

INDEX OF SHEETS	
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B Sheets	Typical Cross Sections and Details
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C Sheets	Quantities and General Information
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C.3 - 7	Tabulations (beg. with tab. of incidentals if needed)
J Sheets	Traffic Control and Staging Sheets
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J.2 - 4	Allowable Lane Closure Maps
N Sheets	Traffic Signal Sheets
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PLANS OF PROPOSED IMPROVEMENT ON THE

PRIMARY ROAD SYSTEM

STATEWIDE COUNTY

Traffic Signs

Various Locations Statewide,
Type B Signing (FY 2026)

SCALES: As Noted

Refer to the Proposal Form for list of applicable specifications.

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



INDEX OF SEALS			
SHEET NO.	NAME	TYPE	BID QUANTITY SHEETS
A.1	Neal Fobian	Primary Signature Block	C.1 - C.2

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.

Neal Fobian 04-07-2026
Signature Date

Neal Fobian
Printed or Typed Name

My license renewal date is December 31, 2026

Pages or sheets covered by this seal: A.1, B.1 - B.12, C.1 - C.7, J.1, and N.1 - N.4.

REVISIONS

TOTAL
28

PROJECT IDENTIFICATION NUMBER

25-00-000-070

PROJECT NUMBER

NHSN-000-T(426)--2R-00

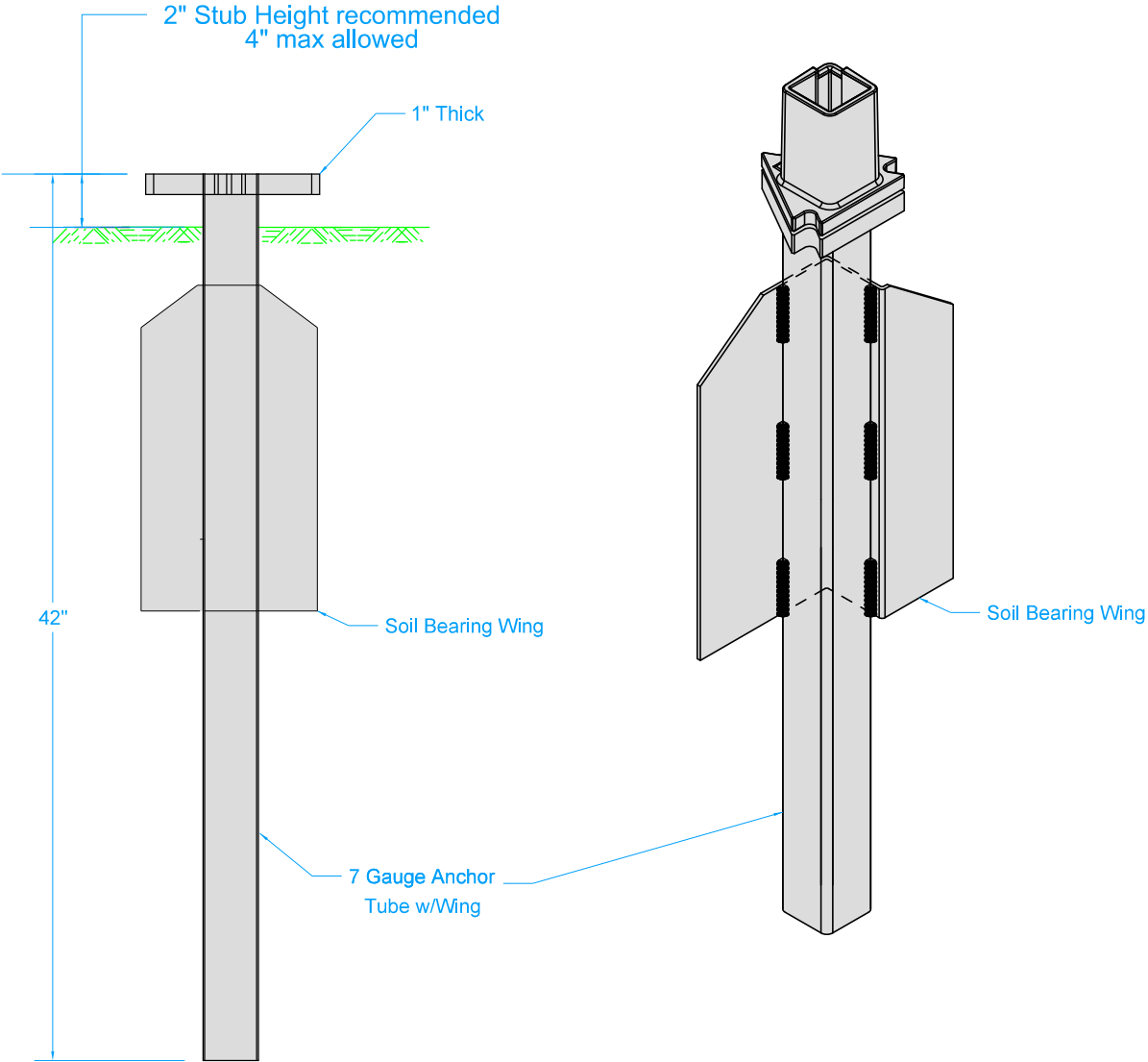
R.O.W. PROJECT NUMBER

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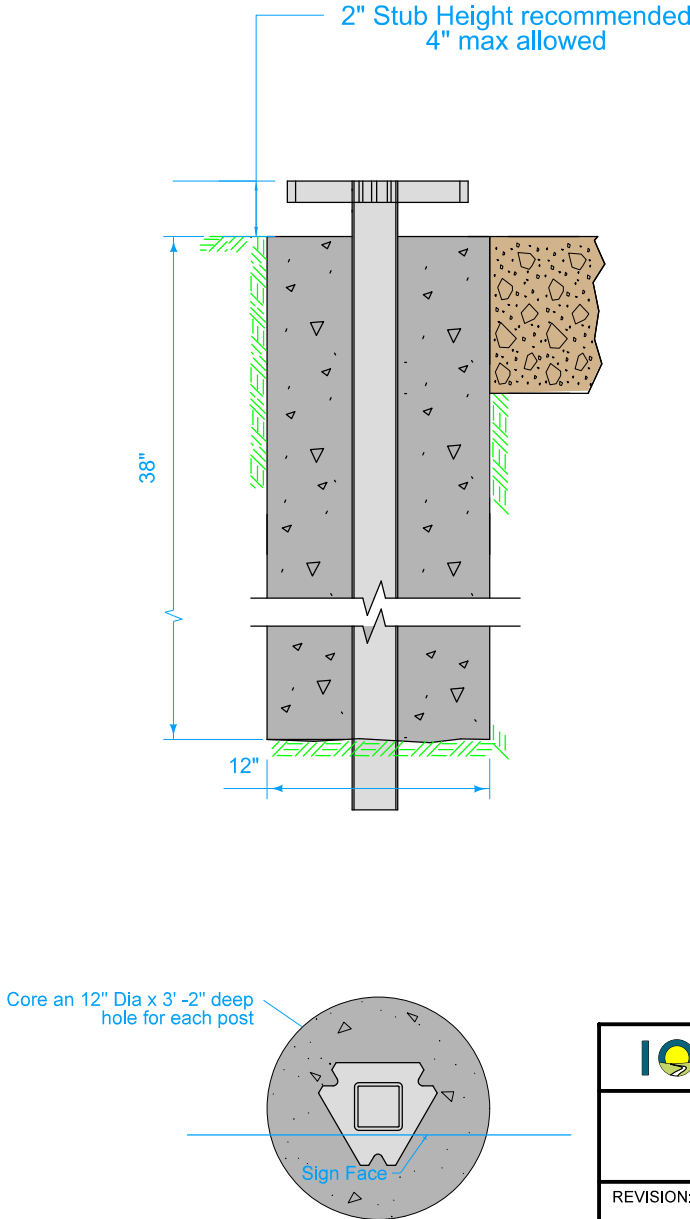
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TYPE 3 INSTALLATION
(TRIANGULAR SLIP BASE SOIL)

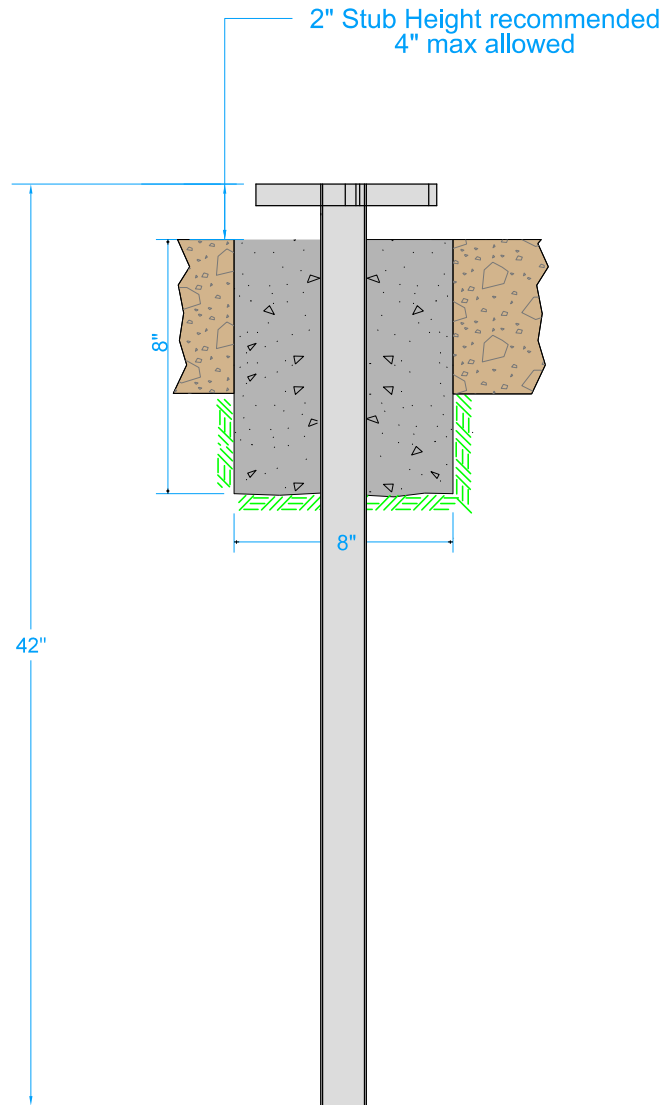


TYPE 4 INSTALLATION
(TRIANGULAR SLIP BASE CONCRETE)

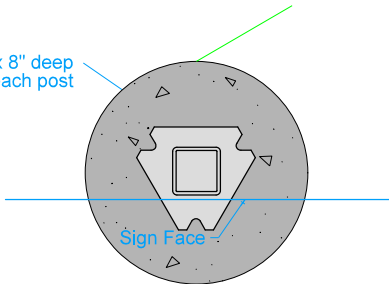


	REVISION			
	-	00-00-00		
	<div>...</div> <div>...</div> <div>TAS STANDARD</div>			
REVISION: __				
<div>Support Structures - Perforated Square Steel Tube Anchor and Post</div>				

TYPE 5 INSTALLATION
(TRIANGULAR SLIP BASE CONCRETE)

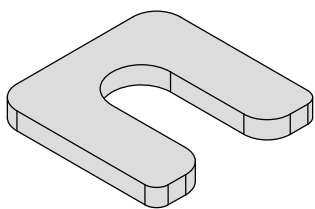


Core an 8" Dia x 8" deep
hole for each post

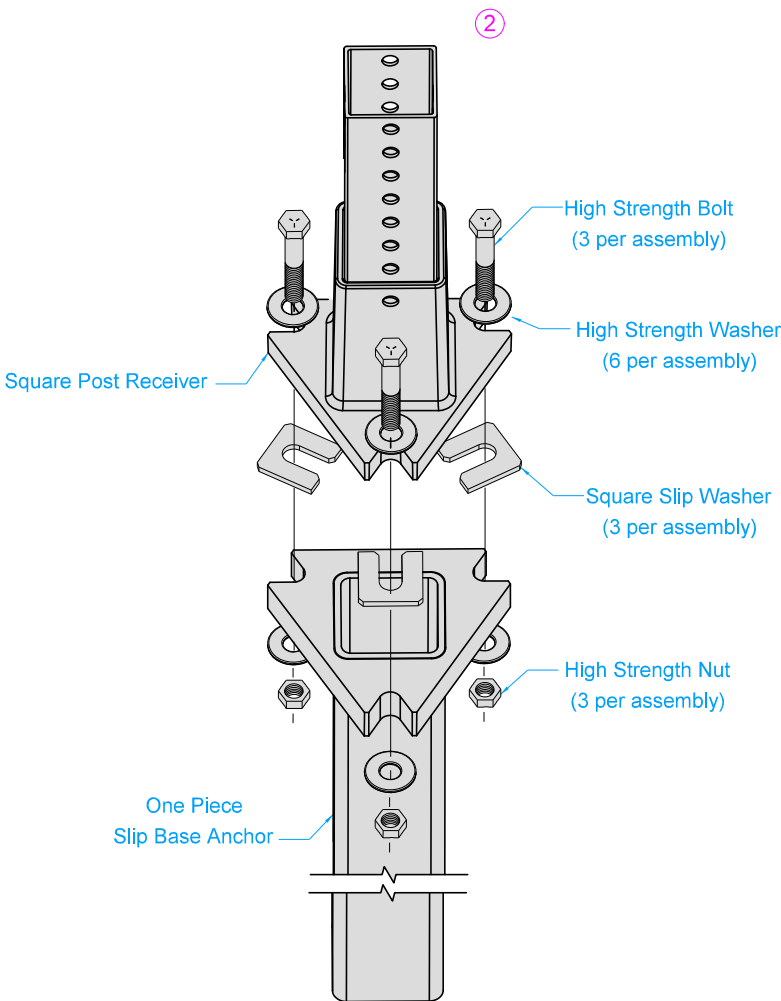


① Used in concrete islands.

IOWA DOT	REVISION	
	-	00-00-00
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	TAS STANDARD	
REVISION: __		
Support Structures - Perforated Square Steel Tube Anchor and Post		

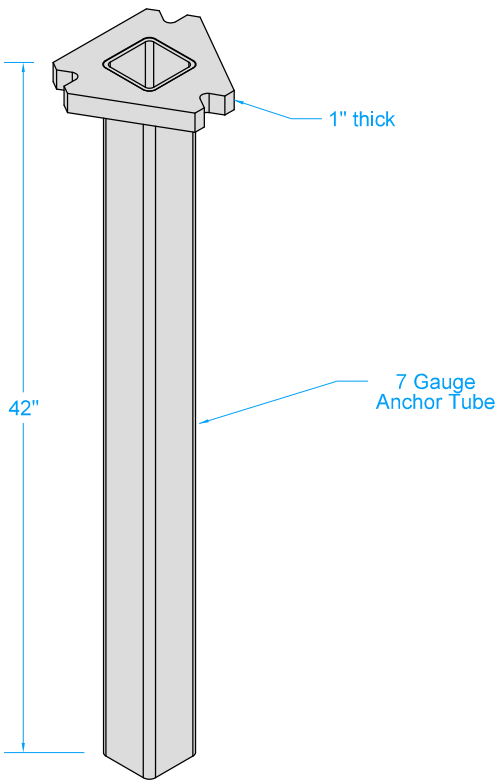


1 $\frac{3}{4}$ " SQUARE X $\frac{3}{16}$ "
SQUARE SLIP WASHER

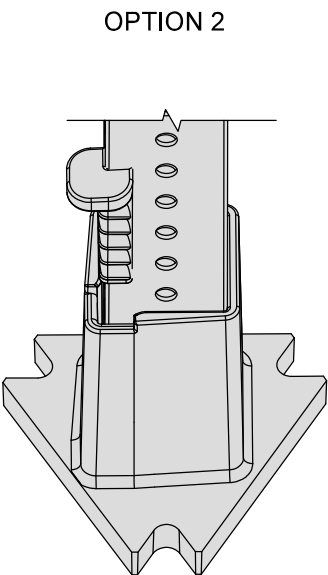
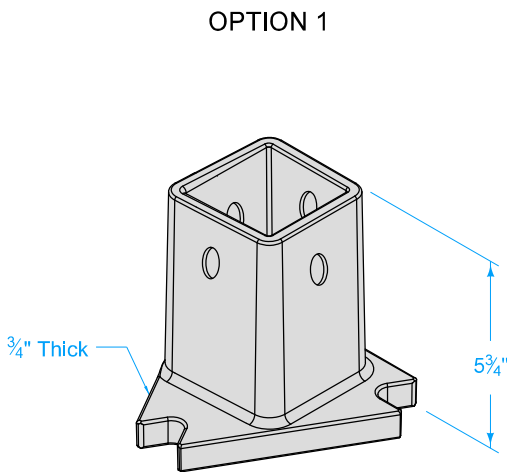


EXPLODED VIEW
SLIP BASE, RECEIVER AND
CONNECTION HARDWARE


ONE PIECE
SLIP BASE ANCHOR



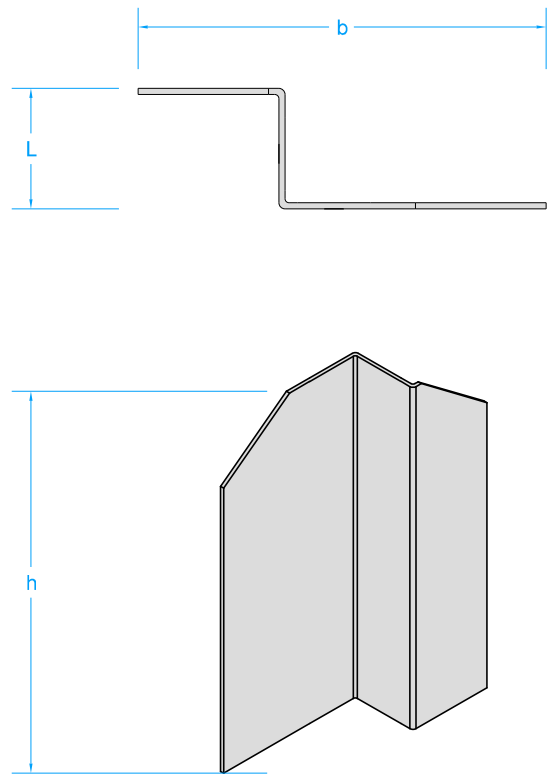
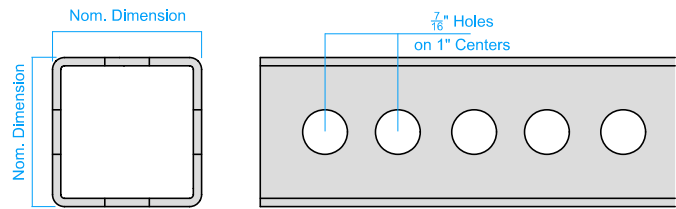
- ① Type III/IV installation
② Fastener size and installation procedure shall be according to manufacturer's recommendation.



2 $\frac{1}{2}$ " SQUARE POST RECEIVER

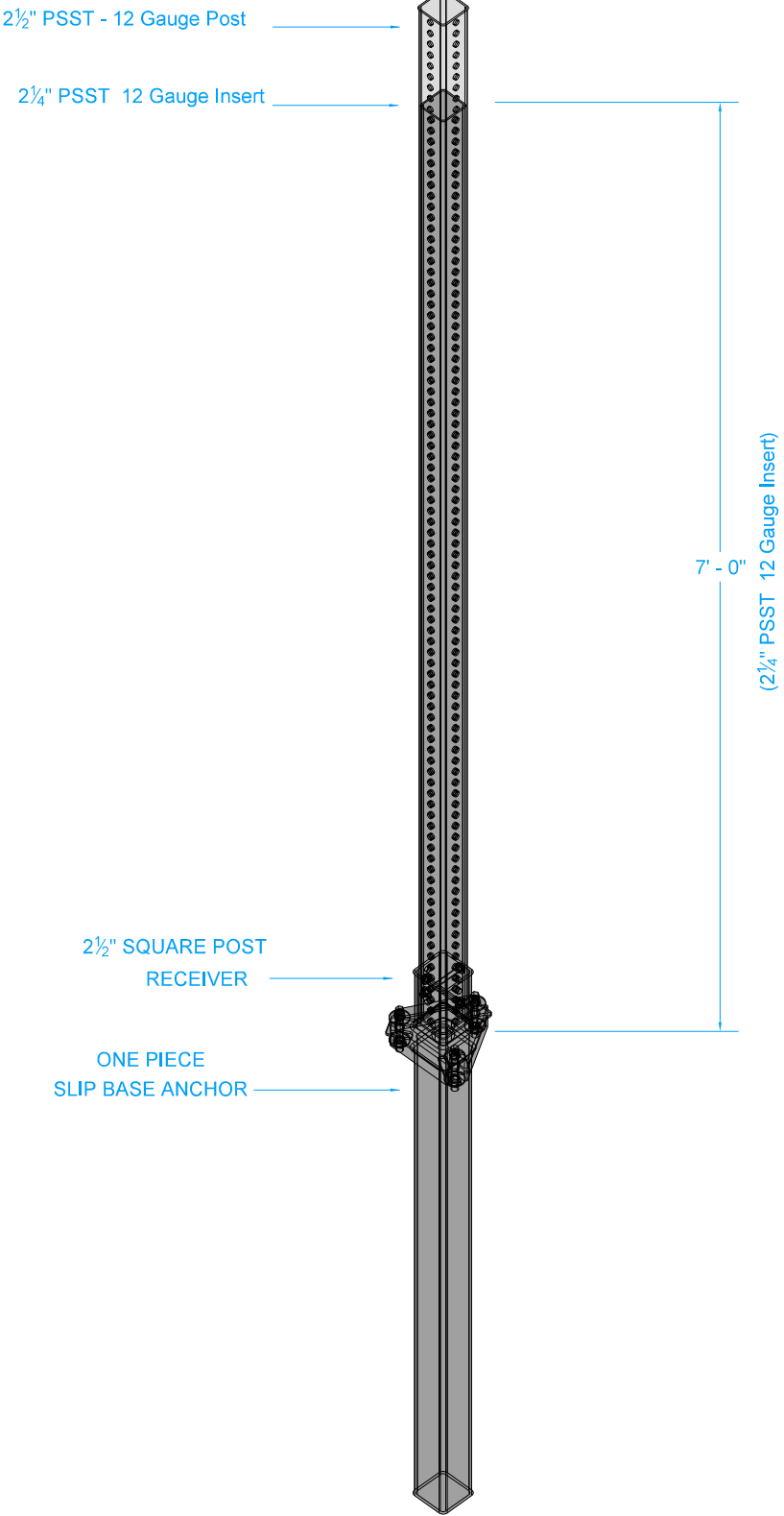
	REVISION		
	-	00-00-00	
	<div>■■■</div>		
TAS STANDARD			
REVISION: __			
<div>Support Structures - Perforated Square Steel Tube Anchor and Post</div>			

PERFORATED STEEL SQUARE TUBE POST DETAILS

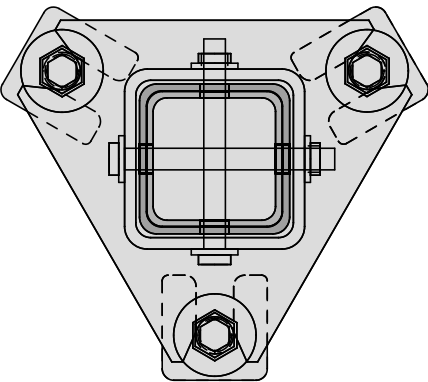
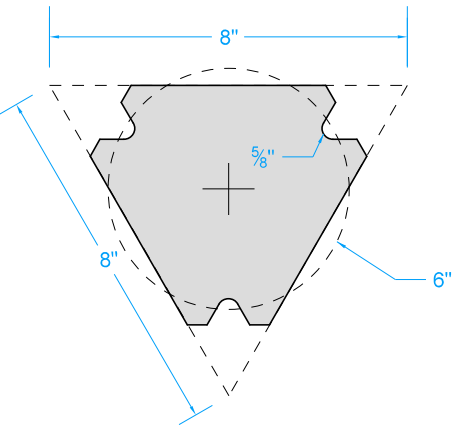


SOIL BEARING WING


SLIP BASE WITH NESTED PERFORATED SQUARE STEEL TUBE POST ^①



SLIP PLATE DIMENSIONS ^①

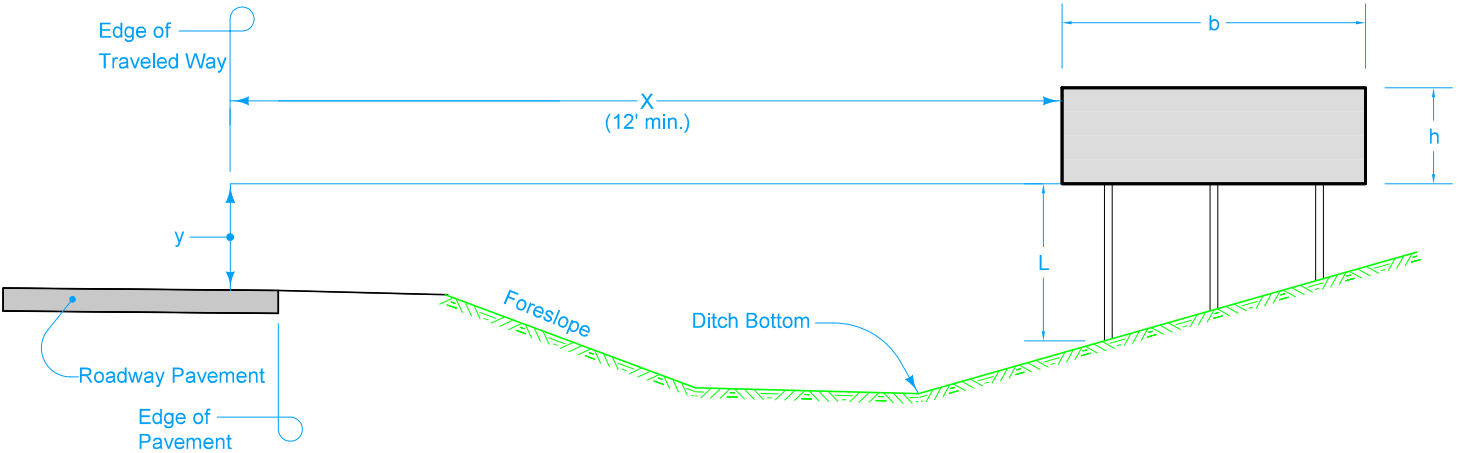


^① Type III/IV installation only


	REVISION	
	-	00-00-00
	TAS STANDARD	
...	...	
REVISION: __		
Support Structures - Perforated Square Steel Tube Anchor and Post		

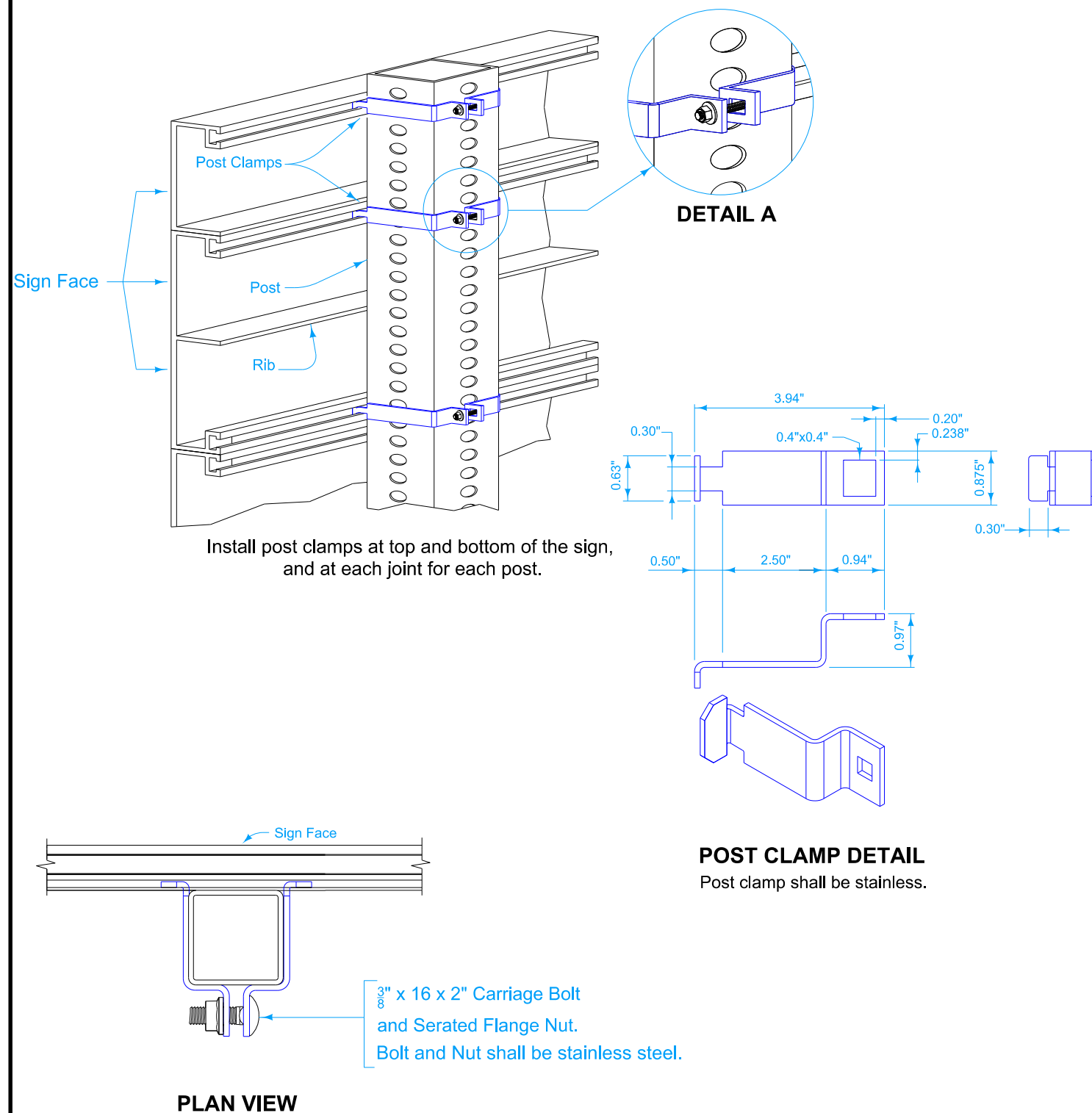
Note: The sign centroid is equivalent to $L + h/2$, (length of the longest post from the ground to the bottom of the sign plus the half the height of the sign.) and the Sign Area Yielding Design is the maximum area that the corresponding sign can have without failure. Sign Area is equivalent to $b \times h$.

POST LOADING FOR PERFORATED SQUARE STEEL TUBE POSTS ^{① ②}						
SIGN CENTROID (FT)	SIGN AREA (SQ-FT) YIELDING DESIGN					
	TYPE 1 TYPE 2	TYPE 3/TYPE 4 (SLIP BASE REQUIRED)				
	2 ½" x 12ga	2 ½" x 12ga		2 ¼" x 12ga inserted into a 2 ½" x 12 ga		
	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
16.5	10.44	20.88	31.32	18.78	37.56	56.34
16	10.76	21.52	32.28	19.36	38.72	58.08
15.5	11.11	22.22	33.33	19.99	39.98	59.97
15	11.48	22.96	34.44	20.65	41.3	61.95
14.5	11.87	23.74	35.61	21.36	42.72	64.08
14	12.3	24.6	36.9	22.13	44.26	66.39
13.5	12.75	25.5	38.25	22.95	45.9	68.85
13	13.24	26.48	39.72	23.83	47.66	71.49
12.5	13.77	27.54	41.71	24.78	49.56	74.34
12	14.35	28.7	43.05	25.82	51.64	77.46
11.5	14.97	29.94	44.91	26.94	53.88	80.82
11	15.65	31.3	46.95	28.16	56.32	84.48
10.5	16.4	32.8	49.2	29.5	59	88.5
10	17.22	34.44	51.66	30.98	61.96	92.94
9.5	18.12	36.24	54.36	32.61	65.22	97.83
9	19.13	38.26	57.39	34.42	68.84	103.26
8.5	20.26	40.52	60.78	36.45	72.9	109.35
8	21.52	43.04	64.56	38.72	77.44	116.16

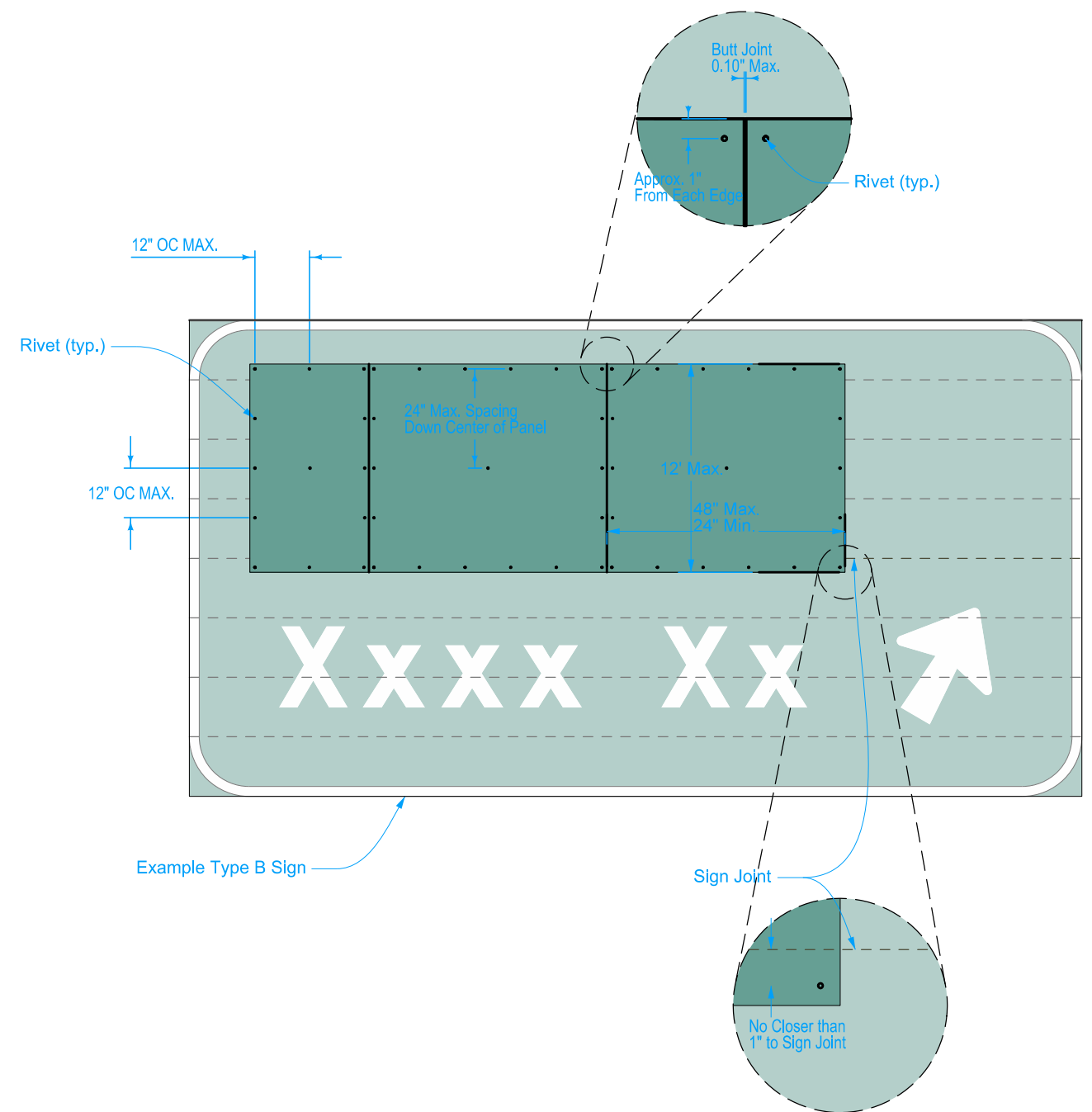


- ① Adapted from AASHTO Standard Specifications for - Highway Signs, Luminaires, and Traffic Signals. 6th Edition 2013. <Rev B 4/7/14>
- ② 90 MPH Wind Load

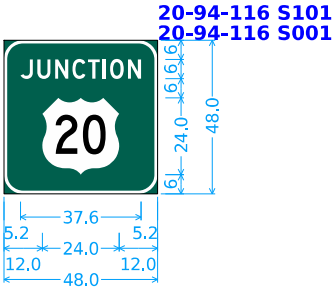
	REVISION	
	-	00-00-00
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	TAS STANDARD	
REVISION: __		
Support Structures - Perforated Square Steel Tube Anchor and Post		



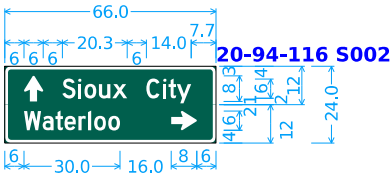
**DETAILS OF
PERFORATED SQUARE STEEL TUBE POST
TYPE "B" SIGN ATTACHMENT**



**TYPE B SIGN
OVERLAY DETAILS**

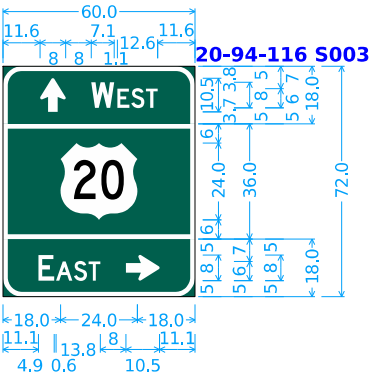


20-94-116 S001/101;
Item : SR Single Lane - 1 - Junction;
6.0" Radius, 1.0" Border, White on Green;
"JUNCTION", D 2K;



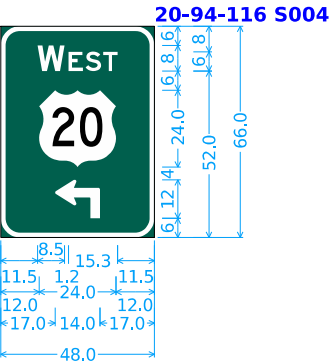
20-94-116 S002;
2.0" Radius, 1.0" Border, White on Green;
Arrow III-6S - 8.0" 90°;
"Sioux City", D 2K;

2.0" Radius, 1.0" Border, White on Green;
"Waterloo", D 2K;
Arrow III-6S - 8.0" 0°;

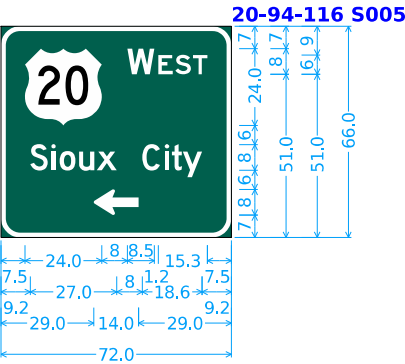


SR Single Lane - 3 Right Turn Alt;
6.0" Radius, 1.5" Border, White on Green;
Arrow III-8S - 10.5" 90°;
"WEST", D 2K;

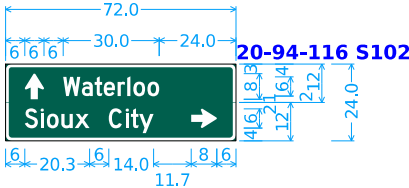
6.0" Radius, 1.5" Border, White on Green;
6.0" Radius, 1.5" Border, White on Green;
"EAST", D 2K;
Arrow III-8S - 10.5" 0°;



20-94-116 S004;
Item : SR Single Lane - 4 Ahead Left;
6.0" Radius, 1.5" Border, White on Green;
"WEST", E 2K;
90 Deg Advance Turn Arrow Custom 14.0" X 12.0°;

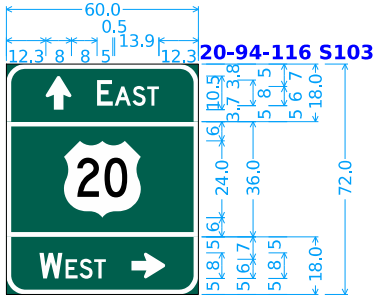


20-94-116 S005;
Item : SR Single Lane - 5 - Left Turn;
6.0" Radius, 1.5" Border, White on Green;
"WEST", E 2K;
"Sioux City", D 2K;
Arrow III-8L - 14.0" 180°;



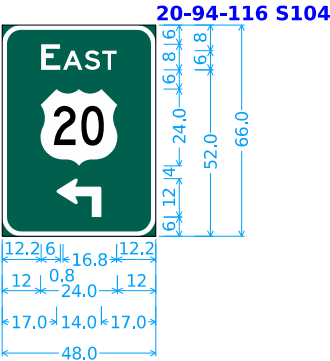
20-94-116 S102;
2.0" Radius, 1.0" Border, White on Green;
Arrow III-6S - 8.0" 90°;
"Waterloo", D 2K;

2.0" Radius, 1.0" Border, White on Green;
"Sioux City", D 2K;
Arrow III-6S - 8.0" 0°;

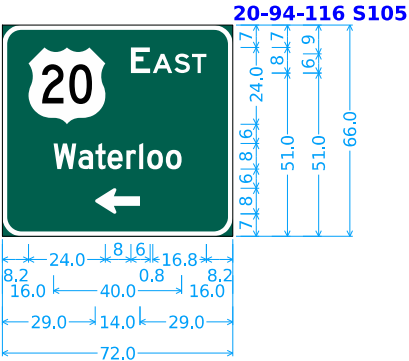


SR Single Lane - 3 Right Turn Alt;
6.0" Radius, 1.5" Border, White on Green;
Arrow III-8S - 10.5" 90°;
"EAST", D 2K;

6.0" Radius, 1.5" Border, White on Green;
6.0" Radius, 1.5" Border, White on Green;
"WEST", D 2K;
Arrow III-8S - 10.5" 0°;

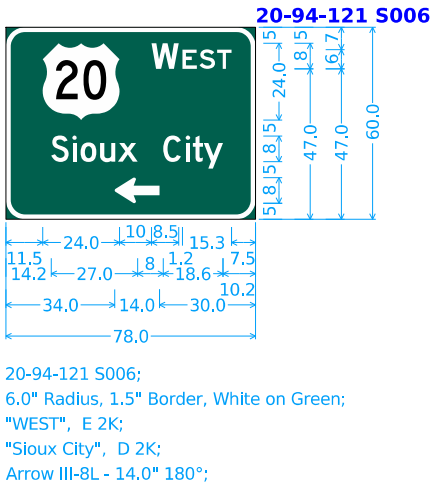
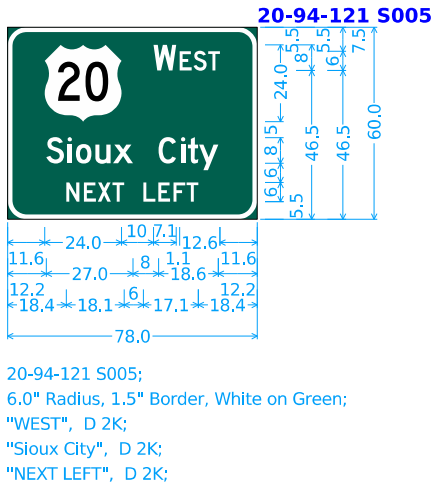
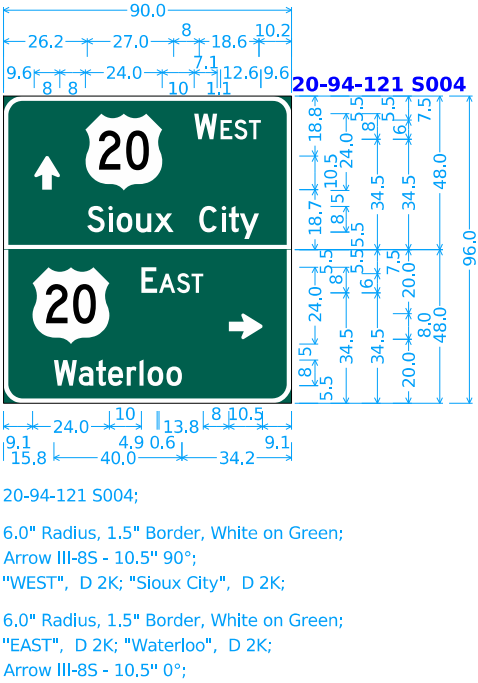
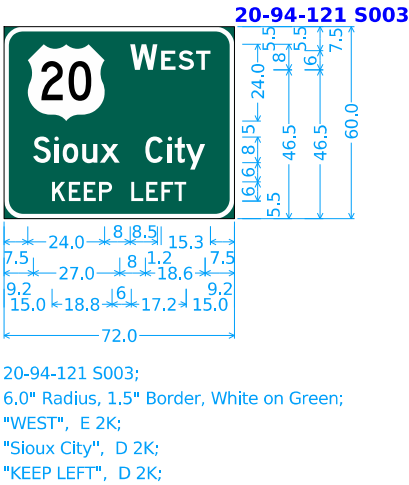
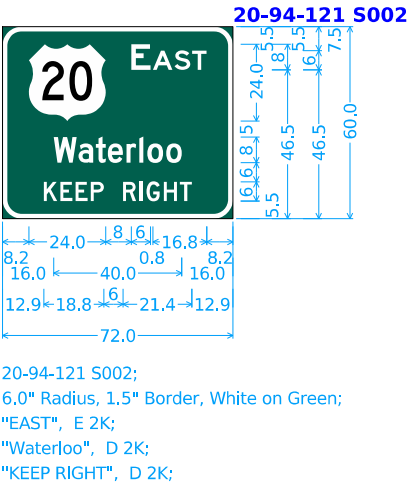
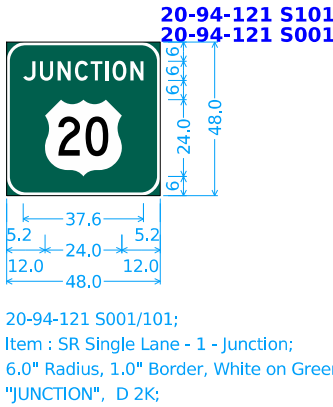


20-94-116 S104;
Item : SR Single Lane - 4 Ahead Left;
6.0" Radius, 1.5" Border, White on Green;
"EAST", E 2K;
90 Deg Advance Turn Arrow Custom 14.0" X 12.0°;

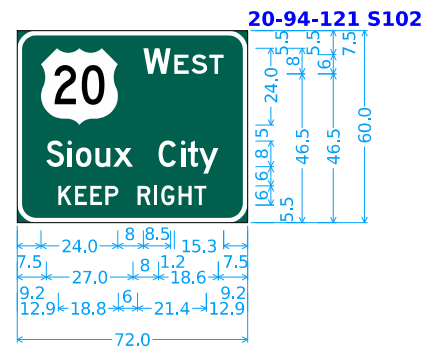


20-94-116 S105;
Item : SR Single Lane - 5 - Left Turn;
6.0" Radius, 1.5" Border, White on Green;
"EAST", E 2K;
"Waterloo", D 2K;
Arrow III-8L - 14.0" 180°;

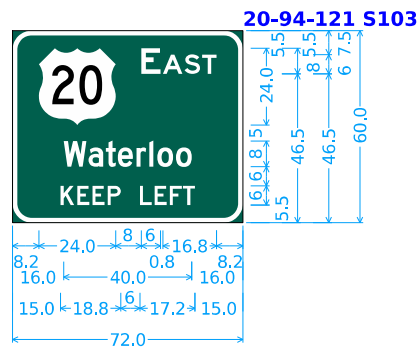
SIGN PANEL DETAILS
US 20 EXIT 116 SR



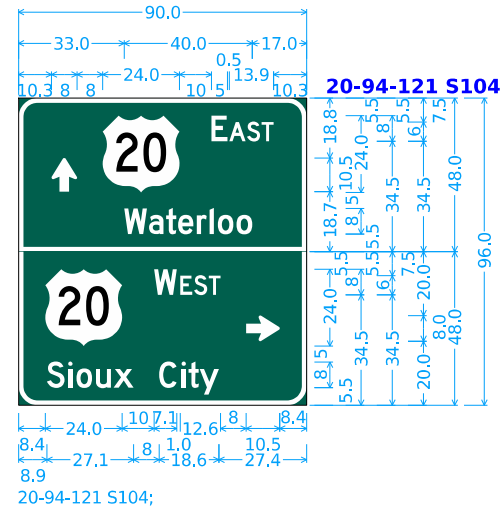
SIGN PANEL DETAILS
US 20 EXIT 121 SR



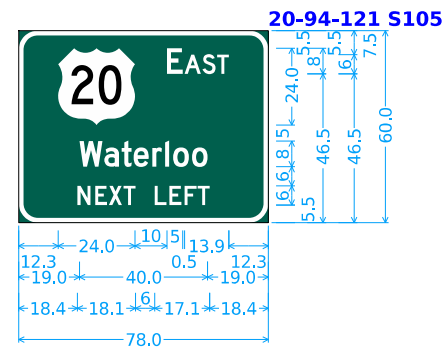
20-94-121 S102;
6.0" Radius, 1.5" Border, White on Green;
"WEST", E 2K;
"Sioux City", D 2K;
"KEEP RIGHT", D 2K;



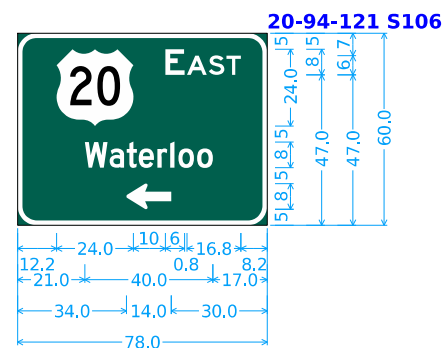
20-94-121 S103;
6.0" Radius, 1.5" Border, White on Green;
"EAST", E 2K;
"Waterloo", D 2K;
"KEEP LEFT", D 2K;



20-94-121 S104;
6.0" Radius, 1.5" Border, White on Green;
Arrow III-8S - 10.5" 90°;
"EAST", D 2K; "Waterloo", D 2K;
6.0" Radius, 1.5" Border, White on Green;
"WEST", D 2K; "Sioux City", D 2K;
Arrow III-8S - 10.5" 0°;

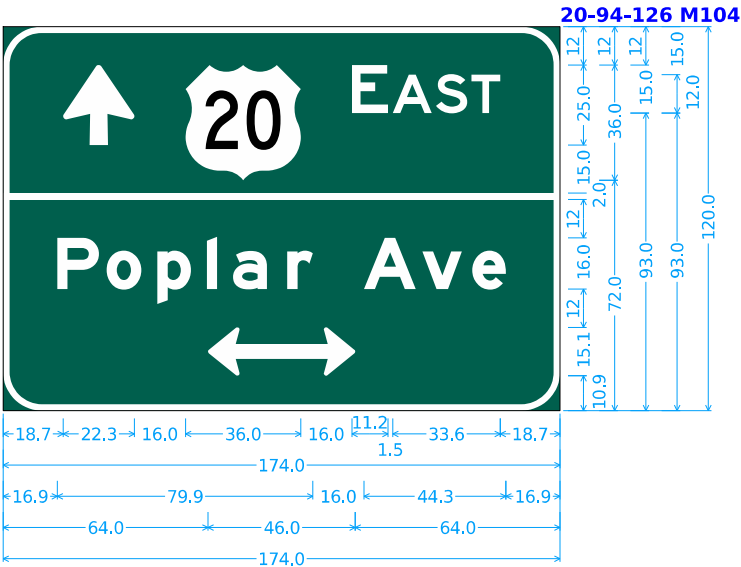


20-94-121 S105;
6.0" Radius, 1.5" Border, White on Green;
"EAST", D 2K;
"Waterloo", D 2K;
"NEXT LEFT", D 2K;

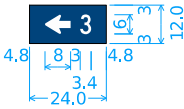


20-94-121 S106;
6.0" Radius, 1.5" Border, White on Green;
"EAST", E 2K;
"Waterloo", D 2K;
Arrow III-8L - 14.0" 180°;

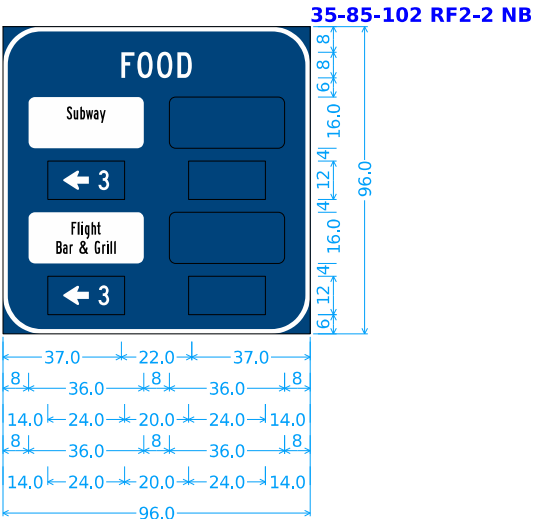
SIGN PANEL DETAILS
US 20 EXIT 121 SR



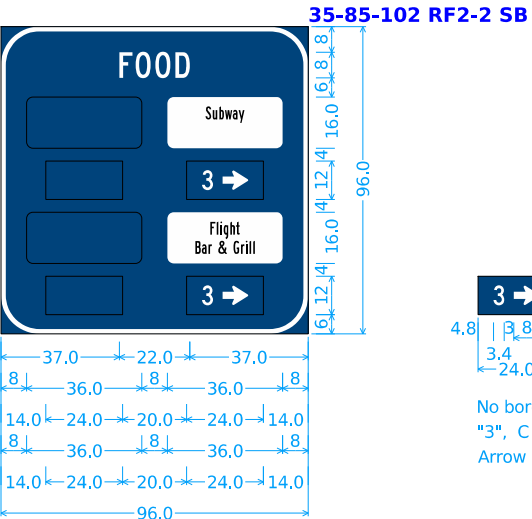
20-94-126 M104;
12.0" Radius, 2.0" Border, White on Green;
Arrow I-E - 25.0" 90°; "EAST", E 2K; "Poplar Ave", E Mod 2K;
Double Headed Arrow 6 - 46.0" 0°;



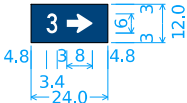
No border, White on Blue;
Arrow III-6S - 8.0" 180°;
"3", C 2K;



35-85-102 RF2-2;
12.0" Radius, 1.5" Border, White on Blue;
"FOOD", C 2K;
2.0" Radius, No border, White on White;
"Subway" Black, B 2K;
2.0" Radius, No border, White on White;
No border, White on Blue;
No border, White on Blue;
2.0" Radius, No border, White on White;
"Flight" Black, B 2K;
"Bar & Grill" Black, B 2K;
2.0" Radius, No border, White on White;
No border, White on Blue;
No border, White on Blue;



35-85-102 RF2-2;
12.0" Radius, 1.5" Border, White on Blue;
"FOOD", C 2K;
2.0" Radius, No border, White on White;
"Subway" Black, B 2K;
2.0" Radius, No border, White on White;
No border, White on Blue;
No border, White on Blue;
2.0" Radius, No border, White on White;
"Flight" Black, B 2K;
"Bar & Grill" Black, B 2K;
2.0" Radius, No border, White on White;
No border, White on Blue;
No border, White on Blue;

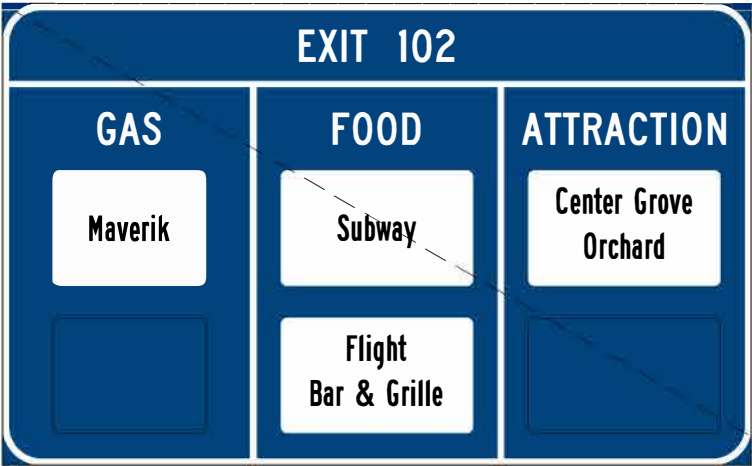


No border, White on Blue;
"3", C 2K;
Arrow III-6S - 8.0" 0°;

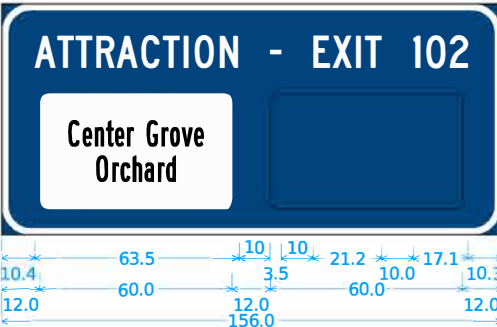
Note to Fabricator: Omit logo/business placards.

Note to installing Contractor: Remove all logo/business placards from existing signs and reinstall on new signs as shown.

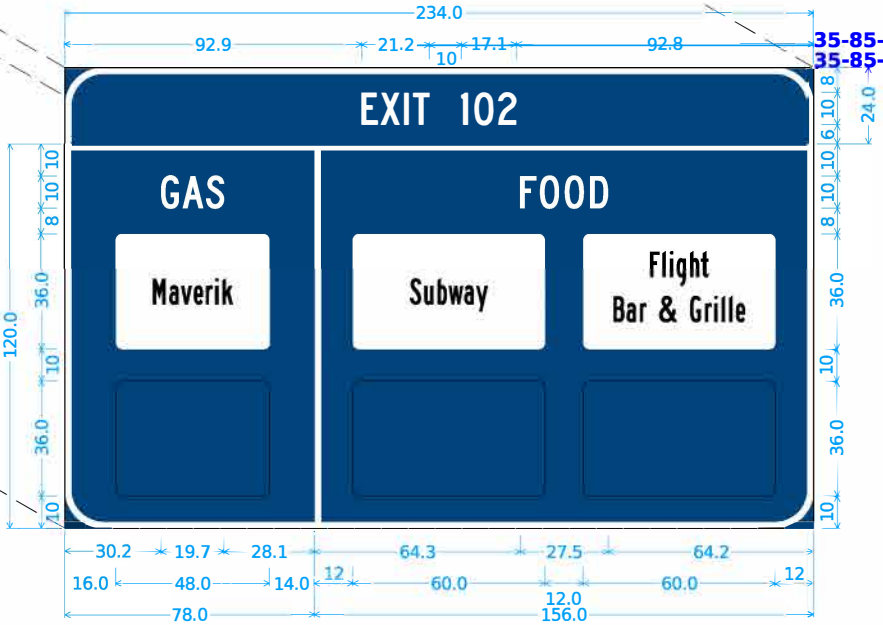
SIGN PANEL
DETAILS



EXISTING SIGN NB
EXISTING SIGN SB



35-85-102 MA2-1 NB
35-85-102 MA2-1 SB



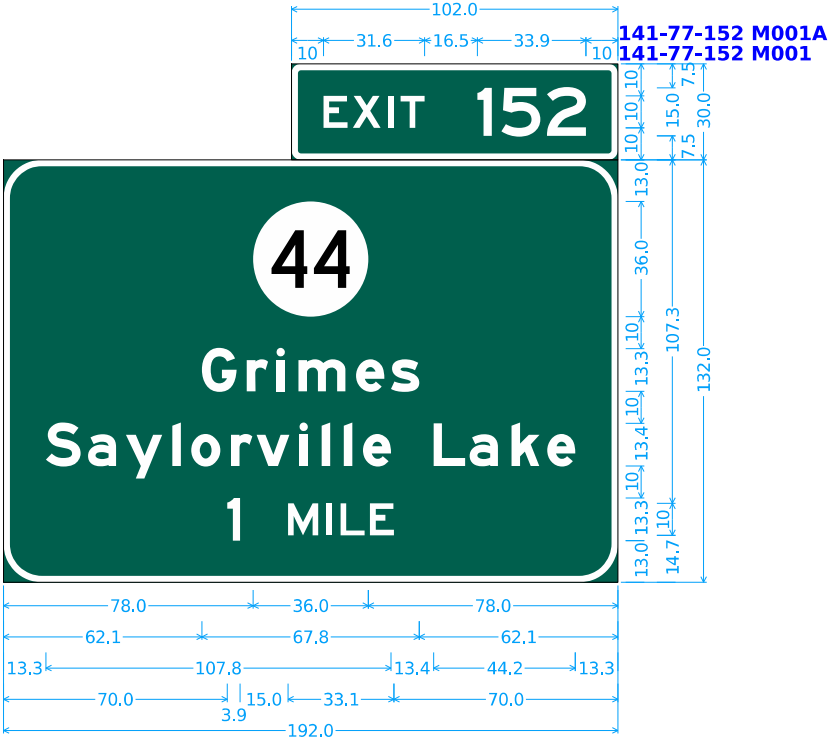
35-85-102 MG2F4 NB
35-85-102 MG2F4 SB

Note to Fabricator: Omit logo/business placards.

Note to installing Contractor: Remove all logo/business placards from existing signs and reinstall on new signs as shown.

12.0" Radius, 2.0" Border, White on Blue;
"EXIT 102", C 2K;
35-85-102 MG2F4;
12.0" Radius, 2.0" Border, White on Blue;
"GAS", C 2K; 2.0" Radius, No border, White on White;
"Maverik" Black, B 2K;
2.0" Radius, No border, White on White;
12.0" Radius, 2.0" Border, White on Blue;
"FOOD", C 2K; 2.0" Radius, No border, White on White;
"Subway" Black, B 2K;
2.0" Radius, No border, White on White;
"Flight" Black, B 2K; "Bar & Grille" Black, B 2K;
2.0" Radius, No border, White on White; 2.0" Radius, No border, White on White;

SIGN PANEL
DETAILS



141-77-152 M001A;
Item : E1-5P;
2.0" Border, White on Green;
"EXIT", E 2K 120% spacing; "152", E 2K;

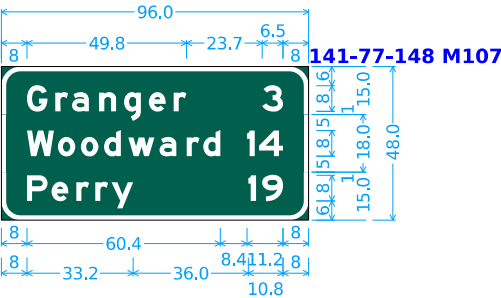
141-77-152 M001;
12.0" Radius, 2.0" Border, White on Green;
State Highway 44 M1-5; "Grimes", E Mod 2K 80% spacing;
"Saylorville Lake", E Mod 2K 80% spacing; "1", E 2K; "MILE", E 2K;



141-77-148 M006;

4.0" Radius, 1.5" Border, White on Green;
"Grimes", E Mod 2K; "2", E Mod 2K;

4.0" Radius, 1.5" Border, White on Green;
"Des Moines", E Mod 2K;
"16", E Mod 2K;

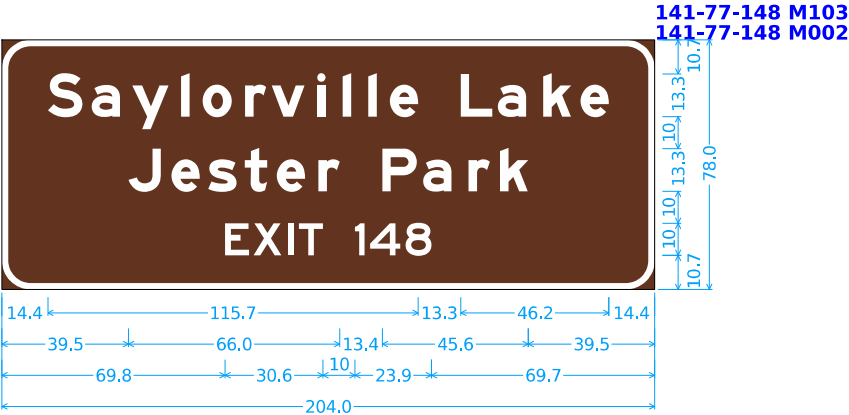


141-77-148 M107;

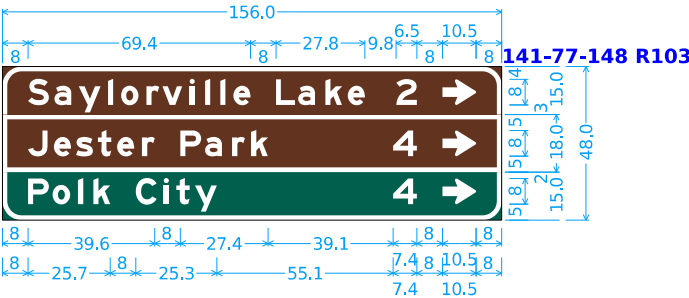
6.0" Radius, 1.5" Border, White on Green;
"Granger", E Mod 2K;
"3", E Mod 2K;

6.0" Radius, 1.5" Border, White on Green;
"Woodward", E Mod 2K;
"14", E Mod 2K;

6.0" Radius, 1.5" Border, White on Green;
"Perry", E Mod 2K; "19", E Mod 2K;



141-77-148 M002_M103;
Item : Supplemental Guide - 1 Dest Template;
9.0" Radius, 2.0" Border, White on Brown;
"Saylorville Lake", E Mod 2K; "Jester Park", E Mod 2K; "EXIT 148", E 2K;



141-77-148 R103;

6.0" Radius, 1.5" Border, White on Brown;
"Saylorville Lake", E Mod 2K; "2", E Mod 2K;
Arrow III-8S - 10.5" 0°;

6.0" Radius, 1.5" Border, White on Brown;
"Jester Park", E Mod 2K; "4", E Mod 2K;
Arrow III-8S - 10.5" 0°;

6.0" Radius, 1.5" Border, White on Green;
"Polk City", E Mod 2K; "4", E Mod 2K;
Arrow III-8S - 10.5" 0°;

SIGN PANEL
DETAILS

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Traffic Sign Items	
1	2401-6745355	REMOVAL OF CONCRETE FOOTINGS OF HIGHWAY SIGNS	EACH	12	<p>Refer to Tabulation 190-62 for locations and details.</p> <p>This item shall consist of removal of concrete footings for steel breakaway sign support posts.</p> <p>Concrete footings or parts of concrete footings removed shall become the property of the Contractor, and shall be removed in accordance with Article 1104.08.</p> <p>Unless otherwise provided or ordered, concrete footings for steel breakaway sign support posts shall be removed 1 foot below natural ground surface. Where portions of the existing concrete footings lie wholly or in part within limits for a new structure (culvert, concrete footing, or other), they shall be removed as necessary to accommodate construction of the proposed structure.</p> <p>Holes remaining from the removal of concrete footings for steel breakaway sign support posts shall be backfilled with suitable earth to the original level or to the natural ground surface in accordance with Article 2402.09.</p> <p>Measurement: The Engineer will count each concrete footing for steel breakaway sign support post removed.</p> <p>Payment: For each concrete footing for steel breakaway sign support post removed, the Contractor shall be paid the contract unit price. This payment shall be full compensation for furnishing all material, equipment, and labor and for the performance of all work necessary for removal of the concrete footings from the project and for any backfilling made necessary by these operations.</p>
2	2524-6765120	REMOVAL OF TYPE B SIGN	EACH	4	<p>Refer to Tabulation 190-62 for location and details.</p> <p>Item is for the removal of extruded aluminum structural panel from its support structure ie: wood/steel posts, overhead truss or other sign.</p> <p>Measurement: Each. The Engineer will count the number of Type B sign panels removed.</p> <p>Payment: The Contractor will be paid the contract unit price for each Type B sign panel removed.</p>
3	2524-6765210	REMOVAL OF TYPE A SIGN ASSEMBLY	EACH	26	<p>Refer to Tabulation 190-62 for location and details.</p> <p>This item for the removal of Type A Sign Assemblies, including the sign panels, sign brackets, supporting structures and hardware. Contractor shall carefully dismantle each sign assembly. Sign posts, brackets and hardware shall become property of the Contractor. Sign panels shall become property of the DOT and shall be delivered to the nearest DOT maintenance facility. All holes resulting from removal of post shall be filled level with the adjacent grade with backfill material conforming to the Standard Specifications.</p> <p>Measurement: The Engineer will count the number of sign assemblies removed.</p> <p>Payment: The Contractor will be paid the contract unit price for each sign assembly removed.</p>

Item no.	Item Code	Item	Unit	Quantities	Estimate Reference Notes
				Estimated	
				Traffic Sign Items	
4	2524-6765220	REMOVAL OF TYPE B SIGN ASSEMBLY	EACH	17	<p>Refer to Tabulation 190-62 for location and details.</p> <p>This item for the removal of Type B Sign Assemblies, including the sign panels, sign brackets, supporting structures and hardware. Contractor shall carefully dismantle each sign assembly. Sign posts, brackets and hardware shall become property of the Contractor.</p> <p>All holes resulting from removal of posts shall be filled level with the adjacent grade with backfill material conforming to the Standard Specifications.</p> <p>Measurement: The Engineer will count the number of sign assemblies removed.</p> <p>Payment: The Contractor will be paid the contract unit price for each sign assembly removed.</p>
5	2524-9081275	CONCRETE FOOTING FOR BREAKAWAY SIGN POST, 2'-8" DIA. X 7'-6"	EACH	38	Refer to Tabulation(s) 190-50 (and 190-51) for details.
6	2524-9276010	PERFORATED SQUARE STEEL TUBE POSTS	LF	280	<p>Refer to Tabulation(s) 190-50 and/or 190-51 for locations and details. Lengths in tabulations are estimate only. Actual lengths shall be determined by field survey. Surveys are the responsibility of the Contractor and are considered incidental to this item.</p> <p>Each post shall consist of a 2 1/4 inch 12 gauge square tubular post nested inside a 2 1/2 inch 12 gauge square tubular post. The interior 2 1/4 inch post shall be a minimum seven feet long.</p> <p>The posts shall meet the requirements in standard specification 4186.</p> <p>Measurement: The Engineer shall measure to the nearest foot from the top of the anchor to the top of the post. The interior nested length of the 2 1/4 inch post will not be measured separately but included in the price bid for Perforated Square Steel Tube Posts.</p> <p>Payment: Per Linear Foot. Payment is full compensation for furnishing, fabricating, and erecting the posts.</p>
7	2524-9276027	PERFORATED SQUARE STEEL TUBE POST ANCHOR, TRIANGULAR SLIP BASE ASSEMBLY	EACH	20	Refer to Tabulation(s) 190-50 and/or 190-51 for locations and details.
8	2524-9281210	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 8 X 21	LF	604	Refer to Tabulation 190-50 for locations and details. Lengths in tabulations are estimate only. Actual lengths shall be determined by field survey. Surveys are the responsibility of the Contractor and are considered incidental to this item.
9	2524-9281426	STEEL BREAKAWAY SIGN POSTS FOR TYPE A OR B SIGNS, W 12 X 26	LF	40	Refer to Tabulation 190-50 for locations and details. Lengths in tabulations are estimate only. Actual lengths shall be determined by field survey. Surveys are the responsibility of the Contractor and are considered incidental to this item.
10	2524-9380001	TYPE B SIGNS, EXTRUDED ALUMINUM STRUCTURAL PANEL	SF	1,585.25	Refer to Tabulation 190-50 for locations and details.
11	2528-8445110	TRAFFIC CONTROL	LS	1	Refer to Traffic Control Plan on Sheet J.1 and allowable lane closure maps on Sheets J.2 - J.4.
12	2533-4980005	MOBILIZATION	LS	1	--
13	2545-1000000	OVERLAY TYPE B GUIDE SIGNS	SF	468	

<div>105_04 4/21/26</div> <div>STANDARDS</div> <div>The following Standards apply to construction work on this project.</div>		
Number	Date	Title
SI-101	04-19-16	Locations - Type 'A' Signs
SI-102	04-19-16	Locations - Type 'B' Signs
SI-112	04-19-16	Footings For Steel Breakaway Posts
SI-113	10-15-19	Support Structures - Steel Breakaway Posts
SI-121	10-16-18	Fabrication - Sign Legend Components
SI-123	10-20-20	Fabrication - Type 'B' Signs
SI-131	10-18-16	Installation - Type 'A' Signs
SI-132	04-17-18	Installation - Type 'B' Signs
SI-133	10-17-17	Installation - Type 'A' Sign Shim
TC-1	10-15-19	Work Not Affecting Traffic (Two-Lane or Multi-Lane)
TC-202	04-18-23	Work Within 15 ft of Traveled Way
TC-211	10-15-19	Lane Closure on Low Volume Roadway
TC-402	04-18-23	Work Within 15 ft of Traveled Way
TC-416	10-15-19	Partial Lane Closure on Ramps
TC-418	04-18-23	Lane Closure on Divided Highway
TC-420	10-16-18	Lane Closure at Ramps

Tabulation of Materials for Type 'B' Signs

Line No.	SIGN NUMBER					DIR OF TRAVEL	SIGN LOCATION				SIGN SIZE					OVERLAY AREA (SQ FT) (3)	Existing		New		Sig Mat	POST INFORMATION										NEW FOOTINGS					INSTALLATION			Remove Type A Assembly (EA)	Remove Type B Assembly (EA)	Remove Reinstall Sign (EA)	Remove Footing (EA)	SEE SIGNING NOTES	Sign Text									
																	POSTS		Sig Mat																																			
																	POSTS																																					
	No.Post	Met(M)	Wood(W)	Ply(P)	No.Post		Met(M)	Wood(W)	Ply(P)	2.5" 12 ga PSST			MAASH				W8x21	W8x21	W12x26	W12x26	W12x26	Slip Base	1'-6" x 4'-0"	2'-8" x 6'-0"	2'-8" x 7'-6"	2'-8" x 9'-0"	TYPE	DIM "X" (FT)	DIM "Y" (FT)																									
	Post 1	Post 2	Post 3	Post 1	Post 1	Post 2	Post 1	Post 2	Post 3																																													
1.0	20	94	116	S	1	NB			20 (S)				4	4	16			1	W	A	2	T	A	14	15							2						1	24	7	1					RA, IB,PP - See Note 2	JUNCTION US 20 (shield)							
2.0	20	94	116	S	2	NB			20 (S)					5.5	2	11			1	W	A	2	T	A	12	13							2						1	24	7	1					RA, IB,PP - See Note 2	SA Sioux City Waterloo RA						
3.0	20	94	116	S	3	NB			20 (S)					5	6	30			2	T	A	2	M	A				16	17									1	24	7	2	1				RA, RB, IB, PB - See Note 2	SA WEST US 20 (shield) EAST RA							
4.0	20	94	116	S	4	NB			20 (S)					4	5.5	22			1	W	A	2	T	A	15.5	16.5							2						1	24	7	1					RA, IB,PP - See Note 2	WEST US 20 (shield) Ahead LA						
5.0	20	94	116	S	5	NB			20 (S)					6	5.5	33			2	W	A	2	M	A				15.5	16.5									1	24	7	1	1				RA, RB, IB, PB - See Note 2	US 20 (shield) WEST Sioux City LA							
6.0	20	94	116	S	101	SB			20 (S)					4	4	16			1	T	A	2	T	A	14	15							2						1	24	7	1					RA, IB,PP - See Note 2	JUNCTION US 20 (shield)						
7.0	20	94	116	S	102	SB			20 (S)					6	2	12			1	T	A	2	T	A	12	13							2						1	24	7	1					RA, IB,PP - See Note 2	SA Waterloo Sioux City RA						
8.0	20	94	116	S	103	SB			20 (S)					5	6	30			2	T	A	2	M	A				16	17									1	24	7	1	1				RA, RB, IB, PB - See Note 2	SA EAST US 20 (shield) WEST RA							
9.0	20	94	116	S	104	SB			20 (S)					4	5.5	22			1	W	A	2	T	A	15.5	16.5							2						1	24	7	1					RA, IB,PP - See Note 2	EAST US 20 (shield) Ahead LA						
10.0	20	94	116	S	105	SB			20 (S)					6	5.5	33			2	W	A	2	M	A				15.5	16.5									1	24	7	1	1				RA, RB, IB, PB - See Note 2	US 20 (shield) EAST Waterloo LA							
11.0	20	94	121	S	1	NB			20 (S)					4	4	16			1	T	A	2	T	A	13	14							2						1	24	7	1					RA, IB,PP - See Note 2	JUNCTION US 20 (shield)						
12.0	20	94	121	S	2	NB			20 (S)					6	5	30			3	T	A	2	M	A				14	15									1	24	7	3					RA, IB, PB - See Note 2	US 20 (shield) EAST Waterloo KEEP RIGHT							
13.0	20	94	121	S	3	NB			20 (S)					6	5	30			2	T	A	2	M	A				14	15									1	24	7		1				RB, IB, PB - See Note 2	US 20 (shield) WEST Sioux City KEEP LEFT							
14.0	20	94	121	S	4	NB			20 (S)					7.5	8	60			1	W	A	2	M	A				17	18									1	24	7	1					RA, IB, PB - See Note 2	SA US 20 (shield) WEST RA Waterloo							
15.0	20	94	121	S	5	NB			20 (S)					6.5	5	32.5			2	W	A	2	M	A				14	15									1	24	7	1	1				RA, RB, IB, PB - See Note 2	US 20 (shield) WEST Sioux City NEXT LEFT							
16.0	20	94	121	S	6	NB			20 (S)					6.5	5	32.5			1	W	A	2	M	A				14	15									1	24	7	1					RA, IB, PB - See Note 2	US 20 (shield) WEST Sioux City LA							
17.0	20	94	121	S	101	SB			20 (S)					4	4	16			1	T	A	2	T	A	13	14							2						1	24	7	1					RA, IB, PP - See Note 2	JUNCTION US 20 (shield)						
18.0	20	94	121	S	102	SB			20 (S)					6	5	30			3	T	A	2	M	A				14	15									1	24	7	3					RA, IB, PB - See Note 2	US 20 (shield) WEST Sioux City KEEP RIGHT							
19.0	20	94	121	S	103	SB			20 (S)					6	5	30			2	W	A	2	M	A				14	15									1	24	7		1				RB, IB, PB - See Note 2	US 20 (shield) EAST Waterloo KEEP LEFT							
20.0	20	94	121	S	104	SB			20 (S)					7.5	8	60			2	T	A	2	M	A				17	18									1	24	7	2					RA, IB, PB - See Note 2	SA US 20 (shield) WEST RA Sioux City							
21.0	20	94	121	S	105	SB			20 (S)					6.5	5	32.5			2	W	A	2	M	A				14	15									1	24	7	1	1				RA, RB, IB, PB - See Note 2	US 20 (shield) EAST Waterloo NEXT LEFT							
22.0	20	94	121	S	106	SB			20 (S)					6.5	5	32.5			1	W	A	2	M	A				14	15									1	24	7	1					RA, IB, PB - See Note 2	US 20 (shield) EAST Waterloo LA							
23.0	20	94	126	M	104	WB	126.42		126.42				14.5	10	145			2	M	A	2	M	A															1	20	7						IB, PB - Use existing footings. See Note 2	SA US20 (shield) EAST Poplar Ave Double Arrow							
24.0	20	40	155	M		EB	154.25						19	12				3	M	A	--	--	--																						1				3				RF, RB	GAS EXIT 155 FOOD LODGING
25.0	20	40	155	M		WB	156.7						19	12				3	M	A	--	--	--																						1				3				RF, RB	GAS EXIT 155 FOOD LODGING
26.0	20	40	155	R		EB	155(R)						12	7.5				2	M	A	--	--	--																						1				2				RF, RB	GAS FOOD LODGING
27.0	20	40	155	R		WB	155(R)						12	7.5				2	M	A	--	--	--																						1				2				RF,RB	GAS FOOD LODGING
28.0	35	85	102	M	G2F4	NB	102		102				19.5	12	19.5	12		234	3	M	A	--	--	A																													SO	EXIT 102 GAS FOOD

Tabulation of Materials for Type 'B' Signs

[illegible]

(1) Mile post information is given for general location only. Use station numbers or stakes for exact location.

(2) Post lengths are estimates. Actual post length to be determined by field measurement.

(3) Remove and reinstall white and yellow panels under sign. See sheet B4 for details

<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div>The following tolerances will be allowed on all signs: Accumulation error of not greater than +/-0.50" per line of copy, not greater than +/-0.50" for spacing between lines of copy, and the margin between lines of copy and the inside edge of the sign border. The following tolerances will be allowed on each letter or numeral: nominal height variation in height variation in width 4" thru 12" -1/8" to +3/8" -1/4" to +1/4" over 12" -1/8" to +3/8" -3/8" to +3/8" ----- Type B signs can be separated into two categories: - Major Guide Signs. - Minor Guide Signs. Major Guide Signs include the advance and exit direction guide signs for an interchange or intersection. Minor Guide Signs include all other guide signs such as NEXT EXIT signs, supplemental guide signs, logo signs, exit gore signs, post-interchange mileage signs, ramp destination signs, and ramp logo signs for an interchange, as well as destination signs along sideroads. Type A signs are not separated into categories, but special consideration should be given to regulatory signs. Do not remove Type B signs until replacement signs have been installed. If construction activities require the removal of a sign, the existing sign may be relocated to temporary posts, or a temporary plywood sign may be installed to replace the existing sign. Existing non-regulatory Type A signs are NOT required to remain in place until installation of replacement signs. Existing regulatory Type A signs, particularly Stop signs, should not be removed until replacement signs are installed. Where a staged traffic control plan is contrary to this guidance, follow the direction of the traffic control plan. Apply the following during the replacement or modification of signs: - No more than one of the major guide signs for each direction of travel at an interchange out of service at any one time. - No major guide sign out of service for more than 8 hours. - No minor guide out of service for more than 24 hours. Remove existing signs and posts within 24 hours following the installation of a new replacement sign. In any case where the plans call for a new sign and</div>			<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div>posts to be installed at the same station location and offset as an existing sign, install the new posts at a minimum of either 5 ft ahead or behind the existing sign installation. Signs shall not be installed more than 25 ft ahead or behind the existing sign installation. Whenever posts for a replacement sign are erected directly in front of an existing sign, install the new replacement sign and remove the existing sign installation within 24 hours of the time that the new posts are erected. Where signs are located behind guardrail, locate the near edge of the sign a minimum of 3 ft behind the guardrail posts. Unless noted otherwise, leave auxiliary panels, such as exit number panels, in place or reattach to the sign using the existing mounting hardware. Also, when replacing an existing logo sign with a new logo sign, remove the business logo panel(s) from the existing sign and attach to the new sign as directed by the Engineer. Do not damage the auxiliary or logo panels when removing and reattaching them. This work is incidental to other work and no separate payment will be made. The following notes apply to the corresponding sign installations shown on the plan sheets and listed in the tabulations. IB INSTALL NEW TYPE B SIGN IA INSTALL NEW TYPE A SIGN Install new signs at the location identified in the plans. For installation of new signs on an existing sign support structure, refer to note (L). For installation of new signs on existing posts: - if the new sign is taller than the existing sign, furnish the necessary hardware to extend the sign above the posts. Refer to Standard Road Plan SI-132. - if the new sign is shorter than the existing sign: - for wood posts and perforated square tube posts, install the sign at the proper height and cut off the excess post length. - for MASSH-400 and steel breakaway posts, install the sign at the top of the posts. For plywood signs, no vertical splices are allowed in signs less than or equal to 10 ft wide. No horizontal splices are allowed in signs less than or equal to 4 ft tall. Each new sign installed shall have a sticker applied to the back of the sign that shows the date the sign was installed. The Contractor shall supply the sticker for all contractor supplied signs. The DOT will supply date</div>			<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div>stickers on any signs supplied by the department. Payment for installing Type A signs or Type B signs includes furnishing hardware for mounting, extending signs above existing posts, and cutting posts to length. MS MODIFICATION OF EXISTING SIGNS For removal and/or installation of logo panels, and other sign modifications. Refer to the project plans and typical details for additional information. SC SIGN COVER For the installation or removal of temporary sign covers for the purposes of temporary traffic control. Sign covers shall completely cover the existing Sign. Care should be taken so that covers, fasteners, and installation practices do not damage the existing sign. Tape of any type shall not be applied to the sheeted face of the existing sign under any circumstances. Repair of damage to the existing sign caused by sign covers will be the responsibility of the Contractor. SO OVERLAY TYPE B GUIDE SIGNS MB INSTALL SPECIAL MOUNTING BRACKET Install special mounting brackets at the locations identified in the plans. Refer to Tabulations 190-51 and/or 190-65. PB INSTALL NEW BREAKAWAY STEEL POSTS AND FOOTING PP INSTALL NEW PERFORATED SQUARE TUBE POSTS AND ANCHORS PM INSTALL NEW MASSH-400 POSTS AND ANCHORS Install new breakaway steel posts and footings, perforated square tube posts and anchors, or MASSH-400 posts and anchors at the locations identified in the plans. Refer to the Standard Road Plans, Typicals, and Tabulations 190-51 and 190-50 for post size and footing information. New posts shall be installed in undisturbed soil. The new posts shall not be placed in the hole of removed posts. Remove excess soil from footing hole. Do not spread soil on adjacent seeded or vegetated areas. If note (RR) accompanies (PB), (PP), or (PM), install an existing sign on the new posts. RR REMOVE AND REINSTALL SIGN AS PER PLAN Do not remove existing major Type B guide signs on posts until the new posts are installed. Promptly remove sign and install at the new location. Existing major Type B guide signs on overhead support</div>			<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div>structures, minor Type B guide signs, plywood signs, and Type A signs may be removed and stored. Transport the signs to a DOT storage area as designated by the Engineer. Transport the signs back to the job site when ready for installation at the new location. Signs to be reinstalled shall not be stored for any length of time with the sheeted face in contact with the ground. Replace signs damaged by the Contractor's activities at no additional cost to the Contracting Authority. Payment for Remove and Reinstall Sign includes sign removal, delivery to and from the DOT storage area (if applicable), and reinstallation, including any hardware required for reinstallation. When noted in the plans, payment for delivery and stockpile of existing signs will be separate from the payment for Remove and Reinstall Sign. RA REMOVAL OF TYPE A SIGN ASSEMBLY RB REMOVAL OF TYPE B SIGN ASSEMBLY Type A Sign Assembly consists of one or more signs installed on one or more posts, either directly mounted to the post or mounted to the post with special sign mounting brackets. Type B Sign Assembly consists of the main sign, all auxiliary signs and brackets, and posts. Unless stated otherwise in the plans, remove all posts with the signs and brackets. Remove each sign assembly identified in the plans. Sign posts removed become the property of the Contractor. All other materials removed remain the property of the DOT. For each sign assembly removed, disassemble each assembly before delivering to the DOT. * For Type A sign assemblies, unbolt all signs, special mounting brackets, and posts from each other. * For Type B assemblies, unbolt all extruded aluminum panels, brackets, and posts from each other. Do not damage the disassembled materials. When the plans call for the removal of posts, the entire existing post shall be removed. The post shall not be broken off or cut off at the ground line. Place backfill in holes remaining from the removal of posts and restore to the surrounding conditions. Deliver the removed signs, special sign mounting brackets, and extruded aluminum panels to a DOT storage area, as designated by the Engineer.</div>		
FILE NO.	ENGLISH	DESIGN TEAM	Fobian	STATEWIDE	COUNTY	PROJECT NUMBER	NHSN-000-T(426) --2R-00	SHEET NUMBER	C.6		

<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div><p>The concrete footings for steel posts are not considered part of the sign assembly. Refer to note RF for concrete footing removal.</p><p>Payment for Removal of Type A Sign Assembly or Removal of Type B Sign Assembly includes sign assembly removal and disassembly, post removal (if applicable), delivery to the DOT storage area, placing backfill in holes, and restoration of the surrounding conditions.</p><p>RF REMOVE EXISTING CONCRETE FOOTING FOR STEEL POST</p><p>Remove existing concrete footings to a depth of at least 1 ft below the natural groundline. Place backfill in holes remaining from removal and restore to the normal surrounding conditions. This work is incidental to other work and no separate payment will be made.</p><p>RS REMOVE EXISTING TYPE B SIGN SUPPORT STRUCTURE</p><p>The following are considered Type B Sign Support Structures:</p><ul style="list-style-type: none">- Overhead sign trusses and foundations- Cantilever sign trusses and foundations- Bridge-mounted brackets<p>Unless stated otherwise in the plans, existing overhead trusses, cantilever trusses, and bridge brackets which are removed become the property of the Contractor. If stated in the plans, deliver overhead trusses, cantilever trusses, and bridge brackets to a DOT storage area, as designated by the Engineer.</p><p>Payment for Removal of Sign Support Structure and Foundation includes sign support structure removal, delivery to the DOT storage area (if applicable), and restoration of the surrounding conditions. Removal of the foundation includes removal of the stem to a minimum of 1 ft below the natural groundline.</p><p>L MODIFY SIGN SUPPORT ANGLES NEEDED TO INSTALL SIGNS ON EXISTING SIGN SUPPORT STRUCTURES</p><p>Refer to the sign support structure details for information on the required angle brackets.</p><p>Provided all specifications are met, the existing sign support angles may be reused. Install existing sign support angles to be reused only on the sign support structure from which they were removed.</p><p>Sign support angles removed and not reused become the property of the Contractor.</p><p>When reusing the existing sign support angles with a shorter replacement sign, the sign support angles may</p></div>				<div>259_01 10/15/25</div> <div>SIGNING NOTES</div> <div><p>need to be trimmed. Refer to the sign support details to determine if and where to trim the sign support angles.</p><p>Do not use existing fasteners. Use new U-Bolts, stainless steel bolts and nuts to install the existing or new sign support angles to the sign support structure.</p><p>Removal of existing sign support angles is incidental to removal of the sign.</p><p>Reinstalling and/or modifying existing sign support angles; furnishing and installing new sign support angles (if required); and furnishing and installing new fasteners is incidental to work associated with Type B signs.</p><p>SIGN INSTALLATION QUALITY CONTROL NOTES</p><p>Post lengths have been derived from the proposed grading cross sections. Verify post lengths in the field prior to ordering or fabrication.</p><p>Slight differences between the design template and the actual conditions should be expected. These variations should be resolved by doing some localized shaping and grading. Obtain material needed to meet the site requirements of SI-112 from the excavation and/or the area immediately adjacent to the work. Ensure reshaping work does not substantially change foreslopes or the drainage in the vicinity of the sign.</p><p>Significant differences between the plan design and the actual field conditions shall be resolved in this manner:</p><p>Survey the location and draw the actual template on the cross section. Recalculate each post length and compare to the maximum allowable leg length. If all of the maximum leg lengths are less than or equal to the maximum allowable leg length, then the proposed post design will be sufficient. If any leg is greater than the maximum allowable leg length, then submit the cross section with the actual template drawn (including offsets and elevation from the survey shown) to the Engineer. The Engineer may forward this information to the Engineer of Record in order to complete a new post design.</p><p>Install the footings, stub posts, and posts according to the tolerances shown on the applicable SI Series Standard Road Plans.</p><p>Footing construction is the controlling activity that substantially affects the quality of the site installation. Verify the elevation difference between the stubs is exactly the same as the elevation difference between the post lengths. If the Engineer requests, submit documentation detailing the site cross section in order to verify site installation.</p></div>					
FILE NO.	ENGLISH	DESIGN TEAM	Fobian	STATEWIDE COUNTY	PROJECT NUMBER	NHSN-000-T(426)--2R-00	SHEET NUMBER	C.7	

108_23A
8/15/22

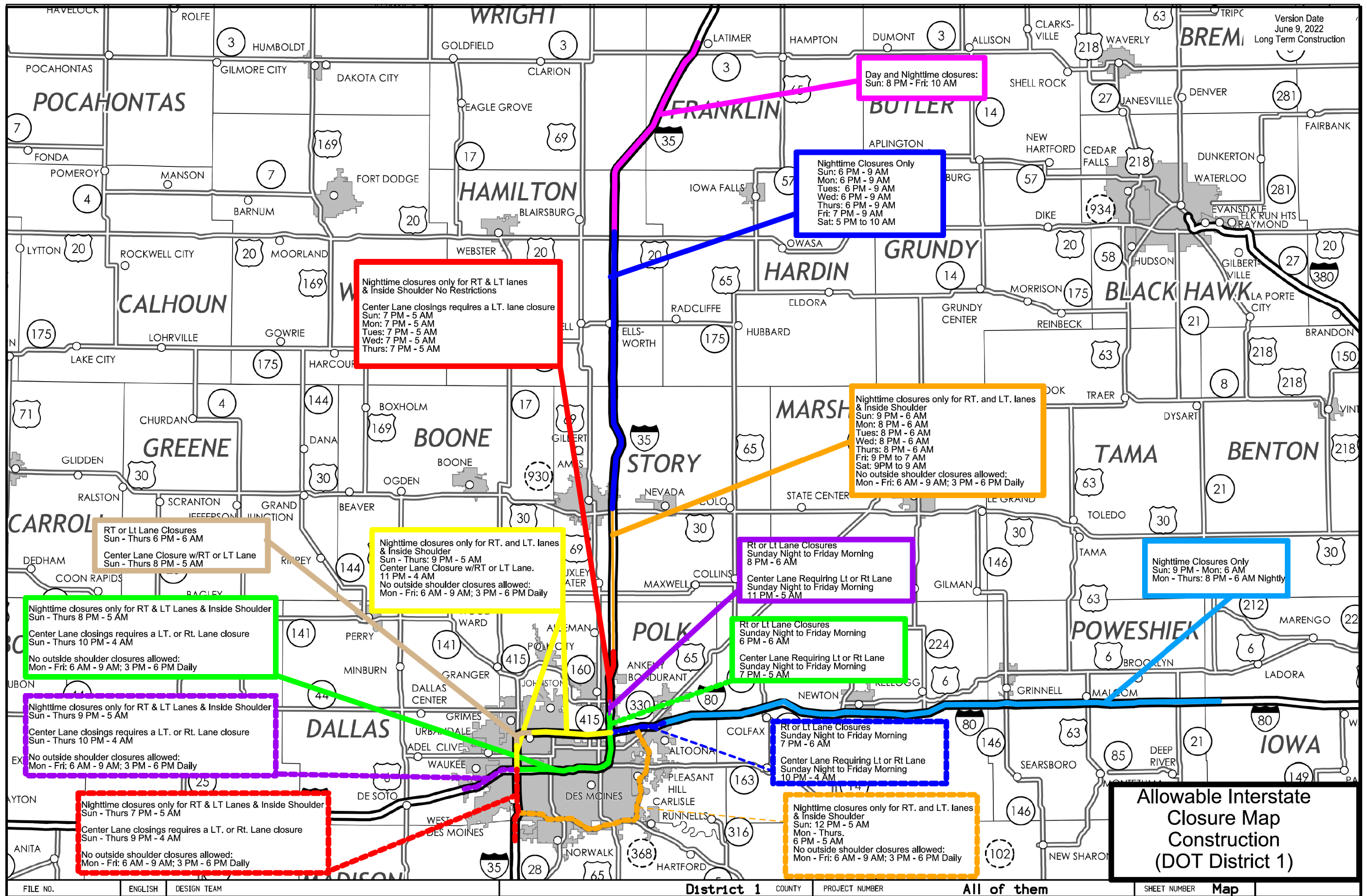
TRAFFIC CONTROL PLAN

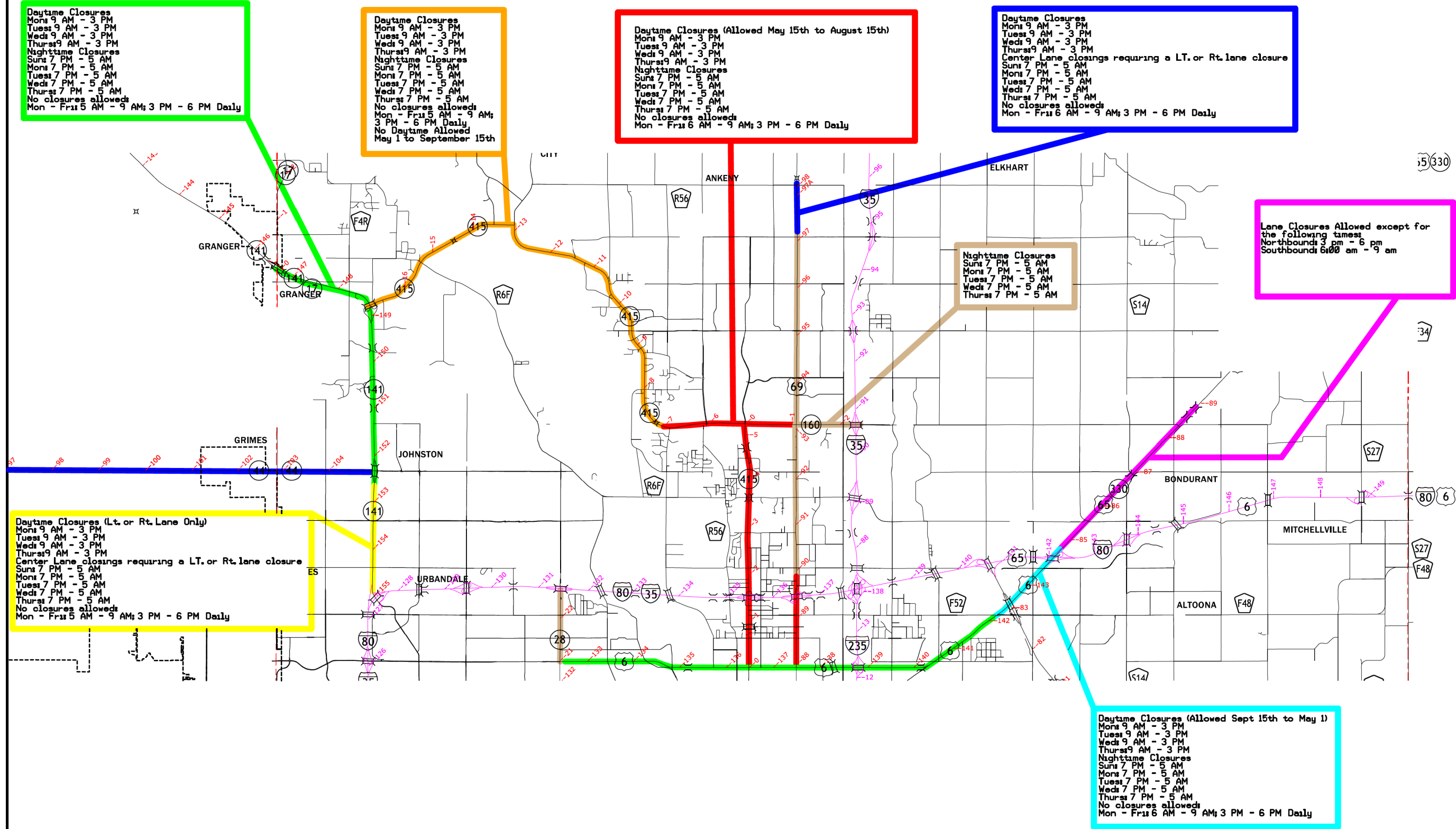
Traffic Shall be maintained at all times except as noted.

Traffic control on this project shall be in accordance with the Standard Road Plans included in Tabulation 105-4. For additional information, refer to Part 6 of the Manual on Uniform Traffic Control Devices and the Standard Specifications. The contractor shall coordinate traffic control with other projects in the area as needed.

No traffic control devices shall be placed before any of the time restrictions.

All lane and/or shoulder closures shall be coordinated with District Staff or as approved by the Engineer. For lane closure information refer to the Allowable Multi-lane Lane Closure Maps on Sheets J.2 - J.4.





Des Moines Metro Allowable Lane Closures

Date: 12/9/22

FILE NO.	ENGLISH	DESIGN TEAM	COUNTY	PROJECT NUMBER	SHEET NUMBER
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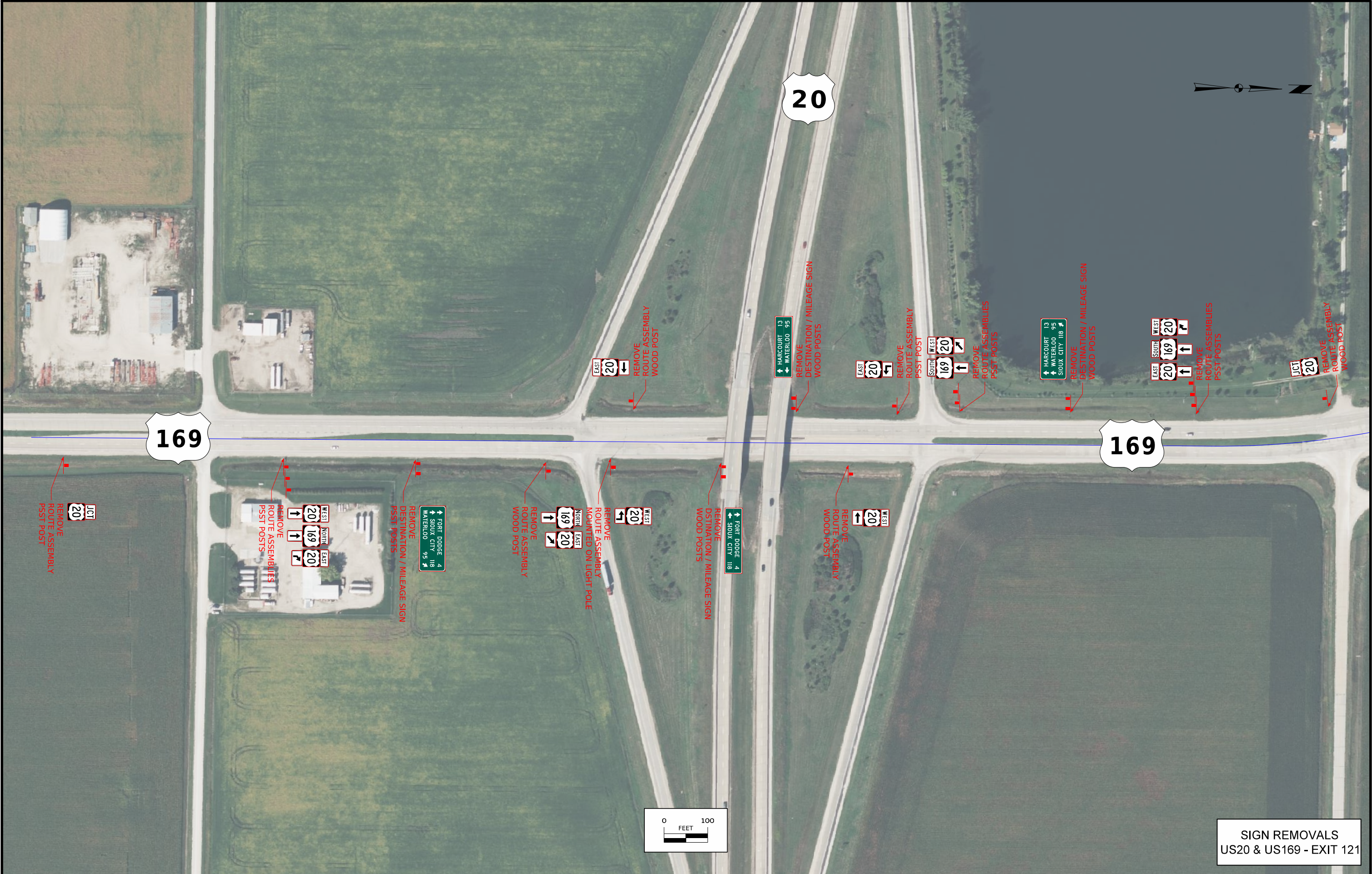
FILE NO. --	ENGLISH	DESIGN TEAM Fobian	STATEWIDE	COUNTY	PROJECT NUMBER NHSN-000-T(426)--2R-00	SHEET NUMBER J.3
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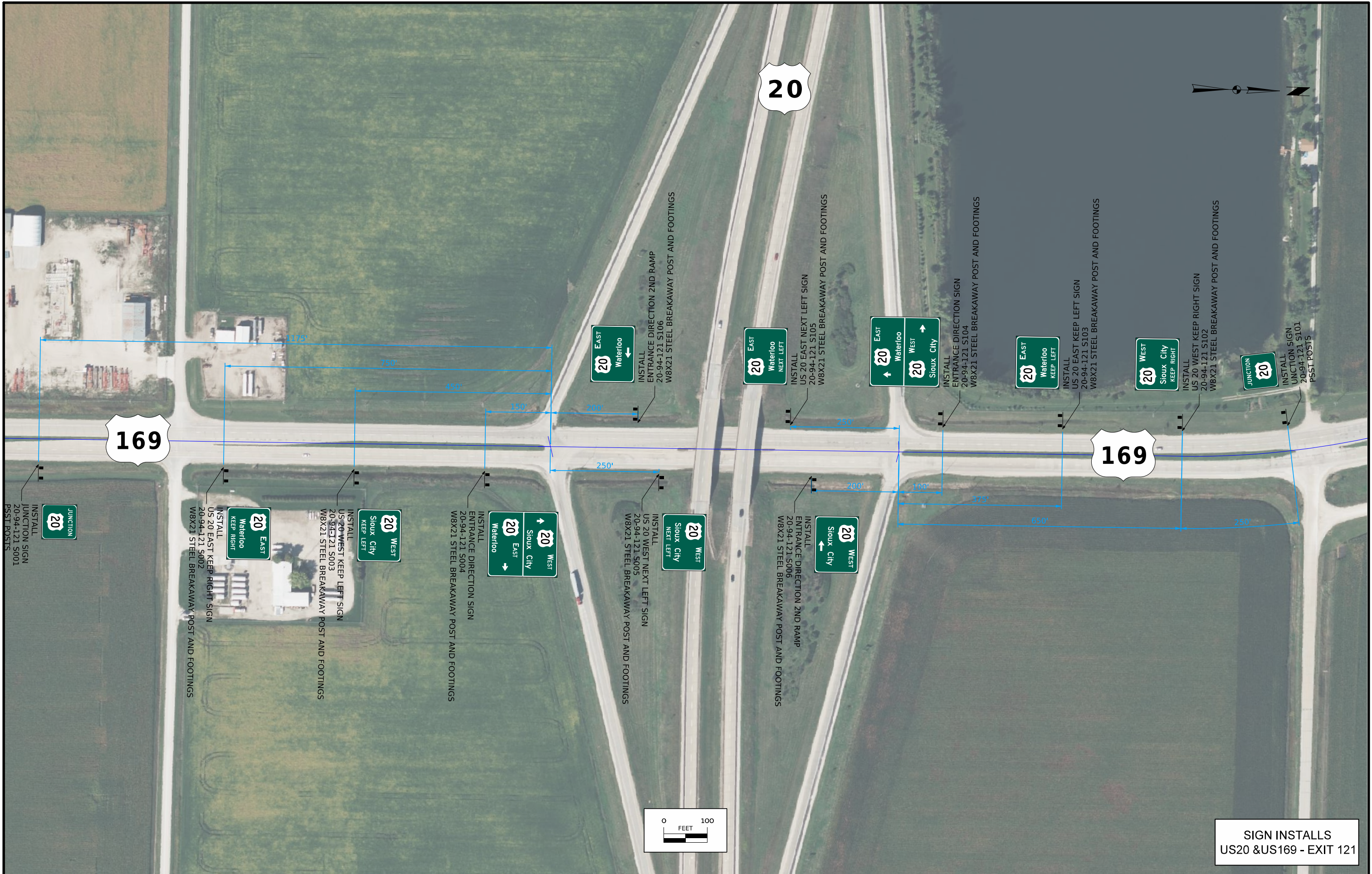
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SIGN REMOVALS
US20 & D36 - EXIT 116







SIGN INSTALLS
US20 & US169 - EXIT 121