

REFERENCE: U-4015A

PROJECT: 35013

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|------|---------------|---------|
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| -Y2- | 10+50 - 12+00 | 24 - 25 |

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

**ROADWAY  
 SUBSURFACE INVESTIGATION**

COUNTY GUILFORD  
 PROJECT DESCRIPTION SR 1556 (GALLIMORE DAIRY  
 RD.) FROM NC 68 (LYNWOOD SMITH EXPY.) TO  
 AIRPARK RD. IN GREENSBORO

**RECOMMENDATIONS**

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C.  | U-4015A                     | 1         | 25           |

**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 1919 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. GOODE

F&R PERSONNEL

INVESTIGATED BY RK&K, LLP

DRAWN BY M. METRY

CHECKED BY S. KABRA

SUBMITTED BY RK&K, LLP

DATE APRIL 2022

**RK&K**  
 P: (919) 878-9560  
 8601 Six Forks Road, Forum 1, Suite 700  
 Raleigh, North Carolina 27615-3960  
 NC License No. F-0112

Engineers | Construction Managers | Planners | Scientists  
 www.rkk.com

Responsive People | Creative Solutions

DocuSigned by:  
 Atefeh Asoudeh  
 46293DE.../2024

SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with 4 main columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, and TERMS AND DEFINITIONS. It contains detailed technical specifications, classification charts, and symbols for geotechnical engineering.

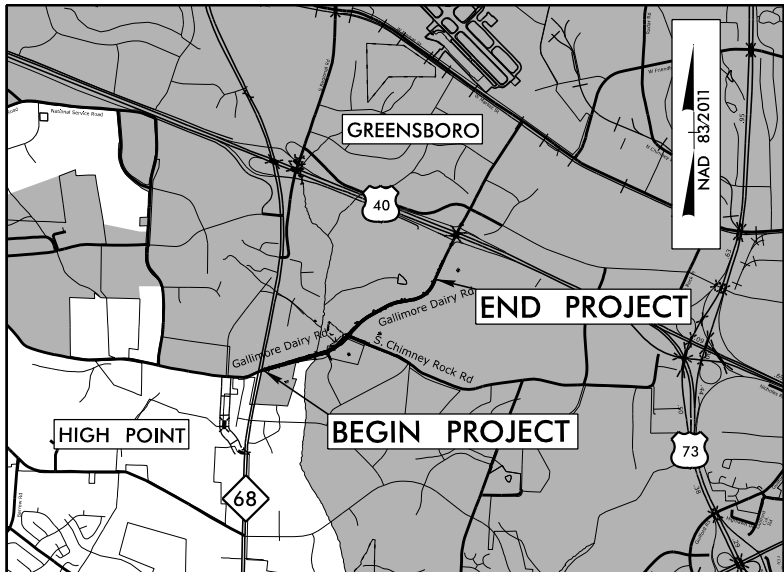
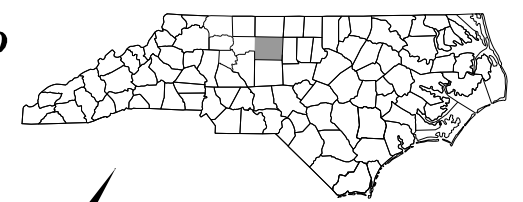
| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | U-4015A                     | 3           | 25           |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
| 35013.1.1       | N/A                         | PE          |              |
| 35013.2.4       | N/A                         | ROW         |              |
| 35013.2.5       | N/A                         | UTL         |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**GUILFORD COUNTY**

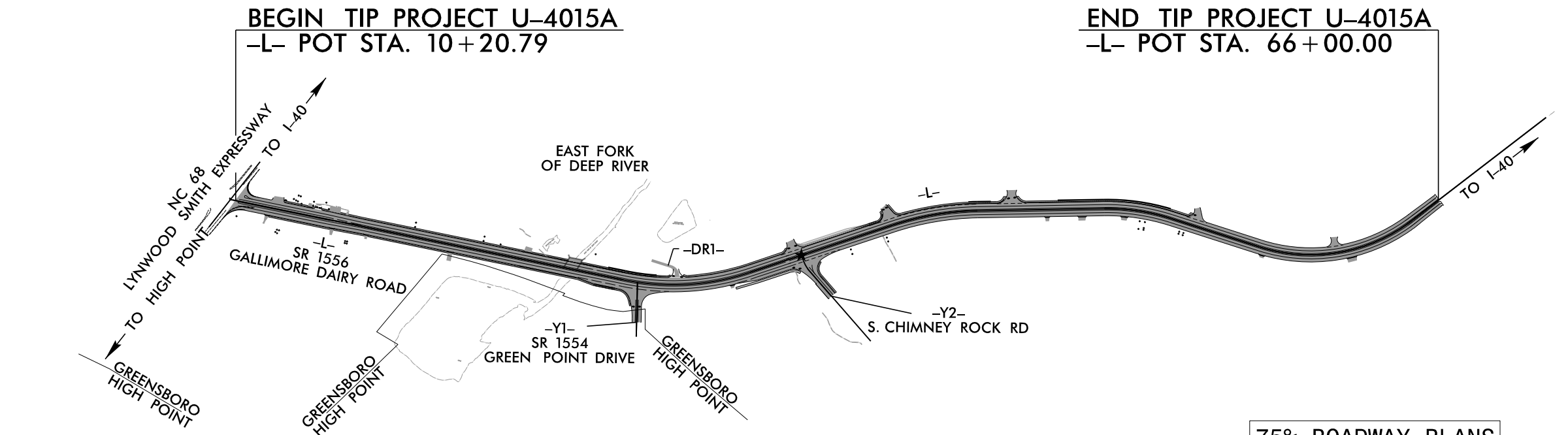
**LOCATION: SR 1556 (GALLIMORE DAIRY RD.) FROM NC 68 (LYNWOOD SMITH EXPY.) TO AIRPARK RD. IN GREENSBORO**

**TYPE OF WORK: GRADING, PAVING, WIDENING, DRAINAGE, CULVERT, SIGNING, RETAINING WALLS, AND SIGNALS**



VICINITY MAP (NTS)

**TIP PROJECT: U-4015A**

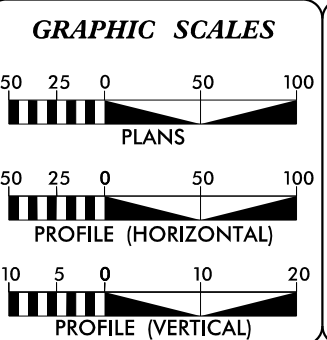


- NOTES:  
 1. A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF GREENSBORO & THE CITY OF HIGH POINT.  
 2. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

**75% ROADWAY PLANS**  
DATE: 05-28-2021

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED

**CONTRACT:**



**DESIGN DATA**  
 ADT 2018 = 15,900  
 ADT 2040 = 18,800  
 V = 50 MPH  
 DHV = 10%  
 D = 65%  
 T = 6% \*  
 \* TTST = 2% DUAL = 4%  
 FUNC CLASS = URBAN MINOR ARTERIAL STATEWIDE TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-4015A..... 1.045 miles  
 LENGTH STRUCTURE TIP PROJECT U-4015A..... 0.011 miles  
 TOTAL LENGTH OF PROJECT U-4015A..... 1.056 miles

**PLANS PREPARED BY:**  
**RK&K**  
 8601 Six Forks Road, Forum 1 Suite 700  
 RALEIGH, NORTH CAROLINA 27615-3960  
 NC LICENSE NO. F-0112  
 1-888-521-4455 OR 919-878-9560

FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 2018 STANDARD SPECIFICATIONS

**RIGHT OF WAY DATE:** 05-21-2021  
**LETTING DATE:** 05-16-2023

**SCOTT D. BLEVINS, PE**  
PROJECT ENGINEER

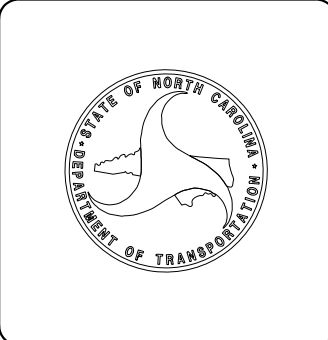
**ZAC WILSON, EIT**  
PROJECT DESIGN ENGINEER

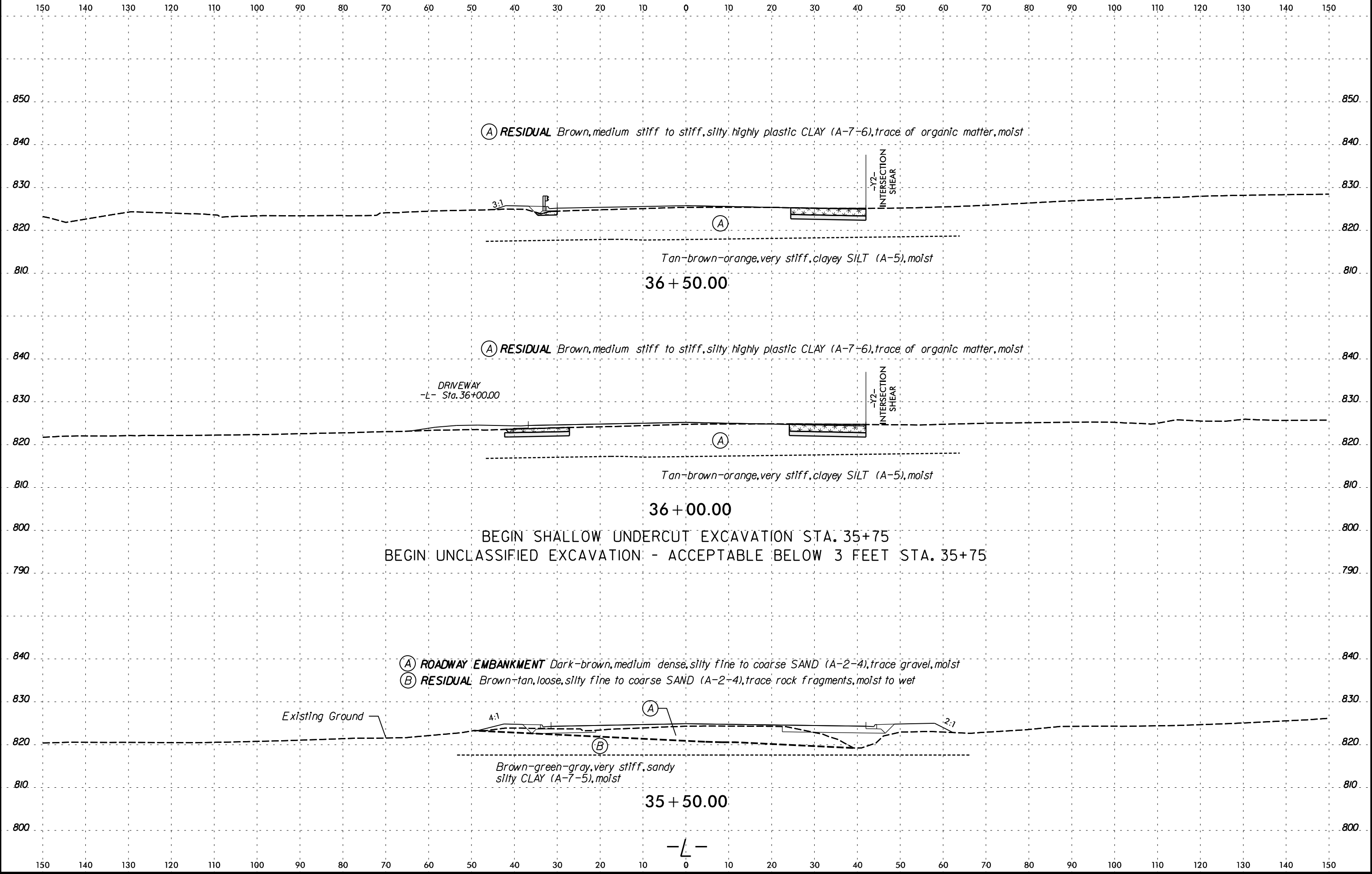
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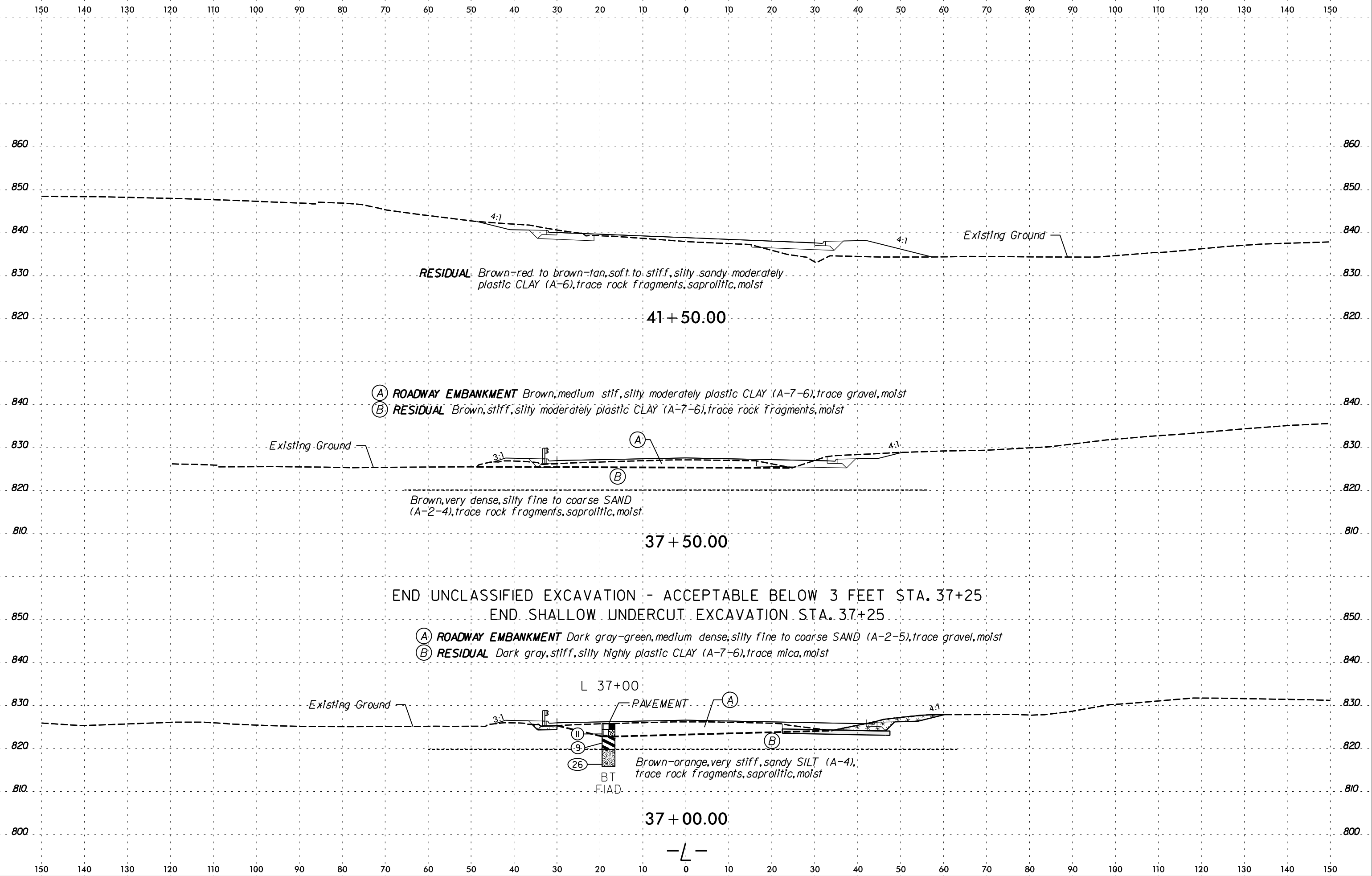
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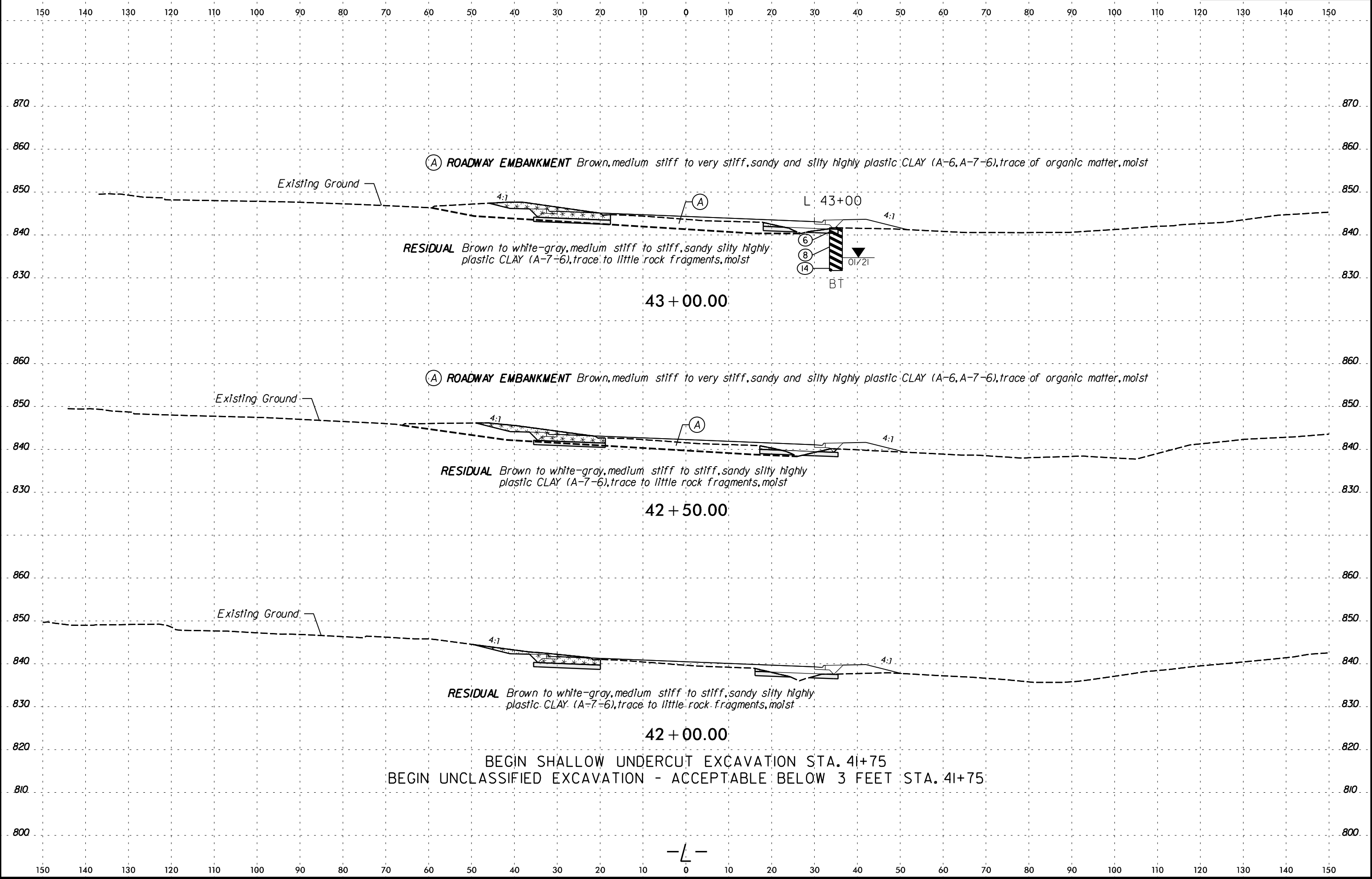
**ROADWAY DESIGN ENGINEER**

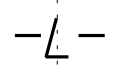
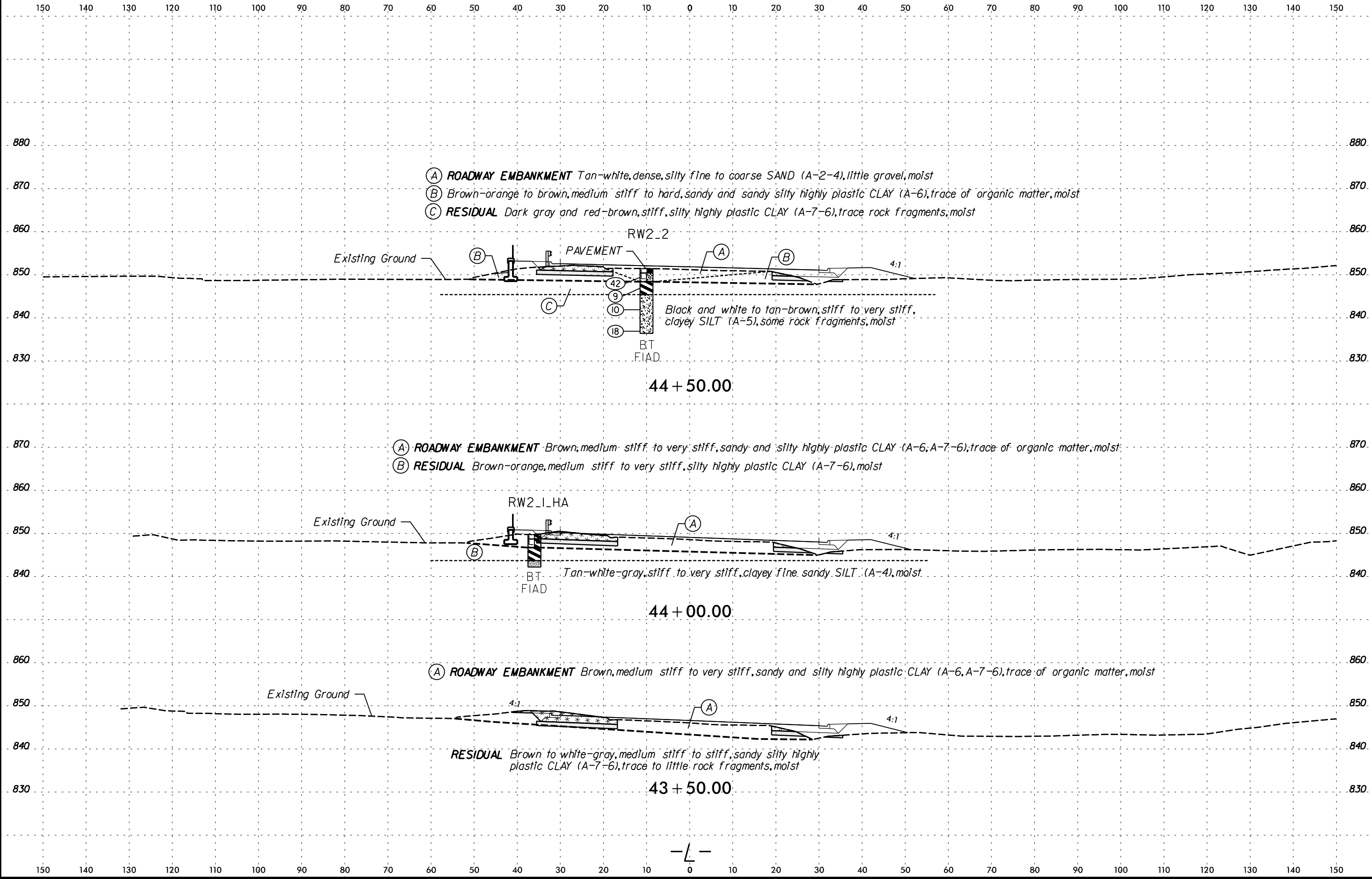
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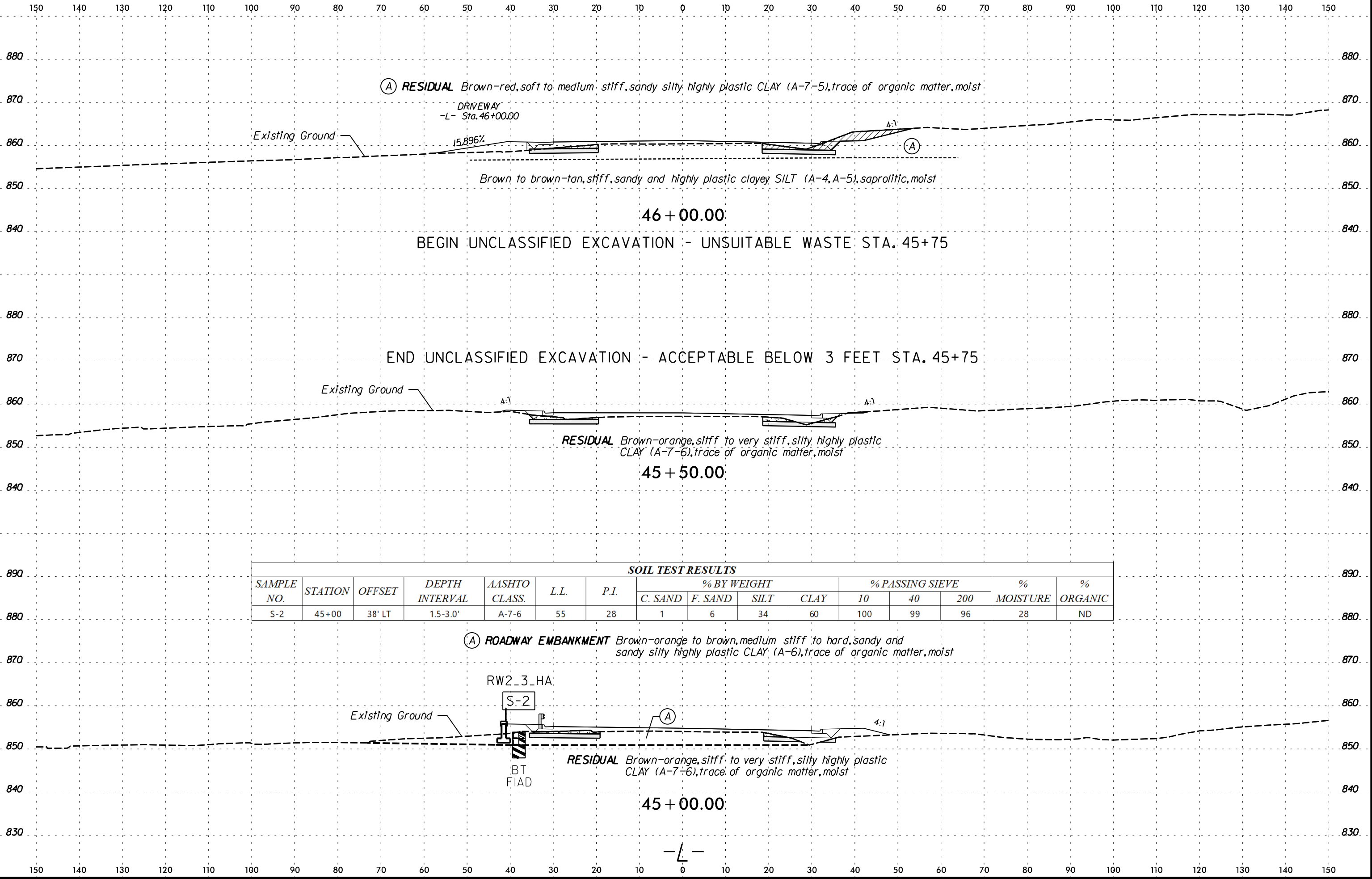




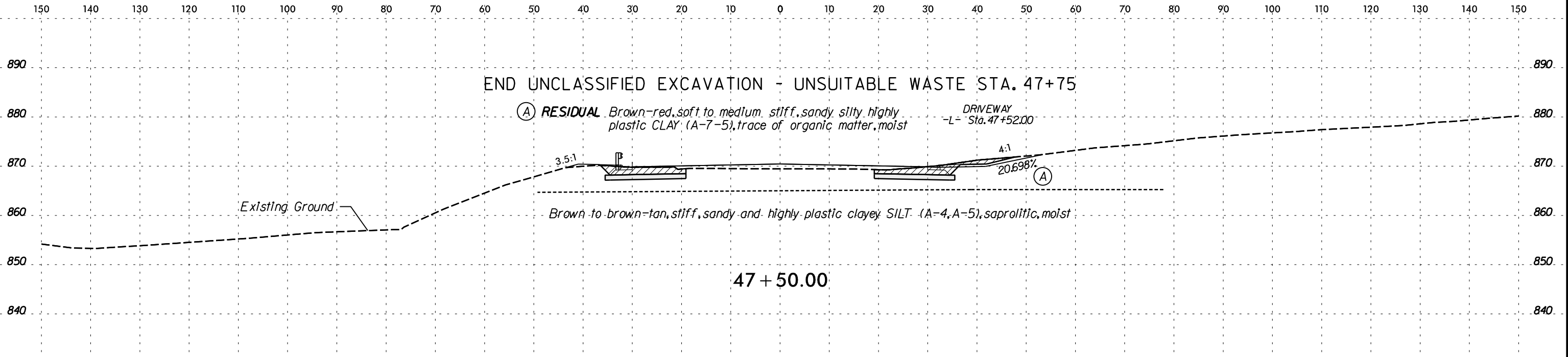






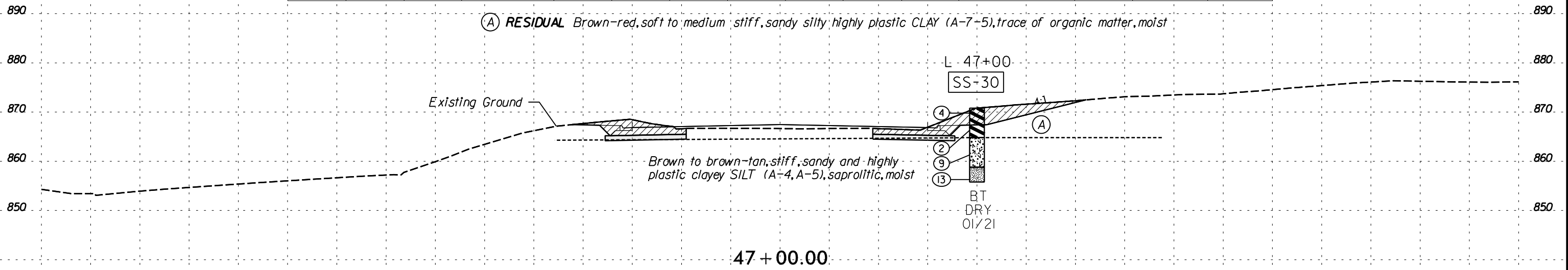




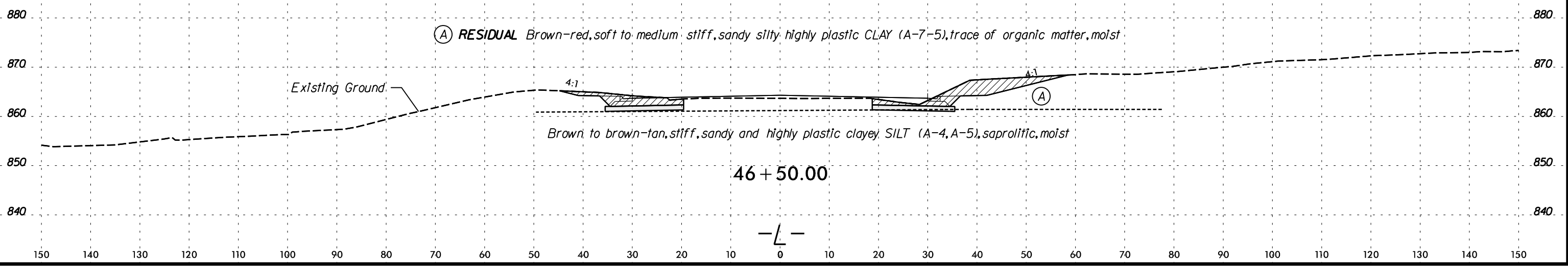


47 + 50.00

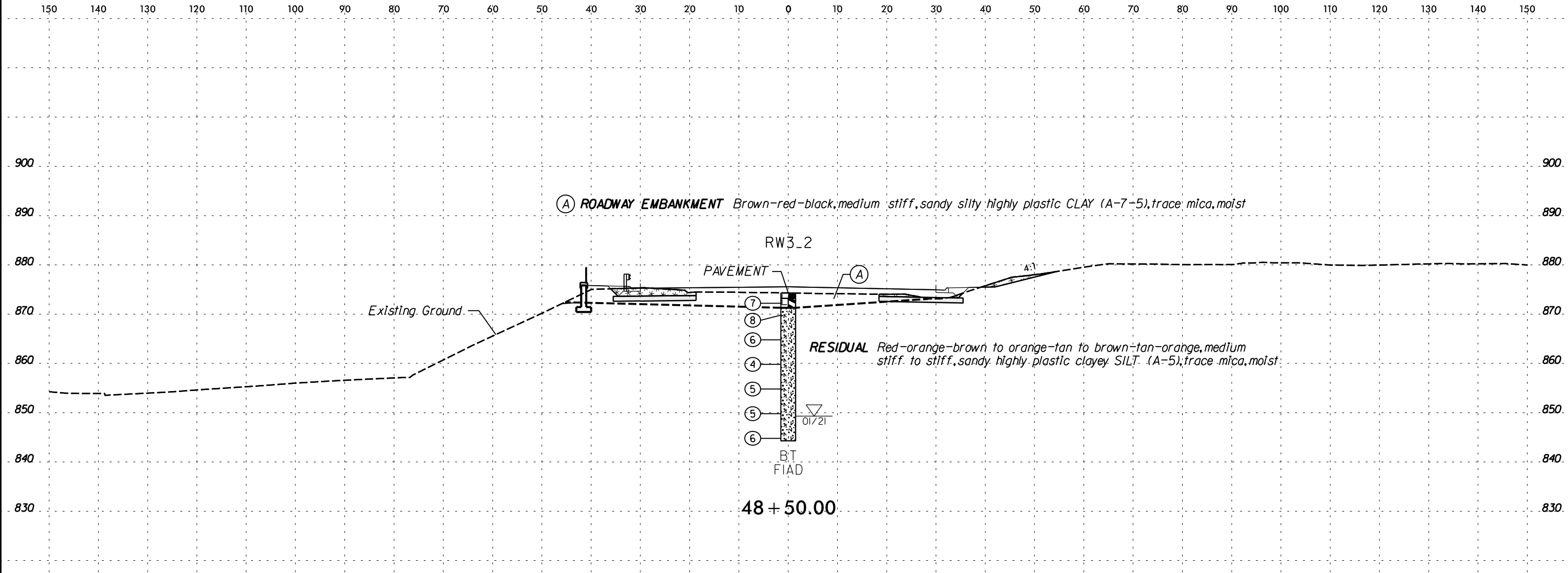
| SOIL TEST RESULTS |         |        |                |               |      |      |             |         |      |      |                 |    |     |            |           |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO.        | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|                   |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| SS-30             | 47+00   | 40' RT | 3.5-5.0'       | A-7-5         | 71   | 39   | ND          | ND      | ND   | ND   | 21              | 79 | 43  | ND         |           |



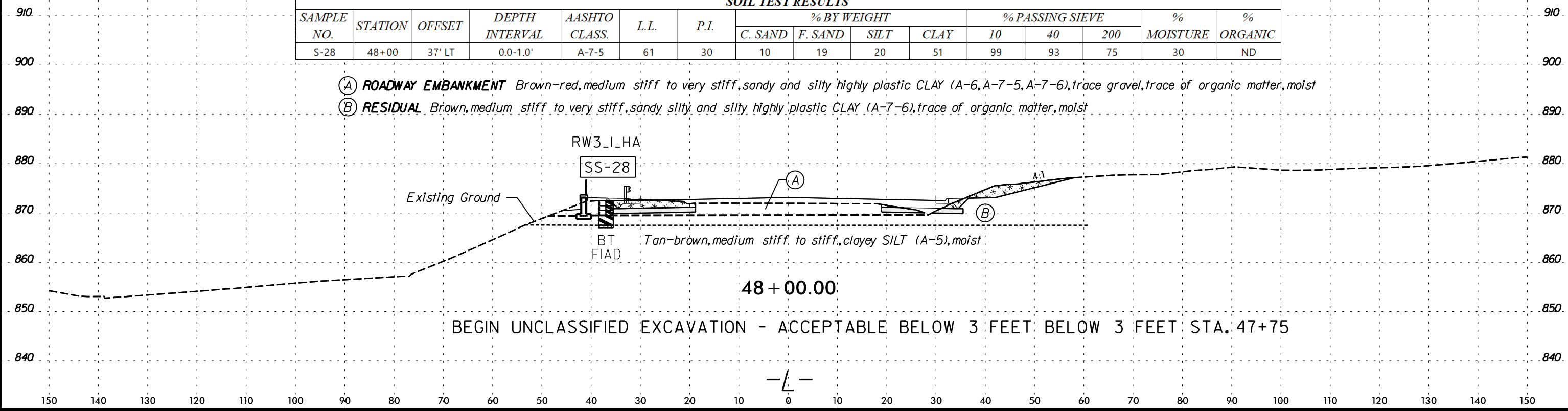
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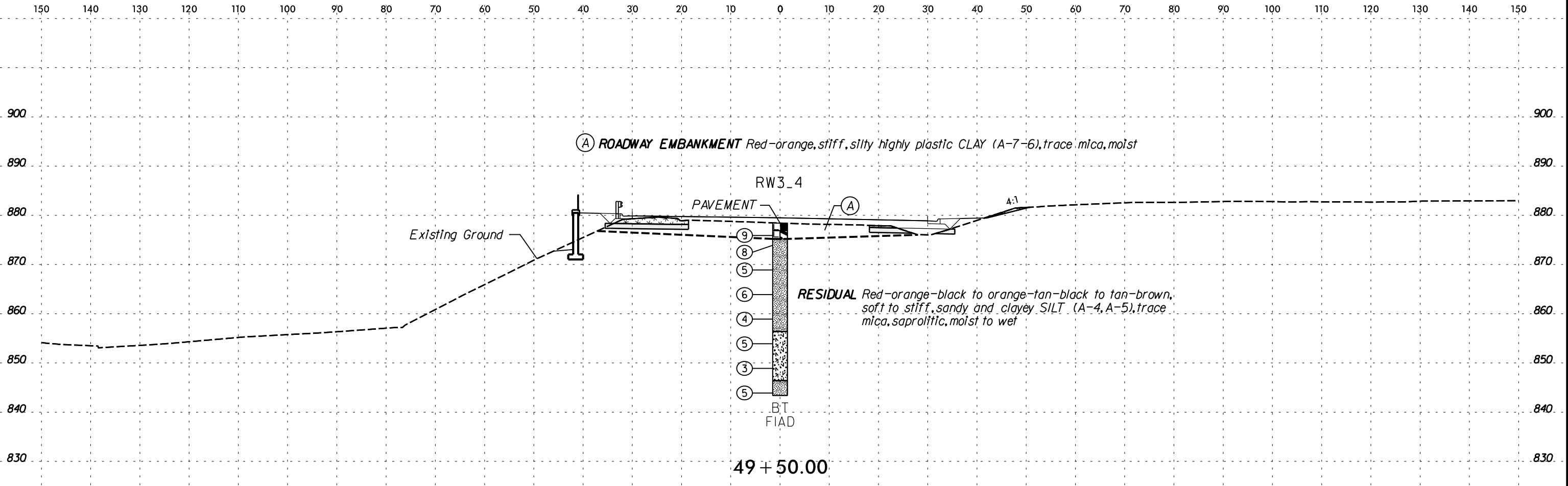


46 + 50.00



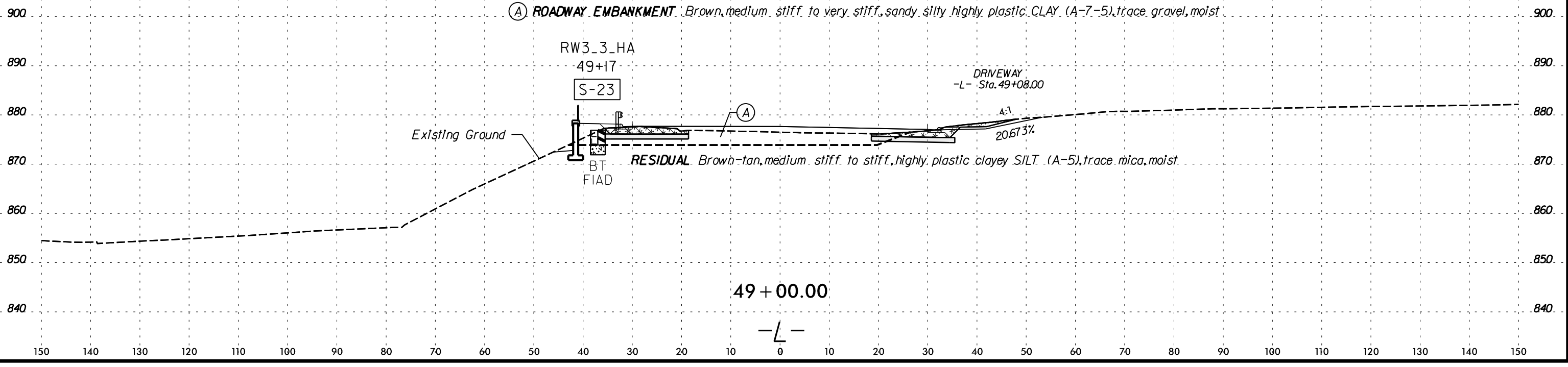
| SOIL TEST RESULTS |         |        |                |               |      |      |             |         |      |      |                 |    |     |            |           |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO.        | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|                   |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| S-28              | 48+00   | 37' LT | 0.0-1.0'       | A-7-5         | 61   | 30   | 10          | 19      | 20   | 51   | 99              | 93 | 75  | 30         | ND        |





49 + 50.00

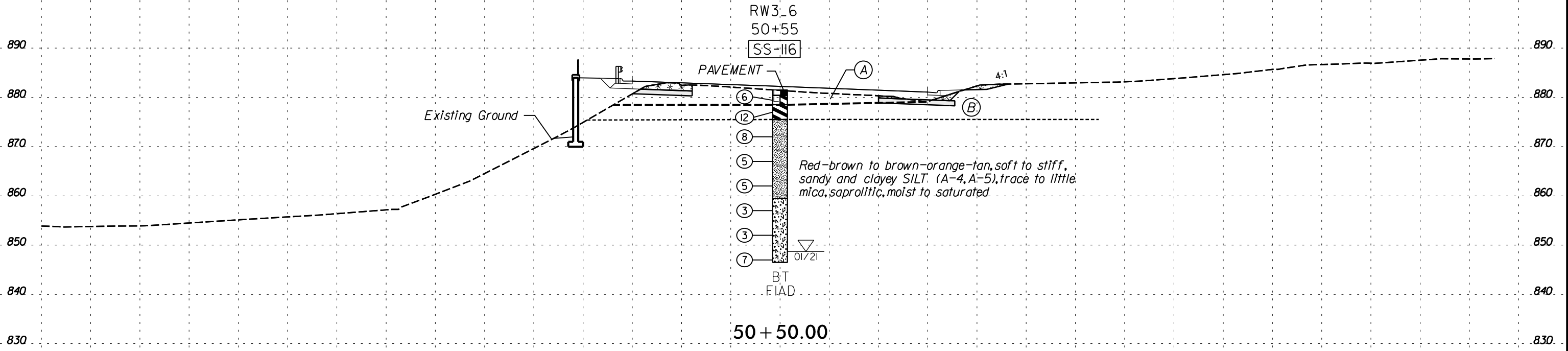
| SOIL TEST RESULTS |         |        |                |               |      |      |             |         |      |      |                 |    |     |            |           |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO.        | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|                   |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| S-23              | 49+17   | 37' LT | 0.0-1.0'       | A-7-5         | 58   | 28   | ND          | ND      | ND   | ND   | 36              | 64 | 25  | ND         |           |



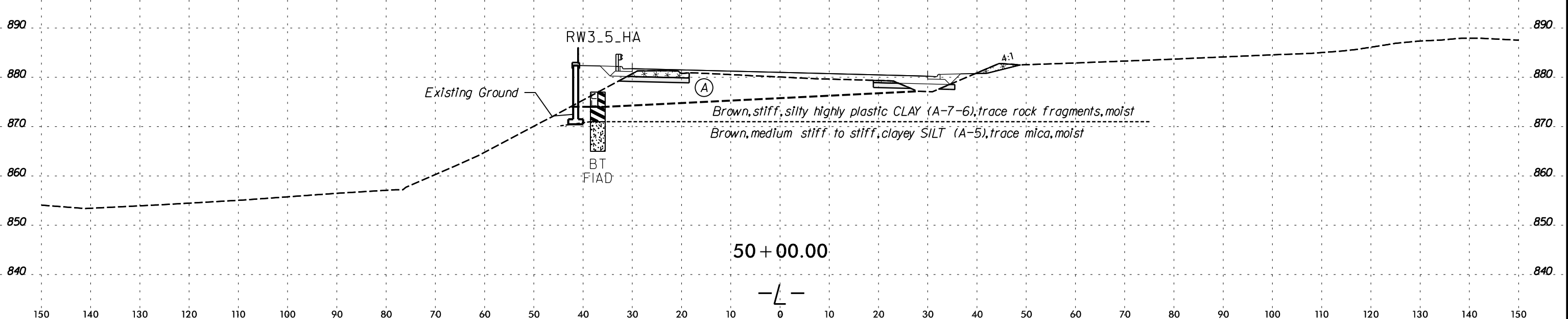
49 + 00.00

| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |          | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|----------|-----------------|----|-----|------------|-----------|
|            |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY     | 10              | 40 | 200 |            |           |
|            |         |        |                |               |      |      | SS-116      | 50+55   | 0 CL | 1.1-2.6' | A-7-6           | 58 | 31  |            |           |

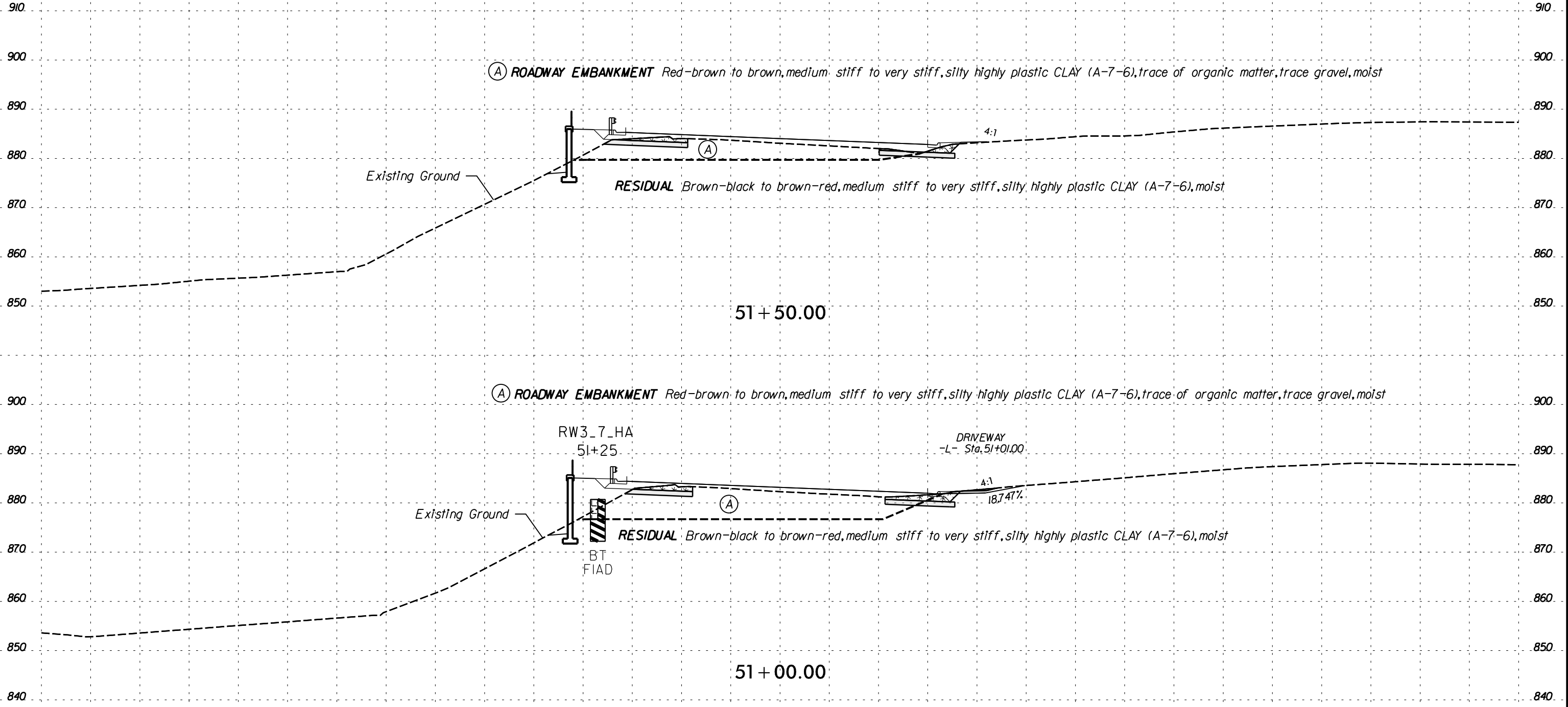
- (A) ROADWAY EMBANKMENT Red-brown, medium stiff, silty highly plastic CLAY (A-7-6), moist
- (B) RESIDUAL Red-brown, stiff, silty highly plastic CLAY (A-7-6), moist



- (A) ROADWAY EMBANKMENT Red-brown, medium stiff to very stiff, sandy silty highly plastic CLAY (A-7-6), trace gravel, moist



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

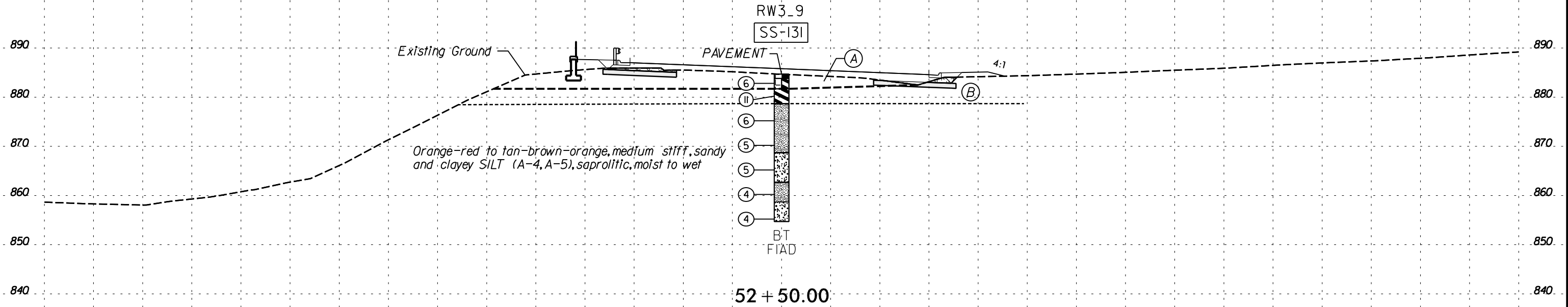


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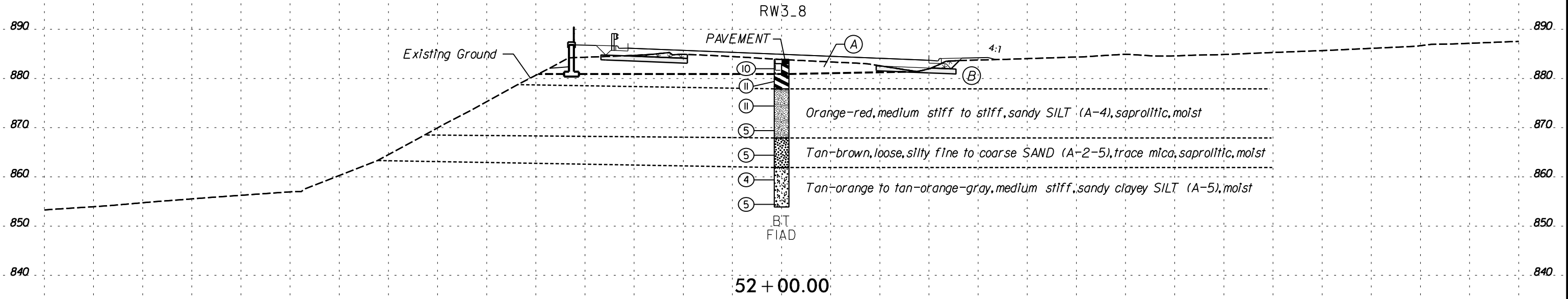
END UNCLASSIFIED EXCAVATION - ACCEPTABLE BELOW 3 FEET STA. 52+75  
END SHALLOW UNDERCUT EXCAVATION STA. 52+75

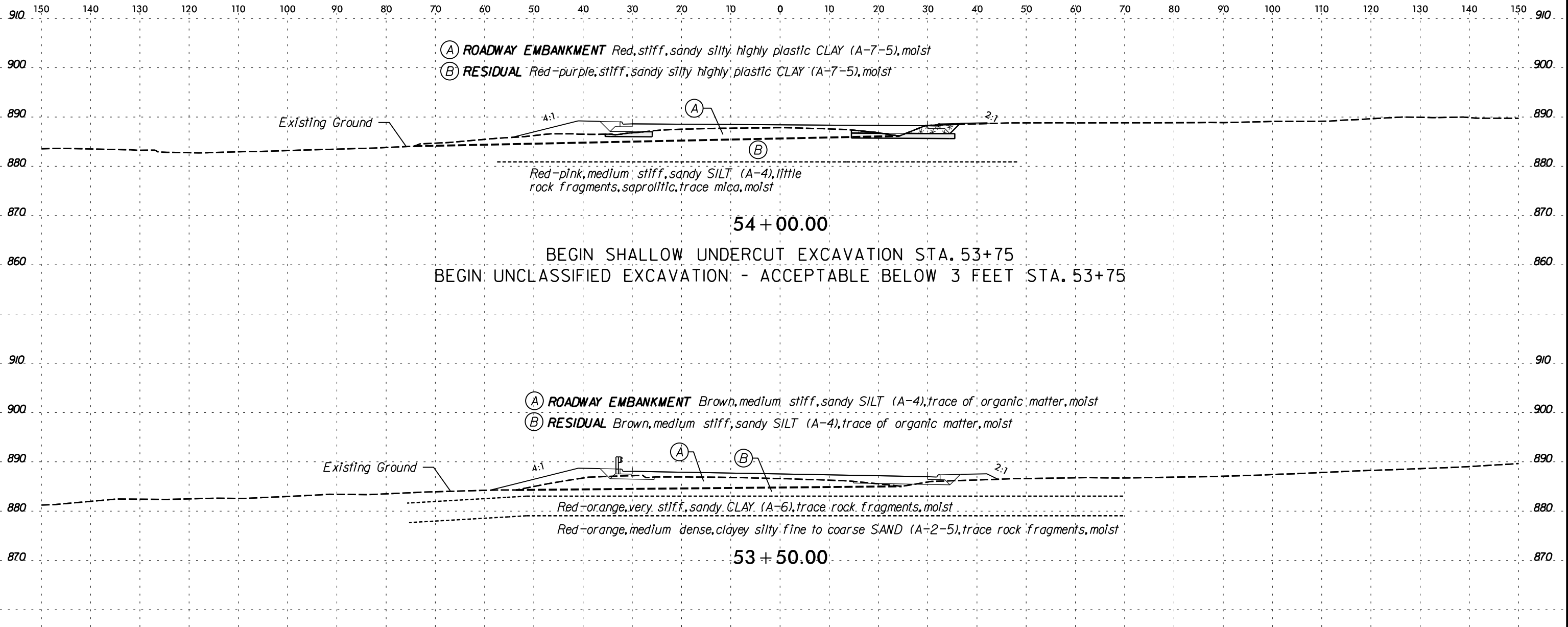
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |          | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|----------|-----------------|----|-----|------------|-----------|
|            |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY     | 10              | 40 | 200 |            |           |
|            |         |        |                |               |      |      | SS-131      | 52+50   | 0 CL | 0.9-2.4' | A-7-6           | 56 | 28  |            |           |

- (A) ROADWAY EMBANKMENT Red-orange, medium stiff, silty highly plastic CLAY (A-7-6), moist
- (B) RESIDUAL Red-orange, stiff, silty highly plastic CLAY (A-7-6), moist



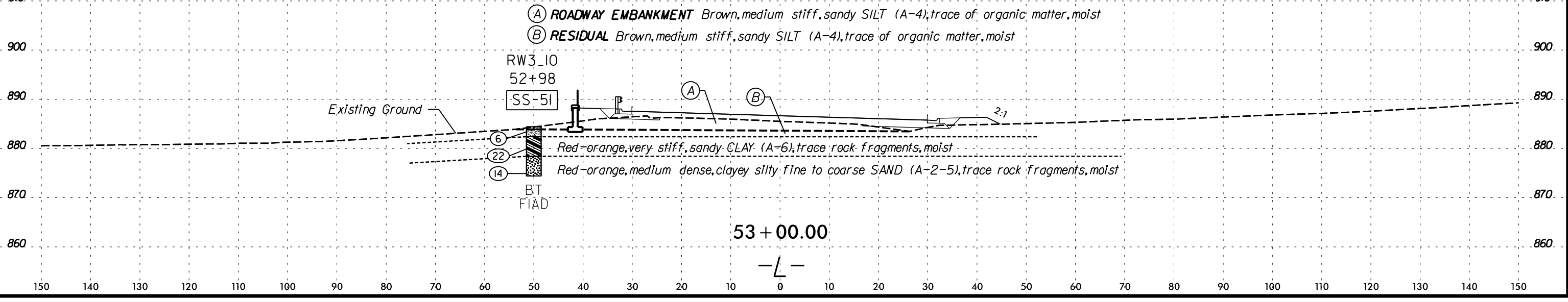
- (A) ROADWAY EMBANKMENT Red-orange, stiff, silty highly plastic CLAY (A-7-6), trace gravel, moist
- (B) RESIDUAL Red-orange, stiff, sandy silty highly plastic CLAY (A-7-6), trace rock fragments, moist



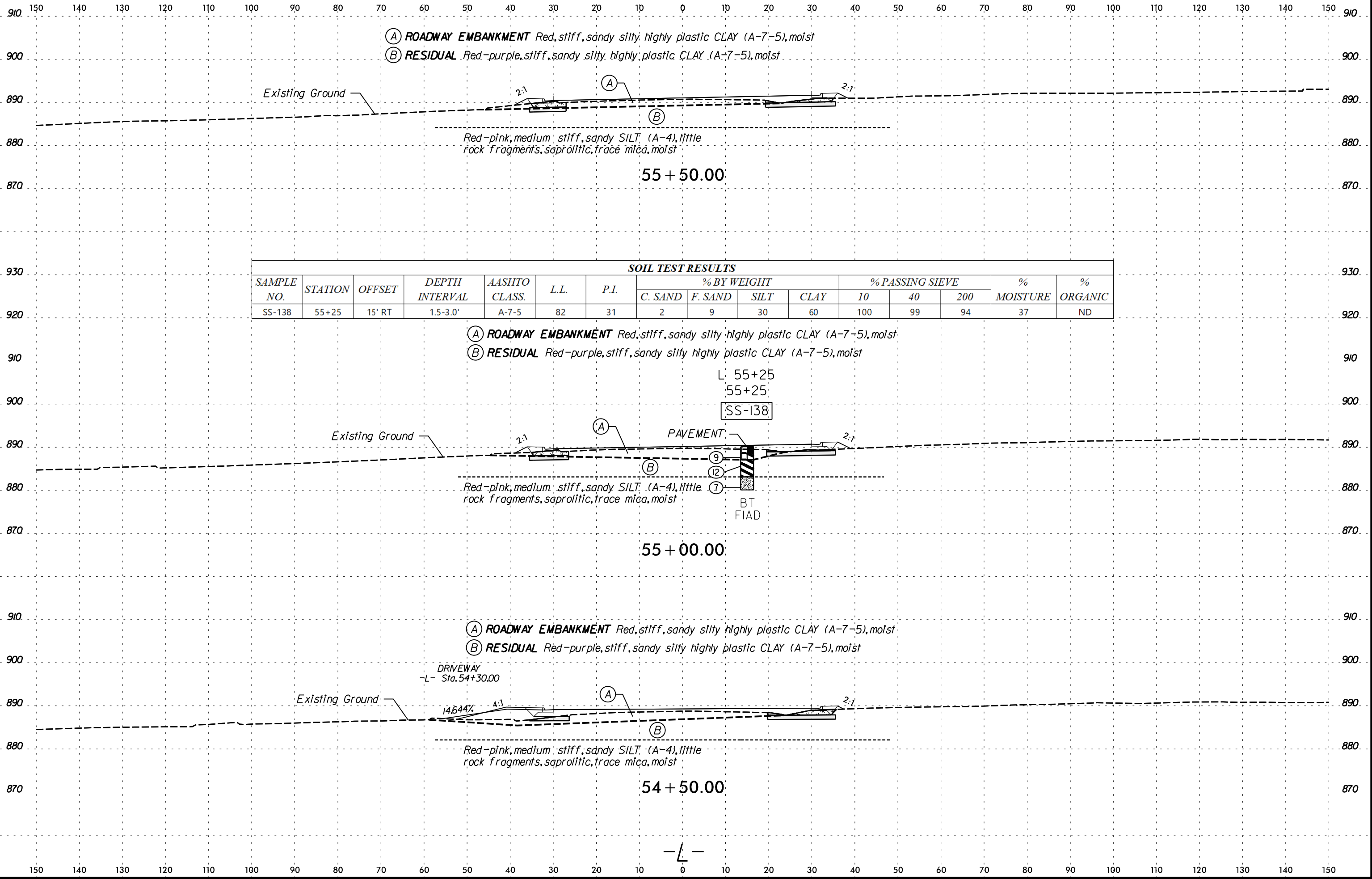


**SOIL TEST RESULTS**

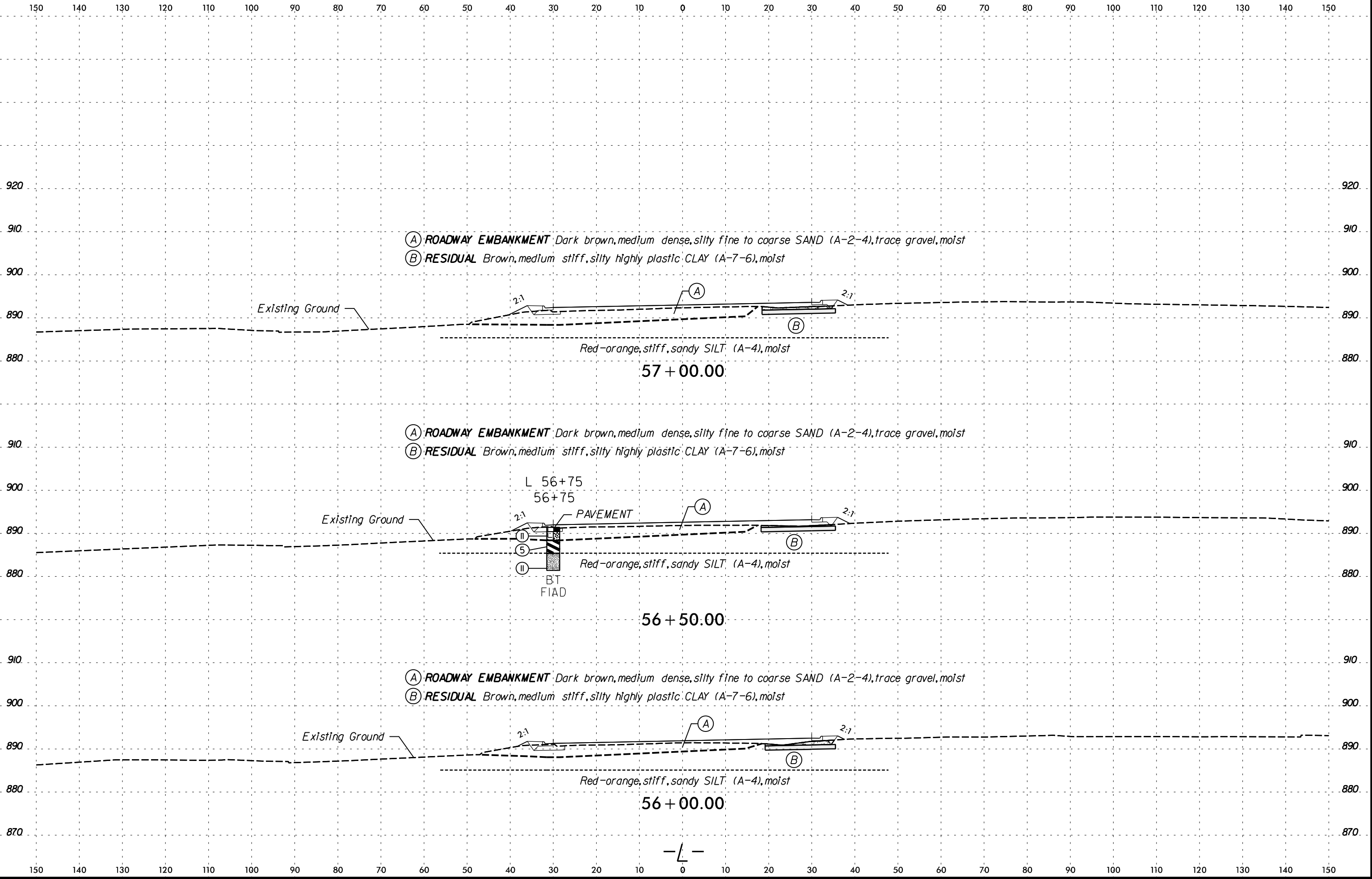
| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
|            |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| SS-51      | 52+98   | 50' LT | 0.0-1.5'       | A-4           | 18   | 3    | ND          | ND      | ND   | ND   | ND              | 43 | 12  | ND         |           |

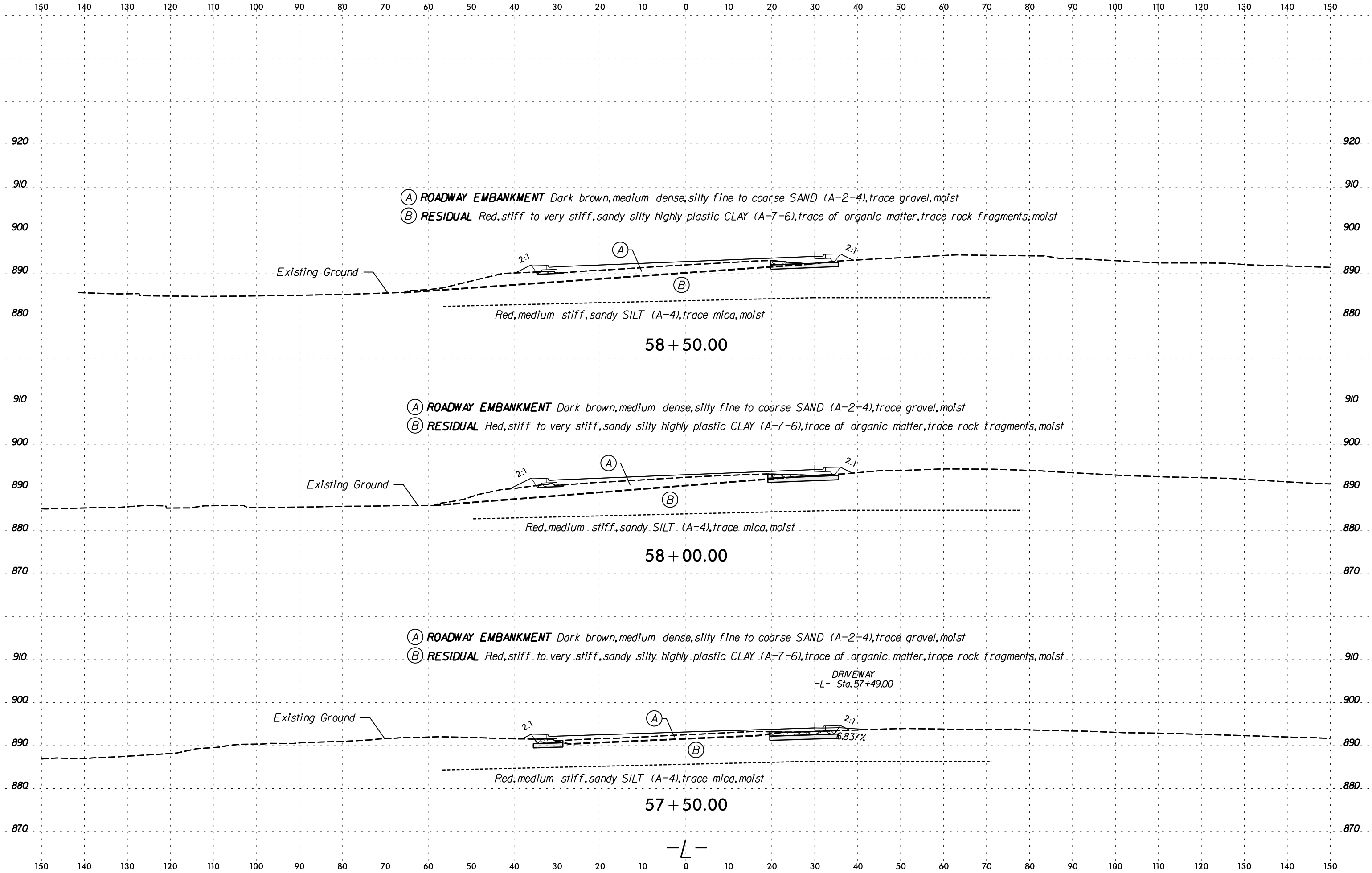


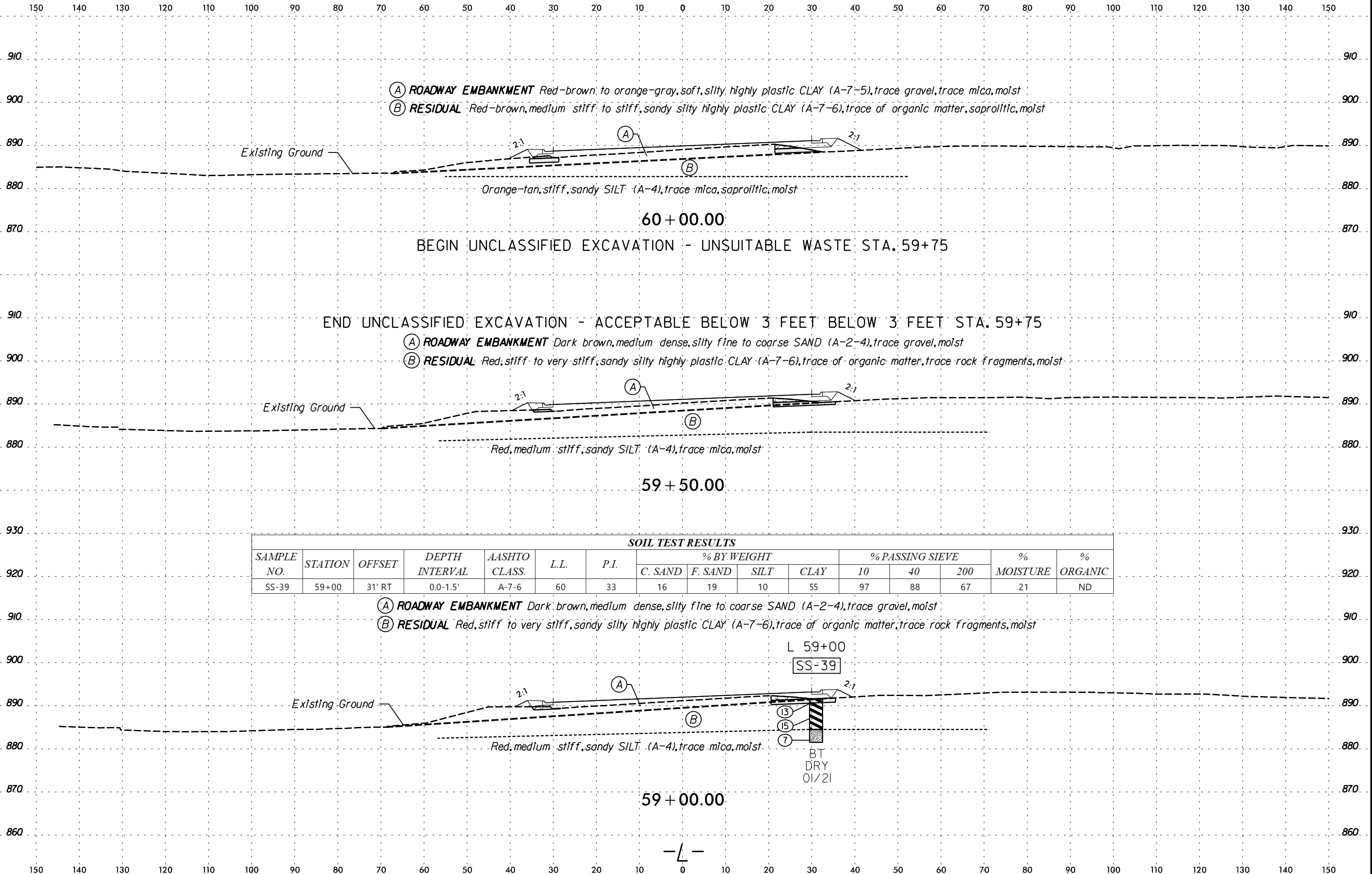




| SOIL TEST RESULTS |         |        |                |               |      |      |             |         |      |      |                 |    |     |            |           |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO.        | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|                   |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| SS-138            | 55+25   | 15' RT | 1.5-3.0'       | A-7-5         | 82   | 31   | 2           | 9       | 30   | 60   | 100             | 99 | 94  | 37         | ND        |



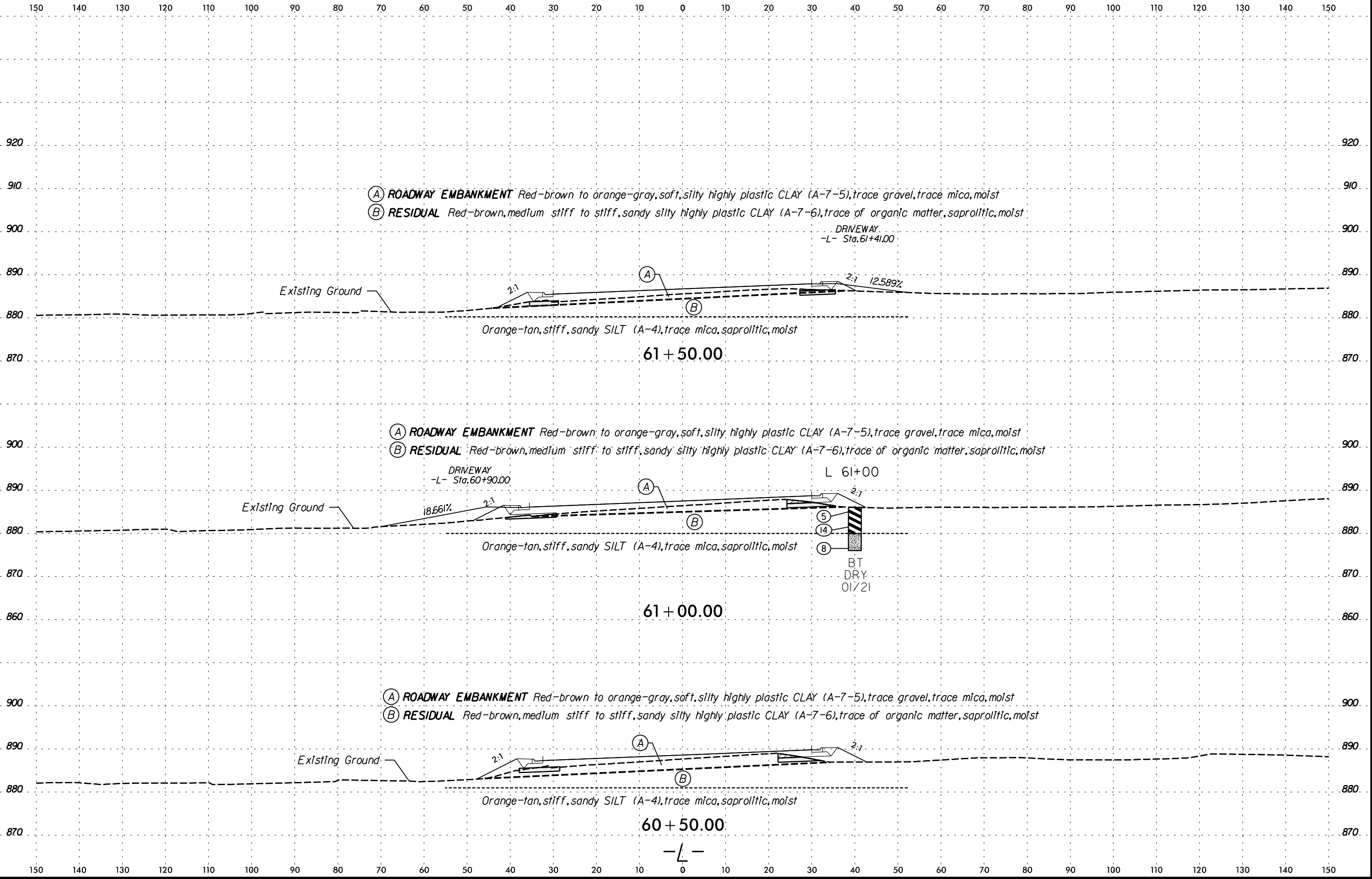




**SOIL TEST RESULTS**

| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
|            |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| SS-39      | 59+00   | 31' RT | 0.0-1.5'       | A-7-6         | 60   | 33   | 16          | 19      | 10   | 55   | 97              | 88 | 67  | 21         | ND        |

(A) **ROADWAY EMBANKMENT** Dark brown, medium dense, silty fine to coarse SAND (A-2-4), trace gravel, moist  
 (B) **RESIDUAL** Red, stiff to very stiff, sandy silty highly plastic CLAY (A-7-6), trace of organic matter, trace rock fragments, moist



(A) **ROADWAY EMBANKMENT** Red-brown to orange-gray, soft, silty highly plastic CLAY (A-7-5), trace gravel, trace mica, moist  
 (B) **RESIDUAL** Red-brown, medium stiff to stiff, sandy silty highly plastic CLAY (A-7-6), trace of organic matter, saprolitic, moist

DRIVEWAY  
 -L- Sta. 61+41.00

Existing Ground

Orange-tan, stiff, sandy SILT (A-4), trace mica, saprolitic, moist

61 + 50.00

(A) **ROADWAY EMBANKMENT** Red-brown to orange-gray, soft, silty, highly plastic CLAY (A-7-5), trace gravel, trace mica, moist  
 (B) **RESIDUAL** Red-brown, medium stiff to stiff, sandy silty highly plastic CLAY (A-7-6), trace of organic matter, saprolitic, moist

DRIVEWAY  
 -L- Sta. 60+90.00

L 61+00

Existing Ground

18.66%

Orange-tan, stiff, sandy SILT (A-4), trace mica, saprolitic, moist

2:1  
 5  
 14  
 8  
 BT  
 DRY  
 01/21

61 + 00.00

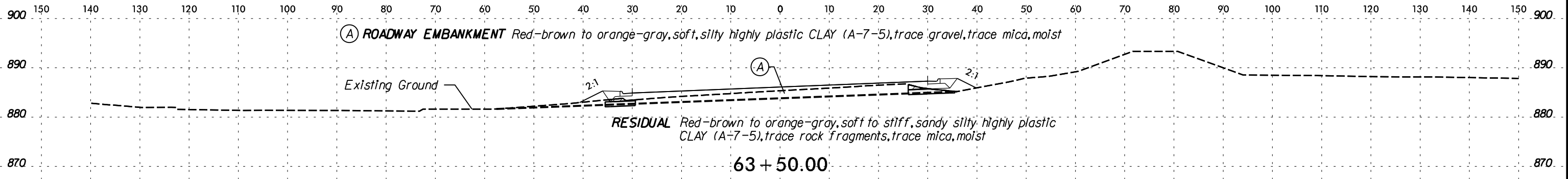
(A) **ROADWAY EMBANKMENT** Red-brown to orange-gray, soft, silty highly plastic CLAY (A-7-5), trace gravel, trace mica, moist  
 (B) **RESIDUAL** Red-brown, medium stiff to stiff, sandy silty highly plastic CLAY (A-7-6), trace of organic matter, saprolitic, moist

Existing Ground

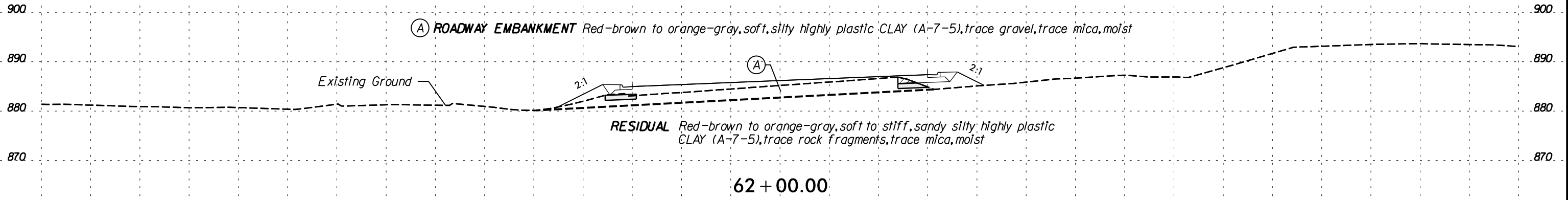
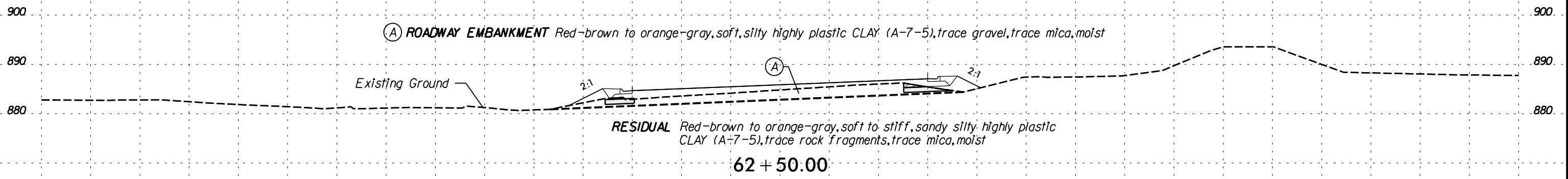
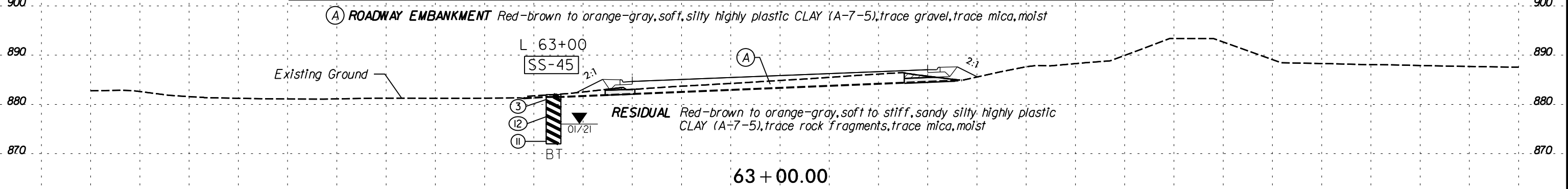
Orange-tan, stiff, sandy SILT (A-4), trace mica, saprolitic, moist

60 + 50.00

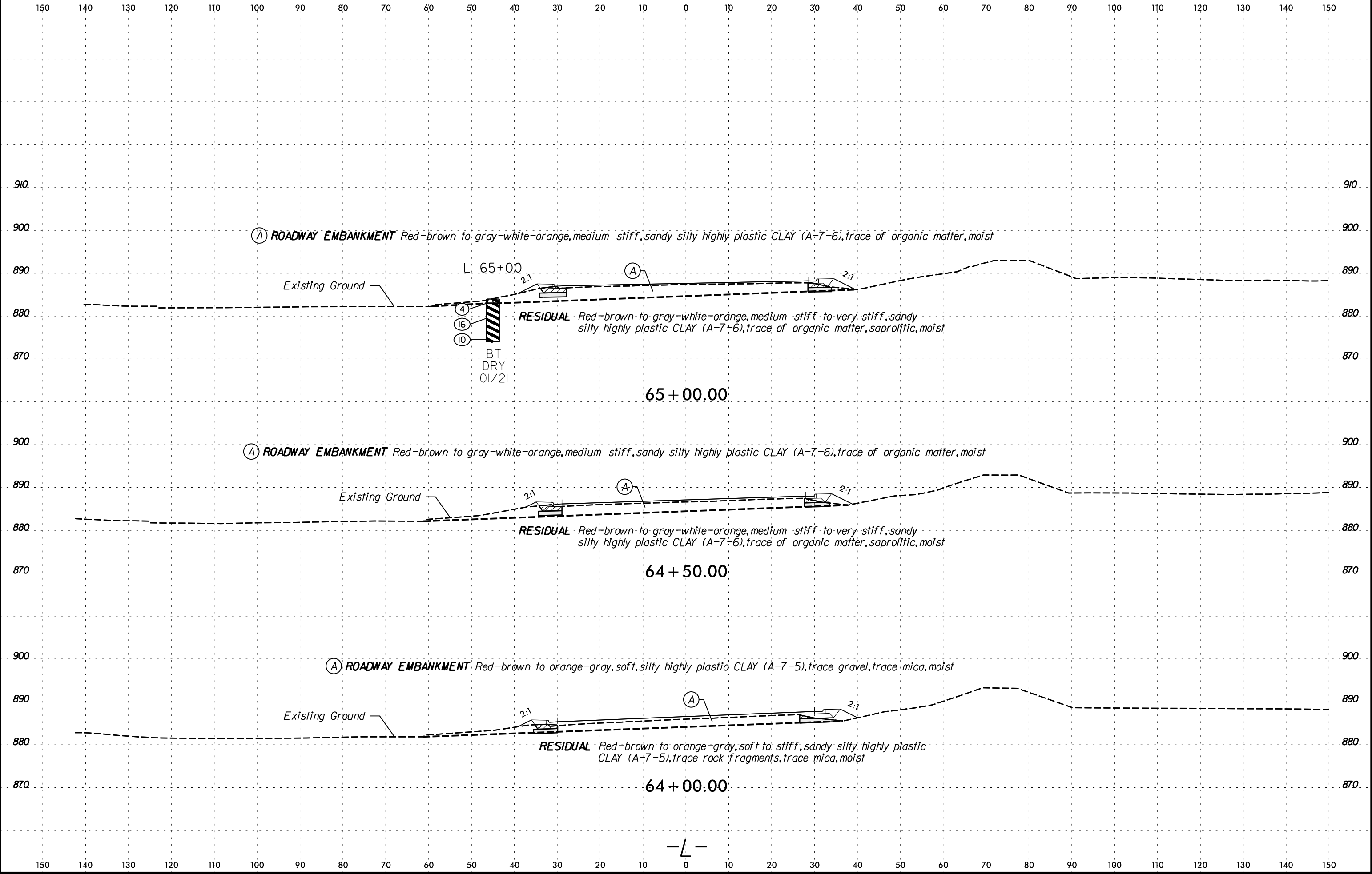
-L-



| SOIL TEST RESULTS |         |        |                |               |      |      |             |         |      |      |                 |    |     |            |           |
|-------------------|---------|--------|----------------|---------------|------|------|-------------|---------|------|------|-----------------|----|-----|------------|-----------|
| SAMPLE NO.        | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |      |      | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|                   |         |        |                |               |      |      | C. SAND     | F. SAND | SILT | CLAY | 10              | 40 | 200 |            |           |
| SS-45             | 63+00   | 46' LT | 0.0-1.5'       | A-7-5         | 74   | 39   | 9           | 13      | 22   | 56   | 99              | 93 | 82  | 31         | ND        |



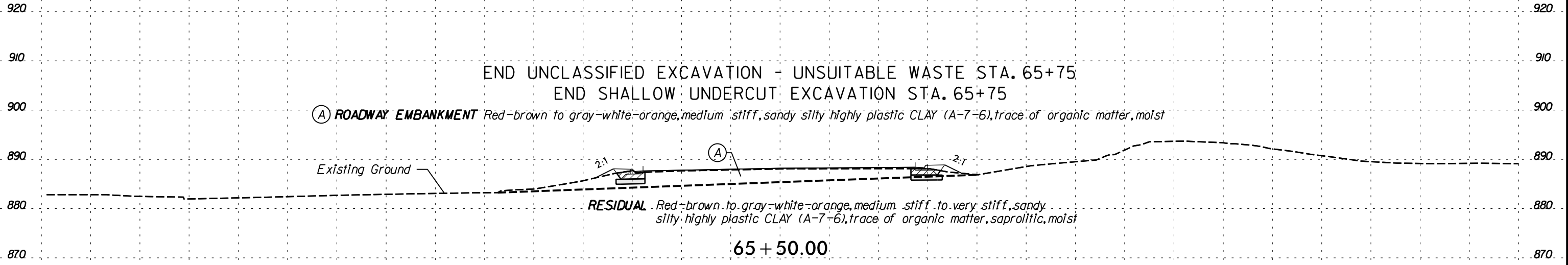
-L-



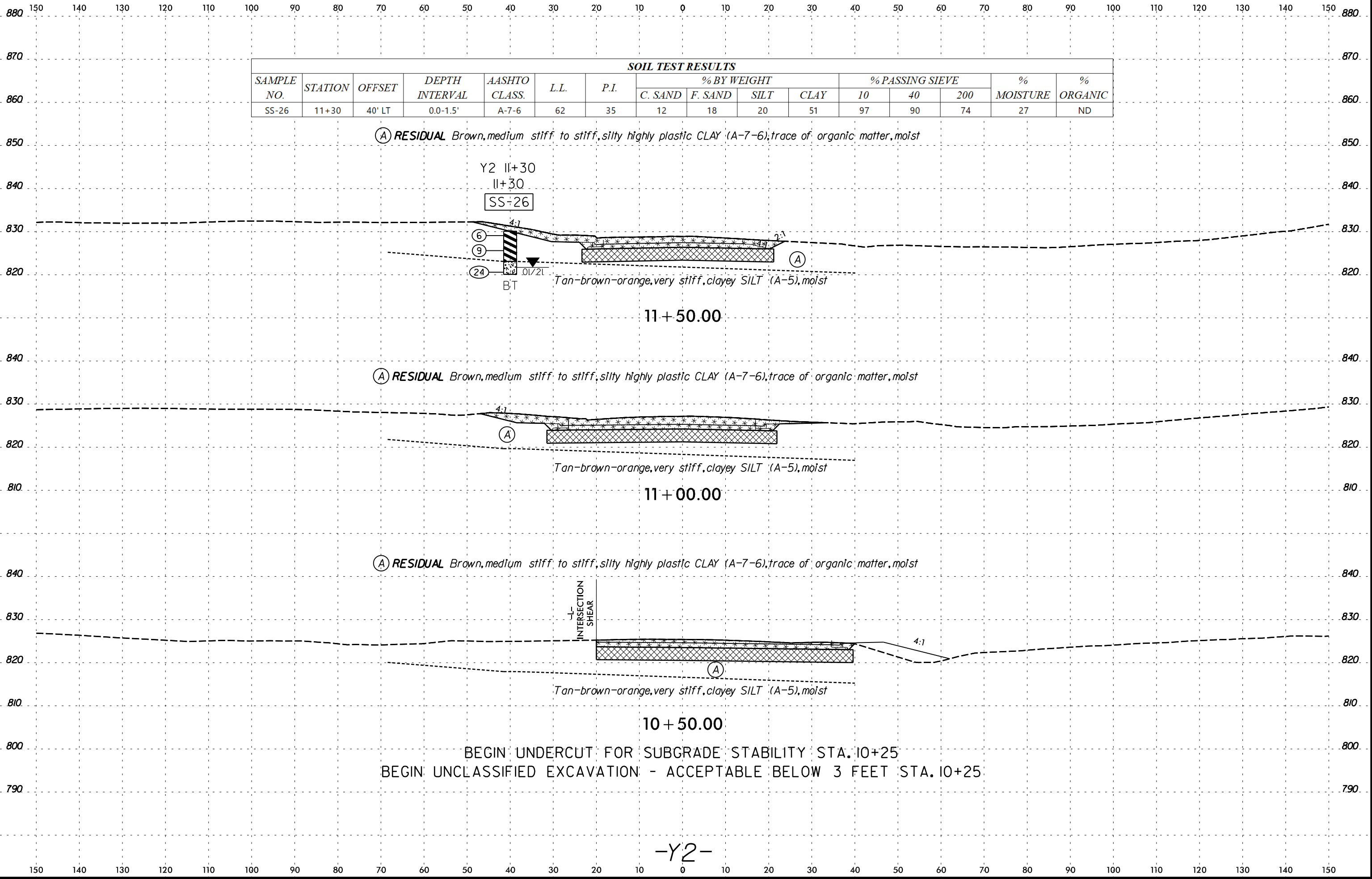




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



| SAMPLE NO. | STATION | OFFSET | DEPTH INTERVAL | AASHTO CLASS. | L.L. | P.I. | % BY WEIGHT |         |        |          | % PASSING SIEVE |    |     | % MOISTURE | % ORGANIC |
|------------|---------|--------|----------------|---------------|------|------|-------------|---------|--------|----------|-----------------|----|-----|------------|-----------|
|            |         |        |                |               |      |      | C. SAND     | F. SAND | SILT   | CLAY     | 10              | 40 | 200 |            |           |
|            |         |        |                |               |      |      | SS-26       | 11+30   | 40' LT | 0.0-1.5' | A-7-6           | 62 | 35  |            |           |



(A) RESIDUAL Brown, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace of organic matter, moist

Y2 11+30

11+30

SS-26

6

9

24

BT

Tan-brown-orange, very stiff, clayey SILT (A-5), moist

11+50.00

(A) RESIDUAL Brown, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace of organic matter, moist

Tan-brown-orange, very stiff, clayey SILT (A-5), moist

11+00.00

(A) RESIDUAL Brown, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace of organic matter, moist

Tan-brown-orange, very stiff, clayey SILT (A-5), moist

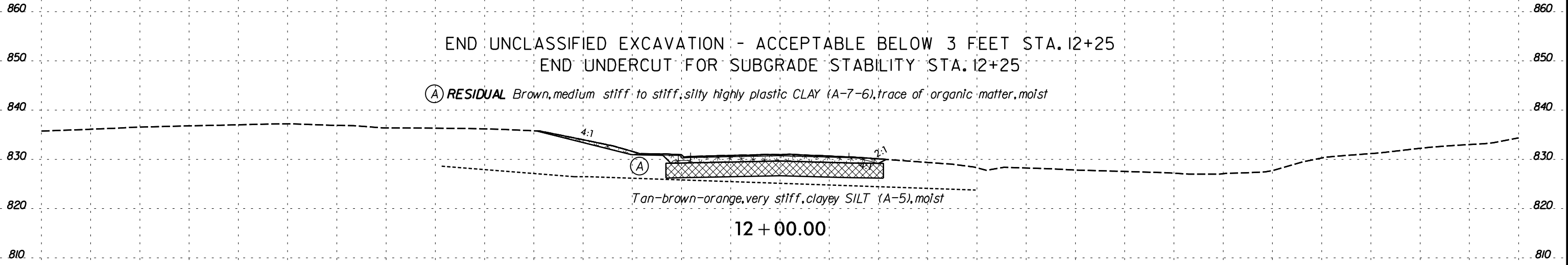
10+50.00

BEGIN UNDERCUT FOR SUBGRADE STABILITY STA. 10+25  
BEGIN UNCLASSIFIED EXCAVATION - ACCEPTABLE BELOW 3 FEET STA. 10+25

-Y2-



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



END UNCLASSIFIED EXCAVATION - ACCEPTABLE BELOW 3 FEET STA. 12+25

END UNDERCUT FOR SUBGRADE STABILITY STA. 12+25

(A) RESIDUAL Brown, medium stiff to stiff, silty highly plastic CLAY (A-7-6), trace of organic matter, moist

Tan-brown-orange, very stiff, clayey SILT (A-5), moist

12 + 00.00

-Y2-