

REFERENCE: B-5121 / B-5317

PROJECT: 42263 / 46031

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.	B-5121 / B-5317	1	48

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY WAKE
PROJECT DESCRIPTION REPLACE BRIDGE NO. 227 ON
US 70/US 401/NC 50 (CAPITAL BOULEVARD) OVER
PEACE STREET AND
REPLACE BRIDGE NO. 213 ON US 70/NC 50 (WADE
AVENUE) OVER US 401 (CAPITAL BOULEVARD)
INVENTORY

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+21 to 53+06	4-7	8-10
-Y5-	10+00 to 14+19	4	11
-Y6-	12+60 to 20+00	4-5	11
-YIRPC-	10+00 to 19+16	4-5	11
-YIRPD-	10+00 to 17+27	5	12
-DR2-	10+00 to 11+50	5	12
-Y2RPB-	10+00 to 16+43	7	12
-Y2LPC-	10+00 to 13+11	7	12
-FLYOVER-	10+00 to 25+76	6-7	13-14

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	20+00 to 42+00	15-26
-Y5-	10+50 to 13+25	27-28
-Y6-	15+00 to 19+27	29-31
-YIRPC-	12+60.64 to 15+52.58	32-34
-YIRPD-	15+59.13 to 16+35.14	35 - 36
-DR2-	10+50 to 11+20	37
-FLYOVER-	15+00 to 24+00	38 - 44

APPENDICES

APPENDIX	TITLE	SHEETS
A	LABORATORY RESULTS	45 - 46

CAUTION NOTICE

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

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

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

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

PERSONNEL

TURNAGE, J. R.

DUGGINS, W. T.

EKLUND, M. A.

ALEXANDER, M. J.

FRAWLEY, M. H.

INVESTIGATED BY TERRACON CONSULTANTS

DRAWN BY ALEXANDER, M. J.

CHECKED BY NASH, A. A.

SUBMITTED BY TERRACON CONSULTANTS

DATE AUGUST 2015

NOT CONSIDERED FINAL UNLESS ALL SIGNATURES ARE COMPLETED



DocuSigned by:

Matthew J. Alexander 8/20/2015

0FB0038EEA08452 SIGNATURE DATE

TIP PROJECT: B-5121 / B-5317

CONTRACT:

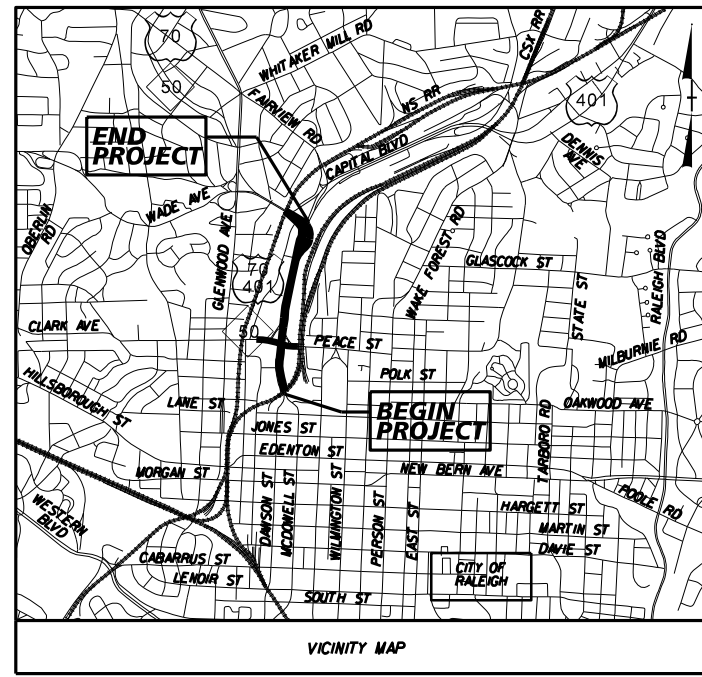
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

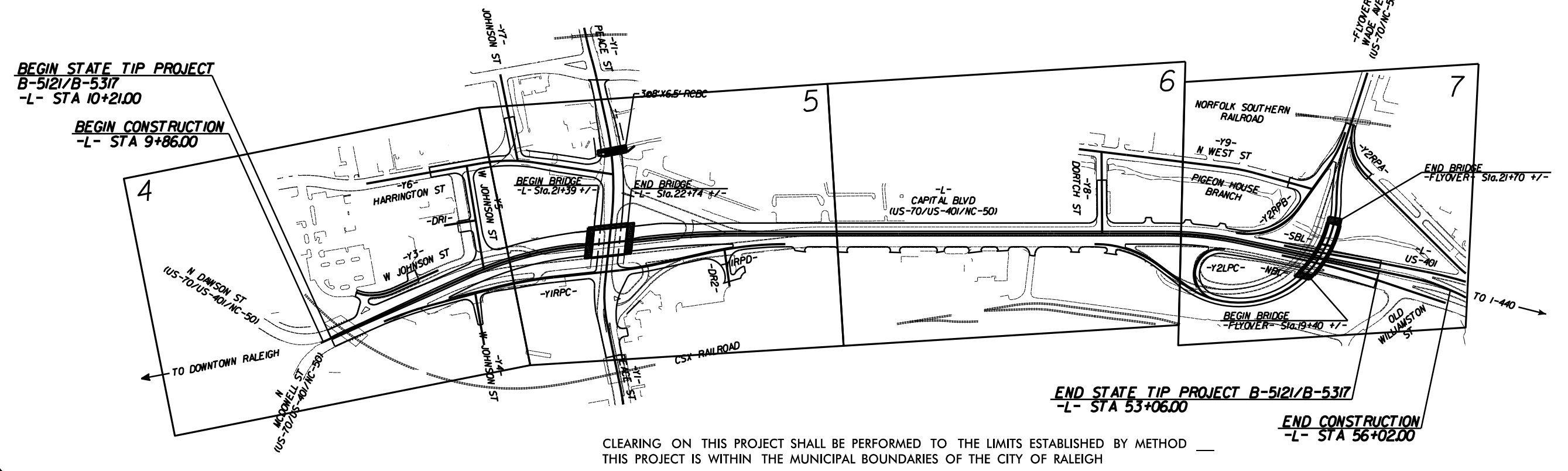
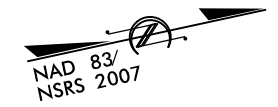
WAKE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5121/B-5317	3	48
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
42263.1.1	BRNHS-0070(119)	P.E. (B-5121)	
46031.1.1	BRNHS-0070(149)	P.E. (B-5317)	

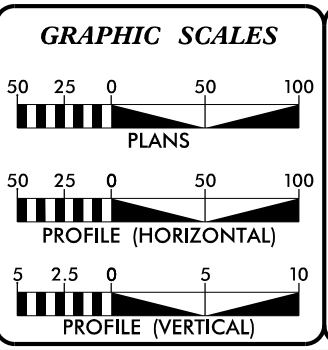
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



LOCATION: BRIDGE NO. 277 ON US-70/US-401/NC-50 (CAPITAL BOULEVARD) OVER PEACE STREET AND BRIDGE NO. 213 ON US-70/NC-50 (WADE AVENUE) OVER US 401 (CAPITAL BOULEVARD)
TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNING, SIGNALS, STRUCTURES, AND CULVERT



CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD ____
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF RALEIGH



DESIGN DATA

AADT 2016	=	58,083
AADT 2036	=	70,416
K	=	10%
D	=	55%
T	=	5%*
V	=	40 MPH

CLASSIFICATION:
URBAN ARTERIAL

* 1% TTST 4% DUAL STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5121/B-5317	=	0.786 MILES
LENGTH STRUCTURE TIP PROJECT B-5121/B-5317	=	0.026 MILES
TOTAL LENGTH TIP PROJECT B-5121/B-5317	=	0.812 MILES

PLANS PREPARED FOR THE NCDOT BY:

Kimley»Horn

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 19, 2015

LETTING DATE:
JUNE 21, 2016

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER

J. JASON PACE, P.E.
PROJECT DESIGN ENGINEER

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

HYDRAULICS ENGINEER

P.E.

SIGNATURE:
ROADWAY DESIGN ENGINEER

P.E.

SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

P.E.

Date: August 2015
 WBS Number: 42263.1.1 / 46031.1.1
 TIP Number: B-5121 / B-5317
 F.A. Number: BRNHS-0070(119) / BRNHS-0070(149)
 County: Wake
 Description: Replace Bridge No. 227 on US 70/US 401/NC 50 (Capital Boulevard) over Peace Street and Replace Bridge No. 213 on US 70/NC 50 (Wade Avenue) over US 401 (Capital Boulevard)

Subject: Roadway Geotechnical Report - Inventory

Project Description

The project is located within the city limits of Raleigh in Wake County. The project begins just south of the CSX Railroad bridge over Capital Boulevard and just north of the Dawson Street and McDowell Street split near downtown. The project continues north for approximately 0.8 miles to a point 275 feet north of the existing Wade Avenue bridge over Capital Boulevard. The project also includes the realignment of several secondary alignments. The project corridor is in an urban setting that has experienced substantial development over hundreds of years.

The geotechnical subsurface investigation was performed in January through April of 2015. Diedrich D-50 and CME 75 rotary drills were utilized to advance the soil test borings. All of the drilling equipment utilized on this project was equipped with automatic Standard Penetration Test (SPT) hammers. In addition to soil test borings performed along the corridor, historic maps were reviewed in order to better understand the development that has taken place along the corridor.

The following alignments were investigated by soil testing or visual reconnaissance:

<u>Alignment</u>	<u>Stations</u>
-L-	10+21 to 53+06
-Y5-	10+00 to 14+19
-Y6-	12+60 to 20+00
-Y1RPC-	10+00 to 19+16
-Y1RPD-	10+00 to 17+27
-DR2-	10+00 to 11+50
-Y2RPB-	10+00 to 16+43
-Y2LPC-	10+00 to 13+11
-FLYOVER-	10+00 to 25+76

Areas of Special Geotechnical Interest

1. High Plasticity Clays

High plasticity clays were encountered in proposed cuts at the following location:

<u>Alignment</u>	<u>Stations</u>
-Y1RPD-	15+80 to 16+90

High plasticity clays were encountered near proposed subgrade or in fill sections at the following locations:

<u>Alignment</u>	<u>Stations</u>
-L-	33+50 to 38+00
-FLYOVER-	22+26 to 24+00

2. Artificial Fill

Artificial fill was encountered at the following locations:

<u>Alignment</u>	<u>Stations</u>
-Y5-	10+25 to 13+48
-Y6-	10+22 to 19+55
-DR2-	10+34 to 11+50
-FLYOVER-	14+04 to 17+68

3. Weathered Rock

Weathered rock was encountered in cut sections or near proposed subgrade at the following location:

<u>Alignment</u>	<u>Stations</u>
-Y1RPC-	12+54 to 15+50

Physiography and Geology

The project is located in the Piedmont Physiographic Province. The residual soils in the area were derived from the weathering of the parent bedrock encountered at depth along the corridor. Geologically, the project corridor is mapped as being underlain by an injected gneiss formation in the Raleigh Belt. The formation consists of biotite gneiss and schist intruded by sills and dikes of granite, pegmatite, and aplite. The existing topography along the project consists of a ridgeline along the east of the corridor with the CSX Railroad at the top and, in general, slopes gently toward Pigeon House Branch to the west. Pigeon House Branch meanders to the west of Capital Boulevard and flows into an existing box culvert at Peace Street which continues outside of the project limits. There is approximately 50 feet of elevation difference between the upland and lowland portions of the project.



PROJECT REFERENCE NO.	SHEET NO.
B-5121 / B-5317	3B

Soil Properties

Soils encountered during the investigation along the corridor consist predominately of roadway embankment, artificial fill, alluvial, and residual.

The roadway embankment soils predominately consist of sandy silts (A-4), sandy clays (A-6) and clayey sands (A-2-6). The silts encountered in the approaches to the existing bridge at Peace Street were very soft to medium stiff. The roadway embankment soils encountered along the -L- alignment from the Peace Street interchange north consisted of clayey sands and sandy clays with a majority of this material being encountered as utility trench backfill. The material encountered was very loose to medium dense clayey sands and soft to very stiff sandy clays.

Artificial fill was encountered in developed areas surrounding the existing roadways. The material encountered varied across the project consisting of silty to clayey sands (A-2-4 and A-2-6, respectively) and sandy clays (A-6). The artificial fill encountered along the -Y6- alignment contained concrete and brick rubble. Glass and metal debris was encountered in the boring on the -DR2- alignment. The borings performed at the proposed retaining wall along the -FLYOVER- alignment encountered wood throughout the fill. The artificial fill ranged in thickness from surficial fill for landscape areas to approximately 15 feet.

Alluvial soils were encountered beneath artificial fill and roadway embankments soils and consist of silty and clayey sands (A-2-4 and A-2-6) and clayey silt (A-5). These soils are not anticipated to impact embankment stability because the amount and duration of overburden pressure.

The residual soils encountered on a majority of the project were saprolitic. The residual soils consist of medium to high plasticity silty clays (A-7), low to medium plasticity sandy clays (A-6), fine sandy and clayey silts (A-4 and A-5), and silty and clayey sands (A-2-4 and A-2-6, respectively). The high plasticity clay soils (PI>25) were encountered near the surface at the locations indicated above. In general the silty and sandy layers were encountered alternating to the top of weathered rock. The residual soils were observed to have alternating layers of fine and coarse grained soils before transitioning into weathered rock.

Rock Properties

Weathered rock along the corridor is derived from the underlying gneiss and schist. The weathered rock along the project corridor is suitable for use as fill. Weathered rock was encountered in proposed cut sections at the approximate location listed in the "Areas of Special Geotechnical Interest" section.

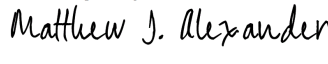
The crystalline rock gneiss was encountered during the investigation. Where encountered, the rock was blue-gray with white and black. The rock was cored at the Wade Avenue overpass location (-FLYOVER-) and RQD values of approximately 85% were reported. The crystalline rock was not encountered within 6 feet of proposed grades during the investigation along the corridor.

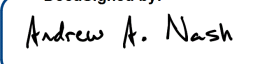
Groundwater

In general, the corridor drains to Pigeon House Branch which runs to the west of Capital Boulevard for the length of the project. Drainage is accomplished by surface runoff of developed areas and existing stormwater management infrastructure.

Groundwater was not encountered within 6 feet of proposed grades during the investigation.

**Respectfully Submitted,
Terracon Consultants, Inc.**

DocuSigned by:

0FB0038EEA06452...
Matthew J. Alexander, PE
Project Geotechnical Engineer

DocuSigned by:

671DA68582E04FE...
Andrew A. Nash, PE
Geotechnical Department Manager

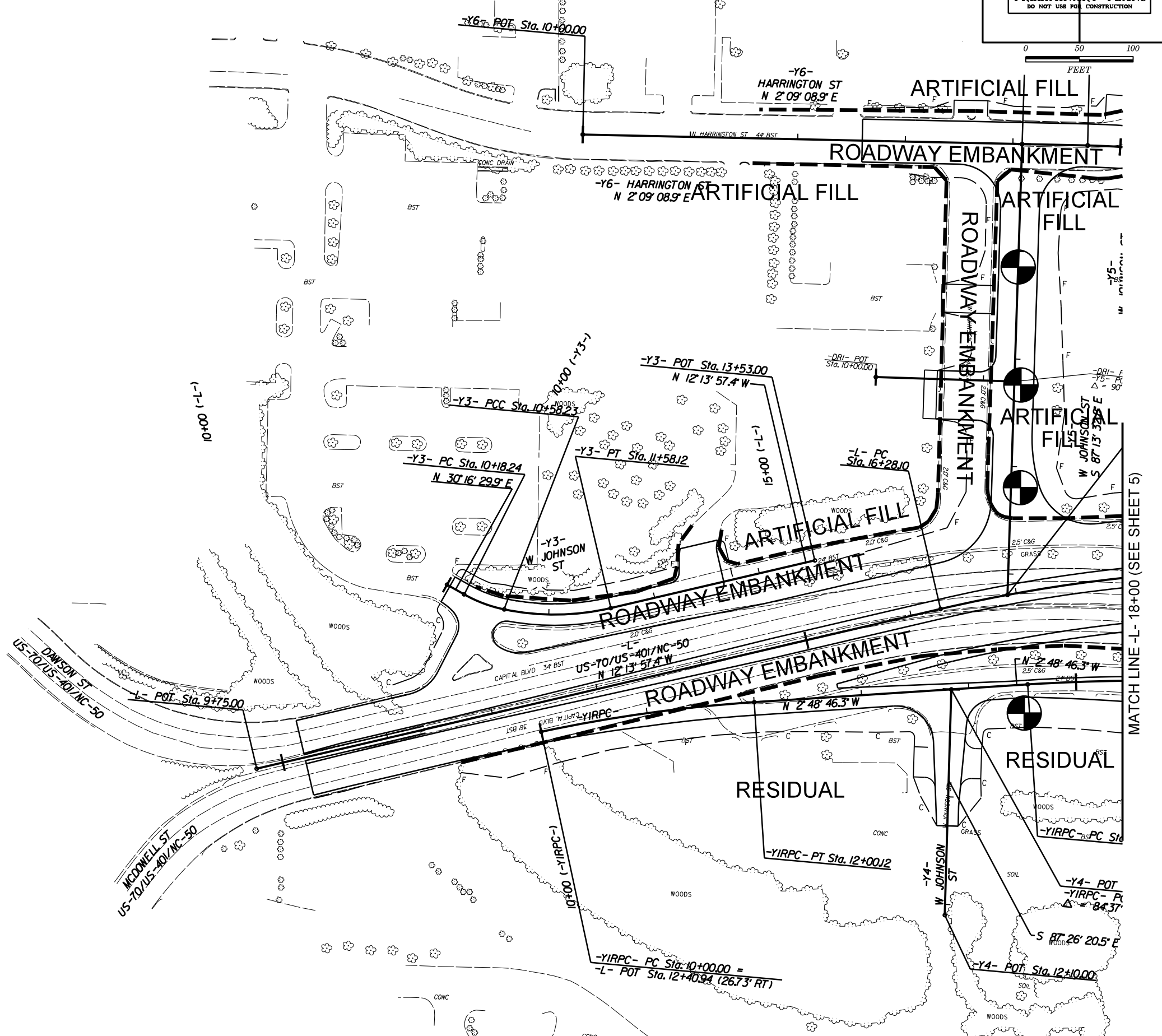
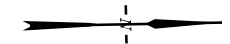
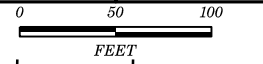
Y5- POT Sta. 10+00
 $\Delta = 90^{\circ}37'18.3''$

PROJECT REFERENCE NO.
B-5121 / B-5317

SHEET NO.
4

INCOMPLETE PLANS
DO NOT USE FOR E/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCH LINE -L- 18+00 (SEE SHEET 5)

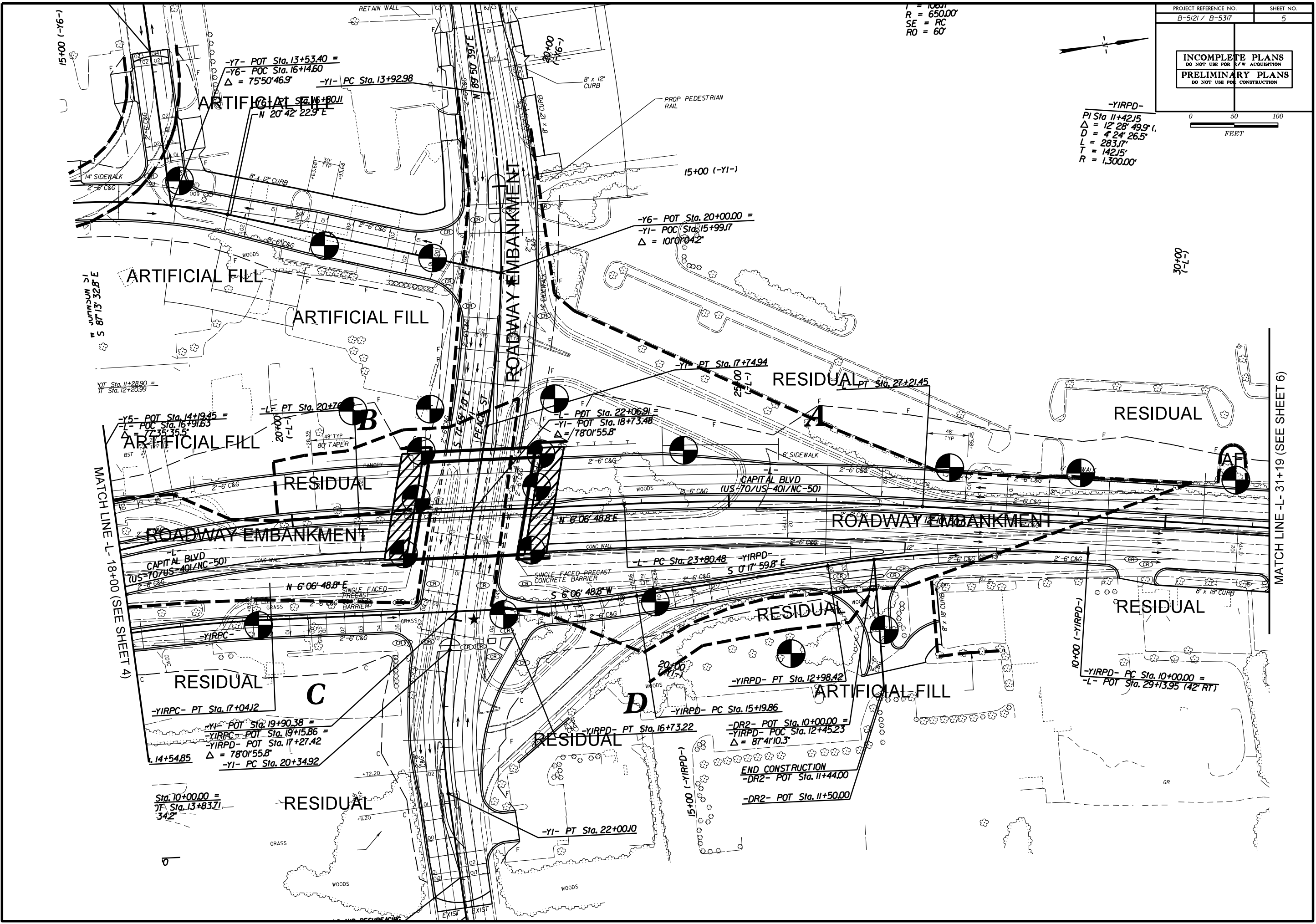
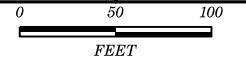
I = 100'
R = 650.00'
SE = RC
RO = 60'

PROJECT REFERENCE NO. B-5121 / B-5317
SHEET NO. 5

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



-YIRPD-
PI Sta 11+42.15
 $\Delta = 12' 28' 49.9''$
 $D = 4' 24' 26.5''$
 $L = 283.17'$
 $T = 142.15'$
 $R = 1,300.00'$



MATCH LINE -L- 18+00 (SEE SHEET 4)

MATCH LINE -L- 31+19 (SEE SHEET 6)

Sta. 10+00.00 =
PT Sta. 13+83.71
34.2

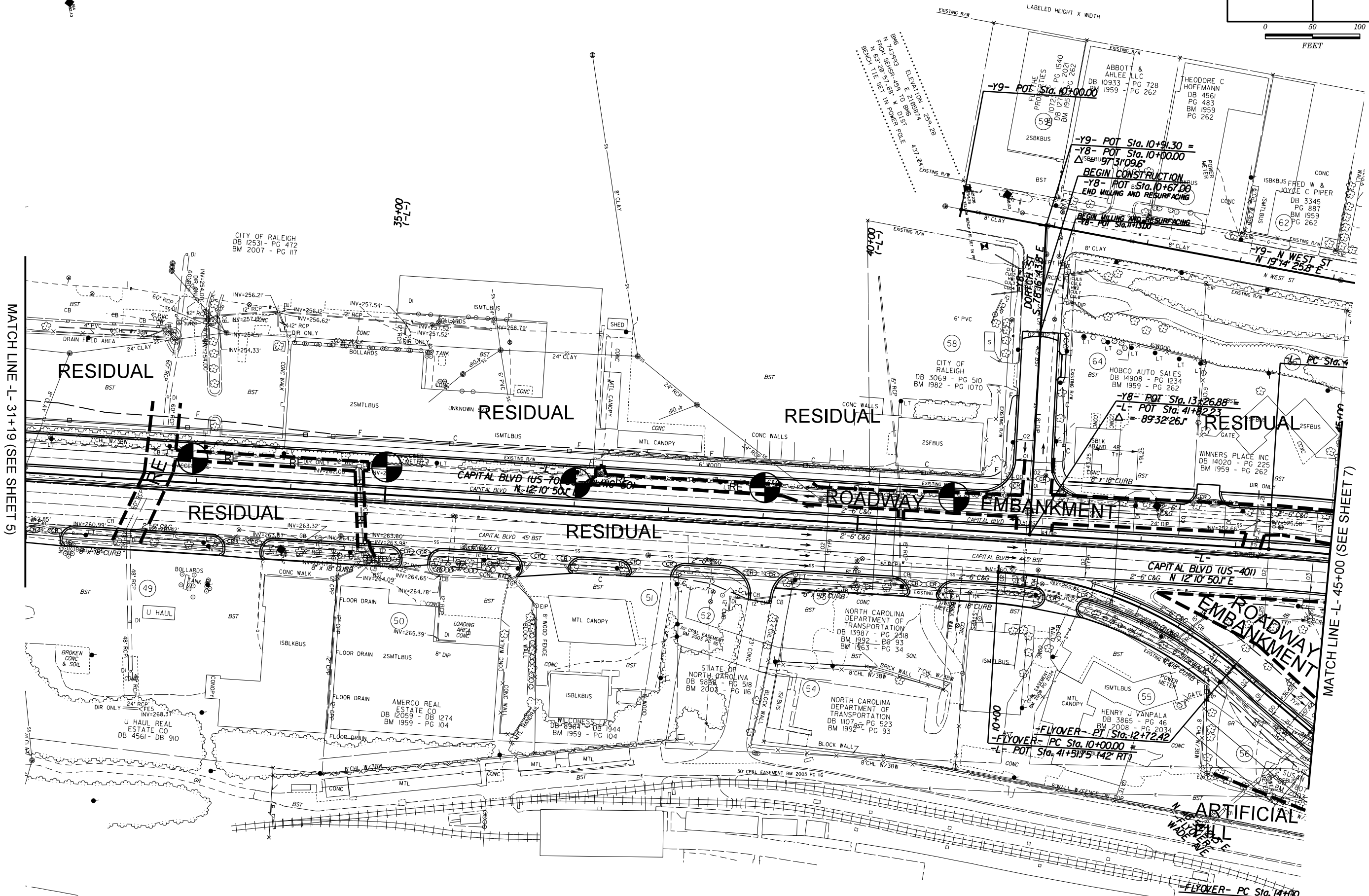
-YIRPC- PT Sta. 17+04.12
-YI- POT Sta. 19+90.38 =
-YIRPC- POT Sta. 19+15.86 =
-YIRPD- POT Sta. 17+27.42
 $\Delta = 78'01'55.8''$
-YI- PC Sta. 20+34.92

-YIRPD- PC Sta. 15+19.86
-YIRPD- PT Sta. 12+98.42
-YIRPD- POT Sta. 16+73.22
-DR2- POT Sta. 10+00.00 =
-YIRPD- POC Sta. 12+45.23
 $\Delta = 87'41'10.3''$
END CONSTRUCTION
-DR2- POT Sta. 11+44.00
-DR2- POT Sta. 11+50.00

-YIRPD- PC Sta. 10+00.00 =
-L- POT Sta. 29+33.95 (42' RT)

RE : ROADWAY EMBANKMENT

PROJECT REFERENCE NO. B-5121 / B-5317	SHEET NO. 6
INCOMPLETE PLANS DO NOT USE FOR P/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCH LINE -L- 31+19 (SEE SHEET 5)

MATCH LINE -L- 45+00 (SEE SHEET 7)

CITY OF RALEIGH
DB 12531 - PG 472
BM 2007 - PG 117

CITY OF RALEIGH
DB 3069 - PG 510
BM 1982 - PG 1070

HOBCO AUTO SALES
DB 14908 - PG 1234
BM 1959 - PG 262

WINNERS PLACE INC
DB 14020 - PG 225
BM 1959 - PG 262

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
DB 1987 - PG 2318
BM 1992 - PG 93
BM 1963 - PG 34

STATE OF
NORTH CAROLINA
DB 9888 - PG 518
BM 2003 - PG 116

NORTH CAROLINA
DEPARTMENT OF
TRANSPORTATION
DB 1107 - PG 523
BM 1992 - PG 93

HENRY J YANPALA
DB 3865 - PG 46
BM 2008 - PG 2034

U HAUL REAL
ESTATE CO
DB 4561 - DB 910

AMERCO REAL
ESTATE CO
DB 12059 - DB 1274
BM 1959 - PG 104

WILCOHESSE, L.P.
DB 8984 - DB 1944
BM 1959 - PG 104

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

RESIDUAL

ROADWAY EMBANKMENT

ROADWAY EMBANKMENT

ARTIFICIAL

FLYOVER - PC Sta. 10+00.00
L- POT Sta. 41+51.75 (42' RT)

BEGIN CONSTRUCTION
-Y8- POT Sta. 10+67.00
END MILLING AND RESURFACING

BEGIN MILLING AND RESURFACING
-Y8- POT Sta. 11+15.00

-Y8- POT Sta. 13+26.88
L- POT Sta. 41+82.23
Δ = 89'32'26"

-Y9- POT Sta. 10+91.30 =
-Y8- POT Sta. 10+00.00
Δ = 97'31'09.6"

-Y9- N WEST ST
N 19°14' 25.8" E

CAPITAL BLVD (US-401)
N 12°10' 50.1" E

CAPITAL BLVD (US-70)
N 12°10' 50.1" E

FLYOVER - PT Sta. 12+72.42

FLYOVER - PC Sta. 14+00

35+00

35+00

40+00

45+00

35+00

35+00

40+00

45+00

35+00

35+00

40+00

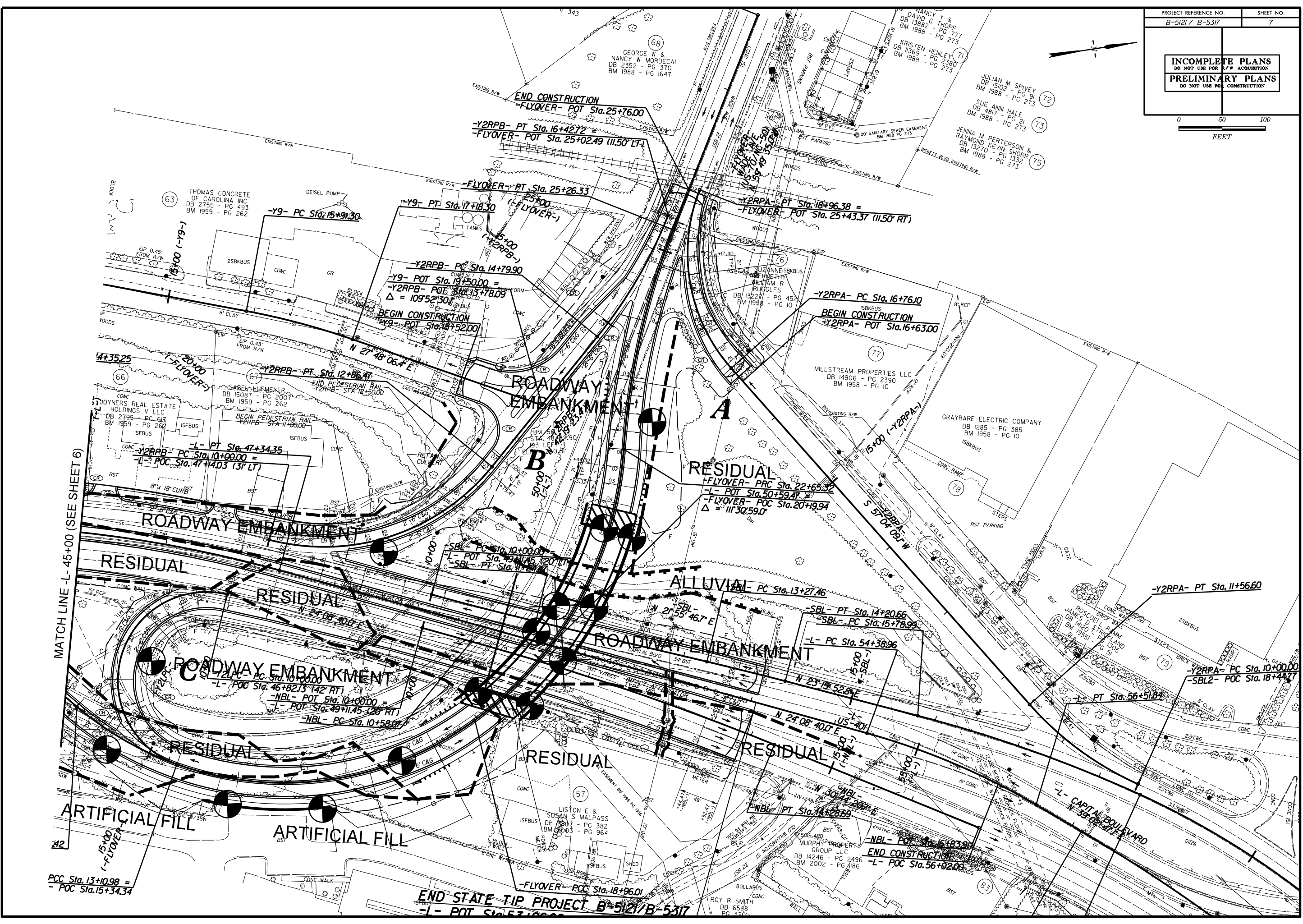
45+00

35+00

35+00

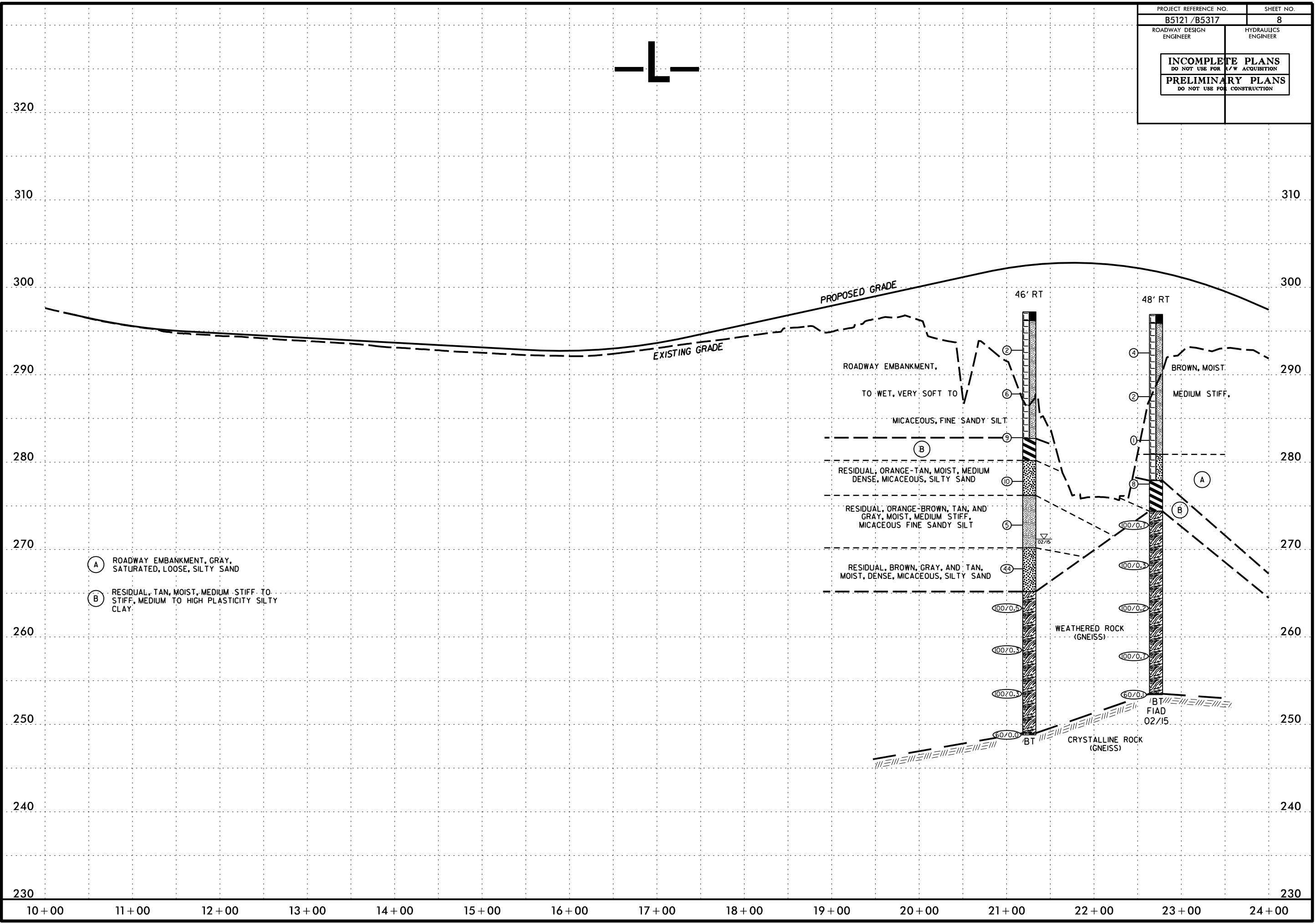
40+00

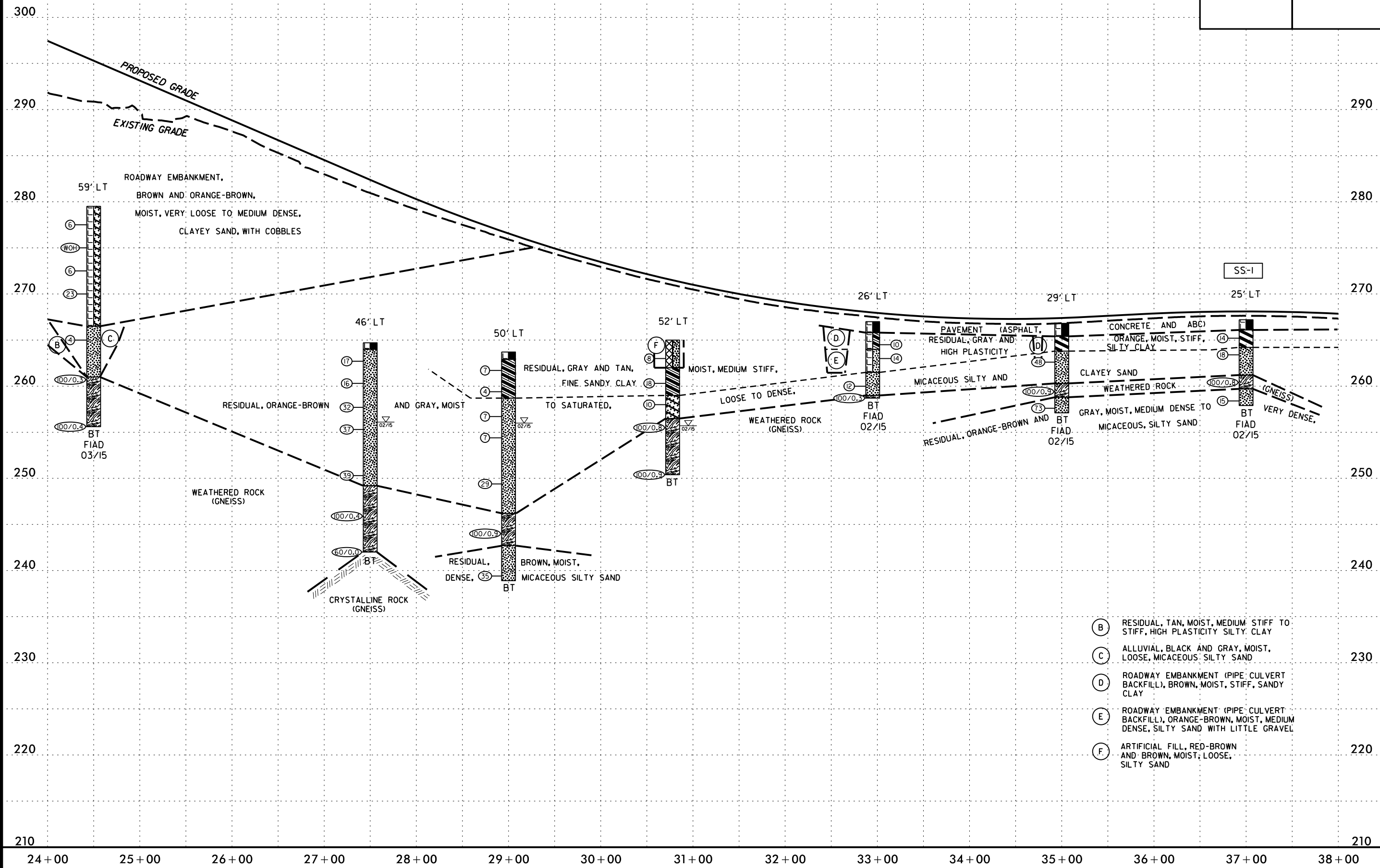
45+00



MATCH LINE -L- 45+00 (SEE SHEET 6)

5/14/99
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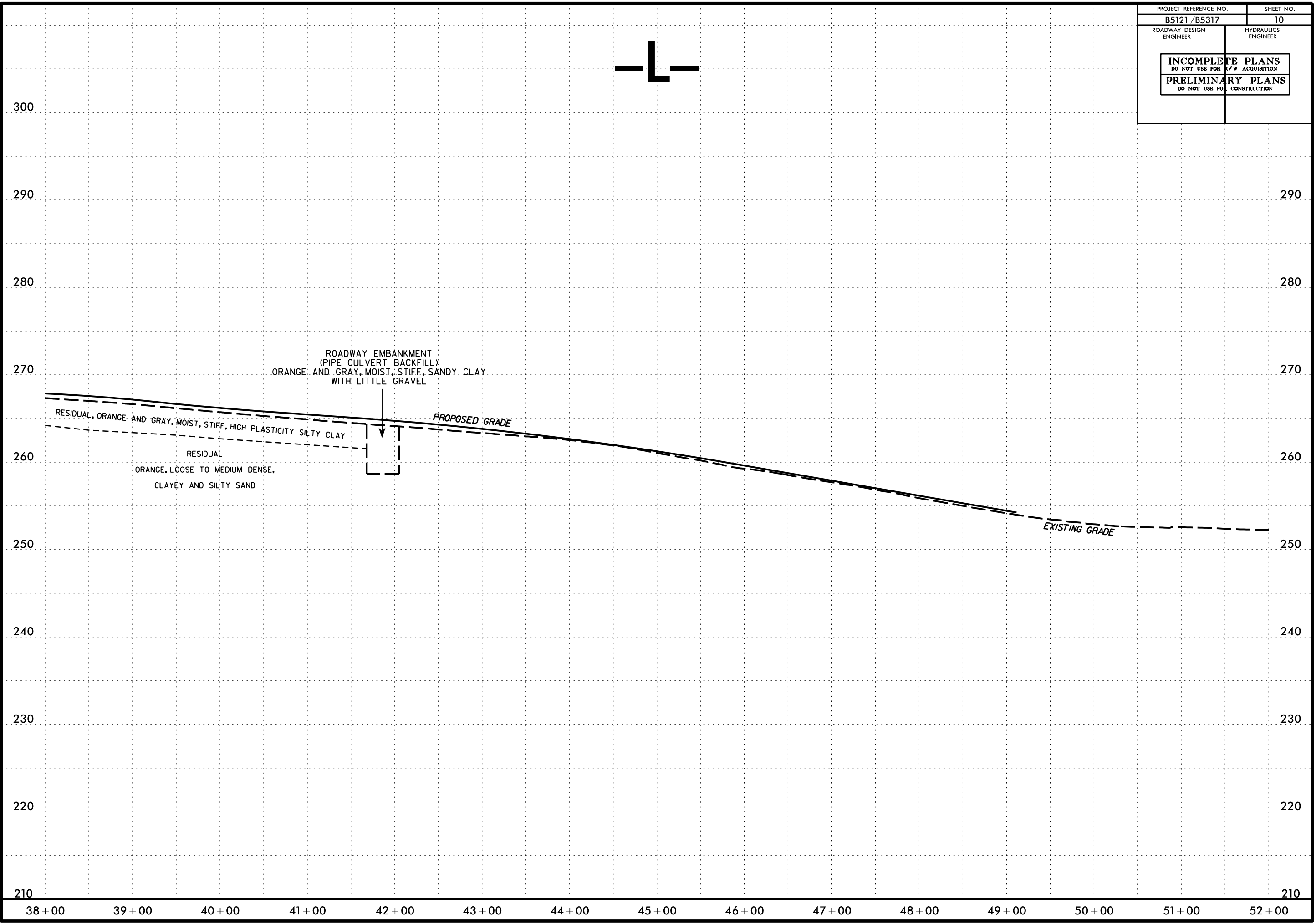


- (B) RESIDUAL, TAN, MOIST, MEDIUM STIFF TO STIFF, HIGH PLASTICITY SILTY CLAY
- (C) ALLUVIAL, BLACK AND GRAY, MOIST, LOOSE, MICACEOUS SILTY SAND
- (D) ROADWAY EMBANKMENT (PIPE CULVERT BACKFILL), BROWN, MOIST, STIFF, SANDY CLAY
- (E) ROADWAY EMBANKMENT (PIPE CULVERT BACKFILL), ORANGE-BROWN, MOIST, MEDIUM DENSE, SILTY SAND WITH LITTLE GRAVEL
- (F) ARTIFICIAL FILL, RED-BROWN AND BROWN, MOIST, LOOSE, SILTY SAND

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 BT 1/2/15

PROJECT REFERENCE NO.	SHEET NO.
B5121 / B5317	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

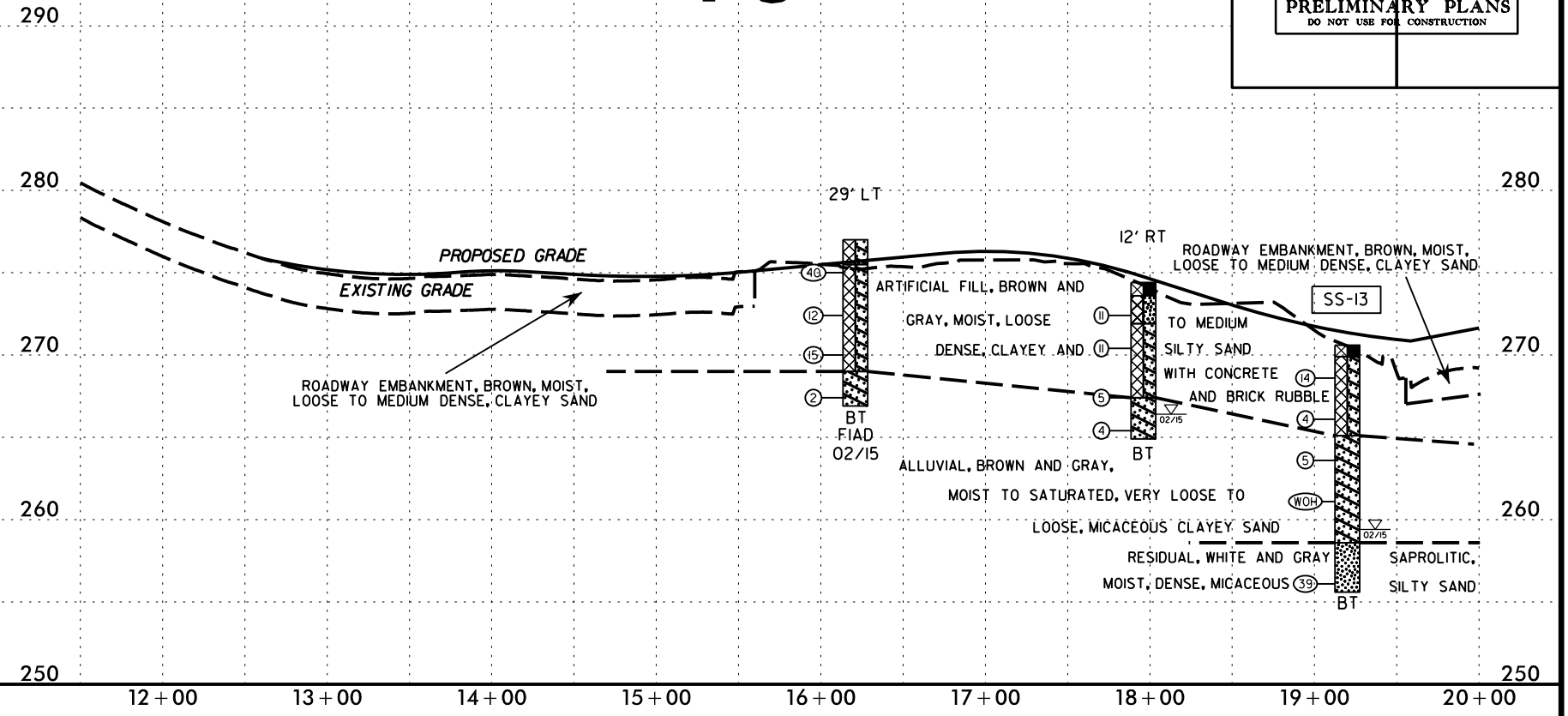
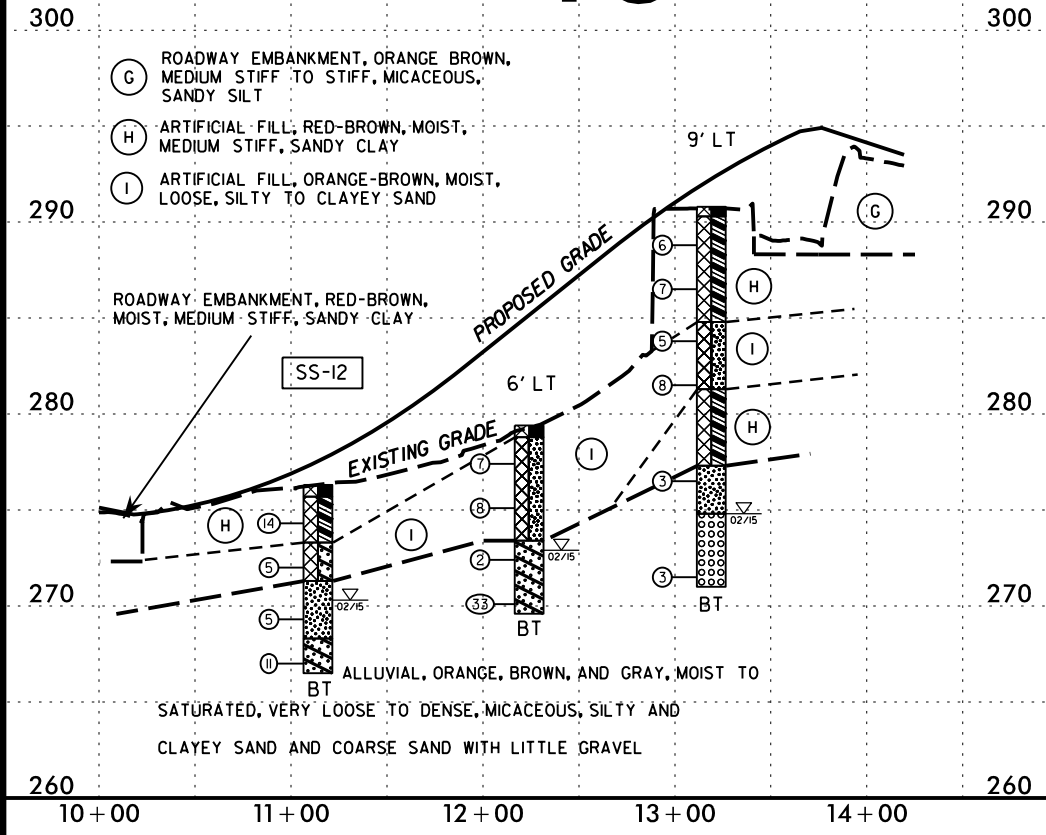
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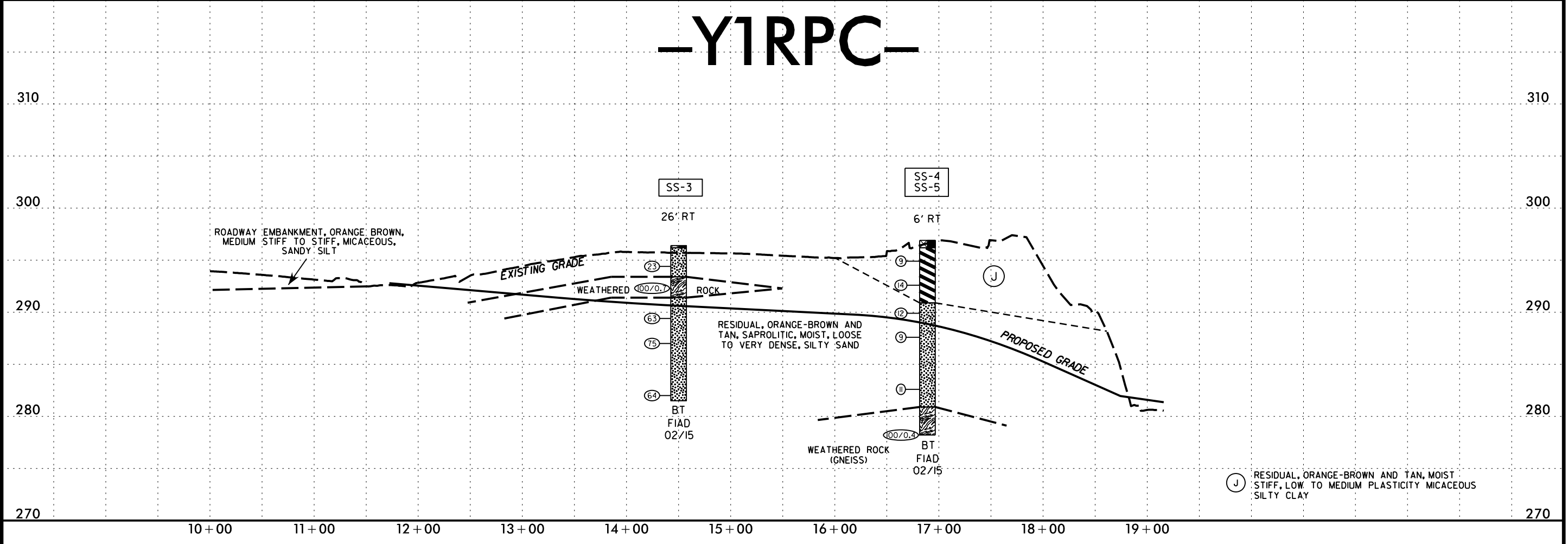
PROJECT REFERENCE NO.	SHEET NO.
B5121/B5317	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-Y5-

-Y6-



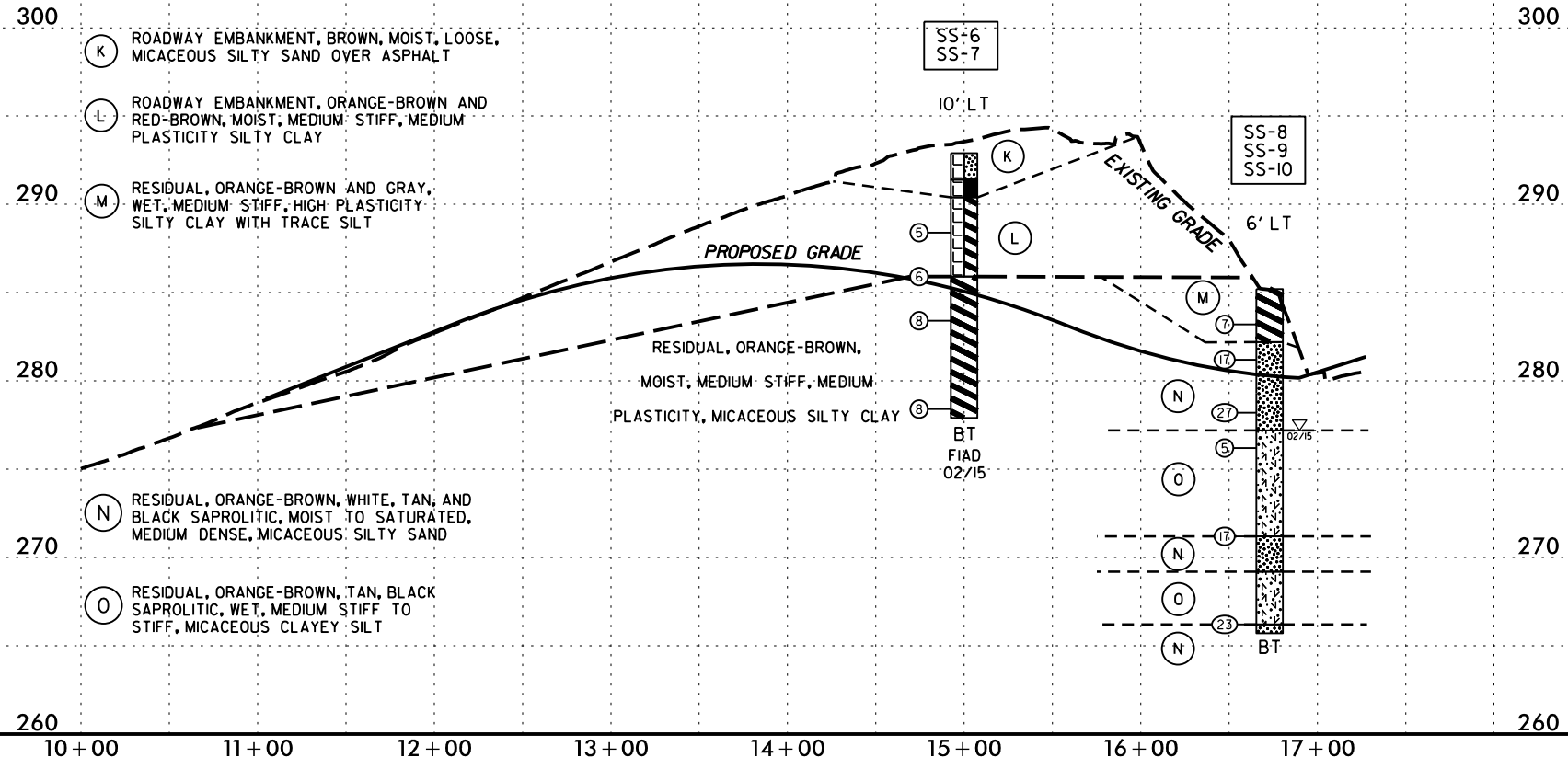
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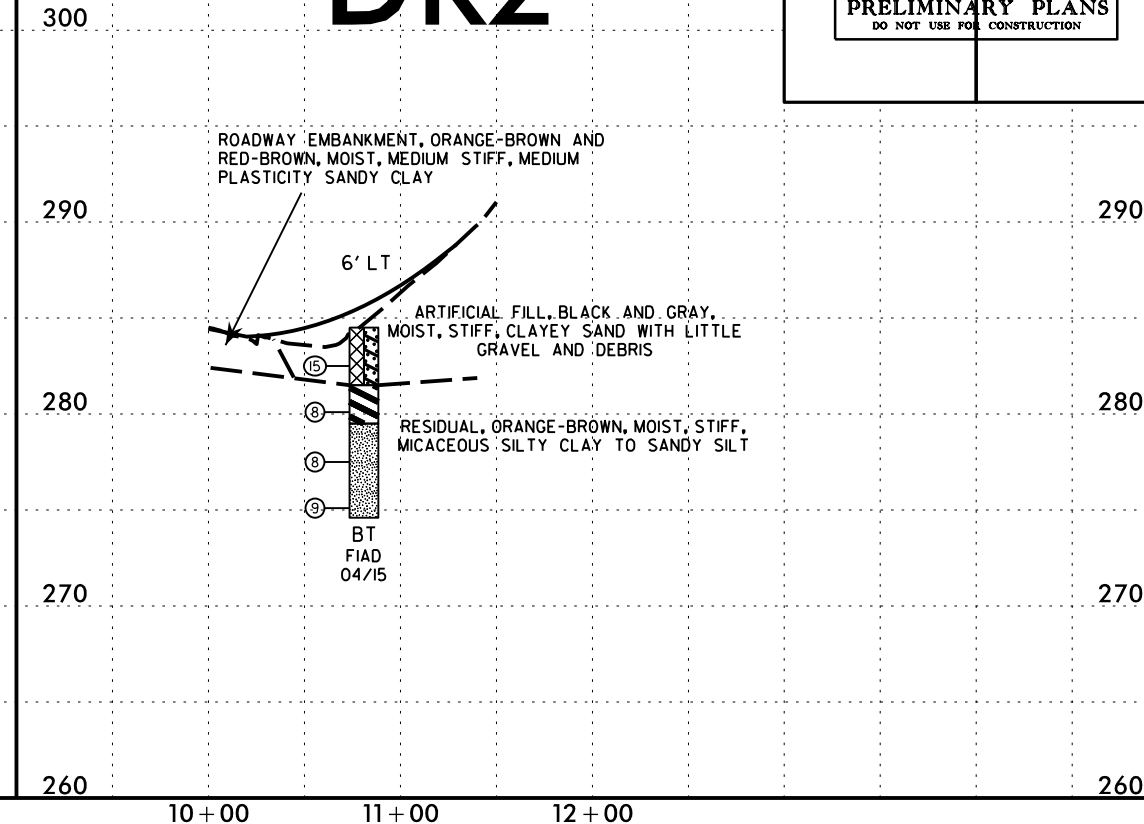
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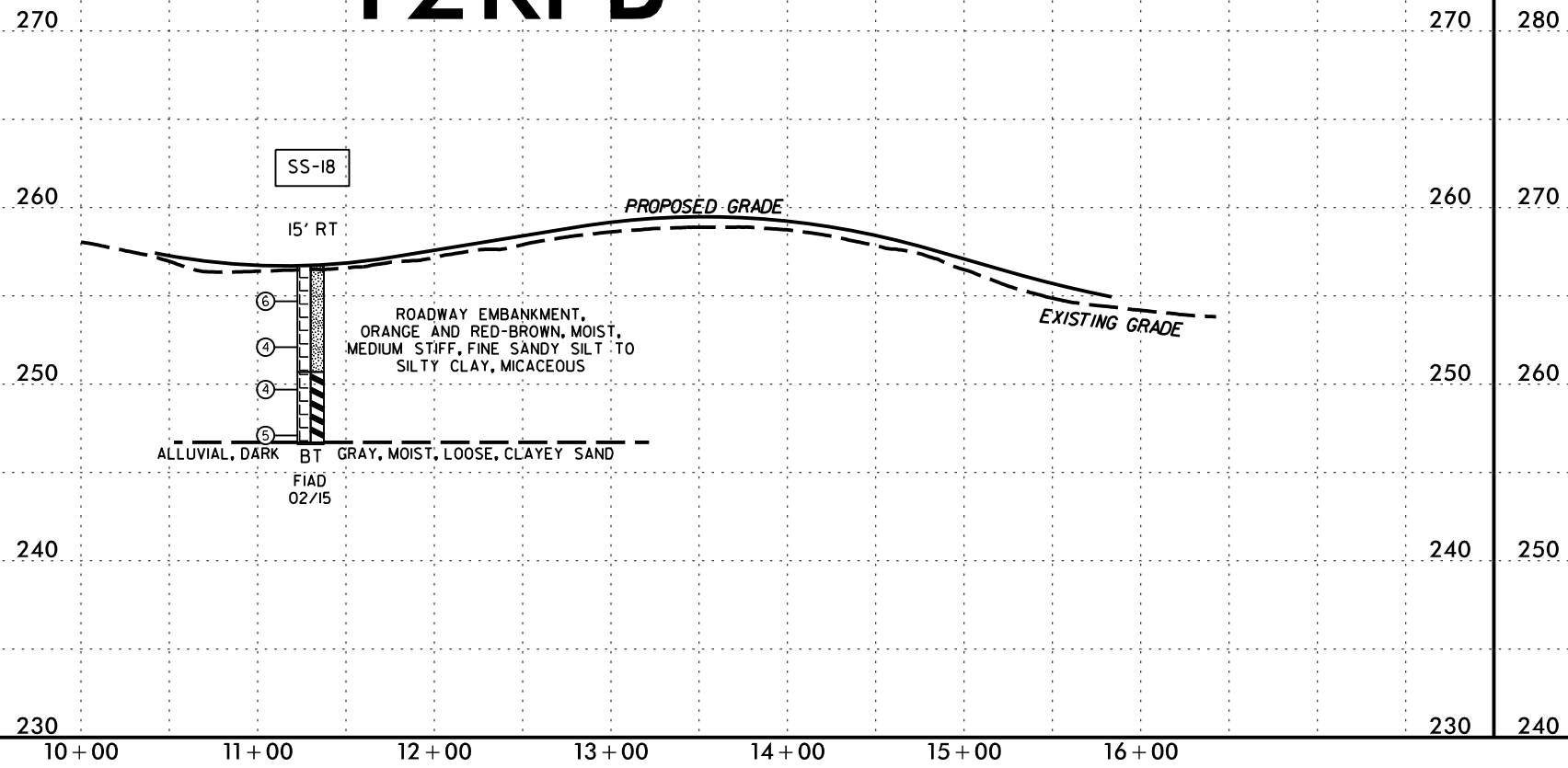


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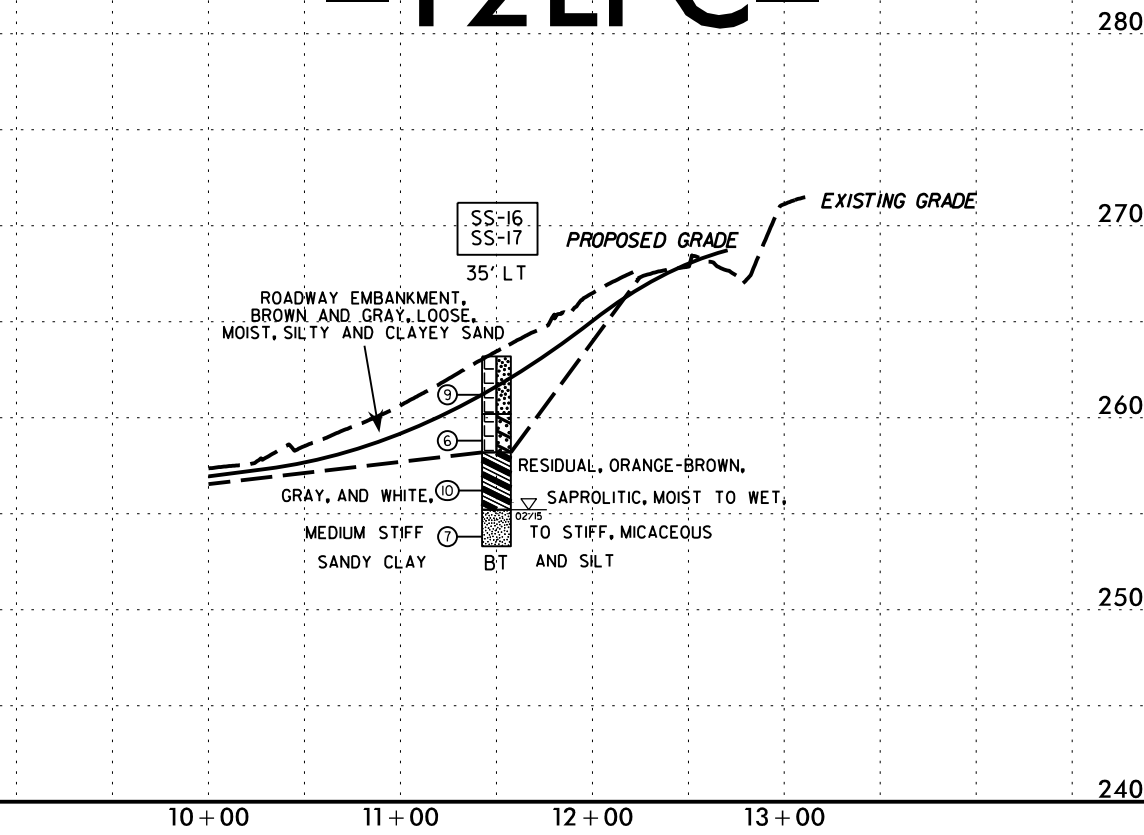


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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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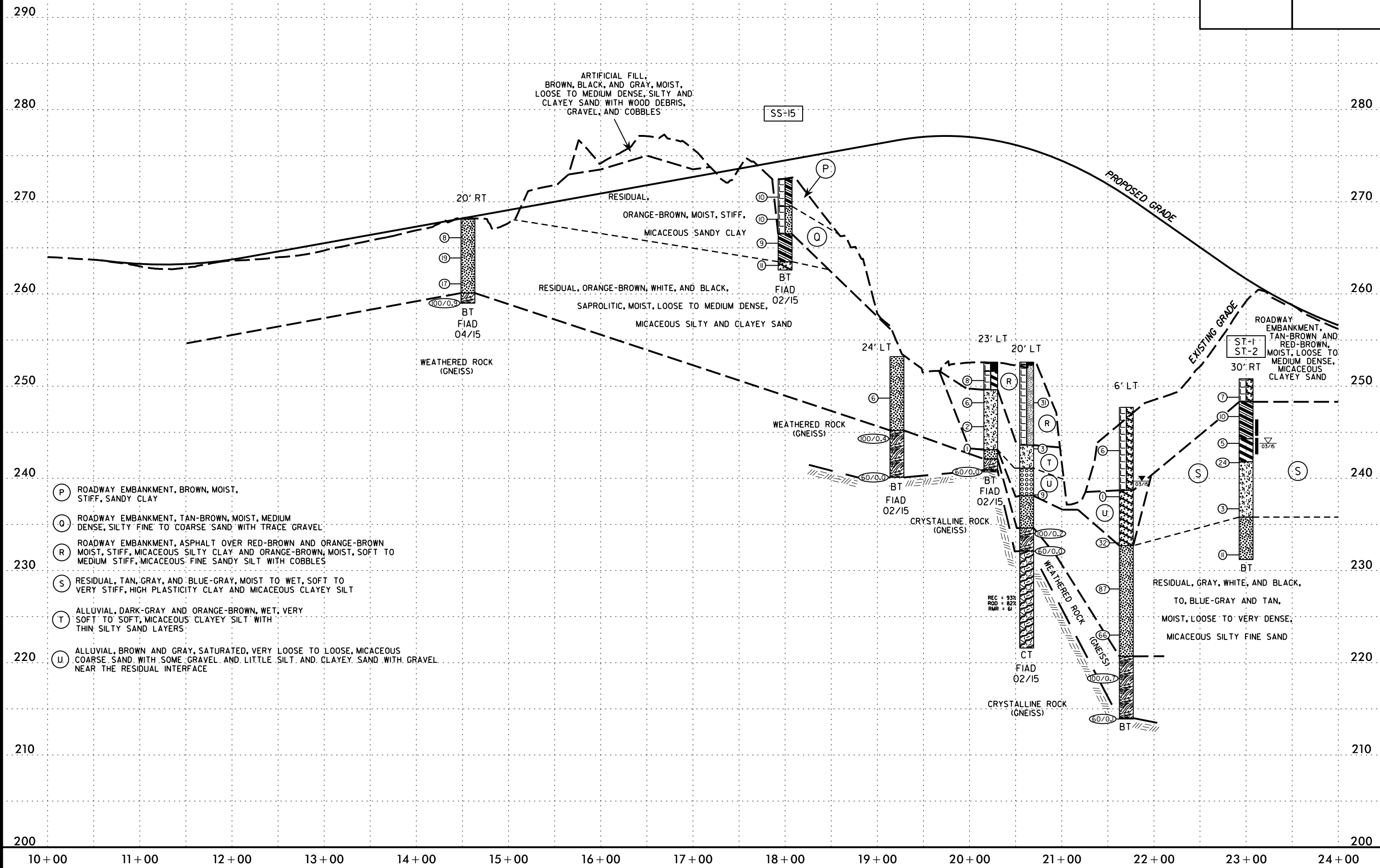
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PROJECT REFERENCE NO.	SHEET NO.
B5121 / B5317	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-FLYOVER-



5/14/99
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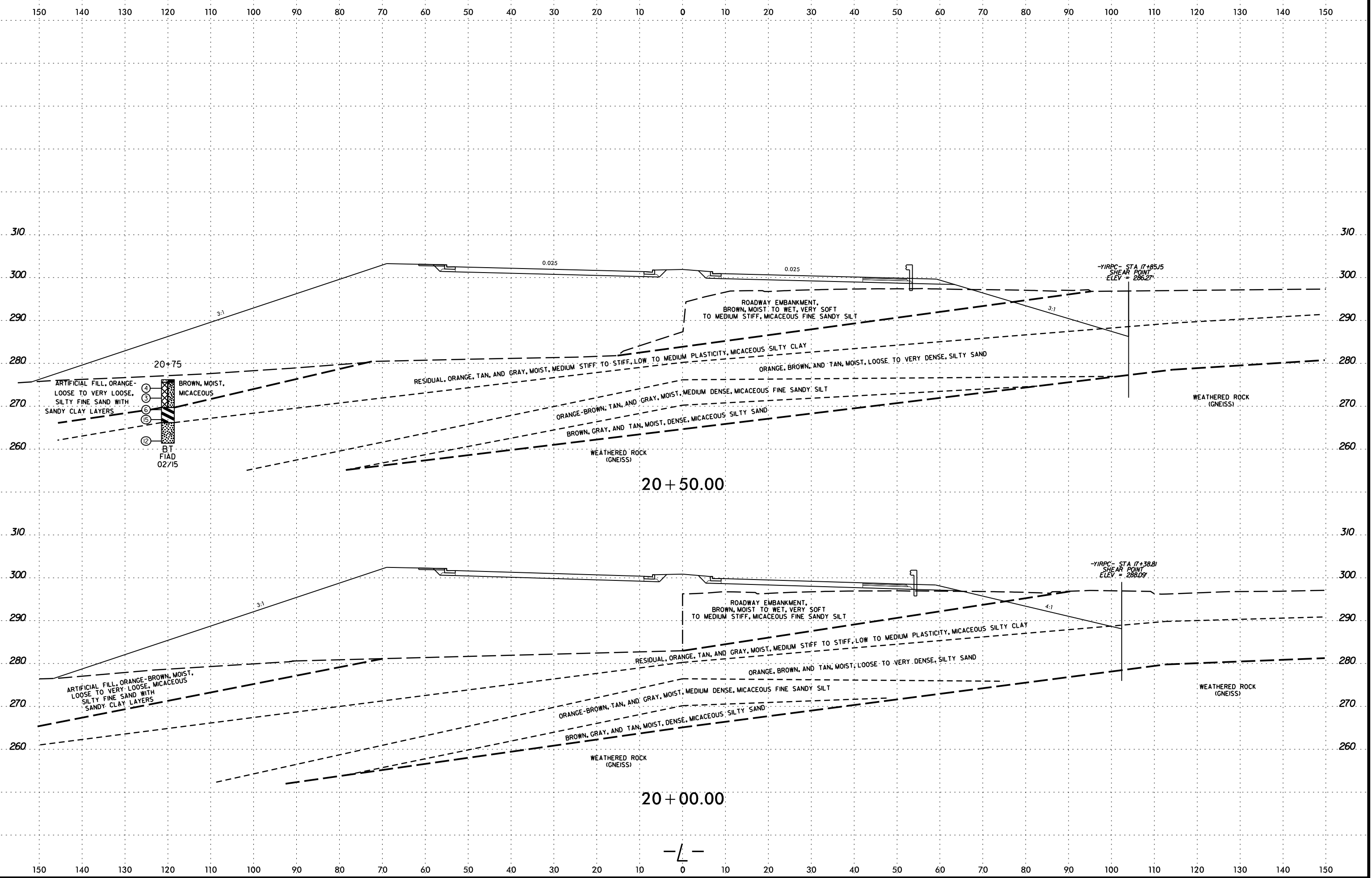
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B5121 / B5317	14
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PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-FLYOVER-

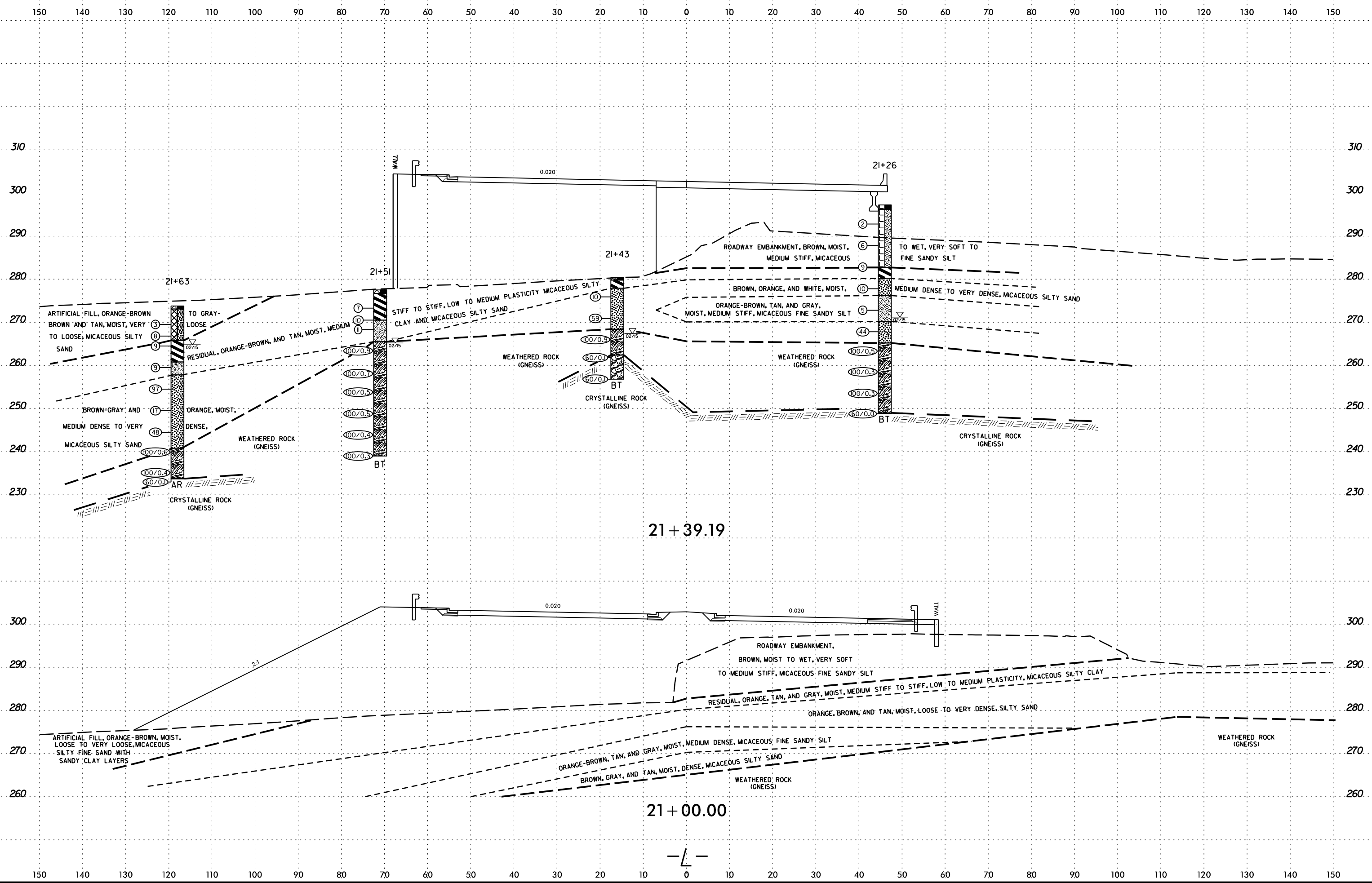


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8/23/99

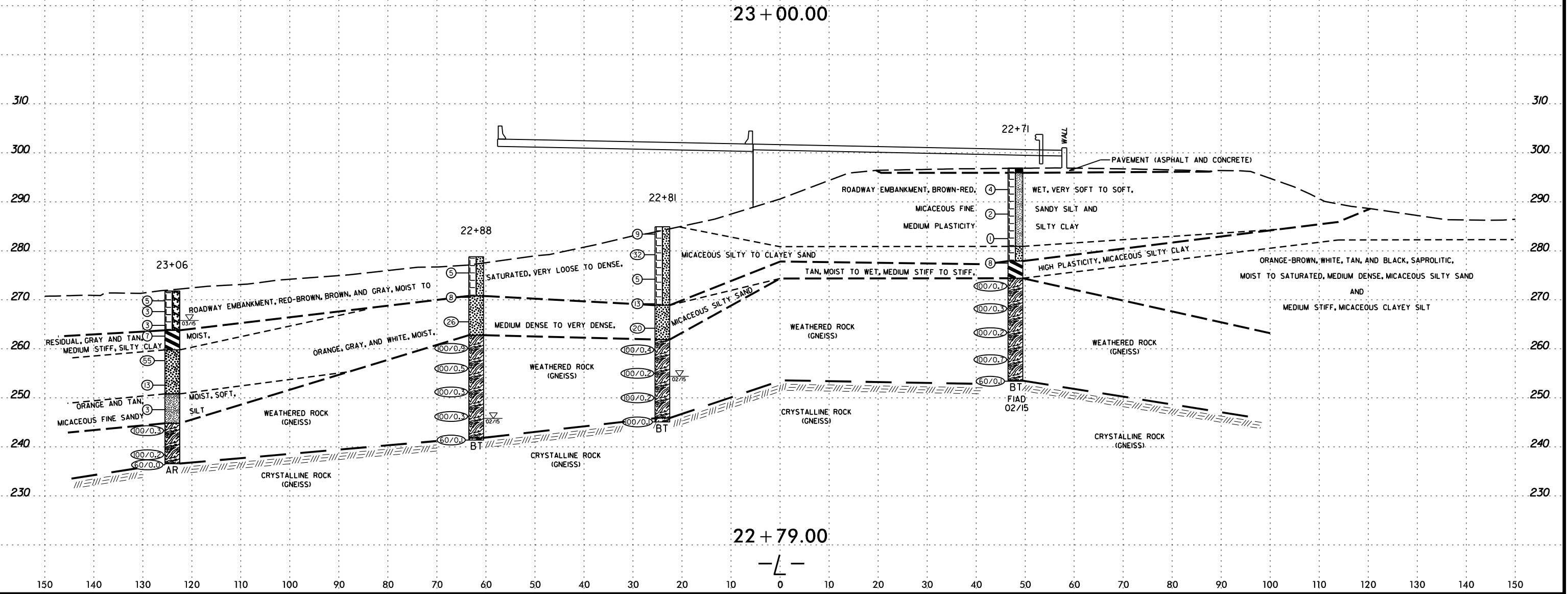
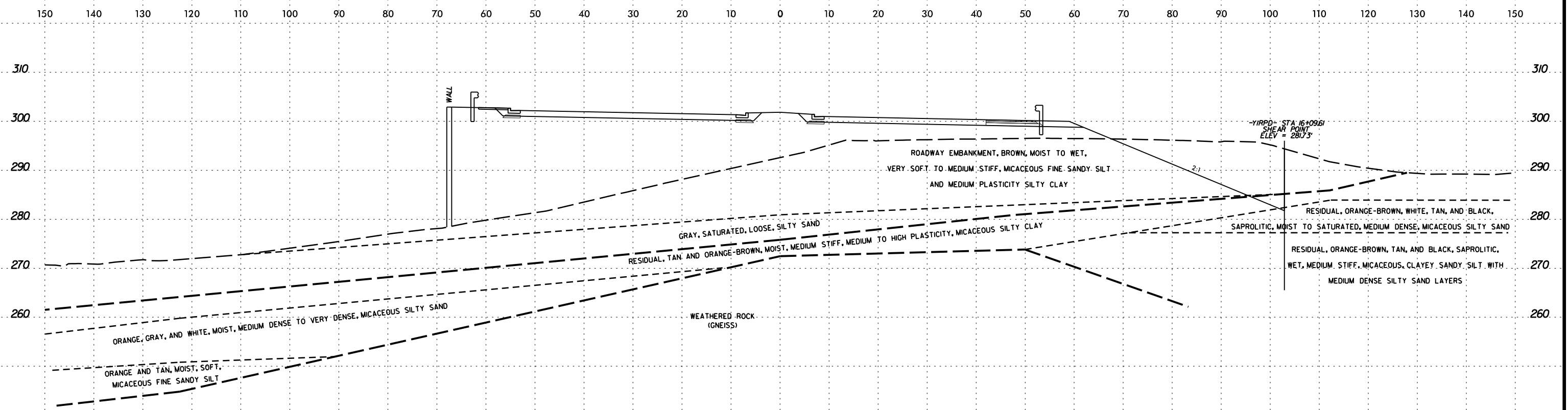


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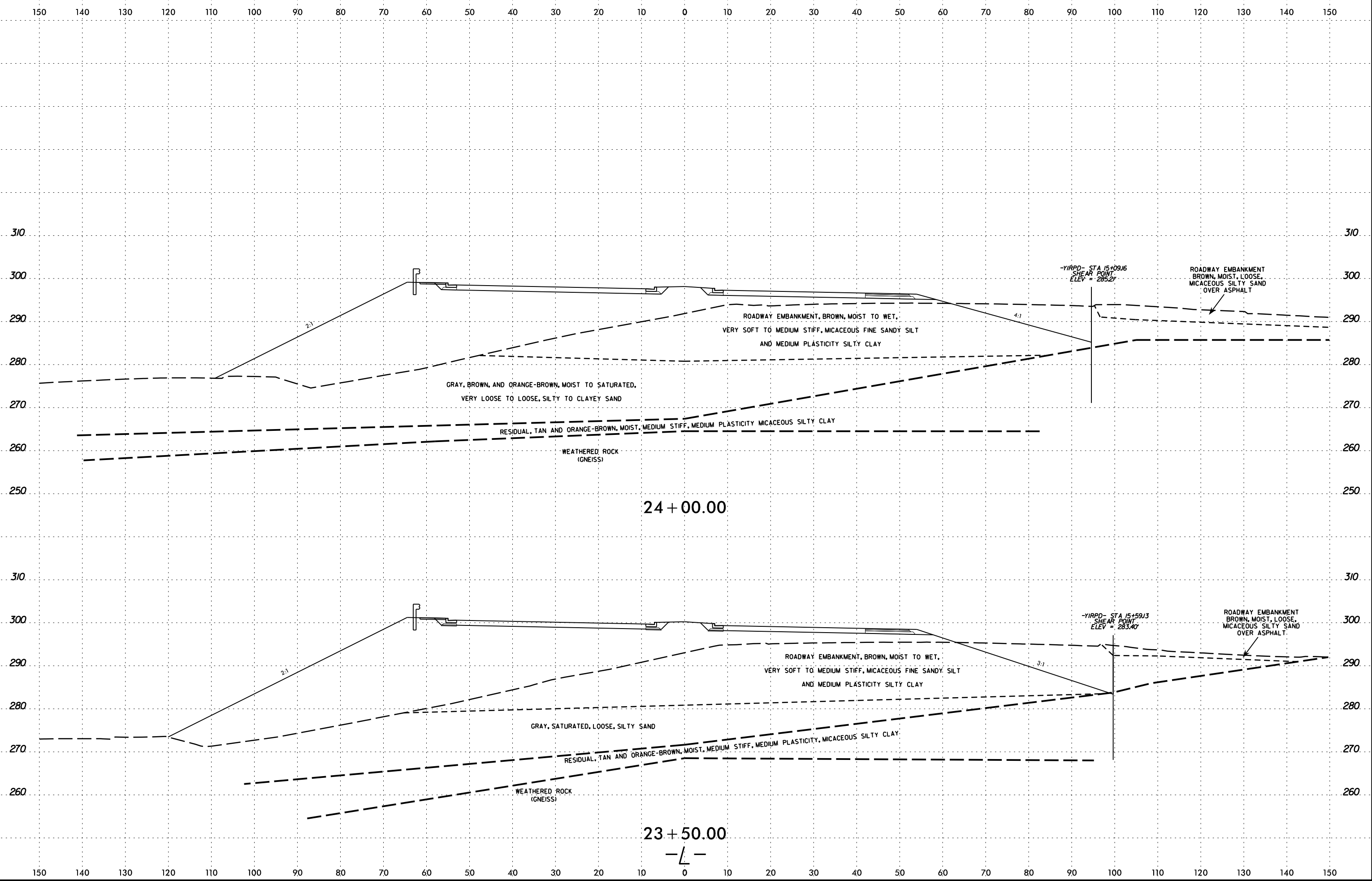
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8/23/99

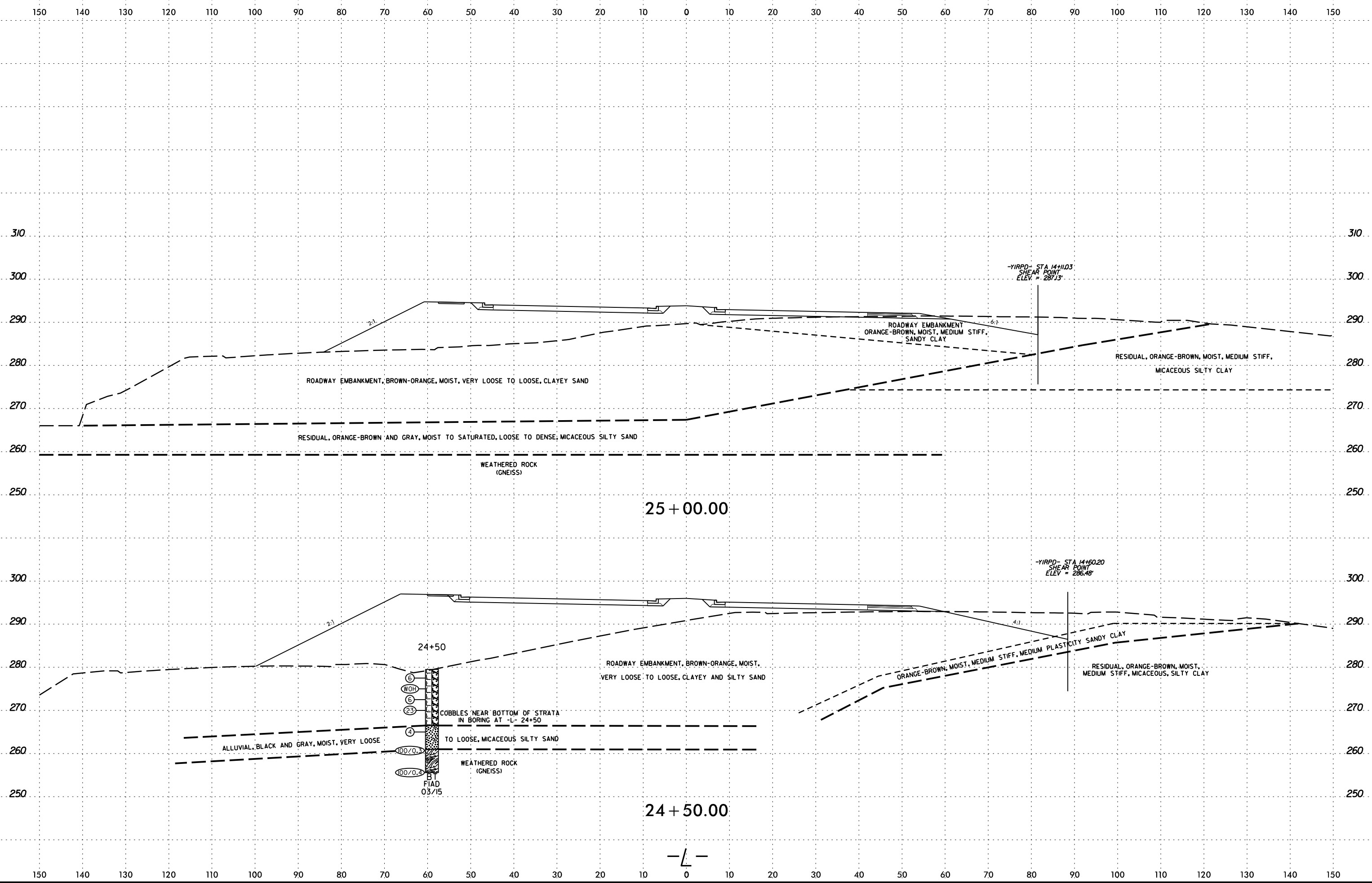


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8/23/99

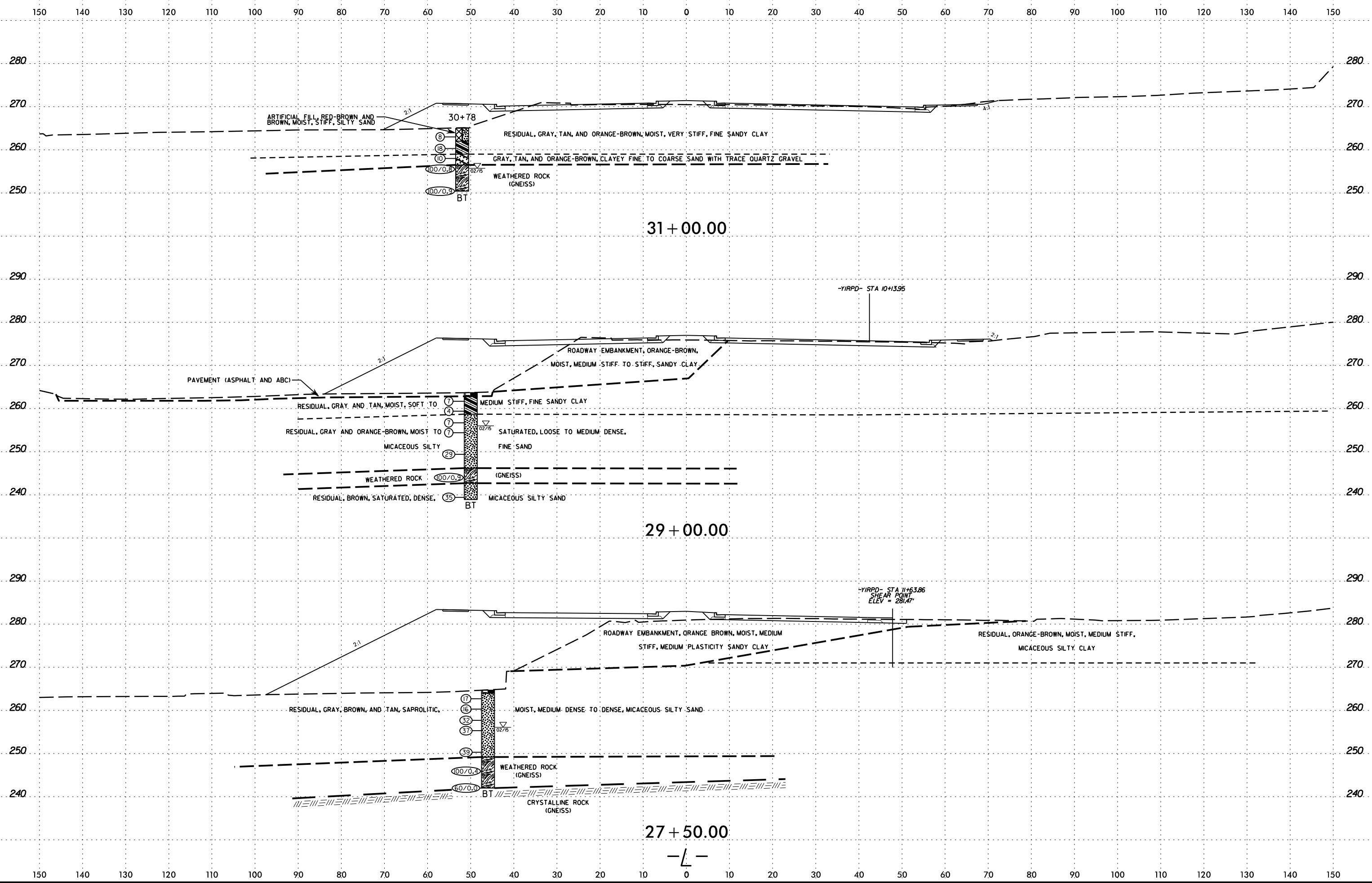


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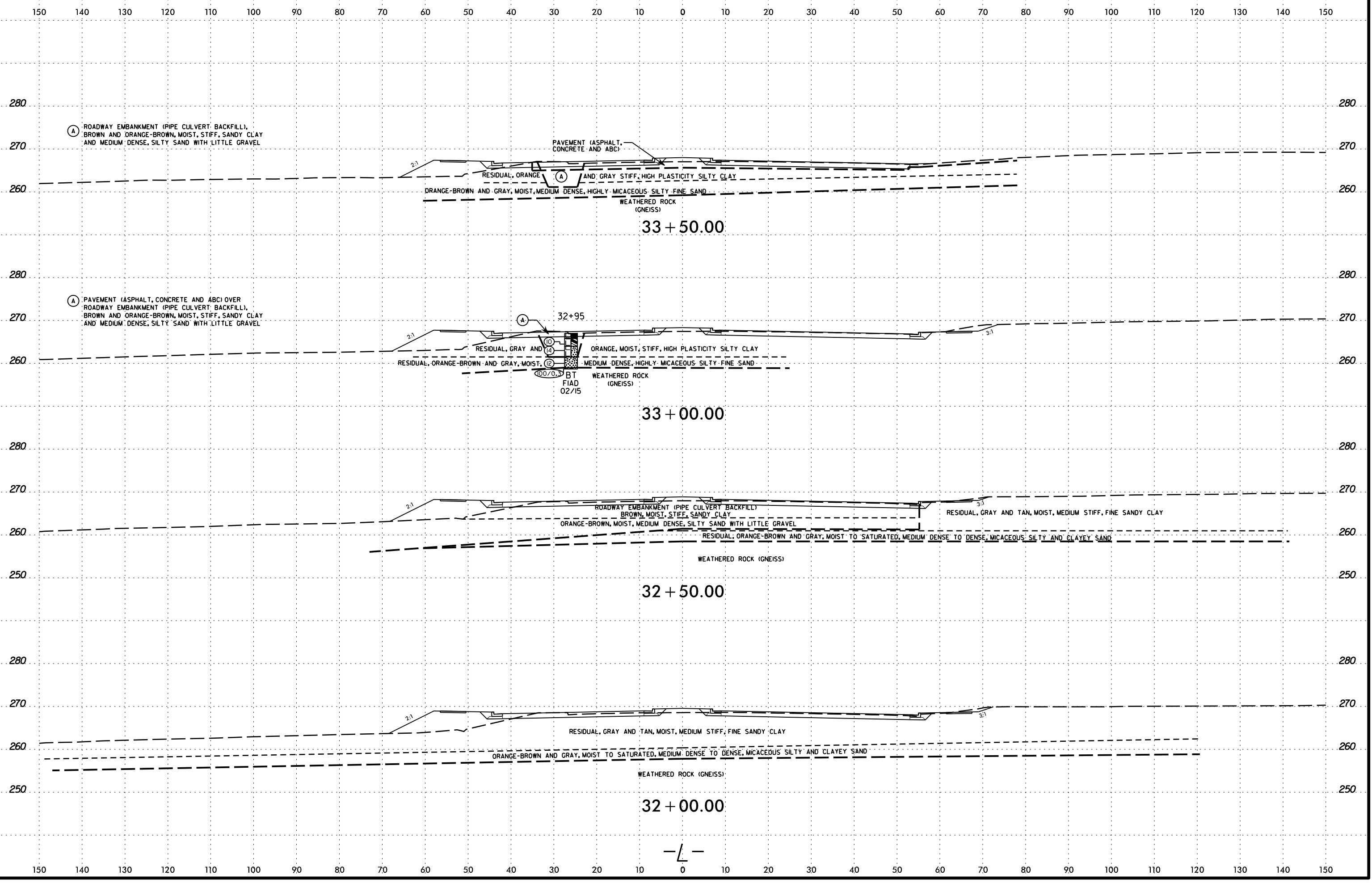
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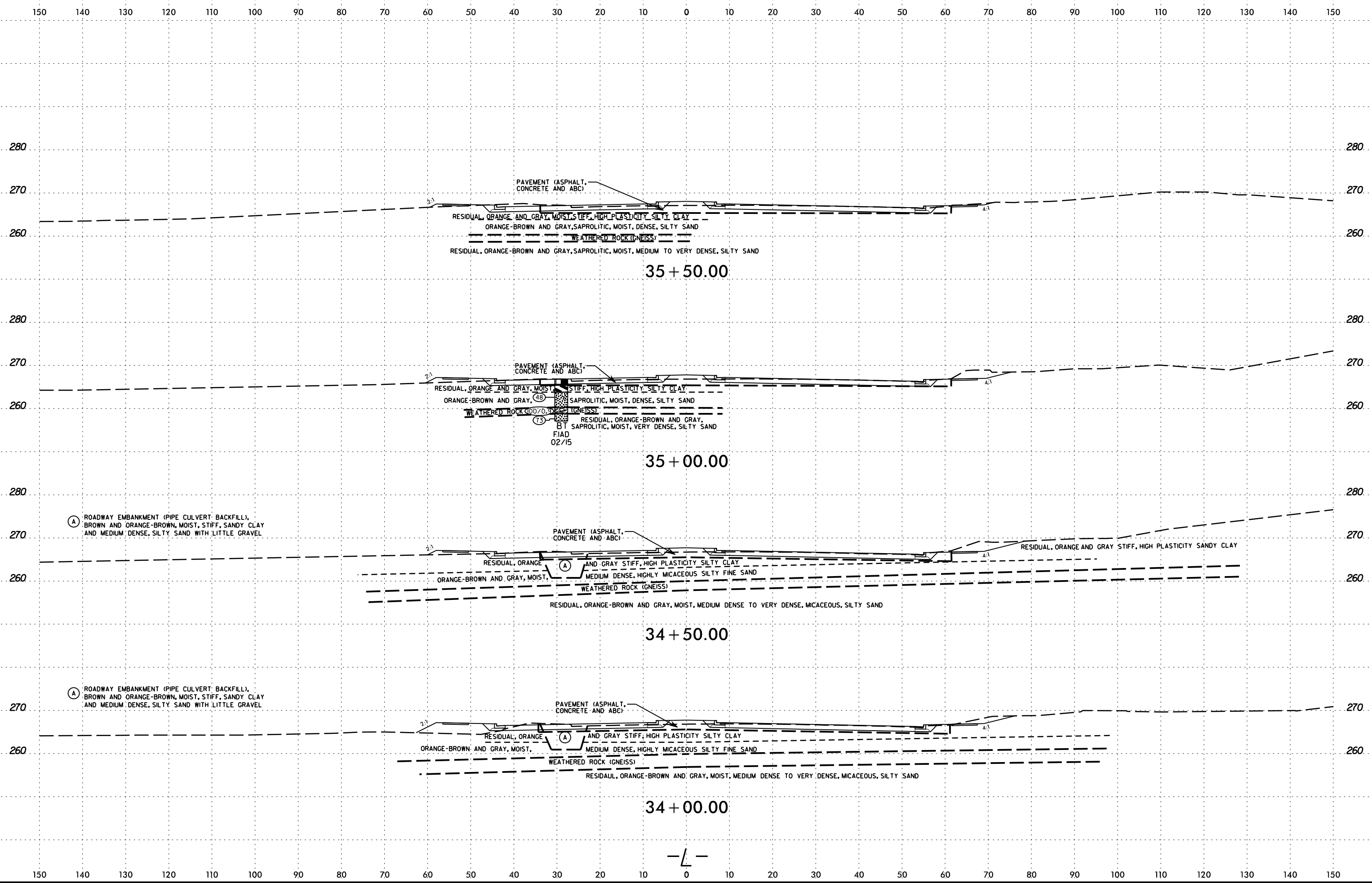


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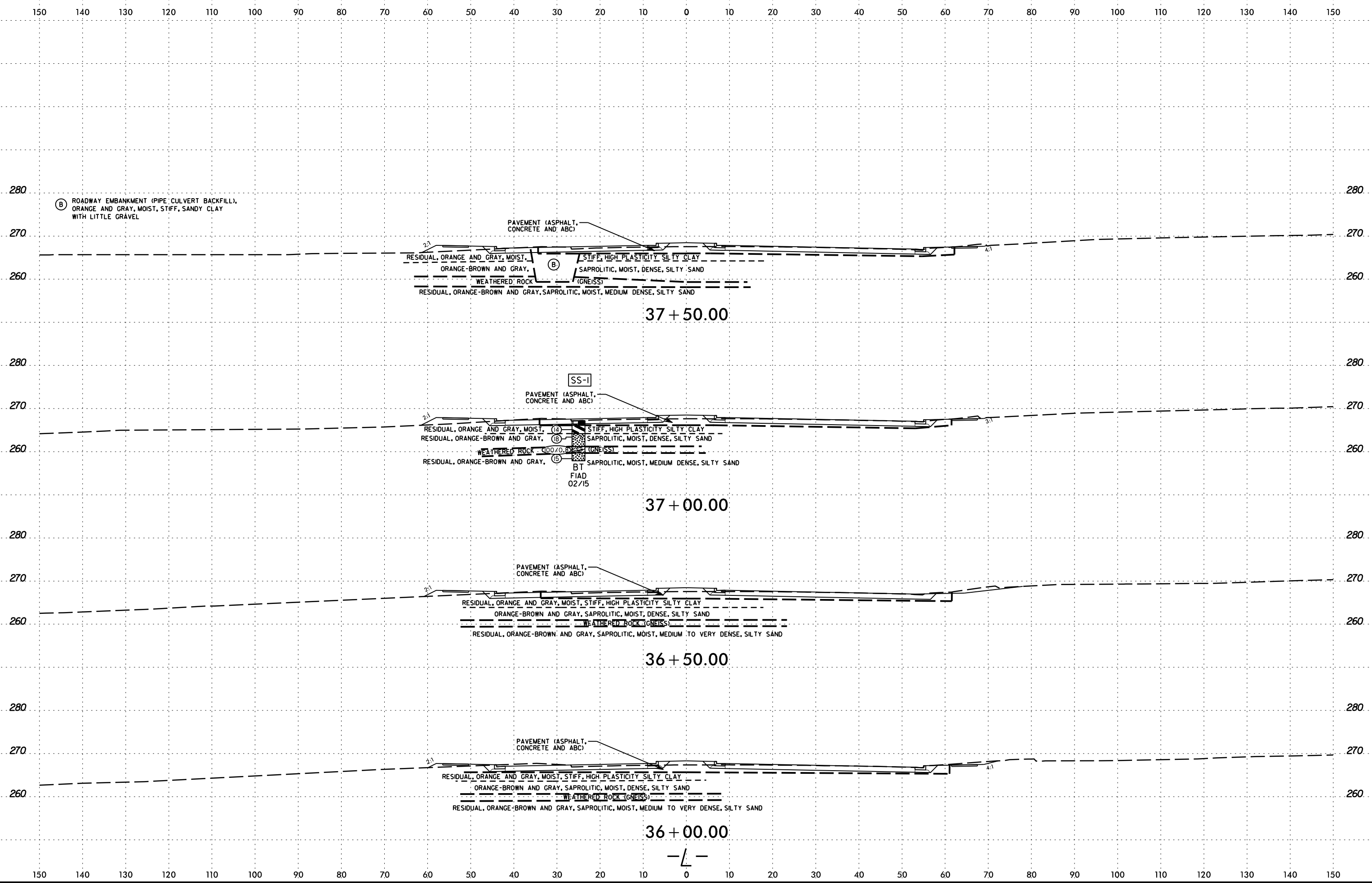
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molexander



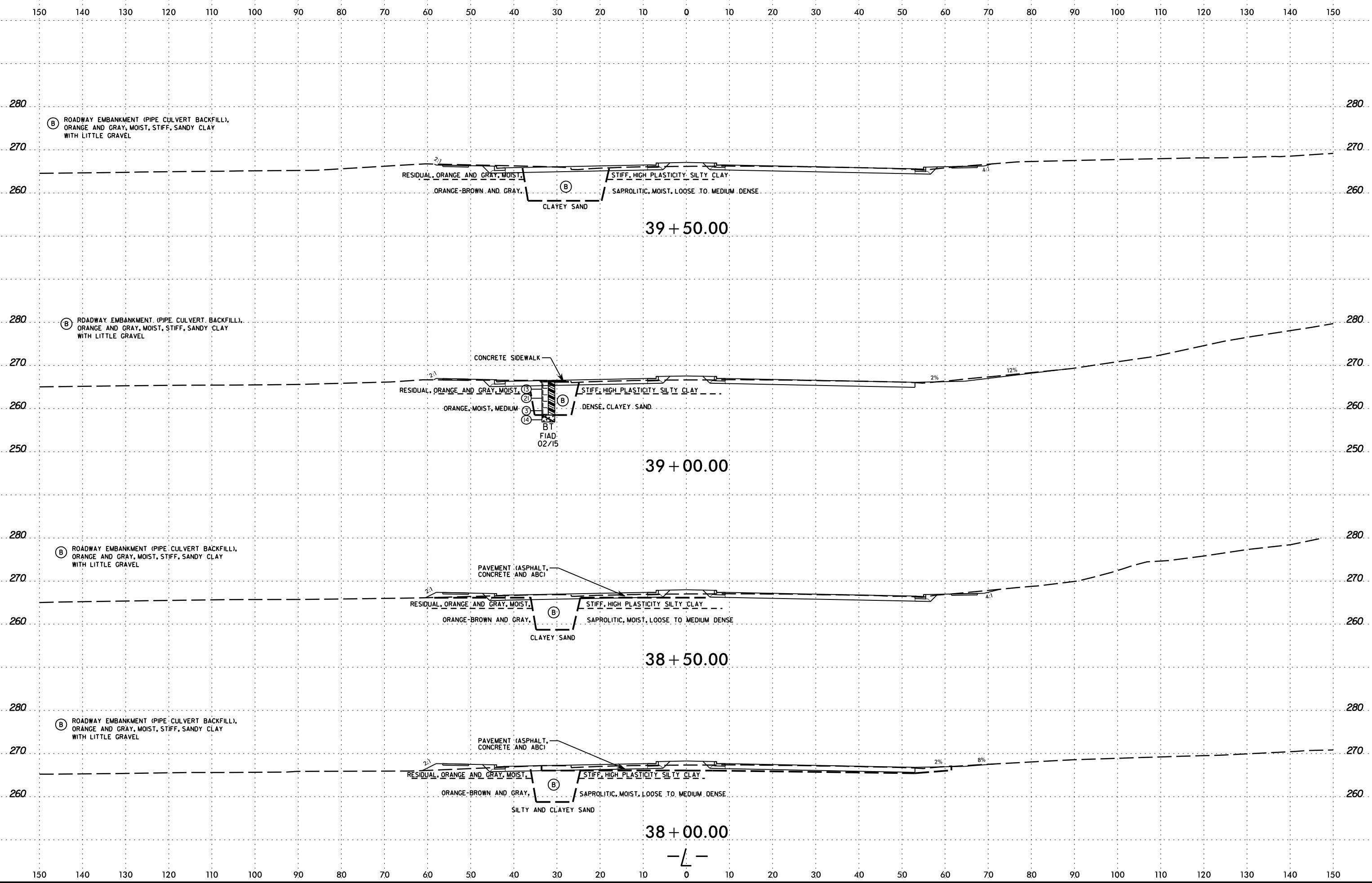
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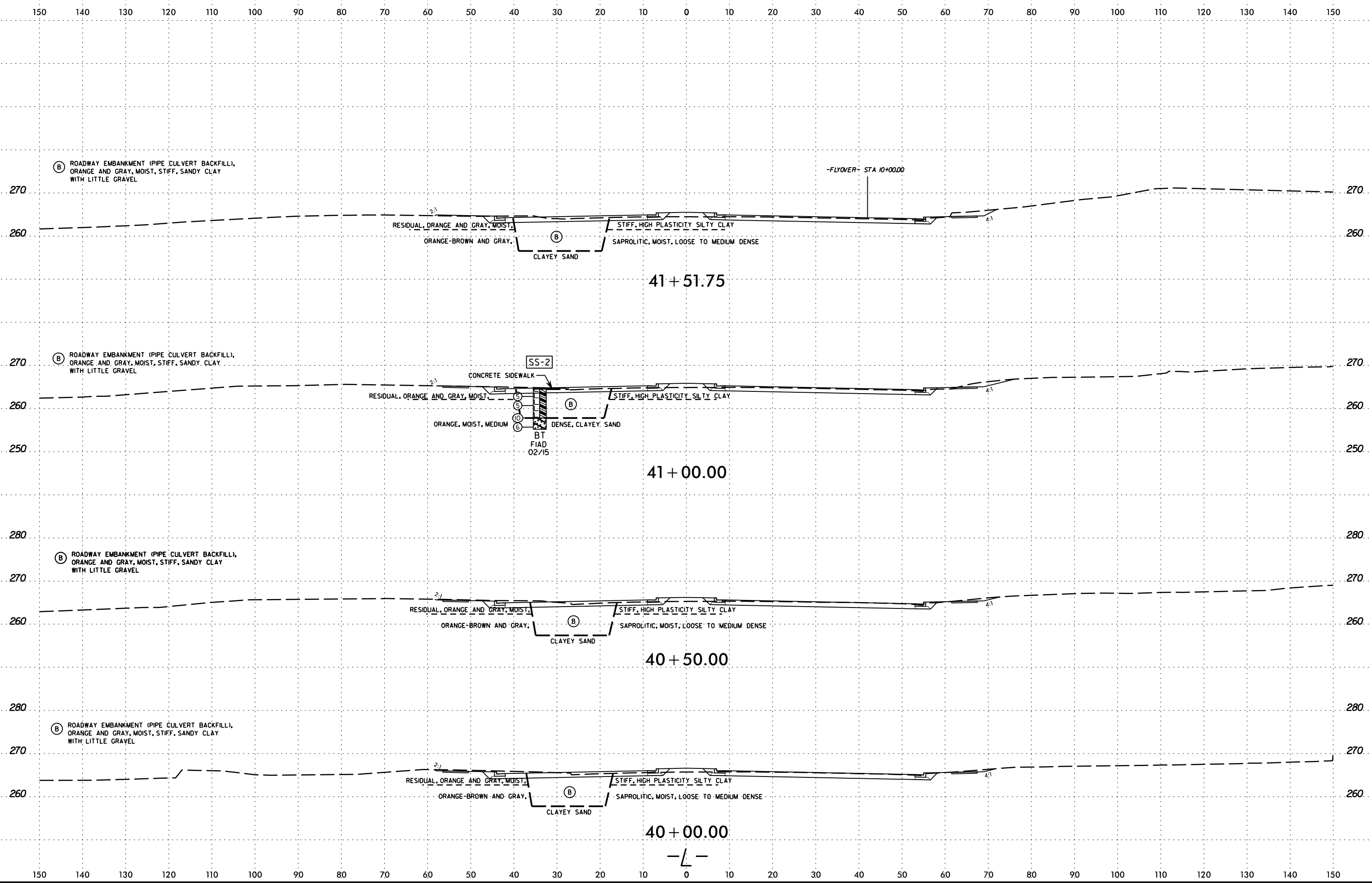
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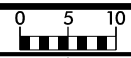


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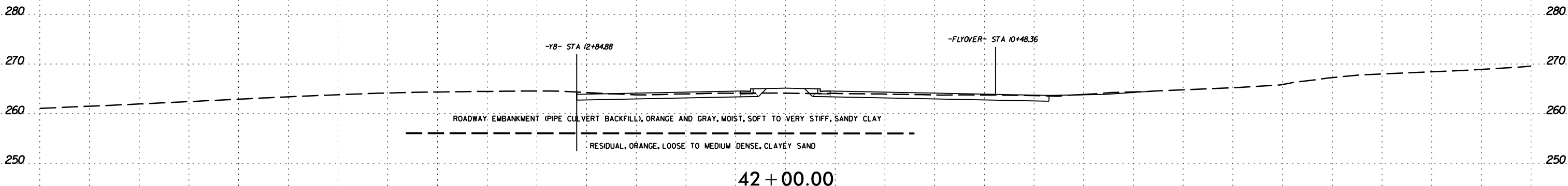
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8/23/99

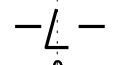


PROJ. REFERENCE NO.	SHEET NO.
B-5121 / B-5317	26

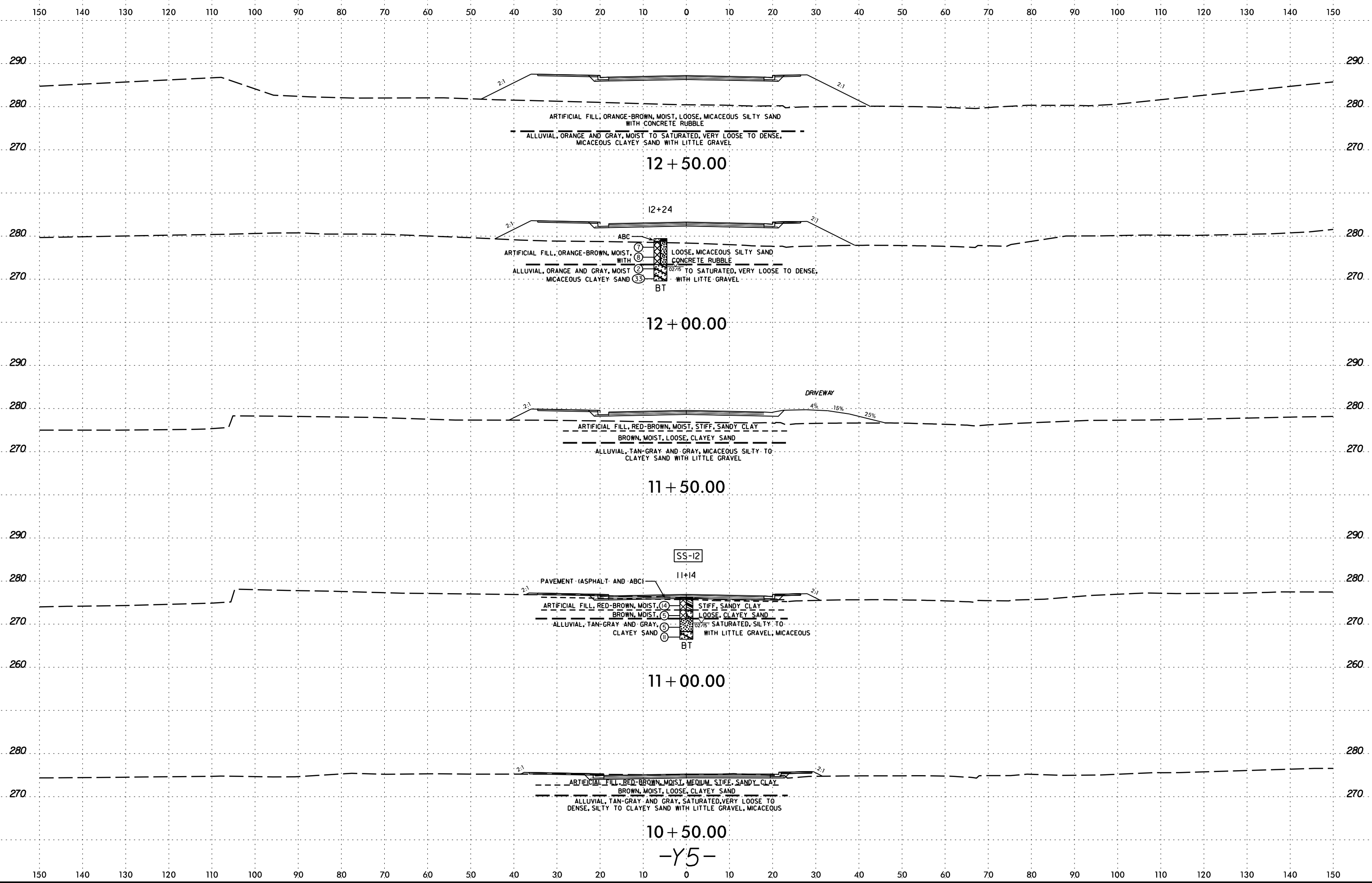
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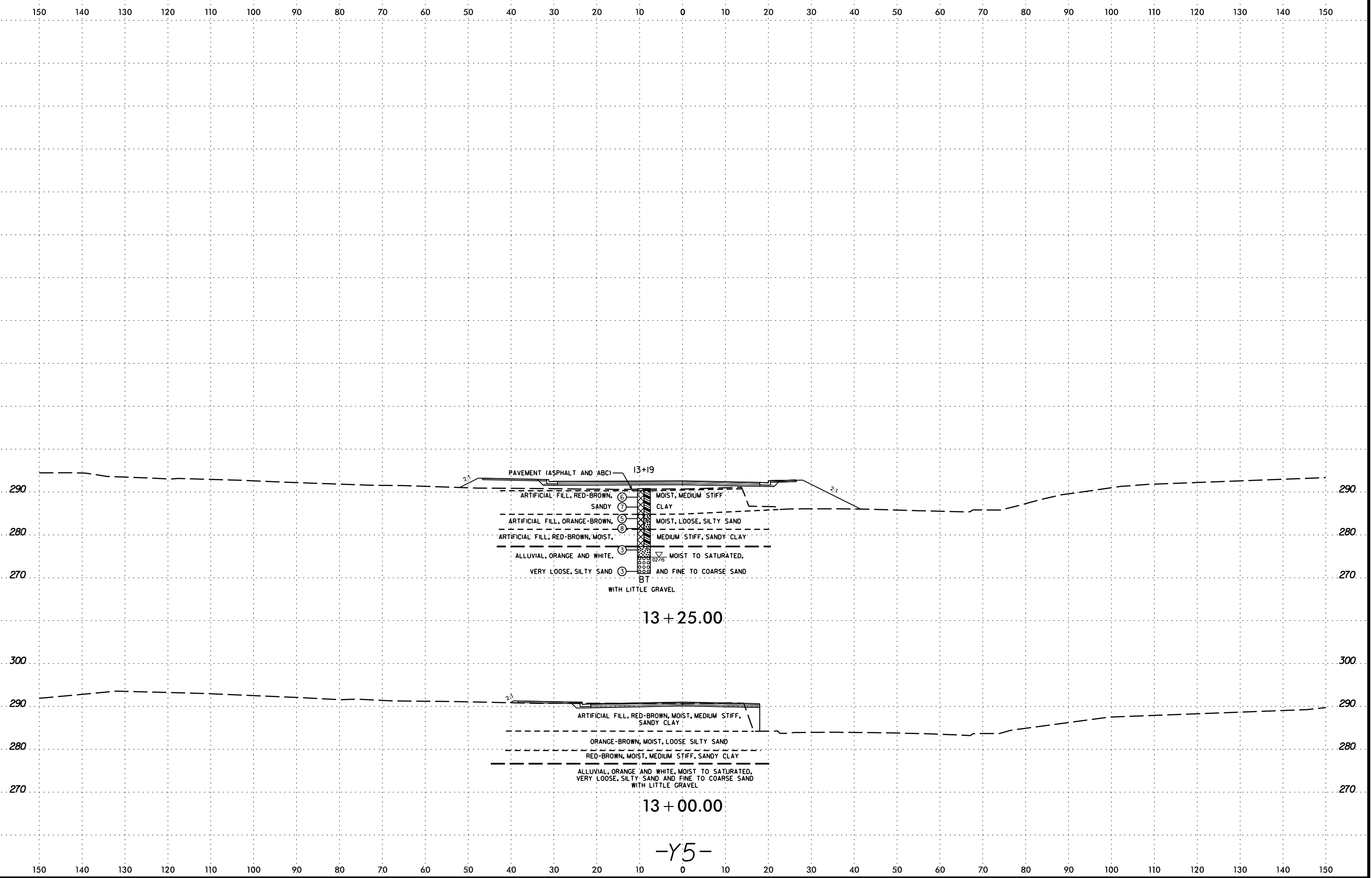


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8/23/99



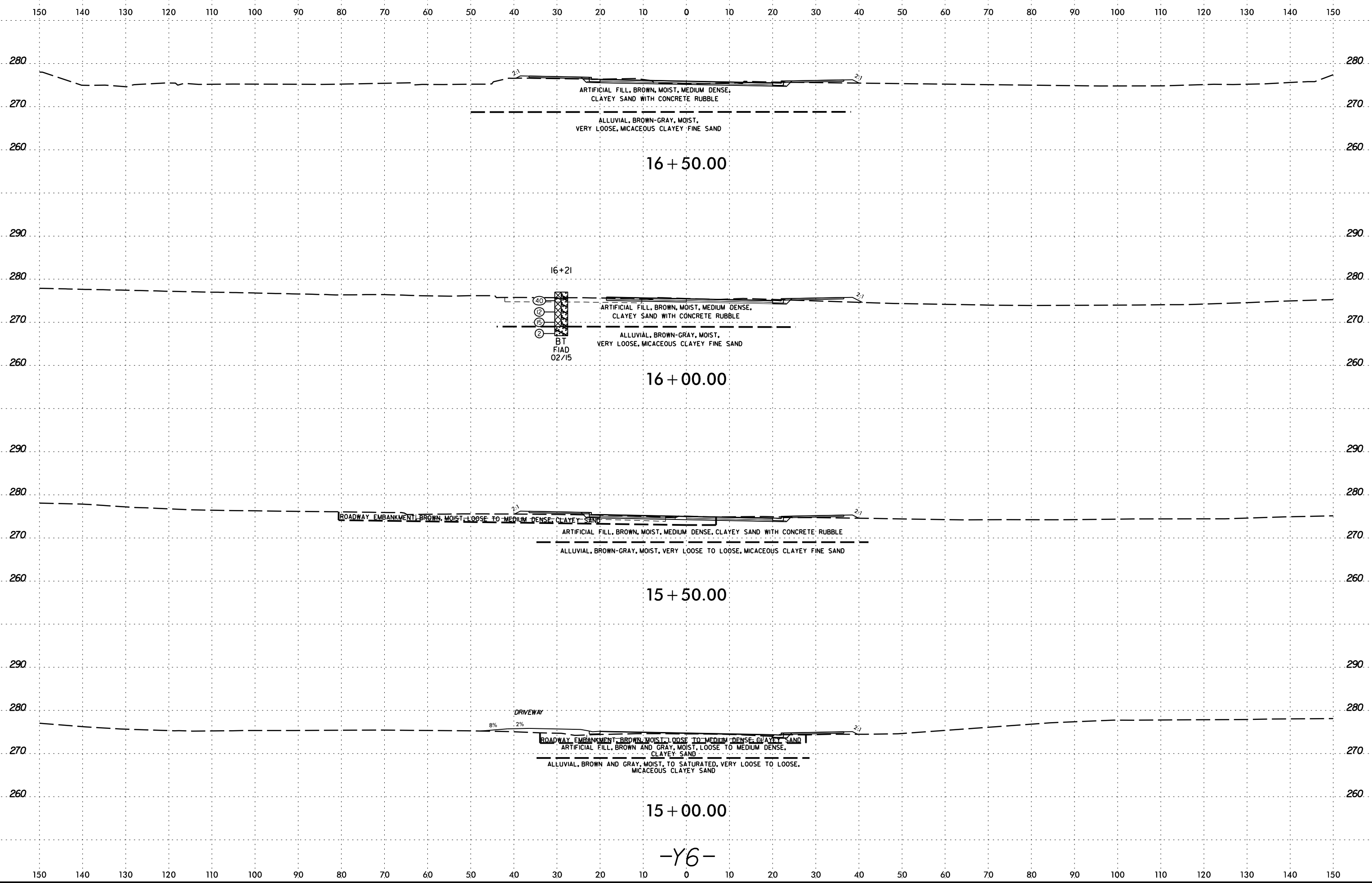
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13 + 25.00

13 + 00.00

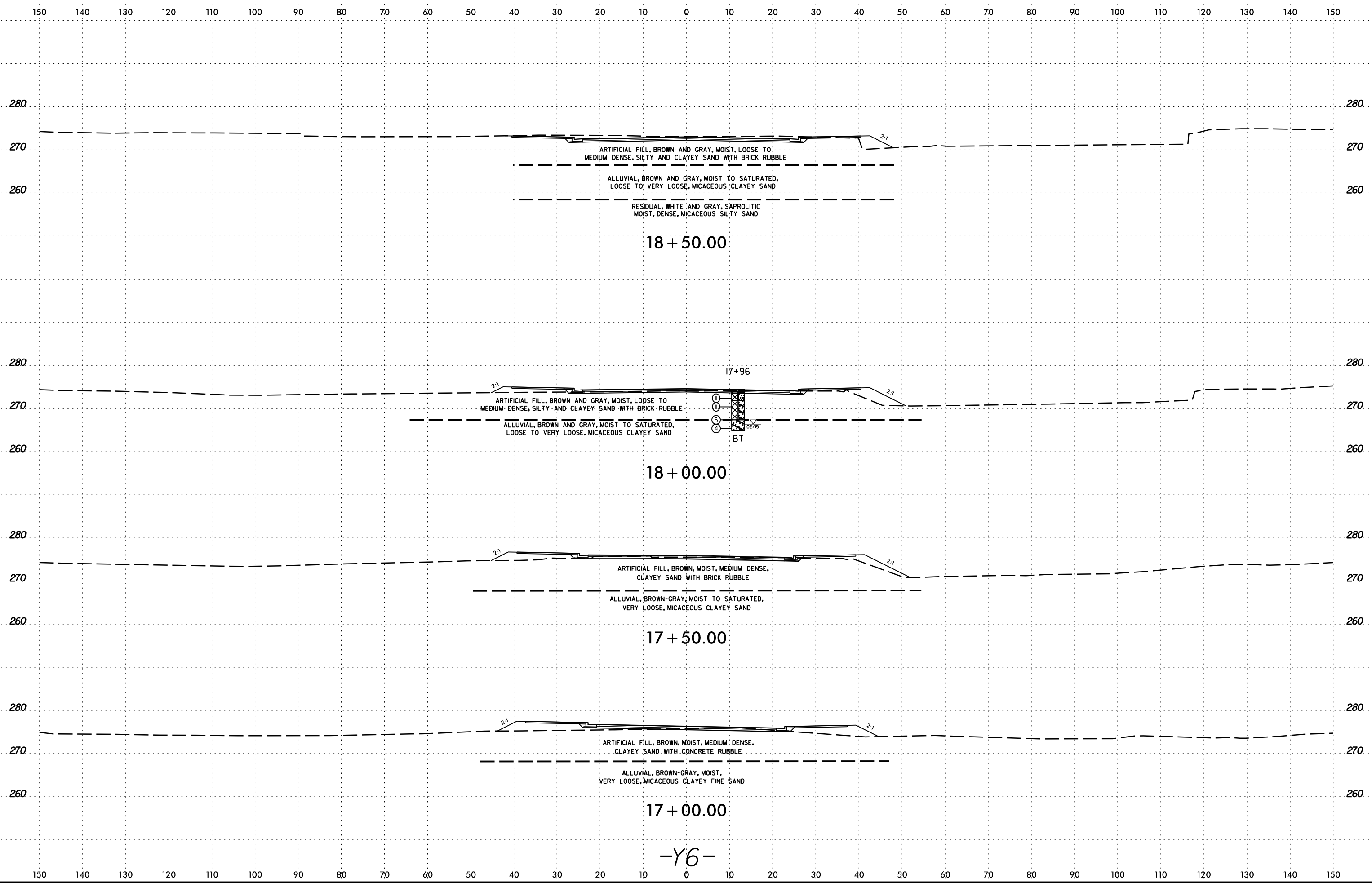
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8/23/99



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molexander

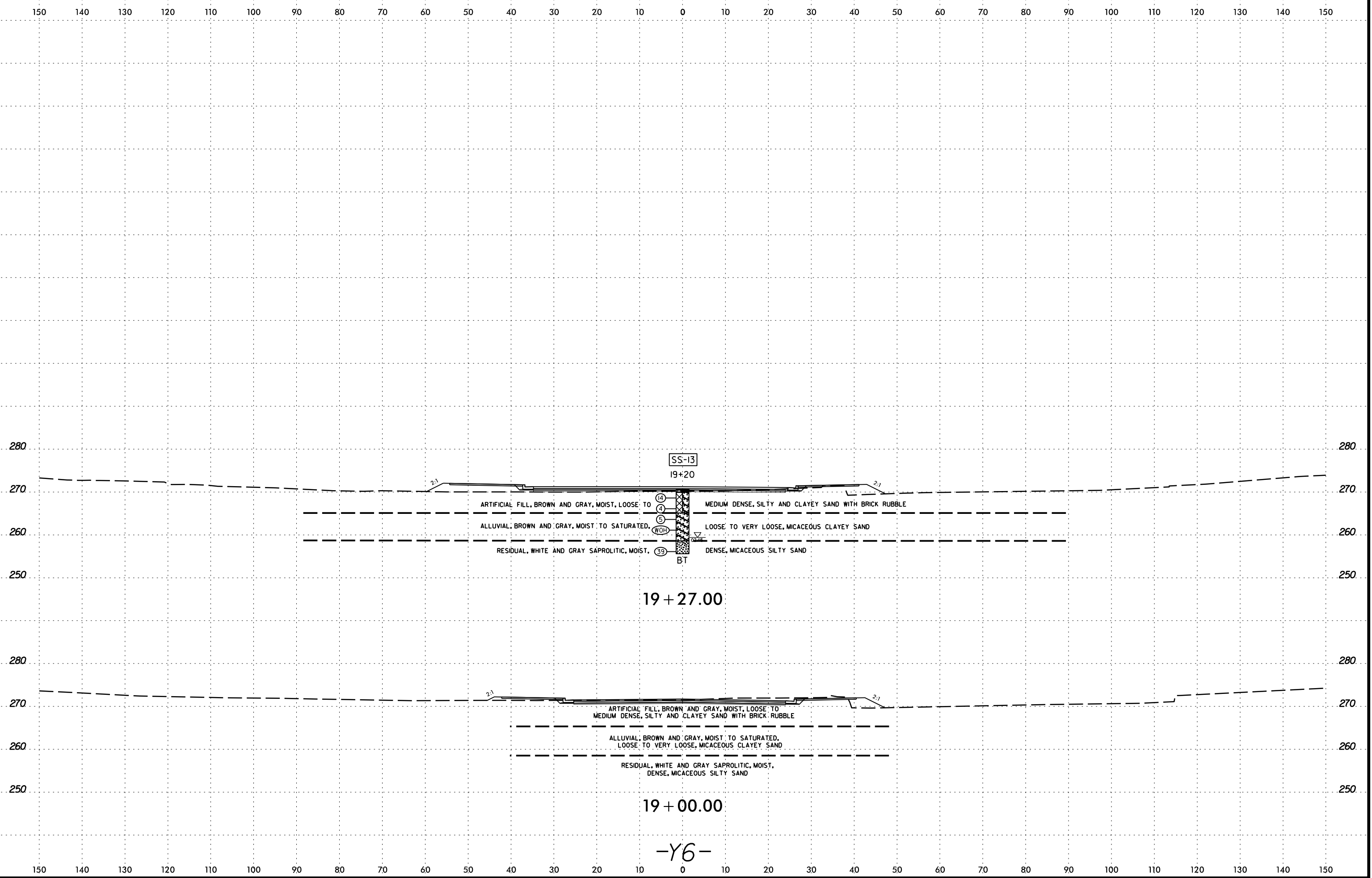
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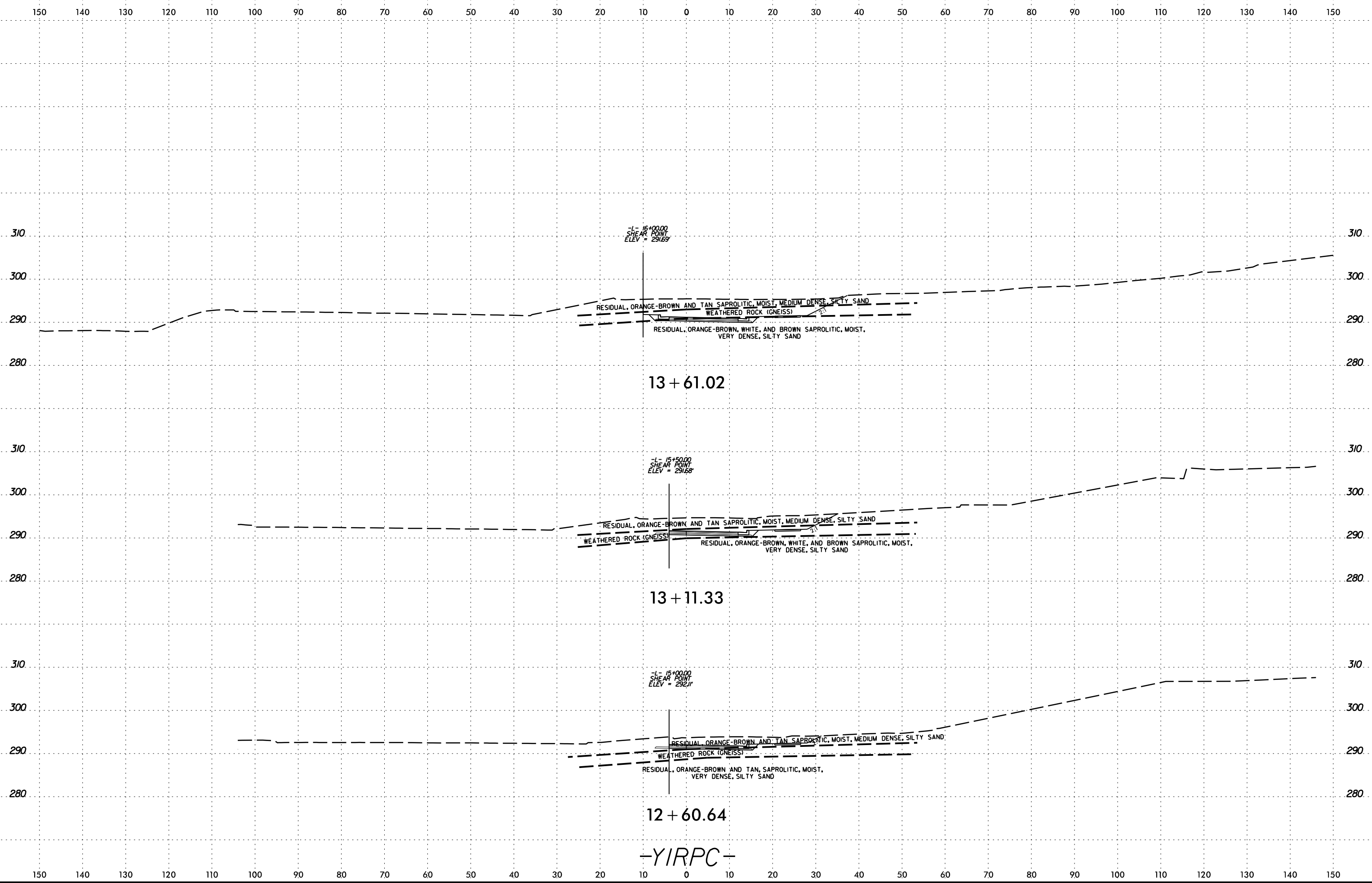
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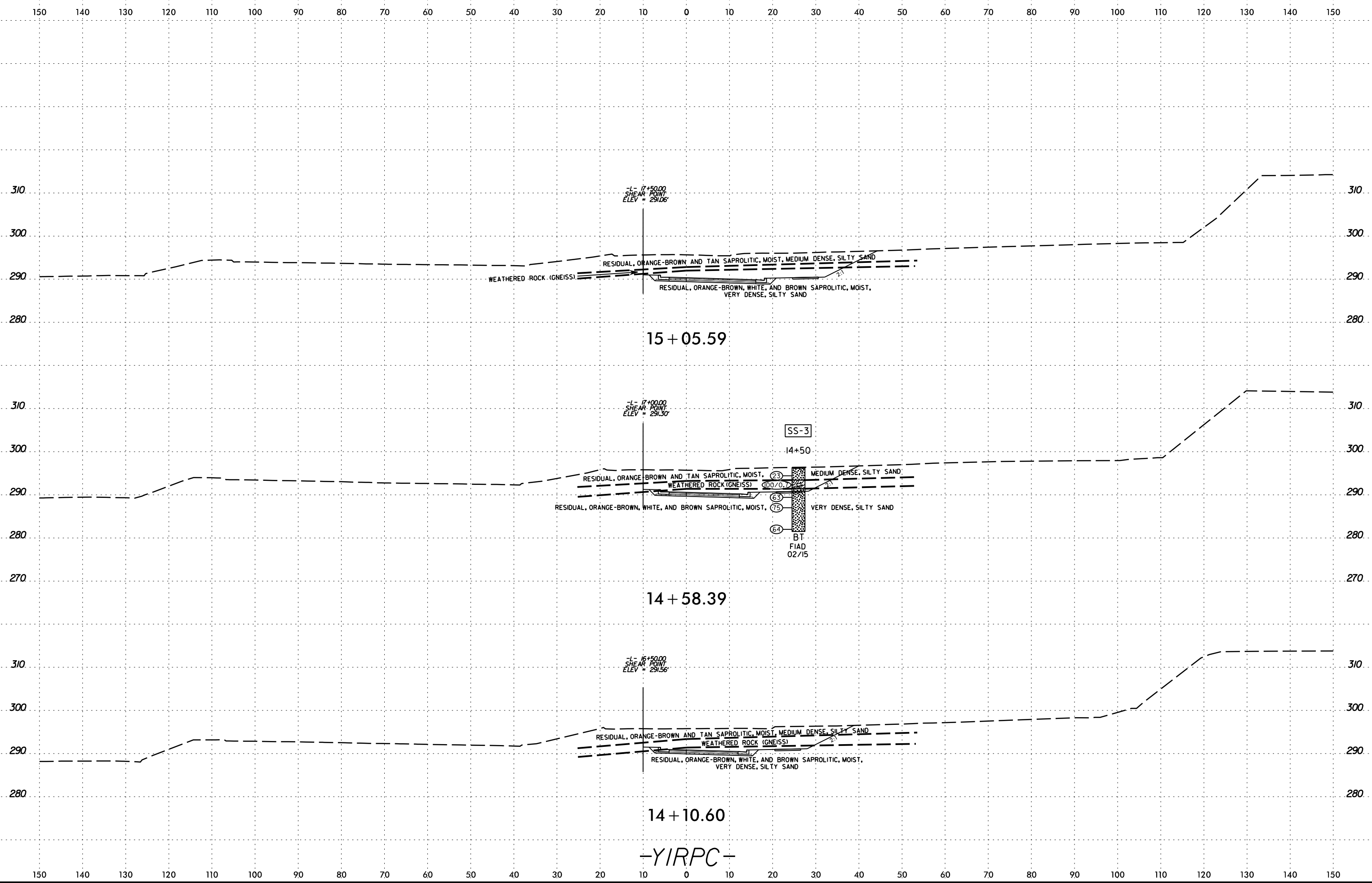
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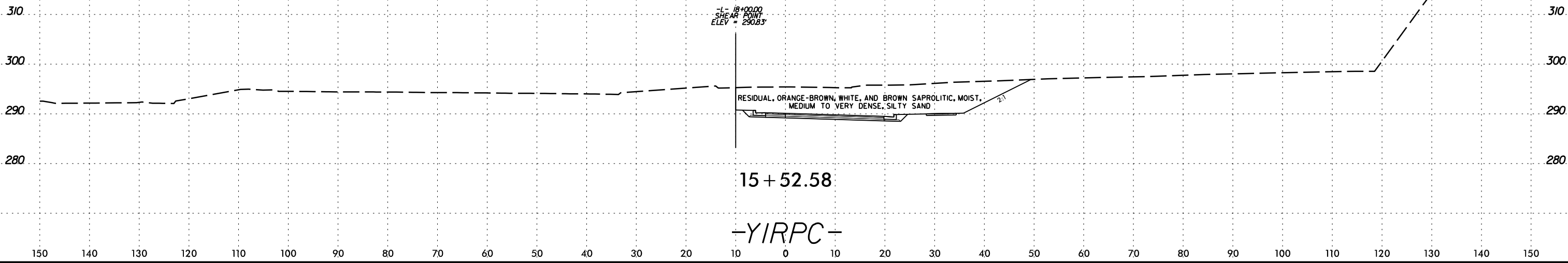


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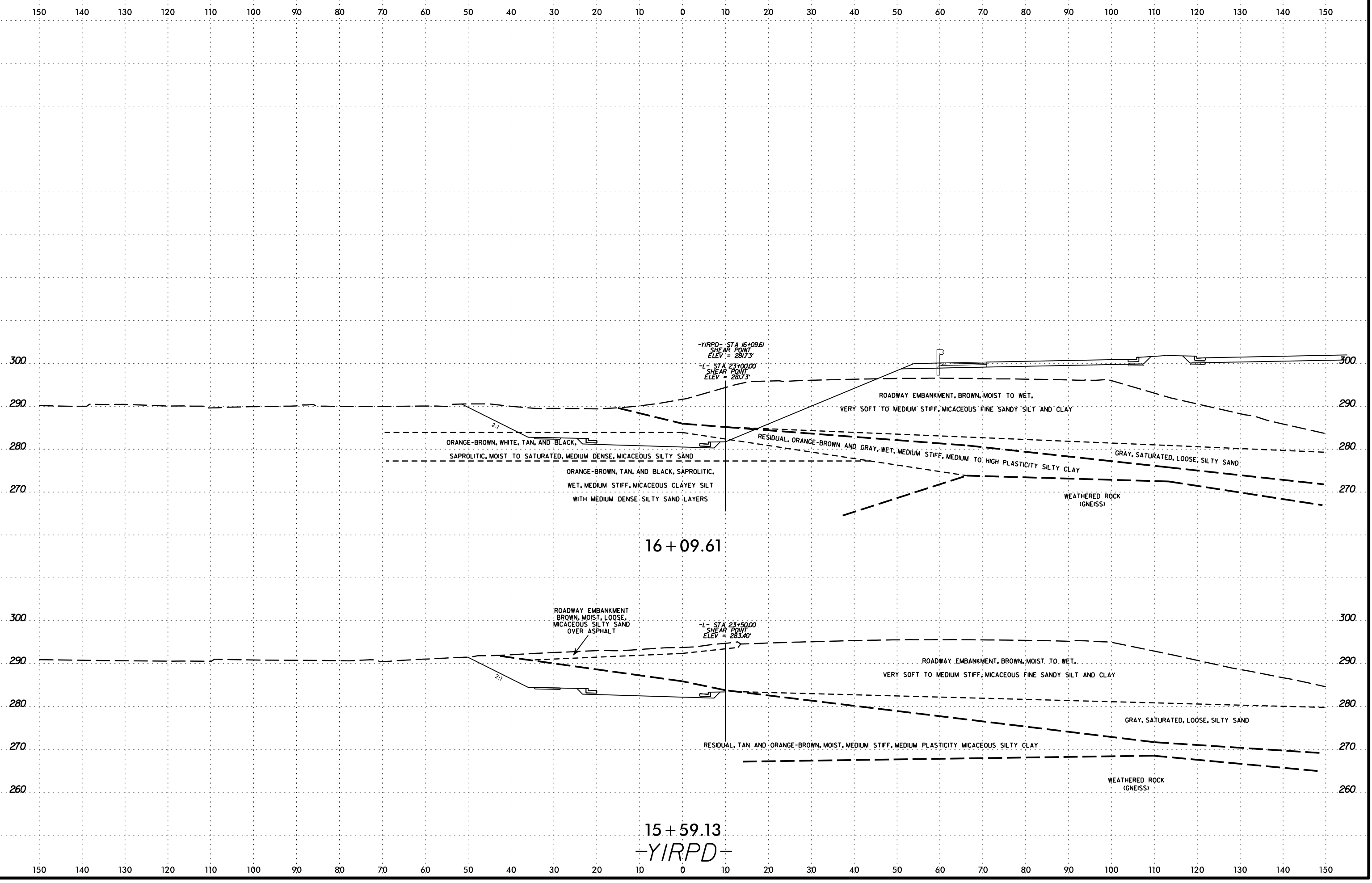
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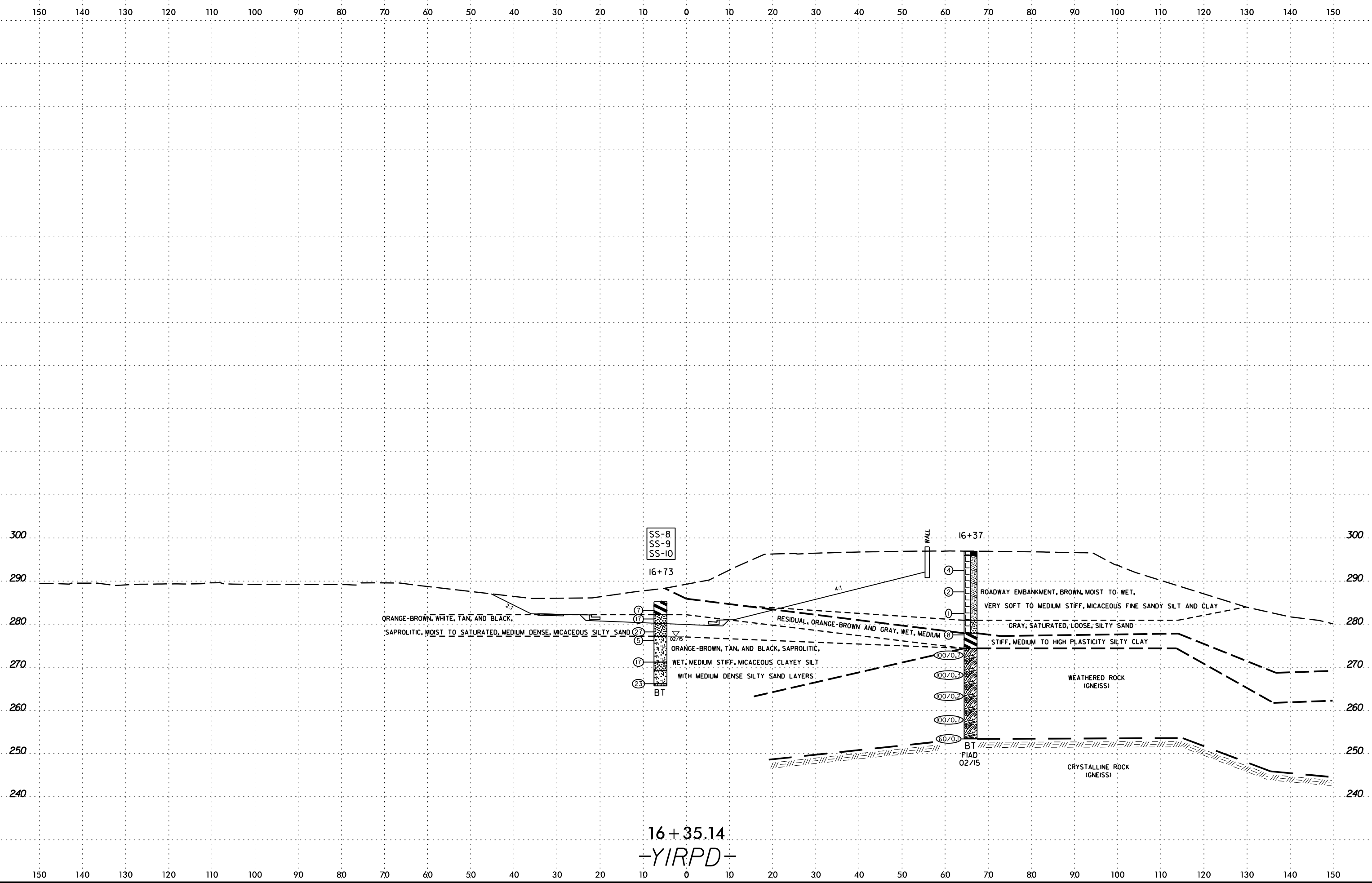
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16 + 09.61

15 + 59.13

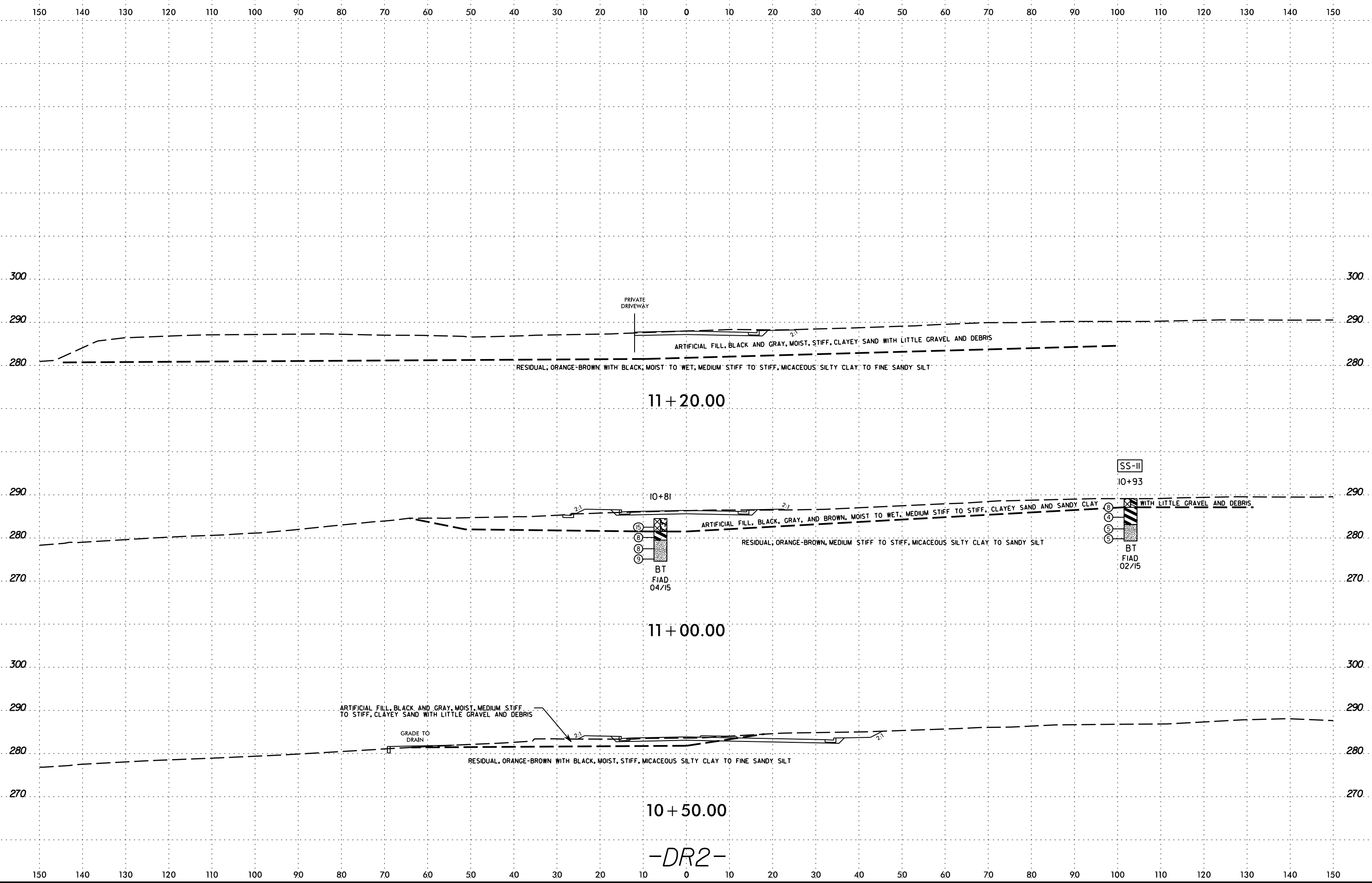
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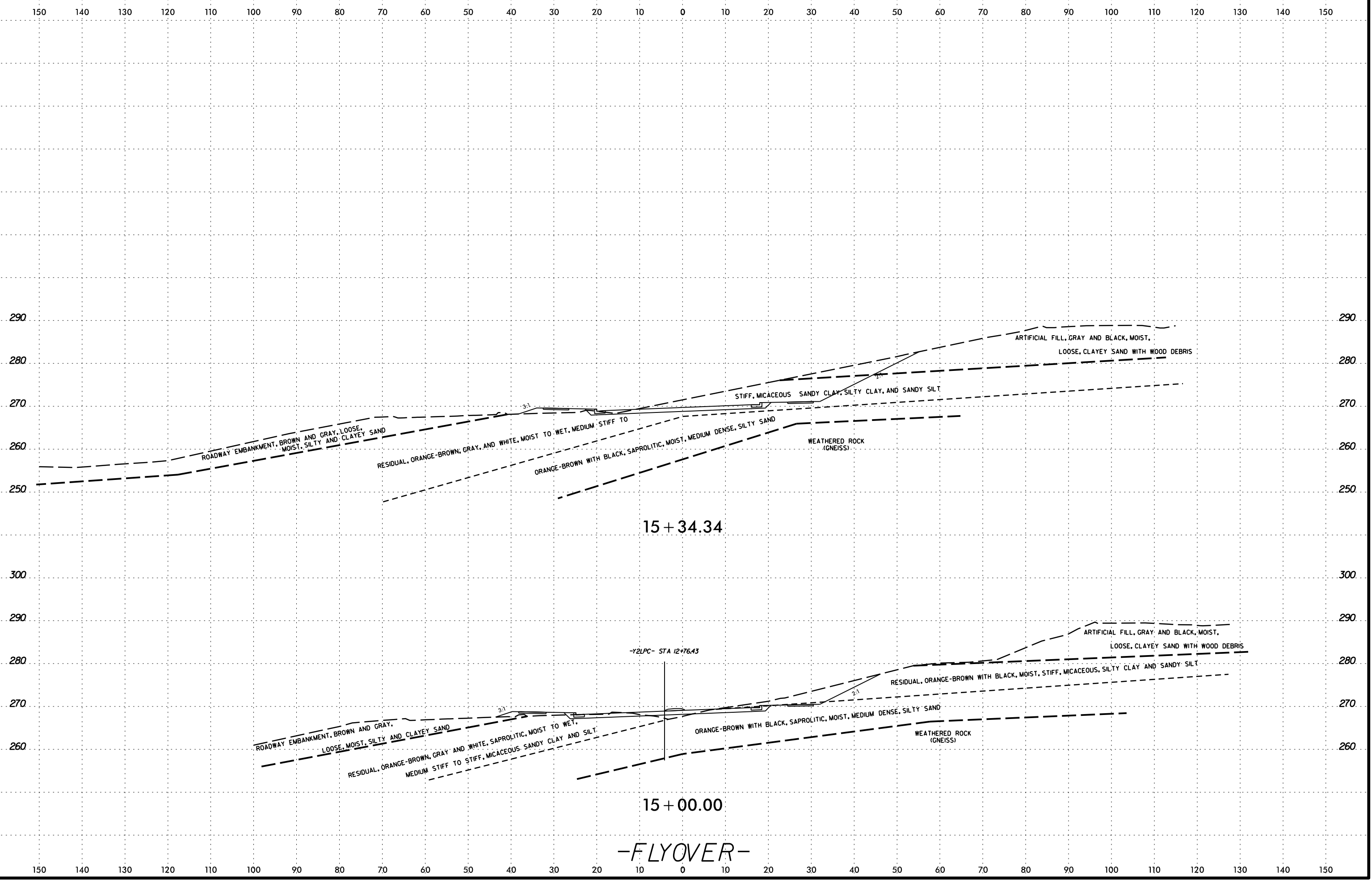
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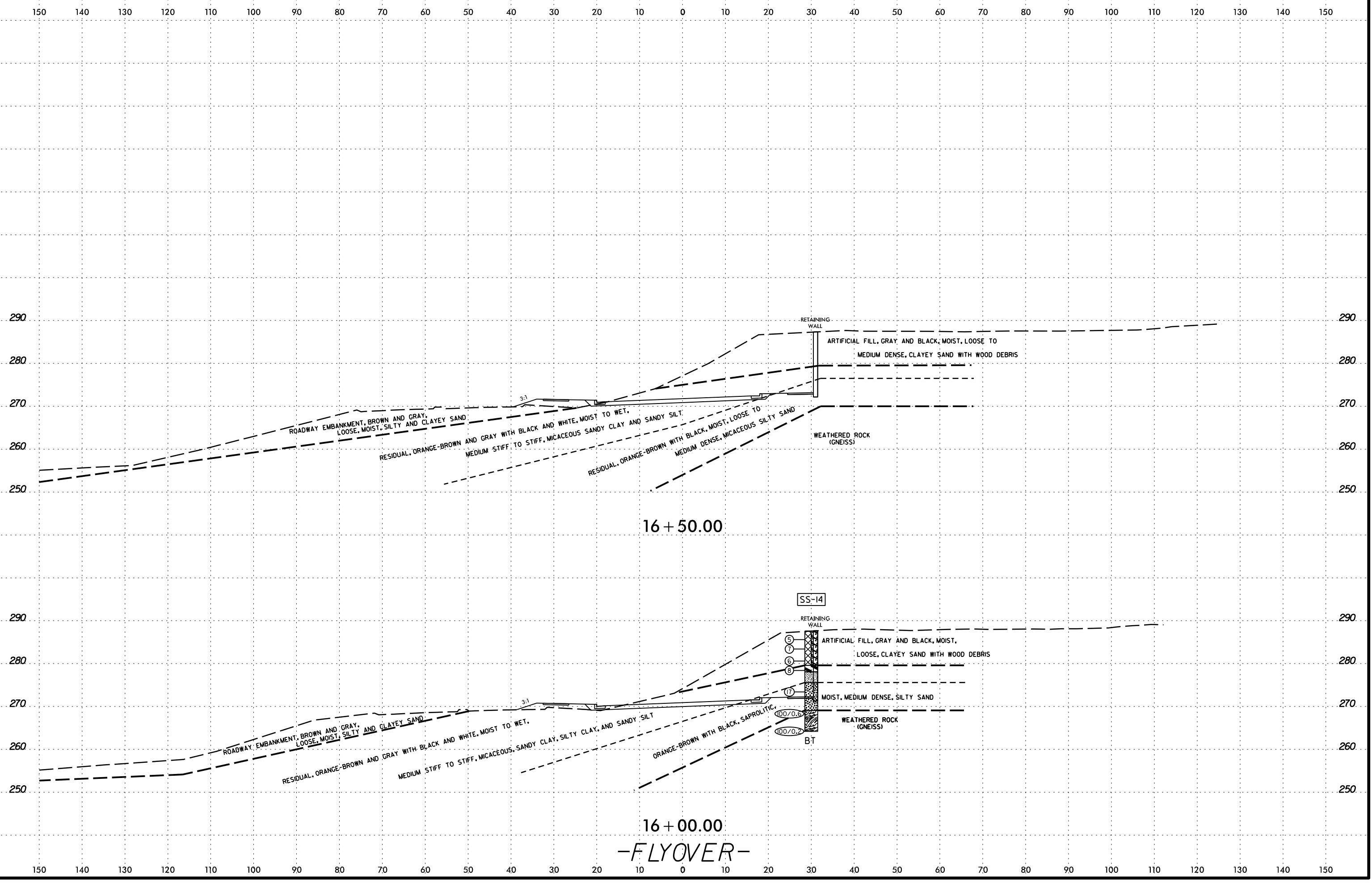
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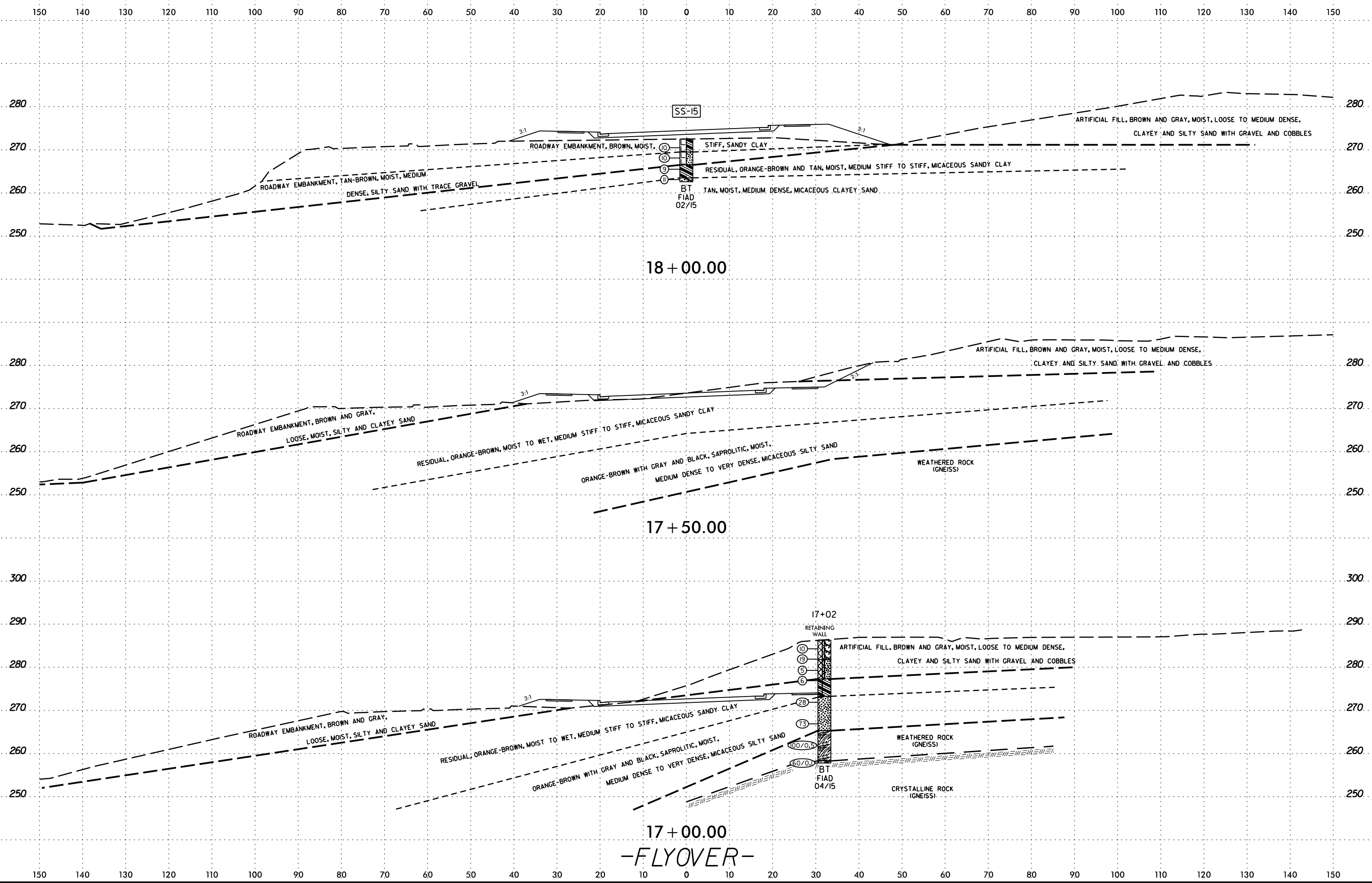
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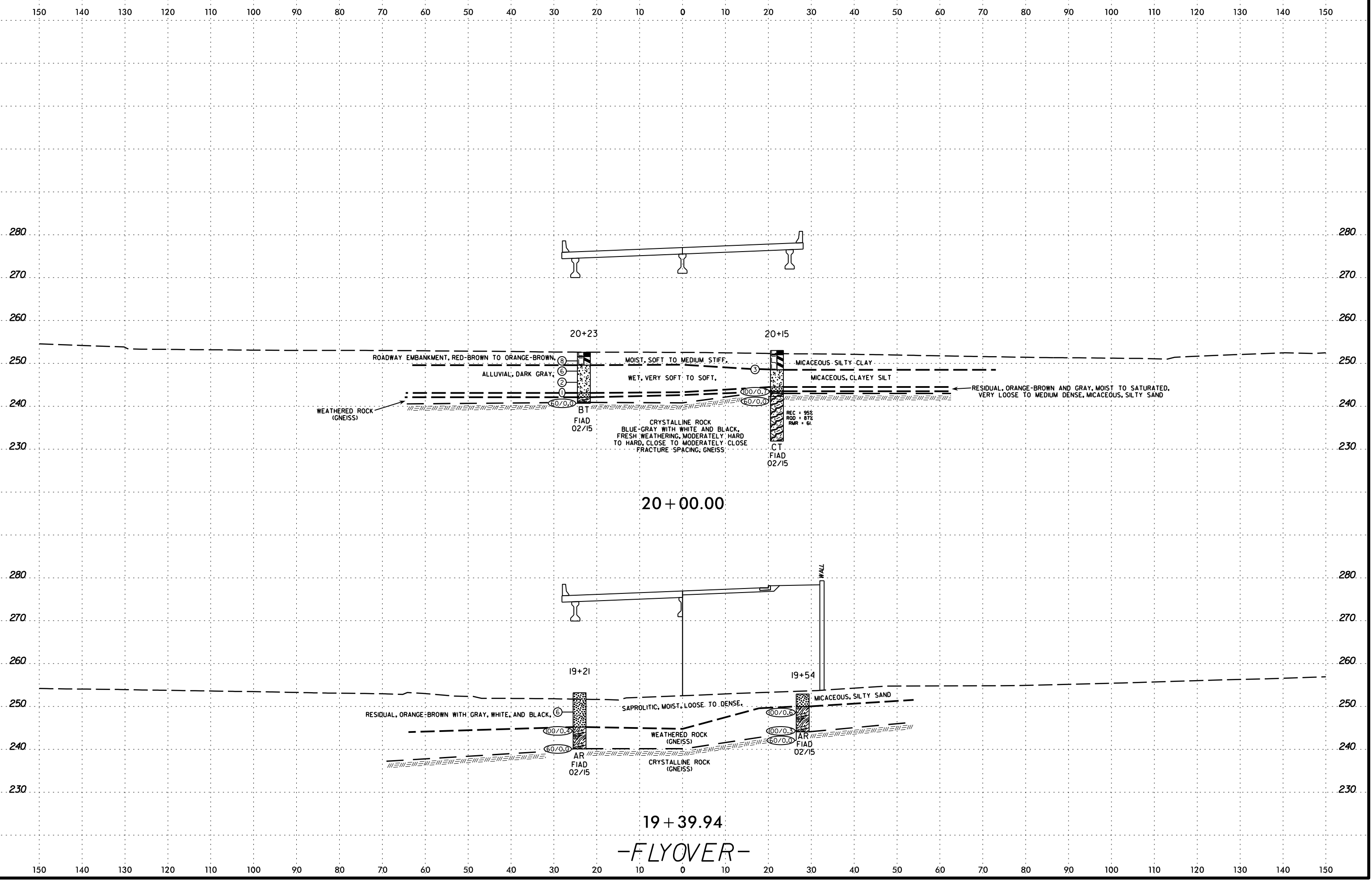
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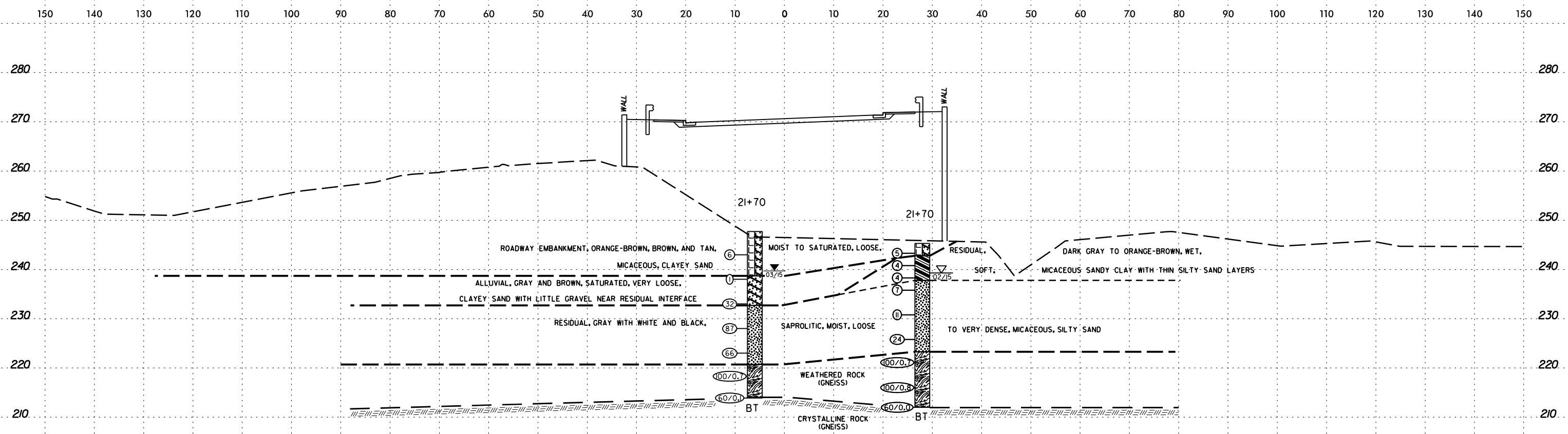
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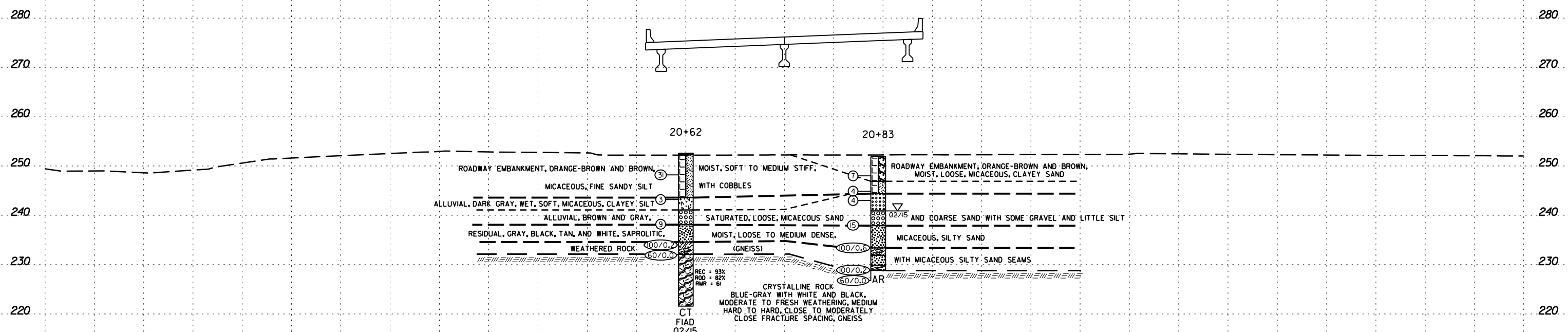


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8/23/99



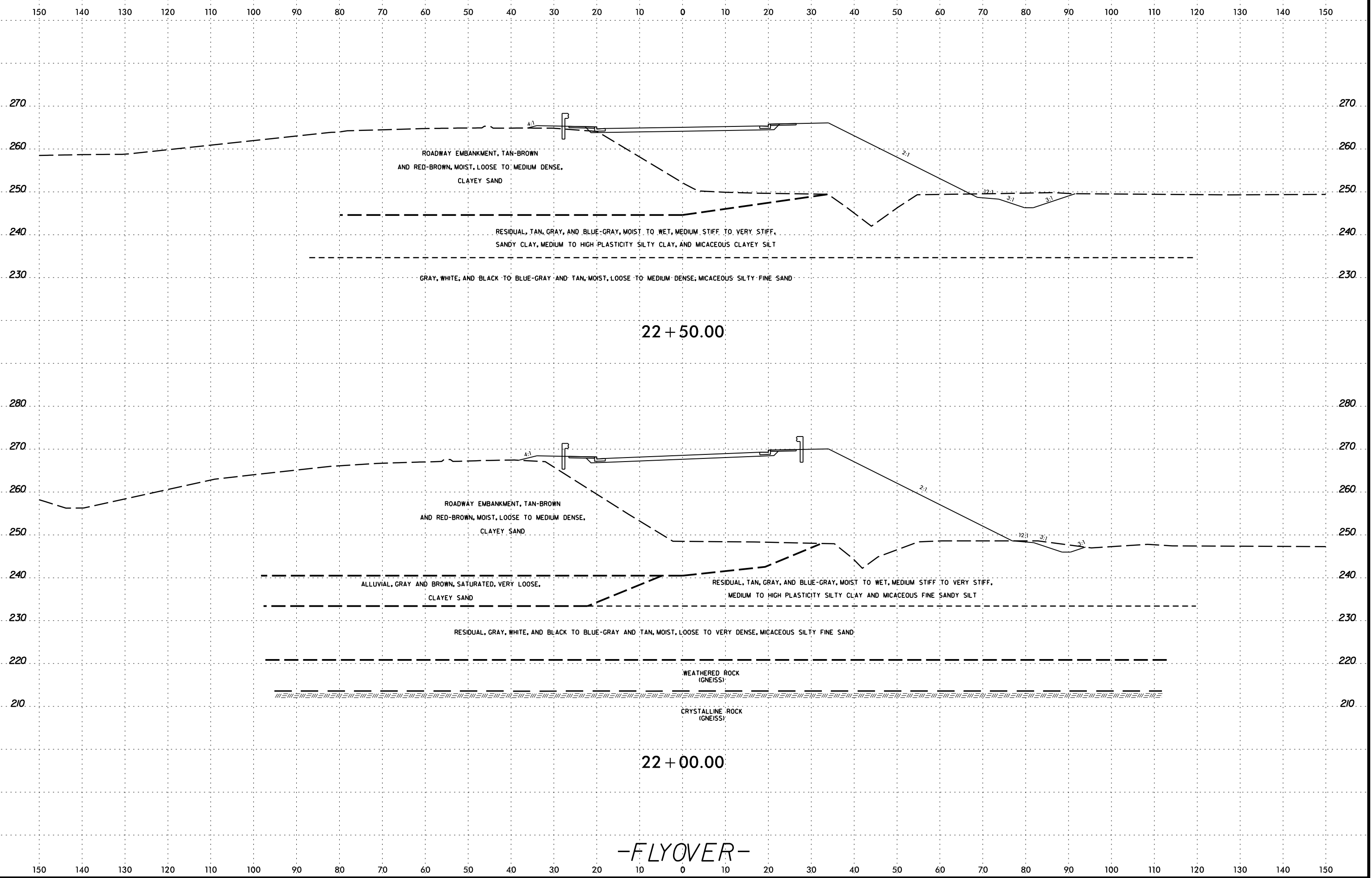
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20 + 50.00

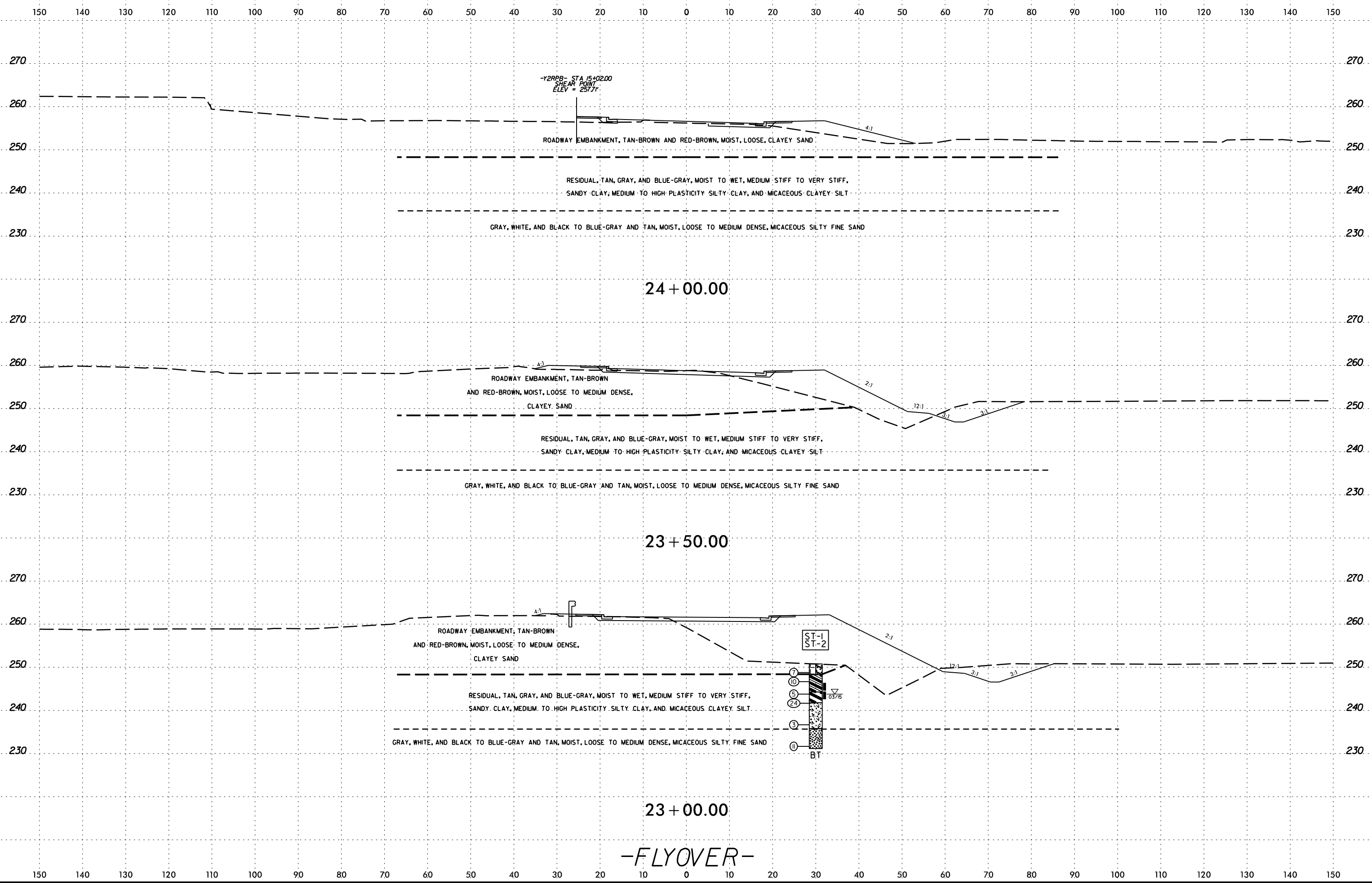
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mleander

PROJECT: 42263 /46031

REFERENCE: B-5121 /B-5317

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

SUBSURFACE INVESTIGATION

***APPENDIX A
LABORATORY RESULTS***

INITIALS

DATE

SOIL LABORATORY TESTING SUMMARY

PROJECT NUMBER: 42263.1.1 / 46031.1.1

ID (TIP): B-5121 / B-5317

COUNTY: Wake

DESCRIPTION: Replace Bridge 227 over Peace Street on US 70 / Replace Bridge over US 401 on US 70 / NC 50

Boring No.	Sample No.	Alignment	Station	Offset (feet)	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic	
									Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200			
L3700	SS-1	-L-	37+00	30' LT	1.1 - 2.6	A-7-6 (10)	49	28	23.7	27.2	5.4	43.7	0	98	90	50	21.5	-	
L4100	SS-2	-L-	41+00	34' LT	1.0 - 2.5	A-6 (6)	40	20	27.3	21.6	19.7	31.4	3	92	77	48	18.2	-	
Y1RPC1450	SS-3	-Y1RPC-	14+50	26' RT	1.0 - 2.5	A-2-4 (0)	31	5	42.8	34.0	11.5	11.7	2	94	70	26	11.7	-	
Y1RPC1689	SS-4	-Y1RPC-	16+89	6' RT	1.0 - 2.5	A-7-6 (11)	53	25	27.6	20.0	9.7	42.7	1	97	84	54	25.7	-	
Y1RPC1689	SS-5	-Y1RPC-	16+89	6' RT	3.3 - 4.8	A-7-5 (6)	50	14	22.2	32.5	10.9	34.4	0	100	90	52	22.6	-	
Y1RPD1500	SS-6	-Y1RPD-	15+00	10' LT	3.5 - 5.0	A-7-5 (7)	51	19	27.2	18.3	17.1	37.4	5	92	75	50	26.7	-	
Y1RPD1500	SS-7	-Y1RPD-	15+00	10' LT	6.0 - 7.0	A-7-5 (9)	49	19	25.3	21.3	13.2	40.2	1	98	82	55	26.3	-	
Y1RPD1673	SS-8	-Y1RPD-	16+73	6' LT	1.0 - 2.5	A-7-6 (12)	50	26	21.9	20.6	9.2	48.3	1	93	81	57	25.6	-	
Y1RPD1673	SS-9	-Y1RPD-	16+73	6' LT	6.0 - 7.5	A-2-4 (0)	27	NP	43.4	40.4	9.3	6.9	0	100	77	21	11.0	-	
Y1RPD1673	SS-10	-Y1RPD-	16+73	6' LT	8.0 - 9.5	A-5 (1)	45	5	21.9	41.3	25.6	11.2	0	100	91	46	46.5	-	
DR2-1093	SS-11	-DR2-	10+93	CL	3.3 - 4.8	A-7-6 (6)	47	19	27.1	27.6	7.0	38.3	0	100	87	49	33.1	-	
Y5-1114	SS-12	-Y5-	11+14	CL	1.0 - 2.5	A-6 (3)	37	18	29.4	26.7	11.7	32.2	8	88	73	42	18.9	-	
Y6-1920	SS-13	-Y6-	19+20	CL	1.0 - 2.5	A-2-6 (0)	31	12	38.2	27.6	10.7	23.5	7	85	65	32	12.7	-	
FLY1600	SS-14	-FLYOVER-	16+00	30' RT	8.2 - 9.5	A-7-5 (18)	55	24	9.2	24.1	16.9	49.8	0	100	96	71	36.7	-	
FLY1800	SS-15	-FLYOVER-	18+00	CL	1.0 - 2.5	A-6 (3)	34	14	23.7	28.4	18.2	29.7	6	87	75	44	16.9	-	
Y2LPC1150	SS-16	-Y2LPC-	11+50	35' LT	1.0 - 2.5	A-2-4 (0)	30	8	43.4	26.5	13.3	16.8	28	61	44	21	11.6	-	
Y2LPC1150	SS-17	-Y2LPC-	11+50	35' LT	3.4 - 4.9	A-2-6 (0)	31	11	39.5	25.9	10.0	24.6	12	80	60	30	20.0	-	
Y2RPB1130	SS-18	-Y2RPB-	11+30	15' RT	1.0 - 2.5	A-4 (0)	35	6	23.6	37.1	12.8	26.5	1	95	84	43	20.0	-	
FLY2305	ST-1	-FLYOVER-	23+05	30' RT	4.5 - 6.3	A-6 (3)	36	15	20.9	37.9	14.2	27.0	2	92	92	45	19.2	-	
FLY2305	ST-2	-FLYOVER-	23+05	30' RT	6.5 - 8.3	A-7-6 (17)	50	29	12.7	24.7	12.0	50.6	1	97	96	65	39.2	-	

CLASSIFICATIONS FOR SHELBY TUBE SAMPLES ST-1 AND ST-2 WERE PERFORMED BY GEOTECHNICS IN ACCORDANCE WITH NCDOT SPECIFICATIONS.

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number