JOHNSON Co. PCC PAVEMENT - GRADE AND REPLACE NHS-080-6(372)239--11-52

LETTING DATE 07-15-2020

INDEX OF SHEETS

* Color Plan Sheets

IOWA DOT

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

INTERSTATE ROAD SYSTEM

JOHNSON COUNTY

PCC PAVEMENT - GRADE AND REPLACE

I-80/380/US 218 Interchange near Iowa City

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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

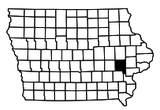
IOWA ONE CALL 1-800-292-8989 811 www.iowaonecall.com Know what's below. Call before you dig.

For Project Location Map
Refer to Sheet A.2

I-80 DESIGN DATA RURAL		
2025 AADT	48,900	V.P.D.
2045 AADT	84,900	V.P.D.
2045 DHV	8,770	V.P.H.
TRUCKS	31	%
Total Design ESALs	--	

I-380 DESIGN DATA RURAL		
2025 AADT	62,800	V.P.D.
2045 AADT	92,300	V.P.D.
2045 DHV	9,530	V.P.H.
TRUCKS	17	%
Total Design ESALs	--	

U.S. 218 DESIGN DATA RURAL		
2025 AADT	41,200	V.P.D.
2045 AADT	61,100	V.P.D.
2045 DHV	6,310	V.P.H.
TRUCKS	11	%
Total Design ESALs	--	



INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.1	x	Primary Signature Block
CD.1	x	Hydraulic Design
CS.1	x	Geotechnical Design
M.1	x	Hydraulic Design
RC.1	x	
V.3	x	
V.20	x	Hydraulic Design

ROADWAY DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

x
Signature Date

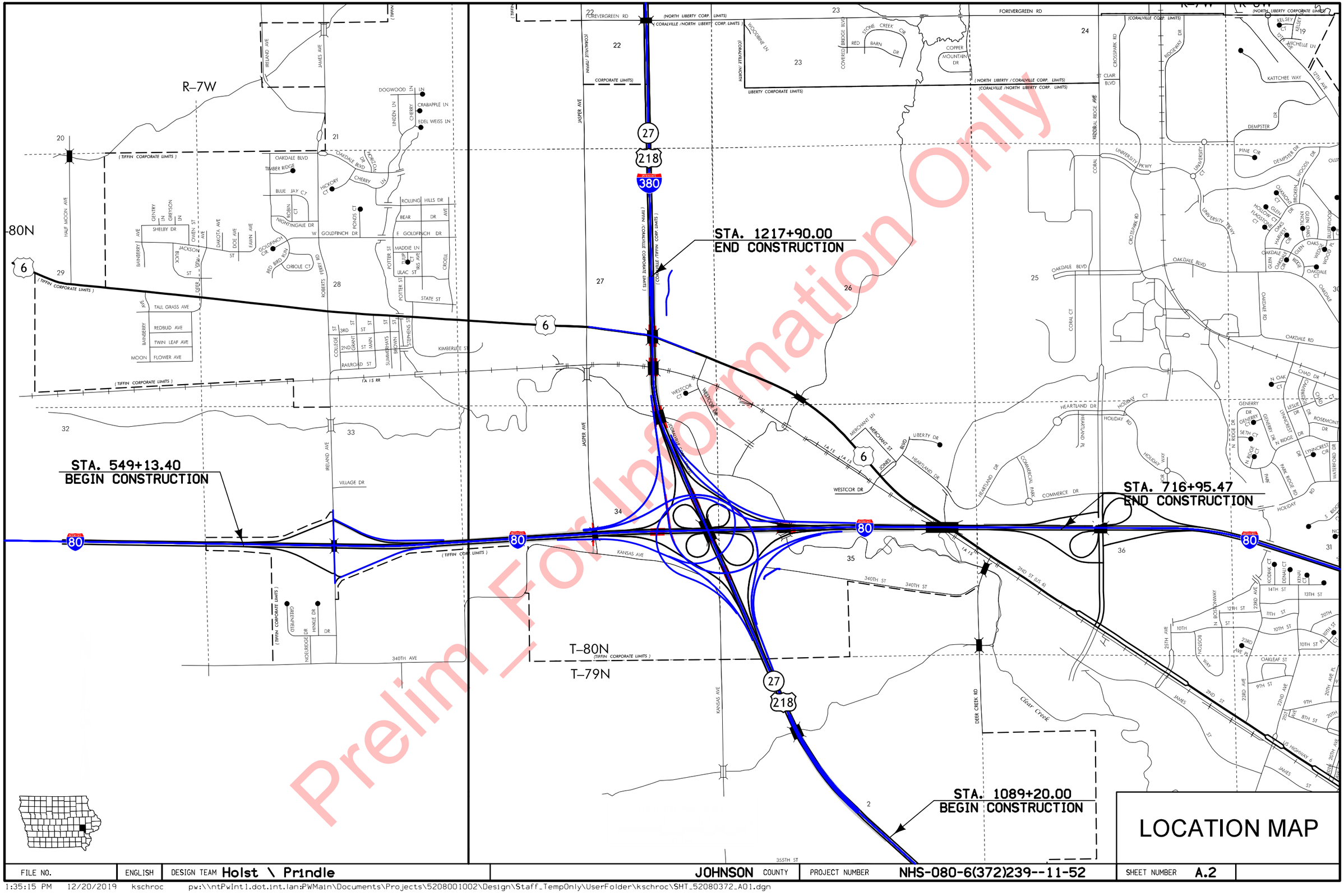
Printed or Typed Name

My license renewal date is December 31, 20xx

Pages or sheets covered by this seal: x
x
x

REVISIONS

	TOTAL
	213
PROJECT IDENTIFICATION NUMBER	
02-52-080-010	
PROJECT NUMBER	
NHS-080-6(372)239--11-52	
R.O.W. PROJECT NUMBER	
IMN-080-6(236)239--0E-52	
IMN-080-6(236)239--0E-52	



LOCATION MAP

FILE NO.	ENGLISH	DESIGN TEAM **Holst \ Prindle**	**JOHNSON** COUNTY	PROJECT NUMBER **NHS-080-6(372)239--11-52**	SHEET NUMBER **A.2**

FHWA # 600430
MAINT. 5202.00380

INTERCHANGE
TO BE OPENED
SUMMER 2019

FHWA# 600420
MAINT. 5200.8L380

FHWA# 600400
MAINT. 5200.7L380

FHWA# 600380
MAINT. 5200.5L380

FHWA# 600410
MAINT. 5200.8R380

FHWA# 600390
MAINT. 5200.7R380

FHWA# 600370
MAINT. 5200.5R380

FHWA# 31500
MAINT. 5245.4S006

FHWA# 32011
MAINT. 5240.0R080

FHWA# 32021
MAINT. 5240.0L080

FHWA# 31970
MAINT. 5237.70080

FHWA# 31980
MAINT. 5238.70080

FHWA# 32000 ML
MAINT. 5239.4L080

FHWA# 600365
MAINT. 5239.5A080

FHWA# 31990 ML
MAINT. 5239.4R080

FHWA# 600365
MAINT. 5239.3A080

FHWA# 600360
MAINT. 5200.0L380

FHWA# 600350
MAINT. 5200.0R380

FHWA# 605565
MAINT. 5296.1S218

T-80N
T-79N

R-7W

R-6W

LOCATION MAP SCALE
0 0.1 0.2 0.3
Miles

EXISTING BRIDGE INFORMATION

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER A.3

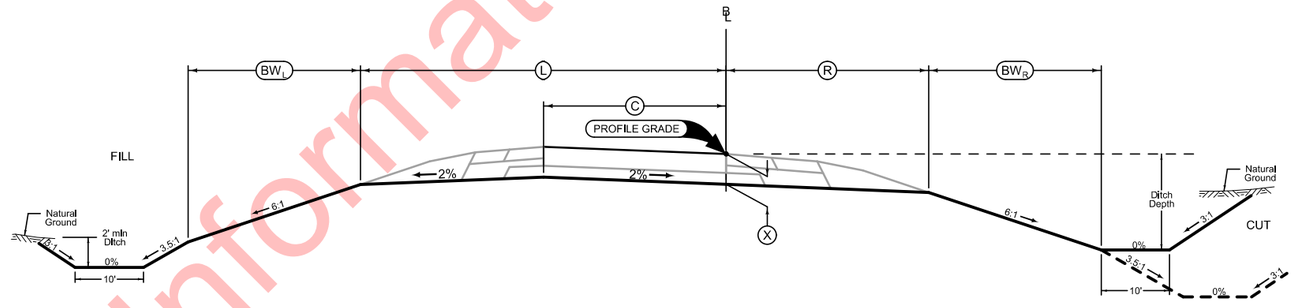
1:35:16 PM 12/20/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_A01.dgn

LOCATION				DIMENSIONS					
INTERCHANGE	RAMP	STATION TO STATION		(L) Feet	(R) Feet	(C) Feet	(X) Inches	(BW_L) Feet	(BW_R) Feet
Ireland Ave	A	1566+30.20	1590+00.00	43.5	16.1	24	18	19.7	20.1
Ireland Ave	D	4561+33.50	4580+95.81	30.4	16.1	16	18	20.3	20.1
I80/I380/US218	A	1530+63.64	1576+25.00	40.1	20.3	24	18	20.1	18.2
I80/I380/US218	B	2513+50.00	2540+18.74	42.3	19.5	24	18	19.8	19.7
I80/I380/US218	B	2540+18.74	2562+13.49	40.3	16.1	16	18	20.3	20.1
I80/I380/US218	C	3519+00.00	3543+35.09	30.9	21.0	16	18	20.2	14.4
I80/I380/US218	D	4541+82.66	4567+79.79	35.5	19.8	16	18	15.7	15.6
I80/I380/US218	E	5519+00.00	5591+95.08	33.9	19.3	16	18	16.9	16.7
I80/I380/US218	F	6502+50.06	6572+25.00	40.1	19.5	24	18	20.1	19.7
I80/I380/US218	G	7504+21.04	7562+75.00	30.4	16.1	16	18	20.3	20.1
I80/I380/US218	H	8537+06.52	8578+73.96	35.5	16.1	16	18	19.7	20.1
IA 965	C	5508+55.71	5514+00.00	32.8	15.8	16	18	19.7	16.2

Section view is in direction of traffic.

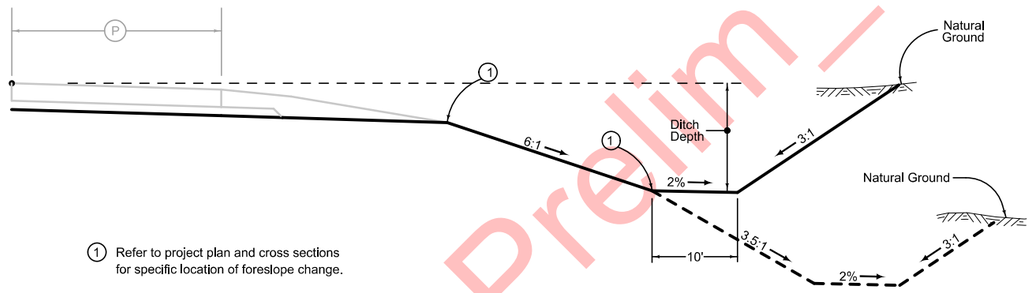
Normal sections shown may be appropriately modified for areas specifically designated by the Engineer such as intersections or superelevated curves.

G_1R_Grade
04-15-14



RAMP GRADING

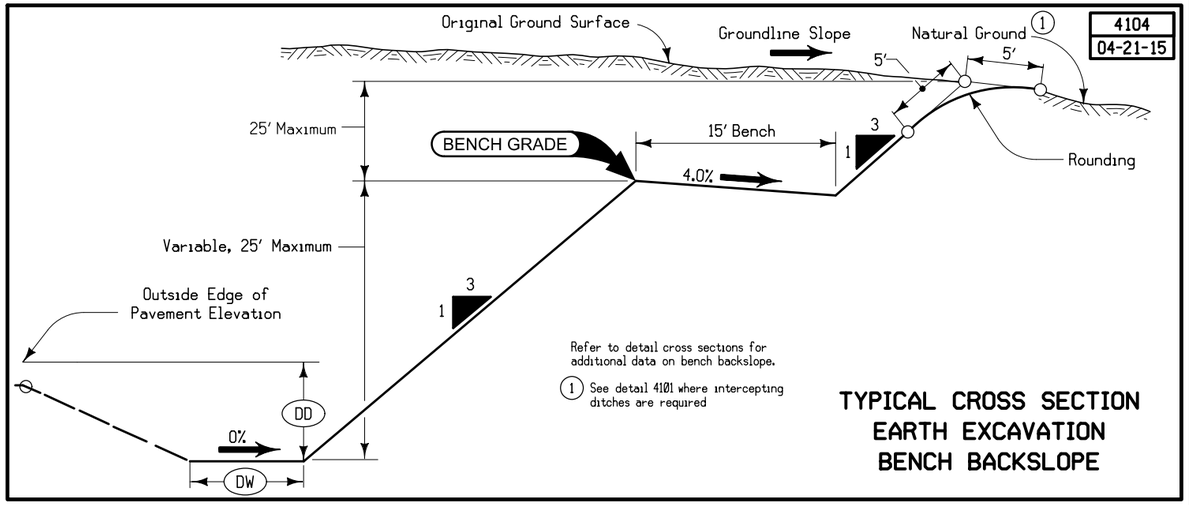
Ditch



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

FORESLOPE AND DITCH GRADING FOR I80/I380/US218

4104
04-21-15



Refer to detail cross sections for additional data on bench backslope.

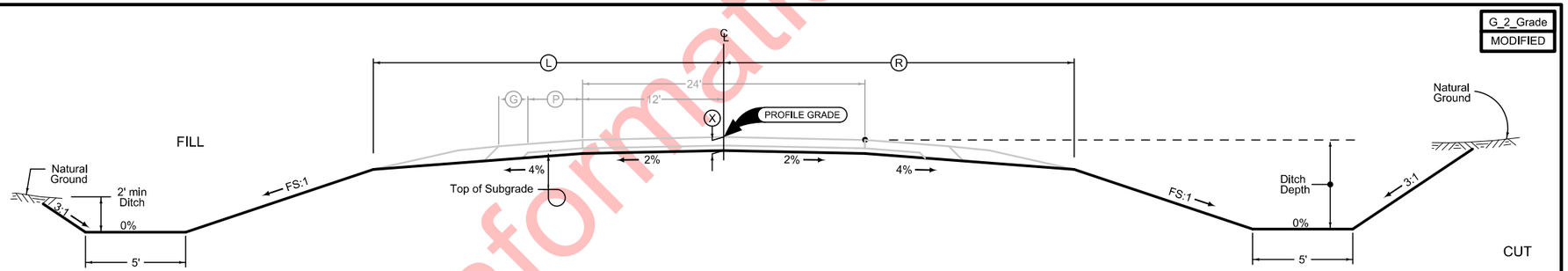
1 See detail 4101 where intercepting ditches are required

TYPICAL CROSS SECTION EARTH EXCAVATION BENCH BACKSLOPE

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER B.1

3:44:46 PM 12/17/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_B01.dgn

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	(X) Inches	FS
	30622+89.02	30627+00.00	24.6	32.50	14.0	3:1

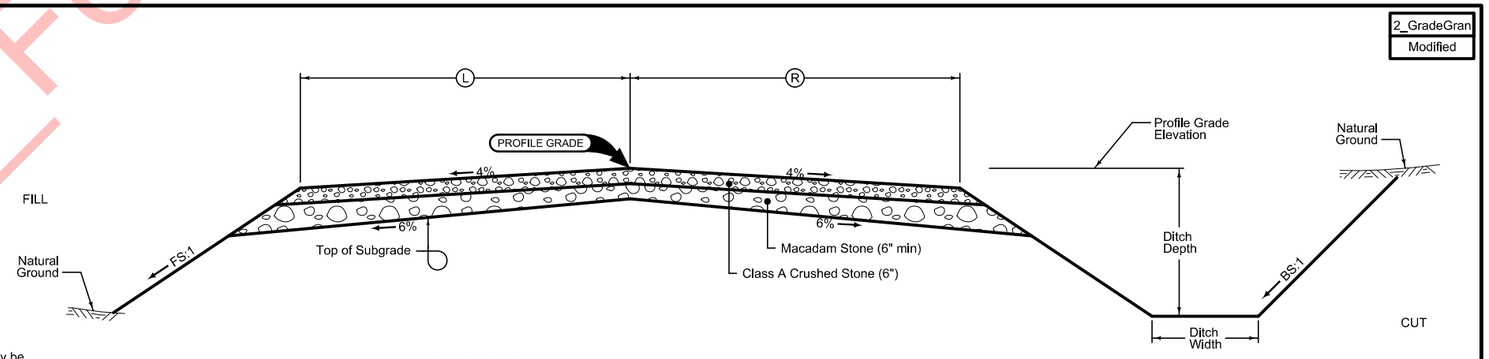


Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

2 LANE GRADING

LOCATION			DIMENSIONS				QUANTITIES	
ROAD IDENTIFICATION	STATION TO STATION		(L) Feet	(R) Feet	FS	BS	MACADAM STONE Tons	CLASS A STONE Tons
Jasper Ave.	xxxxx+xx.xx	xxxxx+xx.xx	14	14	3:1	3:1	xxx	xxx



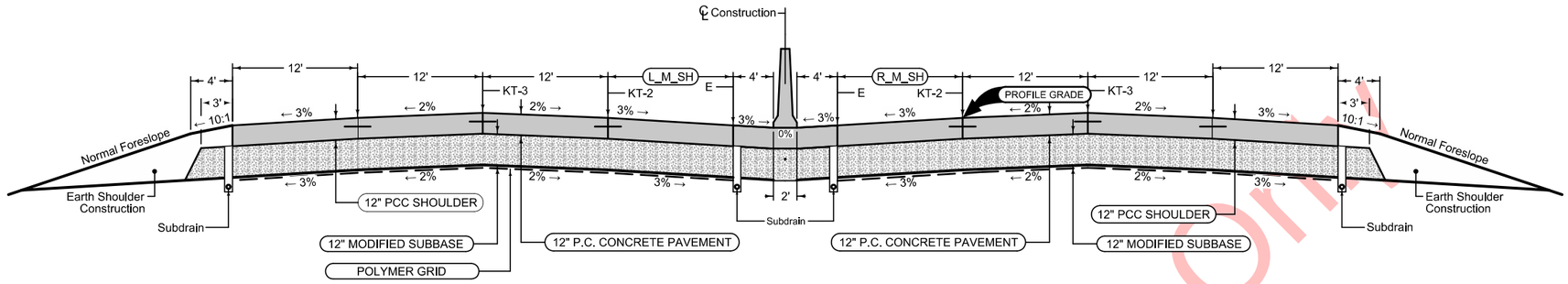
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

GRADING AND GRANULAR SURFACING

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER B.2

3:44:46 PM 12/17/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_B01.dgn



Full Depth PCC Shoulder

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

4D_Closed_P_FullPCC_ MODIFIED	
BEGIN STATION	END STATION
557+90.00	564+40.00

Mainline Jointing:
Transverse joints: CD at 17' spacing

4DP_Closed_ MODIFIED			
BEGIN STATION	END STATION	L_M_SH Feet	R_M_SH Feet
557+90.00	564+40.00	20-12	20-12

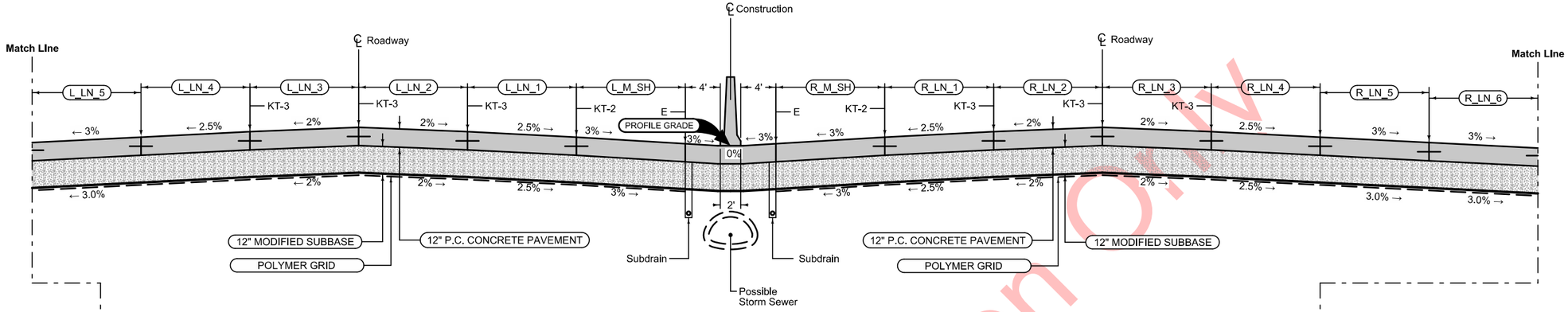
Full Depth PCC Shoulder

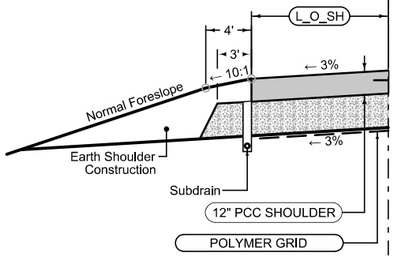
Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 17' spacing

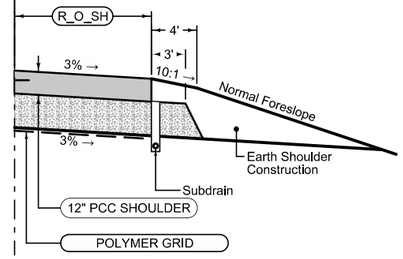
6D_Closed_P_FullPCC_ MODIFIED	
BEGIN STATION	END STATION
557+90.00	564+40.00

See Tab 100-24 or 100-25 for pavement quantities.
Shoulder quantities included with mainline pavement.

INTERSTATE 80 PCC PAVING







Mainline Jointing:
Transverse joints: CD at 17' spacing
Refer to L and U-Sheets for additional transverse jointing details

8DP_Closed_

BEGIN STATION	END STATION	L_LN_5 Feet	L_LN_4 Feet	L_LN_3 Feet	L_LN_2 Feet	L_LN_1 Feet	L_M_SH Feet	R_M_SH Feet	R_LN_1 Feet	R_LN_2 Feet	R_LN_3 Feet	R_LN_4 Feet	R_LN_5 Feet	R_LN_6 Feet
564+40.00	571+00.00	--	--	0 - 9.43	12	12	12	12	12	12	--	--	--	--
571+00.00	572+80.00	--	--	9.43 - 12	12	12	12	12	12	12	0 - 12	--	--	--
572+80.00	582+79.40	--	--	12	12	12	12	12	12	12	12	--	--	--
582+79.40	583+11.79	--	--	12	12	12	12	12	12	12	12	12	--	--
583+11.79	587+00.00	--	--	12	12	12	12	12	12	12	12	12	--	--
587+00.00	590+00.00	--	12	12	12	12	12	12	12	12	12	12	--	--
590+00.00	596+70.00	--	12	12	12	12	12	12	12	12	12	12	--	--
596+70.00	598+50.00	--	12	12	12	12	12	12	12	12	12	12	0 - 12	--
598+50.00	600+00.00	--	12	12	12	12	12	12	12	12	12	12	12	--
600+00.00	603+00.00	12	12	12	12	12	12	12	12	12	12	12	12	--
603+00.00	609+00.00	12	12	12	12	12	12	12	12	12	12	12	12	--
609+00.00	613+50.00	12	12	12	12	12	12	12	12	12	12	12	12	--
613+50.00	619+00.00	12	12	12	12	12	12	12	12	12	12	12	--	--
619+00.00	620+70.60	--	12	12	12	12	12	12	12	12	12	12	--	--
620+70.60	623+28.43	--	12	12	12	12	12	12	12	12	12	12	--	--
623+28.43	668+16.04	--	12	12	12	12	12	12	12	12	12	12	--	--
668+16.04	668+77.78	--	12	12	12	12	12	12	12	12	12	12	--	--
668+77.78	671+60.12	--	12	12	12	12	12	12	12	12	12	12	--	--
671+60.12	672+25.00	--	12	12	12	12	12 - 11.9	12	12	12	12	12	12	--
672+25.00	677+26.98	--	12	12	12	12	11.9 - 8.82	12 - 9.77	12	12	12	12	12	12
677+26.98	677+79.76	12	12	12	12	12	8.82 - 8.48	9.77 - 9.43	12	12	12	12	12	12
677+79.76	680+75.12	12	12	12	12	12	8.48 - 8	9.43 - 8	12	12	12	12	12	12
680+75.12	683+75.00	12	12	12	12	12	8	8	12	12	12	12	12	12
683+75.00	687+00.00	12	12	12	12	12	8	8	12	12	12	12	12	12 - 5.47

Full Depth PCC Shoulder

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

6D_Closed_P_FullPCC_ MODIFIED

BEGIN STATION	END STATION	L_O_SH Feet
557+90.00	582+79.40	12
Ramp Taper		
590+00.00	600+00.00	12
600+00.00	603+00.00	12-6
603+00.00	609+00.00	6
Ramp Taper		
623+28.43	668+16.04	12
Ramp Taper		
677+26.98	687+00.00	12

Full Depth PCC Shoulder

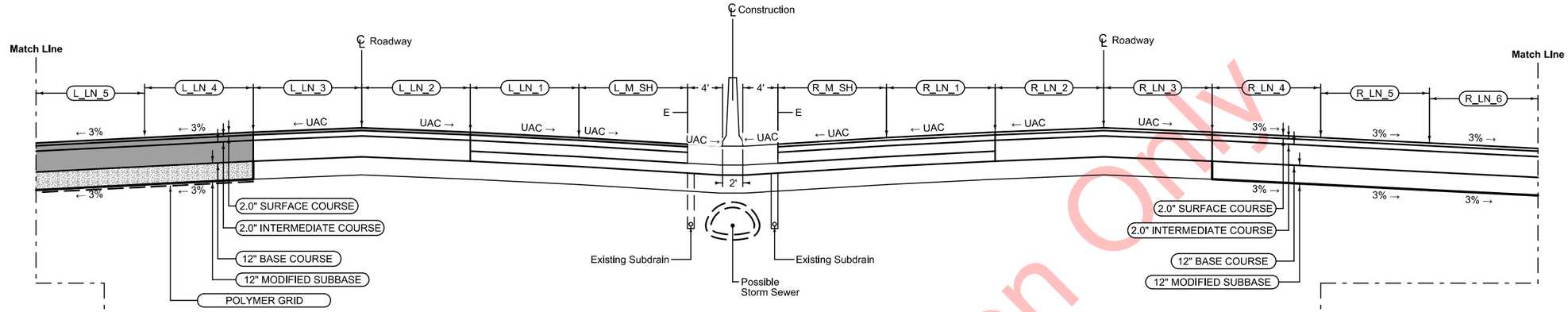
Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: CD at 17' spacing

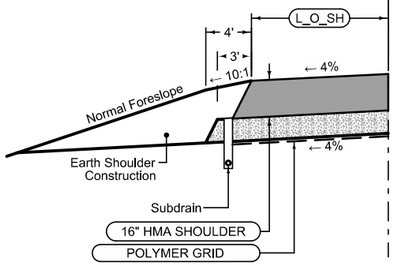
6D_Closed_P_FullPCC_ MODIFIED

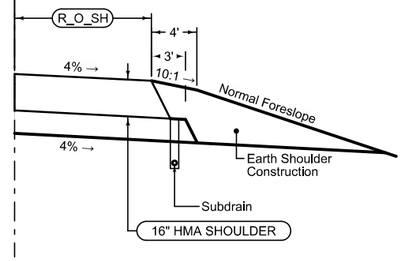
BEGIN STATION	END STATION	R_O_SH Feet
557+90.00	583+11.79	12
Ramp Taper		
587+00.00	596+70.00	12
596+70.00	598+50.00	12-6
598+50.00	613+50.00	6
Ramp Taper		
620+70.60	668+77.78	12
Ramp Taper		
672+25.00	686+75.06	6
686+75.06	687+00.00	6 - 6.53

See Tab 100-24 for pavement quantities.
Shoulder quantities included with mainline pavement.

INTERSTATE 80 PCC PAVING







8DP_Closed_

BEGIN STATION	END STATION	L_LN_5 Feet	L_LN_4 Feet	L_LN_3 Feet	L_LN_2 Feet	L_LN_1 Feet	L_M_SH Feet	R_M_SH Feet	R_LN_1 Feet	R_LN_2 Feet	R_LN_3 Feet	R_LN_4 Feet	R_LN_5 Feet	R_LN_6 Feet
701+25.00	708+50.00	12	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	--	--
708+50.00	712+41.63	--	12	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	--	--
712+41.63	715+33.57	--	12	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	--	--
715+33.57	716+95.47	--	12	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	--	--
716+95.47	722+33.57	--	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	UAC	--	--

Full Depth HMA Shoulder

6D_Closed_P_FullHMA_

BEGIN STATION	END STATION	L_O_SH Feet
701+25.00	708+50.00	12
708+50.00	712+41.63	12 - 6
712+41.63	716+95.47	12

Full Depth HMA Shoulder

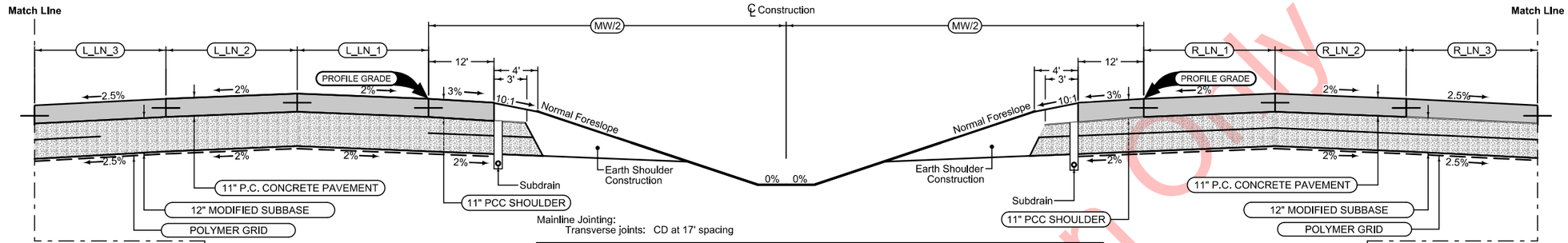
6D_Closed_P_FullHMA_

BEGIN STATION	END STATION	R_O_SH Feet
701+25.00	701+52.22	UAC
701+52.22	708+33.07	UAC
708+33.07	722+50.00	UAC

See Tab 100-24 for pavement quantities.

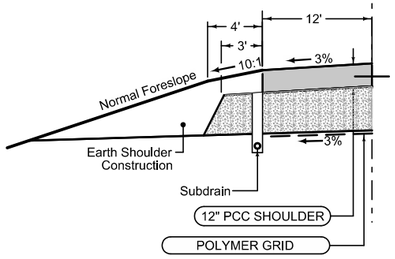
Shoulder quantities included with mainline pavement.

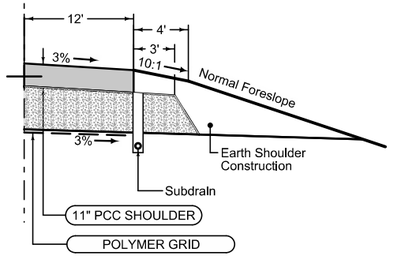
INTERSTATE 80 HMA Paving



Mainline Jointing:
Transverse joints: CD at 17' spacing

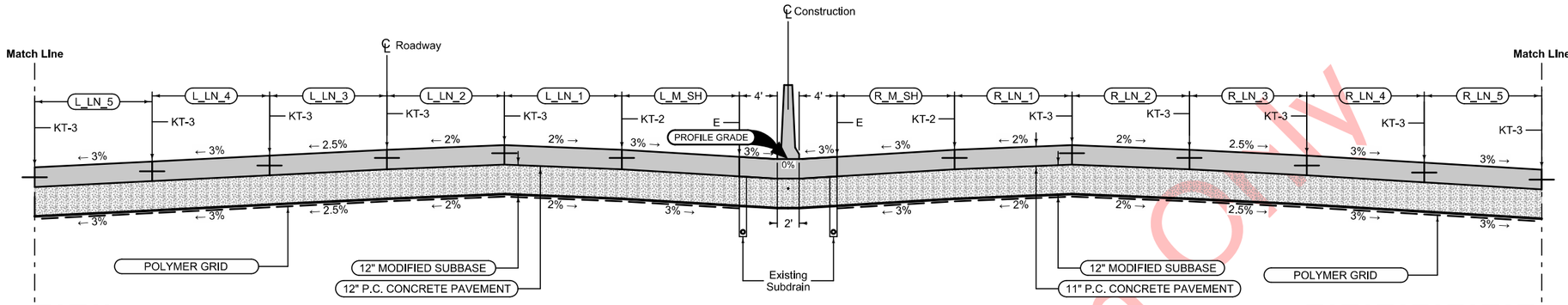
BEGIN STATION	END STATION	MW Feet	L_LN_3 Feet	L_LN_2 Feet	L_LN_1 Feet	R_LN_1 Feet	R_LN_2 Feet	R_LN_3 Feet
1089+20.00	1091+00.00	64	0 - 2.8	12	12	12	12	0 - 12
1091+00.00	1097+00.00	64	2.8 - 12	12	12	12	12	12
1097+00.00	1121+67.62	64 - 34	12	12	12	12	12	12

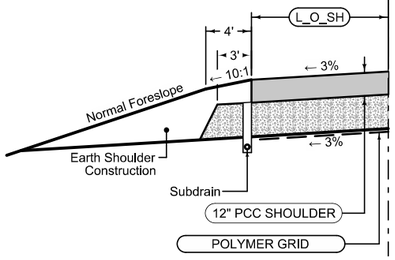


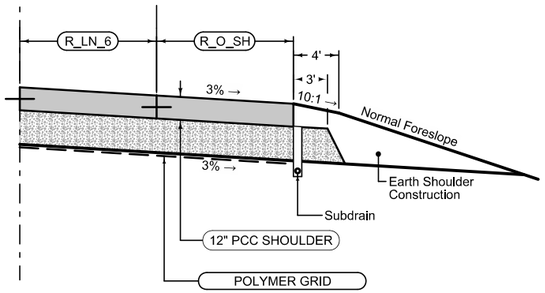


See Tab 100-24 for pavement quantities.
Shoulder quantities included with mainline pavement.

US 218 PCC Paving







Full Depth PCC Shoulder

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

6D_Closed_P_FullPCC_ 04-19-11		
BEGIN STATION	END STATION	L_O_SH Feet
1089+20.00	1123+00.00	12
1123+00.00	1139+00.00	6
Ramp Taper		
1143+18.64	1189+67.92	12
Ramp Taper		
1192+46.51	1201+00.00	10
1201+00.00	1204+00.00	10 - 6
1204+00.00	1210+00.00	6
1210+00.00	1217+89.85	12

Mainline Jointing:
Transverse joints: CD at 17' spacing
Refer to L and U-Sheets for additional transverse jointing details

6DP_Closed_													
BEGIN STATION	END STATION	L_LN_5 Feet	L_LN_4 Feet	L_LN_3 Feet	L_LN_2 Feet	L_LN_1 Feet	L_M_SH Feet	R_M_SH Feet	R_LN_1 Feet	R_LN_2 Feet	R_LN_3 Feet	R_LN_4 Feet	R_LN_5 Feet
1121+67.62	1123+00.00	--	--	12	12	12	12	12	12	12	12	–	–
1123+00.00	1127+75.00	--	0 - 9.5	12	12	12	12	12	12	12	12	–	–
1127+75.00	1129+00.00	--	9.5 - 12	12	12	12	12	12	12	12	12	–	–
1129+00.00	1135+75.40	--	12	12	12	12	12	12	12	12	12	–	–
1135+75.40	1139+00.00	--	12	12	12	12	12	12	12	12	12	–	–
1139+00.00	1143+18.64	--	--	12	12	12	12	12	12	12	12	–	–
1143+18.64	1180+40.38	--	--	12	12	12	12	12	12	12	12	–	–
1180+40.38	1182+58.75	--	--	12	12	12	12	12	12	12	12	–	–
1182+58.75	1189+67.92	--	--	12	12	12	12	12	12	12	12	12	12
1189+67.92	1198+00.00	--	--	12	12	12	12	12	12	12	12	12	12
1198+00.00	1201+00.00	12	12	12	12	12	12	12	12	12	12	12	12
1201+00.00	1201+32.37	12 - 11.03	12	12	12	12	12	12	12	12	12	12	12
1201+32.37	1204+00.00	11.03 - 0	12	12	12	12	12	12	12	12	12	12	12
1204+00.00	1210+00.00	--	12	12	12	12	12	12	12	12	12	12	12
1210+00.00	1211+50.00	--	12	12	12	12	12 - 12.9	12 - 12.9	12	12	12	12	12
1211+50.00	1217+89.85	--	12	12	12	12	12.9 - 24	12.9 - 24	12	12	12	12	12

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

6D_Closed_P_FullPCC_ 04-19-11			
BEGIN STATION	END STATION	R_LN_6 Feet	R_O_SH Feet
1089+20.00	1127+75.00		12
Ramp Taper			
1135+75.40	1180+40.38		12
Ramp Taper			
1186+06.00	1198+00.00	12	6
1198+00.00	1204+00.00	12 - 0	6
1204+00.00	1217+89+.85		6

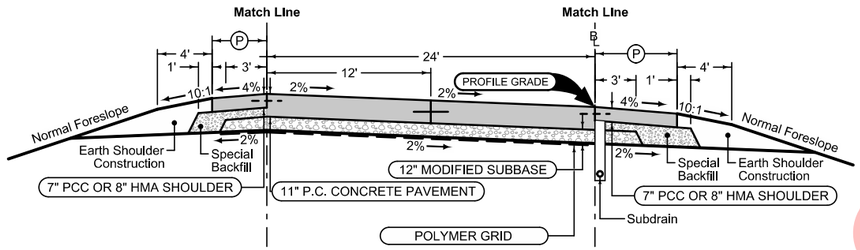
See Tab 100-24 for pavement quantities.
Shoulder quantities included with mainline pavement.

INTERSTATE 380

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
1533+81.10	1558+50.51	6



Section shown in the direction of traffic.

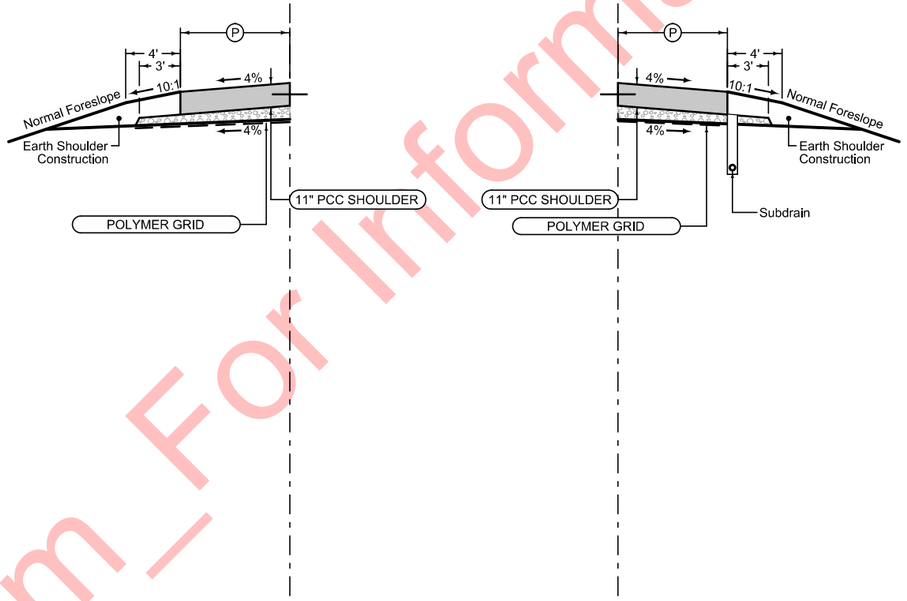
Ramp Jointing:
Transverse joints: CD at 17' spacing.
Longitudinal joint: L-2

2RP_ MODIFIED	
BEGIN STATION	END STATION
1533+81.10	1568+15.19

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
1562+21.66	1568+15.19	6



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
1533+81.10	1558+70.51	10

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
1562+21.66	1568+15.19	10

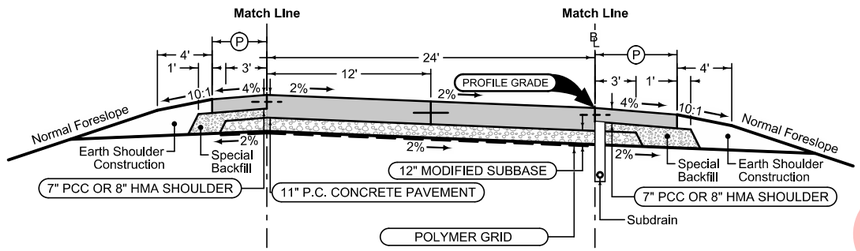
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/380 RAMP A

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
2520+70.30	2528+21.57	6



Section shown in the direction of traffic.

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

2RP_ MODIFIED	
BEGIN STATION	END STATION
2520+70.30	2523+00.00

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
2520+70.30	2523+00.00	10

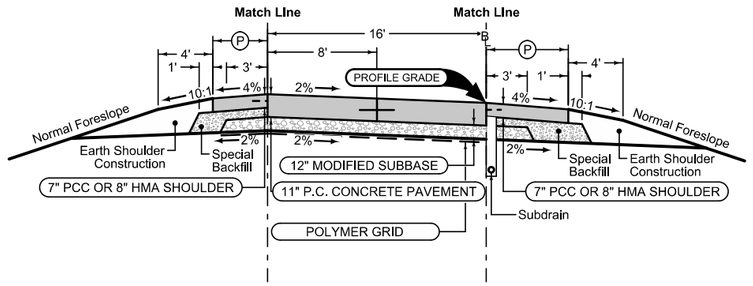
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/380 RAMP B

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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
4545+00.00	4559+66.72	4



Section shown in the direction of traffic.

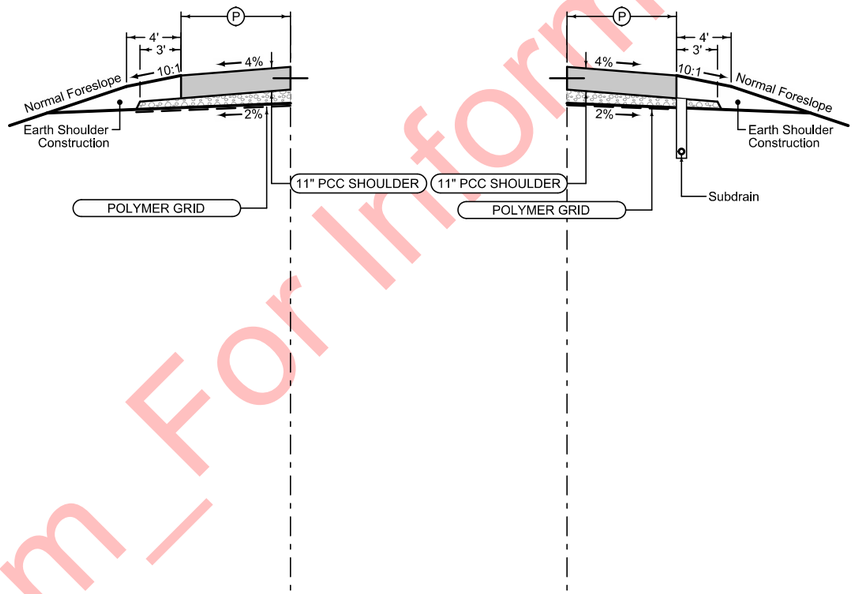
Ramp Jointing:
Transverse joints: CD at 15' spacing.
Longitudinal joints: L-2

1RP_ 10-17-17	
BEGIN STATION	END STATION
4545+00.00	4559+06.72
4562+98.21	4563+91.17

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
4562+48.21	4563+91.17	4



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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
4545+00.00	4559+06.72	6

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
4562+68.21	4563+91.17	6

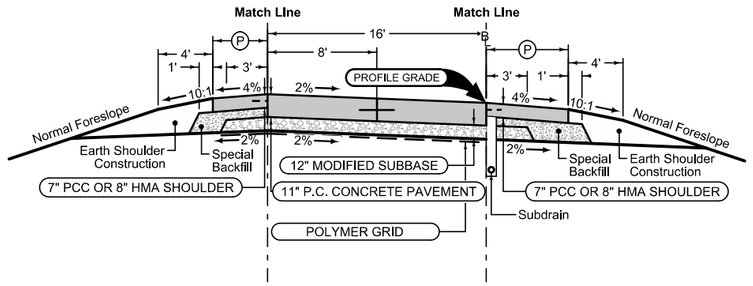
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/380 RAMP D

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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
5523+28.22	5543+79.41	4
5543+79.41	5544+77.00	4-10
5565+81.17	5567+58.46	10
5567+58.46	5568+48.46	10-4
5568+48.46	5583+94.48	4



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
5523+28.22	5583+94.48

Paved Shoulder Alternates

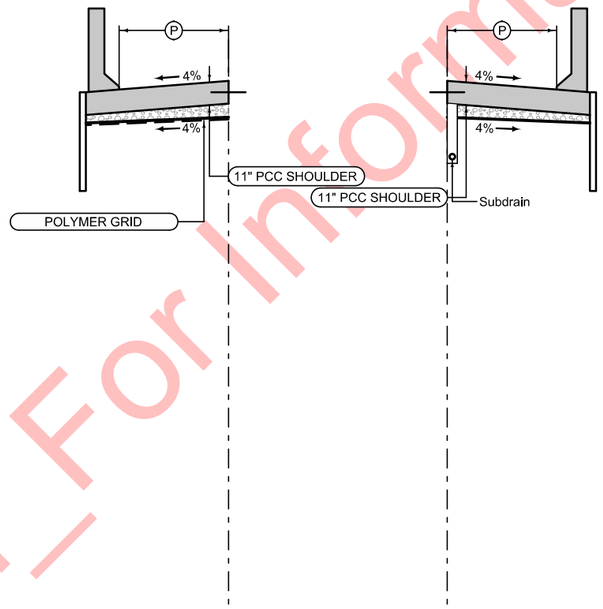
PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 15' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
5523+28.22	5548+50.00	6
5552+10.92	5583+94.48	6

Full Depth PCC Shoulder with Barrier

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 15' spacing

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
5544+77.00	5552+10.92	10



Full Depth PCC Shoulder with Barrier

Shoulder Jointing:
Longitudinal joint: L-2 or KT-2
Transverse joints: C at 15' spacing

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
5548+50.00	5552+10.92	6

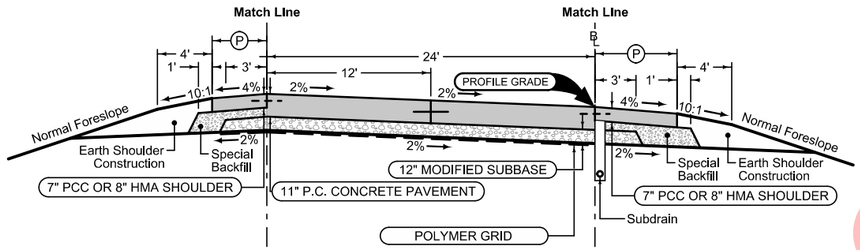
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.
Refer to typical 8208 for barrior at MSE wall.

I-80/380 RAMP E

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

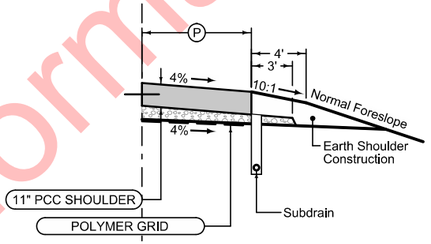
1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
6508+75.12	6568+79.78	6



Section shown in the direction of traffic.

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

2RP_ MODIFIED	
BEGIN STATION	END STATION
6509+05.12	6568+79.78



Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
6508+75.12	6559+57.00	10

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
6562+68.00	6568+79.78	10

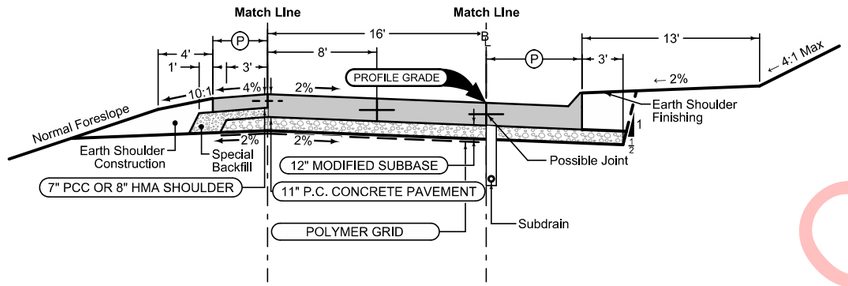
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/380 RAMP F

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

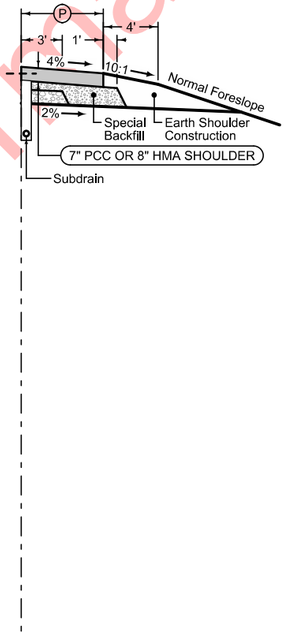
1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
7507+35.79	7558+45.12	4



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
7507+35.79	7558+45.12



Curbed Shoulder

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

Transverse: C at 15' spacing
Single pour: L-2
Staged : KT-2

1R_Curb MODIFIED			
BEGIN STATION	END STATION	(P) Feet	Curb Type See PV-102
7542+15 +/-	7549+45 +/-	7	4" Sloped

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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
7507+35.79	7542+15 +/-	6
7549+45 +/-	7558+45.12	6

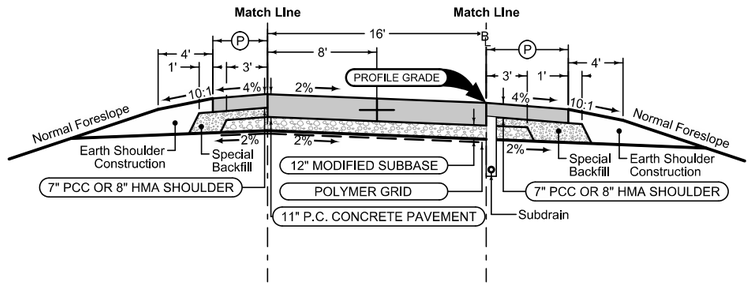
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/380 RAMP G

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

ROAD IDENTIFICATION	BEGIN STATION	END STATION	(P) Feet
			1R_P_ALT_ 10-16-18
I-380 Ramp B	2546+74.48	2557+95.82	4
I-380 Ramp C	3525+38.55	3543+35.09	4
I-380 Ramp H	8568+76.73	8576+24.66	4



Section shown in the direction of traffic.

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

ROAD IDENTIFICATION	BEGIN STATION	END STATION
		1RP_ 10-17-17
I-380 Ramp B	2552+45.00	2557+95.82
I-380 Ramp C	3525+38.55	3543+35.09
I-380 Ramp H	8572+00.00	8576+24.66

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

ROAD IDENTIFICATION	BEGIN STATION	END STATION	(P) Feet
			1R_P_ALT_ 10-16-18
I-380 Ramp B	2552+45.00	2557+95.82	6
I-380 Ramp C	3525+38.55	3543+35.09	6
I-380 Ramp H	8572+00.00	8576+24.66	6

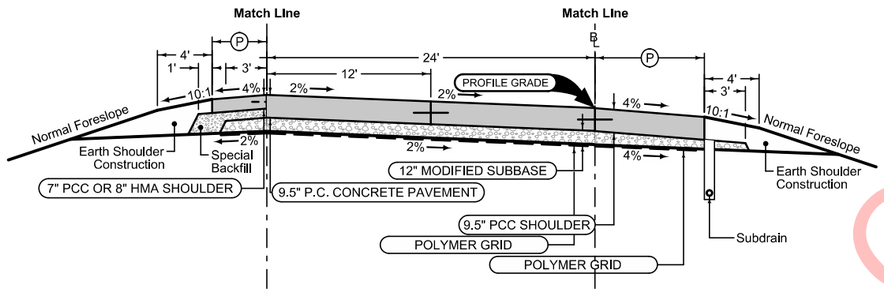
See Tab 100-24 for pavement quantities.
See Tab 112-9 for shoulder quantities.

ONE LANE RAMPS

Paved Shoulder Alternates

PCC Shoulder Jointing:
Longitudinal joint: BT-1 or BT-5
Transverse joints: C at 17' spacing
HMA Shoulder Jointing:
Longitudinal joint: B

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
1566+43.79	1582+78.50	6



Section shown in the direction of traffic.

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

2RP_ MODIFIED	
BEGIN STATION	END STATION
1566+43.79	1582+78.50

Full Depth PCC Shoulder

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

2_P_FullPCC_ MODIFIED		
STATION TO STATION		(P) Feet
1566+43.79	1582+78.50	10

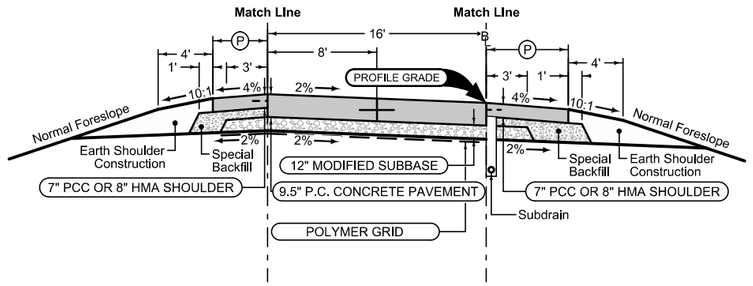
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80 IRELAND RAMP A

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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
4566+00.00	4577+08.84	4



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
4566+00.00	4577+08.84

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

1R_P_ALT_ 10-16-18		
BEGIN STATION	END STATION	(P) Feet
4566+00.00	4577+08.84	6

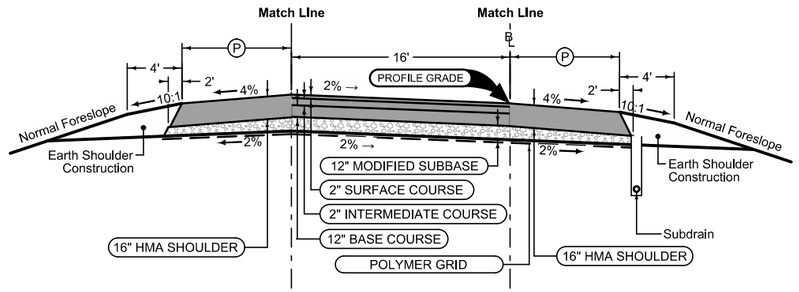
See Tab 100-24 or 100-25 for pavement quantities.
See Tab 112-9 for shoulder quantities.

I-80/Ireland RAMP D

Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

1_R_FullHMA_ MODIFIED		
STATION TO STATION		(P) Feet
5512+46.12	5514+00.00	4



Section shown in direction of traffic.

1RH_ 04-19-11	
BEGIN STATION	END STATION
5512+46.12	5514+00.00

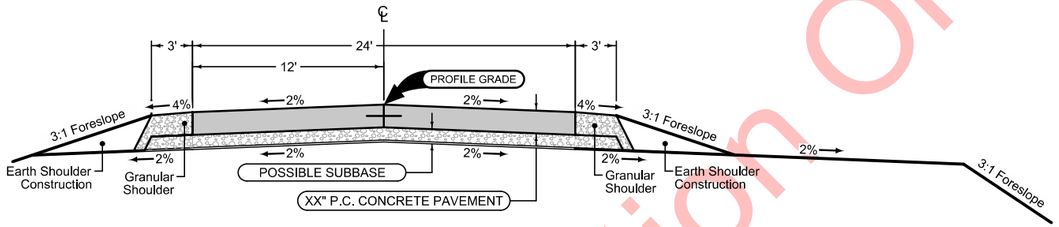
Full Depth HMA Shoulder

Shoulder Jointing:
Longitudinal joint: B

R_1_FullHMA_ MODIFIED		
STATION TO STATION		(P) Feet
5512+46.12	5514+00.00	6

See Tab 100-24 or 100-25 for pavement quantities.
Shoulder quantities included with mainline pavement.

I-80/IA 965 Ramp C



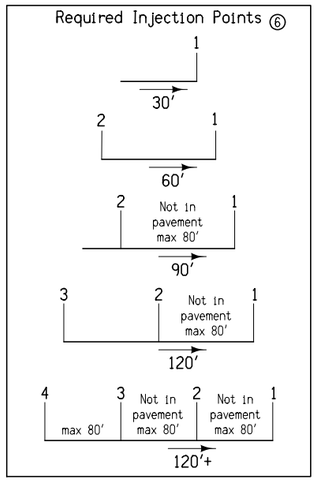
See Tab 100-24 or 100-25 for pavement quantities.

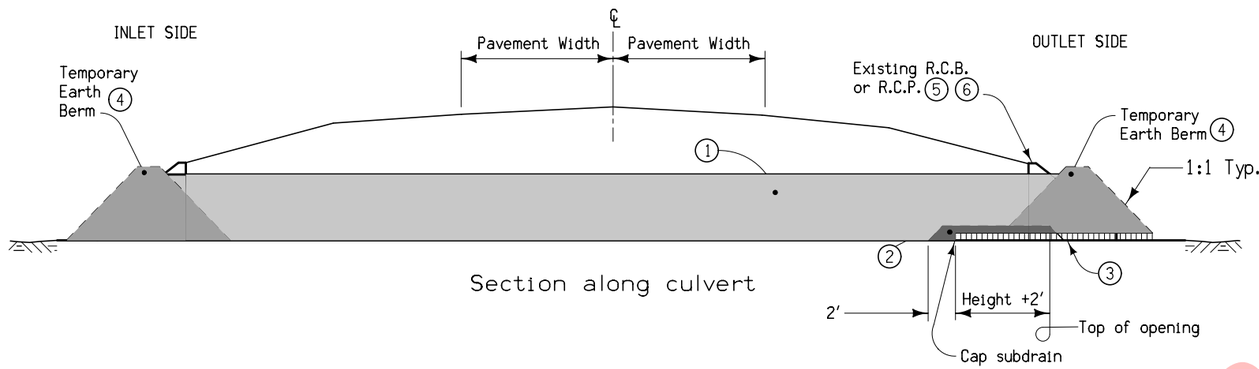
See Tab 112-9 for shoulder quantities.

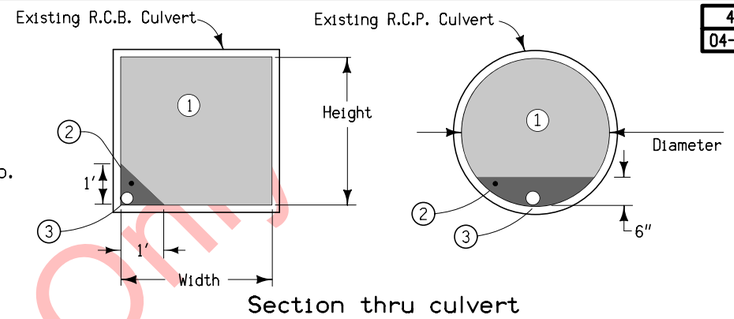
JASPER AVENUE

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER B.18

3:44:57 PM 12/17/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_B01.dgn



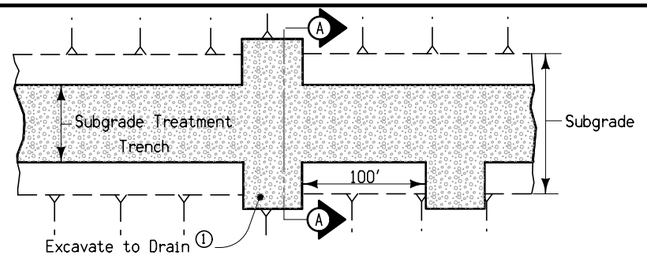




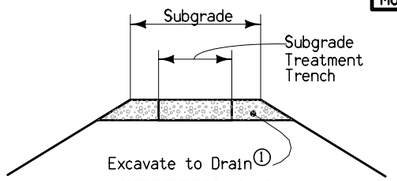
4315
04-15-08

① Flowable Mortar.
② Granular Backfill.
③ 4″ subdrain at flowline elevation of culvert shall be extended into the culvert a distance of 2′ plus the height of the culvert. Granular Backfill covers subdrain and extends an additional 2′. Subdrain and granular backfill are incidental to flowable mortar.
④ Ends of culvert shall be plugged sufficiently to retain flowable mortar. Temporary earth berms are incidental to flowable mortar.
⑤ Removal of headwalls may be required.
⑥ Outlet shall be filled first. See injection point detail for additional information.

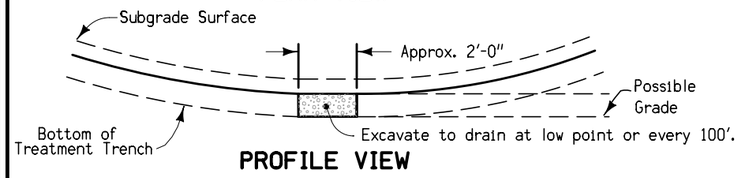
DETAILS OF CULVERT ABANDONMENT WITH FLOWABLE MORTAR (Rectangular structures less than 8′ in either height or width. Circular structures less than 10′ Dia.)



PLAN VIEW



SECTION A-A

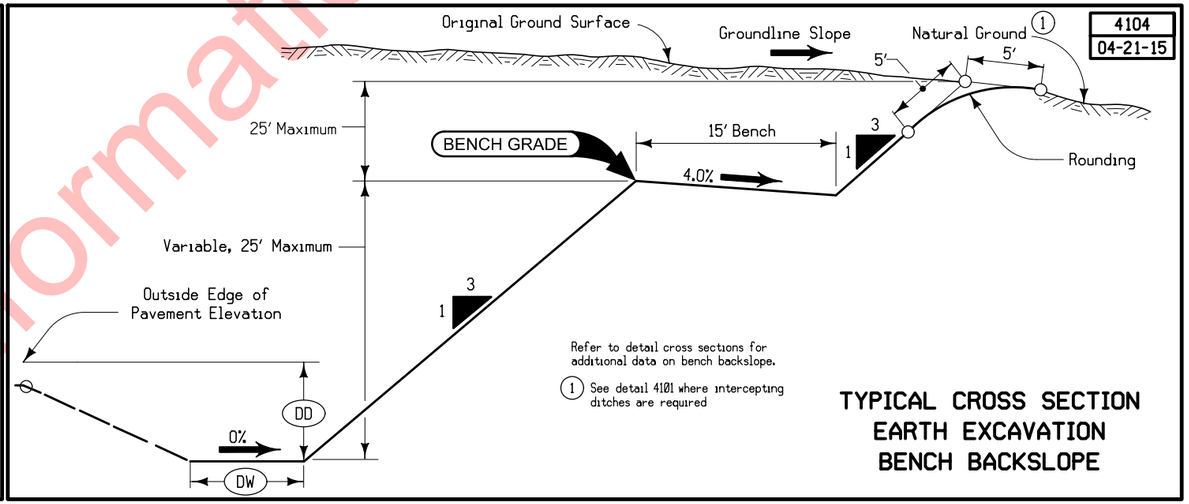


PROFILE VIEW

① The contractor shall excavate a portion of subgrade as necessary to provide drainage for the treatment trench.
The additional excavation and Special Backfill for outlets is incidental and will not be paid separately.

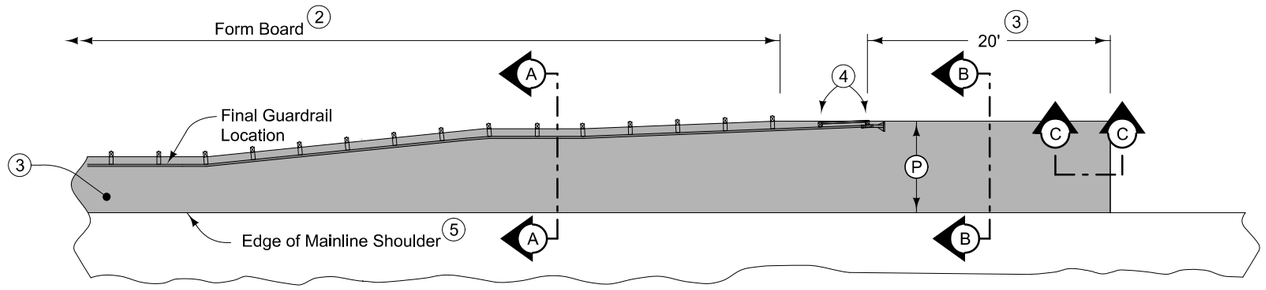
TYPICAL DETAILS OF DRAIN FOR SUBBASE TRENCH

8301
MODIFIED

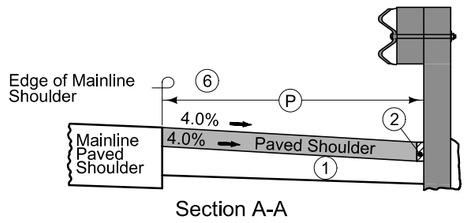


TYPICAL CROSS SECTION EARTH EXCAVATION BENCH BACKSLOPE

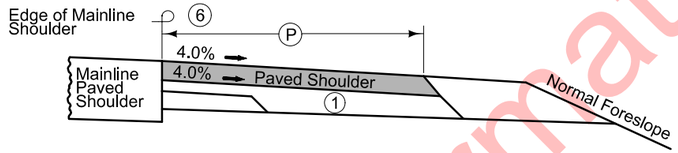
4104
04-21-15



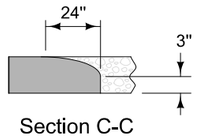
PLAN VIEW



Section A-A



Section B-B



Section C-C
Roll down at granular shoulder or earth.

6" HMA Paved Shoulder at guardrail. 6" PCC may be substituted with the following jointing layout:

Match mainline pavement joint spacing. When mainline pavement is 8" or greater in thickness, place additional transverse 'C' joints in shoulder at mid-panel of the mainline pavement. Place longitudinal 'C' joint at P/2 from edge of mainline pavement when P is greater than 10' wide. Terminate longitudinal joint at transverse joint less than 10' in length.

Compaction of HMA is required to face of guardrail post. Hand compaction will be allowed under guardrail. Removal and reinstallation of guardrail will be allowed with no additional payment.

Refer to Tabulation 112-9 for shoulder quantities.

(1) 6" Special Backfill.

(2) PCC option only: When guardrail posts are installed prior to construction of PCC paved shoulder, fasten form board to the face of guardrail posts for the length shown. Refer to note 4 for final 2 posts.

(3) Continue paved shoulder to existing paved shoulder or 20 feet beyond the center of the first post.

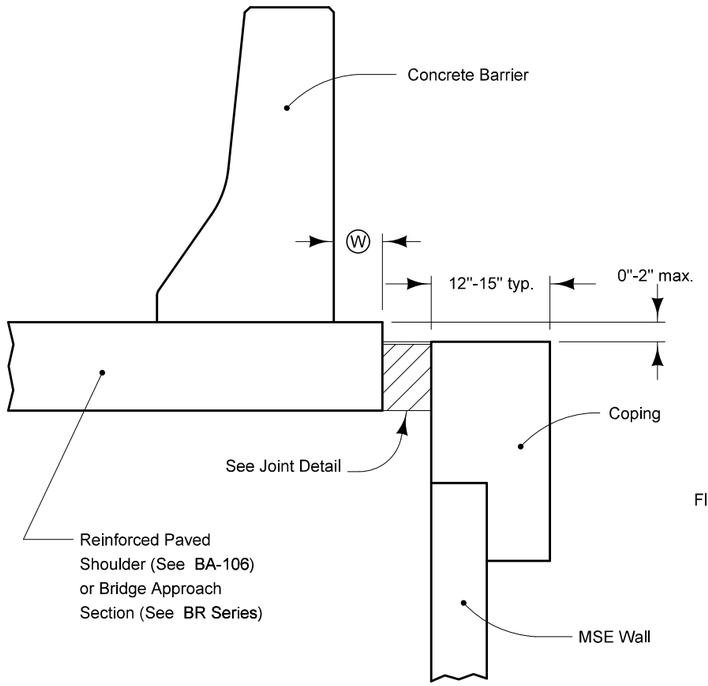
(4) Shoulder may be notched for final 2 posts or post sleeves may be installed through pavement. Do not drive posts through pavement.

(5) 'KT-1 joint for PCC shoulder.
'B' joint for HMA shoulder.

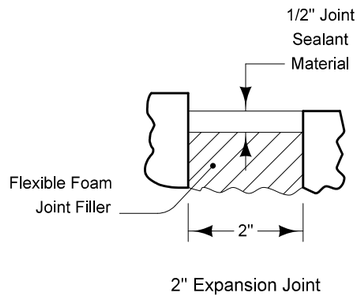
(6) In areas of superelevation, Paved Shoulder at Guardrail cross slope shall match adjacent roadway shoulder cross slope.

PAVED SHOULDER AT GUARDRAIL

8208
04-21-15



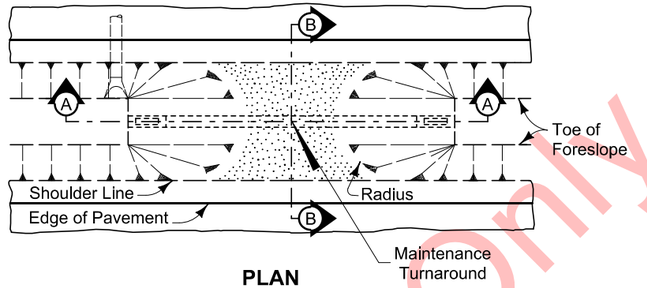
Refer to tabulation 108-20.



2" Expansion Joint

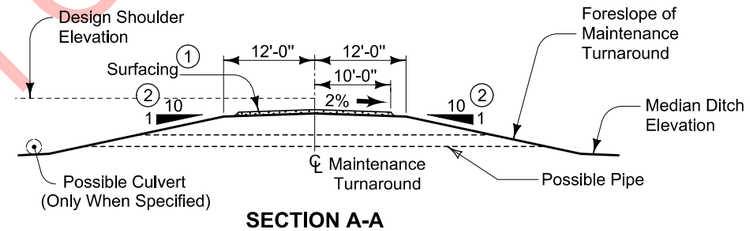
CONCRETE BARRIER WITH MSE WALL

8101
04-21-15

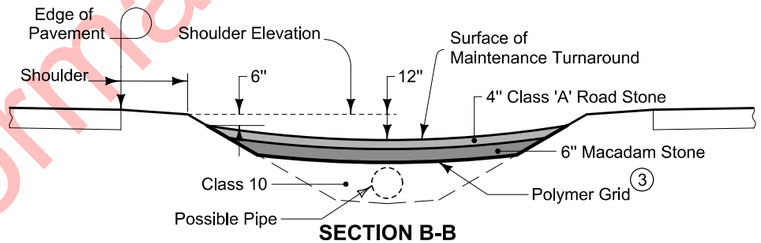


PLAN

1. Surfacing quantities based on a 6 inch layer of Macadam Stone base and a 4 inch layer of Class 'A' Road Stone. Apply surfacing as directed by the Engineer.
2. Construct 8:1 foreslope when drainage pipe is incorporated into the maintenance turnaround.
3. Install Polymer Grid between Class 10 and stone material.
4. See Standard Road Plan DR-212.



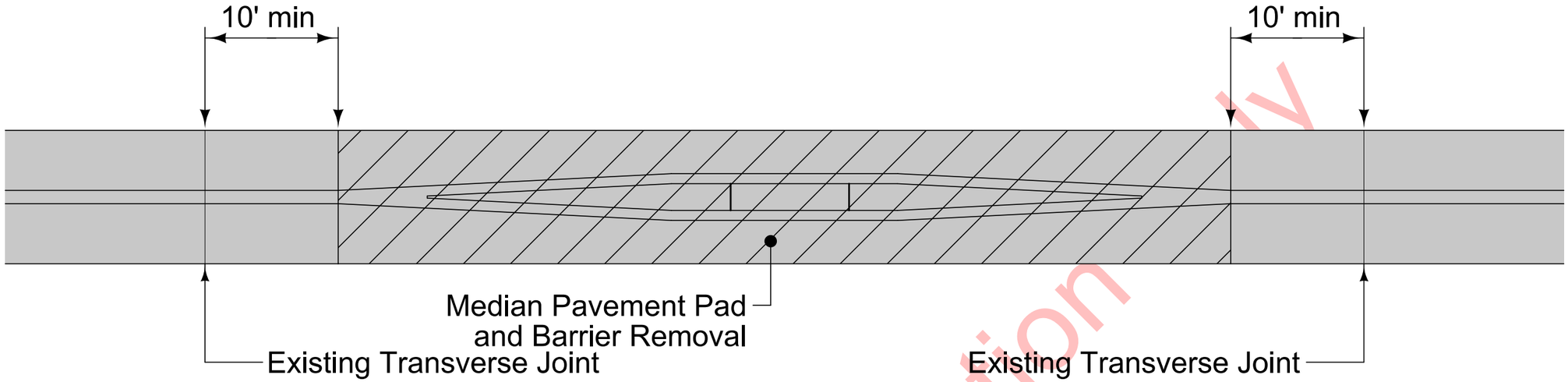
SECTION A-A

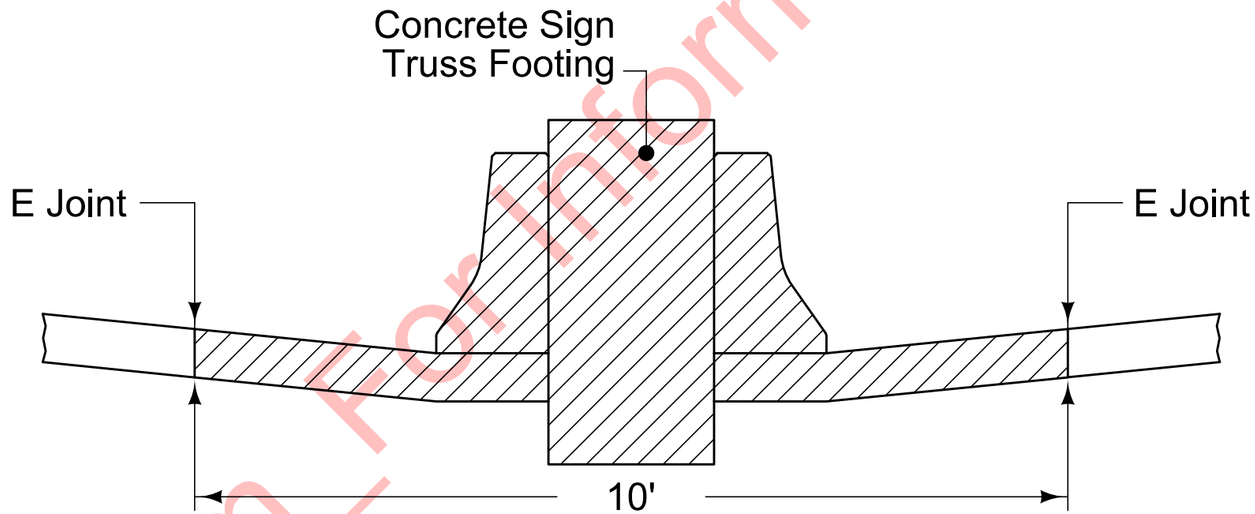


SECTION B-B

MAINTENANCE TURNAROUND

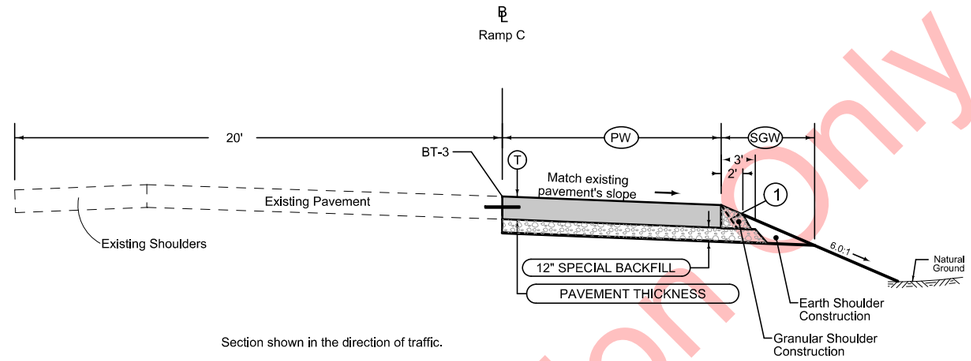
Location		Class 'A' Road Stone	Macadam Stone	Polymer Grid	Class 10	Pipe Length	Beveled Pipe & Guard (4)	Radius	Remarks
Road Identification	Station	TONS	TONS	SY	CY	LF	EACH	FT	
US 218									





SIGN TRUSS REMOVAL
INTERSTATE 80 STA. 705+00

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER B.22



Section shown in the direction of traffic.

LOCATION			DIMENSIONS						Earth Shoulder Construction
ROAD IDENTIFICATION	STATION TO STATION			HMA			PCC		
				(PW) Feet	(T) Inches	(SGW) Feet	(T) Inches	(SGW) Feet	Station
Ramp C	x	x		Vari	11.5	14.3	9.0	12.8	x

Refer to typical 8301 for details of Drain for subgrade treatment trench

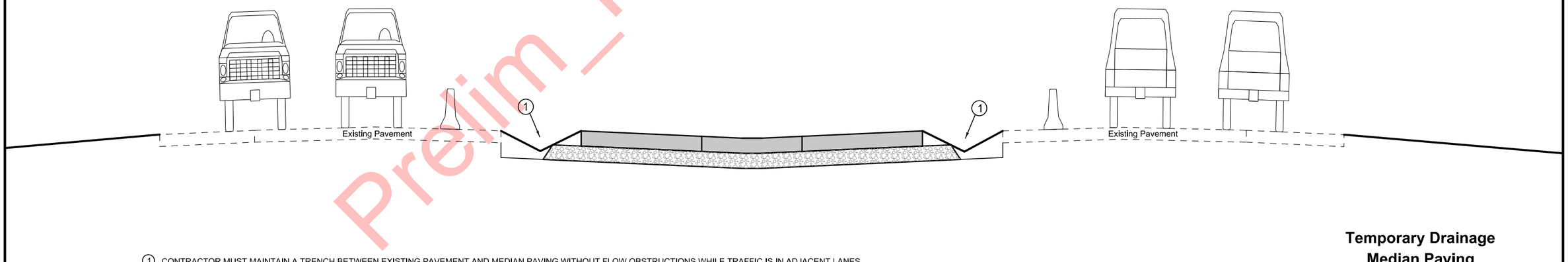
(1) Possible HMA 1:1 slope

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.

See Tab 100-24 for pavement quantities.

Detour Ramp C



(1) CONTRACTOR MUST MAINTAIN A TRENCH BETWEEN EXISTING PAVEMENT AND MEDIAN PAVING WITHOUT FLOW OBSTRUCTIONS WHILE TRAFFIC IS IN ADJACENT LANES.

Temporary Drainage Median Paving

SURVEY SYMBOLS

- TDC Tree Deciduous
- D Centerline Draw or Stream (Down)
- EG Edge of Gravel Road
- Linn County REC
- BNK Stream Bank
- EP Edge of Paved Roads (ML or SR)
- EW Edge of Water
- ENU Edge Unpaved Entrance & Parking
- TEV Evergeen Tree
- HDG Hedge Row
- SNP Unpaved Shoulder
- WM Wind Mill
- SI Sign
- TV Satelite TV Dish
- IN Storm Sewer Intake
- MH Utility Access (Manhole)
- LUM Luminaire
- LP Tank
- GP Guard Post (Less Than 4 Posts)
- SCR Section Corner
- DU Centerline Draw or Stream (Up)
- OUT Tile Outlet
- FW Wire Fence
- ROW Right of Way Rail
- DIK Centerline of Dike or Dam
- RIP Rip-Rap
- GDL Guard Rail Steel
- PRISER Power Riser Pole
- INB Storm Sewer Beehive Intake
- LC Lot Corner
- ITC Midwest (Formerly Alliant Energy)
- SWP Swamp or Marsh
- ENT Centerline BL of Entrance
- FHD Fire Hydrants
- RET Retaining Walls
- STP Stump
- WV Water Valve
- FCL Chain Link and Security Fence
- WEL Well
- TPA Telephone Pole Co. 1
- FWD Wood Fence
- RR Centerline of Railroad Tracks
- MidAmerican Energy
- BM Bench Mark
- C Centerline BL of Road (ML or SR)
- BIN Grain Bin
- SI Sign
- TFR Tree Fruit
- SHR Shrub
- MM Mile Marker Post
- GP Guard Post (Less Than 4 Posts)
- FLG Flag Poles
- EB Electrical Box
- TPD Telephone Pedestal
- WHD Water Hydrant
- SL Speed Limit Sign
- SNK Sink Hole
- CIS Cistern
- SEP Septic Tank
- Central Iowa Power Coop (CIPCO)
- TP Telephone Pole
- TVP TVP TV Pedestal Symbol
- WV Water Valve
- WH Water Hydrant
- GUY Guy Wire
- TPED Telephone Pedestal
- EB Electrical Box
- UB Utility Box
- LUM Luminaire
- INT Storm Sewer Intake
- HT Highline Tower
- INTBH Intake (Beehive)
- INTBH Storm Sewer Intake (Beehive)
- MH Electrical Manhole
- MH Storm Sewer Manhole
- MH Sanitary Sewer Manhole
- MH Fiber Optic Manhole
- MH Manhole

UTILITY LEGEND

E1	Linn County REC Josh Pfannebecker 319-377-1587 Ext. 607 jpfannebecker@linncountyrec.com	Electrical Service / Buried Electrical Lines
E2	ITC Midwest Chad Levi 319-297-6765 clevi@itctransco.com	Overhead Electrical Transmission
E3	Iowa DOT Timothy Zelmet 319-626-2386 Timothy.Zelmet@iowadot.us	Buried Electrical Lines
E4	MidAmerican Energy Nate Johnson 563-333-8648 NLJohnson@midamerican.com	Overhead Electrical Transmission
E5	Central Iowa Power Coop (CIPCO) Dan Ketchum 319-734-4313 Dan.ketchum@cipco.net	Overhead Electrical Transmission
E6	Unclaimed	Buried Electrical Lines
G	MidAmerican Joe Retek 319-341-4457 jjretek@midamerican.com	Buried Gas - Intermediate Pressure
GHP	MidAmerican Steven DellaBetta 319-298-5163 amdellabetta@midamerican.com	Buried Gas - Hi-Pressure Gas
G2HP	Magellan Bill Saehler 319-330-0959 Bill.Saehler@magellanlp.com	Underground HI-Pressure Gas
FO	Iowa Communications Network (ICN) Timothy Flickinger 515-725-4699 timothy.flickinger@iowa.gov	Fiber Optic
FO2	South Slope COOP Randy Cline (Primary) 319-626-2211 randy@southslope.com	Fiber Optic
FO3	Century Link (Formerly Qwest) Bob Wegener (Primary) 815-382-3605 bwegener@terratechllc.net	Fiber Optic
FO4	Transmission Windstream/PAETEC Dave Harris 515-297-8391 Dharris@pearce-services.com	Fiber Optic
FO5	Local Windstream Brian Otto 402-436-5200 brian.otto@windstream.com	Fiber Optic
FO6	Aureon Formerly INS Jeff Klocko 515-830-0445 jeff.klocko@aureon.com	Fiber Optic
FO7	University of Iowa Chris Hatland (Primary) 319-335-1357 chris-hatland@uiowa.edu	Fiber Optic
FO8	Unite Private Network/IM ON Dan Hogan (Primary UPN) 515-326-4237 dan.hogan@upnfiber.com Randy Schoon (Primary IMON) 319-261-4640 randys@imon.net	Fiber Optic
FO9	City of Coralville Ryan Foley 319-248-1720 rfoley@coralville.org	Fiber Optic
FO10	Mediacom Darwin Driscoll (Primary) 845-204-5742 ddriscol@mediacomcc.com	Fiber Optic
FO11	Unclaimed	Fiber Optic
SAN.2	City of Coralville Ryan Foley 319-248-1720 rfoley@coralville.org	Sanitary Sewer
ST S	Iowa DOT Timothy Zelmet 319-626-2386 Timothy.Zelmet@iowadot.us	Storm Sewer
T1	Windstream Brian Otto 402-436-5200 brian.otto@windstream.com	Telephone
T2	South Slope COOP Mark Ditch 319-626-2211 mark@southslope.com	Telephone
TV	Mediacom Darwin Driscoll (Primary) 845-204-5742 ddriscol@mediacomcc.com	Buried Television Cable
W2	City of Coralville Dan Holderness 319-248-1720 dholderness@coralville.com	Water
W4	City of Tiffin Benjamin A. Carhoff, P.E. 319-545-7215 bcarhoff@hart-frederick.com	Water

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

Fiber Optic Coordination

Conduit Run ID	Approximate Station and Offset Range From	To	Sheet	Note
27C	593+30, 125' RT	594+10, RT 125'	D.4	Existing DOT-ICN Fiber Optic - Protect in Place (27C)
29D	-	-	D.6	Existing DOT-ICN Fiber Optic - Coordinate Conduit Lowering Required. See N Sheets (29D)
30B	-	-	D.10	Existing DOT-ICN Fiber Optic - Coordinate Conduit Lowering Required. See N Sheets (30B)
24B	1089+81, 185' LT	1090+83, 187' LT	E.1	Existing DOT-ICN Fiber Optic - Protect in Place (24B)
23C	1099+50, 175' LT	1100+50, 175' LT	E.1	Existing DOT-ICN Fiber Optic - Protect in Place (23C)
22C	1118+00, 187' LT	1118+80, 163' LT	E.3	Existing DOT-ICN Fiber Optic - Protect in Place (22C)
22A	1129+00, 208' LT	1130+00, 218' LT	E.3	Existing DOT-ICN Fiber Optic - Protect in Place (22A)
21G	1133+00, 258' LT	1134+00, 211' LT	E.3	Existing DOT-ICN Fiber Optic - Protect in Place (21G)
21C	1135+12, 75' LT	1135+22, 153' LT	E.5	Existing DOT-ICN Fiber Optic - Protect in Place (21C)
20C	1143+90, 122' LT	1144+90, 168' LT	E.5	Existing DOT-ICN Fiber Optic - Protect in Place (20C)
20D	1146+25, 194' LT	1147+05, 204' LT	E.5	Existing DOT-ICN Fiber Optic - Protect in Place (20D)
15B	1184+00, 354' LT	1185+55, 312' LT	E.7	Existing DOT-ICN Fiber Optic - Protect in Place (15B)

PLAN AND PROFILE LEGEND AND SYMBOL INFORMATION SHEET

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

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER IM-080-6(372)239--13-52	SHEET NUMBER D.1

1:02:23 PM 8/12/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_lgd.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 32

CLEAR CREEK TWP.
T-80N R-7W
SEC. 33

535 540 545 550 555 560 565

STA. 549+13.40
BEGIN PROJECT

STA. 557+90.00
BEGIN PCC PAVING

Sta. 558+52.3, 10.4' Lt.
24" x 66.3' Conc. Pipe
DA = Median Only

Extended LT
with 24" x 16' RCP
U.A.C.

(80WWBMWT)

(80WEBMWT)

INTERSTATE 80

Sta. 558+29.1
Skew 35° Rt. Ah.
48" x 199.2' Conc. Pipe
DA = 29 Ac. - F-R

Extend RT
with 48" x 12' RCP
F.L. = Lt. U.A.C.
Rt. 734.61

0 100
FEET

I-80

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.2

3:14:57 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

780
770
760
750
740
730
720
710

Lt
Rt

BEGIN 34' MEDIAN
Sta. 564+40.00
Elev. 746.39

VPI +21.213
Elv 747.55
Len 500.00 ft
K = 363

END MEDIAN TRANSITION
Sta. 564+40.00
Elev. 746.87

TIE-IN
BEGIN CLOSED MEDIAN
BEGIN MEDIAN TRANSITION
Sta. 557+90.00
Elev. 742.24

VPC +71.21
Elev. 745.05

+1.000%

-0.376%

+90 Rt.
738.55

-3.74%
Rt. DG

+0.84% Rt. Ditch Grade

+0.94% Lt. Ditch Grade

+77 Lt.
733.04

+67 Lt.
732.50

+05 Rt.
735.00

+85 Rt.
735.00

+96 Rt.
734.70

I-80

Lt Med Rt

U.A.C.
U.A.C.
U.A.C.

Ditch Grade
Closed Median With Intakes
Ditch Grade

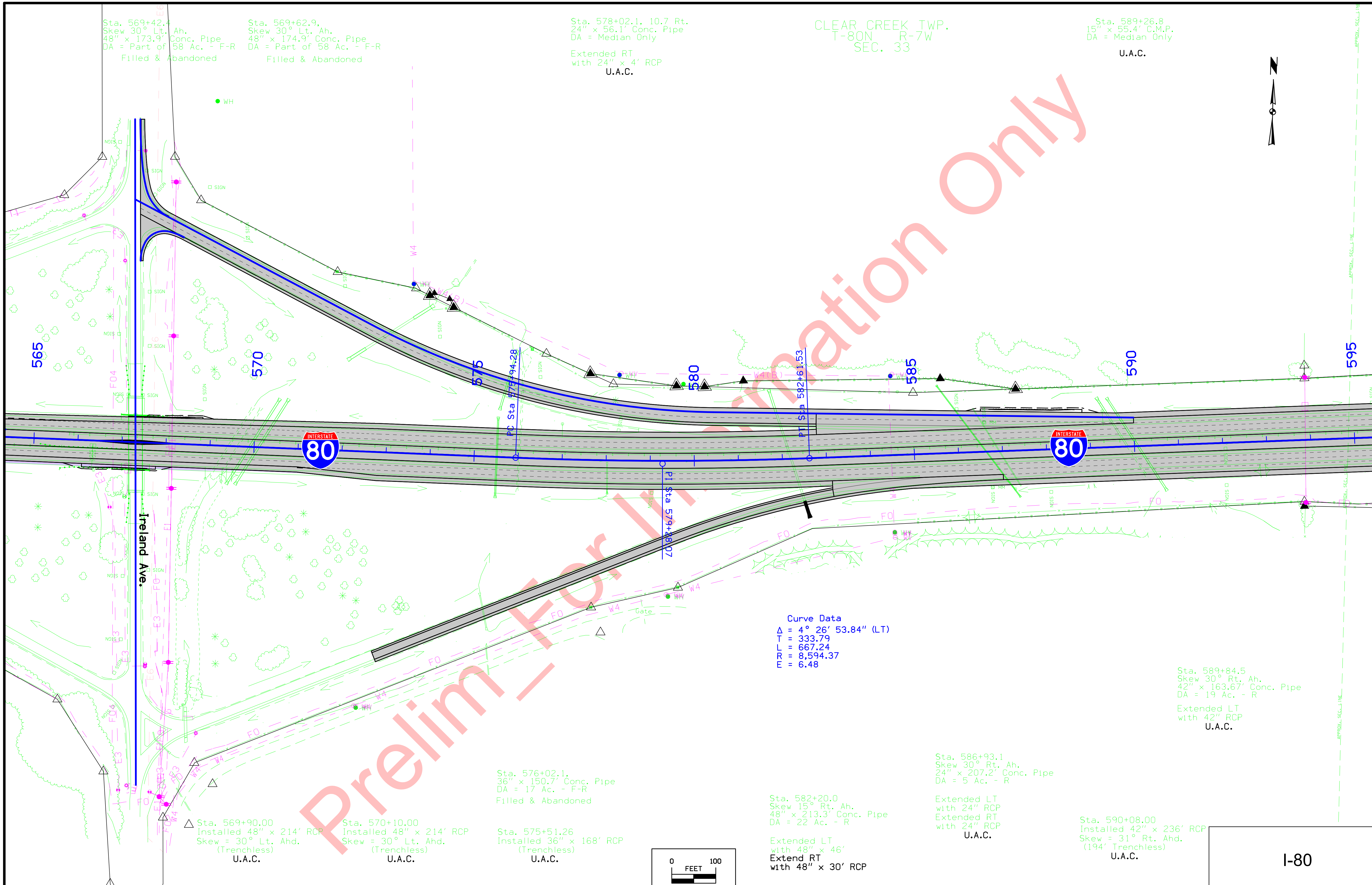
Lt Med Rt

742.34 742.59 742.84 743.09 743.34 743.59 743.84 744.09 744.34 744.59 744.84 745.09 745.33 745.55 745.75 745.94 746.11 746.26 746.40 746.52 746.62 746.70 746.77 746.82 746.85 746.87 746.39 746.37 746.33

535 540 545 550 555 560 565

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.3

3:14:58 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn



Sta. 569+42.4
Skew 30° Lt. Ah.
48" x 173.9' Conc. Pipe
DA = Part of 58 Ac. - F-R
Filled & Abandoned
Sta. 569+62.9
Skew 30° Lt. Ah.
48" x 174.9' Conc. Pipe
DA = Part of 58 Ac. - F-R
Filled & Abandoned
Sta. 578+02.1, 10.7 Rt.
24" x 56.1' Conc. Pipe
DA = Median Only
Extended RT
with 24" x 4' RCP
U.A.C.
CLEAR CREEK TWP.
T-80N R-7W
SEC. 33
Sta. 589+26.8
15" x 55.4' C.M.P.
DA = Median Only
U.A.C.
565
570
575
580
585
590
595
PC Sta 573+94.28
PT Sta 582+61.53
PI Sta 579+28.07
80
Ireland Ave.
Curve Data
Δ = 4° 26' 53.84" (LT)
T = 333.79
L = 667.24
R = 8,594.37
E = 6.48
Sta. 589+84.5
Skew 30° Rt. Ah.
42" x 163.67' Conc. Pipe
DA = 19 Ac. - R
Extended LT
with 42" RCP
U.A.C.
Sta. 586+93.1
Skew 30° Rt. Ah.
24" x 207.2' Conc. Pipe
DA = 5 Ac. - R
Extended LT
with 24" RCP
Extended RT
with 24" RCP
U.A.C.
Sta. 576+02.1
36" x 150.7' Conc. Pipe
DA = 17 Ac. - F-R
Filled & Abandoned
Sta. 582+20.0
Skew 15° Rt. Ah.
48" x 213.3' Conc. Pipe
DA = 22 Ac. - R
Extended LT
with 48" x 46'
Extend RT
with 48" x 30' RCP
Sta. 590+08.00
Installed 42" x 236' RCP
Skew = 31° Rt. Ahd.
(194' Trenchless)
U.A.C.
Sta. 569+90.00
Installed 48" x 214' RCP
Skew = 30° Lt. Ahd.
(Trenchless)
U.A.C.
Sta. 570+10.00
Installed 48" x 214' RCP
Skew = 30° Lt. Ahd.
(Trenchless)
U.A.C.
Sta. 575+51.26
Installed 36" x 168' RCP
(Trenchless)
U.A.C.
0 FEET 100
I-80
Prelim_For Information Only

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.4

3:14:59 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

780
770
760
750
740
730
720
710

VPT +71.21
Elev. 746.13
+0.84% RDG
+0.94% LDG
+45 Rt.
741.20
+45 Lt.
741.20
+05 Rt.
742.90
+05 Lt.
742.89
+36 Rt.
737.00
+25 Rt.
737.50
4.50% RDG
4.45% Lt. DG
+62 Rt.
737.00
+70 Rt.
737.50
+2.80% RDG
+40 Lt.
732.43
+50 Lt.
731.80
+45 Rt.
739.60
-0.40% Rt. Ditch Grade
+2.05% Lt.
Ditch Grade
+87 Lt.
732.37
+77 Lt.
731.80
+51 Rt.
737.40
+40 Rt.
737.62
-0.376%
-0.88% Lt. DG
+50 Lt.
737.76
VPI +95.000
Elv 741.90
Len 350.00 ft
K = 399
+60 Rt.
737.62
+0.55% Rt. Ditch Grade
+0.500%
+51 Lt.
736.00
+55 Rt.
740.34
Ramp A Gore
Ramp D Gore
+12 Rt.
738.84
+00 Rt.
741.76
+1.55% Rt.
Ditch Grade
VPI +00.000
Elv 746.43
Len 450.00 ft
K = 450
+0.500%
-0.500%
-0.50% Rt.
Ditch Grade
+45 Rt.
740.53
+55 Rt.
740.20
+60 Rt.
738.30
+0.60% Rt.
Ditch Grade
+65 Rt.
740.53
+12 Rt.
741.41
-2.10% Rt. DG
+00 Lt.
738.45
+00 Rt.
740.06
+00 Lt.
739.41
+0.80% Rt. DG
+0.24% Lt. Ditch Grade
-1.58% Lt. DG
+80 Rt.
738.30
+70 Rt.
737.90

I-80

Lt Med Rt	DG	Ireland Ave.	Ditch Grade	Variable - V Ditch	No Ditch	Ditch Grade	Lt Med Rt
		Closed Median With Intakes			Closed Median With Intakes		
	DG	Ireland Ave. 5' Ditch	Ditch Grade	Variable - V Ditch		Ditch Grade	

746.28 746.21 746.12 746.02 745.93 745.84 745.74 745.65 745.55 745.46 745.37 745.27 745.18 745.08 744.99 744.90 744.80 744.71 744.61 744.52 744.42 744.33 744.24 744.14 744.05 743.95 743.86 743.77 743.67 743.58 743.48 743.39 743.30 743.20 743.11 743.01 742.92 742.83 742.73 742.64 742.54 742.46 742.39 742.34 742.31 742.29 742.28 742.29 742.32 742.36 742.42 742.49 742.58 742.68 742.80 742.93 743.05 743.18 743.30 743.43 743.55 743.68 743.80 743.93 744.05 744.18 744.30 744.43 744.55 744.68 744.80 744.93 745.05 745.18 745.30 745.42 745.53 745.62 745.69 745.76 745.80 745.84 745.86 745.87 745.86 745.84 745.80 745.76 745.69 745.62 745.53 745.42 745.30 745.18 745.05 744.93 744.80 744.68 744.55 744.43 744.30 744.18 744.05 743.93 743.80 743.68 743.55 743.43 743.30 743.18 743.05 742.93 742.80 742.68 742.55 742.43 742.30 742.18 742.05 741.93

565 570 575 580 585 590 595

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.5

3:15:00 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

Sta. 606+27.0
Skew 45° Rt. Ah.
5' x 5' X 241.1' R.C.B.
DA = 72 Ac. - R

Extended RT
with 66" x 68' RCP
Extended LT
with 102"x62"x44' RF-41 arch pipe
U.A.C.

Sta. 609+03.0, 11.6' Lt.
24" X 62.3' Conc. Pipe
DA = Median Only

Extended LT
with 24" x 40' RCP
U.A.C.

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

Sta. 618+02.2
Skew 30° Rt. Ah.
30" x 161.1' Conc. Pipe
DA = 7 Ac. - R

Extended LT
with 24" x 10' RCP
Filled & Abandoned RT
U.A.C.

Sta. 617+79.00
Installed 30" x 298' RCP
Skew = 30° Rt. Ahd.
(200' Trenchless)
U.A.C.

Sta. 618+62.9
15" x 59.2' C.M.P.
DA = Median Only
U.A.C.

30" x 113.1'
Conc. Pipe
Remove

595 600 605 610 615 620 625

INTERSTATE 80

Ramp C

Ramp E

Ramp B

30" x 41.38'
C.M.P.
Remove

24" x 51.71'
Remove

Kansas Ave.

CONCENTRIC CURVE

Sta. 599+02.3, 13.3 Rt.
24" x 54.68' Conc. Pipe
DA = Median Only

Extended RT
with 24" x 6' RCP
U.A.C.

Sta. 601+42.5
Skew 30° Rt. Ah.
30" x 192.9' Conc. Pipe
DA = 14 Ac. - R

Filled & Abandoned

Sta. 600+55.00
Installed 30" x 226' RCP
(192' Trenchless)
U.A.C.

Sta. 605+02.5, 11.5' Rt.
24" x 54.5' Conc. Pipe
DA = Median Only

Extended RT
with 24" x 32' RCP
U.A.C.

Sta. 622+50.00
Installed 36" x 31.0' RCP
(Trenchless)
U.A.C

0 100
FEET

I-80

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.6

790
780
770
760
750
740
730
720

VPI +00.000
Elv 737.93
Len 500.00 ft
K = 236

VPI +50.000
Elv 772.65
Len 1,900.00 ft
K = 414

Ramp B Gore
RampC/E Gore

-0.76% Rt. Ditch Grade
+30 Lt. 737.36
+00 Lt. 732.60
-1.48% Lt. DG
+55 Lt. 728.82
+45 Rt. 734.40
+0.84% Rt. Ditch Grade
+65 Rt. 734.41
-0.500%
+80 Rt. 736.22
+1.615%
-0.98% Rt. Ditch Grade
+85 Rt. 732.26
+95 Rt. 731.80
+25 Rt. 732.19
+15 Rt. 731.80
+00 Lt. 744.31
+1.38% Lt. Ditch Grade
+2.08% Rt. Ditch Grade
+09 Lt. 754.10
+1.78% Lt. Ditch Grade
+50 Rt. 755.59
+0.82% Rt. Ditch Grade
+40 Lt. 760.00
+20 Rt. 756.98
+90 Lt. 752.54
-0.40% Lt. DG
+28 Lt. 751.99
+1.615%

I-80

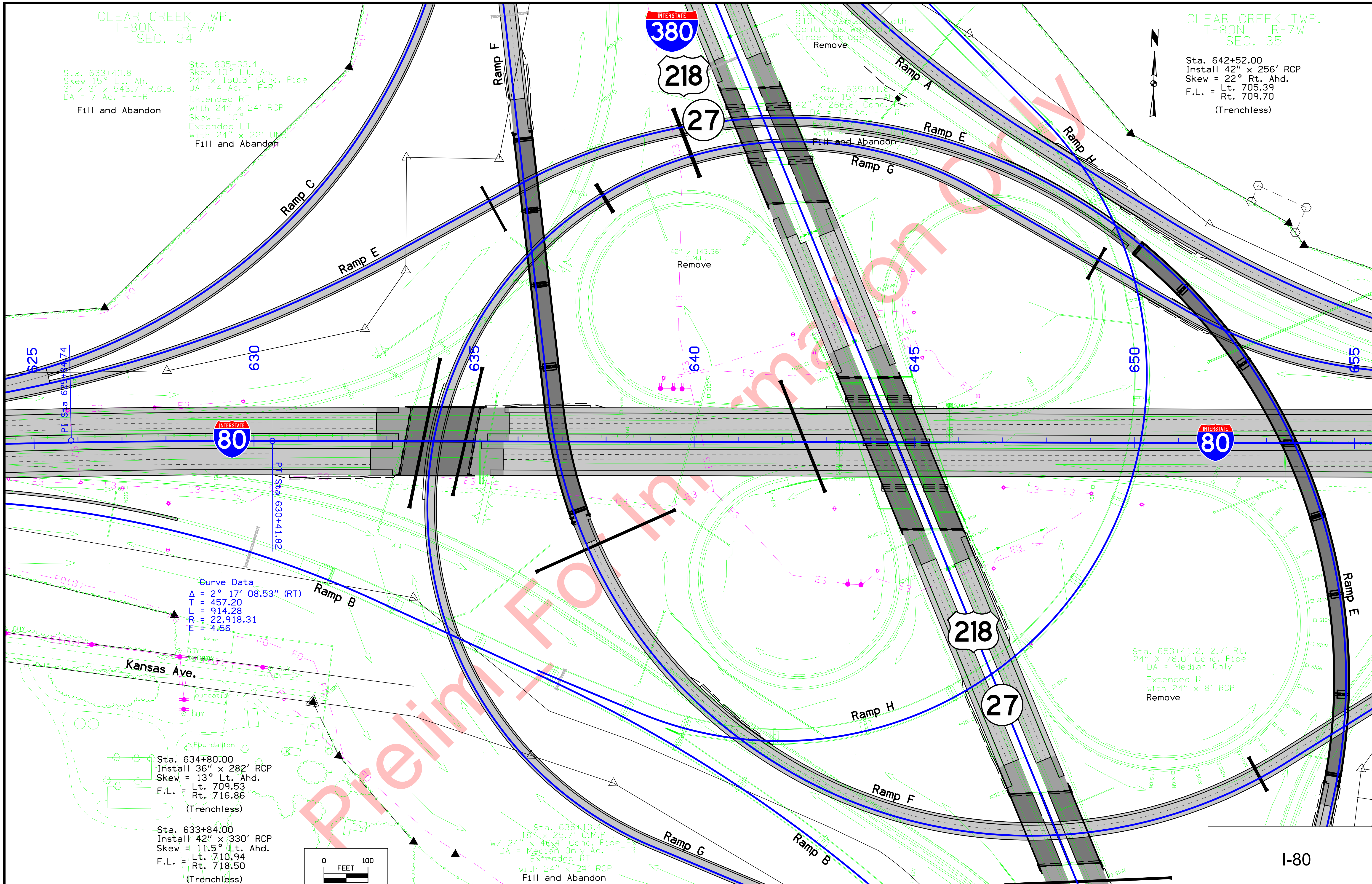
Lt	No Ditch	Ditch Grade	No Ditch	Ditch Grade	Var - V Ditch	DG	Variable - V Ditch	Lt
Med	Closed Median With Intakes							Med
Rt	Ditch Grade				Var-V Ditch		Variable - V Ditch	Rt

741.80 741.68 741.55 741.43 741.30 741.18 741.05 740.93 740.80 740.68 740.55 740.43 740.30 740.18 740.05 739.93 739.80 739.68 739.55 739.43 739.30 739.18 739.07 738.98 738.92 738.89 738.89 738.91 738.95 739.03 739.13 739.25 739.40 739.58 739.79 740.02 740.28 740.56 740.87 741.21 741.58 741.97 742.37 742.77 743.18 743.58 743.99 744.39 744.79 745.20 745.60 746.00 746.41 746.81 747.22 747.62 748.02 748.43 748.83 749.23 749.64 750.04 750.45 750.85 751.25 751.66 752.06 752.46 752.87 753.27 753.68 754.08 754.48 754.89 755.29 755.69 756.10 756.50 756.91 757.31 757.71 758.09 758.45 758.80 759.14 759.46 759.77 760.06 760.33 760.59 760.84 761.07 761.28 761.48 761.67 761.84 761.99 762.13 762.25 762.36 762.46 762.54 762.60 762.65 762.68 762.70 762.70 762.69 762.67 762.62 762.57 762.49 762.41 762.30 762.19 762.05 761.91 761.74 761.57 761.37

595 600 605 610 615 620 625

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.7

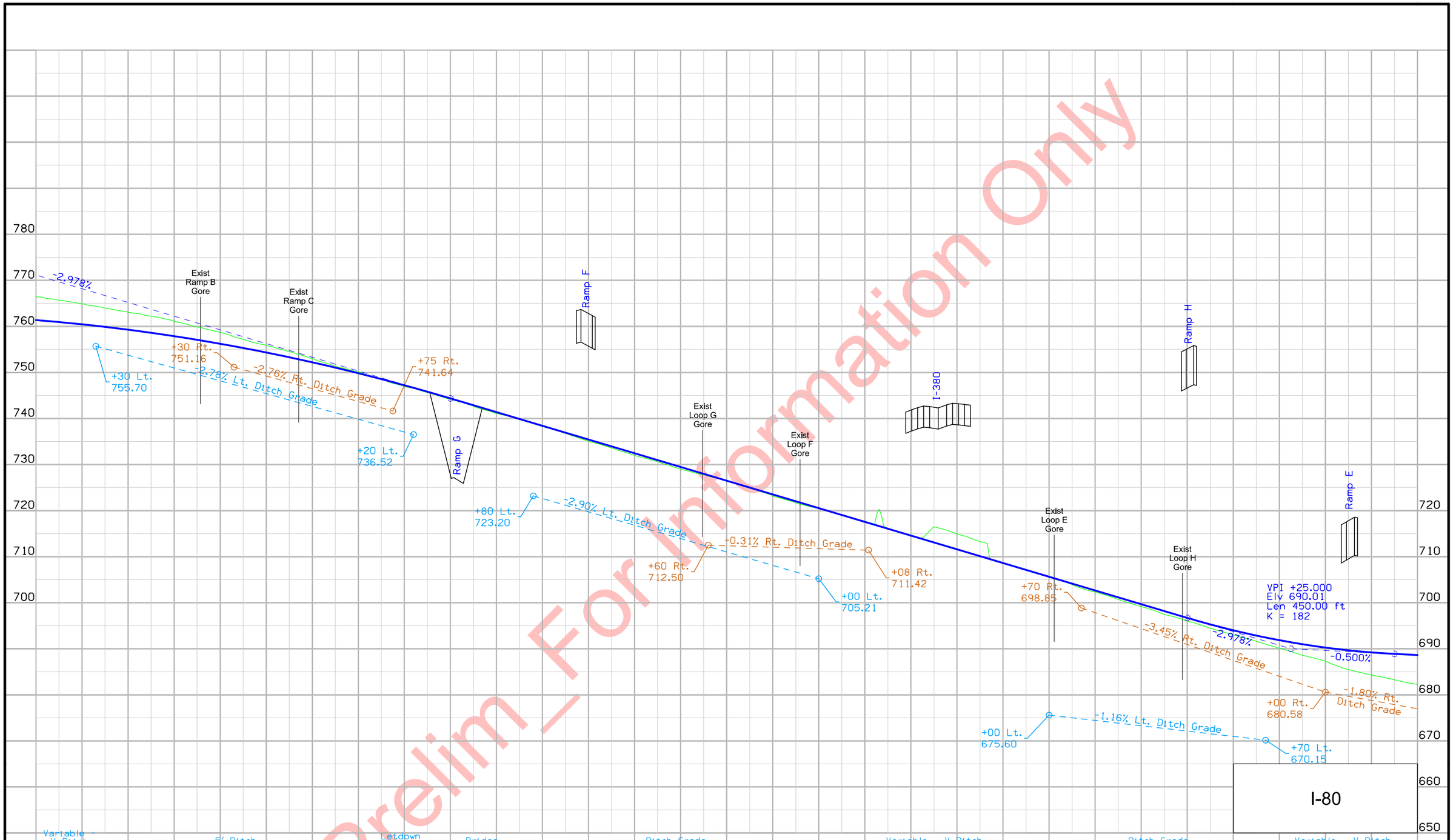
3:15:10 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn



CLEAR CREEK TWP.
T-80N R-7W
SEC. 34
CLEAR CREEK TWP.
T-80N R-7W
SEC. 35
Sta. 633+40.8
Skew 15° Lt. Ah.
3' x 3' x 543.7' R.C.B.
DA = 7 Ac. - F-R
Fill and Abandon
Sta. 635+33.4
Skew 10° Lt. Ah.
24" x 150.3' Conc. Pipe
DA = 4 Ac. - F-R
Extended RT
With 24" x 24' RCP
Skew = 10°
Extended LT
With 24" x 22' UNCL
Fill and Abandon
Remove
Sta. 639+91.1
Fill and Abandon
Sta. 642+52.00
Install 42" x 256' RCP
Skew = 22° Rt. Ahd.
F.L. = Lt. 705.39
Rt. 709.70
(Trenchless)
42" x 143.36' C.M.P.
Remove
Ramp F
Ramp C
Ramp E
Ramp A
Ramp G
Ramp H
Ramp B
380
218
27
80
625
630
635
640
645
650
655
PI Sta 625+84.74
PT Sta 630+41.82
Curve Data
Δ = 2° 17' 08.53" (RT)
T = 457.20
L = 914.28
R = 22,918.31
E = 4.56
Kansas Ave.
Sta. 634+80.00
Install 36" x 282' RCP
Skew = 13° Lt. Ahd.
F.L. = Lt. 709.53
Rt. 716.86
(Trenchless)
Sta. 633+84.00
Install 42" x 330' RCP
Skew = 11.5° Lt. Ahd.
F.L. = Lt. 710.94
Rt. 718.50
(Trenchless)
0 100
FEET
Sta. 635+13.4
18" x 25.7' C.M.P.
W/ 24" x 46.4' Conc. Pipe
DA = Median Only Ac. - F-R
Extended RT
with 24" x 24' RCP
Fill and Abandon
Sta. 653+41.2, 2.7' Rt.
24" X 78.0' Conc. Pipe
DA = Median Only
Extended RT
with 24" x 8' RCP
Remove
I-80
Prelim_For Information Only

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.8

3:15:14 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.9

3:15:15 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

Sta. 658+94.5, 1.1' Rt.
24" X 77.1' Conc. Pipe
DA = Median Only
Extended RT
with 24" x 30' RCP
Fill and Abandon

Sta. 660+50 WB
159'-2" x 57'-3"
P.P. Conc. Beam Bridge
Remove

Sta. 660+50 EB
159'-2" x 73'-2"
P.P. Conc. Beam Bridge
Remove

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

Sta. 672+00.5, 1.6' Rt.
24" X 92.2' Conc. Pipe
DA = Median Only
Fill and Abandon

Sta. 676+00.3, 3.3' Rt.
24" Conc. Pipe
DA = Median Only
Fill and Abandon

Sta. 676+55.00
Install 48" x 280' RCP
F.L. = Lt. 668.16
Rt. 667.29
(Trenchless)

Sta. 682+59.9
24" Conc. Pipe
DA = Median Only
U.A.C.

N

Clear Creek

655 660 665 670 675 680 685

SAN. 2

ST S ST

Ramp A

Ramp G

(80EWBMWT)

(80EEBMWT)

INTERSTATE 80

Curve Data
Δ = 1° 32' 54.91" (Rt)
T = 309.74
L = 619.43
R = 22,918.31
E = 2.09

Sta 673+07.90

Sta 679+27.34

30"x66' Uncl. Pipe
U.A.C.

E1

FO

Ramp E

Ramp F

Ramp D

Clear Creek

Clear Creek

Clear Creek

Block Wall

340th St

0 100
FEET

Sta. 678+99.7
4' x 4' x 152' R.C.B.
W/ 54" x 33.5' Conc. Pipe Ext. Lt.
W/ 36" x 42' Plastic Pipe Ext. Rt.
DA = 49 Ac. - R
Extended RT
with 36" x 46' UNCL
Fill and Abandon

I-80

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.10

3:15:18 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

720
710
700
690
680
670
660
650

VPI +00.000
Elv 680.14
Len 400.00 ft
K = 343

VPI +45.000
Elv 687.11
Len 600.00 ft
K = 257

-0.500%
+0.667%
+0.667%
+3.000%
-0.30% Lt. Ditch Grade
-0.95%
-0.56% Lt. Ditch Grade
-1.80% Rt. Ditch Grade

+40 Rt.
667.26

+50 Lt.
675.08

+59 Lt.
674.75

+52 Lt.
673.57

+00 Lt.
673.41

+00 Lt.
669.50

I-80

Foreslope
Lt. 6:1/3.5:1 Trans. 6:1/3:1 6:1/3:1 w/Variable Ditch Width
Rt. 6:1/3.5:1 Trans. 6:1/3:1

Lt Med Rt

Variable - V Ditch | Bridge | Variable - V Ditch | No Ditch | Ditch Grade

Ditch Grade | Bridge | Variable - V Ditch | Closed Median With Intakes | No Ditch

688.51 688.39 688.26 688.14 688.01 687.89 687.76 687.64 687.51 687.39 687.26 687.14 687.01 686.89 686.76 686.64 686.51 686.39 686.26 686.14 686.01 685.89 685.76 685.64 685.51 685.39 685.26 685.14 685.01 684.89 684.76 684.64 684.51 684.39 684.26 684.14 684.01 683.89 683.76 683.64 683.51 683.39 683.26 683.14 683.01 682.89 682.76 682.64 682.51 682.39 682.26 682.14 682.01 681.89 681.76 681.64 681.51 681.39 681.26 681.14 681.02 680.92 680.84 680.78 680.74 680.72 680.71 680.72 680.75 680.80 680.87 680.95 681.05 681.17 681.31 681.47 681.64 681.81 681.97 682.14 682.31 682.47 682.64 682.81 682.97 683.14 683.31 683.47 683.64 683.81 683.97 684.14 684.31 684.47 684.64 684.81 684.98 685.14 685.33 685.53 685.77 686.02 686.30 686.61 686.94 687.29 687.67 688.07 688.50 688.95 689.43 689.93 690.45 691.00 691.57 692.17 692.79 693.44 694.11 694.80

655 660 665 670 675 680 685

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.11

3:15:19 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

Sta. 693+00.0
562'-0 x 78'
CONTINUOUS WELDED
GIRDER BRIDGE

Sta. 697+10.1, 2.4' Rt.
24" Conc. Pipe
DA = Median Only
U.A.C.

Sign Truss
(By Other Plan)
(Medain footing
previously constructed)

24" x 40' C.M.P.
W/ 30" x 12.6' C.M.P. Ext.
U.A.C

Sta. 706+90.5
24" Conc. Pipe
DA = Median Only
U.A.C.

Sta. 710+24.7
24"x 187.1' Conc. Pipe
DA = 1 Ac. - F-R
Extended with Storm Sewer
U.A.C.

CLEAR CREEK TWP.
T-80N R-7W
SEC. 36

STA. 687+00.00
END PCC PAVING

STA. 701+25.00
BEGIN HMA WIDENING
BEGIN HMA OVERLAY

STA. 705+88.50
END BARRIER REPLACEMENT

STA. 704+11.50
BEGIN BARRIER REPLACEMENT

Iowa Interstate Railroad

Sta. 711+27.3
Skew 30° Lt. Ah.
3' x 3' X 352' R.C.B.
W/ 42" x 52' Conc. Pipe Ext. Lt.
DA = 5 Ac. - F-R

Extended RT
with 42" x 72' RCP
Extend LT
with 42" x 12' RCP
Lt. 720.00
F.L. = Rt. U.A.C.

Sta. 685+00.00
Installed 36" x 336' RCP
(301' Trenchless)
U.A.C.

Sta. 689+39.7, 81.0' Lt.
24" C.M.P.
DA = Median Only
U.A.C.

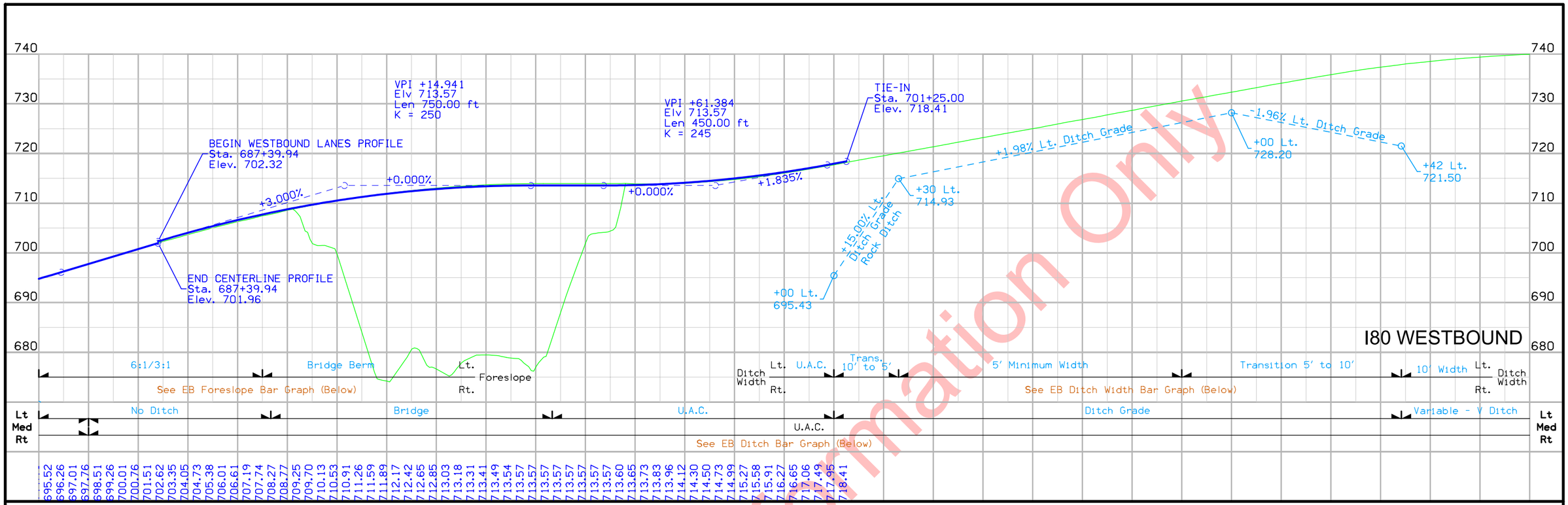
Sta. 693+00.0
562'-0 x 82'
CONTINUOUS WELDED
GIRDER BRIDGE

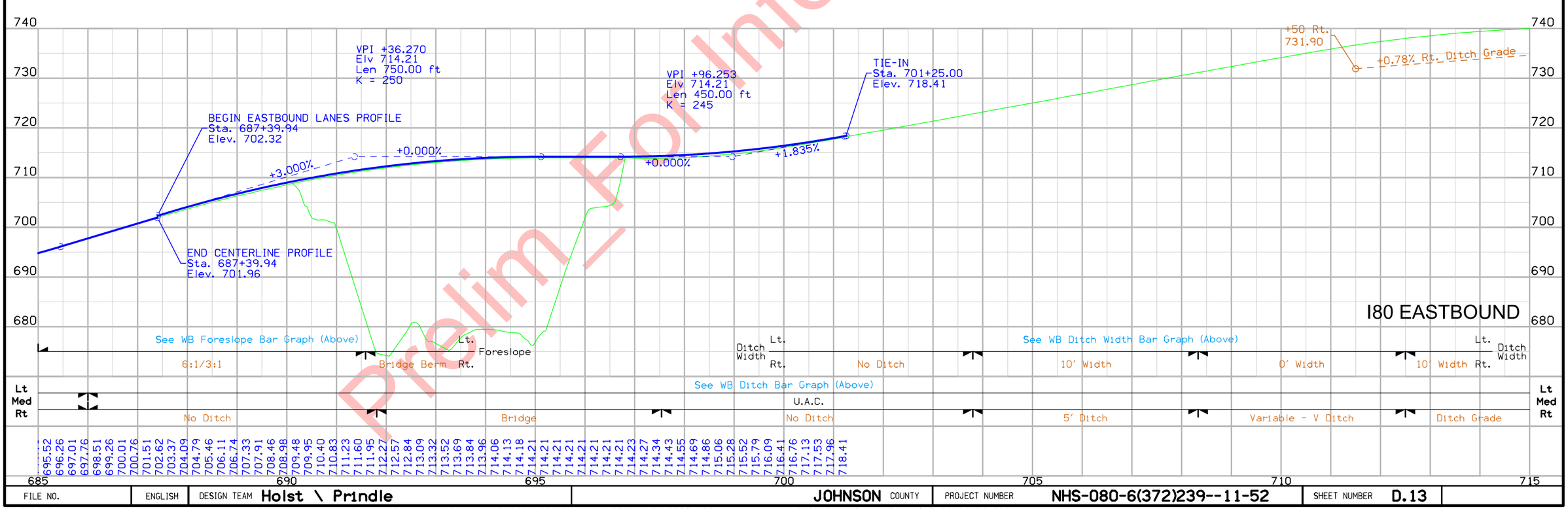
0 100
FEET

I-80

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.12

3:15:21 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn





FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.13

3:15:22 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 36

Curve Data
Δ = 17° 48′ 28.25″ (RT)
T = 897.63
L = 1,780.78
R = 5,729.58
E = 69.89

STA. 716+95.47
END HMA WIDENING
END PROJECT

PC Sta 740+40.31

Coral Ridge Avenue

965

INTERSTATE 80

AP2003004

Prelim

0 100 FEET

I-80

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.14

3:15:54 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

780
770
760
750
740
730
720
710

-0.58% Rt. Ditch Grade
+00 Rt.
735.40
+60 Rt.
732.73

I-80

Lt Med Rt

Var - V Ditch
Ditch Grade
Var - V Ditch

U.A.C.
U.A.C.
U.A.C.

715 720 725 730 735 740 745

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER D.15

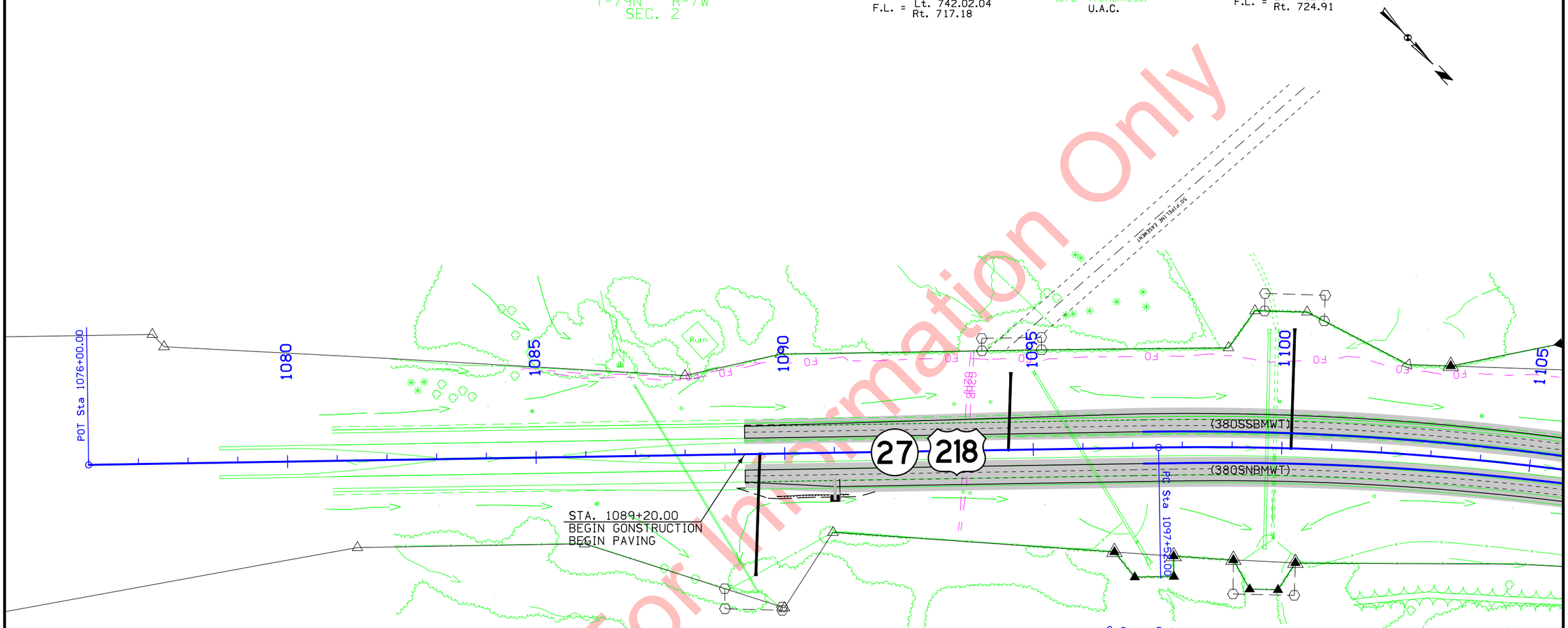
3:15:55 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_D02.dgn

CLEAR CREEK TWP.
T-79N R-7W
SEC. 2

Sta. 1094+50.00
Install 24" x 128' RCP
F.L. = Lt. 742.02.04
Rt. 717.18

Sta. 1099+70.00
Installed 48" x 426' RCP
(372' Trenchless)
U.A.C.

Sta. 1100+20.00
Install 24"x234' RCP
F.L. = Lt. 702.67
Rt. 724.91



℄ Curve Data
Δ = 23° 44' 52.81" (RT)
T = 1,204.70
L = 2,374.80
R = 5,729.58
E = 125.28

Sta. 1089+50.00
Install 24" x 238' RCP
F.L. = Lt. 742.02.04
Rt. 717.18

Sta. 1095+94.8
Skew 30° Rt. Ah.
3' x 3' x 346.0' R.C.B.
W/ Flume Outlet
DA = 13 Ac. - R

Sta. 1095+94.80
Built 3'x3'x46' RCB Extension RT
Skew = 30° Rt. Ahd.
U.A.C.

Sta. 1099+85.3
4' x 4' x 409.0' R.C.B.
Outlet Under Water
DA = 76 Ac. - R
Filled & Abandoned

Sta. 1099+85.3, 18.5' Rt.
24" x 48.5' Conc. Pipe
W/ 30" x 20.4' Plastic Pipe Ext.
DA = Median Only
Filled & Abandoned

Sta. 1087+82.2
Skew 30° Rt. Ah.
30" X 451.2' Conc. Pipe
W/ 29.6' Flume Outlet
DA = 10 Ac. - R
U.A.C.

0 100
FEET

US 218

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.1

11:25:16 AM 11/20/2019 jstrum pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn

Bench Grade — Lt. No Bench / Rt. No Bench — Bench Grade

780
770
760
750
740
730
720
710

VPI +95.230
Elv 758.62
Len 1,200.00 ft
K = 500

+0.800%

-1.600%

TIE-IN
Sta. 1089+20.00
Elev. 750.18

+20 Lt.
745.75

+50 Rt.
743.92

+75 Lt.
739.43

+00 Rt.
743.00

-0.61% Rt.
Ditch Grade

-1.78% Lt.
Ditch Grade

+50 Med.
732.34

+30 Lt.
737.79

+4.00%
Lt. BG

+2.50% Lt.
Ditch Grade

-1.25% Med.

+20 Lt.
724.04

US 218

Lt	U.A.C.	Ditch Grade	No Ditch	5' Ditch	No Ditch	5' Ditch	Lt
Med	U.A.C.	U.A.C. (3.5' Ditch)			Ditch Grade		Med
Rt	U.A.C.	Ditch Grade	4' Ditch	No Ditch		5' Ditch	Rt

750.09 749.72 749.34 748.94 748.54 748.14 747.74 747.34 746.94 746.54 746.14 745.74 745.34 744.94 744.54 744.14 743.74 743.34 742.94 742.54 742.14 741.74 741.34 740.94 740.54 740.14 739.74 739.34 738.94 738.54 738.14 737.74 737.34 736.94 736.54 736.14 735.74 735.34 734.94 734.54 734.14 733.74 733.34 732.94 732.54 732.14 731.74 731.34 730.94 730.54 730.14 729.74 729.34 728.94 728.54 728.14 727.74 727.34 726.94 726.54 726.14 725.74 725.34 724.94

1085 1090 1095 1100 1105

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.2

11:26:14 AM 11/20/2019 jstrum pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn

Sta. 1106+00.00
Install 24"x94' RCP
F.L. = Lt. 717.11
Rt. 717.11

Sta. 1115+50.00
Install 24"x156' RCP
F.L. = Lt. 688.29
Rt. 705.64

Sta. 1116+00.00
Install 24"x174' RCP
F.L. = Lt. 683.09
Rt. 705.18

CLEAR CREEK TWP.
T-79N R-7W
SEC. 2

Sta. 1118+05.9
Skew 10° Lt. Ah.
Triple
10' x 12' x 300.1' R.C.B.
DA = 9 Sq. Miles - R
Extended Triple 10'x12'x300' RCB LT
with Trip 10'x12'x31' RCB
Extended Triple 10'x12'x300' RCB RT
with Trip 10'x12'x32' RCB
U.A.C.

24"x 113.1'
C.M.P.
Removed

24"x 122.6'
C.M.P.
Removed

24" x 40.5'
Plastic
Removed

24" x 39.8'
Plastic
Removed

PI Sta 1109+56.70

1105 1110 1115 1120 1125 1130 1135

(380SSBMWT)

(380SNBMWT)

27 218

PI Sta 1121+29.80

STA. 1121+67.62
BEGIN CLOSED MEDIAN

Sta. 1111+00.00
Install 24"x130' RCP
F.L. = Lt. 708.97
Rt. 698.31

Sta. 1117+70.0, 20.1' Lt.
24" x 139.6' Conc. Pipe
W/ 24" x 9.4' C.M.P. Ext.
DA = Median Only
Removed 24" x 9.4' CMP
Extend 24" x 139.6' RCP
with 24" x 34' RCP
U.A.C.

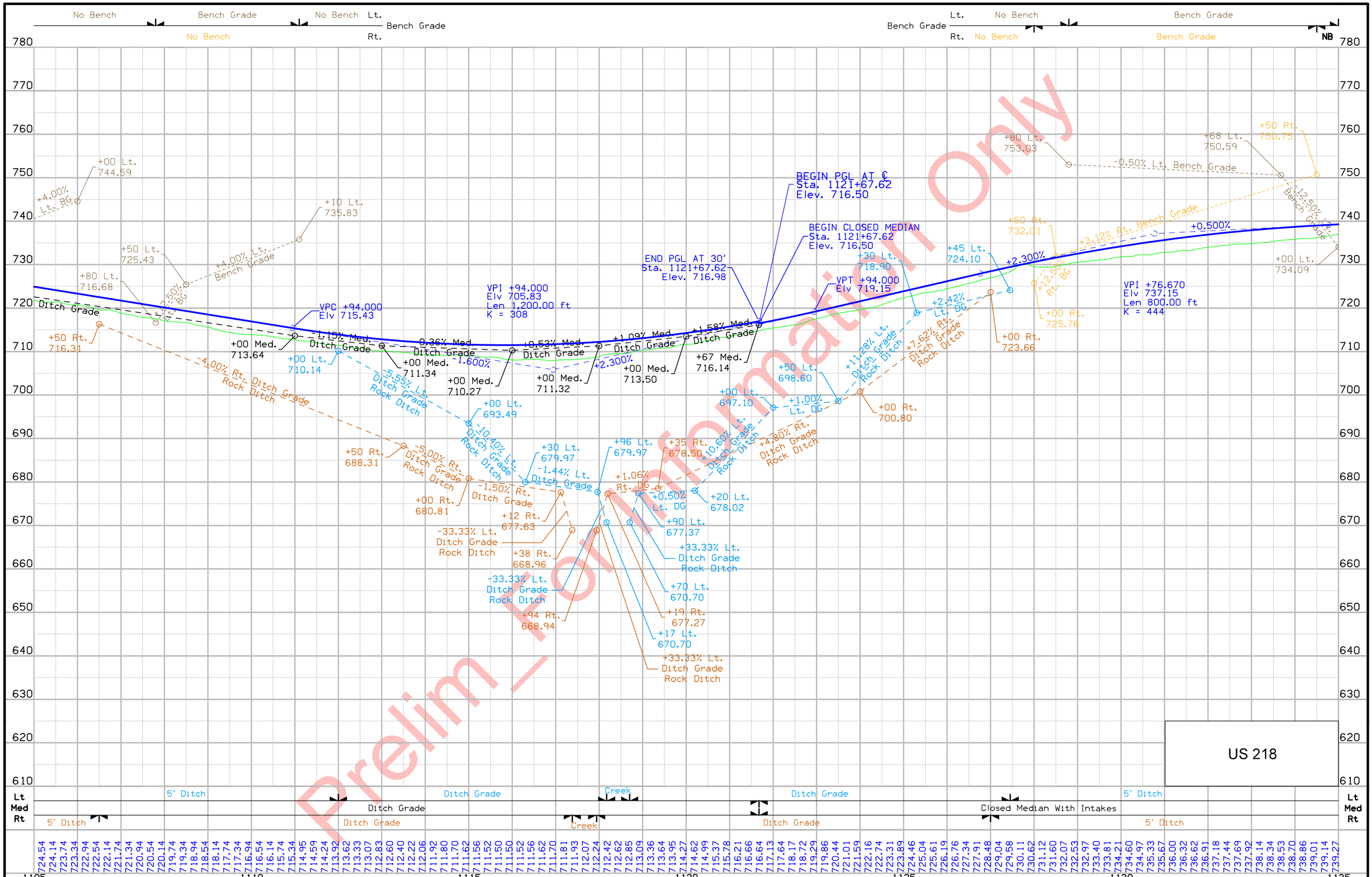
0 100
FEET

Sta. 11127+70.1
Skew 15° Rt. Ah.
24" x 170.8' Conc. Pipe
DA = 2 Ac. - R
Extended 24" x 170.8' RCP
with 24" x 10' RCP
U.A.C.

Sta. 1128+00.00
24" x 64.2' Conc. Pipe
DA = Median Only
Replaced 2 Sections
& Apron at Outlet
U.A.C.

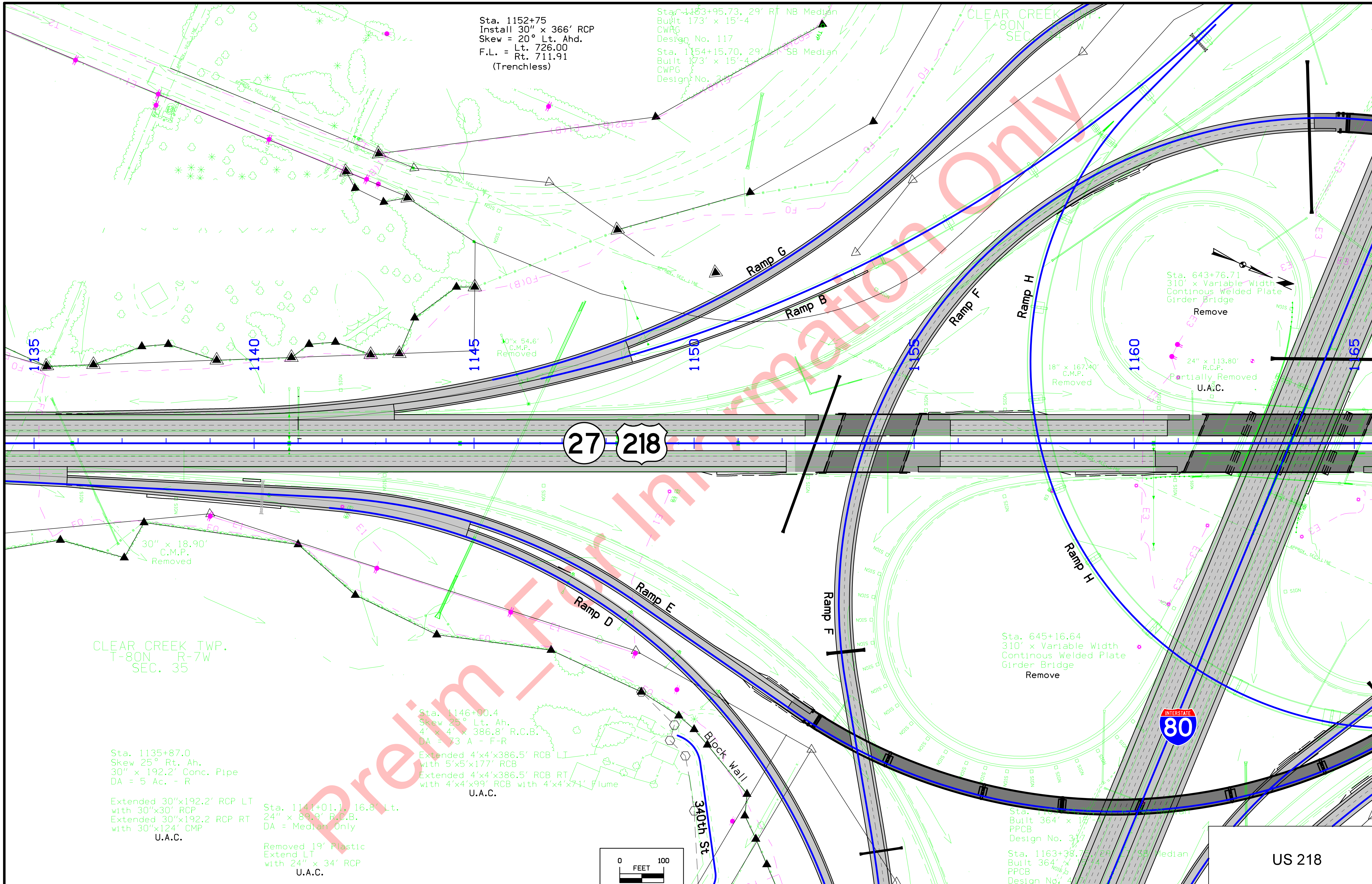
US 218

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.3



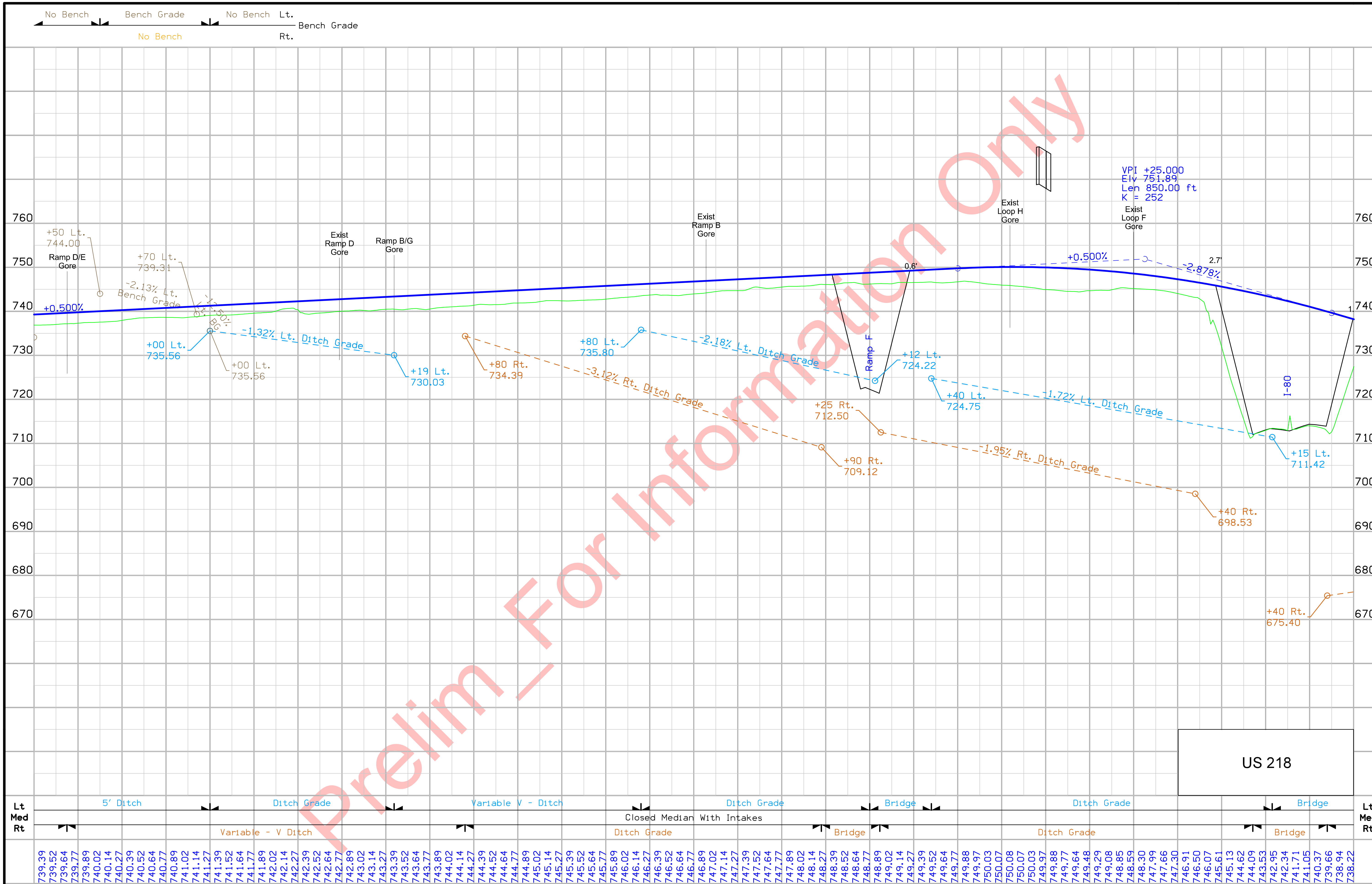
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.4

11:28:06 AM 11/20/2019 jstrum pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn


Sta. 1152+75
Install 30" x 366' RCP
Skew = 20° Lt. Ahd.
F.L. = Lt. 726.00
Rt. 711.91
(Trenchless)
CLEAR CREEK
T-80N
SEC
Ramp G
Ramp B
Ramp F
Ramp H
Sta. 643+76.71
310' x Variable Width
Continous Welded Plate
Girder Bridge
Remove
1135
1140
1145
1150
1155
1160
1165
27
218
Ramp E
Ramp D
Ramp F
Ramp H
30" x 18.90'
C.M.P.
Removed
CLEAR CREEK TWP.
T-80N R-7W
SEC. 35
Sta. 645+16.64
310' x Variable Width
Continous Welded Plate
Girder Bridge
Remove
80
Block Wall
340th St
Sta. 1135+87.0
Skew 25° Rt. Ah.
30" x 192.2' Conc. Pipe
DA = 5 Ac. - R
Extended 30"x192.2' RCP LT
with 30"x30' RCP
Extended 30"x192.2 RCP RT
with 30"x124' CMP
U.A.C.
Extended 4'x4'x386.5' RCB LT
with 5'x5'x177' RCB
Extended 4'x4'x386.5' RCB RT
with 4'x4'x99' RCB with 4'x4'x71' Flume
U.A.C.
Removed 19' Plastic
Extend LT
with 24" x 34' RCP
U.A.C.
0 100
FEET
US 218

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.5

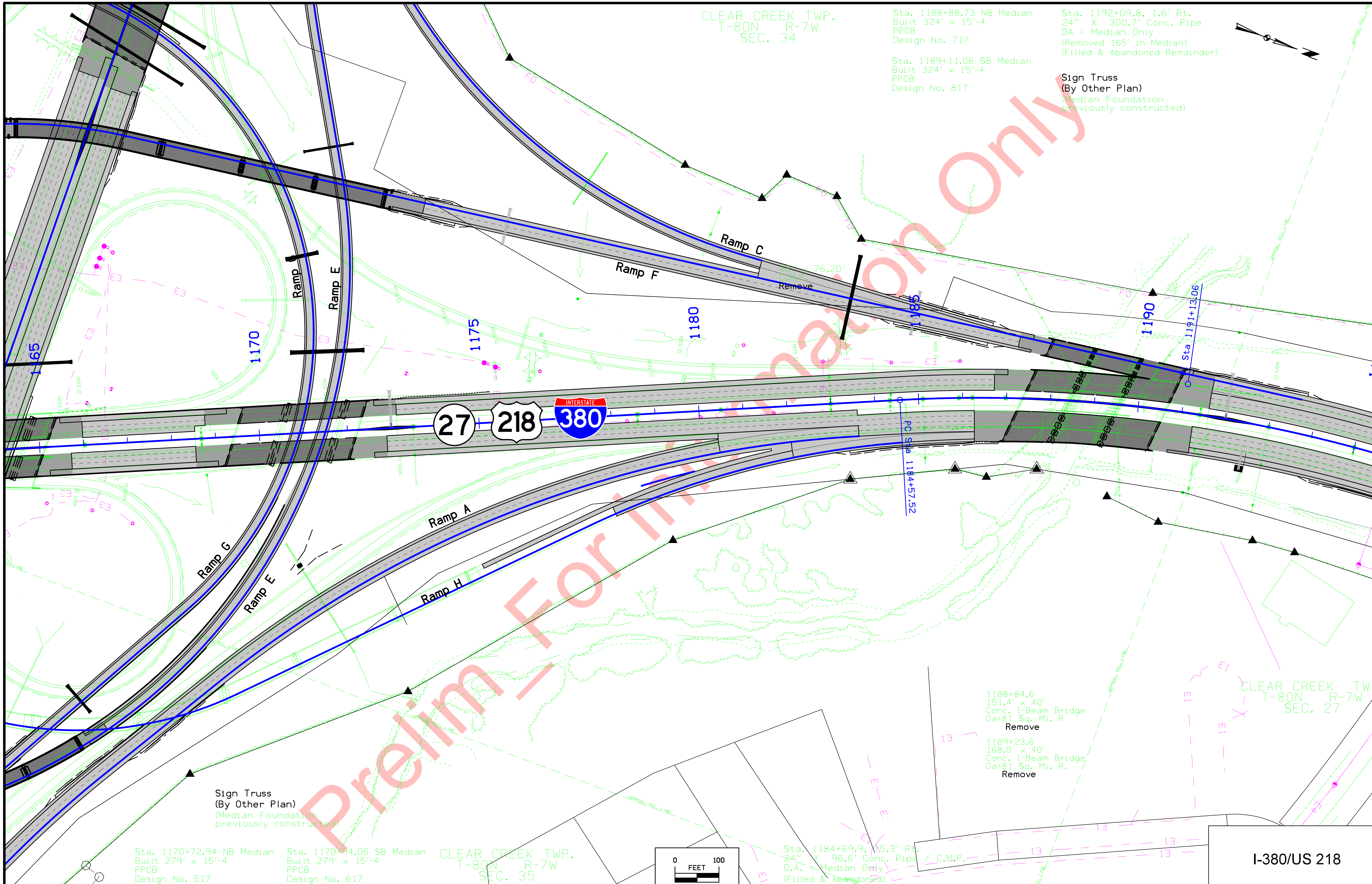
3:20:05 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn



No Bench
Bench Grade
No Bench
Lt.
Bench Grade
No Bench
Rt.
760
750
740
730
720
710
700
690
680
670
+0.500%
+50 Lt.
744.00
Ramp D/E
Gore
+70 Lt.
739.31
-2.13% Lt.
Bench Grade
+00 Lt.
735.56
+00 Lt.
735.56
-1.32% Lt. Ditch Grade
Exist
Ramp D
Gore
Ramp B/G
Gore
+19 Lt.
730.03
+80 Rt.
734.39
-3.12% Rt. Ditch Grade
+80 Lt.
735.80
Exist
Ramp B
Gore
-2.18% Lt. Ditch Grade
+90 Rt.
709.12
+25 Rt.
712.50
Ramp F
0.6'
+12 Lt.
724.22
+40 Lt.
724.75
-1.95% Rt. Ditch Grade
-1.72% Lt. Ditch Grade
Exist
Loop H
Gore
VPI +25.000
Elv 751.89
Len 850.00 ft
K = 252
Exist
Loop F
Gore
+0.500%
-2.878%
2.7'
I-80
+15 Lt.
711.42
+40 Rt.
698.53
+40 Rt.
675.40
Prelim _For Information Only
US 218
Lt
Med
Rt
5' Ditch
Ditch Grade
Variable V - Ditch
Ditch Grade
Bridge
Ditch Grade
Bridge
Closed Median With Intakes
Variable - V Ditch
Ditch Grade
Bridge
Ditch Grade
Bridge
739.39 739.52 739.64 739.77 739.89 740.02 740.14 740.27 740.39 740.52 740.64 740.77 740.89 741.02 741.14 741.27 741.39 741.52 741.64 741.77 741.89 742.02 742.14 742.27 742.39 742.52 742.64 742.77 742.89 743.02 743.14 743.27 743.39 743.52 743.64 743.77 743.89 744.02 744.14 744.27 744.39 744.52 744.64 744.77 744.89 745.02 745.14 745.27 745.39 745.52 745.64 745.77 745.89 746.02 746.14 746.27 746.39 746.52 746.64 746.77 746.89 747.02 747.14 747.27 747.39 747.52 747.64 747.77 747.89 748.02 748.14 748.27 748.39 748.52 748.64 748.77 748.89 749.02 749.14 749.27 749.39 749.52 749.64 749.77 749.88 749.97 750.03 750.07 750.08 750.07 750.03 749.97 749.88 749.77 749.64 749.48 749.29 749.08 748.85 748.59 748.30 747.99 747.66 747.30 746.91 746.50 746.07 745.61 745.13 744.62 744.09 743.53 742.95 742.34 741.71 741.05 740.37 739.66 738.94 738.22
1135
1140
1145
1150
1155
1160
1165

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.6

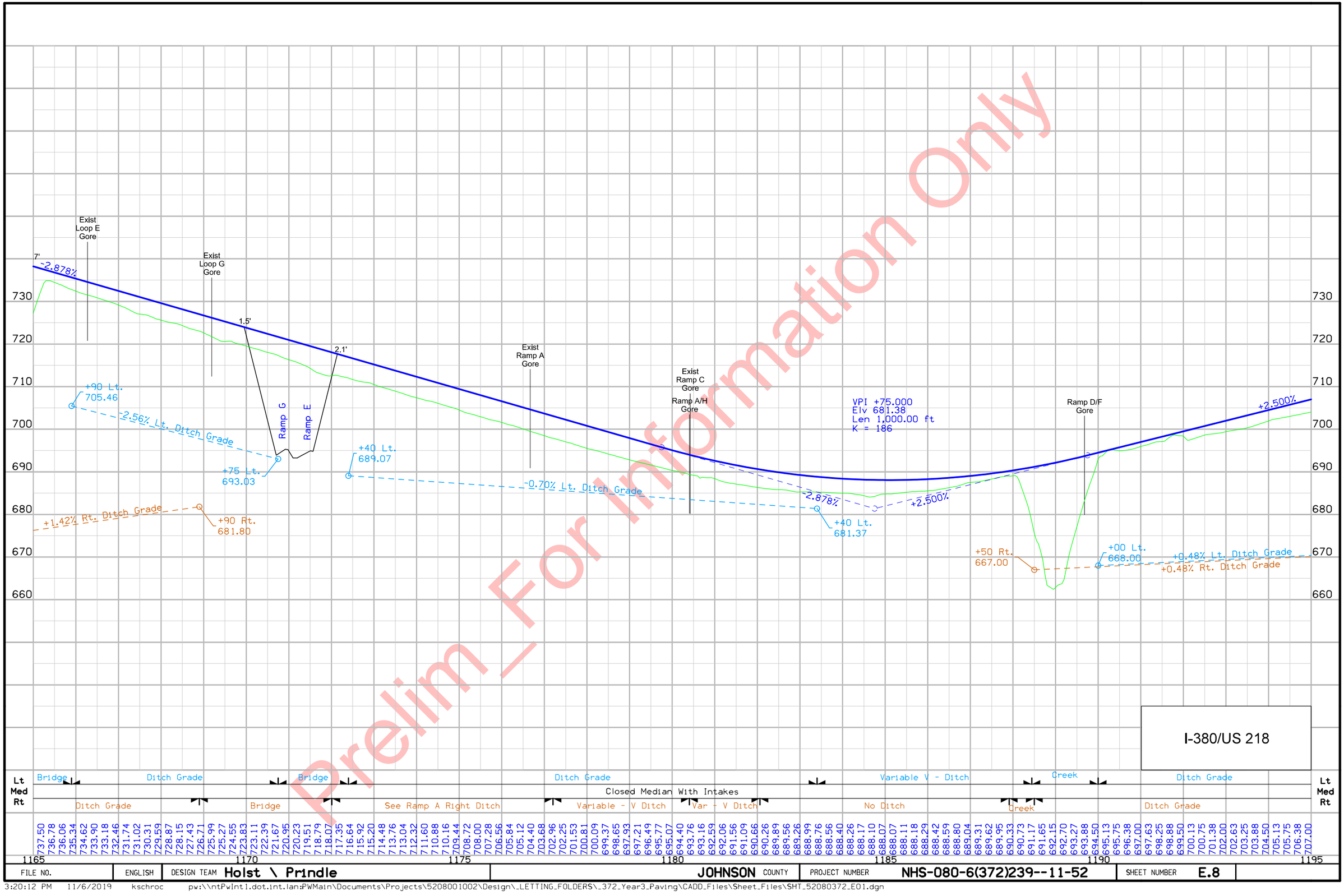
3:20:06 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn


CLEAR CREEK TWP.
T-80N R-7W
SEC. 34
Sta. 1188+88.73 NB Median
Built 324' x 15'-4
PPCB
Design No. 717
Sta. 1189+11.06 SB Median
Built 324' x 15'-4
PPCB
Design No. 817
Sta. 1192+09.8, 1.6' Rt.
24" X 300.7' Conc. Pipe
DA = Median Only
(Removed 165' in Median)
(Filled & Abandoned Remainder)
Sign Truss
(By Other Plan)
(Median Foundation
previously constructed)
Ramp C
Ramp F
Ramp G
Ramp E
Ramp A
Ramp H
76.20'
Remove
1165
1170
1175
1180
1185
1190
1195
Sta 1191+13.06
PC Sta 1184+57.52
27
218
INTERSTATE
380
1188+84.6
151.4' x 40'
Conc. I-Beam Bridge
Da=81 Sq. Mi. R
Remove
1189+23.6
168.0' x 40'
Conc. I-Beam Bridge
Da=81 Sq. Mi. R.
Remove
CLEAR CREEK TWP.
T-80N R-7W
SEC. 27
Sign Truss
(By Other Plan)
(Median Foundation
previously constructed)
Sta. 1170+72.94 NB Median
Built 279' x 15'-4
PPCB
Design No. 517
Sta. 1170+94.06 SB Median
Built 279' x 15'-4
PPCB
Design No. 617
CLEAR CREEK TWP.
T-80N R-7W
SEC. 35
0 100
FEET
Sta. 1184+69.9, 15.3' Rt.
24" X 96.6' Conc. Pipe / C.M.P.
D.A. = Median Only
(Filled & Abandoned)
Prelim_For Information Only

I-380/US 218

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.7

3:20:11 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.8

3:20:12 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn

Sta. 1199+43.59
163' 10" x 40'
Pretensioned Prestressed
Gonc. Beam Bridge

Remove

Sta. 1199+26.90
163' 10" x 40'
Pretensioned Prestressed
Gonc. Beam Bridge

Remove

Sta. 51196+71.96
Installed 60"x38' Steel
(38' Trenchless)
U.A.C.

60" x 32.9'
Conc. Pipe
Filled & Abandoned

Sta. 1204+07.7
18" X 17.1' C.M.P.
24" X 156.3' C.M.P.
D.A. = Median Only
Removed 18"x17.1' CMP
Filled & Abandoned 24" CMP

CLEAR CREEK TWP.
T-80N R-7W
SEC. 27

Sign Truss
(By Other Plan)
(Median Foundation
previously constructed)

STA. 1217+90.00
END CONSTRUCTION
END PCC PAVING

1195 1200 1205 1210 1215 1220 1225

(380NSBMWT)

(380NNBMWT)

27 218 INTERSTATE 380

PT Sta 1197+51.50

24" x 204.0'
Conc. Pipe
U.A.C.

STA. 1203+42.62

Iowa Interstate Railroad

24" x 203.0'
Conc. Pipe
U.A.C.

(ENT US6)

Sta. 51201+82.28
Installed 72"x54' Steel
(54' Trenchless)
U.A.C.

Sta. 1199+32.69 NB Median
Built 224' x 15'-4
PPCB
Design No. 917

Sta. 1199+43.27 SB Median
Built 224' x 15'-4
PPCB
Design No. 1017

72" x 34.3'
Conc. Pipe
Filled & Abandoned

Sta. 1205+65.87 NB Median
Built 284' x 15'-4
PPCB
Design No. 1117

Sta. 1205+83.60 SB Median
Built 284' x 15'-4
PPCB
Design No. 1217

0 100 FEET

Sta. 1209+13.1
18" X 186.5' C.M.P.
24" X 113.8' C.M.P.
D.A. = Median Only
Removed 18"x186.5' CMP
Filled & Abandoned 24" CMP

I-380

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.9

3:20:18 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn

Bench Grade — Lt. / Rt. — No Bench — Bench Grade — Bench Grade

760 750 740 730 720 710 700 690 680 670 660 650

VPI +60.000
Elv 721.00
Len 910.00 ft
K = 248

+2.500% -1.173%

END 34' MEDIAN
Sta. 1210+00.00
Elev. 713.96

BEGIN TRANSITION TO OPEN MEDIAN
Sta. 1210+00.00
Elev. 714.44

END PCC PAVING
END MEDIAN TRANSITION
STA. 1217+90.00
Elev. 732.69

+90 Rt.
756.90

+0.50% Rt. Bench Grade

+80 Rt.
754.85

+10 Rt.
741.70

-0.50% Rt. Bench Grade

+90 Rt.
739.80

-1.173% -1.173% +3.000%

+00 Rt.
713.78

+00 Lt.
713.78

+3.75% Rt. Ditch Grade

+5.43% Lt. Ditch Grade

VPI +35.00 AHEAD
Elv 710.04
Len 900.00 ft
K = 216

VPI +35.00 BACK
Elv 709.56
Len 900.00 ft
K = 216

+60 Rt.
686.00

+80 Lt.
680.10

+0.48% Lt. Ditch Grade

+0.48% Rt. Ditch Grade

+40 Lt.
672.50

+50 Rt.
671.80

I-380/US 218

Lt	Ditch Grade	Bridge	No Ditch	Bridge	Ditch Grade	5' Ditch
Med	Closed Median With Intakes					
Rt	Ditch Grade	Bridge	No Ditch	Bridge	Ditch Grade	

707.63 708.25 708.88 709.50 710.12 710.71 711.28 711.82 712.34 712.83 713.29 713.73 714.15 714.54 714.90 715.24 715.56 715.85 716.11 716.35 716.57 716.75 716.92 717.06 717.17 717.26 717.32 717.36 717.37 717.35 717.32 717.25 717.16 717.05 716.91 716.74 716.55 716.34 716.10 715.83 715.54 715.25 714.96 714.67 714.41 714.18 713.97 713.80 713.65 713.54 713.45 713.39 713.36 713.36 713.39 713.44 713.53 713.65 713.79 714.44 714.65 714.88 715.14 715.43 715.74 716.09 716.47 716.87 717.31 717.77 718.26 718.78 719.33 719.91 720.52 721.16 721.82 722.52 723.24 723.99 724.74 725.49 726.24 726.99 727.74 728.49 729.24 729.99 730.74 731.49 732.24 732.99 733.74 734.49 735.24 735.99 736.73 737.46 738.17 738.87 739.55 740.22 740.87 741.51 742.13 742.74 743.33 743.90 744.47 745.01 745.54 746.06 746.56 747.05 747.52 747.97 748.42 748.84 749.25 749.65

1195 1200 1205 1210 1215 1220 1225

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.10

3:20:20 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn

Sta. 30619+20.00
Install 30" x 158' RCP
Skew = 19° Lt. Ahd.
F.L. = Lt. 757.95
Rt. 769.86

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

STA. 30618+96.20
END GRADE &
GRANULAR SURFACE
BEGIN GRADE & PAVE

STA. 30627+00.00
END CONSTRUCTION
END GRADE & PAVE

POT Sta 30609+23.19
= POT Sta 1600+60.00

POT Sta 30621+26.95
= POT Sta 620+94.05

POT Sta 30617+23.62
= POT Sta 1712+15.94

PC Sta 30623+71.07
PT Sta 30624+77.23
PI Sta 30629+56.25
PC Sta 30624+24.20
PT Sta 30627+19.53
PT Sta 30631+92.54

30610
30615
30620
30625
30630

STA. 30609+23.19
BEGIN CONSTRUCTION
BEGIN GRADE &
GRANULAR SURFACE

Curve Data
Δ = 6° 04' 58.66" (LT)
T = 53.13
L = 106.17
R = 1,000.00
E = 1.41
e = NC
L = 0'
x = 0'
m = 0'
D.S. = 45 mph

Curve Data
Δ = 5° 59' 59.99" (RT)
T = 236.72
L = 473.00
R = 4,516.86
E = 6.20
e = UAC
L = UAC
x = UAC
m = UAC
D.S. = 45 mph

Sta. 30612+15.00
Installed 30" x 26" UNCL
Skew = 6° Lt. Ahd.
U.A.C.

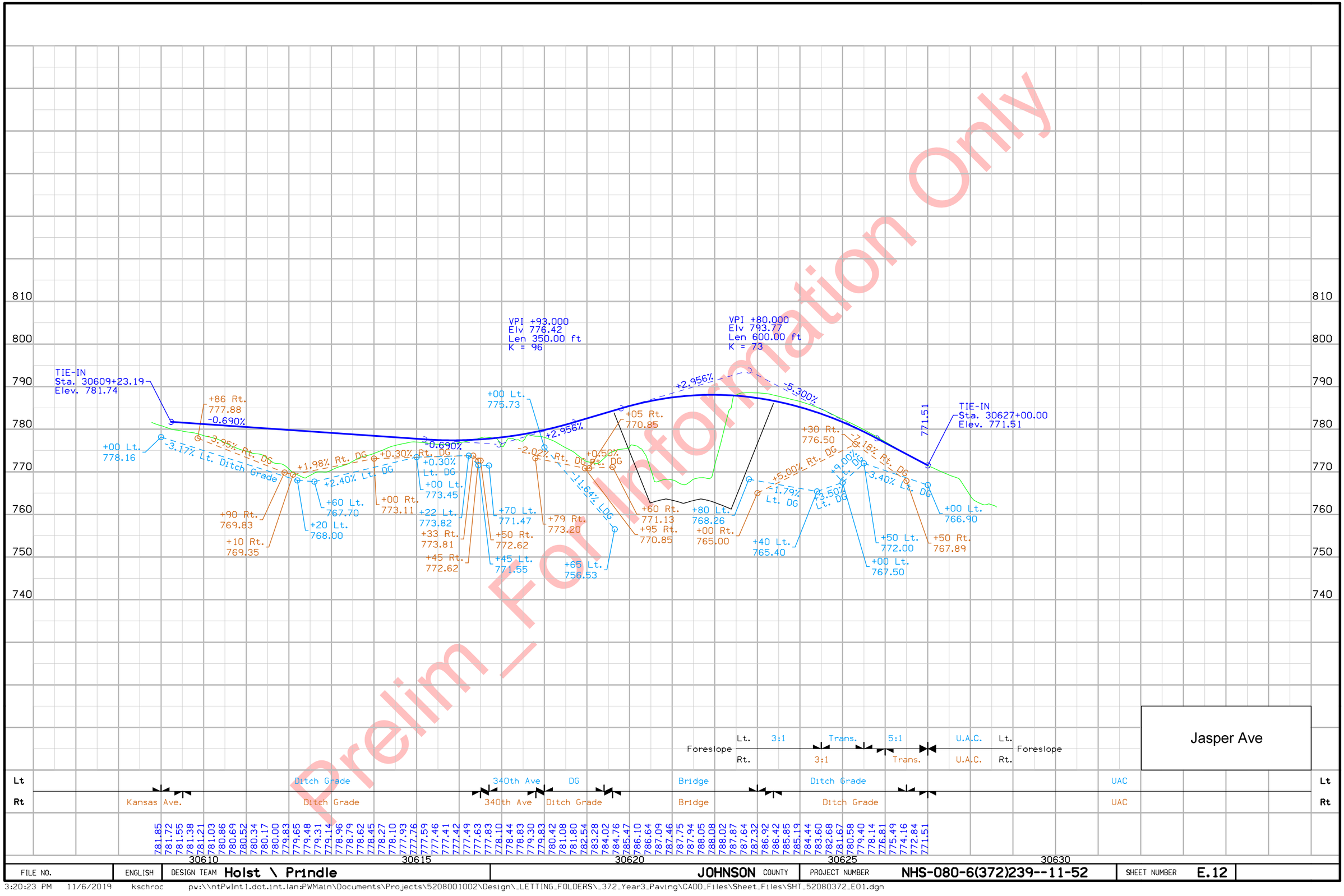
Sta. 30616+40.00
Installed 30"x23"x40' RCP
U.A.C.

0 FEET 100

Jasper Ave

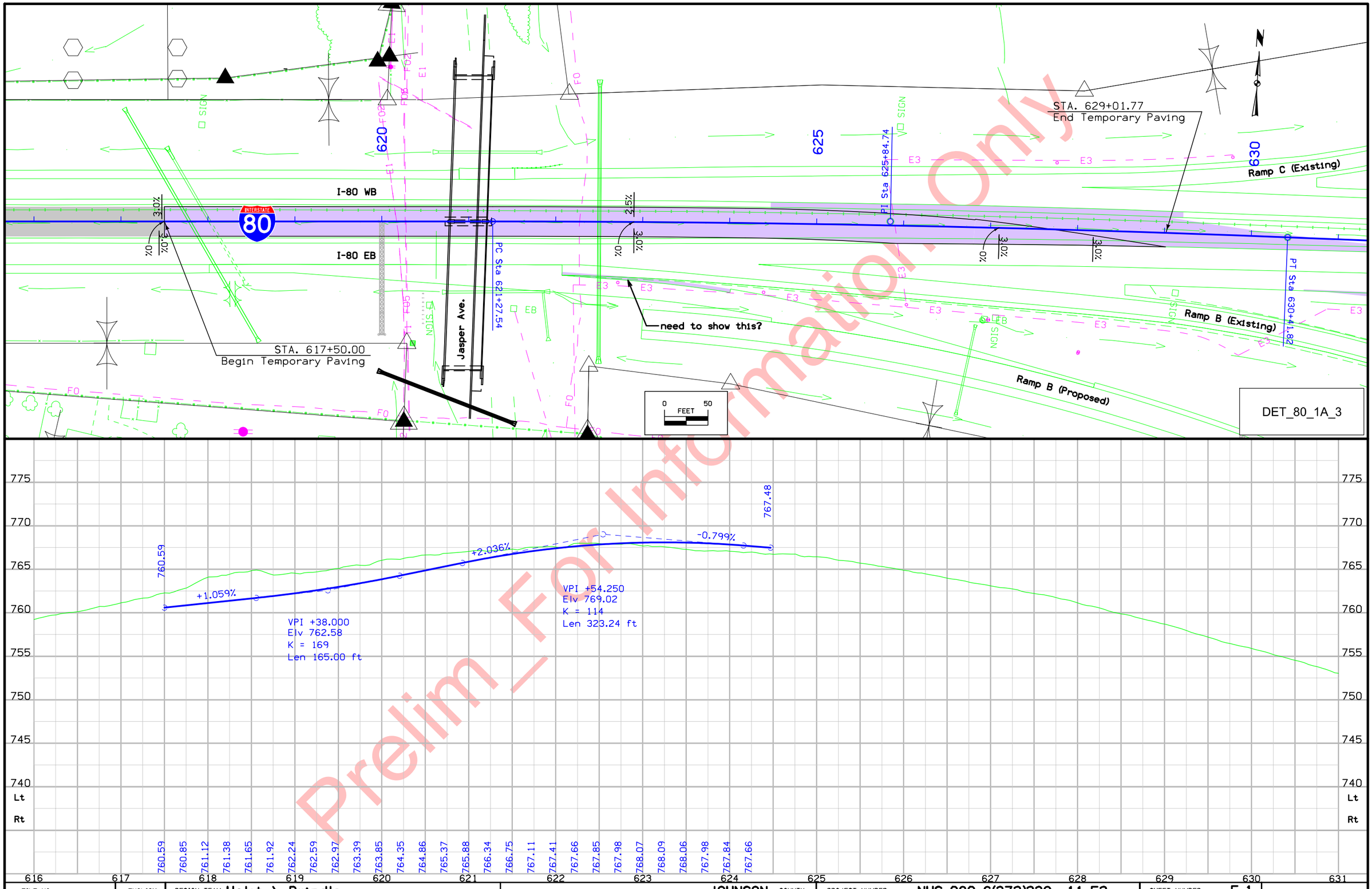
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.11

3:20:22 PM 11/6/2019 kschroc pw:\\ntPwIntl.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn



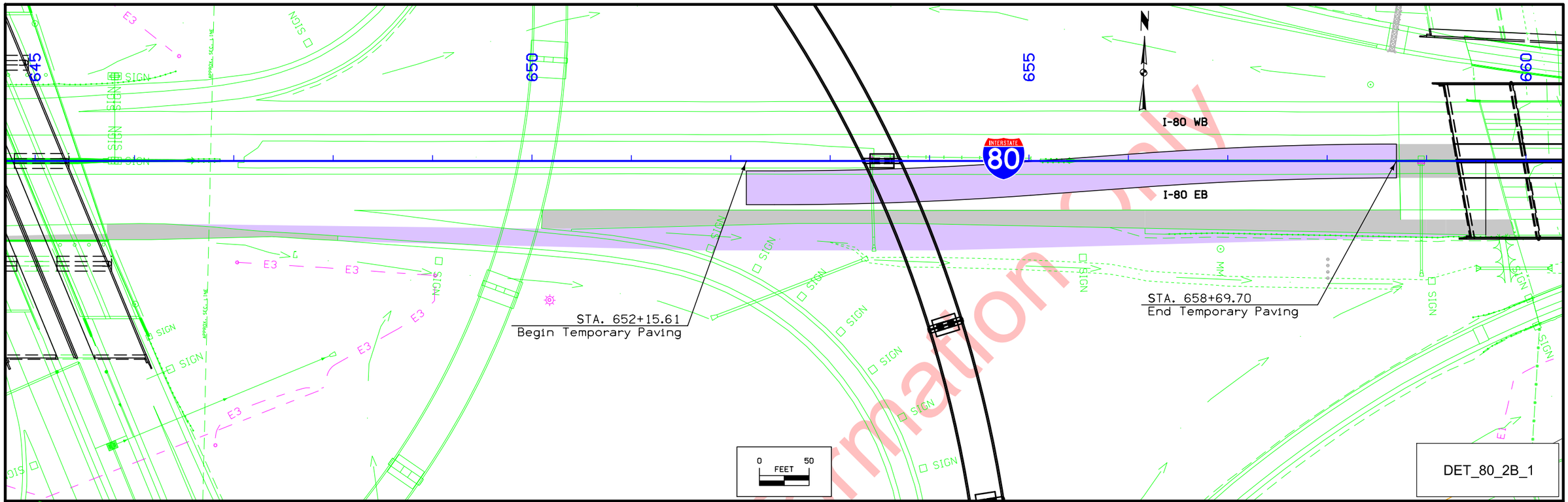
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER E.12

3:20:23 PM 11/6/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_E01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.1

2:07:15 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.2

2:07:18 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn

STA. 1668+98.56
Begin Temporary Paving

POT Sta 1666+98.58

1670

1675

PC Sta 1675+40.82

PI Sta 1676+42.54

Ramp A/G (Proposed)

Ramp A (Existing)

Ramp D (Existing)

Ramp D/F (Proposed)

I-80 WB

I-80 EB

INTERSTATE 80

SAN.2

SIGN

ST S

FO

E1

E3

MW

0 FEET 50

DET_RMPA_1A_1

VPI +98.500
Elv 680.77
K = 114
Len 187.39 ft
SSD = 498'

681.13

-0.360%

-2.004%

-0.261%

675.04

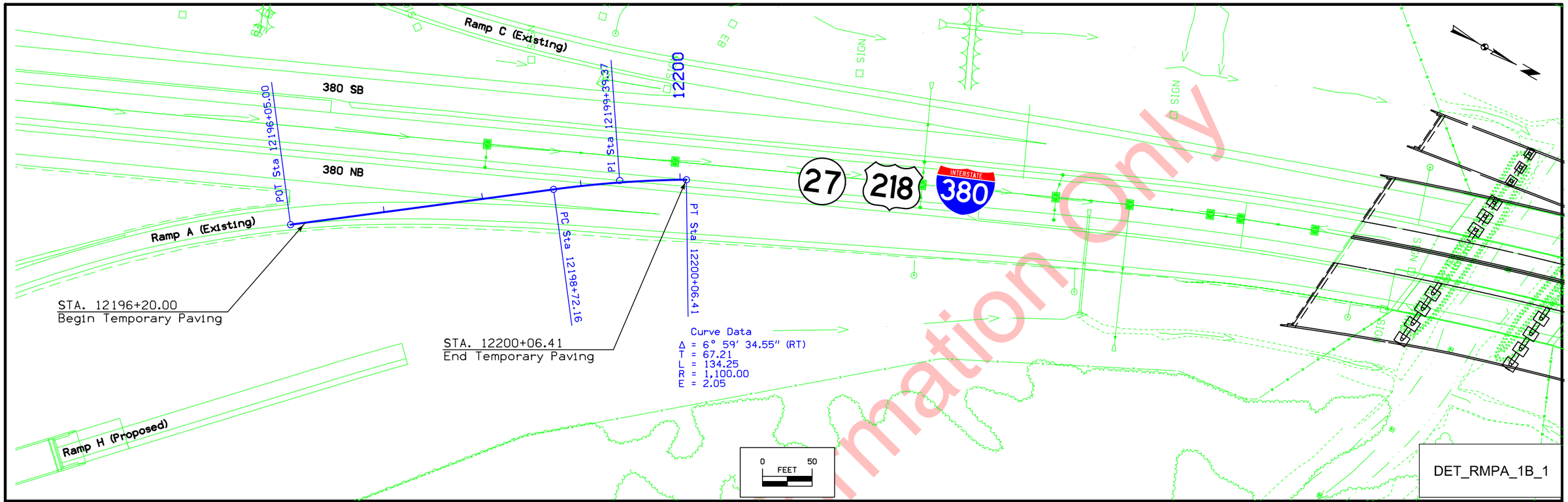
VPI +44.000
Elv 675.85
K = 115
Len 200.43 ft

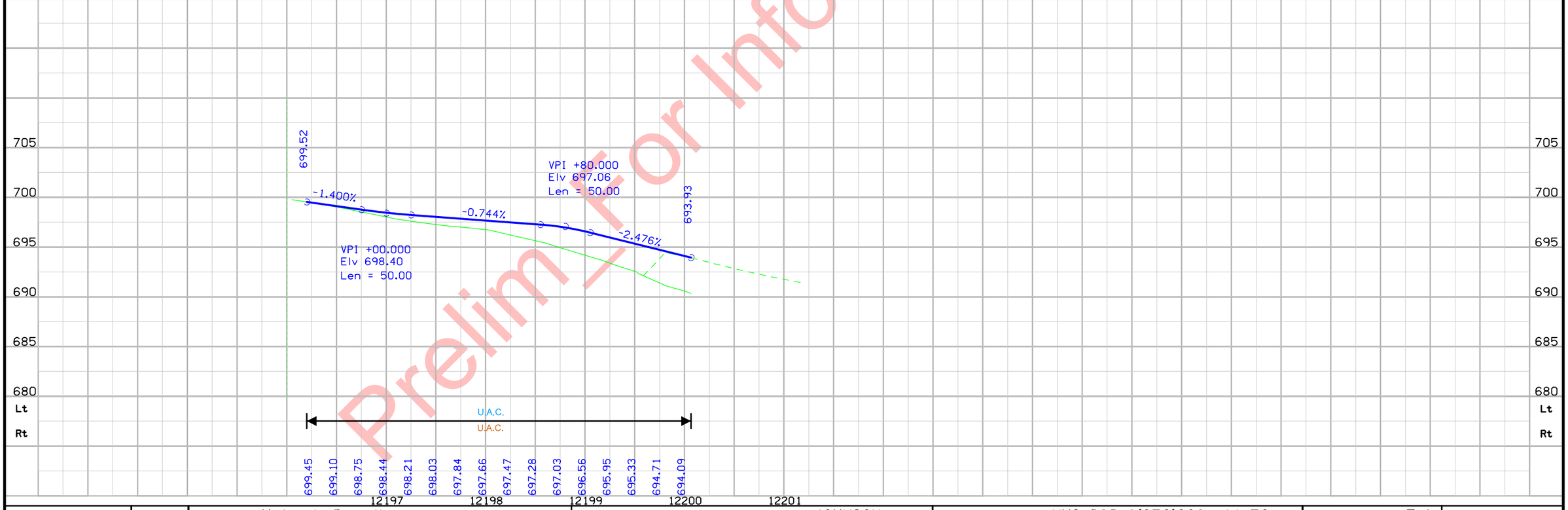
690
685
680
675
670
665
660
655
Lt
Rt

681.12 681.02 680.86 680.64 680.37 680.04 679.66 679.22 678.74 678.23 677.74 677.28 676.87 676.52 676.22 675.98 675.79 675.65 675.57 675.51 675.44 675.38 675.31 675.25 675.18 675.12 675.05

1667 1668 1669 1670 1671 1672 1673 1674 1675 1676 1677

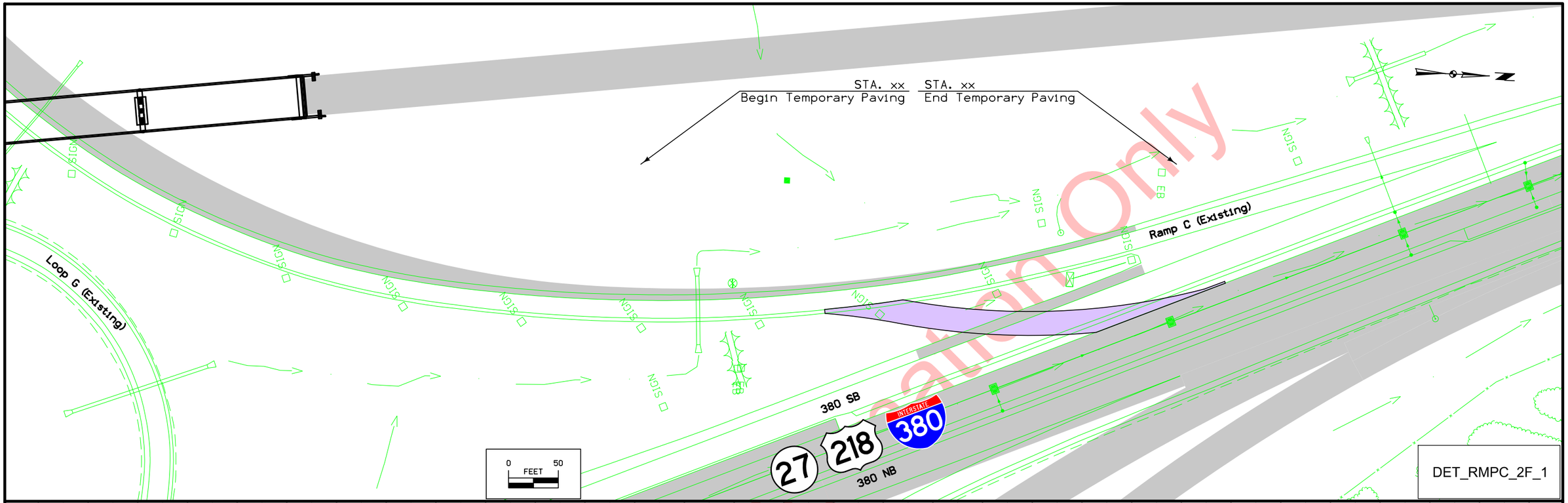
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.3





FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.4

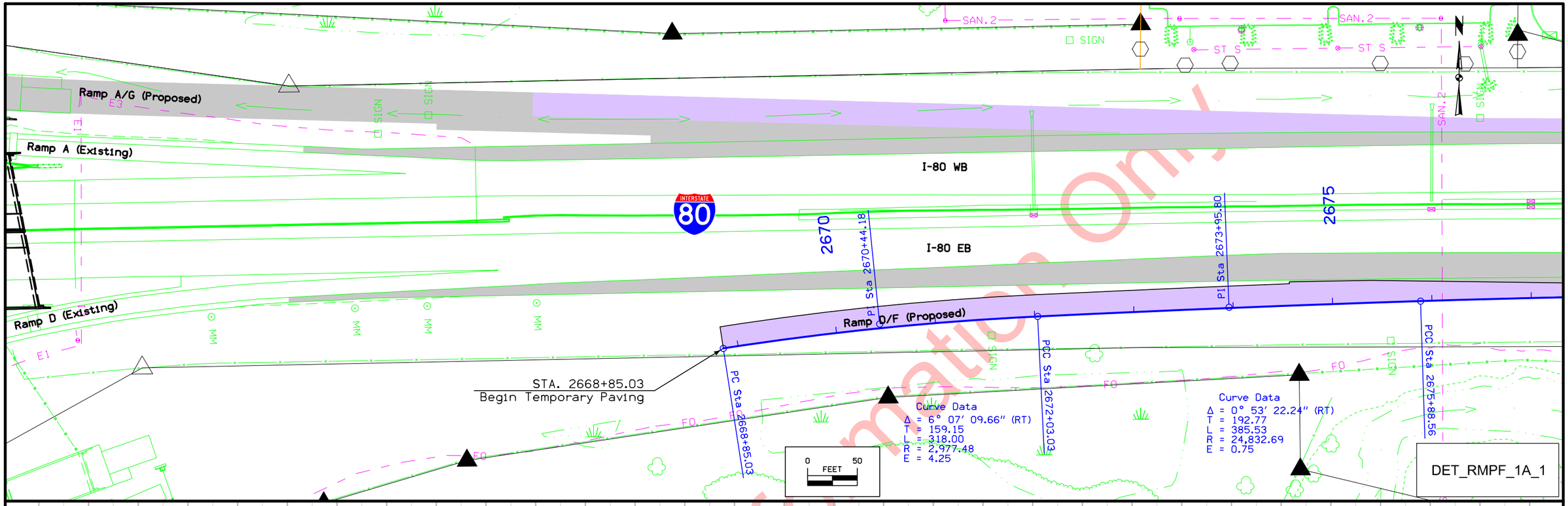
2:07:22 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn



750	750	750	750	750	750	750	750	750	750	750	750	750
745	745	745	745	745	745	745	745	745	745	745	745	745
740	740	740	740	740	740	740	740	740	740	740	740	740
735	735	735	735	735	735	735	735	735	735	735	735	735
730	730	730	730	730	730	730	730	730	730	730	730	730
725	725	725	725	725	725	725	725	725	725	725	725	725
720	720	720	720	720	720	720	720	720	720	720	720	720
715	715	715	715	715	715	715	715	715	715	715	715	715
Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt	Lt
Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt	Rt
4170	4171	4172	4173	4174	4175	4176	4177	4178	4179	4180		

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.5

2:07:24 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn

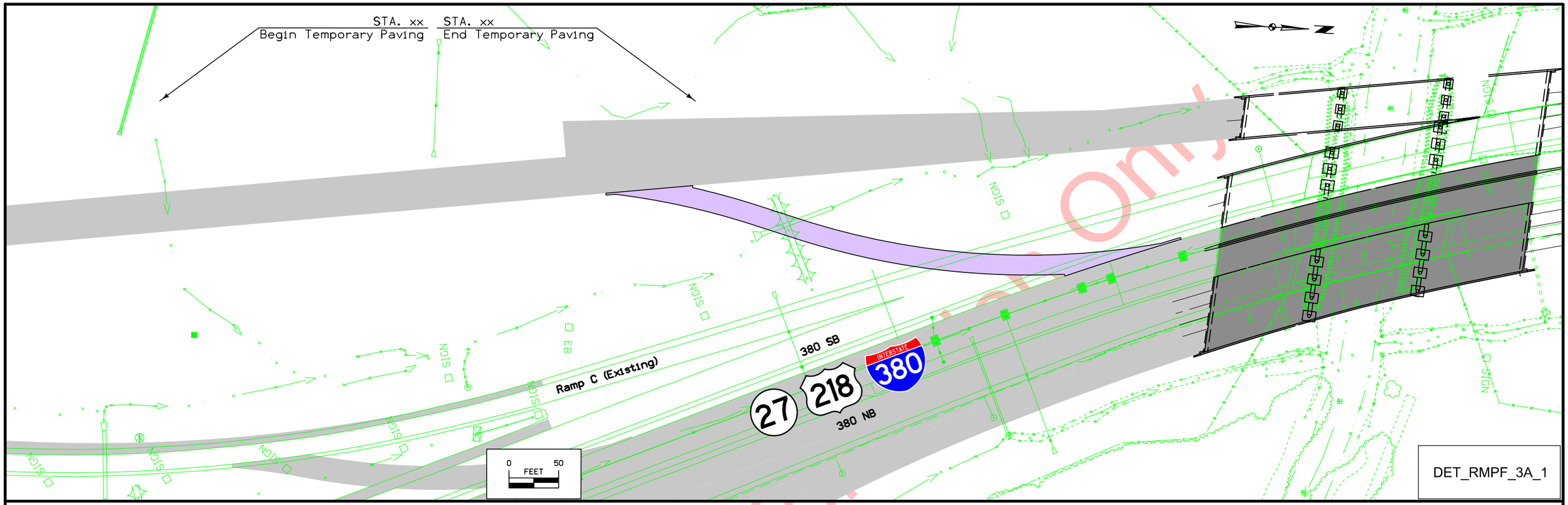


FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.6

2:07:25 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn

STA. xx
Begin Temporary Paving

STA. xx
End Temporary Paving



750 745 740 735 730 725 720 715

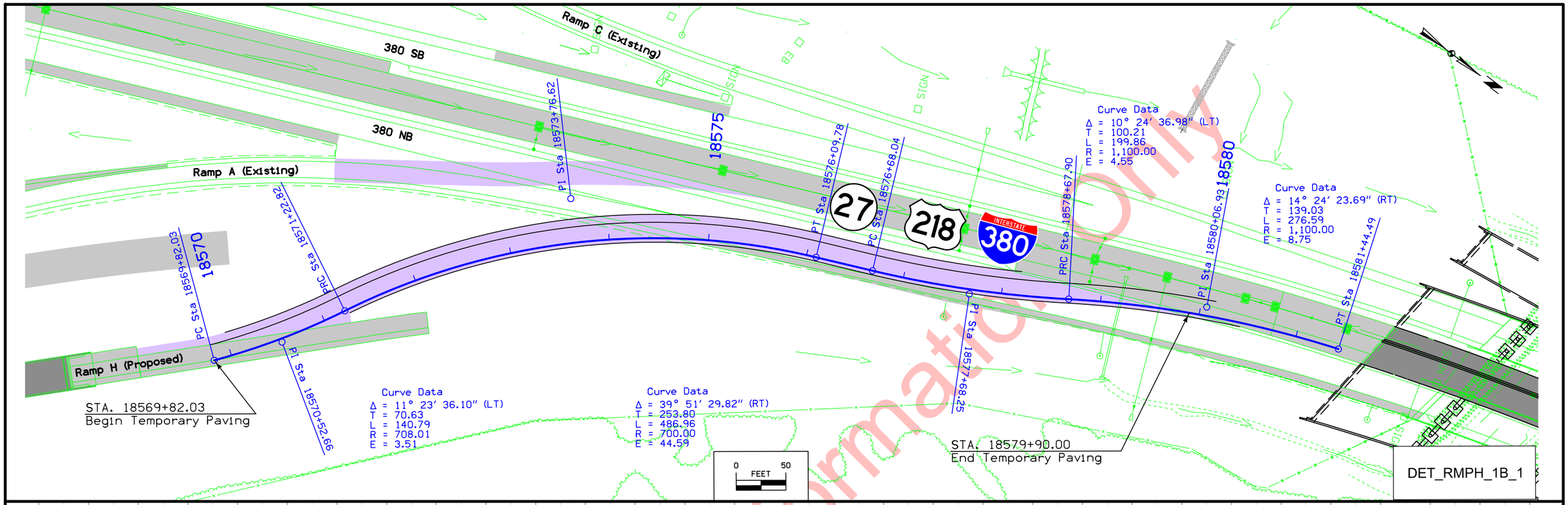
Lt

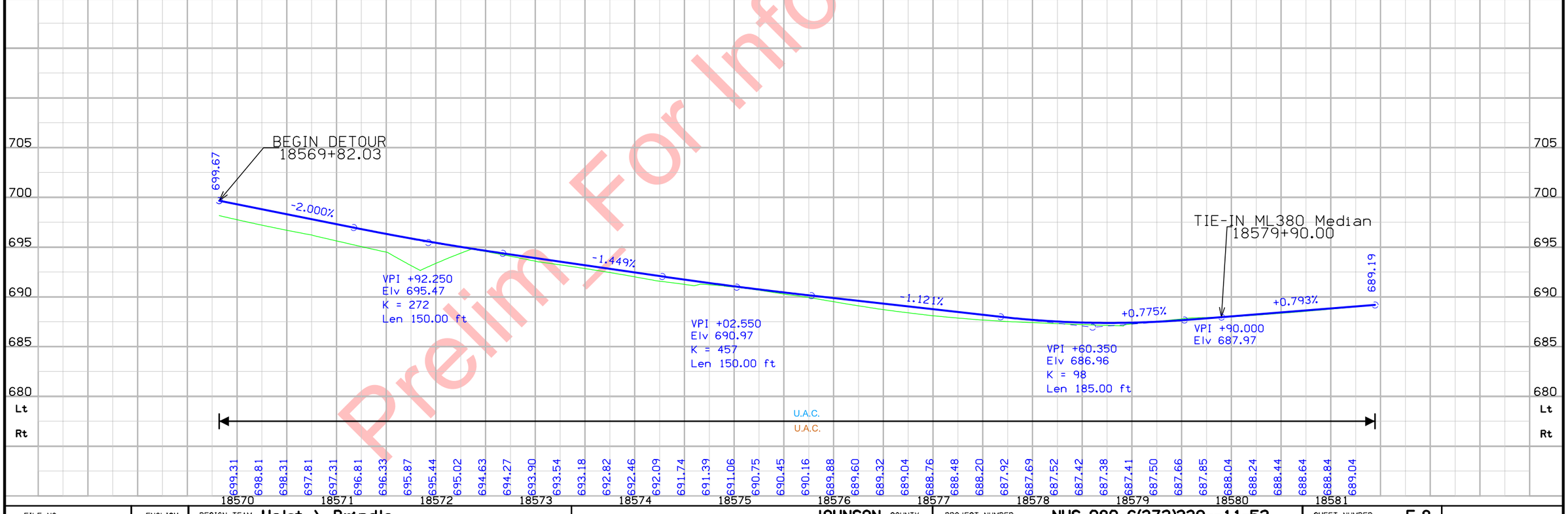
Rt

4170 4171 4172 4173 4174 4175 4176 4177 4178 4179 4180

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.7

2:07:27 PM 12/19/2019 kschroc pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design\Staff_TempOnly\UserFolder\kschroc\SHT_52080372_F01.dgn





FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER F.8

108-23A
08-01-08

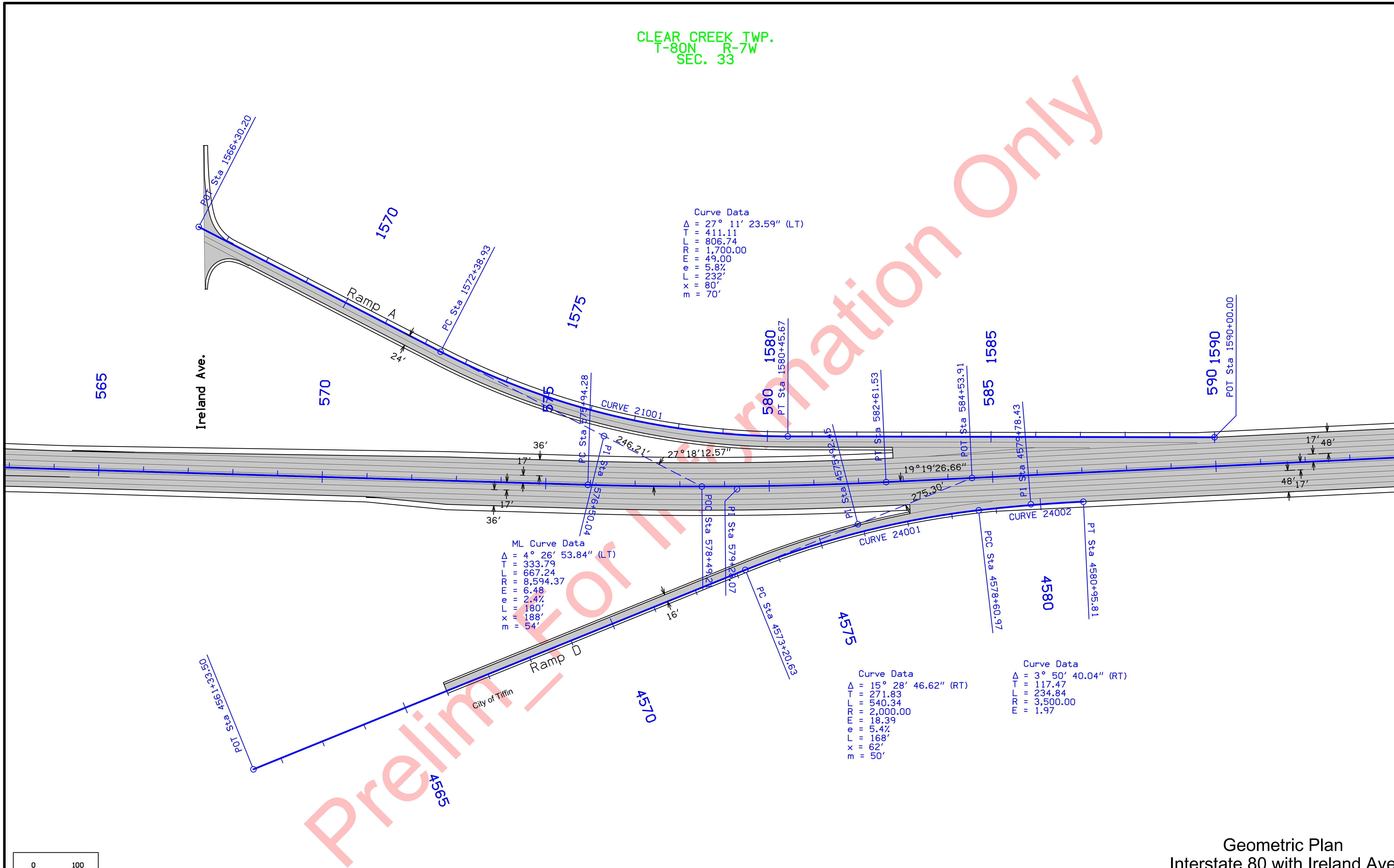
TRAFFIC CONTROL PLAN

In Progress

108-26A
08-01-08

STAGING NOTES

See attached staging scrolls.


CLEAR CREEK TWP.
T-80N R-7W
SEC. 33
POT Sta 1566+30.20
1570
Ramp A
24'
PC Sta 1572+38.93
1575
Curve Data
Δ = 27° 11' 23.59" (LT)
T = 411.11
L = 806.74
R = 1,700.00
E = 49.00
e = 5.8%
L = 232'
x = 80'
m = 70'
565
Ireland Ave.
570
575
CURVE 21001
1580
PT Sta 1580+45.67
580
PC Sta 575+94.28
36'
17'
246.21'
27°18'12.57"
PI Sta 576+50.04
PT Sta 582+61.53
PI Sta 4575+92.15
19°19'26.66"
POT Sta 584+53.91
1585
585
275.30'
PI Sta 4579+78.43
590 1590
POT Sta 1590+00.00
17' 48'
48' 17'
POC Sta 578+49.25
PI Sta 579+25.07
36'
ML Curve Data
Δ = 4° 26' 53.84" (LT)
T = 333.79
L = 667.24
R = 8,594.37
E = 6.48
e = 2.4%
L = 180'
x = 188'
m = 54'
CURVE 24001
CURVE 24002
PCC Sta 4578+60.97
PT Sta 4580+95.81
4580
PC Sta 4573+20.63
4575
16'
Ramp D
City of Tiffin
4570
POT Sta 4561+33.50
4565
Curve Data
Δ = 15° 28' 46.62" (RT)
T = 271.83
L = 540.34
R = 2,000.00
E = 18.39
e = 5.4%
L = 168'
x = 62'
m = 50'
Curve Data
Δ = 3° 50' 40.04" (RT)
T = 117.47
L = 234.84
R = 3,500.00
E = 1.97
0 FEET 100

Geometric Plan
Interstate 80 with Ireland Ave
Johnson County

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.1

8:51:24 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 33

STA. 1566+43.79
BEGIN PAVING

Sta. 572+42.8, 232.9 Lt.
5' x 5' x 130.9' R.C.B.
DA = 63 Ac. - F-R
Extended RT
with 66" x 40' RCP
Extended LT
with 66" x 46' RCP
U.A.C.

Sta. 576+03.7, 108.9 Lt.
42" x 60.6' Conc. Pipe
DA = 18 Ac. - F-R
Filled & Abandoned

Sta. 1575+74.00
Installed 42" x 126' RCP
(92' Trenchless)
U.A.C.

POT 1582+78.50 (Ramp A) =
POT 582+79.39 (SUR080) 101.0' LT
Point 'M' U Sheet 'Ireland RAMP A on I-80'

Curve Data
Δ = 27° 11' 23.59" (LT)
T = 411.11
L = 806.74
R = 1,700.00
E = 49.00
e = 5.8%
L = 232'
x = 80'
m = 70'

STA. 1582+78.50
END PAVING

POT Sta 1566+30.20
PC Sta 1572+38.93
PI Sta 1578+50.04
Sta 1580+45.67
POT Sta 1590+00.00

1570
1575
1580
1585
1590

Ramp A
Ramp D
Ireland Ave.
INTERSTATE 80

0 FEET 100

Ireland Avenue
Ramp A

TIE-IN
Sta. 1566+43.79
Elev. 751.96

VPI +50.000
Elv 750.93
Len 400.00 ft
K = 797

-0.498%
+69 Rt.
750.20
-1.000%
+16 Lt.
749.10
-2.98%
Lt. DG
-4.70% Rt. Ditch Grade
+50 Lt.
745.10
+00 Rt.
734.64
-4.32%
Rt. DG
+90 Rt.
730.75
+00 Rt.
730.40
+2.84% Rt.
Ditch Grade
+35 Rt.
730.70
+25 Rt.
730.40
-0.69%
Rt. DG
+50 Rt.
736.81
+74 Rt.
736.00

VPI +38.500
Elv 740.05
Len 680.00 ft
K = 349
-1.000%
+0.950%

TIE-IN
Sta. 1582+78.50
Elev. 743.28

780 770 760 750 740 730 720 710

	Ireland Ave	Ditch Grade	No Ditch
Lt	Ireland Ave	Ditch Grade	Variable - V Ditch
Rt			

751.93 751.80 751.66 751.52 751.37 751.21 751.04 750.87 750.68 750.49 750.29 750.09 749.87 749.65 749.42 749.18 748.93 748.68 748.43 748.18 747.93 747.68 747.43 747.18 746.93 746.68 746.43 746.18 745.93 745.68 745.43 745.18 744.93 744.68 744.43 744.18 743.93 743.68 743.43 743.19 742.97 742.77 742.58 742.41 742.26 742.13 742.02 741.92 741.84 741.78 741.74 741.71 741.71 741.72 741.75 741.79 741.86 741.94 742.04 742.16 742.30 742.45 742.62 742.81 743.02 743.25

1570 1575 1580 1585 1590

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.2

8:51:27 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_KO1.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 33

STA. 4566+00.00
BEGIN GRADING
BEGIN PAVING

INTERSTATE 80

Ramp D

Ireland Ave.

POT Sta 4561+33.50

Sta. 568+72.2, 665.6' Rt.
6' x 4' x 58.0' R.C.B.
DA = 55 Ac. - F-R
U.A.C.

Sta. 567+96.9, 654.9' Rt.
15" x 57.9' Conc. Pipe
DA = 0.1 Ac. - F
U.A.C.

Sta. 575+43.3, 387.3 Rt.
30" x 73' Conc. Pipe
DA = 7 Ac. - F-R
Remove

PC Sta 4573+20.63

POT 4577+08.84 (IRLD)=
POT 583+14.17 (SUR080) 88.82 RT
Point 'F' U Sheet 'Ireland RAMP D on I-80'

Curve Data
Δ = 15° 28' 46.62" (RT)
T = 271.83
L = 540.34
R = 2,000.00
E = 18.39
e = 5.4%
L = 168'
x = 62'
m = 50'

Sta. 582+20.0
Skew 15° Rt. Ah.
48" x 213.3' Conc. Pipe
DA = 22 Ac. - R

Extended LT
with 48" x 46'
Extend RT
with 48" x 30' RCP

PRC Sta 4578+78.43

PCC Sta 4578+09.97

PRC Sta 4580+95.81

STA. 4577+08.84
END GRADING
END PAVING

Curve Data
Δ = 3° 50' 40.04" (RT)
T = 117.47
L = 234.84
R = 3,500.00
E = 1.97

0 100 FEET

Ireland Ave
Ramp D

4565 4570 4575 4580

VPI +10.000
Elv 759.17
Len 400.00 ft
K = 170

TIE-IN
Sta. 4566+00.00
Elev. 759.70

+55 Rt. 749.54
+65 Rt. 749.54
+45 Rt. 749.91
+75 Rt. 749.98
+00 Rt. 751.11
+00 Rt. 755.30
+00 Lt. 752.60
+70 Lt. 747.63
+80 Lt. 747.30
+90 Lt. 747.47

-0.250%
-2.20% Rt. Ditch Grade
-1.84% Lt. Ditch Grade
+0.90% Rt. DG
-2.602%
-2.08% Rt. Ditch Grade
-1.50% Lt. Ditch Grade

VPI +50.000
Elv 742.52
Len 500.00 ft
K = 146

+0.830%
+1.68% Rt. DG
+0.60% Lt. DG
+90 Lt. 739.97
+30 Lt. 740.21
+09 Rt. 738.84
+30 Rt. 738.00
+60 Rt. 738.02
+40 Rt. 737.80
+50 Rt. 737.80

TIE-IN
Sta. 4577+08.84
Elev. 744.67

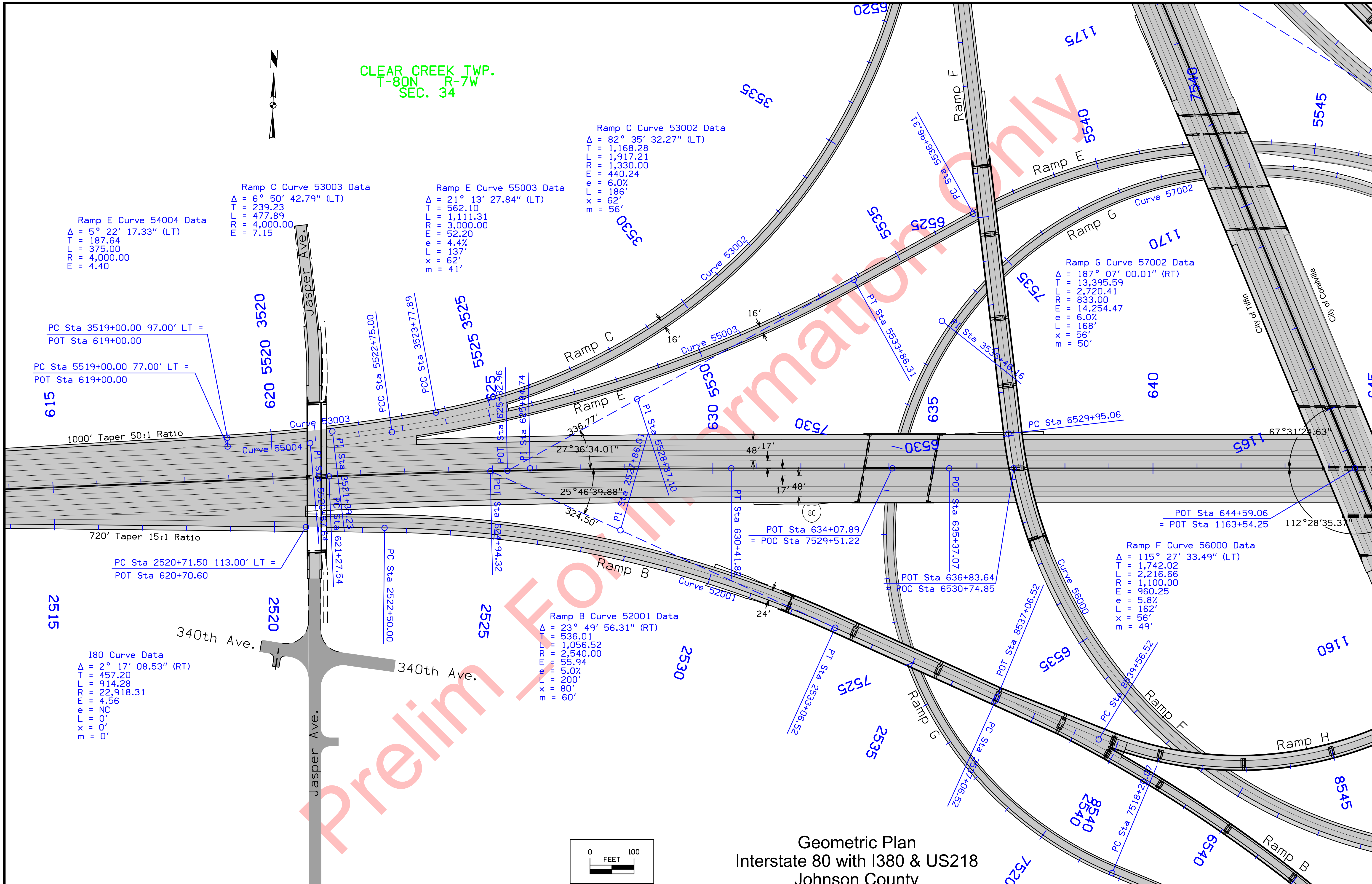
Foreslope Lt. U.A.C. 3:1 to 6:1/3.5:1 6:1/3.5:1 Lt. Foreslope
Rt. U.A.C. 3:1 to 6:1/3.5:1 6:1/3.5:1 Rt.

Lt Med Rt: U.A.C. / U.A.C. — Ditch Grade / Ditch Grade — Variable - V Ditch

759.70 759.63 759.53 759.39 759.21 759.00 758.75 758.46 758.14 757.78 757.38 756.95 756.48 755.97 755.43 754.85 754.23 753.58 752.93 752.28 751.63 750.98 750.33 749.68 749.03 748.40 747.81 747.27 746.77 746.31 745.90 745.52 745.20 744.91 744.67 744.47 744.31 744.20 744.12 744.10 744.11 744.17 744.27 744.41 744.60

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.3

8:51:29 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_KO1.dgn


CLEAR CREEK TWP.
T-80N R-7W
SEC. 34
Ramp C Curve 53002 Data
Δ = 82° 35' 32.27" (LT)
T = 1,168.28
L = 1,917.21
R = 1,330.00
E = 440.24
e = 6.0%
L = 186'
x = 62'
m = 56'
Ramp C Curve 53003 Data
Δ = 6° 50' 42.79" (LT)
T = 239.23
L = 477.89
R = 4,000.00
E = 7.15
Ramp E Curve 55003 Data
Δ = 21° 13' 27.84" (LT)
T = 562.10
L = 1,111.31
R = 3,000.00
E = 52.20
e = 4.4%
L = 137'
x = 62'
m = 41'
Ramp E Curve 54004 Data
Δ = 5° 22' 17.33" (LT)
T = 187.64
L = 375.00
R = 4,000.00
E = 4.40
Ramp G Curve 57002 Data
Δ = 187° 07' 00.01" (RT)
T = 13,395.59
L = 2,720.41
R = 833.00
E = 14,254.47
e = 6.0%
L = 168'
x = 56'
m = 50'
Ramp F Curve 56000 Data
Δ = 115° 27' 33.49" (LT)
T = 1,742.02
L = 2,216.66
R = 1,100.00
E = 960.25
e = 5.8%
L = 162'
x = 56'
m = 49'
Ramp B Curve 52001 Data
Δ = 23° 49' 56.31" (RT)
T = 536.01
L = 1,056.52
R = 2,540.00
E = 55.94
e = 5.0%
L = 200'
x = 80'
m = 60'
I80 Curve Data
Δ = 2° 17' 08.53" (RT)
T = 457.20
L = 914.28
R = 22,918.31
E = 4.56
e = NC
L = 0'
x = 0'
m = 0'
PC Sta 3519+00.00 97.00' LT =
POT Sta 619+00.00
PC Sta 5519+00.00 77.00' LT =
POT Sta 619+00.00
PC Sta 2520+71.50 113.00' LT =
POT Sta 620+70.60
POT Sta 634+07.89
= POC Sta 7529+51.22
POT Sta 636+83.64
= POC Sta 6530+74.85
POT Sta 644+59.06
= POT Sta 1163+54.25
PC Sta 6529+95.06
1000' Taper 50:1 Ratio
720' Taper 15:1 Ratio
Ramp C
Ramp E
Ramp B
Ramp F
Ramp G
Ramp H
Jasper Ave.
340th Ave.
City of Tiffin
City of Coralville
Prelim For Information Only
0 FEET 100

Geometric Plan
Interstate 80 with I380 & US218
Johnson County

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.4

8:51:33 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

N

Ramp G Curve 57001 Data
Δ = 27° 00′ 00.00″ (LT)
T = 254.48
L = 499.51
R = 1,060.00
E = 30.12
e = 5.8%
L = 162′
x = 56′
m = 49′

Ramp A Curve 51002 Data
Δ = 29° 09′ 22.90″ (LT)
T = 660.59
L = 1,292.54
R = 2,540.00
E = 84.50
e = 5.0%
L = 200′
x = 80′
m = 60′

Ramp H Curve 58001 Data
Δ = 157° 20′ 21.27″ (LT)
T = 4,157.28
L = 2,287.49
R = 833.00
E = 3,406.92
e = 6.0%
L = 168′
x = 56′
m = 50′

I80 Curve Data
Δ = 1° 32′ 54.91″ (RT)
T = 309.74
L = 619.43
R = 22,918.31
E = 2.09

Ramp E Curve 55002 Data
Δ = 131° 09′ 16.97″ (RT)
T = 2,807.77
L = 2,918.58
R = 1,275.00
E = 1,808.70
e = 5.6%
L = 157′
x = 56′
m = 47′

Ramp F Curve 56001 Data
Δ = 32° 08′ 32.50″ (RT)
T = 864.27
L = 1,682.97
R = 3,000.00
E = 122.01
e = 4.4%
L = 137′
x = 62′
m = 41′

Ramp D Curve 54002 Data
Δ = 20° 32′ 25.78″ (RT)
T = 407.69
L = 806.62
R = 2,250.00
E = 36.64
e = 5.25
L = 162′
x = 62′
m = 49′

PT Sta 8562+44.01
PC Sta 1549+82.45
PT Sta 1556+43.04
PT Sta 7555+90.00
PC Sta 7550+90.49
PT Sta 7545+44.73
PT Sta 7545+40.49
PT Sta 1562+75.00
POT Sta 7562+75.00 8.00′ RT
POT Sta 1562+75.00
POT Sta 1568+14.05 113.03′ RT
POT Sta 668+16.04
POT Sta 665+02.37
POT Sta 667+43.58
910′ Taper 21.2:1 Ratio
PT Sta 676+17.64
POT Sta 650+13.95
= POC Sta 8554+37.46
POT Sta 653+69.80
= POC Sta 5557+88.95
POT Sta 656+45.08
POT Sta 658+90.60
PT Sta 6564+80.85
PT Sta 6552+11.72
PT Sta 5566+14.89
PC Sta 6555+42.03
PCC Sta 4559+73.17
PI Sta 4552+43.13
PT Sta 6572+25.00 89.00′ RT =
POT Sta 672+25.00
PC Sta 673+07.90
PT Sta 4567+79.79 20.00′ RT =
POC Sta 6567+79.79
PI Sta 1552+43.97
PI Sta 1556+43.97
PI Sta 1545+40.49
PI Sta 1549+44.73

352.65′
29°42′6.98″
321.08′
31°51′29.88″
48′17
17′48′
32°8′32.5
167.29′
30°11′20.97″
417.79′
24′
16′

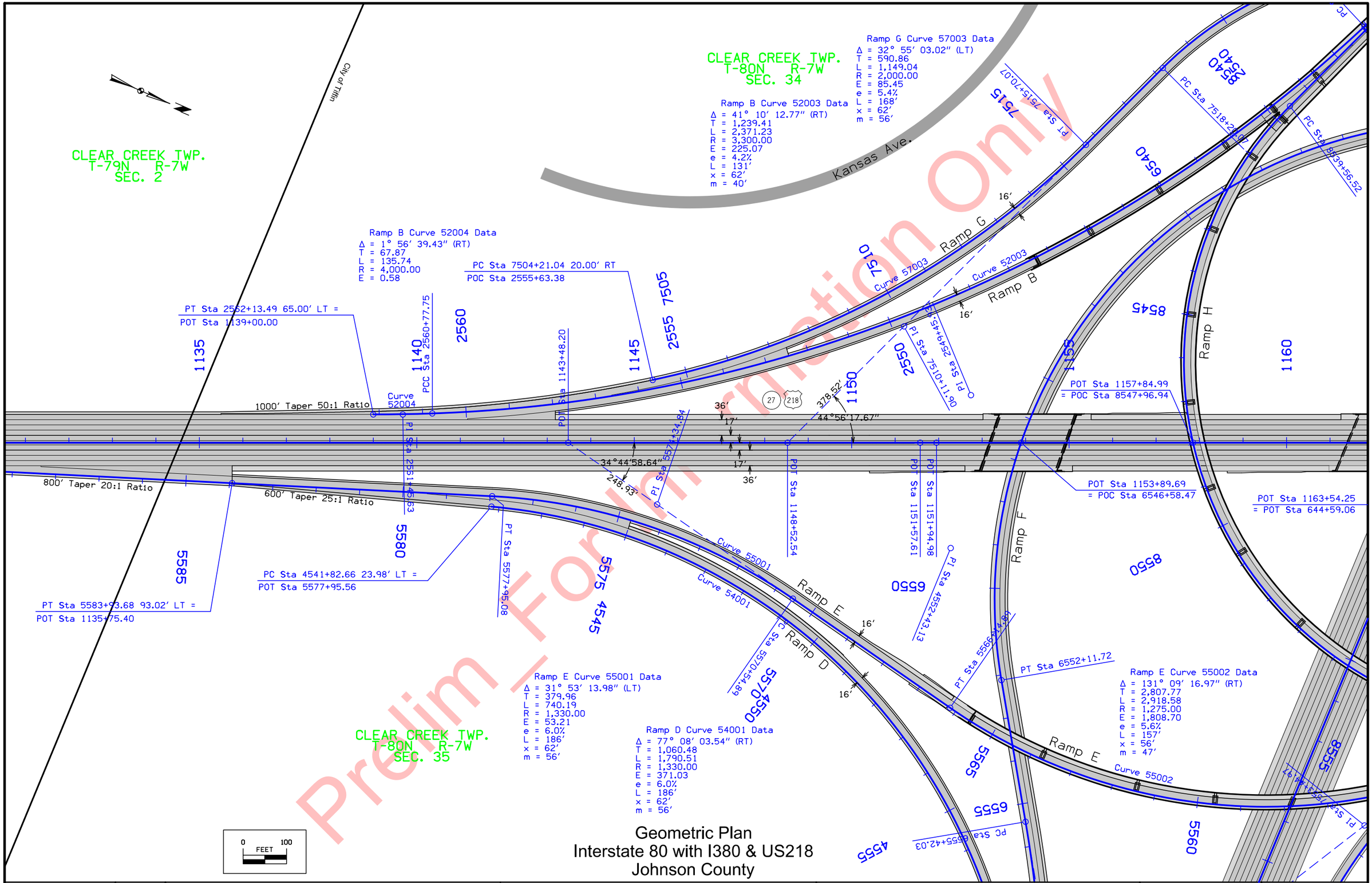
Ramp A
Ramp G
Ramp E
Ramp H
Ramp F
Ramp D
Clear Creek
Curve 58001
Curve 57001
Curve 51002
Curve 56001
Curve 55002
Curve 54002

0 FEET 100

Geometric Plan
Interstate 80 with I380 & US218
Johnson County

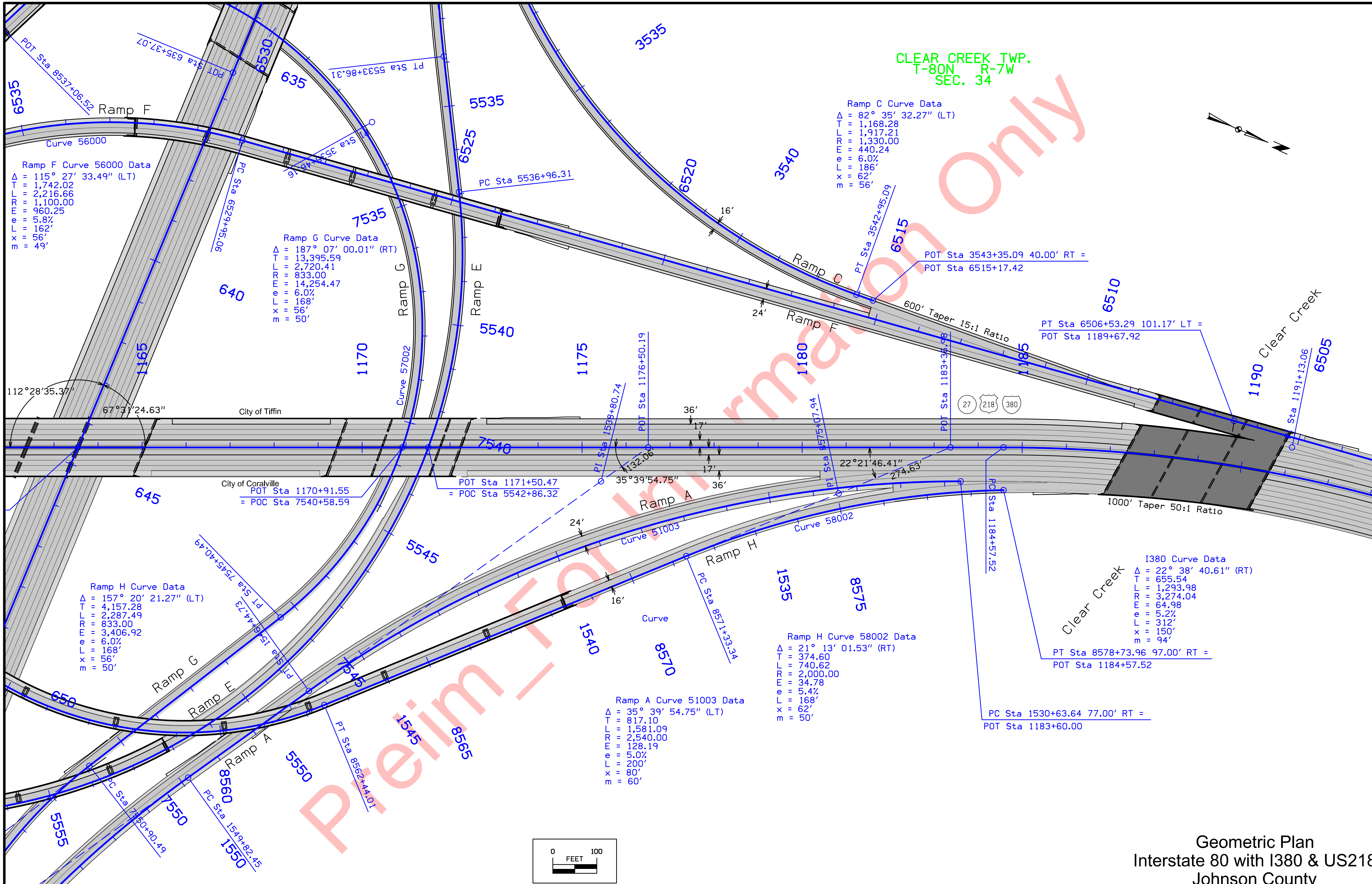
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.5

8:51:36 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.6

8:51:40 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



CLEAR CREEK TWP.
T-80N R-7W
SEC. 34
Preim_For_Information Only
Ramp F Curve 56000 Data
Δ = 115° 27' 33.49" (LT)
T = 1,742.02
L = 2,216.66
R = 1,100.00
E = 960.25
e = 5.8%
L = 162'
x = 56'
m = 49'
Ramp G Curve Data
Δ = 187° 07' 00.01" (RT)
T = 13,395.59
L = 2,720.41
R = 833.00
E = 14,254.47
e = 6.0%
L = 168'
x = 56'
m = 50'
Ramp C Curve Data
Δ = 82° 35' 32.27" (LT)
T = 1,168.28
L = 1,917.21
R = 1,330.00
E = 440.24
e = 6.0%
L = 186'
x = 62'
m = 56'
Ramp H Curve Data
Δ = 157° 20' 21.27" (LT)
T = 4,157.28
L = 2,287.49
R = 833.00
E = 3,406.92
e = 6.0%
L = 168'
x = 56'
m = 50'
Ramp A Curve 51003 Data
Δ = 35° 39' 54.75" (LT)
T = 817.10
L = 1,581.09
R = 2,540.00
E = 128.19
e = 5.0%
L = 200'
x = 80'
m = 60'
Ramp H Curve 58002 Data
Δ = 21° 13' 01.53" (RT)
T = 374.60
L = 740.62
R = 2,000.00
E = 34.78
e = 5.4%
L = 168'
x = 62'
m = 50'
I380 Curve Data
Δ = 22° 38' 40.61" (RT)
T = 655.54
L = 1,293.98
R = 3,274.04
E = 64.98
e = 5.2%
L = 312'
x = 150'
m = 94'
Ramp F
Ramp G
Ramp E
Ramp C
Ramp A
Ramp H
Curve 56000
Curve 57002
Curve 51003
Curve 58002
Curve
POT Sta 8537+06.52
POT Sta 635+37.07
PT Sta 5533+86.31
PC Sta 5536+96.31
PC Sta 6529+95.06
PT Sta 3542+95.09
POT Sta 3543+35.09 40.00' RT =
POT Sta 6515+17.42
600' Taper 15:1 Ratio
PT Sta 6506+53.29 101.17' LT =
POT Sta 1189+67.92
POT Sta 1176+50.19
PI Sta 1538+80.74
POT Sta 1183+36.08
PI Sta 8575+07.94
Sta 1191+13.06
POT Sta 1170+91.55
= POC Sta 7540+58.59
POT Sta 1171+50.47
= POC Sta 5542+86.32
PC Sta 1184+57.52
1000' Taper 50:1 Ratio
PT Sta 7545+40.49
PI Sta 1546+44.73
PC Sta 8571+33.34
PT Sta 8578+73.96 97.00' RT =
POT Sta 1184+57.52
PC Sta 1530+63.64 77.00' RT =
POT Sta 1183+60.00
PT Sta 8562+44.01
PC Sta 7550+90.49
PC Sta 1549+82.45
112°28'35.37"
67°31'24.63"
35°39'54.75"
22°21'46.41"
274.63'
132.06'
City of Tiffin
City of Coralville
Clear Creek
Clear Creek
16'
24'
36'
17'
27
218
380
0 FEET 100

Geometric Plan
Interstate 80 with I380 & US218
Johnson County

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.7

8:51:47 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 27

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

Curve Data
Δ = 35° 39' 54.75" (LT)
T = 817.10
L = 1,581.09
R = 2,540.00
E = 128.19
e = 5.0%
L = 200'
x = 80'
m = 60'

Sta. 1543+50.00
24" x 280' RCP
U.A.C.

STA. 1533+81.10
BEGIN GRADING
BEGIN PAVING

POT 1533+81.10 (Ramp A) =
POT 1180+43.37 (ML380) 96.88' RT
Point 'F' U Sheet 'RAMP A on I-380'

PC Sta 1530+63.64

PI Sta 1538+80.74

PT Sta 1548+44.73

PC Sta 1549+82.45

Clear Creek

Ramp H

Ramp A

Ramp E

Ramp F

Ramp G

INTERSTATE 380

US 218

US 27

0 100
FEET

Ramp A

Prelim_For Information Only

VPI +50.000
Elv 706.69
Len 1,300.00 ft
K = 377

+2.140%

-1.308%

-1.308%

TIE-IN
Sta. 1533+81.10
Elev. 692.38

+00 Rt.
691.35

+1.55% Rt. Ditch Grade

+60 Rt.
684.20

Ramp H

Variable - V Ditch

Ditch Grade

Variable - V Ditch

Lt
Rt

692.78 693.31 693.82 694.31 694.79 695.25 695.70 696.12 696.53 696.93 697.31 697.67 698.01 698.34 698.65 698.94 699.22 699.48 699.73 699.96 700.17 700.36 700.54 700.71 700.85 700.98 701.09 701.19 701.27 701.33 701.38 701.40 701.42 701.41 701.39 701.36 701.30 701.23 701.15 701.04 700.92 700.79 700.63 700.46 700.28 700.08 699.86 699.62 699.37 699.10 698.81 698.51 698.19 697.87 697.55 697.23 696.91 696.60 696.28 695.98 695.67 695.37 695.07 694.78 694.48

730 720 710 700 690 680 670 660

1535 1540 1545 1550

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.8

8:51:56 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

Sta. 653+66.2, 214.7' Lt. (I80)
Sta. 11162+05.8, 920.2' Rt. (I380)
2' X 3' X 141.9' R.C.B.
D.A. = 11 Ac. - F-R
Abandoned

Sta. 1554+44.14
Installed 42" x 438' RCP
Skew = 45.6°LT. Ahd.
D.A. = 28.0 Ac.
U.A.C.

259'-0" x Varies
P.P. Conc. Beam Bridge
U.A.C.

Curve Data
Δ = 29° 09' 22.90" (LT)
T = 660.59
L = 1,292.54
R = 2,540.00
E = 84.50
e = 5.0%
L = 200'
x = 80'
m = 60'

168'-6" x 26'
P.P. Conc. Beam Bridge
Remove

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

STA. 1568+15.19
END GRADING
END PAVING

POT 1568+15.19 (Ramp A) =
POT 668+17.17 (SUR080) 113.0' LT
Point 'M' U Sheet 'RAMP A on I-80'

POT Sta 1577+27.34

PC Sta 1549+82.45

PT Sta 1562+75.00

PT Sta 1556+13.04

Clear Creek

Ramp A

Ramp G

Ramp H

Ramp F

Ramp D

INTERSTATE 80

0 100 FEET

Ramp A

VPI +00.000
Elv 685.11
Len 2,000.00 ft
K = 2110

-1.308%

-1.308%

-0.360%

TIE-IN
Sta. 1568+15.19
Elev. 681.10

720 710 700 690 680 670 660 650

Lt No Ditch Bridge No Ditch Lt
Rt See Ramp G Left Ditch Variable - V Ditch Bridge Variable - V Ditch Rt

694.19 693.91 693.62 693.34 693.06 692.79 692.52 692.25 691.98 691.72 691.46 691.20 690.94 690.69 690.44 690.20 689.96 689.72 689.48 689.25 689.02 688.79 688.56 688.34 688.12 687.91 687.69 687.48 687.28 687.07 686.87 686.67 686.48 686.29 686.10 685.91 685.73 685.55 685.37 685.20 685.02 684.86 684.69 684.53 684.37 684.21 684.06 683.91 683.76 683.61 683.47 683.33 683.20 683.06 682.93 682.81 682.68 682.56 682.44 682.33 682.22 682.11 682.00 681.90 681.80 681.70 681.61 681.51 681.42 681.33 681.24 681.15

1550 1555 1560 1565 1570 1575

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.9

8:52:01 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

PI Sta 2527+86.01

Curve Data
Δ = 41° 10′ 12.77″ (RT)
T = 1,239.41
L = 2,371.23
R = 3,300.00
E = 225.07

Ramp B
Ramp H
Ramp B
Ramp G
Ramp B

PC Sta 2513+50.00

STA. 2523+00.00
STOP PAVING

PC Sta 2522+50.00

PT Sta 2533+96.52

PC Sta 2534+96.52

STA. 2520+70.30
BEGIN PAVING

340th Ave.

340th Ave.

POT 2520+70.30 (Ramp B) =
POT 620+69.40 (SUR080) 113.0′ RT
Point 'M' U Sheet 'RAMP B on I-80'

Curve Data
Δ = 23° 49′ 56.31″ (RT)
T = 536.01
L = 1,056.52
R = 2,540.00
E = 55.94
e = 5.0%
L = 200′
x = 80′
m = 60′

Jasper Ave.

0 100
FEET

Bench Grade Lt. / Rt. — No Bench — No Bench — No Bench — Lt. / Rt. Bench Grade

STOP PAVING
Sta. 2523+00.00
Elev. 762.51

TIE-IN
Sta. 2520+70.30
Elev. 761.63

VPI +00.000
Elv 762.02
Len 800.00 ft
K = 295

VPI +00.000
Elv 795.62
Len 1,600.00 ft
K = 282

+2.800%
-2.865%
-2.865%
+0.090%
+2.800%
-2.00% Rt. Bench Grade
-12.50% Rt. Bench Grade
+2.38% Rt. Ditch Grade
+0.50% Rt. Ditch Grade
+0.50% Rt. Ditch Grade
-2.38% Rt. Ditch Grade

+50 Rt. 779.70
+30 Rt. 768.10
+60 Rt. 764.35
+90 Rt. 765.00
+50 Rt. 762.80
+00 Rt. 756.85
+00 Rt. 756.90
+30 Rt. 755.50
+18 Rt. 755.22

Ramp G

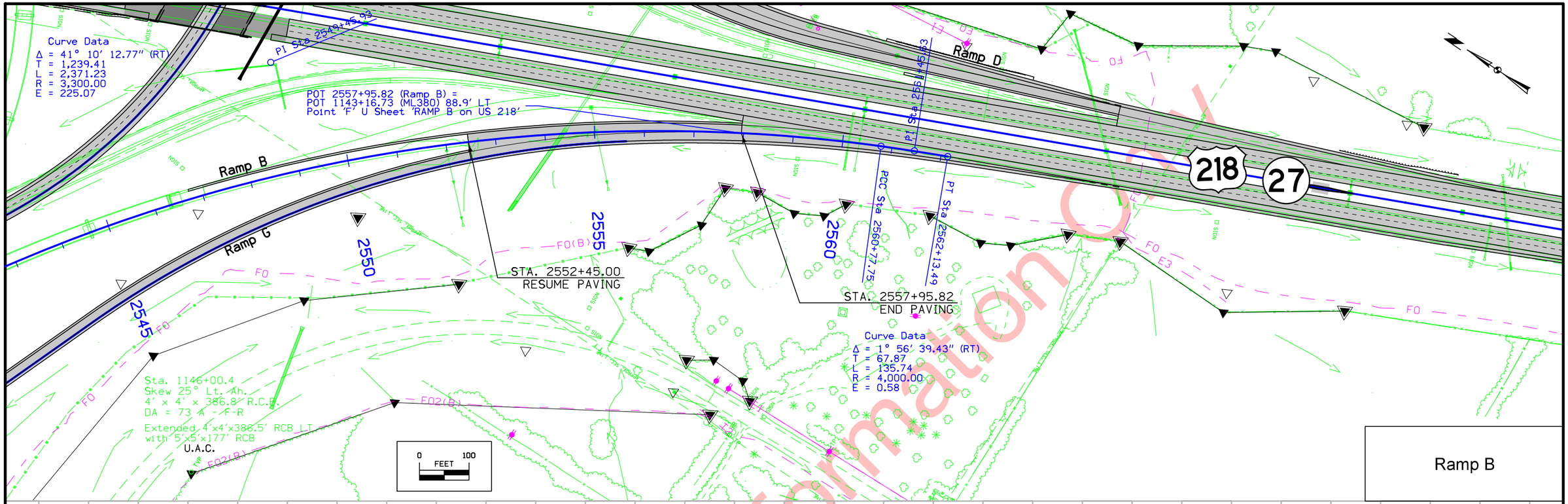
Lt / Rt: Jasper Ave — Variable - V Ditch — No Ditch — Bridge
Jasper Ave — Ditch Grade — Bridge

761.63 761.66 761.69 761.74 761.82 761.92 762.03 762.17 762.33 762.51 762.72 762.94 763.19 763.45 763.74 764.05 764.38 764.73 765.10 765.49 765.91 766.34 766.80 767.28 767.77 768.29 768.84 769.40 769.98 770.59 771.21 771.86 772.53 773.22 773.91 774.57 775.22 775.84 776.44 777.02 777.57 778.11 778.62 779.11 779.58 780.02 780.45 780.85 781.23 781.58 781.92 782.23 782.52 782.79 783.04 783.26 783.46 783.64 783.80 783.94 784.05 784.14 784.21 784.26 784.28 784.29 784.27 784.23 784.16 784.08 783.97 783.84 783.69 783.51 783.32 783.10 782.86 782.60 782.31 782.00 781.68 781.32 780.95 780.56 780.14 779.70 779.24 778.75 778.25 777.72

2515 2520 2525 2530 2535 2540

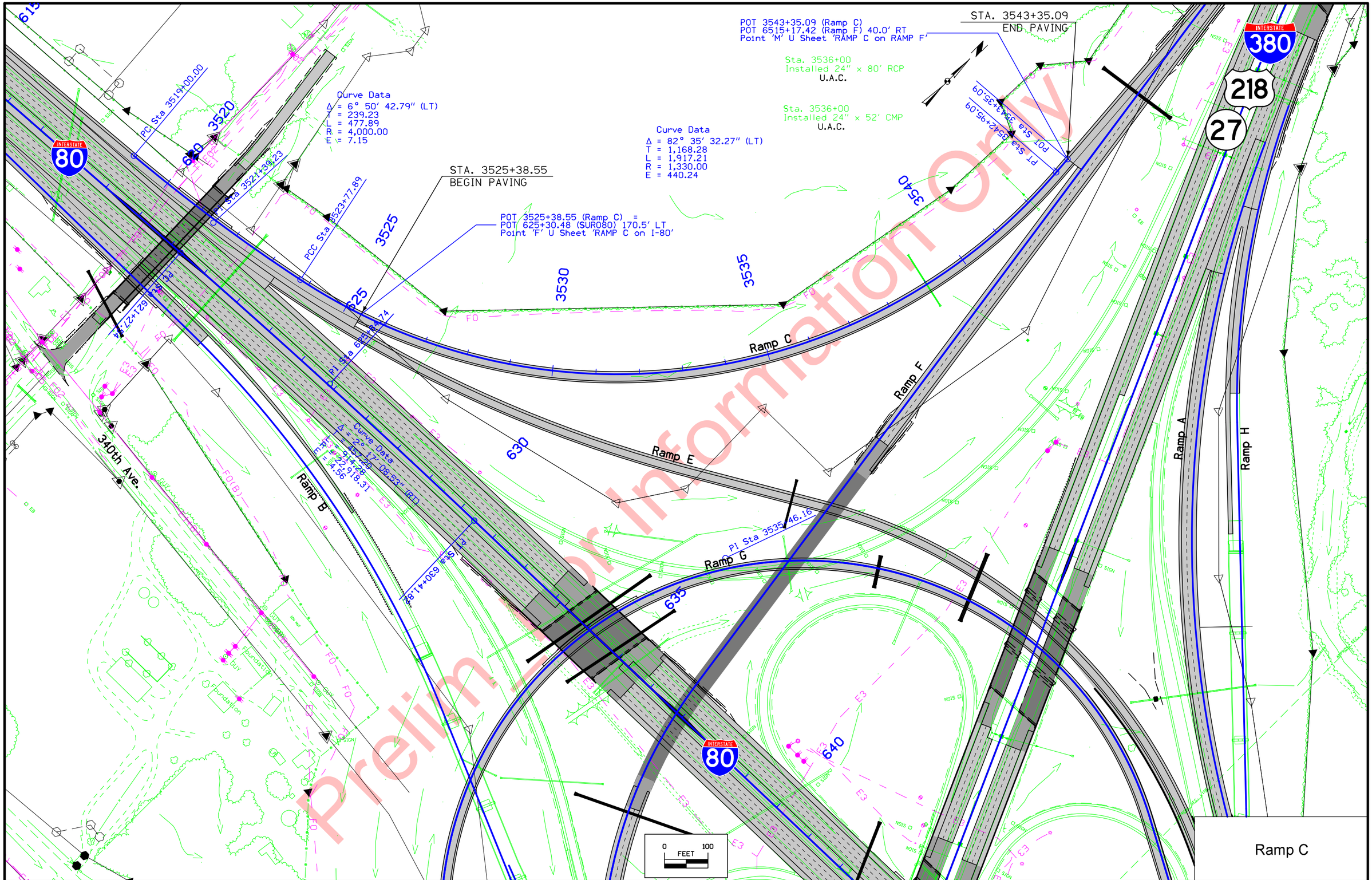
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.10

8:52:07 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



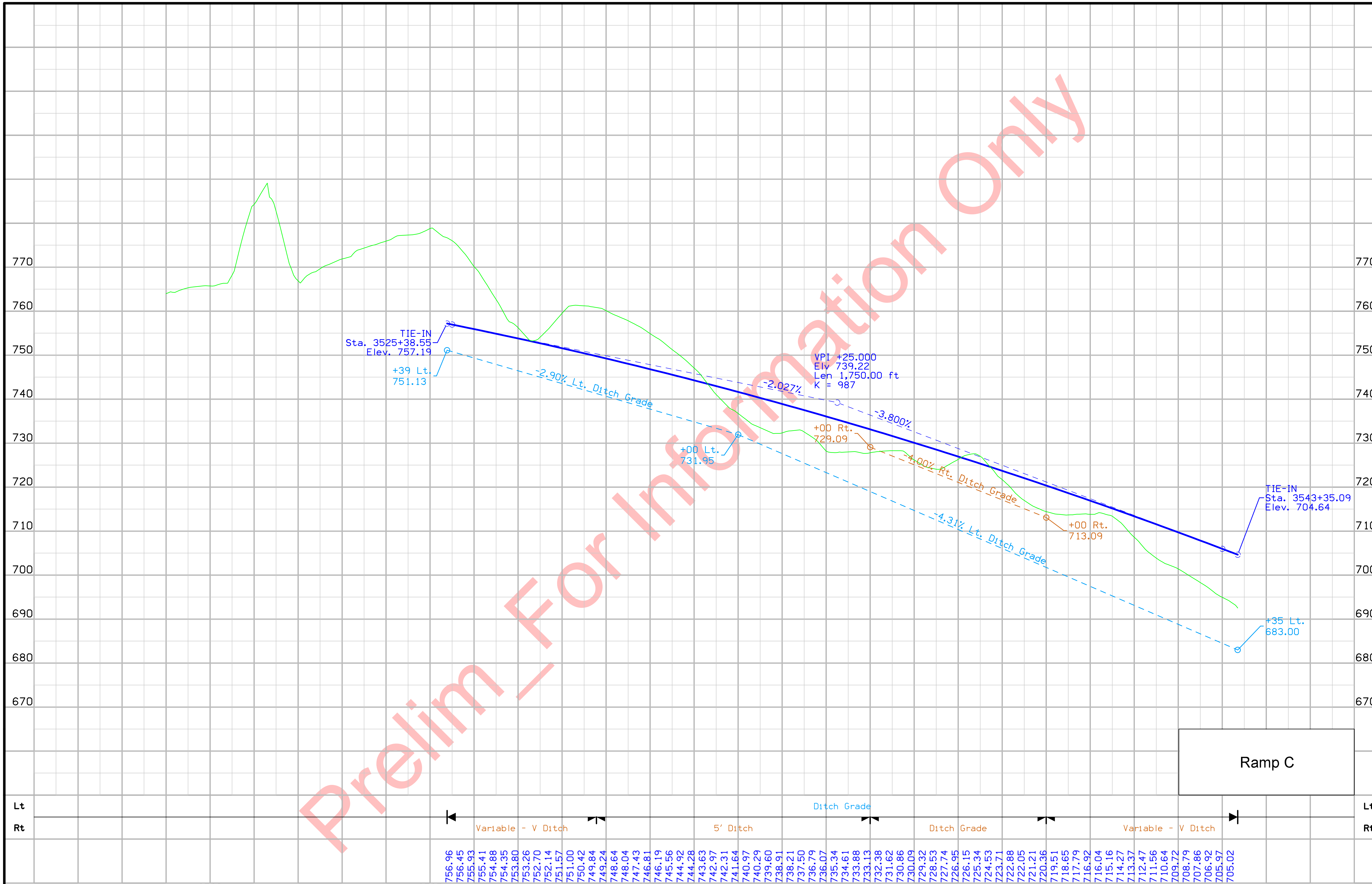
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.11

8:52:12 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



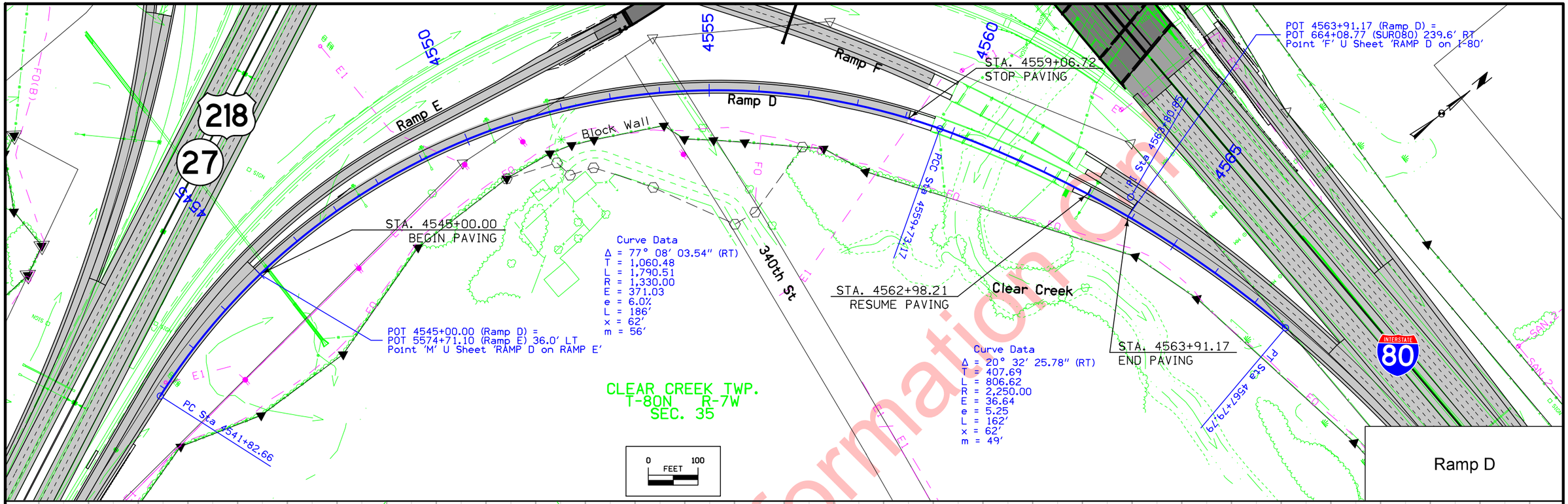
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.12

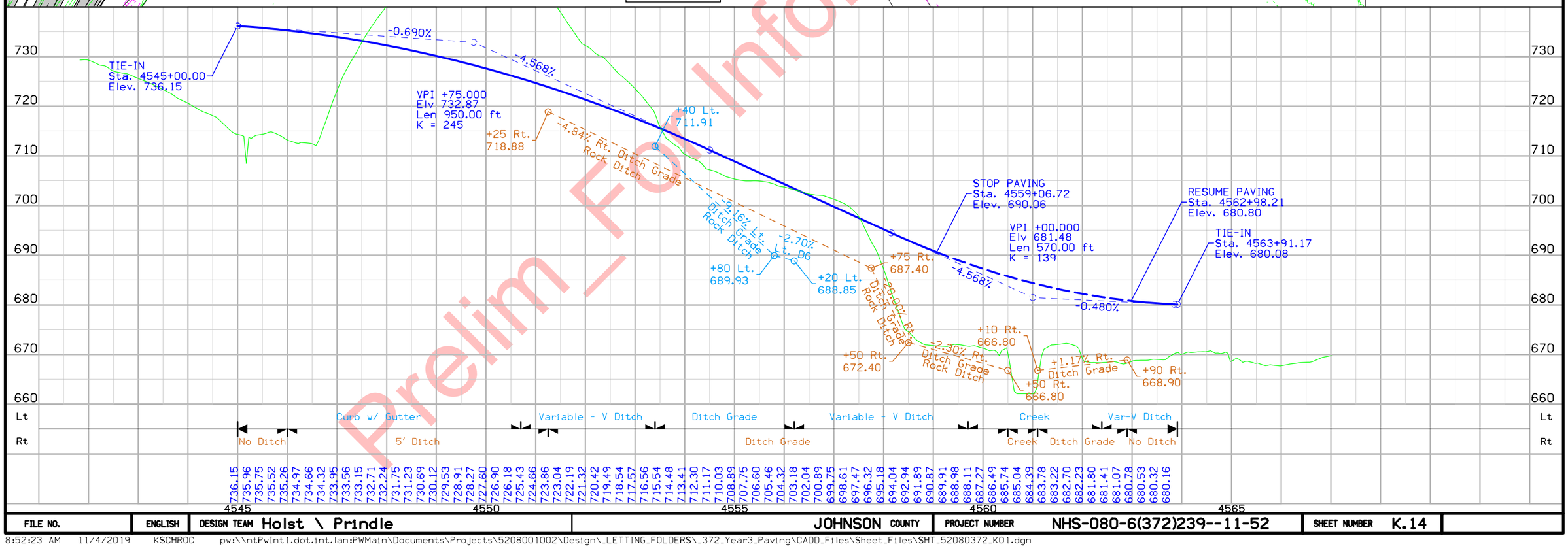
8:52:17 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_KO1.dgn


770
760
750
740
730
720
710
700
690
680
670
TIE-IN
Sta. 3525+38.55
Elev. 757.19
+39 Lt.
751.13
-2.90% Lt. Ditch Grade
-2.027%
VPI +25.000
Elv 739.22
Len 1,750.00 ft
K = 987
-3.800%
+00 Rt.
729.09
+00 Lt.
731.95
-4.00% Rt. Ditch Grade
-4.31% Lt. Ditch Grade
+00 Rt.
713.09
TIE-IN
Sta. 3543+35.09
Elev. 704.64
+35 Lt.
683.00
Ramp C
Lt
Rt
Ditch Grade
Variable - V Ditch
5' Ditch
Ditch Grade
Variable - V Ditch
756.96 756.45 755.93 755.41 754.88 754.35 753.80 753.26 752.70 752.14 751.57 751.00 750.42 749.84 749.24 748.64 748.04 747.43 746.81 746.19 745.56 744.92 744.28 743.63 742.97 742.31 741.64 740.97 740.29 739.60 738.91 738.21 737.50 736.79 736.07 735.34 734.61 733.88 733.13 732.38 731.62 730.86 730.09 729.32 728.53 727.74 726.95 726.15 725.34 724.53 723.71 722.88 722.05 721.21 720.36 719.51 718.65 717.79 716.92 716.04 715.16 714.27 713.37 712.47 711.56 710.64 709.72 708.79 707.86 706.92 705.97 705.02
3520
3525
3530
3535
3540

FILE NO.	ENGLISH	DESIGN TEAM **Holst \ Prindle**	**JOHNSON** COUNTY	PROJECT NUMBER **NHS-080-6(372)239--11-52**	SHEET NUMBER **K.13**

8:52:18 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn





FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.14

8:52:23 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

Sta. 5536+30.00
Install 24" x 64' RCP
F.L. = Lt. 711.83

Sta. 5536+30.00
Install 24" x 40' CMP
F.L. = Rt. 704.30

Sta. 7538+71 (Ramp G)
Install 65" x 40" x 150' CONC ARCH
Skew = 5° Rt. Ahd.
F.L. = Lt. 689.05
Rt. 690.83

POT 5523+28.22 (Ramp E) =
POT 623+26.52 (SUR080) 100.9' LT
Point 'F' U Sheet 'RAMP E on I-80'

STA. 5536+00.00
BEGIN GRADING

Park Road

Jasper Ave.

340th Ave.

Ramp A

Ramp B

Ramp C

Ramp E

Ramp F

Ramp G

PC Sta 5519+00.00

PCC Sta 5522+75.00

PT Sta 5533+96.71

PC Sta 5536+96.21

PI Sta 5528+87.10

5520

5525

5530

5535

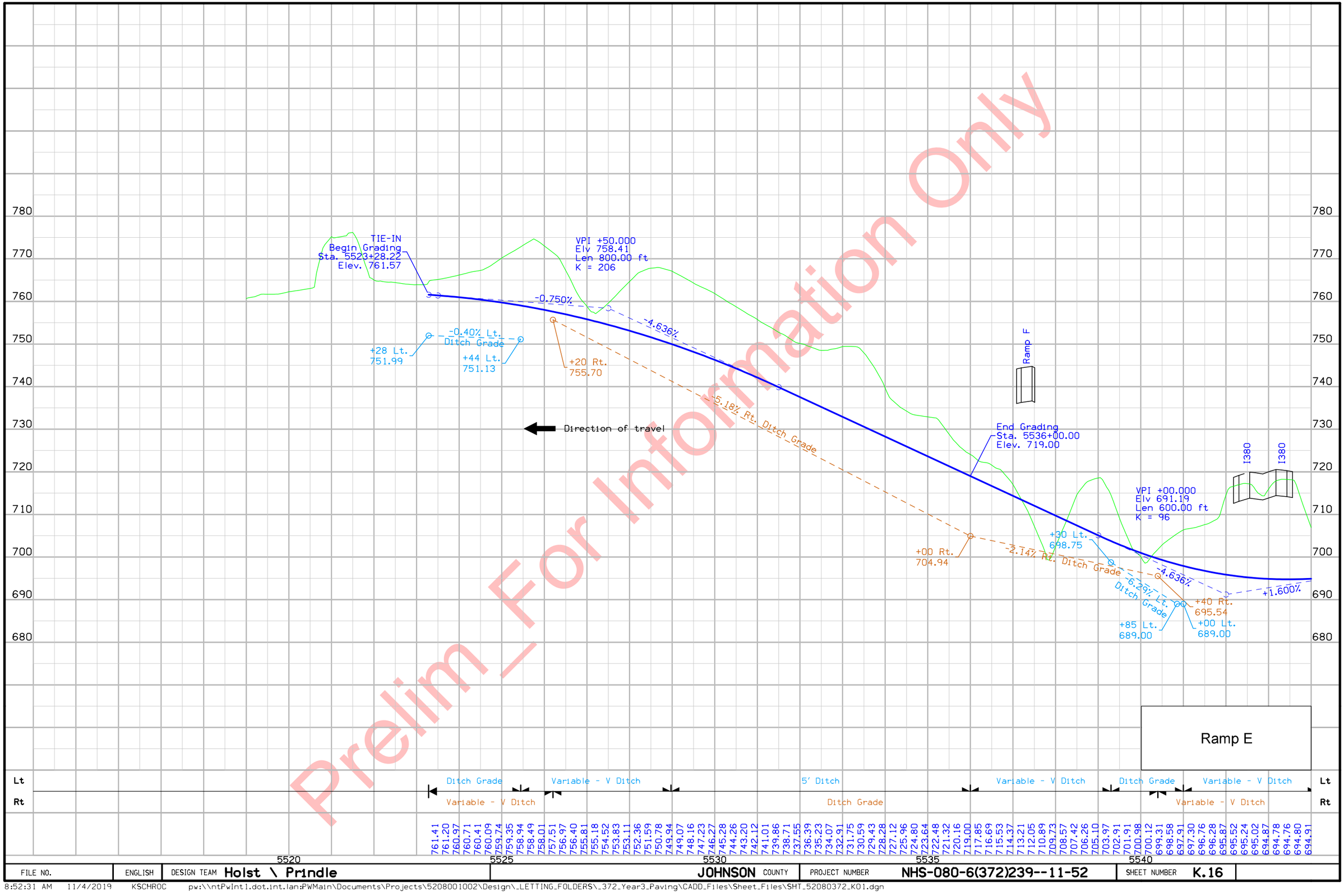
5540

INTERSTATE 80

Ramp E

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.15

8:52:29 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_KO1.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.16

8:52:31 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

PI Sta 5560+04.08

MSE Wall #1

Curve Data
Δ = 131° 09' 16.97" (RT)
T = 2,807.77
L = 2,918.58
R = 1,275.00
E = 1,808.70
e = 5.6%
L = 157'
x = 56'
m = 47'
D.S. = 50 mph

Clear Creek

INTERSTATE 80

Ramp E

Ramp H

Ramp A

Ramp G

MSE Wall #2

Ramp D

Ramp F

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

Pt Sta 5569+44.89

Pc Sta 5570+54.89

0 100 FEET

Ramp E

Ramp H

1380

VPI +20.000
Elv 705.91
Len 600.00 ft
K = 1375

+1.600%

+1.600%

+6.50% Lt. Ditch Grade

+80 Lt.
684.44

+0.94% Lt. Ditch Grade

+50 Lt.
695.49

+00 Lt.
696.84

+2.037%

VPI +00.000
Elv 719.76
Len 600.00 ft
K = 965

+1.414%

+2.037%

Ramp G

180

Ramp F

+3.88% Rt. Ditch Grade

+40 Rt.
700.81

740 730 720 710 700 690 680 670

Lt: See Ramp A Right Ditch | Ditch Grade | 3' Ditch | Bridge | Variable - V Ditch | Curb and Gutter

Rt: See Ramp G Left Ditch | Bridge | Ditch Grade

694.78 694.76 694.80 694.91 695.08 695.32 695.62 695.99 696.39 696.79 697.19 697.59 697.99 698.39 698.79 699.19 699.59 699.99 700.39 700.79 701.19 701.59 702.00 702.41 702.83 703.25 703.68 704.11 704.54 704.98 705.43 705.88 706.33 706.79 707.25 707.72 708.19 708.66 709.14 709.63 710.12 710.61 711.11 711.62 712.12 712.63 713.14 713.65 714.16 714.66 715.15 715.64 716.12 716.59 717.06 717.52 717.97 718.42 718.86 719.29 719.72 720.14 720.56 720.97 721.37 721.77 722.15 722.54 722.91 723.28 723.65 724.00 724.36 724.71 725.06 725.42 725.77 726.13 726.48 726.83 727.19 727.54 727.89 728.25 728.60 728.95 729.30 729.64 729.97 730.30 730.62 730.93 731.25 731.55 731.85 732.14 732.43 732.71 732.99 733.26 733.52 733.78 734.03 734.28 734.52 734.76 734.99 735.21 735.43 735.64 735.85 736.05 736.25 736.44 736.62 736.80 736.97 737.14 737.30 737.45

5545 5550 5555 5560 5565 5570

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.17

8:52:35 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

STA. 5583+94.48
END GRADING
END PAVING

POT 5583+94.48 (Ramp E) =
POT 1135+74.60 (ML380) 93.0' RT
Point 'M' U Sheet 'RAMP E on US 218'

POT Sta 5577+95.08

POT Sta 5591+95.08

Ramp D

Ramp E

Ramp B

Ramp G

5575

5580

5585

5590

218 27

0 FEET 100

Ramp E

VPI +00.000
Elv 742.39
Len 1,950.00 ft
K = 1087

End Grading
Sta. 5583+94.36
Elev. 738.61

TIE-IN
Sta. 5583+94.48
Elev. 738.61

+1.414%

-0.380%

+3.86% Rt. DG

+00 Rt.
734.18

+50 Lt.
733.92

-0.50% Lt. Ditch Grade

+30 Lt.
732.52

770
760
750
740
730
720
710
700

Lt C & G — No Ditch — 5' Ditch — No Ditch

Rt Ditch Grade — Variable - V Ditch

737.60 737.75 737.89 738.02 738.14 738.26 738.38 738.49 738.59 738.69 738.78 738.87 738.95 739.02 739.09 739.16 739.21 739.26 739.31 739.35 739.38 739.41 739.44 739.45 739.46 739.47 739.47 739.46 739.45 739.44 739.41 739.38 739.35 739.31 739.26 739.21 739.15 739.09 739.02 738.95 738.87 738.78 738.69

5575 5580 5585 5590

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.18

8:52:37 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

CLEAR CREEK TWP.
T-80N R-7W
SEC. 27

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

Iowa Interstate Railroad

Clear Creek

Ramp H

Ramp A

STA. 6509+05.12
BEGIN PAVING

POT Sta 6502+50.06

6505

6510

6515

6520

6525

INTERSTATE 380

218

27

48" x 76.20' C.M.P.

Sta. 1117+97.5, 147.3' Lt. (I380)
Sta. 638+47.7, 1092.5' Lt. (I80)
42" x 68.9' Conc. Pipe
DA = 27 Ac. - F-R

Ramp F

POT 6506+50.41 (RAMP F) =
POT 1189+70.70 (ML380) 100.8' LT
Point 'M' U Sheet 'RAMP F on I-380'

Ramp C

Clear Creek

Sta. 6513+00.00
Install 48"x178' RCP
F.L. = Lt. 681.49
Rt. 678.78

0 100
FEET

Ramp F

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.19

8:52:42 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

Direction of travel

TIE-IN
Sta. 6506+50.41
Elev. 694.97

Begin Paving
Sta. 6509+05.12
Elev. 690.97

-2.800%

+4.000%

VPI +00.600
Elv 685.17
Len 700.00 ft
K = 103

+78 Rt.
668.22

+2.00% Rt. Ditch Grade

+17 Rt.
683.00

+4.00% Rt. Ditch Grade

+60 Rt.
713.09

+80 Rt.
733.89

+4.000%

Ramp E

Ramp F

760
750
740
730
720
710
700
690
680
670
660
650

Lt
Rt

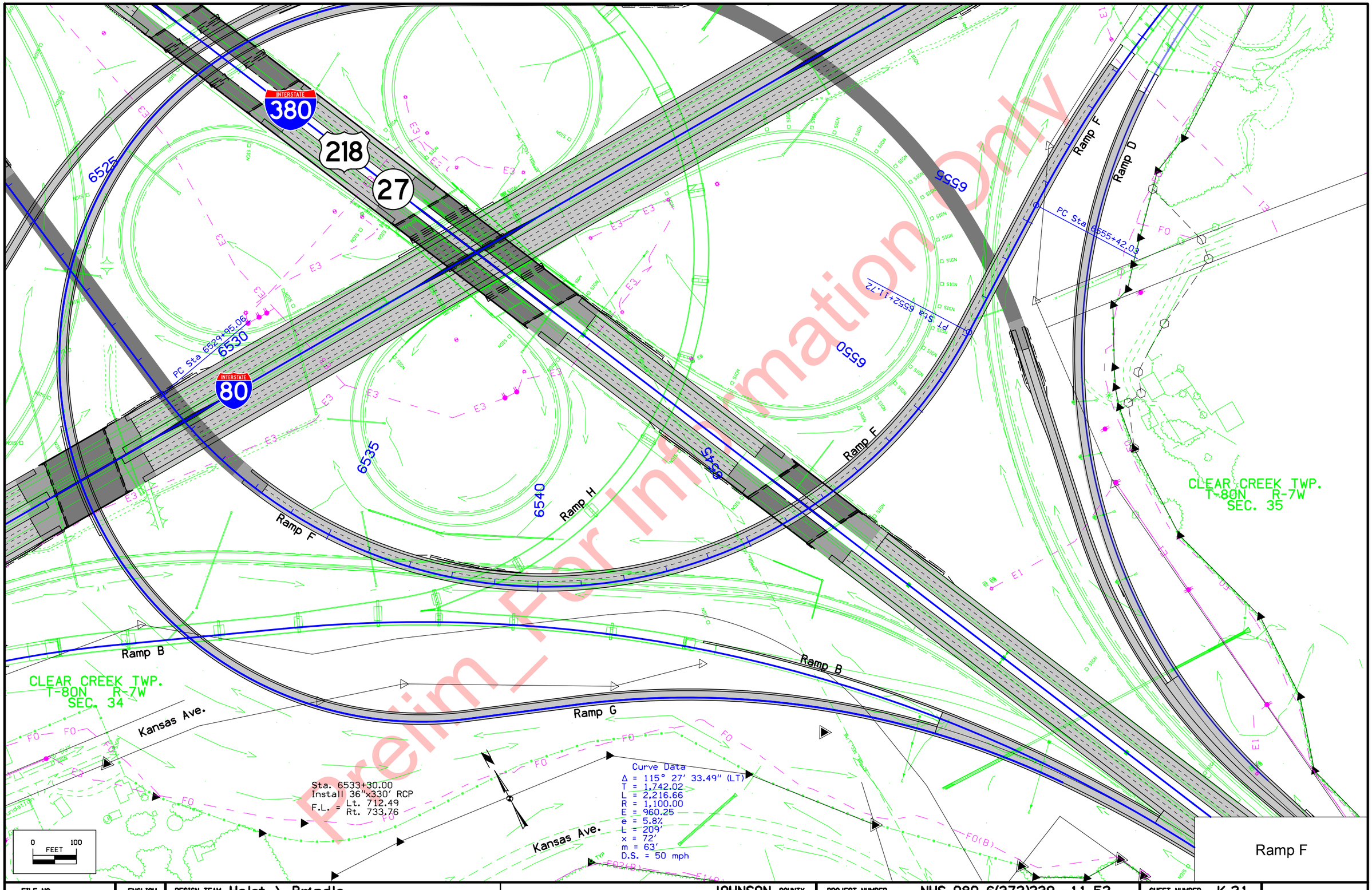
Variable - V Ditch
Ditch Grade
No Ditch
Variable - V Ditch
Ditch Grade
Bridge
Bridge

694.31 693.70 693.15 692.66 692.23 691.87 691.56 691.31 691.13 691.00 690.94 690.94 690.99 691.11 691.29 691.53 691.83 692.19 692.61 693.10 693.64 694.24 694.91 695.63 696.42 697.27 698.17 699.14 700.14 701.14 702.14 703.14 704.14 705.14 706.14 707.14 708.14 709.14 710.14 711.14 712.14 713.14 714.14 715.14 716.14 717.14 718.14 719.14 720.14 721.14 722.14 723.14 724.14 725.14 726.14 727.14 728.14 729.14 730.14 731.14 732.14 733.14 734.14 735.14 736.14 737.14 738.14 739.14 740.14 741.14 742.14 743.14 744.14 745.14 746.14 747.14 748.14 749.14

6505 6510 6515 6520 6525

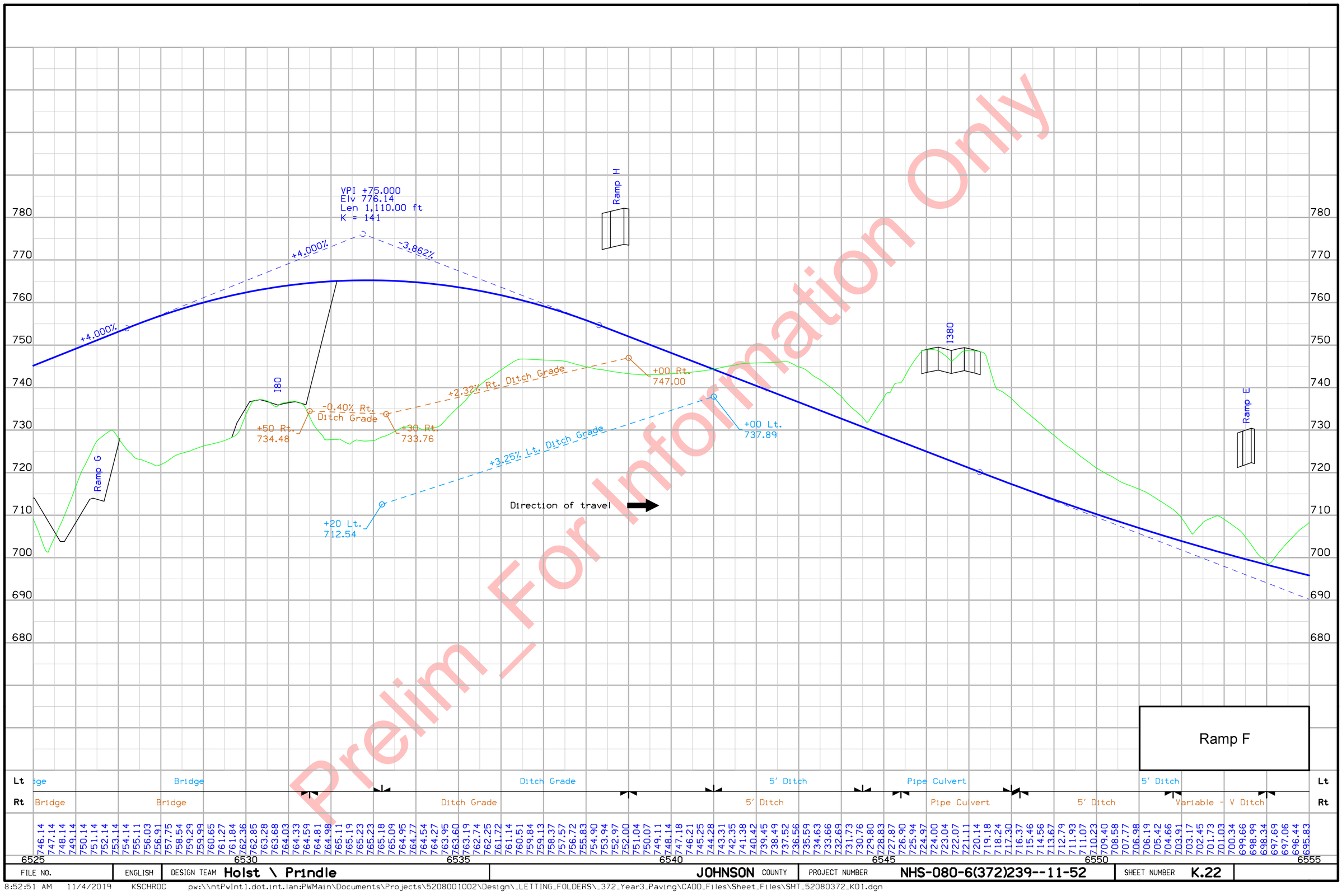
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.20

8:52:44 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



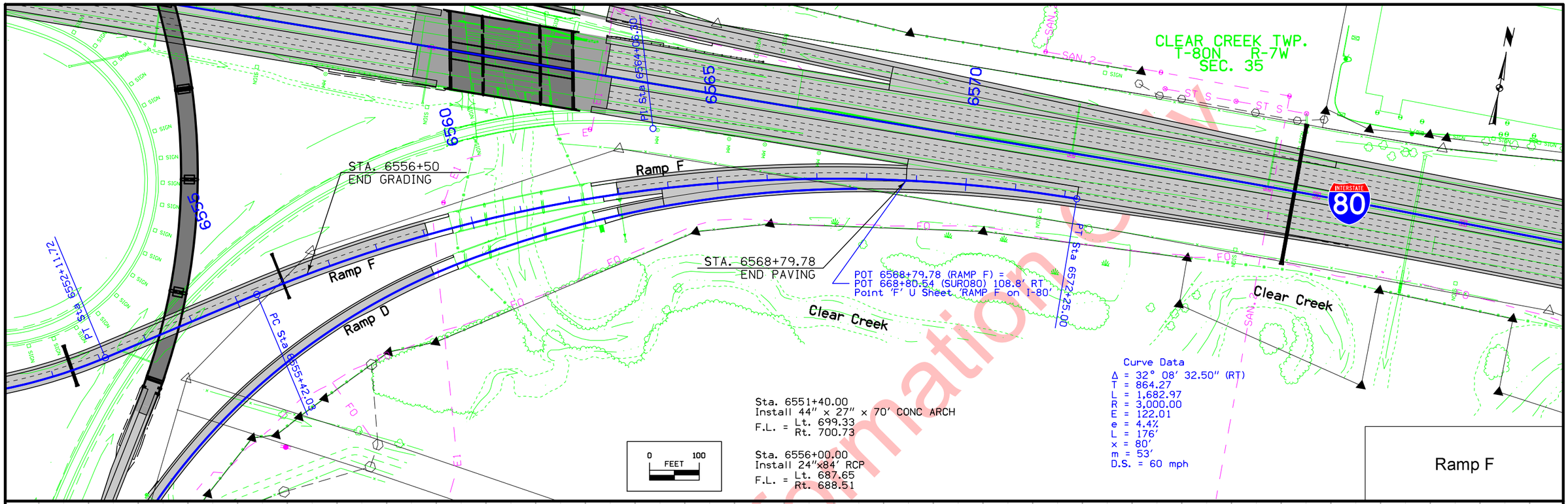
FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.21

8:52:49 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.22

8:52:51 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\52080010O2\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.23

Curve Data
Δ = 187° 07' 00.01" (RT)
T = 13,395.59
L = 2,720.41
R = 833.00
E = 14,254.47
e = 6.0%
L = 168'
x = 56'
m = 50
D.S. = 50 mph

Sta. 7525+40
24" x 58' RCP
D.A. = 6.7 Ac.
U.A.C.

STA. 7526+02.28
BEGIN GRADING

Ramp B

INTERSTATE 80

Kansas Ave.

7525

7520

CLEAR CREEK TWP.
T-80N R-7W
SEC. 34

Curve Data
Δ = 32° 55' 03.02" (LT)
T = 590.86
L = 1,149.04
R = 2,000.00
E = 85.45
e = 5.4%
L = 168'
x = 62'
m = 56'
D.S. = 60 mph

Kansas Ave.

7515

PT Sta 7515+70.07

POT 7507+35.79 (RAMP G) =
POT 2552+46.55 (RAMP B) 35.9' RT
Point 'F' U Sheet 'RAMP G on US 218'

Ramp G

PC Sta 7518+20.07

7530

Ramp C

STA. 7507+35.79
BEGIN PAVING

7510

7505

PC Sta 7504+21.04

Ramp F

Ramp B

PI Sta 7510+11.90

Ramp H

7535

Ramp G

Ramp E

27

218

CLEAR CREEK TWP.
T-80N R-7W
SEC. 35

0 100
FEET

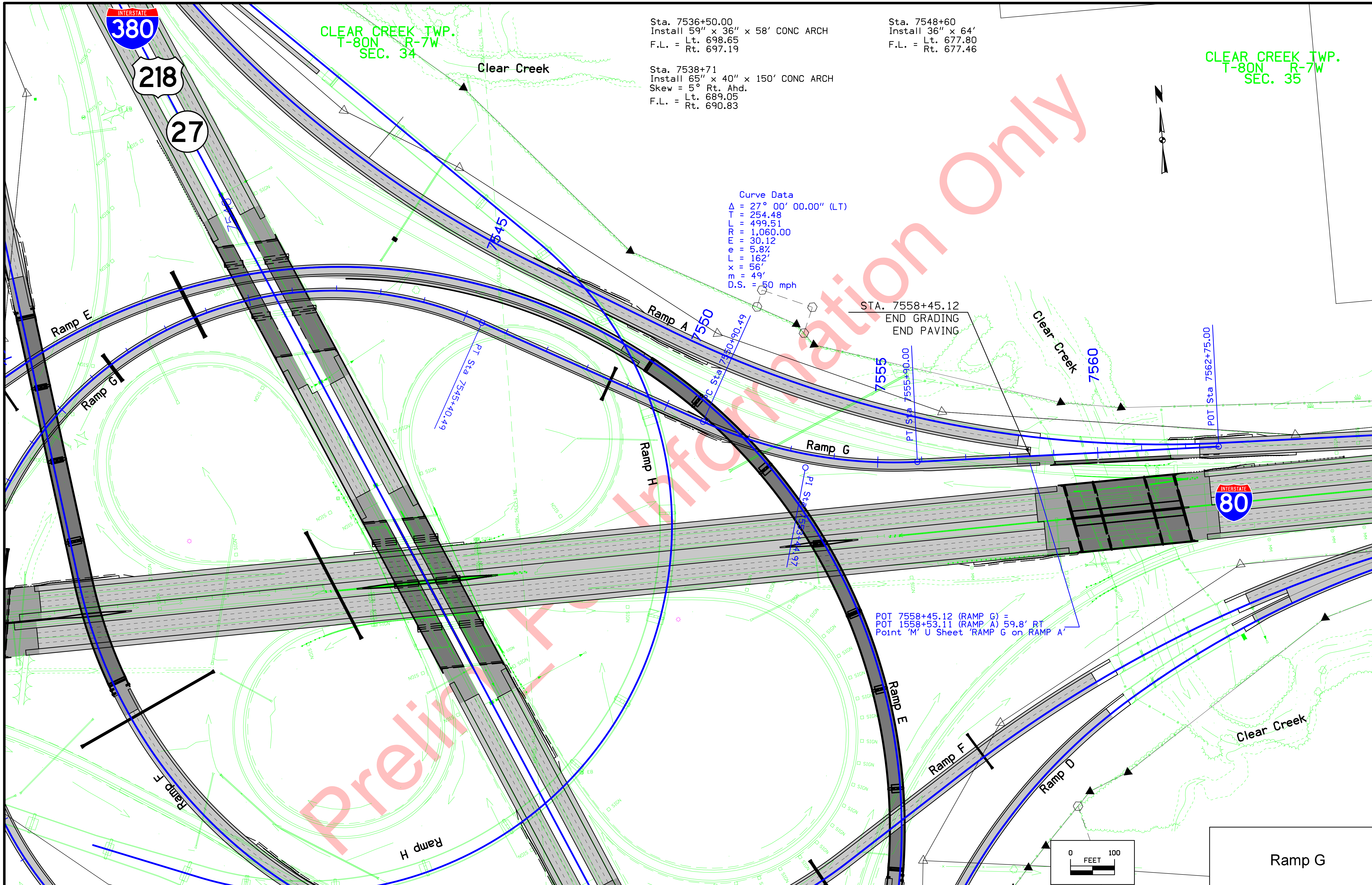
Ramp G

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.24

8:53:02 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.25

8:53:03 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

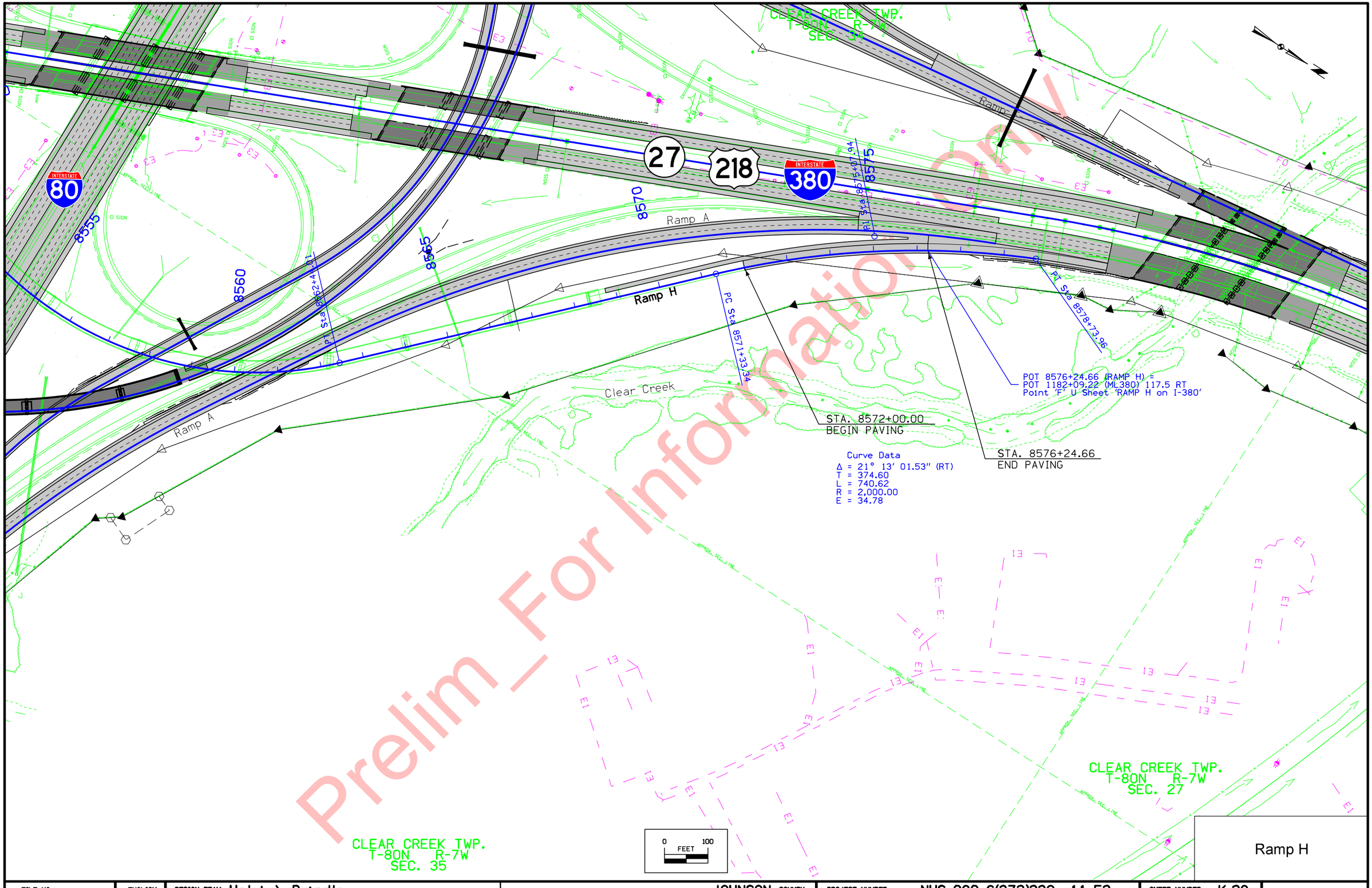


INTERSTATE 380
218
27
CLEAR CREEK TWP.
T-80N R-7W
SEC. 34
Clear Creek
Sta. 7536+50.00
Install 59" x 36" x 58' CONC ARCH
F.L. = Lt. 698.65
Rt. 697.19
Sta. 7538+71
Install 65" x 40" x 150' CONC ARCH
Skew = 5° Rt. Ahd.
F.L. = Lt. 689.05
Rt. 690.83
Sta. 7548+60
Install 36" x 64'
F.L. = Lt. 677.80
Rt. 677.46
CLEAR CREEK TWP.
T-80N R-7W
SEC. 35
Curve Data
Δ = 27° 00' 00.00" (LT)
T = 254.48
L = 499.51
R = 1,060.00
E = 30.12
e = 5.8%
L = 162'
x = 56'
m = 49'
D.S. = 50 mph
STA. 7558+45.12
END GRADING
END PAVING
7540
7545
7550
7555
7560
Ramp A
Ramp E
Ramp G
Ramp H
Ramp F
Ramp D
PI Sta 7545+40.49
PC Sta 7550+90.49
PT Sta 7555+90.00
POT Sta 7562+75.00
PI Sta 7553+44.97
Clear Creek
POT 7558+45.12 (RAMP G) =
POT 1558+53.11 (RAMP A) 59.8' RT
Point 'M' U Sheet 'RAMP G on RAMP A'
INTERSTATE 80
0 FEET 100
Ramp G
Preliminary Information Only

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.26

8:53:09 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

FILE NO.	ENGLISH	DESIGN TEAM **Holst \ Prindle**	**JOHNSON** COUNTY	PROJECT NUMBER **NHS-080-6(372)239--11-52**	SHEET NUMBER **K.27**



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.28

8:53:16 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

BEGIN PAVING
Sta. 8569+06.73
Elev. 701.67

END PAVING
Sta. 8572+00.00
Elev. 694.55

VPI +48.000
Elv 695.85
Len 1,350.00 ft
K = 484

-4.041%

-1.250%

TIE-IN
Begin Grading
Sta. 8574+00.00
Elev. 690.71

TIE-IN
Sta. 8576+24.66
Elev. 687.39

770 760 750 740 730 720 710 700 690 680 670 660

Ramp H

Lt
Rt

Variable - V Ditch

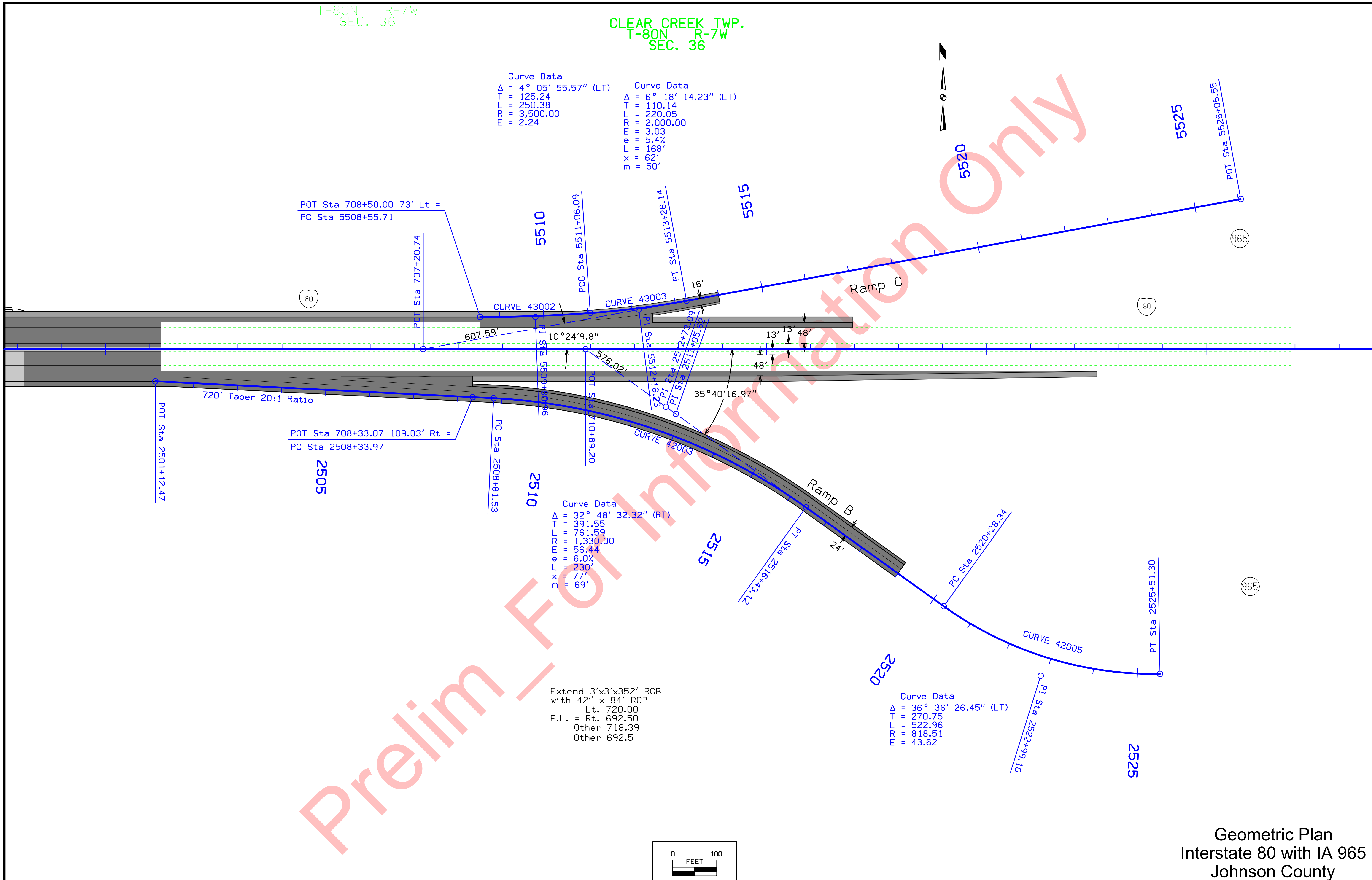
No Ditch

761.44 760.43 759.42 758.41 757.40 756.39 755.38 754.37 753.36 752.35 751.33 750.32 749.31 748.30 747.29 746.28 745.27 744.26 743.25 742.24 741.23 740.22 739.21 738.20 737.19 736.18 735.17 734.16 733.15 732.14 731.13 730.12 729.11 728.10 727.09 726.08 725.07 724.06 723.05 722.04 721.05 720.08 719.11 718.16 717.22 716.30 715.39 714.49 713.60 712.73 711.87 711.02 710.18 709.36 708.55 707.76 706.97 706.20 705.44 704.70 703.97 703.25 702.54 701.85 701.17 700.51 699.85 699.21 698.58 697.97 697.37 696.78 696.20 695.64 695.09 694.55 694.02 693.51 693.01 692.53 692.05 691.59 691.15 690.71 690.29 689.88 689.49 689.10 688.74 688.38 688.03 687.70

8555 8560 8565 8570 8575

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.29

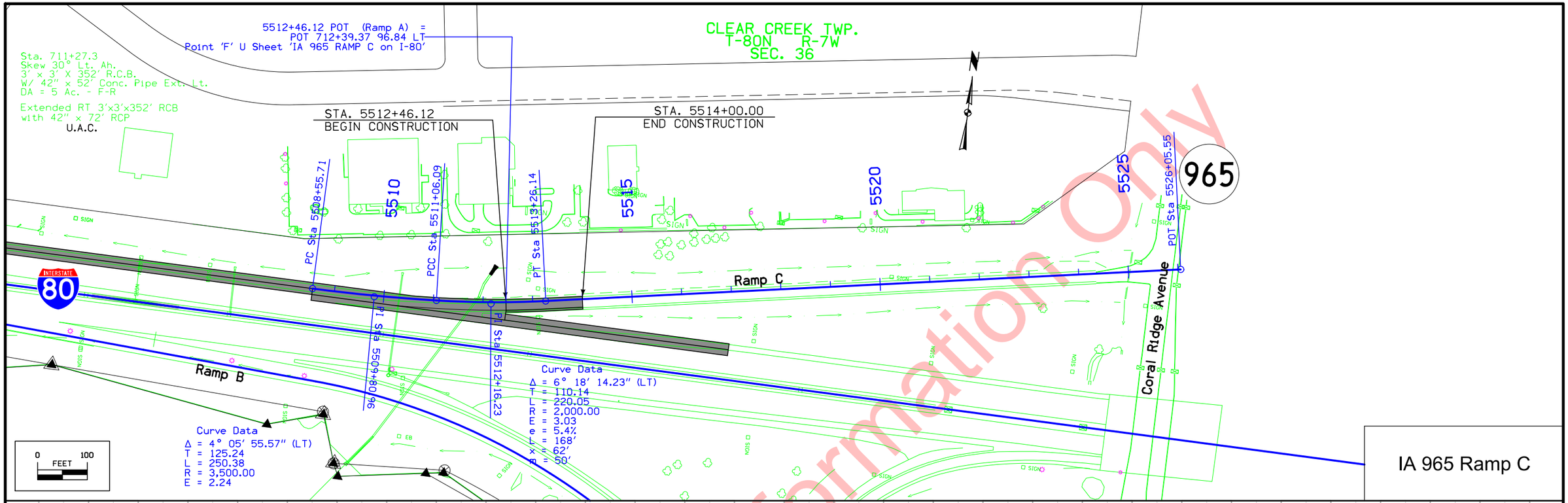
8:53:18 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn



T-80N R-7W
SEC. 36
CLEAR CREEK TWP.
T-80N R-7W
SEC. 36
Curve Data
Δ = 4° 05' 55.57" (LT)
T = 125.24
L = 250.38
R = 3,500.00
E = 2.24
Curve Data
Δ = 6° 18' 14.23" (LT)
T = 110.14
L = 220.05
R = 2,000.00
E = 3.03
e = 5.4%
L = 168'
x = 62'
m = 50'
POT Sta 708+50.00 73' Lt =
PC Sta 5508+55.71
POT Sta 707+20.74
5510
PCC Sta 5511+06.09
PT Sta 5513+26.14
5515
5520
5525
POT Sta 5526+05.55
CURVE 43002
CURVE 43003
16'
Ramp C
607.59'
10°24'9.8"
576.02'
13'
13'
48'
48'
35°40'16.97"
720' Taper 20:1 Ratio
POT Sta 2501+12.47
POT Sta 708+33.07 109.03' Rt =
PC Sta 2508+33.97
2505
PC Sta 2508+81.53
2510
POT Sta 710+89.20
CURVE 42003
Ramp B
24'
Curve Data
Δ = 32° 48' 32.32" (RT)
T = 391.55
L = 761.59
R = 1,330.00
E = 56.44
e = 6.0%
L = 230'
x = 77'
m = 69'
2515
PI Sta 2516+43.12
PC Sta 2520+28.34
CURVE 42005
PT Sta 2525+51.30
2520
Extend 3'x3'x352' RCB
with 42" x 84' RCP
Lt. 720.00
F.L. = Rt. 692.50
Other 718.39
Other 692.5
Curve Data
Δ = 36° 36' 26.45" (LT)
T = 270.75
L = 522.96
R = 818.51
E = 43.62
PI Sta 2522+99.10
2525
0 100
FEET

Geometric Plan
Interstate 80 with IA 965
Johnson County

FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.30



FILE NO.	ENGLISH	DESIGN TEAM Holst \ Prindle	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239--11-52	SHEET NUMBER K.31

8:53:21 AM 11/4/2019 KSCHROC pw:\\ntPwInt1.dot.int.lan:PWMain\Documents\Projects\5208001002\Design_LETTING_FOLDERS_372_Year3_Paving\CADD_Files\Sheet_Files\SHT_52080372_K01.dgn

ESTIMATED ROADWAY QUANTITIES
(1 DIVISION PROJECT)

DE100_0A
12/05/19

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2416-0100015	APRONS, CONCRETE, 15 IN. DIA.	EACH	1	
2	2416-0100018	APRONS, CONCRETE, 18 IN. DIA.	EACH	5	
3	2416-0100024	APRONS, CONCRETE, 24 IN. DIA.	EACH	23	
4	2416-0100030	APRONS, CONCRETE, 30 IN. DIA.	EACH	1	
5	2416-0100036	APRONS, CONCRETE, 36 IN. DIA.	EACH	1	
6	2416-0100048	APRONS, CONCRETE, 48 IN. DIA.	EACH	2	
7	2435-0140172	MANHOLE, STORM SEWER, SW-401, 72 IN.	EACH	1	
8	2435-0140400	MANHOLE, STORM SEWER, SW-404	EACH	1	
9	2435-0250700	INTAKE, SW-507	EACH	7	
10	2435-0250704	INTAKE, SW-507, WELL ONLY	EACH	5	
11	2435-0250800	INTAKE, SW-508	EACH	4	
12	2435-0250900	INTAKE, SW-509	EACH	1	
13	2435-0251000	INTAKE, SW-510	EACH	2	
14	2435-0251218	INTAKE, SW-512, 18 IN.	EACH	1	
15	2435-0251224	INTAKE, SW-512, 24 IN.	EACH	4	
16	2435-0251230	INTAKE, SW-512, 30 IN.	EACH	1	
17	2435-0254700	BARRIER INTAKE, SW-547	EACH	46	
18	2435-0254704	BARRIER INTAKE, SW-547, TOP ONLY	EACH	6	
19	2435-0254714	BARRIER INTAKE, SW-547 MODIFIED, TOP ONLY	EACH	1	
20	2435-0254900	BARRIER INTAKE, SW-549	EACH	3	
21	2435-0256204	INTAKE, SW-562, TOP ONLY	EACH	1	
22	2435-0256210	INTAKE, SW-562 MOD	EACH	20	
23	2435-0600120	INTAKE ADJUSTMENT, MAJOR	EACH	6	
24	2501-8400172	TEMPORARY SHORING	LS	1	
25	2502-8212212	SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.	LF	521	
26	2502-8215112	SUBDRAIN, CORRUGATED METAL PIPE, 12 IN. DIA.	LF	68	
27	2503-0114215	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.	LF	530	
28	2503-0114218	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.	LF	390	
29	2503-0114224	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.	LF	8566	
30	2503-0114230	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 30 IN.	LF	1064	
31	2503-0114236	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 36 IN.	LF	475	
32	2503-0114248	STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 48 IN.	LF	128	
33	2503-0116324	STORM SEWER GRAVITY MAIN, TRENCHED, 2000D LOW CLEARANCE CONCRETE PIPE, EQUIVALENT DIAMETER 24 IN.	LF	252	
34	2503-0124224	STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.	LF	969	
35	2503-0124230	STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 30 IN.	LF	392	
36	2503-0124248	STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 48 IN.	LF	166	
37	2503-0200036	REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.	LF	468	
38	2503-0200341	STORM SEWER ABANDONMENT, PLUG, LESS THAN OR EQUAL TO 36 IN. DIA.	LF	11307	
39	2503-0200342	STORM SEWER ABANDONMENT, FILL AND PLUG, GREATER THAN 36 IN. DIA.	LF	274	
40	2510-6750600	REMOVAL OF INTAKES AND UTILITY ACCESSES	EACH	41	
41	2529-5070110	PATCH, FULL-DEPTH FINISH, BY AREA	SY	14	
42	2529-5070120	PATCH, FULL-DEPTH FINISH, BY COUNT	EACH	22	
43	2599-9999005	SUBDRAIN RISER, 15 IN., WITH NYLOPLAST BEEHIVE CASTING	EACH	13	
44	2599-9999009	DRAIN, CORRUGATED METAL SLOTTED PIPE, 12 IN., W/7.5 IN. GRATE	EACH	0	
45	2599-9999020	MACADAM STONE FOR FRENCH DRAIN	TONS	75	
46	2602-0000400	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	6	
47	2602-0000410	MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	6	
48	2602-0000420	REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	6	

STANDARD ROAD PLANS

The following Standard Road Plans apply to construction work on this project.

DE105_4
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Number	Date	Title
DR-121	10-17-17	Connected Pipe Joints
DR-122	10-18-16	Construction of Type "C" Concrete Adaptors for Pipe Culvert Connections
DR-141	04-18-17	Pipe Bends and Half Pipe
DR-201	10-16-18	Concrete Aprons
DR-205	10-16-18	Concrete Apron with End Wall
SW-101	04-17-18	Trench Bedding and Backfill Zones
SW-102	04-16-19	Rigid Gravity Pipe Trench Bedding
SW-103	04-16-19	Flexible Gravity Pipe Trench Bedding
SW-211	04-17-18	Special Pipe Connections for Storm Sewer
SW-401	04-17-18	Circular Storm Sewer Manhole
SW-404	04-17-18	Rectangular Base/Circular Top Storm Sewer Manhole
SW-507	04-17-18	Single Open-Throat Intake, Small Box
SW-508	04-17-18	Single Open-Throat Intake, Large Box
SW-509	04-17-18	Double Open-Throat Curb Intake, Small Box
SW-510	04-17-18	Double Open-Throat Curb Intake, Large Box
SW-512	04-17-18	Circular Area Intake
SW-514	04-17-18	Boxouts for Grate Intakes
SW-547	04-17-18	Triple-Grate Barrier Intake
SW-549	04-17-18	Single-Grate Barrier Intake, Rectangular
SW-562	04-17-18	Vertical Throat Area Intake
SW-602	04-21-15	Castings for Storm Sewer Manholes
SW-603	10-16-18	Castings for Grate Intakes
SW-604	04-17-18	Castings for Area Intakes

ESTIMATE REFERENCE INFORMATION

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Item No.	Item Code	Description
1	2416-0100015	**APRONS, CONCRETE, 15 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
2	2416-0100018	**APRONS, CONCRETE, 18 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
3	2416-0100024	**APRONS, CONCRETE, 24 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
4	2416-0100030	**APRONS, CONCRETE, 30 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
5	2416-0100036	**APRONS, CONCRETE, 36 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
6	2416-0100048	**APRONS, CONCRETE, 48 IN. DIA.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
7	2435-0140172	**MANHOLE, STORM SEWER, SW-401, 72 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
8	2435-0140400	**MANHOLE, STORM SEWER, SW-404**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
9	2435-0250700	**INTAKE, SW-507**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
10	2435-0250704	**INTAKE, SW-507, WELL ONLY**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Bottom well was constructed during a previous project. Refer to NHS-080-6(371)239--11-52 for more details
11	2435-0250800	**INTAKE, SW-508**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
12	2435-0250900	**INTAKE, SW-509**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
13	2435-0251000	**INTAKE, SW-510**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
14	2435-0251218	**INTAKE, SW-512, 18 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
15	2435-0251224	**INTAKE, SW-512, 24 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
16	2435-0251230	**INTAKE, SW-512, 30 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
17	2435-0254700	**BARRIER INTAKE, SW-547**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Final intake tops must be cast-in-place to match adjacent pavement.
18	2435-0254704	**BARRIER INTAKE, SW-547, TOP ONLY**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Include reconstruction of intake top for six intakes (08038, 08039, 08040, 08057, 08095, and 08096).
		3- Payment will be made only if intake replacement was necessary.
		4- Final intake tops must be cast-in-place to match adjacent pavement.
19	2435-0254714	**BARRIER INTAKE, SW-547 MODIFIED, TOP ONLY**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Include removal and replacement of existing top. Refer to MODIFIED RA-47(3) MEDIAN INTAKE detail in IM-80-6(233)241--13-52 for existing intake details.
20	2435-0254900	**BARRIER INTAKE, SW-549**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Final intake tops must be cast-in-place to match adjacent pavement.
21	2435-0256204	**INTAKE, SW-562, TOP ONLY**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Bottom well was constructed during a previous project. Refer to NHS-080-6(371)239--11-52 for more details
22	2435-0256210	**INTAKE, SW-562 MOD**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Refer to Modified Standard Road Plans in the M Sheets.
23	2435-0600120	**INTAKE ADJUSTMENT, MAJOR**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.
		2- Include adjustments to intakes 08038, 08039, 08056, 08057, and 08096. Refer to Tab 104-5B notes.
24	2501-8400172	**TEMPORARY SHORING**
		This item covers all of the temporary shoring needed for storm sewer removal and installation.
25	2502-8212212	**SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.**
		This item covers the subdrain pipe as part of French Drain. Refer to M Sheet tab 104-5B, plan and profile
		views, and French Drain detail in the M Sheets.
26	2502-8215112	**SUBDRAIN, CORRUGATED METAL PIPE, 12 IN. DIA.**
		This item is used to connect median slotted drain pipe to an intake for two slotted drains.
		See Table HRG-02 in the M Sheets for more details details.
27	2503-0114215	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
28	2503-0114218	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 18 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
29	2503-0114224	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.**
		1- Refer to tab 104-5B and to plan and profile views in the M sheets.

ESTIMATE REFERENCE INFORMATION

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Item No.	Item Code	Description
		2- Quantities include additional 8 feet for 4 remove and replace pipe segments at connections to existing
		storm sewer pipes or structure. Refer to Tab 110-14 in the M Sheets. All 4 pipes were constructed during
		project NHS-080-6(371)239--11-52 and they are: P-38040, P-38067, P-38095, P-380107 for reference.
30	2503-0114230	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 30 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
31	2503-0114236	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 36 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
32	2503-0114248	**STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 48 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
33	2503-0116324	**STORM SEWER GRAVITY MAIN, TRENCHED, 2000D LOW CLEARANCE CONCRETE PIPE, EQUIVALENT DIAMETER 24 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
34	2503-0124224	**STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
35	2503-0124230	**STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 30 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
36	2503-0124248	**STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 48 IN.**
		Refer to tab 104-5B and to plan and profile views in the M sheets.
37	2503-0200036	**REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.**
38	2503-0200341	**STORM SEWER ABANDONMENT, PLUG, LESS THAN OR EQUAL TO 36 IN. DIA.**
39	2503-0200342	**STORM SEWER ABANDONMENT, FILL AND PLUG, GREATER THAN 36 IN. DIA.**
		1- Refer to tab 110-14 in the M sheets.
		2- Removal of pipes is considered incidental to grading operations unless the pipe is specified to be
		maintained are/or removed at a later stage.
		3- Includes abandonment (plug and fill) of median slotted drains immediately before placing permanent
		median barrier.
40	2510-6750600	**REMOVAL OF INTAKES AND UTILITY ACCESSES**
		Refer to tab 110-15 in the M sheets.
41	2529-5070110	**PATCH, FULL-DEPTH FINISH, BY AREA**
42	2529-5070120	**PATCH, FULL-DEPTH FINISH, BY COUNT**
		These two items cover patching of existing mainline I-80 pavement needed after installing temporary
		drainage structures and temporary inlet openings near existing pavement along I-80.
43	2599-9999005	**SUBDRAIN RISER, 15 IN., WITH NYLOPLAST BEEHIVE CASTING**
		Subdrain risers are used as interim drainage intakes during this project and future projects until they
		are removed. Contractor shall maintain those intakes and prevent any debris that could cause clogging
		to the opening of the intake. Measurement and payment shall be made for each subdrain riser and will include
		a nyloplast beehive casting, and inlet/outlet adapter as shown in the detail in the M sheets. All pipe
		bends, fittings, trenching, backfill, and all related work shall be incidental to subdrain riser installation.
44	2599-9999009	**DRAIN, CORRUGATED METAL SLOTTED PIPE, 12 IN., W/7.5 IN. GRATE**
		1- Refer to Median Slotted Drain detail in the M sheets
		2- Refer to Tab. HRG_02 (Medain Slotted Drain) in the M sheets.
		3- Measured in linear feet along the centerline of the pipe from the beginning of slotted drain to the
		center of intake. Lengths of elbows and tees are included in the length of pipe measured.
		4- Payment will be made at the unit price of the CMP slotted drain per linear foot including the slotted
		drain extender plates, #4 rebar, and PCC or HMA pavement associated with pipe installation.
		5- Unit price includes, but is not limited to, slotted drain extender plates and grates, rebar, PCC or
		HMA pavement matching adjacent pavement, trench excavation, dewatering, furnishing bedding material,
		placing bedding and backfill material, joint wrapping, wyes and other fittings, pipe joints, pipe
		connections, testing, and inspection
45	2599-9999020	**MACADAM STONE FOR FRENCH DRAIN**
		This item covers placement of macadam stone as part of French Drain. Refer to M Sheet tab 104-5B,
		plan and profile views, and French Drain detail in the M Sheets.
46	2602-0000400	**TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
47	2602-0000410	**MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
48	2602-0000420	**REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
		Temporary intake or manhole cover will be used to cover the bottom well of the intakes listed below
		before the intake top is placed at a future stage as specified. Refer to Tab 104-5B notes for details.
		The intakes are: 08038, 08039, 08043, 08046, 08052, and 08056.

REMOVAL OF INTAKES AND UTILITY ACCESSES

DE110_15
12/05/19

No.	Location/Description	Type	Remarks
RS-802	569+17.00, 8.75' RT	Intakes	
RS-806	576+70.26, 22.00' LT	Intakes	
RS-808	576+70.26, 22.00' RT	Intakes	
RS-811	580+50.00, 89.40' LT	Intakes	
RS-813	582+20.00, 22.00' LT	Intakes	
RS-815	582+20.00, 22.00' RT	Intakes	
RS-821	590+77.70, 22.00' LT	Intakes	
RS-823	590+77.70, 22.00' RT	Intakes	
RS-826	600+55.00, 22.00' LT	Intakes	
RS-829	601+70.00, 22.00' LT	Intakes	
RS-831	601+70.00, 22.00' RT	Intakes	
RS-836	609+03.00, 22.00' LT	Intakes	
RS-839	611+55.00, 32.00' RT	Intakes	
RS-841	614+39.00, 22.00' LT	Intakes	
RS-843	614+39.00, 22.00' RT	Intakes	
RS-845	617+54.20, 20.00' RT	Intakes	
RS-852	658+94.57, 0.60' LT	Intakes	
RS-857	672+00.45, 1.55' LT	Intakes	
RS-859	672+50.00, 80.00' RT	Intakes	
RS-863	676+00.00, 0.00' RT	Intakes	
RS-1003	1126+60.00, 23.50' RT	Intakes	
RS-1005	1130+90.00, 23.50' LT	Intakes	
RS-1007	1130+90.00, 23.50' RT	Intakes	
RS-1010	1140+80.00, 23.00' LT	Intakes	
RS-1012	1140+80.00, 23.50' RT	Intakes	
RS-1015	1148+25.00, 22.50' LT	Intakes	
RS-1017	1148+25.00, 22.50' RT	Intakes	
RS-1024	1161+15.00, 23.00' RT	Intakes	
RS-1025	1161+33.80, 23.00' LT	Intakes	
RS-1030	1167+60.00, 22.70' LT	Intakes	
RS-1032	1168+68.00, 23.00' LT	Intakes	
RS-1034	1168+68.00, 23.00' RT	Intakes	
RS-1036	1178+60.00, 23.50' RT	Intakes	
RS-1040	1183+07.00, 23.00' LT	Intakes	
RS-1042	1183+07.00, 23.00' RT	Intakes	
RS-1044	1184+40.00, 23.00' LT	Intakes	
RS-1050	1191+41.50, 23.00' LT	Intakes	
RS-1052	1203+62.80, 23.00' LT	Intakes	Note 1
RS-1054	1203+62.80, 23.00' RT	Intakes	
RS-1056	1209+25.50, 23.00' LT	Intakes	
RS-1201	2555+38.50, 38.00' LT	Intakes	
	TOTAL =		

Notes:

1- Remove and replace pipe segment at connections to existing storm sewer pipes or structures that are listed to be removed. Remove and replace pipe segment to the nearest joint. If removing pipe segment will undermine adjacent pavement, saw-cut a new joint at a suitable location and replace damaged pipe segment. Removal of pipe is paid for with item “REMOVE STORM SEWER PIPE LESS THAN OR EQUAL TO 36 IN.” or “REMOVE STORM SEWER PIPE GREATER THAN 36 IN” as listed. Pipe replacement is paid for with the bid item "STORM SEWER GRAVITY MAIN, TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN"

Median Slotted Drain

HRG_02
12/19/19

Refer to Median Slotted Drain detial in the M Sheets

Beginning of Slotted Drain Station	Connection Intake	Construction Stage	Length (FT)
569+30	08005	1A	263
570+00	571+00	2B	100
572+85	08006	1A	189
576+00	08010	1A	68
577+40	08010	1A	68
580+00	08008	1A	147
581+70	08007	1A	118
584+40	08015	1A	217
587+40	08018	1A	336
591+40	08019	1A	196
594+20	08020	1A	229
597+00	08021	1A	76
599+00	08028	1A	153
601+00	08026	1A	68
602+40	08026	1A	68
604+00	08025	1A	137
606+50	08024	1A	201
610+33	08031	1A	300
613+10	08030	1A	154
616+50	08035	1A	209
622+50	08034	1A	495
623+60	08038	1A	287
626+70	08039	1A	326
629+03	08039	2D, Note 1	94
637+70	08046	2E	176
640+00	641+00	2E, Note 2	100
647+35	648+85	2D, Note 3	150
657+50	08056	2B	199
663+30	08062	1B	166
665+56	08070	1B	440
671+00	08072	1B	70
672+40	08073	1B	70
674+57	08074	1B	123
676+20	08075	1B	96
679+40	08080	1B	116
682+00	08081	1B	208
684+20	08096	1B	160
		TOTAL	6573

NOTES:

1- Connect to the slotted drain constructed during stage 1A

2- Conenct the end of slotted drain to intake 08047 with a 12" corrugated metal pipe. Paid by item "SUBDRAIN, CORRUGATED METAL PIPE, 12 IN. DIA." total length = 68.0'. Placement of the 12" corrugated metal pipe follow the same specifications for placement of the slotted drain pipe.

3- Conenct the end of slotted drain to intake 08052 with a 12" corrugated metal pipe. Paid by item "SUBDRAIN, CORRUGATED METAL PIPE, 12 IN. DIA." total length = 161.0'. Placement of the 12" corrugated metal pipe follow the same specifications for placement of the slotted drain pipe.

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

DE110_14
12/05/19

* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			≤ 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
558+52.29, 1.65' RT to 558+52.73, 90.64' LT	Storm Sewer	Removal	-			RP-801, Incidental
Previously abandoned pipe at 569+42.37	Storm Sewer	Removal		-		RP-803, Incidental
Previously abandoned pipe at 569+69.86	Storm Sewer	Removal		-		RP-804, Incidental
Previously abandoned pipe at 576+02.14	Storm Sewer	Removal	-			RP-805, Incidental
576+70.26, 21.50' LT to 576+70.26, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-807
576+70.26, 21.50' RT to 576+70.26, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-809
578+02.17, 10.68' RT to 578+03.00, 70.87' RT	Storm Sewer	Removal	-			RP-810, Incidental
580+50.00, 90.15' LT to 580+50.00, 131.92' LT	Storm Sewer	Abandonment, Plug and Fill	42			AP-812
582+20.00, 21.50' LT to 582+20.00, 21.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-814
582+20.00, 21.50' RT to 582+20.00, 21.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-816
589+26.90, 0.48' LT to 589+82.15, 0.37' LT	Storm Sewer	Removal	-			AP-820, Incidental
590+77.70, 21.50' LT to 590+77.70, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-822
590+77.70, 21.50' RT to 590+77.70, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-824
599+02.31, 13.33' RT to 599+03.00, 73.87' RT	Storm Sewer	Removal	-			RP-825, Incidental
600+55.00, 21.50' LT to 600+55.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-827
Previously abandoned pipe at 601+42.49	Storm Sewer	Removal	-			RP-828, Incidental
601+70.00, 21.50' LT to 601+70.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-830
601+70.00, 21.50' RT to 601+70.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-832
605+02.53, 11.45' RT to 605+03.39, 97.92' RT	Storm Sewer	Removal	-			RP-835, Incidental
609+03.00, 11.58' LT to 609+03.00, 53.00' LT	Storm Sewer	Removal	-			RP-837, Incidental
609+03.00, 53.00' LT to 609+02.54, 107.90' LT	Storm Sewer	Abandonment, Plug and Fill	56			AP-838
611+54.83, 31.02' RT to 611+50.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	28			AP-840
614+39.00, 21.50' LT to 614+39.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-842
614+39.00, 21.50' RT to 614+39.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-844
617+54.20, 19.50' RT to 617+54.20, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	16			AP-846
635+13.43, 3.39' LT to 635+13.53, 92.71' RT	Storm Sewer	Removal	-			RP-847, Incidental
653+41.24, 1.26' LT to 653+41.49, 6.94' RT	Storm Sewer	Removal	-			RP-850, Incidental
653+41.49, 6.94' RT to 653+43.91, 84.71' RT	Storm Sewer	Abandonment, Plug and Fill	78			AP-851
658+94.51, 2.91' RT to 658+94.83, 110.00' RT	Storm Sewer	Abandonment, Plug and Fill	107			AP-853
659+54.43, 108.08' RT to 660+21.97, 108.08' RT	Storm Sewer	Removal	-			RP-854, Incidental
671+54.00, 26.00' LT to 671+71.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	28			AP-855
671+54.00, 26.00' RT to 671+71.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	28			AP-856
672+00.45, 1.55' LT to 672+00.11, 93.95' LT	Storm Sewer	Removal	-			AP-858, Incidental
672+50.00, 81.00' RT to 672+50.00, 159.00' RT	Storm Sewer	Removal	78		78.0	AP-860
675+20.00, 33.00' LT to 675+20.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	30			AP-861
675+20.00, 34.00' RT to 675+20.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	31			AP-862
676+00.25, 3.31' LT to 676+01.51, 94.79' LT	Storm Sewer	Removal	-			RP-864, Incidental
678+21.00, 31.00' LT to 678+21.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	28			AP-865
678+21.00, 32.00' RT to 678+21.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	29			AP-866
678+99.61, 111.02' LT to 679+00.57, 162.55' RT	Storm Sewer	Abandonment, Plug and Fill		274		AP-867
1117+70.00, 19.92' LT to 1117+69.11 193.52' LT	Storm Sewer	Abandonment, Plug and Fill	174			AP-1000
1125+50.00, 3.50' RT to 1125+50.00, 23.50' RT	Storm Sewer	Abandonment, Plug and Fill	20			AP-1001
1125+50.00, 23.50' RT to 1126+59.00, 23.50' RT	Storm Sewer	Removal	109		109.0	RP-1002
1128+00.17, 17.45' LT to 1128+00.57, 81.60' LT	Storm Sewer	Removal	-			RP-1004, Incidental
1130+90.00, 22.50' LT to 1126+59.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1006
1130+90.00, 22.50' RT to 1126+59.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1008
1140+80.00, 22.50' LT to 1140+80.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1011
1140+80.00, 22.50' RT to 1140+80.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1013
1141+01.15, 16.64' LT to 1141+00.72, 121.39' LT	Storm Sewer	Removal	-			RP-1014, Incidental
1148+25.00, 21.50' LT to 1148+25.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	18			AP-1016
1148+25.00, 21.50' RT to 1148+25.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	18			AP-1018
1160+43.90, 23.00' RT to 1161+14.00, 23.00' RT	Storm Sewer	Abandonment, Plug and Fill	71			AP-1022, Note 1
1160+43.90, 19.00' RT to 1160+43.90, 27.00' RT	Storm Sewer	Remove and Replace	8		8.0	RRP-1023, Note 1
1161+33.80, 2.00' LT to 1161+31.83, 112.95' LT	Storm Sewer	Removal	-			RP-1026, Incidental
1167+60.75, 22.70' LT to 1168+68.00, 23.00' LT	Storm Sewer	Removal	108		108.0	RP-1031
1168+68.00, 22.00' LT to 1168+68.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1033
1168+68.00, 22.00' RT to 1168+68.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1035
1178+60.00, 22.50' RT to 1178+60.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1037
1183+07.00, 27.00' LT to 1183+07.00, 19.00' LT	Storm Sewer	Remove and Replace	8		8.0	RRP-1041, Note 1
1183+07.00, 22.50' RT to 1183+07.00, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1043
1184+40.00, 22.50' LT to 1184+35.00, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1045
1191+41.50, 22.50' LT to 1191+41.50, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1051
1203+62.80, 27.00' LT to 1203+62.80, 19.00' LT	Storm Sewer	Remove and Replace	8		8.0	RRP-1053, Note 1
1203+62.80, 22.50' RT to 1203+62.80, 3.50' RT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1055
1209+25.50, 22.50' LT to 1209+25.50, 3.50' LT	Storm Sewer	Abandonment, Plug and Fill	19			AP-1057
1209+25.50, 27.00' RT to 1209+25.50, 19.00' RT	Storm Sewer	Remove and Replace	8		8.0	RRP-1058, Note 1
1536+46.61, 32.98' RT to 1536+02.51, 33.61' LT	Storm Sewer	Removal	80		80.0	RP-1101
1543+50.00, 109.99 RT to 1543+50.00, 161.93' RT	Storm Sewer	Removal	-			AP-1102, Incidental
1556+50.00, 38.92' LT to 1556+50.00, 37.92' RT	Storm Sewer	Abandonment, Plug and Fill	77			AP-1103
1570+47.47, 17.09' LT to 1570+49.01, 15.49' RT	Storm Sewer	Removal	33		33.0	RP-1104
2555+39.50, 38.08' LT to 2555+66.52, 40.50' LT	Storm Sewer	Removal	28		28.0	RP-1202

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

DE110_14
12/05/19

* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			≤ 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
SLOTTED DRAIN ABANDONEMENT ALONG I-380 AND US-218:						
1124+65.00, Connecting to Structure 38010	Storm Sewer	Abandonment, Plug and Fill	240			2
1126+90.00, Connecting to Structure 38009	Storm Sewer	Abandonment, Plug and Fill	140			2
1130+15.00, Connecting to Structure 38019	Storm Sewer	Abandonment, Plug and Fill	151			2
1135+10.00, Connecting to Structure 38018	Storm Sewer	Abandonment, Plug and Fill	417			2
1139+90.00, Connecting to Structure 38025	Storm Sewer	Abandonment, Plug and Fill	400			2
1143+95.00, Connecting to Structure 38037	Storm Sewer	Abandonment, Plug and Fill	312			2
1147+40.00, Connecting to Structure 38036	Storm Sewer	Abandonment, Plug and Fill	270			2
1150+40.00, Connecting to Structure 38035	Storm Sewer	Abandonment, Plug and Fill	210			2
1152+29.00, Connecting to Structure 38034	Storm Sewer	Abandonment, Plug and Fill	126			2
1158+15.00, Connecting to Structure 38040	Storm Sewer	Abandonment, Plug and Fill	225			2
1166+40.00, Connecting to Structure 38050	Storm Sewer	Abandonment, Plug and Fill	224			2
1174+15.00, Connecting to Structure 38065	Storm Sewer	Abandonment, Plug and Fill	440			2
1179+35.00, Connecting to Structure 38066	Storm Sewer	Abandonment, Plug and Fill	112			2
1181+05.00, Connecting to Structure 38067	Storm Sewer	Abandonment, Plug and Fill	191			2
1183+40.00, Connecting to Structure 38073	Storm Sewer	Abandonment, Plug and Fill	91			2
1184+50.00, Connecting to Structure 38074	Storm Sewer	Abandonment, Plug and Fill	56			2
1185+75.00, Connecting to Structure 38074	Storm Sewer	Abandonment, Plug and Fill	61			2
1194+50.00, Connecting to Structure 38087	Storm Sewer	Abandonment, Plug and Fill	146			2
1196+90.00, Connecting to Structure 38086	Storm Sewer	Abandonment, Plug and Fill	183			2
1202+40.00, Connecting to Structure 38095	Storm Sewer	Abandonment, Plug and Fill	119			2
1208+07.00, Connecting to Structure 380102	Storm Sewer	Abandonment, Plug and Fill	30			2
1209+00.00, Connecting to Structure 380102	Storm Sewer	Abandonment, Plug and Fill	56			2
1212+21.00, Connecting to Structure 380106	Storm Sewer	Abandonment, Plug and Fill	217			2
1215+00.00, Connecting to Structure 380105	Storm Sewer	Abandonment, Plug and Fill	246			2
1217+30.00, Connecting to Structure 380104	Storm Sewer	Abandonment, Plug and Fill	226			2
1221+40.00, Connecting to Structure 380115	Storm Sewer	Abandonment, Plug and Fill	261			2
SLOTTED DRAIN ABANDONEMENT ALONG I-80:						
570+00.00, Connecting to Structure 08005	Storm Sewer	Abandonment, Plug and Fill	193			3
572+85.00, Connecting to Structure 08006	Storm Sewer	Abandonment, Plug and Fill	189			3
576+00.00, Connecting to Structure 08010	Storm Sewer	Abandonment, Plug and Fill	68			3
577+40.00, Connecting to Structure 08010	Storm Sewer	Abandonment, Plug and Fill	68			3
580+00.00, Connecting to Structure 08008	Storm Sewer	Abandonment, Plug and Fill	147			3
581+70.00, Connecting to Structure 08007	Storm Sewer	Abandonment, Plug and Fill	118			3
584+40.00, Connecting to Structure 08015	Storm Sewer	Abandonment, Plug and Fill	217			3
587+40.00, Connecting to Structure 08018	Storm Sewer	Abandonment, Plug and Fill	336			3
591+40.00, Connecting to Structure 08019	Storm Sewer	Abandonment, Plug and Fill	196			3
594+20.00, Connecting to Structure 08020	Storm Sewer	Abandonment, Plug and Fill	229			3
597+00.00, Connecting to Structure 08021	Storm Sewer	Abandonment, Plug and Fill	76			3
599+00.00, Connecting to Structure 08028	Storm Sewer	Abandonment, Plug and Fill	153			3
601+00.00, Connecting to Structure 08026	Storm Sewer	Abandonment, Plug and Fill	68			3
602+40.00, Connecting to Structure 08026	Storm Sewer	Abandonment, Plug and Fill	68			3
604+00.00, Connecting to Structure 08025	Storm Sewer	Abandonment, Plug and Fill	137			3
606+50.00, Connecting to Structure 08024	Storm Sewer	Abandonment, Plug and Fill	201			3
610+33.00, Connecting to Structure 08031	Storm Sewer	Abandonment, Plug and Fill	300			3
613+10.00, Connecting to Structure 08030	Storm Sewer	Abandonment, Plug and Fill	154			3
616+50.00, Connecting to Structure 08035	Storm Sewer	Abandonment, Plug and Fill	209			3
637+70.00, Connecting to Structure 08046	Storm Sewer	Abandonment, Plug and Fill	176			3
640+00.00, Connecting to Structure 08047	Storm Sewer	Abandonment, Plug and Fill	100			3
663+30.00, Connecting to Structure 08062	Storm Sewer	Abandonment, Plug and Fill	166			3
665+56.00, Connecting to Structure 08070	Storm Sewer	Abandonment, Plug and Fill	440			3
671+00.00, Connecting to Structure 08072	Storm Sewer	Abandonment, Plug and Fill	70			3
672+40.00, Connecting to Structure 08073	Storm Sewer	Abandonment, Plug and Fill	70			3
674+57.00, Connecting to Structure 08074	Storm Sewer	Abandonment, Plug and Fill	123			3
676+20.00, Connecting to Structure 08075	Storm Sewer	Abandonment, Plug and Fill	96			3
679+40.00, Connecting to Structure 08080	Storm Sewer	Abandonment, Plug and Fill	116			3
682+00.00, Connecting to Structure 08081	Storm Sewer	Abandonment, Plug and Fill	208			3
684+20.00, Connecting to Structure 08096	Storm Sewer	Abandonment, Plug and Fill	160			3
SLOTTED DRAIN REMOVAL:						
622+50.00, Connecting to Structure 08034	Storm Sewer	Removal	-			During Stage 2F, Incidental
623+60.00, Connecting to Structure 08038	Storm Sewer	Removal	-			During Stage 2F, Incidental
629+03.00, Connecting to Structure 08039	Storm Sewer	Removal	-			During Stage 2D, Incidental
626+70.00, Connecting to Structure 08039	Storm Sewer	Removal	-			During Stage 2F, Incidental
647+35.00, Connecting to Structure 08052	Storm Sewer	Removal	-			During Stage 3B, Incidental
657+50.00, Connecting to Structure 08056	Storm Sewer	Removal	-			During Stage 2D, Incidental
		TOTALS:				
		Abandonment, Plug and Fill:	**11307**	**274**		
		Removal:	**468**			

SANITARY OR STORM SEWER ABANDONMENT OR REMOVAL

DE110_14
12/05/19

* Not a bid item

Location/Description	Sanitary or Storm Sewer	Abandonment, Plug Only or Abandonment, Plug and Fill or Removal	Length of Pipe		Fill Material*	Remarks
			≤ 36 inch diameter	> 36 inch diameter	Flowable Mortar or CLSM	
			LF	LF	CY	
Notes:						
1- Remove and replace pipe segment at connections to existing storm sewer pipes or structures that are listed to be removed.						
Remove and replace pipe segment to the nearest joint. If removing pipe segment will undermine adjacent pavement, saw-cut						
a new joint at a suitable location and replace damaged pipe segment. Removal of pipe is considered incidental to grading						
operations for the corresponding stage. Pipe replacement is paid for with the bid item "STORM SEWER GRAVITY MAIN,						
TRENCHLESS, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 24 IN"						
2- Abandon, plug and fill all median slotted drains during the placement of permanent median barrier along US-218 and I-380.						
Coordinate with permanent median barrier contractor. Refer to Tab. 104-5B in the M Sheets of project NHS-080-6(371)239--11-52						
for connection intakes station location. Refer to the as-builts for the actual locations of slotted drains along I-380.						
3- Abandon, plug and fill all median slotted drains during the placement of permanent median barrier along I-80. Coordinate						
with permanent median barrier contractor. Refer to Tab. 104-5B a in the M-Sheets for connection intakes station location.						
GN: All culverts that are not listed above are to be removed with the corresponding stage and are incidental to grading operations						

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

(2) No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes
21801	1089+60.00, 2.50 Rt (ML380)	DR-205 (24")	FL = 745.82	-		23, 27
21802	1089+60.00, 96.00 Rt (ML380)	DR-201 (24")	FL = 743.84	-		
21803	1094+00.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	739.60	734.50		2, 11
21804	1094+50.00, 0.00 Rt (ML380)	SW-562 MOD (3.5' X 3.5')	738.80	733.47		2, 11
21805	1094+50.00, 128.01 Lt (ML380)	SW-211	FL = 725.37	-		
21806	1094+50.00, 149.00 Lt (ML380)	DR-201 (24")	FL = 725.16	-		
21808	1100+50.00, 0.00 Rt (ML380)	SW-562 MOD (3.5' X 3.5')	729.42	724.10		2, 11
21809	1101+00.00, 0.00 Rt (ML380)	SW-562 MOD (3.5' X 3.5')	728.67	723.07		2, 11
21810	1101+00.00, 159.87 Lt (ML380)	SW-211	FL = 710.90	-		
21811	1101+00.00, 190.00 Rt (ML380)	DR-201 (24")	FL = 710.60	-		
21813	1106+50.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	720.44	715.50		2, 11, 35
21814	1107+00.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	719.69	714.44		2, 11, 35
21815	1109+50.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	715.95	711.18		2, 11, 35
21816	1111+50.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	713.14	708.12		2, 11, 35
21817	1112+00.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	712.56	707.54		2, 11, 35
21818	1114+50.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	710.88	705.75		2, 11, 35
21819	1115+50.00, 0.00 (ML380)	SW-562 MOD (4.0' X 4.0')	710.52	704.76		2, 11, 35
21820	1116+00.00, 0.00 (ML380)	SW-562 MOD (4.0' X 4.0')	710.34	704.23		2, 11, 35
21821	1116+50.00, 0.00 (ML380)	SW-562 MOD (4.0' X 4.0')	710.60	703.69		2, 11, 35
21822	1119+00.00, 0.00 (ML380)	SW-562 MOD (3.5' X 3.5')	712.48	707.38		2, 11, 35
21823	1117+00.00, 0.00 (ML380)	SW-562 MOD (4.0' X 4.0')	710.87	702.75		2, 11, 35
21824	1117+00.00, 165.50 Lt (ML380)	SW-211	FL = 679.30	-		
21825	1117+00.00, 195.00 Lt (ML380)	DR-201 (24")	FL = 679.01	-		
372-53	1167+60.00, 22.7 Lt (ML380)	SUBDRAIN RISER, 15"	728.55	-		2, 33
372-54	1167+68.00, 23.0 Lt (ML380)	SW-211	FL = 724.37	-		33
38050	1167+68.00, 0.00 (ML380)	-	-	-		1
38052	1168+84.00, 165.00 Rt (ML380)	SW-211	FL = 691.18	-		
38053	1168+89.00, 215.80 Rt (ML380)	SW-211	FL = 682.00	-		
38054	1168+90.50, 234.35 Rt (ML380)	DR-201 (24")	FL = 681.81	-		
38062	1173+50.00, 125.00 Rt (ML380)	SW-211	FL = 692.82	-		
38063	1173+50.00, 164.70 Rt (ML380)	DR-201 (24")	FL = 688.85	-		
08000	561+50.00, 0.00 (ML080)	SW-547	745.28	739.50		
08001	559+50.00, 0.00 (ML080)	SW-547	743.36	737.24		
08002	559+50.00, 98.00 Rt (ML080)	DR-201 (24")	FL = 735.38	-		
372-01	567+49.97, 1.93 Rt (ML080)	POINT ALONG FRENCH DRAIN	744.91	-		13
372-02	569+17.00, 8.75 Rt (ML080)	SW-512 (24")	744.50	739.00		Type 4B Casting
08003	569+17.00, 0.00 (ML080)	SW-547	744.83	738.82		18
08004	569+17.00, 95.00 Lt (ML080)	DR-201 (24")	FL = 737.90	-		
08005	571+96.00, 0.00 (ML080)	SW-547	743.78	736.75		
08006	574+76.00, 0.00 (ML080)	SW-547	742.73	734.80		
08007	580+50.00, 0.00 (ML080)	SW-547	743.68	736.65		
08008	578+50.00, 0.00 (ML080)	SW-547	742.68	735.53		
08009	577+89.52, 0.00 (ML080)	SW-547	742.46	735.08		
372-04	576+70.26, 22.00 Lt (ML080)	SUBDRAIN RISER, 15"	741.70	-		2, 5
372-05	576+70.26, 22.00 Rt (ML080)	SUBDRAIN RISER, 15"	741.84	-		2, 5
08010	576+70.26, 0.00 (ML080)	SW-547	742.28	734.36		
08012	575+50.67, 0.00 (ML080)	SW-547	742.46	733.13		10
372-07	578+02.00, 22.00 Rt (ML080)	OPEN PIPE INLET	FL = 741.38	-		4, 9
372-08	578+03.00, 77.00 Rt (ML080)	-	-	-		1
372-70	580+50.00, 89.40 Lt (ML080)	SUBDRAIN RISER, 15"	741.30	-		2, 5
372-71	580+50.00, 138.00 Lt (ML080)	DR-201 (15")	FL = 738.16	-		
372-09	582+20.00, 22.00 Rt (ML080)	SUBDRAIN RISER, 15"	743.81	740.9		2, 5, 7
372-10	582+20.00, 22.00 Lt (ML080)	SUBDRAIN RISER, 15"	743.81	740.9		2, 5, 7
08015	582+20.00, 0.00 (ML080)	SW-547 (CIRCULAR)	744.53	734.34		10

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

(2) Line Number	Intake/Utility Access (2) No. From	To	Class 'D'	(1) Pipe Size IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
P-21801	21801	21802	2000	24	82	81.2	1.2		744.9	743.93			
P-21803	21803	21804	2000	24	51.0	47.0	1.60		735.00	734.25			
P-21804	21804	21805	2000J	24	131.0	126.5	6.80		733.97	725.37			
P-21805	21805	21806	2000	24	17.0	14.9	1.00		725.37	725.22			
P-21808	21808	21809	2000	24	51.0	47.0	1.60		724.60	723.85			
P-21809	21809	21810	2000J	24	163.0	158.4	8.00		723.57	710.90			
P-21810	21810	21811	2000	24	26.0	24.0	1.00		710.90	710.66			
P-21813	21813	21814	2000	24	51.0	47.0	1.60		716.00	715.25			
P-21814	21814	21815	2000	24	251.0	247.0	1.20		714.94	711.98			
P-21815	21815	21816	2000	24	201.0	197.0	1.40		711.68	708.92			
P-21816	21816	21817	2000	24	51.0	47.0	0.60		708.62	708.34			
P-21817	21817	21818	2000	24	253.0	248.5	0.60		708.04	706.55			
P-21818	21818	21819	2000	24	101.0	97.0	0.50		706.25	705.76			
P-21819	21819	21820	2000	30	51.0	47.0	0.50		705.26	705.03			
P-21820	21820	21821	2000	30	51.0	47.0	0.50		704.73	704.49			
P-21821	21821	21823	2000	30	51.0	47.0	0.50		704.19	703.96			
P-21822	21822	21823	2000	24	201.0	197.0	0.80		707.88	706.30			
P-21823	21823	21824	2000J	30	168.0	164.0	14.60		703.25	679.30			
P-21824	21824	21825	2000	30	26.0	23.4	1.00		679.30	679.07			
P-372-53	372-53	372-54	2000	15	112.0	107.3	1.90		726.41	724.37			33
PEX-372-54	372-54	38050		15	-	-	2.00		724.37	-			1
PEX-38050	38050	38052		24	-	-	18.00		-	691.18			1
P-38052	38052	38053	2000	24	56.0	51.1	18.00		691.18	682.00			
P-38053	38053	38054	2000	24	15.0	12.5	1.00		682.00	681.87			
PEX-38060	38060	38062		24	-	-	19.00		-	692.82			1
P-380062	38062	38063	2000	24	36.0	33.6	10.00		692.82	689.46			
P-08000	08000	08001	2000	24	199.0	195.0	1.00		740.00	738.05			
P-08001	08001	08002	2000	24	91.0	88.4	2.50		737.74	735.53			3
P-372-01	372-01	372-02	SUBDRAIN	12	167.0	166.2	0.50		742.90	742.07			13
P-08003	372-02	08004	2000	24	99.0	96.6	1.50		739.50	738.05			18
P-08005	08005	08006	2000	24	279.0	275.0	0.60		737.25	735.60			
P-08006	08006	08012	2000	24	74.0	69.7	0.60		735.30	734.88			
P-08007	08007	08008	2000	24	199.0	195.0	0.50		737.15	736.18			
P-08008	08008	08009	2000	24	60.0	55.5	0.50		736.03	735.75			
P-08009	08009	08010	2000	24	119.0	114.3	0.50		735.58	735.01			
P-372-04	372-04	08010	2000	15	22.0	17.5	2.00		739.17	738.82			
P-372-05	372-05	08010	2000	15	22.0	17.5	2.00		739.17	738.82			
P-08010	08010	08012	2000	24	119.0	114.6	0.50		734.86	734.28			
PEX-08012	08012	-		36	-	-			733.63				1
PEX-372-07	372-07	372-08		24	-	-	0.94		741.39	-			4
P-372-70	372-70	372-71	2000	15	44.0	41.8	1.00		738.6	738.18			
P-372-09	372-09	08015	2000	15	22.0	17.5	1.00		741.4	741.22			
P-372-10	372-10	08015	2000	15	22.0	17.8	0.50		741.4	741.22			
PEX-08015	08015	08016		48	-	-	2.16		734.84	-			

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

(2) No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes
08016	581+73.00, 159.00 Lt (ML080)	-	-	-		1
372-12	590+77.70, 22.00 Rt (ML080)	SUBDRAIN RISER, 15"	743.1	-		2, 5, 7
372-13	590+77.70, 22.00 Lt (ML080)	SUBDRAIN RISER, 15"	743.1	-		2, 5, 7
08018	590+77.70, 0.00 (ML080)	SW-547	744.04	737		
08019	593+40.00, 0.00 (ML080)	SW-547	742.73	735.4		
08020	596+50.00, 0.00 (ML080)	SW-547	741.18	733.52		
08021	597+79.17, 0.00 (ML080)	SW-547	740.53	732.9		
08022	598+00.00, 114.00 Lt (ML080)	DR-201 (30")	FL = 732.62	-		
372-15	599+02.20, 22.00 Rt (ML080)	OPEN PIPE INLET	FL = 738.97	-		4, 7, 9
372-16	599+03.00, 80.00 Rt (ML080)	-	-	-		1
08024	604+50.00, 0.00 (ML080)	SW-547	740.56	733.50		
08025	602+60.00, 0.00 (ML080)	SW-547	739.06	732.36		
372-17	601+70.00, 22.00 Rt (ML080)	SW-512 (24")	738.60	734.98		Type 4B Casting
372-18	601+70.00, 22.00 Lt (ML080)	SW-512 (24")	738.6	734.98		Type 4B Casting
08026	601+70.00, 0.00 (ML080)	SW-547	738.88	731.36		
08027	600+76.47, 0.00 (ML080)	SW-547	739.06	730.89		
372-19	600+55.00, 22.00 Lt (ML080)	SUBDRAIN RISER, 15"	738.90	-		2, 5
08028	600+55.12, 0.00 (ML080)	SW-547	739.15	730.50		10
08029	600+55.00, 124.25 Lt (ML080)	-	-	-		1
372-20	605+02.50, 26.00 Rt (ML080)	OPEN PIPE INLET	FL = 738.13	-		4, 9
372-21	605+03.50, 102.90 Rt (ML080)	-	-	-		1
372-24	611+55.00, 32.00 Rt (ML080)	SUBDRAIN RISER, 15"	751.74	-		2, 5, 12
08030	611+50.00, 0.00 (ML080)	SW-547	751.66	744.32		
08031	607+31.00, 0.00 (ML080)	SW-547	744.89	737.4		
08032	607+31.00, 137.00 Rt (ML080)	DR-201 (24")	FL = 732.30	-		
372-22	609+03.00, 22.00 Lt (ML080)	SW-512 (18")	746.6	-		29
372-23	609+03.00, 120.00 Lt (ML080)	-	-	-		1
372-29	617+54.20, 20.00 Rt (ML080)	SUBDRAIN RISER, 15"	760.4	-		2, 5
08034	617+54.00, 0.00 (ML080)	SW-547	760.63	753.55		
372-26	614+39.00, 22.00 Lt (ML080)	SUBDRAIN RISER, 15"	756.05	-		2, 5
372-27	614+39.00, 22.00 Rt (ML080)	SUBDRAIN RISER, 15"	755.48	-		2, 5
08035	614+39.00, 0.00 (ML080)	SW-547	756.32	748.47		
08036	614+39.00, 134.00 Rt (ML080)	DR-201 (24")	FL = 747.10	-		
08038	626+50.00, 0.00 (ML080)	SW-547	759.90	754.30		11, 14
08039	630+00.00, 0.00 (ML080)	SW-547	754.34	747.66		11, 15
08040	632+60.60, 0.00 (ML080)	SW-547	748.28	742.65		11, 30
08041	632+60.60, 108.00 Rt (ML080)	DR-201 (24")	FL = 742.04	-		
08043	636+12.84, 0.00 (ML080)	SW-547	738.02	731.22		11, 19
08044	636+12.84, 119.00 Lt (ML080)	SW-211	722.36	-		
08045	636+12.84, 143.00 Lt (ML080)	DR-201 (24")	FL = 722.25	-		
08046	639+50.00, 0.00 (ML080)	SW-547	727.98	721		11, 19
08047	641+70.00, 0.00 (ML080)	SW-547	721.39	714.01		11, 37
08048	641+70.00, 111.00 Lt (ML080)	SW-211	706.23	-		
08049	641+70.00, 141.00 Lt (ML080)	DR-201 (24")	FL = 706.08	-		
08051	647+15.00, 0.00 (ML080)	SW-547	705.19	698.2		
08052	650+50.00, 0.00 (ML080)	SW-547	695.29	688		19
08053	652+59.50, 0.00 (ML080)	SW-547	690.84	682.24		34
08054	652+74.90, 89.00 Lt (ML080)	SW-211	FL = 679.88	-		16
08055	652+82.00, 128.00 Lt (ML080)	DR-201 (24")	FL = 678.57	-		
08056	655+50.00, 0.00 (ML080)	SW-547	688.39	678.3		21
08057	658+48.17, 0.00 (ML080)	SW-547	686.9	673.99		20
08058	658+48.17, 96.00 Rt (ML080)	SW-211	FL = 671.99	-		
08059	658+48.17, 144.50 Rt (ML080)	DR-201 (24")	FL = 670.68	-		

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

(2) Line Number	(2) Intake/Utility Access No. From	To	Class 'D'	(1) Pipe Size IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
P-372-12	372-12	08018	2000	15	22.0	17.8	1.00		740.70	740.52			
P-372-13	372-13	08018	2000	15	22.0	17.8	1.00		740.70	740.52			
P-08018	08018	08019	2000	24	262.0	257.3	0.50		737.50	736.21			
P-08019	08019	08020	2000	24	309.0	305.0	0.50		735.90	734.37			
P-08020	08020	08021	2000	30	129.0	124.2	0.40		734.02	733.52			
P-08021	08021	08022	2000J	30	109.0	106.3	0.70		733.40	732.66			
PEX-372-15	372-15	372-16		24	-	-	2.20		738.97	-			4
P-08024	08024	08025	2000	24	189.0	185.0	0.60		734.00	732.89			
P-08025	08025	08026	2000	24	89.0	85.0	0.60		732.86	732.35			
P-372-17	372-17	08026	2000	15	22.0	17.5	1.00		735.48	735.30			
P-372-18	372-18	08026	2000	15	22.0	17.5	1.00		735.48	735.30			
P-08026	08026	08027	2000	30	93.0	88.5	0.50		731.86	731.42			
P-08027	08027	08028	2000	30	21.0	16.4	0.50		731.39	731.31			
P-372-19	372-19	08028	2000	15	22.0	17.5	1.00		735.50	735.32			
PEX-08028	08028	08029		30	-	-	1.90		730.68	-			1
PEX-372-20	372-20	372-21		24	-	-	1.03		738.13	-			4
P-372-24	372-24	08030	2000	15	32.0	27.9	1		748.2	747.92			
P-08030	08030	08031	2000	24	418.0	414.0	1.60		744.82	738.20			
P-08031	08031	08032	2000J	24	130.0	127.4	4.20		737.9	732.55			
PEX-372-22	372-22	372-23		24	-	-	2.60		742.7	-			
P-372-29	372-29	08034	2000	15	20.0	15.5	2.00		757.06	756.75			
P-08034	08034	08035	2000	24	314.0	310.0	1.50		754.05	749.52			
P-372-26	372-26	08035	2000	15	22.0	17.5	1.00		752.75	752.57			
P-372-27	372-27	08035	2000	15	22.0	17.5	1.00		752.75	752.57			
P-08035	08035	08036	2000J	24	127.0	124.4	1.70		748.97	747.2			
P-08038	08038	08039	2000	24	349.0	345.0	1.80		754.80	748.59			
P-08039	08039	08040	2000	24	260.0	255.6	1.80		748.16	743.56			
P-08040	08040	08041	2000J	24	101.0	98.4	1.00		743.15	742.10			
P-08043	08043	08044	2000	24	120.0	115.5	8.10		731.72	722.37			
P-08044	08044	08045	2000	24	20.0	17.9	0.5		722.37	722.28			
P-08046	08046	08047	2000	24	219.0	215.0	3.1		721.5	714.84			
P-08047	08047	08048	2000	24	112.0	107.5	7.7		714.51	706.23			
P-08048	08048	08049	2000	24	26.0	23.9	0.5		706.23	706.11			
P-08051	08051	08052	2000	24	334.0	330.0	3		698.7	688.8			
P-08052	08052	08053	2000	24	209.0	204.5	2.5		688.5	683.39			3
P-08053	08053	08054	2000J	24	91.0	86.9	3.3		682.74	679.88			16
P-08054	08054	08055	2000	24	36.0	33.5	3.3		679.88	678.77			
P-08056	08056	08057	2000	24	298.0	293.2	0.5		678.8	677.33			
P-08057	08057	08058	2000J	24	97.0	92.5	2.7		674.49	671.99			16
P-08058	08058	08059	2000	24	45.0	42.4	2.7		671.99	670.85			

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

(2) No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes
08062	665+00.00, 0.00 (ML080)	SW-547	683.64	676.60		
08063	662+65.83, 0.00 (ML080)	SW-547	684.81	672.96		
08064	662+65.00, 136.00 Rt (ML080)	DR-201 (24")	FL = 670.93	-		
08070	670+00.00, 0.00 (ML080)	SW-547	681.14	674.10		
08071	670+61.84, 0.00 (ML080)	SW-547	680.88	673.72		
372-31	671+54.00, 26.00 Lt (ML080)	OPEN PIPE INLET	676.43	-		9
372-32	671+54.00, 26.00 Rt (ML080)	OPEN PIPE INLET	676.43	-		9
08072	671+70.00, 0.00 (ML080)	SW-547	680.71	673.10		
08073	672+81.78, 0.00 (ML080)	SW-547	680.89	672.47		
08074	673+30.00, 0.00 (ML080)	SW-547	681.08	672.15		
372-33	675+20.00, 33.00 Lt (ML080)	OPEN PIPE INLET	FL = 675.80	-		9
372-34	675+20.00, 34.00 Rt (ML080)	OPEN PIPE INLET	FL = 675.90	-		9
08075	675+20.00, 0.00 (ML080)	SW-547	682.27	670.98		
08076	676+59.00, 0.00 (ML080)	SW-547	683.20	669.50		
08077	676+59.00, 117.00 Lt (ML080)	SW-401 (72")	675.00	668.00		39
08078	680+50.00, 151.00 Lt (ML080)	DR-205 (48")	668.05	-		23
08079	680+41.14, 119.19 Lt (ML080)	SW-404 (6' x 7')	678.80	665.90		25
372-35	678+21.00, 31.00 Lt (ML080)	OPEN PIPE INLET	FL = 677.6	-		7, 9
372-36	678+21.00, 32.00 Rt (ML080)	OPEN PIPE INLET	FL = 677.6	-		7, 9
08080	678+21.00, 0.00 (ML080)	SW-547	684.28	676.00		
08081	679+88.30, 0.00 (ML080)	SW-547 (CIRCULAR)	685.43	665.20		
08082	679+17.80, 160.30 Rt (ML080)	DR-201 (48")	FL = 664.84	-		
08095	685+00.00, 0.00 (ML080)	SW-547 MOD, TOP ONLY	694.80	-		
08096	682+60.00, 0.00 (ML080)	INTAKE ADJUSTMENT, MAJOR	689.14	-		26
08097	682+60.00, 90.00 Lt (ML080)	SW-211	FL = 681.16	-		
08098	682+60.00, 130.00 Lt (ML080)	SW-211	FL = 671.08	-		
08099	682+60.00, 152.00 Lt (ML080)	DR-201 (24")	FL = 670.86	-		
372-42	670+50.00, 80.40 Lt (ML080)	DR-205 (18")	FL = 675.02	-		23, 27
372-43	670+50.00, 125.18 Lt (ML080)	DR-201 (18")	FL = 672.14	-		
372-38	668+99.89, 91.80 Rt (ML080)	POINT ALONG FRENCH DRAIN	FL = 676.22	-		13
372-39	670+97.00, 77.90 Rt (ML080)	POINT ALONG FRENCH DRAIN	FL = 676.16	-		13
372-40	672+50.00, 80.00 Rt (ML080)	SW-512 (24")	675.79	672.45		Type 5 Casting
372-41	672+50.00, 159.00 Rt (ML080)	OPEN PIPE OUTLET		-		
RampA-10	1543+50.00, 108.74 Rt (ML380A)	SW-512 (30")	686.30	672.25		10
372-90	1556+50.00, 44.00 Rt (ML380A)	DR-205 (18")	FL = 681.70	-		23
372-91	1556+50.00, 45.00 Lt (ML380A)	DR-201 (18")	FL = 680.78	-		
RampA-29	1564+00.00, 39.90 Rt (ML380A)	SW-562 MOD (3.5' X 3.5')	682.06	676.49		2
RampA-30	1566+50.00, 34.42 Rt (ML380A)	SW-562 MOD (3.5' X 3.5')	681.88	675.05		2, 28
RampA-31	1566+50.00, 58.00 Lt (ML380A)	DR-201 (24")	FL = 670.34	-		
RampB-01	2555+68.00, 40.50 Lt (ML380B)	SW-562, TOP ONLY	741.58	-		24
RampD-01	4547+55.00, 23.00 Lt (ML380D)	SW-507, TOP ONLY	733.88	-	12.0%	24, 36
RampD-03	4549+10.00, 23.00 Lt (ML380D)	SW-507, TOP ONLY	730.71	-	23.8%	24, 36
RampD-05	4550+50.00, 23.00 Lt (ML380D)	SW-507, TOP ONLY	727.00	-	22.8%	24, 36
RampD-07	4551+75.00, 23.00 Lt (ML380D)	SW-507, TOP ONLY	723.01	-	14.8%	24, 36

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

(2) Line Number	Intake/Utility Access No. From	Intake/Utility Access No. To (2)	Class 'D'	(1) Pipe Size IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Flow Lines: Outlet Elevation	Flow Lines: Other Elevation	Pipe Profile Sheet No.	Notes
P-08062	08062	08063	2000	24	234.0	229.2	0.5		677.1	675.95			
P-08063	08063	08064	2000J	24	129.0	126.4	1.9		673.46	671.06			16
P-08070	08070	08071	2000	24	61.0	56.8	0.5		674.60	674.32			
P-08071	08071	08072	2000	24	108.0	103.2	0.5		674.22	673.71			
P-372-31	372-31	08072	2000	18	32.0	27.6	3.0		676.43	675.6			
P-372-32	372-32	08072	2000	18	32.0	27.6	3.0		676.43	675.6			
P-08072	08072	08073	2000	30	111.0	106.8	0.5		673.60	673.07			
P-08073	08073	08074	2000	30	48.0	43.2	0.5		672.97	672.75			
P-08074	08074	08075	2000	30	189.0	185.0	0.5		672.65	671.73			
P-372-33	372-33	08075	2000	18	34.0	29.5	7.0		675.80	673.73			
P-372-34	372-34	08075	2000	18	35.0	30.5	7.0		675.90	673.76			
P-08075	08075	08076	2000	30	138.0	134.0	0.5		671.48	670.81			
P-08076	08076	08077	2000J	30	115.0	110.5	1.0		670.00	668.89			22
P-08077	08077	08079	2000	36	382.0	377.4	0.5		668.50	666.61			
PEX-08077a	Bio-Swale	08077		15			2.0		-	668.66			
P-08078	08078	08079	2000	36	25.0	22.0	1.0		667.25	667.03			
P-08079-1	08079	08081	2000	48	128.0	123.9	0.5		666.40	665.78			3
P-372-35	372-35	08080	2000	18	32.0	27.5	3.0		677.63	676.8			
P-372-36	372-36	08080	2000	18	33.0	28.5	3.0		677.63	676.77			
P-08080	08080	08081	2000	24	166.0	161.3	0.5		676.50	675.69			
P-08079-2	08081	08082	2000J	48	166.0	163.6	0.5		665.70	664.88			
PEX-08095	08095	08096		29 x 18	-	-	3.0		-	683.3			1
PEX-08096	08096	08097		24	-	-	1.2		682.20	681.16			
P-08097	08097	08098	2000	24	44.0	40.0	25.2		671.27	670.84			
P-08098	08098	08099	2000	24	18.0	15.9	1.0		671.08	670.92			
P-372-42	372-42	372-43	2000	18	33.0	32.6	3.0		673.31	672.33			
P-372-38	372-38	372-40	SUBDRAIN	12	354.0	349.2	0.5		674.97	673.22			13
P-372-40	372-40	372-41	2000	15	80.0	78.0	5.5		672.95	668.66			
P-RampA-10	RampA-10	-		24	-	-	0.8		672.75	-			10
P-372-90	372-90	372-91	2000	18	77.0	76.8	1.0		681.63	680.85			
P-RampA-29	RampA-29	RampA-30	2000	24	252.0	247.1	0.5		676.99	675.75			
P-RampA-30	RampA-30	RampA-31	2000	24	93.0	90.1	5.6		675.55	670.5			9, 28

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

No. (2)	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes
RampE-01	5542+82.93, 27.00 Rt (ML380E)	SW-507	693.45	688.21		
RampE-02	5543+46.25, 27.00 Rt (ML380E)	SW-509	693.25	687.62		
RampE-03	5544+09.16, 27.00 Rt (ML380E)	SW-507	693.46	687.04		
RampE-04	5545+08.00, 25.46 Rt (ML380E)	SW-549	694.68	683.57		32
RampG-05	7542+50.00, 8.00 Lt (ML380G)	SW-508	690.33	683.1		
RampG-06	7544+30.00, 8.00 Lt (ML380G)	SW-507	686.84	681.02		
RampE-07	5548+50.00, 25.46 Rt (ML380E)	SW-549	700.15	685.5		32
RampG-08	7545+70.00, 8.00 Lt (ML380G)	SW-507	684.96	679.07		
RampG-09	7546+65.00, 8.00 Lt (ML380G)	SW-507	684.1	678.23		
RampG-10	7547+35.00, 8.00 Lt (ML380G)	SW-508	683.68	677.4		
RampG-11	7547+94.00, 8.00 Lt (ML380G)	SW-508	683.47	676.97		
RampG-12	7548+25.00, 8.00 Lt (ML380G)	SW-508	683.41	676.63		
RampE-13	5551+50.00, 25.46 Rt (ML380E)	SW-549	705.34	683.21		32
RampG-14	7548+60.00, 8.00 Lt (ML380G)	SW-510	683.38	676.29		
RampG-15	7549+69.00, 37.5.00 Lt (ML380G)	DR-205 (24")	FL = 678.01	-		23
RampG-17	7548+97.00, 8.00 Lt (ML380G)	SW-510	683.41	675.91		
RampG-18	7549+31.00, 58.00 Rt (ML380G)	DR-201 (36")	FL = 675.70	-		
RampE-20	5582+50.00, 25.27 Rt (ML380E)	SW-562 MOD (4.0' X 4.0')	738.96	734.93		
RampE-21	5580+00.00, 28.90 Rt (ML380E)	SW-562 MOD (4.0' X 4.0')	738.73	733.84		
RampE-22	5580+00.00, 47.00 Lt (ML380E)	DR-201 (24")	FL = 733.75	-		
RampF-01	6563+00.00, 11.00 Rt (ML380F)	SW-507, TOP ONLY	682.08	-		24
372-95	1536+50.00, 38.00 Rt (ML380A)	DR-205 (18")	FL = 692.77	-		23
RampH-10	8572+50.00, 39.75 Lt (ML380H)	SW-562 MOD (3.5' X 3.5')	692.3	688.3		
RampH-11	8572+50.00, 22.00 Rt (ML380H)	SW-211	FL = 686.99	-		
RampH-12	8572+50.00, 60.00 Rt (ML380H)	SW-211	FL = 672.93	-		
RampH-13	8572+50.00, 89.00 Rt (ML380H)	DR-201 (24")	FL = 672.36	-		
RampH-01	8574+97.00, 27.00 Lt (ML380H)	SW-507	689.86	685.66		
RampA-02	1532+87.00, 11.00 Lt (ML380A)	SW-507	689.96	685.01		
RampH-03	8575+57.00, 54.00 Rt (ML380H)	SW-211	FL = 673.09	-		
RampH-04	8575+57.00, 69.00 Rt (ML380A)	DR-201 (24")	FL = 673.00	-		

STANDARD ROAD PLAN	BID ITEM	COUNT
DR-201 (15")	APRONS, CONCRETE, 15 IN. DIA.	1
DR-201 (18")	APRONS, CONCRETE, 18 IN. DIA.	2
DR-205 (18")	APRONS, CONCRETE, 18 IN. DIA.	3
DR-201 (24")	APRONS, CONCRETE, 24 IN. DIA.	21
DR-205 (24")	APRONS, CONCRETE, 24 IN. DIA.	2
DR-201 (30")	APRONS, CONCRETE, 30 IN. DIA.	1
DR-201 (36")	APRONS, CONCRETE, 36 IN. DIA.	1
DR-201 (48")	APRONS, CONCRETE, 48 IN. DIA.	1
DR-205 (48")		1
SW-401 (72")	MANHOLE, STORM SEWER, SW-401, 72 IN.	1
SW-404 (6' X 7')	MANHOLE, STORM SEWER, SW-404	1
SW-507	INTAKE, SW-507	7
SW-507, TOP ONLY	INTAKE, SW-507, WELL ONLY	5
SW-508	INTAKE, SW-508	4
SW-509	INTAKE, SW-509	1
SW-510	INTAKE, SW-510	2
SW-512 (18")	INTAKE, SW-512, 18 IN.	1
SW-512 (24")	INTAKE, SW-512, 24 IN.	4
SW-512 (30")	INTAKE, SW-512, 30 IN.	1
SW-562, TOP ONLY	INTAKE, SW-562, TOP ONLY	1
SW-562 MOD (3.5' X 3.5')	INTAKE, SW-562 MOD	14
SW-562 MOD (4.0' X 4.0')	INTAKE, SW-562 MOD	6
SW-547	BARRIER INTAKE, SW-547	44
SW-547 (CIRCULAR)	BARRIER INTAKE, SW-547	2
SW-547 MOD, TOP ONLY	BARRIER INTAKE, SW-547, TOP ONLY	1
SW-549	BARRIER INTAKE, SW-549	3
INTAKE ADJUSTMENT, MAJOR	INTAKE ADJUSTMENT, MAJOR	6
SUBDRAIN RISER, 15"	RAIN RISER, 15 IN., WITH NYLOPLAST BEEHIVE CAS	13

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

Line Number (2)	Intake/Utility Access No. (2) From	To	Class 'D'	Pipe Size (1) IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
P-RampE-01	RampE-01	RampE-02	2000	24	60.0	55.9	0.5		688.71	688.43			
P-RampE-02	RampE-02	RampE-03	2000	24	60.0	55.5	0.5		688.12	687.84			
P-RampE-03	RampE-03	RampG-05	2000	24	98.0	93.2	2.0		687.54	685.67			3
P-RampE-04	RampE-04	RampG-05	2000	24	21.0	16.8	1.0		684.07	683.9			32
P-RampG-05	RampG-05	RampG-06	2000	24	182.0	177.8	1.0		683.60	681.82			
P-RampG-06	RampG-06	RampG-08	2000	24	142.0	137.1	1.2		681.52	679.87			
P-RampE-07	RampE-07	RampG-08	2000	24	54.0	49.7	10.0		686.00	681.03			32
P-RampG-08	RampG-08	RampG-09	2000	24	95.0	91.0	0.7		679.57	678.93			
P-RampG-09	RampG-09	RampG-10	2000	24	70.0	66.0	0.5		678.73	678.4			
P-RampG-10	RampG-10	RampG-11	2000	30	59.0	55.0	0.5		677.90	677.63			
P-RampG-11	RampG-11	RampG-12	2000	30	31.0	27.0	0.5		677.47	677.33			
P-RampG-12	RampG-12	RampG-14	2000	30	33.0	29.0	0.5		677.13	676.99			
P-RampE-13	RampE-13	RampG-14	2000	24	53.0	48.1	11.0		683.71	678.42			32
P-RampG-14	RampG-14	RampG-17	2000	30	33.0	29.0	0.5		676.79	676.63			
P-RampG-15	RampG-15	RampG-17	2000	24	70.0	67.2	1.0		677.95	677.28			3
P-RampG-17	RampG-17	RampG-18	2000	36	68.0	65.3	1.0		676.41	675.76			
P-RampE-20	RampE-20	RampE-21	2000	29 x 18	252.0	247.0	0.4		735.43	734.44			
P-RampE-21	RampE-21	RampE-22	2000	24	71.0	68.3	0.8		734.34	733.79			
P-372-95	372-95	RampH-10	2000	18	82.0	79.9	3.7		692.46	689.5			
P-RampH-10	RampH-10	RampH-11	2000	24	65.0	60.3	3.0		688.80	686.99			
P-RampH-11	RampH-11	RampH-12	2000	24	42.0	38.0	37.0		686.99	672.93			
P-RampH-12	RampH-12	RampH-13	2000	24	25.0	22.9	2.0		672.93	672.48			
P-RampH-01	RampH-01	RampA-02	2000	24	62.0	57.7	0.5		686.16	685.87			
P-RampA-02	RampA-02	RampH-03	2000	24	86.0	81.9	15.0		685.51	673.22			
P-RampH-03	RampH-03	RampH-04	2000	24	11.0	8.9	1.5		673.22	673.09			

Bid Item	COUNT
STORM SWR GRAVITY MAIN, TRENCHED, 15"	530.0
STORM SWR GRAVITY MAIN, TRENCHED, 18"	390.0
STORM SWR GRAVITY MAIN, TRENCHED, 24"	8534.0
STRM SWR G-M,TRENCHED, 2000D LOW, 24" EQ	252.0
STORM SWR GRAVITY MAIN, TRENCHED, 30"	1064.0
STORM SWR GRAVITY MAIN, TRENCHED, 36"	475.0
STORM SWR GRAVITY MAIN, TRENCHED, 48"	128.0
STORM SWR GRAVITY MAIN, TRENCHLESS, 24"	969.0
STORM SWR GRAVITY MAIN, TRENCHLESS, 30"	392.0
STORM SWR GRAVITY MAIN, TRENCHLESS, 48"	166.0
SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. DIA.	521.0

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

(2) No.	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes

NOTES:

1. For Information Only - U.A.C.
2. Refer to M-sheets for Modified Standard Road Plans and Special Details
3. Staged construction of pipe may be needed. Cap upstream end of pipe to be removed during a future stage when the remaining of of the pipe or the upstream structure is constructed. Placement and removal of cap shall is incidental to pipe installation.
4. Remove pipe from the upstream end to the location specified. Pipe opening will be used as an inlet for interim drainage purposes.
5. Standpipe construction to be paid for with item "SUBDRAIN RISER, 15 IN., WITH NYLOPLAST BEEHIVE CASTING" and includes all bends, fittings, connections to associated drainage elements and pipe modifications. Pipe slope shall maintain minimum 0.4% slope.
6. Remove the upstream portion of the existing pipe and connect a standpipe for interim drainage purposes.
7. Place sandbags on the downstream end of the openings to prevent bypass. Sandbags are incidental to pipe construction.
8. Removal of existing pavement might be required for the installation of the structure and the associated pipe. Where applicable, patching will be paid for with item "PATCH, FULL-DEPTH FINISH, BY AREA" and/or item "PATCH, FULL-DEPTH FINISH, BY COUNT".
9. Place an orange safety fence around the pipe opening.
10. Connection of proposed structure to existing cross-road pipe shall be incidental to the associated proposed structure, including field bends as needed. When applicable, removal of existing pipe within the structure shall be incidental to the associated proposed structure.
11. Concrete invert at the bottom of the bottom well shall not be constructed until the final intake top is constructed during a future stage. Concrete invert shall make a smooth transition between connecting pipe inverts.
12. install temporary subdrain riser 372-24 during Stage 1A. During Stage 2B, adjust subdrain riser location and form grade elevation as needed and grade to drain towards the riser immediately after existing pavement removal. Any adjustments to the subdrain riser and/or grading is considered incidental to subdrain riser installation. If pipe P-372-24 extension was needed during Stage 2B, pipe extension is paid for with item "STORM SEWER GRAVITY MAIN, TRENCHED, REINFORCED CONCRETE PIPE (RCP), 2000D (CLASS III), 15 IN.".
13. Refer to M-Sheets for French Drain Detail. The subdrain pipe longitudinal slope to maintain a minimum of 0.4% slope. Structure name (i.e. 372-01, 372-38, etc.) is intended as a point along French Drain for horizontal location purposes, and is not an actual structure nor bid item. The subdrain pipe is paid for with item "SUBDRAIN, PERFORATED PLASTIC PIPE, 12 IN. The macadam stone is paid for with item "MACADAM STONE FOR FRENCH DRAIN".
14. Install Intake 08038 with form grade elevation = 764.89' during Stage 1A. Paid for by item "BARRIER INTAKE, SW-547". During Stage remove intake top and adjust bottom well so that the top elevation of the bottom well = 758.57' and cover the top of bottom wel with ROAD DESIGN DETAIL 570-5. Contractor to use appropriate methods to adjust bottom well wall elevation using rebar and/or splices as needed. Engineering approval for the proposed methods is required. Remove the intake cover during Stage 3D and insta intake top with form grade elevation = 759.90'. Adjustments to bottom well are paid for by item "INTAKE ADJUSTMENT, MAJOR". Installation of intake top during stage 3D is paid for by item "BARRIER INTAKE, SW-547, TOP ONLY".
15. Install Intake 08039 with form grade elevation = 756.80' during Stage 1A. Paid for by item "BARRIER INTAKE, SW-547". Remove top an bottom well with a solid steel plate during Stage 2D. During Stage 2F, adjust bottom well so that the top elevation of the bott = 753.01' and cover the bottom well with ROAD DESIGN DETAIL 570-5. Adjustments to bottom well are paid for by item "INTAKE ADJU MAJOR". Install intake top during Stage 3D with form grade elevation = 754.34'. Installation of intake top during stage 3D is pa for by item "BARRIER INTAKE, SW-547, TOP ONLY".
16. Pipe will outlet into an existing or an interim ditch or foreslope. Grade to drain at the outlet if needed. Grading shall be incide pipe installation. A pipe extension might be added during a future stage. Refer to 104-5b for details.
17. Construct bottom well so that the top elevation of the bottom well = 688.26' and cover the bottom well with a heavy duty steel bar during Stage 1A. Construct intake top during Stage 3B. Adjustments to bottom well is paid for by item "INTAKE ADJUSTMENT, MAJOR"

PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

	(2) Line Number	(2) Intake/ Utility Access No. From	To	Class 'D'	(1) Pipe Size IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes

18. Staged construction of pipe may be required. Connect P-08003 to temporary structure 372-02 during stage 1A. Remove approximately 11.0' of the upstream end of the pipe and construct intake 08003 during Stage 2B. Removal of pipe shall be incidental to structure 08003 installation. Final pipe upstream flow line elevation at structure 08003 = 739.33'.
19. Staged construction of intake is needed. cover the top of bottom well with ROAD DESIGN DETAIL 570-5. Remove intake cover and construct intake top during a future stage. Intake bottom well and intake top are paid for by item "BARRIER INTAKE, SW-547".
20. Construct intake 08057 with form grade elevation = 679.40' during Stage 1B. Paid for with item "BARRIER INTAKE, SW-547". Intake top sha be pinned to the bottom well or tied using keyed construction joints. Adjust intake to the listed form grade elevation during Stage Adjustments to bottom well are paid for by item "INTAKE ADJUSTMENT, MAJOR". Intake top is paid for by item "BARRIER INTAKE, SW-547, TOP ONLY".
21. Construct bottom well so that the top elevation of the bottom well = 684.50' and cover the bottom well with a heavy duty steel plate d Stage 2B. Note that the temporary slotted drain connection is at elevation = 682.00' +/-. During Stage 2D, adjust bottom well so tha top of the bottom well is at elevation = 687.05'and cover the bottom well with a ROAD DESIGN DETAIL 570-5. Construct intake top dur bottom well and intake top are paid for with item "BARRIER INTAKE, SW-547". Adjustments to bottom well are paid for by item "INTAKE ADJUSTMENT, MAJOR".
22. Staged construction of pipe might be needed. Pipe will outlet into existing ditch during Stage 1B. Grade to drain at the outlet if nee Grading shall be incidental to pipe installation. Complete construction of pipe during Stage 2D to connect to structure 08077.
23. Top elevation of apron end wall shall be 9" higher than the apron's flow line. Use of DR-121, Type 2 (Connected Pipe Joints) required for apron / pipe joint and next upstream joint in pipe (2 joints).
24. Construct permanent top section on existing bottom-well section, previously constructed by others. Field verify existing well elevations and adjust proposed construction heights as necessary to achieve form grade, as specified.
25. Intake rotated 24 degrees from ML080 alignment. The outlet pipe P-08079-1 connects to the 7 ft wide wall.
26. New intake top is paid for by item "BARRIER INTAKE, SW-547, TOP ONLY".
27. 7.5 Degree D-Section.
28. Pipe P-RampA-30 will be constructed during Stage 1A and pipe opening will be used for interim drainage purposes. Structure RampA-30 wi constructed during Stage 2C. Removal of pipe within structure is considered incidental to structure construction. P-RampA-30 flow l elevation at the connection with structure RampA-30 = 675.22'.
29. Install SW-512 Case 2 (18" riser). Cap the upstream opening of the SW-512 through pipe.
30. Install intake 08040 with form grate elevation = 748.00' during Stage 1A. Paid for by item "BARRIER INTAKE, SW-547". Top slab shall be tied to the bottom well using keyed construction joints or other methods that would not cause damage to the bottom well when the to removed during Stage 3D. Remove and replace top During Stage 3D with the form grade elevation = 748.28'. Paid for with item "BARRIE INTAKE, SW-547, TOP ONLY".
31. Staged construction of intake might be needed. Cover bottom well with a steel plate until the intake top is installed during a future
32. Coordinate with MSE wall contractor for conflict locations. Refer to M sheets for Intake Along MSE Wall Detail.
33. Remove existing subdrain riser and connect proposed P-372-53 to existing PEX-372-54 with TYPE PC-1 connection. Pipe connection (372-54 considered incidental to pipe installation. Construct 372-53, 372-54, and P-372-53 immediatley before the overnight construction of pavement for SB I-380 to EB I-80 loop.
34. Install intake 08053 with form grate elevation = 688.30' during Stage 1A. Paid for by item "BARRIER INTAKE, SW-547". Top slab shall be to the bottom well or tied using keyed construction joints. Remove and replace intake top to the form grade elevation = 690.84' dur Stage 3B. Adjustments to bottom well are paid for with item "INTAKE ADJUSTMENT, MAJOR". Installation of intake top during stage 3B for by item "BARRIER INTAKE, SW-547, TOP ONLY".
35. Construct all bottom wells for intakes along the open median of US-218 first and grade the median ditch to drain towards the bottom we Do not install intake tops until the week immediatley prior to shifting traffic and the start of construction of SB US-218 pavement Stage 2C. Complete the final median ditch grading after installing intake tops before the beginning of Stage 2C. The late finish re of intake tops and final grading is needed to avoid storm sewer spread into SB pavement during Stage 2B. Coordinate with roadway p contractor.

(1) Diameter or equivalent diameter

(2) XSTS = Existing Structure IS = Interim Structure IP = Interim Pipe TS = Temporary Structure TP = Temporary Pipe

STORM SEWER

* Bid Item

INTAKES AND UTILITY ACCESSES

No. (2)	Location Station and Offset	*Type or Standard Road Plan	Form Grade Elev.	Bottom Well Elev.	Other	Notes
36						Slope of top of structure is shown in the "Other" column. Positive grade represents slope towards the roadway and negative grade represents slope away from the roadway.
37						Install intake 08047 with form grate elevation = 721.130' during Stage 2C. Paid for by item "BARRIER INTAKE, SW-547". Top slab sha tied to the bottom well using keyed construction joints or other methods that would not cause damage to the bottom well when th removed during Stage 3B. Remove and replace top During Stage 3B with the form grade elevation = 721.39'. Paid for with item "BA INTAKE, SW-547, TOP ONLY".
38						Grade the area between Proposed Ramp A and Existing Ramp A to drain towards apron intake 372-95 during Stage 1A. Grade the are bet detour and existing Ramp A towards apron intake 372-95 during Stage 1B. Grading shall be incidental to pipe and apron construct
39						Connection of existing pipes to proposed structure is considered incidental to structure installation.

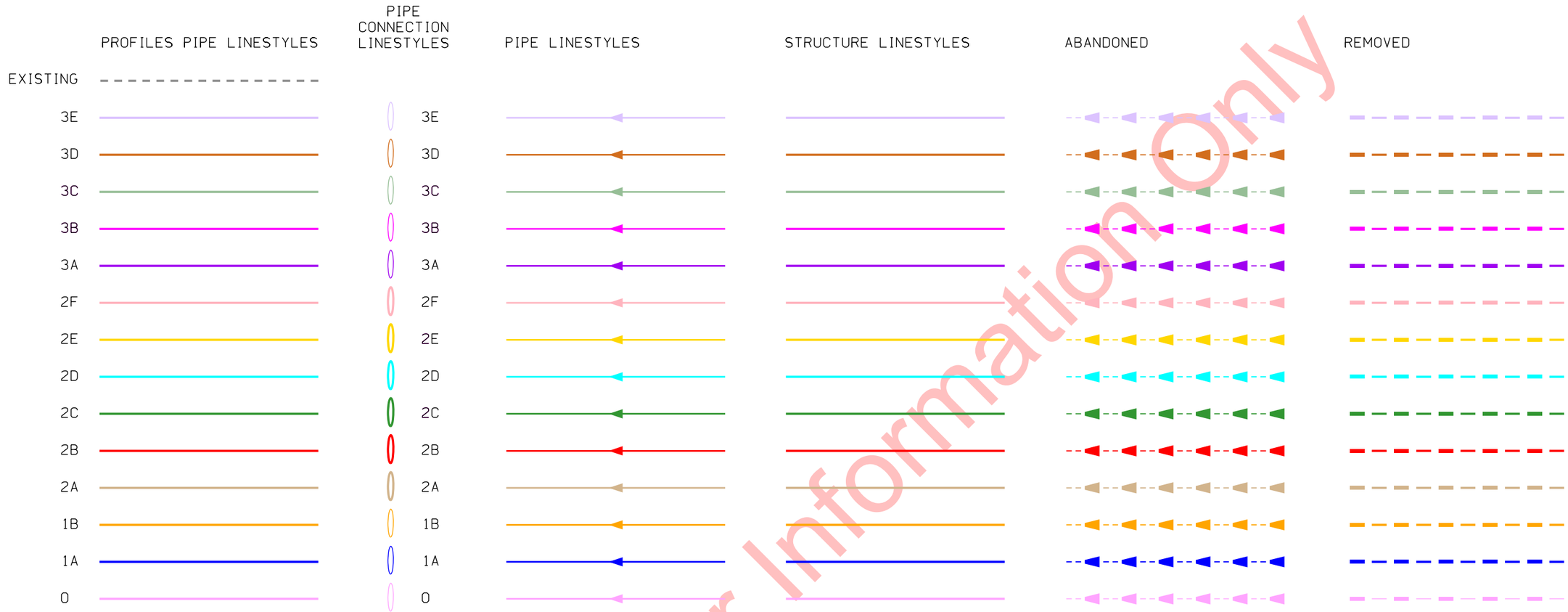
PIPES

Design Length, Slope, and Flowlines are calculated from inside wall to inside wall along CL of pipe. An additional 2 ft length is added to each side of the Design Length to account for estimated length to center of structures.

Line Number (2)	Intake/Utility Access (2) No. From	To	Class 'D'	Pipe Size (1) IN	Bid* Length FT	Design Length FT	Slope %	Connected Pipe Joint (DR-121) Type	Flow Lines: Inlet Elevation	Outlet Elevation	Other Elevation	Pipe Profile Sheet No.	Notes
													GENERAL NOTES:
													GN1 Maintain drainage flows at all times. Pumping and any other work required for maintaining flows shall be incidental to associated construction.
													GN2 Temporary capping of pipe ends and structure walls and covering staged structure construction at stage breaks shall be incidental to the associated pipe or structure.
													GN3 Refer to C Sheets for subdrain outlets into storm sewer structures.
													GN4 Refer to M Sheets for slotted drain locations. Contractor shall determine the appropriate elevations of slotted drain connections to storm structures
													GN5 All steel plates used to cover bottom wells shall have a min wt = 370 lbs. And include lifting hook inside frame in lieu of grate. Ste plates are incidental to structure installation.
													GN6 All intake SW-547 final tops shall be cast-in-place.
													GN7 Pipe class "2000 J" refers to pipes that will require trenchless "Jacking" construction.
													GN8 All ROAD DESIGN DETAIL 570-5 are paid for by item "TEMP INTAKE OR MANHOLE COVER ASSEMBLY". Maintenance and removal of the intake cover paid for by items "MAINT OF TEMP INTKE OR MANHLE CVR ASMBLY" and "RMVL OF TEMP INTKE OR MANHLE CVR ASMBLY" respectively.
													GN9 All pipe IDs that begin with "PEX" refer to existing pipes.
													GN10 All pipe and structure IDs that begin with "P-372" and "372" are temporary pipes and structures and shall be removed or abandoned during or at the end of the project.

INDEX:

STORM SEWER STAGING SYMBOLOGY LEGEND



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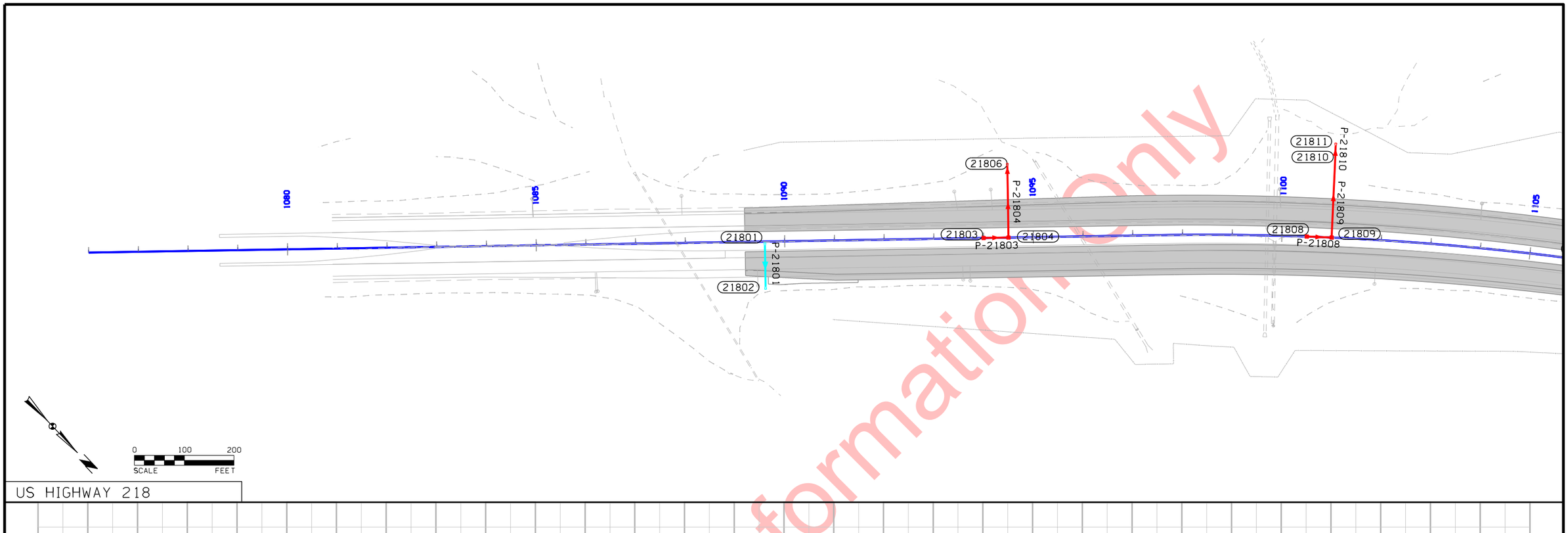

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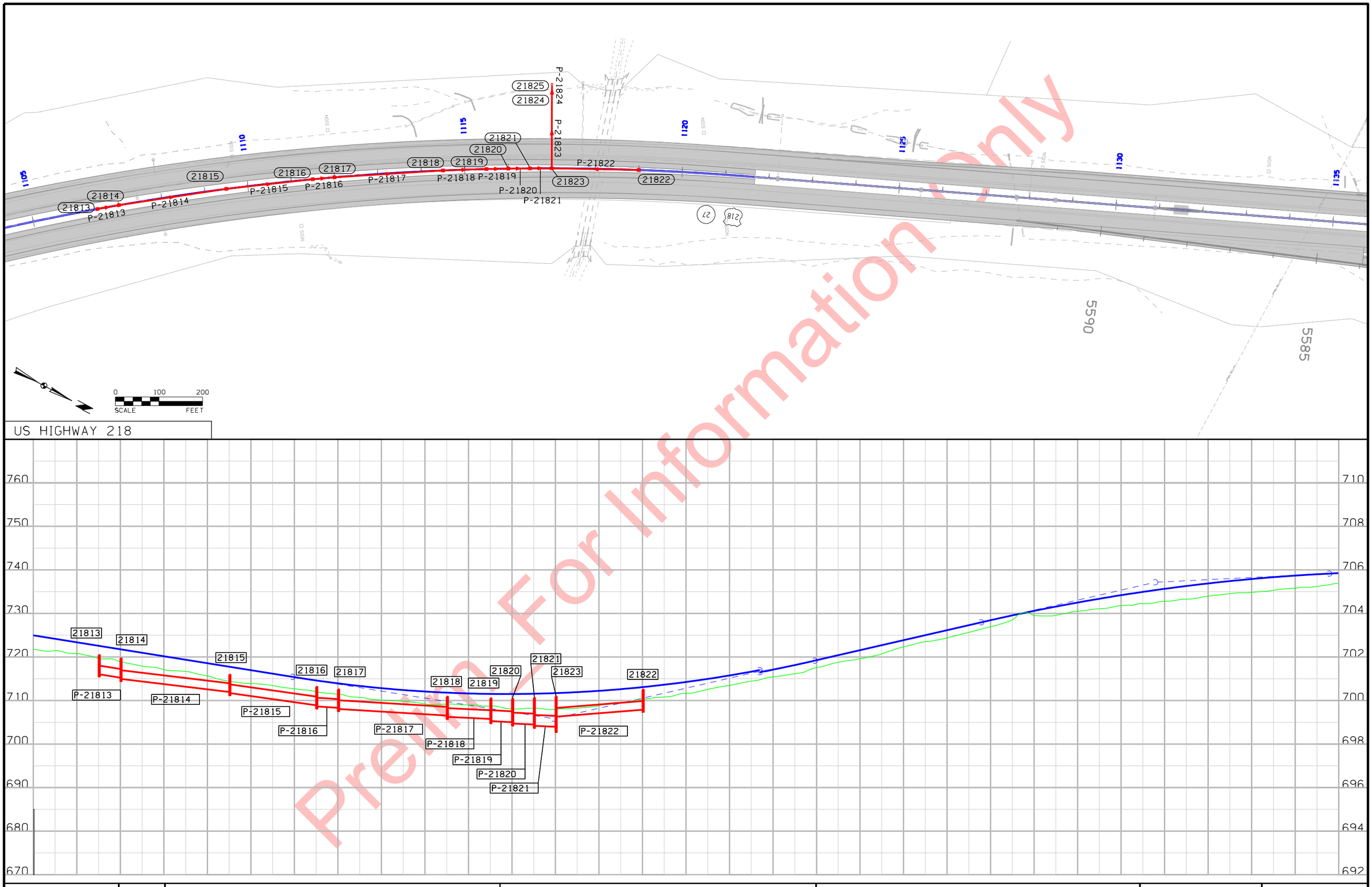

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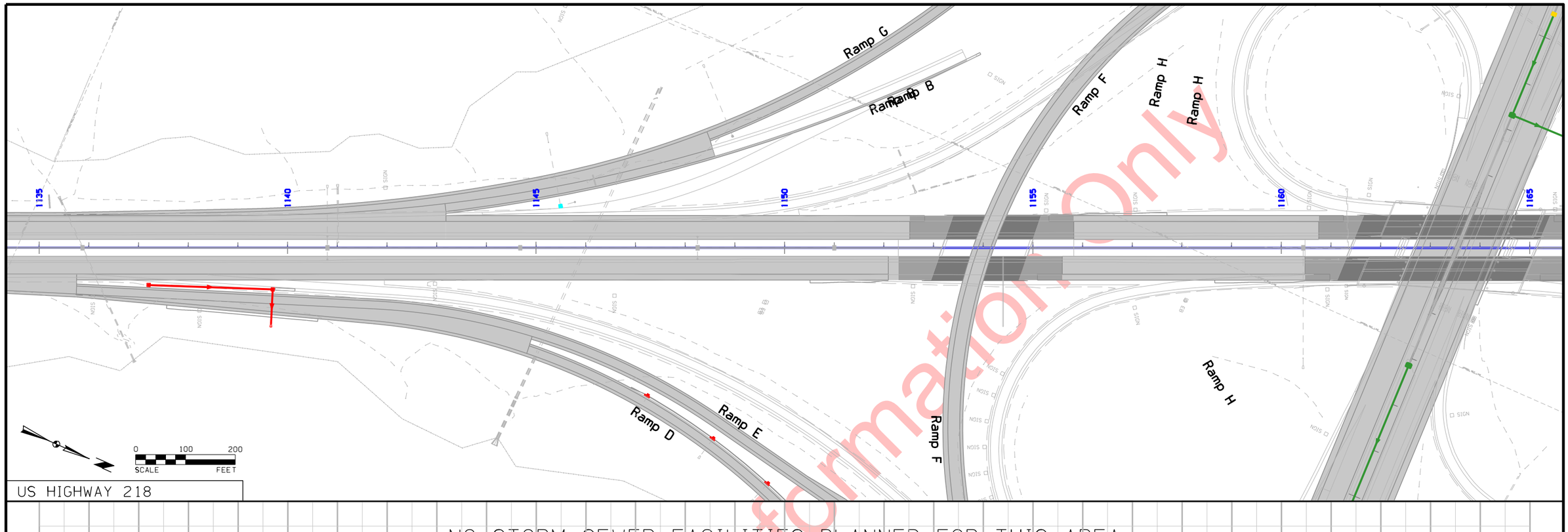

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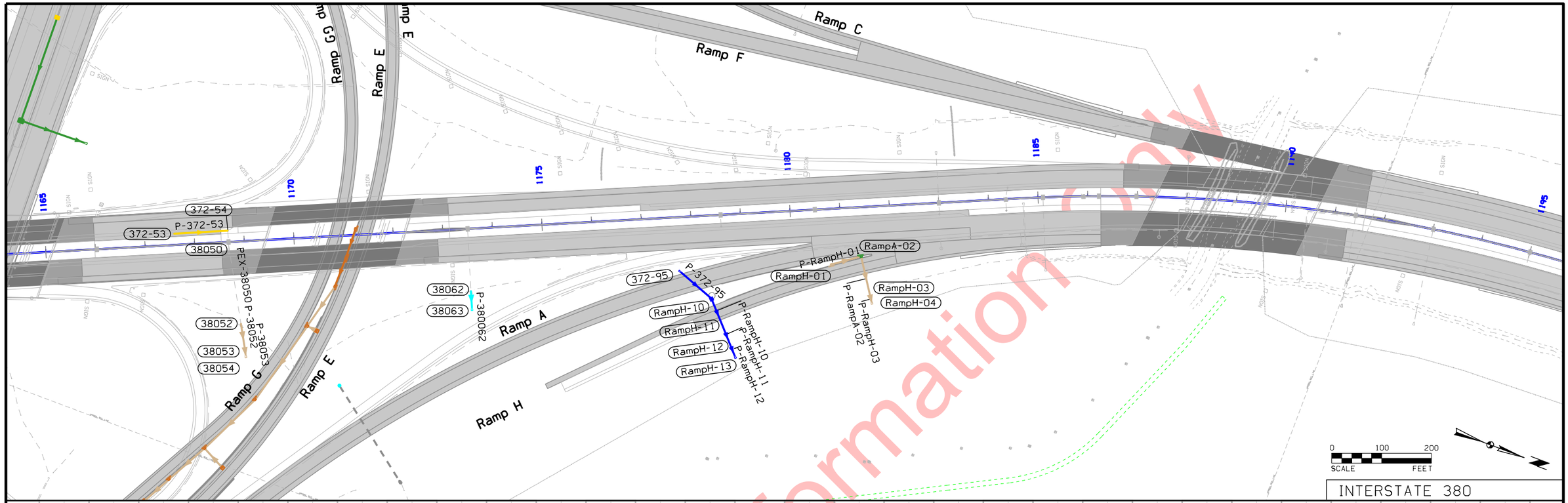

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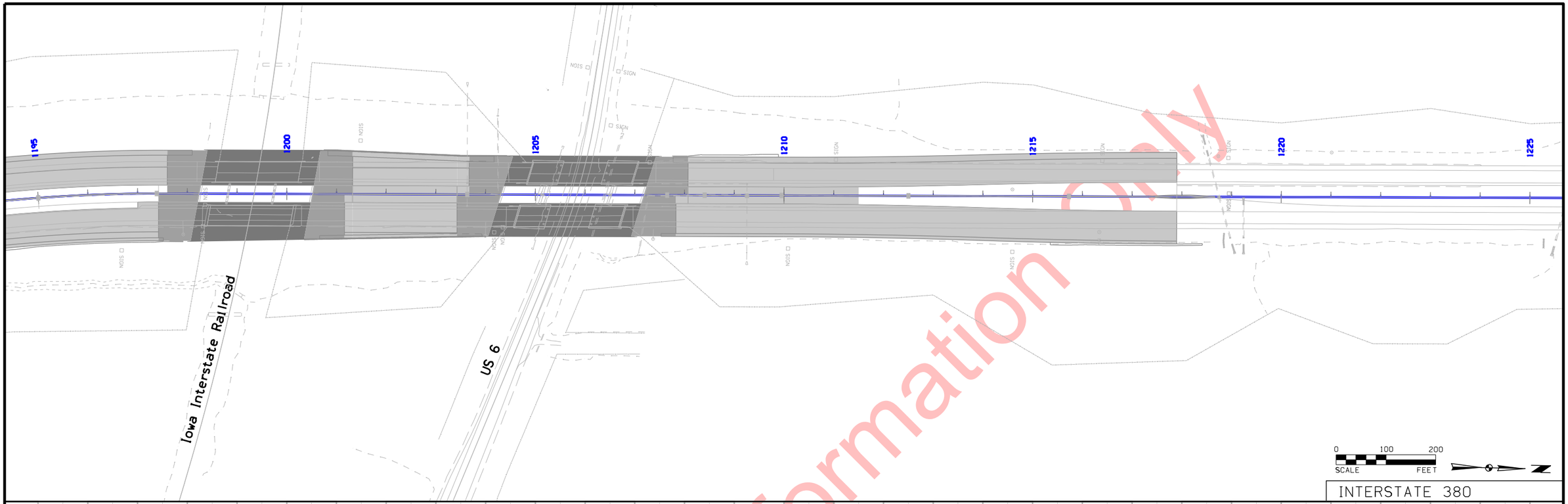

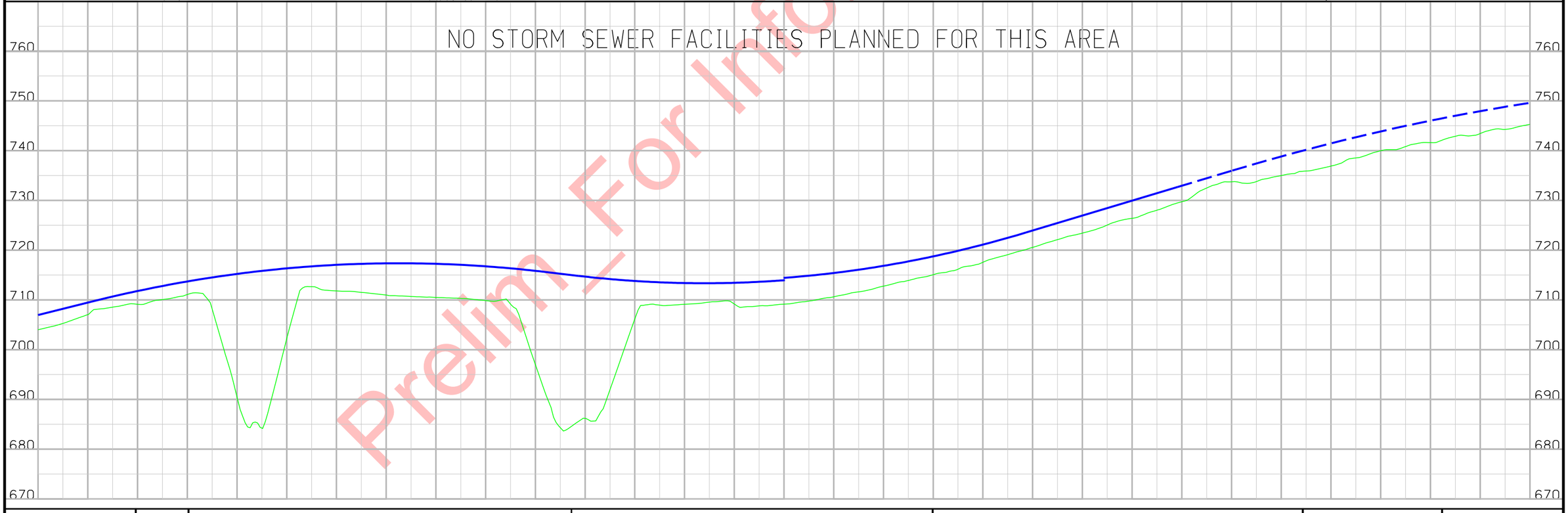

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.19	

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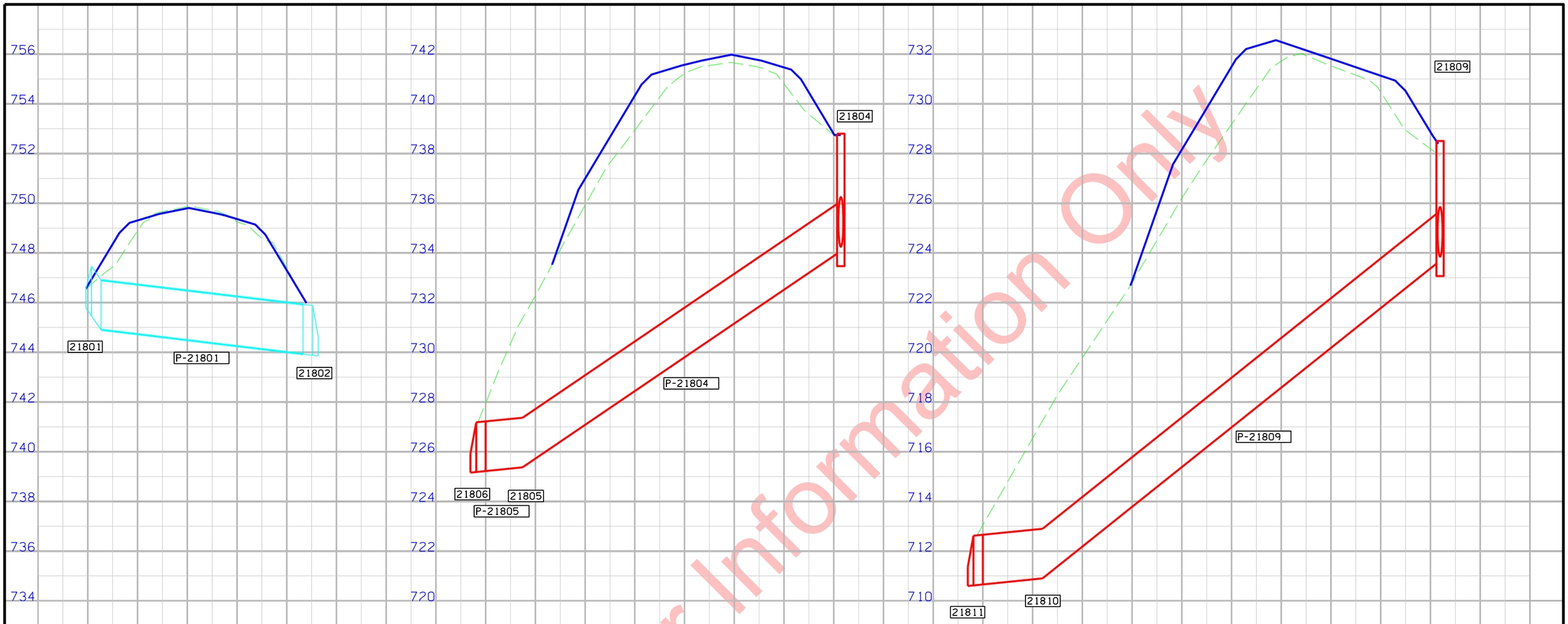

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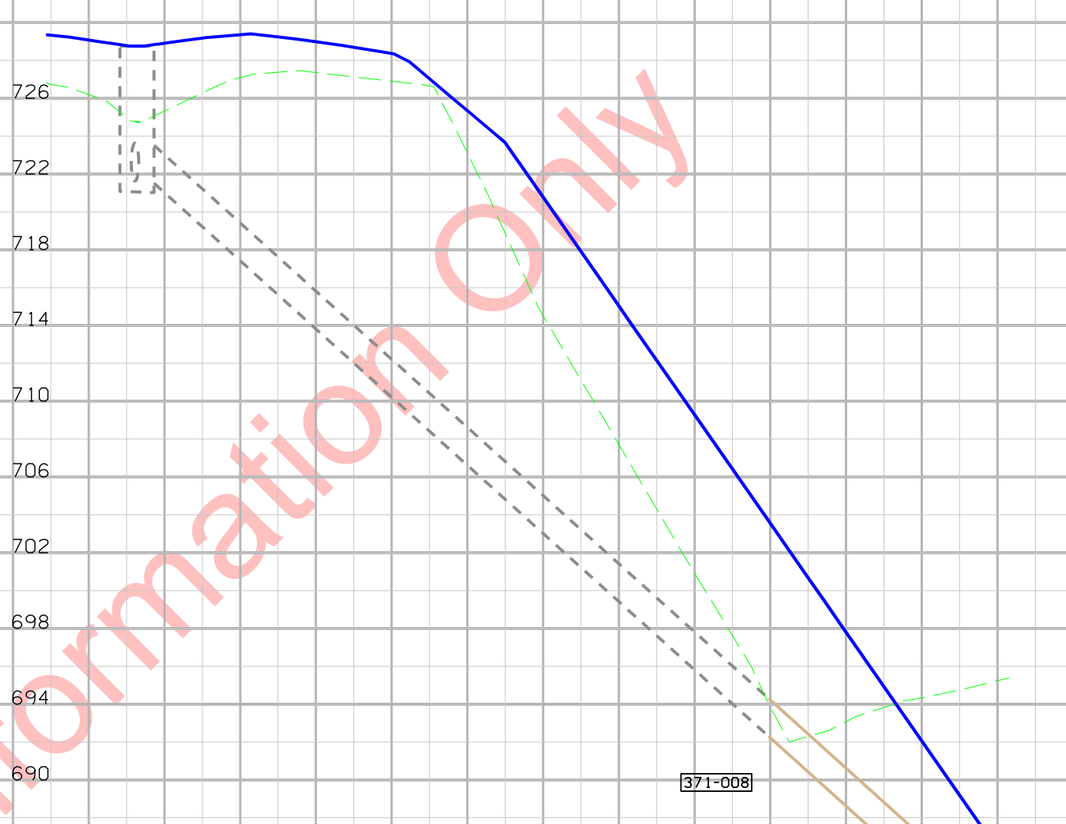

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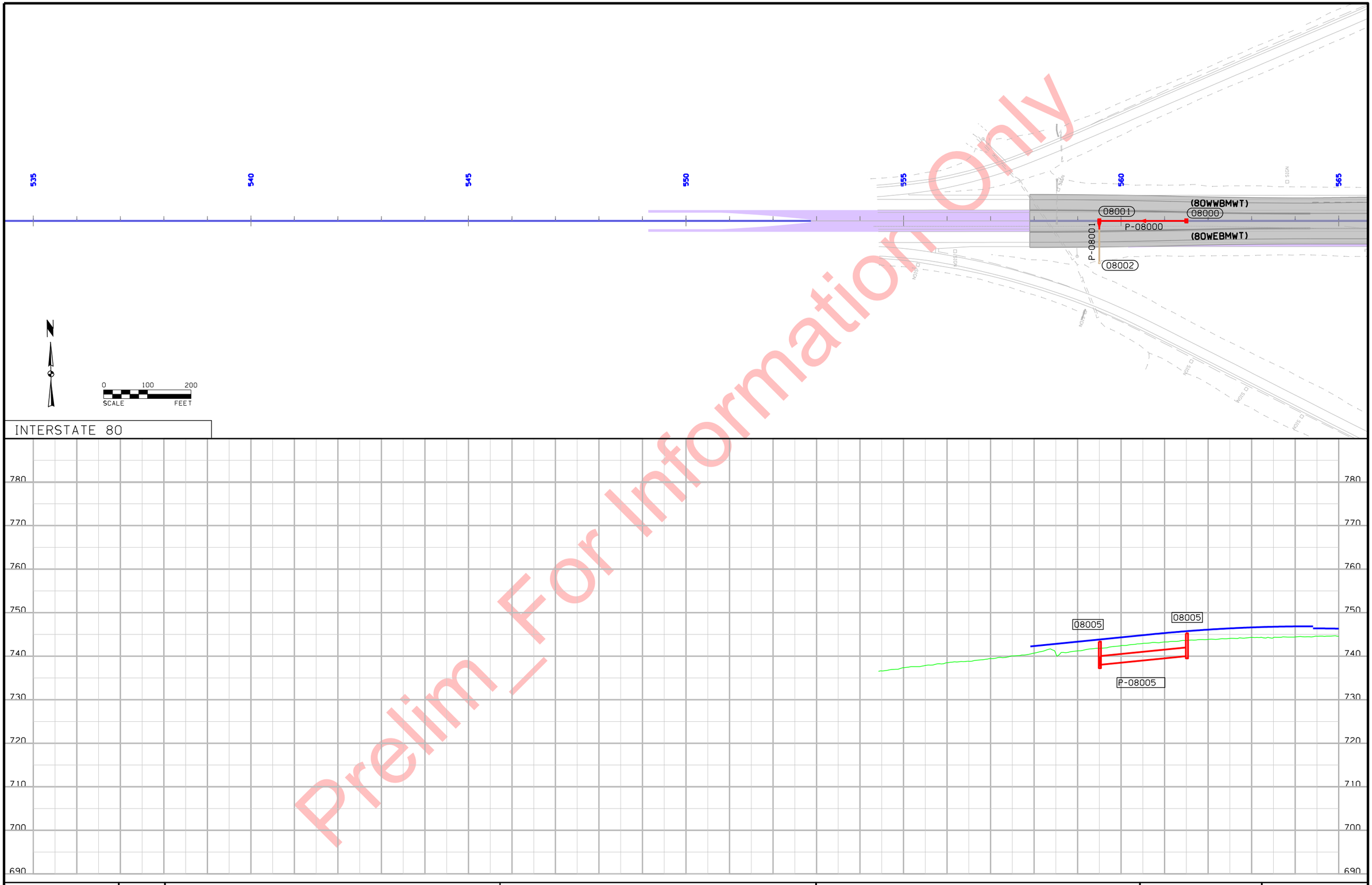

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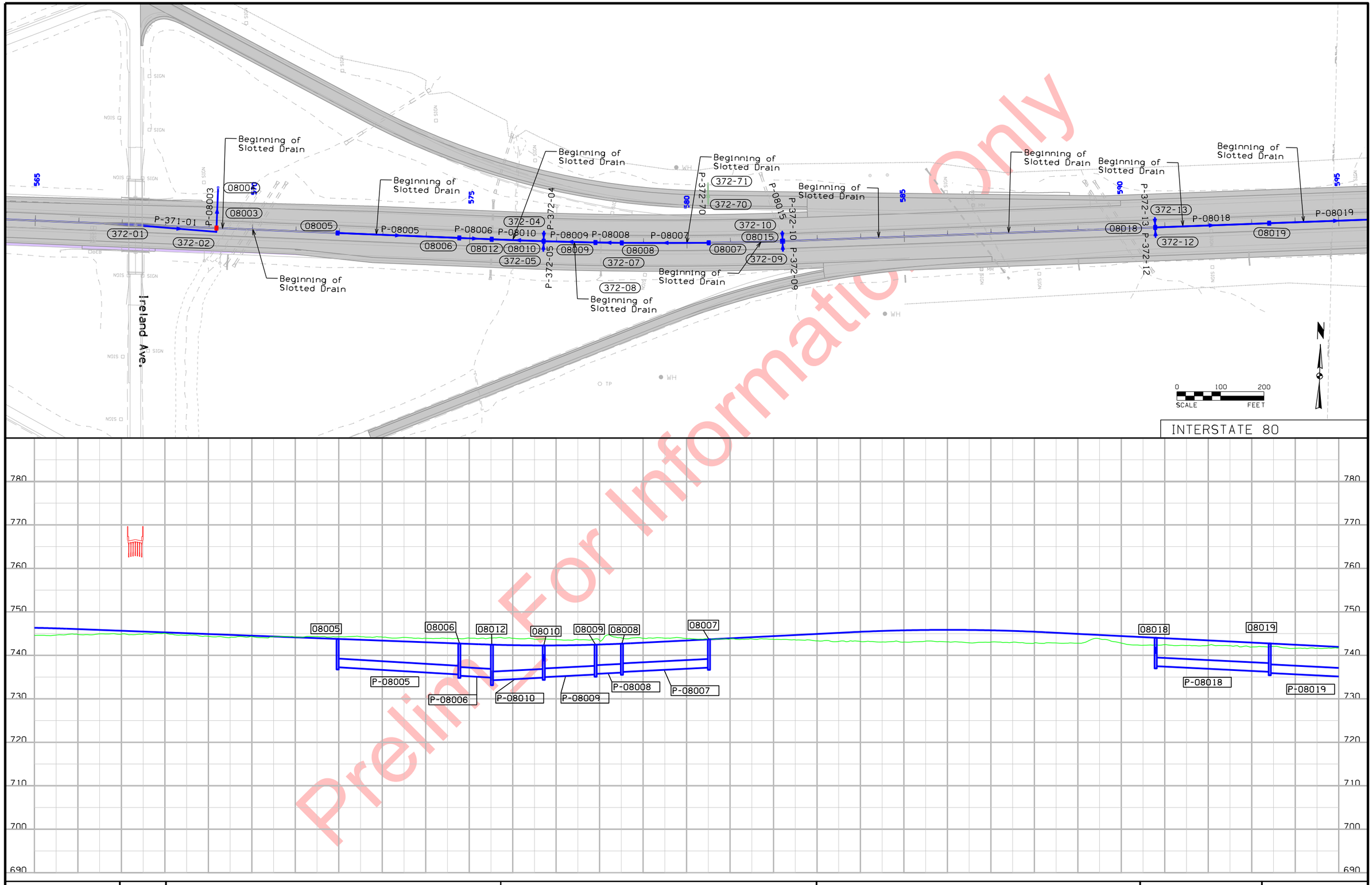

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.23

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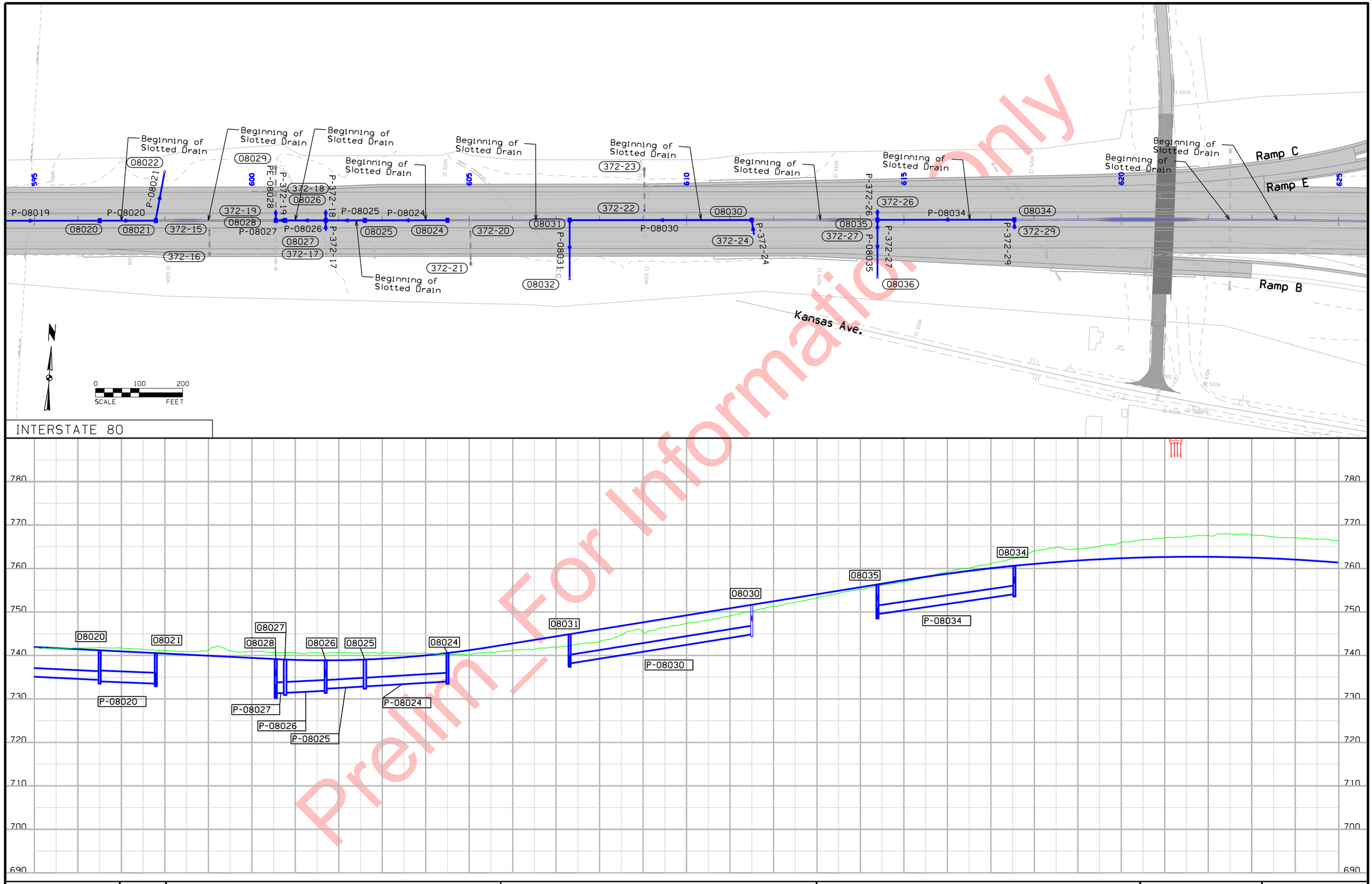

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.24

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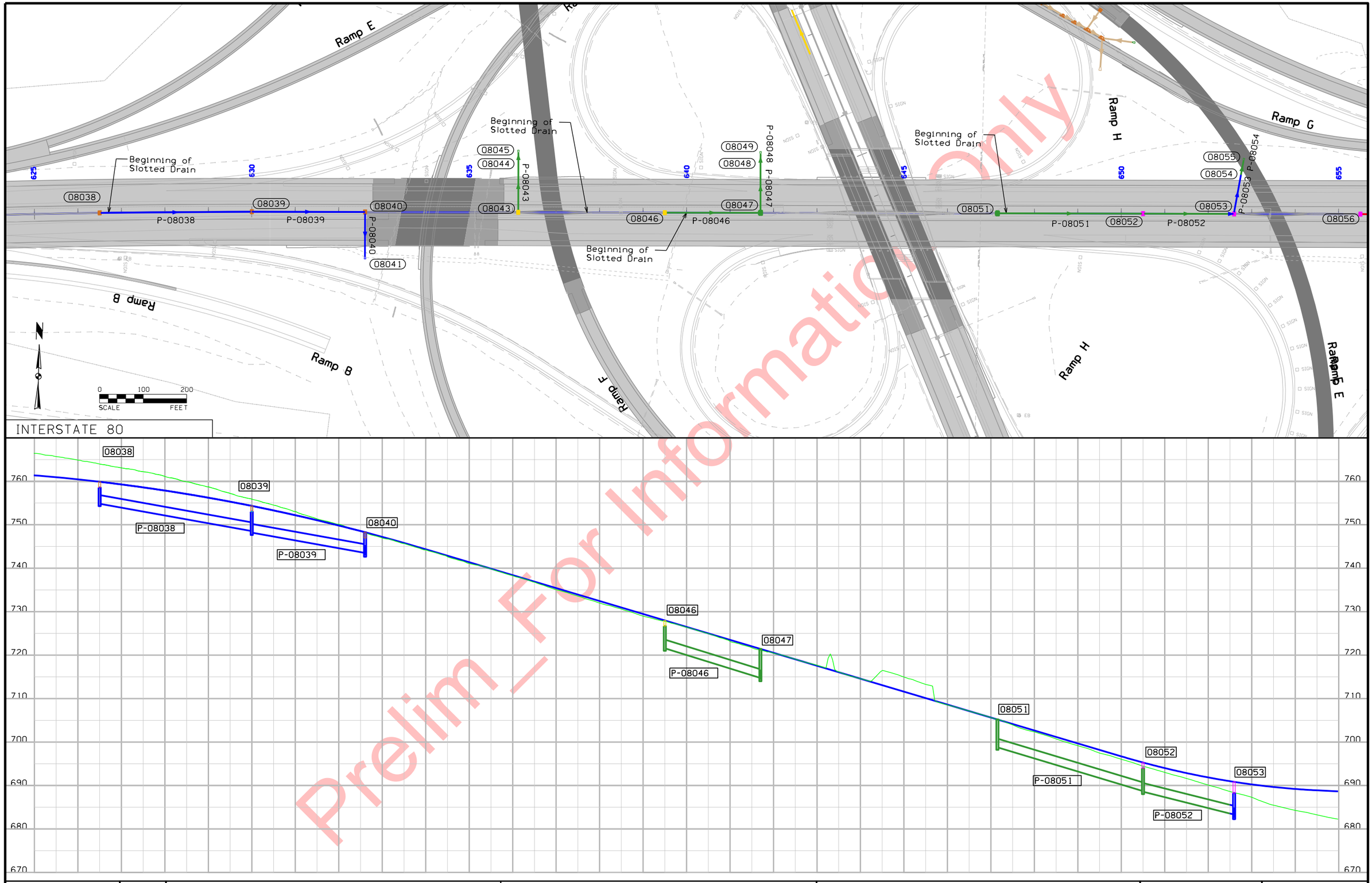

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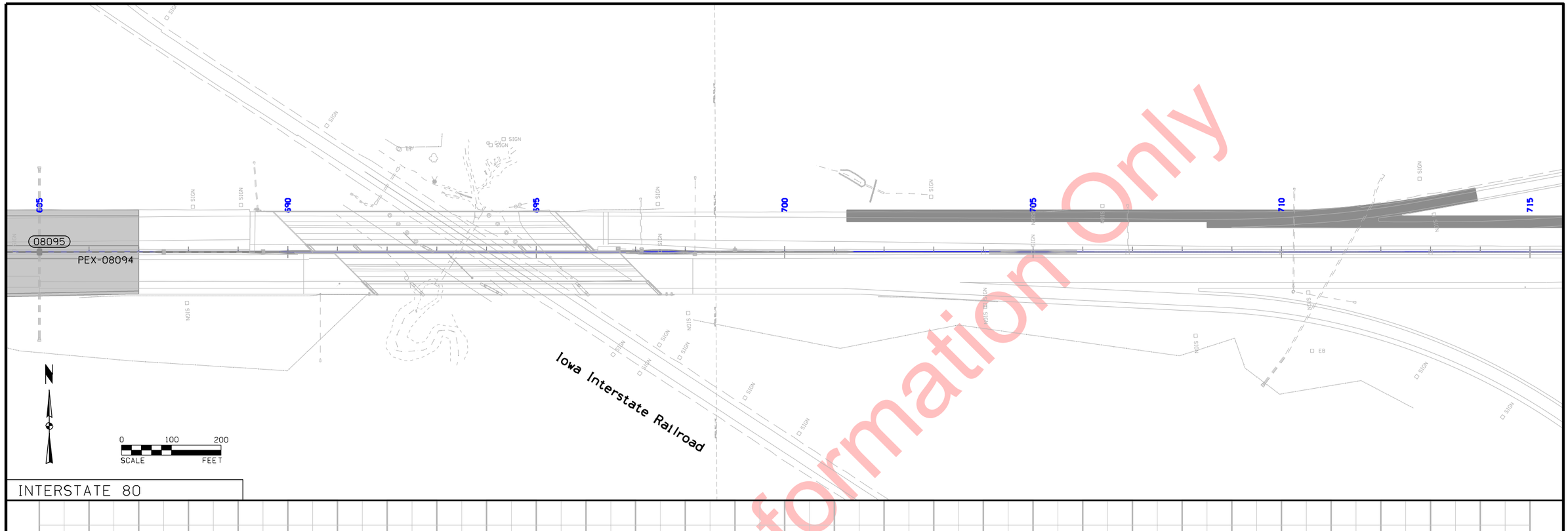

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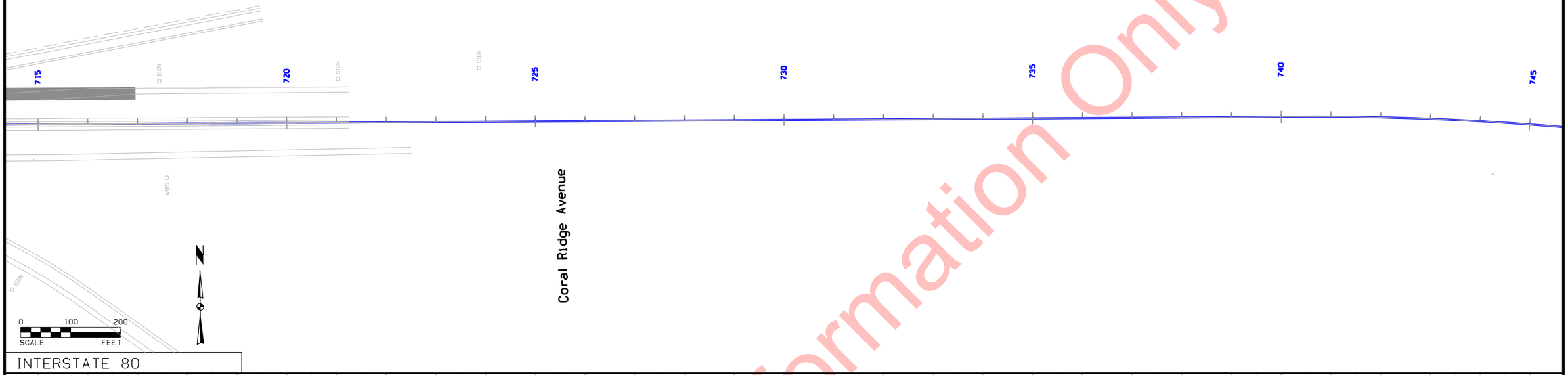
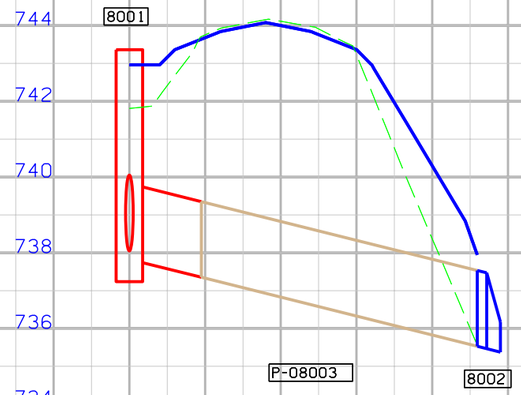
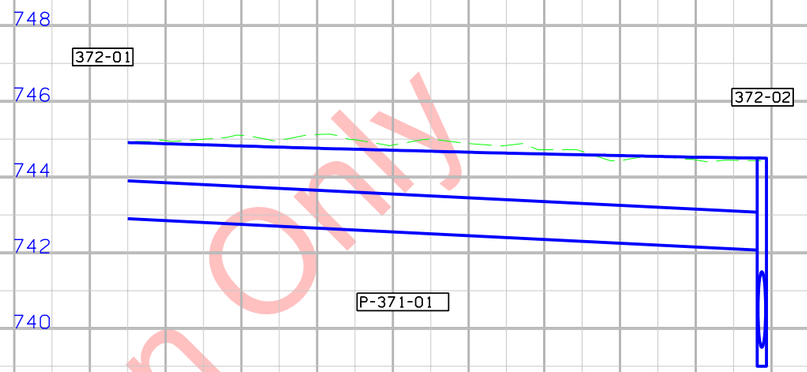


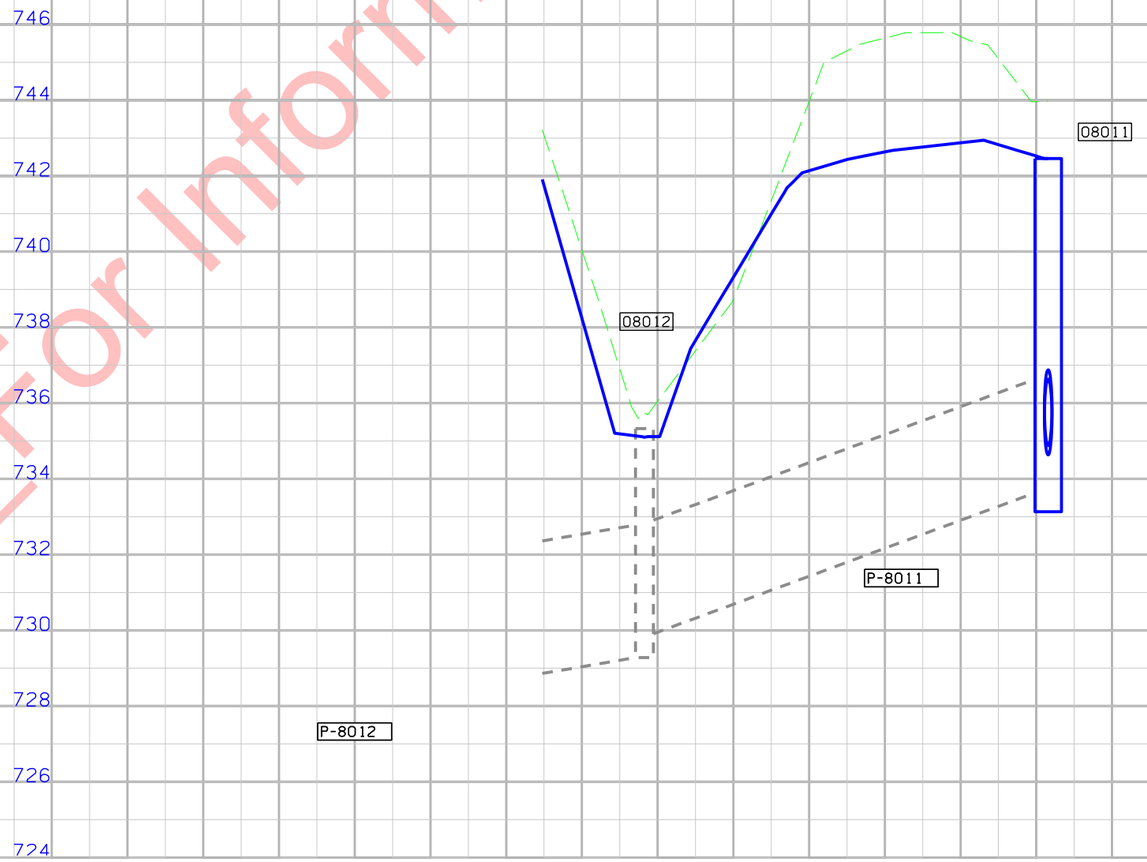
NO STORM SEWER FACILITIES PLANNED FOR THIS AREA

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.28

12:23:51 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_M_52080372.dgn







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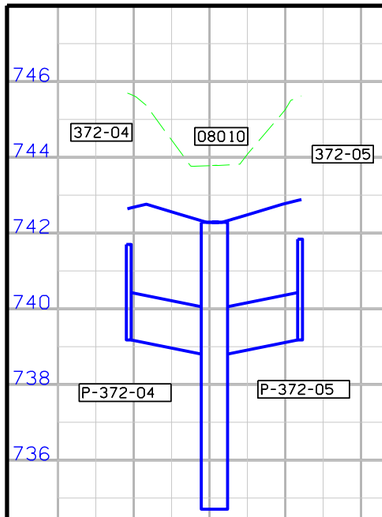

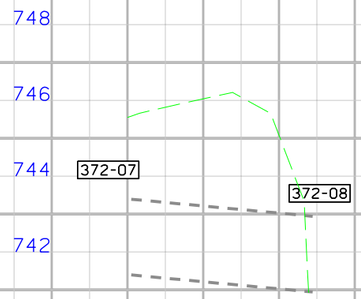

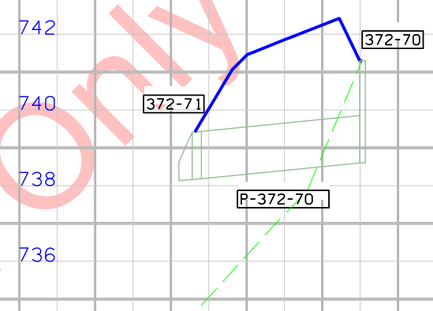

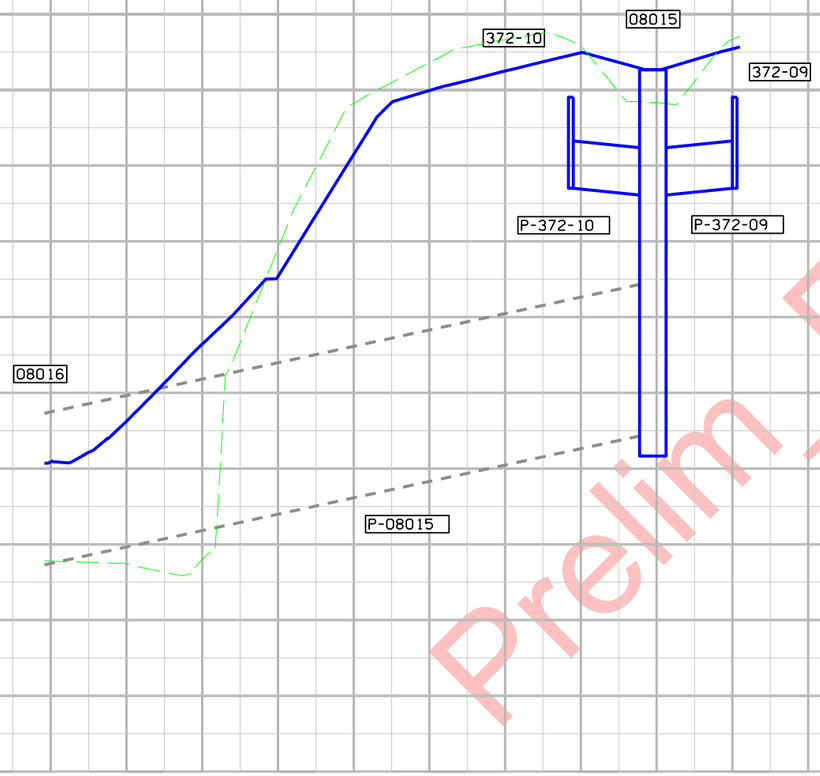

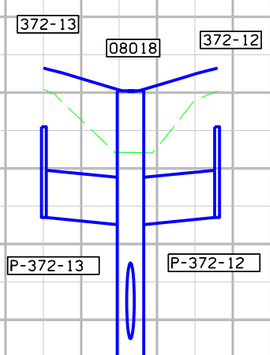

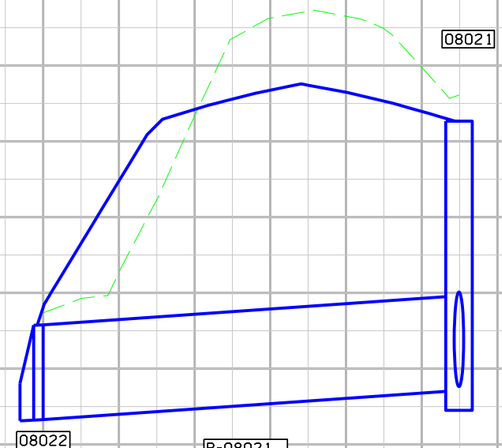

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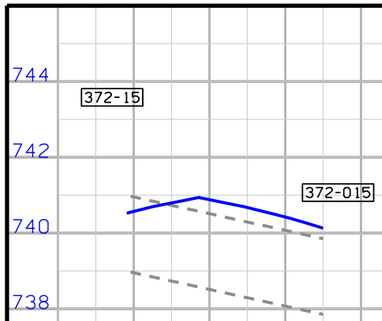

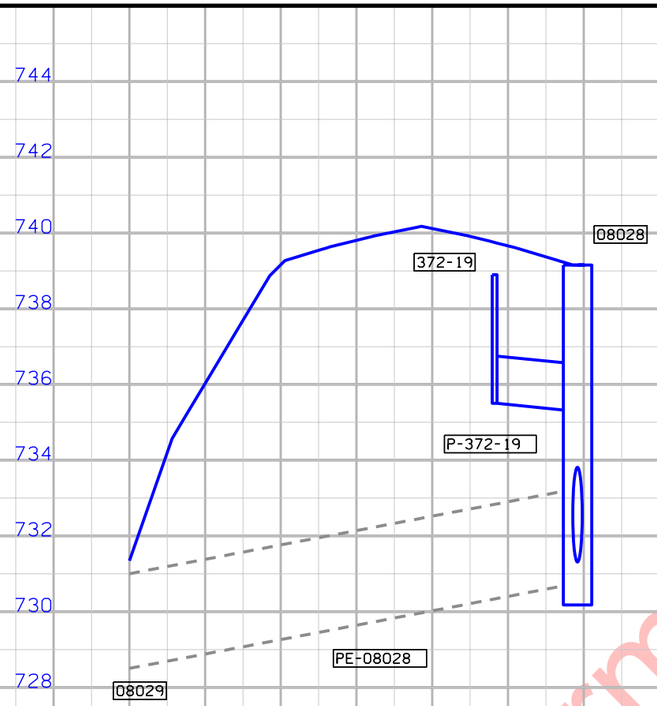

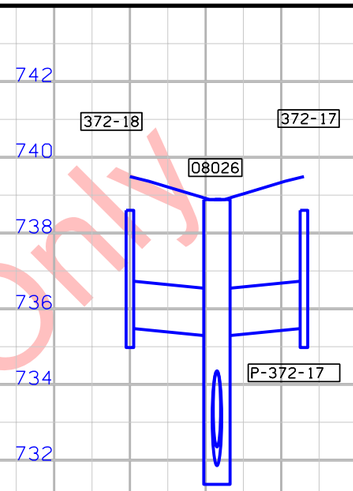

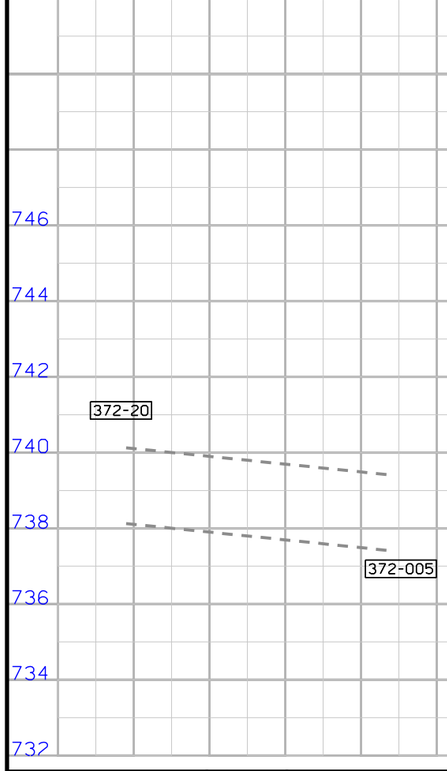

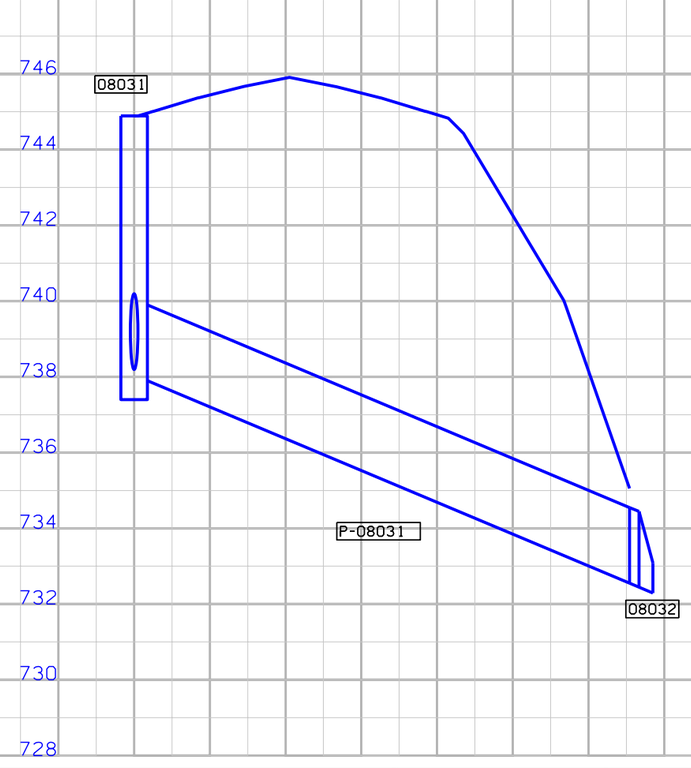

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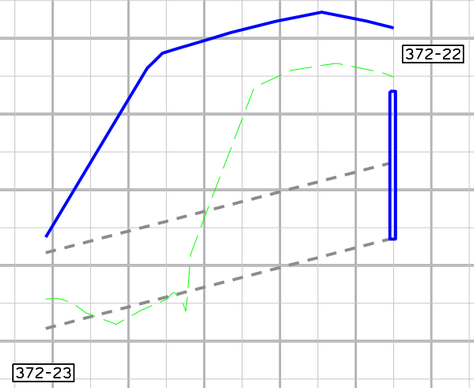

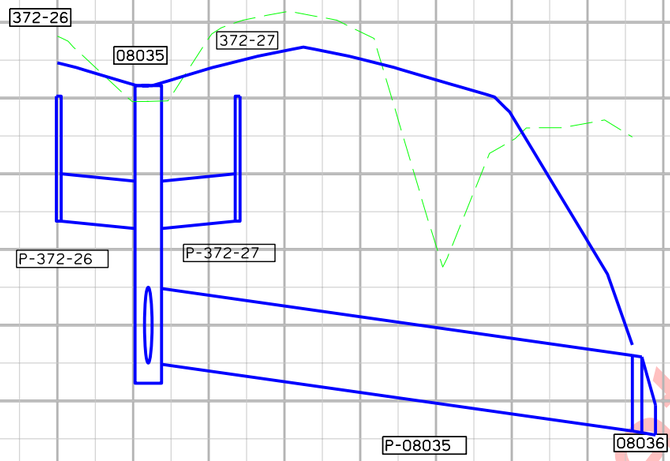

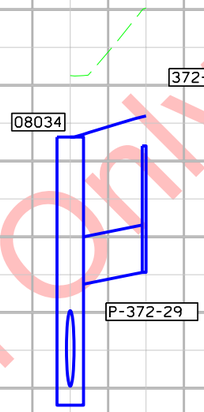

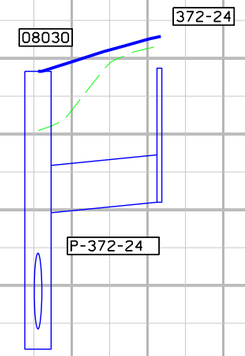

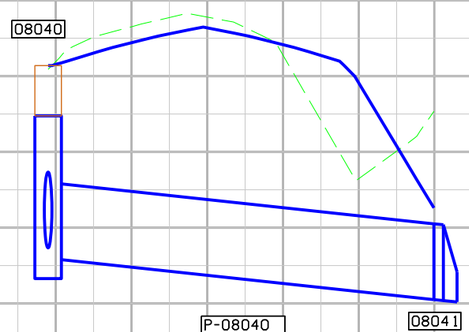

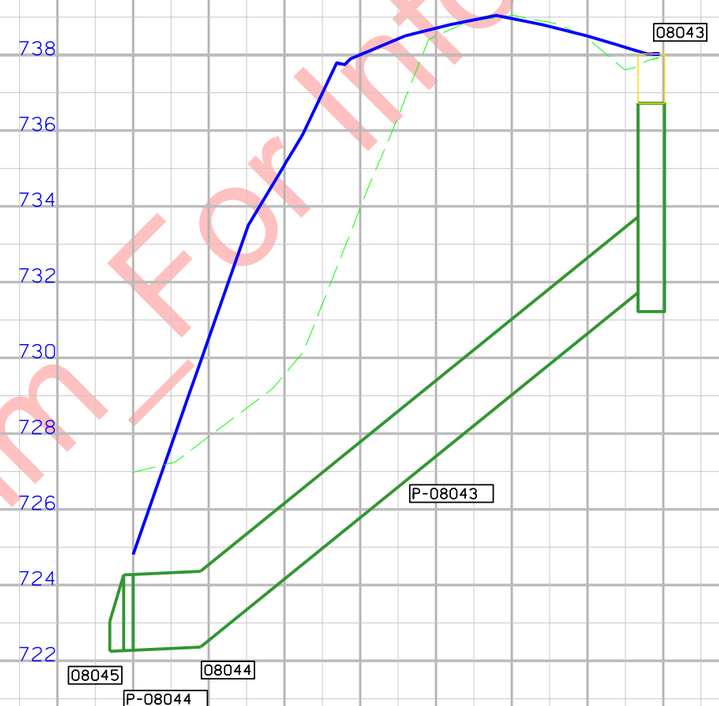

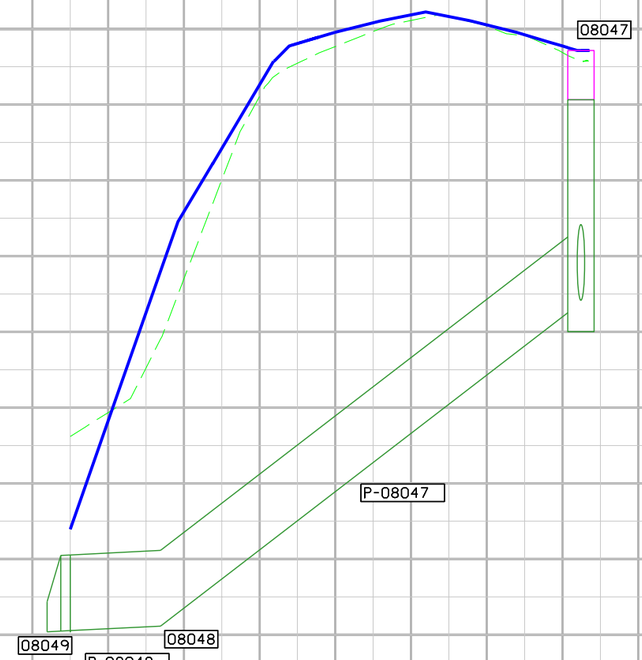

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.32

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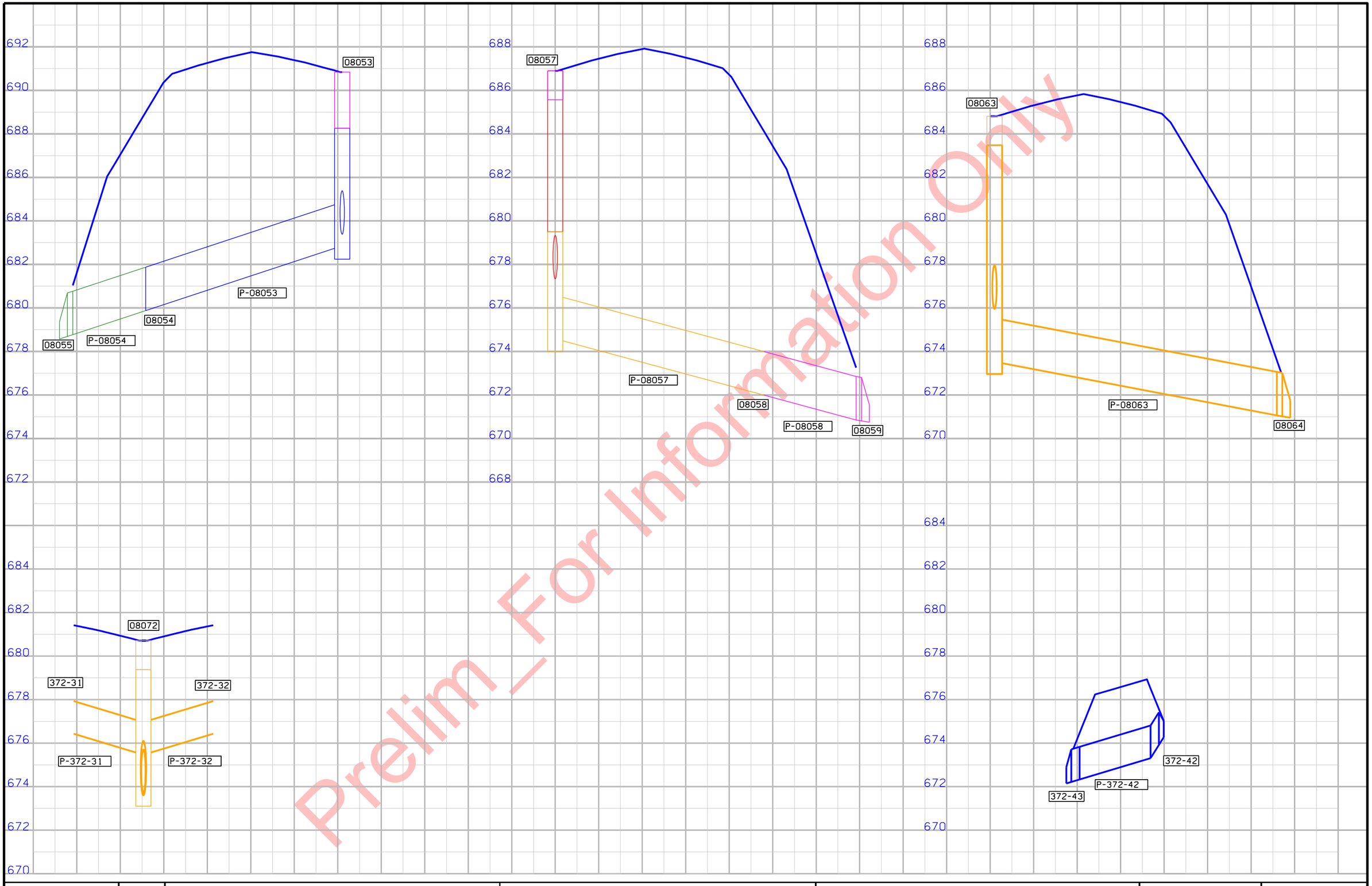

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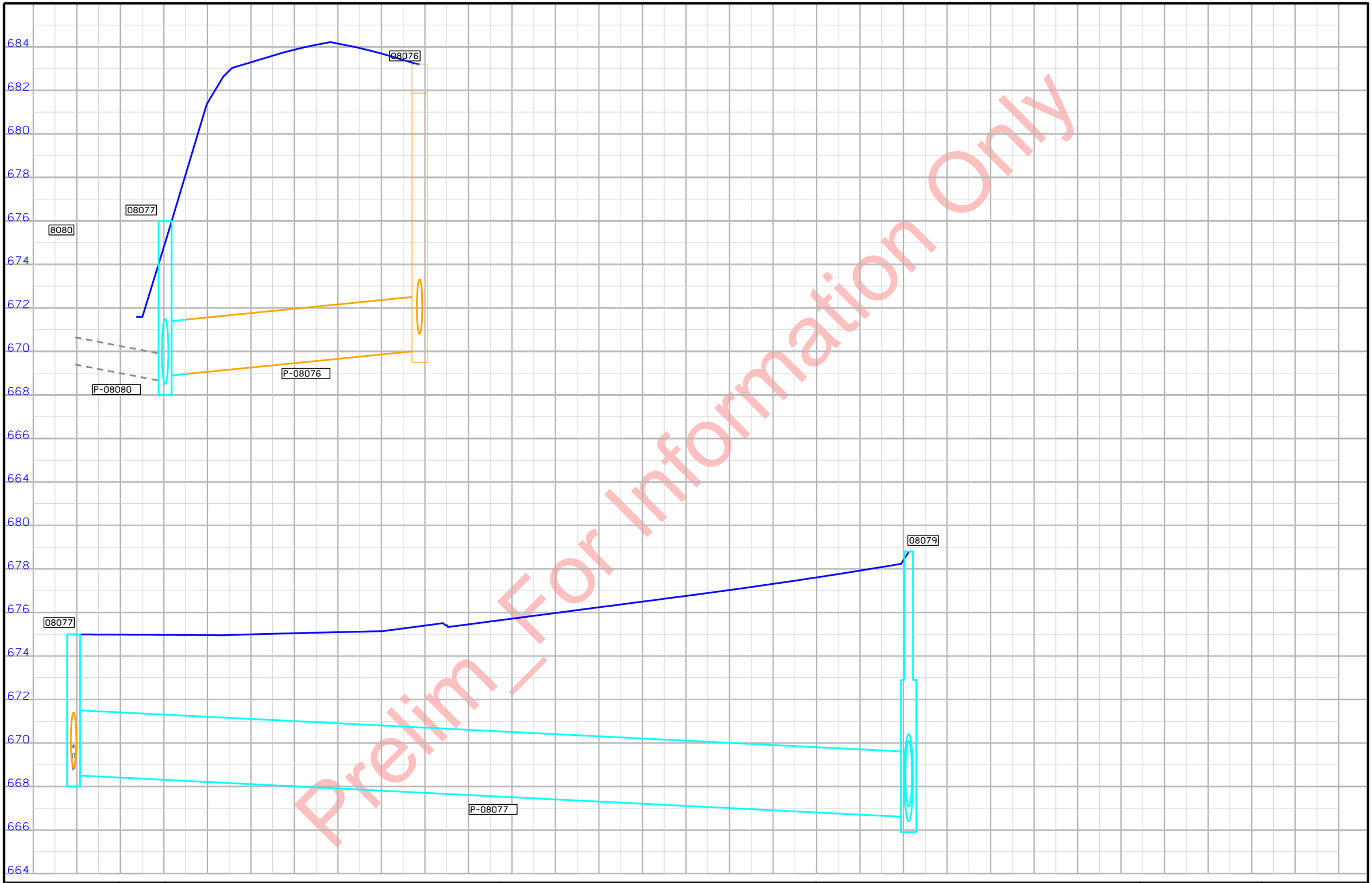

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FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.35	

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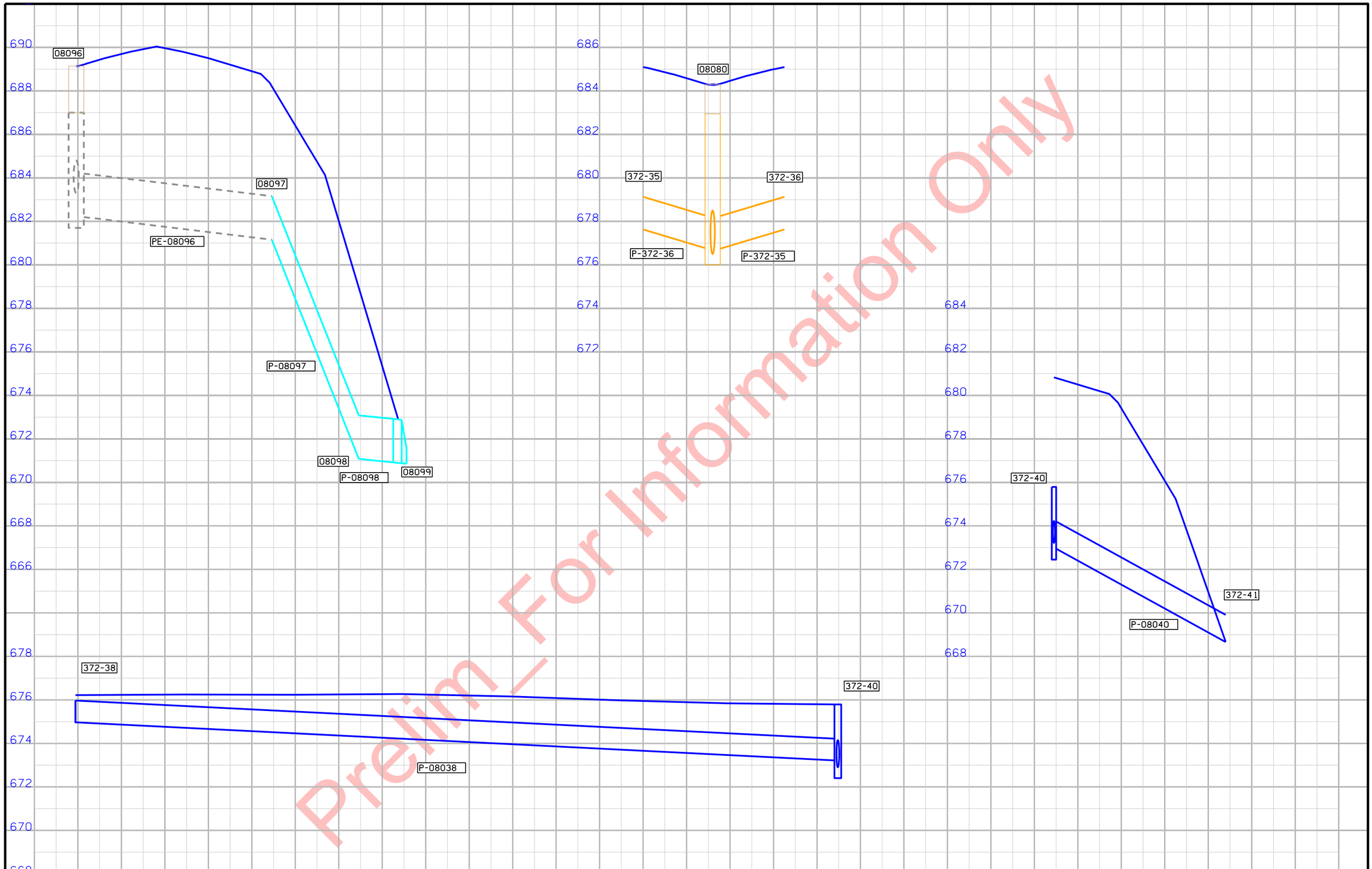

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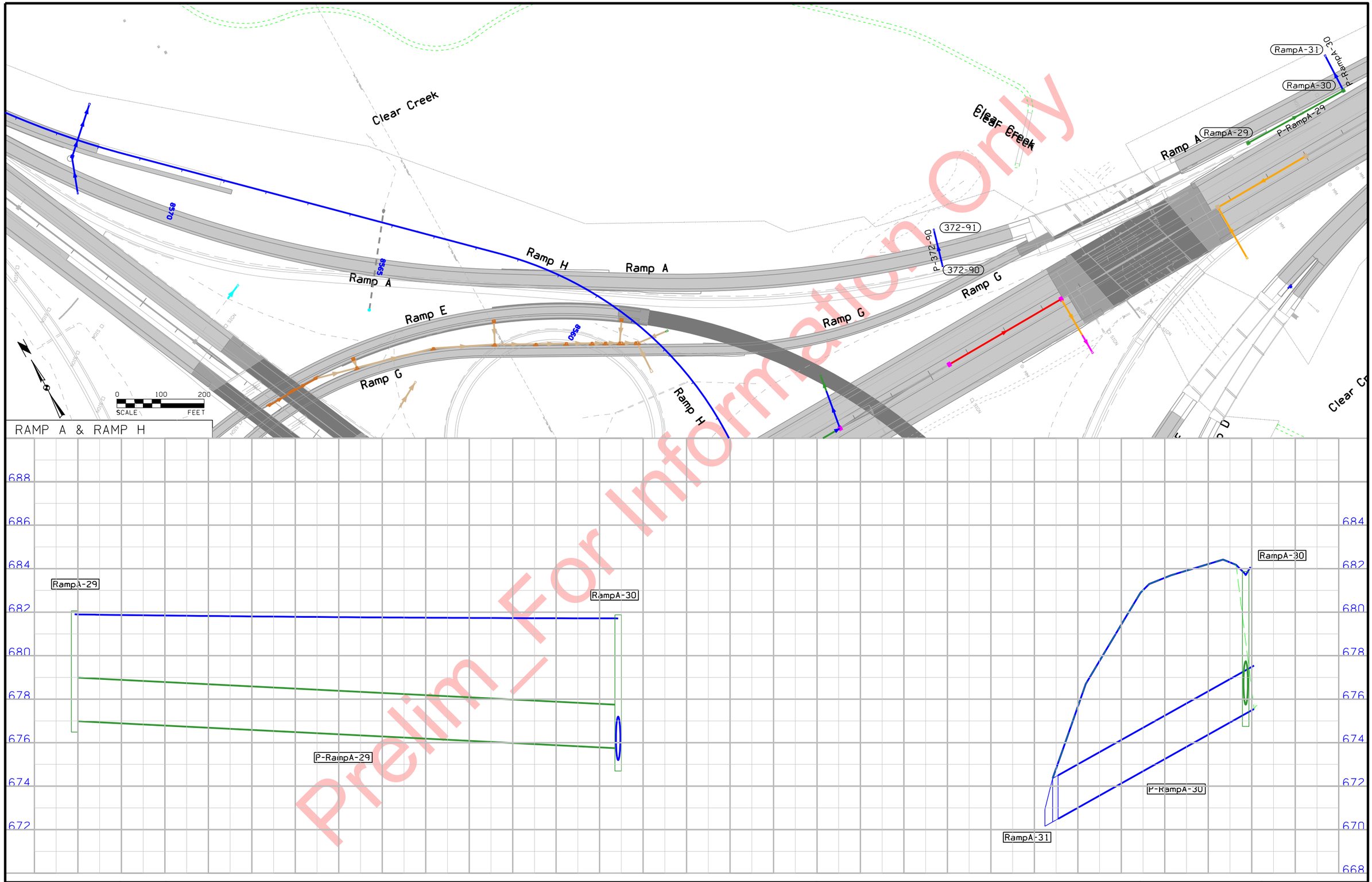

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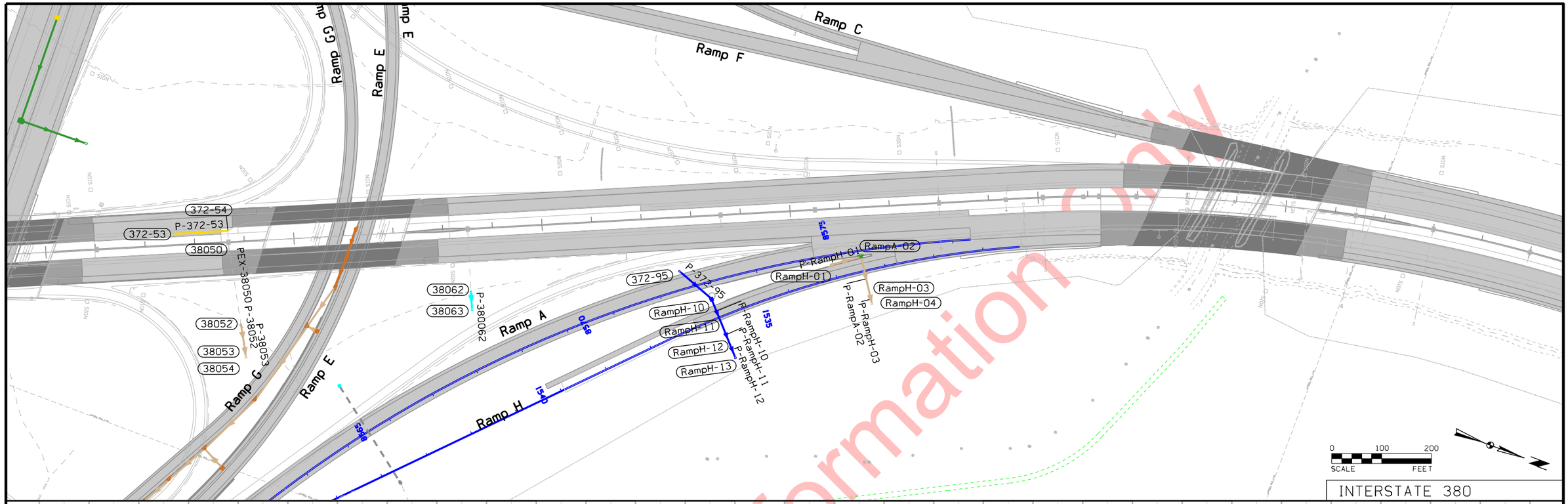

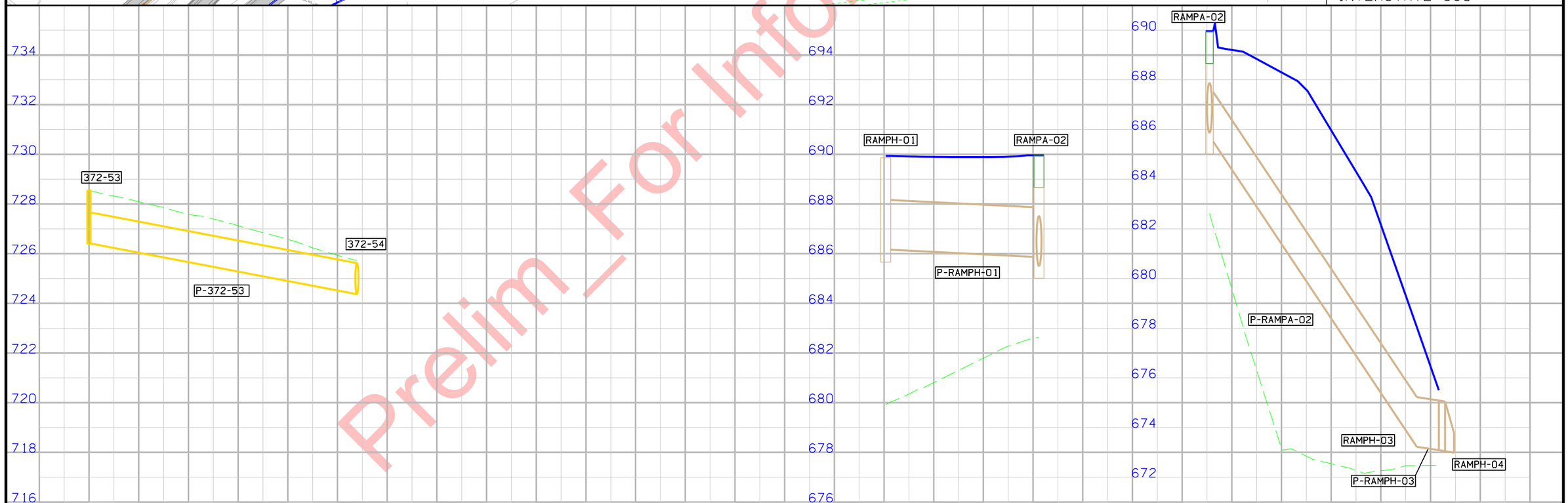

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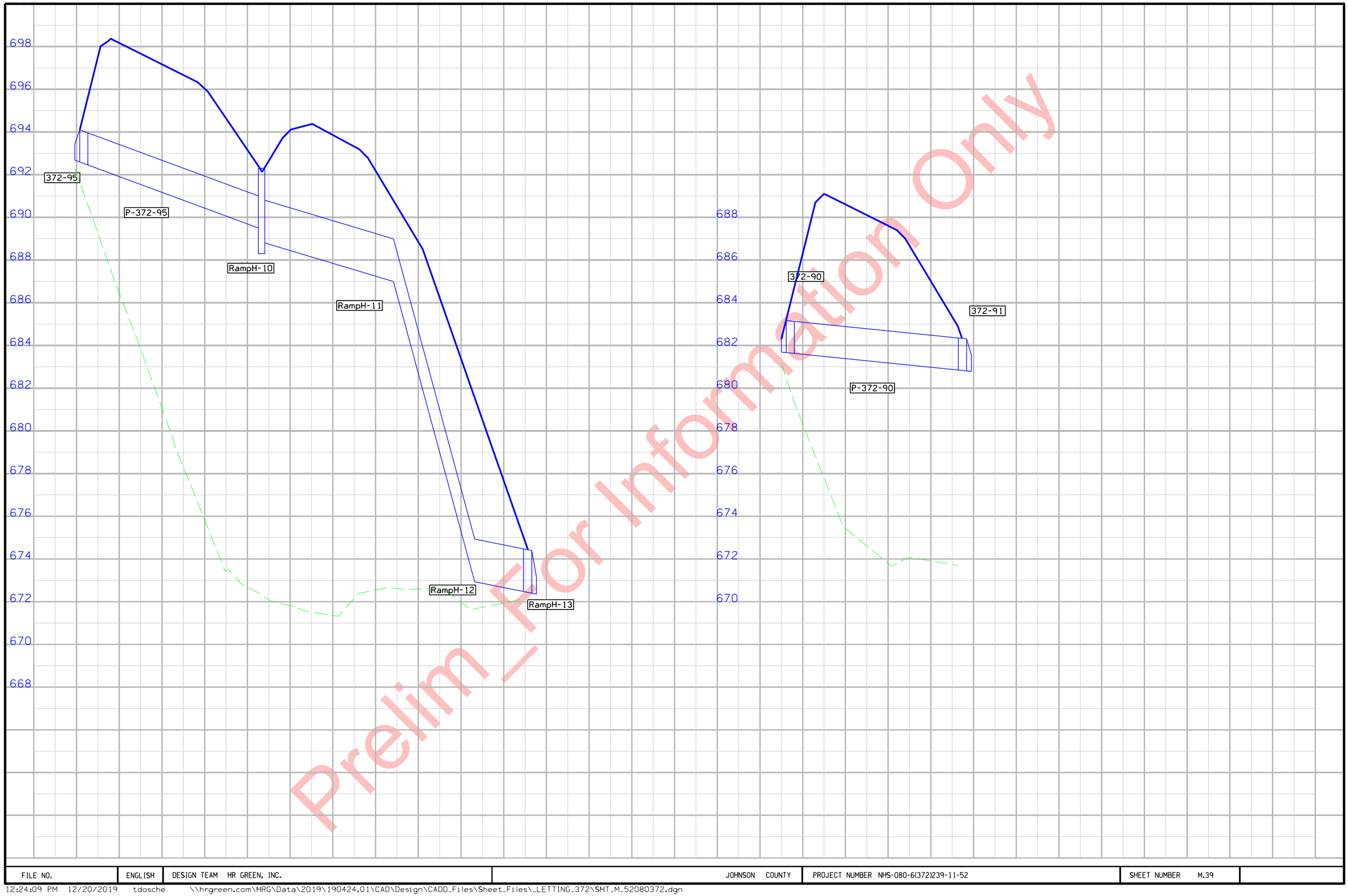

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.39

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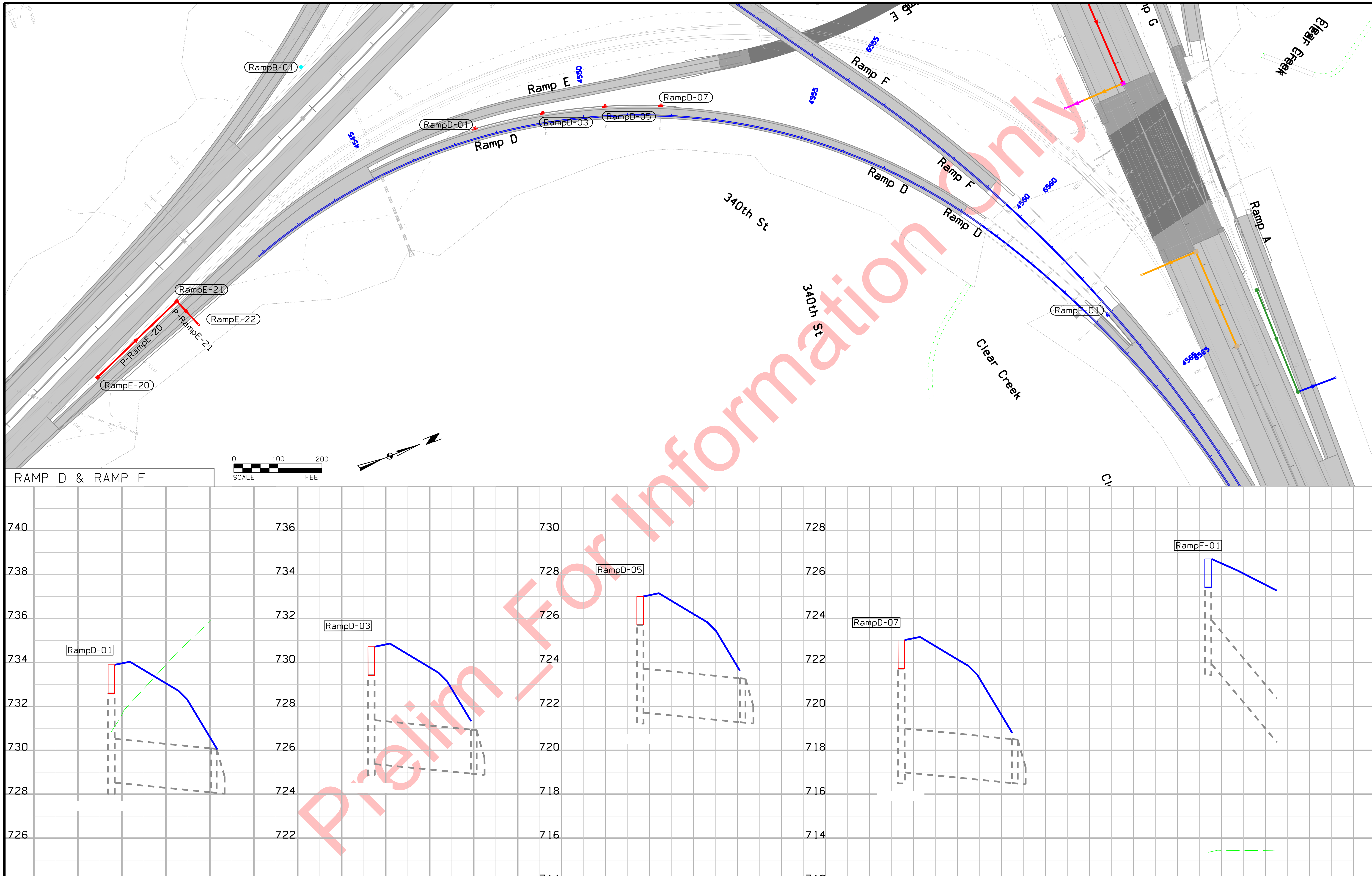
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Ramp E
RampD-07
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RampD-03
RampD-05
Ramp D
Ramp F
340th St
RampE-21
RampE-22
P-RampE-20
P-RampE-21
RampE-20
RampF-01
Clear Creek
Ramp A
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SCALE
FEET
RAMP D & RAMP F
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736
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732
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RampD-01
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Prelim_For Information Only

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.40

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RampB-01
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Ramp D
Ramp F
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340th St
Clear Creek
Bear Creek
Ramp A
RampF-01
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RampE-22
P-RampE-20
P-RampE-21
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SCALE FEET
RAMP E

RampE-20
RampE-21
P-RampE-20
P-RampE-12
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FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.41	

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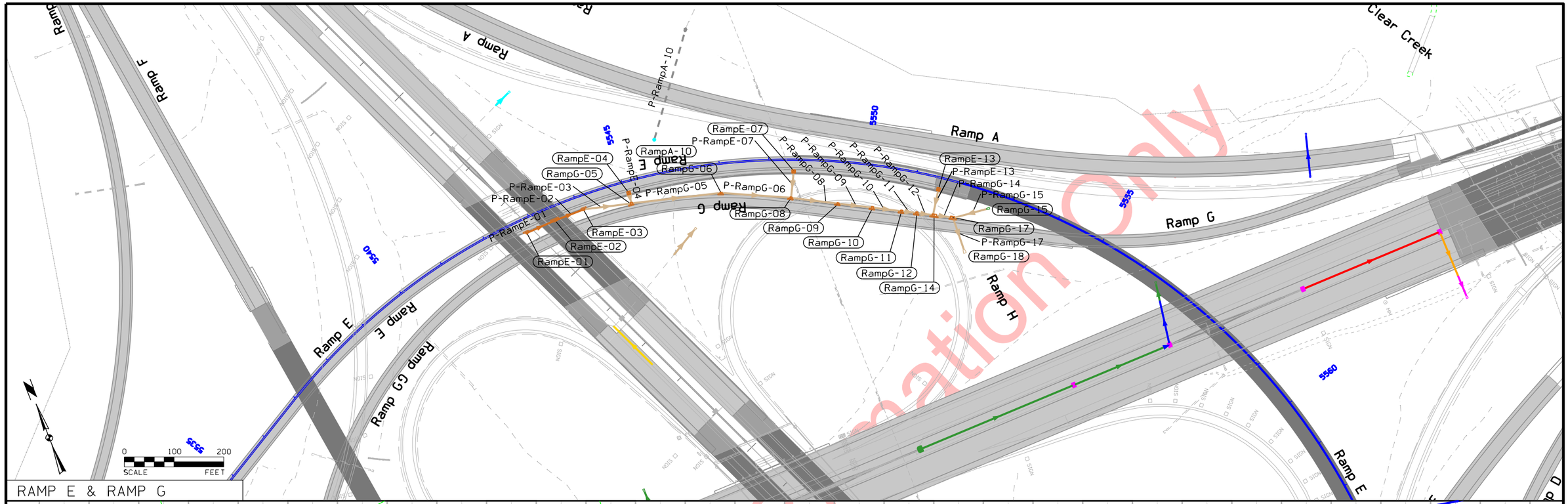

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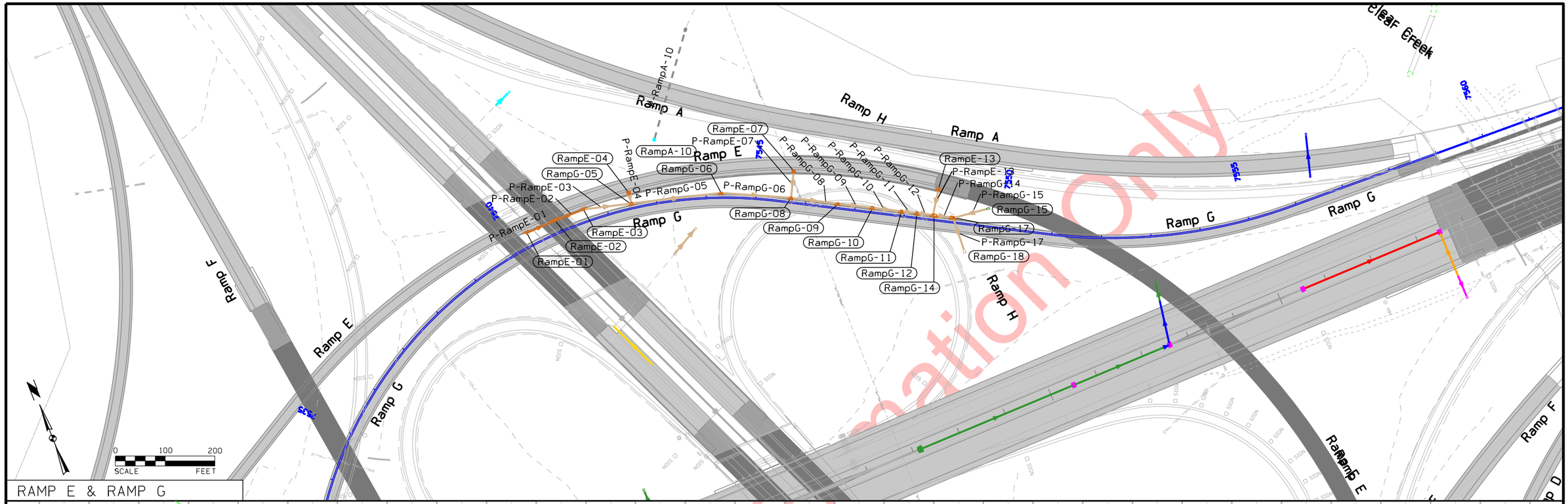

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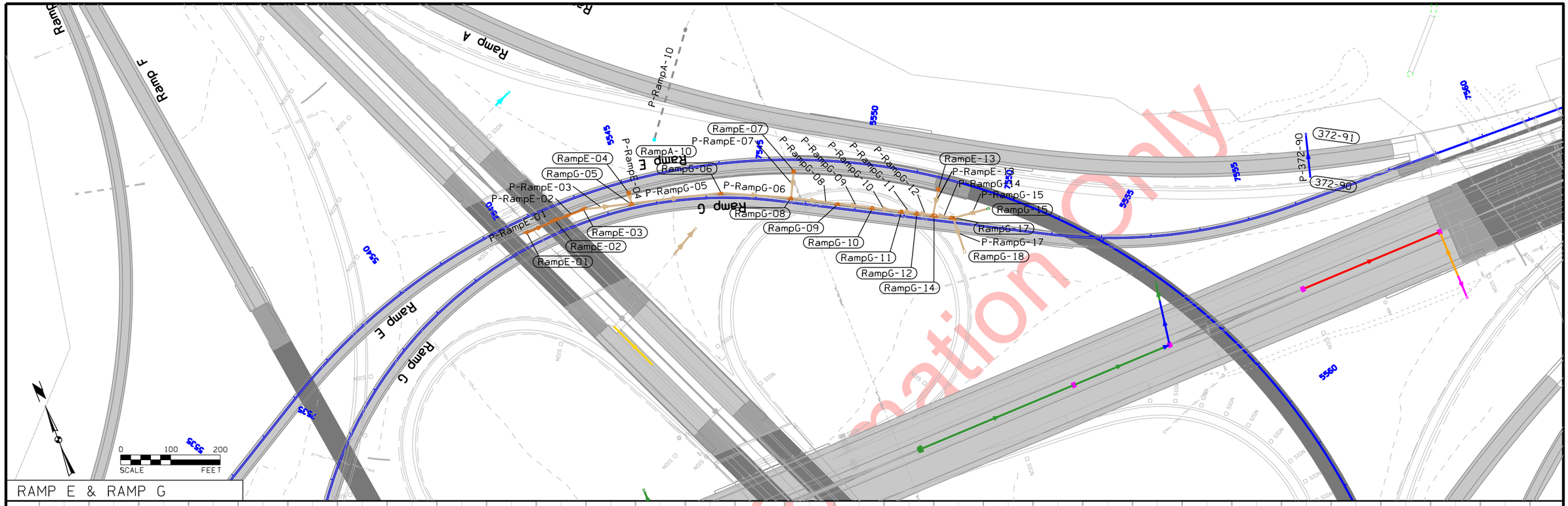

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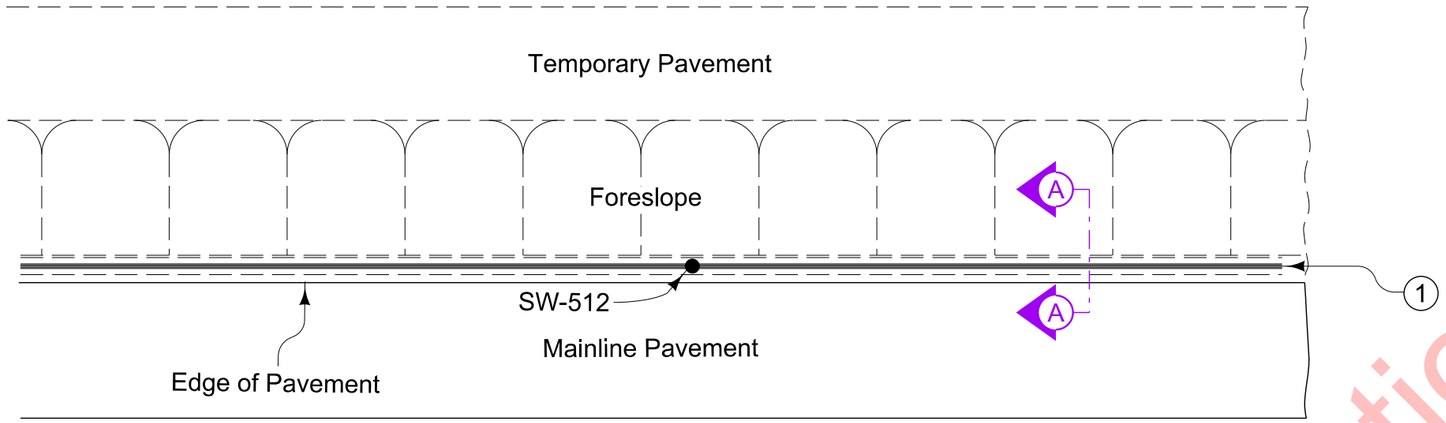
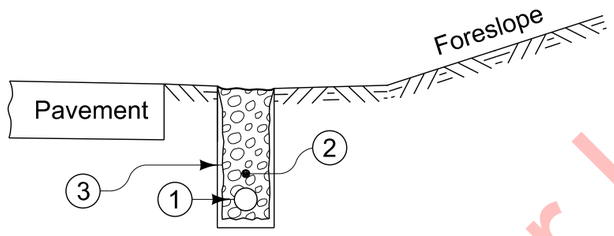
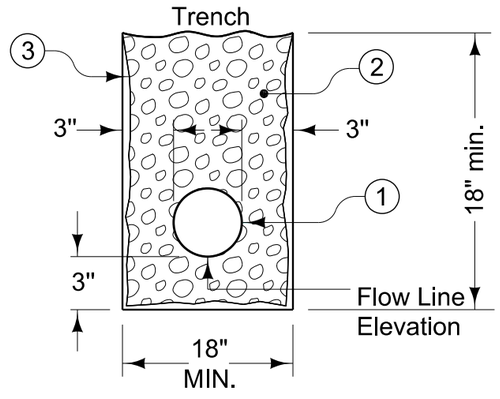


PLAN

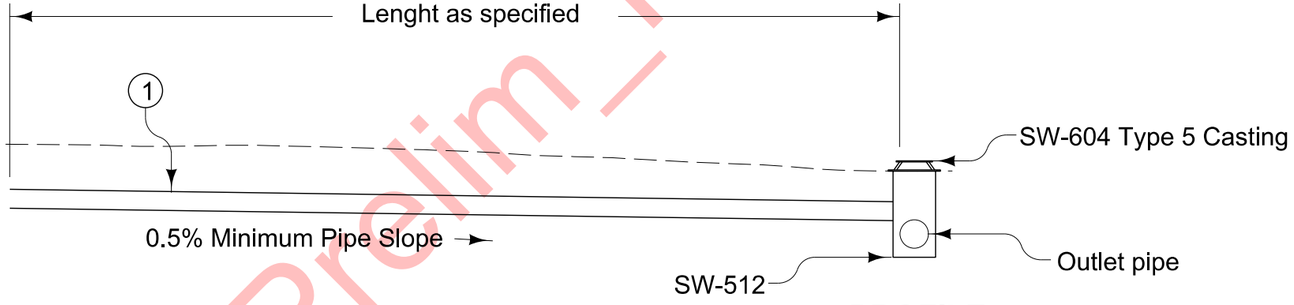
1. 12" Perforated Corrugated Polyethylene Tubing (Subdrain Pipe).
2. Macadam Stone Backfill for Subdrain (loose).
3. Engineering Fabric.
4. SW-512, Riser Diameter.
5. Reinforced Concrete Outlet Pipe.
6. SW-604 Type Casting.



SECTION A-A



TUBING PLACEMENT



PROFILE

FRENCH DRAIN DETAIL

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.45

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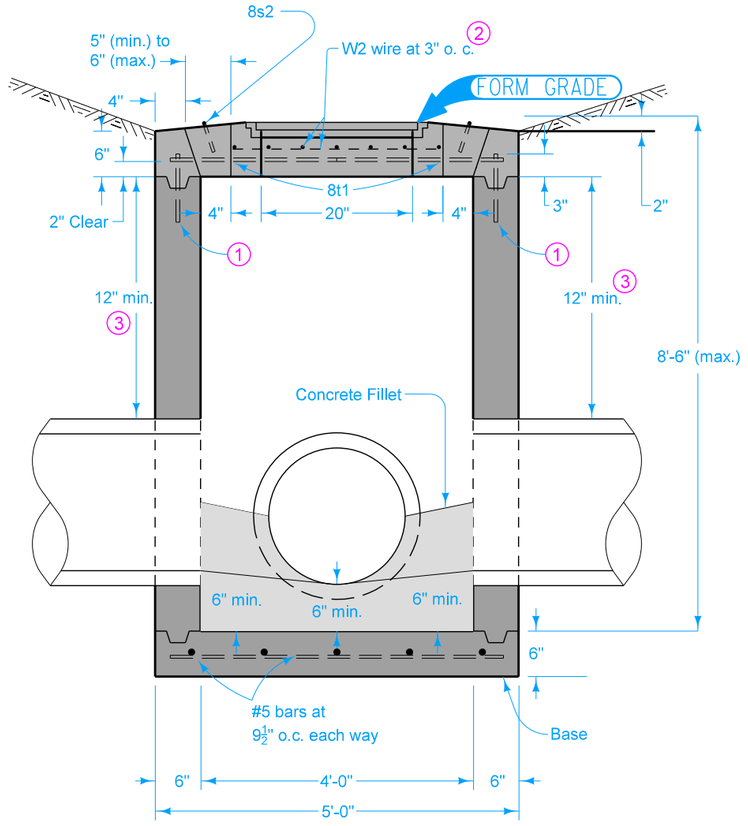
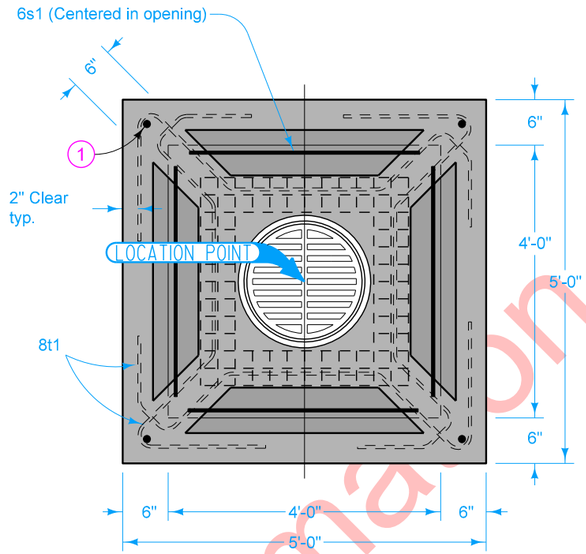


SECTION A-A

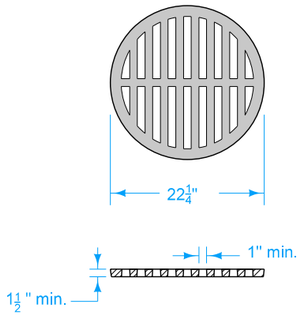


PLAN

Top of intake may be poured in the field or precast. For precast units, place a 1 inch diameter X 3 inch deep alignment hole 3 inches from each side of the corners of the unit.

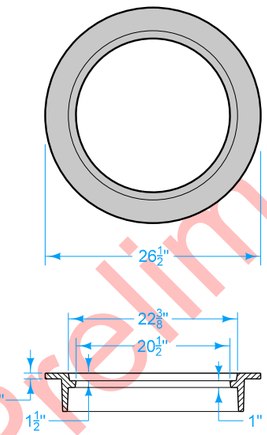
Maximum pipe size 30 inches.

1. Four #6 X 9 inch alignment pins (precast tops only).
2. Meet the requirements of Article 4151.04 of the Standard Specifications.
3. 12 inch minimum wall height above all pipes.



GRATE

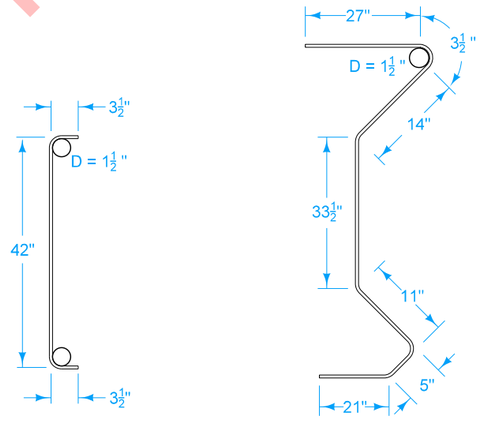
Minimum Weight = 86 lbs.



FRAME

Minimum Weight = 81 lbs.

BENT BAR DETAILS



6s1
(4 bars required)

8t1
(4 bars required)

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

MODIFIED

STANDARD ROAD PLAN

REVISION 3 04-17-18

SW-562

SHEET 1 of 1

MODIFICATIONS: REMOVED CONCRETE APRON MODIFIED BOX DIMENSIONS

VERTICAL THROAT AREA INTAKE (4' X 4' BOX)

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.46

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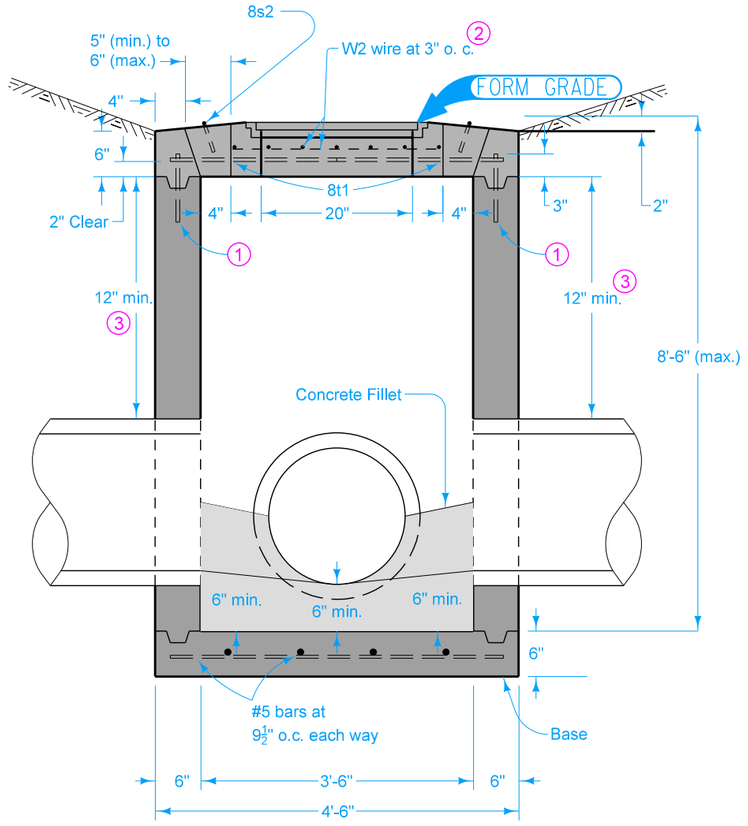
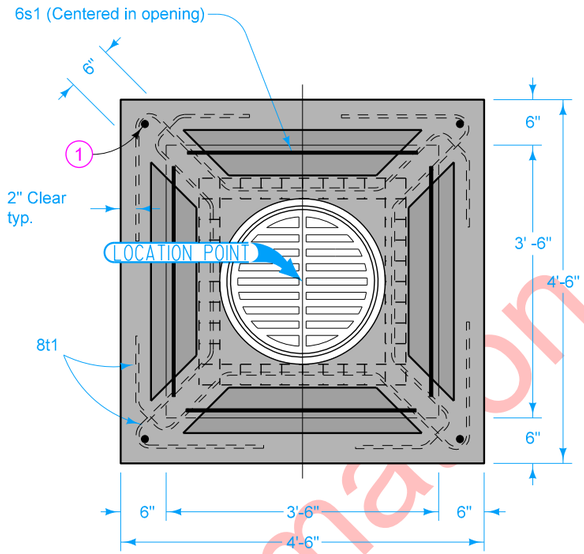


SECTION A-A

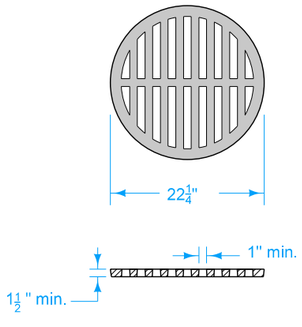


PLAN

Top of intake may be poured in the field or precast. For precast units, place a 1 inch diameter X 3 inch deep alignment hole 3 inches from each side of the corners of the unit.

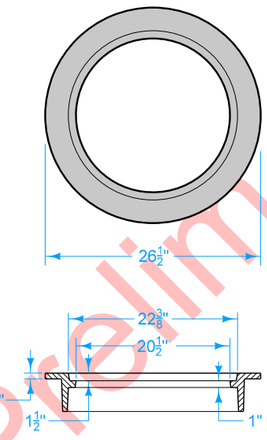
Maximum pipe size 24 inches.

1. Four #6 X 9 inch alignment pins (precast tops only).
2. Meet the requirements of Article 4151.04 of the Standard Specifications.
3. 12 inch minimum wall height above all pipes.



GRATE

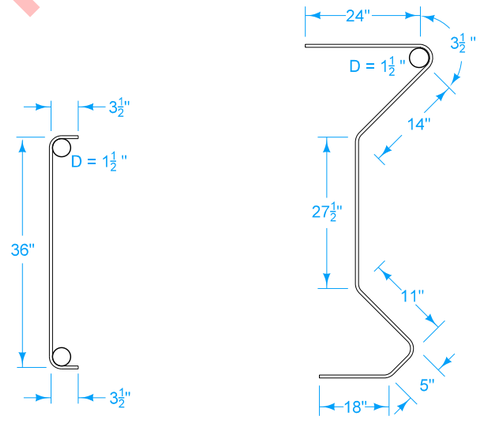
Minimum Weight = 86 lbs.



FRAME

Minimum Weight = 81 lbs.

BENT BAR DETAILS



6s1
(4 bars required)

8t1
(4 bars required)

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

MODIFIED

STANDARD ROAD PLAN

REVISION 3 04-17-18

SW-562

SHEET 1 of 1

MODIFICATIONS: REMOVED CONCRETE APRON MODIFIED BOX DIMENSIONS

VERTICAL THROAT AREA INTAKE (3.5' X 3.5' BOX)

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.47

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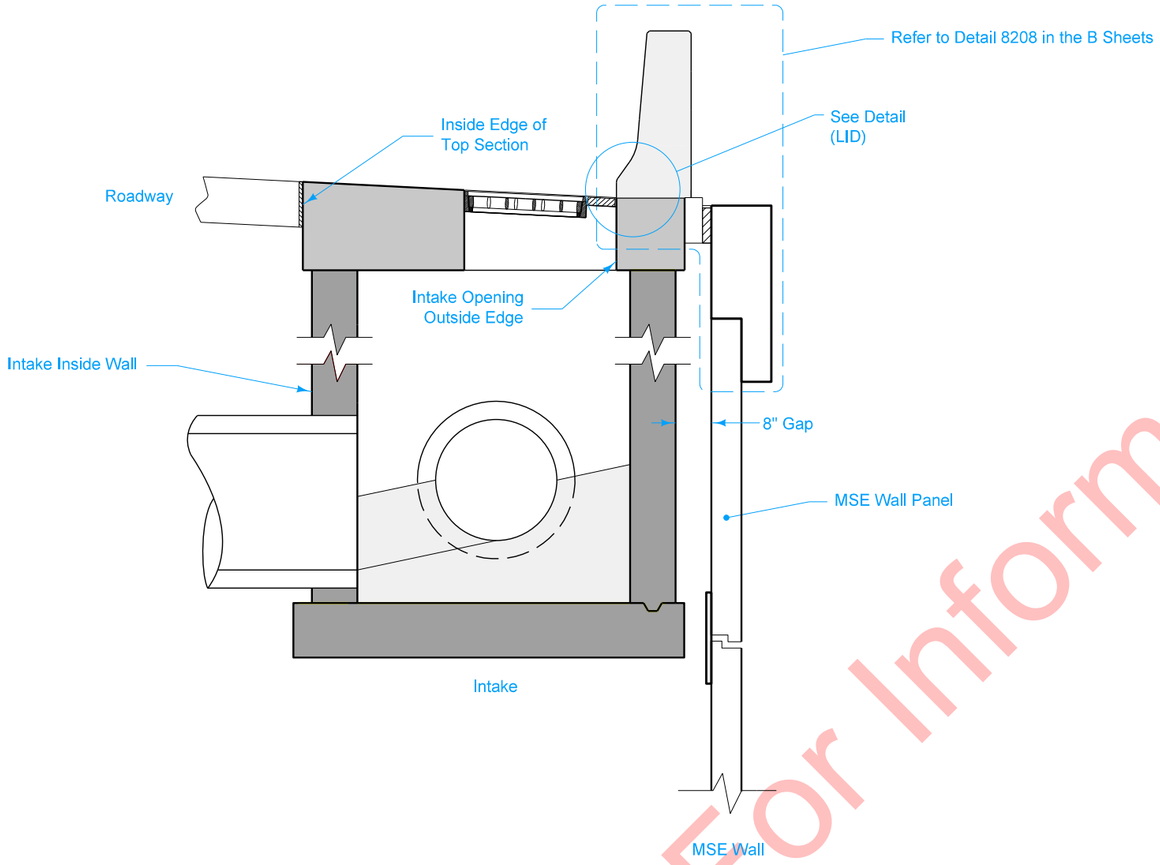

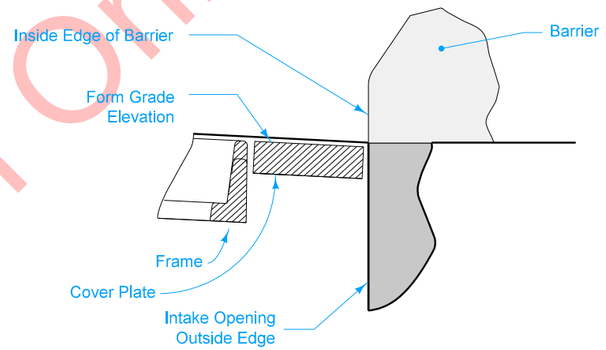

DETAIL
(LID)

NOTES:

1. The intake inside wall and corresponding inside edge of top section is not to extend inward beyond the typical roadway longitudinal joint (into the traveled lane)
2. The intake opening outside edge is not to be shifted inward beyond the typical inside edge of barrier

INTAKES ALONG
MSE WALLS

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.48	

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NOTES:

① USE EPOXY COATED REBAR ACCORDING TO THE IOWA DOT ARTICLE 4151.03 PLACE EPOXY COATED REBAR ONLY IN AREAS OF PERMANENT PCC PAVEMENT. ESTIMATED NUMBER OF REINFORCING STEEL BARS IS 2,096, RESULTING IN A WEIGHT OF 4,213 LBS. INCIDENTAL TO ITEM "DRAIN, CORRUGATED METAL SLOTTED PIPE, 12 IN., W/7.5 IN. GRATE"

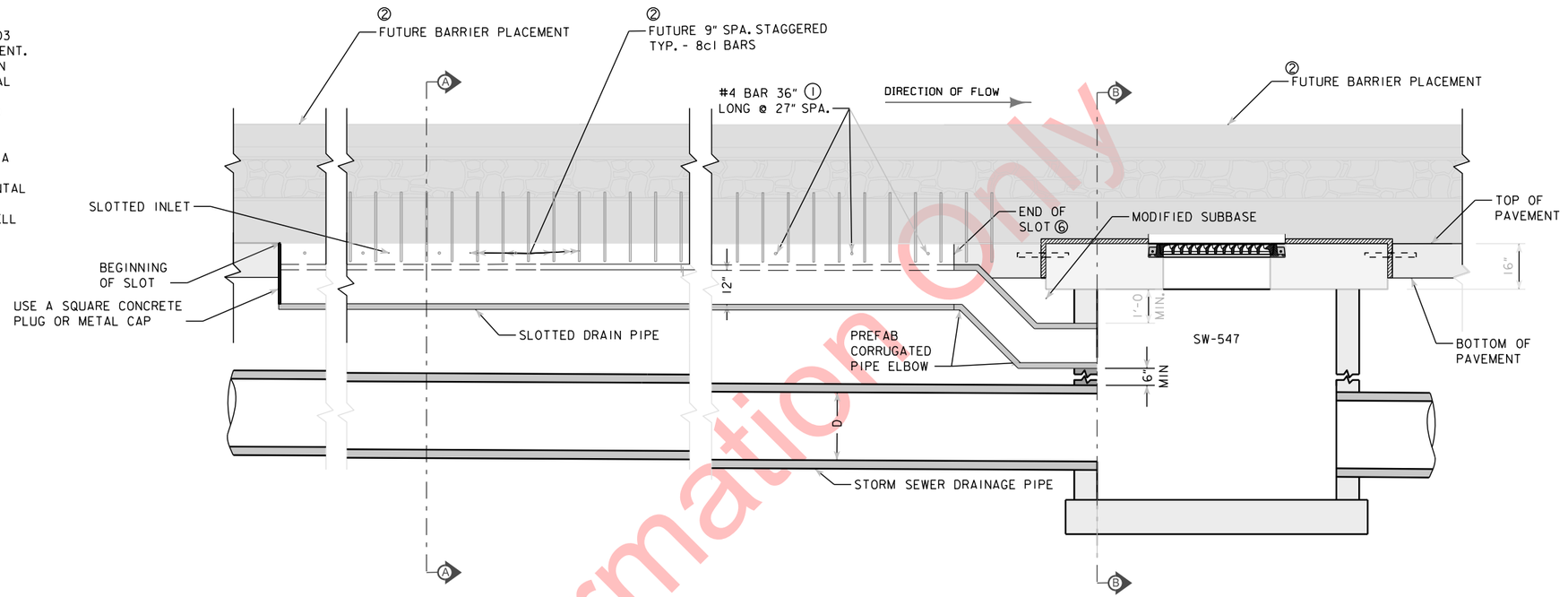
② DURING A FUTURE CONSTRUCTION STAGE, THE SLOTTED DRAIN INLET AND THE SLOTTED DRAIN PIPE WILL BE FILLED WITH FLOWABLE MORTAR AND THE MEDIAN BARRIER WILL BE INSTALLED WITH TWO TYPE 8cI BARS STAGGERED AT 9" SPACING AS SHOWN IN PROFILE VIEW AND SECTION A-A

③ REFER TO STANDARD ROAD PLAN SW-102 FOR MORE DETAILS. SPECIAL BACKFILL MATERIAL AND INSTALLATION IS CONSIDERED INCIDENTAL TO STORM SEWER PIPE INSTALLATION.

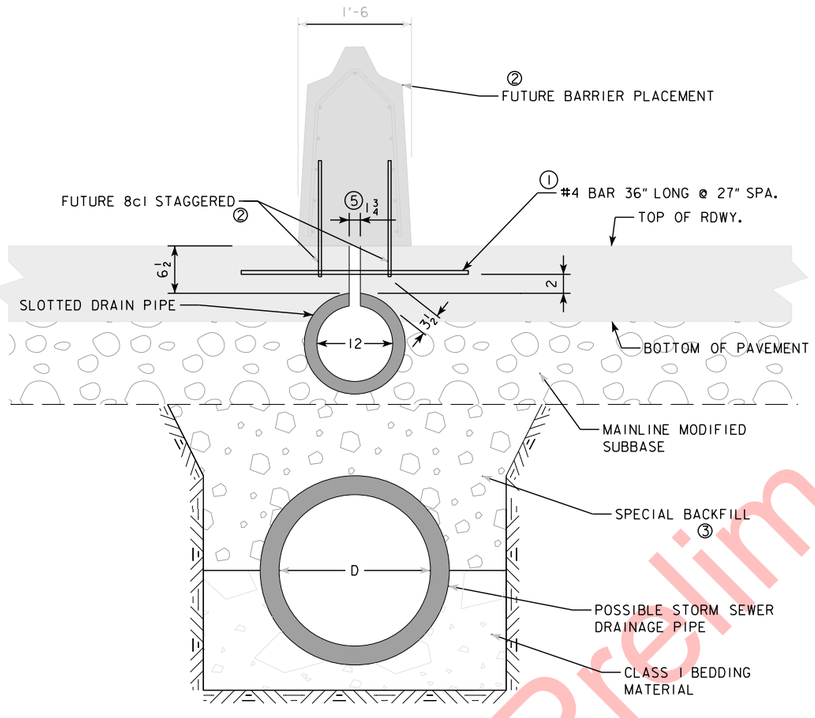
④ PIPE OPENING INVERT SHALL BE 2'3" BELOW THE TOP OF THE INTAKE WELL UNLESS OTHERWISE SPECIFIED

⑤ TEMPORARILY SEAL SLOTTED DRAIN GRATE DURING PAVING OPERATIONS

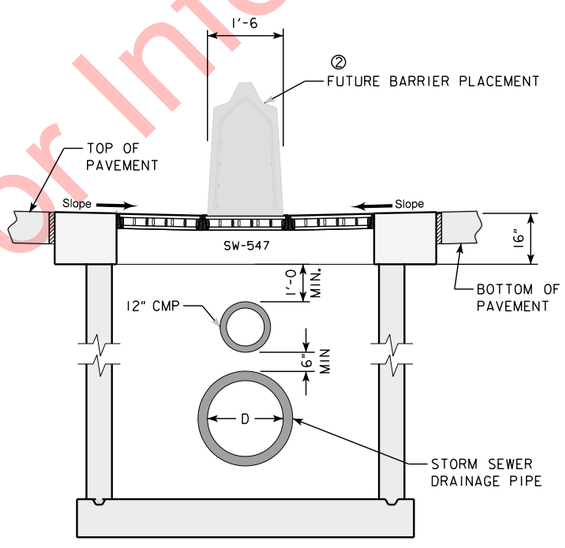
⑥ END SLOTTED DRAIN 10 FEET UPSTREAM OF THE BEGINNING OF THE CONNECTION STRUCTURE. IF THE INTAKE IS WITHIN BRIDGE APPROACH, END SLOTTED DRAIN AT THE BEGINNING OF BRIDGE APPROACH



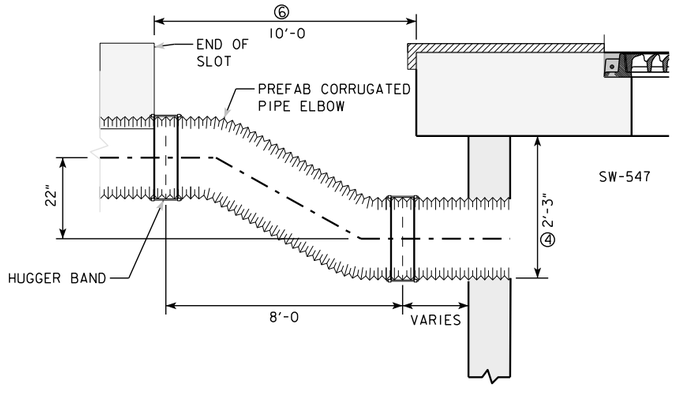
SLOTTED DRAIN INSTALLATION AND CONNECTIONS
PROFILE VIEW



CROSS SECTION VIEW
SECTION A-A



CONNECTION TO MEDIAN INTAKE
CROSS SECTION VIEW
SECTION B-B



CMP PIPE ELBOW DETAIL

MEDIAN SLOTTED DRAIN

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER M.49

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ESTIMATED PROJECT QUANTITIES
(1 DIVISION PROJECT)

DE100-1A
10/28/97

Item No.	Item Code	Item	Unit	Total	As Built Qty.
1	2503-0500402	BRIDGE END DRAIN, DR-402	EACH	40	
2	2507-3250005	ENGINEERING FABRIC	SY	2951	
3	2507-6800061	REVETMENT, CLASS E	TON	1930	
4	2610-0000214	MULCH, WOOD CHIP BERMS, PLACEMENT	CY	3000	
5	2601-2634100	MULCHING	ACRE	147.2	
6	2601-2634105	MULCHING, BONDED FIBER MATRIX	ACRE	8	
7	2601-2636015	NATIVE GRASS SEEDING	ACRE	99	
8	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	15	
9	2601-2636070	HYDRAULIC SEEDING	ACRE	8	
10	2601-2638352	SLOPE PROTECTION, WOOD EXCELSIOR MAT	SQ	8632	
11	2601-2640350	SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT	SQ	594	
12	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	114	
13	2601-2643110	WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION	MGAL	1383.8	
14	2601-2643300	MOBILIZATION FOR WATERING	EACH	3	
15	2602-0000010	SILT DITCHES	LF	0.5	
16	2602-0000020	SILT FENCE	LF	1126	
17	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	18843	
18	2602-0000040	SILT DIKES	LF	0.5	
19	2602-0000050	SILT BASINS	EACH	140	
20	2602-0000071	REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	9985	
21	2602-0000080	REMOVAL OF SILT BASINS	EACH	70	
22	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	1997	
23	2602-0000130	TEMPORARY SEDIMENT CONTROL BASIN	EACH	31	
24	2602-0000135	REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	31	
25	2602-0000140	MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN	EACH	93	
26	2602-0000160	ROCK CHECK DAM	LF	2569	
27	2602-0000170	MAINTENANCE OF ROCK CHECK DAM	EACH	115	
28	2602-0000180	REMOVAL OF ROCK CHECK DAM	EACH	39	
29	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	3400	
30	2602-0000350	REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE	LF	3400	
31	2602-0000400	TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	0.5	
32	2602-0000410	MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	0.5	
33	2602-0000420	REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY	EACH	0.5	
34	2602-0000530	GRATE INTAKE SEDIMENT FILTER BAG	EACH	7	
35	2602-0000540	MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	11	
36	2602-0000550	REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG	EACH	7	
37	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1	
38	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1	
39	2599-9999001	DEEP TILLAGE	ACRE	114	
40	2599-9999002	SLASH MULCH, PRODUCE AND STOCKPILE	CY	1	

STANDARD ROAD PLANS

DE105-4
10/18/11

The following Standard Road Plans apply to construction work on this project.

Number	Date	Title
EC-101	04-19-16	Wood Excelsior Mat for Ditch Protection
EC-103	04-21-15	Wood Excelsior Mat for Slope Protection
EC-201	10-16-18	Silt Fence
EC-204	04-18-17	Perimeter and Slope Sediment Control Devices
EC-301	10-18-16	Rock Erosion Control (REC)
EC-302	10-16-18	Rock Check Dam
EC-601	10-16-18	Temporary Sediment Control Basin
EW-403	04-18-17	Temporary Erosion Control Measures
TC-1	04-16-13	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
DR-402	04-17-18	Rock Flume For Bridge End Drain
570-5	04-18-17	EROSION CONTROL FOR INTAKE OR MANHOLE WELL
570-7	04-18-17	GRATE INTAKE SEDIMENT FILTER BAG
570-11	10-15-19	TEMPORARY SEDIMENT CONTROL FOR CULVERT EXTENSION WITH EXPOSED SOIL

ESTIMATE REFERENCE INFORMATION

DE100-4A
10/29/02

Item No.	Item Code	Description
1	2503-0500402	**BRIDGE END DRAIN, DR-402**
		Refer to RR Sheets for location. Refer to Tab. 104-8A for more details.
2	2507-3250005	**ENGINEERING FABRIC**
		Engineering fabric shall be material as specified for embankment erosion control in accordance with
		Article 4196.01,B,3, of the Standard Specifications.
		Refer to Tabulation 100-23.
3	2507-6800061	**REVETMENT, CLASS E**
		Estimated at 1.6 ton/cu yd.
		Refer to Tabulation 100-23. Refer to RR Sheets for plan view.
4	2610-0000214	**MULCH, WOOD CHIP BERMS, PLACEMENT**
		Approximately 3000 CY of slash mulch is stockpiled in the NW quadrant of the project site and additional
		quantities may be produced on-site. Use this slash mulch as an alternative to revetment, erosion stone,
		and other erosion control measures as directed by engineer.
5	2601-2634100	**MULCHING**
		Mulch all seeding areas according to Article 2601, E, 2. except the areas covered with wood excelsior mats or
		hydraulic mulching. Anchor mulch into the soil using mulch anchoring equipment with a minimum of two passes.
		Included for areas requiring reshaping and seedbed preparation.
		Mulch shall be Certified Noxious Weed Seed Free Mulch as certified by the Iowa Crop Improvement Association
		or adjacent states Crop Improvement Associations.
		Mulch Rate: 1 ½ tons of dry cereal straw or native grass straw per acre.
6	2601-2634105	**MULCHING, BONDED FIBER MATRIX**
		Use hydraulic mulch in wet areas, difficult to access areas, medians and along the area adjacent to the
		shoulder of interstate projects if needed.
7	2601-2636015	**NATIVE GRASS SEEDING**
		Use permanent native seeding in the backslopes, outside ditches, and forselopes. Finalize seeding the
		backslope immediately after grading operations and tillage are complete within the preferred seeding
		timeframe. Do not seed until areas are no longer needed for construction access. Areas in the foreslopes
		that are within 8 feet off of the edge of shoulder should not be seeded with native seeding, refer to bid
		item "SEEDING AND FERTILIZING (RURAL)".
8	2601-2636043	**SEEDING AND FERTILIZING (RURAL)**
		Seed and fertilize with rural permanent seeding in areas within 8 feet ofset off of the edge of the shoulder.
		Do not seed until areas are no longer needed for construction access.
9	2601-2636070	**HYDRAULIC SEEDING**
		Use rural stabilizing crop seeding and fertilizing mixture. Add rural seeding for median ditch and for areas
		within 8 feet from the edge of the shoulder where hydraulic mulch is used. Use native grass seeding
		mixture in foreslopes, outside ditches, and backslopes where hydraulic mulch is used.
10	2601-2638352	**SLOPE PROTECTION, WOOD EXCELSIOR MAT**
11	2601-2640350	**SPECIAL DITCH CONTROL, WOOD EXCELSIOR MAT**
		Refer to Tabulation 100-22.
		Prepare seedbed according to Article 2601.03,B,4 of the Standard Specifications. Install mat
		according to Article 2601.03,H,2 of the Standard Specifications. Seed according to Article 2601.03,H,2 of
		the Standard Specifications. Refer to Table 2601.03-7 for seed mixture.
12	2601-2642100	**STABILIZING CROP - SEEDING AND FERTILIZING**
		Finalize seeding all backslopes, foreslopes, and ditches immediatley after grading operations are complete.
13	2601-2643110	**WATERING FOR SOD, SPECIAL DITCH CONTROL, OR SLOPE PROTECTION**
		Estimated quantity based on a maximum of 50 gallons of water per SQ applied initially, then over 3 separate
		mobilizations, as described below.
14	2601-2643300	**MOBILIZATION FOR WATERING**
		3 Mobilizations. See Article 2601.05, A, 13 for further detail.
15	2602-0000010	**SILT DITCHES**
		Refer to Tabulation 100-13.
16	2602-0000020	**SILT FENCE**
		Refer to Tabulation HRG-01 in the R Sheets.
		Refer to plan view in the R Sheets.
		The HRG-01 tabulation includes estimated locations and elevations for placement of "Silt Fence for foreslope".
		Silt fence flare ups at the endings of each 200 FT long segment of continues silt fence (per Standard Road
		Plan EC-201) are not shown in the erosion and sediment control plan view in the R Sheets, but are accounted
		for in the quantities. Column "# of Silt Fences in Series" in Tab. HRG_01 contains the number of 200 FT long
		silt fence segments for each continues silt fence at a specific contour elevation.
		Verify the specific locations with the Engineer prior to beginning placement. Bid item includes 25% additional
		quantity for field adjustments and replacements.
		Silt fence placement for boring and receiving pits are considered incidental to the boring operations.

ESTIMATE REFERENCE INFORMATION

DE100-4A
10/29/02

Item No.	Item Code	Description
17	2602-0000030	**SILT FENCE FOR DITCH CHECKS**
		Refer to Tab. 100-18. The tabulation includes estimated locations for placement of Silt Fence for Ditch
		Checks to address possible erosion during construction. Verify the specific locations with the Engineer
		prior to beginning placement. Bid item includes 50% additional quantity for field adjustments and replacements.
		All silt fences listed in this tabulation follow Type 1 installation per Standard Road Plan EC-201 unless
		specified otherwise. Each row in the tabulation show the station range for which a number of silt fences listed
		under column "Total # of Silt Fences" shall be placed at spacing of the value listed under column "Spacing".
		For each row in the tabulation, begin silt fence count starting from the downstream end.
		Refer to plan view in the R Sheets.
18	2602-0000040	**SILT DIKES**
		Refer to Tabulation 100-15.
19	2602-0000050	**SILT BASINS**
		Refer to Tab. 100-14. The tabulation includes estimated locations for placement of Silt Basins to address
		possible erosion during construction. Verify the specific locations with the Engineer prior to beginning
		placement. Bid item includes 100% additional quantity for field adjustments and maintenance.
20	2602-0000071	**REMOVAL OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS**
		Refer to Tabulations 100-18 and HRG-01. This item is included for silt fence and silt fence for ditch check
		removal required for staging reasons, for replacement (replacement to be paid separately), or for areas
		that have achieved 70% permanent growth.
21	2602-0000080	**REMOVAL OF SILT BASINS**
		Refer to Tabulation 100-14.
22	2602-0000101	**MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK**
		Refer to Tabulations 100-18 and HRG-01. This item is included for cleanout and repair of the silt fence
		and silt fence for ditch checks during the project.
23	2602-0000130	**TEMPORARY SEDIMENT CONTROL BASIN**
24	2602-0000135	**REMOVAL OF TEMPORARY SEDIMENT CONTROL BASIN**
25	2602-0000140	**MAINTENANCE OF TEMPORARY SEDIMENT CONTROL BASIN**
		A total of 3 cleanouts were assumed for each temporary sediment control basin.
		Refer to Tabulation 100-33 .
26	2602-0000160	**ROCK CHECK DAM**
27	2602-0000170	**MAINTENANCE OF ROCK CHECK DAM**
28	2602-0000180	**REMOVAL OF ROCK CHECK DAM**
		Refer to Tab. 100-32.
		Quantites include an additional 10% of the bid quantity of Silt Fence for Ditch Checks to reflect possible
		replacement for Silt Fence for Ditch Checks during the grading project. A total of 3 cleanouts for each rock
		check dam were assumed. Each rock check dam was assumed to be 16 linear feet.
29	2602-0000320	**PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.**
30	2602-0000350	**REMOVAL OF PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE**
		Refer to Tabulation 100-19.
31	2602-0000400	**TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
32	2602-0000410	**MAINTENANCE OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
33	2602-0000420	**REMOVAL OF TEMPORARY INTAKE OR MANHOLE COVER ASSEMBLY**
		Refer to Tabulation 100-11. Payment is full compensation for inspecting fabric sock and replacing when flow
		capactiy is reduced to 50%.
34	2602-0000530	**GRATE INTAKE SEDIMENT FILTER BAG**
35	2602-0000540	**MAINTENANCE OF GRATE INTAKE SEDIMENT FILTER BAG**
36	2602-0000550	**REMOVAL OF GRATE INTAKE SEDIMENT FILTER BAG**
		Refer to Tabulation 100-37.
37	2602-0010010	**MOBILIZATIONS, EROSION CONTROL**
		This item is included for a single or multiple erosion control mobilization performed by a single crew for
		this project. The quantity will be paid for at the unit price of $500.00 each for Mobilizations, Erosion
		Control, which is full compensation for staged movement of labor, equipment, and materials; and labor, tools,
		equipment, and incidentals necessary to complete the movement. Additional mobilizations not outlined in the
		ECIP must be approved by the Engineer. Failure to mobilize when erosion control work is needed to comply
		with the ECIP or PPP, will result in the Engineer, by written order, direct mobilization within 72 hours of
		a written order. Failure to mobilize within such time period, will result in a deduction of $750.00 per
		calendar day from payment due under the contract, except when Engineer extends such time period.

ESTIMATE REFERENCE INFORMATION

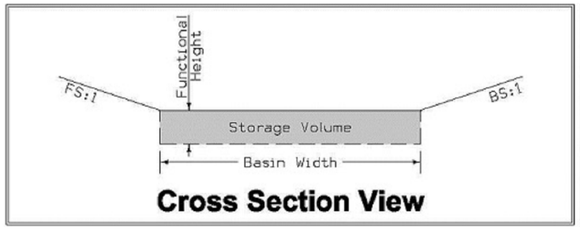
DE100-4A
10/29/02

Item No.	Item Code	Description
38	2602-0010020	**MOBILIZATIONS, EMERGENCY EROSION CONTROL**
		This item is included for erosion control mobilization in case of a sudden occurrence of a serious and urgent
		nature which is beyond normal maintenance of erosion control items. Emergency work requires immediate
		mobilization and movement of necessary labor, for movement of labor, equipment and materials; and for labor,
		tools, equipment, and incidentals necessary to complete the movement. Mobilize with sufficient labor, equipment,
		and materials on job site within eight hours of Engineer's written order to install temporary erosion control
		items on an emergency basis. Engineer's written order will include a description of required work. Only one
		mobilization will be paid for work described in the written order. Failure to mobilize within eight hours of
		written order, will result in a deduction of $1500.00 per calendar day from payment due under the contract,
		except when Engineer extends such time period.
39	2599-9999001	**DEEP TILLAGE**
		Equip tillage equipment with arrowhead type shoe providing lateral displacement and limit movement of subsoil
		to the surface. Obtain Engineer's approval for equipment. It is intended that following subsoil tillage, the
		area remain in a loosened condition. Additional compaction or operation of heavy equipment, other than that
		required for topsoil placement and shaping, will not be allowed on areas tilled. Till at 3 foot maximum centers
		and at right angles to finished slope. For ditch and foreslope areas, perform subsoil tillage after 8 inch top
		soil replacement. Tillage shall be done to an average depth of 18 inches. Deep tillage on ditch and foreslope
		areas should not be completed until areas are no longer needed for construction access; coordinate with the
		engineer regarding possible future access needs. For backslope areas, perform subsoil tillage to an average
		depth of 12 inches prior to placement of 8" topsoil and seeding.
40	2599-9999002	**SLASH MULCH, PRODUCE AND STOCKPILE**
		Trees removed as part of this clearing, grubbing, or removals during this project shall be shredded to generate
		slash mulch to be used for erosion control on this and subsequent projects. Storage of the stockpiles shall be
		in a well drained location to keep the mulch reasonably dry and free from contamination. This item shall be
		measured by cross-section of each produced stockpile and paid for by the calculated cubic yards of mulch.
		This item does not include placement of the mulch as erosion control, placement is paid under item 2610-0000214.

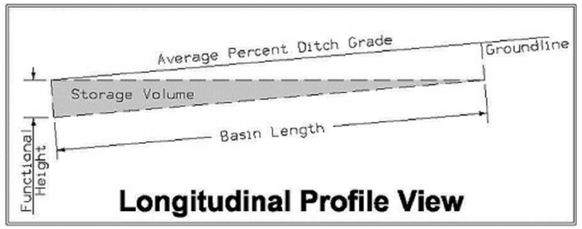
SILT BASINS

Possible Standard: EW-403

DE100-14
10/17/17



Cross Section View



Longitudinal Profile View

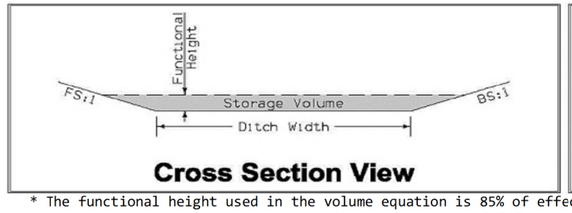
* The functional height used in the volume equation is 95% of effective height. Effective height is 3 feet as shown in EW-403.
* Volume equation: (0.5*Length*(Width*Height+Width*(Height-Length*Avg%Slope))

Basin No.	Location	Bid Items		Stormwater Storage Volume Summary					Subtotal	Remarks
		Installation	Removal	Basin Width	Basin Length	Height	Avg. % Slope	Volume*		
		EACH	EACH	FT	FT	FT		CF		
1A-2	616+50.00	1	1	10.0	50.0	2.85	1.7%	1212.5		
1B-2	623+05.00	1	1	10.0	50.0	2.85	0.4%	1375.0		
1B-2	624+50.00	1	1	10.0	50.0	2.85	0.4%	1375.0		
1D-1	7526+50.00	1	1	10.0	50.0	2.85	2.4%	1125.0		
1E-3	1162+10.00	1	1	10.0	50.0	2.85	1.7%	1212.5		
1G-1	658+50.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
1G-1	659+25.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
1G-1	660+00.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
1G-1	6558+55.00	1	1	10.0	35.0	2.85	2.9%	819.9		
1G-1	6558+95.00	1	1	10.0	35.0	2.85	2.9%	819.9		
1G-1	6559+55.00	1	1	10.0	50.0	2.85	2.9%	1062.5		
2G-1	658+50.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
2G-1	659+25.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
2G-1	660+00.00	1	1	10.0	75.0	2.85	1.8%	1631.3		
2G-1	6558+55.00	1	1	10.0	35.0	2.85	2.9%	819.9		
2G-1	6558+95.00	1	1	10.0	35.0	2.85	2.9%	819.9		
2G-1	6559+55.00	1	1	10.0	50.0	2.85	2.9%	1062.5		
2G-2	1160+85.00	1	1	10.0	50.0	2.85	1.9%	1187.5		
2G-2	1160+15.00	1	1	10.0	50.0	2.85	1.9%	1187.5		
2G-3	6553+55.00	1	1	10.0	35.0	2.85	2.1%	868.9		
2H-2	7546+85.00	1	1	10.0	40.0	2.85	0.4%	1108.0		
2H-2	7548+35.00	1	1	10.0	40.0	2.85	1.5%	1020.0		
2H-2	7549+85.00	1	1	10.0	40.0	2.85	2.4%	948.0		
2K-2	1543+10.00	1	1	10.0	50.0	2.85	0.5%	1362.5		
2L-1	4555+35.00	1	1	10.0	35.0	2.85	8.5%	498.8		
2L-1	4554+80.00	1	1	10.0	35.0	2.85	8.5%	498.8		
2M-1	1167+35.00	1	1	10.0	35.0	2.85	2.6%	838.3		
2M-1	1169+75.00	1	1	10.0	35.0	2.85	2.6%	838.3		
2M-1	640+00.00	1	1	10.0	35.0	2.85	2.9%	819.9		
2M-1	637+55.00	1	1	10.0	35.0	2.85	2.9%	819.9		
2M-2	7537+70.00	1	1	10.0	35.0	2.85	2.4%	850.5		
3E-3	1162+10.00	1	1	10.0	50.0	2.85	1.7%	1212.5		
3M-0	5537+40.00	1	1	10.0	50.0	2.85	1.4%	1250.0		
3M-2	7537+70.00	1	1	10.0	35.0	2.85	2.4%	850.5		
3M-3	1181+00.00	1	1	10.0	50.0	2.85	0.7%	1337.5		
	Total	**35**	**35**							

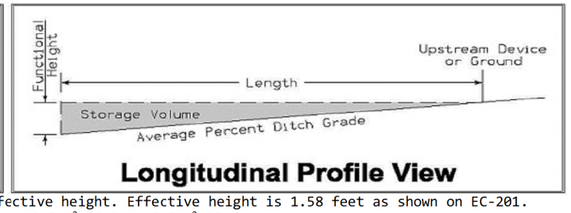
DE100-18
10/16/18

SILT FENCES FOR DITCH CHECKS

Possible Standard: EC-201



Cross Section View



Longitudinal Profile View

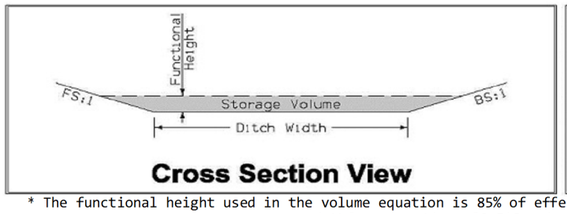
* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H²*FS+DW*H+0.5*H²*BS)]

Basin No.	Location				Bid Items			Stormwater Storage Volume Summary							Ditch Length	Total # of Silt Fences	Total Volume	Remarks
	Station	To Station	Chain	Side	Installation LF	Maintenance LF	Removal LF	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Avg. % Slope	Spacing	Down Stream	Volume* CF				
1A-2	616+30.00	620+50.00	ML080	LT	210.0	21.0	105.0	6.0	3.0	10.0	1.7%	75.0	21.5	808.0	420.0	5.0	4040.0	
1B-2	621+90.00	625+20.00	ML080	LT	33.0	3.3	16.5	3.0	3.0	10.0	0.4%	315.0	18.8	2967.4	330.0	1.0	2967.4	
1C-1	624+50.00	632+70.00	ML080	RT	546.0	54.6	273.0	6.0	3.0	10.0	2.5%	60.0	21.5	646.4	820.0	13.0	8403.1	
1C-2	7512+90.00	7528+00.00	ML380G	LT	1500.0	150.0	750.0	12.0	3.0	10.0	2.2%	60.0	27.0	808.7	1510.0	25.0	20218.0	
1D-1	7512+90.00	7516+50.00	ML380G	RT	198.0	19.8	99.0	3.0	3.0	10.0	2.7%	60.0	18.8	565.2	360.0	6.0	3391.4	
1D-1	7516+50.00	7527+15.00	ML380G	RT	714.0	71.4	357.0	6.0	3.0	10.0	2.4%	60.0	21.5	646.4	1065.0	17.0	10988.7	
1E-1	6533+30.00	6539+00.00	ML380F	RT	324.0	32.4	162.0	4.0	3.0	10.0	2.1%	60.0	19.7	592.3	570.0	9.0	5330.5	
1E-2	6533+40.00	6540+90.00	ML380F	LT	648.0	64.8	324.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	750.0	18.0	7107.4	
1E-3	6540+90.00	6544+40.00	ML380F	LT	288.0	28.8	144.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	350.0	8.0	3158.8	
1E-3	1155+40.00	1162+90.00	ML380	LT	360.0	36.0	180.0	4.0	3.0	10.0	1.7%	75.0	19.7	740.4	750.0	10.0	7403.5	
1F-1	1153+20.00	1148+70.00	ML380	LT	294.0	29.4	147.0	6.0	3.0	10.0	2.2%	60.0	21.5	646.4	450.0	7.0	4524.7	
1F-1	6539+00.00	6545+10.00	ML380F	LT	540.0	54.0	270.0	4.0	3.0	10.0	3.7%	40.0	19.7	394.9	610.0	15.0	5922.8	
1G-1	651+05.00	660+10.00	ML080	RT	432.0	43.2	216.0	4.0	3.0	10.0	2.0%	75.0	19.7	740.4	905.0	12.0	8884.2	
1G-1	6553+85.00	6559+70.00	ML380D	RT	504.0	50.4	252.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	585.0	14.0	5528.0	
1H-1	651+75.00	657+00.00	ML080	RT	288.0	28.8	144.0	4.0	3.0	10.0	2.1%	60.0	19.7	592.3	525.0	8.0	4738.3	
1I-1	661+60.00	671+05.00	ML080	RT	108.0	10.8	54.0	4.0	3.0	10.0	0.4%	315.0	19.7	3109.5	945.0	3.0	9328.5	
2C-1	624+50.00	632+70.00	ML080	RT	546.0	54.6	273.0	6.0	3.0	10.0	2.5%	60.0	21.5	646.4	820.0	13.0	8403.1	
2F-1	1153+20.00	1148+70.00	ML380	LT	294.0	29.4	147.0	6.0	3.0	10.0	2.2%	60.0	21.5	646.4	450.0	7.0	4524.7	
2F-1	6539+00.00	6545+10.00	ML380F	LT	540.0	54.0	270.0	4.0	3.0	10.0	3.7%	40.0	19.7	394.9	610.0	15.0	5922.8	
2G-1	651+05.00	660+10.00	ML080	RT	432.0	43.2	216.0	4.0	3.0	10.0	2.0%	75.0	19.7	740.4	905.0	12.0	8884.2	
2G-1	6553+85.00	6559+70.00	ML380D	RT	504.0	50.4	252.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	585.0	14.0	5528.0	
2G-2	647+75.00	650+95.00	ML080	RT	252.0	25.2	126.0	4.0	3.0	10.0	3.5%	45.0	19.7	444.2	320.0	7.0	3109.5	
2G-2	1154+25.00	1161+30.00	ML080	RT	324.0	32.4	162.0	4.0	3.0	10.0	1.9%	75.0	19.7	740.4	705.0	9.0	6663.2	
2G-3	6548+35.00	6553+60.00	ML380F	LT	420.0	42.0	210.0	6.0	3.0	10.0	3.0%	50.0	21.5	538.7	525.0	10.0	5386.6	
2G-4	6548+85.00	6551+35.00	ML380F	LT	210.0	21.0	105.0	6.0	3.0	10.0	3.1%	50.0	21.5	538.7	250.0	5.0	2693.3	
2G-4	1143+55.00	1152+90.00	ML380	RT	648.0	64.8	324.0	4.0	3.0	10.0	3.1%	50.0	19.7	493.6	935.0	18.0	8884.2	
2G-4	5566+50.00	5572+60.00	ML380	RT	540.0	54.0	270.0	4.0	3.0	10.0	3.8%	40.0	19.7	394.9	610.0	15.0	5922.8	
2H-1	651+75.00	657+00.00	ML080	LT	288.0	28.8	144.0	4.0	3.0	10.0	2.1%	60.0	19.7	592.3	525.0	8.0	4738.3	
2H-2	7551+40.00	7543+85.00	ML380G	RT	360.0	36.0	180.0	4.0	3.0	10.0	1.6%	75.0	19.7	740.4	755.0	10.0	7403.5	
2H-2	647+00.00	651+50.00	ML080	LT	144.0	14.4	72.0	4.0	3.0	10.0	1.2%	100.0	19.7	987.1	450.0	4.0	3948.6	
2H-2	1164+45.00	1168+85.00	ML380	RT	144.0	14.4	72.0	4.0	3.0	10.0	1.4%	100.0	19.7	987.1	440.0	4.0	3948.6	
2H-3	7549+70.00	7555+60.00	ML380G	RT	180.0	18.0	90.0	4.0	3.0	10.0	1.3%	100.0	19.7	987.1	590.0	5.0	4935.7	
2H-4	7542+40.00	7548+00.00	ML380G	RT	108.0	10.8	54.0	4.0	3.0	10.0	1.0%	155.0	19.7	1530.1	560.0	3.0	4590.2	
2K-1	1543+50.00	1547+00.00	ML380A	RT	312.0	31.2	156.0	4.0	4.0	10.0	4.4%	40.0	20.6	412.9	350.0	8.0	3303.1	
2K-2	1540+35.00	1543+50.00	ML380A	RT	36.0	3.6	18.0	4.0	3.0	10.0	0.5%	315.0	19.7	3109.5	315.0	1.0	3109.5	
2L-1	4550+50.00	4553+50.00	ML380D	LT	234.0	23.4	117.0	4.0	4.0	10.0	3.5%	45.0	20.6	464.5	300.0	6.0	2787.0	
2M-1	1165+90.00	1170+75.00	ML380	LT	288.0	28.8	144.0	4.0	3.0	10.0	2.6%	60.0	19.7	592.3	485.0	8.0	4738.3	
2M-1	635+65.00	641+95.00	ML380	LT	432.0	43.2	216.0	4.0	3.0	10.0	2.9%	50.0	19.7	493.6	630.0	12.0	5922.8	
2M-2	7531+85.00	7538+30.00	ML380G	RT	420.0	42.0	210.0	6.0	3.0	10.0	2.4%	60.0	21.5	646.4	645.0	10.0	6463.9	

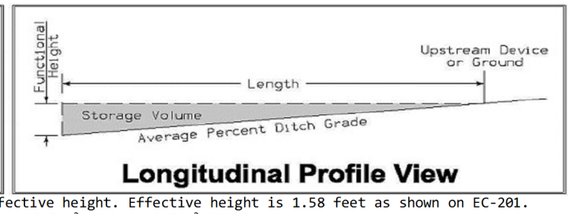
SILT FENCES FOR DITCH CHECKS

DE100-18
10/16/18

Possible Standard: EC-201



Cross Section View



Longitudinal Profile View

* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.
* Volume equation: [0.5*Spacing*(0.5*H²*FS+DW*H+0.5*H²*BS)]

Basin No.	Location				Bid Items			Stormwater Storage Volume Summary							Ditch Length	Total # of Silt Fences	Total Volume	Remarks
	Station	To Station	Chain	Side	Installation	Maintenance	Removal	Foreslope	Backslope	Ditch Width	Avg. % Slope	Spacing	Down Stream	Volume*				
					LF	LF	LF	FS:1	BS:1	FT				CF				
2N-1	702+30.00	708+90.00	ML080	LT	336.0	33.6	168.0	6.0	3.0	10.0	2.0%	75.0	21.5	808.0	660.0	8.0	6463.9	
2N-2	709+00.00	711+75.00	ML080	LT	108.0	10.8	54.0	4.0	3.0	10.0	2.0%	75.0	19.7	740.4	275.0	3.0	2221.1	
3E-2	6533+40.00	6540+90.00	ML380F	LT	648.0	64.8	324.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	750.0	18.0	7107.4	
3E-3	6540+90.00	6544+40.00	ML380F	LT	288.0	28.8	144.0	4.0	3.0	10.0	3.9%	40.0	19.7	394.9	350.0	8.0	3158.8	
3E-3	1155+40.00	1162+90.00	ML380	LT	360.0	36.0	180.0	4.0	3.0	10.0	1.7%	75.0	19.7	740.4	750.0	10.0	7403.5	
3M-0	7531+40.00	7536+25.00	ML380G	RT	336.0	33.6	168.0	6.0	3.0	10.0	2.2%	60.0	21.5	646.4	485.0	8.0	5171.1	
3M-0	627+80.00	633+10.00	ML380G	RT	288.0	28.8	144.0	4.0	3.0	10.0	2.7%	60.0	19.7	592.3	530.0	8.0	4738.3	
3M-0	5528+50.00	5536+25.00	ML380G	RT	1008.0	100.8	504.0	6.0	3.0	10.0	5.1%	30.0	21.5	323.2	775.0	24.0	7756.7	
3M-2	7531+85.00	7538+30.00	ML380G	RT	420.0	42.0	210.0	6.0	3.0	10.0	2.4%	60.0	21.5	646.4	645.0	10.0	6463.9	
3M-3	1172+85.00	1183+00.00	ML380	LT	252.0	25.2	126.0	4.0	3.0	10.0	0.7%	155.0	19.7	1530.1	1015.0	7.0	10710.5	
3M-3	1183+80.00	1187+65.00	ML380	LT	156.0	15.6	78.0	4.0	4.0	10.0	1.5%	100.0	20.6	1032.2	385.0	4.0	4128.9	
	Totals:				18843.0	1884.3	9421.5							39808.1				

ROLLED EROSION CONTROL

DE100-22
04/21/15

Refer to EC-101, EC-103 and EC-104

Location				L	W	Number of Squares	Turf Reinforcement Mat (TRM) (EC-104)				Slope Protection (EC-103)	Special Ditch Control (EC-101)	Remarks
Road Identification	Begin Station	End Station	Side				Type 1	Type 2	Type 3	Type 4			
				FT	FT		Squares	Squares	Squares	Squares	Squares	Squares	
ML080 (1C-1)	628+40.00	633+00.00	RT								463		Shape is irregular. See Plans
ML380G (1C-2)	7527+20.00	7518+40.00	LT								1745		Shape is irregular. See Plans
ML380G (1D-1)	7514+50.00	7527+20.00	RT								1645		Shape is irregular. See Plans
ML380F (1G-1)	6555+50.00	6558+00.00	LT	250	16	40						40	
ML380F (1G-1)	6555+50.00	6558+00.00	LT	250	16	40						40	
ML080 (2C-1)	628+40.00	633+00.00	RT								463		Shape is irregular. See Plans
ML380G (2K-1)	1543+50.00	1546+50.00	RT	310	16	50						50	
ML380G (3M-0)	5527+70.00	5536+25.00	RT	855	16	137						137	
ML380G (3M-3)	5538+50.00	5540+40.00	RT	190	16	30						30	
		Total									**4316**	**297**	

OPEN-THROAT CURB INTAKE SEDIMENT FILTER

DE100-36
10/16/18

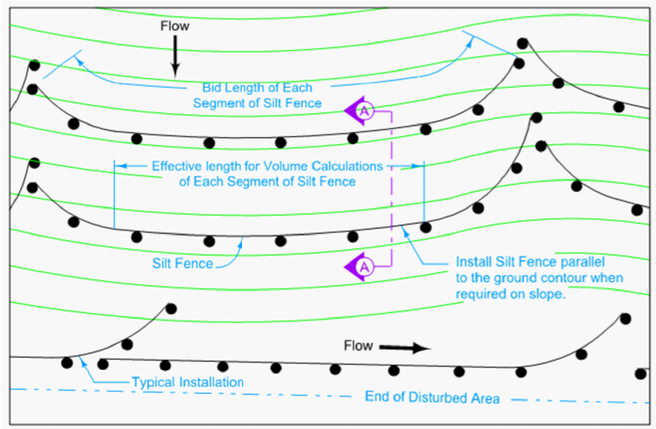
Possible Standard: EC-602

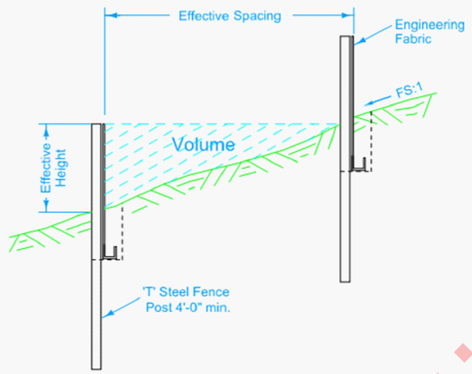
Location Station	Side	Installation	Maintenance	Removal	Remarks
		LF	EACH	EACH	
		1.0	1	1	
Total		**1.0**	**1.0**	**1.0**	

SILT FENCES FOR FORESLOPES

HRG-01
12/05/19

Possible Standard: EC-201





SECTION A-A

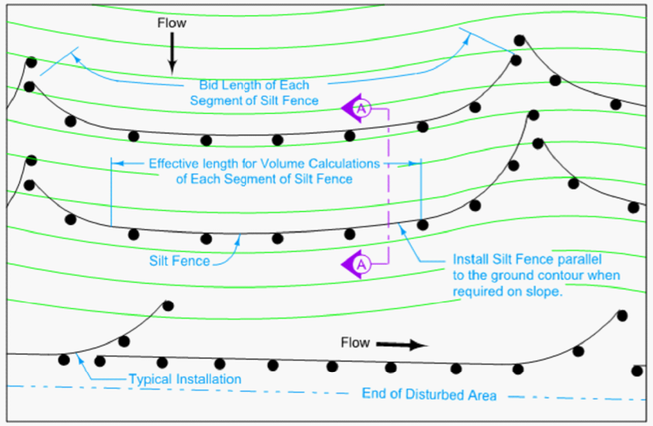
* The functional height used in the volume equation is 85% of effective height. The minimum effective height is 1.58 feet as shown on EC-201.
* Minimum Spacing = FS:1 * Effective Height
* Maximum continuous length of silt fence is 200 feet, the last 20 feet will be flared up, therefor the maximum effective length of 160 feet was used for detention volume computations
* Silt fence shall be placed parallel to the ground contour lines in the disturbed area
* The last 20 feet of each silt fence segment was assumed to be flared-up 45 degrees for the installation length calculation purposes
* Volume equation: [0.5*(Spacing)*(Effective height of Silt Fence)*(Total Effective Length of Silt Fence)]

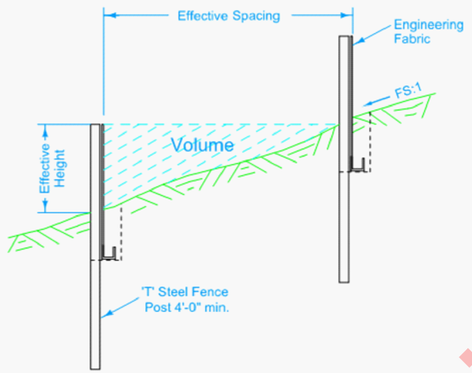
Basin No.	Location							Bid Items			Length	Foreslope	Volume*	# of Silt Fences in Series	Remarks
	Station	Offset	To Station	Offset	Chain	Elevation Contour	Side	Installation LF	Maintenance LF	Removal LF	FT	FS:1	CF		
1B-2	621+90.00	-150.0	625+05.00	-172.0	ML080	755.0	LT	387.5	38.8	193.8	230.0	3.0	731.9	2.0	
1C-1	624+60.00	105.0	624+65.00	230.0	ML080	764.0	RT	1237.5	123.8	618.8	790.0	3.0	2513.8	5.0	
1C-2	7516+80.00	-65.0	7527+30.00	-135.0	ML380G	745.0	LT	1862.5	186.3	931.3	1210.0	3.0	3850.3	7.0	
1C-2	7520+25.00	-75.0	7527+30.00	-105.0	ML380G	735.0	LT	1231.3	123.1	615.6	785.0	3.0	2497.9	5.0	
1D-1	7514+10.00	55.0	7527+20.00	195.0	ML380G	765.0	RT	1806.3	180.6	903.1	1165.0	3.0	3707.1	7.0	
1D-1	7514+50.00	35.0	7527+20.00	165.0	ML380G	755.0	RT	1768.8	176.9	884.4	1135.0	3.0	3611.7	7.0	
1D-1	7515+60.00	35.0	7527+20.00	135.0	ML380G	745.0	RT	1612.5	161.3	806.3	1050.0	3.0	3341.2	6.0	
1D-1	7520+80.00	65.0	7527+20.00	105.0	ML380G	735.0	RT	918.8	91.9	459.4	575.0	3.0	1829.7	4.0	
1E-1	6531+55.00	75.0	6537+35.00	50.0	ML380F	750.0	RT	975.0	97.5	487.5	620.0	4.0	2630.5	4.0	
1E-2	6533+10.00	-125.0	6540+85.00	-50.0	ML380F	740.0	LT	1087.5	108.8	543.8	710.0	4.0	3012.4	4.0	
1E-2	6533+10.00	-85.0	6539+00.00	-40.0	ML380F	740.0	LT	837.5	83.8	418.8	550.0	4.0	2333.5	3.0	
1E-3	1155+40.00	-145.0	1165+00.00	-125.0	ML380	730.0	LT	1206.3	120.6	603.1	765.0	4.0	3245.7	5.0	
1F-1	2545+85.00	-115.0	2553+75.00	-35.0	ML380B	730.0	LT	1300.0	130.0	650.0	840.0	4.0	3563.9	5.0	
1F-1	2546+35.00	-105.0	2553+00.00	-25.0	ML380B	730.0	LT	1050.0	105.0	525.0	680.0	4.0	2885.1	4.0	
1G-1	652+60.00	130.0	660+00.00	195.0	ML080	682.0	RT	1125.0	112.5	562.5	740.0	3.0	2354.7	4.0	
1G-1	651+50.00	115.0	658+80.00	85.0	ML080	686.0	RT	1125.0	112.5	562.5	740.0	4.0	3139.7	4.0	
1G-1	6555+50.00	-75.0	6559+00.00	-155.0	ML380F	692.0	LT	562.5	56.3	281.3	370.0	3.0	1177.4	2.0	
1G-1	6556+90.00	-95.0	6559+75.00	-140.0	ML380F	684.0	LT	475.0	47.5	237.5	300.0	3.0	954.6	2.0	
1I-1	661+70.00	-185.0	671+00.00	-120.0	ML080	682.0	LT	1047.5	104.8	523.8	678.0	4.0	2876.6	4.0	
2C-1	624+60.00	105.0	624+65.00	230.0	ML080	764.0	RT	1237.5	123.8	618.8	790.0	3.0	2513.8	5.0	
2F-1	2545+85.00	-115.0	2553+75.00	-35.0	ML380B	730.0	LT	1300.0	130.0	650.0	840.0	4.0	3563.9	5.0	
2F-1	2546+35.00	-105.0	2553+00.00	-25.0	ML380B	730.0	LT	1050.0	105.0	525.0	680.0	4.0	2885.1	4.0	
2G-1	652+60.00	130.0	660+00.00	195.0	ML080	682.0	RT	1125.0	112.5	562.5	740.0	3.0	2354.7	4.0	
2G-1	651+50.00	115.0	658+80.00	85.0	ML080	686.0	RT	1125.0	112.5	562.5	740.0	4.0	3139.7	4.0	
2G-1	6555+50.00	-75.0	6559+00.00	-155.0	ML380F	692.0	LT	562.5	56.3	281.3	370.0	3.0	1177.4	2.0	
2G-1	6556+90.00	-95.0	6559+75.00	-140.0	ML380F	684.0	LT	475.0	47.5	237.5	300.0	3.0	954.6	2.0	
2G-1	651+65.00	150.0	656+75.00	350.0	ML080	690.0	RT	993.8	99.4	496.9	635.0	6.0	4041.2	4.0	
2G-1	653+05.00	160.0	657+55.00	285.0	ML080	685.0	RT	775.0	77.5	387.5	500.0	6.0	3182.1	3.0	
2G-2	1154+20.00	215.0	1161+50.00	205.0	ML380	710.0	RT	1031.3	103.1	515.6	665.0	4.0	2821.4	4.0	
2G-2	1154+20.00	180.0	1161+40.00	170.0	ML380	720.0	RT	1031.3	103.1	515.6	665.0	4.0	2821.4	4.0	
2G-2	1154+20.00	145.0	1161+10.00	135.0	ML380	730.0	RT	1031.3	103.1	515.6	665.0	4.0	2821.4	4.0	
2G-2	1156+45.00	240.0	1160+15.00	480.0	ML380	710.00	RT	956.3	95.6	478.1	605.0	3.0	1925.2	4.0	
2G-2	1160+20.00	260.0	1160+20.00	505.0	ML380	705.00	RT	512.5	51.3	256.3	330.0	3.0	1050.1	2.0	

SILT FENCES FOR FORESLOPES

HRG-01
12/05/19

Possible Standard: EC-201





SECTION A-A

* The functional height used in the volume equation is 85% of effective height. The minimum effective height is 1.58 feet as shown on EC-201.
* Minimum Spacing = FS:1 * Effective Height
* Maximum continuous length of silt fence is 200 feet, the last 20 feet will be flared up, therefor the maximum effective length of 160 feet was used for detention volume computations
* Silt fence shall be placed parallel to the ground contour lines in the disturbed area
* The last 20 feet of each silt fence segment was assumed to be flared-up 45 degrees for the installation length calculation purposes
* Volume equation: [0.5*(Spacing)*(Effective height of Silt Fence)*(Total Effective Length of Silt Fence)]

Basin No.	Location							Bid Items			Length	Foreslope	Volume*	# of Silt Fences in Series	Remarks
	Station	Offset	To Station	Offset	Chain	Elevation Contour	Side	Installation LF	Maintenance LF	Removal LF	FT	FS:1	CF		
2G-3	6548+70.00	-80.0	6552+45.00	-265.0	ML380F	710.00	RT	512.5	51.3	256.3	330.0	10.0	3500.3	2.0	
2G-3	6549+50.00	-70.0	6552+85.00	-200.0	ML380F	705.00	RT	512.5	51.3	256.3	330.0	10.0	3500.3	2.0	
2G-4	1146+60.00	130.0	1153+25.00	115.0	ML380	730.00	RT	1043.8	104.4	521.9	675.0	4.0	2863.9	4.0	
2G-4	5573+95.00	65.0	5566+95.00	40.0	ML380E	730.00	RT	1093.8	109.4	546.9	715.0	4.0	3033.6	4.0	
2G-4	5572+05.00	80.0	5566+30.00	60.0	ML380E	725.00	RT	1093.8	109.4	546.9	715.0	4.0	3033.6	4.0	
2H-2	644+60.00	-550.0	651+70.00	-135.0	ML080	730.00	RT	1400.0	140.0	700.0	920.0	4.0	3903.4	5.0	
2K-1	1542+60.00	230.0	1544+65.00	90.0	ML380A	692.00	RT	425.0	42.5	212.5	260.0	4.0	1103.1	2.0	
2L-1	4552+20.00	-65.0	4554+50.00	-175.0	ML380D	726.00	LT	437.5	43.8	218.8	270.0	4.0	1145.5	2.0	
2M-1	1166+20.00	-210.0	1170+20.00	-240.0	ML380	705.00	LT	662.5	66.3	331.3	410.0	4.0	1739.5	3.0	
2M-1	1166+35.00	-310.0	1170+20.00	-100.0	ML380	710.00	LT	981.3	98.1	490.6	625.0	4.0	2651.7	4.0	
2M-1	637+70.00	-135.0	641+75.00	-85.0	ML080	720.00	LT	693.8	69.4	346.9	435.0	4.0	1845.6	3.0	
2M-2	7532+00.00	65.0	7537+60.00	105.0	ML380G	710.00	RT	781.3	78.1	390.6	505.0	4.0	2142.6	3.0	
3E-2	6533+10.00	-125.0	6540+85.00	-50.0	ML380F	740.0	LT	1087.5	108.8	543.8	710.0	4.0	3012.4	4.0	
3E-2	6533+10.00	-85.0	6539+00.00	-40.0	ML380F	740.0	LT	837.5	83.8	418.8	550.0	4.0	2333.5	3.0	
3E-3	1155+40.00	-145.0	1165+00.00	-125.0	ML380	730.0	LT	1206.3	120.6	603.1	765.0	4.0	3245.7	5.0	
3M-2	7532+00.00	65.0	7537+60.00	105.0	ML380G	710.00	RT	781.3	78.1	390.6	505.0	4.0	2142.6	3.0	
3M-3	6515+50.00	-45.0	6524+00.00	-35.0	ML380F	700.00	LT	1418.8	141.9	709.4	935.0	4.0	3967.0	5.0	
3M-3	6509+95.00	-35.0	6523+70.00	-200.0	ML380F	690.00	LT	2212.5	221.3	1106.3	1450.0	4.0	6152.0	8.0	
						Total		**52003.8**	**5200.4**	**26001.9**					

ROCK EROSION CONTROL

Refer to EC-301 and Detail 570-8

DE100-23
04/17/18

Location				L	W	Rock Erosion Control (REC)					Material Bid Quantities			Remarks
Road Identification	Begin Station	End Station	Side			Type 1 Rock Ditch Check	Type 2 Rock Ditch	Type 3 Rock Flume	Type 4 Rock Splash Basin	Type 5 Rock Slope Protection	Eng. Fabric	Class E Revetment	Erosion Stone	
			Lt./Rt.	FT	FT						SY	TON	TON	
ML080 (1A-2)	616+87.00	617+20.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (1B-1)	621+80.00	622+35.00	RT	50.0	15.0			x			114.0	78.8		
ML080 (1B-2)	622+40.00	622+55.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (1E-2)	639+45.00	639+90.00	RT	50.0	15.0				x		114.0	78.8		
ML080 (1E-2)	643+95.00	644+40.00	RT	50.0	15.0				x		114.0	78.8		
ML080	569+12.00	569+22.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	607+26.00	607+36.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	614+34.00	614+44.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	632+55.00	632+65.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	652+70.00	652+82.00	LT	10.0	10.0				x		21.8	10.5		Temp Protection (Stage 1)
ML080	658+43.00	658+53.00	RT	10.0	10.0				x		21.8	10.5		Temp Protection (Stage 1)
ML080	662+60.00	662+70.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	666+50.00	666+60.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	670+45.00	670+55.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML080	676+54.00	676+64.00	LT	10.0	10.0				x		21.8	10.5		Temp Protection (Stage 1)
ML080	679+07.00	679+20.00	RT	13.0	13.0				x		32.1	17.7		Outlet Protection (Stage 1)
ML080	679+95.00	680+05.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML380A	1556+45.00	1556+54.00	LT	9.0	10.0				x		20.2	9.5		Outlet Protection (Stage 1)
ML380	1116+95.00	1117+05.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML380	1100+95.00	1101+05.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 1)
ML380G (2H-2)	7548+50.00	7548+65.00	LT	50.0	15.0				x		114.0	78.8		
ML380F (2G-3)	6551+35.00	6551+50.00	LT	50.0	15.0				x		114.0	78.8		
ML380F (2G-1)	6555+95.00	6556+05.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (2G-4)	1151+90.00	1152+15.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (2M-1)	641+85.00	642+10.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (2M-2)	635+05.00	635+30.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (2M-2)	7536+45.00	7535+55.00	LT	50.0	15.0				x		114.0	78.8		
ML080 (2N-1)	701+00.00	702+30.00	LT	145.0	15.0			x			314.6	228.4		
ML080	680+45.00	682+60.00	LT	10.0	10.0				x		21.8	10.5		Inlet Protection (Stage 2)
ML080	682+55.00	682+65.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380H	8572+45.00	8572+55.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380H	8575+50.00	8575+60.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML080	559+45.00	559+55.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380	1139+61.00	1139+71.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380	1094+45.00	1094+55.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380	1089+55.00	1089+65.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML080	636+07.00	636+17.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML080	641+65.00	641+75.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML080	652+77.00	652+87.00	LT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380	1173+45.00	1173+55.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380	1168+86.00	1168+96.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 2)
ML380G (3M-0)	7531+10.00	7531+50.00	LT	50.0	15.0				x		114.0	78.8		
ML380G (3M-0)	633+05.00	634+00.00	LT	95.0	20.0						264.0	199.5		
ML380 (3M-3)	1172+40.00	1172+85.00	LT	50.0	15.0				x		114.0	78.8		
ML380 (3M-3)	1182+95.00	1183+10.00	LT	50.0	15.0				x		114.0	78.8		
ML080	679+07.00	679+17.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 3)
ML380G	7549+40.00	7549+50.00	RT	10.0	10.0				x		21.8	10.5		Outlet Protection (Stage 3)
		Totals									**2950.7**	**1930.3**		

GRATE INTAKE SEDIMENT FILTER BAG

Possible Detail: 570-7

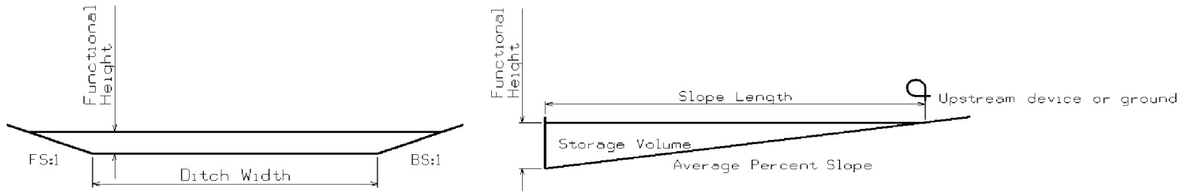
DE100-37
04/18/17

Location Station	Side	Installation	Maintenance	Removal	Remarks
		EACH	EACH	EACH	
658+48.00	RT	1	3	1	Median Intake (Stage 1-3)
658+48.00	LT	1	3	1	Median Intake (Stage 1-3)
1536+00.00	RT	1	1	1	Gore Intake (Stage 1)
1543+50.00	RT	1	1	1	Area Intake (Stage 2)
1137+20.00	RT	1	1	1	Gore Intake (Stage 2)
1139+68.00	RT	1	1	1	Gore Intake (Stage 2)
1145+50.00	LT	1	1	1	Gore Intake (Stage 2)
Total		**7**	**11**	**7**	

TEMPORARY SEDIMENT CONTROL BASIN

DE100-33
10/16/18

Possible Standard: EC-601



* The functional height used in the volume equation is 95% of effective height. Effective height is 2.5 feet as shown in EC-601.
* Volume equation: $[(1/4*(FS*H^2))+(1/2*DW*H)+(1/4*(BS*H^2))]*(H/Avg\%Slope)$

Basin No.	Location		Bid Items			Stormwater Storage Volume Summary					Subtotal	Remarks
	Station	Side	Installation Each	Maintenance Each	Removal Each	Foreslope FS:1	Backslope BS:1	Ditch Width FT	Average % Slope	Volume* CF		
1A-1	618+60.00	RT	1	3	1	6.0	3.0	10.00	1.0%	5834.5		
1B-1	622+50.00	RT	1	3	1	5.0	3.0	10.00	2.5%	2199.8		
1C-2	7528+00.00	LT	1	3	1	6.0	3.0	10.00	2.2%	2652.1		
1D-1	7528+30.00	RT	1	3	1	6.0	3.0	10.00	2.4%	2431.1		
1E-1	6533+30.00	RT	1	3	1	6.0	3.0	10.00	2.1%	2778.3		
1E-2	643+00.00	RT	1	3	1	4.0	3.0	10.00	0.3%	17215.7		
1E-3	643+00.00	RT	1	3	1	4.0	3.0	10.00	1.7%	3038.1		
1F-1	1153+30.00	LT	1	3	1	6.0	3.0	10.00	2.2%	2652.1		
1F-1	1153+30.00	LT	1	3	1	4.0	3.0	10.00	3.7%	1395.9		
1H-1	651+65.00	LT	1	3	1	4.0	3.0	10.00	2.1%	2459.4		
1J-1	676+50.00	LT	1	3	1	4.0	3.0	10.00	0.4%	12911.7		
1J-2	679+00.00	LT	1	3	1	4.0	3.0	10.00	0.7%	7378.1		
1J-3	685+00.00	LT	1	3	1	4.0	3.0	10.00	0.6%	8607.8		
2C-1	7528+00.00	LT	1	3	1	6.0	3.0	10.00	2.2%	2652.1		
2F-1	1153+30.00	LT	1	3	1	6.0	3.0	10.00	2.2%	2652.1		
2F-1	1153+30.00	LT	1	3	1	4.0	3.0	10.00	3.7%	1395.9		
2G-4	5566+30.00	RT	1	3	1	4.0	3.0	10.00	3.8%	1359.1		
2H-1	651+65.00	LT	1	3	1	4.0	3.0	10.00	2.1%	2459.4		
2H-2	651+65.00	LT	1	3	1	4.0	3.0	10.00	1.2%	4303.9		
2H-3	7548+60.00	LT	1	3	1	3.0	3.0	10.00	1.1%	4390.7		
2H-4	7548+60.00	LT	1	3	1	3.0	3.0	10.00	0.9%	5366.4		
2L-1	4556+40.00	LT	1	3	1	4.0	4.0	10.00	8.5%	647.0		
2M-1	7538+75.00	RT	1	3	1	6.0	3.0	10.00	2.6%	2244.0		
2M-2	7538+75.00	RT	1	3	1	6.0	3.0	10.00	2.4%	2431.1		
2N-2	4556+40.00	LT	1	3	1	4.0	3.0	10.00	2.0%	2582.3		
2N-2	4556+40.00	LT	1	3	1	4.0	3.0	10.00	3.4%	1519.0		
3E-2	643+00.00	RT	1	3	1	4.0	3.0	10.00	0.3%	17215.7		
3E-3	643+00.00	RT	1	3	1	4.0	3.0	10.00	1.7%	3038.1		
3M-0	5538+75.00	RT	1	3	1	4.0	3.0	10.00	2.2%	2347.6		
3M-2	7538+75.00	RT	1	3	1	4.0	3.0	10.00	2.4%	2152.0		
3M-3	6513+00.00	LT	1	3	1	6.0	6.0	10.00	0.8%	8549.1		
	Total		**31**	**93**	**31**							

STORMWATER DRAINAGE BASIN AND STORAGE

Refer to EC Standards and 570s Details.

DE100-34
10/17/17

Drainage Basin Location						Summary of Stormwater Storage												
									Best Management Practices (CF)									
Basin No.	Station to Station		Side	Discharge Point		Total Disturbed Area	Disturbed Area with Storage Provided	Disturbed Area without Storage Provided	Temporary Sediment Control Basin (EC-601)	Silt Fence for Foreslope (EC-201)	Silt Fence for Ditch Check (EC-201)	Silt Basin (EW-403)	Rock Check Dam (EC-302)	Silt Dike (EW-403)	Total Storage Volume Provided	Total Storage Volume Required	Storage Volume Met?	Remarks
				Station	Side	Acres	Acres	Acres							CF	CF	Yes/No	
1A-1	618+20.00	621+95.00	RT	618+57.00	RT	1.2	1.7	0.0	5834.5	0.0	0.0	0.0	407.3		6241.8	4320.0	YES	
1A-2	616+15.00	621+10.00	LT	616+15.00	LT	1.3	1.5	0.0	0.0	0.0	4040.0	1212.5	0.0		5252.5	4680.0	YES	
1B-1	620+90.00	623+20.00	RT	622+50.00	RT	0.6	0.6	0.0	2199.8	0.0	0.0	0.0	0.0		2199.8	2160.0	YES	
1B-2	621+00.00	625+60.00	LT	625+60.00	LT	1.7	1.8	0.0	0.0	731.9	2967.4	2750.0	0.0		6449.3	6120.0	YES	
1C-1	620+95.00	633+95.00	RT	633+55.00	RT	2.8	3.0	0.0	0.0	2513.8	8403.1	0.0	0.0		10916.9	10080.0	YES	
1C-2	7528+05.00	7512+90.00	LT	7528+05.00	LT	7.2	8.1	0.0	2652.1	6348.3	20218.0	0.0	0.0		29218.3	25920.0	YES	
1D-1	7510+90.00	7529+10.00	RT	7528+30.00	RT	7.5	8.5	0.0	2431.1	12489.7	14380.0	1125.0	0.0		30425.8	27000.0	YES	
1E-1	6531+40.00	6539+05.00	RT	6533+30.00	RT	2.6	3.0	0.0	2778.3	2630.5	5330.5	0.0	0.0		10739.4	9360.0	YES	
1E-2	6361+00.00	644+20.00	RT	643+00.00	RT	7.0	8.2	0.0	17215.7	5345.9	7107.4	0.0	0.0		29669.0	25200.0	YES	
1E-3	6540+75.00	6545+90.00	LT	6540+85.00	LT	4.6	5.0	0.0	3038.1	3245.7	10562.4	1212.5	0.0		18058.7	16560.0	YES	
1F-1	1143+20.00	1158+55.00	LT	1153+30.00	LT	5.1	5.8	0.0	4047.9	6449.0	10447.6	0.0	0.0		20944.5	18360.0	YES	
1G-1	651+00.00	660+55.00	RT	660+55.00	RT	8.4	9.1	0.0	0.0	7626.4	14412.2	7596.0	3249.0		32883.6	30240.0	YES	
1H-1	650+80.00	657+00.00	LT	651+65.00	LT	1.6	2.0	0.0	2459.4	0.0	4738.3	0.0	0.0		7197.6	5760.0	YES	
1I-1	661+50.00	671+05.00	LT	661+50.00	LT	3.3	3.4	0.0	0.0	2876.6	9328.5	0.0	0.0		12205.1	11880.0	YES	
1J-1	671+05.00	676+50.00	LT	676+50.00	LT	1.7	3.6	0.0	12911.7	0.0	0.0	0.0	0.0		12911.7	6120.0	YES	
1J-2	676+50.00	678+90.00	LT	678+90.00	LT	0.6	2.0	0.0	7378.1	0.0	0.0	0.0	0.0		7378.1	2160.0	YES	
1J-3	678+90.00	685+00.00	LT	685+00.00	LT	1.9	2.4	0.0	8607.8	0.0	0.0	0.0	0.0		8607.8	6840.0	YES	
2C-1	620+95.00	633+95.00	RT	633+55.00	RT	2.8	3.8	0.0	2652.1	2513.8	8403.1	0.0	0.0		13569.0	10080.0	YES	
2F-1	1143+20.00	1158+55.00	LT	1153+30.00	LT	5.1	5.8	0.0	4047.9	6449.0	10447.6	0.0	0.0		20944.5	18360.0	YES	
2G-1	651+00.00	660+55.00	RT	660+55.00	RT	8.5	11.1	0.0	0.0	14849.7	14412.2	7596.0	3249.0		40106.9	30600.0	YES	
2G-2	645+70.00	651+00.00	RT	651+00.00	RT	5.7	6.6	0.0	0.0	11439.6	9772.7	2375.0	0.0		23587.3	20520.0	YES	
2G-3	6547+35.00	6553+90.00	LT	6553+90.00	LT	2.6	3.7	0.0	0.0	7000.6	5386.6	868.9	0.0		13256.1	9360.0	YES	
2G-4	6547+35.00	6553+15.00	RT	65541+40.00	RT	6.6	7.7	0.0	1359.1	8931.0	17500.4	0.0	0.0		27790.6	23760.0	YES	
2H-1	7551+85.00	7556+95.00	RT	7551+85.00	RT	1.6	2.0	0.0	2459.4	0.0	4738.3	0.0	0.0		7197.6	5760.0	YES	
2H-2	7541+40.00	7551+85.00	RT	7551+85.00	RT	7.1	7.4	0.0	4303.9	3903.4	15300.6	3076.0	0.0		26583.9	25560.0	YES	
2H-3	7548+60.00	7559+00.00	LT	7548+60.00	LT	2.5	2.6	0.0	4390.7	0.0	4935.7	0.0	0.0		9326.4	9000.0	YES	
2H-4	7542+10.00	7548+60.00	LT	7548+60.00	LT	1.6	2.8	0.0	5366.4	0.0	4590.2	0.0	0.0		9956.6	5760.0	YES	
2K-1	5545+80.00	5552+25.00	LT	5545+80.00	LT	0.9	1.2	0.0	0.0	1103.1	3303.1	0.0	0.0		4406.3	3240.0	YES	
2K-2	5543+50.00	5545+80.00	LT	5545+80.00	LT	0.9	1.2	0.0	0.0	0.0	3109.5	1362.5	0.0		4472.0	3240.0	YES	
2L-1	4545+20.00	4556+40.00	LT	4556+40.00	LT	1.6	1.9	0.0	647.0	1145.5	2787.0	997.5	1238.4		6815.5	5760.0	YES	
2M-1	634+50.00	643+50.00	LT	640+10.00	LT	5.3	6.2	0.0	2244.0	6236.9	10661.1	3316.3	0.0		22458.3	19080.0	YES	
2M-2	7530+35.00	7538+75.00	RT	7538+75.00	RT	2.4	3.3	0.0	2431.1	2142.6	6463.9	850.5	0.0		11888.1	8640.0	YES	
2N-1	700+75.00	709+00.00	RT	700+75.00	RT	1.7	2.0	0.0	0.0	0.0	6463.9	0.0	880.2		7344.1	6120.0	YES	
2N-2	709+00.00	713+95.00	RT	713+95.00	RT	1.2	1.8	0.0	4101.4	0.0	2221.1	0.0	0.0		6322.4	4320.0	YES	
3E-2	6361+00.00	644+20.00	RT	643+00.00	RT	7.0	8.2	0.0	17215.7	5345.9	7107.4	0.0	0.0		29669.0	25200.0	YES	
3E-3	6540+75.00	6545+90.00	LT	6540+85.00	LT	4.6	5.0	0.0	3038.1	3245.7	10562.4	1212.5	0.0		18058.7	16560.0	YES	
3M-0	5523+25.00	5540+10.00	RT	5538+75.00	RT	5.5	6.0	0.0	2347.6	0.0	17666.1	1250.0	513.5		21777.2	19800.0	YES	
3M-2	7530+35.00	7538+75.00	RT	7538+75.00	RT	2.4	3.2	0.0	2152.0	2142.6	6463.9	850.5	0.0		11609.0	8640.0	YES	
3M-3	1171+90.00	1187+95.00	LT	1183+30.00	LT	8.5	9.8	0.0	8549.1	10119.0	14839.4	1337.5	570.2		35415.1	30600.0	YES	
				Total		**145.2**	**173.3**	**0.0**					0.0					

Notes:

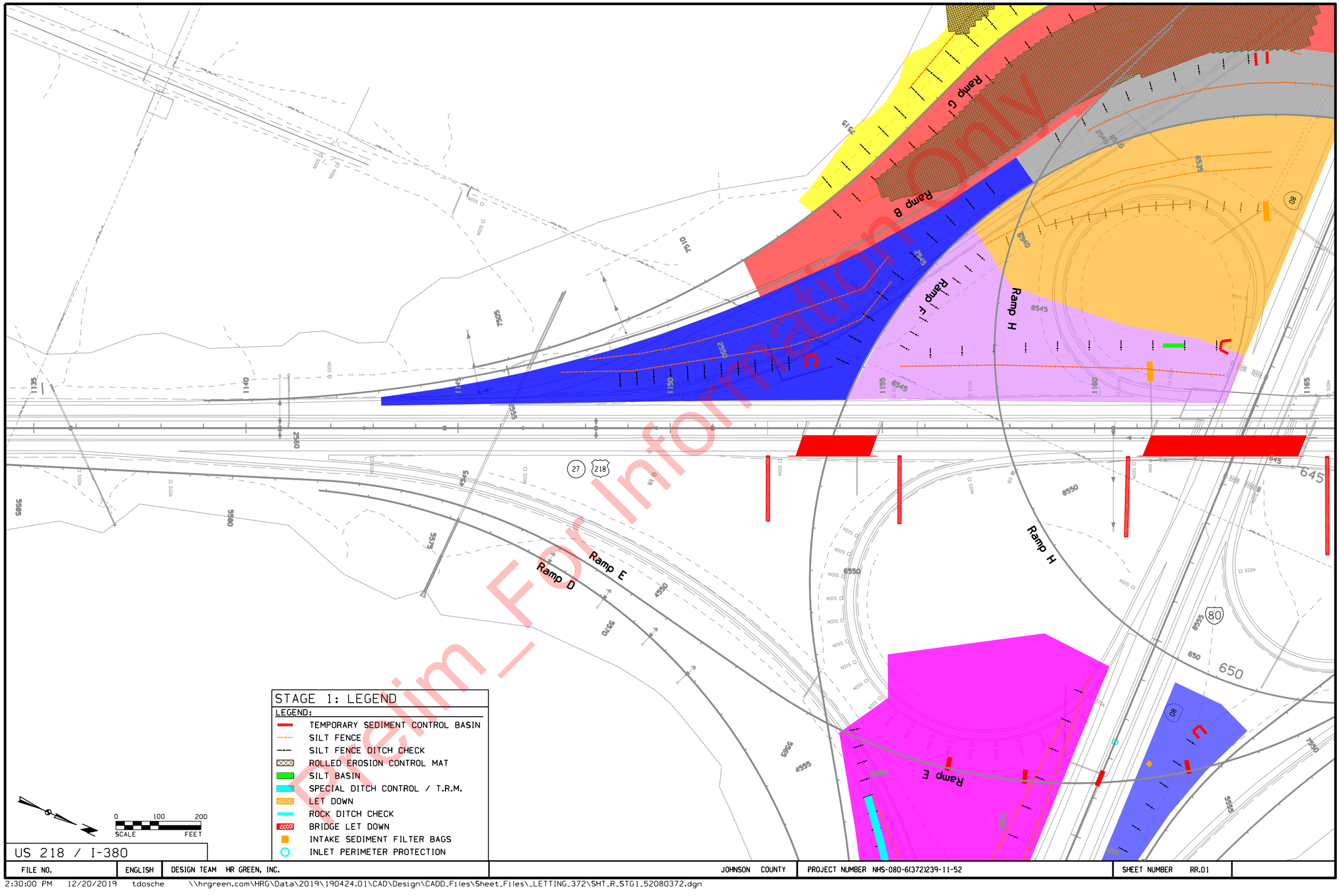
1- For the areas where the storage volume is not met, two rows of silt fence will be placed towards the downstream end in adition to utilizing wood excelsior mat and additional rows of 20" perimeter and slope sediment control devices.

PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE

DE100-19
04/19/16

Possible Standards: EC-204

Location			Length of Installation			Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	
661+50.00	685+00.00	LT			2350.0	Place Along Toe of Slope (Stage 1)
569+10.00	569+25.00	RT	40.0			Median Intake (Stage 1)
571+87.00	572+02.00	N/A	40.0			Median Intake* (Stage 1)
574+70.00	574+85.00	N/A	40.0			Median Intake* (Stage 1)
575+45.00	575+60.00	N/A	40.0			Median Intake* (Stage 1)
576+64.00	576+79.00	N/A	40.0			Median Intake* (Stage 1)
576+65.00	576+75.00	LT	25.0			Temp Inlet (Stage 1)
576+65.00	576+75.00	RT	25.0			Temp Inlet (Stage 1)
577+83.00	577+98.00	N/A	40.0			Median Intake* (Stage 1)
578+43.00	578+58.00	N/A	40.0			Median Intake* (Stage 1)
580+43.00	580+58.00	N/A	40.0			Median Intake* (Stage 1)
582+13.00	582+28.00	N/A	40.0			Median Intake* (Stage 1)
582+15.00	582+25.00	LT	25.0			Temp Inlet (Stage 1)
582+15.00	582+25.00	RT	25.0			Temp Inlet (Stage 1)
590+71.00	590+86.00	N/A	40.0			Median Intake* (Stage 1)
590+72.00	590+82.00	LT	25.0			Temp Inlet (Stage 1)
590+72.00	590+82.00	RT	25.0			Temp Inlet (Stage 1)
593+34.00	593+49.00	N/A	40.0			Median Intake* (Stage 1)
596+44.00	596+59.00	N/A	40.0			Median Intake* (Stage 1)
597+73.00	597+88.00	N/A	40.0			Median Intake* (Stage 1)
600+49.00	600+64.00	N/A	40.0			Median Intake* (Stage 1)
600+50.00	600+60.00	RT	25.0			Temp Inlet (Stage 1)
601+64.00	601+79.00	N/A	40.0			Median Intake* (Stage 1)
601+65.00	601+75.00	LT	25.0			Temp Inlet (Stage 1)
601+65.00	601+75.00	RT	25.0			Temp Inlet (Stage 1)
602+54.00	602+69.00	N/A	40.0			Median Intake* (Stage 1)
604+44.00	604+59.00	N/A	40.0			Median Intake* (Stage 1)
607+25.00	607+40.00	N/A	40.0			Median Intake* (Stage 1)
611+44.00	611+59.00	N/A	40.0			Median Intake* (Stage 1)
611+45.00	611+55.00	RT	25.0			Temp Inlet (Stage 1)
614+32.00	614+47.00	N/A	40.0			Median Intake* (Stage 1)
614+33.00	614+43.00	LT	25.0			Temp Inlet (Stage 1)
614+33.00	614+43.00	RT	25.0			Temp Inlet (Stage 1)
617+48.00	617+63.00	N/A	40.0			Median Intake* (Stage 1)
617+49.00	617+59.00	RT	25.0			Temp Inlet (Stage 1)
632+53.00	632+68.00	N/A	40.0			Median Intake (Stage 1 - Interim Top)
652+42.00	652+57.00	N/A	40.0			Median Intake (Stage 1 - Interim Top)
662+59.00	662+74.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
664+93.00	665+08.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
669+93.00	670+08.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
670+55.00	670+70.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
671+93.00	672+08.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
672+75.00	672+90.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
673+23.00	673+38.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
675+13.00	675+28.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
676+52.00	676+67.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
678+14.00	678+29.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
679+81.00	679+96.00	N/A	40.0			Median Intake* (Stage 1 - Interim Top)
8564+70.00	8570+20.00	RT			585.0	Place Along Toe of Slope (Stage 2)
1543+43.00	8570+20.00	RT	40.0			Infield Intake (Stage 2)
5691+02.00	5691+17.00	N/A	40.0			Median Intake* (Stage 2)
641+63.00	641+78.00	N/A	40.0			Median Intake (Stage 2)
658+41.00	658+56.00	N/A	40.0			Median Intake* (Stage 2)
709+05.00	713+70.00	LT			465.0	Perimeter control (Stage 2)
1093+93.00	1094+08.00	N/A	40.0			Median Intake* (Stage 2)
1100+43.00	1100+58.00	N/A	40.0			Median Intake* (Stage 2)
1100+93.00	1101+08.00	N/A	40.0			Median Intake* (Stage 2)
1106+43.00	1106+58.00	N/A	40.0			Median Intake* (Stage 2)
1106+93.00	1107+08.00	N/A	40.0			Median Intake* (Stage 2)
1109+44.00	1109+59.00	N/A	40.0			Median Intake* (Stage 2)
1111+43.00	1111+58.00	N/A	40.0			Median Intake* (Stage 2)
1111+94.00	1112+09.00	N/A	40.0			Median Intake* (Stage 2)
1114+44.00	1114+59.00	N/A	40.0			Median Intake* (Stage 2)
1115+44.00	1115+59.00	N/A	40.0			Median Intake* (Stage 2)
1115+94.00	1116+09.00	N/A	40.0			Median Intake* (Stage 2)
1116+43.00	1116+58.00	N/A	40.0			Median Intake* (Stage 2)
1116+93.00	1117+08.00	N/A	40.0			Median Intake* (Stage 2)
1118+94.00	1119+09.00	N/A	40.0			Median Intake* (Stage 2)
	Total		**2405.0**	**0.0**	**3400.0**	*= These median intakes and interim intake tops only require erosion control intake protection when they are to be adjacent to disturbed (unpaved) ground for two (2) or more days.



FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.01

2:30:00 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ramp G
Ramp F
Ramp E
Ramp A
Ramp H
80
27
218
380

0 100 200
SCALE FEET

US 218 / I-380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.02	

2:30:01 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

SCALE 0 100 200 FEET

US 218 / I-380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.03	

2:30:03 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ireland Ave.

565 570 575 580 585 590 595

80

WH TP SIGN MM

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.04	

2:30:04 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

Jasper Ave.

Ramp C

Ramp E

Ramp B

Kansas Ave.

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

N

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.05

2:30:05 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ramp C
Ramp E
Ramp F
Ramp G
Ramp A
Ramp E
Ramp H
Ramp G
Ramp B
Kansas Ave.
Ramp H
Ramp F
Ramp G
Ramp B
Ramp H
Ramp E

80

N

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.06

2:30:06 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

Clear Creek

Ramp G

Ramp A

Ramp E

Ramp F

Ramp D

Clear Creek

Clear Creek

Clear Creek

EXISTING 4'X4'X154' RCB WITH FLUME AND 54"X33.5' RCP EXT. LT AND 36"X42' PLASTIC EXT. RT

80

STAGE 1: LEGEND

LEGEND:

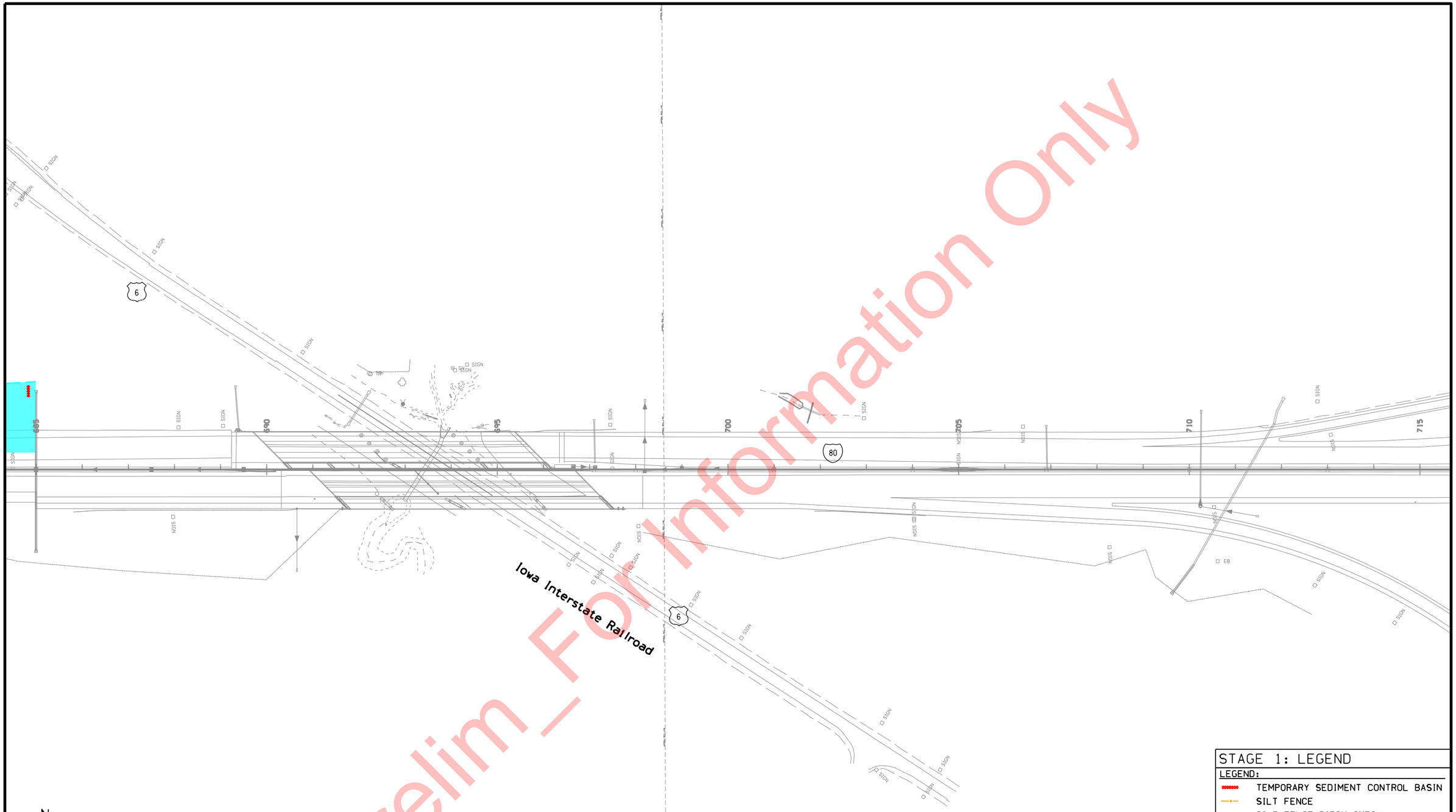
- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.07

2:30:08 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn



INTERSTATE 80

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.08

2:30:09 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG1_52080372.dgn

STAGE 1: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Clear Creek

Ramp A

Ramp H

Ramp E

Ramp G

Ramp D

Ramp F

Ramp C

0 100 200
SCALE FEET

RAMP A & RAMP H

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.09

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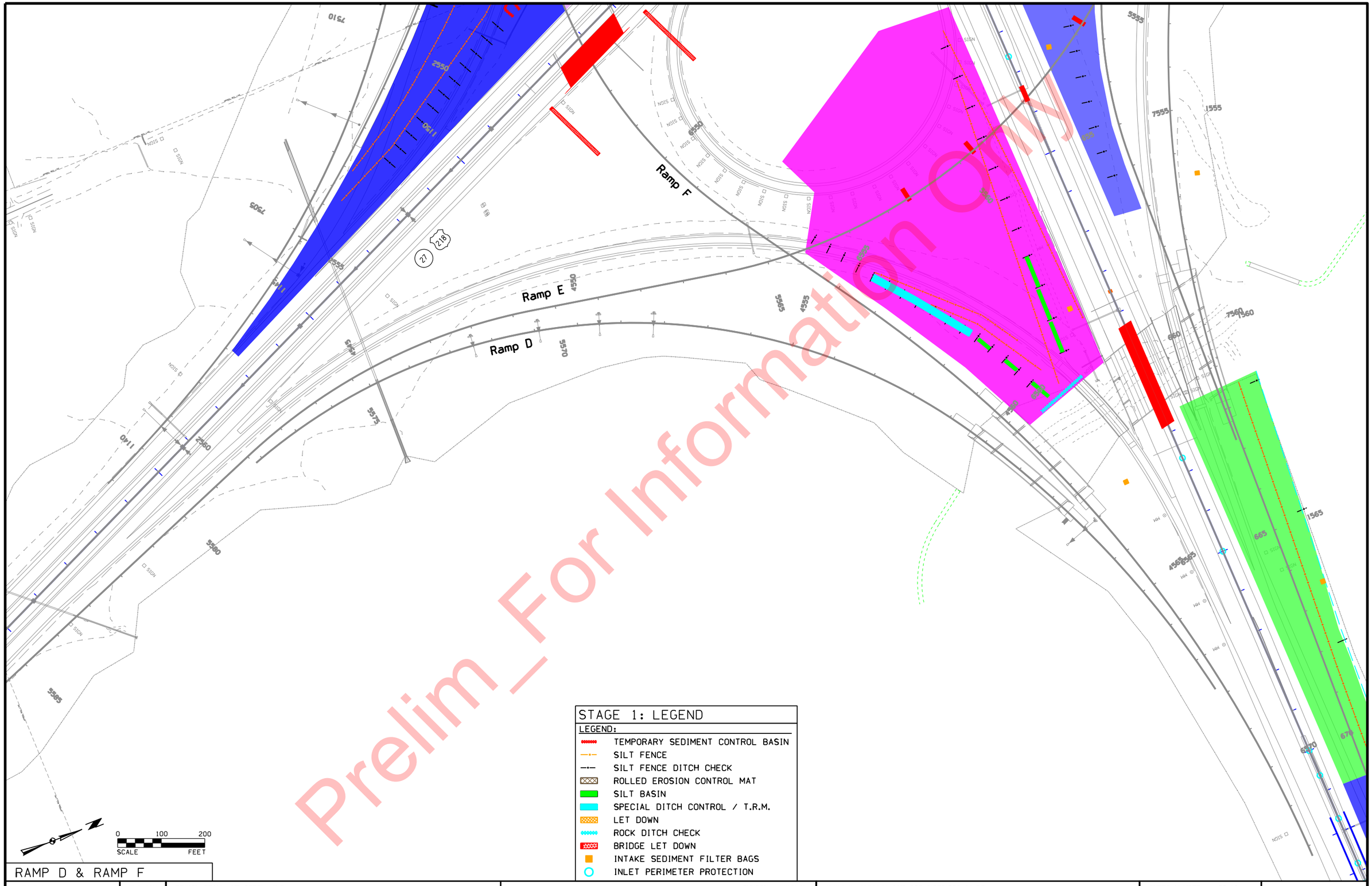

RAMP D & RAMP F

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.10

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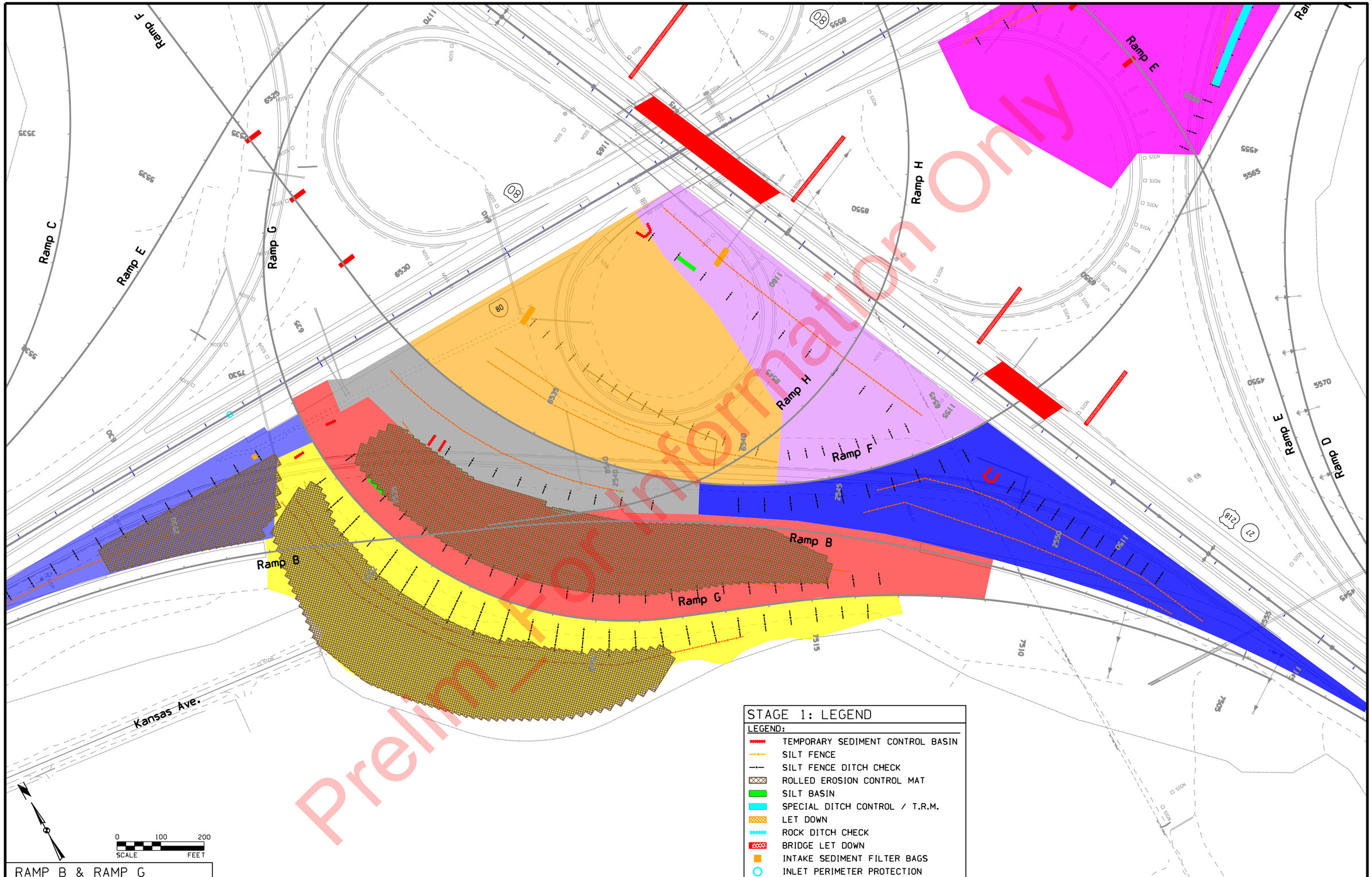

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.11

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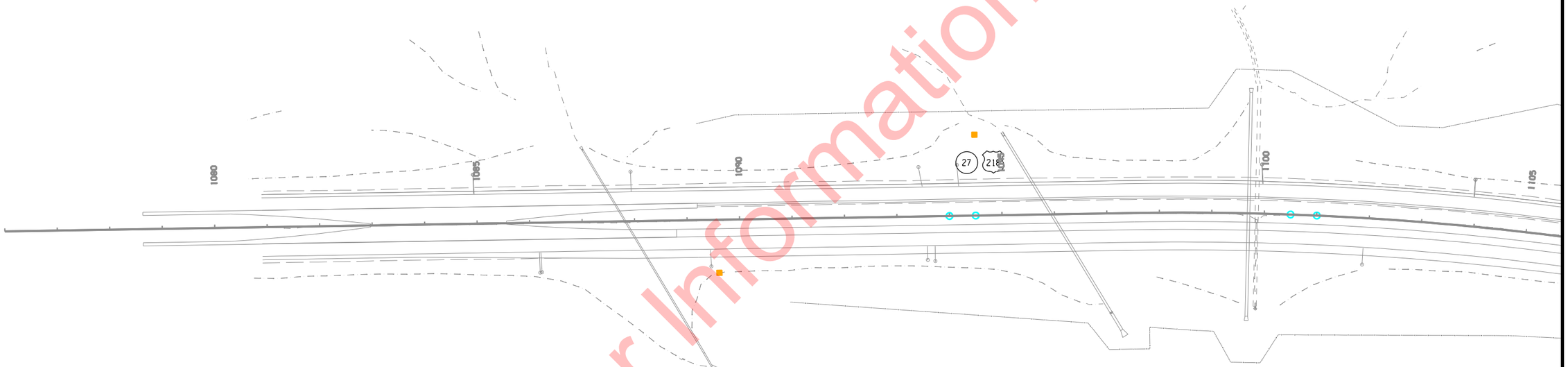


0 100 200
SCALE FEET

INTERSTATE 380

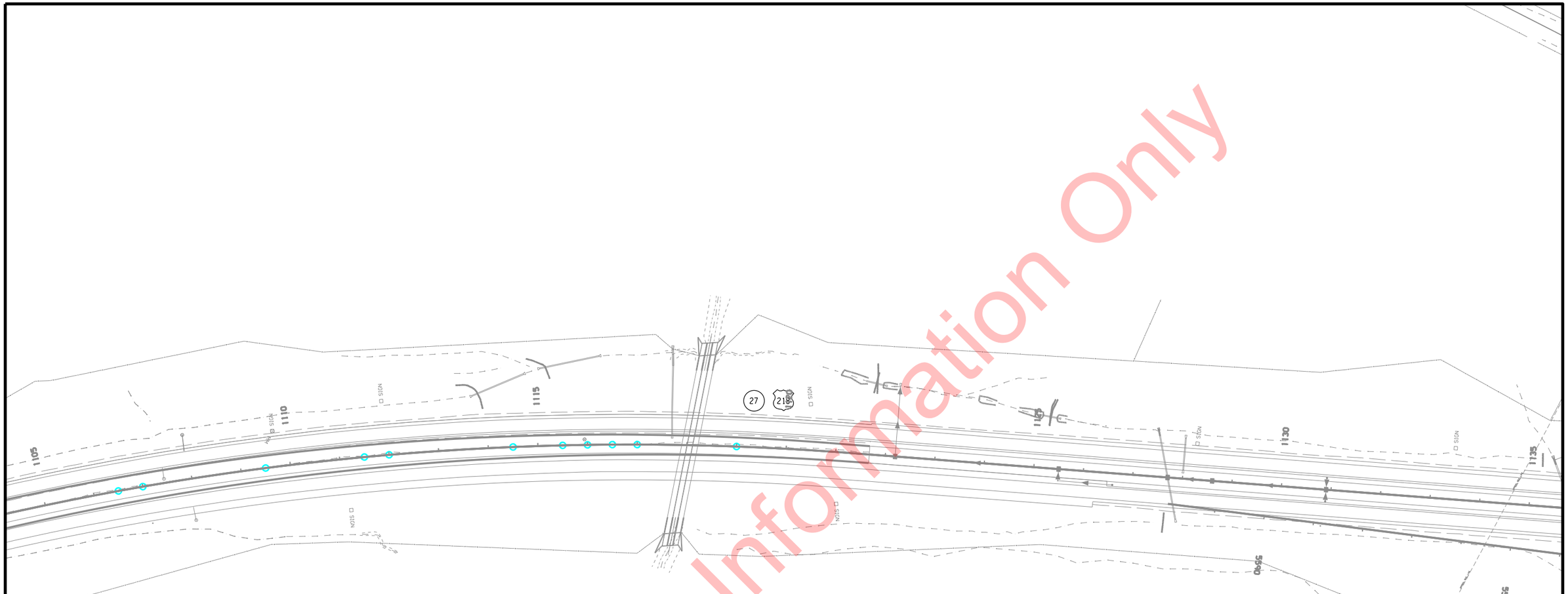
STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.12	

2:24:53 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn



STAGE 2: LEGEND

LEGEND:

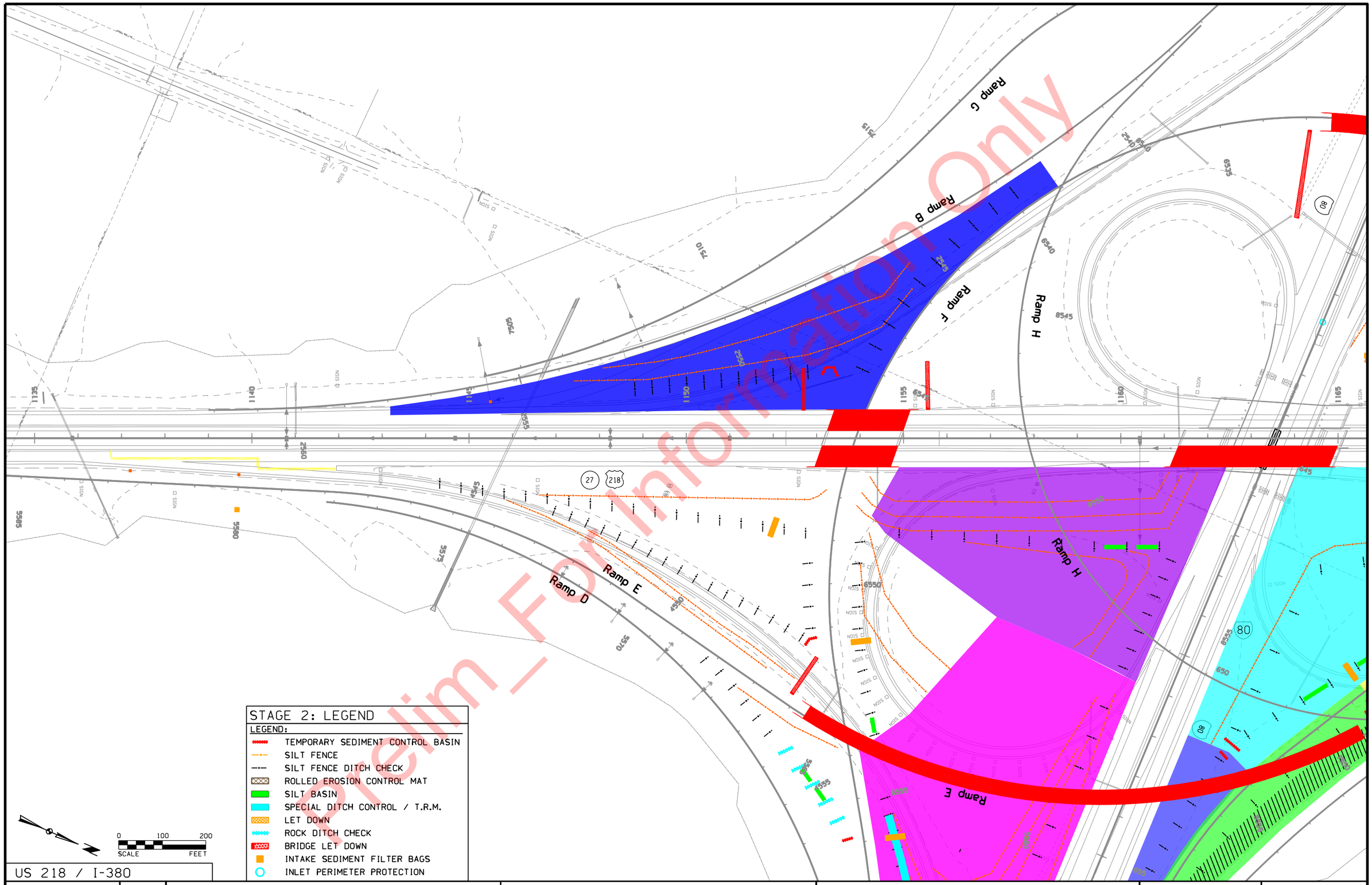
- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

0 100 200
SCALE FEET

INTERSTATE 380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.13	

2:24:55 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn



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2:24:56 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn

STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ramp C
Ramp F
Ramp E
Ramp G
Ramp A
Ramp H
80
27
218
380

0 100 200
SCALE FEET

US 218 / I-380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.15	

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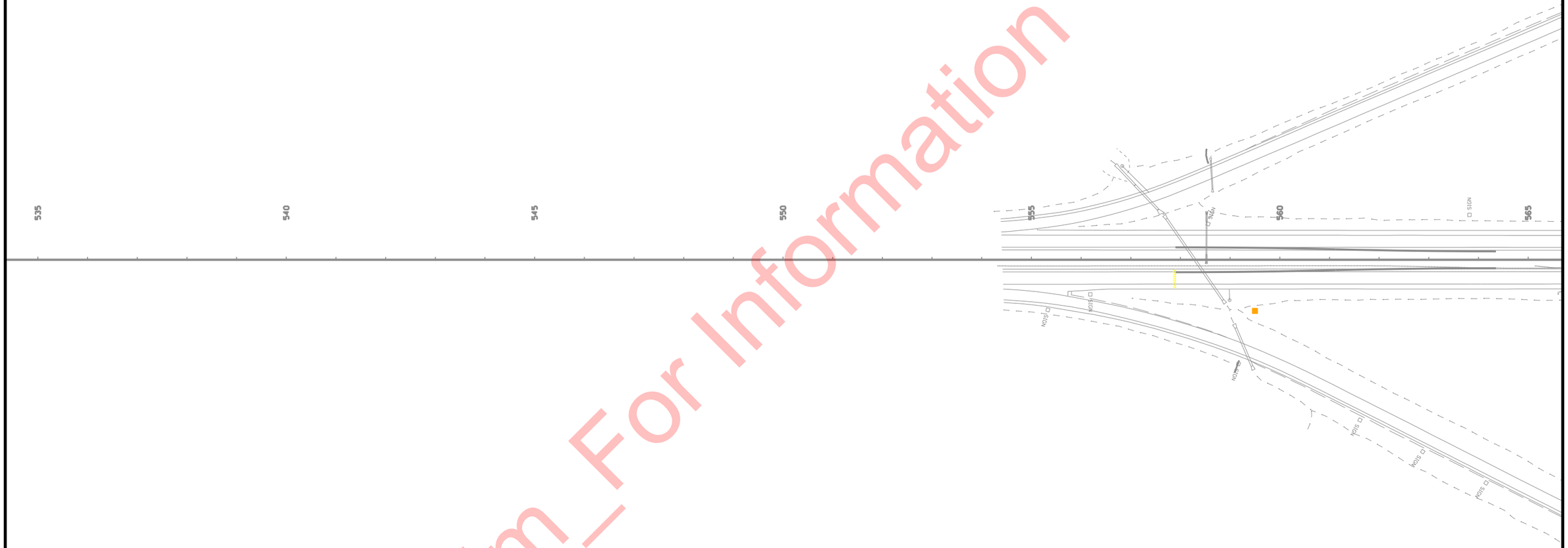
STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION



N

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.16	

2:24:58 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn

STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ireland Ave.

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.17	

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Jasper Ave.

Kansas Ave.

Ramp C

Ramp E

Ramp B

595 600 605 610 615 620 625

2520 2525

80

SIGN

EB

STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

N

0 100 200

SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.18

2:25:01 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn

STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ramp C
Ramp E
Ramp F
Ramp G
Ramp A
Ramp E
Ramp H
Ramp G
Ramp B
Kansas Ave.
Ramp H
Ramp F
Ramp G
Ramp B
Ramp H
Ramp E

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.19

2:25:02 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn

STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Clear Creek

Ramp A

Ramp G

Ramp E

Ramp F

Ramp D

Clear Creek

Clear Creek

Clear Creek

80

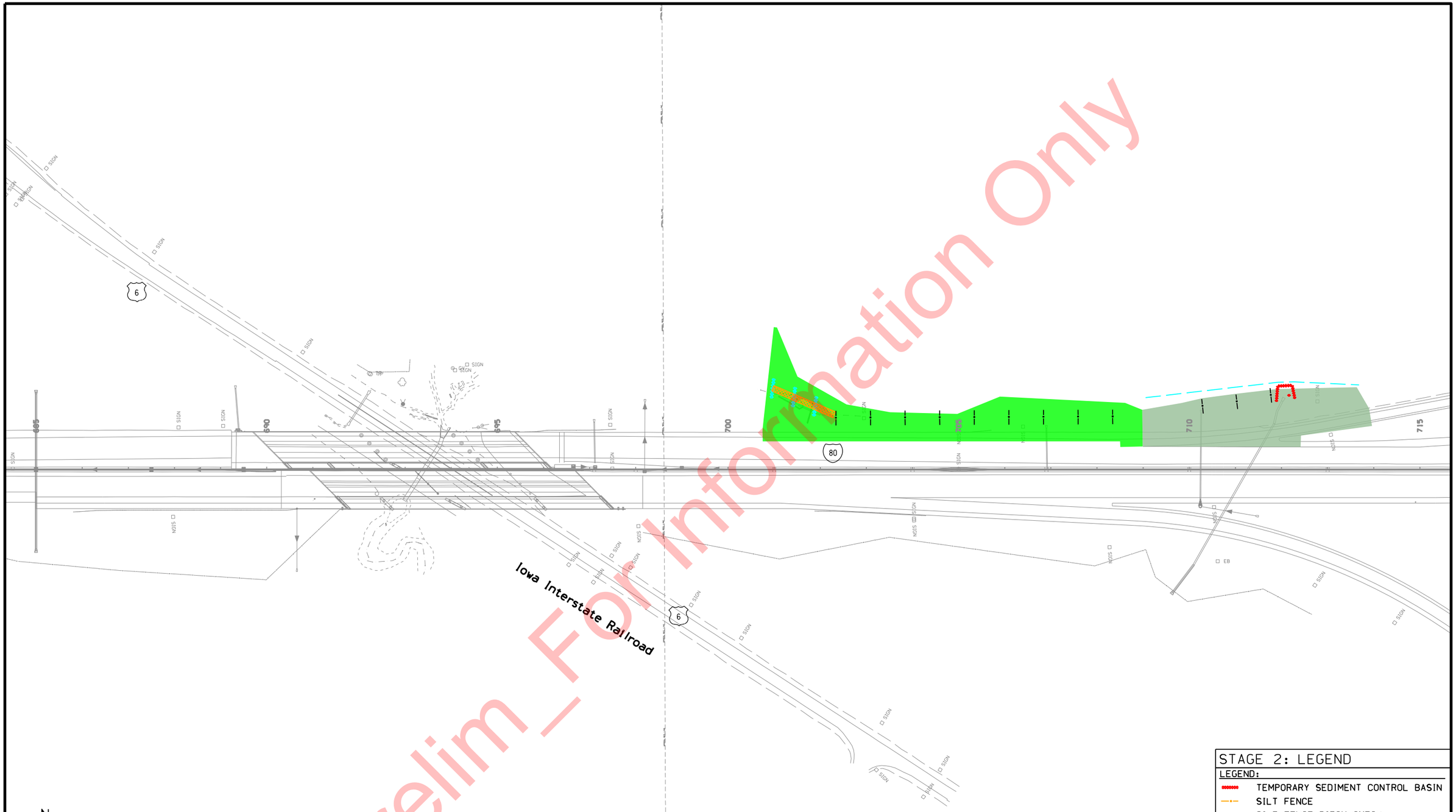
EXISTING 4'X4'X154' RCB WITH FLUME AND 54"X33.5' RCP EXT. LT AND 36"X42' PLASTIC EXT. RT

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.20	

2:25:03 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn



STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.21

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STAGE 2: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Clear Creek

Ramp A

Ramp H

Ramp E

Ramp G

Ramp F

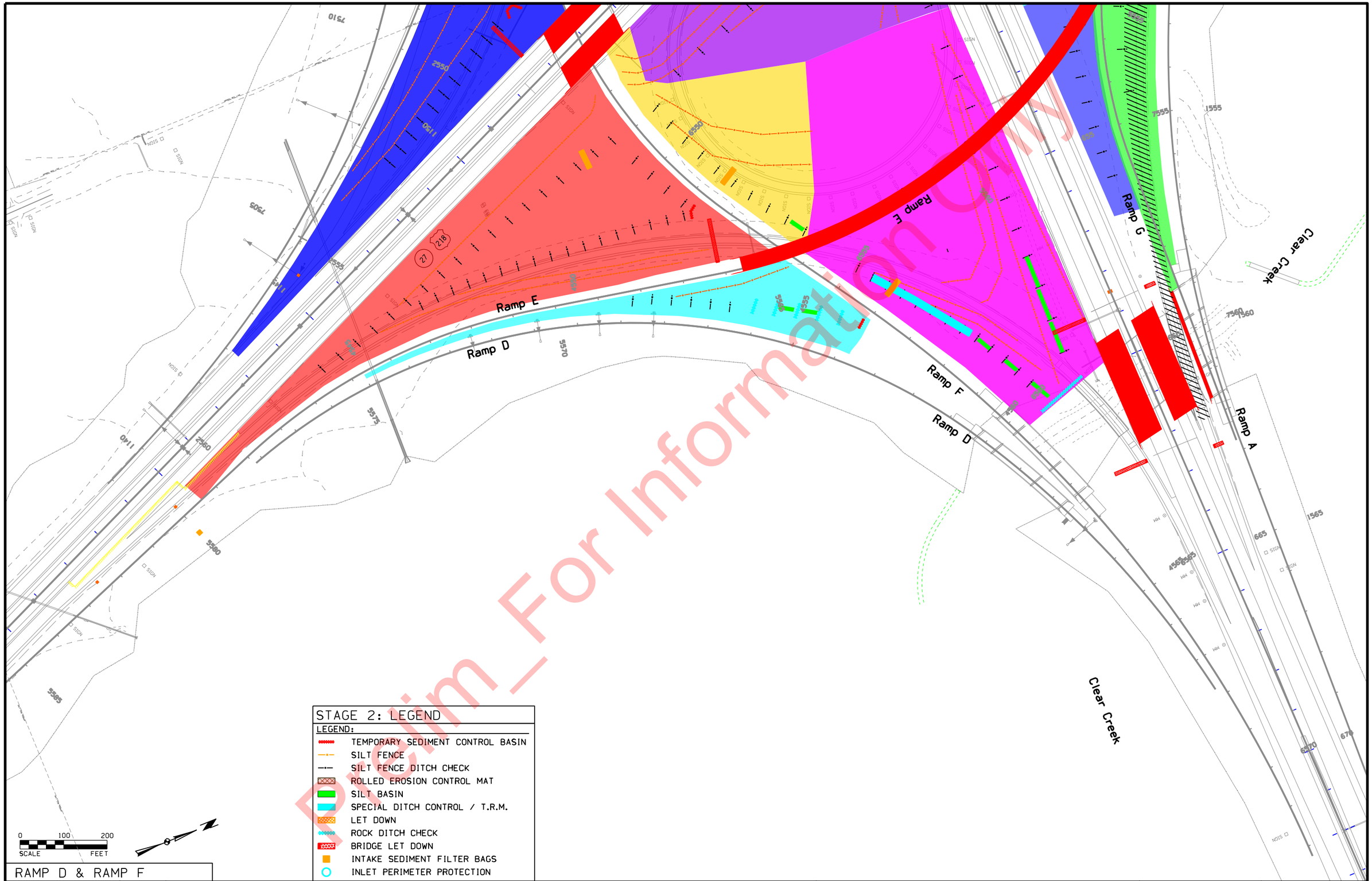
Ramp D

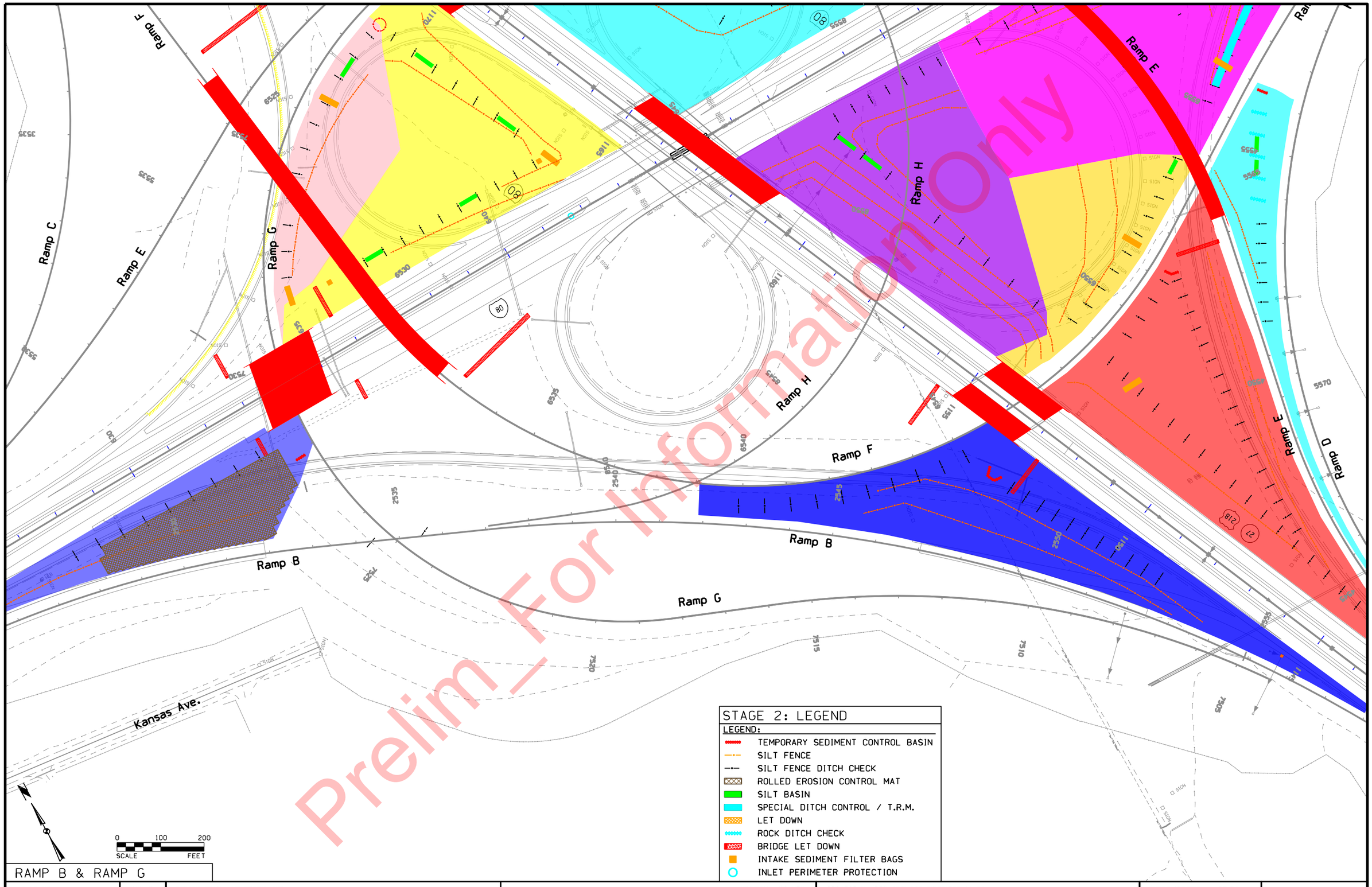
SCALE 0 100 200 FEET

RAMP A, E & RAMP G

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.22

2:25:06 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG2_52080372.dgn





RAMP B & RAMP G

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.24

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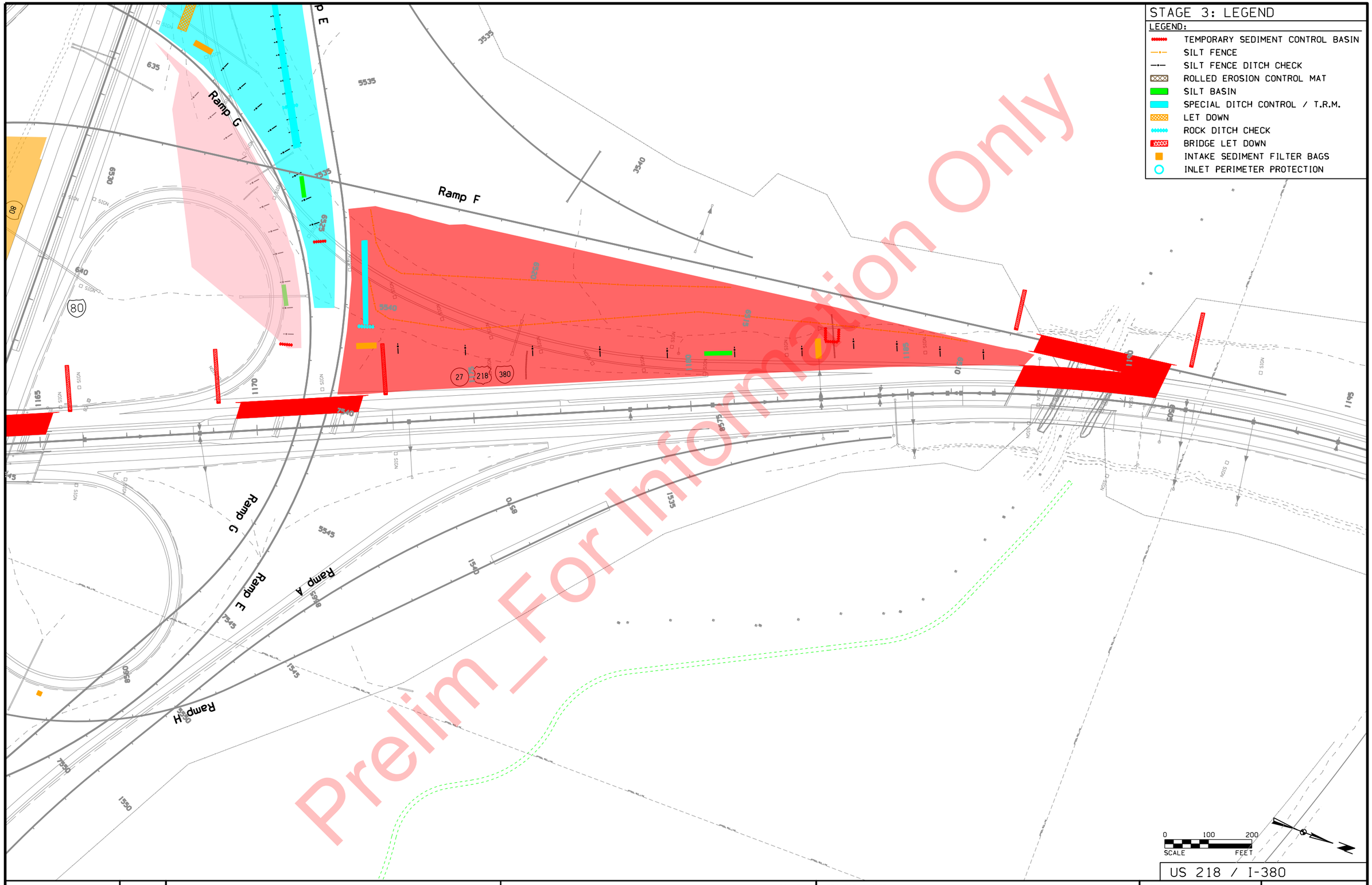

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.25	

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STAGE 3: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

0 100 200
SCALE FEET

US 218 / I-380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.26	

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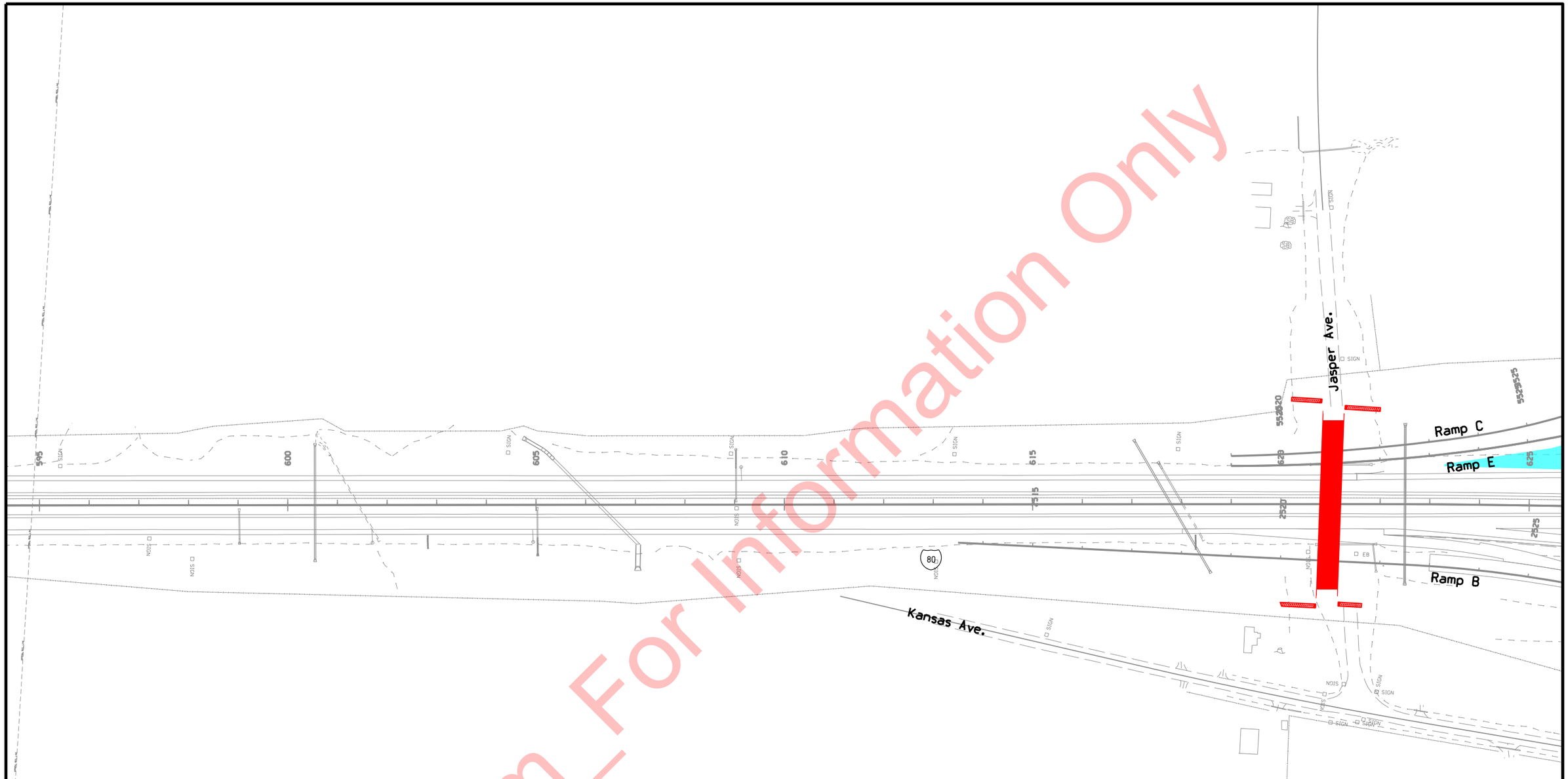

STAGE 3: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

N

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.27

2:35:08 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG3_52080372.dgn

STAGE 3: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Ramp F
Ramp A
Ramp E
Ramp H
Ramp G
Ramp C
Ramp E
Ramp G
Ramp B
Kansas Ave.
Ramp H
Ramp F
Ramp G
Ramp B
Ramp H
Ramp E

80

N

0 100 200
SCALE FEET

INTERSTATE 80

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.28

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STAGE 3: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

Clear Creek

Ramp A

Ramp H

Ramp E

Ramp G

Ramp F

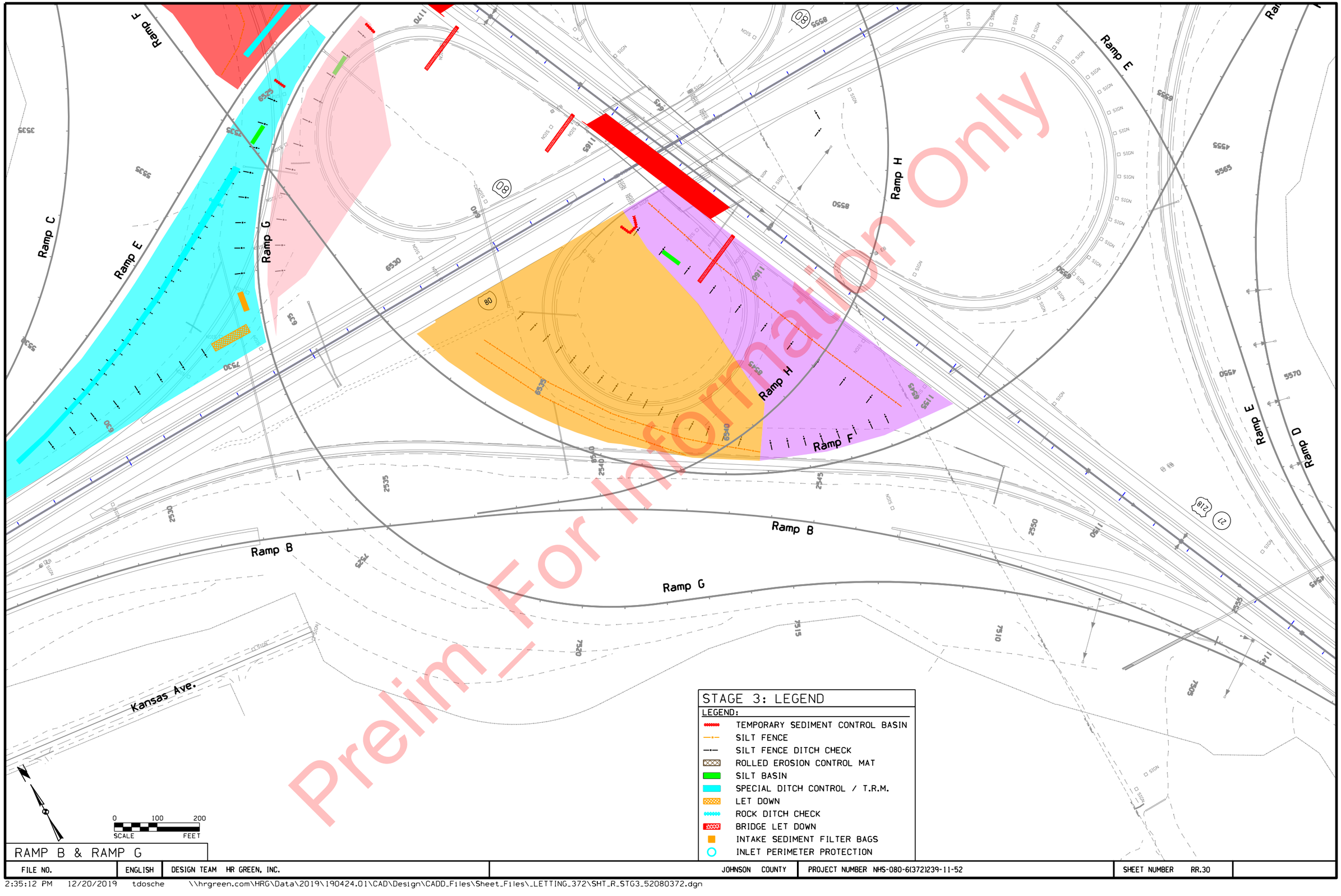
Ramp D

0 100 200
SCALE FEET

RAMP A_2 E & RAMP G

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.29

2:35:11 PM 12/20/2019 tdosche \\hrgreen.com\HRG\Data\2019\190424.01\CAD\Design\CADD_Files\Sheet_Files_LETTING_372\SHT_R_STG3_52080372.dgn



RAMP B & RAMP G

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.30

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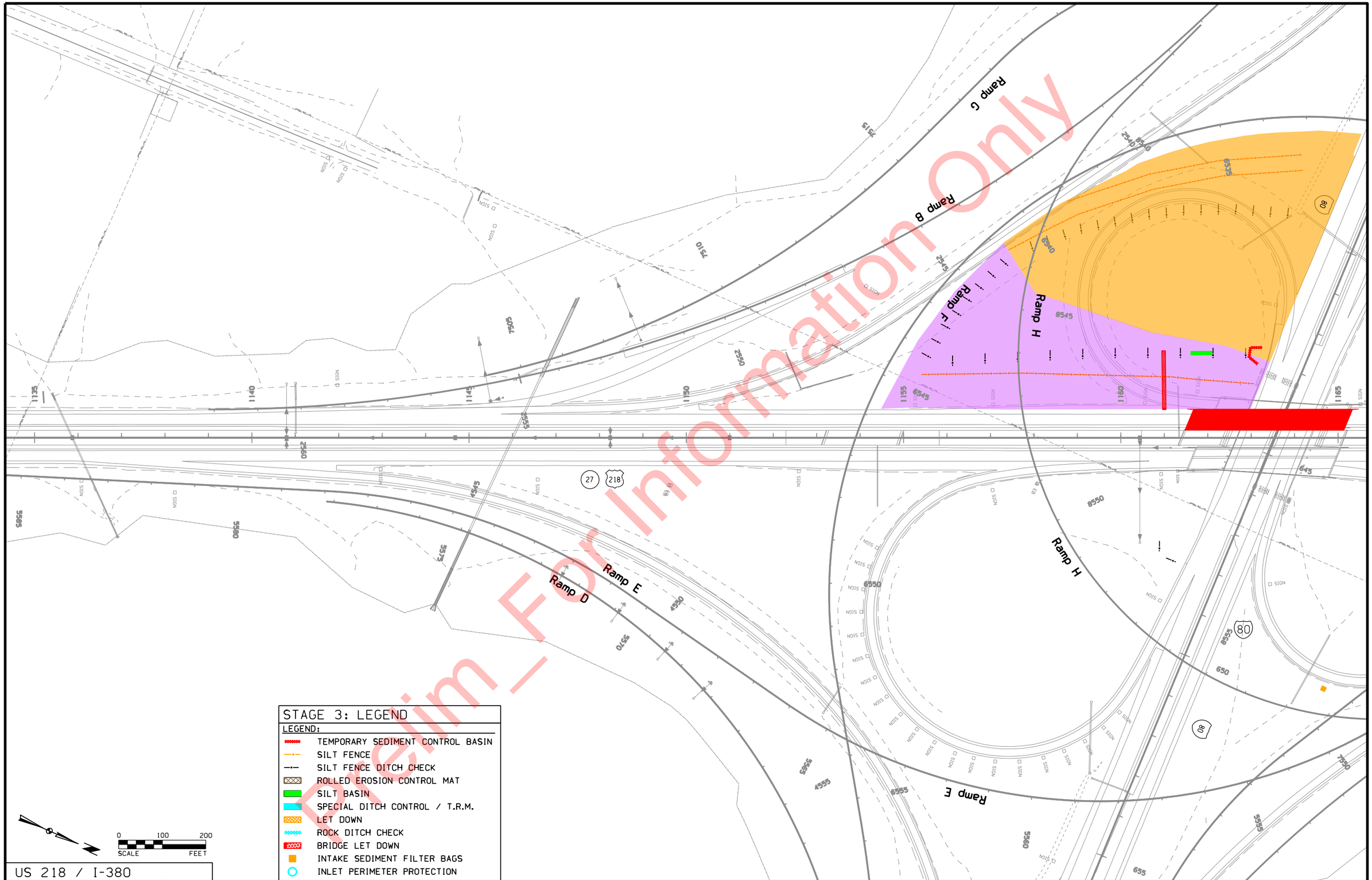

STAGE 3: LEGEND

LEGEND:

- TEMPORARY SEDIMENT CONTROL BASIN
- SILT FENCE
- SILT FENCE DITCH CHECK
- ROLLED EROSION CONTROL MAT
- SILT BASIN
- SPECIAL DITCH CONTROL / T.R.M.
- LET DOWN
- ROCK DITCH CHECK
- BRIDGE LET DOWN
- INTAKE SEDIMENT FILTER BAGS
- INLET PERIMETER PROTECTION

US 218 / I-380

FILE NO.	ENGLISH	DESIGN TEAM HR GREEN, INC.	JOHNSON COUNTY	PROJECT NUMBER NHS-080-6(372)239-11-52	SHEET NUMBER RR.31

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