, RED, ORANGE, AND GRAY, STIFF TO VERY STIFF, MOIST TO WET SANDY CLAY AND MEDIUM DENSE, HIGHLY PLASTIC, CLAYEY SAND

RESIDUAL, GRAY, MEDIUM STIFF, WET, HIGHLY PLASTIC, SILTY CLAY

70+50.00

—L—

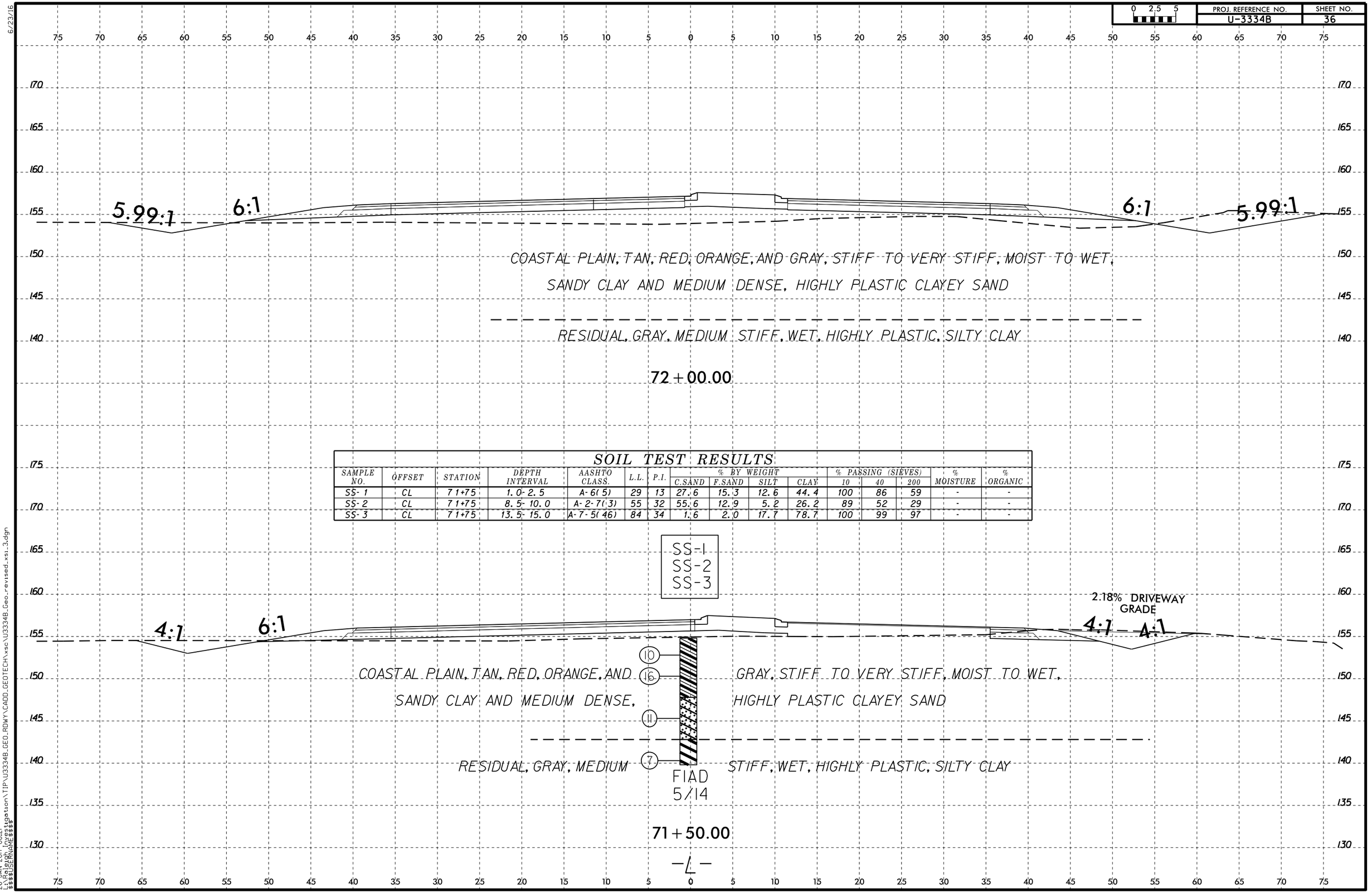
165 160 155 150 145 140 135

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

26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	36

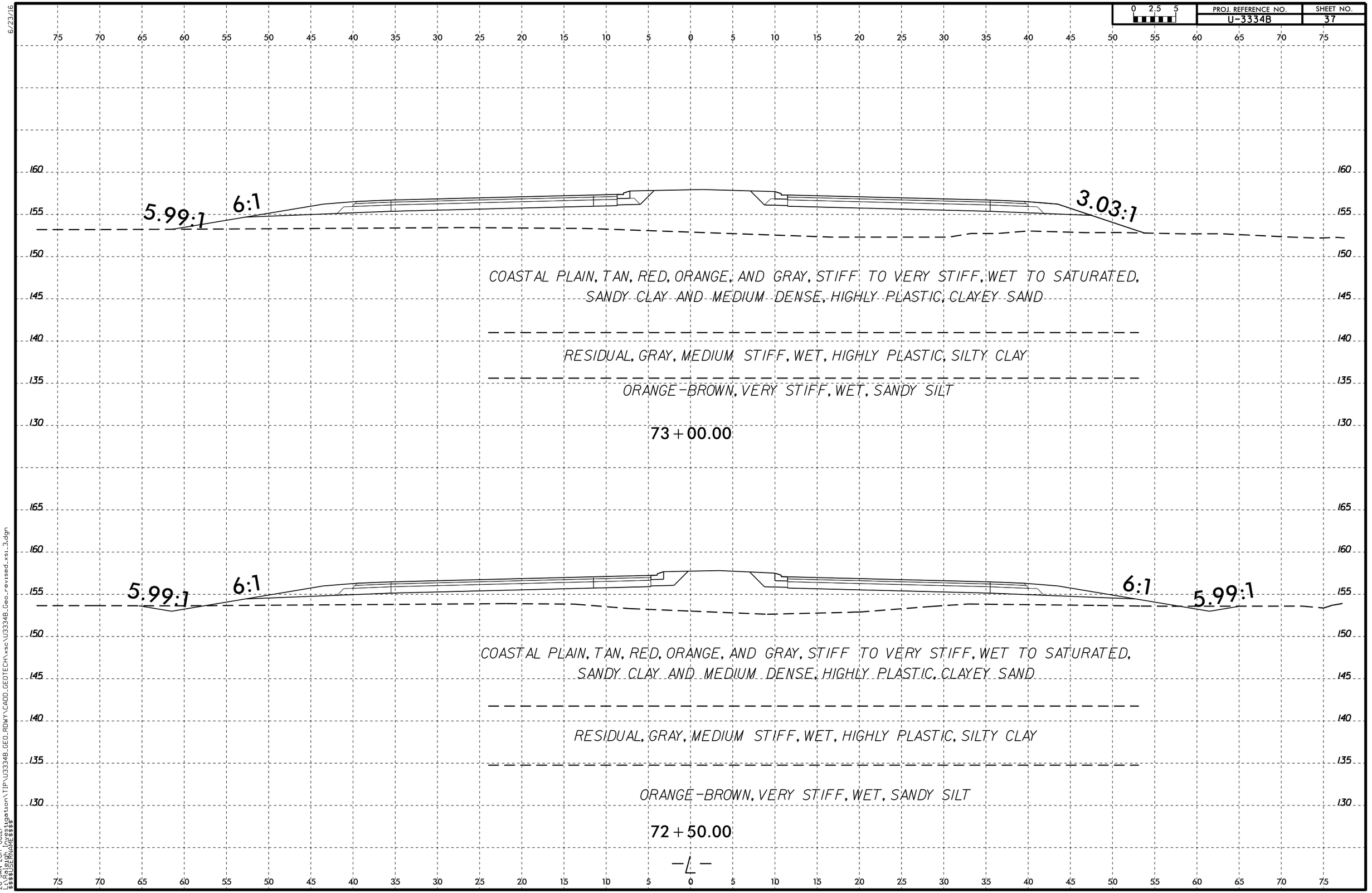


SOIL TEST RESULTS

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-1	CL	71+75	1.0-2.5	A-6(5)	29	13	27.6	15.3	12.6	44.4	100	86	59	-	-
SS-2	CL	71+75	8.5-10.0	A-2-7(3)	55	32	55.6	12.9	5.2	26.2	89	52	29	-	-
SS-3	CL	71+75	13.5-15.0	A-7-5(46)	84	34	1.6	2.0	17.7	78.7	100	99	97	-	-

26-JAN-2017 08:21
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

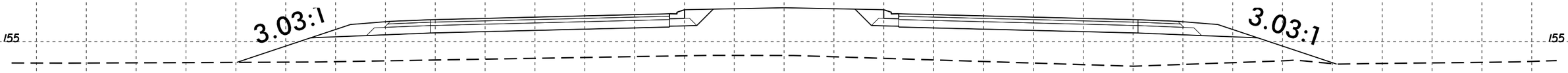
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	37



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	38

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

160 155 150 145 140 135 130



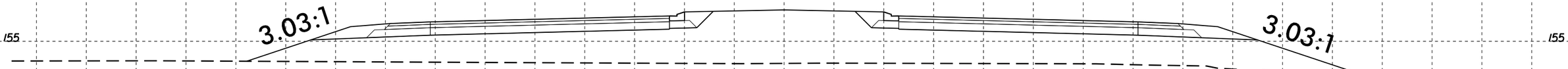
COASTAL PLAIN, TAN, RED, ORANGE, AND GRAY, STIFF TO VERY STIFF, WET TO SATURATED, SANDY AND SILTY CLAY WITH SOME MEDIUM DENSE, CLAYEY SAND AND BASAL COARSE SAND

RESIDUAL, GRAY, MEDIUM STIFF, WET, HIGHLY PLASTIC, SILTY CLAY

ORANGE-BROWN, VERY STIFF, WET, SANDY SILT

74+00.00

165 160 155 150 145 140 135 130



COASTAL PLAIN, TAN, RED, ORANGE, AND GRAY, STIFF TO VERY STIFF, WET TO SATURATED, SILTY AND SANDY CLAY AND MEDIUM DENSE, HIGHLY PLASTIC, CLAYEY SAND

RESIDUAL, GRAY, MEDIUM STIFF, WET, HIGHLY PLASTIC, SILTY CLAY

ORANGE-BROWN, VERY STIFF, WET, SANDY SILT

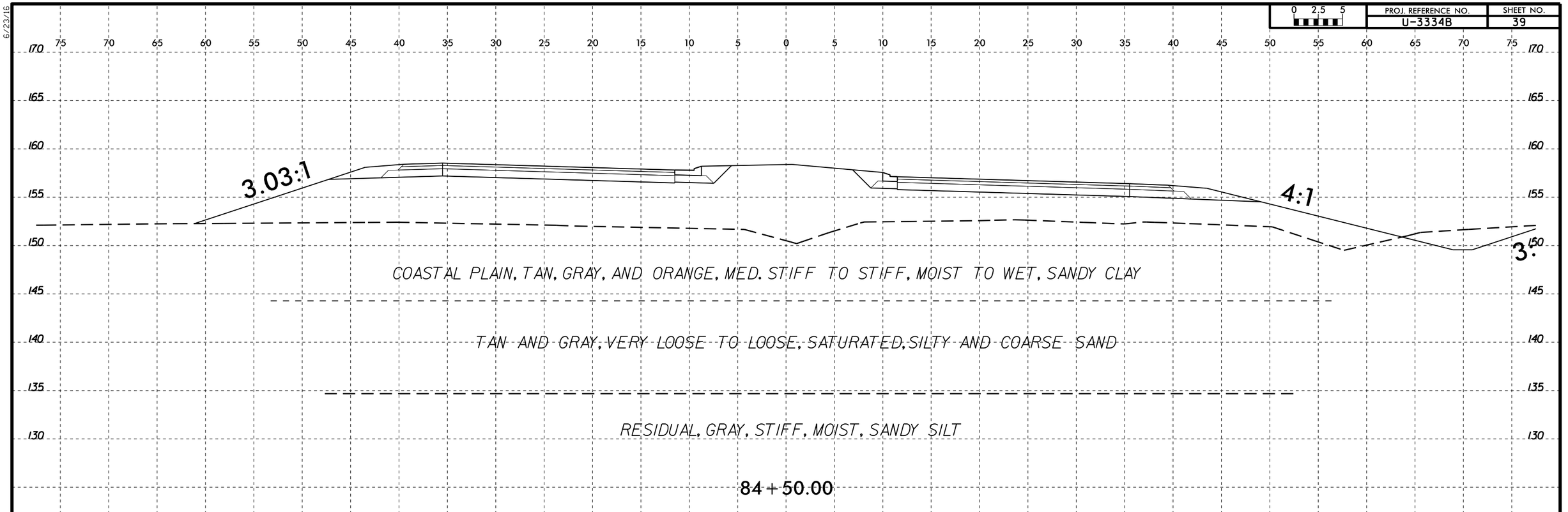
73+50.00

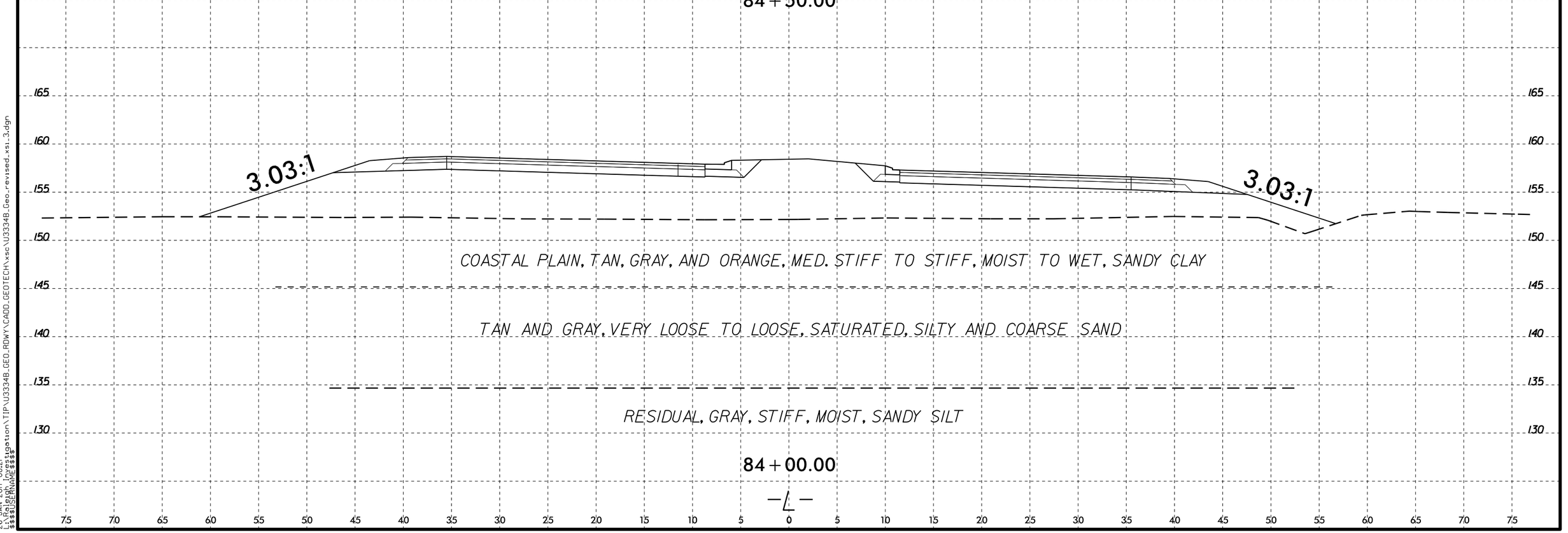
—L—

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

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	39





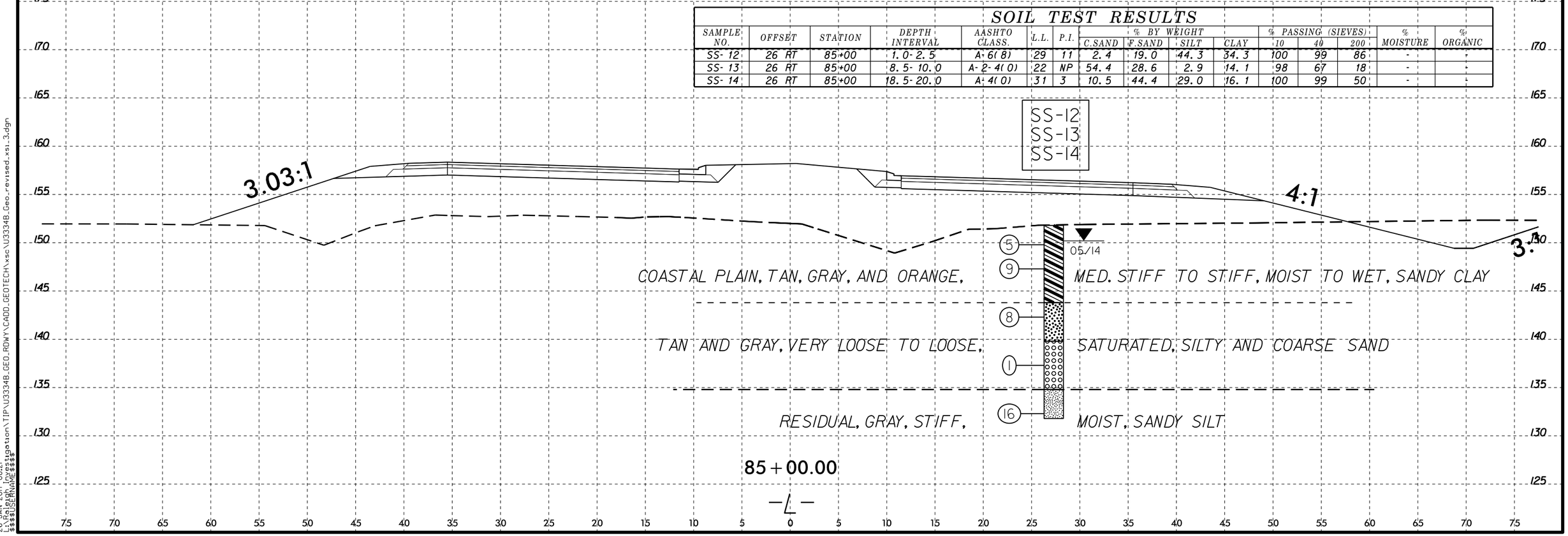
26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	40

SOIL TEST RESULTS

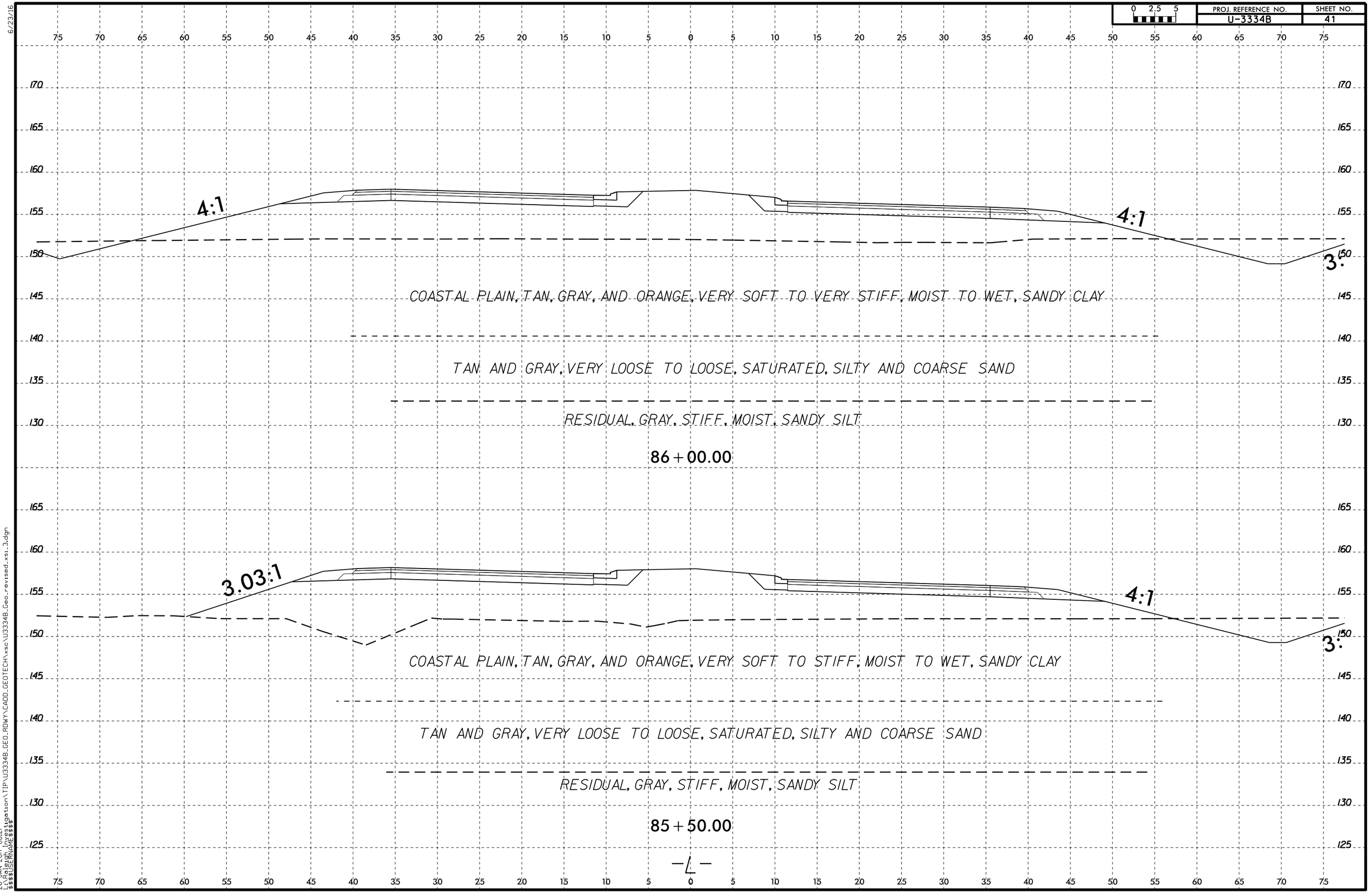
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-12	26 RT	85+00	1.0-2.5	A-6(8)	29	11	2.4	19.0	44.3	34.3	100	99	86	-	-
SS-13	26 RT	85+00	8.5-10.0	A-2-4(0)	22	NP	54.4	28.6	2.9	14.1	98	67	18	-	-
SS-14	26 RT	85+00	18.5-20.0	A-4(0)	31	3	10.5	44.4	29.0	16.1	100	99	50	-	-



26-JAN-2017 08:21
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	41



26-JAN-2017 08:21
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	42

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

170 165 160 155 150 145

4:1

4:1

3:

COASTAL PLAIN, TAN, GRAY, AND ORANGE, VERY SOFT TO VERY STIFF, MOIST TO WET, SANDY CLAY AND SILT

87+00.00

170 165 160 155 150 145 140 135 130 125

4:1

4:1

3

COASTAL PLAIN, TAN, GRAY, AND ORANGE, VERY SOFT TO VERY STIFF, MOIST TO WET, SANDY CLAY AND SILT

TAN AND GRAY, VERY LOOSE TO LOOSE, SATURATED, SILTY AND COARSE SAND

RESIDUAL, GRAY, STIFF, MOIST, SANDY SILT

86+50.00

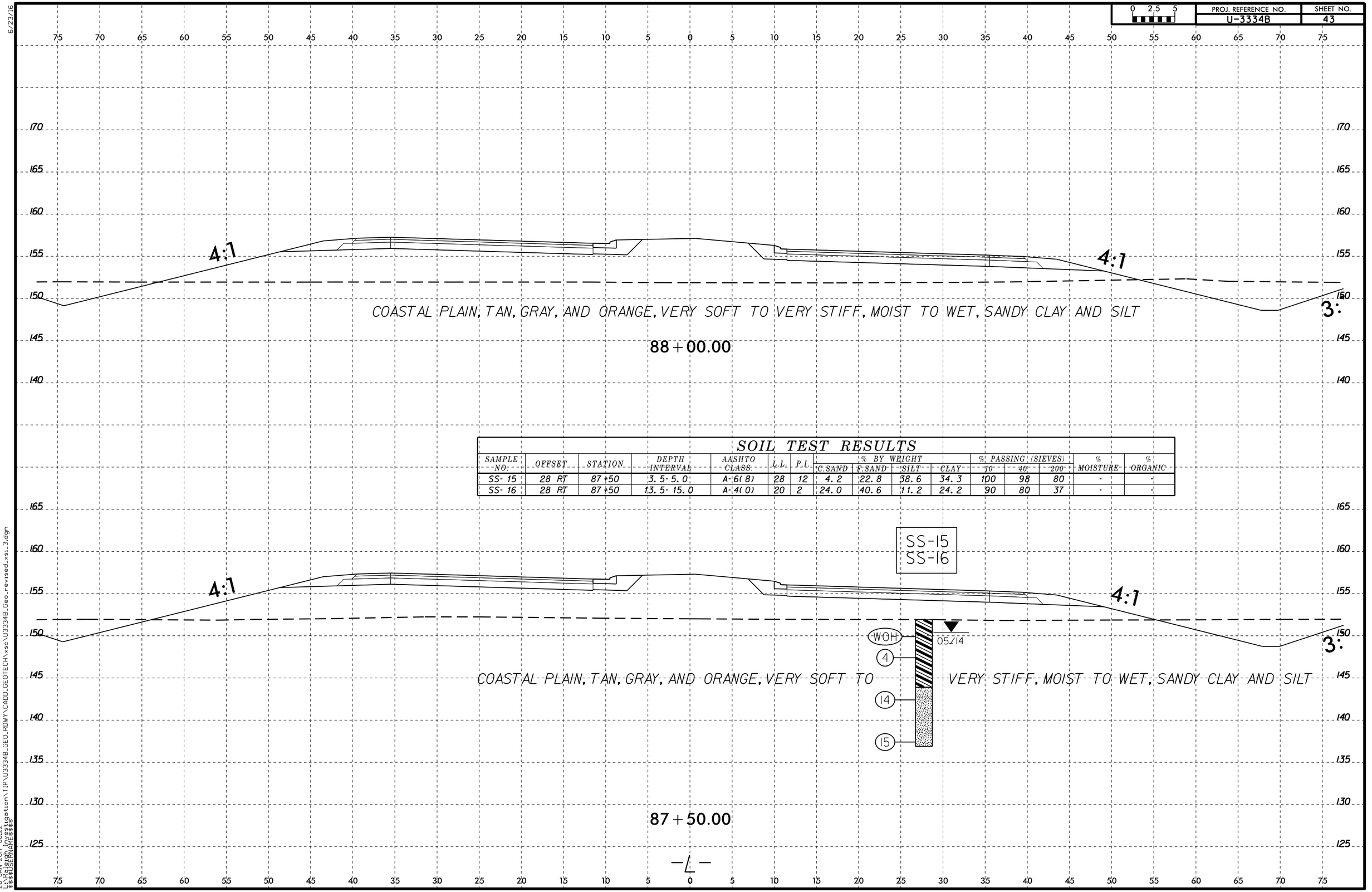
$-L-$

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

26-JAN-2017 08:22
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	43



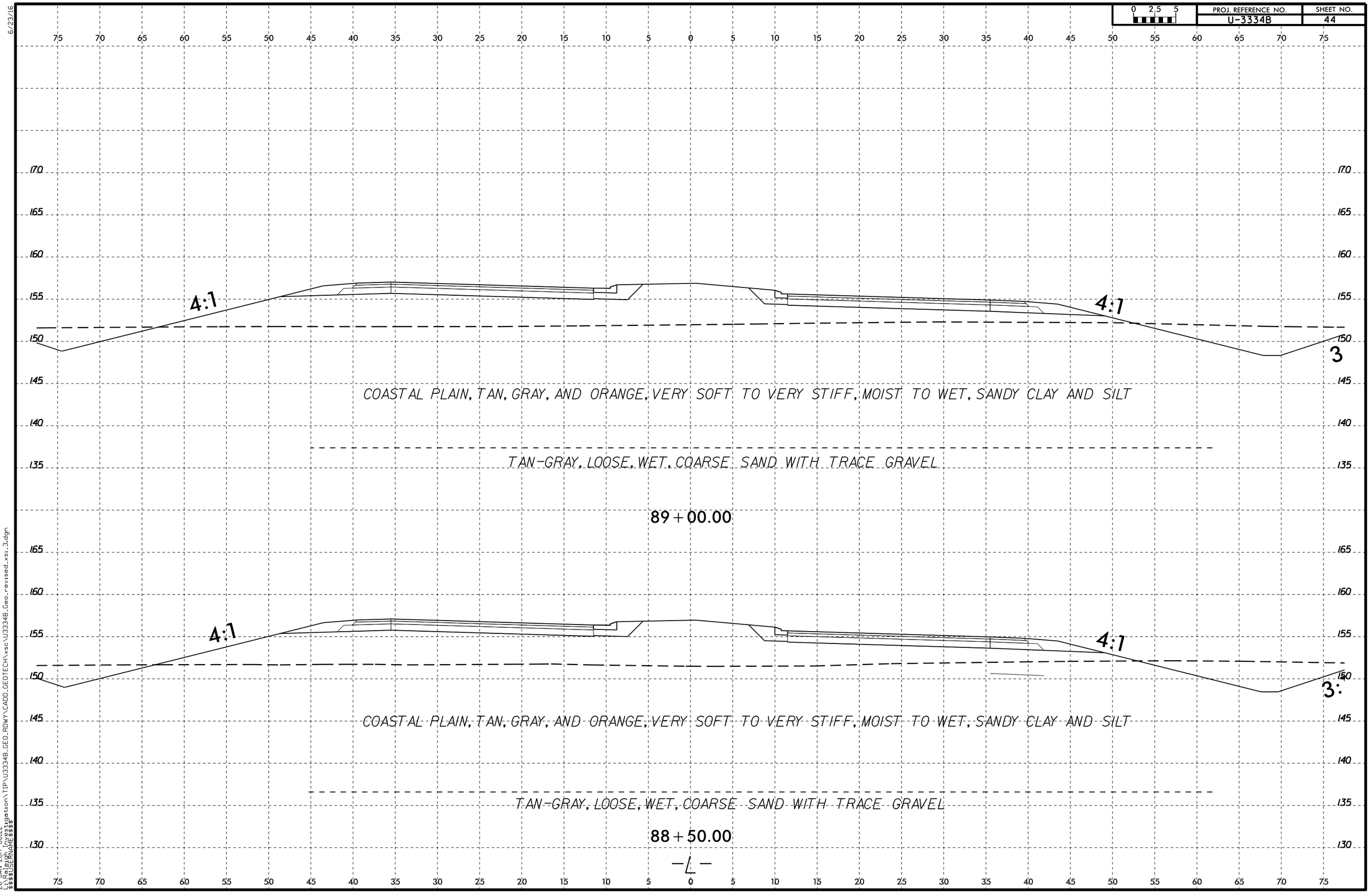
SOIL TEST RESULTS

SAMPLE NO.	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- 15	28 RT	87+50	3. 5- 5. 0	A-6(8)	28	12	4. 2	22. 8	38. 6	34. 3	100	98	80	-	-
SS- 16	28 RT	87+50	13. 5- 15. 0	A-4(0)	20	2	24. 0	40. 6	11. 2	24. 2	90	80	37	-	-

26-JAN-2017 08:22
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	44

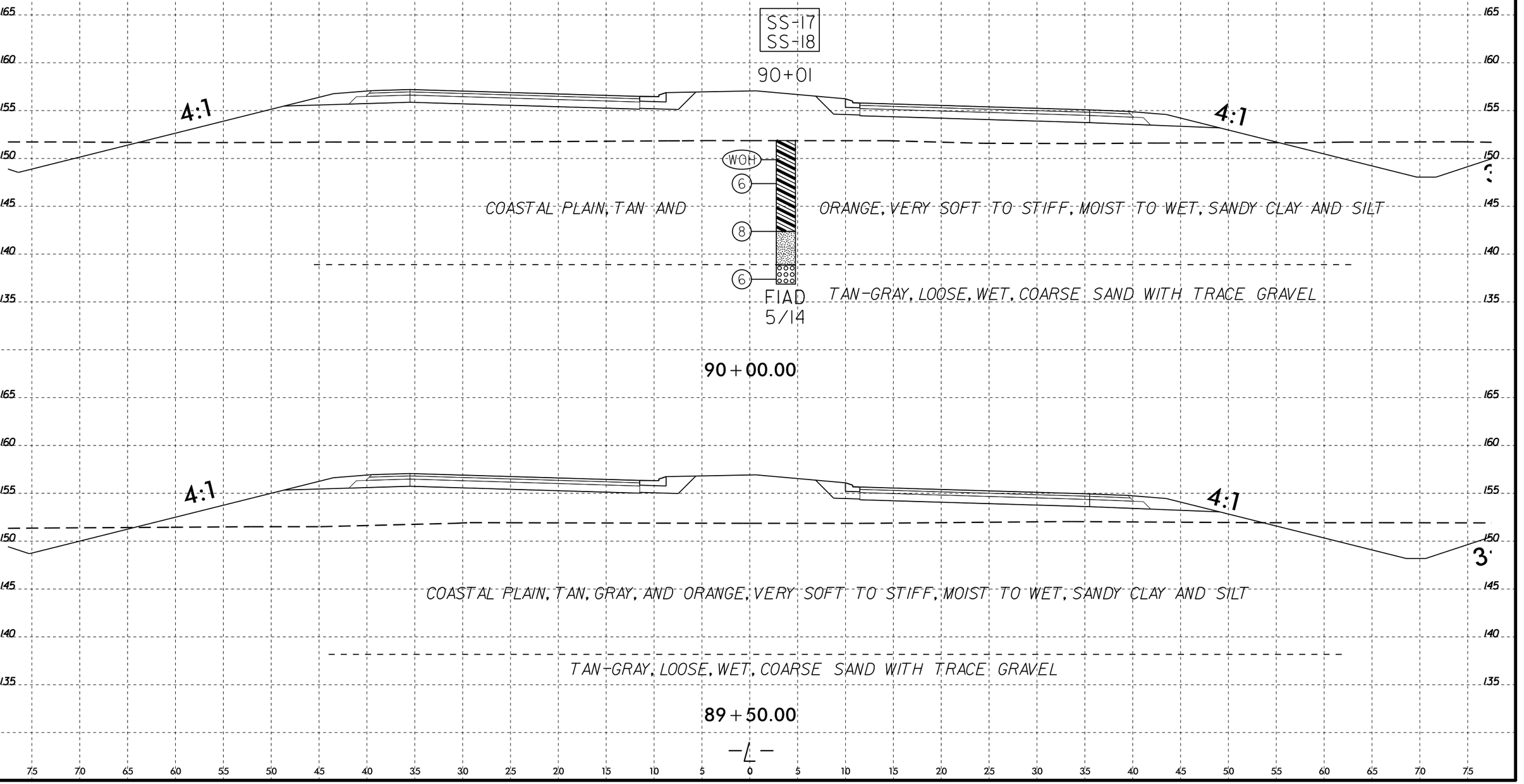


26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

0 2.5 5
PROJ. REFERENCE NO. U-3334B
SHEET NO. 45

SOIL TEST RESULTS

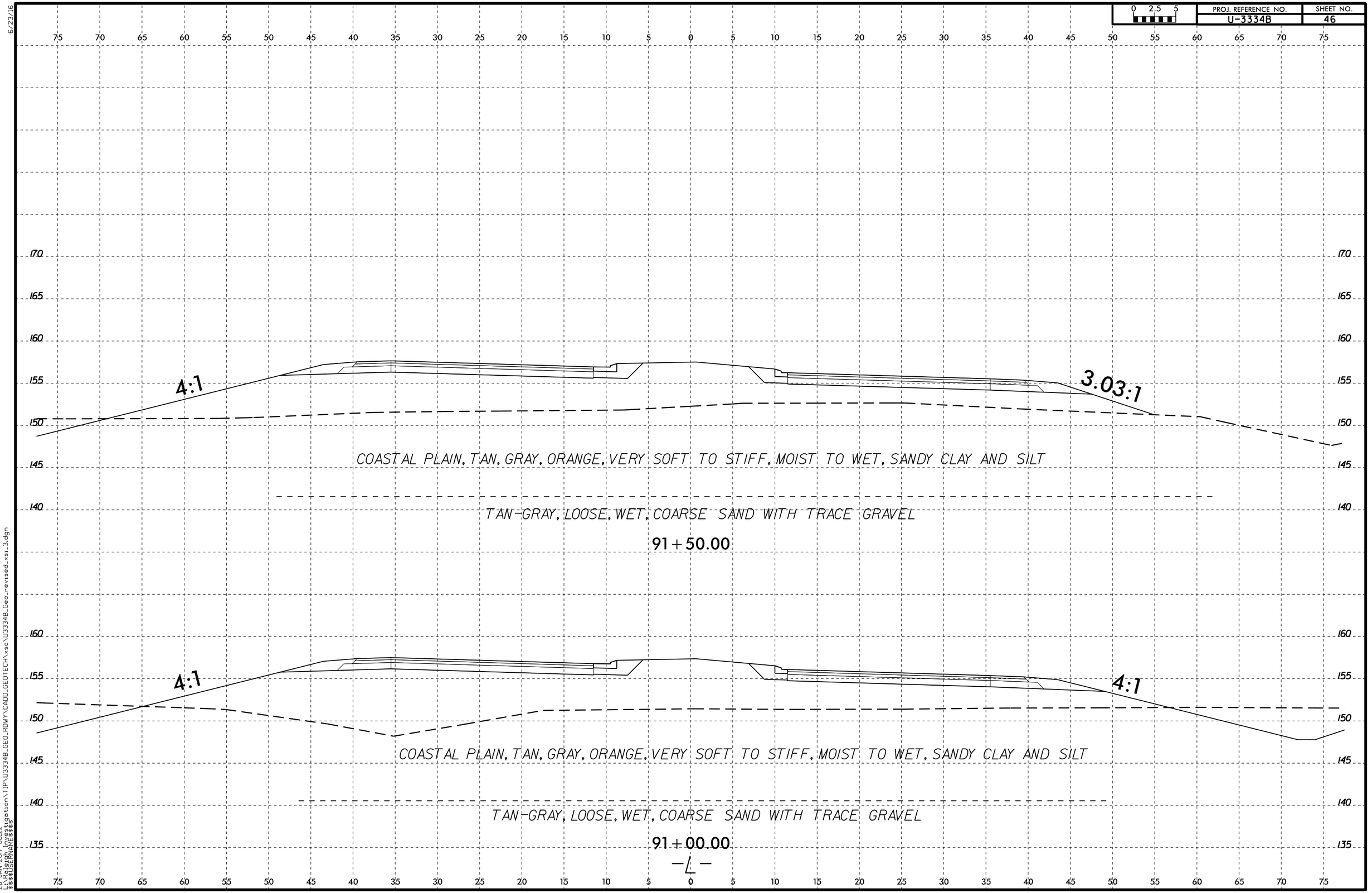
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-17	4 RT	90+01	1.0-2.5	A-6(8)	30	13	5.4	26.6	33.6	34.3	100	98	74	-	-
SS-18	4 RT	90+01	9.5-10.0	A-4(1)	28	9	6.9	53.1	13.8	26.2	100	100	47	-	-



26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	46

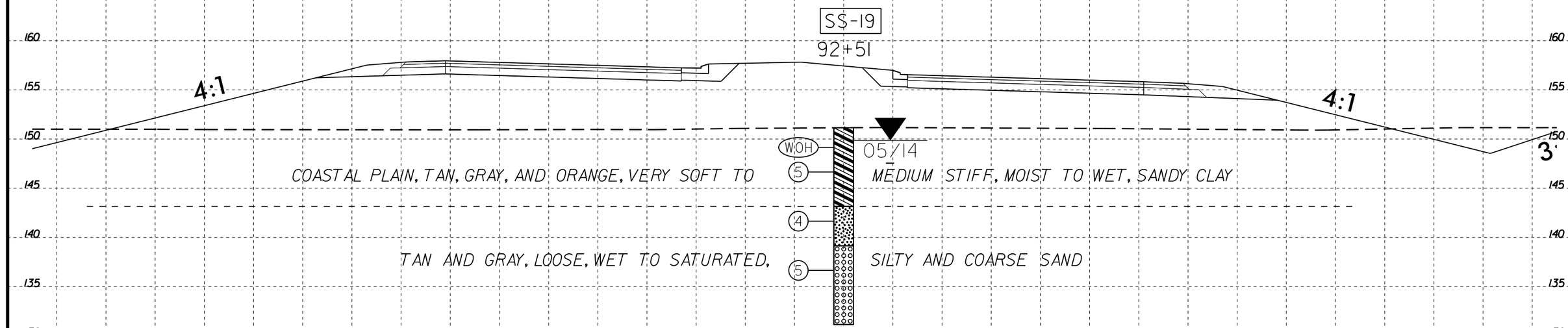


26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

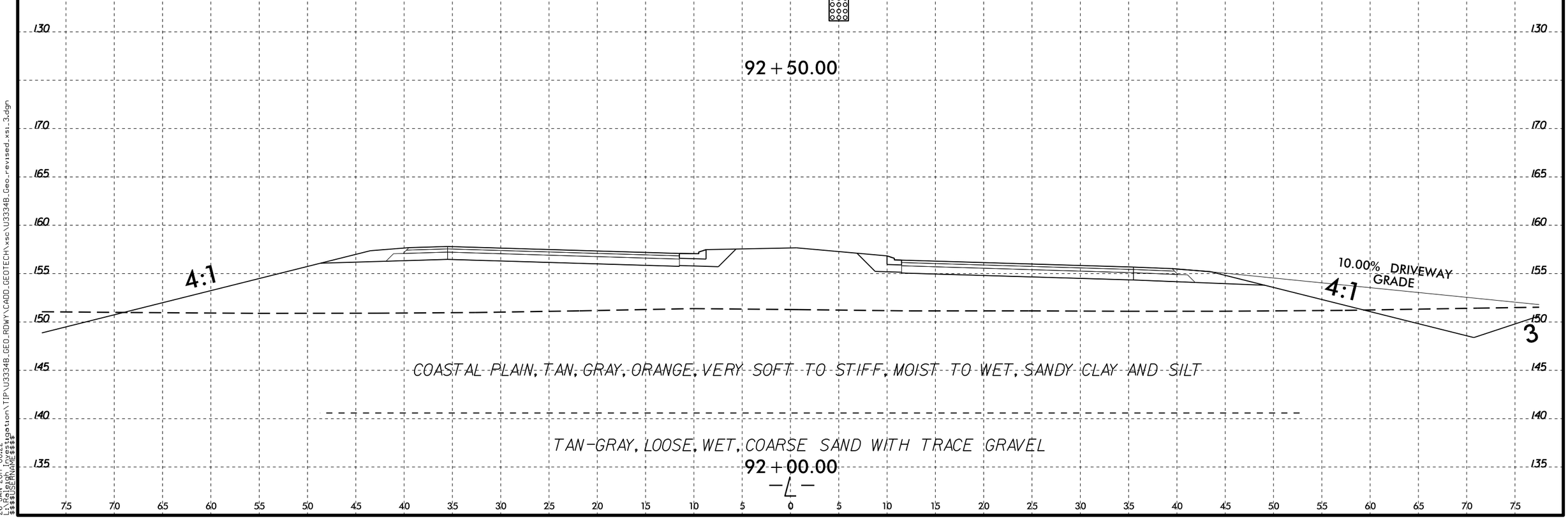
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	47

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-19	5 RT	92+51	1.0-2.5	A-6(7)	29	11	6.1	21.2	36.4	36.3	100	97	79	-	-



92+50.00



92+00.00

—L—

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	48

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

170 165 160 155 150 145 140 135

4:1

4:1

3:

COASTAL PLAIN, TAN AND GRAY, VERY SOFT TO STIFF, MOIST TO WET, SANDY CLAY AND SILT

TAN AND GRAY, VERY LOOSE TO LOOSE, WET TO SATURATED, SILTY AND COARSE SAND

93+50.00

170 165 160 155 150 145 140 135

4:1

4:1

3:

COASTAL PLAIN, TAN AND GRAY, VERY SOFT TO STIFF, MOIST TO WET, SANDY CLAY AND SILT

TAN AND GRAY, VERY LOOSE TO LOOSE, WET TO SATURATED, SILTY AND COARSE SAND

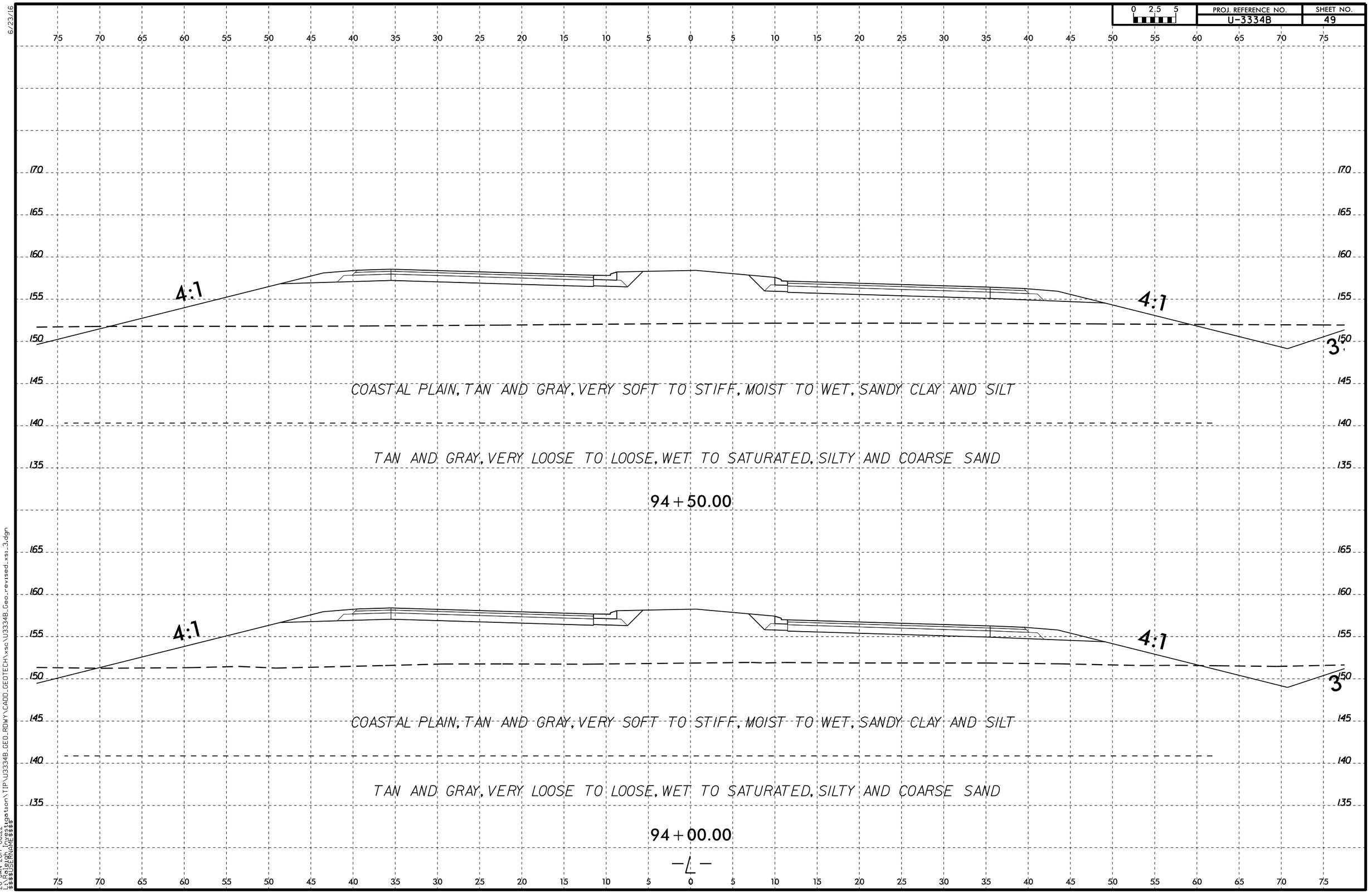
93+00.00

—L—

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

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	49

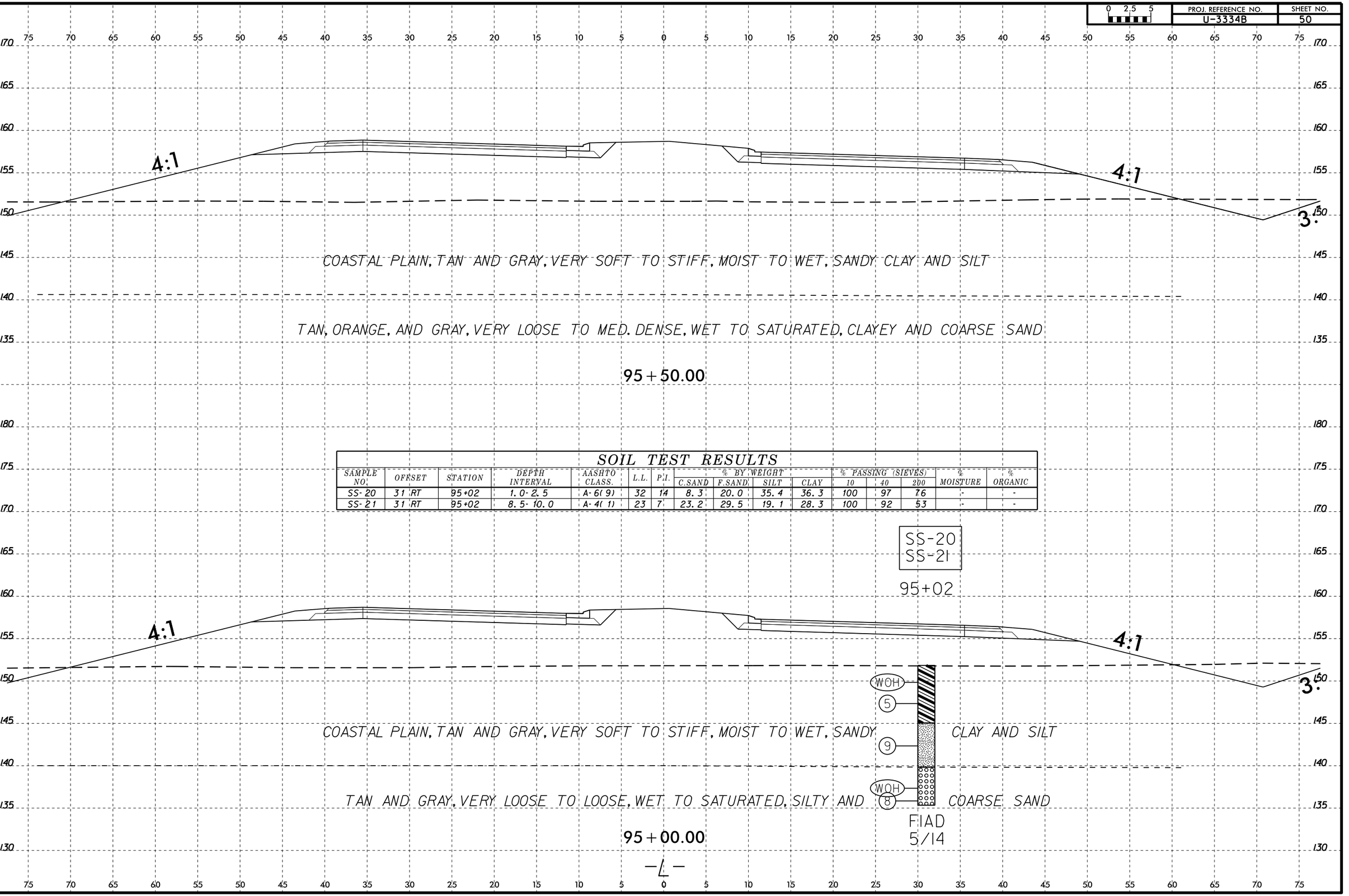


26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

PROJ. REFERENCE NO.	SHEET NO.
U-3334B	50

0 2.5 5



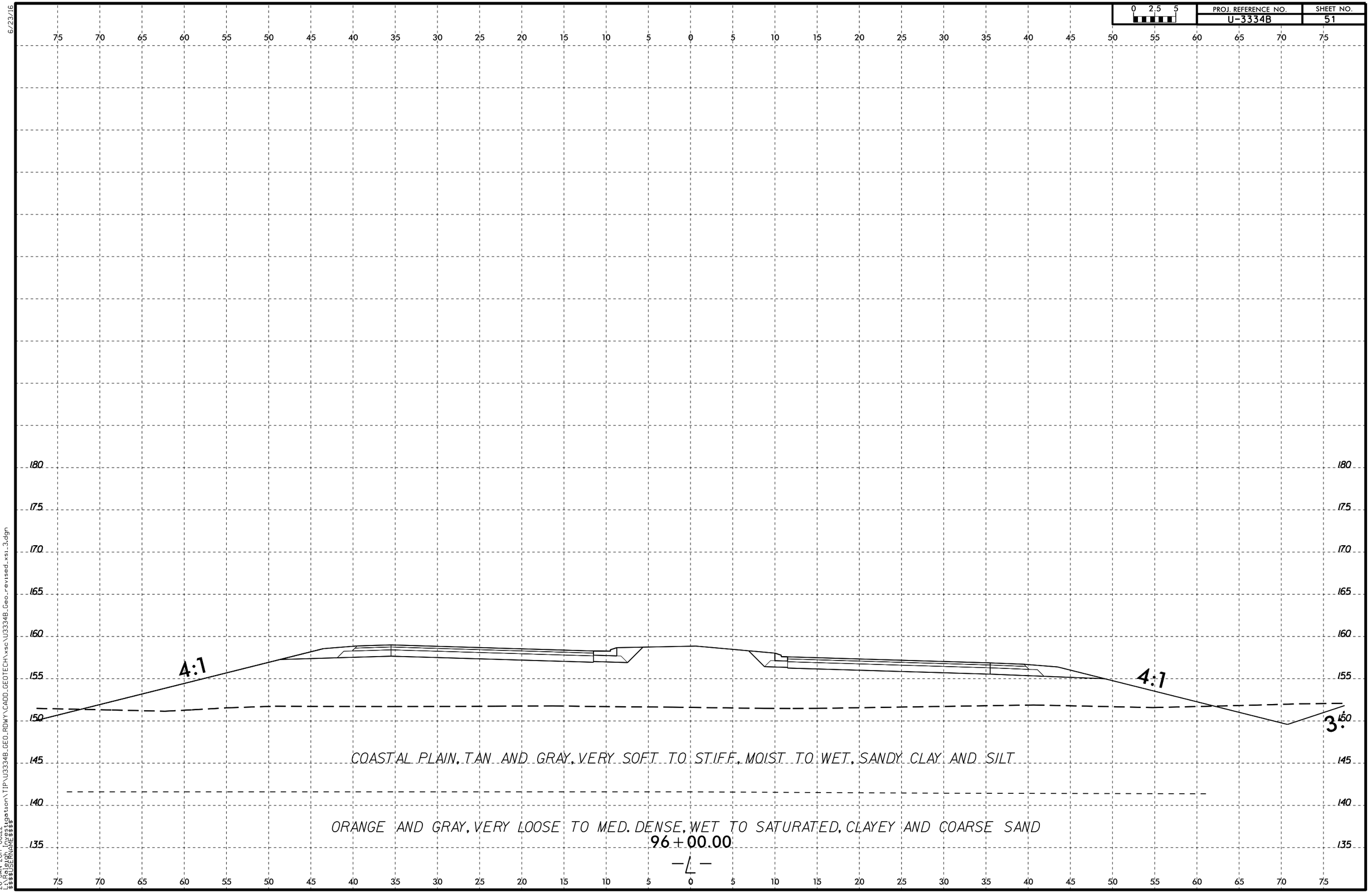
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-20	31 RT	95+02	1.0-2.5	A-6(9)	32	14	8.3	20.0	35.4	36.3	100	97	76	-	-
SS-21	31 RT	95+02	8.5-10.0	A-4(1)	23	7	23.2	29.5	19.1	28.3	100	92	53	-	-

26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

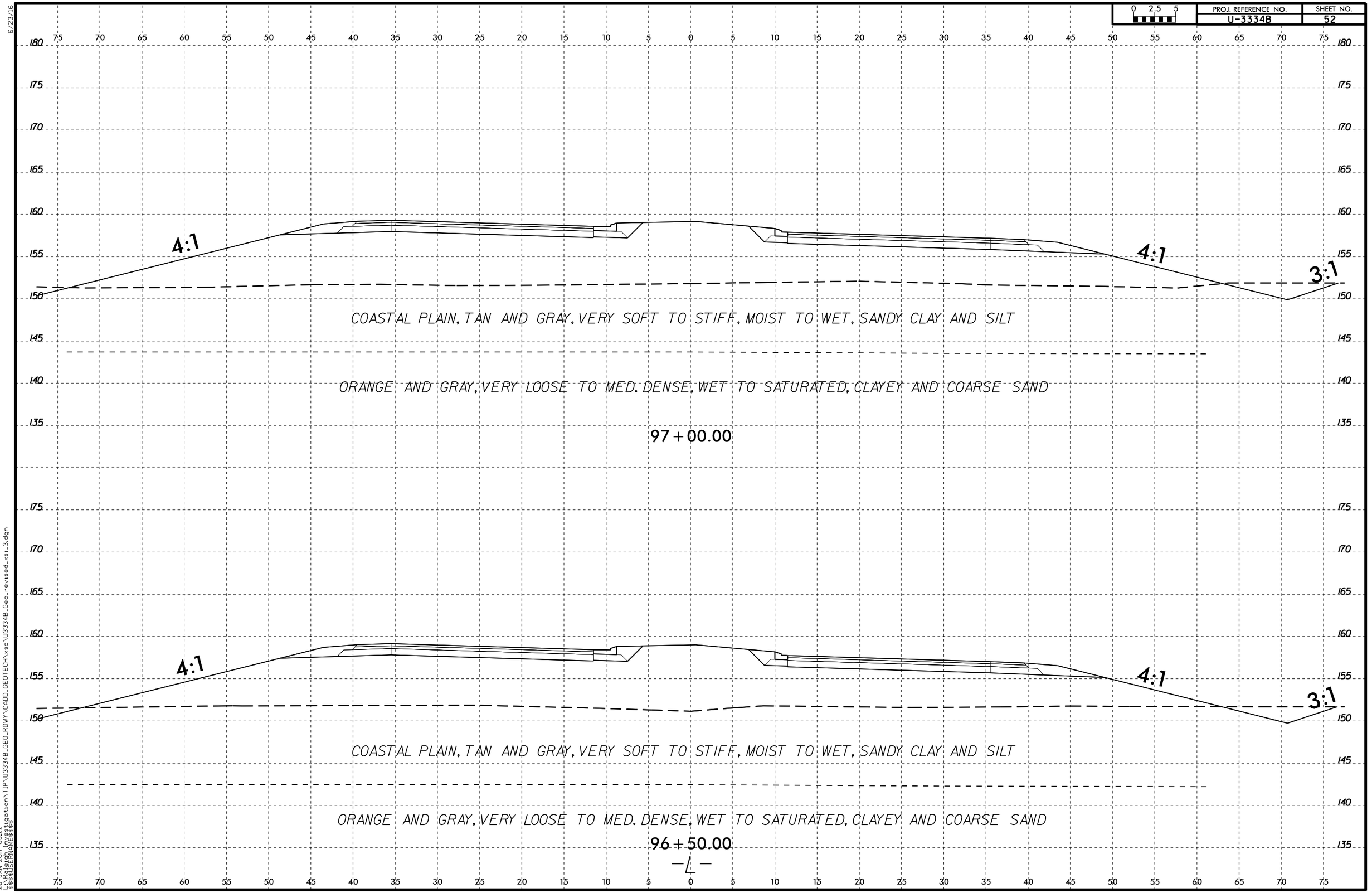
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	51



26-JAN-2017 08:22
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

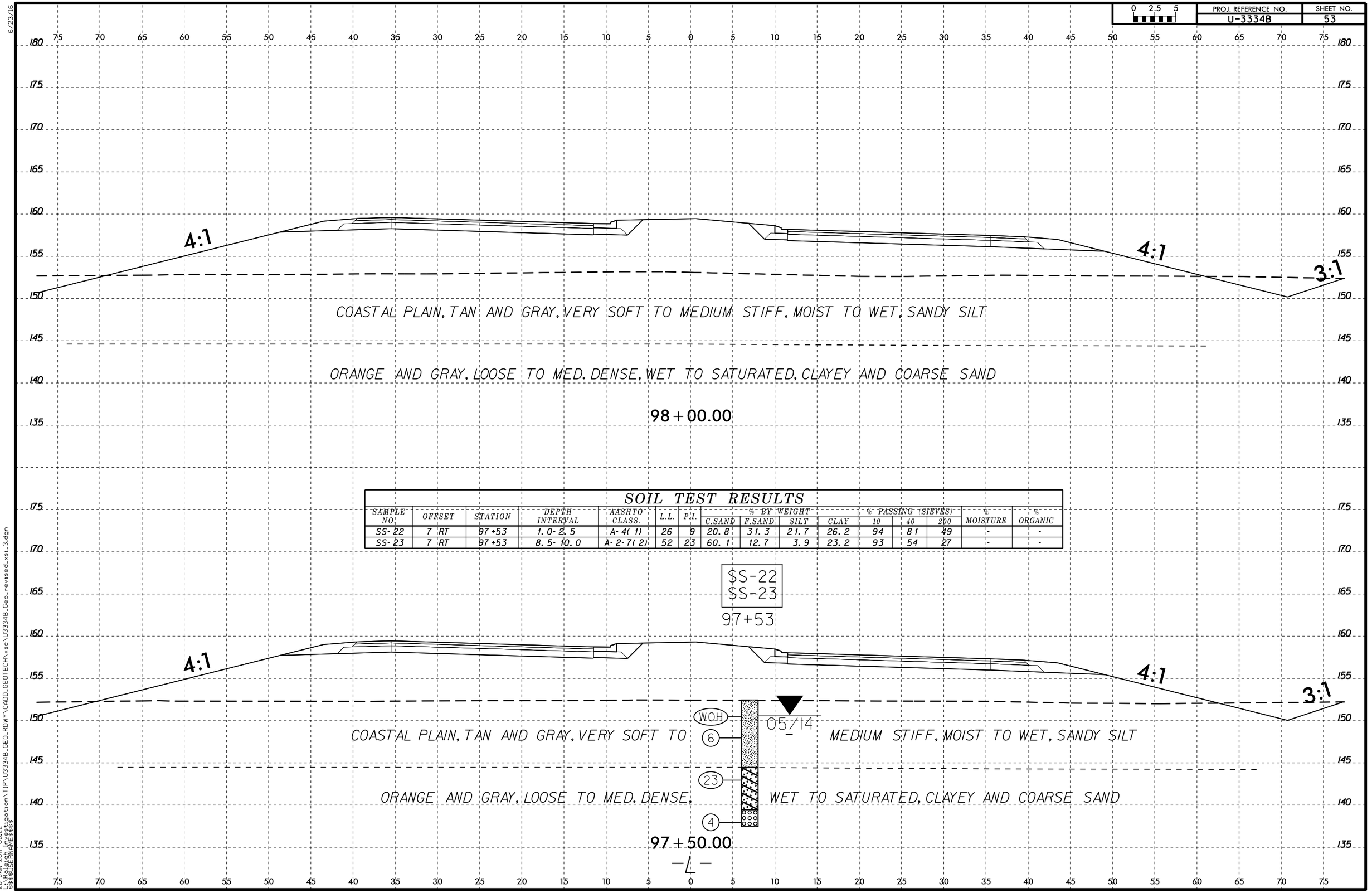
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	52



26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	53



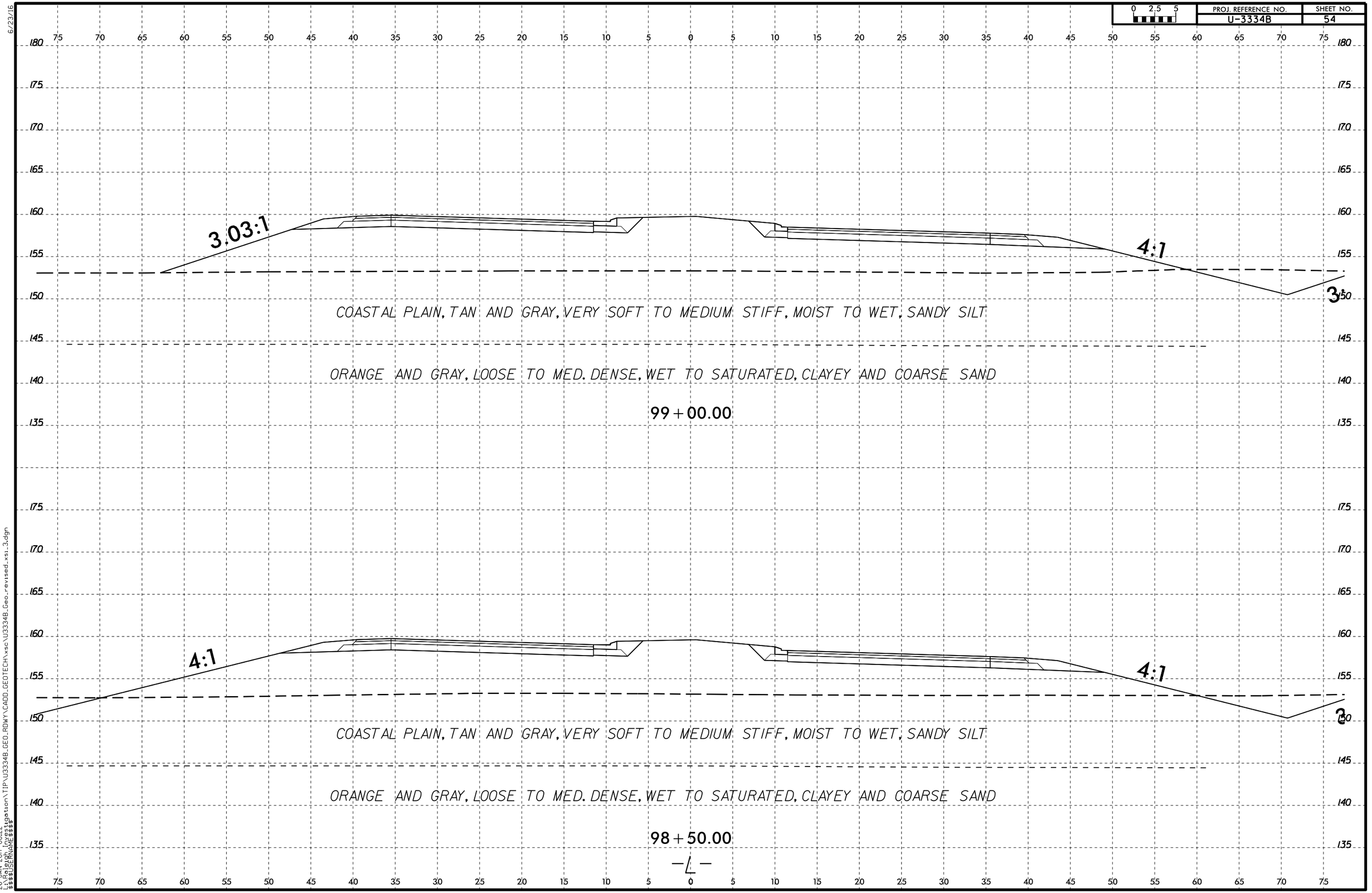
SOIL TEST RESULTS

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-22	7 RT	97+53	1.0-2.5	A-4(1)	26	9	20.8	31.3	21.7	26.2	94	81	49	-	-
SS-23	7 RT	97+53	8.5-10.0	A-2-7(2)	52	23	60.1	12.7	3.9	23.2	93	54	27	-	-

26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

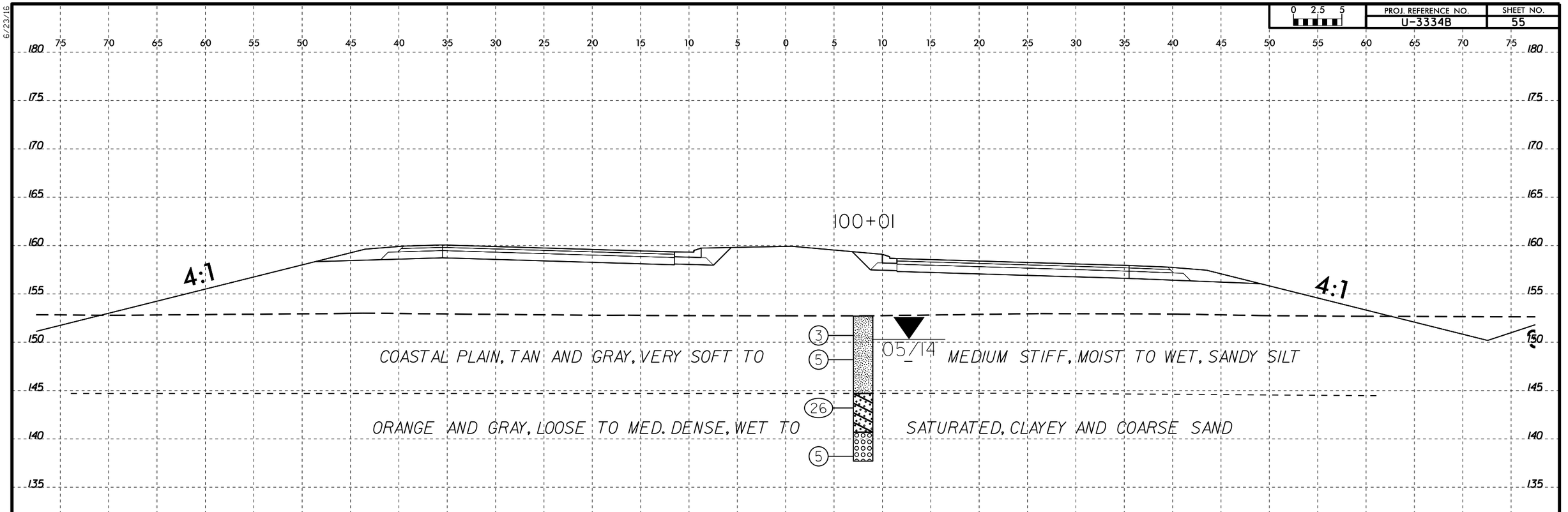
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	54

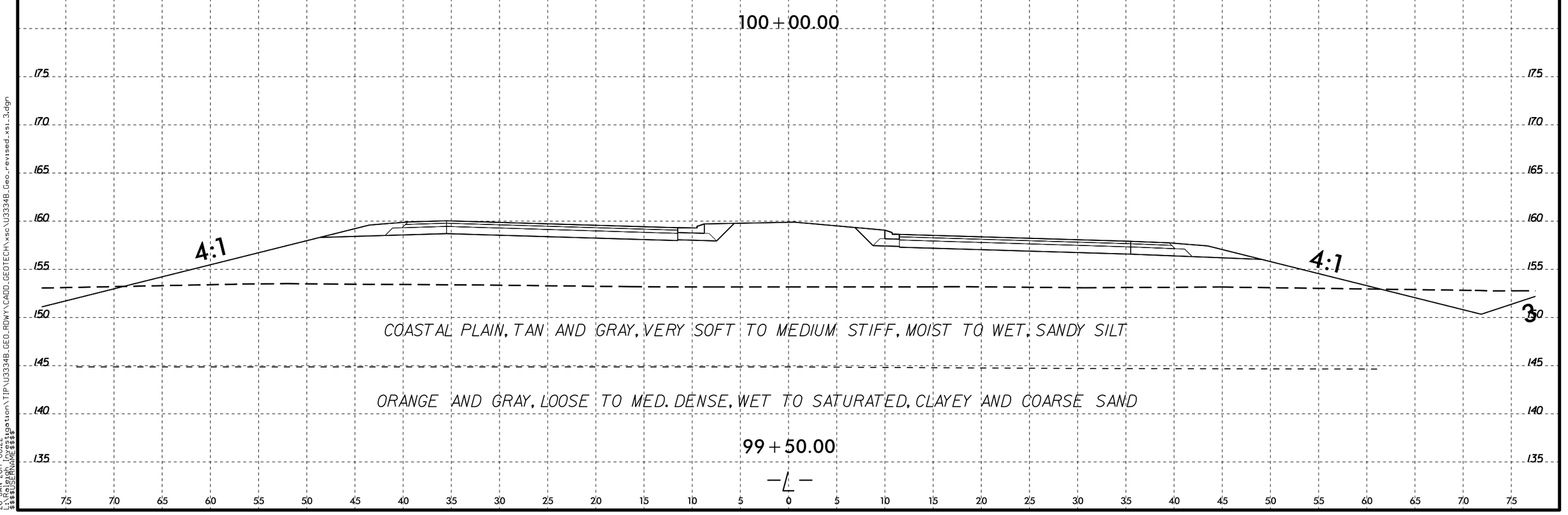


26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	55

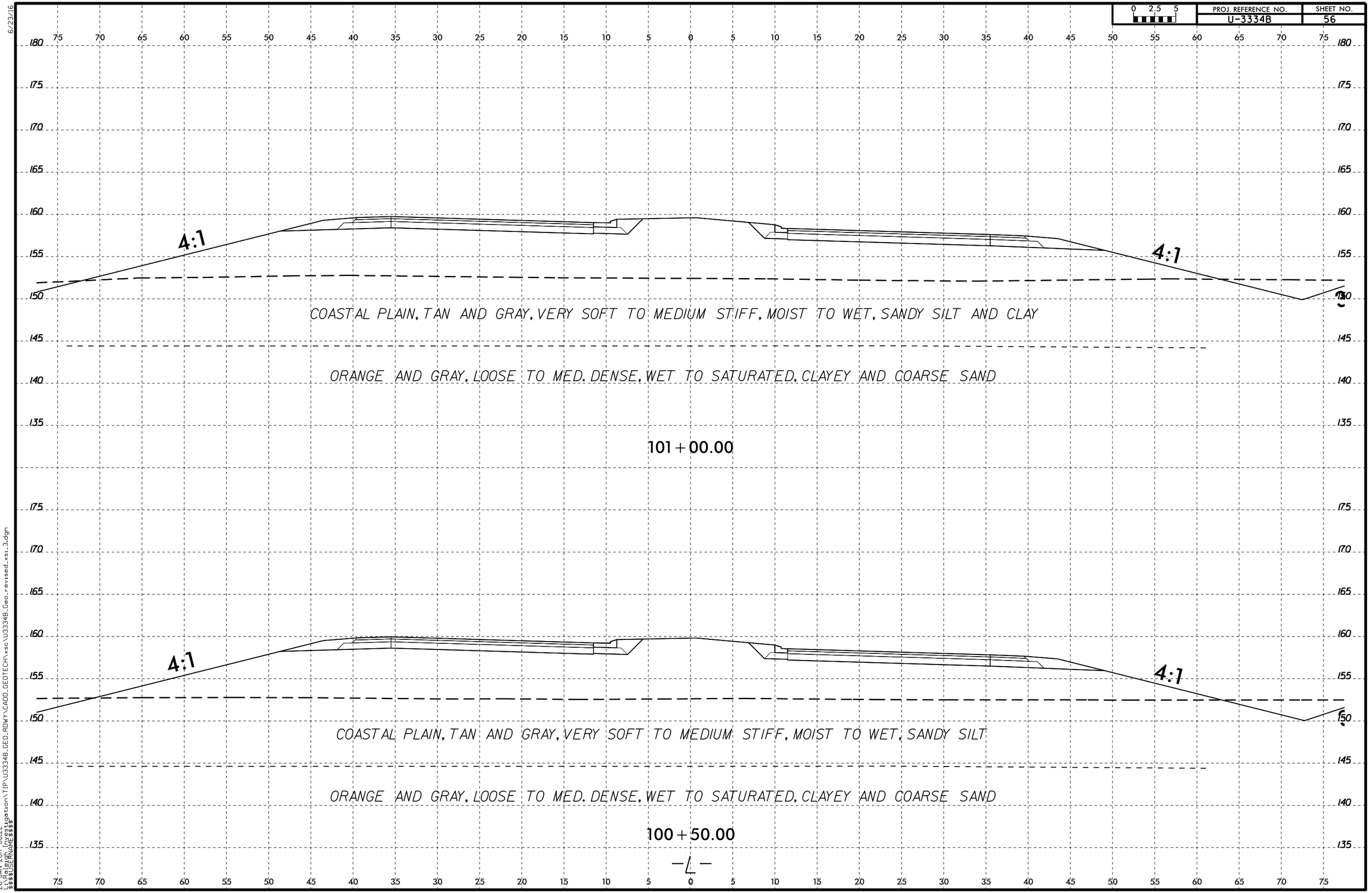




26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

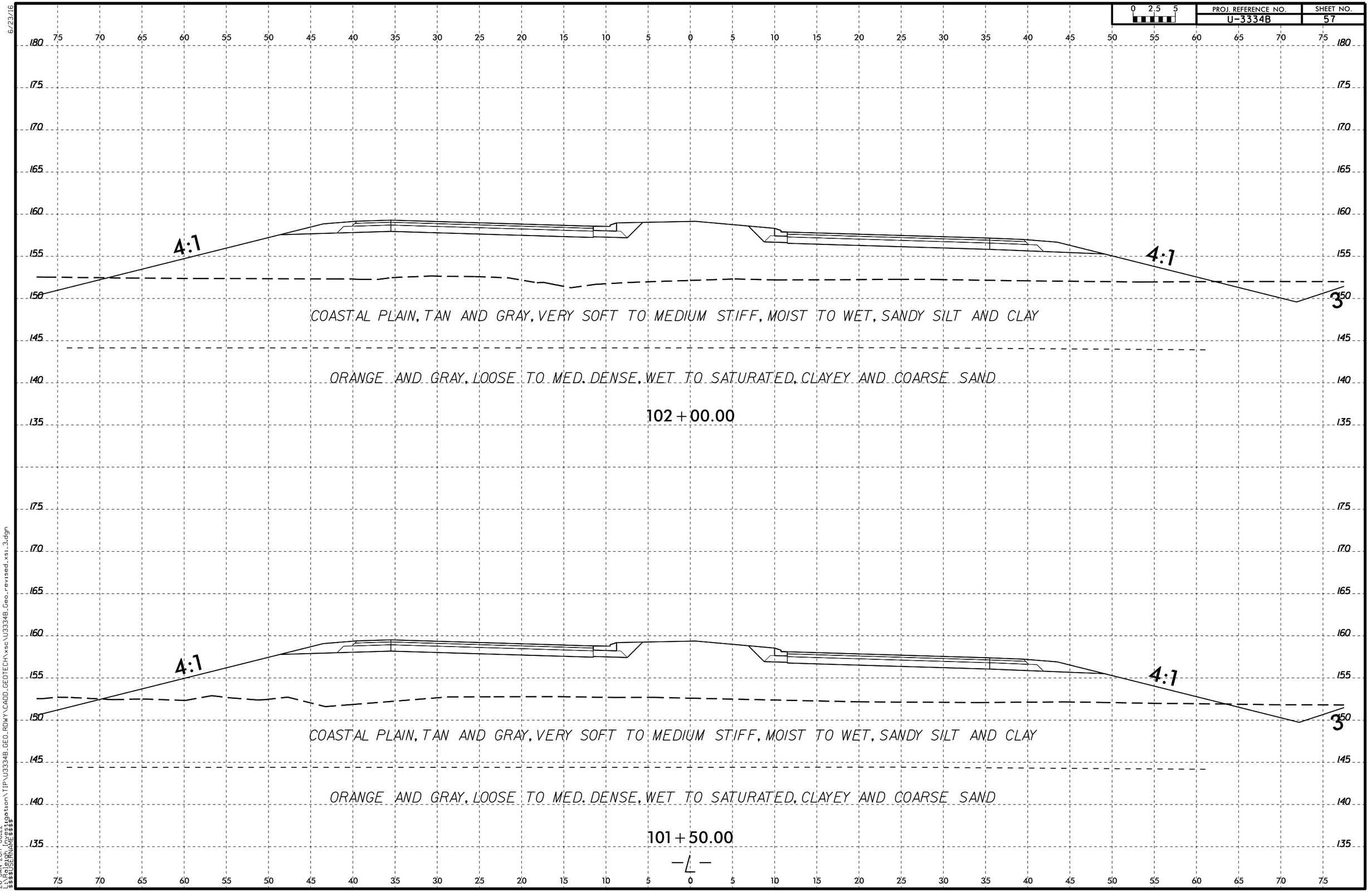
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	56



26-JAN-2017 08:22
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	57



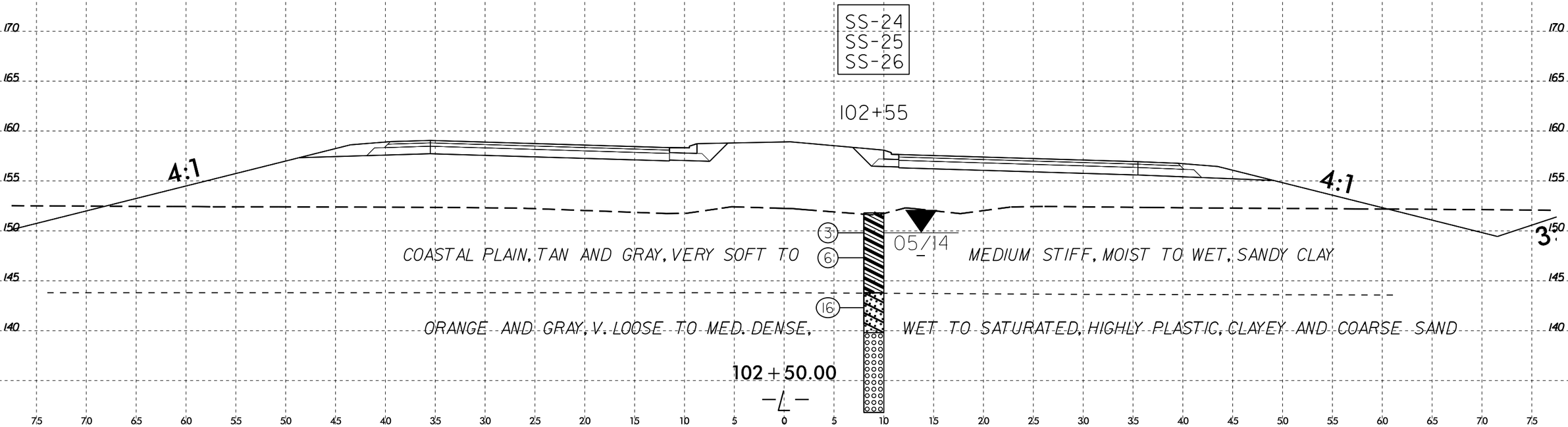
26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	58

SOIL TEST RESULTS

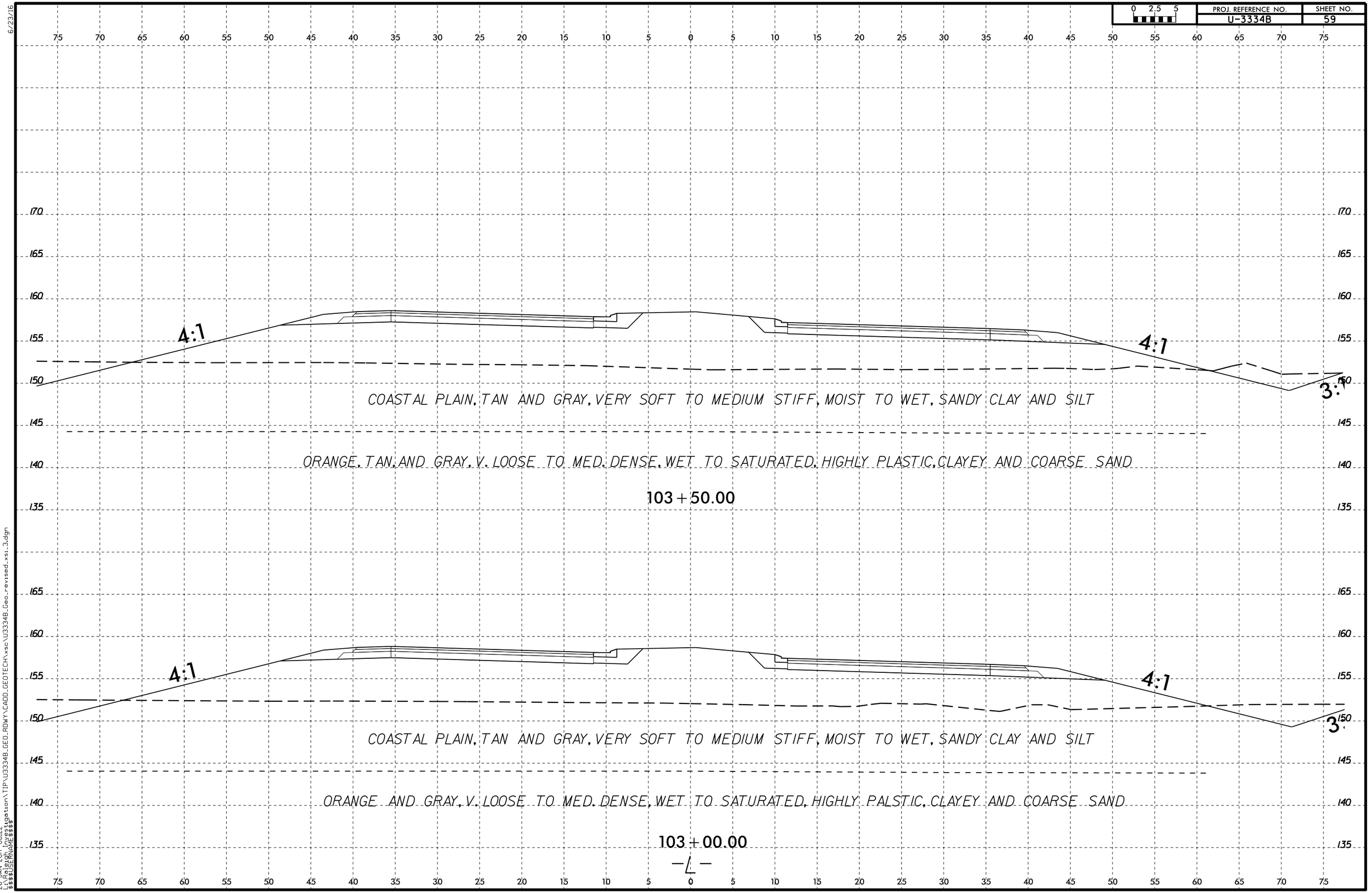
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-24	9 RT	102+55	1.0-2.5	A-6(4)	29	12	22.8	23.4	25.5	28.3	97	83	57	-	-
SS-25	9 RT	102+55	8.5-10.0	A-2-7(1)	48	22	62.7	13.0	3.1	21.2	87	50	22	-	-
SS-26	9 RT	102+55	13.5-15.0	A-1-b(0)	24	10	25.5	18.9	27.6	28.1	99	85	58	-	-



26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

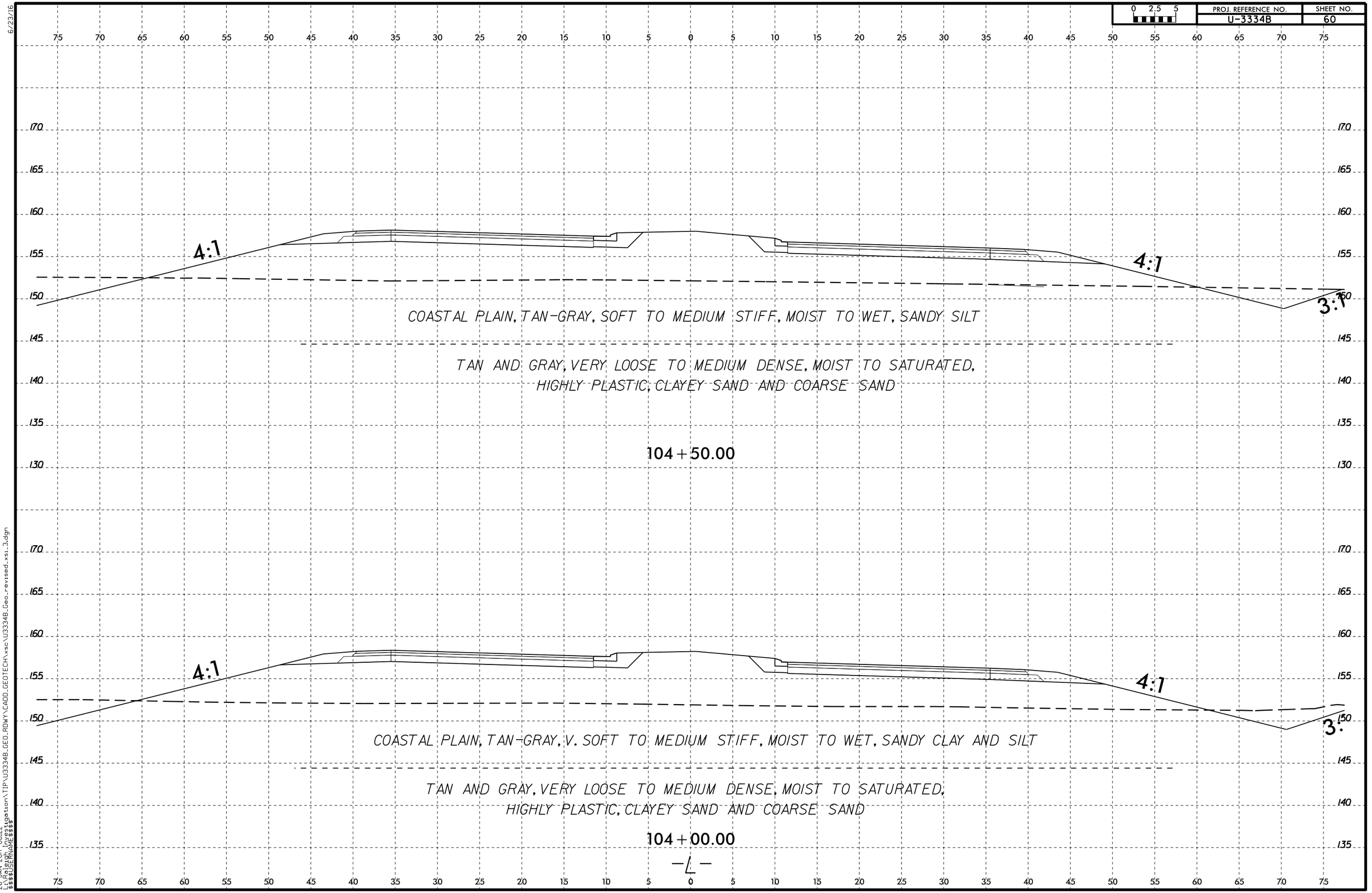
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	59



26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3dgn
$$$$USERNAME$$$$

6/23/16

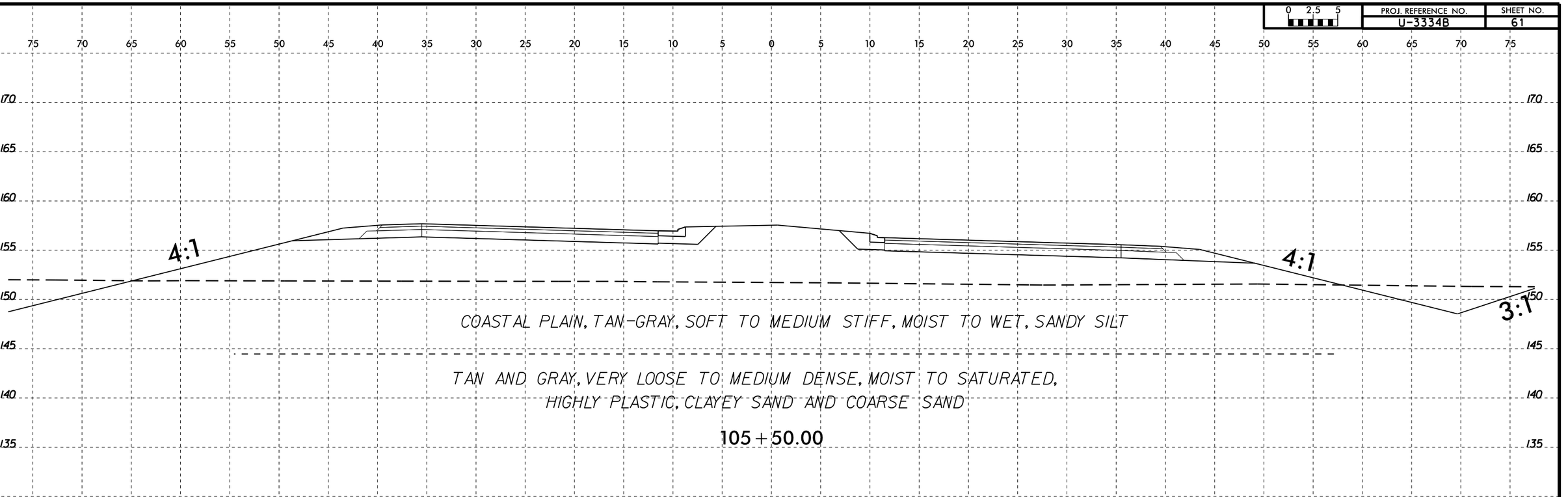
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	60



26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

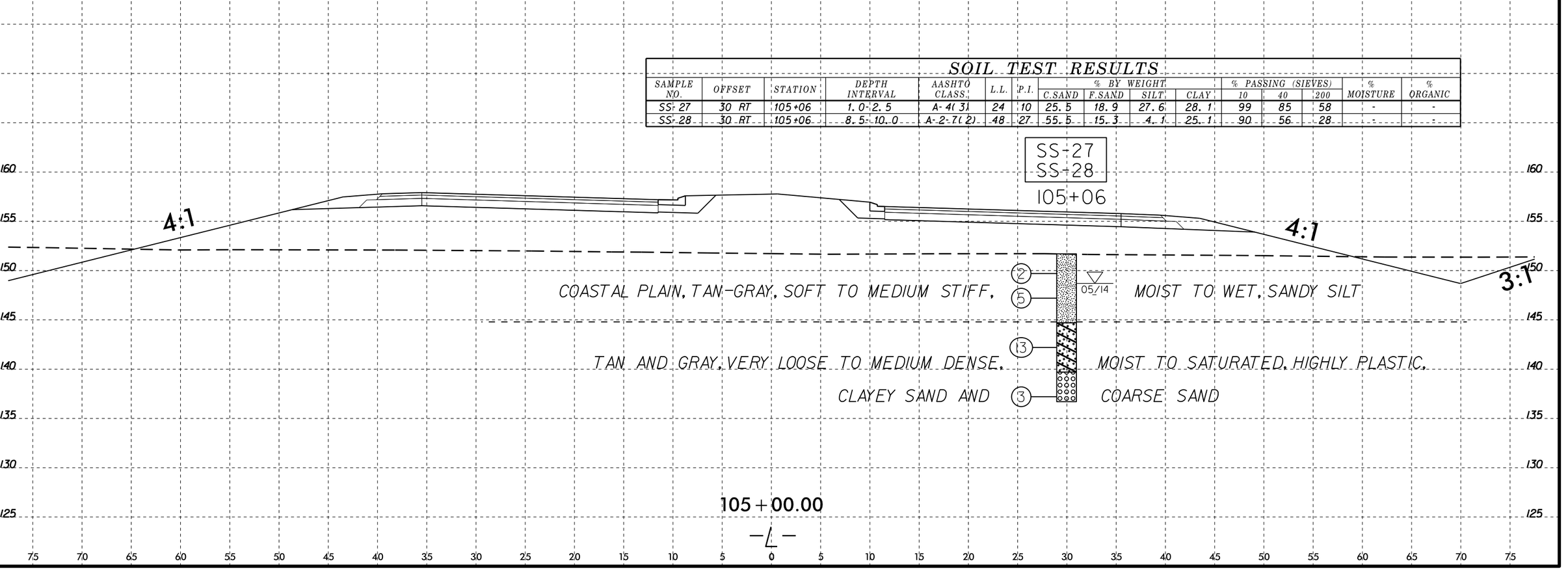
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	61



SOIL TEST RESULTS

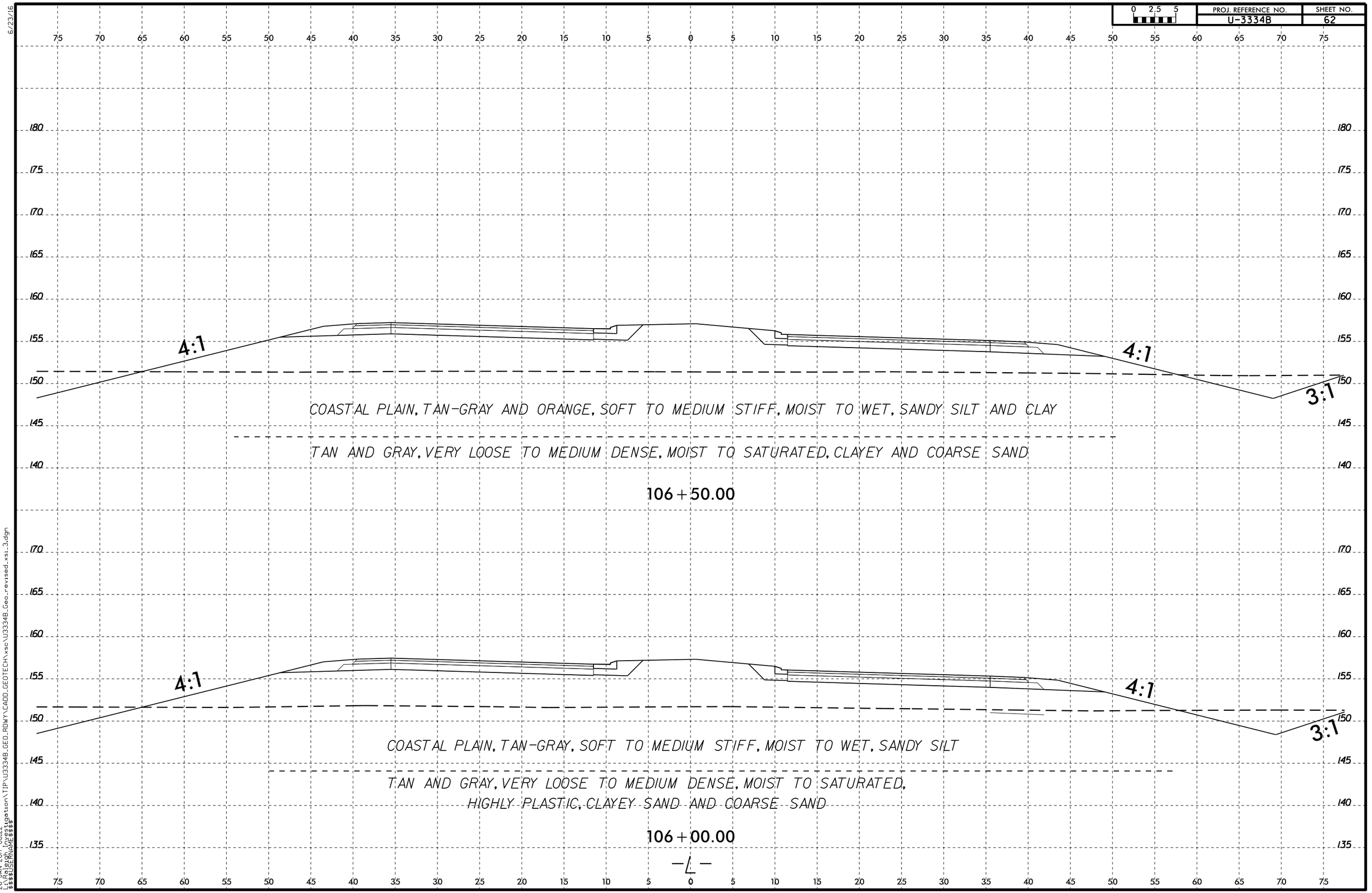
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-27	30 RT	105+06	1.0-2.5	A-4(3)	24	10	25.5	18.9	27.6	28.1	99	85	58	-	-
SS-28	30 RT	105+06	8.5-10.0	A-2-7(2)	48	27	55.5	15.3	4.1	25.1	90	56	28	-	-



26-JAN-2017 08:22
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	62



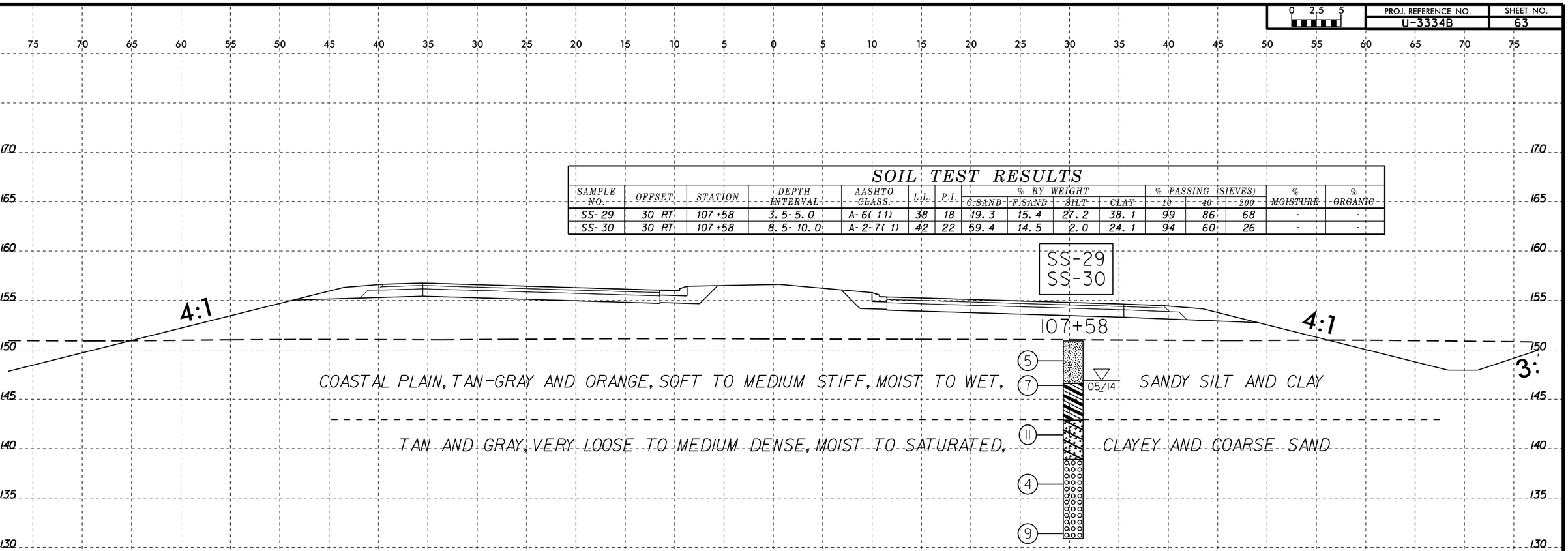
26-JAN-2017 08:22
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi.3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	63

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-29	30 RT	107+58	3.5-5.0	A-6(11)	38	18	19.3	15.4	27.2	38.1	99	86	68	-	-
SS-30	30 RT	107+58	8.5-10.0	A-2-7(1)	42	22	59.4	14.5	2.0	24.1	94	60	26	-	-



26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	64

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

165 160 155 150 145 140 135

4:1

4:1

3:1

COASTAL PLAIN, TAN-GRAY AND ORANGE, SOFT TO MEDIUM STIFF, MOIST TO WET, SANDY SILT, SANDY CLAY AND SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

108+50.00

165 160 155 150 145 140

4:1

4:1

3:1

COASTAL PLAIN, TAN-GRAY AND ORANGE, SOFT TO MEDIUM STIFF, MOIST TO WET, SANDY SILT AND CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

108+00.00

—L—

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

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	65

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

165 160 155 150 145 140 135

4:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SANDY AND SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

109+50.00

4:1

3:1

165 160 155 150 145 140 135

4:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SANDY AND SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

109+00.00

—L—

4:1

3:1

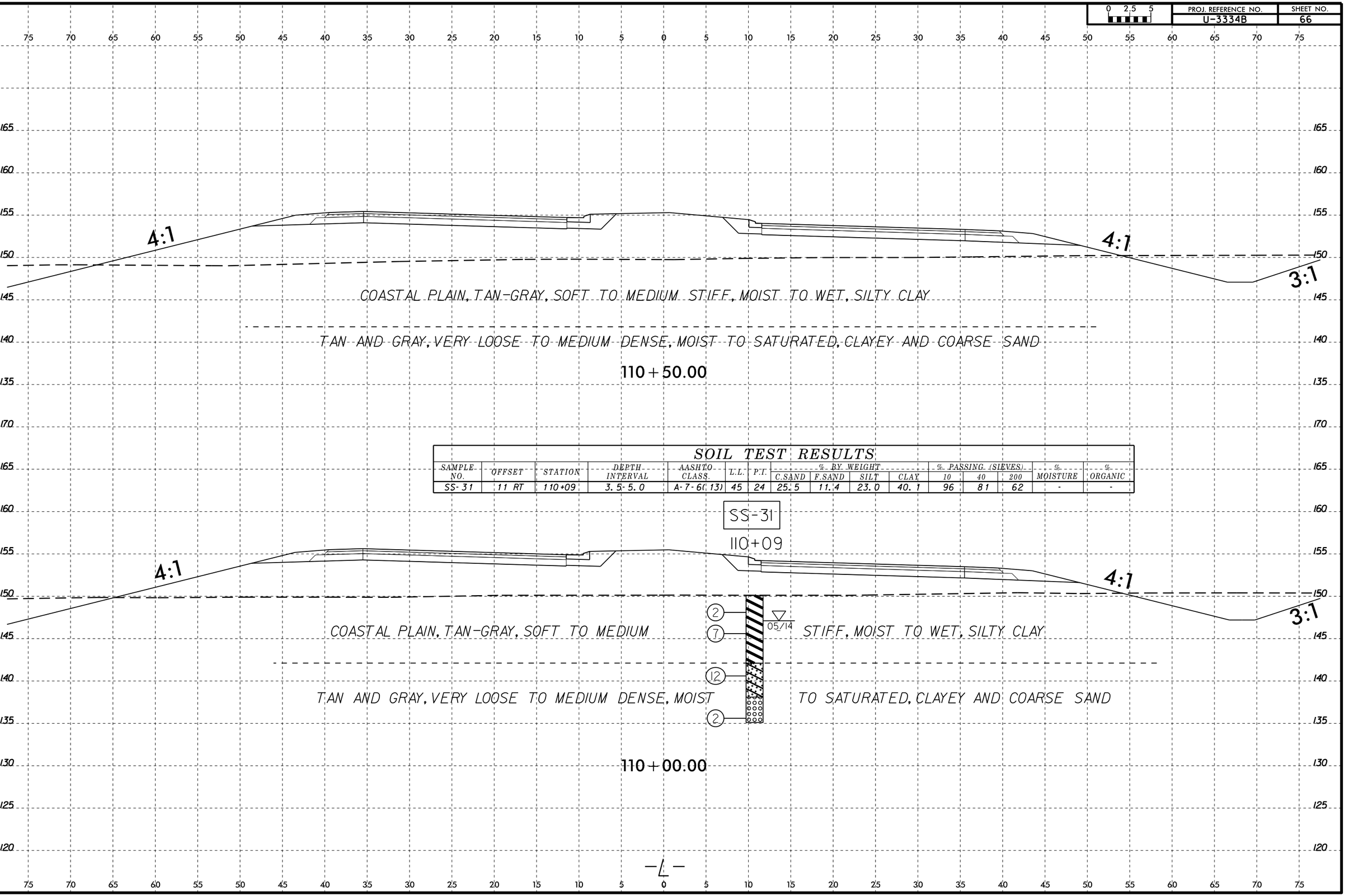
165 160 155 150 145 140 135

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

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	66



SOIL TEST RESULTS

SAMPLE NO.	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-31	11 RT	110+09	3.5-5.0	A-7-6(13)	45	24	25.5	11.4	23.0	40.1	96	81	62	-	-

26-JAN-2017 08:23
L:\Raleigh Investigation\TIP\U3334B\GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	67

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

165 160 155 150 145 140 135

4:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

111 + 50.00

4:1

3:1

165 160 155 150 145 140 135

4:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

111 + 00.00

— L —

4:1

3:1

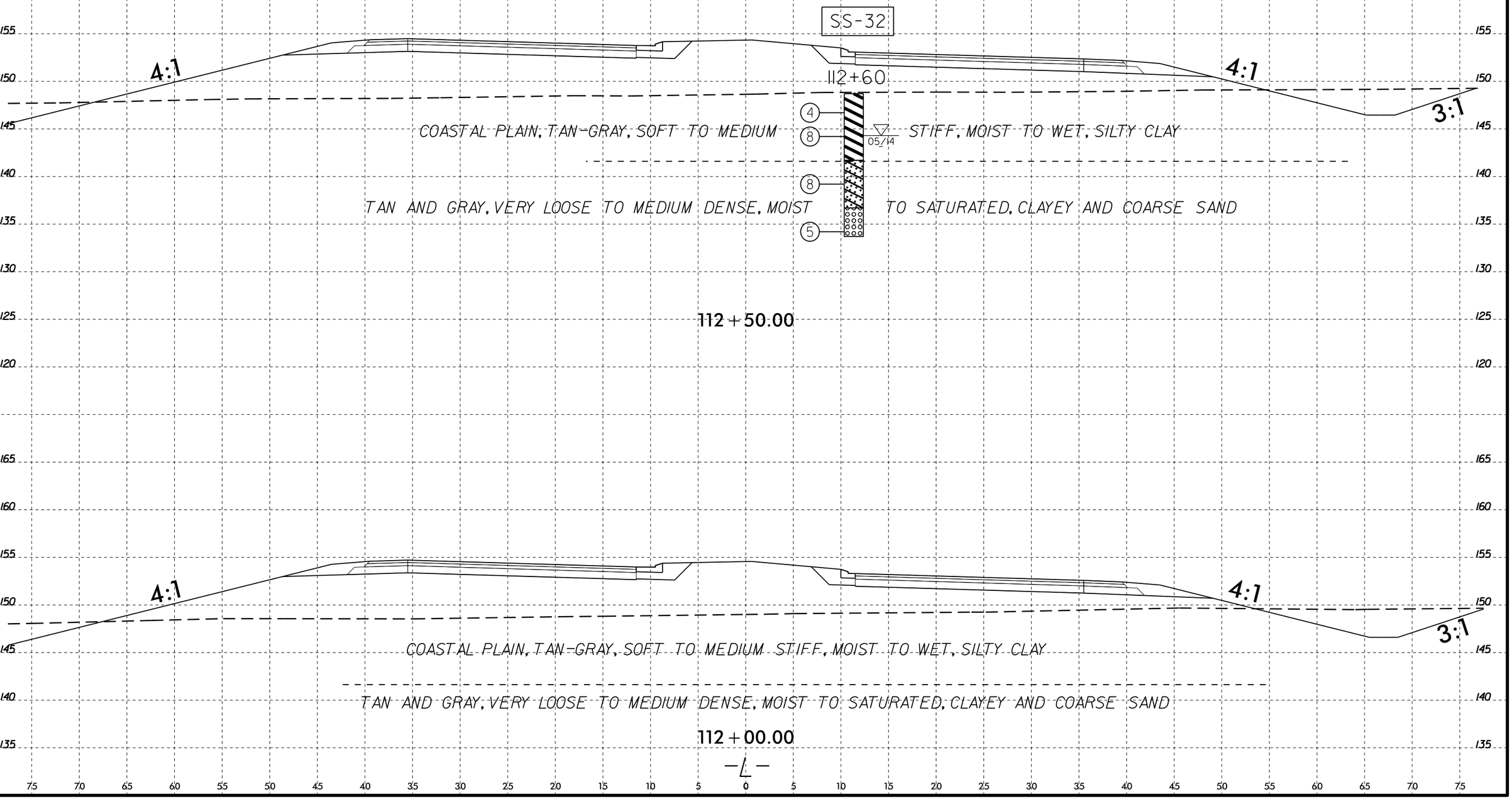
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	68

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-32	9 RT	112+60	8.5-10.0	A-2-6(0)	33	14	65.4	14.5	4.0	16.0	97	59	21	-	-



26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	69

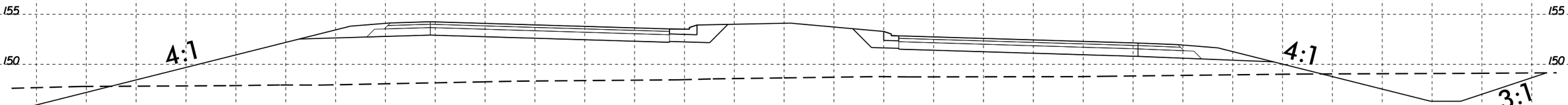
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

165 160 155 150 145 140 135

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

113 + 50.00



COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST TO WET, SILTY CLAY

TAN AND GRAY, VERY LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, CLAYEY AND COARSE SAND

113 + 00.00

$-L-$

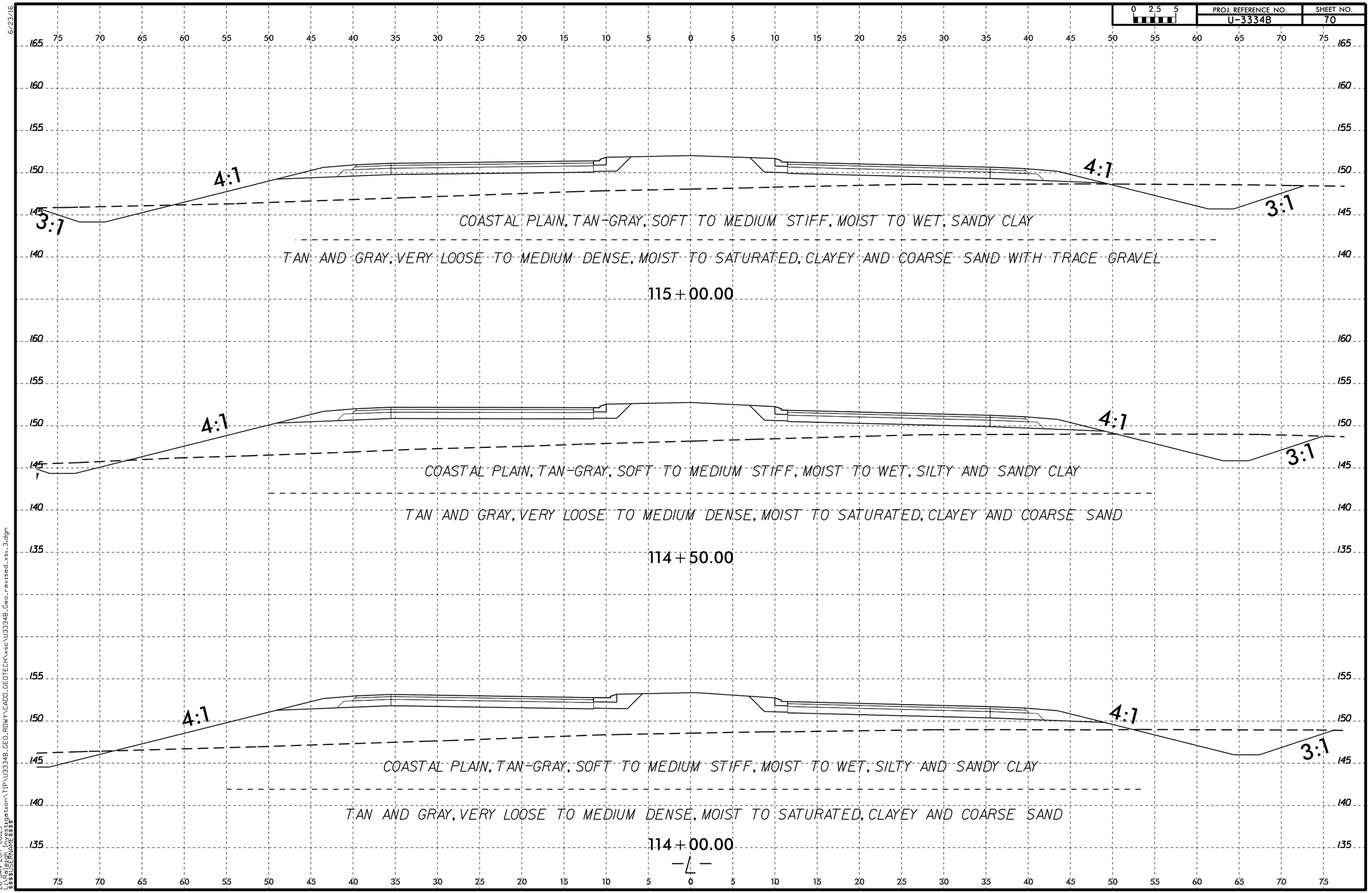
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

165 160 155 150 145 140 135

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

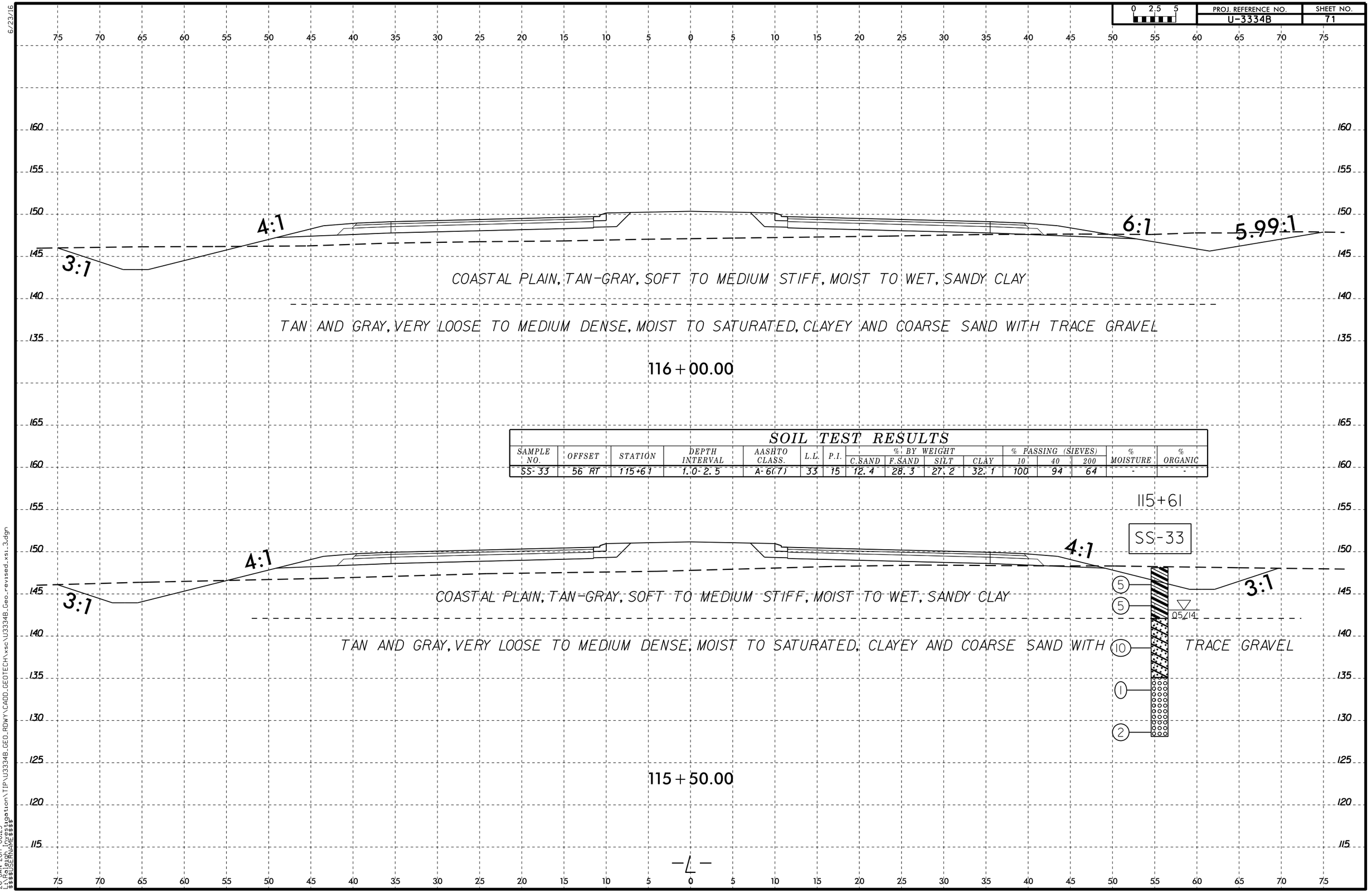
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	70



26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	71



SOIL TEST RESULTS

SAMPLE NO.	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-33	56 RT	115+61	1.0-2.5	A-6(7)	33	15	12.4	28.3	27.2	32.1	100	94	64	-	-

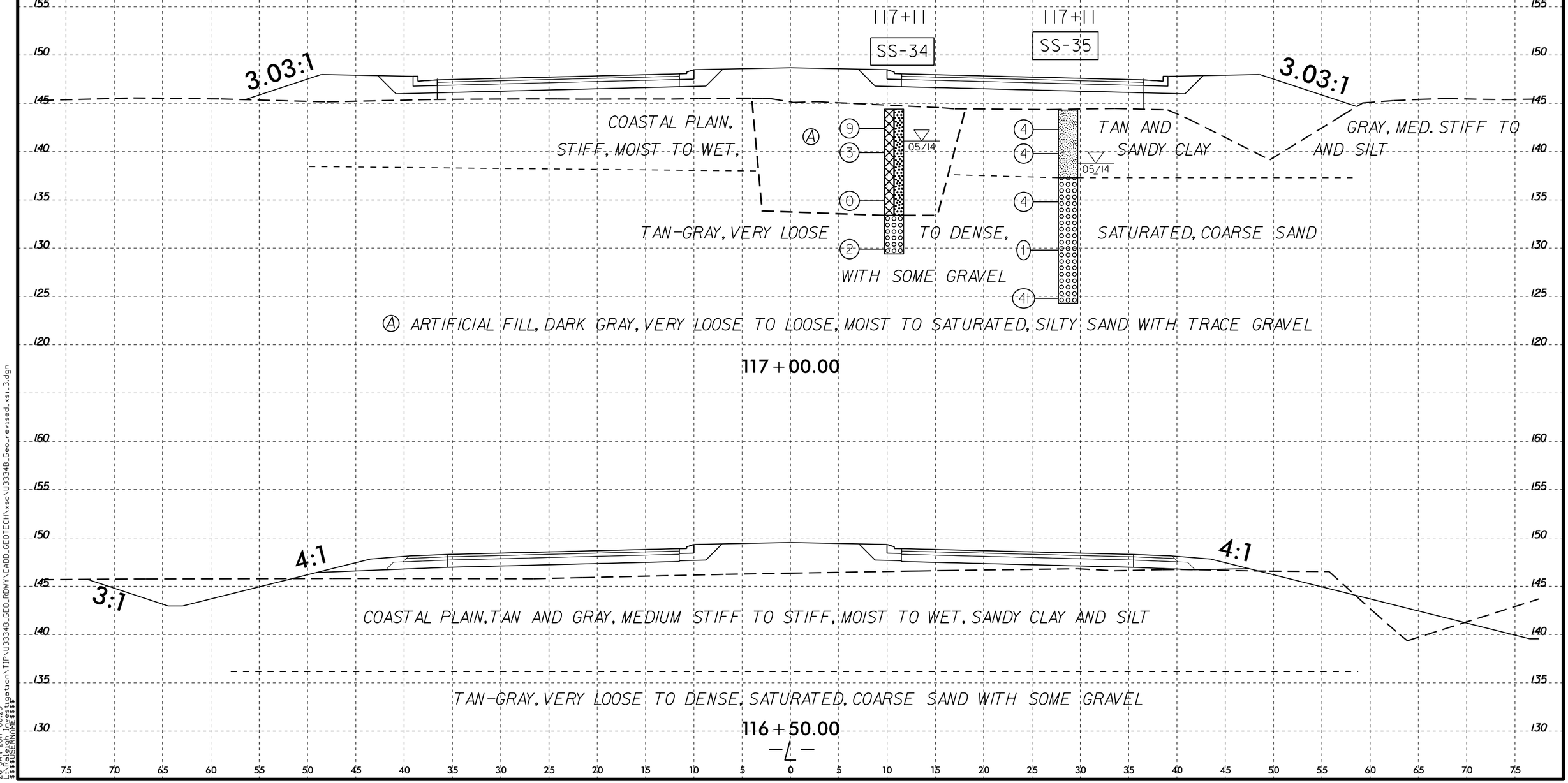
26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsl_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	72

SOIL TEST RESULTS

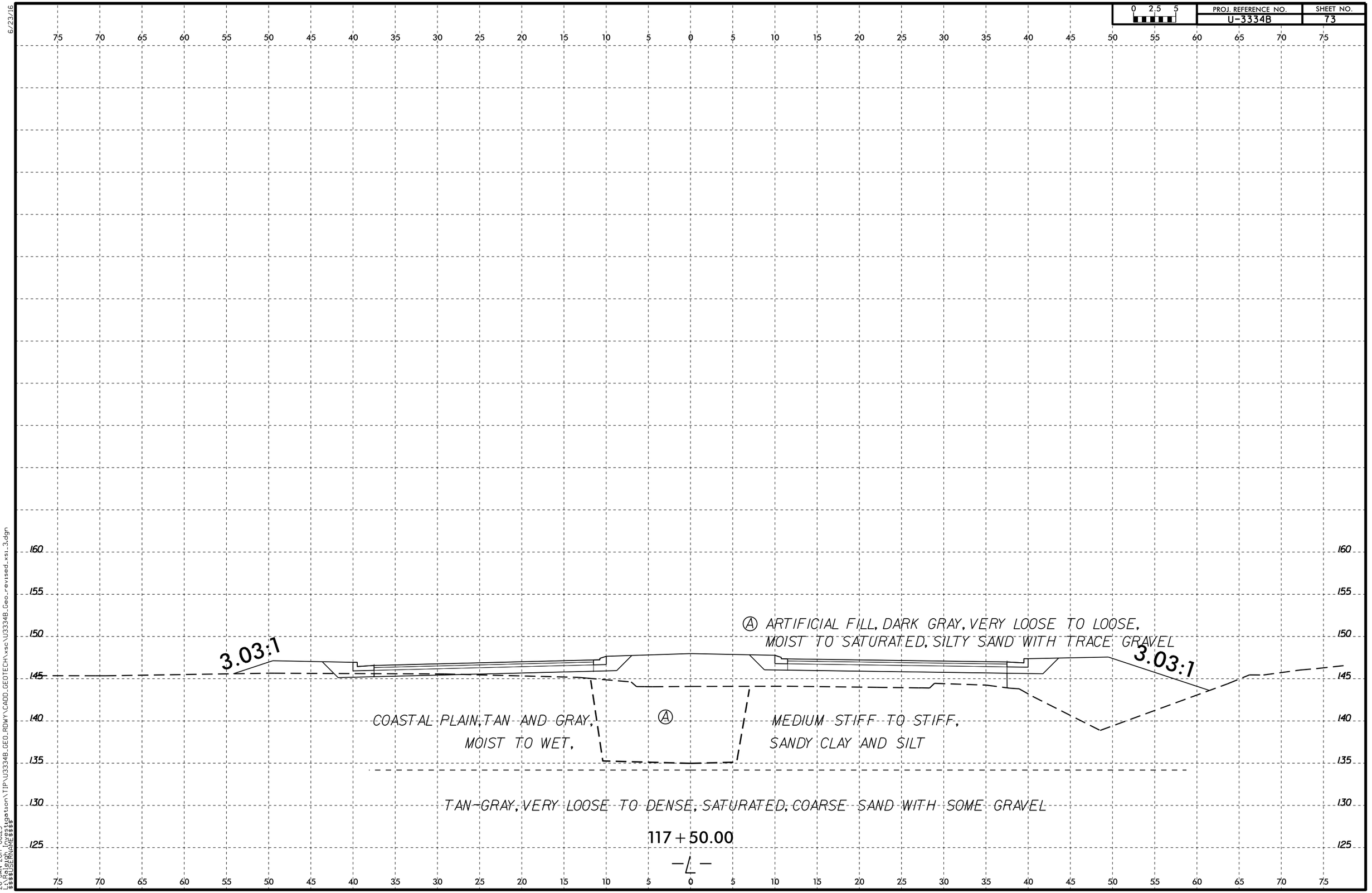
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
SS-34	11 RT	117+11	1.0-2.5	A-2-4(0)	21	7	41.6	24.0	15.3	19.1	90	68	34	-	-
SS-35	29 RT	117+11	1.0-2.5	A-4(1)	26	10	36.3	26.9	13.7	23.1	99	80	39	-	-



26-JAN-2017 08:23
L:\Raleigh Investigation\TIP\U3334B\GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	73

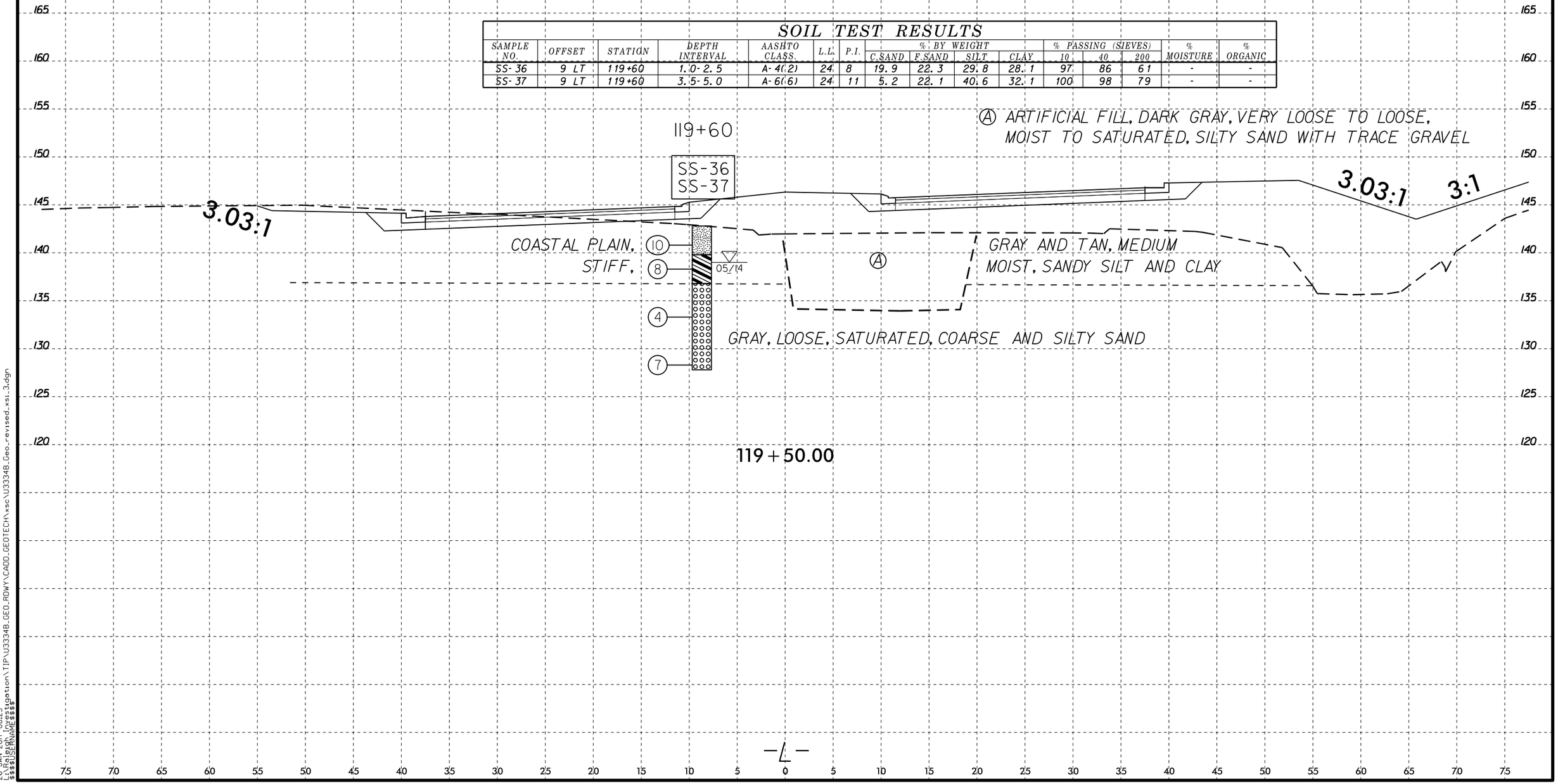


26-JAN-2017 08:23
L:\Raleigh Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	74

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-36	9 LT	119+60	1.0-2.5	A-4(2)	24	8	19.9	22.3	29.8	28.1	97	86	61	-	-
SS-37	9 LT	119+60	3.5-5.0	A-6(6)	24	11	5.2	22.1	40.6	32.1	100	98	79	-	-



6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	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

160 155 150 145 140 135 130

Ⓐ ARTIFICIAL FILL, DARK GRAY, VERY LOOSE TO LOOSE, MOIST TO SATURATED, SILTY SAND WITH TRACE GRAVEL

3.03:1

3.03:1 3:1

COASTAL PLAIN, GRAY AND TAN, MEDIUM STIFF, MOIST, Ⓐ SANDY SILT AND CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

120+50.00

160 155 150 145 140 135 130

Ⓐ ARTIFICIAL FILL, DARK GRAY, VERY LOOSE TO LOOSE, MOIST TO SATURATED, SILTY SAND WITH TRACE GRAVEL

3.03:1

3.03:1 3:1

COASTAL PLAIN, GRAY AND TAN, MEDIUM STIFF, MOIST, Ⓐ SANDY SILT AND CLAY

GRAY, LOOSE, SATURATED, COARSE AND SILTY SAND

120+00.00

—L—

160 155 150 145 140 135 130 125

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

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsl_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	76

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

160 155 150 145 140 135

3.03:1

3.03:1

COASTAL PLAIN, GRAY AND TAN, MEDIUM STIFF, MOIST, SANDY SILT AND CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

121+50.00

160 155 150 145 140 135 130

Ⓐ ARTIFICIAL FILL, DARK GRAY, VERY LOOSE TO LOOSE, MOIST TO SATURATED, SILTY SAND WITH TRACE GRAVEL

3.03:1

3.03:1

COASTAL PLAIN, GRAY AND TAN, MEDIUM STIFF, MOIST, Ⓐ SANDY SILT AND CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

121+00.00

—L—

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

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	77

3.03:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND SILTY CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

122+50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-38	10 RT	122+07	3.5-5.0	A-4(3)	24	8	15.8	24.3	33.8	26.1	100	91	65	-	-
SS-39	10 RT	122+07	8.5-10.0	A-2-4(0)	24	5	31.1	38.9	10.9	19.1	100	93	32	-	-

122+07

SS-38
SS-39

3.03:1

3.03:1

7
6
05/14
16
6

COASTAL PLAIN, GRAY AND TAN, MEDIUM STIFF, MOIST, SANDY SILT AND CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

122+00.00

-L-

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	78

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

160 155 150 145 140

Ⓐ ARTIFICIAL FILL, GRAY-BROWN, LOOSE, MOIST, SILTY SAND WITH TRACE GRAVEL

4:1

4:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND SILTY CLAY

124+00.00

160 155 150 145 140

Ⓐ ARTIFICIAL FILL, GRAY-BROWN, LOOSE, MOIST, SILTY SAND WITH TRACE GRAVEL

3.03:1

3.03:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND SILTY CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

123+50.00

155 150 145 140 135

3.03:1

COASTAL PLAIN, TAN-GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND SILTY CLAY

TAN AND GRAY, LOOSE TO MEDIUM DENSE, MOIST TO SATURATED, COARSE AND SILTY SAND

123+00.00

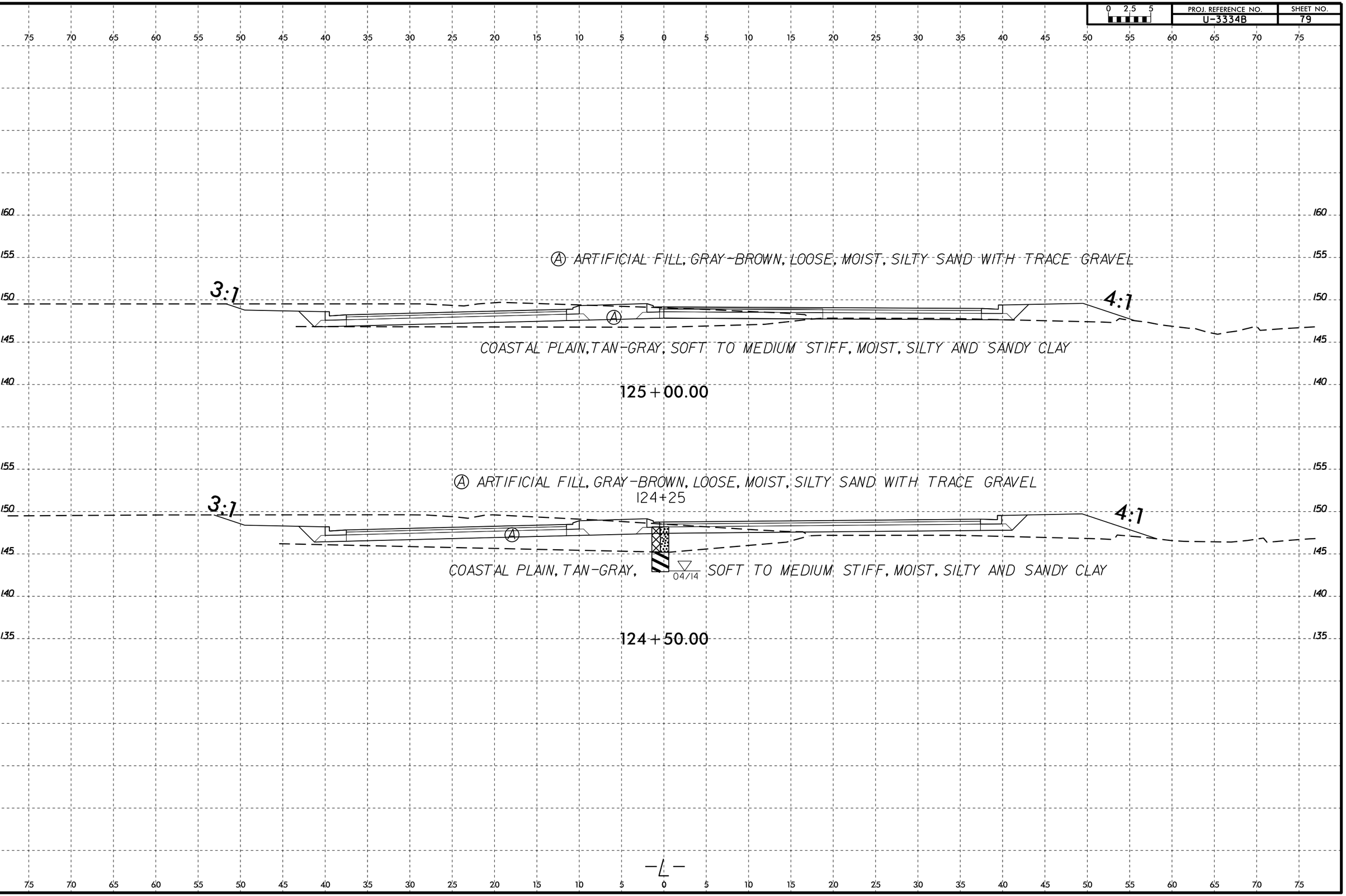
—L—

135 130

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

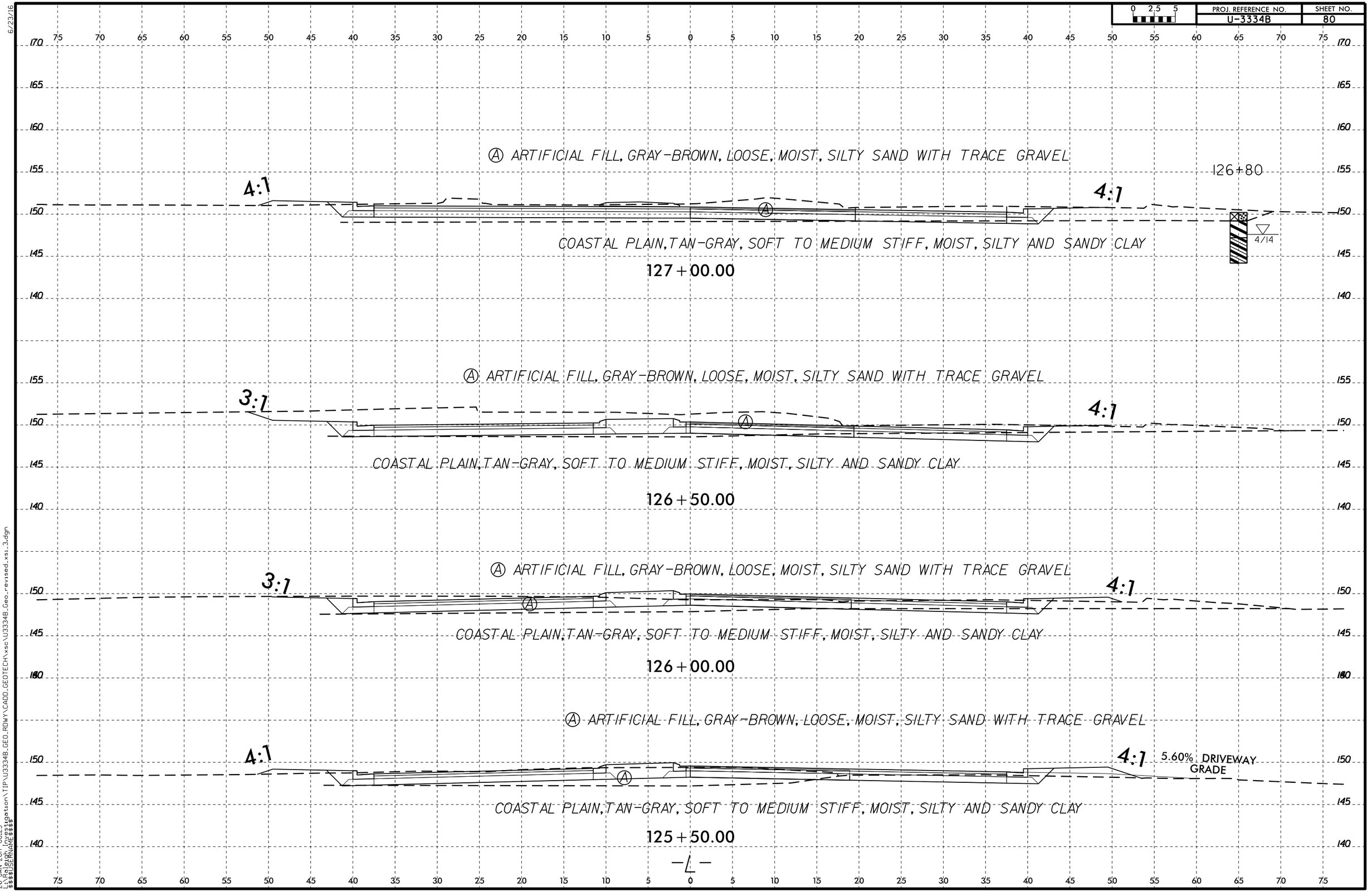
26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xs1_3.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	79



6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	U-3334B	80



26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_revised_xsi_3.dgn
$$$$USERNAME$$$$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3334B	81

0 2.5 5

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

150 145 140 135 155 150 145 140

3.03:1 3.03:1

143.83

COASTAL PLAIN, TAN, ORANGE, AND GRAY, LOOSE, MOIST, SILTY SAND

GRAY, MEDIUM STIFF, MOIST, SANDY CLAY

21+50.00

ARTIFICIAL FILL, BROWN, V. LOOSE, DRY, SAND AND GRAVEL (DRIVEWAY)

3.03:1 4:1 3.03:1

143.60

COASTAL PLAIN, TAN, ORANGE, AND GRAY, LOOSE, MOIST, SILTY SAND

GRAY, MEDIUM STIFF, MOIST, SANDY CLAY

FIAD 8/15

21+00.00

NOTE: THIS CROSS SECTION FALLS IN THE INTERSECTION OF BUFFALO RD. AND BOOKER DAIRY RD.

150 145 140 135 130 125 120 165 150 145 140 135

143.49

COASTAL PLAIN, TAN, ORANGE, AND GRAY, LOOSE, MOIST, SILTY SAND

20+50.00

-Y-

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

26-JAN-2017 08:23
L:\Raleigh_Investigation\TIP\U3334B_GEO_RDWY\CADD_GEOTECH\xsc\U3334B_Geo_xsi_Y.dgn
$$$$USERNAME$$$$