

REFERENCE: U-3621A

PROJECT: 34964

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3621A	1	36

**CONTENTS**

LINE	STATION	PLAN	PROFILE	XSECT
-L-	25+75 TO 36+50	4	9	
-L-	37+00 TO 41+00	5	9	13-15
-L-	41+50 TO 50+00	5	9	
-L-	50+50 TO 80+00	5-8	9, 10	16-30
-L-	80+50 TO 83+63	8	10, 11	
-Y1-	11+25 TO 12+56	4		
-Y2-	10+00 TO 11+25	5		
-Y3-	10+20 TO 11+86	5		
-Y4-	12+30 TO 15+40	5	11	
-Y5-	10+00 TO 10+50	7	12	
-Y5-	10+75 TO 11+75	7	12	31
-Y6-	10+00 TO 11+00	7	12	
-Y6-	11+50 TO 13+00	7	12	32, 33
-Y7-	10+75 TO 13+50	7	12	34-36
-Y7-	14+00 TO 14+61	7	12	
-Y8-	10+00 TO 11+00	8		
-Y9-	10+00 TO 11+25	8		

# ROADWAY SUBSURFACE INVESTIGATION

COUNTY NASH  
PROJECT DESCRIPTION ROCKY MOUNT-SR 1604  
(HUNTER HILL RD.) FROM SR 1613 (NORTH  
WINSTEAD AVE.) TO SR 1616 (COUNTRY CLUB RD.)  
**INVENTORY**

**CAUTION NOTICE**

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

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

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

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

PERSONNEL

N.D. MOHS

H.R. CONLEY

D.A. ARGENBRIGHT

R.E. SMITH

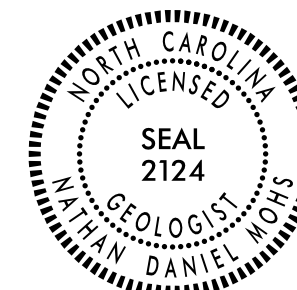
INVESTIGATED BY N.D. MOHS

DRAWN BY T.T. WALKER

CHECKED BY N.T. ROBERSON

SUBMITTED BY N.T. ROBERSON

DATE JANUARY 2015



DocuSigned by:  
Nathan Mohs 2/16/2015

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**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			
	A-1	A-3	A-2	A-4	A-5	A-6	A-7	A-1, A-2	A-4, A-5	A-6, A-7	A-3			
GROUP CLASS.	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 10 MX	51 MN 35 MX 35 MX	35 MX 35 MX 35 MX	35 MX 35 MX 35 MX	36 MN 36 MN 36 MN	36 MN 36 MN 36 MN							
MATERIAL PASSING #40 LL PI	-		40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN						
GROUP INDEX	0		0	0	4 MX	8 MX	12 MX	16 MX	NO MX					
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND			SILTY SOILS	CLAYEY SOILS							
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD				FAIR TO POOR		FAIR TO POOR	POOR	UNSUITABLE					
	PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30													

**CONSISTENCY OR DENSENESS**

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )
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 (MM)	4	10	40	60	200	270
OPENING (INCH)	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	305	75	2.0	0.25	0.05	0.005
	IN.					

**SOIL MOISTURE - CORRELATION OF TERMS**

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

**PLASTICITY**

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

**COLOR**

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). 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
- 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
- DIP & DIP DIRECTION OF ROCK STRUCTURES
- TEST BORING
- AUGER BORING
- CORE BORING
- MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

**RECOMMENDATION SYMBOLS**

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

**ABBREVIATIONS**

- |   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>AR - AUGER REFUSAL</li> <li>BT - BORING TERMINATED</li> <li>CL - CLAY</li> <li>CPT - CONE PENETRATION TEST</li> <li>CSE - COARSE</li> <li>DMT - DILATOMETER TEST</li> <li>DPT - DYNAMIC PENETRATION TEST</li> <li>e - VOID RATIO</li> <li>F - FINE</li> <li>FOSS. - FOSSILIFEROUS</li> <li>FRAC. - FRACTURED, FRACTURES</li> <li>FRAGS. - FRAGMENTS</li> <li>HI. - HIGHLY</li> </ul> | <ul style="list-style-type: none"> <li>MED. - MEDIUM</li> <li>MICA - MICACEOUS</li> <li>MOD. - MODERATELY</li> <li>NP - NON PLASTIC</li> <li>ORG. - ORGANIC</li> <li>PMT - PRESSUREMETER TEST</li> <li>SAP. - SAPROLITIC</li> <li>SD. - SAND, SANDY</li> <li>SL. - SILTY, SILTY</li> <li>SLI. - SLIGHTLY</li> <li>TCR - TRICONE REFUSAL</li> <li>w - MOISTURE CONTENT</li> <li>V - VERY</li> </ul> | <ul style="list-style-type: none"> <li>VST - VANE SHEAR TEST</li> <li>WEA. - WEATHERED</li> <li>γ<sub>s</sub> - UNIT WEIGHT</li> <li>γ<sub>d</sub> - DRY UNIT WEIGHT</li> </ul> <p><b>SAMPLE ABBREVIATIONS</b></p> <ul style="list-style-type: none"> <li>S - BULK</li> <li>SS - SPLIT SPOON</li> <li>ST - SHELBY TUBE</li> <li>RS - ROCK</li> <li>RT - RECOMPACTED TRIAXIAL</li> <li>CBR - CALIFORNIA BEARING RATIO</li> </ul> |
|---|--|---|

**EQUIPMENT USED ON SUBJECT PROJECT**

- |  |   |  |
|--|---|--|
| <p>DRILL UNITS:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CME-45C</li> <li><input type="checkbox"/> CME-55</li> <li><input type="checkbox"/> CME-550</li> <li><input type="checkbox"/> VANE SHEAR TEST</li> <li><input type="checkbox"/> PORTABLE HOIST</li> </ul> | <p>ADVANCING TOOLS:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> CLAY BITS</li> <li><input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER</li> <li><input type="checkbox"/> 8" HOLLOW AUGERS</li> <li><input type="checkbox"/> HARD FACED FINGER BITS</li> <li><input type="checkbox"/> TUNG-CARBIDE INSERTS</li> <li><input type="checkbox"/> CASING <input type="checkbox"/> w/ ADVANCER</li> <li><input type="checkbox"/> TRICONE <input type="checkbox"/> * STEEL TEETH</li> <li><input type="checkbox"/> TRICONE <input type="checkbox"/> * TUNG.-CARB.</li> <li><input type="checkbox"/> CORE BIT</li> </ul> | <p>HAMMER TYPE:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> AUTOMATIC</li> <li><input type="checkbox"/> MANUAL</li> </ul> <p>CORE SIZE:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> -B</li> <li><input type="checkbox"/> -H</li> <li><input type="checkbox"/> -N</li> </ul> <p>HAND TOOLS:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> POST HOLE DIGGER</li> <li><input type="checkbox"/> HAND AUGER</li> <li><input type="checkbox"/> SOUNDING ROD</li> <li><input type="checkbox"/> VANE SHEAR TEST</li> </ul> |
|--|---|--|

**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 YIELD 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 SL.)** 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 (SL.)** 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 GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
- SOFT** CAN BE GROUDED 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	TERM	THICKNESS
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET
		THINLY LAMINATED	< 0.008 FEET

**INDURATION**

- FRIBLE** 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 DISLOADED 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 EMBLACED 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 (SROD)** - 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.

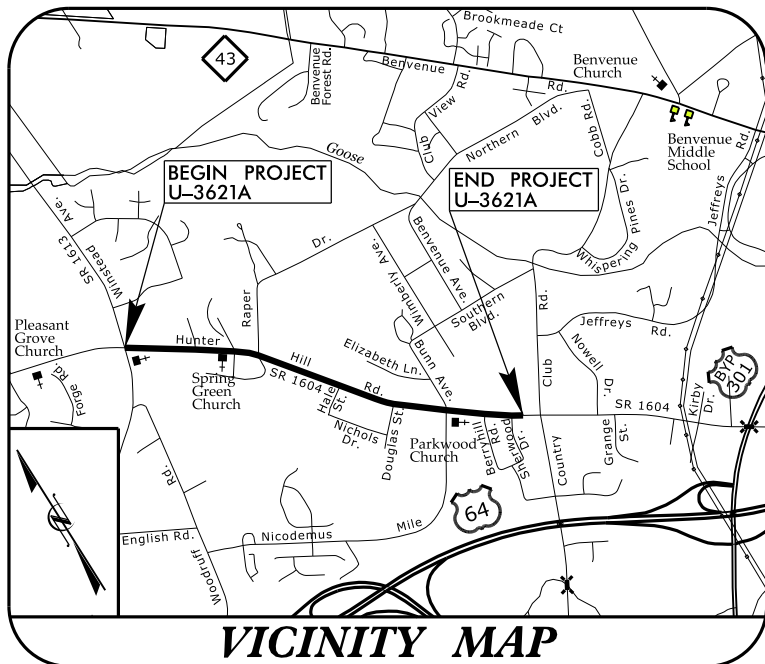
**BENCH MARK:**

ELEVATION:	FEET
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**NOTES:**

09/08/19

See Sheet 1-A For Index of Sheets  
See Sheet 1-B For Conventional Symbols

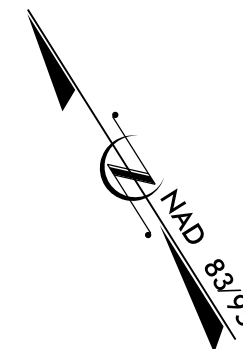


STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**NASH COUNTY**

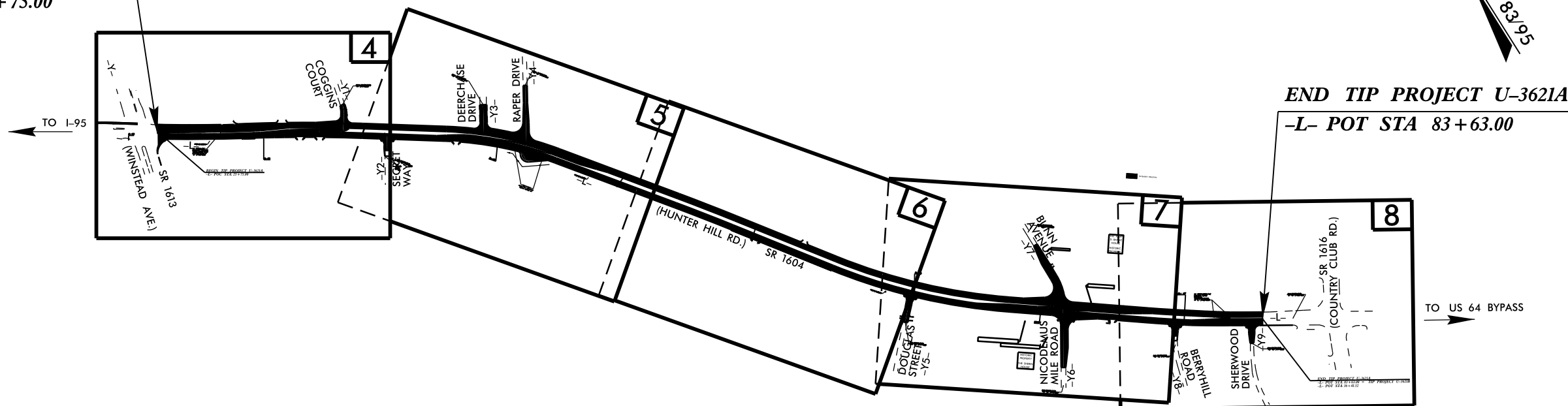
**LOCATION: ROCKY MOUNT - SR 1604 (HUNTER HILL ROAD)  
FROM SR 1613 (NORTH WINSTEAD AVE) TO  
SR 1616 (COUNTRY CLUB ROAD)  
TYPE OF WORK: GRADING, DRAINAGE, PAVING AND SIGNALS**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3621A	3	36
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34964.1.2	STP-1604 (8)	P.E.	



**TIP PROJECT: U-3621A**

**BEGIN TIP PROJECT U-3621A**  
**-L- POC STA 25+75.00**



**END TIP PROJECT U-3621A**  
**-L- POT STA 83+63.00**

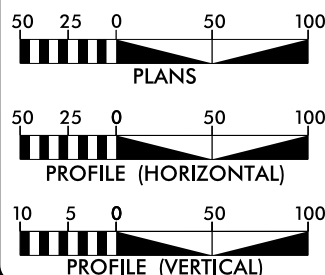
**NOTES:**

- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD
- THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF ROCKY MOUNT.

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

**CONTRACT:**

**GRAPHIC SCALES**



**DESIGN DATA**

ADT 2019 = 22750  
ADT 2039 = 32892  
DHV = 60 %  
D = 9 %  
T = 3 % \*  
V = 50 MPH  
\* TTST = 1% DUAL 2%  
MINOR URBAN ARTERIAL  
SUB-REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-3621A = 1.096 Miles  
TOTAL LENGTH TIP PROJECT U-3621A = 1.096 Miles

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

2012 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:**  
DECEMBER 19, 2014  
**(PRODUCTION)**  
**LETTING DATE:**  
JULY 16, 2019

**REKHA PATEL, PE**  
PROJECT ENGINEER

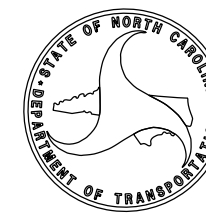
**BRIAN P. ROBINSON**  
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



03-FEB-2015 09:52 L:\Raleigh\investigation\TIP\U3621A\_GEO\_RDWY\CADD\_GEO\TIP\U3621A\_GEO\_RDY\_TSH.dgn nmohs AT GEJ27224



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

January 26, 2015

STATE PROJECT: 34964.1.2 (U-3621A)  
 COUNTY: Nash  
 DESCRIPTION: Rocky Mount-SR 1604 (Hunter Hill Rd.) from SR 1613 (North Winstead Ave.) to SR 1616 (Country Club Rd.)  
 SUBJECT: Geotechnical Report - Inventory

**Project Description**

This project consists of widening Hunter Hill Rd. (-L-, SR 1604) in Rocky Mount to four lanes with median, concrete islands, and turn lanes. The project begins east of the intersection of Hunter Hill Rd. and North Winstead Ave., and continues for 1.1 miles to west of Country Club Rd.

The geotechnical investigation was conducted in March and April of 2014. Some boring data from the U-3621B investigation was referenced for this report. Hand augers and powered auger borings were performed at select locations along the main alignments. 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 1.4 miles, were investigated.

<u>Line</u>	<u>Stations</u>
-L-	25+75 to 83+63
-Y1-	11+25 to 12+56
-Y2-	10+00 to 11+25
-Y3-	10+20 to 11+86
-Y4-	12+30 to 15+40
-Y5-	10+00 to 11+75
-Y6-	10+00 to 13+00
-Y7-	11+00 to 14+61
-Y8-	10+00 to 11+00
-Y9-	10+00 to 11+25

**Areas of Special Geotechnical Interest**

- 1) Highly Plastic Clay Soils: Occurrences of highly plastic clay soil (Plasticity Index greater than 25) are noted below:

<u>Alignment</u>	<u>Station</u>	<u>Offset</u>
-L-	42+00	RT
-L-	70+50	RT
-L-	73+00	RT
-L-	79+71	LT
-Y5-	10+50	LT
-Y6-	12+00	RT
-Y7-	13+00	RT

- 2) Artificial Fill: Occurrences of artificial fill are noted below:

<u>Alignment</u>	<u>Station</u>	<u>Offset</u>
-L-	39+50	LT
-L-	69+00	RT

**Physiography and Geology**

The project corridor is located in Nash County within the city of Rocky Mount. A mixture of homes, businesses, and churches are located along the alignment. Topography is typical of the Upper Coastal Plain and ranges from flat to gently sloping. Natural ground elevations along upland portions of the project generally range from 115 to 145 feet.

The project lies within the Coastal Plain Physiographic Province of North Carolina. The Coastal Plain is a wedge of sedimentary material, covering much of the Southeastern United States that thickens to the east. These sediments were deposited during the transgression and regression of the Atlantic Ocean. Deposition of these sediments began as early as the Cretaceous Period, and includes recent Quaternary deposits. Sediments mainly consist of sand and clay.

The project area is drained by tributaries of the Tar River. Surface drainage is good to excellent throughout the proposed corridor.

**Soil Properties**

Soils encountered during this investigation consist of artificial fill, and coastal plain soils.

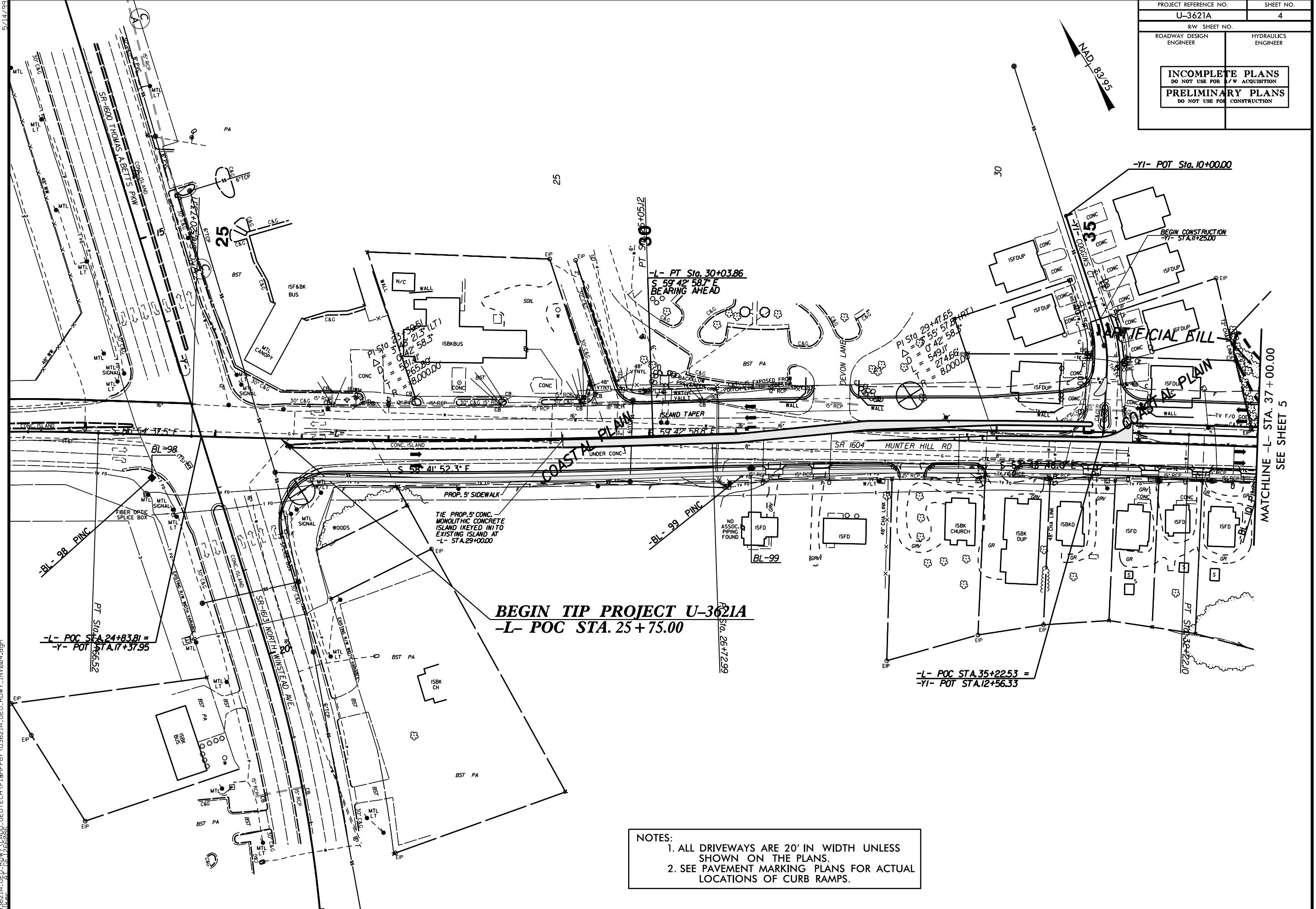
Artificial Fill soils are was encountered left of -L- 36+69 to 40+81 and right of -L- 63+23 to 65+75. These soils consist of primarily tan-brown, loose, silty sand (A-2-4). This material is part of a landscaping area. Coastal Plain soils mainly consist of medium stiff, sandy to silty clay (A-6, A-7), and loose, silty sand (A-2-4). Plastic indices range from non-plastic to 38.

**Groundwater**

Groundwater was encountered within 3 feet of subgrade through the majority of the project and may cause stability problems during construction. Groundwater readings were taken following a period of heavy rain, which may influence seasonal levels. The high moisture content of clay soils indicates slow subsurface drainage.

03-FEB-2015 14:00 U3621A\_GEO ROWY CADDD\_GEO TECH PLAN Proj of U3621A\_GEO\_ROWY\_INV004.dgn  
 U3621A\_GEO ROWY CADDD\_GEO TECH PLAN Proj of U3621A\_GEO\_ROWY\_INV004.dgn  
 5/14/99

PROJECT REFERENCE NO.		SHEET NO.	
U-3621A		4	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION		<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



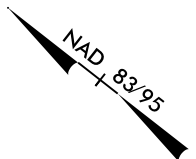
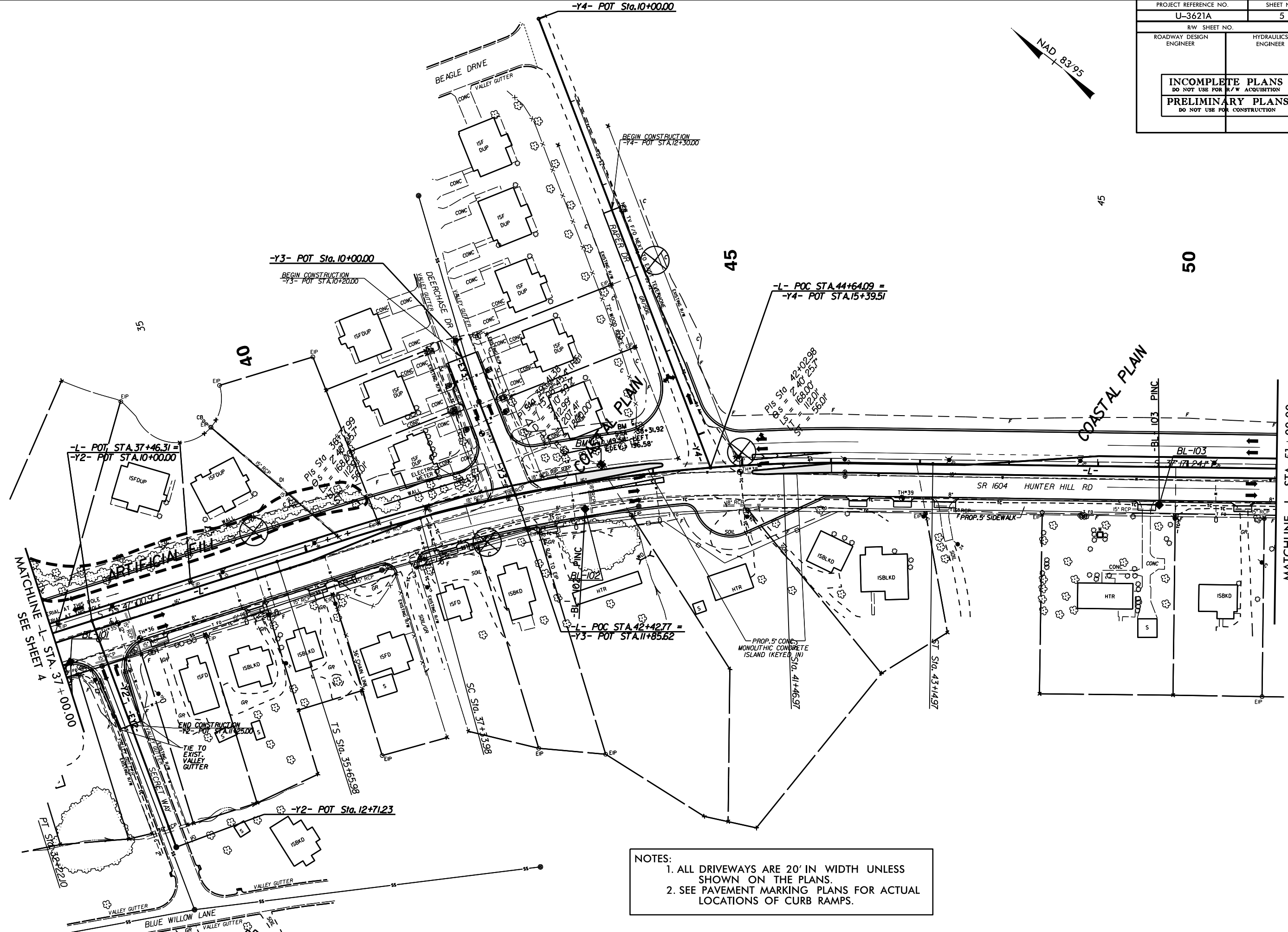
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**-L- POC STA. 25+75.00**

- NOTES:**
1. ALL DRIVEWAYS ARE 20' IN WIDTH UNLESS SHOWN ON THE PLANS.
  2. SEE PAVEMENT MARKING PLANS FOR ACTUAL LOCATIONS OF CURB RAMPS.

MATCHLINE -L- STA. 37+00.00  
 SEE SHEET 5

5/14/95  
 03-FEB-2015 10:00  
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PROJECT REFERENCE NO.	SHEET NO.
U-3621A	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**NOTES:**  
 1. ALL DRIVEWAYS ARE 20' IN WIDTH UNLESS SHOWN ON THE PLANS.  
 2. SEE PAVEMENT MARKING PLANS FOR ACTUAL LOCATIONS OF CURB RAMPS.

MATCHLINE -L- STA. 51+00.00  
 SEE SHEET 6

5/14/99

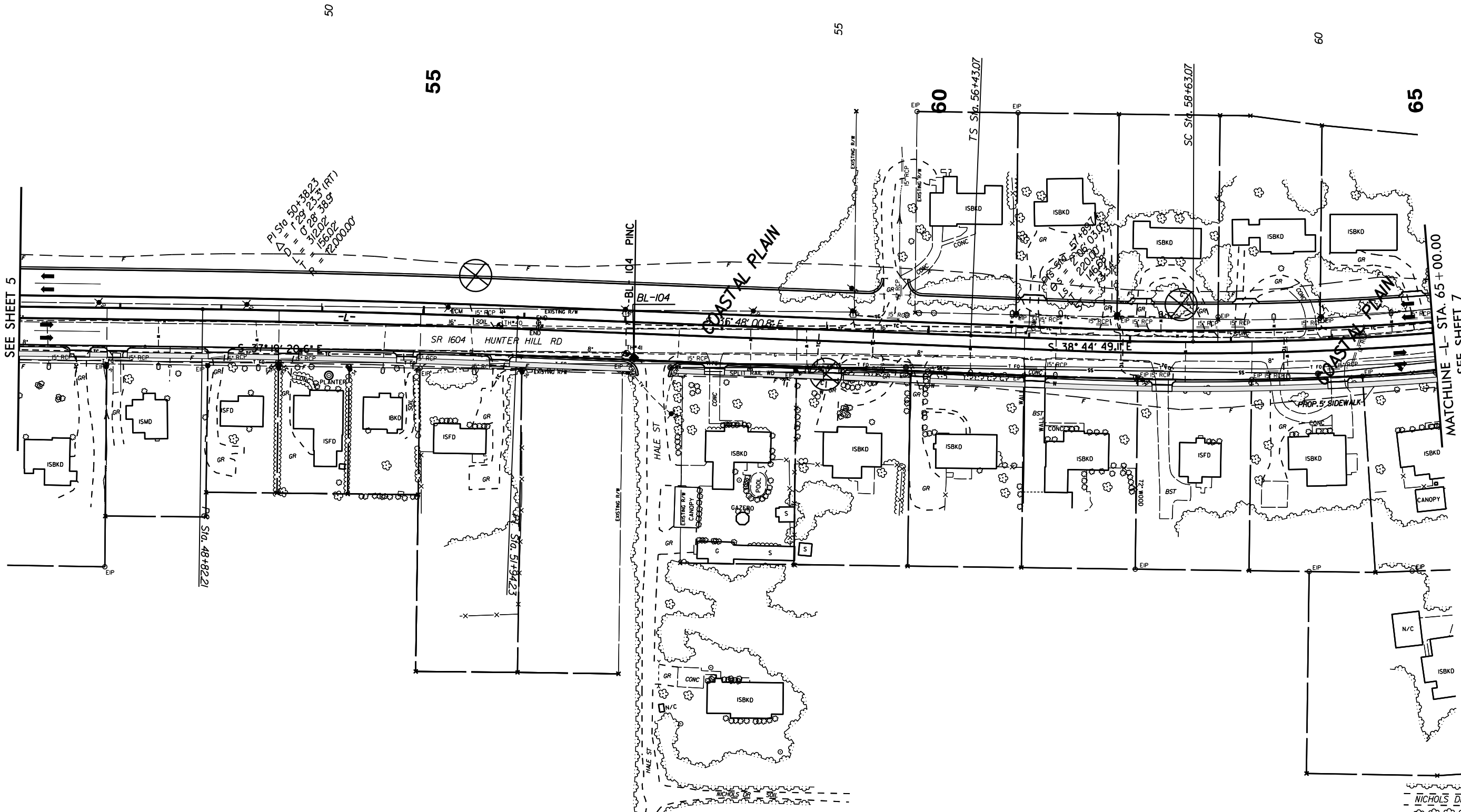
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PROJECT REFERENCE NO. U-3621A		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE -L- STA. 51+00.00  
SEE SHEET 5

MATCHLINE -L- STA. 65+00.00  
SEE SHEET 7

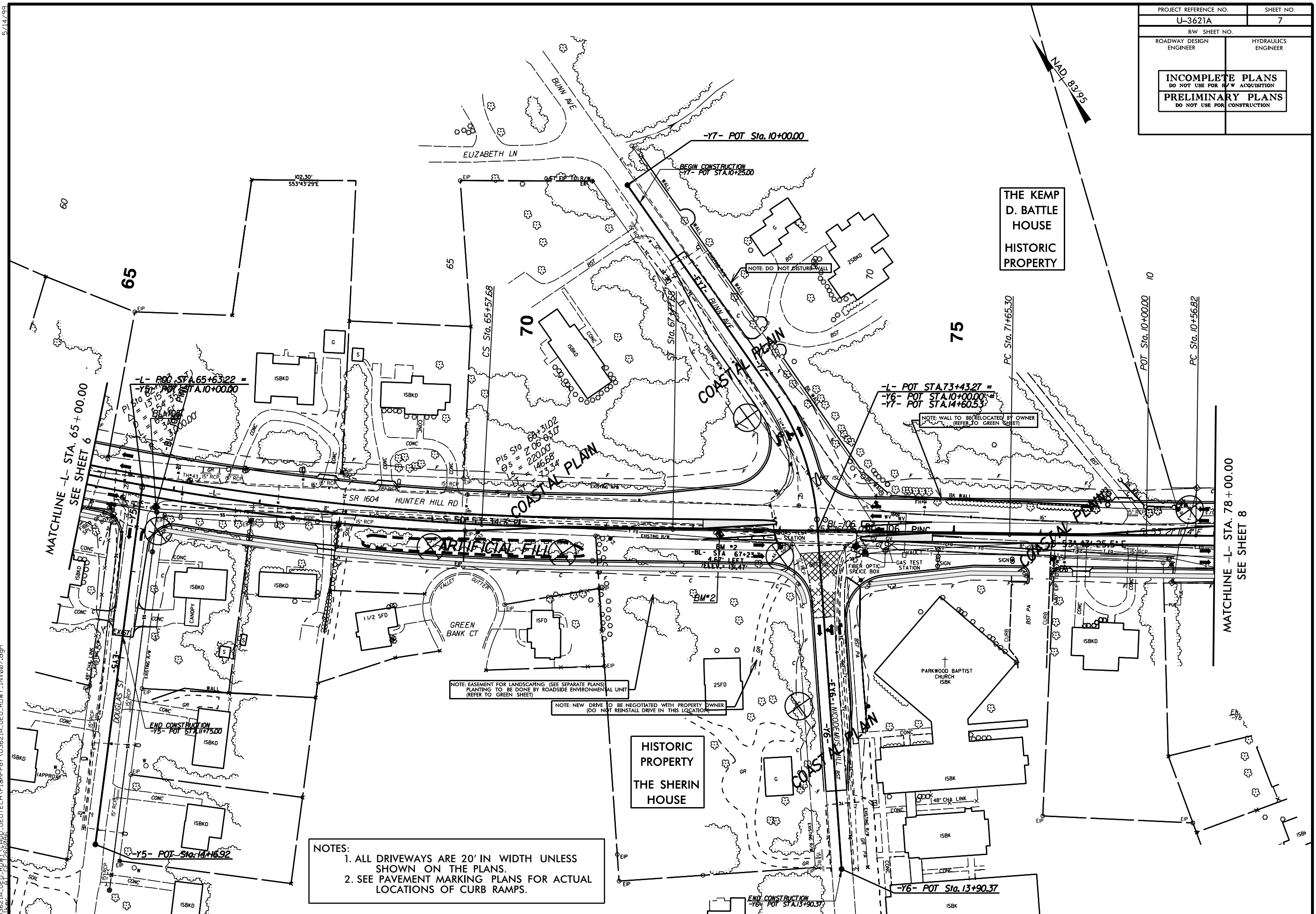


$P1 Sta. 50+38.23$   
 $\Delta D = 1.28$   
 $\Delta E = 0.28$   
 $L = 312.02$   
 $R = 156.02$   
 $R = 72000.00$

NOTES:  
 1. ALL DRIVEWAYS ARE 20' IN WIDTH UNLESS SHOWN ON THE PLANS.  
 2. SEE PAVEMENT MARKING PLANS FOR ACTUAL LOCATIONS OF CURB RAMPS.

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 5/14/95

PROJECT REFERENCE NO.		SHEET NO.	
U-3621A		7	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			



THE KEMP  
 D. BATTLE  
 HOUSE  
 HISTORIC  
 PROPERTY

HISTORIC  
 PROPERTY  
 THE SHERIN  
 HOUSE

**NOTES:**  
 1. ALL DRIVEWAYS ARE 20' IN WIDTH UNLESS SHOWN ON THE PLANS.  
 2. SEE PAVEMENT MARKING PLANS FOR ACTUAL LOCATIONS OF CURB RAMPS.

NOTE: EASEMENT FOR LANDSCAPING (SEE SEPARATE PLANS) PLANTING TO BE DONE BY ROADSIDE ENVIRONMENTAL UNIT (REFER TO GREEN SHEET)

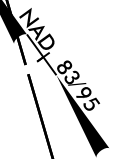
NOTE: NEW DRIVE TO BE NEGOTIATED WITH PROPERTY OWNER (DO NOT REINSTALL DRIVE IN THIS LOCATION)

NOTE: WALL TO BE RELOCATED BY OWNER (REFER TO GREEN SHEET)

NOTE: DO NOT DISTURB WALL

MATCHLINE -L- STA. 65+00.00  
 SEE SHEET 6

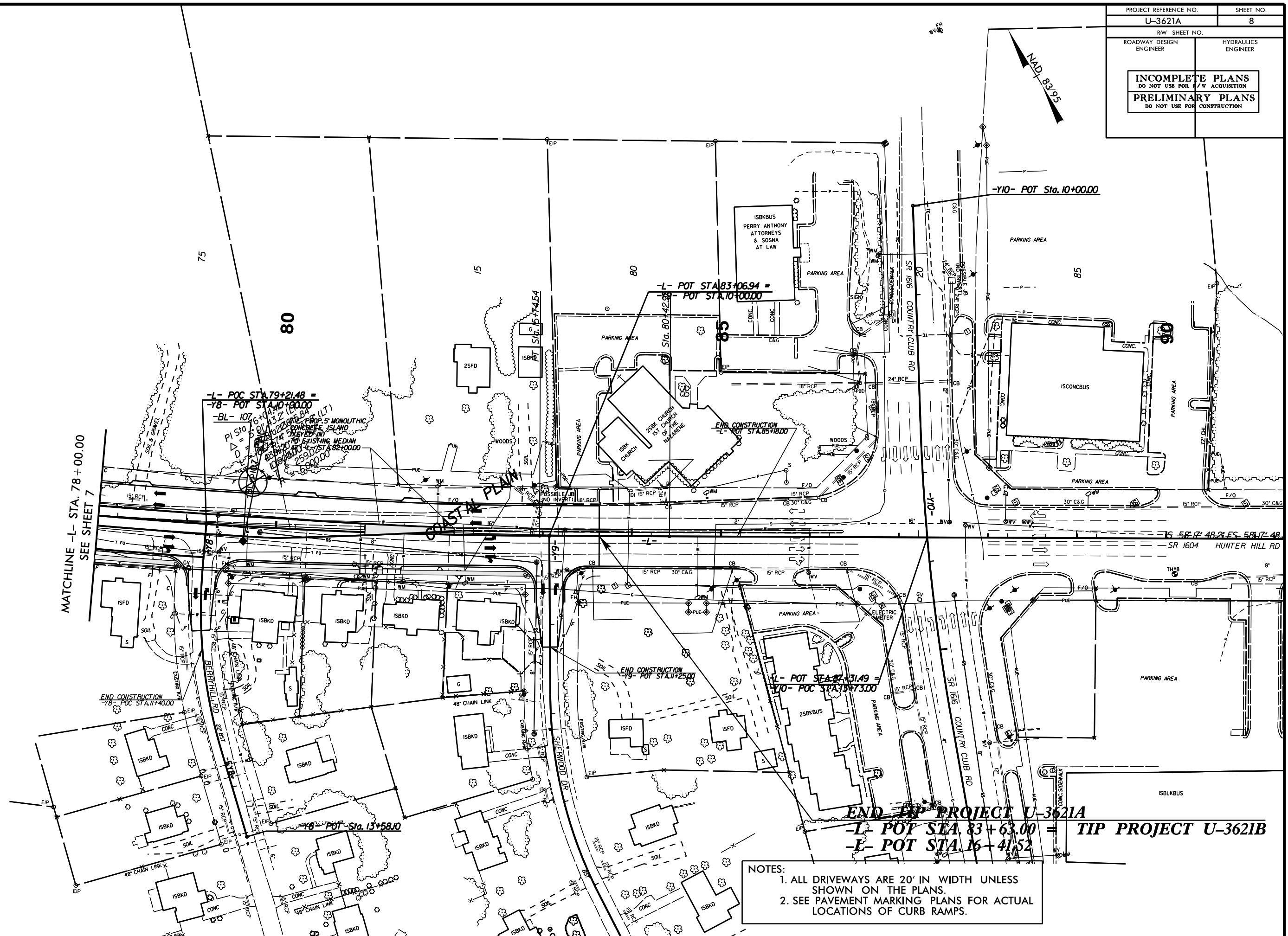
MATCHLINE -L- STA. 78+00.00  
 SEE SHEET 8





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PROJECT REFERENCE NO. U-3621A	SHEET NO. 8
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<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



**NOTES:**  
 1. ALL DRIVEWAYS ARE 20' IN WIDTH UNLESS SHOWN ON THE PLANS.  
 2. SEE PAVEMENT MARKING PLANS FOR ACTUAL LOCATIONS OF CURB RAMPS.

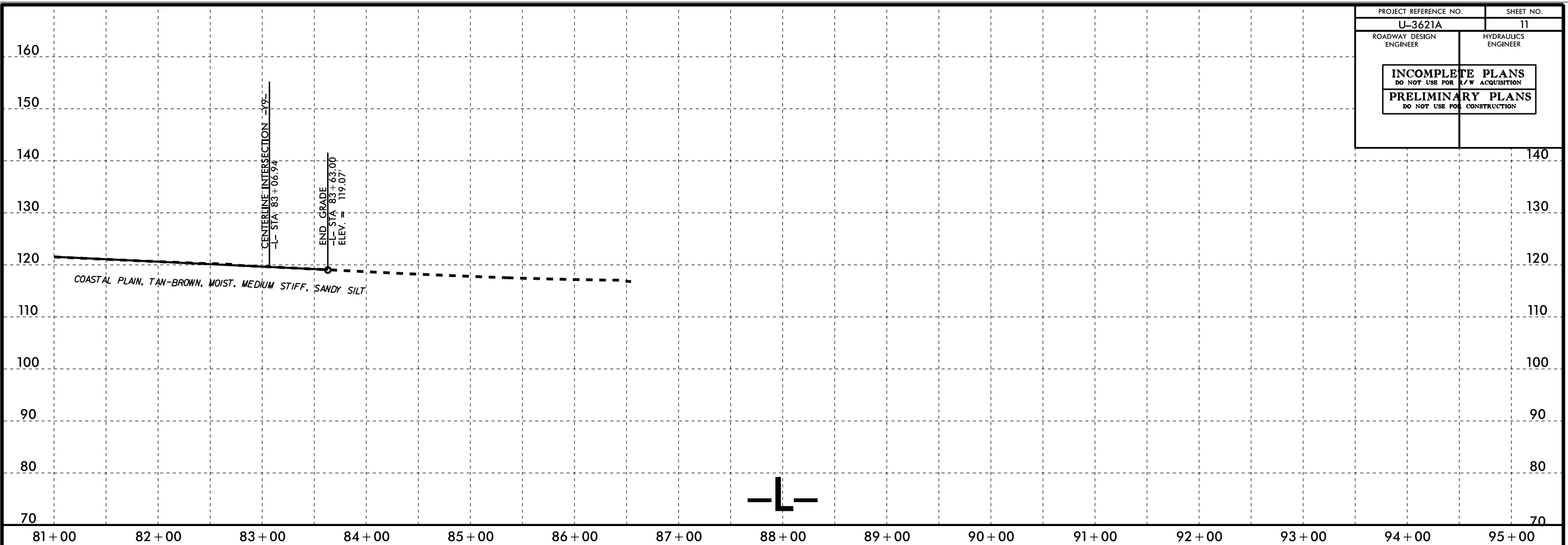




5/28/99

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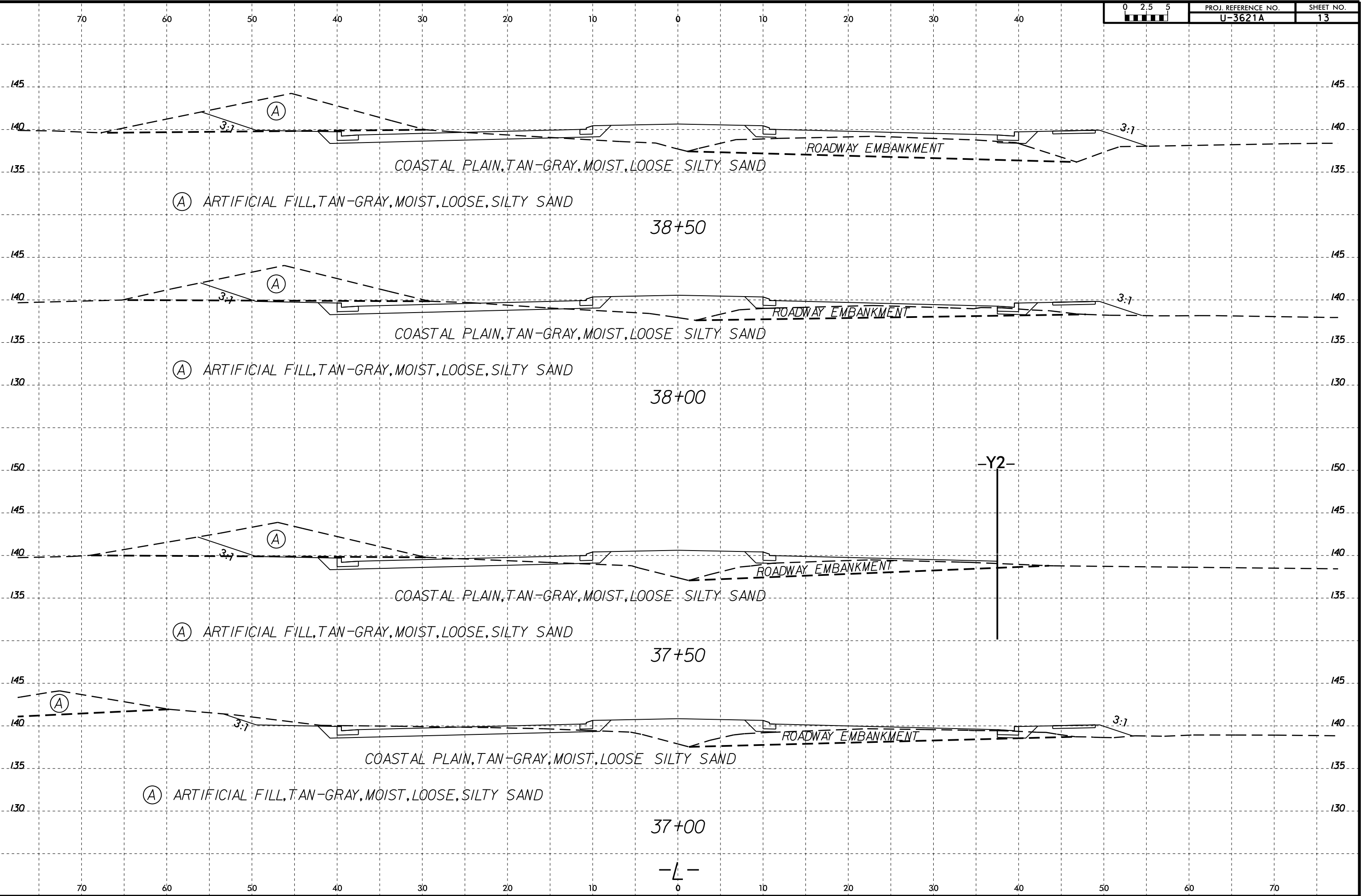
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INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-Y4-



8/23/99  
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Twalker AY 02/26/06



(A) ARTIFICIAL FILL, TAN-GRAY, MOIST, LOOSE, SILTY SAND

COASTAL PLAIN, TAN-GRAY, MOIST, LOOSE SILTY SAND

ROADWAY EMBANKMENT

38+50

(A) ARTIFICIAL FILL, TAN-GRAY, MOIST, LOOSE, SILTY SAND

COASTAL PLAIN, TAN-GRAY, MOIST, LOOSE SILTY SAND

ROADWAY EMBANKMENT

38+00

(A) ARTIFICIAL FILL, TAN-GRAY, MOIST, LOOSE, SILTY SAND

COASTAL PLAIN, TAN-GRAY, MOIST, LOOSE SILTY SAND

ROADWAY EMBANKMENT

37+50

-Y2-

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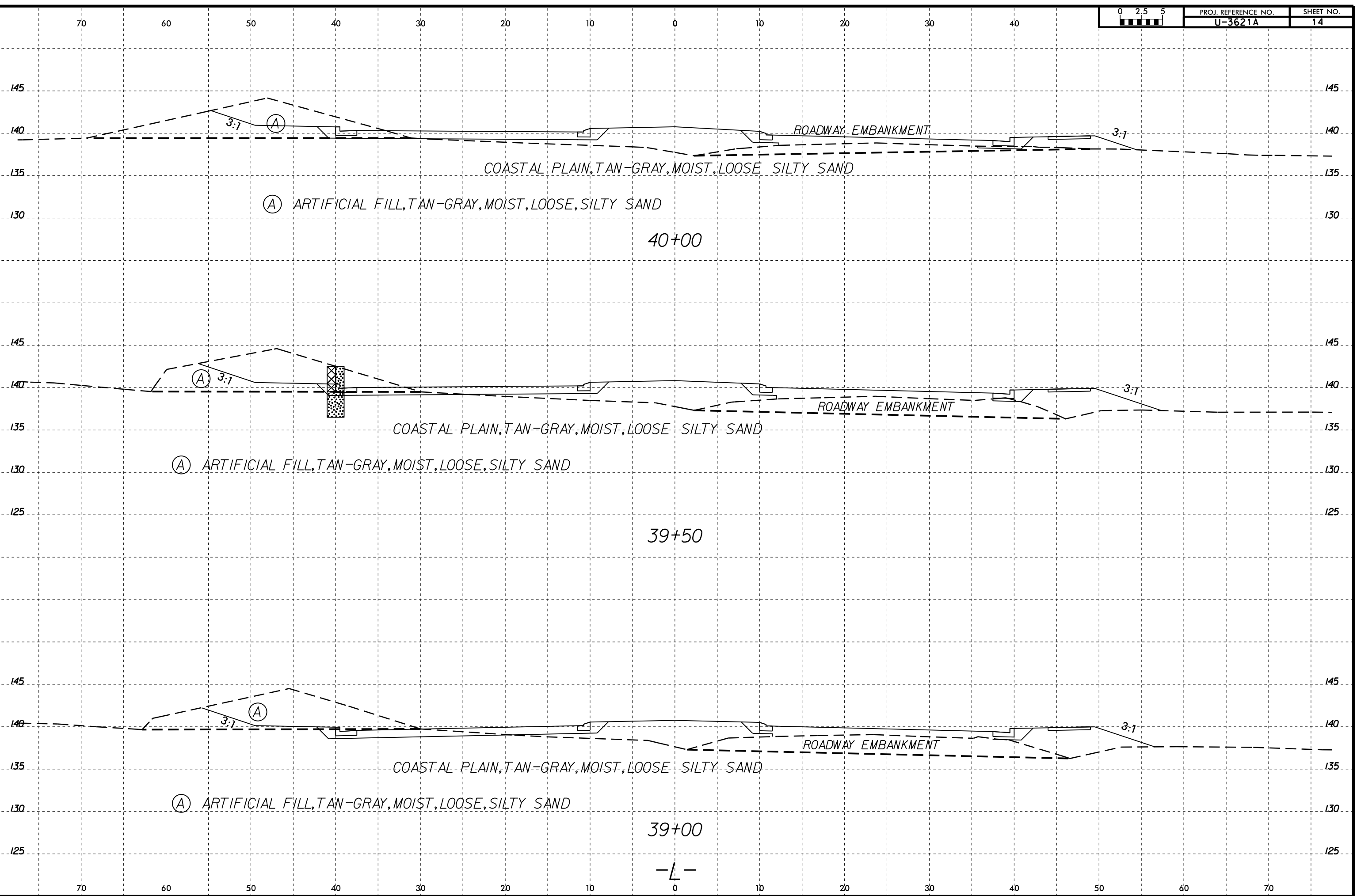
COASTAL PLAIN, TAN-GRAY, MOIST, LOOSE SILTY SAND

ROADWAY EMBANKMENT

37+00

-L-

8/23/99



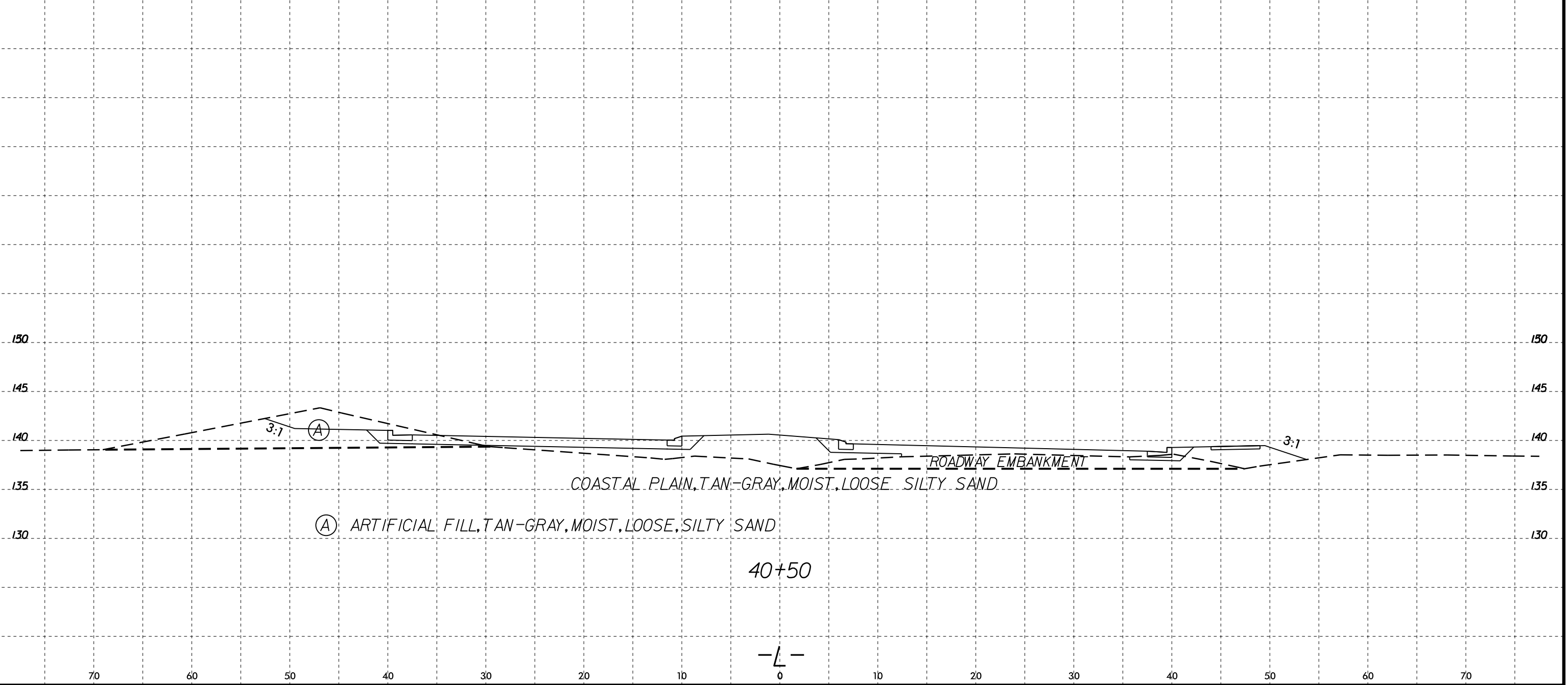
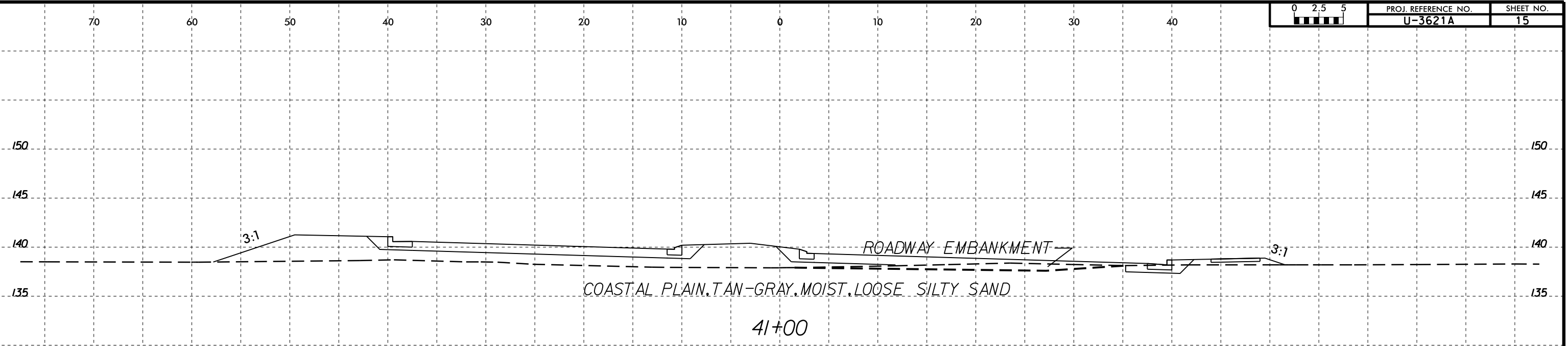
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-L-

8/23/99



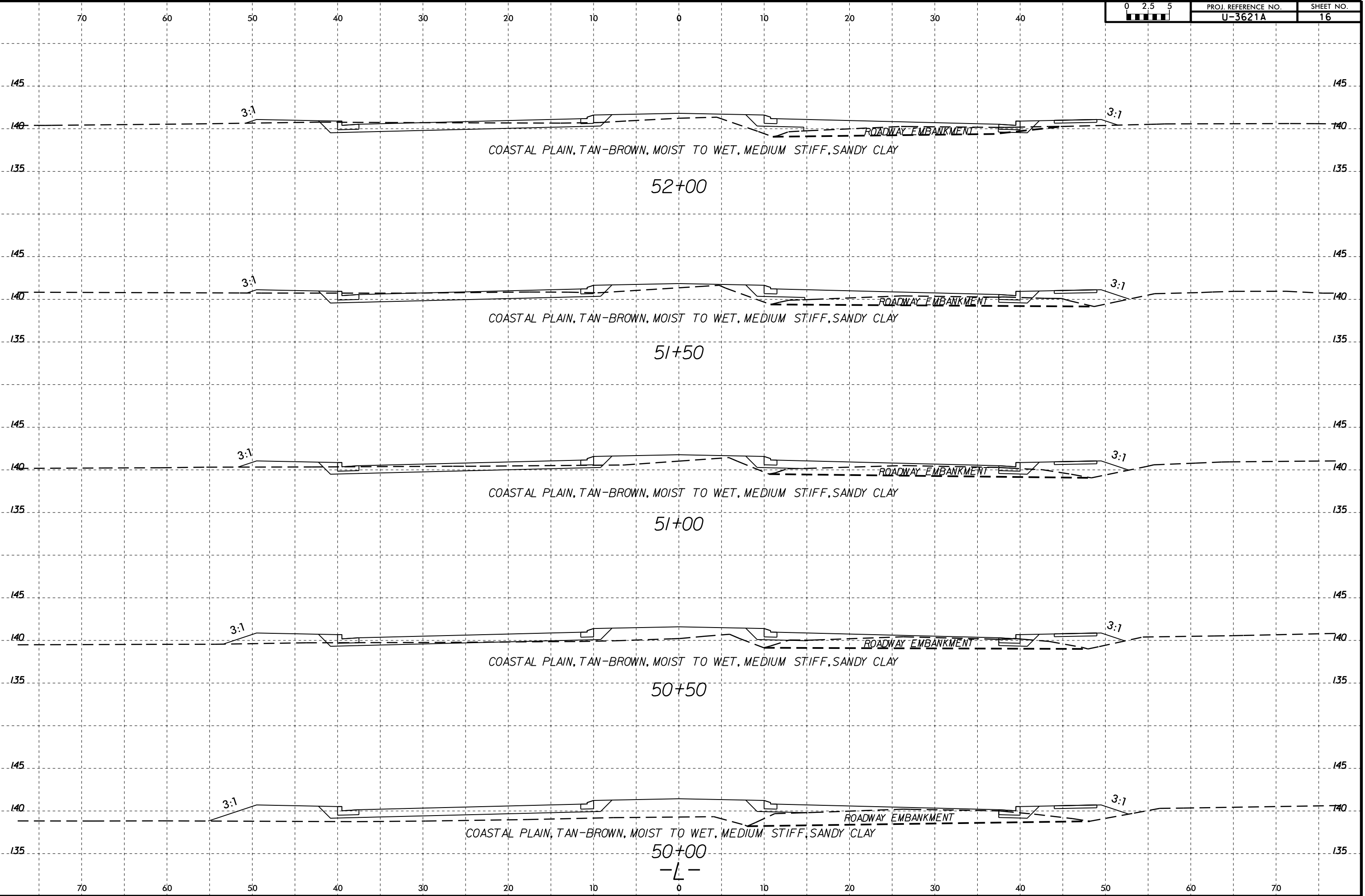
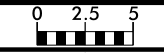
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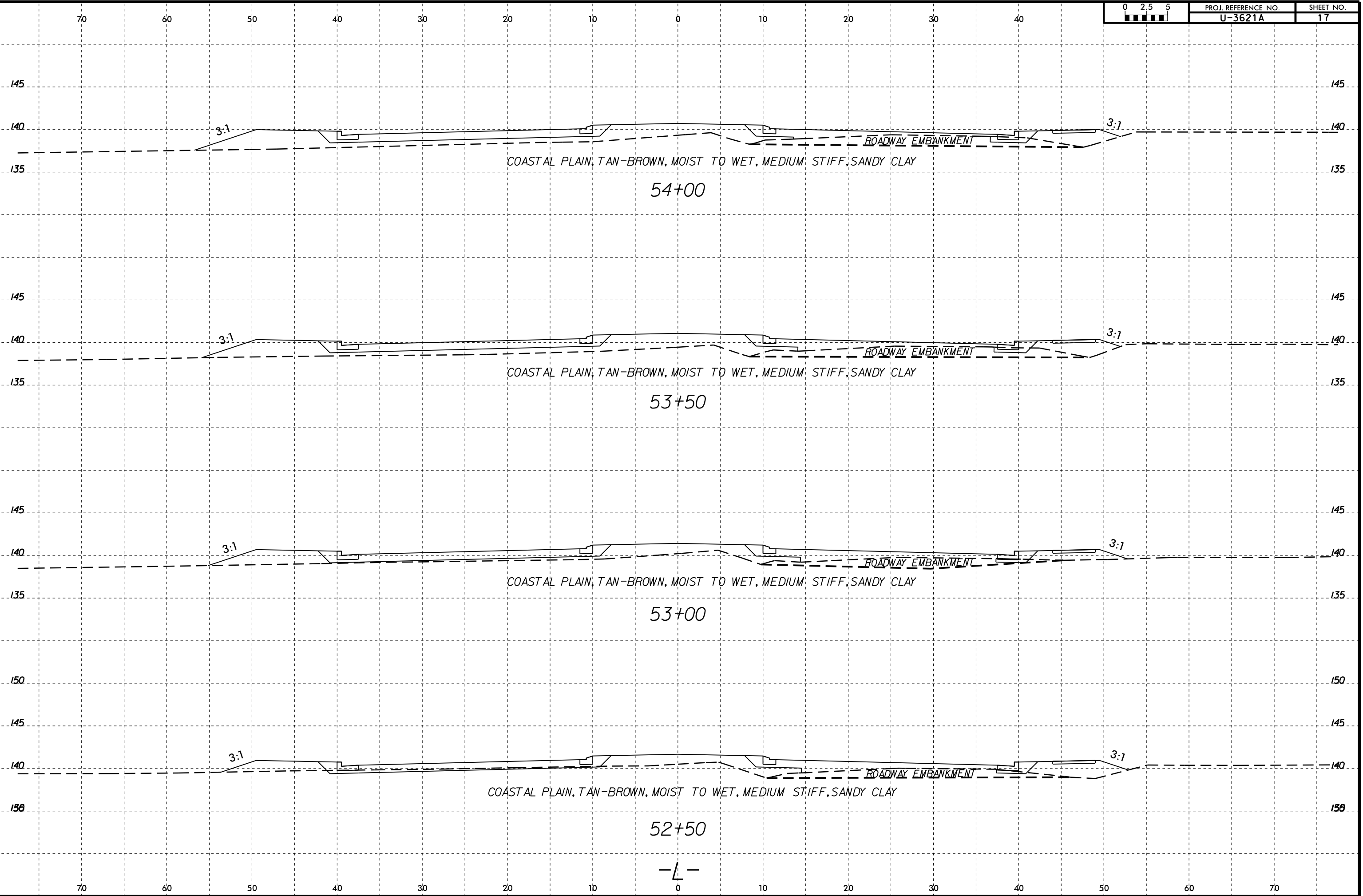




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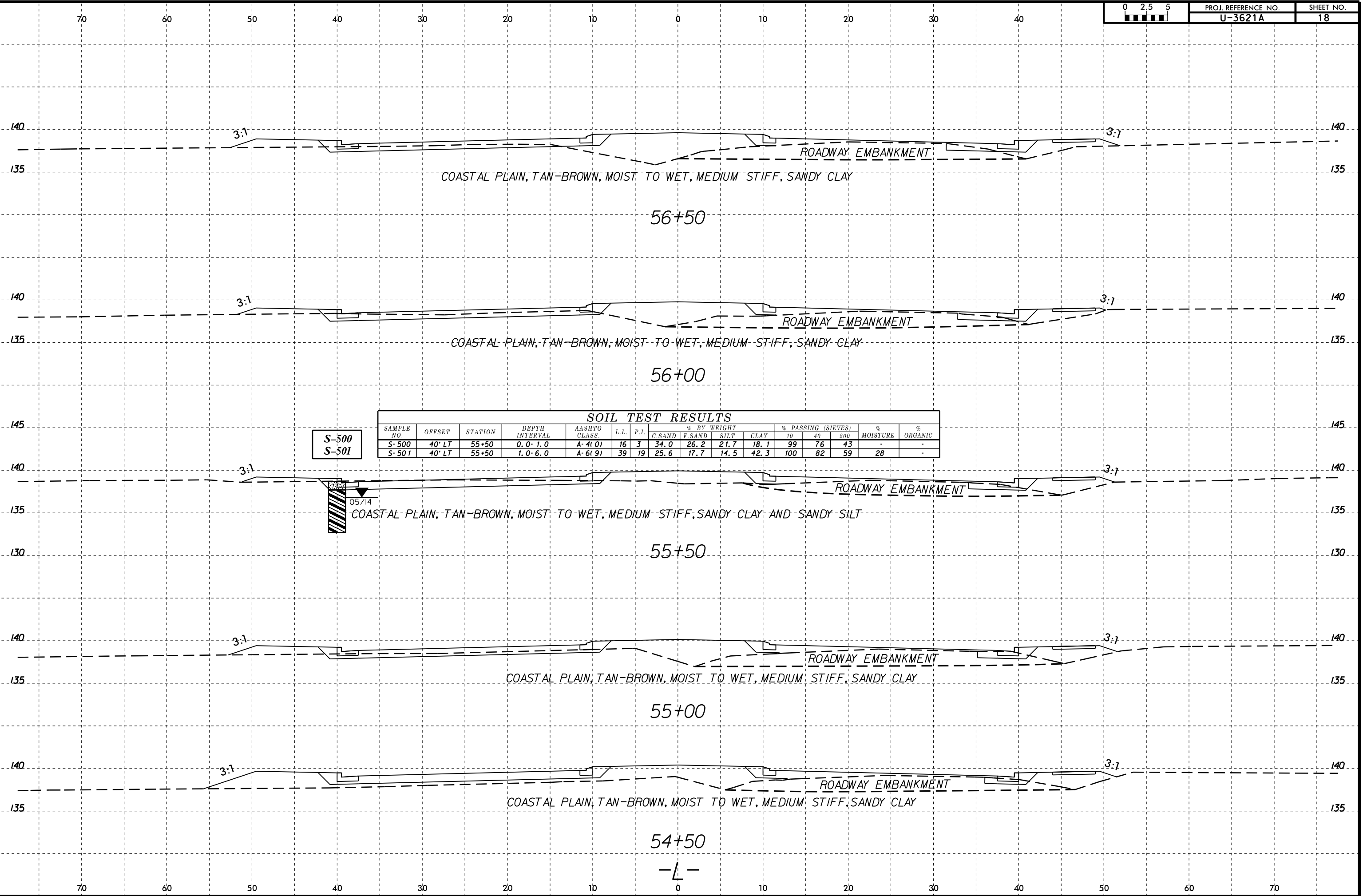


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twalker AT 06/26/99

8/23/99



S-500  
S-501

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-500	40' LT	55+50	0.0-1.0	A-4(0)	16	3	34.0	26.2	21.7	18.1	99	76	43	-	-
S-501	40' LT	55+50	1.0-6.0	A-6(9)	39	19	25.6	17.7	14.5	42.3	100	82	59	28	-

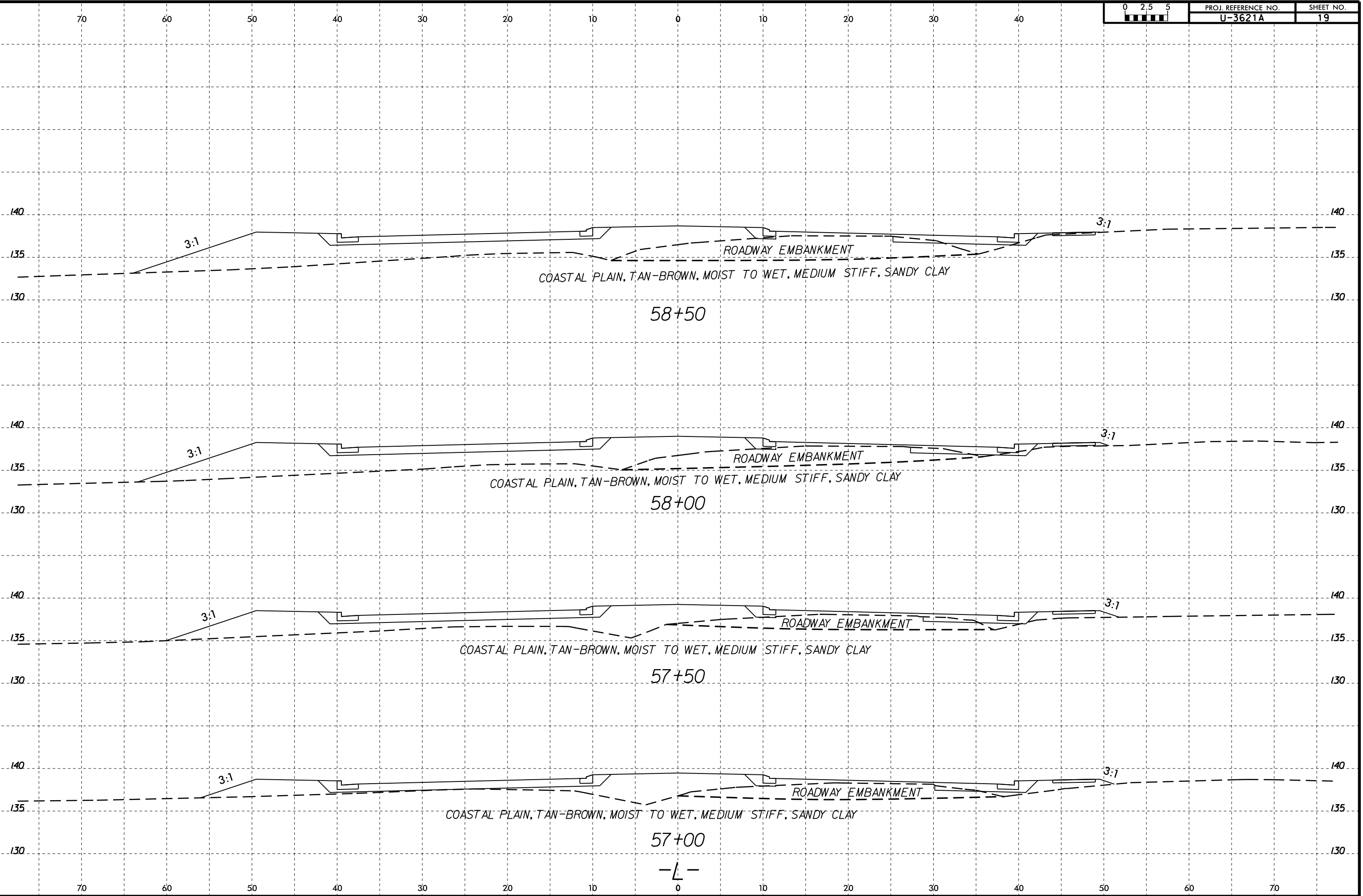


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8/23/99



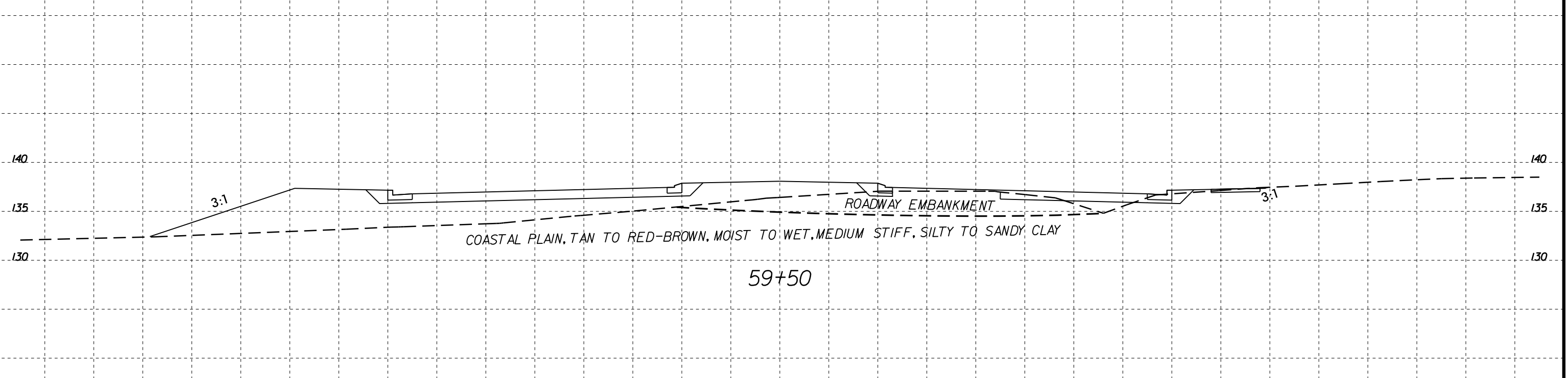
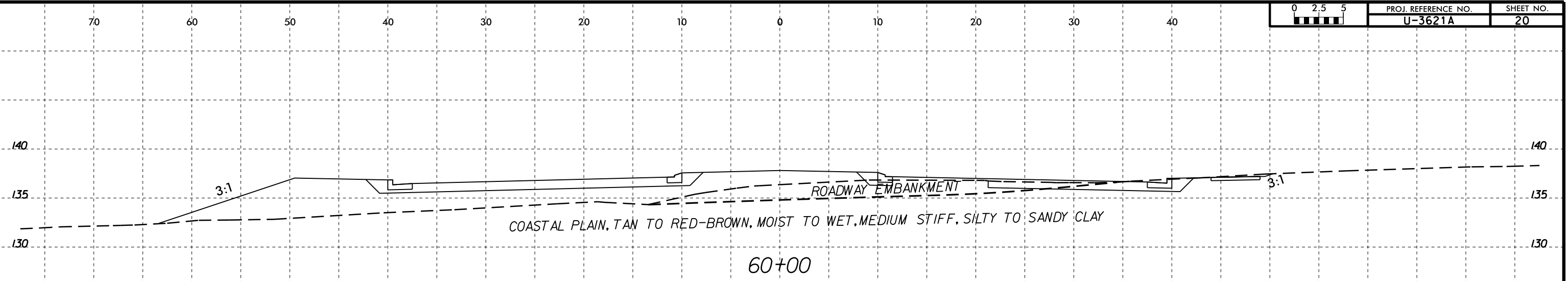
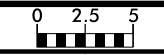
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U-3621A	19



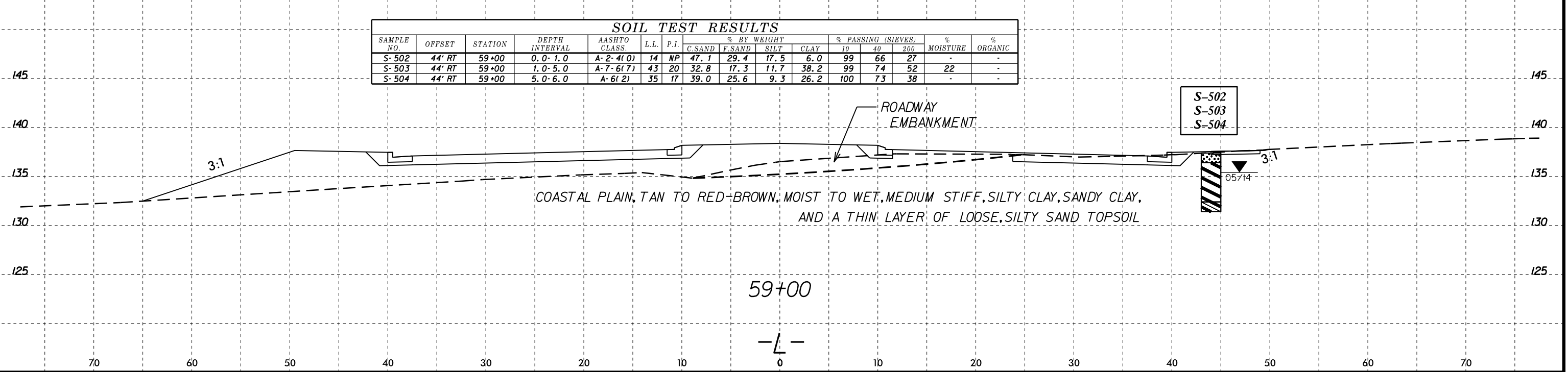
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 ttwalker

-L-

8/23/99



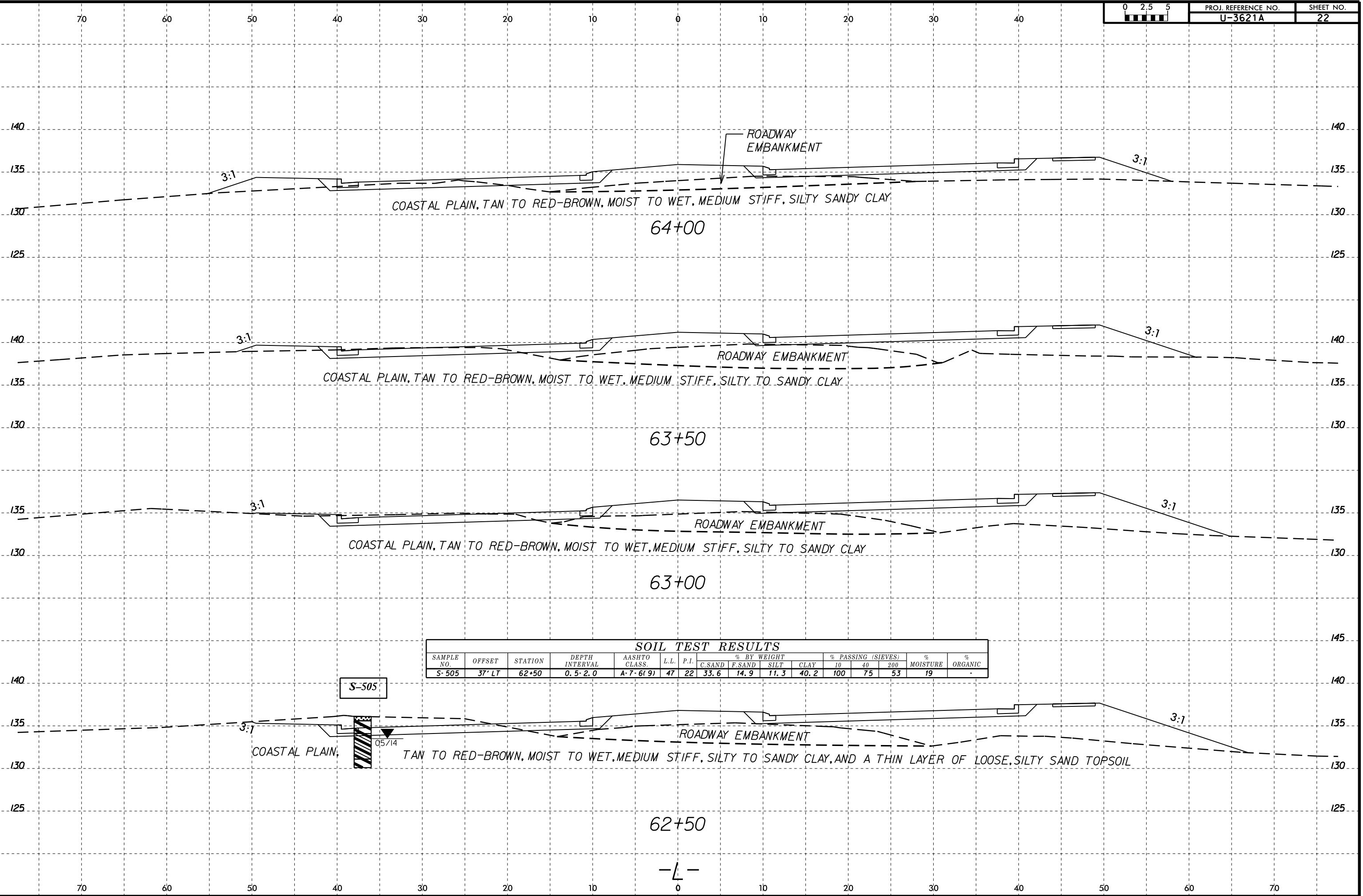
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C. SAND	F. SAND	SILT	CLAY	10	40			200
S-502	44' RT	59+00	0.0-1.0	A-2-4(0)	14	NP	47.1	29.4	17.5	6.0	99	66	27	-	-
S-503	44' RT	59+00	1.0-5.0	A-7-6(7)	43	20	32.8	17.3	11.7	38.2	99	74	52	22	-
S-504	44' RT	59+00	5.0-6.0	A-6(2)	35	17	39.0	25.6	9.3	26.2	100	73	38	-	-



03-FEB-2015 10:43 U:\Projects\991101\991101\TIP\U3621A.GEO.RDWAY\CADD\GEO\TECH\XSC\U3621A.GEO.XSL.L.DGN



8/23/99  
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 Walker, AT 06126686



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-505	37' LT	62+50	0.5-2.0	A-7-6(9)	47	22	33.6	14.9	11.3	40.2	100	75	53	19	-

S-505



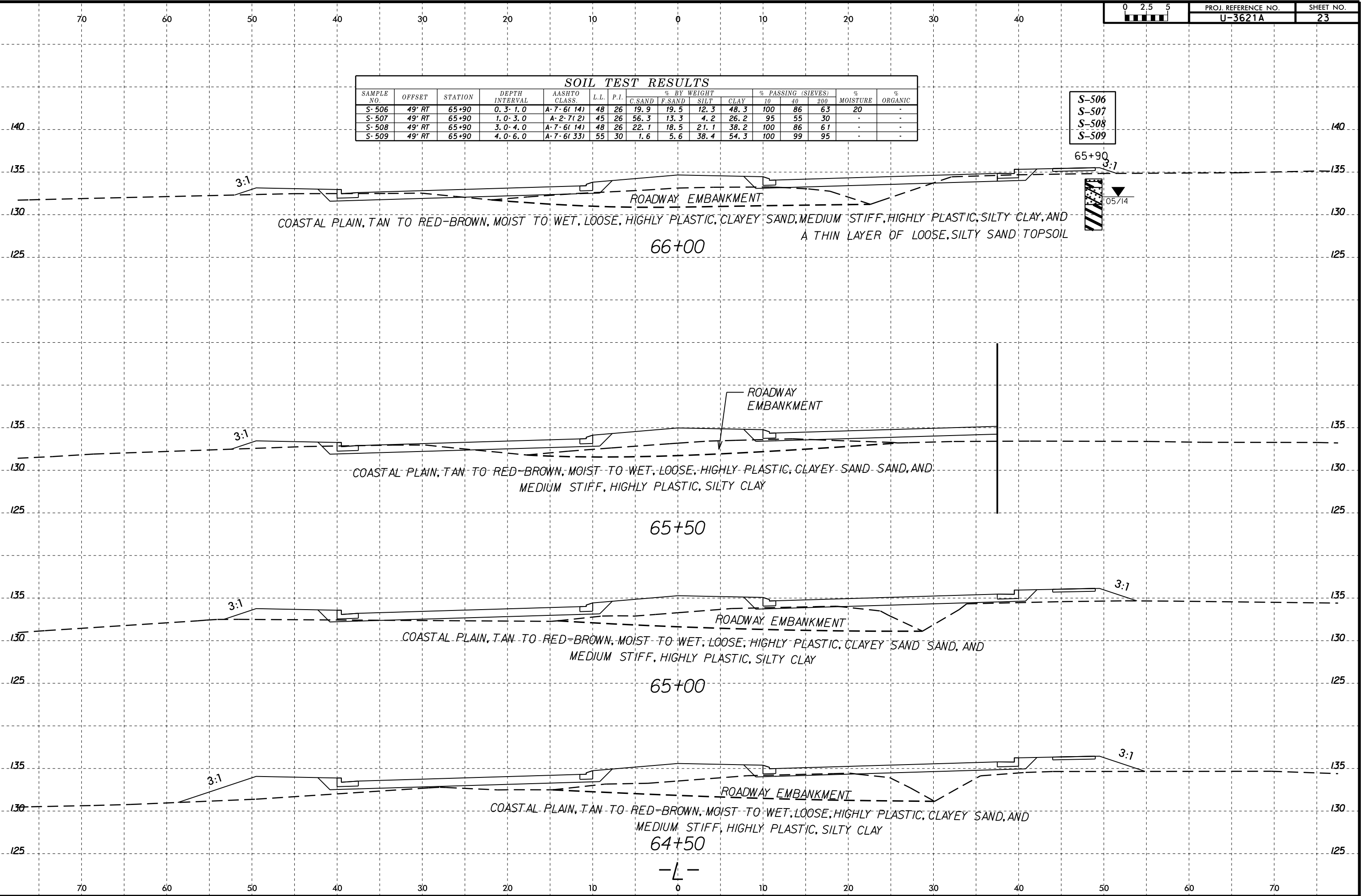
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8/23/99



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-506	49' RT	65+90	0.3-1.0	A-7-6(14)	48	26	19.9	19.5	12.3	48.3	100	86	63	20	-
S-507	49' RT	65+90	1.0-3.0	A-2-7(2)	45	26	56.3	13.3	4.2	26.2	95	55	30	-	-
S-508	49' RT	65+90	3.0-4.0	A-7-6(14)	48	26	22.1	18.5	21.1	38.2	100	86	61	-	-
S-509	49' RT	65+90	4.0-6.0	A-7-6(33)	55	30	1.6	5.6	38.4	54.3	100	99	95	-	-

S-506  
S-507  
S-508  
S-509



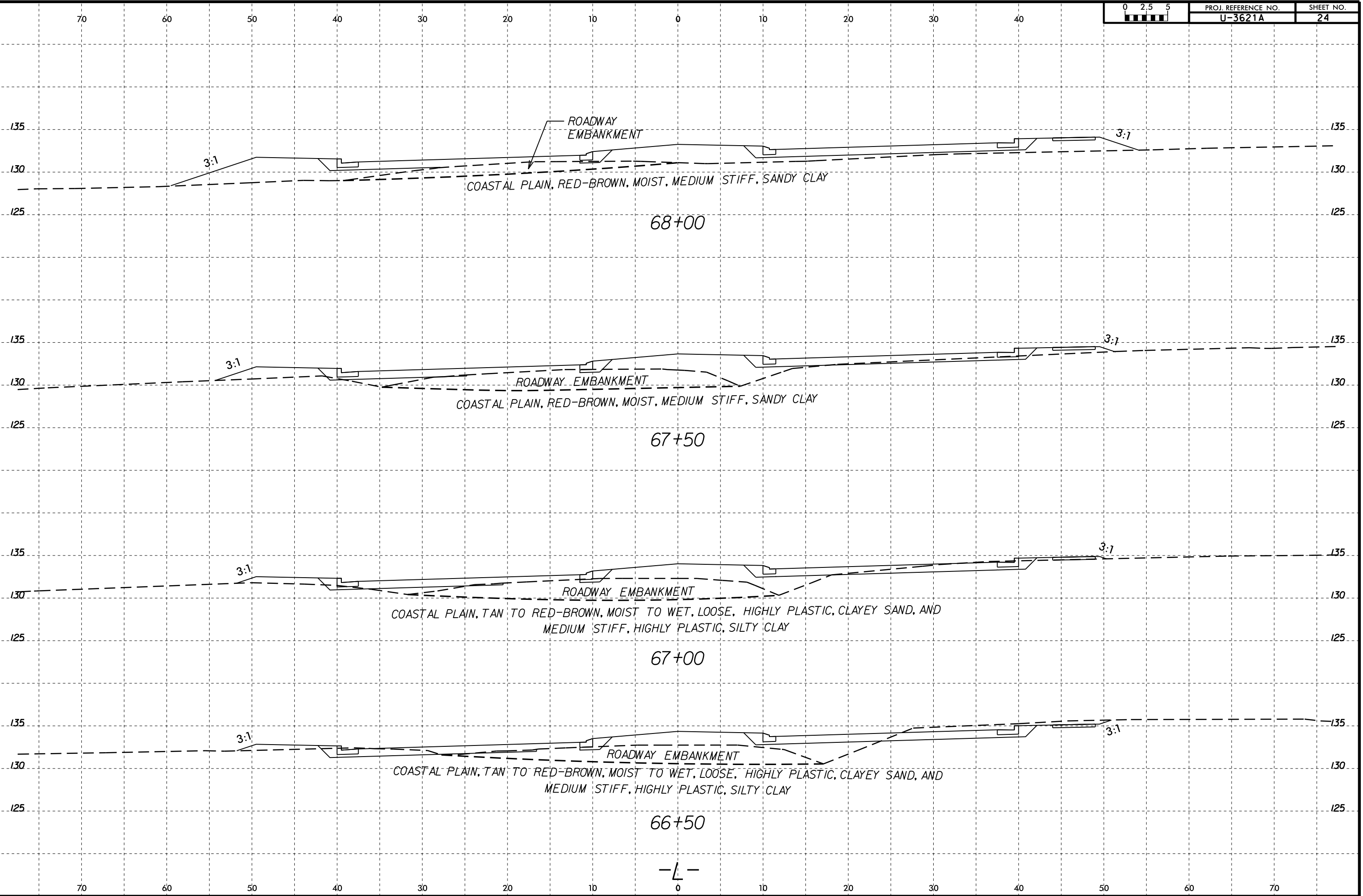
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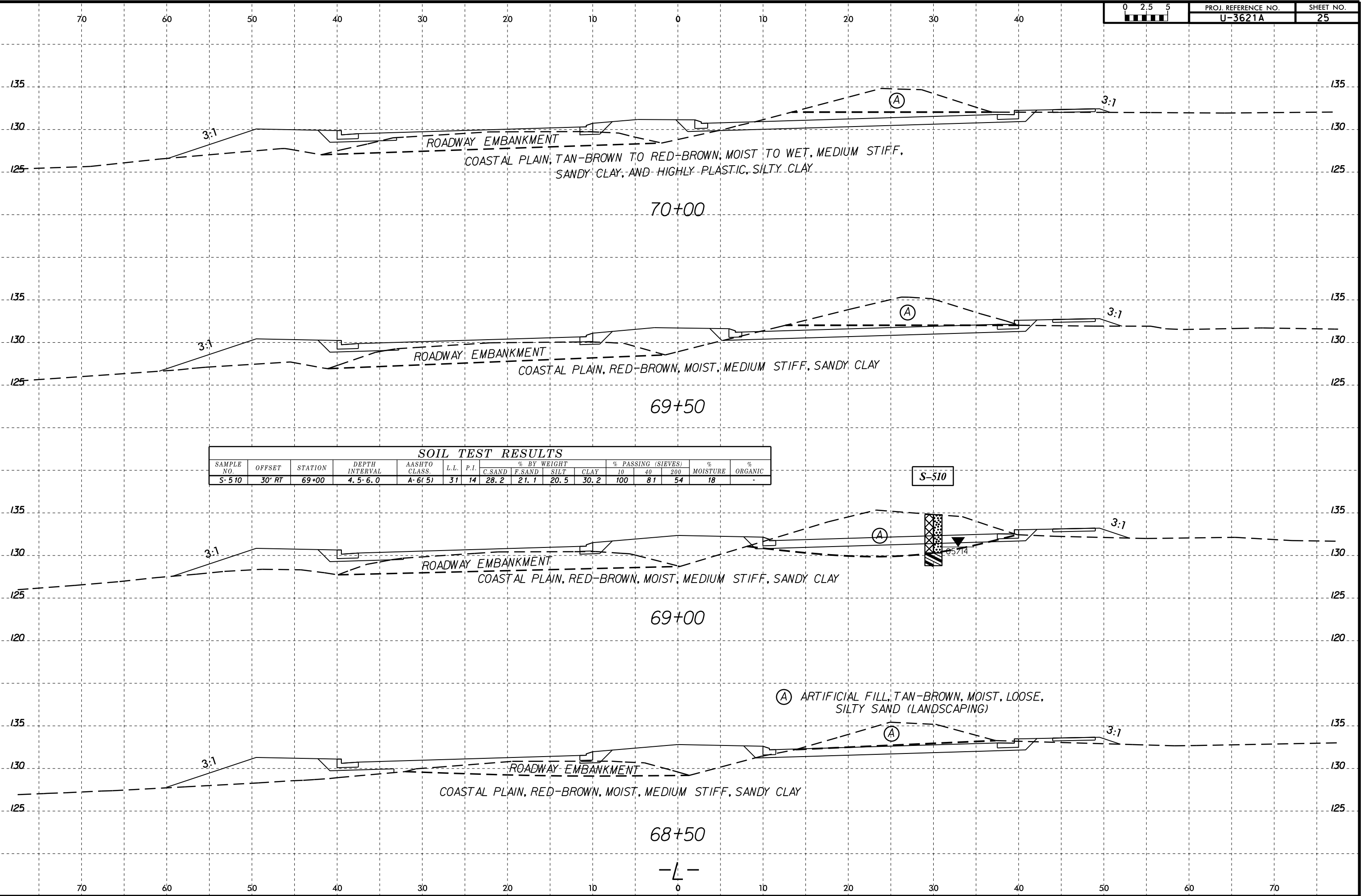


PROJ. REFERENCE NO. U-3621A SHEET NO. 24

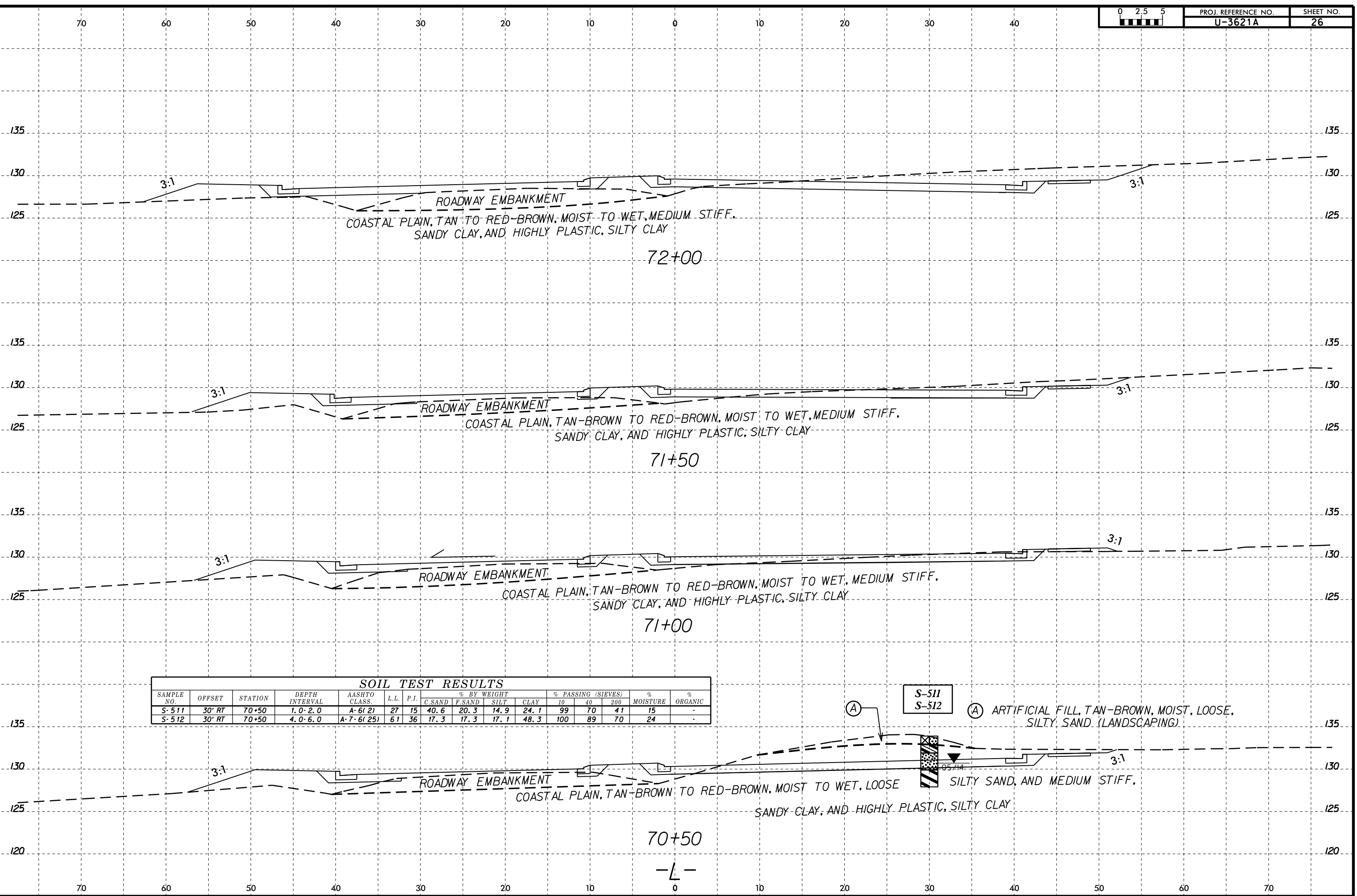
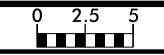


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TWalker AT 06/26/06

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-510	30' RT	69+00	4.5-6.0	A-6(5)	31	14	28.2	21.1	20.5	30.2	100	81	54	18	-



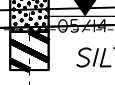
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-511	30' RT	70+50	1.0-2.0	A-6(2)	27	15	40.6	20.3	14.9	24.1	99	70	41	15	-
S-512	30' RT	70+50	4.0-6.0	A-7-6(25)	61	36	17.3	17.3	17.1	48.3	100	89	70	24	-

S-511  
S-512

(A)

(A)

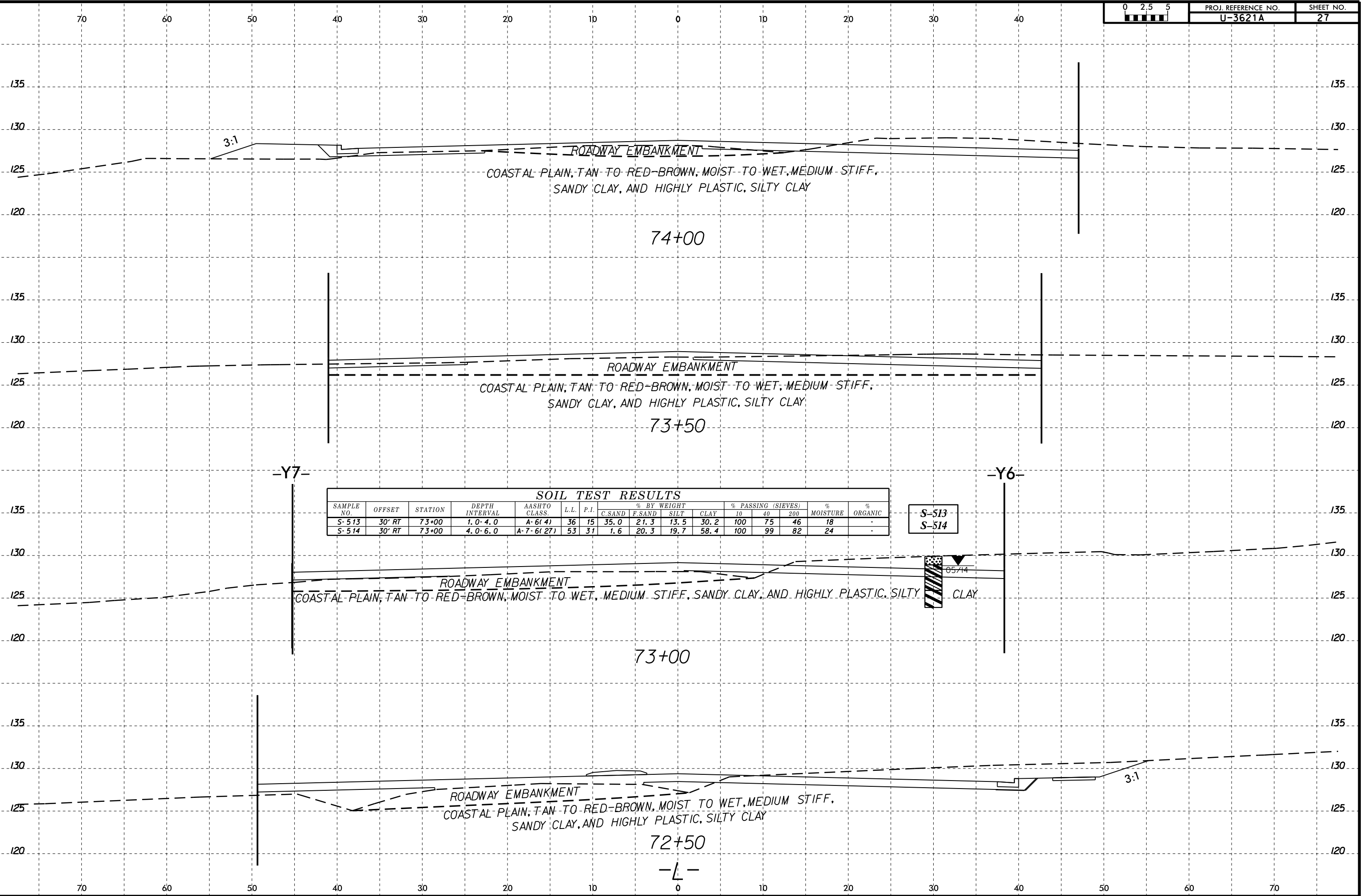
ARTIFICIAL FILL, TAN-BROWN, MOIST, LOOSE, SILTY SAND (LANDSCAPING)



0.5/41  
SILTY SAND, AND MEDIUM STIFF,

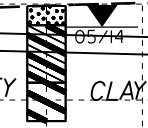
SANDY CLAY, AND HIGHLY PLASTIC, SILTY CLAY

8/23/99  
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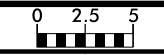
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-513	30' RT	73+00	1.0-4.0	A-6(4)	36	15	35.0	21.3	13.5	30.2	100	75	46	18	-
S-514	30' RT	73+00	4.0-6.0	A-7-6(27)	53	31	1.6	20.3	19.7	58.4	100	99	82	24	-

S-513  
S-514

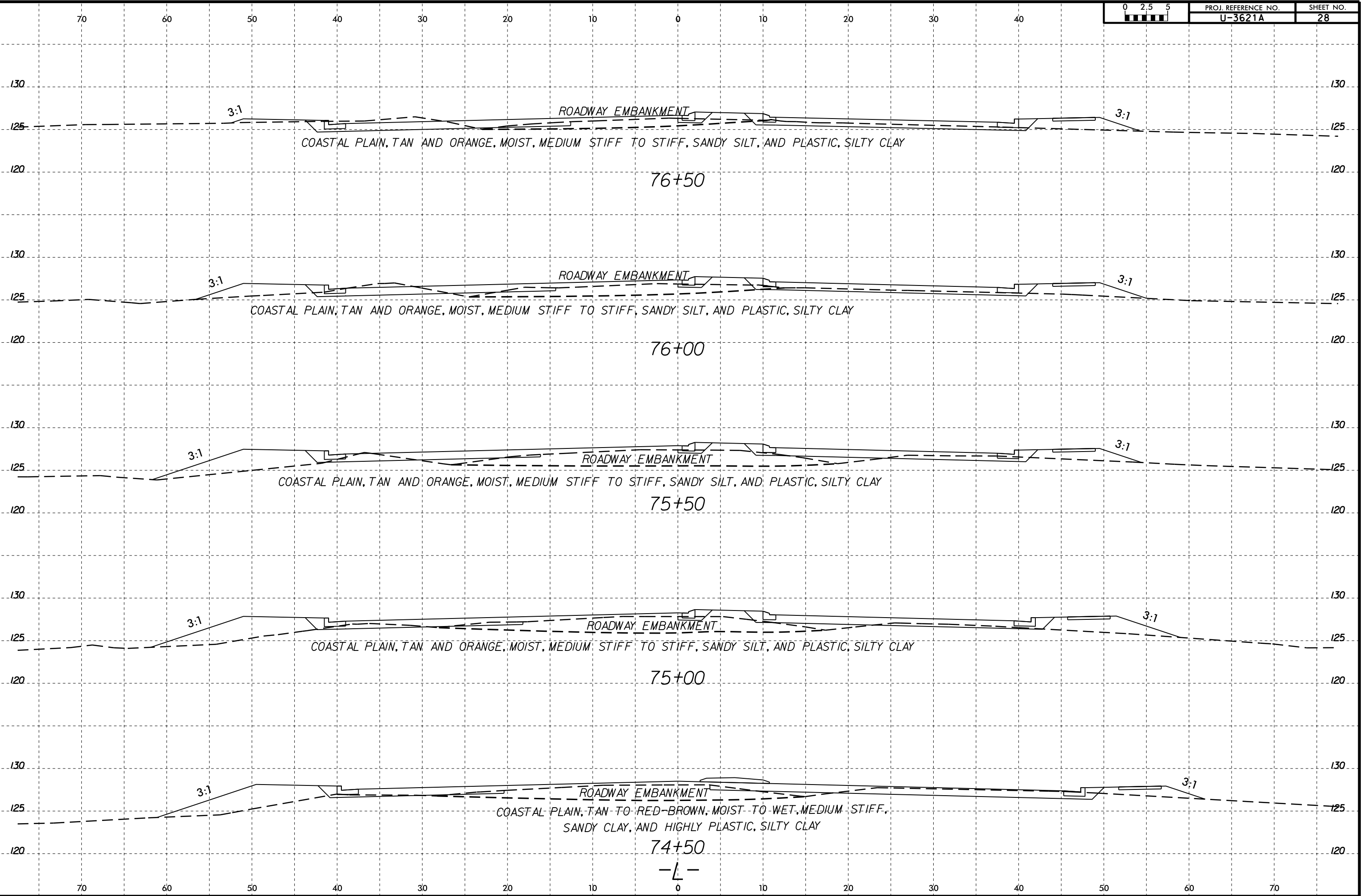


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8/23/99



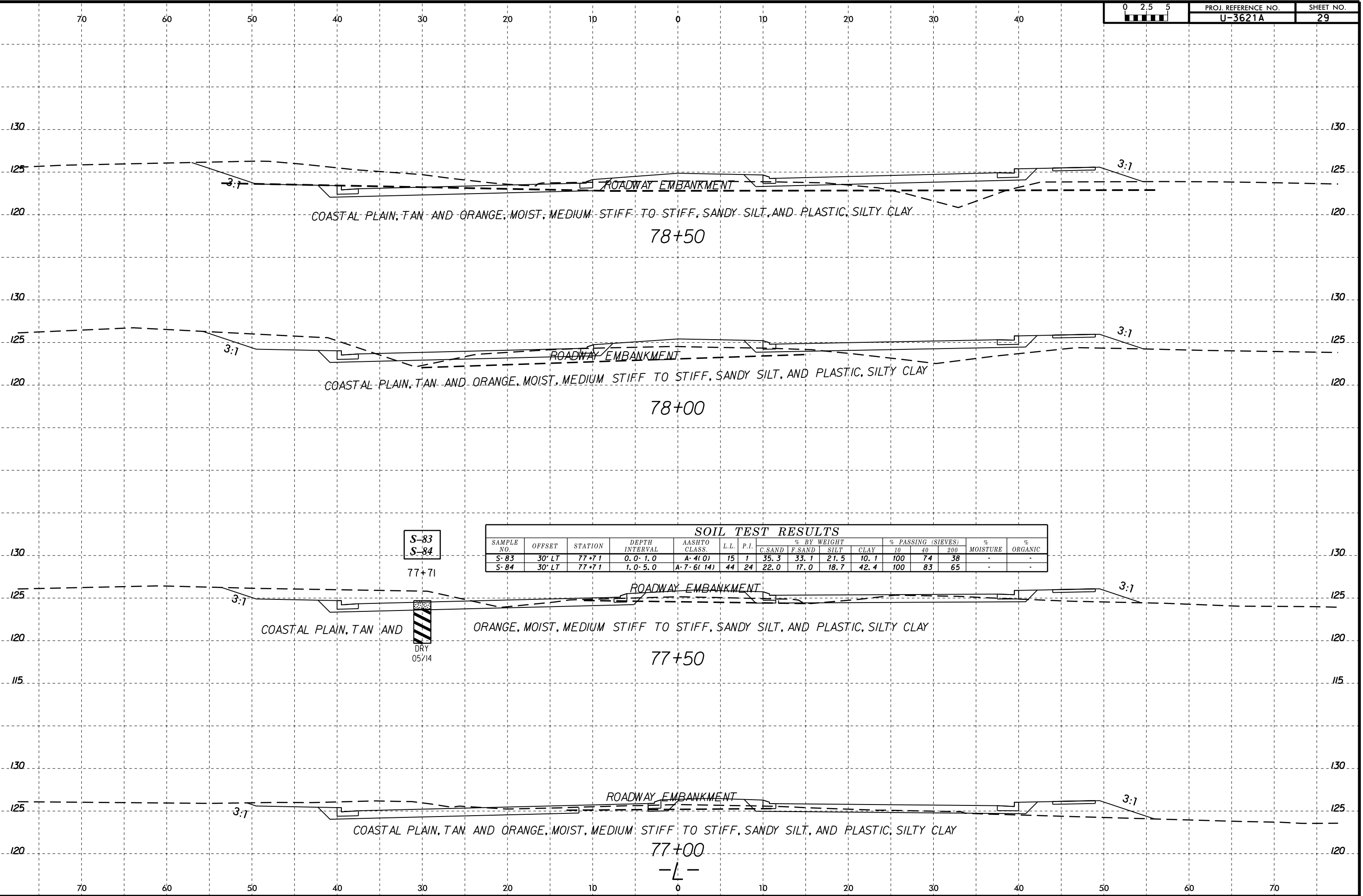
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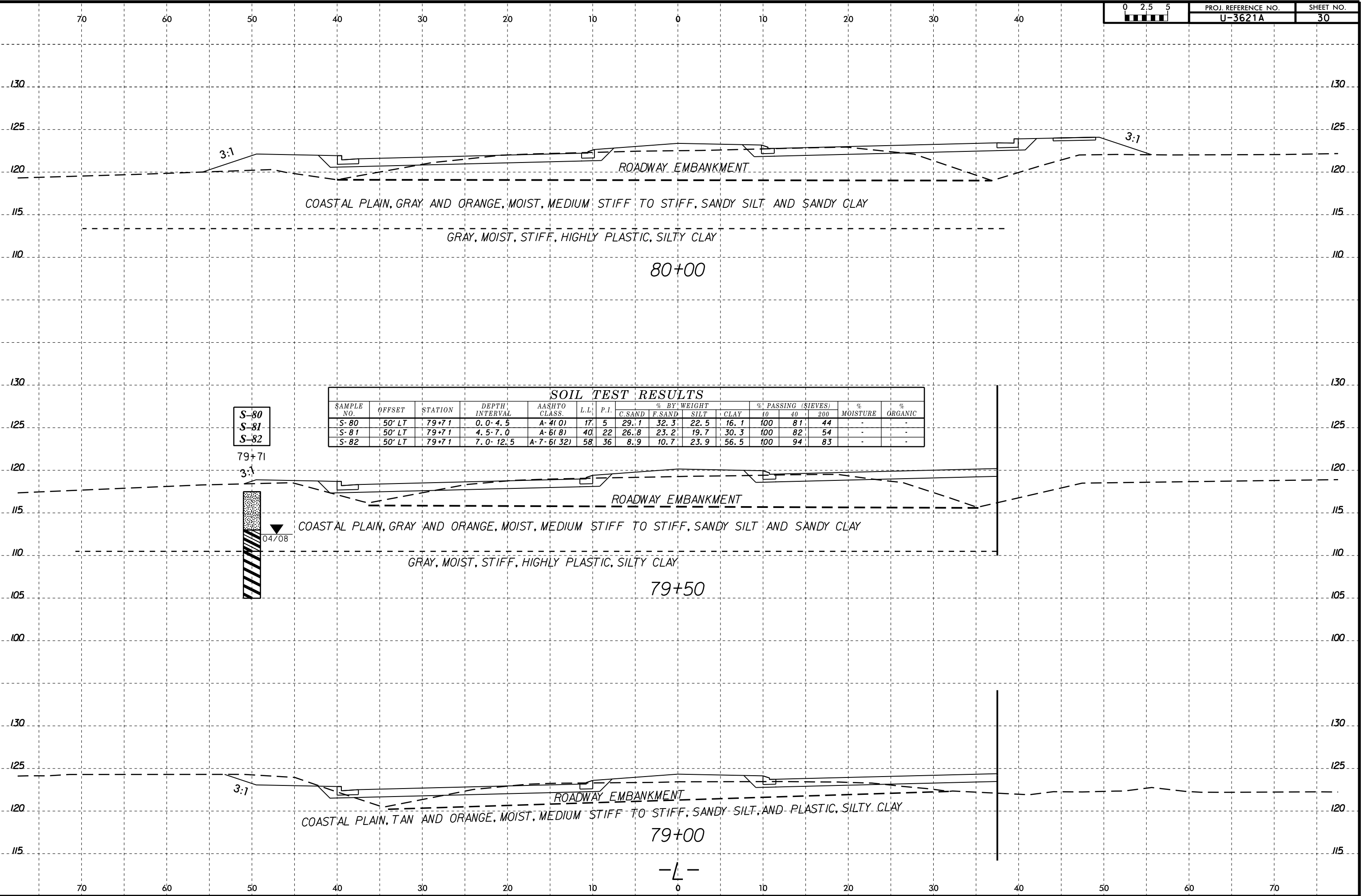
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**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	200		
S-83	30' LT	77+71	0.0-1.0	A-4(0)	15	1	35.3	33.1	21.5	10.1	100	74	38	-	-
S-84	30' LT	77+71	1.0-5.0	A-7-6(14)	44	24	22.0	17.0	18.7	42.4	100	83	65	-	-

8/23/99



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-80	50' LT	79+71	0.0-4.5	A-4(0)	17	5	29.1	32.3	22.5	16.1	100	81	44	-	-
S-81	50' LT	79+71	4.5-7.0	A-6(8)	40	22	26.8	23.2	19.7	30.3	100	82	54	-	-
S-82	50' LT	79+71	7.0-12.5	A-7-6(32)	58	36	8.9	10.7	23.9	56.5	100	94	83	-	-

S-80  
S-81  
S-82

79+71

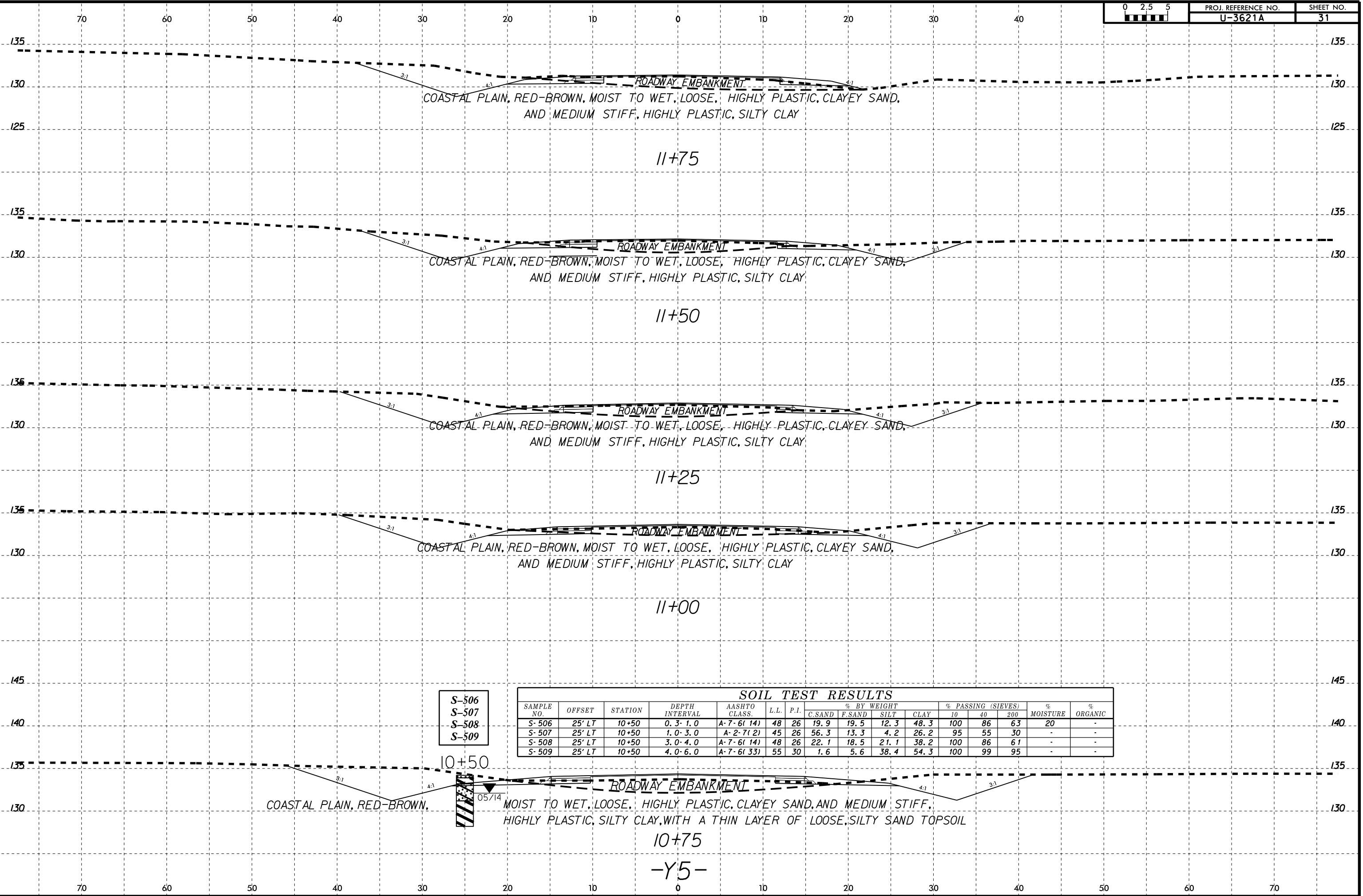
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04/08

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- S-506
- S-507
- S-508
- S-509

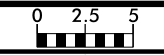
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-506	25' LT	10+50	0.3-1.0	A-7-6(14)	48	26	19.9	19.5	12.3	48.3	100	86	63	20	-
S-507	25' LT	10+50	1.0-3.0	A-2-7(2)	45	26	56.3	13.3	4.2	26.2	95	55	30	-	-
S-508	25' LT	10+50	3.0-4.0	A-7-6(14)	48	26	22.1	18.5	21.1	38.2	100	86	61	-	-
S-509	25' LT	10+50	4.0-6.0	A-7-6(33)	55	30	1.6	5.6	38.4	54.3	100	99	95	-	-

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10+75  
-Y5-

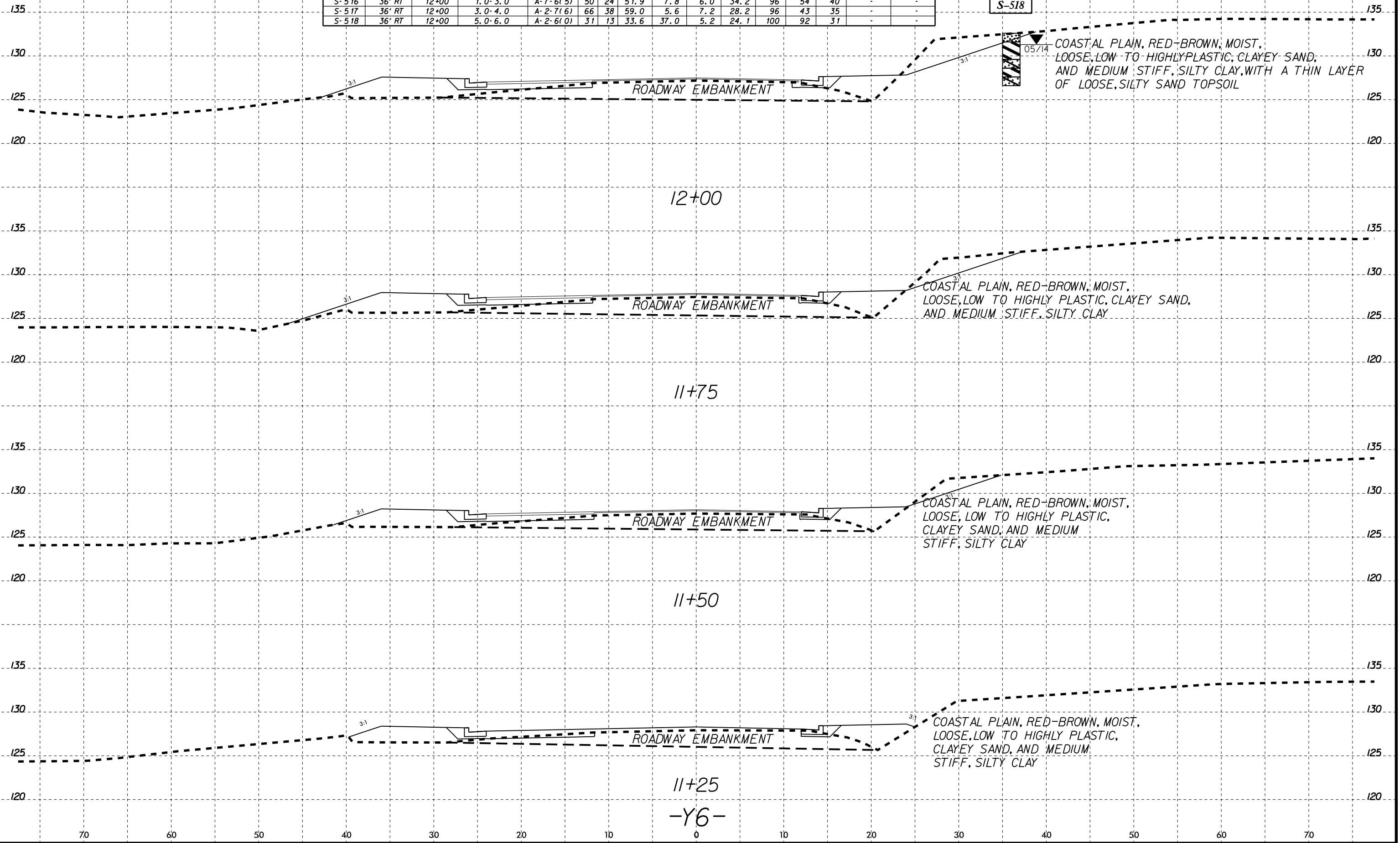


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-516	36' RT	12+00	1.0-3.0	A-7-6(5)	50	24	51.9	7.8	6.0	34.2	96	54	40	-	-
S-517	36' RT	12+00	3.0-4.0	A-2-7(6)	66	38	59.0	5.6	7.2	28.2	96	43	35	-	-
S-518	36' RT	12+00	5.0-6.0	A-2-6(0)	31	13	33.6	37.0	5.2	24.1	100	92	31	-	-

S-516  
S-517  
S-518



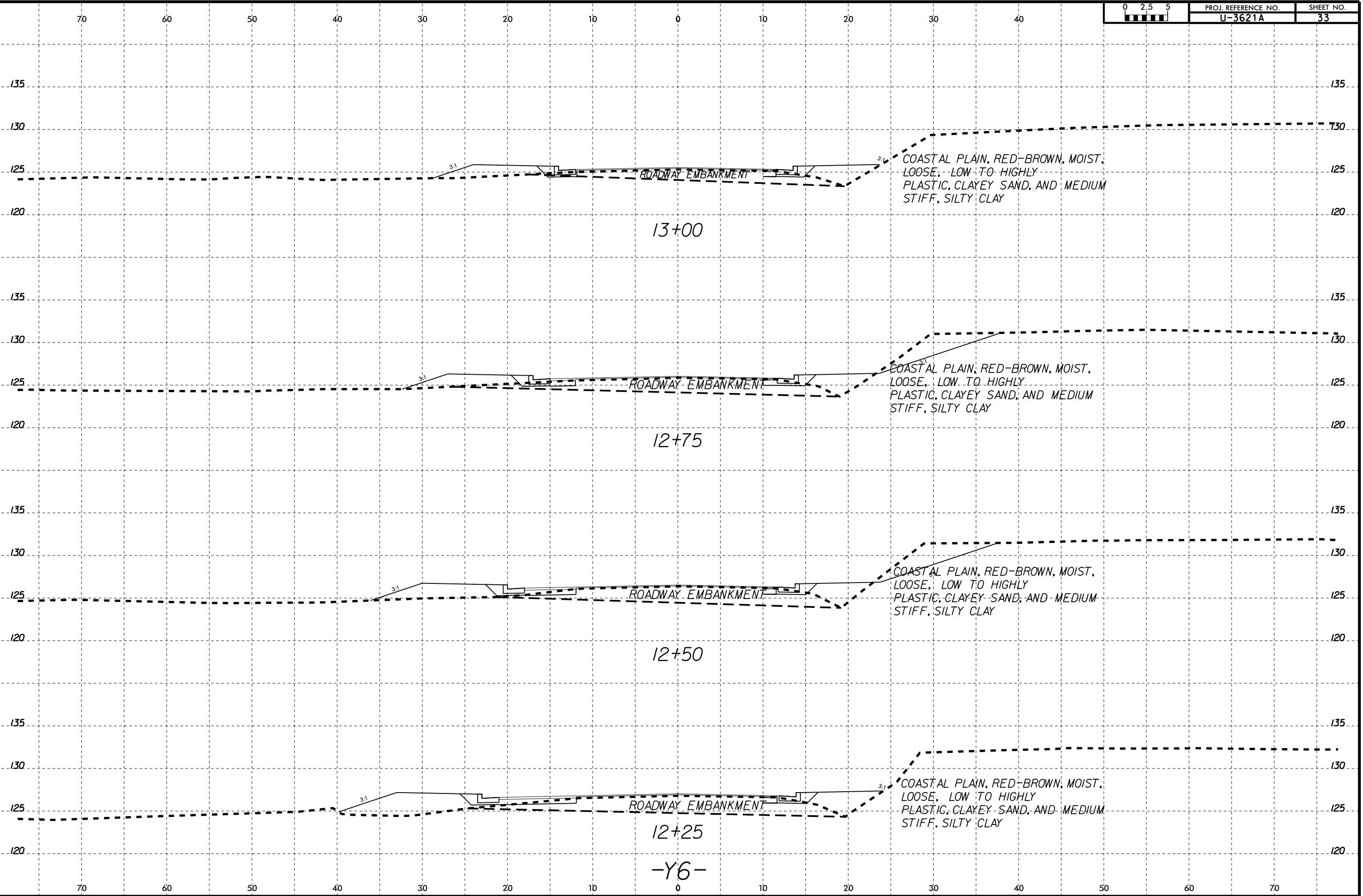
11+25  
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PROJ. REFERENCE NO.	SHEET NO.
U-3621A	33



13+00

12+75

12+50

12+25

-Y6-

COASTAL PLAIN, RED-BROWN, MOIST,  
LOOSE, LOW TO HIGHLY  
PLASTIC, CLAYEY SAND, AND MEDIUM  
STIFF, SILTY CLAY

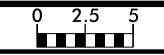
COASTAL PLAIN, RED-BROWN, MOIST,  
LOOSE, LOW TO HIGHLY  
PLASTIC, CLAYEY SAND, AND MEDIUM  
STIFF, SILTY CLAY

COASTAL PLAIN, RED-BROWN, MOIST,  
LOOSE, LOW TO HIGHLY  
PLASTIC, CLAYEY SAND, AND MEDIUM  
STIFF, SILTY CLAY

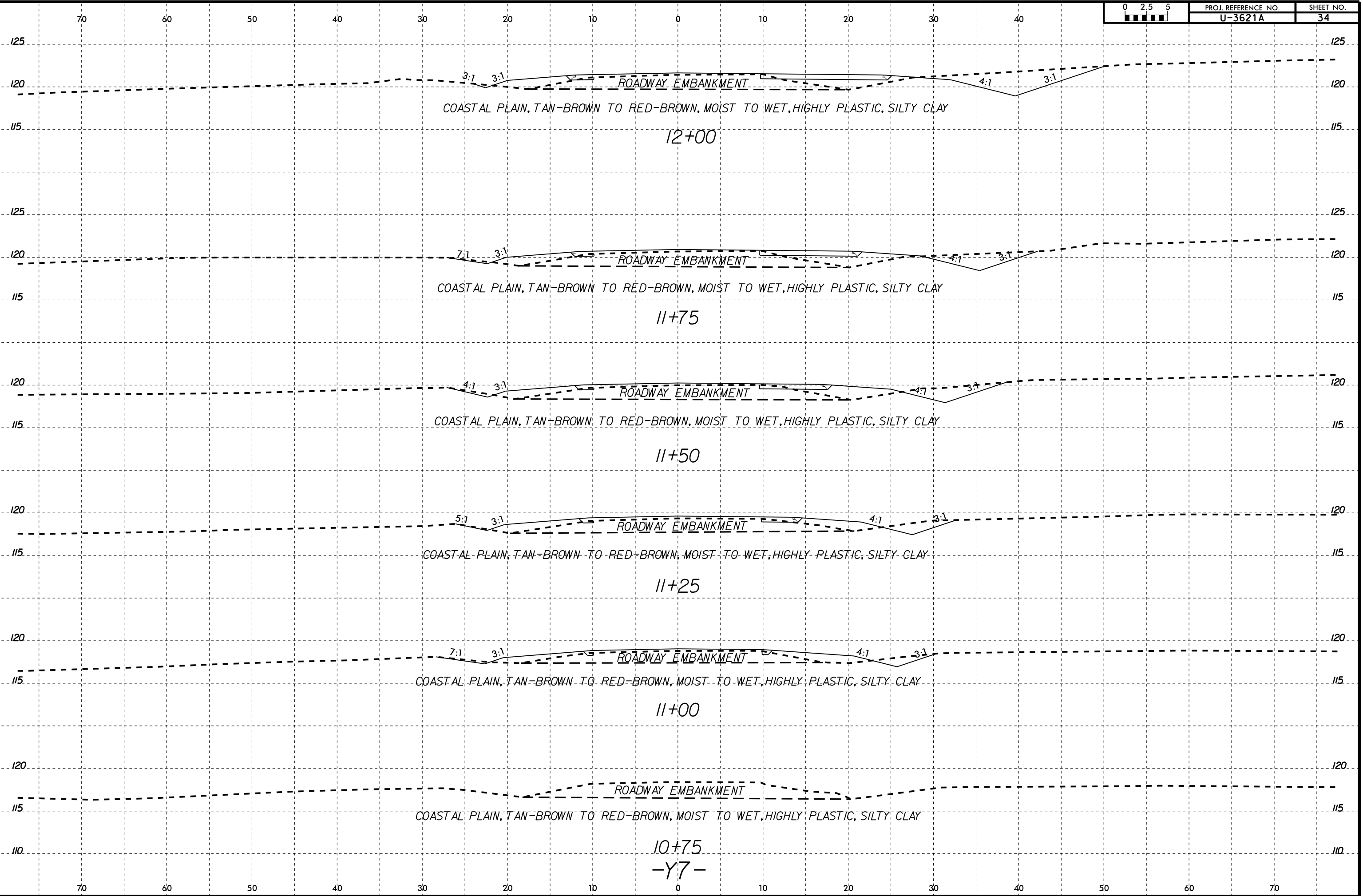
COASTAL PLAIN, RED-BROWN, MOIST,  
LOOSE, LOW TO HIGHLY  
PLASTIC, CLAYEY SAND, AND MEDIUM  
STIFF, SILTY CLAY

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PROJ. REFERENCE NO.	SHEET NO.
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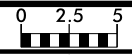


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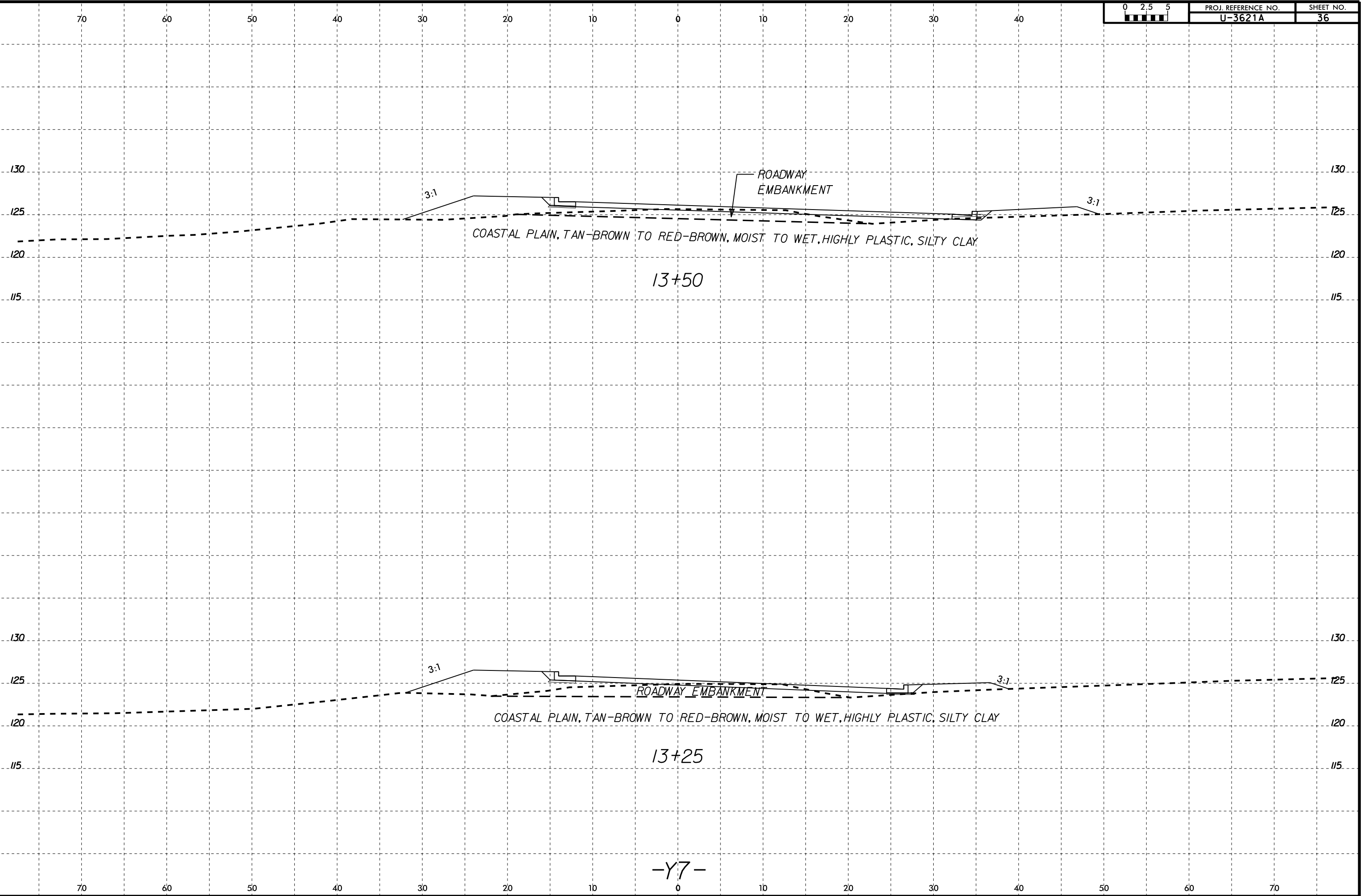
10+75  
-Y7-



8/23/99



PROJ. REFERENCE NO. U-3621A SHEET NO. 36



3:1

ROADWAY EMBANKMENT

3:1

COASTAL PLAIN, TAN-BROWN TO RED-BROWN, MOIST TO WET, HIGHLY PLASTIC, SILTY CLAY

13+50

3:1

ROADWAY EMBANKMENT

3:1

COASTAL PLAIN, TAN-BROWN TO RED-BROWN, MOIST TO WET, HIGHLY PLASTIC, SILTY CLAY

13+25

-Y7-

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