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PLANS OF PROPOSED IMPROVEMENT ON THE
INTERSTATE ROAD SYSTEM
Johnson \ Linn COUNTY
Unknown Pavement - Grade and New
Johnson Co Line to S of US 30

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



REVISIONS

TOTAL
302
PROJECT IDENTIFICATION NUMBER
16-52-380-030-03
PROJECT NUMBER
IM-380-6(434)11--13-52
R.O.W. PROJECT NUMBER
IMN-380-6(433)12--0E-57

DESIGN DATA RURAL

2019	AADT	67,700	V.P.D.
2050	AADT	140,600	V.P.D.
2050	DHV	12,270	V.P.H.
	TRUCKS	17	%
	Total		
	Design ESALs	..	

INDEX OF SEALS

	X		
X	X		X

PRELIMINARY PLANS

Subject to change by final design.

D5 PLAN - Date: 09-13-2022

END CONSTRUCTION
Sta. C 237+25
M.P. 16.31

FHWA No.
SB-607010
NB-607000

Station Equation
173+28.49 (AH)
173+23.53 (BK)

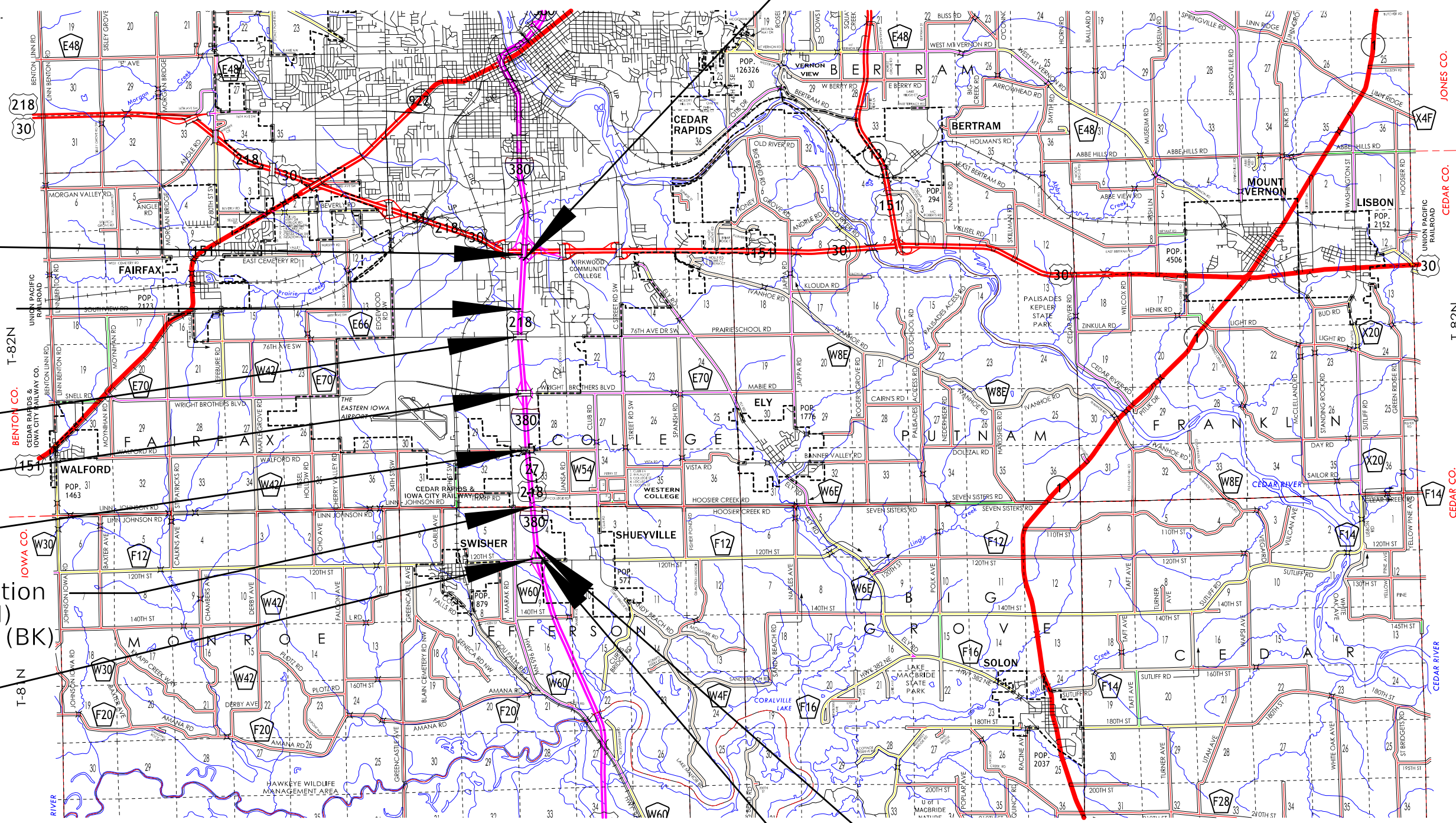
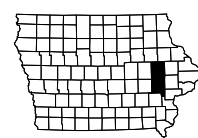
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607050

FHWA No.
600530

FHWA No.
600540

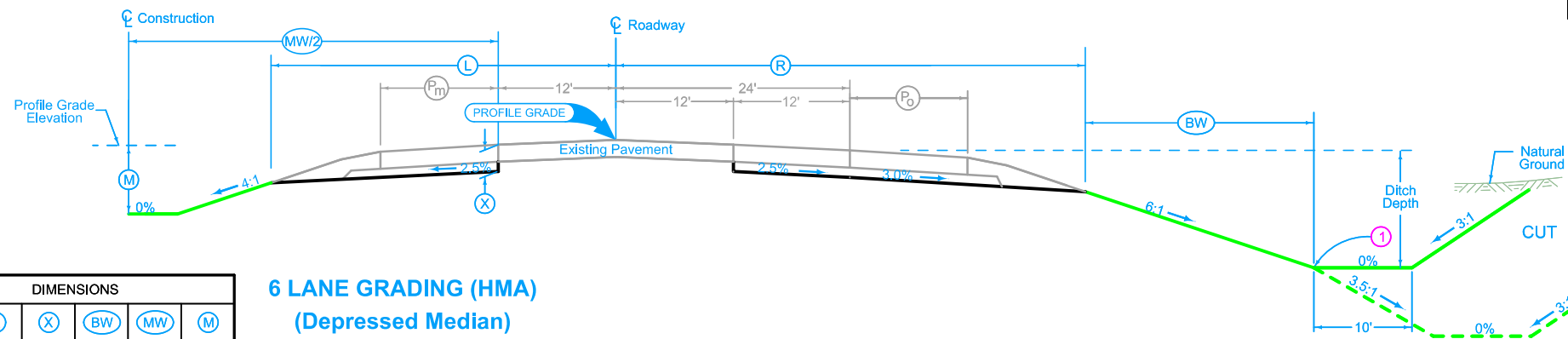
Station Equation
0+00.00 (AH)
1787+29.96 (BK)

FHWA No.
205625



Station Equation
1749+61.91 (AH)
1749+56.90 (BK)

BEGIN CONSTRUCTION
Sta. 1747+00
M.P. 11.05



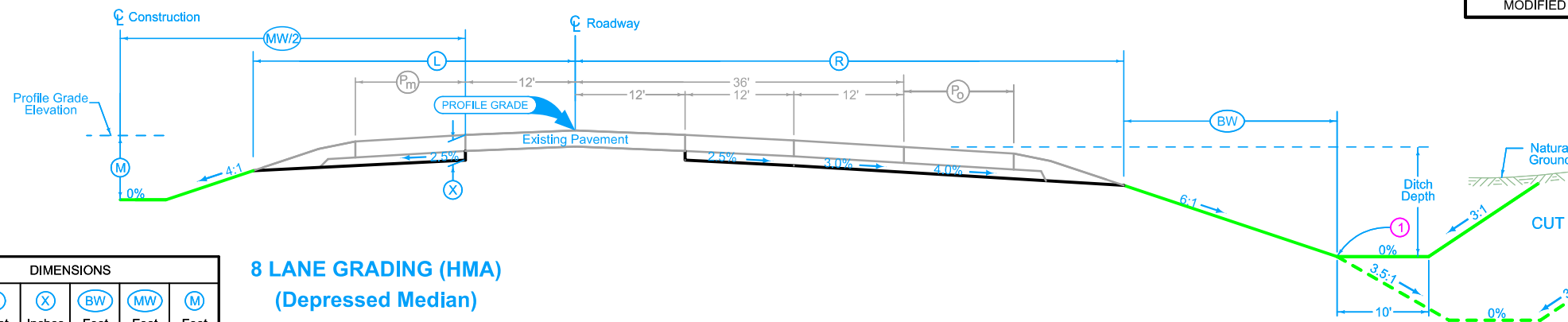
**6 LANE GRADING (HMA)
(Depressed Median)**

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
I-380 NB	1747+00.00 1787+28.96	41.2	53.8	26	4.2	60	3.5	
I-380 NB	0+00.00 120+00.00	41.2	53.8	26	4.2	60	3.5	
I-380 SB	1747+00.00 1787+28.96	41.2	53.8	26	4.2	60	3.5	
I-380 SB	0+00.00 120+00.00	41.2	53.8	26	4.2	60	3.5	

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.



**8 LANE GRADING (HMA)
(Depressed Median)**

LOCATION		DIMENSIONS						
ROAD IDENTIFICATION	STATION TO STATION	L Feet	R Feet	X Inches	BW Feet	MW Feet	M Feet	
I-380 NB	120+00.00 229+00.00	41.2	67.2	26	4.2	60	3.5	
I-380 SB	120+00.00 229+00.00	41.2	67.2	26	4.2	60	3.5	

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

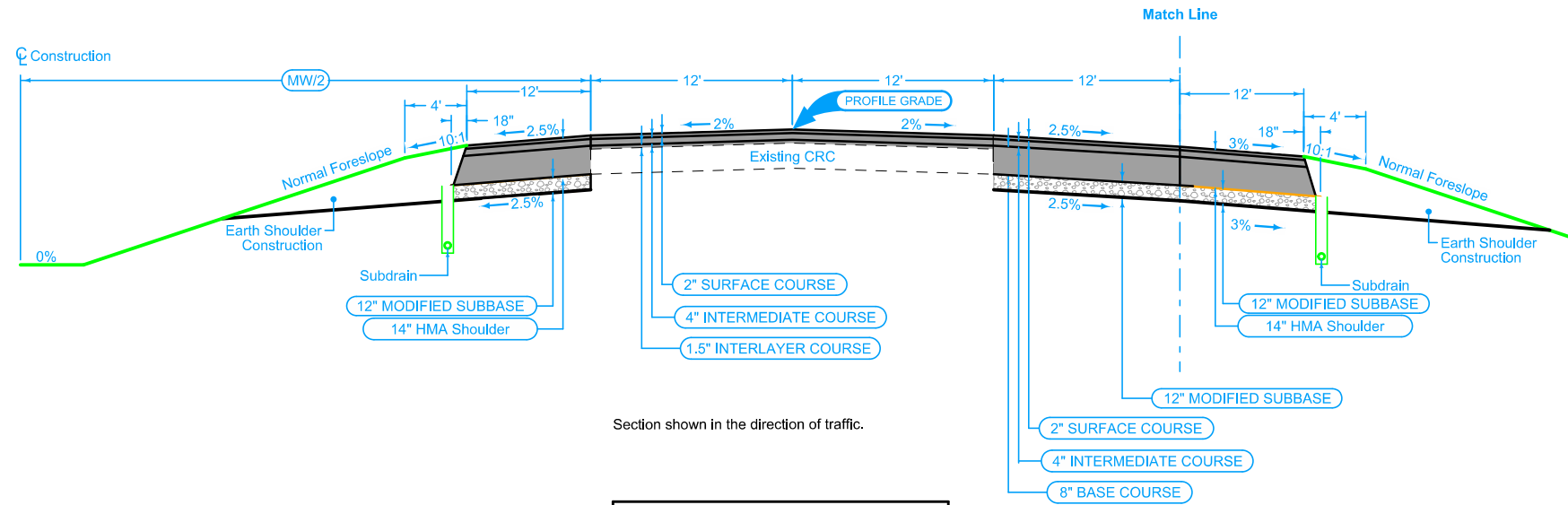
See Plan & Profiles sheets and cross sections for additional details of ditches and backslopes.

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

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

6D_Dprs_P_FullHMA_MODIFIED		
Direction of Travel	BEGIN STATION	END STATION
Both	1747+00	1787+28.96
Both	0+00	229+00



Section shown in the direction of traffic.

6DP_Dprs_MODIFIED			
Direction of Travel	BEGIN STATION	END STATION	MW Feet
Both	1747+00	1787+28.96	60
Both	0+00	229+00	60

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

6D_Dprs_P_FullHMA_MODIFIED		
Direction of Travel	BEGIN STATION	END STATION
NB	1747+00	1751+14.85
NB	12+00	35+25.85
NB	54+50	64+00
NB	93+00	117+89.2
NB	226+00	229+00
SB	1747+00	1751+00
SB	8+66.98	32+50
SB	50+00	67+50
SB	94+60.8	120+00
SB	228+10.36	229+00

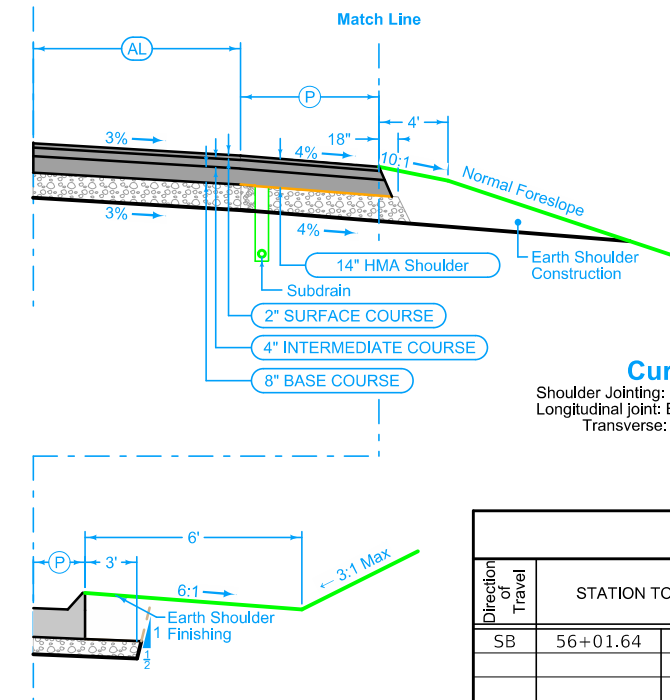
Auxiliary Lane

Longitudinal joint: B

6_AuxLane_HMA_MODIFIED				
Direction of Travel	BEGIN STATION	END STATION	AL Feet	P Feet
NB	1254+25	1787+28.96	12	6
NB	0+00	7+80	12	6
NB	38+36	82+00	12	6
NB	82+00	85+00	12-24	6-10
NB	85+00	89+39.2	24	10
NB	121+00	126+00	24	10
NB	126+00	132+00	24-12	10-12
NB	132+00	156+09.4	12	12
NB	156+09.4	221+79.47	12	0
SB	1755+20	1787+28.96	12	6
SB	0+00	5+56.83	12	6
SB	36+70	80+50	12	6
SB	80+50	86+50	12-24	6-10
SB	86+50	91+50	24	10
SB	123+60	128+00	24	10
SB	128+00	131+00	24-12	10-12
SB	131+00	225+00	12	12

Auxiliary Lane HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B



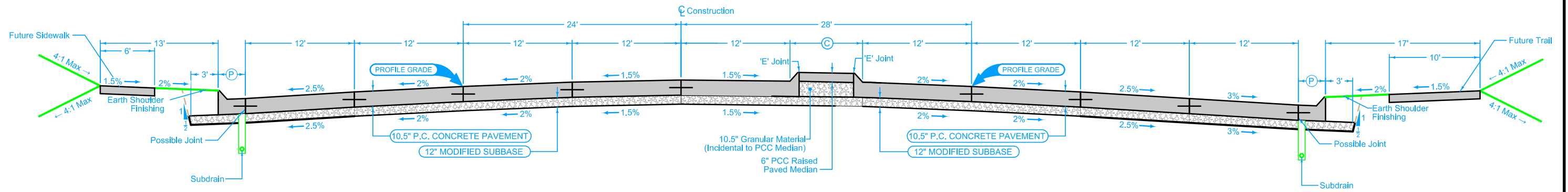
Curbed Shoulder

Shoulder Jointing:
Longitudinal joint: B
Transverse: CD at 17' spacing

2_Curb_MODIFIED			
Direction of Travel	STATION TO STATION	P Feet	Curb Type See PV-102
SB	56+01.64	59+50	7 4" Slp

See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

INTERSTATE 380 HMA OVERLAY AND WIDENING



Curbed Shoulder

Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged : KT-2
 Transverse: C at 17' spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
10+36.56	16+00.00	2.5	6" SLP

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

BEGIN STATION	END STATION	(C) Feet
10+36.56	16+00.00	Var

Curbed Shoulder

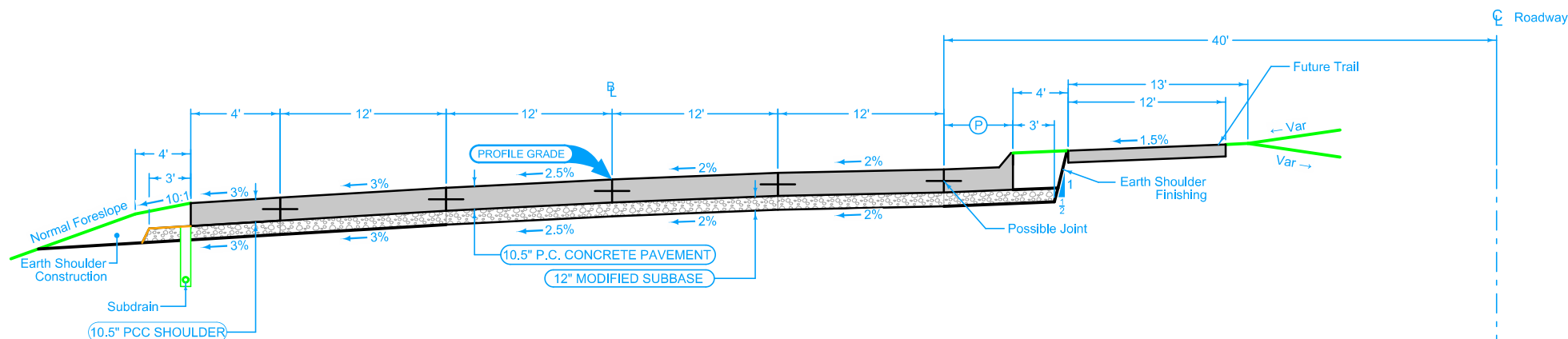
Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged : KT-2
 Transverse: C at 17' spacing

STATION TO STATION		(P) Feet	Curb Type See PV-102
10+36.56	16+00.00	2.5	6" SLP

See Tab 100-24 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

WRIGHT BROTHERS BOULEVARD PCC PAVING



Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

6D_Closed_P_FullPCC_04-20-21	
BEGIN STATION	END STATION
822+33.48	825+84.14

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

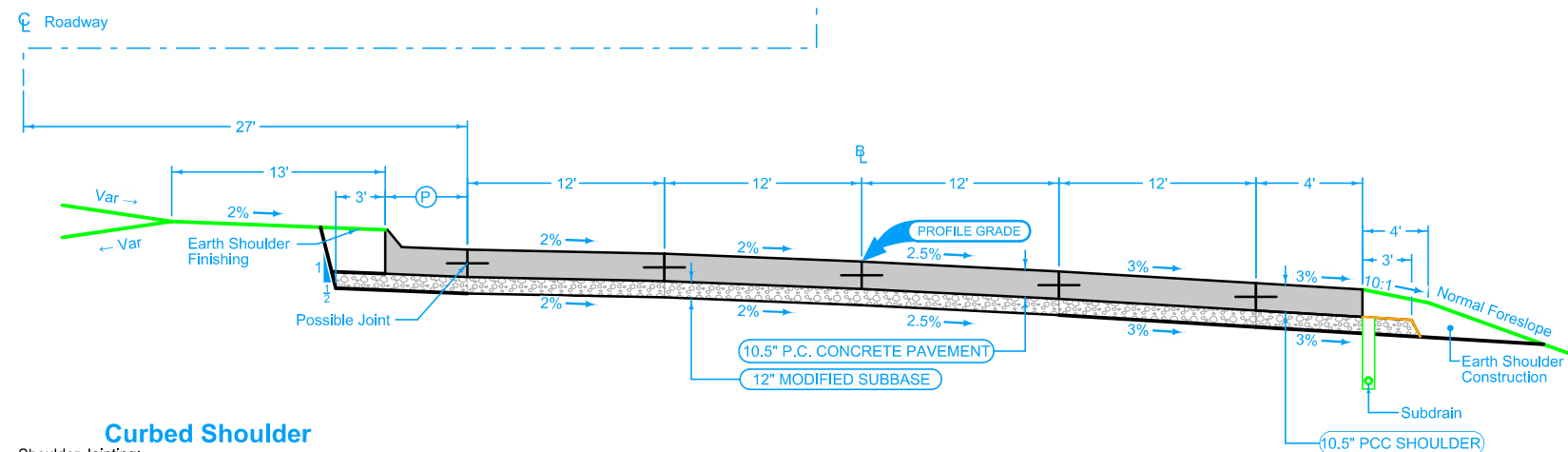
BEGIN STATION	END STATION
822+33.48	825+84.14

Curbed Shoulder

Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged: KT-2
 Transverse: C at 17' spacing

2_Curb_04-21-20		Curb Type See PV-102	
STATION TO STATION	Feet		
822+33.48	825+84.14	2.5	6" SLP



Curbed Shoulder

Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged: KT-2
 Transverse: C at 17' spacing

2_Curb_04-21-20		Curb Type See PV-102	
STATION TO STATION	Feet		
922+34.26	925+80.91	2.5	6" SLP

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

BEGIN STATION	END STATION
922+34.26	925+80.91

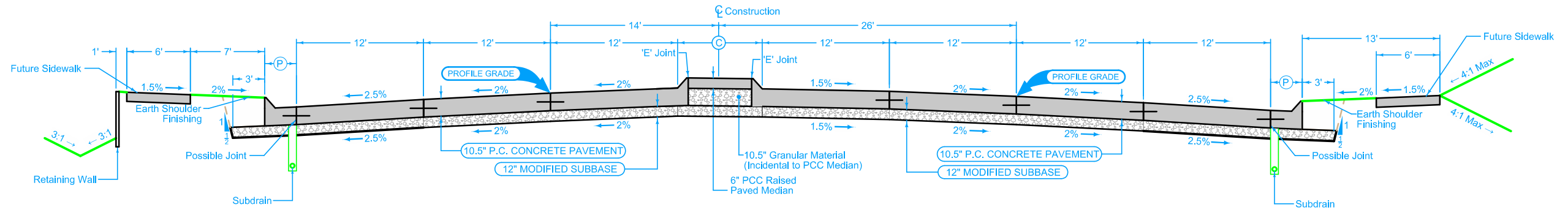
Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

6D_Closed_P_FullPCC_04-20-21	
BEGIN STATION	END STATION
922+34.26	925+80.91

See Tab 100-24 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

WRIGHT BROTHERS BOULEVARD PCC PAVING



Concrete Barrier Shoulder

Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged : KT-2
 Transverse: C at 17' spacing

2_Curb_04-21-20			
STATION TO STATION		(P) Feet	Barrier Size
32+50.00	36+08.81	3.083	34"

Mainline Jointing:
 Transverse joints: CD at 17' spacing
 Longitudinal joint: L-2

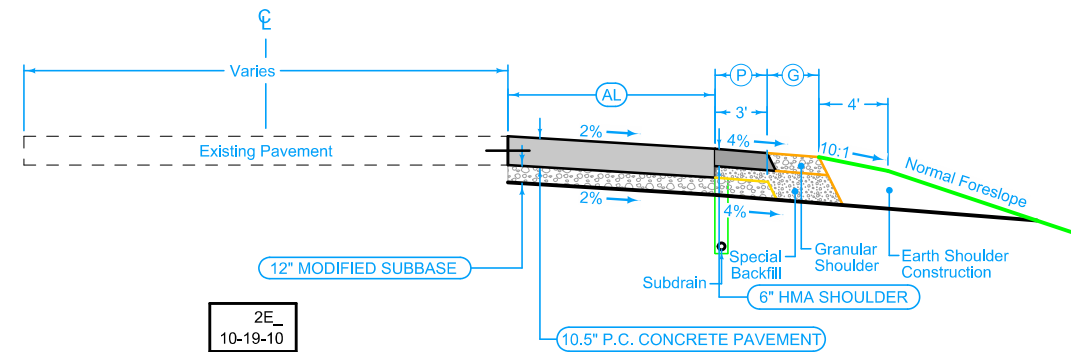
BEGIN STATION	END STATION	(C) Feet
32+50.00	36+08.81	4

Curbed Shoulder

Shoulder Jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 15':

Single pour: L-2
 Staged : KT-2
 Transverse: C at 17' spacing

2_Curb_04-21-20			
STATION TO STATION		(P) Feet	Curb Type See PV-102
32+50.00	36+08.81	2.5	6" SLP



Auxiliary Lane

Longitudinal joint: L or KT
 Transverse joint: Match Mainline

Auxiliary Lane Combination Shoulder

Shoulder Jointing:
 Longitudinal joint: B

2_AuxLane_PCC_10-18-16			2_AL_Shldr_C_04-21-20		
STATION TO STATION		(AL) Feet	(P) Feet	(G) Feet	
36+08.81	39+05.98	12	4	6	
39+05.98	42+05.98	12-0	4	6	

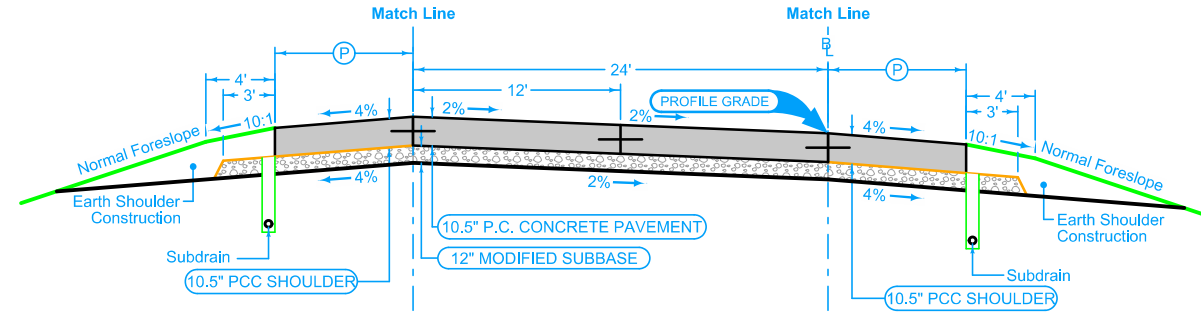
See Tab 100-24 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

WRIGHT BROTHERS BOULEVARD PCC PAVING

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
1113+70.00	1120+01.60	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1109+78.54	1120+01.60

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
1113+70.00	1120+01.60	10

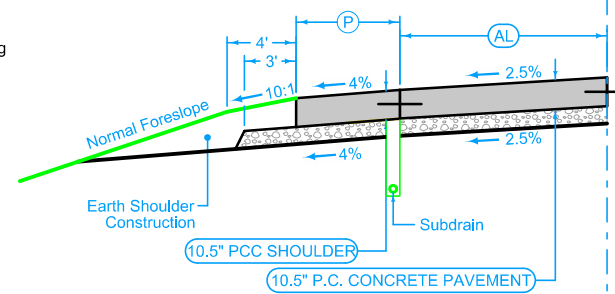
Auxiliary Lane

Longitudinal joint: L-2 or KT-2
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		(AL)	(P)
STATION TO STATION		Feet	Feet
1109+78.54	1112+50.00	12	6
1112+50.00	1113+70.00	12-0	6

Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C at 17' spacing



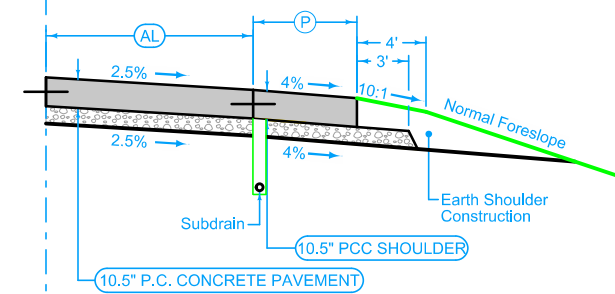
Auxiliary Lane

Longitudinal joint: L-2 or KT-2
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		(AL)	(P)
STATION TO STATION		Feet	Feet
1109+78.54	1112+50.00	12	10
1112+50.00	1113+70.00	12-0	10

Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C at 17' spacing



See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

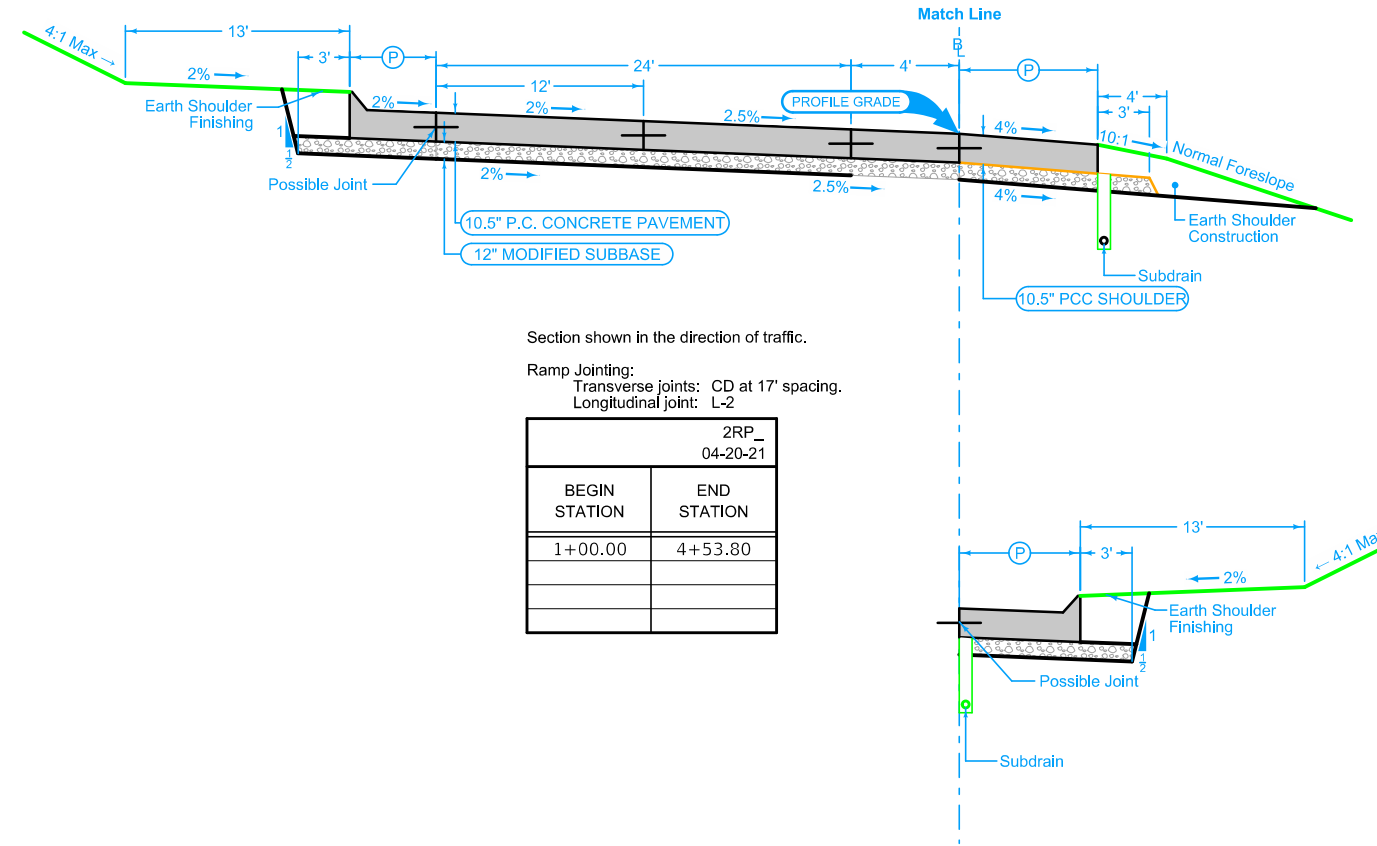
WRIGHT BROTHER BOULEVARD RAMP A PCC PAVING

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+53.80	6.5	6" SLP



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+53.80

Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
2+55.24	4+53.80	10

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

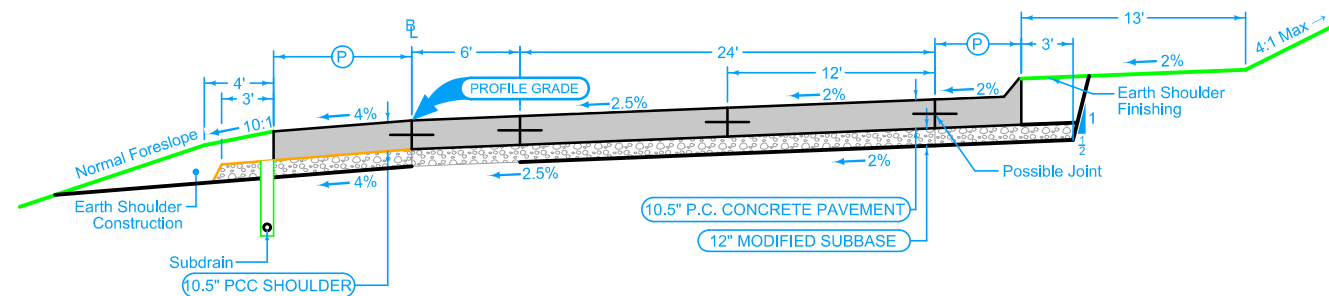
Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	2+55.24	2.5	6" SLP

Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
1+00.00	4+26.47	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+26.47

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+26.47	8.5	6" SLP

See Tab 100-24 for pavement quantities.

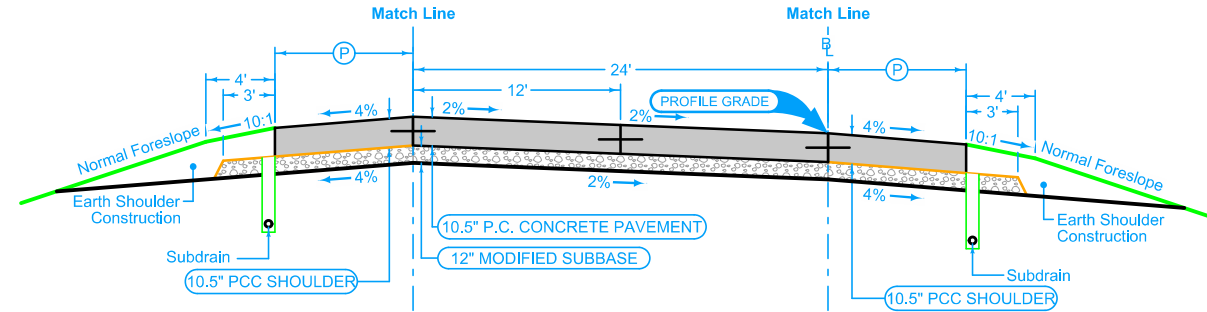
See Tab 112-9 for shoulder quantities.

WRIGHT BROTHER BOULEVARD RAMP A PCC PAVING

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
2092+98.40	2099+50.00	6



Section shown in the direction of traffic.
 Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
2092+98.40	2102+67.63

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

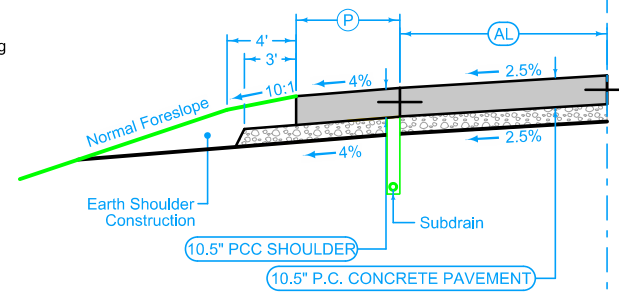
2_P_FullPCC_04-20-21		(P)
STATION TO STATION		Feet
2092+98.40	2099+50.00	10

Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C at 17' spacing

Auxiliary Lane
 Longitudinal joint: L-2 or KT-2
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		(AL)	(P)
STATION TO STATION		Feet	Feet
2099+50.00	2100+70.00	0-12	6
2100+70.00	2102+67.63	12	6

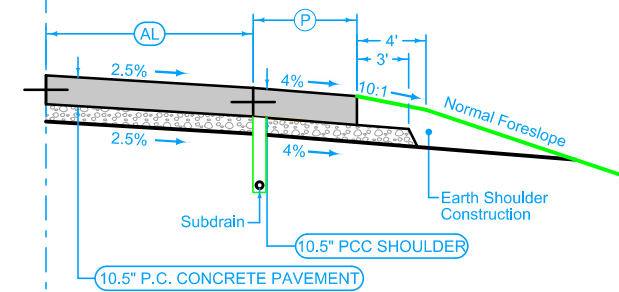


Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L-2 or KT-2
 Transverse joints: C at 17' spacing

Auxiliary Lane
 Longitudinal joint: L-2 or KT-2
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		(AL)	(P)
STATION TO STATION		Feet	Feet
2099+50.00	2100+70.00	0-12	10
2100+70.00	2102+67.63	12	10



See Tab 100-24 for pavement quantities.
 See Tab 112-9 for shoulder quantities.

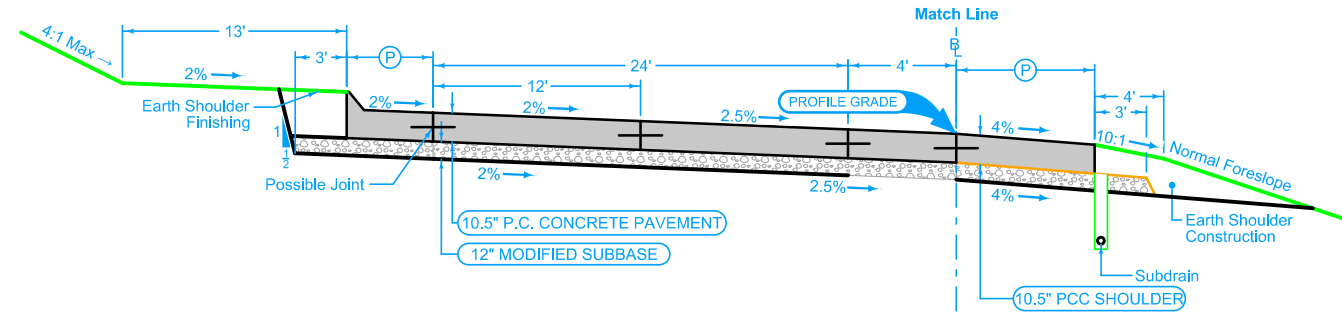
WRIGHT BROTHER BOULEVARD RAMP B PCC PAVING

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

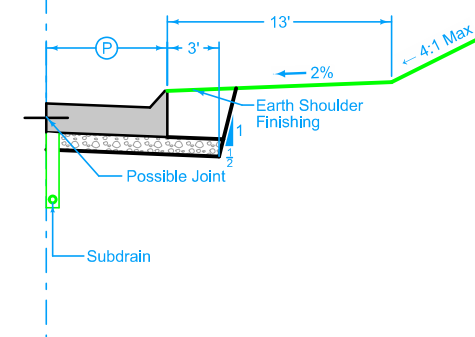
1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+51.43	6.5	6" SLP



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+51.43



Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
1+00.00	3+09.20	10

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

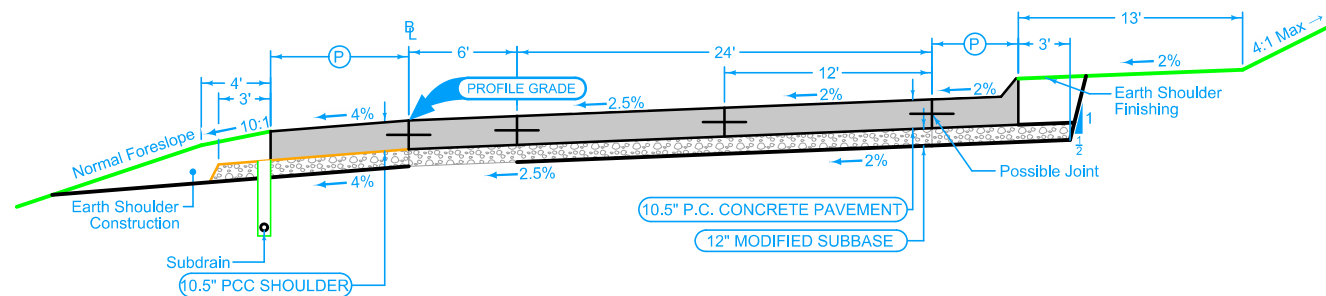
Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
3+09.20	4+51.43	2.5	6" SLP

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
		10



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+28.76

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+28.76	8.5	6" SLP

See Tab 100-24 for pavement quantities.

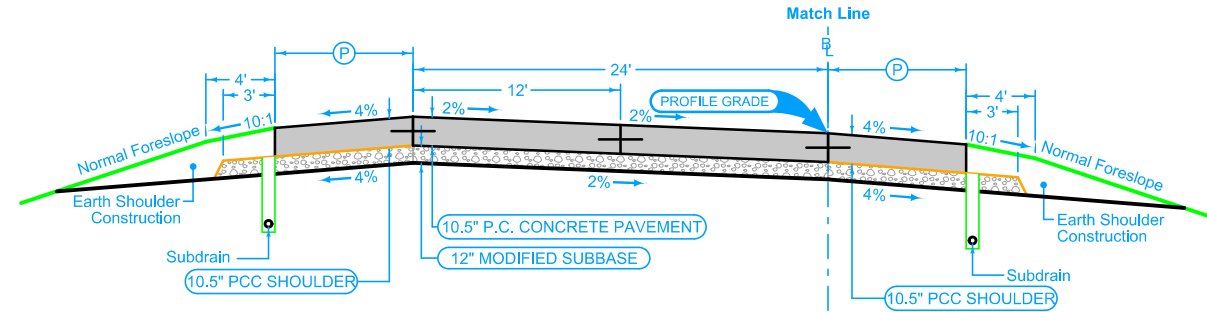
See Tab 112-9 for shoulder quantities.

WRIGHT BROTHER BOULEVARD RAMP B PCC PAVING

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		(P) Feet
3095+08.34	3103+42.03	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
3095+08.34	3103+42.03

Full Depth PCC Shoulder

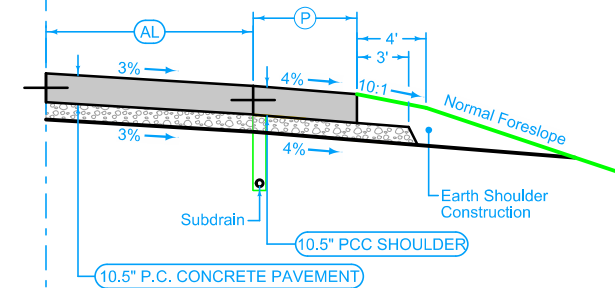
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION		(P) Feet
3095+08.34	3096+75.00	10

Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L or KT
 Transverse joint: Match Mainline

2_AuxLane_PCC_10-18-16		2_AL_Shldr_FullPCC_04-21-20	
STATION TO STATION		(AL) Feet	(P) Feet
3096+75.00	3101+55.00	0-12	10
3101+55.00	3103+42.03	12	10



See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

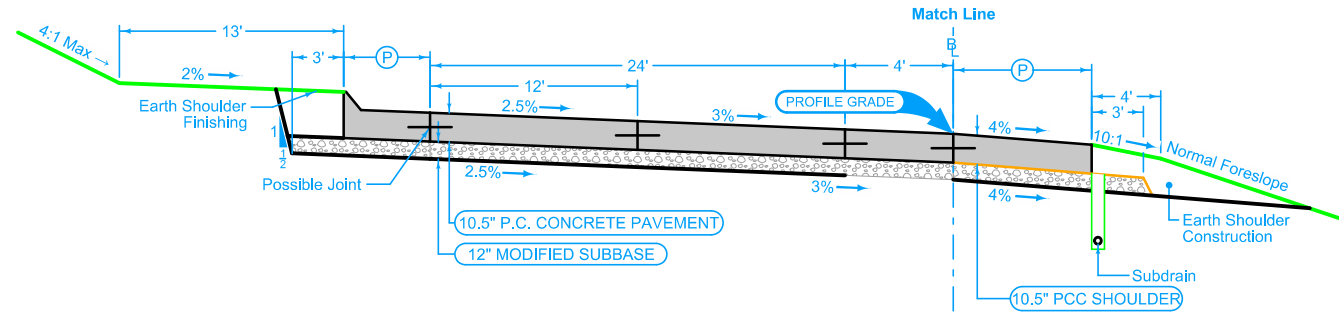
WRIGHT BROTHER BOULEVARD RAMP C PCC PAVING

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

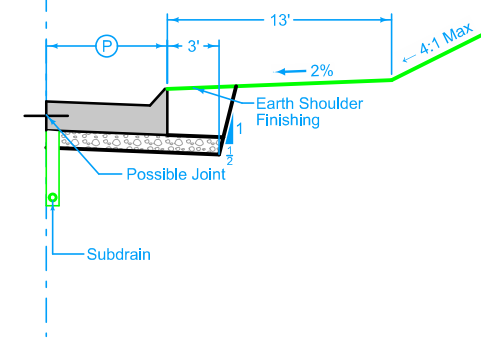
1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+71.37	6.5	6" SLP



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+71.37



Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
2+66.15	4+71.37	10

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

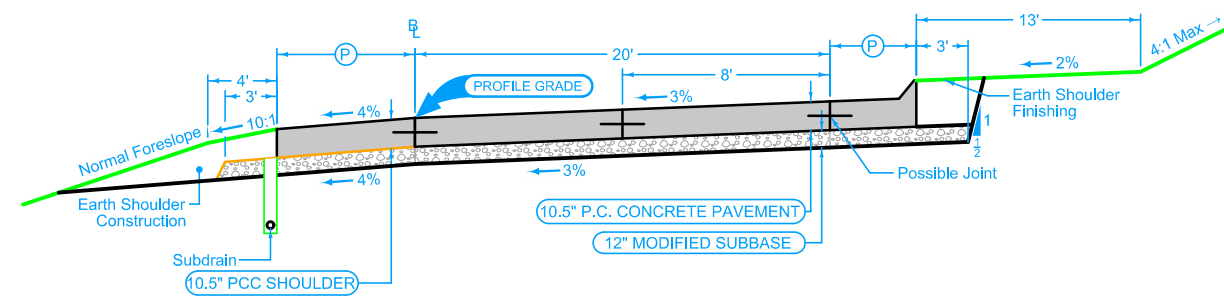
Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	2+66.15	2.5	6" SLP

Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
1+00.00	3+83.76	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	3+83.76

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	3+83.76	2.5	6" SLP

See Tab 100-24 for pavement quantities.

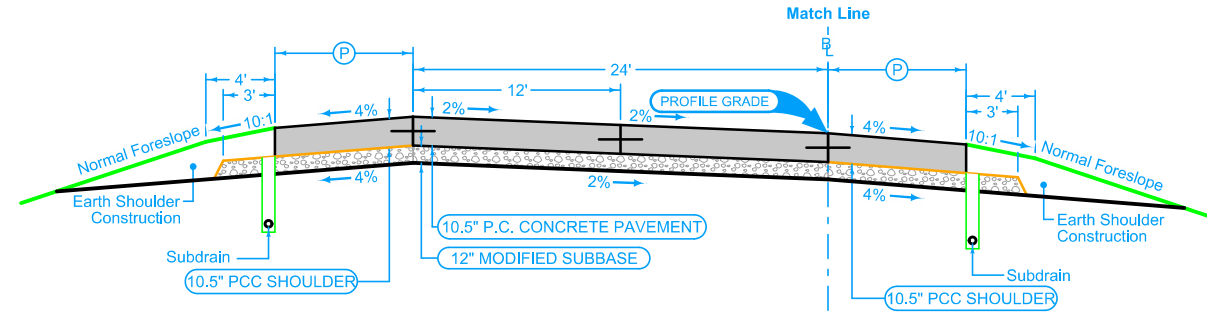
See Tab 112-9 for shoulder quantities.

WRIGHT BROTHER BOULEVARD RAMP C PCC PAVING

Full Depth PCC Shoulder

Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet
4109+29.21	4117+91.66	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_ 04-20-21	
BEGIN STATION	END STATION
4109+29.21	4117+91.66

Full Depth PCC Shoulder

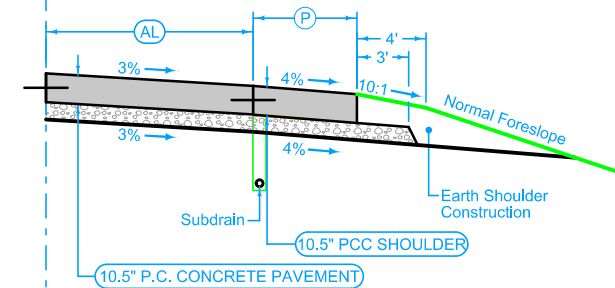
Shoulder Jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

STATION TO STATION		(P) Feet
4116+05.00	4117+91.66	10

Auxiliary Lane Full Depth Shoulder

Shoulder Jointing:
 Longitudinal joint: L or KT
 Transverse joint: Match Mainline

2_AuxLane_PCC_ 10-18-16		2_AL_Shldr_FullPCC_ 04-21-20	
STATION TO STATION		(AL) Feet	(P) Feet
4109+29.21	4111+25.00	12	10
4111+25.00	4116+05.00	12-0	10



See Tab 100-24 for pavement quantities.

See Tab 112-9 for shoulder quantities.

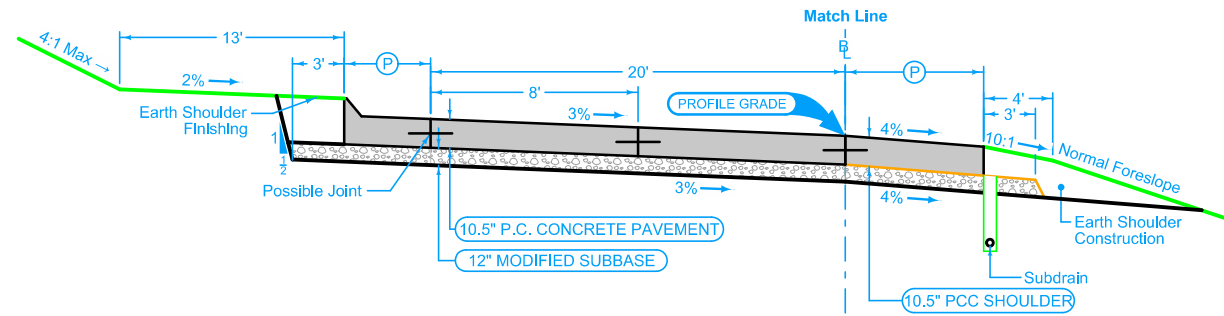
WRIGHT BROTHER BOULEVARD RAMP D PCC PAVING

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

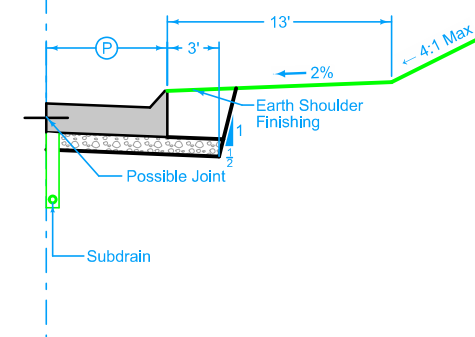
1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+57.19	2.5	6" SLP



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+57.19



Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
1+00.00	3+14.64	10

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

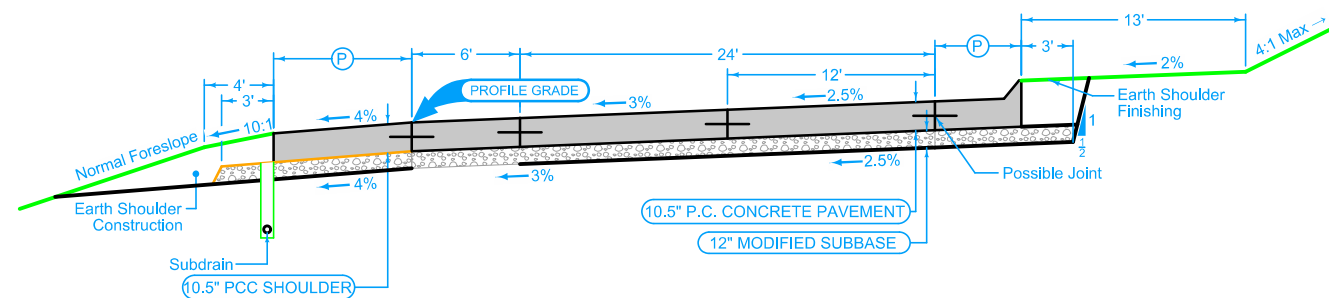
Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
3+14.64	4+57.19	2.5	6" SLP

Full Depth PCC Shoulder

Shoulder jointing:
 Longitudinal joint: BT-2, L-2 or KT-2
 Transverse joints: C at 17' spacing

2_P_FullPCC_04-20-21		
STATION TO STATION	(P) Feet	
1+00.00	4+71.66	6



Section shown in the direction of traffic.

Ramp Jointing:
 Transverse joints: CD at 17' spacing.
 Longitudinal joint: L-2

2RP_04-20-21	
BEGIN STATION	END STATION
1+00.00	4+71.66

Curbed Shoulder

Shoulder jointing:
 Longitudinal joint not required when distance from back of curb to nearest joint is less than 16':

Transverse: C at 17' spacing
 Single pour: L-2
 Staged: KT-2

1R_Curb_04-21-20			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
1+00.00	4+71.66	8.5	6" SLP

See Tab 100-24 for pavement quantities.

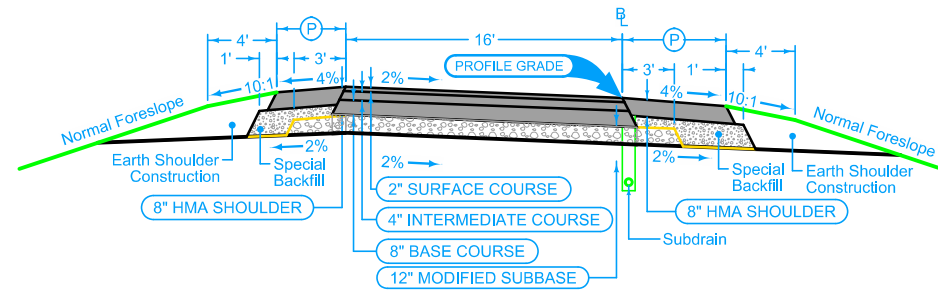
See Tab 112-9 for shoulder quantities.

WRIGHT BROTHER BOULEVARD RAMP D PCC PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
5744+10.19	5751+01.06	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
5744+10.19	5751+01.06

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
5744+10.19	5751+01.06	6

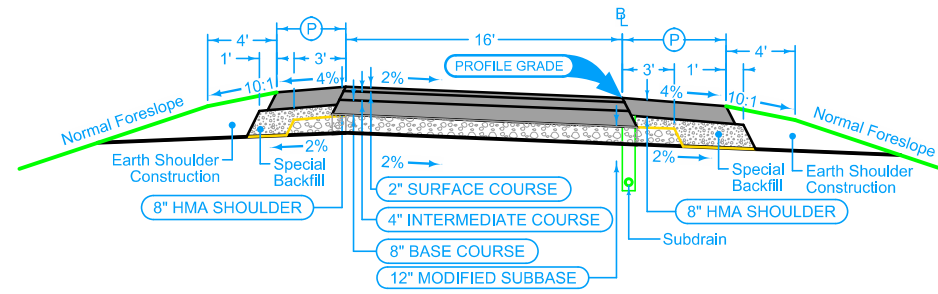
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

120TH STREET RAMP A HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2745+50.83	2751+02.76	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
2745+50.83	2751+02.76

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2745+50.83	2751+02.76	6

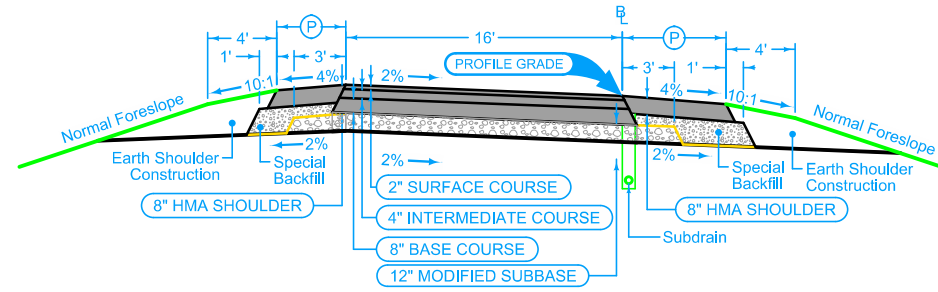
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

120TH STREET RAMP D HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
1027+61.01	1032+56.06	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
1027+61.01	1032+56.06

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
1027+61.01	1032+56.06	6

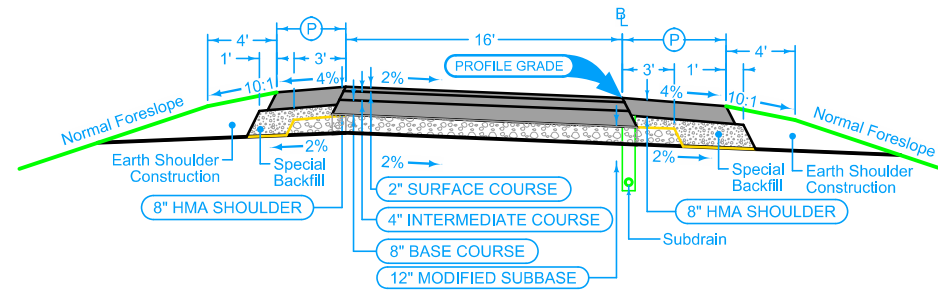
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

SB REST AREA RAMP A HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2011+68.94	2016+10.42	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
2011+68.94	2016+10.42

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2011+68.94	2016+10.42	6

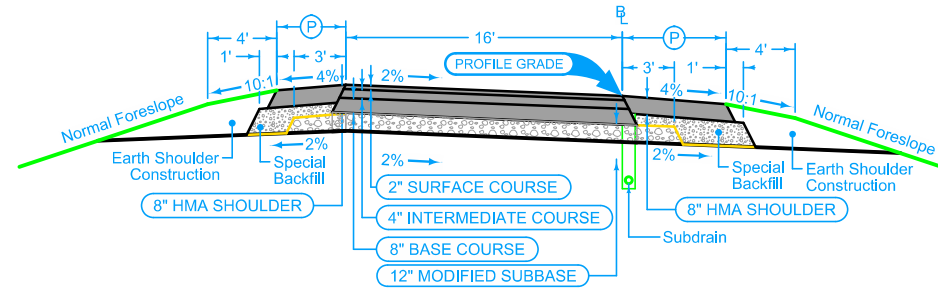
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

NB REST AREA RAMP B HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
3008+70.15	3013+78.96	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
3008+70.15	3013+78.96

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
3008+70.15	3013+78.96	6

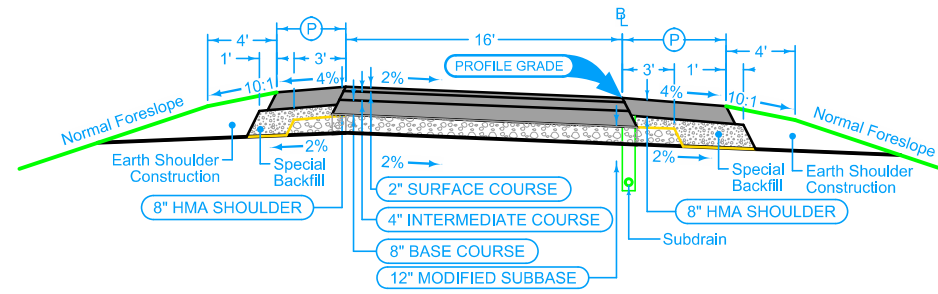
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

SB REST AREA RAMP C HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
4030+28.37	4035+31.07	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
4030+28.37	4035+31.07

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
4030+28.37	4035+31.07	6

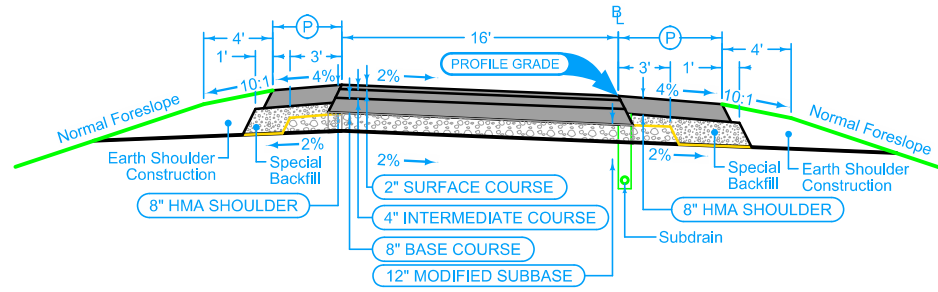
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

NB REST AREA RAMP D HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2225+23.94	2231+51.41	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
2225+23.94	2231+51.41

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
2225+23.94	2231+51.41	6

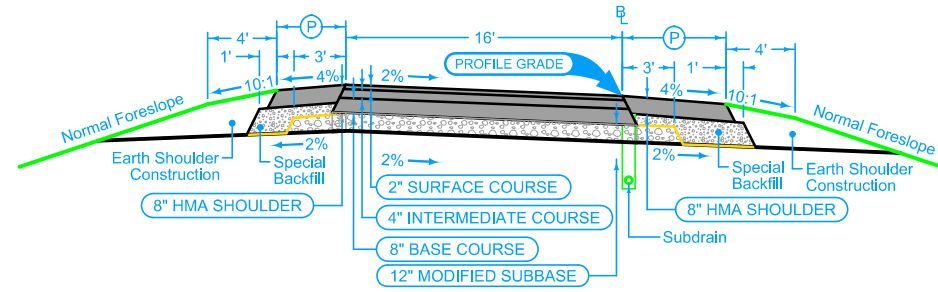
See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

US 30 RAMP B HMA PAVING

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
3227+33.91	3232+45.44	4



Section shown in direction of traffic.

1RH_04-20-21	
BEGIN STATION	END STATION
3227+33.91	3232+45.44

HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1R_P_HMA_10-19-10		
BEGIN STATION	END STATION	(P) Feet
3227+33.91	3232+45.44	6

See Tab 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

US 30 RAMP C HMA PAVING

SURVEY SYMBOLS

<p>⊕ AST, Above Ground Storage Tank</p> <p>BB, Billboard</p> <p>BBB, Bottom of Bridge Beam</p> <p>BCL, Bridge Centerline</p> <p>BD, Bridge Deck</p> <p>BIN, Grain Bin</p> <p>BL, Topo Breakline</p> <p>BLD, Building or Foundation</p> <p>BLS, Bridge Low Steel</p> <p>BM, Bench Mark</p> <p>BNK, Stream Bank</p> <p>BRG, Bridge</p> <p>C, Centerline BL of Road -ML or SR</p> <p>CAV, Cave</p> <p>CEL, Cell Phone Tower</p> <p>CIS, Cistern</p> <p>CON, Concrete or A/C Slab</p> <p>CP, Control Point</p> <p>CRP, Corporation Line</p> <p>CS, Curve Point</p> <p>CU, Back of Curb</p> <p>CUL, Culvert</p> <p>D, Centerline Draw or Stream -Down</p> <p>DAB, Drainage Area Boundary</p> <p>DIK, Centerline of Dike or Dam</p> <p>DTM, Photogrammetry Elv Control Check</p> <p>DU, Centerline Draw or Stream -Up</p> <p>EB, Electrical Box</p> <p>EG, Edge of Gravel Road</p> <p>ENP, Edge Paved Entrance and Park Lot</p> <p>ENT, Centerline BL of Entrance</p> <p>ENU, Edge Unpaved Entrance and Parking</p> <p>EP, Edge of Paved Roads -ML or SR</p> <p>EW, Edge of Water</p> <p>FCL, Chain Link and Security Fence</p> <p>FENO, FENO Monument</p> <p>FHD, Fire Hydrants</p> <p>FLG, Flag Poles</p> <p>FP, Filler Pipe</p> <p>FW, Wire Fence</p> <p>FWD, Wood Fence</p> <p>GDC, Guard Rail Cable</p> <p>GDL, Guard Rail Steel</p> <p>GP, Guard Post -Less Than 4 Posts</p> <p>GPR, Guard Post -4 or More Posts</p> <p>GR, Ground Shot</p> <p>GRV, Grave</p> <p>GU, Gutter In Front of Curb</p> <p>GV, Gas Valve</p> <p>HDG, Hedge Row</p> <p>HS, Hydric Soil -Wetlands</p> <p>HT, Electrical Highline Tower</p> <p>IN, Storm Sewer Intake</p> <p>INB, Storm Sewer Beehive Intake</p> <p>LC, Lot Corner</p> <p>LIN, Miscellaneous Line</p> <p>LP, L.P. Tank</p> <p>LUM, Luminaire</p> <p>MH, Utility Access -Manhole</p> <p>MIS, Miscellaneous</p> <p>MM, Mile Marker Post</p> <p>OUT, Tile Outlet</p> <p>PC, Curve Point</p> <p>PCP, Photo Control Point</p> <p>PCT, Photo Control Target</p> <p>PI, Tangent Point</p> <p>PIP, Pipe Culvert</p> <p>PL, Location of Photo -Wetlands</p> <p>PLG, Location of General Photo</p> <p>POC, Curve Point</p> <p>POST, Spiral Point</p>	<p>PR, Electric Riser Pole</p> <p>PRO, Profile Shot</p> <p>PT, Curve Point</p> <p>REF, Reference Tie Point</p> <p>RET, Retaining Walls</p> <p>RIP, Rip-Rap</p> <p>ROC, Rock Outcropping</p> <p>ROW, Right of Way Mark</p> <p>RR, Centerline of Railroad Tracks</p> <p>RRB, Railroad Signal Box</p> <p>RRF, Railroad Frog</p> <p>RRR, Railroad Rail</p> <p>RRS, Railroad Signal</p> <p>RRW, Railroad Switch</p> <p>RT, Radio Tower</p> <p>S, Soil Sampling Site -Wetlands</p> <p>SBR, Size of Bridge</p> <p>SC, Spiral Point</p> <p>SCR, Section Corner</p> <p>SEP, Septic Tank</p> <p>SF, Silt Fence -Wetlands</p> <p>SG, Staff Gauge -Wetlands</p> <p>SH, Paved Shoulder</p> <p>SHR, Shrub</p> <p>SI, Sign</p> <p>SL, Speed Limit Sign</p> <p>SLN, Section Line</p> <p>SLO, Silo</p> <p>SNK, Sink Hole</p> <p>SNP, Unpaved Shoulder</p> <p>SP, Stream Profile</p> <p>STP, Stump</p> <p>SWK, Sidewalk</p> <p>SWP, Swamp or Marsh</p> <p>TA, Tower Anchor</p> <p>TBO, Telephone Booth</p> <p>TCB, Traffic Signal Box</p> <p>TDC, Tree Deciduous</p> <p>TDL, Traffic Detection Loop</p> <p>TER, Terrace</p> <p>TEV, Evergreen Tree</p> <p>TFR, Tree Fruit</p> <p>TGP, Telegraph Pole</p> <p>TIL, Tile Line</p> <p>TLNL, Tree Line Left</p> <p>TLNR, Tree Line Right</p> <p>TOP, Top of Bridge Pier</p> <p>TPA, Telephone Pole Co. 1</p> <p>TPB, Telephone Pole Co. 2</p> <p>TPC, Telephone Pole Co. 3</p> <p>TR, Telephone Riser Pole</p> <p>TRL, Trail</p> <p>TS, Spiral Point</p> <p>TSB, Telephone Switch Box</p> <p>TSG, Traffic Signal</p> <p>TSL, Traffic Signal and Luminare</p> <p>TV, Satellite TV Dish</p> <p>TVP, TV Pedestal</p> <p>TW, Top of Water</p> <p>UB, Utility Box</p> <p>UE, Utility Elevation</p> <p>UPH, Utility Pot Hole - Quality A</p> <p>UST, Underground Tank</p> <p>UV, Underground Utility Vault</p> <p>VS, Channel Cross Section</p> <p>WC, Wild Card -Misc. Field Shot</p> <p>WEL, Well</p> <p>WHD, Water Hydrant</p> <p>WHU, RV Water Hook Up</p> <p>WM, Wind Mill</p> <p>WND, Wind Turbine</p> <p>WV, Water Valve</p>
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UTILITY LEGEND

		PPA, Alliant Energy, Quality D
		EL1D, Alliant Energy - Quality D
		FO1D, City of Cedar Rapids Quality D
		FO2D, Aureon - Quality D
		FO3D, ICN - Quality D
		FO4D, Mediacom - Quality D
		FO5D, Lumen - Quality D
		FO6D, South Slope - Quality D
		FO7D, UPN - Quality D
		FO8D, Verizon - Quality D
		FO9D, Windstream - Quality D
		GL1D, MidAmerican Energy - Quality D
		WL1D, City of Cedar Rapids - Quality D

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.		
Lavender	(9)	Temporary Pavement Shading
Yellow	(4)	Proposed Pavement Shading
Orange	(6)	Proposed Granular Shading
Orange	(70)	Proposed Shoulder Granular Shading
Yellow	(68)	Proposed Shoulder Paved Full Depth Shading
Yellow	(132)	Proposed Shoulder Paved Partial Depth Shading
Gray, Dark	(112)	Proposed Grade and Pave Shading "In conjunction with a paving project"
Brown, Light	(236)	Grading Shading
Orange, Light	(134)	Proposed Granular Entrance Shading
Yellow	(220)	Proposed Paved Entrance Shading
Tan	(8)	Proposed Sidewalk Shading
Blue, Light	(230)	Proposed Sidewalk Landing Shading
Pink	(11)	Proposed Sidewalk Ramp Shading
Green, Light	(225)	Existing Pavement Shading
Red	(3)	Proposed Structure Shading
Red	(3)	Delineates Restricted Areas

PROFILE VIEW COLOR LEGEND OF PLAN AND PROFILE SHEETS

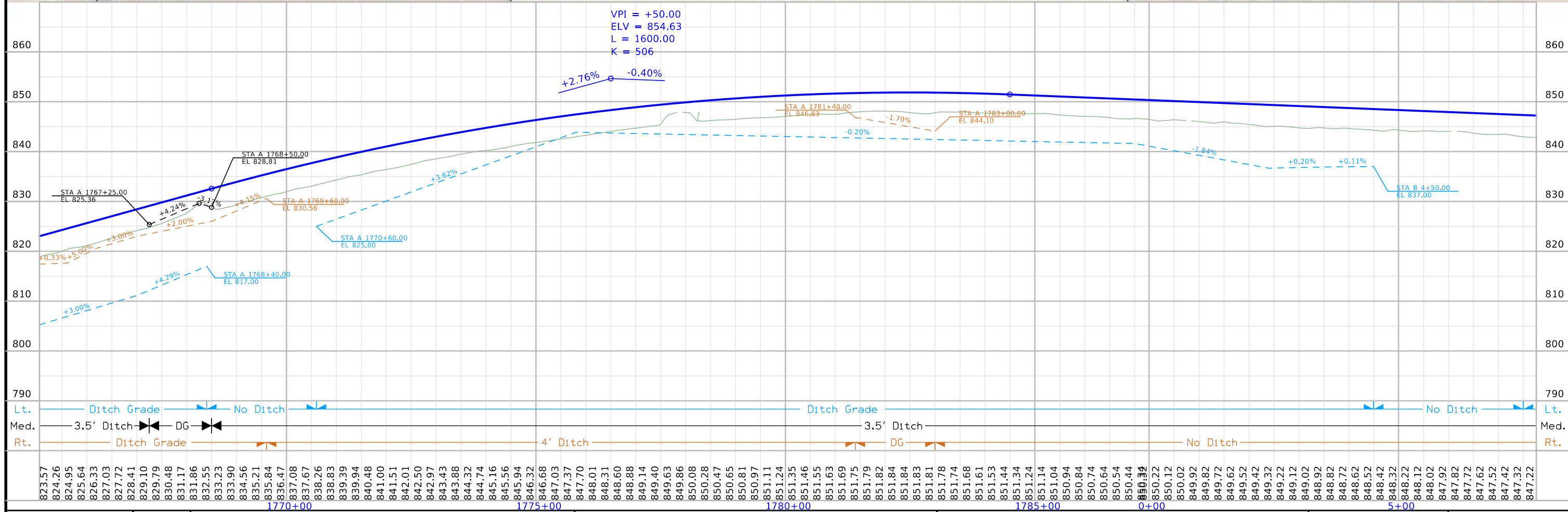
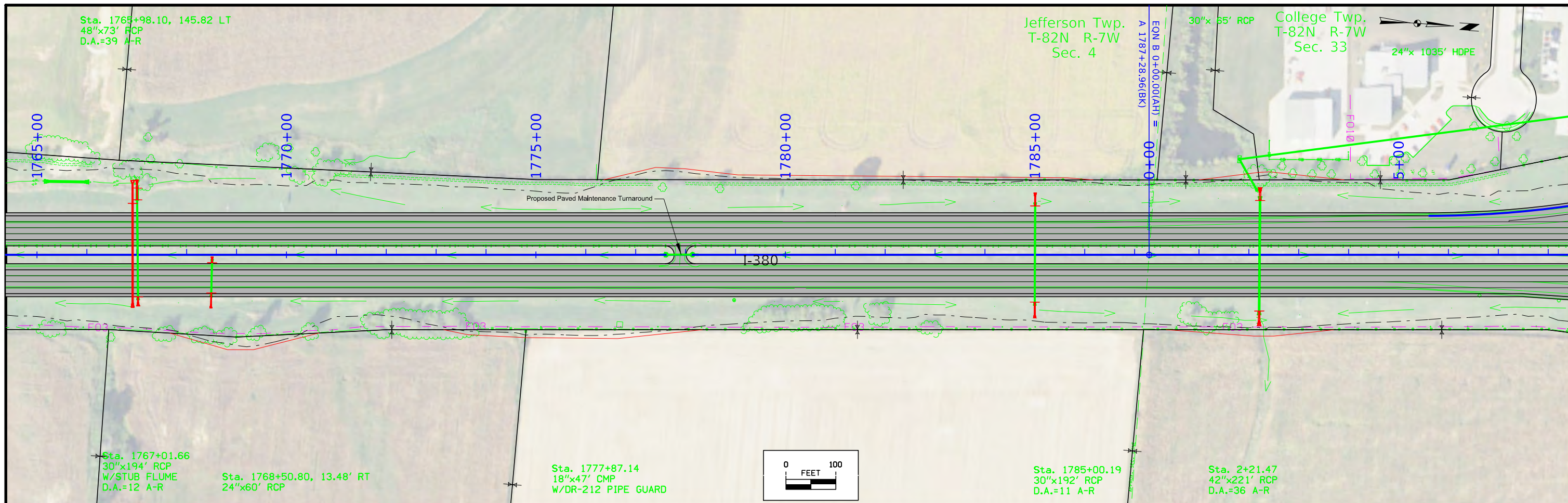
LINEWORK	Design Color No.	
Green	(10)	Existing Ground Line Profile
Blue	(1)	Proposed Profile and Annotation
Magenta	(5)	Existing Utilities
Blue, Light	(230)	Proposed Ditch Grades, Left
Black	(0)	Proposed Ditch Grades, Median
Rust	(14)	Proposed Ditch Grades, Right

	Reference Point
	Station
	Section Corner
	Ground Line Intercept
	Saw Cut
	Guardrail
	Trench Drain
	High Tension 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
	Access Control
	Property Line

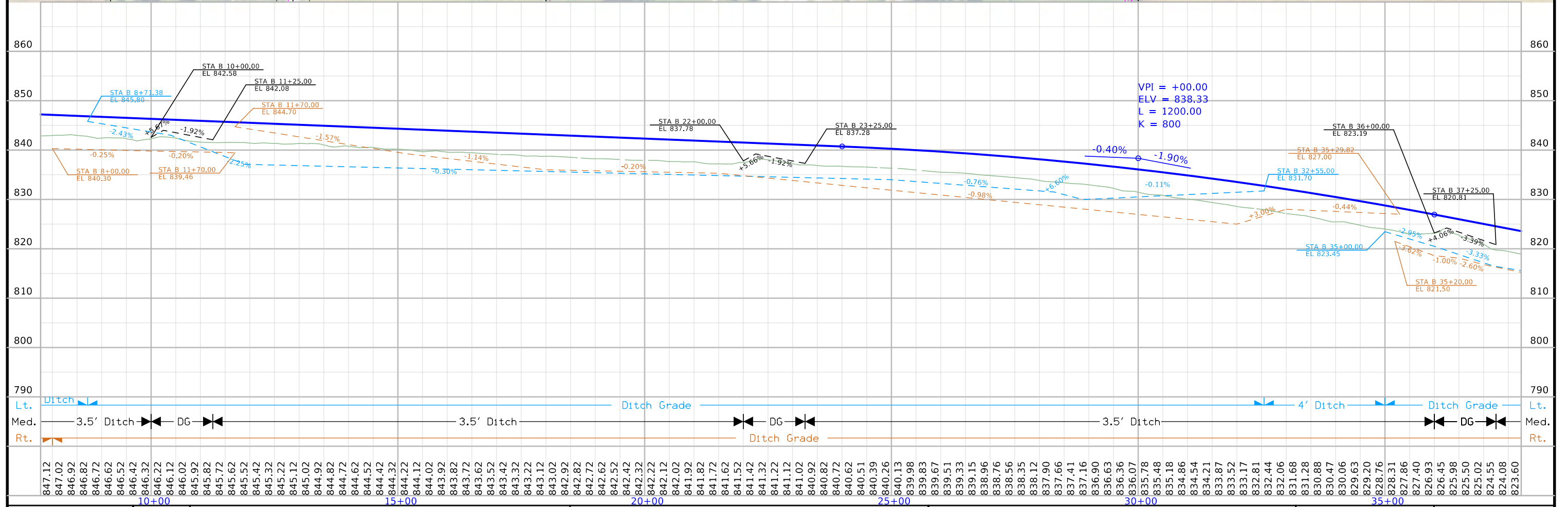
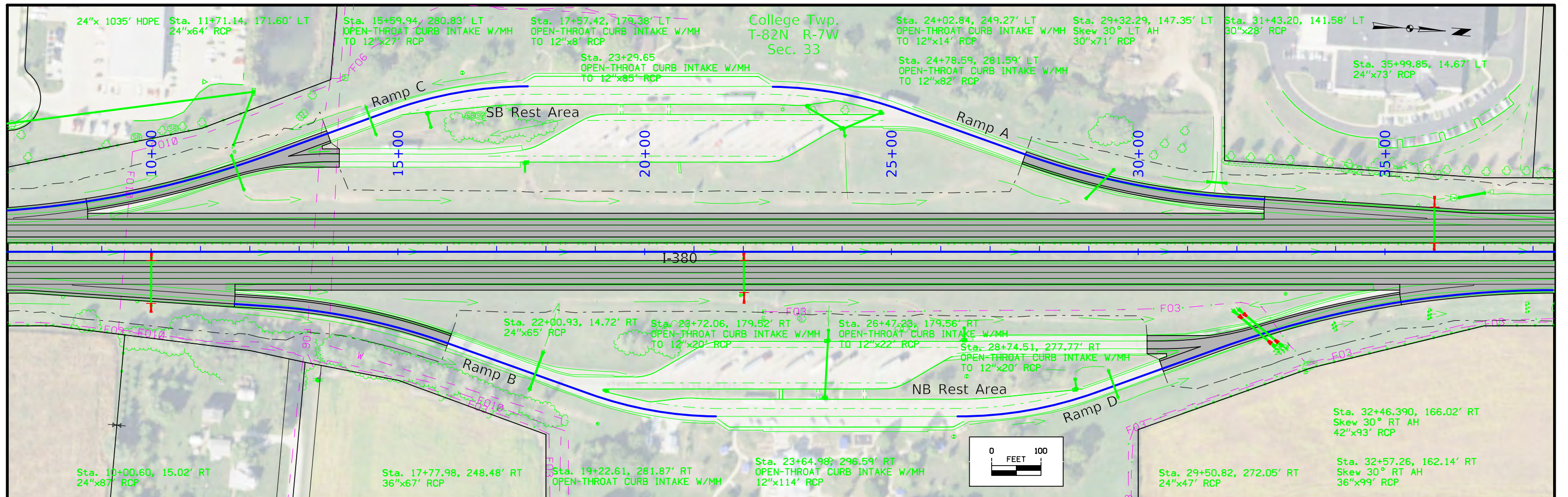
PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

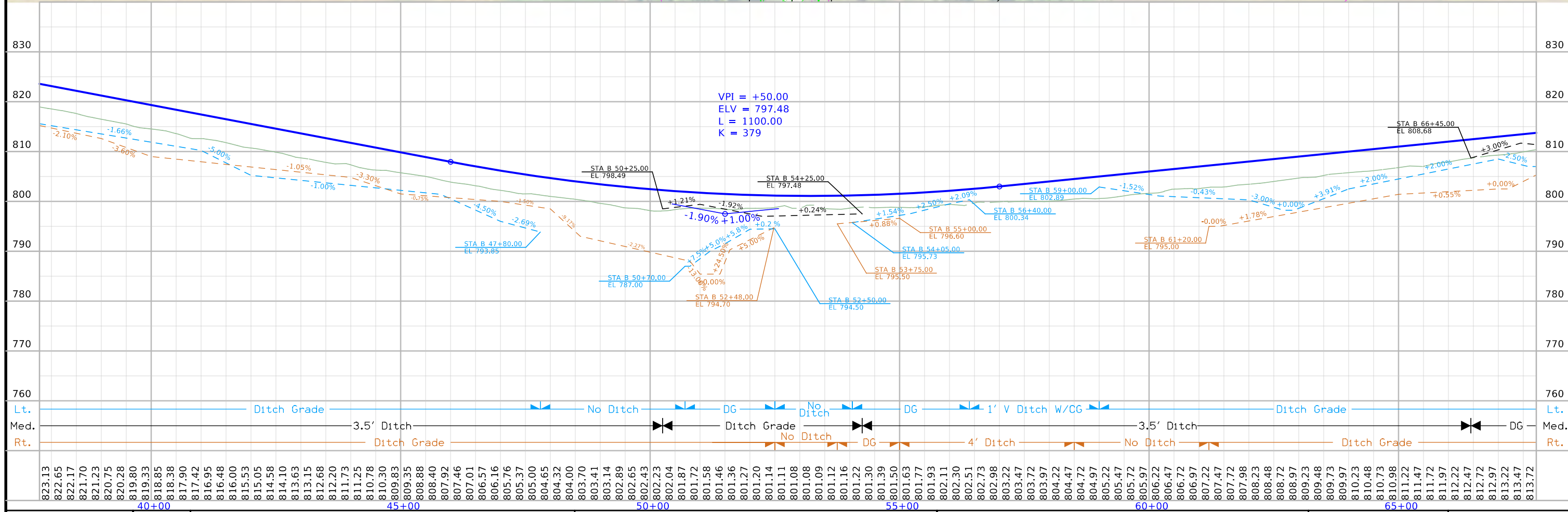
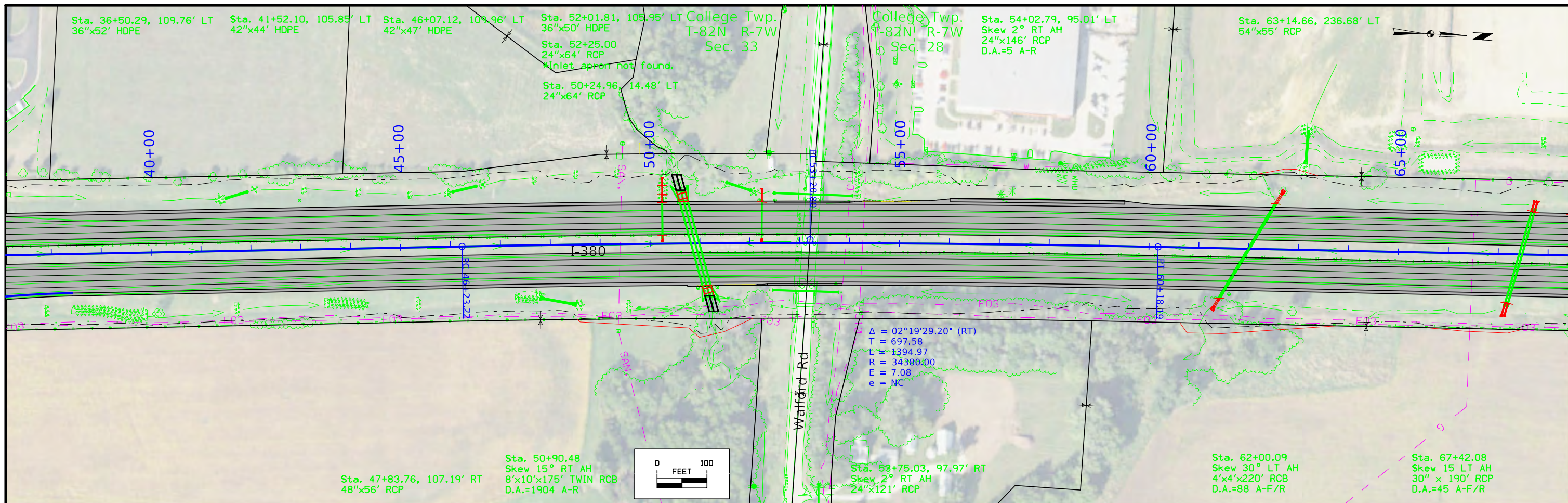


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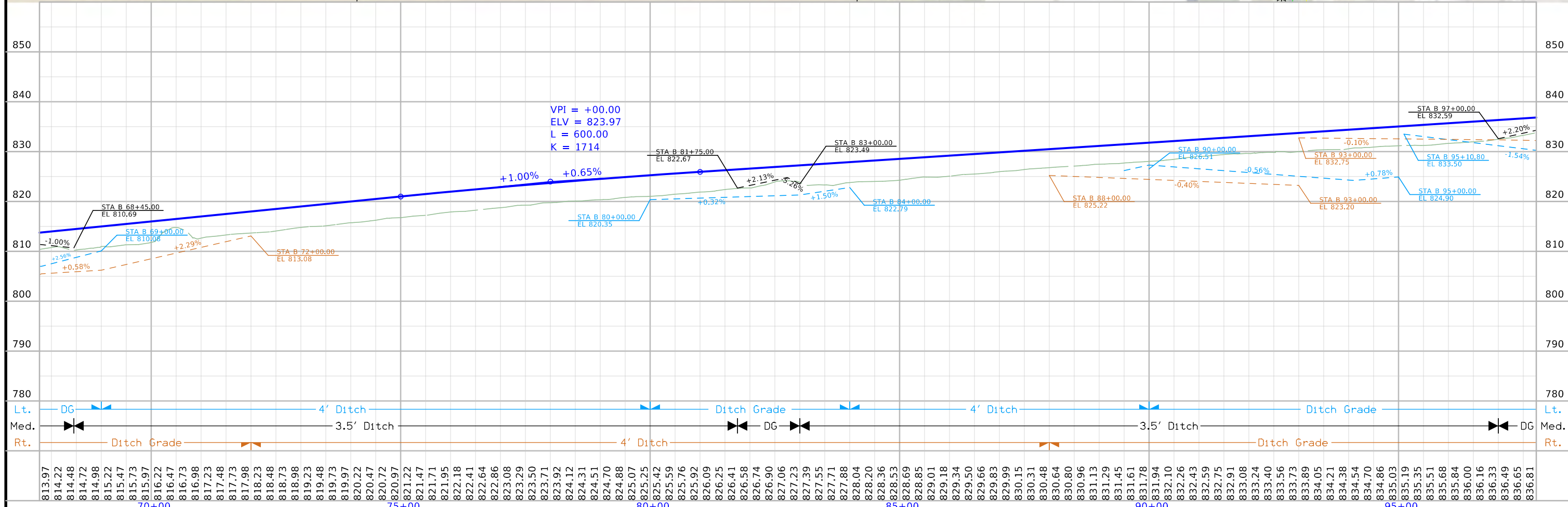
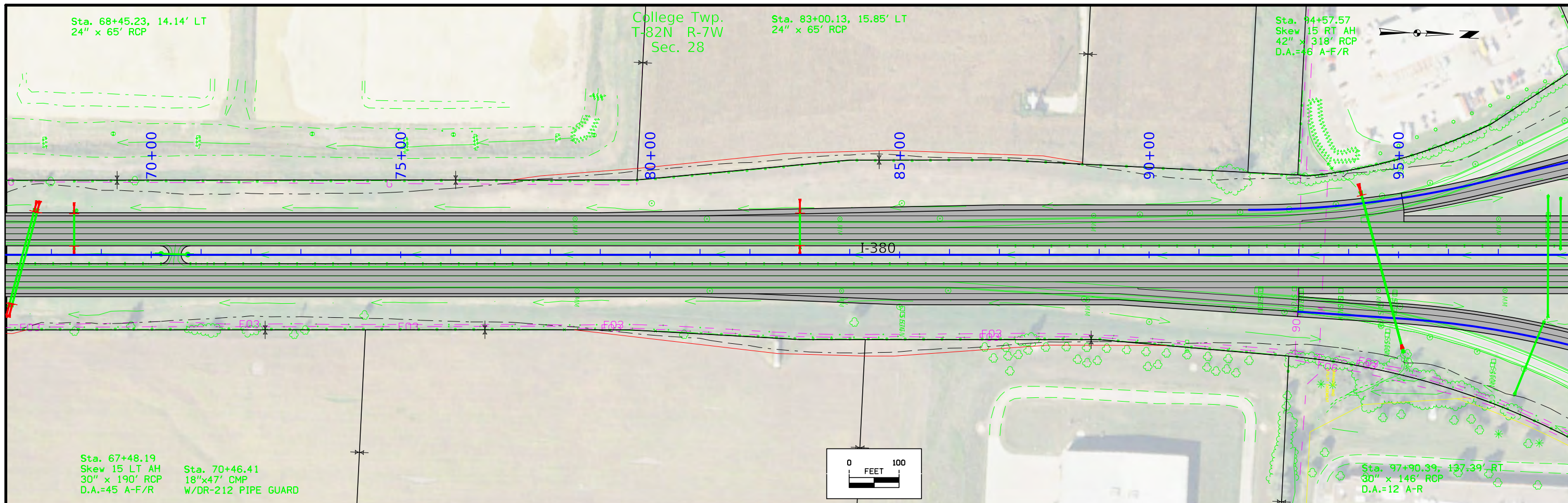
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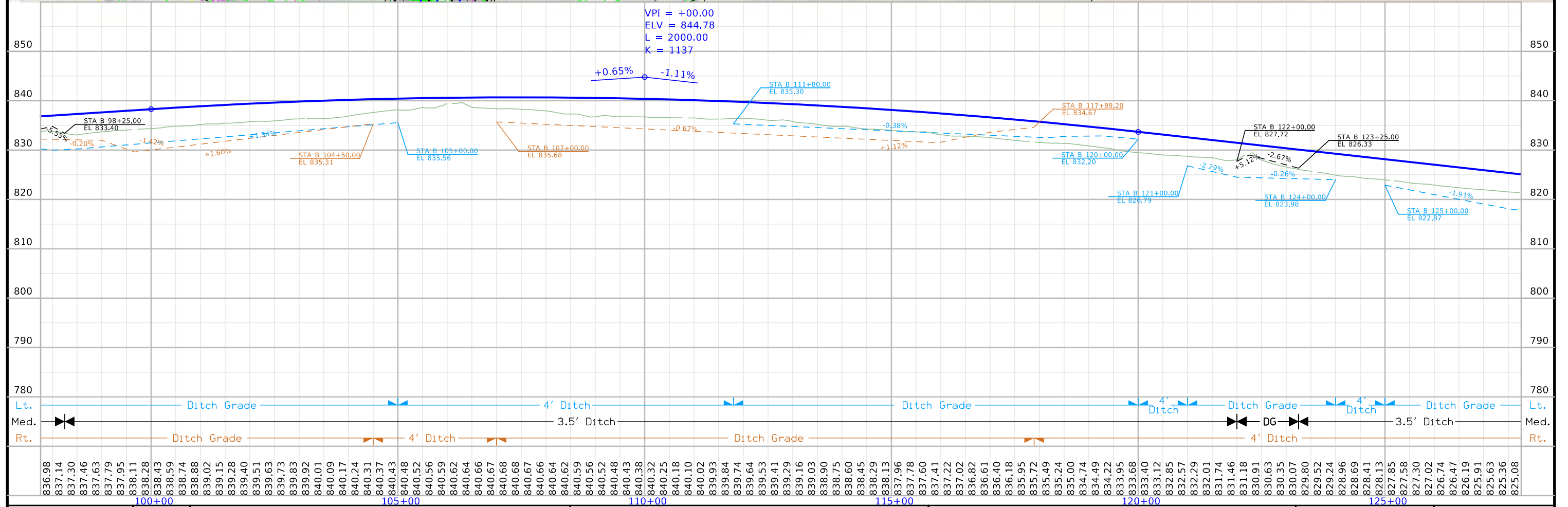
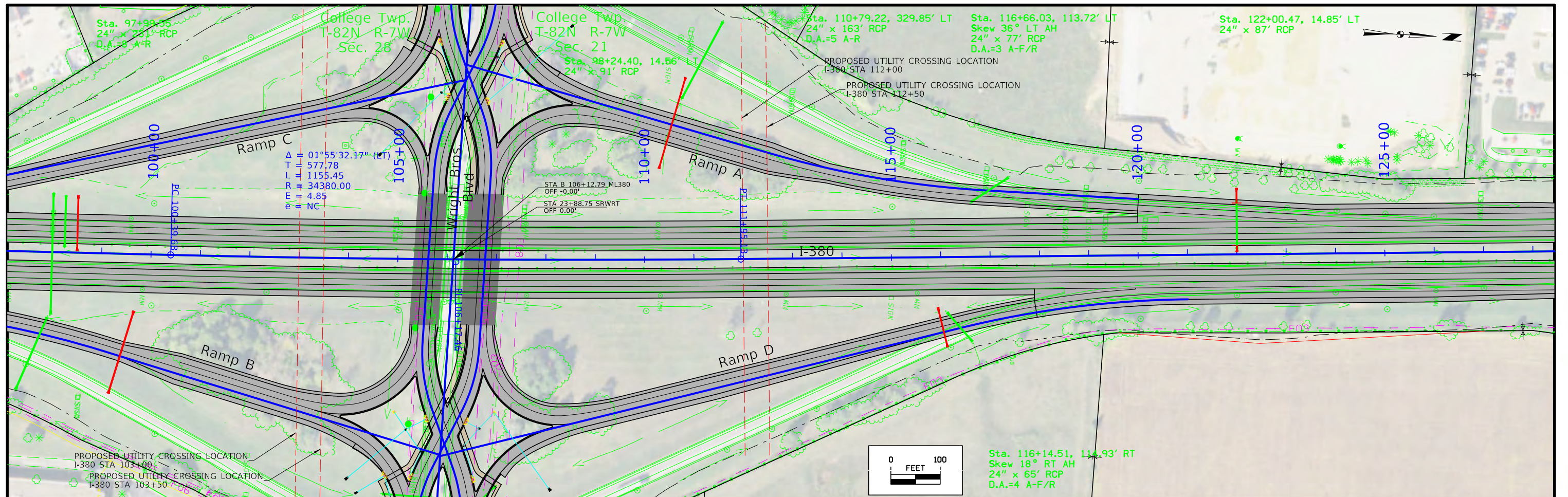
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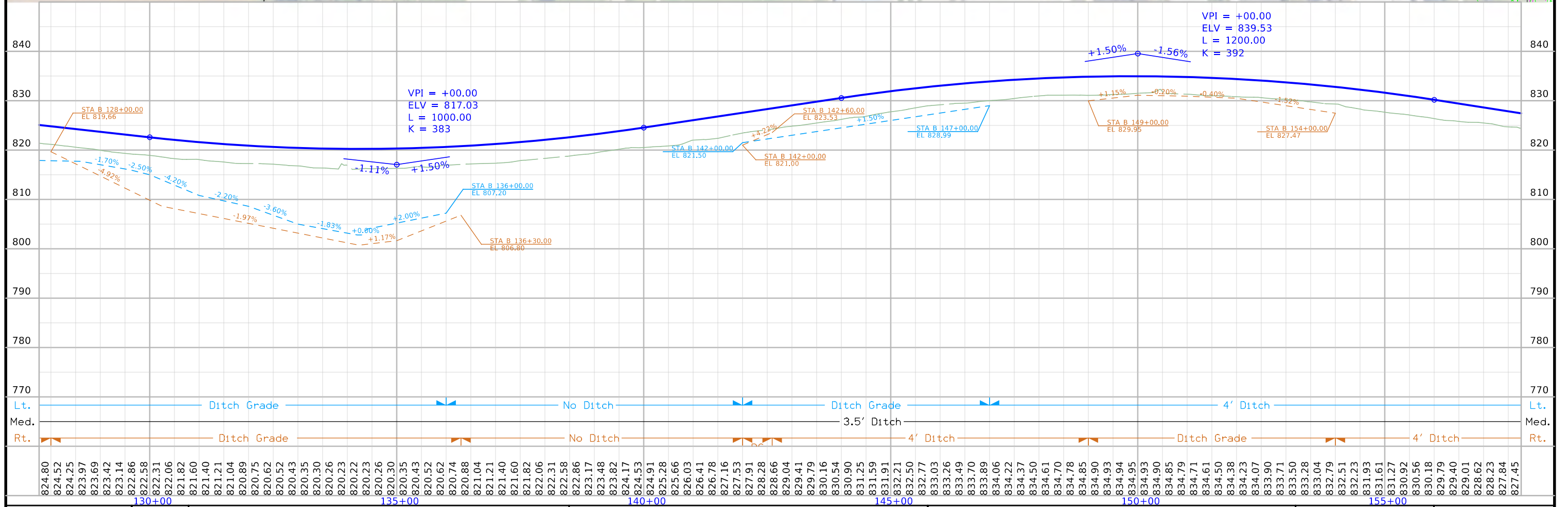
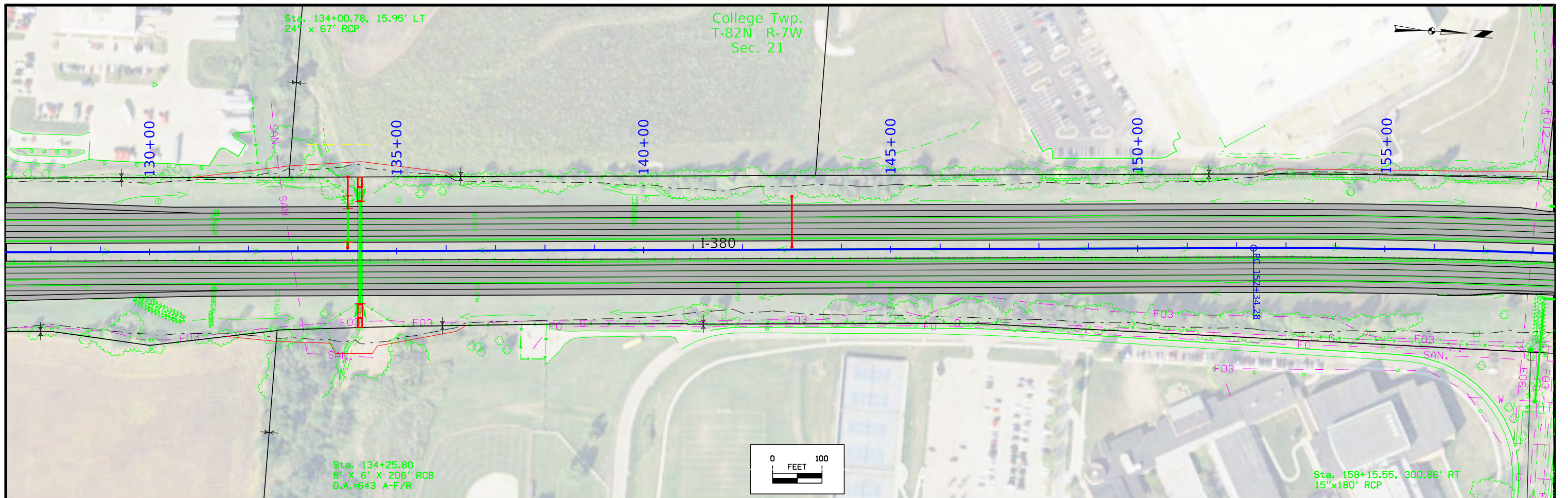
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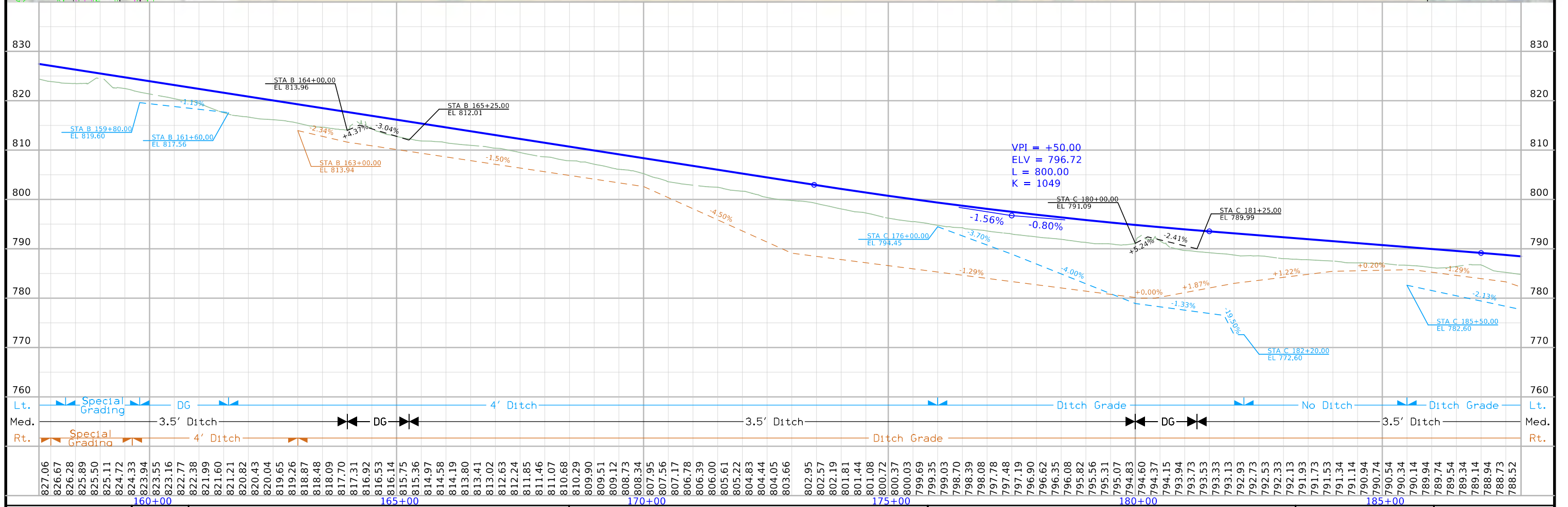
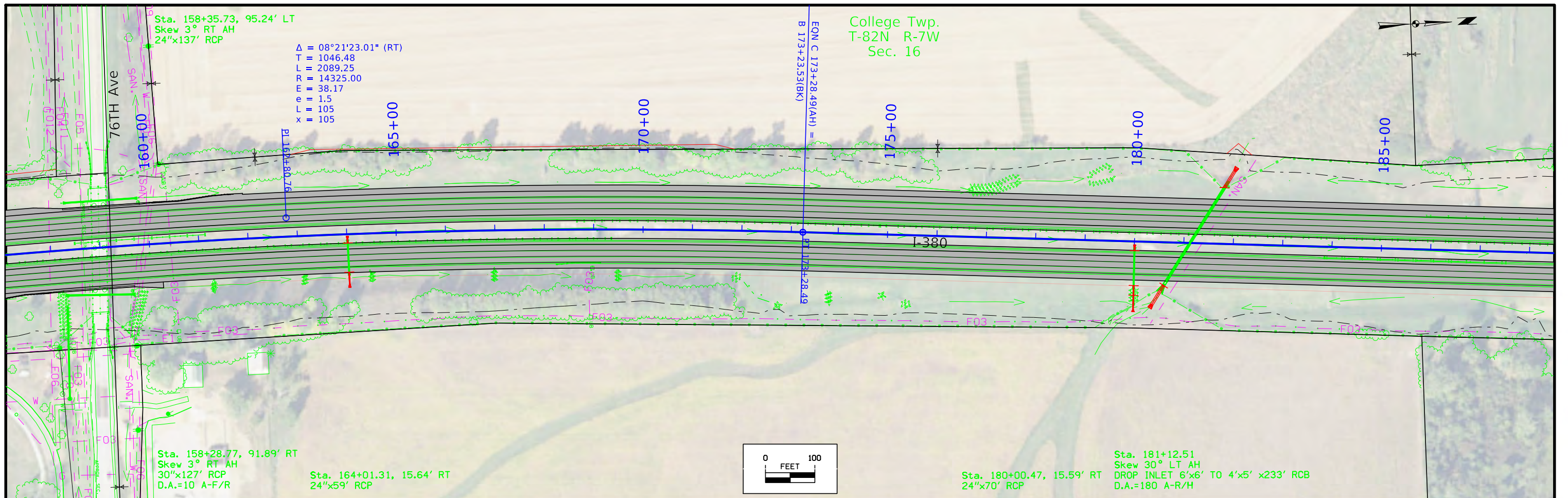
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		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	D.6



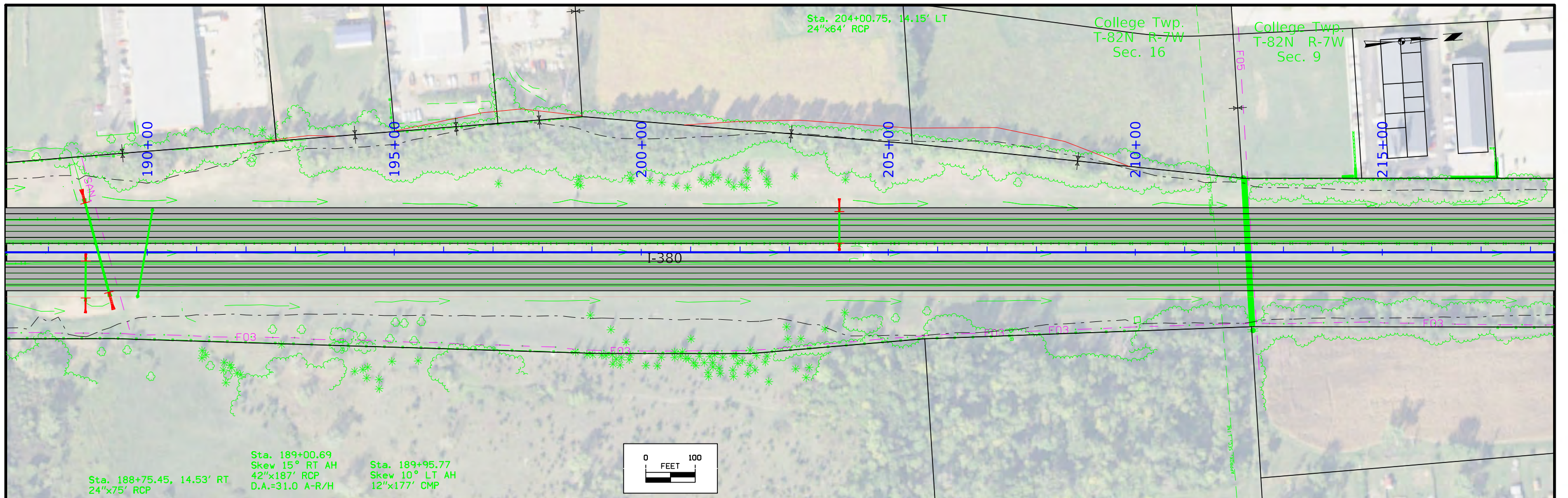
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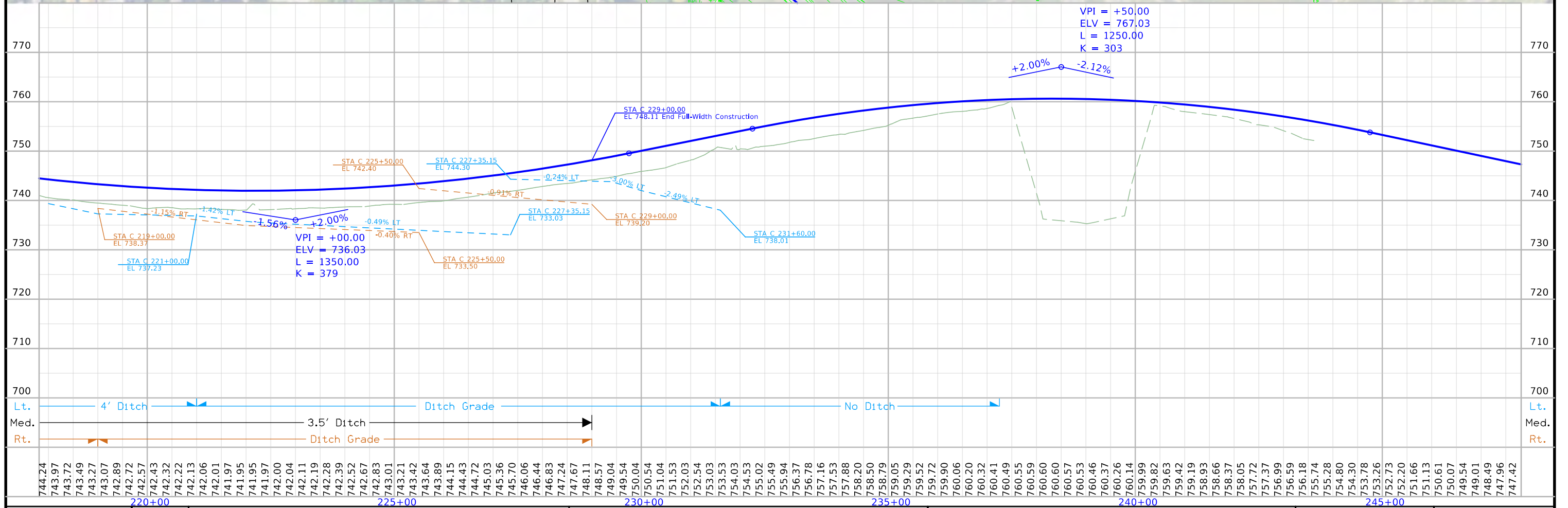
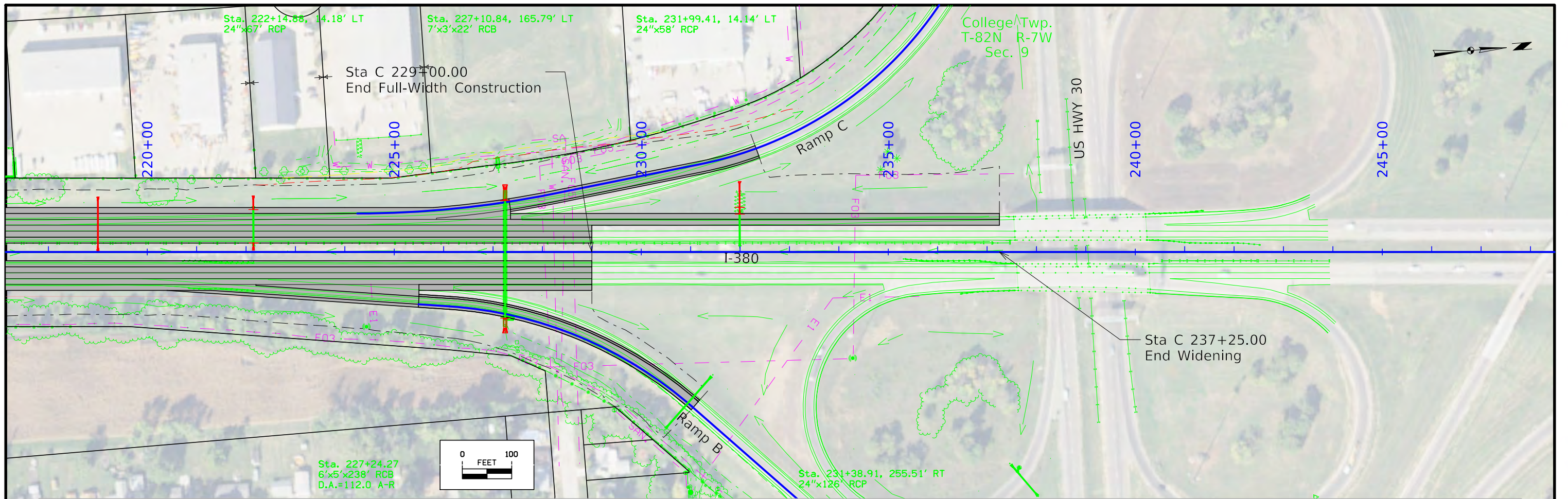


FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
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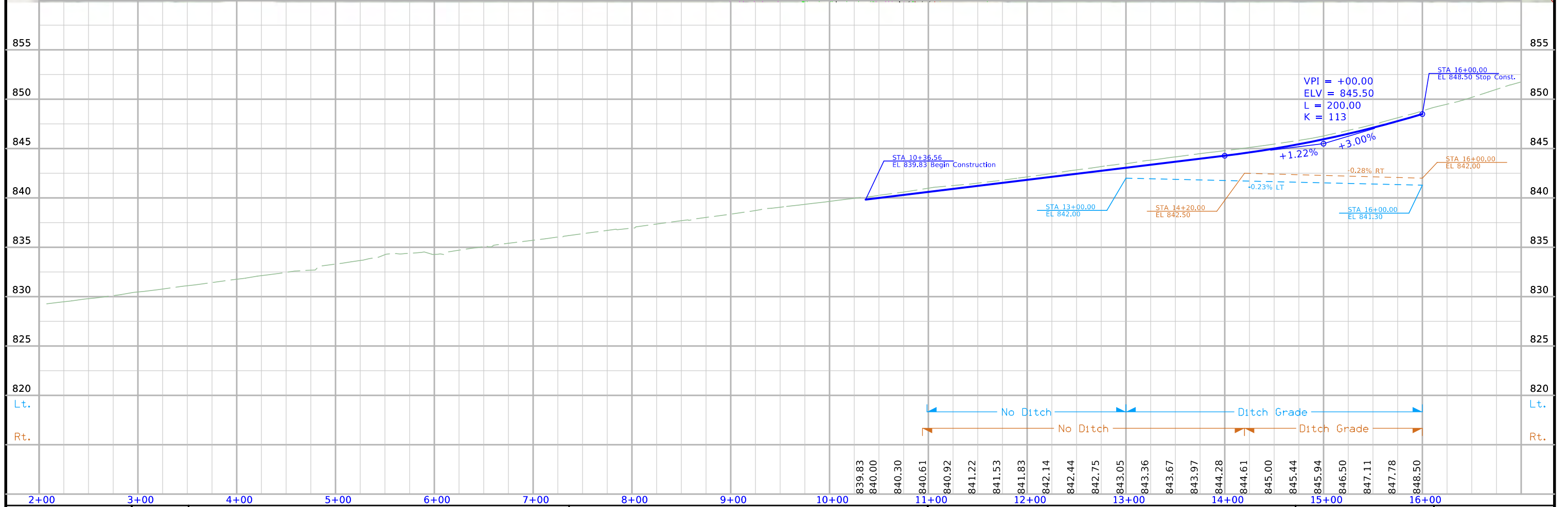
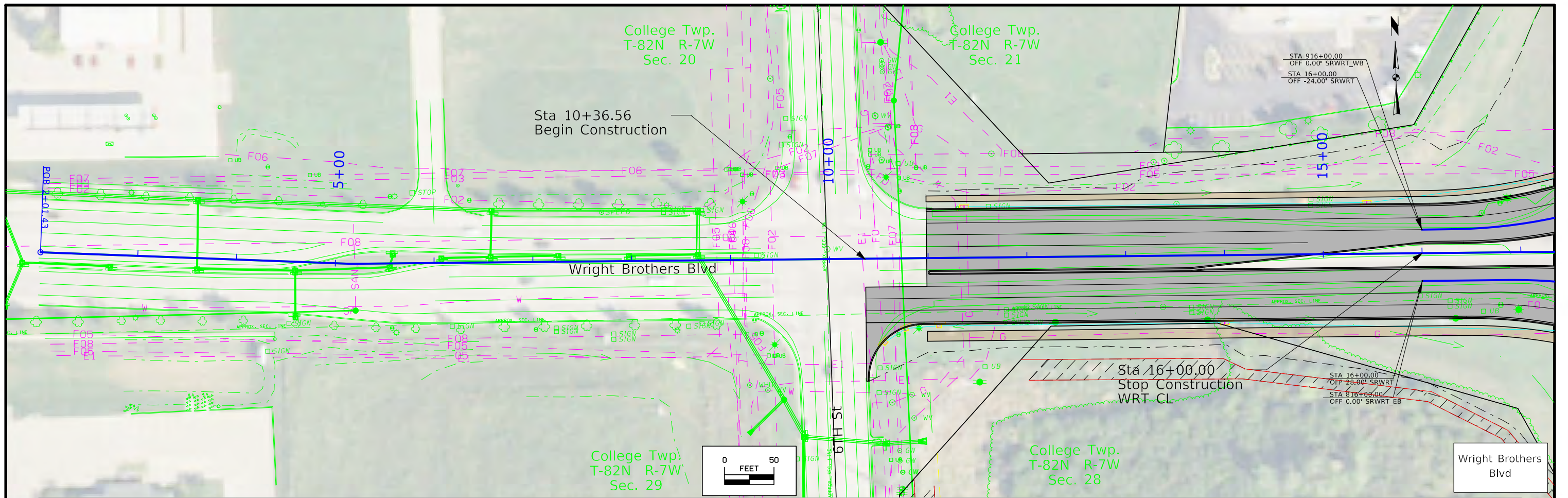
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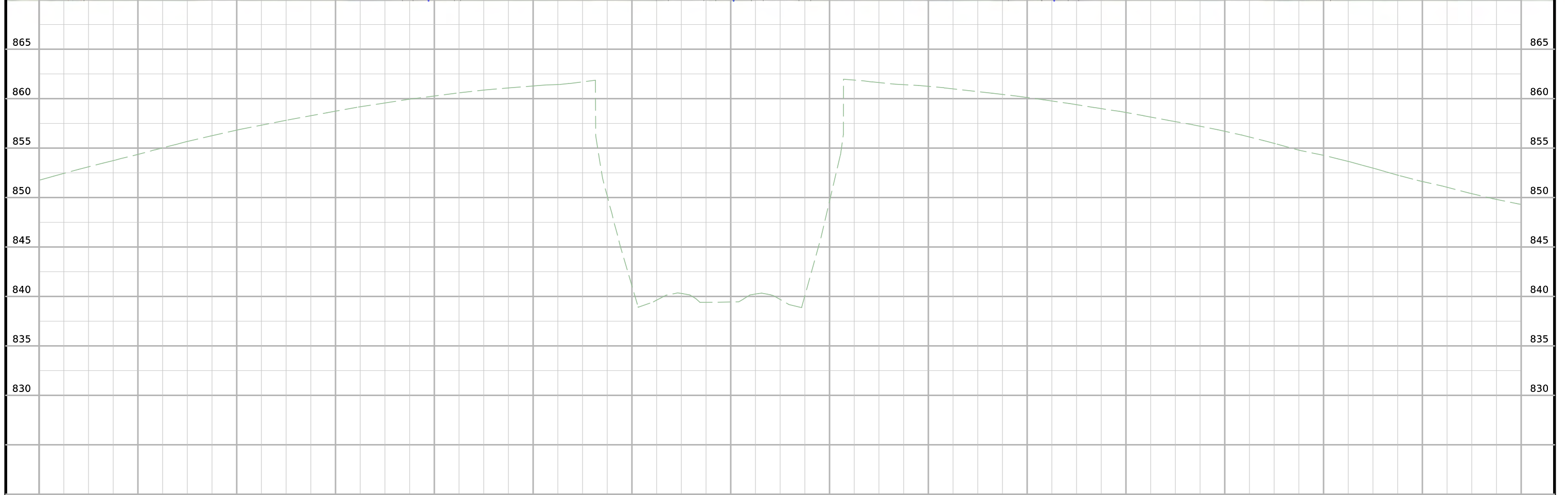
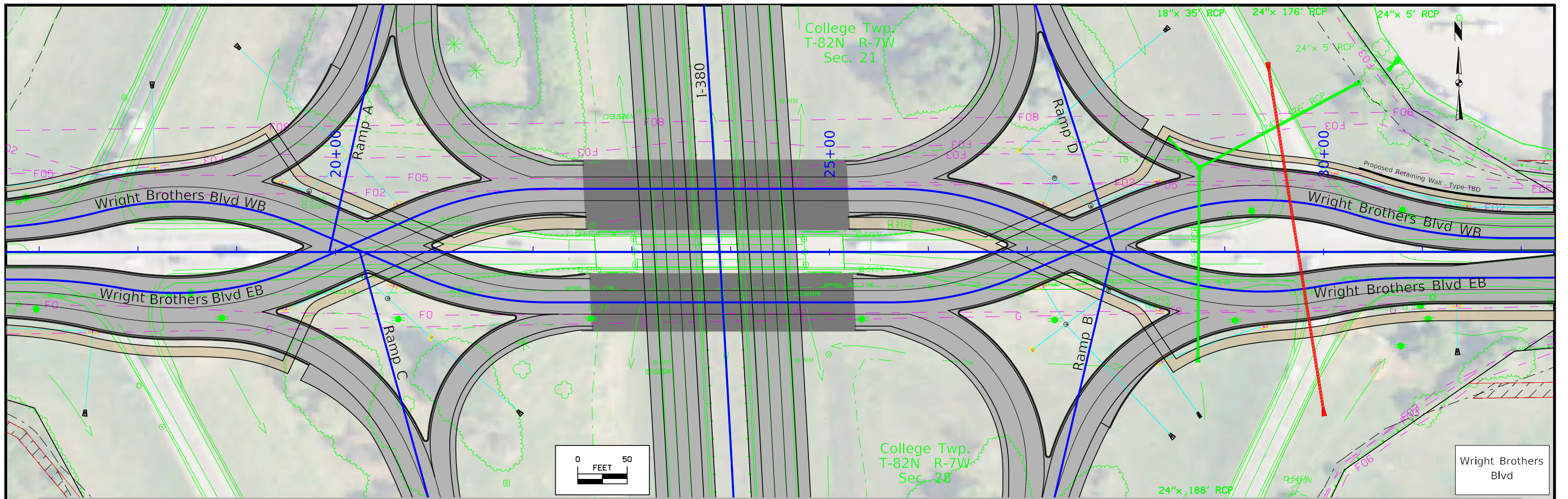


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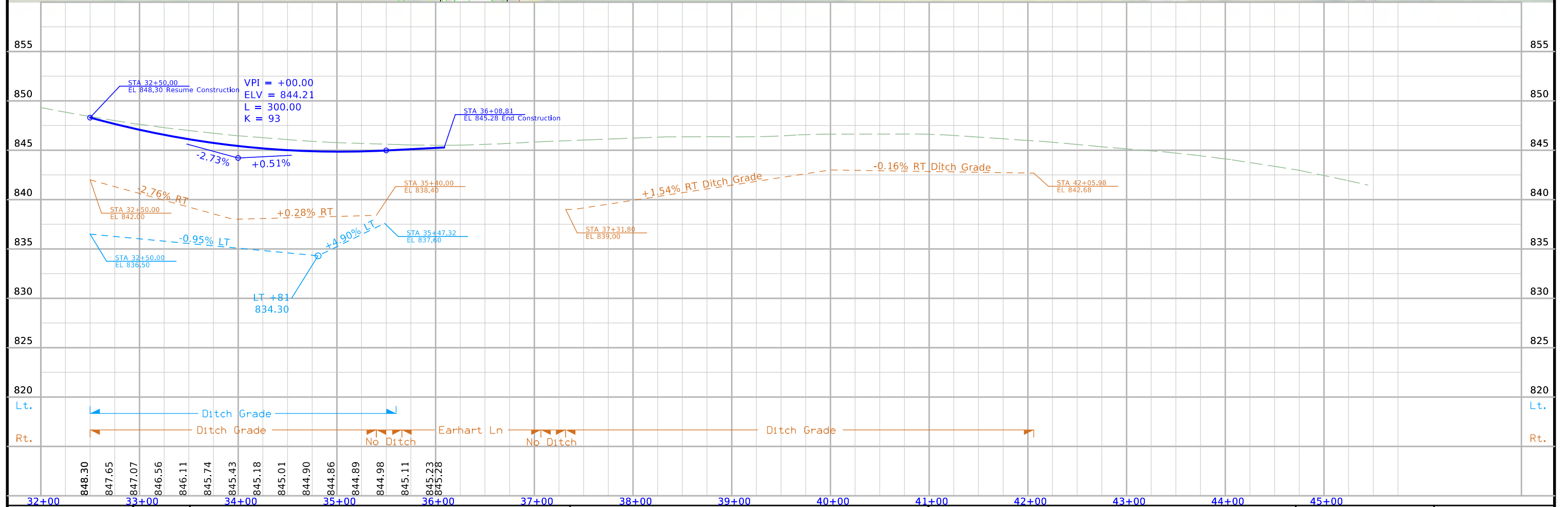
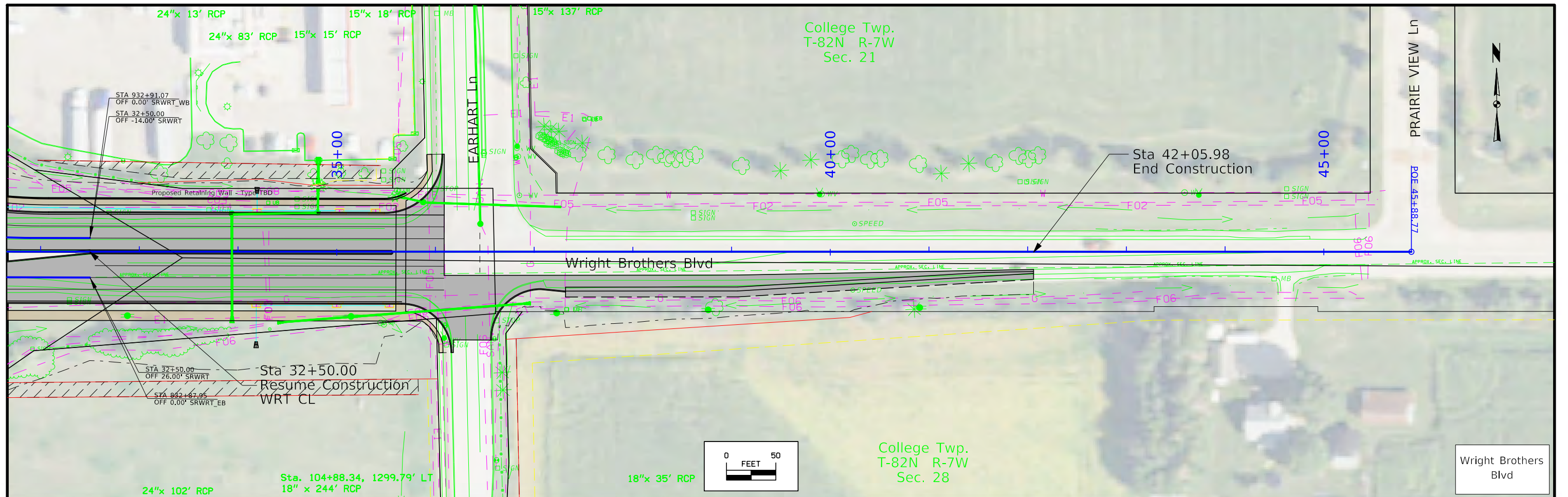
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		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	D.11



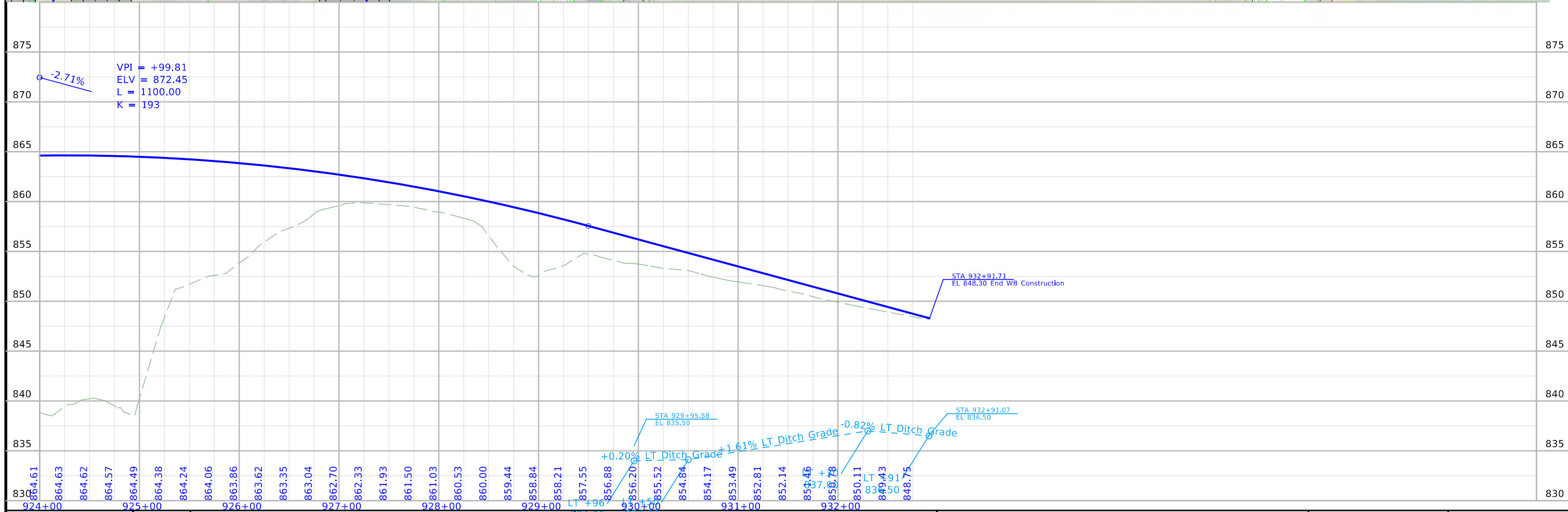
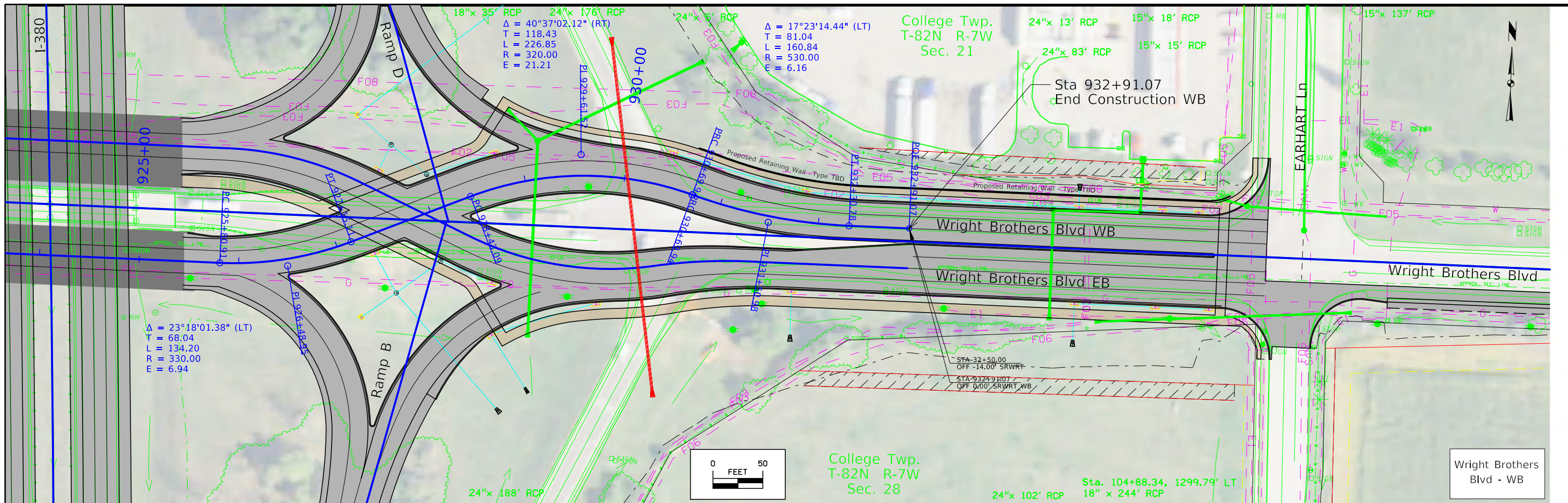
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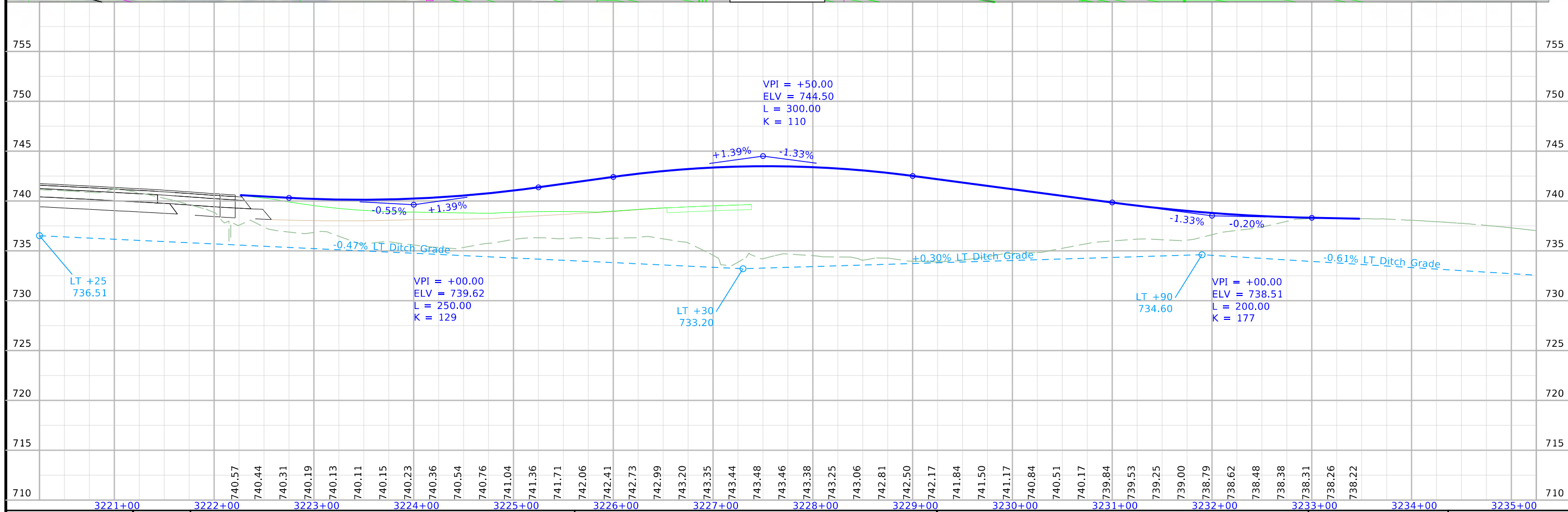
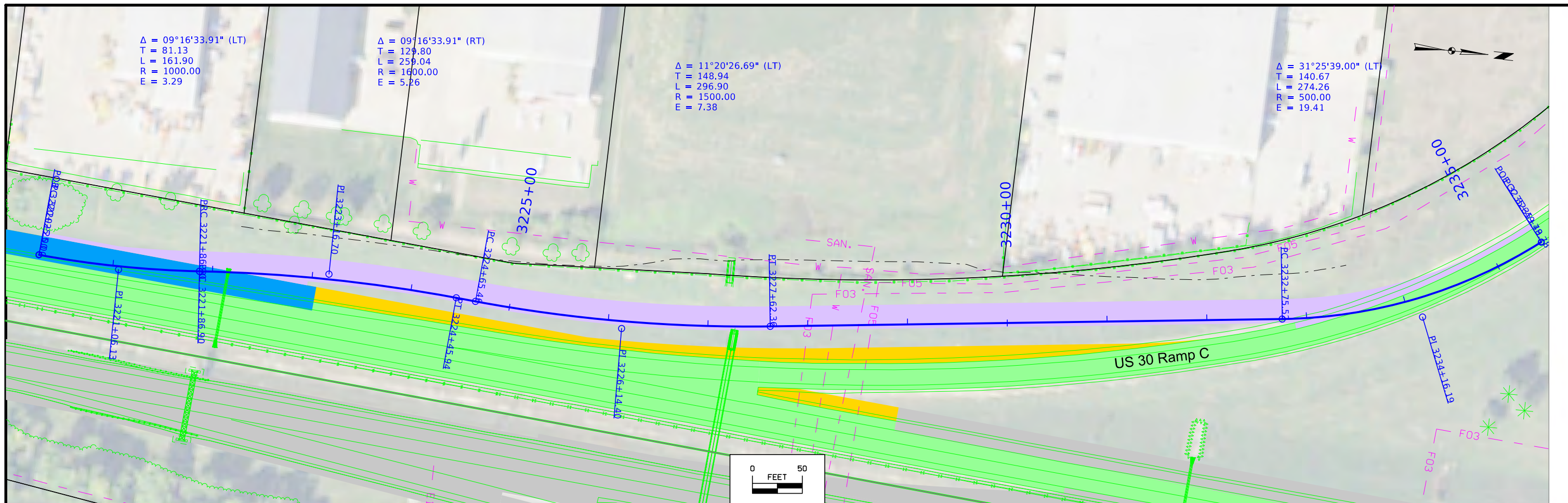


FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	IM-380-6(434)11--13-52	SHEET NUMBER	E.2
Holst \ Schrock \ Dudley							



FILE NO.	ENGLISH	DESIGN TEAM	Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER	IM-380-6(434)11--13-52	SHEET NUMBER	E.3
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FILE NO.	ENGLISH	DESIGN TEAM	Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER	IM-380-6(434)11--13-52	SHEET NUMBER	F.1
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Survey Information

Linn County
IM-380-6(434)12—13-57
I-380 North Section Survey
South of US 30
PIN 16-52-380-030-03
Sap-9552

Party Personnel

Jody Budde- PLS	Lee Budde- Party Chief
Wes Shimp- PLS	Aaron Paulsen- Party Chief
Jon Miranda- Geospatial Lead Tech	Katerina Wyatt- Assistant Survey Party Chief
Ben Sullivan- Geospatial Lead Tech	Levi Suhr- Assistant Survey Party Chief
Matt Svec- Party Chief	

Date(s) of Survey

Begin Date	09/20/2021
End Date	02/01/2022

General Information

Measurement units for this survey are US survey feet. This survey is for the preliminary design for the section of approximately 5 miles of US Interstate 380 from the intersection of US Highway 30 and runs southerly to the intersection of 120th Street NW. Project datum and control information is provided by Design Survey Office. This project is a Partial DTM with Photo control. Project horizontal datum is NAD83 (2011), Iowa RCS Zone 10 (Cedar Rapids).

Vertical Control

Vertical datum for this survey is relative to NAVD88 (computed using Geoid18) for the 2021 new FENOs, FENO #100-103. This survey consisted of observing four new FENO 1-meter rod monuments using minimum 2hr initial static observations along with data from four Iowa RTN CORS sites: Marion (IAMN), Norwalk (IANW), Williamsburg (IAWM) and Coralville (IACI). The published Ellipsoidal heights for the four Iowa RTN stations were held for the vertical adjustment portion of this survey using as-published RTN positions by the Iowa DOT dated August 6, 2021.

Additionally, 11 local existing monuments consisting of existing Iowa DOT FENOs and other local NGS and Linn County passive marks with published NAVD88 elevations were observed and used that are located in proximity to the I-380 project corridor area:

Linn County GPS 6; Eight existing Iowa DOT FENO monuments FENO 68 – 74, NGS BMs GSVS 202 and GSVS 203:

Linn County GPS 6 has a published Elv of: 860.54 usft

DOT FENO 68 has a published Elv of: 811.69 usft

DOT FENO 69 has a published Elv of: 769.93 usft

DOT FENO 70 has a published Elv of: 842.73 usft

DOT FENO 71 has a published Elv of: 795.39 usft

DOT FENO 72 has a published Elv of: 843.96 usft

DOT FENO 73 has a published Elv of: 836.66 usft

DOT FENO 74 has a published Elv of: 758.17 usft

NGS BM GSVS 202 has a published Elv of: 728.21 usft

NGS BM GSVS 203 has a published Elv of: 777.20 usft

The final vertical adjustment results show standard deviations were less than 0.02 ft. at 95% confidence level (2 sigma) for the new FENO monuments.

Horizontal Control

The project coordinate system for this survey is NAD83 (2011) Iowa RCS Zone 10 (Cedar Rapids), US survey feet. This survey control is relative to IaRTN reference stations. IaRTN Reference Station coordinates are relative to the National Reference Station network datum: NAD83 (2011) for Epoch 2010.00. Coordinates were determined by observing each mark for 120 minutes minimum.

For the January 2022 control survey FOTH added FENO monuments FENO 100, FENO 101, FENO 102 and FENO 103. Existing FENO monuments FENO 68 – FENO 74 were recovered and re-observed as part of this survey in addition existing Linn County GPS 6 and two NGS benchmark monuments: GSVS 202 and GSVS 203. Four Iowa RTN CORS stations were utilized for the horizontal adjustment portion of this survey. The published horizontal geodetic positions for the four Iowa RTN stations were held for the horizontal adjustment portion of this survey using as-published RTN positions by the Iowa DOT dated August 6, 2021. The published positions of the existing Iowa DOT

Survey Information

FENOs and GPS 6 were also confirmed and held fixed for the final horizontal constrained adjustment of the four new FENOs established.

The horizontal standard deviation of these adjusted observations was 0.02 ft. or less at 95% confidence level (2 sigma).

PROJECT CONTROL COORDINATE LISTING

PT NUM	NORTHING	EASTING	ELEVATION	DESCRIPTION
FENO 100	8036457.87	20499476.04	720.77	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 11 FT FROM THE FENCE TO THE EAST. 186 FT FROM ELECTRONIC BOARD SIGN BASE TO THE NORTHEAST. 97 FT FROM EDGE OF PAVEMENT TO THE WEST
FENO 101	8020978.61	20497313.39	838.21	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 23 FT FROM LUM TO THE SOUTHWEST. 20 FT FROM MH LID TO THE SOUTHEAST. 57 FT FROM TRAFFIC SIGNAL POST TO THE EAST-SOUTHEAST.
FENO 102	8020962.13	20502649.78	834.83	FENO SET FENO TYPE MONUMNET FLUSH WITH THE GROUND. 97 FT FROM EDGE OF ROAD TO THE SOUTH. 123 FT FROM STOP LINE BAR BEND TO THE SOUTHEAST. 192 FT FROM PP OPPOSITE KIRKWOOD BLVD SW RD TO THE EAST.
FENO 103	8009245.28	20499600.56	857.12	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 75 FT FROM EDGE OF PAVEMENT TO EAST. 86 FT FROM MM 116 SIGN TO SOUTHWEST. 75 FT FROM FENCE CORNER TO SOUTHEAST.
BM 202	8033999.95	20499656.32	728.21	BM NGS BM GSVS 202
BM 203	8032442.01	20503016.24	777.2	BM NGS BM GSVS 203
Linn Co GPS 6	8022154.94	20488934.27	860.54	CP Existing County GPS Rod Driven Mon
FENO 68	8005079.74	20499659.18	811.69	FENO Existing DOT FENO
FENO 69	8005647.81	20497463.82	769.93	FENO Existing DOT FENO
FENO 70	8011658.6	20498935.36	842.73	FENO Existing DOT FENO
FENO 71	8015211.15	20498862.12	795.39	FENO Existing DOT FENO
FENO 72	8020659.83	20498626.28	843.96	FENO Existing DOT FENO
FENO 73	8025964.31	20498701.06	836.66	FENO Existing DOT FENO
FENO 74	8031242.6	20499011.28	758.17	FENO Existing DOT FENO

Alignment Information

The horizontal alignment for this survey is a retrace of As-built Plans No. I-IG-380-6(20)247—04-52, I-380-6(9)255—01-57, I-IG-380-6(33)258—04-57, and STP-U-1187(687)—70-57. Survey stationing was equated to the plan POT at STA 1787+28.96 at the Linn-Johnson county line and run back and ahead throughout the survey.

Mainline (I380) Survey stationing relates to as built plan stationing as follows:

POB PT Sta. 1690+51.33 As-built Plans Project No. I-IG-380-6(20)247—04-52
Survey PT Sta. 1690+51.33

PI Sta. 1739+21.86 As-built Plans Project No. I-IG-380-6(20)247—04-52
Survey PI Sta. 1739+20.91

Station Equation

As-built Plans PT Sta 1749+57.70 (Back) = PT Sta 1749+60.63 (Ahead)
Survey PT Sta 1749+56.90 (Back) = PT Sta 1749+61.91 (Ahead)
* As-built Plans Project No. I-IG-380-6(20)247—04-52

Station Equation

As-built Plans POT Sta 1787+28.96 (Back) = POT Sta 0+00 (Ahead)
Survey POT Sta 1787+28.96 (Back) = POT Sta 0+00 (Ahead)
*As-built Plans change to I-380-6(9)255—01-57

PI Sta. 53+20.57 As-built Plans Project No. I-380-6(9)255—01-57
Survey PI Sta. 53+20.80

PI Sta. 106+19.03 As-built Plans Project No. I-380-6(9)255—01-57
Survey PI Sta. 106+17.46

PI Sta. 162+80.08 As-built Plans Project No. I-380-6(9)255—01-57
Survey PI Sta. 162+80.76

Station Equation

As-built Plans PT Sta 173+23.02 (Back) = PT Sta 173+28.49 (Ahead)
Survey PT Sta 173+23.53 (Back) = PT Sta 173+28.49 (Ahead)
*As-built Plans change to I-IG-380-6(33)258—04-57

END POT Sta. 258+90.94 As-built Plans Project No. I-IG-380-6(33)258—04-57
Survey POT Sta. 258+92.74

Sideroad (Wright Bros Blvd) Survey stationing relates to as built plan stationing as follows:

POB Survey POT Sta. 2+01.43

Survey PI Sta. 5+15.74

PI Sta. 10+00.00 As-built Plans Project No. STP-U-1187(687)—70-57
Survey PI Sta. 10+00.00

PI Sta. 31+03.29 As-built Plans Project No. STP-U-1187(687)—70-57
Survey PI Sta. 31+02.96

PI Sta. 36+43.86 As-built Plans Project No. STP-U-1187(687)—70-57
Survey PI Sta. 36+43.52

END PI Sta. 45+89.03 As-built Plans Project No. STP-U-1187(687)—70-57
Survey PI Sta. 45+88.77

CONTROL POINT VICINITY MAP

This map is a guide to the vicinity of the primary project control points. Primary control is for use with RTK base stations and for RTN validation. Future surveys will use primary project control to establish temporary control as needed for construction or other surveying applications.



HORIZ. DATUM: NAD83(2011) EPOCH 2010.00 - Ia. RCS Zone 10
VERT. DATUM: NAVD88 - Geoid Model G018

Coordinate listing from next sheet will be used with IaRTN for monument recovery. No other reference ties are given.

HORIZONTAL AND VERTICAL PROJECT CONTROL COORDINATE LISTING

HORIZ. DATUM: NAD83(2011) EPOCH 2010.00
 1a. Regional Coordinate System Zone 10

VERT. DATUM: NAVD88
 Geoid Model G018
 Project Control Marks are Bench Marks

<u>PT NUM</u>	<u>NORTHING</u>	<u>EASTING</u>	<u>ELEVATION</u>	<u>DESCRIPTION</u>
FENO 100	8036457.87	20499476.04	720.77	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 11 FT FROM THE FENCE TO THE EAST. 186 FT FROM ELECTRONIC BOARD SIGN BASE TO THE NORTHEAST. 97 FT FROM EDGE OF PAVEMENT TO THE WEST
FENO 101	8020978.61	20497313.39	838.21	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 23 FT FROM LUM TO THE SOUTHWEST. 20 FT FROM MH LID TO THE SOUTHEAST. 57 FT FROM TRAFFIC SIGNAL POST TO THE EAST-SOUTHEAST.
FENO 102	8020962.13	20502649.78	834.83	FENO SET FENO TYPE MONUMNET FLUSH WITH THE GROUND. 97 FT FROM EDGE OF ROAD TO THE SOUTH. 123 FT FROM STOP LINE BAR BEND TO THE SOUTHEAST. 192 FT FROM PP OPPOSITE KIRKWOOD BLVD SW RD TO THE EAST.
FENO 103	8009245.28	20499600.56	857.12	FENO SET FENO TYPE MONUMENT FLUSH WITH THE GROUND. 75 FT FROM EDGE OF PAVEMENT TO EAST. 86 FT FROM MM 116 SIGN TO SOUTHWEST. 75 FT FROM FENCE CORNER TO SOUTHEAST.
BM 202	8033999.95	20499656.32	728.21	BM NGS BM GSVS 202
BM 203	8032442.01	20503016.24	777.2	BM NGS BM GSVS 203
Linn Co GPS 6	8022154.94	20488934.27	860.54	CP Existing County GPS Rod Driven Mon
FENO 68	8005079.74	20499659.18	811.69	FENO Existing DOT FENO
FENO 69	8005647.81	20497463.82	769.93	FENO Existing DOT FENO
FENO 70	8011658.6	20498935.36	842.73	FENO Existing DOT FENO
FENO 71	8015211.15	20498862.12	795.39	FENO Existing DOT FENO
FENO 72	8020659.83	20498626.28	843.96	FENO Existing DOT FENO
FENO 73	8025964.31	20498701.06	836.66	FENO Existing DOT FENO
FENO 74	8031242.6	20499011.28	758.17	FENO Existing DOT FENO

TRAFFIC CONTROL PLAN

Traffic on all through lanes of I-380, 120th St., Wright Brothers Blvd., US 30 and adjacent side roads shall be maintained as indicated on the staging plans at all times except as noted below:

- I-380 under Wright Brothers Blvd. shall utilize a temporary detour using ramps (TC-454) during the placement of bridge beams and removal of the existing bridge over traffic lanes. This detour will be subject to times allowed in Tab 108-23B Traffic Control Closure Tables.

Traffic on all ramps and loops associated with the 120th St. Interchange, NB and SB rest areas, Wright Brothers Blvd. Interchange, and US 30 Interchange shall be maintained at all times except as noted below:

- I-380 SB exit ramp at 120th St. shall be closed for the reconstruction of the ramp.
- I-380 SB entrance ramp at US 30 shall be closed for the reconstruction of the ramp.
- I-380 NB exit ramp at US 30 shall be closed for the reconstruction of the ramp.
- US 30 WB to I-380 SB loop shall be closed for the construction of the add lane and mainline pavement.

Traffic at the Wright Brothers Blvd. intersections of 6th St. SW and the Wright Brothers Blvd. interchange ramps shall be maintained by traffic signals.

Shoulder widths on all routes shall be 2' minimum adjacent to TBR.
Shoulder widths on all routes shall be 3' minimum when TBR is not present.










STAGING NOTES

See Staging Sheets

**CROSS SECTION VIEW COLOR LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Med	(237)	Future Proposed Pavement Shading

**CROSS SECTION VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**













	Pavement Removal		Proposed Granular Shoulder
	Proposed Granular Subbase		Temporary Shoulder
	Proposed Special Backfill		Existing Shoulder Strengthening
	Temporary Barrier Rail		Permanent Barrier Rail
			Channelizing Device

PLAN VIEW COLOR LEGEND OF TRAFFIC CONTROL AND STAGING SHEETS

LINEWORK	Design Color No.	
Green	(2)	Existing Topographic Features and Labels
Magenta	(5)	Pavement Marking Call Outs
Blue	(1)	Proposed Alignment, Stationing, Tic Marks, and Alignment Annotation
Yellow	(4)	Pavement Markings, Yellow
Off White	(254)	Pavement Markings, White
Violet	(15)	Temporary barrier rail, Unpinned
Flush Orange	(228)	Temporary barrier rail, Pinned

SHADING	Design Color No.	
Green, Light	(225)	Existing Pavement Shading
Gray, Light	(48)	Previously Constructed Pavement Shading
Gray, Med	(80)	Proposed Granular Surface Shading
Gray, Med	(80)	Previously Constructed Granular Surface Shading
Blue, Light	(230)	Proposed Pavement Shading
Lavender	(9)	Temporary Pavement Shading
Brown, Light	(236)	Proposed Grading Limits Shading
Pink, Dark	(13)	Proposed MSE or CIP Wall Shading
Red	(3)	Proposed Bridge Shading and Sign Trusses
Black w/Gray, Light Fill	(0,48)	Previously Constructed Structure

**PLAN VIEW PATTERN AND SYMBOL LEGEND
OF TRAFFIC CONTROL AND STAGING SHEETS**

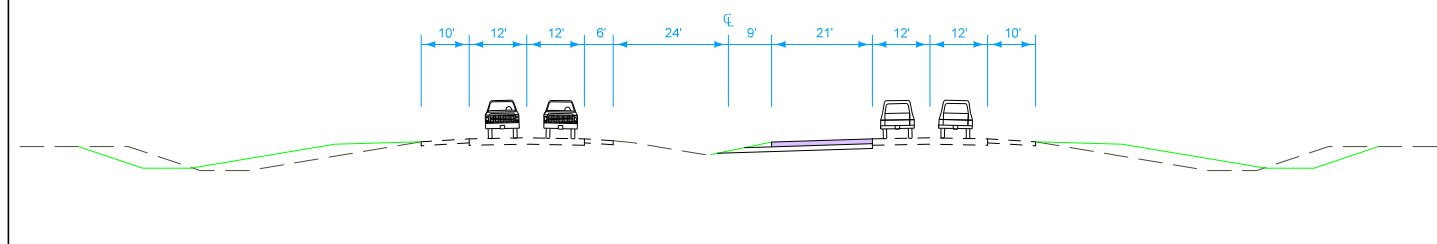
●	Channelizing Device		Crash Cushion (Temp or Perm)
✕	Drum		Traffic Signal
■	Temporary Lane Separator		Flagger
◆	Tubular Marker		Temporary Floodlighting
♦	Channelizer Marker		Traffic Sign
△	Concrete Barrier Marker		Type III Barricade
◁	Delineator		Type A Warning Light
—	Temporary Barrier Rail		Direction of Traffic
	Pavement Removal		Safety Closure
	Sand Barrel Layout		Lane Identification

NOTE: Device spacing according to Standard Road Plans unless specifically dimensioned.

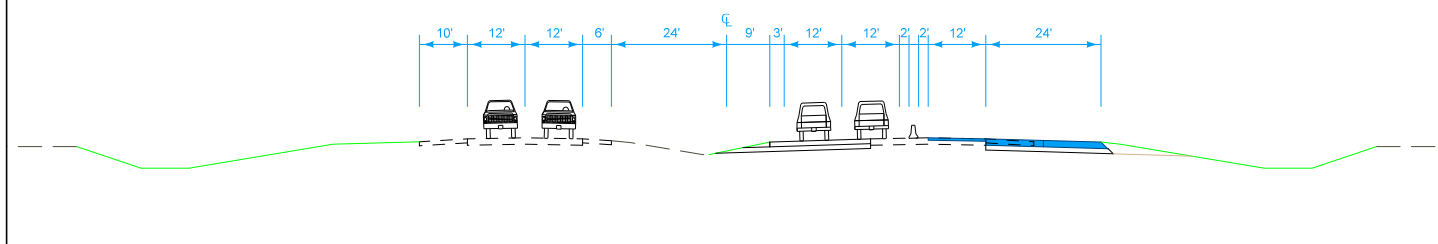
**TRAFFIC CONTROL
AND
STAGING
LEGEND AND SYMBOL
INFORMATION SHEET**

(COVERS SHEET SERIES J)

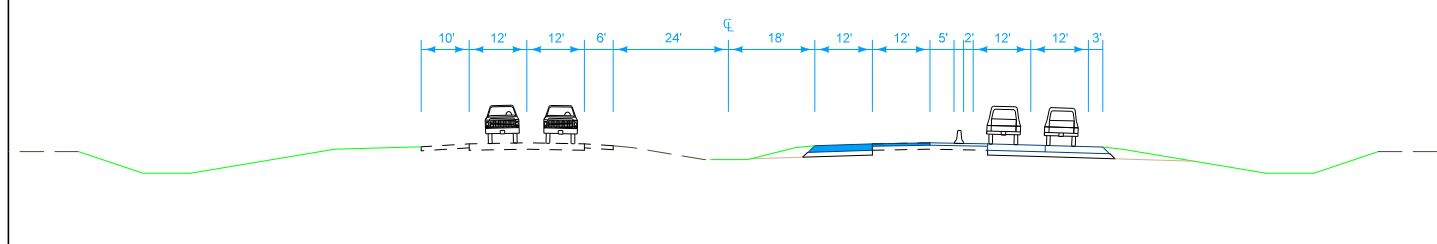
Stage 1



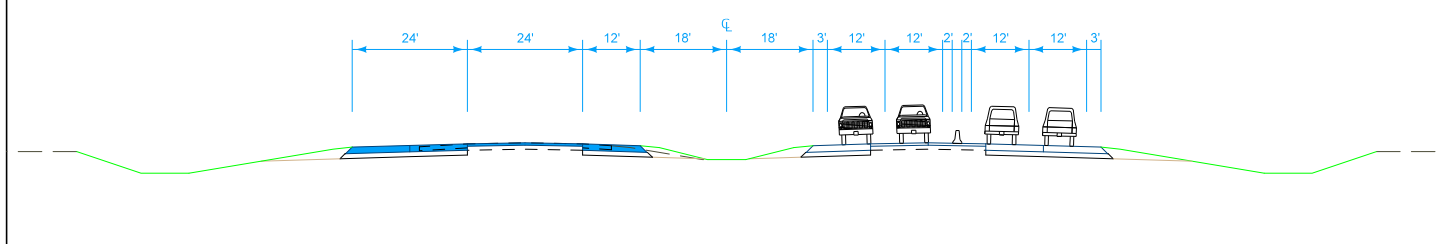
Stage 2



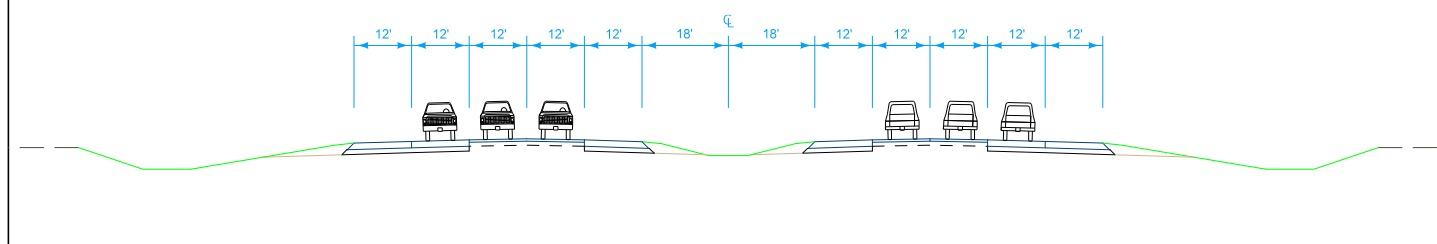
Stage 3



Stage 4

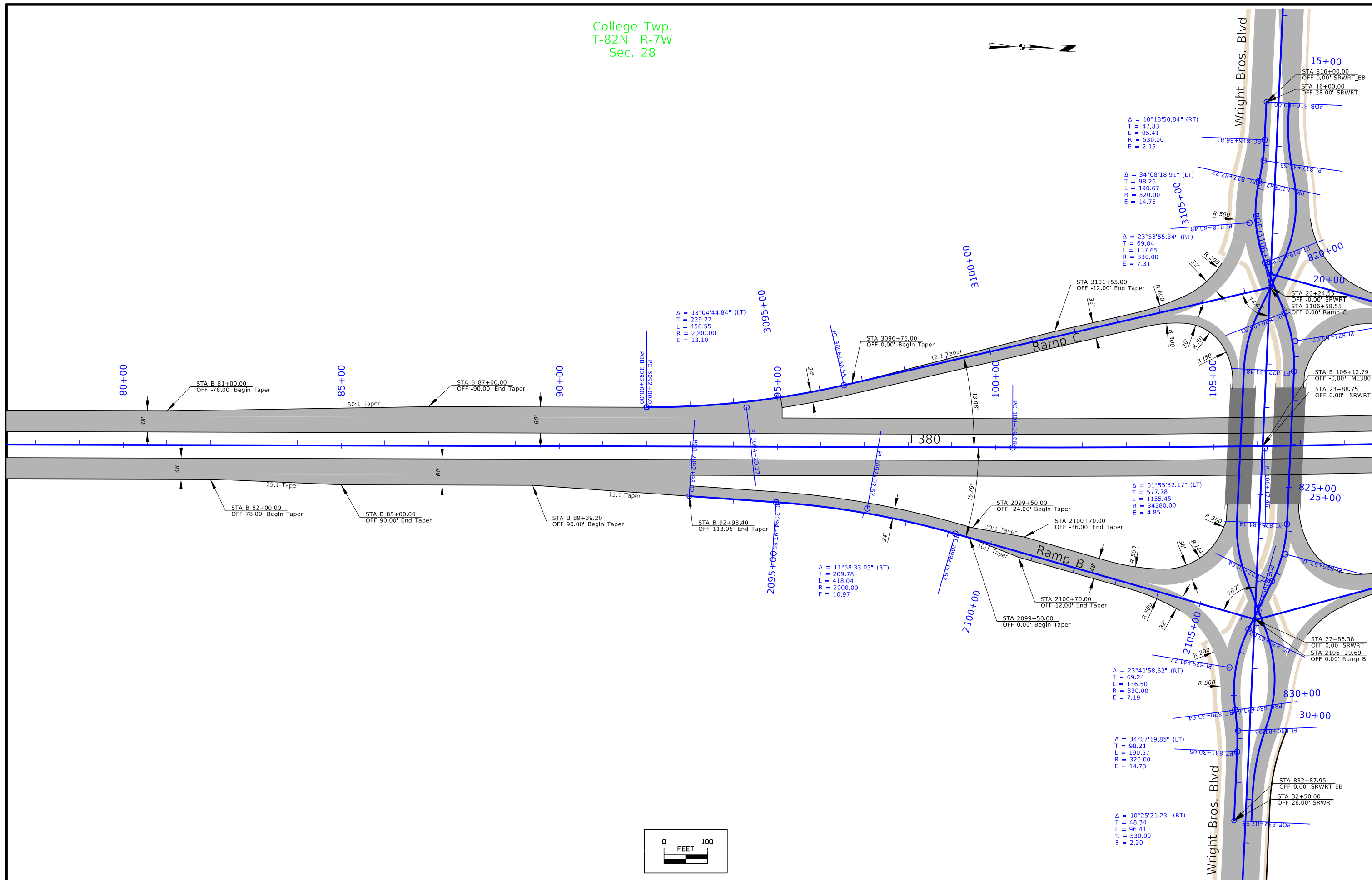
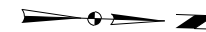


Stage 5



I-380 Staging

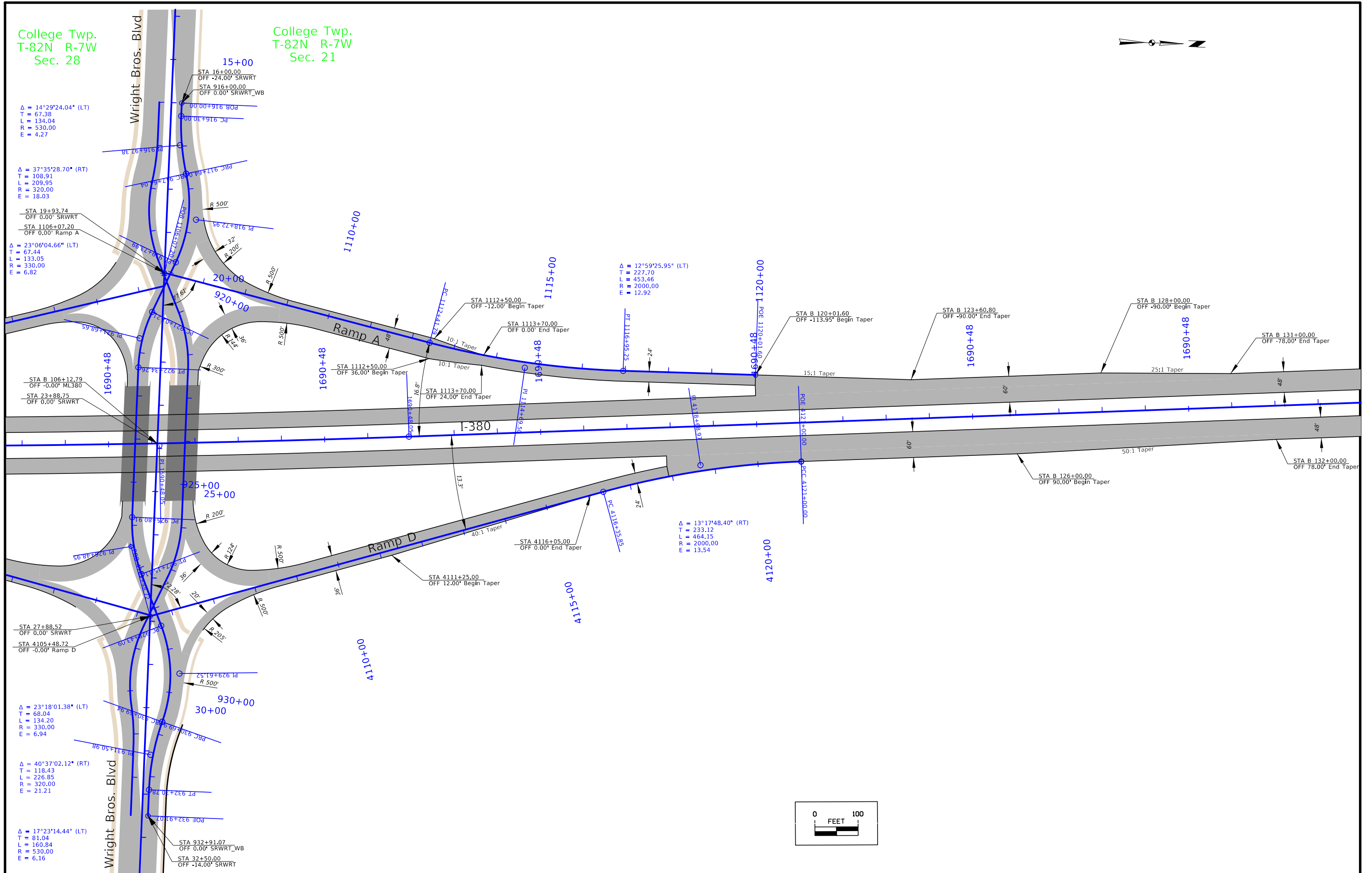
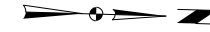
College Twp.
T-82N R-7W
Sec. 28



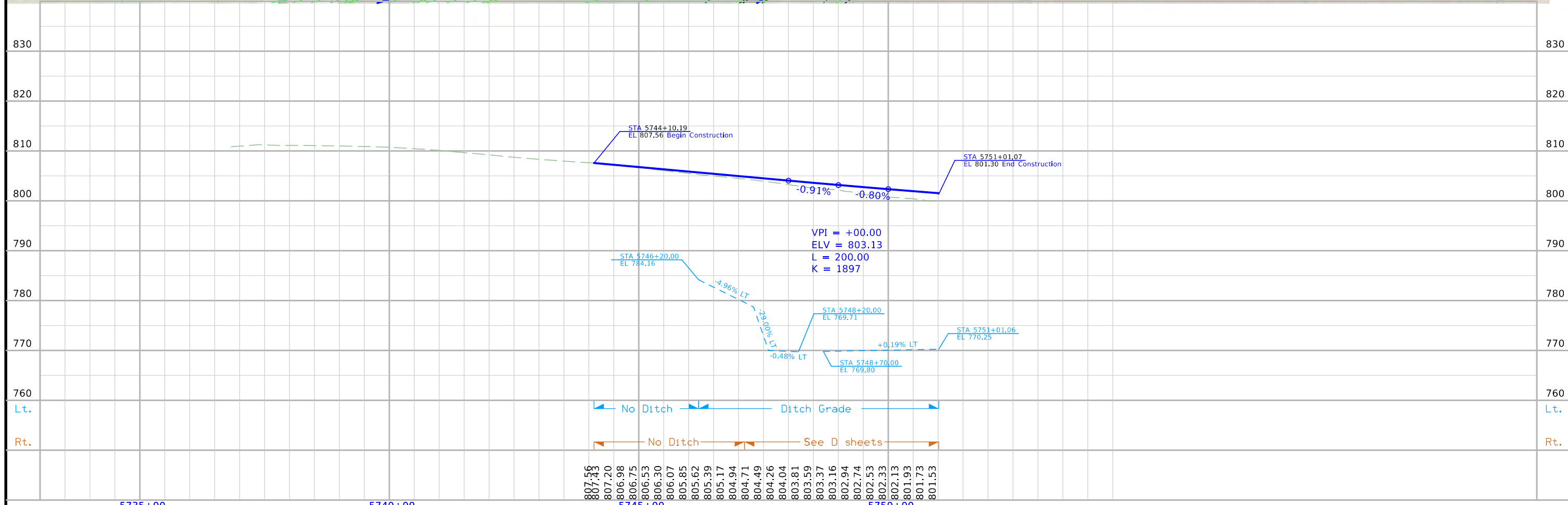
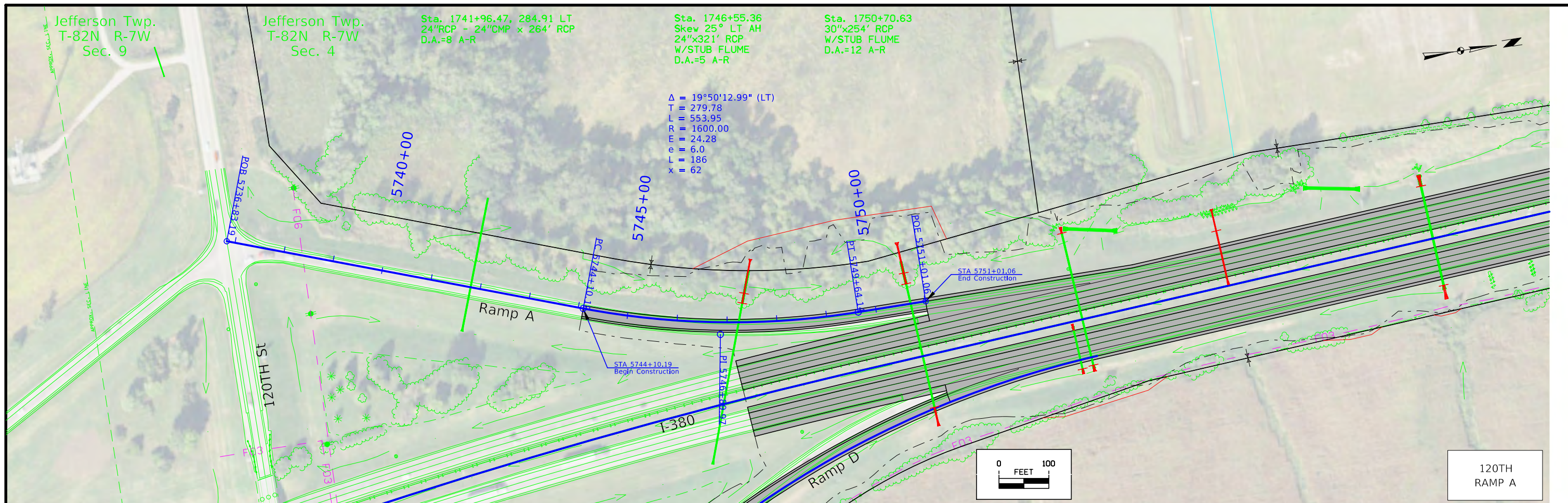
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER IM-380-6(434)11--13-52	SHEET NUMBER K.1
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College Twp.
T-82N R-7W
Sec. 28

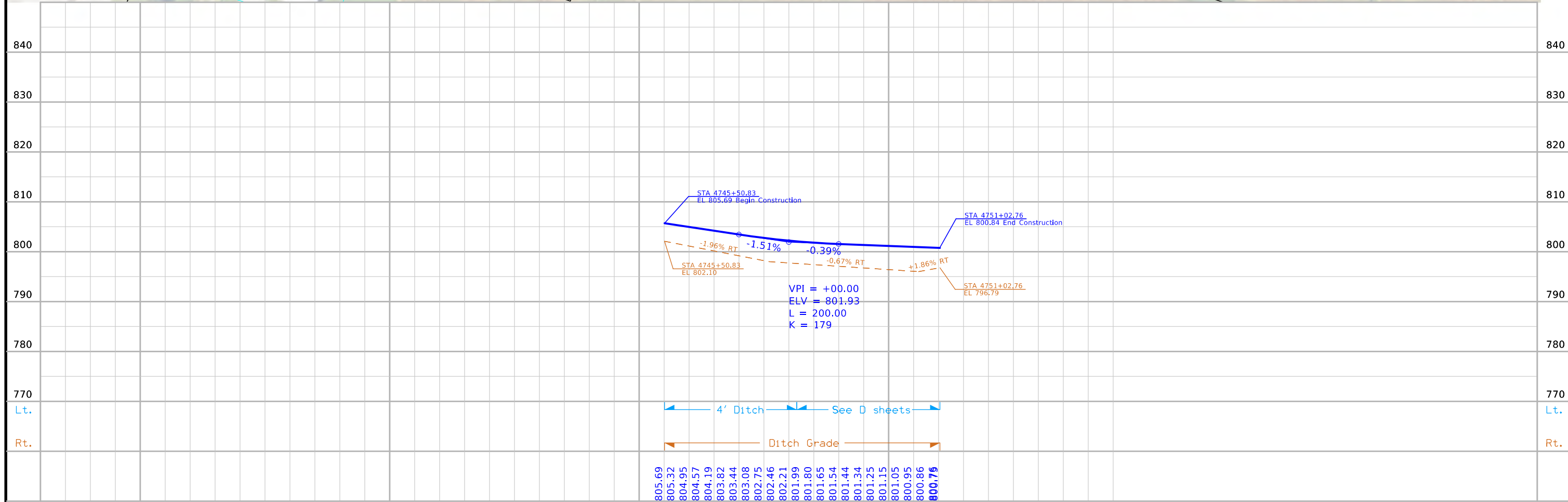
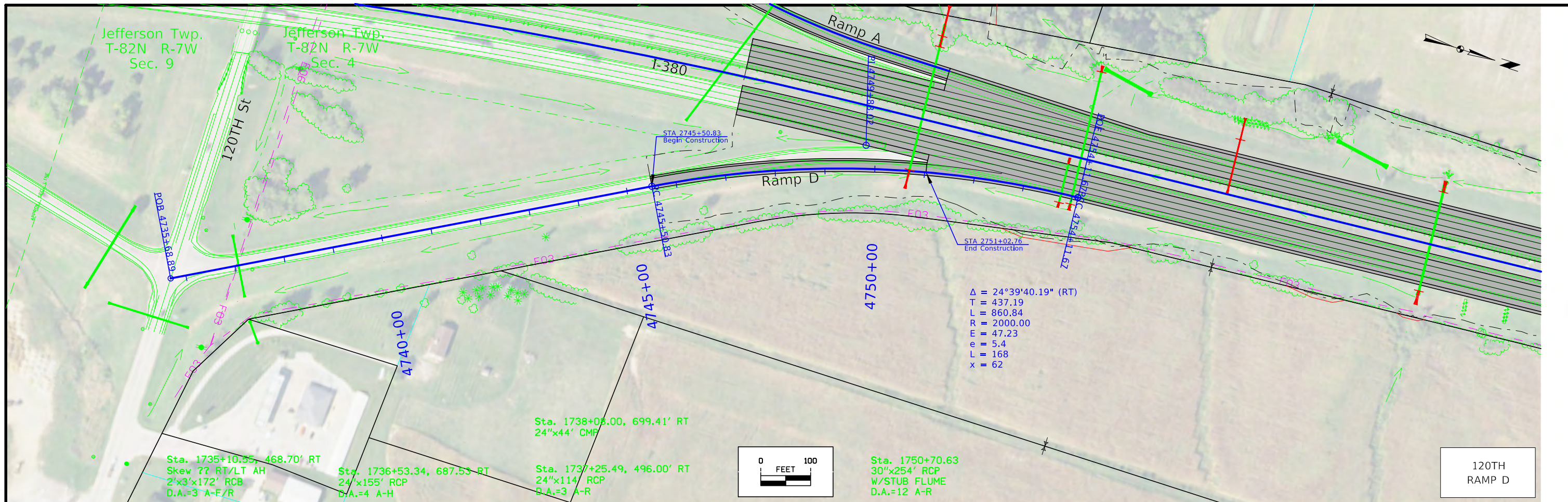
College Twp.
T-82N R-7W
Sec. 21



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER IM-380-6(434)11--13-52	SHEET NUMBER K.2
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FILE NO.	ENGLISH	DESIGN TEAM	Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER	IM-380-6(434)11--13-52	SHEET NUMBER	K.3
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FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	K.4

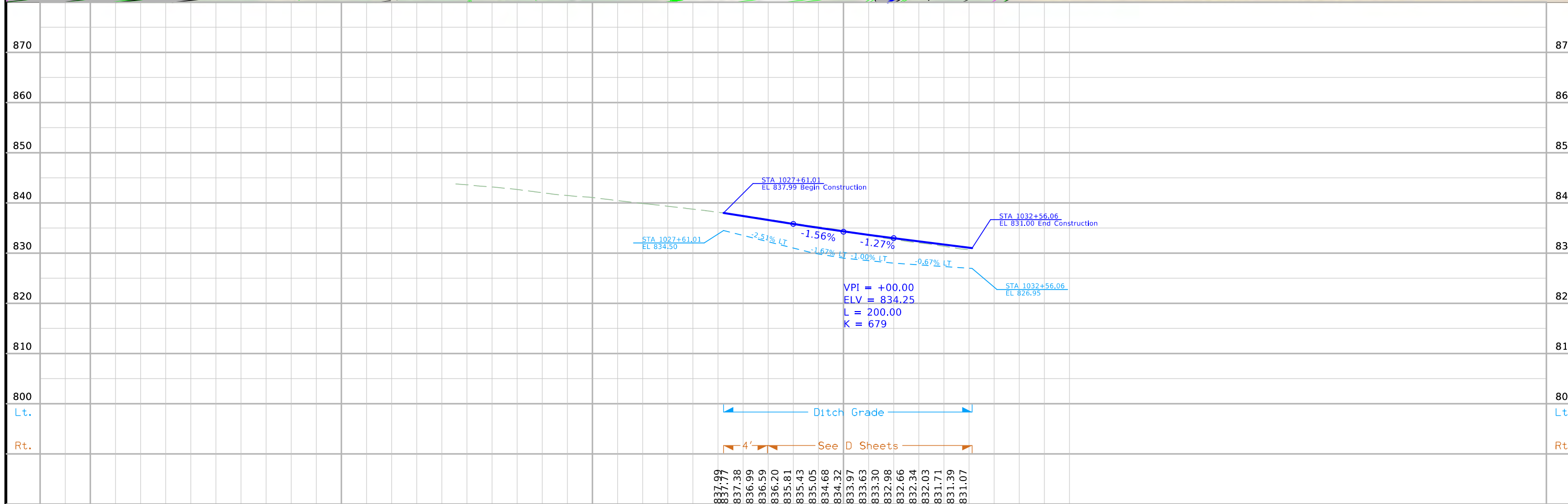
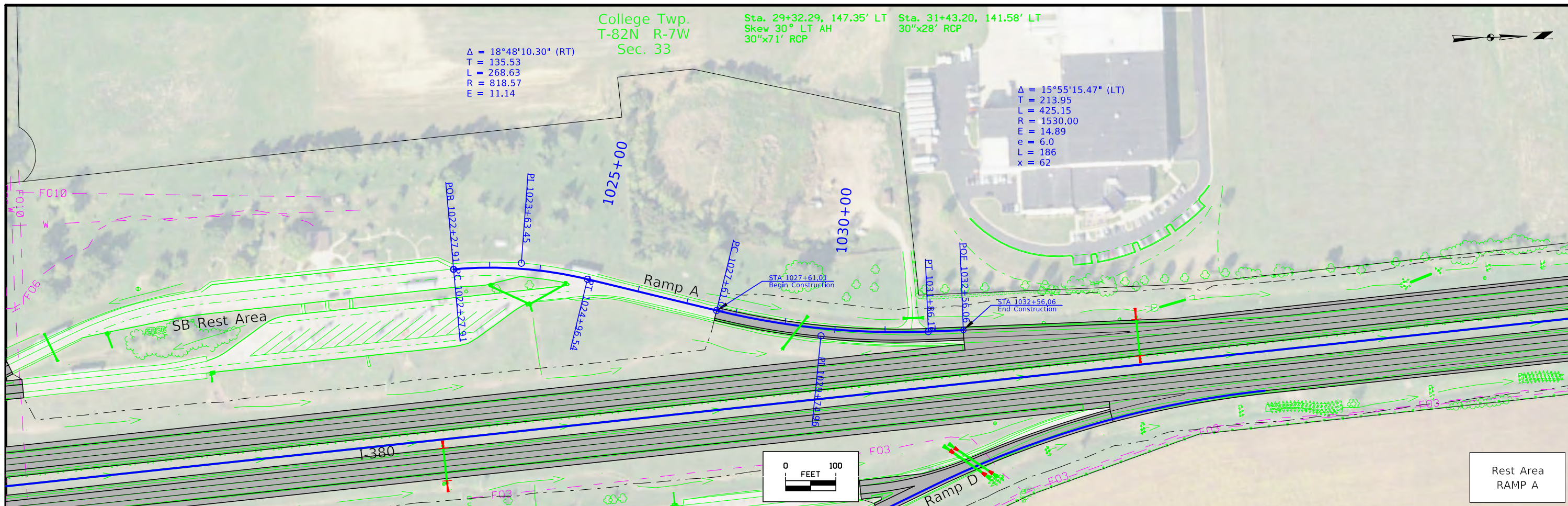
College Twp.
T-82N R-7W
Sec. 33

Sta. 29+32.29, 147.35' LT
Skew 30° LT AH
30"x71' RCP

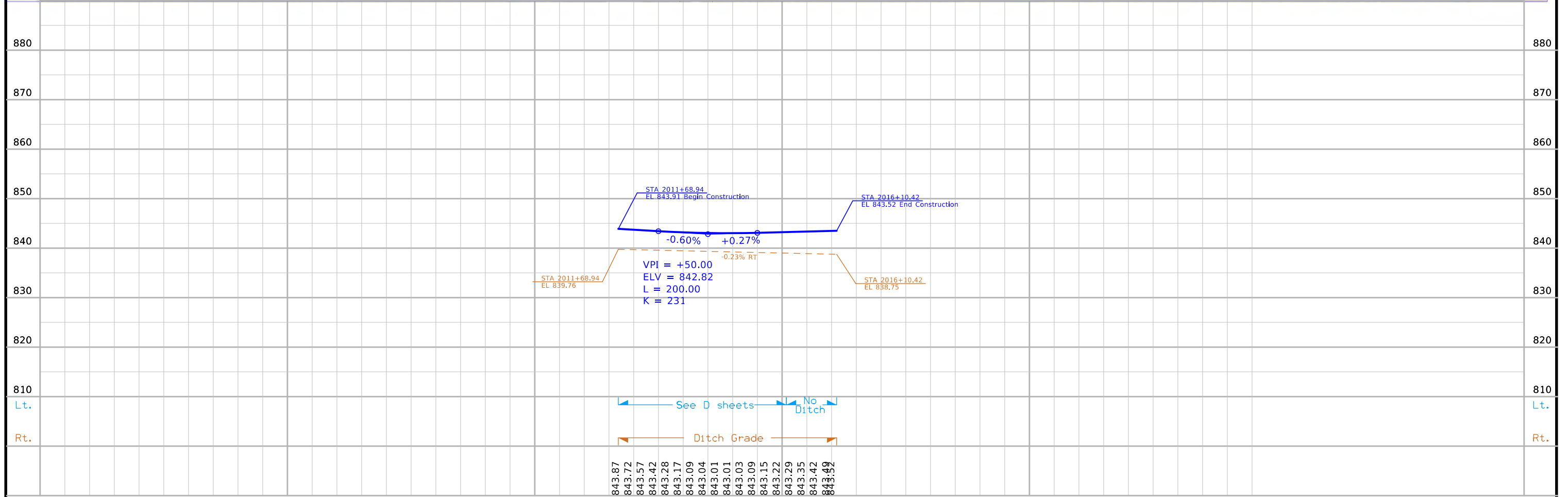
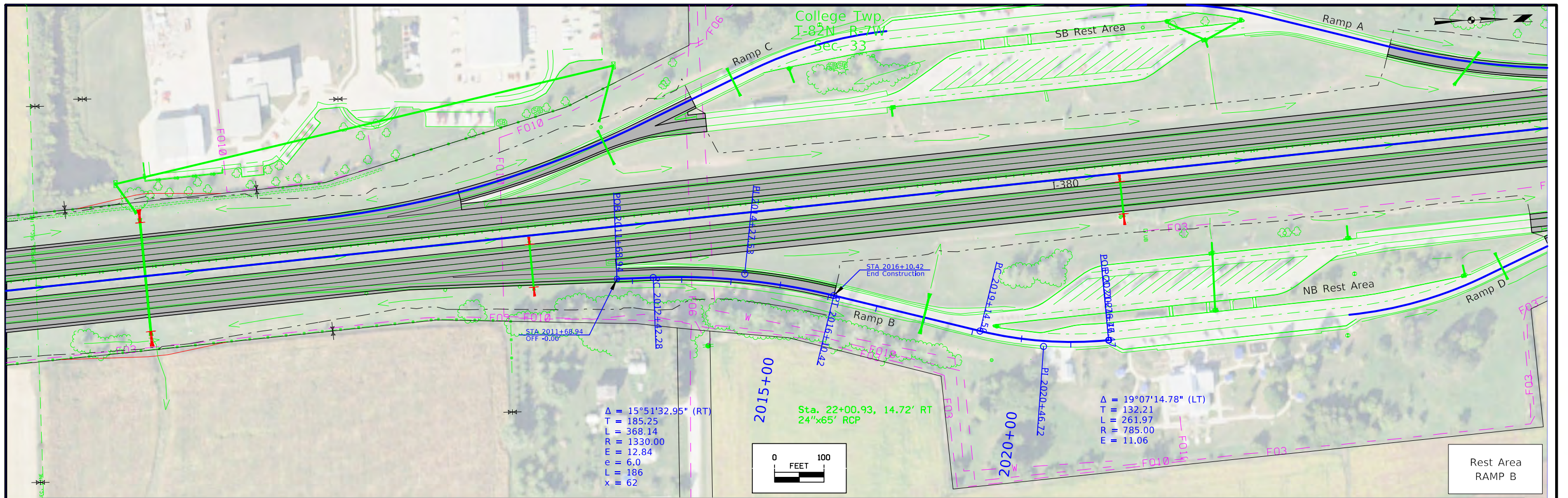
Sta. 31+43.20, 141.58' LT
30"x28' RCP

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L = 268.63
R = 818.57
E = 11.14

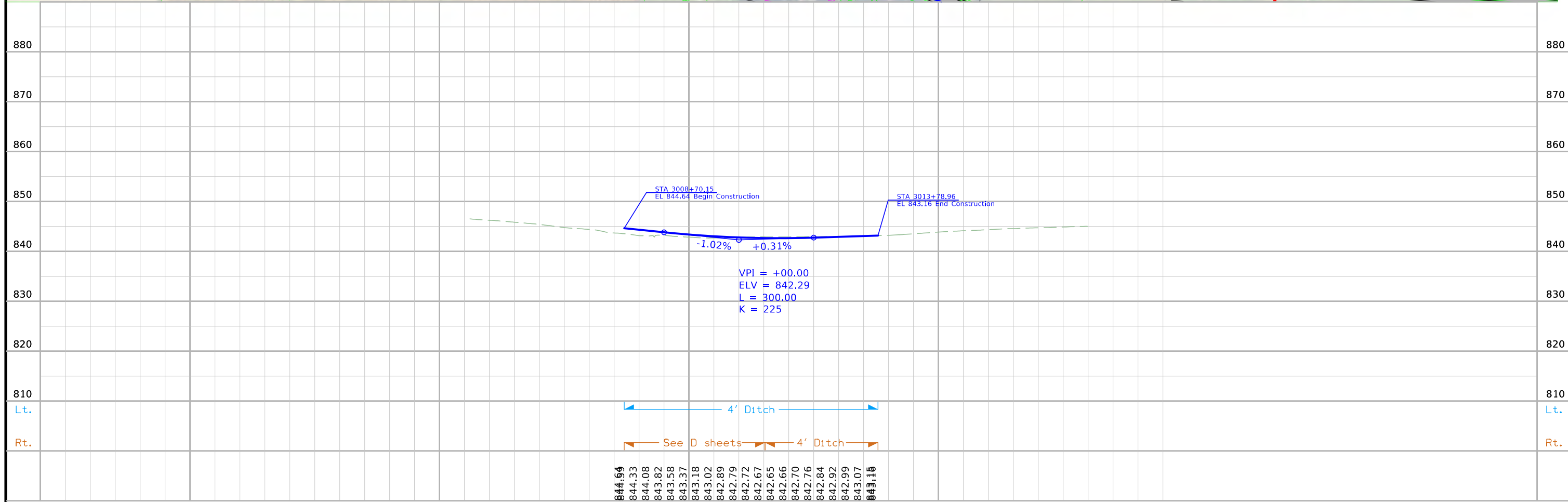
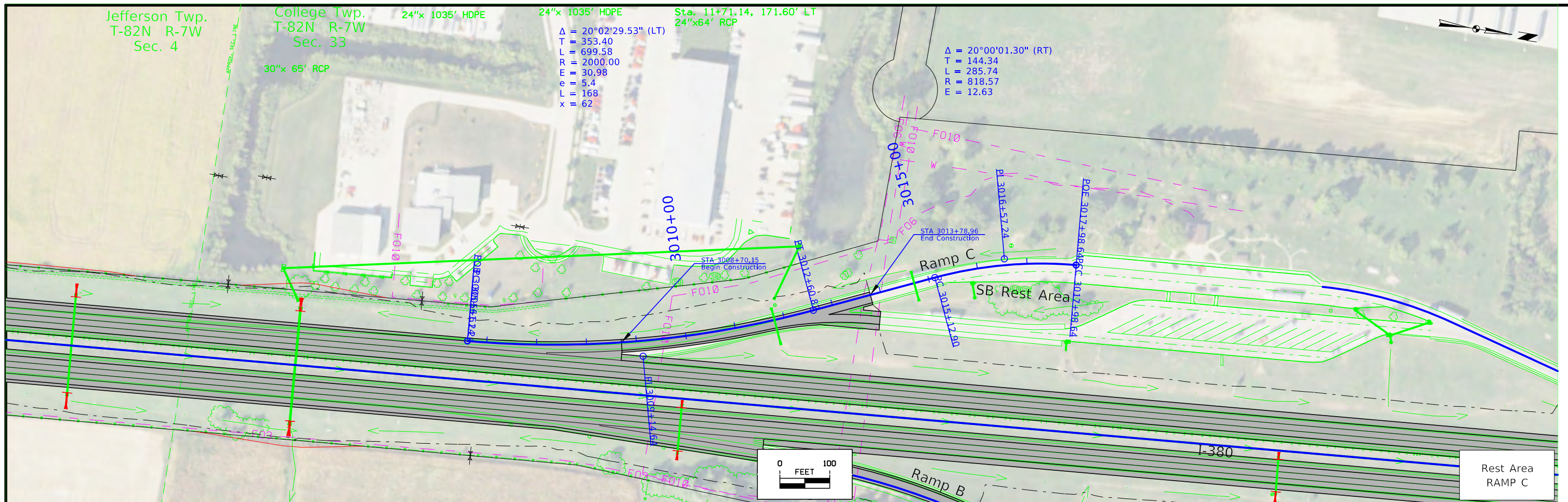
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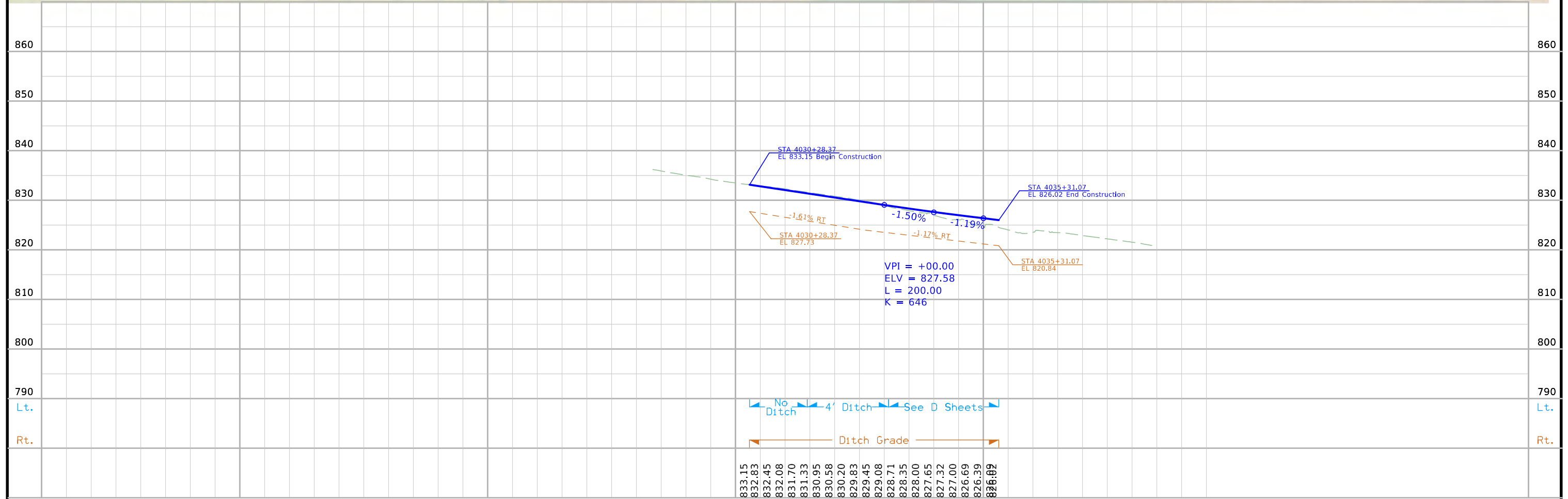
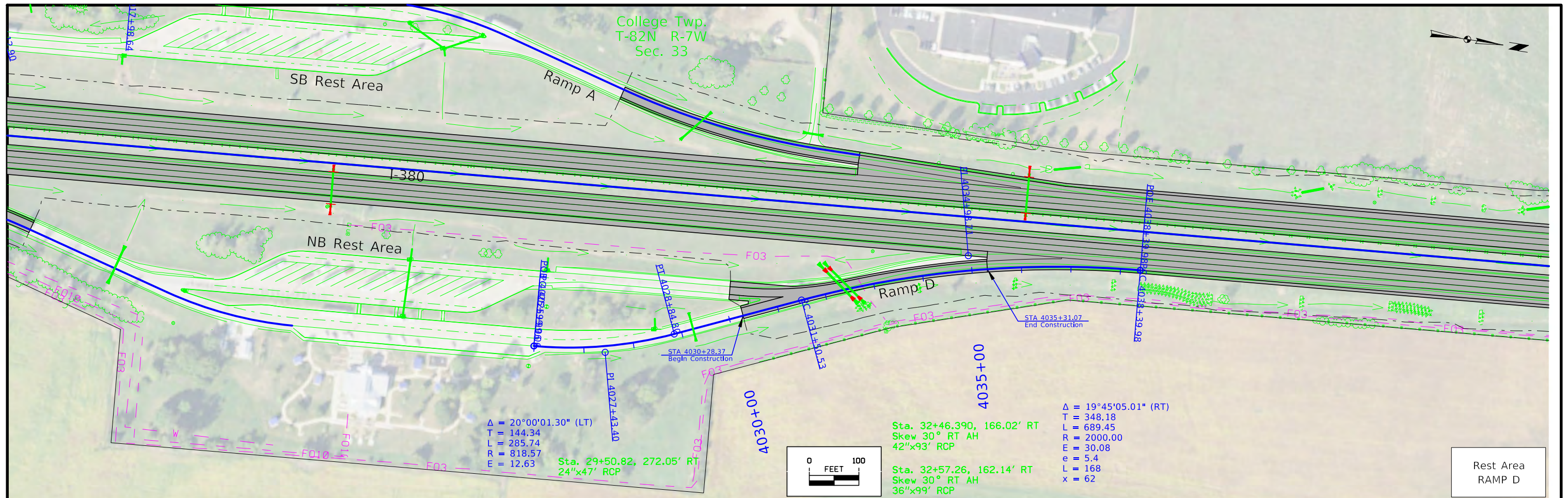
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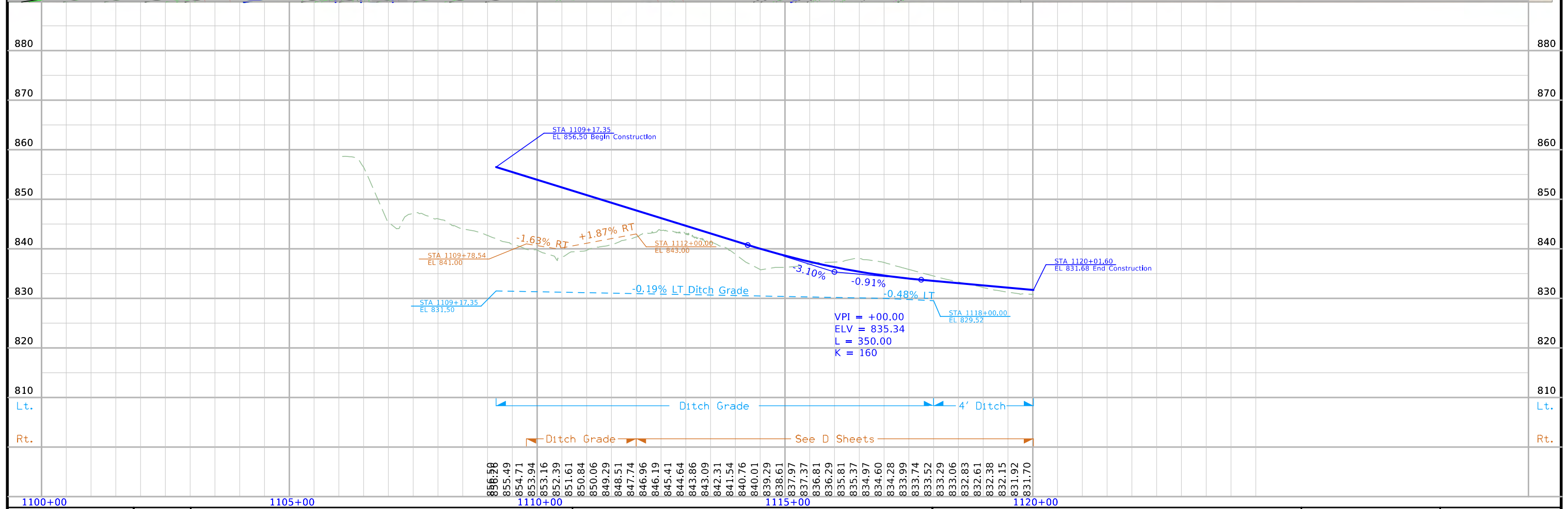
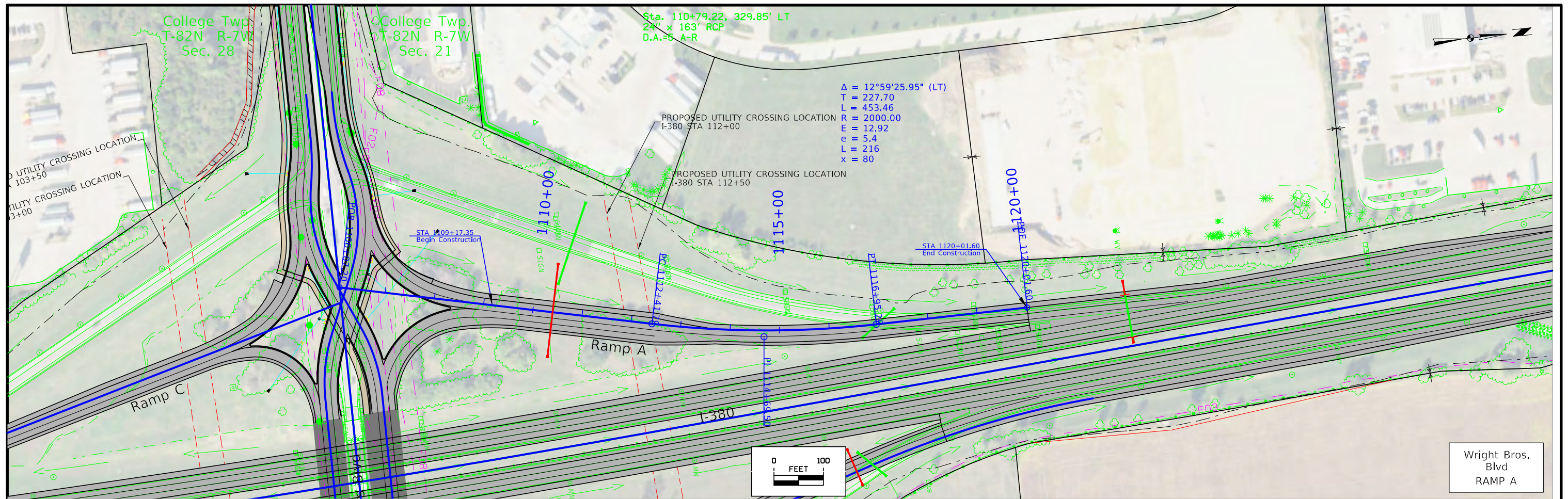
FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER
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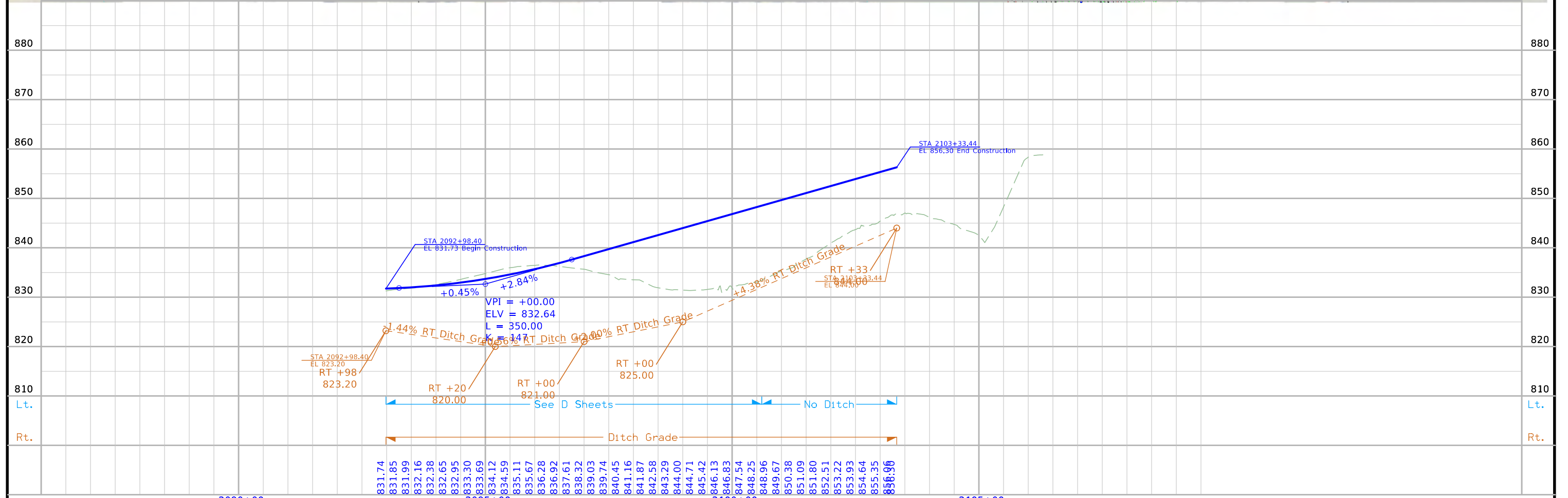
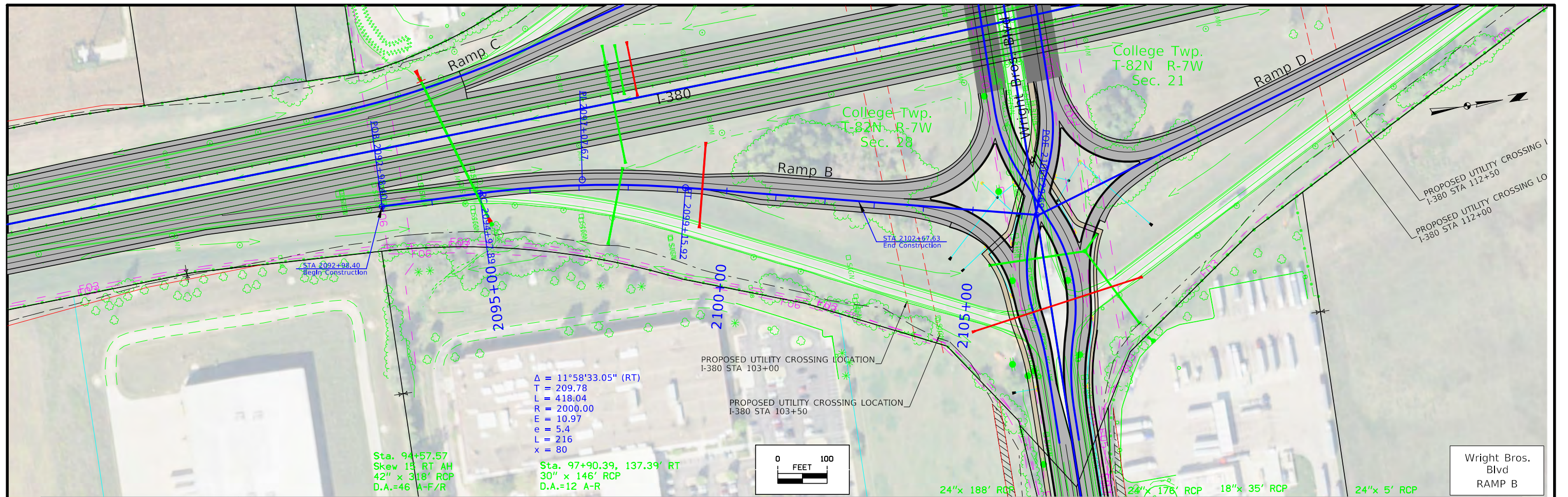
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER IM-380-6(434)11--13-52	SHEET NUMBER K.7
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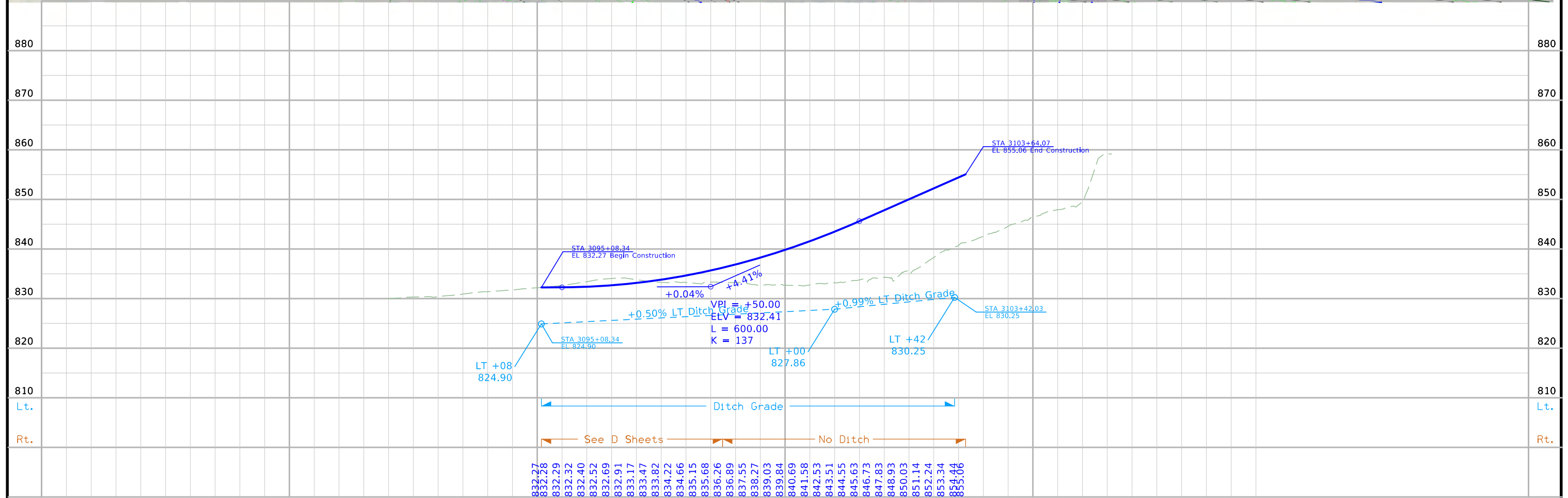
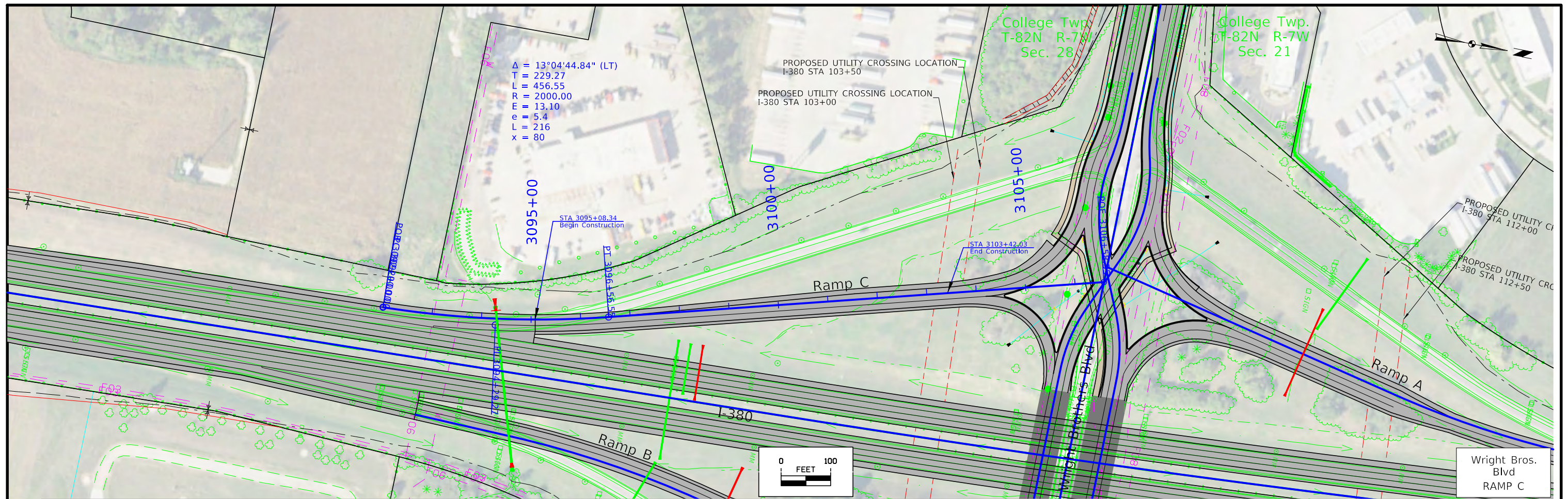
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		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	K.8

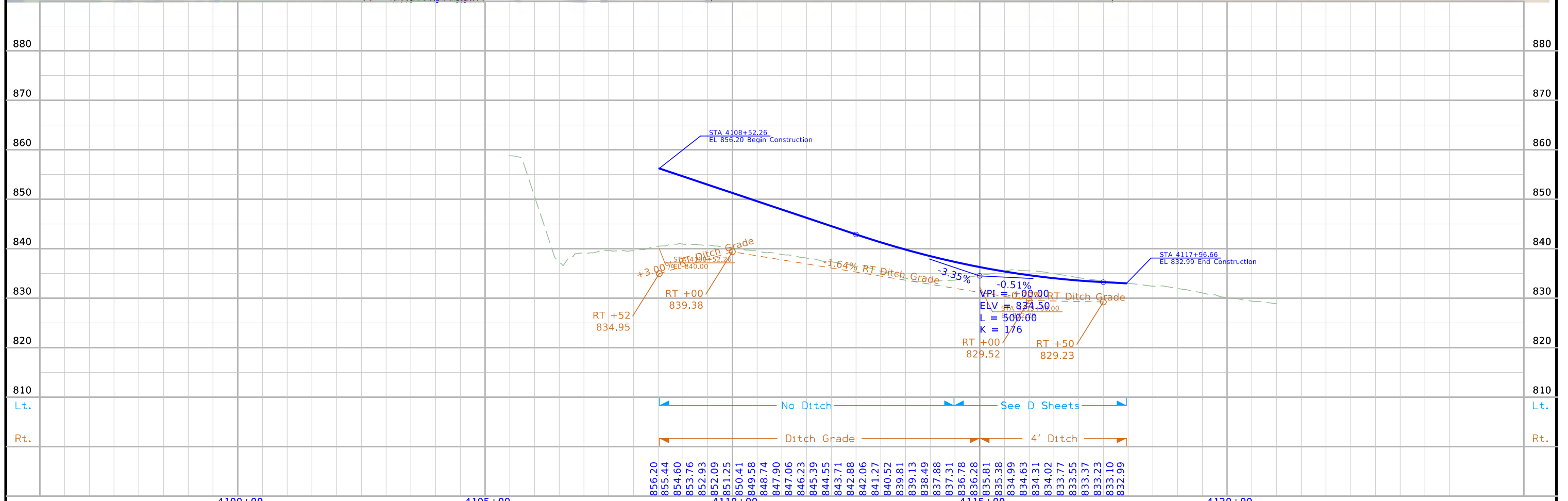
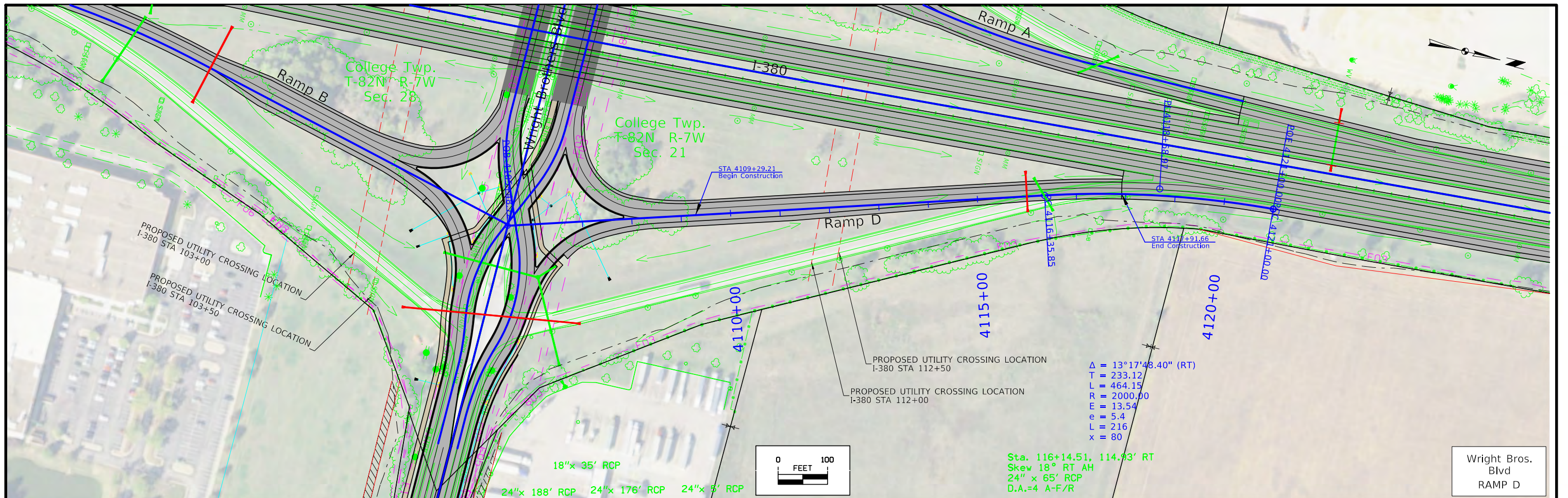


FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	K.9

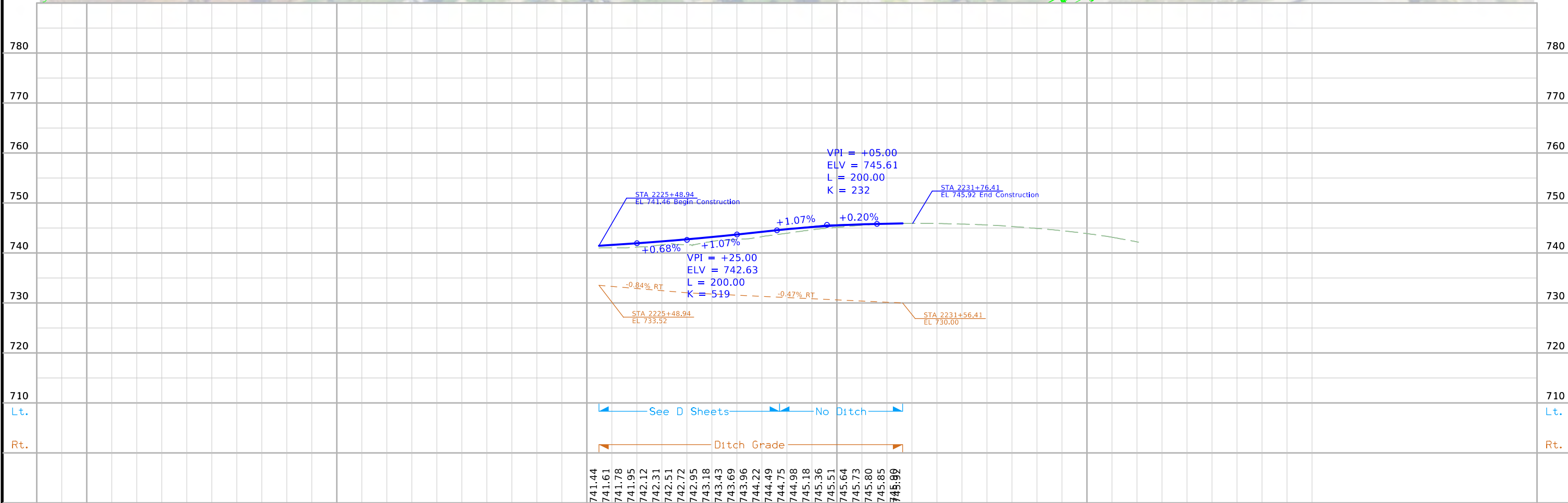
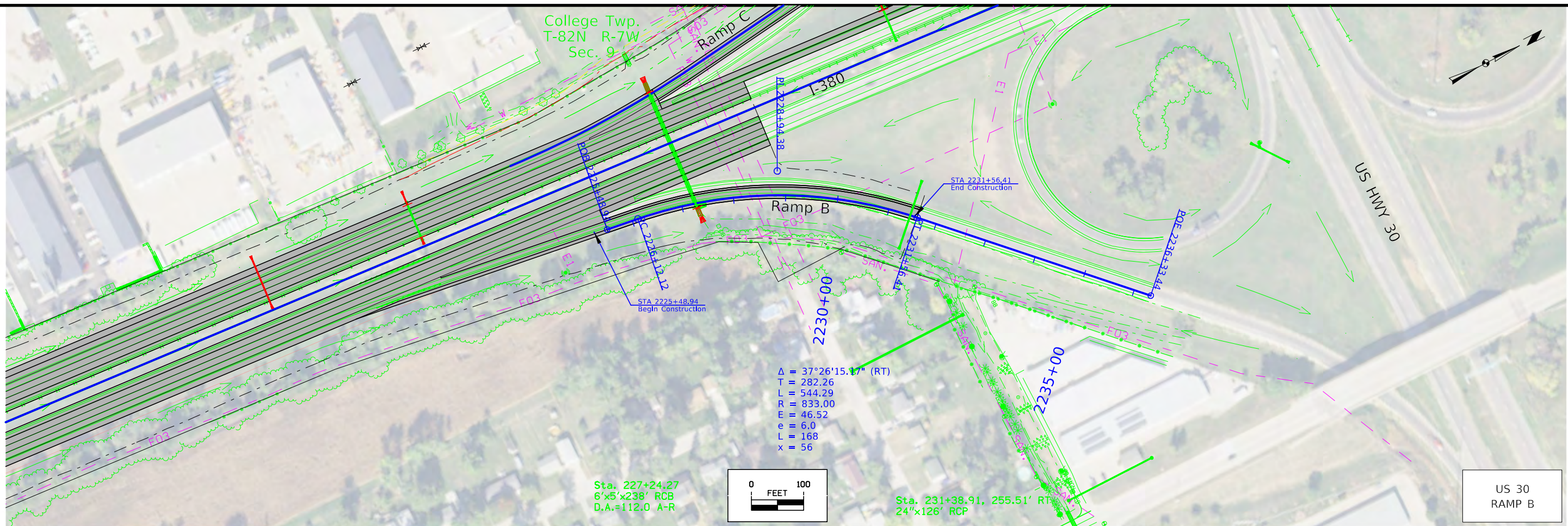


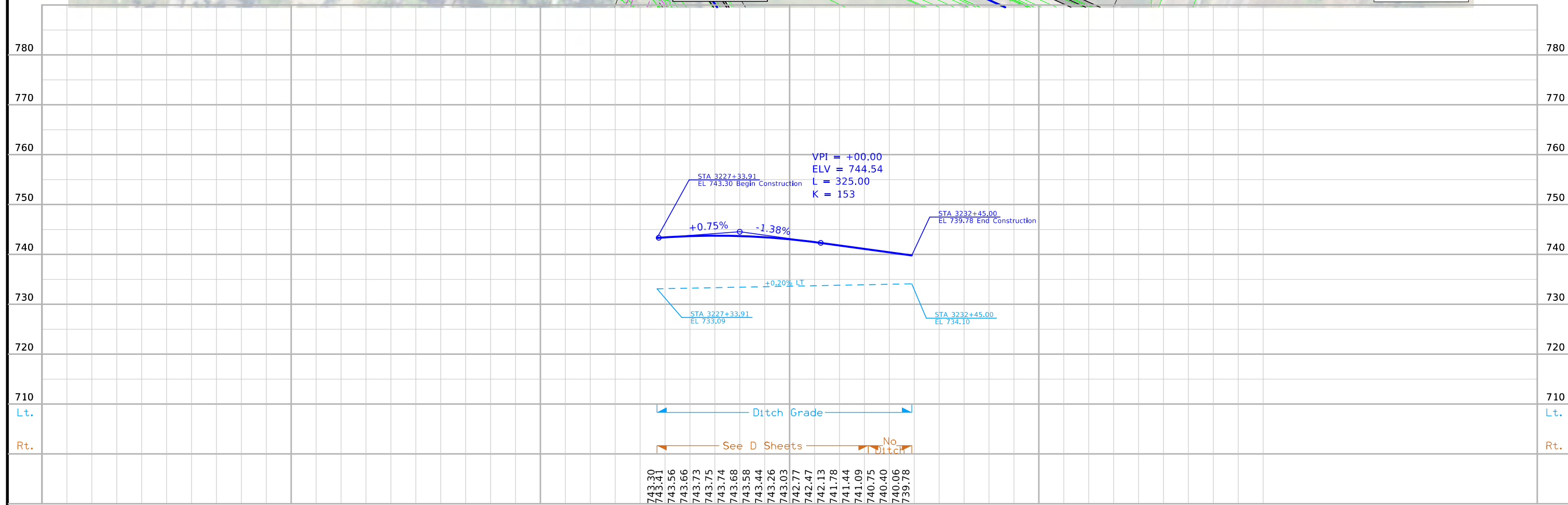
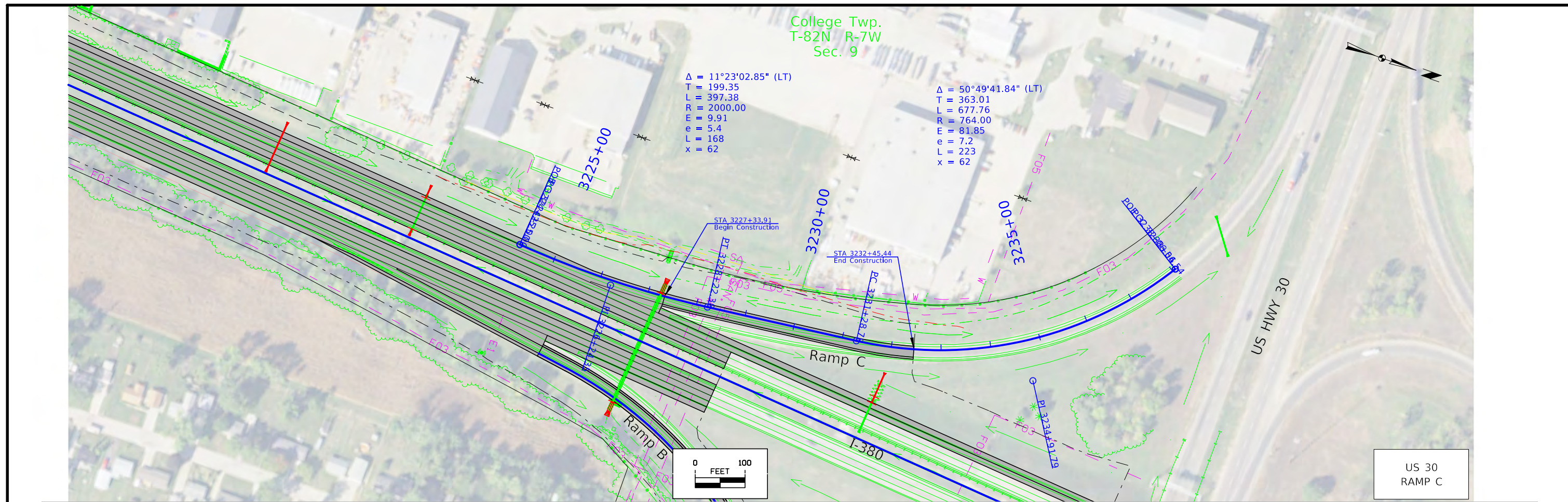
FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	K.10





FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	K.12





College Twp.
T-82N R-7W
Sec. 20

College Twp.
T-82N R-7W
Sec. 21



8+00

9+00

10+00

11+00

12+00

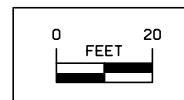
13+00

14+00

Wright Brothers Blvd

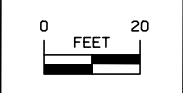
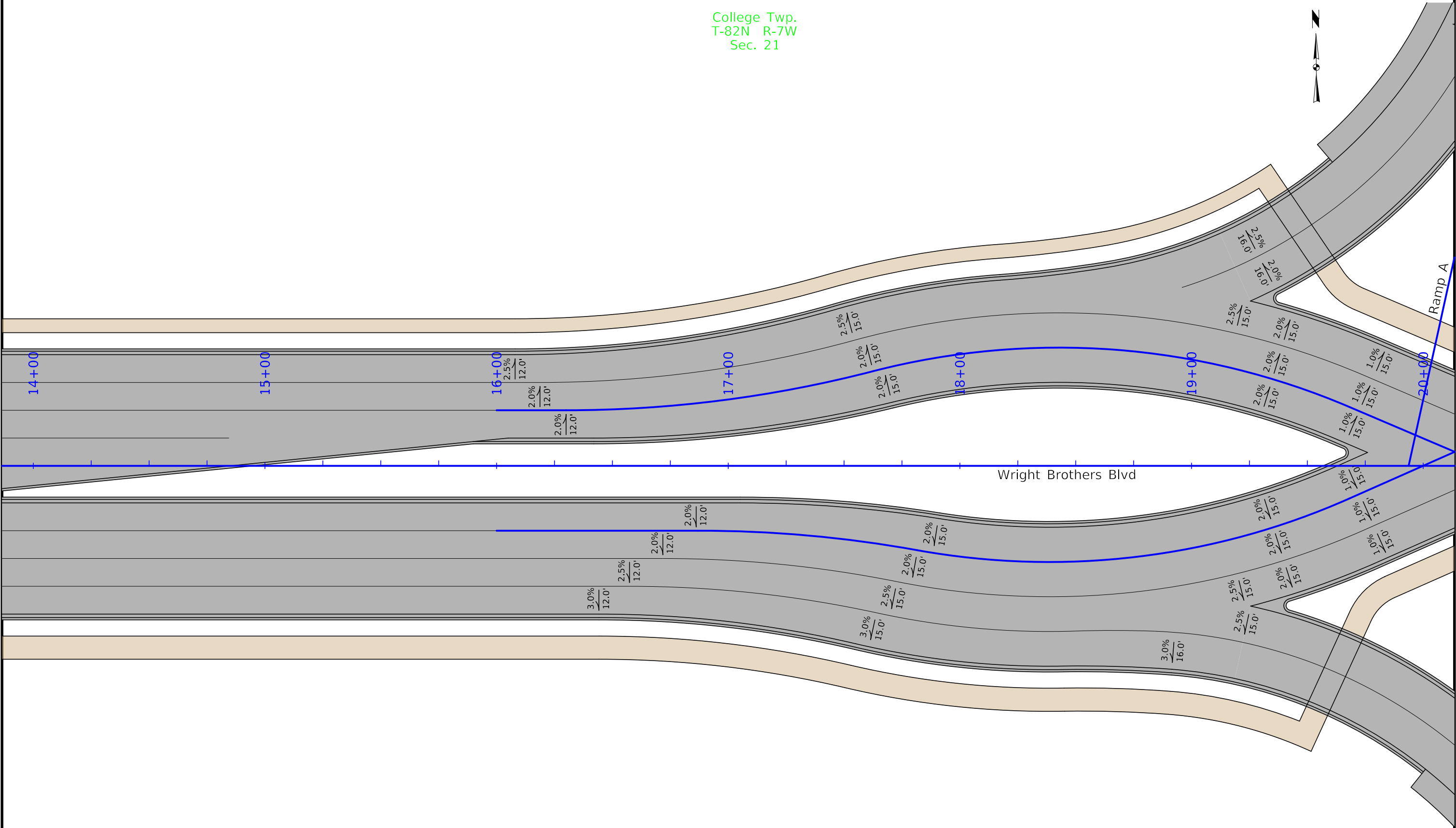
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2.0%	12.0'
2.0%	12.0'
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1.5%	12.0'
2.0%	12.0'
2.0%	12.0'
2.5%	12.0'
3.0%	12.0'

College Twp.
T-82N R-7W
Sec. 29



College Twp.
T-82N R-7W
Sec. 28

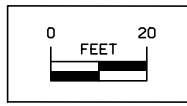
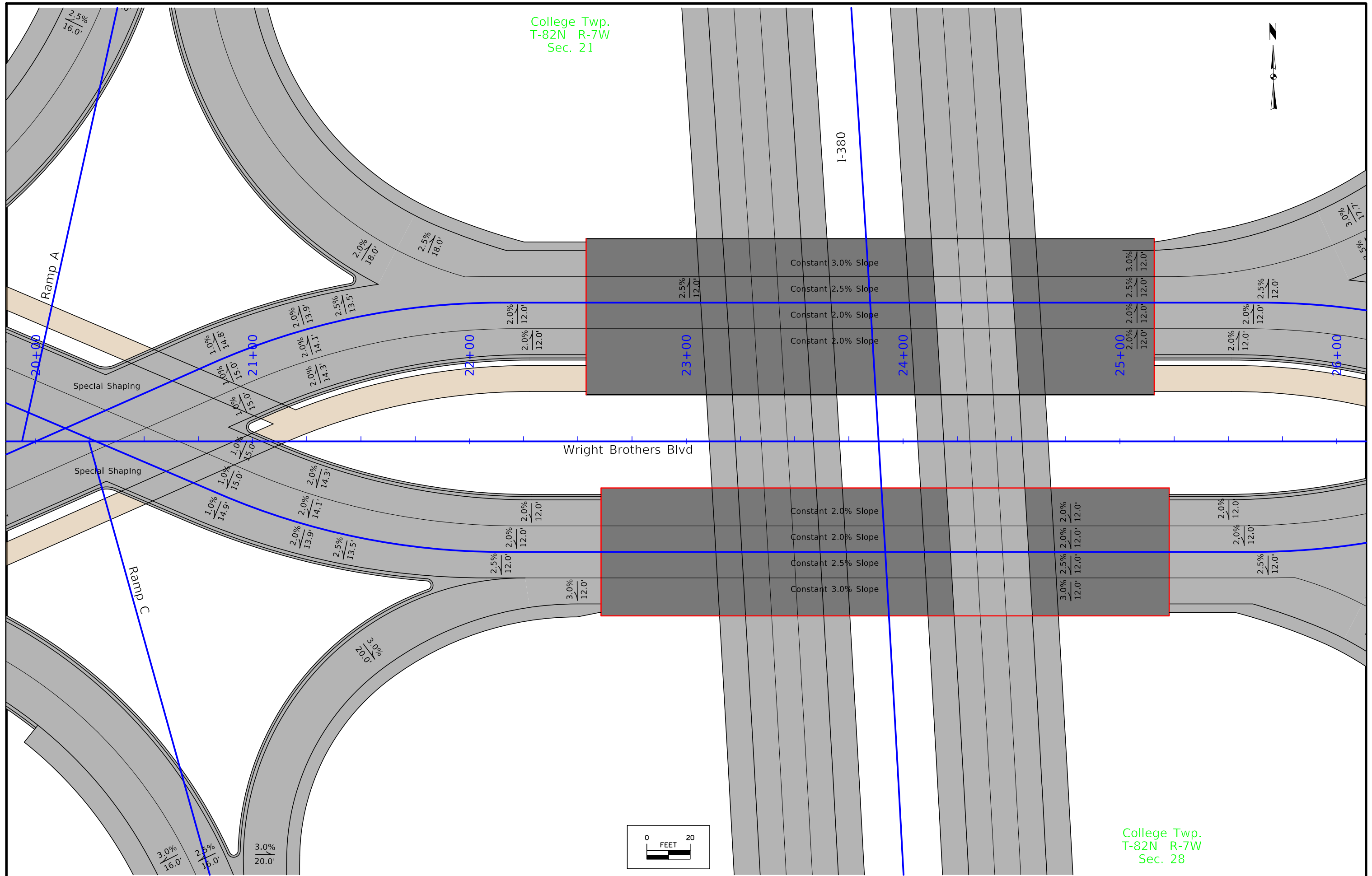
College Twp.
T-82N R-7W
Sec. 21



College Twp.
T-82N R-7W
Sec. 28

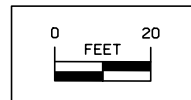
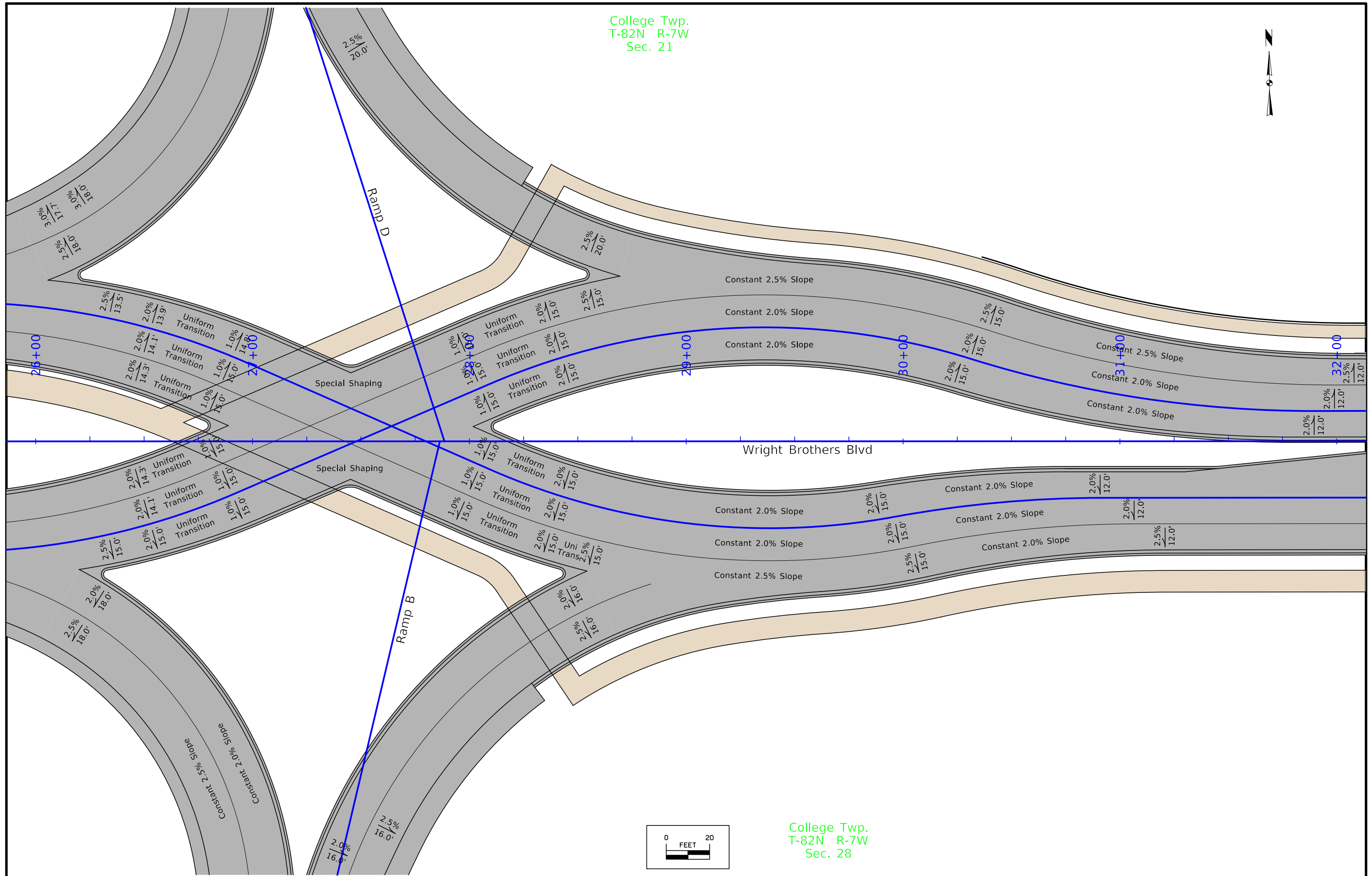
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Schrock \ Dudley	Johnson \ Linn COUNTY	PROJECT NUMBER IM-380-6(434)11--13-52	SHEET NUMBER L.2
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College Twp.
T-82N R-7W
Sec. 21



College Twp.
T-82N R-7W
Sec. 28

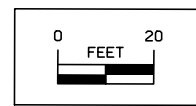
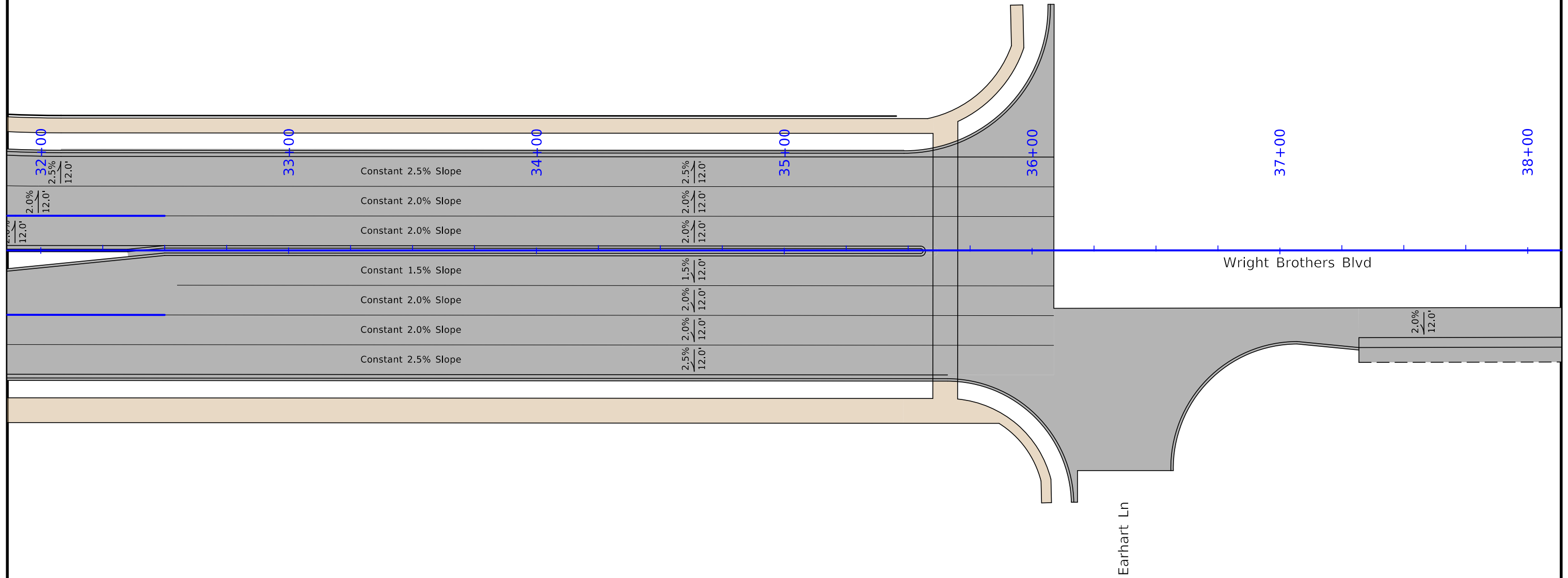
College Twp.
T-82N R-7W
Sec. 21



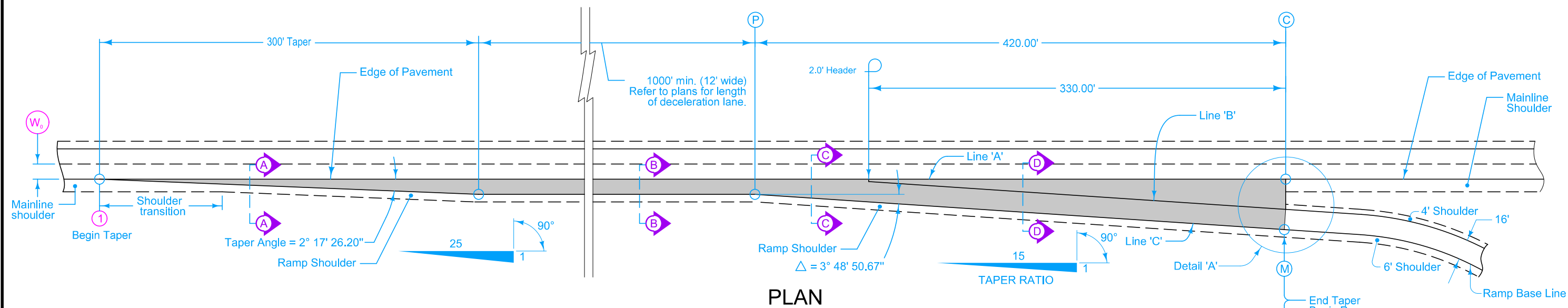
College Twp.
T-82N R-7W
Sec. 28

FILE NO.	ENGLISH	DESIGN TEAM	Johnson \ Linn COUNTY	PROJECT NUMBER	SHEET NUMBER
		Holst \ Schrock \ Dudley		IM-380-6(434)11--13-52	L.4

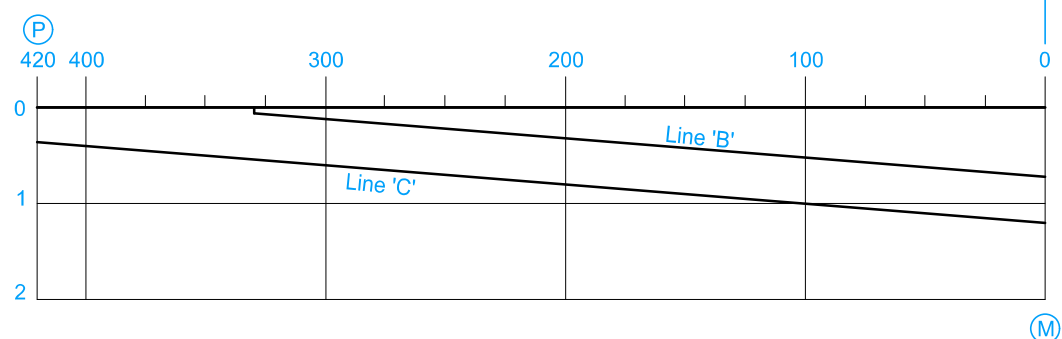
College Twp.
T-82N R-7W
Sec. 21



College Twp.
T-82N R-7W
Sec. 28



PLAN

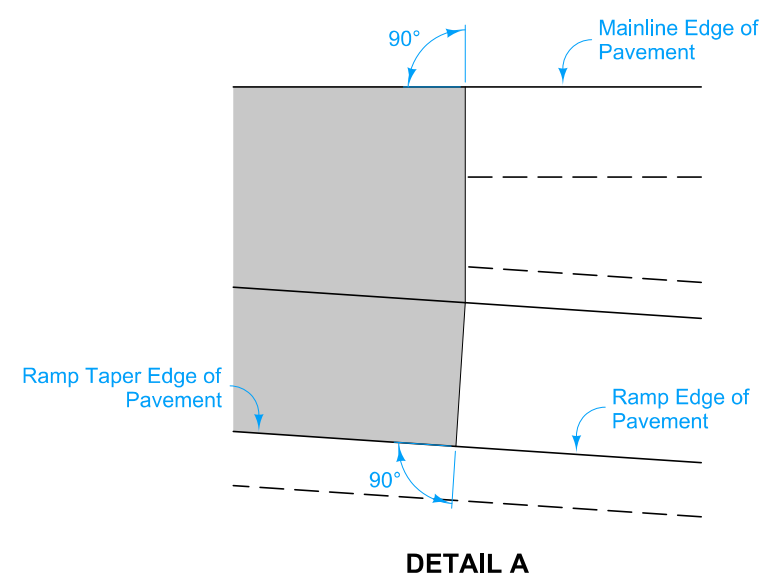


PROFILE

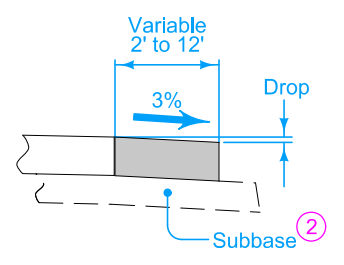
Note: The algebraic difference between the profile grade for ramp base line at (M) and relative profile grade of mainline at (C) is 0.20%

TABLE OF OFFSETS AND DROPS FOR 16' RAMP TAPER

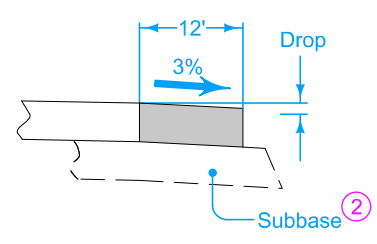
DISTANCE (Ft.)	420	400	375	350	330	325	300	275	250	225	200	175	150	125	100	75	50	25	0
OFFSET (Ft.)	12.00	13.37	15.04	16.70	18.04	18.37	20.04	21.70	23.37	25.04	26.70	28.37	30.04	31.70	33.37	35.04	36.70	38.37	40.00
DROP (Ft.)	0.36	0.40	0.45	0.50	0.54	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00	1.05	1.10	1.15	1.20



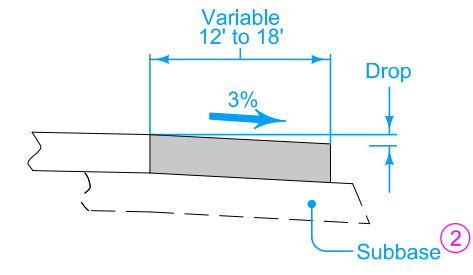
DETAIL A



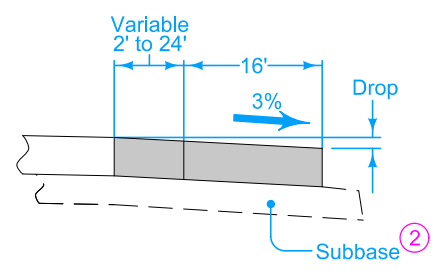
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP

W _o	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	100'	150'

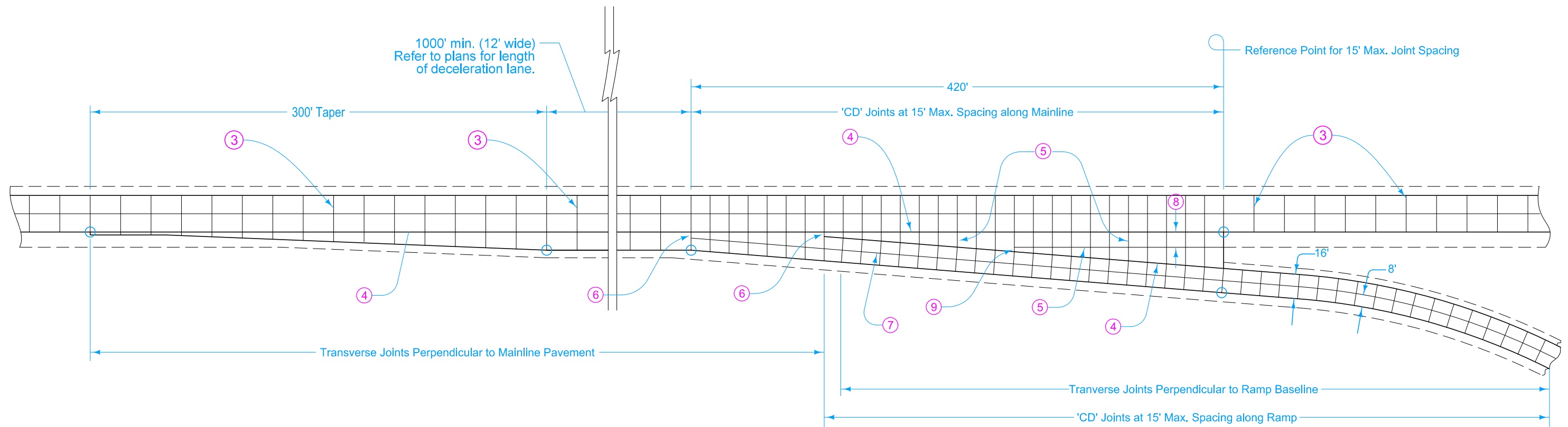
NOTE: W_o is the width of the outside lane to the Edge of Pavement.

- Construct ramp exit pavement the same thickness as mainline pavement.
- For joint detail, see PV-101.
- (1) For header construction detail at the end of taper, see Typical 7101 or Typical 7102.
- (2) Construct subbase for ramp exit pavement the same thickness as mainline subbase.

ROAD DESIGN DETAIL	REVISION	
	2	04-21-20
	533-01	
SHEET 1 of 2		

REVISIONS: Removed MODIFIED from the detail.

**PARALLEL DECELERATION TAPER
FOR 16' RAMP
(60 MPH DESIGN SPEED)**



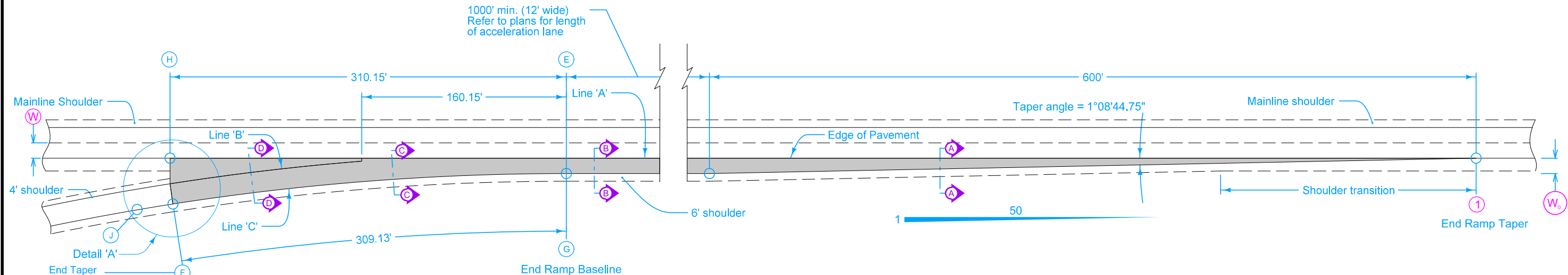
16' EXIT RAMP WITH PARALLEL DECELERATION LANE

- ③ 'CD' Joints at 17' spacing.
- ④ 'BT-2' or 'KT-2' Joint.
- ⑤ 'C' Joint.
- ⑥ 'B' Joint. 2' minimum, 4' maximum.
- ⑦ 'L-2' Joint.
- ⑧ 10' minimum or equal to mainline shoulder width.
- ⑨ 'B' or 'C' Joint. 2' minimum. 4' maximum.

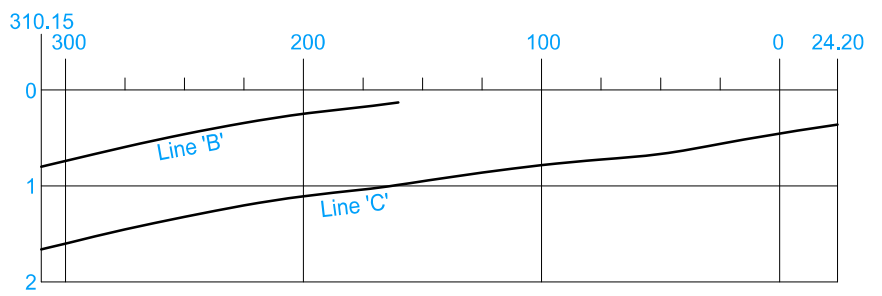
ROAD DESIGN DETAIL	REVISION	
	2	04-21-20
533-01		SHEET 2 of 2

REVISIONS: Removed MODIFIED from the detail.

**PARALLEL DECELERATION TAPER
FOR 16' RAMP
(60 MPH DESIGN SPEED)**

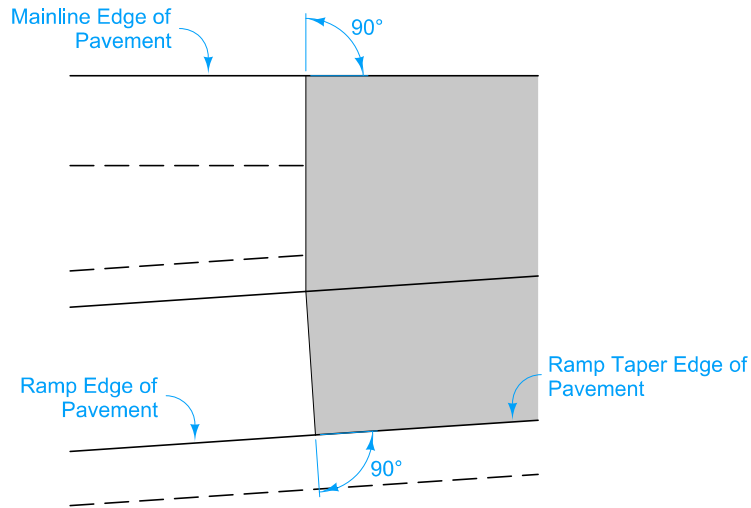


Pt. 'G' to Pt. 'J'
 $\Delta = 8^\circ 51' 20.88''$
 $T = 164.23'$
 $L = 327.73'$
 $E = 6.73'$
 $R = 2000.00'$



NOTE: The algebraic difference between ramp profile grade at point (F) and relative profile grade of mainline at point (H) is 0.62%

W ₆	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	100'	150'



DETAIL A

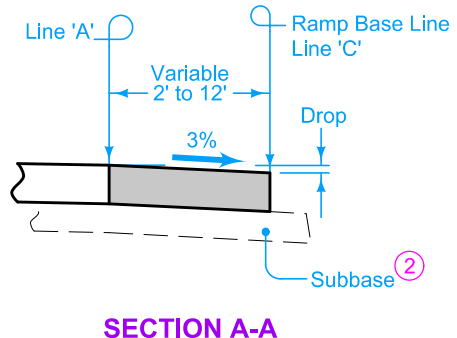
Construct ramp exit pavement the same thickness as mainline pavement.

For joint detail, see PV-101.

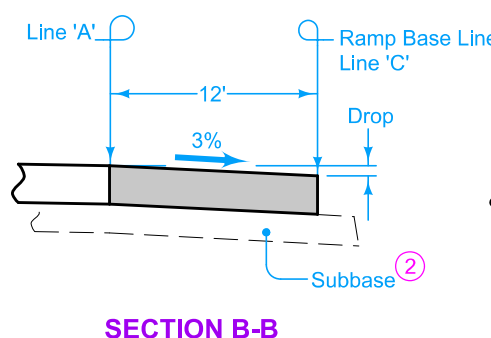
① For header construction detail at the end of taper, see Typical 7101 or Typical 7102.

② Construct subbase for ramp exit pavement the same thickness as mainline subbase.

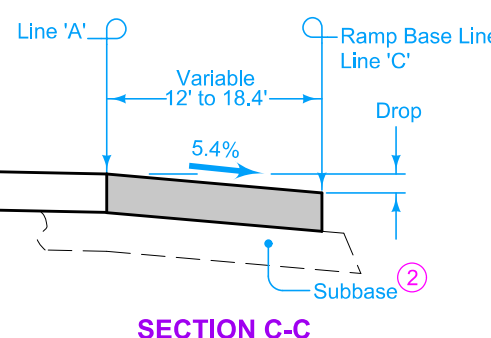
		DISTANCE FROM POINT (E) ALONG LINE 'A' (Ft.)																		
		310.15	300	275	250	225	204	200	175	160.15	150	125	100	75	50	25	0	24.2		
From Line 'A' To Line 'B'	OFFSET (Ft.)	20.00	18.45	14.84	11.56	8.60	6.30	5.95	3.61	2.37										
	SLOPE (%)	← Constant 4.0% Slope →										4.11	4.92	5.40						
	DROP (Ft.)	0.80	0.74	0.59	0.46	0.34	0.25	0.24	0.18	0.13										
From Line 'B' To Line 'C'	OFFSET (Ft.)	← Constant 16' Offset →																		
	SLOPE (%)	← Constant 5.4% Slope →																		
	DROP (Ft.)	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86									
From Line 'A' To Line 'C'	OFFSET (Ft.)										17.63	15.91	14.50	13.41	12.63	12.16	12.00	12.00		
	SLOPE (%)										5.40	5.40	5.40	5.40	5.40	4.59	3.78	3.00		
	DROP (Ft.)	1.66	1.60	1.45	1.32	1.20	1.11	1.10	1.04	0.99	0.95	0.86	0.78	0.72	0.68	0.56	0.45	0.36		
DISTANCE FROM POINT (G) ALONG LINE 'C' (Ft.)		309.13	298.73	273.67	248.66	223.68	202.73	198.74	173.83	159.04	150.14	125.08	100.04	75.02	50.01	25.00	0.00			



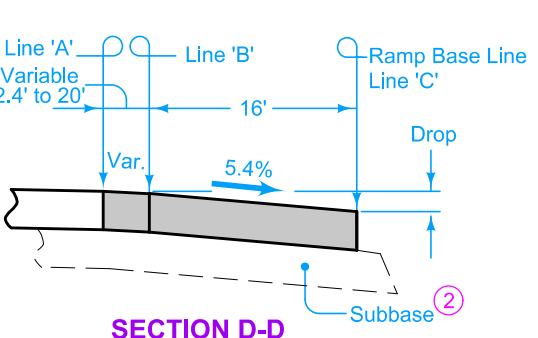
SECTION A-A



SECTION B-B

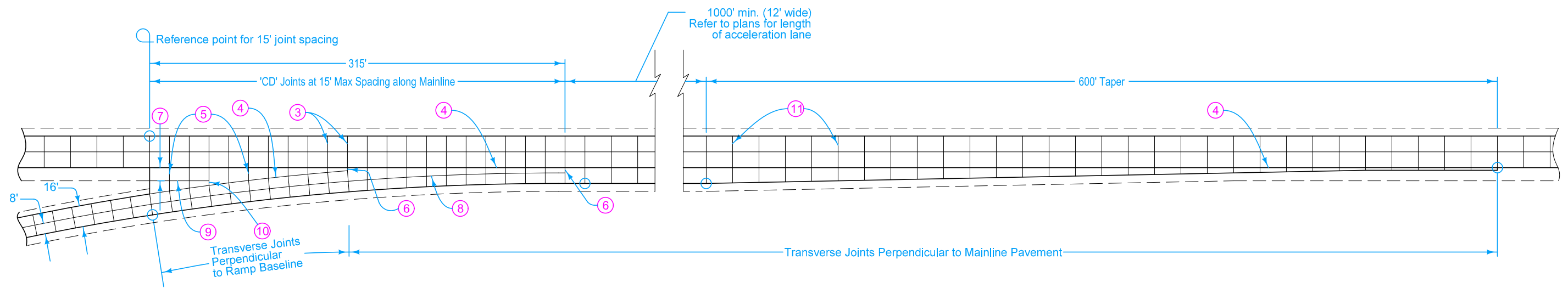


SECTION C-C



SECTION D-D

ROAD DESIGN DETAIL	REVISION
	3 04-20-21
	533-02
SHEET 1 of 2	
REVISIONS: Added Point J and Ramp Profile note.	
PARALLEL ACCELERATION TAPER FOR 16' RAMP (60 MPH DESIGN SPEED)	



- ③ 'CD ' Joints at 15' spacing.
- ④ 'BT-2' or 'KT-2' Joint.
- ⑤ 'C' Joint.
- ⑥ 'B' Joint. 2' minimum, 4' maximum.
- ⑦ 10' minimum or equal to mainline shoulder width.
- ⑧ 'L-2' Joint.
- ⑨ 'C' Joint parallel to mainline pavement.
- ⑩ 'B' or 'C' Joint. 2' minimum, 4' maximum.
- ⑪ 'CD ' Joints at 17' spacing.

		REVISION	
		3	04-20-21
ROAD DESIGN DETAIL		533-02	
		SHEET 2 of 2	

REVISIONS: Added Point J and Ramp Profile note.

**PARALLEL ACCELERATION TAPER
FOR 16' RAMP
(60 MPH DESIGN SPEED)**

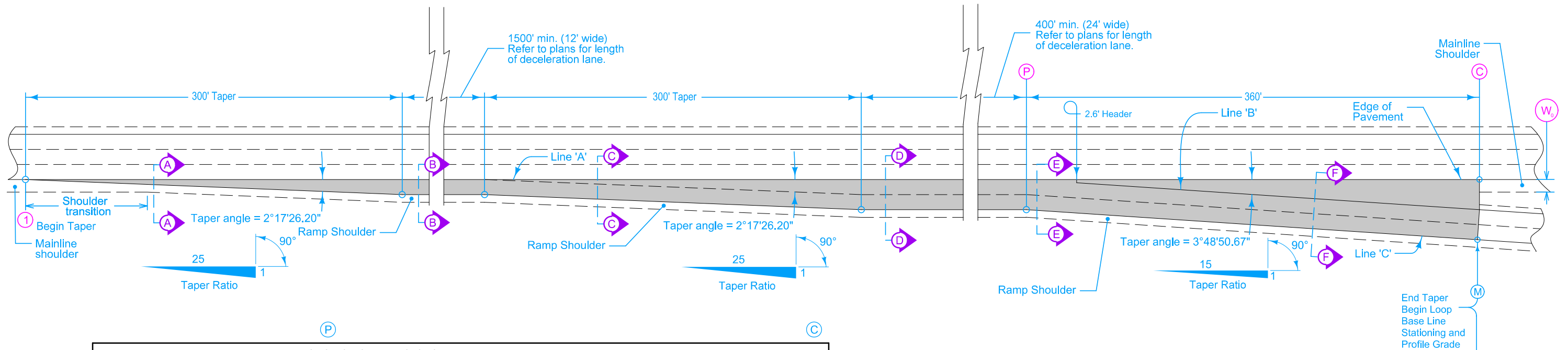
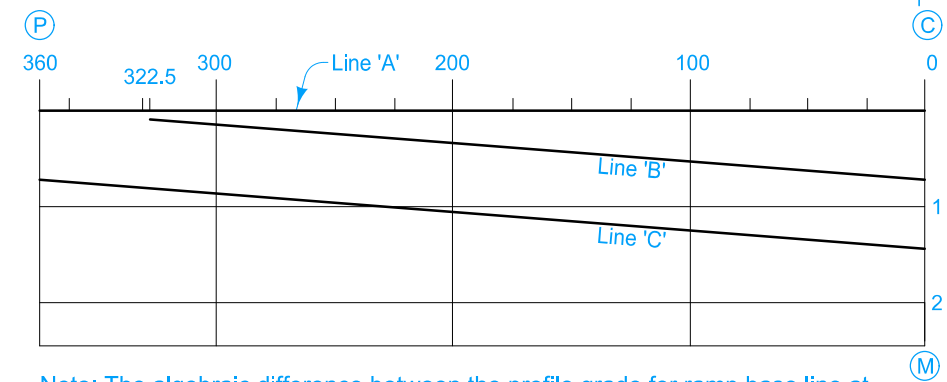
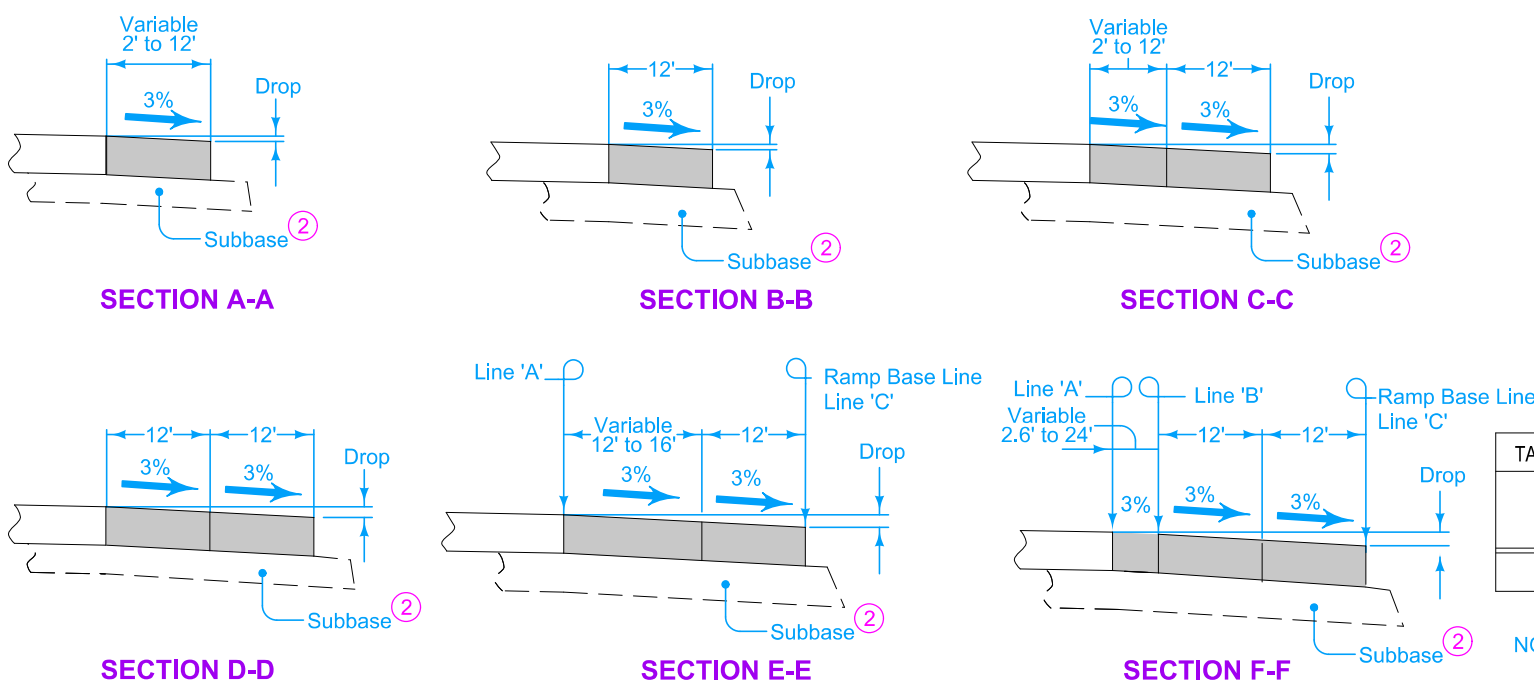


TABLE OF OFFSETS AND DROPS FOR 24' RAMP TAPER

DISTANCE FROM POINT (P) ALONG LINE 'A' (Ft.)		360	350	325	322.5	300	275	250	225	200	175	150	125	100	75	50	25	0
From Line 'A' To Line 'B'	OFFSET (Ft.)				2.5	4.00	5.67	7.33	9.00	10.67	12.33	14.00	15.67	17.33	19.00	20.67	22.33	24.00
	SLOPE (%)	Constant 3.0% Slope																
	DROP (Ft.)				0.08	0.12	0.17	0.22	0.27	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.67	0.72
From Line 'B' To Line 'C'	OFFSET (Ft.)	Constant 24' Offset																
	SLOPE (%)	Constant 3.0% Slope																
	DROP (Ft.)				0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
From Line 'A' To Line 'C'	OFFSET (Ft.)	24.00	24.72	26.39														
	SLOPE (%)	3.00	3.00	3.00														
	DROP (Ft.)	0.72	0.74	0.79	0.80	0.84	0.89	0.94	0.99	1.04	1.09	1.14	1.19	1.24	1.29	1.34	1.39	1.44



Note: The algebraic difference between the profile grade for ramp base line at (M) and relative profile grade of mainline at (C) is 0.20%.



- Construct ramp exit pavement the same thickness as mainline pavement.
- For joint detail, see PV-101.
- (1) For header construction detail at the end of taper See Typical 7101 or Typical 7102.
- (2) Construct subbase for ramp exit pavement the same thickness as mainline subbase.

TABLE OF SHOULDER TRANSITION LENGTHS WITH 6' SHOULDER ON RAMP

W ₀	Shoulder Width beyond Edge of Mainline Pavement		
	8'	10'	12'
12'	NA	100'	150'

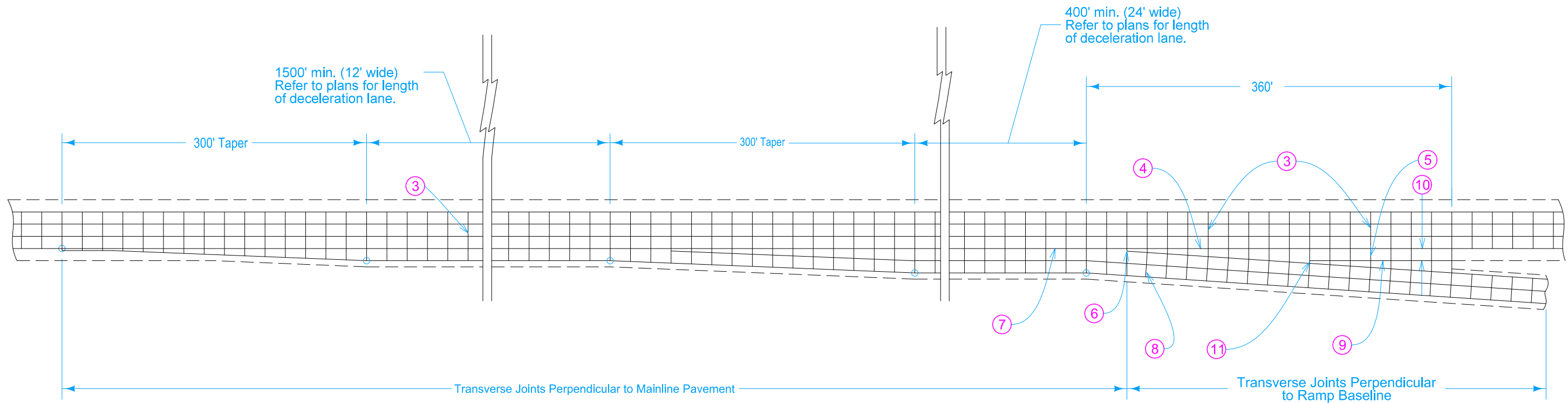
NOTE: W₀ is the width of the outside lane to the Edge of Pavement.

PROFILE

ROAD DESIGN DETAIL	REVISION
	3 04-20-21
	533-04
SHEET 1 of 2	

REVISIONS: Added End Taper note.

PARALLEL DECELERATION TAPER FOR 24' RAMP (60 MPH DESIGN SPEED)

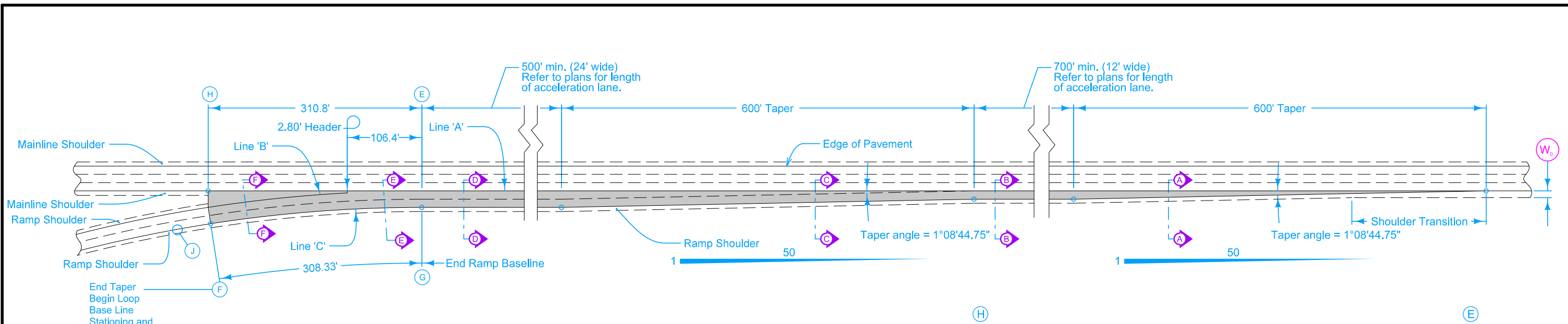


24' EXIT RAMP WITH PARALLEL DECELERATION LANE

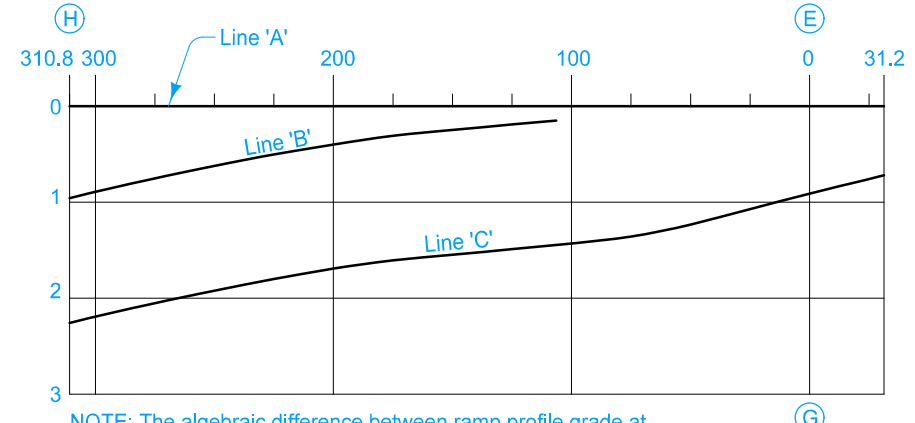
- ③ 'CD' Joints at 17' spacing.
- ④ 'BT-2' or 'KT-2' Joint.
- ⑤ 'C' Joint.
- ⑥ 'B' Joint. 2' minimum, 4' maximum.
- ⑦ 'L-2' Joint.
- ⑧ Construct transverse joints on the exit ramp taper perpendicular to the ramp baseline where the gore area is 4 feet or greater.
- ⑨ 'C' Joint parallel to mainline pavement.
- ⑩ 10' minimum or equal to mainline shoulder width.
- ⑪ 'B' or 'C' Joint. 2' minimum, 4' maximum.

ROAD DESIGN DETAIL	REVISION	
	3	04-20-21
	533-04	
SHEET 2 of 2		
REVISIONS: Added End Taper note.		

**PARALLEL DECELERATION TAPER
FOR 24' RAMP
(60 MPH DESIGN SPEED)**

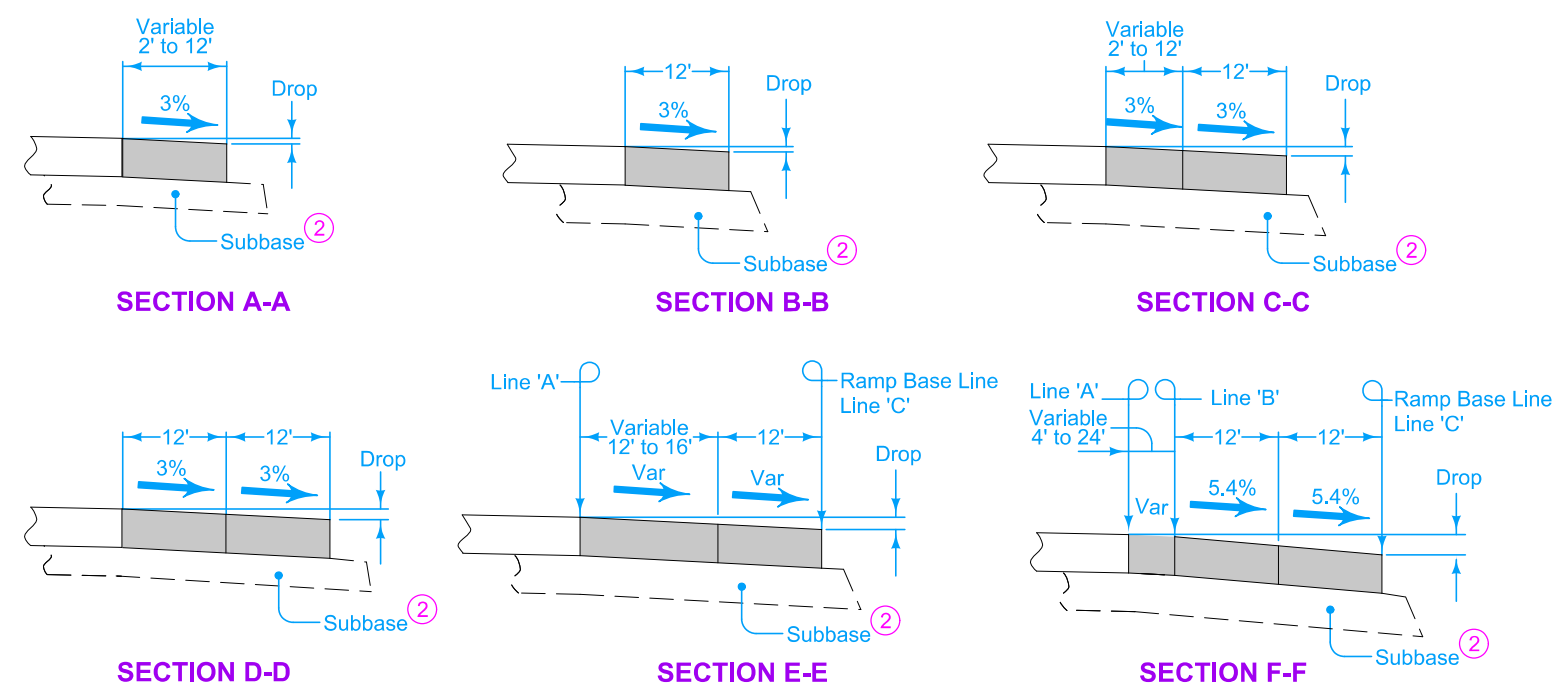


Pt. 'G' to Pt. 'J'
 $\Delta = 09^\circ 31' 13.98''$
 $T = 166.55'$
 $L = 332.33'$
 $E = 6.92'$
 $R = 2000.00'$



NOTE: The algebraic difference between ramp profile grade at point (F) and relative profile grade of mainline at point (H) is 0.61%

DISTANCE FROM POINT (H) ALONG LINE 'A' (Ft.)	310.8	300	275	250	225	200	175	150	125	106.4	100	75	65	50	25	0	25	31.2	
From Line 'A' To Line 'B'	OFFSET (Ft.)	24.00	22.36	18.77	15.50	12.55	9.91	7.58	5.57	3.86	2.80								
	SLOPE (%)	Constant 4.0% Slope										4.51	5.02	5.40					
	DROP (Ft.)	0.96	0.89	0.75	0.62	0.50	0.40	0.30	0.25	0.19	0.15								
From Line 'B' To Line 'C'	OFFSET (Ft.)	Constant 24' Offset																	
	SLOPE (%)	Constant 5.4% Slope																	
	DROP (Ft.)	Constant 1.30' Drop																	
From Line 'A' To Line 'C'	OFFSET (Ft.)											26.50	25.41	25.06	24.63	24.16	24.00	24.00	
	SLOPE (%)											5.40	5.40	5.40	5.04	4.41	3.78	3.15	3.00
	DROP (Ft.)	2.26	2.19	2.05	1.92	1.80	1.69	1.60	1.55	1.49	1.45	1.43	1.37	1.35	1.24	1.07	0.91	0.76	0.72
DISTANCE FROM POINT (F) ALONG LINE 'C' (Ft.)		308.30	297.54	272.58	247.67	202.79	197.95	173.14	148.36	123.60	105.21	100.04	75.02	65.01	50.01	25.00	0.00		



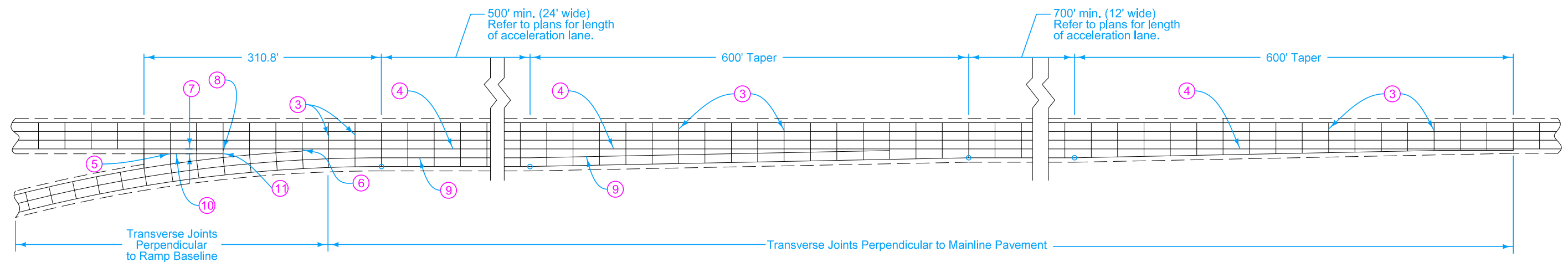
- Construct ramp entrance pavement the same thickness as mainline pavement.
- For joint detail, see PV-101.
- ① For header construction detail at the end of taper See Typical 7101 or Typical 7102.
- ② Construct subbase for ramp entrance pavement the same thickness as mainline subbase.

(W ₀)	Shoulder Width beyond Edge of Mainline Pavement		
8'	10'	12'	
12'	NA	200'	300'

NOTE: W₀ is the width of the outside lane to the Edge of Pavement.

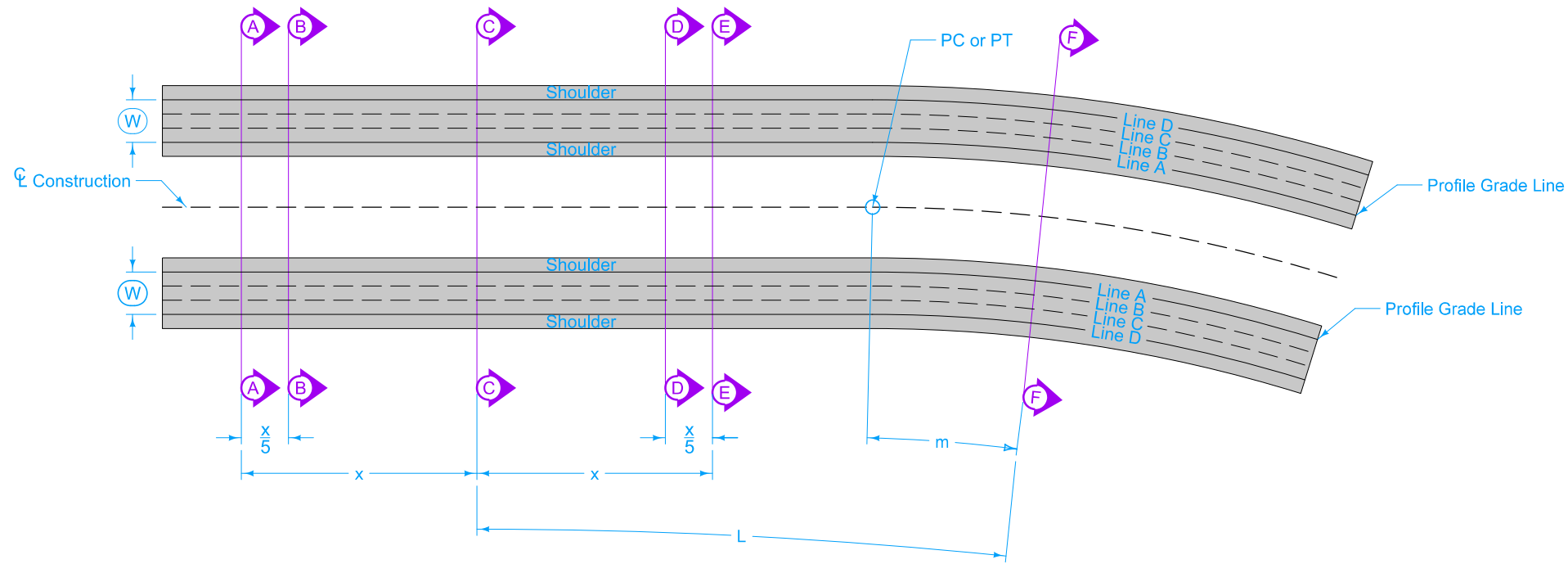
ROAD DESIGN DETAIL	REVISION	
	3	04-20-21
	533-05	
SHEET 1 of 2		
REVISIONS: Added Point J and Ramp Profile note.		

**PARALLEL ACCELERATION TAPER
FOR 24' RAMP
(60 MPH DESIGN SPEED)**

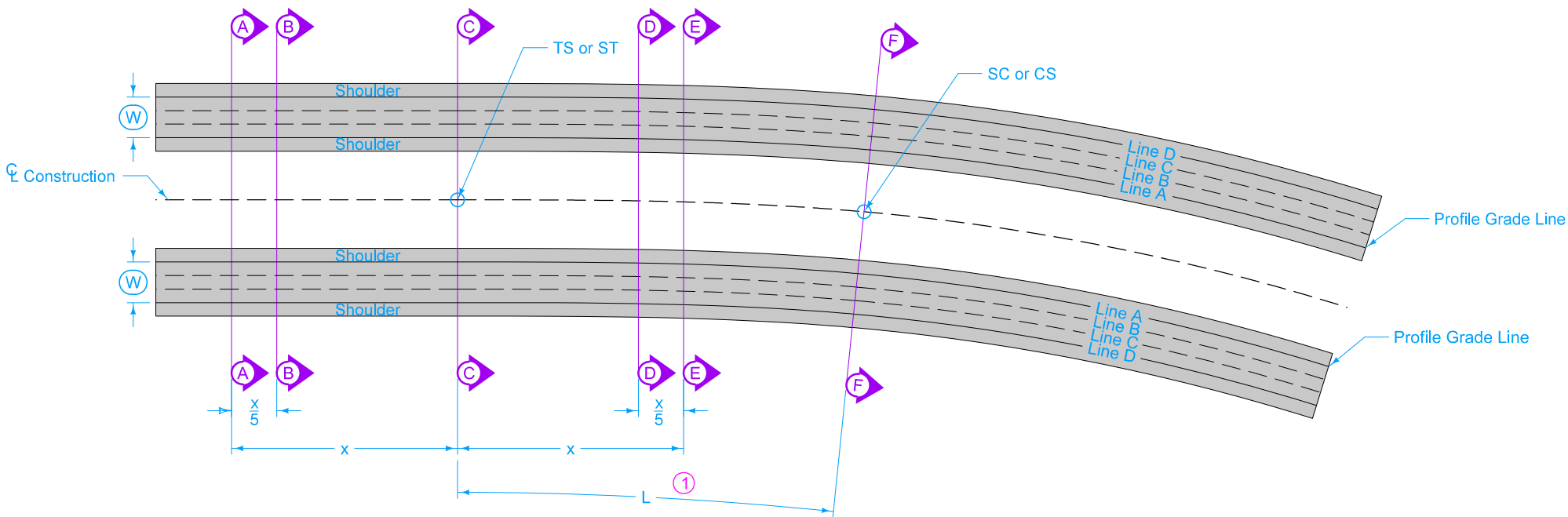


- ③ 'CD' Joints at 17' spacing.
- ④ 'BT-2' or 'KT-2' Joint.
- ⑤ 'C' Joint.
- ⑥ 'B' Joint, 2' minimum, 4' maximum.
- ⑦ 10' minimum or equal to mainline shoulder width.
- ⑧ Construct transverse joints through the gore perpendicular to mainline pavement.
- ⑨ 'L-2' Joint.
- ⑩ 'C' Joint parallel to mainline pavement.
- ⑪ 'B' or 'C' Joint, 2' minimum, 4' maximum.

		REVISION	
		3	04-20-21
ROAD DESIGN DETAIL		533-05	
		SHEET 2 of 2	
REVISIONS: Added Point J and Ramp Profile note.			
PARALLEL ACCELERATION TAPER FOR 24' RAMP (60 MPH DESIGN SPEED)			



TRANSITION DETAILS - TANGENT TO CURVE



TRANSITION DETAILS - SPIRAL 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 = 36' Regardless of Pavement Width

g = Normal Cross Slope (2.5%)

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

e = Superelevation Rate

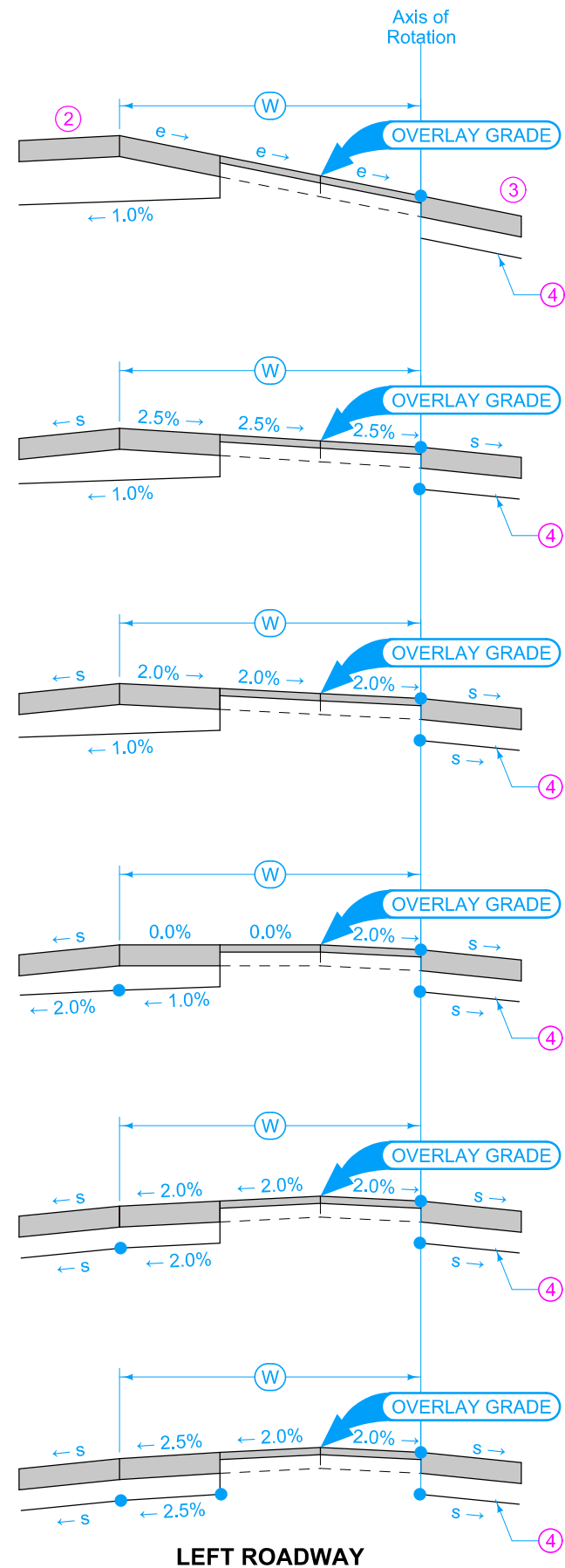
x = Distance to Change Cross Slope from 0% to 2.5%

s = Normal Shoulder Slope

① Spiral curve length coincides with runoff length (L)

Possible Tabulation:
101-18

MODIFIED	REVISION	
	2	04-21-20
STANDARD ROAD PLAN	PV-304	
MODIFICATIONS: None		
SUPERELEVATION DETAILS SIX LANE ROADWAY DEPRESSED MEDIAN OVERLAY AND WIDEN		



SECTION F-F
(Full Superelevation)

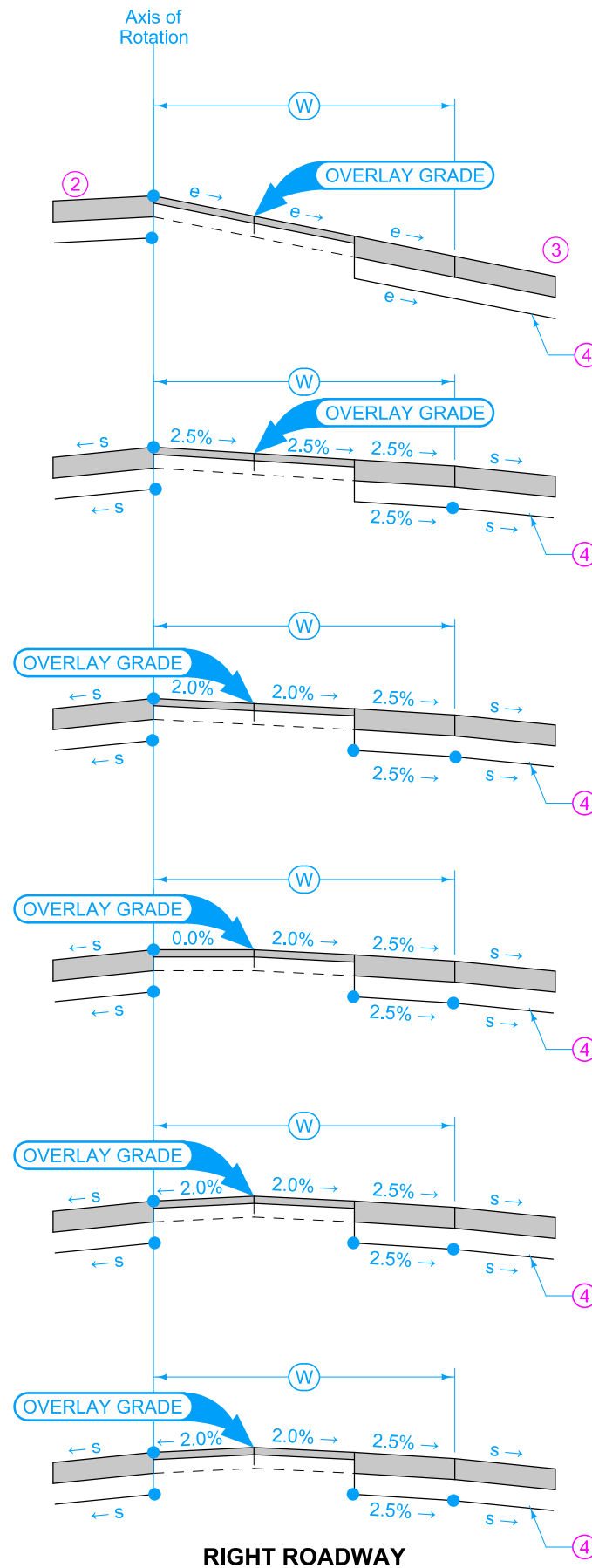
SECTION E-E

SECTION D-D

SECTION C-C

SECTION B-B

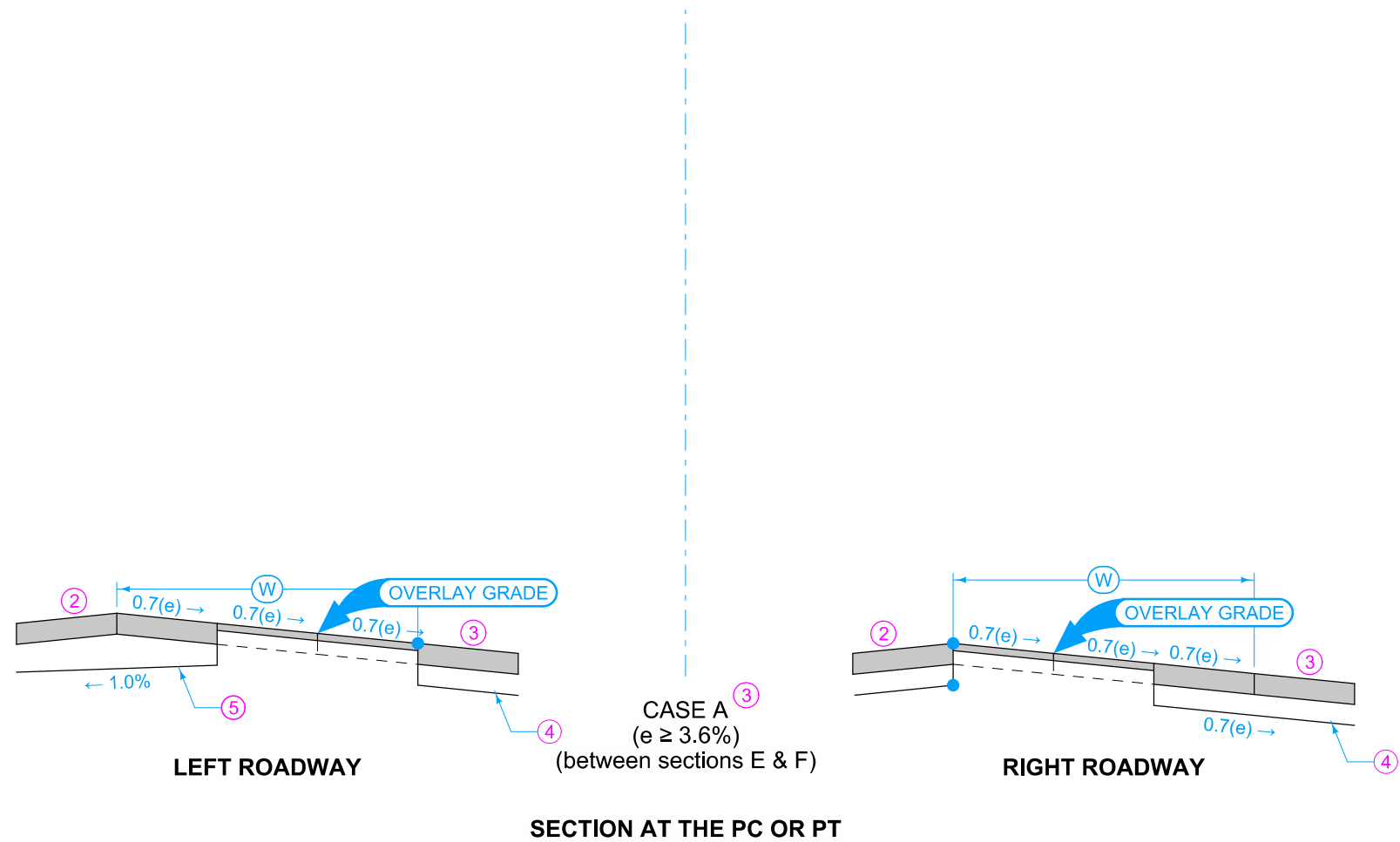
SECTION A-A



RIGHT ROADWAY

- 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.

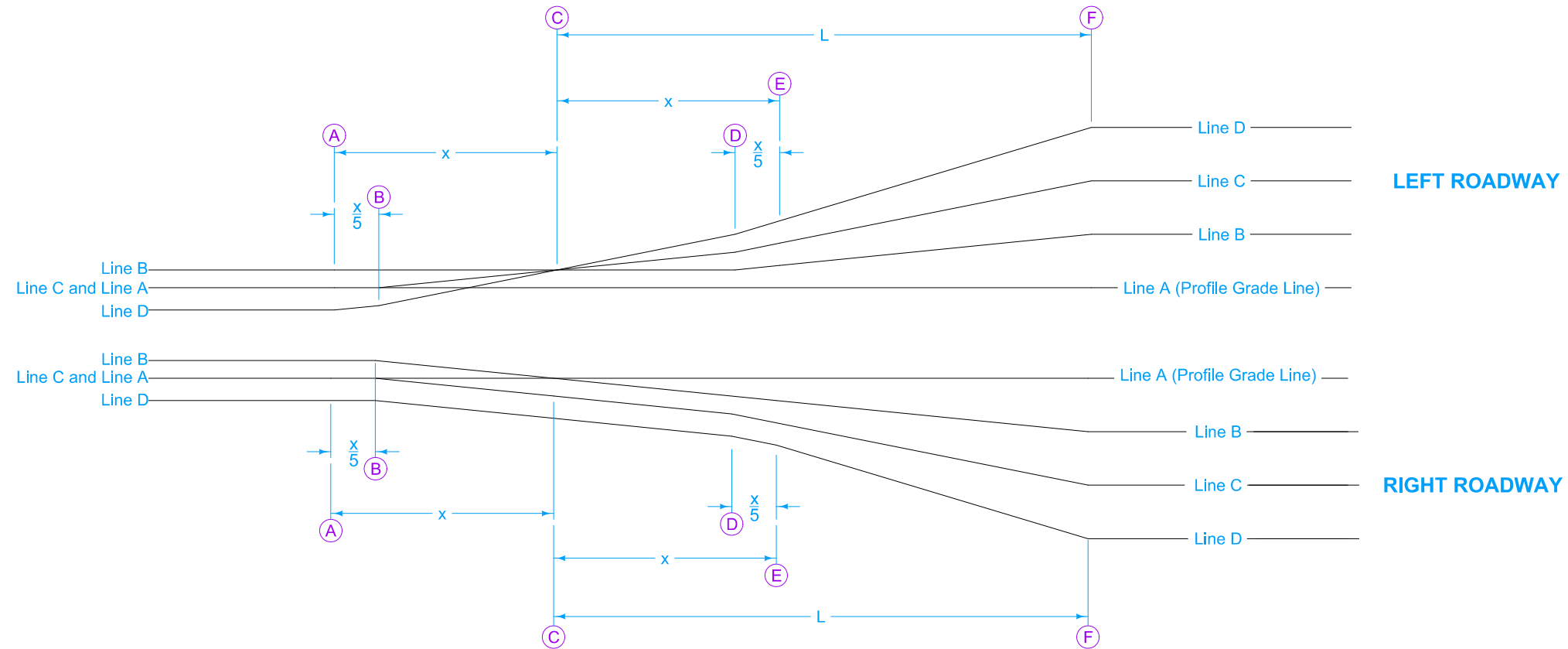
MODIFIED	REVISION	
	2	04-21-20
STANDARD ROAD PLAN		PV-304
		SHEET 2 of 4
MODIFICATIONS: Profile Location Subgrade Slope		
SUPERELEVATION DETAILS		
SIX LANE ROADWAY		
DEPRESSED MEDIAN		
OVERLAY AND WIDEN		



- 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.
- ⑤ Subgrade Surface: Subgrade surface cross slope a minimum of 1% away from existing pavement

MODIFIED	REVISION	
	2	04-21-20
STANDARD ROAD PLAN	PV-304	
SHEET 3 of 4		
MODIFICATIONS: Profile Location Subgrade Slope		
SUPERELEVATION DETAILS SIX LANE ROADWAY DEPRESSED MEDIAN OVERLAY AND WIDEN		

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 (%)	2.0	2.0	2.0	2.0	2.5	e
	Drop (Ft.)	0.24	0.24	0.24	0.24	0.30	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	2.5	e
	Drop (Ft.)	-0.24	-0.24	0.0	0.24	0.30	12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.5	-2.0	0.0	2.0	2.5	e
	Drop (Ft.)	-0.30	-0.24	0.0	0.24	0.30	12(e)
From Line A To Line D	Offset (Ft.)	36	36	36	36	36	36
	Drop (Ft.)	-0.30	-0.24	0.24	0.72	0.90	36(e)



DIAGRAMMATIC PROFILES OF THE PAVEMENT EDGE LINES

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 (%)	2.0	2.0	0.0	-2.0	-2.5	-e
	Drop (Ft.)	0.24	0.24	0.0	-0.24	-0.30	-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	-2.5	-e
	Drop (Ft.)	-0.24	-0.24	-0.24	-0.24	-0.30	-12(e)
From Line C To Line D	Offset (Ft.)	12	12	12	12	12	12
	Slope (%)	-2.5	-2.5	-2.5	-2.5	-2.5	-e
	Drop (Ft.)	-0.30	-0.30	-0.30	-0.30	-0.30	-12(e)
From Line A To Line D	Offset (Ft.)	36	36	36	36	36	36
	Slope (%)						
	Drop (Ft.)	-0.30	-0.30	-0.54	-0.78	-0.90	-36(e)

MODIFIED	REVISION	
	2	04-21-20
STANDARD ROAD PLAN	PV-304	
MODIFICATIONS: None		
SUPERELEVATION DETAILS SIX LANE ROADWAY DEPRESSED MEDIAN OVERLAY AND WIDEN		

