STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3330	1	61

REFERENCE: U-3330

PROJECT: 36596

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

CONTENTS

CROSS SECTIONS

LINE	STATION	SHEETS
L	30+00, 33+00	12
L	34+00-40+00	13-15
L	41+00-50+00	16-20
L	51+00, 53+50	21
L	56+50, 63+00, 66+00	22
L	68+00, 70+00, 72+00,	23
L	73+50-86+00	24-29
L	87+00, 88+50	30
L	89+00-107+00	31-38
L	108+00	39
L	109+50-112+50	39-41
L	113+50	41
L	116+00, 119+00, 122+00	42
L	123+50-127+00	43-44
L	128+00	44
Y1	13+00, 16+50, 20+00	45
Y1LPC	10+00-15+00	46-48
Y1RPA	10+00	49
Y1RPA	11+50-15+50	49-51
Y1RPA	16+50	51
Y1RPB	11+00-14+00	52-53
Y1RPD	12+00, 16+00	54
Y2LPA	14+00	55
Y2RPC	11+00	56
Y3RPB	11+50	57
Y4	11+50-12+50	58
Y6	13+50	59
Y7A	11+00-11+50	60
Y7B	12+00	61

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *NASH*

PROJECT DESCRIPTION *US 301 BYPASS FROM NC 43-48 (BENVENUE RD) TO SR 1836 (MAY DR.)*

INVENTORY

CAUTION NOTICE

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

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

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

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

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INVESTIGATED BY *J.R. SWARTLEY*

DRAWN BY *T.T. WALKER*

CHECKED BY *N.T. ROBERSON*

SUBMITTED BY *N.T. ROBERSON*

DATE *NOVEMBER 2014*

SIGNATURE DATE

NORTH CAROLINA LICENSED SEAL 2296 GEOLOGIST Jarett Swartley

DocuSigned by: Jarett Swartley 12/11/2014

7F3...413... SIGNATURE DATE

PROJECT REFERENCE NO.	SHEET NO.
U-3330	2

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION

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

SOIL LEGEND AND AASHTO CLASSIFICATION

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

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

CONSISTENCY OR DENSENESS

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

TEXTURE OR GRAIN SIZE

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

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

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

SOIL MOISTURE - CORRELATION OF TERMS

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

PLASTICITY

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

COLOR

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

GRADATION

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

ANGULARITY OF GRAINS

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

MINERALOGICAL COMPOSITION

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

COMPRESSIBILITY

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

PERCENTAGE OF MATERIAL

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

GROUND WATER

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

MISCELLANEOUS SYMBOLS

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

RECOMMENDATION SYMBOLS

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

ABBREVIATIONS

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

SAMPLE ABBREVIATIONS

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

EQUIPMENT USED ON SUBJECT PROJECT

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

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

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

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

ROCK DESCRIPTION

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

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

WEATHERING

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

ROCK HARDNESS

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

FRACTURE SPACING

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

BEDDING

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

INDURATION

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

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

TERMS AND DEFINITIONS

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

AQUIFER - A WATER BEARING FORMATION OR STRATA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

BENCH MARK:

ELEVATION: FEET

NOTES:

DATE: 8-15-14

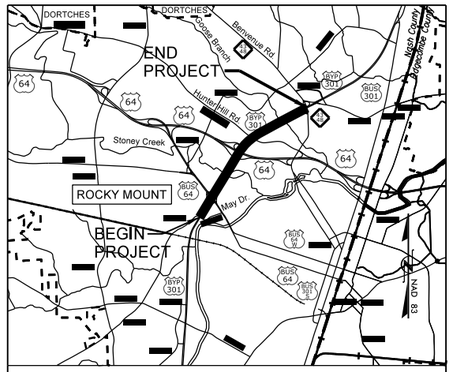
09/08/99

TIP PROJECT: U-3330

CONTRACT: 36596

14-NOV-2014 12:53
L:\Raleigh Investigation\TIP\U3330_GEO_RDWY\CADD_GEOTECH\PlanProf\U3330_RDY_tsh.dgn
jrswarthey AT GEJ27225

See Sheet 1-A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

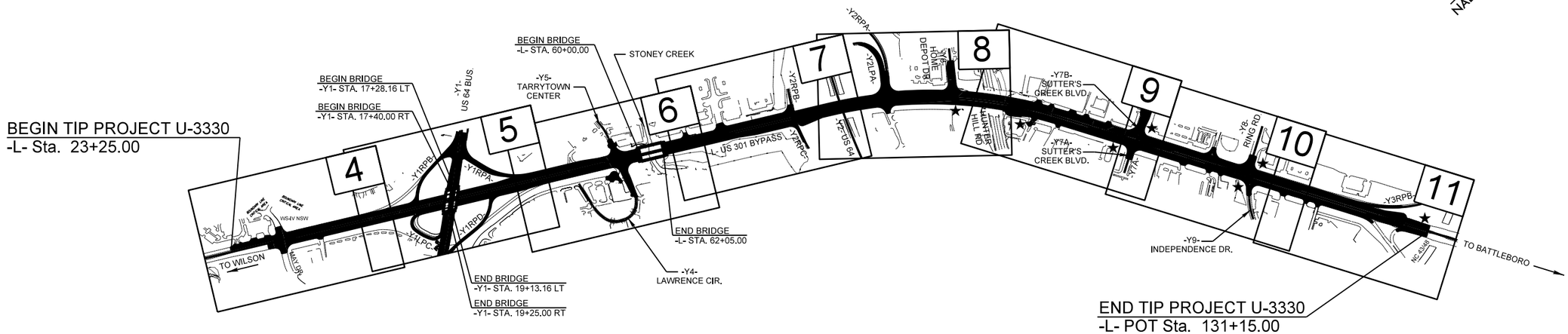
NASH COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3330	2A	61

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
36596.1.2	STP – 0301 (28)	PE
36596.2.1	STP – 0301 (28)	R/W
36596.2.U1	STP – 0301 (28)	UTIL.

LOCATION: ***ROCKY MOUNT – US 301 BYPASS FROM SR 1836 (MAY DRIVE) TO NC 43/48 (BENVENUE ROAD) INTERCHANGE***

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

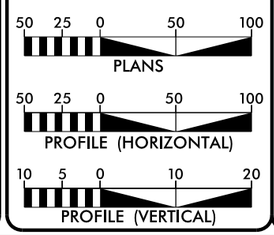


NOTES:
1. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD —.
2. THIS IS A PARTIAL CONTROLLED–ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS.
3. THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF ROCKY MOUNT.

★ TRAFFIC SIGNAL

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2019 = 39,850
ADT 2039 = 48,375
K = 10%
D = 55%
T = 4%*
V = 50 mph

*TTST 2% DUAL 2%
FUNCTIONAL CLASS.: URBAN ARTERIAL STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U–3330	2.005 Miles
LENGTH STRUCTURE TIP PROJECT U–3330	0.039 Mile
TOTAL LENGTH TIP PROJECT U–3330	2.044 Miles

Prepared In the Office of:
MULKEY ENGINEERS & CONSULTANTS NC LICENSE NO. C-1021
FOR THE NORTH CAROLINA DEPT. OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: OCTOBER 21, 2016

LETTING DATE: JANUARY 15, 2019

NCDOT CONTACT: *Brenda Moore, P.E., CPM* — *PROJECT ENGINEER – ROADWAY DESIGN*

Steve A. Drum, P.E. — *PROJECT ENGINEER*

Michael A. Holt, P.E. — *PROJECT DESIGN ENGINEER*

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY
GOVERNOR

ANTHONTY J. TATA
SECRETARY

November 6, 2014

STATE PROJECT: 36596.1.2 (U-3330)
FEDERAL PROJECT: STP-0301(28)
COUNTY: Nash
DESCRIPTION: Rocky Mount – US 301 Bypass From NC 43-48 (Benvenue Rd.) to SR 1836 (May Dr.)
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

This project consists of widening existing US 301 Bypass from a four-lane roadway to a six-lane roadway (-L-) in Rocky Mount. The project begins at the intersection of SR 1836 (May Dr.) and extends northeastward for 3.0 miles. Intersections with other existing roads occur as follows from south to north. Sunset Avenue (US 64 Bus., -Y1-), Lawrence Circle/Tarrytown Center (-Y4- & -Y5-), US 64 (-Y2-), Home Depot Drive (-Y6-), Sutters Creek Blvd. (-Y7A- & -Y7B-), and Ring Road/Independence Drive (-Y8- & -Y9-)

The geotechnical field investigation was conducted during the period of May through August 2014. The Geotechnical Engineering Unit's drill crew was used to drill, sample, and log the borings in this report. The Geotechnical Engineering Unit used a track-mounted CME-55 with an automatic hammer during the investigation. Standard Penetration Tests were performed at selected locations and additional borings were advanced using continuous flight augers, hand augers and bridge rods. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by the Materials and Tests Unit.

The following alignments, totaling 3.3 miles, were investigated. Subsurface soil profiles, and cross-sections, of these alignments are included in this report.

Line	Station		
-L-	23+25	to	131+15
-Y1-	11+75	to	24+04
-Y1LPC-	10+00	to	15+34
-Y1RPA-	10+00	to	17+46
-Y1RPB-	10+00	to	17+52
-Y1RPD-	10+00	to	17+81
-Y2LPA-	10+50	to	16+65
-Y2RPC-	10+70	to	13+00
-Y3RPB-	10+00	to	14+95
-Y4-	10+00	to	13+58
-Y6-	11+12	to	14+40
-Y7A-	10+00	to	13+00
-Y7B-	10+00	to	13+50

Areas of Special Geotechnical Interest

1) The following borehole locations encountered soft, cohesive soils which have the potential to cause embankment stability and/or long term settlement problems:

Alignment	Station	Offset
-L-	70+00	80 RT
-Y2RPC-	11+00	50 LT

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

Alignment	Station	Offset
-L-	36+00	100 LT
-L-	39+93	107 LT
-L-	42+00	80 LT
-L-	43+50	100 RT
-L-	63+00	85 RT
-L-	75+00	80 RT
-L-	79+00	100 LT
-L-	84+00	80 LT
-L-	88+43	98 LT
-L-	93+00	90 RT
-L-	96+00	80 RT
-L-	105+00	85 RT
-L-	116+00	80 RT
-L-	125+00	60 RT
-Y1-	13+00	80 LT
-Y1-	20+00	110 RT
-Y1LPC-	12+00	CL
-Y1RPA-	13+50	15 LT
-Y1RPB-	11+00	30 LT
-Y1RPD-	12+00	30 RT
-Y1RPD-	16+00	20 LT
-Y3RPB-	11+50	40 LT

-Y6-	13+50	55 LT
-Y7A-	11+00	45 RT

3) Shallow Groundwater: Shallow groundwater (within 6 feet of grade), which may cause problems during construction, was encountered in the following locations:

Alignment	Station	Offset
-L-	51+00	80 LT
-L-	75+00	80 RT
-L-	79+00	100 LT
-L-	87+00	65 RT
-L-	88+43	98 LT
-L-	93+00	90 RT
-L-	105+00	85 RT
-L-	122+00	80 LT
-Y1RPA-	9+87	29 RT
-Y1RPD-	12+00	30 RT
-Y3RPB-	11+50	40 LT
-Y6-	13+50	55 LT

4) Crystalline Rock: The following borehole locations encountered crystalline rock above or within 6 feet of grade:

Alignment	Station	Offset
-L-	36+00	100 LT
-L-	36+50	100 LT
-L-	37+50	75 RT
-L-	38+00	75 RT
-L-	38+50	75 RT
-L-	39+47	111 RT
-L-	42+00	80 LT to 80 RT
-L-	43+50	100 RT
-L-	44+00	90 LT to 90 RT
-L-	44+61	123 LT
-L-	45+00	90 RT
-Y1LPC-	10+00 to 12+50	LT to RT
-Y4-	11+50 to 12+50	LT to RT

Physiography and Geology

The project is located along the boundary of the Coastal Plain and Piedmont physiographic provinces of North Carolina. A mixture of fields and wooded areas lie within the project corridor. The project corridor is predominantly urban with commercial businesses located adjacent to US 301. Topography along the project 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 Pennsylvanian to Permian aged residual soils of the Eastern Slate Belt. These residual soils are underlain by weathered and crystalline rock. Some surface exposures of rock outcrop can be seen along the project corridor.

Soil Properties

Soils encountered at the project site include roadway embankment, alluvial sediments, Undivided Coastal Plain sediments, and residual soils.

Roadway embankment soil occurs underneath US 301 Bypass and the overpass approaches to US 64 and Hunter Hill Rd. (US 64 Bus.). The existing embankment is generally one to two feet in height along US 301 Byp. and consists of gray and orange, med. dense, silty sand (A-2-4) and medium stiff, sandy clay (A-6). Roadway embankment cohesive soils exhibit medium to high plasticity indexes.

Alluvial soils occur in and around the Stoney Creek floodplain. The alluvial soils are approximately up to 8 feet thick, and consist of gray, 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 most of the upland areas of the project. These soils consist of gray, tan and orange, very soft to medium 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 20 to 30 percent.

Residual soils belonging to the Eastern Slate Belt underlay the Undivided Coastal Plain soils and are exposed at the surface along much of the project. These soils consist of gray, very soft to medium 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 20 to 30 percent

Groundwater

Groundwater was encountered in most borings. Groundwater ranges from 1.0’ to 8.5’ below the ground surface. Drainage along the project is poor to moderate due to low permeability, clayey soils.

Prepared by,

Jarett Swartley
Project Geological Engineer

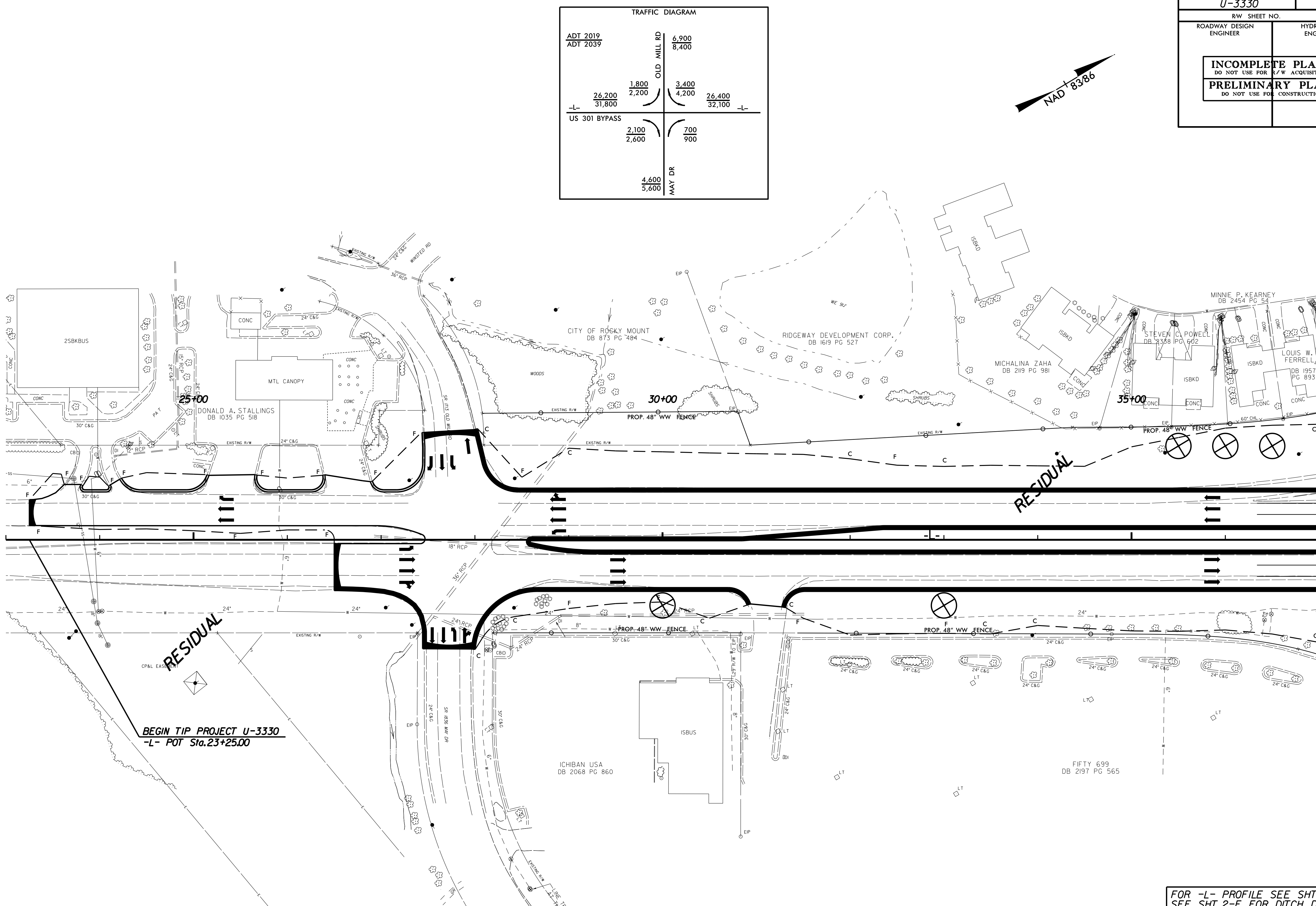
PROJECT REFERENCE NO.	SHEET NO.
U-3330	4

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



FOR -L- PROFILE SEE SHT.12
SEE SHT.2-F FOR DITCH DETAILS

DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

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NC LICENSE NO. C-1Q21

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PROJECT REFERENCE NO.	SHEET NO.
U-3330	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

MATCHLINE TO INSET
-Y1- STA. 22+60

-YIRPD- POT Sta. 17+81.62
-Y1- POT Sta. 23+59.59

END CONSTRUCTION
-Y1- POT Sta. 24+04.00

BEGIN CONSTRUCTION
-Y1- POT Sta. 11+75.00

-YIRPB- POT Sta. 17+52.11
-Y1- POT Sta. 12+69.34

-YIRPA- POT Sta. 17+46.30
-Y1- POT Sta. 13+97.51

-YIRPA- TS Sta. 10+00.00
-L- POT Sta. 50+86.92
(51.0' LT.)

-YIRPB- POT Sta. 10+00.00
-L- POT Sta. 40+09.33

-YIRPD- POT Sta. 10+00.00
-L- POT Sta. 46+42.54

-YILPC- TS Sta. 10+00.00
-L- POT Sta. 40+61.87
(51.0' RT.)

-L- POT Sta. 43+04.76
-Y1- POT Sta. 18+22.61

-YILPC- PT Sta. 15+34.11
-Y1- POC Sta. 21+18.00
(39.0' RT.)

MATCHLINE -L- STA. 37+00 SEE SHEET 4

MATCHLINE -L- STA. 51+00 SEE SHEET 6

MATCHLINE TO INSET
-Y1- STA. 22+60

ROADWAY EMBANKMENT

RESIDUAL

NAD 83/86

FOR -L- PROFILE SEE SHT.13
FOR -Y1- & -YIRPA- PROFILE SEE SHT.20
FOR -YIRPB-,-YILPC-,& -YIRPD- PROFILE SEE SHT.21
SEE SHT.2-F FOR DITCH DETAILS

FOR INTERSECTION DETAILS.SEE SHT.2-G

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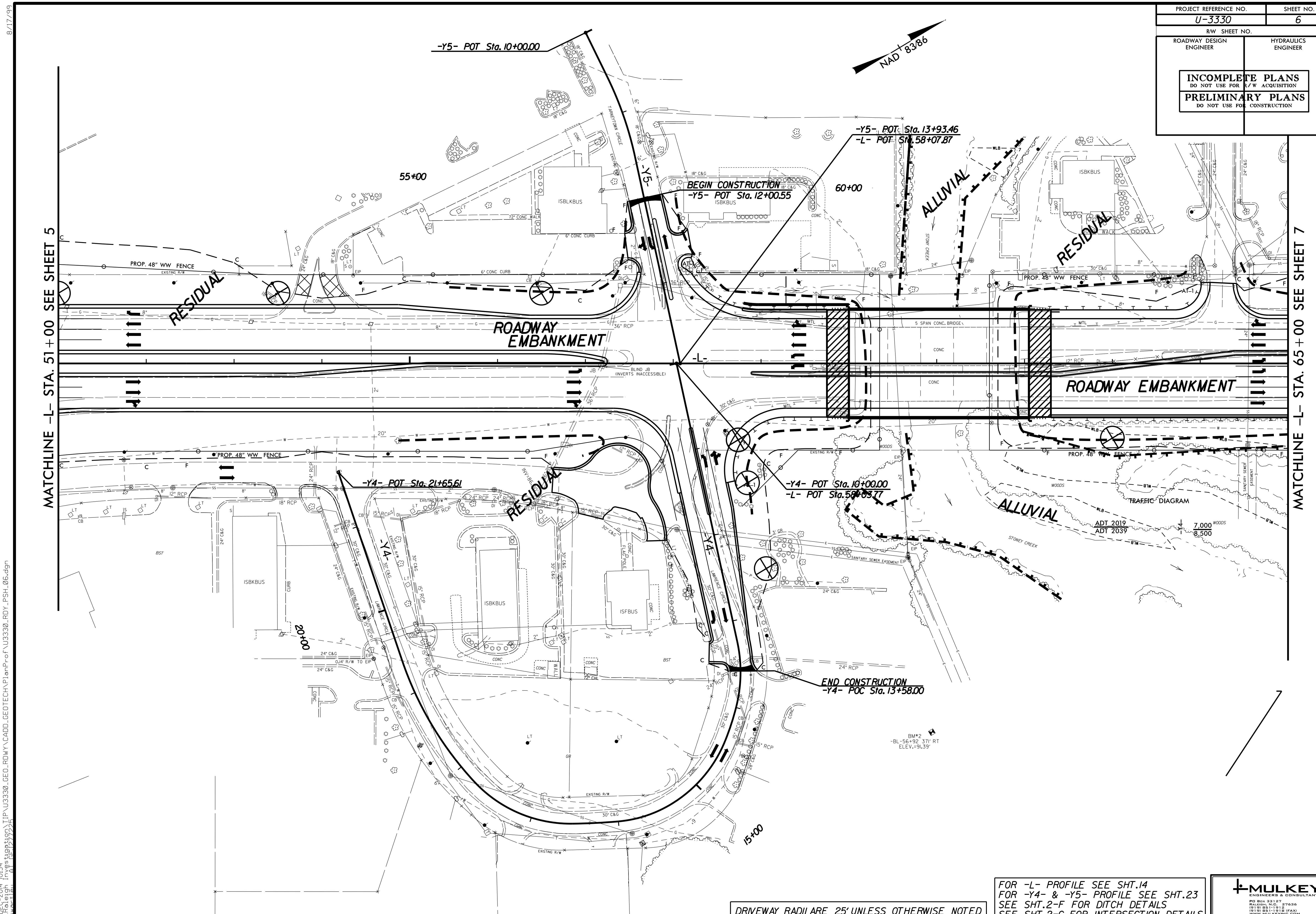
PROJECT REFERENCE NO.	SHEET NO.
U-3330	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT.14
FOR -Y4- & -Y5- PROFILE SEE SHT.23
SEE SHT.2-F FOR DITCH DETAILS
SEE SHT.2-G FOR INTERSECTION DETAILS

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3330	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83/86

MATCHLINE -L- STA. 65+00 SEE SHEET 6

MATCHLINE -L- STA. 79+00 SEE SHEET 8

ISBKBUS

CANOPY

ISFBUS

ISFB

CONC

24" C&G

2" C&G

2' C&G

12" LINES

SANITARY SEWER EASEMENT

PROP. 48" WW FENCE

EXISTING R/W

30" RCP

36" RCP

24" RCP

15" RCP

REMOVE

US 301 SBL

US 301 NBL

ROADWAY EMBANKMENT

RESIDUAL

ALLUVIAL

70+00

WOODS

WLB

BTM

-Y2RPB- POT Sta. 10+00.00

B

75+00

-L- POC Sta.78+07.84

-Y2- POC Sta.19+97.88

ESTIMATED LOCATION OF U/G JB

BEGIN CONSTRUCTION

-Y2RPB- POT Sta. 11+43.77

-L- TS Sta. 76+22.09

-Y2RPB- POT Sta. 12+60.61

-L- POT Sta.73+82.54

-Y2RPB-

-Y2RPC- POT Sta. 12+99.54

-L- POT Sta.73+80.27

-Y2RPC- POT Sta. 10+00.00

C

BEGIN CONSTRUCTION

-Y2RPC- POC Sta. 10+70.00

-Y2RPC-

-Y2-

-L-

A

18+00

20+00

TYPE 8-77

GRAU 350

48" RCP

SIX 64 EBL

SIX 64 WBL

US 64 EBL

US 64 WBL

TRANSITION MEDIAN FROM 30' TO 33'
-L- STA.73+90.00 TO STA.74+65.00

DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT.15
FOR -Y2RPB- & -Y2RPC- PROFILE SEE SHT.22
SEE SHT. 2-F FOR DITCH DETAILS
SEE SHT. 2-H FOR INTERSECTION DETAILS

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tlgibson
Plan View

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-3330	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

BEGIN CONSTRUCTION
-Y2LPA- POS Sta. 10+50.03

-Y2LPA- PC Sta. 10+00.00

-Y2LPA- POT Sta. 16+65.80
-L- POC Sta. 82+10.11

BEGIN CONSTRUCTION
-Y2RPA- POS Sta. 16+85.00

-Y2RPA- POT Sta. 19+29.97
-L- POC Sta. 82+34.11

-Y6- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y6- POT Sta. 11+12.05

-Y6- POT Sta. 14+40.03
-L- POC Sta. 88+04.64

A

D

RESIDUAL

UNDIVIDED COASTAL PLAIN

ROADWAY EMBANKMENT

MATCHLINE -L- STA. 79+00 SEE SHEET 7

MATCHLINE -L- STA. 92+00 SEE SHEET 9

US 301 SBL

US 301 NBL

-L-

-Y6-

-Y2LPA-

-Y2RPA-

HUNTER HILL RD

HILLCREST

HELM ST

PAINE DR

SPECIAL CUT DITCH
SEE DETAIL 8-1

PROP. 48" WW FENCE

PRECAST RETAINING WALL

ESTIMATED LOCATION OF U/G JB

TYPE B-77 ATTENUATOR W/TYPE B-77

NAD 1983

DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT.16
FOR -Y2LPA- & -Y2RPA- PROFILE SEE SHT.22
FOR -Y6- PROFILE SEE SHT.23
SEE SHT.2-F FOR DITCH DETAILS
SEE SHT.2-H FOR INTERSECTION DETAILS

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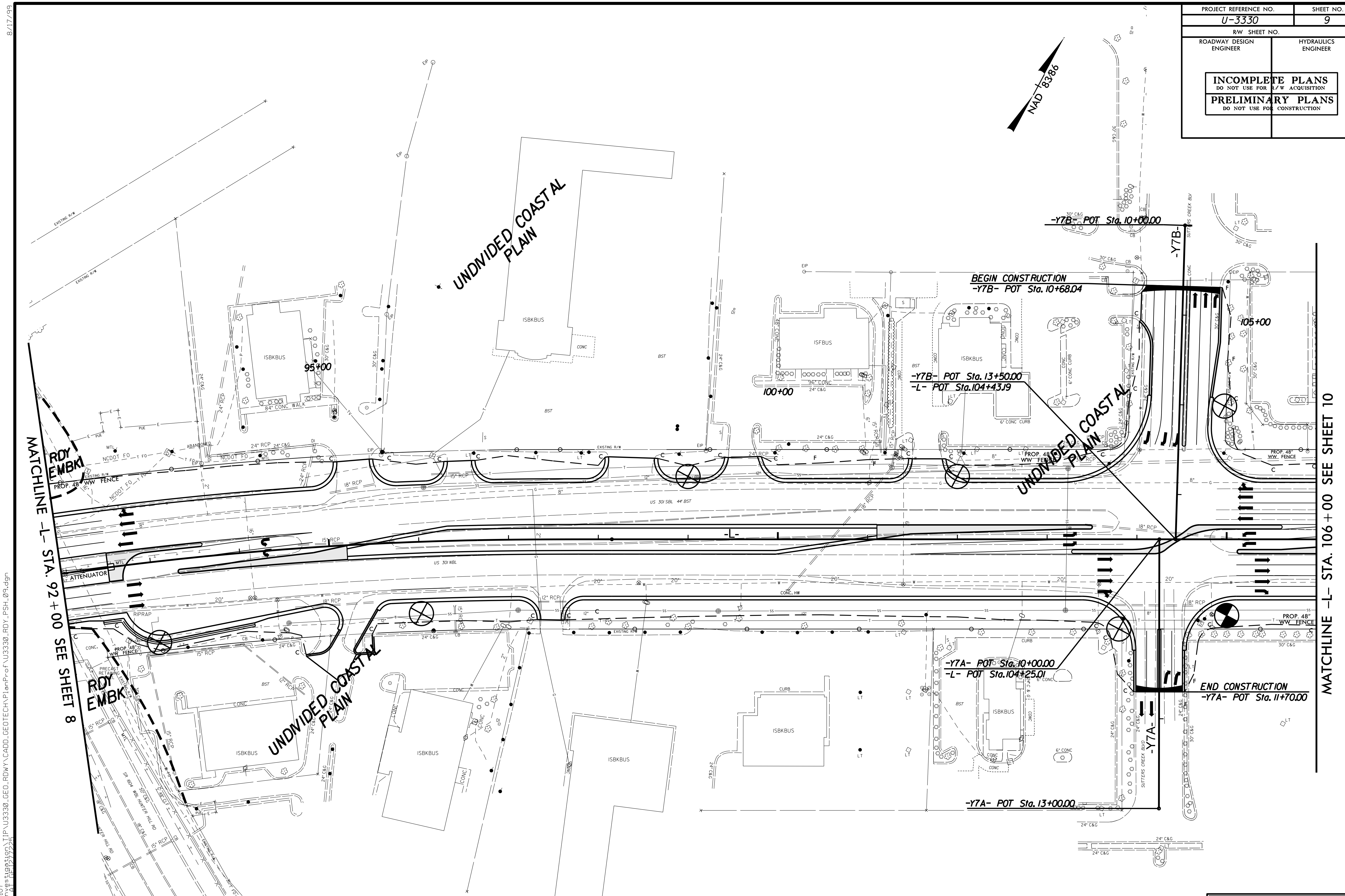
PROJECT REFERENCE NO.	SHEET NO.
U-3330	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT.16 & 17
FOR -Y7A- & -Y7B- PROFILE SEE SHT.23
SEE SHT.2-F FOR DITCH DETAILS
SEE SHT.2-I FOR INTERSECTION DETAILS

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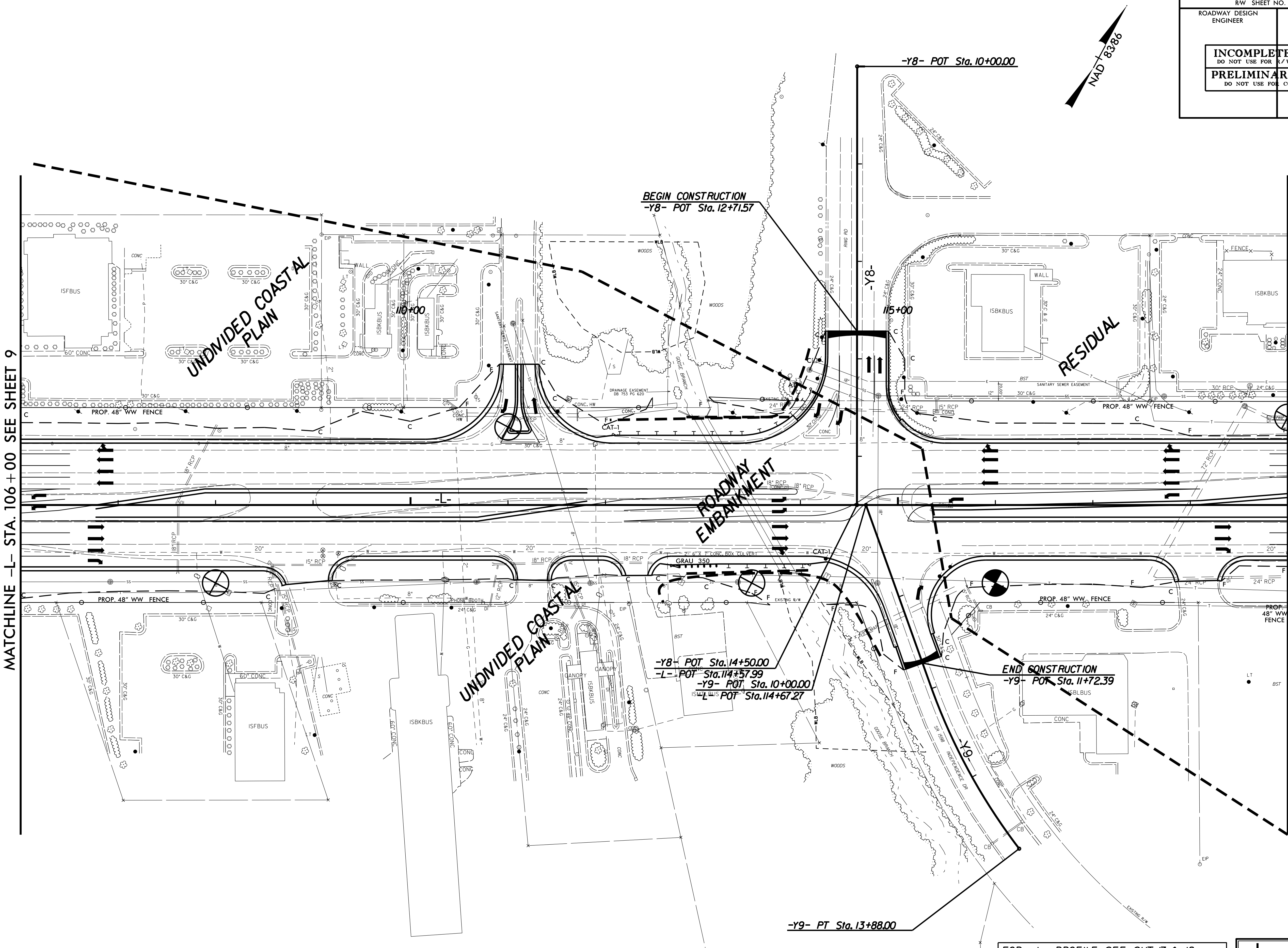
PROJECT REFERENCE NO.	SHEET NO.
U-3330	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT.17 & 18
FOR -Y8- & -Y9- PROFILE SEE SHT.24
SEE SHT.2-F FOR DITCH DETAILS
SEE SHT.2-I FOR INTERSECTION DETAILS

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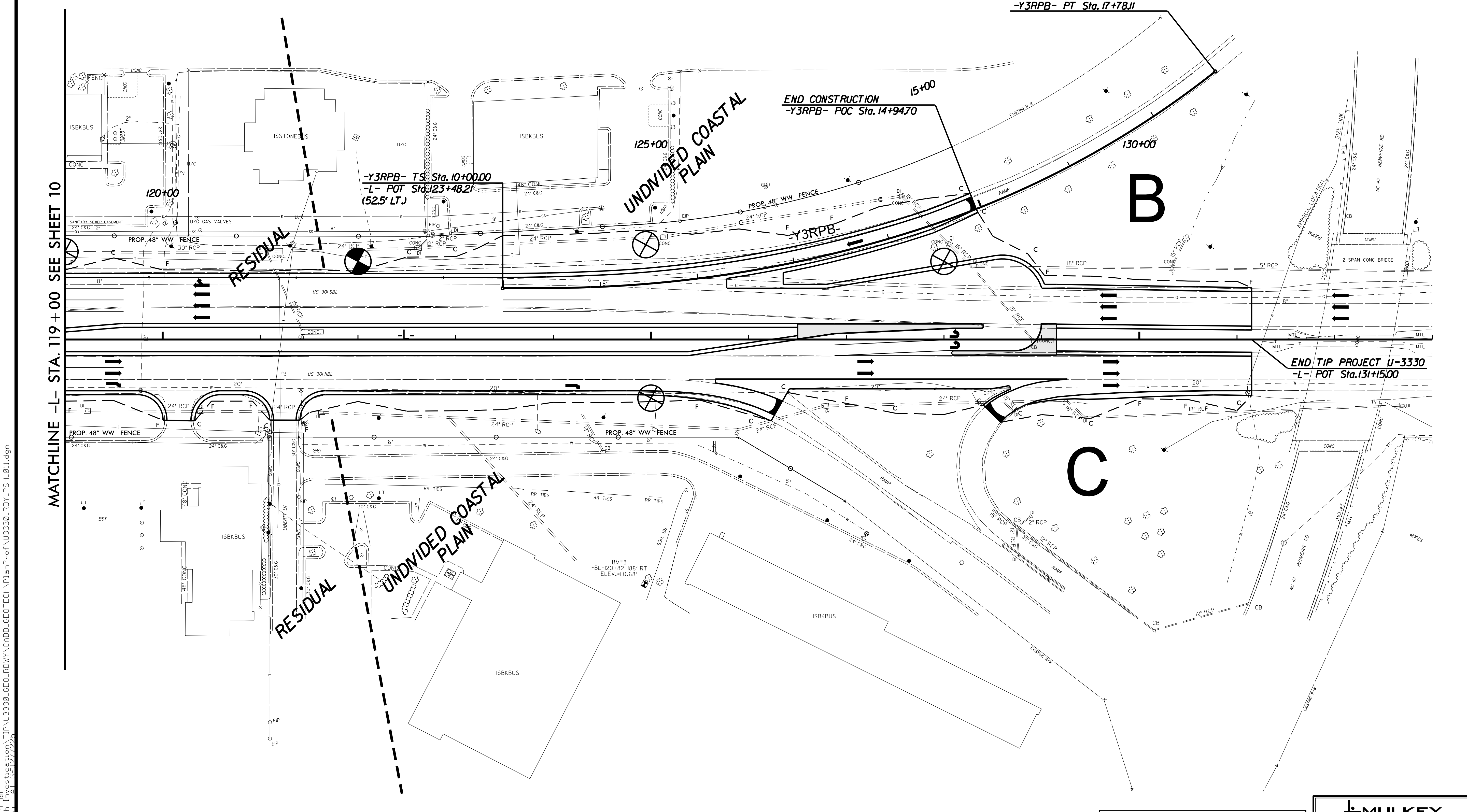
PROJECT REFERENCE NO.	SHEET NO.
U-3330	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DRIVEWAY RADII ARE 25' UNLESS OTHERWISE NOTED

FOR -L- PROFILE SEE SHT. 18 & 19
FOR -Y3RPB- PROFILE SEE SHT. 22
FOR DITCH DETAILS SEE SHT. 2-F

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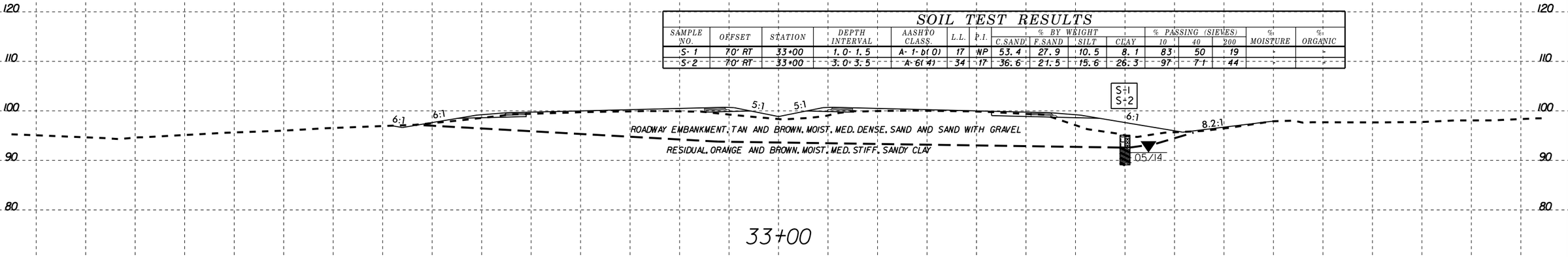
8/23/99

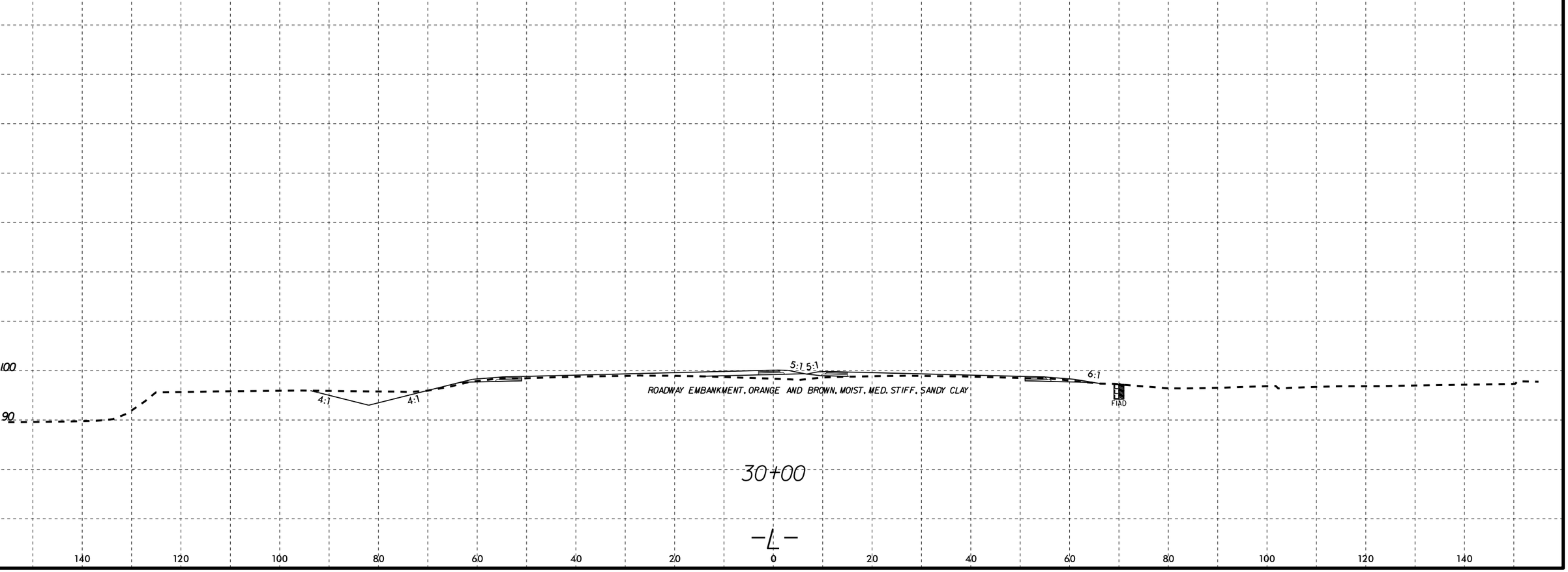
PROJ. REFERENCE NO.	SHEET NO.
U-3330	12

0 5 10

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-1	70' RT	33+00	1.0-1.5	A-1-b(0)	17	NP	53.4	27.9	10.5	8.1	83	50	19	-	-
S-2	70' RT	33+00	3.0-3.5	A-6(4)	34	17	36.6	21.5	15.6	26.3	97	71	44	-	-





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ipswartley
AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	13

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

110
100
90
80

3:1 4:1 6:1 5:1 5:1 5:1 4:1

FTAD

RESIDUAL, TAN AND BROWN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

35+50

100
90

3:1 4:1 6:1 5:1 5:1 5:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

35+00

100
90

6:1 6:1 5:1 5:1 5:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

34+50

110
100
90

6:1 6:1 5:1 5:1 5:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, MED. DENSE, SAND AND SAND WITH GRAVEL
TAN AND BROWN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

34+00

-L-

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

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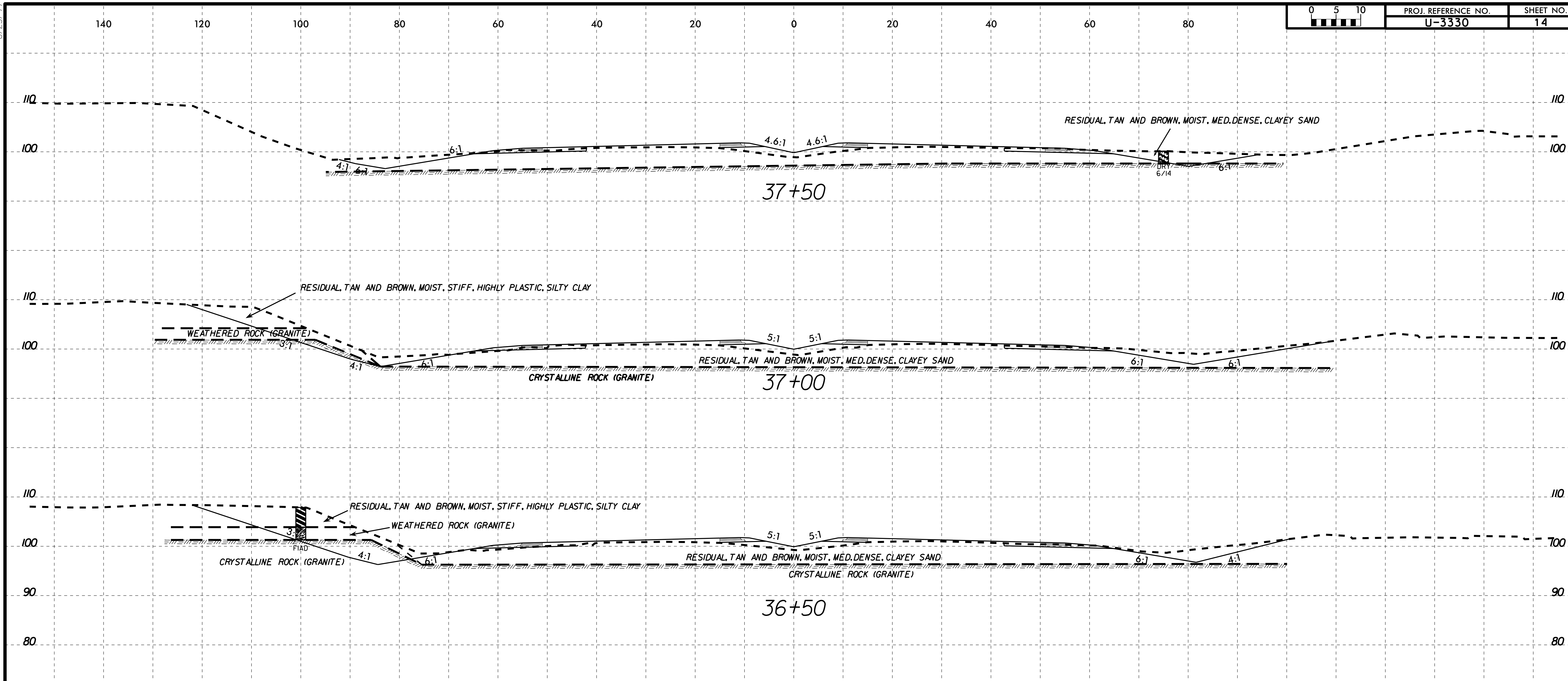
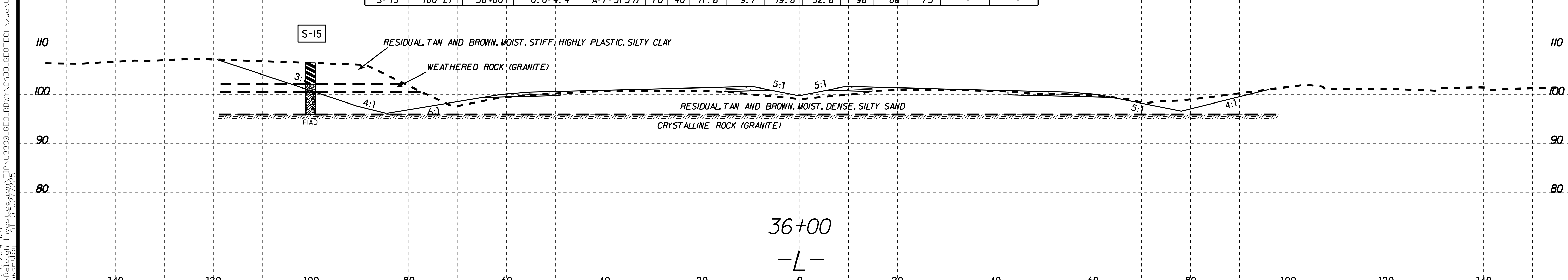
jrsworley
AT GEO27225

PROJ. REFERENCE NO.	SHEET NO.
U-3330	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		
S-15	100' LT	36+00	0.0-4.4	A-7-5(31)	70	40	17.8	9.7	19.8	52.6	98	86	73	-	-



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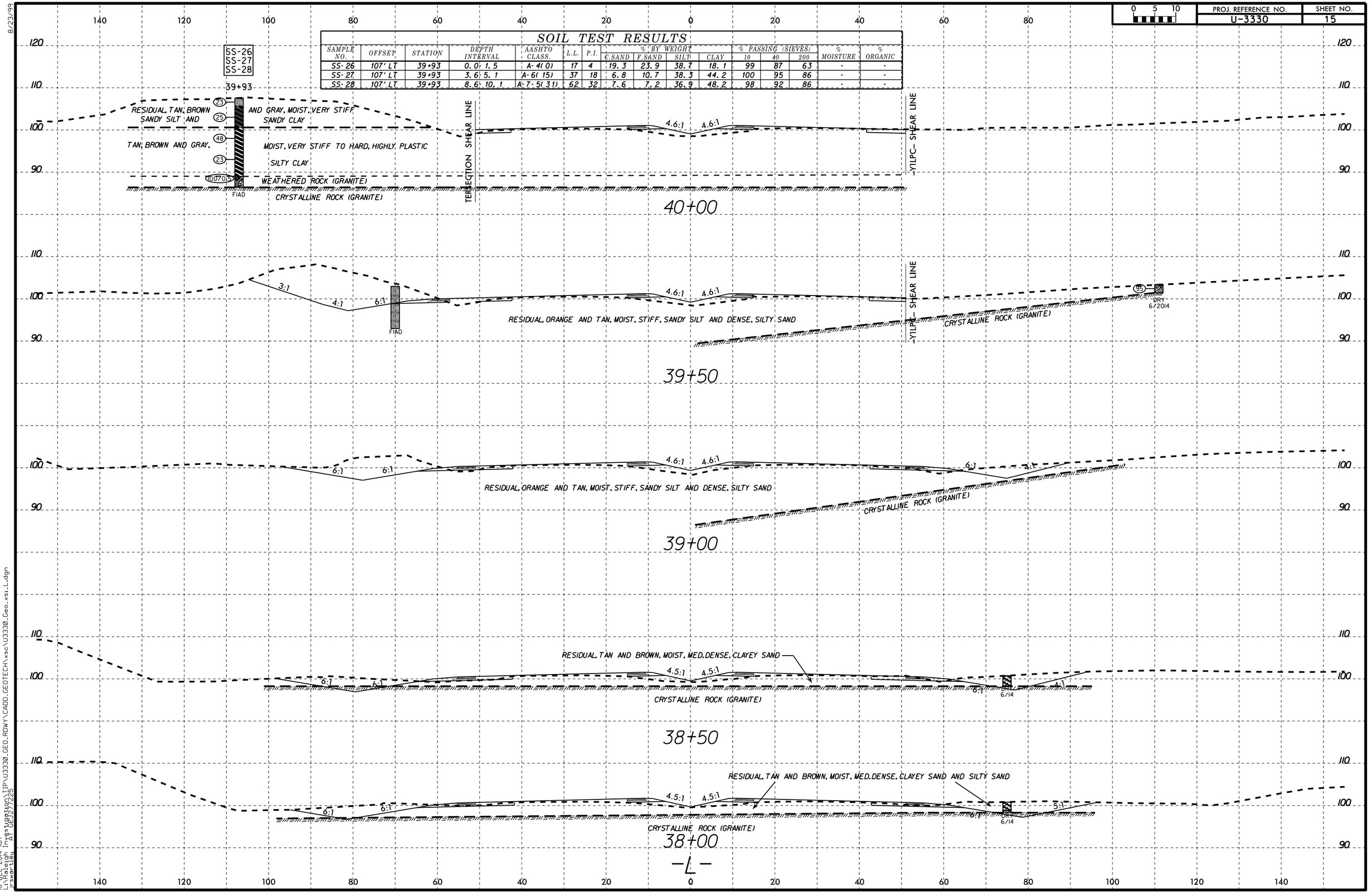
PROJ. REFERENCE NO.	SHEET NO.
U-3330	15

0 5 10

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-26	107' LT	39+93	0.0-1.5	A-4(0)	17	4	19.3	23.9	38.7	18.1	99	87	63	-	-
SS-27	107' LT	39+93	3.6-5.1	A-6(15)	37	18	6.8	10.7	38.3	44.2	100	95	86	-	-
SS-28	107' LT	39+93	8.6-10.1	A-7-5(31)	62	32	7.6	7.2	36.9	48.2	98	92	86	-	-



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irswartley
AT GEJ7225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	16

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

120 110 100 90

ROADWAY EMBANKMENT, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

3:1 4:1 6:1 1.5:1

RESIDUAL, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

CRYSTALLINE ROCK (GRANITE)

42+50

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-72	80' LT	42+00	0.0-7.0	A-7-5(45)	72	42	3.8	6.3	21.2	68.7	100	97	92	-	-
S-73	80' RT	42+00	0.0-13.0	A-6(6)	39	20	12.1	44.2	13.3	30.3	100	98	50	17.6	-

120 110 100 90

S-72 S-73

RESIDUAL, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

ROADWAY EMBANKMENT, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY

3:1 4:1 6:1 7:1 7:1 3:1

60/0.1 FIAD 60/0.1 FIAD

CRYSTALLINE ROCK (GRANITE)

42+00

80

110 100

3:1 4:1 6:1 5.6:1 5.6:1 6:1 4:1 3:1

RESIDUAL, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

41+50

110 100

3:1 4:1 6:1 4.7:1 4.7:1 6:1 4:1 3:1

RESIDUAL, TAN, GRAY AND RED, MOIST, STIFF, SANDY CLAY AND SILTY CLAY

41+00

-L-

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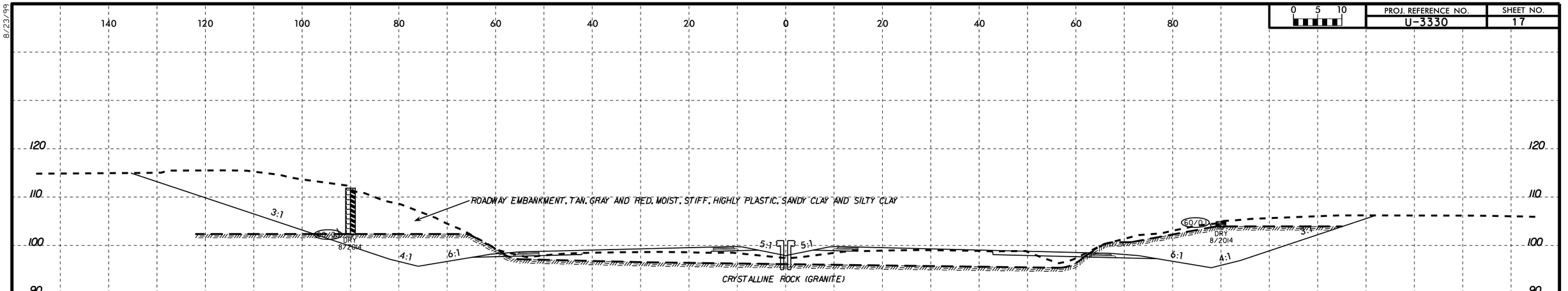
psworley
AT GEO27225

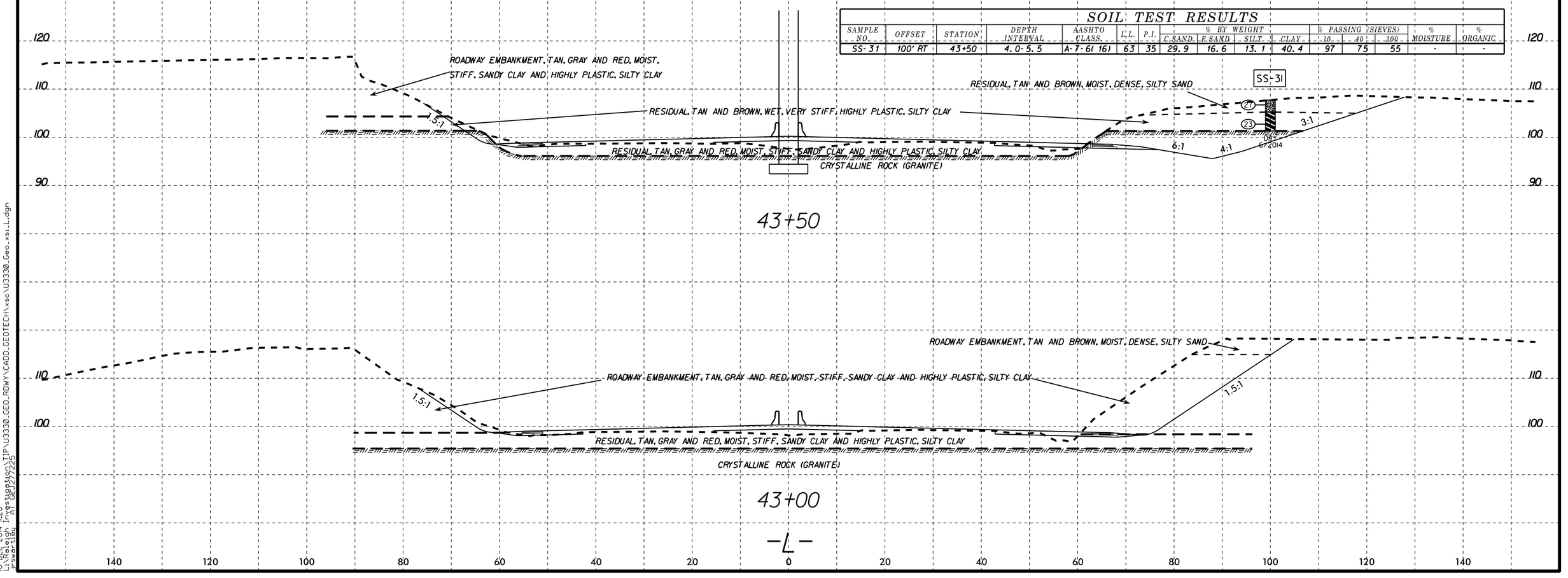
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	17



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	#40	#200	% MOISTURE	% ORGANIC
SS-31	100' RT	43+50	4.0-5.5	A-7-6(16)	63	35	29.9	16.6	13.1	40.4	97	75	55	-	-



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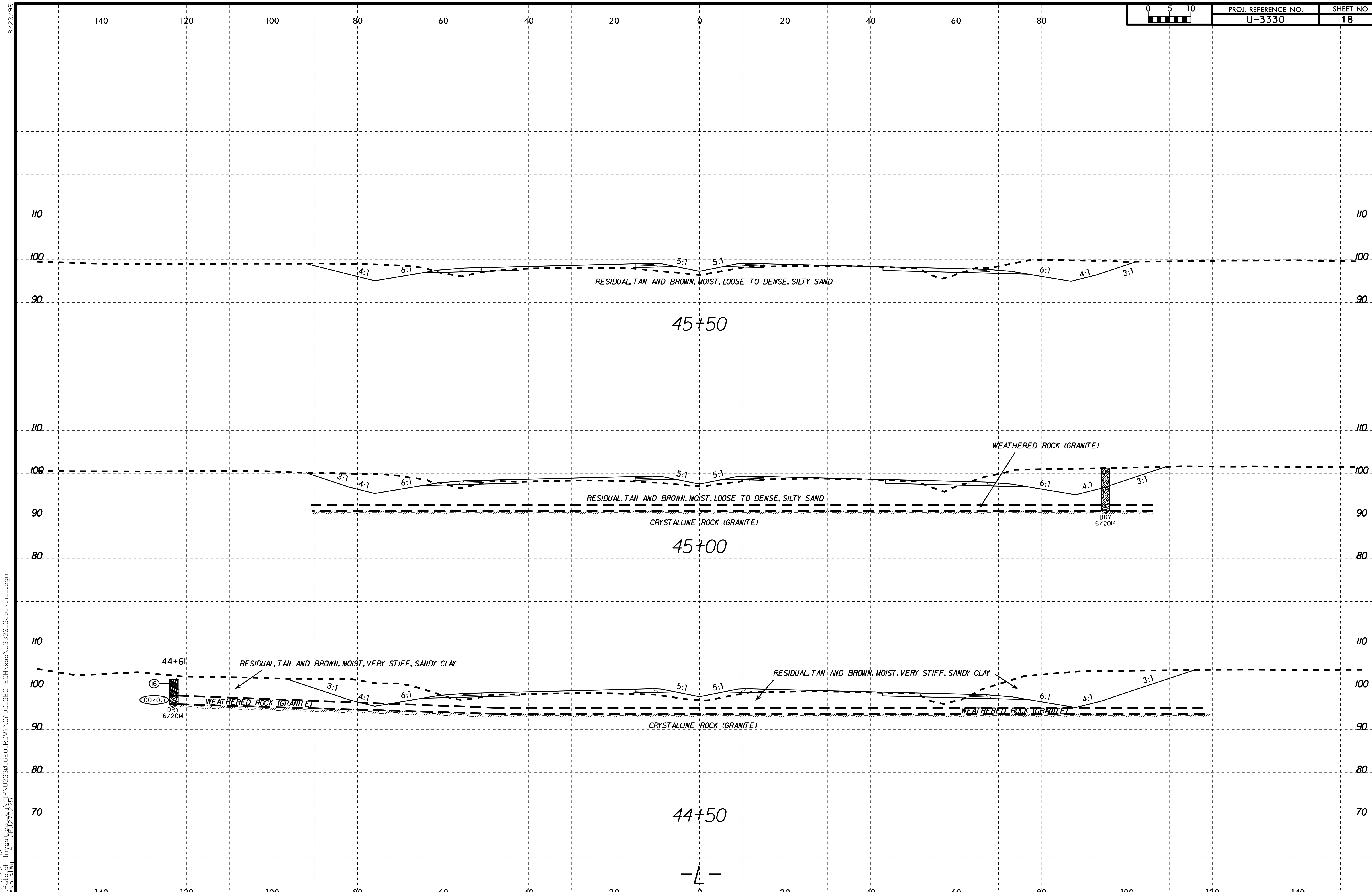
U-3330	18



8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	19

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

100
90

5.66:1 6:1 5:1 5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

47+50

110
100
90

6:1 6:1 5:1 5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

47+00

110
100
90

6:1 6:1 5:1 5:1

RESIDUAL, TAN AND BROWN, MOIST, LOOSE TO DENSE, SILTY SAND

INTERSECTION SHEAR LINE

46+50

110
100
90

5.28:1 6:1 5:1 5:1 6:1 5:1

RESIDUAL, TAN AND BROWN, MOIST, LOOSE TO DENSE, SILTY SAND

46+00

-L-

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

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pswartley AT GEO27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	20

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

100 90

-Y1RPA- SHEAR LINE

4.5:1 4.5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

50+00

100 90

-Y1RPA- SHEAR LINE

5:1 5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

49+50

100 90

-Y1RPA- SHEAR LINE

5:1 5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

49+00

100 90

-Y1RPA- SHEAR LINE

5:1 5:1 6:1 4:1

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

48+50

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-3	70' RT	48+00	1.0-1.5	A-7-6(20)	44	22	6.9	9.9	40.7	42.5	100	95	86	-	-
S-4	70' RT	48+00	5.5-6.0	A-7-6(21)	41	22	3.2	8.9	37.2	50.6	100	98	91	-	-

100 90

-Y1RPA- SHEAR LINE

5:1 5:1 6:1 4:1

S-3
S-4

FILL

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SILTY CLAY

48+00

-L-

110 100 90 80

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

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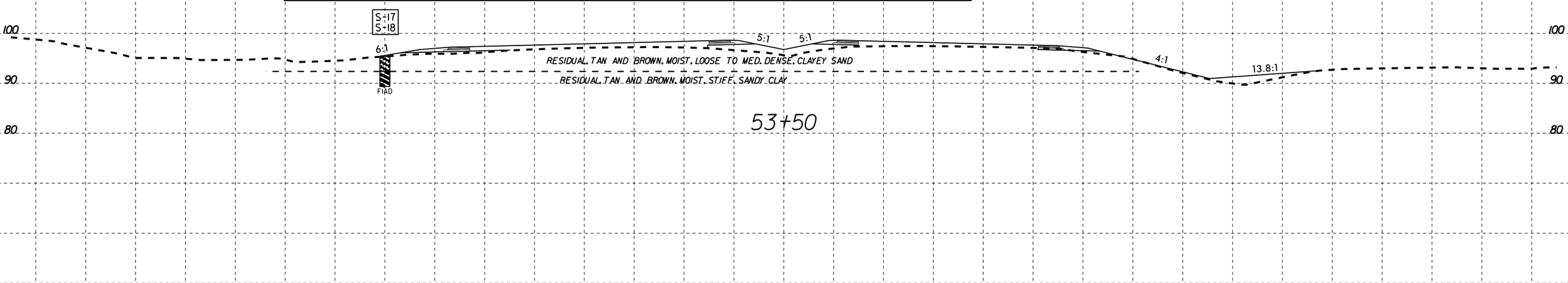
pswartley AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	21

SOIL TEST RESULTS

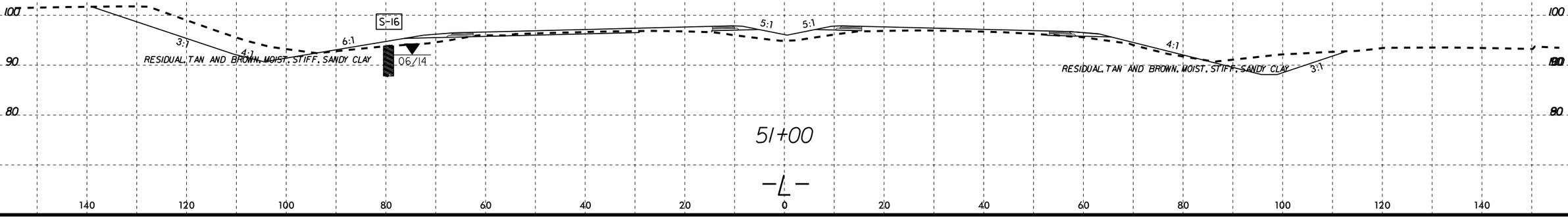
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) #10	#40	#200	% MOISTURE	% ORGANIC
S-17	80' LT	53+50	0.0-3.0	A-2-6(2)	37	21	49.0	19.0	7.7	24.3	95	61	33	-	-
S-18	80' LT	53+50	3.0-6.0	A-7-6(12)	42	24	8.7	30.4	20.4	40.5	94	89	61	-	-



53+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
S-16	80' LT	51+00	0.0-6.0	A-6(10)	34	13	9.1	14.0	44.5	32.4	99	93	80	-	-



51+00

-L-

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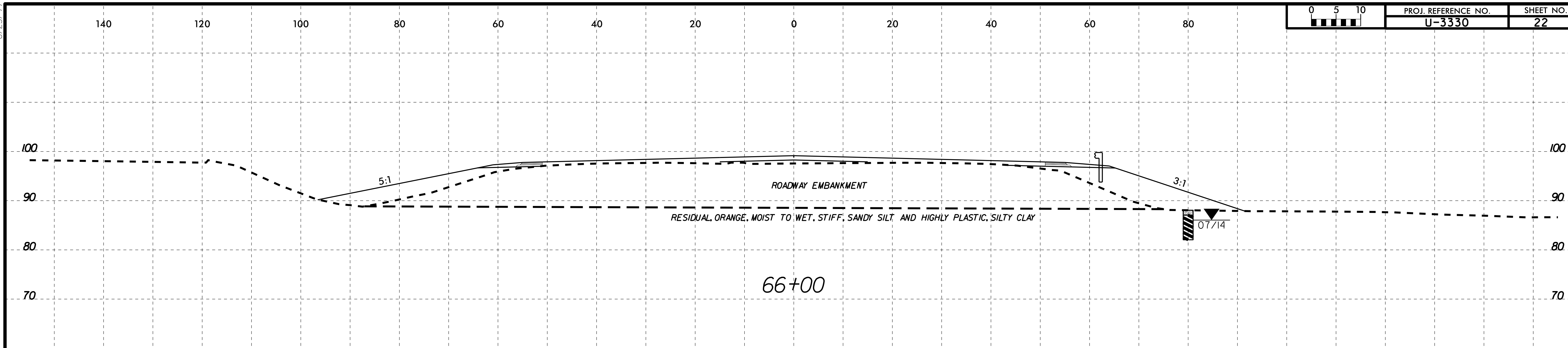
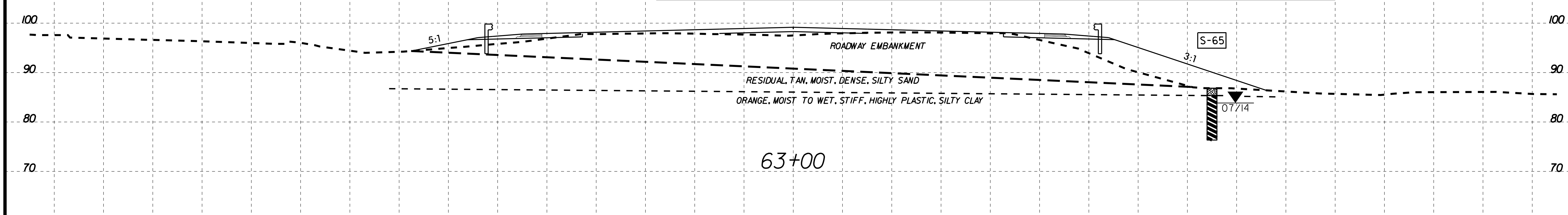
pswartley
AT GEJ/7225



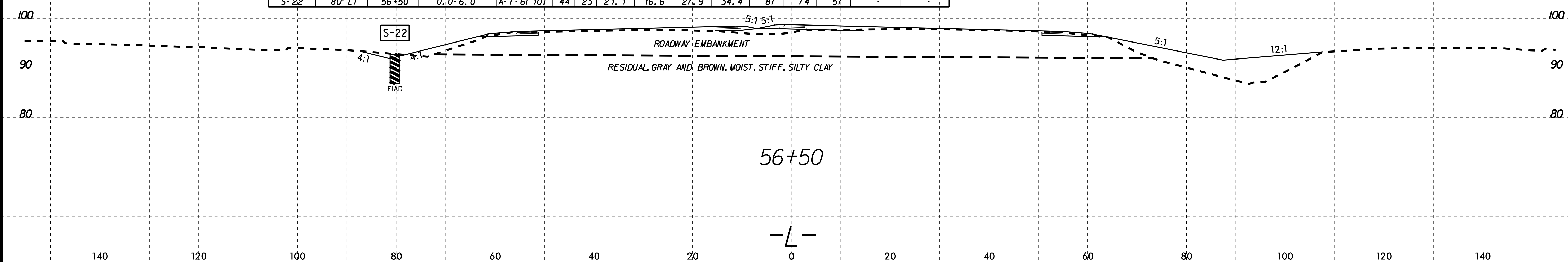
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-65	85' RT	63+00	1.5-6.0	A-7-6(18)	54	37	30.7	11.3	19.6	38.4	97	72	58	-	-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-22	80' LT	56+50	0.0-6.0	A-7-6(10)	44	23	21.1	16.6	27.9	34.4	87	74	57	-	-



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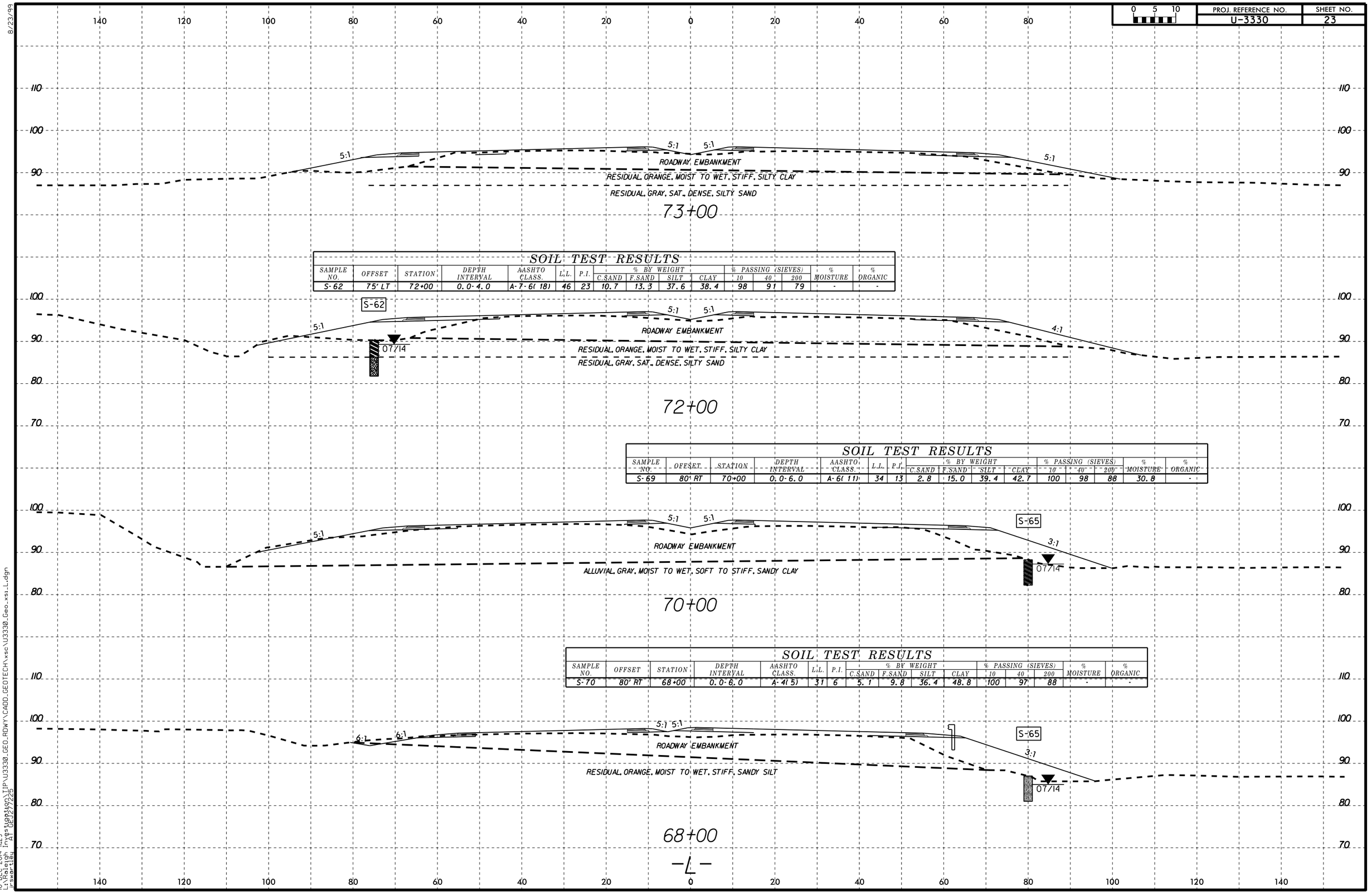

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-62	75' LT	72+00	0.0-4.0	A-7-6(18)	46	23	10.7	13.3	37.6	38.4	98	91	79	-	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-69	80' RT	70+00	0.0-6.0	A-6(11)	34	13	2.8	15.0	39.4	42.7	100	98	88	30.8	-

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-70	80' RT	68+00	0.0-6.0	A-4(5)	31	6	5.1	9.8	36.4	48.8	100	97	88	-	-

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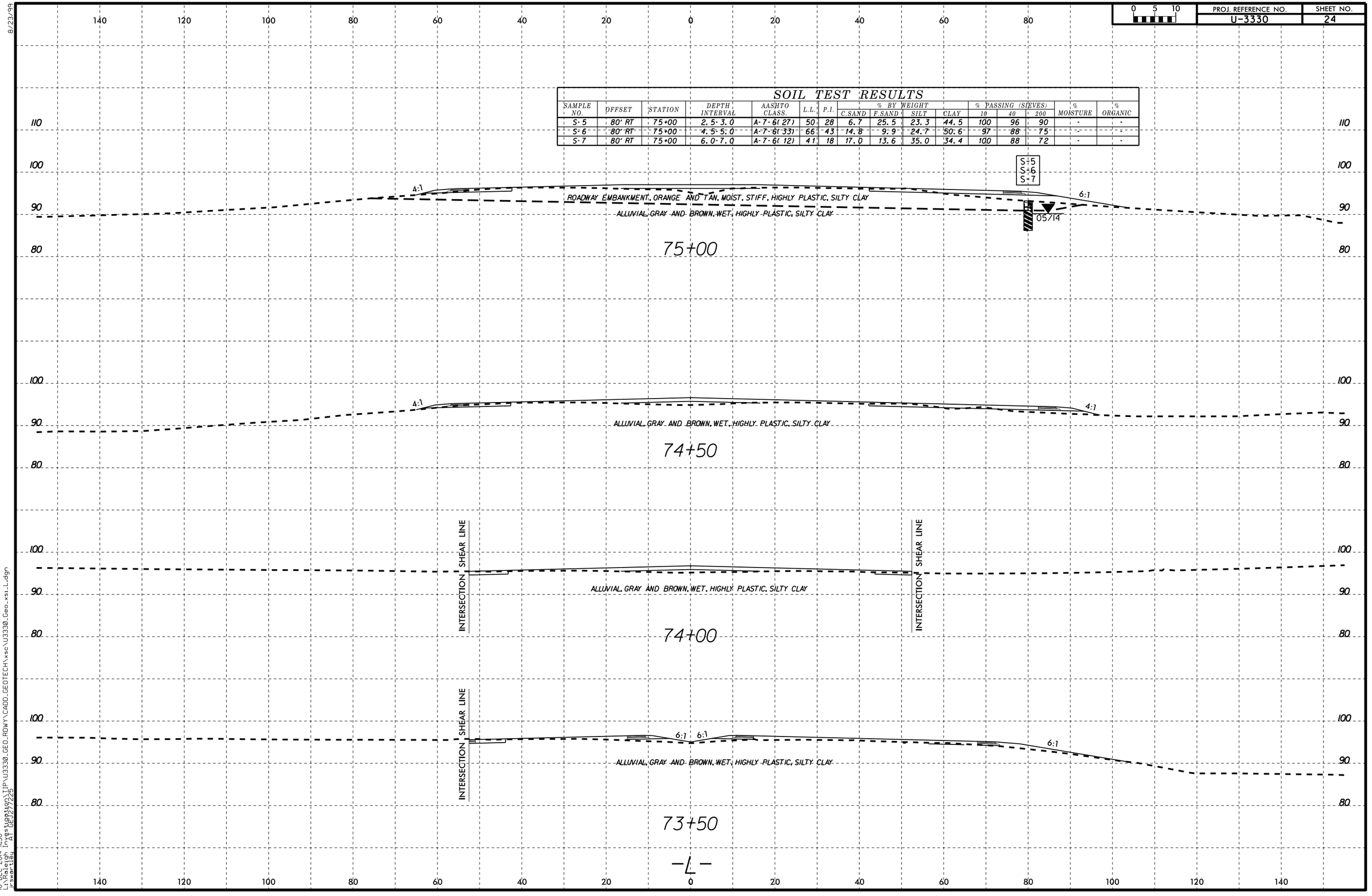
ashortley AT GEJ27225

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	24

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-5	80' RT	75+00	2.5-3.0	A-7-6(27)	50	28	6.7	25.5	23.3	44.5	100	96	90	-	-
S-6	80' RT	75+00	4.5-5.0	A-7-6(33)	66	43	14.8	9.9	24.7	50.6	97	88	75	-	-
S-7	80' RT	75+00	6.0-7.0	A-7-6(12)	41	18	17.0	13.6	35.0	34.4	100	88	72	-	-



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	25

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

110 100 90

3:1 4:1 4:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

77+00

110 100 90

4:1 4:1

ALLUVIAL, GRAY AND BROWN, WET, HIGHLY PLASTIC, SILTY CLAY

76+50

110 100 90 80

4:1 4:1

ROADWAY EMBANKMENT, ORANGE AND TAN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

ALLUVIAL, GRAY AND BROWN, WET, HIGHLY PLASTIC, SILTY CLAY

76+00

100 90 80

4:1 4:1

ROADWAY EMBANKMENT, ORANGE AND TAN, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

ALLUVIAL, GRAY AND BROWN, WET, HIGHLY PLASTIC, SILTY CLAY

75+50

-L-

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

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prsworthey
All GEJ27225

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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	26

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

130 120 110 100 90

ROADWAY EMBANKMENT, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

ROADWAY EMBANKMENT, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

78+00

130 120 110 100 90

ROADWAY EMBANKMENT, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

ROADWAY EMBANKMENT, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

77+50

-L-

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pswartley
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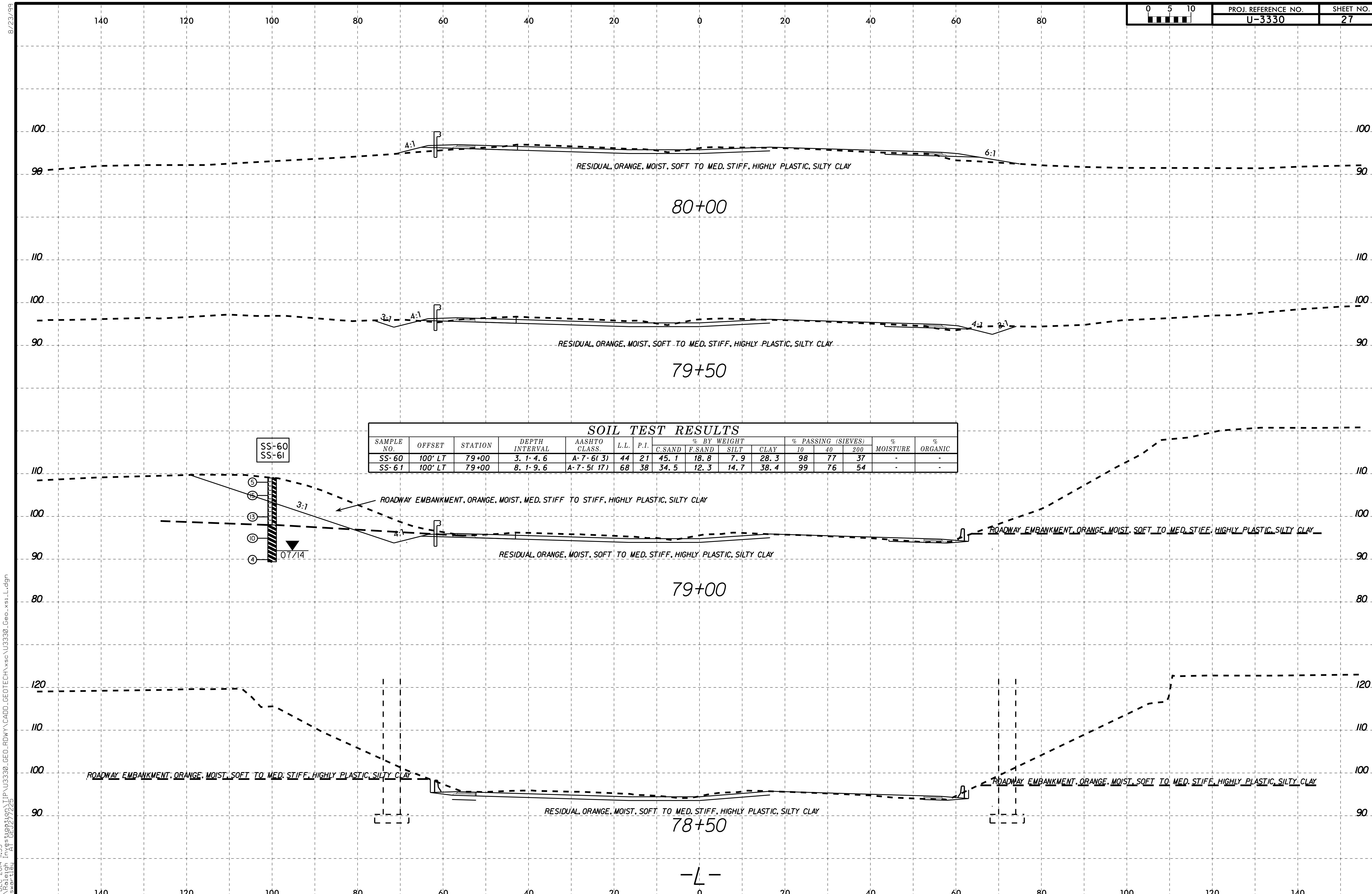

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-60	100' LT	79+00	3.1-4.6	A-7-6(3)	44	21	45.1	18.8	7.9	28.3	98	77	37	-	-
SS-61	100' LT	79+00	8.1-9.6	A-7-5(17)	68	38	34.5	12.3	14.7	38.4	99	76	54	-	-

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rsmartin AT GE92777225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	28

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

110
100
90

6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

83+00

INTERSECTION SHEAR LINE

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

82+50

INTERSECTION SHEAR LINE

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

82+00

INTERSECTION SHEAR LINE

4:1 3:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

81+50

4:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

81+00

4:1 6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

80+50

-L-

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

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swortley
AT GEO27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	29

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

110
100

3:1 4:1 6:1

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

RESIDUAL, GRAY, WET, STIFF, SANDY SILT

86+00

3:1 4:1 6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

85+50

6:1 6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

85+00

6:1 6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

84+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		
S-21	80' LT	84+00	0.0-6.0	A-7-6(23)	53	34	17.0	15.0	27.5	40.5	99	89	71	-	-

S-21

6:1 6:1

FIAD

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

84+00

6:1 6:1

RESIDUAL, ORANGE, MOIST, SOFT TO MED. STIFF, HIGHLY PLASTIC, SILTY CLAY

83+50

-L-

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

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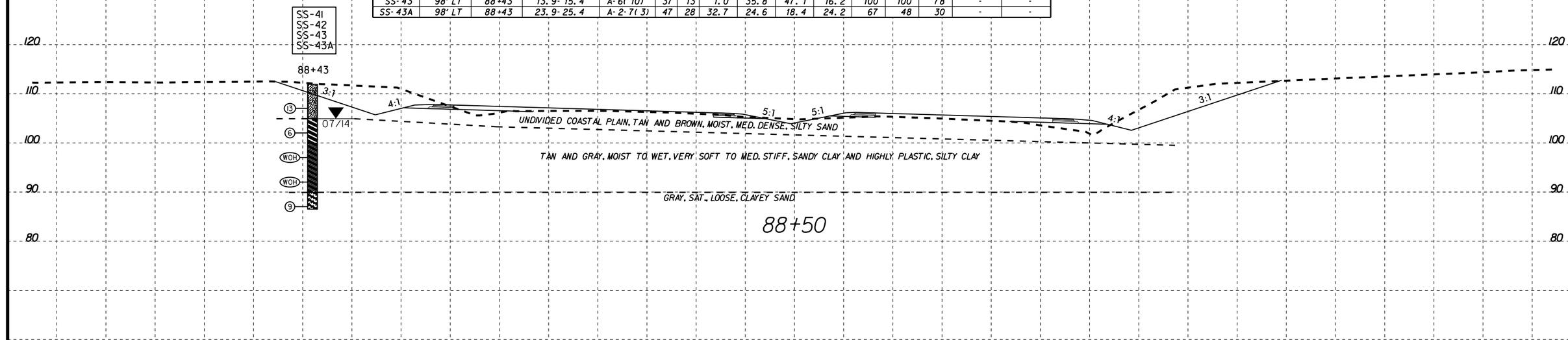
pswartley AT GEJ27225

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	30

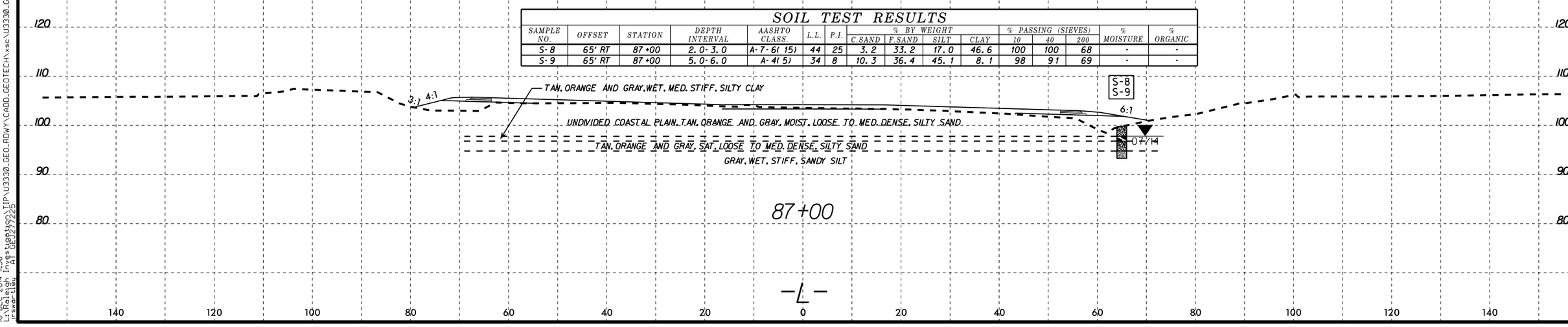
SOIL TEST RESULTS

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-41	98' LT	88+43	3.9-5.4	A-2-4(0)	20	7	44.4	27.3	12.1	16.2	99	71	31	-	-
SS-42	98' LT	88+43	8.9-10.4	A-7-6(43)	76	50	11.9	5.1	28.5	54.5	94	85	80	-	-
SS-43	98' LT	88+43	13.9-15.4	A-6(10)	37	13	1.0	35.8	47.1	16.2	100	100	78	-	-
SS-43A	98' LT	88+43	23.9-25.4	A-2-7(3)	47	28	32.7	24.6	18.4	24.2	67	48	30	-	-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-8	65' RT	87+00	2.0-3.0	A-7-6(15)	44	25	3.2	33.2	17.0	46.6	100	100	68	-	-
S-9	65' RT	87+00	5.0-6.0	A-4(5)	34	8	10.3	36.4	45.1	8.1	98	91	69	-	-



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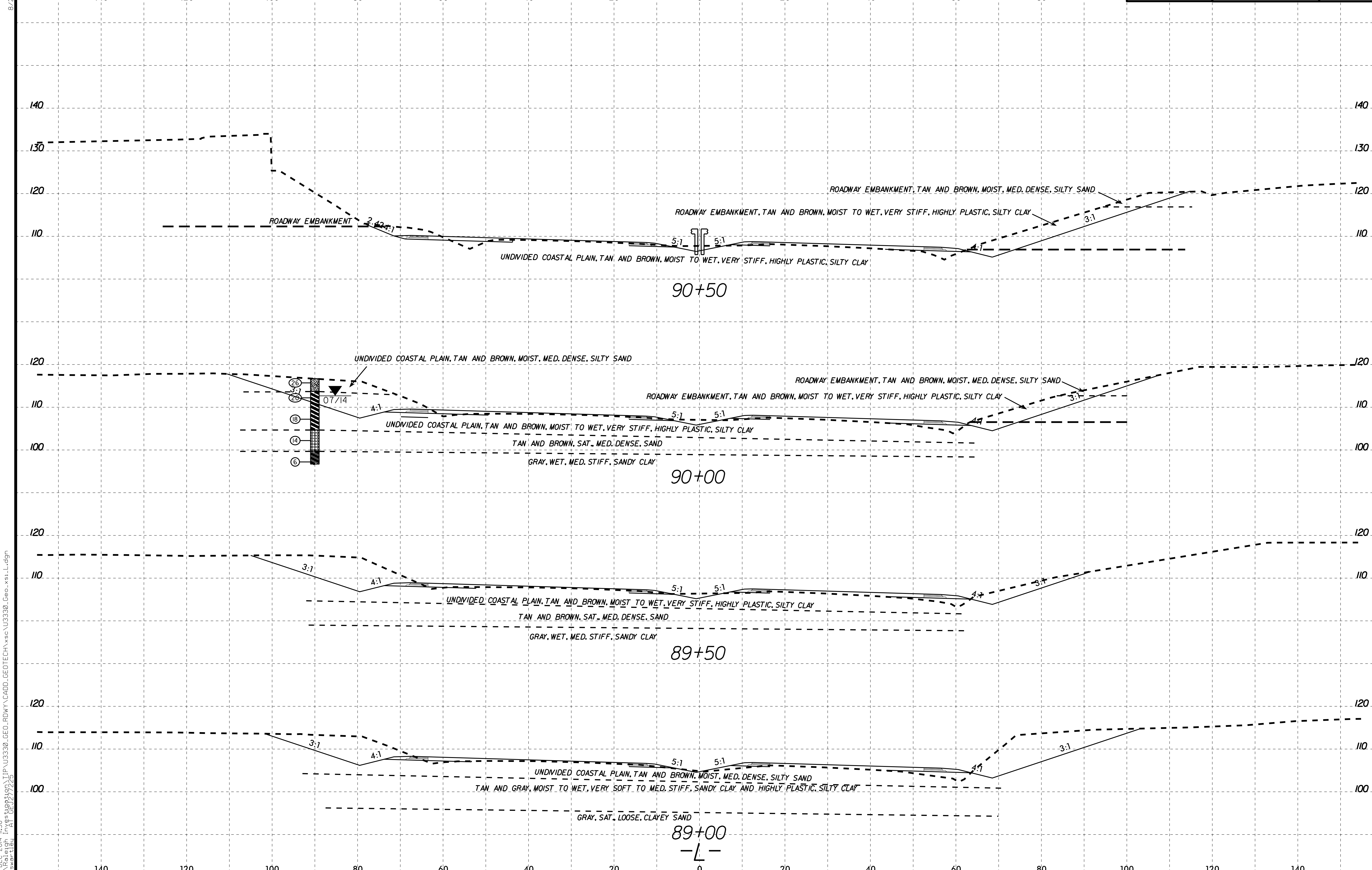
PROJ. REFERENCE NO.	SHEET NO.
U-3330	31



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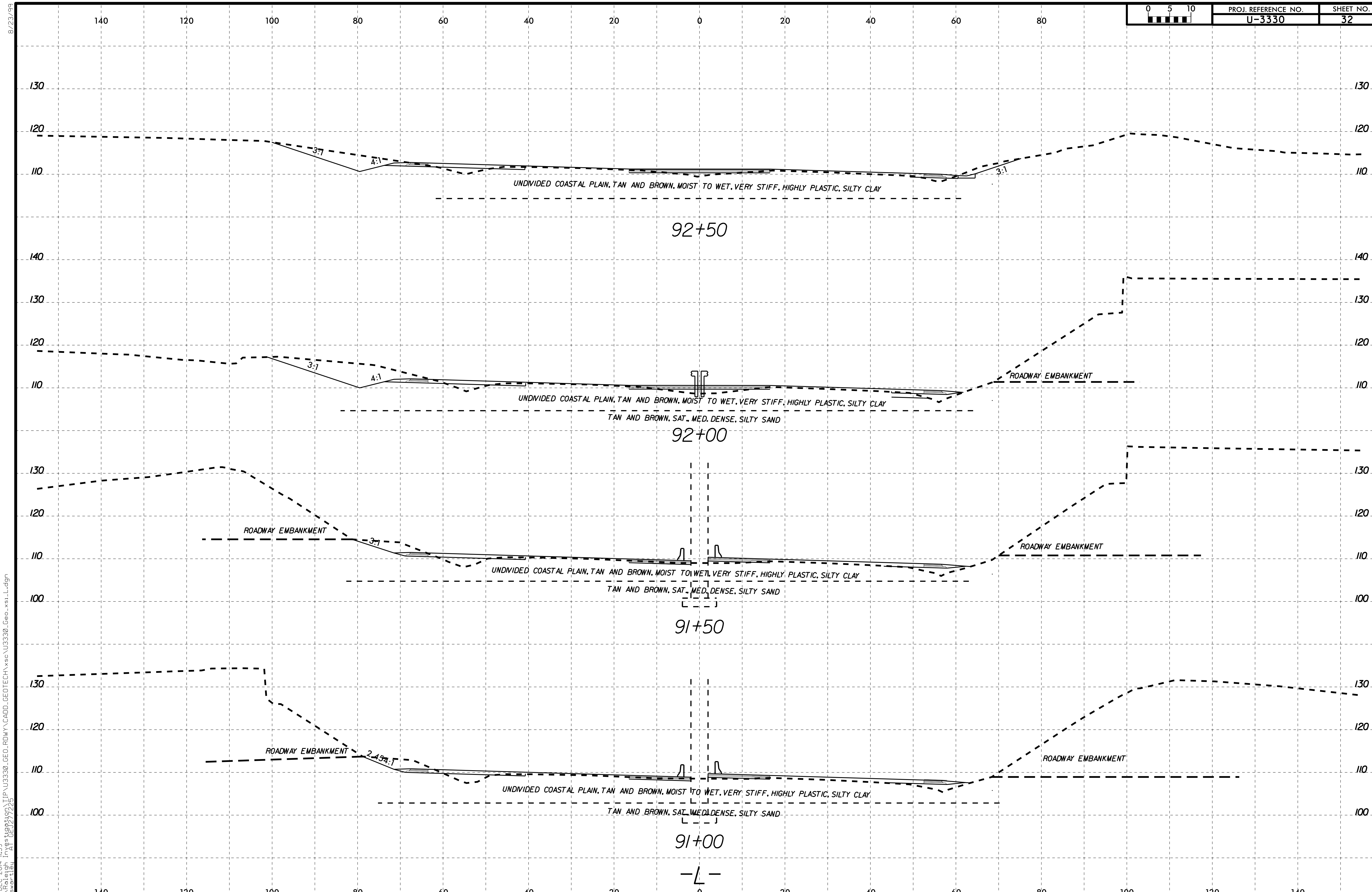
jrswartley AT GEJ277225

PROJ. REFERENCE NO.	SHEET NO.
U-3330	32



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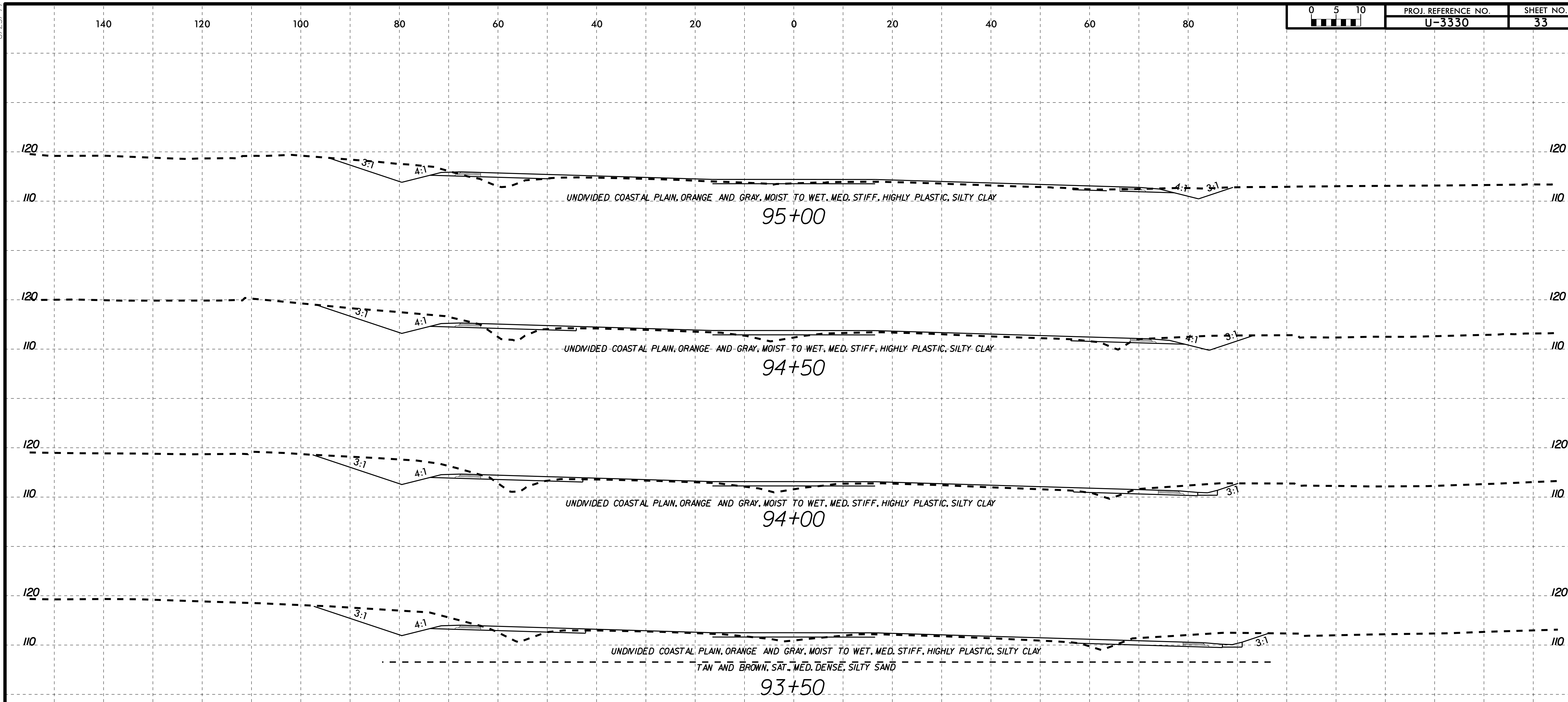
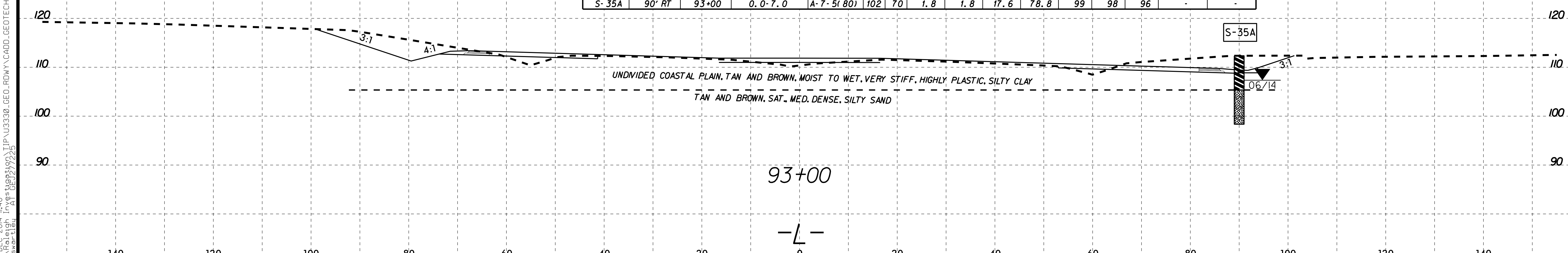
jrswartley AT GEJ277225

PROJ. REFERENCE NO.	SHEET NO.
U-3330	33



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-35A	90' RT	93+00	0.0-7.0	A-7-5(80)	102	70	1.8	1.8	17.6	78.8	99	98	96	-	-



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jrswartley AT GEJ277225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	34

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

DRIVEWAY SHEAR LINE

120 110

3:1 4:1 5:1 5:1

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

97+50

120 110

3:1 4:1 5:1 5:1 4:1 3:1

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

97+00

120 110

3:1 4:1 5:1 5:1 4:1 3:1

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

96+50

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-10A	80' RT	96+00	4.0-5.0	A-7-6(54)	78	49	3.6	2.6	22.9	70.9	100	98	94	-	-

130 120 110 100 90

S-10A

3:1 4:1 5:1 5:1 4:1 3:1

FIAD

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

96+00

120 110

3:1 4:1 5:1 5:1 4:1 3:1

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

95+50

-L-

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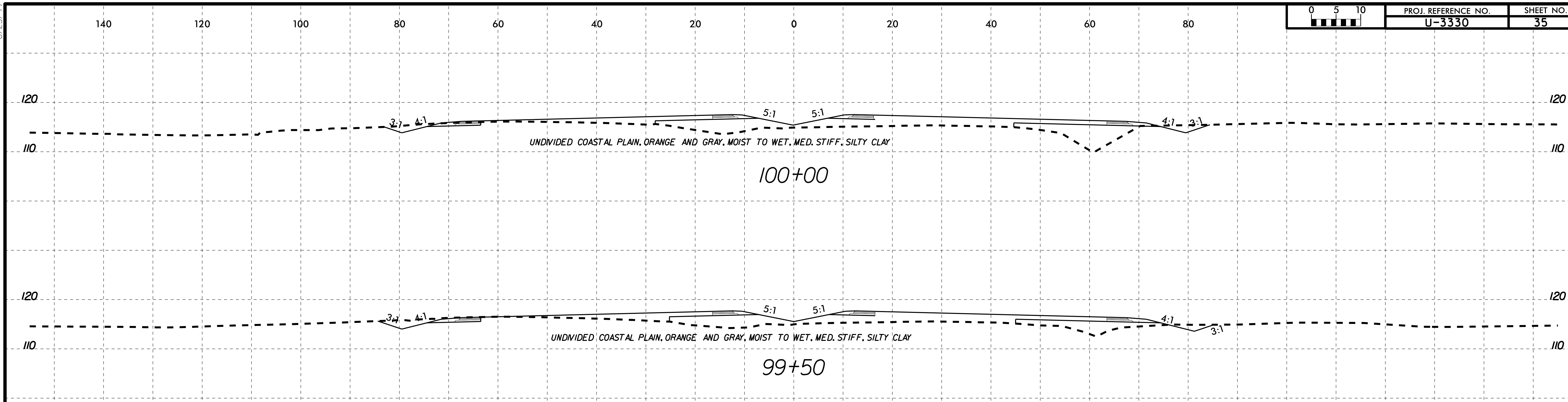
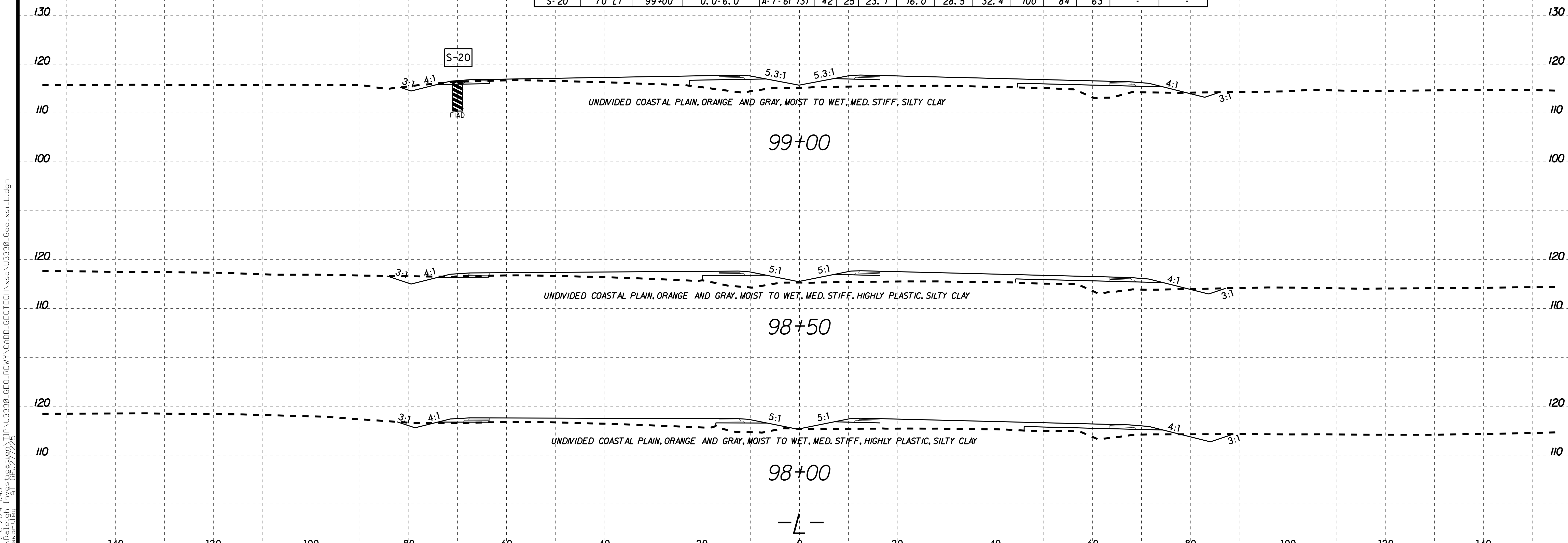
irswartley
AT GEJ27225



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-20	70' LT	99+00	0.0-6.0	A-7-6(13)	42	25	23.1	16.0	28.5	32.4	100	84	63	-	-



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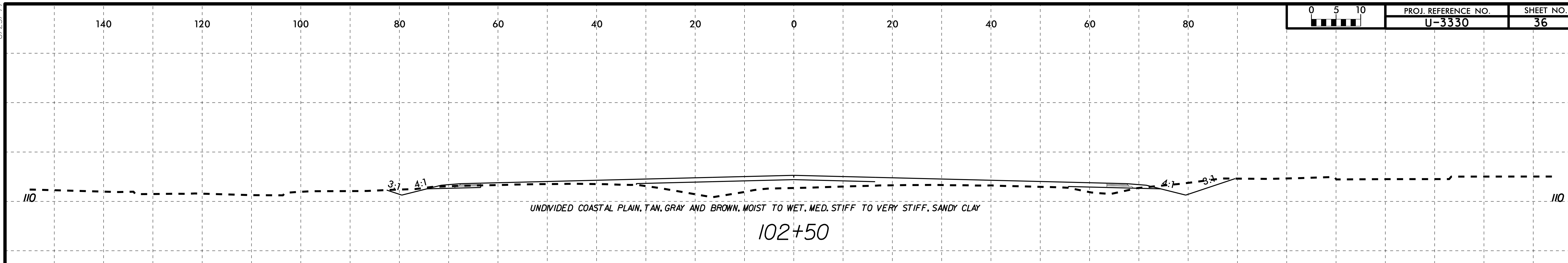
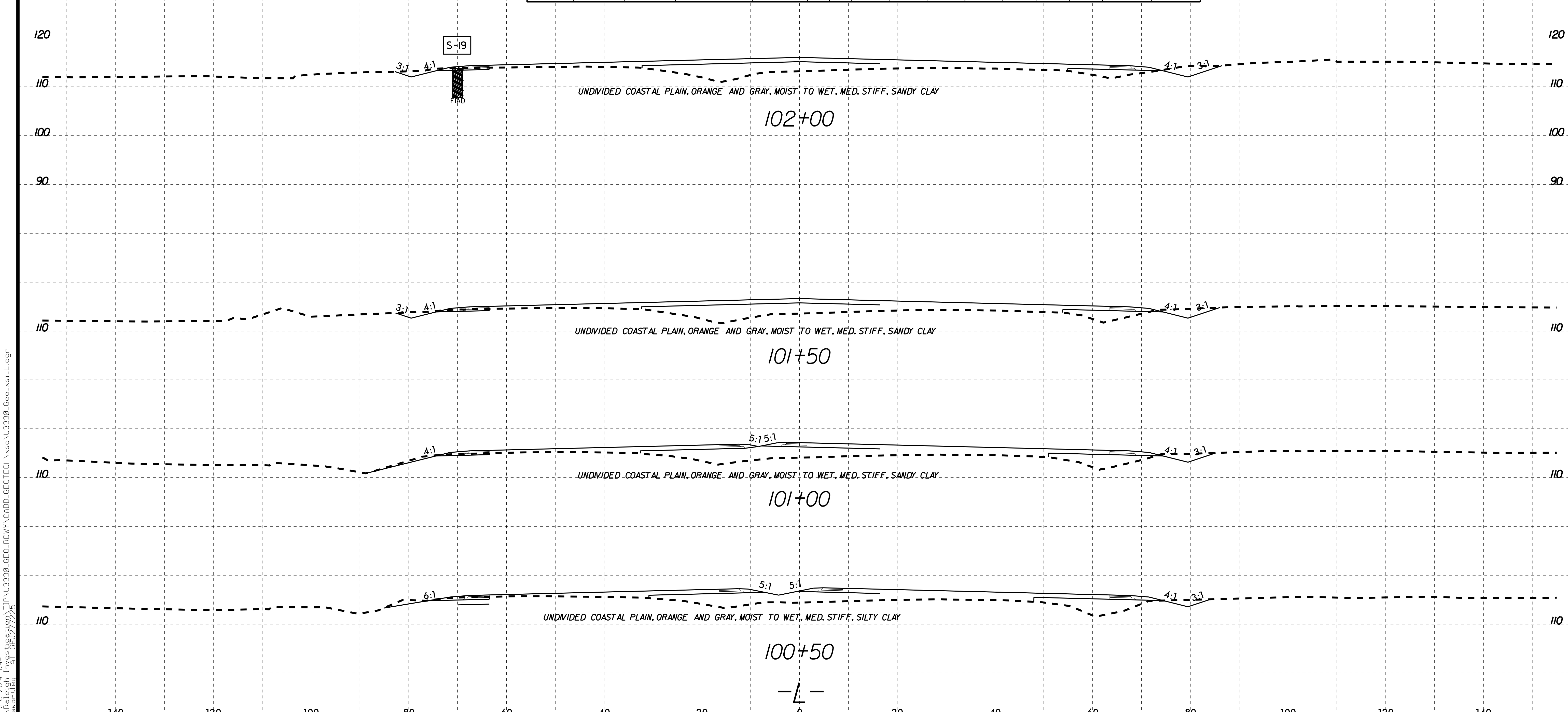
PROJ. REFERENCE NO.	SHEET NO.
U-3330	36



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-19	70' LT	102+00	0.0-6.0	A-6(9)	37	22	19.6	26.7	25.3	28.3	95	83	55	-	-



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jrswartley AT GEJ277225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	37

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

120 110 100

INTERSECTION SHEAR LINE

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

104+50

INTERSECTION SHEAR LINE

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

104+00

INTERSECTION SHEAR LINE

3:1 4:1

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

103+50

4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, MED. STIFF TO VERY STIFF, SANDY CLAY

103+00

-L-

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

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rswartley
AT GEO27725

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-3330	38

0 5 10

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

110
100

5:1 5:1 4:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST, MED. DENSE, CLAYEY SAND
UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST TO WET, MED. STIFF, SANDY CLAY

107+00

110
100

4:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, MED. STIFF TO VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

106+50

110
100

6:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, MED. STIFF TO VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

106+00

110
100

3:1 4:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, MED. STIFF TO VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

105+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-36	85' RT	105+00	3.8-5.3	A-7-6(41)	70	44	3.6	13.5	24.2	58.6	98	96	85	-	-
SS-37	85' RT	105+00	13.8-15.3	A-7-6(50)	74	46	0.4	9.9	33.1	56.6	97	97	93	-	-

130
120
110
100
90

INTERSECTION SHEAR LINE

UNDIVIDED COASTAL PLAIN, GRAY, MOIST, MED. DENSE, SILTY SAND

SS-36
SS-37

UNDIVIDED COASTAL PLAIN, TAN, GRAY AND BROWN, MOIST TO WET, VERY STIFF, HIGHLY PLASTIC, SILTY CLAY

4:1 3:1

25
22
16
15

06/14

105+00

-L-

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

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8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	39

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

110
100
90

6:1 5:1 5:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST, MED. DENSE, CLAYEY SAND

UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST TO WET, MED. STIFF, SANDY CLAY

109+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		
S-10	80' RT	108+00	4.0-5.0	A-7-6(11)	48	24	20.4	26.5	14.6	38.5	100	87	57	-	-

120
110
100
90
80

4:1 5:1 5:1 4:1 3:1

S-10

UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST, MED. DENSE, CLAYEY SAND AND SILTY SAND

UNDIVIDED COASTAL PLAIN, BROWN AND ORANGE, MOIST TO WET, MED. STIFF, SANDY CLAY

FIAD

108+00

-L-

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

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pswartley
AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	40

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

100
90

3:1 4:1 5:1 5:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

111+50

100
90

2:1 4:1 5:1 5:1 4:1 3:1

FIAD

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

111+00

100
80

100
90

6:1 5:1 5:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

110+50

100
90

4:1 5:1 5:1 4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

110+00

-L-

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AT GEJ27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	41

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

100
90
80
70

3:1

ROADWAY EMBANKMENT

3:1

ALLUVIAL, TAN, GRAY AND BROWN, MOIST TO WET, SOFT, SANDY CLAY

GRAY, SAT., LOOSE, CLAYEY SAND

05/14

113+50

100
90
80

3:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

4:1 3:1

112+50

100
90
80

4:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, SILTY CLAY

4:1 3:1

112+00

-L-

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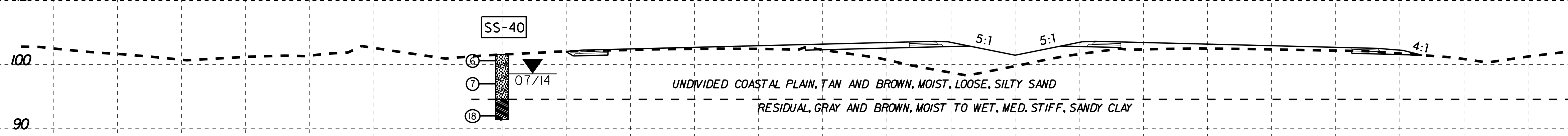
pswartley
AT GEOPAK

PROJ. REFERENCE NO.	SHEET NO.
U-3330	42

SOIL TEST RESULTS

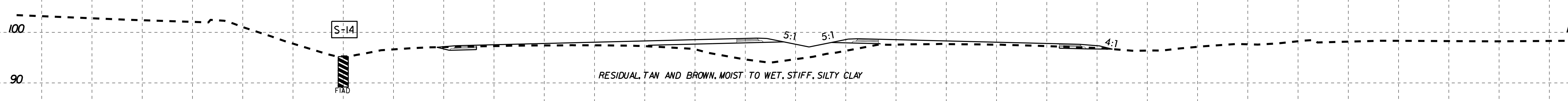
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-40	80' LT	122+00	8.6-10.1	A-6(2)	26	13	29.3	30.5	20.0	20.2	99	78	46	-	-



122+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-14	90' LT	119+00	2.0-3.0	A-7-6(6)	41	25	17.4	40.3	14.0	28.3	97	85	43	-	-



119+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
SS-38	80' RT	116+00	0.0-1.5	A-7-6(12)	45	27	26.5	19.4	21.8	32.3	96	77	57	-	-

116+00

-L-

8/23/99

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	43

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

110
100

-Y3RPB- SHEAR LINE

5:1 5:1 4:1

UNDIVIDED COASTAL PLAIN, GRAY AND ORANGE, MOIST TO WET, SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

125+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
S-11	60' RT	125+00	2.0-2.5	A-7-6(11)	47	26	31.0	14.4	18.2	36.4	96	74	56	-	-
S-12	60' RT	125+00	3.0-3.5	A-6(13)	40	23	13.6	34.8	23.3	28.3	100	92	67	-	-
S-13	60' RT	125+00	4.5-5.5	A-7-6(49)	73	45	4.5	2.6	26.1	66.8	100	97	94	-	-

110
100
90

-Y3RPB- SHEAR LINE

5:1 5:1 4:1

UNDIVIDED COASTAL PLAIN, GRAY AND ORANGE, MOIST TO WET, SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

FIAD

S-11
S-12
S-13

125+00

110
100

-Y3RPB- SHEAR LINE

5:1 5:1 4:1

UNDIVIDED COASTAL PLAIN, GRAY AND ORANGE, MOIST TO WET, SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

124+50

110
100

-Y3RPB- SHEAR LINE

5:1 5:1 4:1

UNDIVIDED COASTAL PLAIN, GRAY AND ORANGE, MOIST TO WET, SOFT, SANDY CLAY AND HIGHLY PLASTIC, SILTY CLAY

124+00

110
100

-Y3RPB- SHEAR LINE

5:1 5:1 6:1

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

RESIDUAL, GRAY AND BROWN, MOIST TO WET, MED. VERY STIFF, SANDY CLAY

123+50

-L-

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

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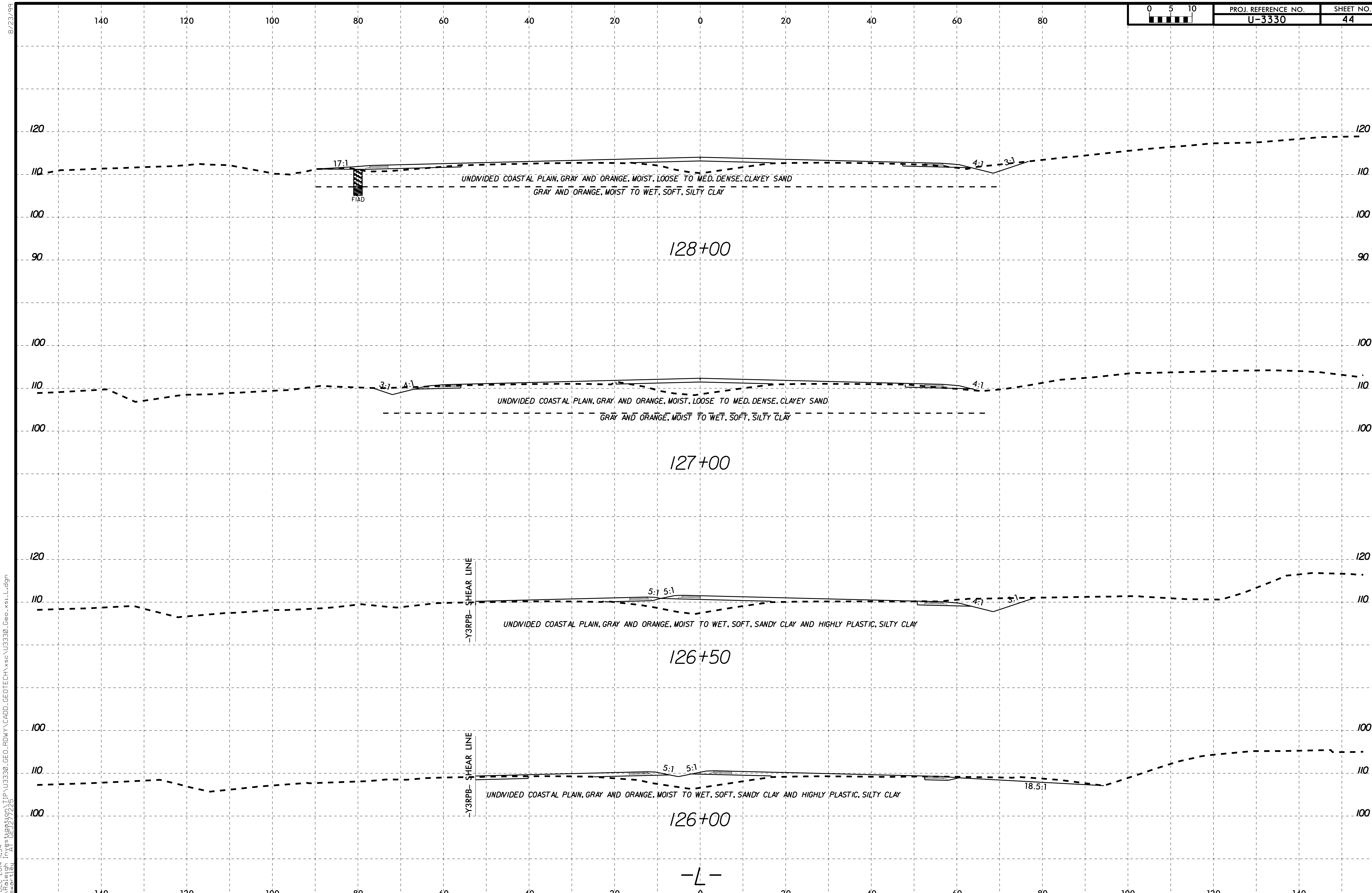
PROJ. REFERENCE NO. U-3330 | SHEET NO. 44



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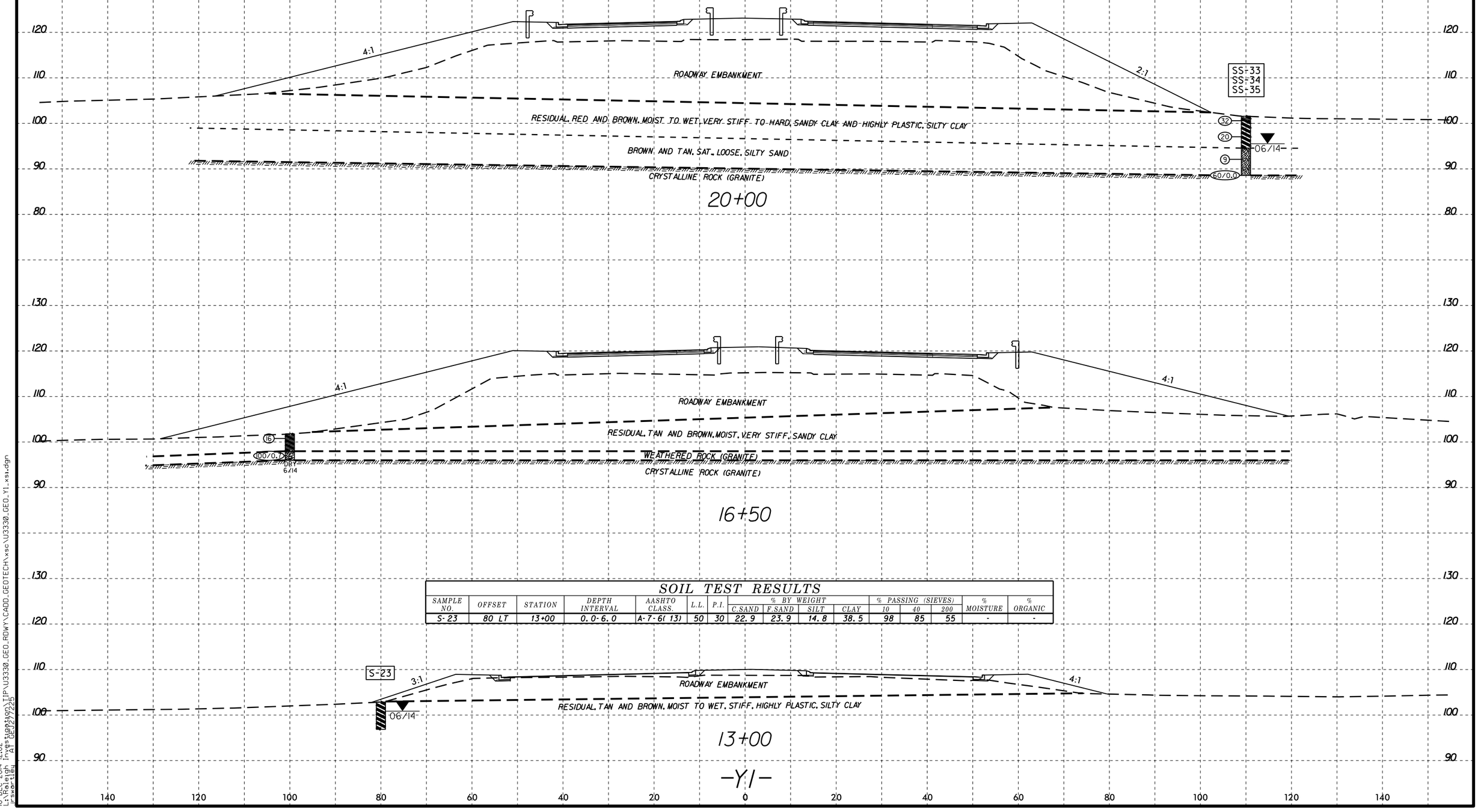
8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	45

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-33	110 RT	20+00	0.0-1.5	A-6(9)	40	25	7.1	48.5	14.1	30.3	100	98	51	-	-
SS-34	110 RT	20+00	3.5-5.0	A-7-6(8)	42	27	27.5	27.9	12.3	32.3	96	79	46	-	-
SS-35	110 RT	20+00	8.5-10.0	A-2-4(0)	25	3	5.9	68.1	9.9	16.2	100	98	33	-	-



SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-23	80 LT	13+00	0.0-6.0	A-7-6(13)	50	30	22.9	23.9	14.8	38.5	98	85	55	-	-

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	46

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

110
100
90
80

RESIDUAL, MOIST, DENSE TO VERY DENSE, SILTY SAND

4:1
DRY
6/14

CRYSTALLINE ROCK (GRANITE)

℄ SHEAR LINE

11+00

110
100
90
80

RESIDUAL, MOIST, DENSE TO VERY DENSE, SILTY SAND

4:1
DRY
6/14

CRYSTALLINE ROCK (GRANITE)

℄ SHEAR LINE

10+50

110
100

RESIDUAL, MOIST, DENSE TO VERY DENSE, SILTY SAND

0.02

CRYSTALLINE ROCK (GRANITE)

℄ SHEAR LINE

10+00

-YILPC-

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

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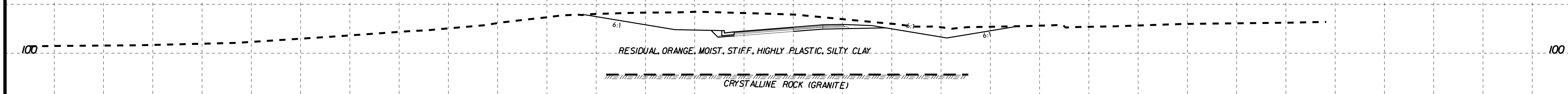
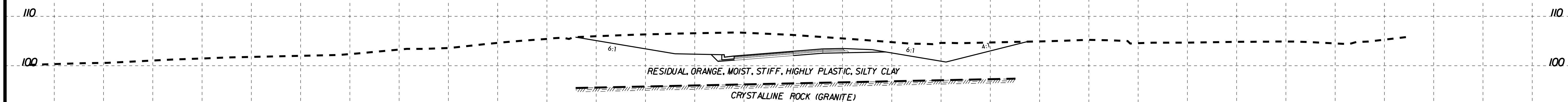
jsworley
AT GEO27225

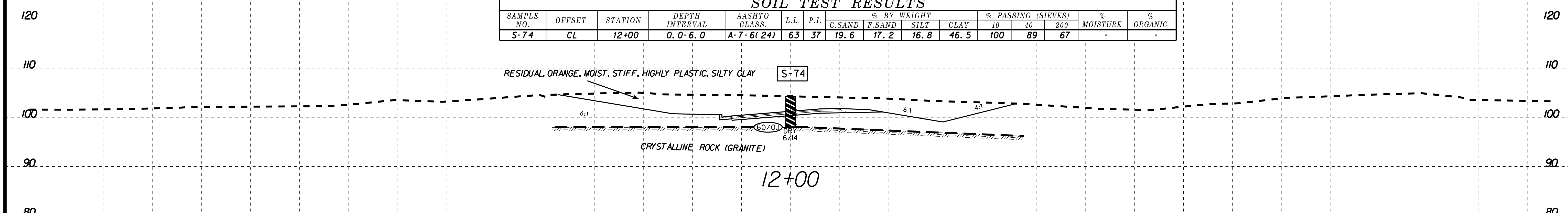


13+00

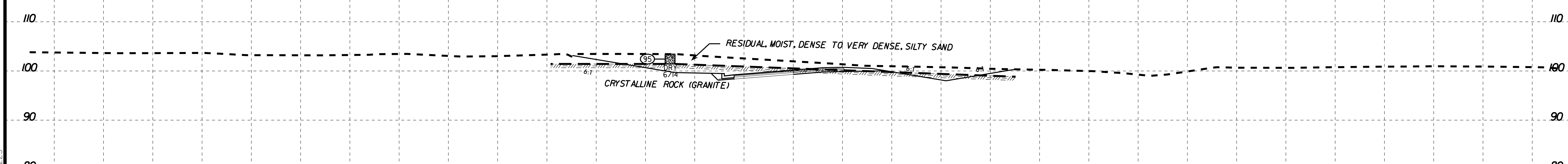


12+50

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		
S-74	CL	12+00	0.0-6.0	A-7-6(24)	63	37	19.6	17.2	16.8	46.5	100	89	67	-	-



12+00



11+50

-YILPC-

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8/23/99

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	48

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

120 110 100 90

6:1

SHEAR LINE

RESIDUAL, ORANGE, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

15+00

120 110 100 90

6:1 6:1 6:1

RESIDUAL, ORANGE, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

06/14

14+50

120 110 100 90

6:1 6:1 6:1 6:1

RESIDUAL, ORANGE, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

14+00

110 100

6:1 6:1 6:1

RESIDUAL, ORANGE, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

13+50

-YILPC-

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

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AT GEOPAK

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	49

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

100
90

L-SHEAR LINE

RESIDUAL, GRAY, MOIST TO WET, STIFF, HIGHLY PLASTIC, SILTY CLAY

3:1 3:1

12+50

100
90

L-SHEAR LINE

0.070 0.070 6:1

RESIDUAL, GRAY, MOIST TO WET, STIFF, HIGHLY PLASTIC, SANDY CLAY

3:1 3:1

12+00

110
100
90

L-SHEAR LINE

6:1

RESIDUAL, GRAY, MOIST TO WET, STIFF, SANDY CLAY

3:1 3:1

11+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
S-16	29' RT	9+87	0.0-6.0	A-6(10)	34	13	9.1	14.0	44.5	32.4	99	93	80	-	-

110
100
90
80

L-SHEAR LINE

S-16

9+87

6:1

3:1

5/14

RESIDUAL, GRAY, MOIST TO WET, STIFF, SANDY CLAY

10+00

-YIRPA-

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	50

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

100
90

6:1
4.6:1
3:1
3:1

RESIDUAL, TAN AND GRAY, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

14+50

100
90

6:1
6:1
3:1
3:1

RESIDUAL, TAN AND GRAY, MOIST, STIFF, HIGHLY PLASTIC, SILTY CLAY

14+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	% BY WEIGHT F.SAND	% BY WEIGHT SILT	% BY WEIGHT CLAY	% PASSING (SIEVES) 10	% PASSING (SIEVES) 40	% PASSING (SIEVES) 200	% MOISTURE	% ORGANIC
S-29	15' LT	13+50	0.0- 10.3	A-7-6(14)	50	31	28.5	16.4	20.8	34.3	96	76	57	-	-

110
100
90

S-29

5.2:1
6:1
3:1
3:1

RESIDUAL, TAN AND GRAY, MOIST TO WET, STIFF, HIGHLY PLASTIC, SILTY CLAY

FIAD

13+50

100
90

6:1
6:1
3:1
3:1

RESIDUAL, GRAY, MOIST TO WET, STIFF, HIGHLY PLASTIC, SILTY CLAY

13+00

-YIRPA-

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

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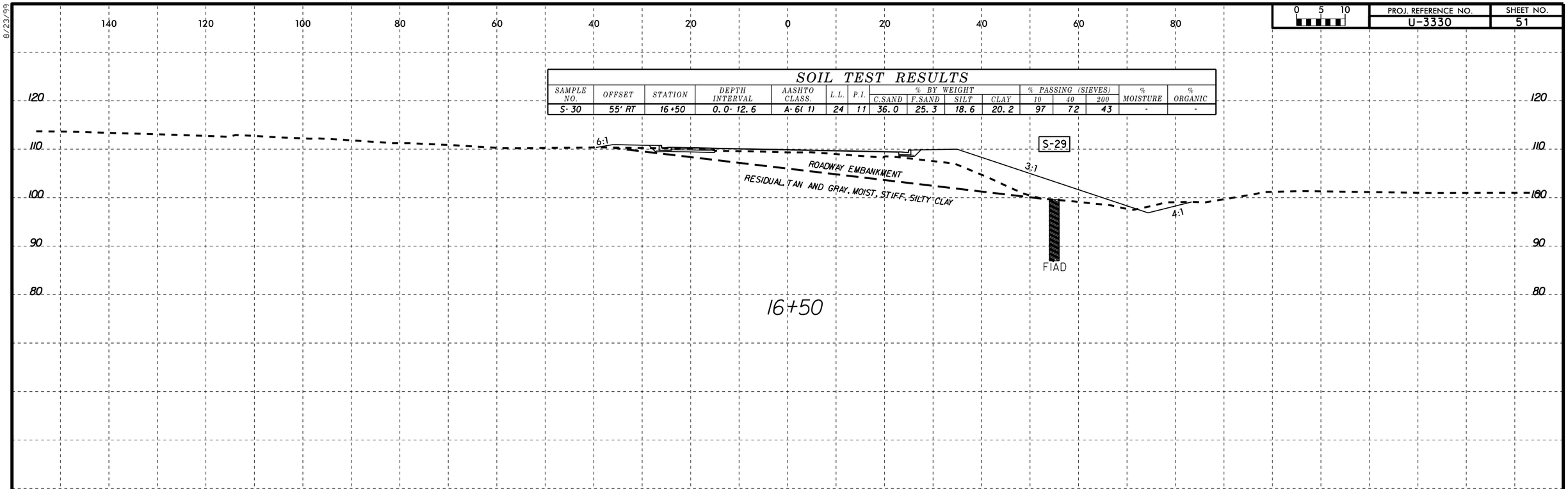
jrsartin
AT GEO2/7225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	51

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C.SAND	F.SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
S-30	55' RT	16+50	0.0-12.6	A-6(1)	24	11	36.0	25.3	18.6	20.2	97	72	43	-	-



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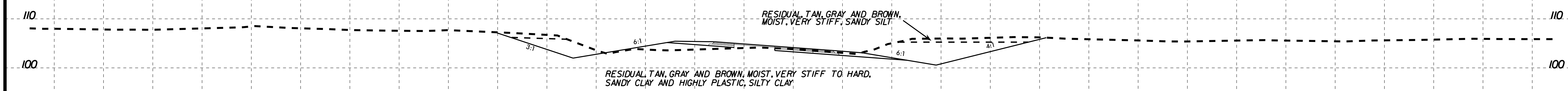
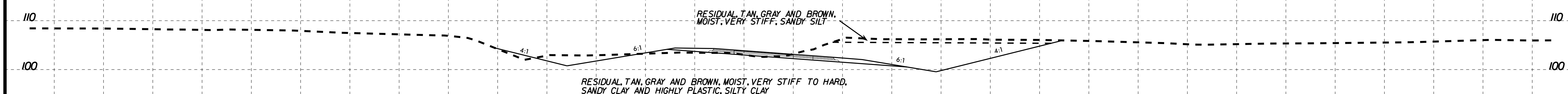
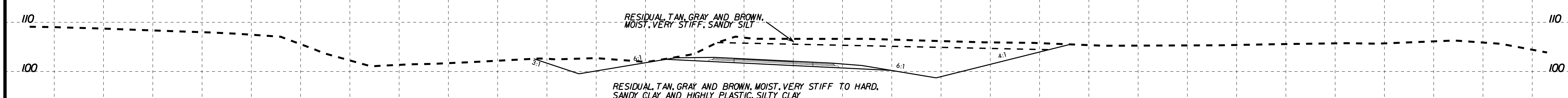
irswartley AT GEJ27225



12+50



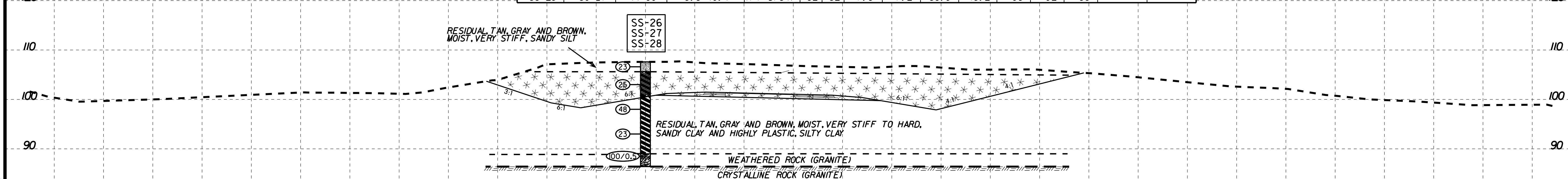
12+00



11+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-26	30' LT	11+00	0.0-1.5	A-4(0)	17	4	19.3	23.9	38.7	18.1	99	87	63	-	-
SS-27	30' LT	11+00	3.6-5.1	A-6(15)	37	18	6.8	10.7	38.3	44.2	100	95	86	-	-
SS-28	30' LT	11+00	8.6-10.1	A-7-5(31)	62	32	7.6	7.2	36.9	48.2	98	92	86	-	-



11+00

-YIRPB-

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	53

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

110
100
90
80

RESIDUAL, TAN AND BROWN, MOIST, STIFF, SANDY CLAY

3:1 6:1 6:1 6:1

TAN AND BROWN, MOIST, DENSE, SILTY SAND

DRY
6.14

14+00

110
100

RESIDUAL, TAN, GRAY AND BROWN, MOIST, VERY STIFF TO HARD, SANDY SILT, AND HIGHLY PLASTIC, SILTY CLAY

3:1 6:1 6:1 4:1

TAN AND BROWN, MOIST, DENSE, SILTY SAND

13+50

110
100
90
80

RESIDUAL, TAN, GRAY AND BROWN, MOIST, VERY STIFF, SANDY SILT

RESIDUAL, TAN, GRAY AND BROWN, MOIST, VERY STIFF TO HARD, HIGHLY PLASTIC, SILTY CLAY

3:1 6:1 6:1 4:1

TAN AND BROWN, MOIST, DENSE, SILTY SAND

13+00

-YIRPB-

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

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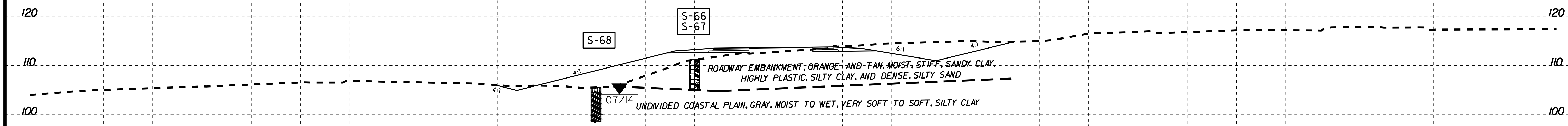
pswartley
AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
U-3330	54

SOIL TEST RESULTS

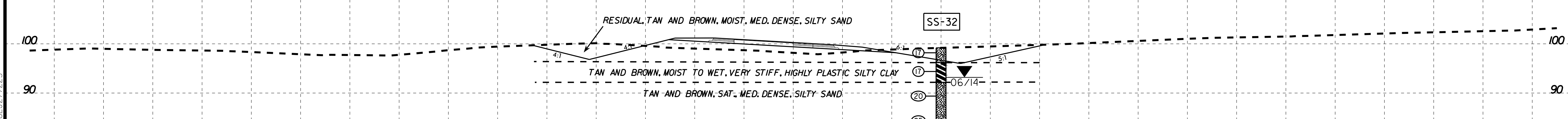
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-66	20' LT	16+00	0.0-2.0	A-6(3)	30	15	35.2	23.4	13.0	28.5	96	72	43	-	-
S-67	20' LT	16+00	2.0-4.0	A-7-6(14)	51	30	27.6	16.7	15.0	40.7	95	75	57	-	-
S-68	40' LT	16+00	1.0-6.0	A-6(9)	31	16	17.5	15.4	26.4	40.7	98	86	70	24.0	-



16+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-32	30' RT	12+00	3.8-5.3	A-7-6(24)	54	34	13.5	17.6	26.5	42.4	98	89	73	-	-



12+00

-YIRPD-

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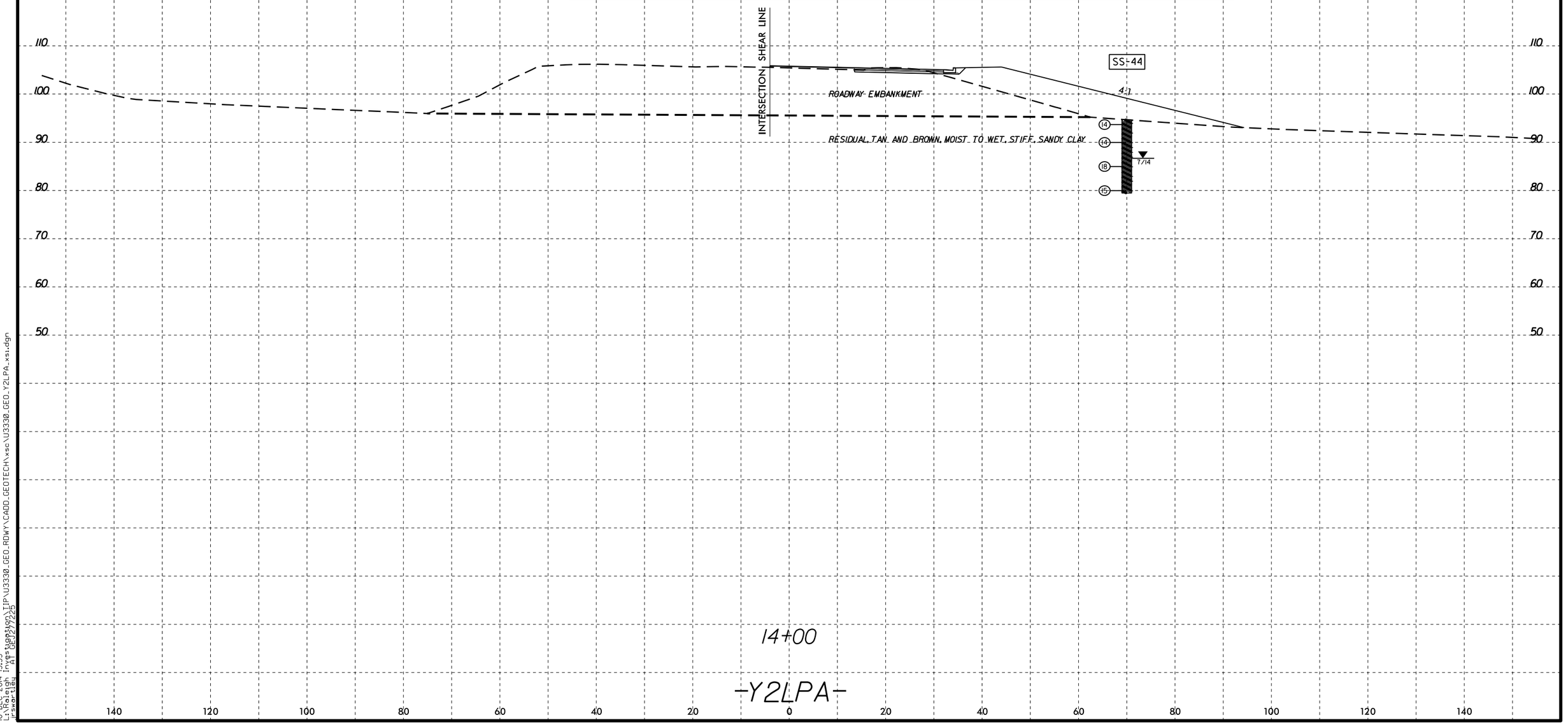
rswartley AT GE1277225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	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-44	70 RT	14+00	3.7-5.2	A-6(11)	37	18	14.9	20.4	34.3	30.3	99	89	70	-	-



14+00

-Y2LPA-

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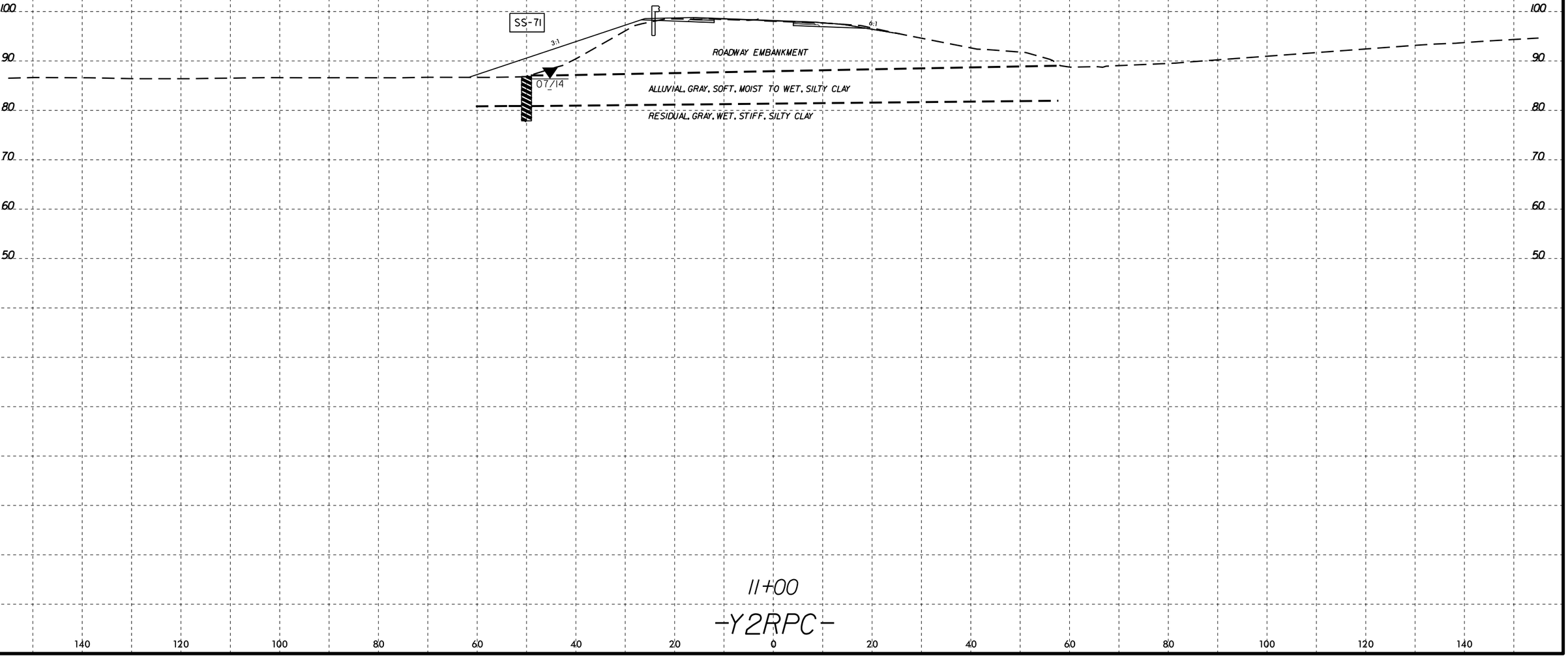
irsworley
A1 GEO27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	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		
S-71	50' LT	11+00	0.0-6.0	A-7-6(19)	45	21	6.5	10.0	32.7	50.8	100	96	86	-	-



11+00

-Y2RPC-

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preserstley
A1 GEO27225

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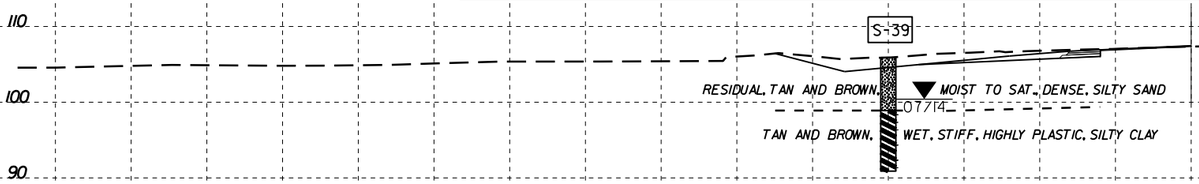
PROJ. REFERENCE NO.	SHEET NO.
U-3330	57

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		
S-39	40' LT	11+50	7.0- 15.0	A-7-6(42)	69	47	6.5	11.7	23.2	58.6	98	94	84	-	-



120 110 100 90 80 70 60 50

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

11+50

-Y3RPB-

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jrsowell
ALT GEO 27225

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	58

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

100 90 80

4:1
94.98
RESIDUAL, TAN, BROWN AND ORANGE, MOIST, DENSE, SILTY SAND AND STIFF, SANDY CLAY
7.14
94.26
CRYSTALLINE ROCK (GRANITE)

12+50

4:1
95.52
RESIDUAL, TAN, BROWN AND ORANGE, MOIST, DENSE, SILTY SAND AND STIFF, SANDY CLAY
25.28
CRYSTALLINE ROCK (GRANITE)

12+00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-64	50' LT	11+00	2.5-3.0	A-6(5)	33	16	24.4	25.5	23.8	26.3	94	78	53	-	-

4:1
95.87
RESIDUAL, TAN, BROWN AND ORANGE, MOIST, DENSE, SILTY SAND AND STIFF, SANDY CLAY
7.14
CRYSTALLINE ROCK (GRANITE)

11+50

-Y4-

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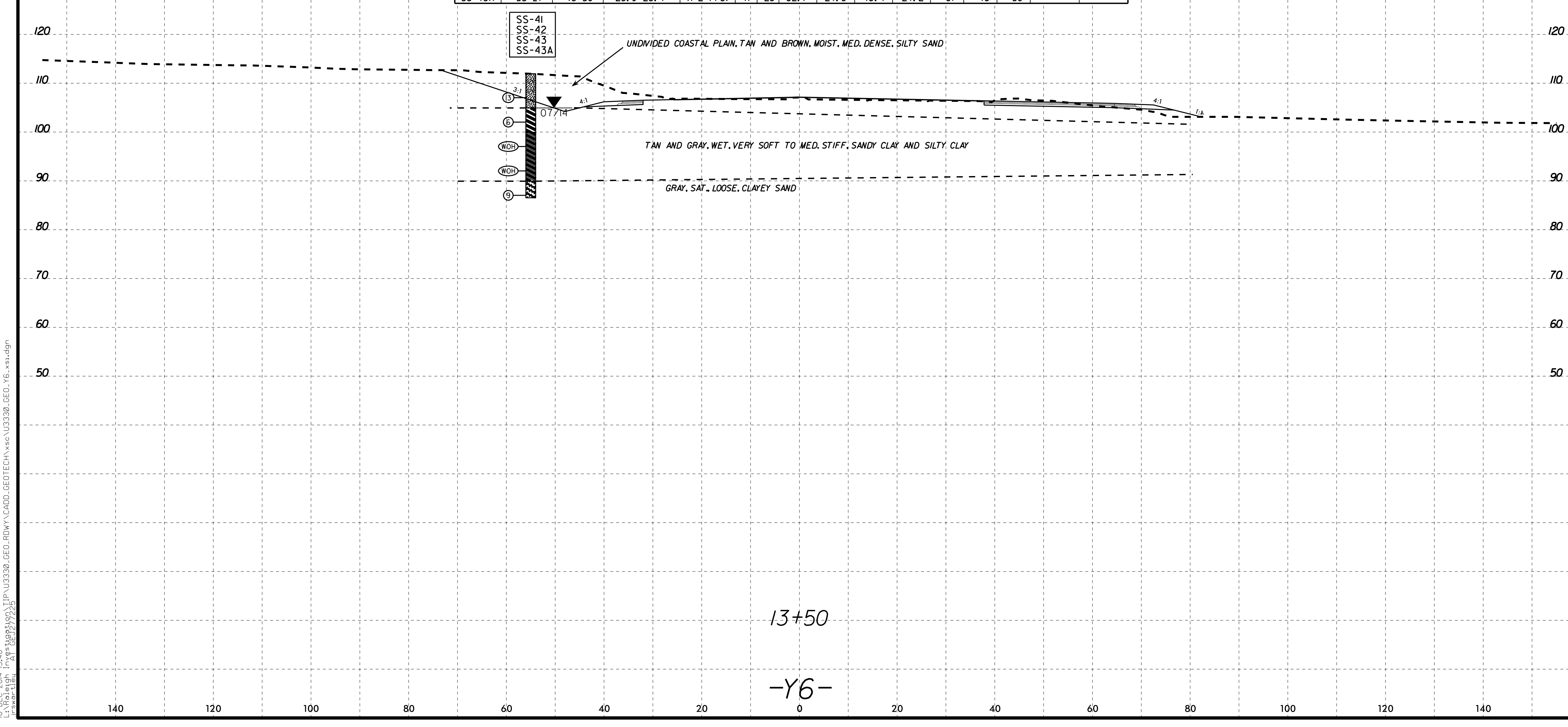
irswartley
AT GEJ27225

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-41	55' LT	13+50	3.9-5.4	A-2-4(0)	20	7	44.4	27.3	12.1	16.2	99	71	31	-	-
SS-42	55' LT	13+50	8.9-10.4	A-7-6(43)	76	50	11.9	5.1	28.5	54.5	94	85	80	-	-
SS-43	55' LT	13+50	13.9-15.4	A-6(10)	37	13	1.0	35.8	47.1	16.2	100	100	78	-	-
SS-43A	55' LT	13+50	23.9-25.4	A-2-7(3)	47	28	32.7	24.6	18.4	24.2	67	48	30	-	-



8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-3330	60

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

120
110

4:1
10:68

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, HIGHLY PLASTIC, SILTY CLAY

11+50

120
110

120
110
100
90

3:1 108.16 4:1

4:1 3:1

UNDIVIDED COASTAL PLAIN, TAN AND BROWN, MOIST TO WET, STIFF, HIGHLY PLASTIC, SILTY CLAY

06/14

11+00

-Y7A-

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

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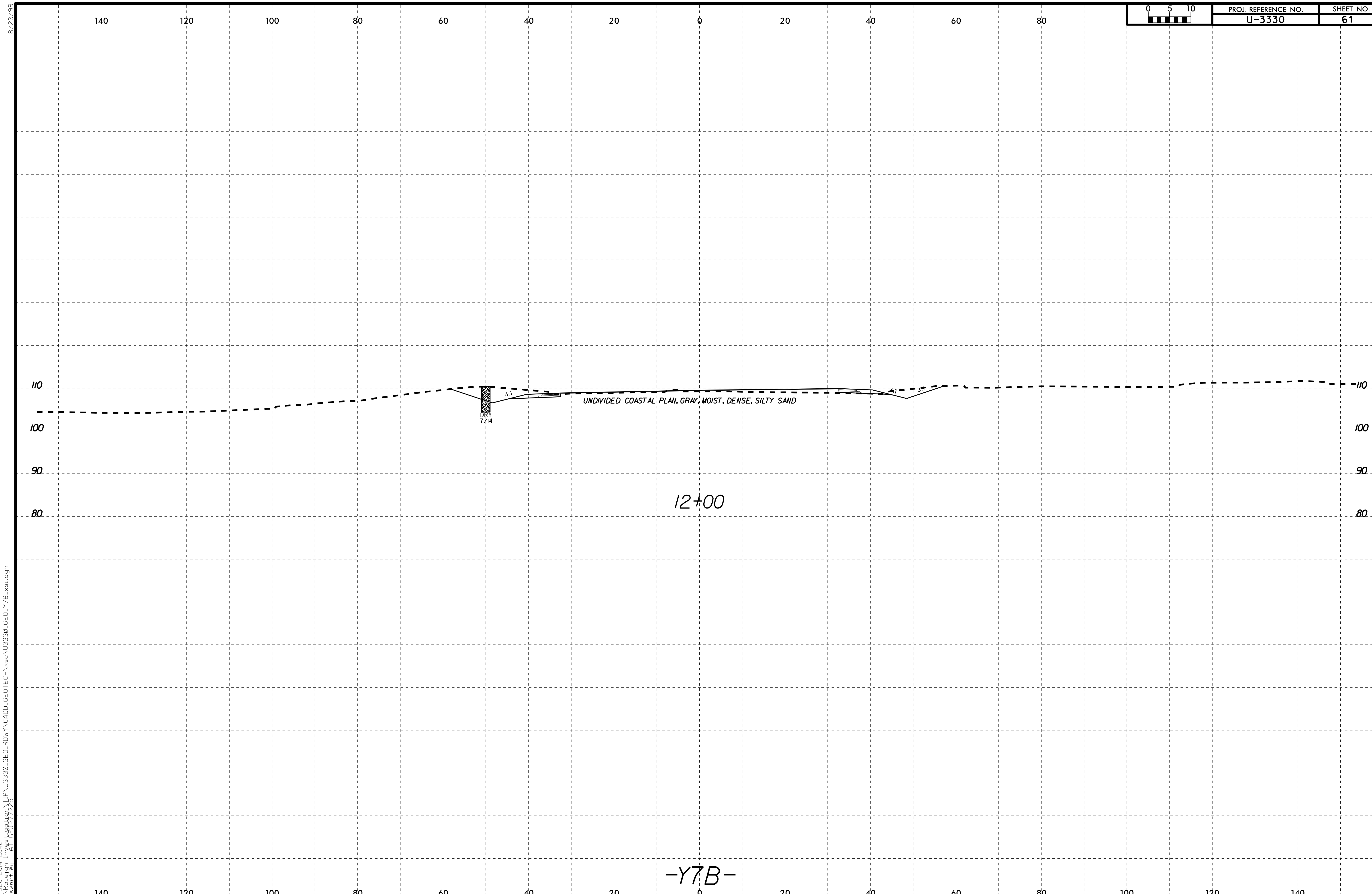
jswartley
AT GEJ27225

PROJ. REFERENCE NO.	SHEET NO.
U-3330	61



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