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REFERENCE: U-2524BC

PROJECT: 34820

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

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

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY GUILFORD
 PROJECT DESCRIPTION GREENSBORO WESTERN LOOP
(I-73 CONNECTOR) FROM I-73/I-840 TO SR 2085
(JOSEPH BRYAN BLVD.) INTERCHANGE
INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524BC	1	33

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:
- 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

- B. WORLEY, PG
- B. SMITH, PG
- L. GONZALEZ
- C. ELLINGTON

INVESTIGATED BY B. SMITH, PG
 DRAWN BY B. SMITH, PG
 CHECKED BY B. WORLEY, PG
 SUBMITTED BY B. SMITH, PG
 DATE DECEMBER, 2014



DocuSigned by:
Brett Smith 2/12/2015

SIGNATURE	DATE
SIGNATURE	DATE

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

Table with multiple sections: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, RECOMMENDATION SYMBOLS, ABBREVIATIONS, SOIL MOISTURE - CORRELATION OF TERMS, PLASTICITY, COLOR, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-2524BC	3	33
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34820.1.2	NHF-0708 (62)	P.E.	

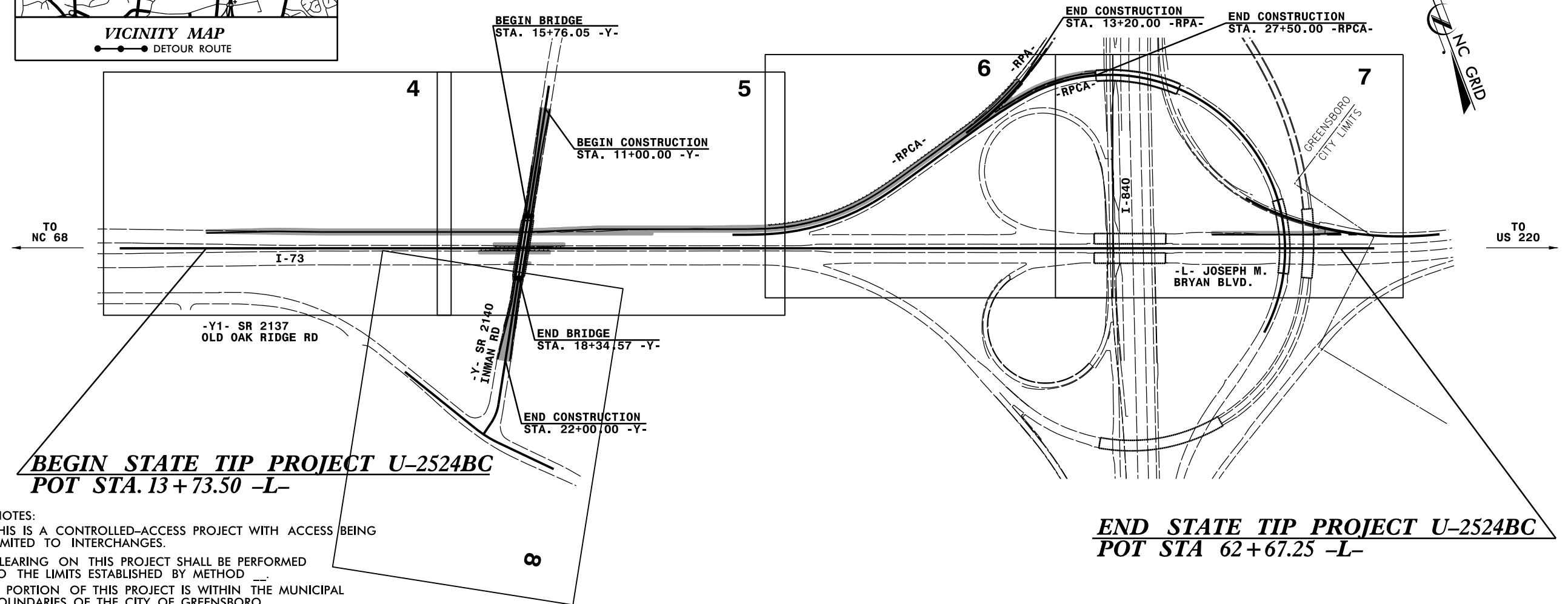
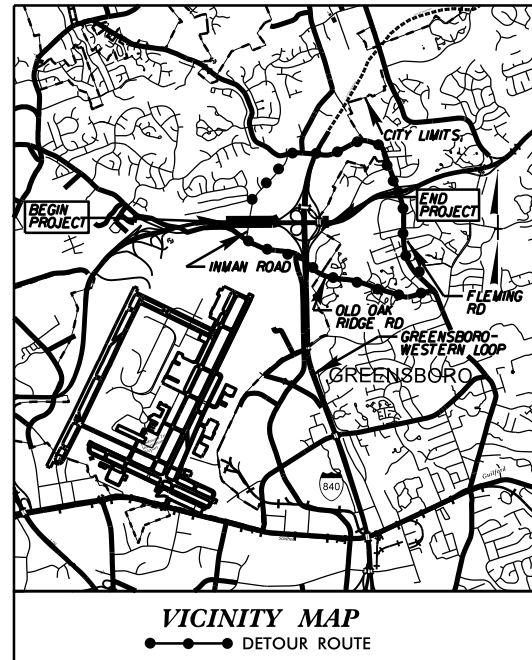
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GUILFORD COUNTY

LOCATION: GREENSBORO WESTERN LOOP (I-73 CONNECTOR) FROM I-73 / I-840
TO SR 2085 (JOSEPH BRYAN BLVD.) INTERCHANGE

TYPE OF WORK: GRADING, DRAINAGE, PAVING, RETAINING WALL,
AND STRUCTURES

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



BEGIN STATE TIP PROJECT U-2524BC
POT STA. 13+73.50 -L-

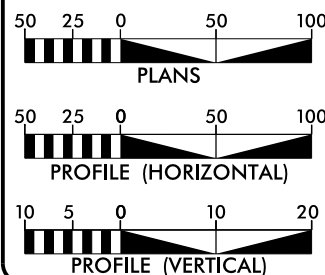
END STATE TIP PROJECT U-2524BC
POT STA. 62+67.25 -L-

NOTES:
THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

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

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF GREENSBORO

GRAPHIC SCALES



DESIGN DATA

ADT 2014 = 28,300
ADT 2034 = 65,500
K = 11 %
D = 55 %
T = 14 % *
V = 70 MPH
CLASSIFICATION: FREEWAY
* 8% TTST DUAL 6% INTERSTATE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-2524BC = 0.926 MILES
LENGTH STRUCTURES TIP PROJECT U-2524BC = 0.000 MILES
TOTAL LENGTH OF TIP PROJECT U-2524BC = 0.926 MILES

PLANS PREPARED BY:
PARSONS
8640 CENTERVIEW DR., SUITE 201
RALEIGH, NORTH CAROLINA 27608
NC LICENSE NO. P-12248
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

TIMOTHY D. GOINS, P.E.
PROJECT ENGINEER

J. MATTHEW PICKENS, P.E.
PROJECT DESIGN ENGINEER

BRENDA MOORE, P.E., CPM
PROJECT ENGINEER
NCDOT ROADWAY DESIGN
ENGINEERING COORDINATION SECTION

LETTING DATE:
JUNE 16, 2015

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: _____ P.E.

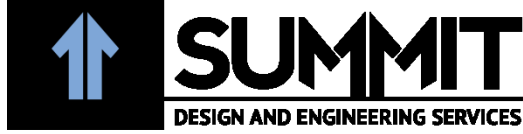
ROADWAY DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

SIGNATURE: _____ P.E.



CONTRACT: U-2524BC



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

December 19, 2014

STATE PROJECT: U-2524BC
 WBS No.: 34820.1.2
 F.A. PROJECT: NHF-0708 (62)
 COUNTY: Guilford
 DESCRIPTION: Greensboro Western Loop (I-73 Connector) from I-73/I-840 to SR 2085 (Joseph Bryan Blvd) Interchange
 SUBJECT: Geotechnical Report - Inventory

Project Description

The project consists of 0.926 miles of proposed roadway widening. The overall project also includes the replacement of the Inman Road Bridge over Joseph Bryan Blvd. The structure subsurface inventory will be turned in under separate cover.

The geotechnical investigation was conducted in November of 2014 utilizing Summit personnel and equipment. Borings were advanced using CME-450 and D-50 drill machines equipped with automatic hammers. Standard Penetration Tests were performed at all boring locations to provide subsurface information for roadbed and slope design/construction. In addition to the drilled borings, three hand auger borings were performed along the -RPCA- alignment. Representative soil samples were collected and submitted to the Summit's soils laboratory for analysis. All investigations and reporting were performed in accordance with the NCDOT Geotechnical Engineering Unit's 1994 "Geotechnical Investigation Requirements, Procedures and Guidelines."

The following alignments were investigated for this project:

<u>Line</u>	<u>Station(±)</u>
-L-	14+00 to 37+80
-L-	57+50 to 60+00
-RPCA-	15+00 to 21+80
-Y-	20+00 to 21+50

Areas of Special Geotechnical Interest

Plastic Soils - Medium plastic, highly sandy, silty clay (A-7-5) was encountered at various locations within the existing Roadway Embankment Fill, and was also encountered in a few locations within Residual soils. The occurrences in Residual soils were below proposed grade in each case. No highly plastic soils were encountered during the investigation.

Crystalline Rock - Crystalline rock was encountered within 6 feet of proposed grade during the roadway investigation at the following locations:

<u>Line</u>	<u>Station</u>
-L-	14+00 to 16+00

Weathered Rock - Weathered rock typically occurs as a thin (< 3 ft.) zone around crystalline rock. It is also possible to encounter thin seams of weathered rock within the residual saprolite in this area.

Shallow Ground Water - Ground water was encountered within 6 feet of grade at the following locations:

<u>Line</u>	<u>Station</u>
-L-	26+50 to 27+00
-RPCA-	17+00 to 21+00

Ponds - One pond is present within close proximity of proposed and existing right of way at the following location:

<u>Line</u>	<u>Station</u>	<u>Offset(ft)</u>	<u>Within Fill/Cut Extent</u>
-RPCA-	12+00 to 18+50	125 LT to 475 LT	No

Retention Ponds - Several retention ponds are present within close proximity of proposed and existing right of way at the following locations:

<u>Line</u>	<u>Station</u>	<u>Offset(ft)</u>	<u>Within Fill/Cut Extent</u>
-RPCA-	17+73 to 21+10	85 LT to 95 LT	No

Physiography, Geology and Surface Water

The project corridor is located in north-central North Carolina just outside the city limits of Greensboro. Topography in the area is characterized by gently rolling, well rounded hills and long low ridges. Elevations along the project range from around 830 feet to just over 900 feet above sea level. The natural topography has already been significantly altered by the previous construction of Joseph Bryan Blvd and associated interchanges.

Geologically the project area is located within the Piedmont Physiographic Province. Located right along the northern edge of the Charlotte Belt. This belt is described as being dominantly plutonic, with igneous plutons ranging in composition from gabbro to granite. The ages of the various plutons are also quite varied, from Middle Proterozoic to Permian, with the oldest rocks commonly being more mafic in composition. Depending on the age and location along the edges or center of the various plutons, various degrees of metamorphism can be present.

There are no major or minor alluvial brooks, creeks, or rivers along the project corridor. There are many engineered drainage ditches associated with the existing infrastructure. There is a pond left of the -RPCA- alignment, as well as a few retention ponds near the base of the Roadway Embankment Fill of this alignment.

Soils Properties

Roadway Embankment Fill soils from the previous construction of Joseph Bryan Blvd and associated interchanges were encountered along the project corridor, especially along the -RPCA- alignment. These soils consisted of sandy silts (A-4), clayey silts (A-5), sandy clays (A-6), and silty clays (A-7-5) with varying amounts of gravel, cobbles, and boulders. Trace amounts of organic materials were also encountered during the investigation. The Roadway Embankment Fill soils ranged from non-plastic to medium plastic, with liquid limits ranging from 72 to 44. Soil moistures were generally moist, with some wet areas encountered near the base of the fill. Cobble and boulder concentrations increased around the base of the fill along the -RPCA- alignment.

Residual soils encountered along the project corridor are derived from the weathering of Late Proterozoic to Permian age crystalline rocks. These soils typically consist of micaceous, saprolitic, silty sands (A-2-4) and sandy silts (A-4). Lesser amounts of micaceous, saprolitic, silty clays (A-7-5) and clayey silts (A-5) were encountered along the project corridor. The Residual soils range from non-plastic to medium plastic. Liquid limits range from 61 to 31, and soil moistures range from dry to saturated. Weathered rock seams of varying thickness and rock fragments of varying size could be encountered throughout the residual soil profile

Rock Properties

All rock properties observations were made from residual saprolite and weathered rock samples obtained in the split spoon sampler during the Standard Penetration Test. No rock core was obtained, and no rock outcrops were observed along the project corridor. The majority of the rock underlying the project area is believed to be Late Proterozoic age Metamorphosed Diorite. The Meta-Diorite observed was highly micaceous, and weakly to moderately foliated. This unit is intruded by a younger, Permian age, Metamorphosed Granite. The Meta-Granite observed was micaceous and weakly foliated.

Ground Water

During the geotechnical field investigation of the roadway alignments, several borings encountered ground water. Areas containing shallow ground water are listed above in the section "Areas of Special Geotechnical Interest." Spring heads and known private wells are accurately shown on boring location plan view sheets. Ground water data was collected during below average to average rainfall conditions. Ground water may fluctuate with seasonal precipitation.

Ponds

No ponds are within the project right of way; however, there is one pond left of the -RPCA- alignment. This pond is listed by alignment, station, and offset in the "Areas of Special Geotechnical Interest." The pond is located upstream from proposed construction along this alignment, and no impact is expected during construction.

Retention Ponds

There are a series of retention ponds located just outside the limits of construction left of the -RPCA- alignment. They are associated with storm water runoff from the existing roadway as well as pond overflow from the pond mentioned in the section above. These ponds are listed by alignment, station, and offset in the "Areas of Special Geotechnical Interest." It is anticipated that these ponds will see increased sediment loading during construction.

BULK SAMPLES

No bulk samples were collected during the investigation.

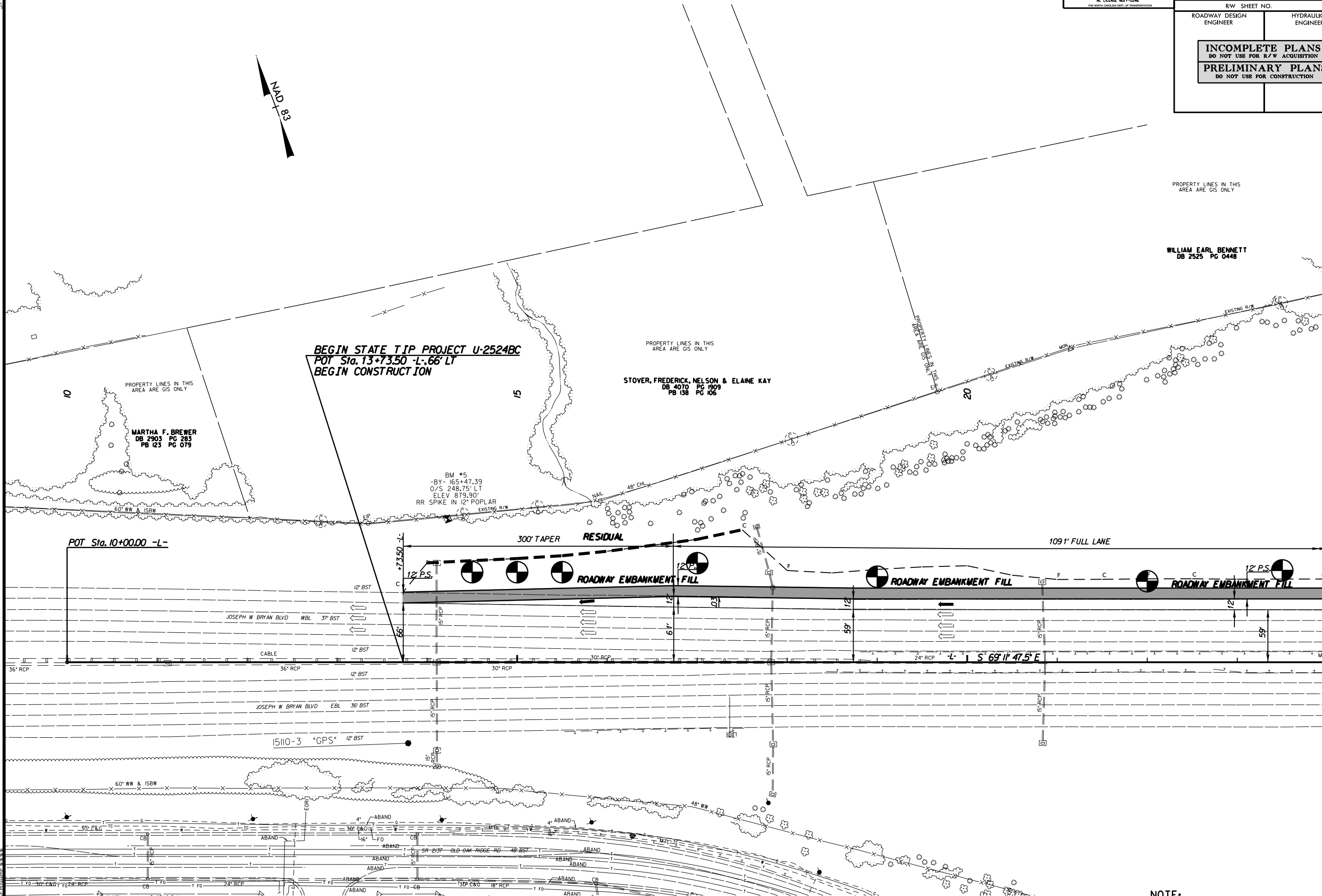
Respectfully Submitted,

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

5/14/19
U-2524BC_Plan\Resub\CADD_GEO\RDWY_SummitResub\CADD_GEO\TECH\Plan\U2524BC_GEO_RDWY_PSH_4.DGN
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PLANS PREPARED BY
PARSONS
5540 CENTERVIEW DR., SUITE 217
RALEIGH, NORTH CAROLINA 27604
NC LICENSE NO. P-0246
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. U-2524BC	SHEET NO. 4
RW SHEET NO.	
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

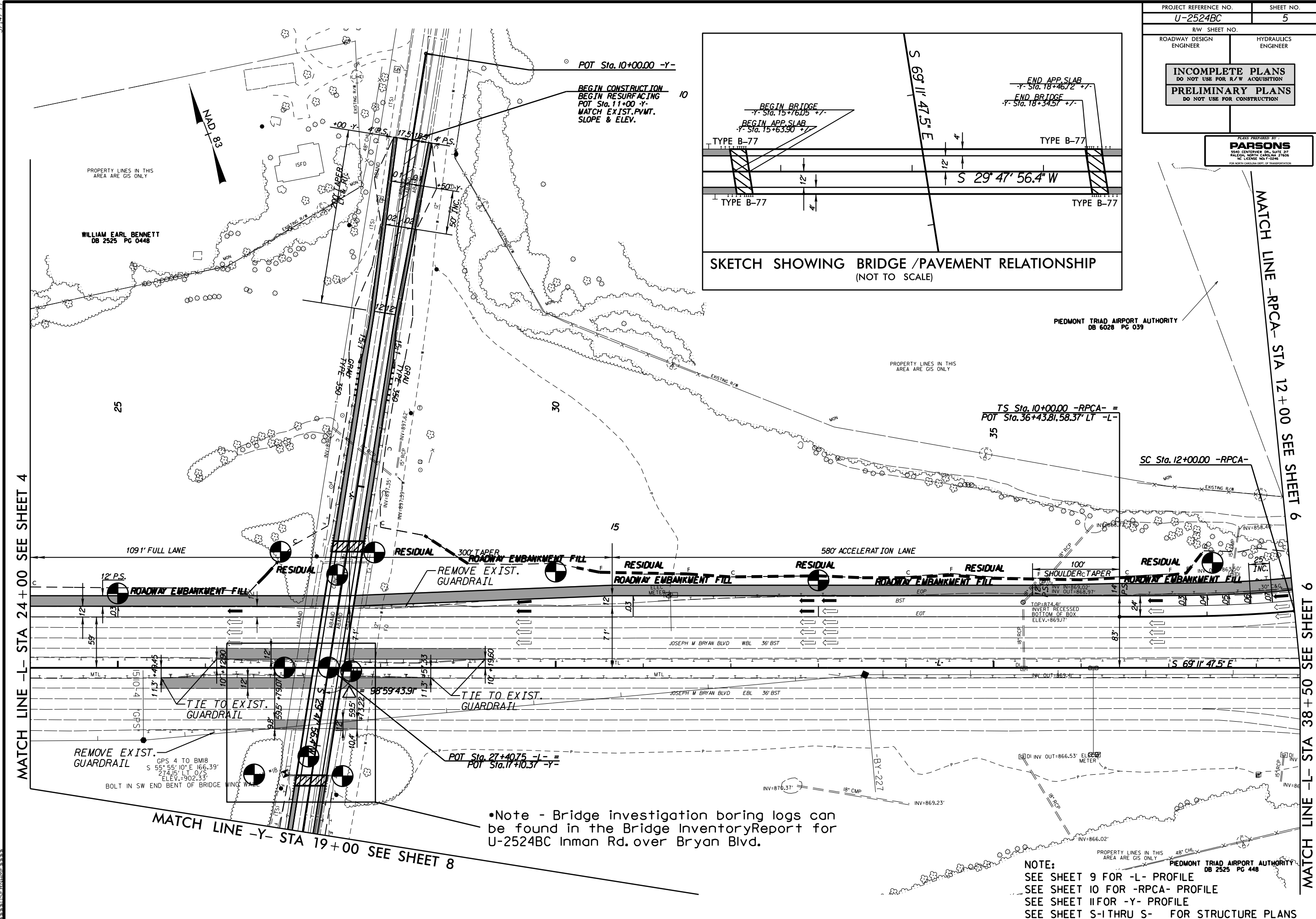
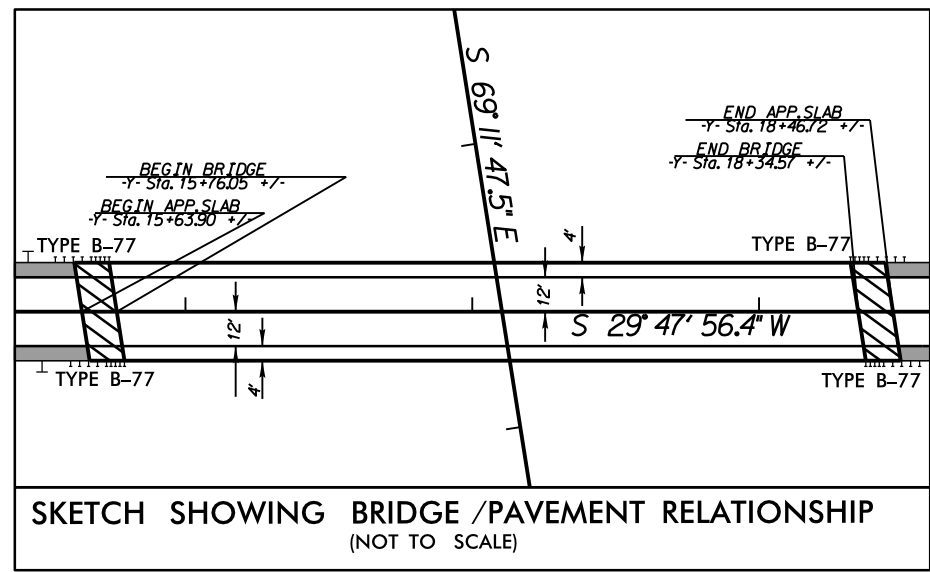


NOTE:
SEE SHEET 9 FOR -L- PROFILE

MATCH LINE -L- STA 24+00 SEE SHEET 5

PROJECT REFERENCE NO. U-2524BC	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FILES PREPARED BY
PARSONS
 5400 CENTERVIEW DR. SUITE 317
 RALEIGH, NORTH CAROLINA 27606
 NC LICENSE NO. P-5284
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION



NOTE:
 SEE SHEET 9 FOR -L- PROFILE
 SEE SHEET 10 FOR -RPCA- PROFILE
 SEE SHEET 11 FOR -Y- PROFILE
 SEE SHEET S-1 THRU S- FOR STRUCTURE PLANS

5/14/2015 9:29 AM
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5/14/09
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PROJECT REFERENCE NO. U-2524BC	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PLANS PREPARED BY
PARSONS
5640 CENTER DR. SUITE 317
RALEIGH, NORTH CAROLINA 27608
NC LICENSE NO. F0244
FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

-RPCA-
PIs Sta 11+33.40
Os = 5' 43' 46.5"
Ls = 200.00'
LT = 133.40'
ST = 66.73'
PI Sta 14+18.41
Δ = 24' 38' 27.6" (LT)
D = 5' 43' 46.5"
L = 430.07'
T = 218.41'
R = 1,000.00'
S.E. = 0.08
PI Sta 16+96.80
Os = 5' 43' 46.5"
Ls = 200.00'
LT = 133.40'
ST = 66.73'
PI Sta 23+36.22
Δ = 9' 01' 24.9" (RT)
D = 3' 10' 27.4"
L = 284.27'
T = 142.43'
R = 1,805.00'
S.E. = 0.03

-RPA-
PI Sta 11+62.59
Δ = 13' 26' 21.6" (LT)
D = 4' 09' 06.7"
L = 323.69'
T = 162.59'
R = 1,380.00'
S.E. = 0.055
PI Sta 14+15.69
Δ = 5' 50' 06.8" (LT)
D = 3' 10' 27.4"
L = 183.83'
T = 91.99'
R = 1,805.00'
S.E. = EXIST.

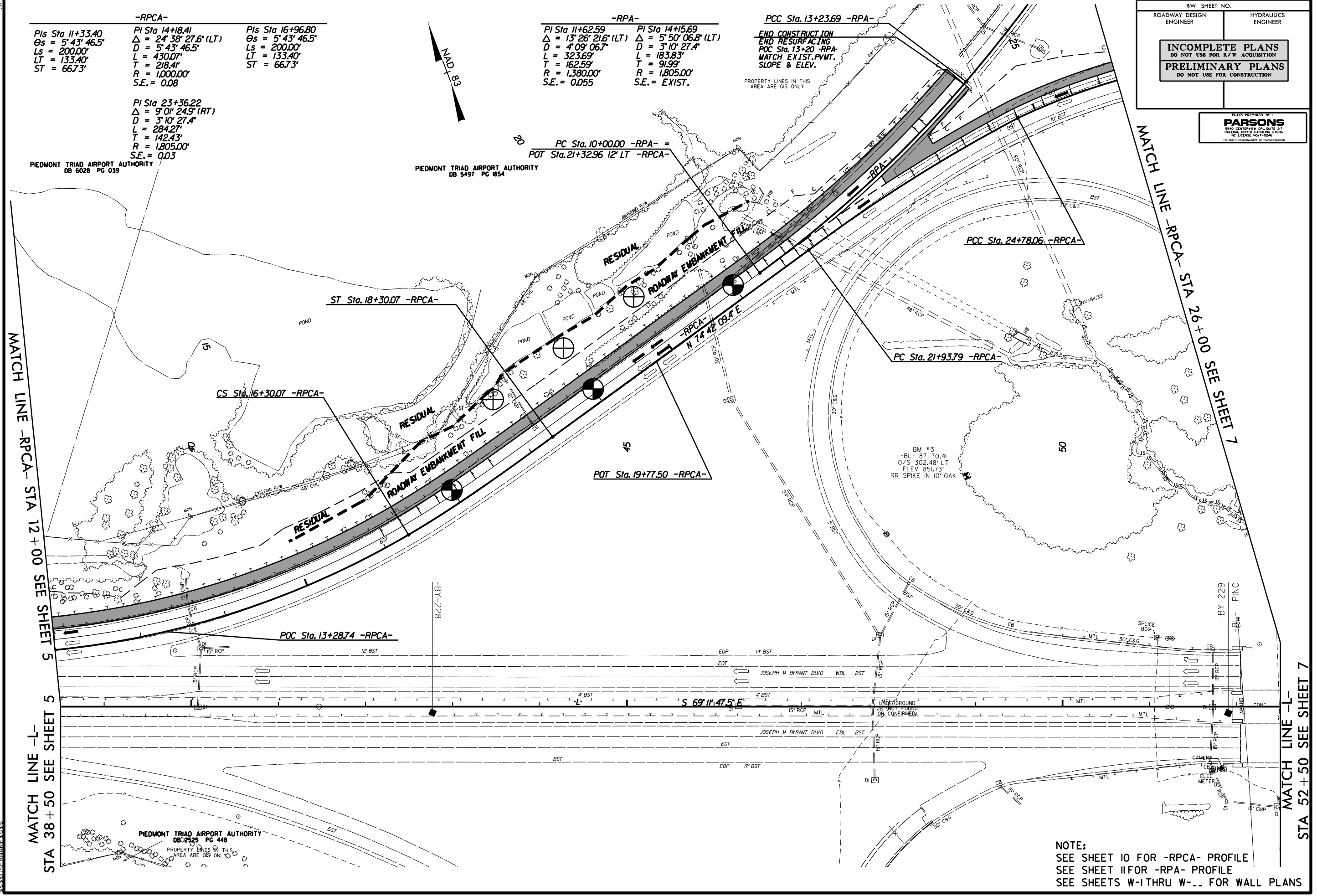
PCC Sta. 13+23.69 -RPA-
END CONSTRUCTION
END RESURFACING
POC Sta. 13+20 -RPA-
MATCH EXIST. PVMT.
SLOPE & ELEV.

PC Sta. 10+00.00 -RPA- =
POT Sta. 21+32.96 12' LT -RPCA-

PIEDMONT TRIAD AIRPORT AUTHORITY
DB 6028 PG 039

PIEDMONT TRIAD AIRPORT AUTHORITY
DB 5497 PG 1854

MATCH LINE -RPCA- STA 12+00 SEE SHEET 5
MATCH LINE -RPCA- STA 26+00 SEE SHEET 7
MATCH LINE -RPCA- STA 38+50 SEE SHEET 7

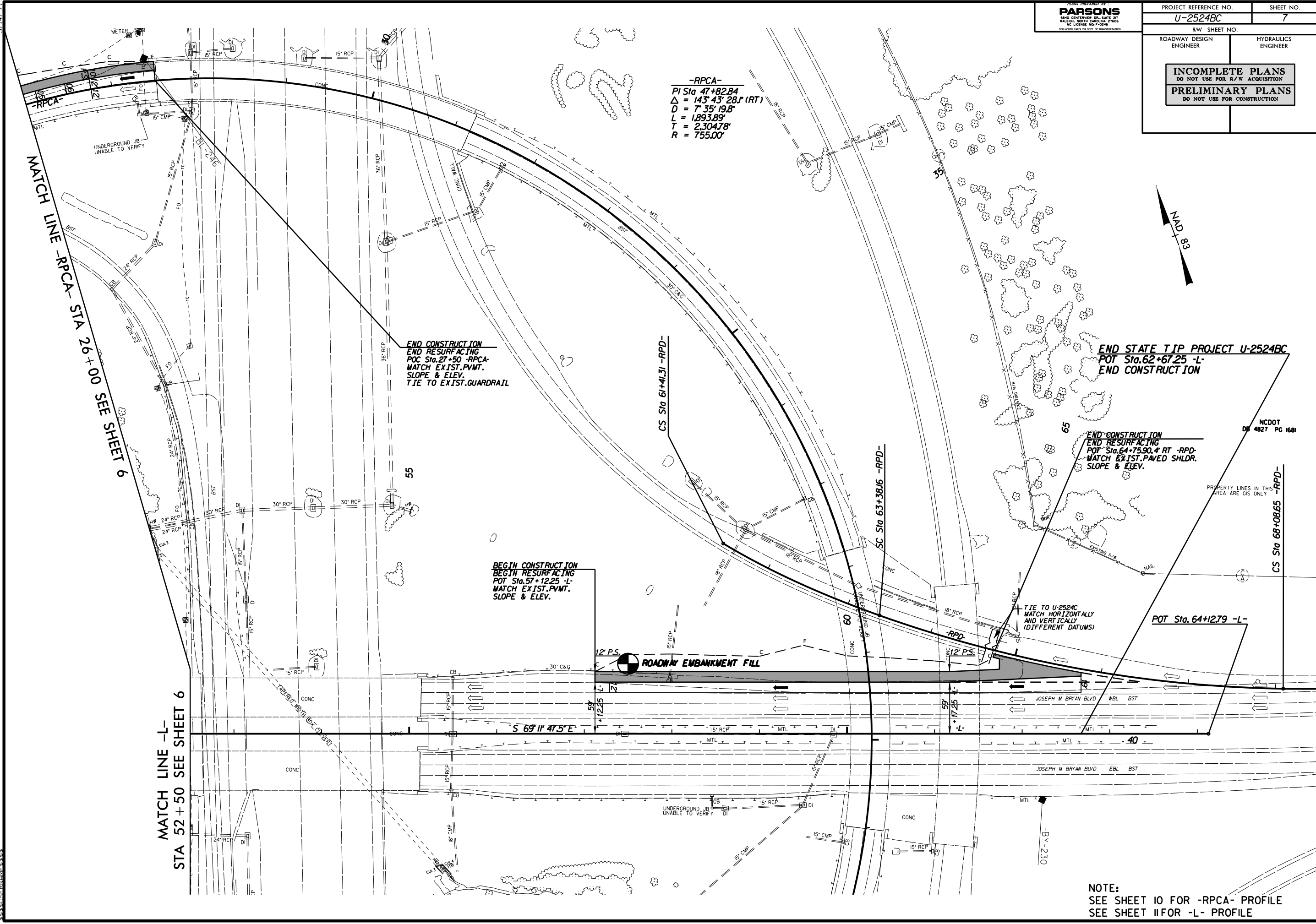


PIEDMONT TRIAD AIRPORT AUTHORITY
DB 2525 PG 448
PROPERTY LINES IN THIS
AREA ARE GIS ONLY

NOTE:
SEE SHEET 10 FOR -RPCA- PROFILE
SEE SHEET 11 FOR -RPA- PROFILE
SEE SHEETS W-1 THRU W-... FOR WALL PLANS

5/14/09
 U:\2524BC\RDWY\FILES\U2524BC_GEO\RDWY_SummitResub\CADD_GEO\TECH\PLAN\U2524BC_GEO_RDWY_PSH_7.DGN
 2524BC_RDWY_PSH_7.DGN
 \$\$\$\$SUSPENSE\$\$\$\$

PARSONS <small>5540 CENTERVIEW DR., SUITE 207 RALEIGH, NORTH CAROLINA 27608 NC LICENSE NO. F-0246 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION</small>	
PROJECT REFERENCE NO. U-2524BC	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCH LINE -RPCA- STA 26+00 SEE SHEET 6

MATCH LINE -L- STA 52+50 SEE SHEET 6

-RPCA-
 PI Sta 47+82.84
 $\Delta = 143^\circ 43' 28.1 (RT)$
 $D = 7^\circ 35' 19.8$
 $L = 1,893.89$
 $T = 2,304.78$
 $R = 755.00'$

END CONSTRUCTION
 END RESURFACING
 POC Sta. 27+50 -RPCA-
 MATCH EXIST. PVMT.
 SLOPE & ELEV.
 TIE TO EXIST. GUARDRAIL

BEGIN CONSTRUCTION
 BEGIN RESURFACING
 POT Sta. 57+12.25 -L-
 MATCH EXIST. PVMT.
 SLOPE & ELEV.

END STATE TIP PROJECT U-2524BC
 POT Sta. 62+67.25 -L-
 END CONSTRUCTION

END CONSTRUCTION
 END RESURFACING
 POT Sta. 64+75.90, 4 RT -RPD-
 MATCH EXIST. PAVED SHLDR.
 SLOPE & ELEV.

TIE TO U-2524C
 MATCH HORIZONTALLY
 AND VERTICALLY
 (DIFFERENT DATUMS)

POT Sta. 64+12.79 -L-

ROADWAY EMBANKMENT FILL

NOTE:
 SEE SHEET 10 FOR -RPCA- PROFILE
 SEE SHEET 11 FOR -L- PROFILE



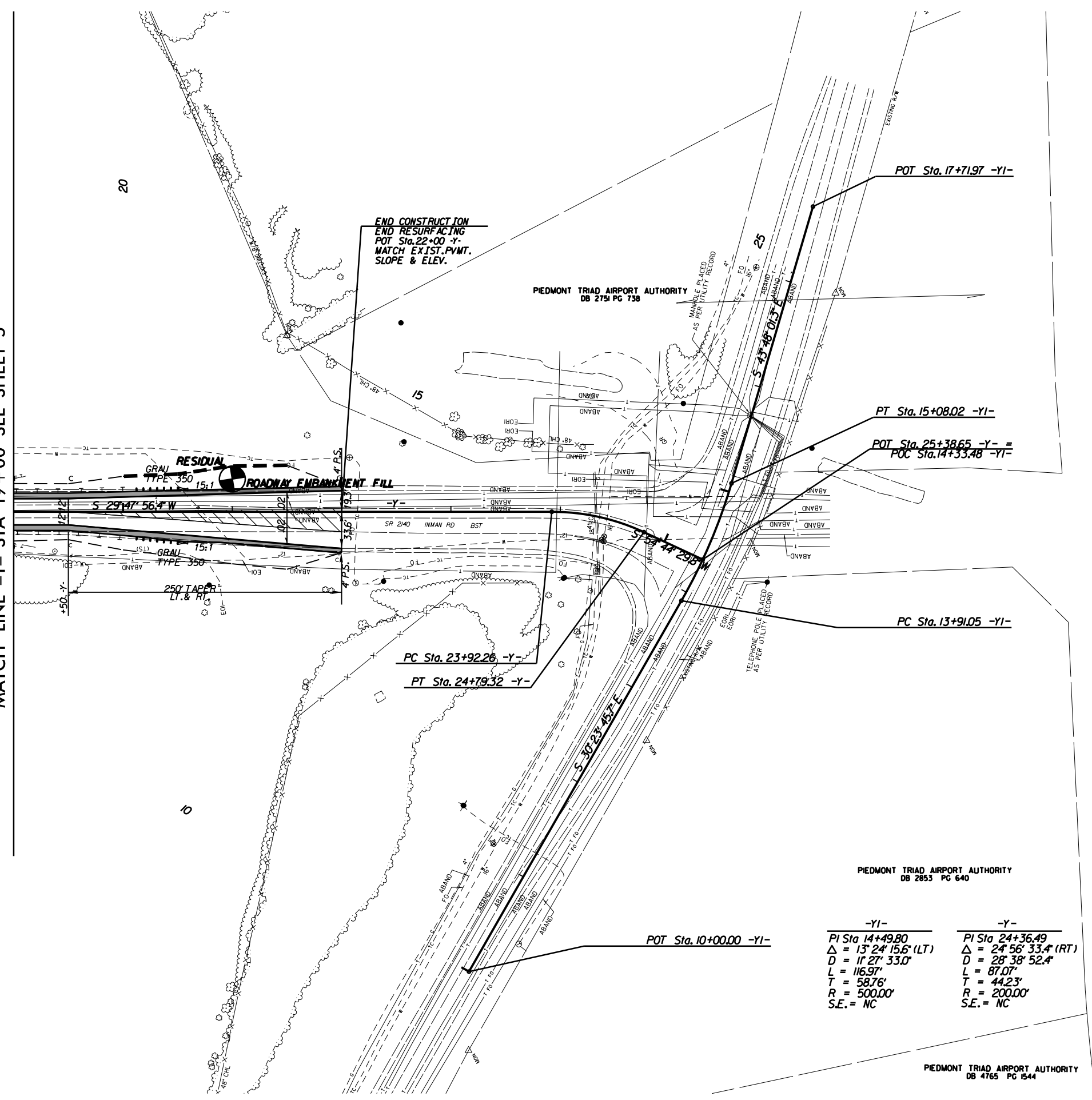
NC DOT
 DS 4827 PG 168

PROPERTY LINES IN THIS
 AREA ARE GIS ONLY

CS Sta 68+08.65 -RPD-

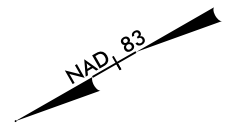
5/14/99
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 25 JAN 2015 12:17
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MATCH LINE -Y- STA 19+00 SEE SHEET 5



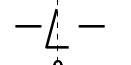
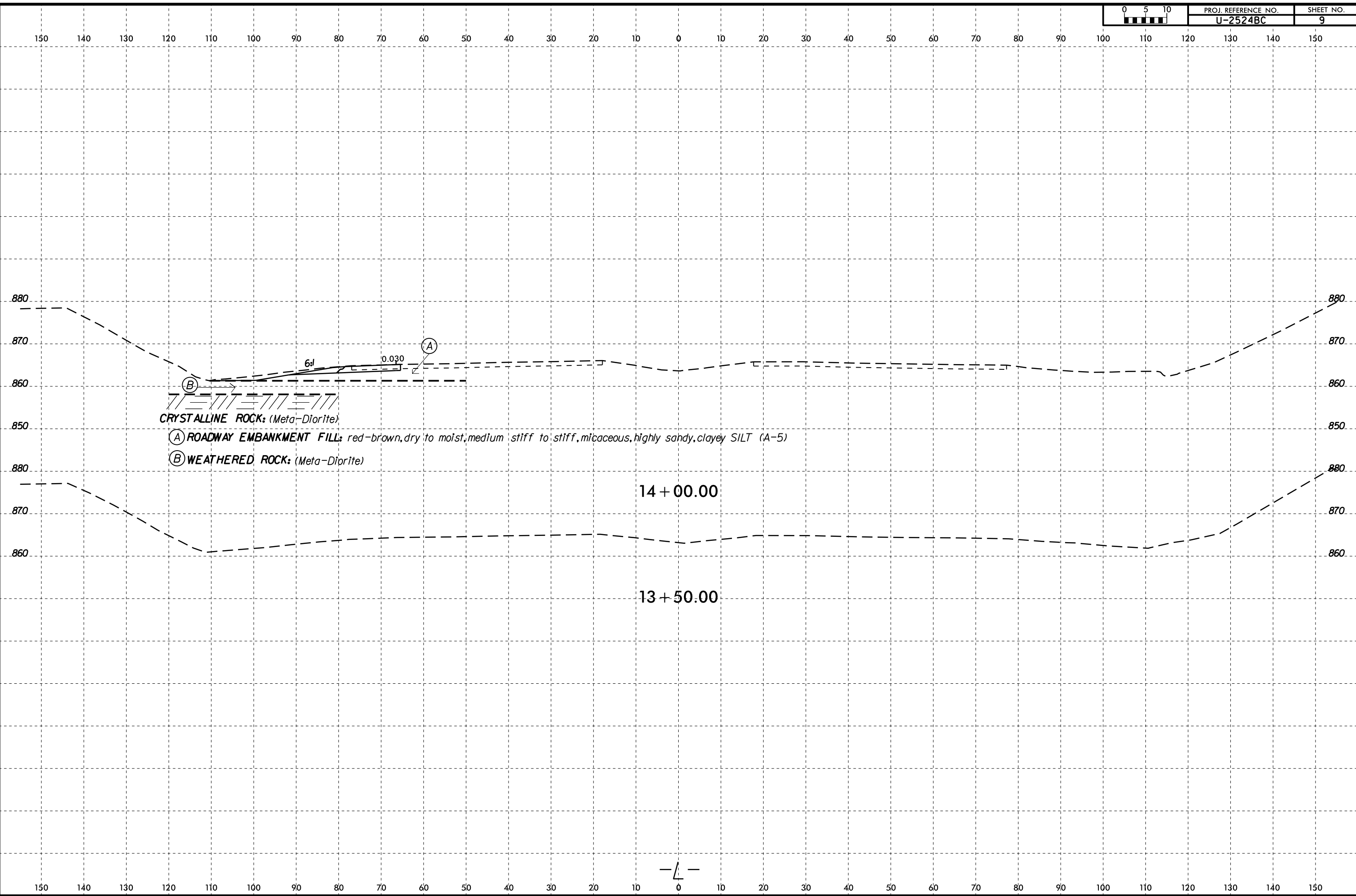
PLANS PREPARED BY
PARSONS
 5540 CENTERVIEW DR., SUITE 207
 RALEIGH, NORTH CAROLINA 27608
 NC LICENSE NO. P-0246
 FOR NORTH CAROLINA DEPT. OF TRANSPORTATION

PROJECT REFERENCE NO. U-2524BC	SHEET NO. 8
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

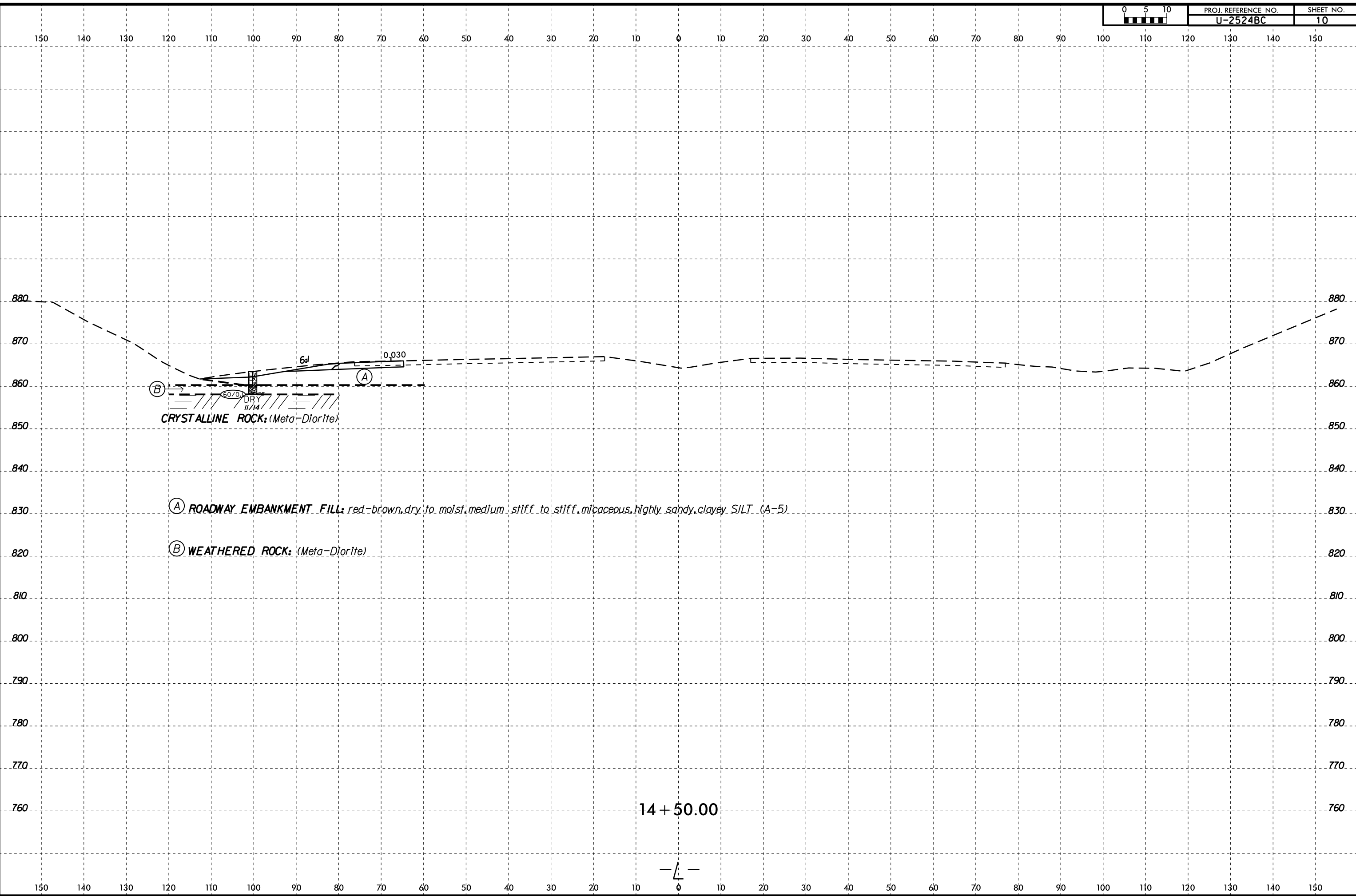


NOTE:
SEE SHEET IIFOR -Y- PROFILE

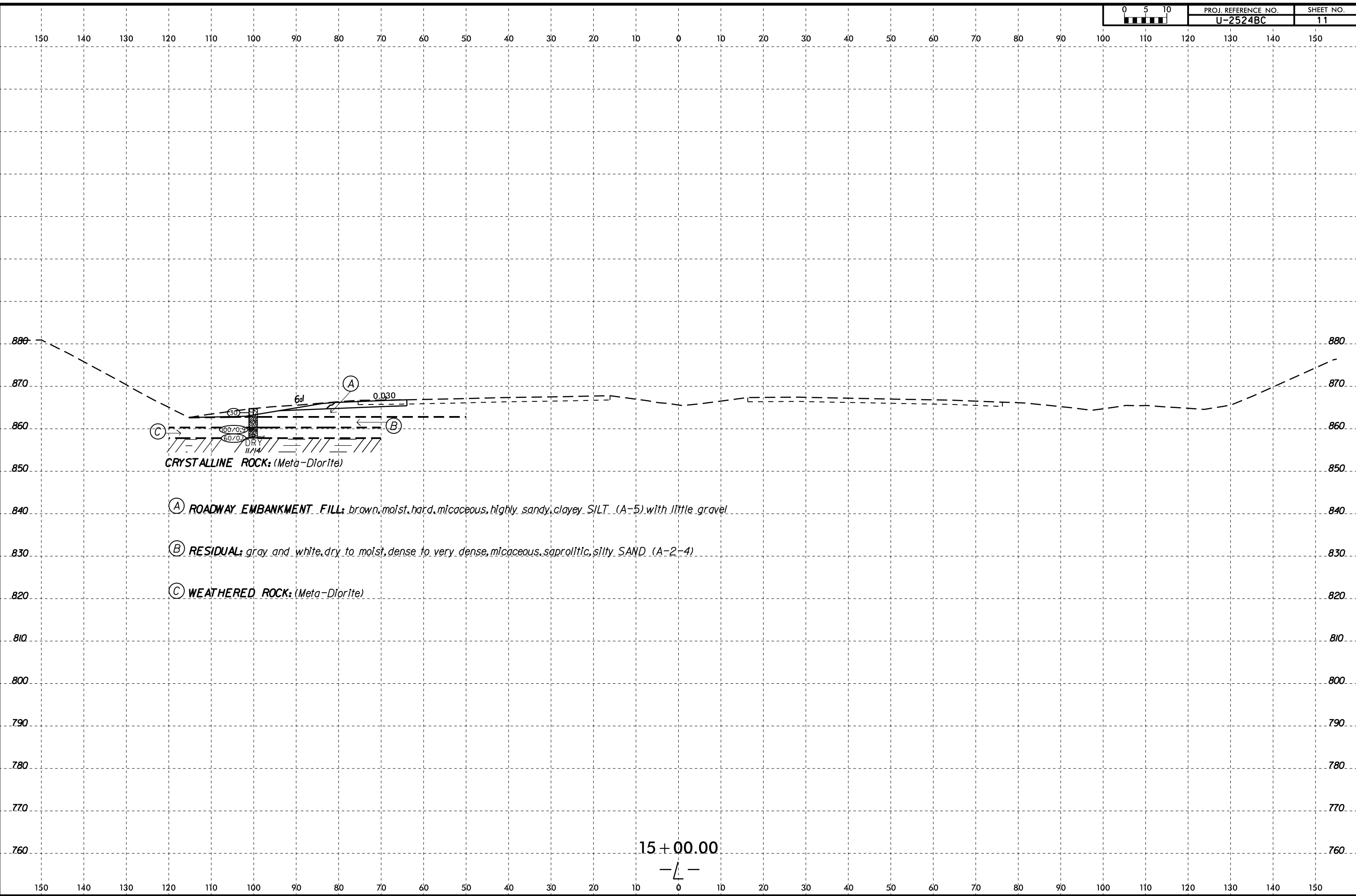
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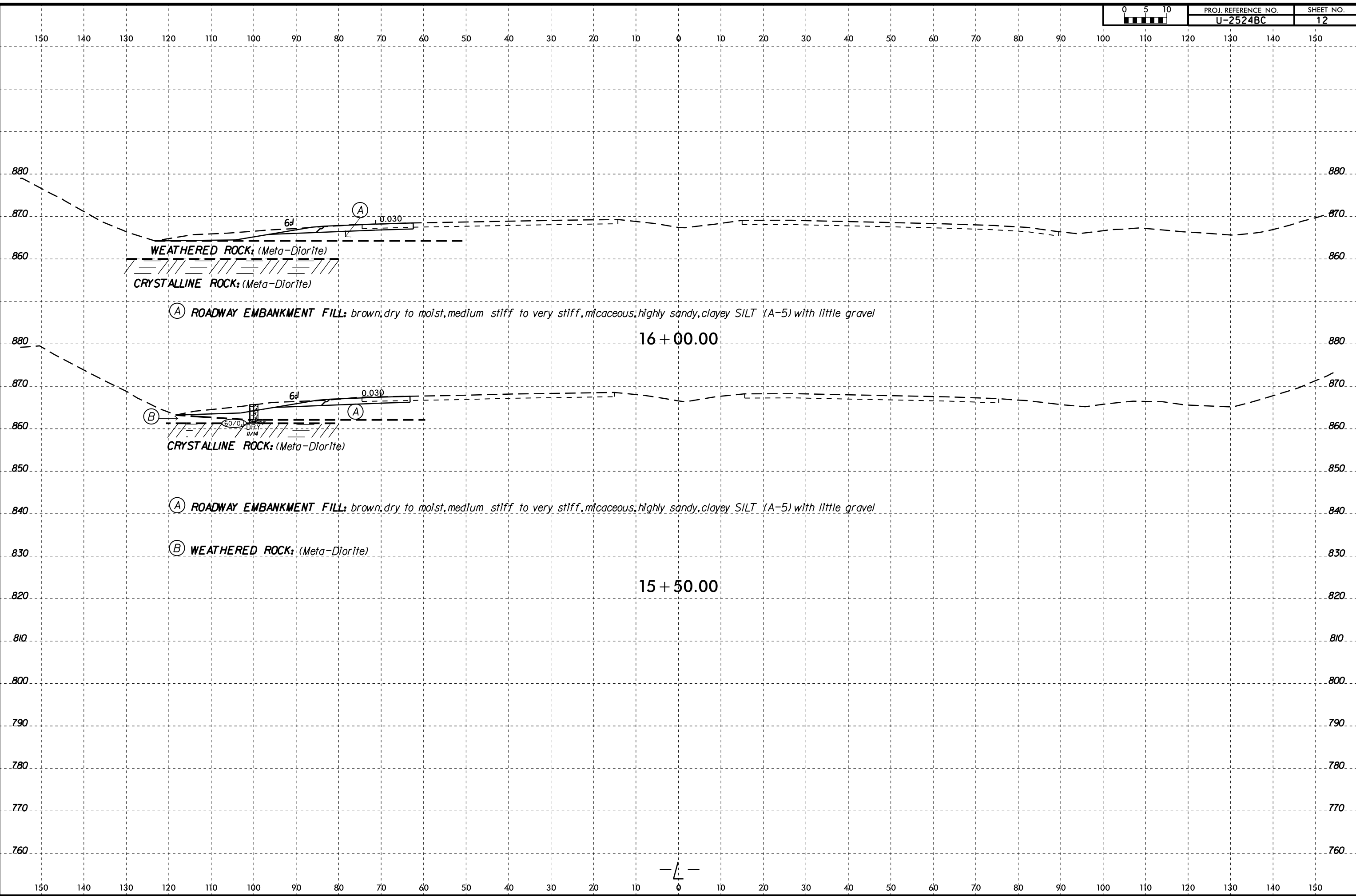
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6%
0.030
WEATHERED ROCK: (Meta-Diorite)
CRYSTALLINE ROCK: (Meta-Diorite)

(A) ROADWAY EMBANKMENT FILL: brown, dry to moist, medium stiff to very stiff, micaceous, highly sandy, clayey SILT (A-5) with little gravel

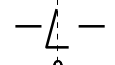
16 + 00.00

6%
0.030
60/0
11/14
CRYSTALLINE ROCK: (Meta-Diorite)

(A) ROADWAY EMBANKMENT FILL: brown, dry to moist, medium stiff to very stiff, micaceous, highly sandy, clayey SILT (A-5) with little gravel

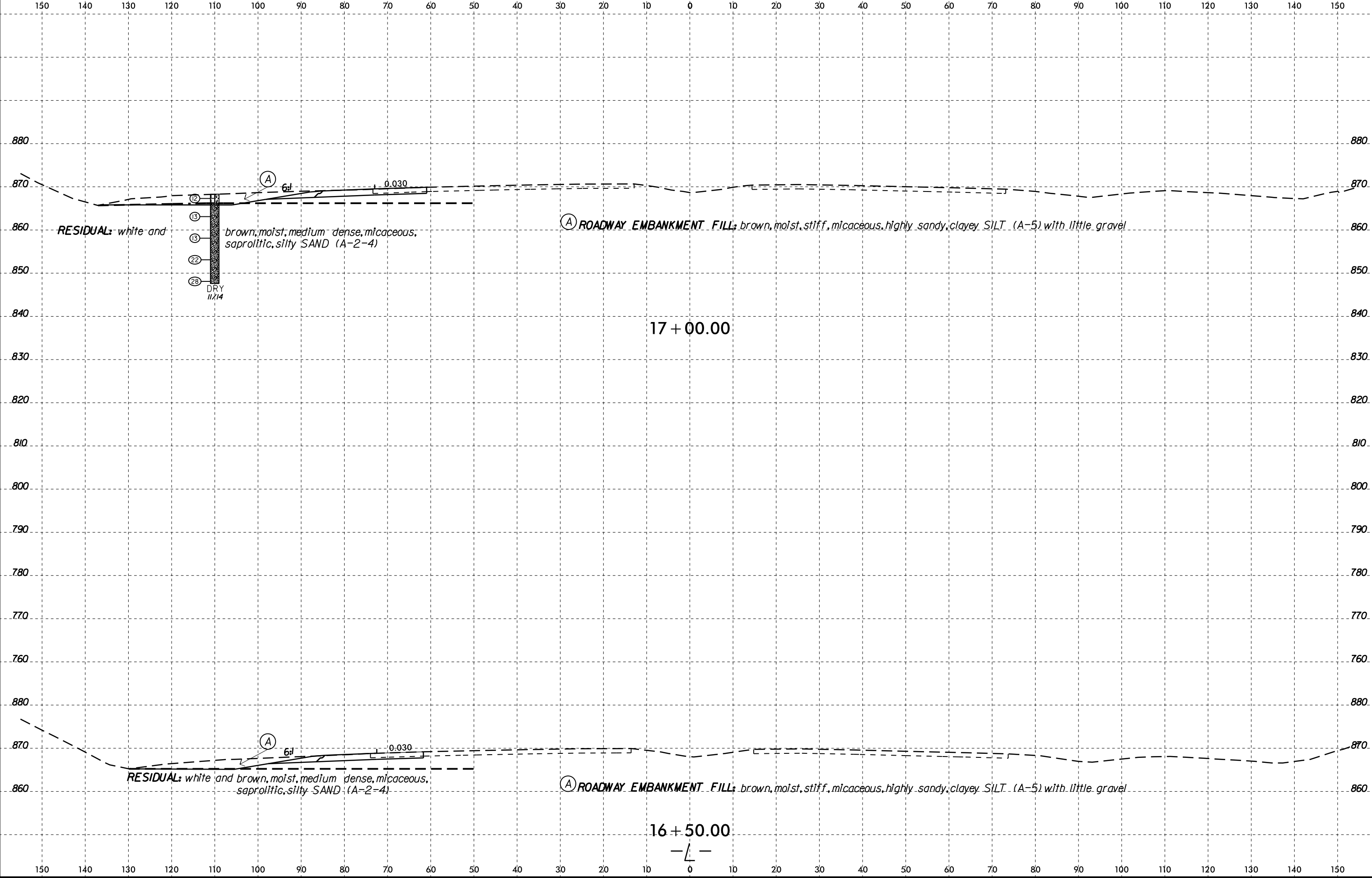
(B) WEATHERED ROCK: (Meta-Diorite)

15 + 50.00



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0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-2524BC	13



(A) ROADWAY EMBANKMENT FILL: brown, moist, stiff, micaceous, highly sandy, clayey SILT (A-5) with little gravel

(A) brown, moist, medium dense, micaceous, saprolitic, silty SAND (A-2-4)

DRY
11/14

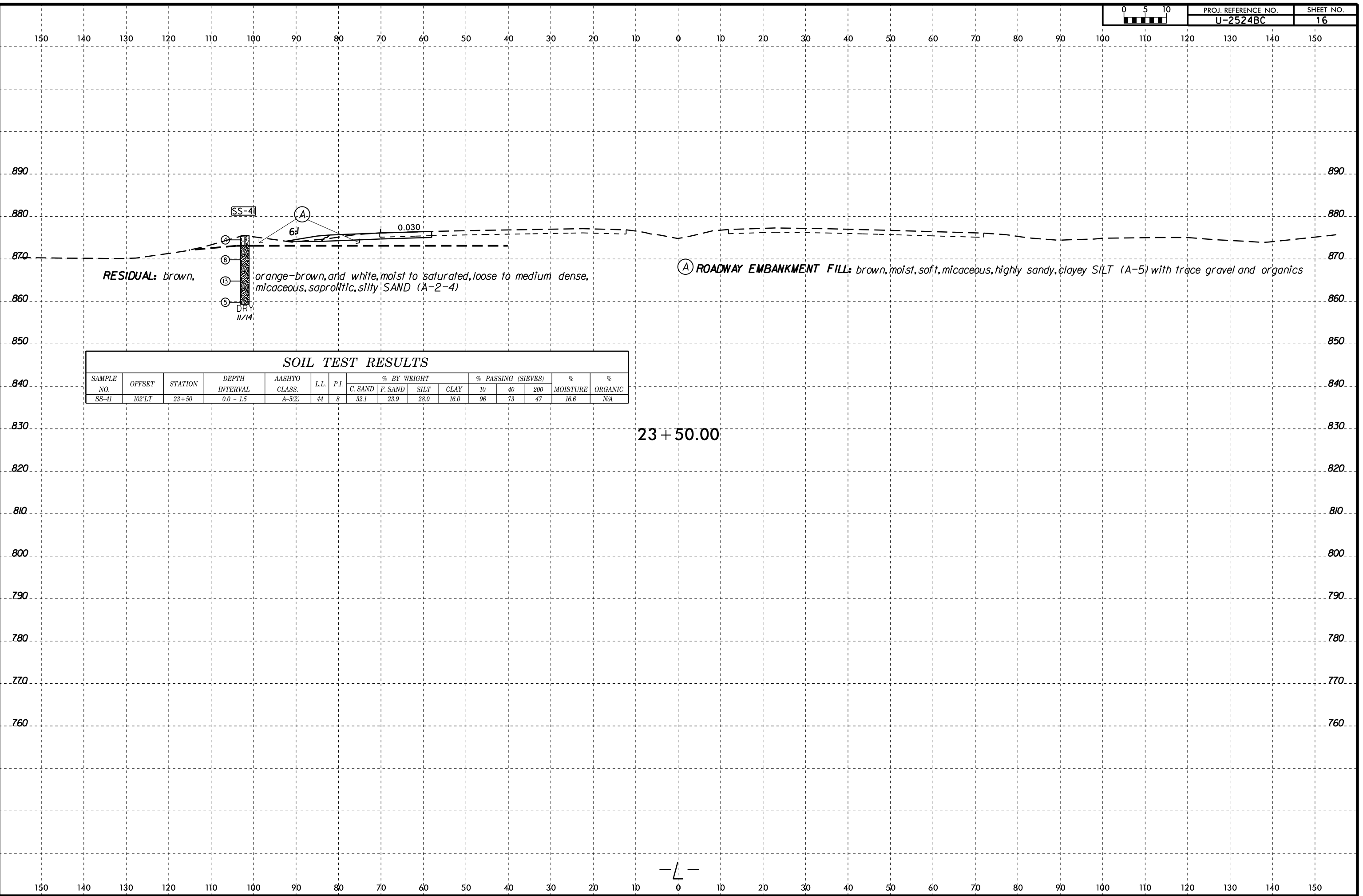
(A) ROADWAY EMBANKMENT FILL: brown, moist, stiff, micaceous, highly sandy, clayey SILT (A-5) with little gravel

(A) RESIDUAL: white and brown, moist, medium dense, micaceous, saprolitic, silty SAND (A-2-4)

17 + 00.00

16 + 50.00

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RESIDUAL: brown,

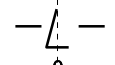
SS-41
 (A)
 6:1
 0.030
 (8)
 (13)
 (5)
 DRY
 11/14
 orange-brown, and white, moist to saturated, loose to medium dense, micaceous, saprolitic, silty SAND (A-2-4)

(A) **ROADWAY EMBANKMENT FILL:** brown, moist, soft, micaceous, highly sandy, clayey SILT (A-5) with trace gravel and organics

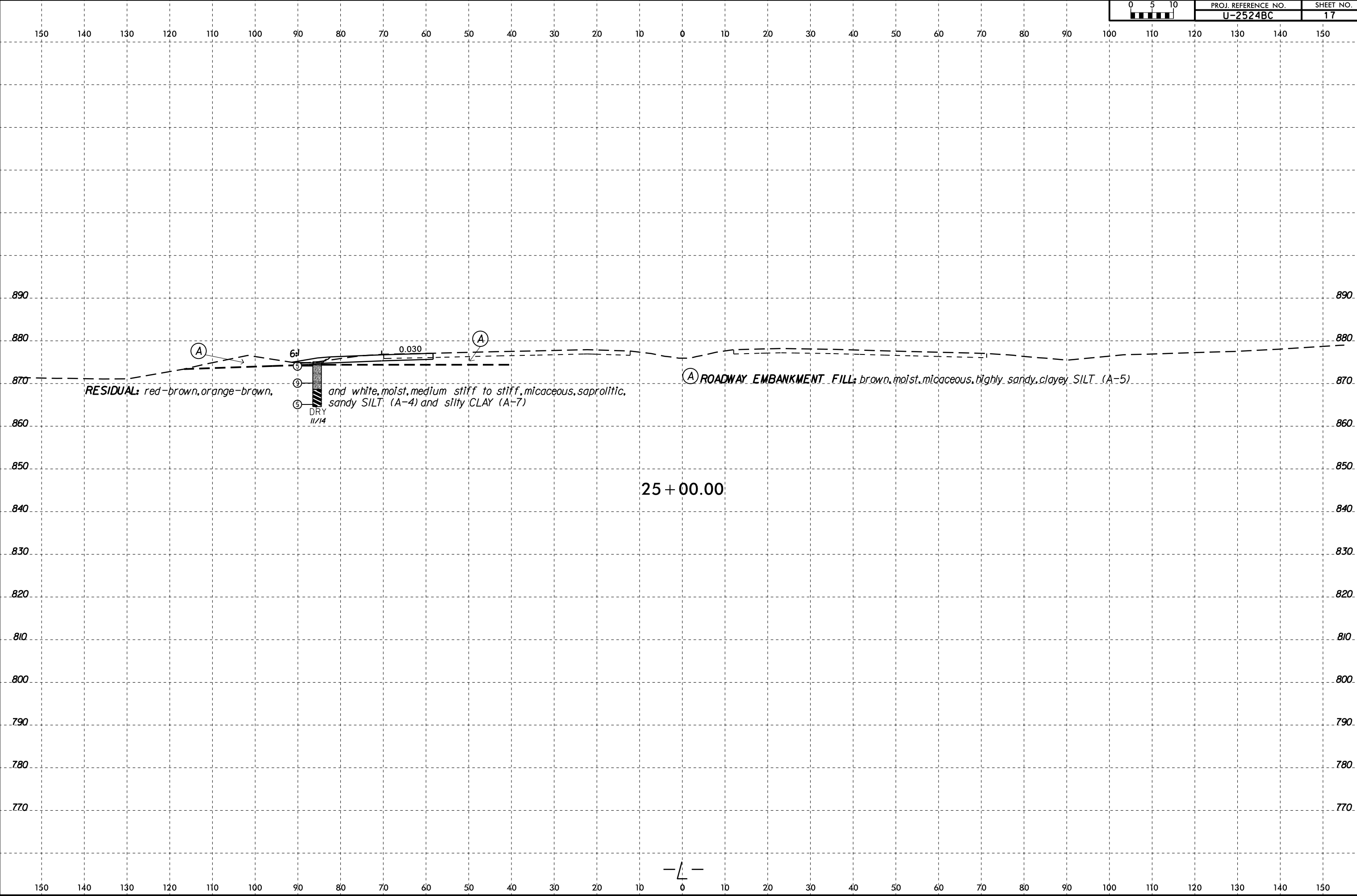
23 + 50.00

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-41	102'LT	23+50	0.0 - 1.5	A-5(2)	44	8	32.1	23.9	28.0	16.0	96	73	47	16.6	NA



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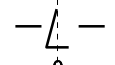


RESIDUAL: red-brown, orange-brown,

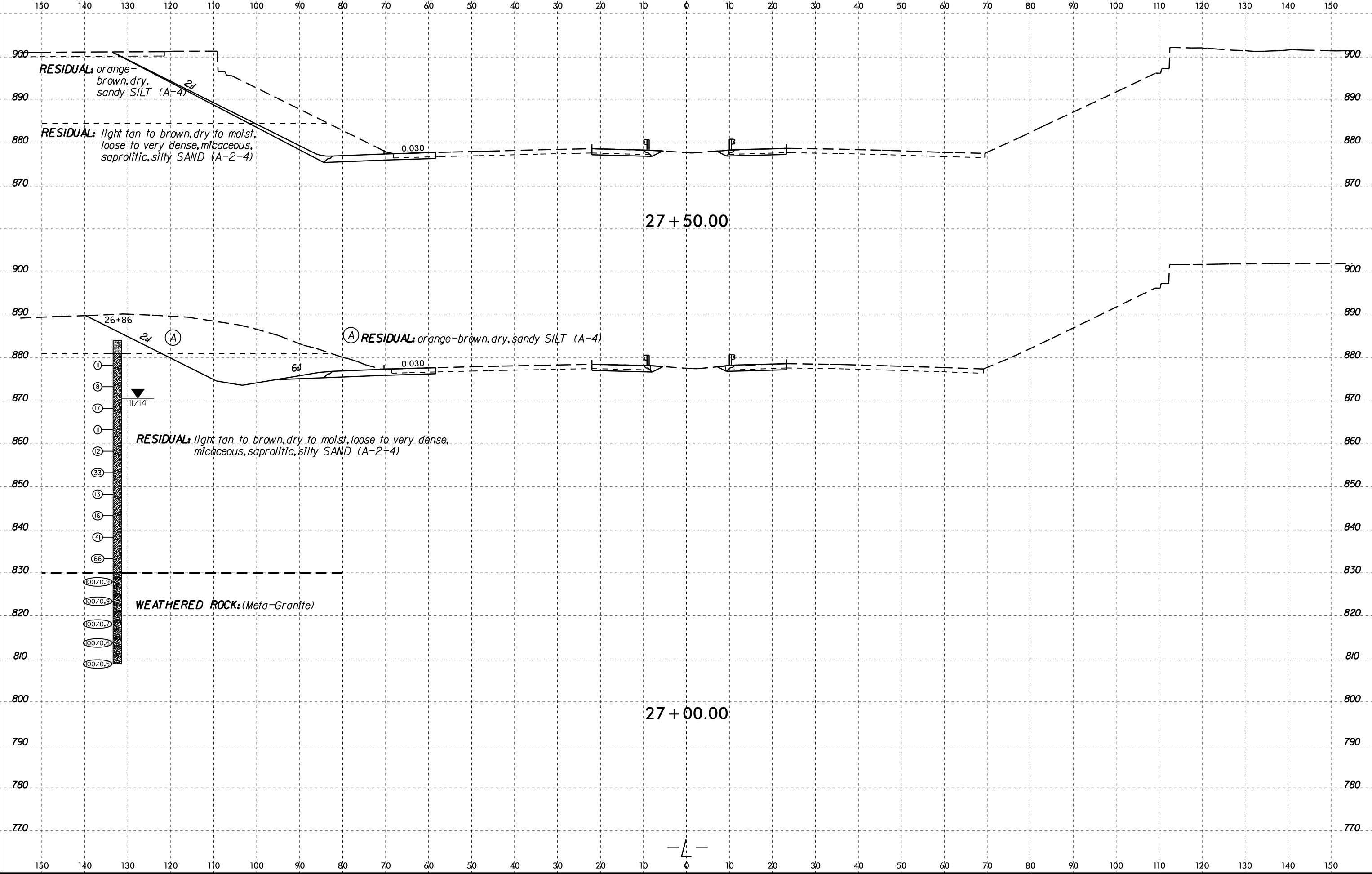
and white, moist, medium stiff to stiff, micaceous, saprolitic, sandy SILT (A-4) and silty CLAY (A-7)

ROADWAY EMBANKMENT FILL: brown, moist, micaceous, highly sandy, clayey SILT (A-5)

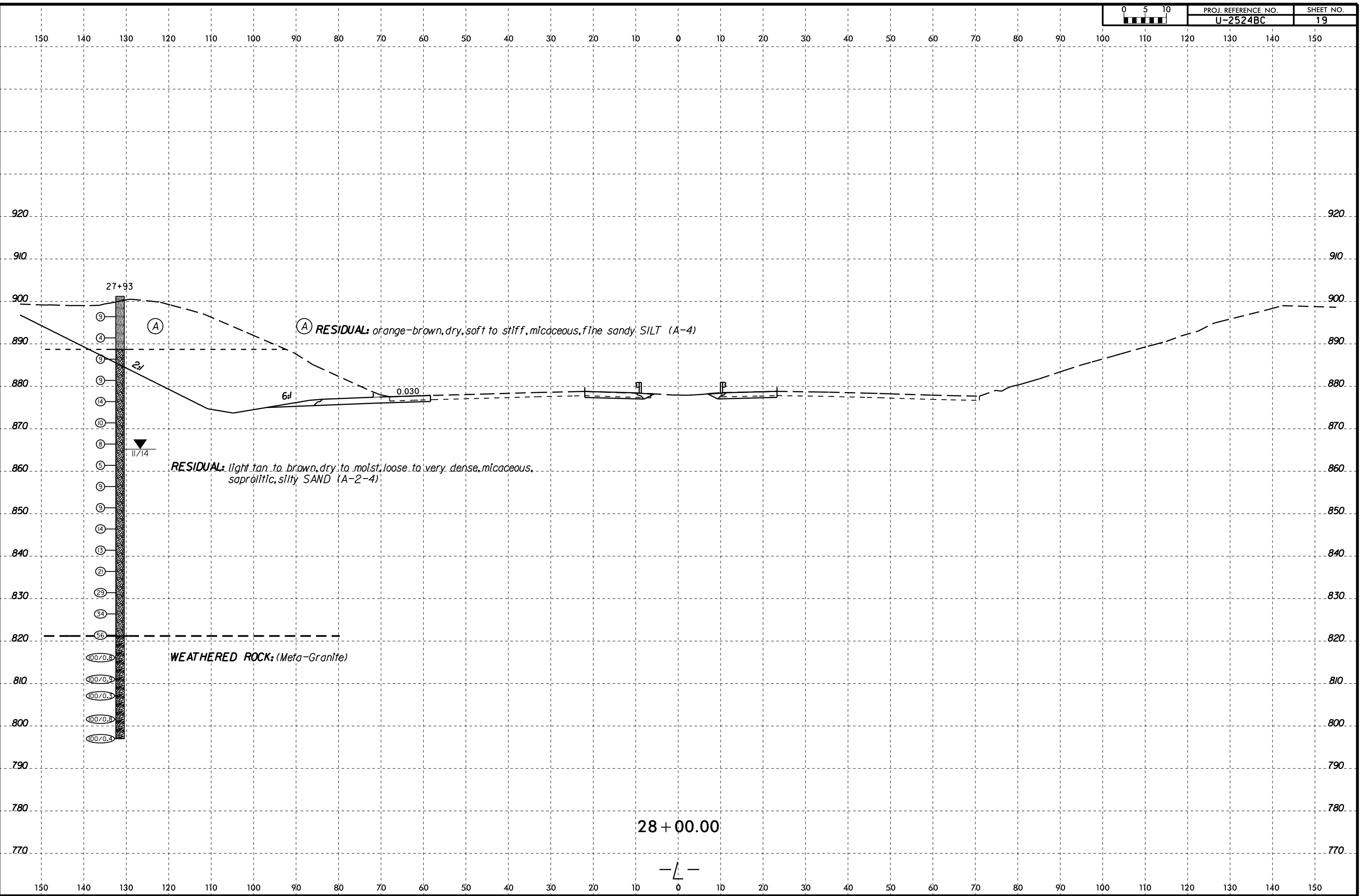
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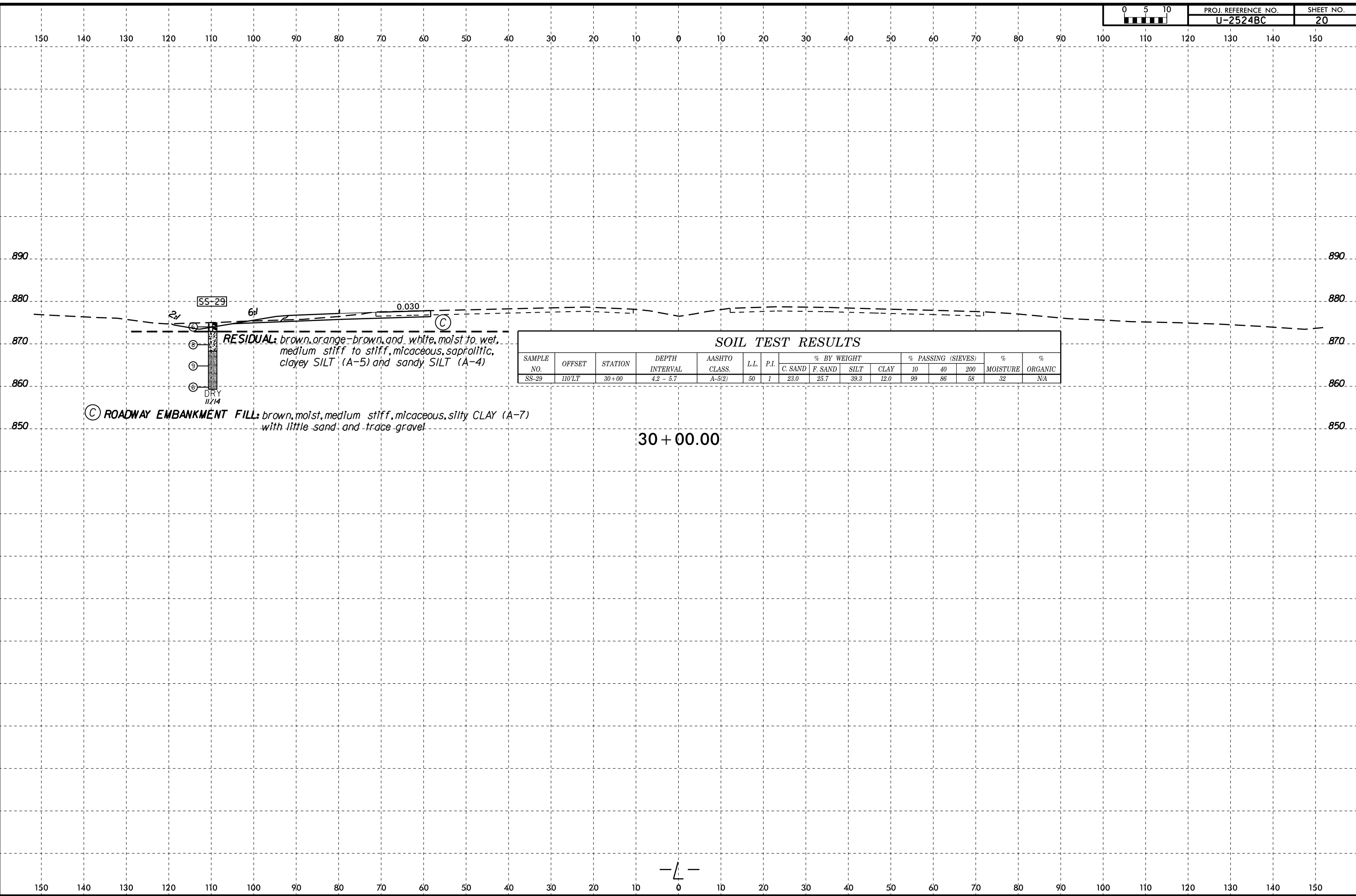
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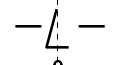


RESIDUAL: brown, orange-brown, and white, moist to wet, medium stiff to stiff, micaceous, saprolitic, clayey SILT (A-5) and sandy SILT (A-4)

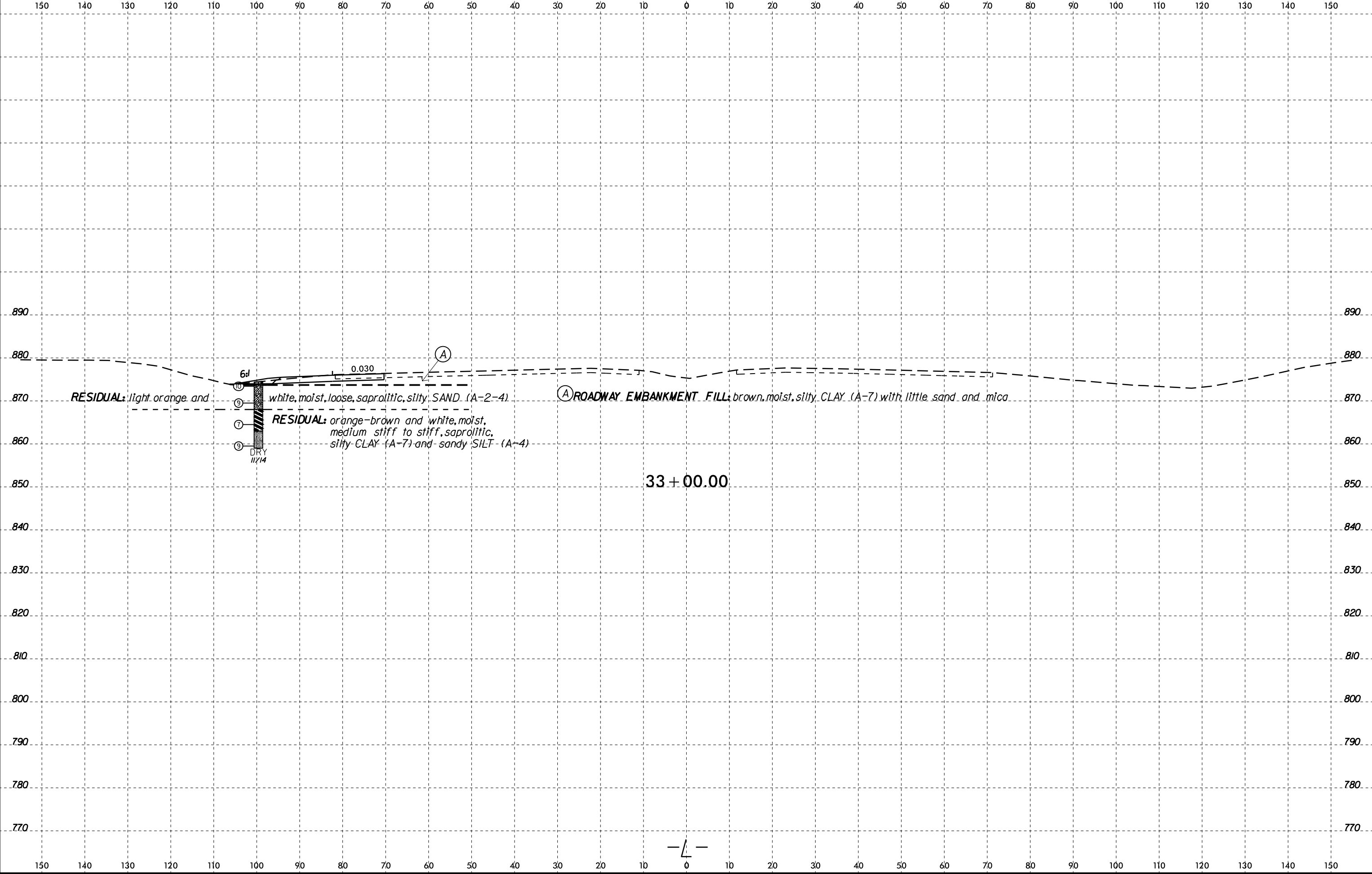
ROADWAY EMBANKMENT FILL: brown, moist, medium stiff, micaceous, silty CLAY (A-7) with little sand and trace gravel

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-29	110'LT	30+00	4.2 - 5.7	A-5(2)	50	1	23.0	25.7	39.3	12.0	99	86	58	32	NA

30 + 00.00

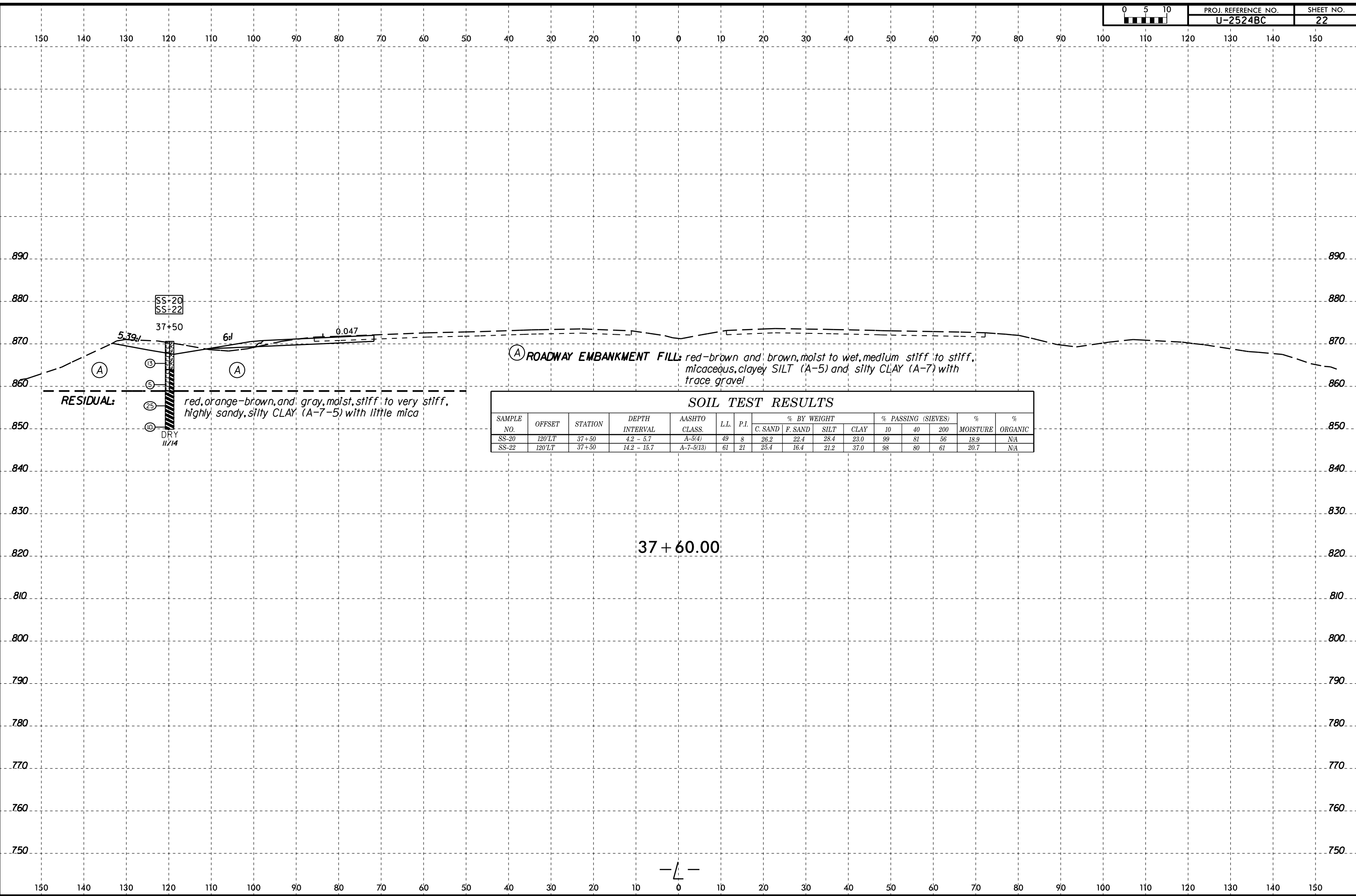


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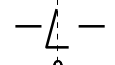


(A) ROADWAY EMBANKMENT FILL: red-brown and brown, moist to wet, medium stiff to stiff, micaceous, clayey SILT (A-5) and silty CLAY (A-7) with trace gravel

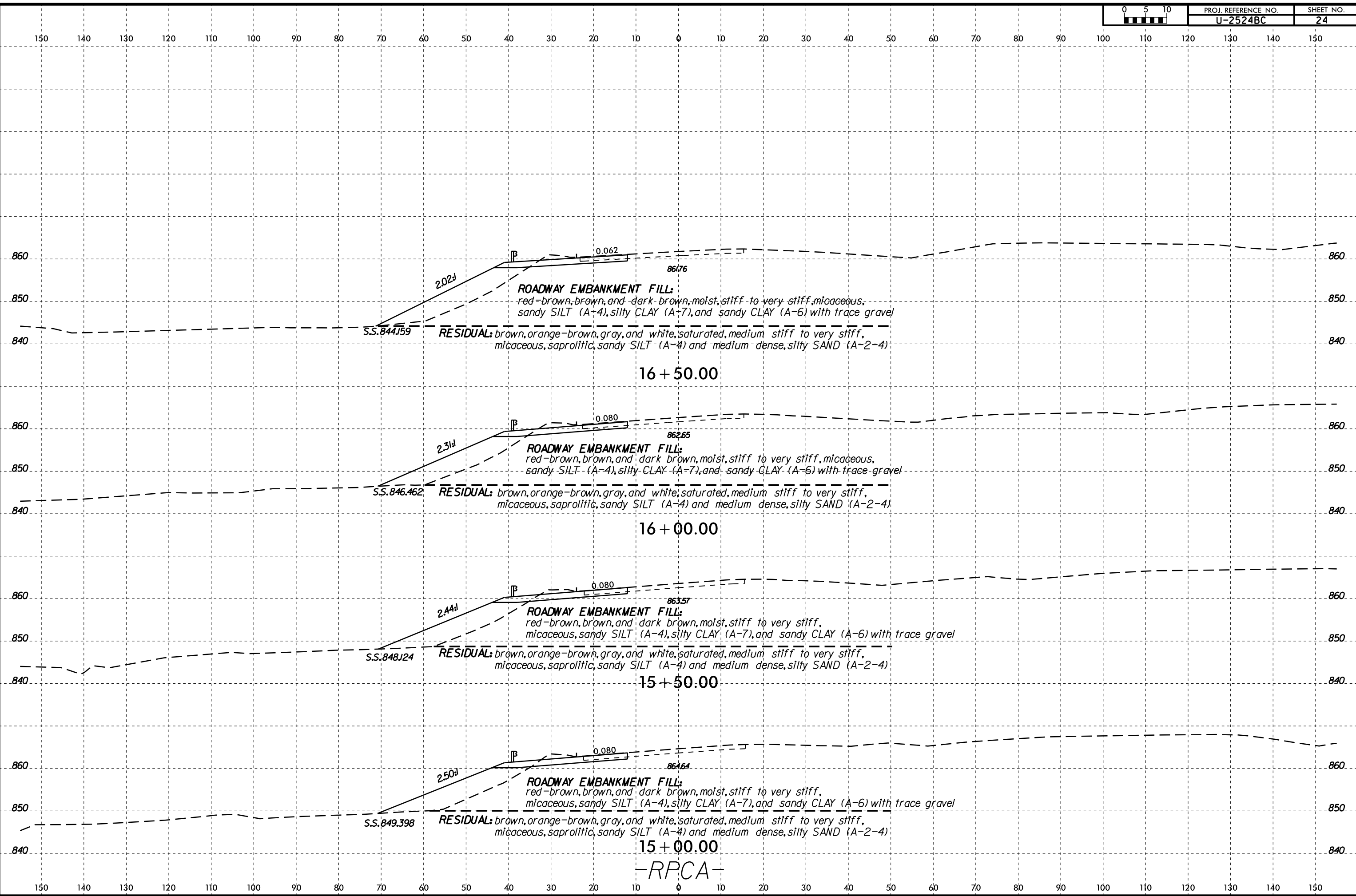
RESIDUAL: red, orange-brown, and gray, moist, stiff to very stiff, highly sandy, silty CLAY (A-7-5) with little mica

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-20	120'LT	37+50	4.2 - 5.7	A-5(4)	49	8	26.2	22.4	28.4	23.0	99	81	56	18.9	NA
SS-22	120'LT	37+50	14.2 - 15.7	A-7-5(13)	61	21	25.4	16.4	21.2	37.0	98	80	61	20.7	NA

37 + 60.00

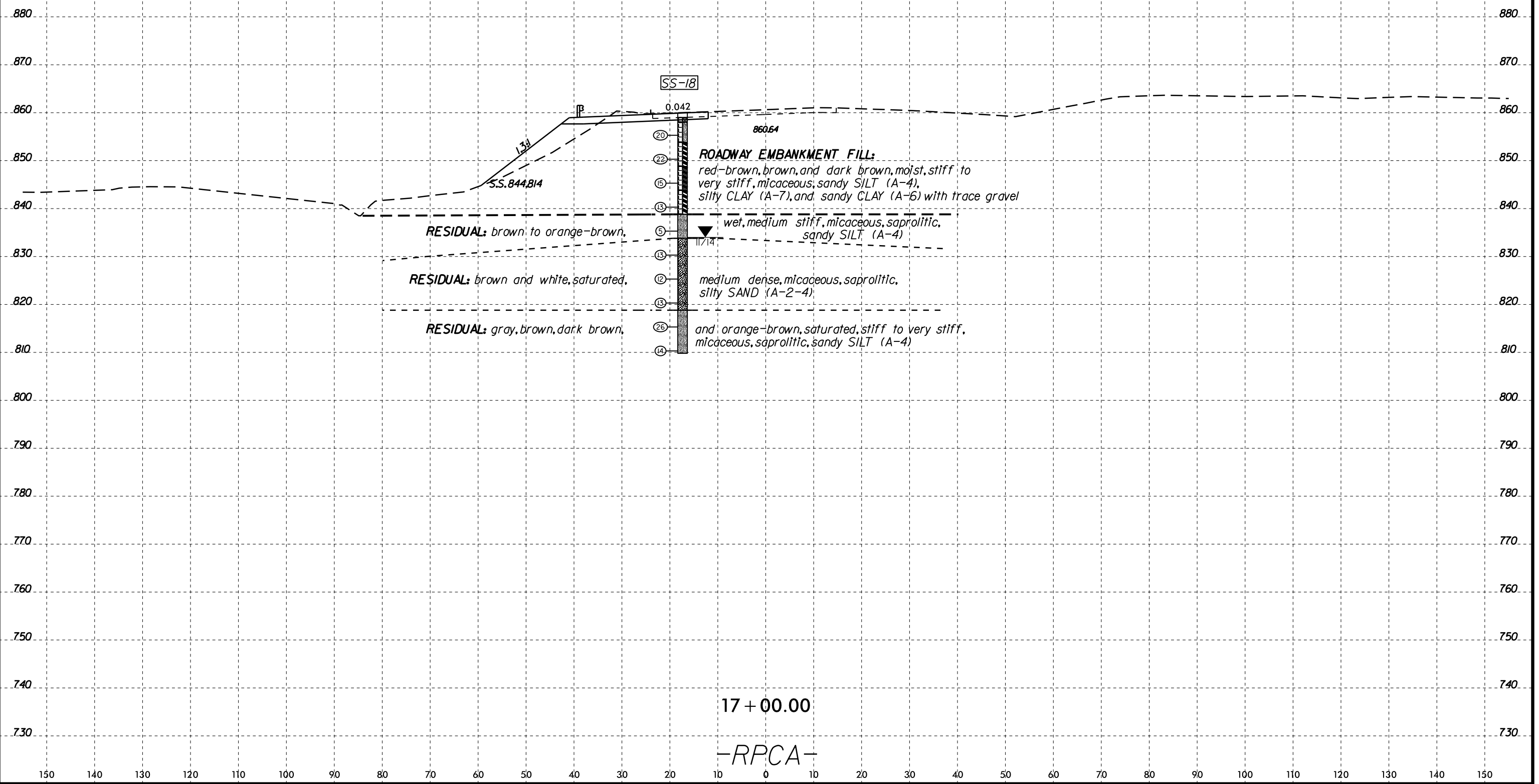


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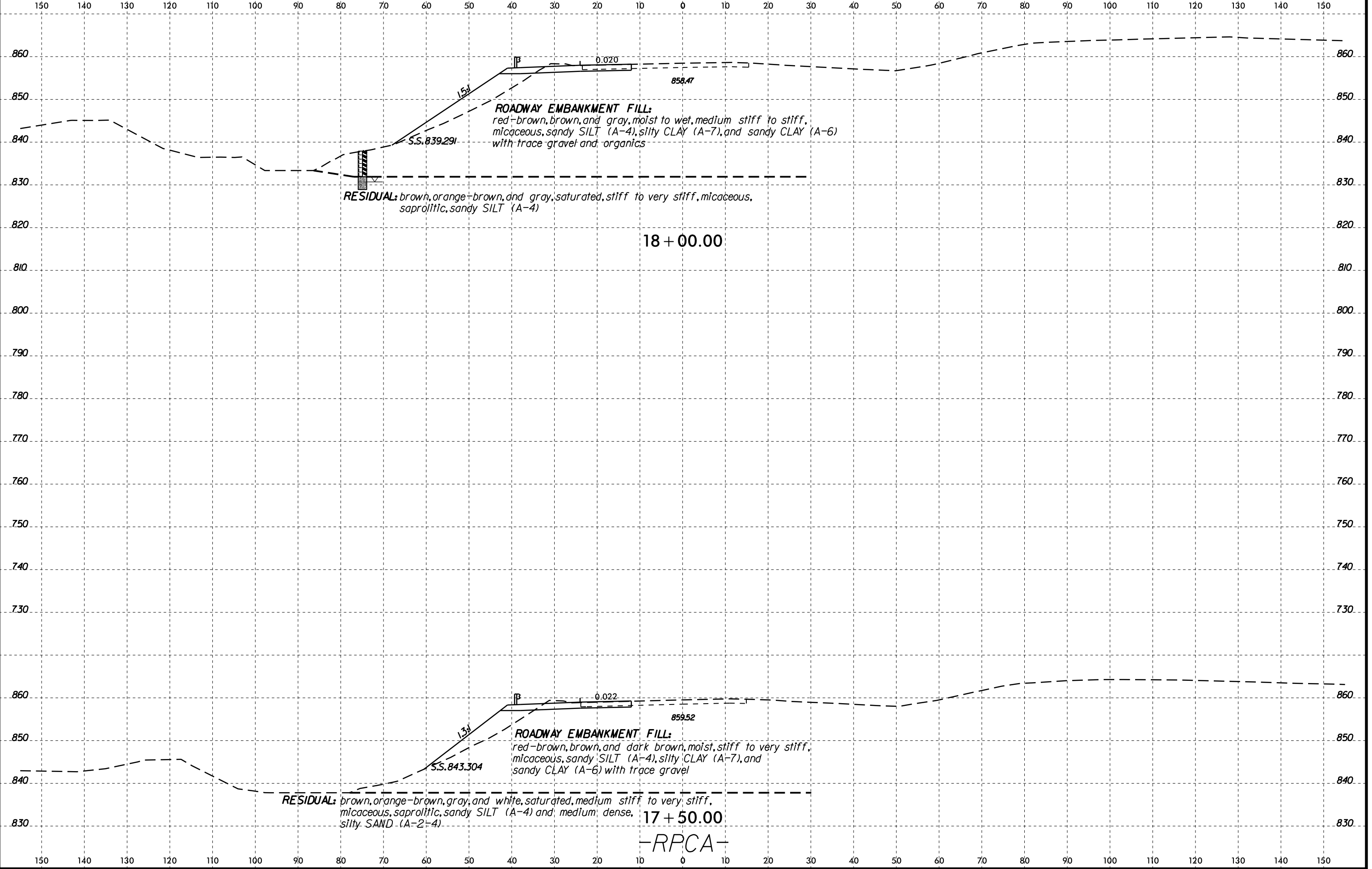
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-18	17LT	17+00	28.7 - 30.2	A-2-4(0)	34	NP	45.4	26.1	12.8	6.5	96	57	23	NA	NA



8/23/99

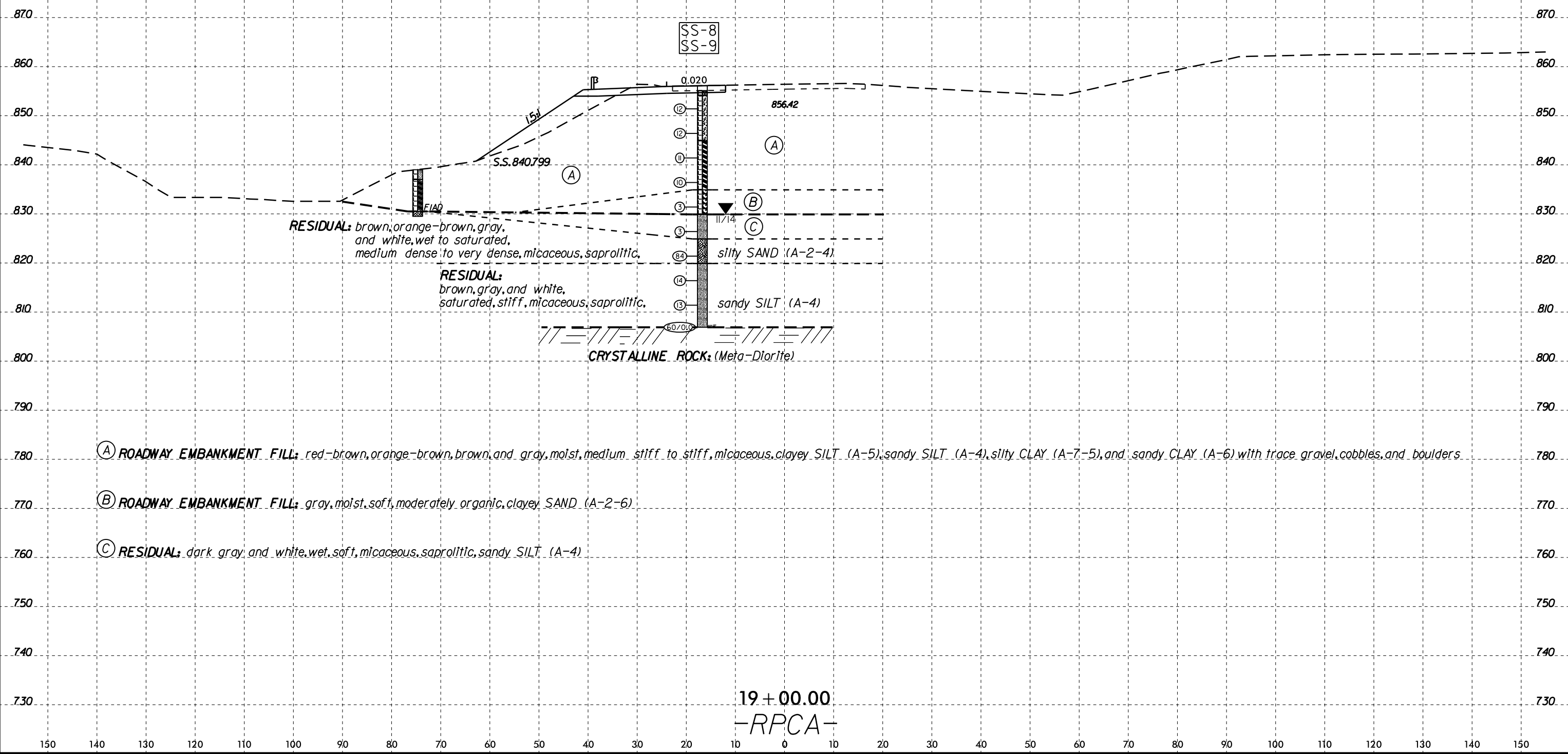
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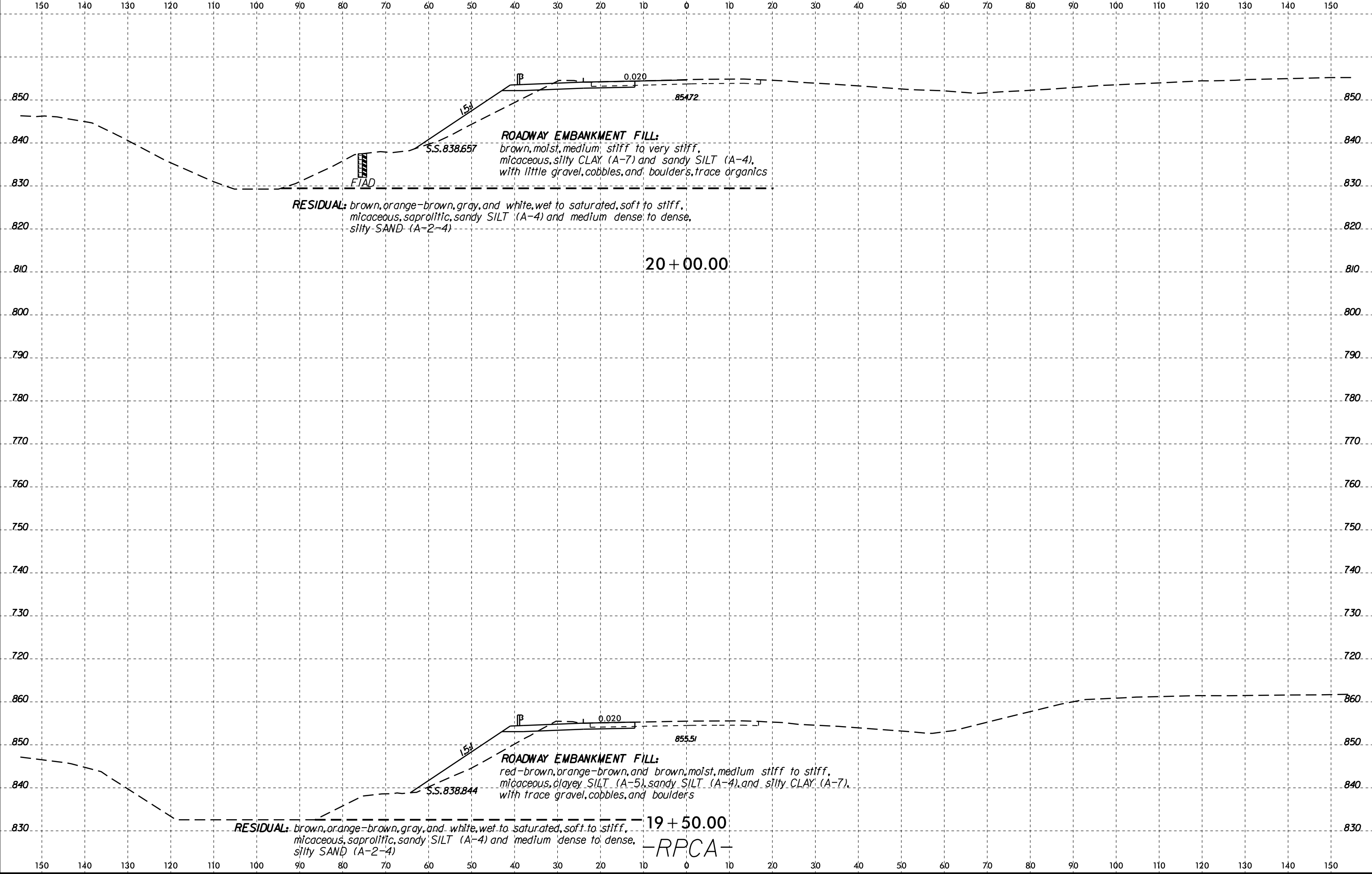


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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-8	17' LT	19+00	3.7 - 5.2	A-5(3)	72	NP	31.0	29.2	23.4	16.4	98	78	44	N/A	N/A
SS-9	17' LT	19+00	13.7 - 15.2	A-7-5(8)	55	14	22.0	22.7	12.2	32.5	97	82	59	N/A	N/A

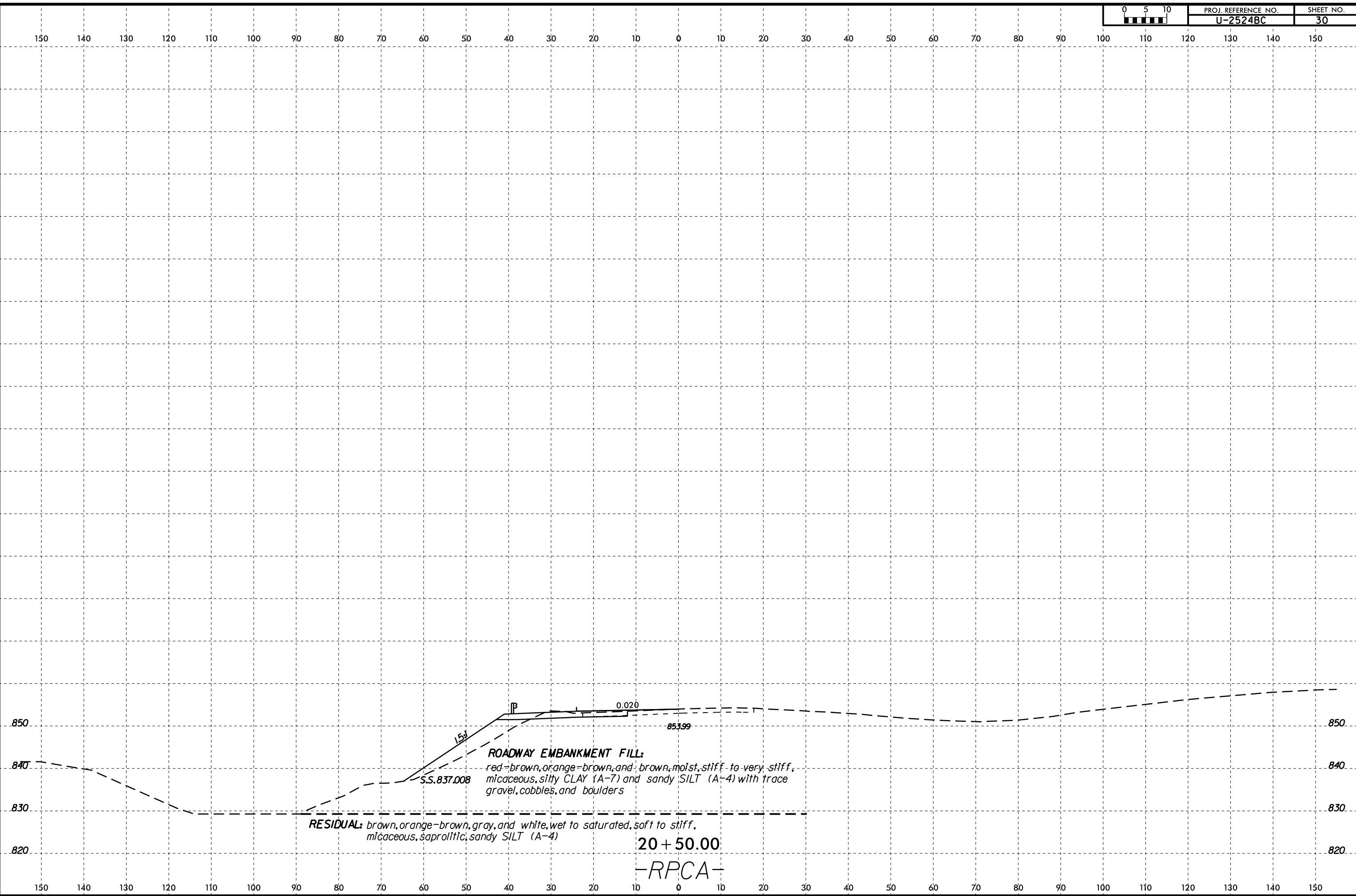


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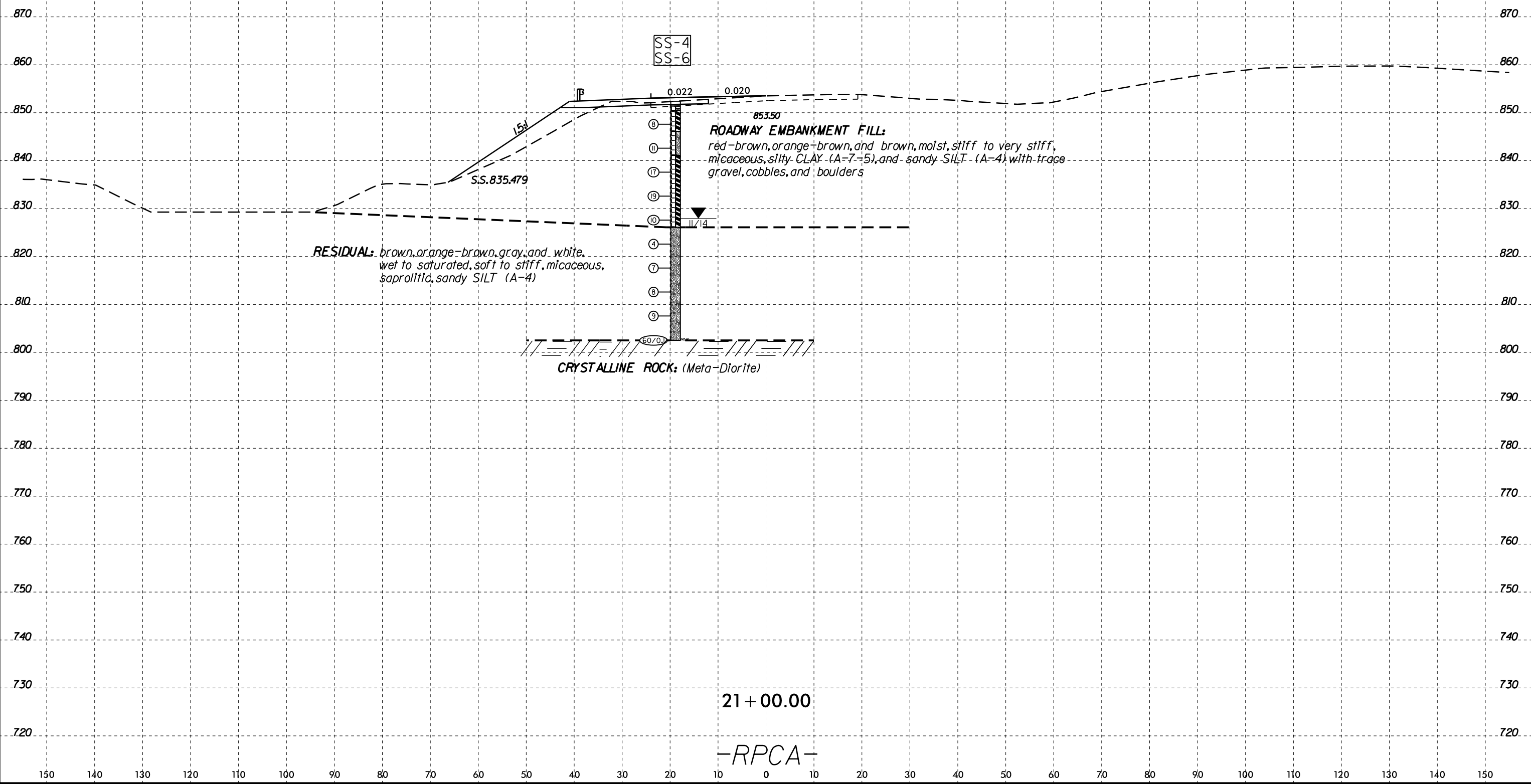
ROADWAY EMBANKMENT FILL:
red-brown, orange-brown, and brown, moist, stiff to very stiff,
micaceous, silty CLAY (A-7) and sandy SILT (A-4) with trace
gravel, cobbles, and boulders

RESIDUAL: brown, orange-brown, gray, and white, wet to saturated, soft to stiff,
micaceous, saprolitic, sandy SILT (A-4)

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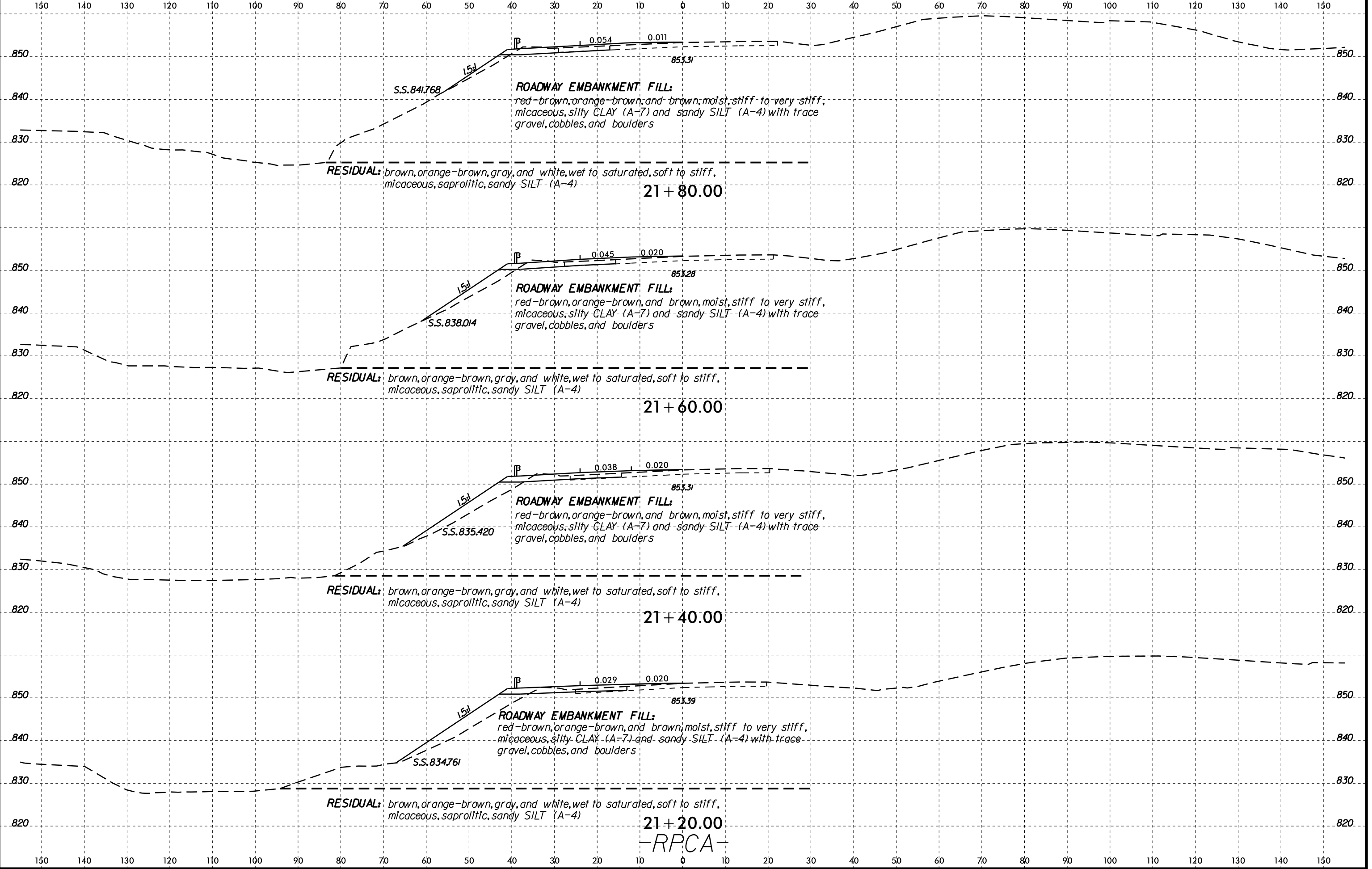
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
SS-4	19'LT	21+00	18.8 - 20.3	A-7-5(7)	53	16	27.3	21.0	21.3	30.4	94	76	52	N/A	N/A
SS-6	19'LT	21+00	33.8 - 35.3	A-4(0)	40	NP	22.0	48.2	24.4	5.4	100	90	38	N/A	N/A



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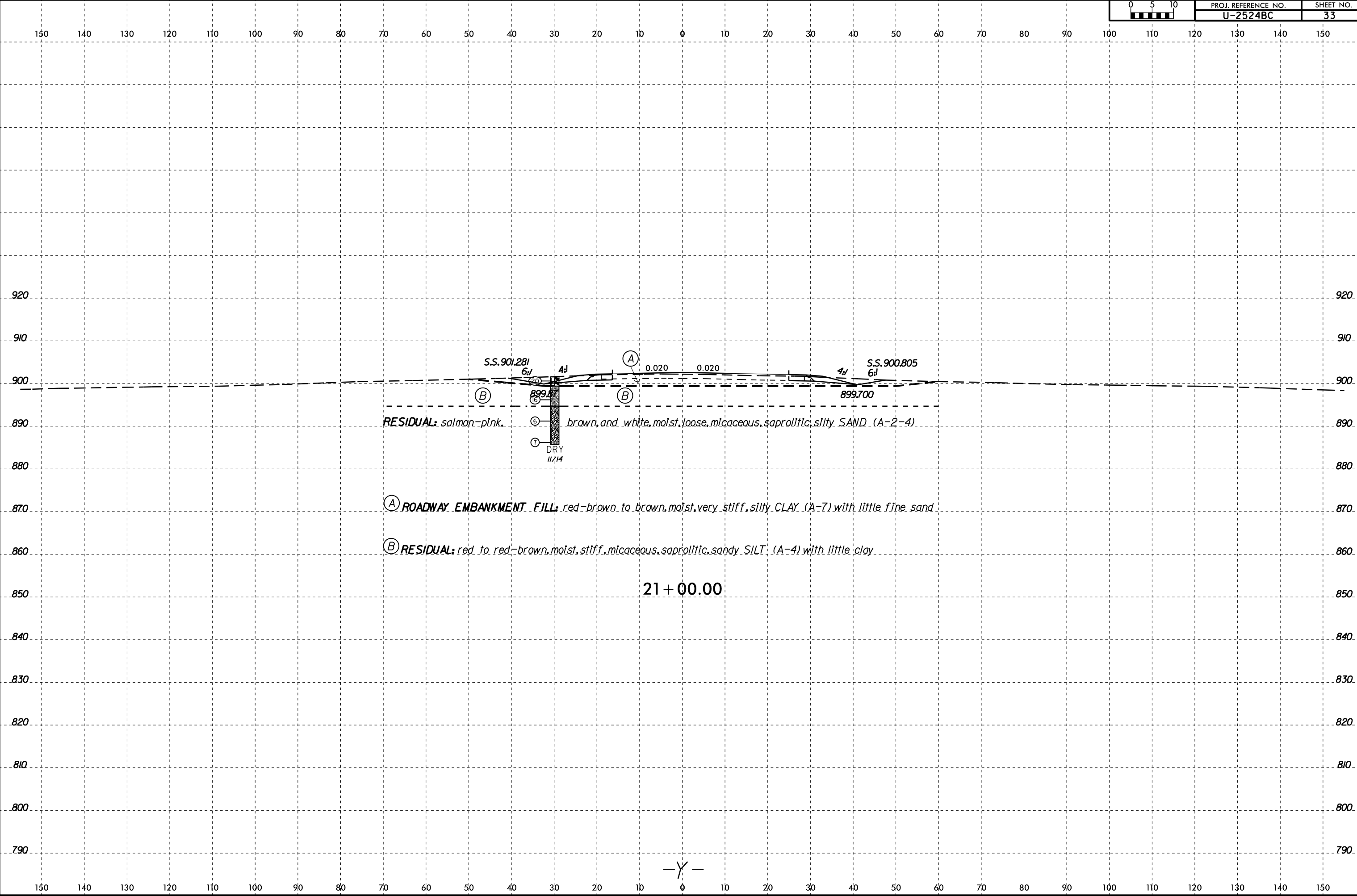
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6:1
4:1
0.020
0.020
S.S. 900.805
4:1
6:1
899.47
899.700
RESIDUAL: salmon-pink.
brown, and white, moist, loose, micaceous, saprolitic, silty SAND (A-2-4)
DRY
11/14
(A) ROADWAY EMBANKMENT FILL: red-brown to brown, moist, very stiff, silty CLAY (A-7) with little fine sand
(B) RESIDUAL: red to red-brown, moist, stiff, micaceous, saprolitic, sandy SILT (A-4) with little clay

21 + 00.00

-Y-