JOHNSON/CEDAR Co. IM-NHS-080-7(114)248--03-52 RECONSTRUCTION

LETTING DATE 12/15/2020

INDEX OF SHEETS

IOWADOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

JOHNSON/CEDAR COUNTY

RECONSTRUCTION

On I-80 Approx 1.5 mi E of IA 1 to 0.5 mi E of Co Rd X30

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

Value Engineering Saves. Refer to Article 1105.14 of the Specifications.

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

REVISIONS

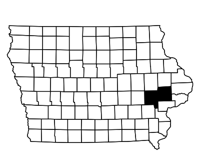
TOTAL
615

PROJECT IDENTIFICATION NUMBER
16-52-080-020
PROJECT NUMBER
IM-NHS-080-7(114)248--03-52
R.O.W. PROJECT NUMBER
IMN-080-7(118)248--0E-52
IMN-080-7(126)254--0E-16

D5 REVISION – Date: 2–05–2020

DM5 PLAN – Date: 9–01–2020
D8 PLAN – Date: 10–06–2020

For Project Location
Refer to Sheet A.2



DESIGN DATA RURAL

2025	AADT	45,600	V.P.D.
2045	AADT	73,700	V.P.D.
2045	DHV	7,600	V.P.H.
TRUCKS		38	%
Total Design ESALs		--	

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	X	Primary Signature Block
X	X	X

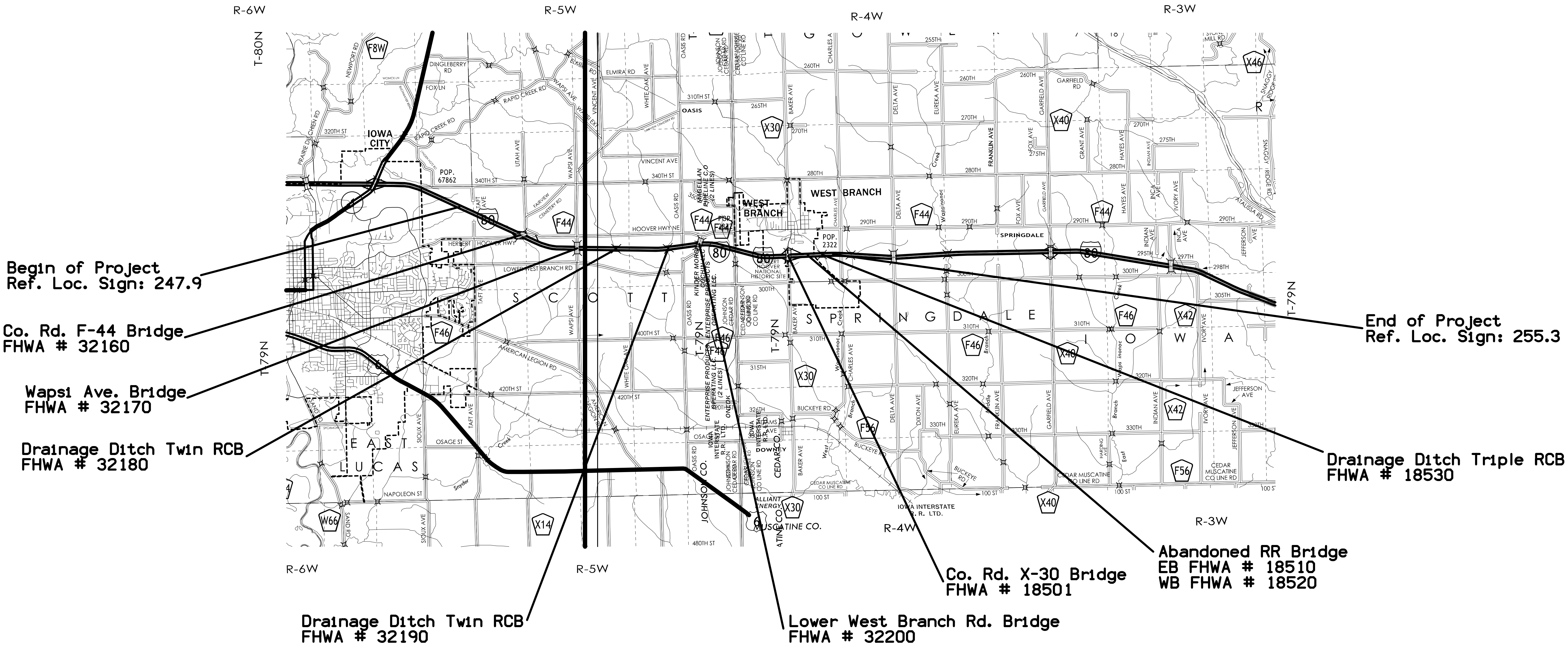
PRELIMINARY PLANS

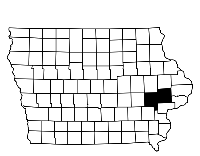
Subject to change by final design.

D5 PLAN – Date: 11–16–2018

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER A.1

9:16:40 AM 2/6/2020 adewolf pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_A01.dgn





LOCATION MAP SCALE

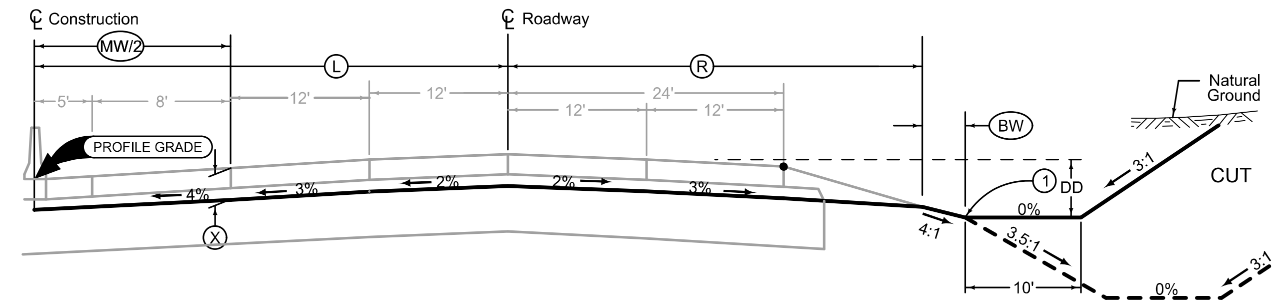
0 1 2 3

Miles

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf		JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER A.2

9:16:42 AM 2/6/2020 adewolf pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_A01.dgn

G_6_Grade_Closed
10-16-18



6 LANE GRADING
(Closed Median)*

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		L Feet	R Feet	X Inches	BW Feet	MW Feet
I 80 WB	1104+00.00	1162+08.56	37	30.8	18	11.8	26
I 80 EB	1104+00.00	1159+84.45	37	30.8	18	11.8	26

* Median grading begins at Sta. 1112+02.00

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf		JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER B.1

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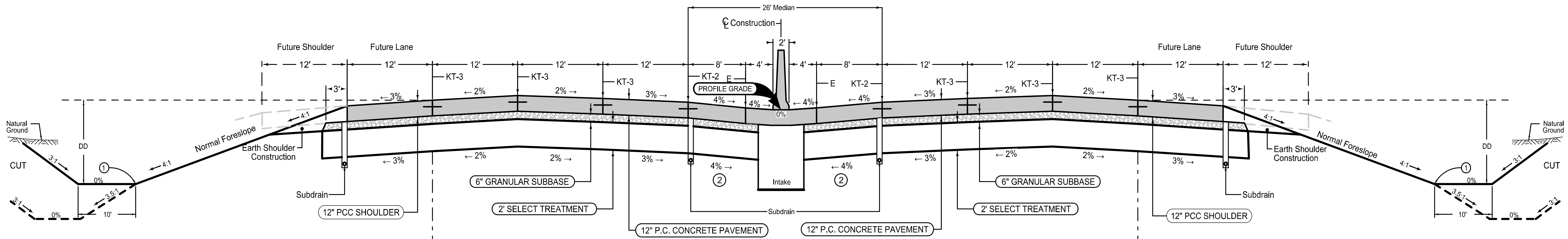


WB Lanes

Mainline Jointing:
Transverse joints: CD at 20' spacing

6DP_Closed_ 04-17-12	
BEGIN STATION	END STATION
* 1104+00.00	1181+18.71

* Median pavement and barrier begin at Sta. 1112+02.00

EB Lanes

Mainline Jointing:
Transverse joints: CD at 20' spacing

6DP_Closed_ 04-17-12	
BEGIN STATION	END STATION
* 1104+00.00	1177+04.99

* Median pavement and barrier begin at Sta. 1112+02.00

Full Depth PCC Shoulder

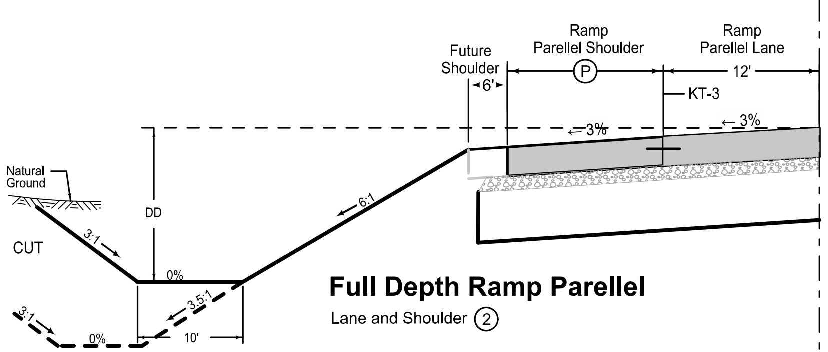
Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 20' spacing

6D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1104+00.00	1162+08.56

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 20' spacing

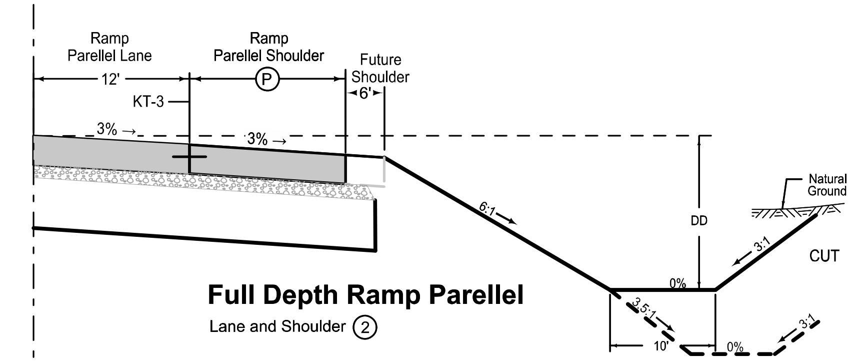
6D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1104+00.00	1159+84.45



Full Depth Ramp Parellel

Lane and Shoulder (2)

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	(P) Feet
1162+08.56	1168+08.56	0-12
1168+08.56	1178+08.56	12
1178+08.56	1181+18.71	(2)



Full Depth Ramp Parellel

Lane and Shoulder (2)

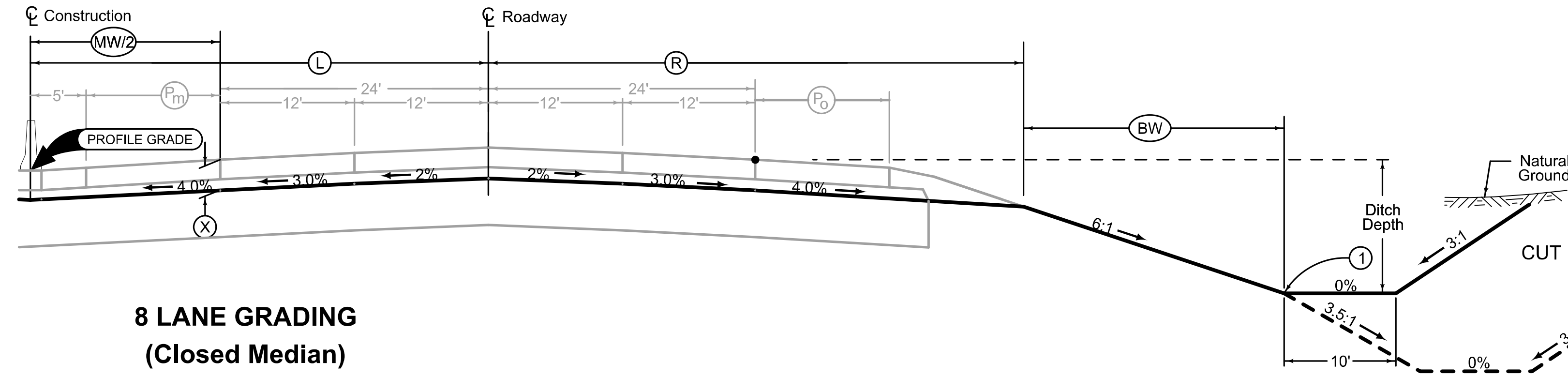
6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	(P) Feet
1159+84.45	1162+84.45	0-12
1162+84.45	1172+84.45	12
1172+84.45	1177+04.99	(2)

(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) Refer to L Sheets for details

I-80
6 Lane Closed Median

G_8_Grade_Closed
10-16-18



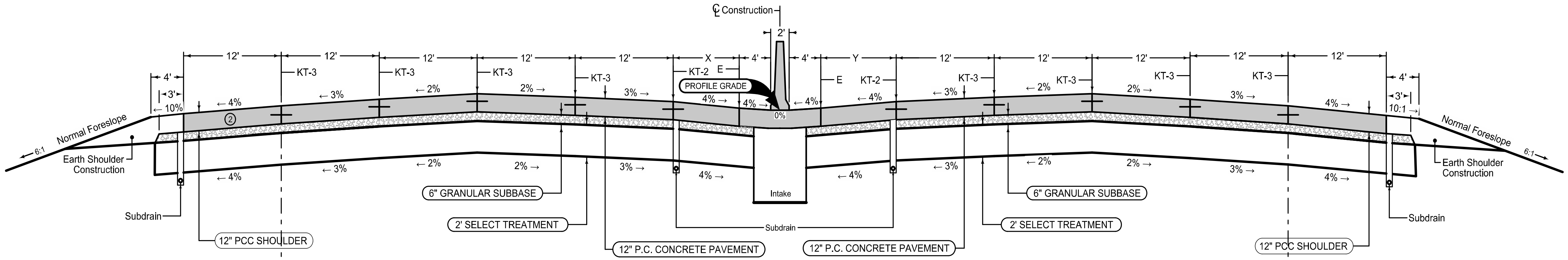
8 LANE GRADING
(Closed Median)

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

LOCATION			DIMENSIONS				
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	(BW) Feet	(MW) Feet
I 80 WB	1177+04.99	1208+30.68	37	54.5	18	15.5	26
I 80 EB	1181+18.71	1208+30.68	37	54.5	18	15.5	26
I 80	1208+30.68	1223+10.00	37-49	54.5	18	15.5	26-50



Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 20' spacing

8D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1181+18.71	1204+39.44
1221+77.57	1223+10.00

Mainline Jointing:
Transverse joints: CD at 20' spacing

8DP_Closed_ 04-17-12		
BEGIN STATION	END STATION	X
1181+18.71	1208+30.68	8'
1208+30.68	1223+10.00	8'-20.3'

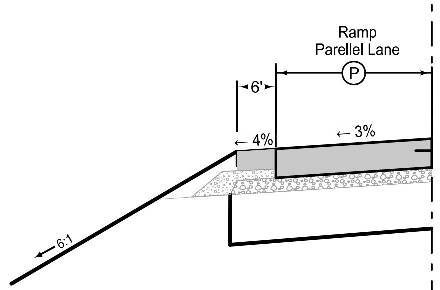
Mainline Jointing:
Transverse joints: CD at 20' spacing

8DP_Closed_ 04-17-12		
BEGIN STATION	END STATION	Y
1181+18.71	1208+73.31	8'
1208+73.31	1223+10.00	8'-19.9'

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 20' spacing

8D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1177+04.99	1197+66.73
1218+62.91	1223+10.00



Full Depth Ramp Parellel

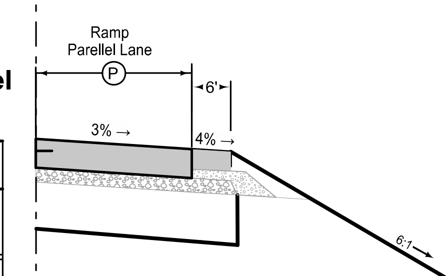
Lane and Shoulder (2)

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	(P) Feet
1204+39.44	1208+58.88	(2)
1208+58.88	1218+73.37	12
1218+73.37	1221+77.57	12-0

Full Depth Ramp Parellel

Lane and Shoulder (2)

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	(P) Feet
1197+66.73	1200+76.88	(2)
1200+76.88	1212+70.75	12
1212+70.75	1218+62.91	12-0



(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) Refer to L Sheets for details

See Tab 100-24 or 100-25 for pavement quantities.

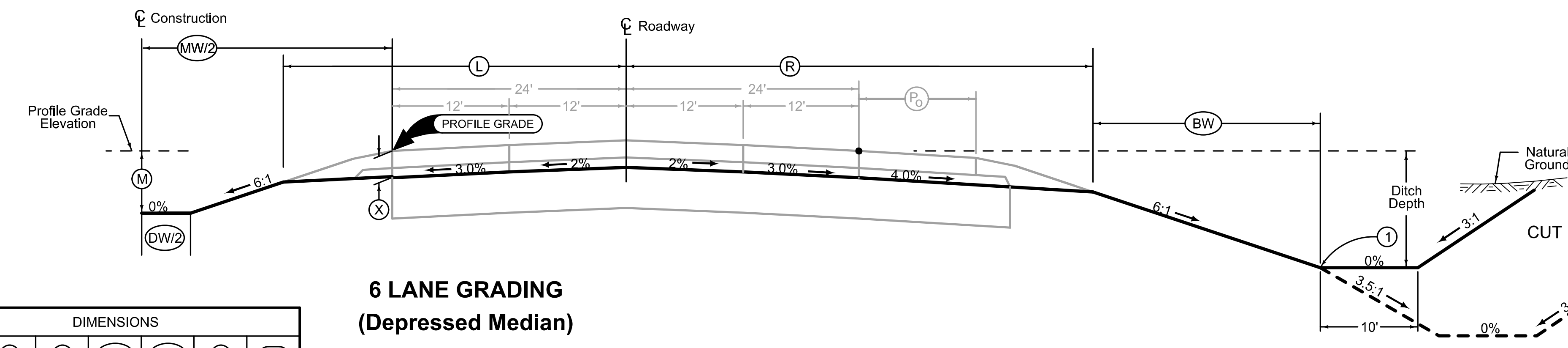
See Tab 112-9 for shoulder quantities.

I-80

8 Lane Closed Median

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER B.3

Modified
10-16-18



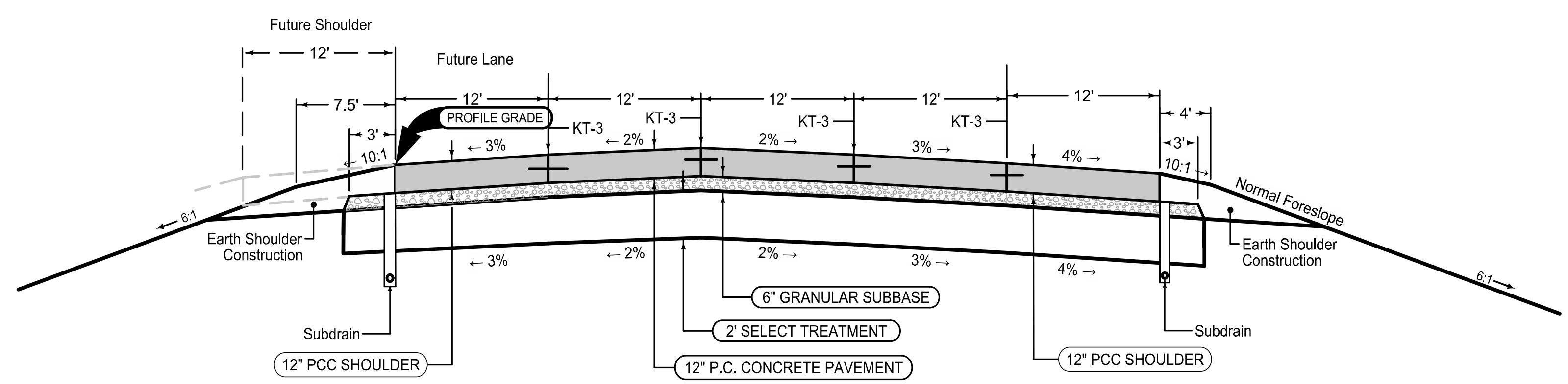
6 LANE GRADING
(Depressed Median)

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

1 Refer to project plan and cross sections for specific location of foreslope change.

LOCATION			DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION		L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	DW Feet
I 80	1223+10.00	1231+42.35	24-38.6	50	18	14.7	74-88	0-4	0-10
I 80	1231+42.35	1427+11.04	38.6	50	18	14.7	88	4	10
I 80	1427+11.04	1444+27.62	38.6-35	50	18	14.7-23.7	88-50	4-1.833	10-4



Mainline Jointing:
Transverse joints: CD at 20' spacing

6DP_Closed_ 04-17-12	
BEGIN STATION	END STATION
1223+10.00	1444+27.62

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 20' spacing

6D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1223+10.00 (EB)	1436+25.00 (EB)
1223+10.00 (WB)	1435+00.00 (WB)

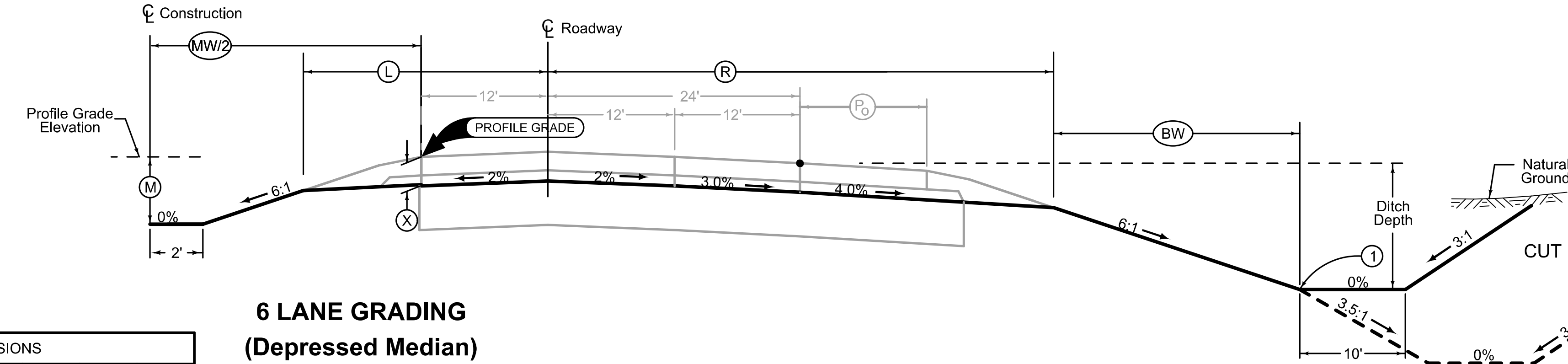
See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

1 Refer to project plan and cross sections for specific location of foreslope change.

I-80 EB/WB

Modified
10-16-18



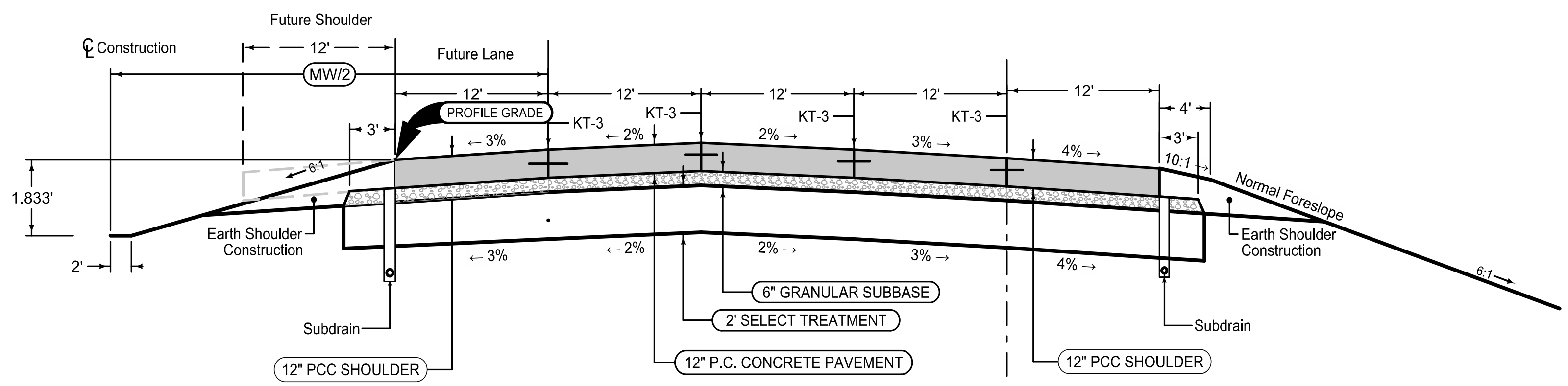
6 LANE GRADING
(Depressed Median)

Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

(1) Refer to project plan and cross sections for specific location of foreslope change.

LOCATION			DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION		L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	DW Feet
I 80	1444+27.62	1503+00.00	35	50	18	23.7	50	1.833	4



Mainline Jointing:
Transverse joints: CD at 20' spacing

6DP_Closed_ 04-17-12	
BEGIN STATION	END STATION
1444+27.62	1503+00.00

Full Depth PCC Shoulder

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 20' spacing

6D_Closed_P_FullPCC_ 04-19-11	
BEGIN STATION	END STATION
1453+45.00 (EB)	1476+46.20 (EB)
1495+56.40 (EB)	1503+00.00 (EB)
1455+72.19 (WB)	1479+52.85 (WB)
1496+72.85 (WB)	1503+00.00 (WB)

Full Depth Ramp Parellel WB

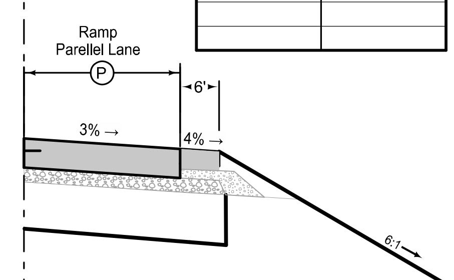
Lane and Shoulder (2)

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	P Feet
1435+00.00	1441+00.00	0-12
1441+00.00	1453+69.72	12
1453+69.72	1455+72.19	(2)
1479+52.85	1483+72.85	(2)
1483+72.85	1493+72.85	12
1493+72.85	1496+72.85	12-0

Full Depth Ramp Parellel EB

Lane and Shoulder (2)

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	P Feet
1436+25.00	1439+25.00	0-12
1439+25.00	1449+25.00	12
1449+25.00	1453+45.00	(2)
1476+46.25	1479+56.40	(2)
1479+56.40	1489+56.40	12
1489+56.40	1495+56.40	12-0



(1) Refer to project plan and cross sections for specific location of foreslope change.

(2) Refer to L Sheets for details

See Tab 100-24 or 100-25 for pavement quantities.

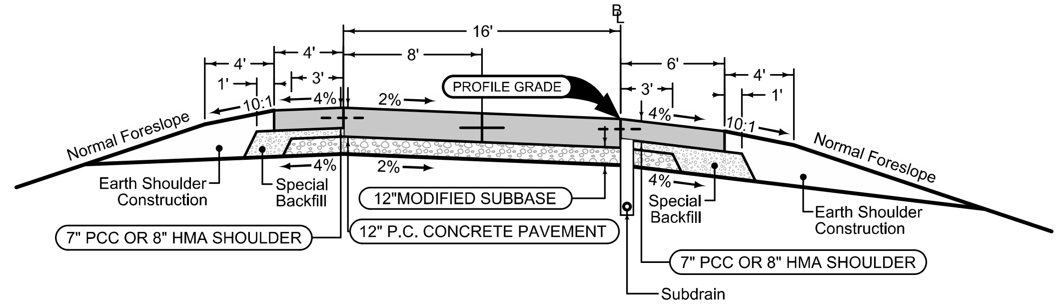
See Tab 112-9 for shoulder quantities.

I-80 EB/WB

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
11462+64.04	11479+52.85



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
11462+64.04	11479+52.85

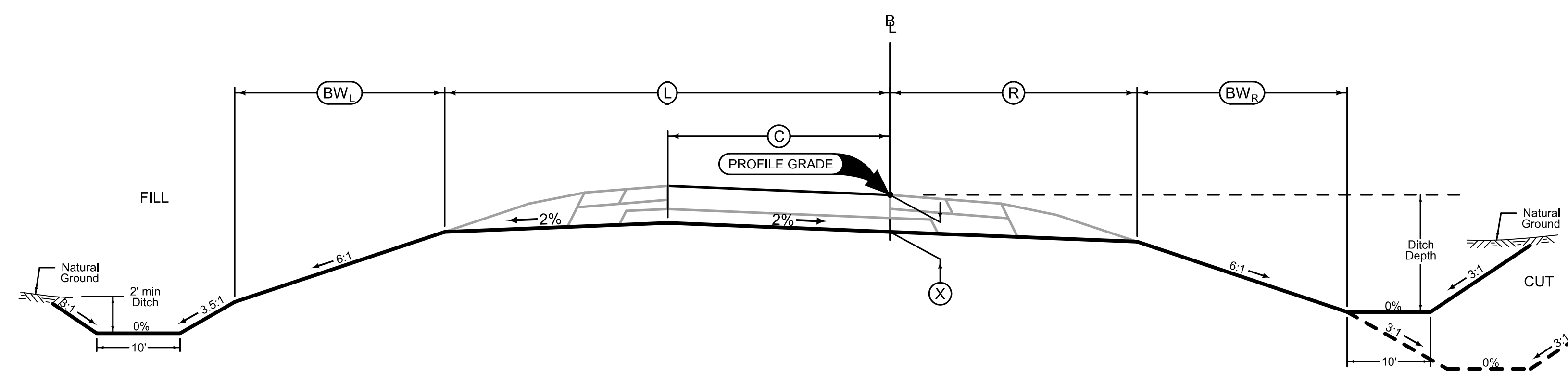
Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

1RP_ 10-17-17	
BEGIN STATION	END STATION
11462+64.04	11479+52.85

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	C Feet	X Inches	BW_L Feet	BW_R Feet
Co. Rd. X-30	A	11462+64.04	11479+52.85	34.9	20.6	16	24	3.1	1.4

G_1R_Grade
04-15-14



Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

RAMP GRADING

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

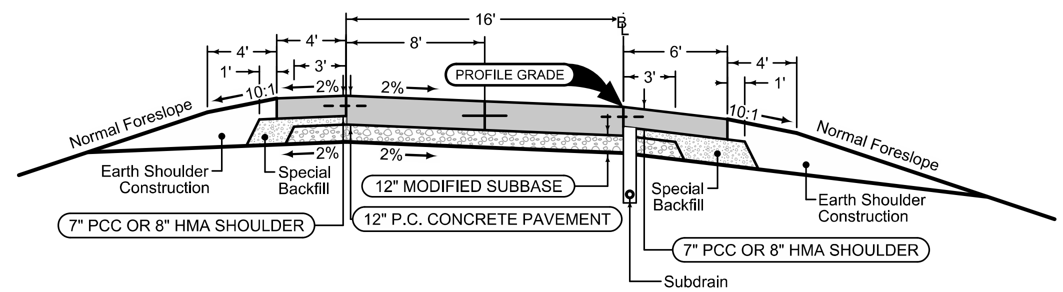
SR X30 RampsA (Westbound Exit)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER B.6

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
21453+45.00	21461+48.37



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
21453+45.00	21461+48.37

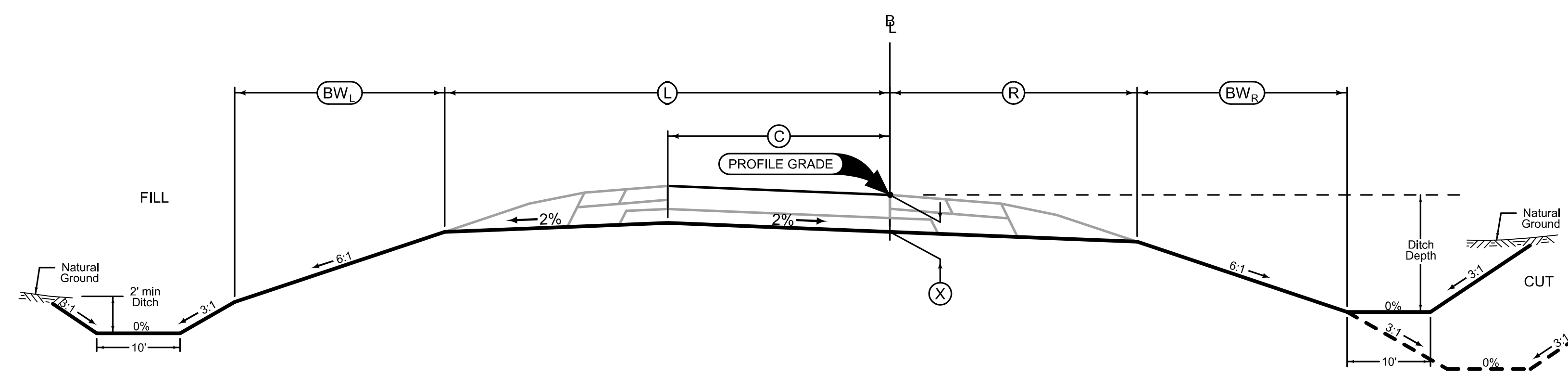
Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

1RP_ 10-17-17	
BEGIN STATION	END STATION
21453+45.00	21461+48.37

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	C Feet	X Inches	BW_L Feet	BW_R Feet
Co. Rd. X-30	B	21453+45.00	21461+48.37	34.9	20.6	16	24	3.1	1.4

G_1R_Grade
04-15-14



RAMP GRADING

Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

See Tab 100-24 or 100-25 for pavement quantities.

See Tab 112-9 for shoulder quantities.

SR X30 Ramp B
(Eastbound Exit)

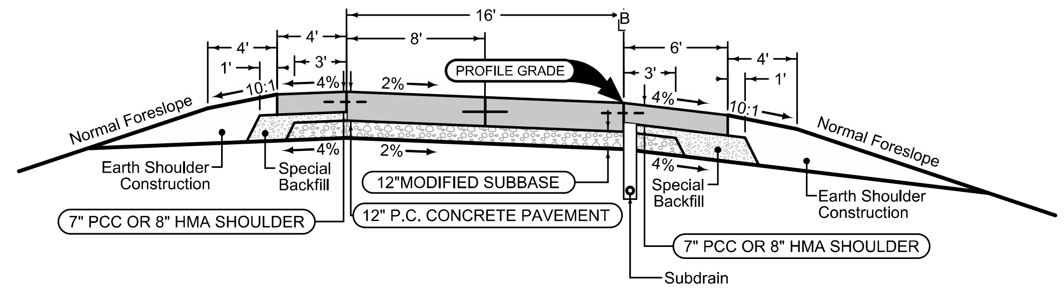
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER B.7

8:15:31 AM 11/15/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_B01.dgn

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
31455+70.30	31463+20.00



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1L_P_ALT_ 10-16-18	
BEGIN STATION	END STATION
31455+70.30	31463+20.00

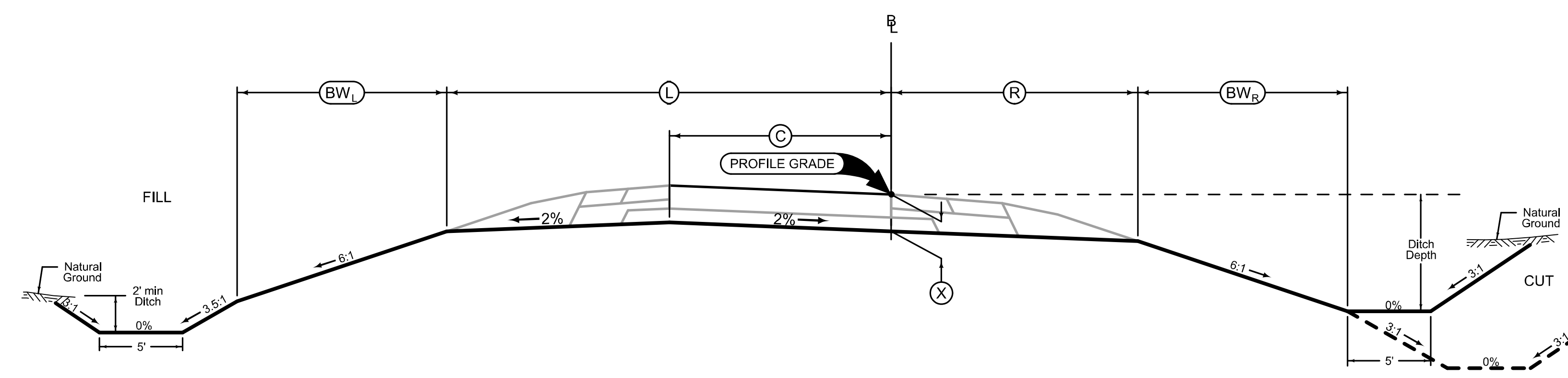
Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

1RP_ 10-17-17	
BEGIN STATION	END STATION
31455+70.30	31463+20.00

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	C Feet	X Inches	BW_L Feet	BW_R Feet
Co. Rd. X-30	C	31455+70.30	31463+20.00	34.9	20.6	16	24	3.1	1.4

G_1R_Grade
04-15-14



Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

RAMP GRADING

See Tab 100-24 or 100-25 for pavement quantities.

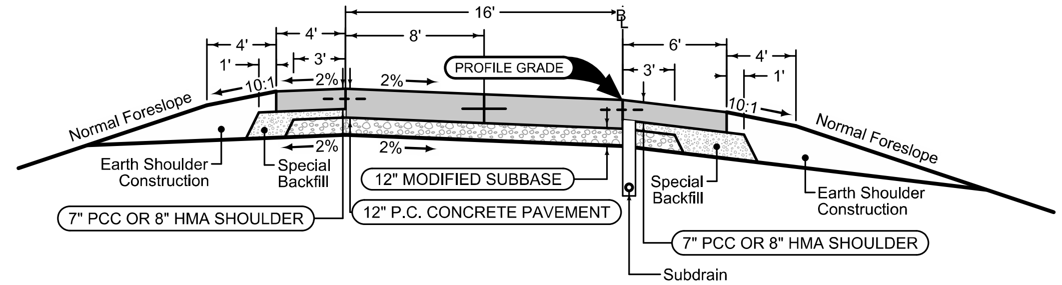
See Tab 112-9 for shoulder quantities.

SR X30 Ramp C
(Westbound Entrance)

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

	1L_P_ALT_ 10-16-18
BEGIN STATION	END STATION
41463+27.89	41476+47.43



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

	1L_P_ALT_ 10-16-18
BEGIN STATION	END STATION
41463+27.89	41476+47.43

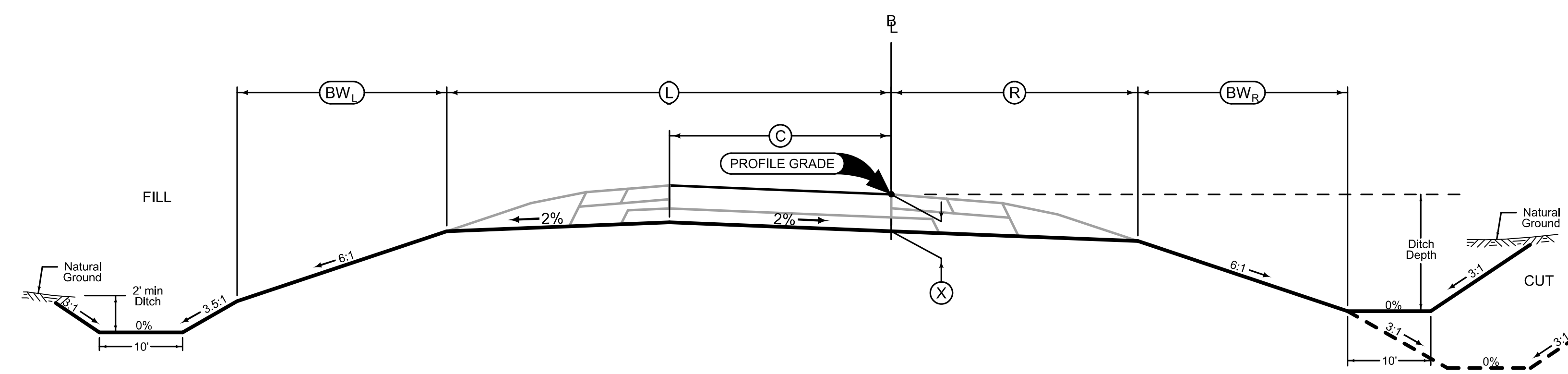
Section shown in the direction of traffic.

Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

	1RP_ 10-17-17
BEGIN STATION	END STATION
41463+27.89	41476+47.43

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		L Feet	R Feet	C Feet	X Inches	BWL Feet	BWR Feet
Co. Rd. X-30	D	41463+27.89	41476+47.43	34.9	20.6	16	24	3.1	1.4

G_1R_Grade
04-15-14



Section view is in direction of traffic.

Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

RAMP GRADING

See Tab 100-24 or 100-25 for pavement quantities.

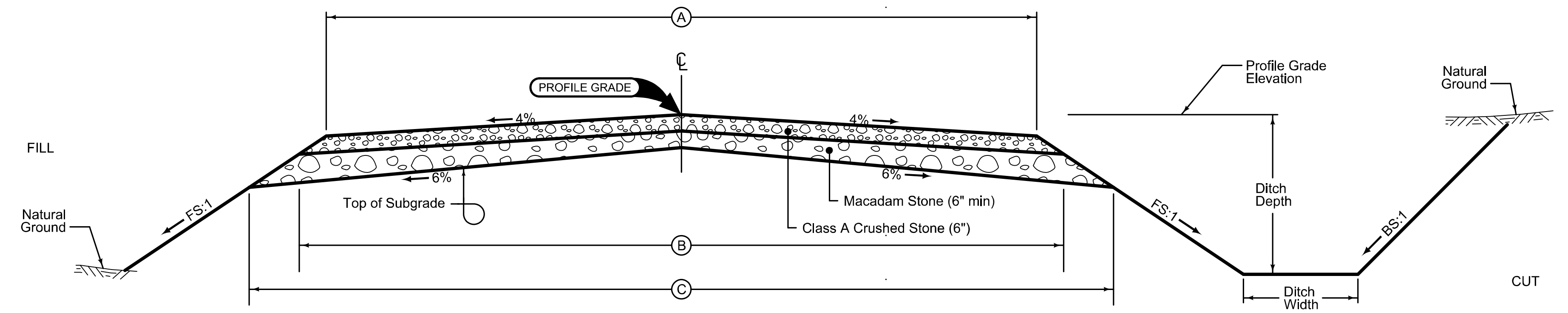
See Tab 112-9 for shoulder quantities.

SR X30 Ramp D
(Eastbound Entrance)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER B.9

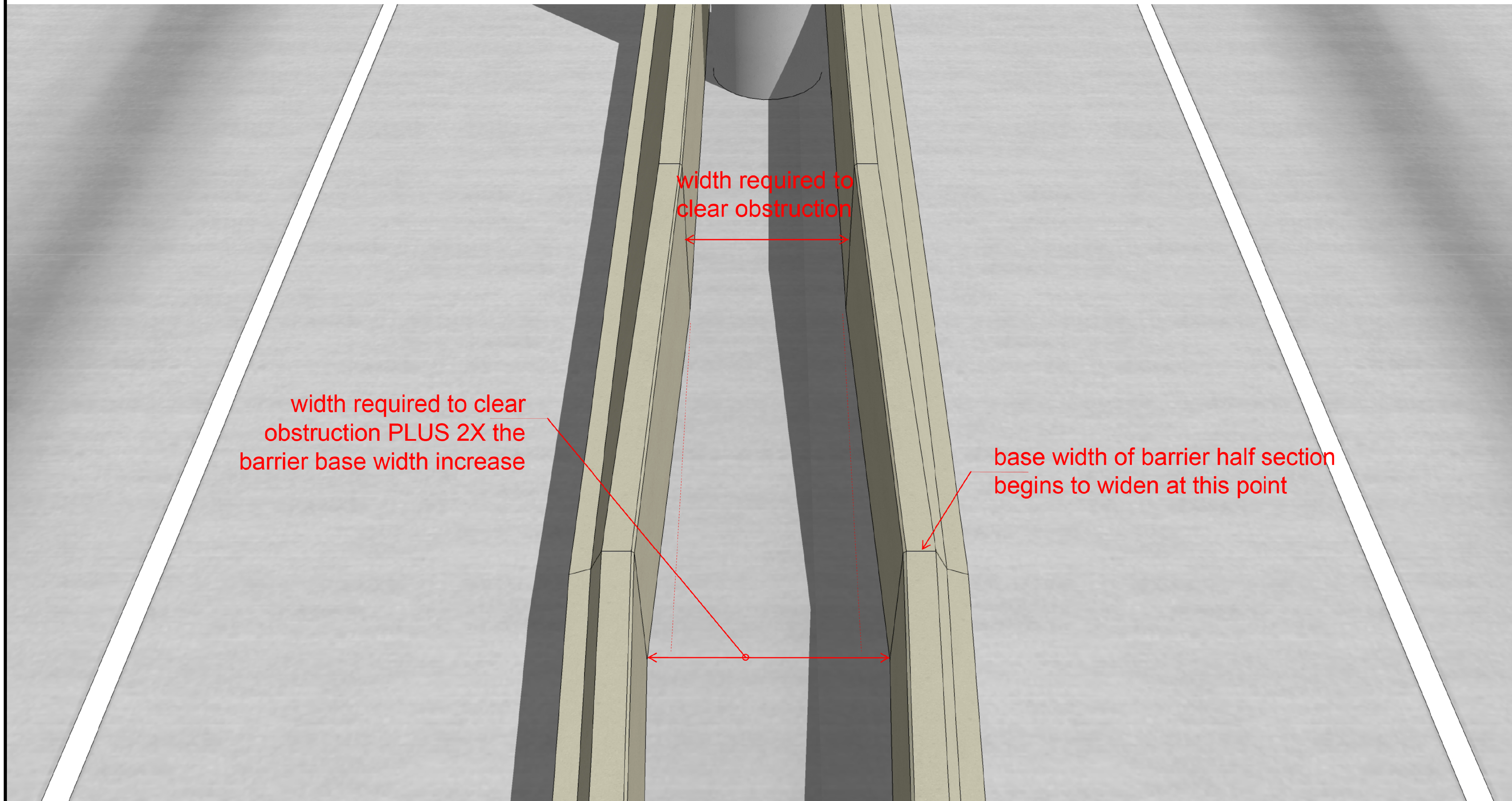
LOCATION			DIMENSIONS					QUANTITIES	
ROAD IDENTIFICATION	STATION TO STATION		A Feet	B Feet	C Feet	FS	BS	MACADAM STONE Tons/Sta.	CLASS A STONE Tons/Sta.
Wapsi Ave.	400+80.00	418+20.42	28	31.6	35.3	3	3	104.33	117.14
Lower West Branch Rd.	504+10.00	512+99.17	28	31.6	35.3	3	3	104.33	117.14

2_GradeGran
Modified



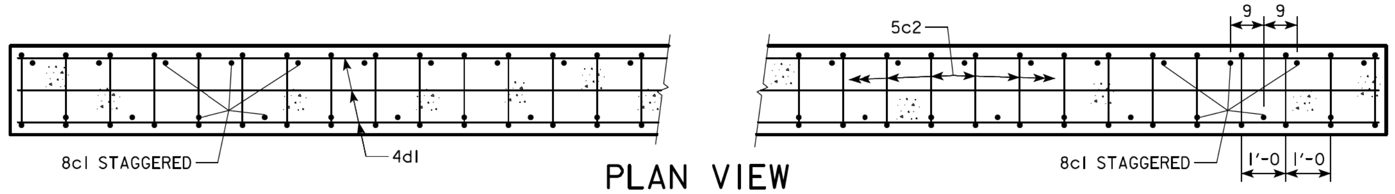
GRADING AND GRANULAR SURFACING

NOTES:
Choke stone surface material shall be Class A crushed stone meeting 4120.04 (Gradation No. 11).
Macadam stone material shall meet section 4122 (nominal maximum 3" size screened over 3/4" screen) or 2" - 3.5" clean.
Road top cross slope shall be 4% - 6%.
Estimated quantities assume a compacted density for Macadarn Stone equal to 130 pounds per cubic foot, and Choke Stone equal to 140 pounds per cubic foot.
Dimensions and quantities are based on 6% road top cross slope.

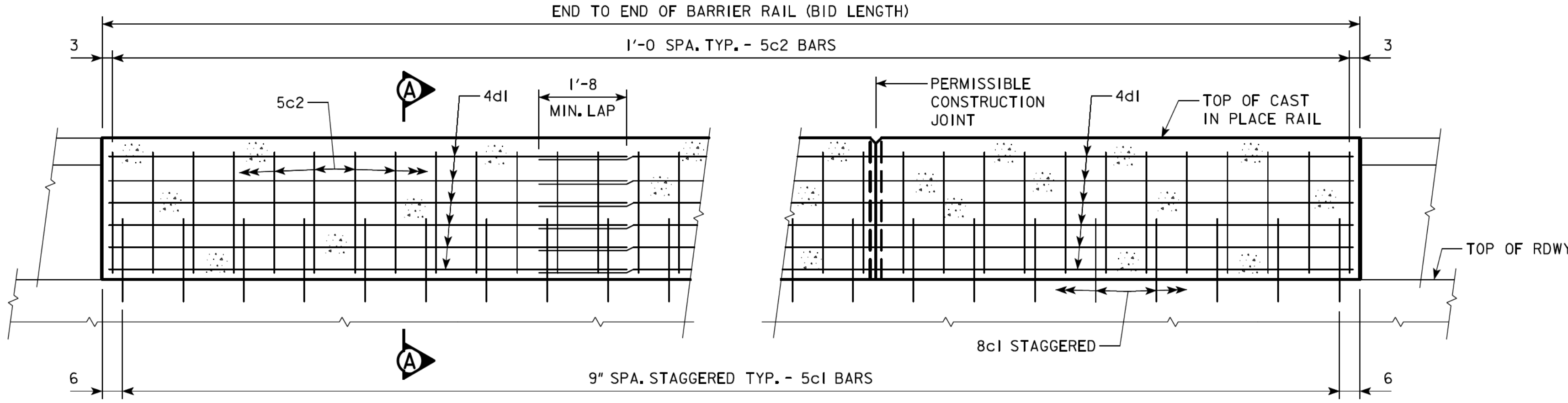


Information Only

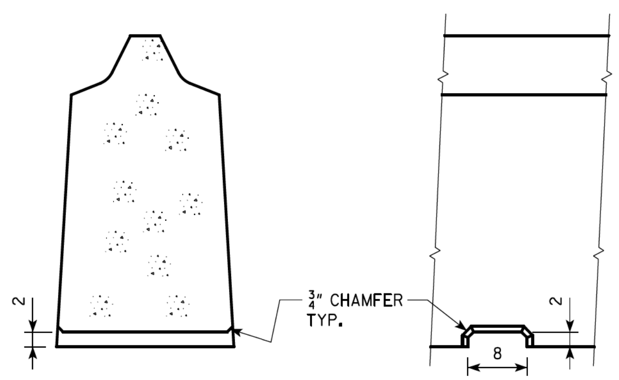
VISUALIZATION OF THE
MEDIAN BARRIER RAIL
(4 OF 4)



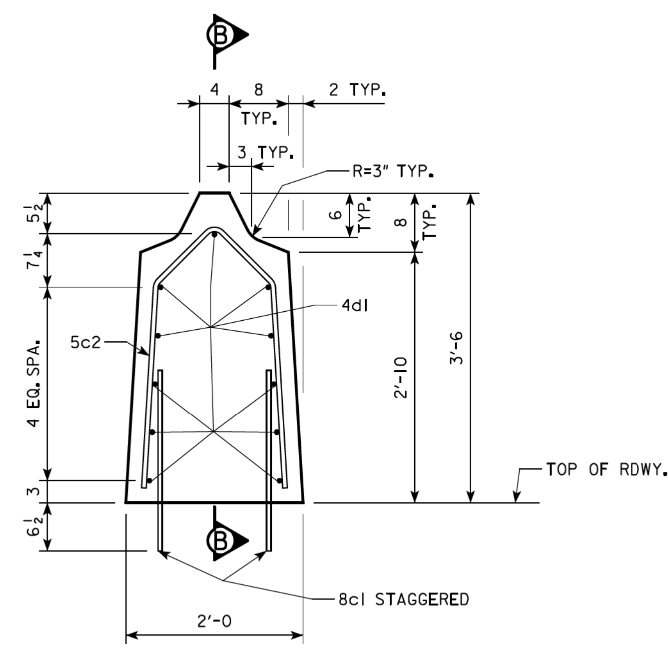
PLAN VIEW



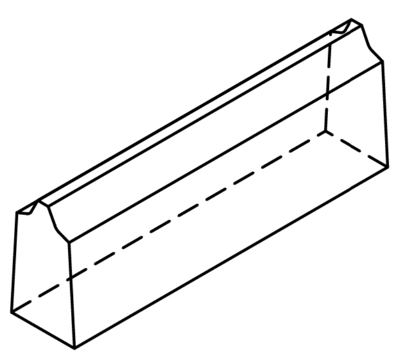
SECTION B-B FULL SECTION BARRIER RAIL



DETAIL OF BARRIER RAIL
DRAIN SLOT AT INTAKE LOCATION



SECTION A-A
FULL SECTION BARRIER RAIL
REINFORCING

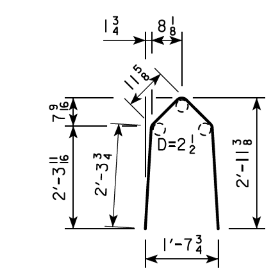


VIEW OF FULL SECTION
BARRIER RAIL

EPOXY REINF. BAR LIST - RAIL PER FT.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
8c1	DOWEL BAR		1.33	2'-6	9
5c2	RAIL, VERTICAL		1	6'-6	7
4d1	RAIL, LONGITUDINAL		11	1'-0	7
				TOTAL (LBS) PER LINEAL FOOT	23

BENT BAR DETAILS



5c2

NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER

CONCRETE QTY. - RAIL PER FT.

TOTAL CU. YDS. PER LINEAL FOOT	0.2109

NOTES:
CONSTRUCTION JOINTS SHALL BE PLACED AS NEEDED. WHERE ABUTTING SECTIONS ARE PLACED AS SEPARATE POURS, A BUTT JOINT MAY BE USED.
LONGITUDINAL REINFORCEMENT SHALL BE EXTENDED INTO THE ABUTTING SECTION A MINIMUM OF 1'-10 SPANNING THE BUTT JOINT.
WHERE THERE IS A DRAIN SLOT ADJUST DOWEL AND VERTICAL REINFORCING TO MAINTAIN 2" CLEAR FROM EDGE OF CONCRETE.

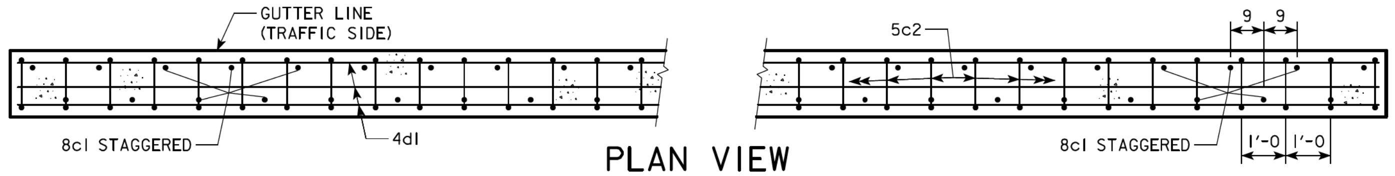
42" CONCRETE BARRIER RAIL
(#1 - 42" FULL SECTION)
MEDIAN BARRIER RAIL

ENGLISH | IOWA DOT | DESIGN TEAM Flattery | JOHNSON COUNTY | PROJECT NUMBER IM-080-6(281)244--13-52 | SHEET NUMBER U.5

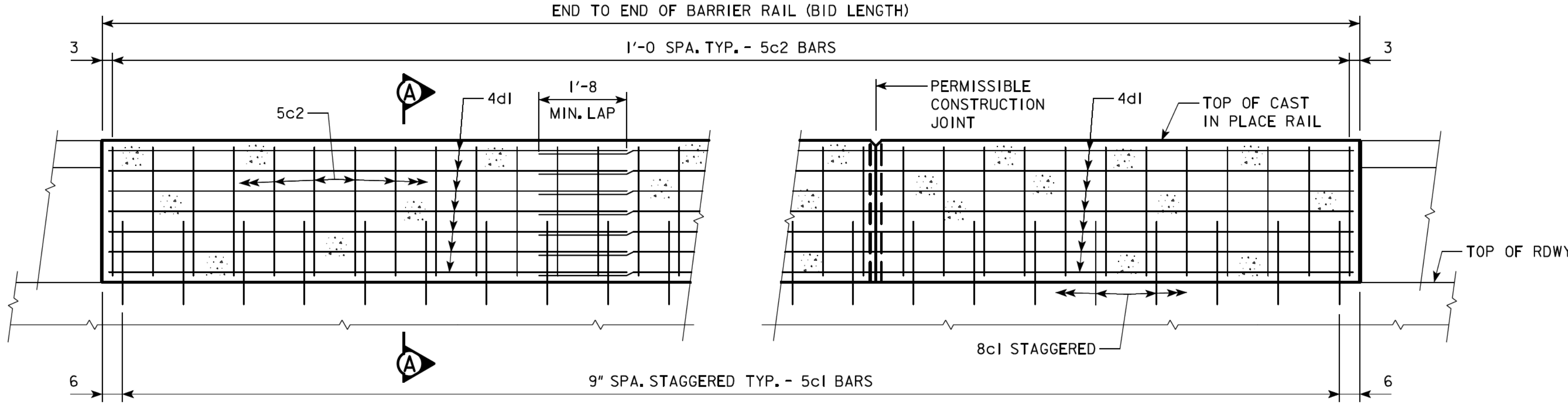
1:32:01 PM 12/3/2012 pflatte W:\Projects\5208001OC98\Design\Project_281\52080281U02.sht

EPOXY REINF. BAR LIST - RAIL PER FT.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
8c1	DOWEL BAR	—	1.33	2'-6	9
5c2	RAIL, VERTICAL		1	6'-9	7
4d1	RAIL, LONGITUDINAL	—	13	1'-0	9
	TOTAL (LBS) PER LINEAL FOOT				25

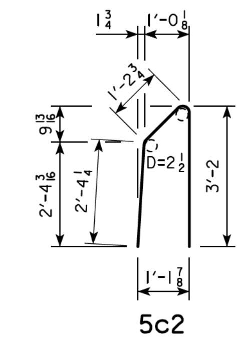


PLAN VIEW



SECTION B-B 42" HALF SECTION BARRIER RAIL

BENT BAR DETAILS

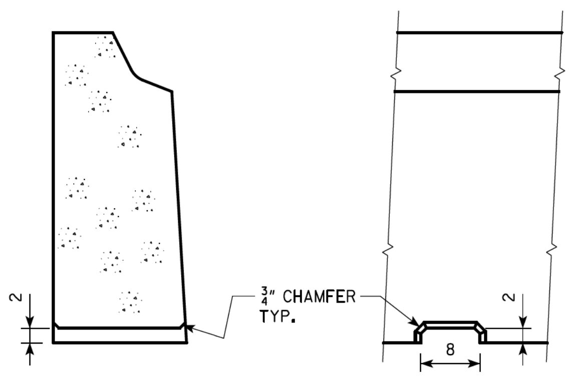


NOTE: ALL DIMENSIONS ARE OUT TO OUT. D=PIN DIAMETER

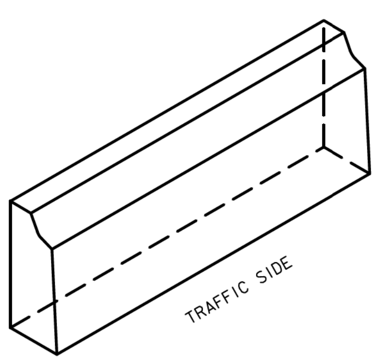
CONCRETE QTY. - RAIL PER FT.

TOTAL CU. YDS. PER LINEAL FOOT	0.1703

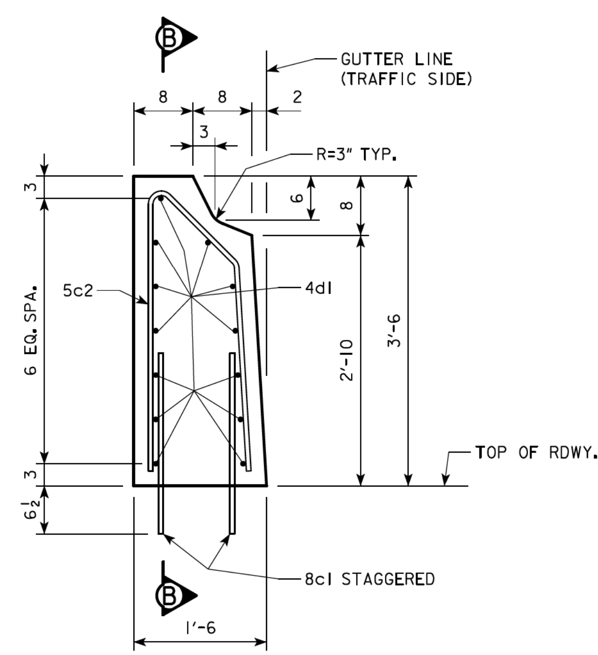
NOTES:
CONSTRUCTION JOINTS SHALL BE PLACED AS NEEDED. WHERE ABUTTING SECTIONS ARE PLACED AS SEPARATE POURS, A BUTT JOINT MAY BE USED.
LONGITUDINAL REINFORCEMENT SHALL BE EXTENDED INTO THE ABUTTING SECTION A MINIMUM OF 1'-10 SPANNING THE BUTT JOINT.
WHERE THERE IS A DRAIN SLOT ADJUST DOWEL AND VERTICAL REINFORCING TO MAINTAIN 2" CLEAR FROM EDGE OF CONCRETE.



DETAIL OF BARRIER RAIL
DRAIN SLOT AT INTAKE LOCATION



VIEW OF HALF SECTION
BARRIER RAIL



SECTION A-A
HALF SECTION BARRIER RAIL
REINFORCING

42" CONCRETE BARRIER RAIL
(#3 - 42" HALF SECTION)
MEDIAN BARRIER RAIL

ENGLISH	IOWA DOT	DESIGN TEAM Flattery		JOHNSON COUNTY	PROJECT NUMBER	IM-080-6(281)244--13-52	SHEET NUMBER	U.7

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FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf		JOHNSON/CEDAR COUNTY	PROJECT NUMBER	IM-NHS-080-7(114)248--03-52	SHEET NUMBER	B.13

8:15:42 AM 11/15/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_B01.dgn

ACCESS POINTS AND SAFETY RAMPS

Refer to Cross-Sections

Length of Unclassified Pipe calculated is based on using Corrugated Metal Pipe.
(1) Refer to MI-210
(2) Refer to EW-501.
(3) Refer to EW-501 or EW-502.
*Predetermined for access point not constructed with this project.

Location		Type	Length of Opening (1)			W	(1) (2) PR	(2) SR	Pipe Culvert (3)					Aprons	Driveway Surface Area		Driveway Surfacing Material	Remarks
Station	Side	A, B, C, Safety Ramp, or Predetermined*	Case	1½" Dropped Curb	3" Dropped Curb				H	Size	Pipe Length	Lt.	Rt.		HMA	PCC		
			1 or 2	LF	LF	FT	FT	FT	FT	IN	LF	LF	LF	No.	SY	SY	TON	
403+93.00	Lt.	C				20.0		20.0										Wapsi Ave (UAC Ent Pipe)
416+92.00	Lt.	C				24.0		20.0										Wapsi Ave
416+92.00	Rt.	C				20.0		15.0										Wapsi Ave
505+61.50	**Rt.**	**Close Entrance**																**Lower West Branch Rd. New Ent. Location still to be determined.**

SURVEY SYMBOLS

CP Control Point
WC Wild Card (Misc. Field Shot)
SCR Section Corner
REF Reference Tie Point
BM Bench Mark
MIS Miscellaneous
IN Storm Sewer Intake
CON Concrete or A/C Slab
BL Topo Breakline
PLG Location of General Photo
PRO Profile Shot
CUL Culvert
GR Ground Shot
SOP Size of Pipe or Culvert
PIP Pipe Culvert
DU Centerline Draw or Stream (Up)
D Centerline Draw or Stream (Down)
OUT Tile Outlet
SNK Sink Hole
LIN Miscellaneous Line
RIP Rip-Rap
BRG Bridge
PPC Mid American Electric
PR Electric Riser Pole
TA Tower Anchor
PPB Linn County REC
PPA Alliant Energy
ST1C City of West Branch
INB Storm Sewer Beehive Intake
UE Utility Elevation
POT Tangent Point
TIL Tile Line
BNK Stream Bank
LUM Luminaire
UV Underground Utility Vault
MM Mile Marker Post
SL Speed Limit Sign
EG Edge of Gravel Road
EP Edge of Paved Roads (ML or SR)

EL1D Alliant Energy QLC
GL1D Alliant Energy
PPA Alliant Energy
Mary Montgomery
PO Box 351
Cedar Rapids, IA 52406-9874
(319) 786-4768
MaryMontgomery@alliantenergy.com

EL2D Linn County REC QLC
Kevin Stucker
5695 REC Dr.
Marion, IA 52302
(319) 377-1587
kstucker@linncountyrec.com

EL3D Mid American Electric QLC
PPC Mid American Electric
Jason Warren
1630 Lower Muscatine Rd
Iowa City, IA 52240
(319) 341-4425
jlwarren@midamerican.com

GL4D Mid American Electric QLC
GH4D Mid American Electric
Joe Retek
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Iowa City, IA 50501
(319) 341-4457
jjretek@midamerican.com

WL1D City of West Branch QLC
SA1C City of West Branch
ST1C City of West Branch
Matt Goodale
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mgoodale@westbranchiowa.org

FO7D Iowa DOT QLC
EL4D Iowa DOT
Jeff McCollough
800 Lincoln Way
Ames, IA 50010
(515) 239-1373
jeffry.n.mccollough

GH2D Enterprise Products Partners, LP QLC
GL2D Enterprise Product Partners, LP
Matthew Baker
1015 N. Jefferson
Kearney, MO 64060
(816) 858-7810
mjbaker@eprod.com

FO1D AT&T QLC
Leny Vohs
1425 Oak Street
Kansas City, MO 64106
(816) 275-4014
lv2121@att.com

TL2D Century Link QLC
FO2D Century Link
Steve Parker
2103 E. University Ave.
Des Moines, IA 50317
(515) 265-0968
Steven.Parker4@centurylink

FO6D Mediacom Communications Corporation QLC
TV5D Mediacom Communications Corporation
Tim Eagan
3210 Division St.
Burlington, IA 52655
(319) 208-1829
teagan@mediacomcc.com

FO3D Iowa Communications Network QLC
Mike Broderick
400 E 14th St Grimes State Office Building,
Des Moines, IA 50319
(515) 725-4610
Mike.Broderick@iowa.gov

TL4D Liberty Communications QLC
FO4D Liberty Communications
Marcus Behnken
413 N. Calhoun St.
West Liberty, IA 52776
(319) 627-2145
behnken@corp.lcom.net

UTILITY LEGEND

FO5D MCI/Verizon Business QLC
Jim Powers
2600 Westown PKWY Suite 100,
West Des Moines, IA 50266
(515) 380-2208
jim.powers1@Verizon.com

PPB Linn County REC QLC
Kim Colberg
5695 REC Dr.
Marion, IA 52302
(319) 377-1587
kcolberg@linncountyrec.com

PLAN VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Magenta	(5)	Existing Utilities
SHADING	**Design Color No.**	
Yellow	(4)	Highlight for Critical Notes or Features
Red	(3)	Delineates Restricted Areas
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

Reference Point
Station
Survey Line
Section Corner
Ground Line Intercept
Saw Cut
Guardrail
Trench Drain
HighTension Cable Guardrail
Sheet Pile
Pavement Removal
Clearing & Grubbing Area

RIGHT-OF-WAY LEGEND

Proposed Right-of-Way
Existing Right of Way
Existing and Proposed Right-of-Way
Easement and Existing Right-of-Way
Easement (Temporary)
Easement
C/A Access Control
Property Line

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

(COVERS SHEET SERIES D, E, F, & K)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER D.1

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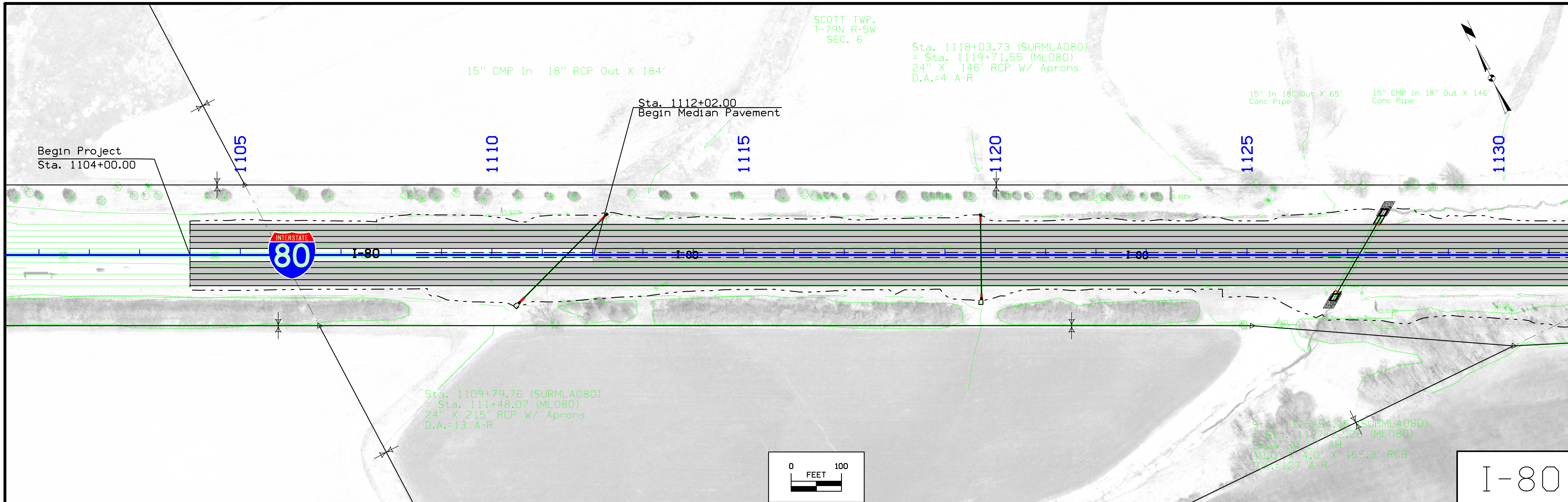

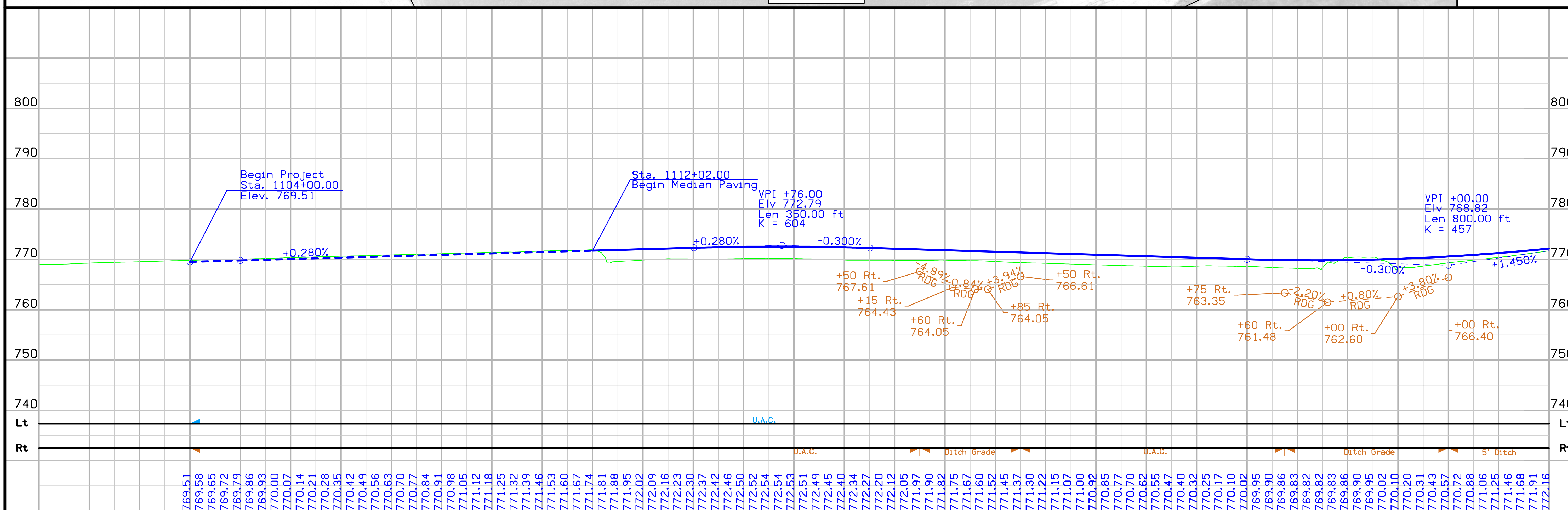

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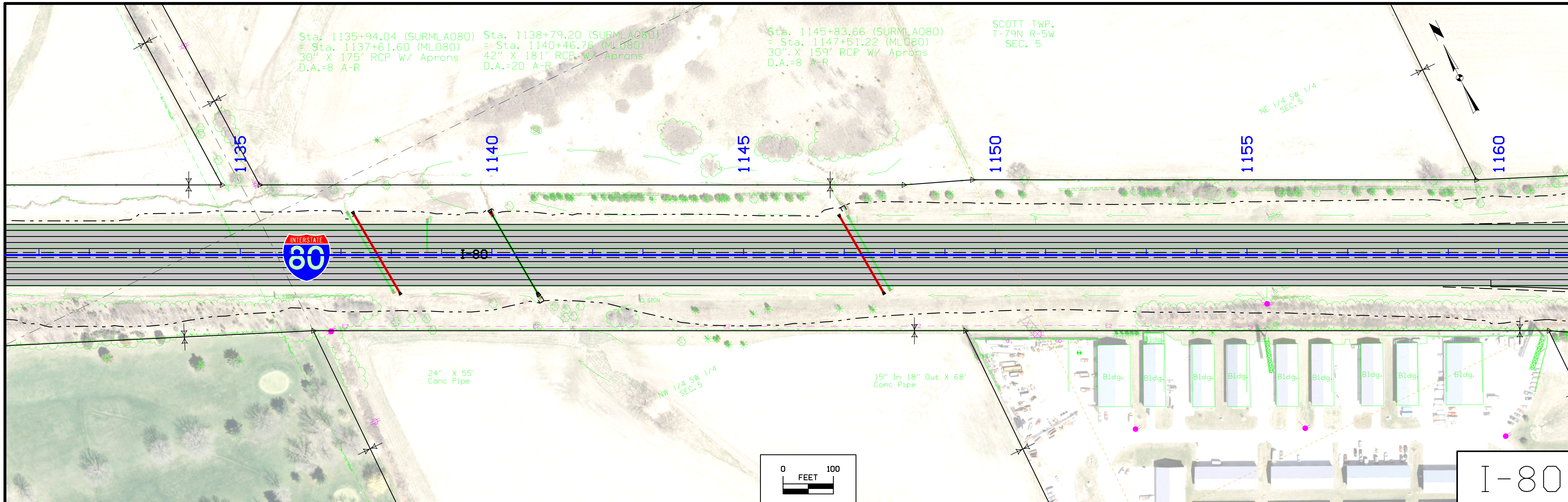

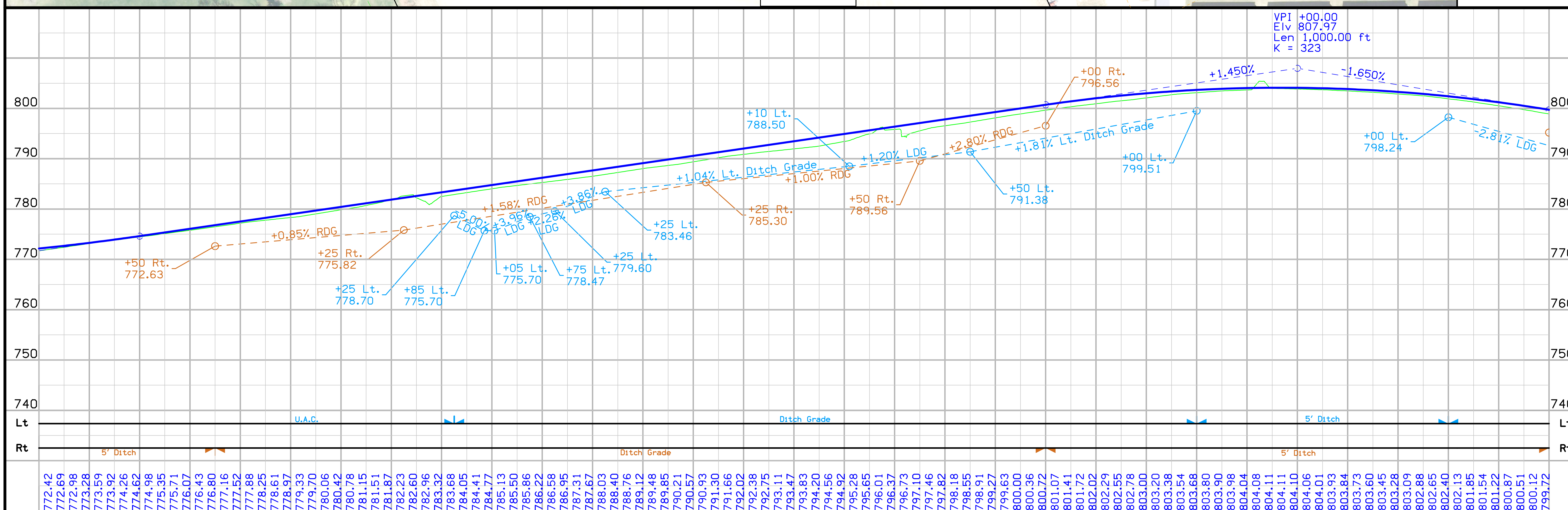

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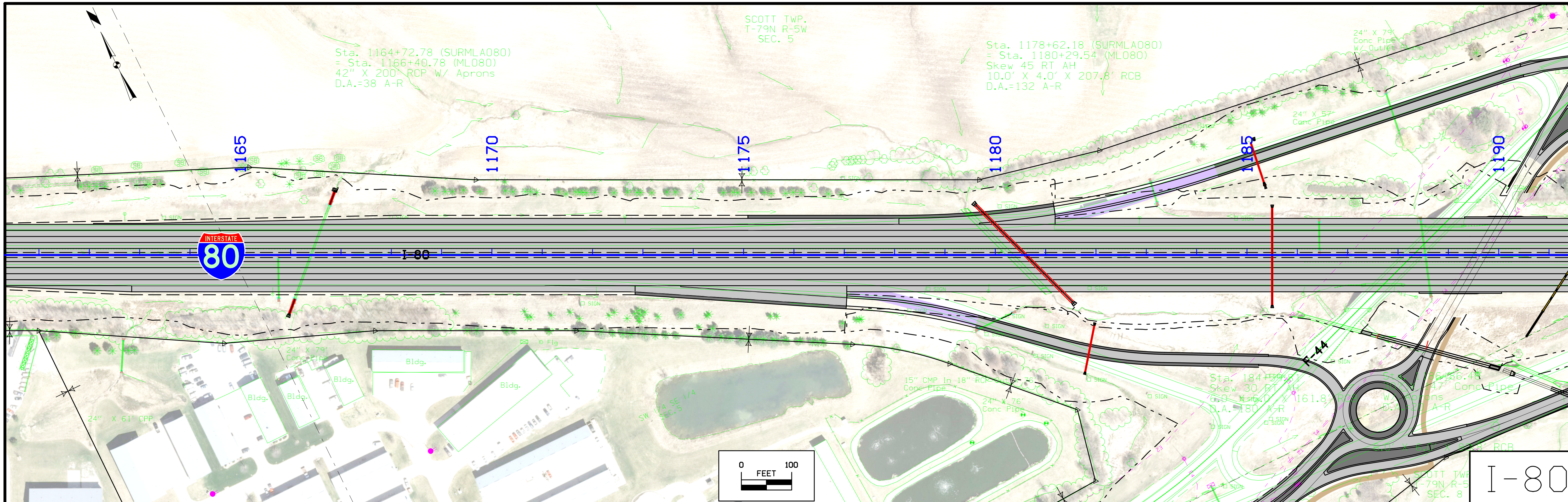

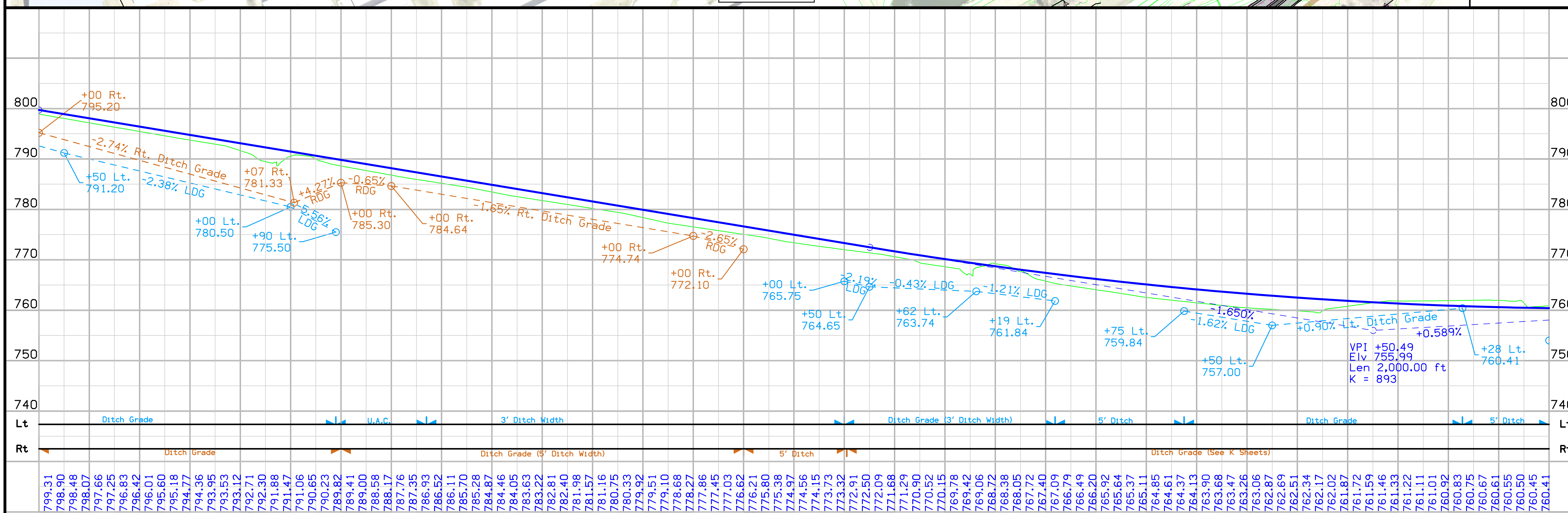

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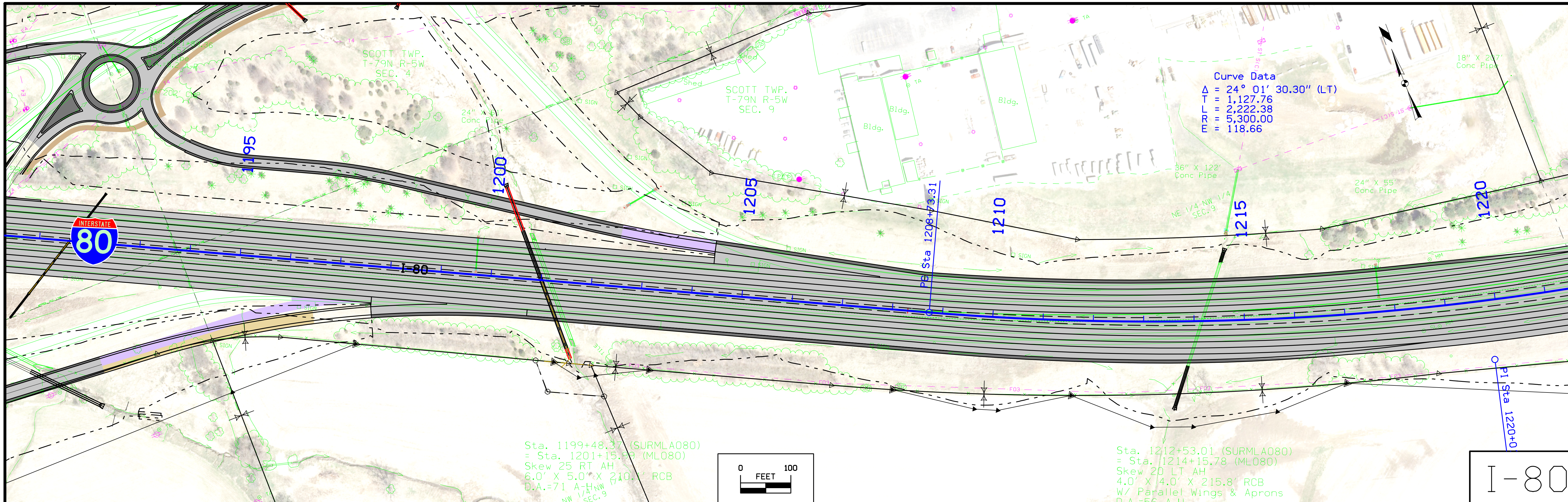

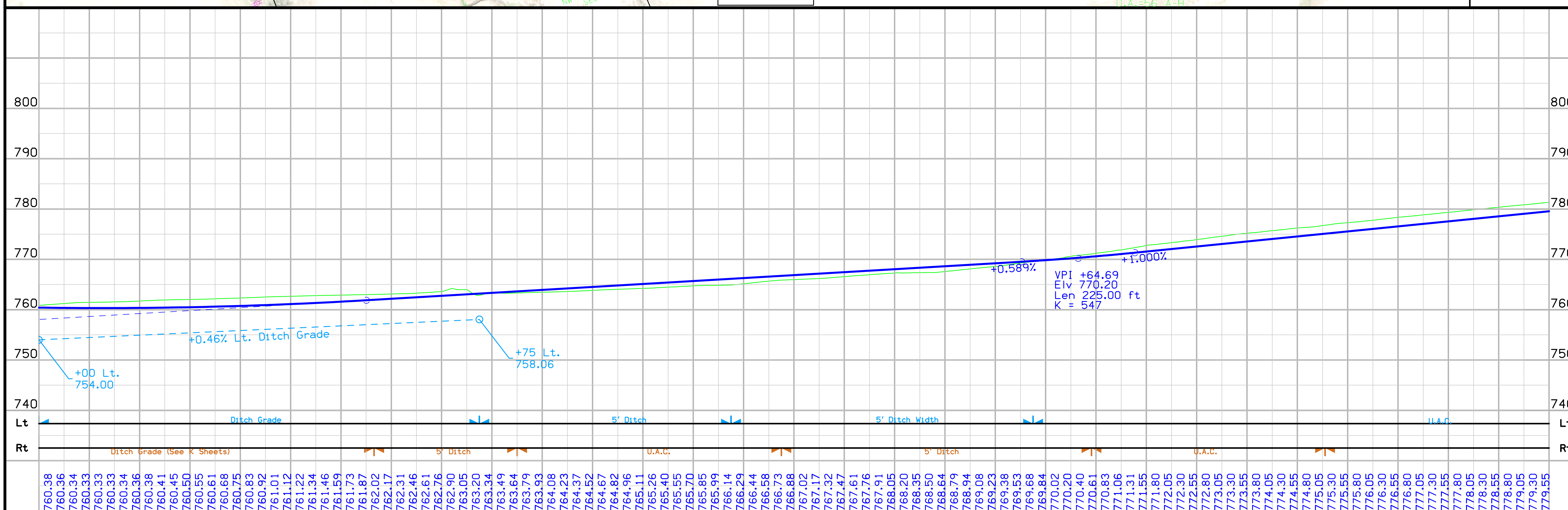

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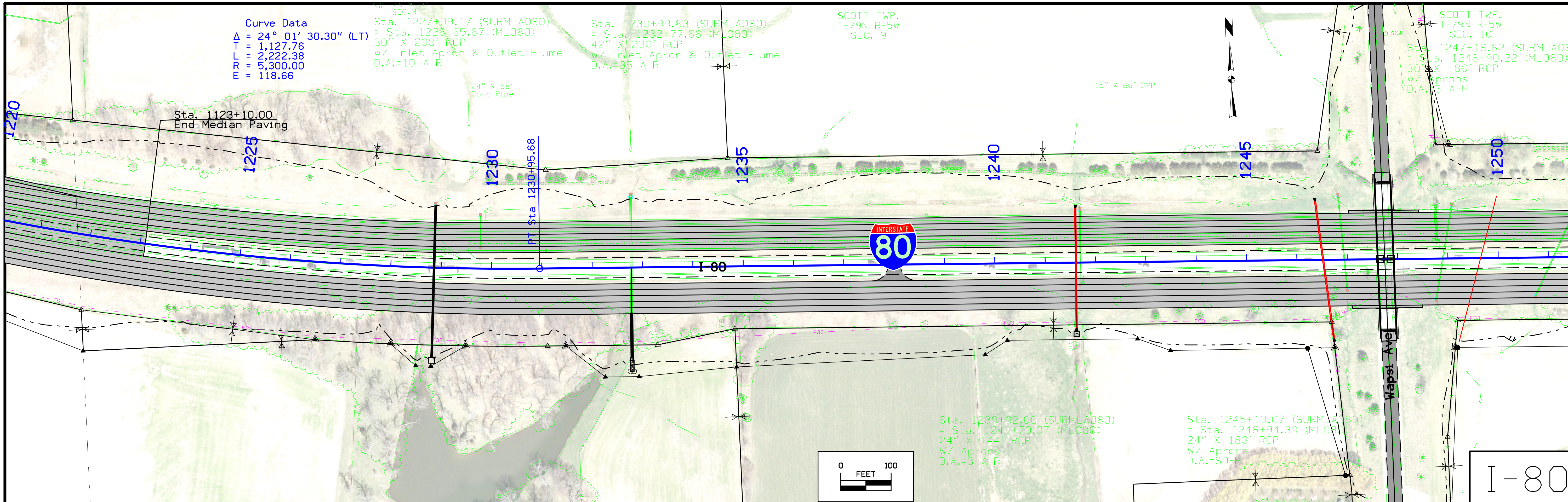

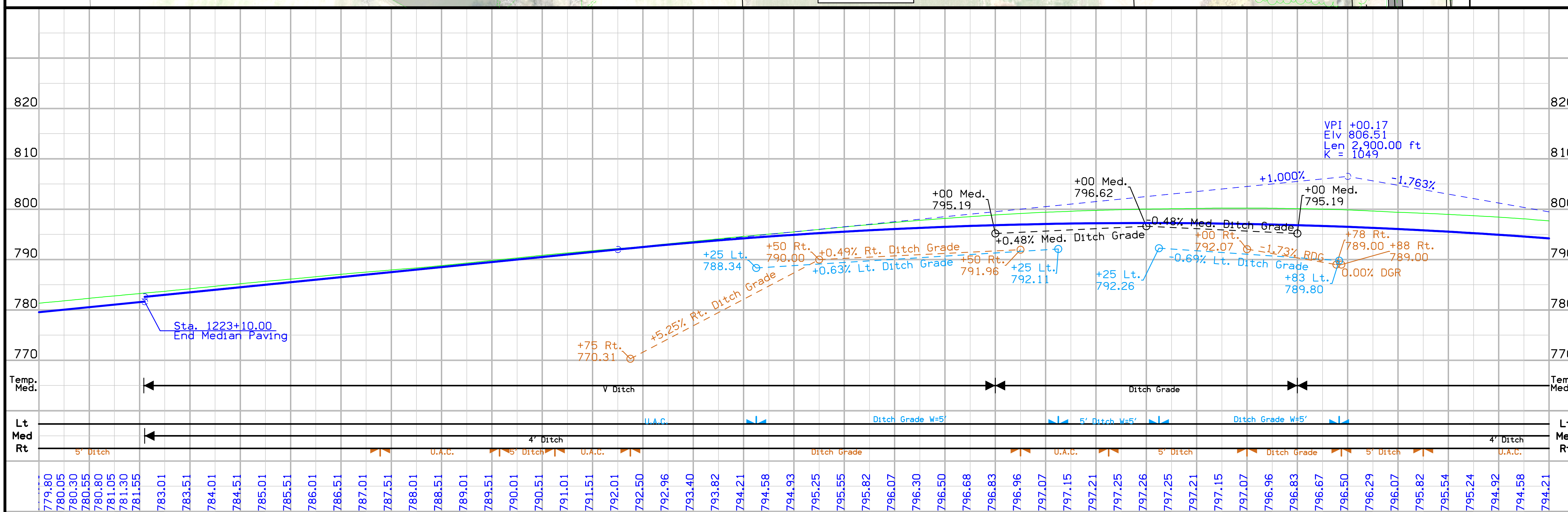

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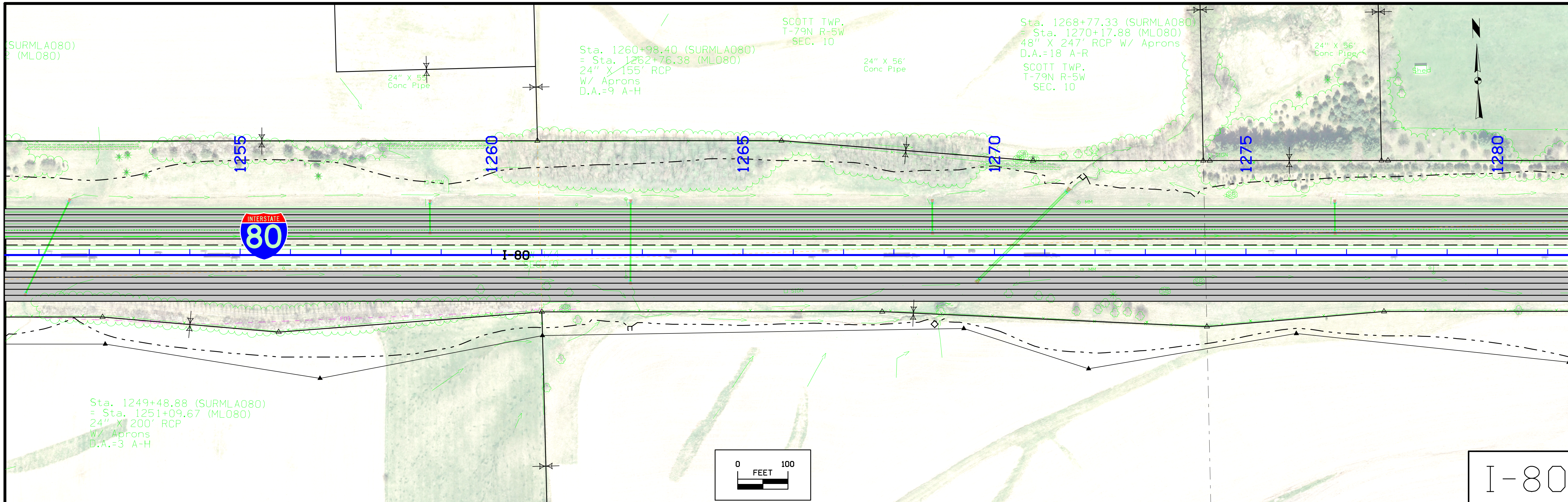

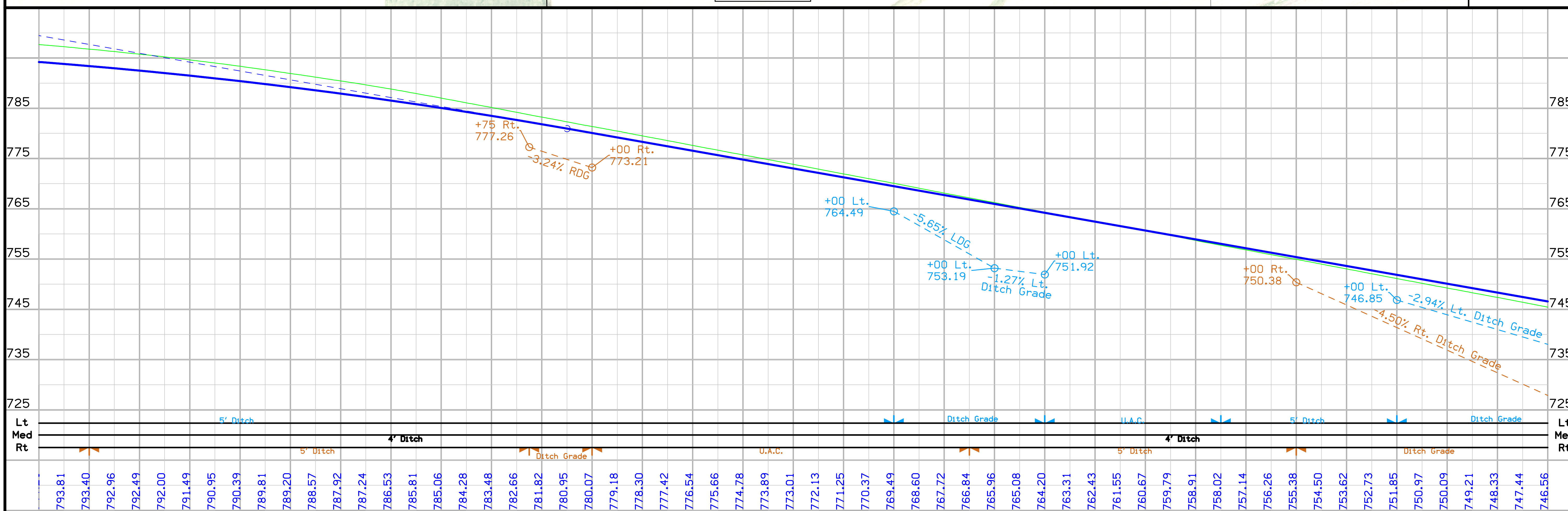

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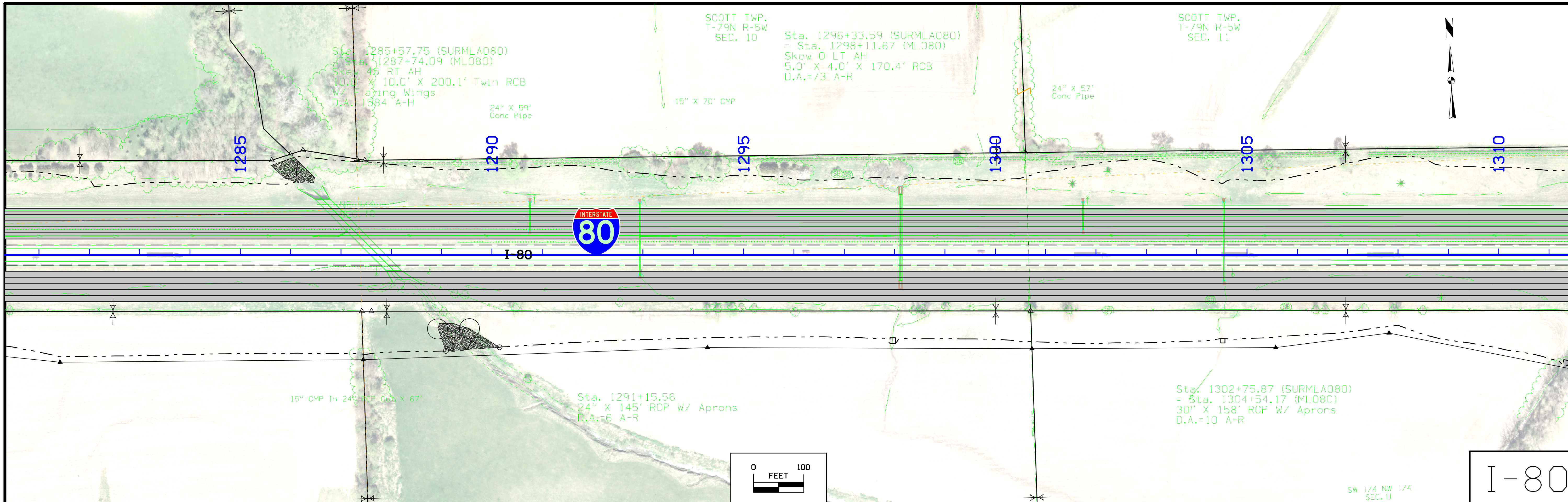

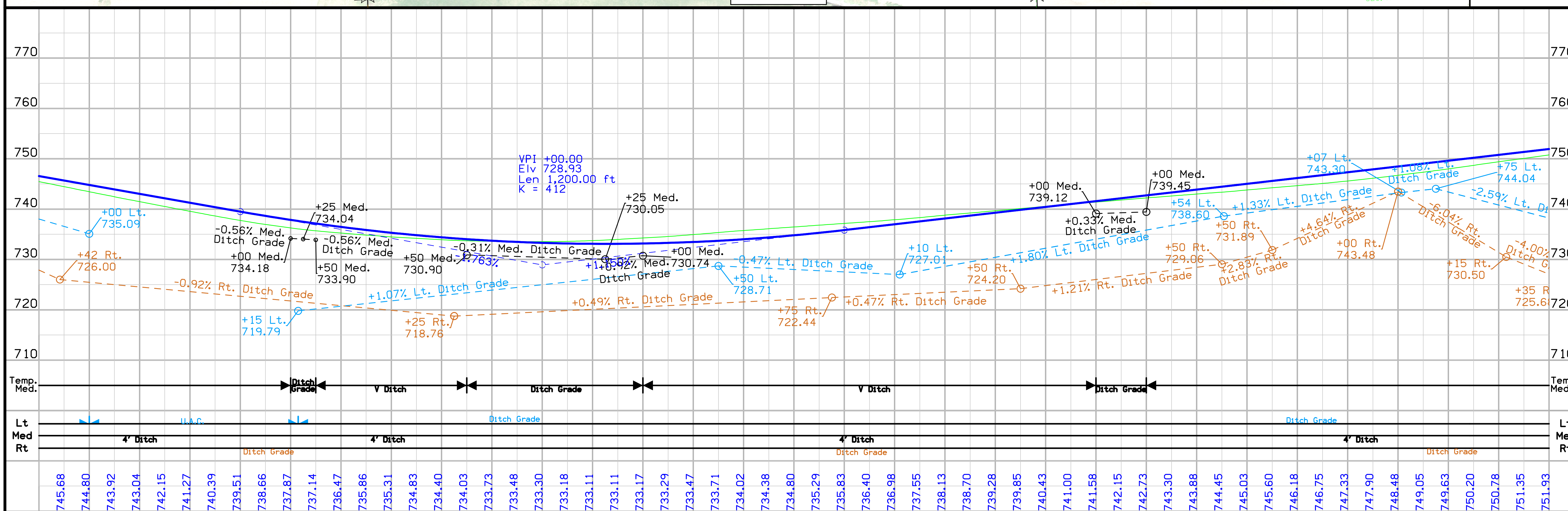

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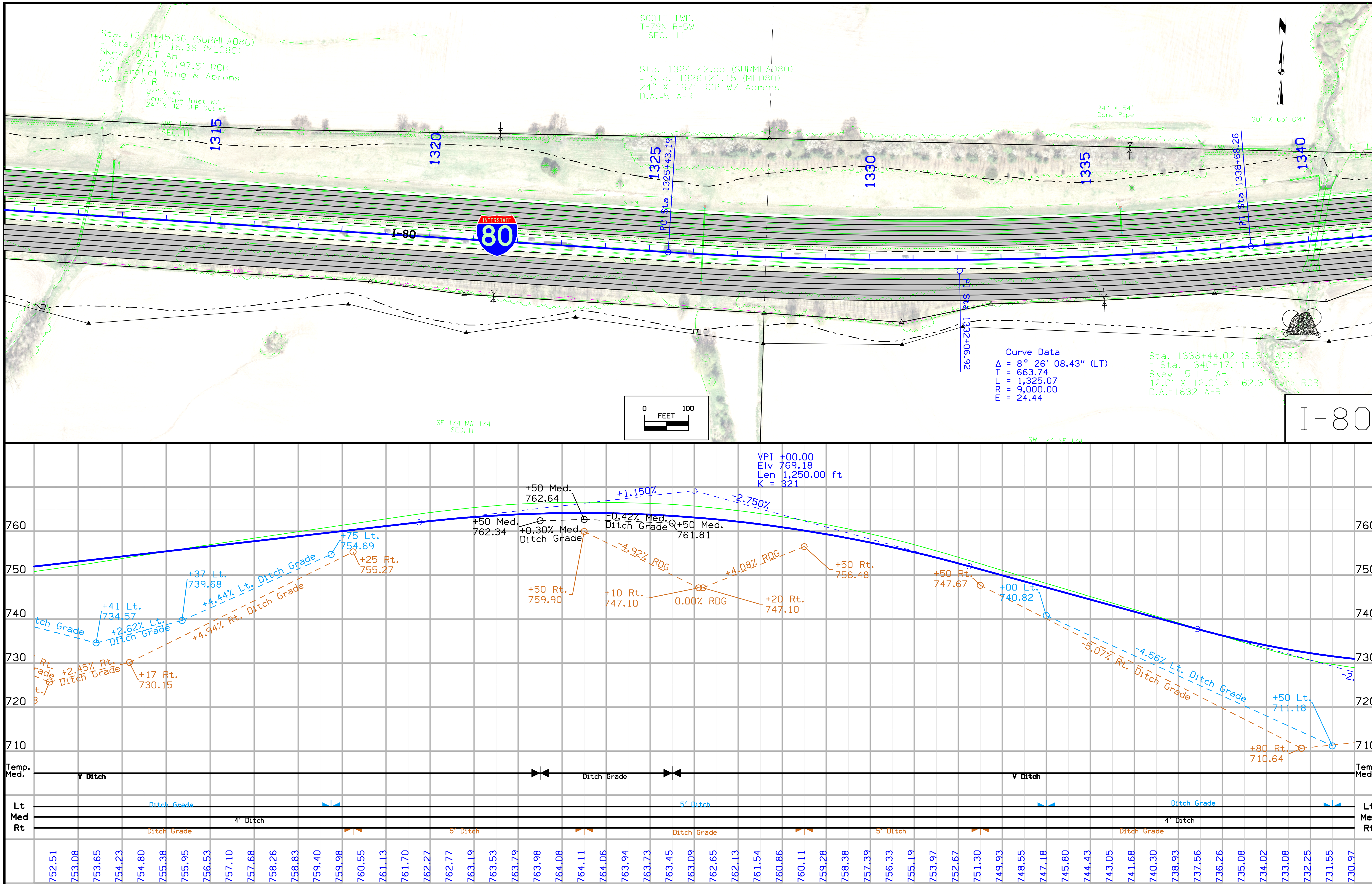

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER D.9

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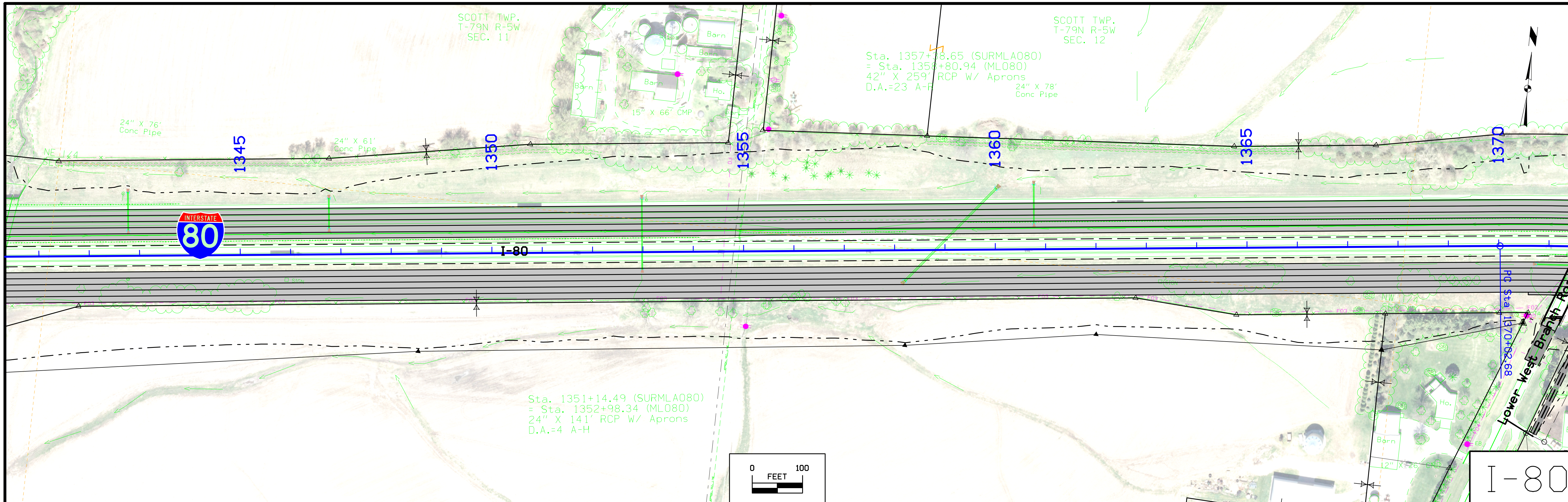

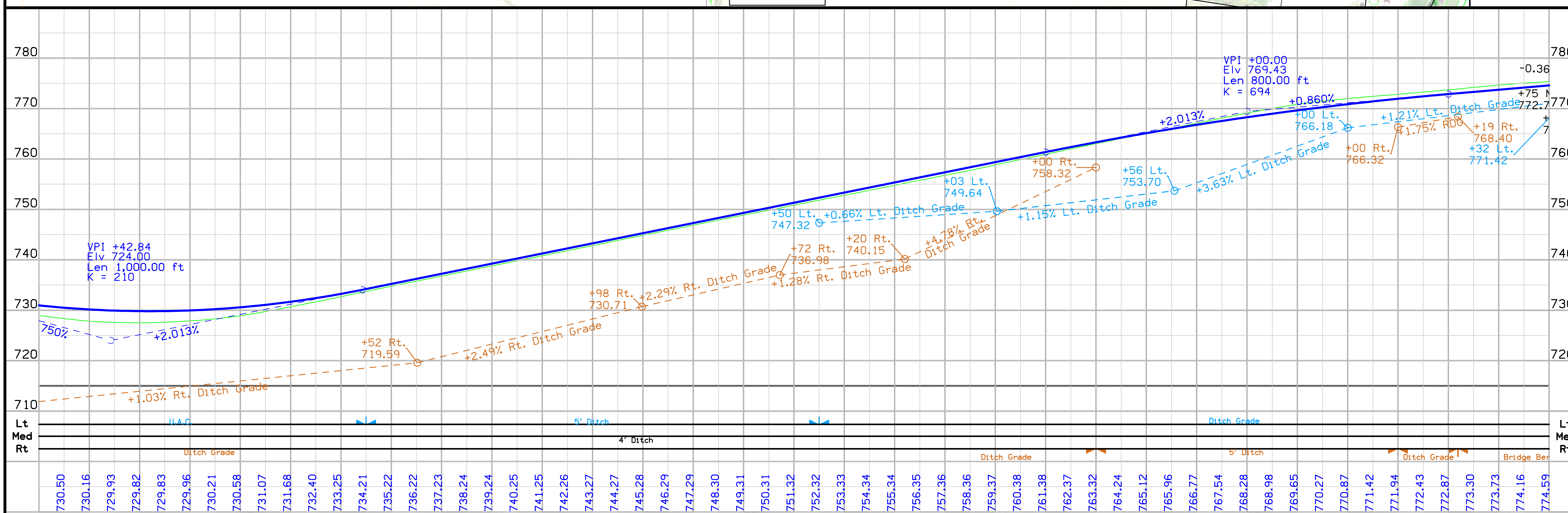

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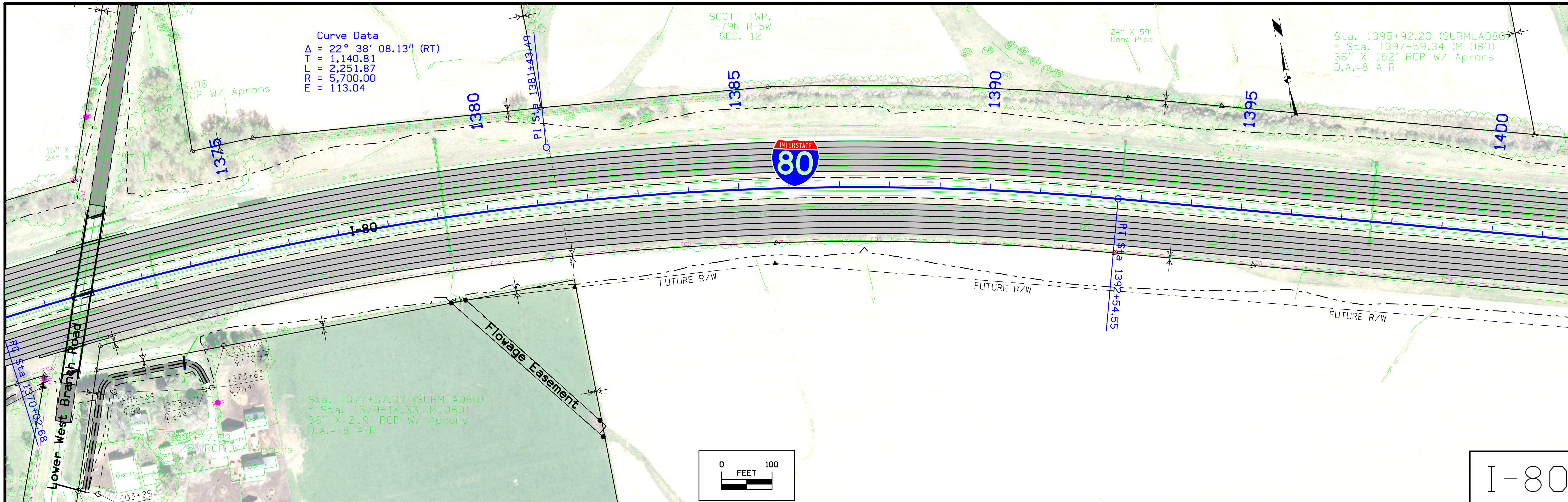

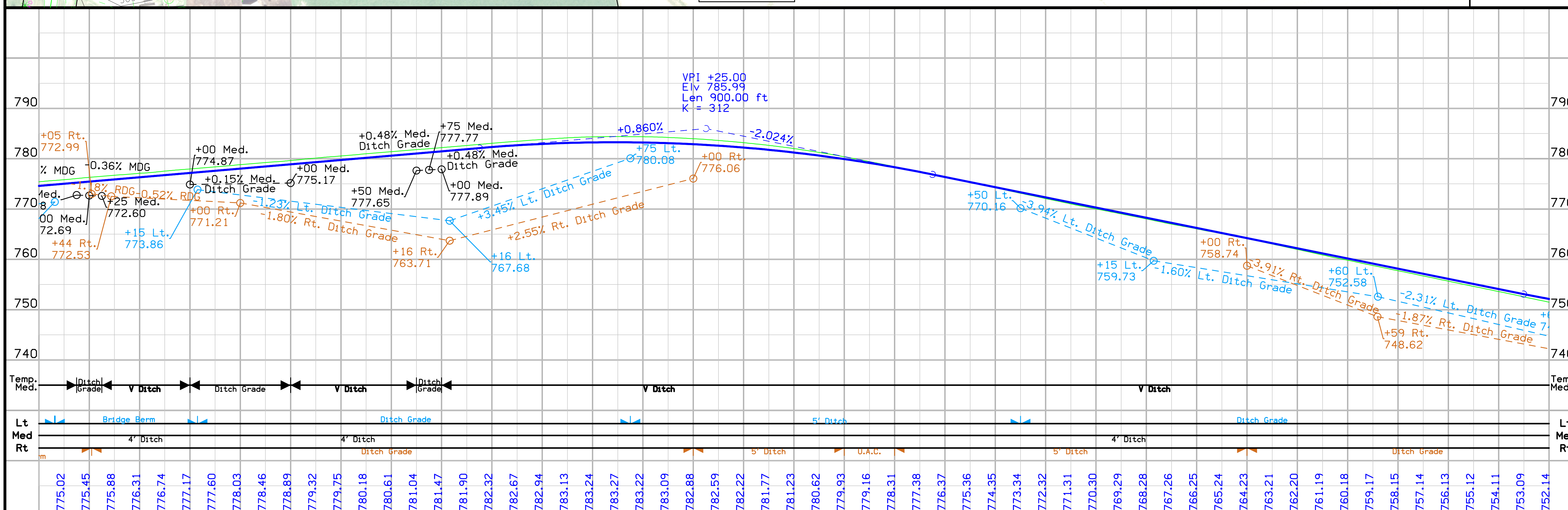

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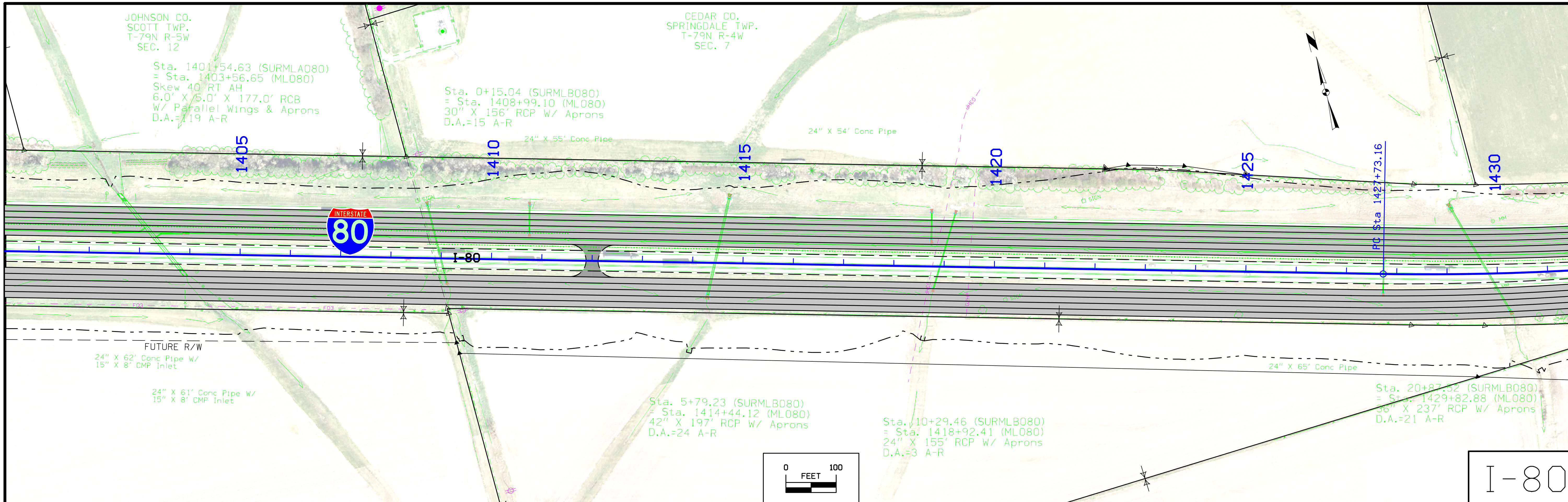

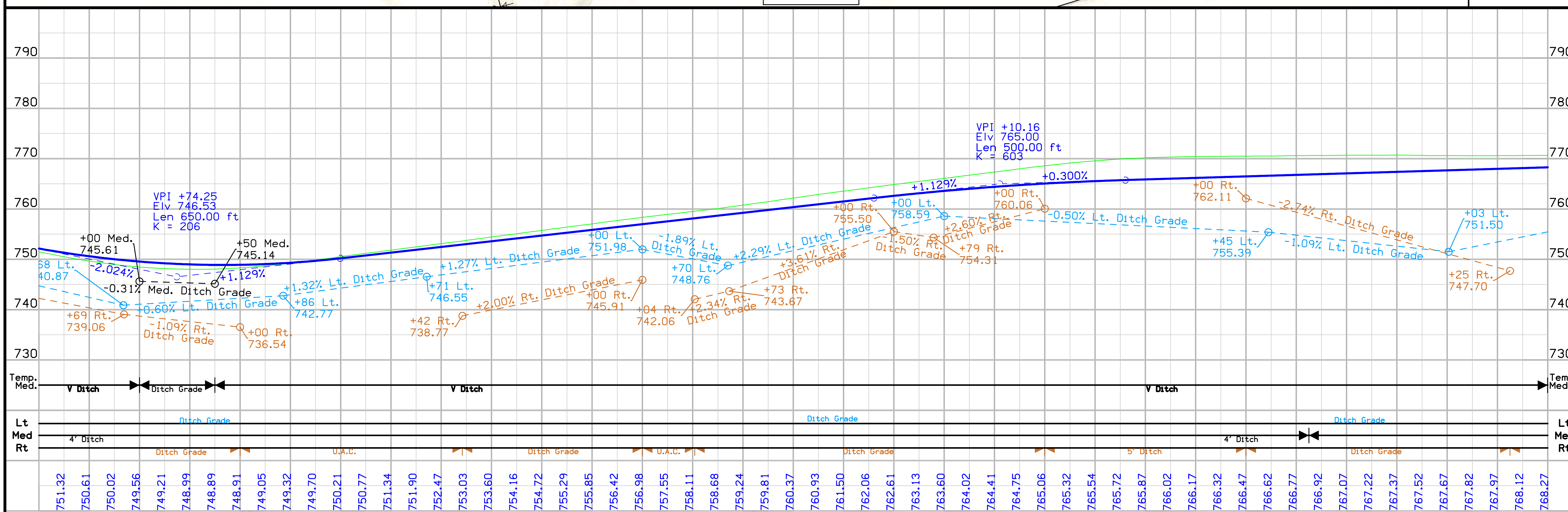

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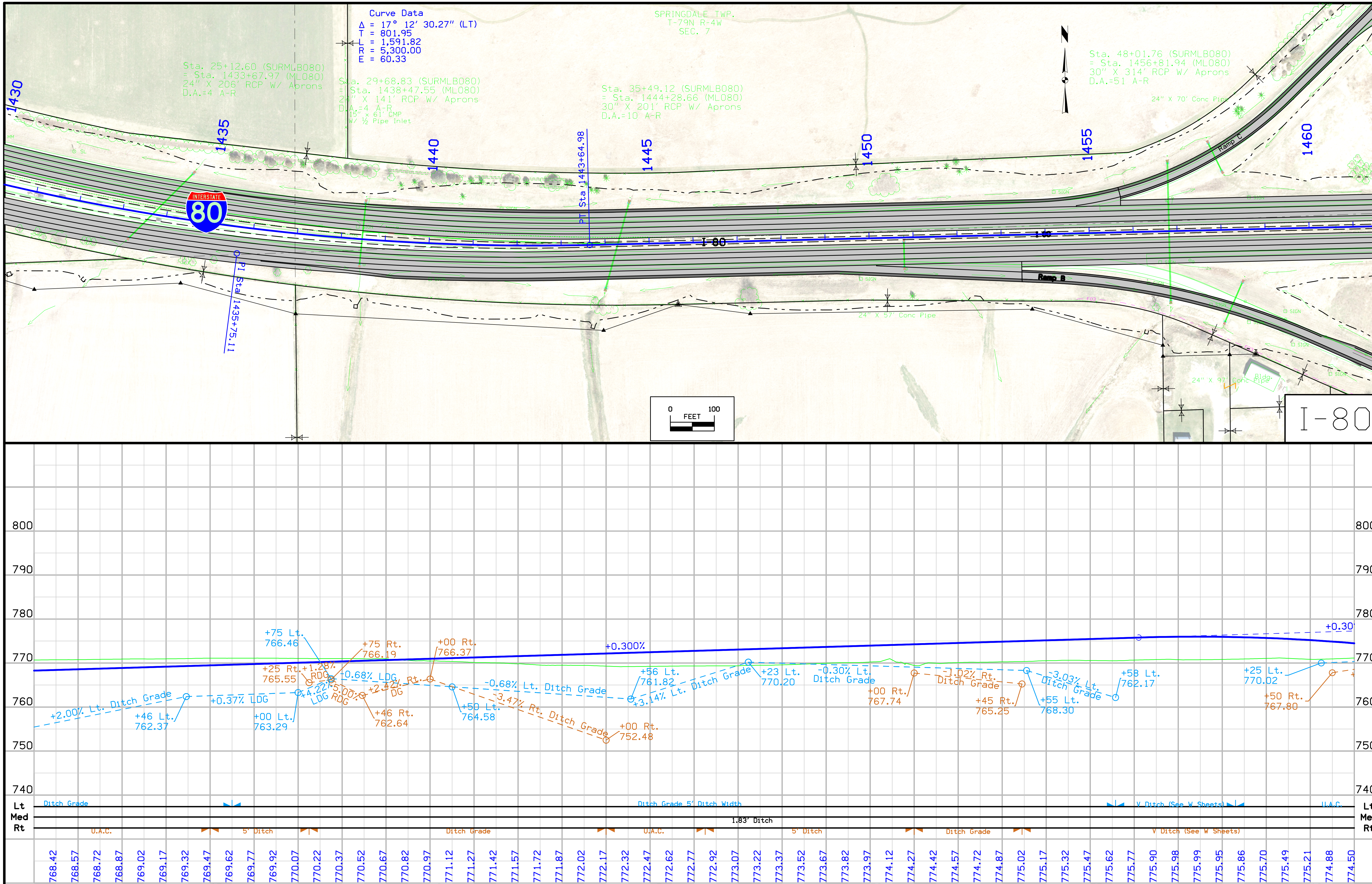

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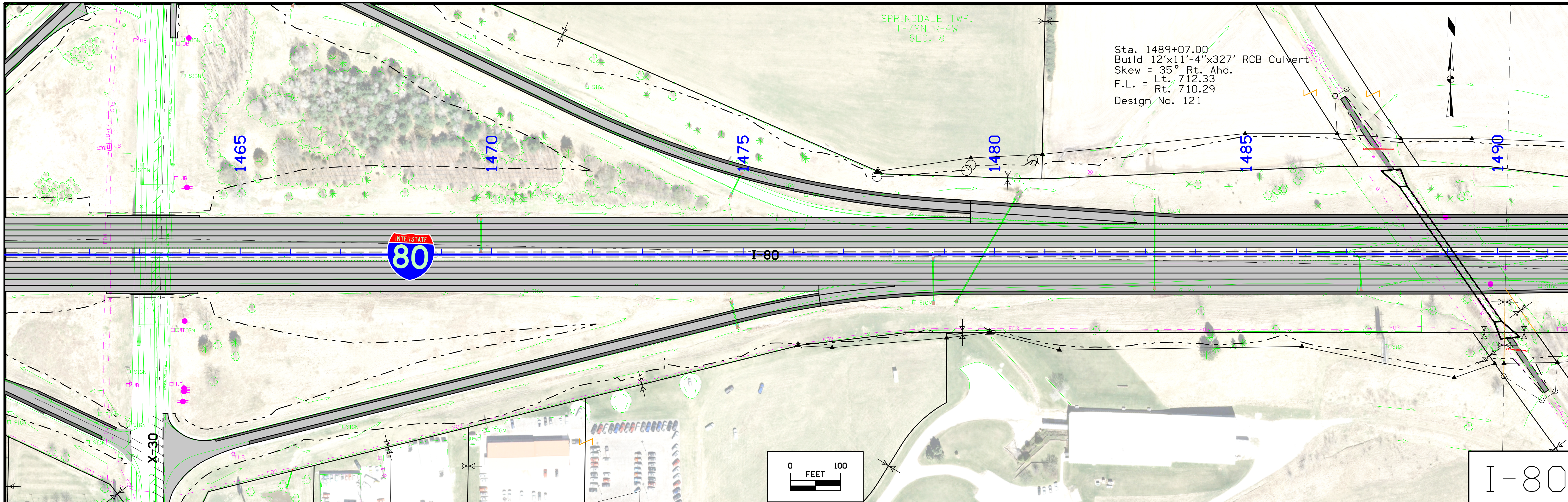

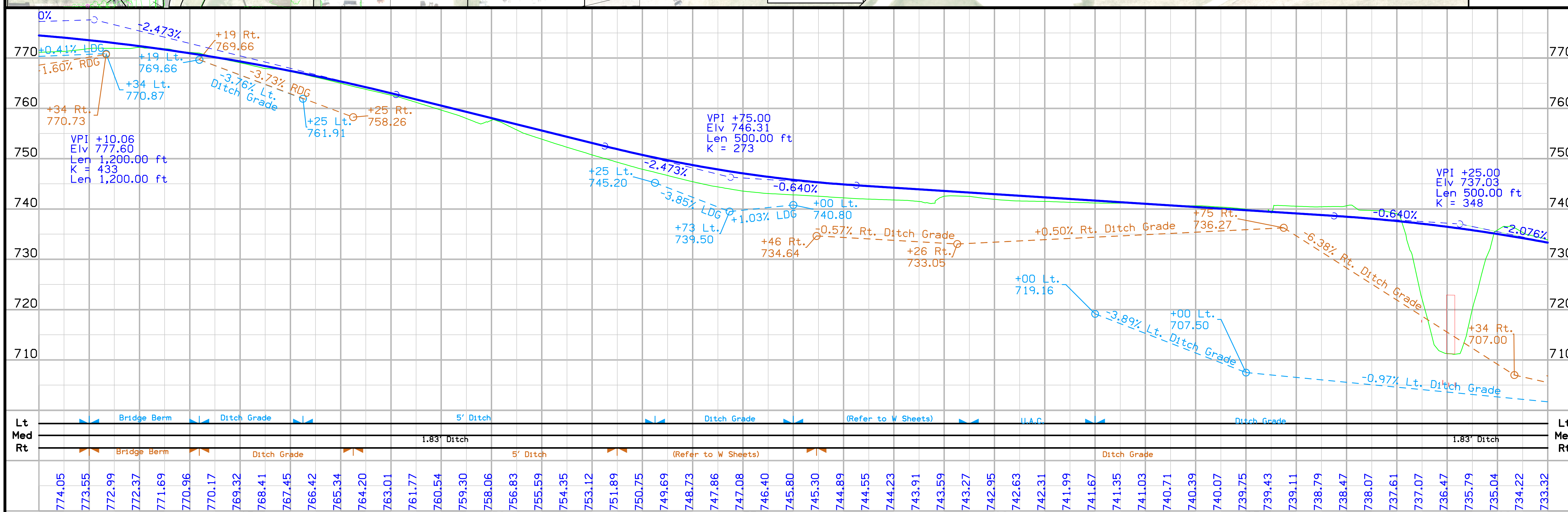

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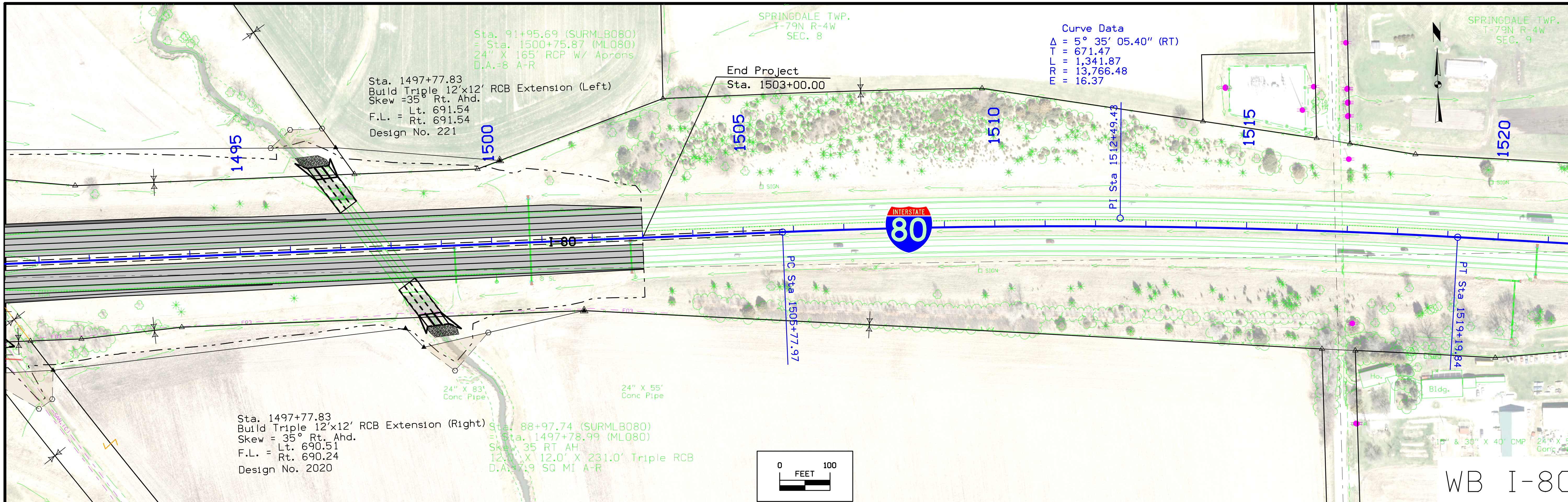

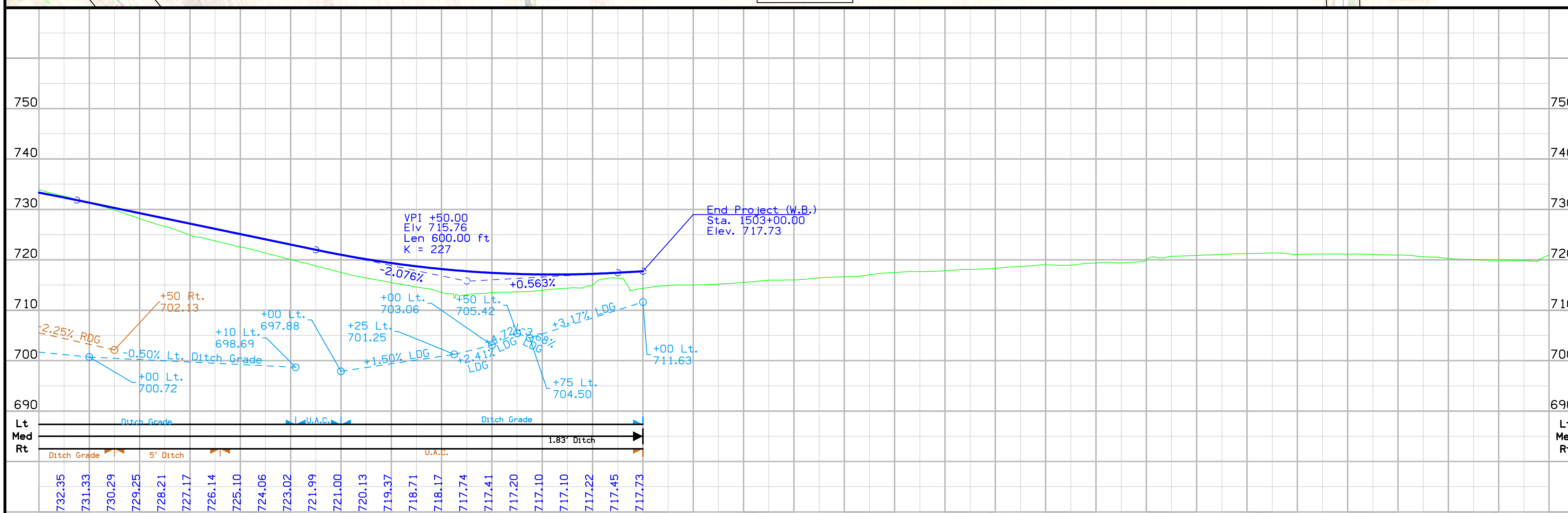

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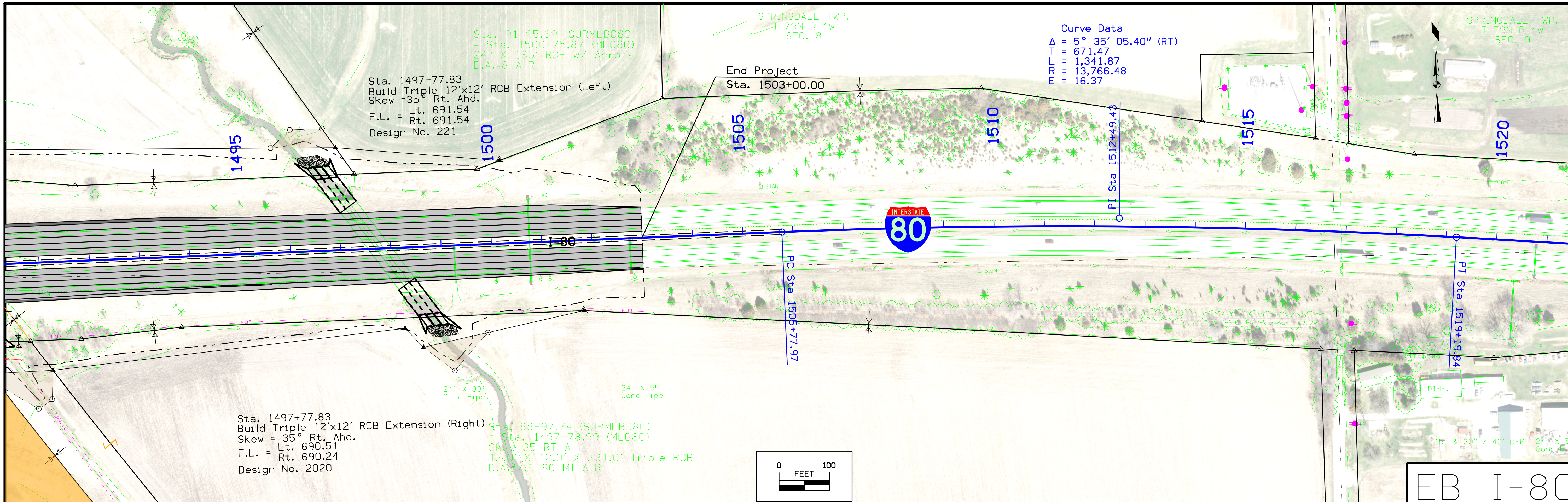

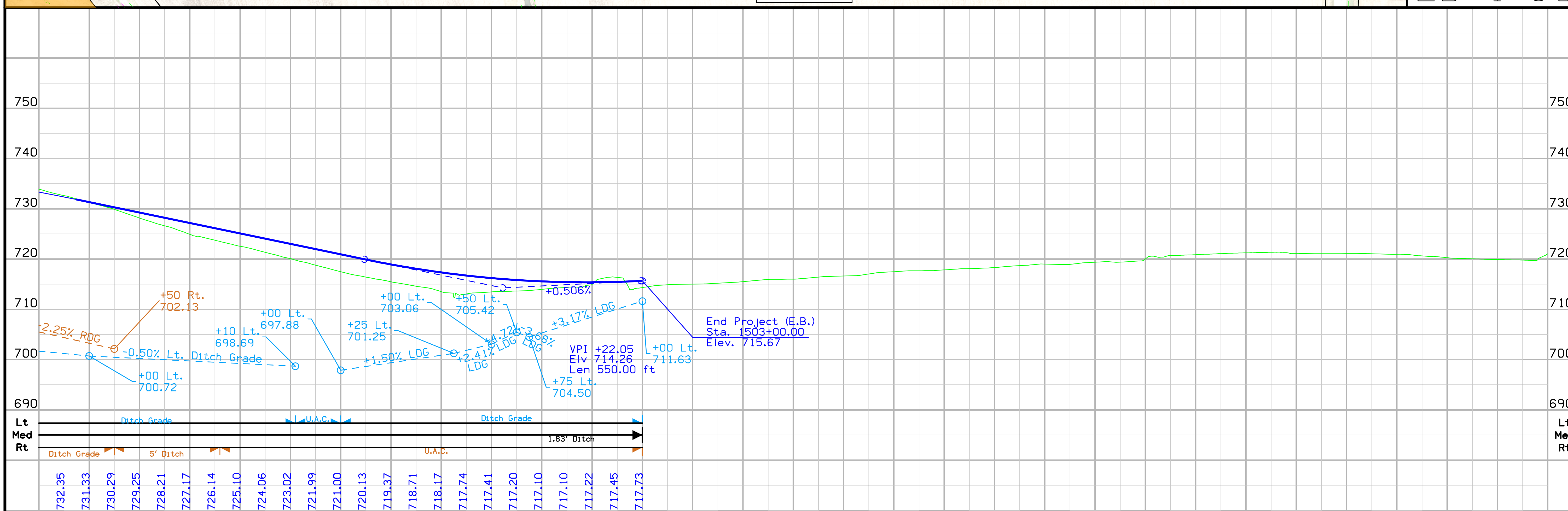

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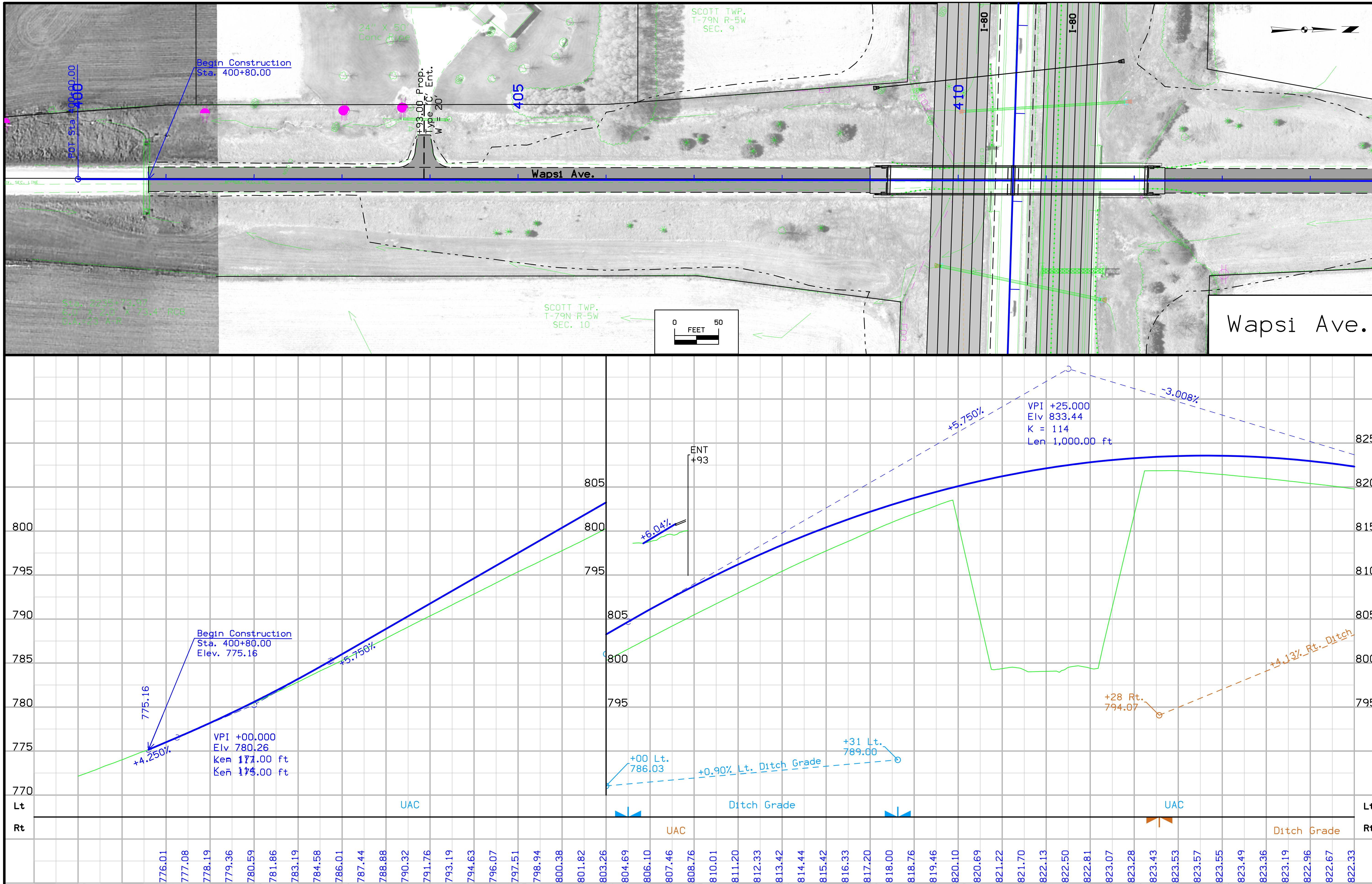
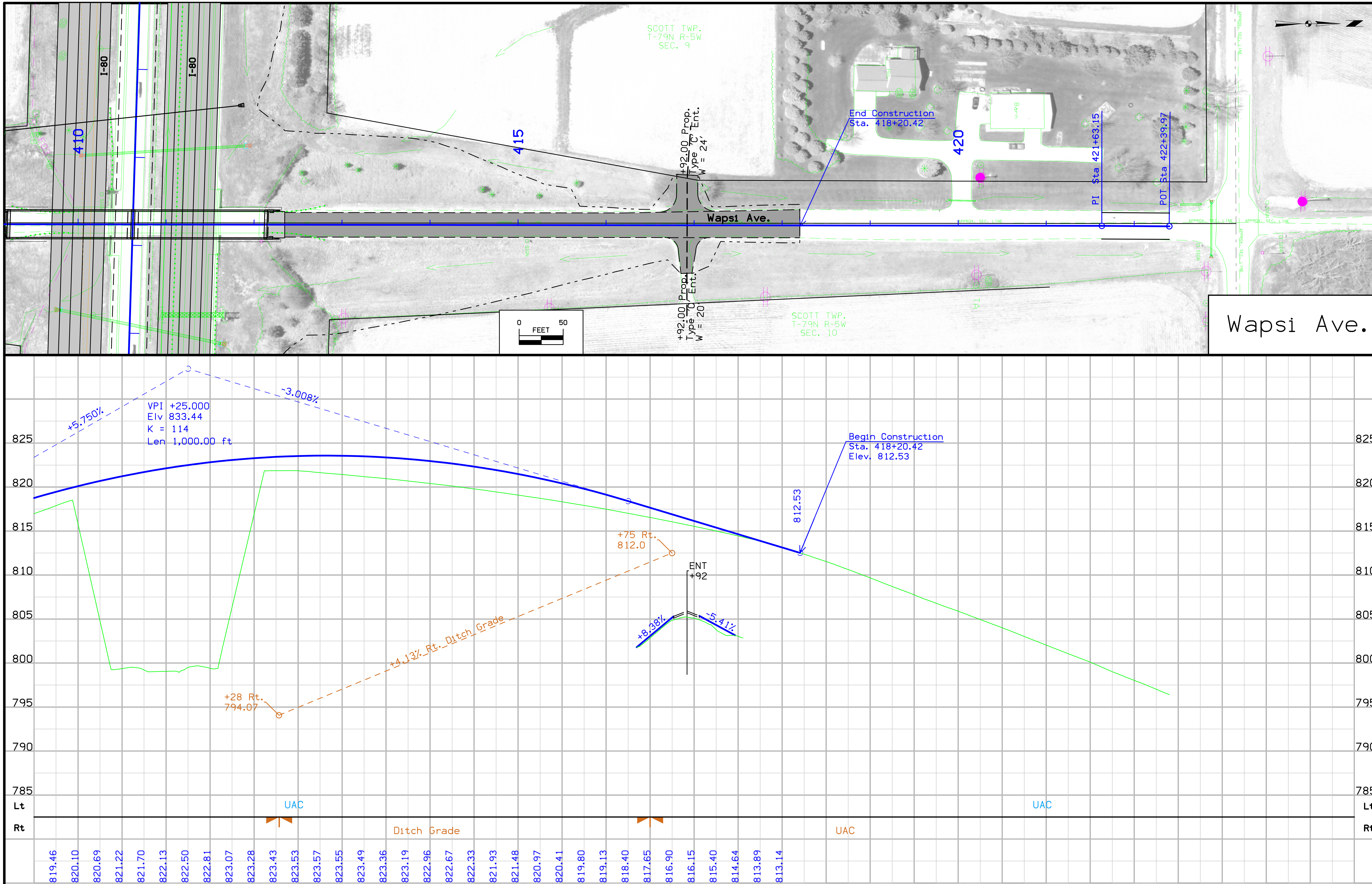


FILE NO.	ENGLISH	DESIGN TEAM **Jia \ Miller \ DeWolf**	**JOHNSON/CEDAR** COUNTY	PROJECT NUMBER **IM-NHS-080-7(114)248--03-52**	SHEET NUMBER **E.100**



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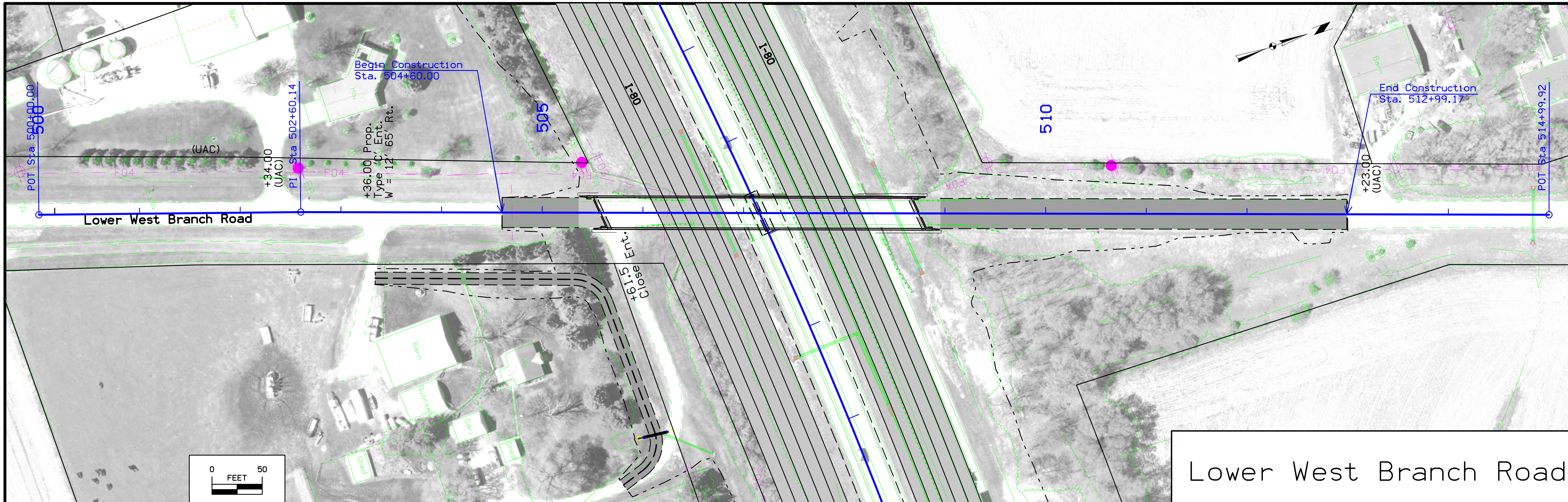

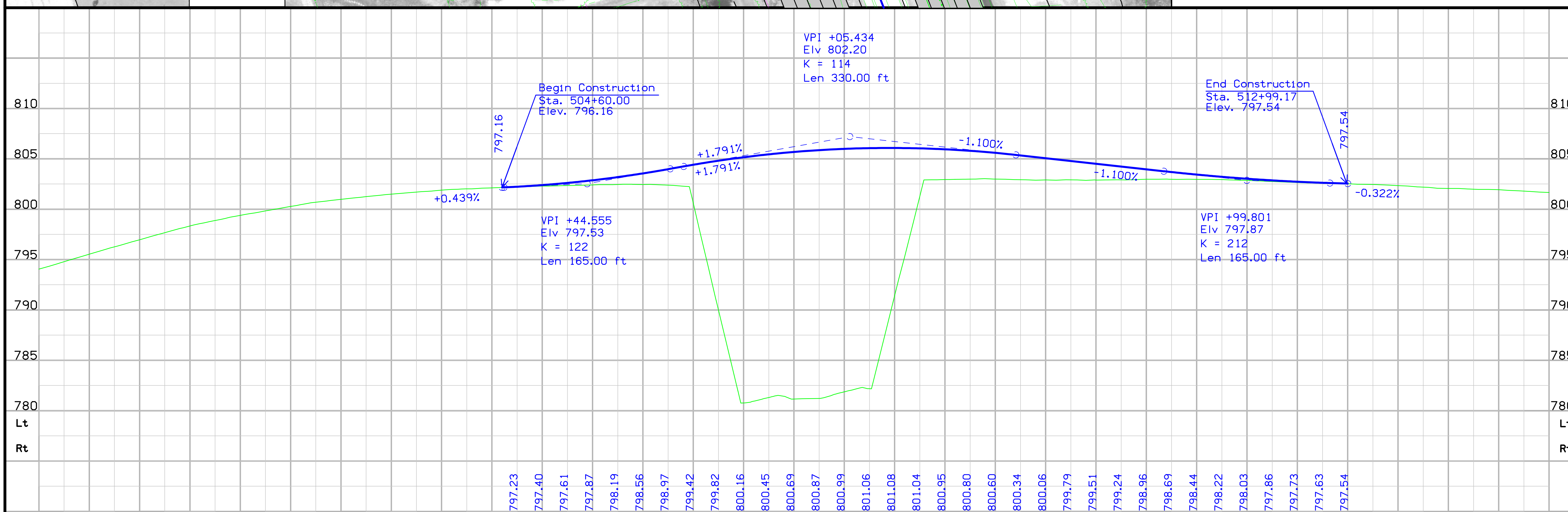

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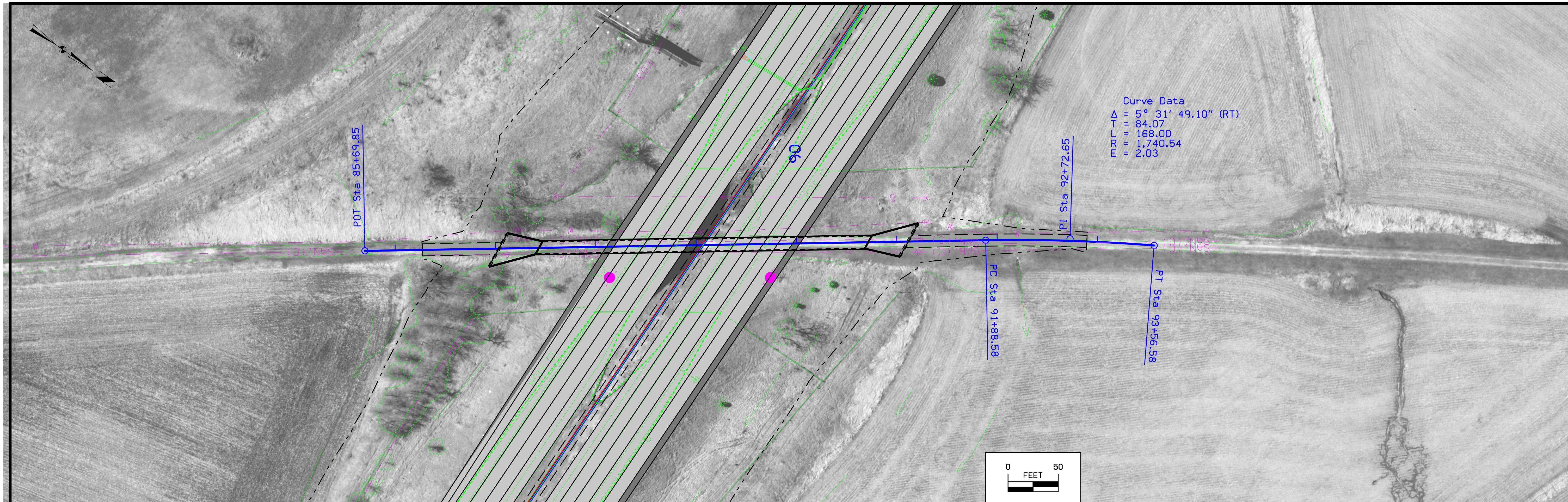

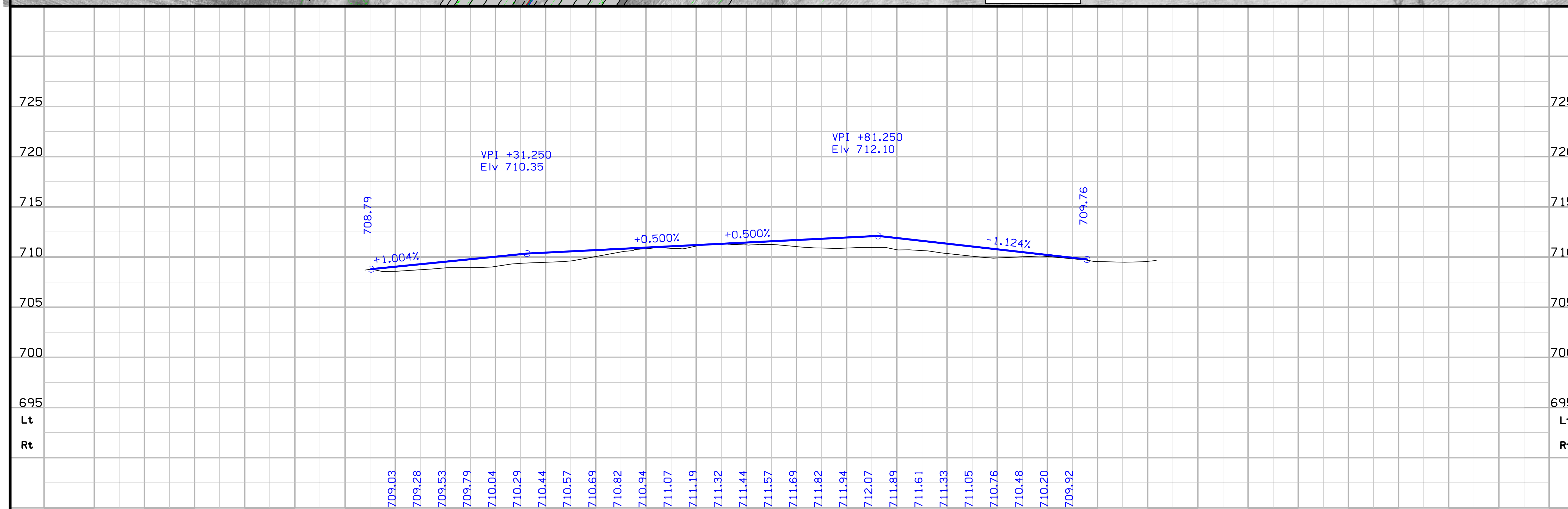

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER E.103

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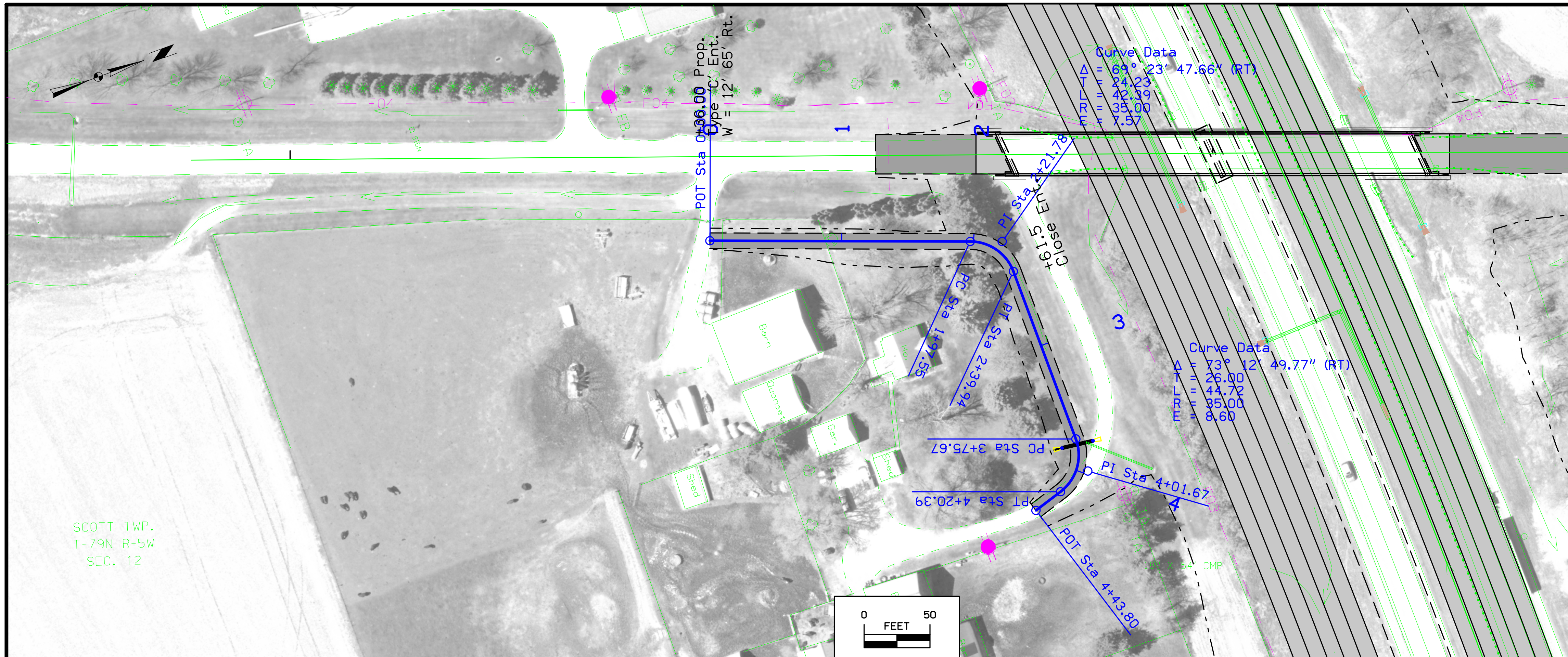
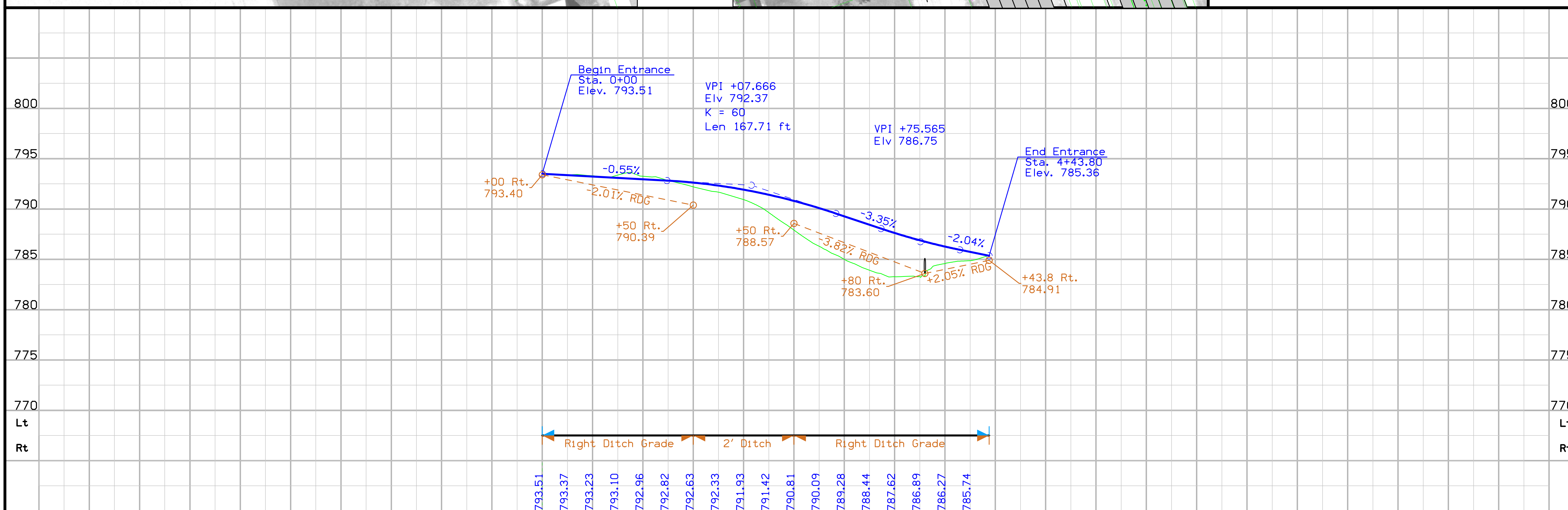


Lower West Branch Road Entrance



108-23A
08-01-08

TRAFFIC CONTROL PLAN

I-80
Two lanes of traffic shall be maintained in each direction at all times except as follows:

(1) Temporary Lane Closure:
A single lane closure will be allowed for shoulder strengthening and placing TBR during the times indicated for TEPOARARY LANE CLOSURE per Tab. 108-23B (to be developed)

(2) Temporary Road Closure:
A) Short duration closure of up to 20 minutes for setting bridge beams or other overhead work:
Short duration closures will be allowed during the times indicated for TEPOARARY ROAD CLOSURE per Tab. 108-23B.
Traffic control shall be in accordance with TC-451.
B) Extended durations over 20 minutes to remove existing bridge or setting bridge beams:
Extended duration closures will be allowed during the times indicated for TEPOARARY ROAD CLOSURE per Tab. 108-23B.
I-80 traffic shall be detoured as shown on the Detour Plan Details sheets J.2B-J.2D.

(3) Ramp Closure:
A) Ramps at Herbert Hoover and West Branch interchanges will be closed during its construction.
Traffic will be detoured to adjacent interchanges. See sheet J.2E for details.
- Herbert Hoover ramps: EB traffic uses Dodge St., WB traffic uses West Branch.
- West Branch ramps: EB traffic uses Herbert Hoover, WB traffic uses Garfield Ave.
B) Ramps at Herbert Hoover and West Branch interchanges shall not be constructed at the same time.

Herbert Hoover Highway (year 1 and 2)
At least one lane of traffic shall be maintained in each direction at all times.

Wapsi Ave. and Lower West Branch Road (year 3 to first half of year 4. Total closure time no more than 2 years)
Traffic will be closed during construction. Traffic will be detoured to adjacent interchanges. See sheet J.2 for detour route.

X30
Traffic shall be maintained during construction.

108-26A
08-01-08

STAGING NOTES

Year 1
West Section
Traffic:
- All Traffic will remain on existing WB/EB lanes
- Temporary nighttime lane closures for EB shoulder strengthening

Construction:
- Construct EB outside shoulder strengthening
- Construct median intakes and jack median outlet pipes
- Construct closed median pavement (omit barrier and gap bridge at Herbert Hoover Highway)
- Begin construction of new Herbert Hoover Bridge, sideroad, and roundabouts

Middle Section
Traffic:
- All Traffic will remain on existing WB/EB lanes

Construction:
- Grade new EB lanes, gap bridges at Wapsi Ave. and Lower West Branch

East Section
Traffic:
- All Traffic will remain on existing WB/EB lanes
- Temporary nighttime lane closures for WB temporary pavement (both outside and median side)

Construction:
- Construct WB temporary pavement and median intake wells

Year 2
West Section
Traffic:
- All Traffic will remain on existing WB/EB lanes and EB shoulder strengthening or stay in median pavement
- In the Herbert Hoover bridge area, shift EB traffic to WB lanes and temporary pavement

Construction:
- Construct EB lanes and outside shoulder
- Finish construction of new Herbert Hoover Bridge, sideroad, and roundabouts
- Remove existing Herbert Hoover Bridge
- In the Herbert Hoover bridge area:

(1) construct WB temporary pavement
(2) construct median, median intakes/pipes, and EB pavement

Middle Section
Traffic:
- All Traffic will remain on existing WB/EB lanes

Construction:
- Pave new EB lanes and outside shoulder, gap bridges at Wapsi Ave. and Lower West Branch

East Section
Traffic:
- All Traffic stay on WB lanes and temporary pavement

Construction:
- Construct EB lanes and shoulders

Year 3
West Section
Traffic:
- EB traffic on new EB lanes. WB traffic on new median

Construction:
- Construct WB lanes and outside shoulder

Middle Section
Traffic:
- All Traffic will remain on existing WB/EB lanes

Construction:
- Remove bridges at Wapsi Ave. and Lower West Branch
- Grade and pave the gapped areas at Wapsi Ave. and Lower West Branch
- Pave new WB lanes and outside shoulder
- Construct overhead bridge piers, abutments, not piers

East Section
Traffic:
- All Traffic stay on new EB lanes

Construction:
- Construct WB lanes and shoulders

Year 4
West Section
Traffic:
- Traffic on new WB/EB lanes respectively

Construction:
- None

Middle Section
Traffic:
- Traffic on new WB/EB lanes respectively

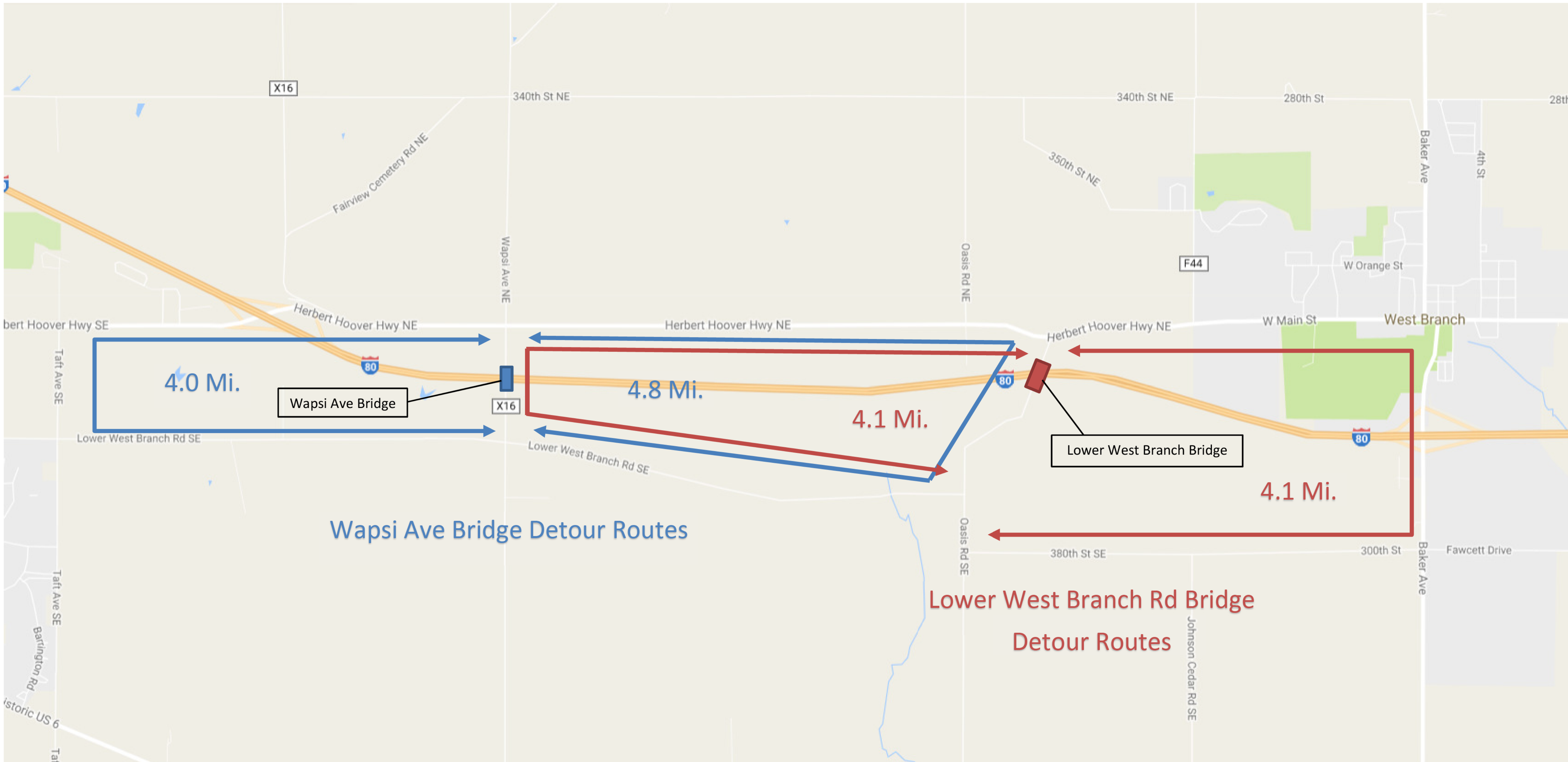
Construction:
- Finish bridge construction at Wapsi Ave. and Lower West Branch
- Remove existing EB lanes
- Pave 12' median shoulder for both direction
- Grade median

East Section
Traffic:
- Traffic on new WB/EB lanes respectively

Construction:
- Grade median and finish intake construction

Note:
Need to add crossovers, temporary pavements, and ramp construction later

Detour routes for Wapsi Avenue (X16) Bridge over Interstate 80 and Lower West Branch Road Bridge over Interstate 80



FILE NO. | ENGLISH | DESIGN TEAM Jia \ Miller \ Bartholomew | JOHNSON COUNTY | PROJECT NUMBER IM-NHS-080-7(114)248--03-52 | SHEET NUMBER J.2

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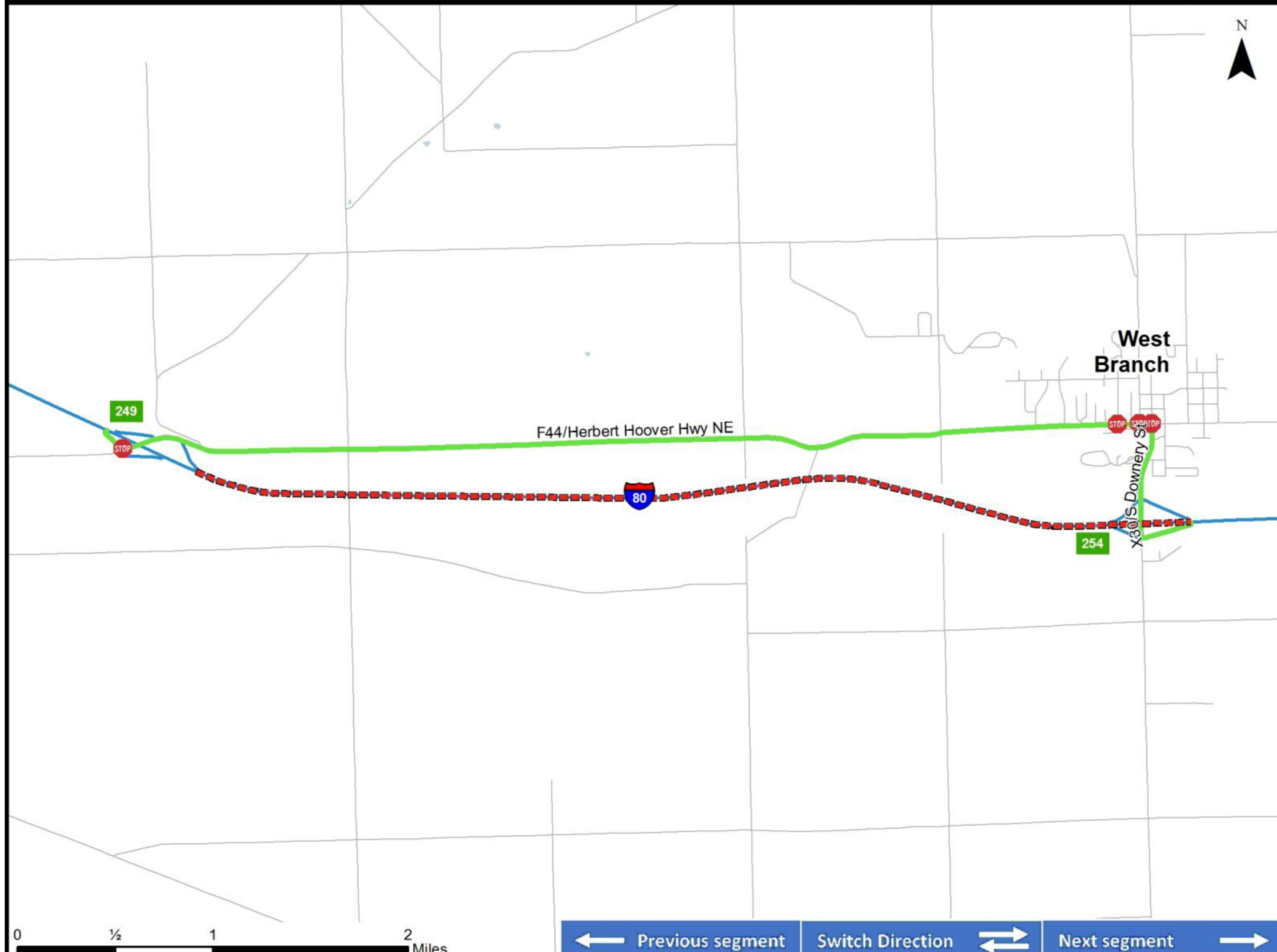
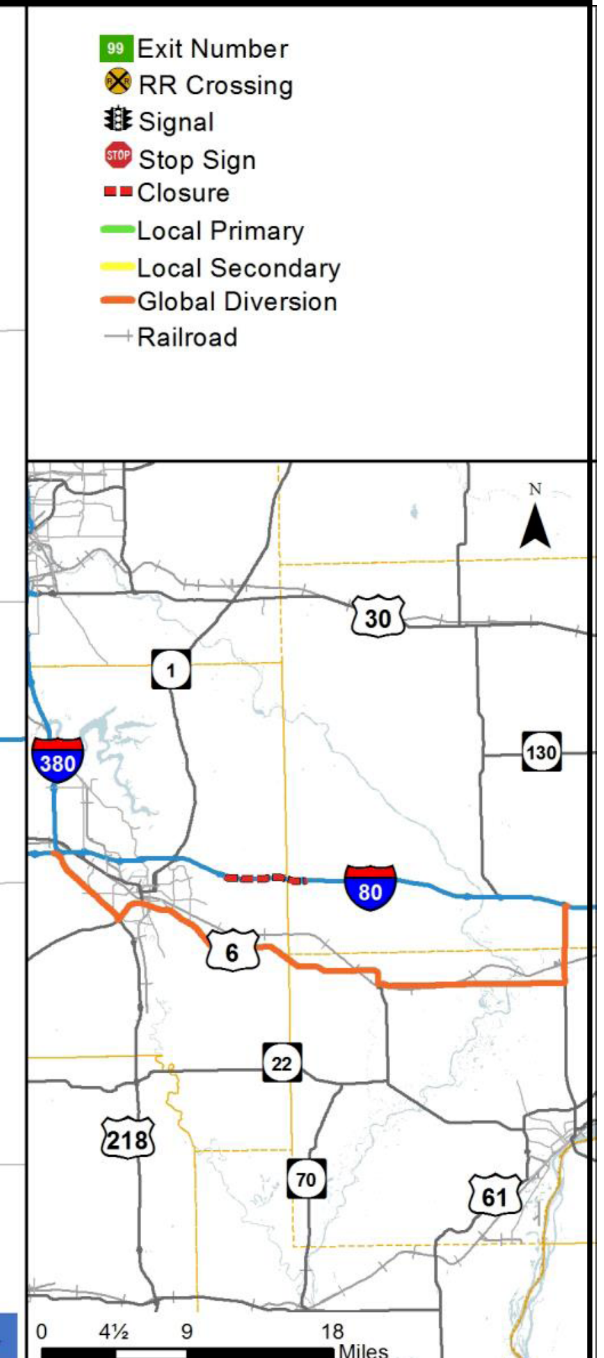
FREEWAY DIVERSION	Davenport	I-80 Eastbound	From: Exit 249 (F44)	To: Exit 254 (X30)	Plan 5001 1/7

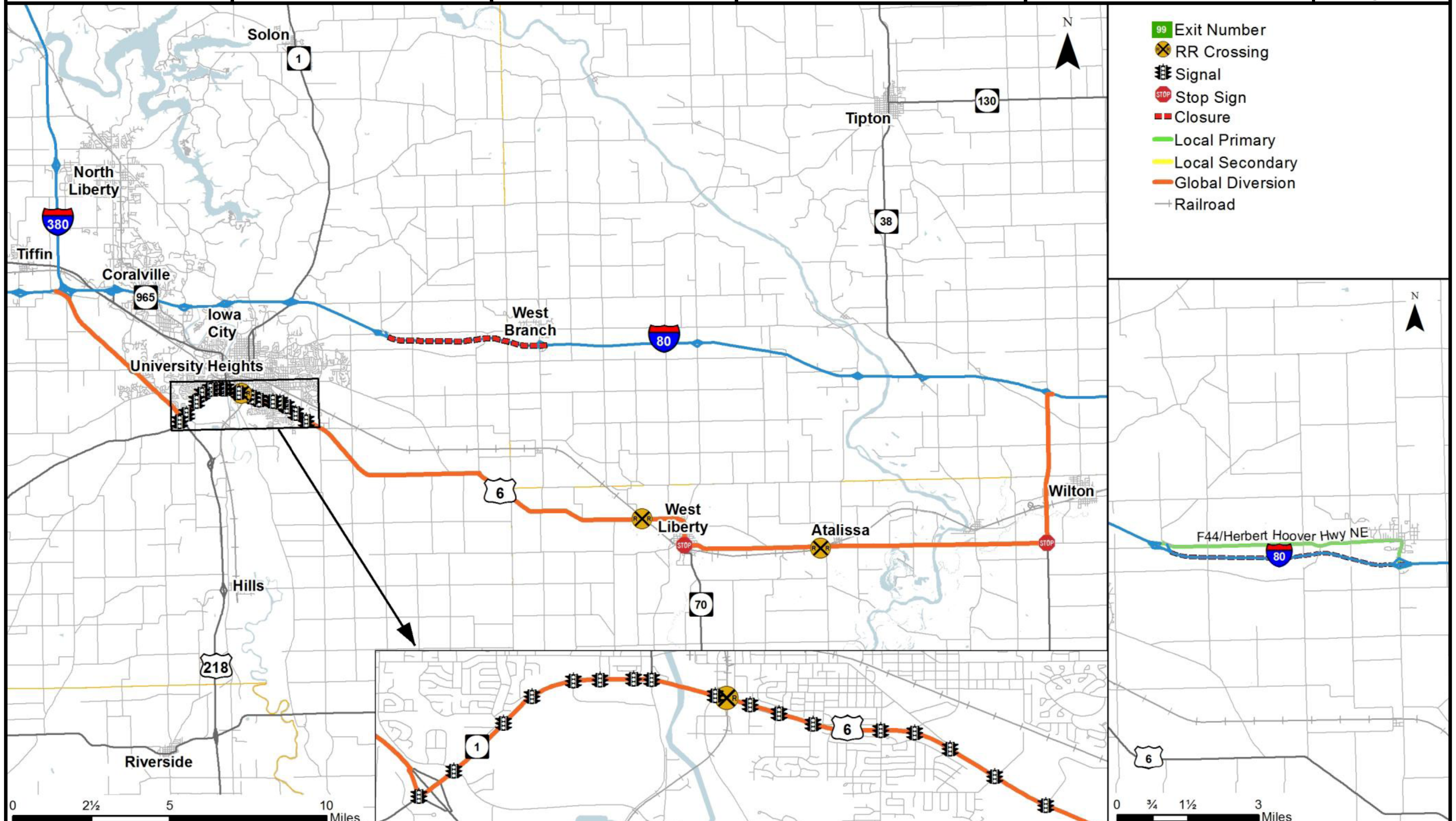




Critical Locations to Monitor	Affected Stakeholders (Also see Global Diversion)		
I-80 EB Off Ramp at F44	Iowa State Patrol	Iowa DOT TMC	Iowa City PD/FD
F44 EB between Oliphant St & X30	Cedar Co. 911	Iowa DOT Maintenance	West Branch FD
F44 EB to X30 SB	Cedar Co. Sheriff		West Liberty PD/FD
X30 SB to I-80 EB	Cedar Co. EMA		Wilton PD/FD
	Cedar Co. Secondary Road		

3/21/2016

FREEWAY DIVERSION	Davenport	I-80 Eastbound	From: Exit 249 (F44)	To: Exit 254 (X30)	Plan 5001 2/7



Critical Locations to Monitor

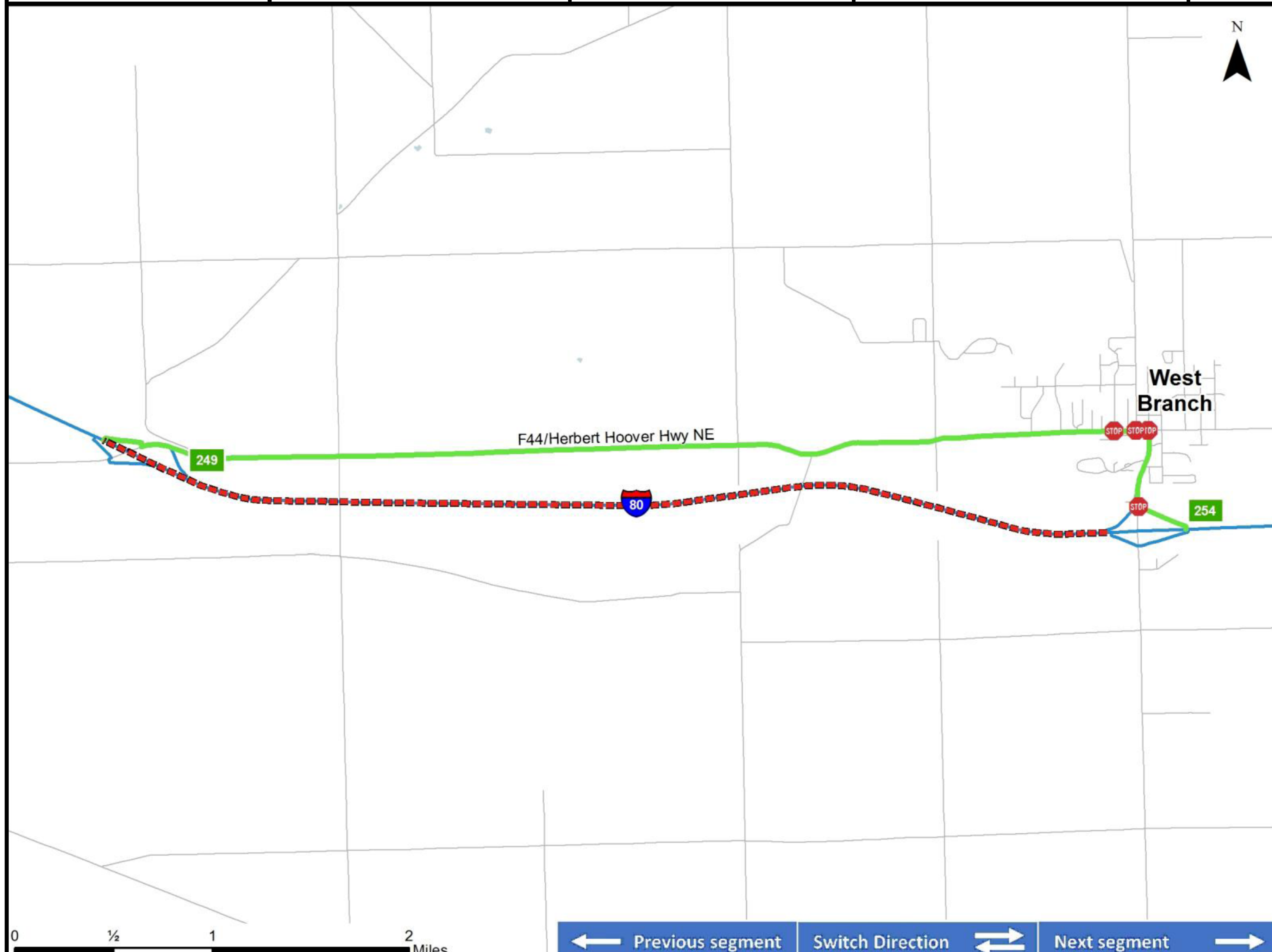
- US 218 to IA 1 Off Ramp
- IA 1 & US 6 between US 218 & Heinz Rd
- US 6 EB at CIC Railway Crossing (Iowa City)
- US 6 EB at IAIS RR Crossing (West Liberty)
- US 6 EB at IA 70
- US 6 EB at IAIS RR Crossing (Atalissa)
- US 6 EB to US 6/IA 38 NB

Affected Stakeholders (Also see Local Diversion)

- Muscatine Co. (MUSCOM)
- Muscatine Co. Sheriff
- Muscatine Co. EMA
- Muscatine Co. Maintenance
- Johnson Co. Sheriff
- Johnson Co. EMA
- Johnson Co. Maintenance
- Iowa City Public Works
- CIC Railway Co.
- IAIS RR Ltd.

3/21/2016

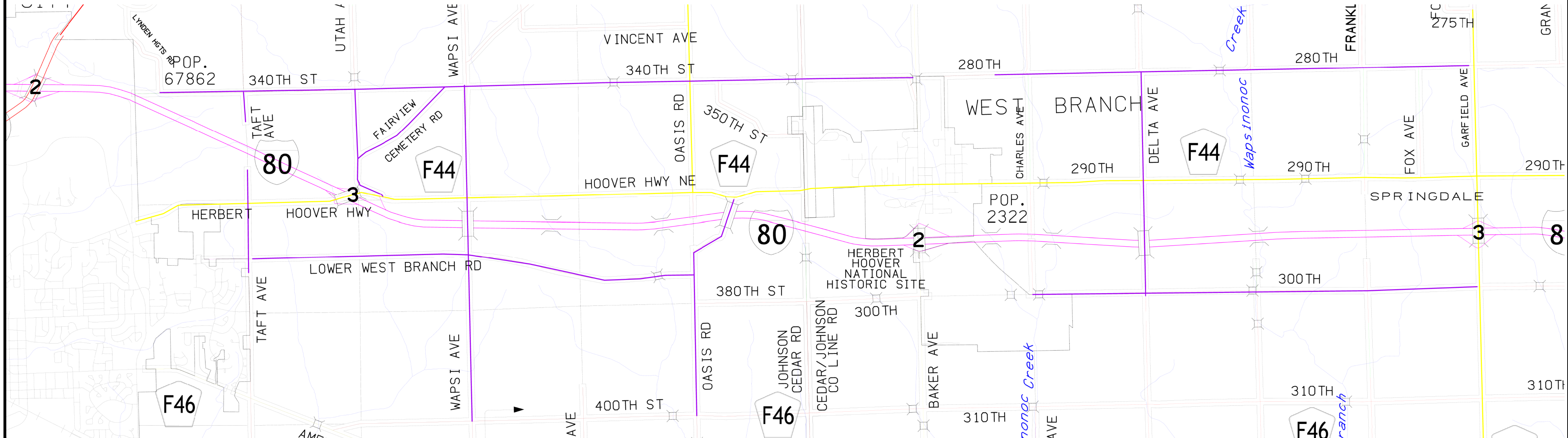
FREEWAY DIVERSION	Davenport	I-80 Westbound	From: Exit 254 (X30)	To: Exit 249 (F44)	Plan 5002 1/7



- Exit Number
- RR Crossing
- Signal
- Stop Sign
- Closure
- Local Primary
- Local Secondary
- Global Diversion
- Railroad

Critical Locations to Monitor	Affected Stakeholders (Also see Global Diversion)		
I-80 WB Off Ramp to X30	Iowa State Patrol	Iowa DOT TMC	Iowa City PD/FD
X30 NB TO F44 WB	Cedar Co. 911	Iowa DOT Maintenance	West Branch FD
F44 WB between X30 & Oliphant St	Cedar Co. Sheriff		West Liberty PD/FD
	Cedar Co. EMA		Wilton PD/FD
	Cedar Co. Secondary Road		

3/21/2016



1. Ramps at Herbert Hoover and West Branch interchanges shall not be constructed at the same time.

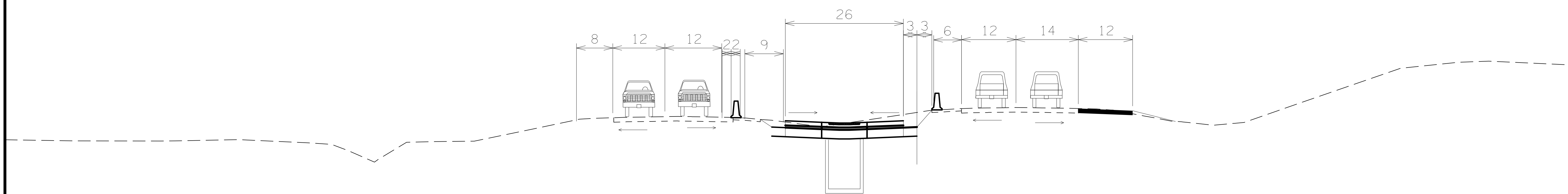
2. During Construction of ramps of Herbert Hoover: EB traffic use Dodge St., WB traffic use West Branch.

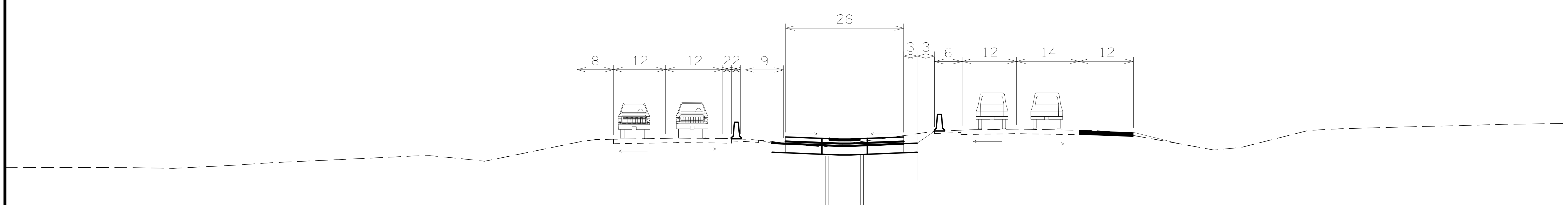
3. During Construction of ramps of West Branch: EB traffic use Herbert Hoover, WB traffic use Garfield.

Ramp Construction Detour Sheet

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ Bartholomew	JOHNSON COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.02E

West End Staging (Closed Med.)

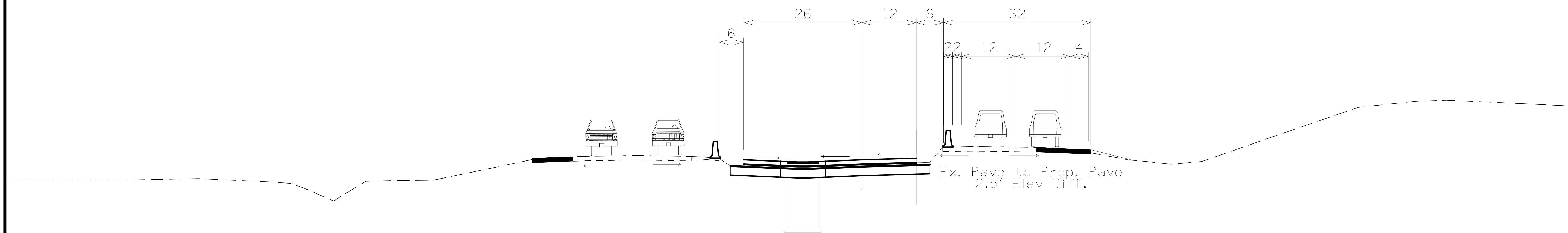


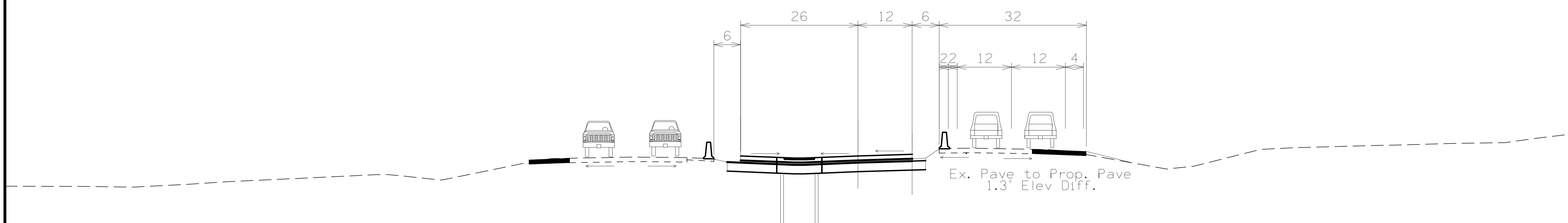


Stage 1
(Year 1)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.3

West End Staging (Closed Med.)



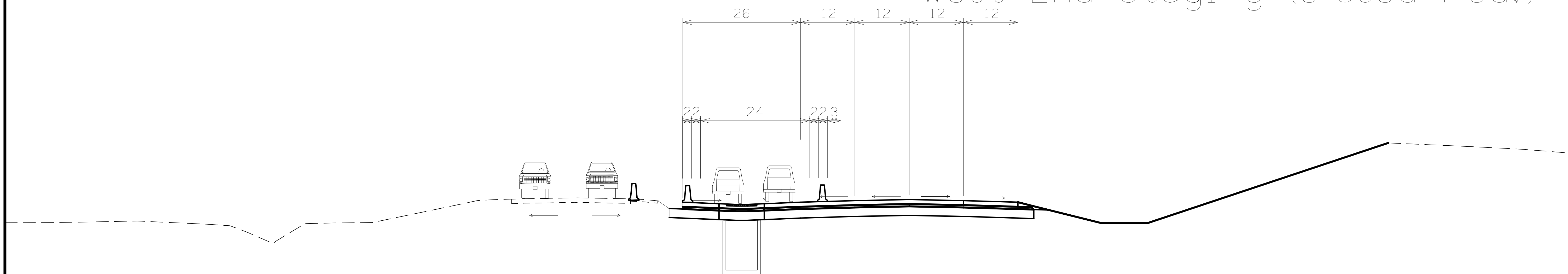


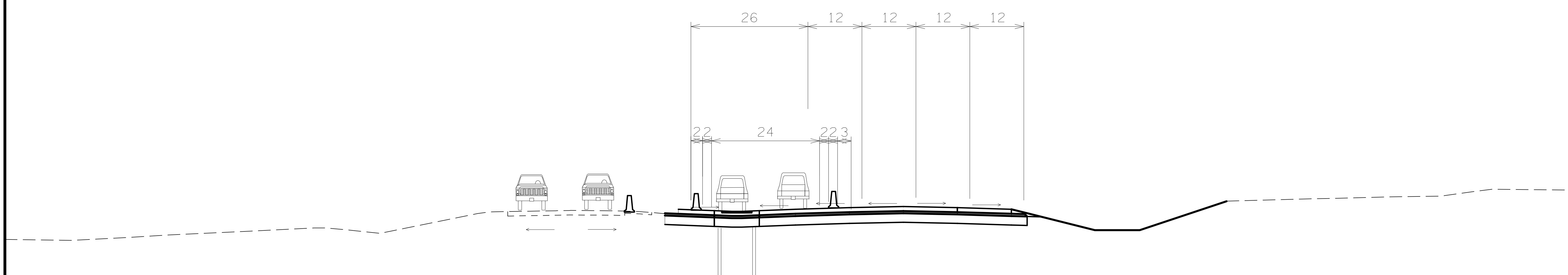
Stage 2a
(Year 2)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf		JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.4	

7:01:02 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_West_Staging XS.dgn

West End Staging (Closed Med.)

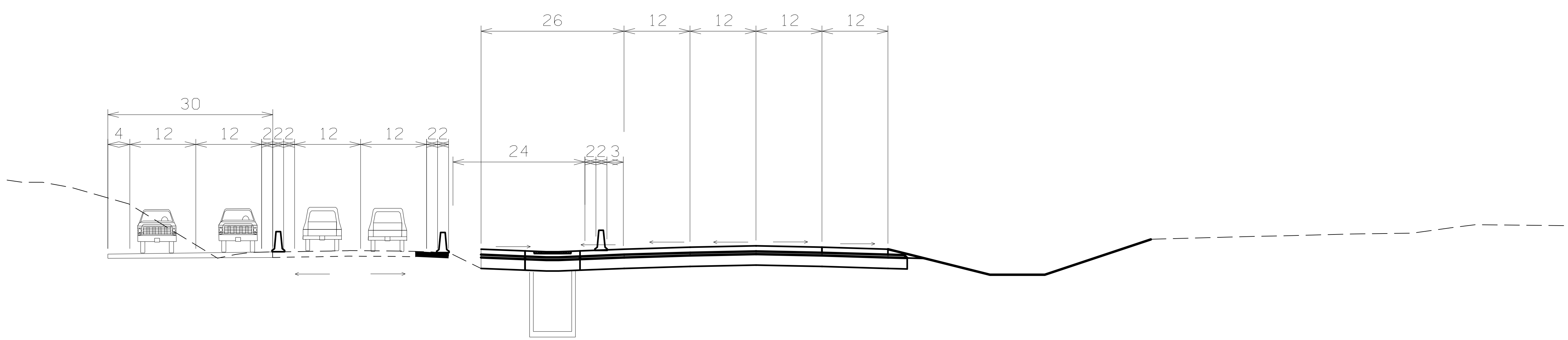




Stage 2b
(Year 2)

West End Staging (Closed Med.)

Herbert Hoover Bridge Staging:
Gap Bridge Median Work until new bridge is in place
Shift EB Traffic to Temporary Lanes on WB
Shift can only take place once old bridge is removed

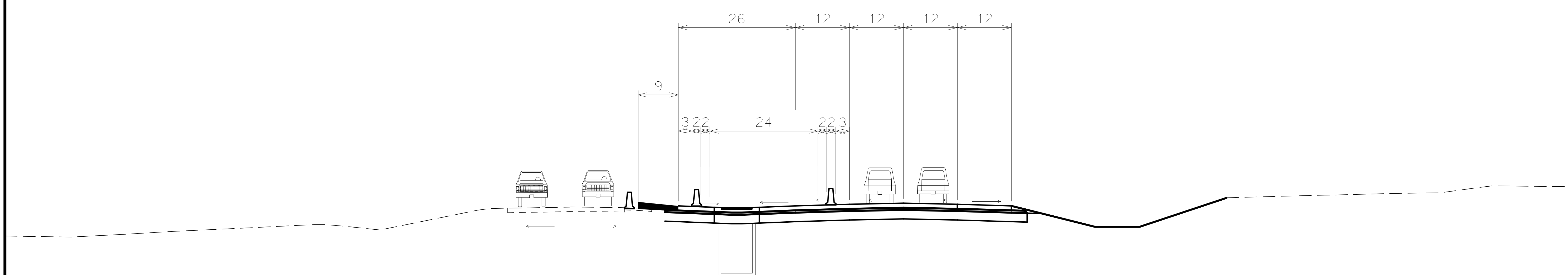


Stage 2
(Year 2)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.6

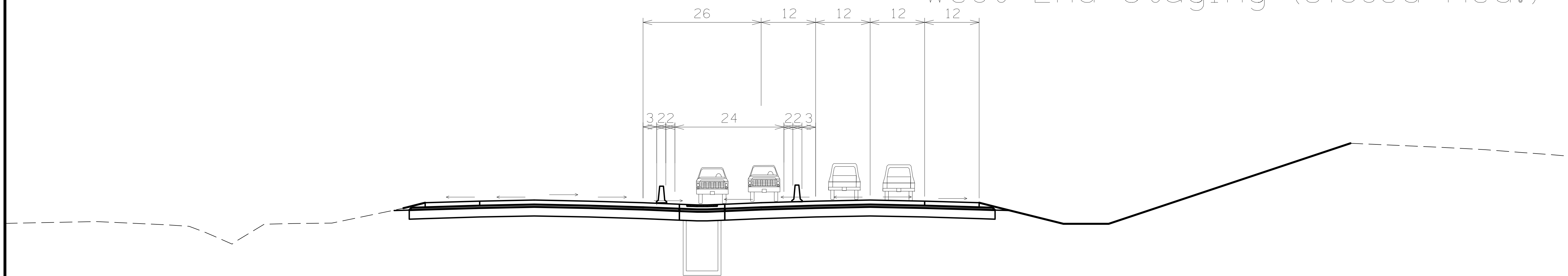
7:01:01 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_West_Staging XS.dgn

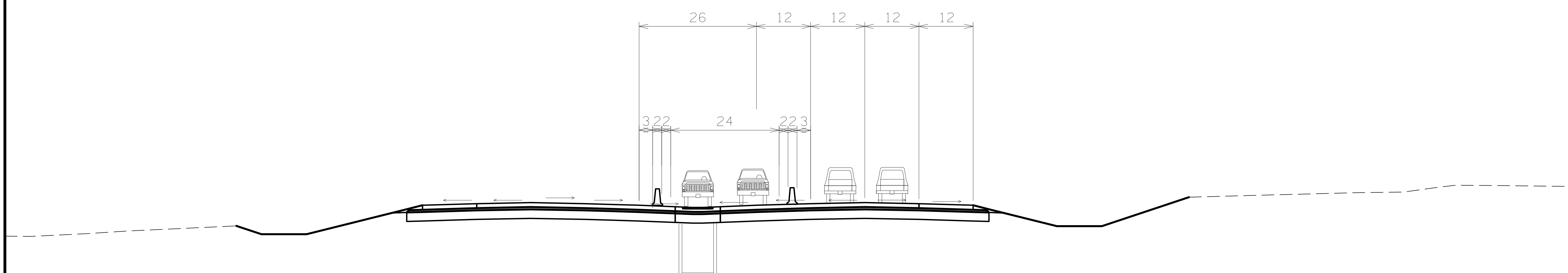
West End Staging (Closed Med.)



Winter Traffic
(End of Year 2)

West End Staging (Closed Med.)





Stage 3
(Year 3)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf		JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.8	

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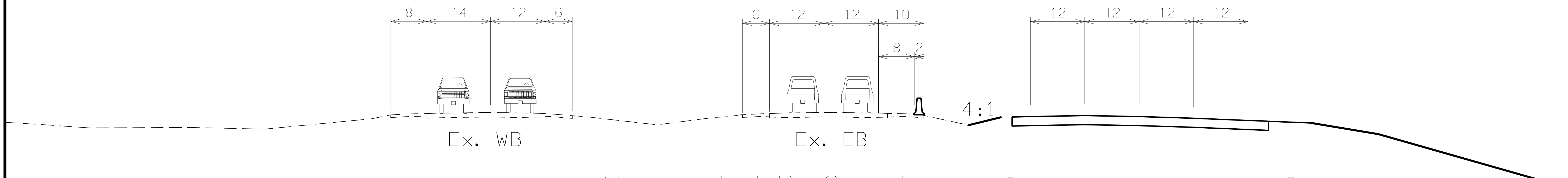
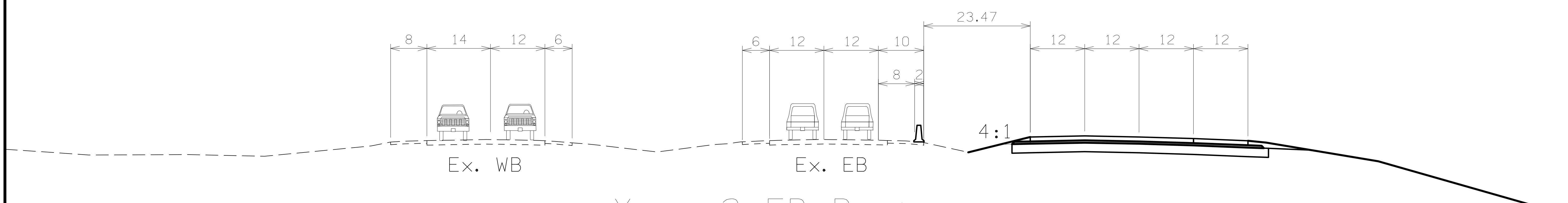
Middle Section (88' Open Med.)



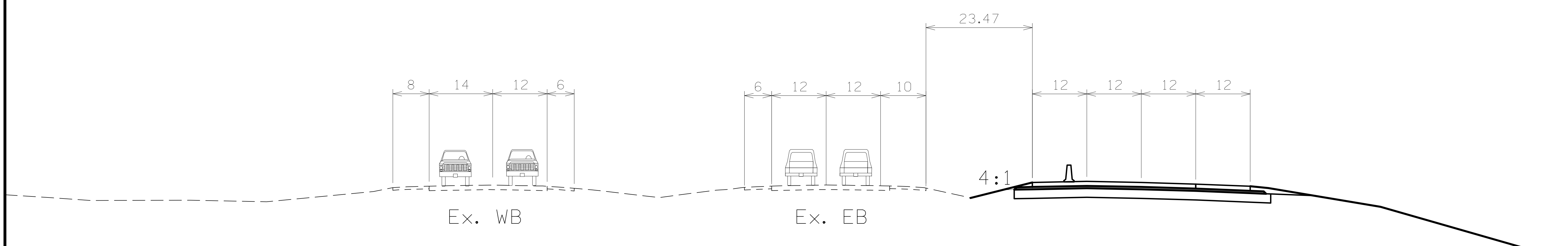
Year 1 EB Grading

Bridges at Lower West Branch and
Wapsi Ave will be gapped



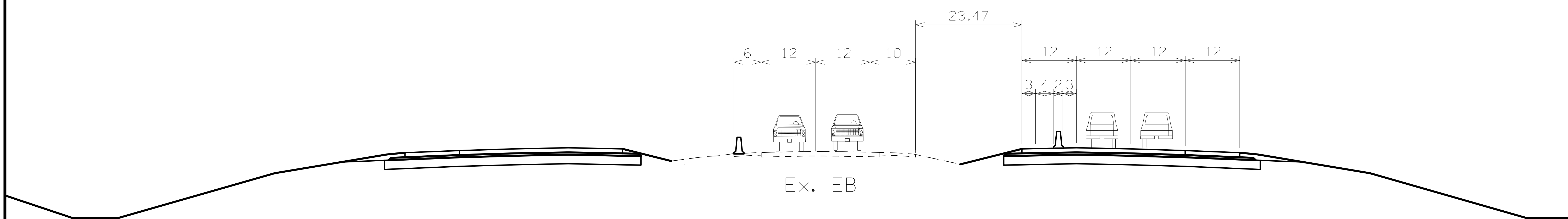
Year 2 EB Paving

Bridges at Lower West Branch and
Wapsi Ave will be gapped



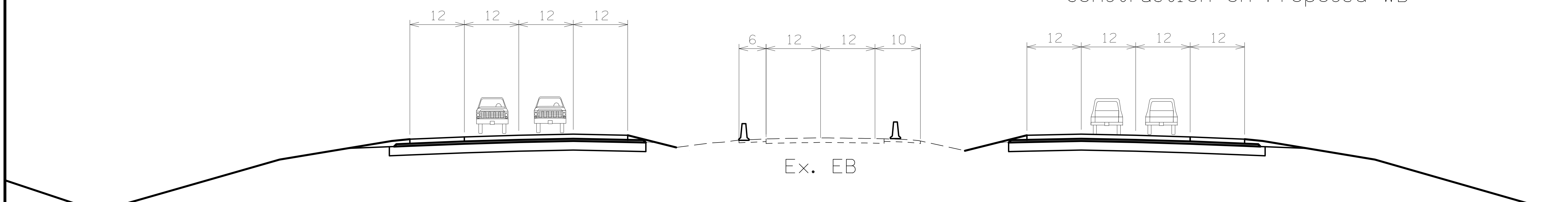
End of Year 2 Winter Traffic

Middle Section (88' Open Med.)

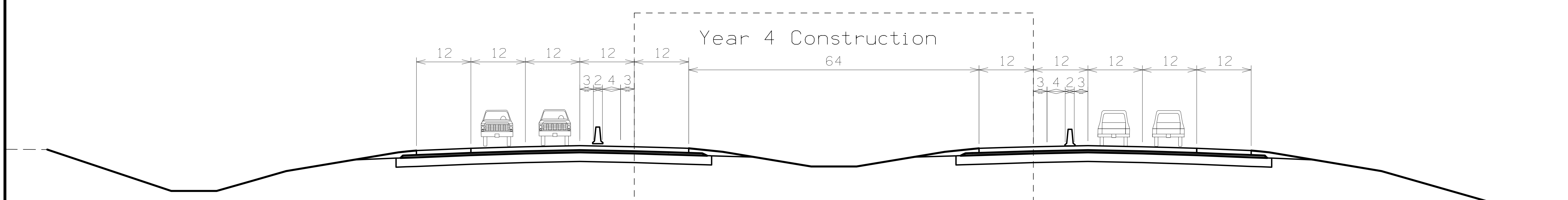


Year 3 WB Grade and Pave

Gapped area for Bridges at Lower West Branch and
Wapsi Ave will be constructed before
construction on Proposed WB



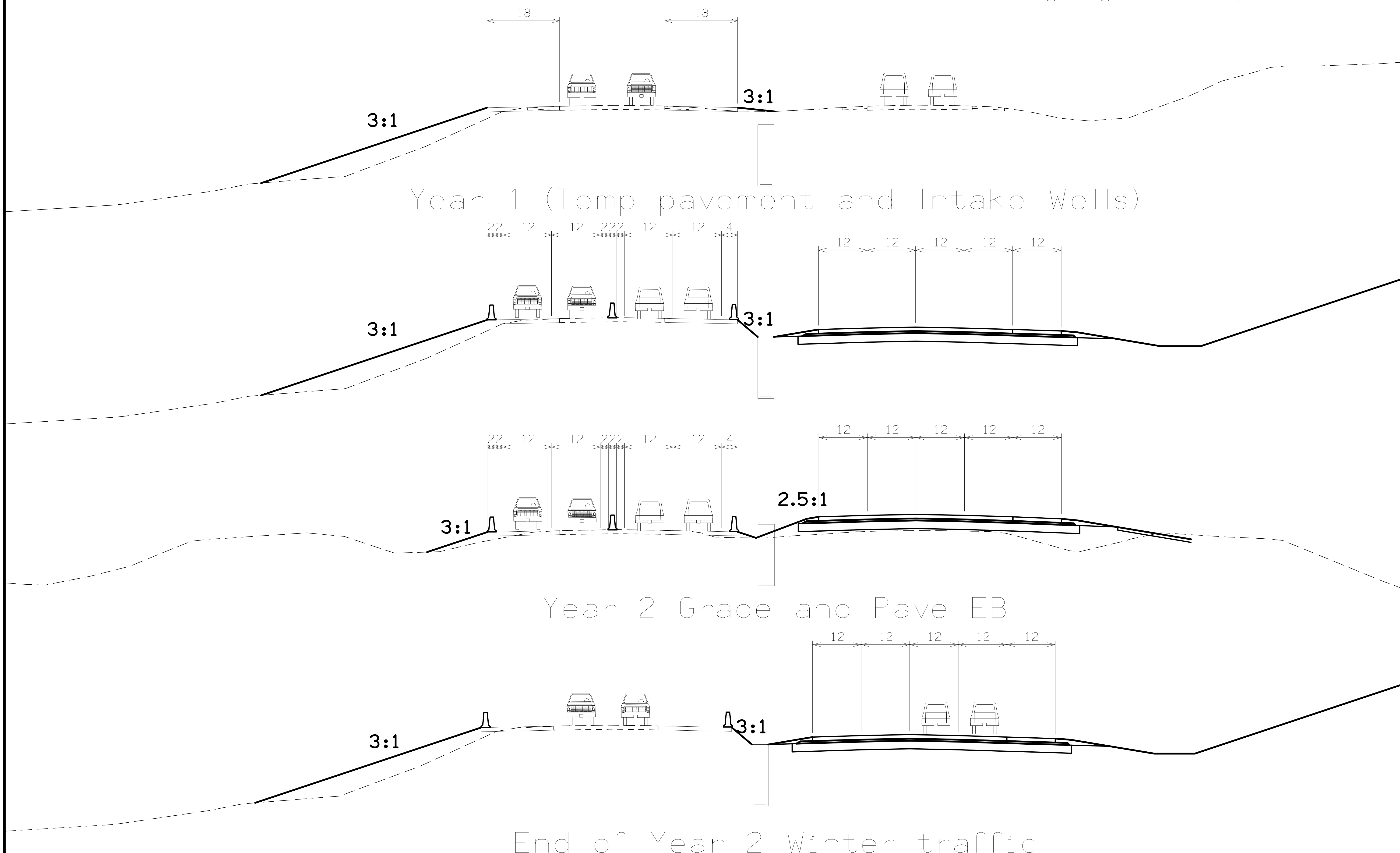
End of Year 3 Winter Traffic



Year 4 EB and WB Shoulder
Median Grading

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.10

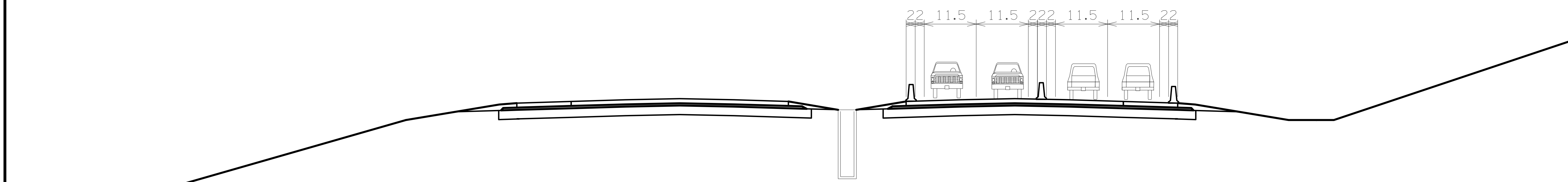
East End Staging (50' Open Med.)



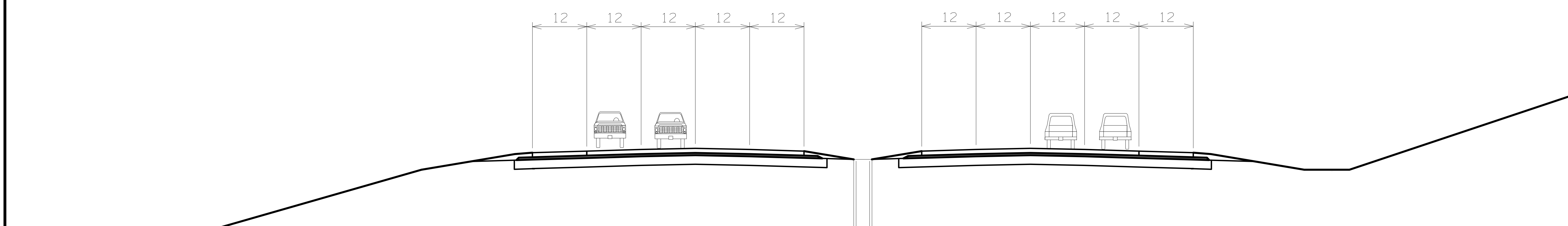
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.11

7:14:13 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_East_Staging XS.dgn

East End Staging (50' Open Med.)



Year 3 Grade and Pave WB

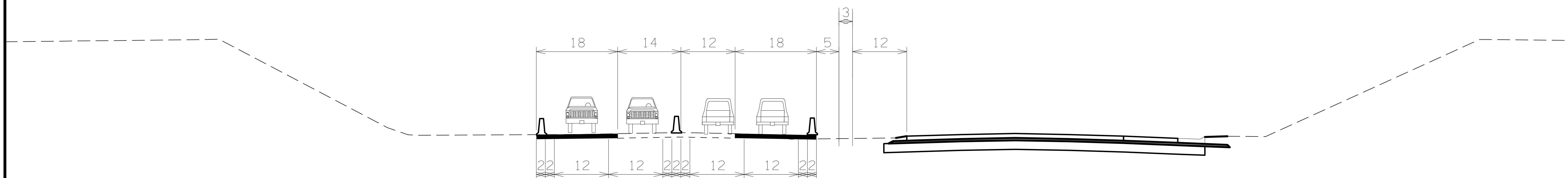


Year 4 Traffic

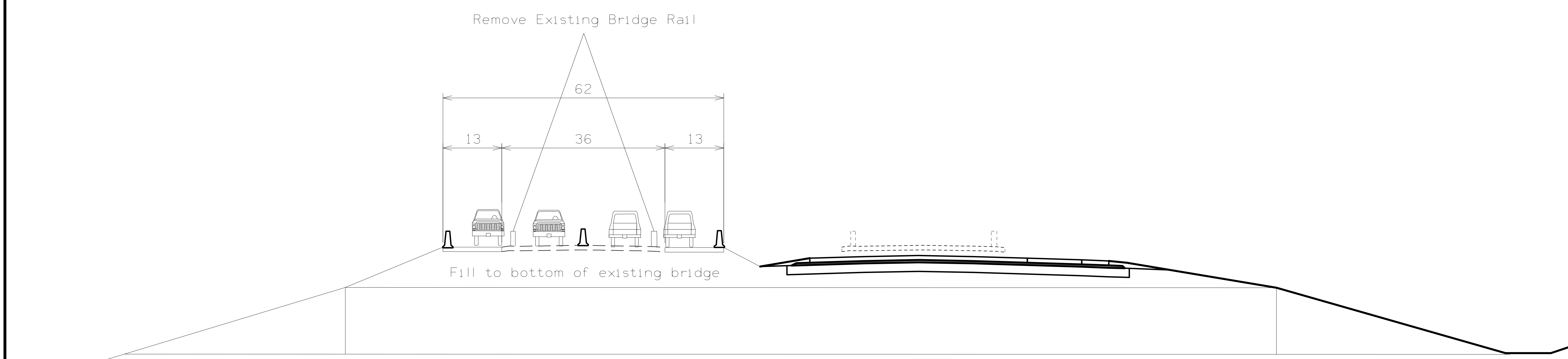
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.12	

7:14:14 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_East_Staging XS.dgn

East End Staging (50' Open Med.)



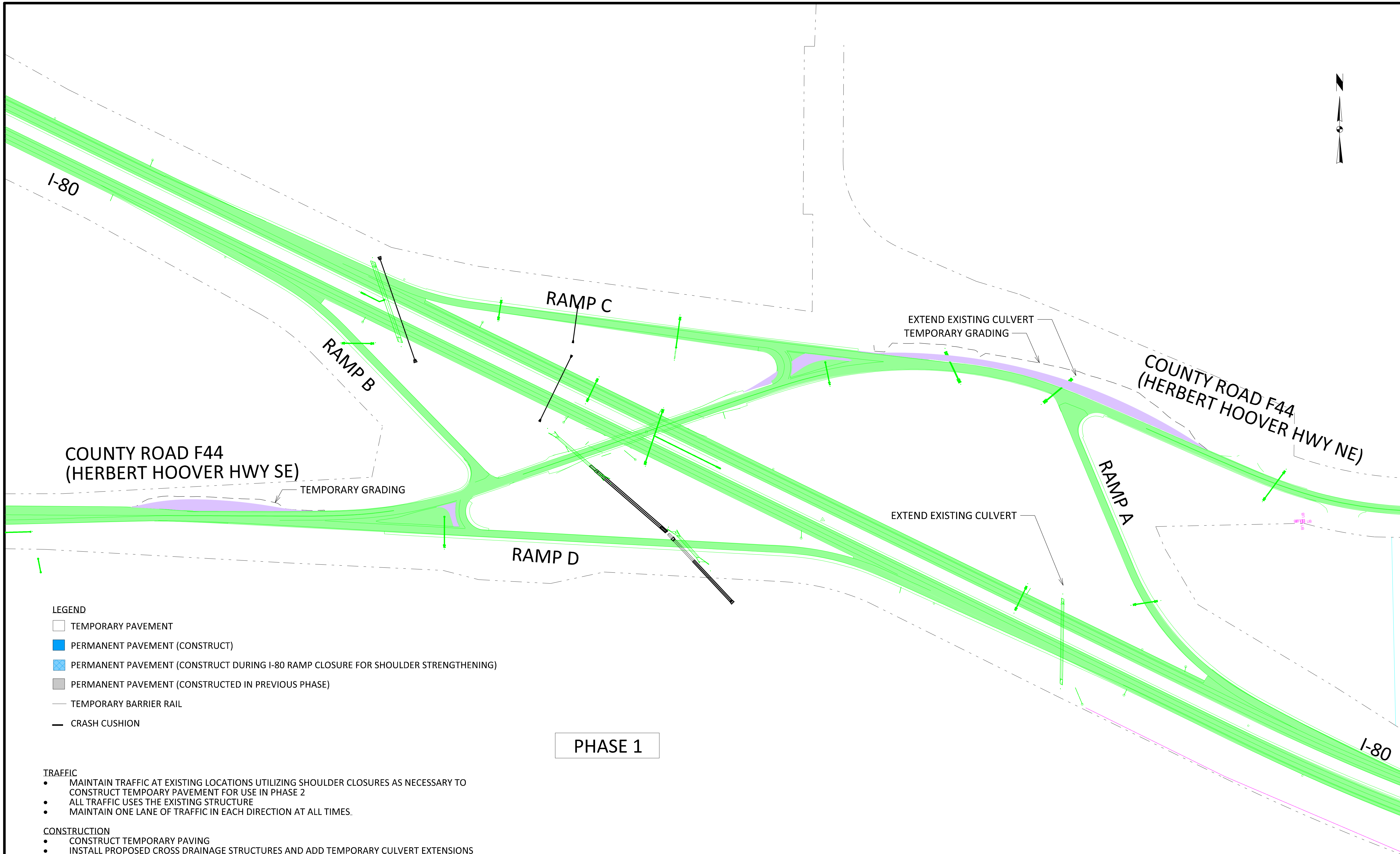
Year 2 Traffic Under X-30 Bridge



Year 2 Traffic over Trail Box
(Construct Box Year 1)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.13

7:14:14 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_East_Staging XS.dgn



LEGEND

- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT (CONSTRUCT)
- PERMANENT PAVEMENT (CONSTRUCT DURING I-80 RAMP CLOSURE FOR SHOULDER STRENGTHENING)
- PERMANENT PAVEMENT (CONSTRUCTED IN PREVIOUS PHASE)
- TEMPORARY BARRIER RAIL
- CRASH CUSHION

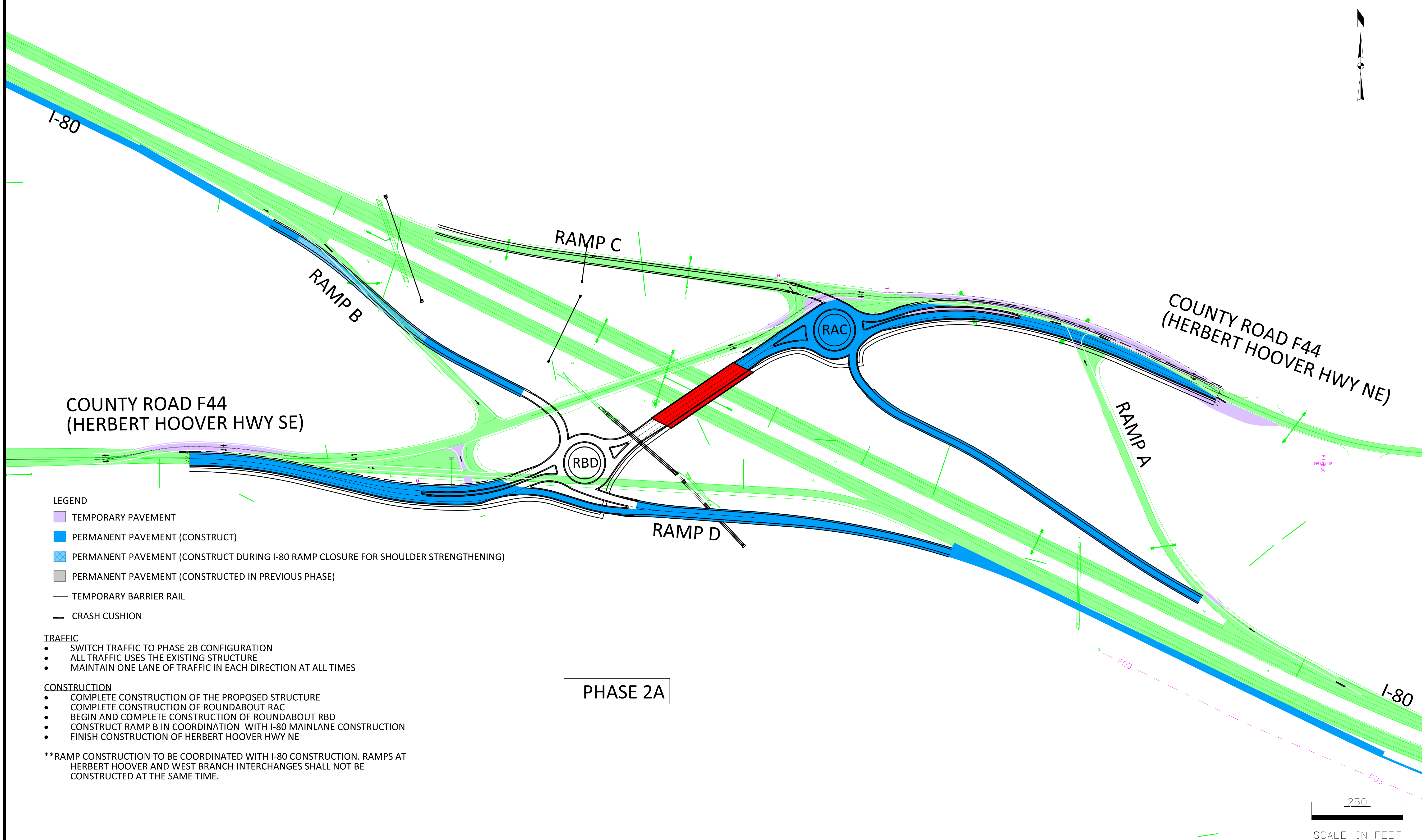
PHASE 1

TRAFFIC

- MAINTAIN TRAFFIC AT EXISTING LOCATIONS UTILIZING SHOULDER CLOSURES AS NECESSARY TO CONSTRUCT TEMPOARY PAVEMENT FOR USE IN PHASE 2
- ALL TRAFFIC USES THE EXISTING STRUCTURE
- MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES.

CONSTRUCTION

- CONSTRUCT TEMPORARY PAVING
- INSTALL PROPOSED CROSS DRAINAGE STRUCTURES AND ADD TEMPORARY CULVERT EXTENSIONS AS NECESSARY TO MAINTAIN EXISTING DRAINAGE PATTERNS DURING CONSTRUCTION



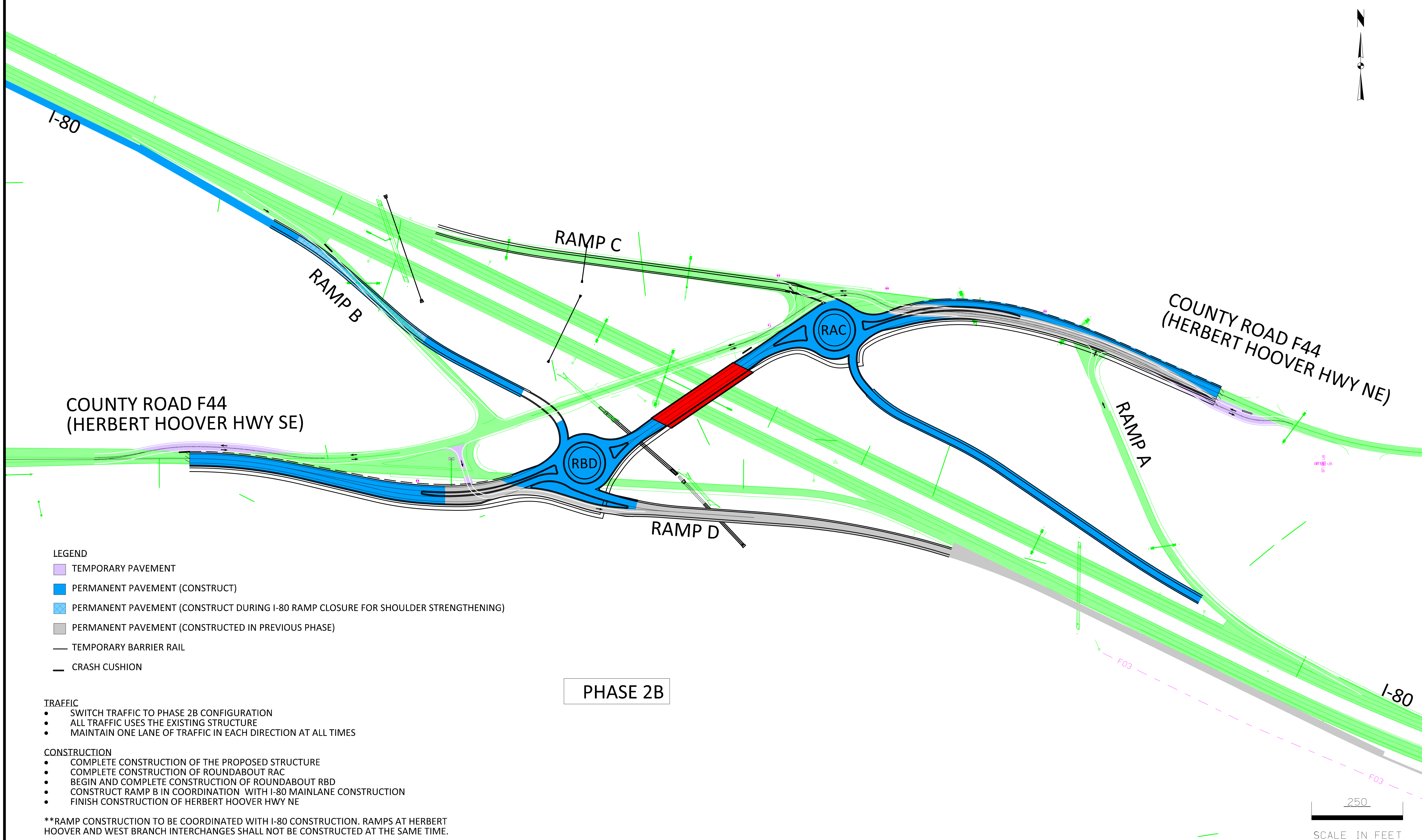
LEGEND
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT (CONSTRUCT)
- PERMANENT PAVEMENT (CONSTRUCT DURING I-80 RAMP CLOSURE FOR SHOULDER STRENGTHENING)
- PERMANENT PAVEMENT (CONSTRUCTED IN PREVIOUS PHASE)
- TEMPORARY BARRIER RAIL
- CRASH CUSHION

TRAFFIC
- SWITCH TRAFFIC TO PHASE 2B CONFIGURATION
- ALL TRAFFIC USES THE EXISTING STRUCTURE
- MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES

CONSTRUCTION
- COMPLETE CONSTRUCTION OF THE PROPOSED STRUCTURE
- COMPLETE CONSTRUCTION OF ROUNDABOUT RAC
- BEGIN AND COMPLETE CONSTRUCTION OF ROUNDABOUT RBD
- CONSTRUCT RAMP B IN COORDINATION WITH I-80 MAINLANE CONSTRUCTION
- FINISH CONSTRUCTION OF HERBERT HOOVER HWY NE

**RAMP CONSTRUCTION TO BE COORDINATED WITH I-80 CONSTRUCTION. RAMPS AT HERBERT HOOVER AND WEST BRANCH INTERCHANGES SHALL NOT BE CONSTRUCTED AT THE SAME TIME.

PHASE 2A



LEGEND

- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT (CONSTRUCT)
- PERMANENT PAVEMENT (CONSTRUCT DURING I-80 RAMP CLOSURE FOR SHOULDER STRENGTHENING)
- PERMANENT PAVEMENT (CONSTRUCTED IN PREVIOUS PHASE)
- TEMPORARY BARRIER RAIL
- CRASH CUSHION

TRAFFIC

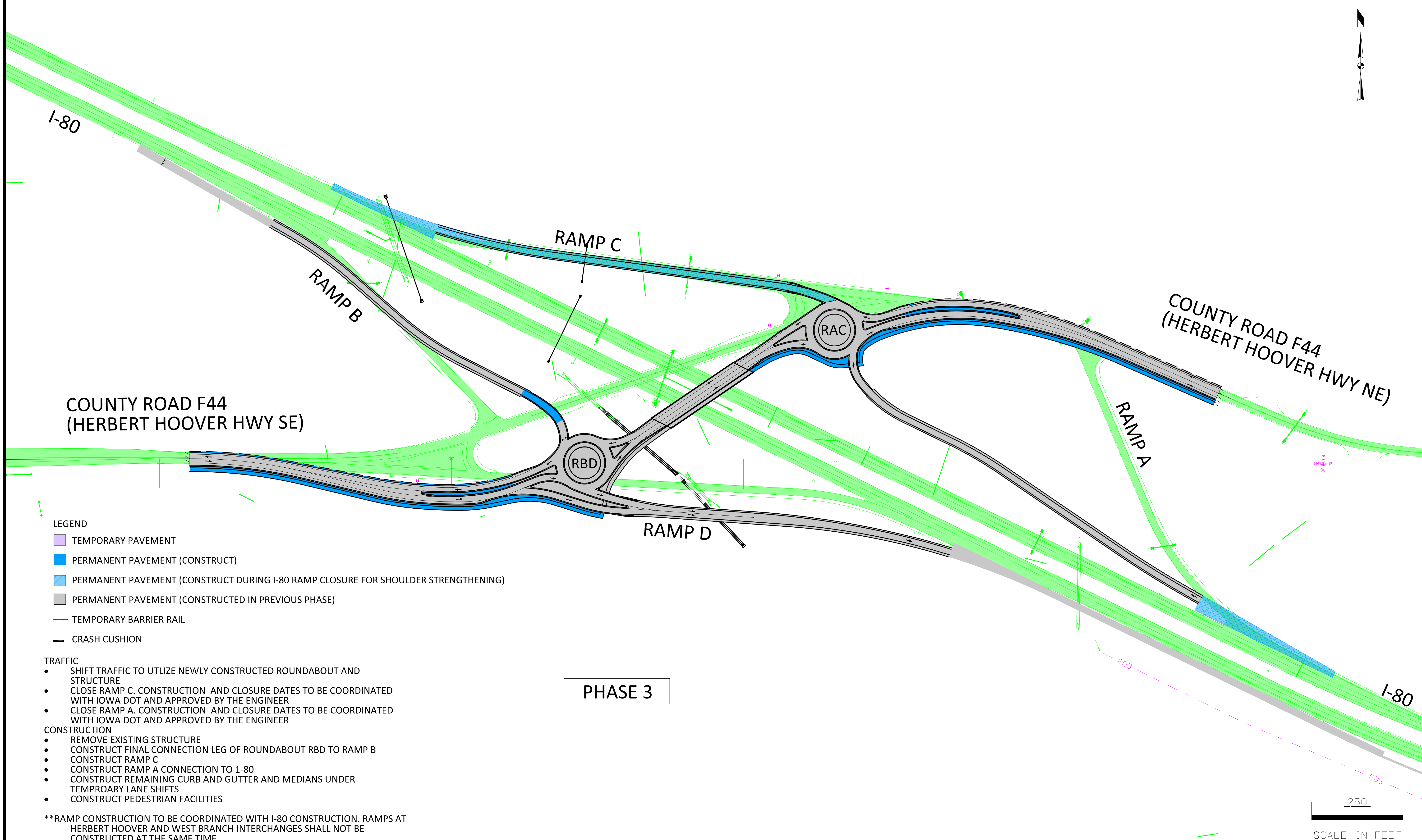
- SWITCH TRAFFIC TO PHASE 2B CONFIGURATION
- ALL TRAFFIC USES THE EXISTING STRUCTURE
- MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES

CONSTRUCTION

- COMPLETE CONSTRUCTION OF THE PROPOSED STRUCTURE
- COMPLETE CONSTRUCTION OF ROUNDABOUT RAC
- BEGIN AND COMPLETE CONSTRUCTION OF ROUNDABOUT RBD
- CONSTRUCT RAMP B IN COORDINATION WITH I-80 MAINLANE CONSTRUCTION
- FINISH CONSTRUCTION OF HERBERT HOOVER HWY NE

**RAMP CONSTRUCTION TO BE COORDINATED WITH I-80 CONSTRUCTION. RAMPS AT HERBERT HOOVER AND WEST BRANCH INTERCHANGES SHALL NOT BE CONSTRUCTED AT THE SAME TIME.

FILE NO.	ENGLISH	DESIGN TEAM Yanxiao Jia \ MSA PROFESSIONAL SERVICES	JOHNSON COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER J.102



LEGEND

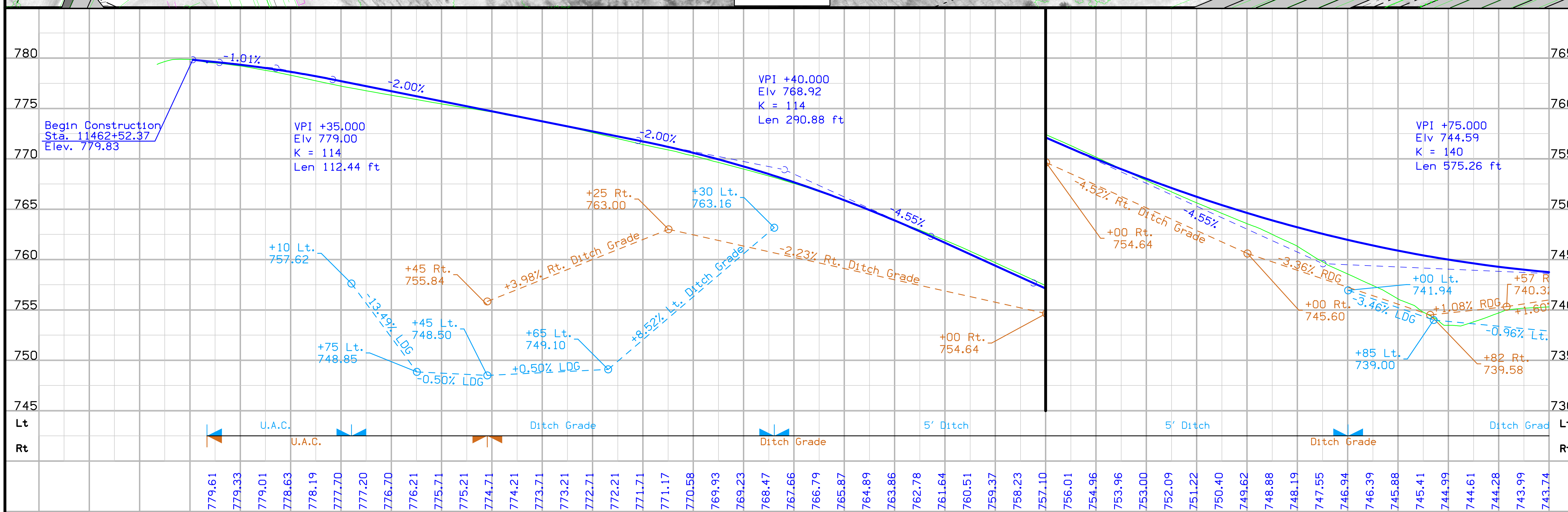
- TEMPORARY PAVEMENT
- PERMANENT PAVEMENT (CONSTRUCT)
- PERMANENT PAVEMENT (CONSTRUCT DURING I-80 RAMP CLOSURE FOR SHOULDER STRENGTHENING)
- PERMANENT PAVEMENT (CONSTRUCTED IN PREVIOUS PHASE)
- TEMPORARY BARRIER RAIL
- CRASH CUSHION

TRAFFIC
- SHIFT TRAFFIC TO UTLIZE NEWLY CONSTRUCTED ROUNDABOUT AND STRUCTURE
- CLOSE RAMP C. CONSTRUCTION AND CLOSURE DATES TO BE COORDINATED WITH IOWA DOT AND APPROVED BY THE ENGINEER
- CLOSE RAMP A. CONSTRUCTION AND CLOSURE DATES TO BE COORDINATED WITH IOWA DOT AND APPROVED BY THE ENGINEER

CONSTRUCTION
- REMOVE EXISTING STRUCTURE
- CONSTRUCT FINAL CONNECTION LEG OF ROUNDABOUT RBD TO RAMP B
- CONSTRUCT RAMP C
- CONSTRUCT RAMP A CONNECTION TO 1-80
- CONSTRUCT REMAINING CURB AND GUTTER AND MEDIANS UNDER TEMPROARY LANE SHIFTS
- CONSTRUCT PEDESTRIAN FACILITIES

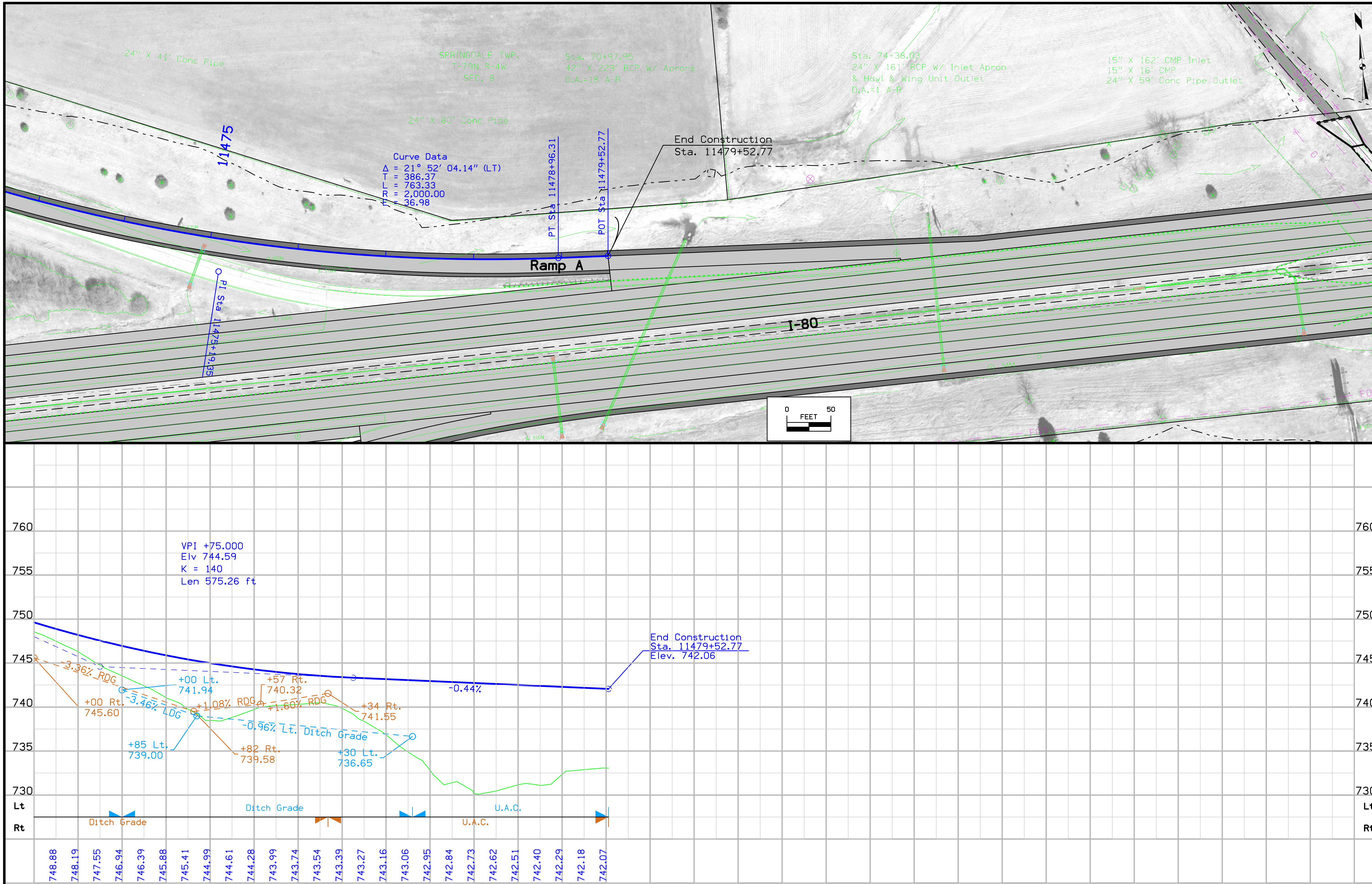
**RAMP CONSTRUCTION TO BE COORDINATED WITH I-80 CONSTRUCTION. RAMPS AT HERBERT HOOVER AND WEST BRANCH INTERCHANGES SHALL NOT BE CONSTRUCTED AT THE SAME TIME.

PHASE 3



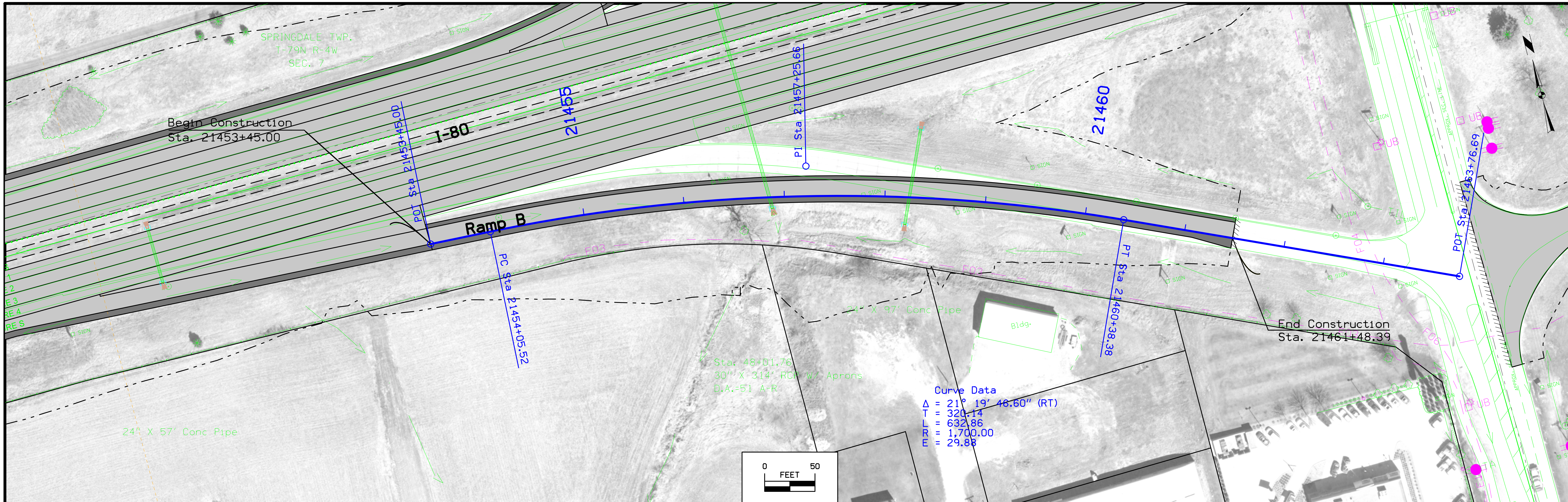
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.100

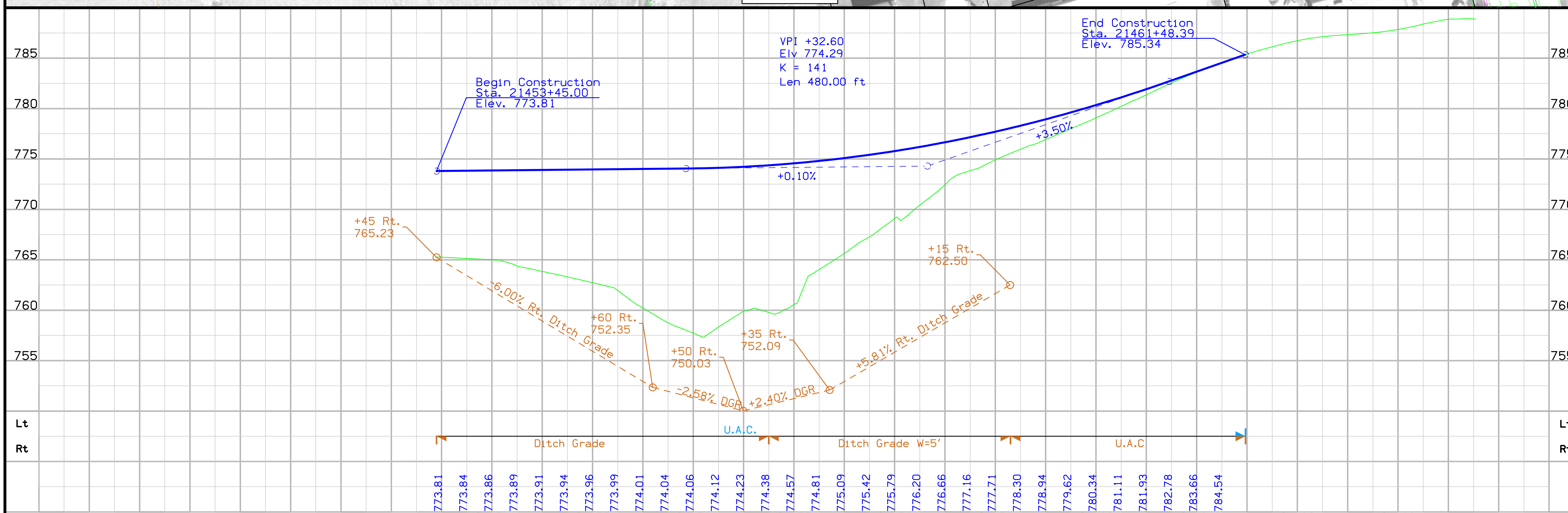
8:44:43 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K5_RampAX30.dgn



FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.101

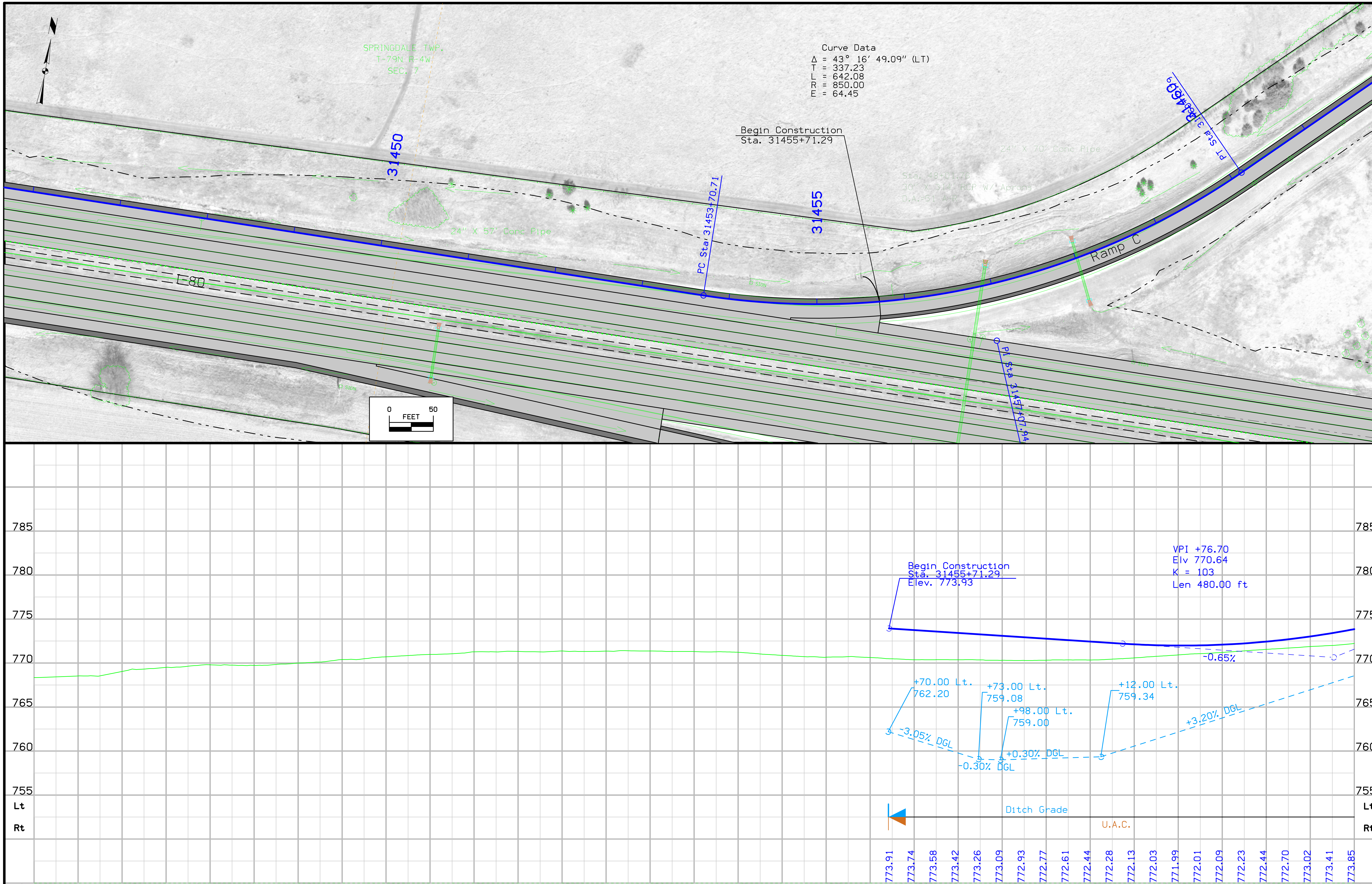
8:45:14 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K5_RampAX30.dgn





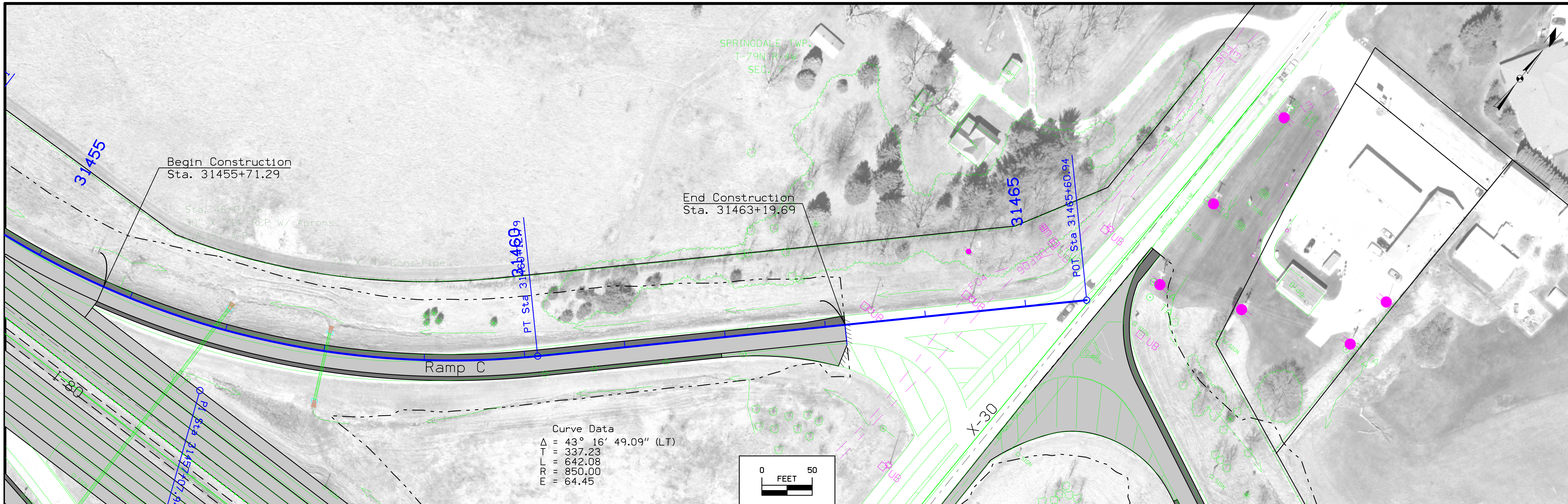
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.102

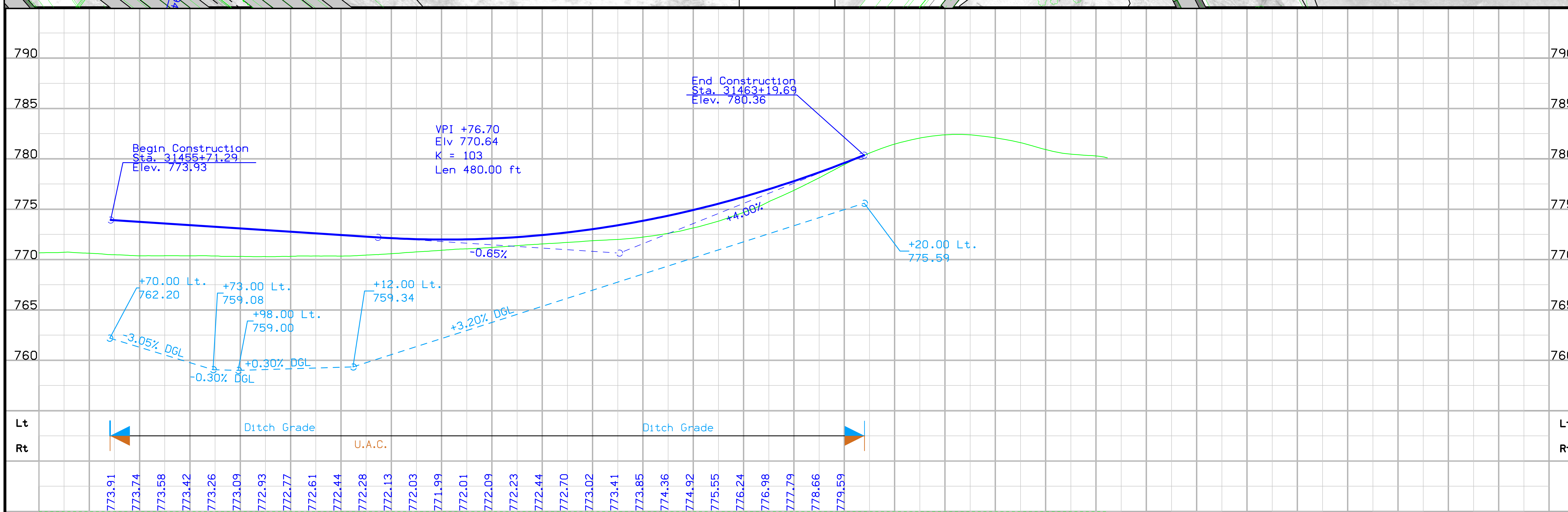
8:45:21 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K7_RampBX30.dgn



FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.103

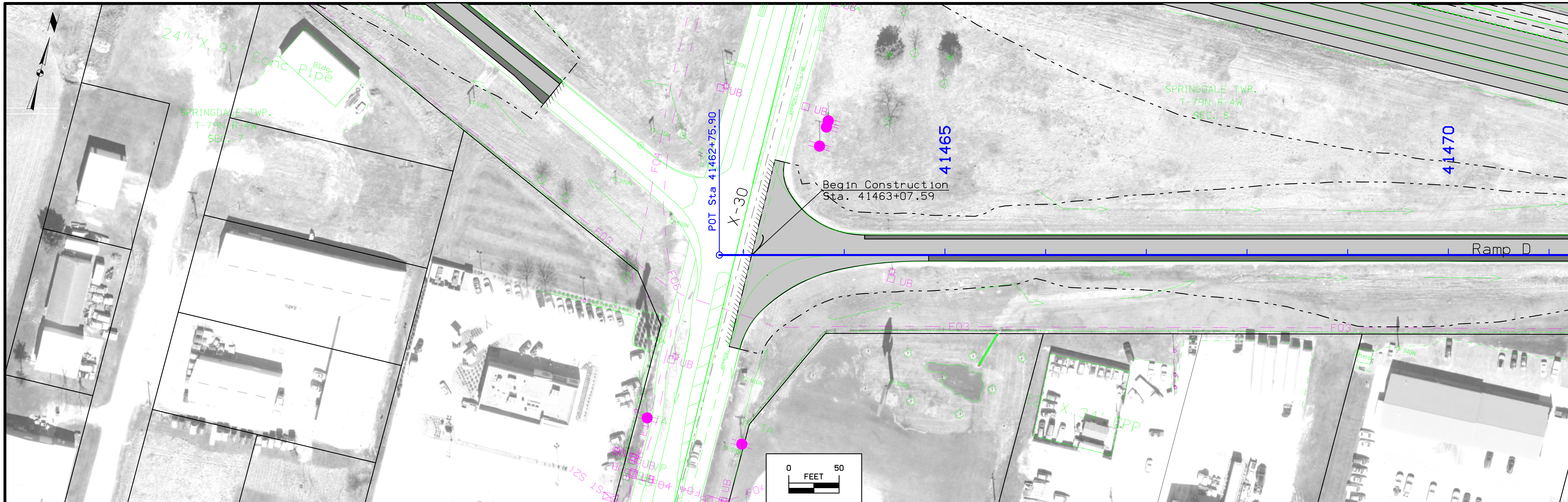
8:45:43 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K8_RampCX30.dgn

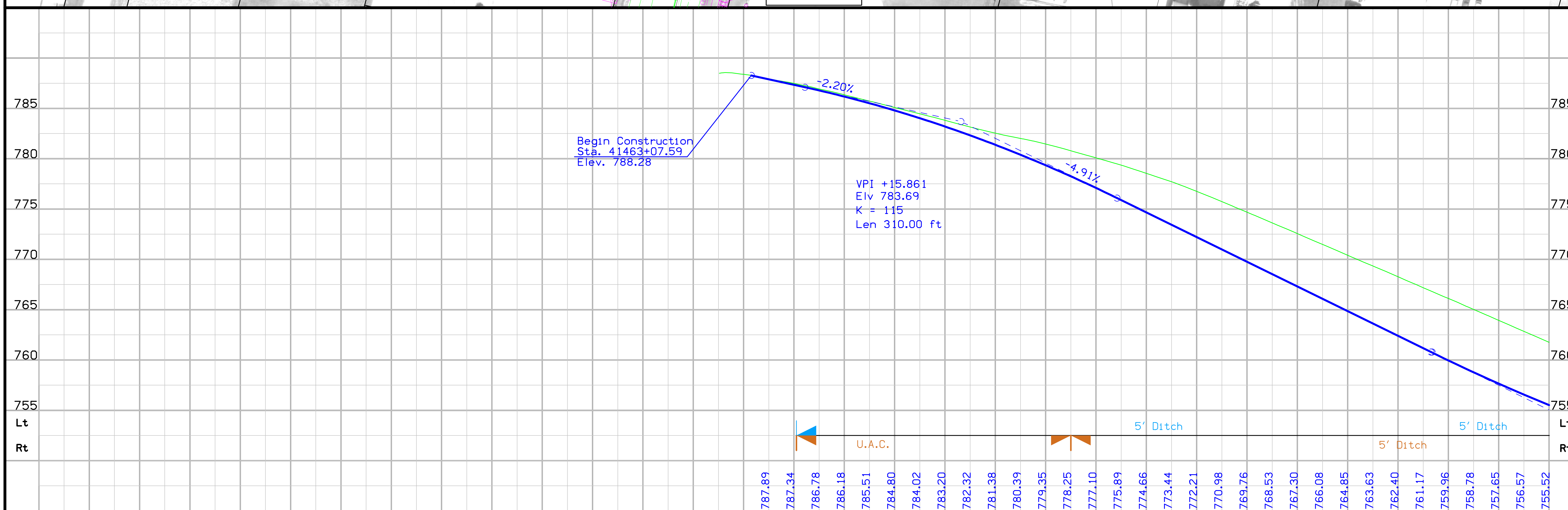




FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.104

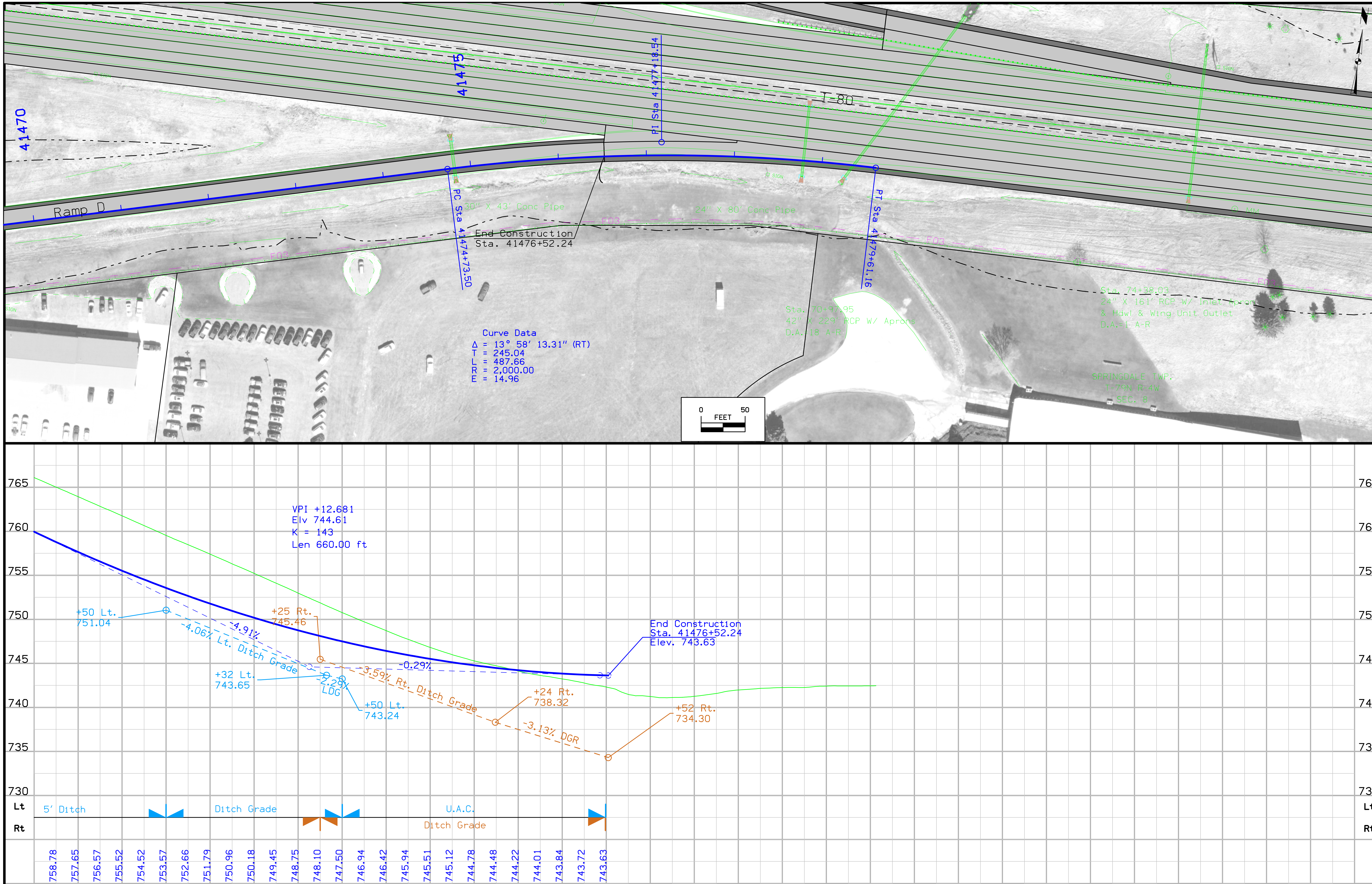
8:45:59 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K8_RampCX30.dgn





FILE NO. | ENGLISH | DESIGN TEAM **Jia \ Miller \ DeWolf** | **JOHNSON/CEDAR** COUNTY | PROJECT NUMBER **IM-NHS-080-7(114)248--03-52** | SHEET NUMBER **K.105**

8:46:20 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K10_RampDX30.dgn



FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER K.106

8:46:34 AM 2/12/2019 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_K10_RampDX30.dgn

SURVEY SYMBOLS

CP Control Point
WC Wild Card (Misc. Field Shot)
SCR Section Corner
REF Reference Tie Point
BM Bench Mark
MIS Miscellaneous
IN Storm Sewer Intake
CON Concrete or A/C Slab
BL Topo Breakline
PLG Location of General Photo
PRO Profile Shot
CUL Culvert
GR Ground Shot
SOP Size of Pipe or Culvert
PIP Pipe Culvert
DU Centerline Draw or Stream (Up)
D Centerline Draw or Stream (Down)
OUT Tile Outlet
SNK Sink Hole
LIN Miscellaneous Line
RIP Rip-Rap
BRG Bridge
PPC Mid American Electric
PR Electric Riser Pole
TA Tower Anchor
PPB Linn County REC
PPA Alliant Energy
ST1C City of West Branch
INB Storm Sewer Beehive Intake
UE Utility Elevation
POT Tangent Point
TIL Tile Line
BNK Stream Bank
LUM Luminaire
UV Underground Utility Vault
MM Mile Marker Post
SL Speed Limit Sign
EG Edge of Gravel Road
EP Edge of Paved Roads (ML or SR)

UTILITY LEGEND

EL1D Alliant Energy QLC
GL1D Alliant Energy
PPA Alliant Energy
Mary Montgomery
PO Box 351
Cedar Rapids, IA 52406-9874
(319) 786-4768
MaryMontgomery@alliantenergy.com

EL2D Linn County REC QLC
Kevin Stucker
5695 REC Dr.
Marion, IA 52302
(319) 377-1587
kstucker@linncountyrec.com

EL3D Mid American Electric QLC
PPC Mid American Electric
Jason Warren
1630 Lower Muscatine Rd
Iowa City, IA 52240
(319) 341-4425
jlwarren@midamerican.com

GL4D Mid American Electric QLC
GH4D Mid American Electric
Joe Retek
1630 Lower Muscatine Rd
Iowa City, IA 50501
(319) 341-4457
jjretek@midamerican.com

WL1D City of West Branch QLC
SA1C City of West Branch
ST1C City of West Branch
Matt Goodale
110 North Poplar St. PO Box 218
West Branch, IA 52358
(319) 643-5888
mgoodale@westbranchiowa.org

FO7D Iowa DOT QLC
EL4D Iowa DOT
Jeff McCollough
800 Lincoln Way
Ames, IA 50010
(515) 239-1373
jeffry.n.mccollough

GH2D Enterprise Products Partners, LP QLC
GL2D Enterprise Product Partners, LP
Matthew Baker
1015 N. Jefferson
Kearney, MO 64060
(816) 858-7810
mjbaker@eprod.com

FO1D AT&T QLC
Leny Vohs
1425 Oak Street
Kansas City, MO 64106
(816) 275-4014
lv2121@att.com

TL2D Century Link QLC
FO2D Century Link
Steve Parker
2103 E. University Ave.
Des Moines, IA 50317
(515) 265-0968
Steven.Parker4@centurylink

FO6D Mediacom Communications Corporation QLC
TV5D Mediacom Communications Corporation
Tim Eagan
3210 Division St,
Burlington, IA 52655
(319) 208-1829
teagan@mediacomcc.com

FO3D Iowa Communications Network QLC
Mike Broderick
400 E 14th St Grimes State Office Building,
Des Moines, IA 50319
(515) 725-4610
Mike.Broderick@iowa.gov

TL4D Liberty Communications QLC
FO4D Liberty Communications
Marcus Behnken
413 N. Calhoun St,
West Liberty, IA 52776
(319) 627-2145
behnken@corp.lcom.net

UTILITY LEGEND

FO5D MCI/Verizon Business QLC
Jim Powers
2600 Westown PKWY Suite 100,
West Des Moines, IA 50266
(515) 380-2208
jim.powers1@Verizon.com

PPB Linn County REC QLC
Kim Colberg
5695 REC Dr.
Marion, IA 52302
(319) 377-1587
kcolberg@linncountyrec.com

PLAN VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Existing Utilities
Blue, Dark	(1)	Proposed Storm Sewer Pipes, Alignment, Stationing, and Tic Marks
Blue, Light	(230)	Proposed Storm Sewer Intakes or Structures
SHADING	**Design Color No.**	
Lavender	(9)	Temporary Pavement Shading
Gray, Light	(48)	Proposed Pavement Shading
Gray, Med	(80)	Proposed Granular Shading
Tan	(8)	Proposed Sidewalk Shading

PROFILE VIEW COLOR LEGEND OF STORM SEWER SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Ground Line Profile
Magenta	(5)	Existing Utilities Information
Blue, Dark	(1)	Proposed Pipe
Blue, Light	(230)	Proposed Intakes or Structures

PLAN VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

Plug and Abandon Existing Pipe or Structure
Removal of Existing Pipe or Structure
Previously Constructed Pipe or Structure
Direction of Pipe Flow

PROFILE VIEW LINE STYLE LEGEND OF STORM SEWER SHEETS

Existing Ground (at Pipe Centerline)
Proposed Ground (at Pipe Centerline)
Previously Constructed Pipe or Structure
Proposed Pipe
Proposed Structure

Reference Point
Station
Survey Line
Section Corner
Ground Line Intercept
Saw Cut
Guardrail
Clearing & Grubbing Area
Pavement Removal

RIGHT-OF-WAY LEGEND

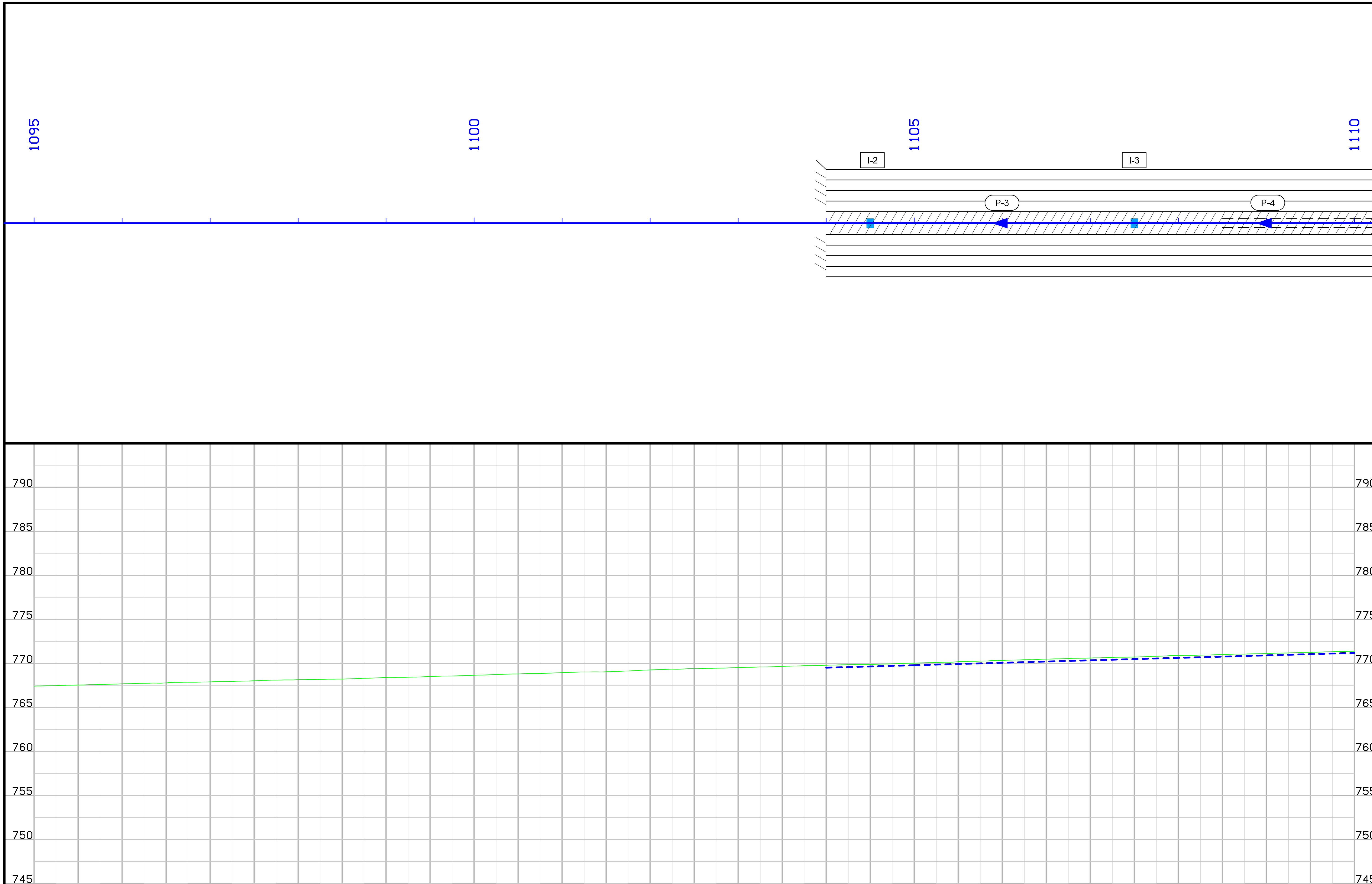
Proposed Right-of-Way
Existing and Proposed Right-of-Way
Easement and Existing Right-of-Way
Borrow
Easement (Temporary)
Easement
Excess
A/C Access Control

STORM SEWER LEGEND AND SYMBOL INFORMATION SHEET

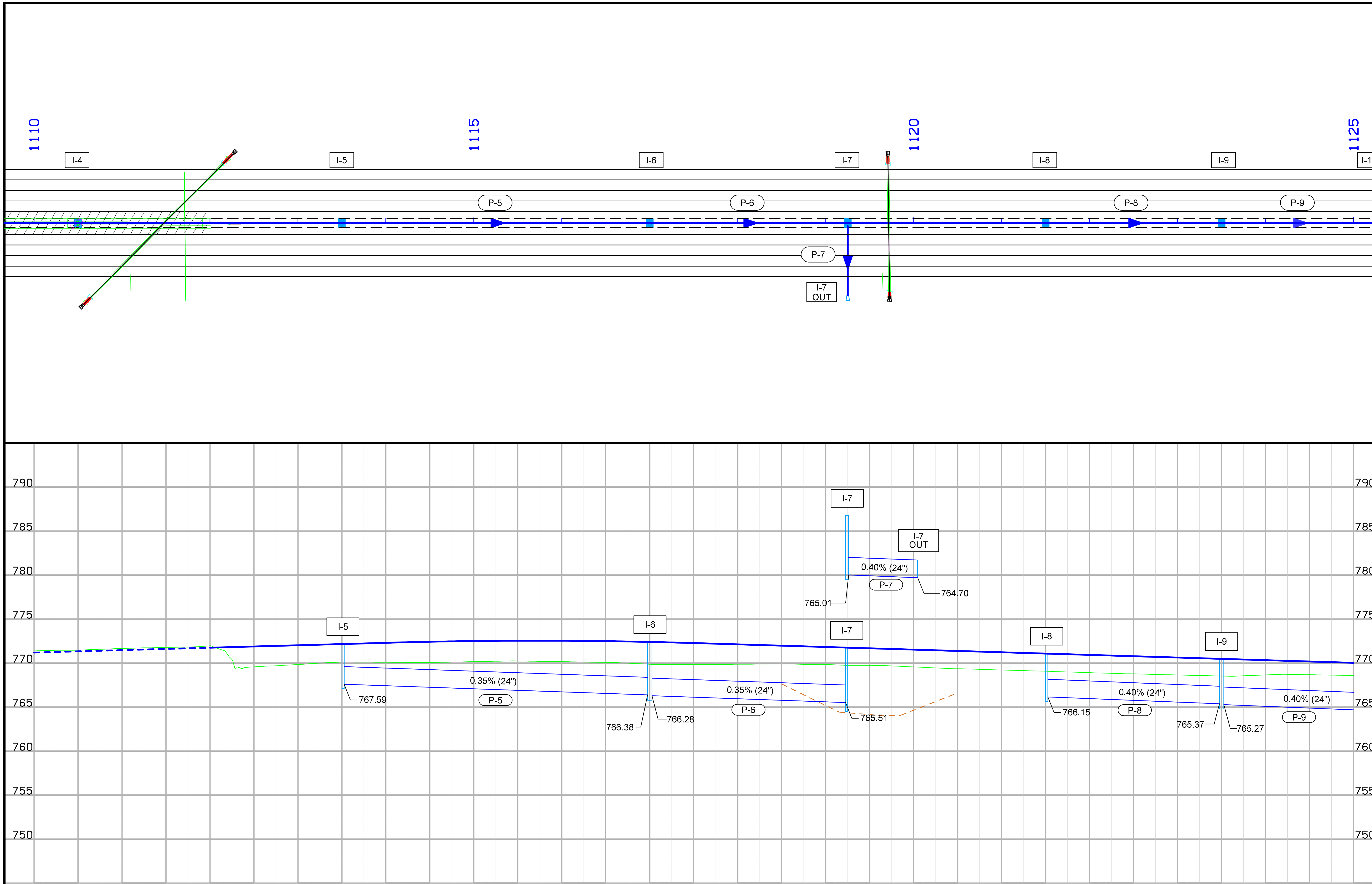
(COVERS SHEET SERIES M)

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER M.2

9:24:39 AM 3/20/2020 rmille3 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_LGD.dgn

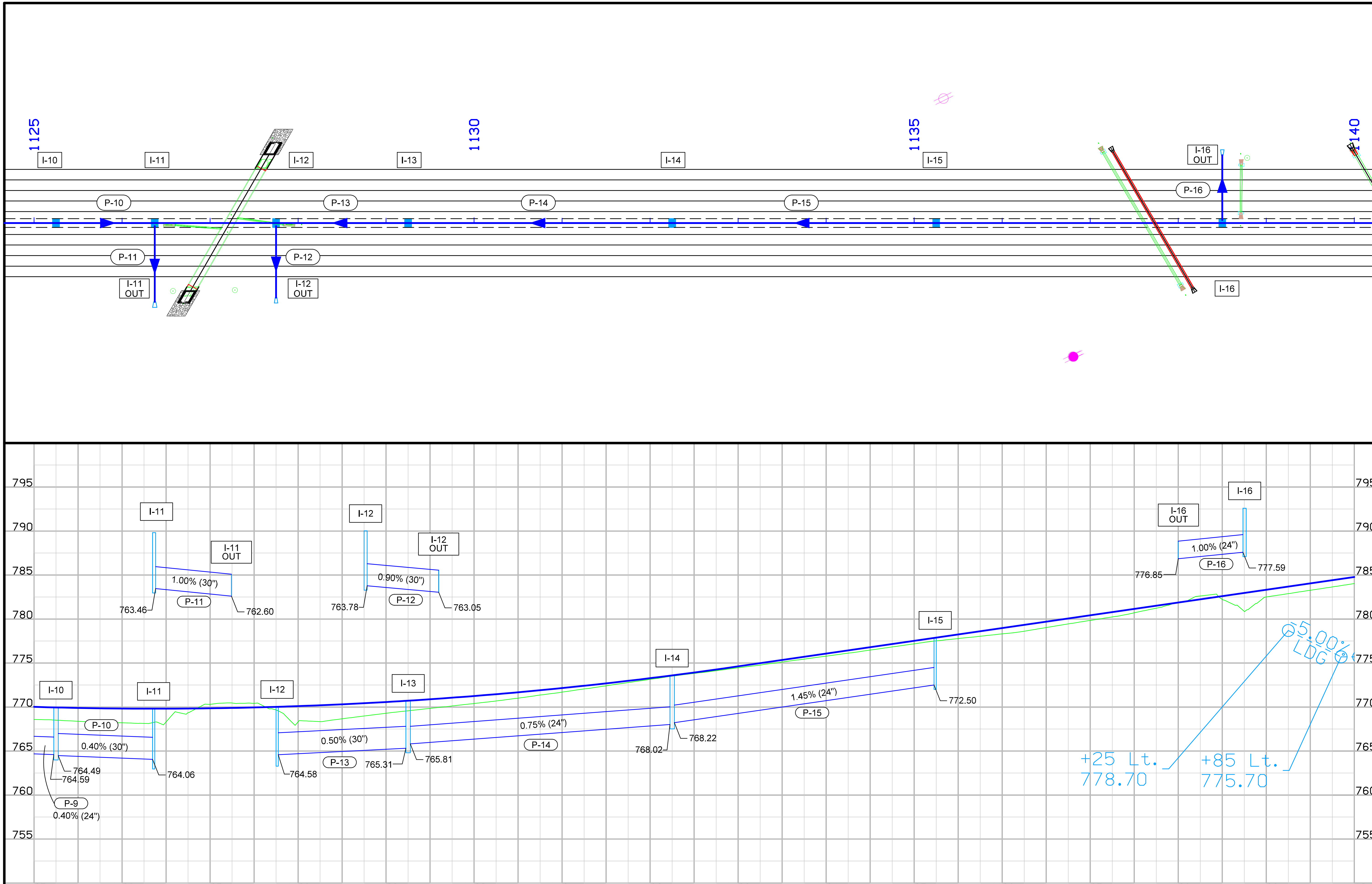


FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER	M.3



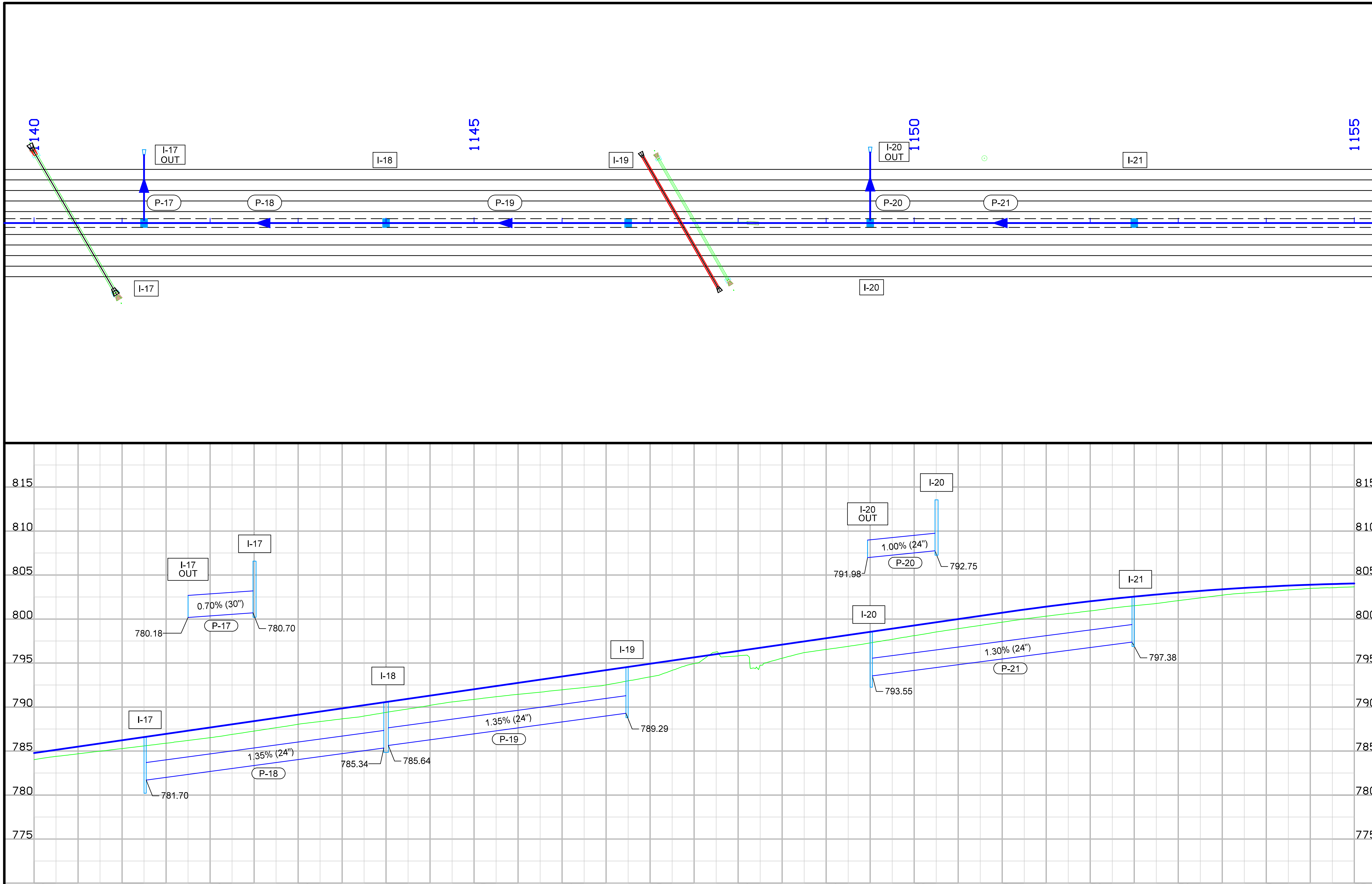
FILE NO. | ENGLISH | DESIGN TEAM | COUNTY | PROJECT NUMBER | SHEET NUMBER M.4

1:20:12 PM 3/19/2020 rmille3 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\52080114M2.dgn



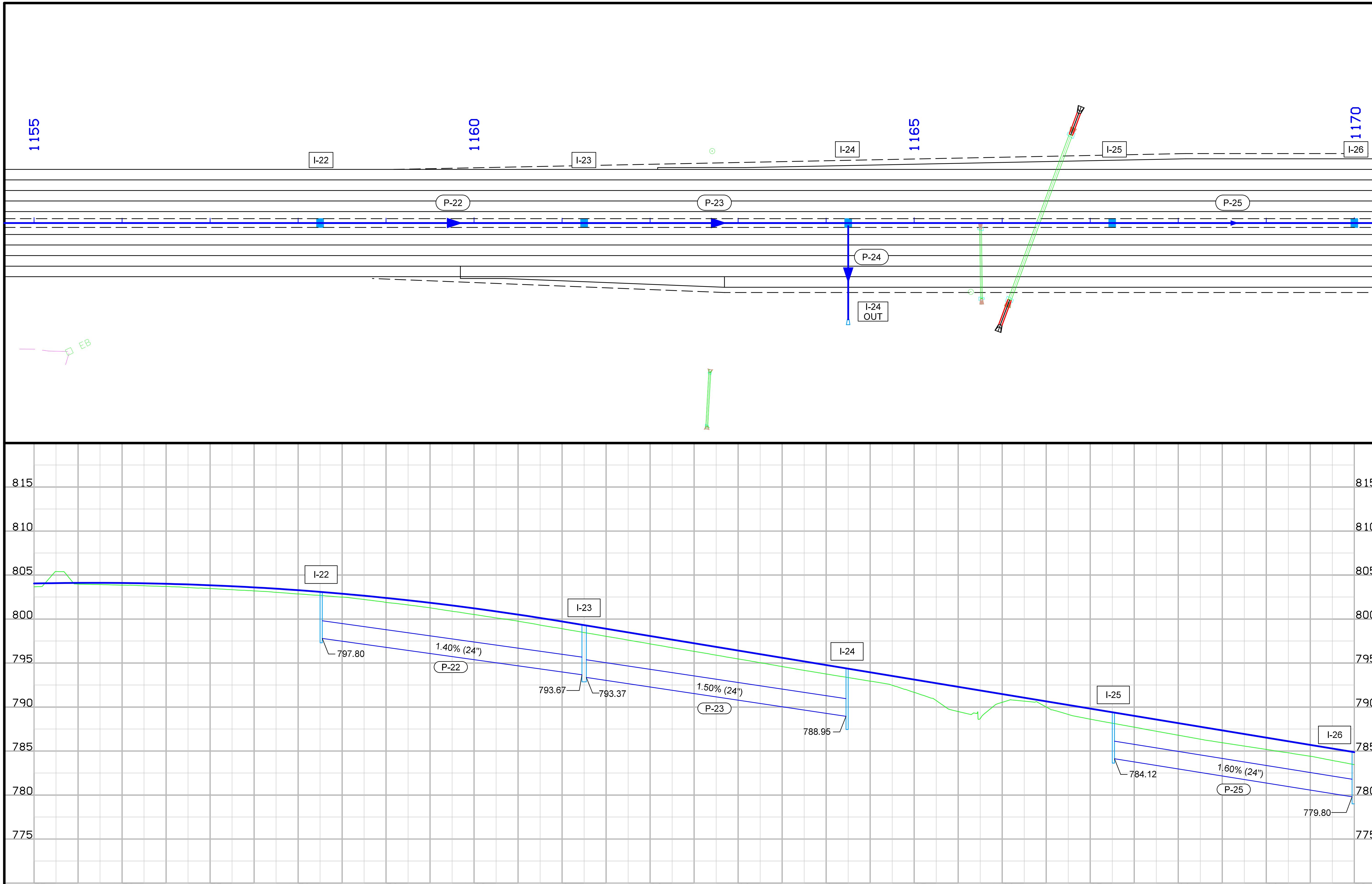
FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER M.5

1:20:14 PM 3/19/2020 rmille3 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\52080114M2.dgn



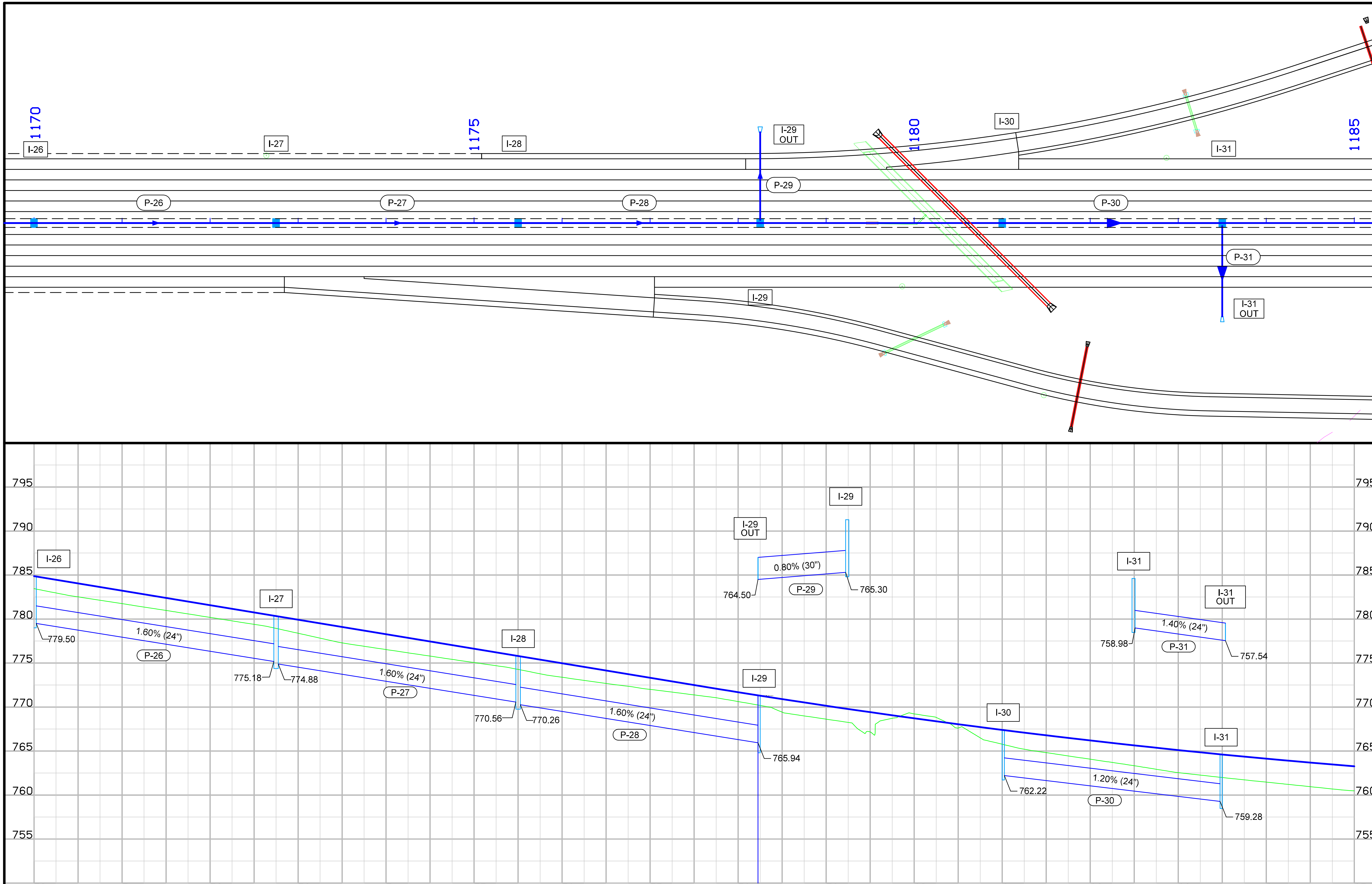
FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER	M.6

1:20:17 PM 3/19/2020 rmille3 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\52080114M2.dgn



FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER	M.7

1:20:18 PM 3/19/2020 rmille3 pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\52080114M2.dgn



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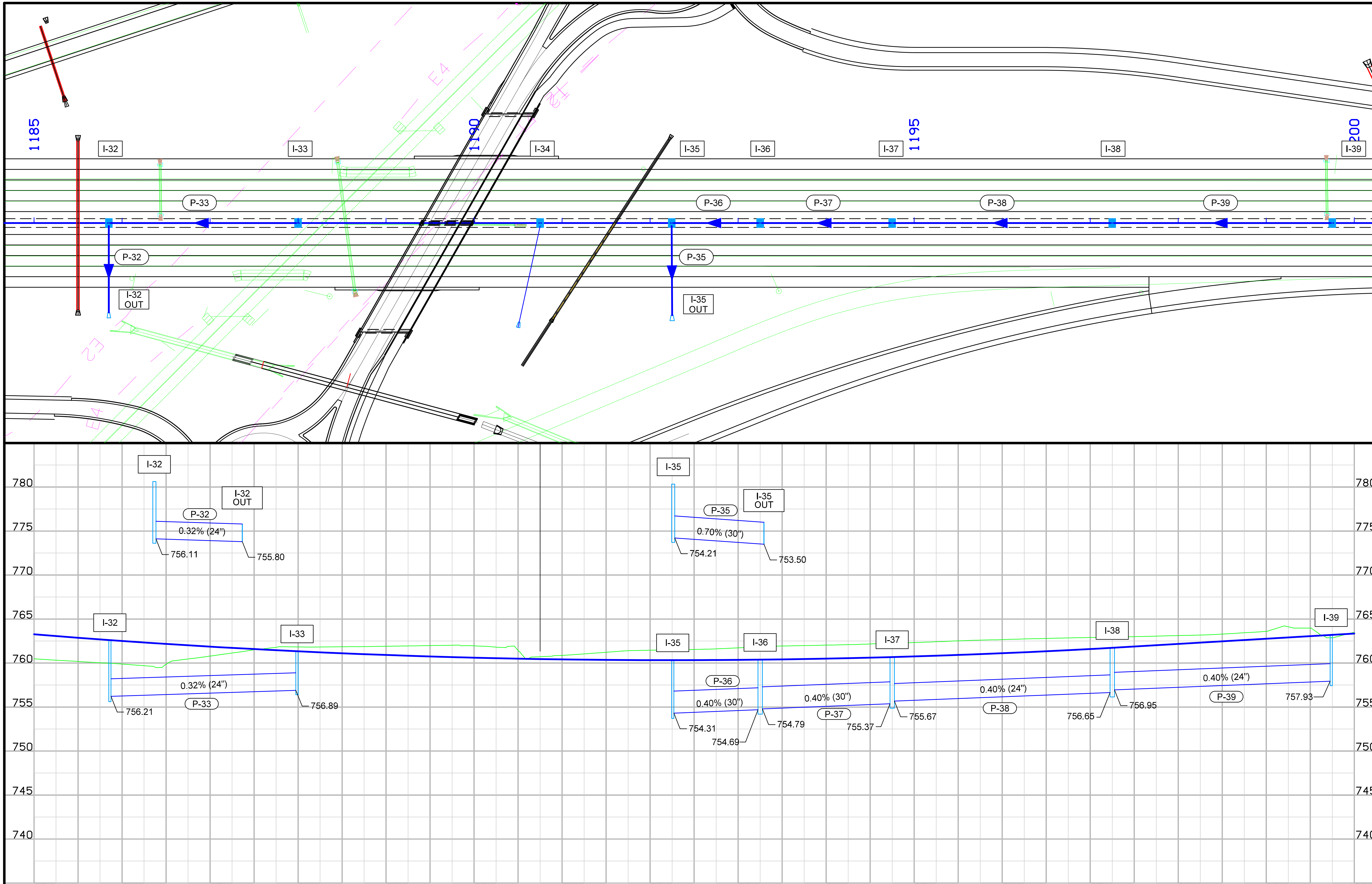

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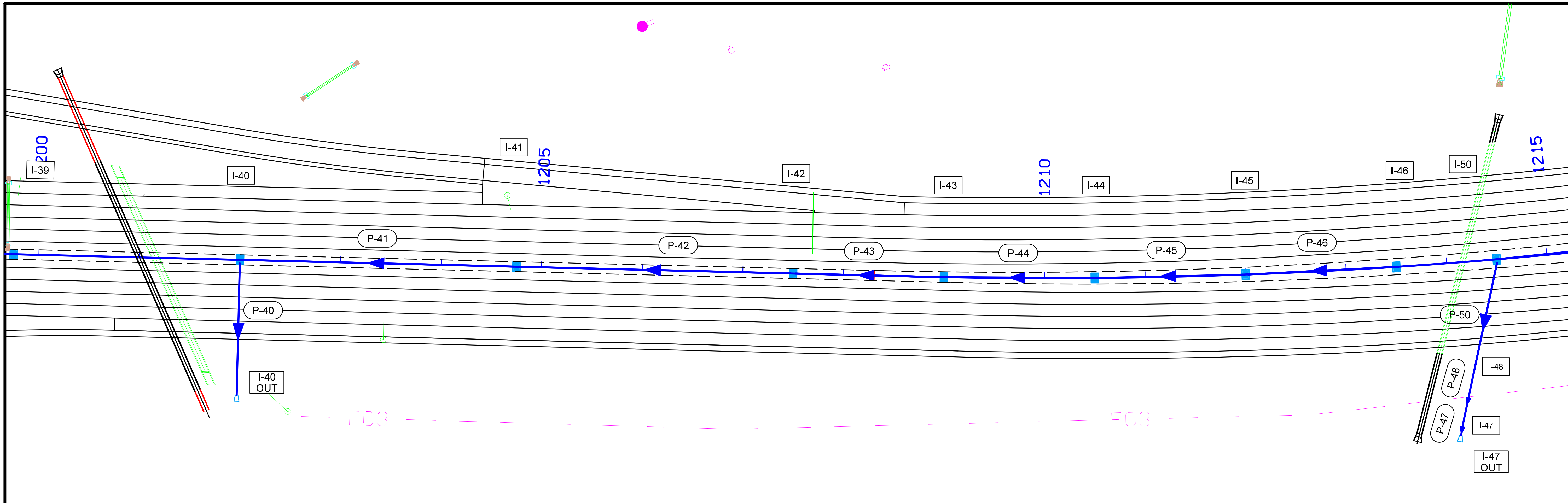

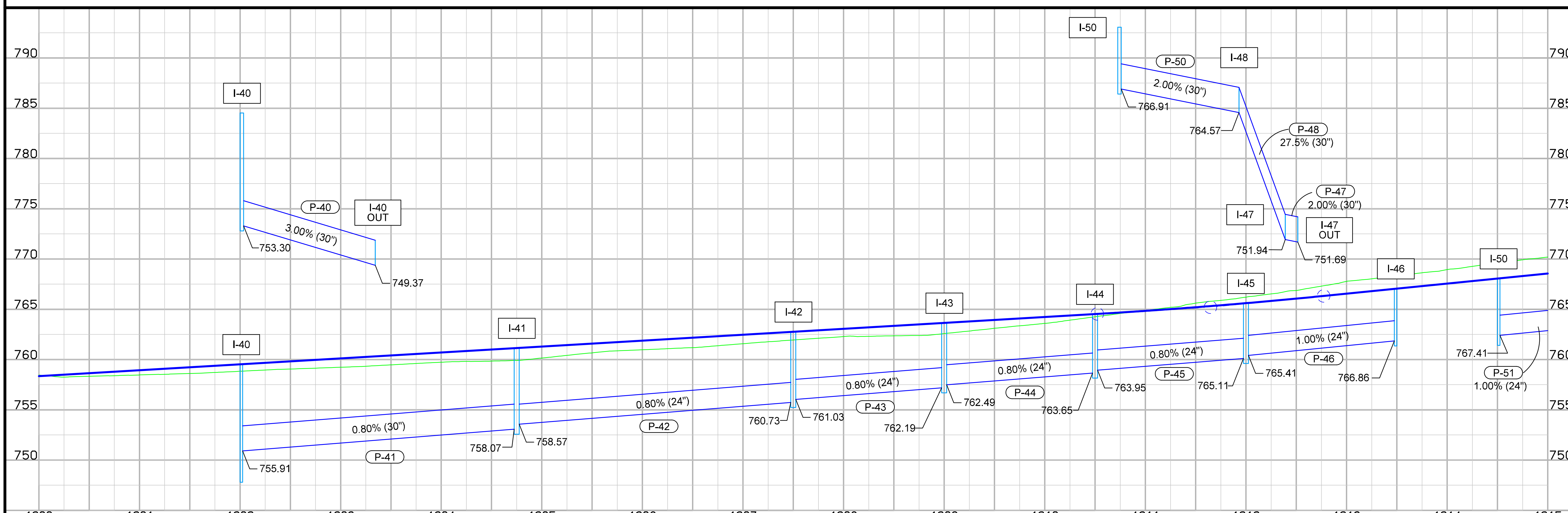

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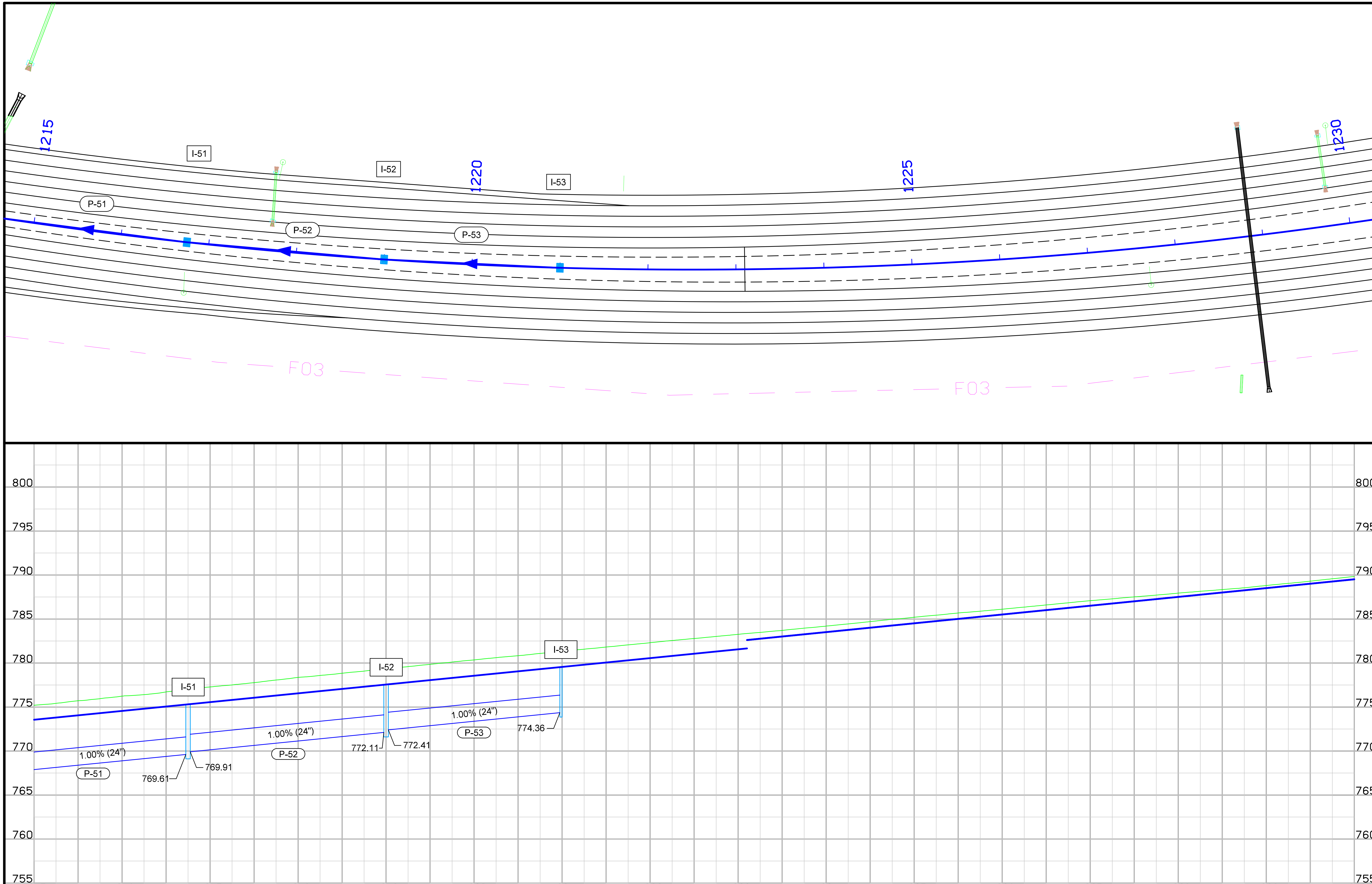

FILE NO.	ENGLISH	DESIGN TEAM		COUNTY	PROJECT NUMBER	SHEET NUMBER	M.11

Information Only

PLOTTED: Monday, November 19, 2012 4:32:40 PM

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FILE PATH: Z:\WEST BRANCH 36845 LIFT STATION & MAIN DS\DRAWINGS_PRODUCTION DRAWINGS\2 - OVERALL PLAN

DATE	REVISIONS

SCALE	AS NOTED
DRAWN	ALG
CHECKED	DRS
APPROVED	DRS
DATE	11-16-12
ISSUED FOR	CONSTRUCTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

V&K
VEENSTRA & KIMM, INC.

LIFT STATION AND FORCE MAIN
CITY OF WEST BRANCH

860 22nd Avenue • Suite 4 • Coralville, Iowa 52241-1565
319-466-1000 • 319-466-1008(FAX) • 888-241-8001(WATS)

OVERALL PLAN

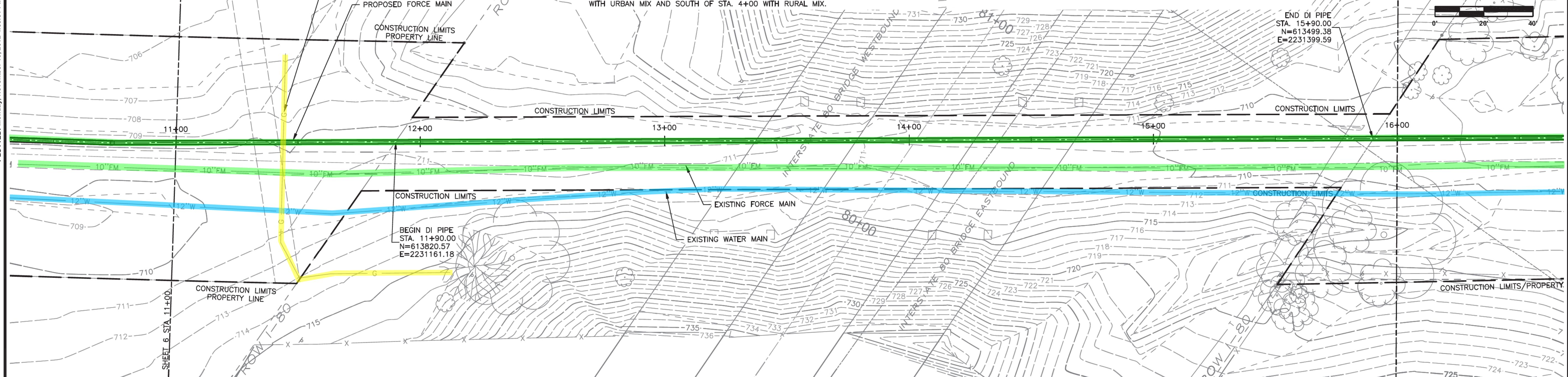
DWG. NO.
2
PROJECT 36845

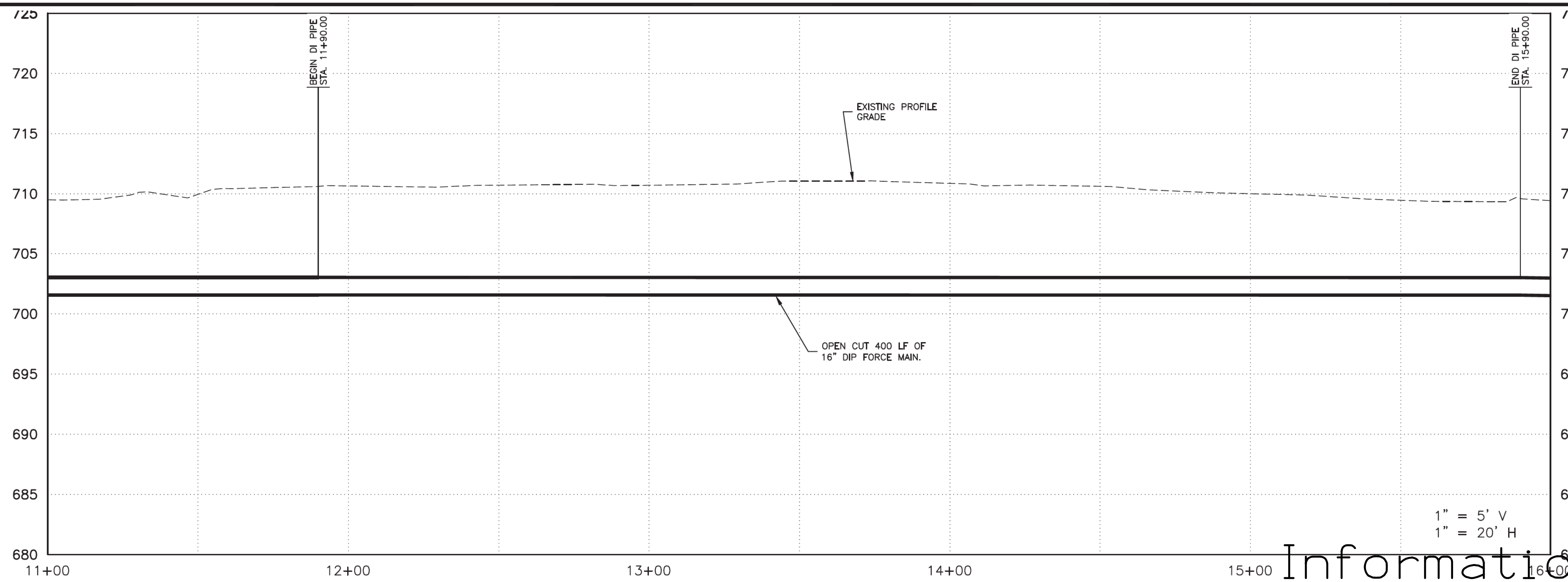
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.1

7:17:25 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_U01.dgn

NOTES:

1. TILE LINES ARE PRESENT ALONG ROUTE IF TILE LINES ARE ENCOUNTERED, MARK ENDS ON BOTH SIDE OF TRENCH. LEAVE TRENCH OPEN UNTIL REPAIR CAN BE INSPECTED AND PHOTOGRAPHED BY ENGINEER. REPAIR AS SPECIFIED.
2. FORCE MAIN ROUTE FOLLOWS OLD RAILROAD CORRIDOR. BACKFILL TRENCH AND COMPACT AS SPECIFIED. REPLACE GRANULAR SURFACING WITH NEW MATERIAL 12' WIDE 6" THICK.
3. SEED ALL NON AGRICULTURAL AREAS DISTURBED BY CONSTRUCTION NORTH OF STA. 4+00 WITH URBAN MIX AND SOUTH OF STA. 4+00 WITH RURAL MIX.
4. CONTRACTOR SHALL PARK ALL CONSTRUCTION EQUIPMENT AND STOCKPILE MATERIALS IN STAGING AREA NORTHWEST OF LIFT STATION AT END OF EACH DAY WHEN WORKING NORTH OF INTERSTATE I-80.
5. ALL FORCE MAIN FROM STA. 4+00 TO STA. 37+12 MUST BE INSTALLED PRIOR TO APRIL 1, 2013. IN AGRICULTURAL AREAS SEGREGATE TOP 18" OF SOIL. BACKFILL TRENCH AND REPLACE TOP 18" OF SOIL. DO NOT OVER COMPACT OR USE AS A HAUL ROAD. IF MATERIAL BECOMES COMPACTED, DISC AS NECESSARY.





Information Only

PLOTTED: Monday, November 19, 2012 4:33:31 PM

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X-REFS: 36845 Design & Topo 2011-5-20

DATE	REVISIONS

SCALE	AS NOTED
DRAWN	ALG
CHECKED	DRS
APPROVED	DRS
DATE	11-16-12
ISSUED FOR	CONSTRUCTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

V&K

VEENSTRA & KIMM, INC.

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CITY OF WEST BRANCH

860 22nd Avenue • Suite 4 • Coralville, Iowa 52241-1565
319-466-1000 • 319-466-1008(FAX) • 888-241-8001(WATS)

FORCE MAIN
PLAN AND PROFILE

DWG. NO. 7

PROJECT 36845

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.2

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Information Only

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.3

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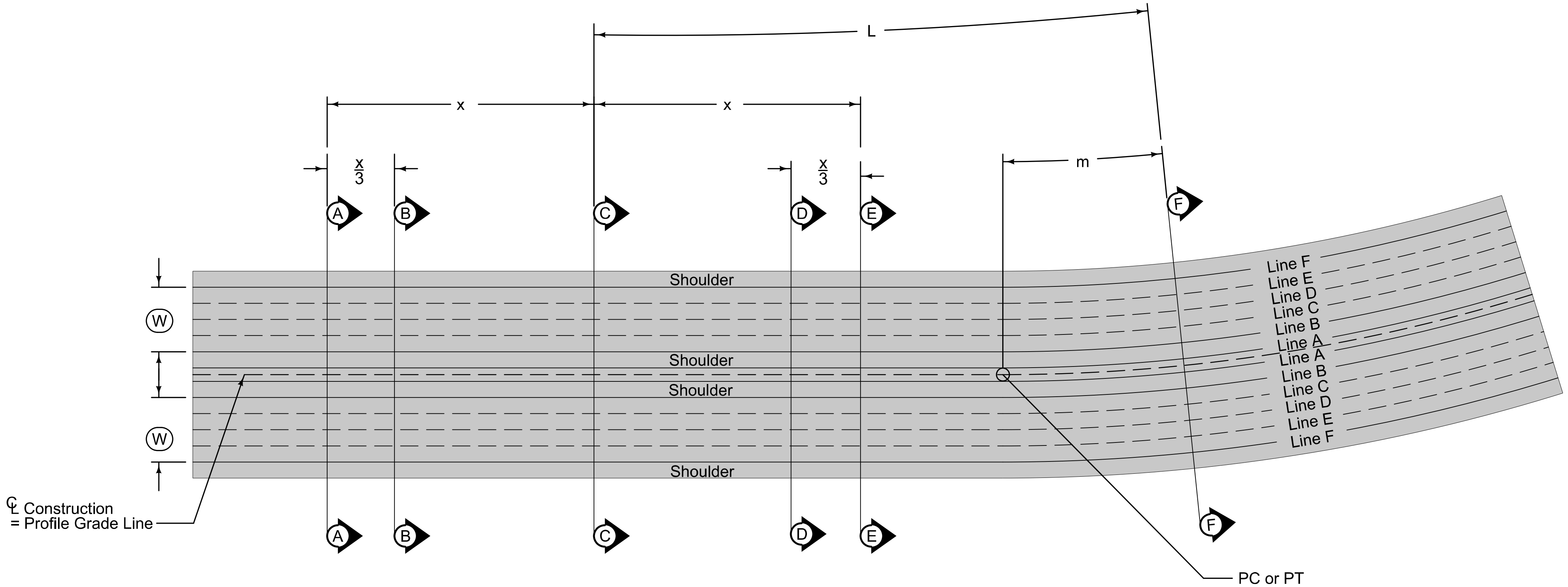


TRANSITION DETAILS - TANGENT TO CURVE

Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

When spiral curve transitions are not required:
Place 70% of full superelevation at the P.C. and P.T.
Place 30% of the runoff length within the curve.

Unless otherwise specified, all lengths are measured along the centerline of construction.

Superelevations on this standard are shown for curves to the right. Curves to the left are a mirror image of what is shown.

Smooth curves should be established at the time of construction at sections A-F along the profile edges of lines A-F.

See Detail A for profile grade location.

m = 30% of Runoff Length (L)

W = 48'

g = Normal Cross Slope (3.0%)

L = Distance to Change Cross Slope from 0% to e

e = Supereleavtion Rate

x = Distance to Change Cross Slope from 0% to 3.0%

s = Normal Shoulder Slope

1 Spiral curve length coincides with runoff length (L)

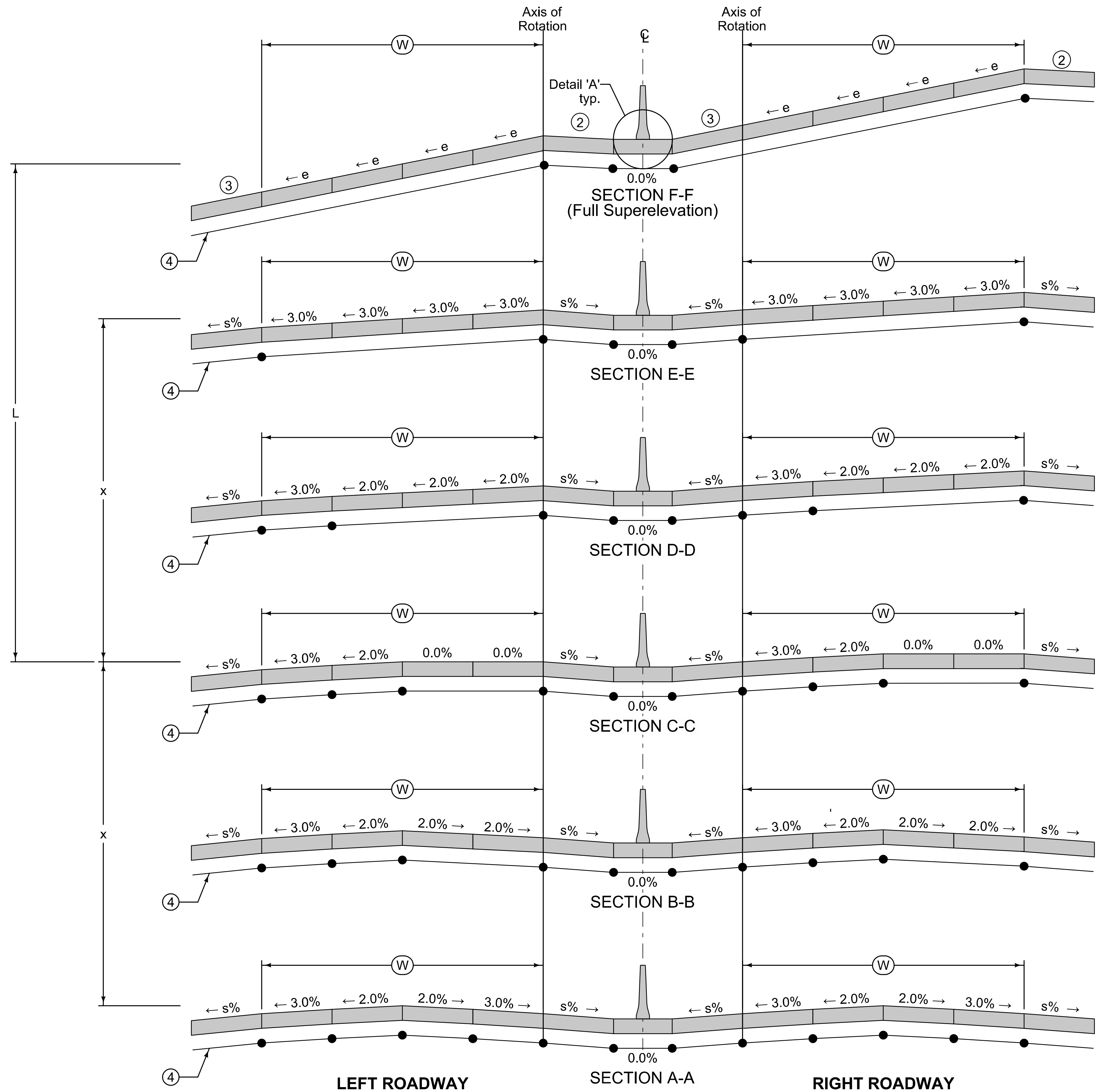
Tabulation:
101-18

Curve P. I. Sta. 1220+01.07

Curve P. I. Sta. 1435+76.80

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN
NORMAL CROWN = 3.0%

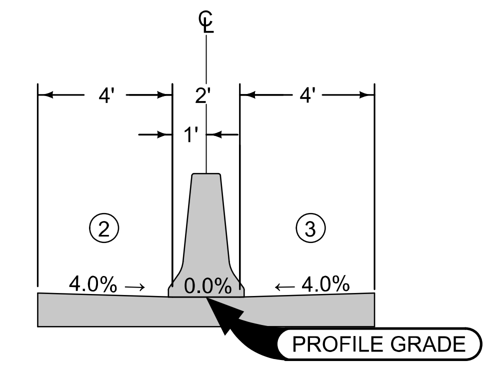
FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.4



2. High Side Shoulder: Maintain normal shoulder cross slope (s) until the cross slope break with the adjacent pavement reaches 8.0%, then slope the shoulder at the same rate as the adjacent pavement maintaining an 8% cross slope breakover.

3. Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

4. Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.



DETAIL A

Curve P. I. Sta. 1220+01.07

Curve P. I. Sta. 1435+76.80

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.5

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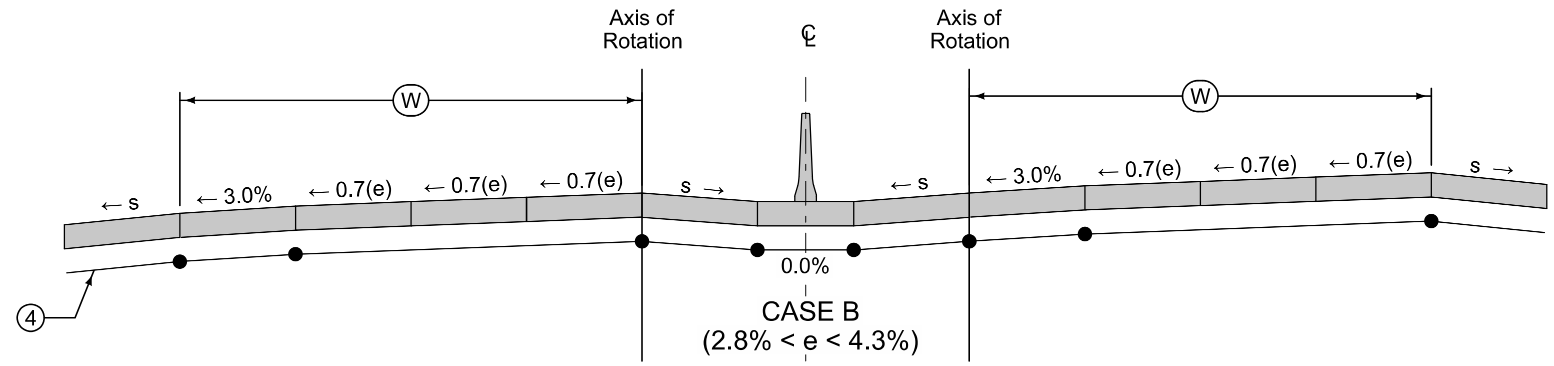


SECTION AT THE PC OR PT

(2) High Side Shoulder: Maintain normal shoulder cross slope (s) until the cross slope break with the adjacent pavement reaches 8.0%, then slope the shoulder at the same rate as the adjacent pavement maintaining an 8% cross slope breakover.

(3) Low Side Shoulder: Maintain normal shoulder cross slope (s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

(4) Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

Curve P. I. Sta. 1220+01.07

Curve P. I. Sta. 1435+76.80

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.6

TABLE OF OFFSETS AND DROPS FOR RIGHT ROADWAY

Location of Cross Sections		A	B	C	D	E	F
From Line A To Line B	Offset (Ft.)	*	*	*	*	*	*
	Slope (%)	s	s	s	s	s	3
	Drop (Ft.)						
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	3.0	3.0	3.0	3.0	3.0	e
	Drop (Ft.)	0.36	0.36	0.36	0.36	0.36	12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	2.0	2.0	3.0	e
	Drop (Ft.)	0.24	0.24	0.24	0.24	0.36	12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	0.0	2.0	3.0	e
	Drop (Ft.)	-0.24	-0.24	0.0	0.24	0.36	12(e)
From Line E To Line F	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-3.0	-2.0	0.0	2.0	3.0	e
	Drop (Ft.)	-0.36	-0.24	0.0	0.24	0.36	12(e)

* Refer to plan details for shoulder width

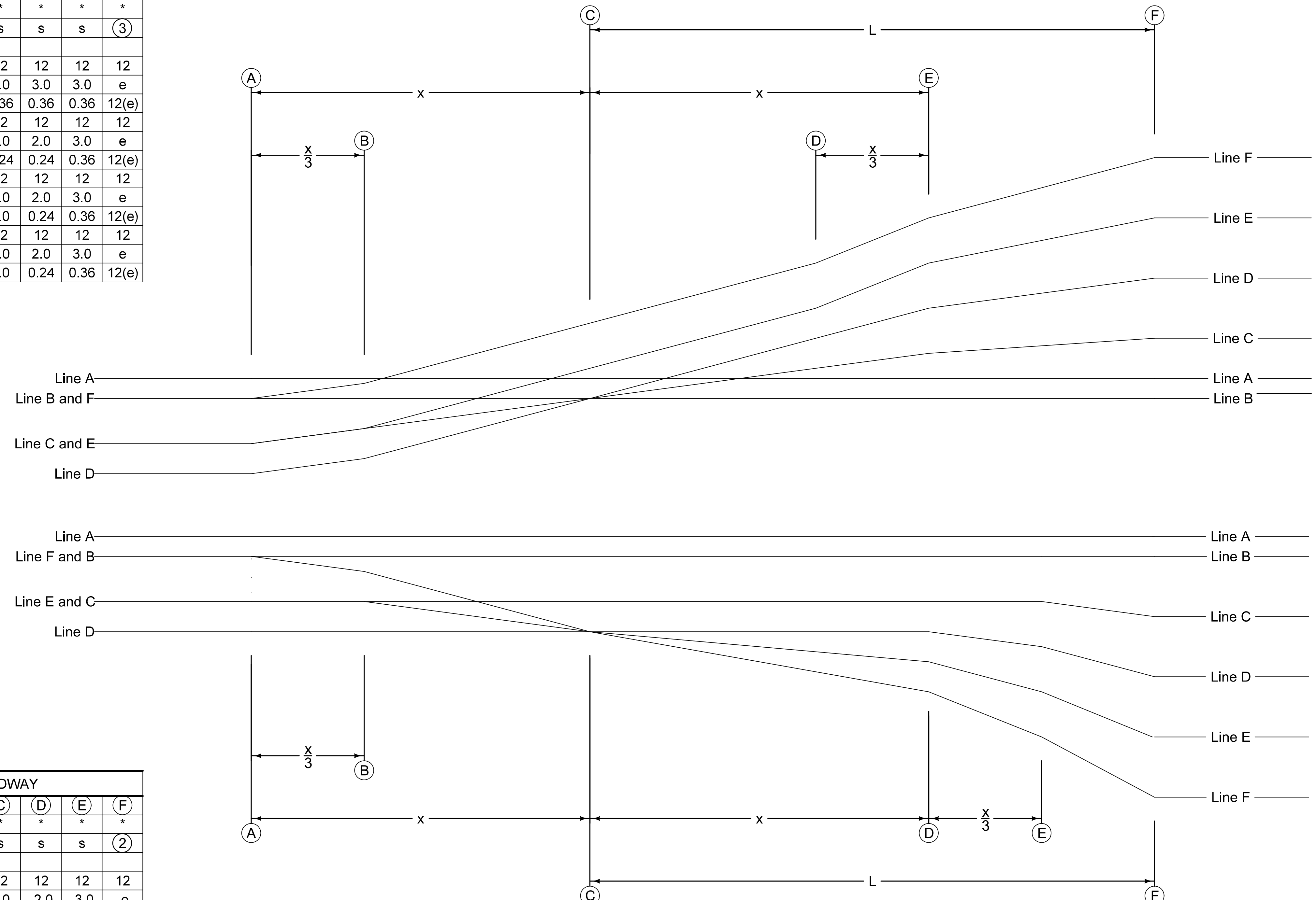


TABLE OF OFFSETS AND DROPS FOR LEFT ROADWAY

Location of Cross Sections		A	B	C	D	E	F
From Line A To Line B	Offset (Ft.)	*	*	*	*	*	*
	Slope (%)	s	s	s	s	s	2
	Drop (Ft.)						
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	3.0	2.0	0.0	-2.0	-3.0	-e
	Drop (Ft.)	0.36	0.24	0.0	-0.24	-0.36	-12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	0.0	-2.0	-3.0	-e
	Drop (Ft.)	0.24	0.24	0.0	-0.24	-0.36	-12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	-2.0	-2.0	-3.0	-e
	Drop (Ft.)	-0.24	-0.24	-0.24	-0.24	-0.36	-12(e)
From Line E To Line F	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-3.0	-3.0	-3.0	-3.0	-3.0	-e
	Drop (Ft.)	-0.36	-0.36	-0.36	-0.36	-0.36	-12(e)

* Refer to plan details for shoulder width

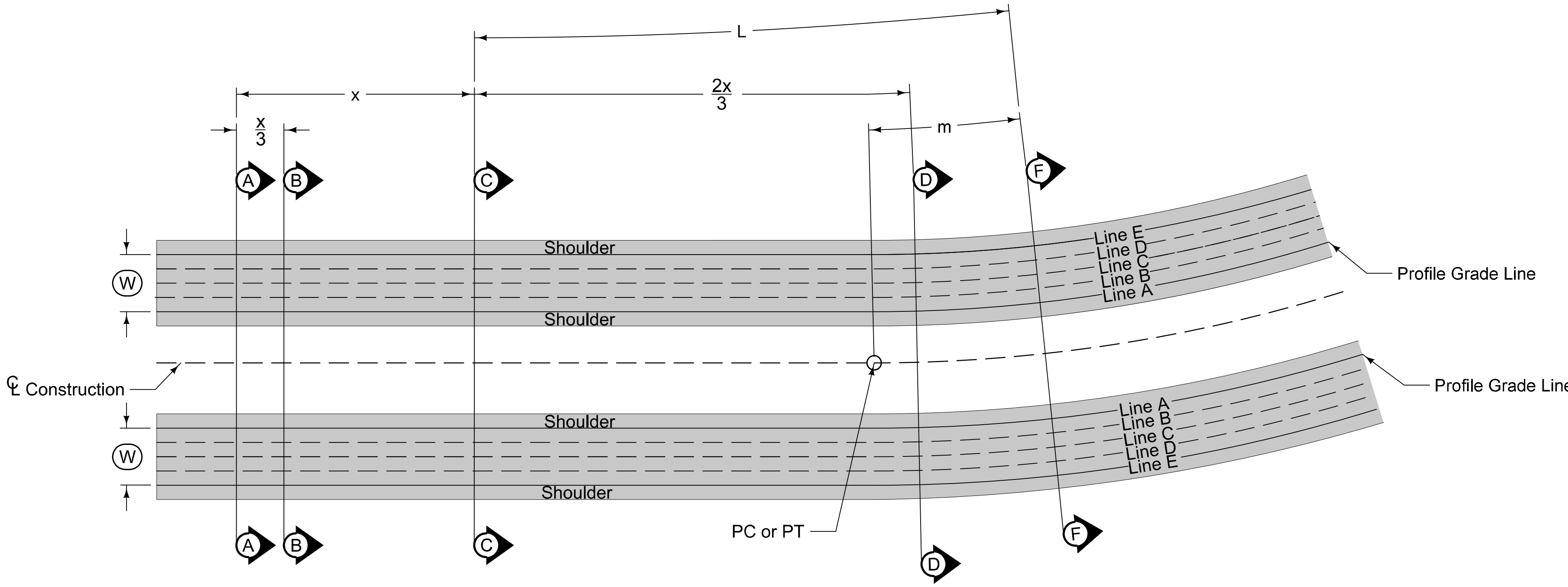
DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

Curve P. I. Sta. 1220+01.07

Curve P. I. Sta. 1435+76.80

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
CLOSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.7



TRANSITION DETAILS - TANGENT TO CURVE

Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

When spiral curve transitions are not required:
Place 70% of full superelevation at the PC and PT.
Place 30% of the runoff length within the curve.

Unless otherwise specified, all lengths are measured along the centerline of construction.

Superelevations on this standard are shown for curves to the right. Curves to the left are a mirror image of what is shown.

Smooth curves should be established at the time of construction at sections A-F along the profile edges of lines A-D.

Axis of rotation coincides with profile grade location.

m = 30% of Runoff Length (L)

W = 48' Regardless of Pavement Width

g = Normal Cross Slope (3.0%)

L = Distance to Change Cross Slope from 0% to e

e = Supereleavtion Rate

x = Distance to Change Cross Slope from 0% to 3.0%

s = Normal Shoulder Slope

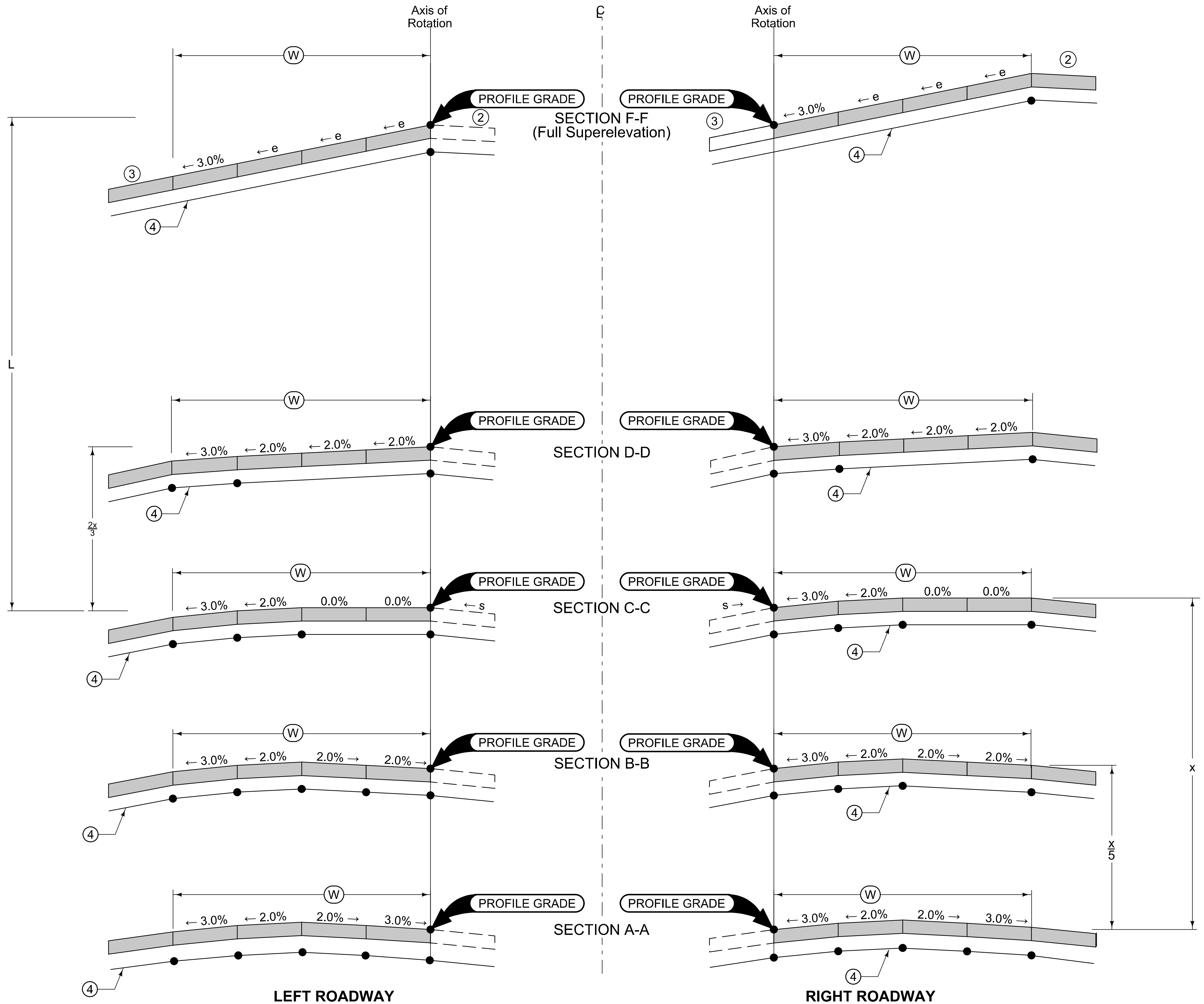
1 Spiral curve length coincides with runoff length (L)

Tabulation:
101-18

Curve P. I. Sta. 1332+06.92

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.8



② High Side Shoulder: Maintain normal shoulder cross slope(s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

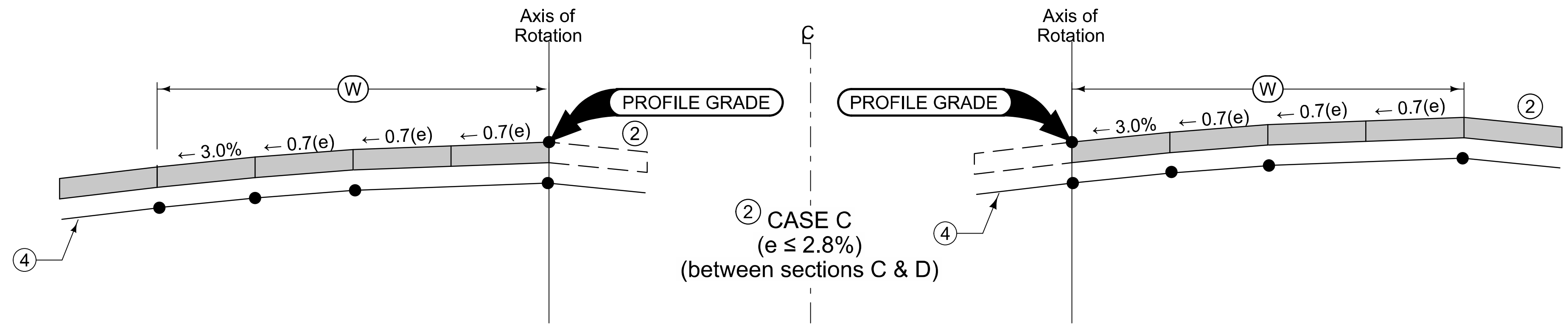
③ Low Side Shoulder: Maintain normal shoulder cross slope(s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

④ Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

Curve P. I. Sta. 1332+06.92

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.9



(2) High Side Shoulder: Maintain normal shoulder cross slope(s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

(3) Low Side Shoulder: Maintain normal shoulder cross slope(s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

(4) Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

SECTION AT THE PC OR PT

Curve P. I. Sta. 1332+06.92

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

TABLE OF OFFSETS AND DROPS FOR RIGHT ROADWAY

Location of Cross Sections		(A)	(B)	(C)	(D)	(F)
From Line A To Line B	Offset (Ft.)	12	12	12	12	12
	Slope (%)	3.0	3.0	3.0	3.0	3.0
	Drop (Ft.)	0.36	0.36	0.36	0.36	0.36
From Line B To Line C	Offset (Ft.)	12	12	12	12	12
	Slope (%)	2.0	2.0	2.0	2.0	2.8
	Drop (Ft.)	0.24	0.24	0.24	0.24	0.34
From Line C To Line D	Offset (Ft.)	12	12	12	12	12
	Slope (%)	-2.0	-2.0	0.0	2.0	2.8
	Drop (Ft.)	-0.24	-0.24	0.0	0.24	0.34
From Line D To Line E	Offset (Ft.)	12	12	12	12	12
	Slope (%)	-3.0	-2.0	0.0	2.0	2.8
	Drop (Ft.)	-0.36	-0.24	0.0	0.24	0.34
From Line A To Line E	Offset (Ft.)	48	48	48	48	48
	Drop (Ft.)	0.00	0.12	0.60	1.08	1.38

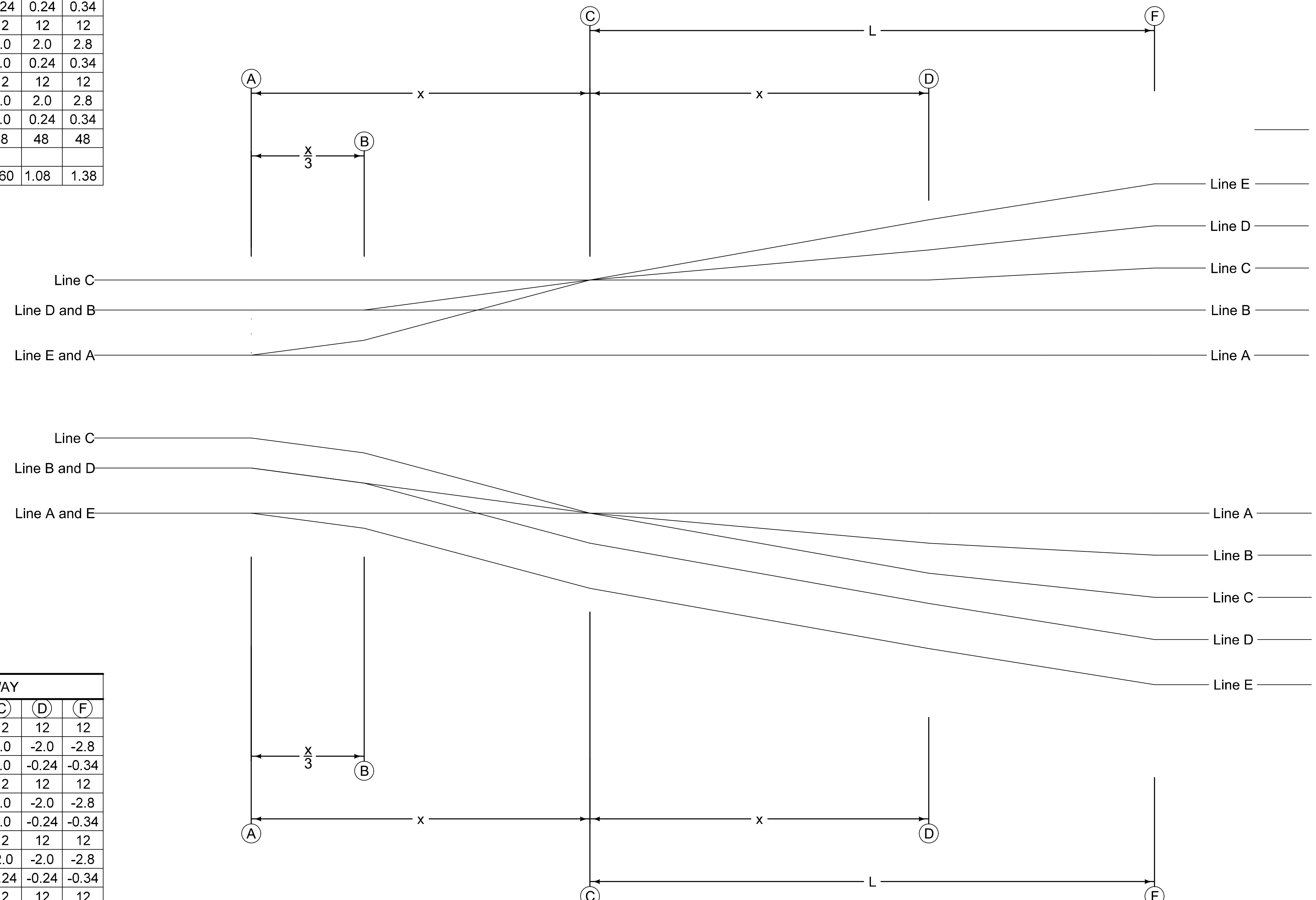


TABLE OF OFFSETS AND DROPS FOR LEFT ROADWAY

Location of Cross Sections		(A)	(B)	(C)	(D)	(F)
From Line A To Line B	Offset (Ft.)	12	12	12	12	12
	Slope (%)	3.0	2.0	0.0	-2.0	-2.8
	Drop (Ft.)	0.36	0.24	0.0	-0.24	-0.34
From Line B To Line C	Offset (Ft.)	12	12	12	12	12
	Slope (%)	2.0	2.0	0.0	-2.0	-2.8
	Drop (Ft.)	0.24	0.24	0.0	-0.24	-0.34
From Line C To Line D	Offset (Ft.)	12	12	12	12	12
	Slope (%)	-2.0	-2.0	-2.0	-2.0	-2.8
	Drop (Ft.)	-0.24	-0.24	-0.24	-0.24	-0.34
From Line D To Line E	Offset (Ft.)	12	12	12	12	12
	Slope (%)	-3.0	-3.0	-3.0	-3.0	-3.0
	Drop (Ft.)	-0.36	-0.36	-0.36	-0.36	-0.36
From Line A To Line E	Offset (Ft.)	48	48	48	48	48
	Slope (%)					
	Drop (Ft.)	0.00	-0.12	-0.60	-1.08	-1.38

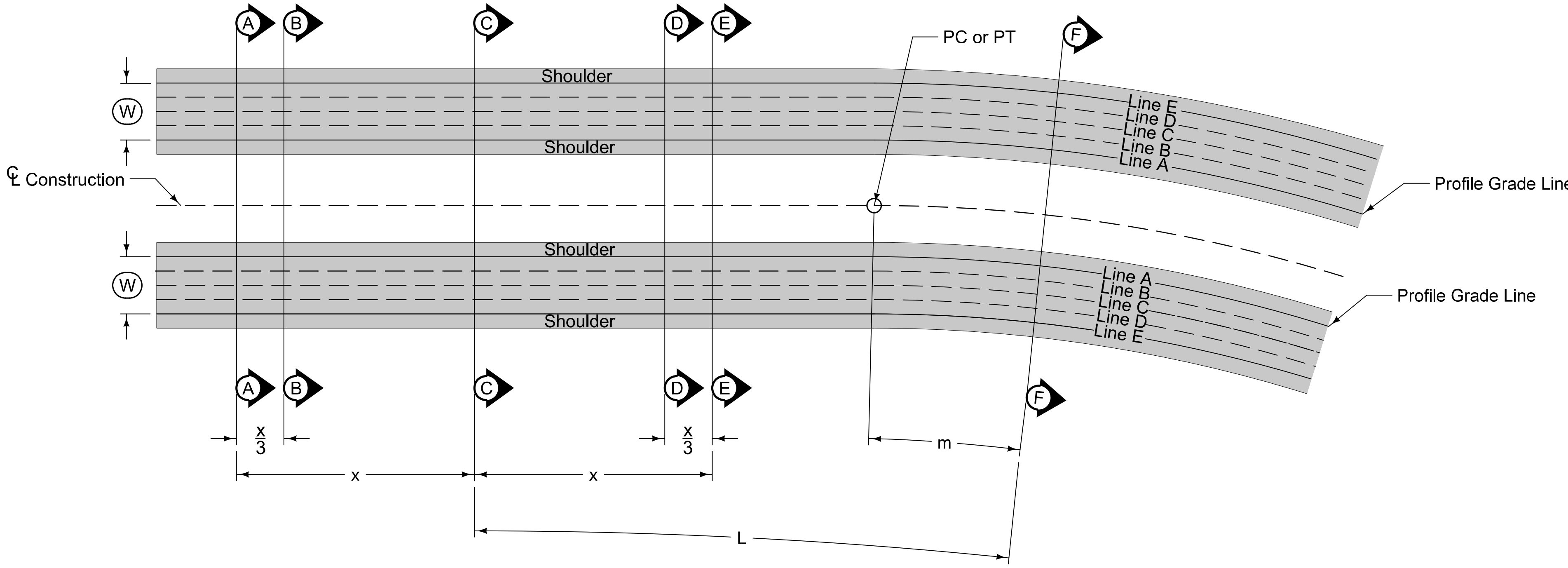
* Refer to plan details for shoulder width

DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

Curve P. I. Sta. 1332+06.92

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.11



TRANSITION DETAILS - TANGENT TO CURVE

Refer to specific curve data contained in project plans for tangent runout length (x), runoff length (L) and full superelevation (e).

When spiral curve transitions are not required:
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Axis of rotation coincides with profile grade location.

m = 30% of Runoff Length (L)

W = 48' Regardless of Pavement Width

g = Normal Cross Slope (3.0%)

L = Distance to Change Cross Slope from 0% to e

e = Supereleavtion Rate

x = Distance to Change Cross Slope from 0% to 3.0%

s = Normal Shoulder Slope

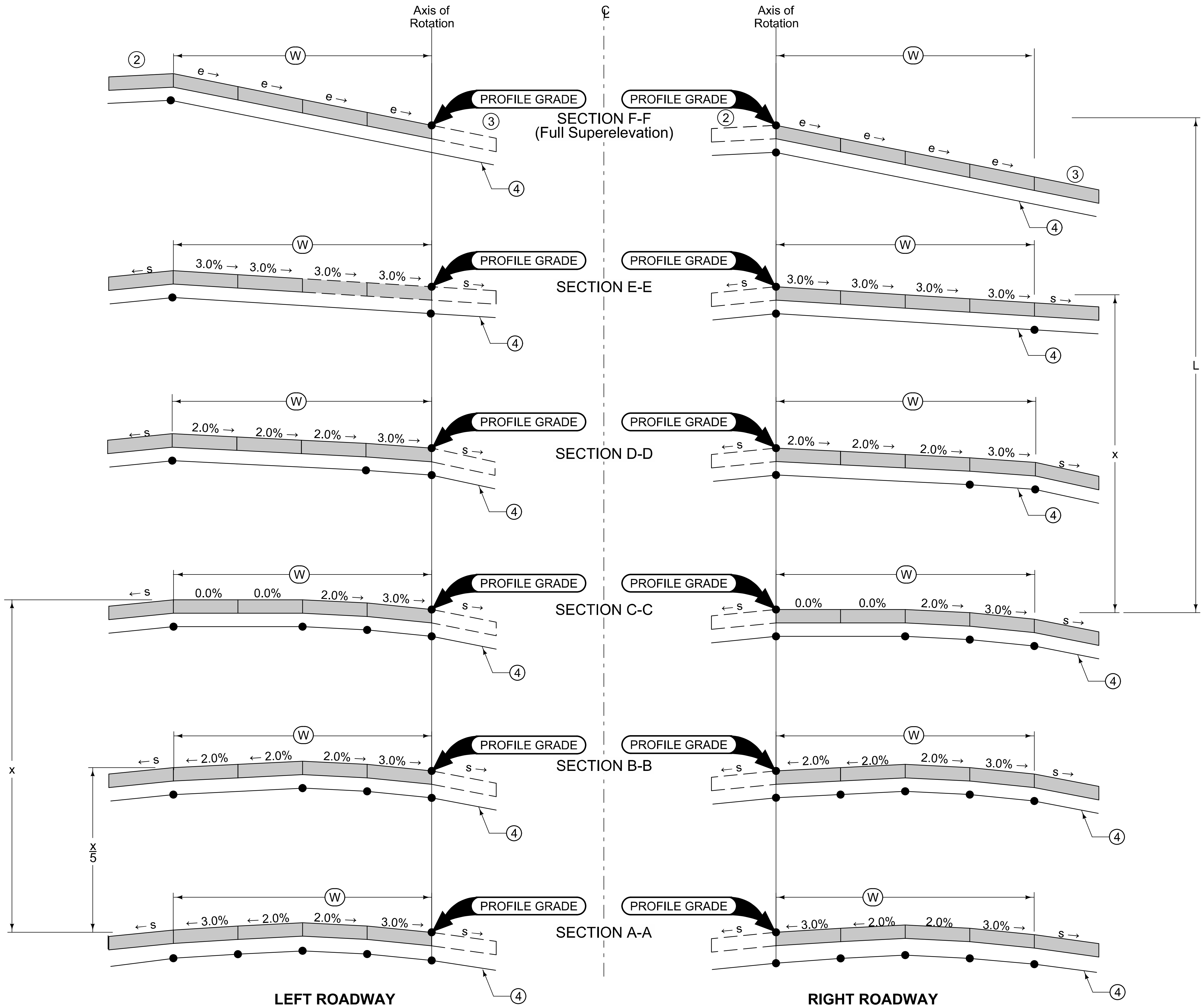
1 Spiral curve length coincides with runoff length (L)

Tabulation:
101-18

Curve P. I. Sta. 1381+43.49

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.12



(2) High Side Shoulder: Maintain normal shoulder cross slope(s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

(3) Low Side Shoulder: Maintain normal shoulder cross slope(s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

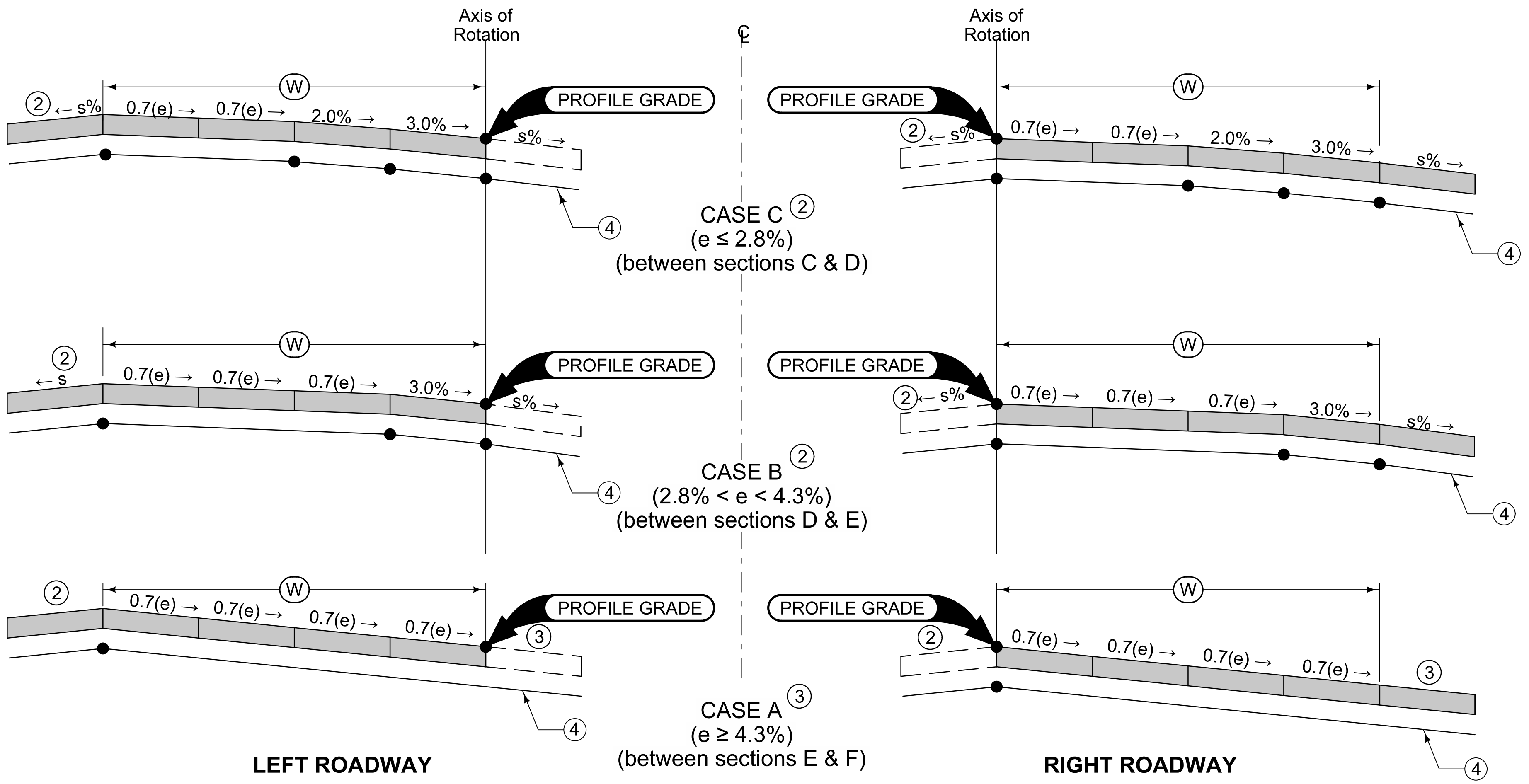
(4) Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.

Curve P. I. Sta. 1381+43.49

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.13

7:18:05 AM 11/16/2018 adewolf pw:\\projectwise.dot.int.lan:PWMain\Documents\Projects\5208002016\Design\CADD Files\SHT\SHT_52080114_U04.dgn

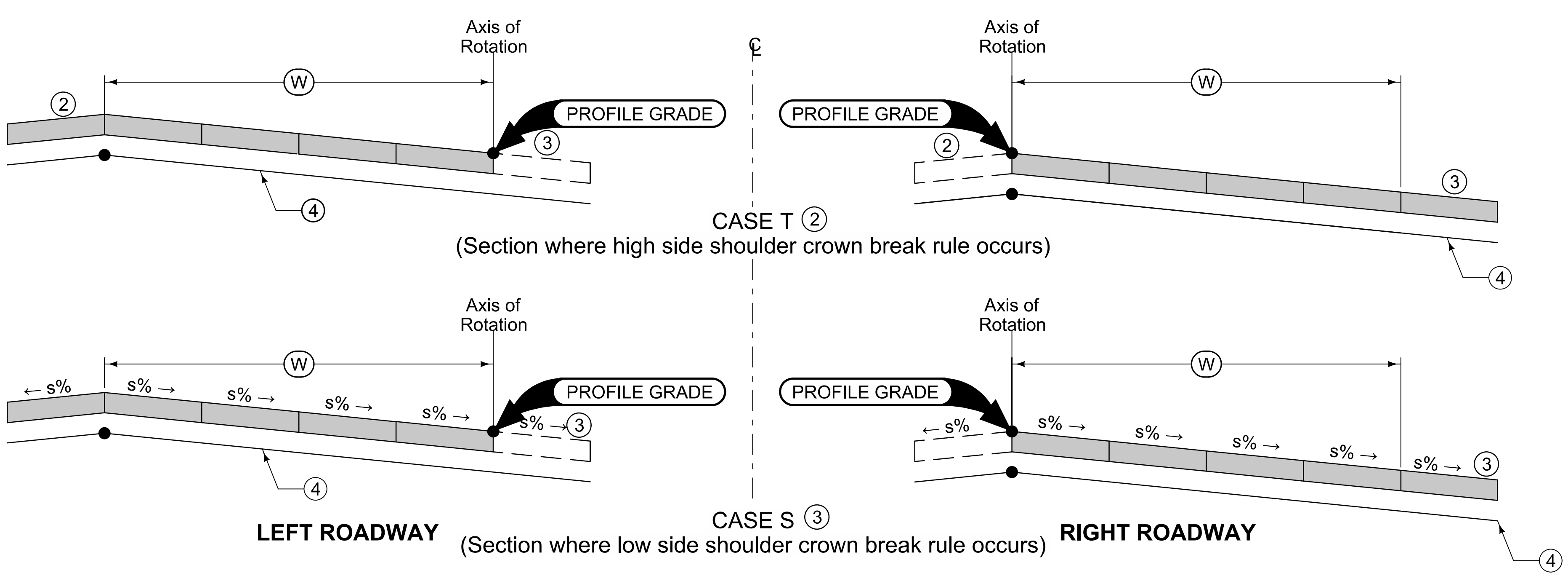


SECTION AT THE PC OR PT

② High Side Shoulder: Maintain normal shoulder cross slope(s), until the cross slope break with the adjacent pavement reaches 8.0%. Maintain 8% breakover until superelevation rate reaches 7%. If superelevation rate exceeds 7.0%, maintain a 1% shoulder cross slope away from the adjacent pavement.

③ Low Side Shoulder: Maintain normal shoulder cross slope(s) until the adjacent pavement slope equals s, then slope the shoulder at the same cross slope as the adjacent pavement.

④ Subgrade Surface: Subgrade surface cross slope parallel to pavement surface cross slope.



SECTION WHERE SHOULDER SLOPE TRANSITION BEGINS

Curve P. I. Sta. 1381+43.49

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

FILE NO.	ENGLISH	DESIGN TEAM Jia \ Miller \ DeWolf	JOHNSON/CEDAR COUNTY	PROJECT NUMBER IM-NHS-080-7(114)248--03-52	SHEET NUMBER U.14

TABLE OF OFFSETS AND DROPS FOR LEFT ROADWAY

Location of Cross Sections		(A)	(B)	(C)	(D)	(E)	(F)
From Line A To Line B	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	3.0	3.0	3.0	3.0	3.0	e
	Drop (Ft.)	0.36	0.36	0.36	0.36	0.36	12(e)
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	2.0	2.0	3.0	e
	Drop (Ft.)	0.24	0.24	0.24	0.24	0.36	12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	0.0	2.0	3.0	e
	Drop (Ft.)	-0.24	-0.24	0.0	0.24	0.36	12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-3.0	-2.0	0.0	2.0	3.0	e
	Drop (Ft.)	-0.36	-0.24	0.0	0.24	0.36	12(e)
From Line A To Line E	Offset (Ft.)	48	48	48	48	48	48
	Drop (Ft.)	0.00	0.12	0.60	1.08	1.44	48(e)

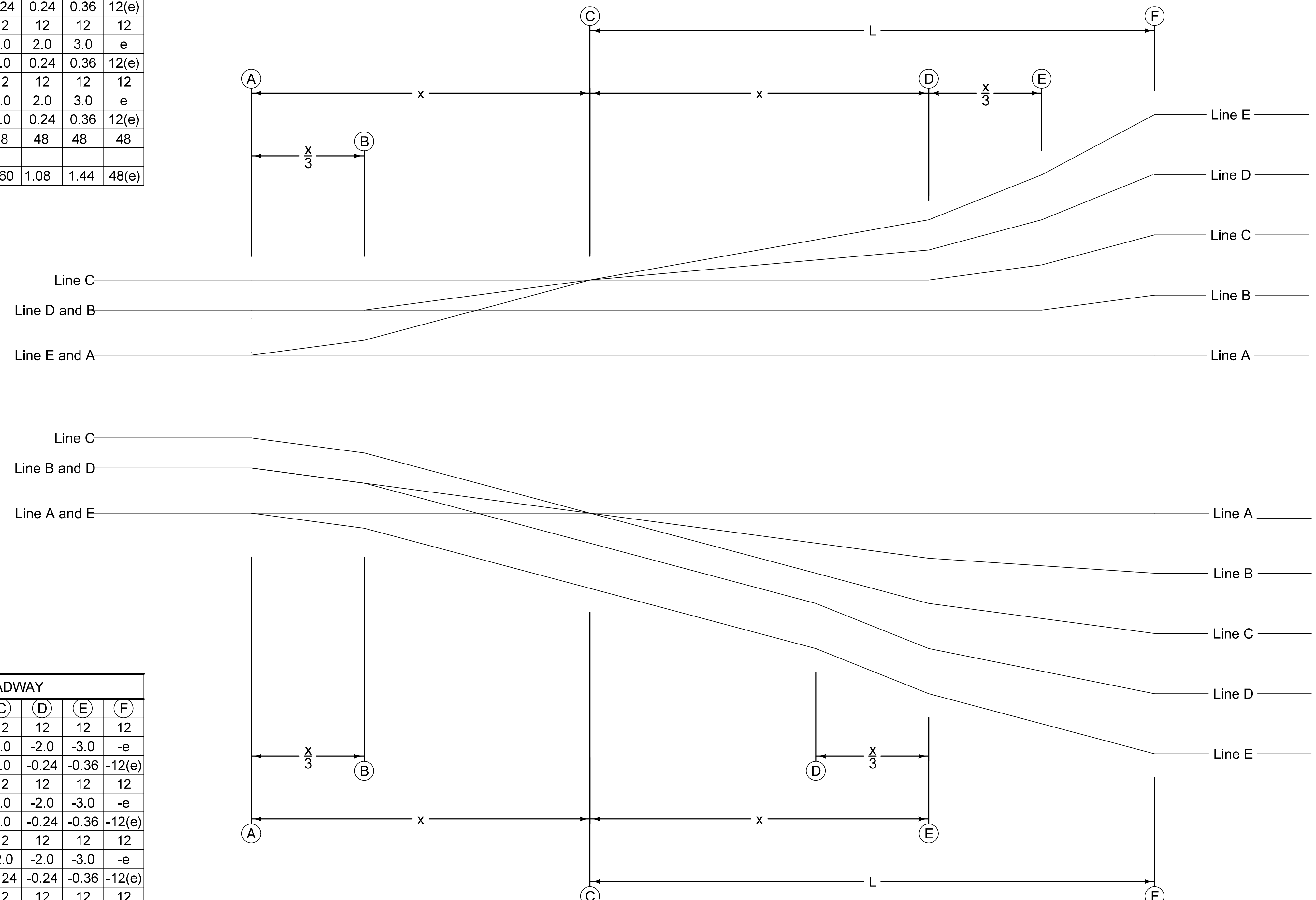


TABLE OF OFFSETS AND DROPS FOR RIGHT ROADWAY

Location of Cross Sections		(A)	(B)	(C)	(D)	(E)	(F)
From Line A To Line B	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	3.0	2.0	0.0	-2.0	-3.0	-e
	Drop (Ft.)	0.36	0.24	0.0	-0.24	-0.36	-12(e)
From Line B To Line C	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	2.0	2.0	0.0	-2.0	-3.0	-e
	Drop (Ft.)	0.24	0.24	0.0	-0.24	-0.36	-12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.0	-2.0	-2.0	-2.0	-3.0	-e
	Drop (Ft.)	-0.24	-0.24	-0.24	-0.24	-0.36	-12(e)
From Line D To Line E	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-3.0	-3.0	-3.0	-3.0	-3.0	-e
	Drop (Ft.)	-0.36	-0.36	-0.36	-0.36	-0.36	-12(e)
From Line A To Line E	Offset (Ft.)	48	48	48	48	48	48
	Slope (%)						
	Drop (Ft.)	0.00	-0.12	-0.60	-1.08	-1.44	-48(e)

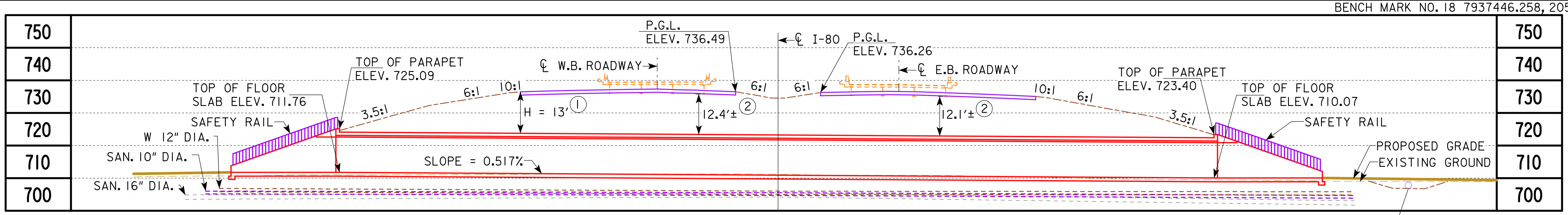
* Refer to plan details for shoulder width

DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

Curve P. I. Sta. 1381+43.49

SUPERELEVATION DETAILS
EIGHT LANE ROADWAY
DEPRESSED MEDIAN
NORMAL CROWN = 3.0%

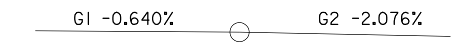
BENCH MARK NO. 18 7937446.258, 20598159.230, 767.983 CP SET FENO MONUMENT 12" DEEP STAMPED "CP18"



① DESIGN FOR FILL HEIGHT OF 15.4′ DUE TO STAGED TRAFFIC CONDITION.

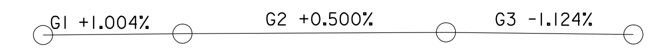
② MIN. VERT. CLEAR TO AVERAGE LOW BEAM ELEV. DURING CONSTRUCTION.

LONGITUDINAL SECTION ALONG ℄ CULVERT



VPI STA = 1489+25.000 VC = 500.00′
VPI ELEV = 737.03

PROPOSED PROFILE GRADE I-80



VPI STA. = 85+76.015 ELEV. 708.792
VPI STA. = 87+31.250 ELEV. 710.350
VPI STA. = 90+81.250 ELEV. 712.100
VPI STA. = 92+89.381 ELEV. 709.760

(RCB FLOOR SLAB ELEVATION TIES IN AT PAVING NOTCH)

PROPOSED PROFILE GRADE TRAIL

NOTES:
1. AESTHETIC TREATMENTS OF HEADWALLS IS INCLUDED.
2. THE RCB IS TO BE CONSTRUCTED WITH I-80 TRAFFIC ON THE EXISTING BRIDGES. THE RCB FINAL DESIGNER SHALL COORDINATE WITH ROAD DESIGN REGARDING POTENTIAL ISSUES DUE TO MAINLINE CONSTRUCTION STAGED EMBANKMENT. IT IS DESIRED THAT NO STAGED MAINLINE FILL OR FLOWABLE MORTAR BE PLACED AGAINST THE EXISTING BRIDGE BEAMS.
3. FROST TROUGH NOT INCLUDED FOR CIP.
4. LIGHTING INSIDE CULVERT SHALL BE REQUIRED.
5. EXISTING TWIN 169′x30′ CONTINUOUS I-BEAM BRIDGES (DESIGN NO 5359) TO BE REMOVED (NOT PART OF THIS DESIGN).

(PRELIMINARY)

UTILITIES LEGEND:

SAN- 16 INCH DIAMETER FORCE MAIN
SAN- 10 INCH DIAMETER FORCE MAIN
W- 12 INCH P.V.C.
G- 6 INCH STEEL GAS LINE

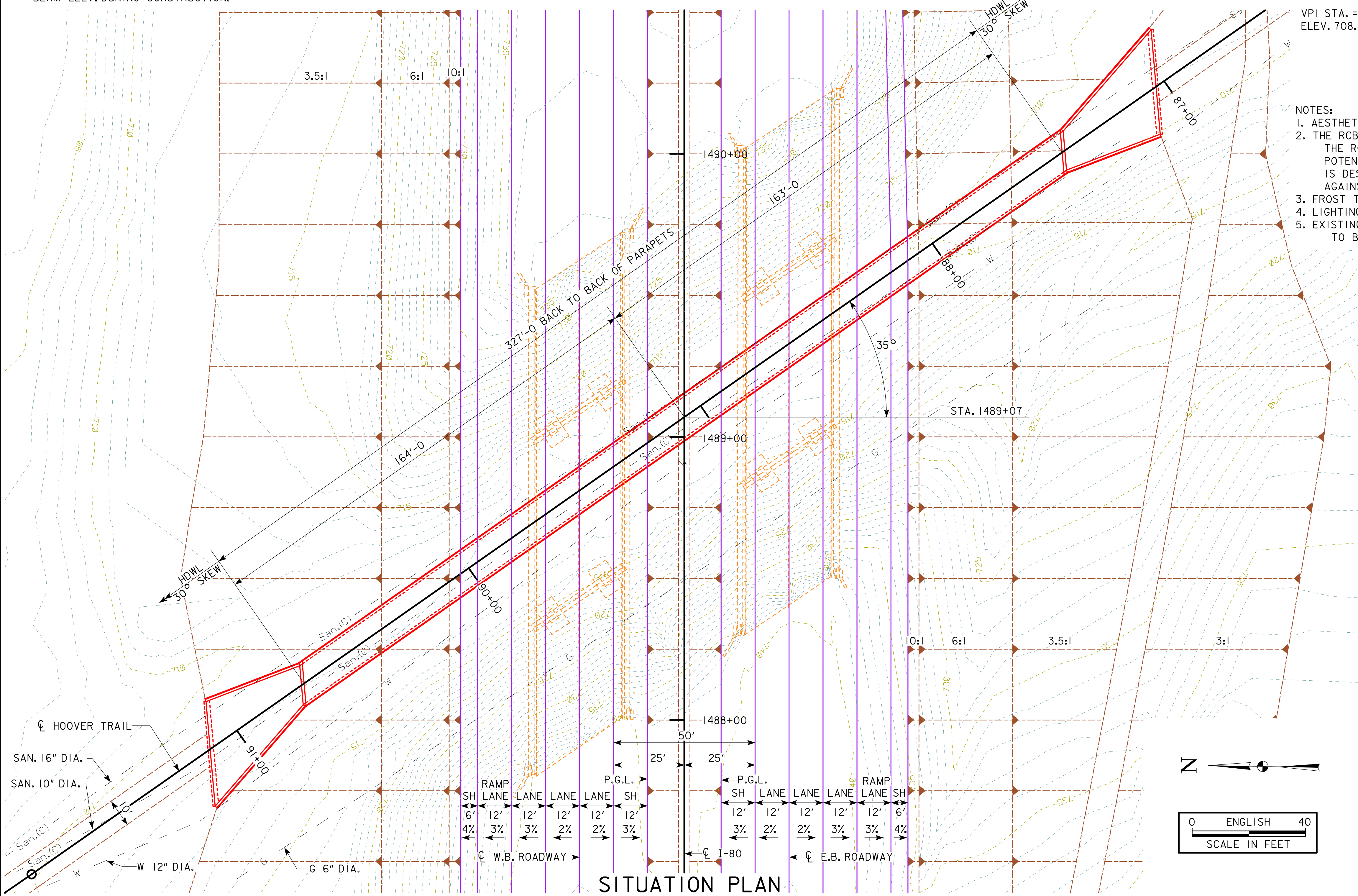
SEE ROAD PLANS FOR FINAL UTILITIES DATA.

TRAFFIC ESTIMATE

2025 AADT	45,200	V.P.D.
2045 AADT	71,800	V.P.D.
2045 DHV	7,410	V.P.H.
TRUCKS	36	%
TOTAL DESIGN ESALs	-	

LOCATION

HOOVER TRAIL AT I-80 CROSSING
T-79N R-4W
SECTION 8
SPRINGDALE TOWNSHIP
CEDAR COUNTY
LATITUDE 41.664114°
LONGITUDE -91.337338°



SITUATION PLAN

N

0 ENGLISH 40
SCALE IN FEET

PRELIMINARY

DESIGN FOR 35° SKEW (R.A.)

12′x11′-4x327′ REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN

STATION 1489+07.00 (I-80) DECEMBER 2018

CEDAR COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. 1 OF 1 FILE NO. 31630 DESIGN NO. 121