

REFERENCE: B-5980

PROJECT: 47617

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-5980	1	100

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-RPD-	10+00 TO 22+19	5	14
-Y1-	15+00 TO 55+80	5, 7-8	15-17
-Y2-	10+00 TO 14+00	8	18
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CROSS SECTIONS

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APPENDICES

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C	ROCK CORE PHOTOGRAPHS	99-100

ROADWAY SUBSURFACE INVESTIGATION

COUNTY NASH
PROJECT DESCRIPTION I-95 INTERCHANGE
IMPROVEMENTS AT HALIFAX RD (SR 1522)

INVENTORY

CAUTION NOTICE

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

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

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

- NOTES:
- 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

R. DOYLE

Z. ARDEBILI

A. LOZADA

A. PITZER

G. LANG

SUMMIT D&E

GEOTECHNICS

INVESTIGATED BY R. DOYLE

DRAWN BY A. LOZADA

CHECKED BY R. DOYLE

SUBMITTED BY AECOM

DATE JUNE 2019



SIGNATURE

DATE

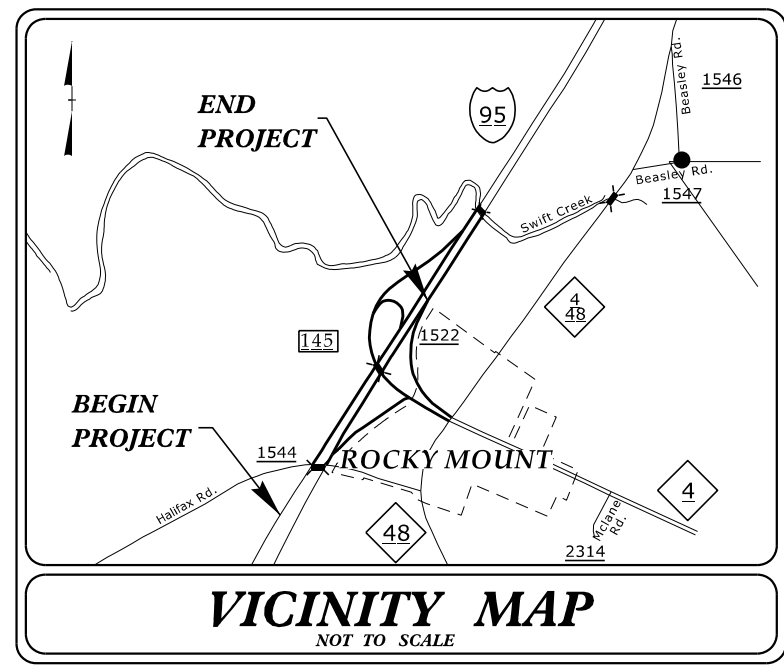
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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

05/24/2019 0:\DGS\Projects\4-URS\Jobs4\...Projects\NCDOT\60557176_B-5980-Halifax Rd Interchange\400_Technical\431_Geotechnical\B5980_GEO_CADD\RDWY\CADD_GEO\TECH\PlanProf\B5980_r_dy_tsh.dgn 05/08/99

CONTRACT: TIP PROJECT: B-5980

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

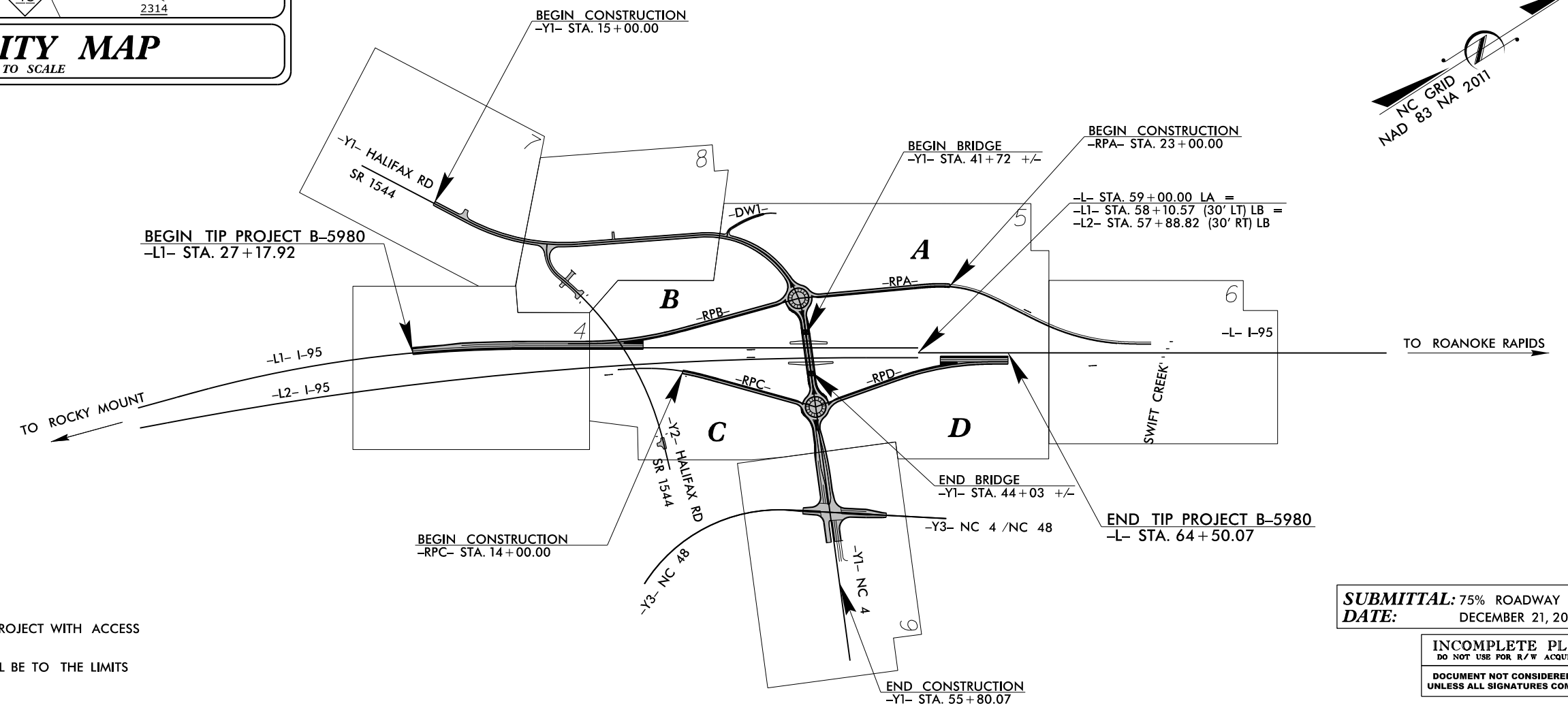
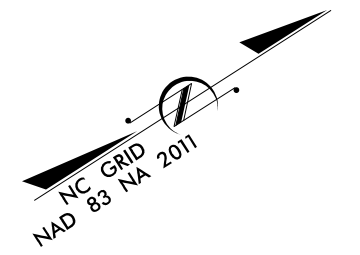
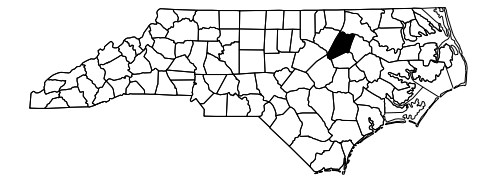


STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS
NASH COUNTY

**LOCATION: I-95 INTERCHANGE IMPROVEMENTS
 AT HALIFAX ROAD (SR 1544)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, UTILITY CONSTRUCTION,
 AND STRUCTURES**

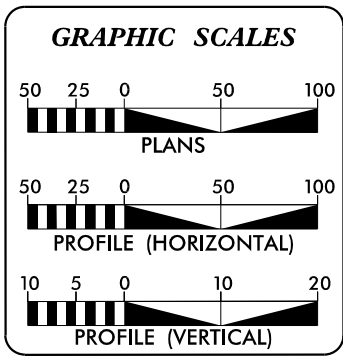
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5980	3	100
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
47617.1.1		PE	



THIS IS A CONTROLLED ACCESS PROJECT WITH ACCESS LIMITED TO INTERCHANGES
 CLEARING ON THE PROJECT SHALL BE TO THE LIMITS ESTABLISHED USING METHOD III

SUBMITTAL: 75% ROADWAY PLANS
DATE: DECEMBER 21, 2018

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



DESIGN DATA

ADT 2017	=	27,500
ADT 2040	=	39,700
K	=	6 %
D	=	55 %
T	=	17 % *
V	=	75 MPH
* (TTST 15% + DUAL 2%)		
FUNC CLASS	=	INTERSTATE STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-5980	=	0.690 MILES
TOTAL LENGTH OF TIP PROJECT B-5980	=	0.690 MILES

Prepared in the Office of:

AECOM
 2018 STANDARD SPECIFICATIONS

NC FIRM LICENSE No: F-0342
 701 Corporate Center Drive, Suite 475
 Raleigh, NC 27607
 (919) 854-6200 - (919) 854-6259(FAX)

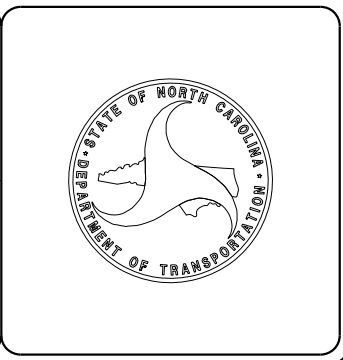
RIGHT OF WAY DATE: JANUARY 2019	LAURA C. FISHER, P.E. PROJECT ENGINEER
LETTING DATE: SEPTEMBER 2019	KIMBERLY A. KOIVUNIEMI, P.E. PROJECT DESIGN ENGINEER
	RUSSELL BROADWELL, P.E. PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.





AECOM – North Carolina
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Tel: 919-461-1100
Fax: 919-461-1415

June 11, 2019

WBS NO.: 47617.1.1
NCDOT TIP: B-5980
COUNTY: Nash

DESCRIPTION: I-95 Interchange Improvements at Halifax Rd (SR 1522)
SUBJECT: Geotechnical Report – Roadway Inventory

Project Description

This project is for the proposed interchange reconfiguration at I-95, Exit 145 (Goldrock Interchange) and NC-4 located in Battleboro, Nash County, North Carolina. The proposed interchange will tie-in N Halifax Rd (SR 1522) with NC-4, which will include two roundabouts (one on each side of I-95) and a bridge over I-95. Maximum fill and cut on the project are approximately 29-ft and 24-ft, respectively

A geotechnical investigation was conducted from October 1, 2018 through February 2019. AECOM subcontracted Summit Design and Engineering, LLC from Hillsborough, North Carolina to provide drilling services for this investigation. 39 Standard Penetration Test (SPT) borings were conducted, as well as 11 hand-auger borings. Representative soil samples were collected for visual classification in the field and select samples were submitted for laboratory analysis. AECOM subcontracted Geotechnics, Inc. of Raleigh, North Carolina to provide laboratory services for this project. The following alignments were investigated:

<u>Line</u>	<u>Station(±)</u>
-L1-	27+18 to 41+28
-RPA-	23+00 to 32+28
-RPB-	10+00 to 24+45
-RPC-	14+00 to 22+42
-RPD-	10+00 to 22+19
-Y1-	15+00 to 55+80
-Y2-	10+00 to 14+00
	21+78 to 22+20
-Y3-	23+86 to 26+38
-DW1-	10+00 to 12+80

Physiography and Geology

The project is located near the border of the Coastal Plain Physiographic Province and the Piedmont Physiographic Province, but lying entirely within the Coastal Plain Physiographic Province. Along the project corridor the terrain is moderately sloped and land use consists mostly of farmlands and woods.

According to USGS¹, the near surface geology consists of Yorktown Formation, Undivided (Tertiary). Yorktown Formation is described as fossiliferous clay with varying amounts of fine-grained sand, bluish gray, shell material commonly concentrated in lenses; mainly in area north of Neuse River.

Soil Properties

The project encountered the following soil types: Roadway Embankment, Artificial Fill, Undivided Coastal Plain, Coastal Plain, Residual, Weathered Rock, and Crystalline Rock.

Roadway embankment material was present in some areas throughout the project. Roadway embankments were built for the existing N Halifax Rd overpass and Goldrock Interchange, which includes a bridge over I-95 for the I-95 southbound entry and exit ramps. This material consisted of brown to gray to red, dry to moist, sandy to silty clay (A-6, A-7), sandy to clayey silt (A-4, A-5), and silty to clayey sand (A-2-4, A-2-6, A-2-7), with blow counts ranging from 2 to 16 blows per foot (bpf), with an average around 10 bpf, indicating a stiff consistency for the fine material and a loose to medium dense condition for the granular material.

Artificial Fill was encountered along the Y1 alignment from approximate STA 21+00 to 23+50. Material consisted of brown to light brown, moist to dry, loose, clayey sand with gravel. Large gravel pieces prevented the hand auger from advancement. The artificial fill mound is located adjacent to the Wakestone Corporation. Multiple boulders were observed around the artificial fill mound.

Undivided Coastal Plain soils generally consisted of brown to gray, moist, sandy to silty clay to sandy silt (A-6, A-7, A-4), with blow counts ranging from 2 to 88 bpf, indicating a very soft to hard consistency, underlain by brown to white to gray, moist to wet, silty to clayey sand to sand with trace silt and clay (A-2-4, A-2-6, A-1-b) with blow counts ranging from 2 to 34 bpf, indicating a very loose to dense material.

Coastal Plain (Yorktown Formation) soils were encountered below the Undivided Coastal Plain soils. This material consisted of a gray to dark gray, silty to sandy clay (A-6, A-7), with blow counts ranging from 2 to 11 bpf, indicating a very soft to stiff consistency.

Residual soils were encountered in few of the borings below the coastal plain stratum. These soils consisted of white to black, dry to moist, silty to clayey sand (A-2-4, A-2-6) with blow counts ranging from 63 to 82 bpf, indicating a very dense material.

Weathered rock consisted of weathered granite. Top of weathered rock ranged from 7.5 to 43.0-ft below ground surface and top of weathered rock elevation ranged from El. 95.3 to 142.5-ft. Generally, SPT refusal was encountered shortly after reaching the top of weathered rock.

Crystalline rock encountered throughout the site consisted of granite. See rock properties for granite characteristics and description.

¹ <https://mrdata.usgs.gov/geology/state/sgmc-unit.php?unit=NCTpy;11>

Rock Properties

Top of rock ranged from 15.7 to 53.0-ft below ground surface and top of rock elevation ranged from El. 85.3 to El. 117.2-ft. Granite was the predominant rock type encountered within this project area. Boring B1-B advanced 19.6-ft into the granite. Rock core recovery ranged from 61% to 100% and RQD ranged from 20% to 76%. Laboratory test results show the uniaxial compressive strength of the granite ranged from 14,300 psi to 16,050 psi.

Groundwater Properties

Groundwater measurements were recorded in each boring. Excluding the borings that were dry and/or caved-in, the 0-hour groundwater readings ranged from 2.5 to 23.7-ft below ground surface and 0-hour groundwater elevations ranged from El. 119.8 to El. 139.0-ft. 24-hours groundwater readings ranged from 4.0 to 16.2-ft below ground surface and 24-hour groundwater elevations ranged from El. 121.9 to El. 143.0-ft. Note that groundwater elevation may fluctuate seasonally.

On the west side of I-95 a drainage ditch or stream, approximately 6 to 8-ft deep, runs along the west side of the existing I-95 southbound entry and exit ramp embankment. The ditch or stream continues along the embankment until it approaches I-95 southbound and then turns southwest and continues along I-95 southbound for approximately 350-ft. The ditch or stream was dry during the field exploration. Also, a rock quarry pond is located approximately 150-ft west of the existing I-95 southbound entry and exit ramp embankment. The water elevation of the pond is approximately El. 115-ft. Lastly, Swift Creek is located approximately 500-ft north of the project and should not impact the project construction.

Areas of Special Geotechnical Interest

- 1) **Moderately to Highly Plastic Soils:** Moderately to highly plastic soils were encountered throughout the project. Atterberg limit tests for 24 samples had plasticity indices greater than or equal to 16. The following alignments were found to contain moderately to highly plastic soils:

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-RPA-	30+00 to 32+28	LT to RT
-RPB-	10+00 to 24+45	LT to RT
-RPC-	16+50 to 18+50	LT to RT
-RPD-	18+50 to 22+19	LT to RT
-Y1-	15+00 to 55+80	LT to RT
-Y2-	21+78 to 22+20	LT to RT
-Y3-	23+86 to 26+38	LT to RT

- 2) **Soft Soils:** Soft soils (not including topsoil) were found in the following alignments:

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-RPB-	20+00 to 22+00	LT to RT
-RPD-	18+50 to 22+19	LT to RT
-Y1-	15+00 to 19+00	LT to RT
-Y1-	33+00 to 35+00	LT to RT
-Y1-	37+00 to 39+00	LT to RT

<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-Y1-	41+00 to 45+00	LT to RT
-Y1-	47+00 to 49+00	RT
-Y2-	12+50 to 14+00	LT to RT
-Y2-	21+78 to 22+20	LT to RT

- 3) **Loose Sands:** Loose sands were found in the following alignments:

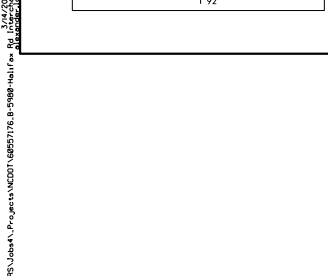
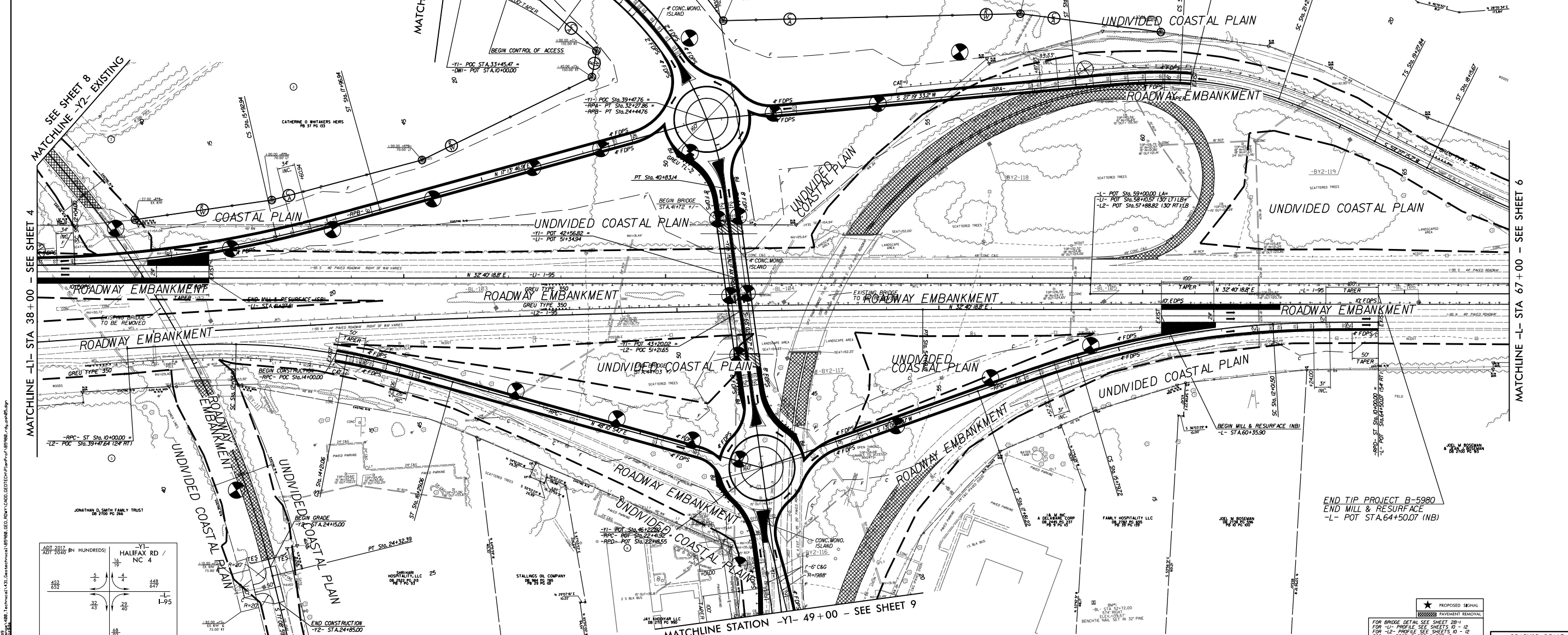
<u>Line</u>	<u>Stations (±)</u>	<u>Offsets</u>
-RPA-	26+00 to 32+28	LT to RT
-RPB-	18+00 to 24+45	LT to RT
-RPD-	18+50 to 22+19	LT to RT
-Y1-	22+00 to 25+00	LT to RT
-Y1-	31+00 to 43+50	LT to RT
-Y1-	47+00 to 49+00	RT
-Y2-	10+00 to 12+50	LT to RT
-Y2-	21+78 to 22+20	LT to RT
-Y3-	23+86 to 26+38	LT to RT

Undisturbed Samples

Undisturbed thin wall Shelby tube samples were collected at the following locations and submitted for testing.

<u>Sample No.</u>	<u>Station</u>	<u>Depth (ft)</u>	<u>Test</u>
ST-1	-Y1- 44+03, 17' RT	20.0-22.0	Triaxial
ST-2	-RPD- 19+50, 16'LT	13.1-15.1	Consolidation
ST-3	-RPA- 31+00, CL	20.0-22.0	Consolidation

-Y1- PI Sta 37+46.69 Δ = 85.34 330.0 (RT) D = 9.32 57.5 L = 506.62 T = 565.7 R = 6000.0 e = 0.0 RUNOFF = 18" DS = 45 MPH	-RAB1- PI Sta 10+00.00 Δ = 367.00 00.0 (LT) D = 97.56 44.5 L = 595.94 T = 0.00 R = 63.00	-RAB2- PI Sta 10+00.00 Δ = 367.00 00.0 (LT) D = 97.56 44.5 L = 595.94 T = 0.00 R = 63.00	-L2- PI Sta 33+24.86 Δ = 17.42 53.6 (RT) D = 71.4 56.8 L = 430.23 T = 215.630 R = 23000.0 e = 62 MATCH EXISTING (NC)	-DW1- PI Sta 10+43.27 Δ = 47.28 10.0 (RT) D = 14.35 23.6 L = 41.42 T = 21.98 R = 50.00	PI Sta 11+94.7 Δ = 17.24 02.3 (RT) D = 10.03 06.8 L = 17.31 T = 87.23 R = 5700.0	PI Sta 13+08.54 Δ = 17.03 14.8 (RT) D = 37.09 20.4 L = 56.55 T = 28.49 R = 1900.0
PI Sta 16+77.05 Δ = 4.35 01.2 D = 208.00 L = 138.72 T = 138.72 R = 69.36	-RPA- PI Sta 22+24.72 Δ = 15.45 23.4 (LT) D = 8.11 06.4 L = 138.72 T = 138.72 R = 69.36 RUNOFF = 20" DS = 45 MPH	PI Sta 23+87.16 Δ = 8.11 06.4 D = 208.00 L = 138.72 T = 138.72 R = 69.36	PI Sta 13+98.98 Δ = 17.42 53.6 (RT) D = 71.4 56.8 L = 430.23 T = 215.630 R = 23000.0 e = 62 MATCH EXISTING (NC)	-RPB- PI Sta 16+60.95 Δ = 2.39 23.2 D = 204.00 L = 136.00 T = 136.00 R = 67.00	PI Sta 16+60.95 Δ = 2.39 23.2 D = 204.00 L = 136.00 T = 136.00 R = 67.00	PI Sta 16+60.95 Δ = 2.39 23.2 D = 204.00 L = 136.00 T = 136.00 R = 67.00
-RPC- PI Sta 11+38.72 Δ = 4.46 01.2 D = 208.00 L = 138.72 T = 138.72 R = 69.36 RUNOFF = 208"	PI Sta 13+47.9 Δ = 4.35 01.2 D = 208.00 L = 138.72 T = 138.72 R = 69.36	PI Sta 14+90.44 Δ = 4.46 01.2 D = 208.00 L = 138.72 T = 138.72 R = 69.36	-RPD- PI Sta 11+34.36 Δ = 12.44 50.2 (LT) D = 3.23 44.2 L = 208.00 L = 134.36 T = 134.36 R = 67.00 e = 62 MATCH EXISTING (NC)	PI Sta 13+98.98 Δ = 17.42 53.6 (RT) D = 71.4 56.8 L = 430.23 T = 215.630 R = 23000.0 e = 62 MATCH EXISTING (NC)	PI Sta 16+60.95 Δ = 2.39 23.2 D = 204.00 L = 136.00 T = 136.00 R = 67.00	PI Sta 16+60.95 Δ = 2.39 23.2 D = 204.00 L = 136.00 T = 136.00 R = 67.00



PROJECT REFERENCE NO. B-5980 SHEET NO. 5

ROADWAY DESIGN ENGINEER: [Signature]

INCOMPLETE PLANS
DO NOT USE FOR CONSTRUCTION

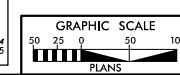
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

END TIP PROJECT B-5980
END MILL & RESURFACE
-L- POT STA.64+50.07 (NB)

★ PROPOSED SIGNAL

□ PAYMENT REMOVAL

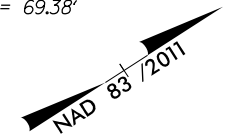
FOR BRIDGE DETAIL SEE SHEET 28-1
FOR -L1- PROFILE SEE SHEETS 10 - 12
FOR -L2- PROFILE SEE SHEETS 10 - 12
FOR -Y1- PROFILE SEE SHEETS 16 & 17
FOR -RPA- & -RPB- PROFILE SEE SHEET 14
FOR -RPC- & -RPD- PROFILE SEE SHEET 15
FOR -RAB1- & -RAB2- SEE SHEET 19



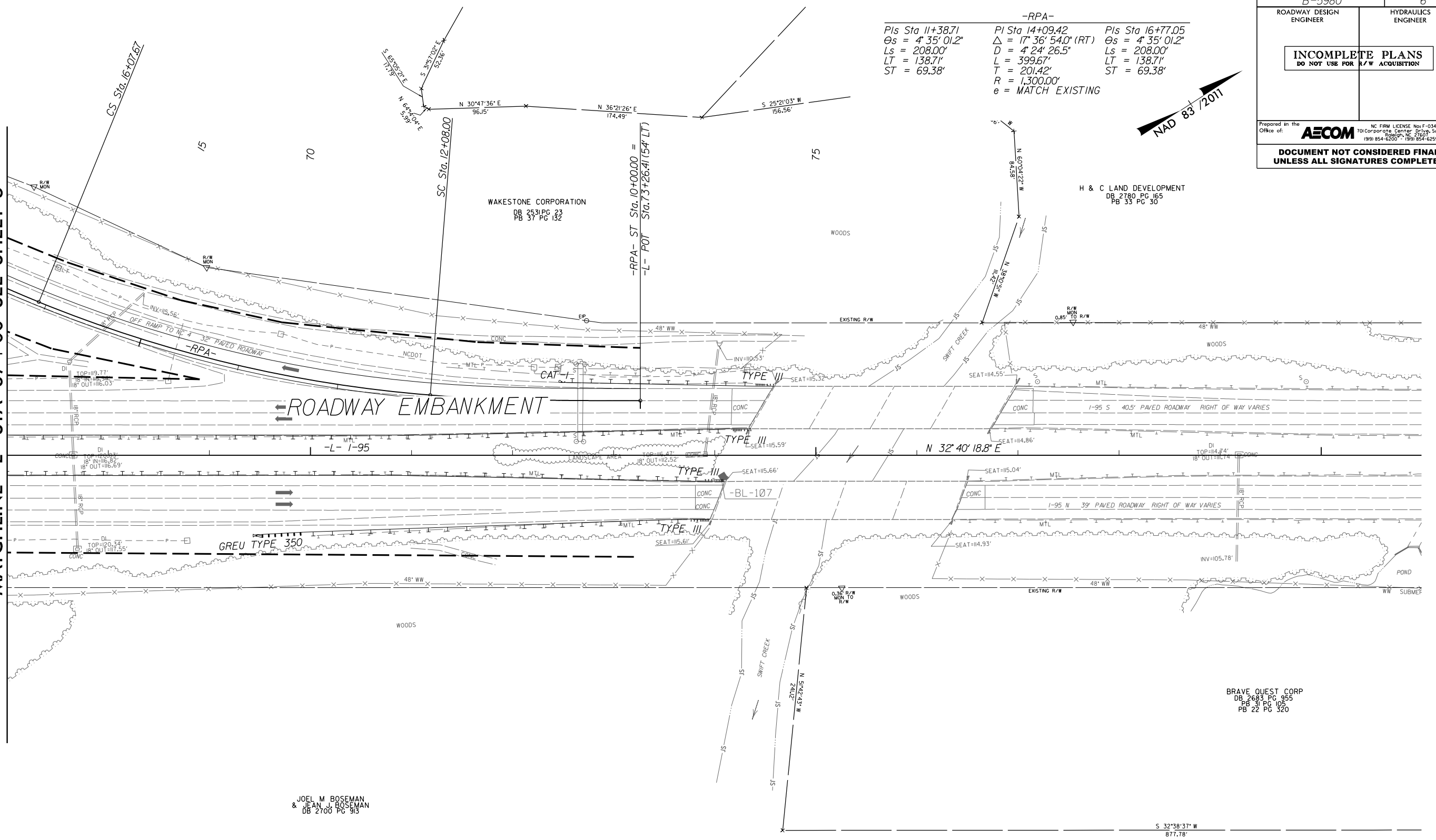
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-RPA-

PIs Sta 11+38.71 θs = 4° 35' 01.2" Ls = 208.00' LT = 138.71' ST = 69.38'	PI Sta 14+09.42 Δ = 17° 36' 54.0" (RT) D = 4° 24' 26.5" L = 399.67' T = 201.42' R = 1,300.00' e = MATCH EXISTING	PIs Sta 16+77.05 θs = 4° 35' 01.2" Ls = 208.00' LT = 138.71' ST = 69.38'
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MATCHLINE -L- STA 67+00 SEE SHEET 5



JOEL M BOSEMAN
& JEAN J BOSEMAN
DB 2700 PG 93

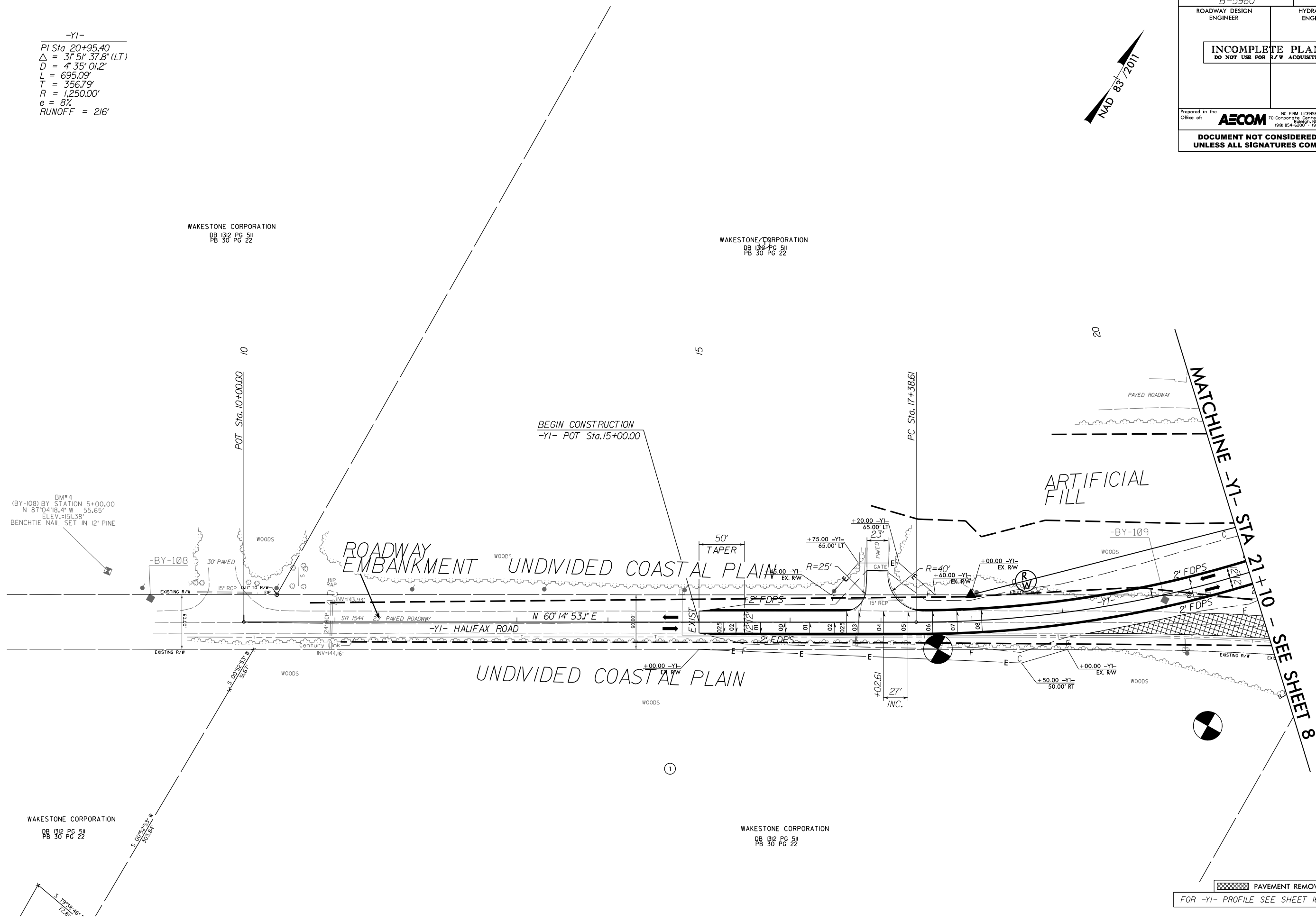
BRAVE QUEST CORP
DB 2683 PG 955
PB 31 PG 105
PB 22 PG 320

NOTE: SHEET PROVIDED FOR REFERENCE. PAVEMENT MARKING AND TRAFFIC CONTROL WORK ONLY WILL BE COMPLETED IN THIS AREA.
FOR -L- PROFILE SEE SHEET 13
FOR -RPA- PROFILE SEE SHEET 14

5/14/2019 3:14:20 PM C:\Users\jboseman\Documents\4000_Technical\431_Geotechnical\B5980_GEO_RDW\CADD_GEO\TECH\Plan\Prof\B5980_rdu_psh06.dgn

PROJECT REFERENCE NO. B-5980	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
<small>Prepared in the Office of:</small> AECOM	
<small>NC FIRM LICENSE No. F-0342 701 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-6200 / (919) 854-6259 (FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-Y1-
 PI Sta. 20+95.40
 $\Delta = 3^{\circ} 51' 37.8" (LT)$
 $D = 4^{\circ} 35' 01.2"$
 $L = 695.09'$
 $T = 356.79'$
 $R = 1,250.00'$
 $e = 8\%$
 RUNOFF = 216'



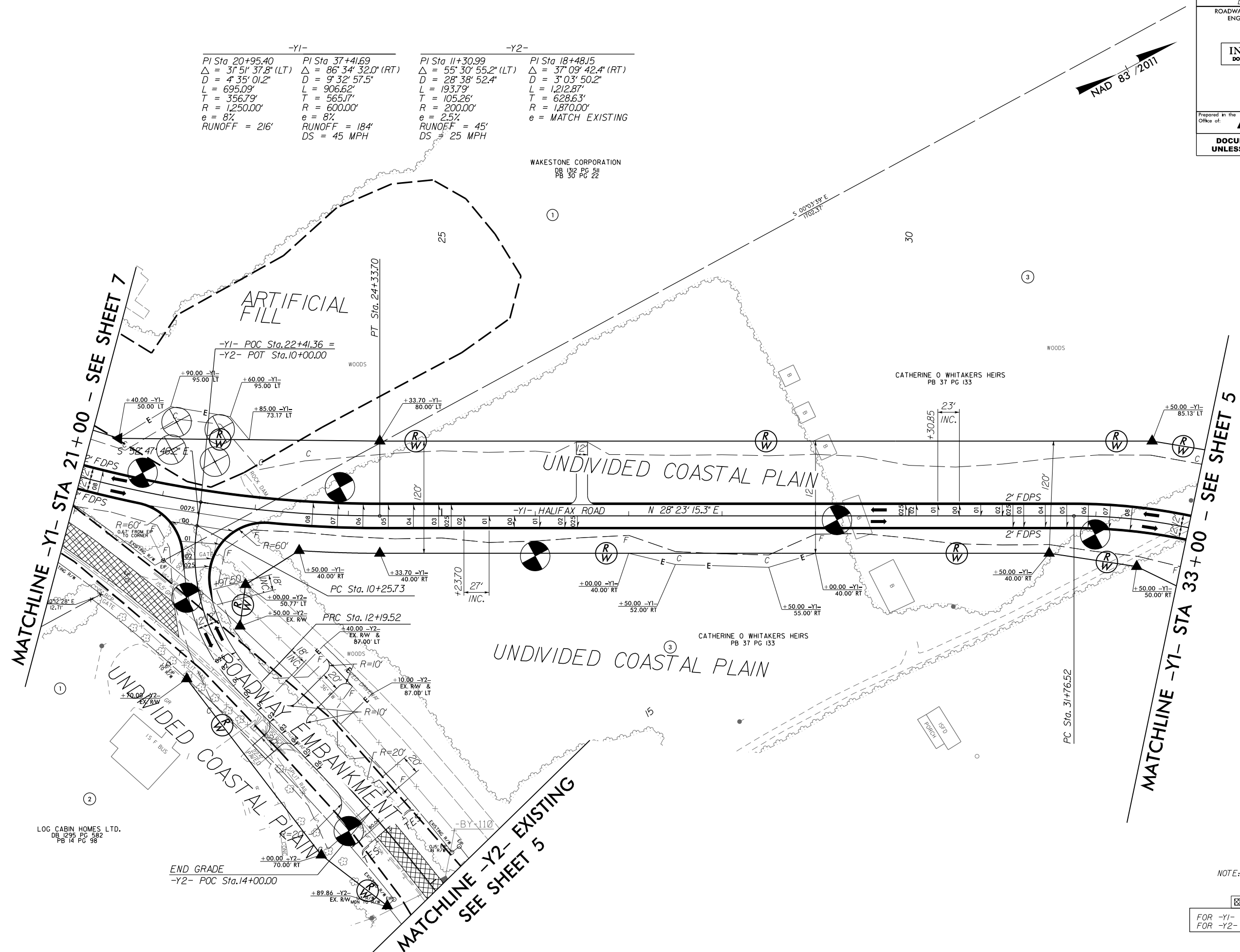
BM#4
 (BY-108) BY STATION 5+00.00
 $N 87^{\circ} 04' 18.4" W 55.65'$
 ELEV. = 151.38'
 BENCHMARK NAIL SET IN 12" PINE

PAVEMENT REMOVAL
 FOR -Y1- PROFILE SEE SHEET 16

5/14/99
 alifax Rd Interchange\400_Technical\431_Geotechnical\B5980_GEO_RDWY\CADD_GEO\RDWY\Plan\Prof\B5980_rdy_psh07.dgn

PROJECT REFERENCE NO. B-5980		SHEET NO. 8	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
Prepared in the Office of: AECOM <small>70 Corporate Center Drive, Suite 475 Raleigh, NC 27603 (919) 854-4200 • (919) 854-4259(FAX)</small>			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-Y1-		-Y2-	
PI Sta 20+95.40	PI Sta 37+41.69	PI Sta 11+30.99	PI Sta 18+48.15
$\Delta = 31^{\circ} 51' 37.8"$ (LT)	$\Delta = 86^{\circ} 34' 32.0"$ (RT)	$\Delta = 55^{\circ} 30' 55.2"$ (LT)	$\Delta = 37^{\circ} 09' 42.4"$ (RT)
$D = 4^{\circ} 35' 01.2"$	$D = 9^{\circ} 32' 57.5"$	$D = 28^{\circ} 38' 52.4"$	$D = 3^{\circ} 03' 50.2"$
$L = 695.09'$	$L = 906.62'$	$L = 193.79'$	$L = 1,212.87'$
$T = 356.79'$	$T = 565.17'$	$T = 105.26'$	$T = 628.63'$
$R = 1,250.00'$	$R = 600.00'$	$R = 200.00'$	$R = 1,870.00'$
$e = 8\%$	$e = 8\%$	$e = 2.5\%$	$e = \text{MATCH EXISTING}$
RUNOFF = 216'	RUNOFF = 184'	RUNOFF = 45'	
	DS = 45 MPH	DS = 25 MPH	



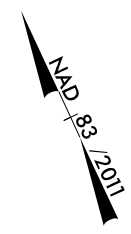
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

PAVEMENT REMOVAL

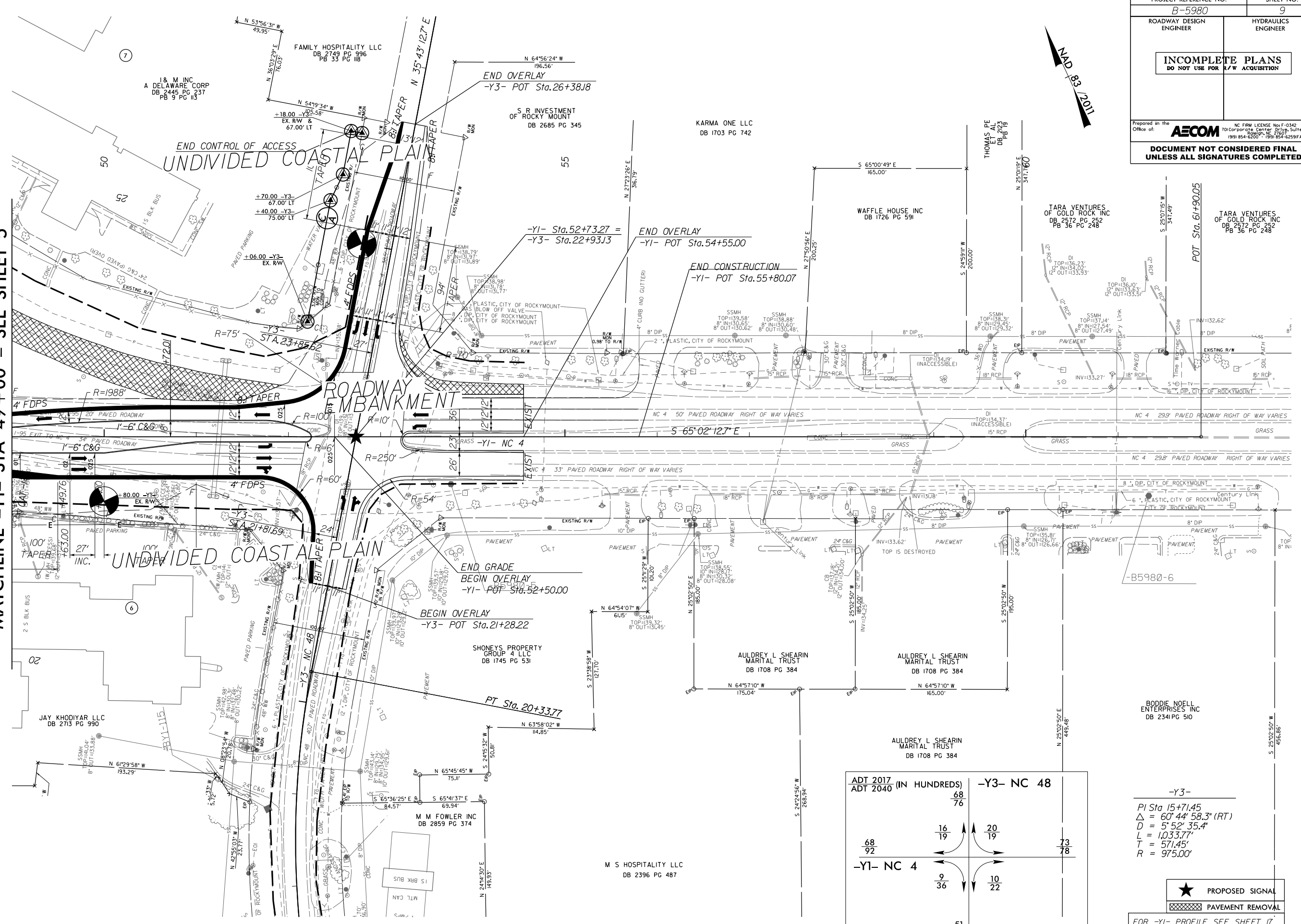
FOR -Y1- PROFILE SEE SHEET 16
 FOR -Y2- PROFILE SEE SHEET 18

5/14/99

PROJECT REFERENCE NO. B-5980	SHEET NO. 9
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
Prepared in the Office of: AECOM	
<small>NC FIRM LICENSE No: F-0342 701 Corporate Center Drive, Suite 415 1901 854 8500 / 1901 854 6259 (FAX)</small>	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -Y1- STA 49+00 - SEE SHEET 5



ADT 2017 ADT 2040 (IN HUNDREDS)		-Y3- NC 48	
		68	76
		16	20
		19	19
68	92	9	10
-Y1- NC 4		36	22
		51	96

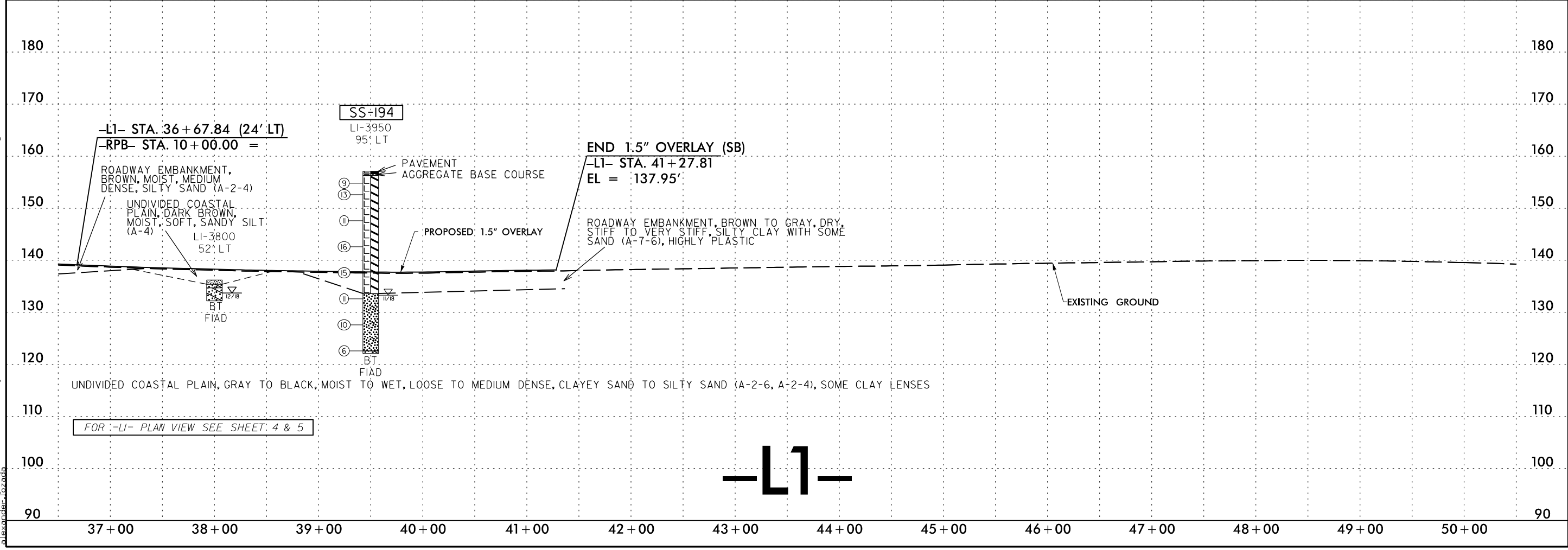
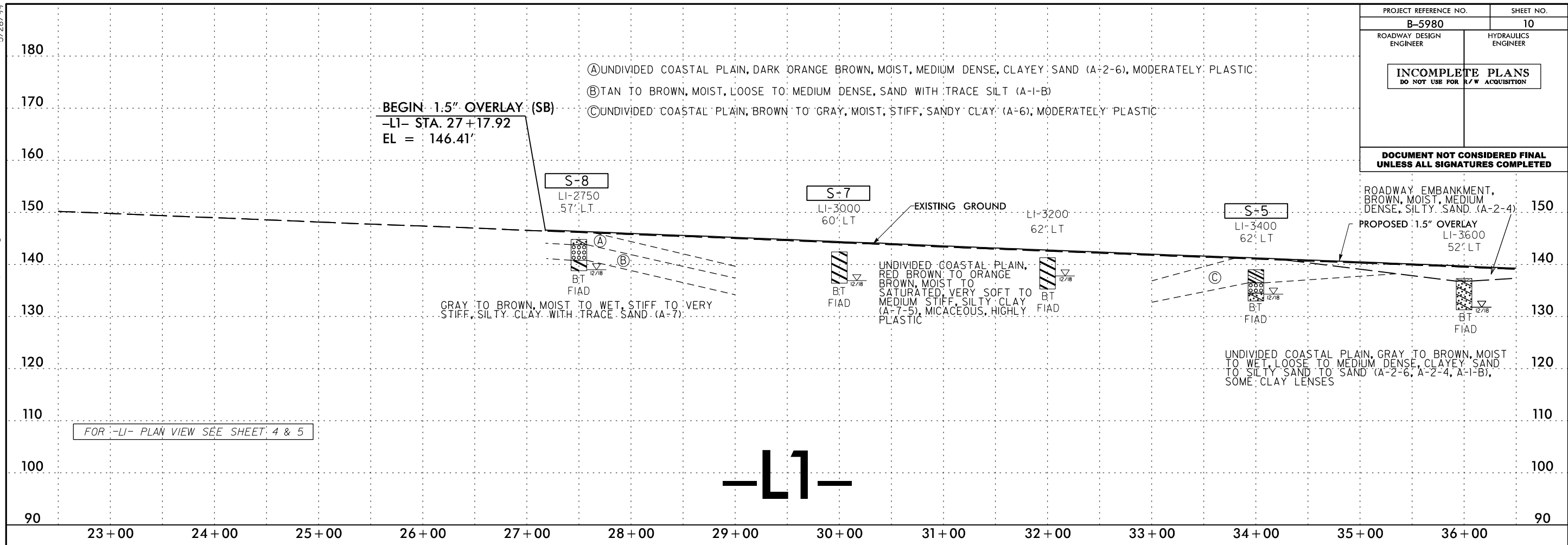
-Y3-
 PI Sta 15+71.45
 $\Delta = 60' 44'' 58.3'' (RT)$
 $D = 5' 52'' 35.4''$
 $L = 1033.77'$
 $T = 571.45'$
 $R = 975.00'$

★ PROPOSED SIGNAL
 ▨ PAVEMENT REMOVAL
 FOR -Y1- PROFILE SEE SHEET 17

alifax Rd Interchange \400_Technical\431_Geotechnical\B5980_GEO_RDWY\CADD_GEO\TECH\Plan\Prof_B5980_rdu_psh09.dgn

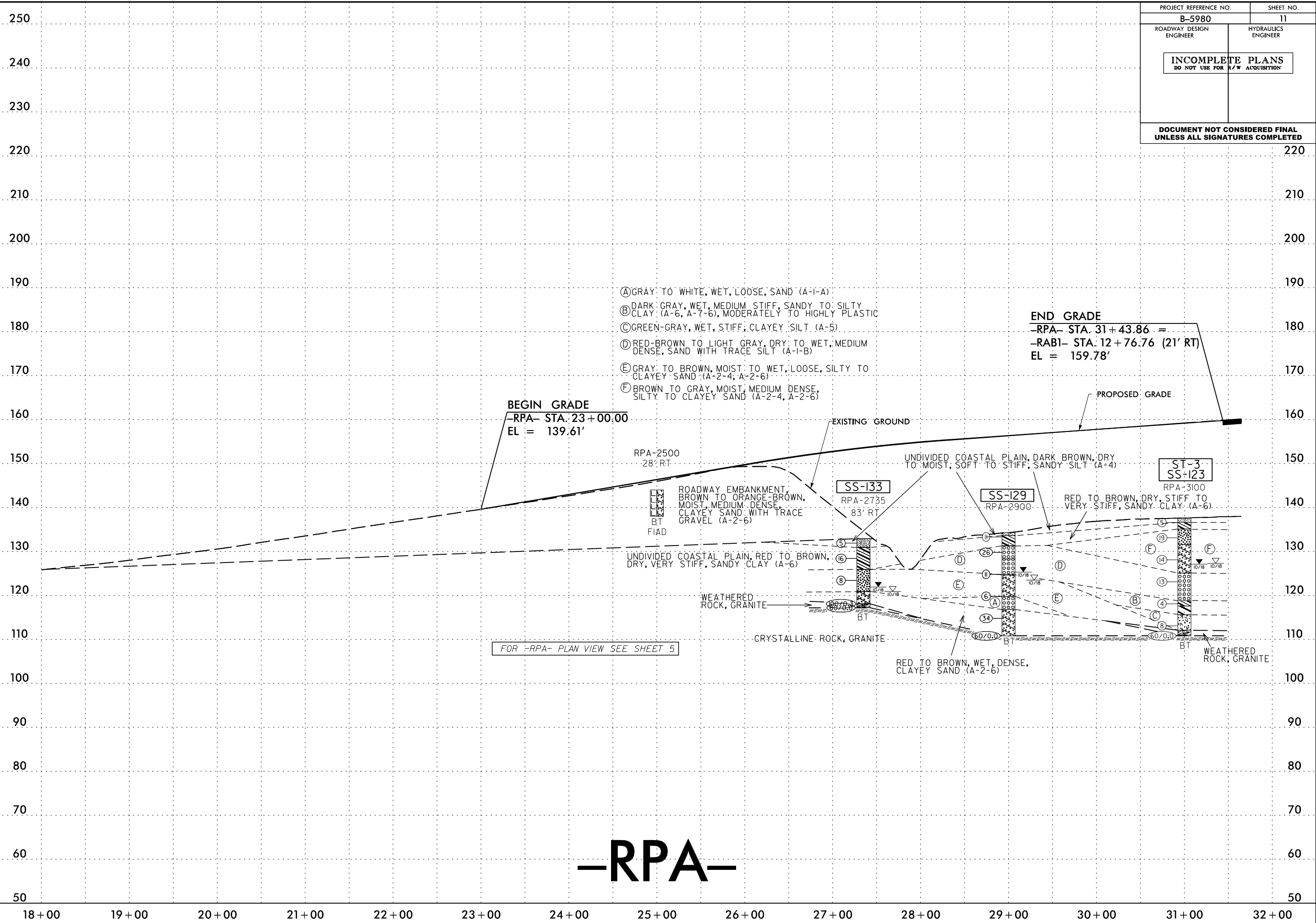
5/28/99
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 3/14/2018 10:55:17 AM alexander.lopez

PROJECT REFERENCE NO. B-5980	SHEET NO. 10
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



PROJECT REFERENCE NO.	SHEET NO.
B-5980	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

5/14/99
 3/14/2018
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 Alexander Lozada



- Ⓐ GRAY TO WHITE, WET, LOOSE, SAND (A-1-A)
- Ⓑ DARK GRAY, WET, MEDIUM STIFF, SANDY TO SILTY CLAY (A-6, A-7-6), MODERATELY TO HIGHLY PLASTIC
- Ⓒ GREEN-GRAY, WET, STIFF, CLAYEY SILT (A-5)
- Ⓓ RED-BROWN TO LIGHT GRAY, DRY TO WET, MEDIUM DENSE, SAND WITH TRACE SILT (A-1-B)
- Ⓔ GRAY TO BROWN, MOIST TO WET, LOOSE, SILTY TO CLAYEY SAND (A-2-4; A-2-6)
- Ⓕ BROWN TO GRAY, MOIST, MEDIUM DENSE, SILTY TO CLAYEY SAND (A-2-4, A-2-6)

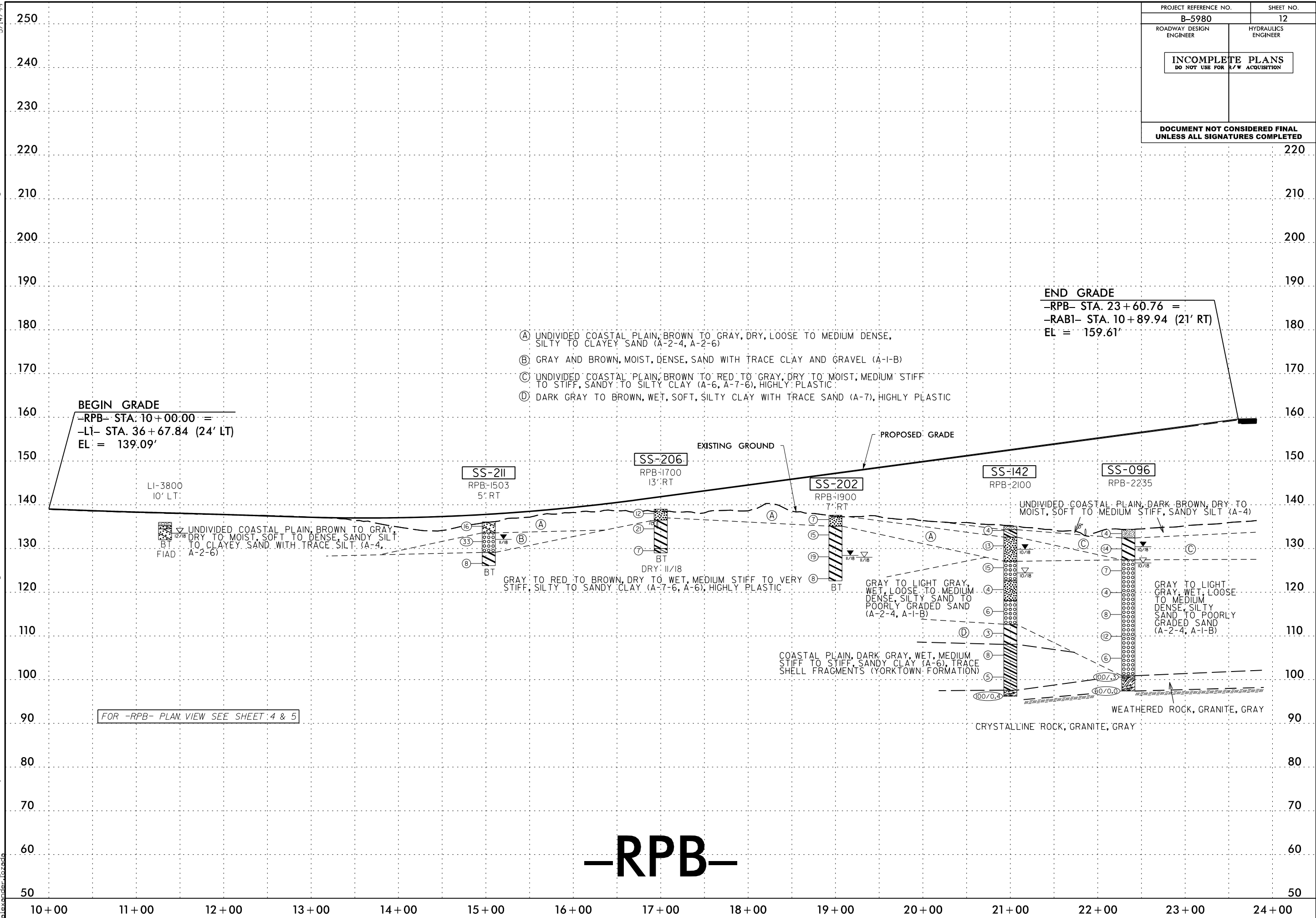
END GRADE
 -RPA- STA. 31+43.86 =
 -RABI- STA. 12+76.76 (21' RT)
 EL = 159.78'

BEGIN GRADE
 -RPA- STA. 23+00.00
 EL = 139.61'

FOR -RPA- PLAN VIEW SEE SHEET 5

-RPA-

PROJECT REFERENCE NO.	SHEET NO.
B-5980	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

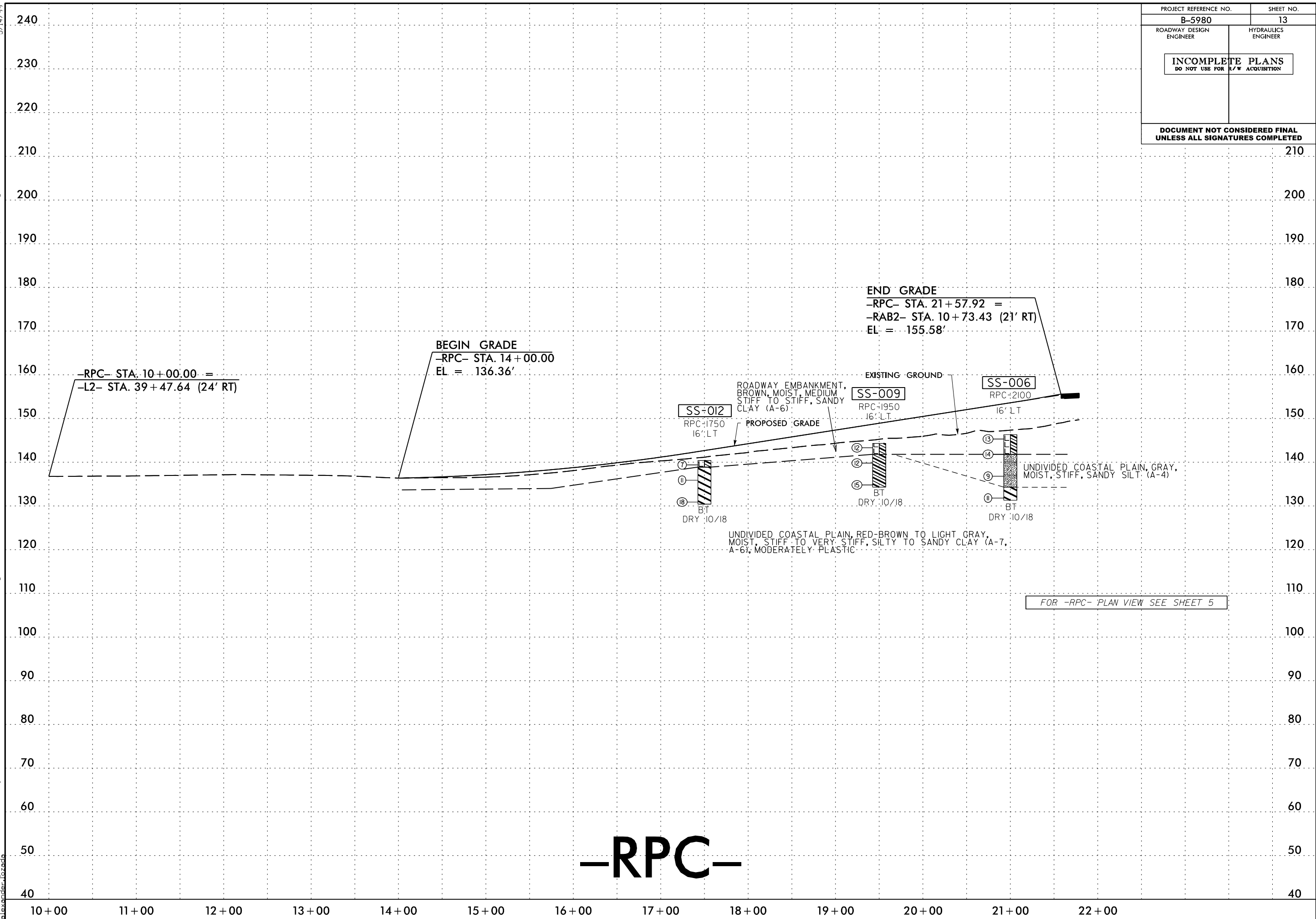


-RPB-

5/14/99
 3/14/2018
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5/14/99
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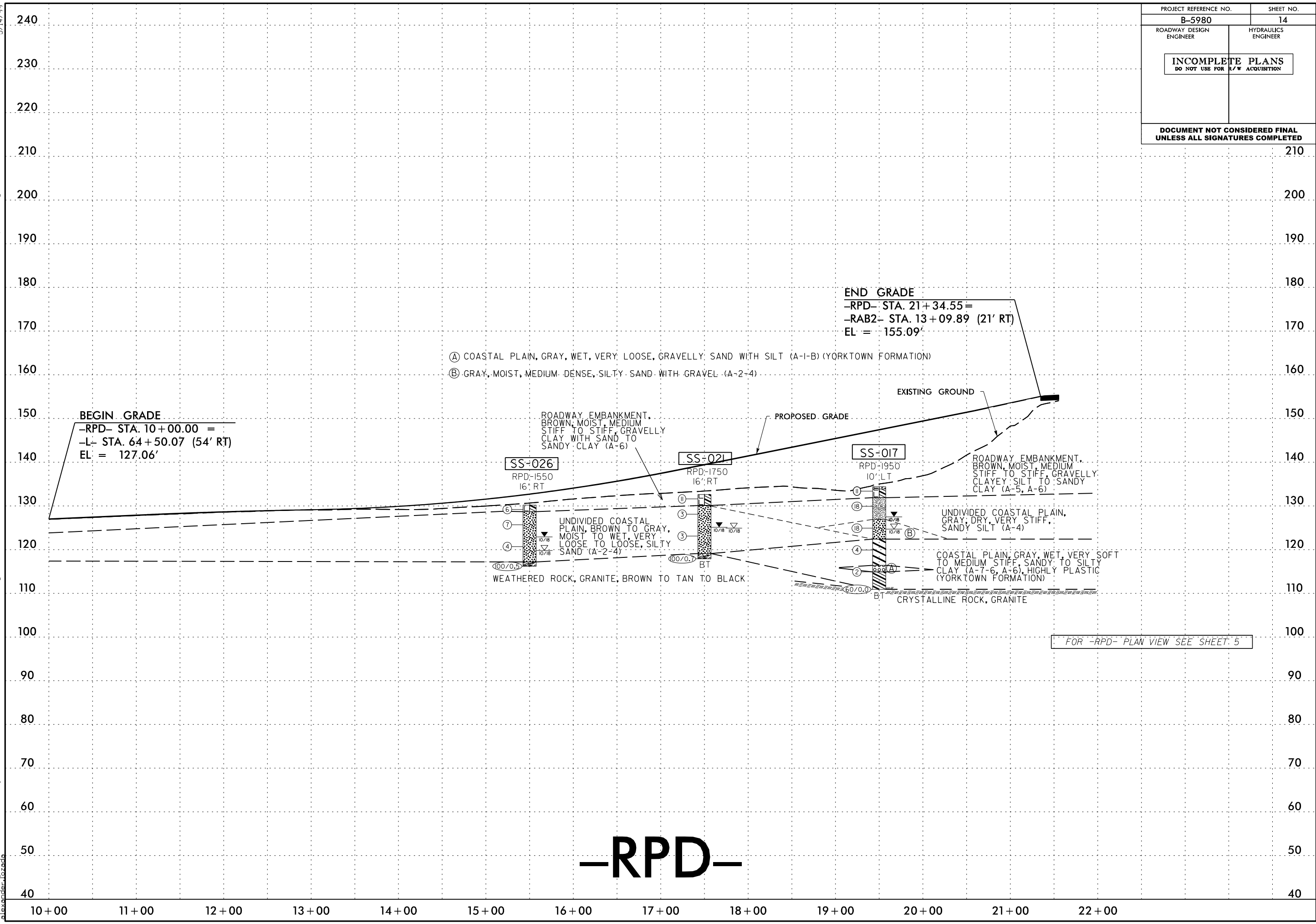
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B-5980	13
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



7/14/2018
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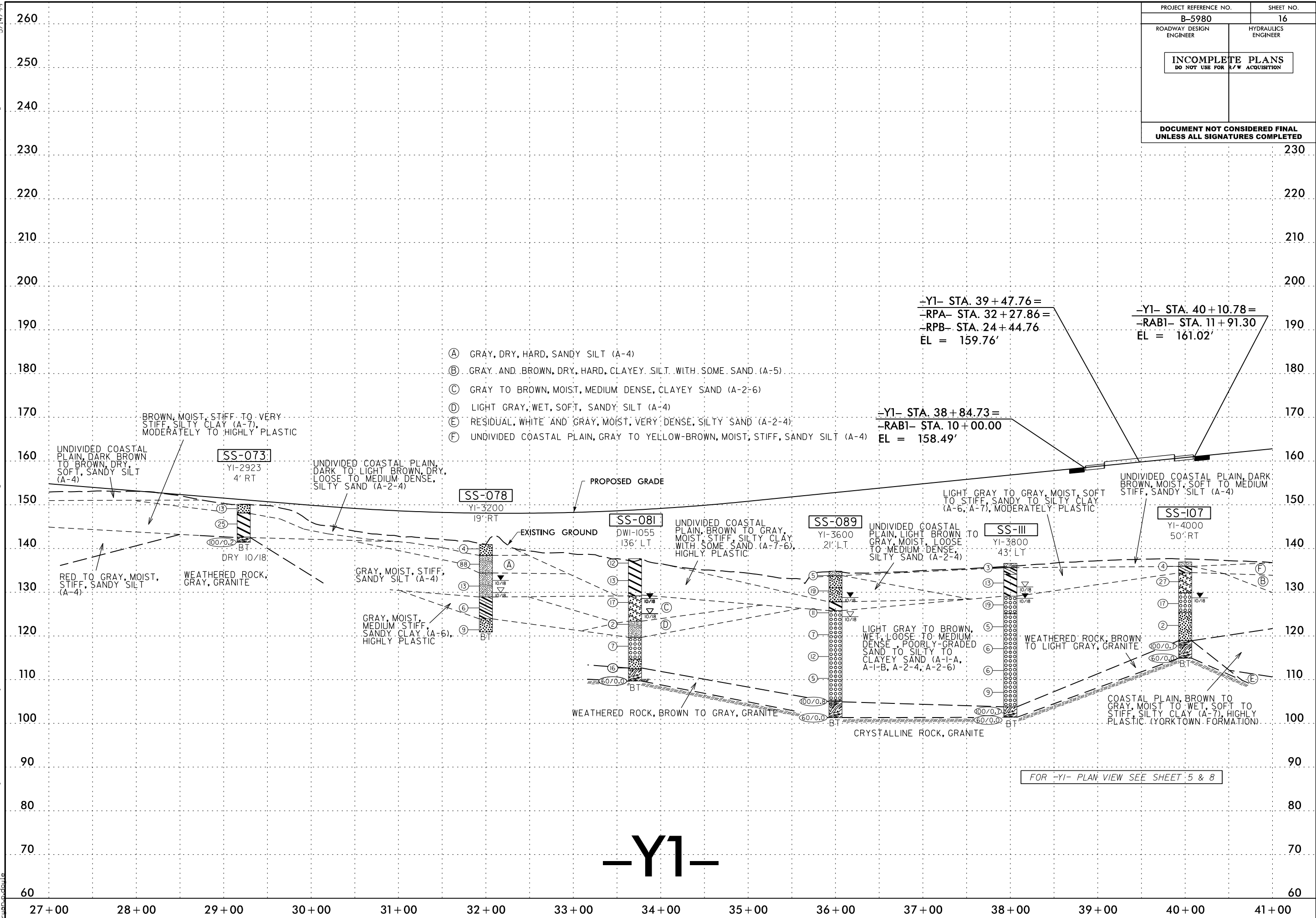
5/14/99
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PROJECT REFERENCE NO.	SHEET NO.
B-5980	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-RPD-

PROJECT REFERENCE NO.	SHEET NO.
B-5980	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

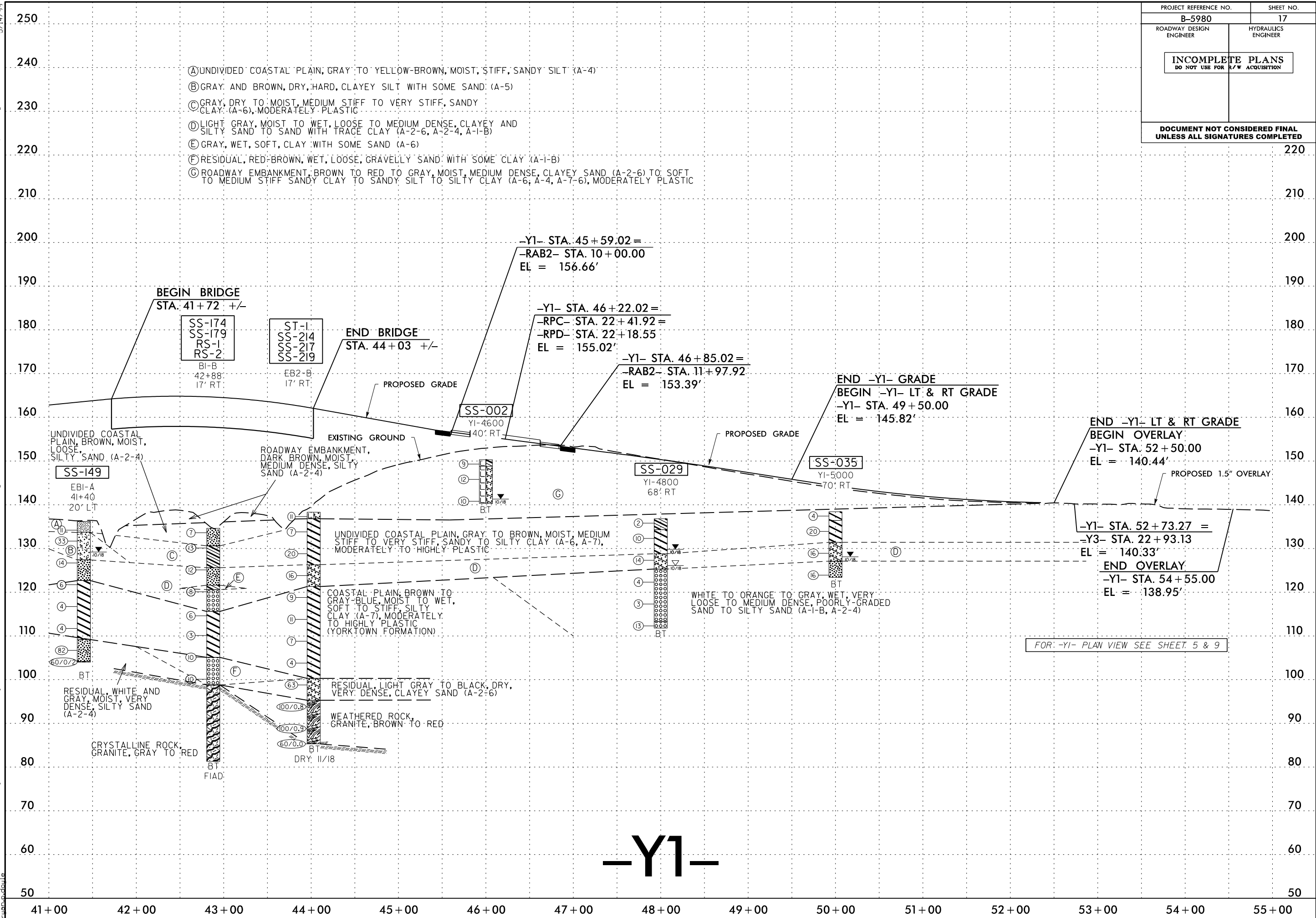


-Y1-

FOR -Y1- PLAN VIEW SEE SHEET 5 & 8

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 5/14/99

PROJECT REFERENCE NO.	SHEET NO.
B-5980	17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



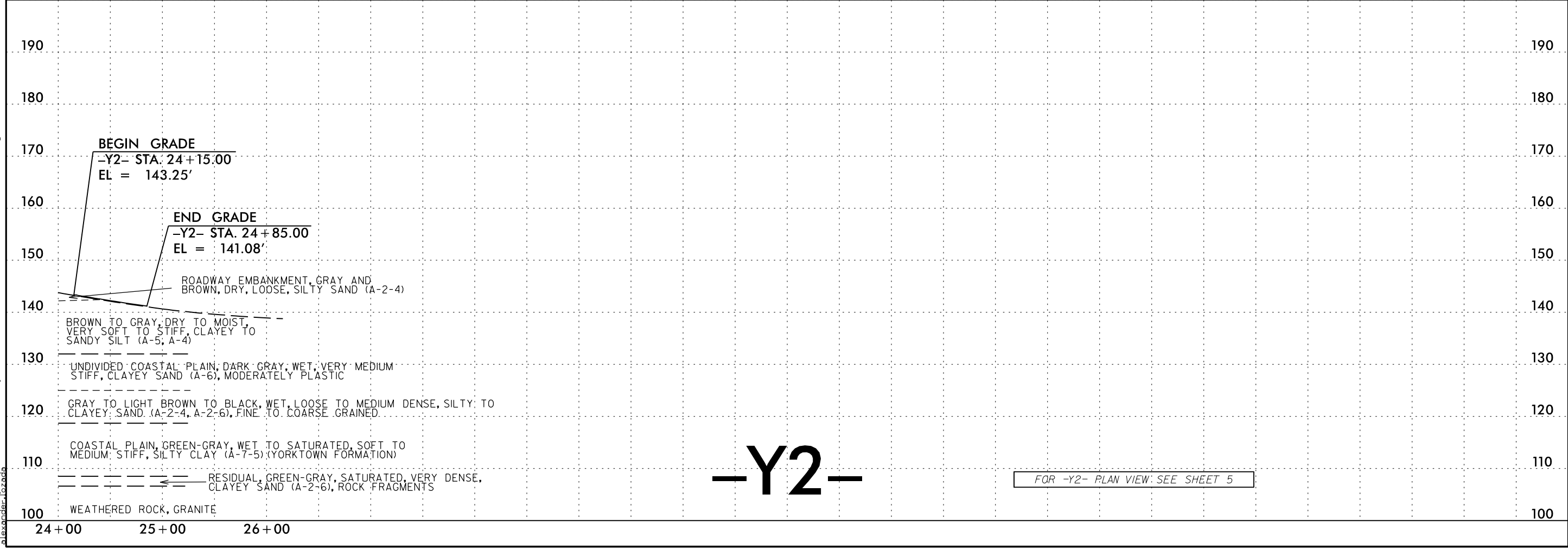
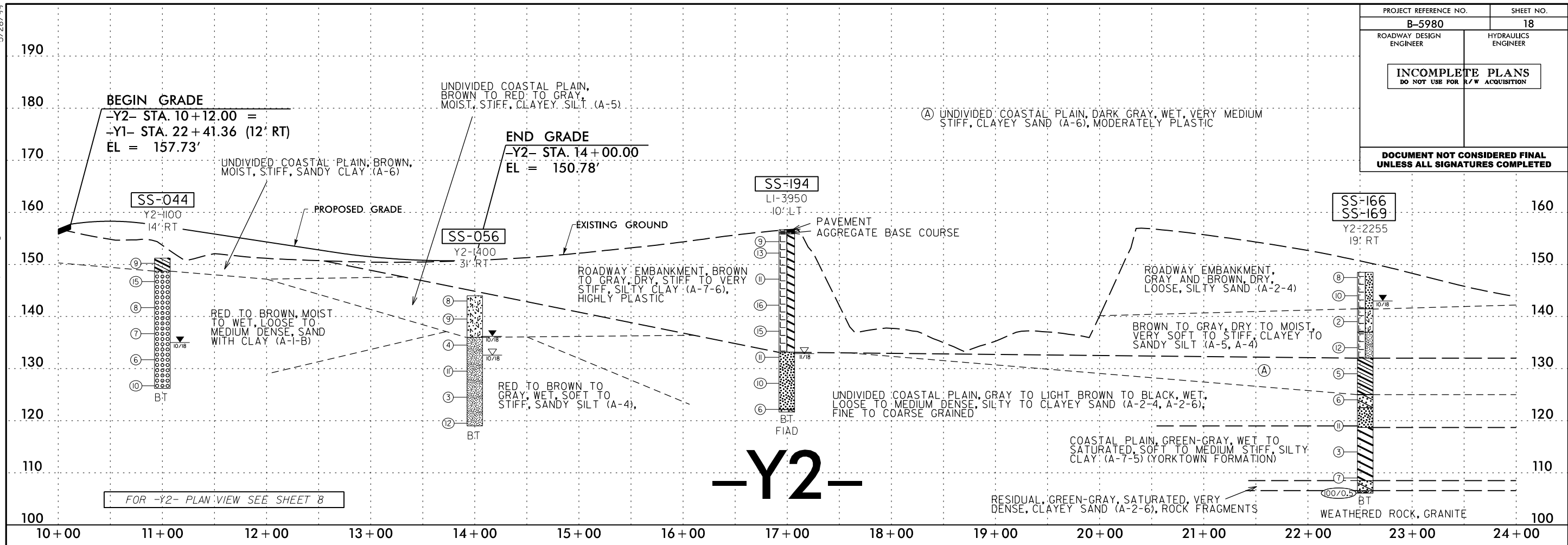
-Y1-

FOR: -Y1- PLAN VIEW SEE SHEET 5 & 9

5/14/99
 5/24/2009
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5/28/99
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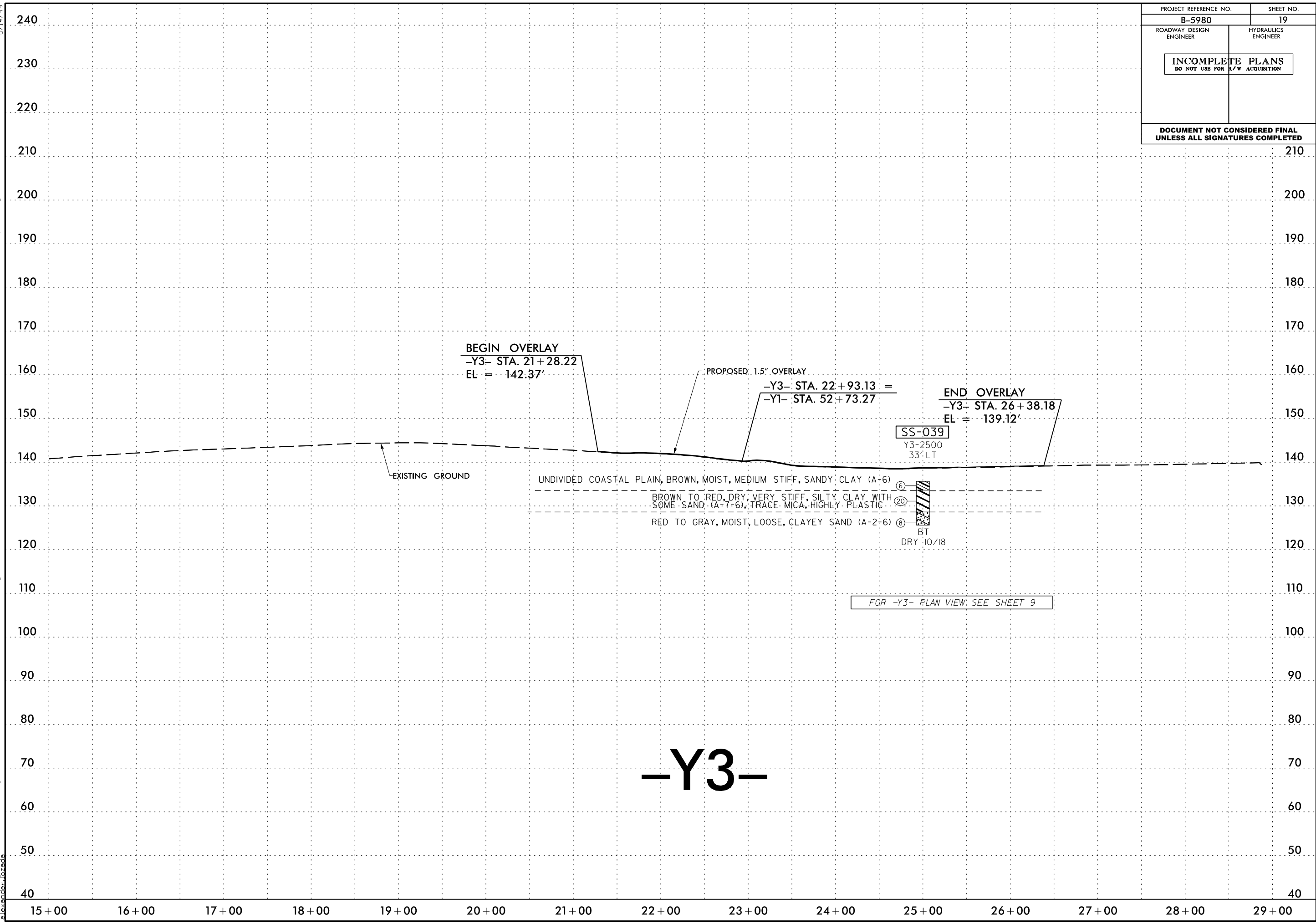
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



FOR -Y2- PLAN VIEW SEE SHEET 5

5/14/99
3/14/2018
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Alexander Lozada

PROJECT REFERENCE NO.	SHEET NO.
B-5980	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

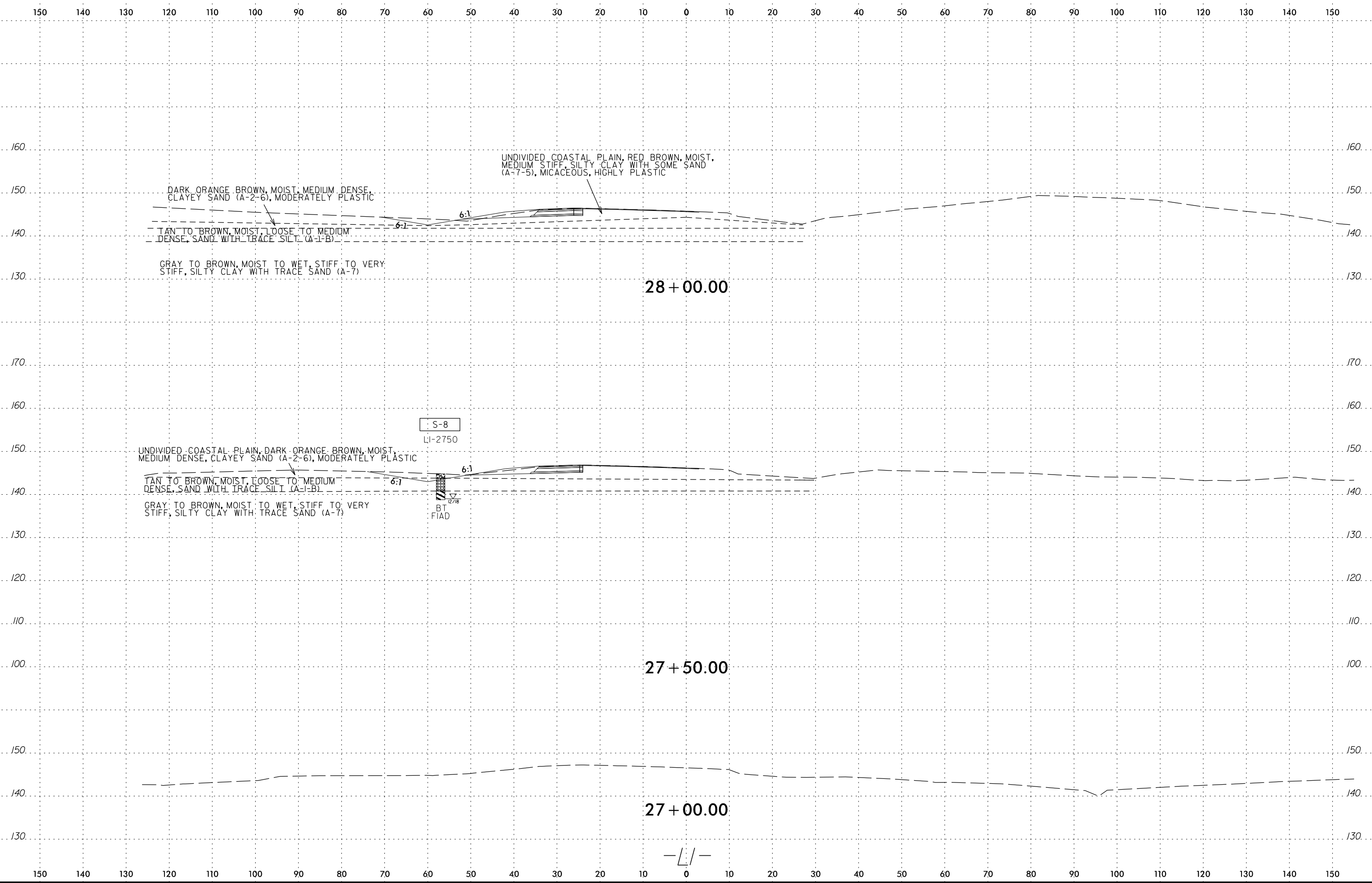


PROJECT REFERENCE NO.	SHEET NO.
B-5980	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-DW1-

5/14/99
 3/14/2018
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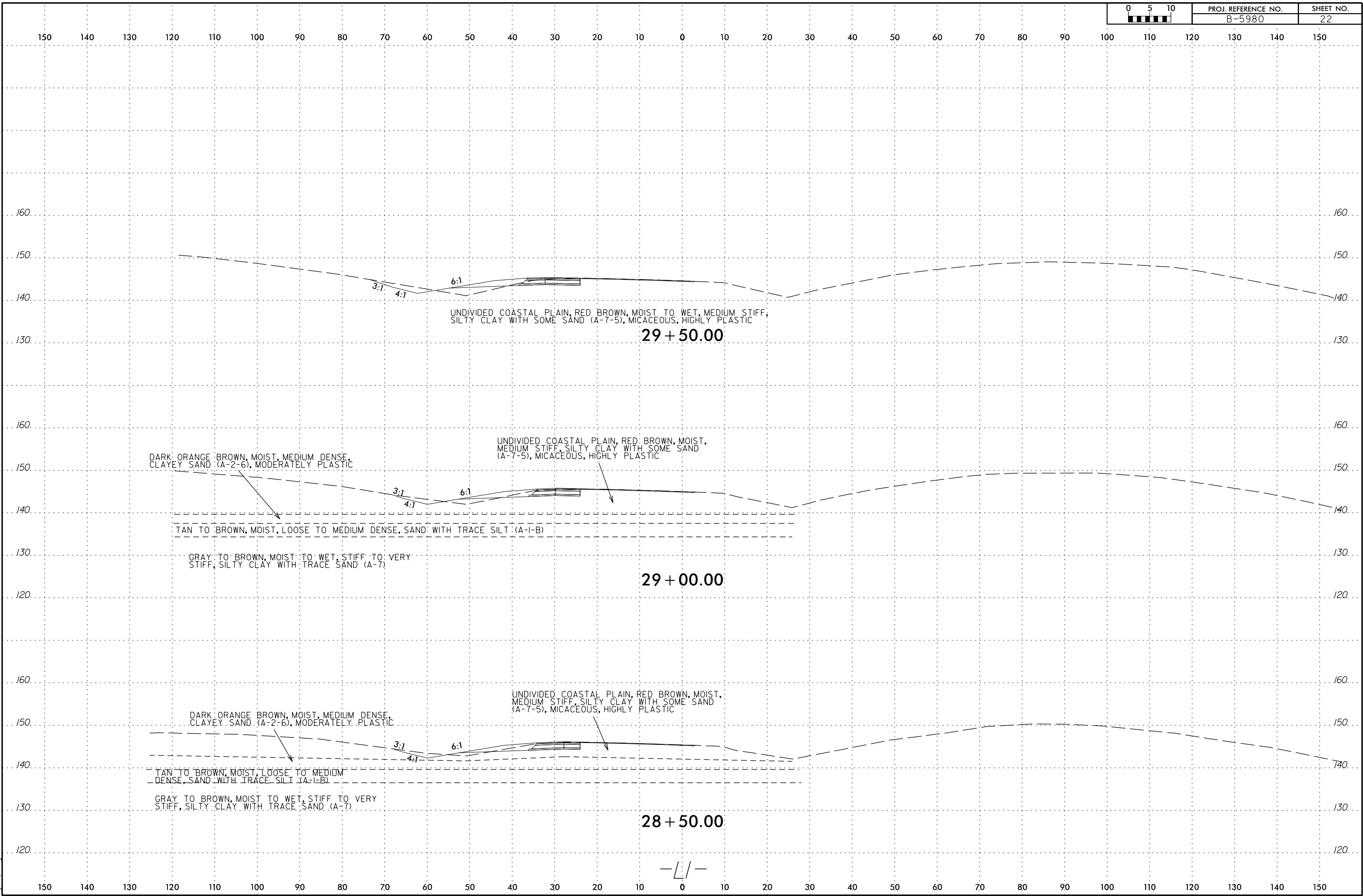


28 + 00.00

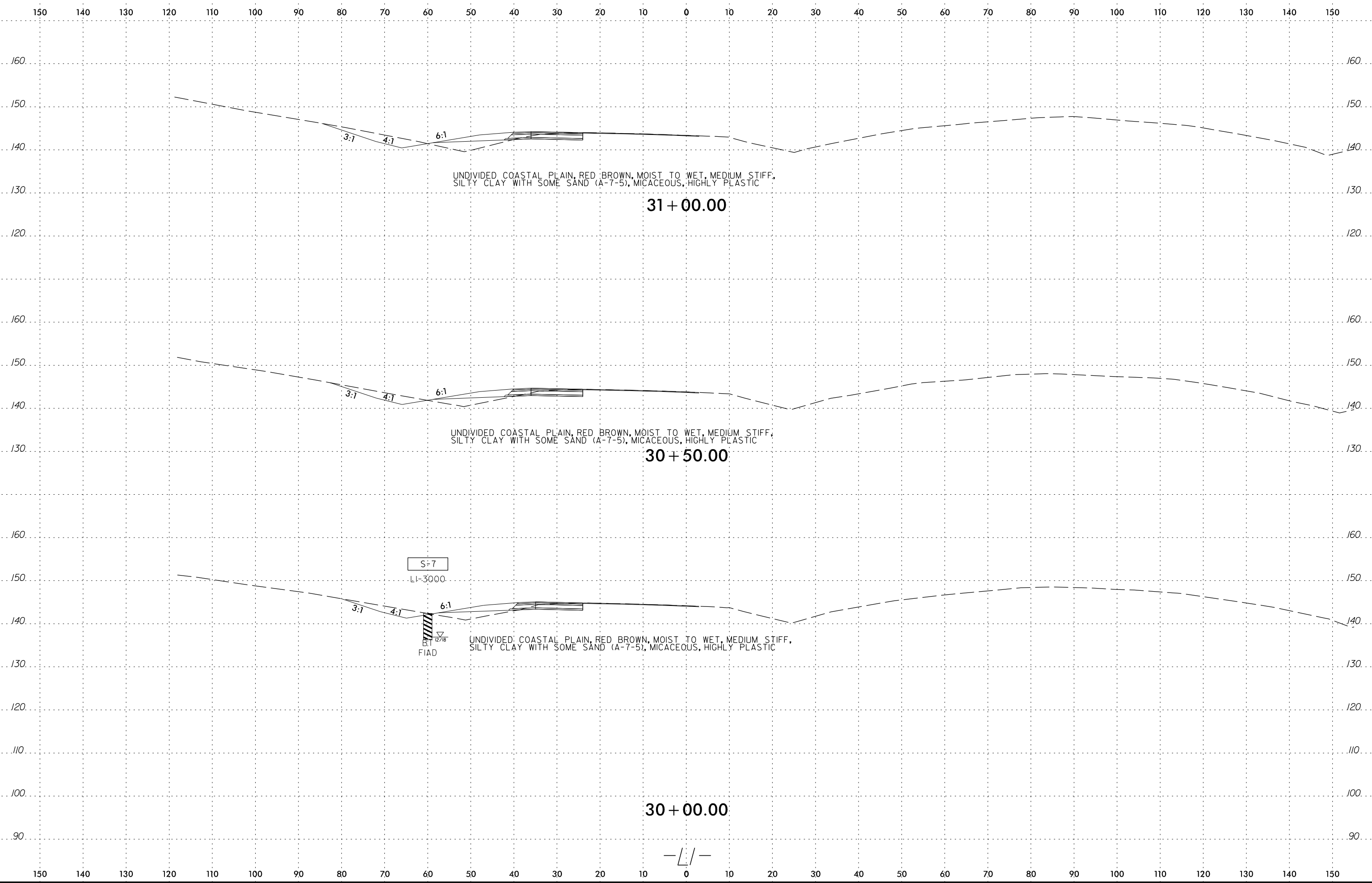
27 + 50.00

27 + 00.00

— / —



— / —



31 + 00.00

30 + 50.00

30 + 00.00

— / —

UNDIVIDED COASTAL PLAIN, RED BROWN, MOIST TO WET, MEDIUM STIFF,
SILTY CLAY WITH SOME SAND (A-7-5), MICACEOUS, HIGHLY PLASTIC

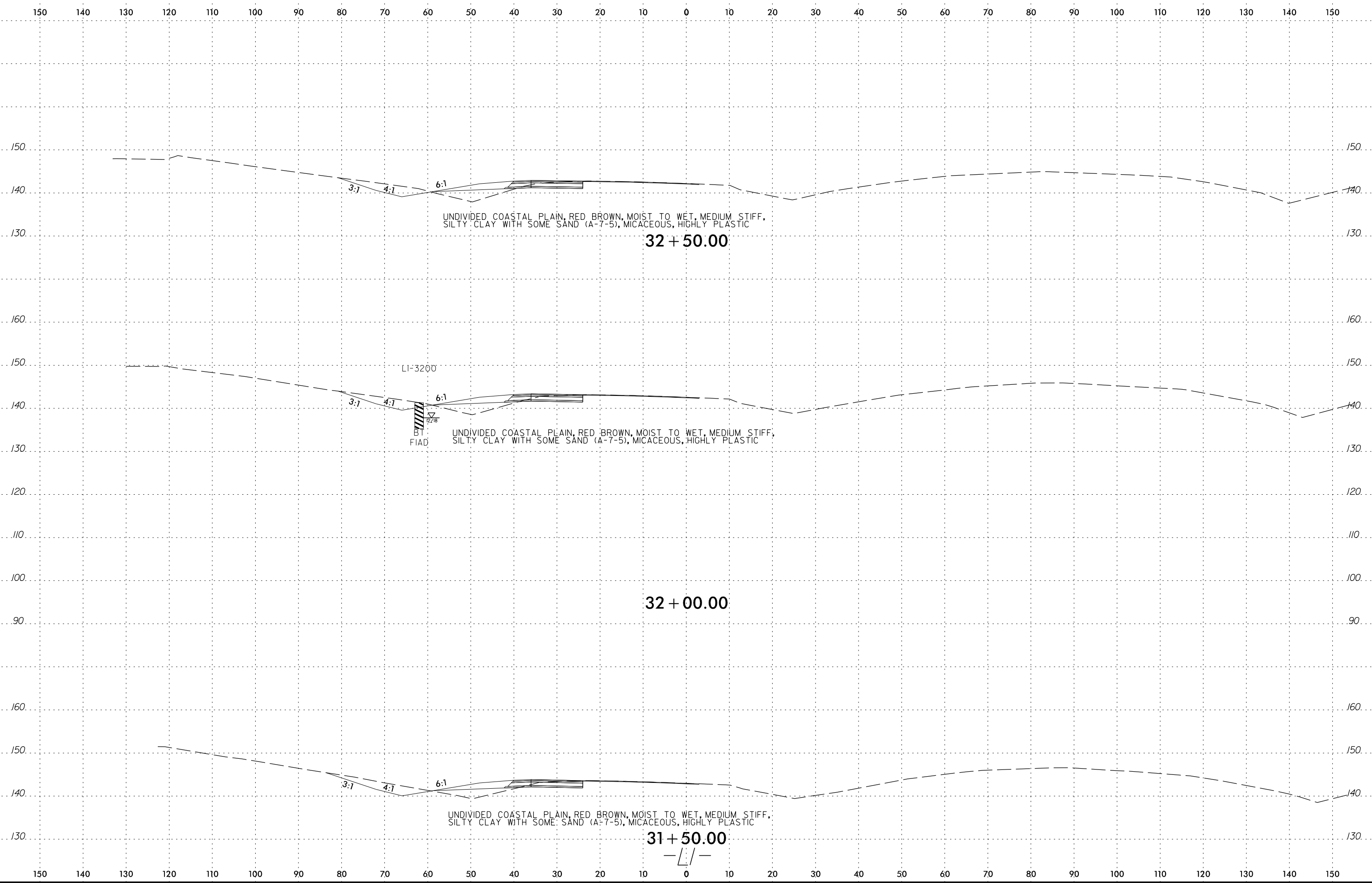
UNDIVIDED COASTAL PLAIN, RED BROWN, MOIST TO WET, MEDIUM STIFF,
SILTY CLAY WITH SOME SAND (A-7-5), MICACEOUS, HIGHLY PLASTIC

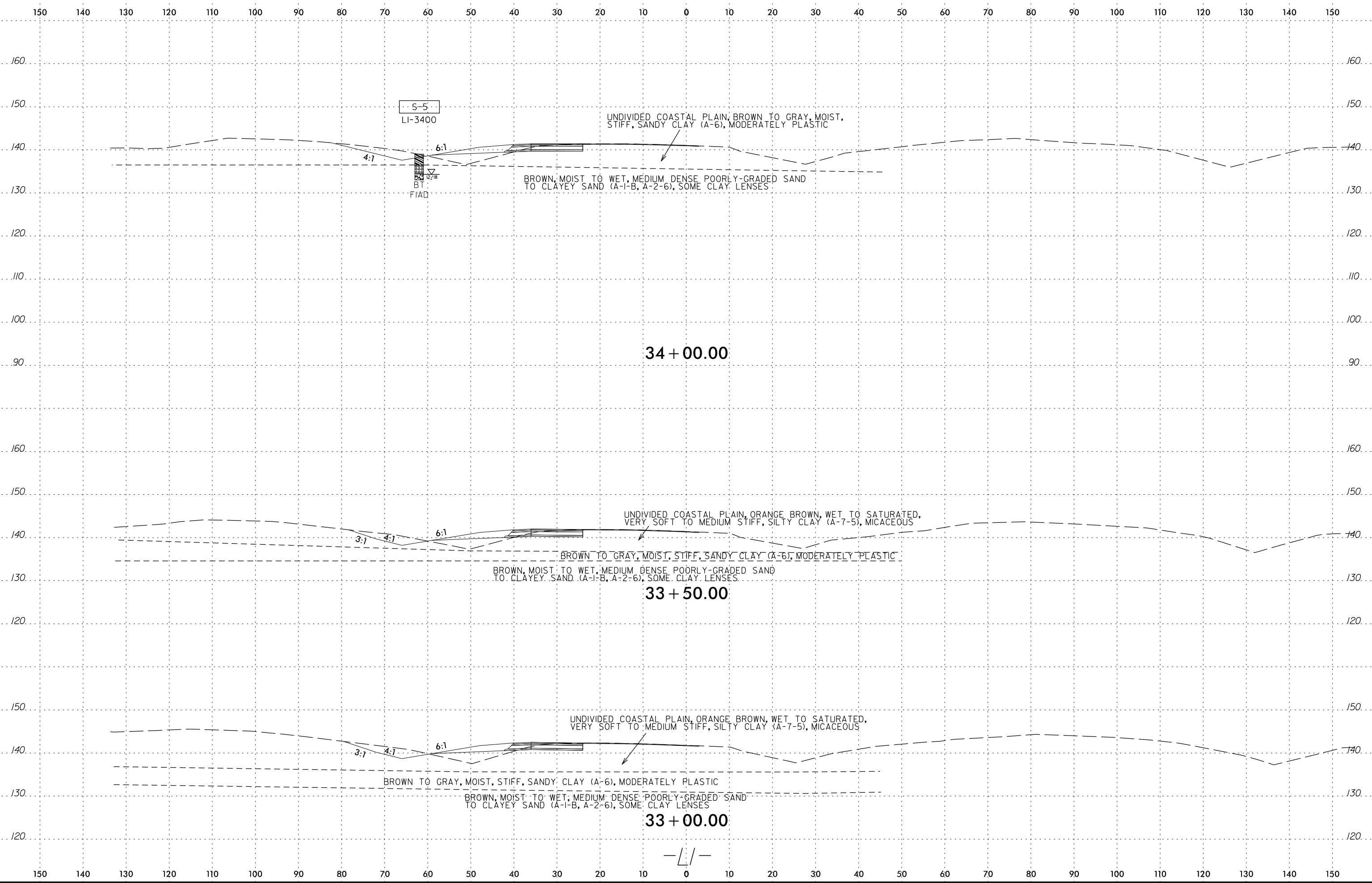
UNDIVIDED COASTAL PLAIN, RED BROWN, MOIST TO WET, MEDIUM STIFF,
SILTY CLAY WITH SOME SAND (A-7-5), MICACEOUS, HIGHLY PLASTIC

S-7

LI-3000

BT 12/16
FIAD



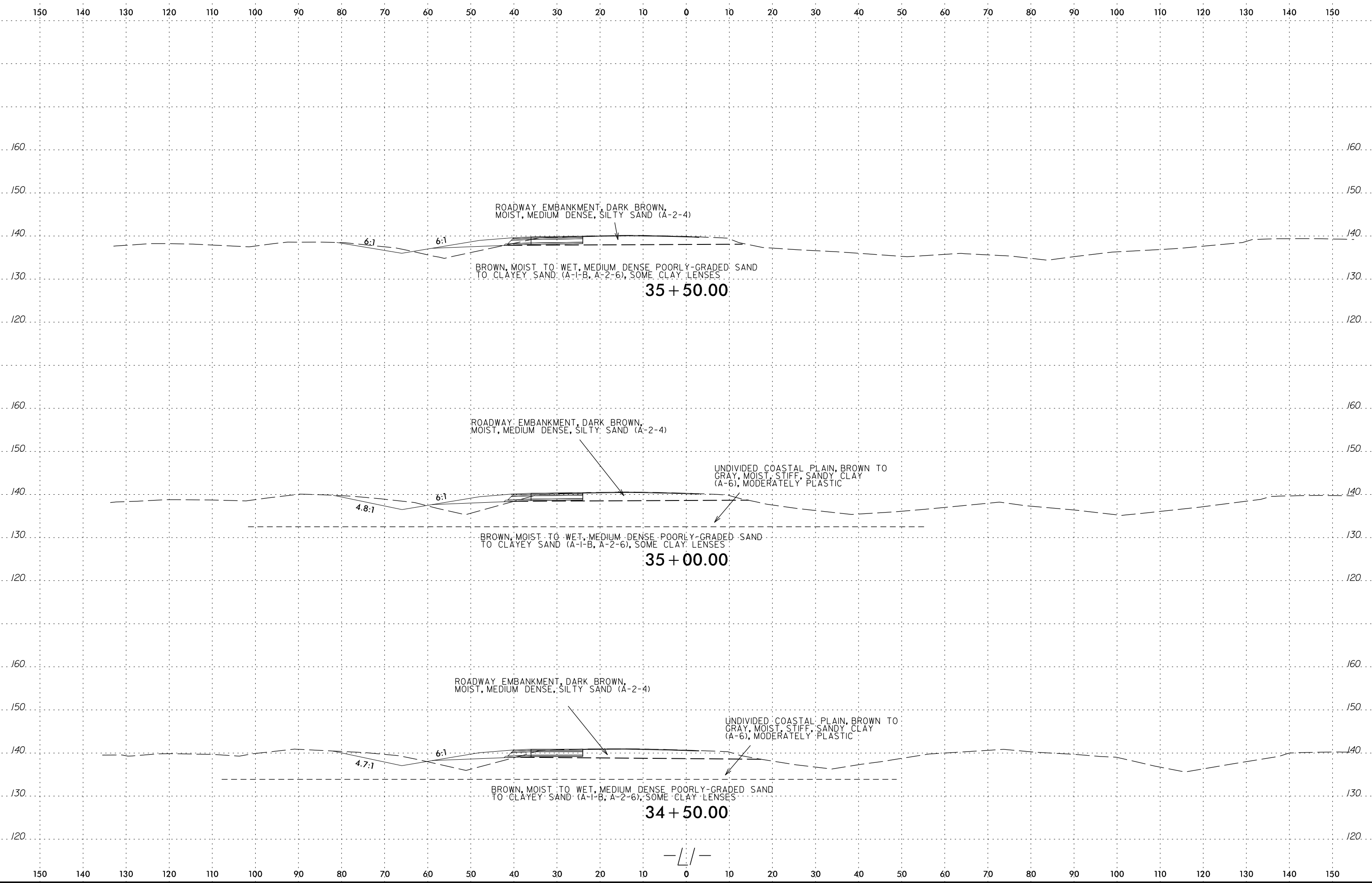


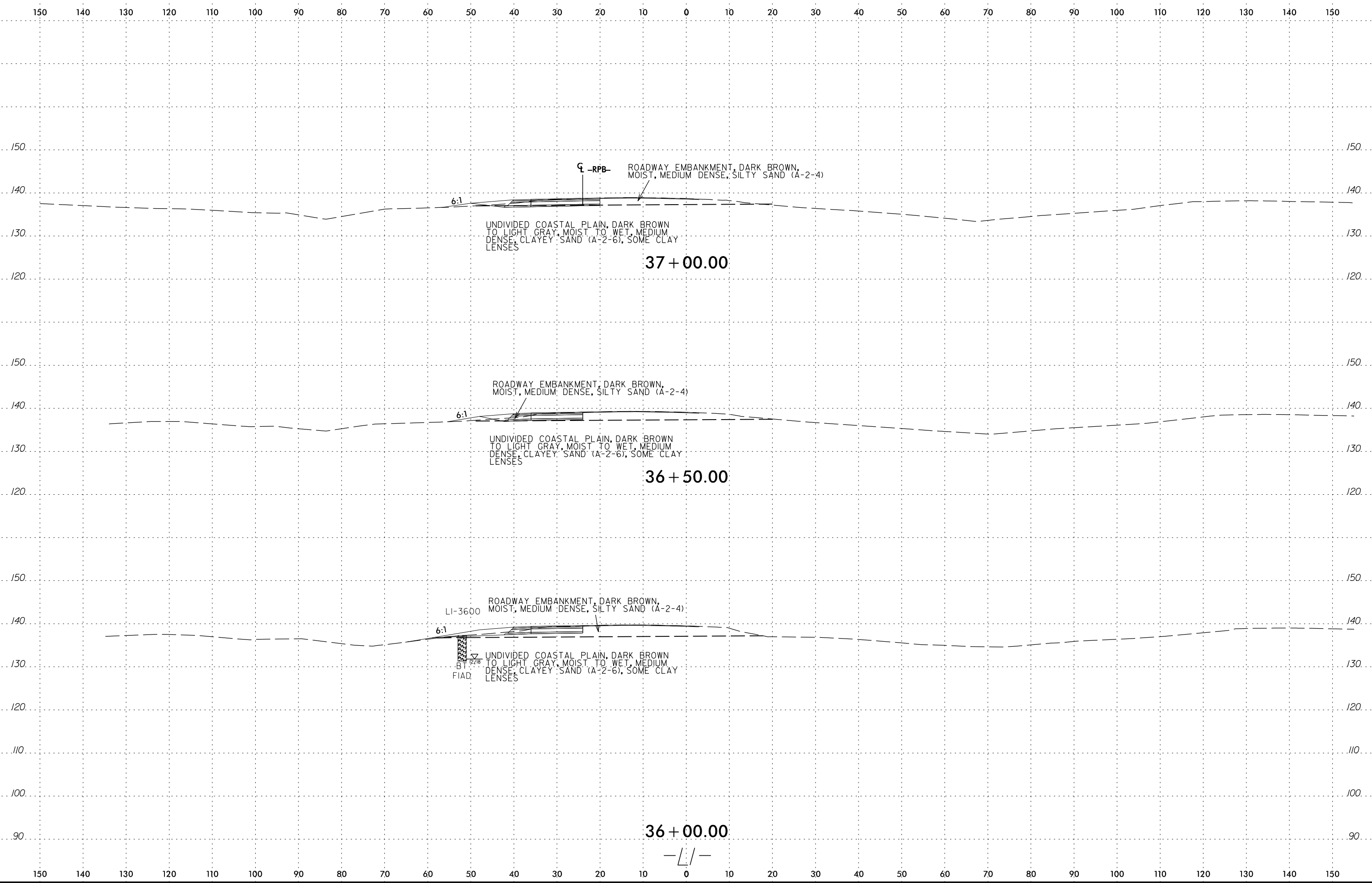
34 + 00.00

33 + 50.00

33 + 00.00

— / —





ROADWAY EMBANKMENT, DARK BROWN,
MOIST, MEDIUM DENSE, SILTY SAND (A-2-4)

UNDIVIDED COASTAL PLAIN, DARK BROWN
TO LIGHT GRAY, MOIST TO WET, MEDIUM
DENSE, CLAYEY SAND (A-2-6), SOME CLAY
LENSES

37 + 00.00

ROADWAY EMBANKMENT, DARK BROWN,
MOIST, MEDIUM DENSE, SILTY SAND (A-2-4)

UNDIVIDED COASTAL PLAIN, DARK BROWN
TO LIGHT GRAY, MOIST TO WET, MEDIUM
DENSE, CLAYEY SAND (A-2-6), SOME CLAY
LENSES

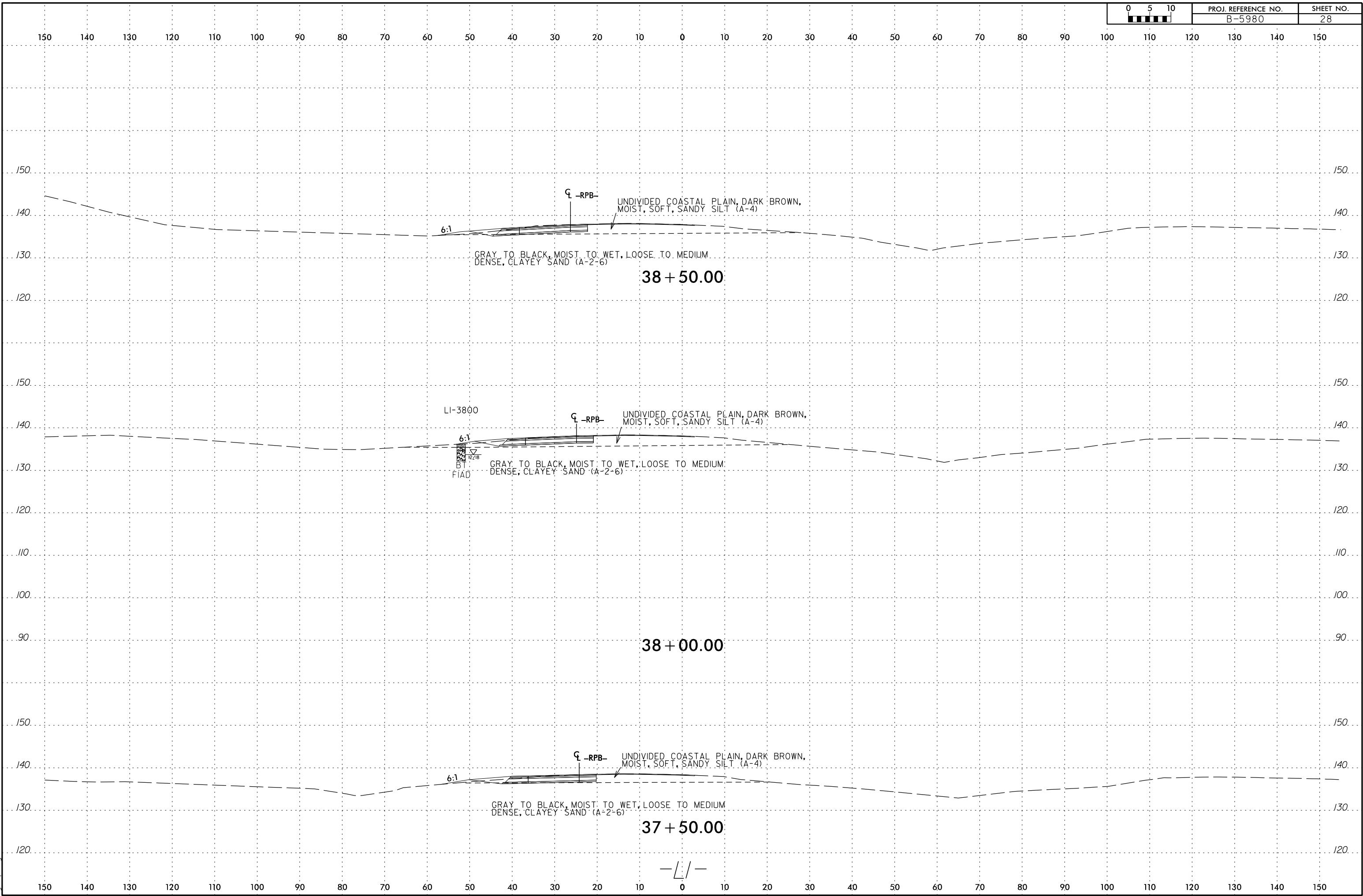
36 + 50.00

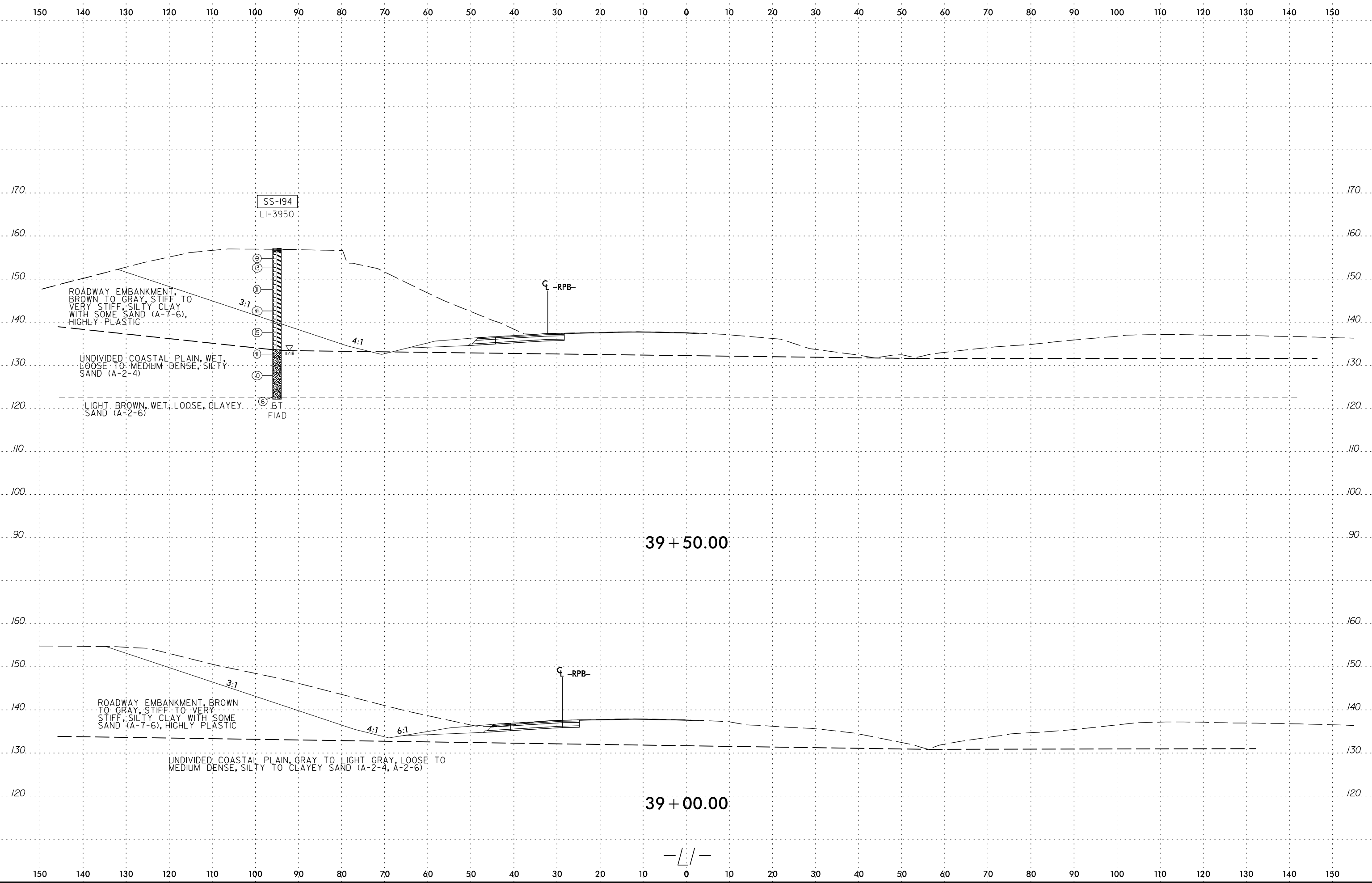
ROADWAY EMBANKMENT, DARK BROWN,
MOIST, MEDIUM DENSE, SILTY SAND (A-2-4)

UNDIVIDED COASTAL PLAIN, DARK BROWN
TO LIGHT GRAY, MOIST TO WET, MEDIUM
DENSE, CLAYEY SAND (A-2-6), SOME CLAY
LENSES

36 + 00.00

— / —

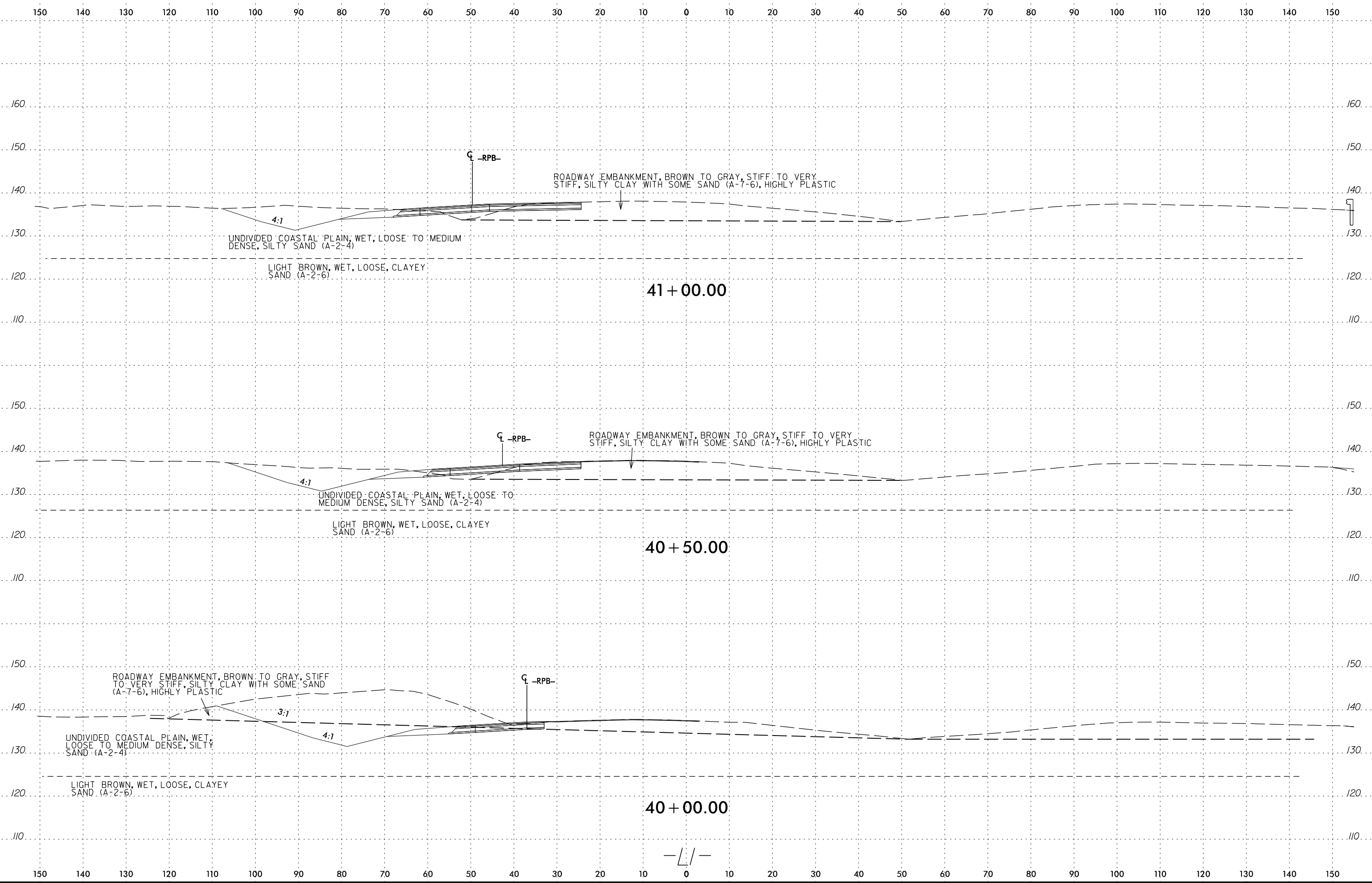




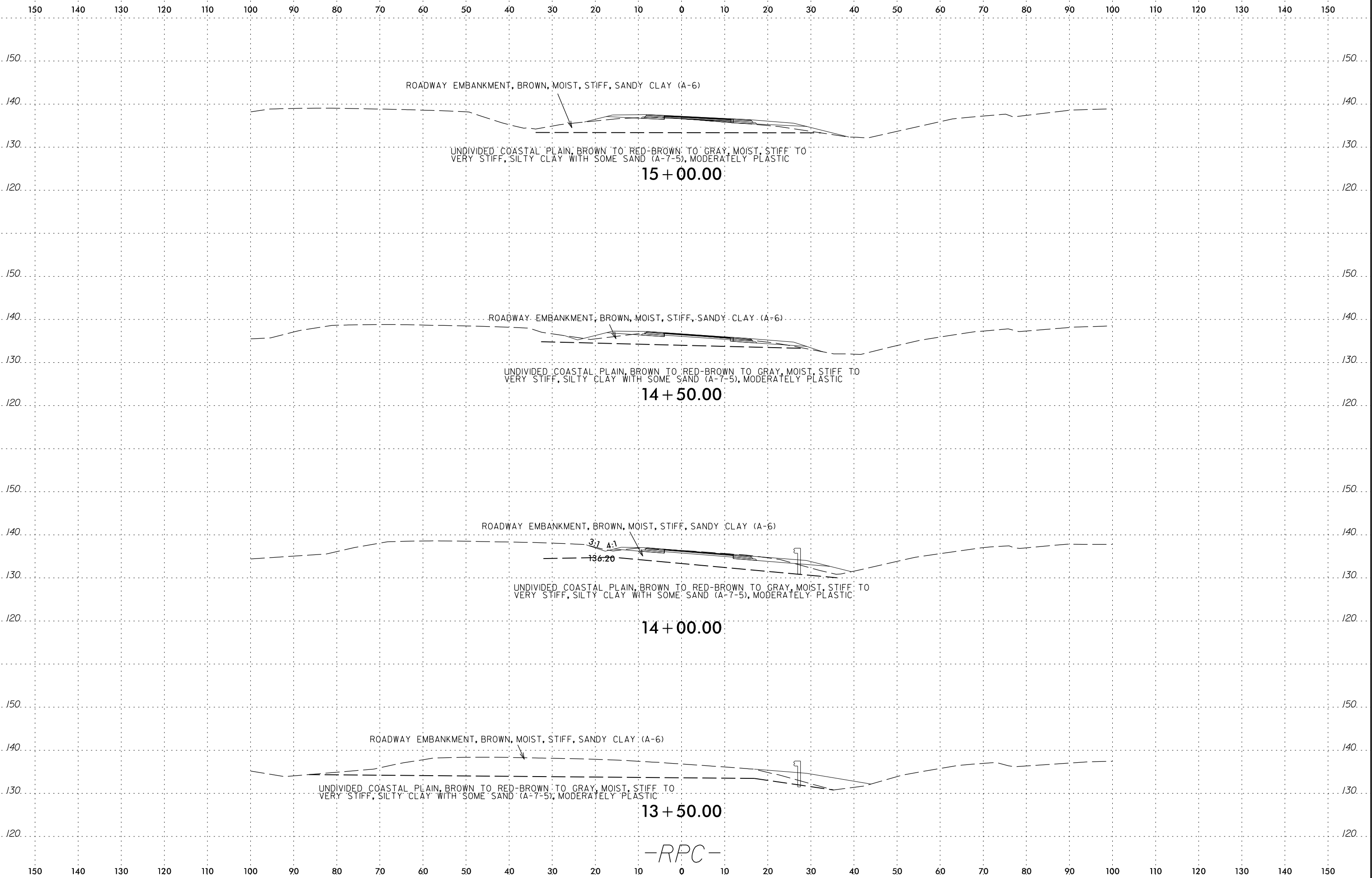
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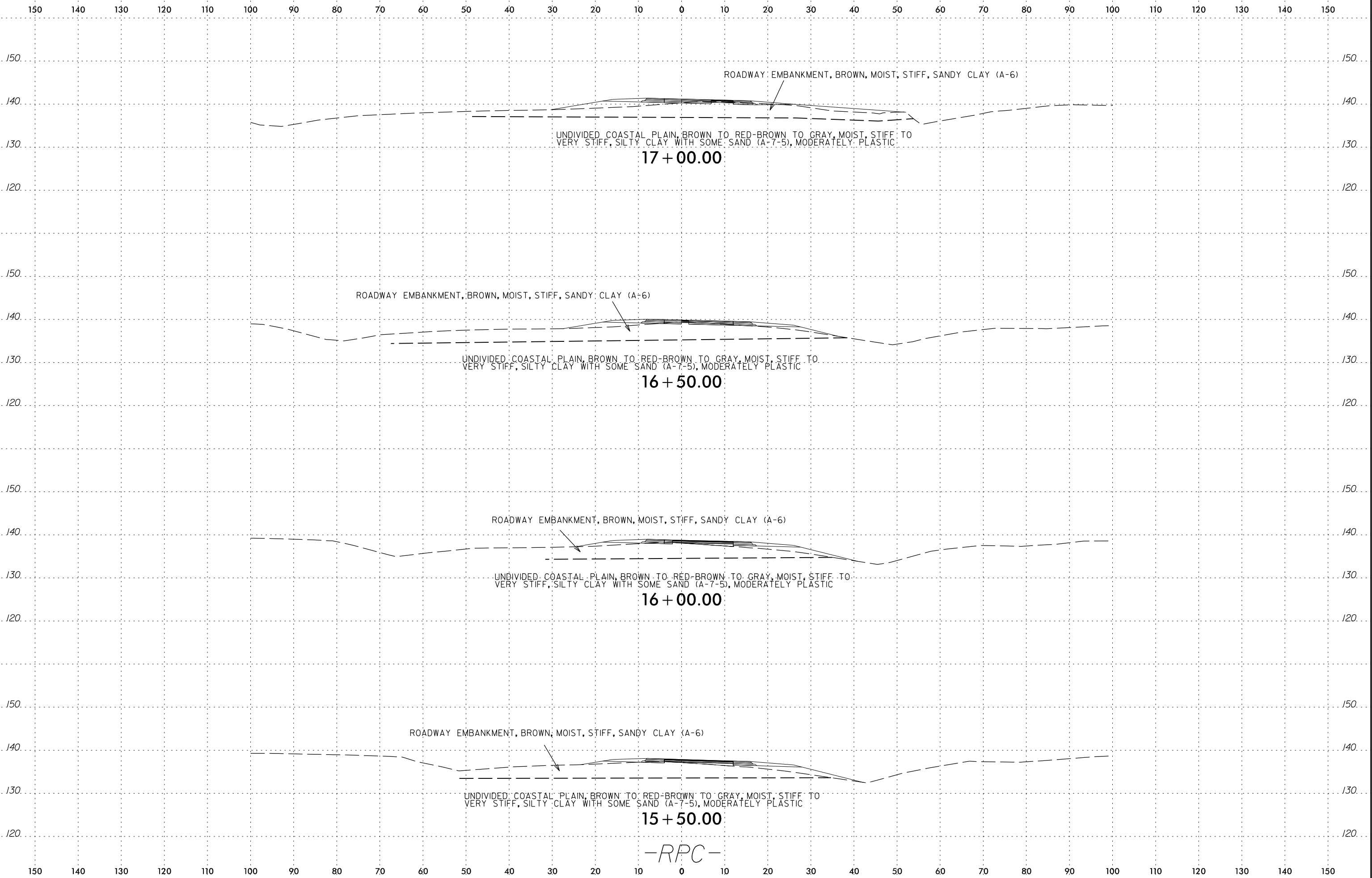
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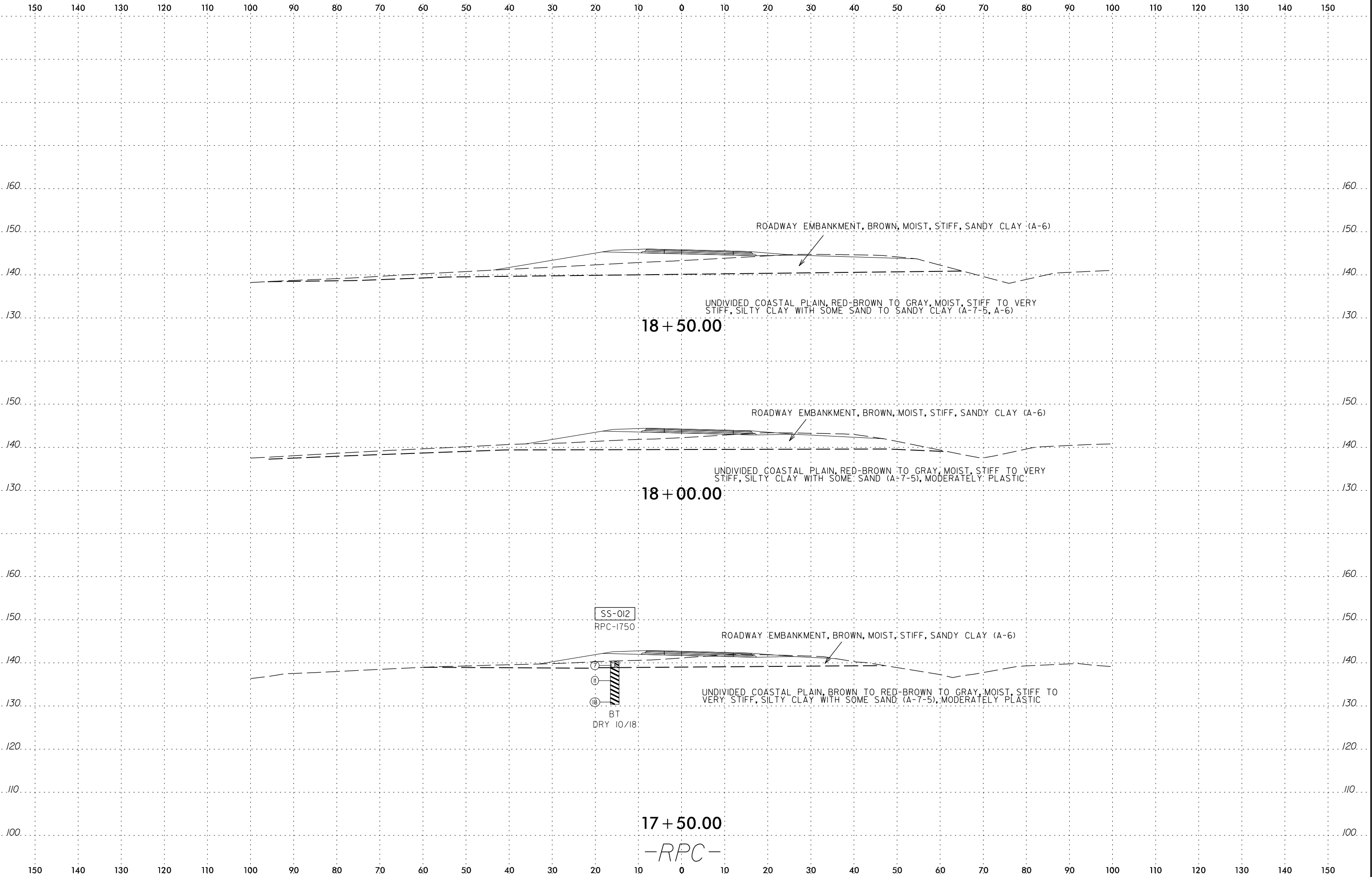


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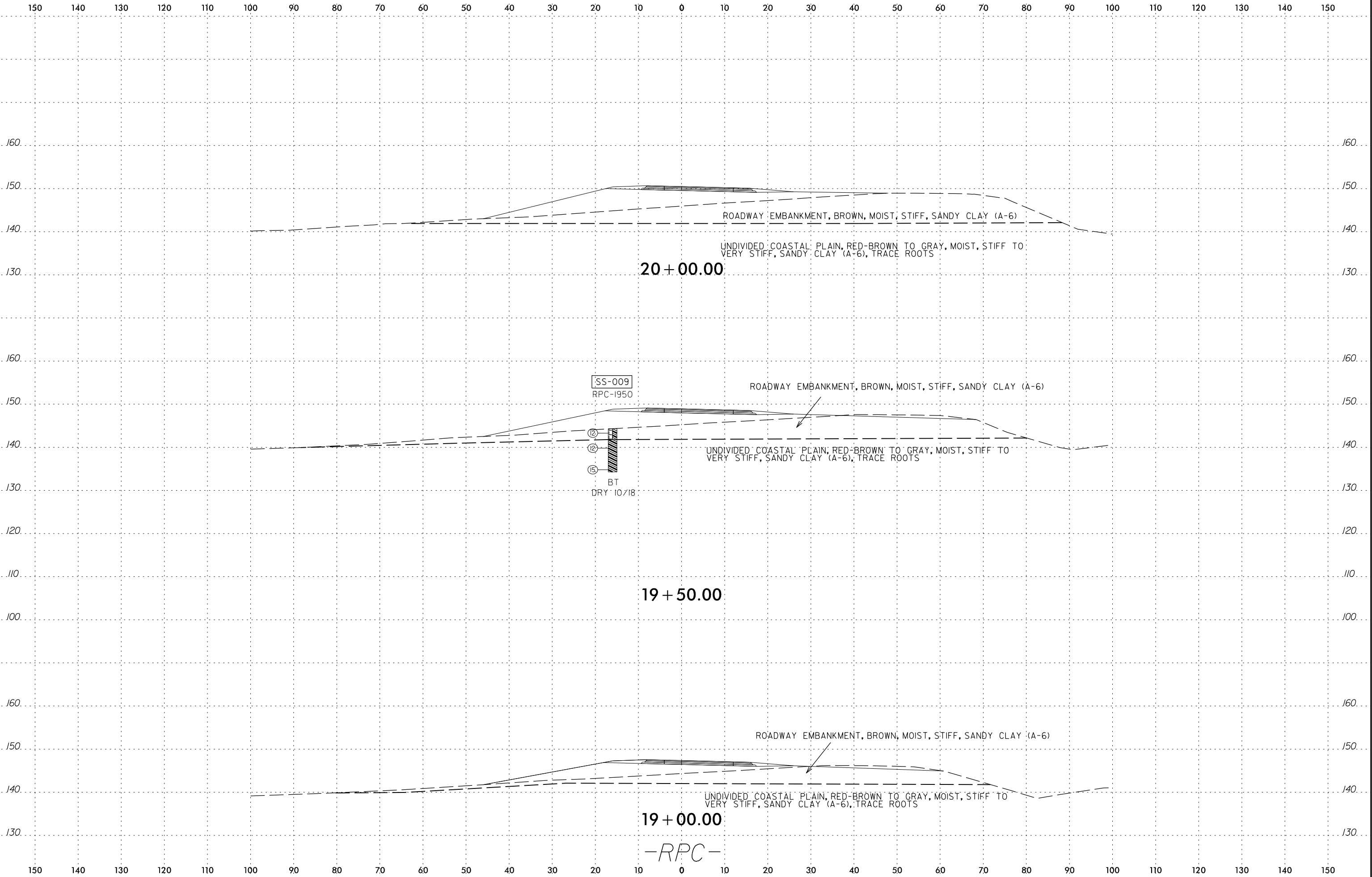




5/24/2016
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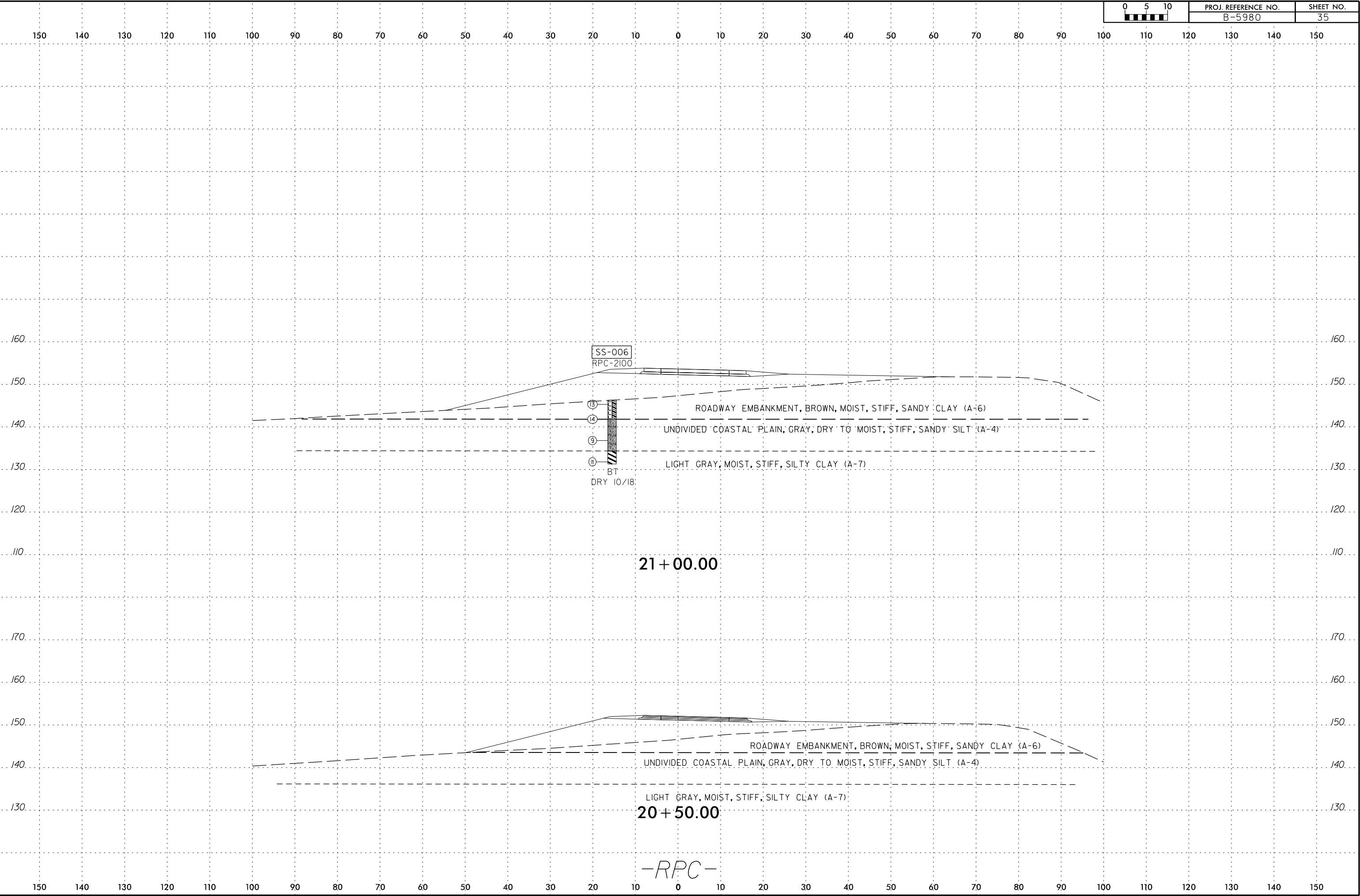
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5/24/2016
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 ryan.p.doble

-RPC-

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SS-006
RPC-2100

15
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12
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DRY 10/18

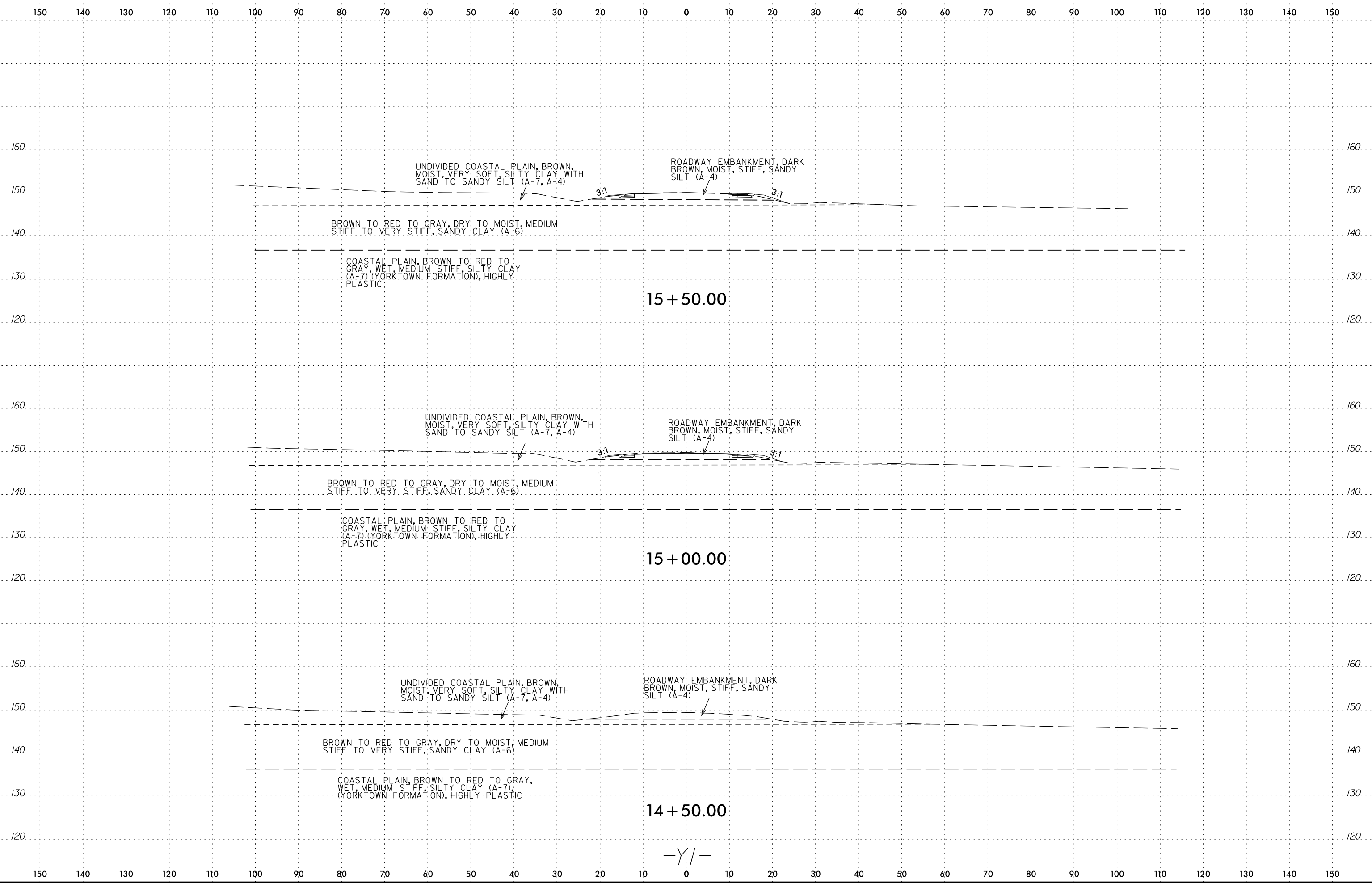
ROADWAY EMBANKMENT, BROWN, MOIST, STIFF, SANDY CLAY (A-6)
UNDIVIDED COASTAL PLAIN, GRAY, DRY TO MOIST, STIFF, SANDY SILT (A-4)
LIGHT GRAY, MOIST, STIFF, SILTY CLAY (A-7)

21 + 00.00

ROADWAY EMBANKMENT, BROWN, MOIST, STIFF, SANDY CLAY (A-6)
UNDIVIDED COASTAL PLAIN, GRAY, DRY TO MOIST, STIFF, SANDY SILT (A-4)
LIGHT GRAY, MOIST, STIFF, SILTY CLAY (A-7)

20 + 50.00

-RPC-



UNDIVIDED COASTAL PLAIN, BROWN, MOIST, VERY SOFT, SILTY CLAY WITH SAND TO SANDY SILT (A-7, A-4)

ROADWAY EMBANKMENT, DARK BROWN, MOIST, STIFF, SANDY SILT (A-4)

BROWN TO RED TO GRAY, DRY TO MOIST, MEDIUM STIFF TO VERY STIFF, SANDY CLAY (A-6)

COASTAL PLAIN, BROWN TO RED TO GRAY, WET, MEDIUM STIFF, SILTY CLAY (A-7) (YORKTOWN FORMATION), HIGHLY PLASTIC

15 + 50.00

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, VERY SOFT, SILTY CLAY WITH SAND TO SANDY SILT (A-7, A-4)

ROADWAY EMBANKMENT, DARK BROWN, MOIST, STIFF, SANDY SILT (A-4)

BROWN TO RED TO GRAY, DRY TO MOIST, MEDIUM STIFF TO VERY STIFF, SANDY CLAY (A-6)

COASTAL PLAIN, BROWN TO RED TO GRAY, WET, MEDIUM STIFF, SILTY CLAY (A-7) (YORKTOWN FORMATION), HIGHLY PLASTIC

15 + 00.00

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, VERY SOFT, SILTY CLAY WITH SAND TO SANDY SILT (A-7, A-4)

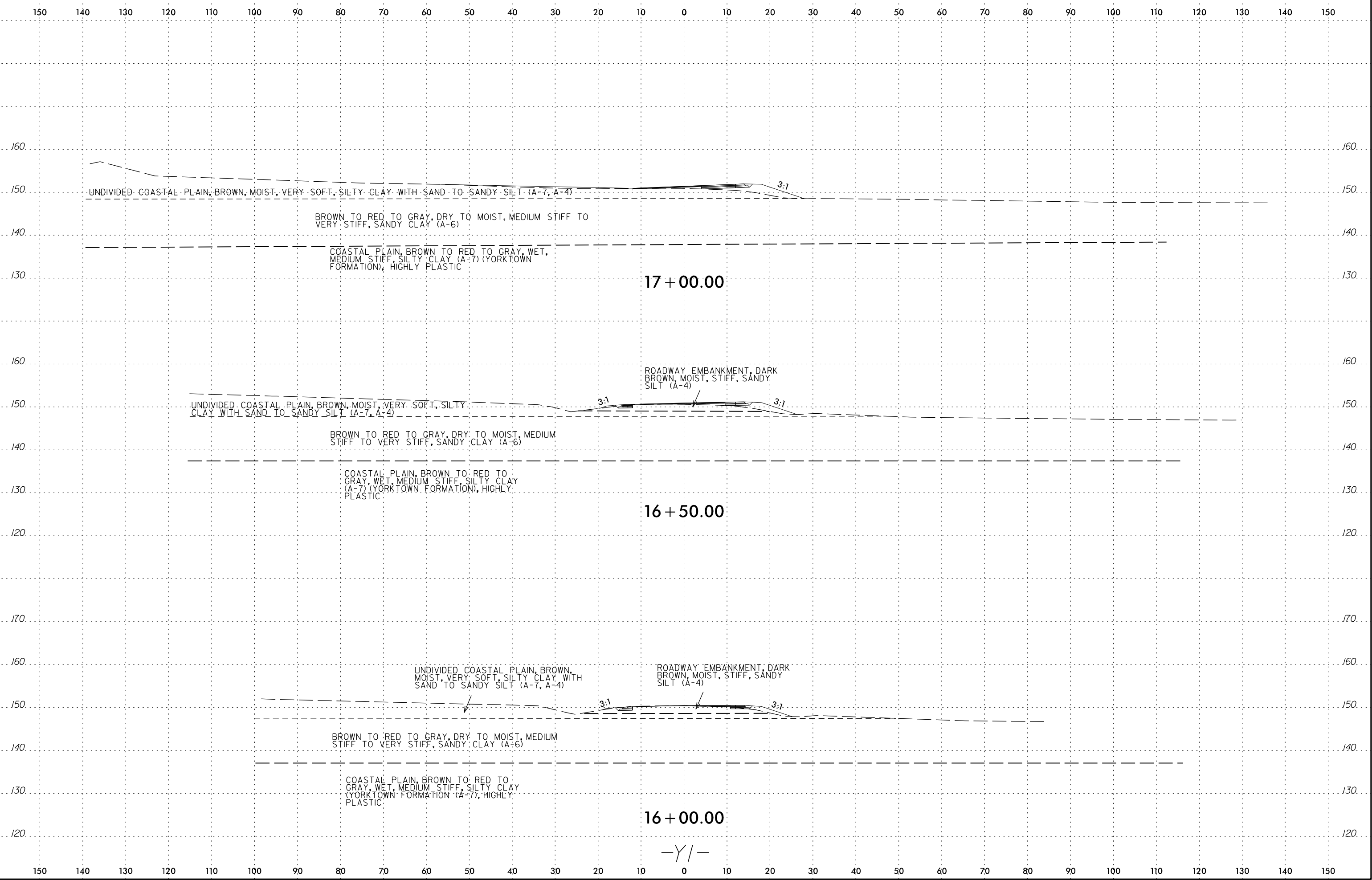
ROADWAY EMBANKMENT, DARK BROWN, MOIST, STIFF, SANDY SILT (A-4)

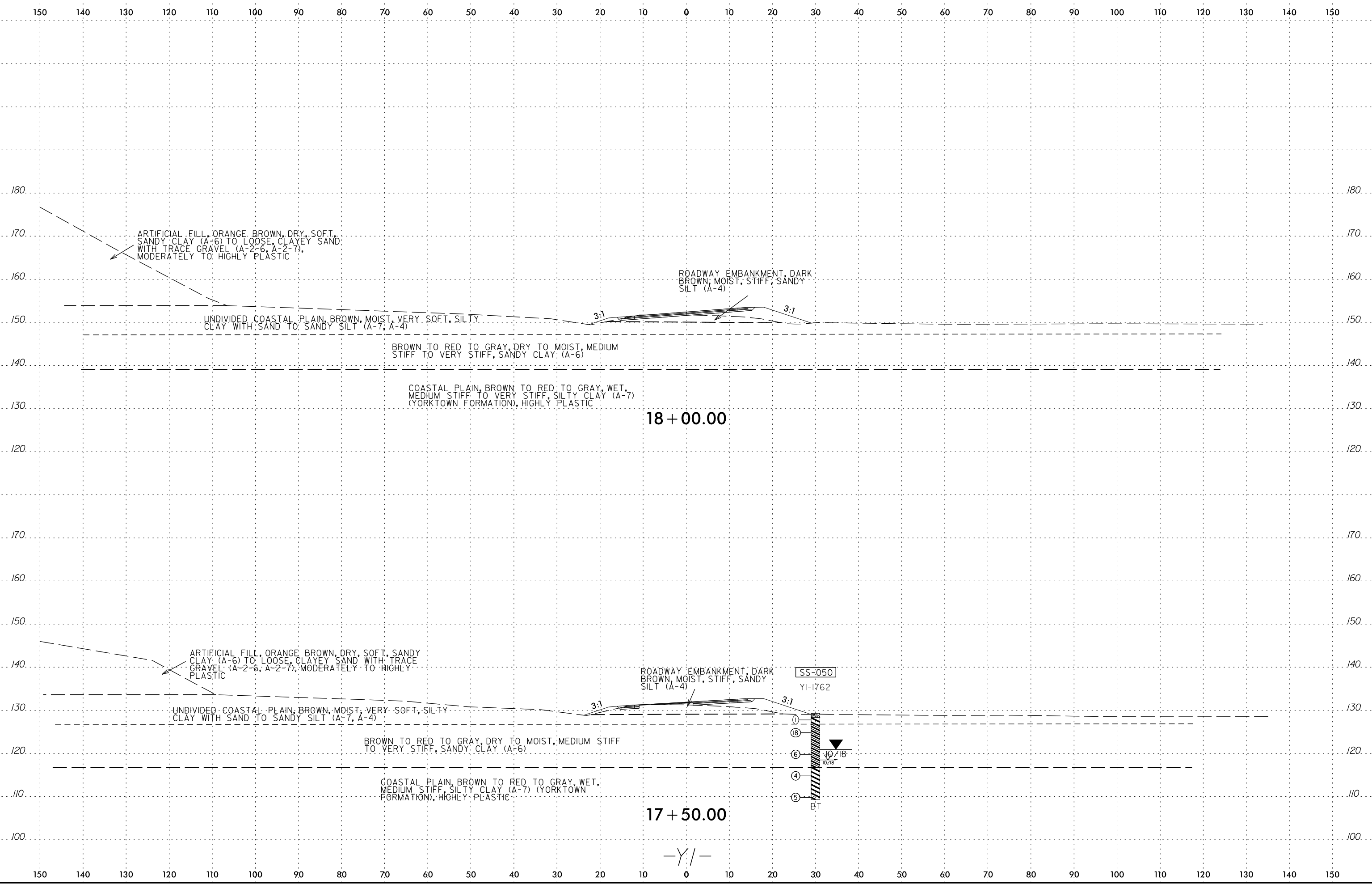
BROWN TO RED TO GRAY, DRY TO MOIST, MEDIUM STIFF TO VERY STIFF, SANDY CLAY (A-6)

COASTAL PLAIN, BROWN TO RED TO GRAY, WET, MEDIUM STIFF, SILTY CLAY (A-7) (YORKTOWN FORMATION), HIGHLY PLASTIC

14 + 50.00

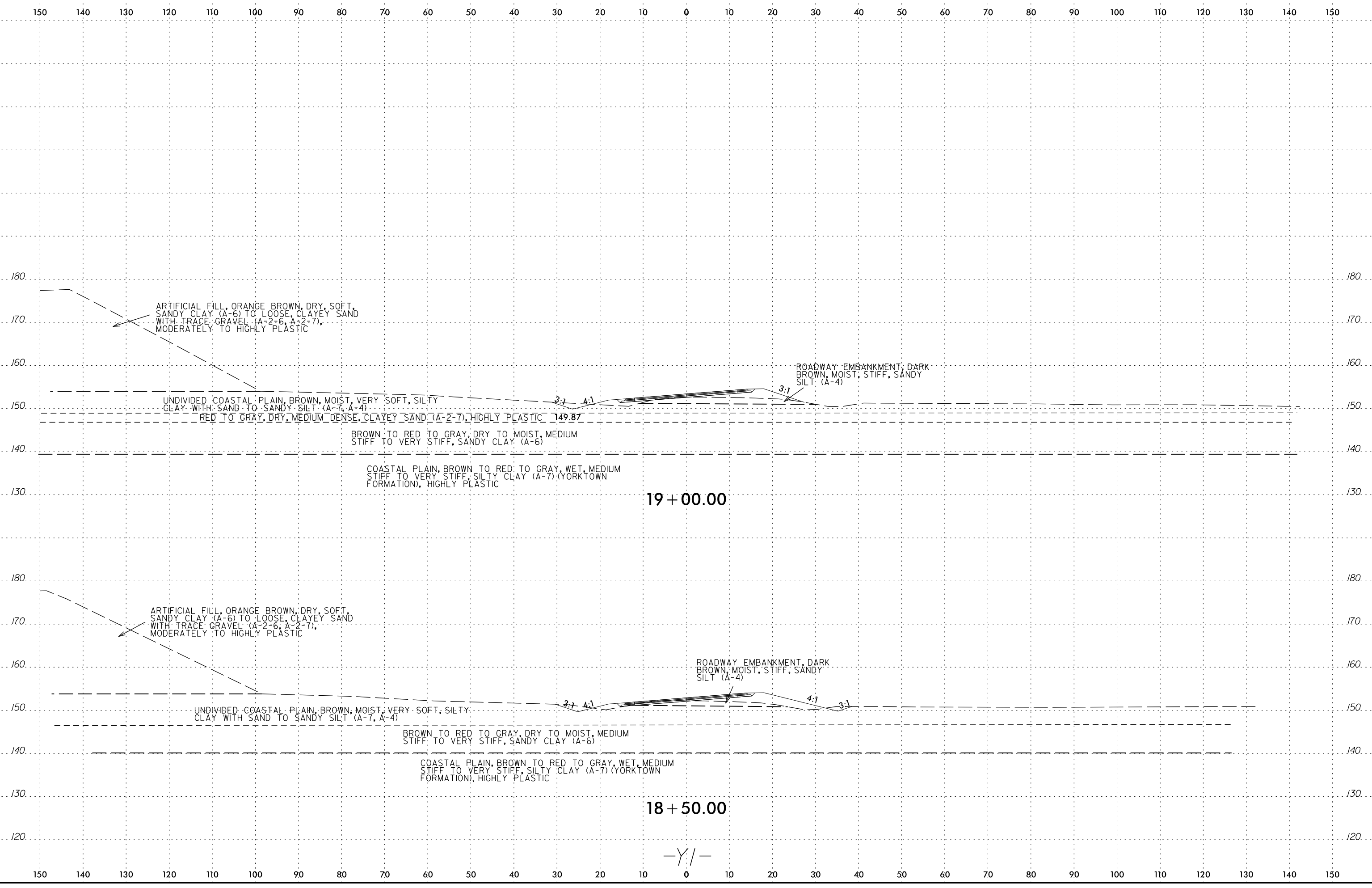
-Y/-





-Y/-

6/23/16
5/24/2018
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ARTIFICIAL FILL, ORANGE BROWN, DRY, SOFT, SANDY CLAY (A-6) TO LOOSE, CLAYEY SAND WITH TRACE GRAVEL (A-2-6, A-2-7), MODERATELY TO HIGHLY PLASTIC

ROADWAY EMBANKMENT, DARK BROWN, MOIST, STIFF, SANDY SILT (A-4)

UNDIVIDED COASTAL PLAIN, BROWN, MOIST, VERY SOFT, SILTY CLAY WITH SAND TO SANDY SILT (A-7, A-4)

RED TO GRAY, DRY, MEDIUM DENSE, CLAYEY SAND (A-2-7), HIGHLY PLASTIC 149.87

BROWN TO RED TO GRAY, DRY TO MOIST, MEDIUM STIFF TO VERY STIFF, SANDY CLAY (A-6)

COASTAL PLAIN, BROWN TO RED TO GRAY, WET, MEDIUM STIFF TO VERY STIFF, SILTY CLAY (A-7) (YORKTOWN FORMATION), HIGHLY PLASTIC

19 + 00.00

ARTIFICIAL FILL, ORANGE BROWN, DRY, SOFT, SANDY CLAY (A-6) TO LOOSE, CLAYEY SAND WITH TRACE GRAVEL (A-2-6, A-2-7), MODERATELY TO HIGHLY PLASTIC

ROADWAY EMBANKMENT, DARK BROWN, MOIST, STIFF, SANDY SILT (A-4)

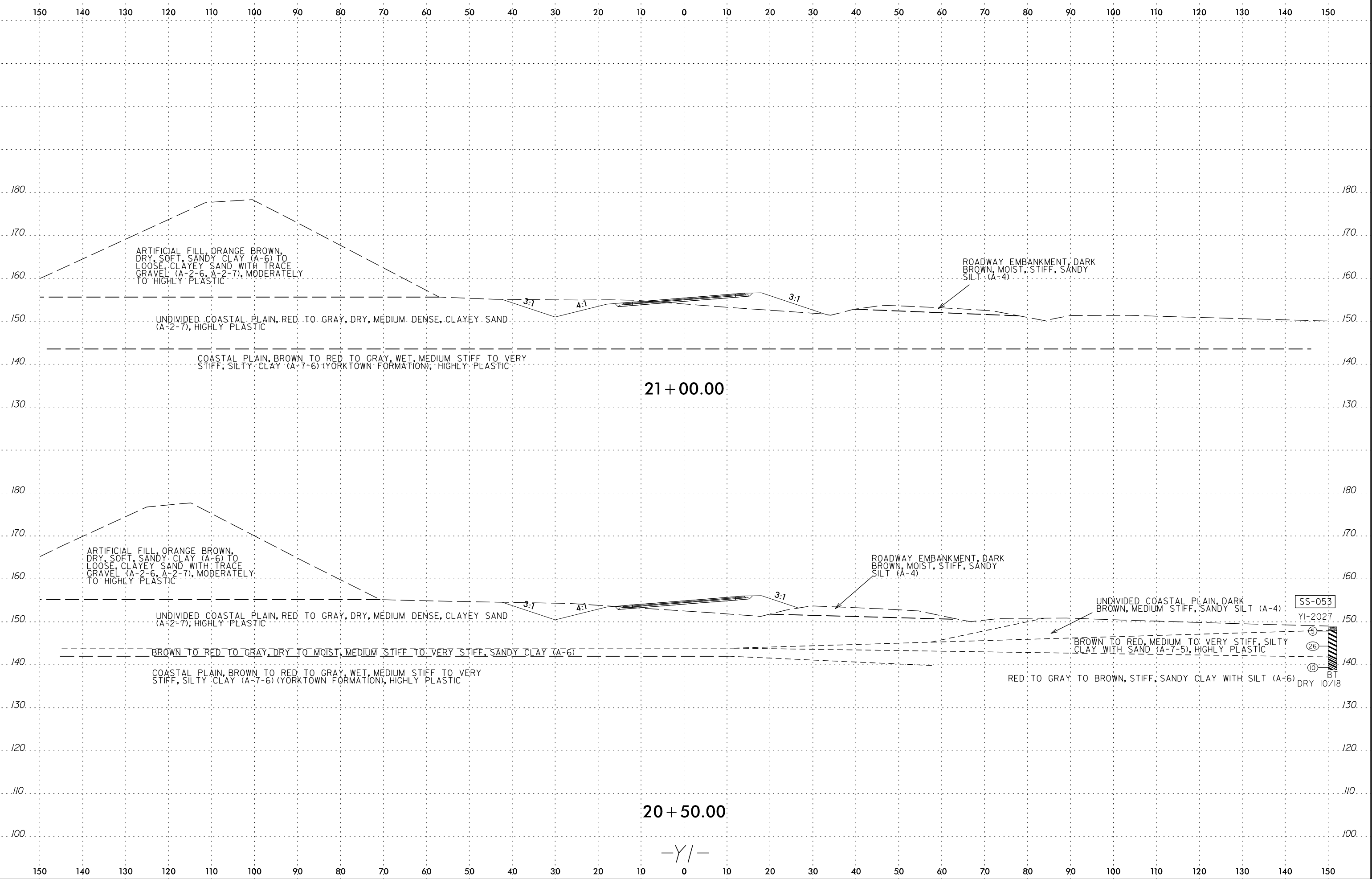
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BROWN TO RED TO GRAY, DRY TO MOIST, MEDIUM STIFF TO VERY STIFF, SANDY CLAY (A-6)

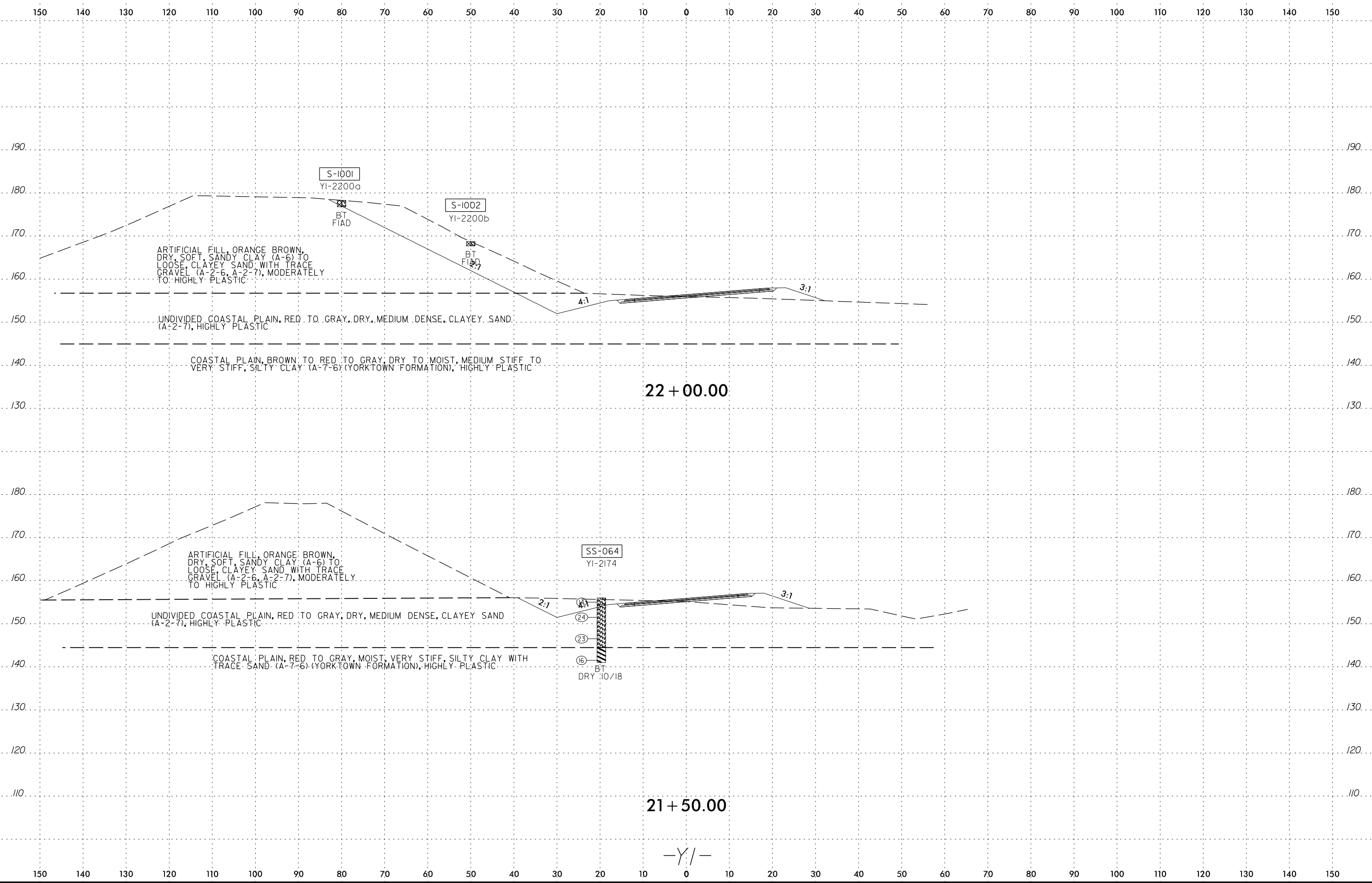
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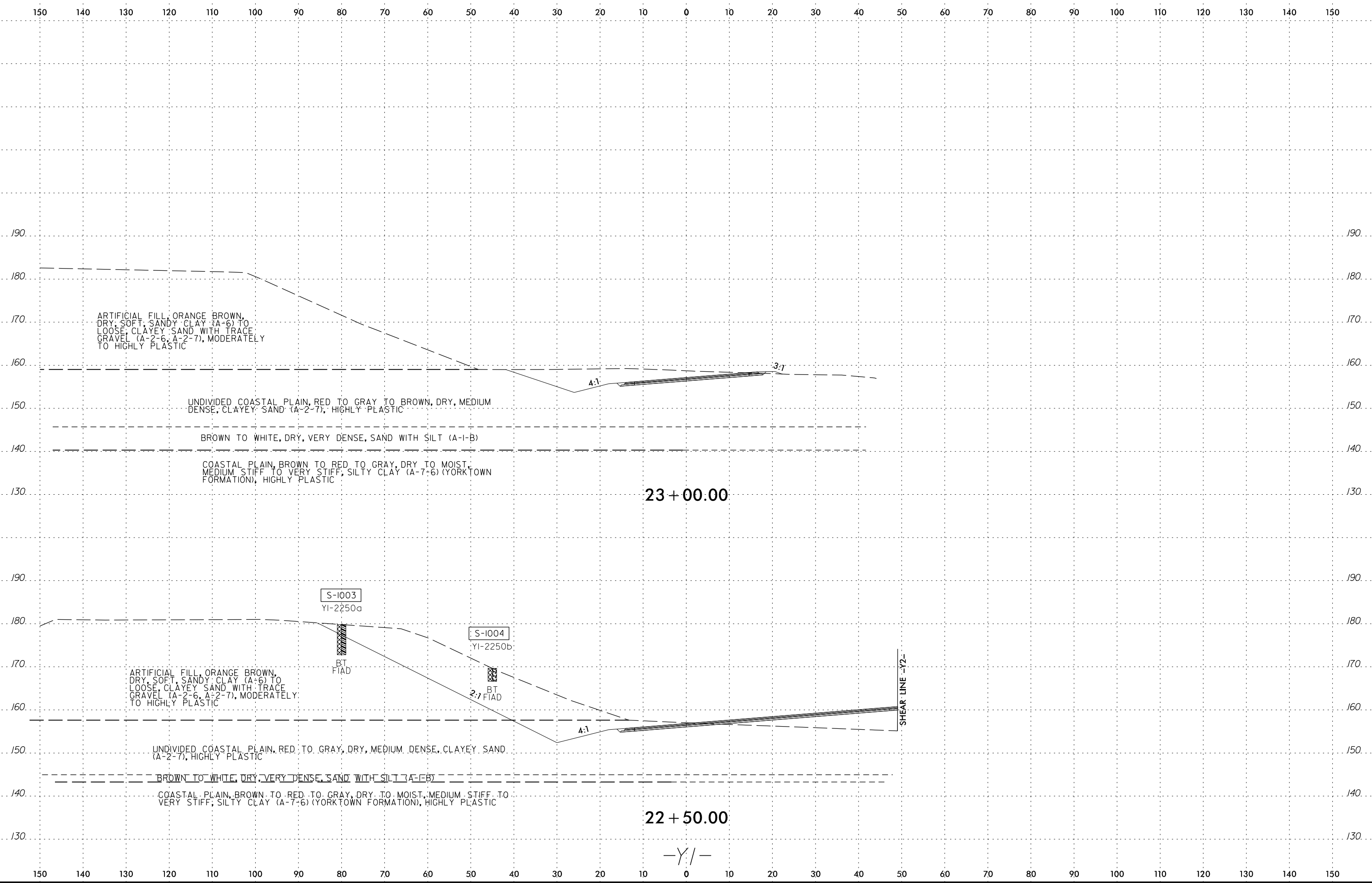
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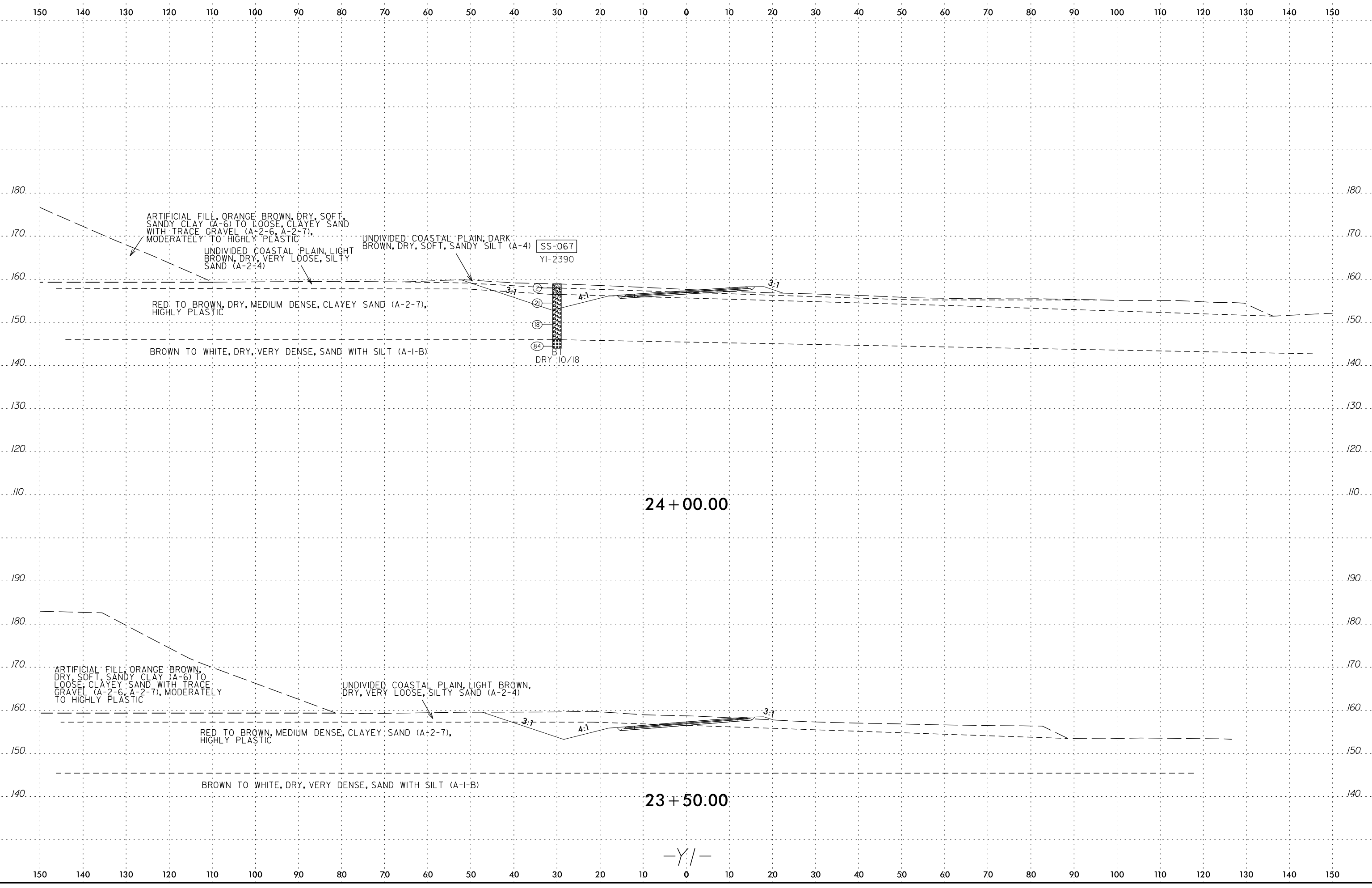
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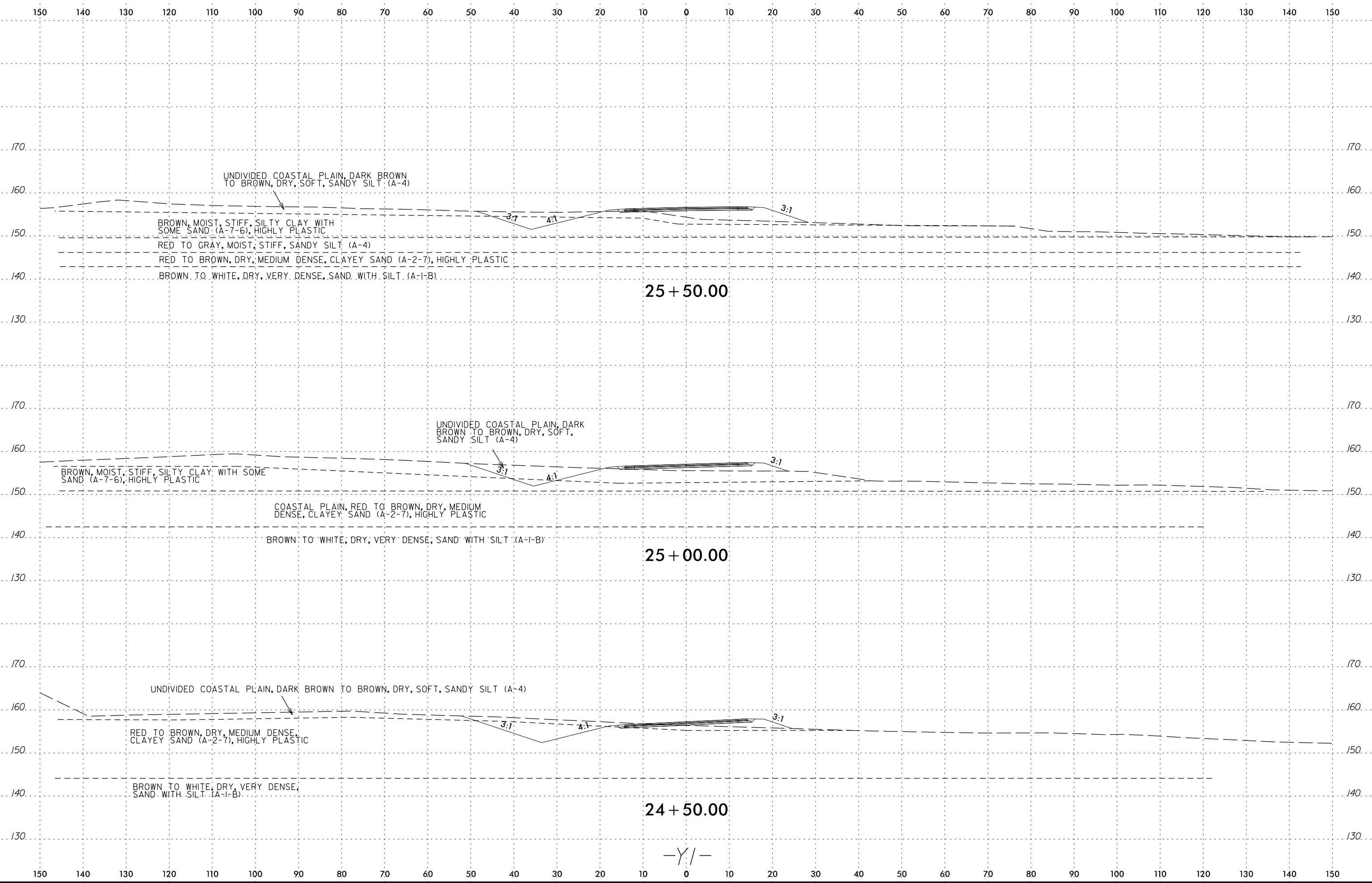
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5/24/2016
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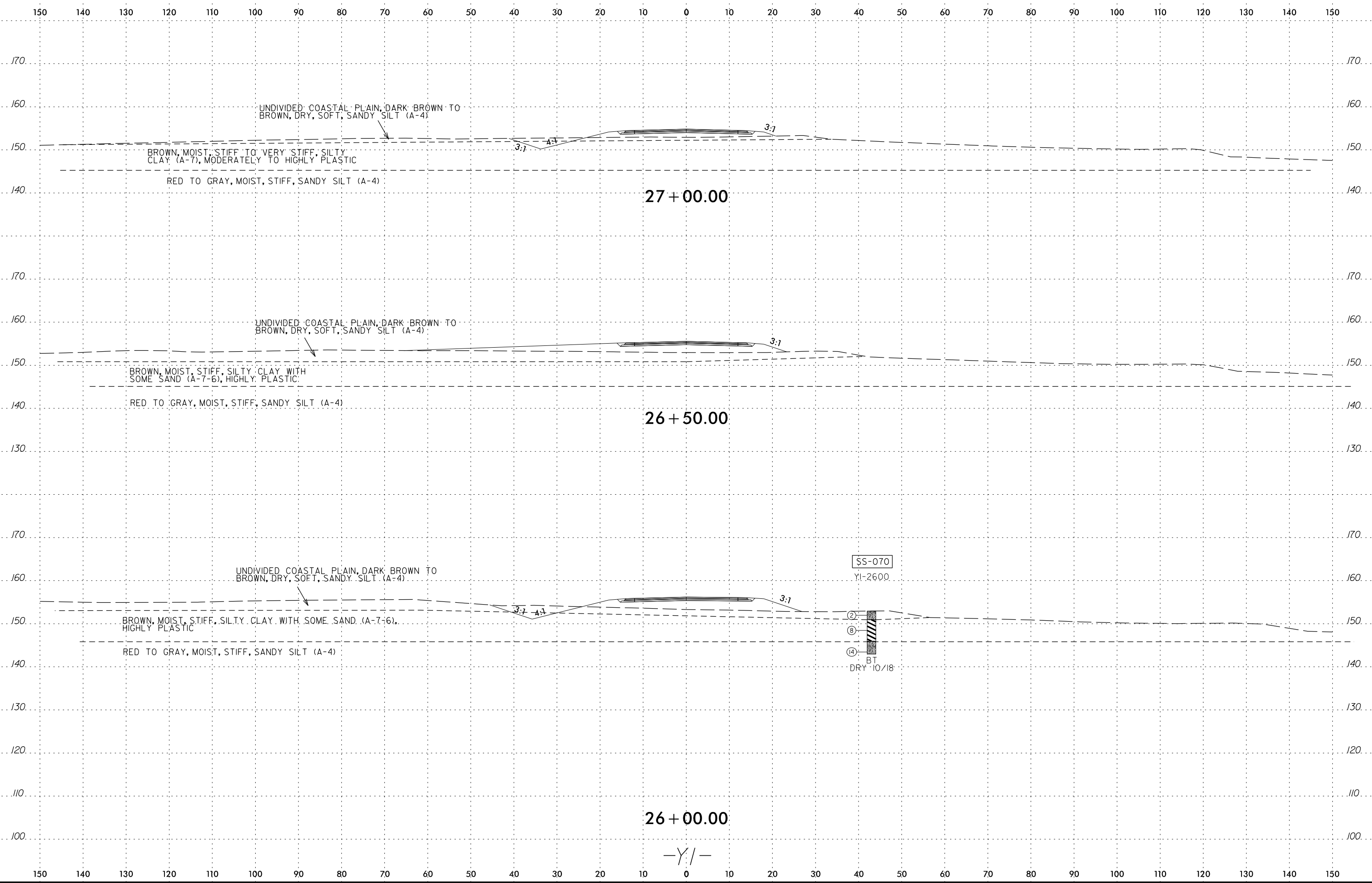




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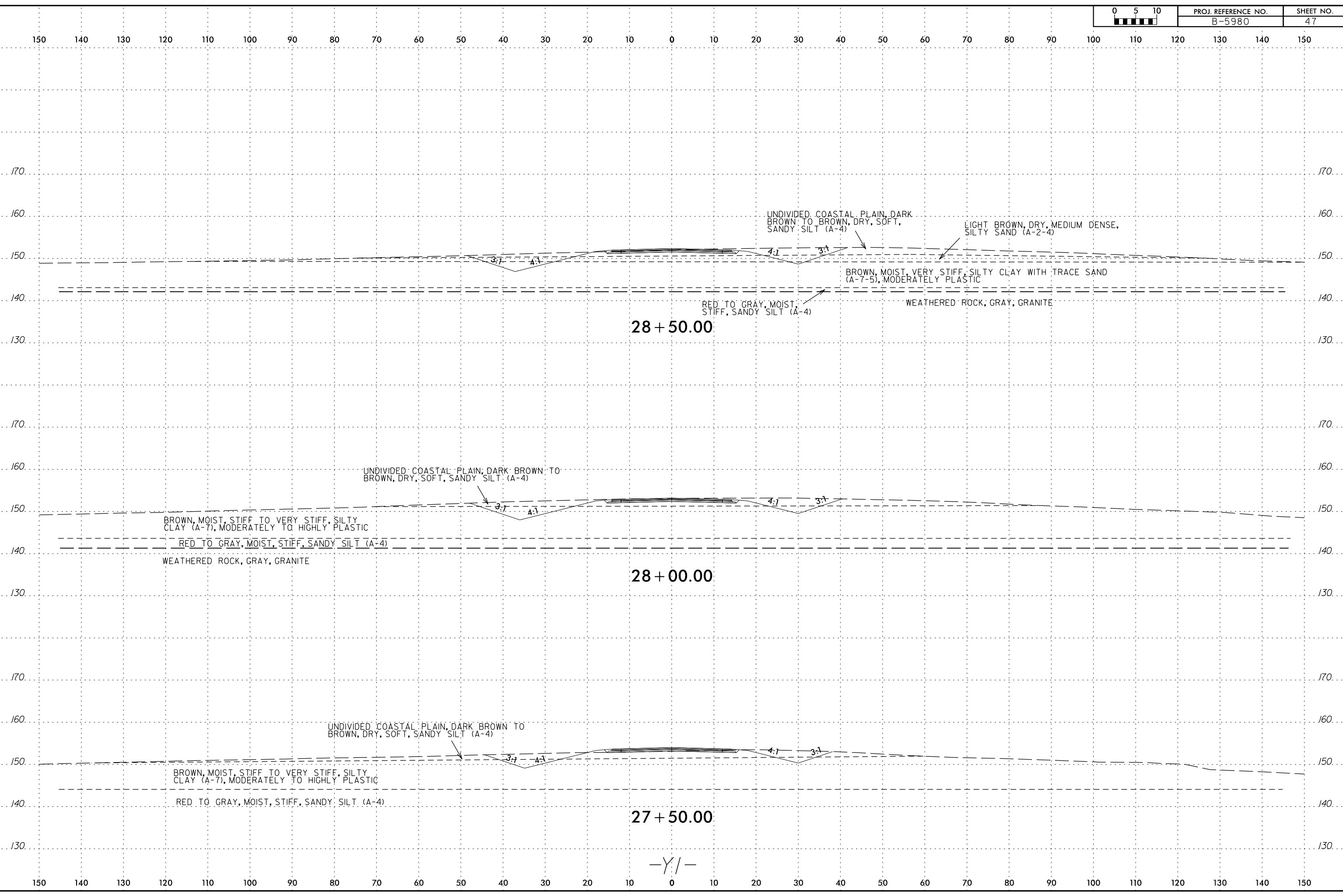


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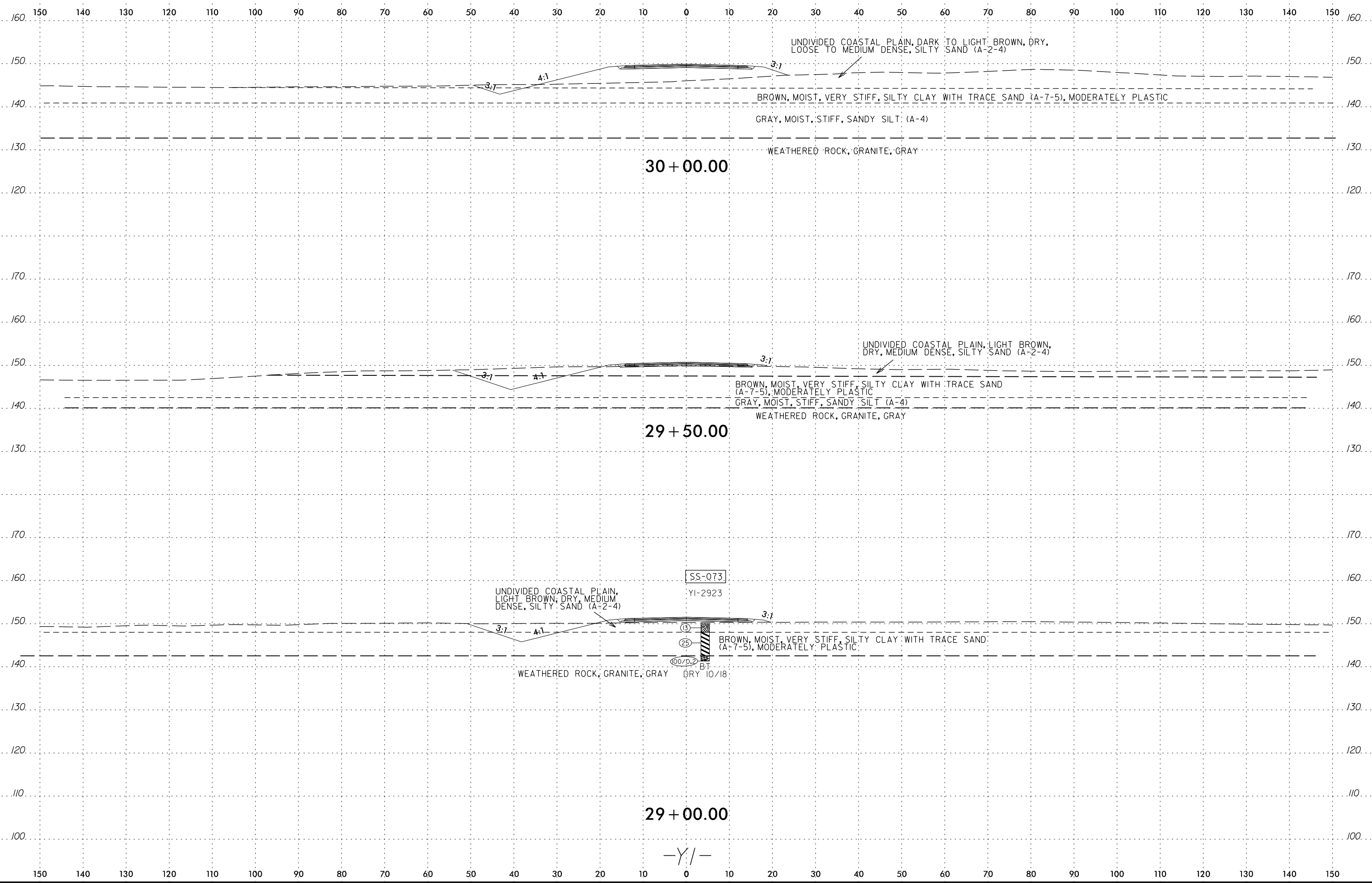
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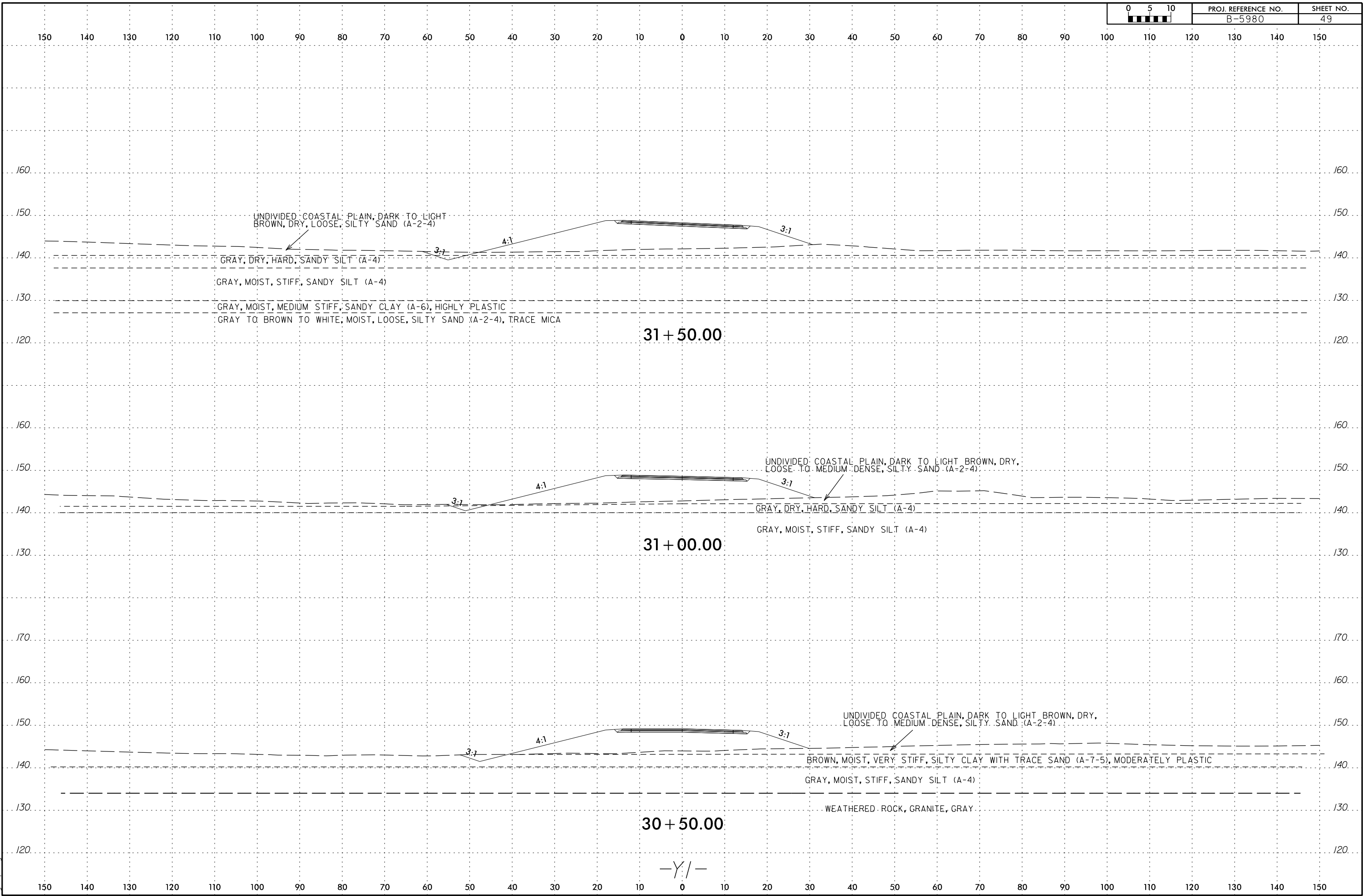
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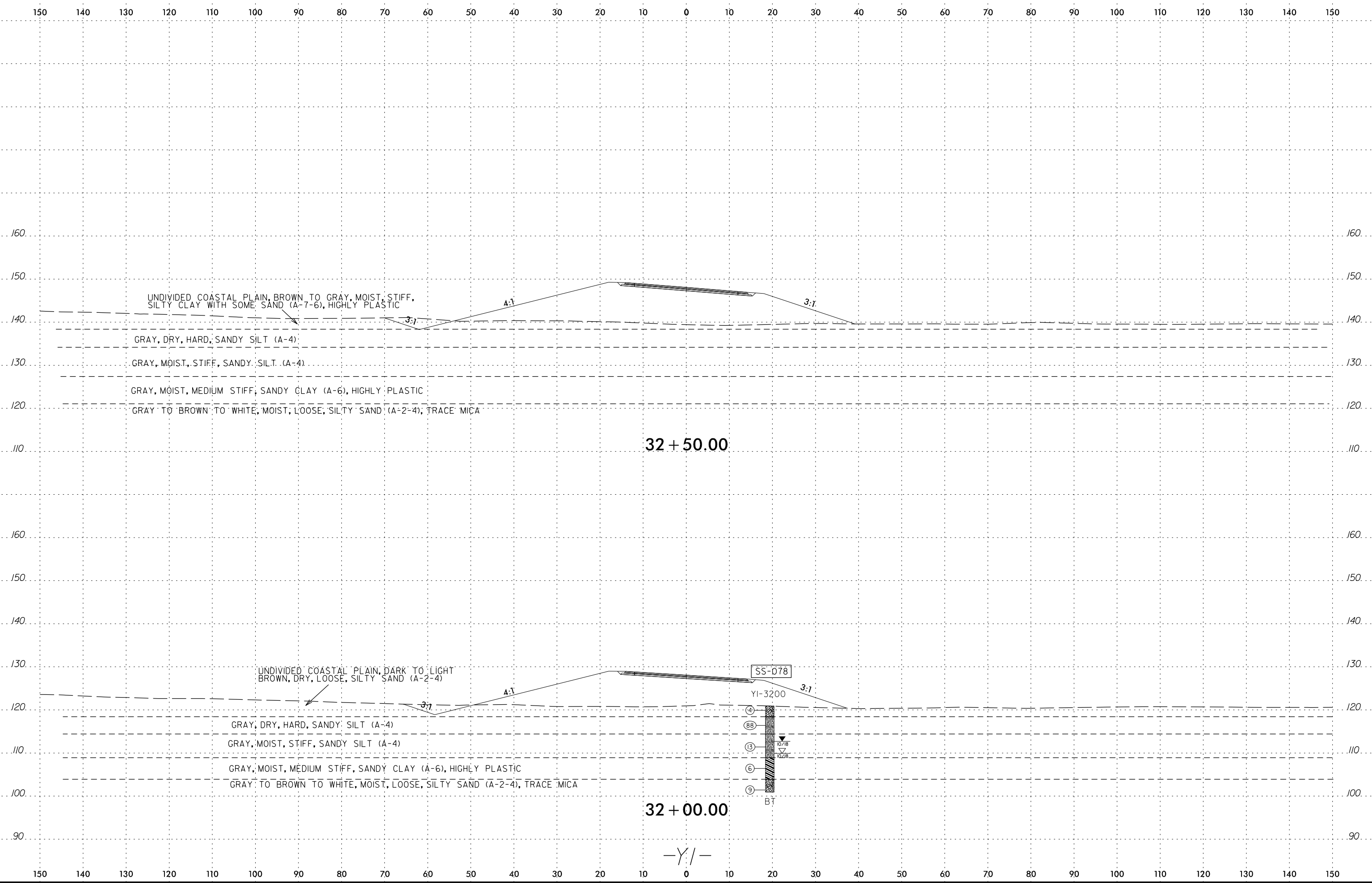
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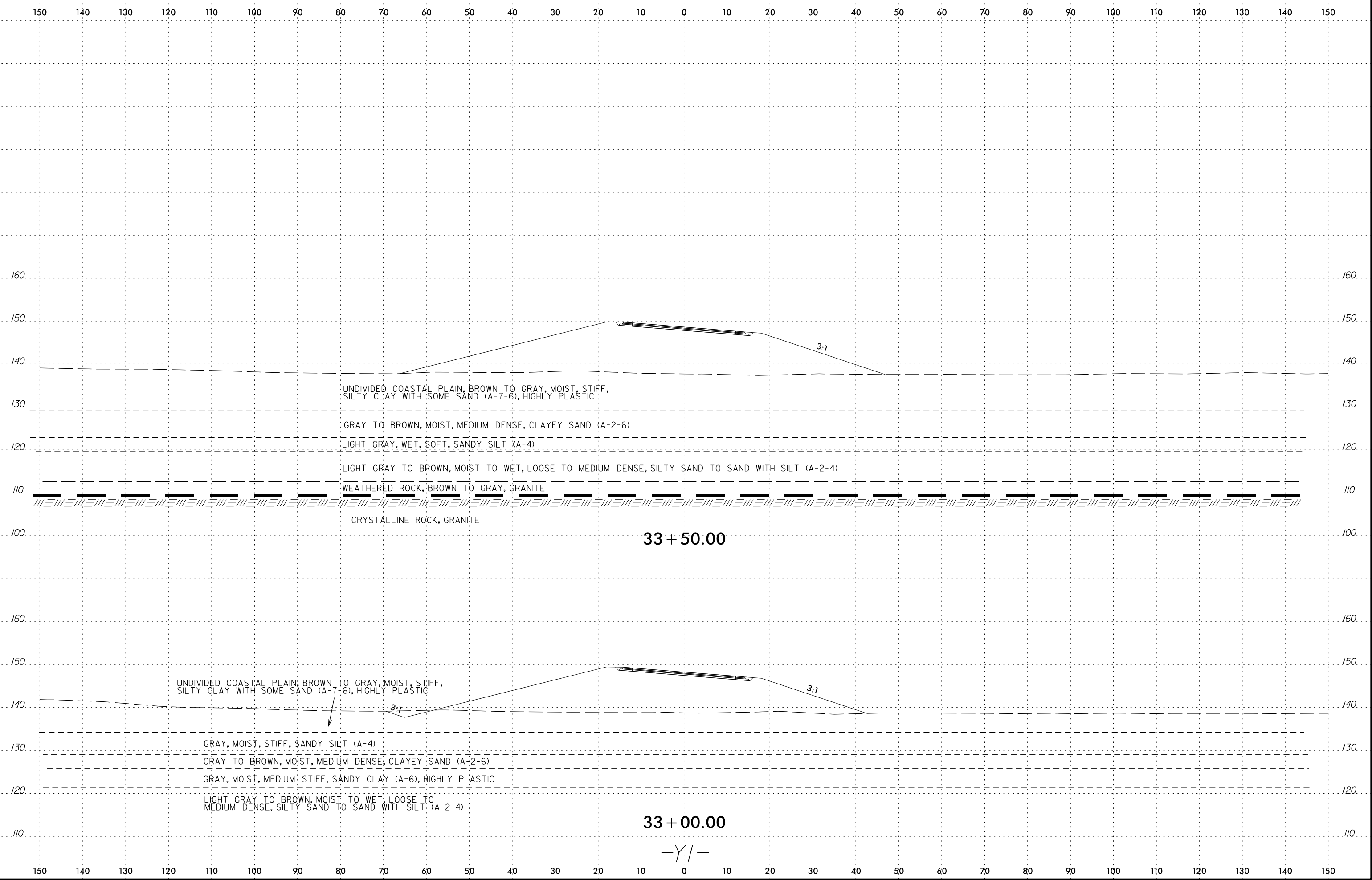


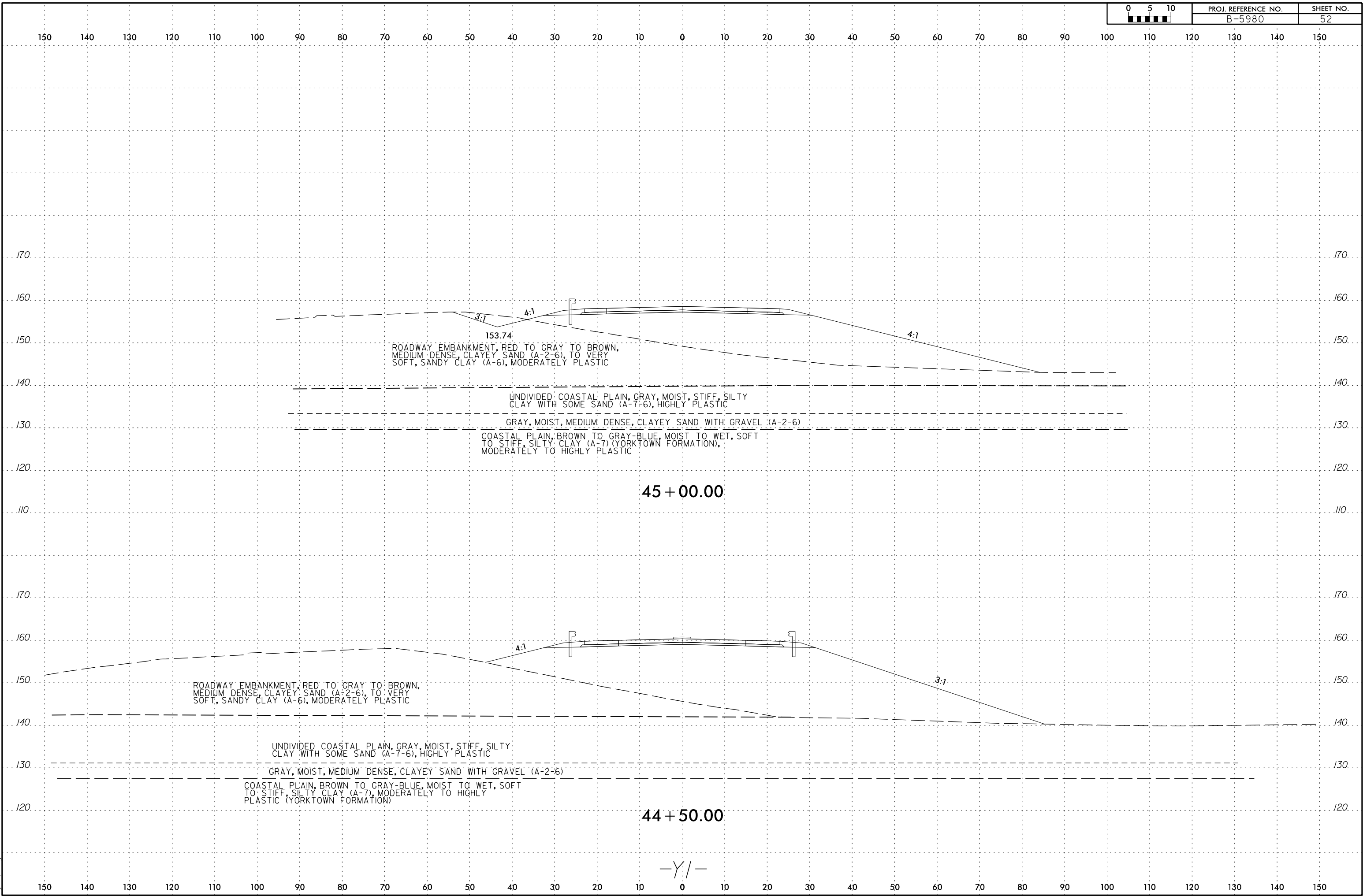


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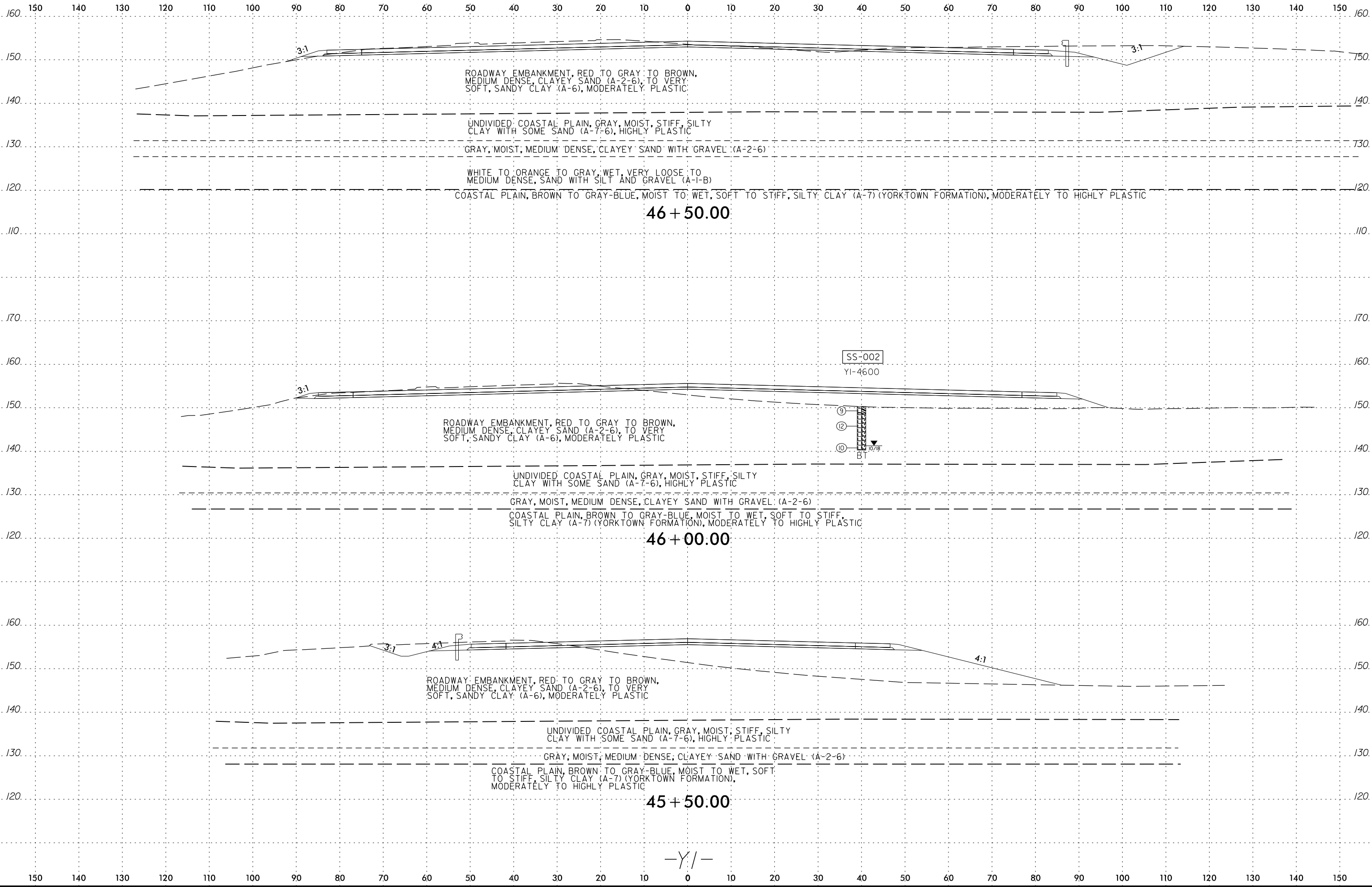




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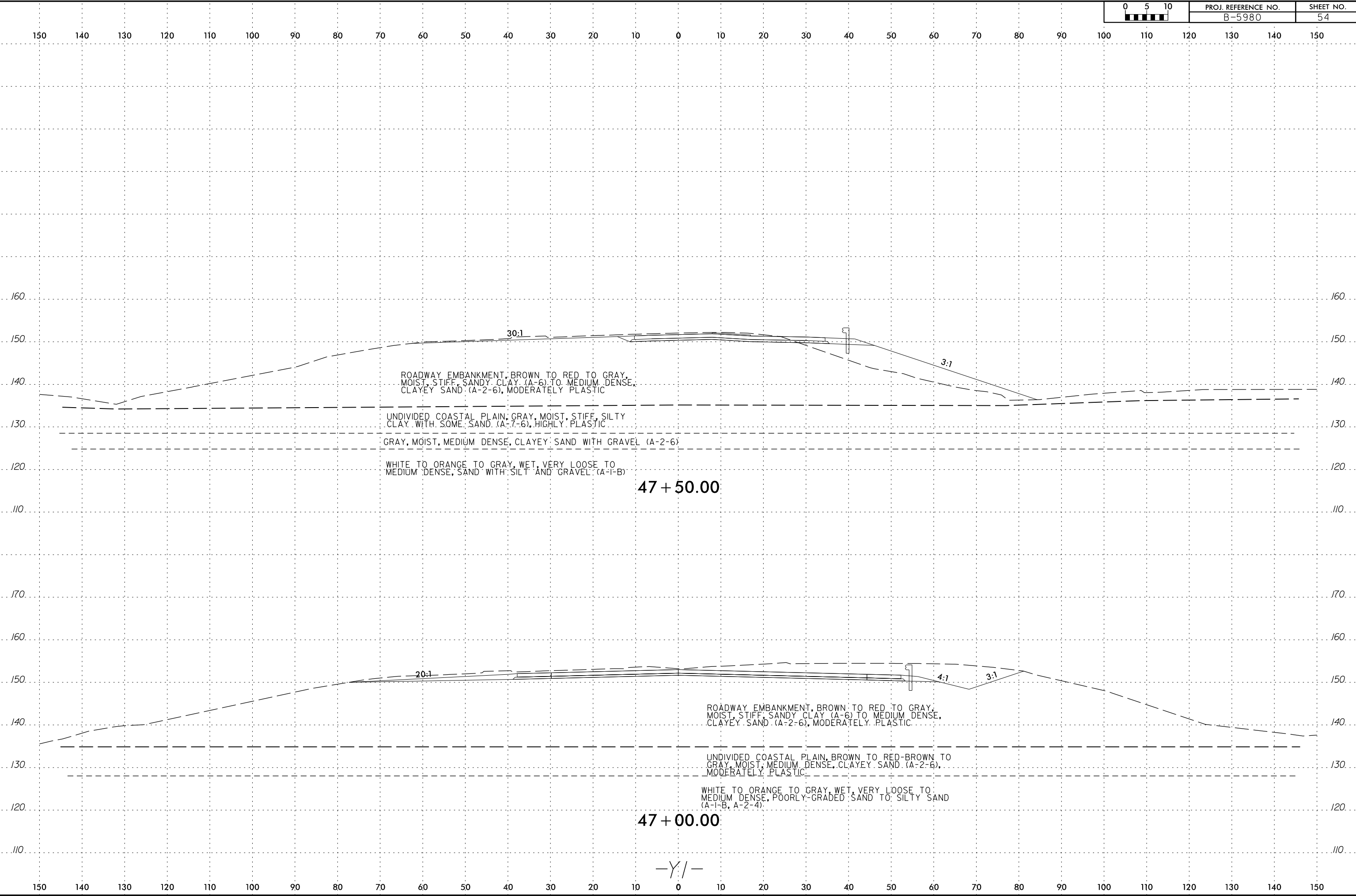
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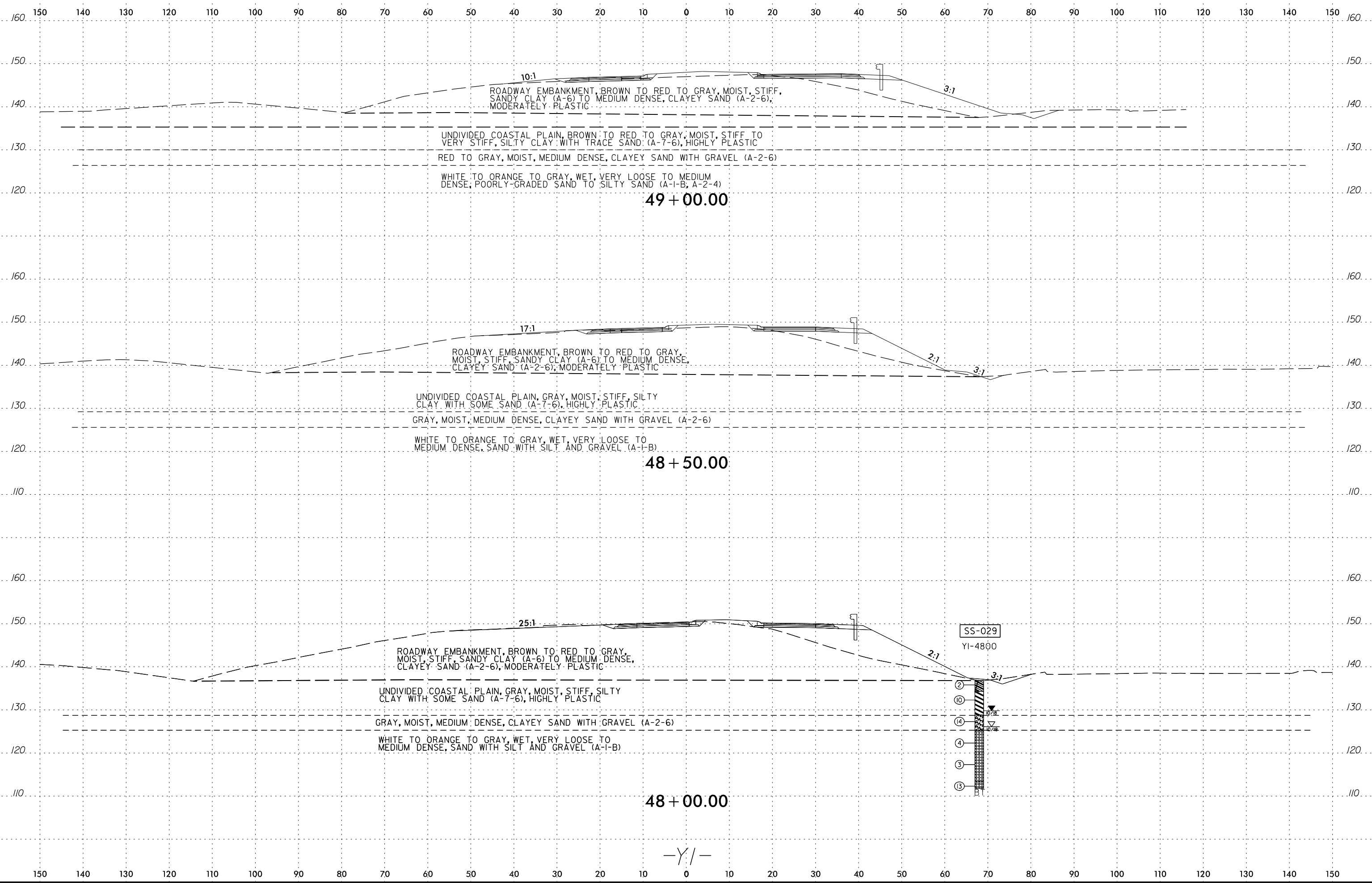


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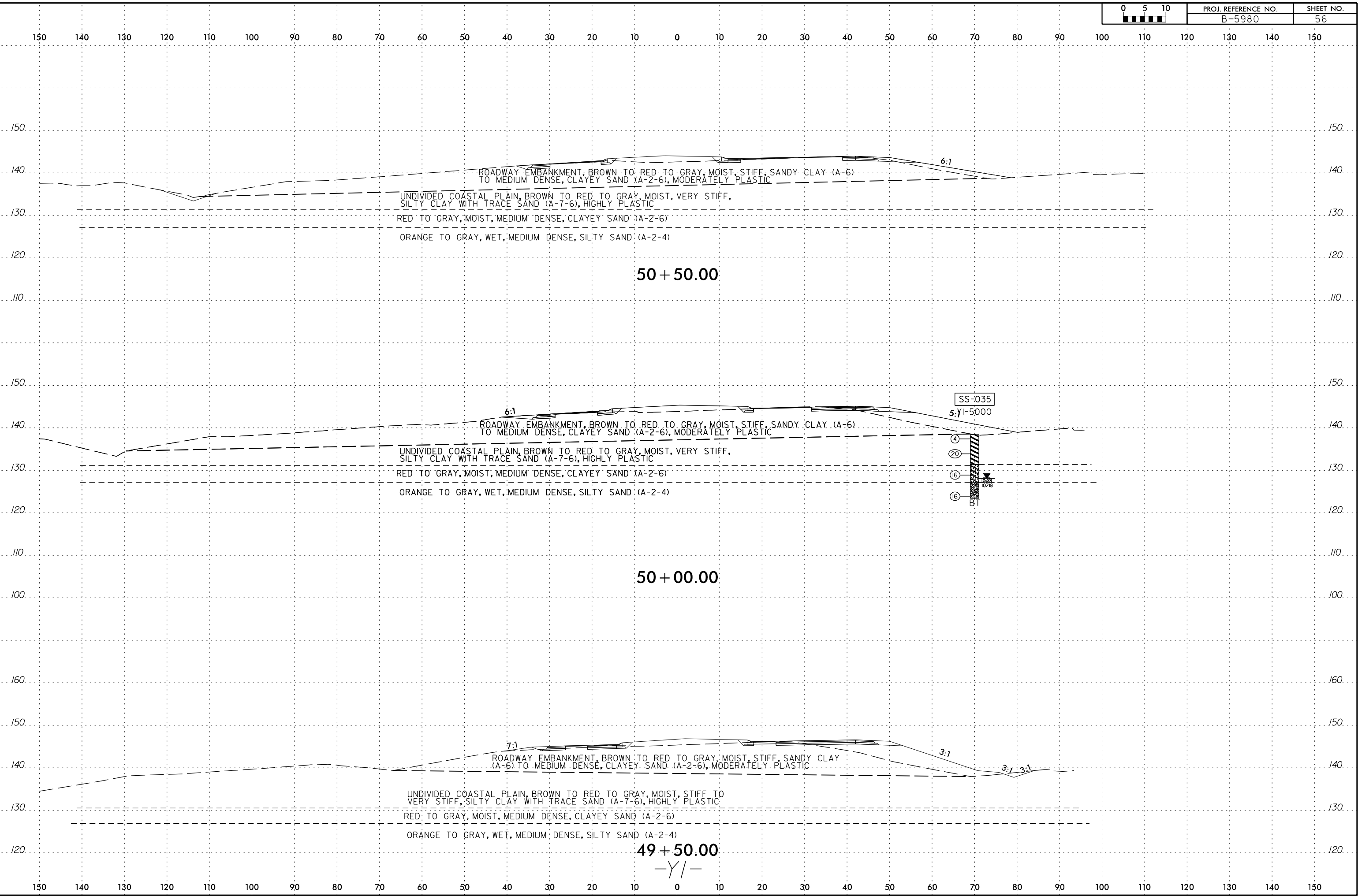
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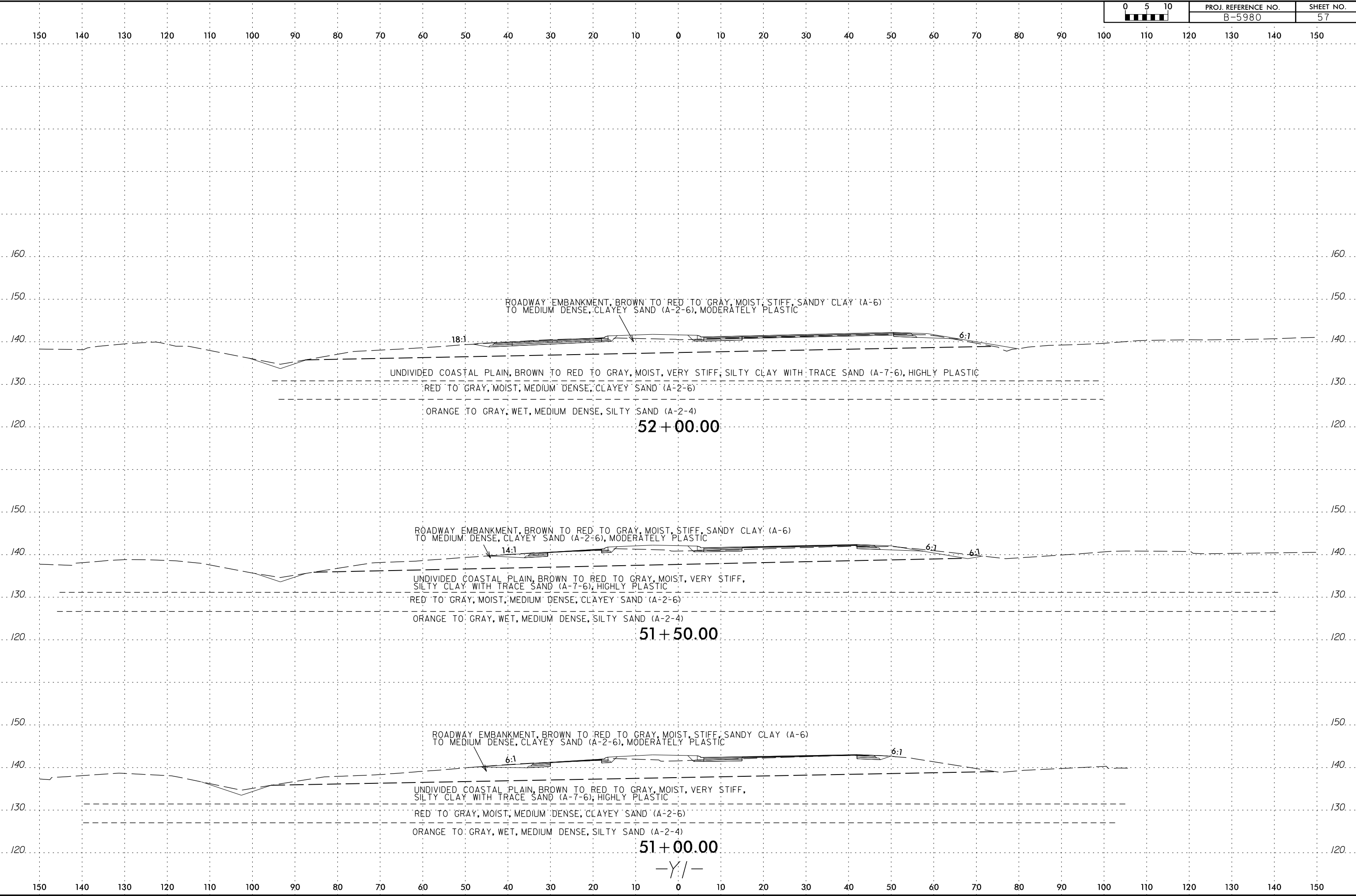
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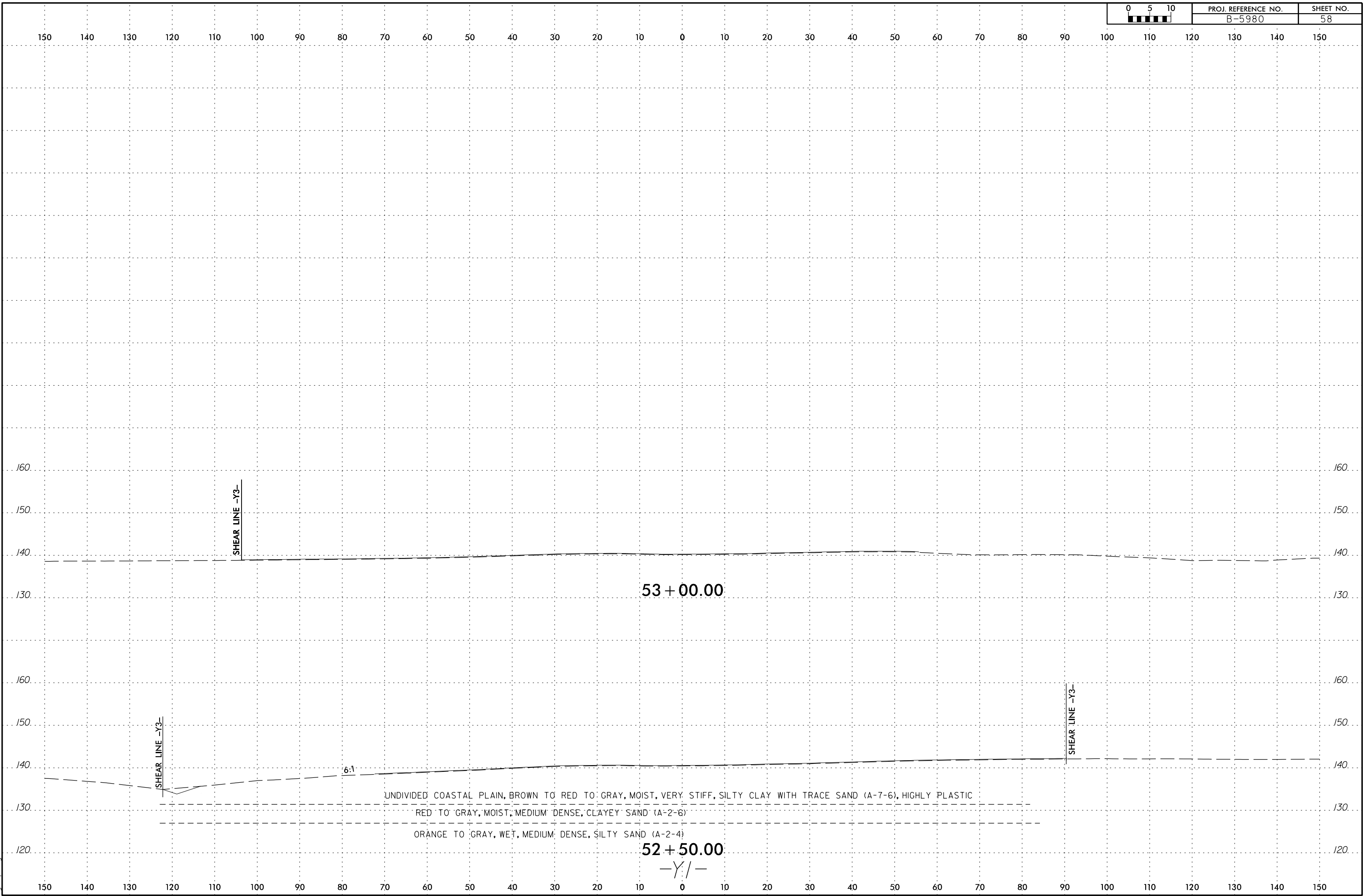


-Y/-





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53 + 00.00

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UNDIVIDED COASTAL PLAIN, BROWN TO RED TO GRAY, MOIST, VERY STIFF, SILTY CLAY WITH TRACE SAND (A-7-6), HIGHLY PLASTIC

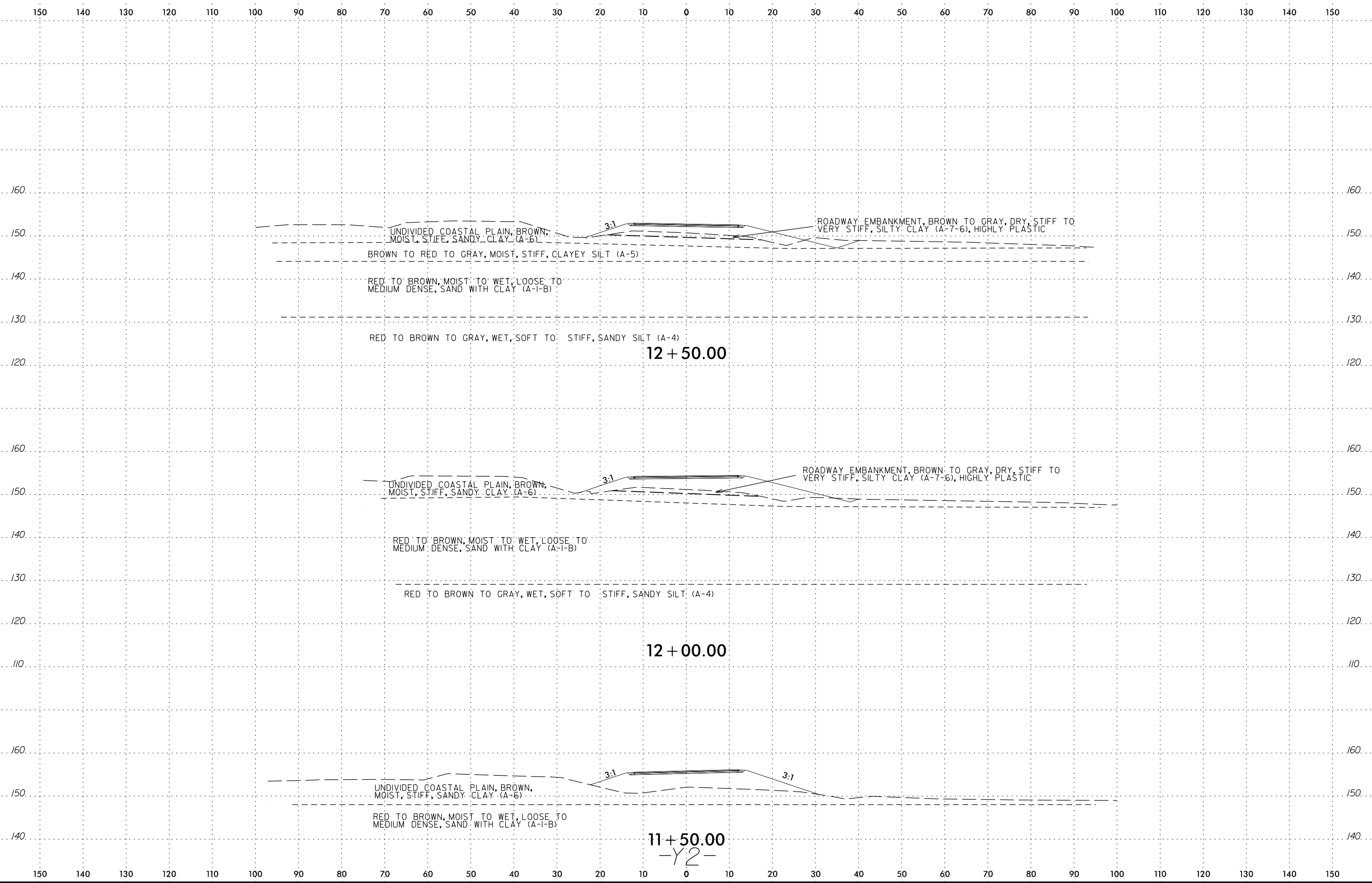
RED TO GRAY, MOIST, MEDIUM DENSE, CLAYEY SAND (A-2-6)

ORANGE TO GRAY, WET, MEDIUM DENSE, SILTY SAND (A-2-4)

SHEAR LINE -Y3-

SHEAR LINE -Y3-

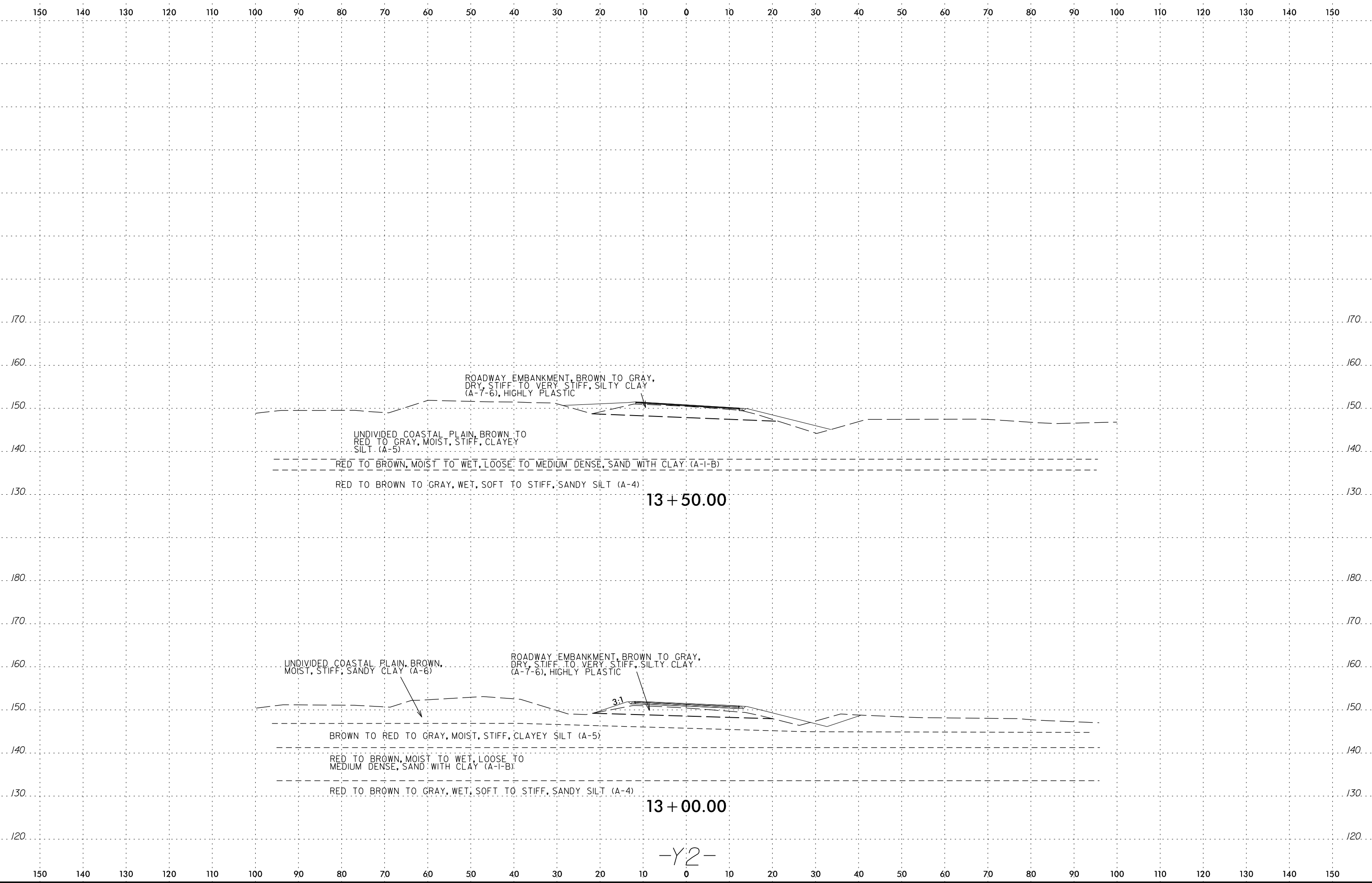
SHEAR LINE -Y3-



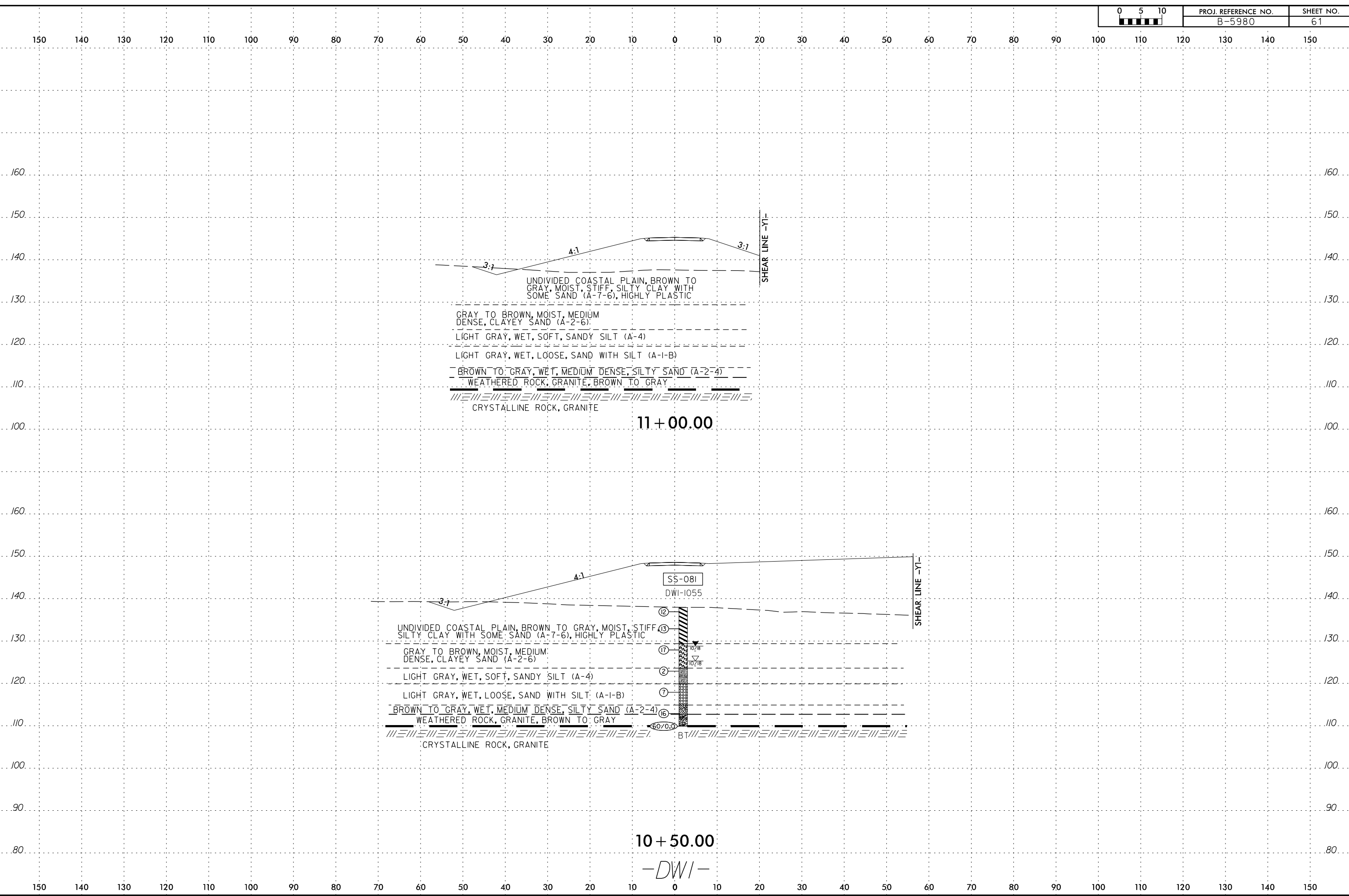
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-Y2-

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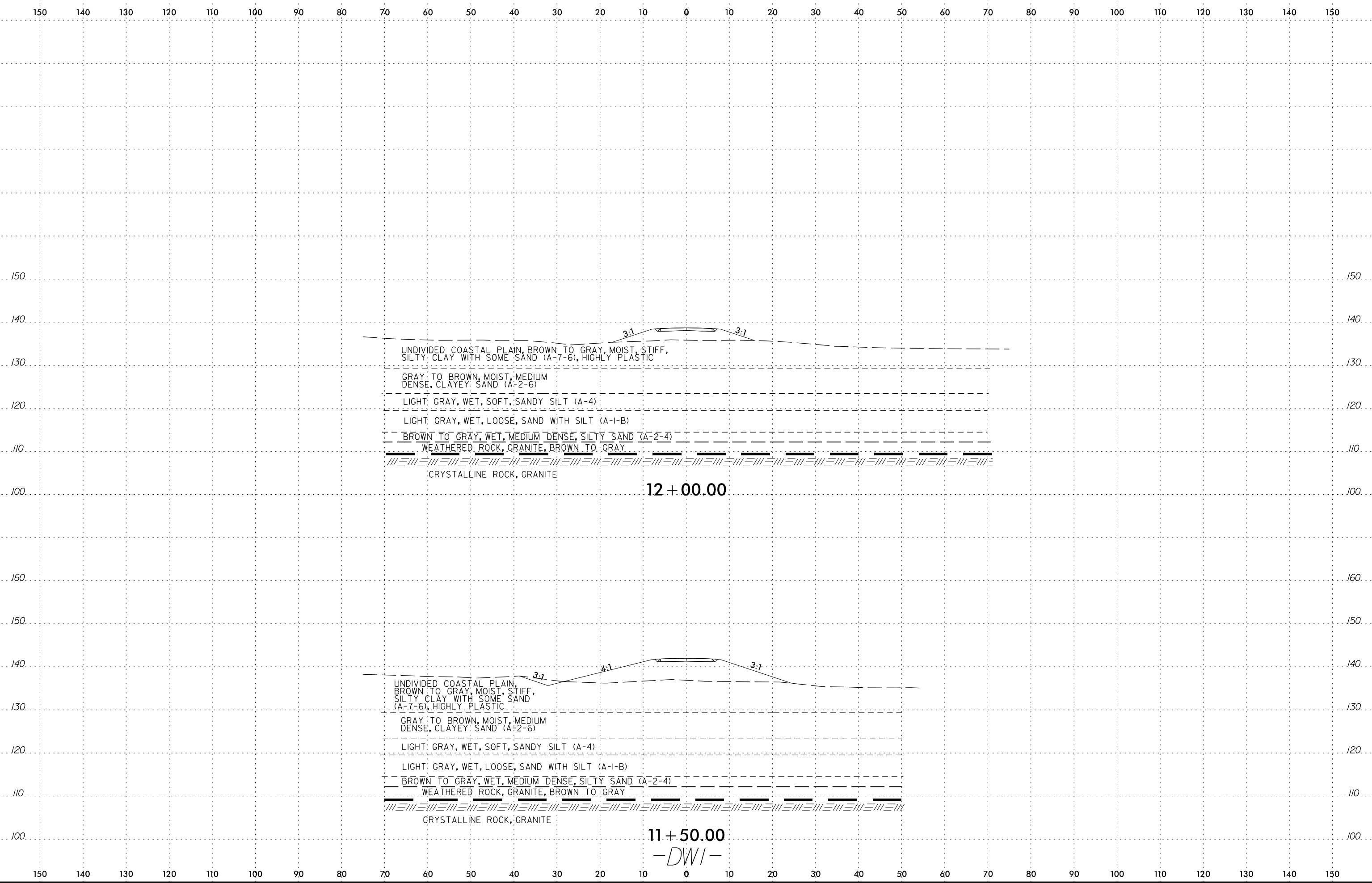
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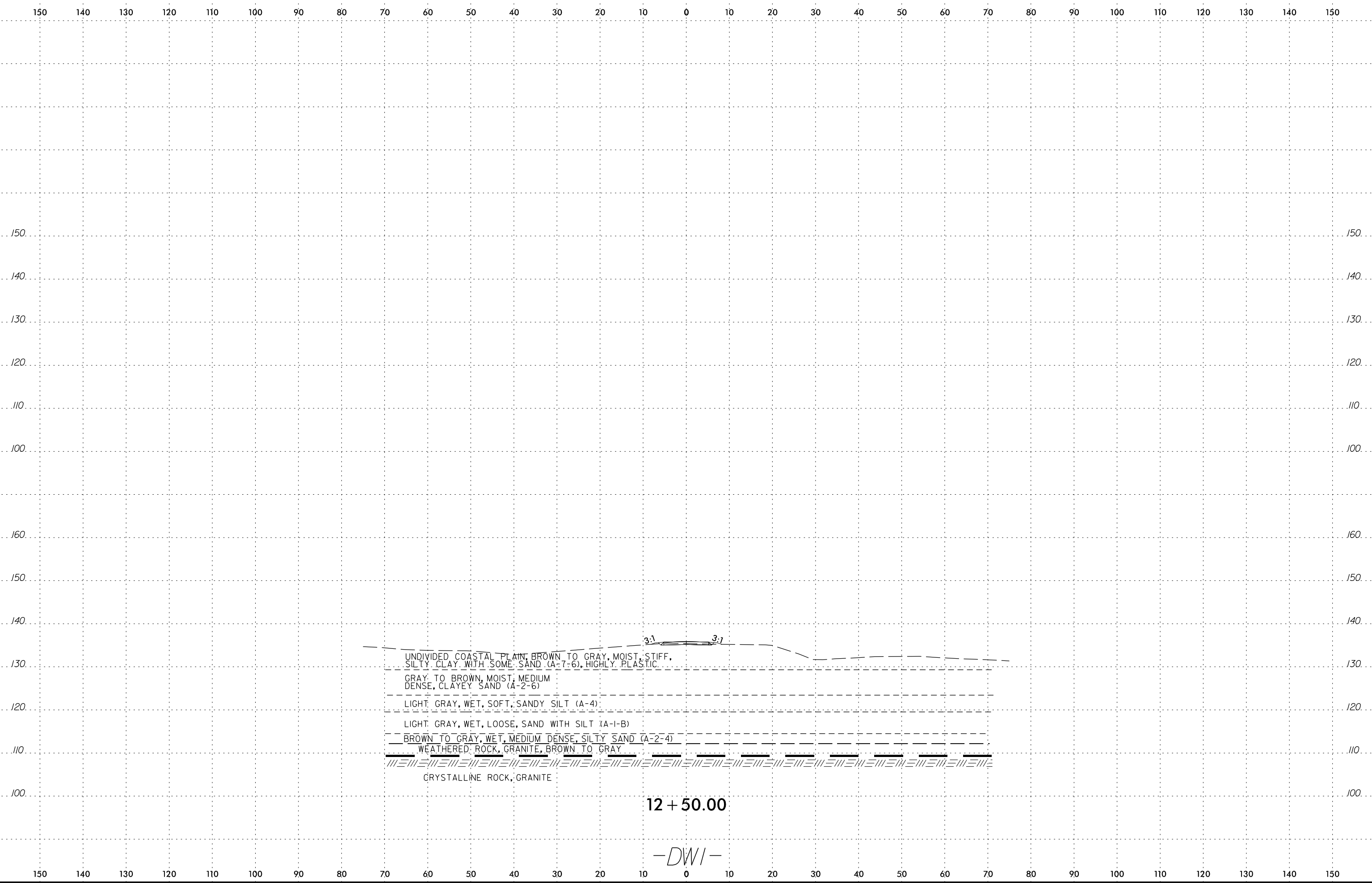


11 + 00.00

10 + 50.00

-DWI-





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

SUBSURFACE INVESTIGATION

***APPENDIX A
SOIL TEST RESULTS***

REFERENCE: B-5980

PROJECT: 47617

SOIL TEST RESULTS

BORING NO.	SAMPLE NO.	OFFSET	STATION	ALIGNMENT	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
									GRAVEL	C. SAND	F. SAND	FINES	10	40	200	
L 1- 2750	S- 8	57' LT	27+50	- L 1-	0. 0- 1. 0	A- 2- 6(1)	30	16	13. 28	22. 4	29. 27	35. 05	86. 72	64. 32	35. 05	15. 3
L 1- 3000	S- 7	60' LT	30+00	- L 1-	1. 0- 1. 5	A- 7- 5(6)	75	26	12. 96	11. 81	34. 35	40. 88	87. 04	75. 23	40. 88	43. 5
L 1- 3400	S- 5	62' LT	34+00	- L 1-	1. 0- 2. 0	A- 6(3)	33	18	2. 73	26. 92	29. 28	41. 07	97. 27	70. 35	41. 07	15. 9
L 1- 3950	SS- 194	95' LT	39+50	- L 1-	8. 5- 10. 0	A- 7- 6(7)	45	28	3. 28	23. 64	30. 09	42. 98	96. 72	73. 07	42. 98	12. 8
RPA- 2735	SS- 133	83' RT	27+35	- RPA-	3. 5- 5. 0	A- 6(10)	39	15	0. 19	6. 22	21. 99	71. 60	99. 81	93. 59	71. 60	14. 6
RPA- 2900	SS- 129	CL	29+00	- RPA-	13. 5- 14. 5	A- 2- 6(0)	35	12	11. 36	40. 80	26. 03	21. 81	88. 64	47. 84	21. 81	17. 8
RPA- 3100	ST- 3	CL	31+00	- RPA-	20. 0- 22. 0	A- 7- 6(23)	59	37	0. 55	11. 70	6. 80	80. 94	99. 45	87. 75	80. 94	67. 1
RPA- 3100	SS- 123	CL	31+00	- RPB-	18. 5- 20. 0	A- 6(9)	38	21	0. 25	13. 00	30. 11	56. 65	99. 75	86. 75	56. 65	32. 8
RPB- 1503	SS- 211	5' RT	15+03	- RPB-	8. 5- 10. 0	A- 7- 6(35)	62	42	0. 00	1. 49	17. 46	81. 05	100. 0	98. 51	81. 05	30. 3
RPB- 1700	SS- 206	13' RT	17+00	- RPB-	3. 5- 5. 0	A- 7- 6(30)	59	39	0. 12	2. 06	21. 09	76. 73	99. 88	97. 82	76. 73	20. 3
RPB- 1900	SS- 202	7' RT	19+00	- RPB-	3. 5- 5. 0	A- 7- 6(10)	46	28	0. 53	11. 06	37. 54	50. 87	99. 47	88. 41	50. 87	16. 2
RPB- 2100	SS- 142	CL	21+00	- RPB-	23. 5- 25. 0	A- 7- 6(23)	63	43	10. 23	16. 46	12. 61	60. 71	89. 77	73. 32	60. 71	74. 9
RPB- 2235	SS- 096	CL	22+35	- RPB-	3. 5- 5. 0	A- 7- 6(10)	61	43	1. 64	35. 43	23. 16	39. 77	98. 36	62. 93	39. 77	21. 2
RPC- 1750	SS- 012	16' LT	17+50	- RPC-	3. 5- 5. 0	A- 7- 5(13)	53	23	0. 02	2. 12	35. 47	62. 39	99. 98	97. 86	62. 39	24. 2
RPC- 1950	SS- 009	16' LT	19+50	- RPC-	3. 5- 5. 0	A- 6(3)	30	12	1. 08	13. 71	35. 57	49. 64	98. 92	85. 21	49. 64	15. 5
RPC- 2100	SS- 006	16' LT	21+00	- RPC-	8. 5- 10. 0	A- 4(0)	20	5	7. 23	9. 81	38. 40	44. 56	92. 77	82. 96	44. 56	12. 8
RPD- 1550	SS- 026	16' RT	15+50	- RPD-	8. 5- 10. 0	A- 2- 4(0)	0	0	0. 52	36. 02	35. 04	28. 42	99. 48	63. 46	28. 42	45. 7
RPD- 1750	SS- 021	16' RT	17+50	- RPD-	3. 5- 5. 0	A- 2- 4(0)	0	0	1. 61	30. 51	37. 19	30. 69	98. 39	67. 88	30. 69	34. 9
RPD- 1950	SS- 017	10' LT	19+50	- RPD-	13. 5- 15. 0	A- 7- 6(89)	100	78	0. 00	0. 18	0. 60	99. 22	100. 0	99. 82	99. 22	51. 4
RPD- 1950	ST- 2	16' LT	19+50	- RPD-	13. 1- 15. 1	A- 2- 7(5)	59	41	12. 42	36. 0	19. 26	32. 32	87. 58	51. 58	32. 32	36. 1
Y 1- 1762	SS- 050	30' RT	17+62	- Y 1-	13. 5- 15. 0	A- 7- 6(36)	65	42	0. 01	5. 04	13. 92	81. 03	99. 99	94. 95	81. 03	32. 5
Y 1- 2027	SS- 053	151' RT	20+27	- Y 1-	3. 5- 5. 0	A- 7- 5(9)	57	27	1. 49	27. 21	23. 99	47. 31	98. 51	71. 31	47. 31	18. 4
Y 1- 2174	SS- 064	20' LT	21+74	- Y 1-	13. 5- 15. 0	A- 7- 6(20)	67	39	9. 07	26. 81	6. 48	57. 64	90. 93	64. 12	57. 64	27. 0
Y 1- 2200a	S- 1001	80' LT	22+00	- Y 1-	0. 0- 1. 5	A- 2- 6(1)	40	21	22. 53	27. 40	19. 76	30. 31	77. 47	50. 07	30. 31	15. 3
Y 1- 2200b	S- 1002	50' LT	22+00	- Y 1-	0. 0- 1. 0	A- 2- 7(2)	49	30	30. 32	21. 18	18. 47	30. 03	69. 68	48. 51	30. 03	18. 9
Y 1- 2250a	S- 1003	80' LT	22+50	- Y 1-	4. 0- 6. 0	A- 6(1)	37	16	9. 04	24. 29	30. 47	36. 19	90. 96	66. 66	36. 19	15. 6
Y 1- 2250b	S- 1004	45' LT	22+50	- Y 1-	1. 0- 3. 0	A- 2- 6(1)	32	16	4. 90	30. 76	31. 54	32. 80	99. 10	64. 34	32. 80	14. 6
Y 1- 2390	SS- 067	30' LT	23+90	- Y 1-	8. 5- 10. 0	A- 2- 7(0)	49	32	9. 50	42. 26	22. 60	25. 65	90. 50	48. 24	25. 65	7. 5
Y 1- 2600	SS- 070	43' RT	26+00	- Y 1-	3. 5- 5. 0	A- 7- 6(11)	53	32	3. 37	24. 99	23. 35	48. 29	96. 63	71. 64	48. 29	21. 4
Y 1- 2923	SS- 073	4' RT	29+23	- Y 1-	3. 5- 5. 0	A- 7- 5(12)	54	20	0. 54	18. 68	19. 62	61. 17	99. 46	80. 79	61. 17	27. 5
Y 1- 3200	SS- 078	19' RT	32+00	- Y 1-	13. 5- 15. 0	A- 6(9)	39	26	0. 09	2. 25	47. 14	50. 52	99. 91	97. 66	50. 52	26. 4
Y 1- 3600	SS- 089	21' LT	36+00	- Y 1-	8. 5- 9. 0	A- 7- 6(7)	49	34	5. 36	30. 21	24. 42	40. 01	94. 64	64. 43	40. 01	15. 6
Y 1- 3800	SS- 111	43' LT	38+00	- Y 1-	3. 5- 5. 0	A- 7- 6(13)	46	25	0. 35	3. 80	34. 21	61. 65	99. 65	95. 86	61. 65	18. 7
Y 1- 4000	SS- 107	50' RT	40+00	- Y 1-	13. 5- 15. 0	A- 2- 4(0)	0	0	0. 88	36. 14	34. 94	28. 04	99. 12	62. 98	28. 04	37. 0
EB1- A	SS- 149	20' LT	41+40	- Y 1-	13. 5- 15. 0	A- 7- 6(56)	77	54	0. 00	0. 87	6. 75	92. 38	100. 0	99. 13	92. 38	47. 7
EB1- B	SS- 157	20' RT	41+40	- Y 1-	9. 0- 10. 0	A- 6(9)	39	18	0. 00	2. 45	34. 46	63. 09	100. 0	97. 55	63. 09	21. 2
B1- A	SS- 188	17' LT	42+88	- Y 1-	18. 5- 20. 0	A- 7- 6(29)	54	30	0. 67	3. 16	8. 70	87. 46	99. 33	96. 16	87. 46	51. 9
B1- A	SS- 184	17' LT	42+88	- Y 1-	8. 5- 9. 0	A- 7- 6(19)	67	47	0. 00	24. 99	23. 19	51. 83	100. 0	75. 01	51. 83	17. 2
B1- B	SS- 174	17' RT	42+88	- Y 1-	8. 5- 9. 0	A- 6(7)	35	20	1. 48	15. 70	28. 57	54. 25	98. 52	82. 82	54. 25	16. 6
B1- B	SS- 179	17' RT	42+88	- Y 1-	23. 5- 25. 0	A- 7- 5(17)	47	16	0. 00	1. 37	11. 29	87. 34	100. 0	98. 63	87. 34	69. 5
EB2- B	SS- 214	17' RT	44+03	- Y 1-	8. 5- 10. 0	A- 7- 6(29)	68	50	0. 66	8. 07	28. 48	62. 8	99. 34	91. 28	62. 80	18. 9
EB2- B	ST- 1	17' RT	44+03	- Y 1-	20. 0- 22. 0	A- 7- 6(41)	58	39	2. 32	0. 24	2. 62	94. 83	97. 68	97. 44	94. 83	65. 8

TESTED BY: *Michael P. Simon*

NCDOT NO.: 129-03-0411

SOIL TEST RESULTS

BORING NO.	SAMPLE NO.	OFFSET	STATION	ALIGNMENT	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE
									GRAVEL	C. SAND	F. SAND	FINES	10	40	200	
EB2-B	SS-217	17' RT	44+03	-Y1-	23.5-25.0	A-7-6(41)	66	45	0.36	6.86	8.22	84.56	99.64	92.78	84.56	49.1
EB2-B	SS-219	17' RT	44+03	-Y1-	33.5-35.0	A-7-6(46)	70	50	0.05	3.32	11.46	85.17	99.95	96.64	85.17	68.4
Y1-4600	SS-002	40' RT	46+00	-Y1-	3.5-5.0	A-2-6(1)	39	18	3.52	27.55	34.63	34.30	96.48	68.93	34.30	11.2
Y1-4800	SS-029	68' RT	48+00	-Y1-	3.5-5.0	A-7-6(11)	45	27	0.99	13.24	31.35	54.42	99.01	85.77	54.42	16.2
Y1-5000	SS-035	70' RT	50+00	-Y1-	3.5-5.0	A-7-6(14)	48	28	0.05	2.44	37.03	60.48	99.95	97.52	60.48	21.5
Y2-1100	SS-044	14' RT	11+00	-Y2-	13.5-15.0	A-1-B(0)	0	0	4.22	53.18	22.69	19.92	95.78	42.61	19.92	26.8
Y2-1400	SS-056	31' RT	14+00	-Y2-	3.5-5.0	A-5(4)	47	9	5.88	0.12	40.44	53.57	94.12	94.01	53.57	32.6
Y2-2255	SS-166	19' RT	22+55	-Y2-	18.5-20.0	A-6(6)	40	22	4.23	21.99	26.27	47.51	95.77	73.78	47.51	19.6
Y2-2255	SS-169	19' RT	22+55	-Y2-	33.5-35.0	A-7-5(8)	45	15	2.17	20.16	18.95	58.73	97.83	77.68	58.73	57.0
Y3-2500	SS-039	33' LT	25+00	-Y3-	3.5-5.0	A-7-6(15)	55	31	0.12	2.47	40.12	57.29	99.88	97.41	57.29	24.4
DW1-1055	SS-081	2' RT	10+55	-DW1-	4.0-5.5	A-7-6(17)	60	41	0.37	13.57	33.07	52.99	99.63	86.06	52.99	19.0

TESTED BY: Michael P. Sumner

NCDOT NO.: 129-03-0411



SPECIFIC GRAVITY
 AASHTO T-100-15

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001 Visual Description: GRAY CLAY

(Minus No.4 sieve material, oven dried)

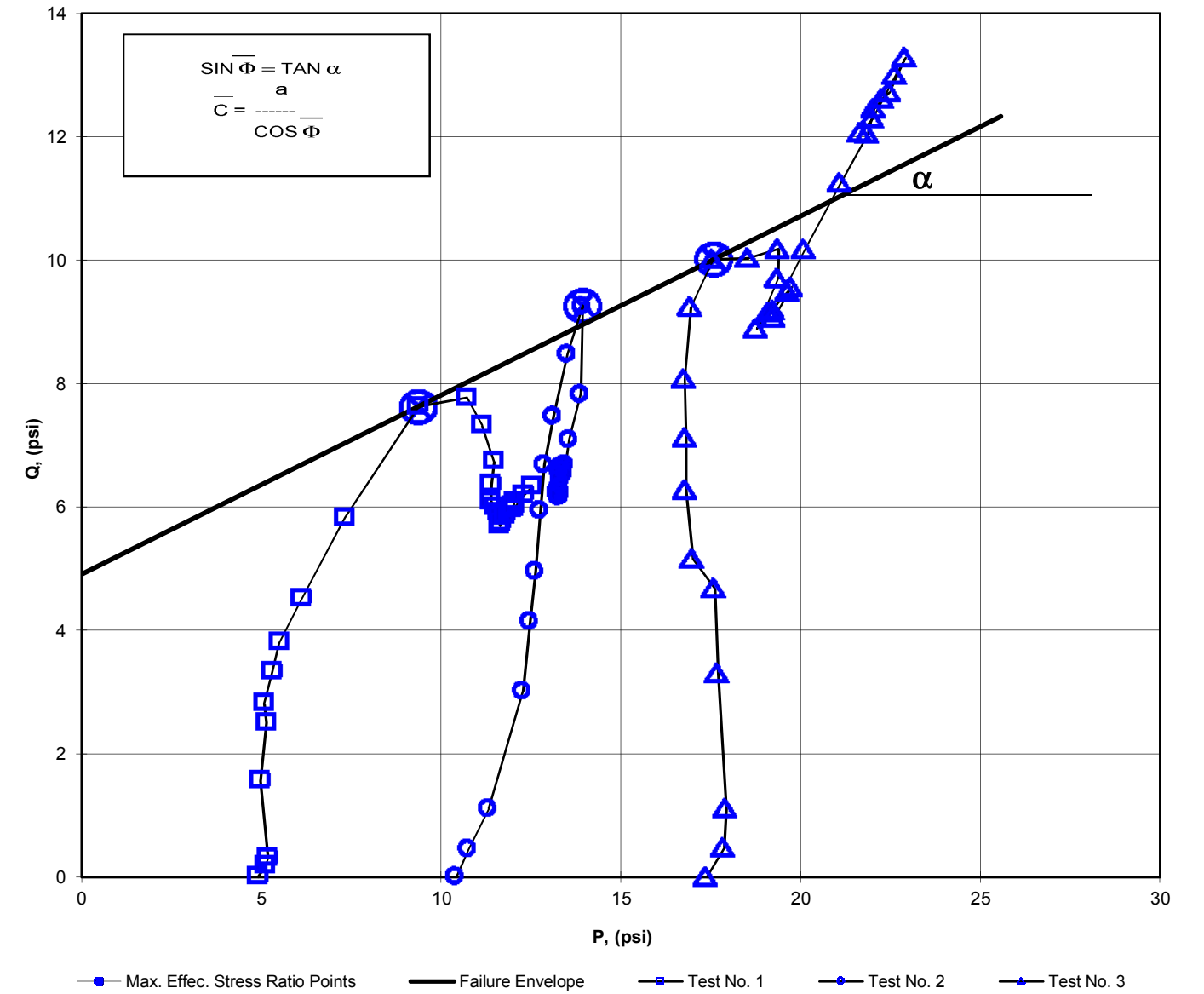
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Pycnometer ID:	G/R/N 347	G/R/N 344
Weight of Pycnometer & Soil & Water (g):	696.6	692.13
Temperature (°C):	24.8	24.9
Weight of Pycnometer & Water (g):	668.05	667.29
Tare Number:	347	344
Weight of Tare & Dry Soil (g):	215	208.33
Weight of Tare (g):	170.71	169.91
Weight of Dry Soil (g):	44.29	38.42
Specific Gravity of Soil @ Measured Temperature:	2.813	2.829
Specific Gravity of Water @ Measured Temperature:	0.99710	0.99708
Conversion Factor for Measured Temperature:	0.99889	0.99887
Specific Gravity @ 20° Celsius:	2.816	2.833

Average Specific Gravity @ 20° Celsius 2.82

CONSOLIDATED UNDRAINED TRIAXIAL TEST WITH PORE PRESSURE READINGS
 AASHTO T-297

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Consolidated Undrained Triaxial Test with Pore Pressure



$a = 4.91$ $\bar{C} = 5.13$
 $\alpha = 16.2$ $\bar{\Phi} = 16.88$

Tested By 129-05-0411 Date 11/28/18 Checked By SFS Date 11/28/18

DCN: CT-S5A Date: 11/9/18 Revision: 0

S:\Excel\Excel QA\Spreadsheets\Specific Gravity.xls

Tested By: 129-04-0411 Date: 11/15/18 Approved By: MPS Date: 11/28/18

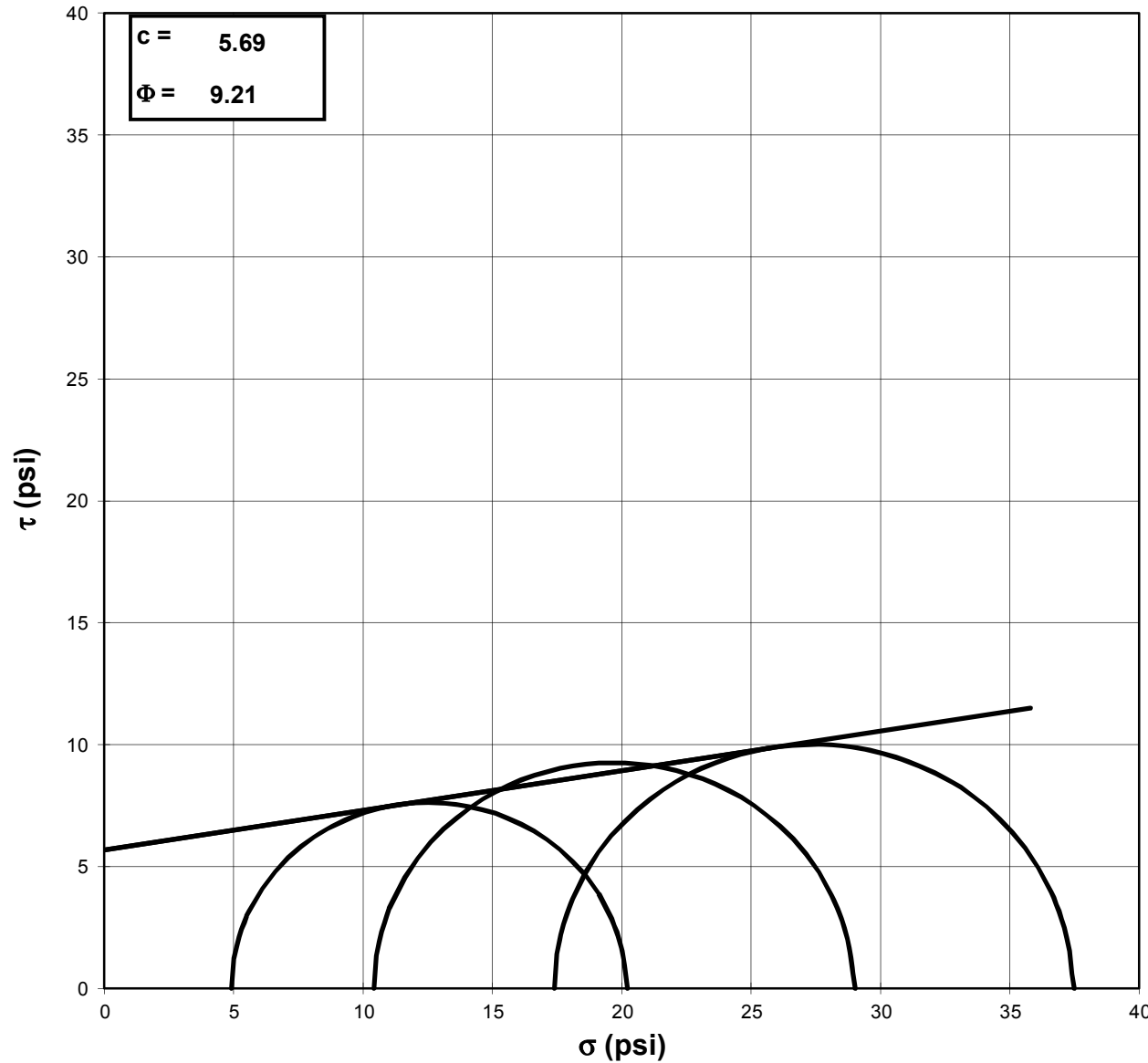
page 1 of 11 DCN: CT-S28 DATE: 4/12/13 REVISION: 3

Sigmatrax.xls



MOHR TOTAL STRENGTH ENVELOPE
 AASHTO T-297

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001
 Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

CONSOLIDATED UNDRAINED TRIAXIAL TEST
WITH PORE PRESSURE READINGS
 AASHTO T-297

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001
 Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Stage No.	1
Test No.	1

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.086	Diameter 1:	2.870
Length 2:	6.132	Diameter 2:	2.869
Length 3:	6.096	Diameter 3:	2.882
Length 4:	6.096	Diameter 4:	2.869
Avg. Length:	6.103	Avg. Diam.:	2.873

PRESSURES (psi)	
Cell Pressure (psi)	54.9
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	4.9
Pore Pressure	
Response (%)	98

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.1
Final Change (ml)	10.9

MAXIMUM OBLIQUITY POINTS	
P	= 9.37
Q	= 7.63

Initial Dial Reading (mil)	212
Dial Reading After Saturation (mil)	385
Dial Reading After Consolidation (mil)	444

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.2	0.000	50.0
13.5	0.002	50.0
14.9	0.003	50.0
30.0	0.009	51.5
41.6	0.015	52.3
45.4	0.021	52.6
51.6	0.030	52.9
57.6	0.039	53.2
66.4	0.051	53.3
82.6	0.072	53.4
105.2	0.103	53.1
107.5	0.139	51.9
102.5	0.176	51.1
95.9	0.219	50.1
91.6	0.250	49.8
88.7	0.292	49.6
88.4	0.350	49.4
88.1	0.411	49.2
87.8	0.458	49.1
87.3	0.520	49.0
87.4	0.565	48.9
88.7	0.611	48.9
91.0	0.656	48.9
93.0	0.687	48.9
95.1	0.718	48.9
94.6	0.749	48.9
94.6	0.780	48.9
95.5	0.824	48.8
99.2	0.870	48.8
102.0	0.917	48.7

Tested By: 129-04-0411 Date: 11/15/18 Approved By: MPS Date: 11/28/18

Tested By: 129-04-0411 Date: 11/15/18 Input Checked By: GEM Date: 11/28/18

TIP: B-5980
 Project Description: I-95 Interchange Improvements at Halifax Rd (SR 1522)
 ALN: Y1 STA: 44+03 OFF: 17' RT



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Effective Confining Pressure (psi)	4.9	Stage No.	1
		Test No	1

Stage No.	1
Test No.	2

INITIAL SAMPLE DIMENSIONS (in)			
Length 1:	6.080	Diameter 1:	2.878
Length 2:	6.136	Diameter 2:	2.863
Length 3:	6.101	Diameter 3:	2.853
Length 4:	6.127	Diameter 4:	2.831
Avg. Length:	6.111	Avg. Diam.:	2.856

INITIAL DIMENSIONS		VOLUME CHANGE	
Initial Sample Length (in)	6.10	Volume After Consolidation (in ³)	35.52
Initial Sample Diameter (in)	2.87	Length After Consolidation (in)	5.87
Initial Sample Area (in ²)	6.48	Area After Consolidation (in ²)	6.050
Initial Sample Volume (in ³)	39.55		

PRESSURES (psi)	
Cell Pressure (psi)	60.4
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	10.4
Pore Pressure Response (%)	98

VOLUME CHANGE	
Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	7.7
Final Change (ml)	16.3

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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MAXIMUM OBLIQUITY POINTS	
\bar{P}	= 13.94
Q	= 9.26

Initial Dial Reading (mil)	282
Dial Reading After Saturation (mil)	282
Dial Reading After Consolidation (mil)	348

0.03	0.38	-0.01	5.30	4.9	1.077	-0.03	5.11	0.19
0.06	0.60	0.02	5.50	4.9	1.123	0.03	5.20	0.30
0.15	3.10	1.49	6.52	3.4	1.908	0.49	4.97	1.55
0.25	5.00	2.27	7.64	2.6	2.896	0.46	5.14	2.50
0.36	5.63	2.65	7.89	2.3	3.483	0.48	5.08	2.81
0.51	6.65	2.92	8.63	2.0	4.341	0.45	5.31	3.32
0.67	7.61	3.22	9.31	1.7	5.487	0.43	5.50	3.81
0.88	9.04	3.31	10.64	1.6	6.634	0.37	6.12	4.52
1.23	11.65	3.42	13.15	1.5	8.792	0.30	7.32	5.83
1.75	15.26	3.17	17.00	1.7	9.750	0.21	9.37	7.63
2.36	15.54	1.95	18.50	3.0	6.247	0.13	10.73	7.77
2.99	14.64	1.08	18.47	3.8	4.819	0.08	11.15	7.32
3.73	13.47	0.17	18.22	4.7	3.839	0.01	11.48	6.74
4.25	12.72	-0.14	17.77	5.1	3.517	-0.01	11.41	6.36
4.98	12.17	-0.39	17.47	5.3	3.295	-0.03	11.39	6.08
5.97	12.00	-0.61	17.52	5.5	3.171	-0.05	11.52	6.00
7.01	11.81	-0.80	17.52	5.7	3.066	-0.07	11.62	5.90
7.80	11.67	-0.92	17.50	5.8	3.001	-0.08	11.66	5.83
8.86	11.46	-1.00	17.37	5.9	2.940	-0.09	11.64	5.73
9.63	11.37	-1.05	17.34	6.0	2.908	-0.09	11.65	5.69
10.41	11.48	-1.03	17.42	5.9	2.932	-0.09	11.68	5.74
11.17	11.71	-1.03	17.66	5.9	2.969	-0.09	11.80	5.86
11.70	11.94	-1.11	17.96	6.0	2.983	-0.09	11.99	5.97
12.23	12.17	-1.06	18.14	6.0	3.036	-0.09	12.06	6.08
12.76	12.02	-1.08	18.01	6.0	3.007	-0.09	12.00	6.01
13.28	11.95	-1.11	17.97	6.0	2.986	-0.09	11.99	5.97
14.04	11.97	-1.14	18.02	6.1	2.977	-0.10	12.04	5.98
14.82	12.38	-1.21	18.51	6.1	3.021	-0.10	12.32	6.19
15.62	12.66	-1.31	18.88	6.2	3.036	-0.11	12.55	6.33

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
17.2	0.000	50.0
22.8	0.001	50.1
31.1	0.002	50.2
55.3	0.008	51.1
69.6	0.014	52.1
80.0	0.019	52.7
92.7	0.028	53.6
102.1	0.037	54.2
112.4	0.049	54.8
125.5	0.069	55.4
136.0	0.098	55.7
118.2	0.133	54.4
109.4	0.168	53.9
104.6	0.210	53.6
103.0	0.238	53.5
99.6	0.279	53.4
101.7	0.331	53.4
105.8	0.391	53.7
107.7	0.434	53.8
108.3	0.492	53.7
108.5	0.537	53.6
108.3	0.582	53.6
107.9	0.626	53.5
106.7	0.655	53.4
106.4	0.683	53.4
106.2	0.713	53.4
107.0	0.743	53.3
106.8	0.789	53.3
107.9	0.833	53.3
108.0	0.862	53.3
108.4	0.932	53.3

TIP: B-5980
 Project Description: I-95 Interchange Improvements at Halifax Rd (SR 1522)
 ALN: Y1 STA: 44+03 OFF: 17' RT

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297



Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Effective Confining Pressure (psi)	10.4	Stage No.	1
		Test No	2

Stage No.	1
Test No.	3

INITIAL SAMPLE DIMENSIONS (in)

Length 1:	6.162	Diameter 1:	2.845
Length 2:	6.185	Diameter 2:	2.875
Length 3:	6.162	Diameter 3:	2.878
Length 4:	6.138	Diameter 4:	2.872
Avg. Length:	6.162	Avg. Diam.:	2.868

INITIAL DIMENSIONS

VOLUME CHANGE

Initial Sample Length (in)	6.11	Volume After Consolidation (in ³)	38.16
Initial Sample Diameter (in)	2.86	Length After Consolidation (in)	6.05
Initial Sample Area (in ²)	6.41	Area After Consolidation (in ²)	6.313
Initial Sample Volume (in ³)	39.16		

PRESSURES (psi)

Cell Pressure (psi)	67.4
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	17.4
Pore Pressure Response (%)	96

VOLUME CHANGE

Initial Burette Reading (ml)	48.0
Final Burette Reading (ml)	23.8
Final Change (ml)	24.2

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
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MAXIMUM OBLIQUITY POINTS

\bar{P}	=	17.57
Q	=	10.01

Initial Dial Reading (mil)	76
Dial Reading After Saturation (mil)	84
Dial Reading After Consolidation (mil)	193

Strain (%)	Deviation Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	\bar{A}	\bar{P}	Q
0.01	0.90	0.10	11.22	10.3	1.087	0.11	10.77	0.45
0.03	2.21	0.20	12.43	10.2	1.216	0.09	11.33	1.10
0.13	6.03	1.15	15.31	9.3	1.650	0.19	12.29	3.01
0.23	8.28	2.09	16.62	8.3	1.993	0.26	12.48	4.14
0.32	9.92	2.75	17.60	7.7	2.293	0.28	12.64	4.96
0.47	11.90	3.60	18.72	6.8	2.745	0.31	12.77	5.95
0.61	13.38	4.23	19.57	6.2	3.161	0.32	12.88	6.69
0.80	14.96	4.77	20.62	5.7	3.644	0.33	13.14	7.48
1.14	16.96	5.37	22.01	5.1	4.358	0.32	13.53	8.48
1.63	18.52	5.75	23.20	4.7	4.958	0.32	13.94	9.26
2.19	15.65	4.36	21.72	6.1	3.581	0.28	13.89	7.83
2.78	14.20	3.94	20.68	6.5	3.190	0.28	13.58	7.10
3.47	13.37	3.65	20.15	6.8	2.973	0.28	13.46	6.69
3.93	13.06	3.53	19.96	6.9	2.894	0.28	13.43	6.53
4.61	12.46	3.38	19.50	7.0	2.769	0.28	13.27	6.23
5.47	12.65	3.45	19.62	7.0	2.813	0.28	13.30	6.32
6.46	13.12	3.68	19.87	6.7	2.946	0.29	13.31	6.56
7.19	13.31	3.75	19.98	6.7	2.994	0.29	13.33	6.65
8.14	13.26	3.66	20.03	6.8	2.961	0.28	13.40	6.63
8.88	13.19	3.60	20.02	6.8	2.931	0.28	13.42	6.59
9.63	13.04	3.58	19.89	6.8	2.904	0.28	13.37	6.52
10.35	12.89	3.53	19.78	6.9	2.868	0.28	13.34	6.44
10.83	12.64	3.43	19.63	7.0	2.806	0.28	13.32	6.32
11.31	12.53	3.45	19.51	7.0	2.797	0.28	13.24	6.27
11.79	12.43	3.40	19.46	7.0	2.769	0.28	13.25	6.22
12.29	12.48	3.32	19.59	7.1	2.757	0.27	13.34	6.24
13.04	12.34	3.32	19.45	7.1	2.737	0.27	13.28	6.17
13.77	12.39	3.28	19.53	7.1	2.734	0.27	13.34	6.19
14.26	12.33	3.27	19.49	7.2	2.723	0.27	13.32	6.17
15.42	12.22	3.33	19.31	7.1	2.723	0.28	13.20	6.11

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.4	0.000	50.0
17.3	0.001	50.0
25.4	0.002	50.6
53.1	0.008	53.0
70.5	0.015	54.4
76.6	0.021	55.5
91.0	0.030	56.9
101.8	0.039	57.7
114.1	0.052	58.7
129.5	0.074	59.7
140.0	0.105	59.8
141.0	0.142	58.9
143.8	0.179	58.2
138.5	0.222	57.7
128.5	0.254	57.5
132.9	0.297	57.4
139.7	0.356	57.2
140.0	0.418	57.2
135.4	0.465	57.2
138.4	0.527	57.3
153.2	0.573	57.4
169.6	0.619	57.5
182.3	0.666	57.6
189.2	0.697	57.8
192.5	0.728	57.7
195.1	0.759	57.6
204.3	0.791	57.8
201.8	0.836	57.7
193.2	0.884	57.7
190.8	0.915	57.8
183.3	0.946	57.6

Tested By: 129-04-0411 Date: 11/15/18 Input Checked By: GEM Date:

TIP: B-5980
 Project Description: I-95 Interchange Improvements at Halifax Rd (SR 1522)
 ALN: Y1 STA: 44+03 OFF: 17' RT

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297



**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001

Client: AECOM Boring No.: EB2-B
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-1
 Lab ID: R-2018-313-001-001
 Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

Effective Confining Pressure (psi)	17.4	Stage No.	1
		Test No	3

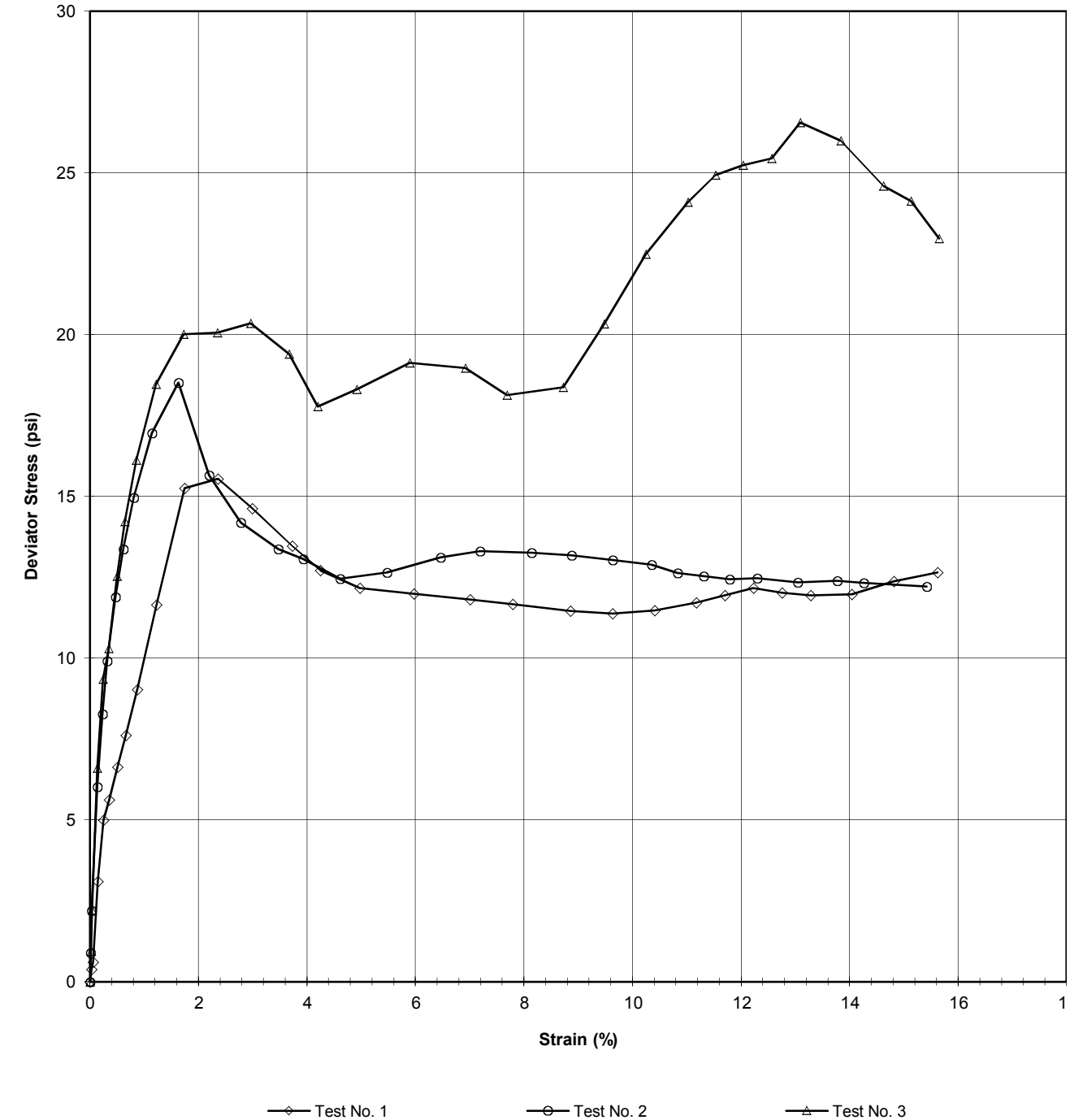
INITIAL DIMENSIONS

Initial Sample Length (in)	6.16
Initial Sample Diameter (in)	2.87
Initial Sample Area (in ²)	6.46
Initial Sample Volume (in ³)	39.79

VOLUME CHANGE

Volume After Consolidation (in ³)	38.16
Length After Consolidation (in)	6.04
Area After Consolidation (in ²)	6.313

Strain (%)	Deviator Stress	ΔU	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principle Stress Ratio	A	P	Q
0.02	0.95	-0.01	18.35	17.4	1.054	-0.01	17.88	0.47
0.04	2.22	0.57	19.05	16.8	1.132	0.27	17.94	1.11
0.14	6.60	2.99	21.01	14.4	1.458	0.47	17.71	3.30
0.24	9.35	4.45	22.30	13.0	1.722	0.50	17.62	4.67
0.35	10.30	5.53	22.17	11.9	1.868	0.56	17.02	5.15
0.50	12.54	6.85	23.09	10.5	2.189	0.57	16.82	6.27
0.65	14.23	7.70	23.93	9.7	2.466	0.56	16.82	7.11
0.85	16.13	8.68	24.85	8.7	2.850	0.56	16.79	8.07
1.22	18.48	9.69	26.19	7.7	3.395	0.55	16.95	9.24
1.73	20.02	9.84	27.58	7.6	3.647	0.51	17.57	10.01
2.34	20.05	8.86	28.59	8.5	3.349	0.46	18.56	10.03
2.96	20.35	8.18	29.57	9.2	3.208	0.42	19.39	10.18
3.67	19.40	7.72	29.08	9.7	3.004	0.41	19.38	9.70
4.20	17.77	7.49	27.68	9.9	2.794	0.44	18.79	8.89
4.91	18.31	7.42	28.29	10.0	2.835	0.42	19.13	9.16
5.89	19.13	7.20	29.33	10.2	2.875	0.39	19.76	9.56
6.92	18.96	7.21	29.16	10.2	2.860	0.40	19.68	9.48
7.69	18.14	7.20	28.34	10.2	2.778	0.41	19.27	9.07
8.72	18.37	7.33	28.44	10.1	2.825	0.42	19.25	9.19
9.48	20.34	7.45	30.29	10.0	3.043	0.38	20.12	10.17
10.25	22.49	7.53	32.36	9.9	3.278	0.35	21.12	11.25
11.02	24.09	7.57	33.92	9.8	3.451	0.33	21.88	12.05
11.53	24.93	7.80	34.53	9.6	3.597	0.33	22.06	12.46
12.04	25.24	7.73	34.91	9.7	3.610	0.32	22.29	12.62
12.56	25.44	7.64	35.20	9.8	3.607	0.31	22.48	12.72
13.09	26.56	7.75	36.21	9.6	3.753	0.30	22.93	13.28
13.84	25.99	7.74	35.65	9.7	3.689	0.31	22.66	12.99
14.63	24.60	7.68	34.32	9.7	3.529	0.33	22.02	12.30
15.13	24.13	7.78	33.75	9.6	3.507	0.34	21.69	12.06
15.65	22.97	7.63	32.74	9.8	3.351	0.35	21.26	11.49



Tested By: 129-04-0411 Date: 11/15/18 Approved By: MPS Date: 11/28/18

**CONSOLIDATED UNDRAINED TRIAXIAL TEST
 WITH PORE PRESSURE READINGS**
 AASHTO T-297

Client: AECOM
 Client Reference: Halifax Rd. Interchange
 Project No.: R-2018-313-001
 Lab ID: R-2018-313-001-001

Boring No.: EB2-B
 Depth (ft): 20-22
 Sample No.: ST-1

Client: AECOM
 Client Reference: Halifax Rd. Interchange
 Project No.: R-2018-313-001
 Lab ID: R-2018-313-001-001 Specific Gravity (Measured) 2.82

Visual Description: GRAY CLAY WITH SAND (UNDISTURBED)

SAMPLE CONDITION SUMMARY

Boring No.:	EB2-B	EB2-B	EB2-B
Depth (ft):	20-22	20-22	20-22
Sample No.:	ST-1	ST-1	ST-1
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	51.3	33.6	65.8
Total Unit Weight (pcf)	98.6	105.1	107.7
Dry Unit Weight (pcf)	65.2	78.7	65.0
Moisture Content (%) (FINAL)	52.1	53.4	45.9
Initial State Void Ratio, e	1.701	1.237	1.710
Void Ratio at Shear, e	1.426	1.181	1.599

TEST 1 INITIAL



TEST 1 FINAL



TEST 2 INITIAL



TEST 2 FINAL



TEST 3 INITIAL



TEST 3 FINAL



Tested By: 129-04-0411 Date: 11/15/18 Input Checked By: GEM Date: 11/28/18

Tested By 129-04-0411 Date 11/15/18

Approved By MPS Date 11/28/18



SPECIFIC GRAVITY
 AASHTO T-100-15

Client: AECOM Boring No.: RPD-1950
 Client Reference: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN CLAY

(Minus No.4 sieve material, oven dried)

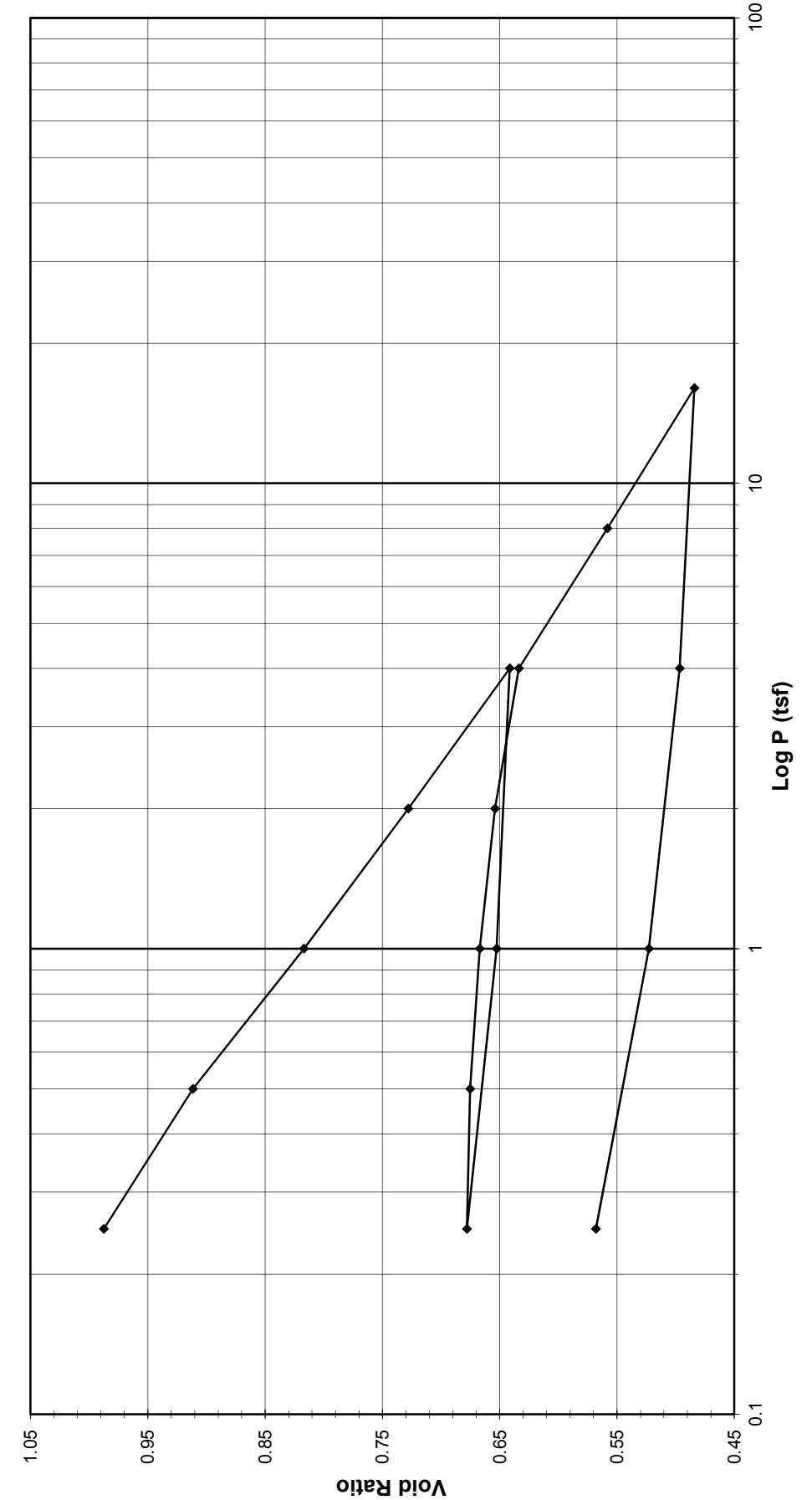
Replicate Number	1	2
Pycnometer ID:	G/R/N 543	G/R/N 545
Weight of Pycnometer & Soil & Water (g):	700.5	696.97
Temperature (°C):	24.8	24.5
Weight of Pycnometer & Water (g):	660.27	660.72
Tare Number:	543	545
Weight of Tare & Dry Soil (g):	226.49	220.67
Weight of Tare (g):	163.18	163.66
Weight of Dry Soil (g):	63.31	57.01
Specific Gravity of Soil @ Measured Temperature:	2.743	2.746
Specific Gravity of Water @ Measured Temperature:	0.99710	0.99718
Conversion Factor for Measured Temperature:	0.99889	0.99897
Specific Gravity @ 20° Celsius:	2.746	2.749

Average Specific Gravity @ 20° Celsius	2.75
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ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client	AECOM	Boring No.	RPD-1950
Client Reference	Halifax Rd. Interchange	Depth (ft)	13.1-15.1
Project No.	R-2018-313-001	Sample No.	ST-2
Lab ID	R-2018-313-001-002	Visual Description	TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED





ONE DIMENSIONAL CONSOLIDATION
AASHTO T-216

Client AECOM Boring No. RPD-1950
Client Reference Halifax Rd. Interchange Depth (ft) 13.1-15.1
Project No. R-2018-313-001 Sample No. ST-2
Lab ID R-2018-313-001-002 Visual Description TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R470
1 Division = 0.0001 (in.)

Sample Properties

Water Content (%) 20.61
Tare Number 800 855
Wt. Tare & WS (g) 530.54 258.20
Wt. Tare & DS (g) 416.85 237.35
Wt. Water (g) 113.69 20.85
Wt. Tare (g) 101.70 136.20
Wt. DS (g) 315.15 101.15

Sample Parameters
Sample Diameter (in) 2.5 2.5
Sample Height (in) 1.0000 0.7406
Sample Volume (cc) 80.44 59.57
Wt. Wet Sample + Ring (g) 356.35 340.20
Wt. of Ring (g) 214.18 214.18
Wt. of Wet Sample (g) 142.17 126.02
Wet Density (pcf) 110.29 131.99
Wet Density (g/cc) 1.77 2.12
Water Content (%) 36.07 20.61
Wt. of Dry Sample (g) 104.48 104.48
Dry Density (pcf) 81.05 109.44
Dry Density (g/cc) 1.30 1.75
Void Ratio 1.1173 0.5681
Saturation (%) 88.79 99.79
Specific Gravity 2.75 Measured

Test Data Summary

Applied Pressure (tsf)	Final Reading (div)	Dial Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Seating	0	0	0	25.400	80.440	1.29885	1.11726
0.25	635.0	22.8	612.1	23.845	75.516	1.38354	0.98765
0.5	1015.4	44.2	971.2	22.933	72.627	1.43856	0.91163
1	1479.4	60.5	1418.9	21.796	69.026	1.51362	0.81683
2	1932.4	93.6	1838.8	20.730	65.649	1.59149	0.72794
4	2377.8	130.5	2247.3	19.692	62.363	1.67535	0.64145
1	2277.7	83.0	2194.7	19.825	62.785	1.66407	0.65258
0.25	2127.0	52.7	2074.3	20.131	63.754	1.63878	0.67808
0.5	2145.9	58.3	2087.6	20.097	63.647	1.64155	0.67525
1	2201.4	74.9	2126.5	19.999	63.334	1.64965	0.66702
2	2287.9	100.0	2187.9	19.843	62.841	1.66261	0.65403
4	2416.7	133.4	2283.3	19.600	62.073	1.68318	0.63382
8	2810.4	169.9	2640.6	18.693	59.199	1.76488	0.55818
16	3216.1	226.1	2990.1	17.805	56.388	1.85288	0.48418
4	3093.4	161.7	2931.7	17.953	56.857	1.83758	0.49654
1	2919.3	111.7	2807.6	18.269	57.855	1.80587	0.52282
0.25	2667.0	73.0	2593.9	18.811	59.574	1.75377	0.56805

Tested By 129-04-0411 Date 11/26/18 Input Checked By GEM Date 12/7/18

DCN: CT-24E Date: 5/3/12 Revision: 6

Z:\2018 PROJECTS\AECOM\2018-313 AECOM - HALIFAX\2018-313-001-002 DOT GEOJAC-16T5F1 Cx.xlsm\FINAL PLOT

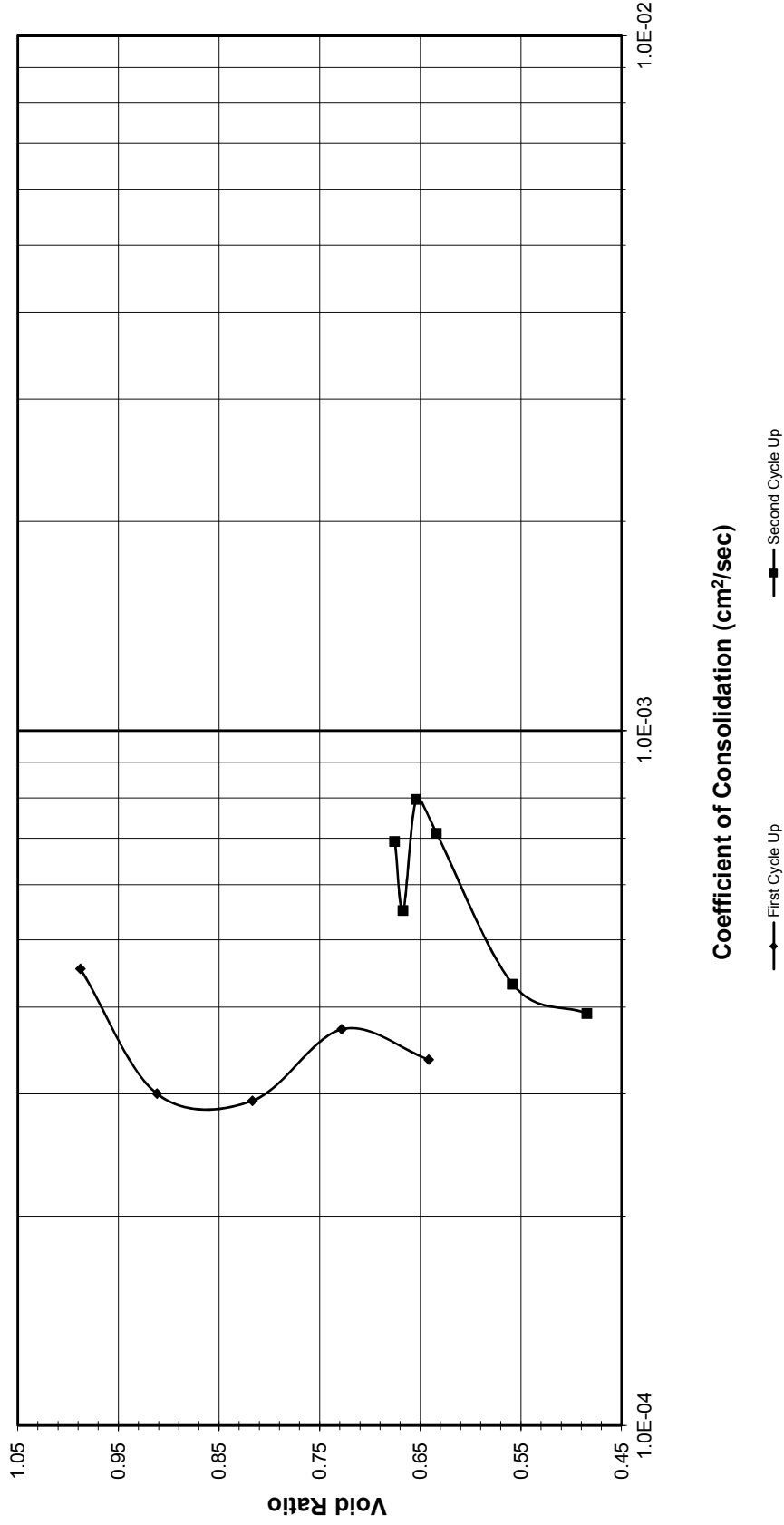


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client AECOM Boring No. RPD-1950
Client Reference Halifax Rd. Interchange Depth (ft) 13.1-15.1
Project No. R-2018-313-001 Sample No. ST-2
Lab ID R-2018-313-001-002 Visual Description TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

—●— First Cycle Up —■— Second Cycle Up



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM
 Client Reference: Halifax Rd. Interchange
 Project No.: R-2018-313-001
 Lab ID: R-2018-313-001-002

Boring No.: RPD-1950
 Depth (ft): 13.1-15.1
 Sample No.: ST-2
 Visual Description: TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Sample Properties		C _v Test Data Summary	
Consolidometer No.	R470	Corrected	Sample
1 Division =	0.0001 (in.)	Dial Reading @ t ₅₀ (div)	Height @ t ₅₀ (cm)
Initial	Final	Time t ₅₀ (min.)	C _v (cm ² /sec)
Water Content	855		
Tare Number	800		
Wt. Tare & WS (g)	530.54	287.2	2.467
Wt. Tare & DS (g)	416.85	780.1	2.342
Wt. Water (g)	113.69	1198.0	0.00029
Wt. Tare (g)	101.70	1622.7	0.00037
Wt. DS (g)	315.15	2035.1	0.00034
Water Content (%)	36.07	NA	NA
Sample Parameters			
Sample Diameter (in)	2.5	NA	NA
Sample Height (in)	1.000	NA	NA
Sample Volume (cc)	80.44	2079.6	0.00069
Wt. Wet Sample + Ring (g)	356.35	2100.7	0.00055
Wt. of Ring (g)	214.18	2149.8	0.00080
Wt. of Wet Sample (g)	142.17	2224.8	0.00071
Wet Density (pcf)	110.29	2449.8	0.00043
Wet Density (g/cc)	1.77	2804.9	0.00039
Water Content (%)	36.07	NA	NA
Wt. of Dry Sample (g)	104.48	NA	NA
Dry Density (pcf)	81.05	NA	NA
Dry Density (g/cc)	1.30	NA	NA
Void Ratio	1.1173	NA	NA
Saturation (%)	88.79	NA	NA
Specific Gravity	2.75	NA	NA

Load Increment (tsf): 0 - 0.25, 0.25 - 0.5, 0.5 - 1.0, 1.0 - 2.0, 2.0 - 4.0, 4.0 - 1.0, 1.0 - 0.25, 0.25 - 0.5, 0.5 - 1.0, 1.0 - 2.0, 2.0 - 4.0, 4.0 - 8.0, 8.0 - 16.0, 16.0 - 4.0, 4.0 - 1.0, 1.0 - 0.25

Dial Reading @ t₅₀ (div): 310.0, 824.3, 1258.5, 1716.3, 2165.6, NA, NA, 2137.9, 2175.6, 2249.8, 2358.2, 2619.7, 3031.0, NA, NA, NA

Machine Deflection (div): 22.8, 44.2, 60.5, 93.6, 130.5, 83.0, 52.7, 58.3, 74.9, 100.0, 133.4, 169.9, 226.1, 161.7, 111.7, 73.0

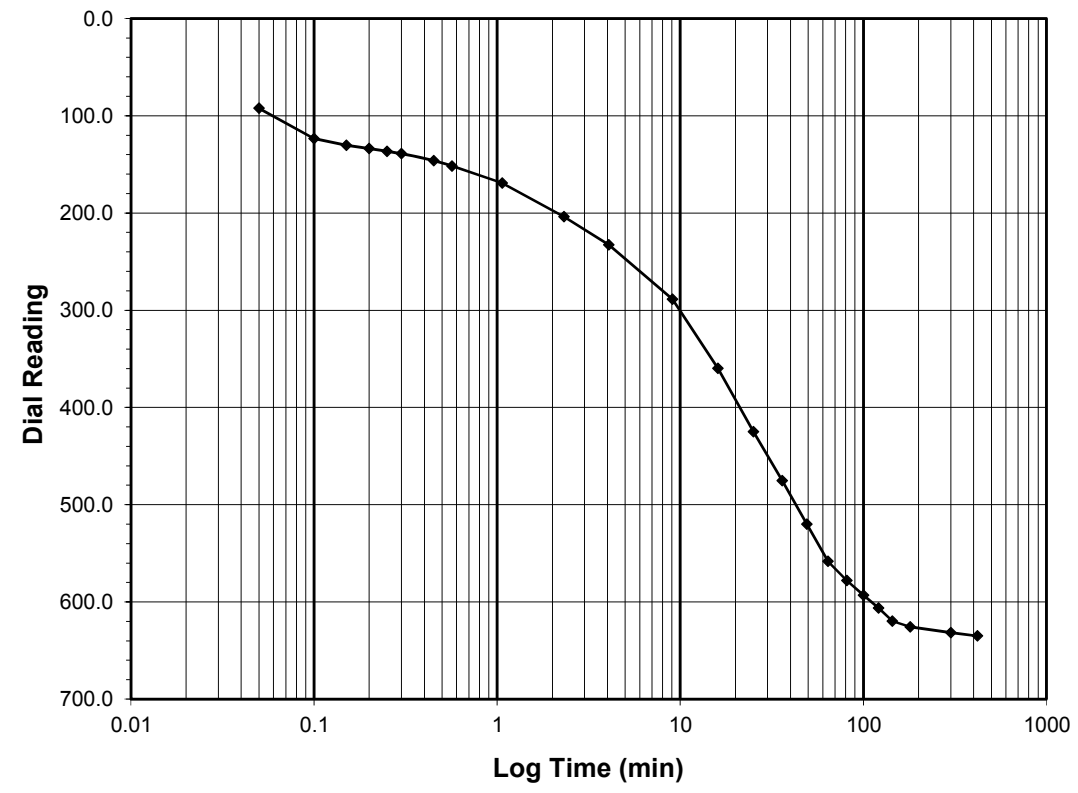
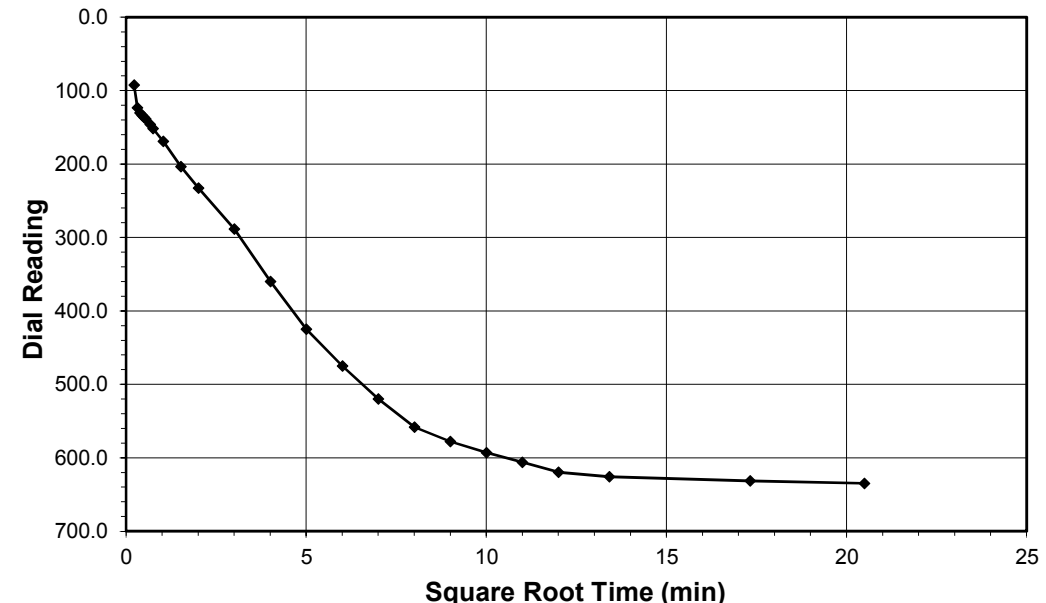
Tested By: 129-04-0411 Date: 11/26/18 Input Checked By: GEM Date: 12/7/18

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ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf): 0.0-0.25
 Final Reading (div): 635.0
 Consolidometer No.: R470
 1 Division (in): 0.0001

Start Date: 11/26/18
 Start Time: 16:44:42

Elapsed Time (min)	Dial Reading (div)
Initial	0.0
0.05	92.3
0.10	123.5
0.15	130.4
0.20	133.8
0.25	136.5
0.30	138.8
0.45	146.1
0.57	151.7
1.07	169.3
2.32	203.8
4.07	232.6
9.07	288.5
16.07	359.8
25.07	424.8
36.07	475.3
49.08	520.0
64.08	558.2
81.08	577.9
100.08	593.2
121.08	606.3
144.08	619.8
180.08	625.8
300.08	631.5
420.08	635.0

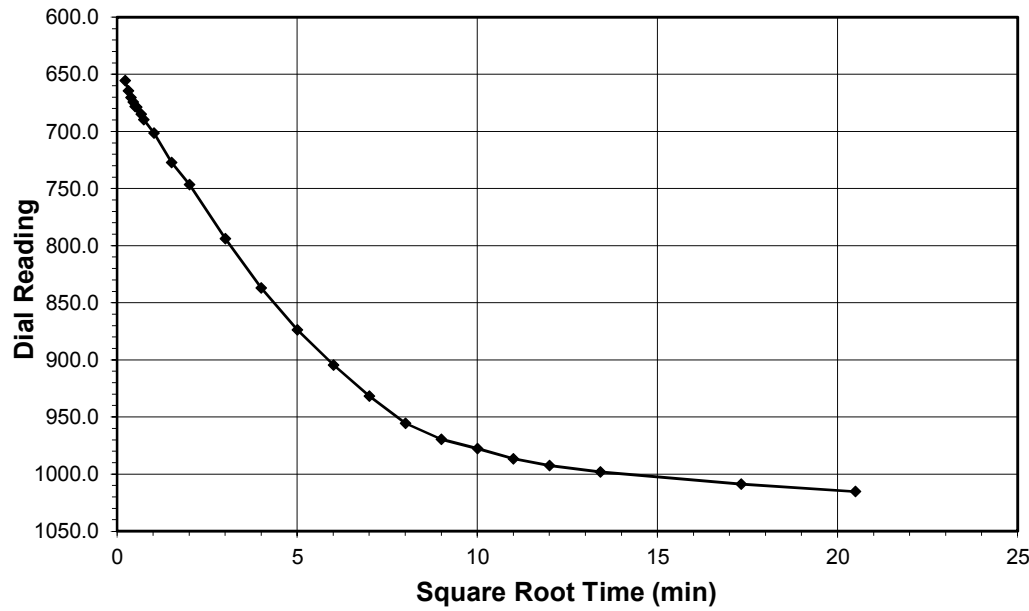
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ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

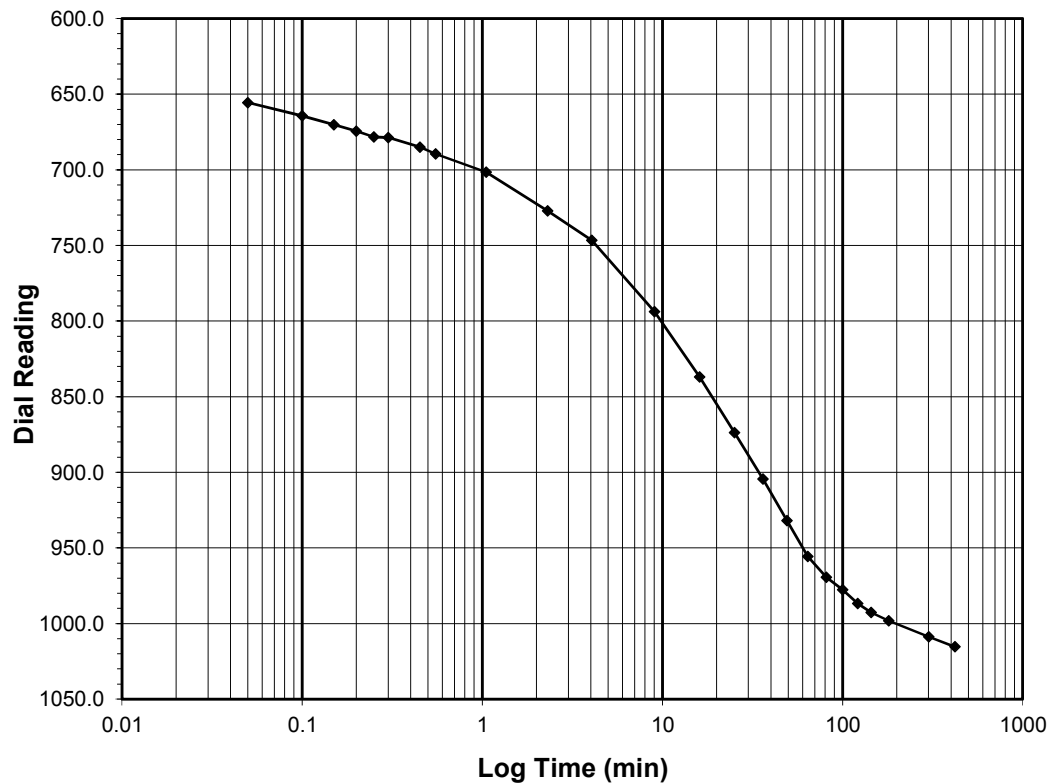
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 1015.4
 Consolidometer No. R470
 1 Division (in) 0.0001

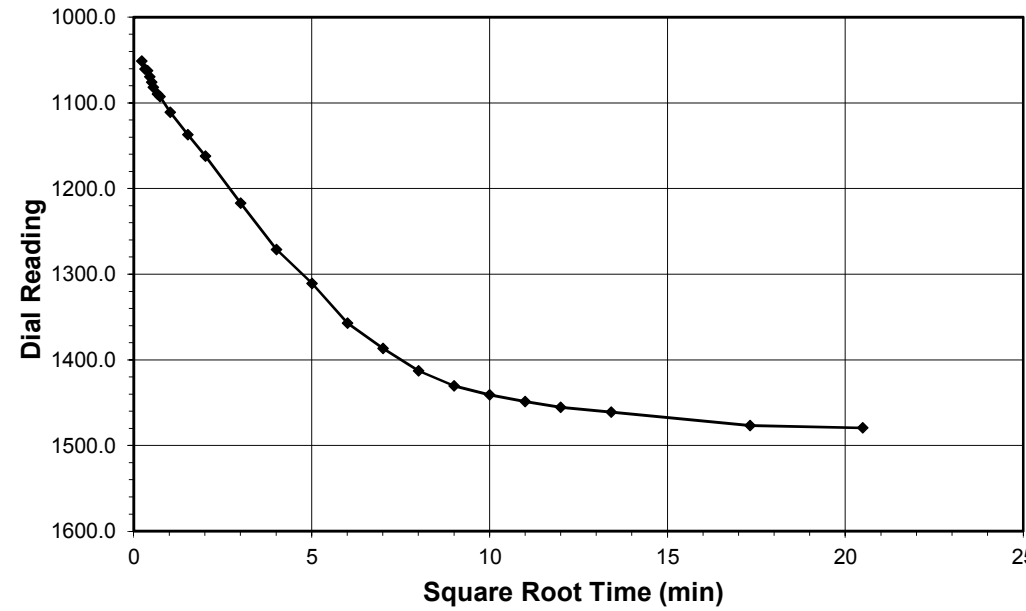
Start Date 11/26/18
 Start Time 23:44:47

Elapsed Time (min)	Dial Reading (div)
Initial	635.0
0.05	655.6
0.10	664.4
0.15	670.2
0.20	674.4
0.25	678.2
0.30	678.6
0.45	685.0
0.55	689.5
1.05	701.5
2.30	727.2
4.05	746.6
9.05	793.8
16.05	837.0
25.07	873.7
36.07	904.5
49.07	931.9
64.07	955.6
81.07	969.5
100.07	977.7
121.07	986.7
144.07	992.7
180.07	998.1
300.07	1008.9
420.12	1015.4



Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

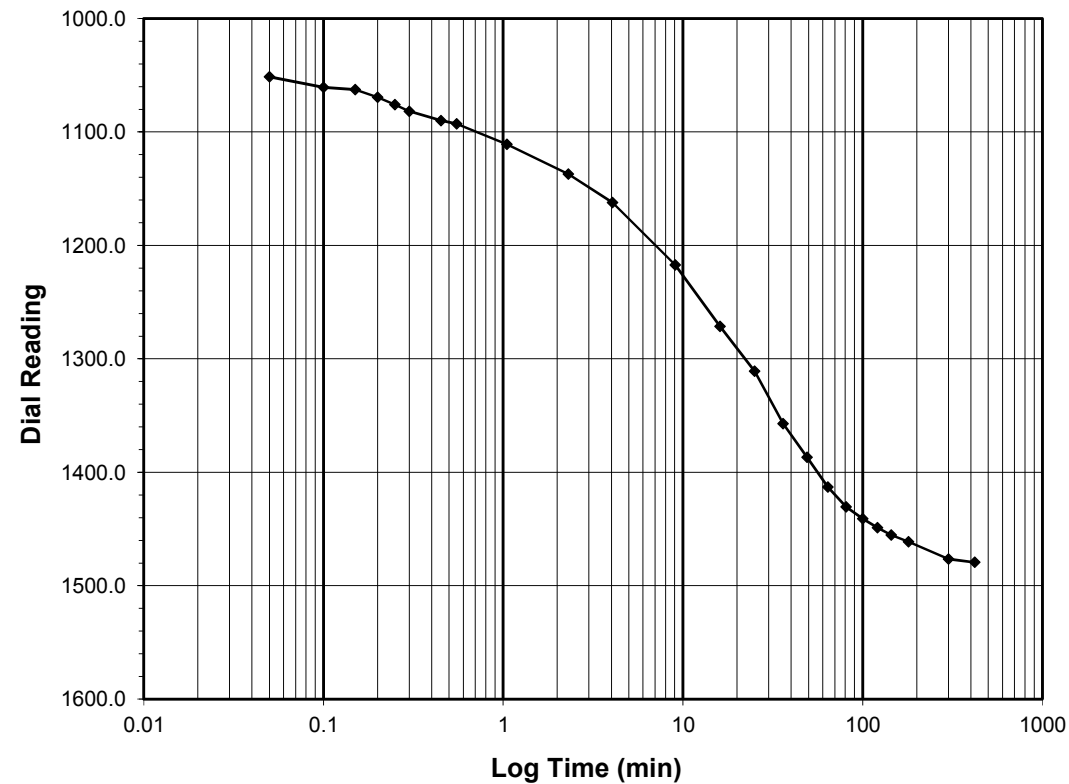
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
 Final Reading (div) 1479.4
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/27/18
 Start Time 6:44:54

Elapsed Time (min)	Dial Reading (div)
Initial	1015.4
0.05	1051.4
0.10	1060.5
0.15	1062.5
0.20	1069.5
0.25	1075.9
0.30	1081.7
0.45	1089.9
0.55	1092.7
1.05	1110.9
2.30	1137.1
4.05	1162.2
9.05	1217.2
16.07	1271.4
25.07	1310.8
36.07	1357.3
49.07	1386.8
64.07	1412.9
81.07	1430.5
100.07	1440.9
121.07	1448.8
144.07	1455.2
180.07	1461.2
300.07	1476.5
420.03	1479.4



Tested By 129-04-0411 Date 11/26/18 Checked By GEM Date 12/4/18

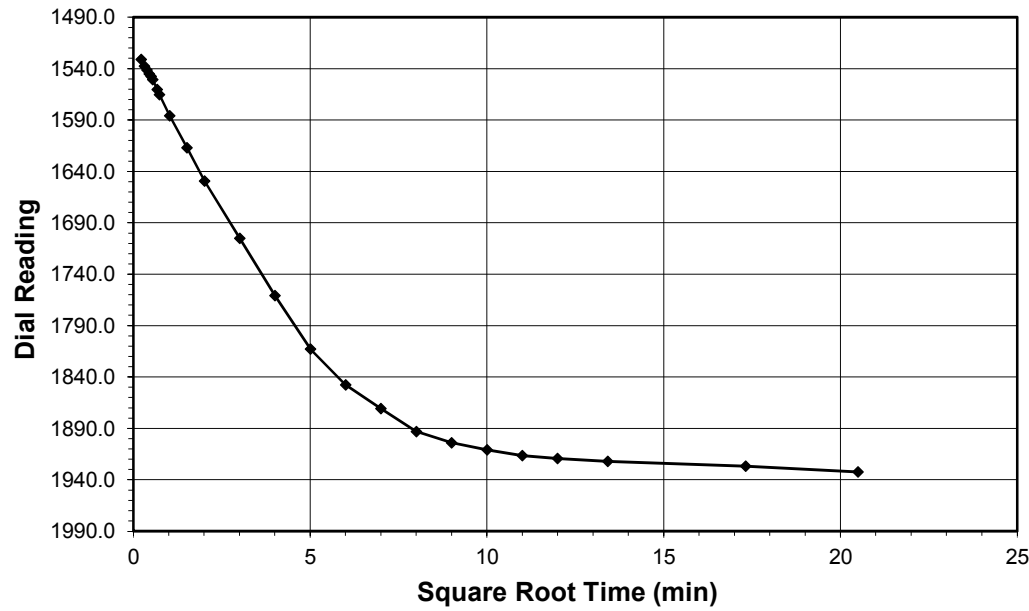
Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

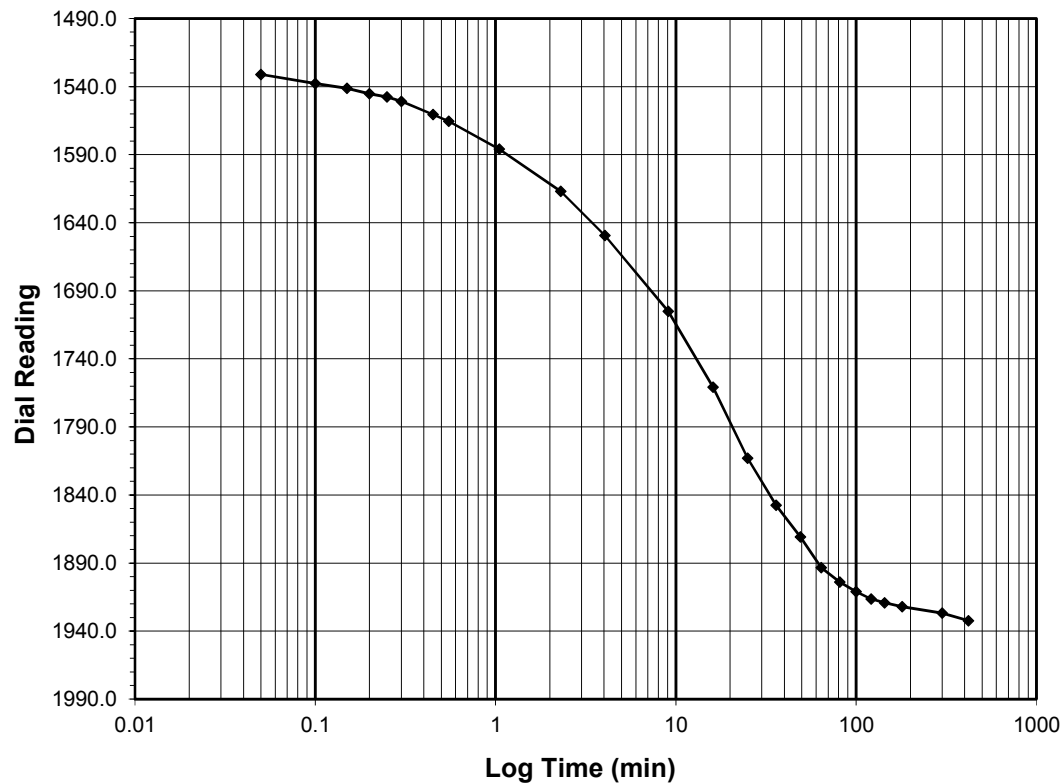
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
 Final Reading (div) 1932.4
 Consolidometer No. R470
 1 Division (in) 0.0001

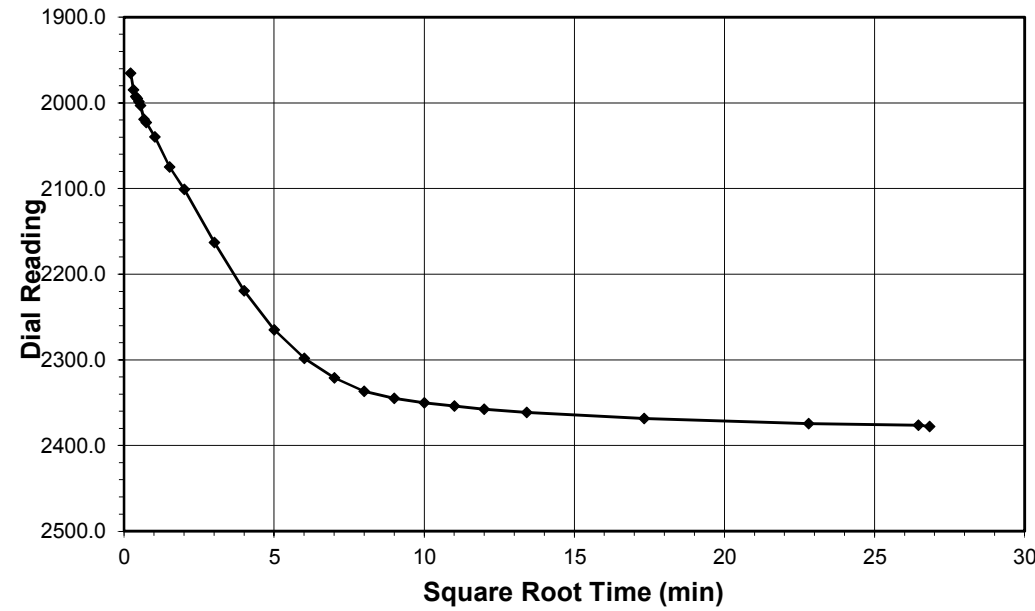
Start Date 11/27/18
 Start Time 13:44:56

Elapsed Time (min)	Dial Reading (div)
Initial	1479.4
0.05	1531.1
0.10	1537.7
0.15	1541.4
0.20	1545.2
0.25	1547.6
0.30	1550.9
0.45	1560.5
0.55	1565.5
1.05	1586.0
2.30	1617.0
4.05	1649.4
9.07	1705.2
16.07	1760.9
25.07	1813.0
36.07	1847.7
49.07	1870.8
64.07	1893.3
81.07	1904.1
100.07	1911.1
121.07	1916.5
144.07	1919.4
180.07	1922.2
300.07	1926.7
420.03	1932.4



Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

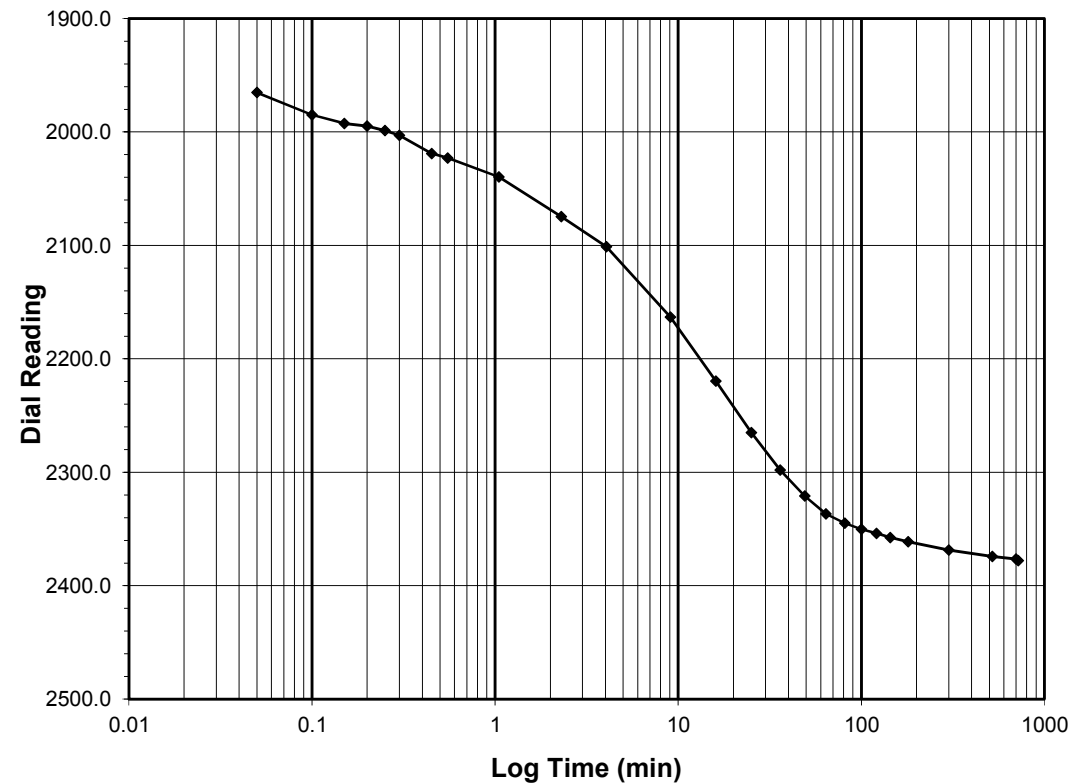
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 2377.8
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/27/18
 Start Time 20:44:59

Elapsed Time (min)	Dial Reading (div)
Initial	1932.4
0.05	1965.2
0.10	1984.8
0.15	1992.5
0.20	1994.9
0.25	1998.8
0.30	2003.1
0.45	2019.1
0.55	2022.9
1.05	2039.7
2.30	2074.7
4.05	2101.2
9.05	2163.1
16.05	2219.5
25.05	2265.2
36.05	2298.1
49.07	2321.0
64.07	2336.8
81.07	2344.9
100.07	2350.2
121.07	2354.0
144.07	2357.6
180.07	2361.2
300.07	2368.6
520.07	2374.3
700.07	2376.4
720.38	2377.8



Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18

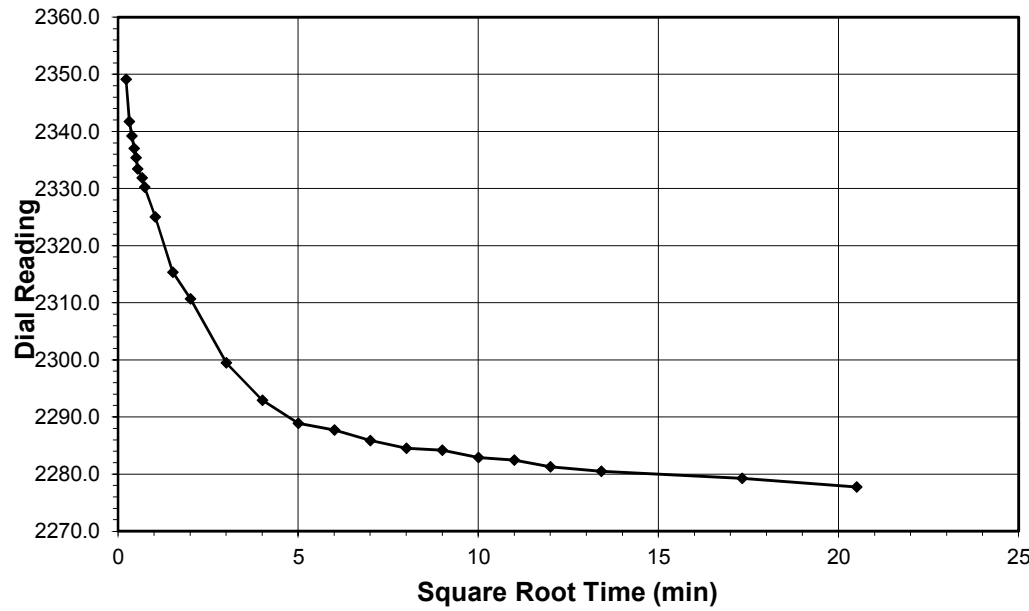
Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

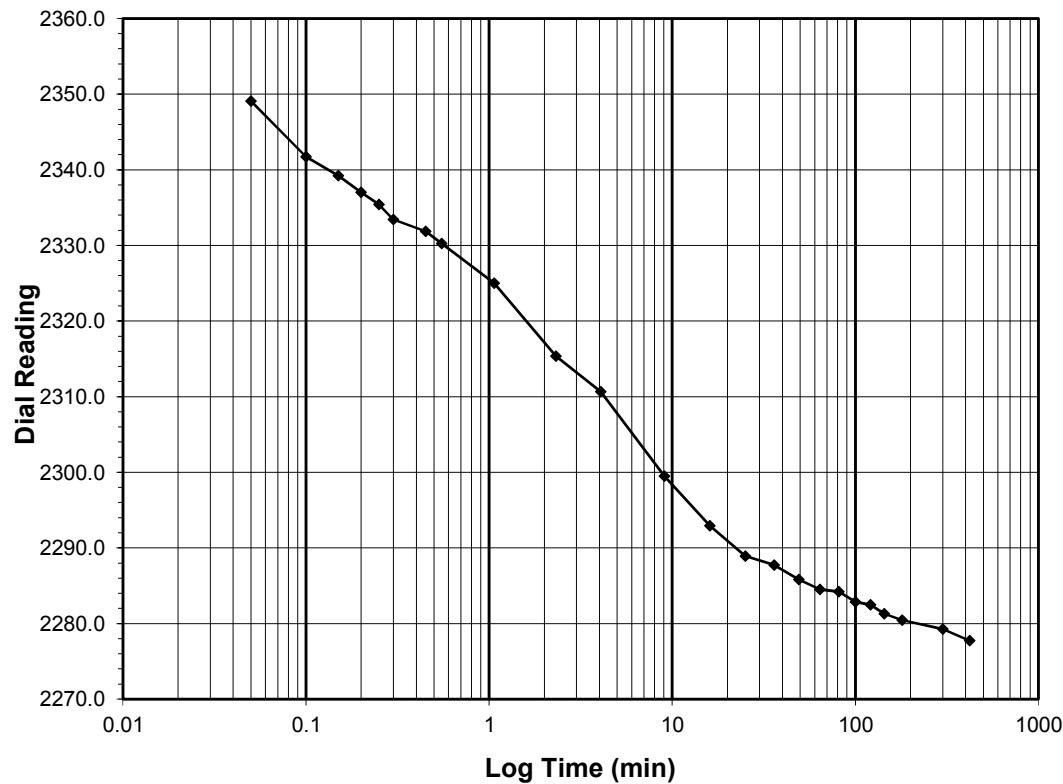
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
 Final Reading (div) 2277.7
 Consolidometer No. R470
 1 Division (in) 0.0001

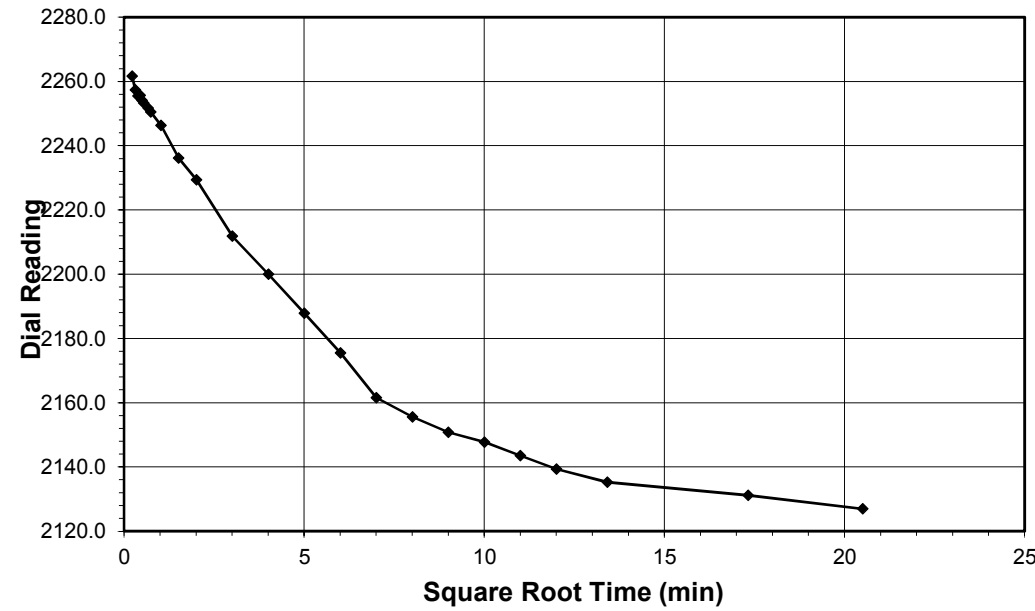
Start Date 11/28/18
 Start Time 8:45:22

Elapsed Time (min)	Dial Reading (div)
Initial	2377.8
0.05	2349.1
0.10	2341.7
0.15	2339.2
0.20	2337.0
0.25	2335.4
0.30	2333.4
0.45	2331.8
0.55	2330.3
1.07	2325.0
2.32	2315.3
4.07	2310.7
9.07	2299.5
16.07	2292.9
25.07	2288.9
36.07	2287.7
49.07	2285.8
64.07	2284.5
81.07	2284.2
100.07	2282.9
121.07	2282.5
144.07	2281.3
180.07	2280.5
300.07	2279.3
420.42	2277.7



Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

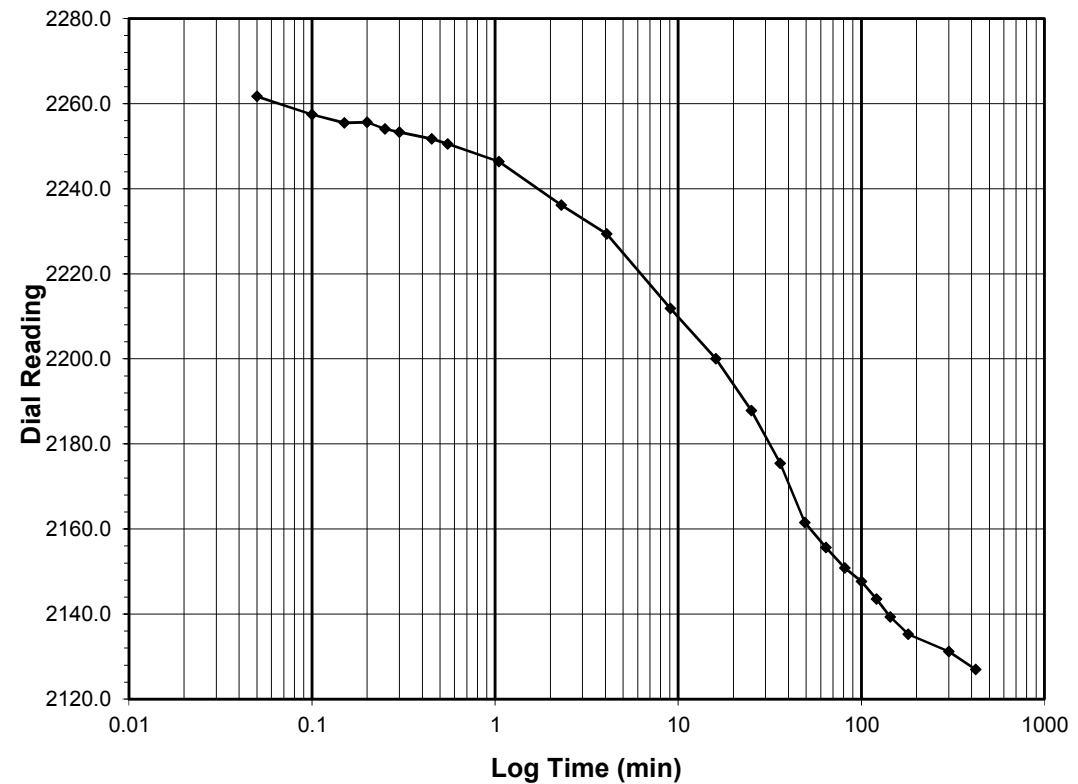
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 2127.0
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/28/18
 Start Time 15:45:47

Elapsed Time (min)	Dial Reading (div)
Initial	2277.7
0.05	2261.7
0.10	2257.4
0.15	2255.5
0.20	2255.6
0.25	2254.1
0.30	2253.3
0.45	2251.7
0.55	2250.5
1.05	2246.3
2.30	2236.2
4.07	2229.4
9.07	2211.9
16.07	2200.0
25.07	2187.8
36.07	2175.5
49.07	2161.5
64.07	2155.6
81.07	2150.8
100.07	2147.7
121.07	2143.6
144.07	2139.3
180.07	2135.3
300.07	2131.2
420.48	2127.0



Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18

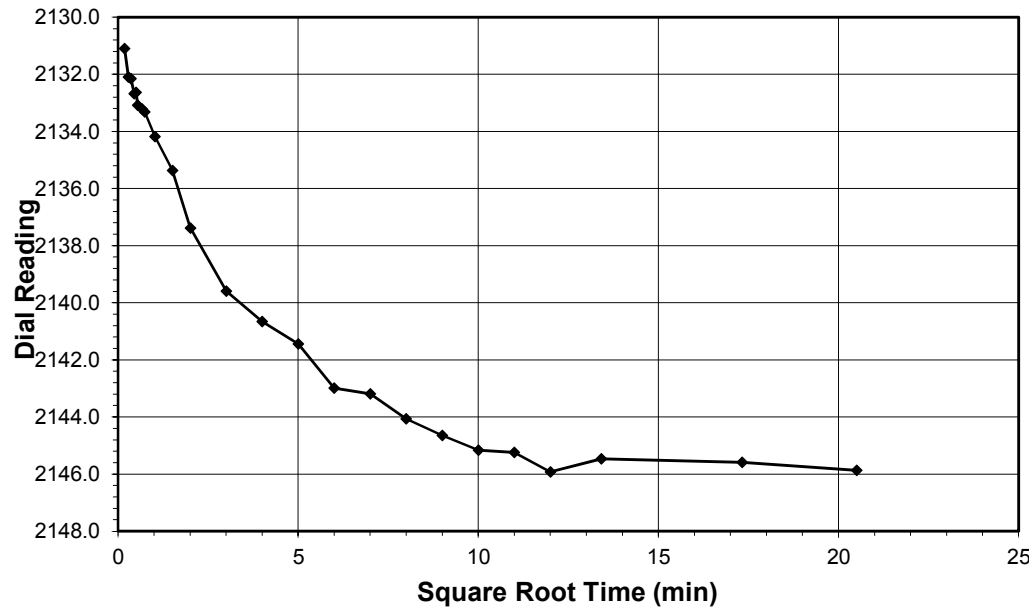
Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

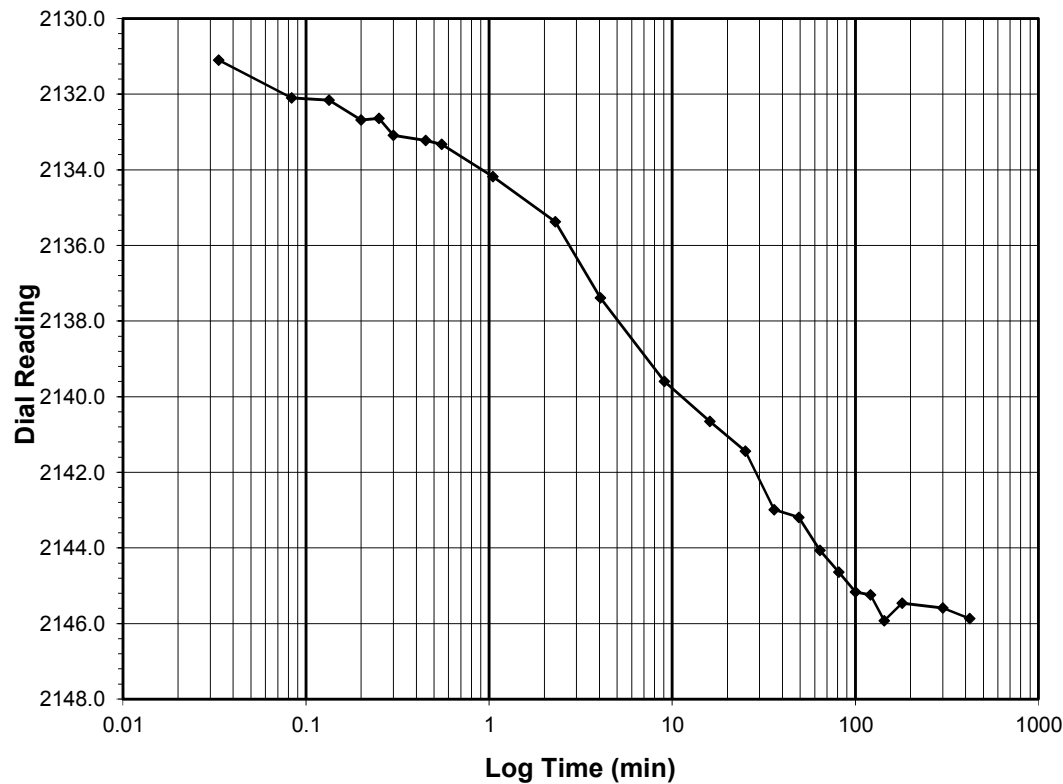
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 2145.9
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/28/18
 Start Time 22:46:16

Elapsed Time (min)	Dial Reading (div)
Initial	2127.0
0.03	2131.1
0.08	2132.1
0.13	2132.2
0.20	2132.7
0.25	2132.6
0.30	2133.1
0.45	2133.2
0.55	2133.3
1.05	2134.2
2.30	2135.4
4.05	2137.4
9.05	2139.6
16.05	2140.7
25.05	2141.4
36.05	2143.0
49.05	2143.2
64.05	2144.1
81.07	2144.6
100.07	2145.2
121.07	2145.2
144.07	2145.9
180.07	2145.5
300.07	2145.6
420.42	2145.9

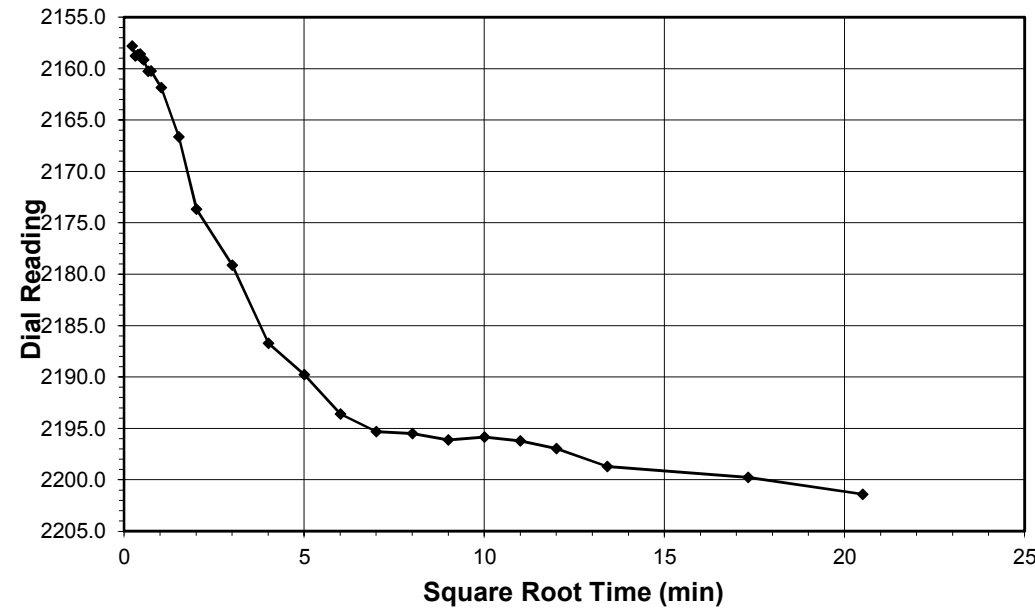


Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18

ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

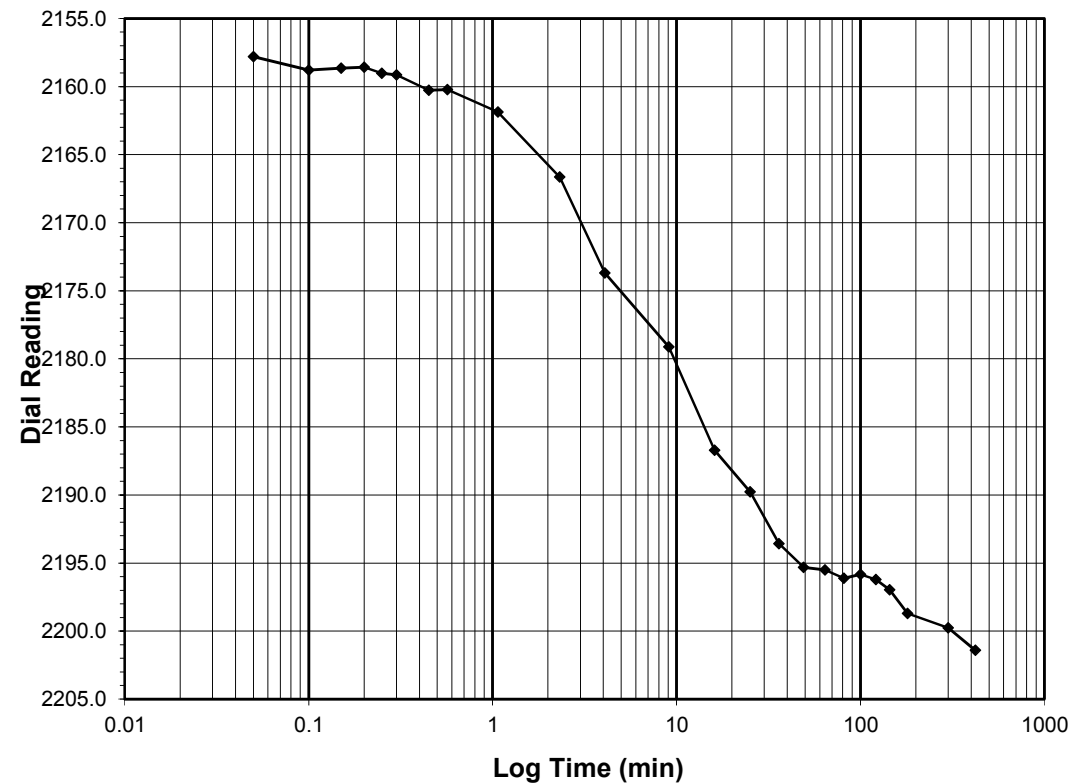
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.5-1.0
 Final Reading (div) 2201.4
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 5:46:42

Elapsed Time (min)	Dial Reading (div)
Initial	2145.9
0.05	2157.8
0.10	2158.8
0.15	2158.6
0.20	2158.6
0.25	2159.0
0.30	2159.1
0.45	2160.3
0.57	2160.2
1.07	2161.9
2.32	2166.6
4.07	2173.7
9.07	2179.1
16.07	2186.7
25.07	2189.8
36.07	2193.6
49.07	2195.3
64.07	2195.5
81.07	2196.1
100.07	2195.8
121.07	2196.2
144.08	2197.0
180.08	2198.7
300.08	2199.8
420.50	2201.4



Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

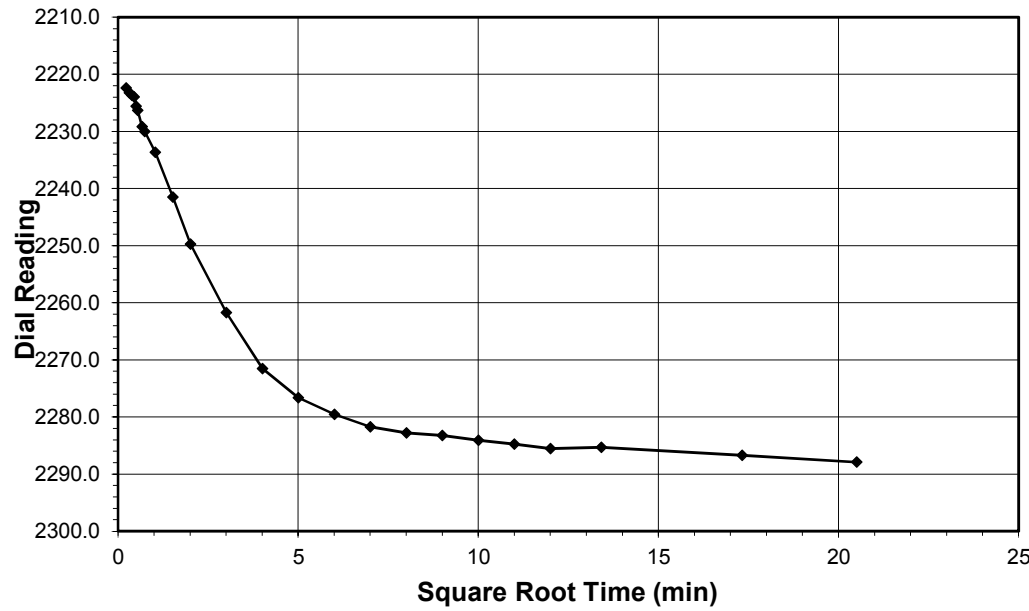
ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

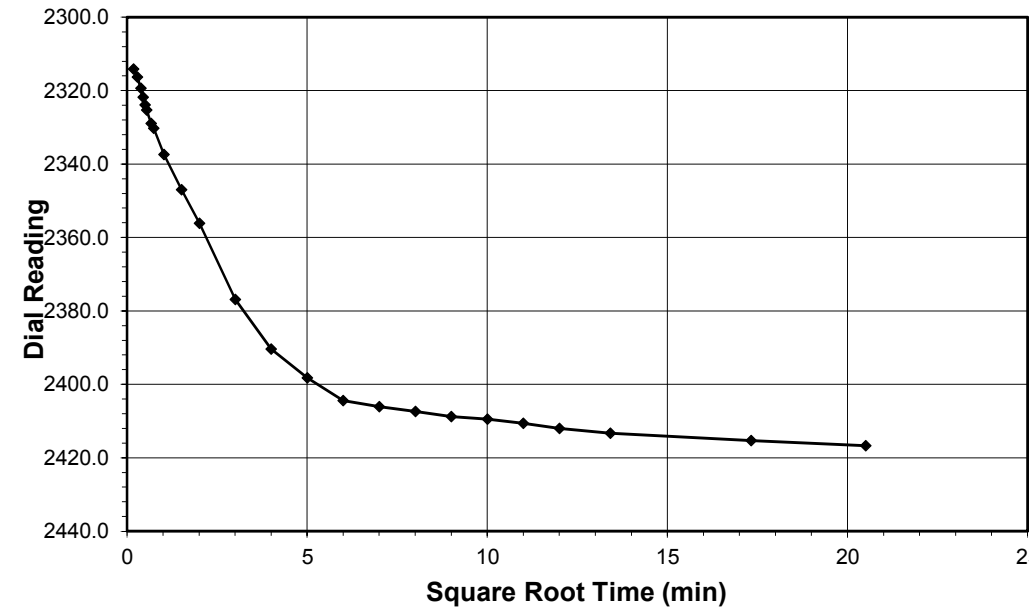
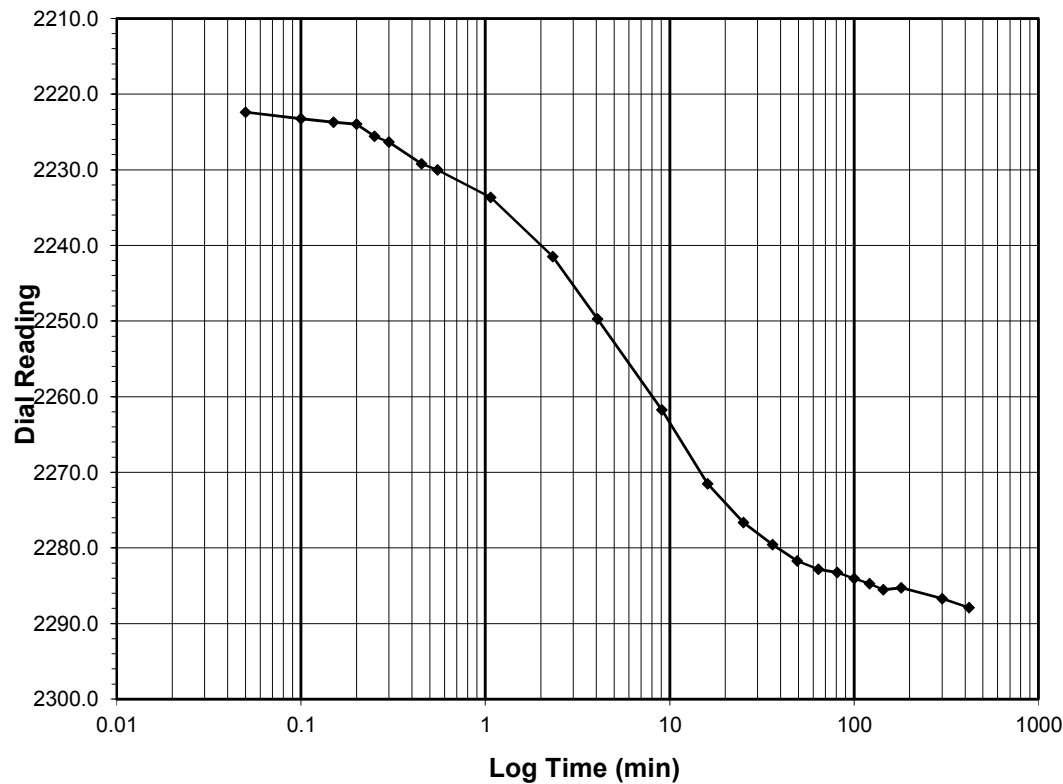
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
 Final Reading (div) 2287.9
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 12:47:12

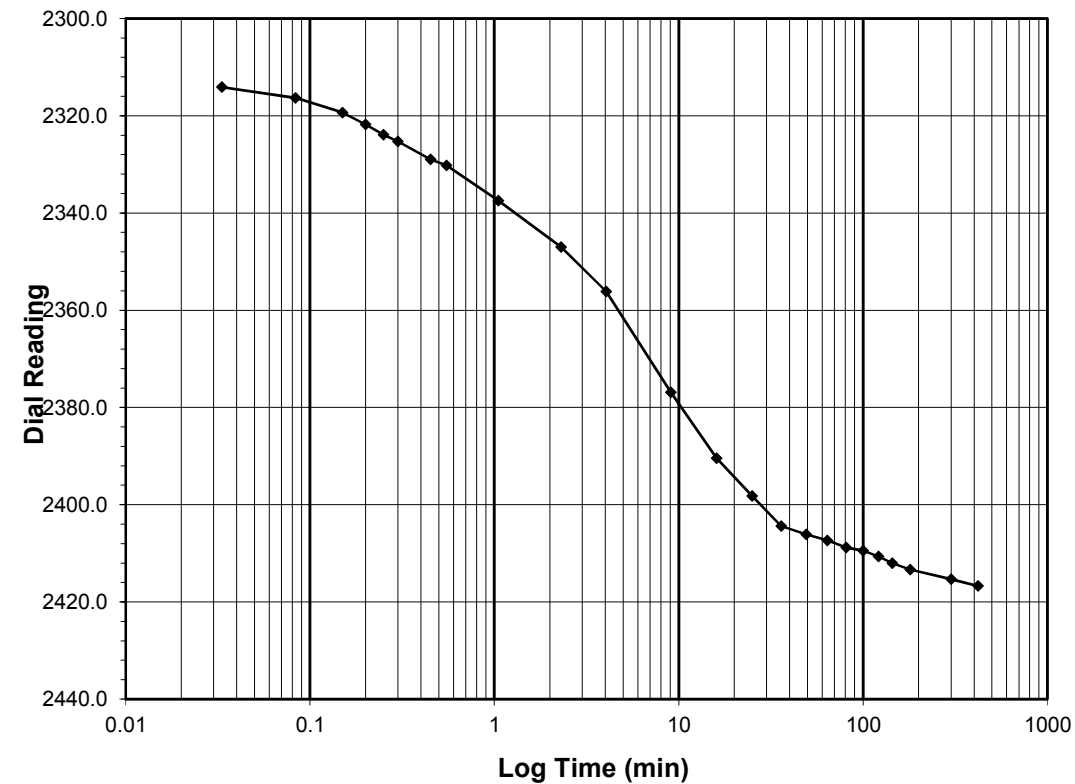
Elapsed Time (min)	Dial Reading (div)
Initial	2201.4
0.05	2222.4
0.10	2223.3
0.15	2223.7
0.20	2224.0
0.25	2225.6
0.30	2226.3
0.45	2229.2
0.55	2230.0
1.07	2233.7
2.32	2241.5
4.07	2249.7
9.07	2261.7
16.07	2271.5
25.07	2276.6
36.07	2279.6
49.07	2281.7
64.07	2282.8
81.07	2283.3
100.07	2284.1
121.07	2284.7
144.07	2285.5
180.07	2285.3
300.07	2286.7
420.43	2287.9



Test Load (tsf) 2.0-4.0
 Final Reading (div) 2416.7
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 19:47:38

Elapsed Time (min)	Dial Reading (div)
Initial	2287.9
0.03	2314.1
0.08	2316.3
0.15	2319.4
0.20	2321.8
0.25	2323.9
0.30	2325.3
0.45	2328.9
0.55	2330.2
1.05	2337.4
2.30	2347.0
4.05	2356.1
9.05	2376.9
16.05	2390.4
25.05	2398.2
36.05	2404.4
49.07	2406.1
64.07	2407.4
81.07	2408.8
100.07	2409.5
121.07	2410.6
144.07	2412.0
180.07	2413.3
300.07	2415.3
420.45	2416.7



Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18

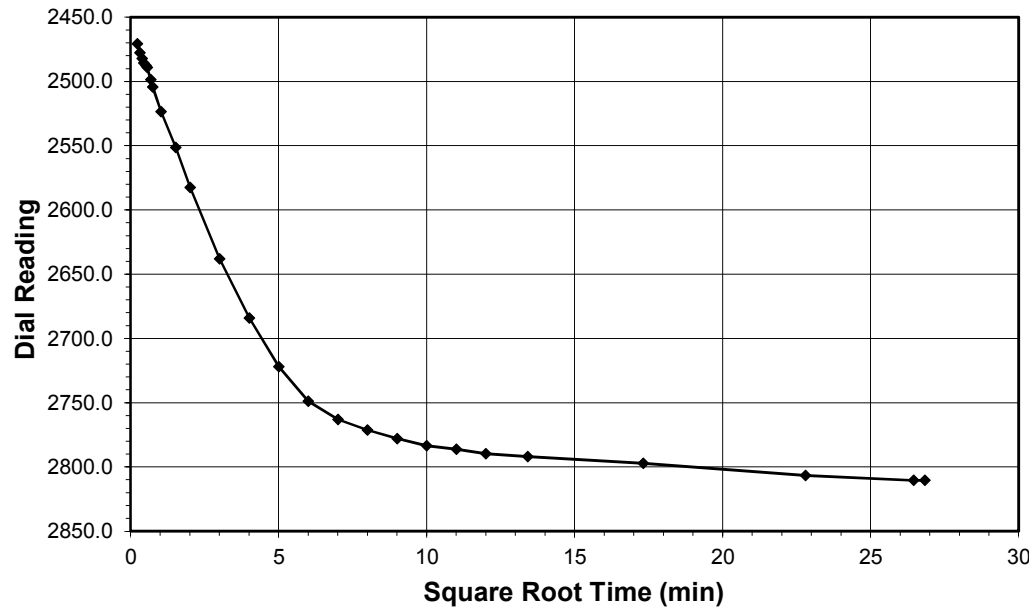
Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

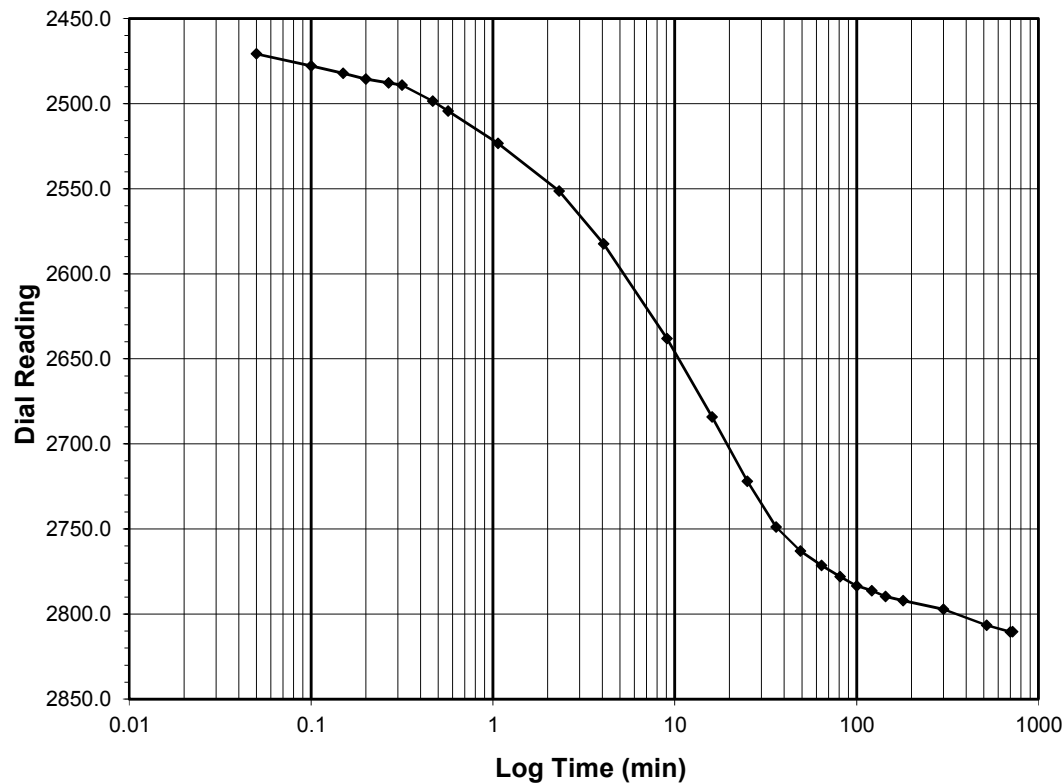
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
 Final Reading (div) 2810.4
 Consolidometer No. R470
 1 Division (in) 0.0001

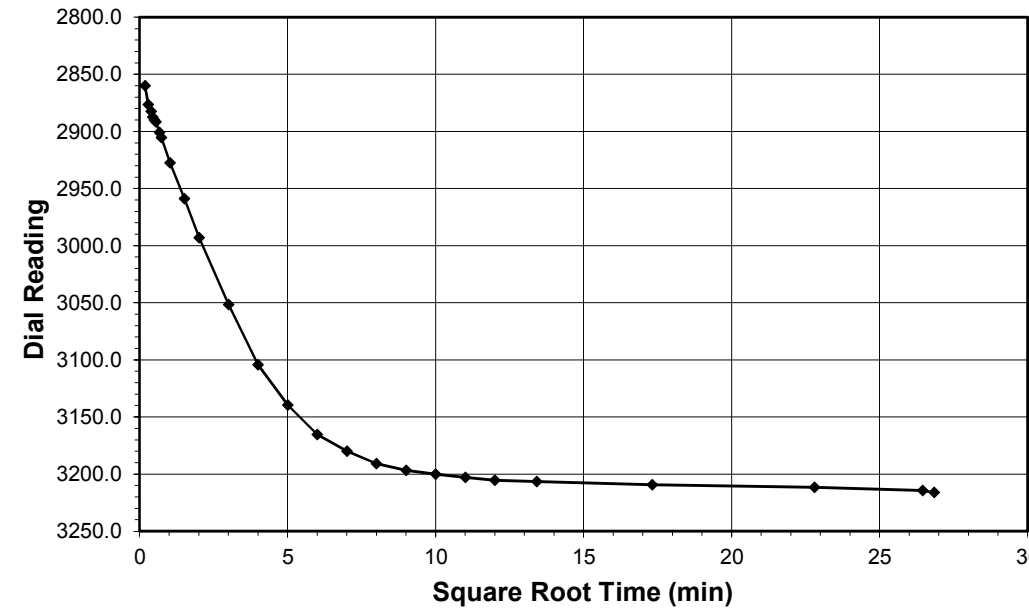
Start Date 11/30/18
 Start Time 2:48:06

Elapsed Time (min)	Dial Reading (div)
Initial	2416.7
0.05	2470.8
0.10	2477.8
0.15	2482.2
0.20	2485.6
0.27	2487.7
0.32	2489.2
0.47	2498.6
0.57	2504.4
1.07	2523.4
2.32	2551.5
4.07	2582.4
9.07	2638.1
16.07	2684.2
25.07	2722.0
36.07	2748.8
49.07	2763.0
64.07	2771.4
81.07	2777.9
100.07	2783.4
121.07	2786.3
144.07	2789.6
180.07	2792.0
300.07	2797.1
520.08	2806.6
700.08	2810.4
720.22	2810.4



Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

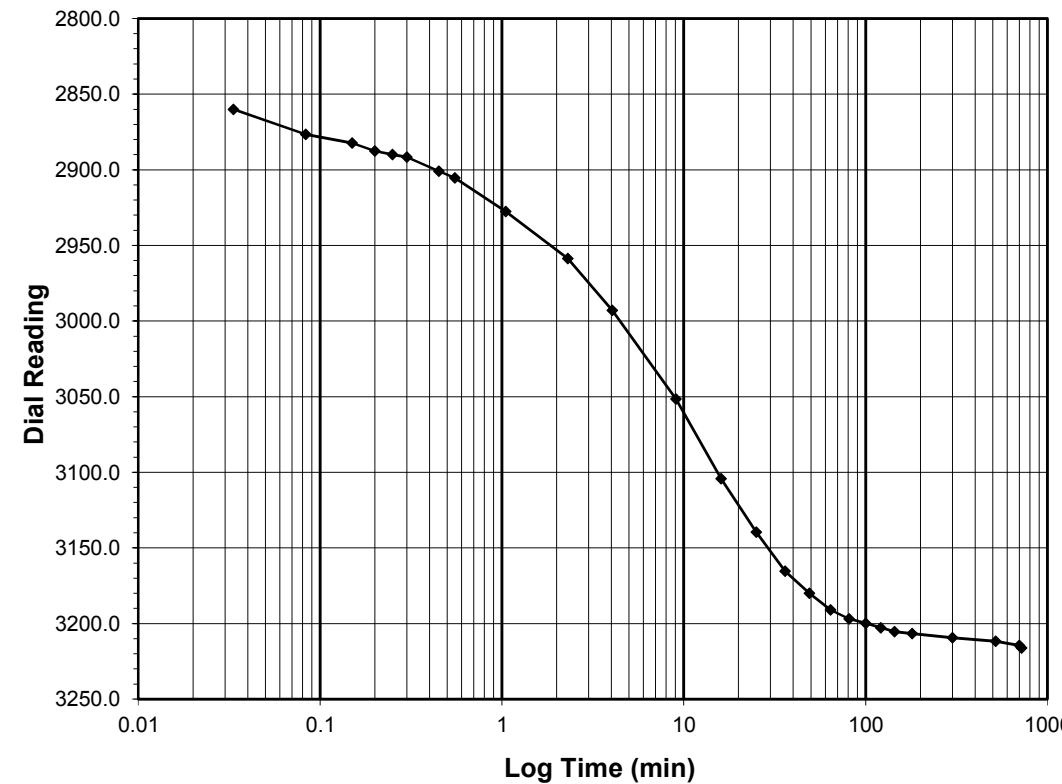
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
 Final Reading (div) 3216.1
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 11/30/18
 Start Time 14:48:19

Elapsed Time (min)	Dial Reading (div)
Initial	2810.4
0.03	2860.0
0.08	2876.5
0.15	2882.4
0.20	2887.6
0.25	2890.0
0.30	2891.7
0.45	2901.0
0.55	2905.5
1.05	2927.5
2.30	2958.7
4.05	2993.0
9.05	3051.5
16.05	3104.3
25.05	3139.5
36.05	3165.5
49.05	3180.1
64.07	3190.9
81.07	3196.8
100.07	3200.0
121.07	3202.9
144.07	3205.3
180.07	3206.6
300.07	3209.5
520.07	3211.7
700.07	3214.4
720.43	3216.1



Tested By 129-04-0411 Date 11/30/18 Checked By GEM Date 12/4/18

Tested By 129-04-0411 Date 11/30/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

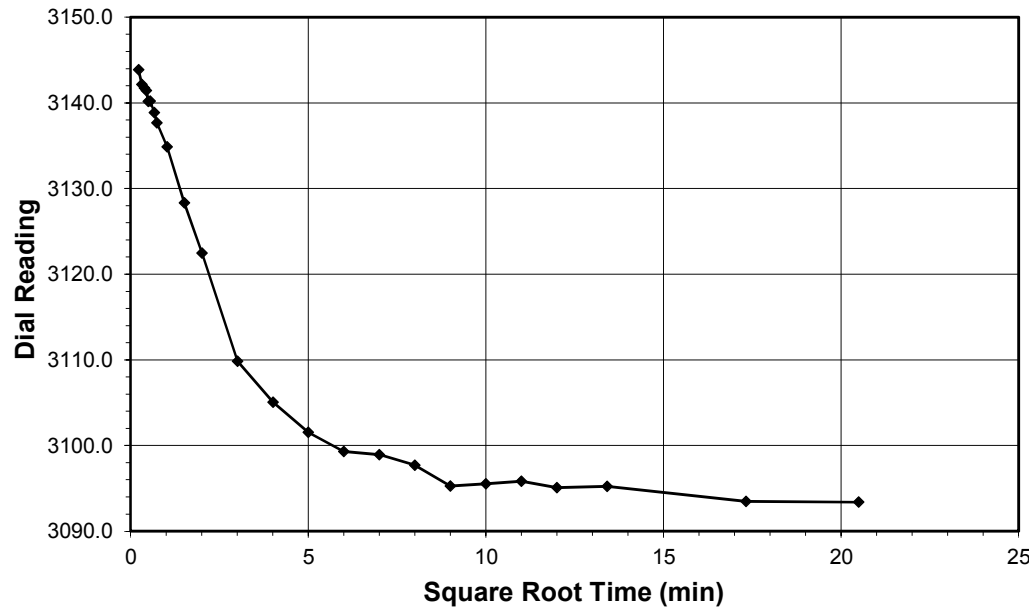
ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

Client: AECOM Boring No.: RPD-1950
 Client Project: Halifax Rd. Interchange Depth (ft): 13.1-15.1
 Project No.: R-2018-313-001 Sample No.: ST-2
 Lab ID: R-2018-313-001-002 Visual Description: TAN SANDY CLAY

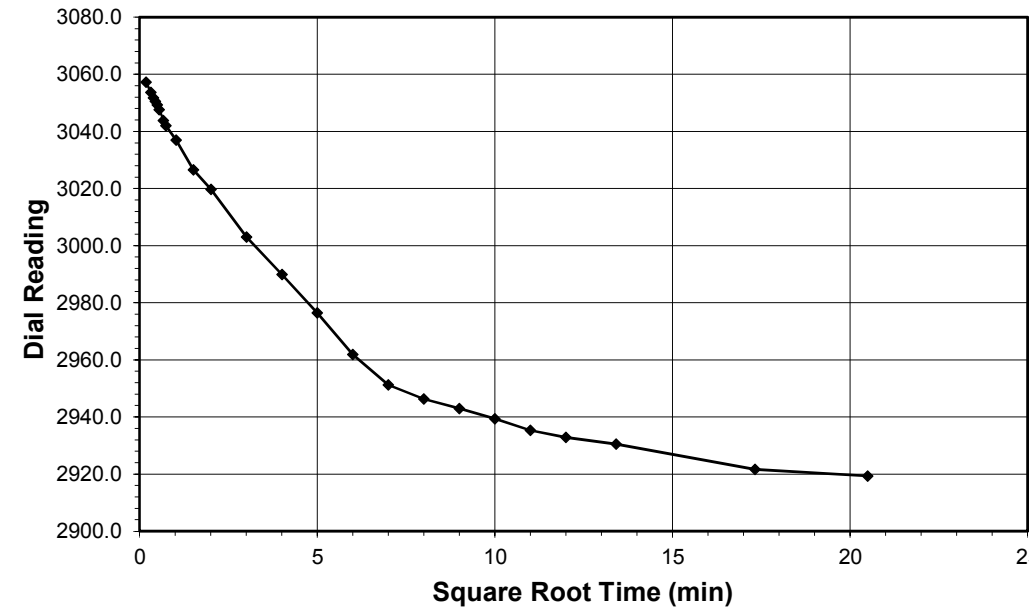
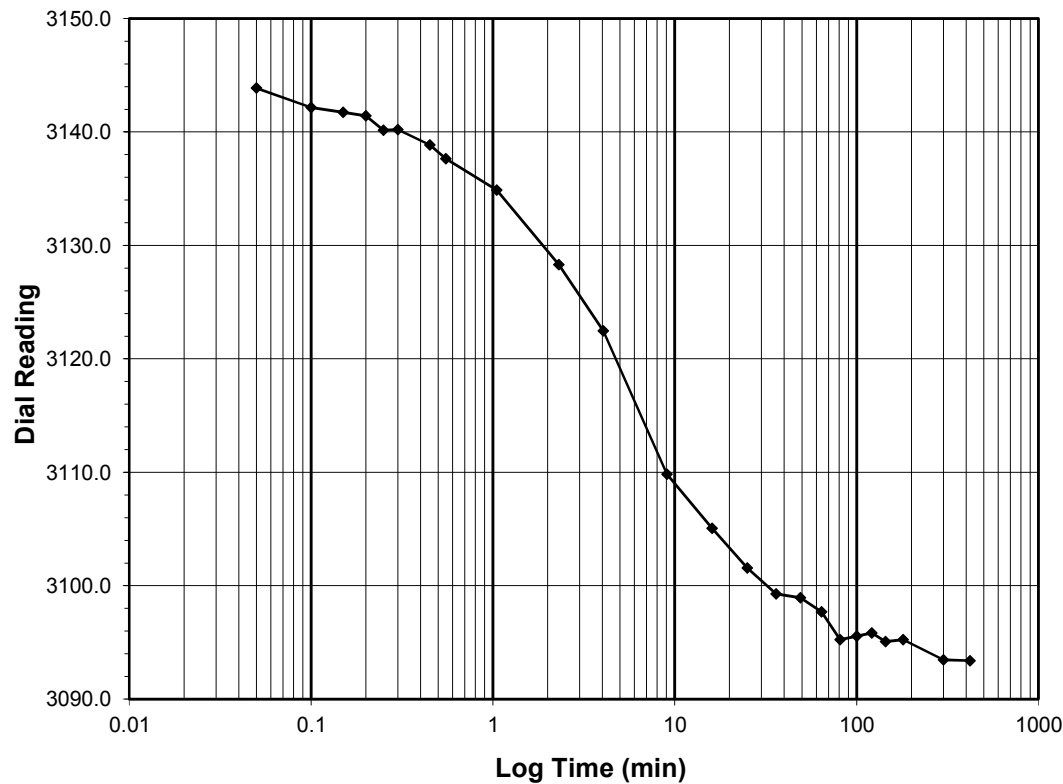
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



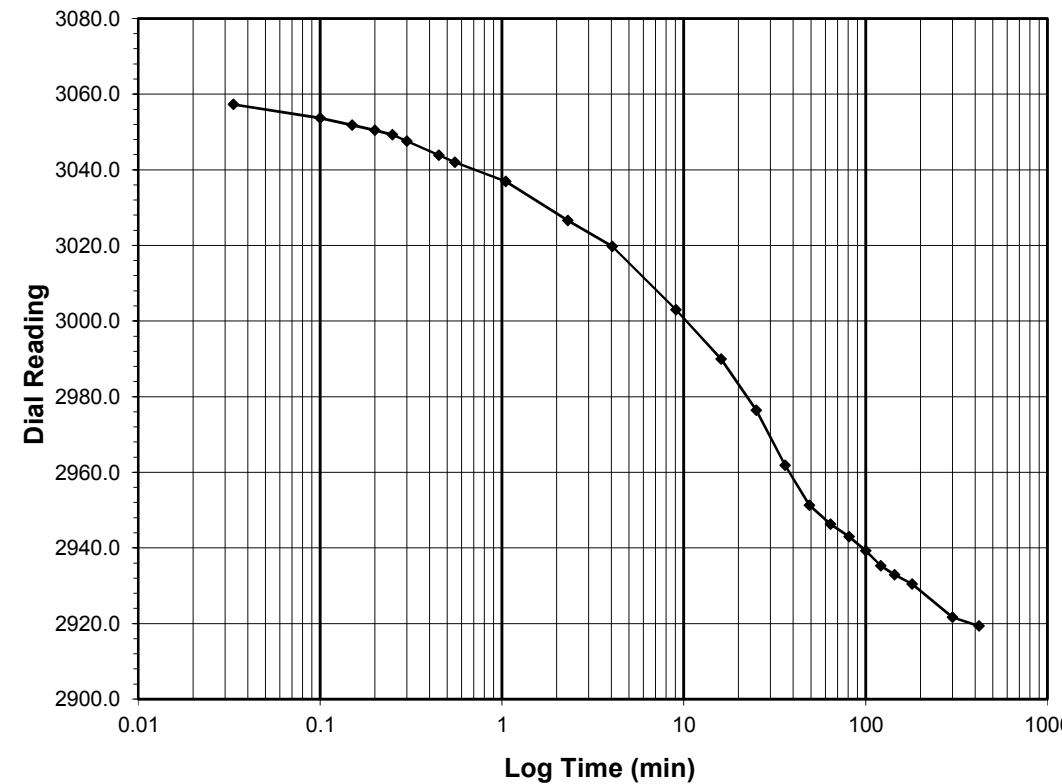
Test Load (tsf) 16.0-4.0
 Final Reading (div) 3093.4
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 12/1/18
 Start Time 2:48:46

Elapsed Time (min)	Dial Reading (div)
Initial	3216.1
0.05	3143.9
0.10	3142.2
0.15	3141.7
0.20	3141.4
0.25	3140.2
0.30	3140.2
0.45	3138.9
0.55	3137.7
1.05	3134.9
2.30	3128.3
4.05	3122.5
9.05	3109.8
16.05	3105.1
25.05	3101.6
36.05	3099.3
49.07	3098.9
64.07	3097.7
81.07	3095.3
100.07	3095.5
121.07	3095.8
144.07	3095.1
180.07	3095.2
300.07	3093.5
420.05	3093.4



Test Load (tsf) 4.0-1.0
 Final Reading (div) 2919.3
 Consolidometer No. R470
 1 Division (in) 0.0001
 Start Date 12/1/18
 Start Time 9:48:49

Elapsed Time (min)	Dial Reading (div)
Initial	3093.4
0.03	3057.3
0.10	3053.7
0.15	3051.8
0.20	3050.5
0.25	3049.2
0.30	3047.6
0.45	3043.8
0.55	3042.0
1.05	3037.0
2.30	3026.6
4.05	3019.7
9.05	3003.0
16.05	2989.9
25.05	2976.4
36.05	2961.9
49.05	2951.3
64.05	2946.3
81.07	2943.0
100.07	2939.3
121.07	2935.3
144.07	2932.9
180.07	2930.5
300.07	2921.7
420.05	2919.3



Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18

Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18

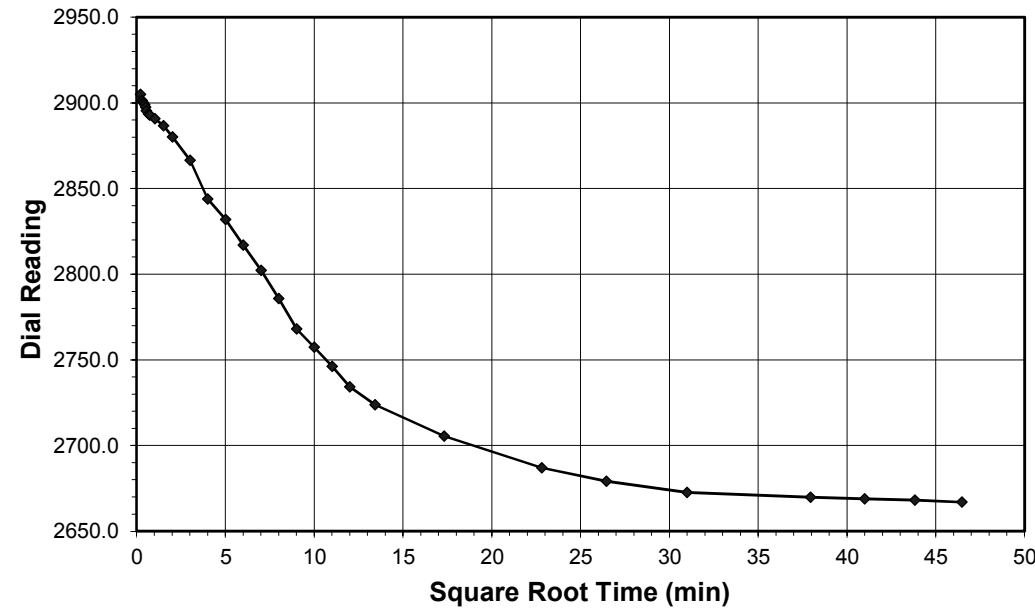


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	AECOM	Boring No.	RPD-1950
Client Project	Halifax Rd. Interchange	Depth (ft)	13.1-15.1
Project No.	R-2018-313-001	Sample No.	ST-2
Lab ID	R-2018-313-001-002	Visual Description	TAN SANDY CLAY

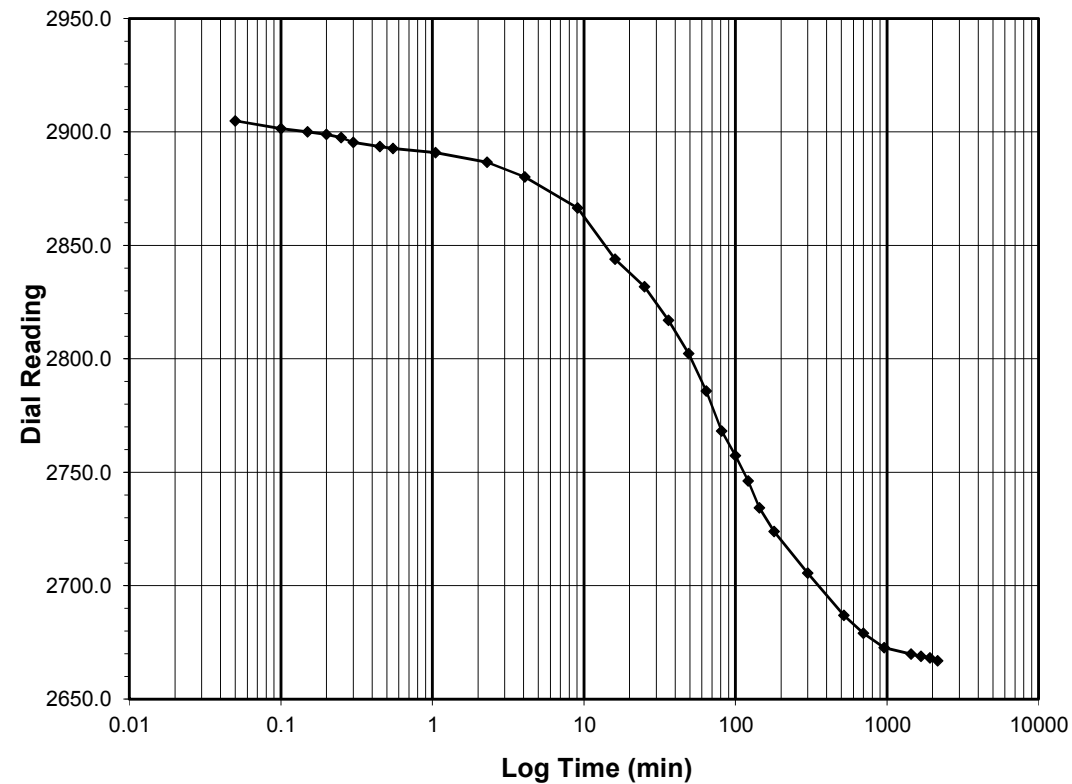
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 2667.0
 Consolidometer No. R470
 1 Division (in) 0.0001

Start Date 12/1/18
 Start Time 16:48:53

Elapsed Time (min)	Dial Reading (div)
Initial	2919.3
0.05	2904.9
0.10	2901.5
0.15	2900.0
0.20	2899.0
0.25	2897.5
0.30	2895.5
0.45	2893.5
0.55	2892.7
1.05	2890.9
2.30	2886.6
4.07	2880.2
9.07	2866.5
16.07	2844.0
25.07	2831.9
36.07	2817.0
49.07	2802.3
64.07	2785.9
81.07	2768.2
100.07	2757.3
121.07	2746.2
144.07	2734.3
180.07	2723.8
300.07	2705.5
520.07	2687.0
700.07	2679.1
960.07	2672.7
1440.07	2669.8
1680.07	2668.8
1920.07	2668.1
2160.07	2667.0



Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18



SPECIFIC GRAVITY
 AASHTO T-100-15

Client: AECOM Boring No.: RPA-3100
 Client Reference: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN CLAY

(Minus No.4 sieve material, oven dried)

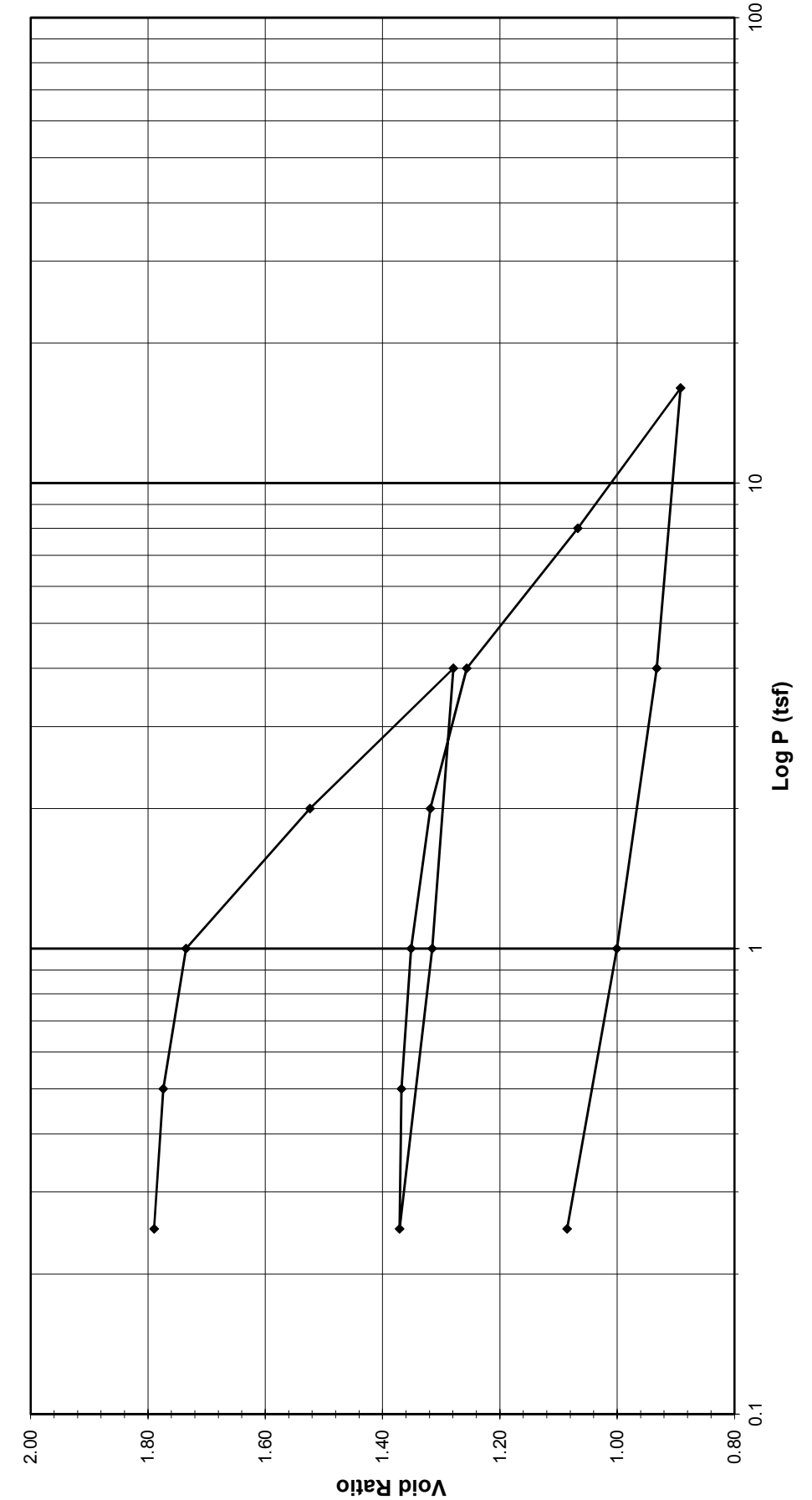
Replicate Number	1	2
Pycnometer ID:	G/R/N 280	G/R/N 445
Weight of Pycnometer & Soil & Water (g):	719.44	697.91
Temperature (°C):	24.7	24.1
Weight of Pycnometer & Water (g):	684.80	662.29
Tare Number:	280	445
Weight of Tare & Dry Soil (g):	241.48	220.48
Weight of Tare (g):	187.28	164.54
Weight of Dry Soil (g):	54.20	55.94
Specific Gravity of Soil @ Measured Temperature:	2.770	2.753
Specific Gravity of Water @ Measured Temperature:	0.99713	0.99728
Conversion Factor for Measured Temperature:	0.99892	0.99907
Specific Gravity @ 20° Celsius:	2.773	2.755

Average Specific Gravity @ 20° Celsius	2.76
--	------

ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client	AECOM	Boring No.	RPA-3100
Client Reference	Halifax Rd. Interchange	Depth (ft)	20-22
Project No.	R-2018-313-001	Sample No.	ST-3
Lab ID	R-2018-313-001-003	Visual Description	TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED





ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	AECOM	Boring No.	RPA-3100
Client Reference	Halifax Rd. Interchange	Depth (ft)	20-22
Project No.	R-2018-313-001	Sample No.	ST-3
Lab ID	R-2018-313-001-003	Visual Description	TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Consolidometer No. R409
1 Division = 0.0001 (in.)

Sample Properties

Test Data Summary

	Initial	Final	Applied Pressure (tsf)	Final Dial Reading (div)	Machine Deflection (div)	Corrected Reading (div)	Height of Sample (mm)	Volume (cc)	Dry Density (g/cc)	Void Ratio
Water Content										
Tare Number	TB-04	852	Seating	0	0	0	25.400	80.440	0.98343	1.80551
Wt. Tare & WS (g)	352.51	249.03	0.25	92.6	31.8	60.8	25.245	79.950	0.98945	1.78944
Wt. Tare & DS (g)	264.99	218.19	0.5	163.1	47.0	116.1	25.105	79.506	0.99498	1.77392
Wt. Water (g)	87.52	30.84	1	324.6	70.0	254.6	24.753	78.392	1.00912	1.73505
Wt. Tare (g)	134.54	136.00	2	1102.2	95.6	1006.5	22.843	72.343	1.09349	1.52402
Wt. DS (g)	130.45	82.19	4	2006.1	126.9	1879.2	20.627	65.323	1.21100	1.27911
Water Content (%)	67.09	37.52	1	1843.4	92.9	1750.5	20.954	66.359	1.19211	1.31522
			0.25	1617.5	65.2	1552.3	21.457	67.953	1.16413	1.37087
Sample Parameters			0.5	1635.9	72.1	1563.9	21.428	67.860	1.16573	1.36761
Sample Diameter (in)	2.5	2.5	1	1706.5	84.4	1622.0	21.280	67.392	1.17383	1.35129
Sample Height (in)	1.0000	0.7430	2	1839.6	100.9	1738.7	20.984	66.454	1.19040	1.31855
Sample Volume (cc)	80.44	59.77	4	2089.6	128.9	1960.7	20.420	64.668	1.22327	1.25625
Wt. Wet Sample + Ring (g)	346.39	323.00	8	2800.7	166.5	2634.2	18.709	59.250	1.33513	1.06721
Wt. of Ring (g)	214.21	214.21	16	3480.6	221.8	3258.8	17.123	54.226	1.45882	0.89194
Wt. of Wet Sample (g)	132.18	108.79	4	3270.5	156.9	3113.6	17.492	55.394	1.42806	0.93269
Wet Density (pcf)	102.54	113.58	1	2980.6	109.0	2871.6	18.106	57.340	1.37960	1.00058
Wet Density (g/cc)	1.64	1.82	0.25	2647.1	77.2	2569.9	18.872	59.767	1.32357	1.08526
Water Content (%)	67.09	37.52								
Wt. of Dry Sample (g)	79.11	79.11								
Dry Density (pcf)	61.37	82.59								
Dry Density (g/cc)	0.98	1.32								
Void Ratio	1.8065	1.0853								
Saturation (%)	102.50	95.43								
Specific Gravity	2.76	Measured								

page 2 of 4
DCN: CT-24E Date: 5/3/12 Revision: 6
Tested By 129-04-0411 Date 11/26/18 Input Checked By GEM Date 12/7/18

Z:\2018 PROJECTS\AECOM\2018-313 AECOM - HALIFAX\2018-313-001-003 DOT GEOJAC-16T5F1 Cx.xlsm\FINAL PLOT
2200 Westinghouse Blvd., Suite 103 • Raleigh, NC 27604 • Phone (919) 876-0405 • Fax (919) 876-0460 • www.geotechnics.net

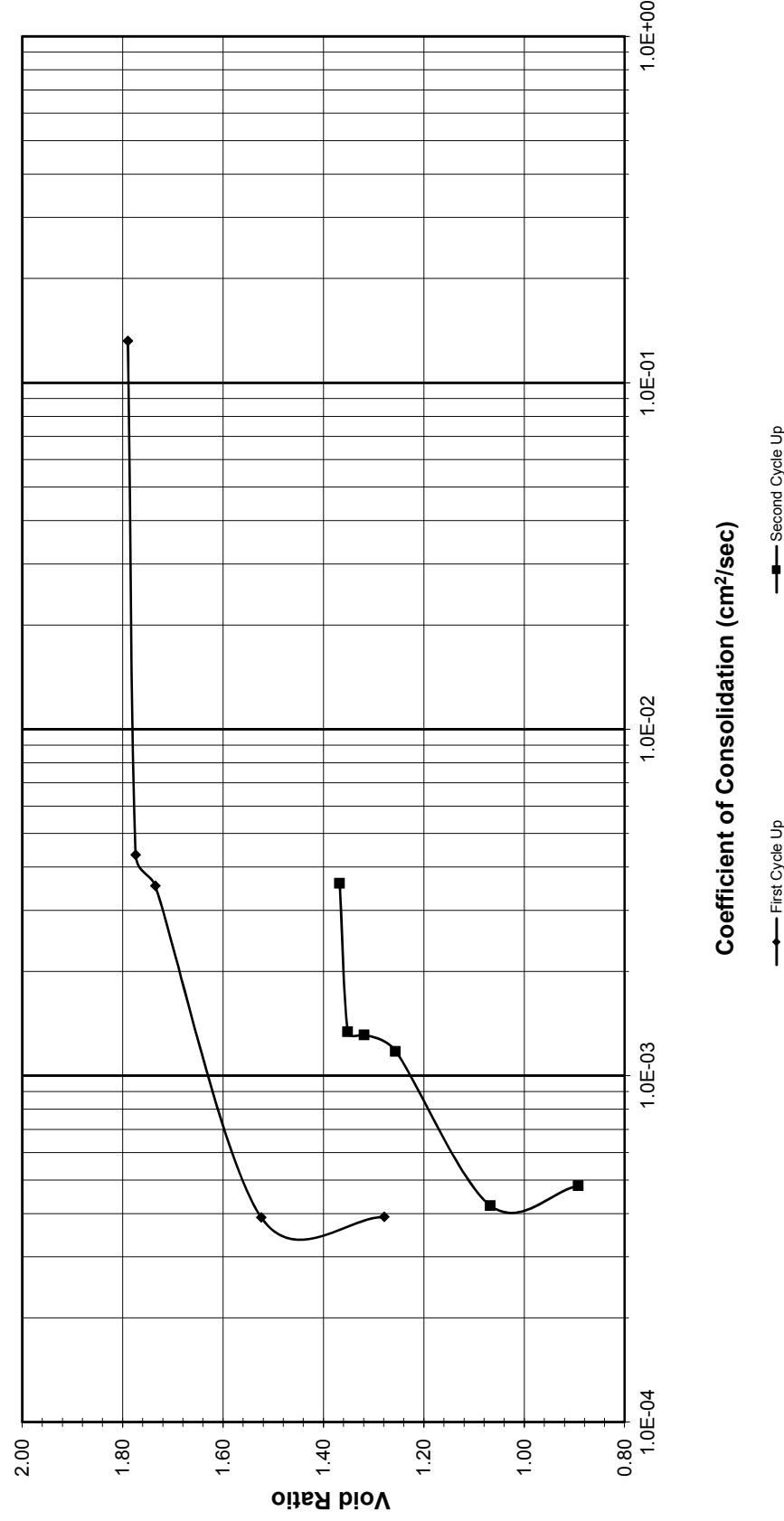


ONE DIMENSIONAL CONSOLIDATION

AASHTO T-216

Client	AECOM	Boring No.	RPA-3100
Client Reference	Halifax Rd. Interchange	Depth (ft)	20-22
Project No.	R-2018-313-001	Sample No.	ST-3
Lab ID	R-2018-313-001-003	Visual Description	TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Coefficient of Consolidation (cm²/sec)

—■— First Cycle Up —●— Second Cycle Up



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM
 Client Reference: Halifax Rd. Interchange
 Project No.: R-2018-313-001
 Lab ID: R-2018-313-001-003

Boring No.: RPA-3100
 Depth (ft): 20-22
 Sample No.: ST-3
 Visual Description: TAN SANDY CLAY

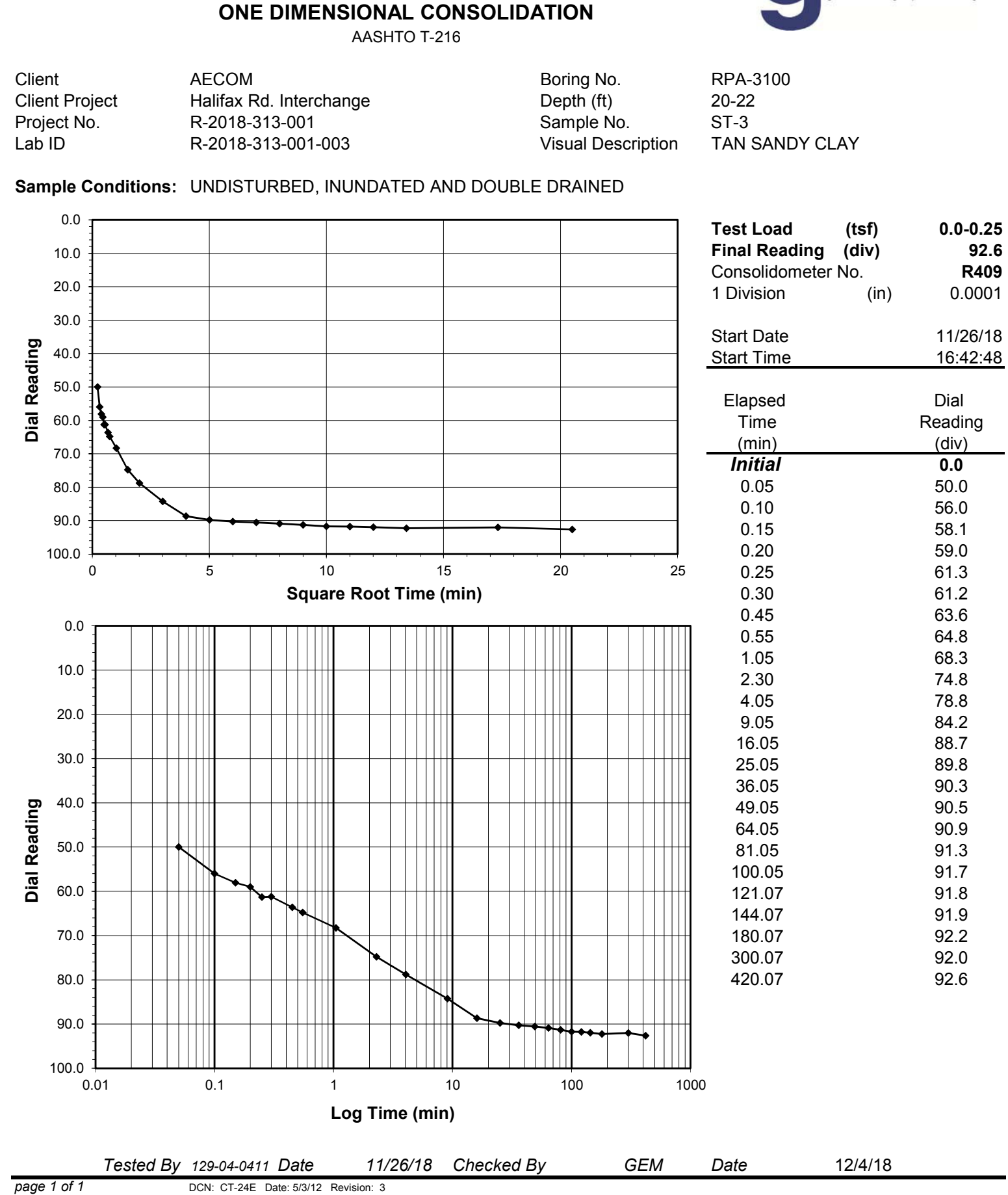
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Sample Properties		C _v Test Data Summary	
	Initial	Final	
Water Content			
Tare Number	TB-04	852	
Wt. Tare & WS (g)	352.51	249.03	
Wt. Tare & DS (g)	264.99	218.19	
Wt. Water (g)	87.52	30.84	
Wt. Tare (g)	134.54	136.00	
Wt. DS (g)	130.45	82.19	
Water Content (%)	67.09	37.52	
Sample Parameters			
Sample Diameter (in)	2.5	2.5	
Sample Height (in)	1.000	0.743	
Sample Volume (cc)	80.44	59.77	
Wt. Wet Sample + Ring (g)	346.39	323.00	
Wt. of Ring (g)	214.21	214.21	
Wt. of Wet Sample (g)	132.18	108.79	
Wet Density (pcf)	102.54	113.58	
Wet Density (g/cc)	1.64	1.82	
Water Content (%)	67.09	37.52	
Wt. of Dry Sample (g)	79.11	79.11	
Dry Density (pcf)	61.37	82.59	
Dry Density (g/cc)	0.98	1.32	
Void Ratio	1.8065	1.0853	
Saturation (%)	102.50	95.43	
Specific Gravity	2.76	Measured	

Load Increment (tsf)	Dial Reading @ t ₅₀ (div)	Machine Deflection (div)	Corrected Dial Reading @ t ₅₀ (div)	Sample Height @ t ₅₀ (cm)	Time t ₅₀ (min.)	C _v (cm ² /sec)
0 - 0.25	46.0	31.8	14.2	2.536	0.04	0.13202
0.25 - 0.5	132.1	47.0	85.1	2.518	1.20	0.00434
0.5 - 1.0	238.2	70.0	168.2	2.497	1.45	0.00353
1.0 - 2.0	694.2	95.6	598.6	2.388	12.00	0.00039
2.0 - 4.0	1531.0	126.9	1404.1	2.183	10.00	0.00039
4.0 - 1.0	NA	92.9	NA	NA	NA	NA
1.0 - 0.25	NA	65.2	NA	NA	NA	NA
0.25 - 0.5	1625.9	72.1	1553.8	2.145	1.05	0.00360
0.5 - 1.0	1666.9	84.4	1582.5	2.138	2.80	0.00134
1.0 - 2.0	1773.1	100.9	1672.2	2.115	2.80	0.00131
2.0 - 4.0	1962.4	128.9	1833.5	2.074	3.00	0.00118
4.0 - 8.0	2437.7	166.5	2271.2	1.963	7.50	0.00042
8.0 - 16.0	3145.8	221.8	2924.0	1.797	5.50	0.00048
16.0 - 4.0	NA	156.9	NA	NA	NA	NA
4.0 - 1.0	NA	109.0	NA	NA	NA	NA
1.0 - 0.25	NA	77.2	NA	NA	NA	NA

DCN: CT-24E Date: 5/3/12 Revision: 6
 Tested By 129-04-0411 Date 11/26/18 Input Checked By GEM Date 12/7/18

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ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

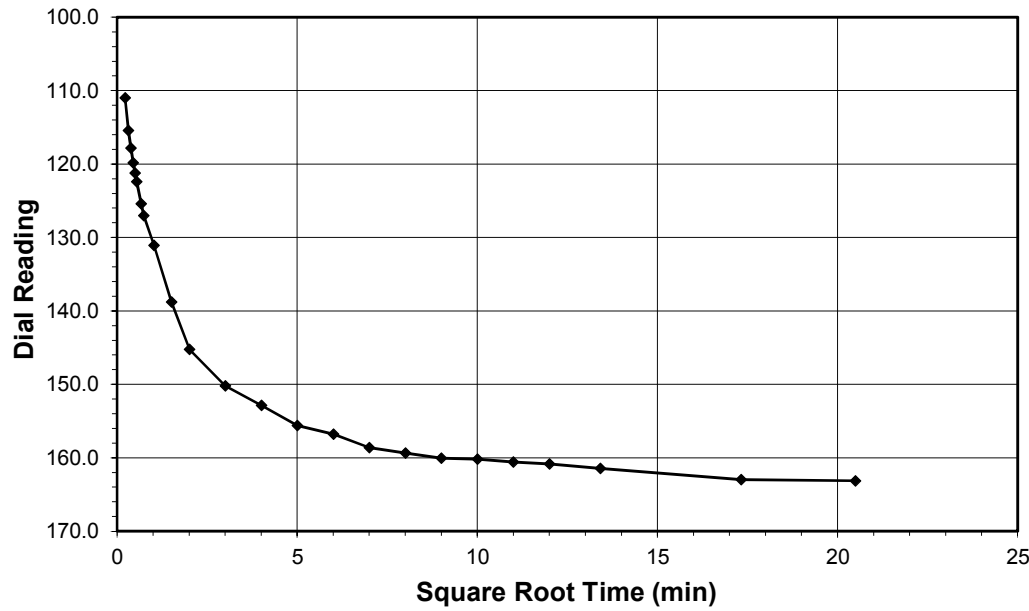
ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

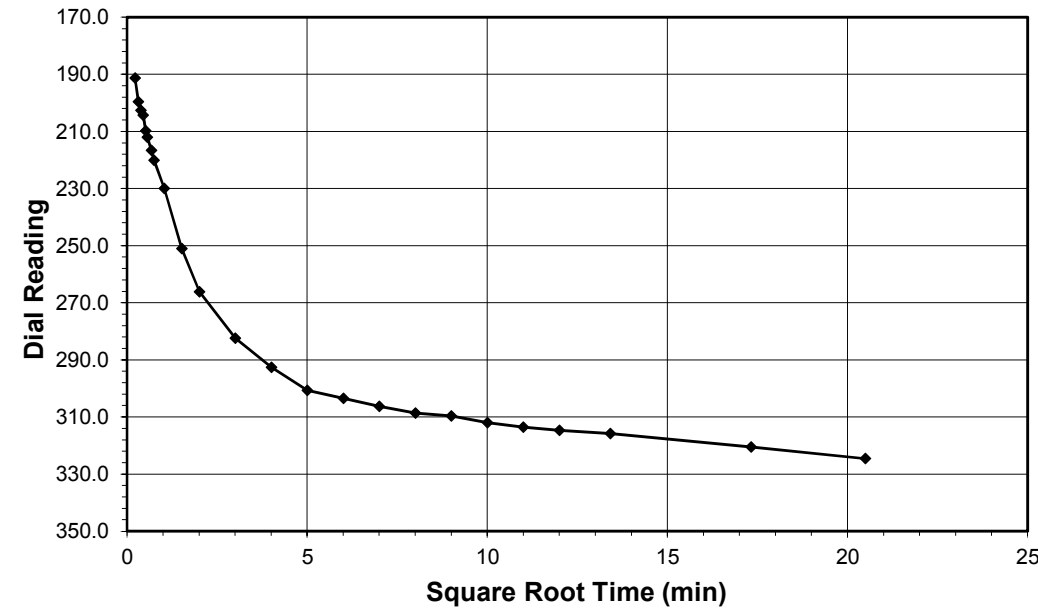
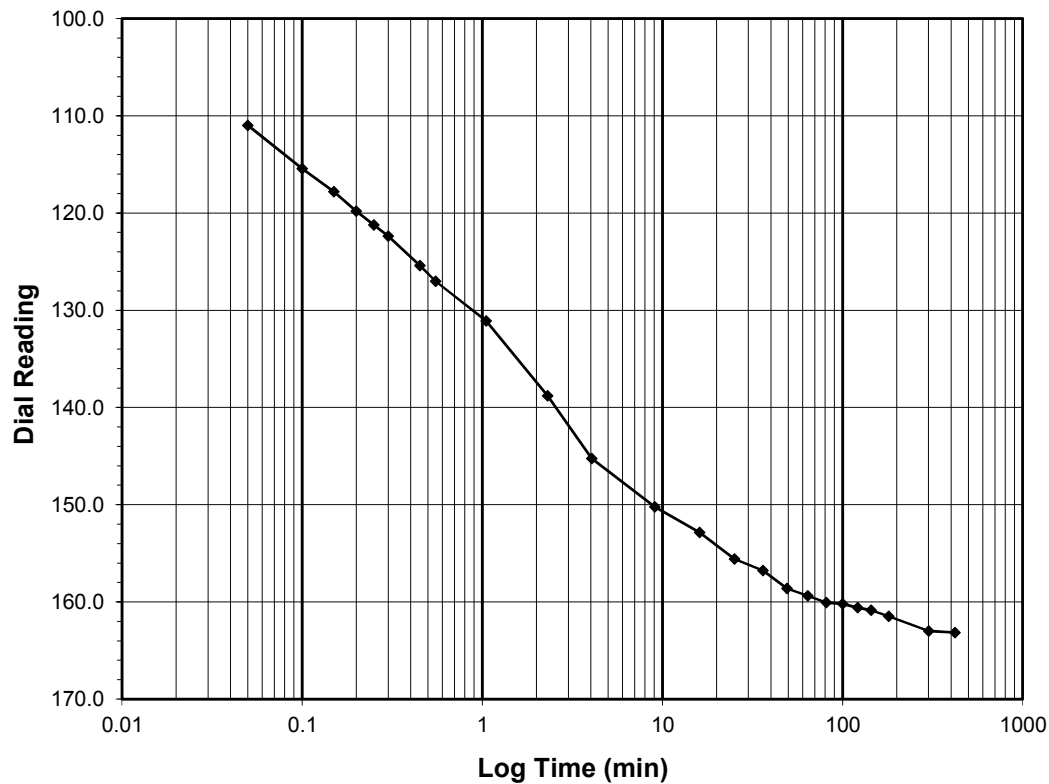
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



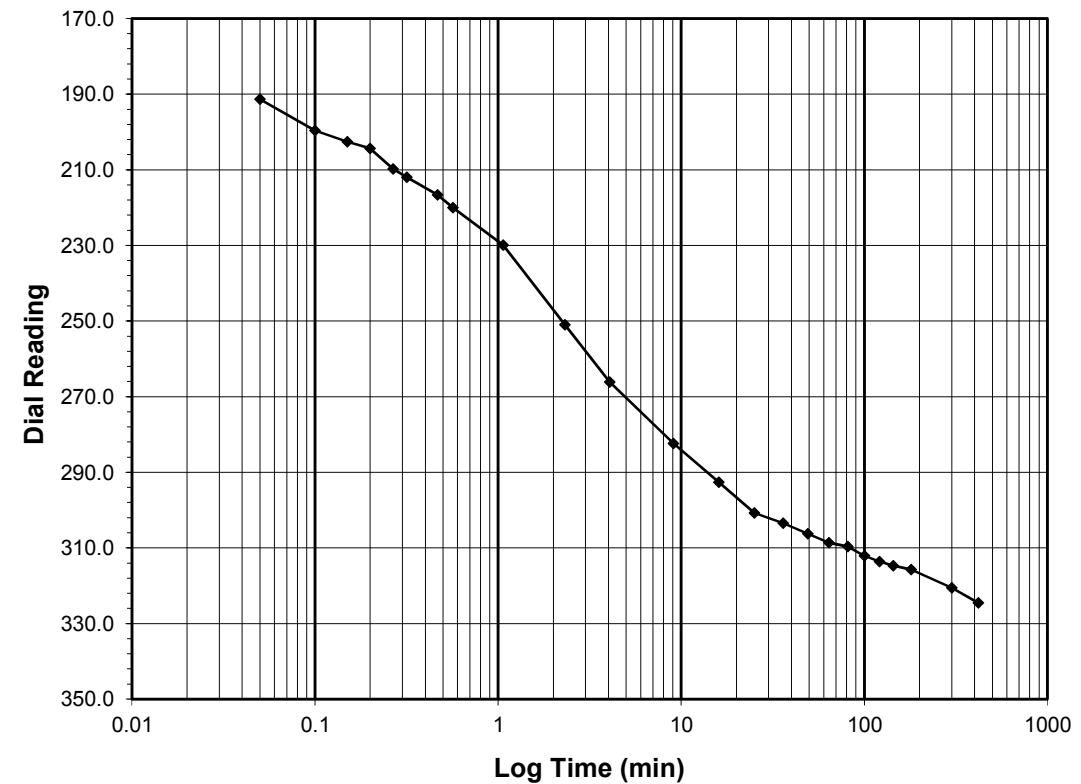
Test Load (tsf) 0.25-0.5
 Final Reading (div) 163.1
 Consolidometer No. R409
 1 Division (in) 0.0001
 Start Date 11/26/18
 Start Time 23:42:52

Elapsed Time (min)	Dial Reading (div)
Initial	92.6
0.05	111.0
0.10	115.4
0.15	117.8
0.20	119.8
0.25	121.2
0.30	122.4
0.45	125.4
0.55	127.0
1.05	131.1
2.30	138.8
4.05	145.2
9.07	150.2
16.07	152.9
25.07	155.6
36.07	156.8
49.07	158.6
64.07	159.4
81.07	160.1
100.07	160.2
121.07	160.6
144.07	160.8
180.07	161.5
300.07	163.0
420.05	163.1



Test Load (tsf) 0.5-1.0
 Final Reading (div) 324.6
 Consolidometer No. R409
 1 Division (in) 0.0001
 Start Date 11/27/18
 Start Time 6:42:55

Elapsed Time (min)	Dial Reading (div)
Initial	163.1
0.05	191.3
0.10	199.6
0.15	202.6
0.20	204.3
0.27	209.8
0.32	212.0
0.47	216.6
0.57	220.1
1.07	229.9
2.32	251.0
4.07	266.1
9.07	282.4
16.07	292.7
25.07	300.7
36.07	303.5
49.07	306.3
64.07	308.6
81.07	309.6
100.08	312.1
121.08	313.6
144.08	314.7
180.08	315.8
300.08	320.5
420.08	324.6



Tested By 129-04-0411 Date 11/26/18 Checked By GEM Date 12/4/18

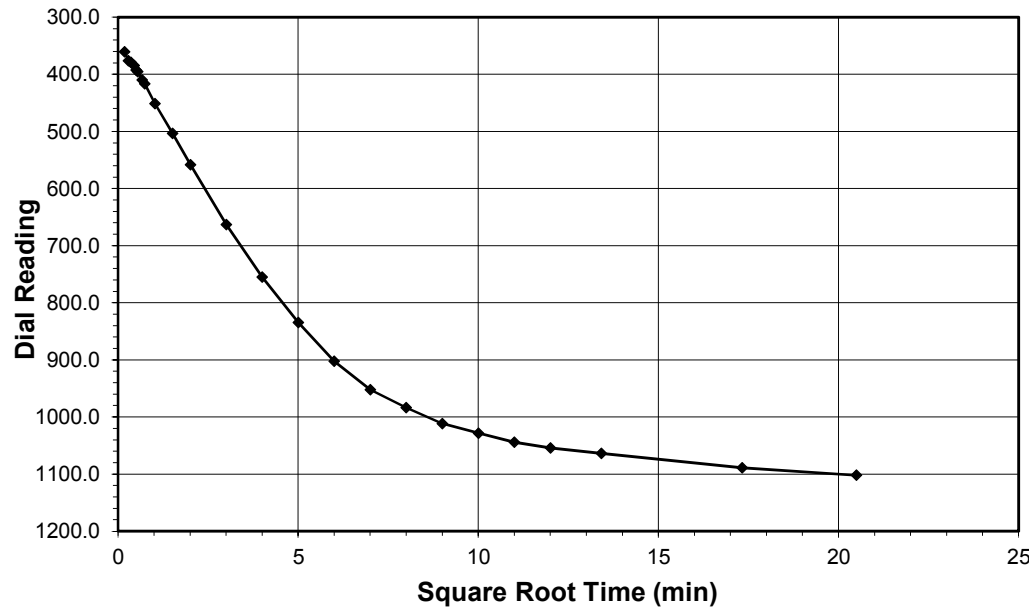
Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

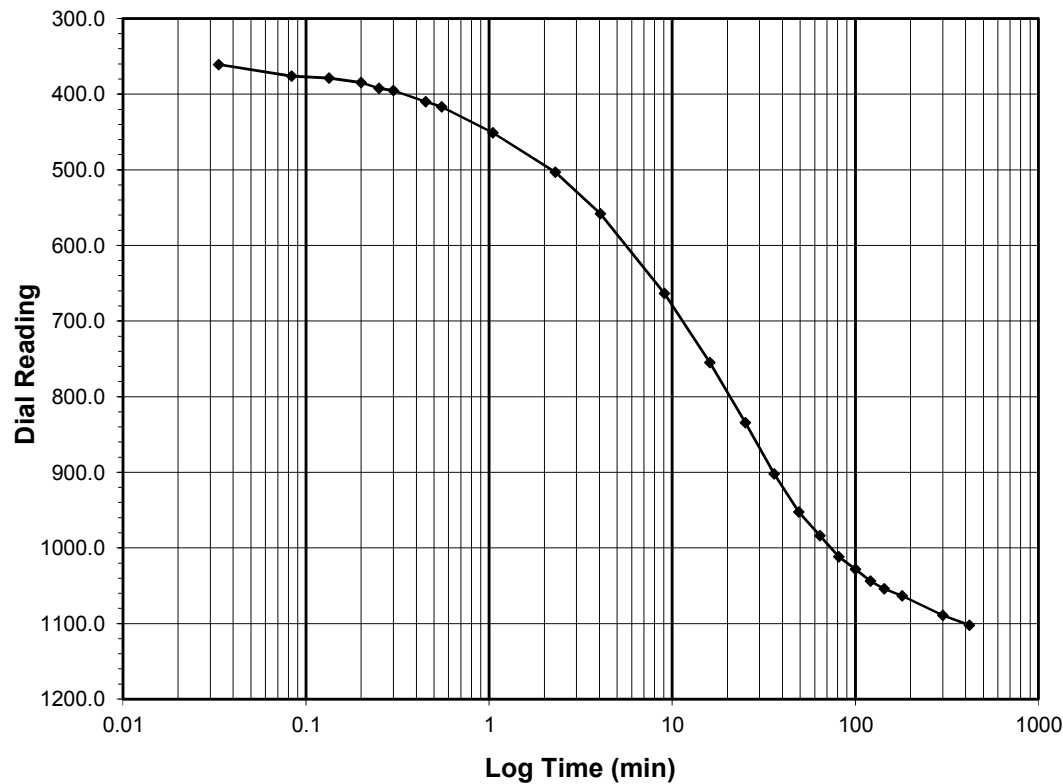
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
 Final Reading (div) 1102.2
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/27/18
 Start Time 13:43:00

Elapsed Time (min)	Dial Reading (div)
Initial	324.6
0.03	360.8
0.08	376.1
0.13	378.9
0.20	384.8
0.25	392.3
0.30	395.2
0.45	410.1
0.55	416.8
1.05	451.3
2.30	503.3
4.05	558.3
9.05	663.3
16.05	754.8
25.05	834.5
36.05	902.3
49.05	952.5
64.05	983.8
81.07	1011.8
100.07	1028.3
121.07	1044.0
144.07	1054.1
180.07	1063.5
300.07	1089.1
420.10	1102.2

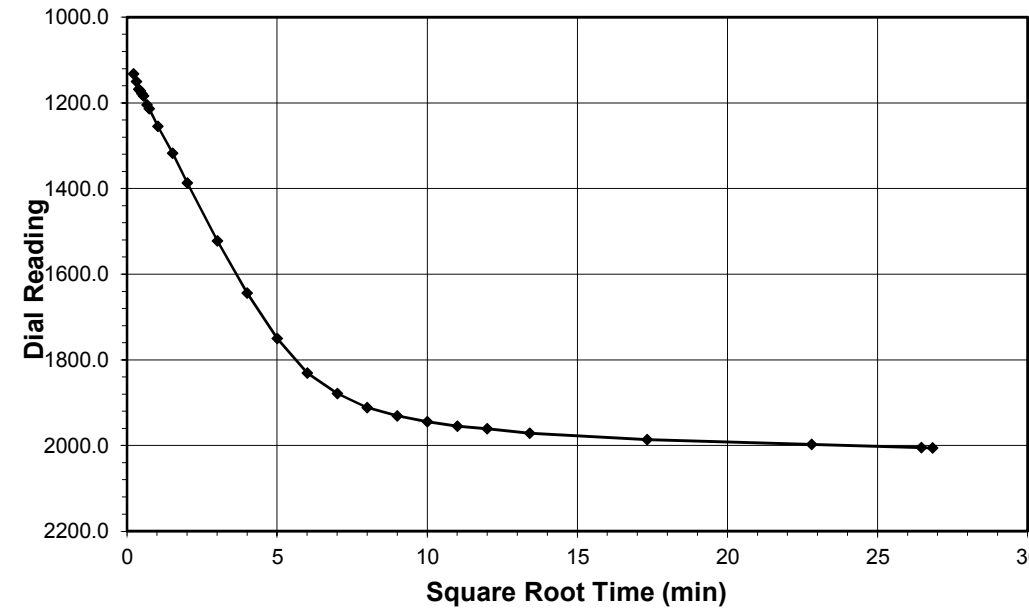


Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18

ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

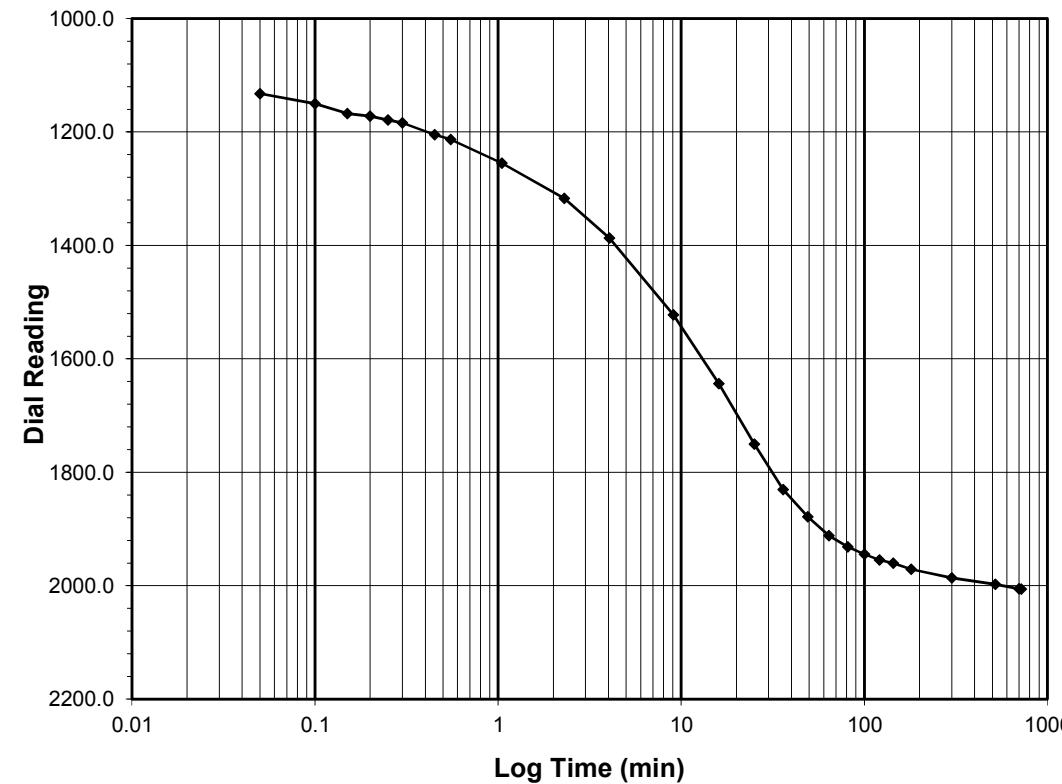
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 2006.1
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/27/18
 Start Time 20:43:07

Elapsed Time (min)	Dial Reading (div)
Initial	1102.2
0.05	1132.4
0.10	1150.1
0.15	1167.9
0.20	1172.1
0.25	1178.7
0.30	1184.2
0.45	1205.0
0.55	1213.5
1.05	1254.9
2.30	1317.3
4.05	1387.3
9.05	1522.6
16.05	1643.9
25.05	1750.2
36.05	1830.7
49.07	1878.3
64.07	1911.5
81.07	1931.3
100.07	1944.5
121.07	1954.5
144.07	1960.5
180.07	1971.0
300.07	1986.3
520.07	1997.4
700.07	2005.1
720.38	2006.1



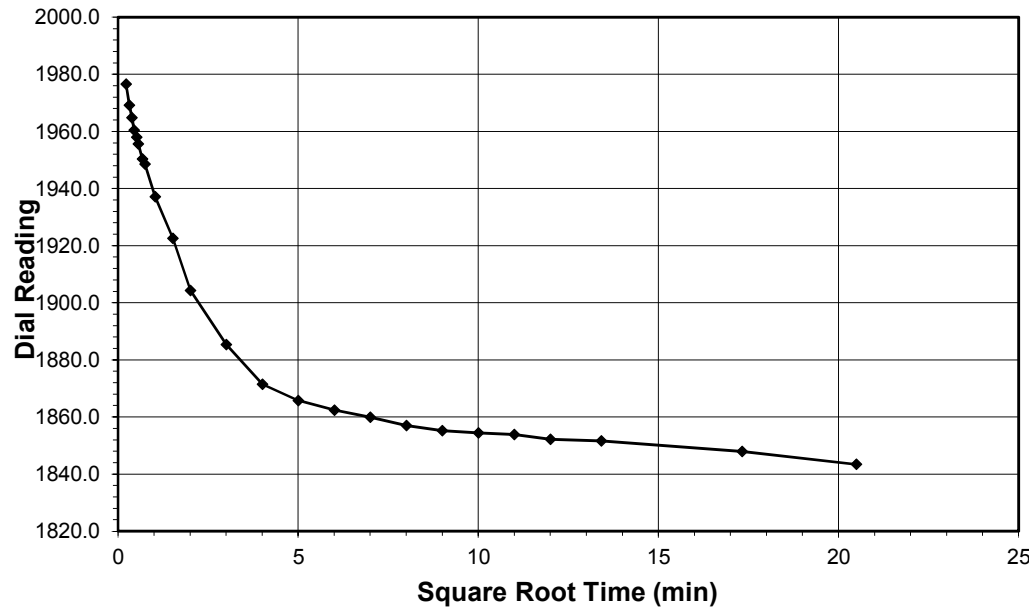
Tested By 129-04-0411 Date 11/27/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

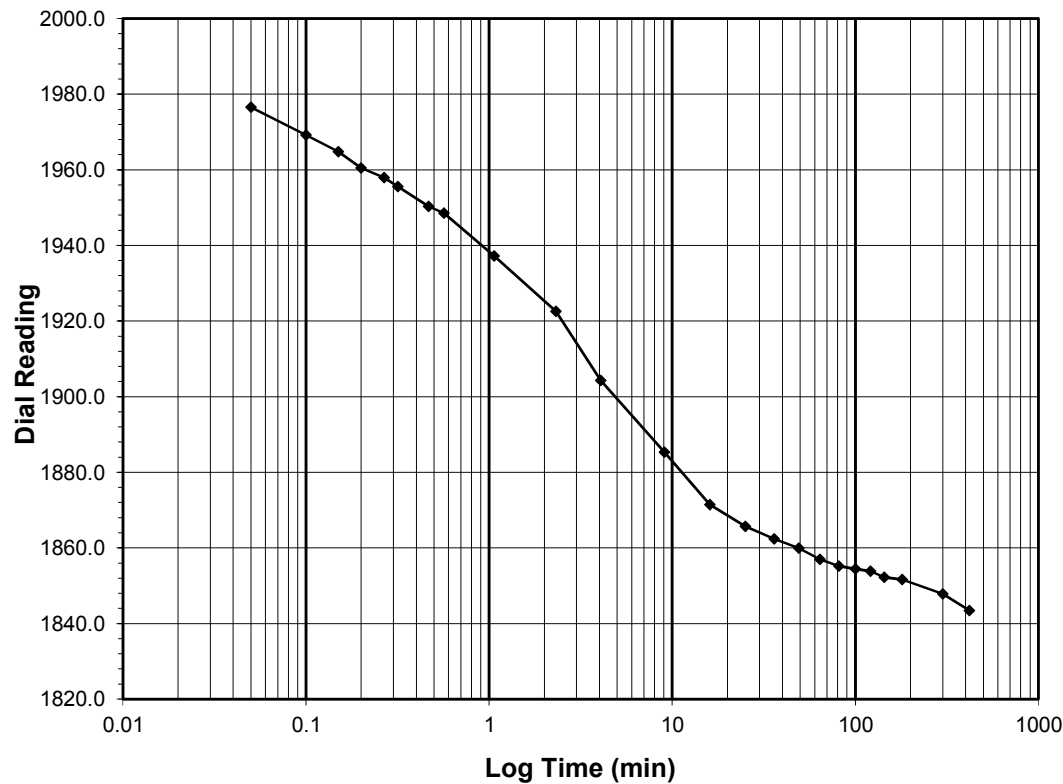
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) **4.0-1.0**
 Final Reading (div) **1843.4**
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 11/28/18
 Start Time 8:43:30

Elapsed Time (min)	Dial Reading (div)
Initial	2006.1
0.05	1976.6
0.10	1969.2
0.15	1964.8
0.20	1960.5
0.27	1957.9
0.32	1955.6
0.47	1950.3
0.57	1948.6
1.07	1937.2
2.32	1922.6
4.07	1904.3
9.07	1885.3
16.07	1871.4
25.07	1865.7
36.07	1862.4
49.07	1859.9
64.07	1857.0
81.07	1855.2
100.08	1854.4
121.08	1853.8
144.08	1852.2
180.08	1851.6
300.08	1847.9
420.03	1843.4

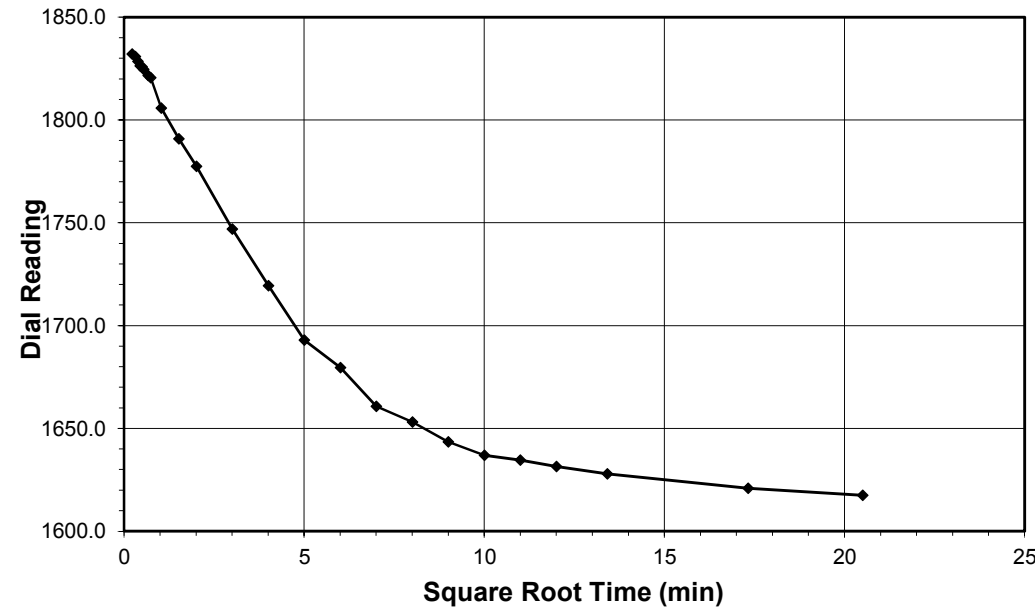


Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18

ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

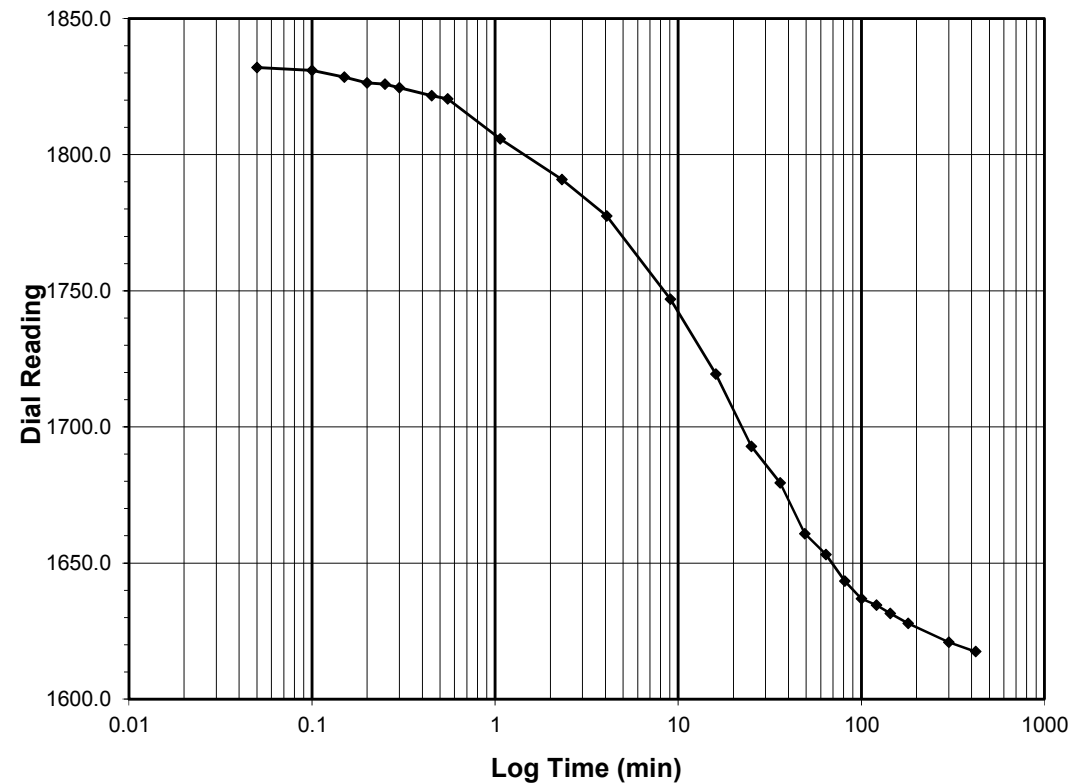
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) **1.0-0.25**
 Final Reading (div) **1617.5**
 Consolidometer No. **R409**
 1 Division (in) 0.0001

Start Date 11/28/18
 Start Time 15:43:32

Elapsed Time (min)	Dial Reading (div)
Initial	1843.4
0.05	1832.0
0.10	1830.9
0.15	1828.5
0.20	1826.3
0.25	1825.9
0.30	1824.6
0.45	1821.7
0.55	1820.5
1.07	1805.8
2.32	1790.9
4.07	1777.4
9.07	1746.9
16.07	1719.4
25.07	1692.9
36.07	1679.5
49.07	1660.8
64.07	1653.1
81.07	1643.4
100.07	1636.9
121.07	1634.6
144.07	1631.5
180.07	1627.9
300.08	1620.9
420.45	1617.5



Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

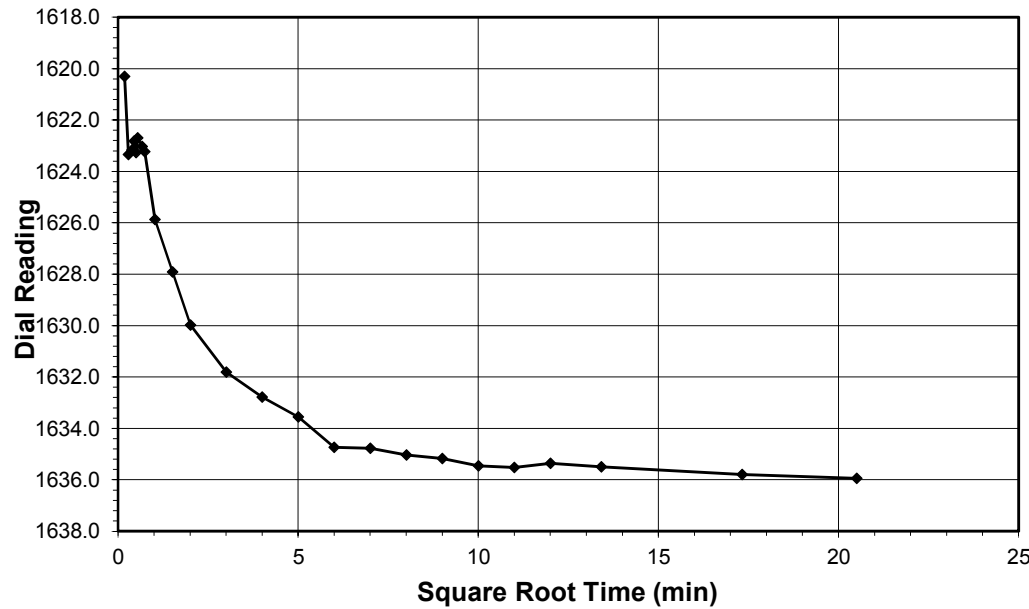
ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED

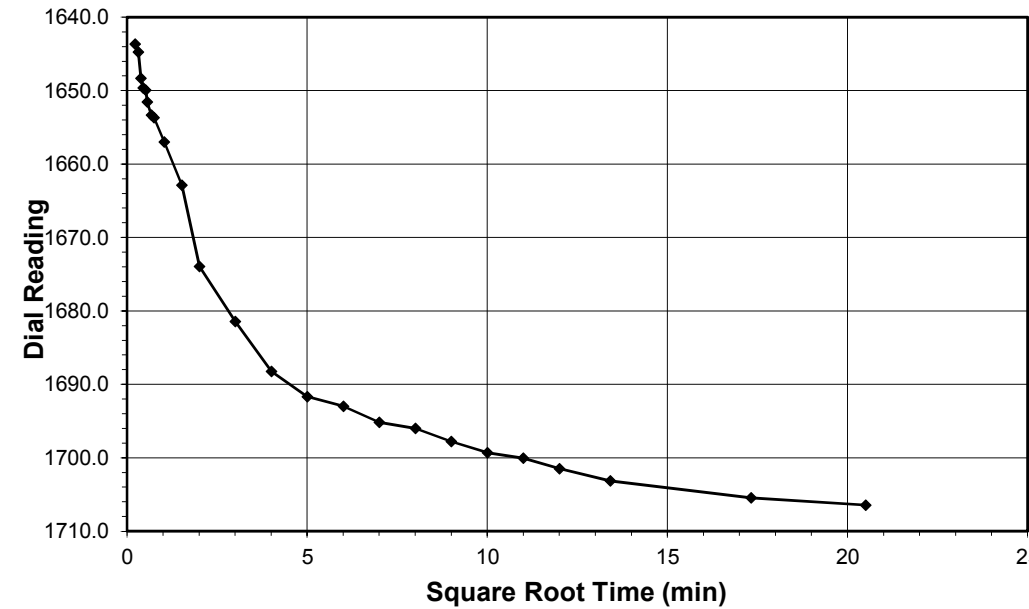
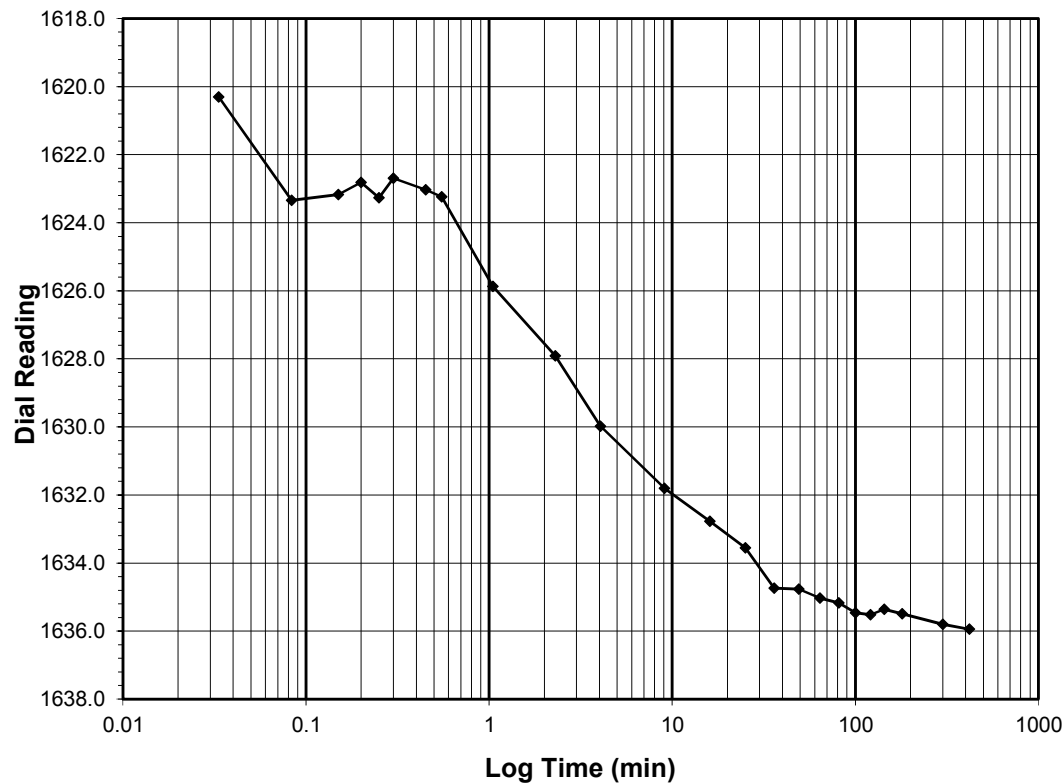
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 0.25-0.5
 Final Reading (div) 1635.9
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/28/18
 Start Time 22:43:59

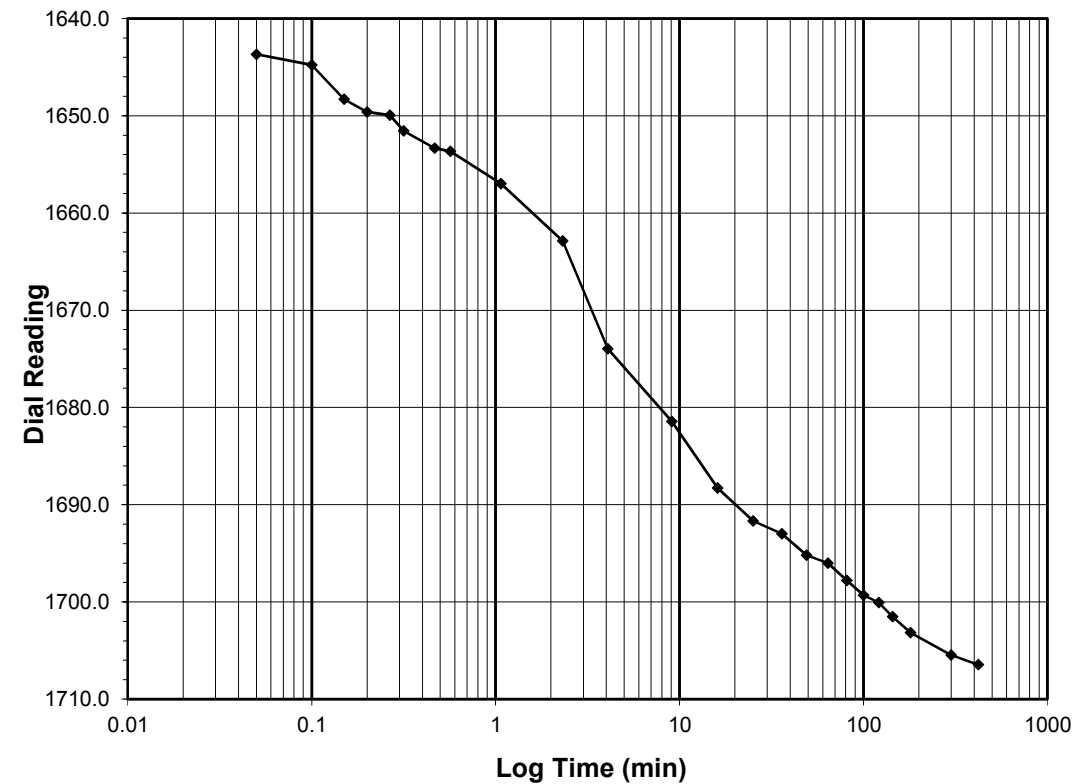
Elapsed Time (min)	Dial Reading (div)
Initial	1617.5
0.03	1620.3
0.08	1623.3
0.15	1623.2
0.20	1622.8
0.25	1623.3
0.30	1622.7
0.45	1623.0
0.55	1623.2
1.05	1625.9
2.30	1627.9
4.05	1630.0
9.05	1631.8
16.05	1632.8
25.05	1633.6
36.05	1634.7
49.05	1634.8
64.07	1635.0
81.07	1635.2
100.07	1635.5
121.07	1635.5
144.07	1635.4
180.07	1635.5
300.07	1635.8
420.37	1635.9



Test Load (tsf) 0.5-1.0
 Final Reading (div) 1706.5
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 5:44:22

Elapsed Time (min)	Dial Reading (div)
Initial	1635.9
0.05	1643.7
0.10	1644.8
0.15	1648.3
0.20	1649.6
0.27	1649.9
0.32	1651.6
0.47	1653.3
0.57	1653.7
1.07	1657.0
2.32	1662.9
4.07	1674.0
9.07	1681.4
16.07	1688.3
25.07	1691.7
36.07	1693.0
49.07	1695.2
64.07	1696.0
81.08	1697.8
100.08	1699.3
121.08	1700.1
144.08	1701.5
180.08	1703.1
300.08	1705.4
420.45	1706.5



Tested By 129-04-0411 Date 11/28/18 Checked By GEM Date 12/4/18

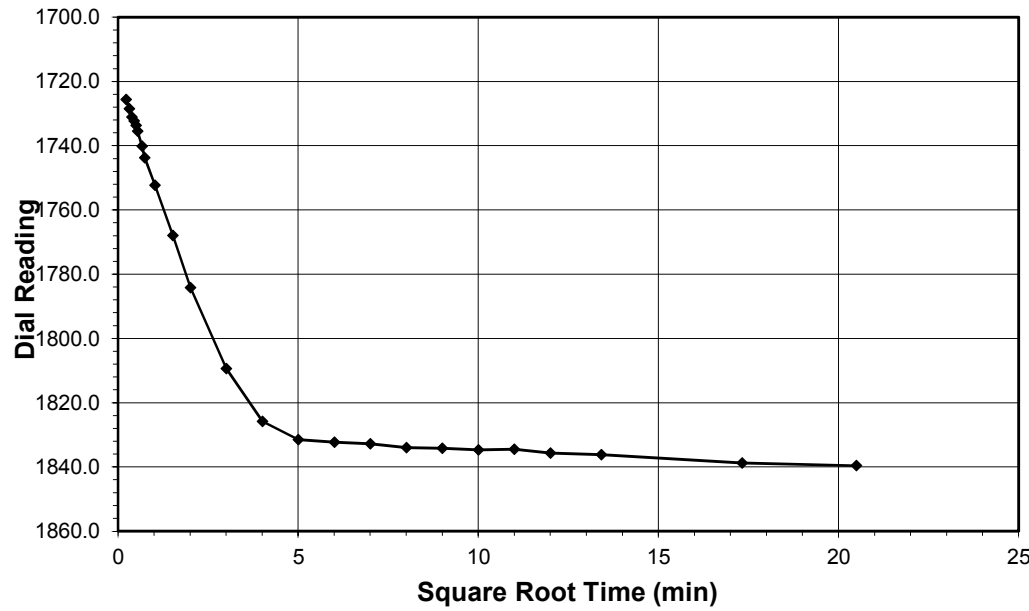
Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

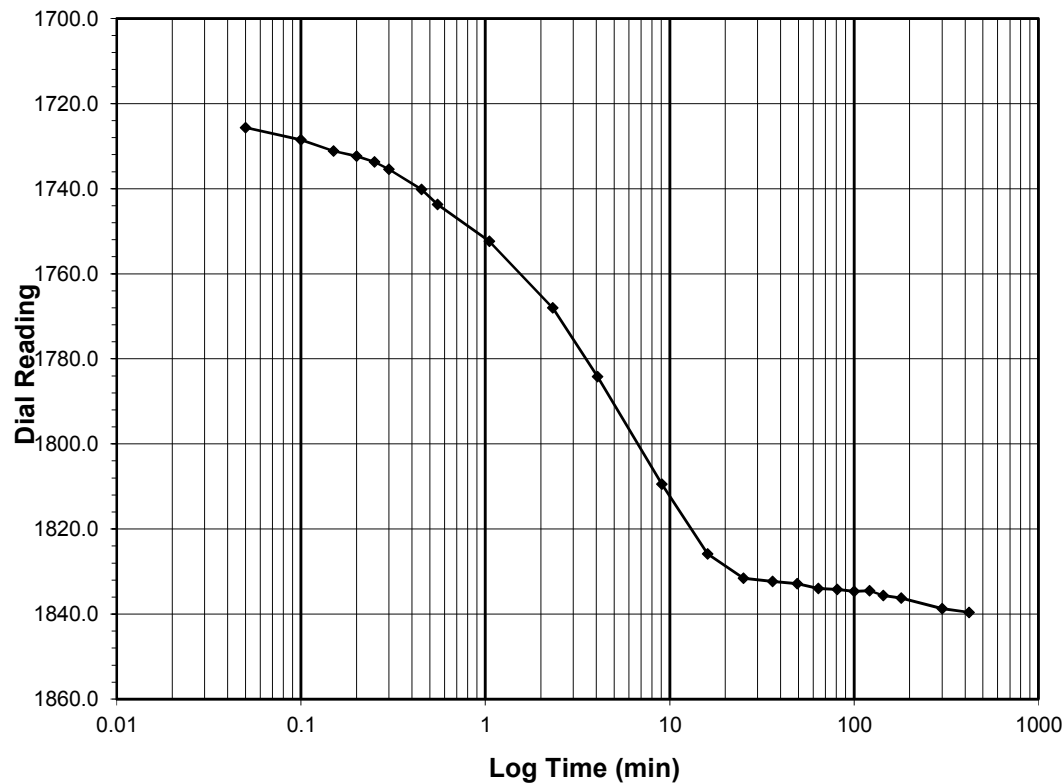
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-2.0
 Final Reading (div) 1839.6
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 12:44:49

Elapsed Time (min)	Dial Reading (div)
Initial	1706.5
0.05	1725.6
0.10	1728.5
0.15	1731.1
0.20	1732.3
0.25	1733.7
0.30	1735.4
0.45	1740.2
0.55	1743.7
1.05	1752.3
2.32	1768.0
4.07	1784.2
9.07	1809.4
16.07	1825.8
25.07	1831.5
36.07	1832.3
49.07	1832.8
64.07	1834.0
81.07	1834.2
100.07	1834.7
121.07	1834.5
144.07	1835.6
180.07	1836.2
300.07	1838.7
420.02	1839.6



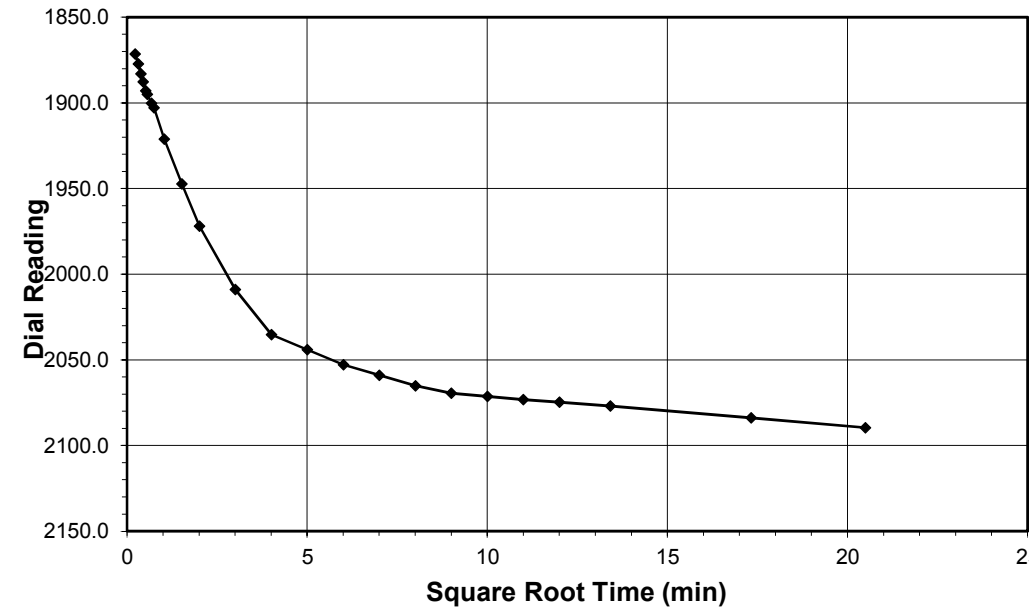
Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

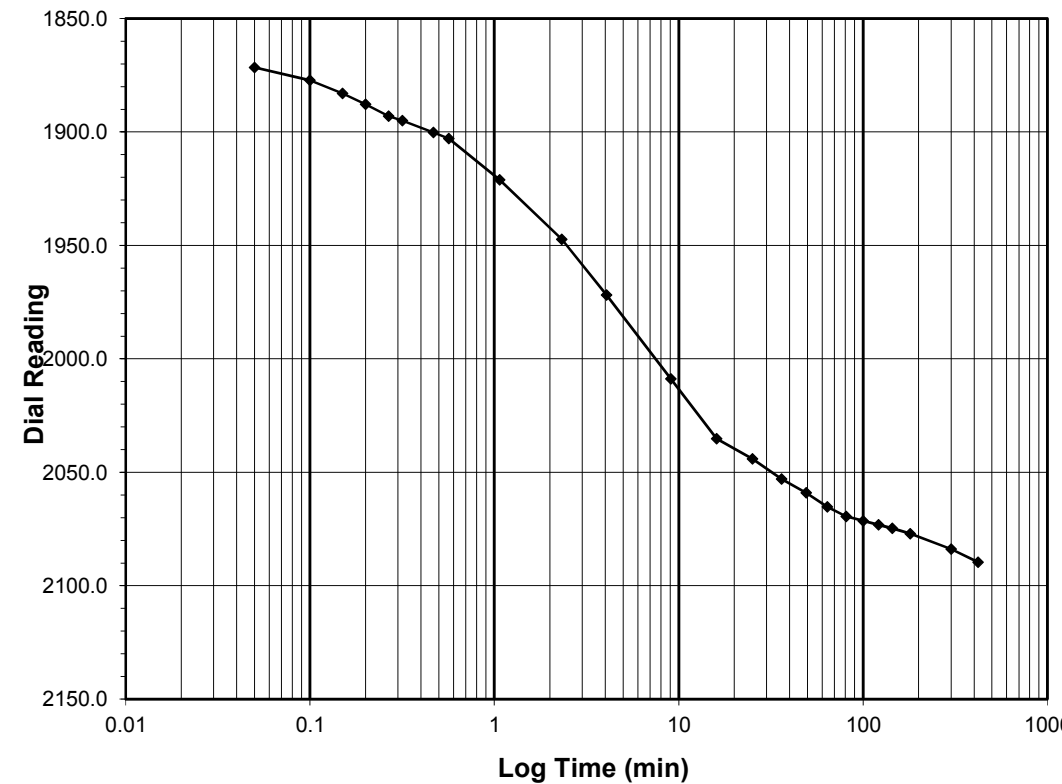
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 2.0-4.0
 Final Reading (div) 2089.6
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/29/18
 Start Time 19:44:50

Elapsed Time (min)	Dial Reading (div)
Initial	1839.6
0.05	1871.6
0.10	1877.2
0.15	1883.0
0.20	1887.8
0.27	1893.0
0.32	1895.0
0.47	1900.3
0.57	1902.9
1.07	1921.2
2.32	1947.3
4.07	1971.9
9.07	2008.9
16.07	2035.2
25.07	2044.1
36.07	2052.9
49.07	2059.0
64.07	2065.2
81.07	2069.4
100.08	2071.4
121.08	2073.2
144.08	2074.7
180.08	2077.0
300.08	2083.8
420.00	2089.6



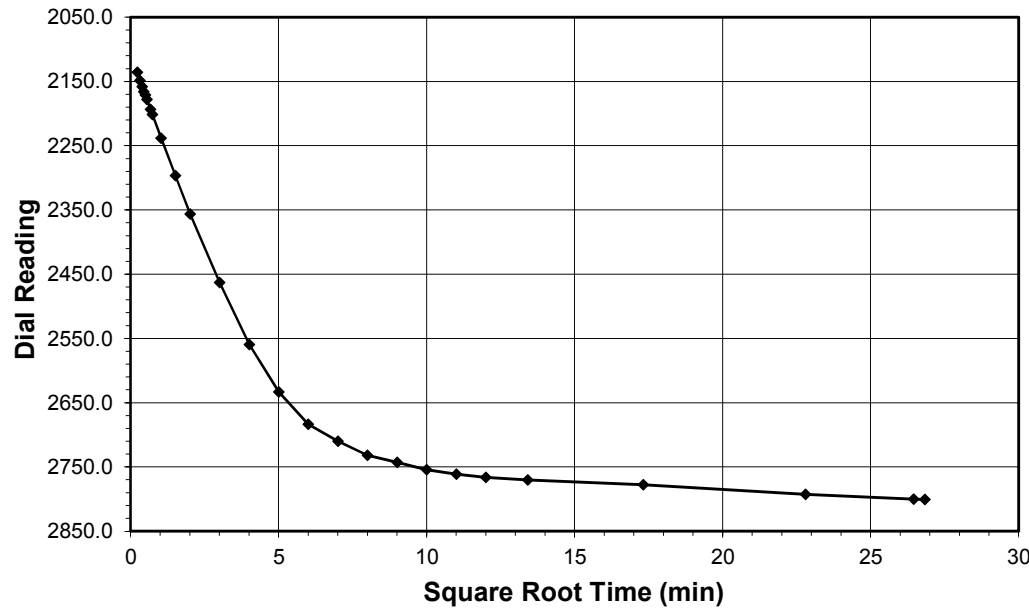
Tested By 129-04-0411 Date 11/29/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

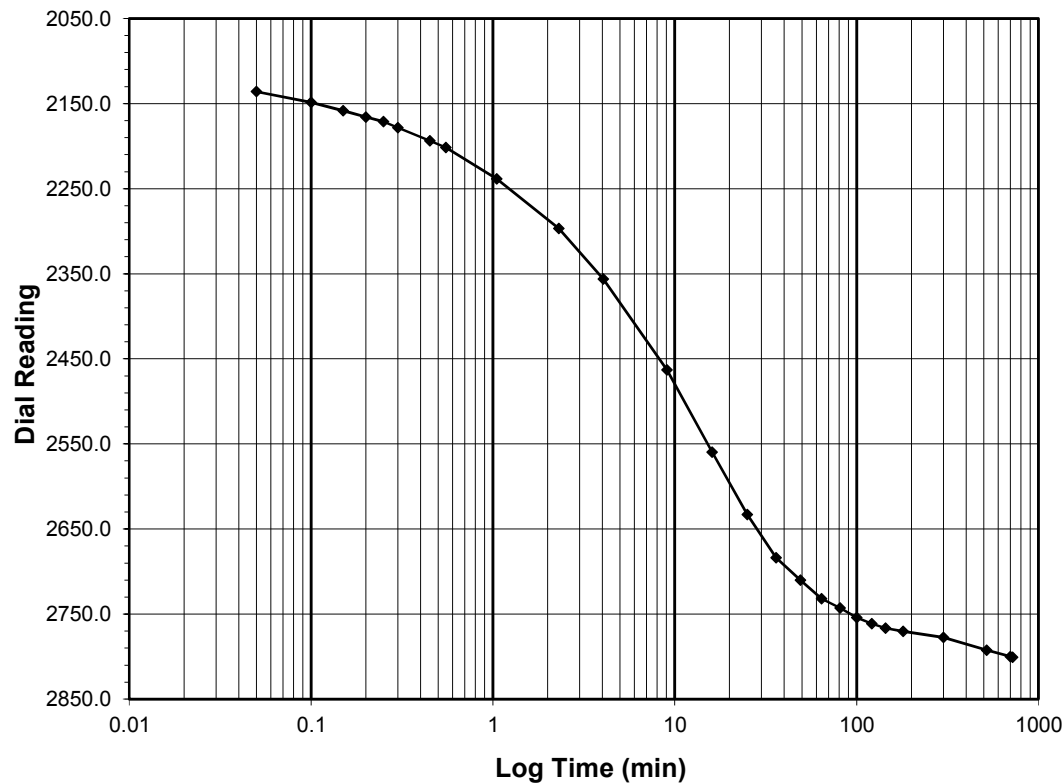
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-8.0
 Final Reading (div) 2800.7
 Consolidometer No. R409
 1 Division (in) 0.0001

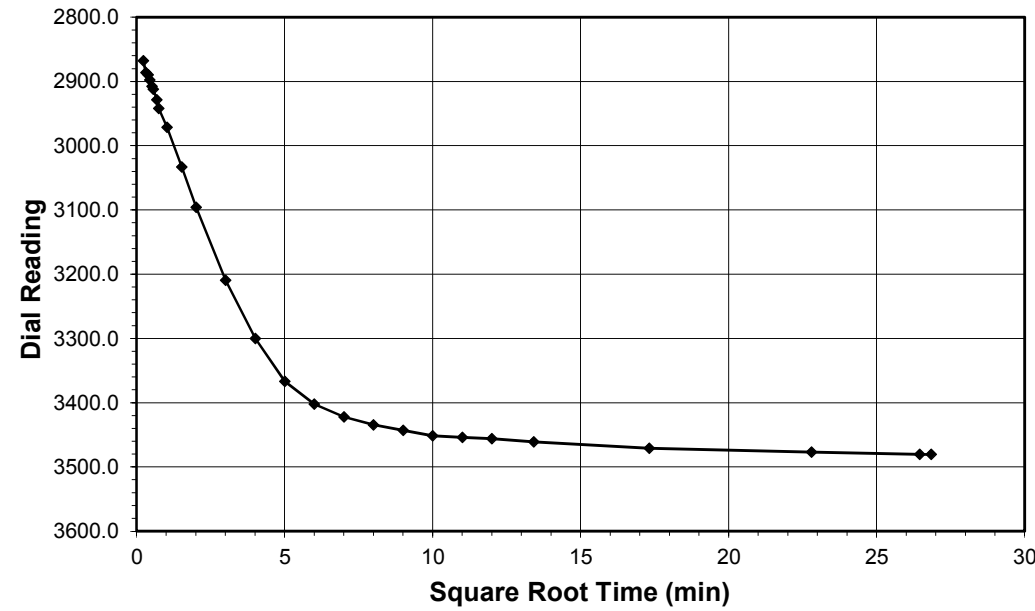
Start Date 11/30/18
 Start Time 2:44:50

Elapsed Time (min)	Dial Reading (div)
Initial	2089.6
0.05	2135.9
0.10	2148.5
0.15	2158.4
0.20	2165.9
0.25	2171.2
0.30	2178.1
0.45	2193.7
0.55	2201.5
1.05	2238.3
2.30	2296.7
4.05	2356.2
9.07	2463.1
16.07	2559.8
25.07	2633.2
36.07	2683.8
49.07	2710.2
64.07	2731.8
81.07	2743.0
100.07	2754.3
121.07	2761.4
144.07	2766.4
180.07	2770.2
300.07	2777.6
520.07	2792.5
700.07	2800.1
720.15	2800.7



Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

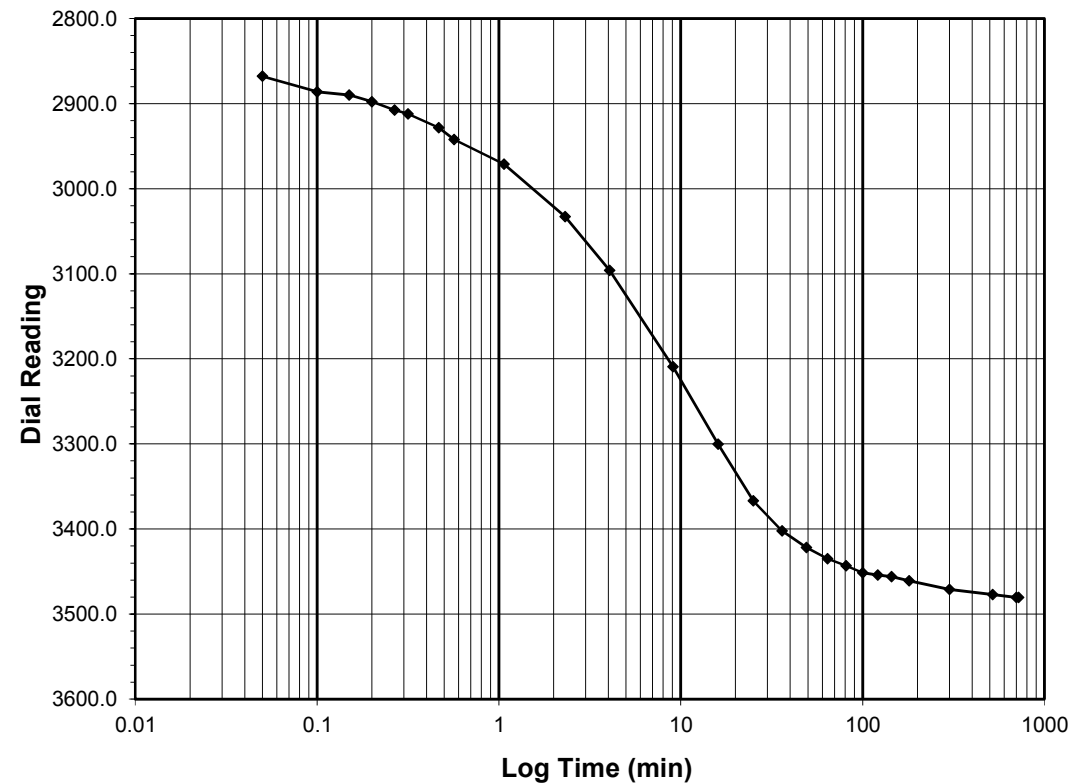
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 8.0-16.0
 Final Reading (div) 3480.6
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 11/30/18
 Start Time 14:44:59

Elapsed Time (min)	Dial Reading (div)
Initial	2800.7
0.05	2867.8
0.10	2886.2
0.15	2889.7
0.20	2897.8
0.27	2907.5
0.32	2912.3
0.47	2928.5
0.57	2942.1
1.07	2971.3
2.32	3033.0
4.07	3096.1
9.07	3209.4
16.07	3300.3
25.07	3366.9
36.07	3402.2
49.07	3421.9
64.07	3434.8
81.07	3443.0
100.07	3451.6
121.08	3454.2
144.08	3456.0
180.08	3461.0
300.08	3471.2
520.08	3476.9
700.08	3480.4
720.43	3480.6



Tested By 129-04-0411 Date 11/30/18 Checked By GEM Date 12/4/18

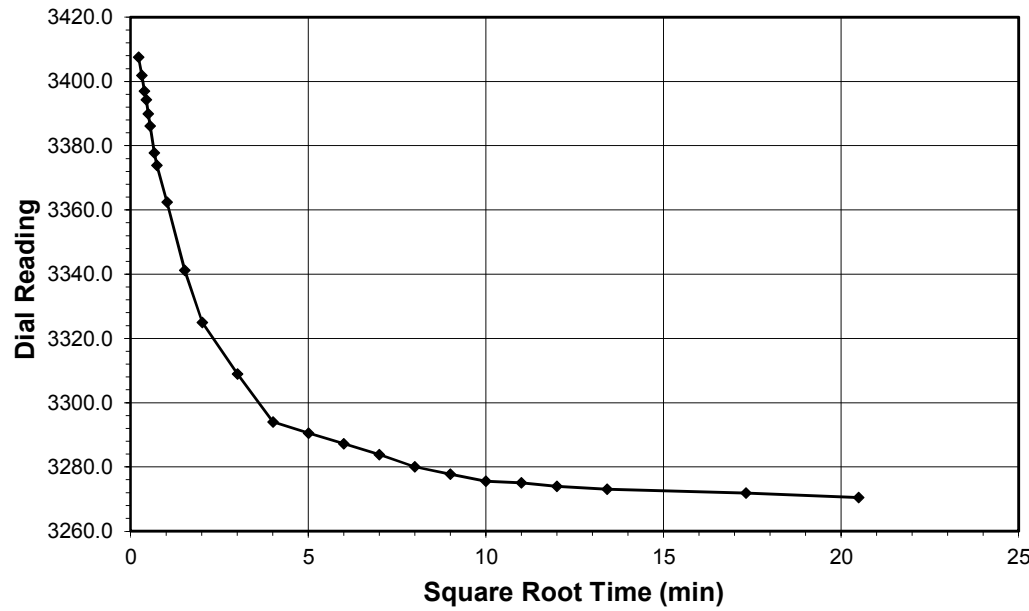
Tested By 129-04-0411 Date 11/30/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

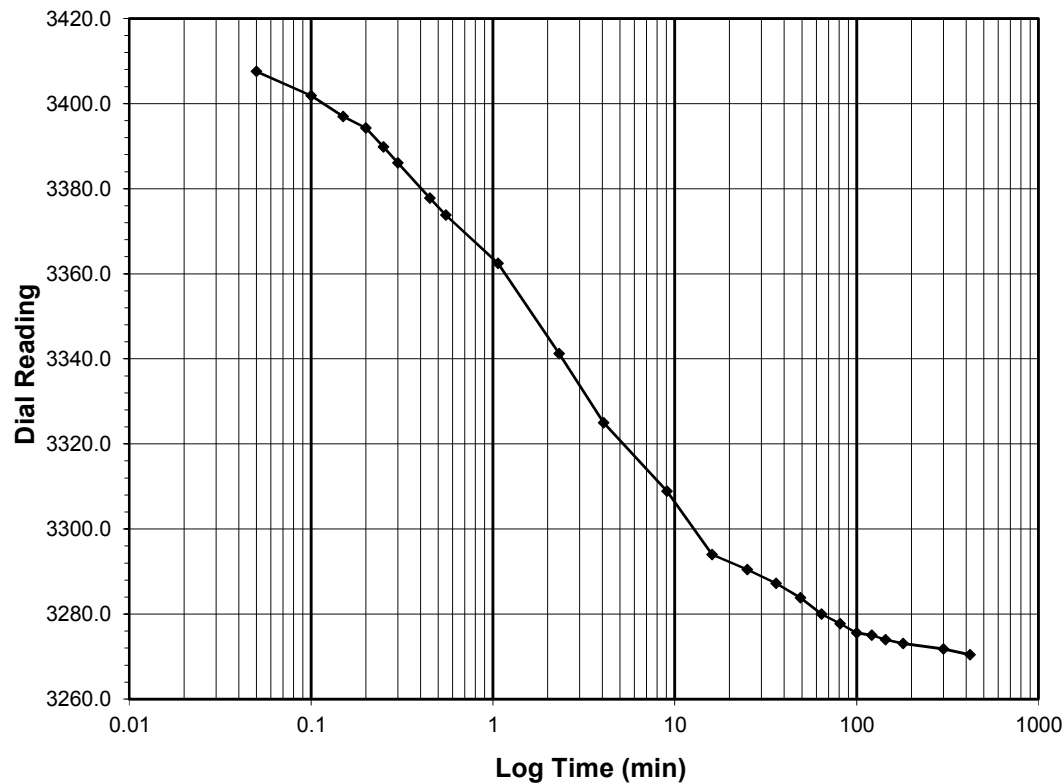
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 16.0-4.0
 Final Reading (div) 3270.5
 Consolidometer No. R409
 1 Division (in) 0.0001

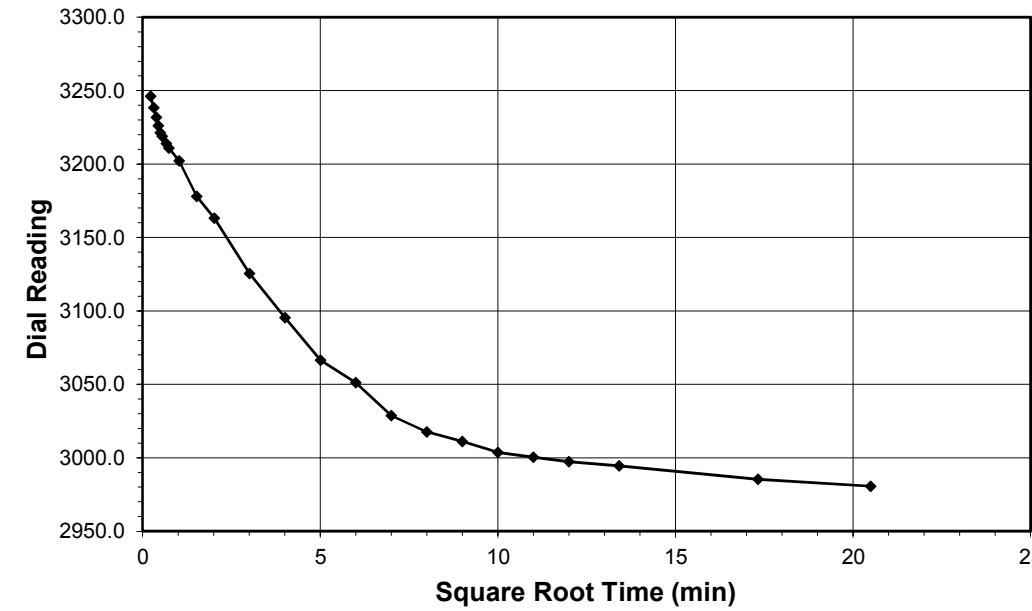
Start Date 12/1/18
 Start Time 2:45:25

Elapsed Time (min)	Dial Reading (div)
Initial	3480.6
0.05	3407.6
0.10	3401.9
0.15	3396.9
0.20	3394.3
0.25	3389.9
0.30	3386.1
0.45	3377.8
0.55	3373.8
1.07	3362.5
2.32	3341.2
4.07	3325.0
9.07	3308.9
16.07	3294.0
25.07	3290.5
36.07	3287.2
49.07	3283.9
64.07	3280.0
81.07	3277.7
100.07	3275.6
121.07	3275.0
144.07	3274.0
180.07	3273.1
300.07	3271.8
420.08	3270.5



Client: AECOM Boring No.: RPA-3100
 Client Project: Halifax Rd. Interchange Depth (ft): 20-22
 Project No.: R-2018-313-001 Sample No.: ST-3
 Lab ID: R-2018-313-001-003 Visual Description: TAN SANDY CLAY

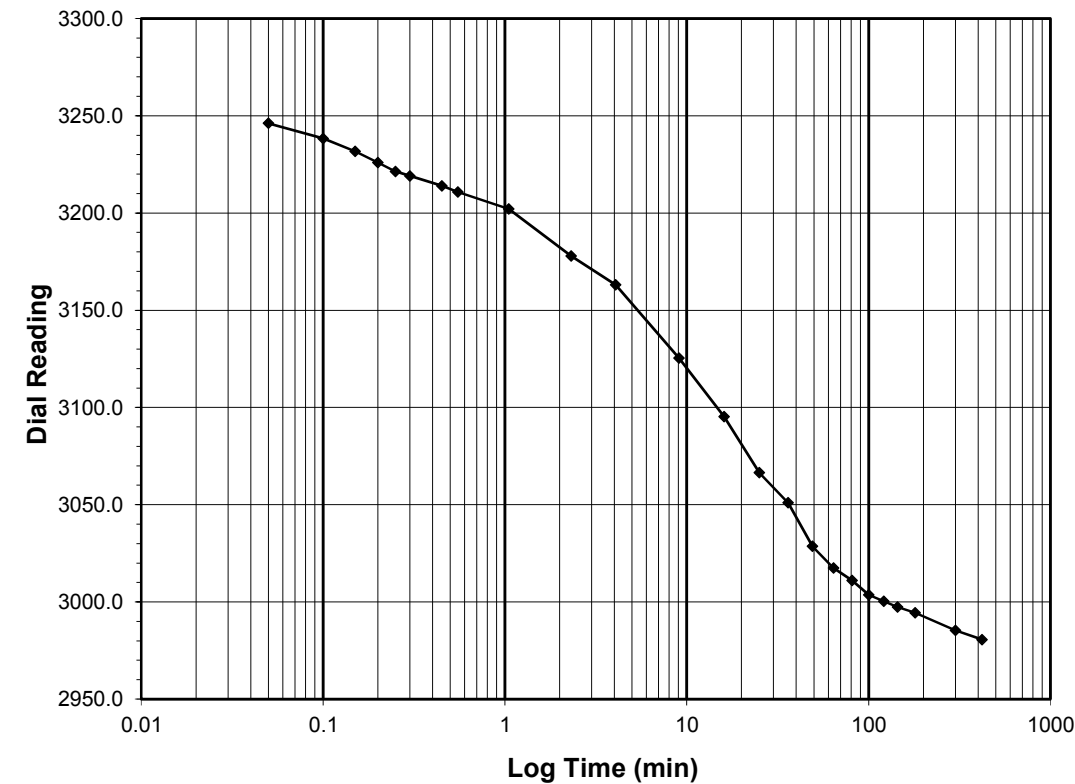
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 4.0-1.0
 Final Reading (div) 2980.6
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 12/1/18
 Start Time 9:45:30

Elapsed Time (min)	Dial Reading (div)
Initial	3270.5
0.05	3246.1
0.10	3238.2
0.15	3231.7
0.20	3226.0
0.25	3221.4
0.30	3219.0
0.45	3213.9
0.55	3210.8
1.05	3202.1
2.32	3177.8
4.07	3163.1
9.07	3125.3
16.07	3095.3
25.07	3066.5
36.07	3051.1
49.07	3028.7
64.07	3017.5
81.07	3011.1
100.07	3003.7
121.07	3000.3
144.07	2997.3
180.07	2994.5
300.07	2985.4
420.08	2980.6



Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18

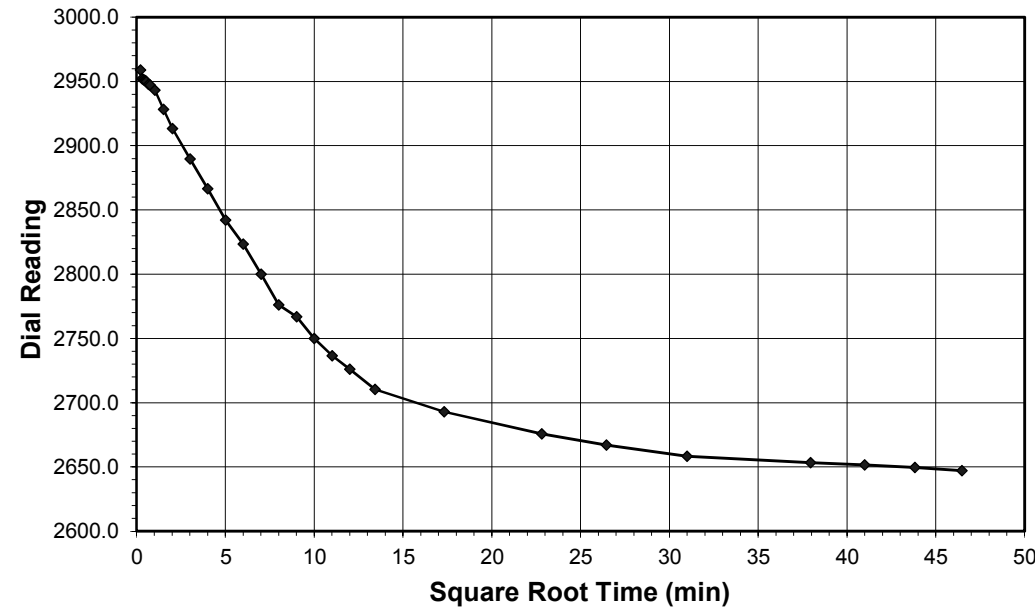
Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18



ONE DIMENSIONAL CONSOLIDATION
 AASHTO T-216

Client	AECOM	Boring No.	RPA-3100
Client Project	Halifax Rd. Interchange	Depth (ft)	20-22
Project No.	R-2018-313-001	Sample No.	ST-3
Lab ID	R-2018-313-001-003	Visual Description	TAN SANDY CLAY

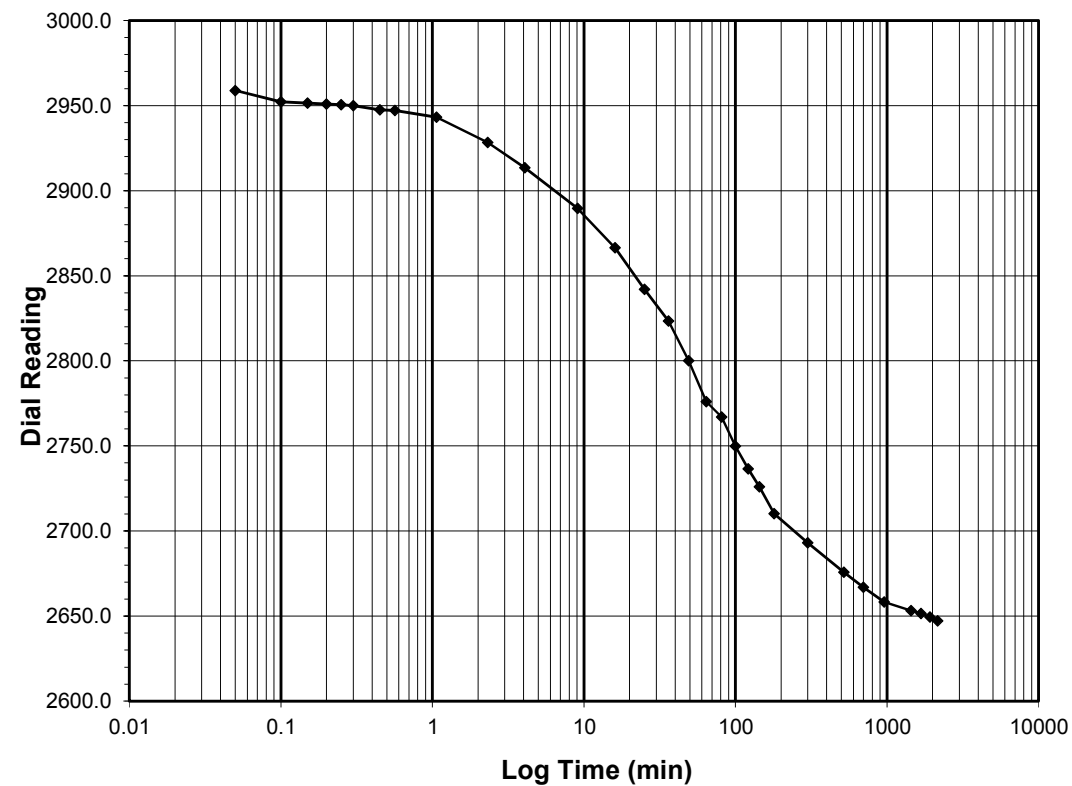
Sample Conditions: UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Test Load (tsf) 1.0-0.25
 Final Reading (div) 2647.1
 Consolidometer No. R409
 1 Division (in) 0.0001

Start Date 12/1/18
 Start Time 16:45:35

Elapsed Time (min)	Dial Reading (div)
Initial	2980.6
0.05	2958.9
0.10	2952.2
0.15	2951.5
0.20	2950.9
0.25	2950.4
0.30	2950.0
0.45	2947.6
0.57	2947.2
1.07	2943.2
2.32	2928.3
4.07	2913.4
9.07	2889.6
16.07	2866.4
25.07	2842.1
36.07	2823.3
49.07	2800.1
64.07	2776.0
81.07	2766.9
100.07	2749.9
121.07	2736.5
144.07	2726.0
180.07	2710.3
300.07	2693.0
520.07	2675.7
700.07	2666.9
960.07	2658.3
1440.07	2653.3
1680.07	2651.6
1920.07	2649.5
2160.07	2647.1



Tested By 129-04-0411 Date 12/1/18 Checked By GEM Date 12/4/18

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

SUBSURFACE INVESTIGATION

*APPENDIX B
ADDITIONAL BORING LOGS*

REFERENCE: B-5980

PROJECT: 47617

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 47617.1.1		TIP B-5980		COUNTY NASH		GEOLOGIST RYAN DOYLE										
SITE DESCRIPTION I-95 INTERCHANGE IMPROVEMENTS AT HALIFAX RD (SR 1522)							GROUND WTR (ft)									
BORING NO. Y1-2027		STATION 20+27		OFFSET 151 ft RT		ALIGNMENT -Y1-										
COLLAR ELEV. 148.8 ft		TOTAL DEPTH 10.0 ft		NORTHING 842,929		EASTING 2,346,546										
DRILL RIG/HAMMER EFF./DATE SUM3359 CME-450 85% 11/19/2018			DRILL METHOD 2 1/4" ID HSA			HAMMER TYPE Automatic										
DRILLER MIKE MOSELEY		START DATE 10/03/18		COMP. DATE 10/03/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
150	148.8	0.0	1	2	3										148.8 GROUND SURFACE 0.0	
															UNDIVIDED COASTAL PLAIN 0.8	
145	145.3	3.5	8	10	16							SS-053	D		BROWN TO RED, MEDIUM TO VERY STIFF, SILTY CLAY WITH SAND (A-7-5), HIGHLY PLASTIC 7.9	
140	140.3	8.5	6	5	5								M		RED TO GRAY TO BROWN, STIFF, SANDY CLAY WITH SILT (A-6) 10.0	
Boring Terminated at Elevation 138.8 ft IN SANDY CLAY (A-6)																

WBS 47617.1.1		TIP B-5980		COUNTY NASH		GEOLOGIST ZAHRA AGHAZADEH										
SITE DESCRIPTION I-95 INTERCHANGE IMPROVEMENTS AT HALIFAX RD (SR 1522)							GROUND WTR (ft)									
BORING NO. EB1-B		STATION 41+40		OFFSET 20 ft RT		ALIGNMENT -Y1-										
COLLAR ELEV. 136.7 ft		TOTAL DEPTH 33.2 ft		NORTHING 844,230		EASTING 2,347,868										
DRILL RIG/HAMMER EFF./DATE SUM3359 CME-450 85% 11/19/2018			DRILL METHOD 2 1/4" ID HSA			HAMMER TYPE Automatic										
DRILLER MIKE MOSELEY		START DATE 10/29/18		COMP. DATE 10/29/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
140															136.7 GROUND SURFACE 0.0	
135	135.7	1.0	2	5	6								M		UNDIVIDED COASTAL PLAIN 4.5	
													D		GRAY, STIFF TO VERY STIFF, SANDY SILT (A-4), SOME ROOTS 7.5	
130	133.2	3.5	13	12	18										RED, VERY STIFF, CLAYEY SILT (A-5) 9.0	
													M		GRAY TO BROWN, LOOSE, SILTY SAND (A-2-4) 12.0	
125	128.2	8.5	3	3	4							SS-157	W		LIGHT GRAY, MEDIUM STIFF, SANDY CLAY (A-6), MODERATELY PLASTIC 12.0	
													W		LIGHT GRAY, VERY LOOSE TO LOOSE, SILTY SAND (A-2-4), MEDIUM TO COARSE GRAINED 23.5	
120	123.2	13.5	2	4	3								W			
													W			
115	118.2	18.5	2	2	2								W			
													W			
110	113.2	23.5	32	58	42								W		WEATHERED ROCK GRANITE, LIGHT GRAY 23.5	
													W			
105	108.2	28.5	100/0.3										W			
													W			
	103.5	33.2	60/0.0												Boring Terminated BY AUGER REFUSAL at Elevation 103.5 ft ON CRYSTALLINE ROCK 33.2	

GEOTECHNICAL BORING REPORT

BORE LOG

WBS 47617.1.1		TIP B-5980		COUNTY NASH		GEOLOGIST ZAHRA AGHAZADEH										
SITE DESCRIPTION I-95 INTERCHANGE IMPROVEMENTS AT HALIFAX RD (SR 1522)							GROUND WTR (ft)									
BORING NO. B1-A		STATION 42+88		OFFSET 17 ft LT		ALIGNMENT -Y1-	0 HR. N/A									
COLLAR ELEV. 134.6 ft		TOTAL DEPTH 33.5 ft		NORTHING 844,201		EASTING 2,348,018	24 HR. FIAD									
DRILL RIG/HAMMER EFF./DATE SUM3359 CME-450 85% 11/19/2018				DRILL METHOD 2 1/4" ID HSA		HAMMER TYPE Automatic										
DRILLER MIKE MOSELEY		START DATE 10/31/18		COMP. DATE 10/31/18		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100			ELEV. (ft)	DEPTH (ft)		
135	134.6	0.0	1	3	3									134.6	0.0	GROUND SURFACE
													W			UNDIVIDED COASTAL PLAIN BROWN, LOOSE, CLAYEY SAND WITH SOME GRAVEL (A-2-6)
130	131.1	3.5	6	9	12								M			BROWN AND GRAY, STIFF TO VERY STIFF, SILTY CLAY (A-7-6), HIGHLY PLASTIC
125	126.1	8.5	6	6	4								M W	125.6	9.0	SS-184 LIGHT GRAY, LOOSE, SAND WITH TRACE CLAY (A-1-B), MEDIUM TO COARSE GRAINED
120	121.1	13.5	2	3	3								W M	120.6	14.0	COASTAL PLAIN GREEN, SOFT TO MEDIUM STIFF, SILTY CLAY (A-7-6), TRACE MICA, HIGHLY PLASTIC (YORKTOWN FORMATION)
115	116.1	18.5	3	2	2								M			SS-188
110	111.1	23.5	WOR	1	2								M			
105	106.1	28.5	7	4	5								W	106.1	28.5	RESIDUAL ORANGE-WHITE, LOOSE, SAND WITH TRACE CLAY (A-1-B), LITTLE ROCK FRAGMENTS, MEDIUM TO COARSE GRAINED
	101.1	33.5												101.1	33.5	Boring Terminated BY AUGER REFUSAL at Elevation 101.1 ft ON CRYSTALLINE ROCK

NCDOT BORE DOUBLE HALIFAX RD - UPDATE.GPJ NC_DOT.GDT 2/18/19

GEOTECHNICAL BORING REPORT

CORE LOG

WBS 47617.1.1		TIP B-5980		COUNTY NASH		GEOLOGIST ZAHRA AGHAZADEH						
SITE DESCRIPTION I-95 INTERCHANGE IMPROVEMENTS AT HALIFAX RD (SR 1522)								GROUND WTR (ft)				
BORING NO. B1-B		STATION 42+88		OFFSET 17 ft RT		ALIGNMENT -Y1-		0 HR. N/A				
COLLAR ELEV. 134.6 ft		TOTAL DEPTH 53.3 ft		NORTHING 844,171		EASTING 2,348,004		24 HR. FIAD				
DRILL RIG/HAMMER EFF./DATE SUM3359 CME-450 85% 11/19/2018				DRILL METHOD 2 1/4" ID HSA / CORE BORING		HAMMER TYPE Automatic						
DRILLER MIKE MOSELEY		START DATE 10/30/18		COMP. DATE 10/31/18		SURFACE WATER DEPTH N/A						
CORE SIZE NQ		TOTAL RUN 17.5 ft										
ELEV (ft)	RUN ELEV (ft)	DEPTH (ft)	RUN (ft)	DRILL RATE (Min/ft)	RUN		SAMP. NO.	STRATA		LOG	DESCRIPTION AND REMARKS	DEPTH (ft)
					REC. (ft) %	RQD (ft) %		REC. (ft) %	RQD (ft) %			
98.79	98.8	35.8	4.6	2:00/1.0 2:00/1.0 4:00/1.0	(2.8) 61%	(0.9) 20%	RS-1	(2.8) 16%	(0.9) 5%		Begin Coring @ 35.8 ft CRYSTALLINE ROCK GRAY TO BLACK, WEATHERED TO FRESH, HARD, CLOSELY TO MODERATELY FRACTURED, NO BEDDING APPARENT, GRANITE SOME IRON OXIDE STAINING	35.8
95	94.2	40.4	5.0	2:50/1.0 2:20/0.6 3:38/1.0 4:06/1.0 2:55/1.0	(5.0) 100%	(3.2) 64%	RS-2	(5.0) (3.2)				
90	89.2	45.4	5.0	4:05/1.0 5:00/1.0 2:50/1.0 3:33/1.0	(4.3) 86%	(3.6) 72%		(4.3) (3.6)				
85	84.2	50.4	2.9	6:14/1.0 10:22/1.0 6:13/1.0 7:48/1.0	(2.9) 100%	(2.2) 76%		(2.9) (2.2)				
	81.3	53.3		16:00/1.0 47:30/0.9							Boring Terminated at Elevation 81.3 ft ON CRYSTALLINE ROCK	53.3

NCDOT CORE DOUBLE HALIFAX RD - UPDATE.GPJ NC_DOT.GDT 2/18/19

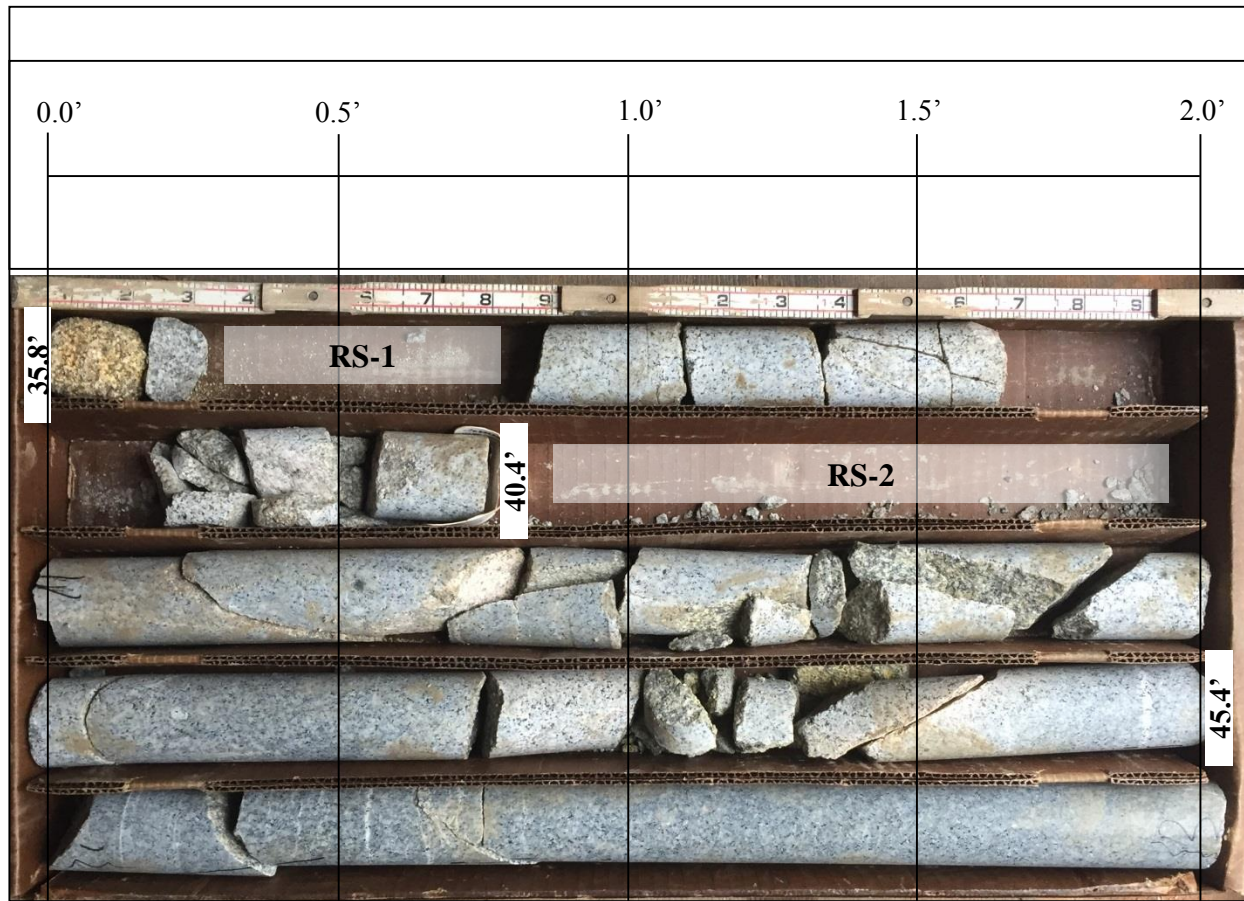
*NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
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SUBSURFACE INVESTIGATION

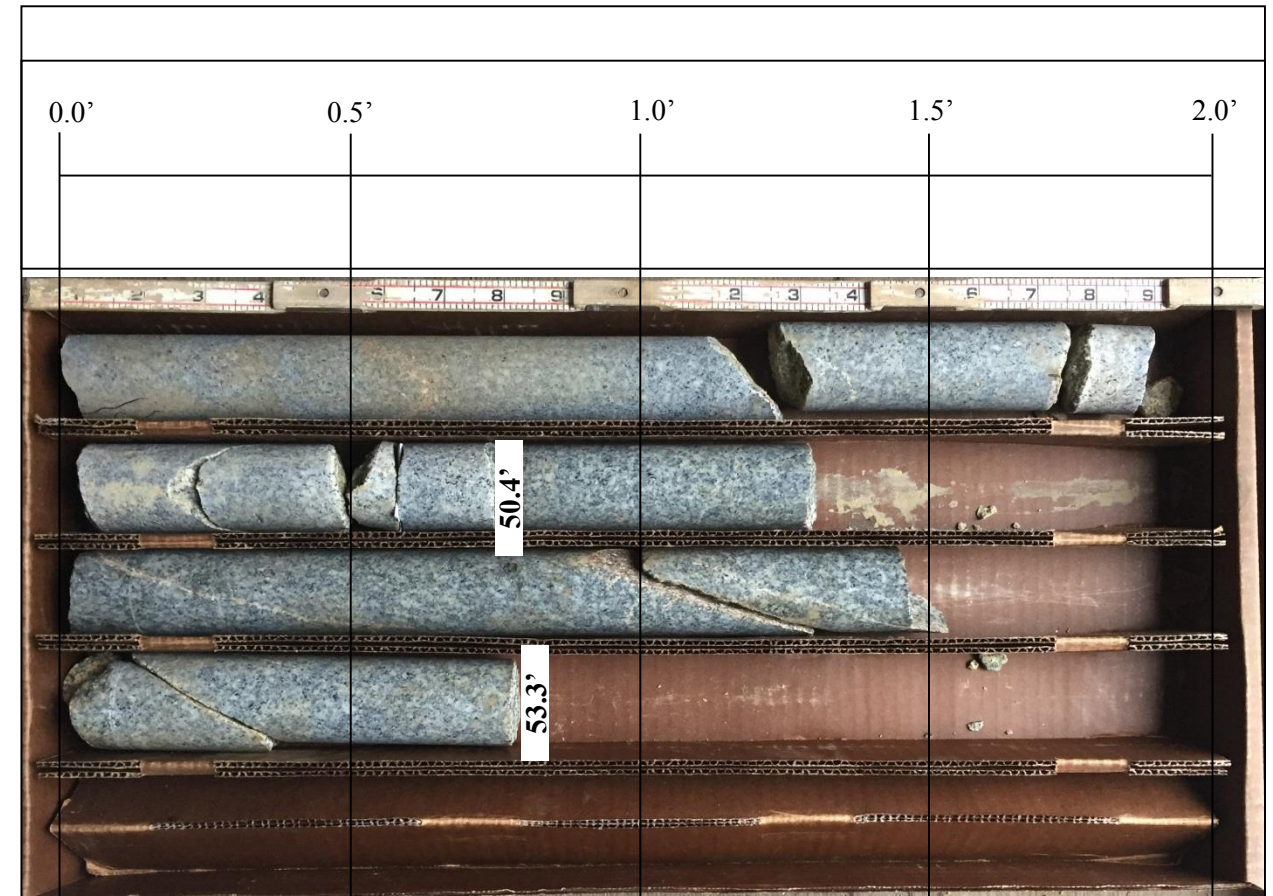
*APPENDIX C
ROCK CORE PHOTOGRAPHS*

PROJECT: 47617

REFERENCE: B-5980



Sta. 42+88 -Y1-, 17-ft RT, Box 1 of 2, 35.8-ft to 47.4-ft



Sta. 42+88 -Y1-, 17-ft RT, Box 2 of 2, 47.4-ft to 53.3-ft

SCALE 1:40 (1"=4")

ROCK CORE PHOTOGRAPHS

**I-95 INTERCHANGE IMPROVEMENTS AT HALIFAX RD
(SR 1522)**

**NASH COUNTY, NORTH CAROLINA
WBS NO.: 47617.1.1, TIP NO.: B-5980**



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1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
Tel: 919-461-1100 Fax: 919-46-1415