STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5020B	1	102

REFERENCE: R-5020B

PROJECT: 41499

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN
-L-	174+79 TO 289+75	4-12
-RPA-	13+47 TO 19+50	11,13
-RPB-	11+30 TO 13+50	11
-RPC-	15+00 TO 23+00	11,14
-RPD-	12+20 TO 14+50	11
-Y3I-	12+25 TO 17+00	9

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	175+00 TO 263+50	15-66
-L-	266+00 TO 271+50	67-71
-L-	273+50 TO 289+75	72-82
-RPA-	13+47 TO 19+50	83-87
-RPB-	11+30 TO 13+50	88-89
-RPC-	15+00 TO 23+00	90-95
-RPD-	12+20 TO 14+50	96-98
-Y3I-	12+25 TO 17+00	99-102

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *COLUMBUS*

PROJECT DESCRIPTION *US 701 BYPASS (MADISON STREET – JK POWELL BLVD.) FROM SR 1437 (VIRGIL AVENUE) TO US 74/76*

INVENTORY

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

N.O. MOORE

C.L. SMITH

D.G. PINTER

INVESTIGATED BY *N.O. MOORE*

DRAWN BY *N.O.M./J.L.L.*

CHECKED BY *J. L. LOVE*

SUBMITTED BY *N. T. ROBERSON*

DATE *FEBRUARY 2018*

NORTH CAROLINA LICENSED SEAL 1912 GEOLOGIST NEIL T. ROBERSON

DocuSigned by:
Neil T. Roberson 2/15/2018
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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	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 LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

RECOMMENDATION SYMBOLS

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

ABBREVIATIONS

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

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- ☐ CME-45C
- ☐ CME-55
- ☐ CME-550
- ☐ VANE SHEAR TEST
- ☐ PORTABLE HOIST
- ☐ _____
- ☐ _____

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

HAMMER TYPE:
- ☐ AUTOMATIC ☐ MANUAL

CORE SIZE:
- ☐ -B _____ ☐ -H _____
- ☐ -N _____

HAND TOOLS:
- ☐ POST HOLE DIGGER
- ☒ HAND AUGER
- ☐ SOUNDING ROD
- ☐ VANE SHEAR TEST
- ☐ _____

ROCK DESCRIPTION

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

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:

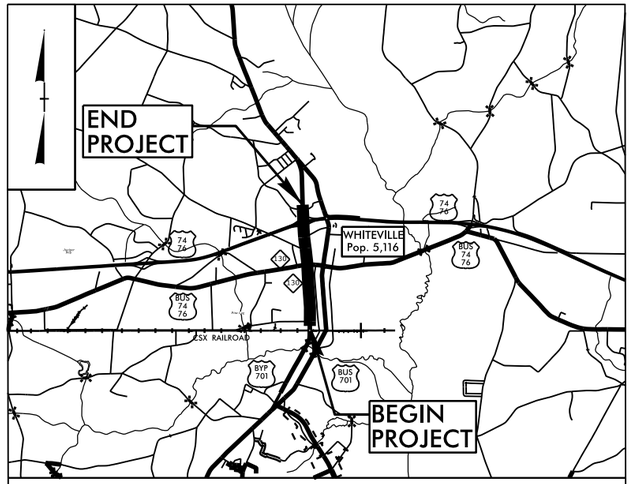
BORINGS LOCATED USING GPK FILED DATED 5/25/17 AND ELEVATIONS FROM TIN FILE DATED 5/30/17.

DATE: 8-15-14

09/08/09

TIP PROJECT: R-5020B

See Sheet 1A for Index of Sheets
See Sheet 1B for Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

COLUMBUS COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5020B	3	102
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
41499.1.3	NHP-701(33)	P.E.	

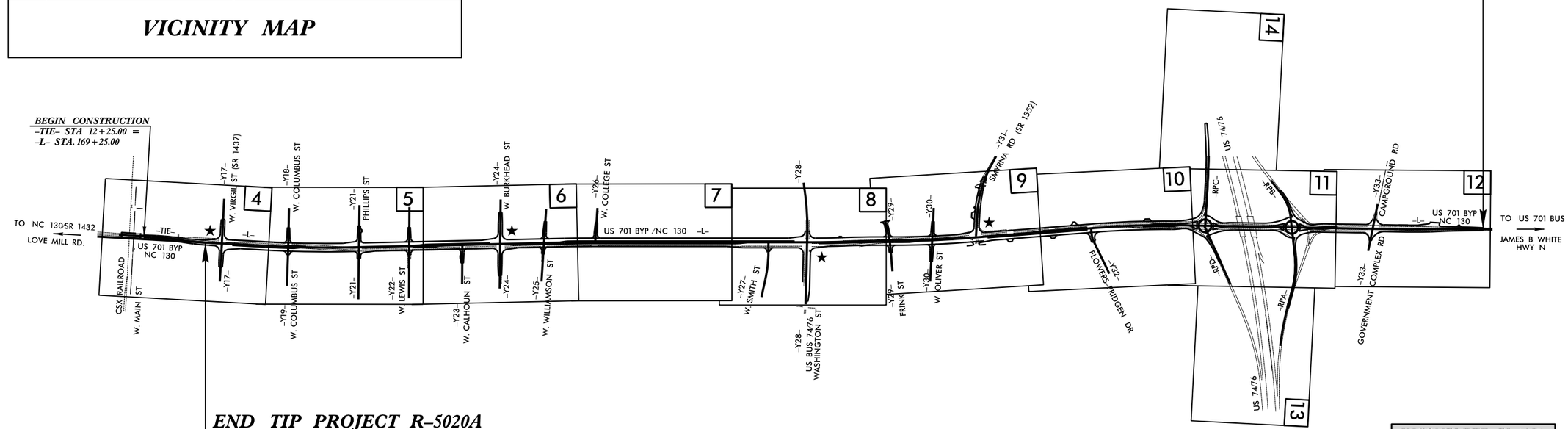
25% REVIEW PLANS

LOCATION: US 701 BYPASS (MADISON STREET – JK POWELL BOULEVARD) FROM SR 1437 (VIRGIL AVENUE) TO US 74/76

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

NAD 83
NA 2011

END TIP PROJECT R-5020B
-L- POT STA 289+75.00



END TIP PROJECT R-5020A
BEGIN TIP PROJECT R-5020B
-TIE- PT STA 17+79.88 =
-L- POT STA 174+78.94

NOTE:
1. THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF WHITEVILLE.
2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD __.

★ SIGNAL MODIFICATION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-0243 FAX (919) 859-0258
ENG FIRM LICENSE NO. C-490

CONTRACT:

GRAPHIC SCALES

PLANS: 50 25 0 50 100
PROFILE (HORIZONTAL): 50 25 0 50 100
PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2020 = 21,417
ADT 2040 = 26,000
K = 8 %
D = 55 %
T = 6 % *
V = 50 MPH
*(TTST =3% DUAL 3%)
FUNC CLASS =URBAN ARTERIAL

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT R-5020B = 2.282 MILES

TOTAL LENGTH OF TIP PROJECT R-5020B = 2.282 MILES

Prepared In the Office of:
KCI Associates of N.C., P.A.
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609
Phone (919) 783-9214
Fax (919) 783-9266

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 16, 2018

LETTING DATE:
FEBRUARY 18, 2020

Plans Prepared For:
DIVISION OF HIGHWAYS
558 Gillespie St.
Fayetteville NC, 28302

CHARLES L. FLOWE, P.E.
PROJECT ENGINEER

BARRY C. SMITH, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT: STEVEN KENDALL, P.E.
PROJECT ENGINEER – DIVISION 6

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

31-JAN-2018 16:42
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$$$$USERNAME$$$$

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

February 8, 2018

STATE PROJECT: 41499.1.3 (R-5020B)
FEDERAL PROJECT: NHP-701(33)
COUNTY: COLUMBUS

DESCRIPTION: US 701 Bypass (Madison Street - JK Powell Boulevard) from SR 1437 (Virgil Avenue) to US 74/76

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 US 701 Bypass (-L-) from approximately 200 feet south of West Virgil Street (-Y17-) to approximately 1000 feet north of Government Complex Road/Campground Road (-Y33-).

A geotechnical investigation was conducted during May of 2017. Hand augers were performed by the Geotechnical Engineering Unit. 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 2.98 miles, were investigated. Subsurface plans and cross sections of these alignments are included in this report.

Line	Stations
-L-	174+79 to 289+75
-RPA-	13+47 to 20+80
-RPB-	11+30 to 14+75
-RPC-	15+00 to 24+23
-RPD-	12+20 to 15+76
-Y31-	12+25 to 17+73

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 within the city limits of the town of Whiteville, and within the Coastal Plain Province. Clays and sands of the Tertiary Yorktown Formation overlay clays and sands of the Cretaceous Peedee Formation. The terrain is relatively flat with some low-lying wetland areas towards the north of the project. The widening project is a mixture of small businesses, school facilities, single-family homes, woods, and wetlands.

Soils Properties

Soils encountered during this investigation are roadway embankment, alluvial, and Undivided Coastal Plain.

Roadway Embankment soils are present along all existing roads within the project limits such as US 701 Bypass (-L-), New Smyrna Road (-Y31-), and along exit ramps (-RPA-, -RPB-, -RPC-, -RPD-). These soils primarily consist of orange, tan, and brown, moist, loose to medium dense, silty sand (A-2-4).

Alluvial soils are present along the northern portion of US 701 (-L-) where low-lying wetlands are located on both sides of the road. These soils primarily consist of light to dark gray, moist to wet, very soft to soft, silty sand (A-2-4) and soft to medium stiff, sandy silt with trace organics and wood fragments (A-4).

Undivided Coastal Plain soils are also present along the entire project corridor. These soils are characterized by gray, orange, red, moist, medium stiff to stiff, mottled, sandy silt (A-4), sandy clay (A-6), and highly plastic, silty clay (A-7-6). Plastic indices for these soils range from 31 to 64.

Groundwater

Groundwater measurements were taken in May 2017 during average rainfall conditions. Groundwater was absent is most borings; however, groundwater was present in 9 borings and ranged from 3.0 to 4.5 feet from the ground surface. .

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-	181+50 to 198+50	LT to RT
-L-	201+00 to 207+50	LT to RT
-L-	211+00 to 213+50	LT to RT
-L-	225+00 to 232+00	LT to RT
-L-	234+50 to 239+50	LT to RT
-L-	262+50 to 278+50	LT to RT
-L-	286+00 to 290+50	LT to RT
-RPB-	10+00 to 14+50	LT to RT
-Y31-	10+00 to 17+00	LT to RT

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

Line	Stations	Offsets
-L-	179+00	20’ RT
-L-	220+00	25’ LT
-L-	229+50	60’ RT
-L-	243+00	40’ RT
-L-	245+00	40’ RT

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

Line	Stations	Offsets
-L-	220+00	100’ RT
-L-	289+33	85’ LT

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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ENG FIRM LICENSE NO. C-690

NAD 83/NA 2011

REVISIONS

8/17/99

-TIE- POT Sta.10+00.00

-Y17- POT Sta. 10+00.00
BEARING AH = S 89° 53' 05.9" E

BEGIN TIP PROJECT R-5020B
-TIE- PT Sta. 17+79.88 =
-L- POT Sta. 174+78.94

BEGIN CONSTRUCTION
-TIE- POT Sta.12+25.00

-TIE- PC Sta. 12+96.18

-TIE- PRC Sta. 15+34.39

-TIE- PT Sta. 17+79.88
-L- POT Sta.174+78.94

BEGIN CONSTRUCTION
-Y17- POT Sta.11+85.00

-Y17- Sta. 13+64.13=
-L- Sta.176+27.56.0S=37.5'LT

-L- POT Sta. 176+27.67=
-Y17- POT Sta.14+01.63

-TIE- N 0° 28' 07" E

-L- N 0° 17' 14.1" E

END CONSTRUCTION
-Y17- POT Sta.16+15.00

-Y17- POT Sta. 17+43.78

-Y17- Sta. 14+39.37
-L- Sta.176+78.0S=37.5'RT

-L- STA. 180+00 SEE SHEET 5

MATCHLINE -L- STA. 180+00 SEE SHEET 5

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

PROPOSED LOW POINT
-L- STA. 176+99.43

US 701 BYPASS NC 130 JK POWELL BLVD

MCGILL STREET

W. WALTER ST

W. VIRGIL STREET

WEST MAIN STREET

MARTIN LUTHER KING

HEAD WALL

TELEPHONE CONDUIT ATTACHED TO BRIDGE

CANOPY 3 GAS PUMP

2SBLK CHURCH

ISMTL BUS

ISBK APT

ISBLKD

ISBLK BUS

★ SIGNAL MODIFICATION

01-FEB-2018 07:58
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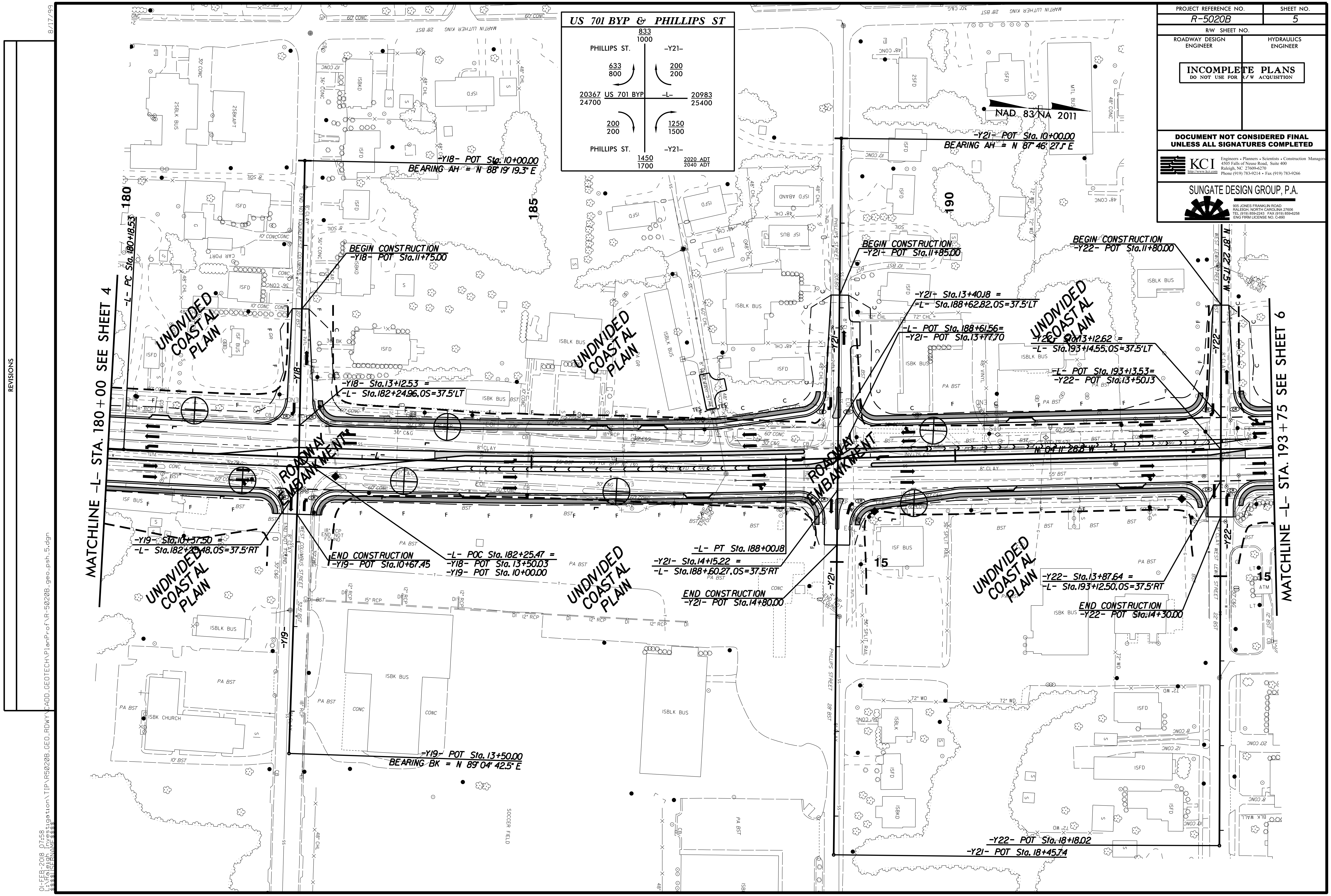

PROJECT REFERENCE NO. R-5020B
SHEET NO. 5
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
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SUNGATE DESIGN GROUP, P.A.
US 701 BYP & PHILLIPS ST
833
1000
PHILLIPS ST.
-Y21-
633
800
200
200
20367
24700
US 701 BYP
-L-
20983
25400
200
200
1250
1500
PHILLIPS ST.
-Y21-
1450
1700
2020 ADT
2040 ADT
NAD 83/NA 2011
-Y18- POT Sta. 10+00.00
BEARING AH = N 88°19' 19.3" E
-Y21- POT Sta. 10+00.00
BEARING AH = N 87°46' 27.1" E
BEGIN CONSTRUCTION
-Y18- POT Sta. 11+75.00
BEGIN CONSTRUCTION
-Y21- POT Sta. 11+85.00
BEGIN CONSTRUCTION
-Y22- POT Sta. 11+80.00
-Y21- Sta. 13+40.18 =
-L- Sta. 188+62.82, OS=37.5' LT
-L- POT Sta. 188+61.56=
-Y21- POT Sta. 13+77.70
-Y22- Sta. 13+12.62 =
-L- Sta. 193+14.55, OS=37.5' LT
-L- POT Sta. 193+13.53=
-Y22- POT Sta. 13+50.13
-Y18- Sta. 13+12.53 =
-L- Sta. 182+24.96, OS=37.5' LT
-L- PC Sta. 180+18.53
MATCHLINE -L- STA. 180+00 SEE SHEET 4
MATCHLINE -L- STA. 193+75 SEE SHEET 6
UNDIVIDED COASTAL PLAIN
ROADWAY EMBANKMENT
-Y19- Sta. 10+37.50 =
-L- Sta. 182+25.48, OS=37.5' RT
END CONSTRUCTION
-Y19- POT Sta. 10+67.45
-L- POC Sta. 182+25.47 =
-Y18- POT Sta. 13+50.03
-Y19- POT Sta. 10+00.00
-L- PT Sta. 188+00.18
-Y21- Sta. 14+15.22 =
-L- Sta. 188+60.27, OS=37.5' RT
END CONSTRUCTION
-Y21- POT Sta. 14+80.00
-Y22- Sta. 13+87.64 =
-L- Sta. 193+12.50, OS=37.5' RT
END CONSTRUCTION
-Y22- POT Sta. 14+30.00
-Y19- POT Sta. 13+50.00
BEARING BK = N 89°04' 42.5" E
-Y22- POT Sta. 18+18.02
-Y21- POT Sta. 18+45.74
N 04°11' 28.8" W
185
190
-L-
-Y18-
-Y19-
-Y21-
-Y22-
WEST COLUMBUS STREET
PHILLIPS STREET
MARTIN LUTHER KING
SOCCER FIELD
REVISIONS
8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-5020B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258
ENG FIRM LICENSE NO. C-690

NAD 83/NA 2011

MATCHLINE -L- STA. 193+75 SEE SHEET 5

MATCHLINE -L- STA. 207+65 SEE SHEET 7

-L- POT Sta.197+91.14 = -Y23- POT Sta.10+00.00

UNDIVIDED COASTAL PLAIN

-Y23- Sta.10+37.52 = -L- Sta.197+90.07,OS=37.5'RT

-L- POT Sta.201+31.46 = -Y24- POT Sta.14+00.21

-Y24- Sta.13+62.69 = -L- Sta.201+32.67,OS=37.5'LT

-Y25- Sta.12+68.38 = -L- Sta.205+28.63,OS=37.5'LT

-L- POT Sta.205+25.35 = -Y25- POT Sta.13+06.02

-Y24- Sta.14+37.73 = -L- Sta.201+30.25,OS=37.5'RT

-Y25- Sta.13+43.66 = -L- Sta.205+22.08,OS=37.5'RT

BEGIN CONSTRUCTION -Y24- POT Sta.11+15.00

BEGIN CONSTRUCTION -Y25- POT Sta.11+10.00

END CONSTRUCTION -Y23- POT Sta.11+65.00

END CONSTRUCTION -Y24- POT Sta.16+85.00

END CONSTRUCTION -Y25- POT Sta.14+05.00

-Y23- POT Sta.13+50.14

-Y24- POT Sta.18+00.41

-L- PC Sta.207+07.85

-Y25- POT Sta.16+52.74

ROADWAY EMBANKMENT

★ SIGNAL MODIFICATION

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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REVISIONS 8/17/99

MATCHLINE -L- STA. 207+65 SEE SHEET 6

MATCHLINE -L- STA. 221+55 SEE SHEET 8

-Y26- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y26- POT Sta. 11+30.00

-Y26- Sta. 12+70.86 =
-L- Sta. 209+88.70S=37.5'LT

-L- POT Sta. 209+86.36 =
-Y26- POT Sta. 13+08.43

-L- PT Sta. 209+33.24

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

DO NOT DISTURB FENCE (SEE NOTE)

LEDER PARK SECTION 4 (F) PROTECTED

NOTE: DO NOT DISTURB FENCE ALONG WHITEVILLE HIGH SCHOOL PROPERTY

US 701 BYP NC 130 JK POWELL BLVD

WHITEVILLE HIGH SCHOOL

BASEBALL FIELD

TENNIS COURTS

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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TEL (919) 859-2243 FAX (919) 859-6258
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REVISIONS 8/17/99

NAD 83/NA 2011

MATCHLINE –L– STA. 221+55 SEE SHEET 7

MATCHLINE –L– STA. 235+40 SEE SHEET 9

WILLIAMSON HOUSE
NATIONAL REGISTER ELIGIBLE

NATIONAL REGISTER ELIGIBLE

-Y28- PC Sta. 10+95.73

BEGIN CONSTRUCTION
-Y28- POC Sta.14+37.00

-Y28- PT Sta. 14+70.01

-Y28- Sta.14+99.45 =
-L- Sta. 228+92.45,OS = 37.5' LT

-L- PC Sta. 229+40.00

-L- PRC Sta. 232+36.66

-L- PT Sta. 235+33.33

-Y27- Sta.10+49.50 =
-L- Sta. 225+43.57,OS=49.5'RT

-Y27- PC Sta. 10+75.95
BEARING BK = N 87° 06' 00.1" E

END CONSTRUCTION
-Y27- POC Sta.10+79.64

-L- POT Sta.225+43.57 =
-Y27- POT Sta. 10+00.00

-L- POT Sta.228+91.34 =
-Y28- POT Sta. 15+36.96

-Y28- Sta.15+86.48 =
-L- Sta.228+90.15,OS=49.5'RT

-Y27- PT Sta.13+35.33
BEARING AH = S 80° 30' 56.3" E

END CONSTRUCTION
-Y28- POT Sta.20+68.00

-Y27- POT Sta. 14+97.90

-Y28- POT Sta. 20+93.11
BEARING BK = N 88° 29' 03.9" E

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

SIGNAL MODIFICATION

225 230 15 20

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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TEL (919) 859-2243 FAX (919) 859-6258
ENG FIRM LICENSE NO. C-690

NAD 83/NA 2011

BEGIN CONSTRUCTION
-Y31- POC Sta.12+25.00

-Y29- POT Sta.10+00.00

BEGIN CONSTRUCTION
-Y29- POT Sta.10+09.71

BEGIN CONSTRUCTION
-Y30- POT Sta.11+20.00

-Y30- POT Sta.10+00.00

-Y29- Sta.11+52.54 =
-L- Sta. 236+26.37.0S=37.5'LT
-L- POT Sta.236+34.93 =
-Y29- PI Sta. 11+91.01
-L- PC Sta. 236+74.26

-Y30- Sta.12+53.00 =
-L- Sta. 240+19.85.0S=37.5'LT
-L- POC Sta.240+16.40 =
-Y30- POT Sta. 12+90.66

-L- PT Sta. 243+04.74

-Y31- PT Sta. 15+64.23

-Y31- Sta.17+35.10 =
-L- POT Sta.244+15.36.0S=37.5'LT

-Y29- Sta.12+28.66 =
-L- Sta. 236+38.27.0S=37.5'RT

END CONSTRUCTION
-Y29- POT Sta.12+95.00

-Y29- POT Sta.14+63.29

-Y30- Sta.13+28.32 =
-L- Sta. 240+12.98.0S=37.5'RT

END CONSTRUCTION
-Y30- POT Sta.14+85.00

-Y30- POT Sta.16+61.63

-L- POT Sta.244+10.16 =
-Y31- POT Sta.17+72.96

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

NATIONAL REGISTER ELIGIBLE

MATCHLINE -L- STA. 235+40 SEE SHEET 8

MATCHLINE -L- STA. 249+00 SEE SHEET 10

★ SIGNAL MODIFICATION

REVISIONS

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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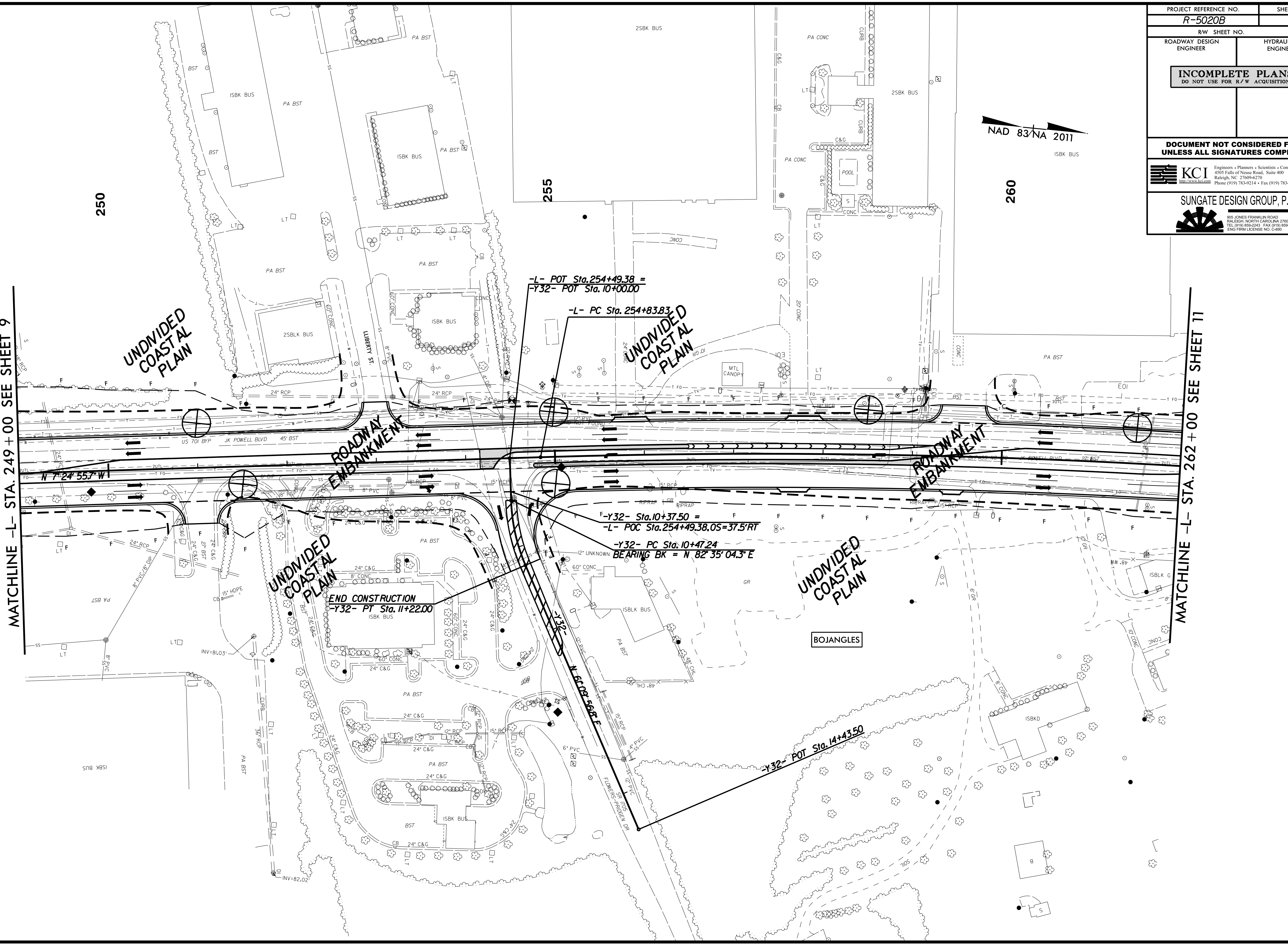
TEL (919) 859-2243 FAX (919) 859-6258
ENG FIRM LICENSE NO. C-890



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

KCI
Engineers • Planners • Scientists • Construction Managers
4505 Falls of Neuse Road, Suite 400
Raleigh, NC 27609-6270
http://www.kci.com
Phone (919) 783-9214 • Fax (919) 783-9266

SUNGATE DESIGN GROUP, P.A.
905 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27606
TEL (919) 859-2243 FAX (919) 859-6258
ENG FIRM LICENSE NO. C-690

REVISIONS 8/17/99

MATCHLINE –RPC– STA. 19+50 SEE SHEET 14

-RPC- ST Sta. 20+37.25
BEARING AH = S 89°50'51.4" E

-RPB- POT Sta. 10+00.00

NAD 83/NA 2011

-RPB- PC Sta. 11+51.78

N 48°43'23.2" E

BEGIN CONSTRUCTION
-RPB- POT Sta. 11+30.00

-RPB- POT Sta. 14+18.38=
-ROUND2- POC Sta. 12+76.82

-ROUND1- PCC Sta. 12+68.61

-RPC- POT Sta. 23+65.59=
-ROUND1- POC Sta. 12+84.77

-RPC- PT Sta. 24+22.50=
-L- POT Sta. 264+76.53

-ROUND2- PC Sta. 10+00.00=
-ROUND2- PT Sta. 13+58.14
-L- POT Sta. 271+97.70

-RPB- PT Sta. 13+75.23
BEARING AH = N 80°43'52.1" E

-ROUND2- PCC Sta. 12+68.61

-ROUND1- PC Sta. 10+00.00=
-ROUND1- PT Sta. 13+58.14
-L- POT Sta. 264+12.70

-L- PT Sta. 262+58.13
-RPD- POT Sta. 15+75.76=
-L- POT Sta. 264+68.17

-ROUND1- PCC Sta. 10+89.54

-RPD- POT Sta. 15+16.29=
-ROUND1- POC Sta. 11+08.39

-ROUND1- PCC Sta. 11+79.07 =
-L- POT Sta. 265+31.70

-L- POT Sta. 272+53.85=
-RPA- POT Sta. 20+80.44
-RPB- POT Sta. 14+75.06

-ROUND2- PCC Sta. 10+89.54

-RPA- POT Sta. 20+23.33=
-ROUND2- POC Sta. 10+96.05

-ROUND2- PCC Sta. 11+79.07 =
-L- POT Sta. 273+11.70

-RPA- PT Sta. 18+24.51
BEARING AH = S 80°43'52.1" W

BEGIN CONSTRUCTION
-RPD- POT Sta. 12+20.00

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

C

B

D

A

MATCHLINE –L– STA. 262+00 SEE SHEET 10

MATCHLINE –L– STA. 275+90 SEE SHEET 12

MATCHLINE –RPD– STA. 11+50 SEE SHEET 13

MATCHLINE –RPA– STA. 16+50 SEE SHEET 13

FOR -L- PROFILE, SEE SHEET 19
FOR -ROUNDI-, -ROUND2- PROFILES, SEE SHEET 23
FOR -RPA-, -RPB-, -RPC-, -RPD- PROFILES, SEE SHEET 24

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/NA 2011

REVISIONS 8/17/99

MATCHLINE -L- STA. 275+90 SEE SHEET 11

-Y33- POT Sta. 10+00.00
BEARING AH = S 81° 25' 05.6" E

BEGIN CONSTRUCTION
-Y33- POT Sta.11+45.05

-Y33- Sta.11+88.27 =
-L- Sta.279+88.62.0S=37.5'LT

-L- PRC Sta. 285+56.73

-L- PC Sta. 282+11.96

-Y33- Sta.12+64.53 =
-L- Sta.279+74.78.0S=37.5'RT

-L- POT Sta.279+81.70 =
-Y33- POT Sta. 12+26.40

END CONSTRUCTION
-Y33- POT Sta.13+35.52

-Y33- POT Sta. 14+28.72

-L- PT Sta. 289+32.65
BEARING AH = N 1° 38' 48.8" W

UNDIVIDED COASTAL PLAIN

ALLUVIAL

ROADWAY EMBANKMENT

280

285

FIRST SAINT PAUL MISSIONARY BAPTIST CHURCH

TANKS

ISMTL BUS

END TIP PROJECT R-5020B
-L- POT Sta. 289+75.00

FOR -L- PROFILE, SEE SHEETS 19 & 20

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PROJECT REFERENCE NO.	SHEET NO.
R-5020B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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NAD 83/NA 2011

MATCHLINE –RPA– STA. 16+50 SEE SHEET 11

–RPA– SRS Sta. 14+47.27

–RPA– CS Sta. 13+47.27

–RPA– SC Sta. 15+97.27

–RPA– PC Sta. 10+00.00

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

15

CEMETERY

GR

CONC

MTL

LT

–RPA– RAMP 25' BST

WBL US 74/76 ANDREW JACKSON HWY 32' BST

EBL US 74/76 ANDREW JACKSON HWY 32' BST

CABLE

10

S 63°00'59" W

MATCHLINE –RPD– STA. 11+50 SEE SHEET 11

–RPD– POT Sta. 10+00.00

REVISIONS

8/17/99

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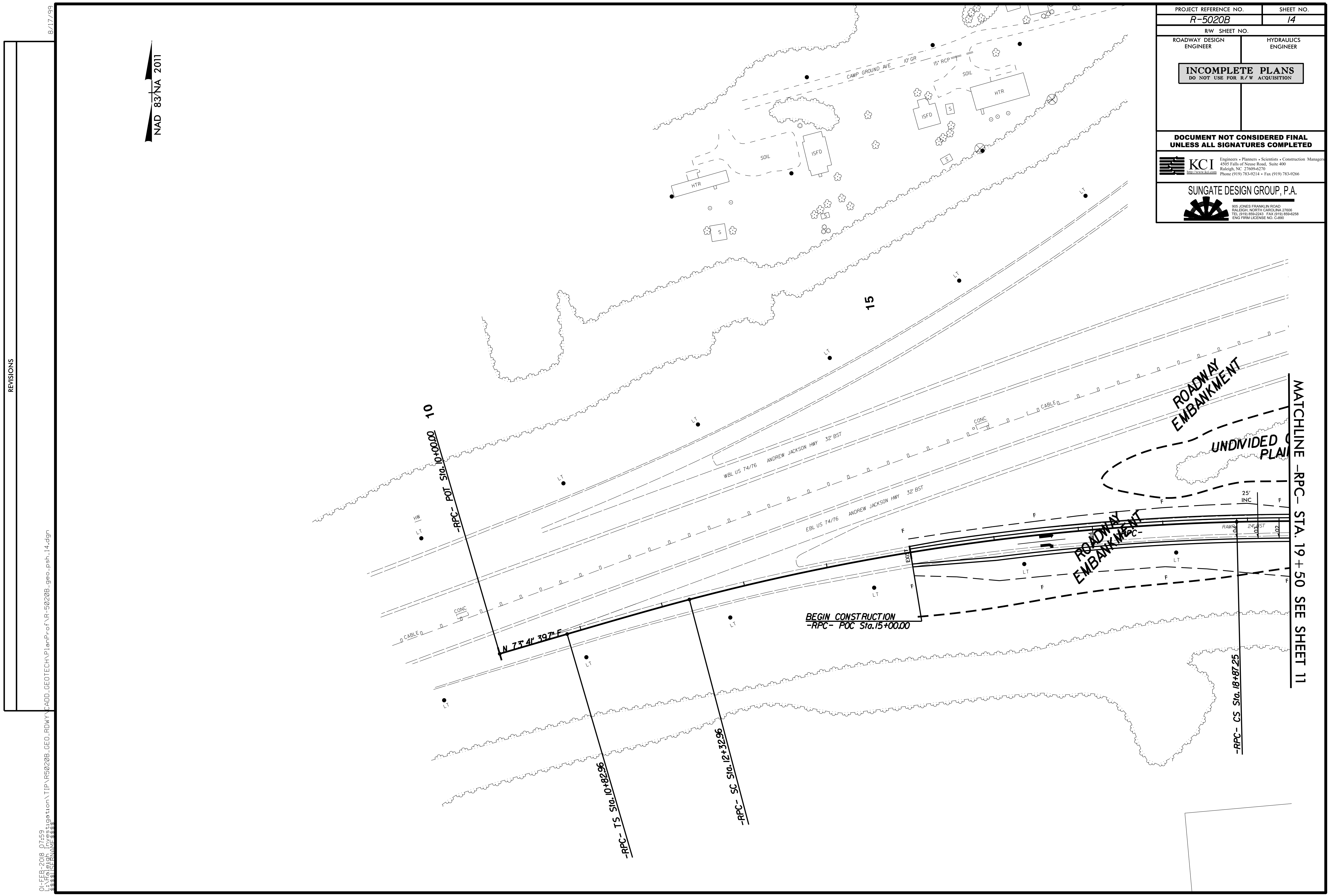

PROJECT REFERENCE NO.
SHEET NO.
R-5020B
14
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
KCI
SUNGATE DESIGN GROUP, P.A.
NAD 83/NA 2011
REVISIONS
8/17/99
MATCHLINE -RPC- STA. 19+50 SEE SHEET 11
ROADWAY EMBANKMENT
UNDIVIDED
BEGIN CONSTRUCTION
-RPC- POC Sta.15+00.00
-RPC- POT Sta.10+00.00
-RPC- TS Sta.10+82.96
-RPC- SC Sta.12+32.96
-RPC- CS Sta.18+87.25
N 73° 41' 39.7" E
WBL US 74/76 ANDREW JACKSON HWY 32' BST
EBL US 74/76 ANDREW JACKSON HWY 32' BST
CAMP GROUND AVE
CABLE
CONC
HTR
ISFD
SOIL
LT
HW
25' INC

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	15

SEE -Y17- X-SECTIONS

ROADWAY EMBANKMENT, GRAY, TAN, AND BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE ORGANICS

SEE -Y17- X-SECTIONS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY TO GRAY, VERY SOFT TO SOFT, MOIST, SANDY SILT

176+00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-37	20' RT	175+50	3.0-4.5	A-4(0)	0	NP	11.7	53.7	16.4	18.2	100	95	41	-	-
S-38	20' RT	175+50	4.5-5.0	A-4(0)	0	NP	16.6	50.5	10.7	22.2	100	92	39	17.6	-

S-37
S-38

3:1

ROADWAY EMBANKMENT, GRAY, BLACK, TAN, AND BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE ORGANICS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY TO GRAY, VERY SOFT TO SOFT, MOIST, SANDY SILT AND LOOSE, SILTY SAND

FIAD
05/17

175+50.00

3:1

ROADWAY EMBANKMENT, GRAY, BLACK, TAN, AND BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE ORGANICS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY TO GRAY, VERY SOFT TO SOFT, MOIST, SANDY SILT

175+00.00

-L-

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	16

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

70 65 60 55

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, TAN AND DARK GRAY, VERY SOFT TO SOFT, WET, SANDY SILT

178+00.00

70 65 60 55

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, TAN AND GRAY, VERY SOFT TO SOFT, WET, SANDY SILT

177+50.00

70 65 60 55

176+90

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

FIAD
05/17

UNDIVIDED COASTAL PLAIN, TAN TO GRAY, VERY SOFT TO SOFT, WET, SANDY SILT

177+00.00

70 65 60 55

SEE -Y17- X-SECTIONS

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

SEE -Y17- X-SECTIONS

UNDIVIDED COASTAL PLAIN, TAN TO GRAY, VERY SOFT TO SOFT, WET, SANDY SILT

176+50.00

-L-

50

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

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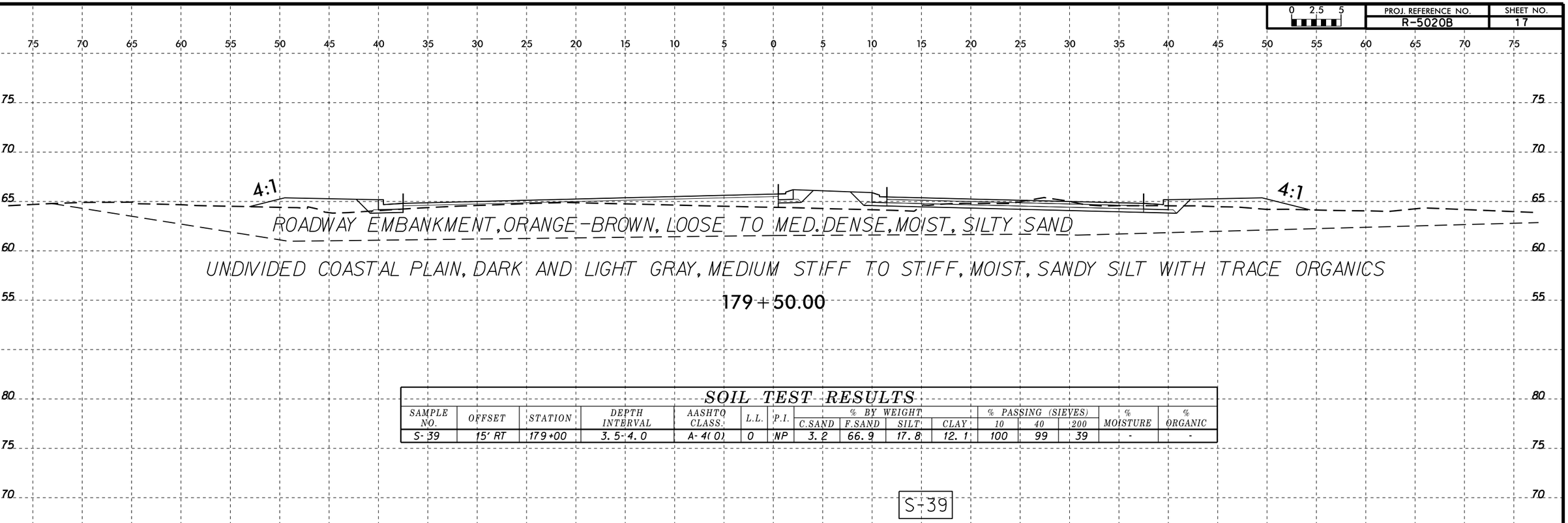
6/23/16

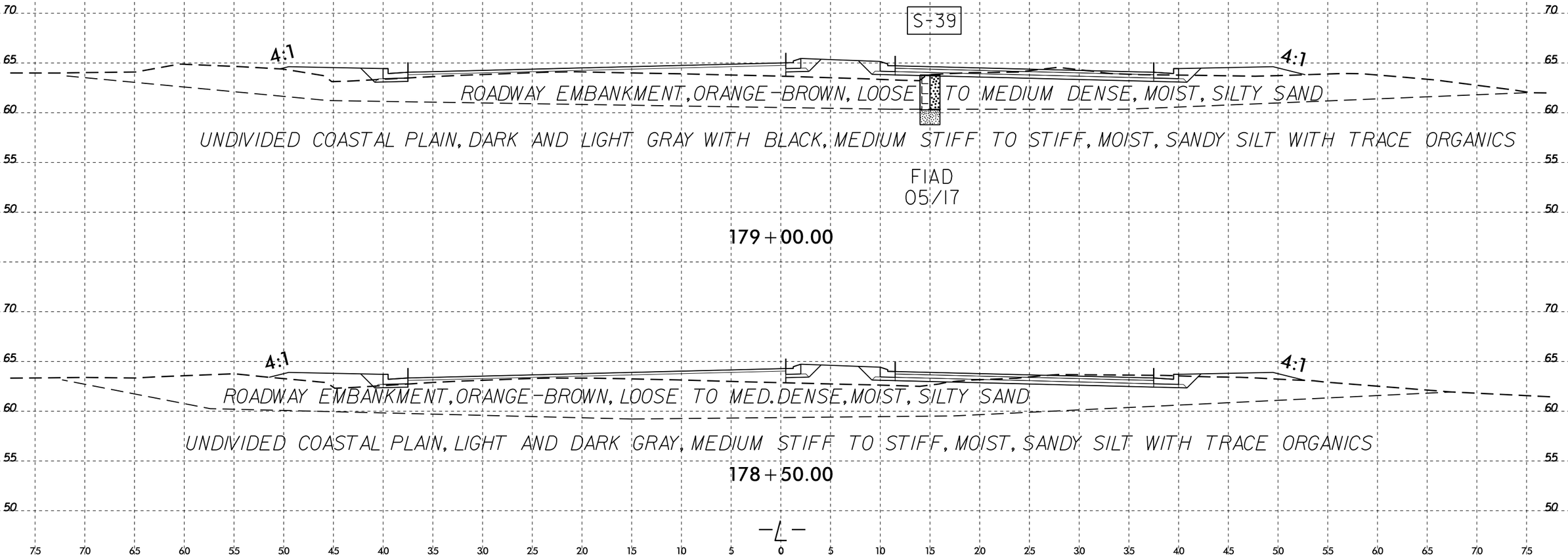
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	17



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-39	15' RT	179+00	3.5-4.0	A-4(0)	0	NP	3.2	66.9	17.8	12.1	100	99	39	-	-

S-39



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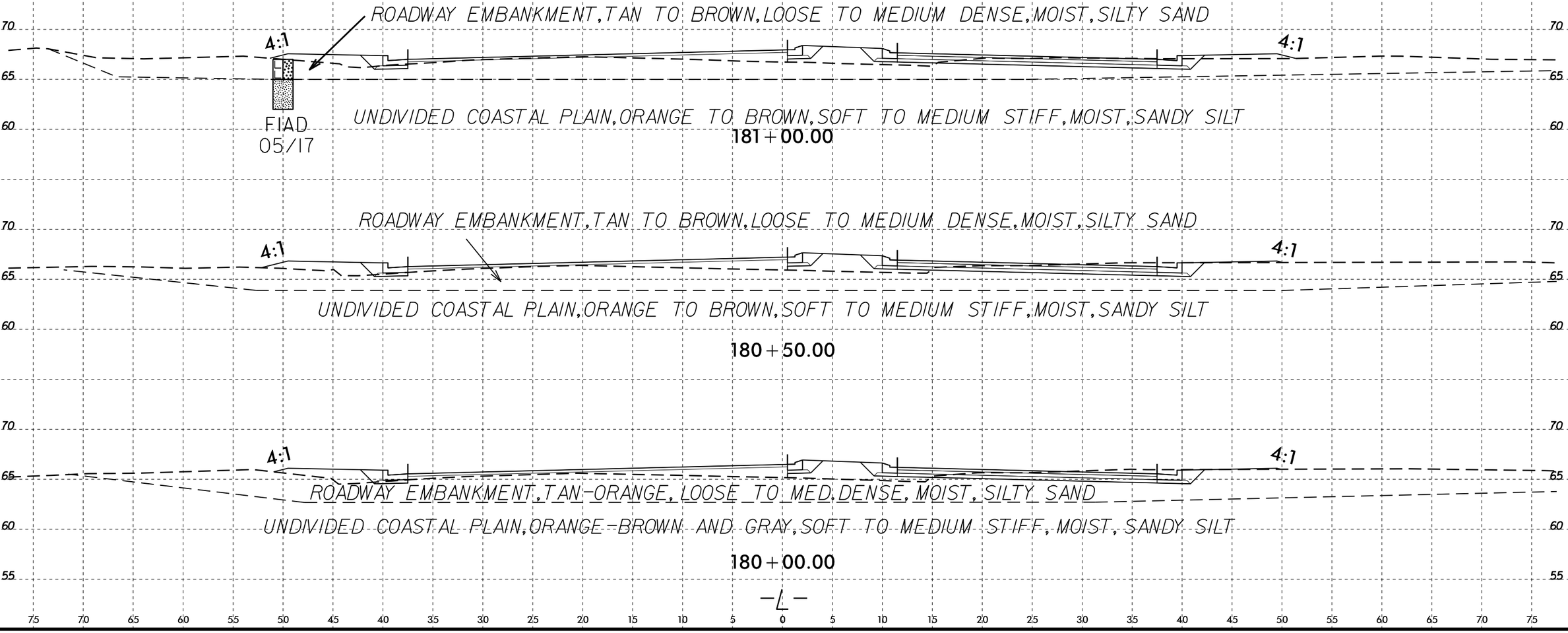
SOIL TEST RESULTS

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
S-48	50' LT	181+00	2.5-3.0	A-4(0)	20	5	2.4	57.6	19.8	20.2	100	99	50	-	-

S-48



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	19

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

85 80 75 70 65 60

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

SEE -Y18- X-SECTIONS

-Y19-

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MOIST, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

182 + 50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

SEE -Y18- X-SECTIONS

UNDIVIDED COASTAL PLAIN, ORANGE TO BROWN, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT

-Y19-

LIGHT GRAY, ORANGE, AND RED MOTTLED, STIFF TO MEDIUM STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

182 + 00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-40	30' RT	181+60	2.7-3.3	A-4(2)	22	8	13.9	37.6	20.2	28.3	100	100	57	-	-

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND

181+60

S-40

4:1

4:1

UNDIVIDED COASTAL PLAIN, GRAY, ORANGE, BROWN, AND RED, MED. STIFF TO STIFF, MOIST, SILTY CLAY AND SANDY SILT

181 + 50.00

-L-

FIAD 05/17

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	20

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

184+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

183+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

183+00.00

—L—

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	21

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85 80 75 70 65

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

186+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

185+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

185+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

184+50.00

—L—

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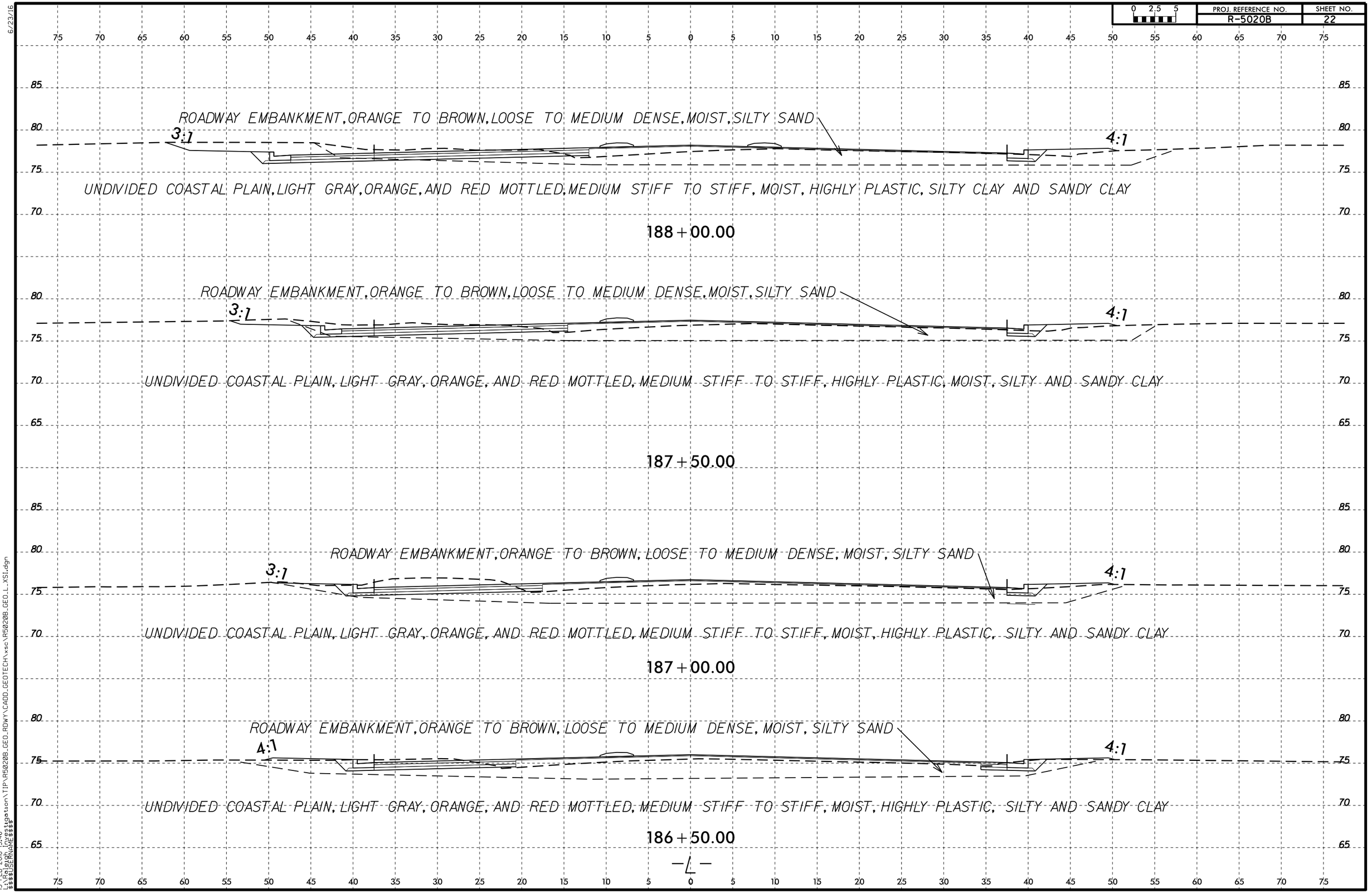
	R-5020B	22



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	23

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND SANDY CLAY

190+00.00

189+75

3:1

4:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND

FIAD
05/17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND SANDY CLAY

FIAD
05/17

189+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND SANDY CLAY

189+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

$SEE -Y21- X-SECTIONS

$SEE -Y21- X-SECTIONS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, HIGHLY PLASTIC, MOIST, SILTY CLAY AND SANDY CLAY

188+50.00

—L—

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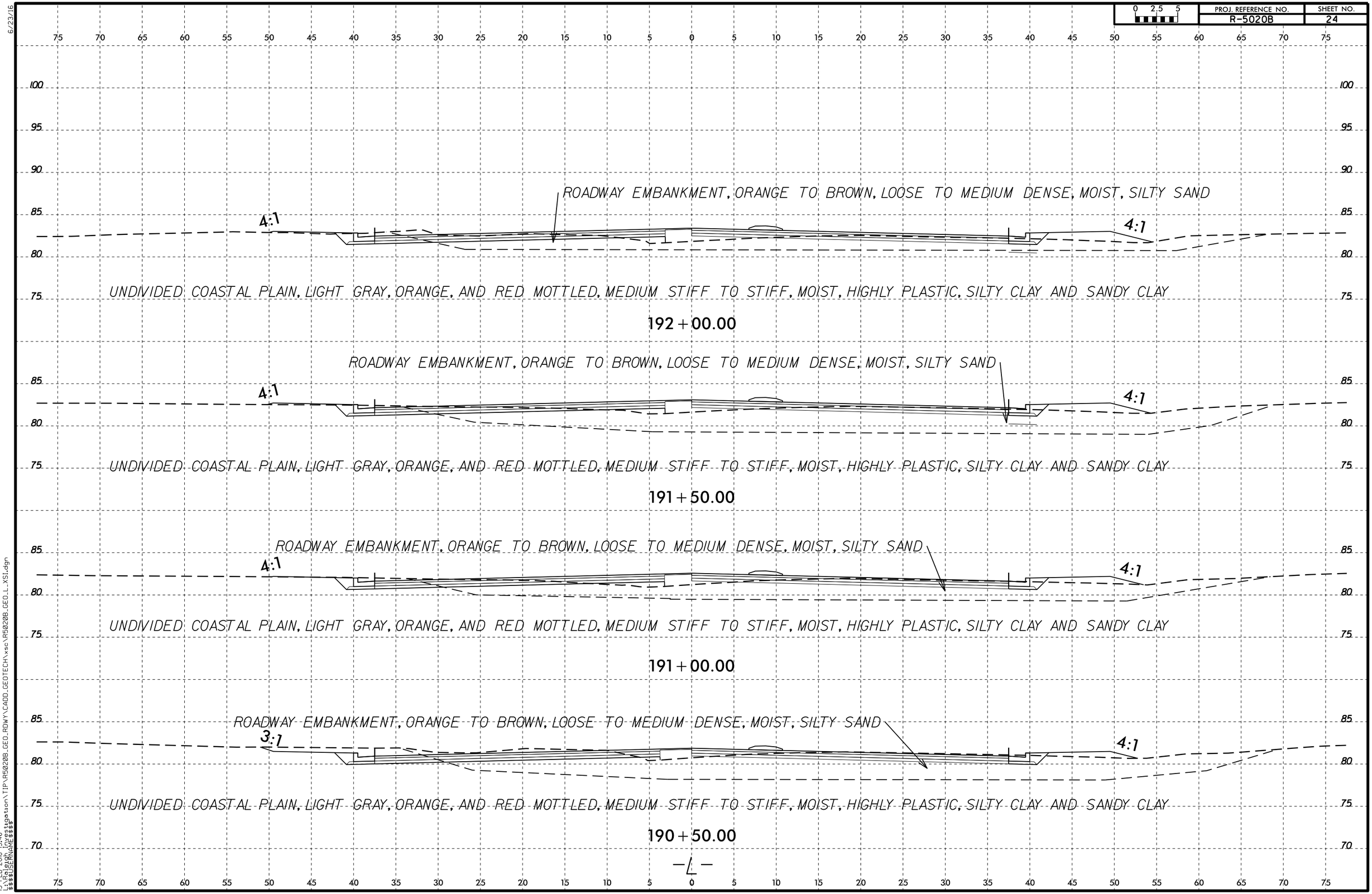

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	25

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

90 85 80 75 70 65

ROADWAY EMBANKMENT, TAN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND VERY LOOSE TO LOOSE CLAYEY SAND

193+50.00

SEE -Y22- X-SECTIONS

ROADWAY EMBANKMENT, TAN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

SEE -Y22- X-SECTIONS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND VERY LOOSE TO LOOSE CLAYEY SAND

193+00.00

ROADWAY EMBANKMENT, TAN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND VERY LOOSE TO LOOSE CLAYEY SAND

192+50.00

-L-

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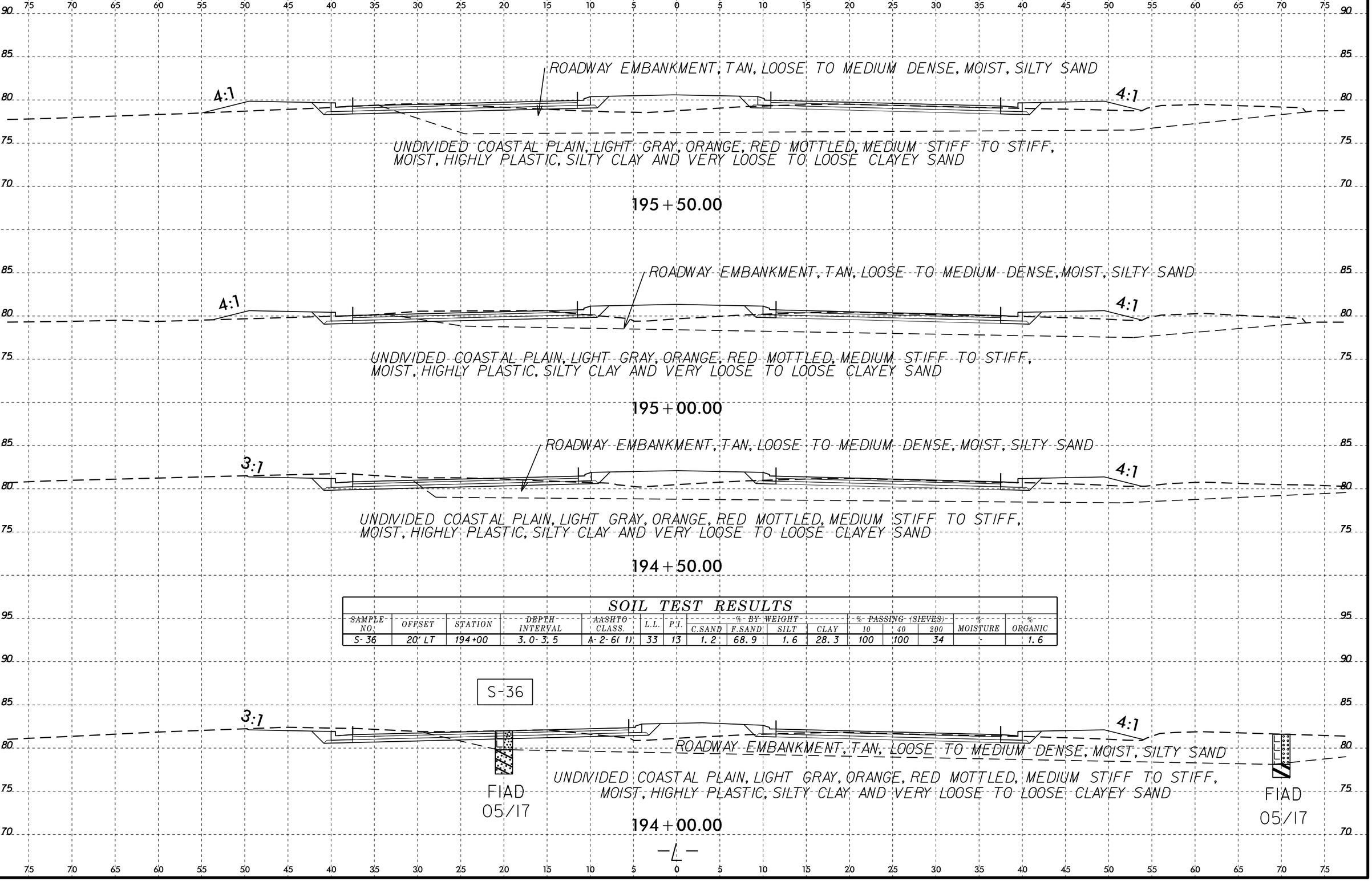
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	26



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-36	20' LT	194+00	3.0-3.5	A-2-6(1)	33	13	1.2	68.9	1.6	28.3	100	100	34	-	1.6

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	27

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

197+50.00

4:1

4:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

197+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

196+50.00

4:1

4:1

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND VERY LOOSE TO LOOSE CLAYEY SAND

196+00.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	28

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

199+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

199+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

198+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

4:1

SEE -Y23- X-SECTIONS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

198+00.00

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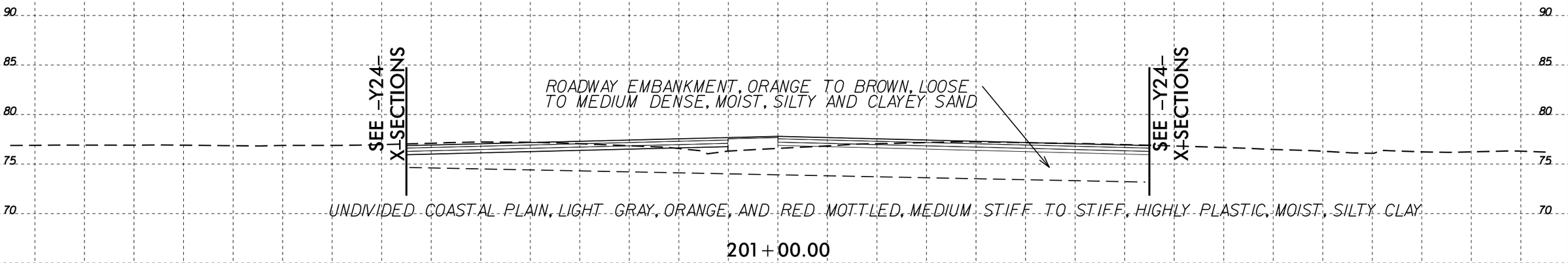
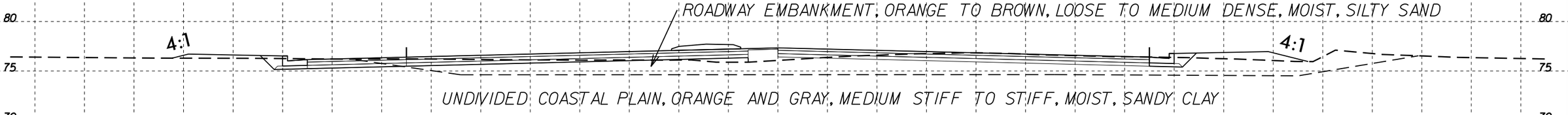
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	29

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



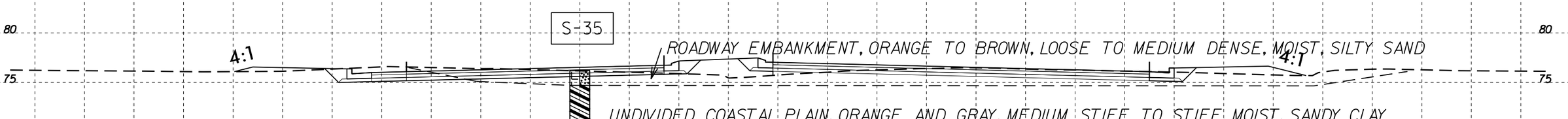
201+00.00



200+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		
S-35	20' LT	200+00	2.5-3.0	A-6(1)	29	11	3.4	61.6	6.7	28.3	100	100	38	-	-



200+00.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	30

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

90 85 80 75 70

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND CLAYEY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

202+50.00

85 80 75 70 65

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND CLAYEY SAND

4:1

4:1

FIAD
05/17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

202+00.00

60

85 80 75 70 65

$SEE -Y24- X-SECTIONS

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND CLAYEY SAND

$SEE -Y24- X-SECTIONS

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, HIGHLY PLASTIC, MOIST, SILTY CLAY

201+50.00

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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	31

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

90 85 80 75

4:1

ROADWAY EMBANKMENT, ORANGE, BROWN, AND GRAY, LOOSE TO MED. DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE AND RED MOTTLED, MEDIUM STIFF TO STIFF, HIGHLY PLASTIC, MOIST, SILTY CLAY

204+50.00

4:1

ROADWAY EMBANKMENT, ORANGE, BROWN, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

FIAD
05/17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

4:1

FIAD
05/17

204+00.00

3:1

4:1

ROADWAY EMB., ORANGE, BROWN, AND GRAY, LOOSE TO MED. DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

203+50.00

ROADWAY EMBANKMENT, ORANGE, BROWN, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

70

203+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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	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

95
90
85
80
75

ROADWAY EMBANKMENT, TAN TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM DENSE TO DENSE, MOIST, CLAYEY SAND

206+00.00

SEE -Y25- X-SECTIONS

ROADWAY EMBANKMENT, TAN TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

LIGHT GRAY, ORANGE, AND RED MOTTLED, MEDIUM DENSE TO DENSE, MOIST, CLAYEY SAND

205+50.00

4:1

SEE -Y25- X-SECTIONS

ROADWAY EMBANKMENT, ORANGE, BROWN, AND GRAY, LOOSE TO MED. DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE AND RED MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

205+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

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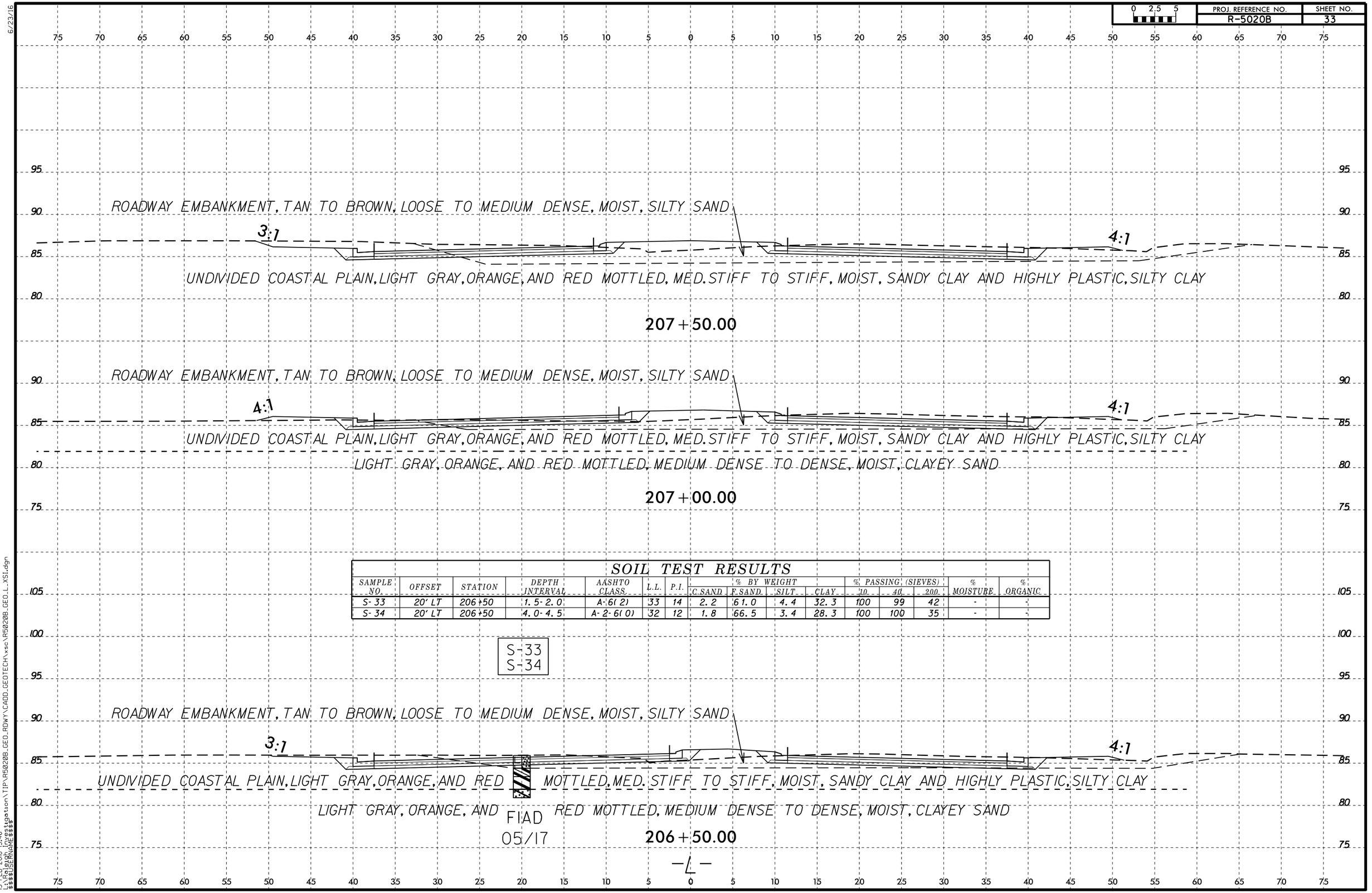
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	33



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-33	20' LT	206+50	1.5-2.0	A-6(2)	33	14	2.2	61.0	4.4	32.3	100	99	42	-	-
S-34	20' LT	206+50	4.0-4.5	A-2-6(0)	32	12	1.8	66.5	3.4	28.3	100	100	35	-	-

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	34

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

95 90 85 80

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED, SOFT TO MEDIUM STIFF, MOIST, SANDY CLAY

209+50.00

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED, SOFT TO MEDIUM STIFF, MOIST, SANDY CLAY

209+00.00

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED,
SOFT TO MEDIUM STIFF, MOIST, SANDY CLAY

FIAD
05/17

208+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED, SOFT TO MED. STIFF, MOIST, SANDY CLAY

208+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

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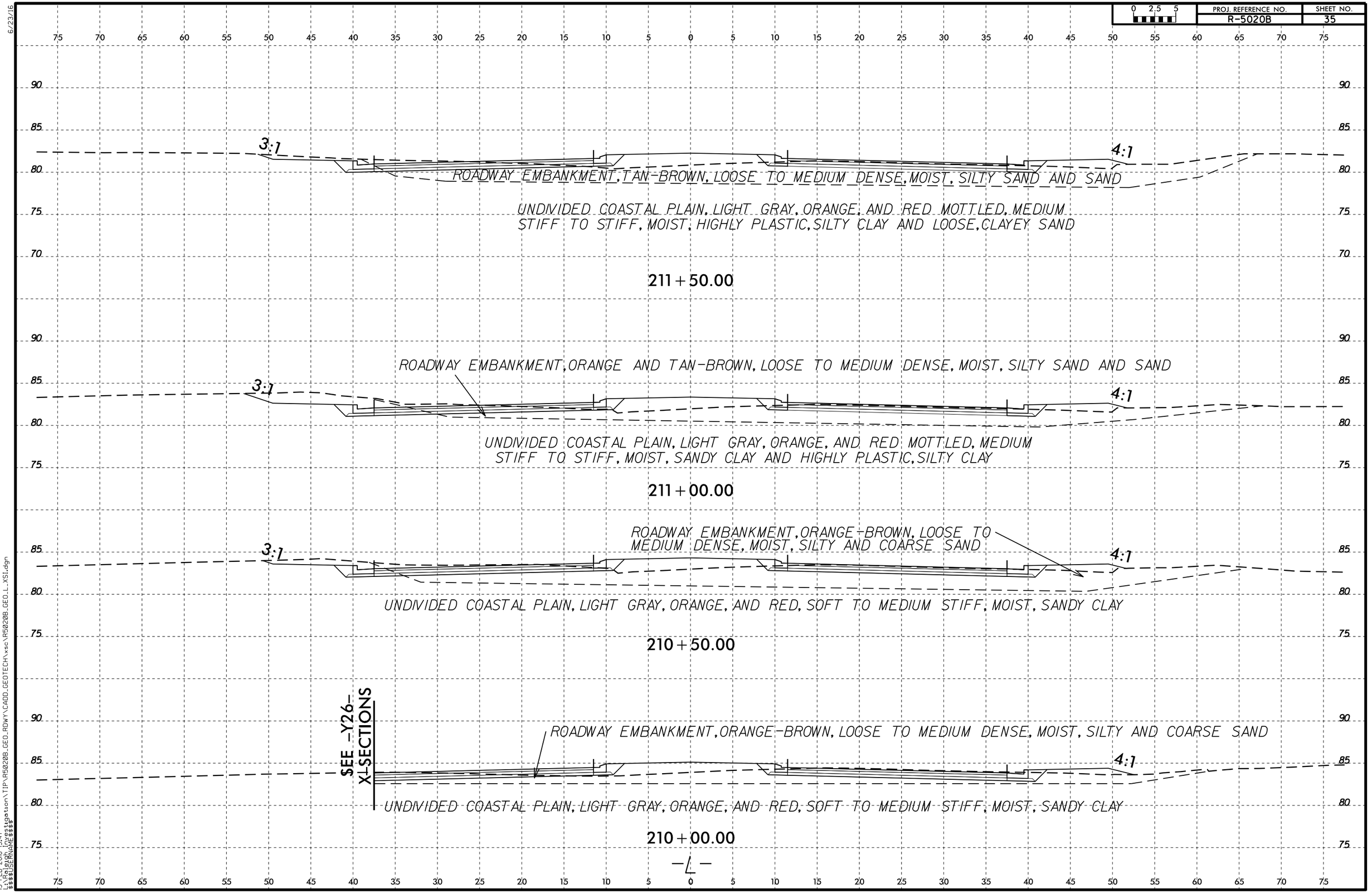
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	35



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	36

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

85 / 80 / 75 / 70

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND AND SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MED. STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

213+50.00

80 / 75

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MED. STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

213+00.00

85 / 80 / 75 / 70 / 65

4:1 4:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MED. STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND LOOSE, CLAYEY SAND

212+50.00

85 / 80 / 75 / 70 / 65

3:1 4:1

ROADWAY EMB., ORANGE-BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND AND SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED MOTTLED, MED. STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY AND LOOSE, CLAYEY SAND

FIAD 05/17

FIAD 05/17

212+00.00

—L—

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	37

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

215+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

215+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

214+50.00

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

214+00.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	38

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

217+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

216+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		
S-32	25' LT	216+00	4.0-4.5	A-4(3)	22	8	0.4	34.7	36.6	28.3	100	100	73	-	-

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

S-32

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND LOOSE, SILTY SAND WITH TRACE WOOD FRAGMENTS

216+00.00

FIAD 05/17

FIAD 05/17

-L-

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	39

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

85 / 80 / 75 / 70 / 65

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND FINE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, V.LOOSE TO LOOSE, MOIST, SILTY SAND

218+50.00

80 / 75 / 70 / 65

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND FINE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, V.LOOSE TO LOOSE, MOIST, SILTY SAND

218+00.00

80 / 75 / 70 / 65 / 60

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY TO DARK GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS (WOOD FRAGMENTS)

217+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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	40

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-29	25' LT	220+00	2.5-3.0	A-6(7)	29	15	7.1	41.6	23.0	28.3	100	96	65	22.7	-

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

S-29

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MEDIUM STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, LOOSE, MOIST, SILTY SAND AND CLAYEY SILT

FIAD 05/17

FIAD 05/17

220+00.00

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND FINE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, LOOSE, MOIST, SILTY SAND AND SOME SILT

219+50.00

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND FINE SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, V.LOOSE TO LOOSE, MOIST, SILTY SAND

219+00.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	41

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

85 80 75 70 65

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MED. STIFF, MOIST, SANDY SILT

222+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

80 75 70

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
LOOSE, MOIST, SILTY SAND AND SOME SILT

221+50.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

80 75 70

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
LOOSE, MOIST, SILTY SAND AND SOME SILT

221+00.00

ROADWAY EMBANKMENT, TAN, ORANGE, AND GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND FINE SAND

80 75 70 65

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY,
LOOSE, MOIST, SILTY SAND AND SOME SILT

220+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

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	42

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, BROWN TO DARK GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY WITH TRACE ORGANICS (WOOD FRAGMENTS)

224+50.00

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
S-41	50' RT	224+00	2.5-3.0	A-4(0)	26	8	2.0	62.8	6.9	28.3	100	99	40	-	-
S-42	50' RT	224+00	3.5-4.0	A-6(8)	36	22	2.4	52.9	12.3	32.3	100	99	54	19.4	-

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

S-41
S-42

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MED. STIFF, MOIST, SANDY SILT

FIAD
05/17

224+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MED. STIFF, MOIST, SANDY SILT

223+00.00

ROADWAY EMBANKMENT, ORANGE TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, SOFT TO MED. STIFF, MOIST, SANDY CLAY

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MED. STIFF, MOIST, SANDY SILT

222+50.00

—L—

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	43

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

80 75 70 65

ROADWAY EMBANKMENT, TAN TO ORANGE, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

226+50.00

ROADWAY EMBANKMENT, TAN TO ORANGE, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND

4:1 4:1

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

226+00.00

ROADWAY EMBANKMENT, TAN TO ORANGE, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND

4:1

-Y27-

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

225+50.00

ROADWAY EMBANKMENT, TAN TO ORANGE, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND

4:1

FIAD
05/17

UNDIVIDED COASTAL PLAIN, ORANGE TO GRAY, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

225+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

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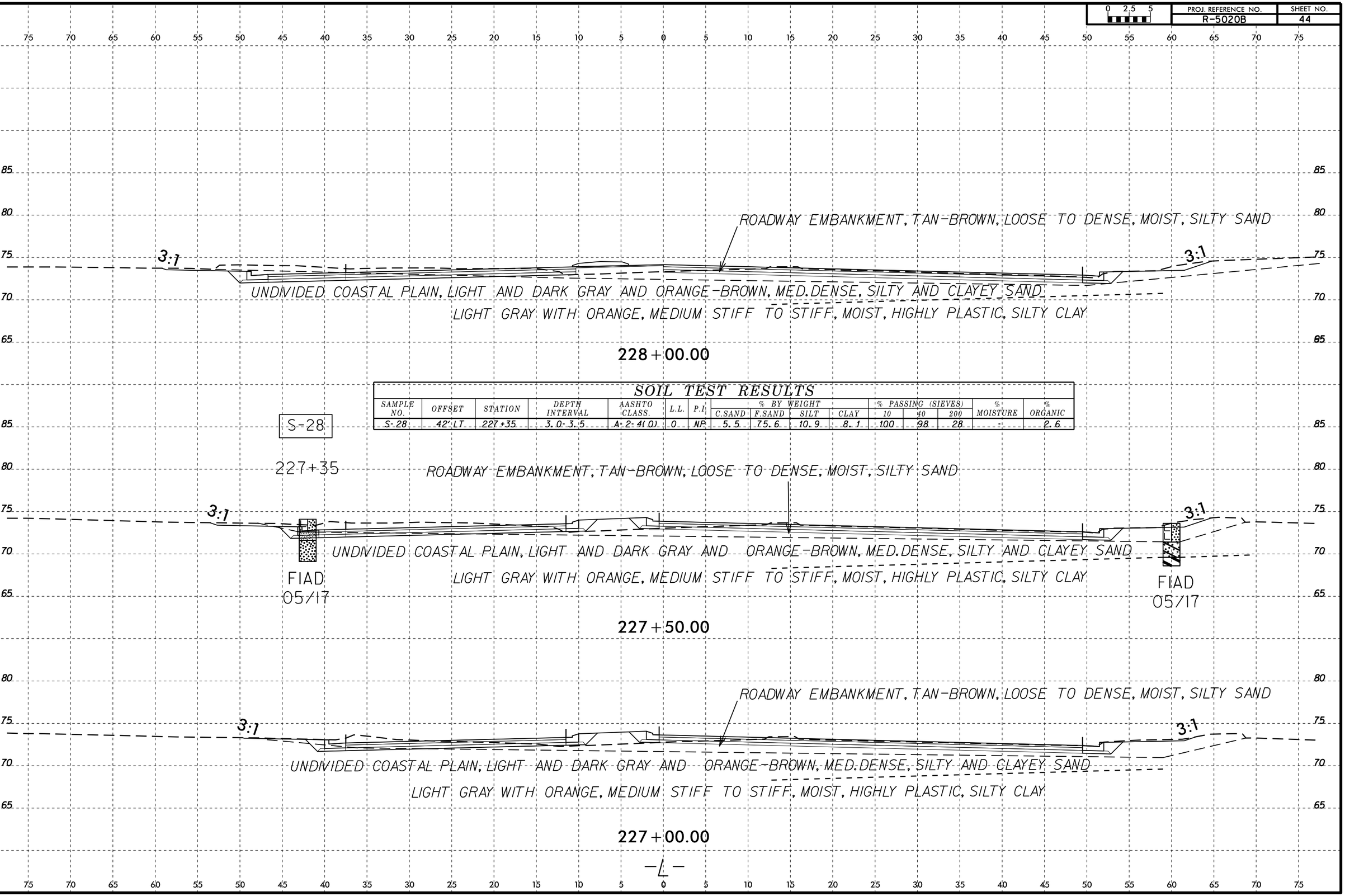
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	44



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-28	42' LT	227+35	3.0-3.5	A-2-4(0)	0	NP	5.5	75.6	10.9	8.1	100	98	28	-	2.6

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	45

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

85 80 75 70 65

4:1

4:1

ROADWAY EMBANKMENT, TAN TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, FINE SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

229+50.00

SEE -Y28- X-SECTIONS

SEE -Y28- X-SECTIONS

80 75 70 65

ROADWAY EMBANKMENT, TAN TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, FINE SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

229+00.00

SEE -Y28- X-SECTIONS

80 75 70 65 60

3:1

ROADWAY EMBANKMENT, TAN TO BROWN, LOOSE TO MEDIUM DENSE, MOIST, FINE SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

228+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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	46

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

85 80 75 70 65

ROADWAY EMBANKMENT, DARK GRAY TO BROWN, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

231+00.00

ROADWAY EMBANKMENT, DARK GRAY TO BROWN, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

230+50.00

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-27	35' LT	230+00	3.0-3.5	A-7-6(31)	49	31	1.8	31.3	18.4	48.5	100	99	93	-	-

ROADWAY EMBANKMENT, DARK GRAY TO BROWN, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

3:1

S-27

4:1

FIAD
05/17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

230+00.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	47

ROADWAY EMBANKMENT, ORANGE-BROWN, GRAY-BLACK, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-BLACK-ORANGE, VERY SOFT TO SOFT, MOIST, SANDY SILT WITH TRACE ORGANICS

232+50.00

EX. DRV

4:1

ROADWAY EMBANKMENT, DARK GRAY TO BROWN, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

232+00.00

ROADWAY EMBANKMENT, DARK GRAY TO BROWN, MEDIUM DENSE TO DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY AND ORANGE MOTTLED, MEDIUM STIFF TO STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

231+50.00

-L-

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	48

ROADWAY EMBANKMENT, ORANGE-BROWN, GRAY-BLACK, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-BLACK-ORANGE, VERY SOFT TO SOFT, MOIST, SANDY SILT WITH TRACE ORGANICS

234+00.00

ROADWAY EMBANKMENT, ORANGE-BROWN, GRAY-BLACK, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

4:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-BLACK-ORANGE, VERY SOFT TO SOFT, MOIST, SANDY SILT WITH TRACE ORGANICS

233+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		
S-43	55' RT	233+00	4.0-4.5	A-4(3)	24	9	3.0	47.9	18.8	30.3	100	99	61	25.9	-

ROADWAY EMBANKMENT, ORANGE-BROWN, GRAY-BLACK, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

S-43

3:1

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-BLACK-ORANGE, VERY SOFT TO SOFT, MOIST, SANDY SILT WITH TRACE ORGANICS

FIAD
05/17

233+00.00

—L—

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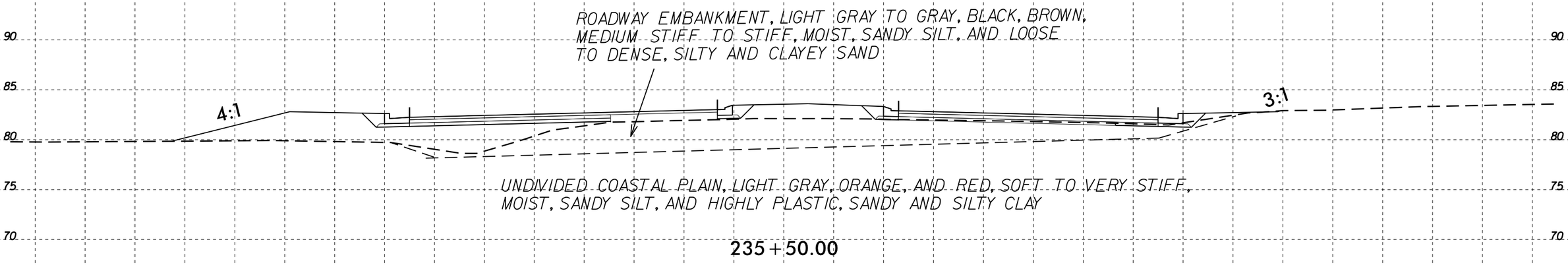
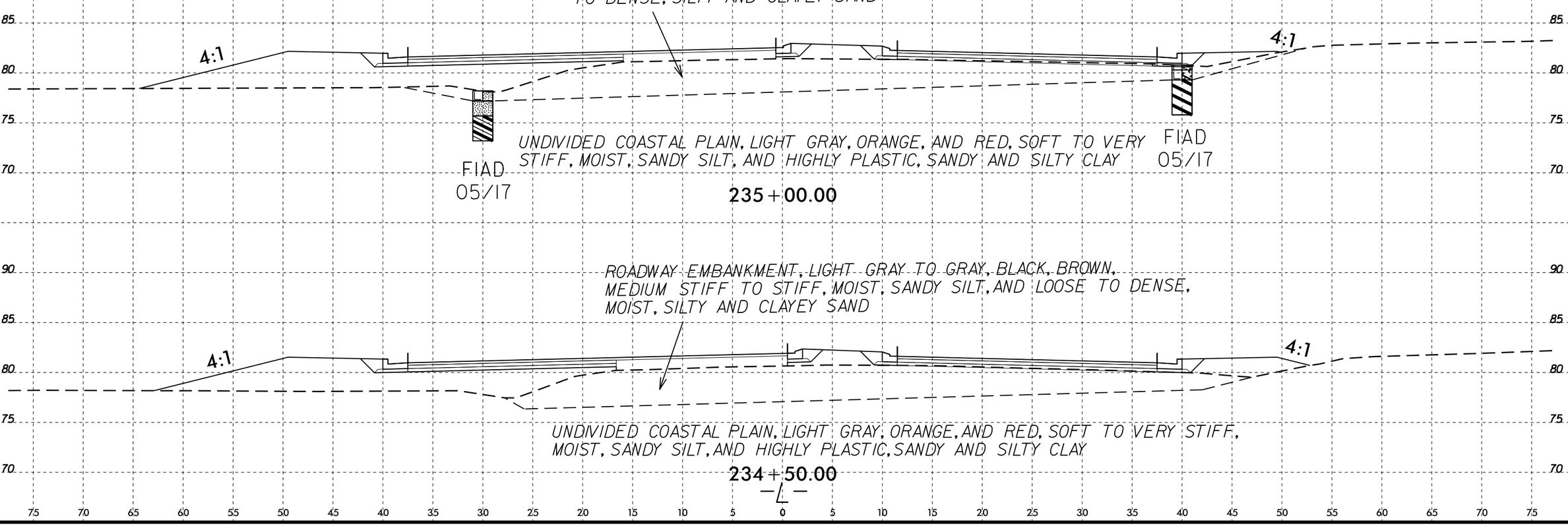
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	49



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
S-24	30' LT	235+00	0.5-1.0	A-4(0)	22	3	3.4	54.9	27.5	14.1	100	99	50	-	4.3
S-25	30' LT	235+00	1.5-2.0	A-4(0)	17	2	2.2	55.4	22.2	20.2	100	99	52	-	-
S-26	30' LT	235+00	3.0-3.5	A-6(3)	25	11	1.8	50.5	23.4	24.2	100	99	57	22.0	-

S-24
S-25
S-26



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-44	25' RT	237+00	2.0-2.5	A-7-6(36)	52	34	0.2	12.9	32.3	54.5	100	100	97	-	-

ROADWAY EMBANKMENT, BROWN-LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

S-44

3:1

4:1

UNDIVIDED COASTAL PLAIN, RED-LIGHT GRAY, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

FIAD
05/17

237+00.00

ROADWAY EMBANKMENT, LIGHT GRAY TO GRAY, BLACK, BROWN, MOIST, MEDIUM STIFF TO STIFF, SANDY SILT, AND LOOSE TO DENSE, SILTY AND CLAYEY SAND

SEE -Y29- X-SECTIONS

SEE -Y29- X-SECTIONS

UNDIVIDED COASTAL PLAIN, RED-LIGHT GRAY, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY

236+50.00

ROADWAY EMBANKMENT, LIGHT GRAY TO GRAY, BLACK, BROWN, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT, AND LOOSE TO DENSE, SILTY AND CLAYEY SAND

SEE -Y29- X-SECTIONS

4:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY, ORANGE, AND RED, SOFT TO VERY STIFF, MOIST, SANDY SILT, AND HIGHLY PLASTIC, SANDY AND SILTY CLAY

236+00.00

—L—

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	51

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

100 95 90 85 80 75

ROADWAY EMBANKMENT, ORANGE-BROWN-LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-LIGHT TO DARK GRAY-TAN-BLACK,
SOFT TO STIFF, MOIST, HIGHLY PLASTIC, SANDY TO SILTY CLAY WITH LITTLE ORGANICS

238+50.00

ROADWAY EMBANKMENT, BROWN-LIGHT GRAY, LOOSE TO MEDIUM LOOSE, MOIST, SILTY SAND

4:1

4:1

UNDIVIDED COASTAL PLAIN, RED-LIGHT GRAY, STIFF TO VERY STIFF,
MOIST, HIGHLY PLASTIC, SILTY CLAY

238+00.00

ROADWAY EMBANKMENT, BROWN-LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

4:1

UNDIVIDED COASTAL PLAIN, RED-LIGHT GRAY, STIFF TO VERY STIFF,
MOIST, HIGHLY PLASTIC, SILTY CLAY

237+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

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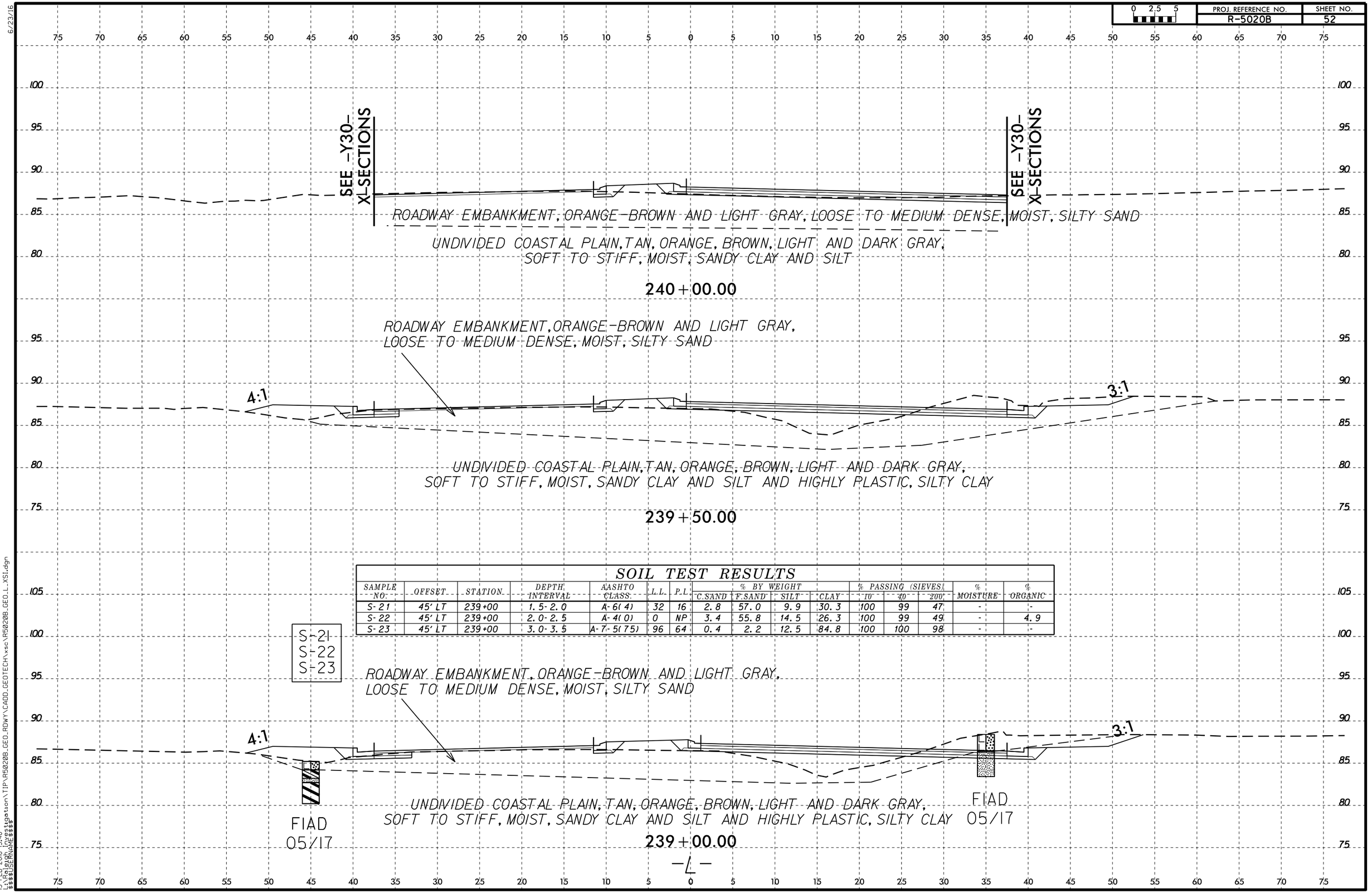
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	52



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-21	45' LT	239+00	1.5-2.0	A-6(4)	32	16	2.8	57.0	9.9	30.3	100	99	47	-	-
S-22	45' LT	239+00	2.0-2.5	A-4(0)	0	NP	3.4	55.8	14.5	26.3	100	99	49	-	4.9
S-23	45' LT	239+00	3.0-3.5	A-7-5(75)	96	64	0.4	2.2	12.5	84.8	100	100	98	-	-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	53

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

100 95 90 85

4:1

ROADWAY EMBANKMENT, ORANGE-BROWN AND LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, TAN, ORANGE, BROWN, LIGHT AND DARK GRAY, SOFT TO STIFF, MOIST, SANDY CLAY AND SILT

242+00.00

95 90 85 80

ROADWAY EMBANKMENT, ORANGE-BROWN AND LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

3:1

UNDIVIDED COASTAL PLAIN, TAN, ORANGE, BROWN, LIGHT AND DARK GRAY, SOFT TO STIFF, MOIST, SANDY CLAY AND SILT

241+50.00

95 90 85 80

ROADWAY EMBANKMENT, ORANGE-BROWN AND LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

3:1

UNDIVIDED COASTAL PLAIN, TAN, ORANGE, BROWN, LIGHT AND DARK GRAY, SOFT TO STIFF, MOIST, SANDY CLAY AND SILT

241+00.00

90 85 80 75

ROADWAY EMBANKMENT, ORANGE-BROWN AND LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

3:1

UNDIVIDED COASTAL PLAIN, TAN, ORANGE, BROWN, LIGHT AND DARK GRAY, SOFT TO STIFF, MOIST, SANDY CLAY AND SILT

240+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

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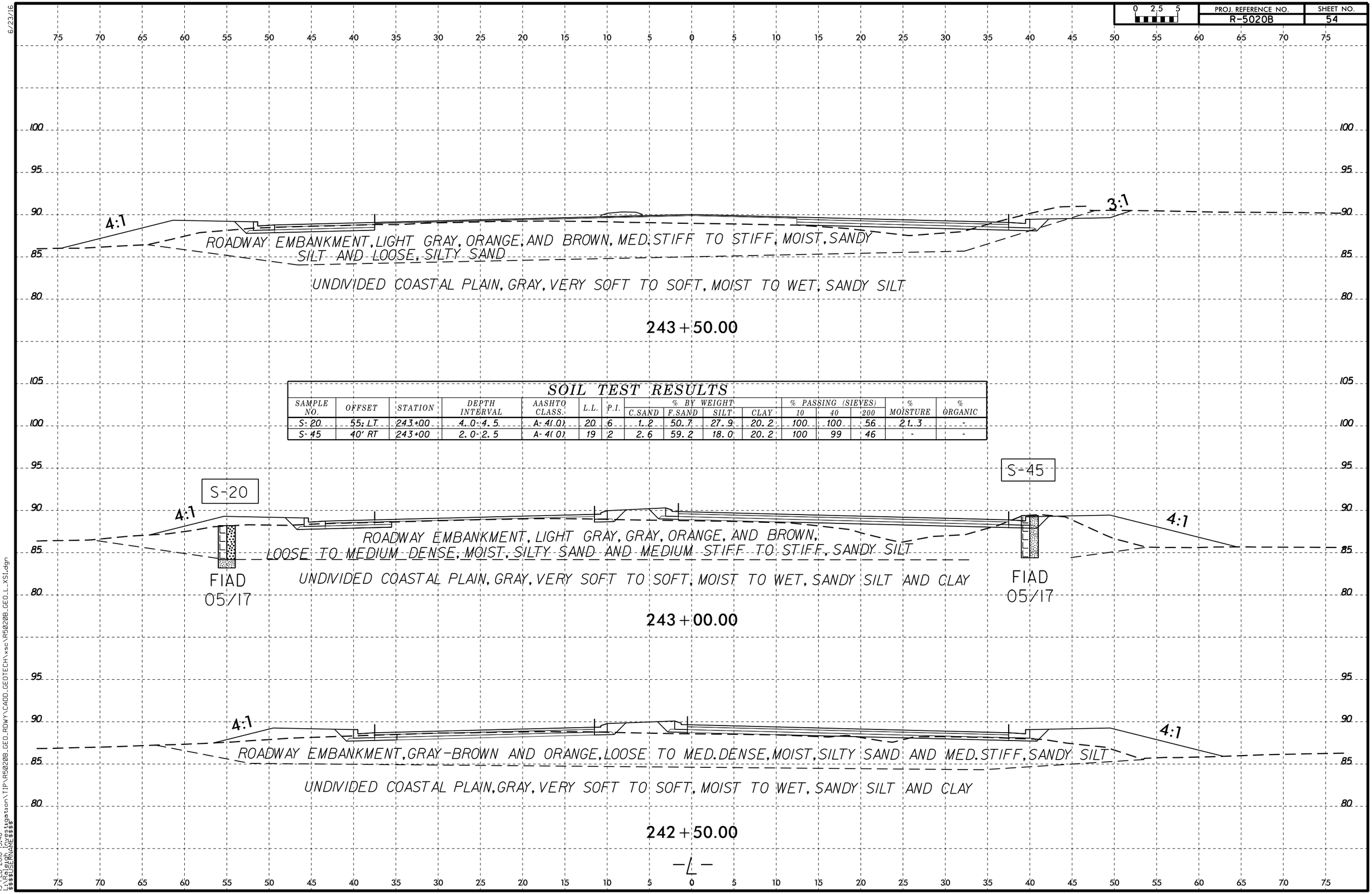
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	54

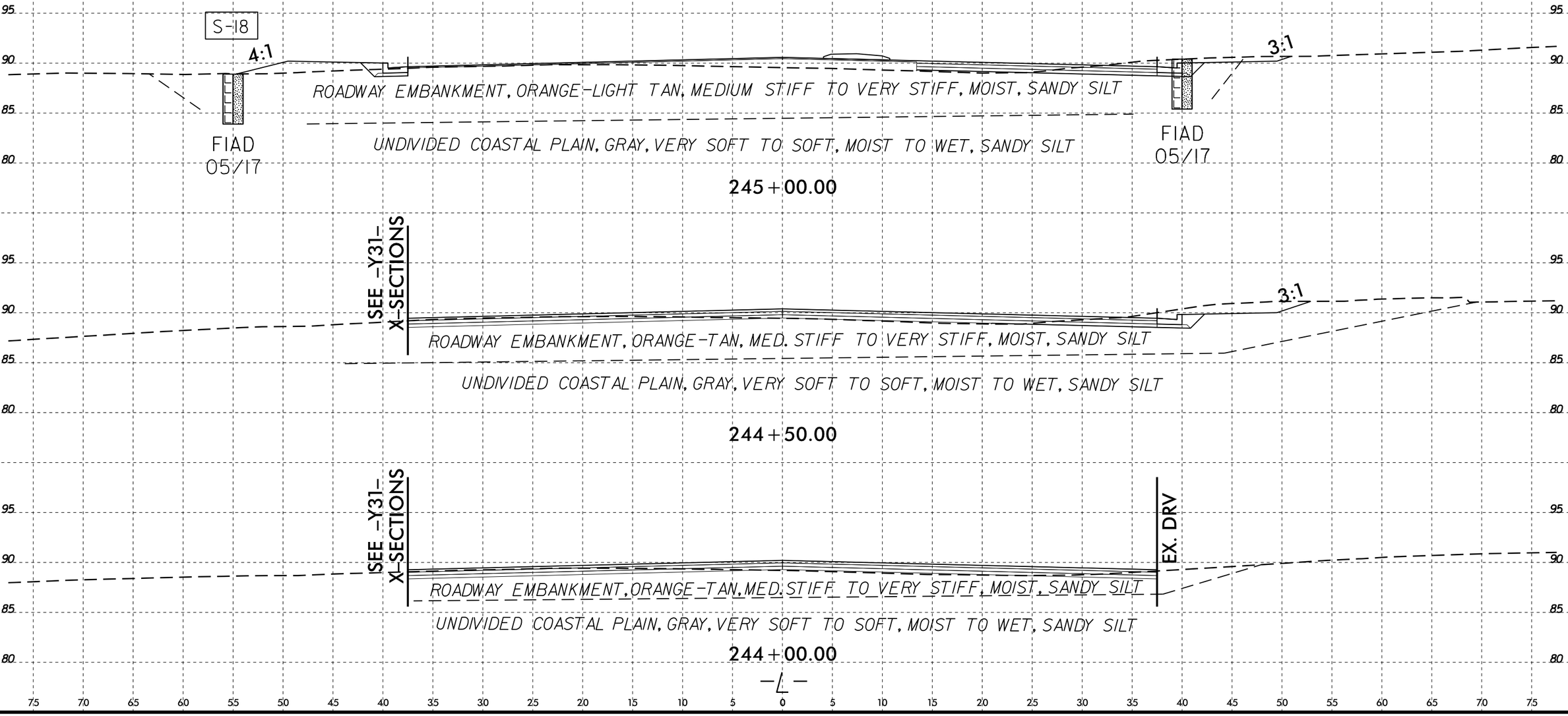


SOIL TEST RESULTS

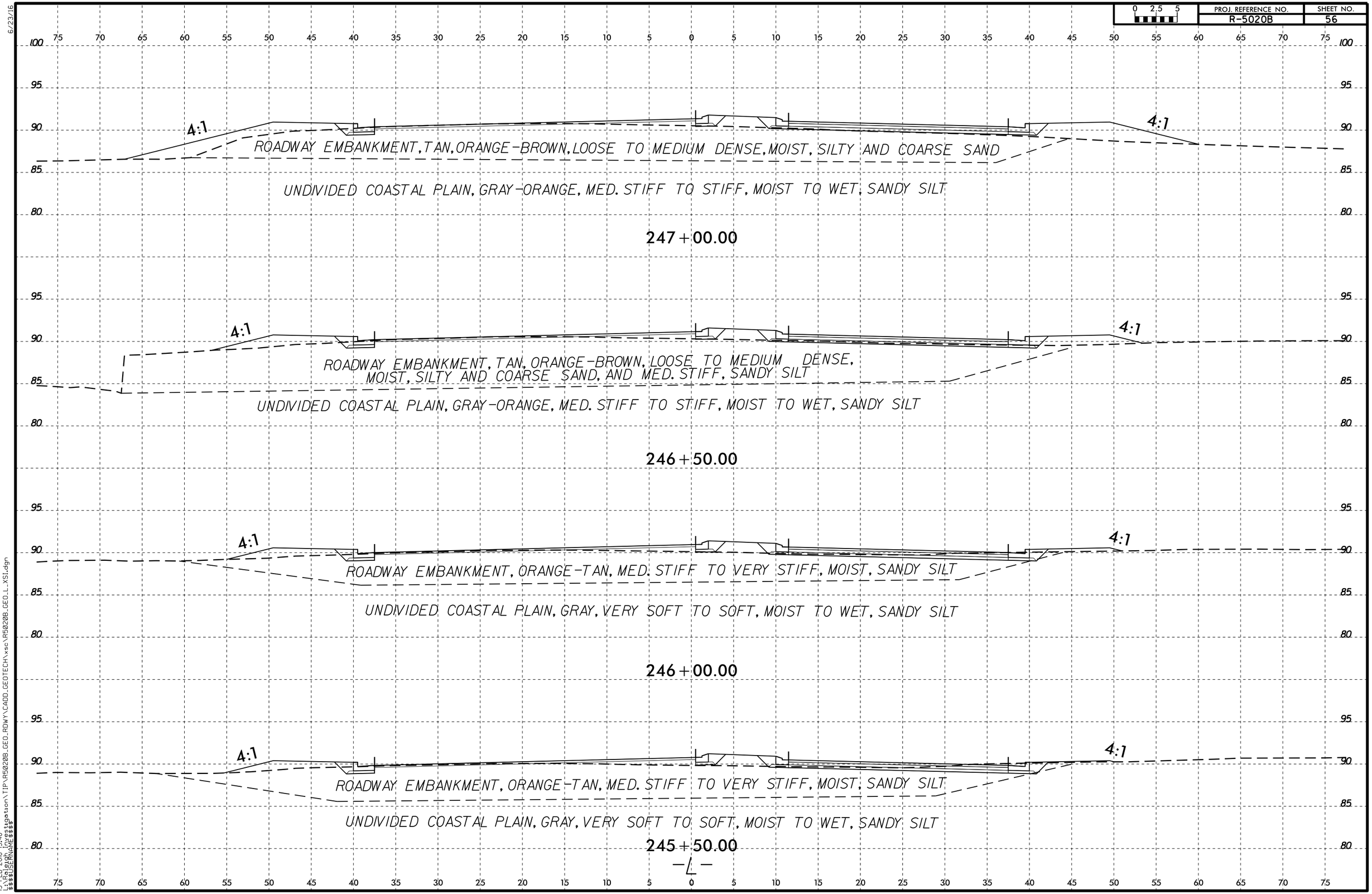
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-20	55' LT	243+00	4.0-4.5	A-4(0)	20	6	1.2	50.7	27.9	20.2	100	100	56	21.3	-
S-45	40' RT	243+00	2.0-2.5	A-4(0)	19	2	2.6	59.2	18.0	20.2	100	99	46	-	-

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
S-18	55' LT	245+00	2.0-2.5	A-4(1)	23	8	5.5	56.2	16.2	22.2	100	98	47	19.0	-
S-46	40' RT	245+00	1.5-2.0	A-4(1)	26	9	1.6	60.2	18.0	20.2	100	100	45	-	-



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	56



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	57

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

100 95 90 85 80

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST TO WET, SANDY SILT

4:1

248+50.00

105 100

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-17	60' LT	248+00	3.0-3.5	A-4(0)	0	NP	2.6	64.0	17.2	16.2	100	99	43	22.3	-

S-17

4:1

ROADWAY EMBANKMENT, TAN, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY COARSE SAND, AND SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

4:1

FIAD 05/17

FIAD 05/17

248+00.00

4:1

ROADWAY EMBANKMENT, TAN, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST TO WET, SANDY SILT

4:1

247+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

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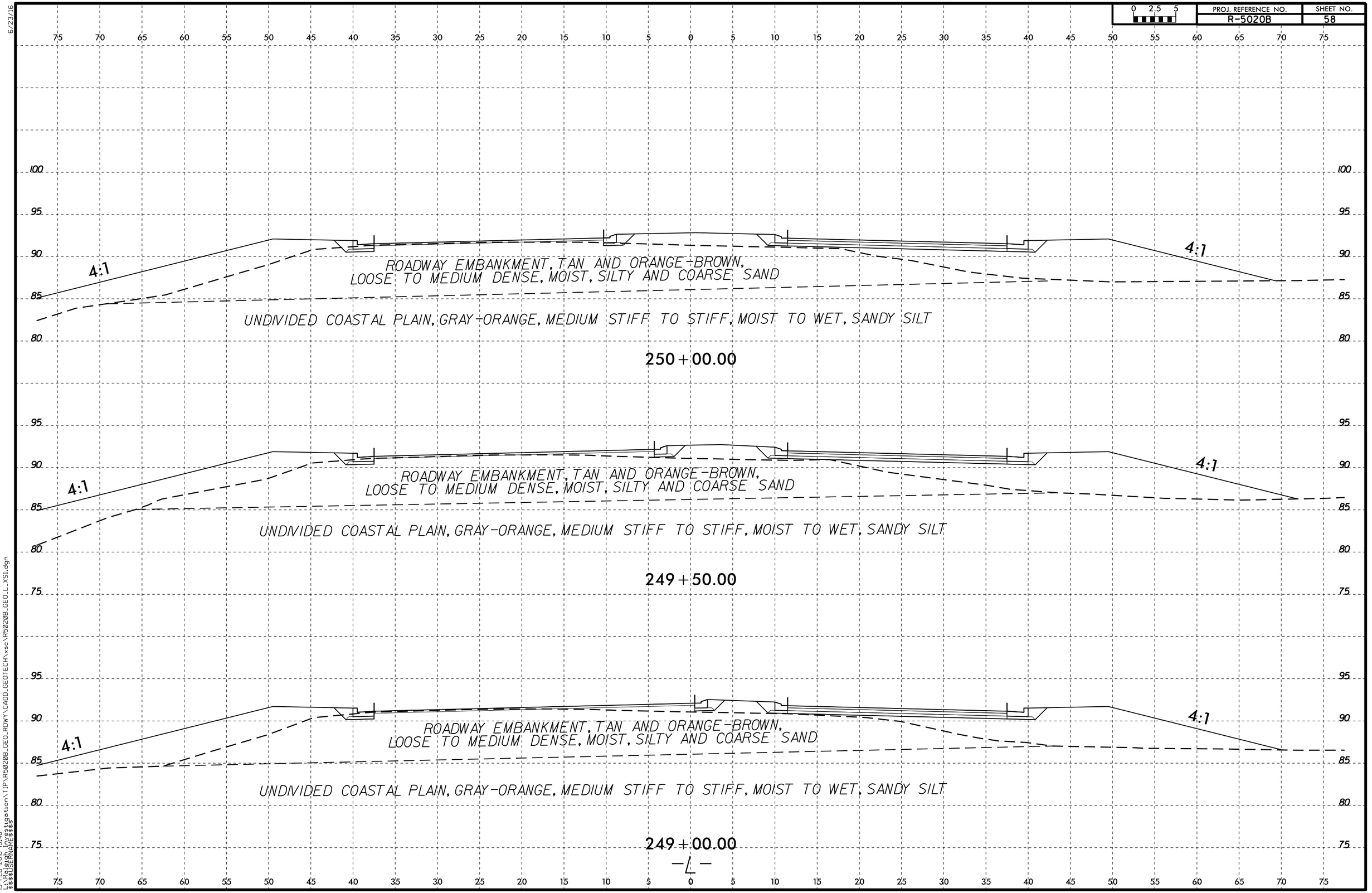
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	58



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	59

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

105 100 95 90 85 80

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

FIAD 05/17

3:1

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT AND LOOSE TO MEDIUM DENSE, SILTY SAND WITH TRACE ORGANICS

251+50.00

95 90 85 80

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

4:1

FIAD 05/17

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT AND LOOSE TO MEDIUM DENSE, SILTY SAND WITH TRACE ORGANICS

251+00.00

95 90 85 80

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY AND COARSE SAND

4:1

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST TO WET, SANDY SILT

250+50.00

95 90 85 80 75

—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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	60

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

100 95 90 85

4:1

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

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

4:1

253+50.00

EX. DRV

4:1

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

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

253+00.00

4:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

252+50.00

4:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT
AND LOOSE TO MEDIUM DENSE, SILTY SAND WITH TRACE ORGANICS

252+00.00

80

—L—

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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
S-15	50' LT	255+00	1.5-2.0	A-2-4(0)	0	NP	2.0	76.4	9.5	12.1	100	99	29	-	-
S-16	50' LT	255+00	2.5-3.0	A-2-4(0)	0	NP	1.0	86.5	6.5	6.1	100	100	19	-	-
S-47	30' RT	255+00	4.5-5.0	A-2-5(0)	0	NP	1.6	78.6	11.7	8.1	100	100	26	-	-

S-15
S-16

S-47

4:1

4:1

ROADWAY EMBANKMENT, ORANGE-LIGHT GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY AND RED-BROWN, VERY LOOSE TO LOOSE, MOIST, SILTY SAND AND SOME MEDIUM STIFF TO STIFF, SILTY CLAY

FIAD 05/17

FIAD 05/17

255+00.00

SEE -Y32- XI-SECTIONS

4:1

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

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

254+50.00

4:1

4:1

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

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

254+00.00

-L-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	62

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

105
100
95
90

4:1

ROADWAY EMBANKMENT, LIGHT GRAY, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

257+00.00

100
95
90

4:1

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

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

256+50.00

85
95
90

4:1

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

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

4:1

256+00.00

85
95
90

4:1

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

UNDIVIDED COASTAL PLAIN, GRAY AND RED-BROWN, VERY LOOSE TO LOOSE, MOIST, SILTY SAND AND SOME MEDIUM STIFF TO STIFF, SILTY CLAY

4:1

255+50.00

85
80

—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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	63

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

105 100 95 90 85

4:1

ROADWAY EMBANKMENT, LIGHT GRAY, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

259+00.00

100 95 90

4:1

ROADWAY EMBANKMENT, LIGHT GRAY, V. LOOSE TO LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

FIAD
05/17

258+50.00

100 95 90

4:1

ROADWAY EMBANKMENT, LIGHT GRAY, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

258+00.00

100 95 90 85

4:1

ROADWAY EMBANKMENT, LIGHT GRAY, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, GRAY-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

257+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

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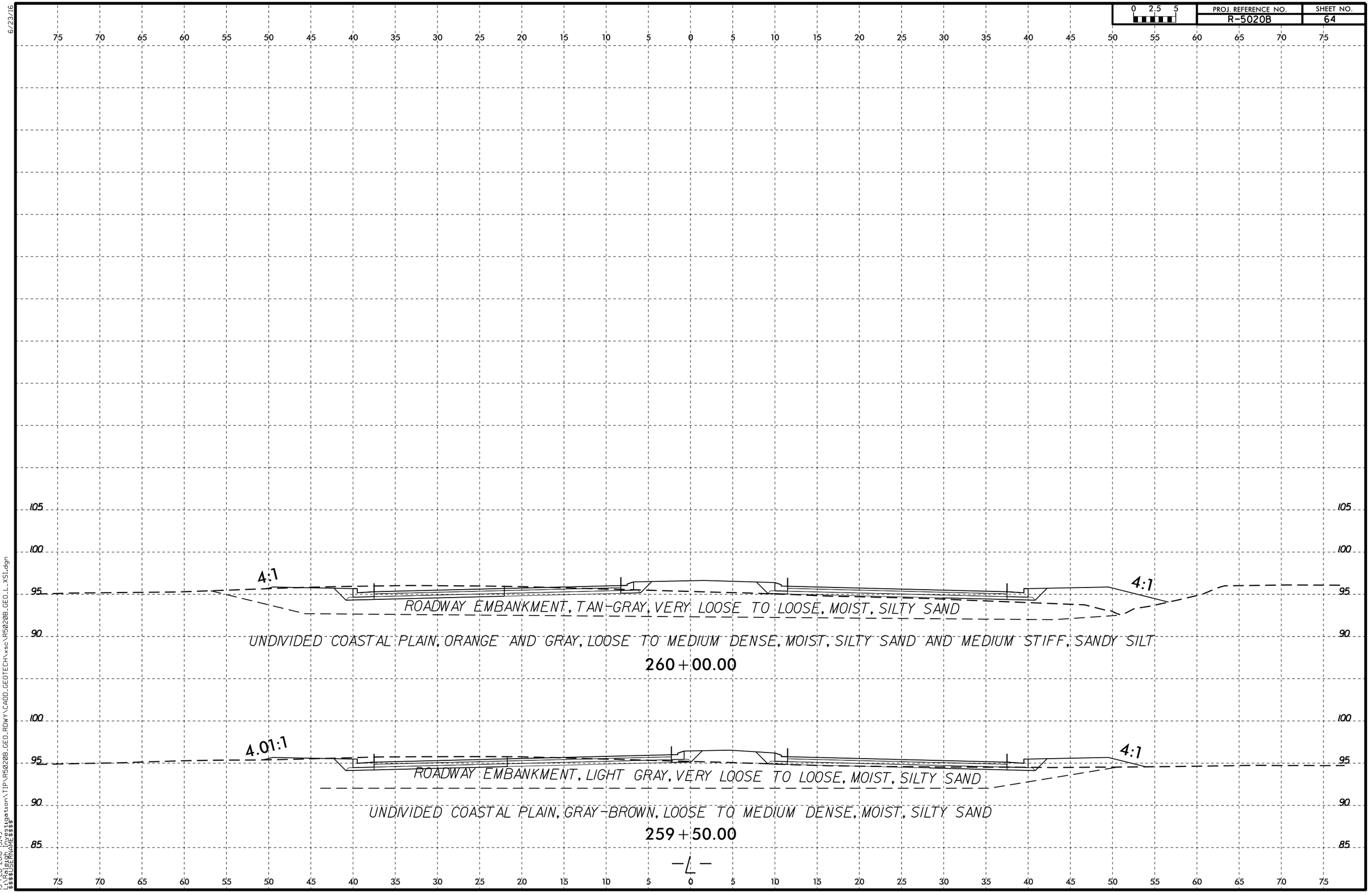
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	64



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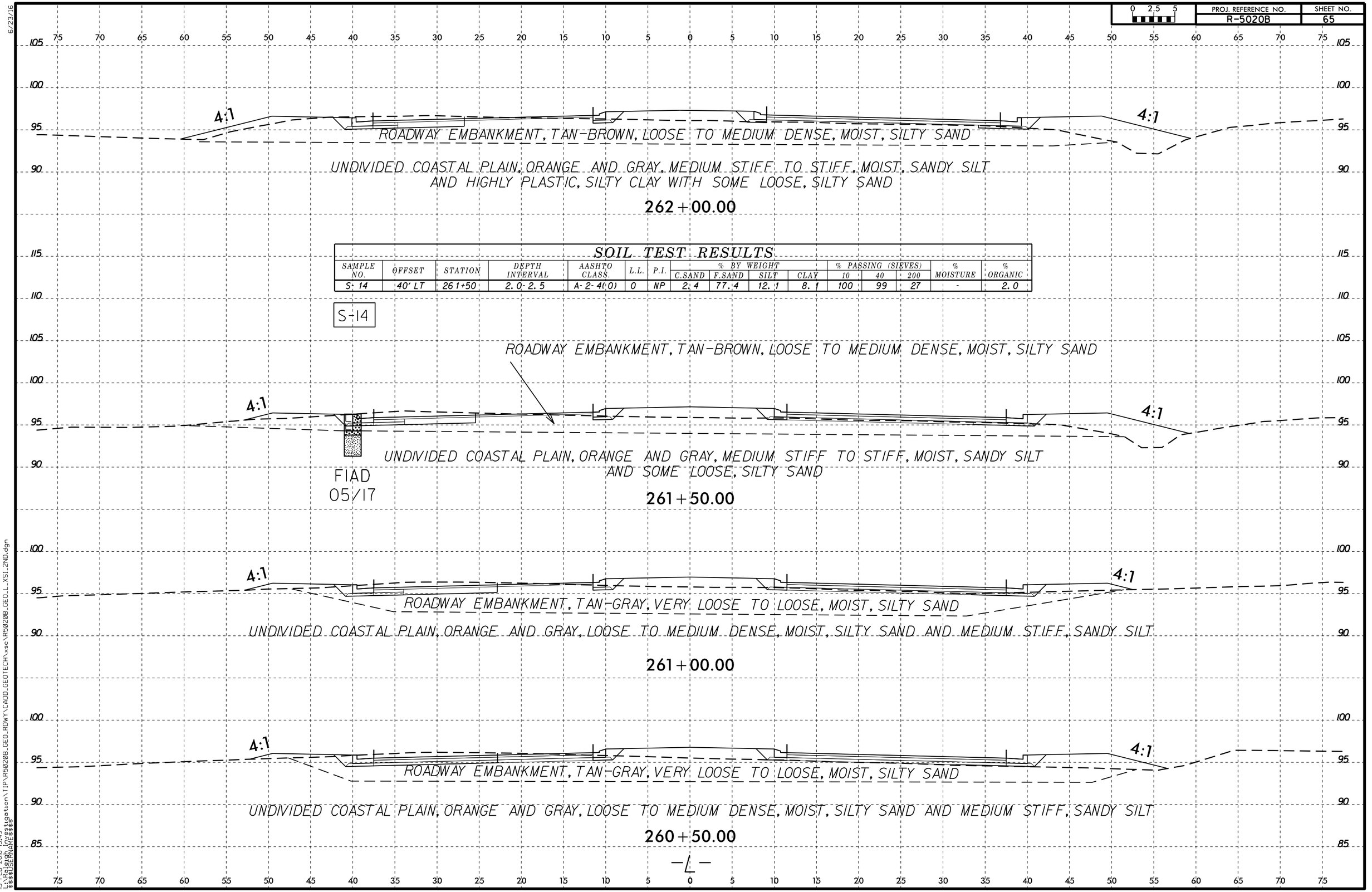

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-14	40' LT	261+50	2.0-2.5	A-2-4(0)	0	NP	2.4	77.4	12.1	8.1	100	99	27	-	2.0

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	66

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

105 100 95 90

4:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, TAN-ORANGE, SOFT TO MEDIUM STIFF, MOIST, SILTY CLAY

4:1

263+50.00

105 100 95 90

4:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, TAN-ORANGE, SOFT TO MEDIUM STIFF, MOIST, SILTY CLAY

4:1

263+00.00

100 95 90 85

4:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, TAN-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT AND SILTY CLAY

4:1

262+50.00

$-L-$

FIAD
05/17

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.
	R-5020B	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

115 110 105 100 95 90

6:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

6:1

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

267+00.00

105 100 95 90

7.7:1

ROADWAY EMBANKMENT, LIGHT BROWN-ORANGE, LOOSE TO MEDIUM DENSE, SILTY SAND

6:1

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

266+50.00

105 100 95 90

6:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

266+00.00

-L-

85

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

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	68

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

120 115 110 105 100 95 90

4:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

268+00.00

6:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

267+50.00

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	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

120 115 110 105 100 95 90

6:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

269+00.00

120 115 110 105 100 95 90

6:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

268+50.00

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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	70

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

110 105 100 95 90 85

4:1 6:1

95.25

ROADWAY EMBANKMENT, BROWN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, TAN-BROWN, MEDIUM STIFF TO STIFF, MOIST, SILTY CLAY AND SOME LOOSE TO MEDIUM DENSE, SILTY SAND

6:1 4:1

95.37

FIAD
05/17

270+50.00

105 100 95 90

4:1 6:1

94.83

FIAD
05/17

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

270+00.00

11.6:1

115 110 105 100 95 90

6:1

ROADWAY EMBANKMENT, LIGHT BROWN AND ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

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

269+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

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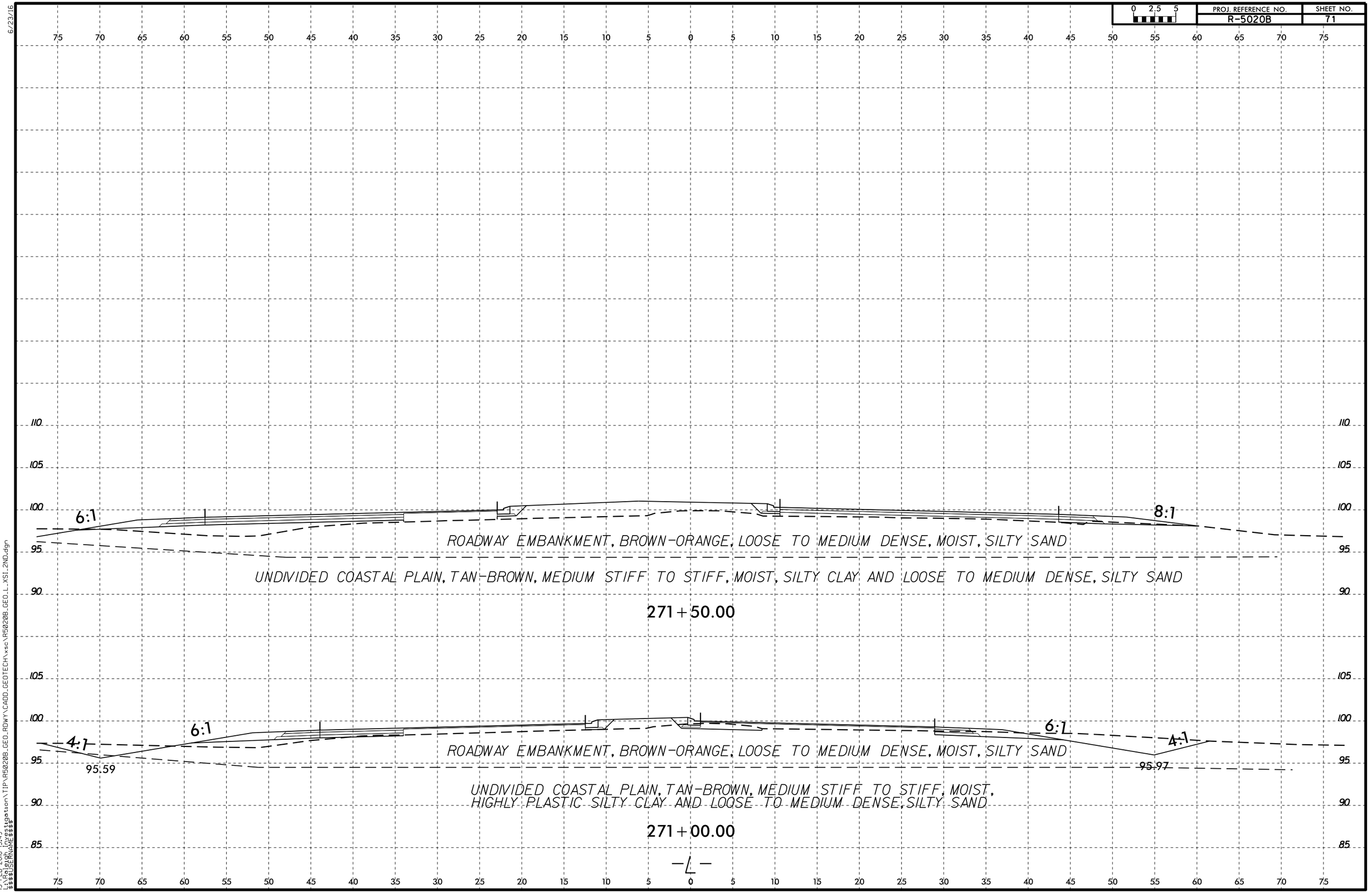
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	71



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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	72

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

110 105 100 95 90

7.3:1 6:1 4:1

ROADWAY EMBANKMENT, BROWN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

97.17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY WITH TRACE WOOD FRAGMENTS

FIAD
05/17

274+50.00

105 100 95 90

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

97.08

ROADWAY EMBANKMENT, BROWN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

96.75

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY WITH TRACE WOOD FRAGMENTS

274+00.00

105 100 95 90 85

6:1 6:1

ROADWAY EMBANKMENT, BROWN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, STIFF TO VERY STIFF, MOIST, HIGHLY PLASTIC, SILTY CLAY WITH TRACE WOOD FRAGMENTS

273+50.00

$\mathit{-L-}$

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

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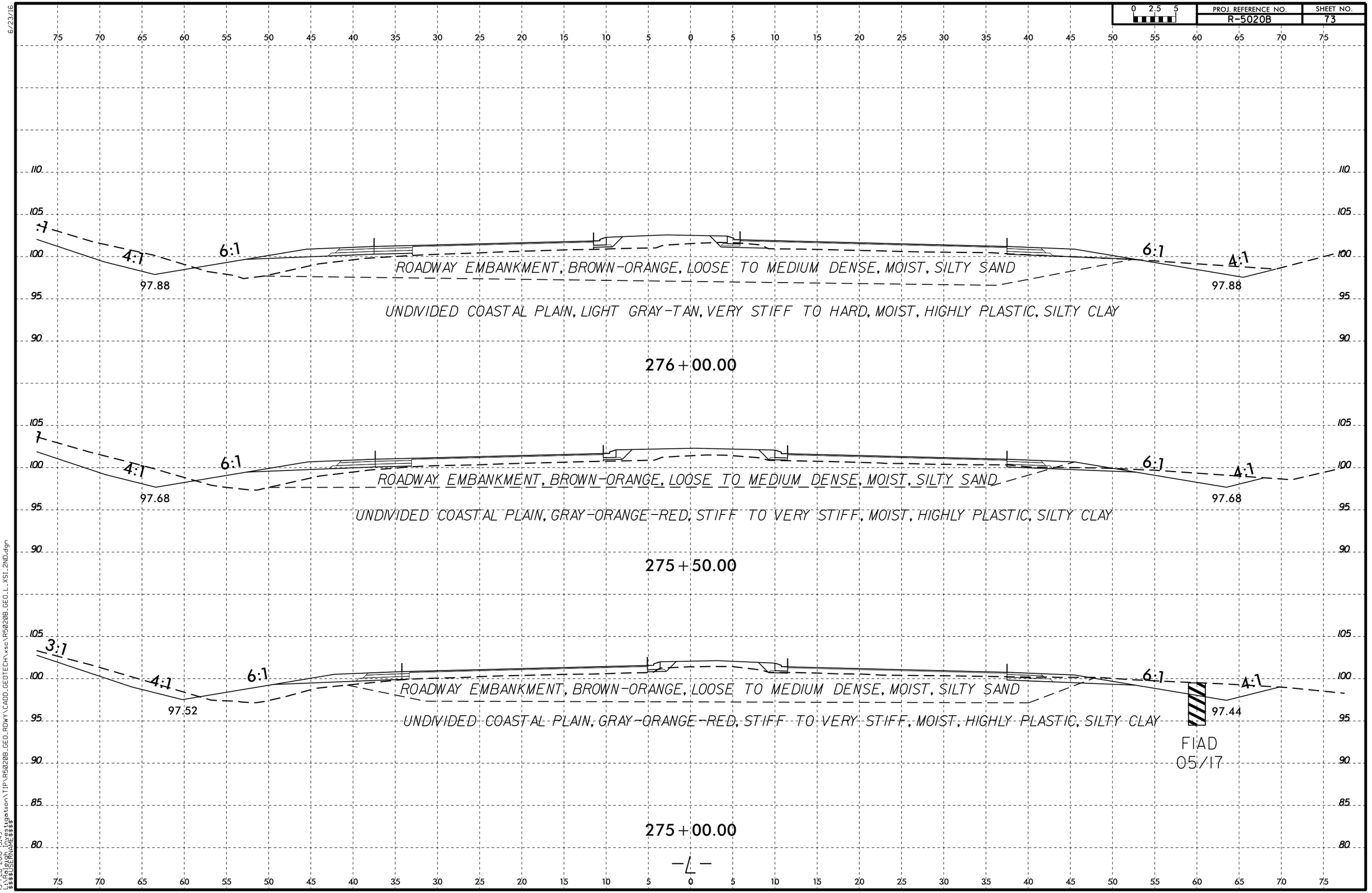
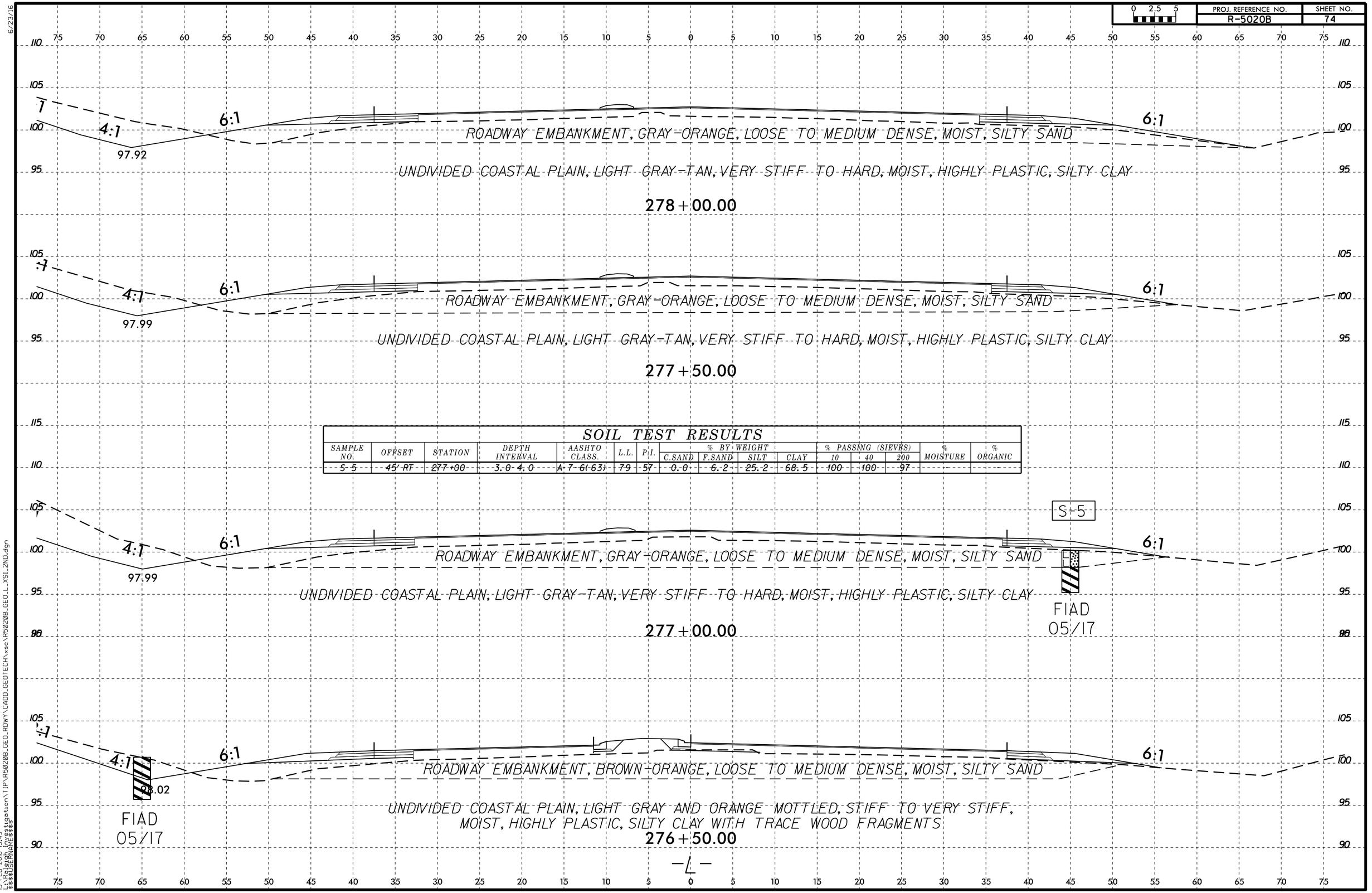
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	73





SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-5	45' RT	277+00	3.0-4.0	A-7-6(63)	79	57	0.0	6.2	25.2	68.5	100	100	97	-	-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	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

110 105 100 95 90

-Y33-

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-BROWN, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

279+50.00

-Y33-

105 100 95

6:1

4:1

97.65

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-BROWN, MEDIUM STIFF TO STIFF, MOIST, SANDY SILT

6:1

FIAD
05/17

279+00.00

115 110 105 100 95 90

3:1

4:1

6:1

97.79

ROADWAY EMBANKEMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-ORANGE, MEDIUM STIFF TO VERY STIFF, MOIST, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY AND SANDY SILT

6:1

FIAD
~~FIAD~~
05/17

278+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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	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

115 110 105 100 95 90

5:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND MEDIUM STIFF TO STIFF, SANDY SILT

ALLUVIAL, LIGHT TO DARK GRAY, VERY SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH WOOD FRAGMENTS AND TRACE ORGANICS

FIAD 05/17

281+00.00

105 100 95 90

6:1

ROADWAY EMBANKMENT, LIGHT-BROWN-BROWN, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

FIAD 05/17

ALLUVIAL, GRAY-DARKGRAY, LIGHT BROWN-ORANGE, BLACK, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

280+50.00

105 100 95 90

-Y33-

ROADWAY EMBANKMENT, LIGHT-BROWN-BROWN, VERY LOOSE TO LOOSE, MOIST, SILTY SAND

-Y33-

ALLUVIAL, GRAY-DARKGRAY, LIGHT BROWN-ORANGE, BLACK, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH WOOD FRAGMENTS AND TRACE ORGANICS

280+00.00

-L-

105 100 95 90 85

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

13-FEB-2018 15:49
L:\Raleigh_Investigation\TIP\R5020B_GEO_RDWY\CADD_GEOTECH\xsc\R5020B_GEO_L_XSI_2ND.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	77

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
S-6	55' LT	282+50	3.0-4.0	A-4(0)	21	6	0.8	60.3	16.7	22.2	100	100	44	-	3.0
S-7	55' LT	282+50	4.0-5.0	A-4(0)	19	6	2.0	59.5	14.3	24.2	100	99	43	-	-

S-6
S-7

4:1

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND MEDIUM STIFF TO STIFF SANDY SILT

ALLUVIAL, LIGHT TO DARK GRAY, VERY SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH WOOD FRAGMENTS AND TRACE ORGANICS

FIAD
05/17

282+50.00

4:1

4:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND MEDIUM STIFF TO STIFF SANDY SILT

ALLUVIAL, LIGHT TO DARK GRAY, VERY SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH WOOD FRAGMENTS AND TRACE ORGANICS

282+00.00

4:1

4.3:1

ROADWAY EMBANKMENT, TAN AND ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND MEDIUM STIFF TO STIFF SANDY SILT

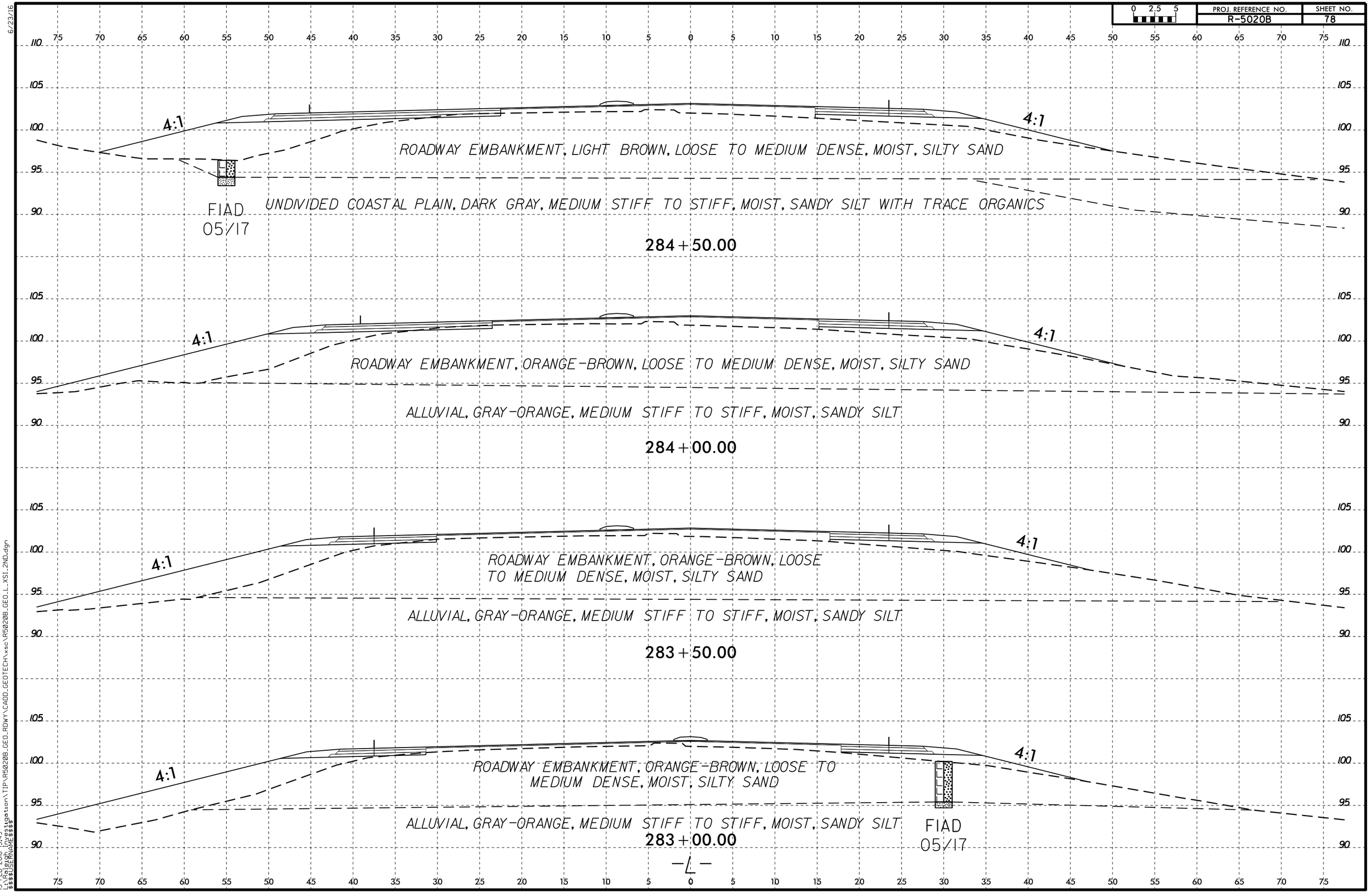
ALLUVIAL, LIGHT TO DARK GRAY, VERY SOFT TO MEDIUM STIFF, MOIST, SANDY SILT WITH WOOD FRAGMENTS AND TRACE ORGANICS

281+50.00

-L-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	78



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	79

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

110 105 100 95

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MED. DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1 6:1 99.65 4:1

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM TO VERY STIFF, MOIST, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY

286+00.00

110 105 100 95

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1

UNDIVIDED COASTAL PLAIN, DARK GRAY, MED. STIFF TO STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS

285+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		
S-4	30' RT	285+00	4.0-5.0	A-4(0)	21	5	4.8	61.9	13.1	20.2	100	98	39	-	-
S-1	75' RT	285+00	3.0-5.0	A-2-4(0)	0	NP	6.2	79.4	4.2	10.1	100	99	19	-	1.9

110 105 100 95 90

Ⓐ ALLUVIAL, GRAY TO DARK GRAY, LOOSE TO MED. DENSE, SILTY SAND WITH TRACE WOOD FRAGMENTS

S-4

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1

S-1

UNDIVIDED COASTAL PLAIN, DARK GRAY, MED. STIFF TO STIFF, MOIST, SANDY SILT WITH TRACE ORGANICS

FIAD 05/17

Ⓐ

FIAD 05/17

285+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

0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
R-5020B	80

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

115 110 105 100 95 90

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM TO VERY STIFF, MOIST, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY

287+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		
S-3	30' RT	287+00	1.0-2.0	A-2-4(0)	0	NP	43.1	42.1	0.6	14.1	100	81	17	-	-

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1 6:1 4:1

S-3

100.00

FIAD 05/17

UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM TO VERY STIFF, MOIST, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY

287+00.00

FIAD 05/17

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE MICA

4:1 6:1 4:1

99.83

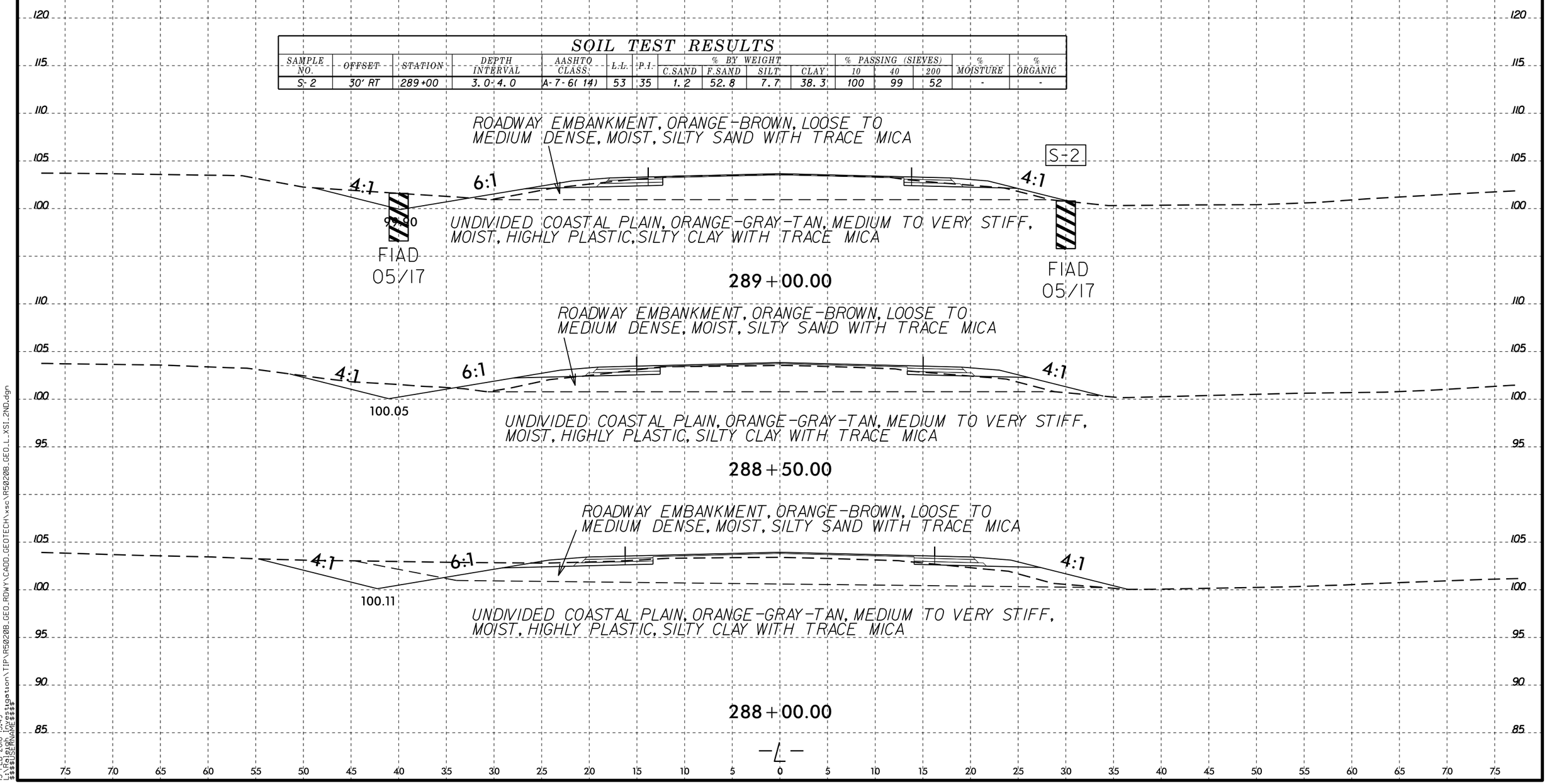
UNDIVIDED COASTAL PLAIN, GRAY-ORANGE, MEDIUM TO VERY STIFF, MOIST, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY

286+50.00

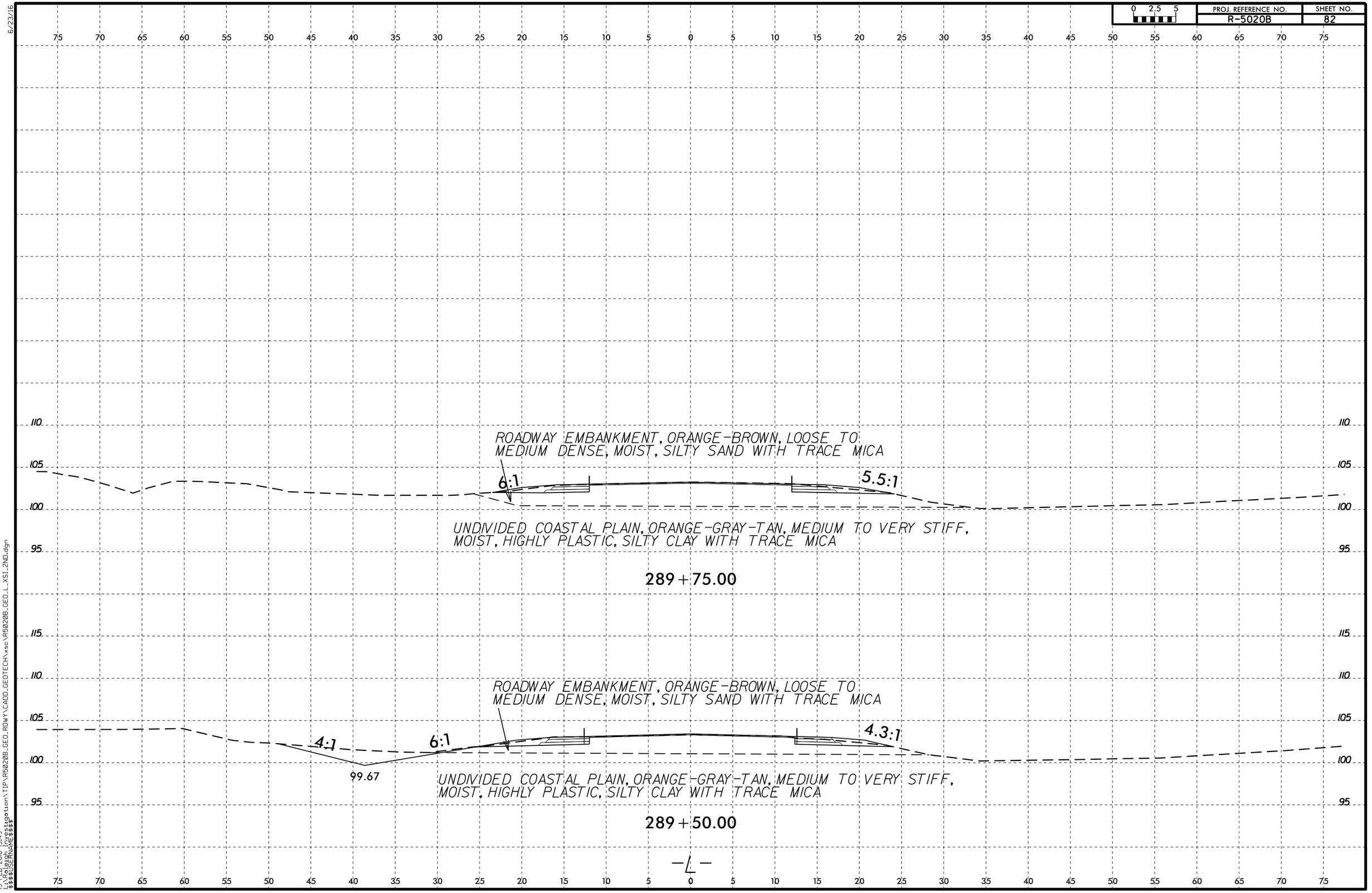
—L—

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
S-2	30' RT	289+00	3.0-4.0	A-7-6(14)	53	35	1.2	52.8	7.7	38.3	100	99	52	-	-



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	82



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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	83

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

110 105 100 95 90 85

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

14+00.00

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

13+50.00

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

13+47.27

-RPA-

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	84

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

110 105 100 95 90 85

6:1

3.4:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

15+50.00

6:1

3:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

15+00.00

3:1

ROADWAY EMBANKMENT, ORANGE-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-ORANGE, MEDIUM STIFF TO STIFF, MOIST, SANDY CLAY

14+50.00

-RPA-

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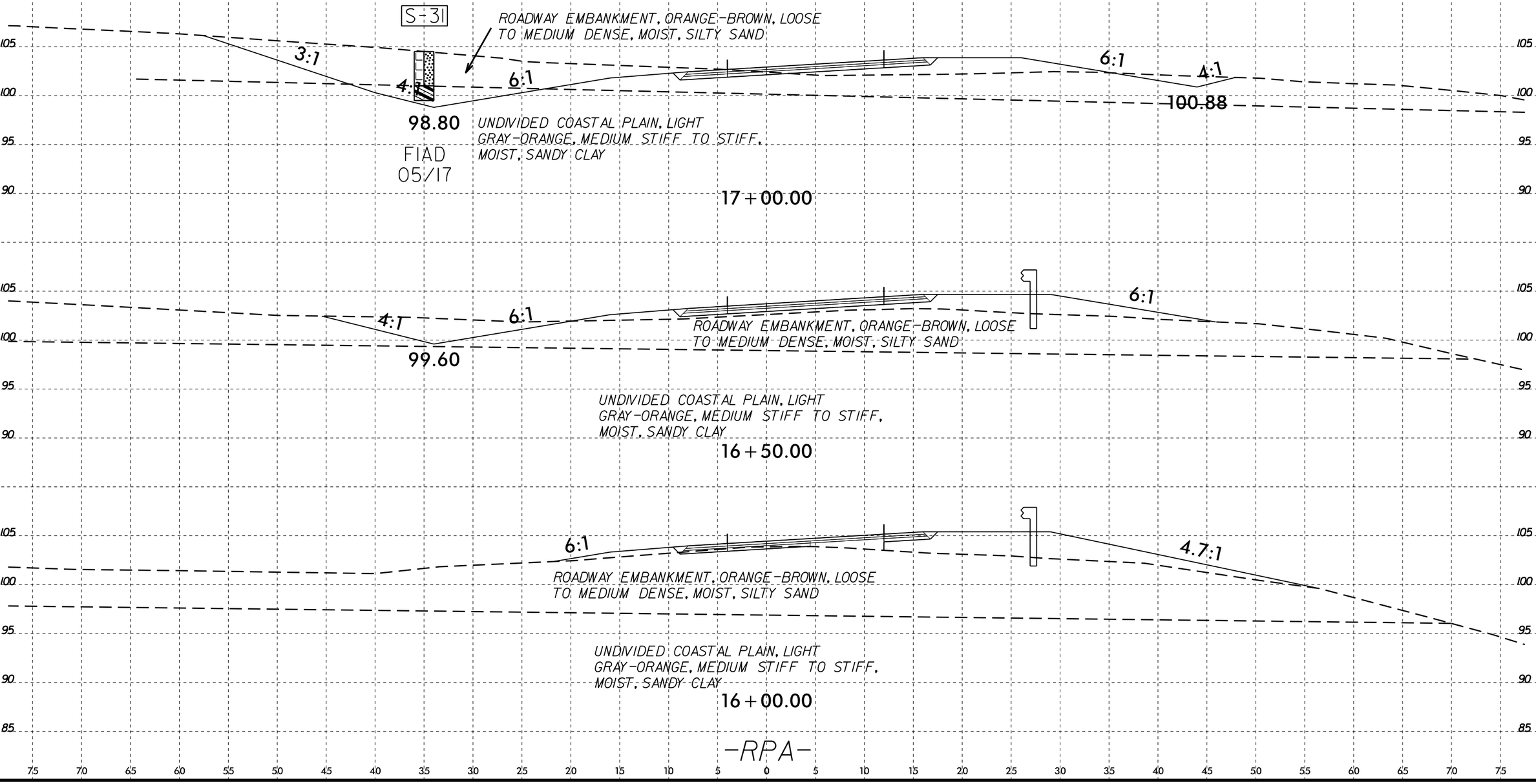
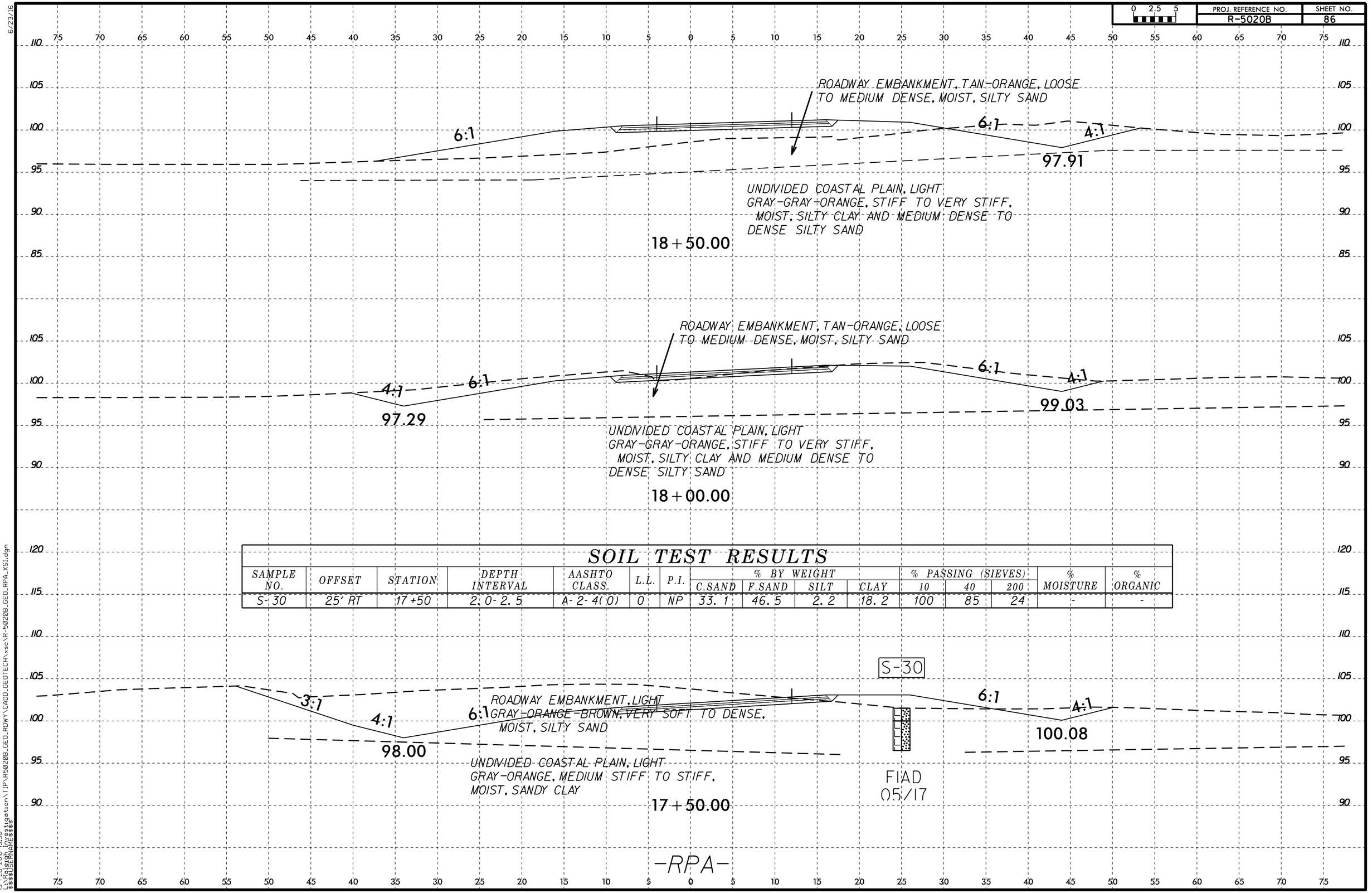
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	85

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-31	35' LT	17+00	4.0-4.5	A-6(1)	29	13	1.6	64.0	8.1	26.3	100	100	39	-	-



0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	86



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-30	25' RT	17+50	2.0-2.5	A-2-4(0)	0	NP	33.1	46.5	2.2	18.2	100	85	24	-	-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	87

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

110 105 100 95 90 85

ROADWAY EMBANKMENT, TAN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

6:1

6:1

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-ORANGE, STIFF TO VERY STIFF, MOIST, SILTY CLAY AND MEDIUM DENSE TO DENSE SILTY SAND

19+50.00

ROADWAY EMBANKMENT, TAN-ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

6:1

6:1

4:1

97.34

FIAD
05/17

FIAD
05/17

UNDIVIDED COASTAL PLAIN, LIGHT GRAY-GRAY-ORANGE, STIFF TO VERY STIFF, MOIST, SILTY CLAY AND MEDIUM DENSE TO DENSE SILTY SAND

19+00.00

-RPA-

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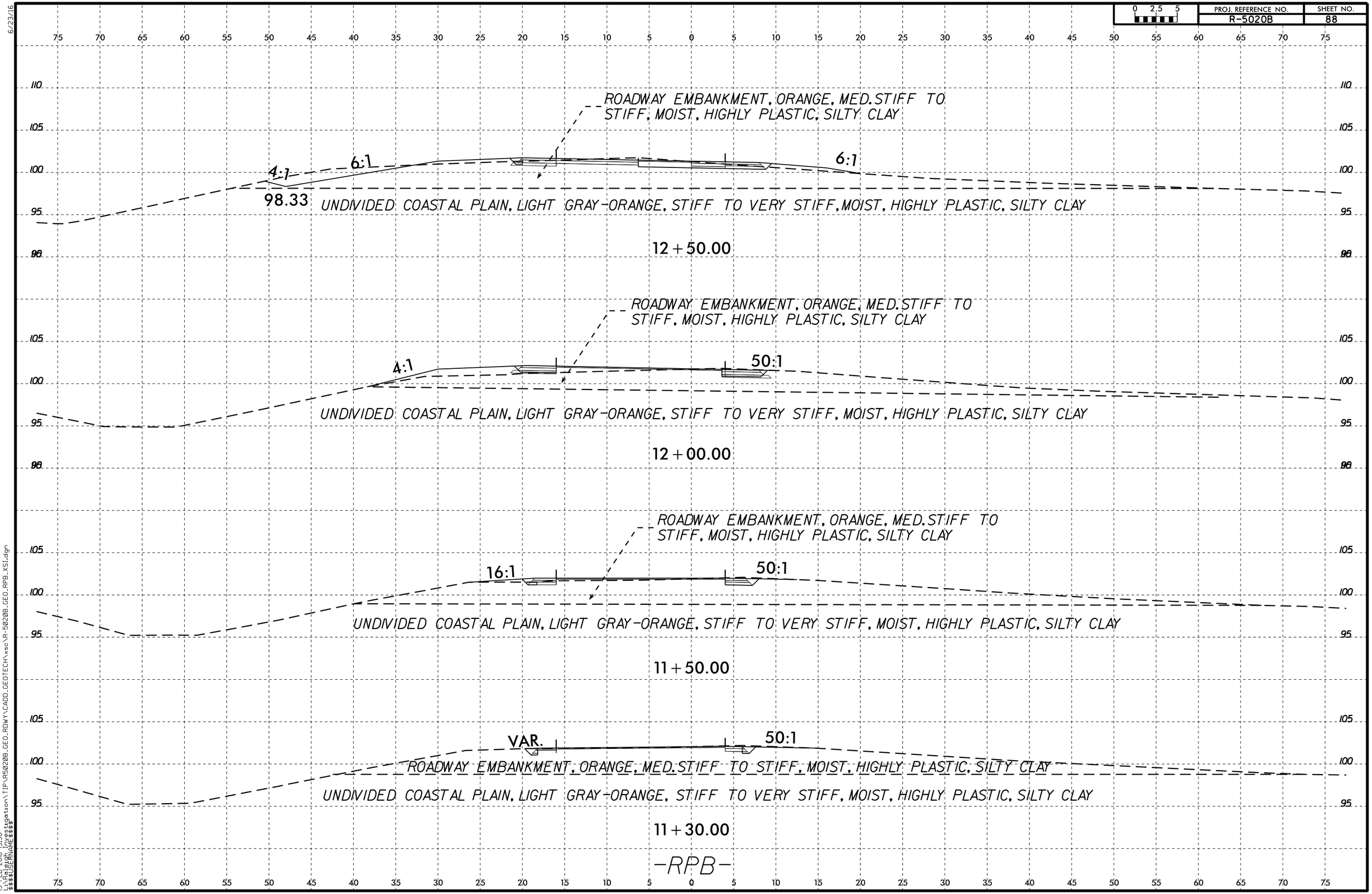
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	88



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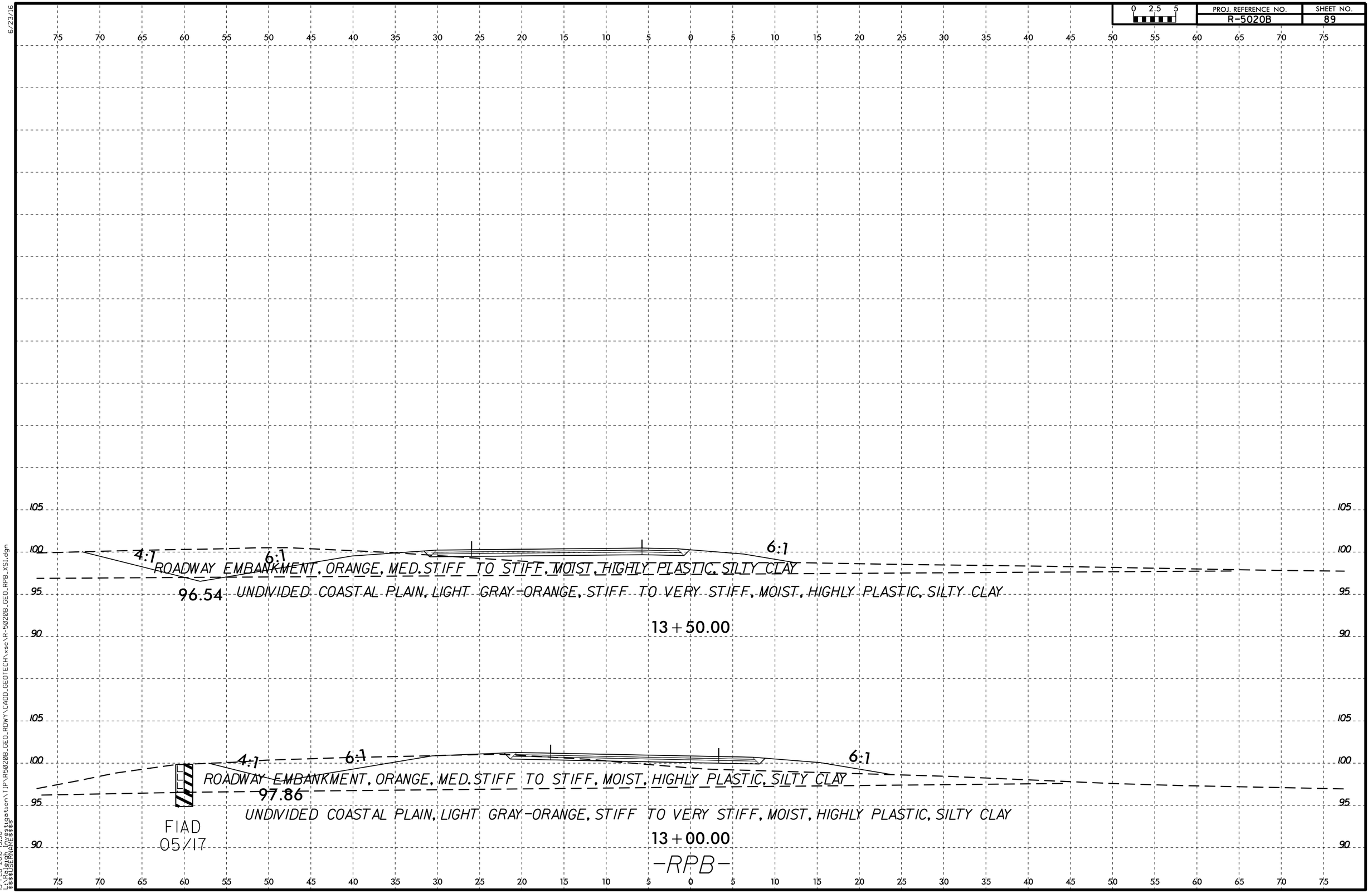
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	89



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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	90

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

110 105 100 95 90

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

16+00.00

110 105 100 95 90

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

15+50.00

105 100 95 90 85

114:1

10.6:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

15+00.00

-RPC-

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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	91

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

115 110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

17 + 50.00

110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF SANDY SILT AND CLAY

17 + 00.00

110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF SANDY SILT AND CLAY

16 + 50.00

85

-RPC-

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

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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	92

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

115 110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

19+00.00

110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

18+50.00

110 105 100 95 90

6:1

4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

18+00.00

-RPC-

105 100 95 90 85

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

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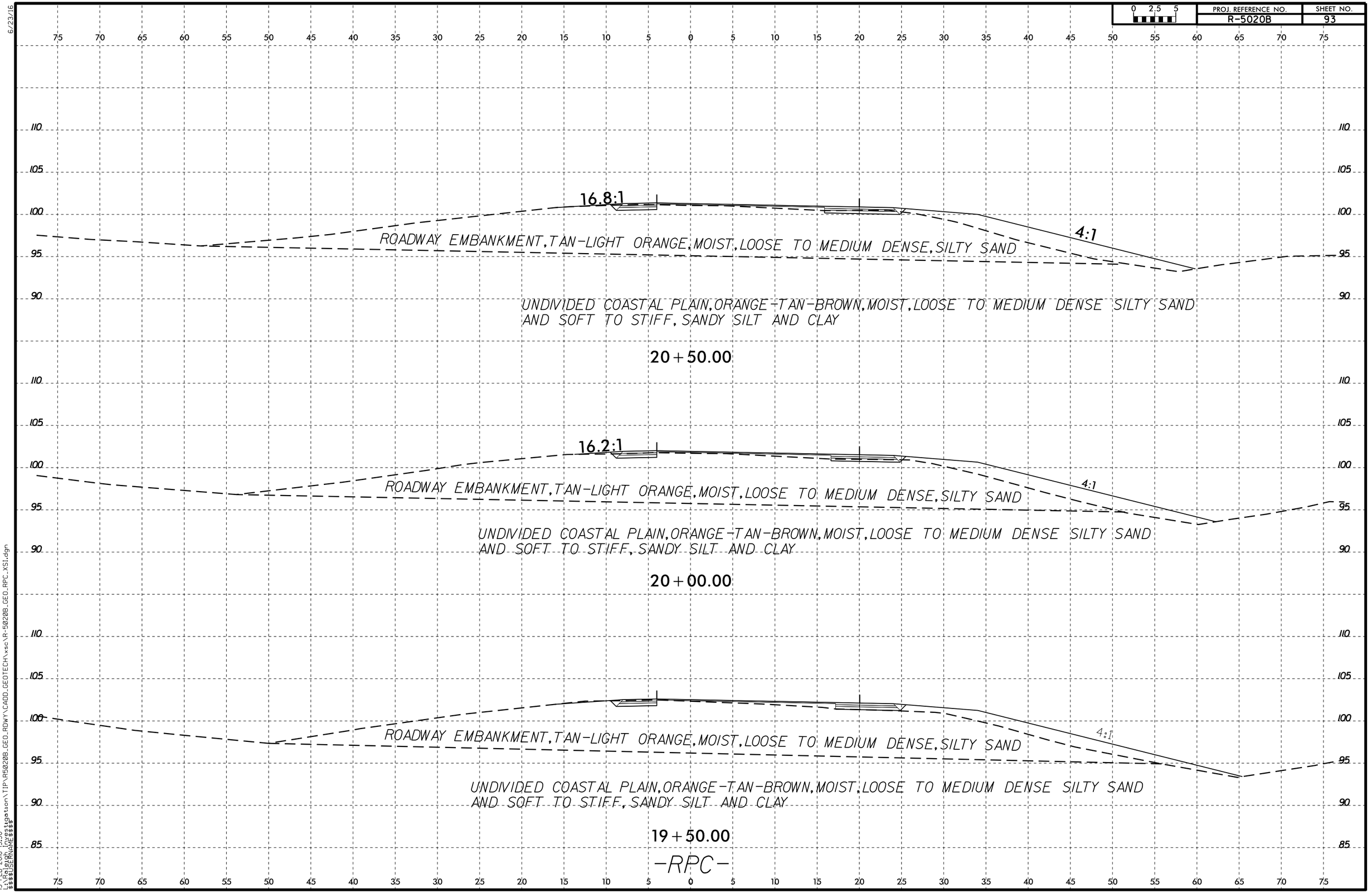
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	93



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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	94

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

105 100 95 90

14.4:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

22+00.00

105 100 95 90

17.5:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

21+50.00

105 100 95 90

27.2:1

ROADWAY EMBANKMENT, TAN-LIGHT ORANGE, MOIST, LOOSE TO MEDIUM DENSE, SILTY SAND

4:1

UNDIVIDED COASTAL PLAIN, ORANGE-TAN-BROWN, MOIST, LOOSE TO MEDIUM DENSE SILTY SAND AND SOFT TO STIFF, SANDY SILT AND CLAY

21+00.00

85

-RPC-

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

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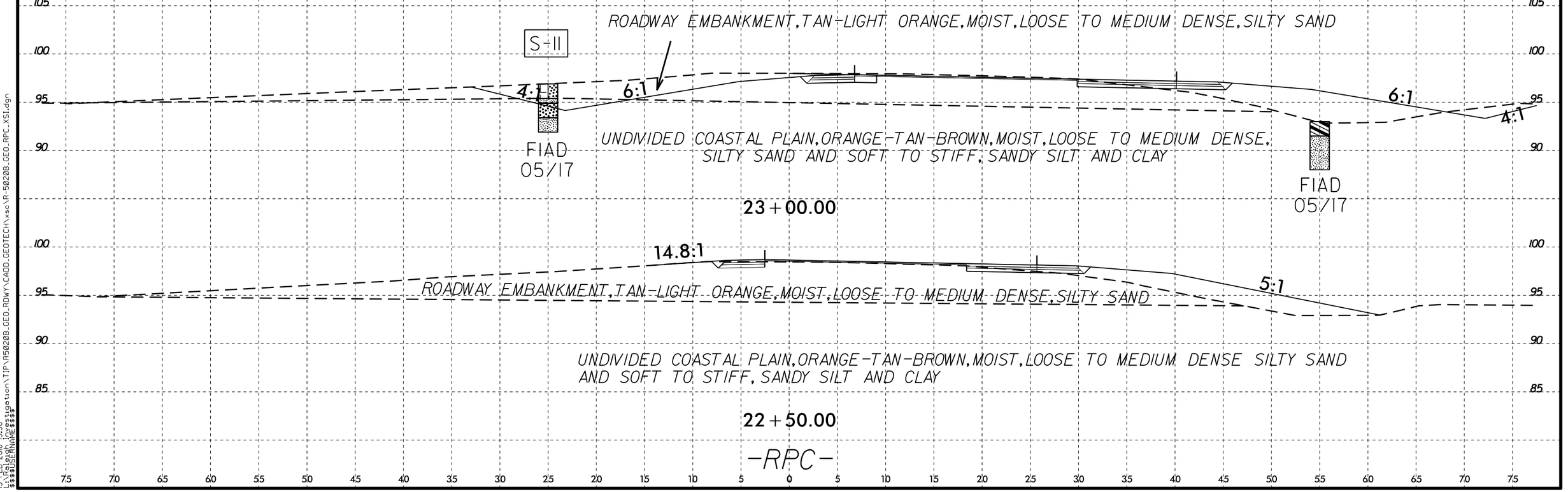
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	95

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-11	25' LT	23+00	4.0-4.5	A-4(0)	26	6	1.4	60.8	15.6	22.2	100	100	38	-	-
S-12	55' RT	23+00	0.8-1.3	A-6(3)	30	15	8.5	49.3	11.9	30.3	100	95	47	-	-
S-13	55' RT	23+00	2.0-2.5	A-4(0)	20	2	1.4	66.9	15.6	16.2	100	100	38	-	-

S-12
S-13



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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	96

14:1

9.42:1

ROADWAY EMBANKMENT, ORANGE-DARK GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

UNDIVIDED COASTAL PLAIN, GRAY-TAN, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND LOOSE TO MEDIUM DENSE SILTY SAND

13+00.00

12.8:1

10.8:1

ROADWAY EMBANKMENT, ORANGE-DARK GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

UNDIVIDED COASTAL PLAIN, GRAY-TAN, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND LOOSE TO MEDIUM DENSE SILTY SAND

12+50.00

13.5:1

ROADWAY EMBANKMENT, ORANGE-DARK GRAY, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND WITH TRACE PEBBLES

UNDIVIDED COASTAL PLAIN, GRAY-TAN, SOFT TO MEDIUM STIFF, MOIST, SANDY SILT AND LOOSE TO MEDIUM DENSE SILTY SAND

12+20.00

-RPD-

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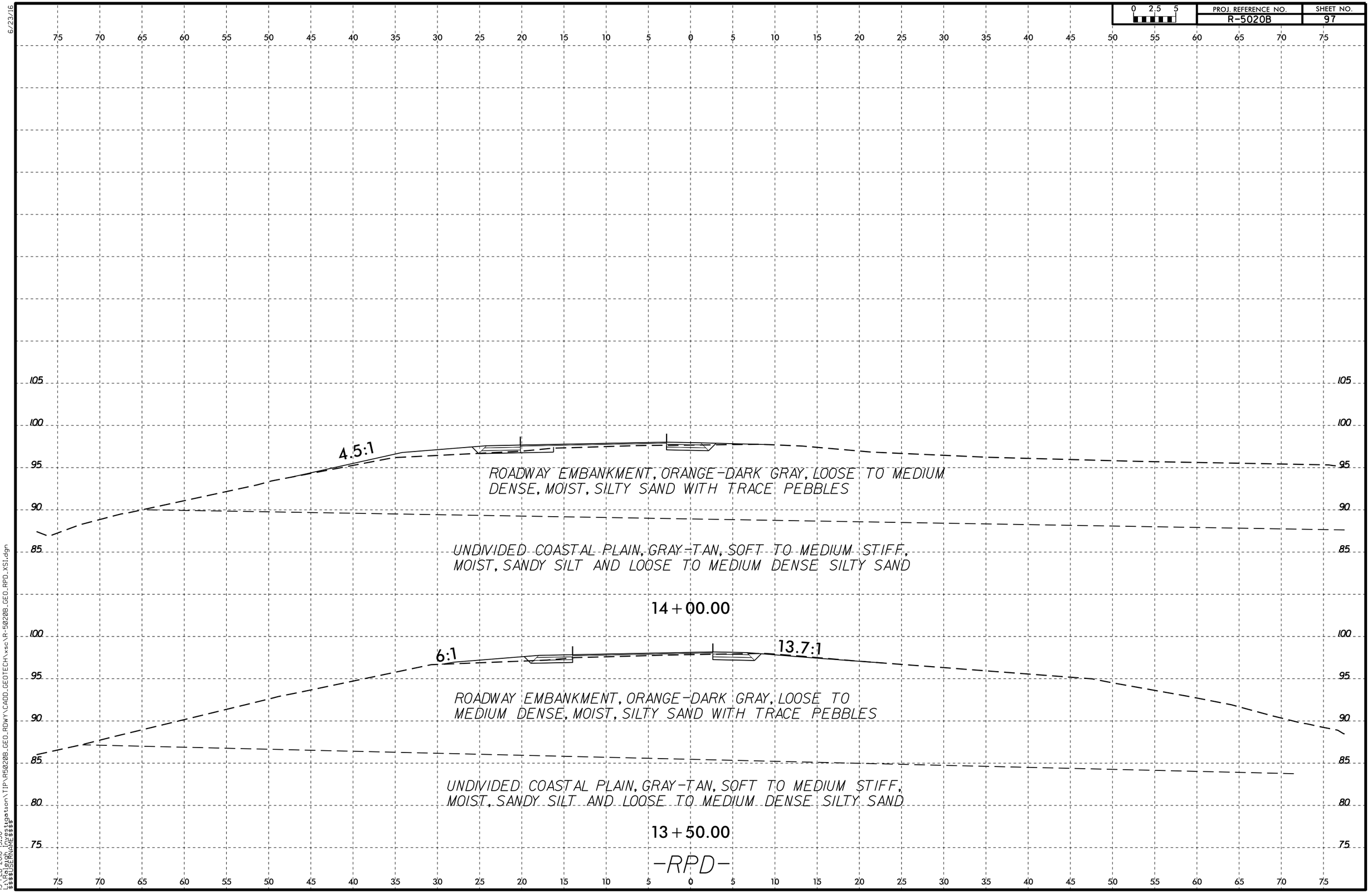
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	97



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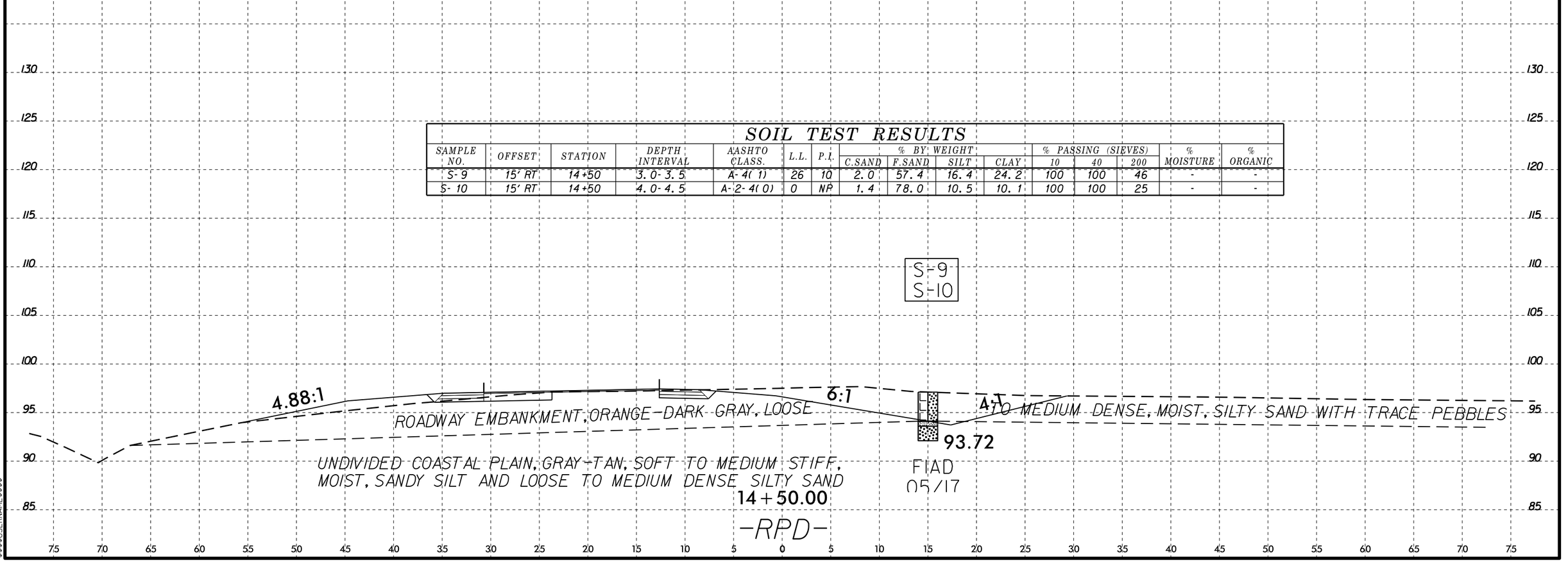
6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	98

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-9	15' RT	14+50	3.0-3.5	A-4(1)	26	10	2.0	57.4	16.4	24.2	100	100	46	-	-
S-10	15' RT	14+50	4.0-4.5	A-2-4(0)	0	NP	1.4	78.0	10.5	10.1	100	100	25	-	-



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6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	99

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

85
80
75

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

70

13+00.00

80
75

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

70

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

12+50.00

80
75

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

70

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

65

12+25.00

-Y31-

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

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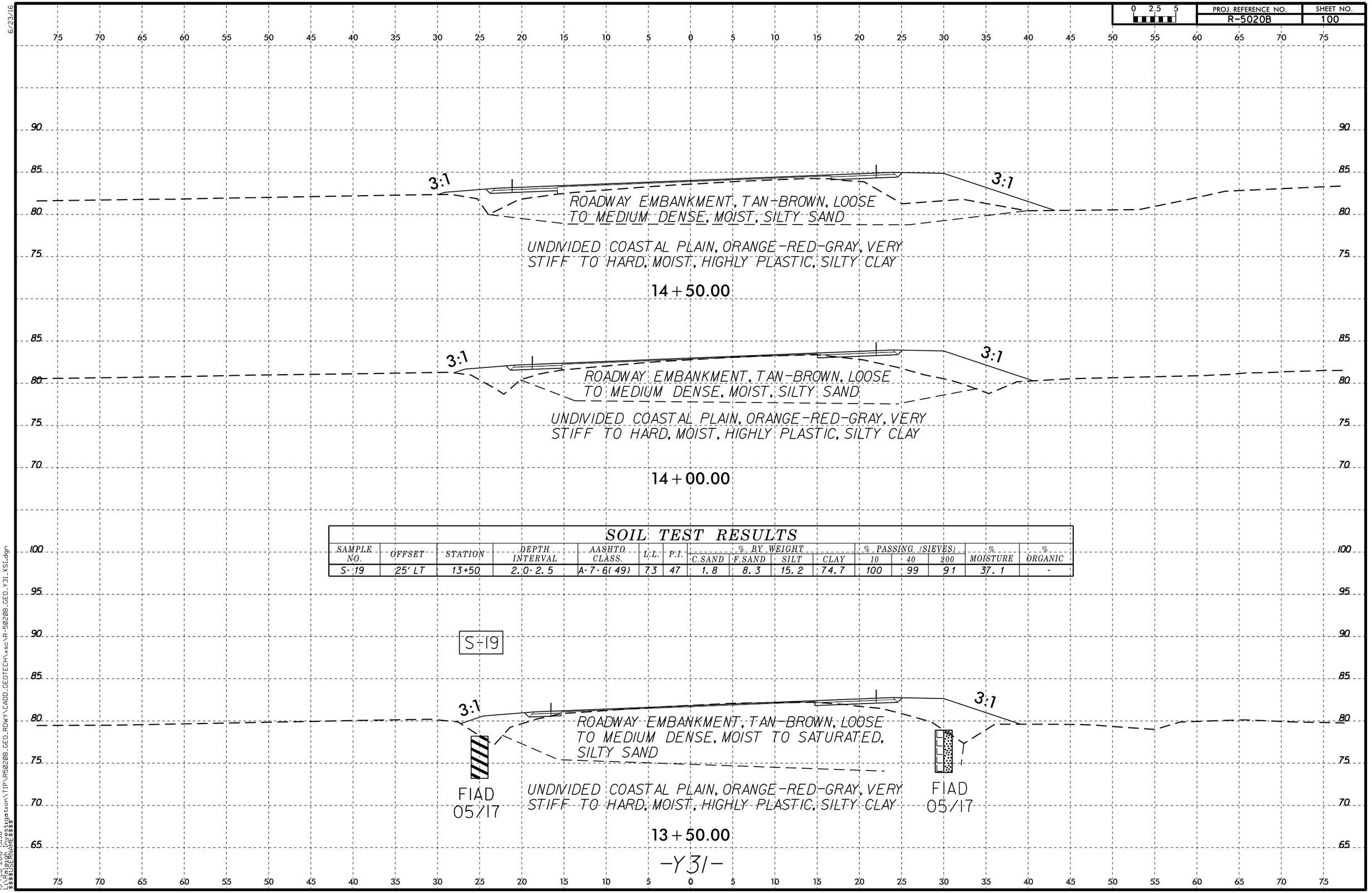
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	100



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-19	25' LT	13+50	2.0-2.5	A-7-6(49)	73	47	1.8	8.3	15.2	74.7	100	99	91	37.1	-

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	101

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

95 90 85 80

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

16+50.00

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

16+00.00

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

15+50.00

3:1

ROADWAY EMBANKMENT, TAN-BROWN, LOOSE TO MEDIUM DENSE, MOIST, SILTY SAND

3:1

UNDIVIDED COASTAL PLAIN, ORANGE-RED-GRAY, VERY STIFF TO HARD, MOIST, HIGHLY PLASTIC, SILTY CLAY

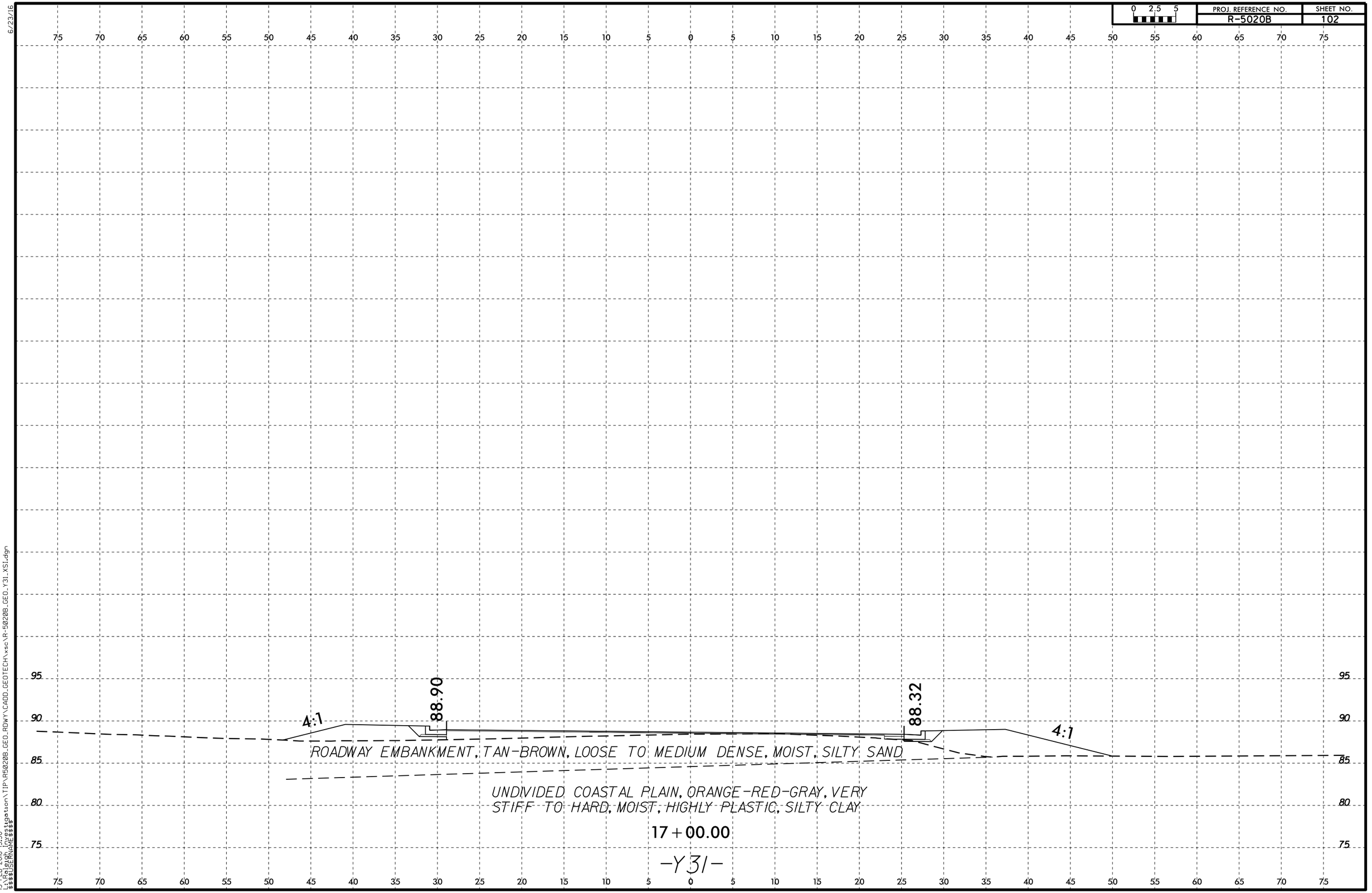
15+00.00

95 90 85 80 75 70

-Y31-

6/23/16

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	R-5020B	102



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