ID: P-4900

CONTRACT: 41099.1.2

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

CONTENTS

LINE	STATION	PLAN	PROFILE
L	10+00-17+00	4	4
L	17+00-23+00	5	5
L	23+50	5	5
L	24+00-31+00	5	5
L	31+00-45+00	6	6
L	45+00-55+50	7	7
L	56+00	7	7
L	56+50-59+00	7	7
L	59+00-73+00	8	8
L	73+00-87+00	9	9
L	87+00-101+00	10	10
L	101+00-115+00	11	11
L	115+00-129+00	12	12
L	129+00-135+00	13	13

SHEET	DESCRIPTION
14-16	SOIL TEST RESULT(S)

CROSS SECTIONS

LINE	STATION	SHEETS
L	11+00-24+50	17-33
L	28+00-34+50	34-40
L	39+00-41+50	41-44
L	55+00-57+50	45-48
L	84+00-88+50	48-53
L	108+00-120+50	53-66
L	122+50-132+50	66-75

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

ROADWAY SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. *41099.1.2 (P-4900)* F.A. PROJ. *TCSP-0635(5)*

COUNTY *ROBESON*

PROJECT DESCRIPTION *RAILROAD BYPASS OF PEMBROKE TO ALLOW NORTH TO SOUTH SHIPMENTS TO TURN EAST*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	41099.1.2 (P-4900)	1	75

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
41099.1.2	TCSP-0635(5)	P.E.
		R/W & UTIL.

CAUTION NOTICE

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O.B. OTI

H.R. CONLEY

J.R. MATULA

INVESTIGATED BY *J.R. SWARTLEY*

CHECKED BY *N.T. ROBERSON*

SUBMITTED BY *N.T. ROBERSON*

DATE *JANUARY 2015*

NORTH CAROLINA LICENSED SEAL 2296 GEOLOGIST JARETT T. SWARTLEY

Docusigned by: Jarett Swartley 1/13/2015

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DRAWN BY: *J.R. SWARTLEY, T.T. WALKER*

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PROJECT REFERENCE NO.	SHEET NO.
41099.1.2 (P-4900)	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 TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE:

VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	A-1		A-3	A-2				A-4	A-5	A-6	A-7	A-1, A-2 A-3	A-4, A-5 A-6, A-7	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5 A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
LIQUID LIMIT	6 MX		NP	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
PLASTIC INDEX				10 MX	10 MX	11 MN	11 MN	10 MX	10 MX	11 MX	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 A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

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

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE	<4	N/A
	LOOSE	4 TO 10	
	MEDIUM DENSE	10 TO 30	
	DENSE	30 TO 50	
	VERY DENSE	>50	
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT	<2	<0.25
	SOFT	2 TO 4	0.25 TO 0.50
	MEDIUM STIFF	4 TO 8	0.5 TO 1.0
	STIFF	8 TO 15	1 TO 2
	VERY STIFF	15 TO 30	2 TO 4
	HARD	>30	>4

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NONPLASTIC	0-5	VERY LOW
LOW PLASTICITY	6-15	SLIGHT
MED. PLASTICITY	16-25	MEDIUM
HIGH PLASTICITY	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.
UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)
GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES 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 WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 31
MODERATELY COMPRESSIBLE	LIQUID LIMIT EQUAL TO 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT - CLAY SOILS
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%
MODERATELY ORGANIC	5 - 10%	12 - 20%
HIGHLY ORGANIC	>10%	>20%

OTHER MATERIAL	
TRACE	1 - 10%
LITTLE	10 - 20%
SOME	20 - 35%
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 W/ CORE
- SPT N-VALUE
- REF — SPT REFUSAL

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:
- ☐ MOBILE B-___
- ☐ BK-51
- ☐ CME-45C
- ☐ CME-550
- ☐ 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_____
- ☐ -N_____
- ☐ -H_____

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

ROCK DESCRIPTION

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

WEATHERED ROCK (WR)	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, YIELDS SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, YIELDS 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 FEET
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 THE 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, 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: FT.

NOTES:

REVISED 09/23/09

09/08/99

TIP PROJECT: P-4900

CONTRACT: 41099.1.2

STATE OF NORTH CAROLINA
NCDOT RAIL DIVISION

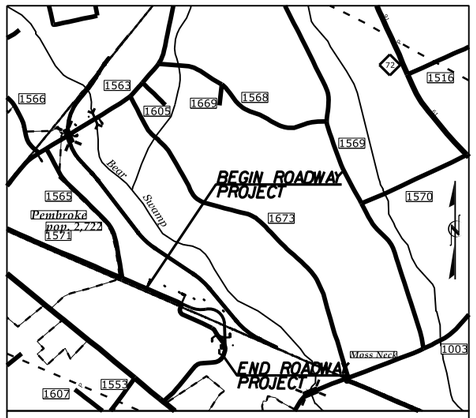
ROBESON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	P-4900	2A	75

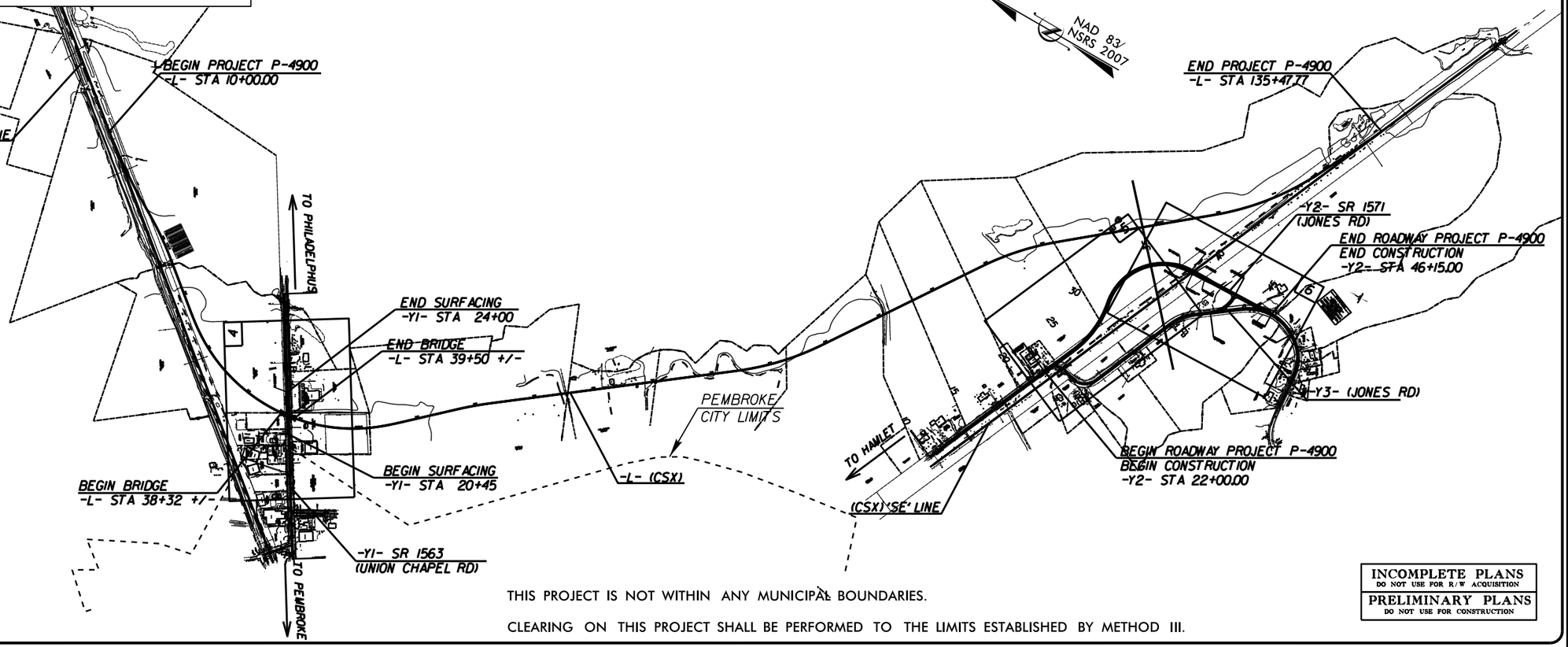
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
41099.1.2	TCSP-0635(5)	PE, R/W

LOCATION: RAIL GRADE SEPARATION OVER SR 1563 (UNION CHAPEL RD) & GRADE CROSSING RELOCATION ON SR 1571 (JONES RD).

TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURE.



VICINITY MAP



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA -Y1-

ADT 2012 = 7,800
ADT 2035 = 15,600
DHV = 10 %
D = 60 %
T = 3 % *
V = 40 MPH
* TTST =1 DUAL =2
FUNC CLASS = LOCAL

SUB REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT P-4900 = 0.457

TOTAL LENGTH OF ROADWAY PROJECT P-4900 = 0.457

Prepared In the Office of:

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
APRIL 30, 2014

LETTING DATE:
APRIL 15, 2015

ENRICO A. ROQUE, P.E.
PROJECT ENGINEER

BRIAN BLACKWELL, E.I.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

NC DEPARTMENT OF TRANSPORTATION
RAIL DIVISION
DESIGN AND CONSTRUCTION

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONTY J. TATA
SECRETARY

January 5, 2015

STATE PROJECT: 41099.1.2 (P-4900)
FEDERAL PROJECT: TCSP-0635(5)
COUNTY: Robeson
DESCRIPTION: Railroad Bypass of Pembroke to allow North to South Shipments to turn East

SUBJECT: Geotechnical Report – Inventory

The Geotechnical Engineering Unit has completed a subsurface investigation for this project and presents the following inventory. Plans, profiles and cross-sections will be included in this report.

Project Description

The project corridor is in Robeson County within the town of Pembroke. This project proposes a railroad (-L-) connecting the North-South and East-West CSX lines. The proposed railroad begins just north of Bear Swamp along the existing CSX line and continues southeast, merging with the East-West line. The railroad alignment passes over Union Chapel Rd. (-Y2-).

The geotechnical field investigation was conducted during the period of January through April 2014. The Geotechnical Engineering Unit's drill crew was used to drill, sample, and log part of the borings in this report. The Geotechnical Engineering Unit used a track mounted CME-55 with an automatic hammer during the investigation. Two consultants were contracted to complete the majority of the project, Catlin and Mid-Atlantic. Catlin was contracted to drill, log and sample the land borings along the project. Catlin used a track mounted CME-45B. Both an NCDOT geologist and a Catlin field geologist were used to log these borings. Mid-Atlantic was subcontracted to drill the borings in Bear Swamp. A marsh buggy mounted CME-45C was used for these borings. An NCDOT geologist was used to log the borings with Mid-Atlantic. Standard Penetration Tests were performed in all of the borings. Representative soil samples were collected for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

The following alignment, totaling 2.4 miles, was investigated. Subsurface soil profiles, and cross-sections, of these alignments are included in this report.

Line	Station
-L-	10+00 to 135+48

Areas of Special Geotechnical Interest

1) The entire project contains soft, cohesive soils which have the potential to cause embankment stability and/or long term settlement problems.

2) All but the following sections were found to exhibit groundwater within 6 feet of natural ground or higher:

Alignment	Station	Offset
-L-	110+00	CL
-L-	114+00	CL
-L-	118+00	CL
-L-	126+00	33 LT

3) The following sections contains relatively soft, soils with little organic content which have the potential for problems during construction.

Alignment	Station	Offset
-L-	23+50	40 LT
-L-	56+00	50 LT

Physiography and Geology

The project is located in the Coastal Plain physiographic province of North Carolina. A mixture of fields, pastures, and some wooded areas lie within the project corridor. The terrain is generally flat to slightly rolling. Surficial soils in this area are Quaternary-Tertiary aged alluvial deposits categorized as Undivided Coastal Plain deposits. These deposits are underlain by Cretaceous-aged deposits of the Black Creek Formation. Geologically, most of the soils in this area were likely deposited in a delta floodplain fluvial setting associated with the Lumber River basin. Soft to very soft cohesive soils are common throughout most of the project. No rock was encountered.

Soil Properties

Soils encountered at the project site include roadway embankment soils, alluvial sediments, Undivided Coastal Plain sediments, and Coastal Plain soils belonging to the Black Creek formation.

Roadway embankment soil occurs underneath Union Chapel Rd. The existing embankment is generally one to two feet in height and consists of gray and orange, med. dense, silty sand (A-2-4) and medium stiff, sandy clay (A-6).

Alluvial soils occur in and around the Bear Swamp channel. The alluvial soils are approximately 15 to 20 feet thick, and consist of very soft to medium stiff, wet, sandy silt (A-4), sandy clay (A-6), silty clay (A-7-6) and very loose, silty sand (A-2-4).

Undivided Coastal Plain soils make up the surficial deposits across the project. These soils consist of gray, tan and orange, very soft to med. stiff silty clay (A-7-6), sandy clay (A-6), sandy silt (A-4) and silty

sand (A-2-4). The cohesive soils exhibit medium to high plasticity indexes and have natural moisture contents of 23 to 86 percent.

Coastal Plain soils belonging to the Black Creek Formation underlay the Undivided Coastal Plain soils. These soils consist of gray, very soft to med. stiff silty clay (A-7-6), sandy clay (A-6), sand and silty sand (A-3,A-2-4). The cohesive soils exhibit low to high plasticity indexes and have natural moisture contents of 16 to 58 percent

Prepared by,
DocuSigned by:
Jarett Swartley
7F355C29F75A413...
1/13/2015

Jarett Swartley
Project Geological Engineer

Groundwater

Groundwater was encountered in most borings. Groundwater ranges from 1.5' to 8.5' below the ground surface. The surface water depth in Bear Swamp varied from approximately 0.5' to 1.0' during this investigation.

Undisturbed Samples

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

Sample No.	Station (-L-)	Depth	Test
ST-1A	38+37	20.5-22.5	Consolidation, Triaxial CU
ST-1	42+00	13.5-15.5	Consolidation, Triaxial CU
ST-2	42+00	16.0-18.0	Consolidation, Triaxial CU
ST-7	28+00	14.5-16.5	Consolidation, Triaxial CU
ST-8	28+00	16.5-18.5	Consolidation, Triaxial CU
ST-14	59+00	20.0-22.0	Consolidation, Triaxial CU
ST-15	59+00	23.5-25.5	Consolidation, Triaxial CU
ST-19	82+00	11.1-13.1	Consolidation, Triaxial CU
ST-25	102+00	16.5-18.5	Consolidation, Triaxial CU
ST-26	102+00	21.5-23.5	Consolidation, Triaxial CU
ST-53	21+50	11.7-13.7	Consolidation, Triaxial CU
ST-54	20+00	15.9-17.9	Consolidation, Triaxial CU
ST-58	38+17	21.5-23.5	Consolidation, Triaxial CU

Graveyards

There is one graveyard that is located within very close proximity to the project and should be noted.

Alignment	Station	Offset
-L-	56+00	60 RT

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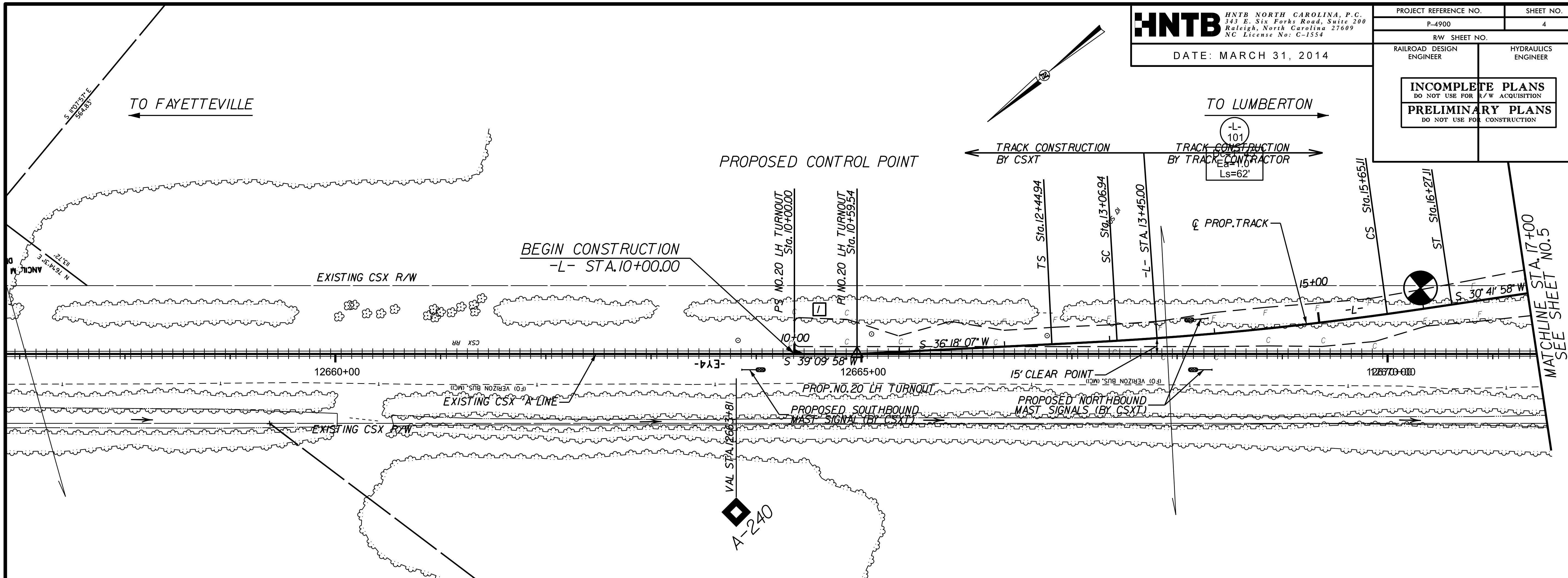
NC License No: C-1554

DATE: MARCH 31, 2014

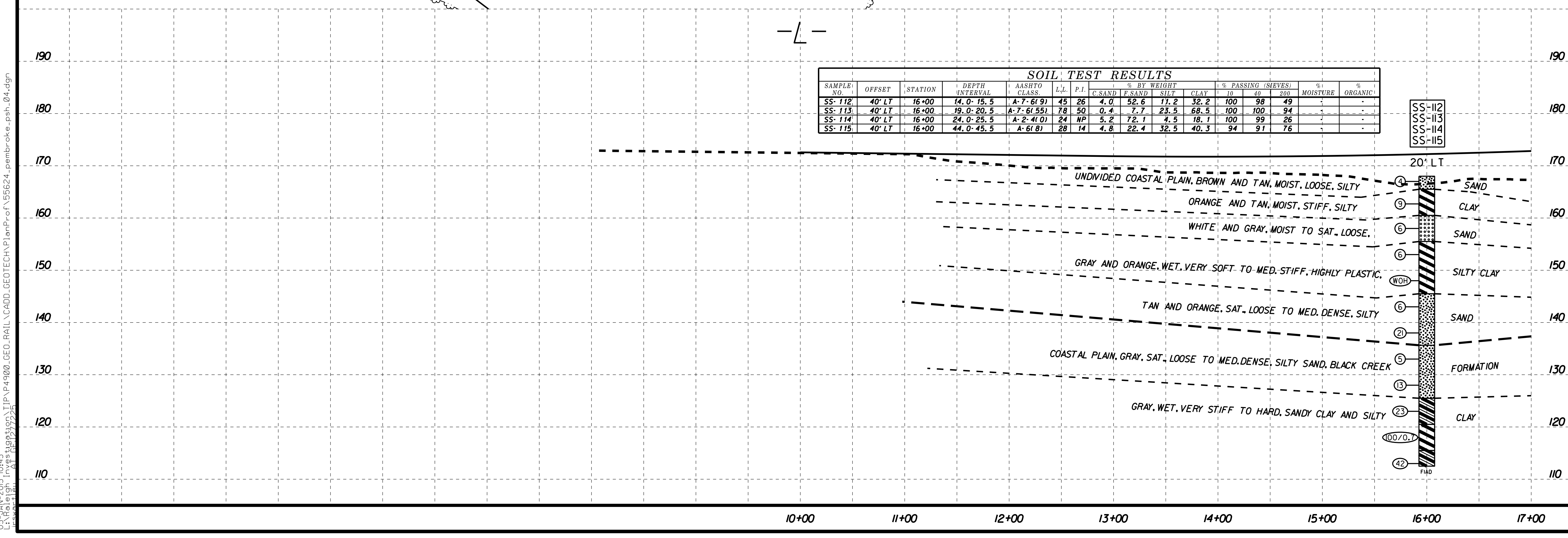
PROJECT REFERENCE NO.	SHEET NO.
P-4900	4
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION



TO FAYETTEVILLE
TO LUMBERTON
PROPOSED CONTROL POINT
TRACK CONSTRUCTION BY CSXT
TRACK CONSTRUCTION BY TRACK CONTRACTOR
BEGIN CONSTRUCTION -L- STA.10+00.00
EXISTING CSX R/W
PS NO.20 LH TURNOUT Sta.10+00.00
PS NO.20 LH TURNOUT Sta.10+59.54
TS Sta.12+44.94
SC Sta.13+06.94
-L- STA.13+45.00
CS Sta.15+65.11
ST Sta.16+27.11
℄ PROP.TRACK
15+00
S 30°41' 58" W
S 36°18' 07" W
S 39°09' 58" W
10+00
12660+00
12665+00
15' CLEAR POINT
PROP.NO.20 LH TURNOUT
EXISTING CSX 'A' LINE
PROPOSED SOUTHBOUND MAST SIGNAL (BY CSXT)
PROPOSED NORTHBOUND MAST SIGNALS (BY CSXT)
EXISTING CSX R/W
VAL STA.12663+81
A-240
MATCHLINE STA.17+00 SEE SHEET NO.5



-L-
190
180
170
160
150
140
130
120
110
SS-112
SS-113
SS-114
SS-115
20' LT
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
10+00
11+00
12+00
13+00
14+00
15+00
16+00
17+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-112	40' LT	16+00	14.0-15.5	A-7-6(9)	45	26	4.0	52.6	11.2	32.2	100	98	49	-	-
SS-113	40' LT	16+00	19.0-20.5	A-7-6(55)	78	50	0.4	7.7	23.5	68.5	100	100	94	-	-
SS-114	40' LT	16+00	24.0-25.5	A-2-4(0)	24	NP	5.2	72.1	4.5	18.1	100	99	26	-	-
SS-115	40' LT	16+00	44.0-45.5	A-6(8)	28	14	4.8	22.4	32.5	40.3	94	91	76	-	-

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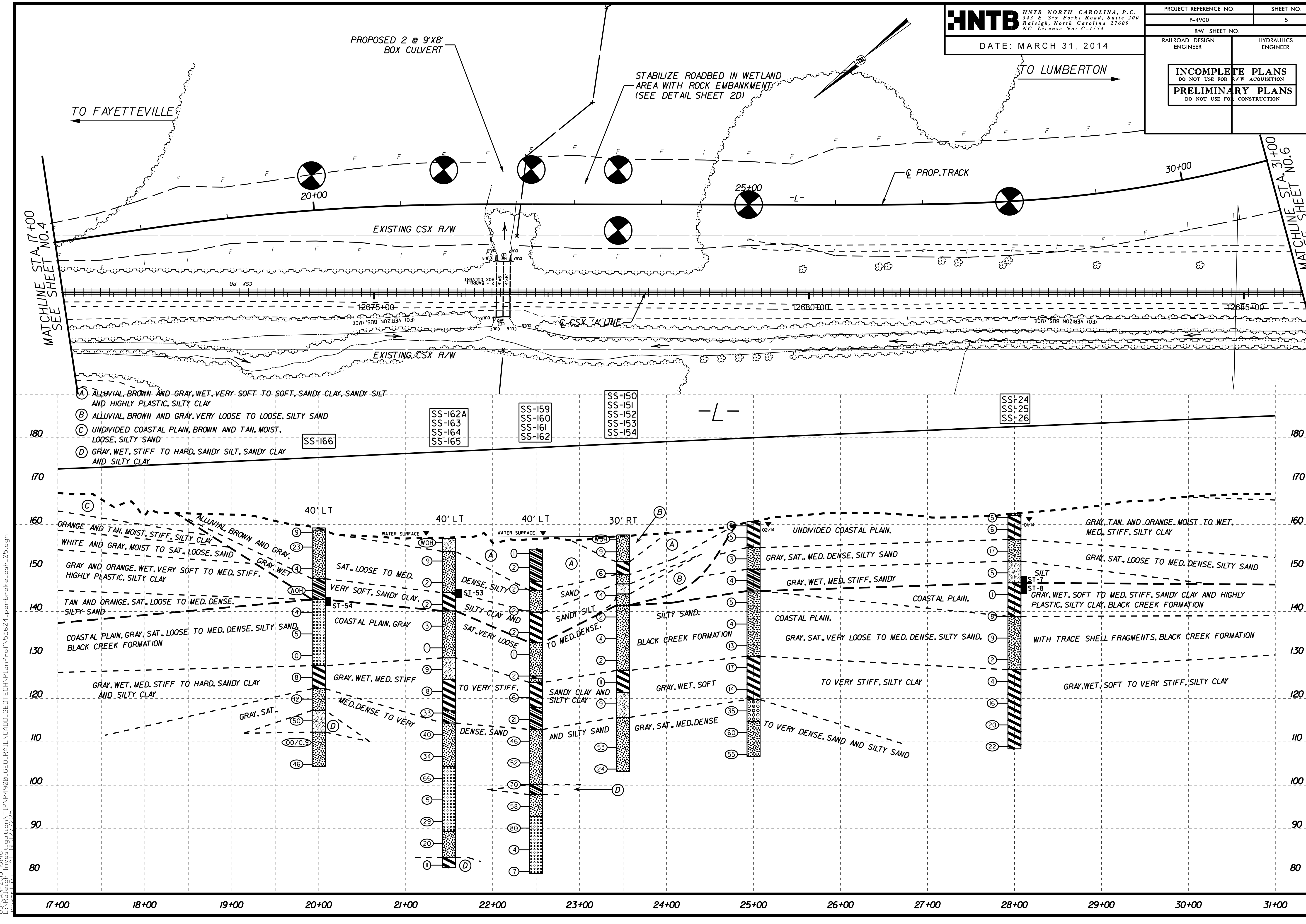
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	5
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TO FAYETTEVILLE
TO LUMBERTON
PROPOSED 2 @ 9'X8' BOX CULVERT
STABILIZE ROADBED IN WETLAND AREA WITH ROCK EMBANKMENT (SEE DETAIL SHEET 2D)
℄ PROP. TRACK
-L-
20+00
25+00
30+00
EXISTING CSX R/W
℄ CSX 'A' LINE
12675+00
12680+00
12685+00
MATCHLINE STA. 17+00 SEE SHEET NO. 4
MATCHLINE STA. 31+00 SEE SHEET NO. 6
(A) ALLUVIAL, BROWN AND GRAY, WET, VERY SOFT TO SOFT, SANDY CLAY, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY
(B) ALLUVIAL, BROWN AND GRAY, VERY LOOSE TO LOOSE, SILTY SAND
(C) UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
(D) GRAY, WET, STIFF TO HARD, SANDY SILT, SANDY CLAY AND SILTY CLAY
SS-166
SS-162A SS-163 SS-164 SS-165
SS-159 SS-160 SS-161 SS-162
SS-150 SS-151 SS-152 SS-153 SS-154
SS-24 SS-25 SS-26
40' LT
40' LT
40' LT
30' RT
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND SILTY CLAY
ALLUVIAL, BROWN AND GRAY, GRAY, WET, VERY SOFT, SANDY CLAY, SILTY CLAY AND SAT., VERY LOOSE TO MED. DENSE, SILTY SAND
SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY
GRAY, WET, MED. STIFF TO VERY STIFF, SANDY CLAY AND SILTY CLAY
GRAY, SAT., MED. DENSE TO VERY DENSE, SAND AND SILTY SAND
SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, SOFT
UNDIVIDED COASTAL PLAIN.
GRAY, SAT., MED. DENSE, SILTY SAND
GRAY, WET, MED. STIFF, SANDY
COASTAL PLAIN.
GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND.
TO VERY STIFF, SILTY CLAY
TO VERY DENSE, SAND AND SILTY SAND
GRAY, TAN AND ORANGE, MOIST TO WET, MED. STIFF, SILTY CLAY
GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND
SILT
GRAY, WET, SOFT TO MED. STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY, BLACK CREEK FORMATION
WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION
GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY
ST-54
ST-53
ST-7
ST-8
WATER SURFACE
180
170
160
150
140
130
120
110
100
90
80
17+00
18+00
19+00
20+00
21+00
22+00
23+00
24+00
25+00
26+00
27+00
28+00
29+00
30+00
31+00

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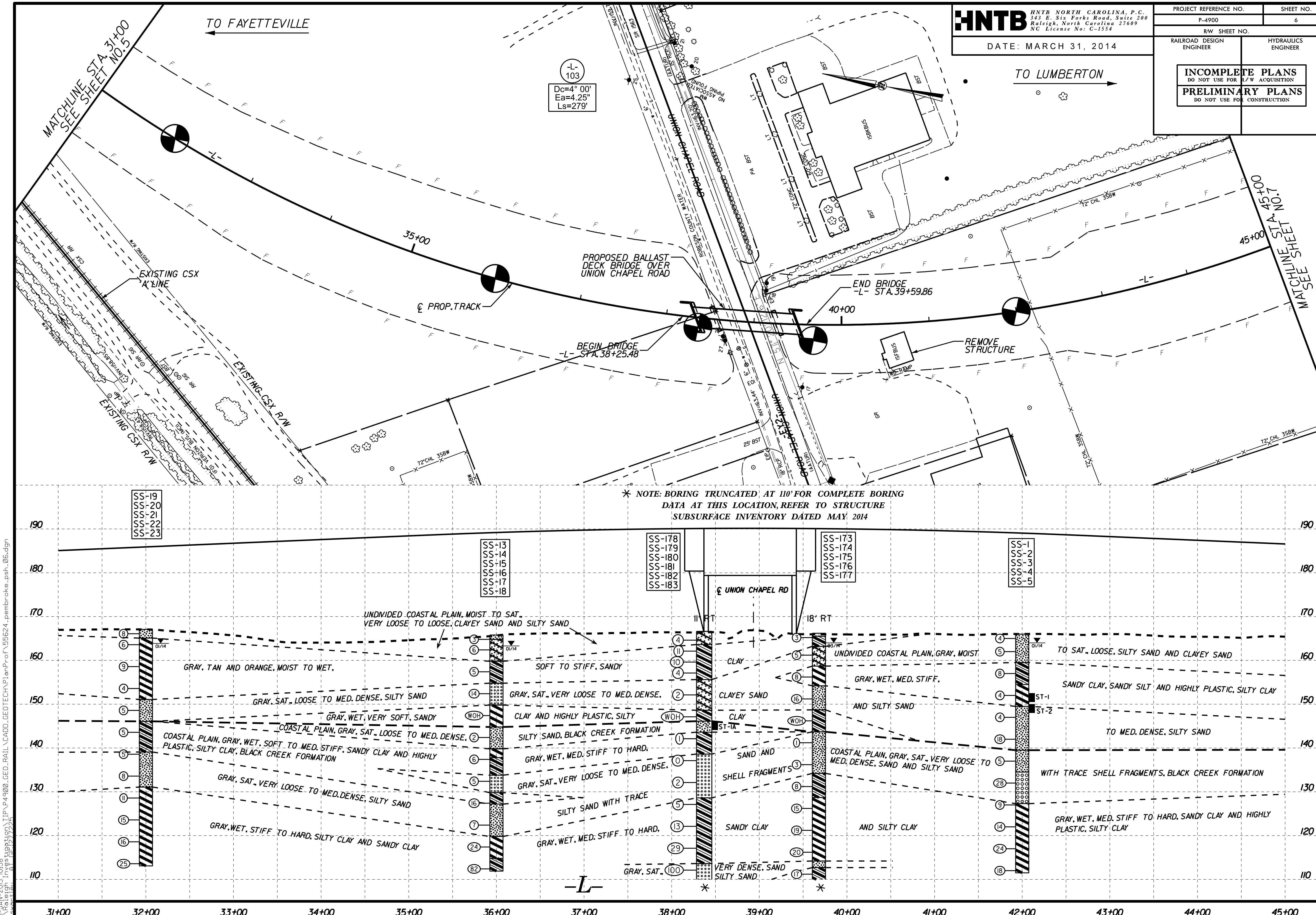

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554
DATE: MARCH 31, 2014
PROJECT REFERENCE NO. P-4900
SHEET NO. 6
R/W SHEET NO.
RAILROAD DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
TO FAYETTEVILLE
TO LUMBERTON
MATCHLINE STA. 31+00 SEE SHEET NO.5
MATCHLINE STA. 45+00 SEE SHEET NO.7
-L- 103
Dc=4° 00'
Ea=4.25"
Ls=279'
35+00
40+00
45+00
EXISTING CSX 'A' LINE
EXISTING CSX R/W
℄ PROP. TRACK
PROPOSED BALLAST DECK BRIDGE OVER UNION CHAPEL ROAD
BEGIN BRIDGE -L- STA. 38+25.48
END BRIDGE -L- STA. 39+59.86
REMOVE STRUCTURE
UNION CHAPEL ROAD
SR 1563
ROBESON COUNTY WATER
72" CHL 3SBW
* NOTE: BORING TRUNCATED AT 110' FOR COMPLETE BORING DATA AT THIS LOCATION, REFER TO STRUCTURE SUBSURFACE INVENTORY DATED MAY 2014
SS-19 SS-20 SS-21 SS-22 SS-23
SS-13 SS-14 SS-15 SS-16 SS-17 SS-18
SS-178 SS-179 SS-180 SS-181 SS-182 SS-183
SS-173 SS-174 SS-175 SS-176 SS-177
SS-1 SS-2 SS-3 SS-4 SS-5
℄ UNION CHAPEL RD
11' RT
18' RT
UNDIVIDED COASTAL PLAIN, MOIST TO SAT. VERY LOOSE TO LOOSE, CLAYEY SAND AND SILTY SAND
GRAY, TAN AND ORANGE, MOIST TO WET.
GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, VERY SOFT, SANDY
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE,
COASTAL PLAIN, GRAY, WET, SOFT TO MED. STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY, BLACK CREEK FORMATION
GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, STIFF TO HARD, SILTY CLAY AND SANDY CLAY
SOFT TO STIFF, SANDY
GRAY, SAT., VERY LOOSE TO MED. DENSE,
CLAY AND HIGHLY PLASTIC, SILTY
SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO HARD,
GRAY, SAT., VERY LOOSE TO MED. DENSE,
SILTY SAND WITH TRACE
GRAY, WET, MED. STIFF TO HARD,
GRAY, SAT.
CLAY
CLAYEY SAND
CLAY
SAND AND
SHELL FRAGMENTS
SANDY CLAY
VERY DENSE, SAND
SILTY SAND
UNDIVIDED COASTAL PLAIN, GRAY, MOIST
GRAY, WET, MED. STIFF,
AND SILTY SAND
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SAND AND SILTY SAND
AND SILTY CLAY
TO SAT., LOOSE, SILTY SAND AND CLAYEY SAND
SANDY CLAY, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY
ST-1
ST-2
ST-1A
TO MED. DENSE, SILTY SAND
WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY
190
180
170
160
150
140
130
120
110
-L-
31+00
32+00
33+00
34+00
35+00
36+00
37+00
38+00
39+00
40+00
41+00
42+00
43+00
44+00
45+00
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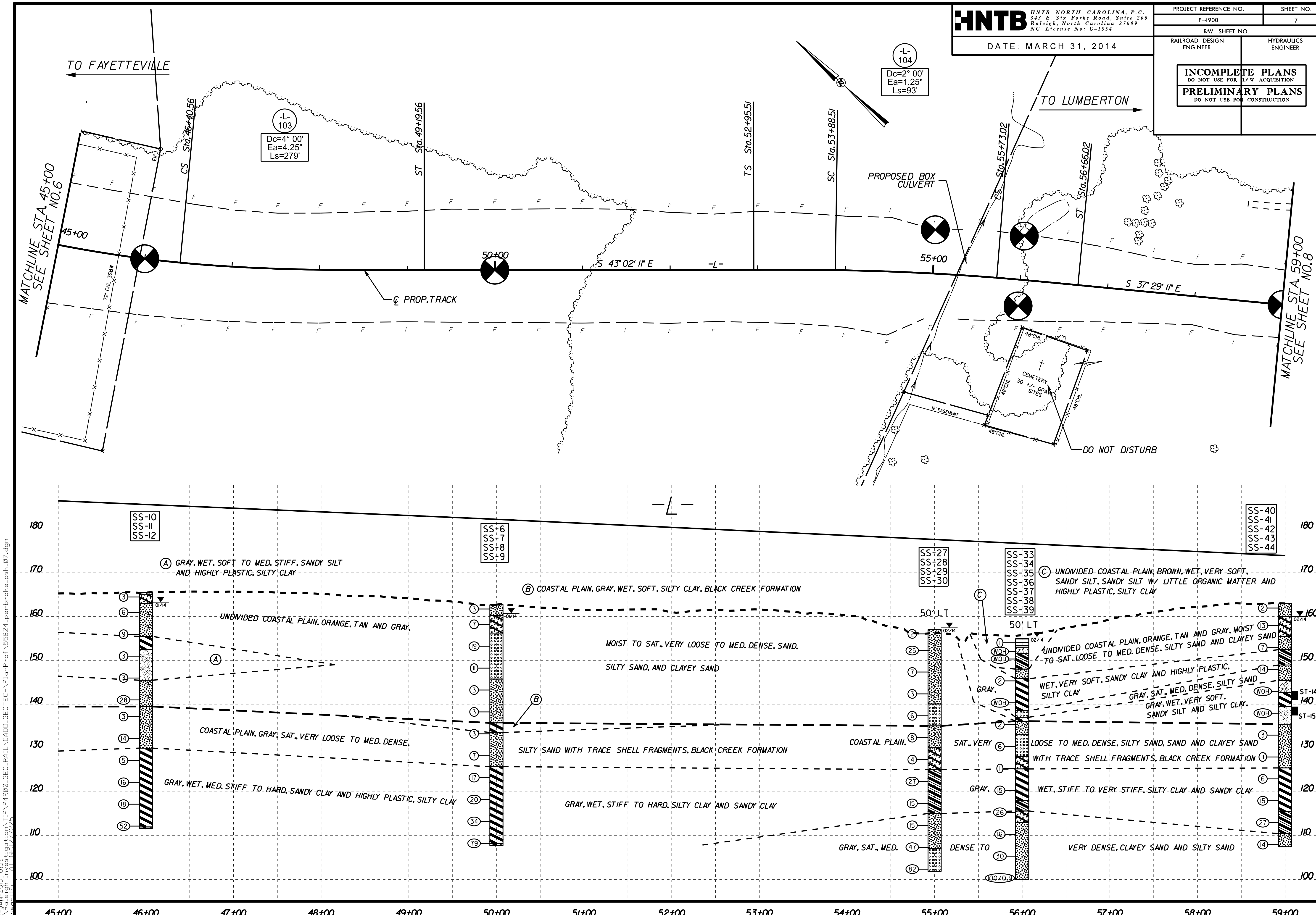
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	7
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TO FAYETTEVILLE
TO LUMBERTON
-L- 103
Dc=4° 00'
Ea=4.25"
Ls=279'
-L- 104
Dc=2° 00'
Ea=1.25"
Ls=93'
CS Sta.46+40.56
ST Sta.49+19.56
TS Sta.52+95.51
SC Sta.53+88.51
CS Sta.55+73.02
ST Sta.56+66.02
MATCHLINE STA.45+00 SEE SHEET NO.6
MATCHLINE STA.59+00 SEE SHEET NO.8
45+00
50+00
55+00
S 43° 02' 11" E
S 37° 29' 11" E
-L-
℄ PROP.TRACK
PROPOSED BOX CULVERT
CEMETERY 30 +/- GRAVE SITES
12' EASEMENT
48"CHL
DO NOT DISTURB
SS-10 SS-11 SS-12
SS-6 SS-7 SS-8 SS-9
SS-27 SS-28 SS-29 SS-30
SS-33 SS-34 SS-35 SS-36 SS-37 SS-38 SS-39
SS-40 SS-41 SS-42 SS-43 SS-44
(A) GRAY, WET, SOFT TO MED. STIFF, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY
(B) COASTAL PLAIN, GRAY, WET, SOFT, SILTY CLAY, BLACK CREEK FORMATION
(C) UNDIVIDED COASTAL PLAIN, BROWN, WET, VERY SOFT, SANDY SILT, SANDY SILT W/ LITTLE ORGANIC MATTER AND HIGHLY PLASTIC, SILTY CLAY
UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., VERY LOOSE TO MED. DENSE, SAND, SILTY SAND, AND CLAYEY SAND
UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND
WET, VERY SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY
GRAY, SAT., MED. DENSE, SILTY SAND
GRAY, WET, VERY SOFT, SANDY SILT AND SILTY CLAY
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION
COASTAL PLAIN, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND, SAND AND CLAYEY SAND WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY
GRAY, WET, STIFF TO HARD, SILTY CLAY AND SANDY CLAY
GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY
GRAY, SAT., MED. DENSE TO VERY DENSE, CLAYEY SAND AND SILTY SAND
50' LT
ST-14
ST-15
180
170
160
150
140
130
120
110
100
45+00
46+00
47+00
48+00
49+00
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53+00
54+00
55+00
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57+00
58+00
59+00

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HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	8
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TO FAYETTEVILLE

TO LUMBERTON

MATCHLINE STA. 59+00
SEE SHEET NO.7

MATCHLINE STA. 73+00
SEE SHEET NO.9

60+00 65+00 70+00

-L-

℄ PROP. TRACK

REMOVE STRUCTURE

REMOVE STRUCTURE

3S ELEC WIRE

S 37° 29' 11" E

12" SOIL

SS-40
SS-41
SS-42
SS-43
SS-44

SS-45
SS-46
SS-47
SS-48

SS-49
SS-50

SS-51
SS-52

7' LT

02/14

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY AND CLAYEY SAND

TAN AND GRAY, WET.

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND

ST-14

GRAY, WET, VERY SOFT, SANDY SILT AND SILTY CLAY.

ST-15

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION

GRAY, WET, STIFF TO VERY STIFF.

GRAY, SAT., MED. DENSE TO DENSE.

SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT.

VERY SOFT TO STIFF, SANDY CLAY AND

SILTY SAND AND CLAYEY SAND

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE.

SILTY CLAY AND SANDY CLAY

GRAY, SAT., MED. DENSE TO DENSE.

SILTY SAND

FIAD

LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND

HIGHLY PLASTIC, SILTY CLAY

GRAY, SAT., MED. DENSE.

SAND AND SILTY SAND, BLACK CREEK FORMATION

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

SILTY SAND AND CLAYEY SAND

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SAND AND SILTY SAND, BLACK CREEK FORMATION

180 170 160 150 140 130 120 110 100

59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00

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jsmith
ENGINEER

HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	9
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TO FAYETTEVILLE

TO LUMBERTON

MATCHLINE STA. 73+00
SEE SHEET NO. 8

MATCHLINE STA. 87+00
SEE SHEET NO. 10

75+00

80+00

85+00

-L-

℄ PROP. TRACK

6" SOIL

SS-53
SS-54
SS-55
SS-56
SS-57

SS-58
SS-59

SS-60

SS-61
SS-62
SS-63

20' RT

02/14

A GRAY, SAT., LOOSE, SILTY SAND

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., VERY LOOSE TO MED. DENSE, CLAYEY SAND AND SILTY SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY SILT, SANDY CLAY

AND HIGHLY PLASTIC, SILTY CLAY

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SAND AND SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, SOFT TO STIFF, HIGHLY PLASTIC, SILTY CLAY

UNDIVIDED COASTAL PLAIN, TAN, ORANGE AND GRAY, SAT.

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF,

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO VERY DENSE.

LOOSE TO MED. DENSE, SILTY SAND

ST-19

SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

SAND, SILTY SAND AND CLAYEY SAND, BLACK CREEK FORMATION

GRAY, WET, STIFF, SILTY CLAY

GRAY, SAT., LOOSE, SAND

GRAY, WET, MED. STIFF, SANDY SILT AND SILTY CLAY

170
160
150
140
130
120
110
100
90

73+00 74+00 75+00 76+00 77+00 78+00 79+00 80+00 81+00 82+00 83+00 84+00 85+00 86+00 87+00

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343 E. Six Forks Road, Suite 200
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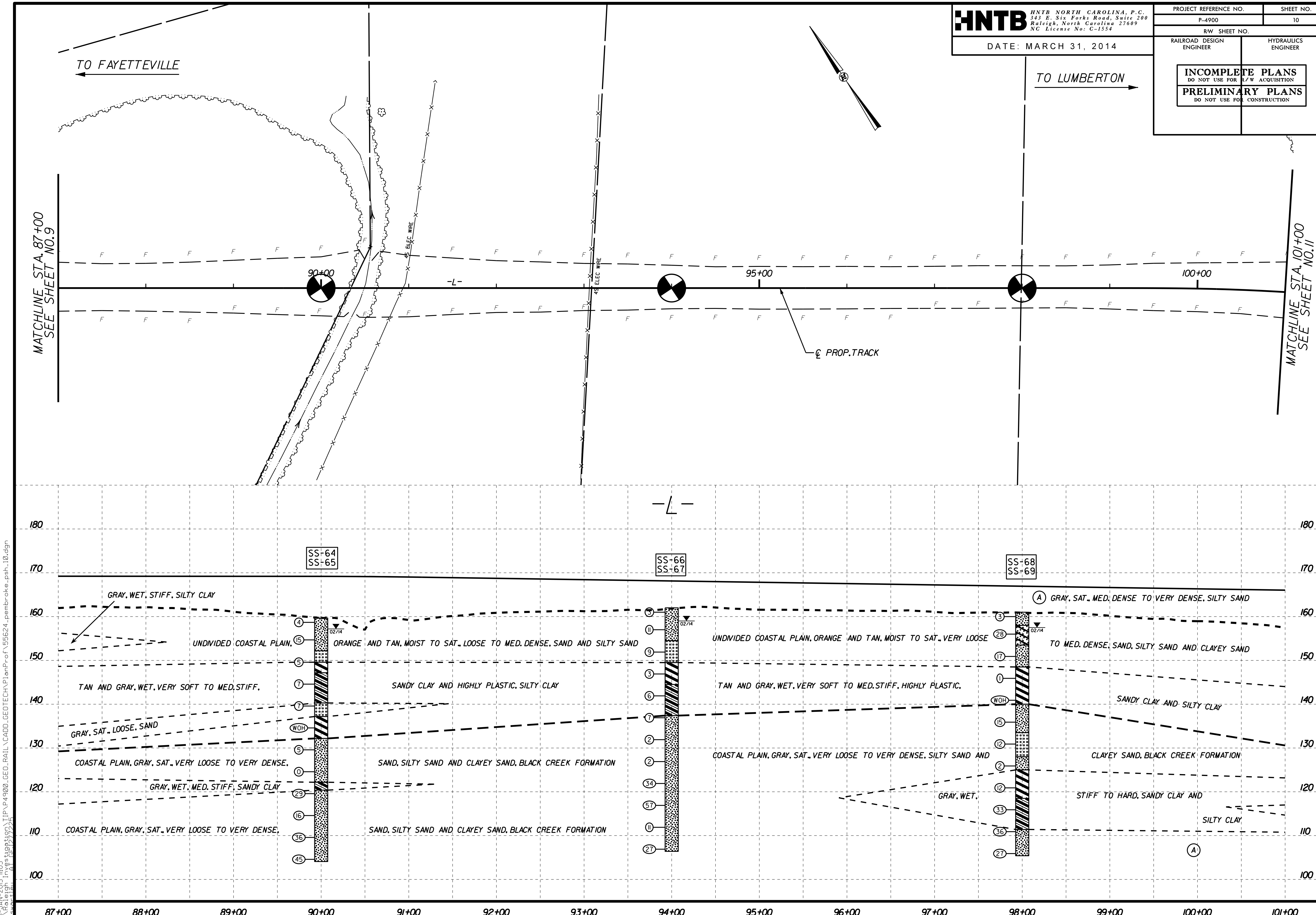
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	10
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TO FAYETTEVILLE
TO LUMBERTON
MATCHLINE STA. 87+00 SEE SHEET NO.9
MATCHLINE STA. 101+00 SEE SHEET NO.11
90+00
95+00
100+00
-L-
45 ELEC WIRE
℄ PROP. TRACK
-L-
SS-64 SS-65
SS-66 SS-67
SS-68 SS-69
GRAY, WET, STIFF, SILTY CLAY
UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SAND AND SILTY SAND
UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT., VERY LOOSE TO MED. DENSE, SAND, SILTY SAND AND CLAYEY SAND
(A) GRAY, SAT., MED. DENSE TO VERY DENSE, SILTY SAND
TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY
TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, HIGHLY PLASTIC, SANDY CLAY AND SILTY CLAY
GRAY, SAT., LOOSE, SAND
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO VERY DENSE, SAND, SILTY SAND AND CLAYEY SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF, SANDY CLAY
GRAY, WET, STIFF TO HARD, SANDY CLAY AND SILTY CLAY
(A)
02/14
180
170
160
150
140
130
120
110
100
87+00
88+00
89+00
90+00
91+00
92+00
93+00
94+00
95+00
96+00
97+00
98+00
99+00
100+00
101+00

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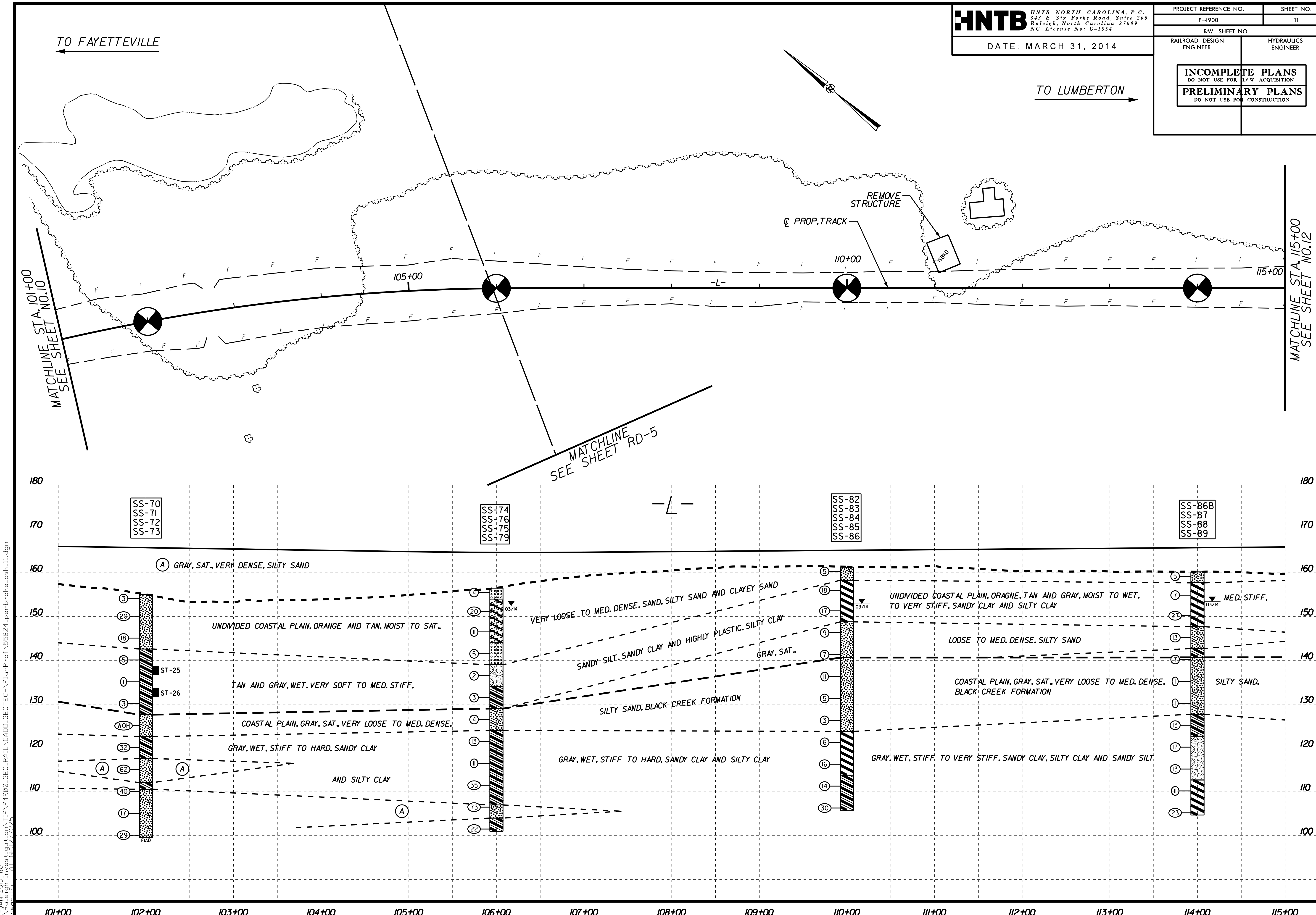
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	11
R/W SHEET NO.	
RAILROAD DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TO FAYETTEVILLE
TO LUMBERTON
MATCHLINE STA. 101+00 SEE SHEET NO.10
MATCHLINE STA. 115+00 SEE SHEET NO.12
MATCHLINE SEE SHEET RD-5
REMOVE STRUCTURE
℄ PROP. TRACK
105+00
110+00
115+00
-L-
SS-70 SS-71 SS-72 SS-73
SS-74 SS-76 SS-75 SS-79
SS-82 SS-83 SS-84 SS-85 SS-86
SS-86B SS-87 SS-88 SS-89
A GRAY, SAT., VERY DENSE, SILTY SAND
UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT.
TAN AND GRAY, WET, VERY SOFT TO MED. STIFF.
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE.
GRAY, WET, STIFF TO HARD, SANDY CLAY
AND SILTY CLAY
VERY LOOSE TO MED. DENSE. SAND, SILTY SAND AND CLAYEY SAND
SANDY SILT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY
GRAY, SAT.
SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, STIFF TO HARD, SANDY CLAY AND SILTY CLAY
UNDIVIDED COASTAL PLAIN, ORAGNE, TAN AND GRAY, MOIST TO WET, TO VERY STIFF, SANDY CLAY AND SILTY CLAY
MED. STIFF.
LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, BLACK CREEK FORMATION
SILTY SAND.
GRAY, WET, STIFF TO VERY STIFF, SANDY CLAY, SILTY CLAY AND SANDY SILT
ST-25
ST-26
WOH
180
170
160
150
140
130
120
110
100
101+00
102+00
103+00
104+00
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112+00
113+00
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115+00

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

DATE: MARCH 31, 2014

PROJECT REFERENCE NO.	SHEET NO.
P-4900	12

R/W SHEET NO.

RAILROAD DESIGN ENGINEER

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

PROJECT REFERENCE NO.	SHEET NO.
P-4900	13
R/W SHEET NO.	

DATE: MARCH 31, 2014

RAILROAD DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TO FAYETTEVILLE

TO LUMBERTON

TRACK CONSTRUCTION BY TRACK CONTRACTOR

TRACK CONSTRUCTION BY CSXT

PROPOSED CONTROL POINT

-L- STA.131+88.08

1710' +/- TO MP SE-288

EXISTING CSX R/W

EXISTING R/W

℄ PROP.TRACK

130+00

135+00

END CONSTRUCTION
-L- STA.135+47.85

2

MATCHLINE STA.129+00
SEE SHEET NO.12

1805+00

1810+00

1815+00

WILMINGTON LINE

15' CLEAR POINT

PROP.NO.20 RH TURNOUT

EXISTING CSX 'SE' LINE

PROPOSED EASTBOUND MAST SIGNALS (BY CSXT)

PROPOSED WESTBOUND MAST SIGNAL (BY CSXT)

EXISTING CSX R/W

EXISTING R/W

-L-

SS-108
SS-109
SS-110

81' LT

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

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO WET. STIFF TO VERY STIFF, SANDY SILT AND HIGHLY PLASTIC, SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SAND AND SILTY SAND

COASTAL PLAIN, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND, BLACK CREEK FORMATION

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C SAND	F SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-108	81' LT	130+00	9.0-10.5	A-4(0)	27	10	26.6	41.9	11.4	20.1	100	87	37	-	-
SS-109	81' LT	130+00	14.0-15.5	A-7-6(11)	46	29	24.0	27.6	16.2	32.2	100	85	53	18.3	-
SS-110	81' LT	130+00	39.0-40.5	A-2-6(1)	31	16	57.1	15.4	3.3	24.2	100	69	29	-	-

180 170 160 150 140 130 120 110 100

129+00 130+00 131+00 132+00 133+00 134+00 135+00

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PROJECT REFERENCE NO.	SHEET NO.
P-4900	14

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-166	40' LT	20+00	13.4-14.9	A-6(5)	38	14	14.7	40.7	32.5	12.1	93	85	54	-	-
SS-162A	40' LT	21+50	0.0-1.5	A-4(0)	15	NP	23.0	39.9	19.0	18.1	100	92	42	-	-
SS-163	40' LT	21+50	9.2-10.7	A-2-4(0)	25	NP	4.2	73.3	14.4	8.1	100	98	30	39.9	-
SS-164	40' LT	21+50	29.2-30.7	A-4(0)	17	2	16.7	35.6	27.5	20.1	100	90	57	-	-
SS-165	40' LT	21+50	39.7-40.7	A-6(9)	32	15	0.8	30.4	26.5	42.3	100	100	75	-	-
SS-159	40' LT	22+50	0.5-1.5	A-6(6)	28	15	19.3	26.2	22.3	32.2	100	92	59	-	-
SS-160	40' LT	22+50	3.2-4.7	A-6(4)	26	13	19.1	27.8	22.9	30.2	100	91	58	-	-
SS-161	40' LT	22+50	13.2-14.7	A-2-4(0)	27	NP	6.4	73.7	14.8	5.0	100	96	26	-	-
SS-162	40' LT	22+50	38.2-39.7	A-6(10)	35	15	1.6	33.2	26.9	38.3	100	99	76	-	-
SS-150	30' RT	23+50	7.9-9.1	A-7-6(7)	43	26	13.3	45.8	10.8	30.1	98	89	46	-	-
SS-151	30' RT	23+50	17.9-19.4	A-2-4(0)	27	NP	47.0	32.4	10.5	10.0	100	71	24	-	-
SS-152	30' RT	23+50	27.9-29.4	A-2-4(0)	20	NP	54.6	25.6	8.7	11.0	89	62	19	-	-
SS-153	30' RT	23+50	32.9-34.4	A-7-6(27)	49	28	0.8	13.7	17.3	68.3	100	100	90	25.5	-
SS-154	30' RT	23+50	37.9-39.4	A-6(9)	35	16	14.5	24.9	18.5	42.2	98	87	67	-	-
SS-24	CL	28+00	0.5-1.5	A-7-6(7)	43	19	33.0	16.3	10.5	40.2	100	78	53	-	-
SS-25	CL	28+00	12.7-14.2	A-4(2)	30	8	11.5	48.7	19.7	20.1	100	93	52	-	-
SS-26	CL	28+00	17.7-19.2	A-7-5(10)	44	14	6.4	33.2	42.3	18.1	100	97	72	58.8	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-19	CL	32+00	2.5-4.0	A-7-6(8)	41	22	33.2	15.5	17.1	34.2	100	80	53	-	-
SS-20	CL	32+00	12.5-14.0	A-7-6(12)	43	27	4.0	44.7	21.1	30.2	100	97	58	-	-
SS-21	CL	32+00	22.5-24.0	A-6(7)	33	16	20.3	23.9	35.6	20.1	100	92	59	-	-
SS-22	CL	32+00	37.5-39.0	A-7-6(22)	43	23	4.0	5.4	26.2	64.4	100	97	92	-	-
SS-23	CL	32+00	47.5-49.0	A-7-6(20)	42	20	2.8	9.1	19.7	68.4	100	98	92	-	-
SS-13	CL	36+00	7.4-8.9	A-6(2)	26	13	32.5	26.3	11.2	30.1	100	82	44	-	-
SS-14	CL	36+00	17.4-18.9	A-7-6(31)	64	36	2.8	22.0	27.1	48.1	94	92	80	-	-
SS-15	CL	36+00	22.4-23.9	A-2-4(0)	25	NP	3.2	73.3	13.4	10.0	100	98	32	-	-
SS-16	CL	36+00	28.0-28.9	A-6(1)	30	14	40.5	23.6	15.8	20.0	100	81	37	-	-
SS-17	CL	36+00	37.4-38.6	A-6(4)	39	15	28.3	23.2	16.4	32.1	93	76	49	-	-
SS-18	CL	36+00	47.4-48.9	A-7-6(25)	49	26	5.4	8.2	22.2	64.1	100	97	89	-	-
SS-178	11' RT	38+37	3.5-5.0	A-6(4)	37	23	39.1	24.7	7.5	28.7	100	78	39	15.2	-
SS-179	11' RT	38+37	6.0-7.5	A-6(5)	39	25	31.1	31.2	6.3	31.4	100	83	41	18.6	-
SS-180	11' RT	38+37	8.5-10.0	A-6(6)	38	24	33.0	24.1	8.3	34.6	100	80	46	17.8	-
SS-181	11' RT	38+37	18.5-20.0	A-6(9)	32	16	4.5	35.5	29.4	30.6	100	97	70	30.0	2.07
SS-182	11' RT	38+37	23.5-25.0	A-6(1)	31	13	3.7	62.3	13.7	20.3	100	97	39	52.6	0.48
SS-183	11' RT	38+37	38.5-40.0	A-6(13)	40	23	13.2	22.1	13.2	51.5	96	87	66	23.8	-
SS-173	18' RT	39+68	0.7-1.5	A-6(6)	35	21	34.9	19.7	15.3	30.1	100	77	48	-	-
SS-174	18' RT	39+68	4.0-5.5	A-2-6(2)	40	23	48.5	19.2	8.2	24.1	100	68	34	-	-
SS-175	18' RT	39+68	9.0-10.5	A-7-6(9)	55	37	39.0	20.7	9.2	31.1	99	71	42	-	-
SS-176	18' RT	39+68	19.0-20.5	A-6(10)	39	19	1.0	47.0	19.9	32.1	100	99	65	-	-
SS-177	18' RT	39+68	24.0-25.5	A-2-4(0)	23	NP	4.1	74.5	12.3	9.0	100	98	25	-	-
SS-1	CL	42+00	0.0-1.5	A-2-4(0)	24	10	47.7	21.0	9.2	22.0	95	65	32	-	-
SS-2	CL	42+00	8.0-9.5	A-6(4)	35	23	39.1	26.9	10.0	24.0	100	77	38	-	-
SS-3	CL	42+00	13.0-14.5	A-7-6(18)	48	31	4.4	41.1	14.4	40.1	100	98	66	-	-
SS-4	CL	42+00	33.0-34.5	A-1-b(0)	41	NP	53.3	30.9	7.8	8.0	78	48	15	-	-
SS-5	CL	42+00	38.0-39.5	A-7-6(32)	55	31	4.0	3.6	12.2	80.2	100	98	93	-	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-10	CL	46+00	13.5-15.0	A-4(0)	28	2	3.8	69.9	8.2	18.0	100	97	41	-	-
SS-11	CL	46+00	18.5-20.0	A-4(0)	28	6	9.0	60.1	6.8	24.0	100	95	38	-	-
SS-12	CL	46+00	37.3-38.8	A-7-6(26)	50	26	3.0	5.4	15.4	76.2	98	96	91	-	-
SS-6	CL	50+00	3.5-5.0	A-2-6(1)	35	14	53.5	18.6	5.8	22.0	96	64	28	-	-
SS-7	CL	50+00	13.5-15.0	A-3(0)	19	NP	67.3	26.9	1.8	4.0	100	69	7	-	-
SS-8	CL	50+00	18.5-20.0	A-2-4(0)	29	2	1.8	73.5	6.6	18.0	100	99	35	-	-
SS-9	CL	50+00	38.5-40.0	A-7-6(18)	41	22	6.8	13.0	12.0	68.1	100	97	82	-	-
SS-27	50' LT	55+00	3.8-5.3	A-2-4(0)	19	NP	61.1	28.5	4.3	6.0	100	75	13	-	-
SS-28	50' LT	55+00	8.7-10.2	A-2-4(0)	27	NP	0.3	83.2	3.4	13.1	100	100	21	-	-
SS-29	50' LT	55+00	28.7-30.2	A-2-6(0)	37	14	54.1	15.3	8.5	22.1	77	46	25	-	-
SS-30	50' LT	55+00	33.7-35.2	A-6(9)	29	13	6.2	16.3	29.2	48.2	99	96	83	-	-
SS-33	50' LT	56+00	0.0-1.5	A-4(1)	28	6	25.1	24.5	40.3	10.1	99	83	55	-	4.8
SS-34	50' LT	56+00	2.0-3.5	A-4(0)	15	2	30.4	34.0	21.6	14.1	98	81	40	-	-
SS-35	50' LT	56+00	3.7-5.2	A-6(3)	29	16	25.5	32.8	15.6	26.1	97	83	45	-	-
SS-36	50' LT	56+00	9.2-10.2	A-7-6(63)	95	67	0.6	3.2	11.8	84.4	87	87	84	61.2	-
SS-37	50' LT	56+00	13.7-15.2	A-7-5(9)	49	19	25.3	27.7	28.8	18.1	100	86	55	85.9	-
SS-38	50' LT	56+00	18.9-20.2	A-2-4(0)	27	10	55.9	22.0	8.0	14.1	99	58	26	-	-
SS-39	50' LT	56+00	28.7-29.8	A-2-6(1)	33	15	45.2	16.8	10.9	27.1	83	56	33	-	-
SS-40	CL	59+00	4.0-5.5	A-2-7(1)	42	22	65.8	9.6	2.4	22.1	89	44	23	-	-
SS-41	CL	59+00	19.0-20.3	A-4(0)	26	5	0.6	58.1	21.2	20.1	100	100	52	-	-
SS-42	CL	59+00	24.0-25.5	A-4(0)	30	6	4.4	66.1	21.4	8.0	100	98	42	58.1	-
SS-43	CL	59+00	29.0-30.2	A-2-4(0)	27	NP	62.4	22.1	7.4	8.0	95	59	16	-	-
SS-44	CL	59+00	49.0-50.5	A-6(12)	37	19	15.5	17.1	11.2	56.3	100	91	71	-	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-45	CL	62+00	8.9-10.4	A-6(6)	39	25	20.1	39.4	10.4	30.2	100	93	43	-	-
SS-46	CL	62+00	13.9-15.4	A-6(7)	36	18	4.4	45.0	14.4	36.2	100	99	55	-	-
SS-47	CL	62+00	18.9-19.9	A-6(3)	35	16	3.4	59.7	10.8	26.1	100	99	42	-	-
SS-48	CL	62+00	33.9-35.4	A-4(0)	18	5	5.8	31.0	39.1	24.1	98	94	70	-	-
SS-49	7' LT	66+00	9.1-10.6	A-6(4)	36	19	20.9	38.6	2.2	38.2	100	93	43	-	-
SS-50	7' LT	66+00	14.1-15.6	A-7-6(30)	55	33	0.6	20.9	18.1	60.4	100	100	85	60.2	-
SS-51	CL	70+00	6.0-7.5	A-2-6(1)	32	15	32.6	39.8	3.4	24.1	100	82	29	-	-
SS-52	CL	70+00	9.8-10.6	A-7-6(33)	59	35	5.4	11.9	18.3	64.4	100	99	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		
SS-53	CL	74+00	9.1-10.3	A-4(0)	28	5	2.8	61.6	7.4	28.2	100	99	49	-	-
SS-54	CL	74+00	14.1-15.6				0.0	0.0	0.0	0.0		0	0	60.1	-
SS-55	CL	74+00	19.1-20.3	A-4(2)	32	10	0.6	57.3	11.9	30.2	100	100	49	-	-
SS-56	CL	74+00	39.1-40.6	A-7-6(12)	51	29	35.2	10.3	16.3	38.2	97	78	54	-	-
SS-57	CL	74+00	49.1-50.6	A-2-4(0)	15	NP	29.0	54.6	3.3	13.1	99	85	18	-	-
SS-58	20' RT	78+00	9.1-10.6	A-4(1)	22	8	18.5	41.9	17.5	22.1	100	89	46	-	-
SS-59	20' RT	78+00	19.1-20.6	A-6(2)	30	11	0.4	58.4	11.1	30.2	100	100	47	-	-
SS-60	CL	82+00	8.6-10.1	A-7-6(63)	84	59	0.4	1.8	19.3	78.5	96	95	94	-	-
SS-61	CL	86+00	5.0-6.5	A-7-6(10)	49	32	37.2	15.9	8.7	38.2	100	76	48	-	-
SS-62	CL	86+00	14.1-15.6	A-6(4)	33	19	30.8	29.4	9.7	30.2	100	82	42	-	-
SS-63	CL	86+00	19.1-20.6	A-7-6(54)	88	66	2.0	10.3	17.3	70.4	87	86	78	53.3	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-64	CL	90+00	14.1-15.6	A-6(6)	35	23	27.6	28.2	10.1	34.2	99	83	46	-	-
SS-65	CL	90+00	34.1-35.6	A-2-4(0)	22	NP	48.1	33.2	4.6	14.1	97	76	19	-	-
SS-66	CL	94+00	14.1-15.6	A-7-6(14)	49	35	22.1	27.0	10.7	40.2	100	86	54	23.2	-
SS-67	CL	94+00	19.1-20.6	A-6(4)	38	20	22.3	37.4	10.1	30.2	100	87	42	-	-
SS-68	CL	98+00	34.1-35.6	A-2-4(0)	21	NP	54.3	27.9	3.7	14.1	89	62	17	-	-
SS-69	CL	98+00	44.1-45.6	A-6(9)	31	16	5.2	27.6	18.9	48.3	100	97	73	-	-

PROJECT REFERENCE NO.	SHEET NO.
P-4900	16

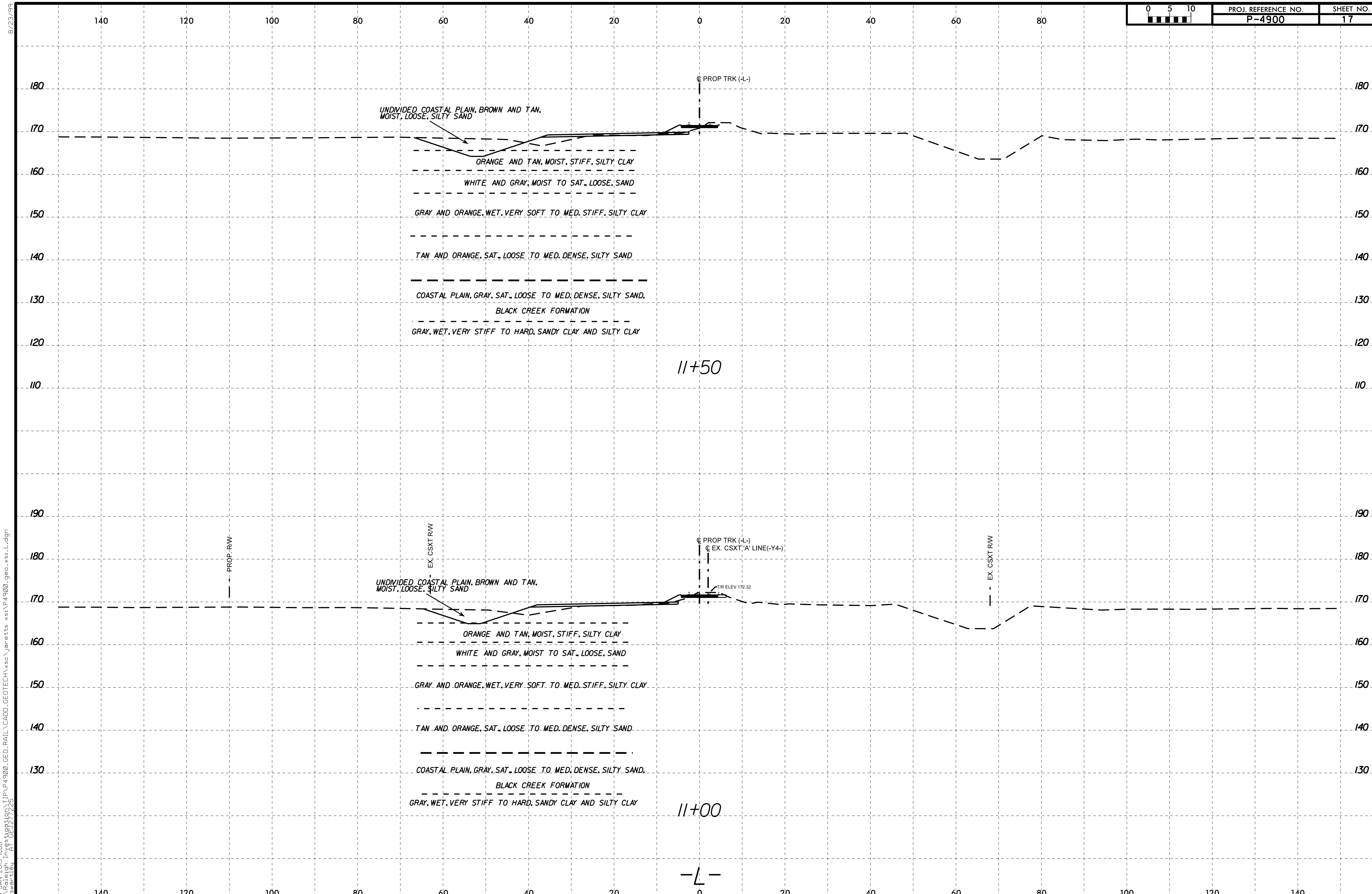
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-70	CL	102+00	14.0-15.5	A-6(4)	37	18	1.2	62.2	6.4	30.2	100	99	44	-	-
SS-71	CL	102+00	19.0-20.5				0.0	0.0	0.0	0.0		0	0	39.2	-
SS-72	CL	102+00	29.0-30.5	A-2-4(0)	25	8	53.1	25.7	5.1	16.1	88	60	19	-	-
SS-73	CL	102+00	34.0-35.5	A-6(11)	31	17	4.6	23.1	21.9	50.3	100	98	79	-	-
SS-74	CL	106+00	4.3-5.8	A-2-7(3)	42	27	57.1	11.7	5.0	26.2	100	66	33	-	-
SS-76	CL	106+00	19.0-20.5	A-4(0)	27	8	1.4	66.3	8.2	24.2	100	100	37	-	-
SS-75	CL	106+00	24.0-25.5	A-6(3)	35	16	2.4	58.6	12.8	26.2	100	100	43	-	-
SS-79	CL	106+00	34.0-35.5	A-6(20)	40	21	1.0	12.9	25.7	60.4	100	99	91	-	-
SS-82	CL	110+00	4.3-5.8	A-7-6(6)	44	21	34.8	23.0	9.0	33.2	100	78	45	-	-
SS-83	CL	110+00	14.0-15.5	A-2-4(0)	29	9	24.0	52.5	3.4	20.1	100	89	26	-	-
SS-84	CL	110+00	29.0-30.5	A-2-4(0)	22	NP	10.5	72.7	4.7	12.1	100	97	20	-	-
SS-85	CL	110+00	39.0-40.5	A-7-6(25)	47	25	2.4	6.8	18.2	72.5	100	98	93	-	-
SS-86	CL	110+00	54.0-55.5	A-6(16)	36	17	0.8	14.7	34.1	50.4	100	99	94	-	-
SS-86B	CL	114+00	24.0-25.5	A-2-4(0)	23	NP	13.3	66.4	5.2	15.1	98	93	22	-	-
SS-87	CL	114+00	29.0-30.5	A-2-4(0)	22	NP	7.4	76.1	5.4	11.1	100	100	19	-	-
SS-88	CL	114+00	34.0-35.5	A-6(9)	27	11	0.2	13.1	44.4	42.3	100	100	93	-	-
SS-89	CL	114+00	39.0-40.5	A-4(0)	15	2	4.8	47.7	25.3	22.2	100	98	56	-	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-92	CL	118+00	0.0-1.5	A-6(4)	36	19	38.6	18.5	9.7	33.2	98	74	44	-	-
SS-93	CL	118+00	4.3-5.8	A-7-6(6)	51	31	45.5	17.5	5.7	31.2	99	69	38	-	-
SS-94	CL	118+00	14.0-15.5	A-7-6(5)	42	23	10.1	51.2	10.6	28.2	100	94	43	-	-
SS-96	CL	118+00	44.0-45.5	A-4(1)	23	10	17.7	37.9	10.2	34.2	100	95	46	-	-
SS-103	33' LT	126+00	4.3-5.8	A-7-6(4)	52	26	53.5	10.1	4.2	32.2	100	62	37	-	-
SS-104	33' LT	126+00	9.0-10.5	A-2-7(1)	41	20	73.4	7.6	1.9	17.1	100	42	20	-	-
SS-105	33' LT	126+00	19.0-20.5	A-2-4(0)	20	NP	20.8	63.2	2.8	13.1	100	91	17	-	-
SS-106	33' LT	126+00	24.0-25.5	A-7-6(22)	46	23	2.6	14.5	48.6	34.2	97	96	88	-	-

PROJ. REFERENCE NO.	SHEET NO.
P-4900	17



℄ PROP TRK (-L-)
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
11+50
PROP. R/W
EX. CSXT R/W
℄ PROP TRK (-L-)
℄ EX. CSXT 'A' LINE(-Y4-)
T/R ELEV 172.32
EX. CSXT R/W
11+00
-L-

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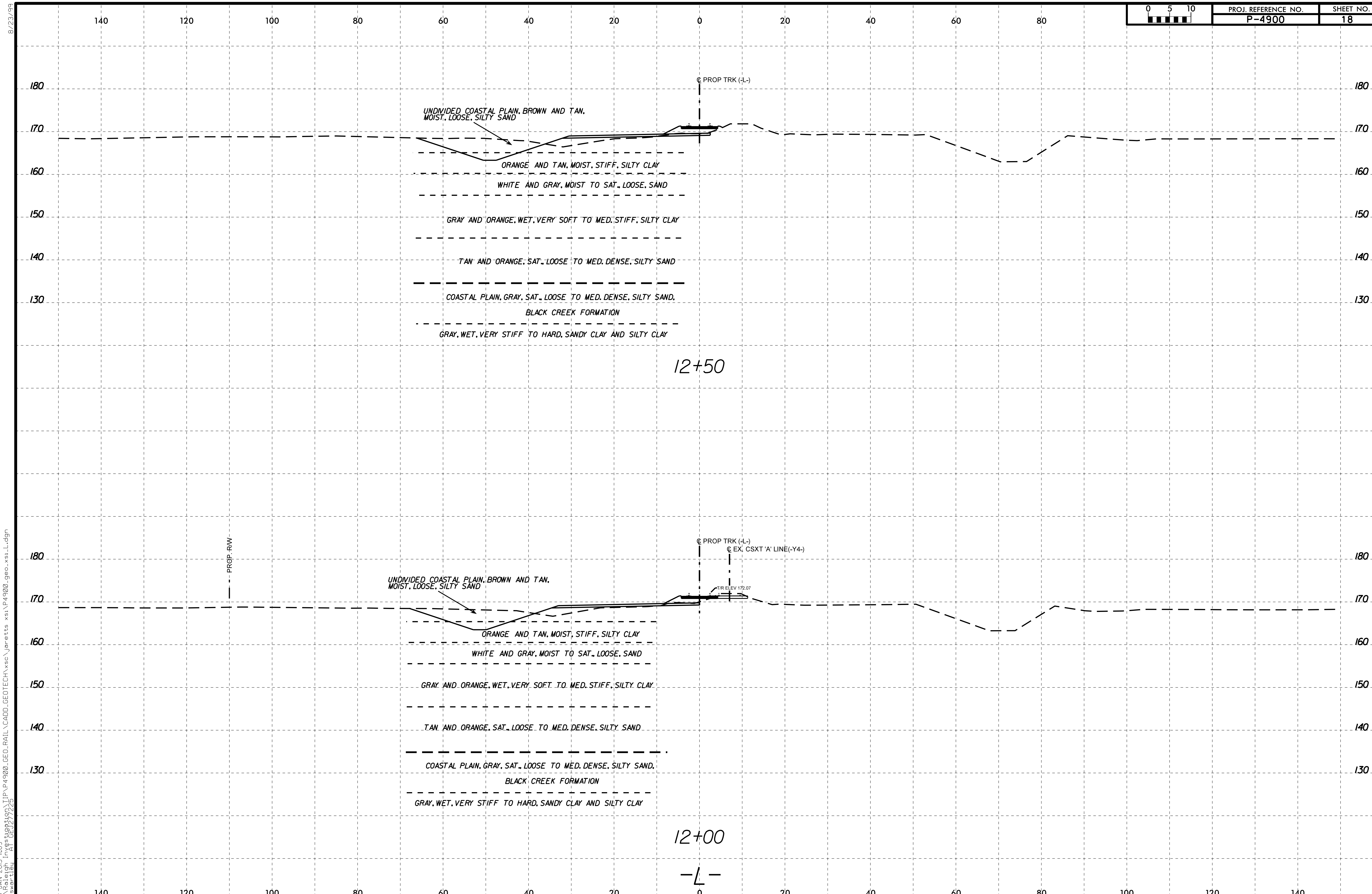
PROJ. REFERENCE NO.	SHEET NO.
P-4900	18



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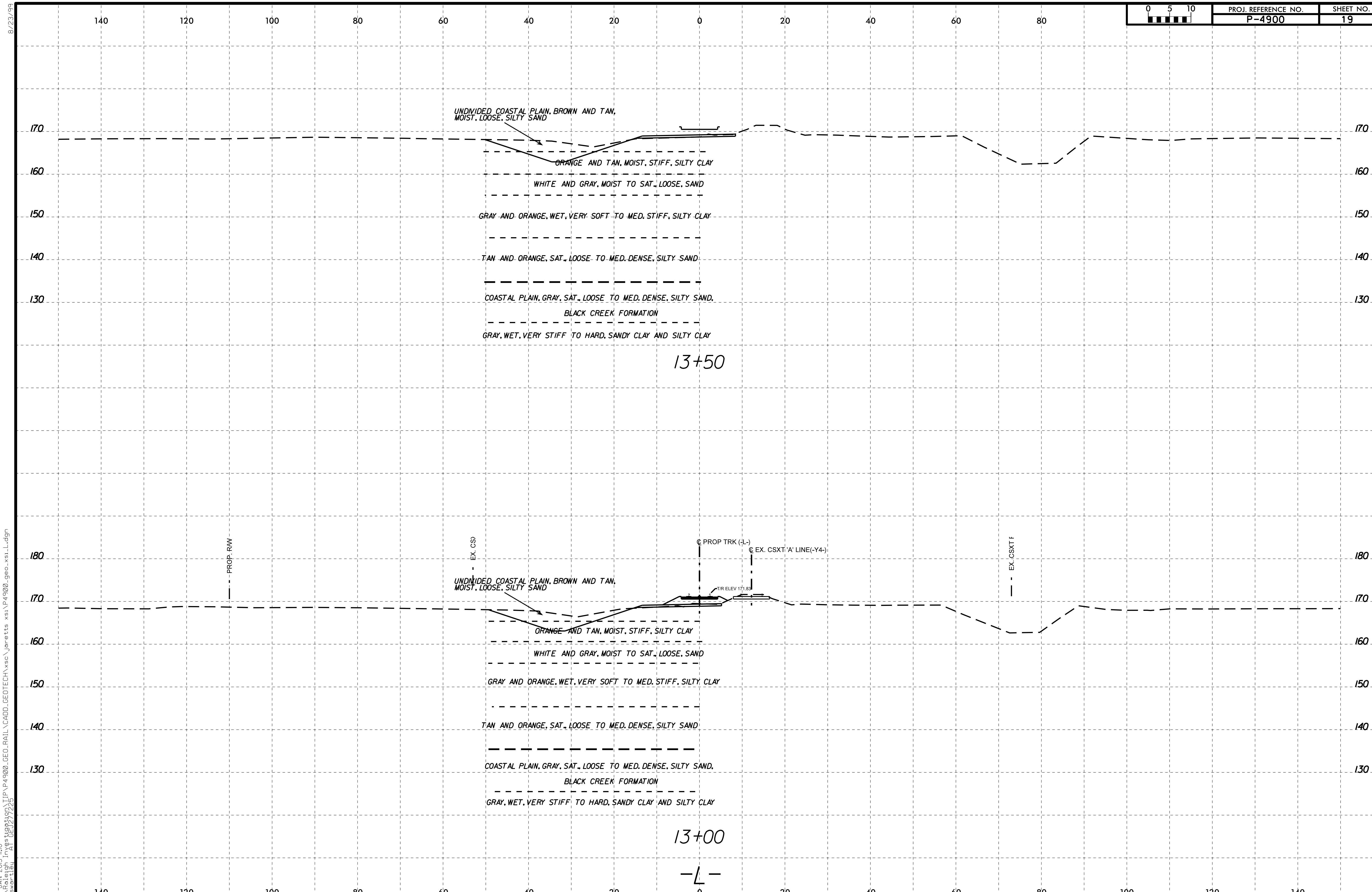
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UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND.
BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
13+50
PROP. R/W
EX. CS
℄ PROP TRK (-L-)
℄ EX. CSXT 'A' LINE(-Y4-)
T/R ELEV 171.83
EX. CSXT
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND.
BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
13+00
-L-

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	20

140 120 100 80 60 40 20 0 20 40 60 80

170
160
150
140
130

UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND

ORANGE AND TAN, MOIST, STIFF, SILTY CLAY

WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND

GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY

TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY

14+50

PROP. R/

EX. CS)

℄ PROP TRK (-L-)

℄ EX. CSXT 'A' LINE(-Y4-)

T/R ELEV 171.74

EX. CS)

180
170
160
150
140
130

UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND

ORANGE AND TAN, MOIST, STIFF, SILTY CLAY

WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND

GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY

TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY

14+00

-L-

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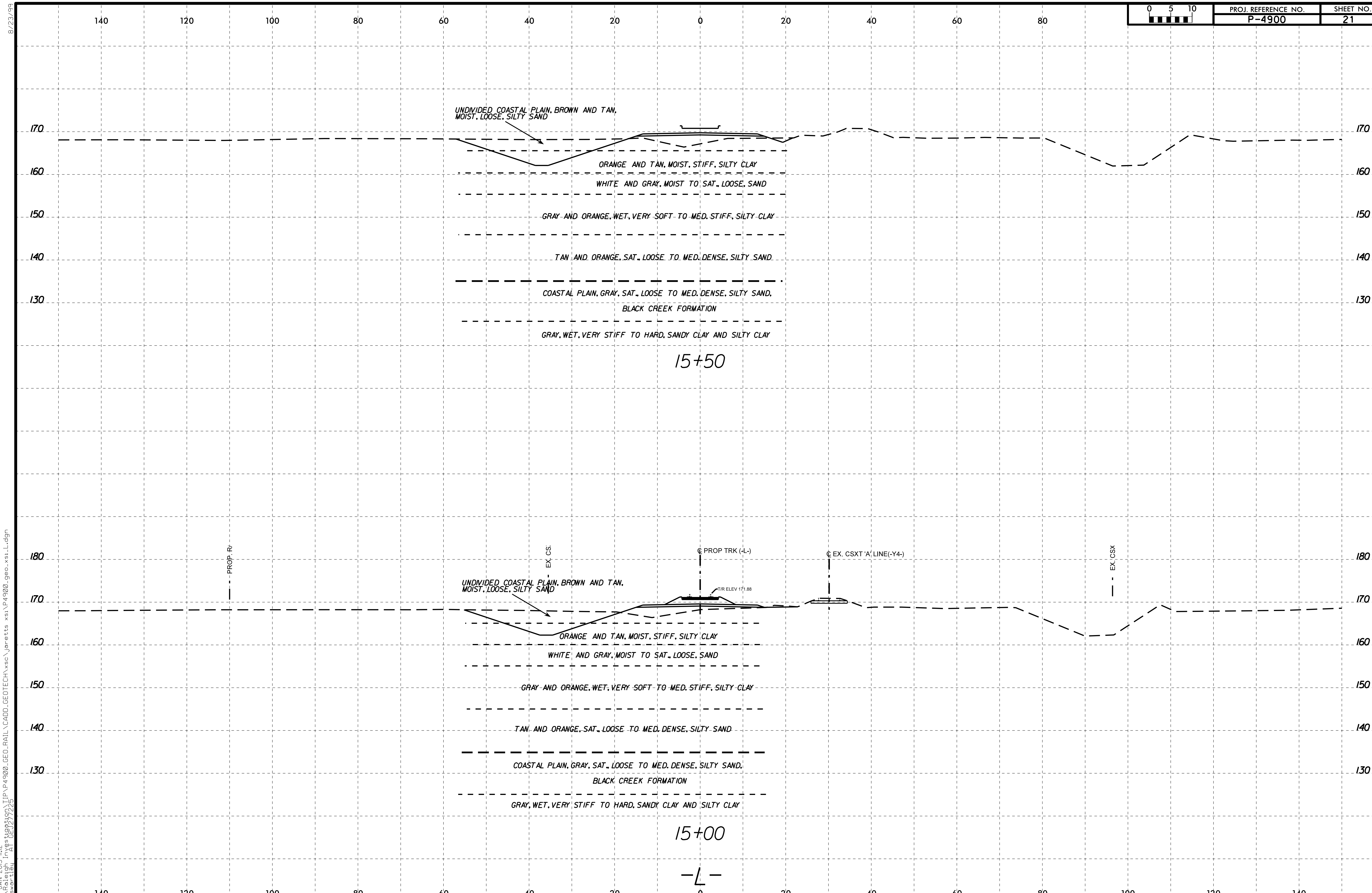
PROJ. REFERENCE NO.	SHEET NO.
P-4900	21



0 5 10
140 120 100 80 60 40 20 0 20 40 60 80
170
160
150
140
130
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
15+50
180
PROP. R/
EX. CS.
℄ PROP TRK (-L-)
T/R ELEV 171.88
℄ EX. CSXT 'A' LINE(-Y4-)
EX. CSX
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
15+00
-L-
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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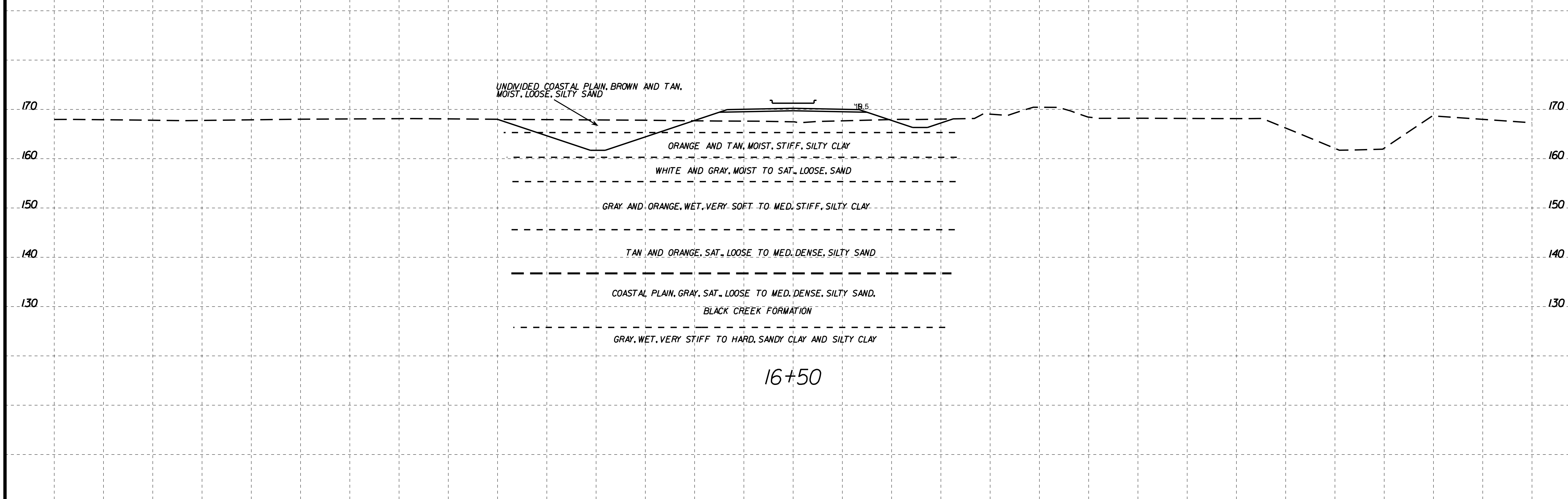
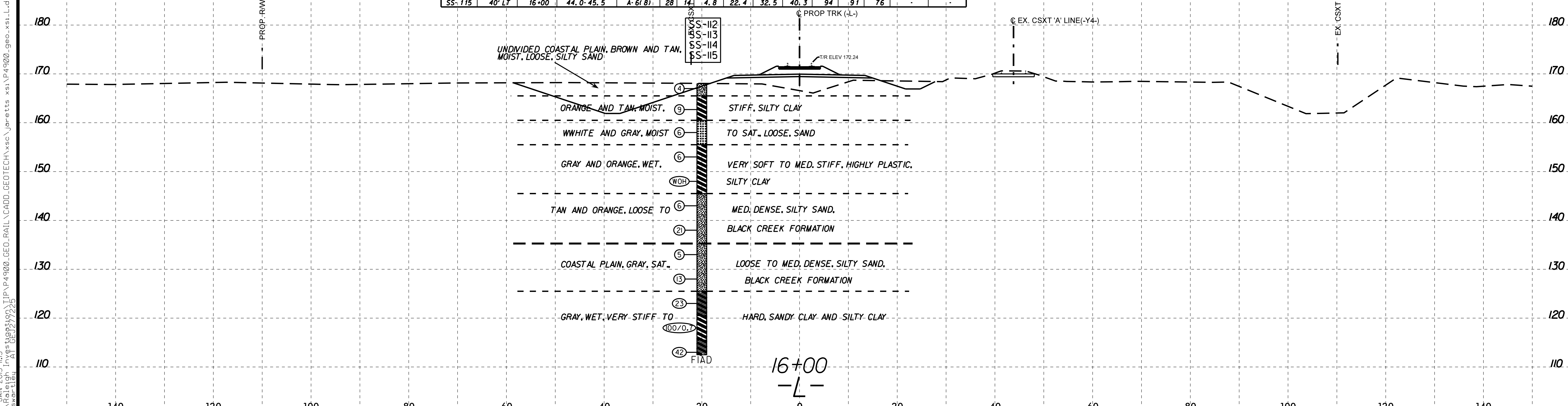

UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND,
BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
16+50

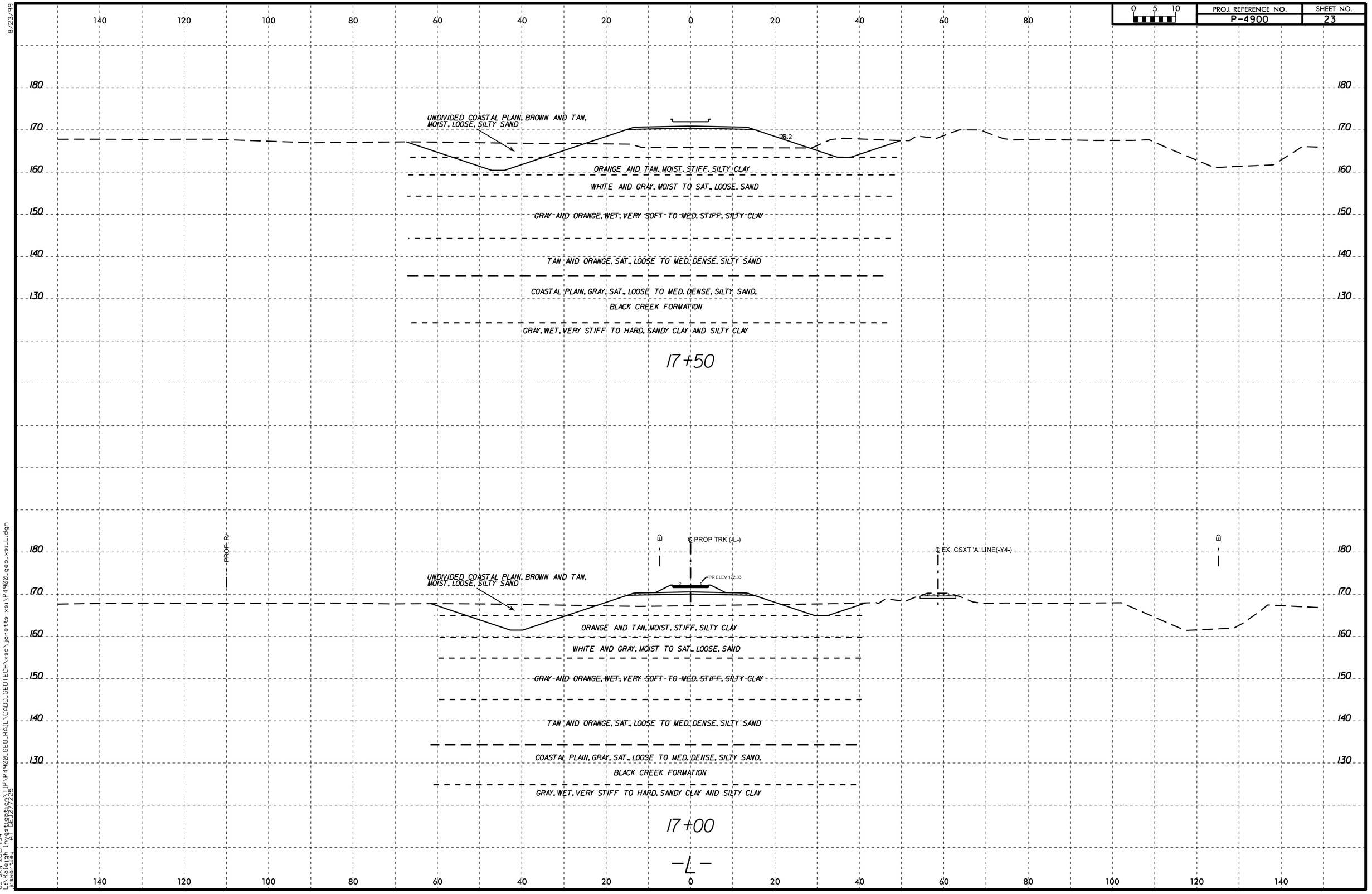
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-112	40' LT	16+00	14.0-15.5	A-7-6(9)	45	26	4.0	52.6	11.2	32.2	100	98	49	-	-
SS-113	40' LT	16+00	19.0-20.5	A-7-6(55)	78	50	0.4	7.7	23.5	68.5	100	100	94	-	-
SS-114	40' LT	16+00	24.0-25.5	A-2-4(0)	24	NP	5.2	72.1	4.5	18.1	100	99	26	-	-
SS-115	40' LT	16+00	44.0-45.5	A-6(8)	28	14	4.8	22.4	32.5	40.3	94	91	76	-	-


PROP. R/W
EX. CSXT R/W
C PROP TRK (-L-)
C EX. CSXT 'A' LINE(-Y4-)
SS-112
SS-113
SS-114
SS-115
T/R ELEV 172.24
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WWHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY
TAN AND ORANGE, LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
FIAD
16+00
-L-

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	23



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irswartley
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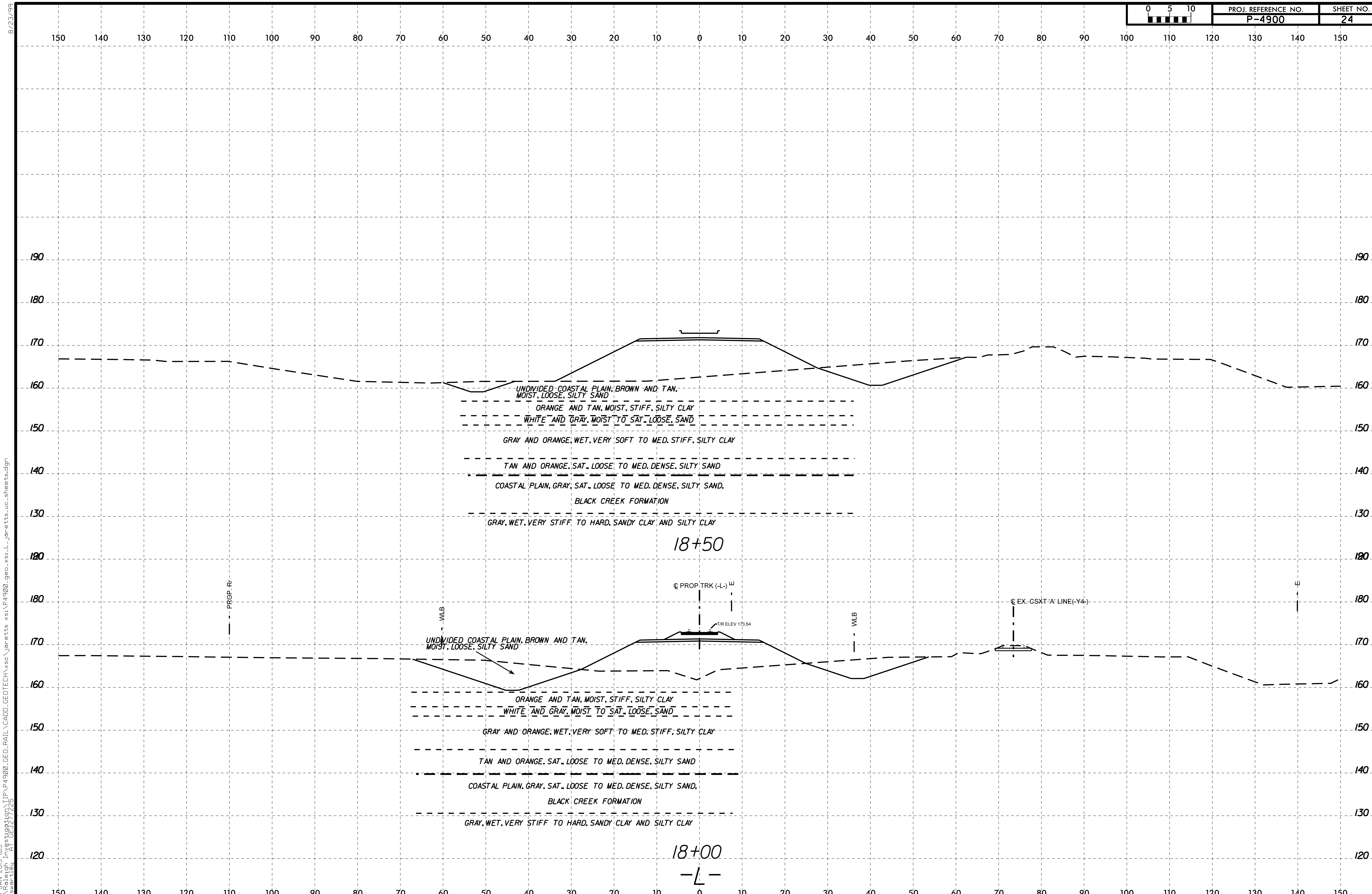

0 5 10
PROJ. REFERENCE NO.
P-4900
SHEET NO.
24
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND,
BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
18+50
PROP. R/
WLB
℄ PROP. TRK (-L-)
T/R ELEV 173.64
℄ EX. CSXT 'A' LINE(-Y4-)
UNDIVIDED COASTAL PLAIN, BROWN AND TAN, MOIST, LOOSE, SILTY SAND
ORANGE AND TAN, MOIST, STIFF, SILTY CLAY
WHITE AND GRAY, MOIST TO SAT., LOOSE, SAND
GRAY AND ORANGE, WET, VERY SOFT TO MED. STIFF, SILTY CLAY
TAN AND ORANGE, SAT., LOOSE TO MED. DENSE, SILTY SAND
COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND,
BLACK CREEK FORMATION
GRAY, WET, VERY STIFF TO HARD, SANDY CLAY AND SILTY CLAY
18+00
-L-

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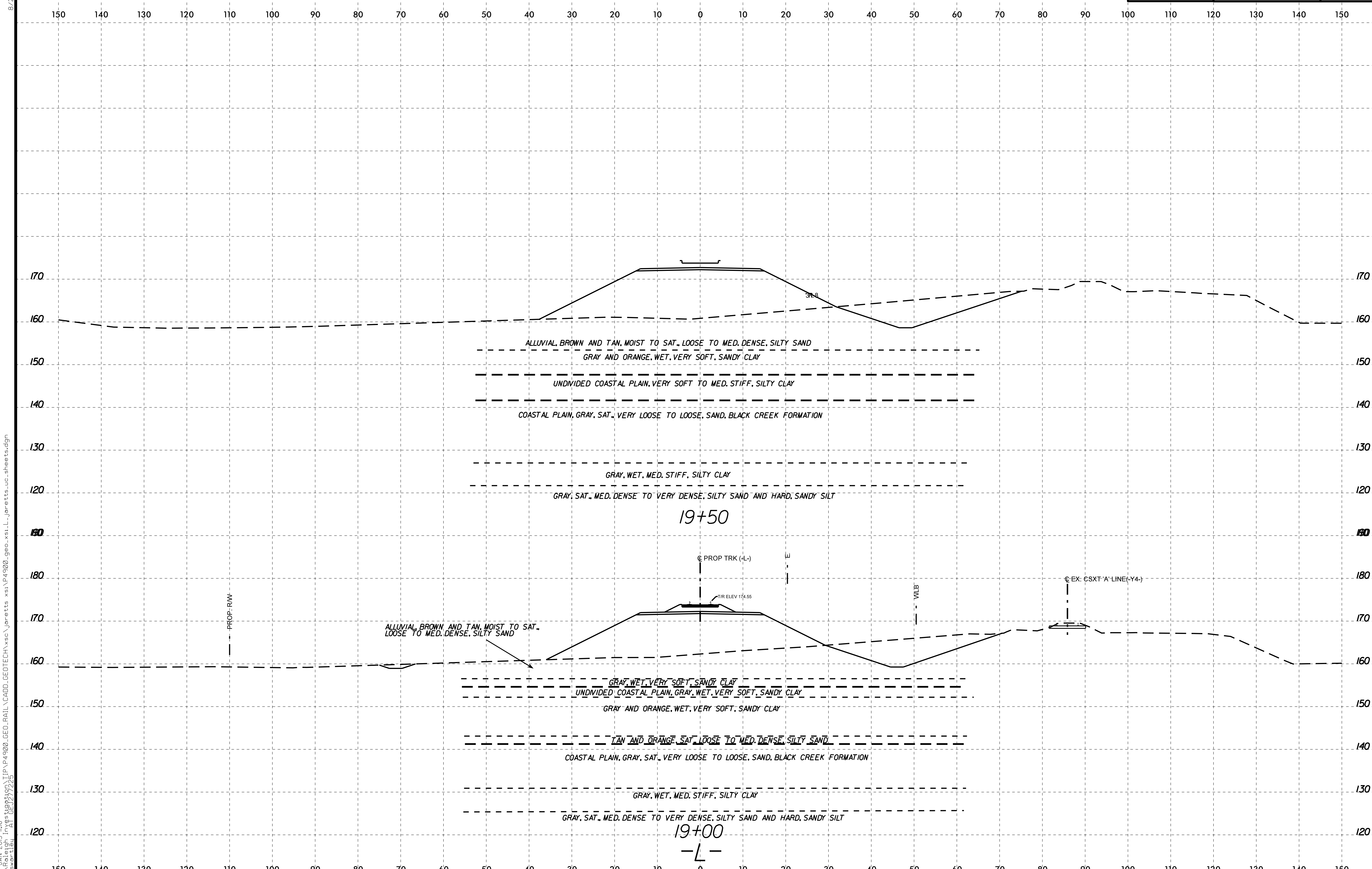
jrswartley AT GEJ277225

PROJ. REFERENCE NO.	SHEET NO.
P-4900	25



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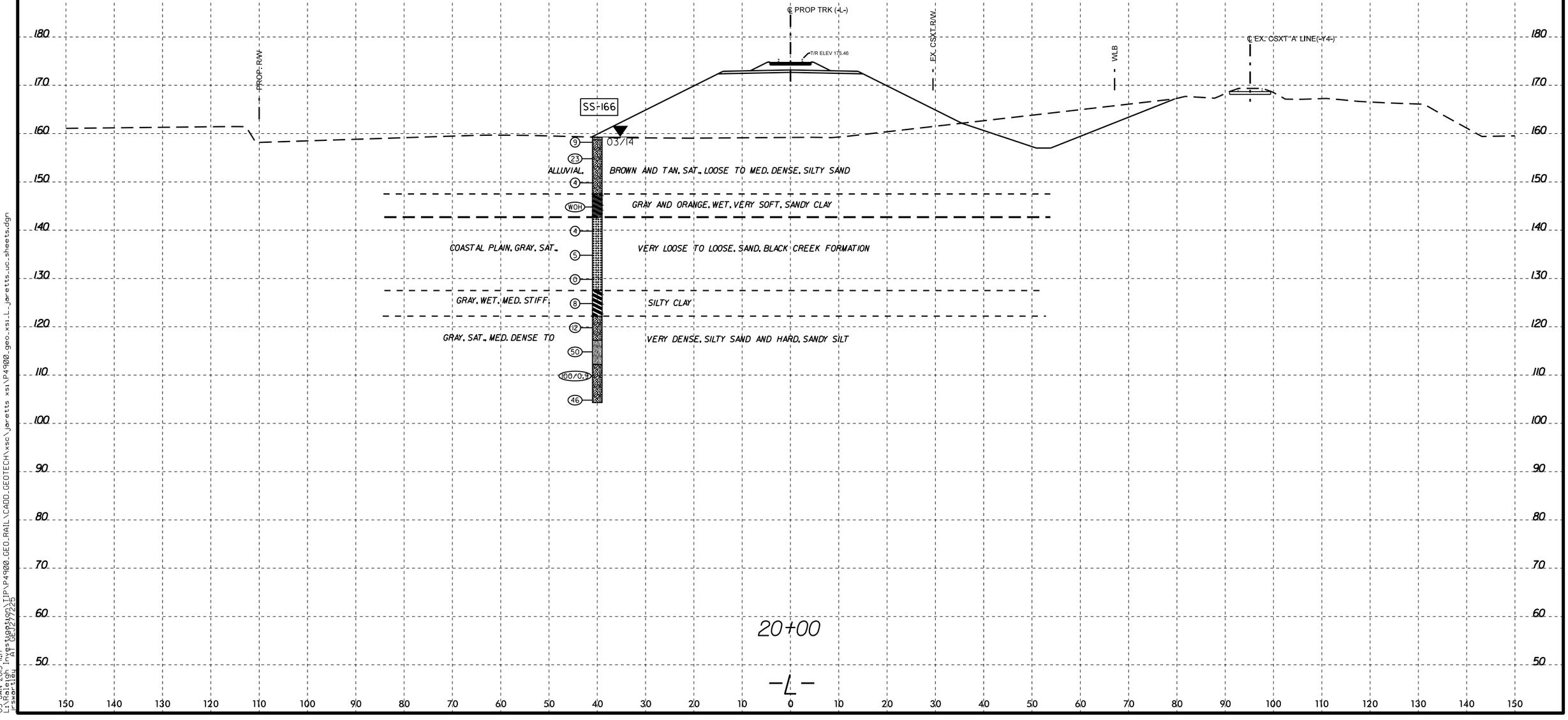
jrswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	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
SS-166	40' LT	20+00	13.4-14.9	A-6(5)	38	14	14.7	40.7	32.5	12.1	93	85	54	- - -	- - -



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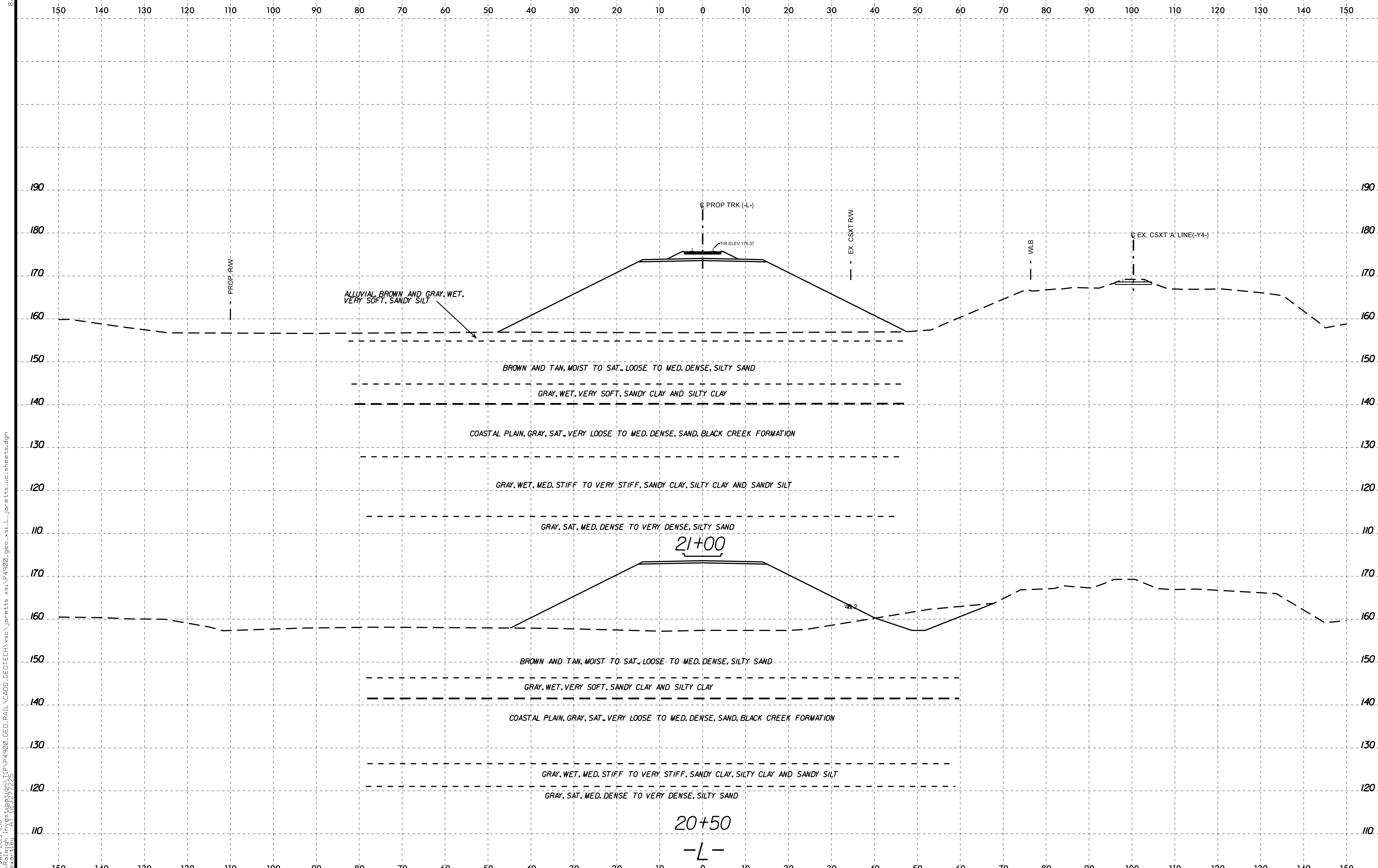
PROJ. REFERENCE NO.	SHEET NO.
P-4900	27



℄ PROP TRK (-L-)
T/R ELEV 176.37
EX. CSXT R/W
WLB
℄ EX. CSXT 'A' LINE(-Y4-)
PROP. R/W
ALLUVIAL, BROWN AND GRAY, WET, VERY SOFT, SANDY SILT
BROWN AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, VERY SOFT, SANDY CLAY AND SILTY CLAY
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO VERY STIFF, SANDY CLAY, SILTY CLAY AND SANDY SILT
GRAY, SAT, MED. DENSE TO VERY DENSE, SILTY SAND
21+00
BROWN AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, VERY SOFT, SANDY CLAY AND SILTY CLAY
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO VERY STIFF, SANDY CLAY, SILTY CLAY AND SANDY SILT
GRAY, SAT, MED. DENSE TO VERY DENSE, SILTY SAND
20+50
-L-

8/23/99

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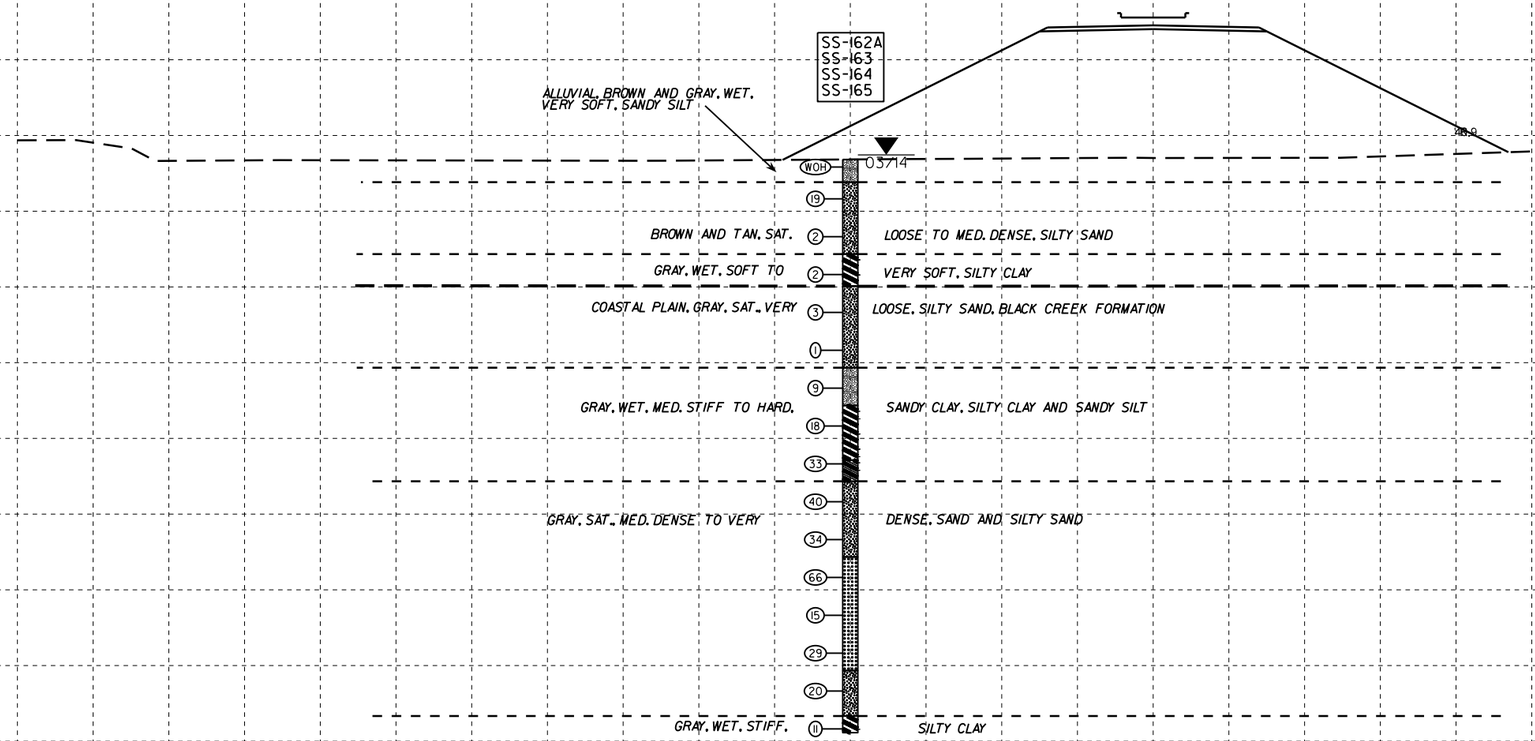
jrswartley AT GEJ277225

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
SS-162A	40' LT	21+50	0.0- 1.5	A-4(0)	15	NP	23.0	39.9	19.0	18.1	100	92	42	-	-
SS-163	40' LT	21+50	9.2- 10.7	A-2-4(0)	25	NP	4.2	73.3	14.4	8.1	100	98	30	39.9	-
SS-164	40' LT	21+50	29.2- 30.7	A-4(0)	17	2	16.7	35.6	27.5	20.1	100	90	57	-	-
SS-165	40' LT	21+50	39.7- 40.7	A-6(9)	32	15	0.8	30.4	26.5	42.3	100	100	75	-	-



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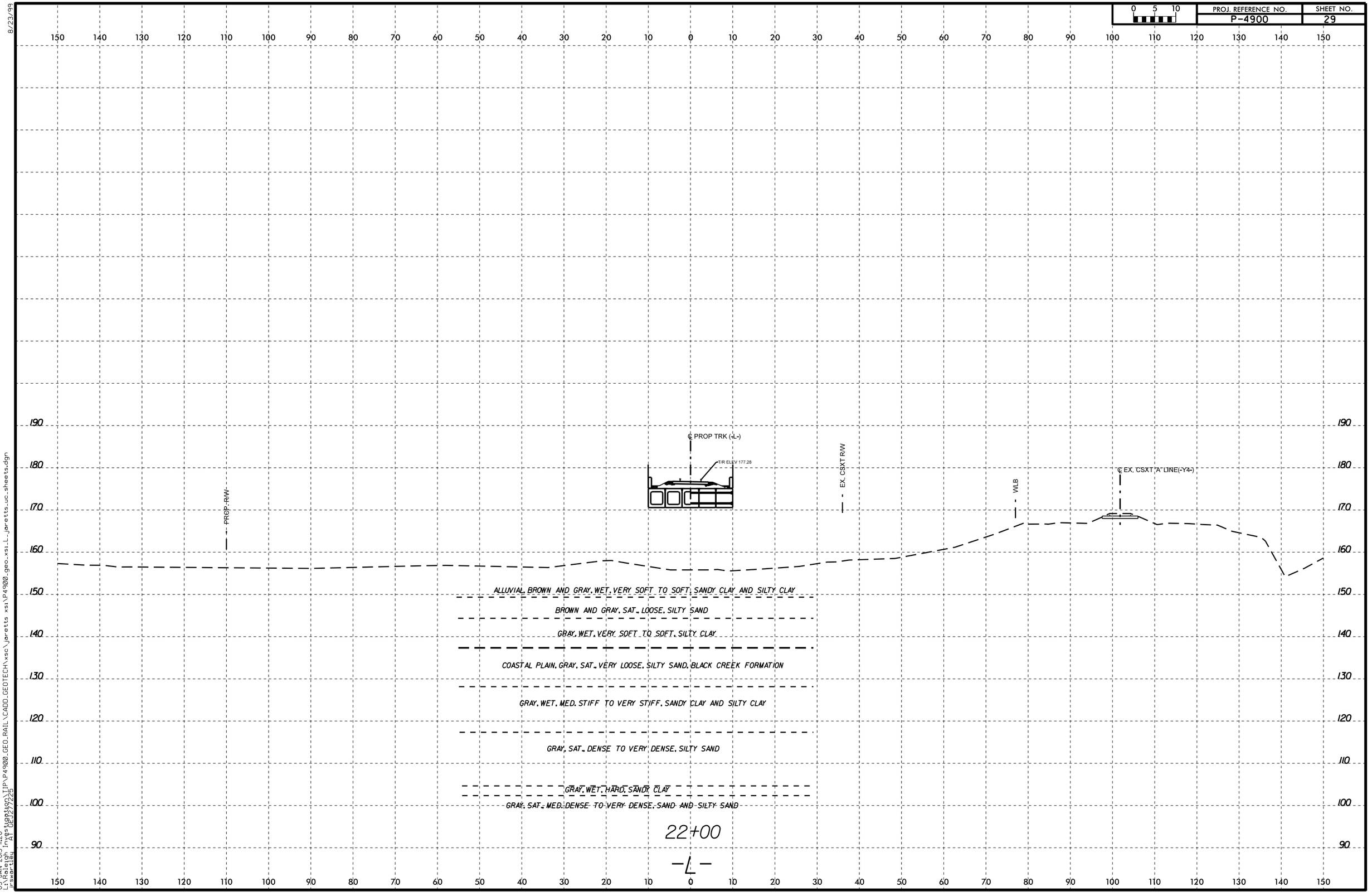
irswartley

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	29



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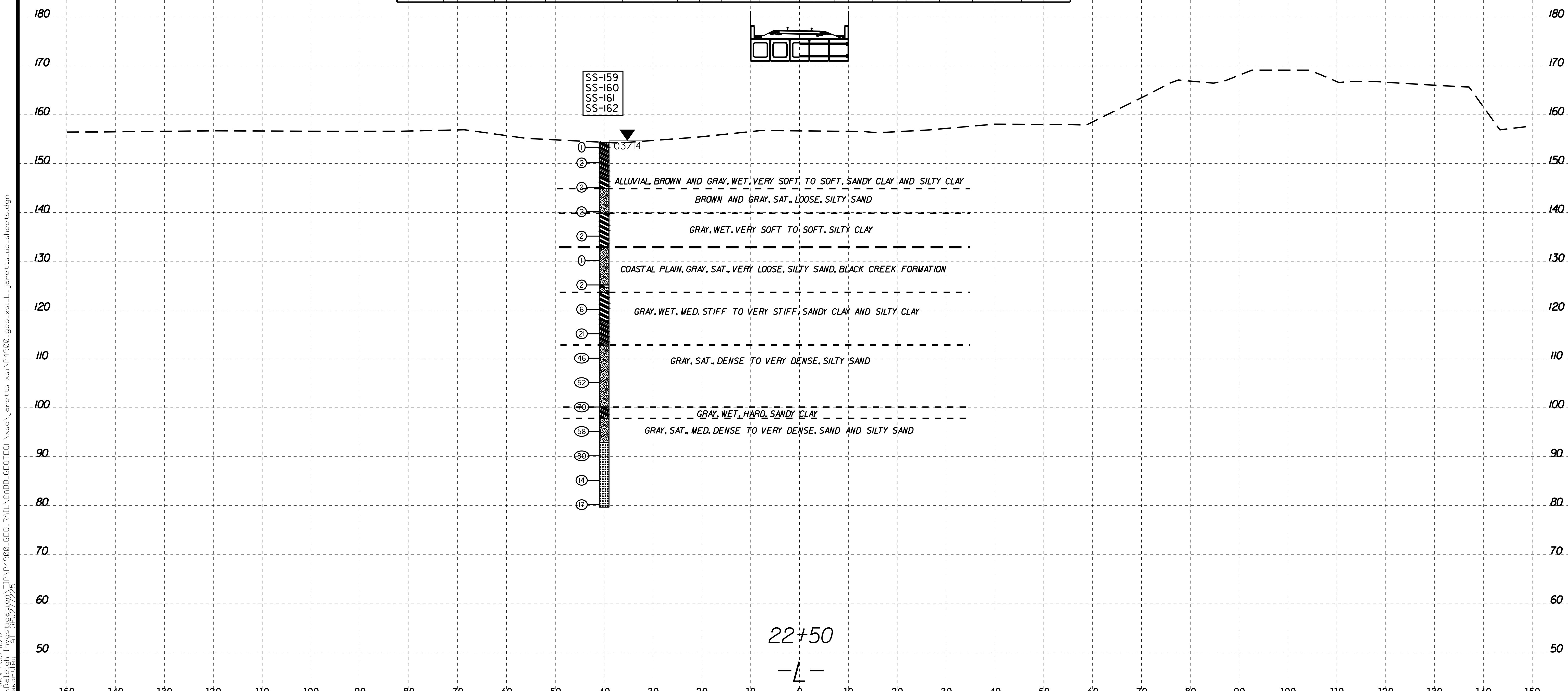
jrswartley
AT GEJ27225

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-159	40' LT	22+50	0.5-1.5	A-6(6)	28	15	19.3	26.2	22.3	32.2	100	92	59	-	-
SS-160	40' LT	22+50	3.2-4.7	A-6(4)	26	13	19.1	27.8	22.9	30.2	100	91	58	-	-
SS-161	40' LT	22+50	13.2-14.7	A-2-4(0)	27	NP	6.4	73.7	14.8	5.0	100	96	26	-	-
SS-162	40' LT	22+50	38.2-39.7	A-6(10)	35	15	1.6	33.2	26.9	38.3	100	99	76	-	-


SS-159
SS-160
SS-161
SS-162
03/14
ALLUVIAL, BROWN AND GRAY, WET, VERY SOFT TO SOFT, SANDY CLAY AND SILTY CLAY
BROWN AND GRAY, SAT., LOOSE, SILTY SAND
GRAY, WET, VERY SOFT TO SOFT, SILTY CLAY
COASTAL PLAIN, GRAY, SAT., VERY LOOSE, SILTY SAND, BLACK CREEK FORMATION
GRAY, WET, MED. STIFF TO VERY STIFF, SANDY CLAY AND SILTY CLAY
GRAY, SAT., DENSE TO VERY DENSE, SILTY SAND
GRAY, WET, HARD, SANDY CLAY
GRAY, SAT., MED. DENSE TO VERY DENSE, SAND AND SILTY SAND
1 2 2 2 2 1 2 6 21 46 52 70 58 80 14 17
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

22+50

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8/23/99

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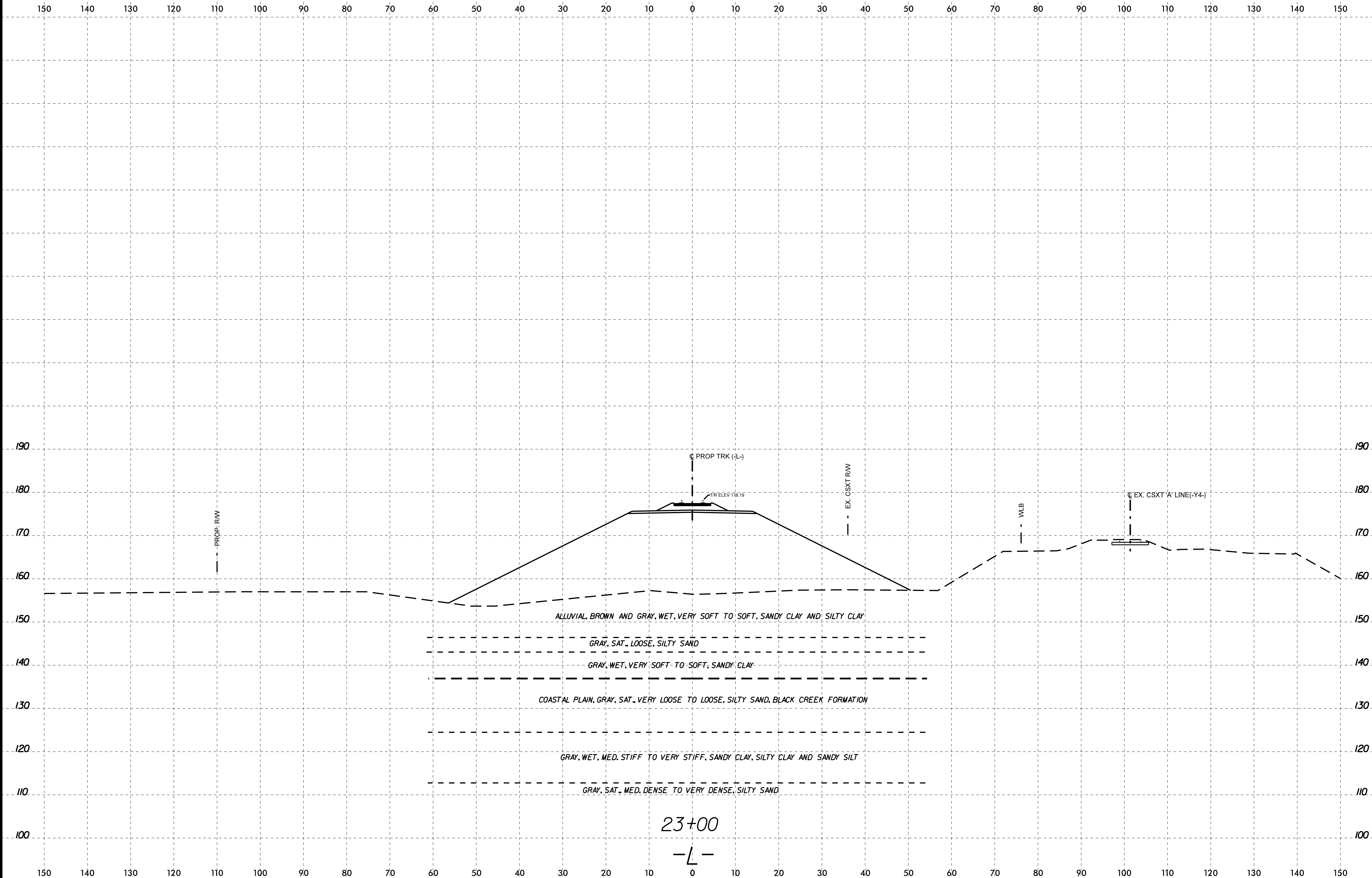
	P-4900	31



23+00

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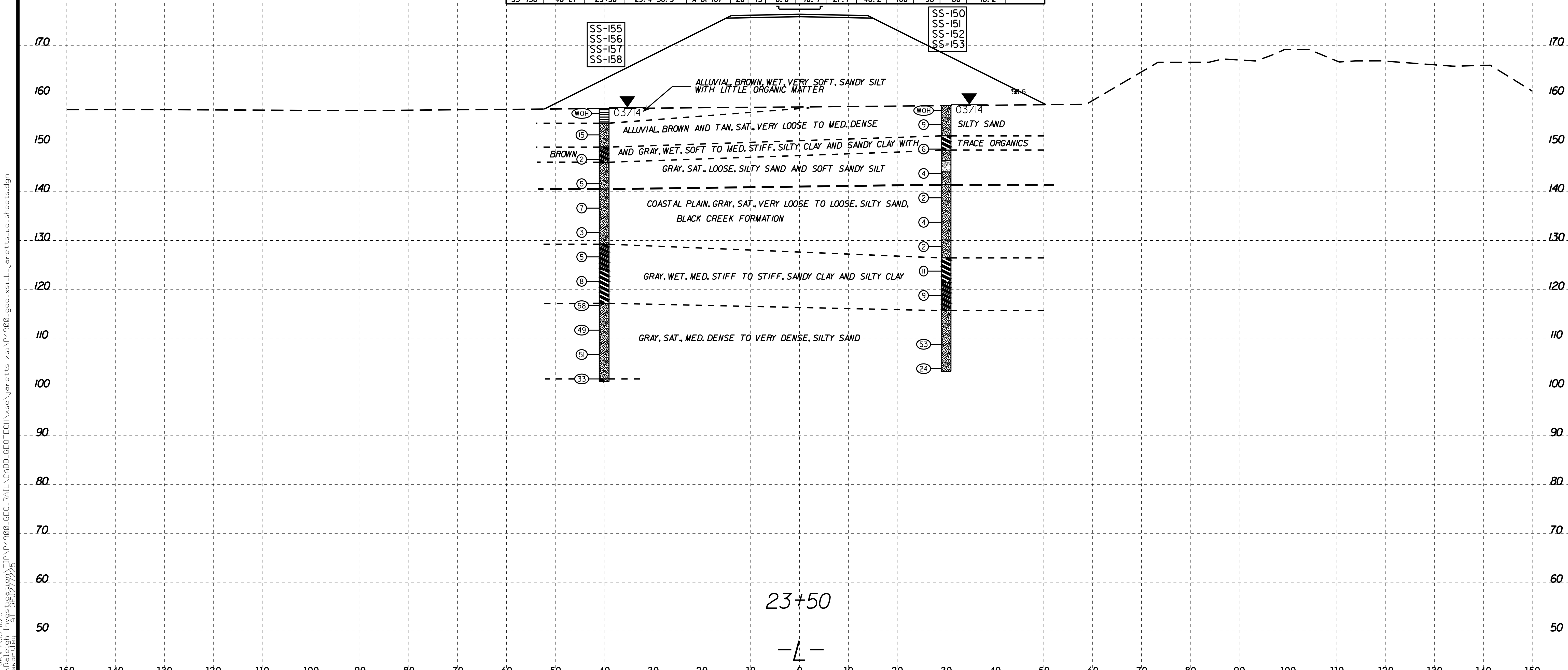
jrswartley AT GEJ277225

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
P-4900	32

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-150	30' RT	23+50	7.9-9.1	A-7-6(7)	43	26	13.3	45.8	10.8	30.1	98	89	46	-	-
SS-151	30' RT	23+50	17.9-19.4	A-2-4(0)	27	NP	47.0	32.4	10.5	10.0	100	71	24	-	-
SS-152	30' RT	23+50	27.9-29.4	A-2-4(0)	20	NP	54.6	25.6	8.7	11.0	89	62	19	-	-
SS-153	30' RT	23+50	32.9-34.4	A-7-6(27)	49	28	0.8	13.7	17.3	68.3	100	100	90	25.5	-
SS-154	30' RT	23+50	37.9-39.4	A-6(9)	35	16	14.5	24.9	18.5	42.2	98	87	67	-	-
SS-155	40' LT	23+50	0.0-1.5	A-4(0)	27	NP	30.9	38.4	22.7	8.0	100	85	36	-	4.8
SS-156	40' LT	23+50	9.4-10.9	A-6(7)	30	12	8.4	25.7	43.8	22.1	100	95	74	-	3.4
SS-157	40' LT	23+50	14.4-15.9	A-2-4(0)	24	NP	14.3	70.1	11.6	4.0	100	90	20	-	-
SS-158	40' LT	23+50	29.4-30.9	A-6(10)	28	15	8.0	18.1	27.7	46.2	100	96	80	16.2	-



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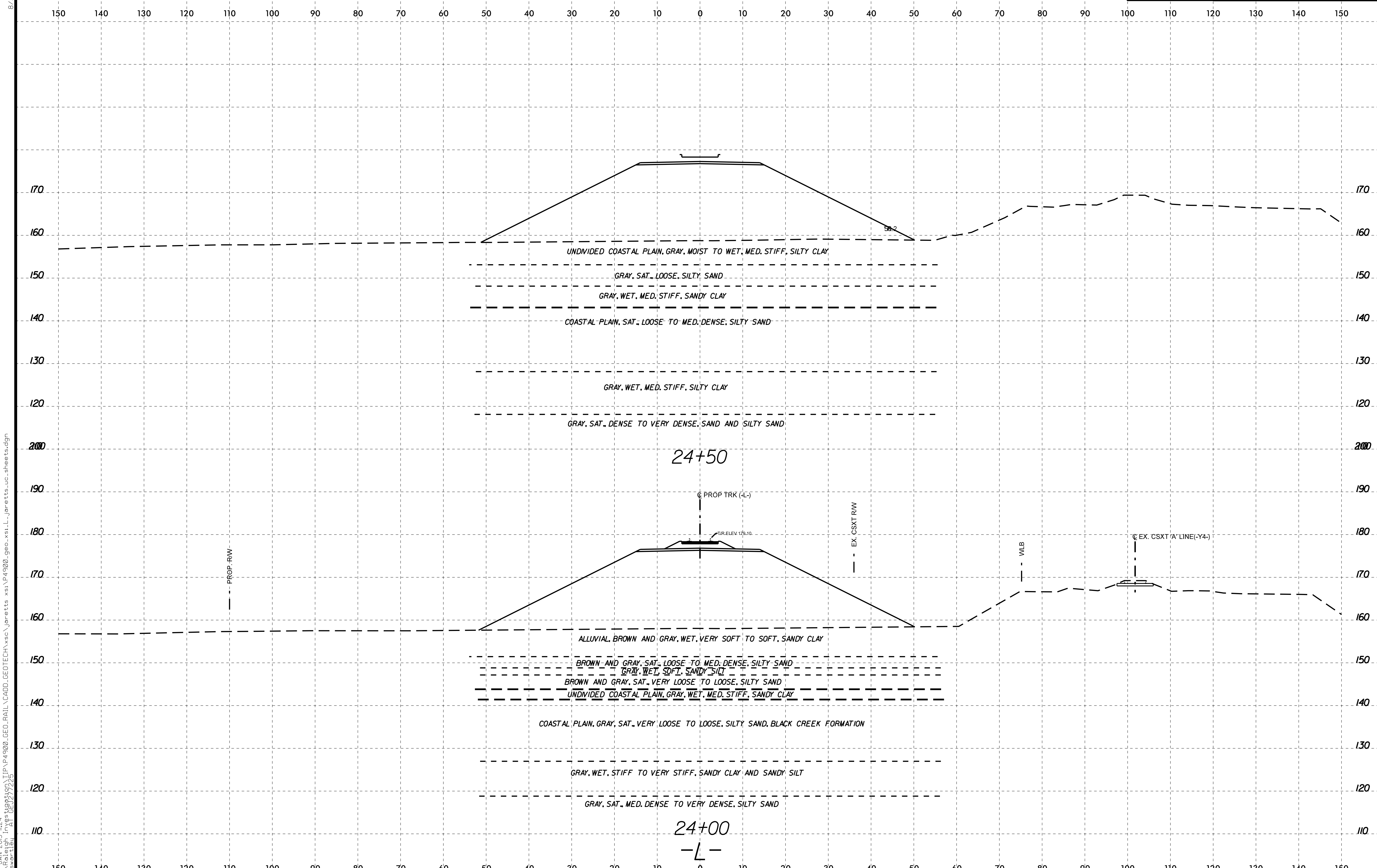
PROJ. REFERENCE NO.	SHEET NO.
P-4900	33



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P-4900	34

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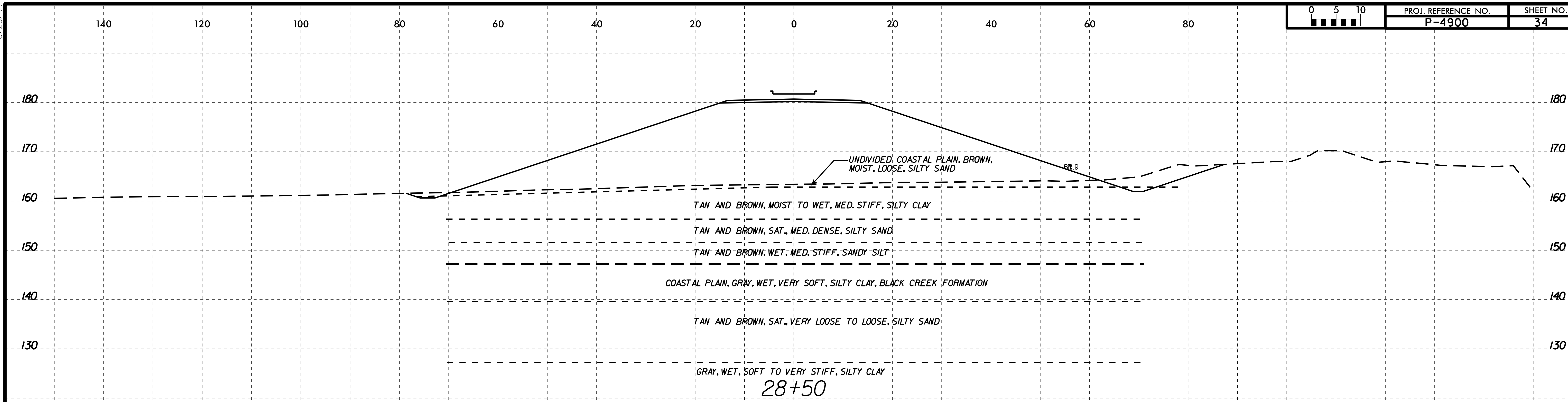
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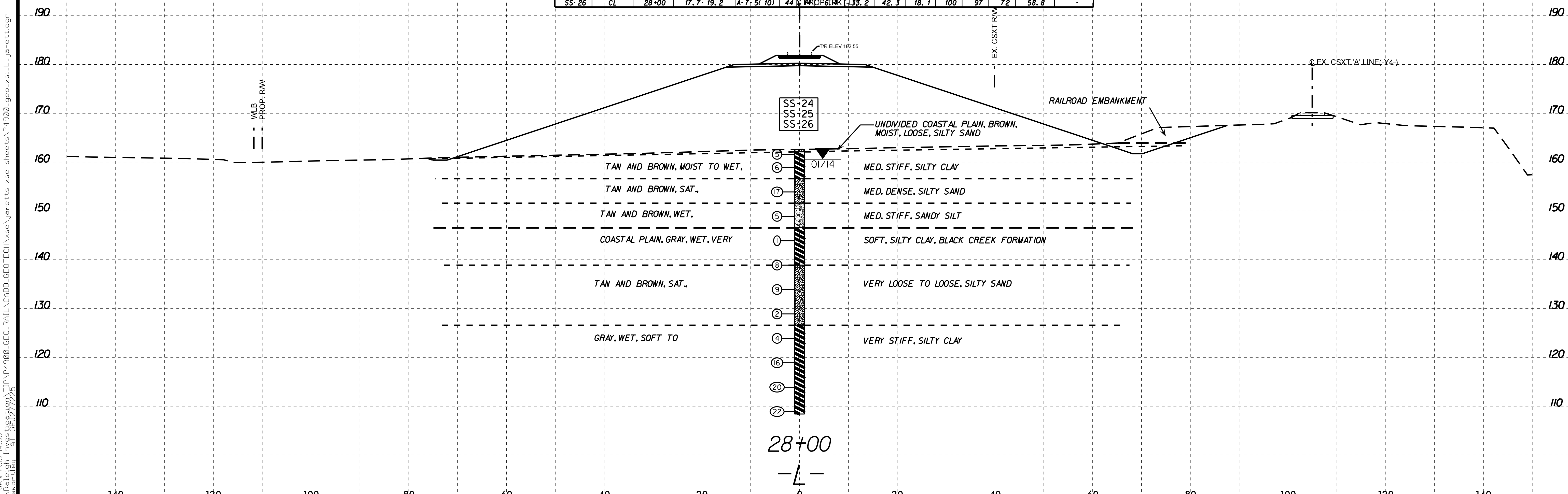
140 120 100 80 60 40 20 0 20 40 60 80
180
170
160
150
140
130
UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND
TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY
TAN AND BROWN, SAT., MED. DENSE, SILTY SAND
TAN AND BROWN, WET, MED. STIFF, SANDY SILT
COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION
TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND
GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY
28+50

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-24	CL	28+00	0.5-1.5	A-7-6(7)	43	19	33.0	16.3	10.5	40.2	100	78	53	-	-
SS-25	CL	28+00	12.7-14.2	A-4(2)	30	8	11.5	48.7	19.7	20.1	100	93	52	-	-
SS-26	CL	28+00	17.7-19.2	A-7-5(10)	44	14	6.4	33.2	42.3	18.1	100	97	72	58.8	-


200
190
180
170
160
150
140
130
120
110
℄ PROP. TRK (-L-)
T/R ELEV 182.55
EX. CSXT R/W
℄ EX. CSXT 'A' LINE(-Y4-)
WLB
PROP. R/W
RAILROAD EMBANKMENT
SS-24
SS-25
SS-26
UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND
01/14
TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY
TAN AND BROWN, SAT., MED. DENSE, SILTY SAND
TAN AND BROWN, WET, MED. STIFF, SANDY SILT
COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION
TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND
GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY
5 6 17 5 1 8 9 2 4 16 20 22
28+00
-L-
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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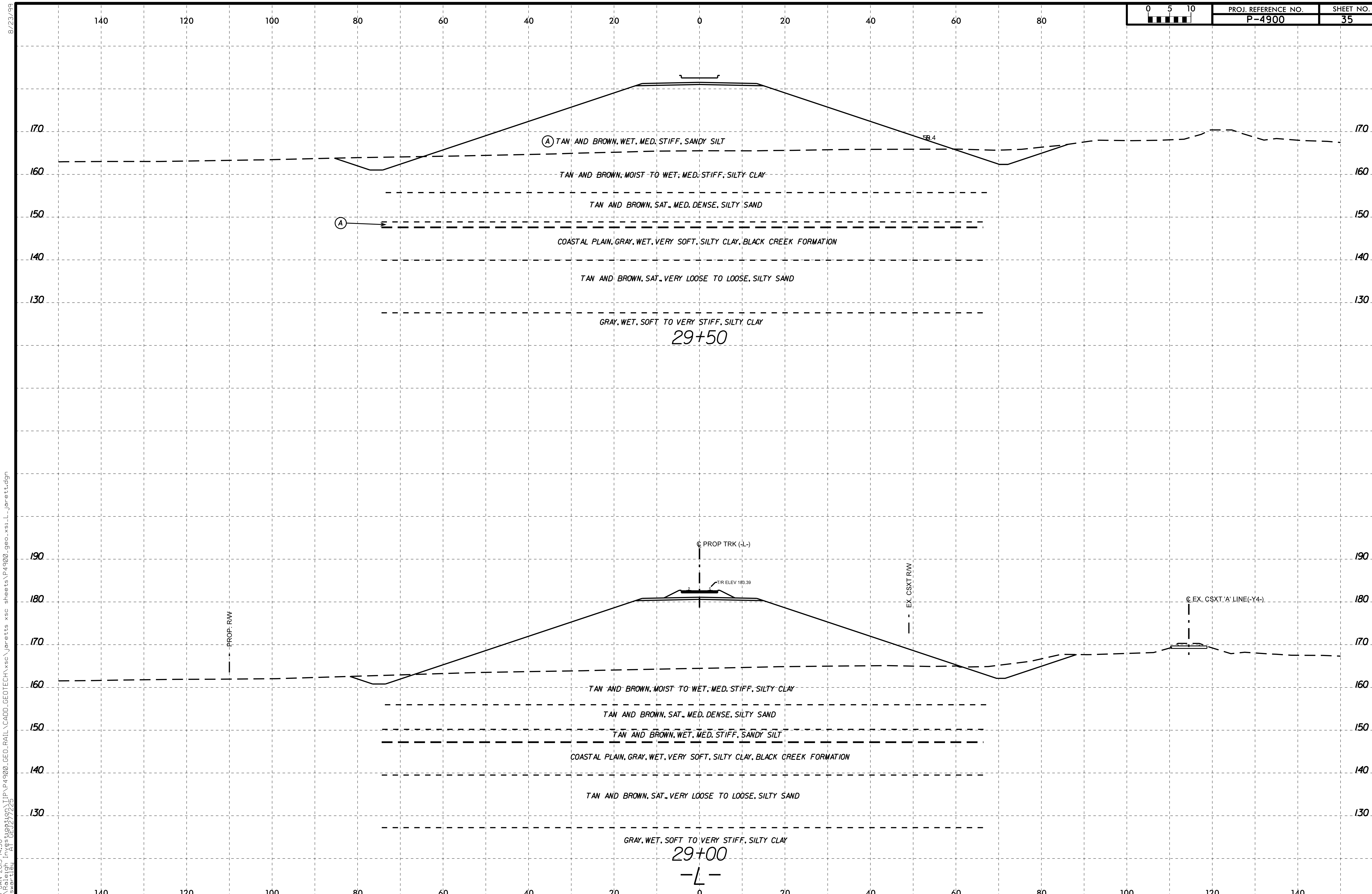
PROJ. REFERENCE NO. P-4900 | SHEET NO. 35



0 5 10
140 120 100 80 60 40 20 0 20 40 60 80
170 160 150 140 130
(A) TAN AND BROWN, WET, MED. STIFF, SANDY SILT
58.4
TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY
TAN AND BROWN, SAT., MED. DENSE, SILTY SAND
(A)
COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION
TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND
GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY
29+50
190 180 170 160 150 140 130
℄ PROP TRK (-L-)
T/R ELEV 183.39
EX. CSXT R/W
PROP. R/W
℄ EX. CSXT 'A' LINE(-Y4-)
TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY
TAN AND BROWN, SAT., MED. DENSE, SILTY SAND
TAN AND BROWN, WET, MED. STIFF, SANDY SILT
COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION
TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND
GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY
29+00
-L-
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

8/23/99

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jrswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	36

140 120 100 80 60 40 20 0 20 40 60 80

170 160 150 140 130

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND

SB-2

TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY

TAN AND BROWN, SAT., MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION

TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND

GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY

30+50

℄ PROP TRK (-L-)

T/R ELEV 184.23

PROP. R/W

EX. CSXT R/W

℄ EX. CSXT "A" LINE(-Y4-)

190 180 170 160 150 140 130

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND

TAN AND BROWN, MOIST TO WET, MED. STIFF, SILTY CLAY

TAN AND BROWN, SAT., MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, WET, VERY SOFT, SILTY CLAY, BLACK CREEK FORMATION

TAN AND BROWN, SAT., VERY LOOSE TO LOOSE, SILTY SAND

GRAY, WET, SOFT TO VERY STIFF, SILTY CLAY

30+00

-L-

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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irswartley
AT GEJ27225

8/23/99

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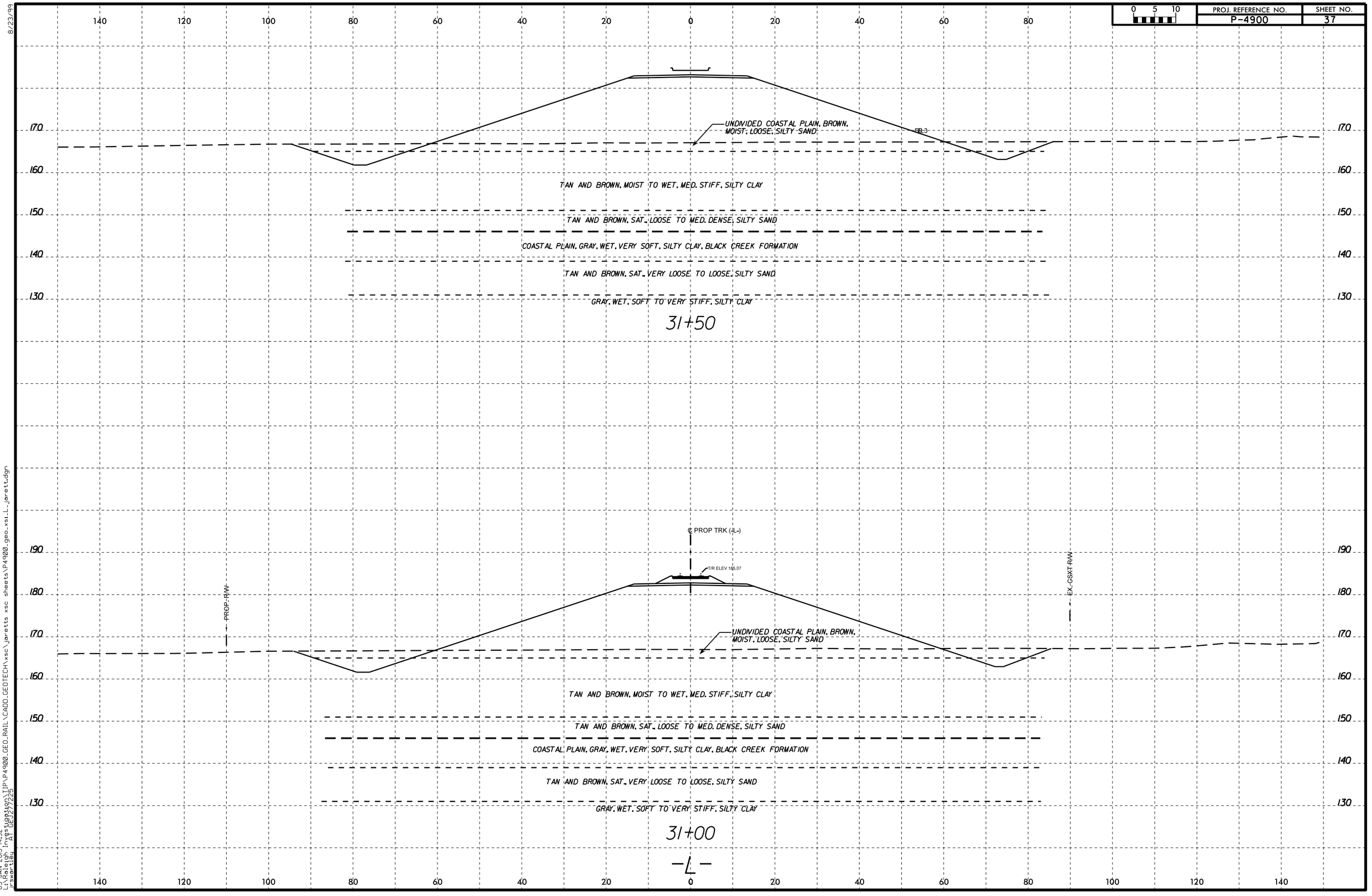
	P-4900	37



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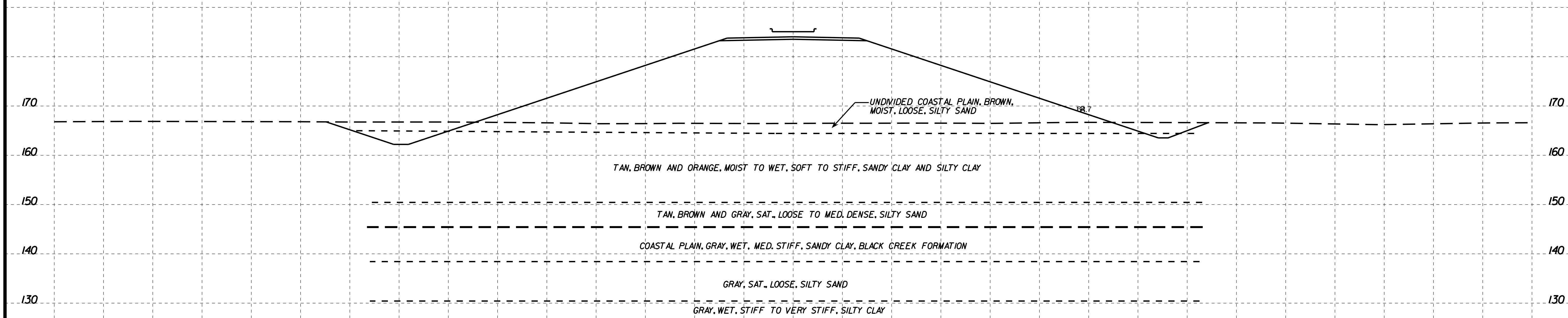
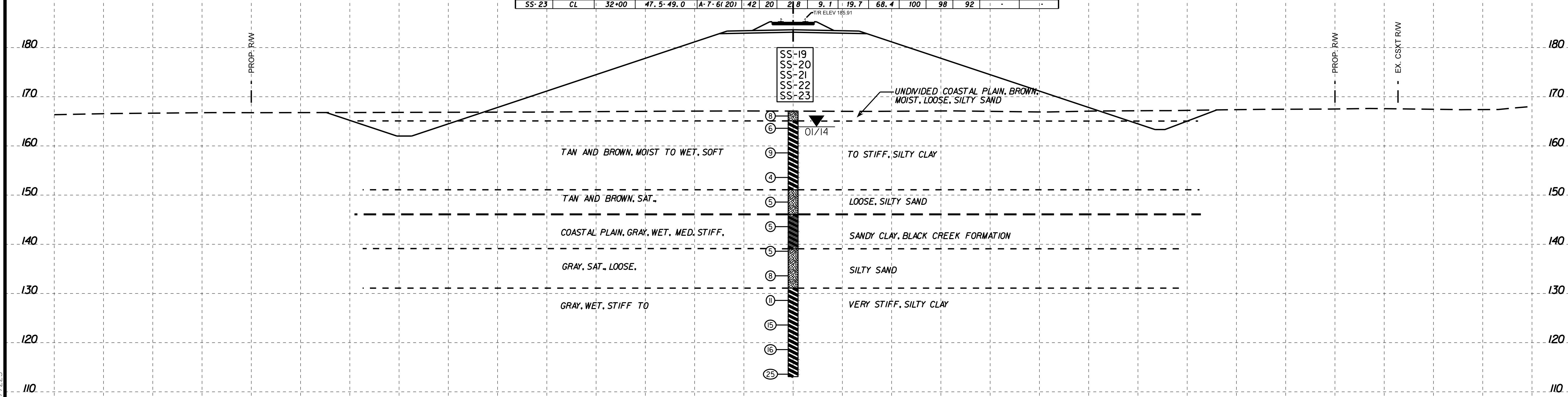
irswartley
AT GEJ27225

8/23/99



32+50

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-19	CL	32+00	2.5-4.0	A-7-6(8)	41	22	33.2	15.5	17.1	34.2	100	80	53	-	-
SS-20	CL	32+00	12.5-14.0	A-7-6(12)	43	27	4.0	44.7	21.1	30.2	100	97	58	30.4	-
SS-21	CL	32+00	22.5-24.0	A-6(7)	33	16	20.3	23.9	35.6	20.1	100	92	59	19.7	-
SS-22	CL	32+00	37.5-39.0	A-7-6(22)	43	23	4.0	5.4	26.2	64.4	100	97	92	-	-
SS-23	CL	32+00	47.5-49.0	A-7-6(20)	42	20	2.8	9.1	19.7	68.4	100	98	92	-	-



32+00

-L-

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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jrswartley AT GEJ277225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	39

140 120 100 80 60 40 20 0 20 40 60 80

170
160
150
140
130

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND AND CLAYEY SAND

TB.8

TAN, BROWN AND ORANGE, MOIST TO WET, SOFT TO STIFF, SANDY CLAY AND SILTY CLAY

TAN, BROWN AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF, SANDY CLAY.

GRAY, SAT., LOOSE, SILTY SAND

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY

33+50

℄ PROP TRK (-L-)

T/R ELEV 189.75

PROP. R/W

PROP. R/W

190
180
170
160
150
140
130

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND

TAN, BROWN AND ORANGE, MOIST TO WET, SOFT TO STIFF, SANDY CLAY AND SILTY CLAY

TAN, BROWN AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, WET, MED. STIFF, SANDY CLAY, BLACK CREEK FORMATION

GRAY, SAT., LOOSE, SILTY SAND

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY

33+00

-L-

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AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	40

140 120 100 80 60 40 20 0 20 40 60 80

170
160
150
140
130
120

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND AND CLAYEY SAND

TB.B

TAN, BROWN AND ORANGE, MOIST TO WET, SOFT TO STIFF, SANDY CLAY AND SILTY CLAY

TAN, BROWN AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF, SANDY CLAY.

GRAY, SAT., LOOSE, SILTY SAND

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY

34+50

200
190
180
170
160
150
140
130

℄ PROP TRK (-L-)

TIR ELEV 187.59

PROP. R/W

PROP. R/W

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, LOOSE, SILTY SAND AND CLAYEY SAND

TAN, BROWN AND ORANGE, MOIST TO WET, SOFT TO STIFF, SANDY CLAY AND SILTY CLAY

TAN, BROWN AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

COASTAL PLAIN, GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF, SANDY CLAY.

GRAY, SAT., LOOSE, SILTY SAND

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY

34+00

-L-

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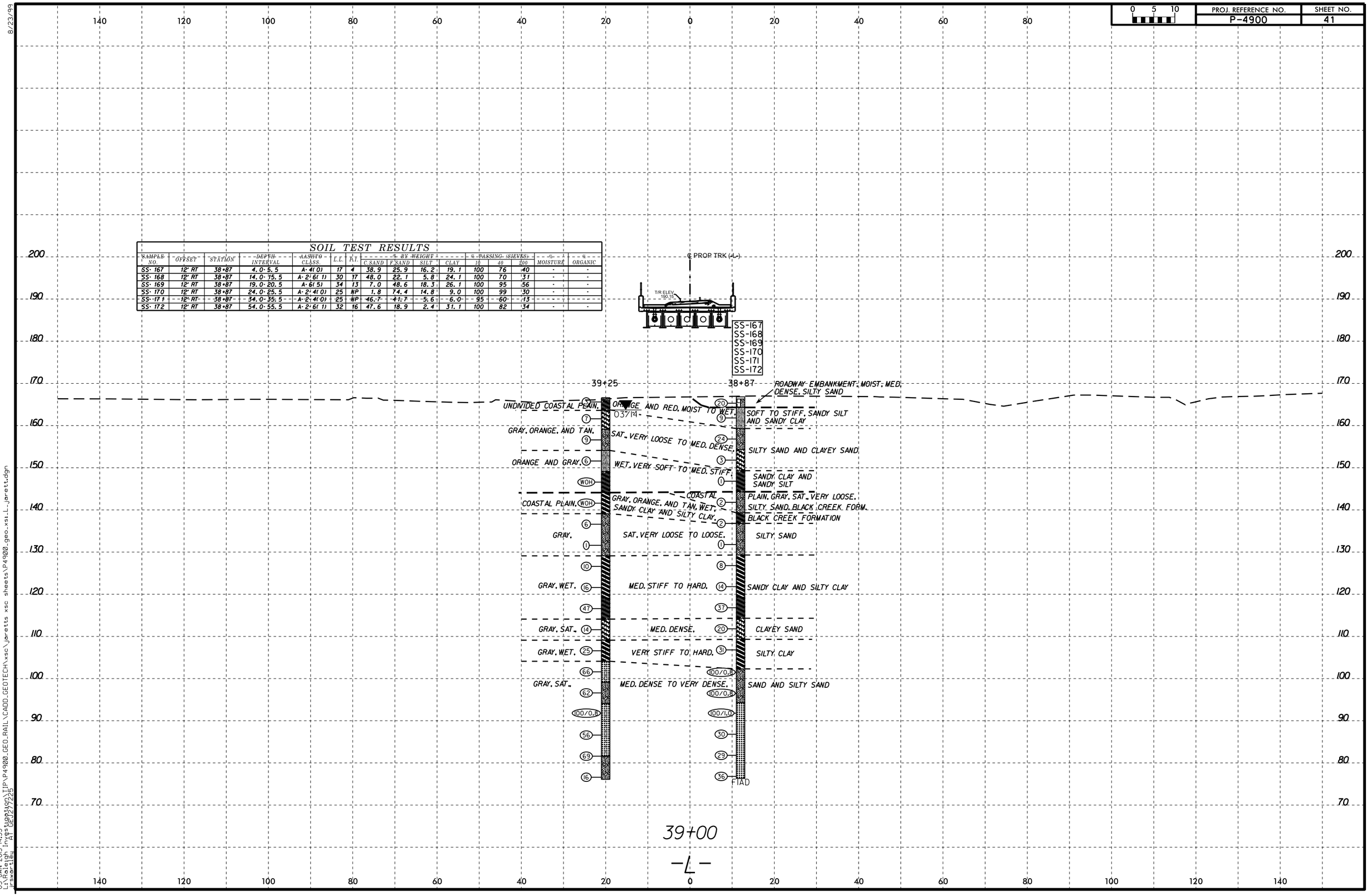
irswartley
AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
P-4900	41

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C SAND	% BY WEIGHT F SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING SIEVES #10	% PASSING SIEVES #40	% PASSING SIEVES #200	% MOISTURE	% ORGANIC
SS-167	12' RT	38+87	4.0-5.5	A-4(0)	17	4	38.9	25.9	16.2	19.1	100	76	40	-	-
SS-168	12' RT	38+87	14.0-15.5	A-2-6(1)	30	17	48.0	22.1	5.8	24.1	100	70	31	-	-
SS-169	12' RT	38+87	19.0-20.5	A-6(5)	34	13	7.0	48.6	18.3	26.1	100	95	56	-	-
SS-170	12' RT	38+87	24.0-25.5	A-2-4(0)	25	NP	1.8	74.4	14.8	9.0	100	99	30	-	-
SS-171	12' RT	38+87	34.0-35.5	A-2-4(0)	25	NP	46.7	41.7	5.6	6.0	95	60	13	-	-
SS-172	12' RT	38+87	54.0-55.5	A-2-6(1)	32	16	47.6	18.9	2.4	31.1	100	82	34	-	-



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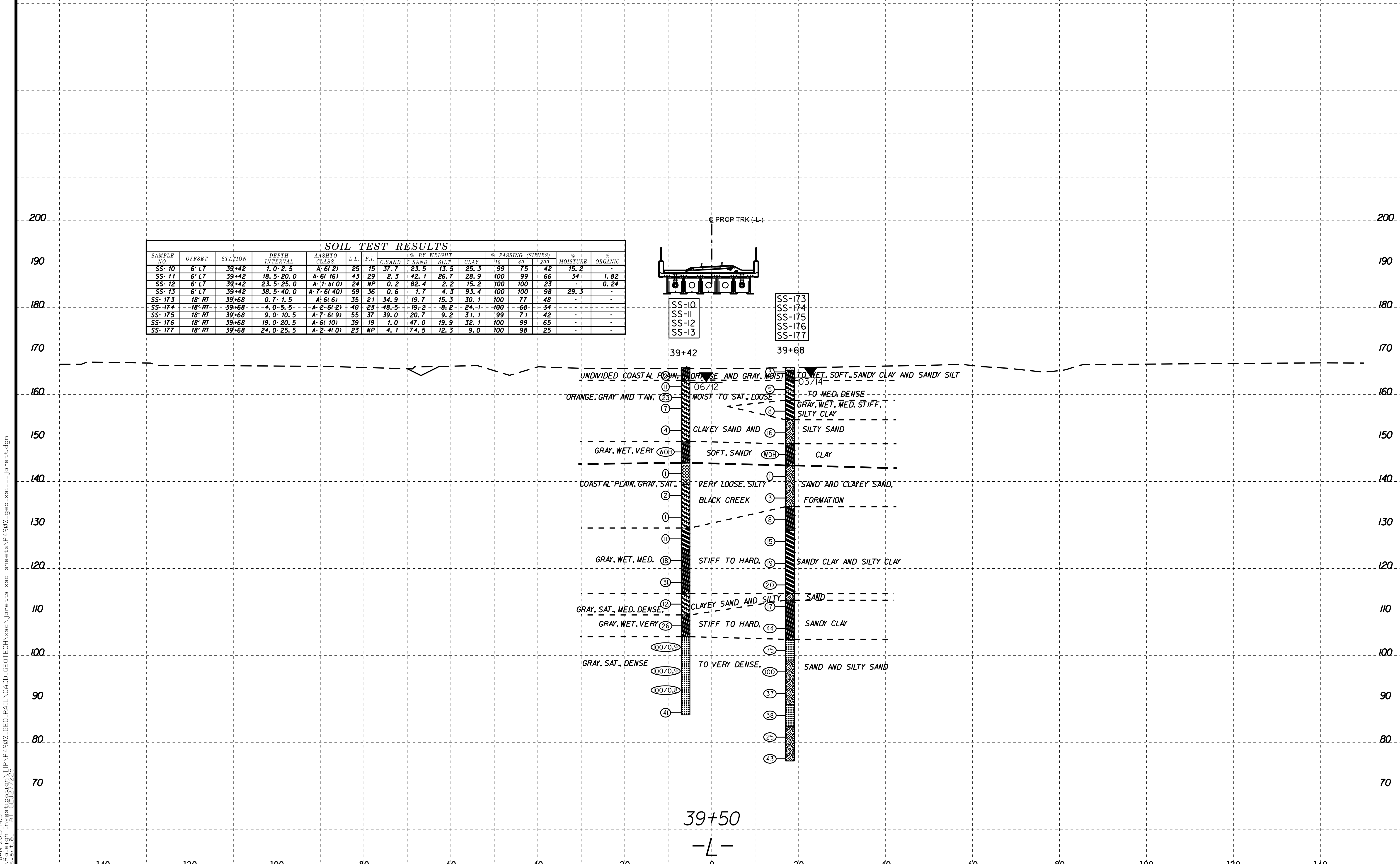
jrswartley

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-10	6' LT	39+42	1.0-2.5	A-6(2)	25	15	37.7	23.5	13.5	25.3	99	75	42	15.2	-
SS-11	6' LT	39+42	18.5-20.0	A-6(16)	43	29	2.3	42.1	26.7	28.9	100	99	66	34	1.82
SS-12	6' LT	39+42	23.5-25.0	A-1-b(0)	24	NP	0.2	82.4	2.2	15.2	100	100	23	-	0.24
SS-13	6' LT	39+42	38.5-40.0	A-7-6(40)	59	36	0.6	1.7	4.3	93.4	100	100	98	29.3	-
SS-173	18' RT	39+68	0.7-1.5	A-6(6)	35	21	34.9	19.7	15.3	30.1	100	77	48	-	-
SS-174	18' RT	39+68	4.0-5.5	A-2-6(2)	40	23	48.5	19.2	8.2	24.1	100	68	34	-	-
SS-175	18' RT	39+68	9.0-10.5	A-7-6(9)	55	37	39.0	20.7	9.2	31.1	99	71	42	-	-
SS-176	18' RT	39+68	19.0-20.5	A-6(10)	39	19	1.0	47.0	19.9	32.1	100	99	65	-	-
SS-177	18' RT	39+68	24.0-25.5	A-2-4(0)	23	NP	4.1	74.5	12.3	9.0	100	98	25	-	-



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	P-4900	43

140 120 100 80 60 40 20 0 20 40 60 80

170
160
150
140

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MOIST TO WET, SOFT, SAND CLAY AND SANDY SILT

ORANGE GRAY AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, CLAYEY SAND AND SILTY SAND

GRAY, WET, MED. STIFF, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE, SILTY SAND AND CLAYEY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND SILTY CLAY

40+50

200
190
180
170
160
150
140

℄ PROP TRK (L)

T/R ELEV 190.01

PROP. R/W

PROP. R/W

UNDIVIDED COASTAL PLAIN, ORANGE AND GRAY, MOIST TO WET, SOFT, SANDY CLAY AND SANDY SILT

ORANGE GRAY AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, CLAYEY SAND AND SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY

COASTAL PLAIN, GRAY, SAT., VERY LOOSE, SILTY SAND AND CLAYEY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND SILTY CLAY

40+00

-L-

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irswartley
AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	44

140 120 100 80 60 40 20 0 20 40 60 80

190 180 170 160 150 140 130

UNDIVIDED COASTAL PLAIN, ORANGE GRAY AND TAN, MOIST TO SAT., LOOSE TO MED. DENSE, CLAYEY SAND AND SILTY SAND

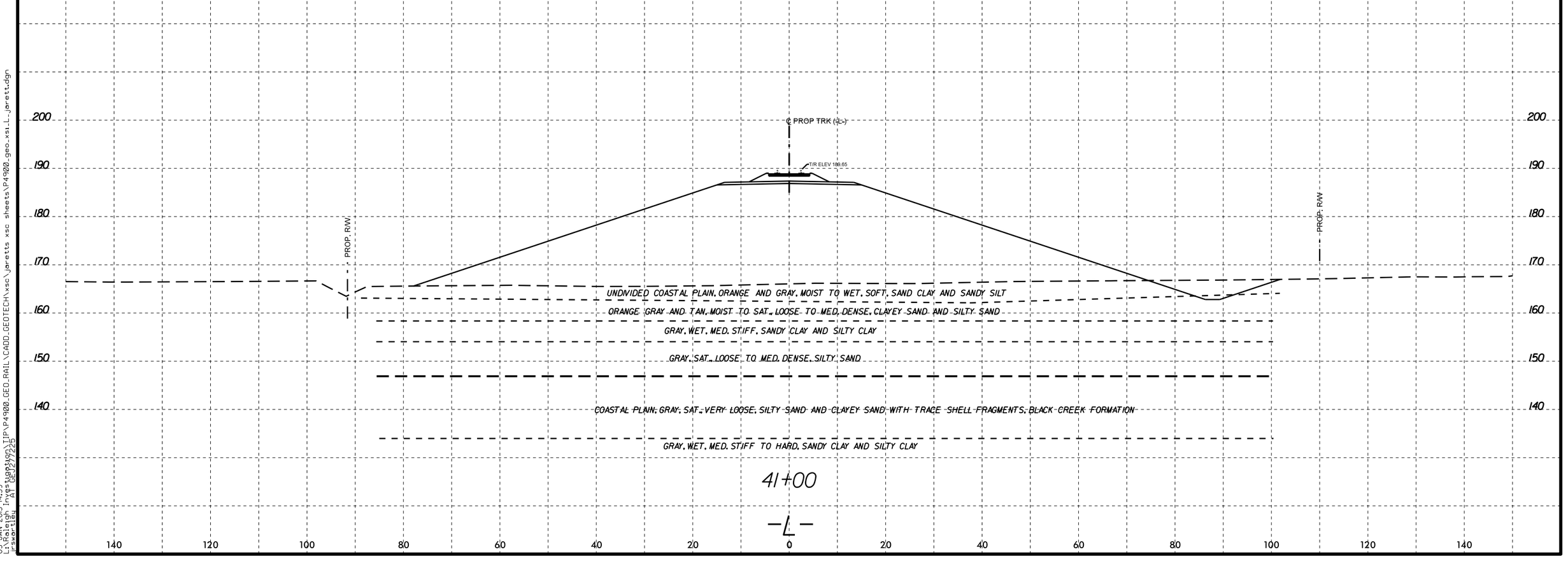
GRAY, WET, MED. STIFF, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE, SILTY SAND AND CLAYEY SAND WITH TRACE SHELL FRAGMENTS, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF TO HARD, SANDY CLAY AND SILTY CLAY

41+50



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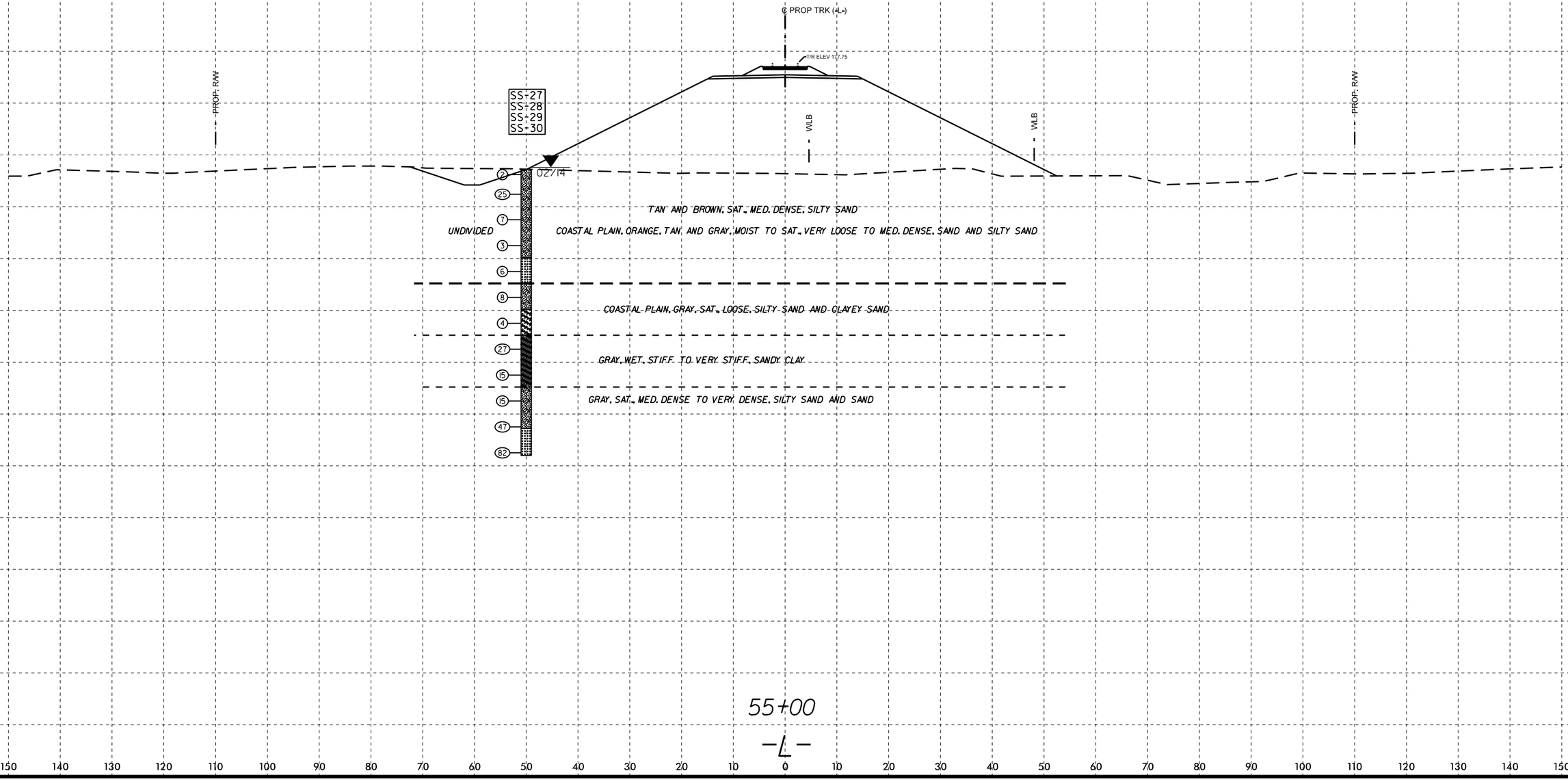
irswartley AT GEJ27225

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) #10	% PASSING (SIEVES) #40	% PASSING (SIEVES) #200	% MOISTURE	% ORGANIC
SS-27	50' LT	55+00	3.8-5.3	A-2-4(0)	19	NP	61.1	28.5	4.3	6.0	100	75	13	-	-
SS-28	50' LT	55+00	8.7-10.2	A-2-4(0)	27	NP	0.3	83.2	3.4	13.1	100	100	21	-	-
SS-29	50' LT	55+00	28.7-30.2	A-2-6(0)	37	14	54.1	15.3	8.5	22.1	77	46	25	-	-
SS-30	50' LT	55+00	33.7-35.2	A-6(9)	29	13	6.2	16.3	29.2	48.2	99	96	83	-	-



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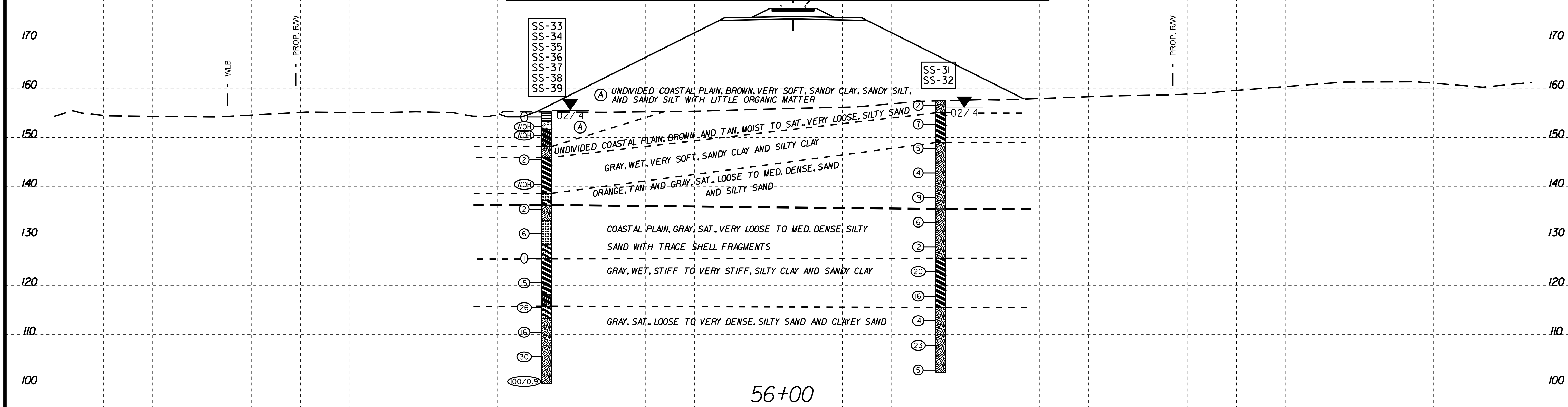
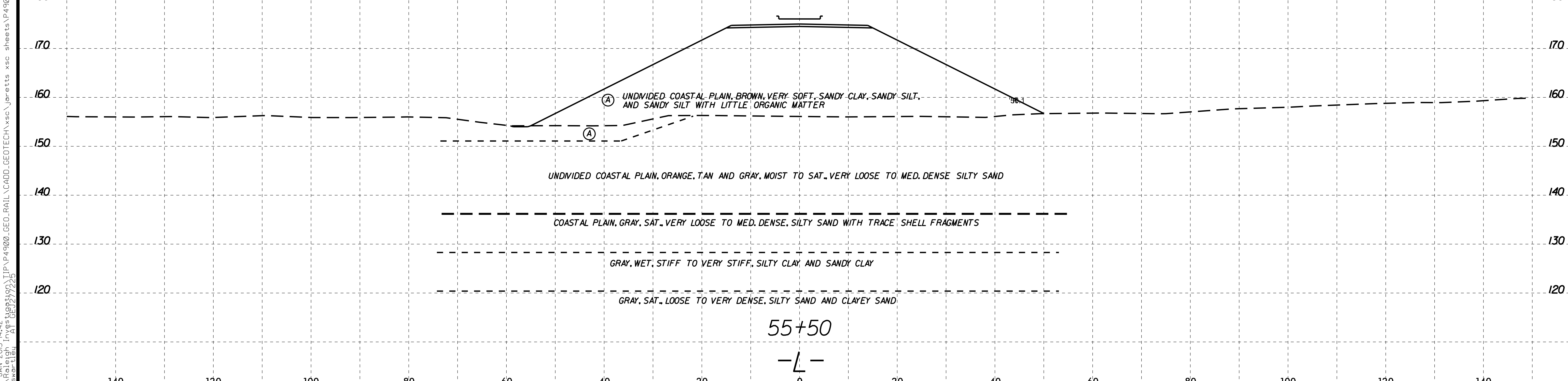
irswartley

PROJ. REFERENCE NO.	SHEET NO.
P-4900	46

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-31	30' RT	56+00	3.8-5.3	A-7-6(21)	58	43	20.1	26.9	14.8	38.2	100	88	58	28.6	-
SS-32	30' RT	56+00	23.7-25.2	A-2-4(0)	32	NP	63.2	20.9	7.8	8.0	91	52	15	-	-
SS-33	50' LT	56+00	0.0-1.5	A-4(1)	28	6	25.1	24.5	40.3	10.1	99	83	55	-	4.8
SS-34	50' LT	56+00	2.0-3.5	A-4(0)	15	2	30.4	34.0	21.6	14.1	98	81	40	-	-
SS-35	50' LT	56+00	3.7-5.2	A-6(3)	29	16	25.5	32.8	15.6	26.1	97	83	45	-	-
SS-36	50' LT	56+00	9.2-10.2	A-7-6(63)	95	67	0.6	3.2	11.8	84.4	87	87	84	61.2	-
SS-37	50' LT	56+00	13.7-15.2	A-7-5(9)	49	19	25.3	27.7	28.8	18.1	100	86	55	85.9	-
SS-38	50' LT	56+00	18.9-20.2	A-2-4(0)	27	10	55.9	22.0	8.0	14.1	99	58	26	-	-
SS-39	50' LT	56+00	28.7-29.8	A-2-6(1)	33	15	45.2	16.8	10.9	27.1	83	56	33	-	-





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	P-4900	47

140 120 100 80 60 40 20 0 20 40 60 80

190
180
170
160
150
140
130

℄ PROP TRK (-L-)

T/R ELEV 175.91

PROP. R/W

PROP. R/W

(A) UNDIVIDED COASTAL PLAIN, BROWN, VERY SOFT, SANDY CLAY, SANDY SILT, AND SANDY SILT WITH LITTLE ORGANIC MATTER

(A)

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., VERY LOOSE TO MED. DENSE SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY AND SILTY CLAY

GRAY, SAT., DENSE, SILTY SAND

GRAY, WET, VERY SOFT, SANDY SILT AND SILTY CLAY

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND WITH TRACE SHELL FRAGMENTS

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY

57+00

160
150
140
130
120

(A) UNDIVIDED COASTAL PLAIN, BROWN, VERY SOFT, SANDY CLAY, SANDY SILT, AND SANDY SILT WITH LITTLE ORGANIC MATTER

45.5

(A)

UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., VERY LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, VERY SOFT, SANDY CLAY AND SILTY CLAY

ORANGE, TAN AND GRAY, SAT., LOOSE TO MED. DENSE, SAND AND SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND WITH TRACE SHELL FRAGMENTS

GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY

GRAY, SAT., LOOSE TO VERY DENSE, SILTY SAND AND CLAYEY SAND

56+50

-L-

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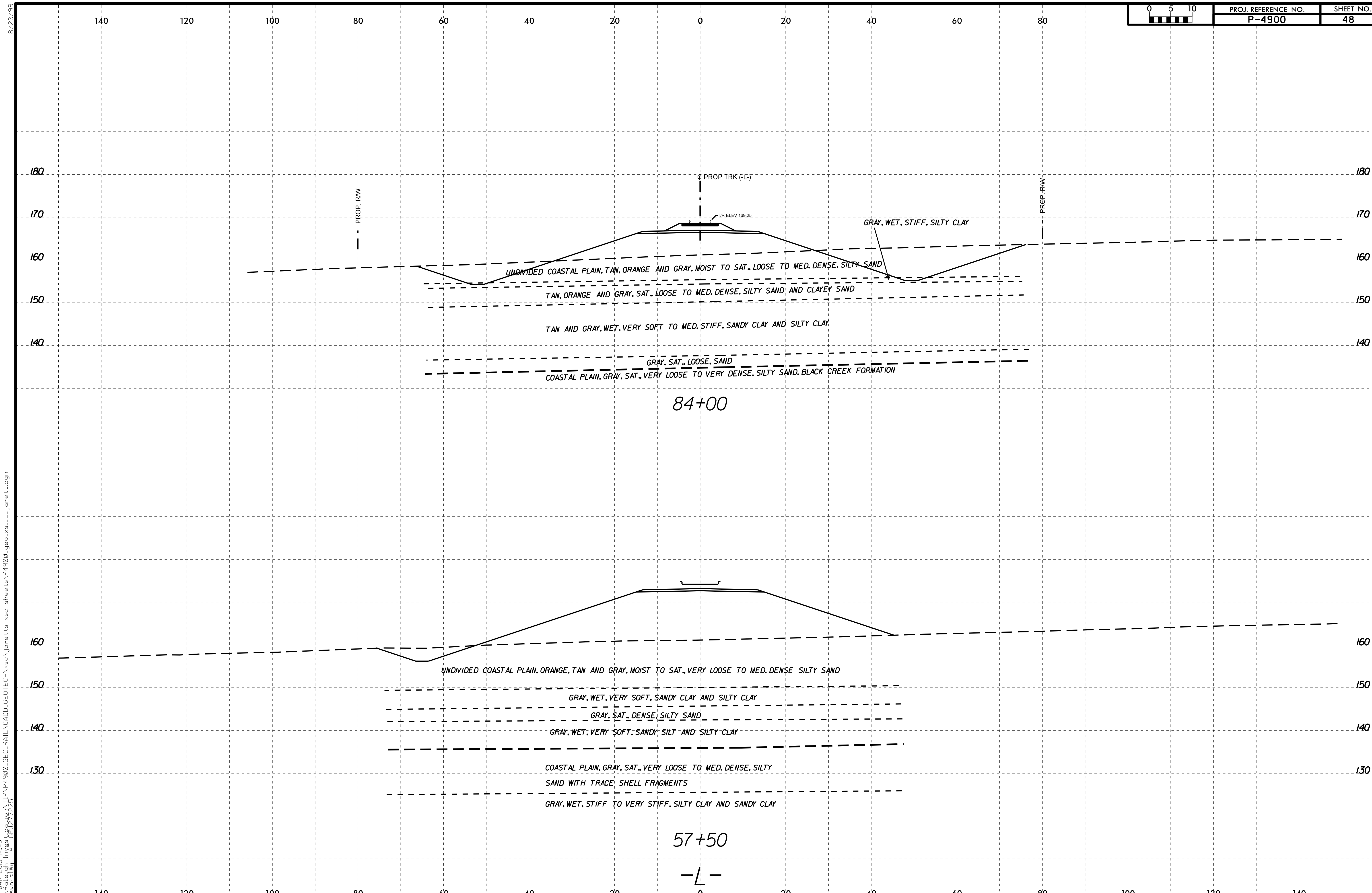
irswartley
AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
P-4900	48



0 5 10
C PROP TRK (-L-)
T/R ELEV 169.25
PROP. R/W
PROP. R/W
GRAY, WET, STIFF, SILTY CLAY
UNDIVIDED COASTAL PLAIN, TAN, ORANGE AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND
TAN, ORANGE AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND
TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND SILTY CLAY
GRAY, SAT., LOOSE, SAND
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO VERY DENSE, SILTY SAND, BLACK CREEK FORMATION
84+00
UNDIVIDED COASTAL PLAIN, ORANGE, TAN AND GRAY, MOIST TO SAT., VERY LOOSE TO MED. DENSE SILTY SAND
GRAY, WET, VERY SOFT, SANDY CLAY AND SILTY CLAY
GRAY, SAT., DENSE, SILTY SAND
GRAY, WET, VERY SOFT, SANDY SILT AND SILTY CLAY
COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY
SAND WITH TRACE SHELL FRAGMENTS
GRAY, WET, STIFF TO VERY STIFF, SILTY CLAY AND SANDY CLAY
57+50
-L-
140 120 100 80 60 40 20 0 20 40 60 80 100 120 140
180 170 160 150 140 130

8/23/99

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8/23/99

PROJ. REFERENCE NO.	SHEET NO.
P-4900	49

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140 120 100 80 60 40 20 0 20 40 60 80

180 170 160 150 140

℄ PROP TRK (-L-)

TOR ELEV. 169.24

PROP. R/W

PROP. R/W

UNDIVIDED COASTAL PLAIN. TAN, ORANGE AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, STIFF, SILTY CLAY

TAN, ORANGE AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE, SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO VERY DENSE, SILTY SAND, BLACK CREEK FORMATION

85+00

180 170 160 150 140

℄ PROP TRK (-L-)

UNDIVIDED COASTAL PLAIN. TAN, ORANGE AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND

GRAY, WET, STIFF, SILTY CLAY

TAN, ORANGE AND GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND AND CLAYEY SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE, SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO VERY DENSE, SILTY SAND, BLACK CREEK FORMATION

84+50

-L-

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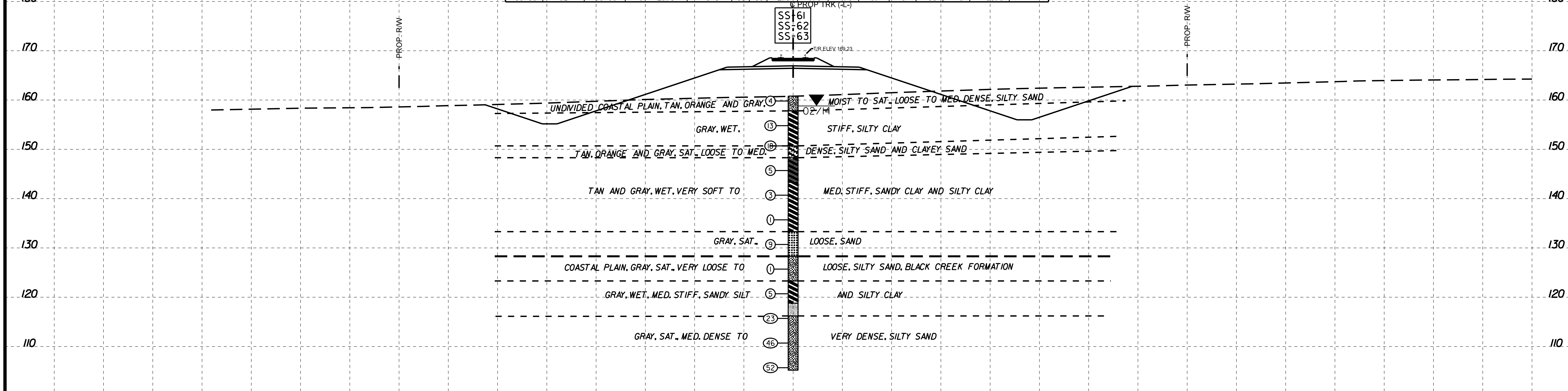
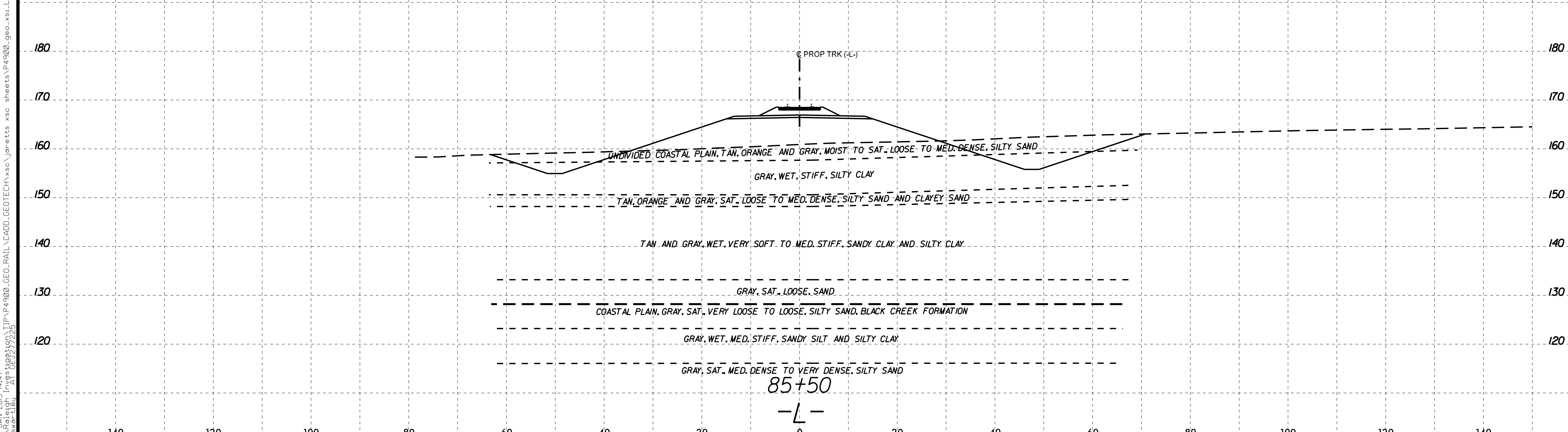
irswartley
AT GEJ27225

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-61	CL	86+00	5.0-6.5	A-7-6(10)	49	32	37.2	15.9	8.7	38.2	100	76	48	-	-
SS-62	CL	86+00	14.1-15.6	A-6(4)	33	19	30.8	29.4	9.7	30.2	100	82	42	-	-
SS-63	CL	86+00	19.1-20.6	A-7-6(54)	88	66	2.0	10.3	17.3	70.4	87	86	78	53.3	-



86+00



85+50

-L-

8/23/99

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jrswartley AT GEU27225

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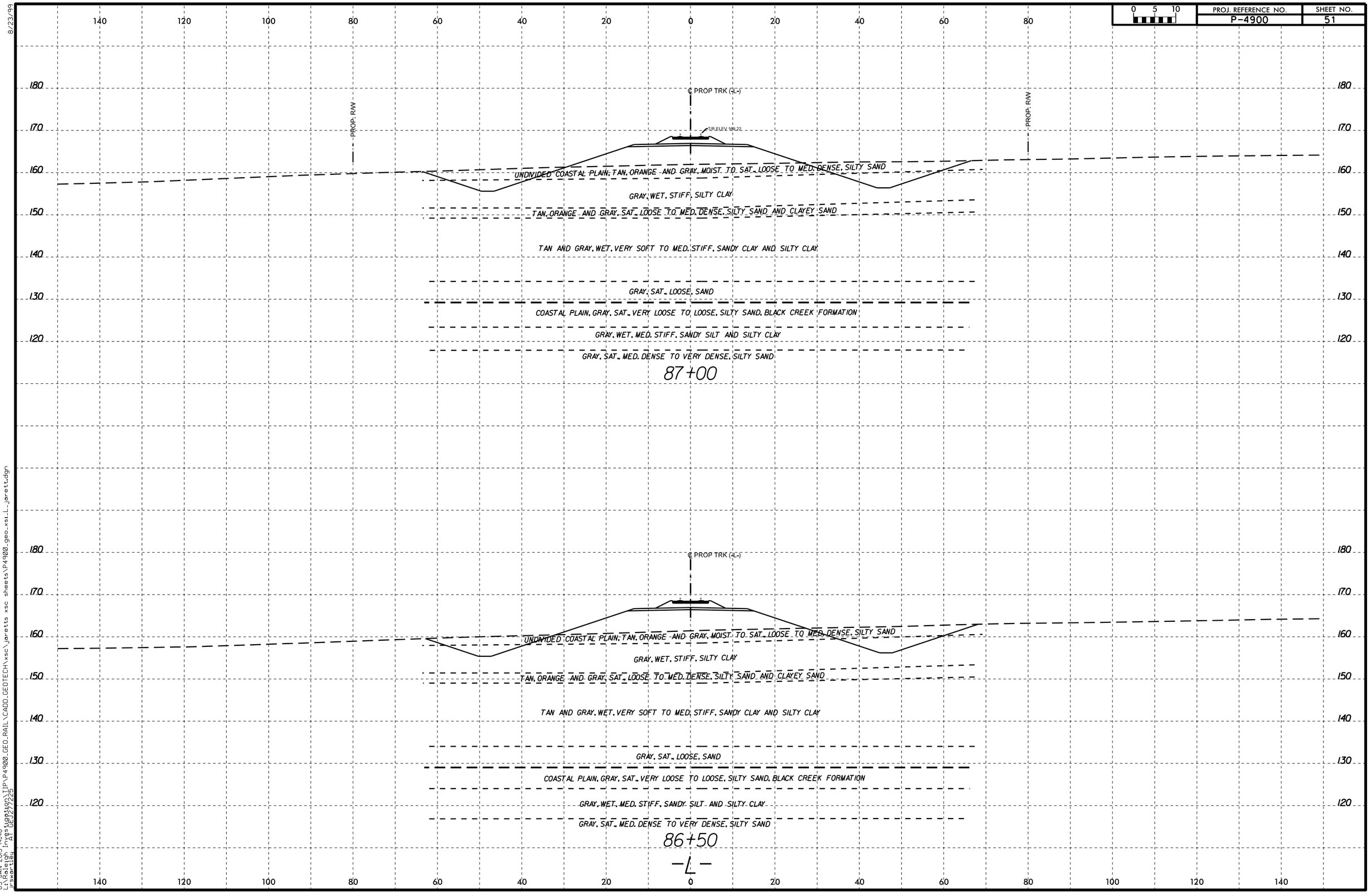
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	51



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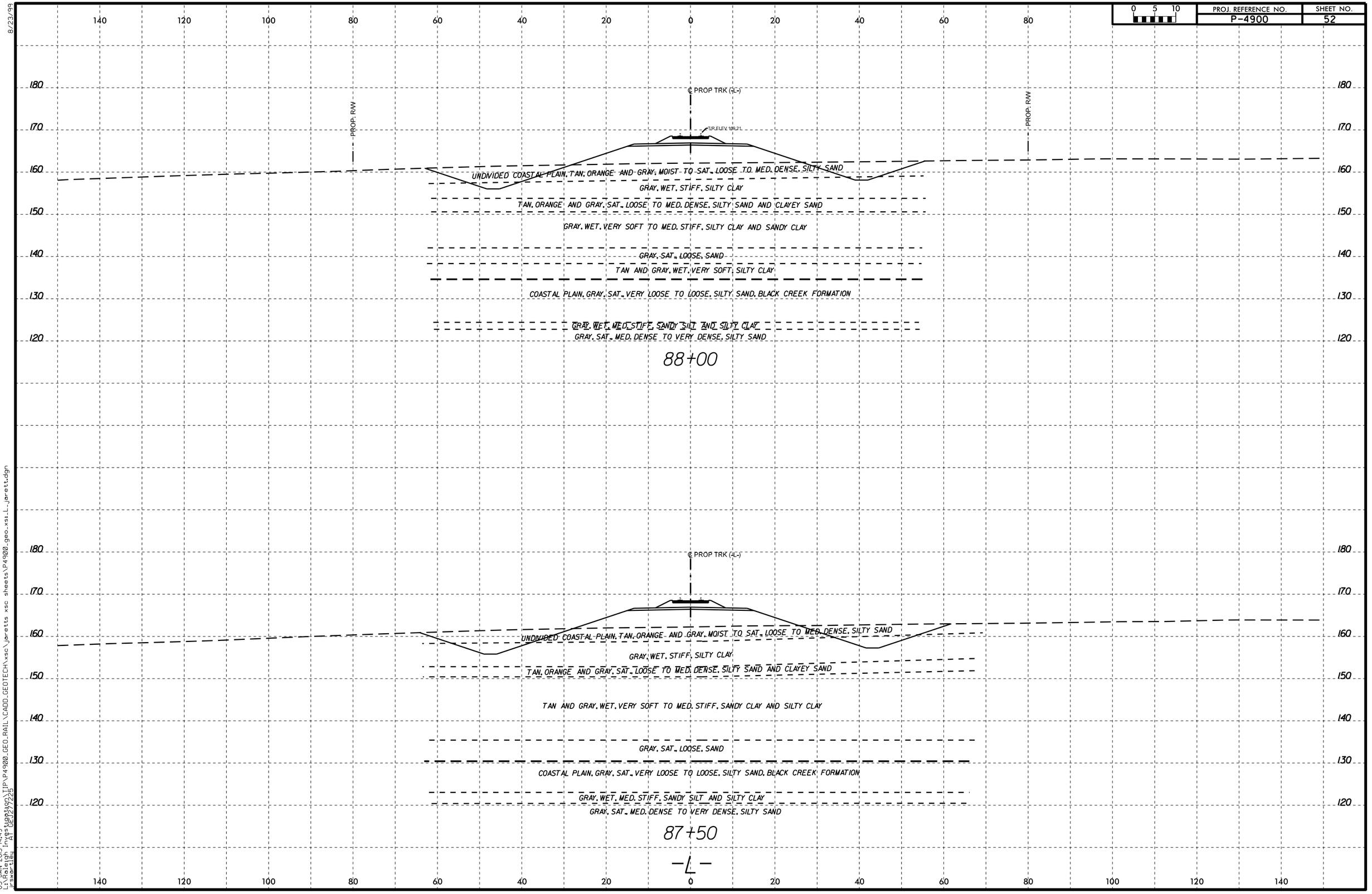
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	52



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irswartley AT GEJ27225

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
P-4900	53

0 5 10

140 120 100 80 60 40 20 0 20 40 60 80

180 170 160 150 140 130

PROP. R/W

℄ PROP TRK (L-)

T/R ELEV 164.83

PROP. R/W

UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT., VERY LOOSE TO MED. DENSE, CLAYEY SAND, SILTY SAND AND SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY SILT, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, STIFF TO HARD, SANDY CLAY AND SILTY CLAY

108+00

180 170 160 150 140 130 120

℄ PROP TRK (L-)

UNDIVIDED COASTAL PLAIN, TAN, ORANGE AND GRAY, MOIST TO SAT., LOOSE TO MED. DENSE, SILTY SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE, SAND

TAN AND GRAY, WET, VERY SOFT, SILTY CLAY

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO LOOSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, MED. STIFF, SANDY SILT AND SILTY CLAY

GRAY, SAT., MED. DENSE TO VERY DENSE, SILTY SAND

88+50

-L-

140 120 100 80 60 40 20 0 20 40 60 80 100 120 140

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irswartley
AT GEJ27225

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
P-4900	54

0 5 10

140 120 100 80 60 40 20 0 20 40 60 80

PROP. RW

℄ PROP TRK (4-)

T/R ELEV 164.98

PROP.

170
160
150
140
130

UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT., VERY LOOSE TO MED. DENSE, SILTY SAND

TAN AND GRAY, WET, MED. STIFF TO VERY STIFF, SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, STIFF TO HARD, SANDY CLAY AND SILTY CLAY

109+00

℄ PROP TRK (4-)

UNDIVIDED COASTAL PLAIN, ORANGE AND TAN, MOIST TO SAT., VERY LOOSE TO MED. DENSE, CLAYEY SAND, SILTY SAND AND SAND

TAN AND GRAY, WET, VERY SOFT TO MED. STIFF, SANDY SILT, SANDY CLAY AND SILTY CLAY

GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND

COASTAL PLAIN, GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND, BLACK CREEK FORMATION

GRAY, WET, STIFF TO HARD, SANDY CLAY AND SILTY CLAY

108+50

-L-

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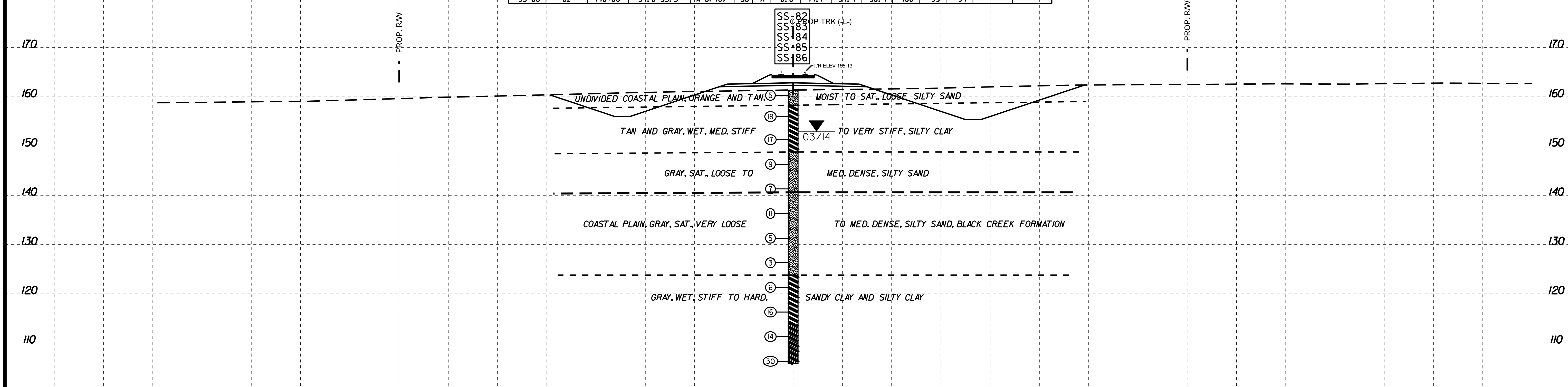
irswartley
AT GEJ27225

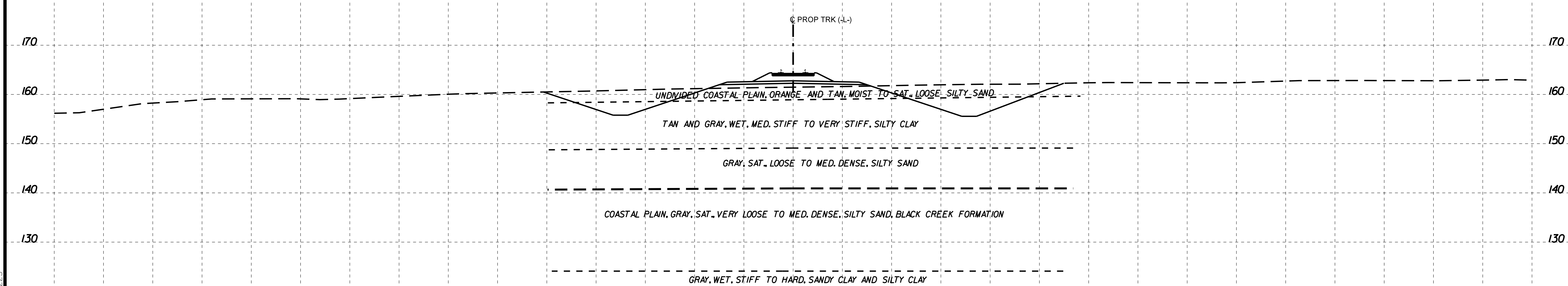
PROJ. REFERENCE NO.	SHEET NO.
P-4900	55

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-82	CL	110+00	4.3-5.8	A-7-6(6)	44	21	34.8	23.0	9.0	33.2	100	78	45	-	-
SS-83	CL	110+00	14.0-15.5	A-2-4(0)	29	9	24.0	52.5	3.4	20.1	100	89	26	-	-
SS-84	CL	110+00	29.0-30.5	A-2-4(0)	22	NP	10.5	72.7	4.7	12.1	100	97	20	-	-
SS-85	CL	110+00	39.0-40.5	A-7-6(25)	47	25	2.4	6.8	18.2	72.5	100	98	93	-	-
SS-86	CL	110+00	54.0-55.5	A-6(16)	36	17	0.8	14.7	34.1	50.4	100	99	94	-	-



110+00



109+50

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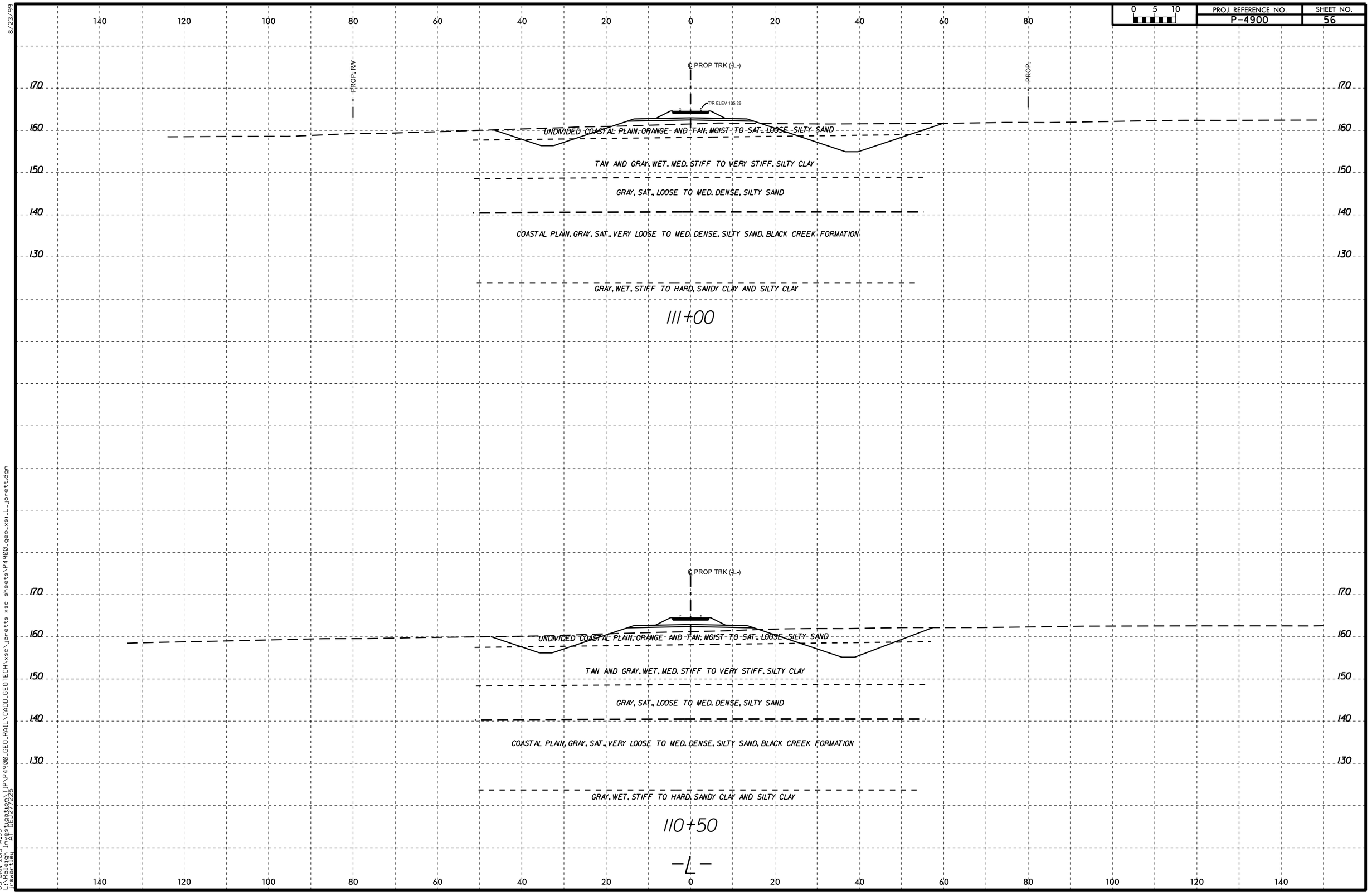

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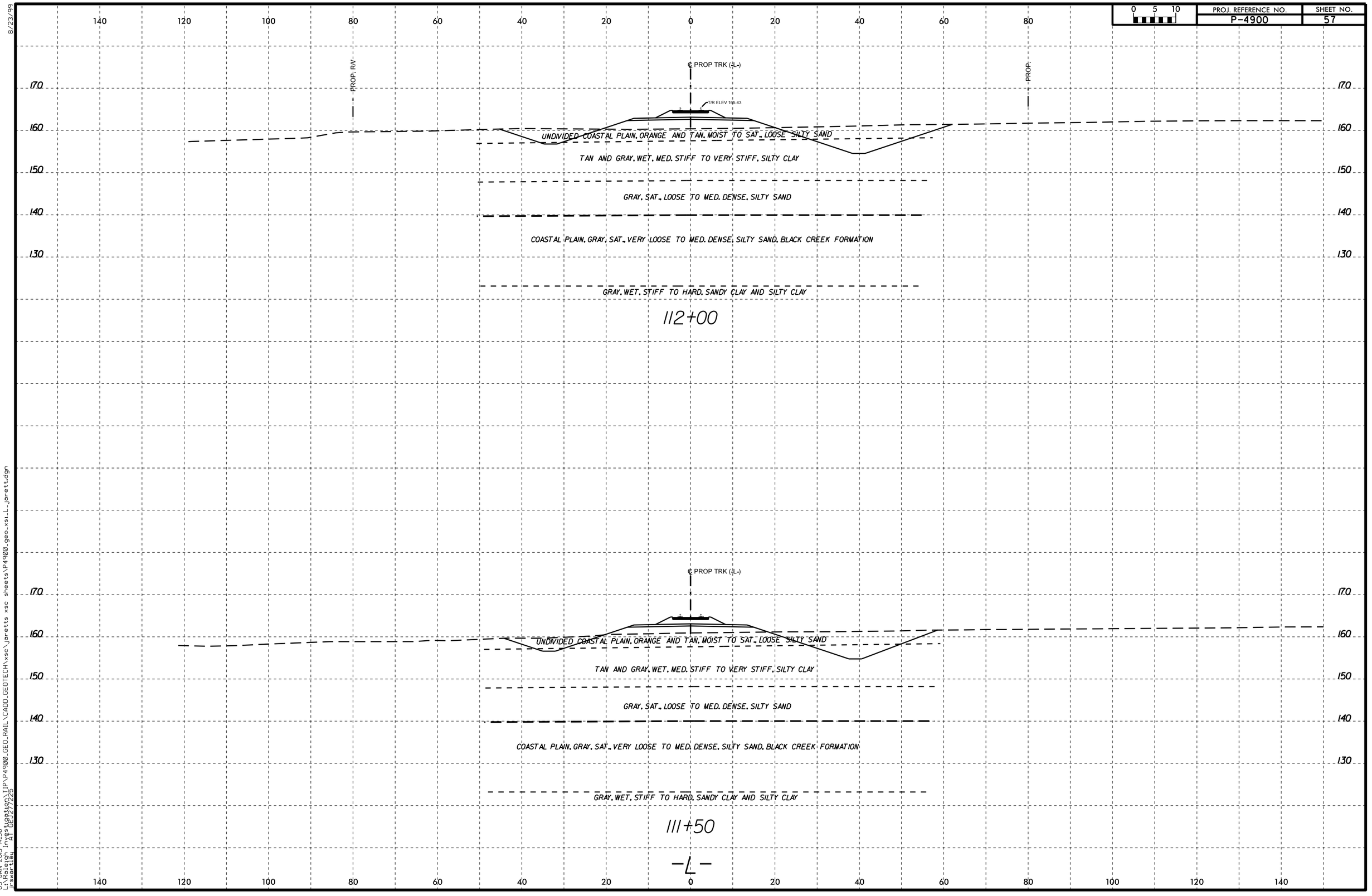
rswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	57



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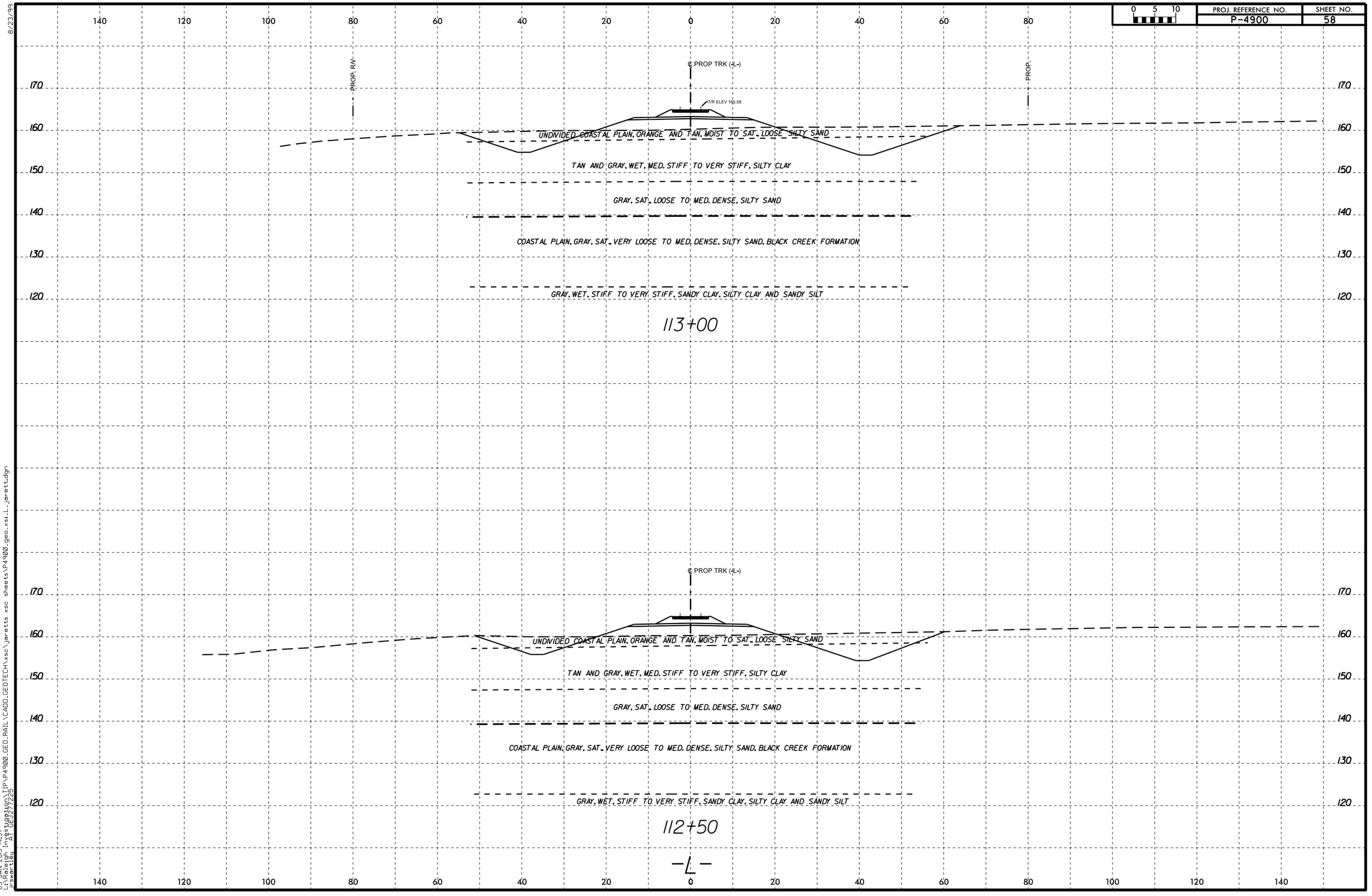
irswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	58



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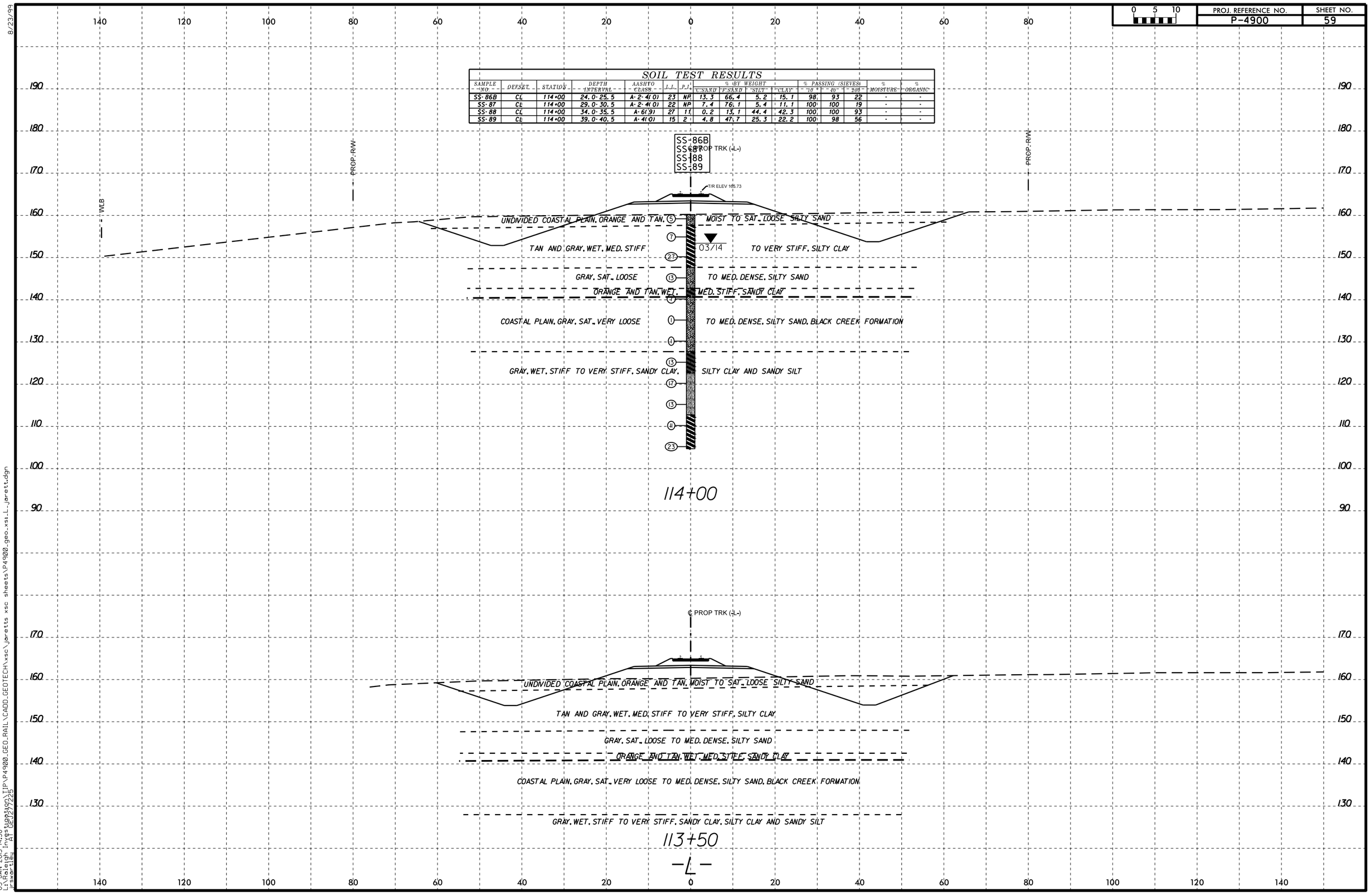
jswartley AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
P-4900	59

0 5 10

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-86B	CL	114+00	24.0-25.5	A-2-4(0)	23	NP	13.3	66.4	5.2	15.1	98	93	22	-	-
SS-87	CL	114+00	29.0-30.5	A-2-4(0)	22	NP	7.4	76.1	5.4	11.1	100	100	19	-	-
SS-88	CL	114+00	34.0-35.5	A-6(9)	27	11	0.2	13.1	44.4	42.3	100	100	93	-	-
SS-89	CL	114+00	39.0-40.5	A-4(0)	15	2	4.8	47.7	25.3	22.2	100	98	56	-	-



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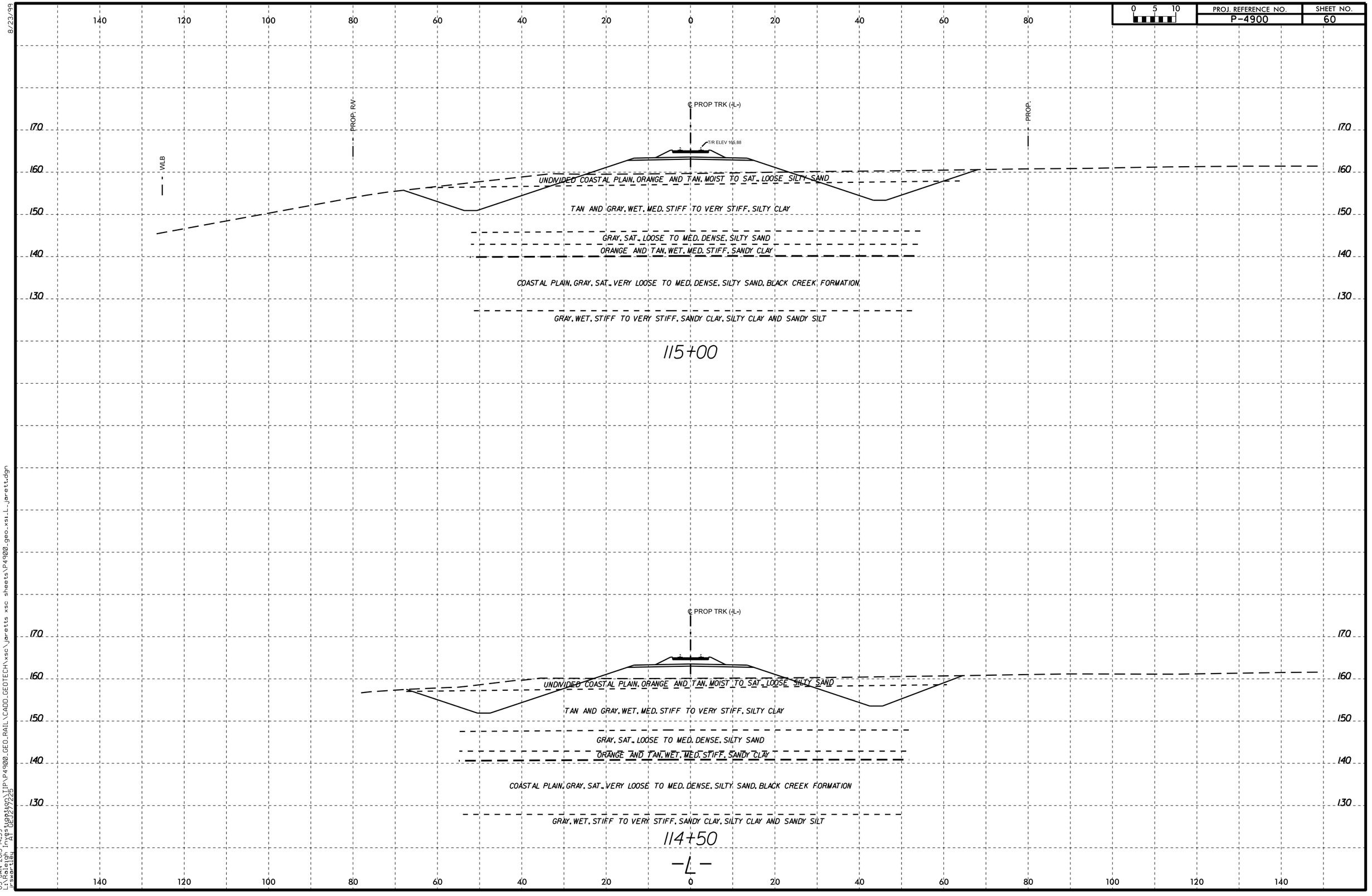
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	60



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irswartley AT GEJ27225

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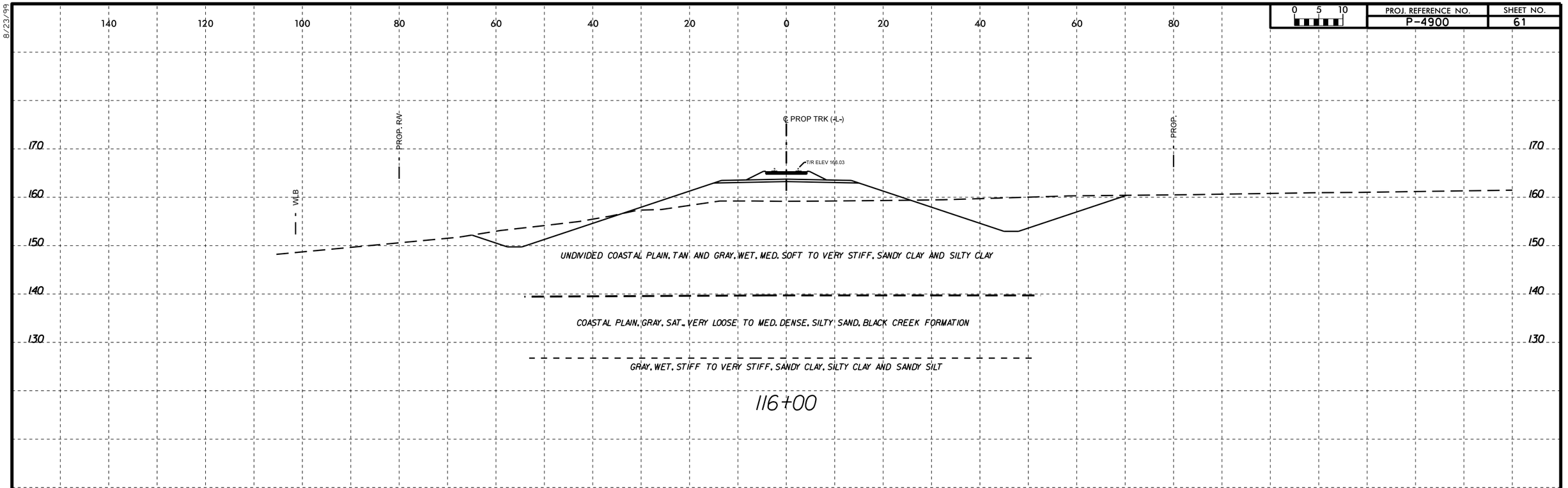
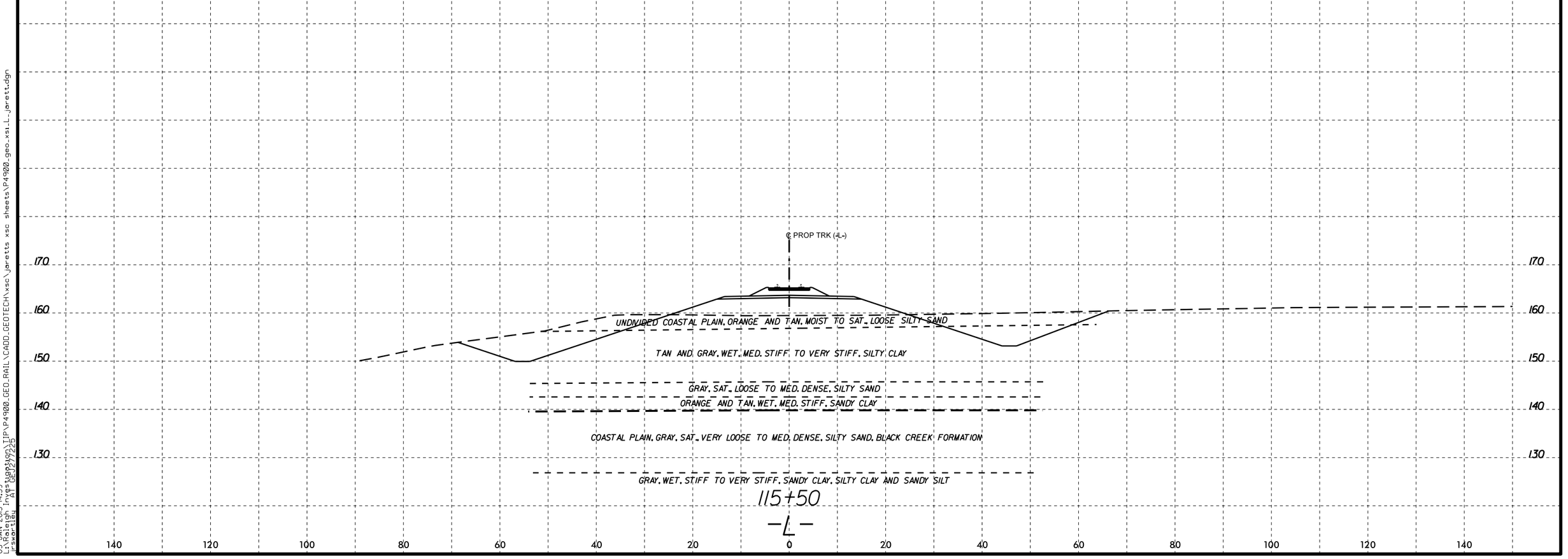
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	61





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irswartley
AT GEJ27225

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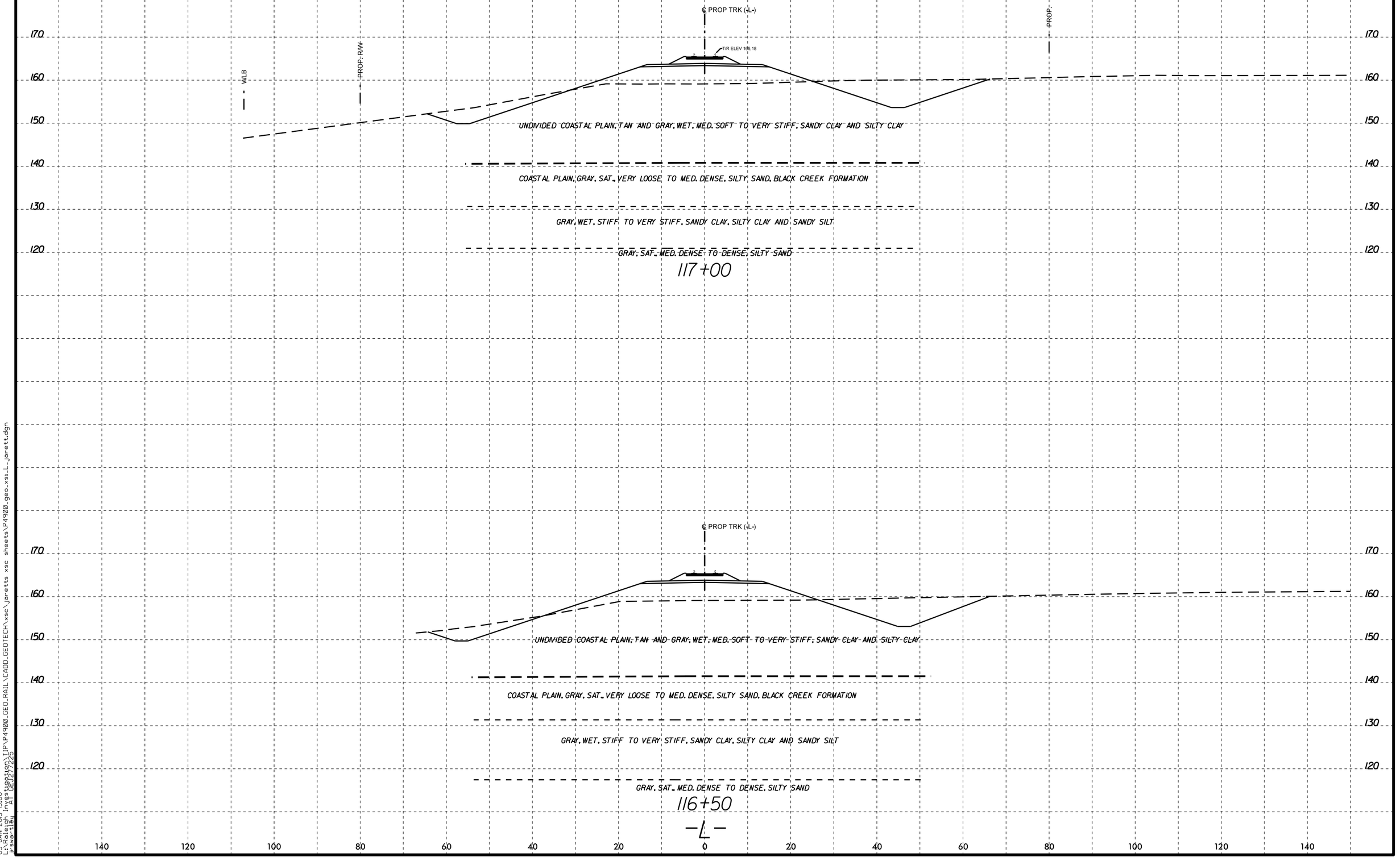
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	62



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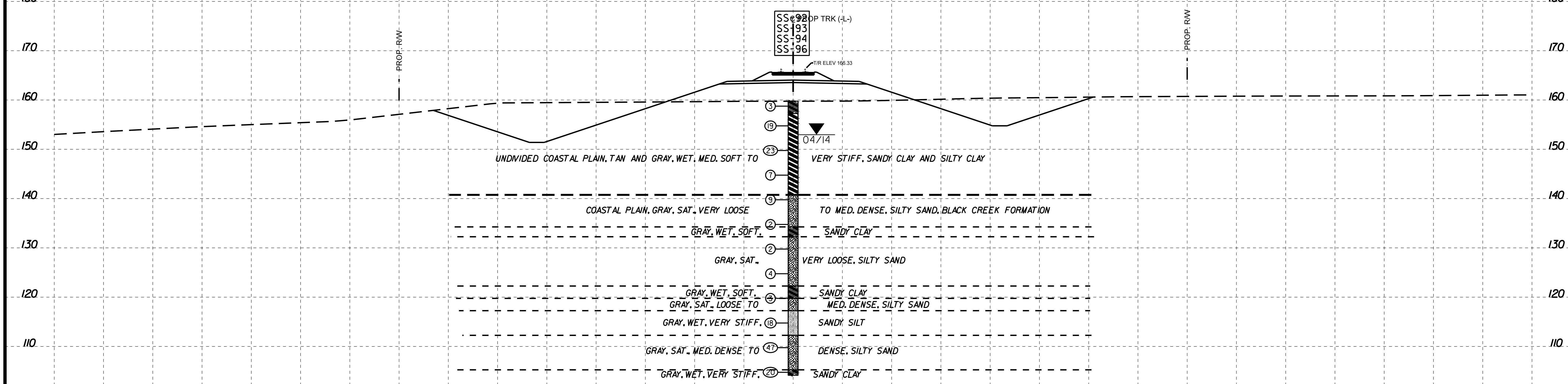
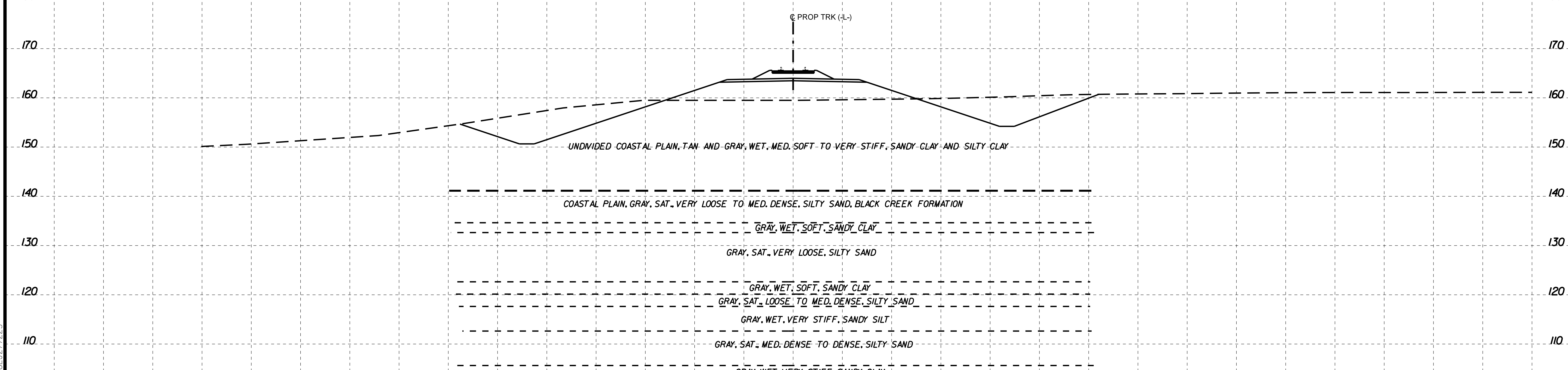
irswartley
AT GEJ27225

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-92	CL	118+00	0.0-1.5	A-6(4)	36	19	38.6	18.5	9.7	33.2	98	74	44	-	-
SS-93	CL	118+00	4.3-5.8	A-7-6(6)	51	31	45.5	17.5	5.7	31.2	99	69	38	-	-
SS-94	CL	118+00	14.0-15.5	A-7-6(5)	42	23	10.1	51.2	10.6	28.2	100	94	43	-	-
SS-96	CL	118+00	44.0-45.5	A-4(1)	23	10	17.7	37.9	10.2	34.2	100	95	46	-	-



118+00



117+50

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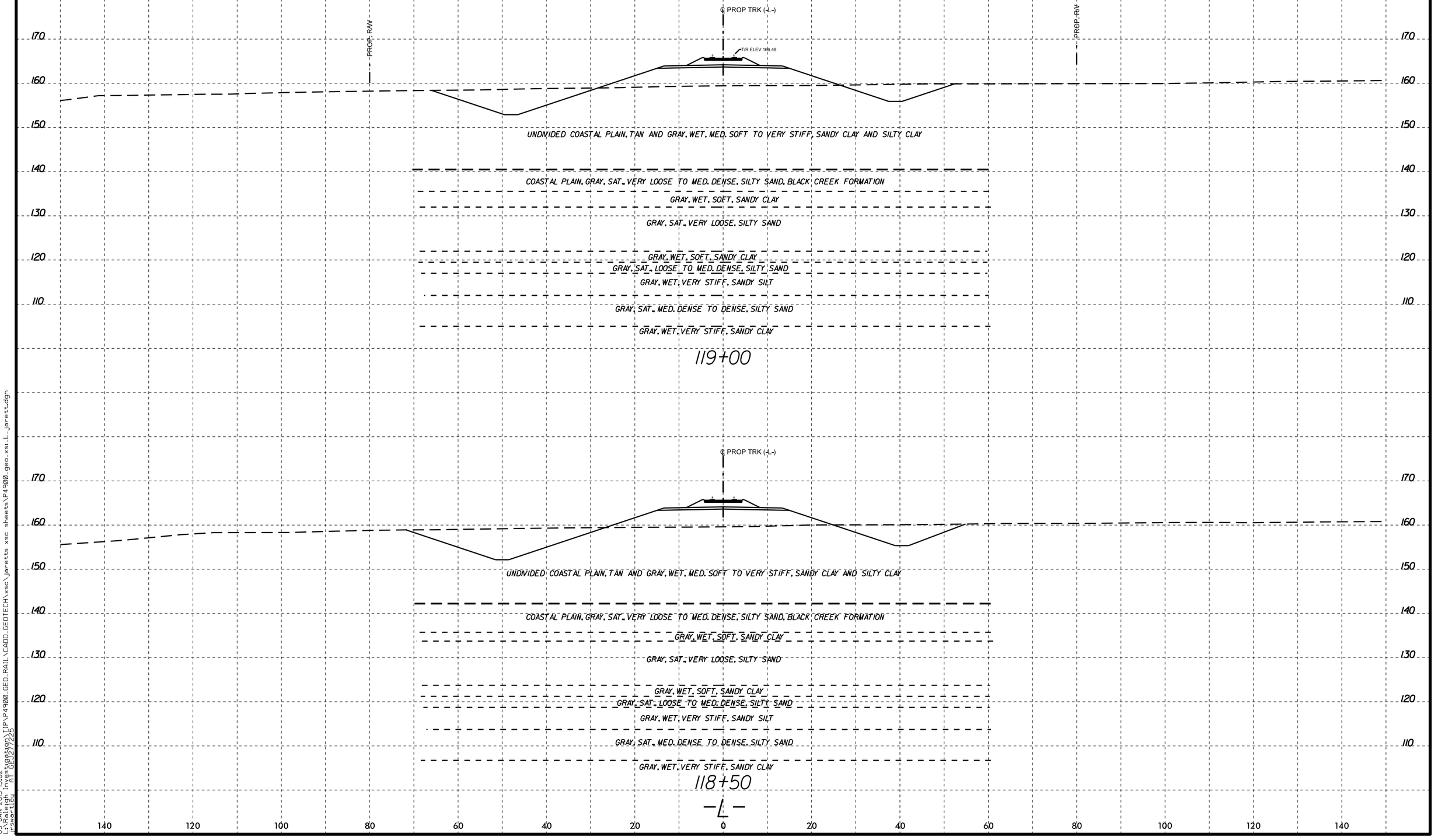
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	64



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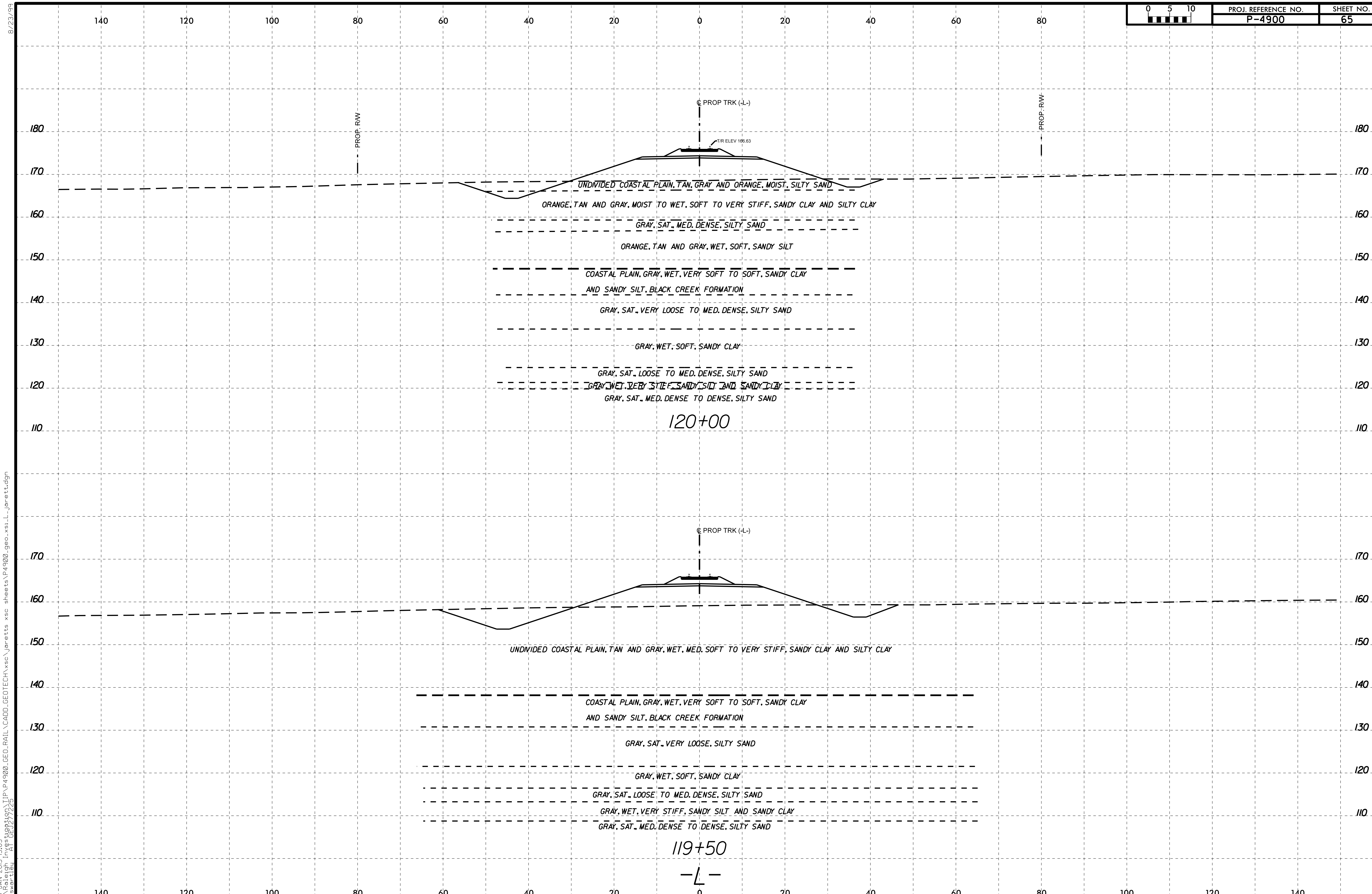
irswartley
AT GEJ27225

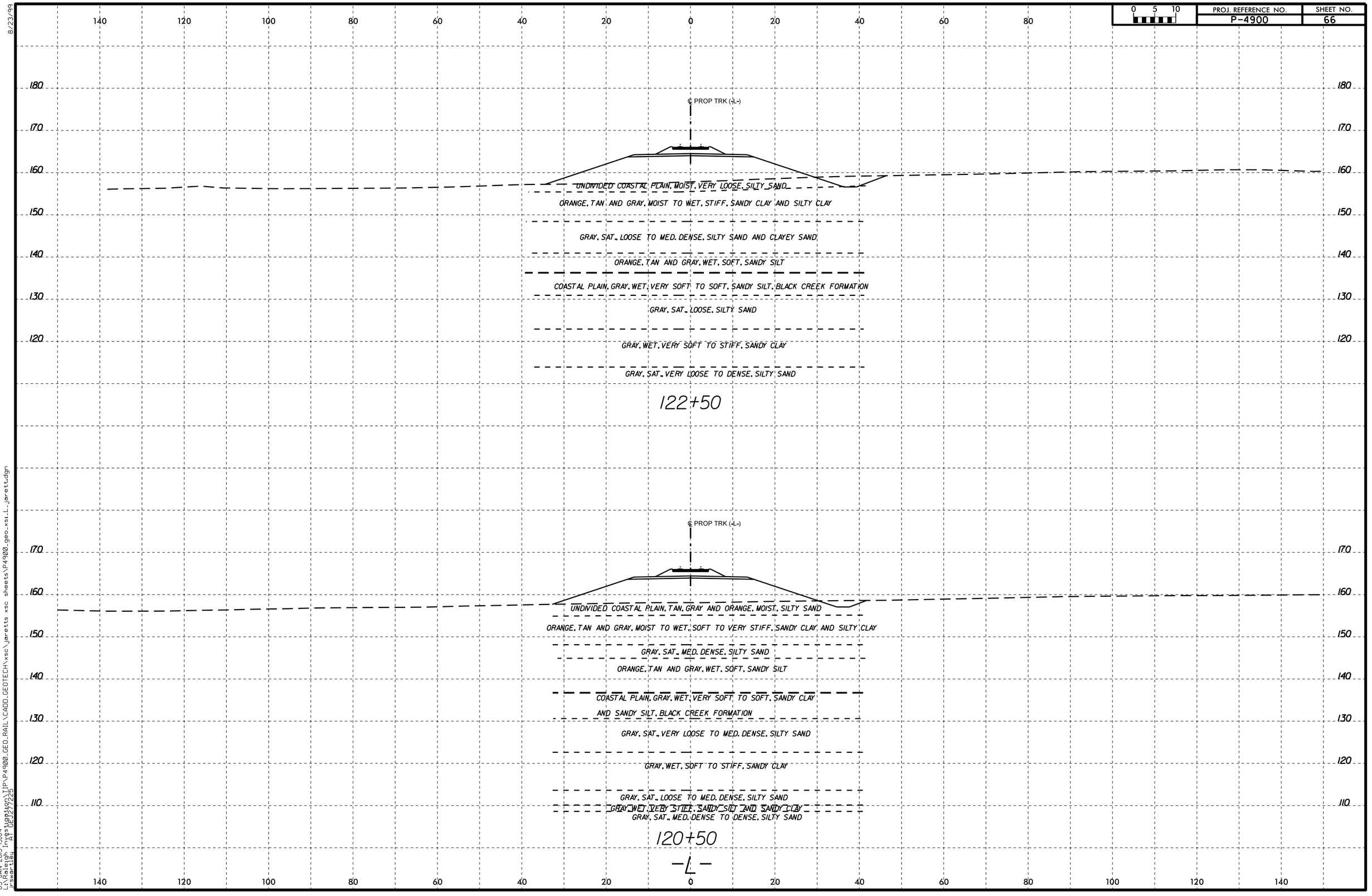


℄ PROP TRK (-L-)
PROP. R/W
PROP. R/W
T/R ELEV 186.63
UNDIVIDED COASTAL PLAIN, TAN, GRAY AND ORANGE, MOIST, SILTY SAND
ORANGE, TAN AND GRAY, MOIST TO WET, SOFT TO VERY STIFF, SANDY CLAY AND SILTY CLAY
GRAY, SAT., MED. DENSE, SILTY SAND
ORANGE, TAN AND GRAY, WET, SOFT, SANDY SILT
COASTAL PLAIN, GRAY, WET, VERY SOFT TO SOFT, SANDY CLAY
AND SANDY SILT, BLACK CREEK FORMATION
GRAY, SAT., VERY LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, SOFT, SANDY CLAY
GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, VERY STIFF, SANDY SILT AND SANDY CLAY
GRAY, SAT., MED. DENSE TO DENSE, SILTY SAND
120+00
℄ PROP TRK (-L-)
UNDIVIDED COASTAL PLAIN, TAN AND GRAY, WET, MED. SOFT TO VERY STIFF, SANDY CLAY AND SILTY CLAY
COASTAL PLAIN, GRAY, WET, VERY SOFT TO SOFT, SANDY CLAY
AND SANDY SILT, BLACK CREEK FORMATION
GRAY, SAT., VERY LOOSE, SILTY SAND
GRAY, WET, SOFT, SANDY CLAY
GRAY, SAT., LOOSE TO MED. DENSE, SILTY SAND
GRAY, WET, VERY STIFF, SANDY SILT AND SANDY CLAY
GRAY, SAT., MED. DENSE TO DENSE, SILTY SAND
119+50
-L-

8/23/99
05-JAN-2015 15:03

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	66



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irswartley AT GEJ27225

8/23/99

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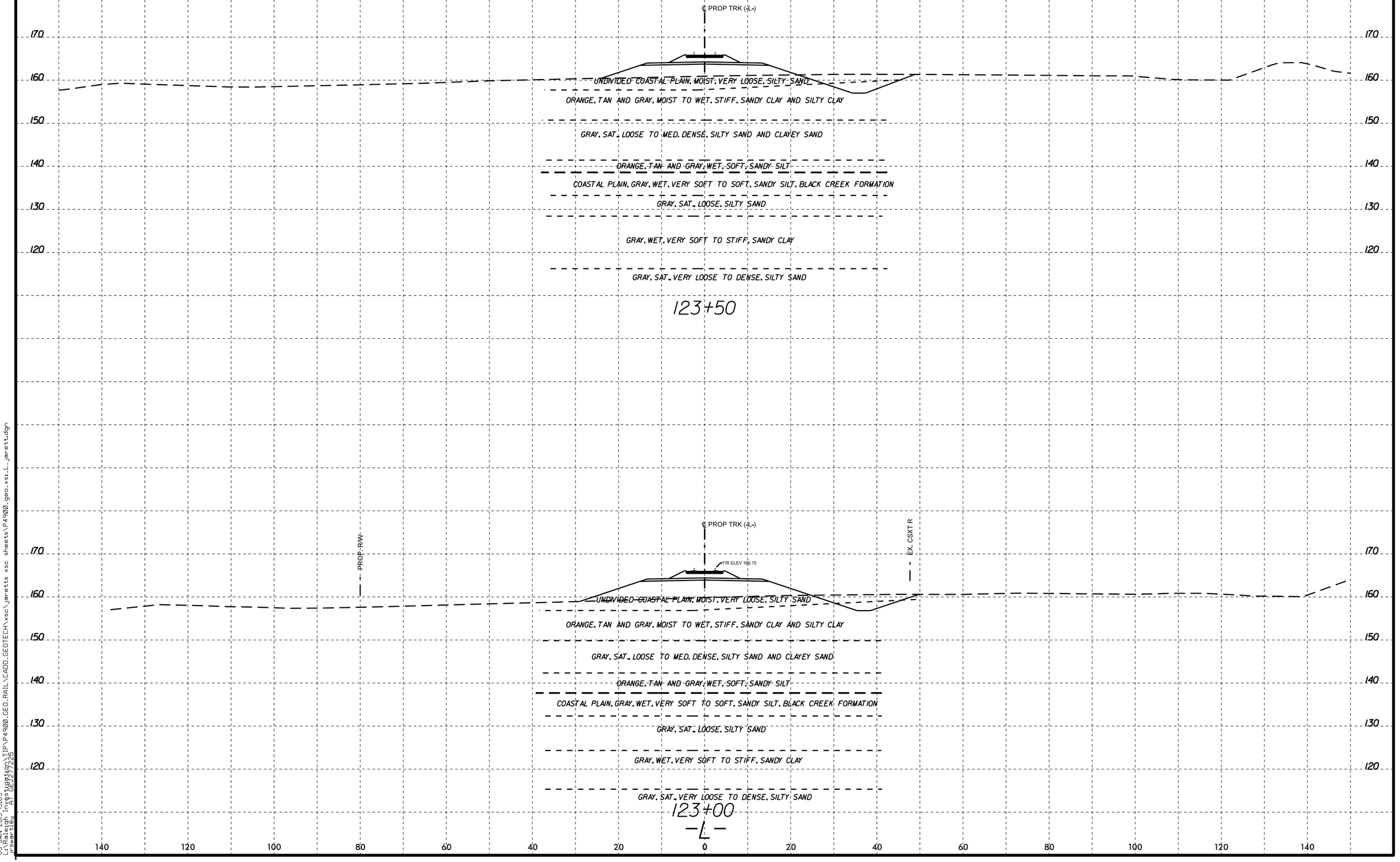
	P-4900	67



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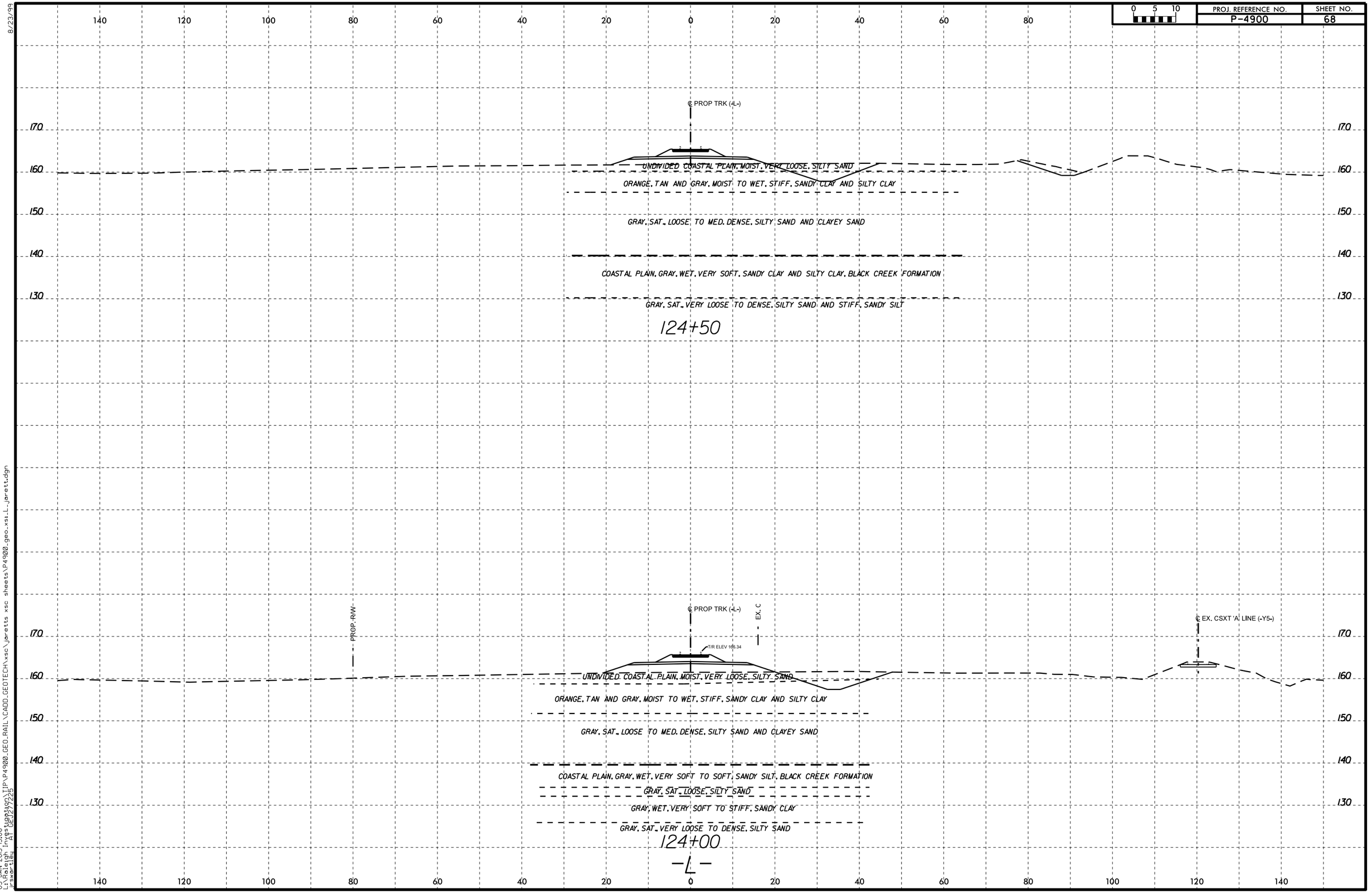
pswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	68



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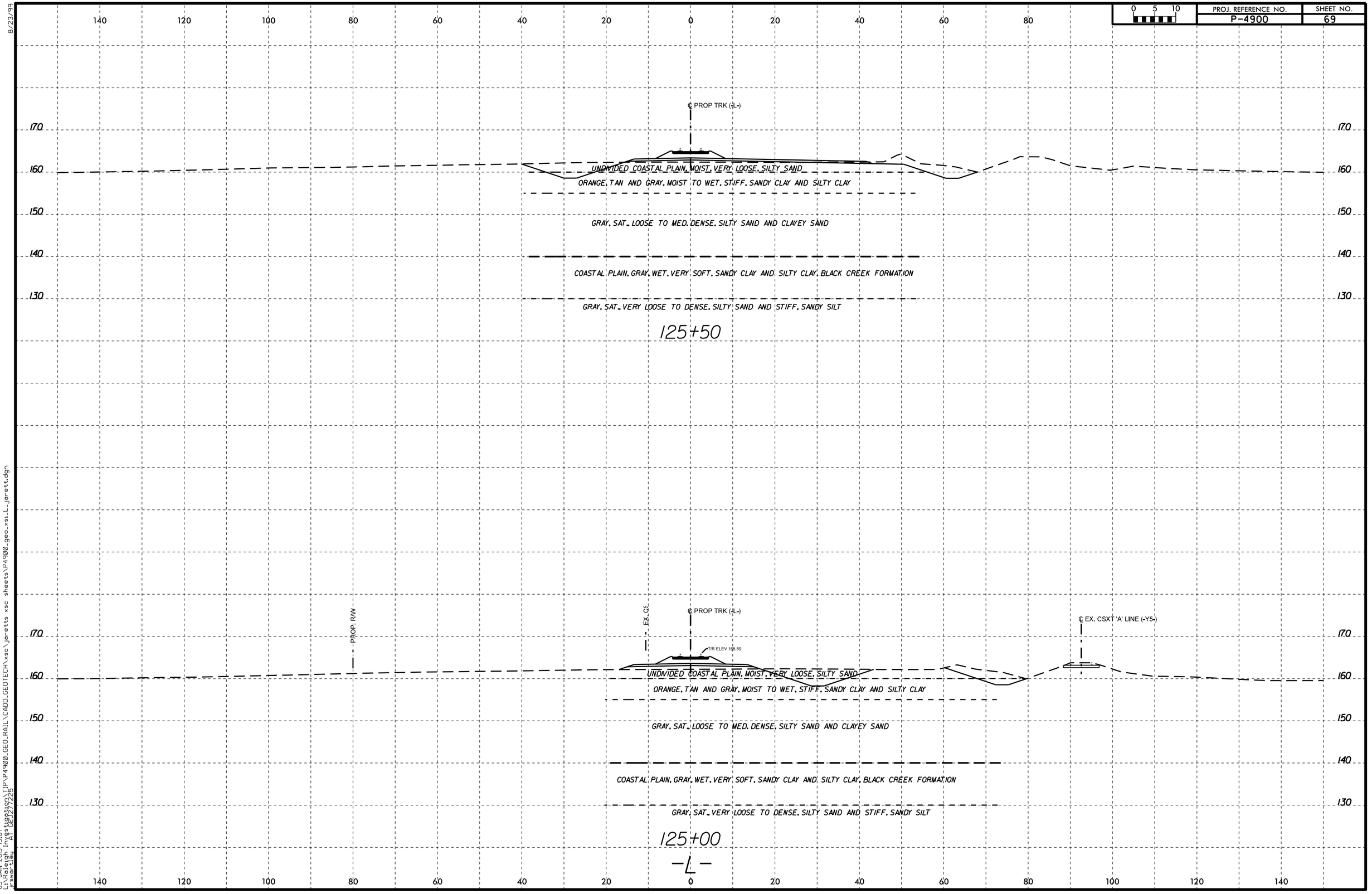
irswartley
AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	P-4900	69



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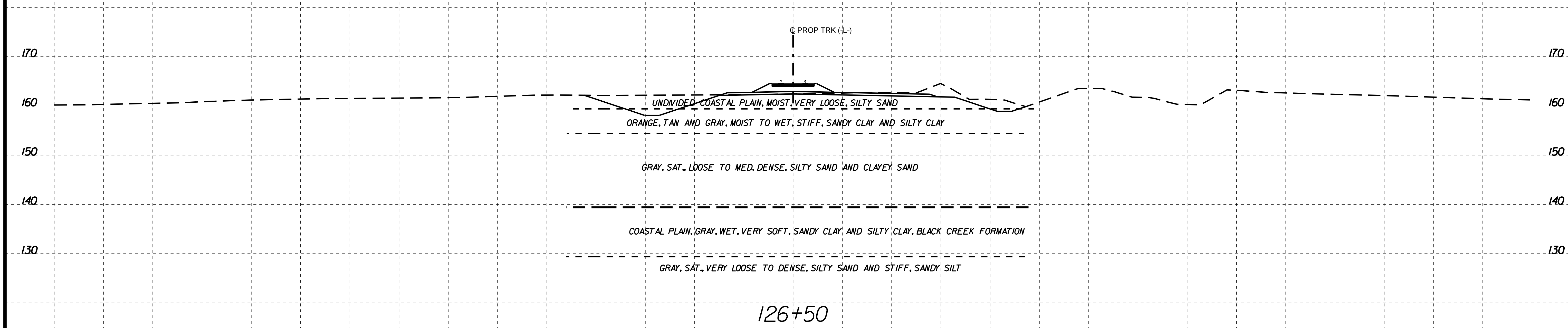
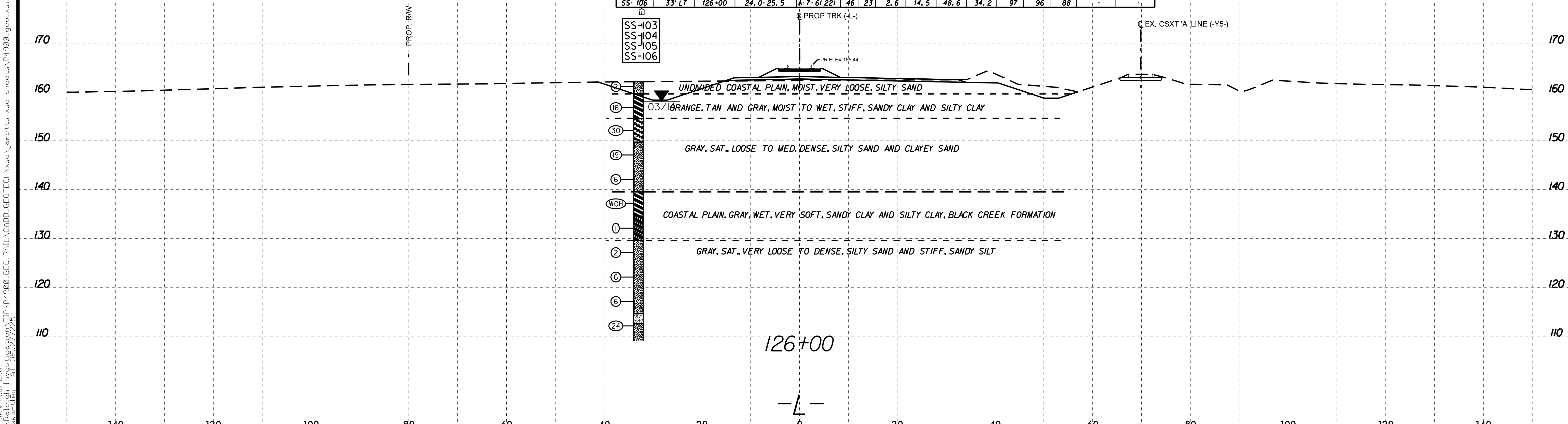
AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
P-4900	70



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-103	33' LT	126+00	4.3-5.8	A-7-6(4)	52	26	53.5	10.1	4.2	32.2	100	62	37	-	-
SS-104	33' LT	126+00	9.0-10.5	A-2-7(1)	41	20	73.4	7.6	1.9	17.1	100	42	20	-	-
SS-105	33' LT	126+00	19.0-20.5	A-2-4(0)	20	NP	20.8	63.2	2.8	13.1	100	91	17	-	-
SS-106	33' LT	126+00	24.0-25.5	A-7-6(22)	46	23	2.6	14.5	48.6	34.2	97	96	88	-	-



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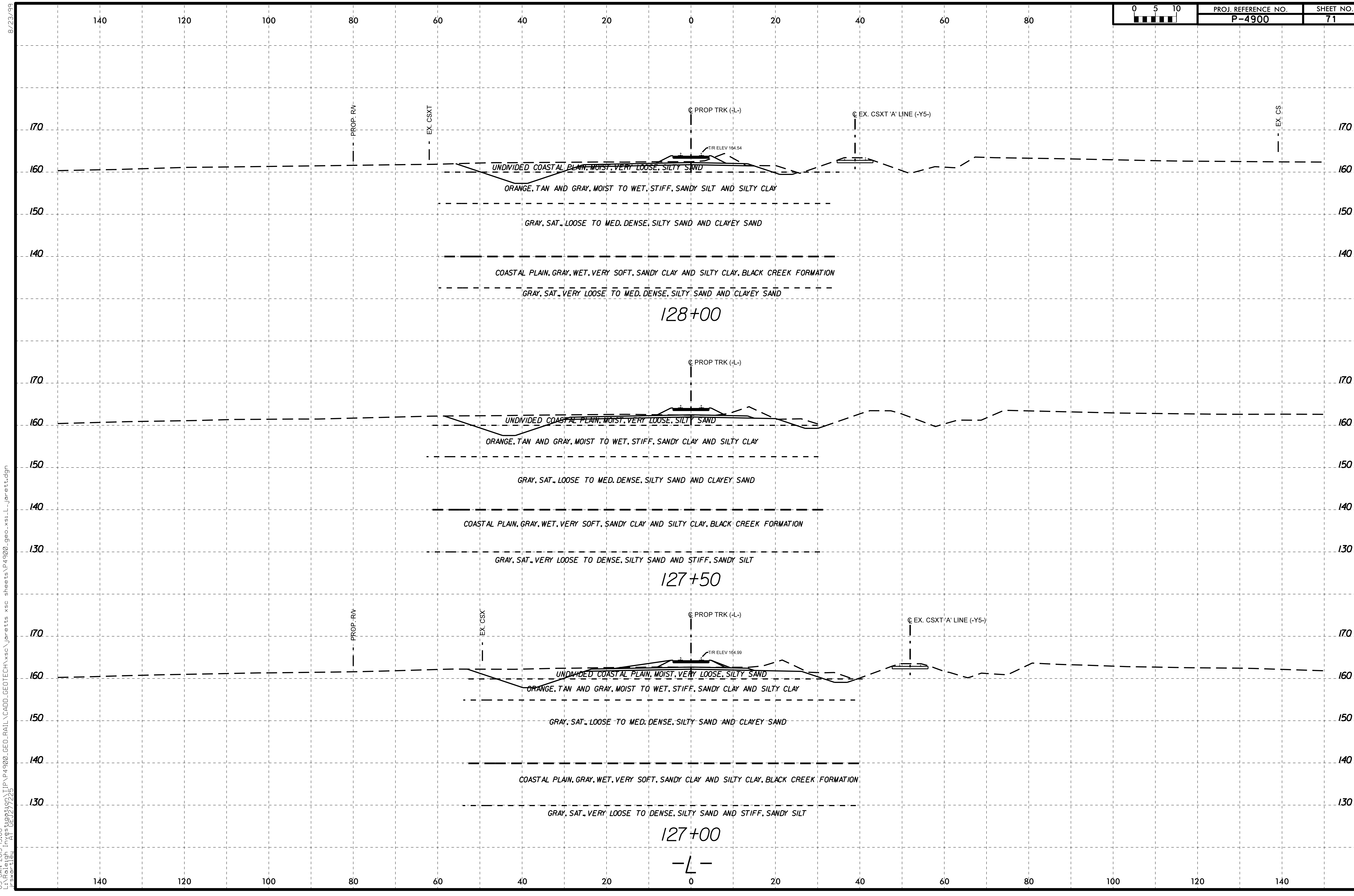
PROJ. REFERENCE NO.	SHEET NO.
P-4900	71



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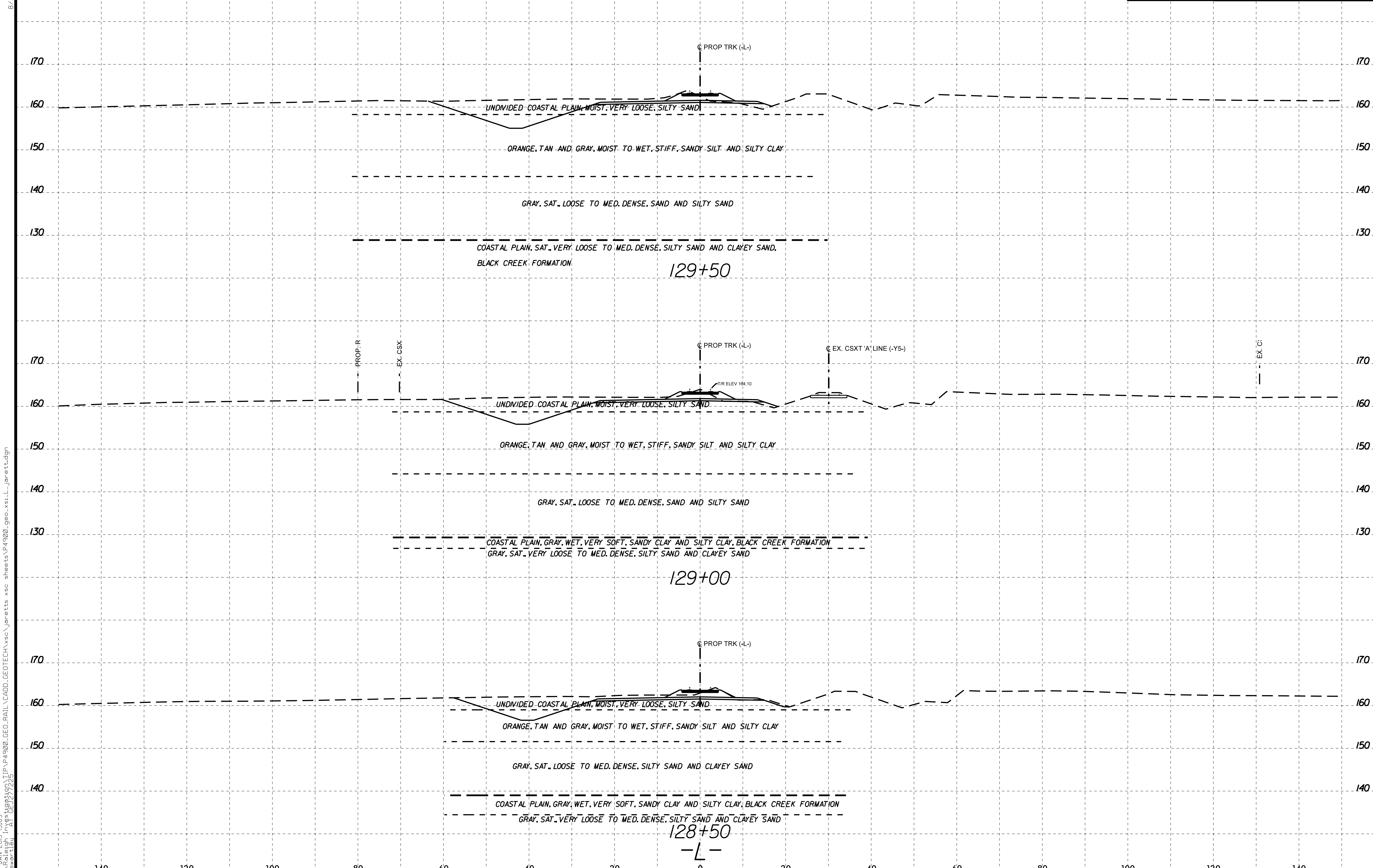

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jrswartley AT GEJ277225

8/23/99

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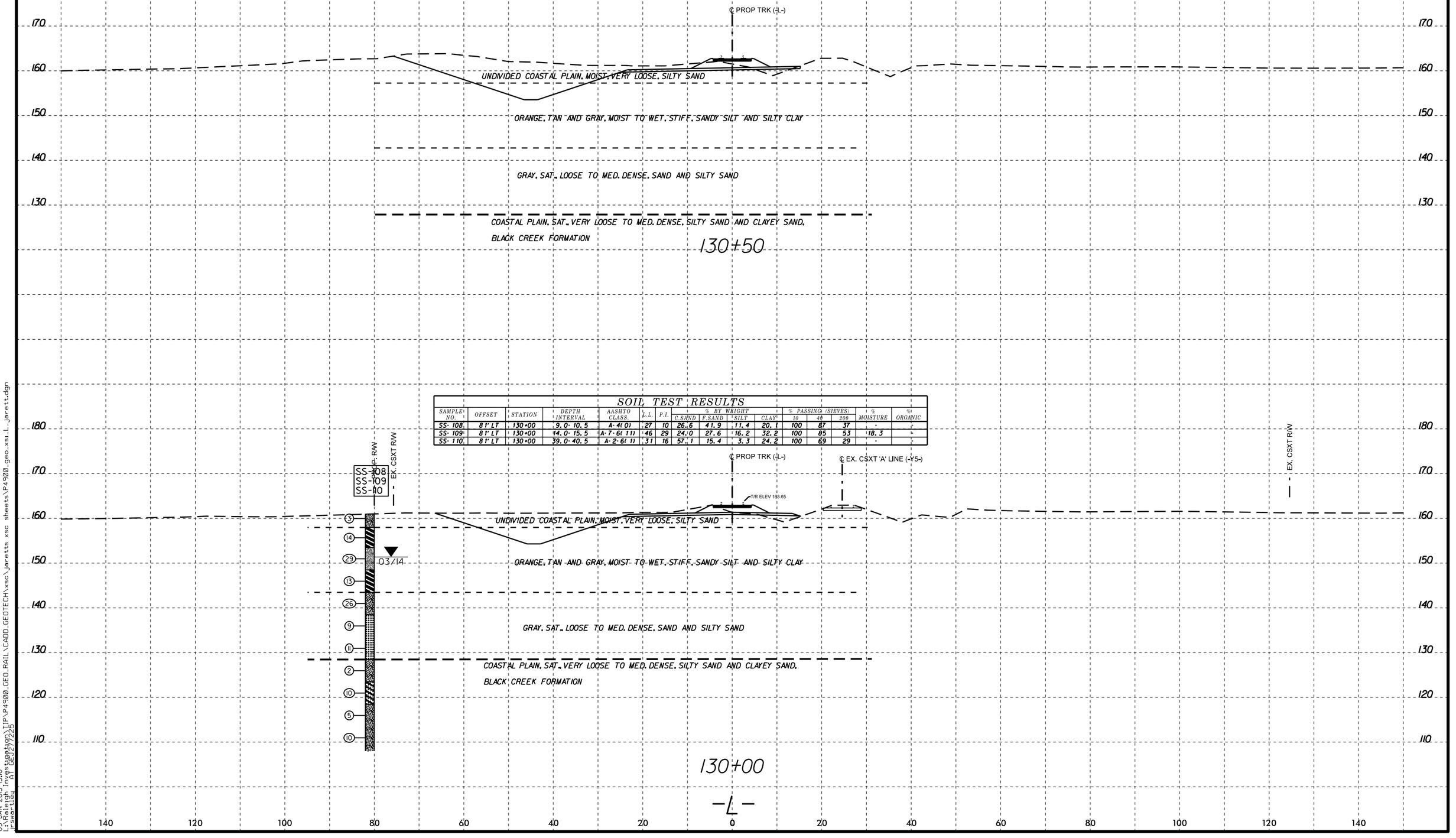

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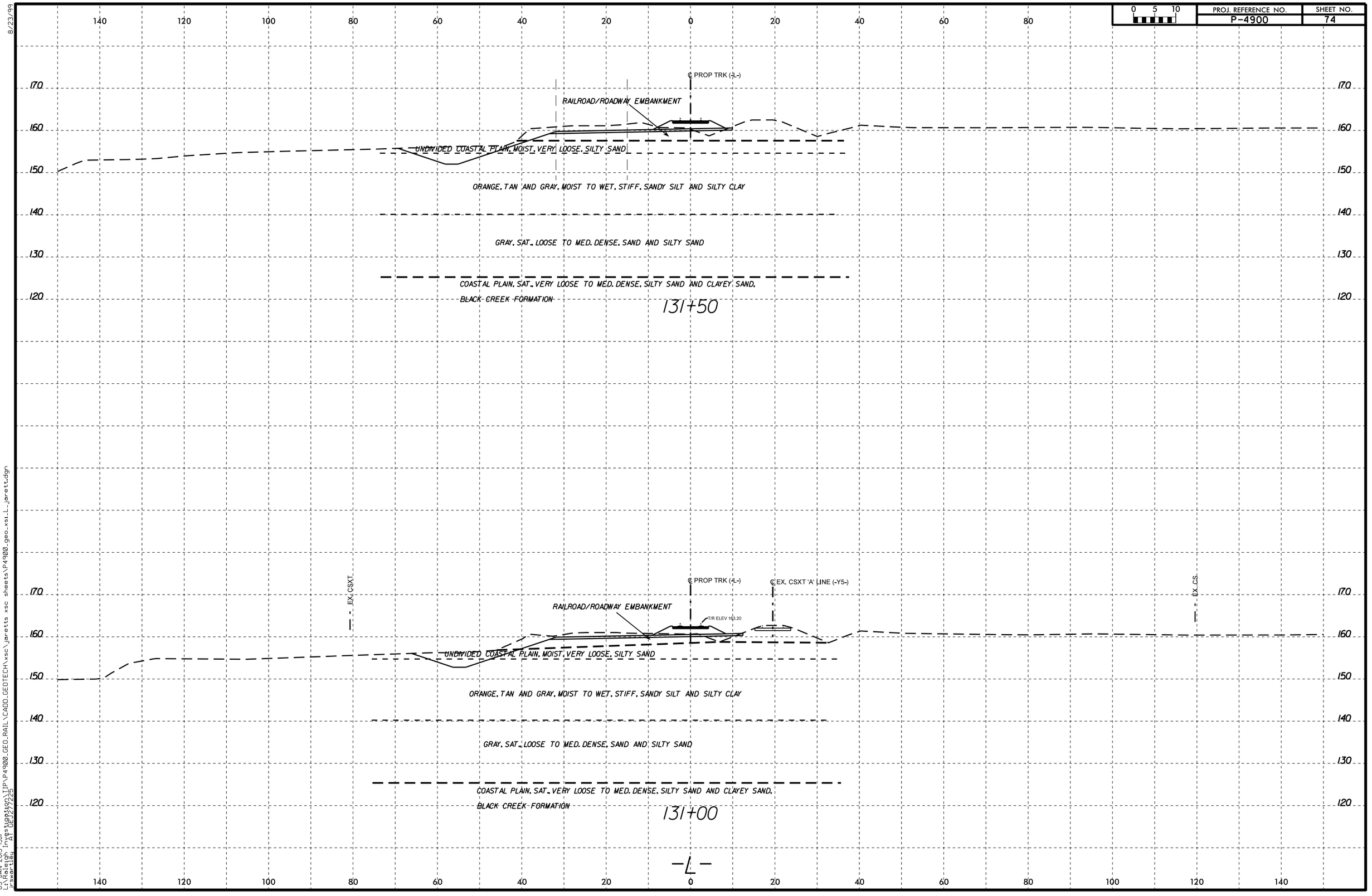

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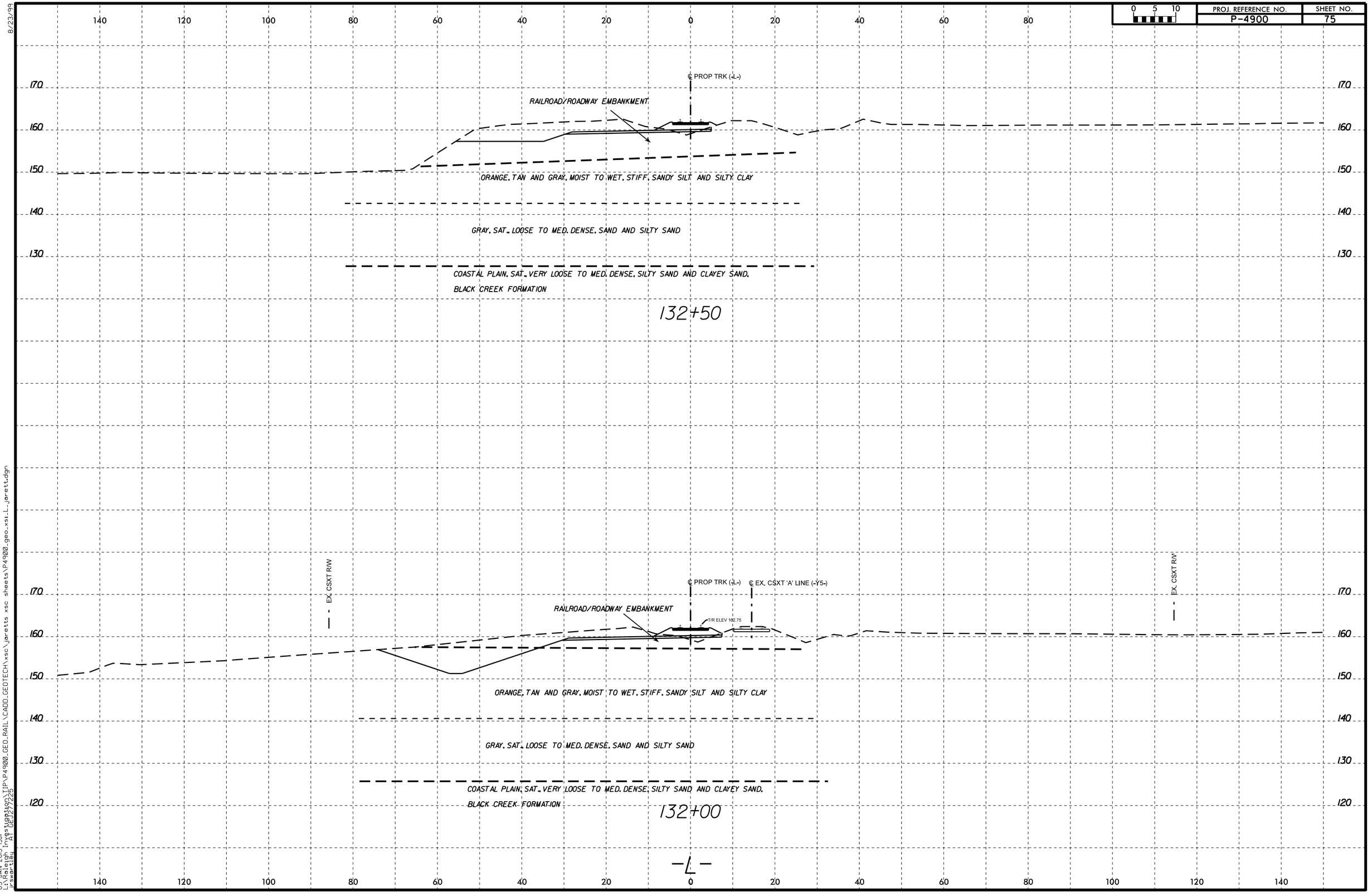

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