

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-5824	1	44

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.

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- NOTES:
- 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.
 - 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

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B. WORLEY, PG

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A. GROSS, GIT

M.B. MOSELEY

C. BOWEN

INVESTIGATED BY B. SMITH, PG

DRAWN BY B. SMITH, PG

CHECKED BY B. WORLEY, PG

SUBMITTED BY B. SMITH, PG

DATE AUGUST, 2018

Prepared in the
Office of:



NC FIRM LICENSE No: P-0339 and C-487
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DocuSigned by:
[Signature] 1/24/2019
BE01A49304C542E SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+52.50 - 106+65.31	4-11	12-18
-Y1-	10+75.00 - 12+09.51	4	
-Y2-	10+39.50 - 11+75.00	4	
-Y3-	10+25.00 - 15+25.00	5	
-Y4-	10+00.00 - 13+75.00	5	
-Y5-	10+00.0 - 10+92.74	6	
-Y6-	10+52.62 - 12+00.00	7	
-Y7A-	10+51.50 - 12+00.00	7	
-Y7B-	12+00.00 - 13+03.24	7	
-Y8A-	10+47.72 - 12+90.79	8	
-Y8B-	11+25.00 - 12+42.99	8	
-Y9-	10+75.00 - 13+75.00	9	
-Y10-	10+25.00 - 11+73.59	10	
-Y11A-	10+44.26 - 12+25.00	10	
-Y11B-	10+00.00 - 11+32.17	10	
-Y12_EX-	11+32.85 - 14+10.87	11	

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	18+50 - 21+00	19-22
-L-	43+00 - 46+50	23-27
-L-	92+50 - 97+50	28-36
-L-	102+50 - 105+50	37-41

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY FORSYTH
PROJECT DESCRIPTION NC 66 (OLD HOLLOW ROAD)
WIDENING FROM HARLEY DRIVE TO US 158

INVENTORY

REFERENCE: U-5824

PROJECT: 44395

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																							
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, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i>										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.										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:										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 (ROD) - 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 (IN 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.																																																																																																																							
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS										MINERALOGICAL COMPOSITION										COMPRESSIONIBILITY										PERCENTAGE OF MATERIAL										GROUND WATER										MISCELLANEOUS SYMBOLS										RECOMMENDATION SYMBOLS										ABBREVIATIONS																																																																					
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.										SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50										ORGANIC MATERIAL TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC > 10%										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										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY										UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK										AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - COARSE 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										DRILL UNITS: <input checked="" type="checkbox"/> D-50 <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST																																																																					
GROUP CLASS. A-1-a A-1-b A-3 A-2-4 A-2-5 A-2-6 A-2-7 A-4 A-5 A-6 A-7 A-1, A-2 A-3 A-4, A-5 A-6, A-7										CRISTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)										WEATHERED ROCK (WR) CRYSTALLINE ROCK (CR) NON-CRYSTALLINE ROCK (NCR) COASTAL PLAIN SEDIMENTARY ROCK (CP)										FRESH VERY SLIGHT (IV SLI.) SLIGHT (SLI.) MODERATE (MOD.) MODERATELY SEVERE (MOD. SEV.) SEVERE (SEV.) VERY SEVERE (IV SEV.) COMPLETE										WEATHERING FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (IV 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. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> 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. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i> VERY SEVERE (IV 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. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i> 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.										UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK										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 W - UNIT WEIGHT W_d - DRY UNIT WEIGHT										ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input checked="" type="checkbox"/> 2.25" HOLLOW STEM AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE <input type="checkbox"/> STEEL TEETH <input type="checkbox"/> TRICONE <input type="checkbox"/> TUNG-CARB. <input type="checkbox"/> CORE BIT										TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM): 4, 10, 40, 60, 200, 270 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										SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION LL - LIQUID LIMIT, PL - PLASTIC LIMIT, OM - OPTIMUM MOISTURE SHRINKAGE LIMIT SATURATED - (SAT.), WET - (W), MOIST - (M), DRY - (D)										TEXTURE OR GRAIN SIZE U.S. STD. SIEVE SIZE OPENING (MM): 4, 10, 40, 60, 200, 270 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										SOIL MOISTURE - CORRELATION OF TERMS SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION LL - LIQUID LIMIT, PL - PLASTIC LIMIT, OM - OPTIMUM MOISTURE SHRINKAGE LIMIT SATURATED - (SAT.), WET - (W), MOIST - (M), DRY - (D)										PLASTICITY PLASTICITY INDEX (PI), DRY STRENGTH NON PLASTIC, SLIGHTLY PLASTIC, MODERATELY PLASTIC, HIGHLY PLASTIC										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.									
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See Sheet 1A For Index of Sheets
 See Sheet 1B For Conventional Symbols
 See Sheet 1C-1 For Survey Control Sheet

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

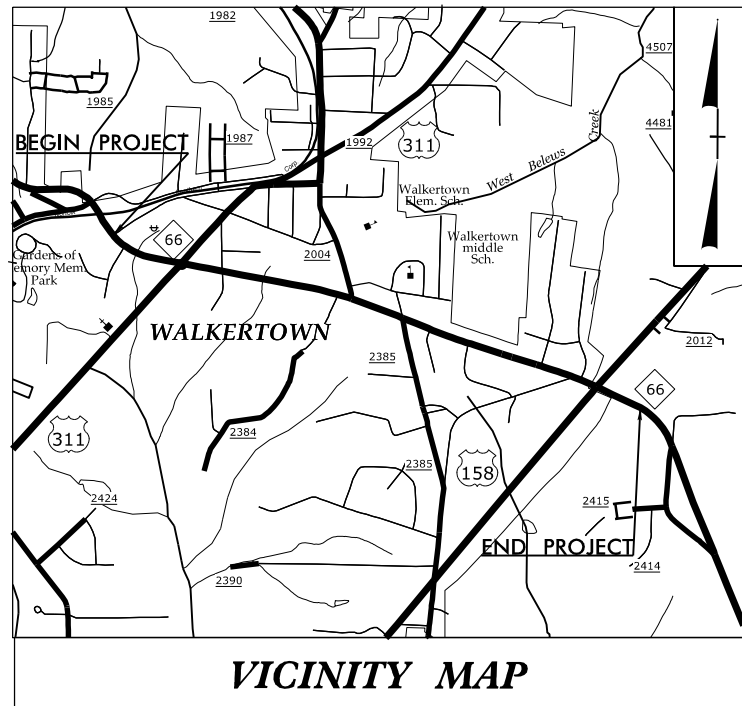
FORSYTH COUNTY

LOCATION: NC 66 (OLD HOLLOW ROAD) WIDENING
 FROM HARLEY DRIVE TO US 158

TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND RETAINING WALLS

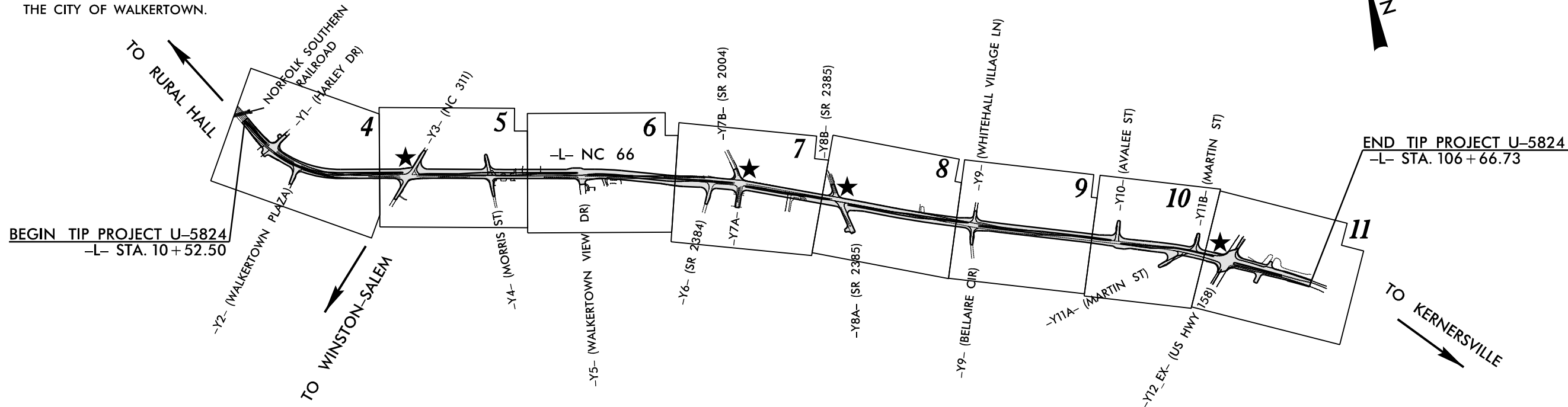
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-5824	3	44
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
44395.1.1		PE	

★ TRAFFIC SIGNAL



VICINITY MAP

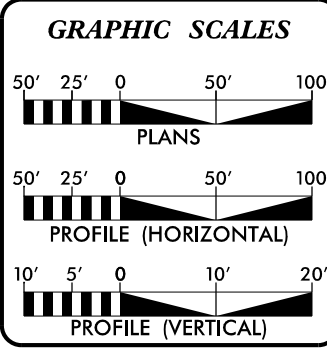
NOTE: THIS PROJECT IS WITHIN MUNICIPAL BOUNDARIES OF THE CITY OF WALKERTOWN.



DESIGN EXCEPTIONS REQUIRED FOR SAG VERTICAL CURVE K, CREST VERTICAL CURVE K, AND VERTICAL STOPPING SIGHT DISTANCE FOR CREST CURVE.
 CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____.

INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

CONTRACT:



DESIGN DATA

ADT 2020 =	22450
ADT 2040 =	24200
K =	8 %
D =	55 %
T =	4 % *
V =	50 MPH
* TTST =	1% DUAL=3%
FUNC CLASS =	MINOR ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-5824 =	1.821 MILES
TOTAL LENGTH TIP PROJECT U-5824 =	1.821 MILES

BRETT ABERNATHY, PE, PLS
NCDOT CONTACT, DIVISION 9

Prepared in the Office of:

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 Fax: (919) 732-6776
 www.summitde.net

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
 AUGUST 17, 2018

LETTING DATE:
 FEBRUARY 18, 2020

TRACY N. PARROTT, PE
PROJECT ENGINEER

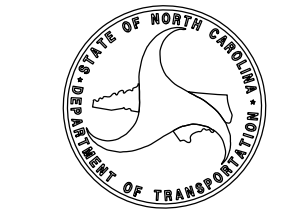
BRANDON W. JOHNSON, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



28-AUG-2018 15:55
 C:\Users\brgett\Documents\NCDOT Projects\Active Projects\U-5824 - Walkertown\U5824_GEO_RDWY_inventory\Drawings\U5824_GEO_inv_03.dgn
 \$\$\$USERNAME\$\$\$



919.732.3883 SUMMIT-ENGINEER.COM
504 Meadowland Drive, Hillsborough, NC 27278

August 15, 2018

WBS Number: 44395.1.1
TIP Number: U-5824
County: Forsyth
Description: NC 66 (Old Hollow Road) Widening from Harley Drive to US 158

SUBJECT: Geotechnical Report - Roadway Subsurface Inventory

Project Description

The proposed project is located on NC 66 within the municipal boundaries of the city of Walkertown. The project consists of 1.82 miles of roadway widening along NC 66 (Old Hollow Road). Roadway improvements, designed to improve traffic flow associated with the new widening, are also proposed along 12 secondary roads and business entrances that intersect with NC 66. The proposed earthworks are relatively minor throughout the project corridor with most proposed grade elevations within a few feet of the existing grade of NC 66. However, there are a few areas of the project that have some proposed cut sections of up to 8 feet deep and embankment heights of up to 20 feet. One structure, a 225-foot retaining wall, is proposed within the project corridor along the south side of NC 66.

The geotechnical investigation was conducted from June 20, 2018 to July 3, 2018. Borings were advanced using a Diedrich D-50 drill machine equipped with an automatic hammer. Standard Penetration Tests were performed at all planned boring locations to provide subsurface information for roadbed and slope design/construction. Representative soil samples were collected and submitted to Summit's soils laboratory for classification and moisture content testing. Where possible, borings were left open for a minimum of 24 hours to collect groundwater data. All investigations and reporting were performed in accordance with the NCDOT Geotechnical Engineering Unit's 2016 "Geotechnical Investigation and Recommendations Manual."

The following alignments were investigated for this project:

<u>Alignment</u>	<u>Station(±)</u>
-L-	10+52.50 - 106+65.31
-Y1-	10+75.00 - 12+09.51

-Y2-	10+39.50 - 11+75.00
-Y3-	10+25.00 - 15+25.00
-Y4-	10+00.00 - 13+75.00
-Y5-	10+00.00 - 10+92.74
-Y6-	10+52.62 - 12+00.00
-Y7A-	10+51.50 - 12+00.00
-Y7B-	12+00.00 - 13+03.24
-Y8A-	10+47.72 - 12+90.79
-Y8B-	11+25.00 - 12+42.99
-Y9-	10+75.00 - 13+75.00
-Y10-	10+25.00 - 11+73.59
-Y11A-	10+44.23 - 12+25.00
-Y11B-	10+00.00 - 11+32.17
-Y12_EX-	11+32.85 - 14+10.87

Physiography and Geography

The project corridor is located in north-central North Carolina in the Piedmont Physiographic Province. Topography in the region is characterized by gently rolling, well rounded hills and long low ridges with a few hundred feet of elevation difference between the hills and valleys. In general, the topography within the project corridor would fit this description. Elevations within the project corridor range from approximately 919 feet to approximately 1,004 feet above sea level. The topographic high occurs near the top of the intersection of NC 66 and Main Street (SR 2004). The topographic low occurs within the floodplain of Lowery Mill Creek.

Geologically, the project corridor is located within the Milton Belt. This small geologic belt is sandwiched in between the Dan River Triassic Basin to the west and the Carolina Slate Belt to the east. It is characterized by strongly foliated gneiss and schist that is commonly felsic in composition. Evidence suggests that rocks of the Milton Belt are mainly Precambrian in age and were likely metamorphosed during the early to middle-Paleozoic. The dominant rock types underlying the project corridor are believed to be Biotite Gneiss and Schist.

Lowery Mill Creek is the only significant body of water within the project corridor. A few small unnamed tributaries and/or drainage features were encountered or observed within the project corridor during the investigation.

Soil Properties

Roadway Embankment soils from the construction of existing NC 66 and the various intersecting secondary roads are present within the project corridor. These soils are quite similar to the local Residual soils that they were sourced from. Roadway Embankment soils consist of mostly sandy silts (A-4) and clayey silts (A-5). Laboratory analysis revealed a range of liquid limits from 26 to 51 with an average of 37. Plasticity Index (PI) values ranged from 4 to 6 with an average of 5. Soil moistures varied from 17.7% to 34.3% with an average of 28.1%. The higher moisture values were typically encountered near the base of existing areas of deeper fill. Soil densities of the sandy and clayey silts typically range from soft to stiff. Some areas of silty sands (A-2-4) are also present within the Roadway Embankment. Only 1 non-cohesive

sample was lab tested and the results showed a liquid limit of 25, a PI value of 3, and moisture content of 15.7%. Soil densities of the silty sands typically range from loose to medium dense with isolated very dense areas. Roadway Embankment soils often appear similar to the local residual soils in color and composition. However, they often have a “reworked” appearance, with a large variation in grain size. They can contain little to trace amounts of organic material, gravel, cobbles, boulders and/or other types of debris.

Alluvial soils, soils that have been transported and deposited by water, were not encountered during the geotechnical investigation. However, alluvial soils are believed to be present within a few areas of the project corridor. This is based on observations made in the field and data provided in the wetlands survey file. Alluvial soils are typically wet to saturated, very soft to soft, and trace to highly organic. Specific locations where these soils are believed to be present will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Residual soils, soils derived from the weathering of rock, are the dominant soil origin within the project corridor. In general, the residual soils follow the typical weathering profile seen throughout the piedmont. The clays, when present, are usually found closer to the ground surface. The silts and sands are typically found deeper and closer to the parent rock source. However, much like the parent rocks that they weather from, the Residual soils can vary significantly in some areas in both composition and vertical/horizontal distribution. In several areas throughout the project corridor, the top foot or two of Residual soils appeared disturbed or reworked. This may have been due to past agricultural activities and/or more recent development occurring along NC 66. Clayey silts (A-5) and sandy silts (A-4) are the predominate soil type and occur throughout the project corridor. These soils are saprolitic in many areas and are typically micaceous. Laboratory analysis indicated a range of liquid limits from 25 to 70 with an average of 50. PI values varied from 1 to 10 with an average of 5. Moisture content ranged from 17.3% to 46.4% with an average of 24.9%. Higher moisture values were typically encountered in topographically low areas. Sieve analysis showed that even the clayey silts have a very high sand content. Soil densities of the sandy and clayey silts typically range from medium stiff to very stiff with isolated very soft and hard areas. Some trace amounts of Manganese Oxide (MnO) were observed within the clayey and sandy silts. Manganese oxide (MnO) will generate nearly frictionless surfaces of indeterminate orientation throughout the Residual soil profile, which can lead to slope stability issues. However, no significant amounts of MnO were encountered during the geotechnical investigation. Clayey, silty sands (A-2-5) and silty sands (A-2-4) are also prevalent throughout the project corridor. These soils are typically saprolitic and micaceous. Laboratory analysis of these sands indicated a range of liquid limits from 27 to 58 with an average of 46. PI values varied from 0 to 7 with an average of 1. Moisture content ranged from 14.7% to 21.7% with an average of 17.6%. Soil densities of the sands typically range from loose to medium dense with some dense to very dense areas. Silty clays (A-7-5 & A-7-6) are present in some areas within the project corridor. These soils are typically not saprolitic and contain less visible mica. Laboratory testing of the clays showed a range of liquid limits from 41 to 80 with an average of 61. PI values varied from 13 to 36 with an average of 23. Moisture content ranged from 15.8% to 37.7% with an average of 24.3%. Soil densities of the clays typically range from stiff to very stiff with isolated soft to medium stiff areas. Sieve analysis showed that the clays often have a very high sand content which helps to limit their plasticity. A few areas within the project corridor do contain highly plastic clays (PI value greater than 26) and will be highlighted in the “Areas of Special Geotechnical Interest” section of this text report.

Rock Properties

Crystalline Rock was not encountered during this investigation and is not expected to be a factor during roadway construction. Weathered Rock (Mica Schist) was encountered in only one area but was greater than six feet from proposed grade and is not expected to be a factor during roadway construction.

Groundwater Properties

The field investigation as conducted during a period of near average rainfall. Groundwater was only encountered in two borings located in the lowest areas of the project. Between the two borings the average elevation of groundwater could be inferred at approximately 931.7 feet. Groundwater was not encountered within 6 feet of proposed grade and is not expected to be a factor during roadway construction.

Areas of Special Geotechnical Interest

Plastic Soils - During the geotechnical investigation, highly plastic clays were encountered in a few areas within the project corridor. More detailed information on these soils can be found in the “Soil Properties” section of this text report. The following approximate locations listed below show areas where highly plastic clays are present within the project corridor:

<u>Alignment</u>	<u>Station(±)</u>	<u>Offset</u>
-L-	71+25 – 73+25	Left & Right
-L-	92+75 – 97+25	Left & Right
-L-	103+00 – 105+25	Left & Right

Alluvial Soils - During the geotechnical investigation, areas of Alluvial soils were observed. These soils are typically soft, wet or saturated, and may contain higher amounts of organic material. More detailed information on these soils can be found in the “Soil Properties” section of this text report. The following approximate locations listed below show areas where Alluvial soils are present within the project corridor:

<u>Alignment</u>	<u>Station(±)</u>	<u>Offset</u>
-L-	19+06 – 20+41	Left

Soft and/or Wet Soils – During the geotechnical investigation, low areas containing soft and/or wet Residual soils were encountered. More detailed information on these soils can be found in the “Soil Properties” section of this text report. The following approximate locations listed below show areas where soft and/or wet Residual soils are present within the project corridor.

<u>Alignment</u>	<u>Station(±)</u>	<u>Offset</u>
-L-	18+75 – 19+75	Left & Right
-L-	42+75 – 45+50	Left
-L-	105+25 – 106+65	Left & Right

References


The Geology of the Carolinas, J. Wright Horton, Jr., and Victor A. Zullo

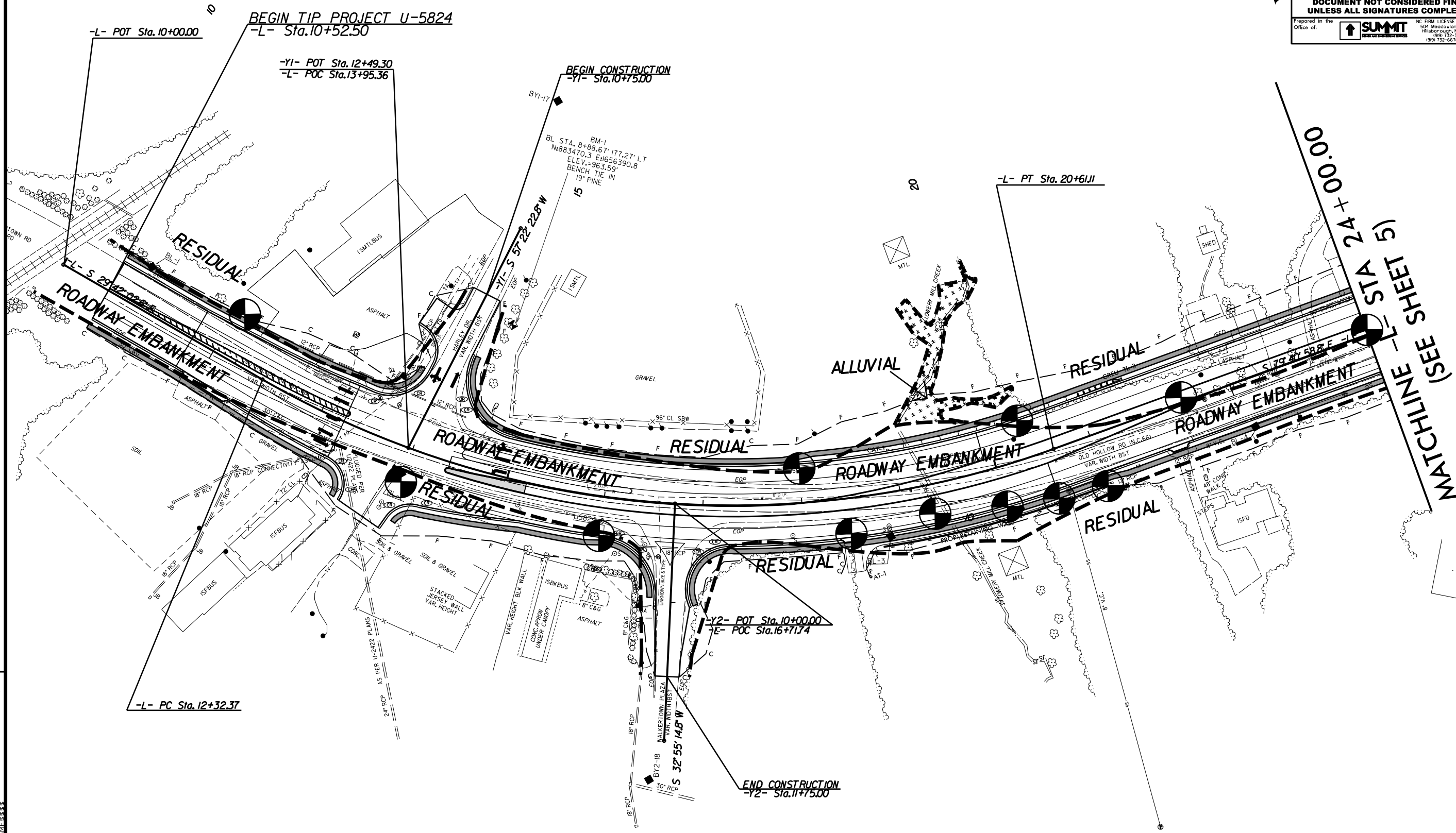
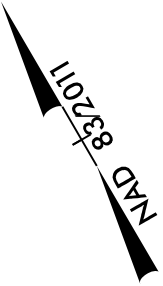
Respectfully Submitted,

Brett Smith, PG
Project Geologist
Summit Design and Engineering Services, PLLC

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L
PI Sta 16+75.18
Δ = 49° 58' 56" (LT)
D = 6' 01" 52"
L = 828.74'
T = 442.81'
R = 950.00'
SE = 4%
RO = 192'

PROJECT REFERENCE NO.	SHEET NO.
U-5824	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 NC FIRM LICENSE No: P-0337 504 Meadows Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)



MATCHLINE - SHEET 5 (SEE STA 24+00.00)

REVISIONS

8/17/09

PROJECT REFERENCE NO.	SHEET NO.
U-5824	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
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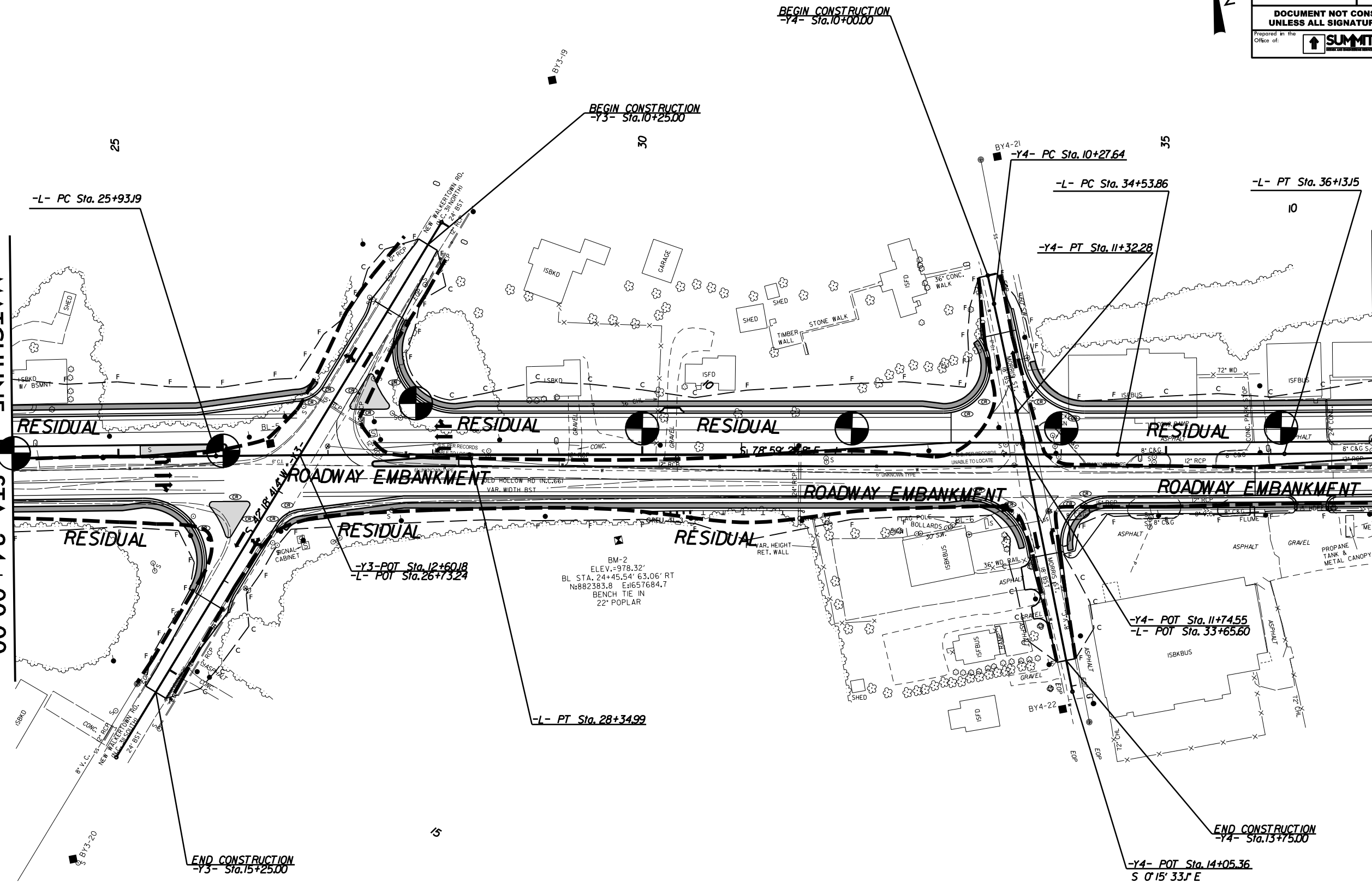
-L-
 PI Sta 27+14.09 PI Sta 35+33.50
 $\Delta = 0' 41' 30.0"$ (RT) $\Delta = 0' 27' 25.2"$ (LT)
 $D = 0' 17' 09.8"$ $D = 0' 17' 12.9"$
 $L = 241.80'$ $L = 159.29'$
 $T = 120.90'$ $T = 79.64'$
 $R = 20,030.00'$ $R = 19,970.00'$
 SE = NC SE = NC

-Y4-
 PI Sta 10+79.96
 $\Delta = 1' 11' 56.8"$ (RT)
 $D = 1' 08' 45.3"$
 $L = 104.64'$
 $T = 52.32'$
 $R = 5,000.00'$

NAD 83/2011

MATCHLINE -L- STA 24+00.00 (SEE SHEET 4)

MATCHLINE -L- STA 37+00.00 (SEE SHEET 6)



REVISIONS

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8/17/09

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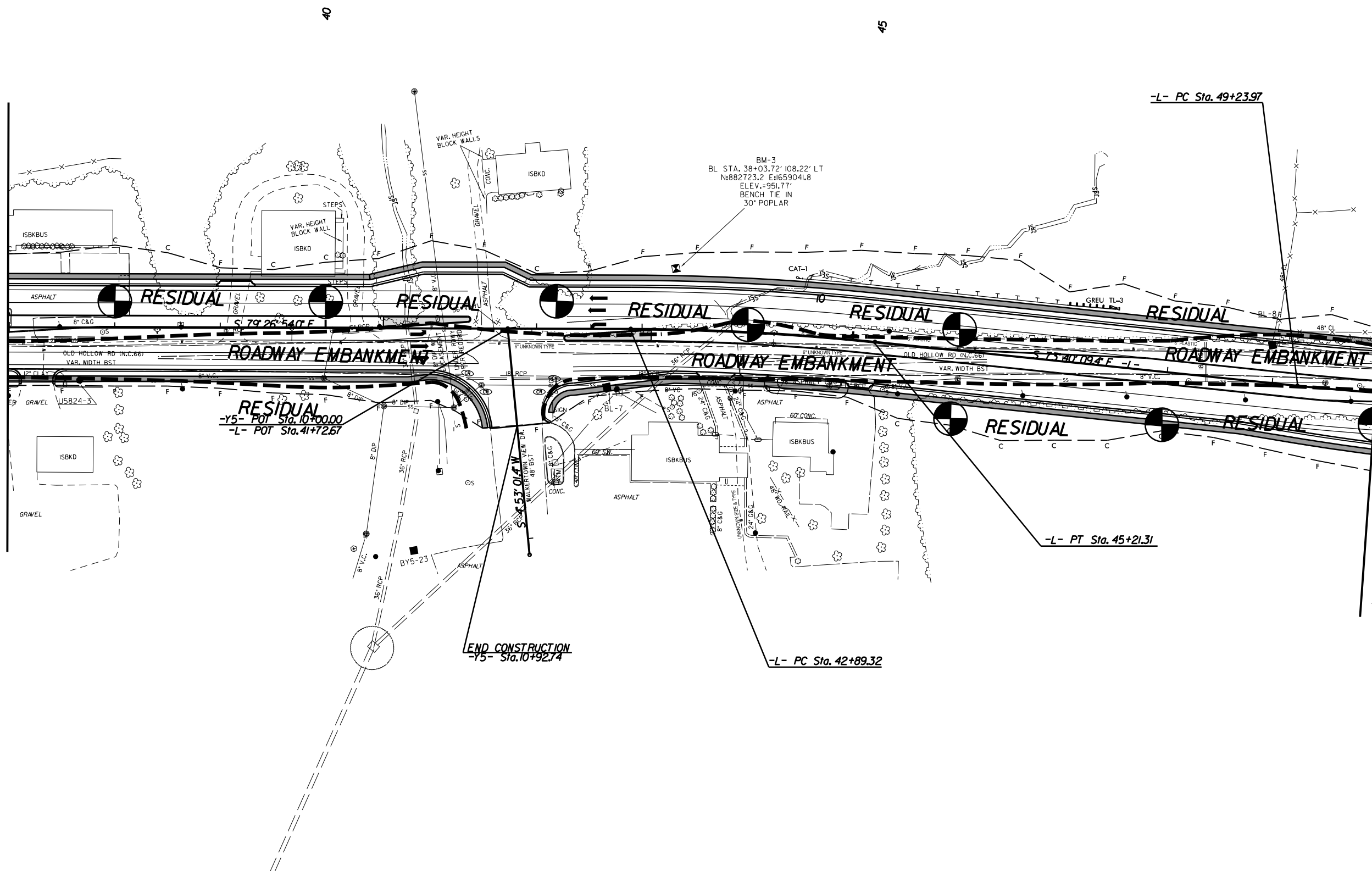
L	
PI Sta 44+05.41	PI Sta 50+18.92
$\Delta = 5^{\circ} 46' 44.5" (RT)$	$\Delta = 4^{\circ} 43' 39.5" (LT)$
D = 2' 29' 28.0"	D = 2' 29' 28.0"
L = 231.99'	L = 189.78'
T = 116.09'	T = 94.95'
R = 2,300.00'	R = 2,300.00'
SE = 3%	SE = 3%
RO = 144'	RO = 144'

NAD 83/2011

PROJECT REFERENCE NO. U-5824	SHEET NO. 6
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: 	NC FIRM LICENSE No: P-0339 504 Meadows Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)

MATCHLINE -L- STA 37 + 00.00
(SEE SHEET 5)

MATCHLINE -L- STA 50 + 00.00
(SEE SHEET 7)



40

45

50

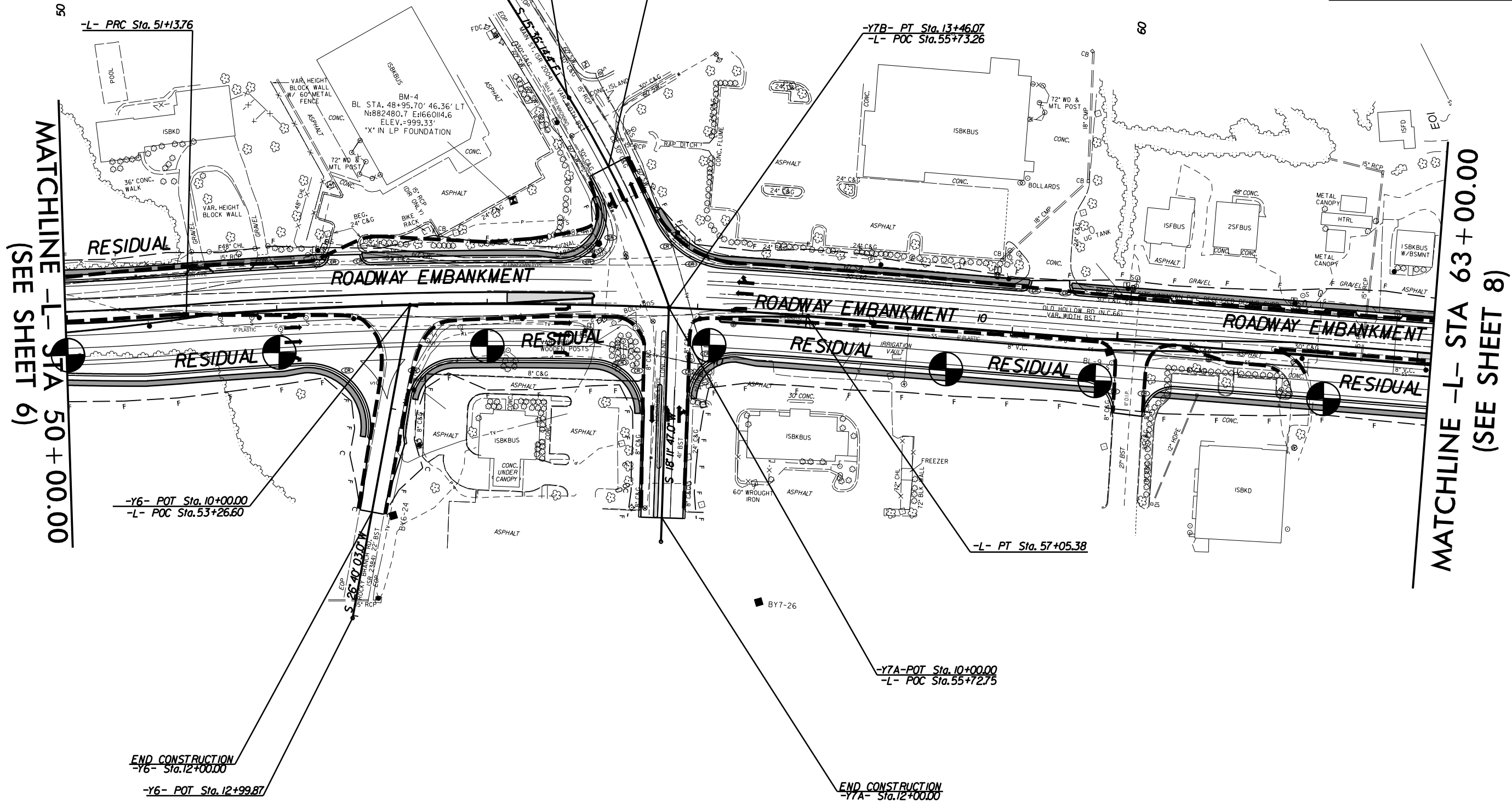
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REVISIONS

-Y7B-
PI Sta 12+35.76
 $\Delta = 12' 41" 34.4" (RT)$
 $D = 5' 43' 46.5"$
 $L = 221.53'$
 $T = 111.22'$
 $R = 1,000.00'$

PI Sta 50+18.92
 $\Delta = 4' 43' 39.8" (LT)$
 $D = 2' 29' 28.0"$
 $L = 189.78'$
 $T = 94.95'$
 $R = 2,300.00'$
 $SE = 3\%$
 $RO = 144'$

-L-
PI Sta 54+10.21
 $\Delta = 9' 11" 11.0" (RT)$
 $D = 1' 33' 09.8"$
 $L = 591.63'$
 $T = 296.45'$
 $R = 3,690.00'$
 $SE = 2\%$
 $RO = 96'$



PROJECT REFERENCE NO. U-5824	SHEET NO. 7
RW SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office at: 	NC FIRM LICENSE No: P-0399 Sgt. Madsen Drive Hillsborough, NC 27278 (919) 732-3881 (919) 732-6676 (FAX)

8/17/99

REVISIONS

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-Y8A-
PI Sta 11+10.45
Δ = 1'26"19.4" (LT)
D = 2'17"30.6"
L = 62.78'
T = 31.39'
R = 2,500.00'

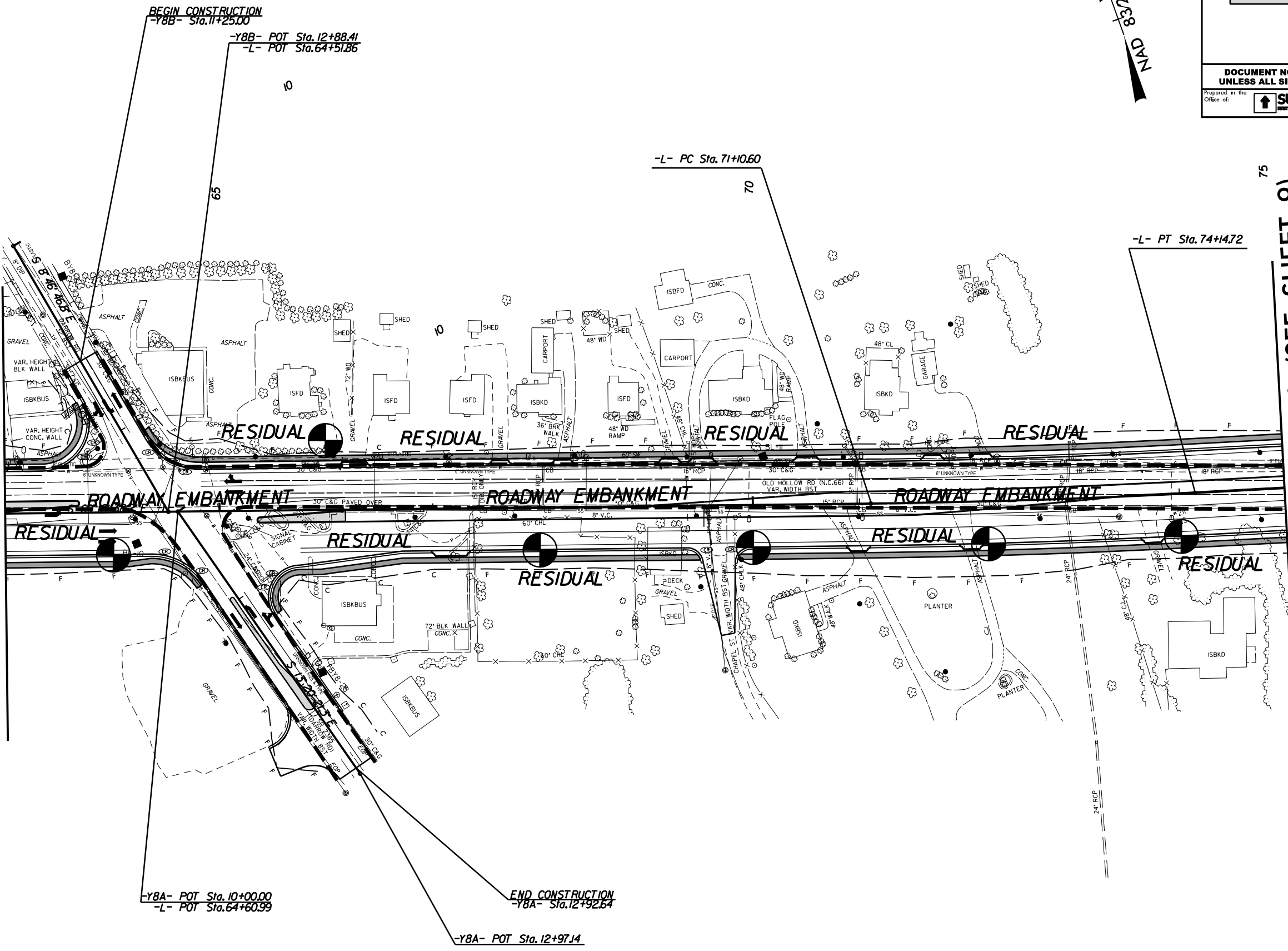
-L-
PI Sta 72+62.68
Δ = 2'23"13.1" (LT)
D = 0'47"05.5"
L = 304.12'
T = 152.08'
R = 7,300.00'
SE = NC

PROJECT REFERENCE NO. U-5824	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: SUMMIT	NC FIRM LICENSE No: P-0339 504 Meadowslands Drive Hillsborough, NC 27278 (919) 732-3883 (919) 732-6676 (FAX)



MATCHLINE -L- STA 63 + 00.00 (SEE SHEET 7)

MATCHLINE -L- STA 75 + 00.00 (SEE SHEET 9)



BEGIN CONSTRUCTION
-Y8B- Sta. 11+25.00
-Y8B- POT Sta. 12+88.41
-L- POT Sta. 64+51.86

-L- PC Sta. 71+10.60

-L- PT Sta. 74+14.72


-Y8A- POT Sta. 10+00.00
-L- POT Sta. 64+60.99

END CONSTRUCTION
-Y8A- Sta. 12+92.64

-Y8A- POT Sta. 12+97.14

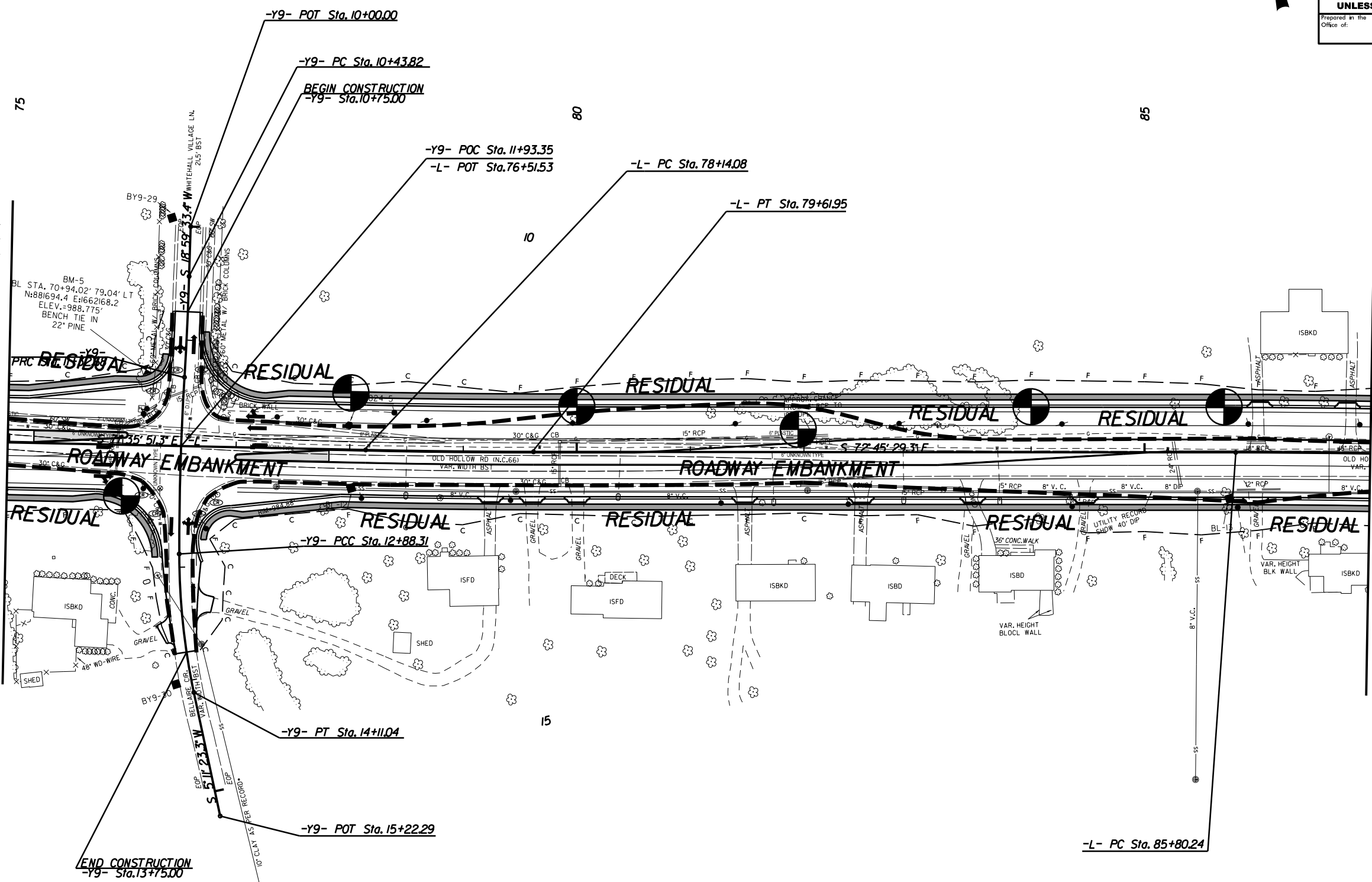
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 8/17/18
 REVISIONS

-L-		-Y9-		
PI Sta 78+88.02	PI Sta 87+15.36	PI Sta 10+88.25	PI Sta 12+10.52	PI Sta 13+49.89
$\Delta = 1'09'38.0"$ (LT)	$\Delta = 2'07'14.6"$ (RT)	$\Delta = 1'41'49.3"$ (RT)	$\Delta = 3'34'51.9"$ (LT)	$\Delta = 1'55'07.5"$ (LT)
$D = 0'47'05.5"$	$D = 0'47'05.5"$	$D = 1'54'35.5"$	$D = 2'18'03.7"$	$D = 9'42'40.1"$
$L = 147.86'$	$L = 270.20'$	$L = 88.86'$	$L = 155.63'$	$L = 122.73'$
$T = 73.93'$	$T = 135.12'$	$T = 44.43'$	$T = 77.84'$	$T = 61.59'$
$R = 7,300.00'$	$R = 7,300.00'$	$R = 3,000.00'$	$R = 2,490.00'$	$R = 590.00'$
SE = NC	SE = NC			

PROJECT REFERENCE NO. U-5824	SHEET NO. 9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 NC FIRM LICENSE No: P-0339 504 Meadows Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)

MATCHLINE -L- STA 75 + 00.00
 (SEE SHEET 8)

MATCHLINE -L- STA 87 + 00.00
 (SEE SHEET 10)



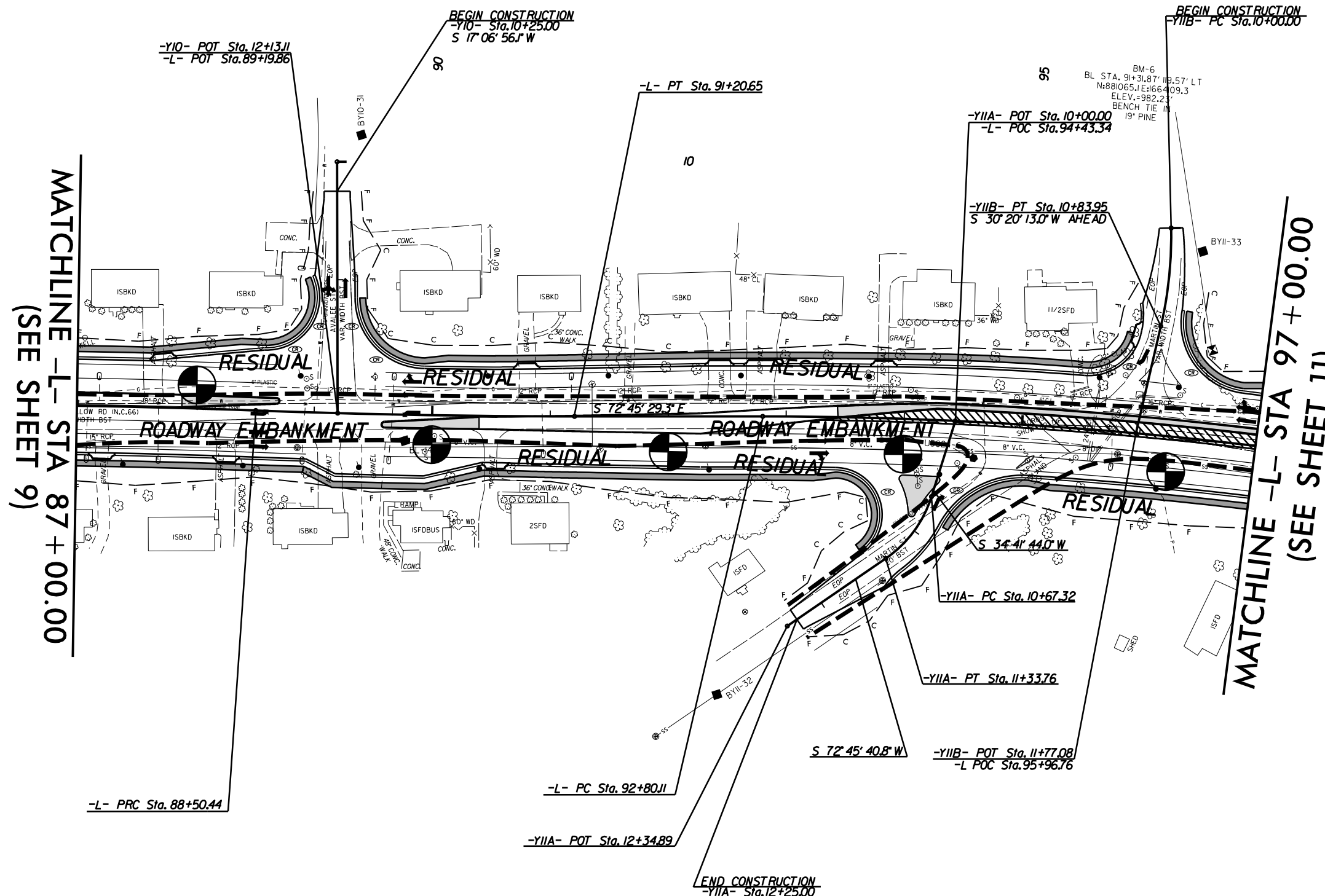
8/17/99

REVISIONS
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 \$\$\$\$

-L-		
PI Sta 87+15.36	PI Sta 89+85.56	PI Sta 95+14.03
$\Delta = 2' 07" 14.6'$ (RT)	$\Delta = 2' 07" 14.6'$ (LT)	$\Delta = 7' 38" 49.5'$ (RT)
D = 0' 47" 05.5"	D = 0' 47" 05.5"	D = 1' 38" 13.3"
L = 270.20'	L = 270.20'	L = 467.13'
T = 135.12'	T = 135.12'	T = 233.91'
R = 7,300.00'	R = 7,300.00'	R = 3,500.00'
SE = NC	SE = NC	SE = 2%
		RO = 98'

-YIIA-	-YIIB-
PI Sta 11+01.82	PI Sta 10+42.19
$\Delta = 38' 03" 56.8'$ (RT)	$\Delta = 14' 08" 48.2'$ (RT)
D = 57' 17" 44.8"	D = 16' 51" 06.1"
L = 66.44'	L = 83.95'
T = 34.50'	T = 42.19'
R = 100.00'	R = 340.00'

PROJECT REFERENCE NO. U-5824	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of: SUMMIT	NC FIRM LICENSE No: P-0339 504 Meadows Drive Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)



MATCHLINE -L- STA 87 + 00.00
 (SEE SHEET 9)

MATCHLINE -L- STA 97 + 00.00
 (SEE SHEET 11)



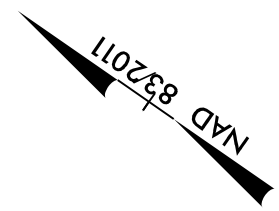
8/17/99


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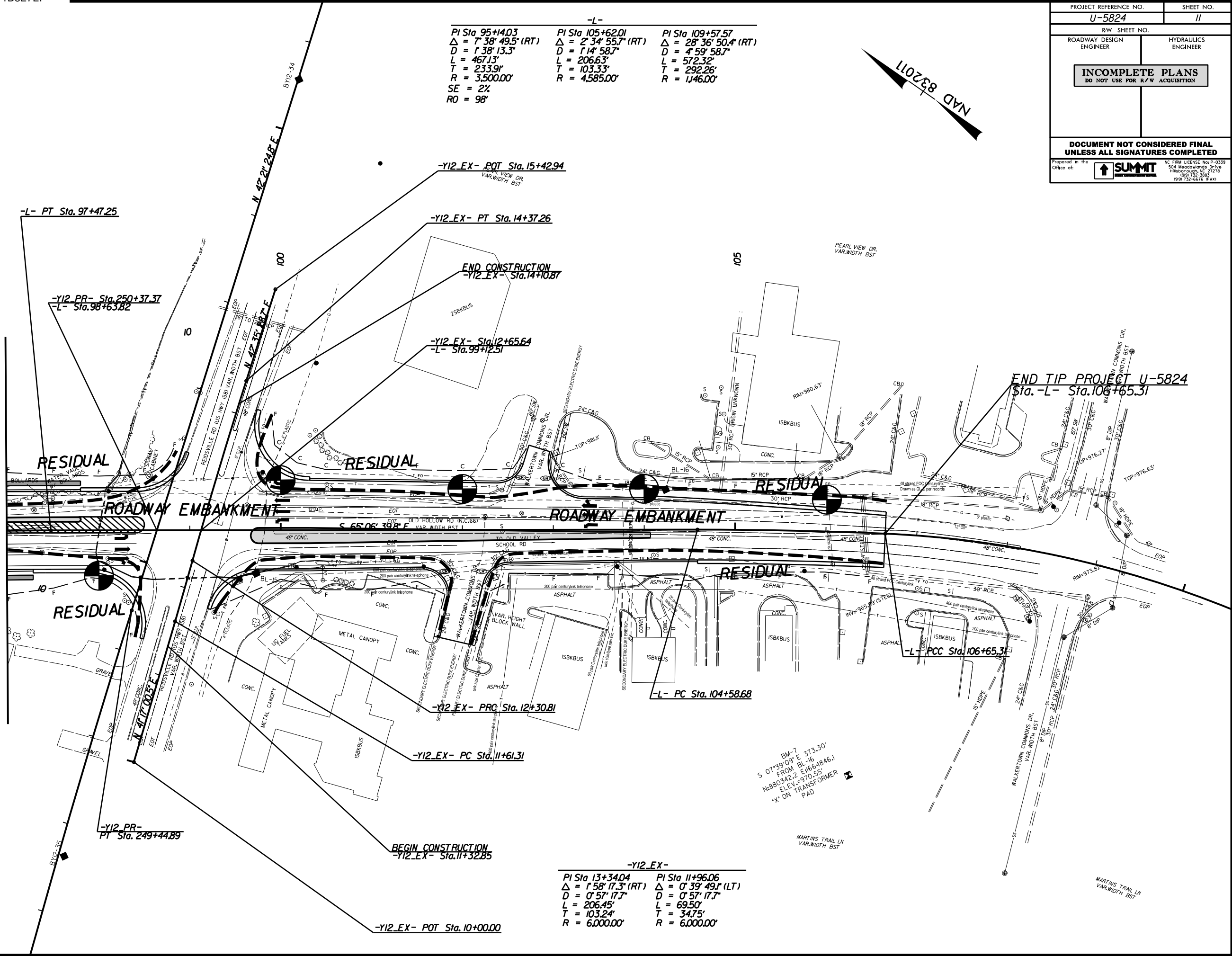
REVISIONS

MATCHLINE -L- STA 97+00.00 (SEE SHEET 10)

-L-		
PI Sta 95+14.03	PI Sta 105+62.01	PI Sta 109+57.57
$\Delta = 7' 38' 49.5" (RT)$	$\Delta = 2' 34' 55.7" (RT)$	$\Delta = 28' 36' 50.4" (RT)$
$D = 1' 38' 13.3"$	$D = 1' 14' 58.7"$	$D = 4' 59' 58.7"$
$L = 467.13'$	$L = 206.63'$	$L = 572.32'$
$T = 233.91'$	$T = 103.33'$	$T = 292.26'$
$R = 3,500.00'$	$R = 4,585.00'$	$R = 1,460.00'$
$SE = 2\%$		
$RO = 98'$		



PROJECT REFERENCE NO. U-5824	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	 <small>NC FIRM LICENSE No. P-03379 504 Meadows Road Hillsborough, NC 27278 (919) 332-3883 (919) 732-6676 (FAX)</small>



-Y12_EX- POT Sta. 15+42.94

-Y12_EX- PT Sta. 14+37.26

END CONSTRUCTION -Y12_EX- Sta. 14+10.87

-Y12_EX- Sta. 12+65.64

-L- Sta. 99+12.51

-L- PT Sta. 97+47.25

-Y12_PR- Sta. 250+37.37

-L- Sta. 98+63.82

END TIP PROJECT U-5824 Sta. -L- Sta. 106+65.31

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

-Y12_PR- PT Sta. 249+44.89

BEGIN CONSTRUCTION -Y12_EX- Sta. 11+32.85

-Y12_EX- POT Sta. 10+00.00

-L- PC Sta. 104+58.68

-Y12_EX- PRC Sta. 12+30.81

-Y12_EX- PC Sta. 11+61.31

BM-7
S 07°39'09" E 373.30'
FROM BL-16
N880342.2 E1664846.1
ELEV. = 970.55'
* ON TRANSFORMER PAD

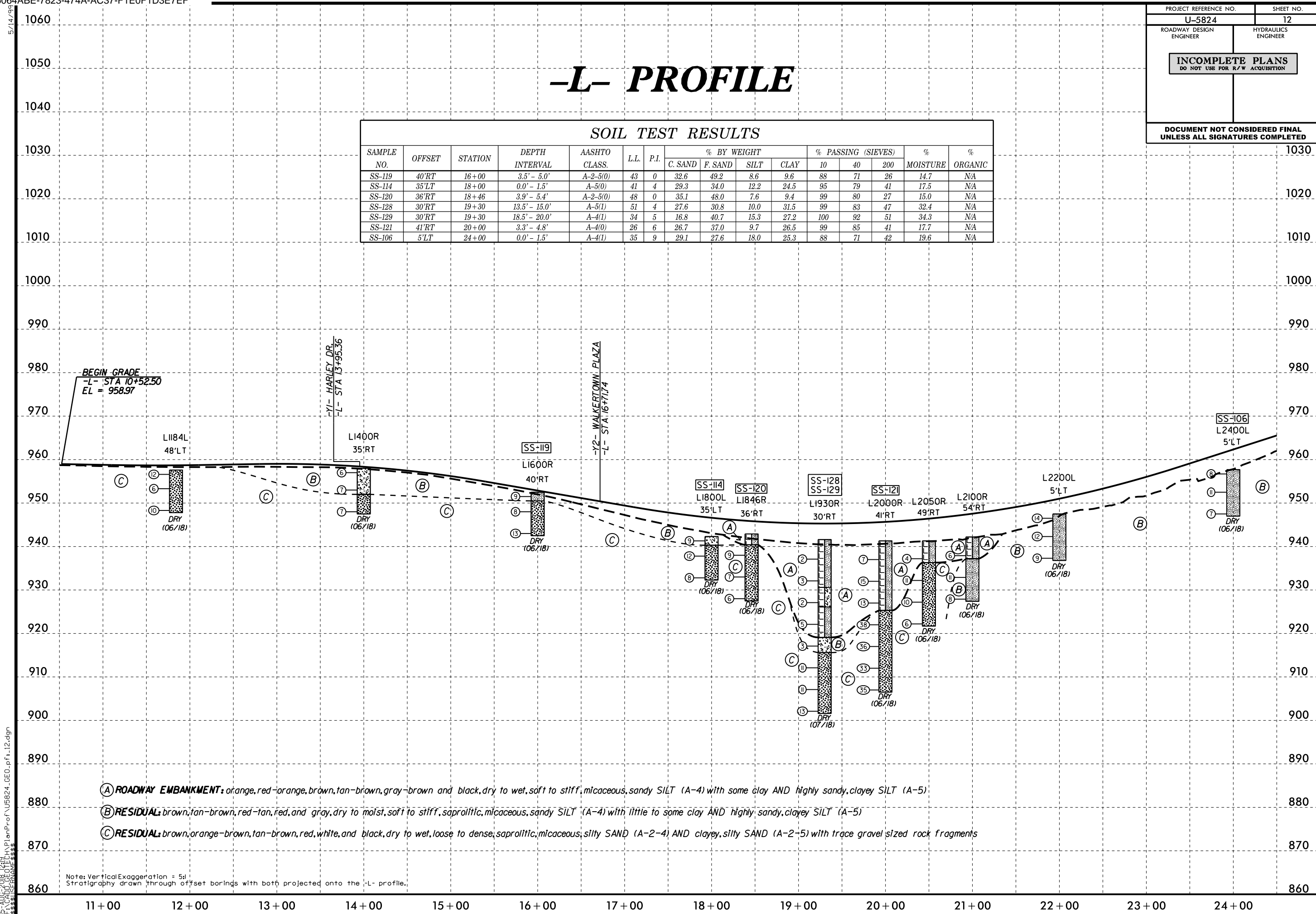
-Y12_EX-	
PI Sta 13+34.04	PI Sta 11+96.06
$\Delta = 1' 58' 17.3" (RT)$	$\Delta = 0' 39' 49.1" (LT)$
$D = 0' 57' 17.7"$	$D = 0' 57' 17.7"$
$L = 206.45'$	$L = 69.50'$
$T = 103.24'$	$T = 34.75'$
$R = 6,000.00'$	$R = 6,000.00'$

5/14/99

PROJECT REFERENCE NO. U-5824	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

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-119	40'RT	16+00	3.5' - 5.0'	A-2-5(0)	43	0	32.6	49.2	8.6	9.6	88	71	26	14.7	NA
SS-114	35'LT	18+00	0.0' - 1.5'	A-5(0)	41	4	29.3	34.0	12.2	24.5	95	79	41	17.5	NA
SS-120	36'RT	18+46	3.9' - 5.4'	A-2-5(0)	48	0	35.1	48.0	7.6	9.4	99	80	27	15.0	NA
SS-128	30'RT	19+30	13.5' - 15.0'	A-5(1)	51	4	27.6	30.8	10.0	31.5	99	83	47	32.4	NA
SS-129	30'RT	19+30	18.5' - 20.0'	A-4(1)	34	5	16.8	40.7	15.3	27.2	100	92	51	34.3	NA
SS-121	41'RT	20+00	3.3' - 4.8'	A-4(0)	26	6	26.7	37.0	9.7	26.5	99	85	41	17.7	NA
SS-106	5'LT	24+00	0.0' - 1.5'	A-4(1)	35	9	29.1	27.6	18.0	25.3	88	71	42	19.6	NA



- (A) **ROADWAY EMBANKMENT:** orange, red-orange, brown, tan-brown, gray-brown and black, dry to wet, soft to stiff, micaceous, sandy SILT (A-4) with some clay AND highly sandy, clayey SILT (A-5)
- (B) **RESIDUAL:** brown, tan-brown, red-tan, red, and gray, dry to moist, soft to stiff, saprolitic, micaceous, sandy SILT (A-4) with little to some clay AND highly sandy, clayey SILT (A-5)
- (C) **RESIDUAL:** brown, orange-brown, tan-brown, red, white, and black, dry to wet, loose to dense, saprolitic, micaceous, silty SAND (A-2-4) AND clayey, silty SAND (A-2-5) with trace gravel sized rock fragments

Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

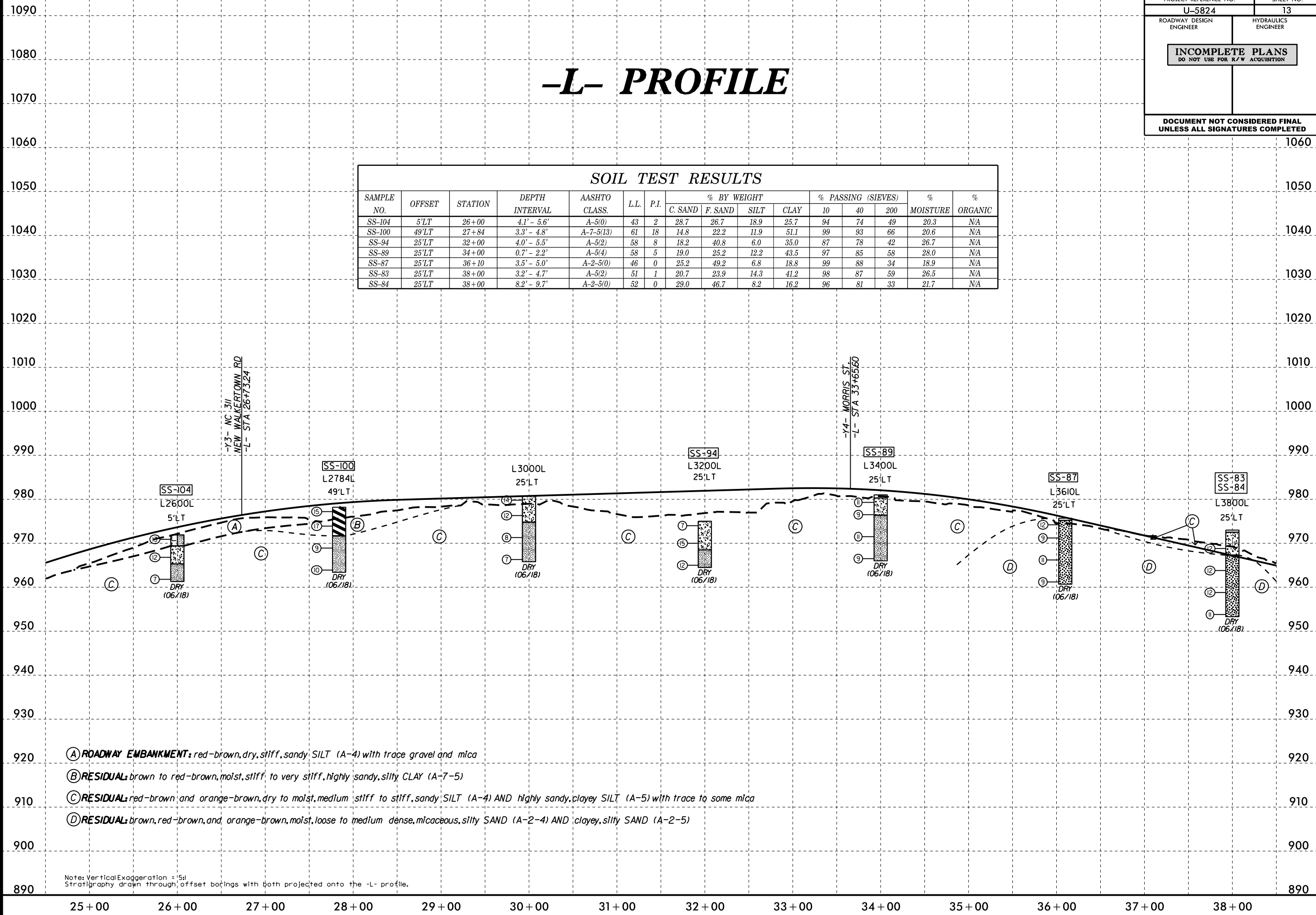
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PROJECT REFERENCE NO. U-5824	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

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-104	5'LT	26+00	4.1' - 5.6'	A-5(0)	43	2		
SS-100	49'LT	27+84	3.3' - 4.8'	A-7-5(13)	61	18	14.8	22.2	11.9	51.1	99	93	66	20.6	N/A
SS-94	25'LT	32+00	4.0' - 5.5'	A-5(2)	58	8	18.2	40.8	6.0	35.0	87	78	42	26.7	N/A
SS-89	25'LT	34+00	0.7' - 2.2'	A-5(4)	58	5	19.0	25.2	12.2	43.5	97	85	58	28.0	N/A
SS-87	25'LT	36+10	3.5' - 5.0'	A-2-5(0)	46	0	25.2	49.2	6.8	18.8	99	88	34	18.9	N/A
SS-83	25'LT	38+00	3.2' - 4.7'	A-5(2)	51	1	20.7	23.9	14.3	41.2	98	87	59	26.5	N/A
SS-84	25'LT	38+00	8.2' - 9.7'	A-2-5(0)	52	0	29.0	46.7	8.2	16.2	96	81	33	21.7	N/A



- (A) ROADWAY EMBANKMENT: red-brown, dry, stiff, sandy SILT (A-4) with trace gravel and mica
- (B) RESIDUAL: brown to red-brown, moist, stiff to very stiff, highly sandy, silty CLAY (A-7-5)
- (C) RESIDUAL: red-brown and orange-brown, dry to moist, medium stiff to stiff, sandy SILT (A-4) AND highly sandy, clayey SILT (A-5) with trace to some mica
- (D) RESIDUAL: brown, red-brown, and orange-brown, moist, loose to medium dense, micaceous, silty SAND (A-2-4) AND clayey, silty SAND (A-2-5)

Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

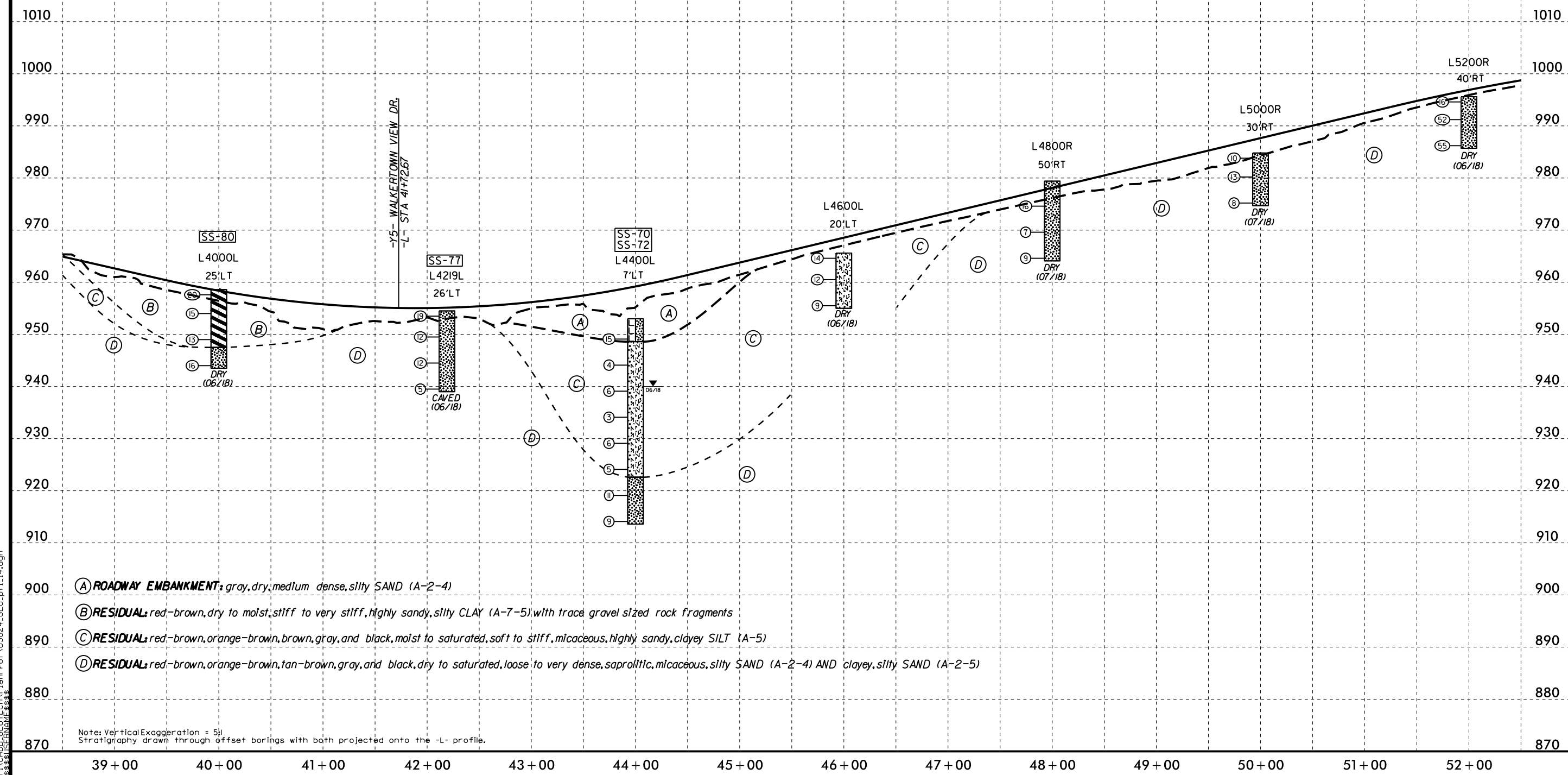
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PROJECT REFERENCE NO. U-5824	SHEET NO. 14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

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-80	25'LT	40+00	3.6' - 5.1'	A-7-5(4)	43	13		
SS-77	26'LT	42+19	4.0' - 5.5'	A-2-4(0)	27	7	42.8	23.7	6.7	26.9	93	64	34	15.2	N/A
SS-70	7'LT	44+00	2.9' - 4.4'	A-2-4(0)	28	3	45.0	28.1	5.9	21.1	91	63	28	15.7	N/A
SS-72	7'LT	44+00	12.9' - 14.4'	A-5(0)	50	1	20.0	40.4	17.5	22.1	98	88	48	46.4	N/A



- (A) ROADWAY EMBANKMENT: gray, dry, medium dense, silty SAND (A-2-4)
- (B) RESIDUAL: red-brown, dry to moist, stiff to very stiff, highly sandy, silty CLAY (A-7-5) with trace gravel sized rock fragments
- (C) RESIDUAL: red-brown, orange-brown, brown, gray, and black, moist to saturated, soft to stiff, micaceous, highly sandy, clayey SILT (A-5)
- (D) RESIDUAL: red-brown, orange-brown, tan-brown, gray, and black, dry to saturated, loose to very dense, saprolitic, micaceous, silty SAND (A-2-4) AND clayey, silty SAND (A-2-5)

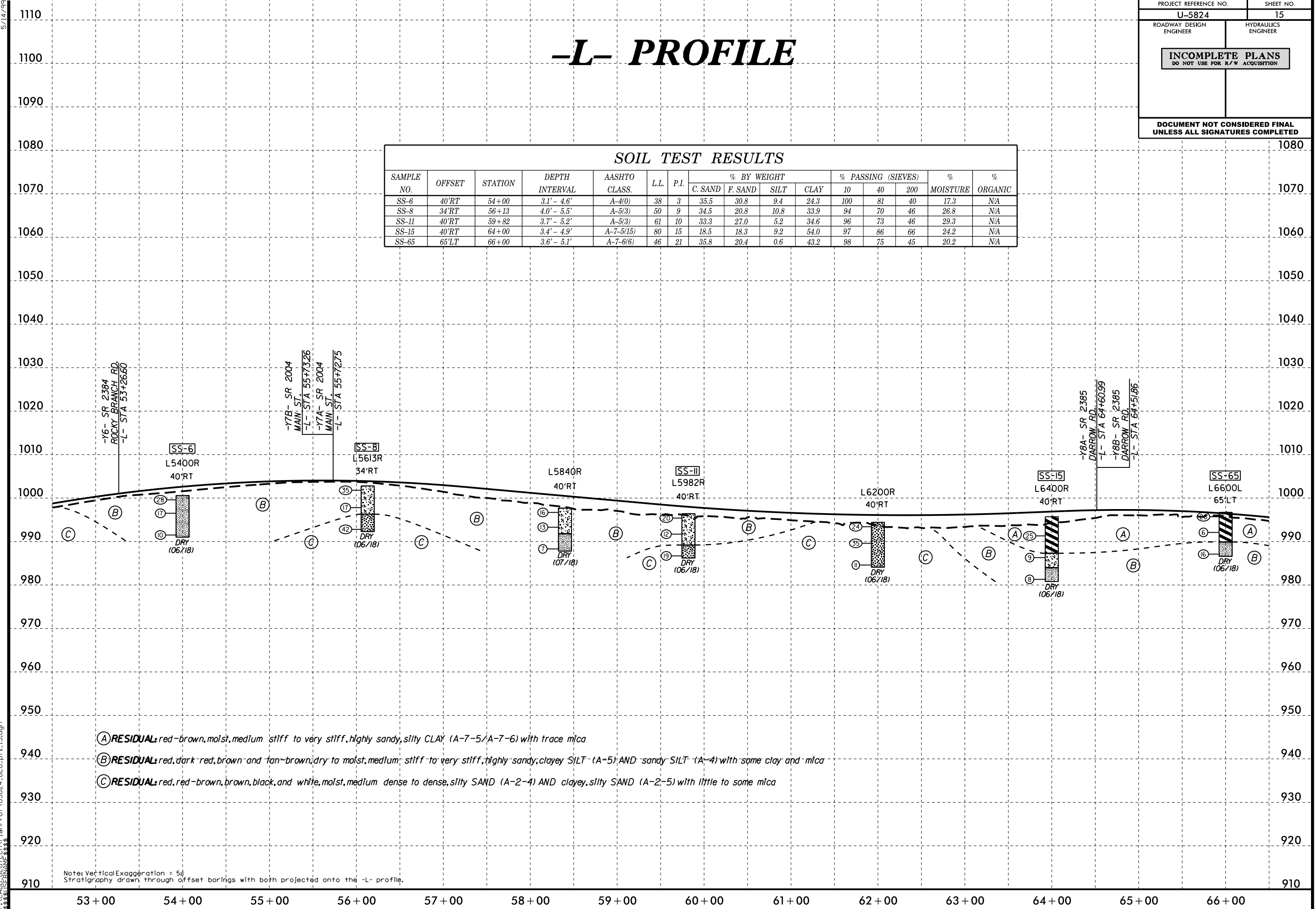
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PROJECT REFERENCE NO. U-5824	SHEET NO. 15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

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-6	40'RT	54+00	3.1' - 4.6'	A-4(0)	38	3		
SS-8	34'RT	56+13	4.0' - 5.5'	A-5(3)	50	9	34.5	20.8	10.8	33.9	94	70	46	26.8	NA
SS-11	40'RT	59+82	3.7' - 5.2'	A-5(3)	61	10	33.3	27.0	5.2	34.6	96	73	46	29.3	NA
SS-15	40'RT	64+00	3.4' - 4.9'	A-7-5(15)	80	15	18.5	18.3	9.2	54.0	97	86	66	24.2	NA
SS-65	65'LT	66+00	3.6' - 5.1'	A-7-6(6)	46	21	35.8	20.4	0.6	43.2	98	75	45	20.2	NA



- (A) RESIDUAL: red-brown, moist, medium stiff to very stiff, highly sandy, silty CLAY (A-7-5/A-7-6) with trace mica
- (B) RESIDUAL: red, dark red, brown and tan-brown, dry to moist, medium stiff to very stiff, highly sandy, clayey SILT (A-5) AND sandy SILT (A-4) with some clay and mica
- (C) RESIDUAL: red, red-brown, brown, black, and white, moist, medium dense to dense, silty SAND (A-2-4) AND clayey, silty SAND (A-2-5) with little to some mica

Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

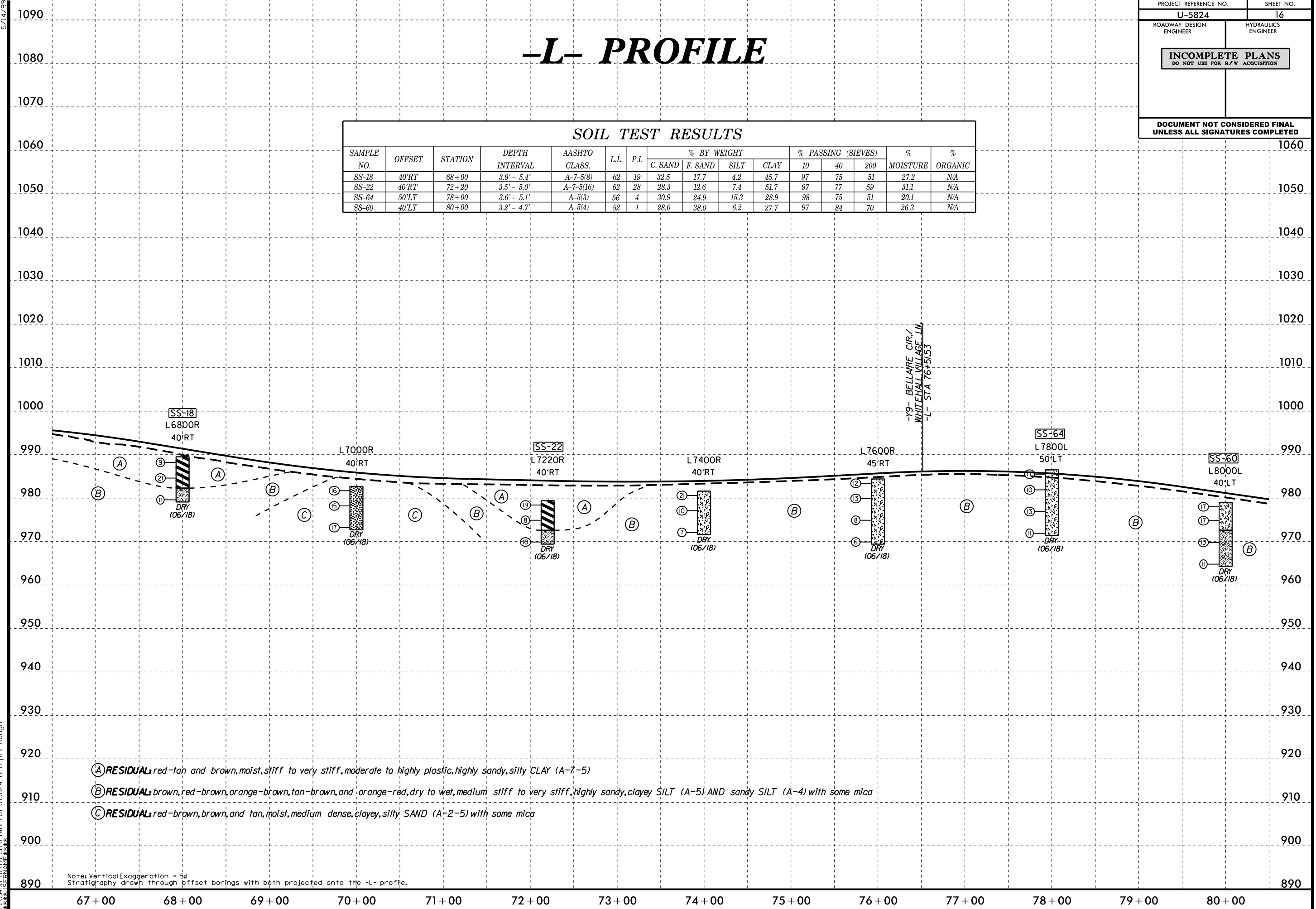
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PROJECT REFERENCE NO. U-5824	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-18	40'RT	68+00	3.9' - 5.4'	A-7-5(8)	62	19	32.5	17.7	4.2	45.7	97	75	51	27.2	NA
SS-22	40'RT	72+20	3.5' - 5.0'	A-7-5(16)	62	28	28.3	12.6	7.4	51.7	97	77	59	31.1	NA
SS-64	50'LT	78+00	3.6' - 5.1'	A-5(3)	56	4	30.9	24.9	15.3	28.9	98	75	51	20.1	NA
SS-60	40'LT	80+00	3.2' - 4.7'	A-5(4)	52	1	28.0	38.0	6.2	27.7	97	84	70	26.3	NA



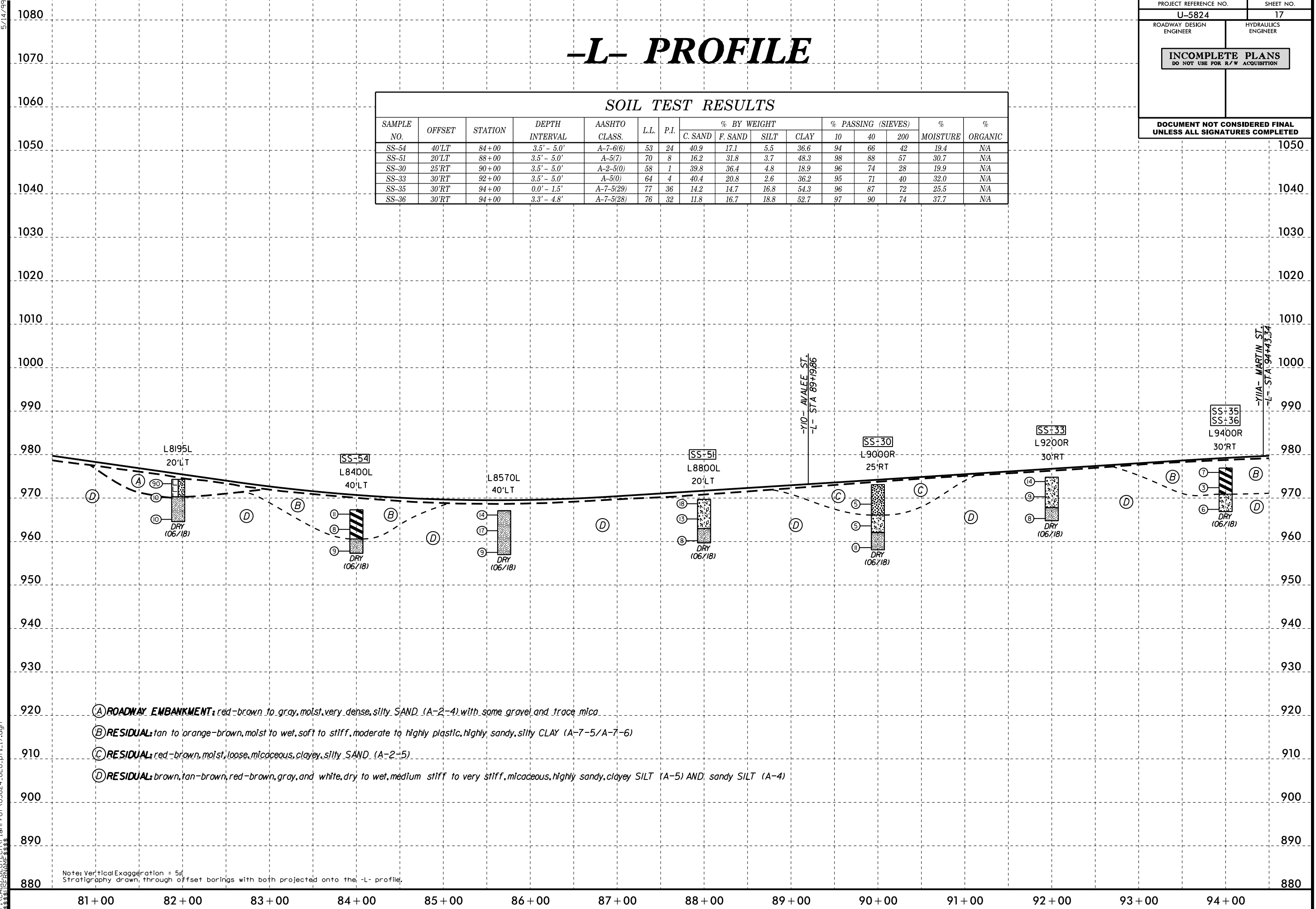
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PROJECT REFERENCE NO. U-5824	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L- PROFILE

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-54	40'LT	84+00	3.5' - 5.0'	A-7-6(6)	53	24		
SS-51	20'LT	88+00	3.5' - 5.0'	A-5(7)	70	8	16.2	31.8	3.7	48.3	98	88	57	30.7	N/A
SS-30	25'RT	90+00	3.5' - 5.0'	A-2-5(0)	58	1	39.8	36.4	4.8	18.9	96	74	28	19.9	N/A
SS-33	30'RT	92+00	3.5' - 5.0'	A-5(0)	64	4	40.4	20.8	2.6	36.2	95	71	40	32.0	N/A
SS-35	30'RT	94+00	0.0' - 1.5'	A-7-5(29)	77	36	14.2	14.7	16.8	54.3	96	87	72	25.5	N/A
SS-36	30'RT	94+00	3.3' - 4.8'	A-7-5(28)	76	32	11.8	16.7	18.8	52.7	97	90	74	37.7	N/A



- (A) **ROADWAY EMBANKMENT:** red-brown to gray, moist, very dense, silty SAND (A-2-4) with some gravel and trace mica
- (B) **RESIDUAL:** tan to orange-brown, moist to wet, soft to stiff, moderate to highly plastic, highly sandy, silty CLAY (A-7-5/A-7-6)
- (C) **RESIDUAL:** red-brown, moist, loose, micaceous, clayey, silty SAND (A-2-5)
- (D) **RESIDUAL:** brown, tan-brown, red-brown, gray, and white, dry to wet, medium stiff to very stiff, micaceous, highly sandy, clayey SILT (A-5) AND; sandy SILT (A-4)

Note: Vertical Exaggeration = 5x
Stratigraphy drawn through offset borings with both projected onto the -L- profile.

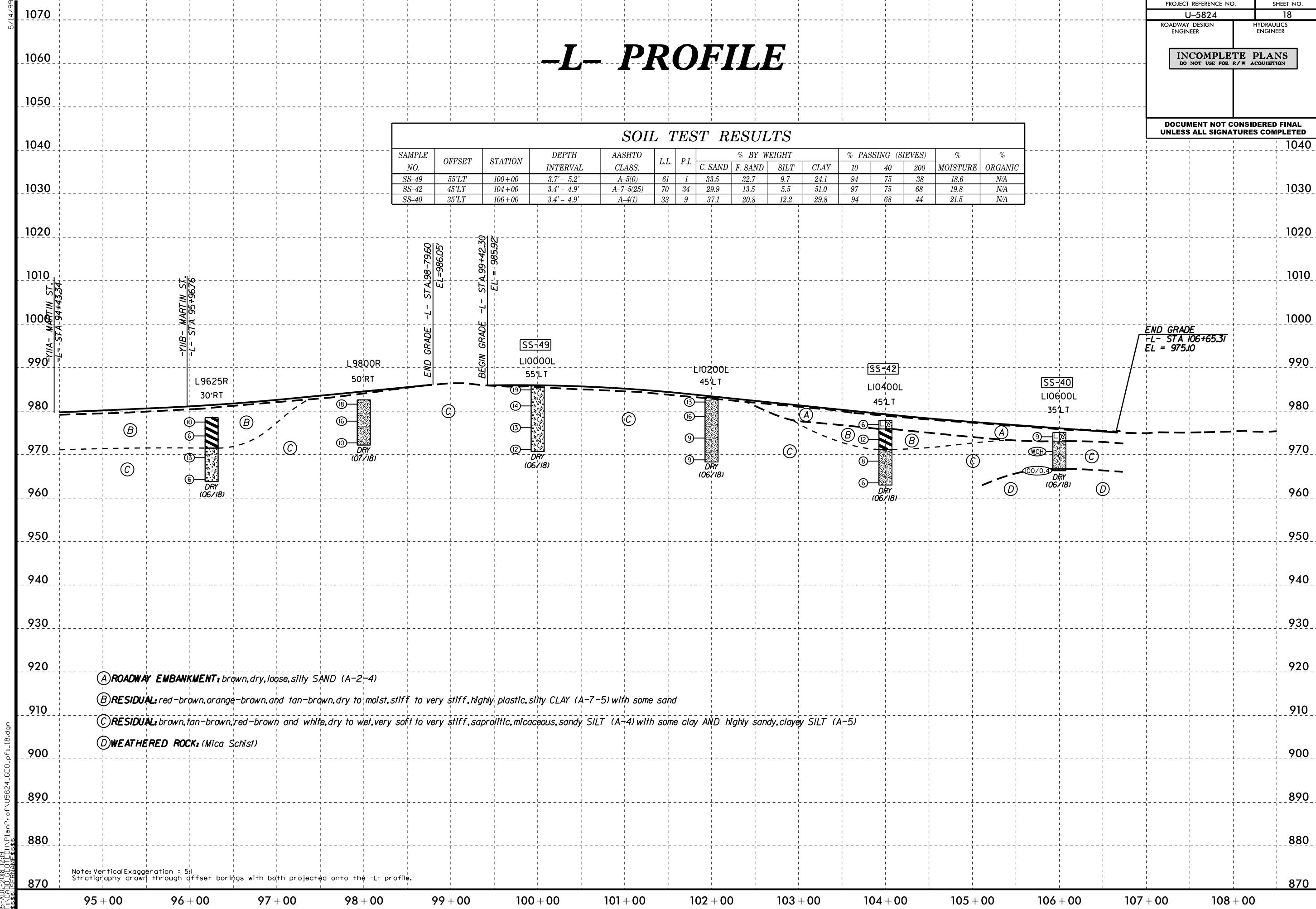
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PROJECT REFERENCE NO. U-5824	SHEET NO. 18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

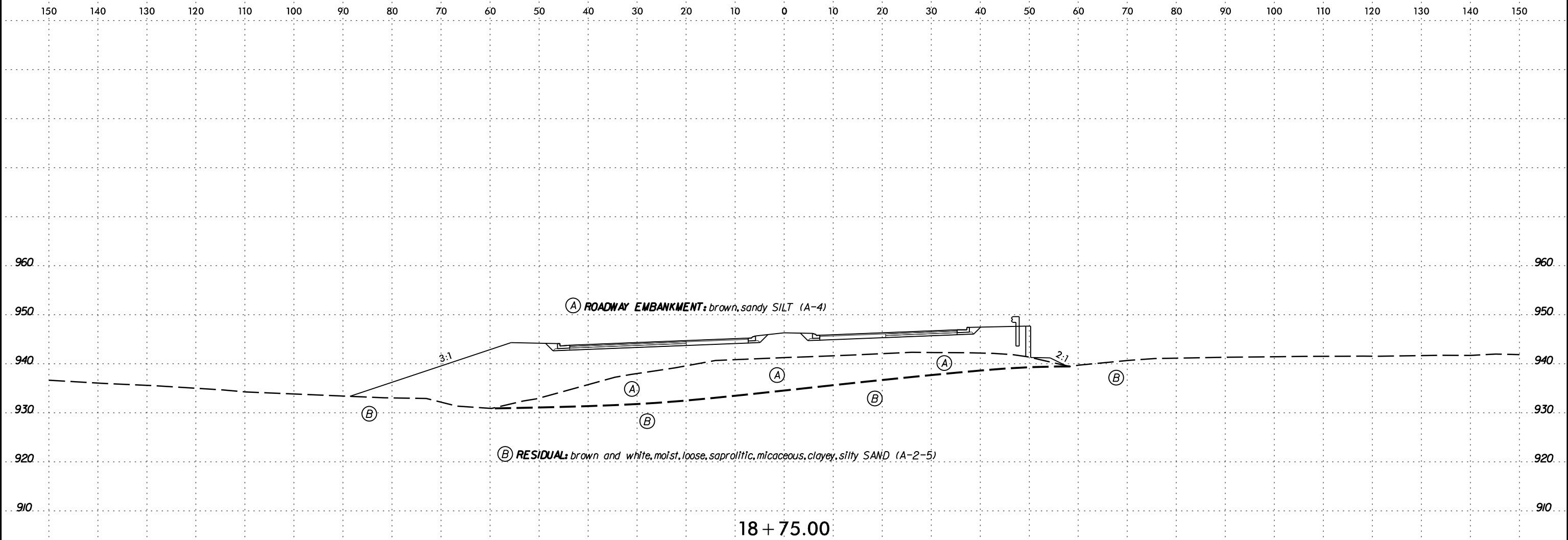
-L- PROFILE

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-49	55'LT	100+00	3.7' - 5.2'	A-5(0)	61	1		
SS-42	45'LT	104+00	3.4' - 4.9'	A-7-5(25)	70	34	29.9	13.5	5.5	51.0	97	75	68	19.8	NA
SS-40	35'LT	106+00	3.4' - 4.9'	A-4(1)	33	9	37.1	20.8	12.2	29.8	94	68	44	21.5	NA



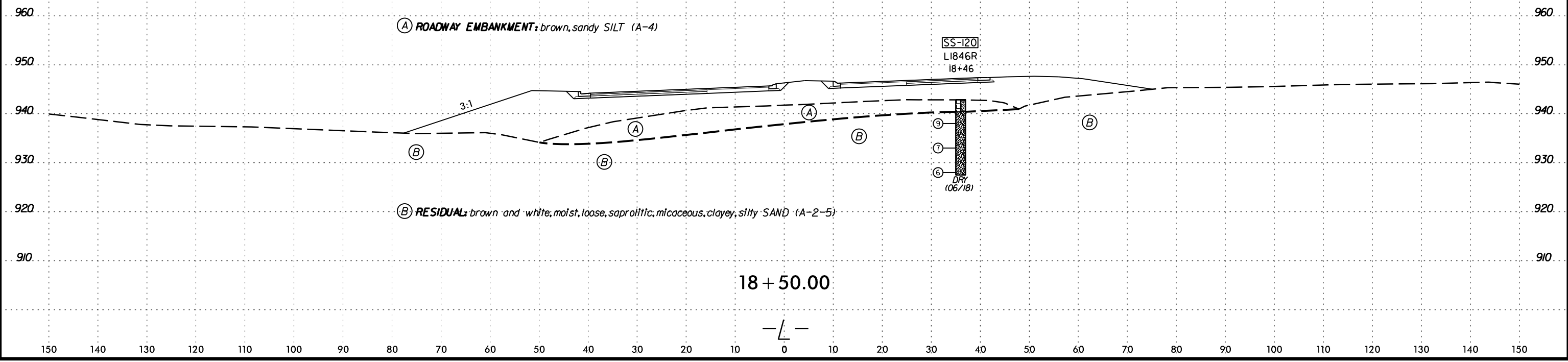
Note: Vertical Exaggeration = 5x
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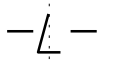


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SOIL TEST RESULTS																
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C. SAND	F. SAND	SILT	CLAY	10	40	200			
SS-120	36'RT	18+46	3.9' - 5.4'	A-2-5(0)	48	0	35.1	48.0	7.6	9.4	99	80	27	15.0	NA	

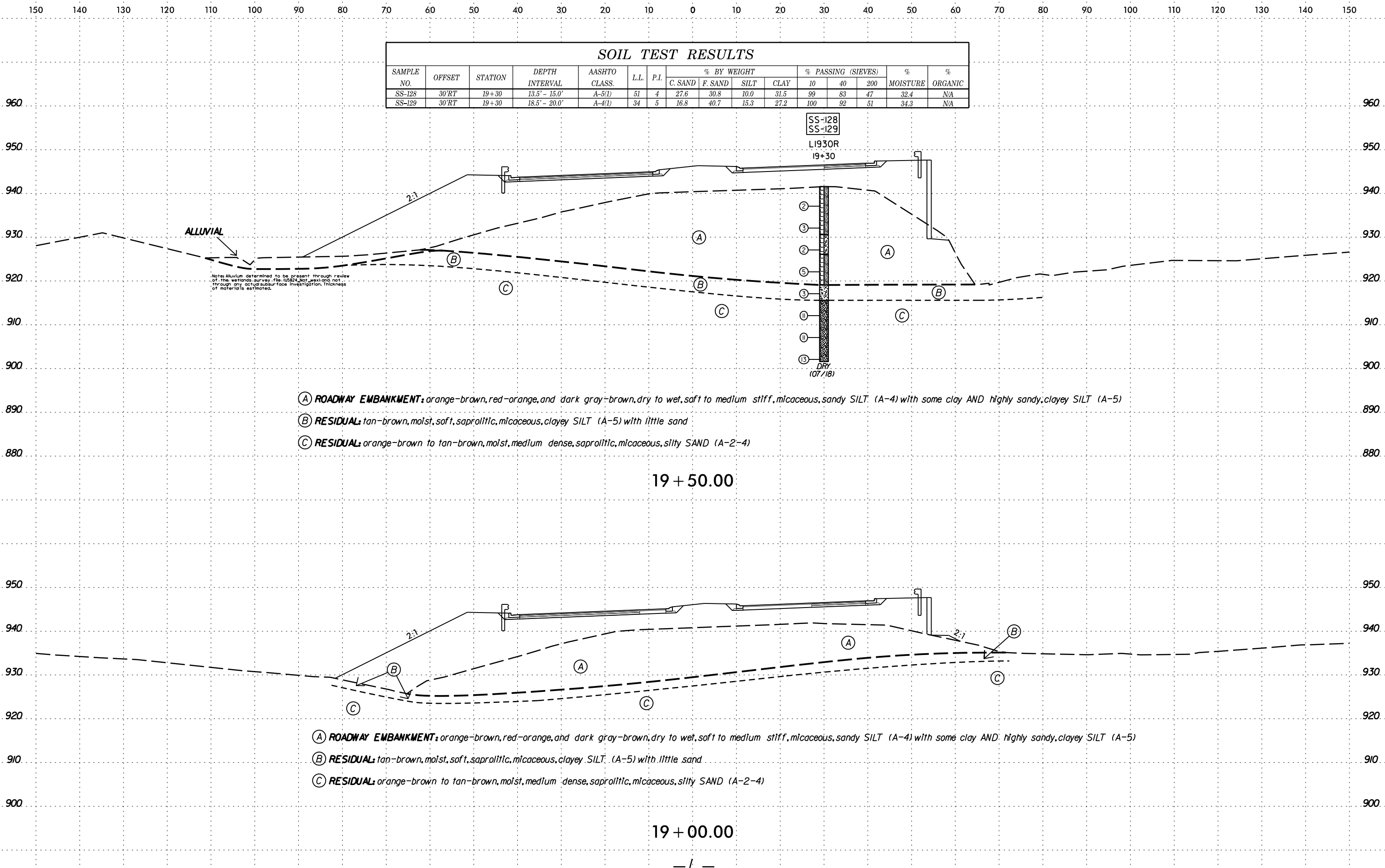


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-128	30'RT	19+30	13.5' - 15.0'	A-5(1)	51	4	27.6	30.8	10.0	31.5	99	83	47	32.4	NA
SS-129	30'RT	19+30	18.5' - 20.0'	A-4(1)	34	5	16.8	40.7	15.3	27.2	100	92	51	34.3	NA

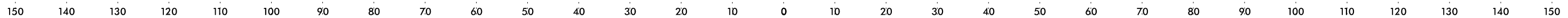


- (A) **ROADWAY EMBANKMENT:** orange-brown, red-orange, and dark gray-brown, dry to wet, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay AND highly sandy, clayey SILT (A-5)
- (B) **RESIDUAL:** tan-brown, moist, soft, saprolitic, micaceous, clayey SILT (A-5) with little sand
- (C) **RESIDUAL:** orange-brown to tan-brown, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

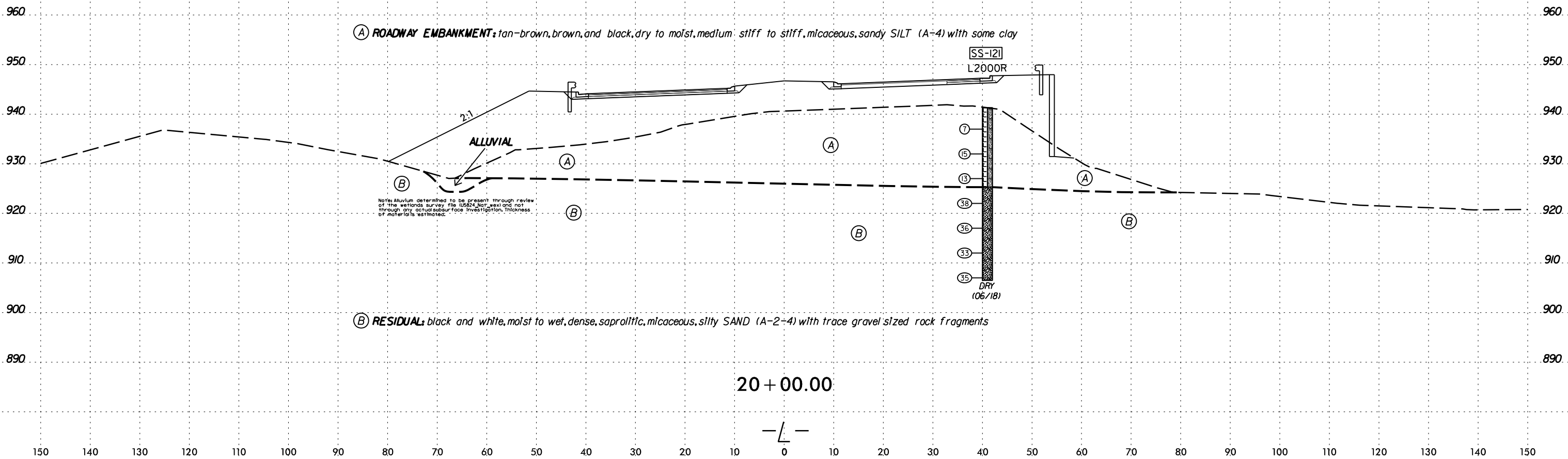
- (A) **ROADWAY EMBANKMENT:** orange-brown, red-orange, and dark gray-brown, dry to wet, soft to medium stiff, micaceous, sandy SILT (A-4) with some clay AND highly sandy, clayey SILT (A-5)
- (B) **RESIDUAL:** tan-brown, moist, soft, saprolitic, micaceous, clayey SILT (A-5) with little sand
- (C) **RESIDUAL:** orange-brown to tan-brown, moist, medium dense, saprolitic, micaceous, silty SAND (A-2-4)

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 33 SUBSEQUENT

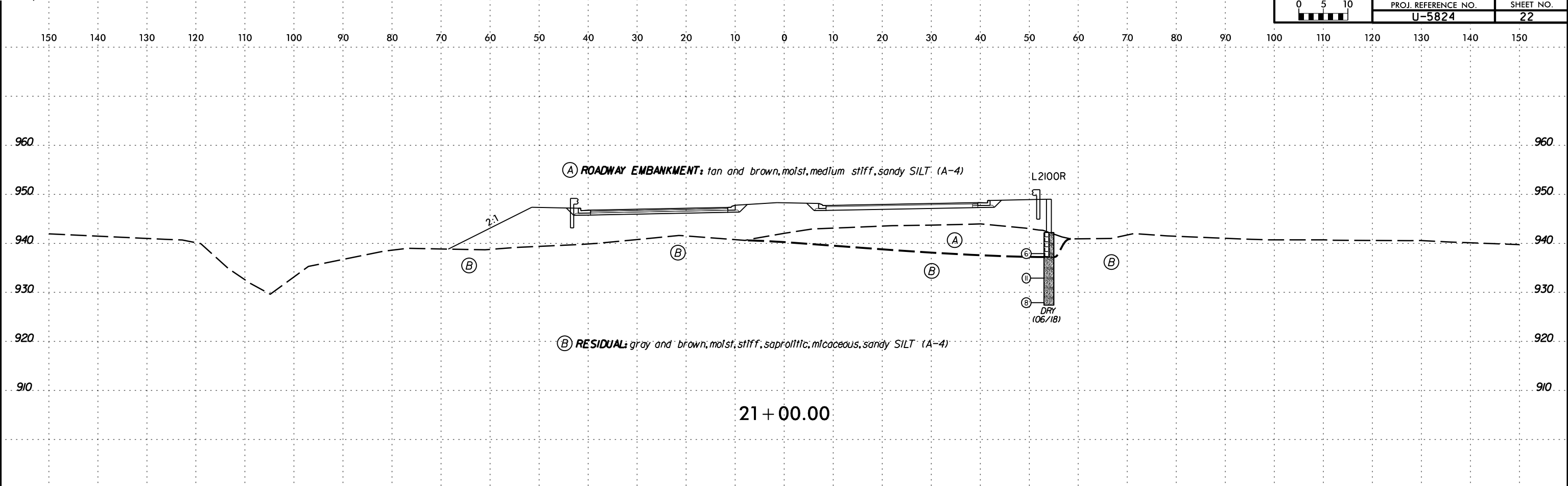
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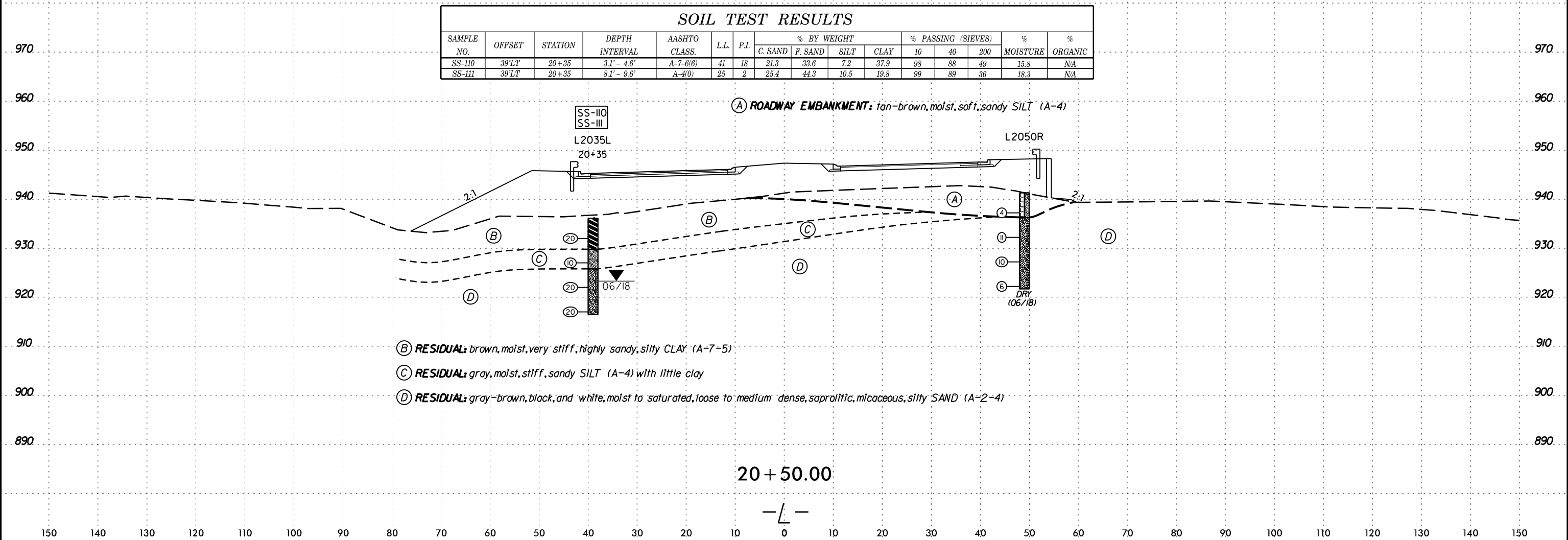
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							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-121	4' RT	20+00	3.3' - 4.8'	A-4(0)	26	6	26.7	37.0	9.7	26.5	99	85	41	17.7	NA



Note: Alluvium determined to be present through review of the wetlands survey file (U5824_not_wet) and not through any actual surface investigation. Thickness of materials estimated.



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-110	39'LT	20+35	3.1' - 4.6'	A-7-6(6)	41	18	21.3	33.6	7.2	37.9	98	88	49	15.8	N/A
SS-111	39'LT	20+35	8.1' - 9.6'	A-4(0)	25	2	25.4	44.3	10.5	19.8	99	89	36	18.3	N/A

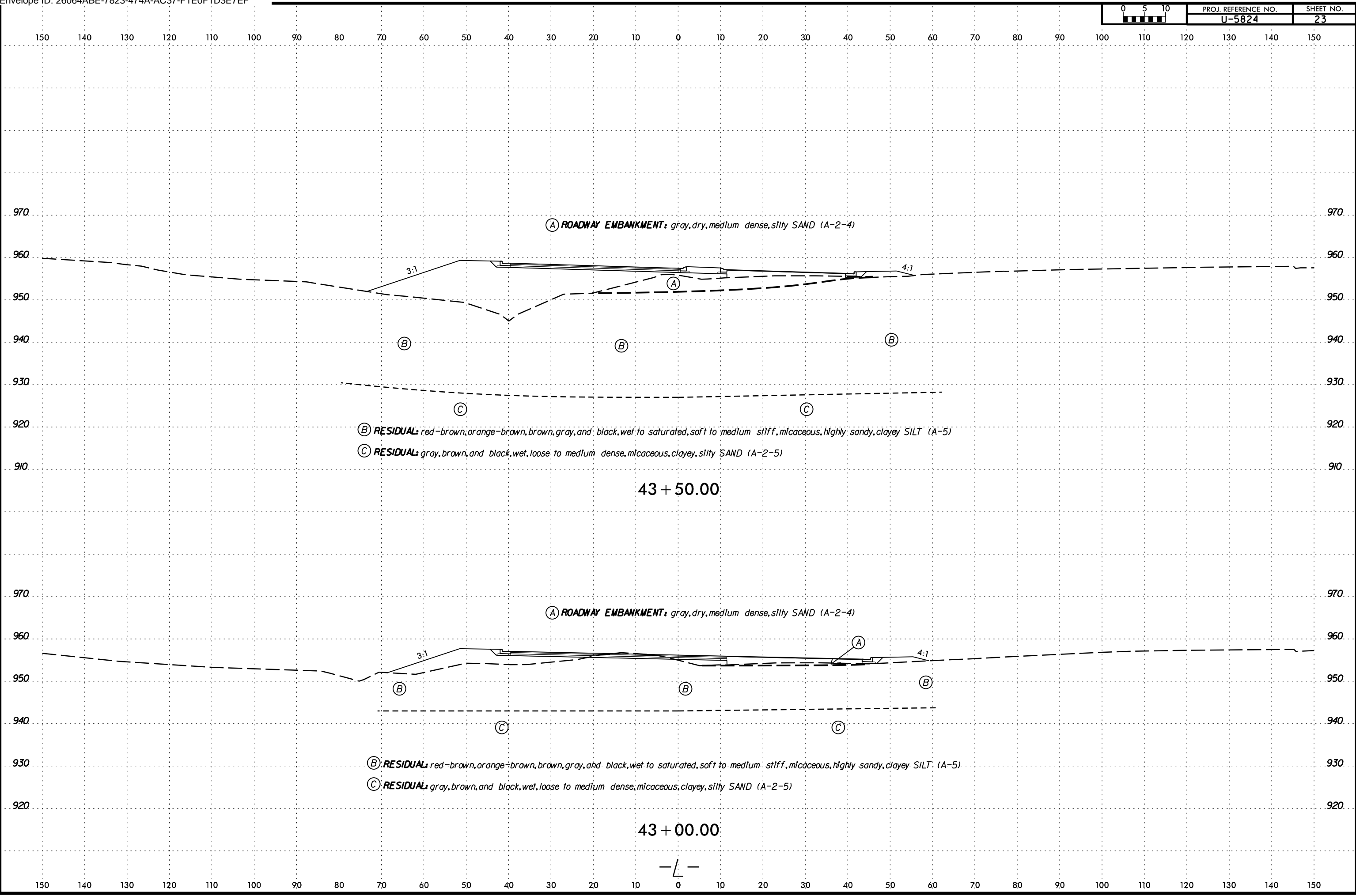


- (A) ROADWAY EMBANKMENT: tan-brown, moist, soft, sandy SILT (A-4)
- (B) RESIDUAL: brown, moist, very stiff, highly sandy, silty CLAY (A-7-5)
- (C) RESIDUAL: gray, moist, stiff, sandy SILT (A-4) with little clay
- (D) RESIDUAL: gray-brown, black, and white, moist to saturated, loose to medium dense, saprolitic, micaceous, silty SAND (A-2-4)

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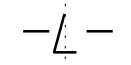


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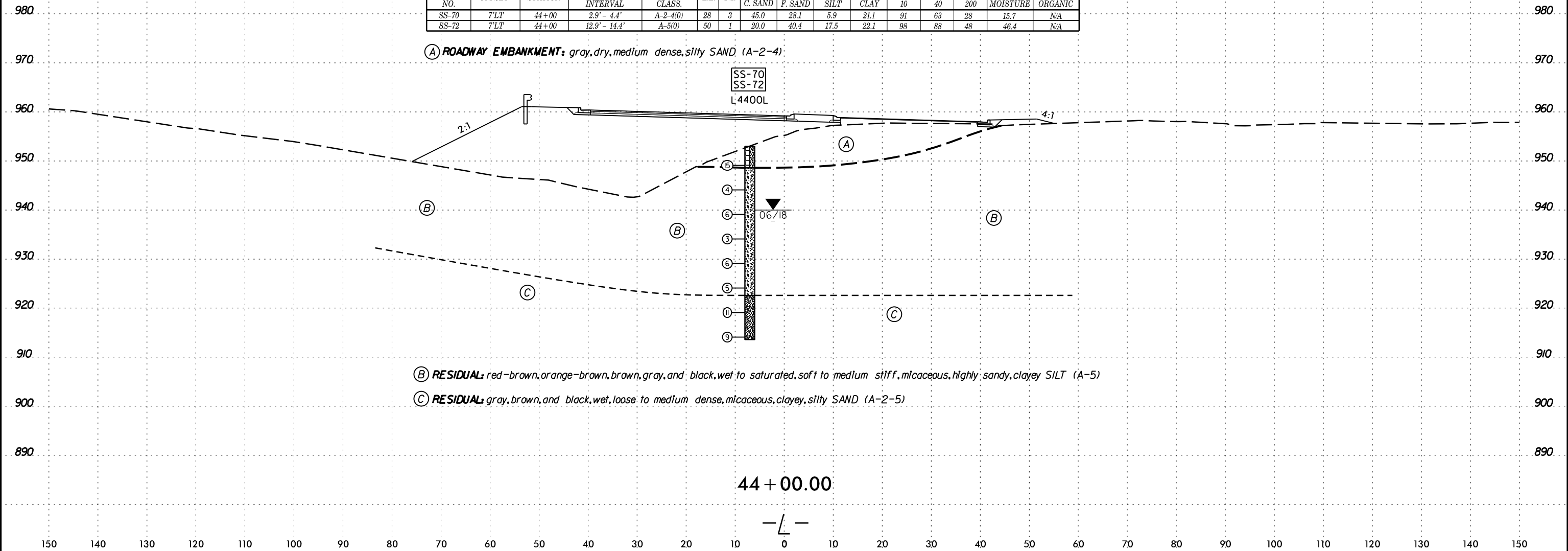




SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-70	7'LT	44+00	2.9' - 4.4'	A-2-4(0)	28	3	45.0	28.1	5.9	21.1	91	63	28	15.7	N/A
SS-72	7'LT	44+00	12.9' - 14.4'	A-5(0)	50	1	20.0	40.4	17.5	22.1	98	88	48	46.4	N/A

(A) ROADWAY EMBANKMENT: gray, dry, medium dense, silty SAND (A-2-4)

SS-70
SS-72
L4400L



(B) RESIDUAL: red-brown, orange-brown, brown, gray, and black, wet to saturated, soft to medium stiff, micaceous, highly sandy, clayey SILT (A-5)

(C) RESIDUAL: gray, brown, and black, wet, loose to medium dense, micaceous, clayey, silty SAND (A-2-5)

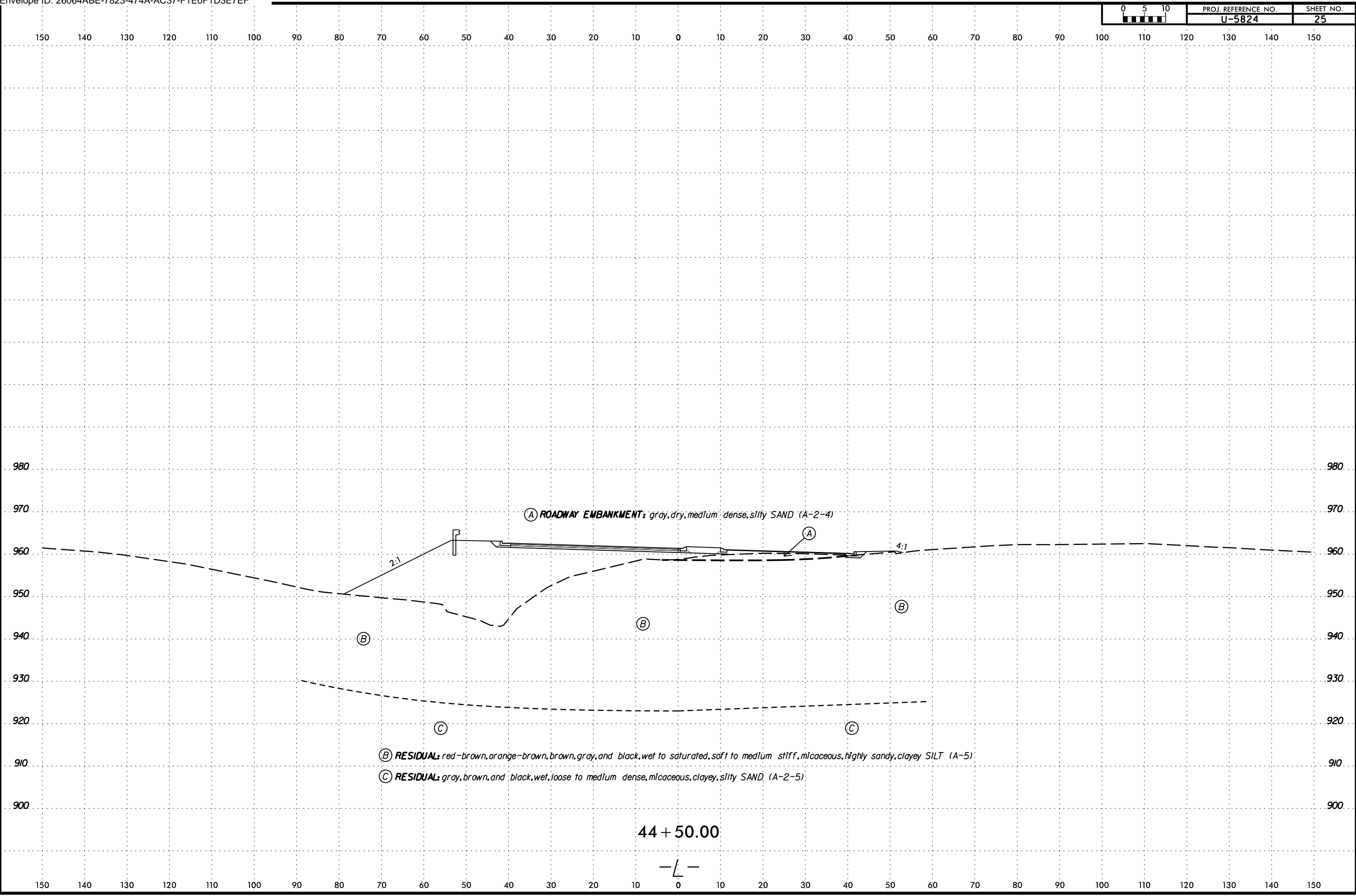
44 + 00.00



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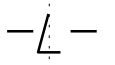


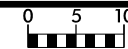
(A) ROADWAY EMBANKMENT: gray, dry, medium dense, silty SAND (A-2-4)

(B) RESIDUAL: red-brown, orange-brown, brown, gray, and black, wet to saturated, soft to medium stiff, micaceous, highly sandy, clayey SILT (A-5)

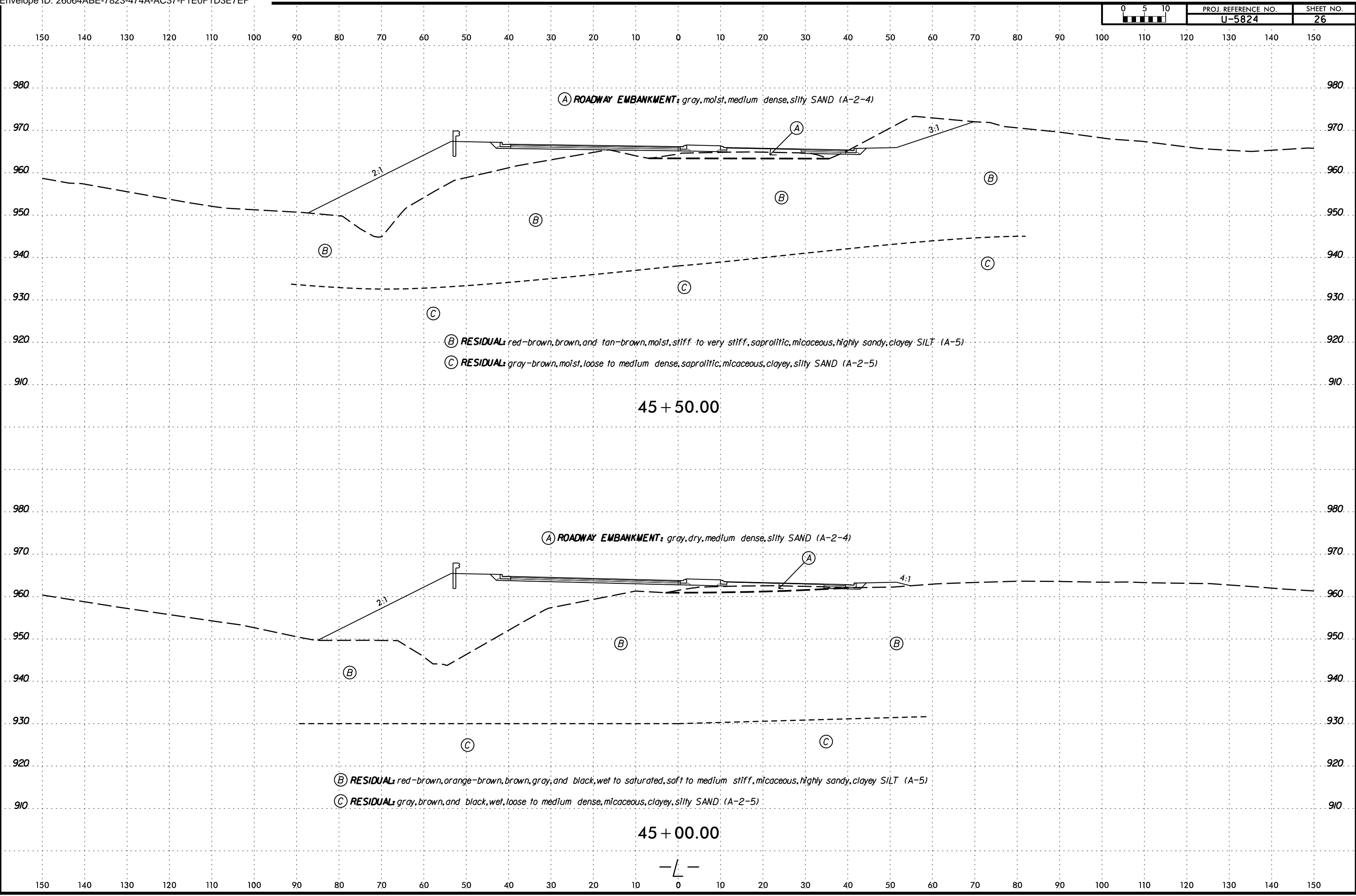
(C) RESIDUAL: gray, brown, and black, wet, loose to medium dense, micaceous, clayey, silty SAND (A-2-5)

44 + 50.00





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28-AUG-2018 16:04
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45 + 50.00

(A) ROADWAY EMBANKMENT: gray, dry, medium dense, silty SAND (A-2-4)

(B) RESIDUAL: red-brown, brown, and tan-brown, moist, stiff to very stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5)

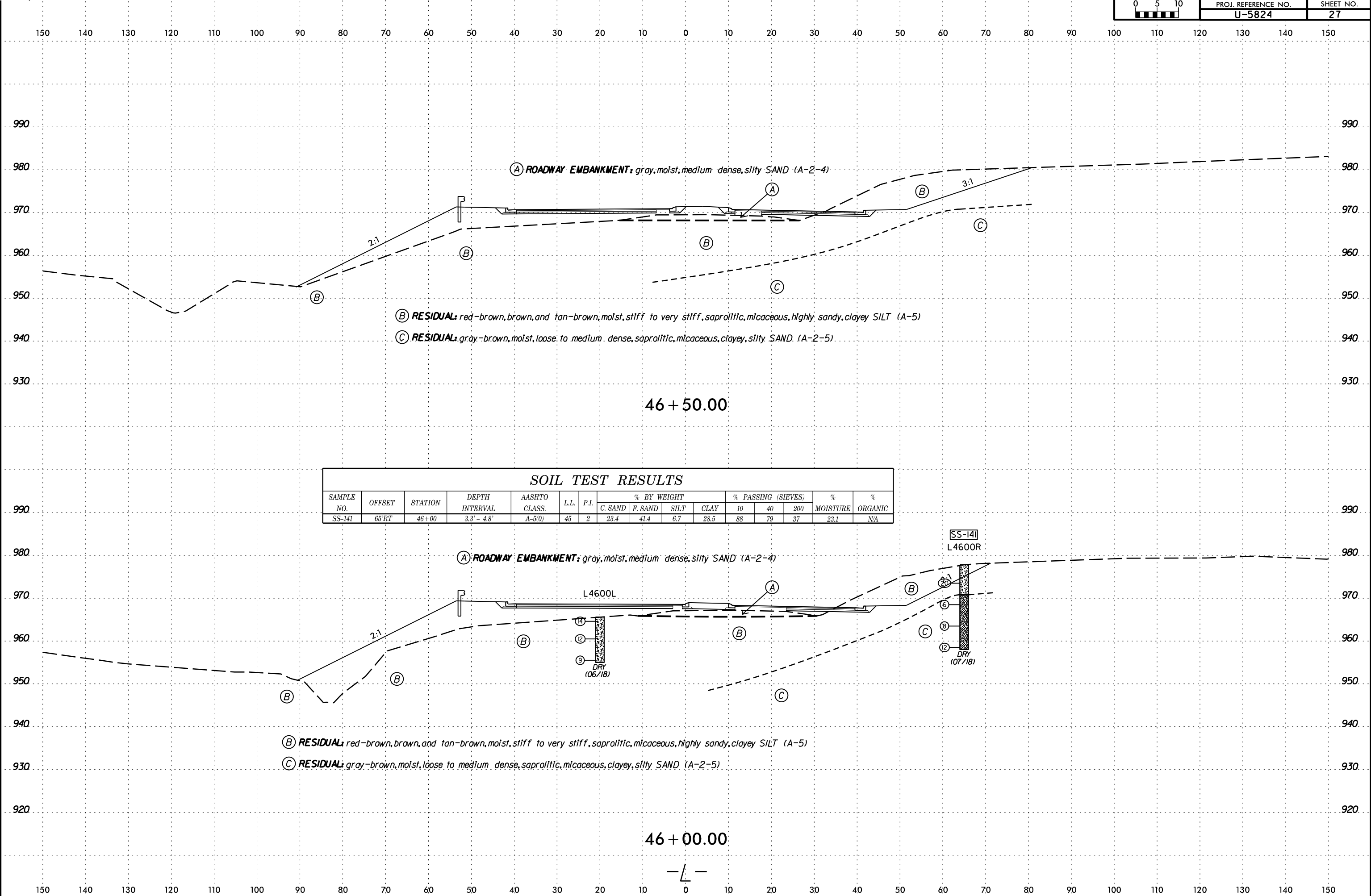
(C) RESIDUAL: gray-brown, moist, loose to medium dense, saprolitic, micaceous, clayey, silty SAND (A-2-5)

45 + 00.00

(B) RESIDUAL: red-brown, orange-brown, brown, gray, and black, wet to saturated, soft to medium stiff, micaceous, highly sandy, clayey SILT (A-5)

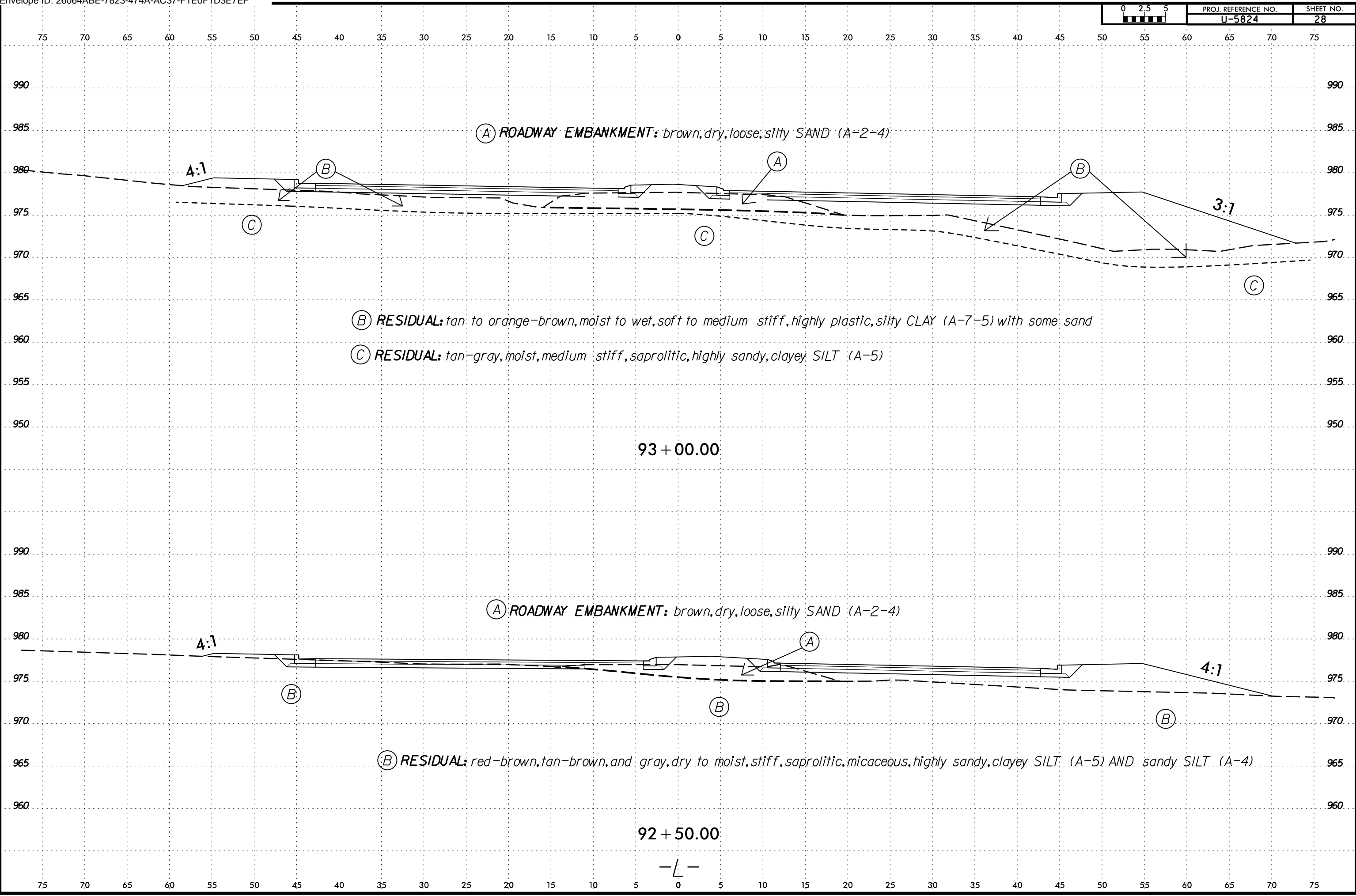
(C) RESIDUAL: gray, brown, and black, wet, loose to medium dense, micaceous, clayey, silty SAND (A-2-5)

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28-AUG-2018 16:43
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(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: tan to orange-brown, moist to wet, soft to medium stiff, highly plastic, silty CLAY (A-7-5) with some sand

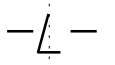
(C) RESIDUAL: tan-gray, moist, medium stiff, saprolitic, highly sandy, clayey SILT (A-5)

(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: red-brown, tan-brown, and gray, dry to moist, stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5) AND sandy SILT (A-4)

93 + 00.00

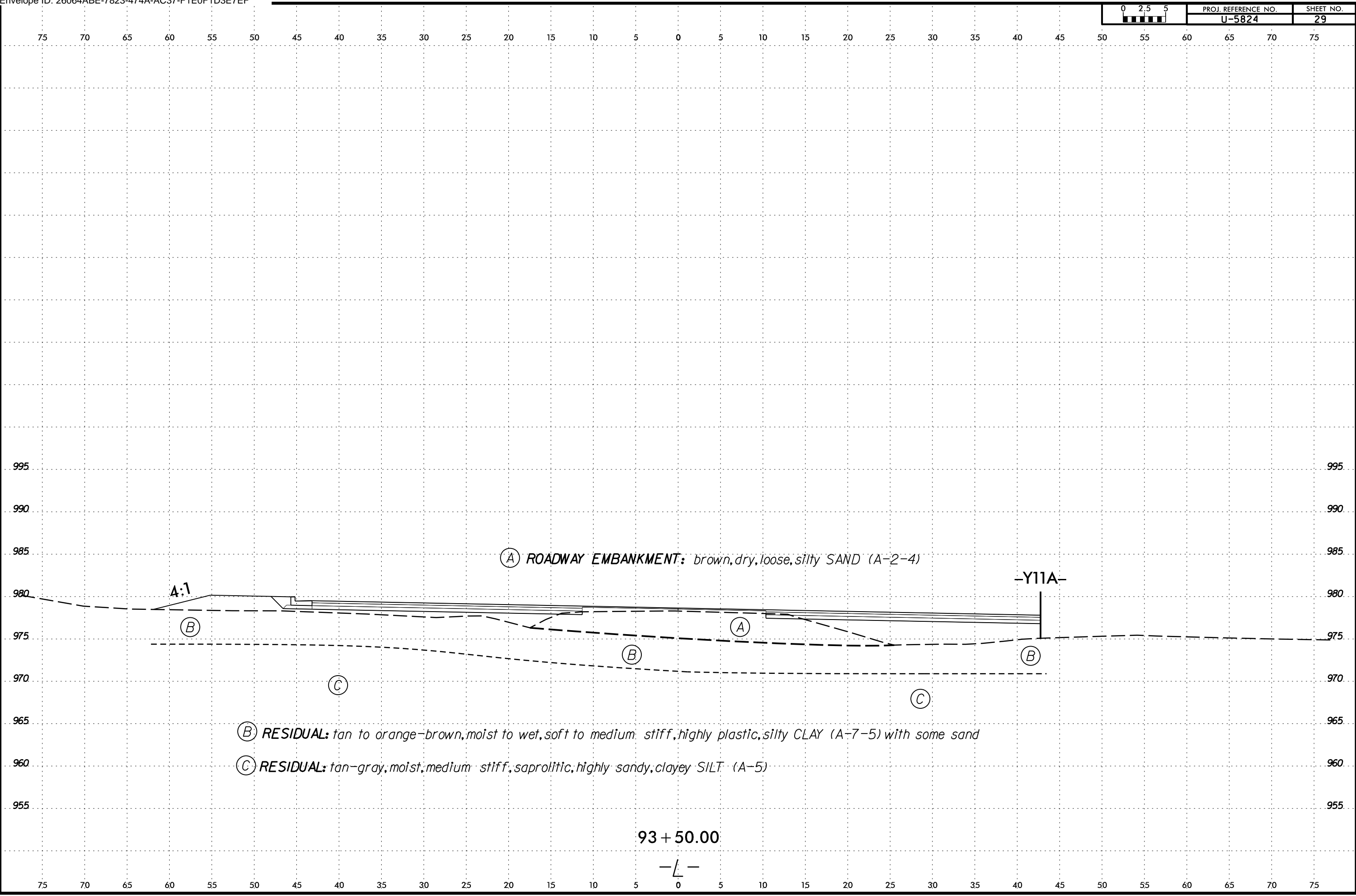
92 + 50.00





PROJ. REFERENCE NO.	SHEET NO.
U-5824	29

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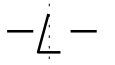


(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: tan to orange-brown, moist to wet, soft to medium stiff, highly plastic, silty CLAY (A-7-5) with some sand

(C) RESIDUAL: tan-gray, moist, medium stiff, saprolitic, highly sandy, clayey SILT (A-5)

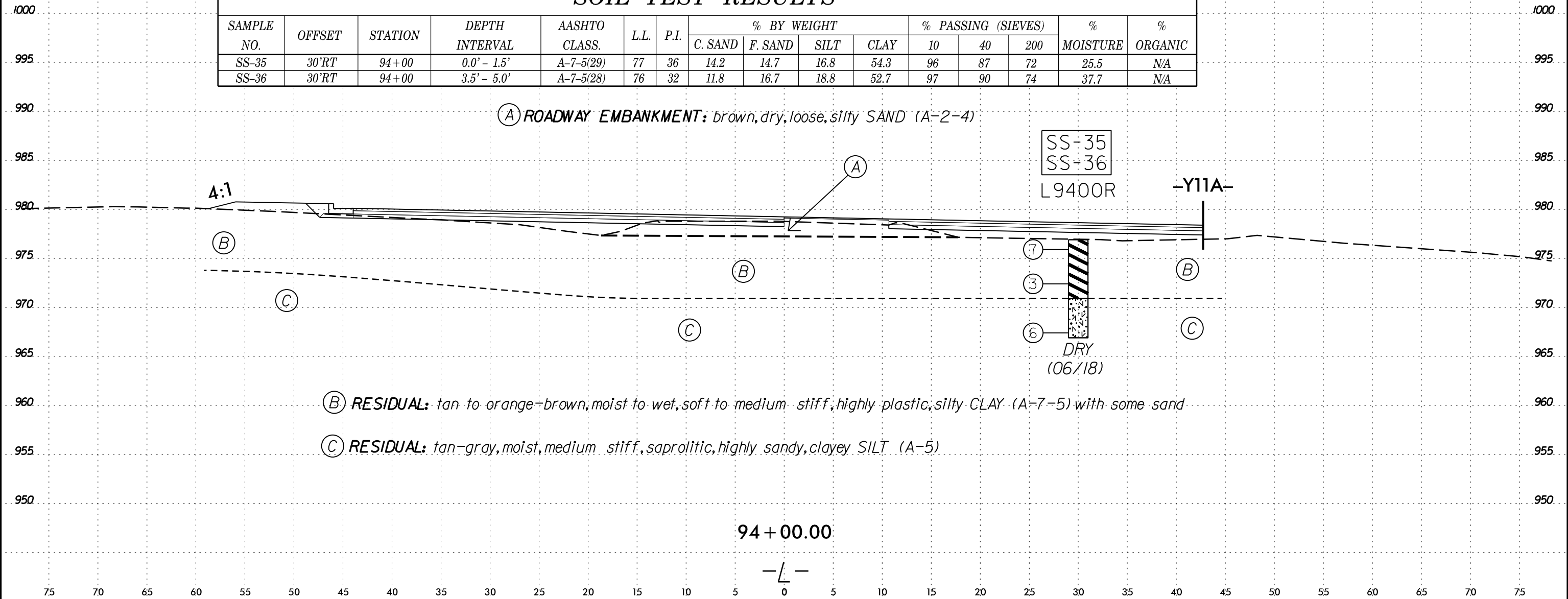
93 + 50.00





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

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-35	30'RT	94+00	0.0' - 1.5'	A-7-5(29)	77	36	14.2	14.7	16.8	54.3	96	87	72	25.5	N/A
SS-36	30'RT	94+00	3.5' - 5.0'	A-7-5(28)	76	32	11.8	16.7	18.8	52.7	97	90	74	37.7	N/A

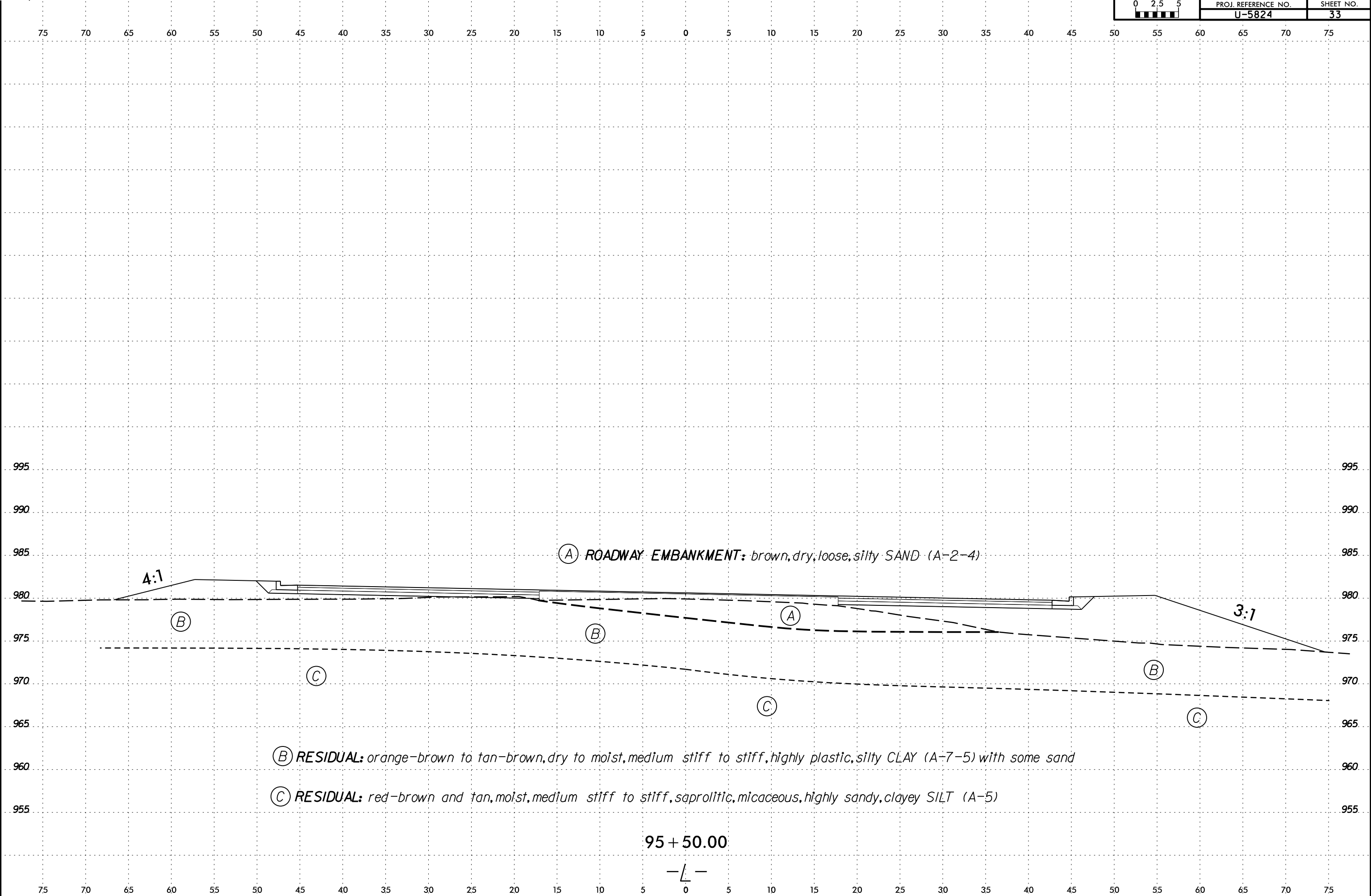


75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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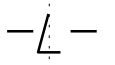


(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: orange-brown to tan-brown, dry to moist, medium stiff to stiff, highly plastic, silty CLAY (A-7-5) with some sand

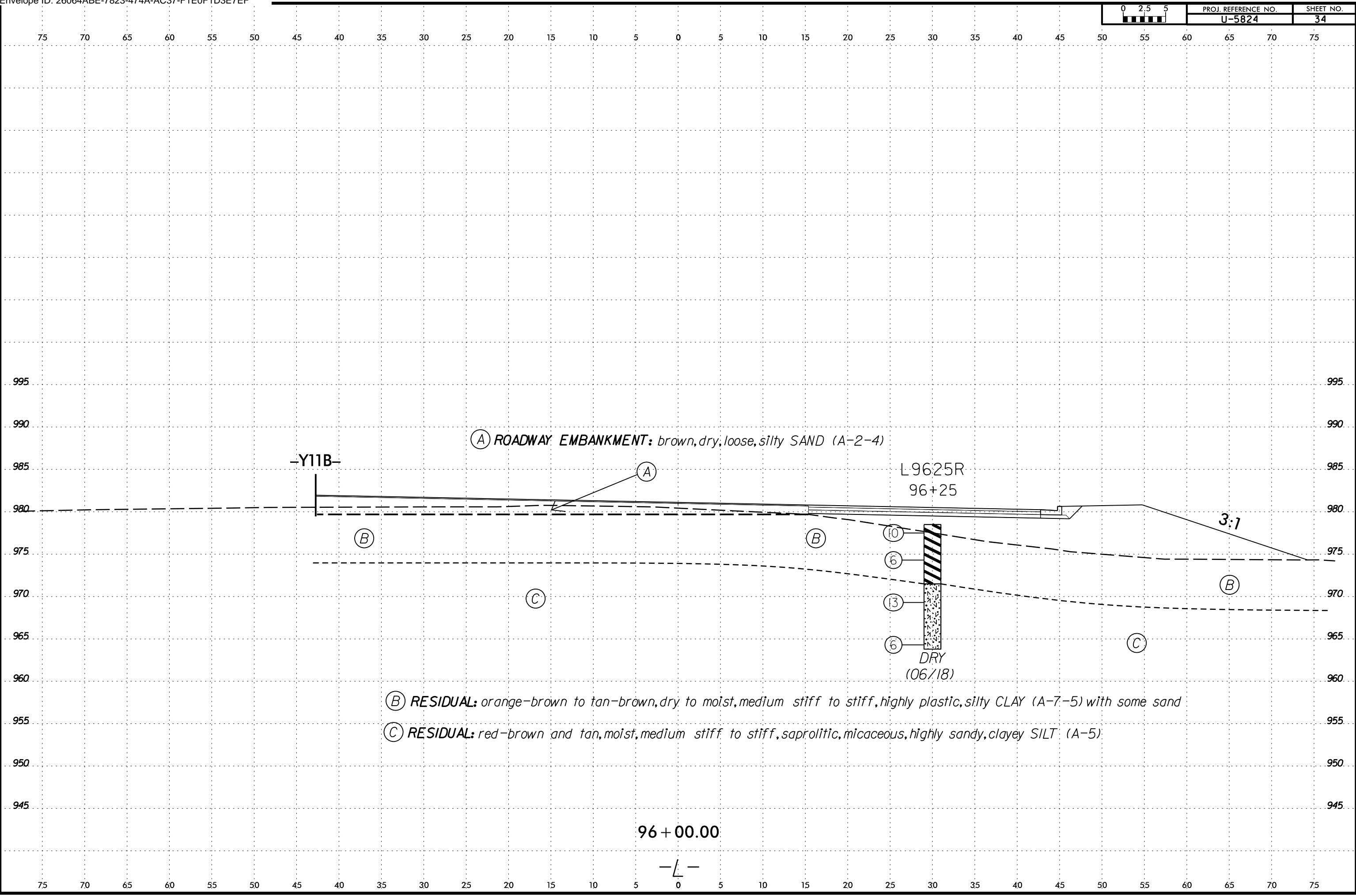
(C) RESIDUAL: red-brown and tan, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5)

95 + 50.00





6/23/16
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(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

-Y11B-

L9625R
96+25

3:1

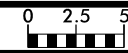
(10)
(6)
(13)
(6)
DRY
(06/18)

(B) RESIDUAL: orange-brown to tan-brown, dry to moist, medium stiff to stiff, highly plastic, silty CLAY (A-7-5) with some sand

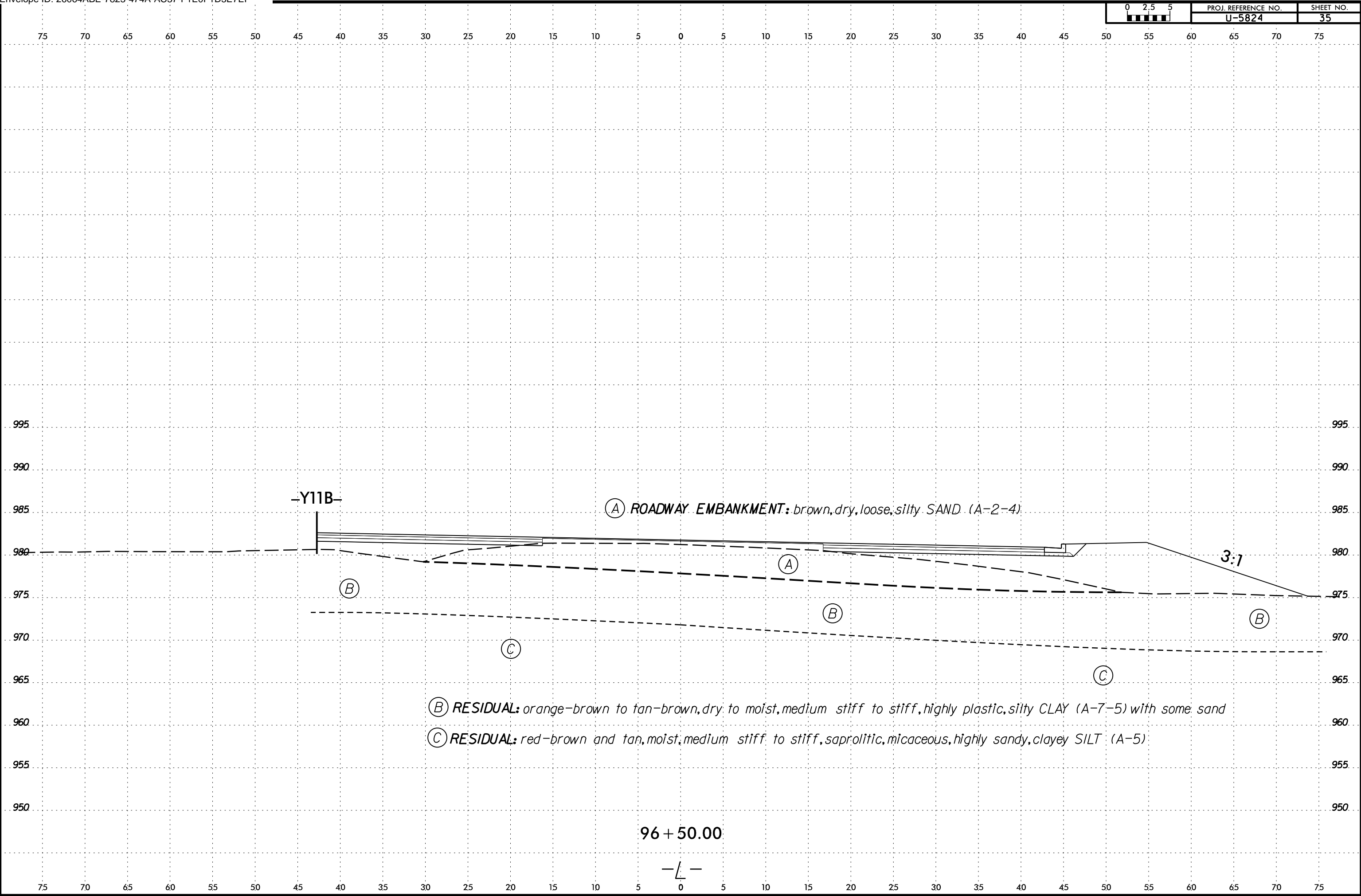
(C) RESIDUAL: red-brown and tan, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5)

96 + 00.00

-L-



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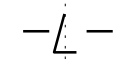


(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: orange-brown to tan-brown, dry to moist, medium stiff to stiff, highly plastic, silty CLAY (A-7-5) with some sand

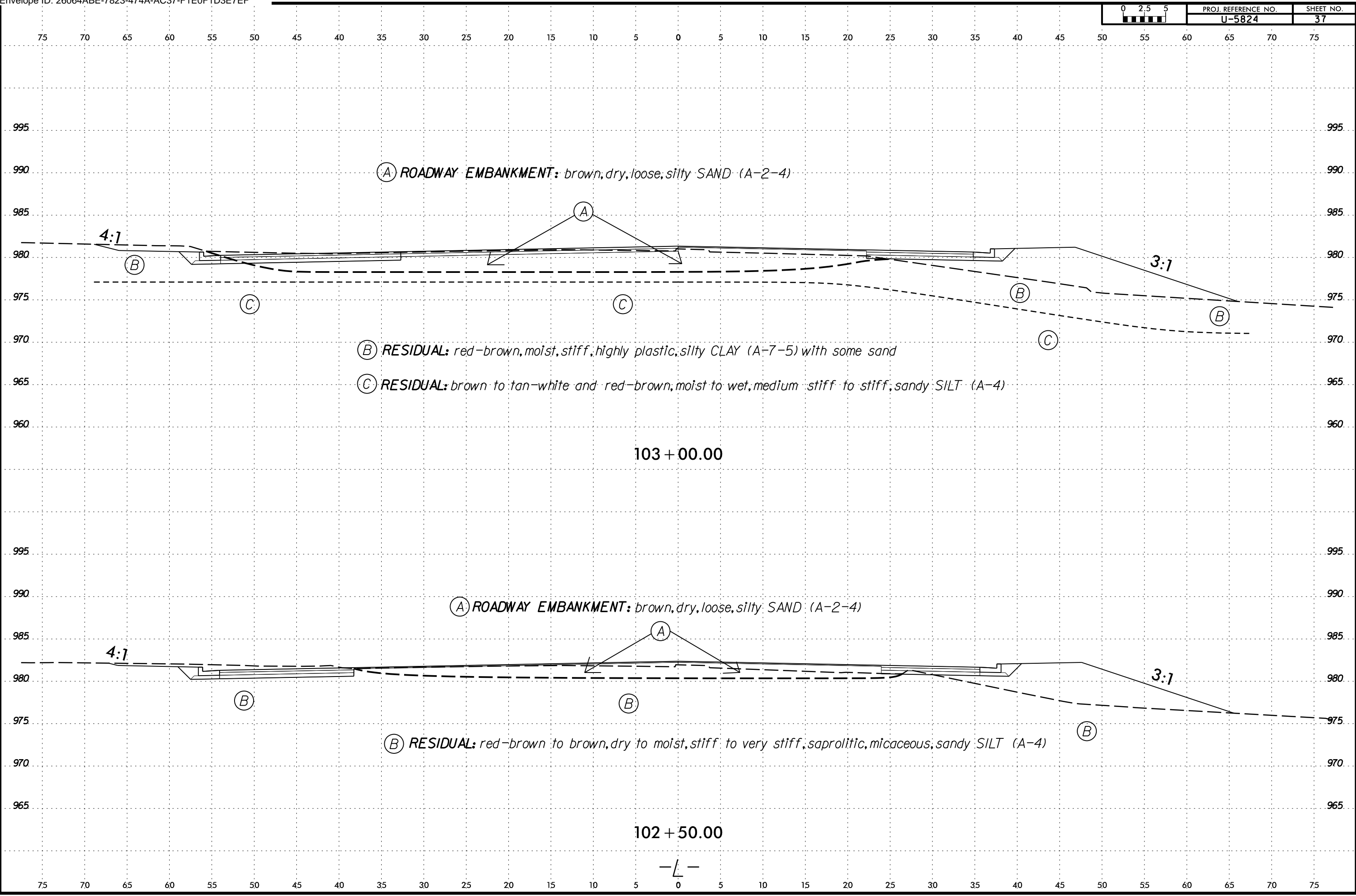
(C) RESIDUAL: red-brown and tan, moist, medium stiff to stiff, saprolitic, micaceous, highly sandy, clayey SILT (A-5)

96 + 50.00





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28-AUG-2018 16:25
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(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: red-brown, moist, stiff, highly plastic, silty CLAY (A-7-5) with some sand

(C) RESIDUAL: brown to tan-white and red-brown, moist to wet, medium stiff to stiff, sandy SILT (A-4)

103 + 00.00

(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: red-brown to brown, dry to moist, stiff to very stiff, saprolitic, micaceous, sandy SILT (A-4)

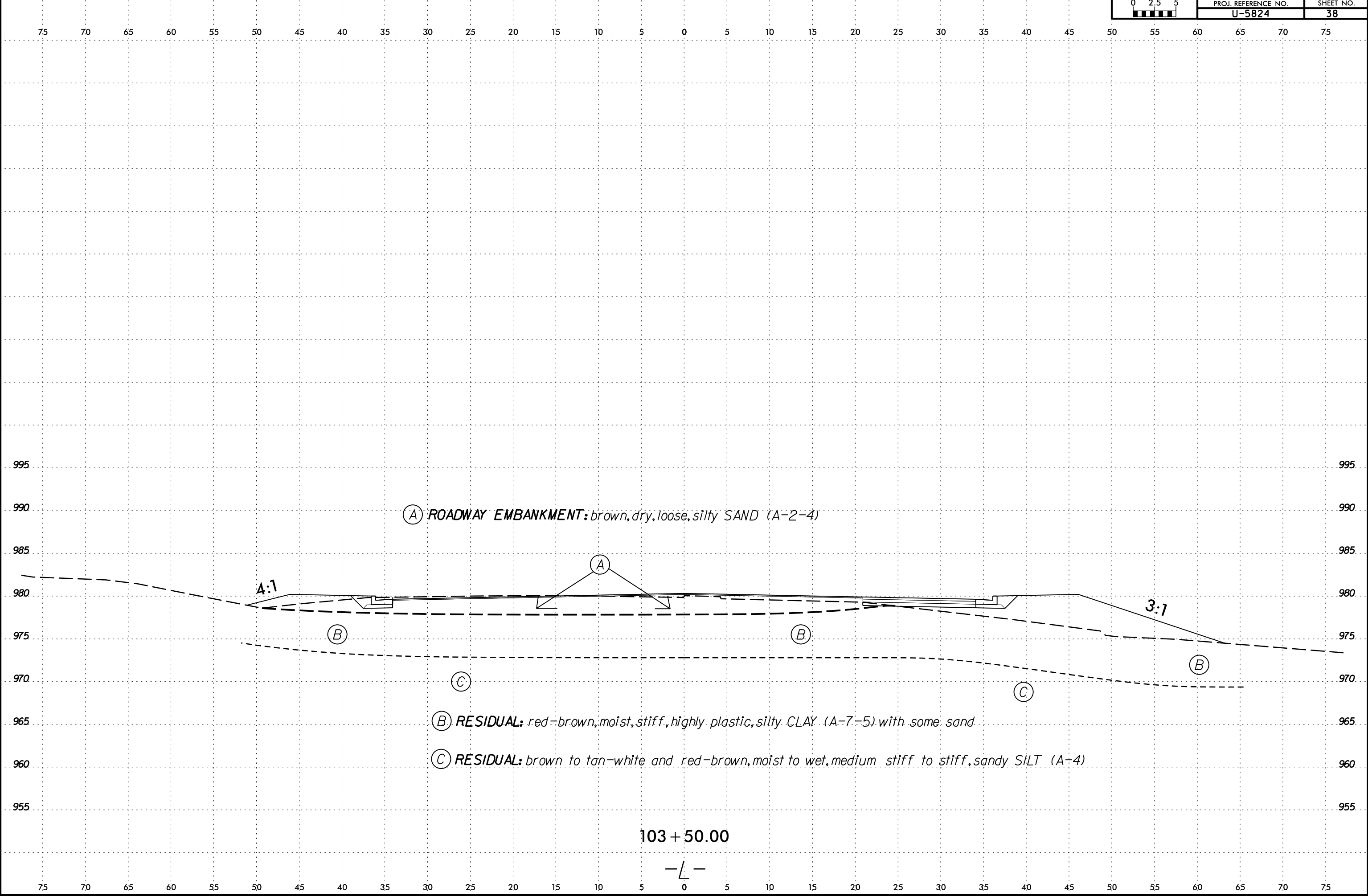
102 + 50.00





PROJ. REFERENCE NO.	SHEET NO.
U-5824	38

6/23/16
28-AUG-2018 16:26
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(A) ROADWAY EMBANKMENT: brown, dry, loose, silty SAND (A-2-4)

(B) RESIDUAL: red-brown, moist, stiff, highly plastic, silty CLAY (A-7-5) with some sand

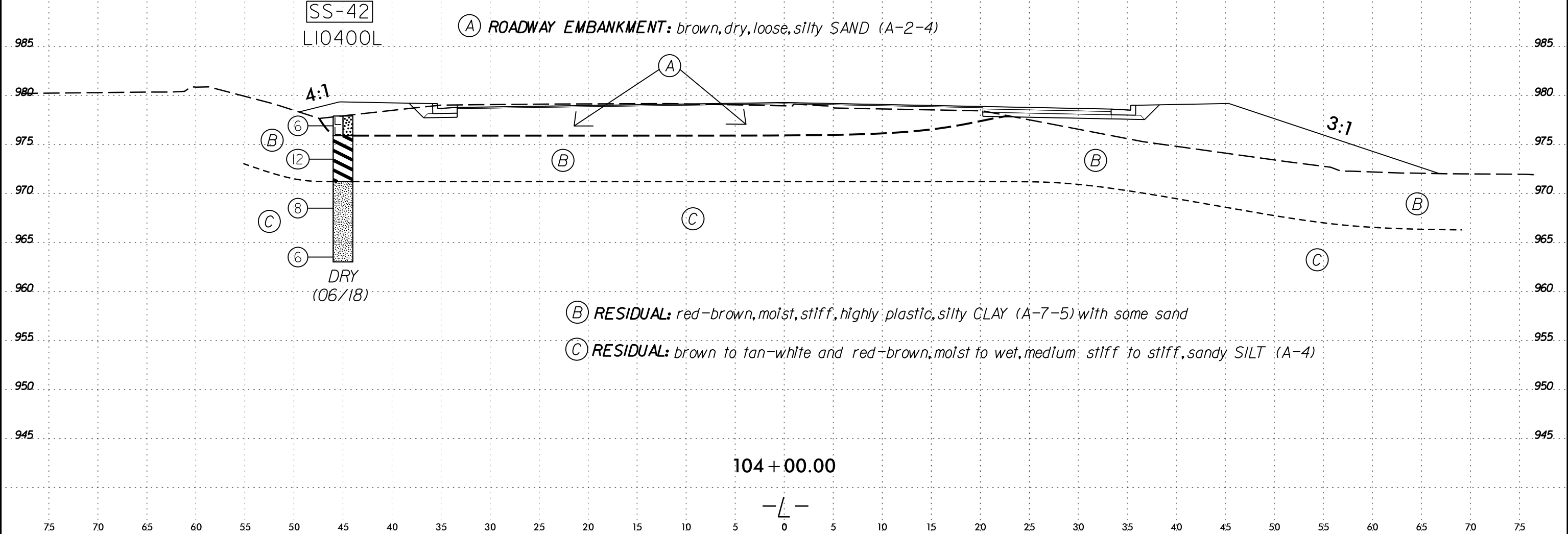
(C) RESIDUAL: brown to tan-white and red-brown, moist to wet, medium stiff to stiff, sandy SILT (A-4)

103 + 50.00

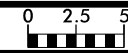


SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-42	45'LT	104+00	3.4' - 4.9'	A-7-5(25)	70	34	29.9	13.5	5.5	51.0	97	75	68	19.8	N/A

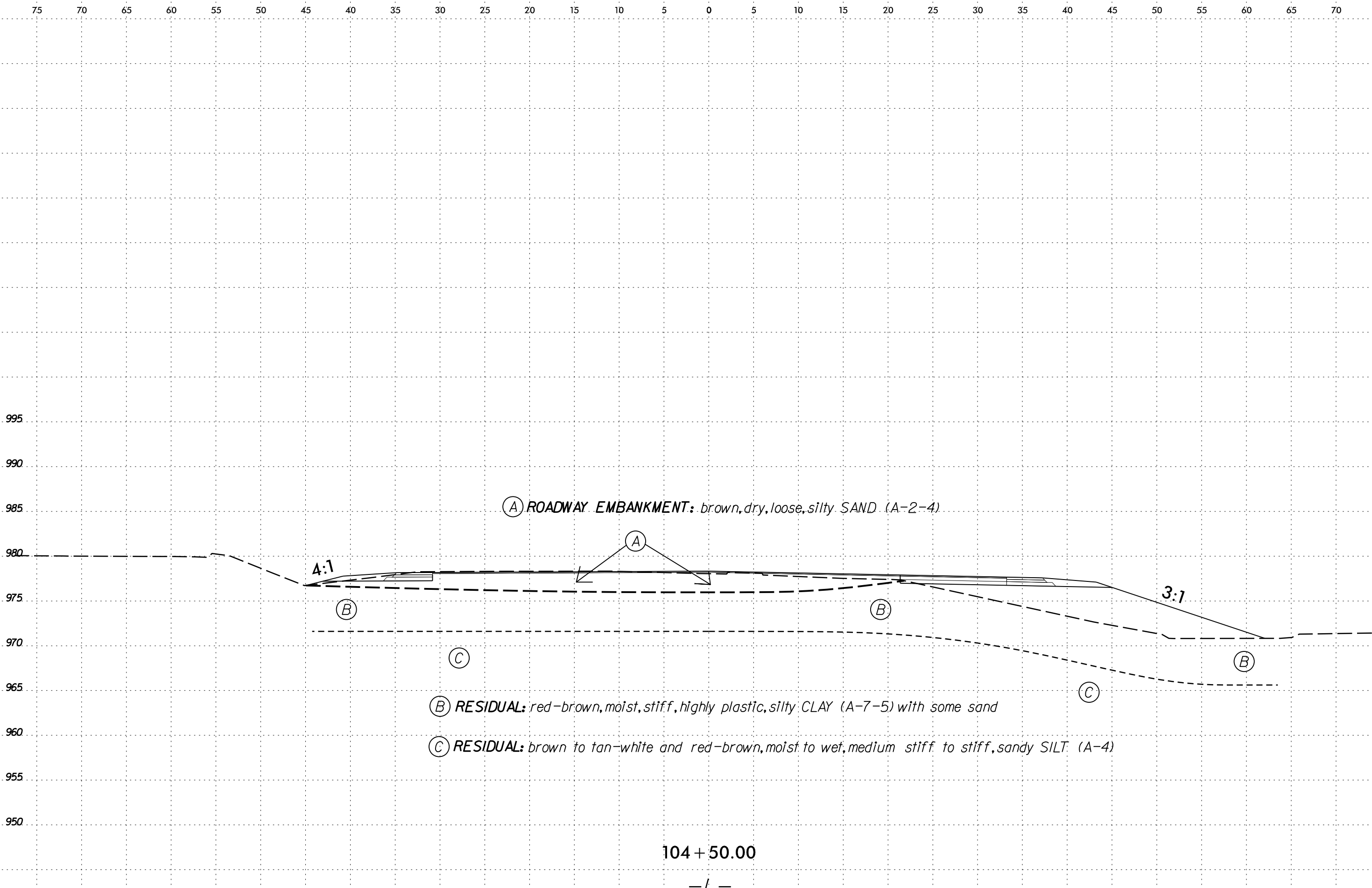


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PROJ. REFERENCE NO.	SHEET NO.
U-5824	40

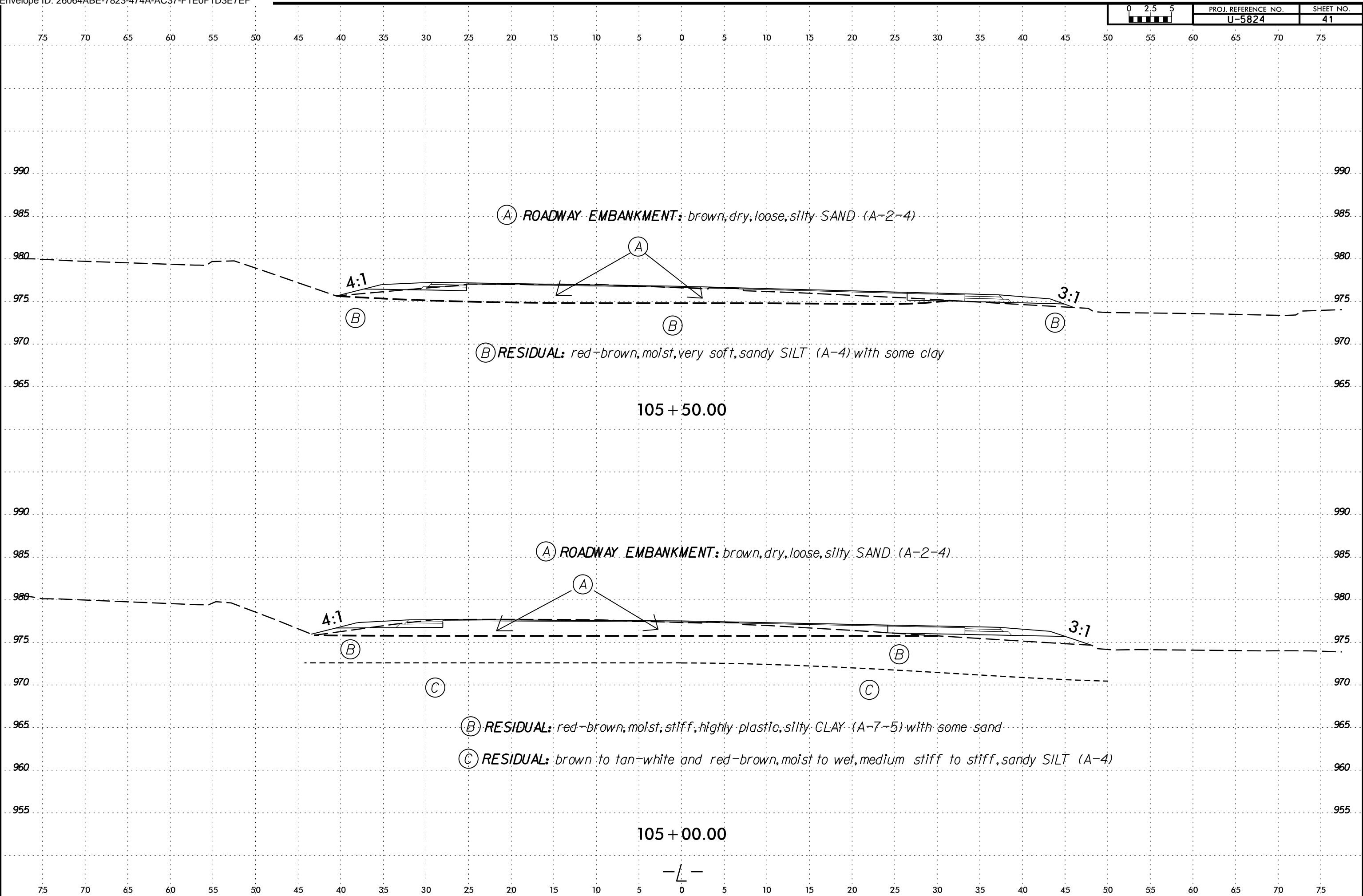
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PROJ. REFERENCE NO.	SHEET NO.
U-5824	41

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-L-