

REFERENCE: W-5602

PROJECT: 50139

SEE SHEET 3 FOR PLAN SHEET LAYOUT
AT TIME OF INVESTIGATION

CONTENTS

<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>	<u>PROFILE</u>
-L-	27+11 TO 168+78	5-15	17-27

CROSS SECTIONS

<u>LINE</u>	<u>STATION</u>	<u>SHEETS</u>
-L-	48+50 TO 50+00	28-29
-L-	85+50 TO 86+50	30-31
-L-	91+00 TO 94+50	32-35

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

ROADWAY
SUBSURFACE INVESTIGATION

COUNTY ONSLOW
PROJECT DESCRIPTION NC 172 (SNEADS FERRY RD.)
FROM NC 210 TO CAMP LEJEUNE GATE

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	W-5602	1	35

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

J.K. CRENSHAW
CATLIN, INC.

INVESTIGATED BY T.C. BOTTOMS

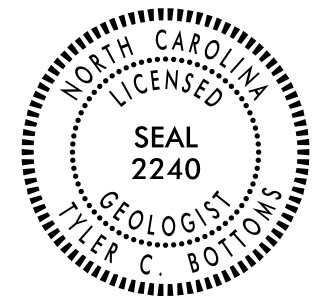
DRAWN BY T.C. BOTTOMS

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE APRIL 2016

DS
DNA



DocuSigned by:
Tyler C. Bottoms 4/18/2016
48A2D3BD08CF4A6
SIGNATURE DATE

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

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



PAT McCrory
Governor
NICHOLAS J. TENNYSON
Secretary

April 11, 2016

STATE PROJECT: 50139.1.FR1 (W-5602)
 F.A. PROJECT: HSIP-0172(13)
 COUNTY: Onslow
 DESCRIPTION: NC 172 (Sneads Ferry Rd.) from NC 210 to Camp Lejeune Gate
 SUBJECT: Geotechnical Inventory

Project Description

This project is located in Onslow County on NC 172. Proposed construction consists of widening NC 172 to four lanes from NC 210 to 500 feet north of the intersection with Old Ferry Rd. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted during February and March of 2016. Hand auger borings were completed and representative soil samples were collected for visual classification in the field and submitted to the soils lab for testing.

The following alignment was investigated. The subsurface profile and selected cross sections of this alignment are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	27+11 to 168+78

Areas of Special Geotechnical Interest

- 1) The entire project was found to exhibit seasonal high ground water.

- 2) The following sections contain cohesive soils which have the potential to cause embankment/subgrade and or slope stability problems during construction:

<u>Line</u>	<u>Station(±)</u>
-L-	57+63 to 58+38
-L-	151+62 to 154+38
-L-	157+63 to 160+38

- 3) The following sections contain organic soils which have the potential to cause embankment/subgrade and or slope stability problems during construction:

<u>Line</u>	<u>Station(±)</u>
-L-	48+78 to 49+80
-L-	85+64 to 86+34
-L-	91+85 to 94+30

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations along the proposed alignment range from 11± feet to 49± feet above sea level.

Surficial soils in this area are generally classified as alluvial.

Ground Water

Ground water data was collected in February and March of 2016, during a time of normal precipitation. Ground water elevations ranged from 6± to 46± feet above sea level.

Soils

Soils within this project area have been divided into two categories: roadway embankment and alluvial.

Roadway embankment soils were encountered along existing NC 172. These soils are comprised of 1 to 4± feet of loose to medium dense sand (A-2-4, A-3).

Alluvial soils were encountered beneath the roadway embankment. They are comprised of 6± or more feet of loose to medium dense sand and soft sandy silt (A-4). Medium dense sand with trace to little organic material was also encountered with organic contents ranging from 0.8 to 4.4%

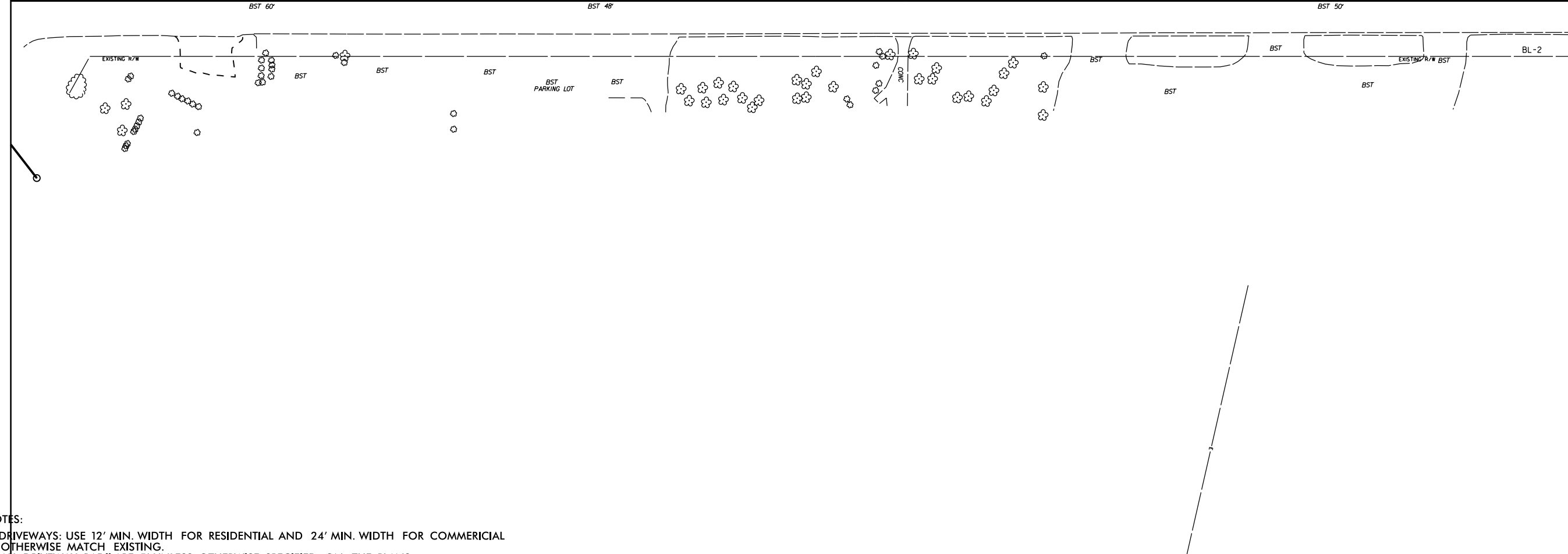
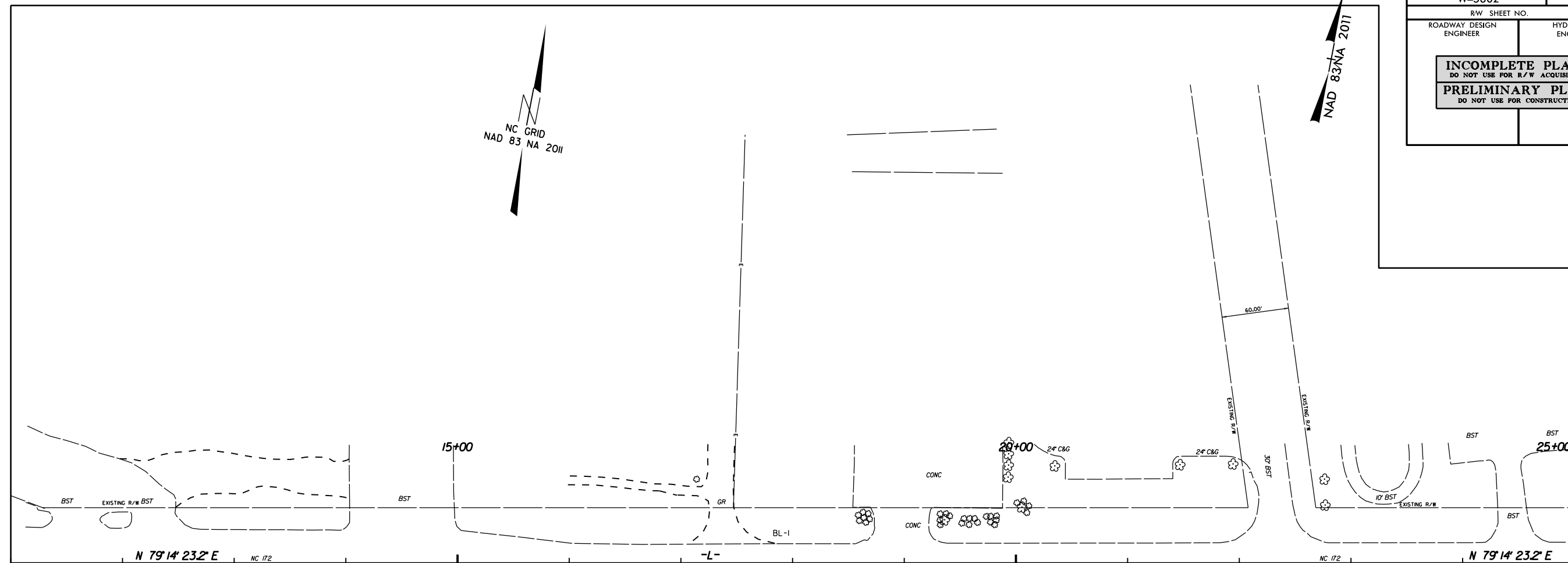


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PROJECT REFERENCE NO. W-5602	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTES:

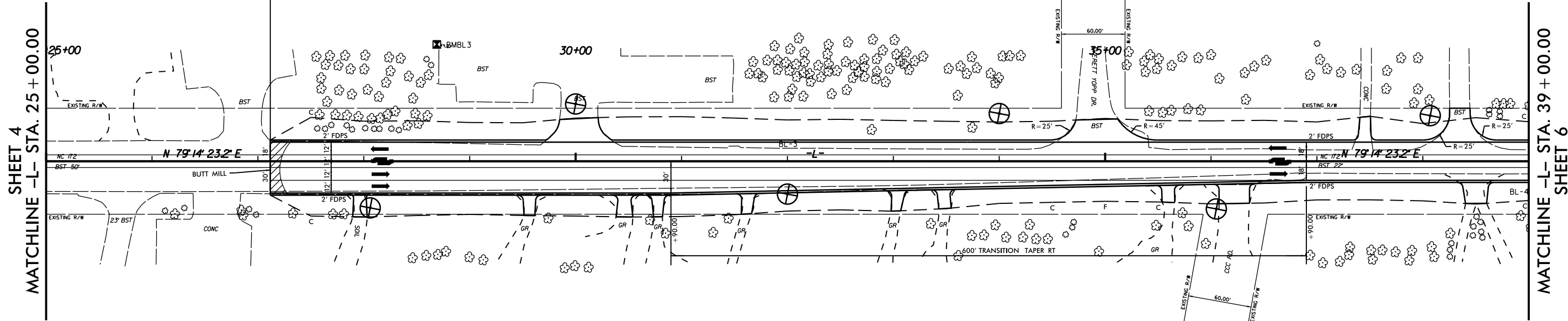
1. DRIVEWAYS: USE 12' MIN. WIDTH FOR RESIDENTIAL AND 24' MIN. WIDTH FOR COMMERCIAL OTHERWISE MATCH EXISTING.
2. ALL DRIVEWAY RADII ARE 5' UNLESS OTHERWISE SPECIFIED ON THE PLANS.

MATCHLINE -L- STA. 25 + 00.00
SHEET 5

PROJECT REFERENCE NO.	SHEET NO.
W-5602	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BEGIN PROJECT W-5602
 -L- STA. 27+11.67
 BEGIN OVERLAY/WIDENING



SHEET 4
MATCHLINE -L- STA. 25+00.00

MATCHLINE -L- STA. 39+00.00
SHEET 6

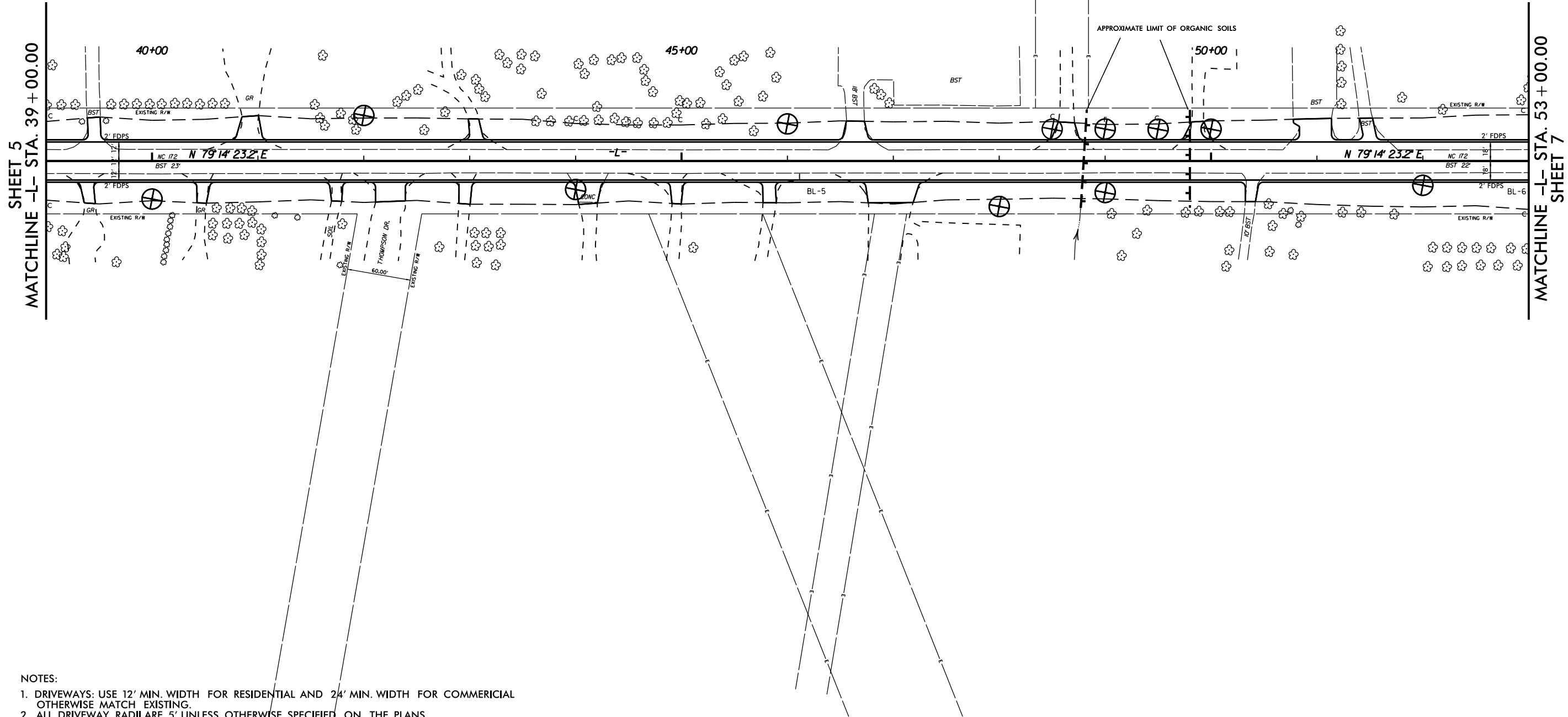
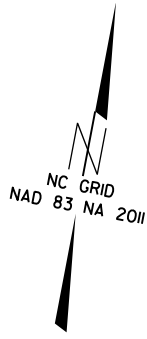
REVISIONS

NOTES:

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PROJECT REFERENCE NO.	SHEET NO.
W-5602	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

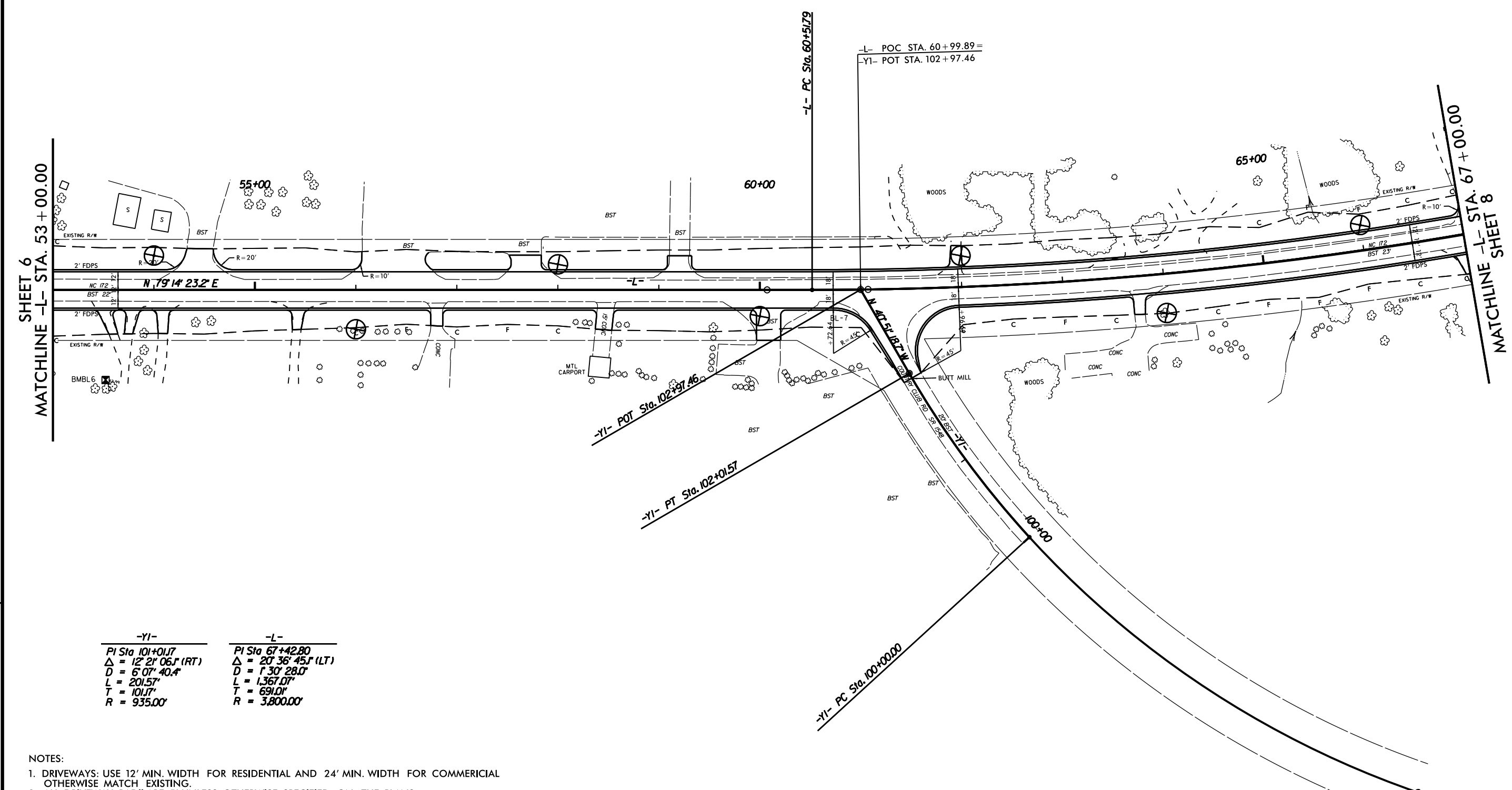
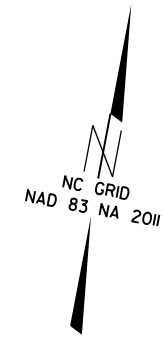


NOTES:

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PROJECT REFERENCE NO.	SHEET NO.
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RW SHEET NO.	
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



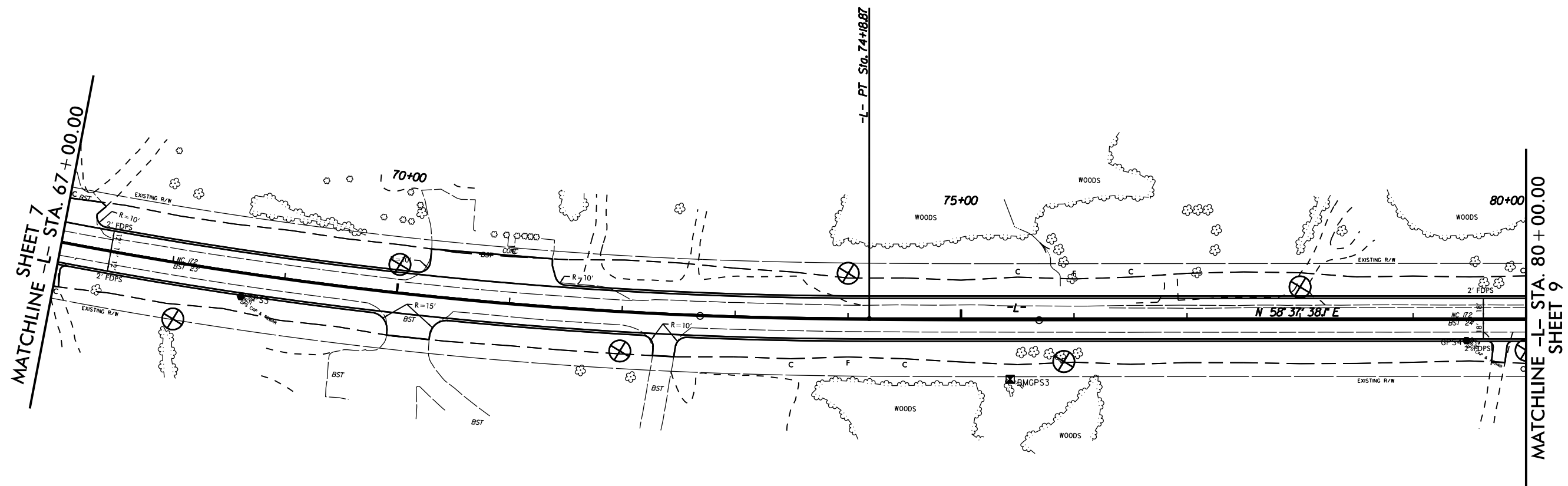
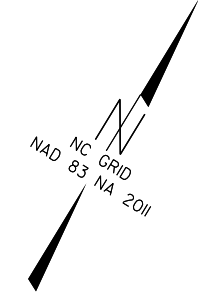
-YI-	-L-
PI Sta 101+01.7	PI Sta 67+42.80
$\Delta = 12^\circ 21' 06.7$ (RT)	$\Delta = 20^\circ 36' 45.7$ (LT)
D = 6' 07" 40.4"	D = 1' 30" 28.0"
L = 201.57'	L = 1,367.07'
T = 101.17'	T = 691.01'
R = 935.00'	R = 3,800.00'

- NOTES:
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 2. ALL DRIVEWAY RADII ARE 5' UNLESS OTHERWISE SPECIFIED ON THE PLANS.

REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
W-5602	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-L-

PI Sta 67+42.80
 $\Delta = 20^\circ 36' 45.1''$ (LT)
 $D = 130' 28.0''$
 $L = 1367.07'$
 $T = 691.01'$
 $R = 3800.00'$

NOTES:

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REVISIONS

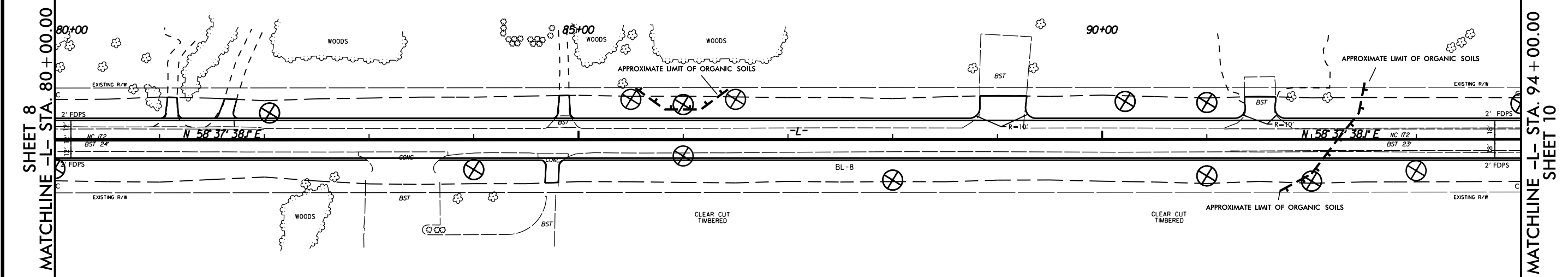
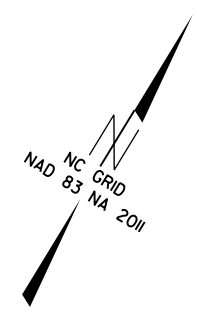
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MATCHLINE -L- STA. 80 + 00.00
SHEET 9

MATCHLINE -L- STA. 67 + 00.00
SHEET 7

PROJECT REFERENCE NO.	SHEET NO.
W-5602	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



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REVISIONS

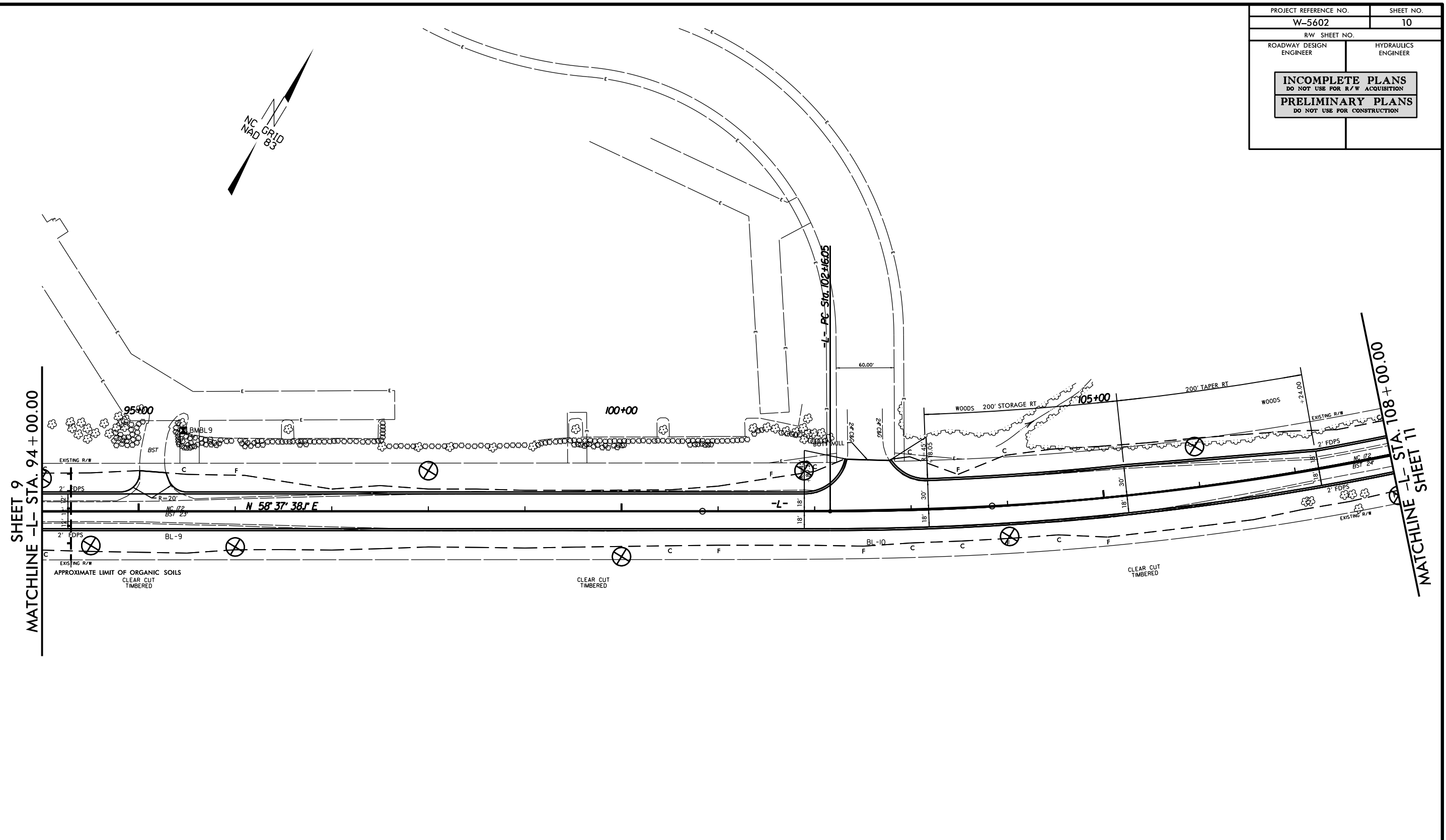
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PROJECT REFERENCE NO.	SHEET NO.
W-5602	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SHEET 9
 MATCHLINE -L- STA. 94+00.00

MATCHLINE -L- STA. 108+00.00
 SHEET 11



-L-

PI Sta 115+20.67
 $\Delta = 48' 26' 34.7''$ (LT)
 $D = 1' 58' 32.6''$
 $L = 245.92'$
 $T = 1304.62'$
 $R = 2900.00'$

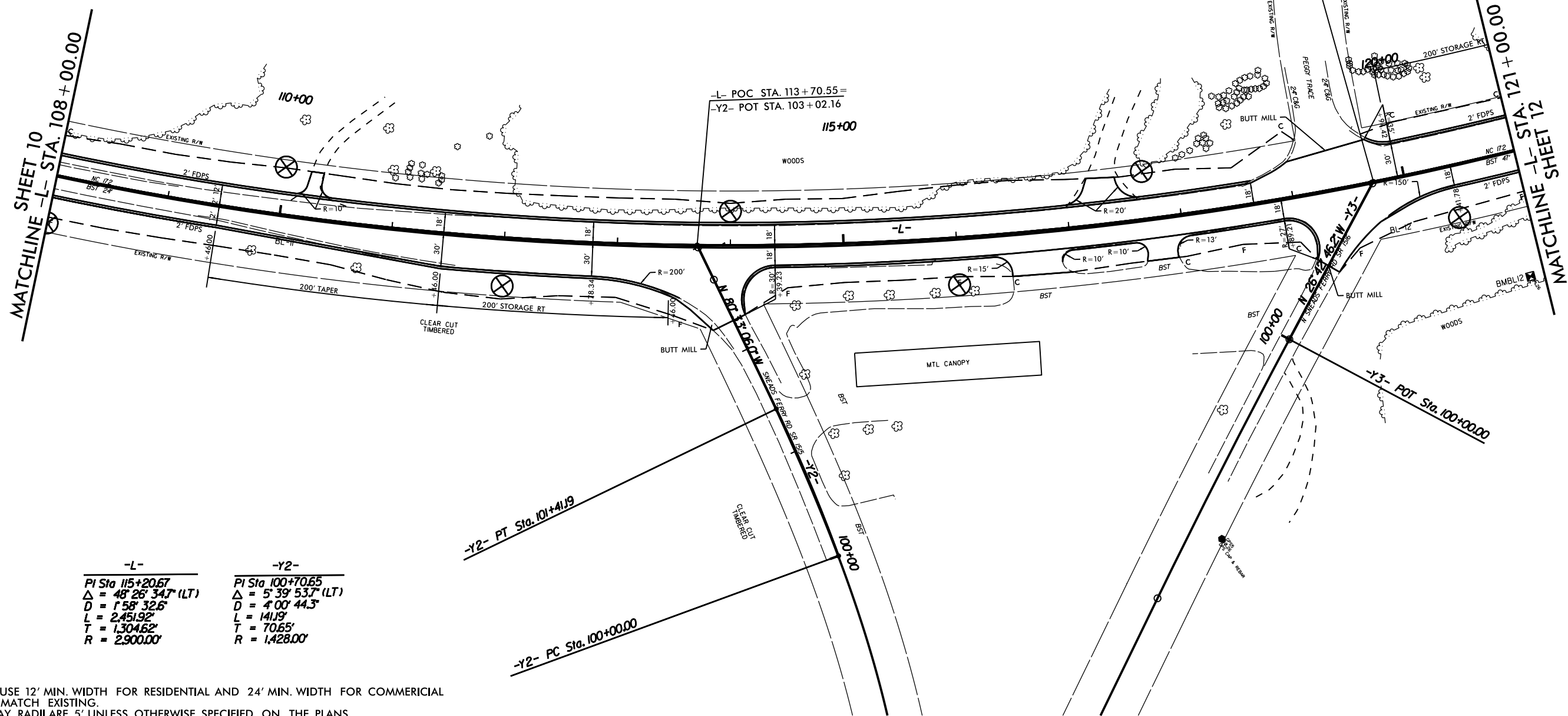
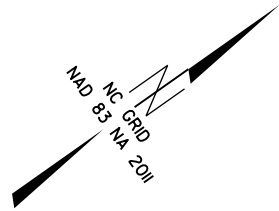
NOTES:

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PROJECT REFERENCE NO.	SHEET NO.
W-5602	11
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



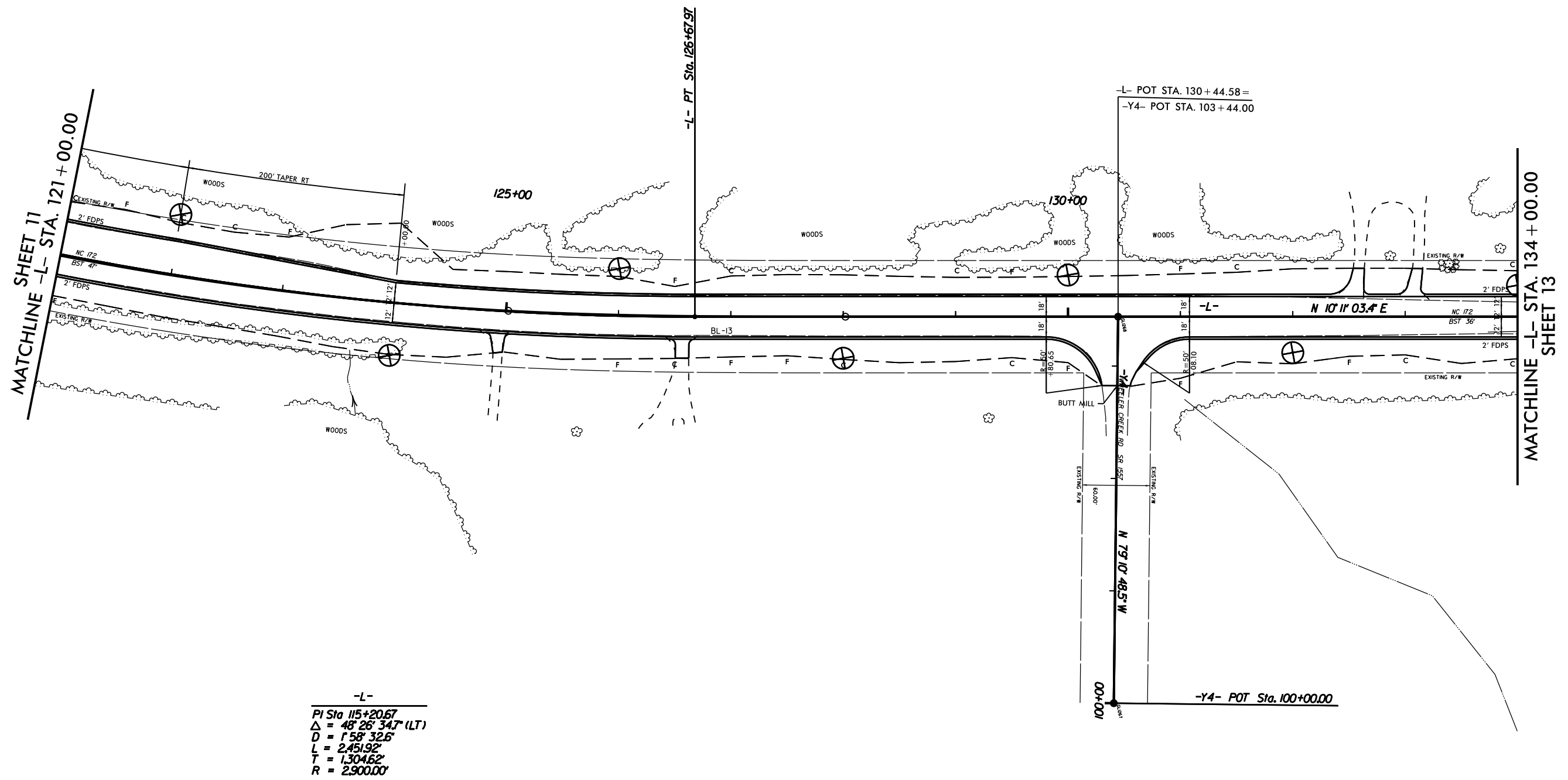
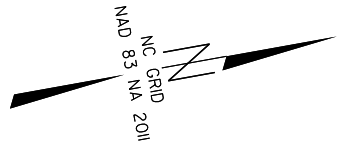
-L-	-Y2-
PI Sta 115+20.67	PI Sta 100+70.65
$\Delta = 48^{\circ} 26' 34.7" (LT)$	$\Delta = 5^{\circ} 39' 53.7" (LT)$
D = 1'58' 32.6"	D = 4'00' 44.3"
L = 2451.92'	L = 141.9'
T = 1304.62'	T = 70.65'
R = 2900.00'	R = 1,428.00'

- NOTES:
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PROJECT REFERENCE NO.	SHEET NO.
W-5602	12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



MATCHLINE -L- STA. 121+00.00

MATCHLINE -L- STA. 134+00.00

-L-

PI Sta 115+20.67
 $\Delta = 48^\circ 26' 34.7 (LT)$
 $D = 158' 32.6$
 $L = 2451.92'$
 $T = 1304.62'$
 $R = 2900.00'$

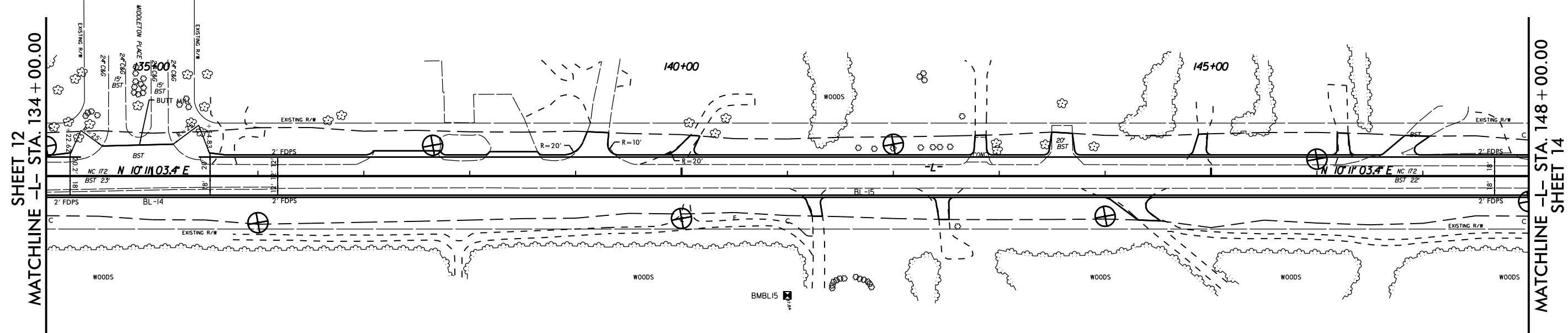
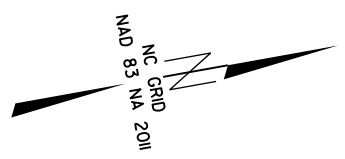
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REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
W-5602	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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REVISIONS

SHEET 12
MATCHLINE -L- STA. 134+00.00

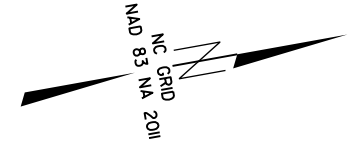
MATCHLINE -L- STA. 148+00.00
SHEET 14

NOTES:

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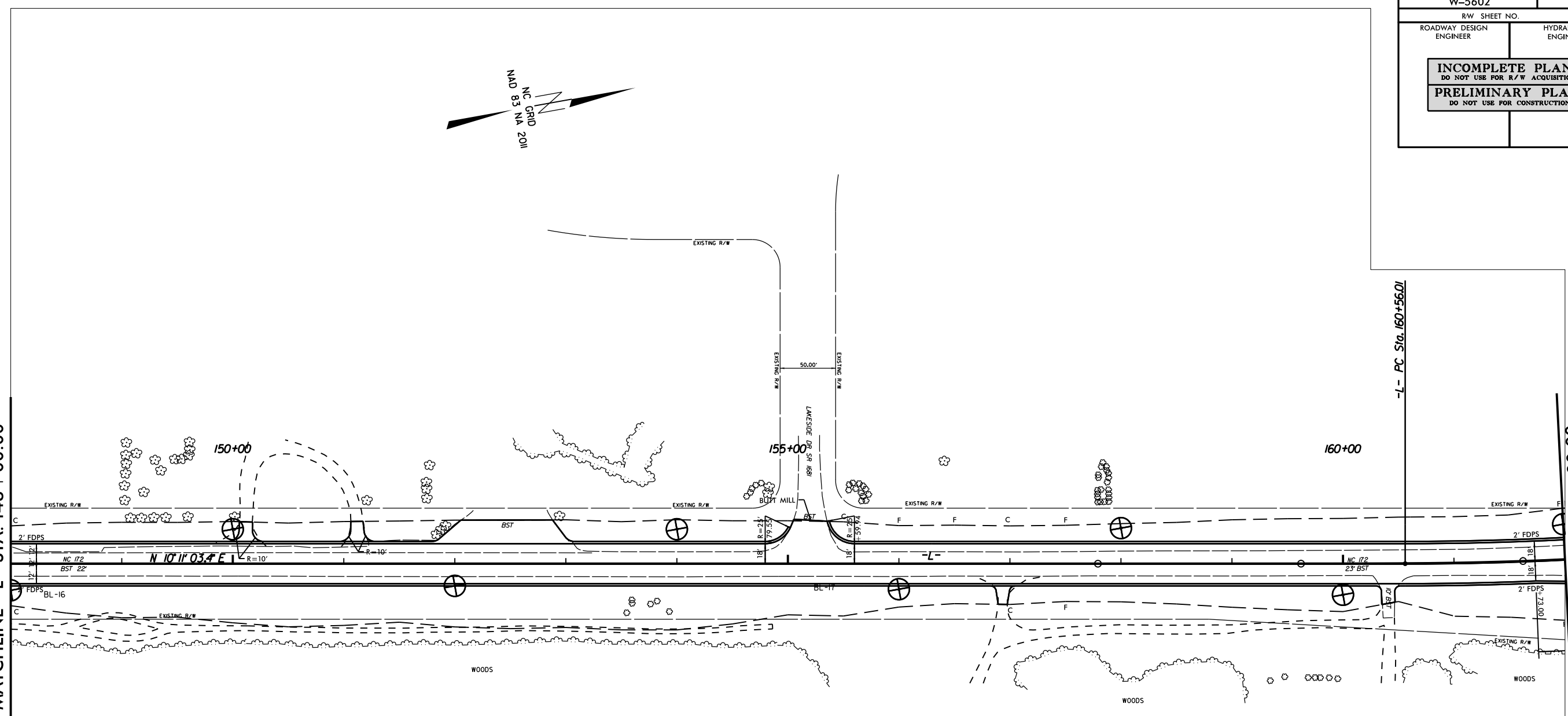
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PROJECT REFERENCE NO.	SHEET NO.
W-5602	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



SHEET 13
 MATCHLINE -L- STA. 148+00.00

MATCHLINE -L- STA. 162+00.00
 SHEET 15



-L-

PI Sta 165+12.18
 $\Delta = 17^{\circ} 52' 43.4\"$ (LT)
 $D = 158' 32.6'$
 $L = 904.92'$
 $T = 456.17'$
 $R = 2900.00'$

- NOTES:
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REVISIONS

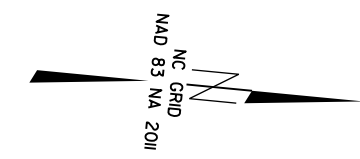
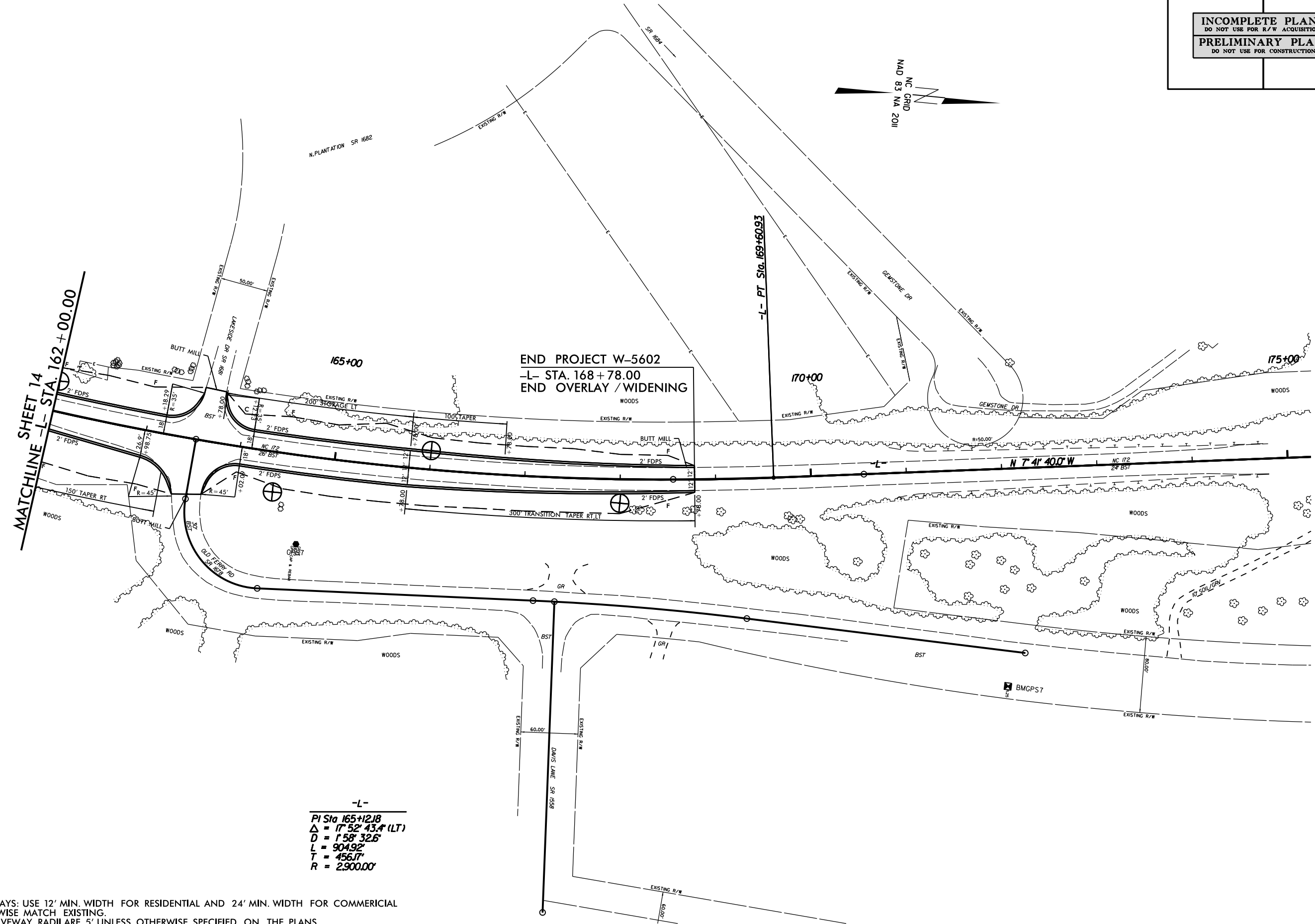
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PROJECT REFERENCE NO.	SHEET NO.
W-5602	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISIONS

8/17/99

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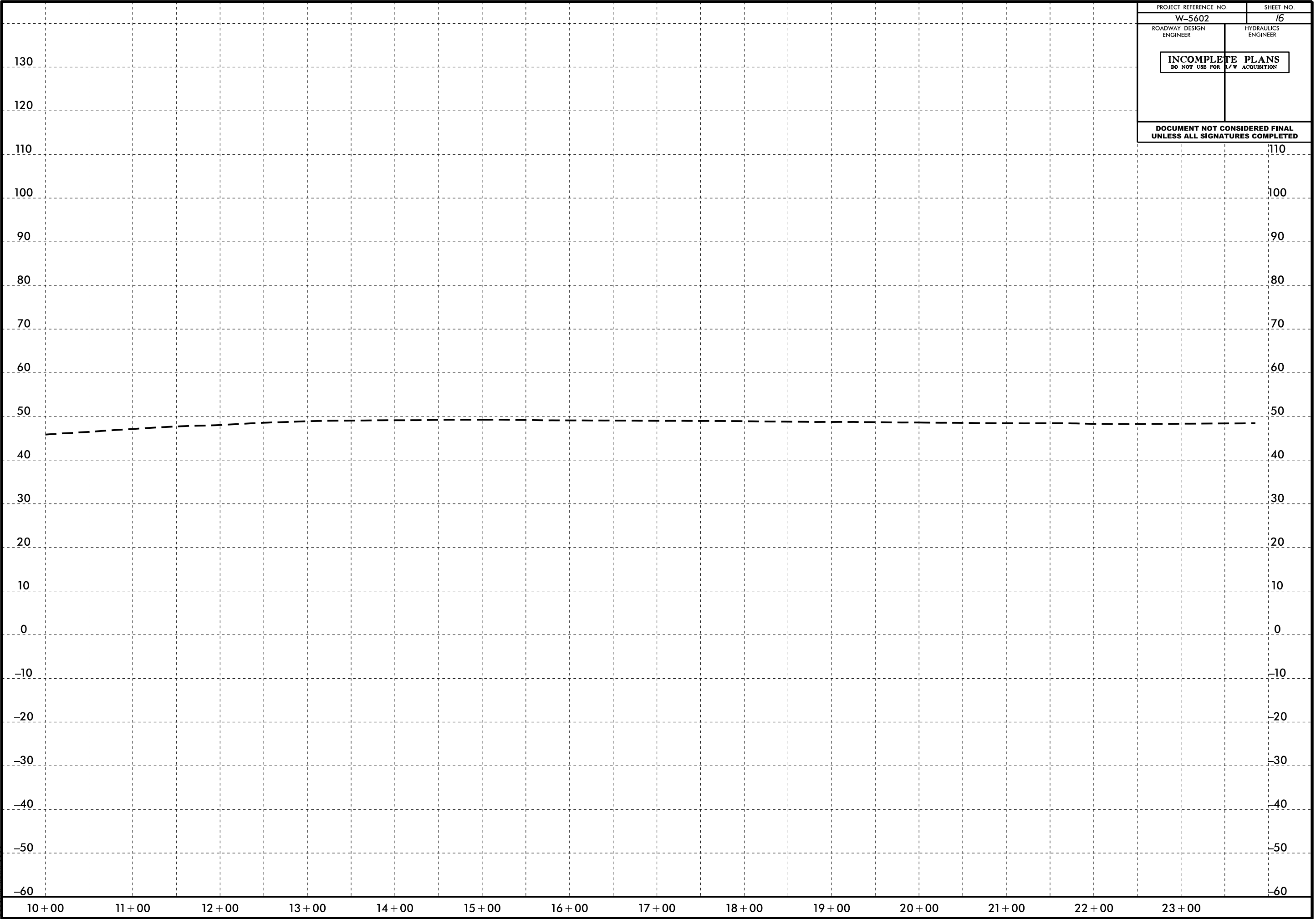


-L-
 PI Sta 165+12.18
 $\Delta = 17' 52' 43.4''$ (LT)
 $D = 158' 32.6''$
 $L = 904.92'$
 $T = 456.17'$
 $R = 2900.00'$

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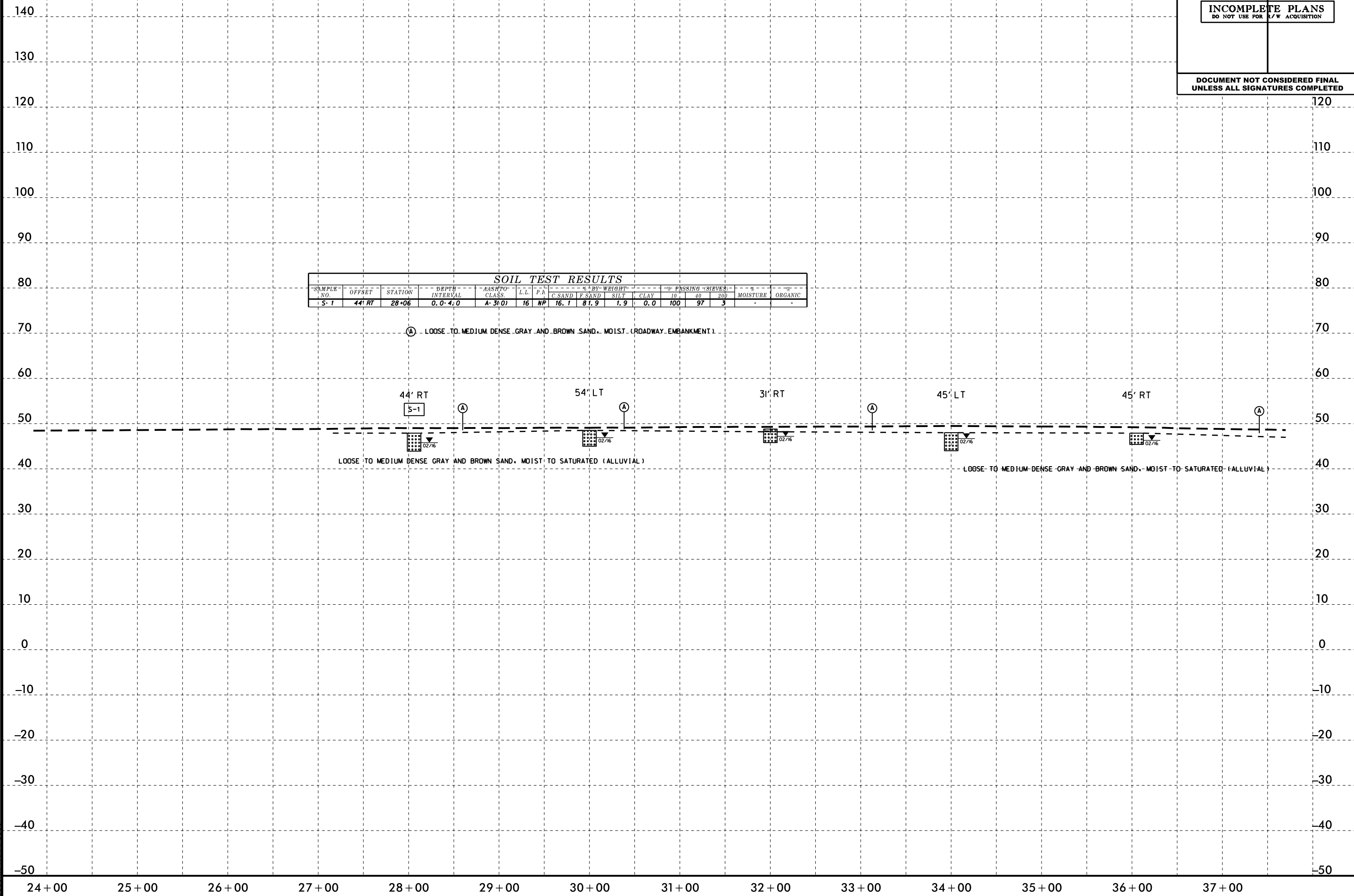
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\$\$\$ SPRING \$\$\$

PROJECT REFERENCE NO. W-5602	SHEET NO. 16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/99

PROJECT REFERENCE NO. W-5602	SHEET NO. 17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

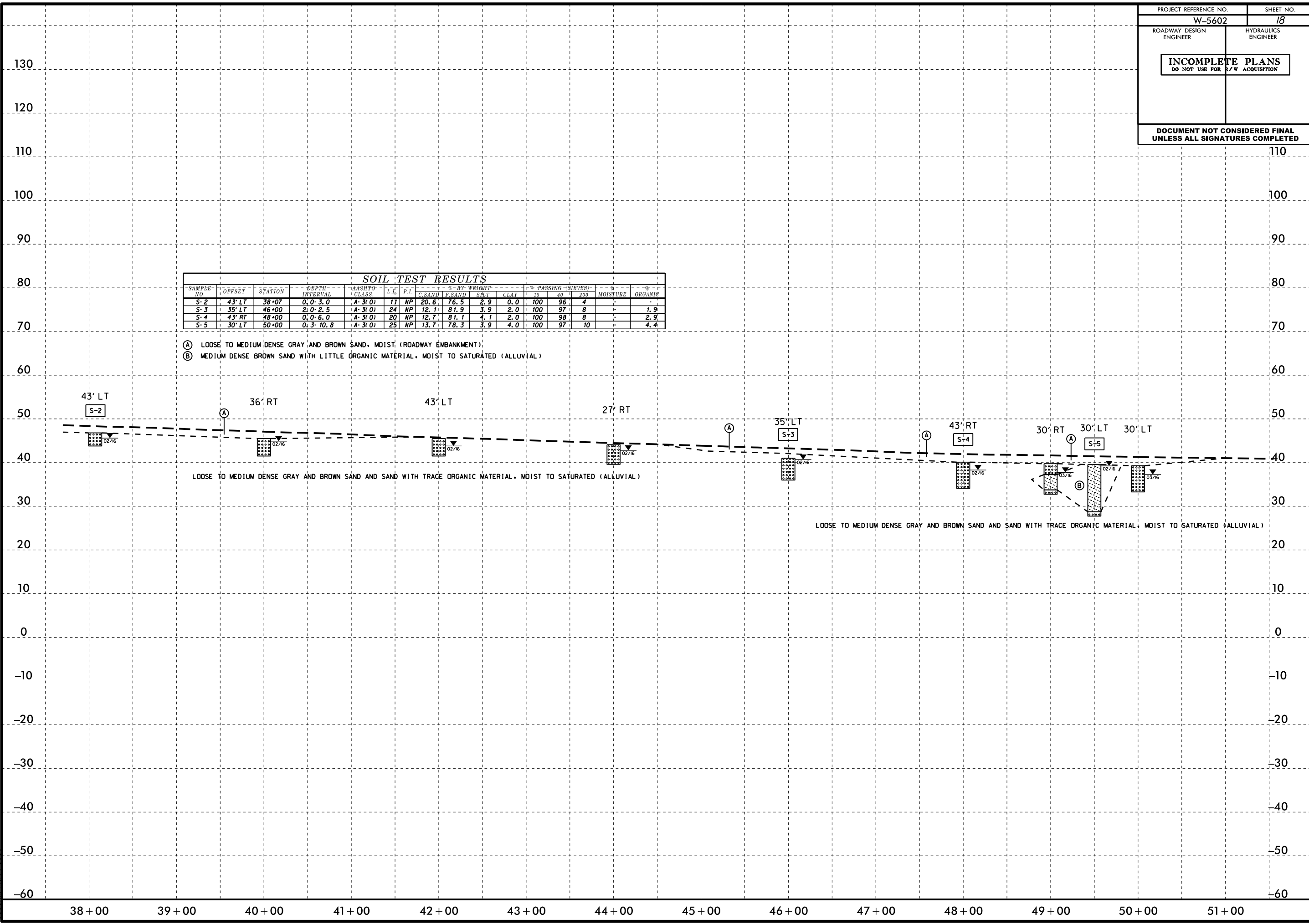


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.	% BY WEIGHT				PASSING SIEVES			MOISTURE	ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1	44' RT	28+06	0.0-4.0	A-3(0)	16	NP	16.1	81.9	1.9	0.0	100	97	3	-	-

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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.L.	% BY WEIGHT				% PASSING - SIEVES		MOISTURE	ORGANIC	
							SAND	F SAND	SILT	CLAY	10	200			
S-2	43' LT	38+07	0.0-3.0	A-3(0)	11	NP	20.6	76.5	2.9	0.0	100	96	4	-	-
S-3	35' LT	46+00	2.0-2.5	A-3(0)	24	NP	12.7	81.9	3.9	2.0	100	97	8	1.9	
S-4	43' RT	48+00	0.0-6.0	A-3(0)	20	NP	12.7	81.1	4.1	2.0	100	98	8	2.9	
S-5	30' LT	50+00	0.3-10.8	A-3(0)	25	NP	13.7	78.3	3.9	4.0	100	97	10	4.4	

- (A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)



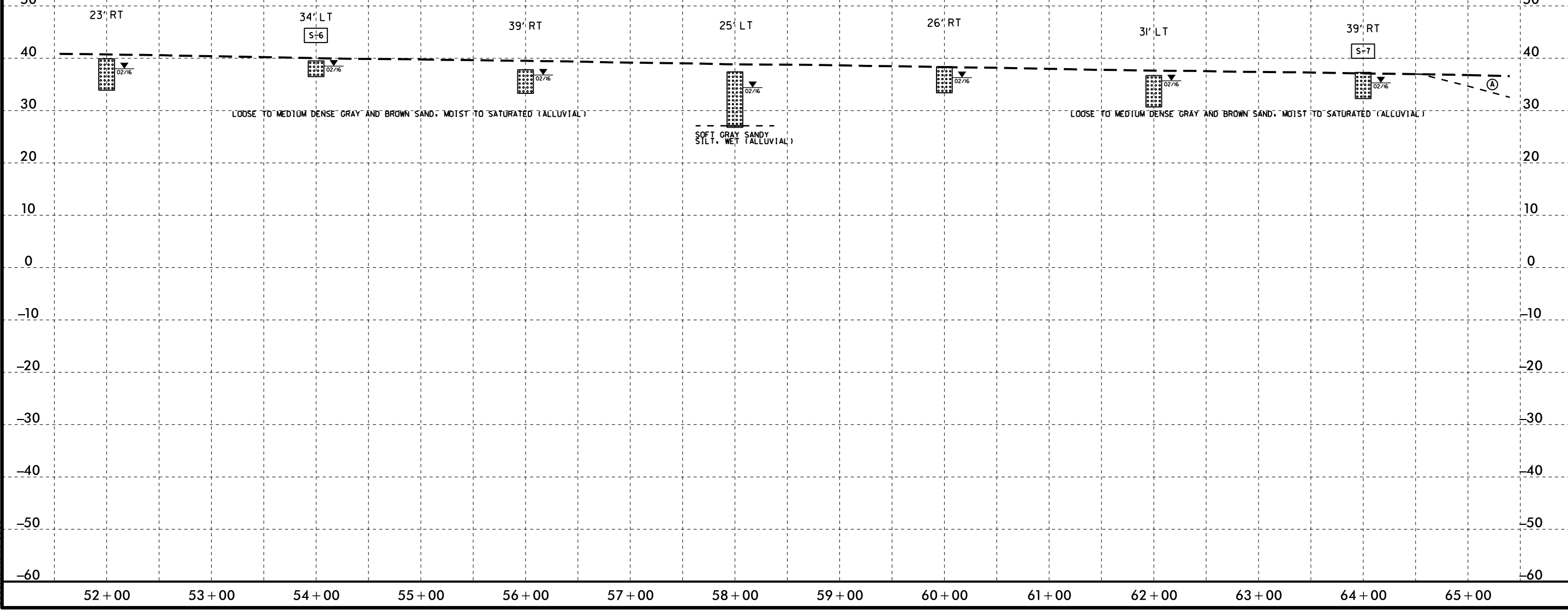
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5/14/99

PROJECT REFERENCE NO. W-5602	SHEET NO. 19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
S-6	34' LT	54+00	0.0' - 3.0'	A-3(0)	18	NP	14.7	80.5	2.7	2.0	100	97	7	-	-
S-7	39' RT	64+00	0.0' - 5.0'	A-3(0)	16	NP	16.5	81.3	2.1	0.0	100	97	4	-	-

Ⓐ LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

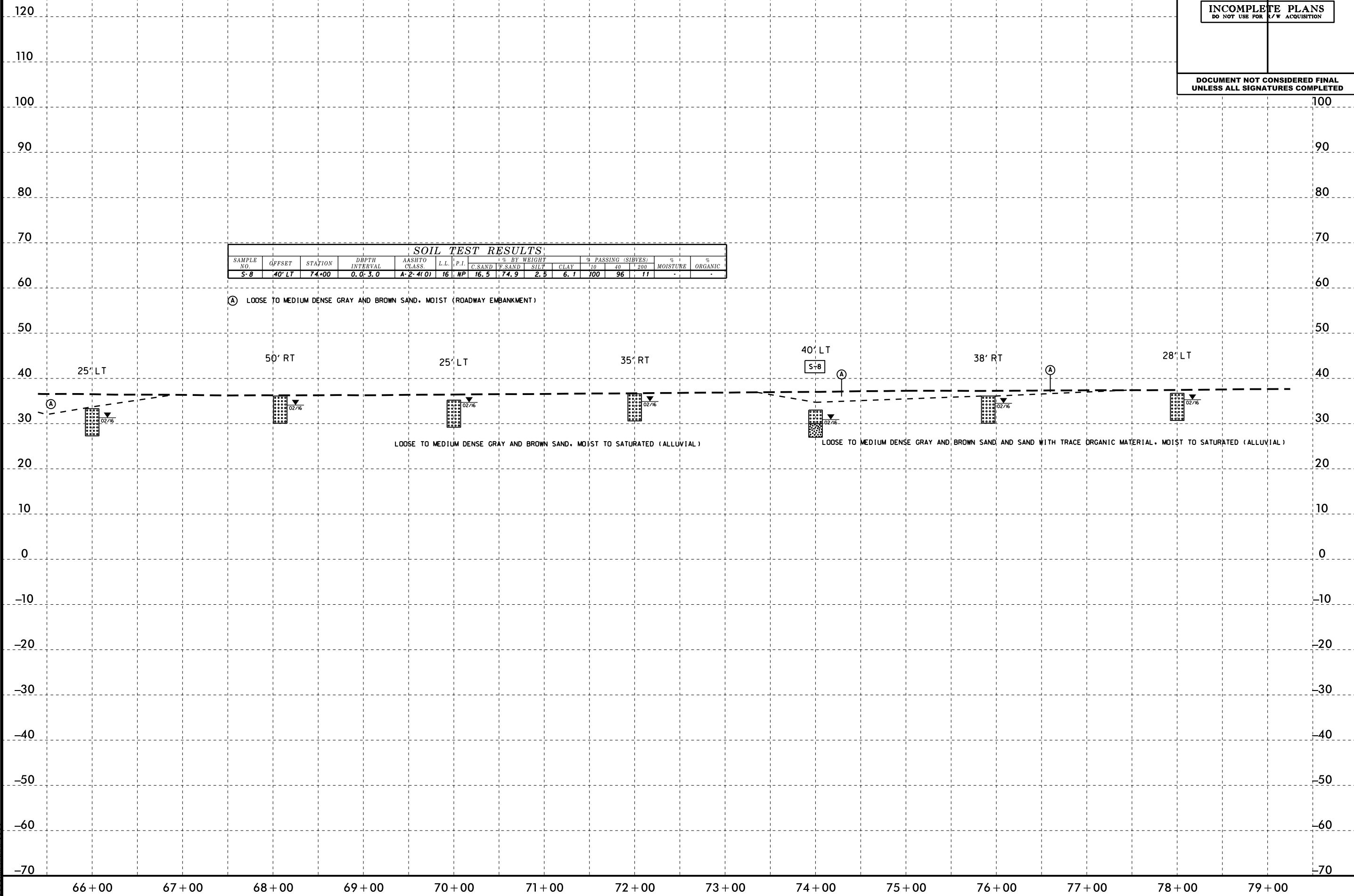


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5/14/99

PROJECT REFERENCE NO. W-5602	SHEET NO. 20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

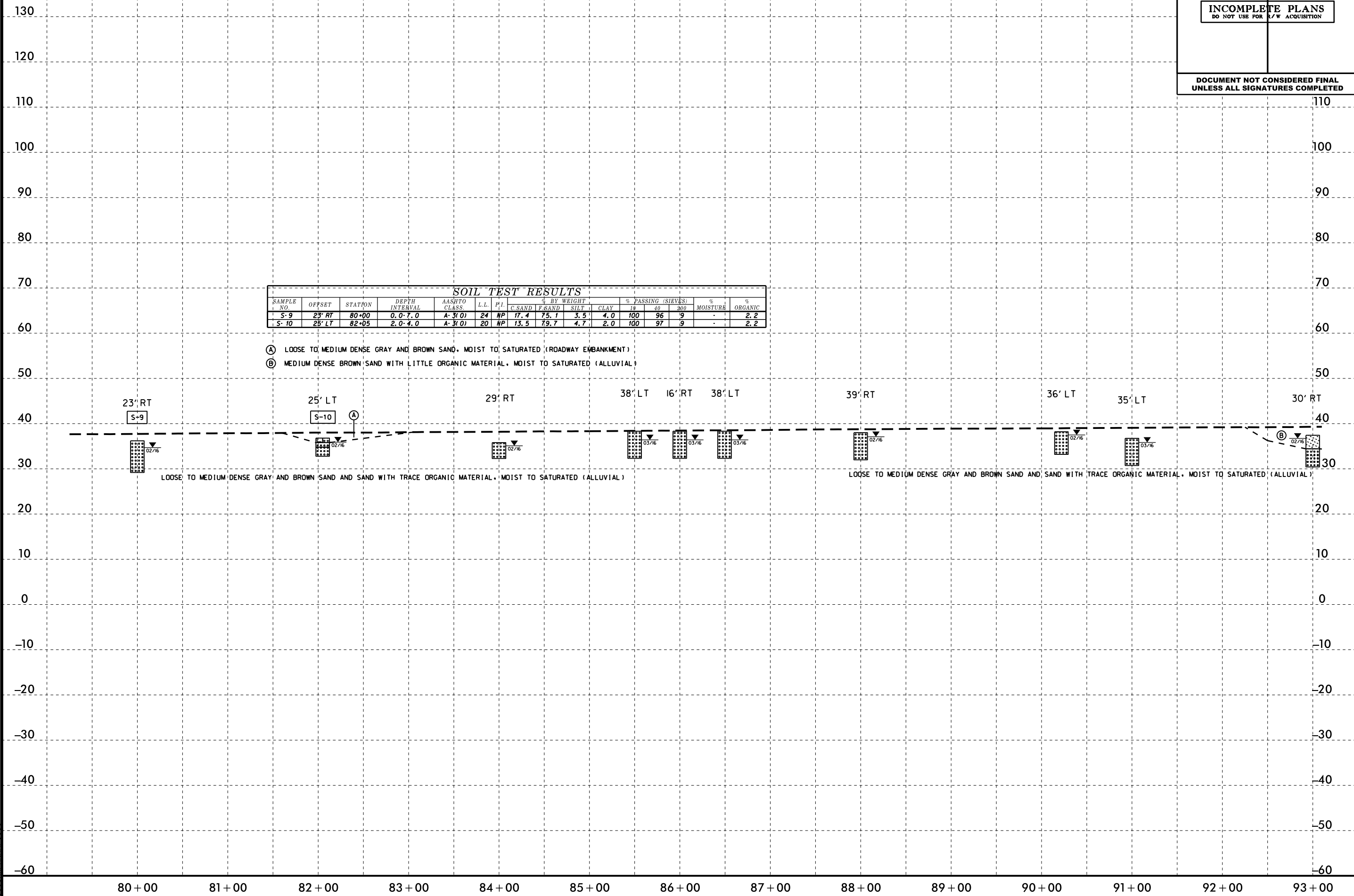
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIBVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	#10	#40	#200		
S-8	40' LT	74+00	0.0-3.0	A-2-4(0)	16	NP	16.5	74.9	2.5	6.1	100	96	11	-	-



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PROJECT REFERENCE NO. W-5602	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



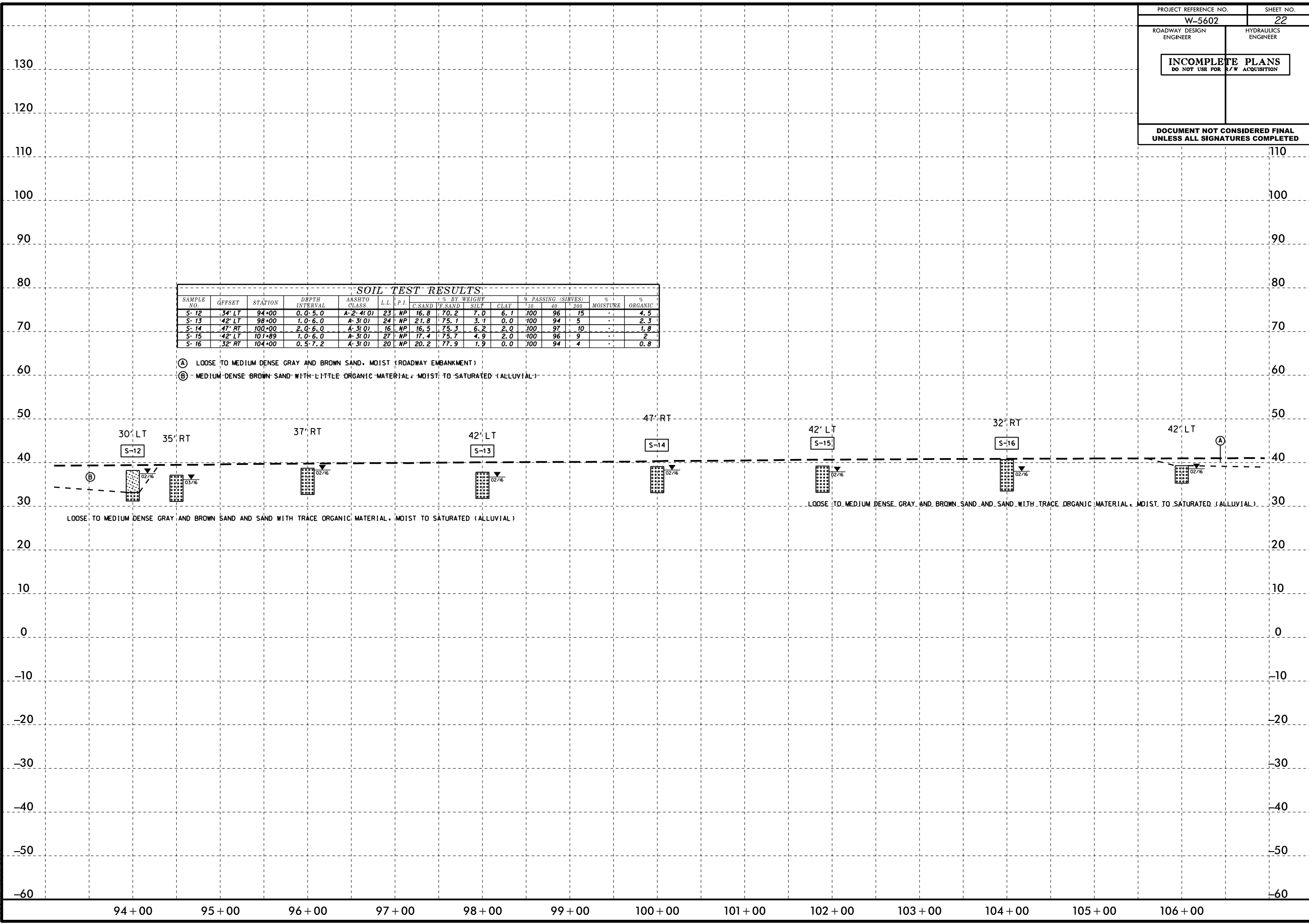
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	200		
S-9	23' RT	80+00	0.0-7.0	A-3(0)	24	HP	17.4	75.1	3.5	4.0	100	96	9	-	2.2
S-10	25' LT	82+05	2.0-4.0	A-3(0)	20	HP	13.5	79.7	4.7	2.0	100	97	9	-	2.2

- (A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST TO SATURATED (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

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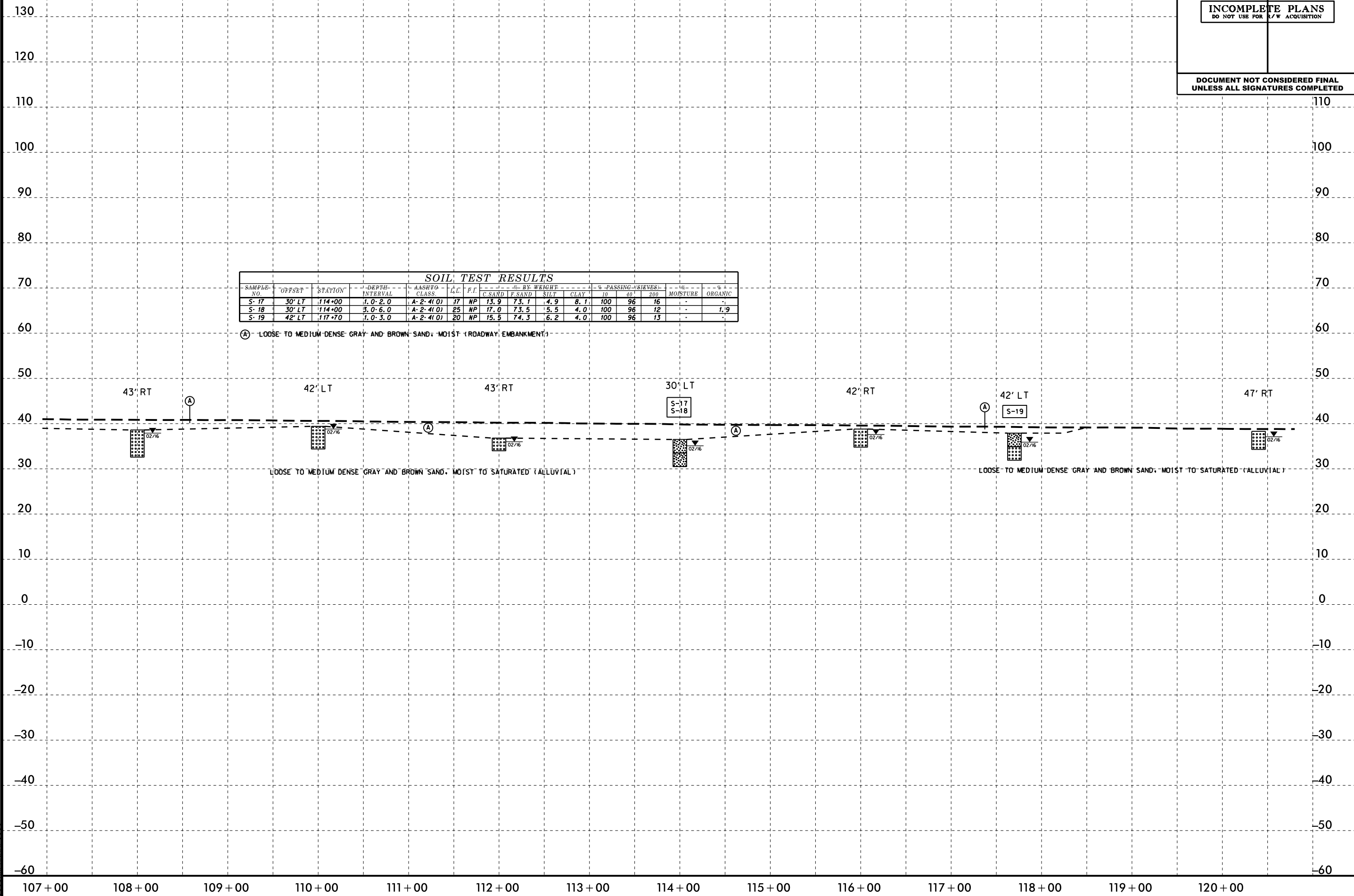
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W-5602	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



5/14/99

PROJECT REFERENCE NO. W-5602	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

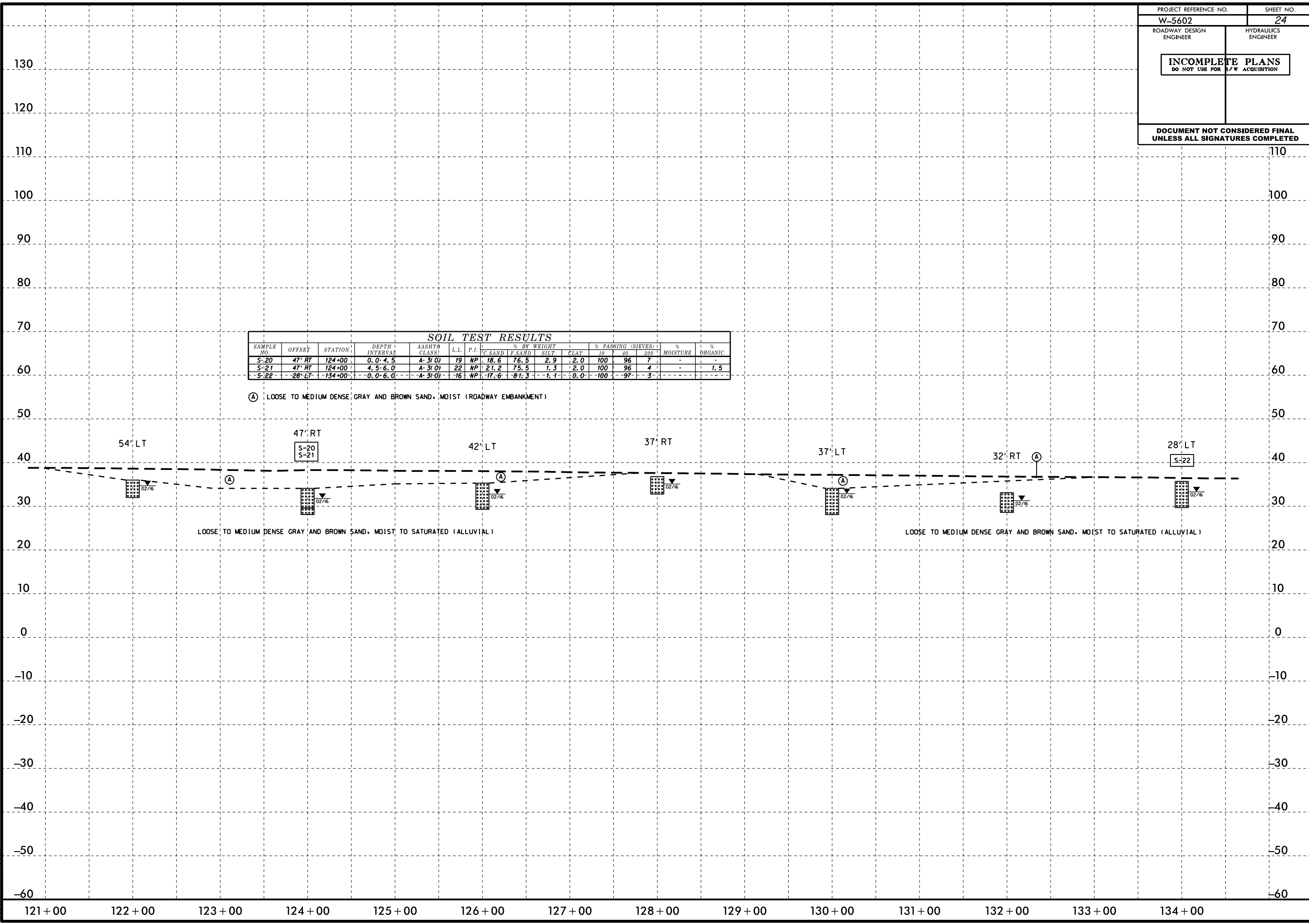
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-17	30' LT	114+00	1.0-2.0	A-2-4(0)	17	NP	13.9	73.7	4.9	8.1	100	96	16	-	-
S-18	30' LT	114+00	3.0-6.0	A-2-4(0)	25	NP	17.0	73.5	5.5	4.0	100	96	12	-	1.9
S-19	42' LT	117+70	1.0-3.0	A-2-4(0)	20	NP	15.5	74.3	6.2	4.0	100	96	13	-	-



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 \$\$\$ SPRING \$\$\$

PROJECT REFERENCE NO. W-5602	SHEET NO. 24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS	
DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-20	47' RT	124+00	0.0-4.5	A-3(0)	19	NP	18.6	76.5	2.9	2.0	100	96	7	-	-
S-21	47' RT	124+00	4.5-6.0	A-3(0)	22	NP	21.2	75.5	1.3	2.0	100	96	4	-	1.5
S-22	28' LT	134+00	0.0-6.0	A-3(0)	16	NP	17.6	81.3	1.1	0.0	100	97	3	-	-

(A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

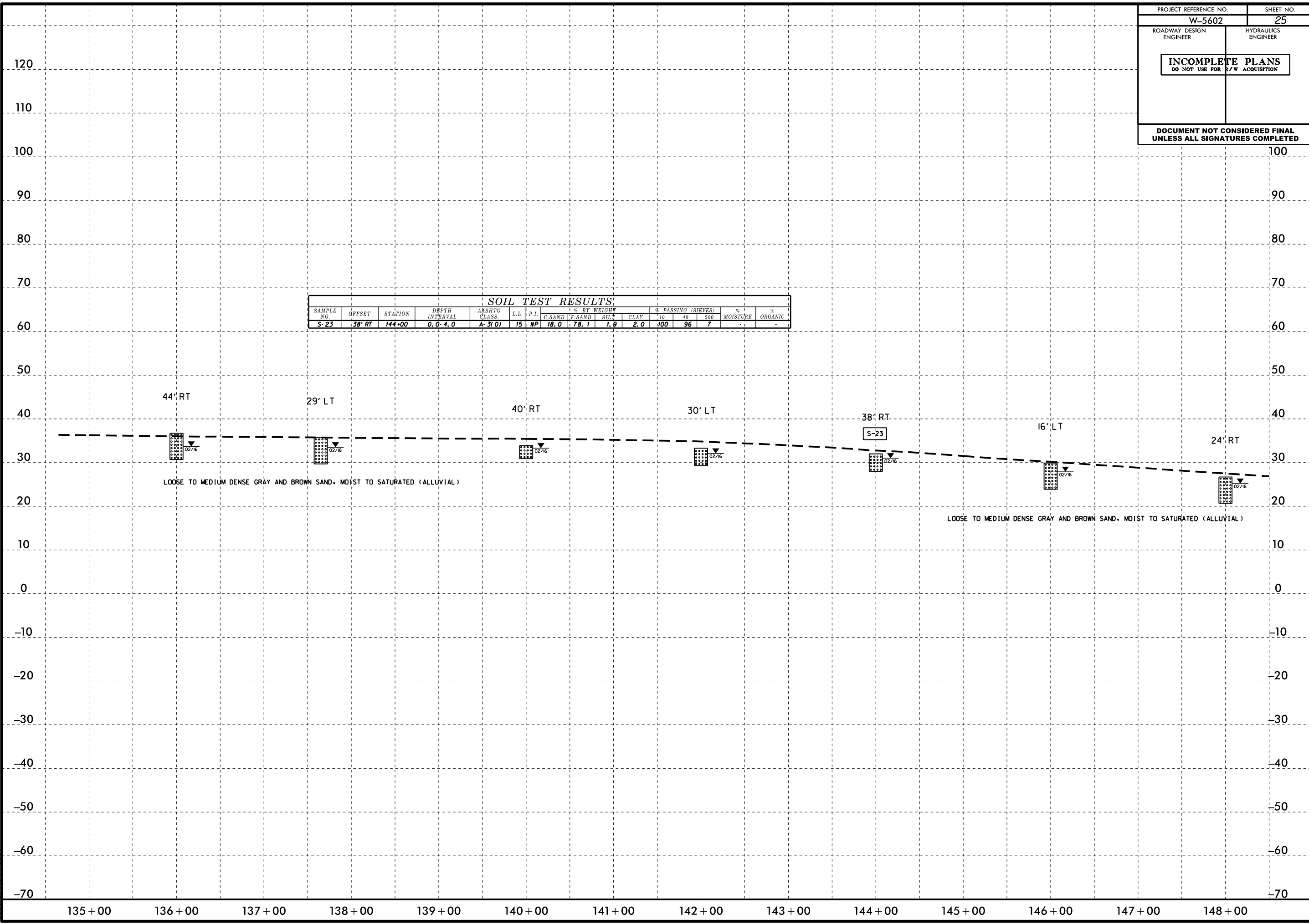
LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST TO SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST TO SATURATED (ALLUVIAL)

5/14/99

PROJECT REFERENCE NO. W-5602	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	ASHFTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-23	38' RT	144+00	0.0-4.0	A-3(0)	15	NP	18.0	78.1	1.9	2.0	100	96	7	-	-



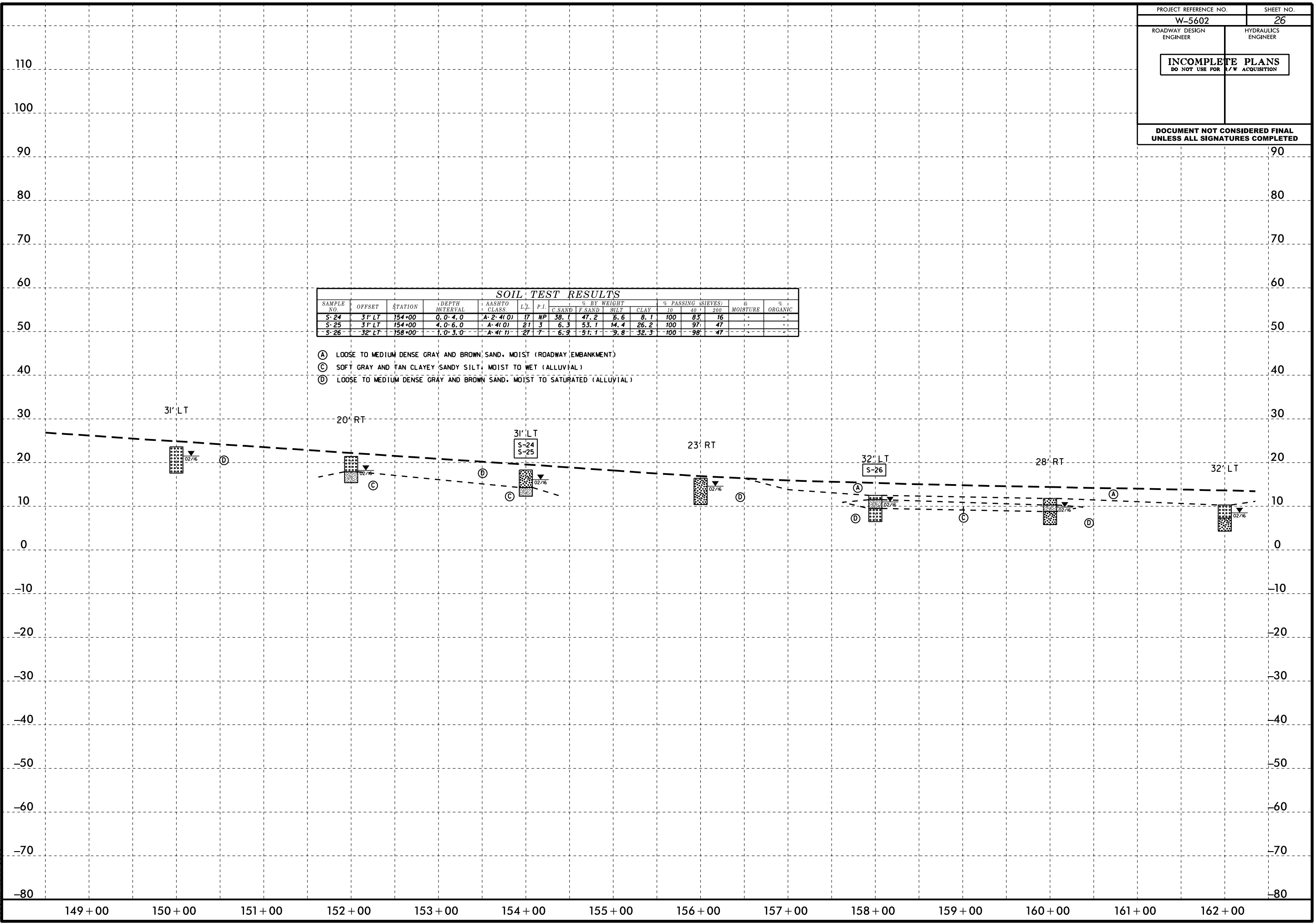
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PROJECT REFERENCE NO. W-5602	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	200		
S-24	3' LT	154+00	0.0-4.0	A-2-4(0)	17	NP	38.1	47.2	5.6	8.1	100	83	16	-	-
S-25	3' LT	154+00	4.0-6.0	A-4(0)	21	3	6.3	53.1	14.4	26.2	100	97	47	-	-
S-26	32' LT	158+00	1.0-3.0	A-4(1)	27	7	6.9	51.1	9.8	32.3	100	98	47	-	-

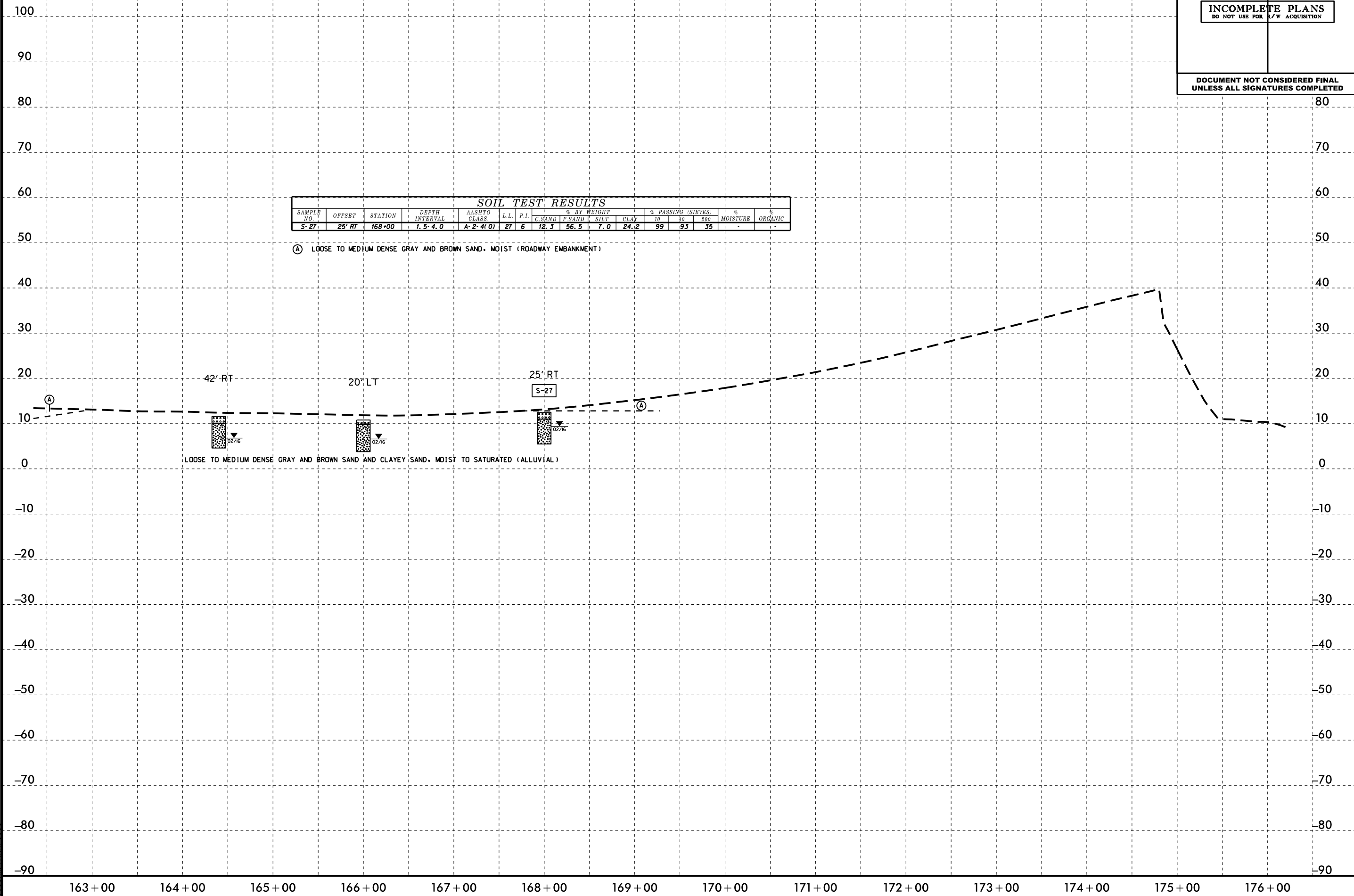
- (A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- (C) SOFT GRAY AND TAN CLAYEY SANDY SILT, MOIST TO WET (ALLUVIAL)
- (D) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST TO SATURATED (ALLUVIAL)



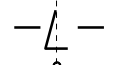
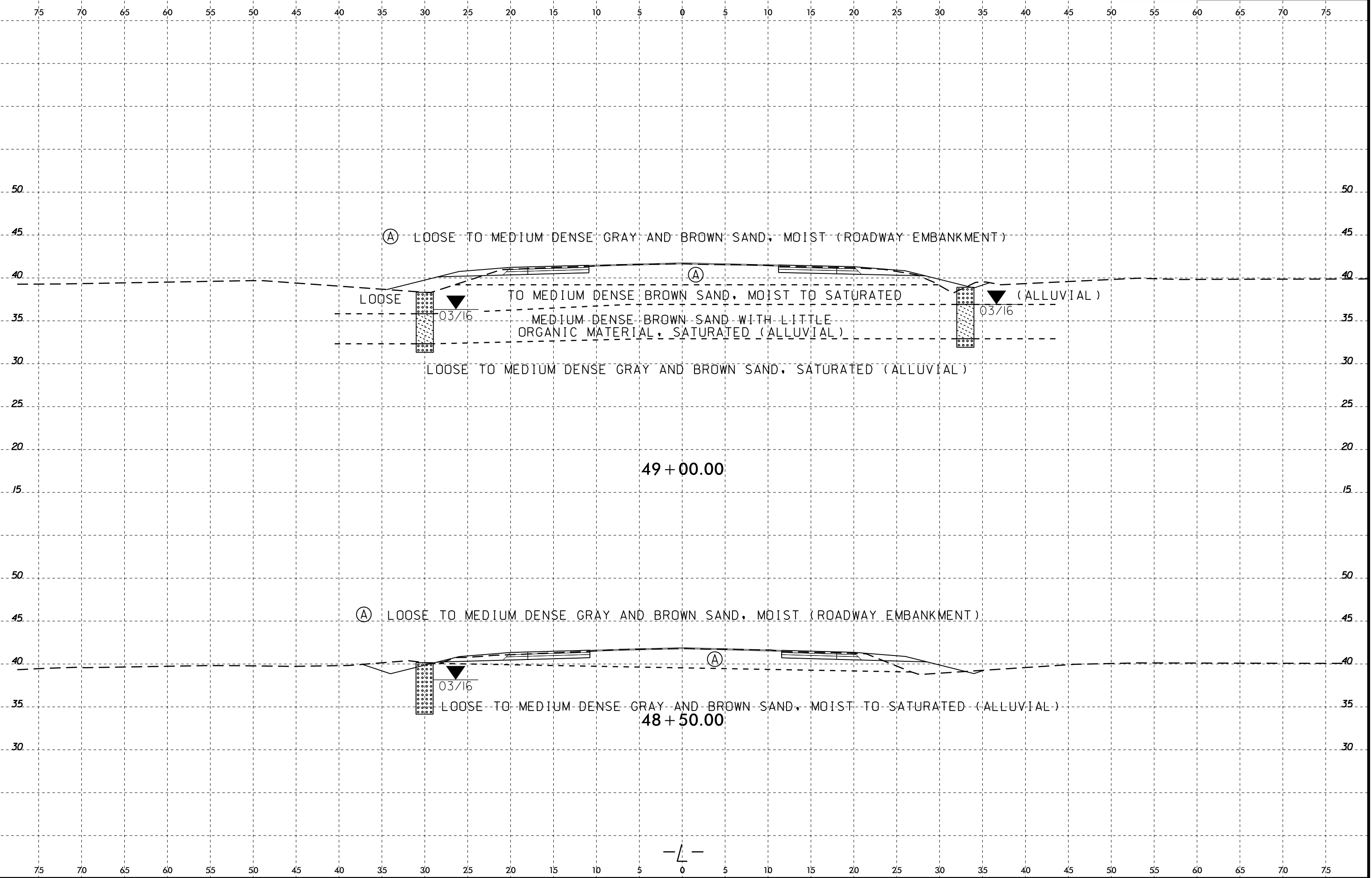
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 \$\$\$\$ SPRING \$\$\$

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-27	25' RT	168+00	1.5'-4.0'	A-2-A(1)	27	6	12.3	56.5	7.0	24.2	99	93	35	-	-

(A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)



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

(A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

03/16

LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST TO SATURATED (ALLUVIAL)
50 + 00.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-5	30' LT	49+50	0.3- 10.8	A-3(0)	25	NP	13.7	78.3	3.9	4.0	100	97	10	-	4.4

(A) LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, MOIST (ROADWAY EMBANKMENT)

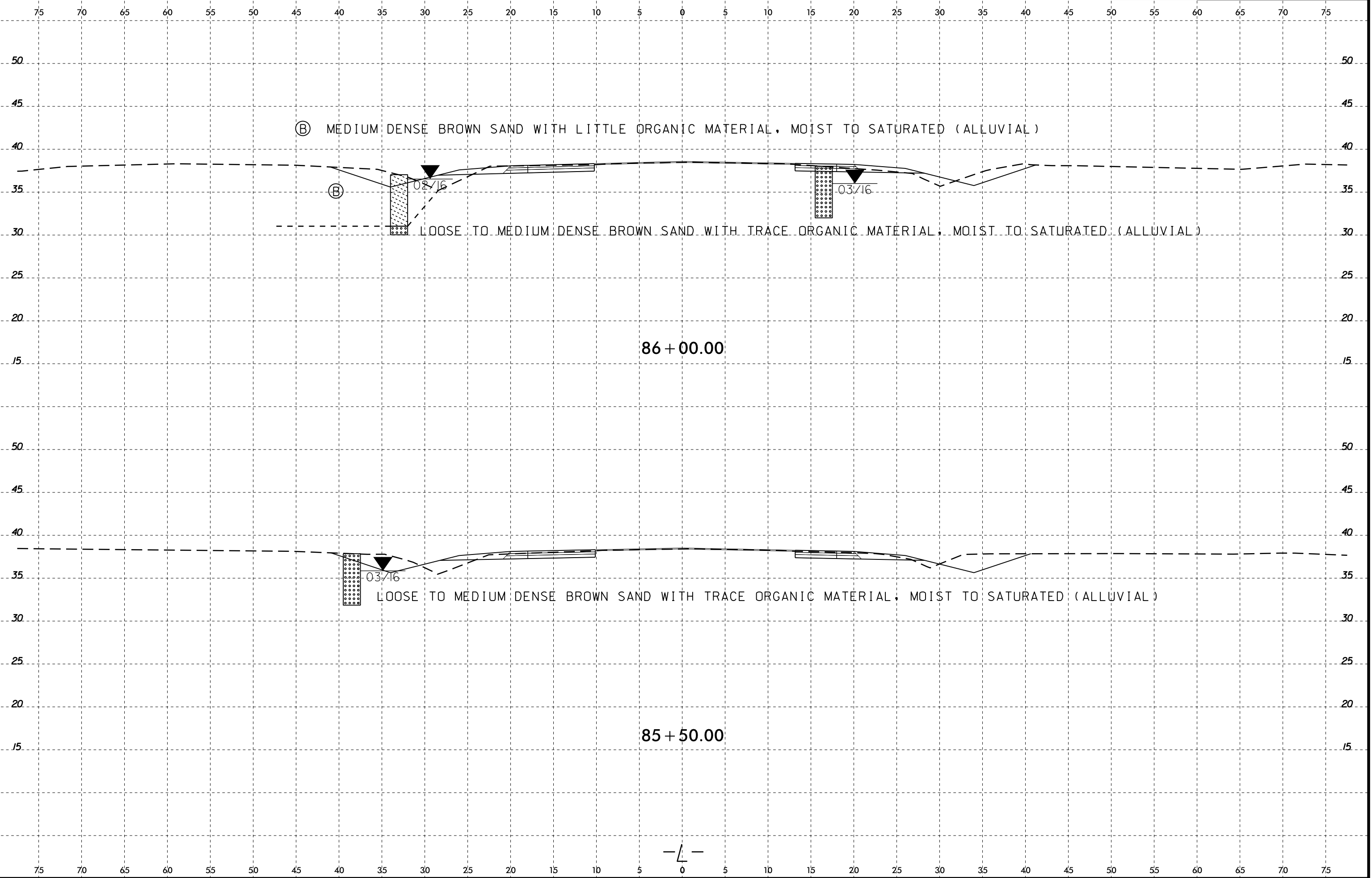
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02/16

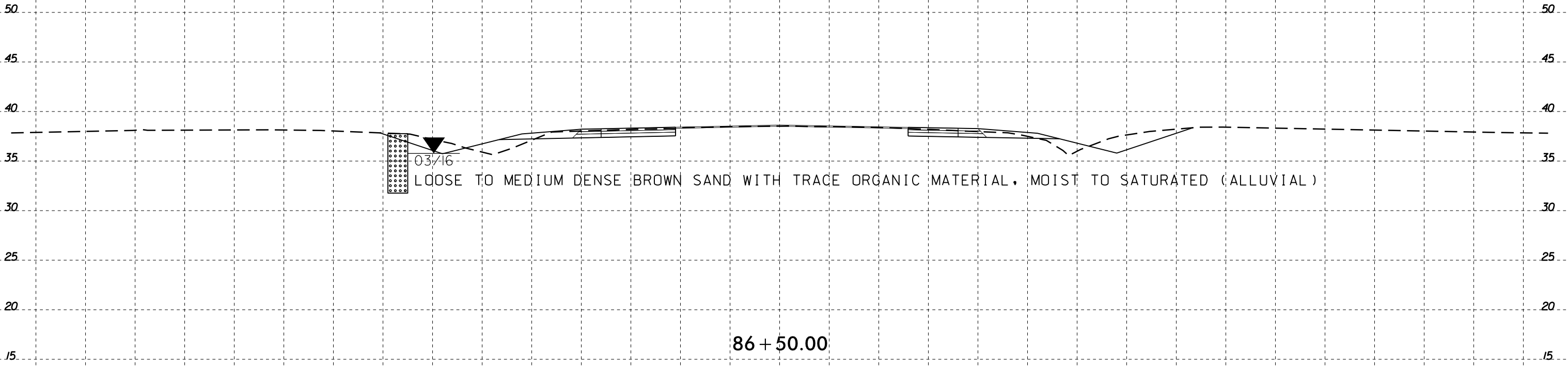
MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE GRAY AND BROWN SAND, SATURATED (ALLUVIAL)

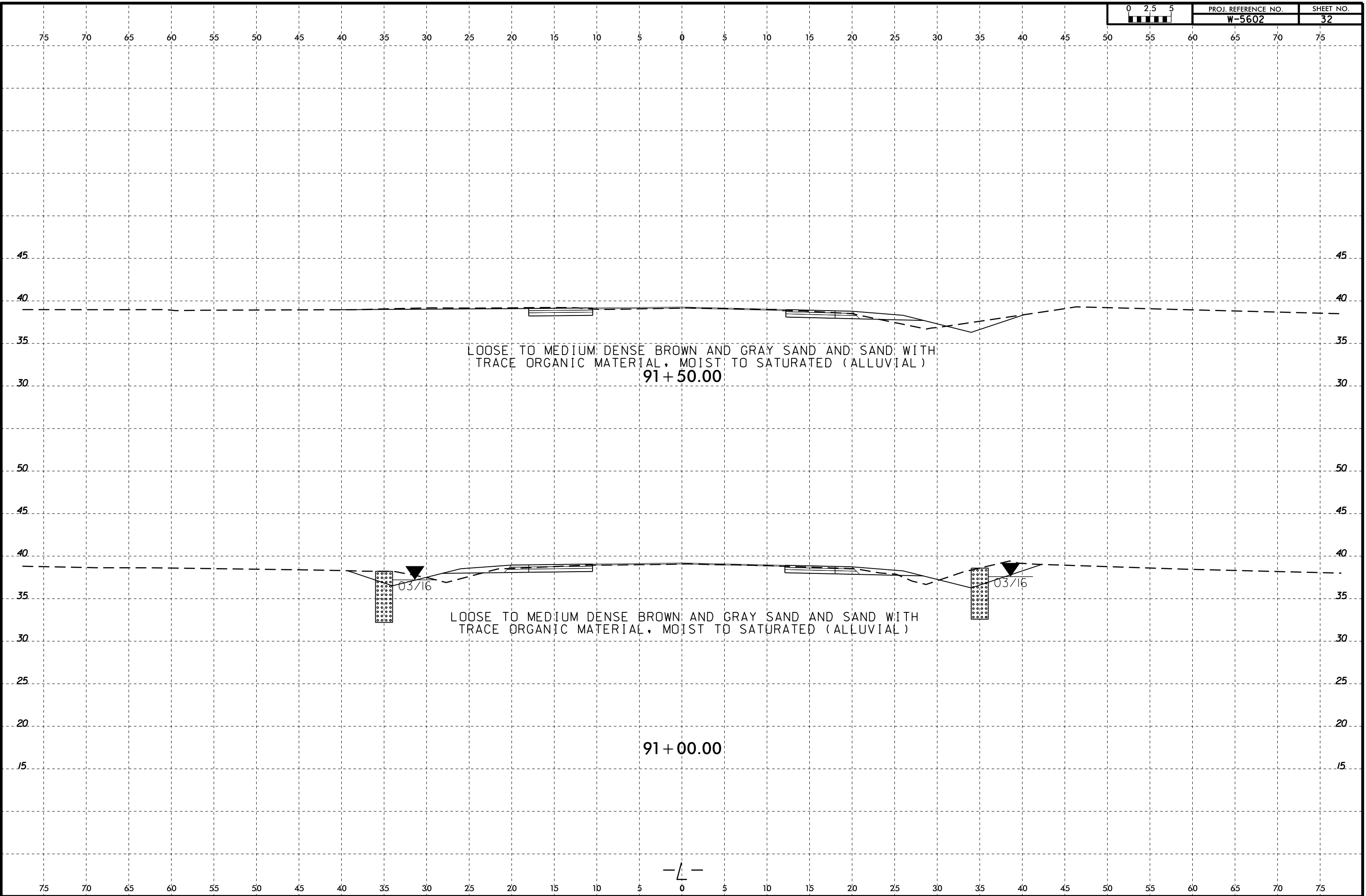
49 + 50.00

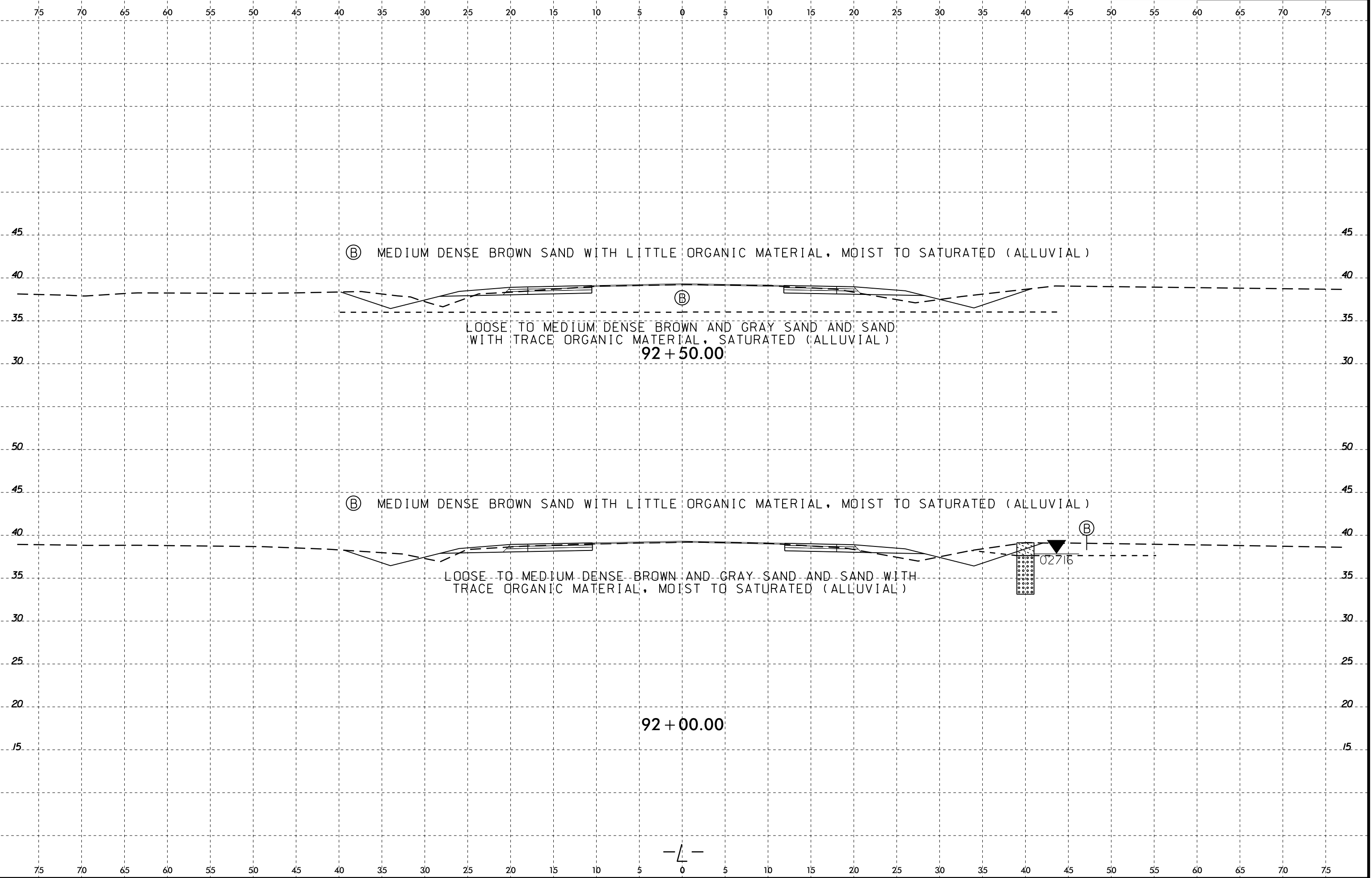


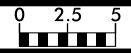
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75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

45 45

40 40

35 35

MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE BROWN AND GRAY SAND AND SAND WITH TRACE ORGANIC MATERIAL, SATURATED (ALLUVIAL)

93+50.00

30 30

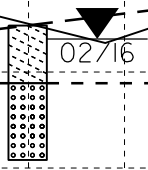
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ⓑ MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

40 40

ⓑ



02/16

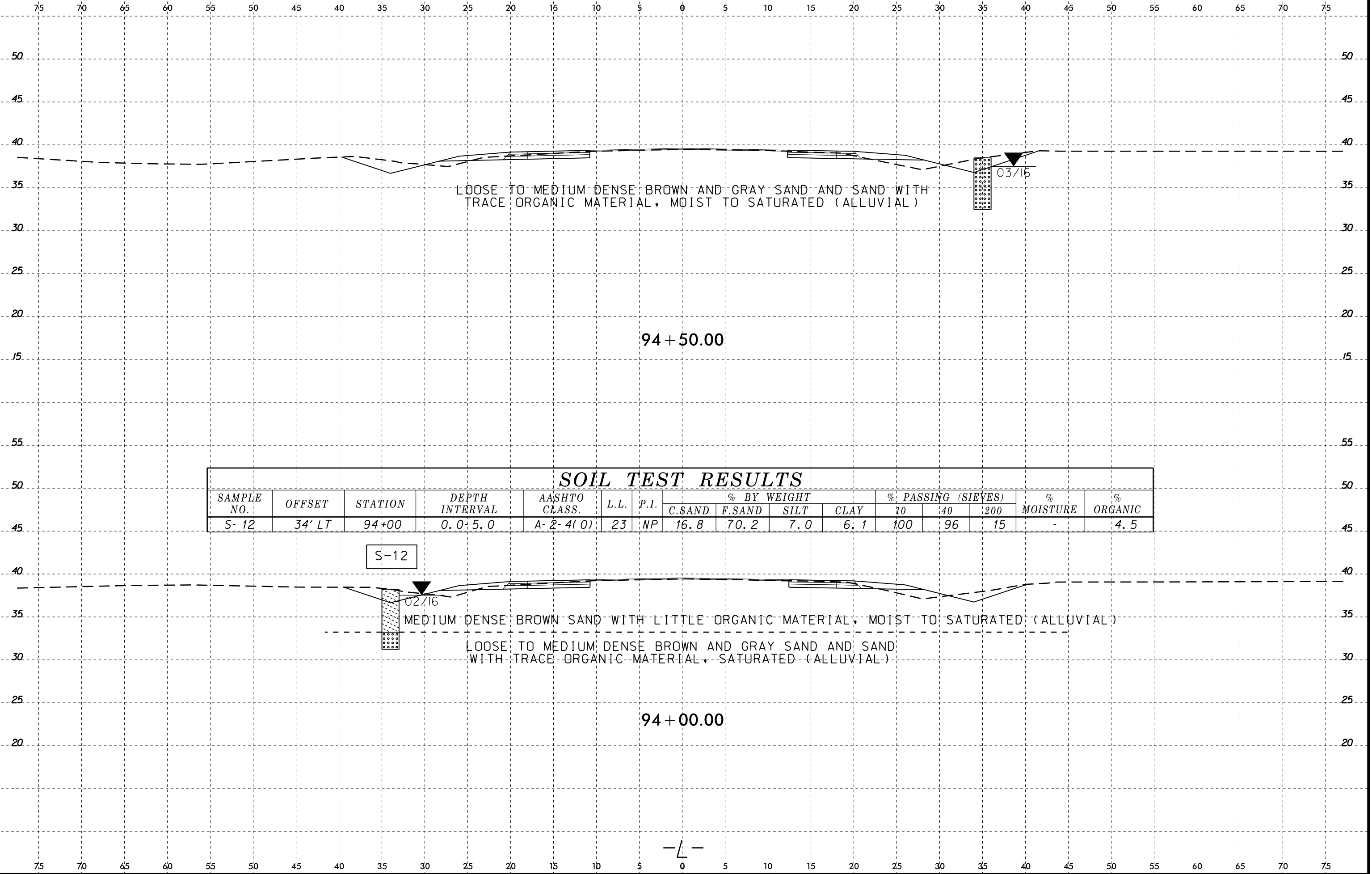
LOOSE TO MEDIUM DENSE BROWN AND GRAY SAND AND SAND WITH TRACE ORGANIC MATERIAL, SATURATED (ALLUVIAL)

93+00.00

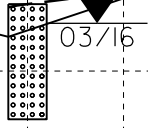
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LOOSE TO MEDIUM DENSE BROWN AND GRAY SAND AND SAND WITH TRACE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

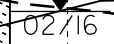


94 + 50.00

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-12	34' LT	94+00	0.0-5.0	A-2-4(0)	23	NP	16.8	70.2	7.0	6.1	100	96	15	-	4.5

S-12



MEDIUM DENSE BROWN SAND WITH LITTLE ORGANIC MATERIAL, MOIST TO SATURATED (ALLUVIAL)

LOOSE TO MEDIUM DENSE BROWN AND GRAY SAND AND SAND WITH TRACE ORGANIC MATERIAL, SATURATED (ALLUVIAL)

94 + 00.00