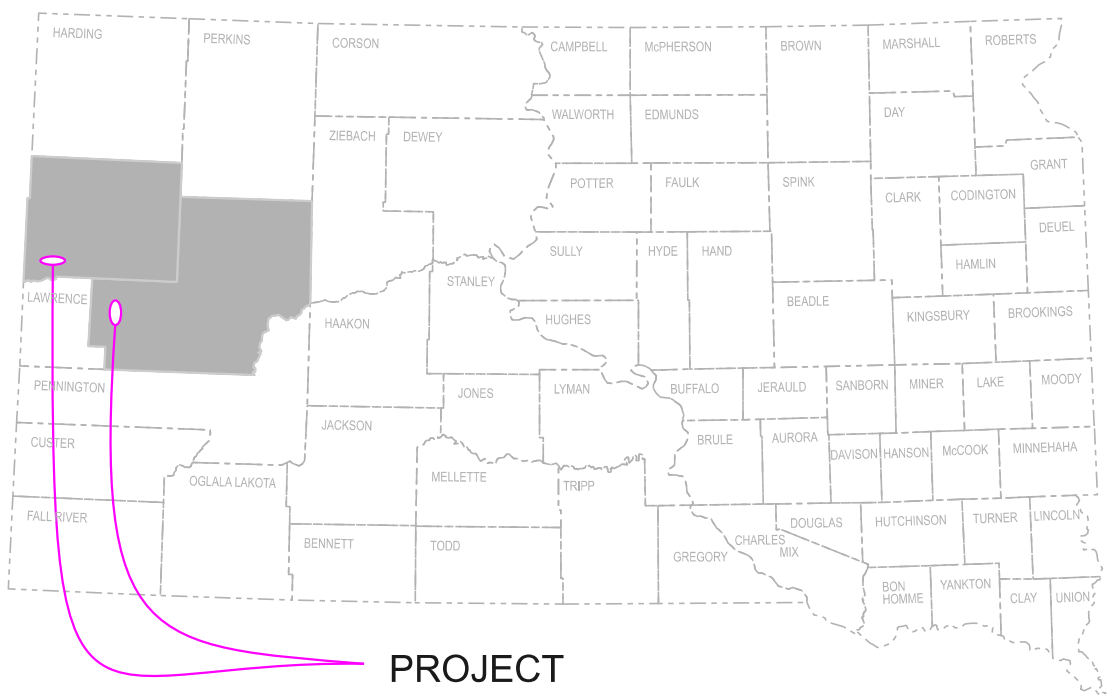


STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED

SD DOT	PROJECT	SECTION	SHEET
	079-476 212-476	Non	1/16

Plotting Date: 04/12/2024



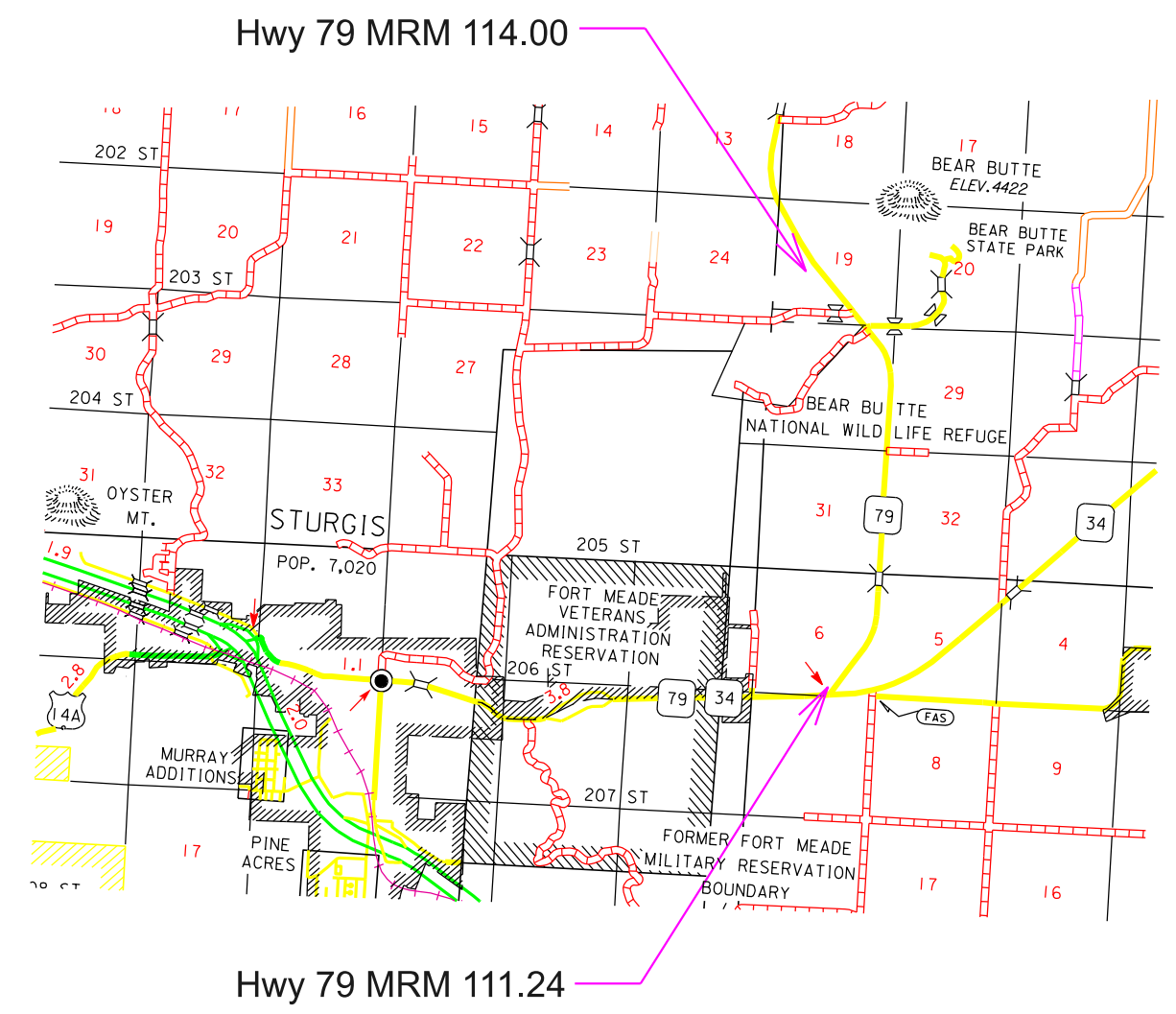
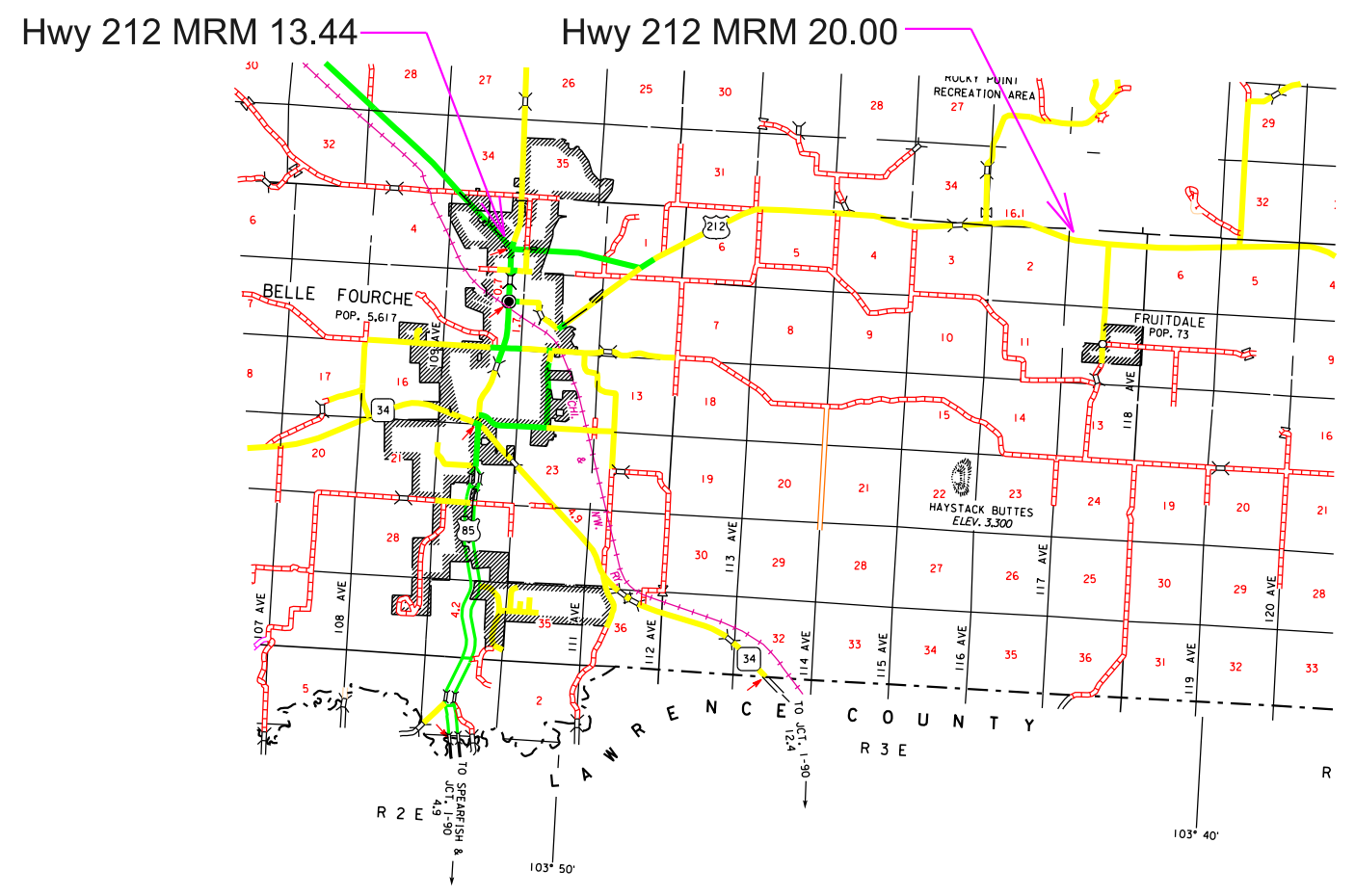
PROJECT 079-476 & 212-476 SD HIGHWAY 79 & US HIGHWAY 212 BUTTE & MEADE COUNTY

SIGNING UPGRADES
PCN i7HT & i7HU

INDEX OF SHEETS

1	General Layout with Index
2-5	Estimate with General Notes and Tables
6-8	Sign Details
9-11	Footing Details
12-16	Standard Plates

PROJECT



STORM WATER PERMIT
None Required

DESIGN DESIGNATION - SD 79

ADT (2023)	2199
ADT (2043)	3505
DHV	558
D	50%
T DHV	5.1%
T ADT	11.2%
V	65 mph

DESIGN DESIGNATION - US 212

ADT (2023)	2054
ADT (2043)	2947
DHV	469
D	50%
T DHV	4.9%
T ADT	10.8%
V	65 mph

ESTIMATE OF QUANTITIES

PCN i7HT

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0130	Remove Traffic Sign	4	Each
632E1375	4.0"x4.0" Tubular Post	116.7	Ft
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	33.3	SqFt
632E3525	Install State Furnished Sign	150.0	SqFt
632E6100	Slip Base Assembly for 4.0"x4.0" Tubular Post	8	Each
632E6105	Multi-Directional Hinge Assembly for 4.0"x4.0" Tubular Post	8	Each
632E6110	4.0"x4.0" Tubular Post Closure Cap	8	Each
634E0110	Traffic Control Signs	73.0	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

PCN i7HU

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
009E0010	Mobilization	Lump Sum	LS
110E0130	Remove Traffic Sign	6	Each
632E0014	1.75' Diameter Breakaway Support Concrete Footing	12.0	Ft
632E1240	W8x18 Steel Post	70.9	Ft
632E1375	4.0"x4.0" Tubular Post	50.0	Ft
632E3113	Extruded Aluminum Sign, Nonremovable Copy High Intensity	150.0	SqFt
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	32.0	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	74.0	SqFt
632E6100	Slip Base Assembly for 4.0"x4.0" Tubular Post	4	Each
632E6105	Multi-Directional Hinge Assembly for 4.0"x4.0" Tubular Post	4	Each
632E6110	4.0"x4.0" Tubular Post Closure Cap	4	Each
634E0110	Traffic Control Signs	277.6	SqFt
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS
634E0420	Type C Advance Warning Arrow Board	2	Each

SPECIFICATIONS

Standard Specifications for Roads and Bridges, 2015 Edition and Required Provisions, Supplemental Specifications, and Special Provisions as included in the Proposal.

UTILITIES

The Contractor will be aware that utilities may be present in the areas of the sign replacements. A utility survey was not completed for this project. The Contractor will be responsible for having all utilities located prior to removal of existing signs and installation of new signs.

SEQUENCE OF OPERATIONS

The Contractor will submit a sequence of operations for approval two weeks prior to the preconstruction meeting. If changes to the sequence of operations are proposed during the project, these must be submitted for review a minimum of one week prior to potential implementation. Approval for changes to the sequence of operations will only be allowed when the proposed changes meet with the Department's intent for traffic control and sequencing of the work.

GENERAL TRAFFIC CONTROL

Existing guide, route, informational logo, regulatory, and warning signs will be temporarily reset and maintained during construction. Removing, relocating, covering, salvaging, and resetting of existing traffic control devices, including delineation, will be the responsibility of the Contractor. Cost for this work will be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost will be replaced by the Contractor at no cost to the State.

All temporary traffic control sign locations will be set in the field by the Contractor and verified by the Engineer prior to installation.

All construction operations will be conducted in the general direction of traffic movement.

If there is a discrepancy between the traffic control plans, standard plates, and the MUTCD, whichever is more stringent will be used, as determined by the Engineer.


Unless otherwise stated in these plans, work will not be allowed during hours of darkness.

TRAFFIC CONTROL SIGNS

Traffic control signs have been included in a table for each route. Payment will only be for those signs used on each route.

TABLE OF TRAFFIC CONTROL SIGNS – PCN i7HT

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
W20-1	ROAD WORK AHEAD	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					73.0

	PROJECT	SECTION	SHEET
	079-476 212-476	Non	2/16

Plotting Date: 04/12/2024

TABLE OF TRAFFIC CONTROL SIGNS – PCN i7HU

ITEMIZED LIST FOR TRAFFIC CONTROL SIGNS

SIGN CODE	SIGN DESCRIPTION	CONVENTIONAL ROAD			
		NUMBER	SIGN SIZE	SQFT PER SIGN	SQFT
R3-7R	RIGHT LANE MUST TURN RIGHT	2	30" x 30"	6.3	12.6
W4-2	LEFT or RIGHT LANE ENDS (symbol)	2	48" x 48"	16.0	32.0
W9-2	LANE ENDS MERGE LEFT	2	48" x 48"	16.0	32.0
W20-1	ROAD WORK AHEAD	4	48" x 48"	16.0	64.0
W20-4	ONE LANE ROAD AHEAD	2	48" x 48"	16.0	32.0
W20-5	LEFT or RIGHT LANE CLOSED AHEAD	2	48" x 48"	16.0	32.0
W20-7	FLAGGER (symbol)	2	48" x 48"	16.0	32.0
W21-5	SHOULDER WORK	2	48" x 48"	16.0	32.0
G20-2	END ROAD WORK	2	36" x 18"	4.5	9.0
CONVENTIONAL ROAD TRAFFIC CONTROL SIGNS SQFT					277.6

GENERAL PERMANENT SIGNING

New sign installations will be staked in the field by the Contractor and checked by the Engineer. The Contractor will give the Engineer a minimum of one week to check staked locations prior to signpost installation. Lateral offset of signs will be as shown in the plans or as directed by the Engineer.

The Contractor will be responsible for contacting South Dakota One Call to locate the utilities at the staked sign installation locations.

When signs are mounted in an assembly, they will be 1-2 inches apart vertically and horizontally.

The height of the post must not exceed the minimum height needed by more than 0.5 feet. Any portion that extends above the sign will be cut off. No separate payment will be made for cutting the post or for that length cut off.

Aluminum Sign Brace will be used on all signs 36 inches or greater in width and will conform to ASTM B221 Alloy 6063-T6 or 6061-T6. The Aluminum Sign Brace will be 2 inches in width and free of holes. The Aluminum Sign Brace will also be used to connect various signs together so that an entire sign assembly can be erected on a single installation. Stiffeners may be fastened to signs by use of 1/4-inch diameter drive rivets.

The Contractor will use a method to attach the sign to the posts that is compatible with the sign posts.

Prior to ordering signs, the Contractor will verify dimensions, background, border, and legend of the signs.

Prior to use, the Contractor will provide documentation for the sign support devices showing they meet the applicable NCHRP 350 or MASH requirements.

REMOVE TRAFFIC SIGN

Existing signs that are shown as being removed in the Permanent Signing Table will become the property of the Contractor. Existing signposts and bases will be removed in their entirety. All existing signs, posts, and/or hardware removed will not be reused. Holes remaining from the removal of wood posts will be backfilled and compacted with material placed in layers not to exceed 6 inches in depth.

All costs associated with the removal of existing signs, posts, hardware, and backfilled holes will be incidental to the contract unit price per each for "Remove Traffic Sign". Quantities will be per assembly at the contract unit price per each.

NEW PERMANENT SIGNING

All signs will be manufactured in accordance with the sheeting manufacturer's recommendations utilizing a matched component system, including inks, electronic cuttable films, and protective overlay films.

All Flat Aluminum Signs, Nonremovable Copy High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type IV. All Flat Aluminum Signs, Nonremovable Copy Super/Very High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type XI.

All Extruded Aluminum Signs, Nonremovable Copy Super/Very High Intensity will have sheeting in conformance with the requirements of ASTM D4956 Type XI.

All costs associated with furnishing and installing the new permanent signs, and with furnishing and installing stiffeners and hardware will be incidental to the contract unit price per square foot for "Flat Aluminum Sign, Nonremovable Copy High Intensity", "Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity", or "Extruded Aluminum Sign, Nonremovable Copy High Intensity".

STATE FURNISHED SIGN

The Contractor will need to coordinate with the project engineer to pickup the State Furnished Signs. The State Furnished Signs are currently being stored at the SDDOT Newell Maintenance shop. A minimum of one week notice will be needed to allow the project engineer to contact and make arrangements with the maintenance shop.

SLIP BASE ANCHOR

The Contractor will furnish and install new 13" MASSH-400 Slip Base for 4" x 4" tube posts as required in the Permanent Signing Table. Slip Base anchors will be installed in 18" diameter by 48" deep concrete footing. Reinforcing steel will not be required in the concrete footing for 13" MASSH-400 Slip Base for 4" x 4" tube posts.

All costs for furnishing and installing the 13" MASSH-400 Slip Base for 4" x 4" tube posts will be included in the price for "Slip Base Assembly for 4.0"x4.0" Tubular Post".

CONCRETE FOOTING FOR SLIP BASE ANCHOR

The Contractor will furnish and install 18" diameter by 48" deep concrete footing for each 13" MASSH-400 Slip Base for 4" x 4" tube post. Concrete for these footings will meet the requirements of Concrete for Incidental Construction – Class M (M6 Concrete).

The location of the 4 stop signs at int intersection of Hwy 212 and Hwy 85 are located on concrete islands. The Contractor will be required to "core" through the existing concrete to install the 18" diameter footing. Any concrete damaged by the "coring" process will be replaced by the Contractor at no additional cost to the State.

All costs for equipment, materials, and labor to install the concrete footings will be incidental to the unit price for "Slip Base Assembly for 4.0"x4.0" Tubular Post".

TUBULAR POST CLOSURE CAP

Tubular Post Closure Caps will be of a type that is compatible with 4.0"x4.0" Tubular Post. Tubular Post Closure Caps will be capable of keeping water and debris out of the 4.0"x4.0" Tubular Post and will be securely fastened to the post.

DIGITALLY PRINTED SIGNS

Digitally printed signs will be allowed on this project. If the Contractor elects to provide digitally printed signs, such signs will adhere to the following specifications.

PROTECTIVE OVERLAY FILM


Permanent traffic signs printed with digital ink systems will be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlaminates will comply with the retroreflective sheeting manufacturer's recommendations to ensure proper adhesion and transparency and will also meet the reflective film durability as identified in Table 1.

Table 1: Retroreflective Film Minimum Durability Requirements

ASTM D4956 Type	Full Sign Replacement Term (years)	Sheeting Replacement Term (years)
I	0	7
III	7	10
IV	7	10
VIII	7	10
IX	7	12
XI	7	12

FABRICATION

Retroreflective sheeting will be applied to a properly cleaned and prepared aluminum sign blank in accordance with the retroreflective sheeting manufacturer's recommendations. Sign legend will be applied using digital print technologies and systems in accordance with the retroreflective sheeting manufacturer's recommendations and the requirements of these plans.

	PROJECT	SECTION	SHEET
	079-476 212-476	Non	3/16

Plotting Date: 04/12/2024

Finished signs will be free of ragged edges and must be supplied clean and free of scratches, grease, oil, lubricants or other contaminants. Minor blemishes (dirt speck, dust, etc.) may settle on the fresh ink surface or become entrapped between the sheeting surface and transparent overlay film due to static charge within the sign shop environment. Any blemish must be minor and not interfere with the communication of the sign message to the motorist. The blemish must not be visible to the naked eye when viewed from 30 feet or greater.

After application of the retroreflective sheeting, sign blanks will be stacked and packaged face to face, back to back, and protected in accordance with the sheeting manufacturer's recommendations. Finished signs will be securely packaged to prevent damage during transit or storage according to the sheeting manufacturer's recommendations.

TRAFFIC SIGN PERFORMANCE WARRANTY PROVISIONS

Based on the ASTM Type of sheeting specified, traffic control signs will be warranted for the duration shown in Table 1. Full product terms and conditions are as established by each sheeting manufacturer and may contain certain limitations based on sheeting and ink colors, and geographic exposure of the sign. A copy of the warranty document with complete details of terms and conditions will be supplied if requested by the Engineer.

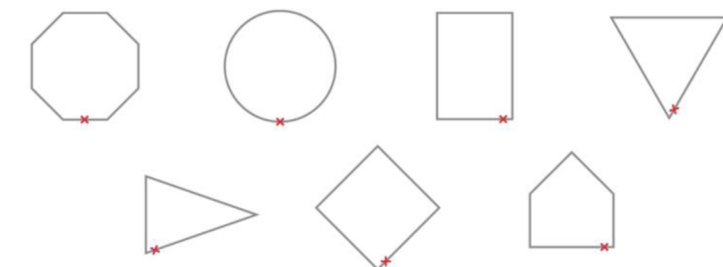
CERTIFIED DIGITAL SIGN FABRICATOR

Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

DATE TAGGING SIGNS WITH PERTINENT INFORMATION

All digitally printed signs are required to be date-tagged with the following 2 components:

1. Date tags on the back of signs
Tags will have the following information and be fabricated with material and printing system that are as durable as the warranted sign.
 - Name of Sign Fabricator
 - Date the sign was fabricated (month and year)
 - Process that was used for sign fabrication (digitally printed)
 - Supplier of sheeting that was used for fabricating the sign.
2. Border date
The month and year (mm/yyyy) of sign fabrication will be printed in the border of the sign in 3/8" sans serif font. Border date will be printed with the same warranted printed system as the sign face. The date should be printed in the locations indicated below.





Plotting Date: 04/12/2024

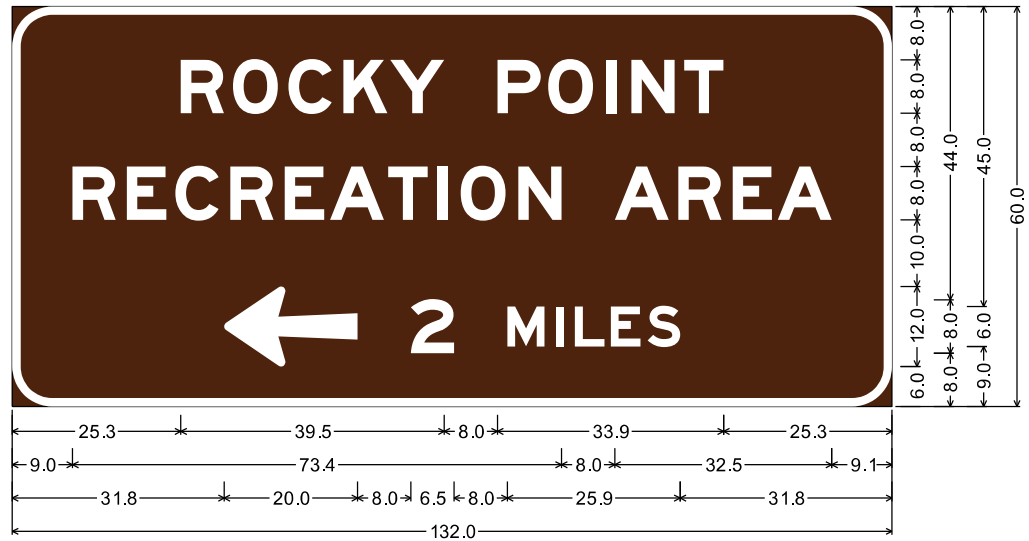
PCN I7HT - PERMANENT SIGNING																														
HWY	MRM	SIGN					POST					SIGN DESCRIPTION	WORK TO BE DONE	LF of 4"	LF of W8x18	FLAT ALUMINUM SIGN			EXTR. ALUMINUM		REMOVE SIGN									
		Side of Road	Width (in)	Height (in)	Direction Facing	Location	New Sign	Sign Type	Remove Existing	Square Footage	Sheeting Type					New Post	Length Post #1 (ft)	Offset to center of Post #1 (ft)	Length Post #2 (ft)	Offset to center of Post #2 (ft)		Size (in)	# of Posts	Shear Slip Base	SQFT STATE FURNISHED	SQFT IV	SQFT XI	SQFT IV	SQFT XI	
79	111.24+0.022	LEFT	114	42	NORTH	SB ROW	YES	FLAT ALUM	YES	33.3	IV	YES	13.8	23	16	28.7	4.0	2	YES	D1-3a: DESTINATION BOARD - 3 LINES W/ ARROW AND DISTANCE Lt Arrow - Union Center 42 Sturgis 3 - Rt Arrow Rapid City 33 - Rt Arrow	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGN ON NEW POSTS AT EXISTING LOCATION. AIRPORT SIGN WILL BE DISCARDED AND NOT REPLACED	29.8		33.3						1
			30	24			NO	FLAT ALUM	YES	5.0	IV									Airport Lt Arrow										
79	114.00+0.273	RIGHT	120	66	SOUTH	NB ROW	YES	FLAT ALUM	YES	55.0	IV	YES	13.6	30	14.9	36	4.0	2	YES	RECREATION DESTINATION BOARD - WORDS W/ ARROW BEAR BUTTE STATE PARK Up Arrow - Campground Lt Arrow - Centennial Trail Horse Camp Education Center - Rt Arrow	REMOVE EXISTING SIGN, SIGN POSTS AND BASES. INSTALL NEW STATE FURNISHED SIGN ON NEW POSTS AT EXISTING LOCATION	28.5		55.0						1
79	114.00+0.454	LEFT	120	48	NORTH	SB ROW	YES	FLAT ALUM	YES	40.0	IV	YES	13.4	30	14.5	36	4.0	2	YES	RECREATION DESTINATION BOARD - WORDS W/ ARROW BEAR BUTTE STATE PARK Lt Arrow - Education Center Centennial Trail Horse Camp - Rt Arrow	REMOVE EXISTING SIGN, SIGN POSTS AND BASES. INSTALL NEW STATE FURNISHED SIGN ON NEW POSTS AT EXISTING LOCATION	27.9		40.0					1	
79	114.00+0.628	LEFT	120	66	NORTH	SB ROW	YES	FLAT ALUM	YES	55.0	IV	YES	14.7	30	15.8	36	4.0	2	Yes	RECREATION DESTINATION BOARD - WORDS W/ ARROW Up Arrow - BEAR BUTTE STATE PARK Bear Butte Lake Campground - Rt Arrow	REMOVE EXISTING SIGN, SIGN POSTS AND BASES. INSTALL NEW STATE FURNISHED SIGN ON NEW POSTS AT EXISTING LOCATION	30.5		55.0					1	
															TOTALS:		116.7	0.0	150.0	33.3	0.0	0.0	0.0	0.0	4					



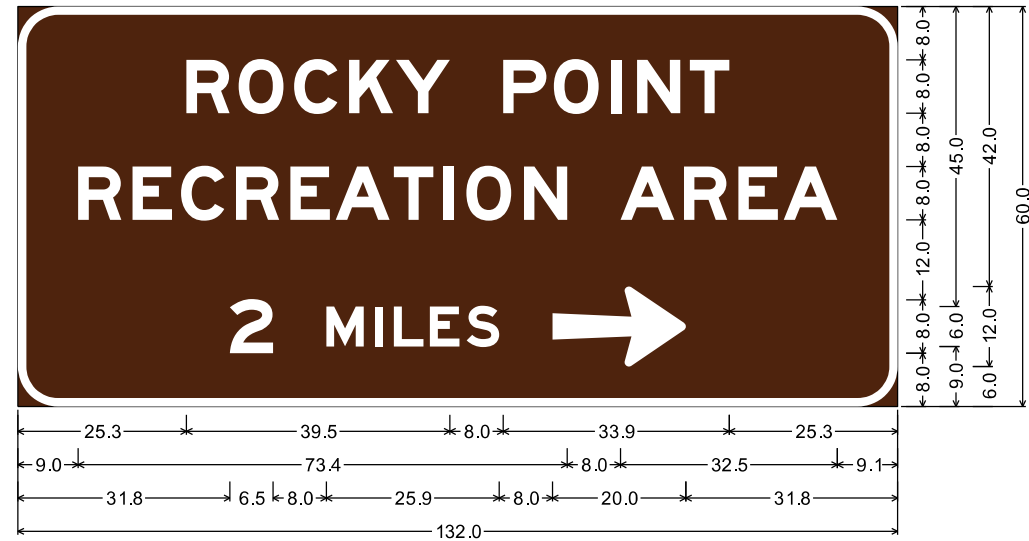
PCN ITHU - PERMANENT SIGNING																												
HWY	MRM	Side of Road	SIGN				POST						SIGN DESCRIPTION	WORK TO BE DONE	LF of 4"	LF of W8x18	FLAT ALUMINUM SIGN		EXTR. ALUMINUM		REMOVE SIGN							
			Width (in)	Height (in)	Direction Facing	Location	New Sign	Sign Type	Remove Existing	Square Footage	Sheeting Type	New Post					Length Post #1 (ft)	Offset to center of Post #1 (ft)	Length Post #2 (ft)	Offset to center of Post #2 (ft)		Size (in)	# of Posts	Shear Slip Base	SQFT IV	SQFT XI	SQFT IV	SQFT XI
212	13.44+0.012 Intersection with Hwy 85	RIGHT	48	48	WEST	EB ROW ISLAND	YES	FLAT ALUM	YES	16.0	XI	YES	12.5	4' from back of curb	NA	NA	4.0	1	YES	R1-1: STOP	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	12.5			16.0			1
			30	12			YES	FLAT ALUM	YES	2.5	XI									R1-3P: ALL WAY				2.5				
212	13.44+0.049 Intersection with Hwy 85	LEFT	48	48	EAST	WB ROW ISLAND	YES	FLAT ALUM	YES	16.0	XI	YES	12.5	4' from back of curb	NA	NA	4.0	1	YES	R1-1: STOP	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	12.5			16.0			1
			30	12			YES	FLAT ALUM	YES	2.5	XI									R1-3P: ALL WAY				2.5				
212	19.59+0.138	RIGHT	150	72	WEST	EB ROW	YES	EXTR ALUM	YES	75.0	IV	YES	17.8	26	19.0	33.5	W8x18	2	YES	RECREATION/CULTURAL AREA ROCKY POINT RECREATION AREA (BELLE FOURCHE RESERVOIR) Lt Arrow - 2 MILES	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	36.8				75.0		1
			24	24			YES	FLAT ALUM	YES	4.0	IV									RW - 050: FISHING				4.0				
			24	24			YES	FLAT ALUM	YES	4.0	IV									RW - 080: BOAD LAUNCHING RAMP				4.0				
			24	24			YES	FLAT ALUM	YES	4.0	IV									RM - 020: CAMPING (TRAILER)				4.0				
			24	24			YES	FLAT ALUM	YES	4.0	IV									RM - 160: DUMP STATION				4.0				
212	20.00+0.068	LEFT	150	72	EAST	WB ROW	YES	EXTR ALUM		75.0	IV	YES	16.4	26	17.7	33.5	W8x18	2	YES	RECREATION/CULTURAL AREA ROCKY POINT RECREATION AREA (BELLE FOURCHE RESERVOIR) 2 MILES - Rt Arrow	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	34.1				75.0		1
			24	24			YES	FLAT ALUM		4.0	IV									RW - 050: FISHING				4.0				
			24	24			YES	FLAT ALUM		4.0	IV									RW - 080: BOAD LAUNCHING RAMP				4.0				
			24	24			YES	FLAT ALUM		4.0	IV									RM - 020: CAMPING (TRAILER)				4.0				
			24	24			YES	FLAT ALUM		4.0	IV									RM - 160: DUMP STATION				4.0				
85	56.56+0.023 Intersection with Hwy 212	RIGHT	48	48	SOUTH	NB ROW ISLAND	YES	FLAT ALUM	YES	16.0	XI	YES	12.5	4' from back of curb	NA	NA	4.0	1	YES	R1-1: STOP	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	12.5			16.0			1
			30	12			YES	FLAT ALUM	YES	2.5	XI									R1-3P: ALL WAY				2.5				
85	56.60+0.008 Intersection with Hwy 212	LEFT	48	48	NORTH	SB ROW ISLAND	YES	FLAT ALUM	YES	16.0	XI	YES	12.5	4' from back of curb	NA	NA	4.0	1	YES	R1-1: STOP	REMOVE EXISTING SIGNS, SIGN POSTS AND BASES. INSTALL NEW SIGNS ON NEW POST AT EXISTING LOCATION	12.5			16.0			1
			30	12			YES	FLAT ALUM	YES	2.5	XI									R1-3P: ALL WAY				2.5				
															TOTALS:	50.0	70.9	32.0	74.0	150.0	0.0	6						

SIGN DETAILS

Hwy 212 - MRM 19.59+0.138



Hwy 212 - MRM 20.00+0.068



6.0" Radius, 1.3" Border, White on Brown;
 "ROCKY POINT", E Mod 2K; "RECREATION AREA", E Mod 2K; Arrow Custom - 20.0" 180°;
 "2 MILES", E Mod 2K;

Table of widths and spaces

25.3	R	6.5	1.4	6.6	1.6	C	6.5	1.8	K	6.5	0.5	8.1	8.0	6.5	1.1	6.8	1.9	1.5	2.3	N	6.5	1.4	5.9	25.3				
9.0	R	6.5	1.8	E	5.9	1.3	C	6.5	1.8	R	6.4	1.6	E	6.0	0.9	A	8.0	0.8	5.9	1.4	I	1.5	2.0	O	6.8	1.9	N	6.4
		8.0	A	8.1	1.4	R	6.5	1.6	E	6.0	0.9	A	8.0	9.1														
31.8	←	20.0	8.0	Z	6.5	8.0	M	5.5	1.8	I	1.1	1.8	L	4.4	0.9	E	4.5	1.0	S	4.9	31.8							

6.0" Radius, 1.3" Border, White on Brown;
 "ROCKY POINT", E Mod 2K; "RECREATION AREA", E Mod 2K; "2 MILES", E Mod 2K;
 Arrow Custom - 20.0" 0°;

Table of widths and spaces

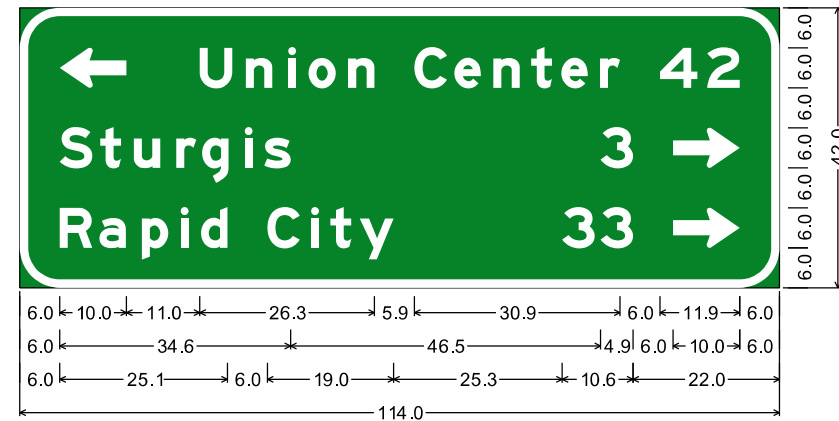
25.3	6.5	1.4	6.6	1.6	6.5	1.8	6.5	0.5	8.1	8.0	6.5	1.1	6.8	1.9	1.5	2.3	6.5	1.4	5.9	25.3								
9.0	R	6.5	1.8	E	5.9	1.3	C	6.5	1.8	R	6.4	1.6	E	6.0	0.9	A	8.0	0.8	5.9	1.4	I	1.5	2.0	O	6.8	1.9	N	6.4
		8.0	A	8.1	1.4	R	6.5	1.6	E	6.0	0.9	A	8.0	9.1														
31.8	Z	6.5	8.0	M	5.5	1.8	I	1.1	1.8	L	4.4	0.9	E	4.5	1.0	S	4.9	8.0	→	20.0	31.8							

WIDTH x HEIGHT	11' 0" x 5' 0"	
BORDER WIDTH	1.5" inset 0"	
CORNER RADIUS	6.0"	
BACKGROUND	TYPE:	Type IV High Intensity
	COLOR:	BROWN
LEGEND / BORDER	TYPE:	Type IV High Intensity
	COLOR:	WHITE

WIDTH x HEIGHT	11' 0" x 5' 0"	
BORDER WIDTH	1.5" inset 0"	
CORNER RADIUS	6.0"	
BACKGROUND	TYPE:	Type IV High Intensity
	COLOR:	BROWN
LEGEND / BORDER	TYPE:	Type IV High Intensity
	COLOR:	WHITE

SIGN DETAILS

Hwy 79 - MRM 111.24+0.022



6.0" Radius, 1.3" Border, White on Green;
 Standard Arrow Custom 10.0" X 6.0" 180°; "Union Center", E Mod 2K;
 "42", E Mod 2K; "Sturgis", E Mod 2K; "3", E Mod 2K;
 Standard Arrow Custom 10.0" X 6.0" 0°; "Rapid City", E Mod 2K;
 "33", E Mod 2K; Standard Arrow Custom 10.0" X 6.0" 0°;

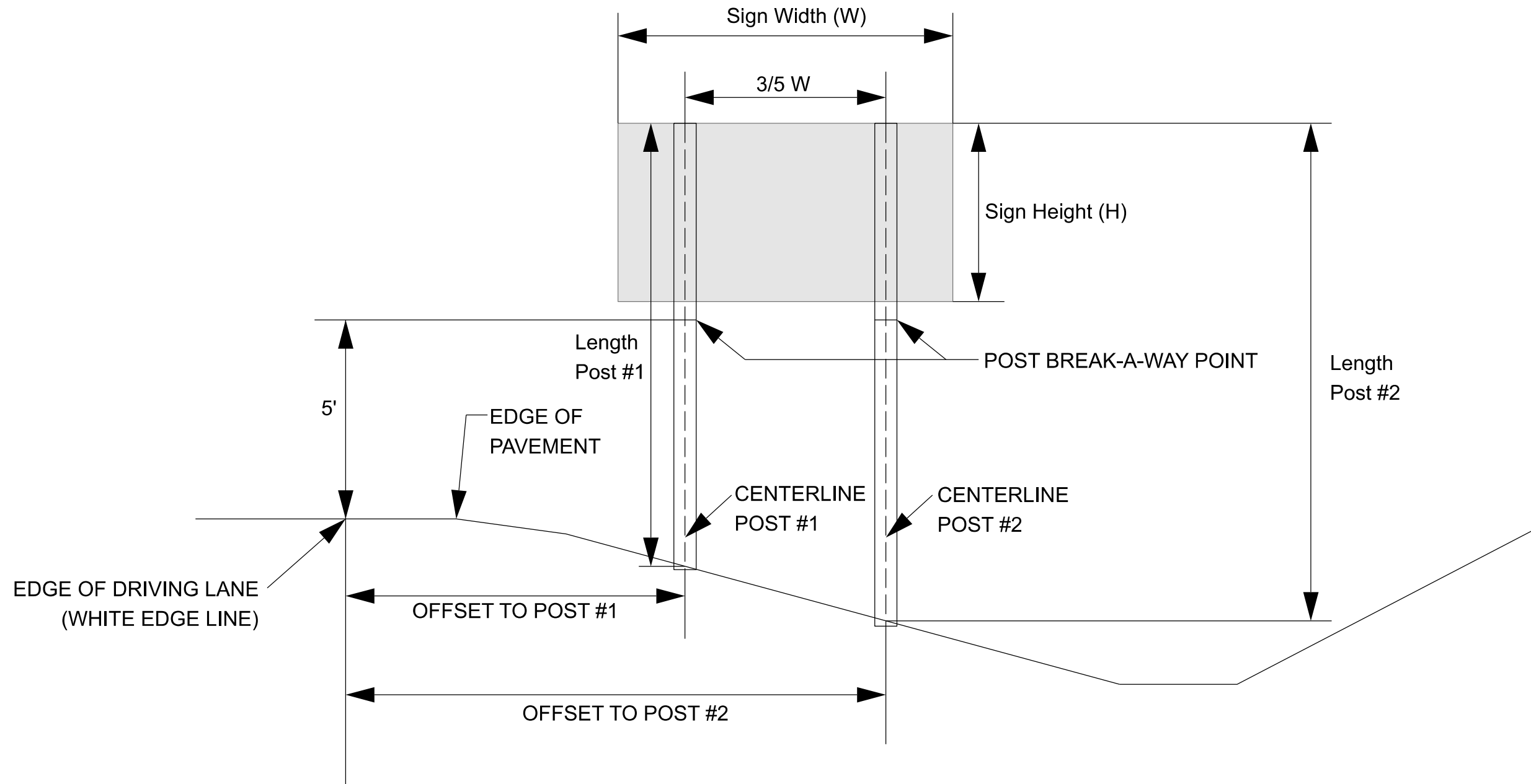
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6.0	C	4.9	1.1	e	4.0	1.9	n	3.9	1.8	t	3.0	1.5	e	3.9	1.9	r	3.0	6.0	5.5	1.5	4.9	6.0					
6.0	S	4.9	1.1	t	3.1	2.0	u	4.0	2.4	r	3.0	0.9	g	3.9	2.4	i	1.3	1.6	s	4.0	46.5	3	4.9	6.0	→	10.0	6.0
6.0	R	4.9	1.0	a	4.0	2.4	p	4.0	1.9	i	1.1	1.9	d	4.0	6.0	C	4.8	1.6	i	1.3	1.8	3.0	1.3	y	5.1		
		25.3	3	4.9	0.9	3	4.8	6.0	→	10.0	6.0																

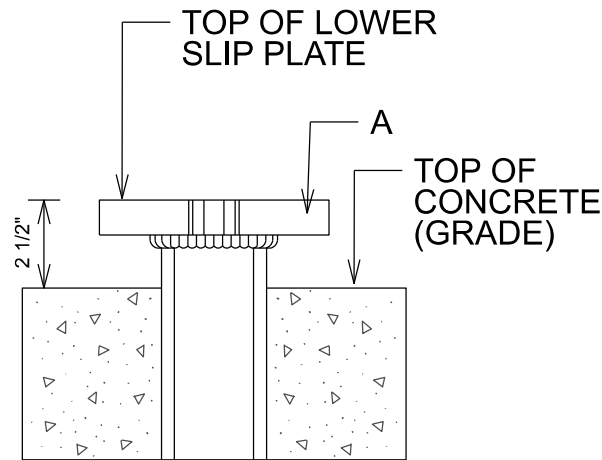
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BORDER WIDTH	1.25" inset 0"	
CORNER RADIUS	6.0"	
BACKGROUND	TYPE:	Type IV High Intensity
	COLOR:	GREEN
LEGEND / BORDER	TYPE:	Type IV High Intensity
	COLOR:	WHITE

SIGN DETAILS

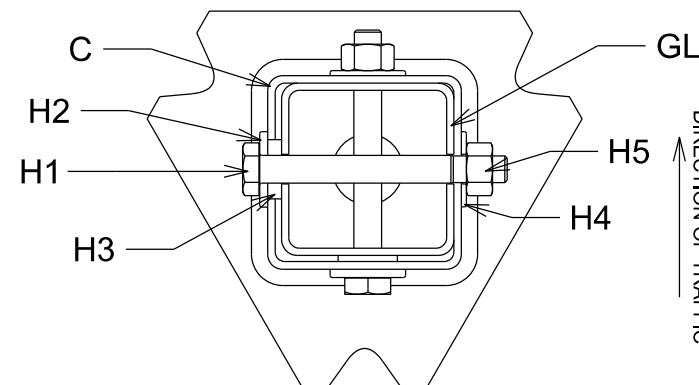
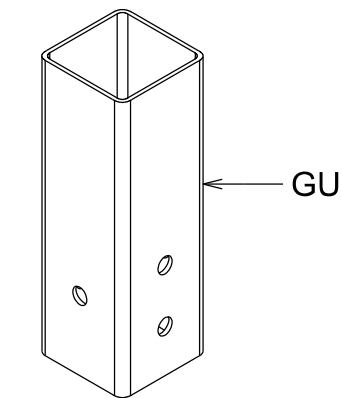
SD DOT	PROJECT	SECTION	SHEET
	079-476 212-476	Non	8/16
Plotting Date: 04/12/2024			



MASSH 400 DETAILS

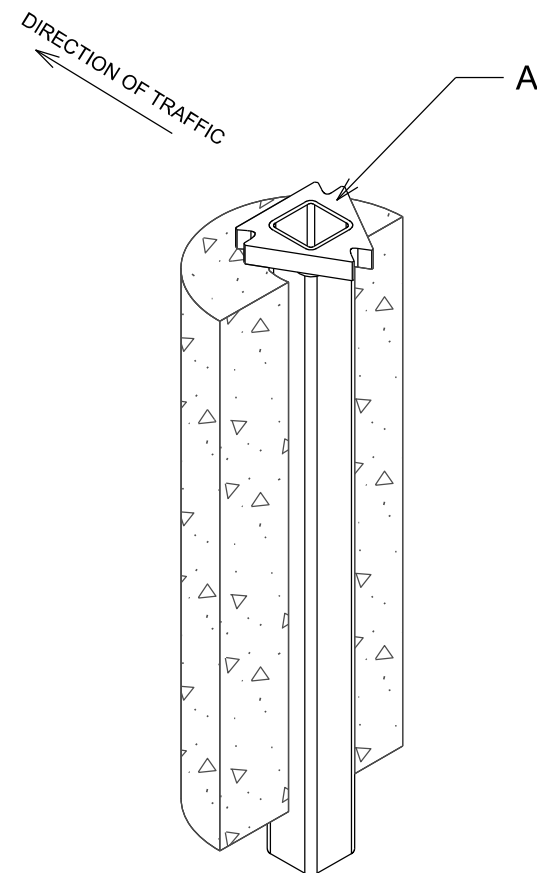


UPPER POST



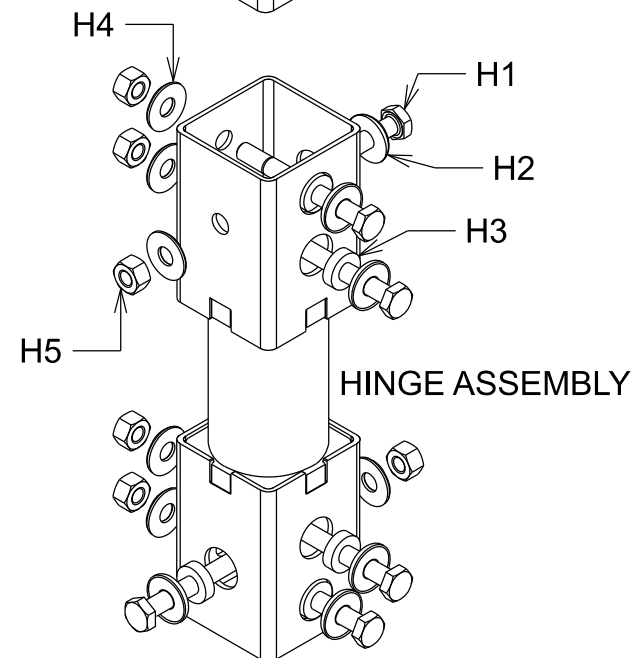
SECTION VIEW

CONCRETE INSTALLATION DETAIL

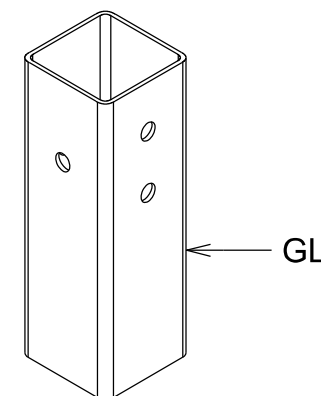


SLIP BASE ASSEMBLY

* Concrete footings will be 18" in diameter and 48" deep.

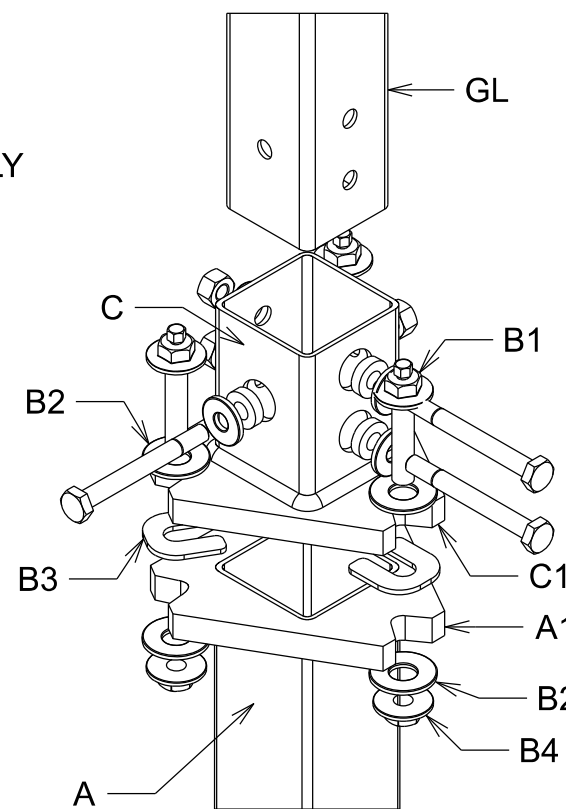


HINGE ASSEMBLY



LOWER POST

MULTI-DIRECTIONAL HINGE ASSEMBLY



SLIP BASE ASSEMBLY

INSTALLATION PROCEDURE

TOOLS NEEDED: 1-1/16" SOCKET & BOX WRENCH (for post attachment hardware), 1-1/8" SOCKET & BOX WRENCH & 9/16" SOCKET (for slip plate hardware).

1. Install Triangular Unibase Anchor (A) plumb & squared up with the road. The most common orientation is with the point of the triangular slip plate facing oncoming traffic. On multi-leg installations, be sure that all Unibase Anchors are squared & lined up with each other.
2. Depth of embedment to leave 2-1/2" ($\pm 1/2$ ") from grade to bottom of Lower Slip Plate of Unibase (A).
3. Place one each Teflon coated Slip Washer (B3) on top of Lower Slip Plate of Unibase (A) at each notched point with open end of slot facing center of triangular slip plate. Leave enough room between the closed ends of the slot/notch to allow $\text{\O}3/4$ " Redi-Torque Bolt (B1) to pass through.
4. Place Upper Slip Plate (C) onto the three Slip Washers (B3) properly indexed so that square post receiver portion is squared up with road.
5. Slide 1 of the 7/8" Flat Washer (B2) on to each Redi-Torque Bolt (B1) then insert down through notched points of Upper Slip Plate (C), slot of Slip Washer (B3) and notched point of Lower Slip Plate of Unibase (A1). Slide 1 each 7/8" Flat Washer (B2) followed by threading 1 each 3/4" Flange Nut (B4) on to each Redi-Torque Bolt (B1) and tighten using the 1-1/8" (larger) hex and NOT the 9/16" (smaller) hex. This is done to help flatten any galvanizing buildup and ensure all three hardware sets will be tight. The Redi-Torque Bolt smaller hex head is removed later.
6. If using a template to drill the holes in the posts make sure that the two thru-holes on the side for the slip base post receiver are on the same sides of the posts as the two thru-holes for the hinge post receiver, and that the single thru-holes for the slip base post receiver are on the same sides of the posts as the single thru-holes for the hinge post receiver. On a flat surface, insert upper sign post (GU) and lower post (GL) into opposite ends of a hinge assembly making sure that the sets of post holes match up with with hardware holes in the hinge. Insert the bolt (H1) through the 1-3/4" diameter washer (H2) then a 1-3/8" diameter shoulder washer (H3) then into a post receiver (large hole) as shown in diagram. Add the 5/8" flat washer (H4) and hex nut (H5) and finger tighten. Do the same for the other 5 sets of hardware and receiver holes. Tighten them until the 1-3/4" diameter washer (H2) is flat against the outside post receiver socket of the hinge assembly, beginning with the nut closest to the end of the post, followed by the next one on that same side, ending with the single one side. Repeat steps above for any additional post assemblies.
7. Insert post assembly with lower post (GL) at bottom and upper sign panel post (GU) at top into the appropriate Upper Slip Plate (C) receiver, orienting post in such a way as the two bolt heads face the side of the slip base post receiver containing the point of the triangular slip plate. Insert the bolt (H1) through the 1-3/4" diameter washer (H2) then a 1-3/8" diameter shoulder washer (H3) then into a post receiver (large hole) as shown in diagram. Add the 5/8" flat washer (H4) and hex nut (H5) and finger tighten. Do the same for the other 2 sets of hardware and receiver holes. Tighten them until the 1-3/4" diameter washer (H2) is flat against the outside post receiver socket (C), beginning with the nut closest to the end of the post, followed by the next one on that same side, ending with the single one side. Repeat steps above for any additional slip base assemblies.
8. Loosen the three bolts connecting the Lower Slip Plate of Unibase (A) and Upper Slip Plate (C) using the 1-1/8" (larger) hex then finger tighten making sure the Slip Washers (B3) are pushed in snug against the Redi-Torque Bolts (B1). Finally use a 9/16" wrench on the 9/16" (smaller) hex until it snaps off which results in the designed torque value.

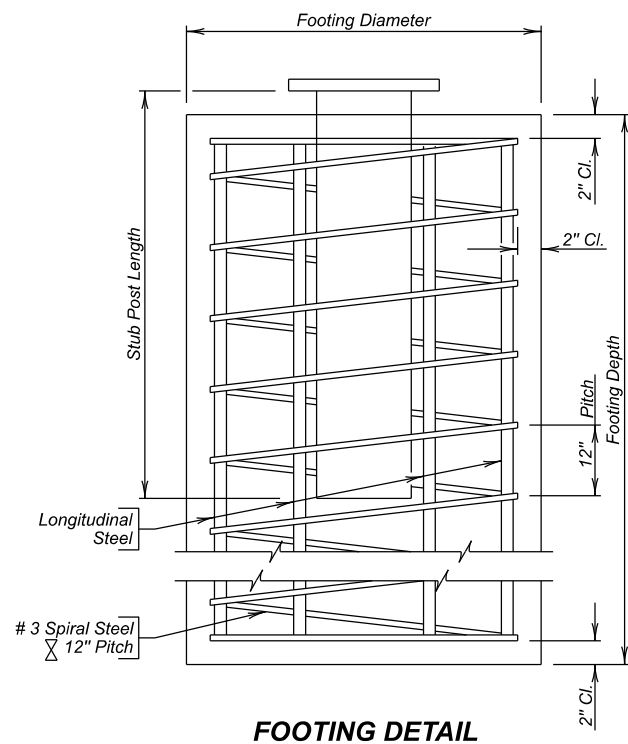
REINSTALLATION AFTER IMPACT

- * Gather all materials to a safe area and inspect all parts including welds to determine which parts, if any should be replaced. New slip base hardware should be used. Make sure all hinges are tight and square.
- * Follow Installation Procedures 3 - 8 above.

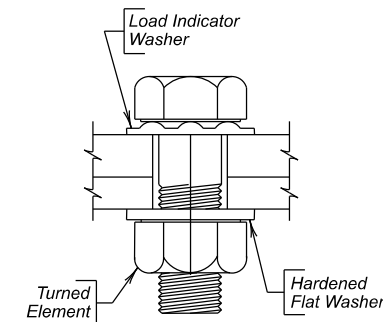
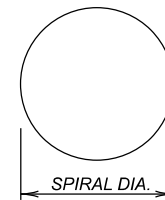
SITE LOCATION	POST SIZE	FOOTING DIMENSIONS		STUB POST LENGTH	LONGITUDINAL STEEL QUANTITIES			# SPIRAL STEEL QUANTITIES	
		DIA.	DEPTH		NO.	SIZE	LENGTH	DIA.	LENGTH
Hwy 212 MRM 19.59+0.138	W8x18	1.75	6	2.25	8	#6	5.6667	1.4167	37.75
Hwy 212 MRM 20.00+0.068	W8x18	1.75	6	2.25	8	#6	5.6667	1.4167	37.75

⊗ # Spirals - Use 12" pitch and 1 1/2 extra turns at each end. Use 1 1/2 turns for lap at splice as required, or weld as approved by the Office of Bridge Design. Spirals may be smooth bars, Bar length shown does not include Splices. Dimensions are out to out of bars.

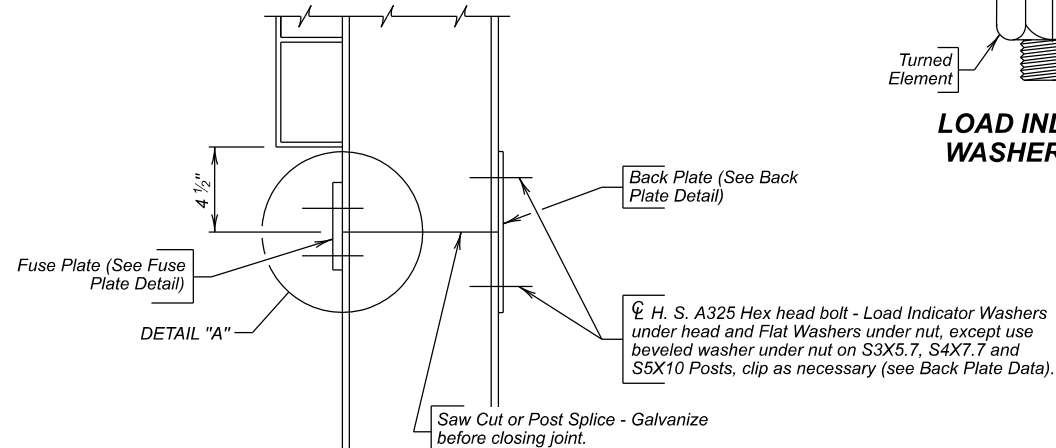
NOTE:
The above is a Site Specific data entry table and the inserted information is the responsibility of the Region Traffic Engineer.



FOOTING DETAIL

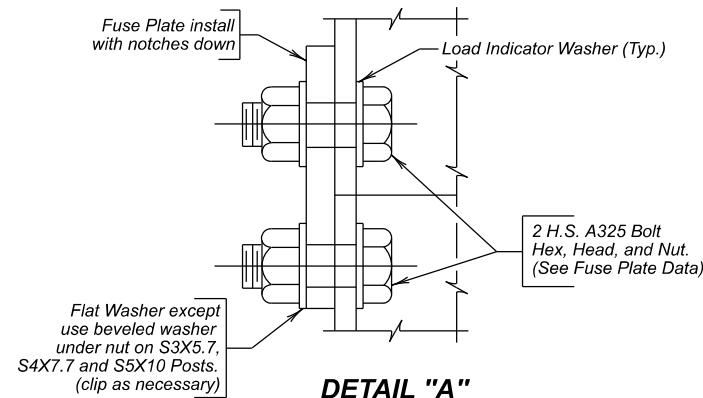


LOAD INDICATOR WASHER DETAIL

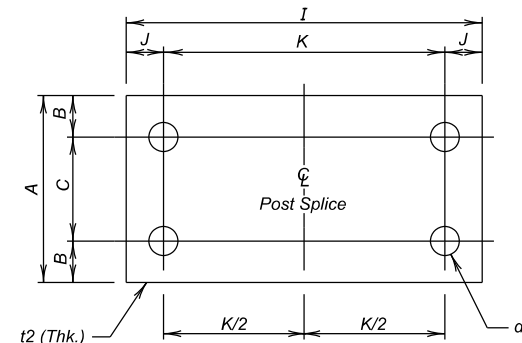


FUSE & BACK PLATE INSTALLATION

TRAFFIC DIRECTION



DETAIL "A"



BACK PLATE DETAIL

NOTES

- Design Specification: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 2001 Edition with 2003 Interims.
- Concrete Footings shall be Class M6 - fc = 4000 p. s. i.
- Structural Steel shall conform to ASTM A36.
- All Reinforcing Steel, except spirals, shall conform to ASTM 615 Grade 60.
- Spiral Reinforcing Steel may be fabricated from cold drawn wire ASTM A1064, or hot rolled plain or deformed bars conforming to the strength requirements of ASTM A615, Grade 60.
- All Bolts and Nuts shall conform to ASTM A325 except that 1/2" diameter bolts may conform to either ASTM A325 or ASTM A449. Washers shall conform to ASTM F436. All hardware shall be galvanized in accordance with ASTM F2329.
- All structural steel including Posts and Post Stubs shall be galvanized in accordance with ASTM A123.
- All Bolt Holes shall be drilled. All plate cuts shall preferably be saw cuts. However, Flame Cutting will be permitted providing all edges are ground smooth (metal projecting beyond the plane of the plate face will NOT be allowed).
- All welding and weld inspection shall be in accordance with the latest edition of AWS D 1.5 Structural Welding Code.

PROCEDURE FOR ASSEMBLING SLIP BASE

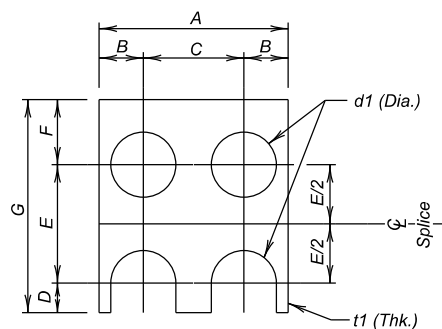
- Place galvanized Sheet Metal Diaphragms on top of the lower slip plate.
- Connect main post to Stub Post with clean unlubricated bolts and nuts with one Hardened Washer on each bolt between slip plates.
- Plumb post by adding shims between slip plates.
- Tighten bolts to a practical maximum, using a 12" - 15" wrench in order to bed surfaces and clean threads. DO NOT TIGHTEN TO PROOF LOAD.
- Loosen all bolts and retighten in increments, using a systematic order, until each bolt has been tightened to the specified torque corresponding to the post size used (See Slip Base Plate Data). Tighten bolts only to the torque specified. DO NOT OVERTIGHTEN. Check torque on each bolt after entire sign has been erected.

ASSEMBLY OF FRICTION FUSE PLATES, BACK PLATES AND STIFFENERS

High strength bolts shall be tightened so as to obtain a residual tension by the use of load indicator washers.

SHOP PLANS

The fabricator shall submit shop plans in accordance with the Specifications or in Adobe PDF format. Shop plan submittals shall be sent to the Office of Bridge Design. Include design and check design, if applicable, with initial submittal.



FUSE PLATE DETAIL

Post Size	A	B	C	D	E	F	G	d1	t1	Bolt Size
S3X5.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" φ	1/4"	1/2" φ
S4X7.7	2 5/8"	9/16"	1 1/2"	1/2"	1 1/2"	1 1/8"	3 1/8"	5/8" φ	1/4"	1/2" φ
S5X10	3"	1 1/16"	1 5/8"	5/8"	2 1/4"	1 1/8"	4"	3/4" φ	3/8"	5/8" φ
W6X12	4"	1 5/16"	2 1/8"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" φ	3/8"	5/8" φ
W6X15	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" φ	3/8"	5/8" φ
W6X20	6"	1 3/8"	3 1/4"	5/8"	2 1/2"	1 3/8"	4 1/2"	3/4" φ	3/8"	5/8" φ
W8X18	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" φ	1/2"	3/4" φ
W8X21	5 1/4"	1 5/16"	2 5/8"	3/4"	2 1/2"	1 3/8"	4 5/8"	7/8" φ	1/2"	3/4" φ
W8X24	6 1/2"	1 1/2"	3 1/2"	7/8"	3"	1 5/8"	5 1/2"	1" φ	9/16"	7/8" φ
W8X28	6 1/2"	1 9/16"	3 3/8"	7/8"	3"	1 3/4"	5 5/8"	1" φ	1/2"	7/8" φ
W8X31	8"	1 3/8"	4 3/4"	1"	3"	2"	6 1/2"	1 1/8" φ	5/8"	1" φ
W10X33	8"	1 7/8"	4 1/4"	1 1/8"	4 1/2"	2 1/4"	7 7/8"	1 1/4" φ	3/4"	1 1/8" φ

Post Size	A	B	C	J	K	I	d1	t2	Bolt Size
S3X5.7	2 5/8"	9/16"	1 1/2"	1 1/4"	4 1/2"	7"	5/8" φ	1/4"	1/2" φ
S4X7.7	2 5/8"	9/16"	1 1/2"	1 1/4"	4 1/2"	7"	5/8" φ	1/4"	1/2" φ
S5X10	3"	1 1/16"	1 5/8"	1 1/4"	4 3/4"	7 1/4"	3/4" φ	1/4"	5/8" φ
W6X12	4"	1 5/16"	2 1/8"	1 1/4"	4 3/4"	7 1/4"	3/4" φ	1/4"	5/8" φ
W6X15	6"	1 3/8"	3 1/4"	1 1/4"	5 1/4"	7 3/4"	3/4" φ	1/4"	5/8" φ
W6X20	6"	1 3/8"	3 1/4"	1 1/4"	5 1/4"	7 3/4"	3/4" φ	1/4"	5/8" φ
W8X18	5 1/4"	1 5/16"	2 5/8"	1 3/8"	5 3/4"	8 1/2"	7/8" φ	1/4"	3/4" φ
W8X21	5 1/4"	1 5/16"	2 5/8"	1 3/8"	5 3/4"	8 1/2"	7/8" φ	1/4"	3/4" φ
W8X24	6 1/2"	1 1/2"	3 1/2"	1 5/8"	6"	9 1/4"	1" φ	5/16"	7/8" φ
W8X28	6 1/2"	1 9/16"	3 3/8"	1 3/4"	6"	9 1/2"	1" φ	3/8"	7/8" φ
W8X31	8"	1 5/8"	4 3/4"	2"	6 1/2"	10 1/2"	1 1/8" φ	3/8"	1" φ
W10X33	8"	1 7/8"	4 1/4"	2 1/2"	7"	1'-0"	1 1/4" φ	7/16"	1 1/8" φ

ERECTION DETAILS
FOR
**TWO-POST ONE-DIRECTION
BREAKAWAY SIGN SUPPORTS**

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016

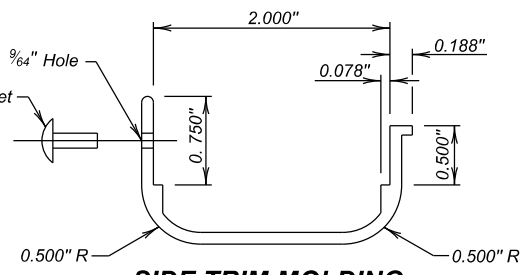
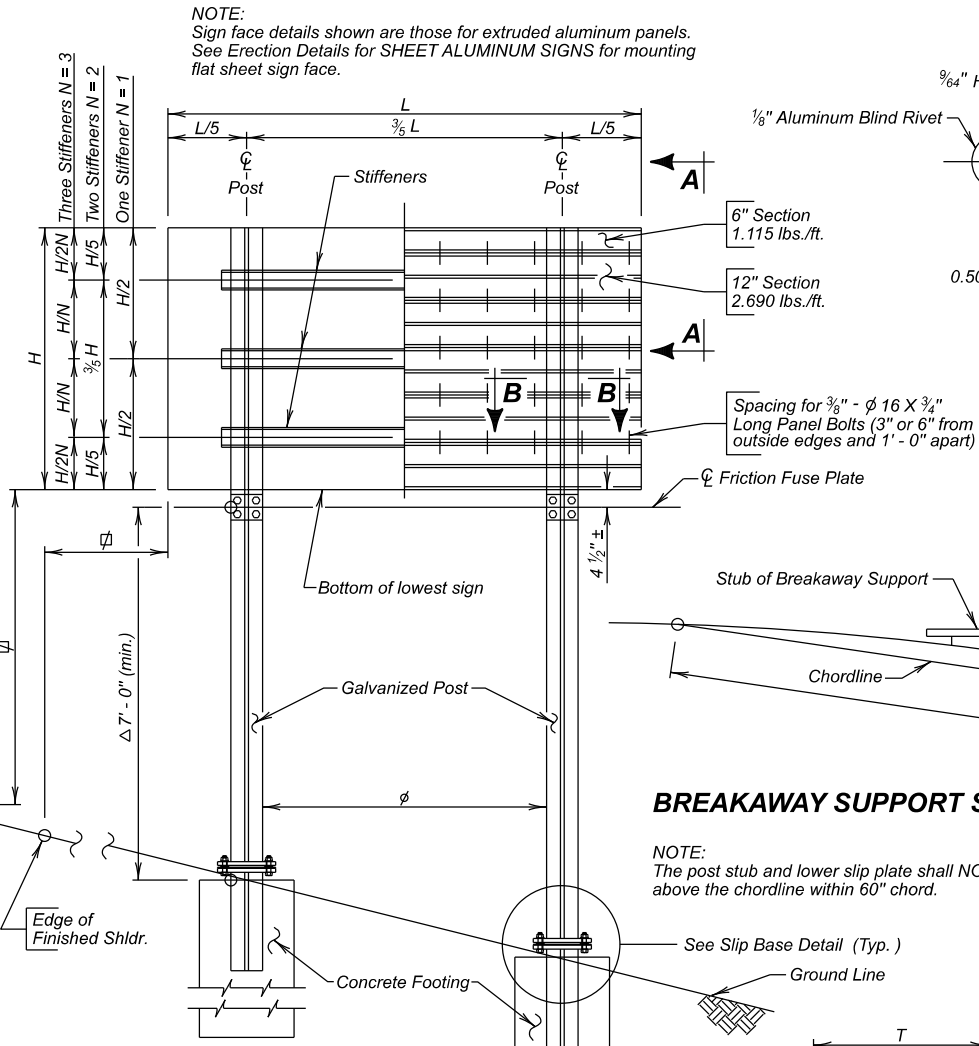
Plotting Date: 04/12/2024

NOTE: Sign face details shown are those for extruded aluminum panels. See Erection Details for SHEET ALUMINUM SIGNS for mounting flat sheet sign face.

Δ Mounting height as recommended by latest edition of AASHTO ROADSIDE DESIGN GUIDE.

∅ Clear distance as recommended by latest edition of MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

NOTE:
N = Number of Stiffeners to be used
H = Vertical dimension of sign
L = Horizontal dimension of Main Sign



STIFFENER DATA

Post	Stiffener	a	b	c	d	Bolt (A325)	Plate Thk.
S3X5.7 thru W8X21	C3X5	10 1/2"	5"	1 1/4"	8"	5/8" φ	5/16"
W8X24 thru W10X45	C5X6.7	13 1/2"	6"	1 1/2"	10 1/2"	7/8" φ	3/8"

STIFFENER NOTES

- Stiffeners must always be used on Two Post Breakaway signs regardless of type of sign face employed.
- Number of stiffeners used, N, shall be as follows:
if $H \leq 2' - 0"$ then $N = 1$
if $2' - 0" < H \leq 8' - 0"$ then $N = 2$
if $8' - 0" < H \leq 15' - 0"$ then $N = 3$

BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

NOTE: The post stub and lower slip plate shall NOT extend more than 4" max. above the chordline within 60" chord.

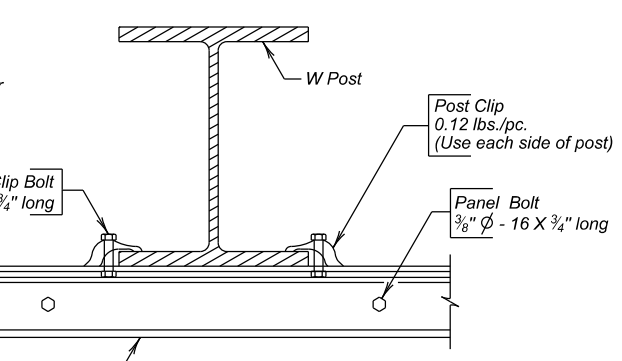
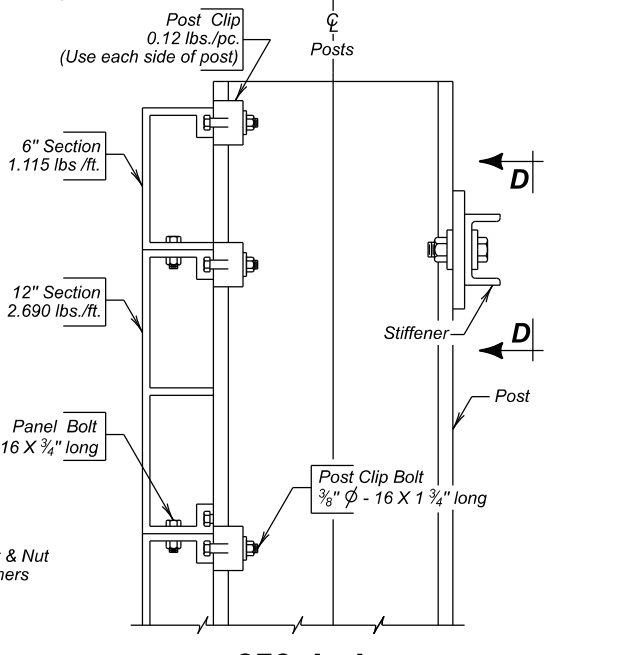
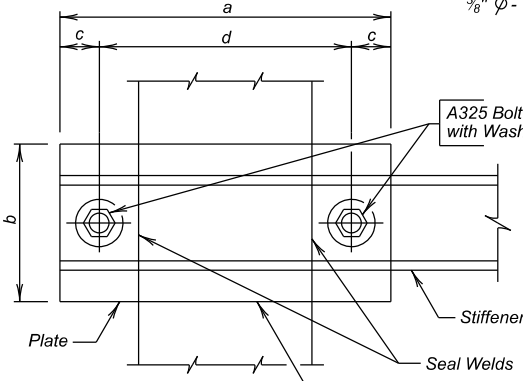
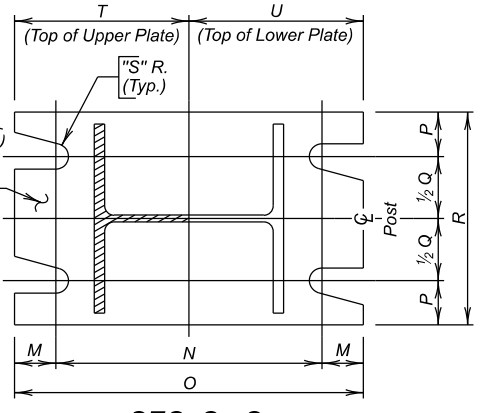


TABLE 3 - SHEET METAL DIAPHRAGM DATA

Post Size	M	N	O	P	Q	R	V
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	5/8"
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	3/4"
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	3/4"
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	7/8"
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	7/8"
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	7/8"
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	1"
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	1"
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	1 1/8"
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	1 1/8"
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	1 1/8"

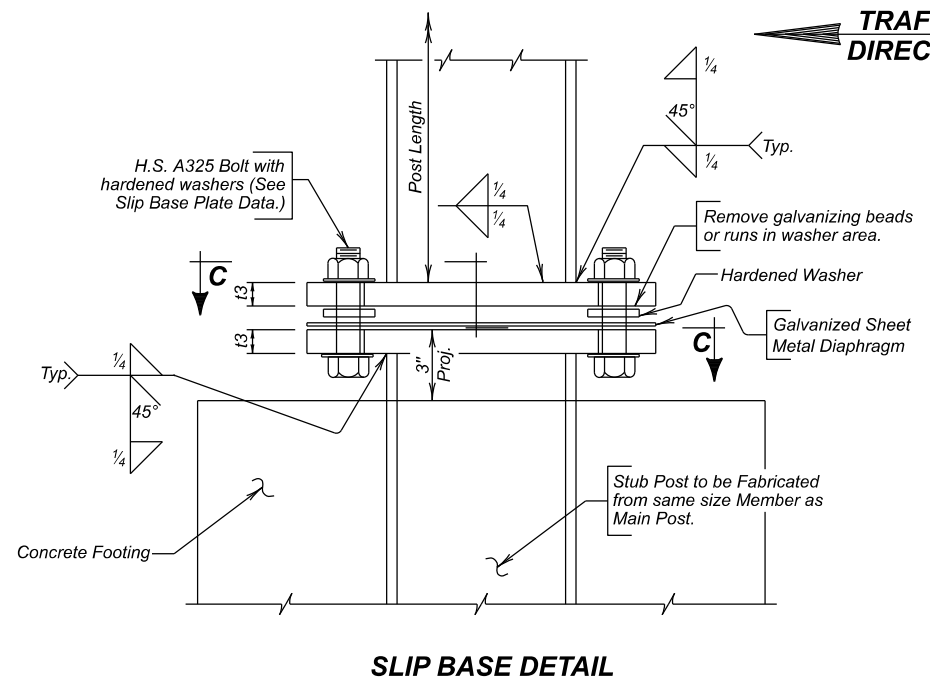


* NOTE: Above Bevel is for Sign on Right Shoulder. Plate Bevels are Opposite hand for Sign on Left Shoulder.

TABLE 4 - SLIP BASE PLATE DATA

Post Size	M	N	O	P	Q	R	S	T	U	t3	Bolt Size	Bolt Torque
S3X5.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" φ	142" - #
S4X7.7	3/4"	6"	7 1/2"	3/4"	1 1/2"	3"	9/32"	3 3/4"	3 3/4"	5/8"	1/2" φ	142" - #
S5X10	7/8"	7 1/4"	9"	3/4"	2"	3 1/2"	11/32"	4 1/2"	4 1/2"	7/8"	5/8" φ	345" - #
W6X12	7/8"	8 1/4"	10"	7/8"	2 3/4"	4 1/2"	11/32"	5"	5"	7/8"	5/8" φ	345" - #
W6X15	1 1/8"	8 1/2"	10 3/4"	1 1/4"	4"	6 1/2"	13/32"	5 3/8"	5 3/8"	1"	3/4" φ	554" - #
W6X20	1 1/8"	10"	1' - 0 1/4"	1 1/4"	4"	6 1/2"	13/32"	6 1/8"	6 1/8"	1"	3/4" φ	554" - #
W8X18	1 1/8"	10 1/2"	1' - 0 3/4"	1 1/4"	3 1/2"	6"	13/32"	6 3/8"	6 3/8"	1"	3/4" φ	554" - #
W8X21	1 1/4"	11 1/4"	1' - 1 3/4"	1 1/4"	3 1/2"	6"	15/32"	6 7/8"	6 7/8"	1"	7/8" φ	645" - #
W8X24	1 1/2"	11"	1' - 2"	1 5/8"	4 1/4"	7 1/2"	15/32"	7"	7"	1"	7/8" φ	645" - #
W8X28	1 5/8"	11 1/4"	1' - 2 1/2"	1 5/8"	4 1/4"	7 1/2"	17/32"	7 1/4"	7 1/4"	1 1/8"	1" φ	735" - #
W8X31	1 3/4"	11 1/4"	1' - 2 3/4"	1 7/8"	5 1/4"	9"	17/32"	7 3/8"	7 3/8"	1 1/8"	1" φ	735" - #
W10X33	1 3/4"	1' - 2"	1' - 5 1/2"	1 7/8"	5 1/4"	9"	17/32"	8 3/4"	8 3/4"	1 1/4"	1" φ	735" - #

∅ Clear span between posts shall be 7' - 0" minimum for posts larger than 18 lb/ft. Reference FHWA acceptance letter dated 6/4/91 (Code SS-25).

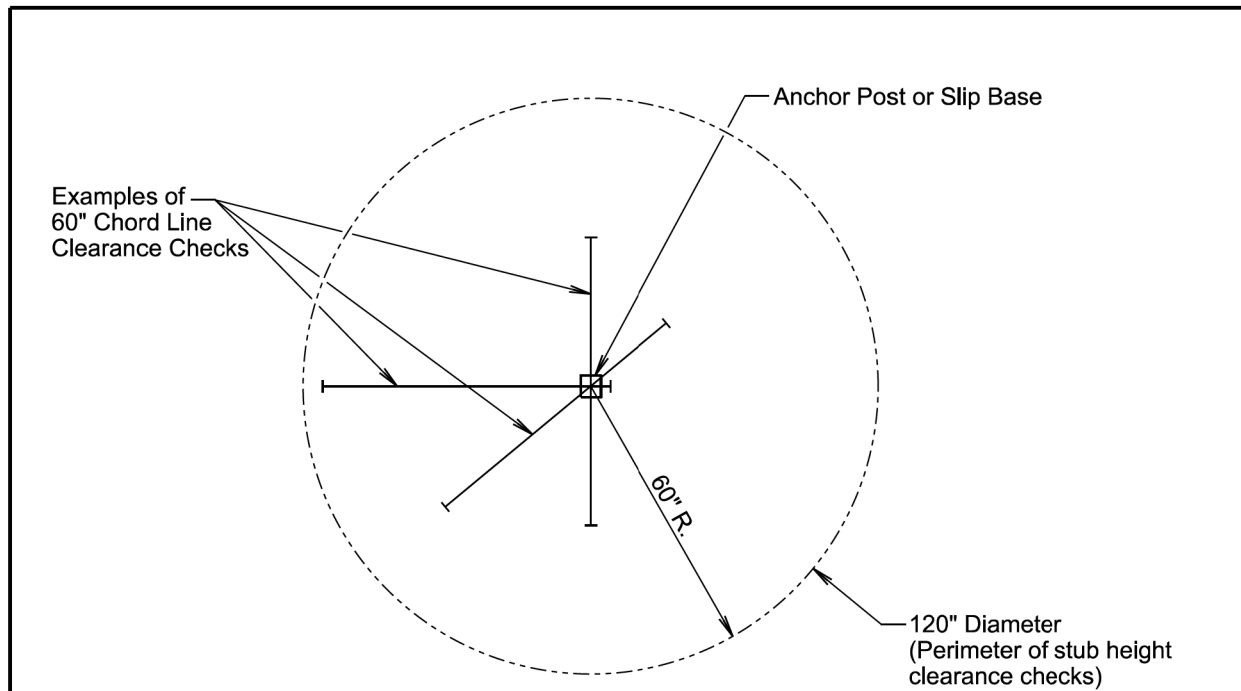


NOTE: Diaphragm need not be regalvanized after cutting to size and drilling of holes.

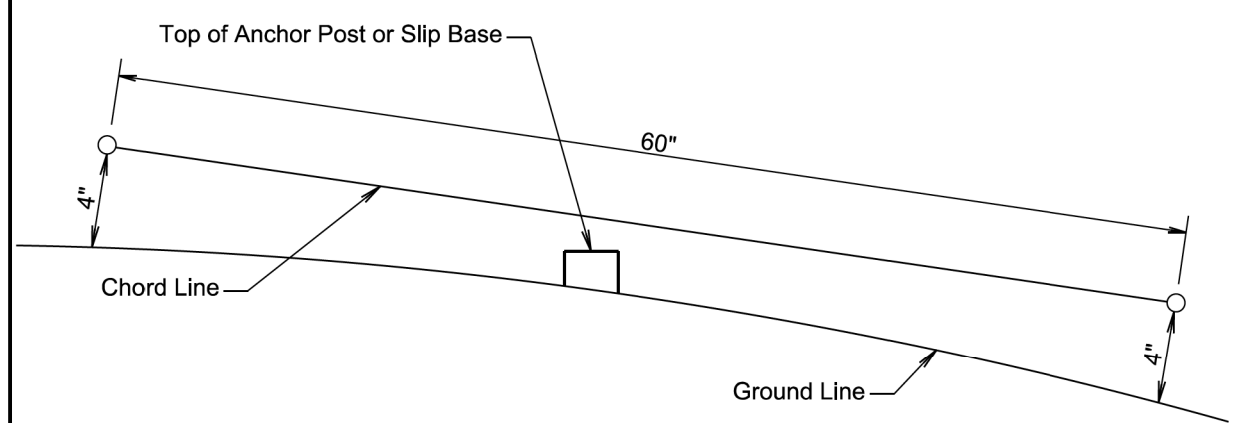
ERECTION DETAILS FOR TWO-POST ONE-DIRECTION BREAKAWAY SIGN SUPPORTS

S. D. DEPT. OF TRANSPORTATION

DECEMBER 2016



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

GENERAL NOTES:

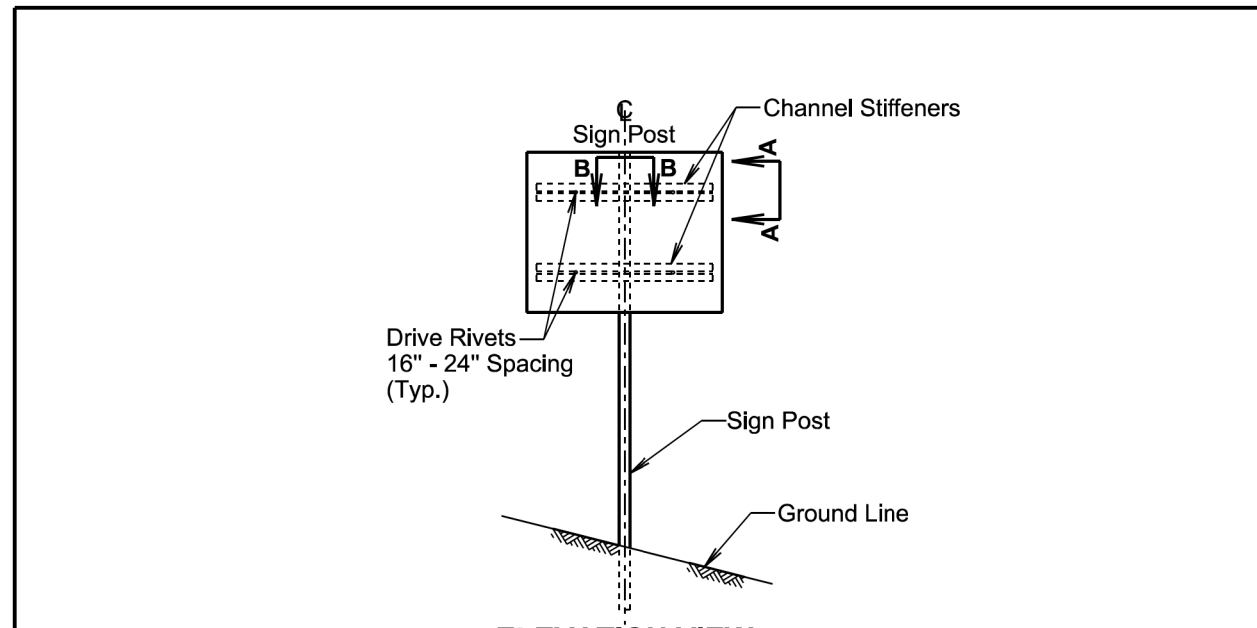
The top of anchor posts and slip bases WILL NOT extend above a 60" chord line within a 120" diameter circle around the post with ends 4" above the ground.

At locations where there is curb and gutter adjacent to the breakaway sign support, the stub height will be a maximum of 4" above the ground line at the localized area adjacent to the breakaway support stub.

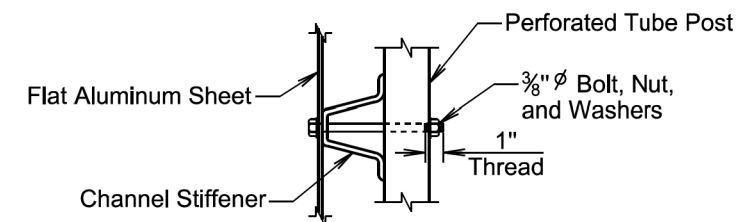
January 22, 2021

	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
		Sheet 1 of 1

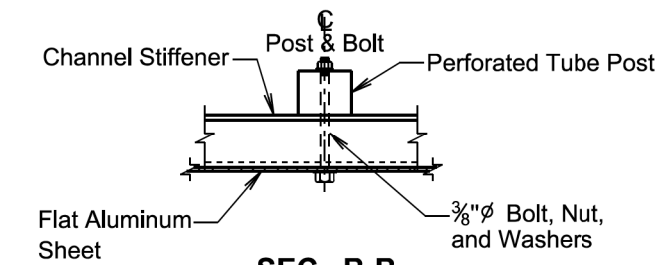
Published Date: 2024



ELEVATION VIEW
(One post breakaway sign supports.)



SEC. A-A



SEC. B-B

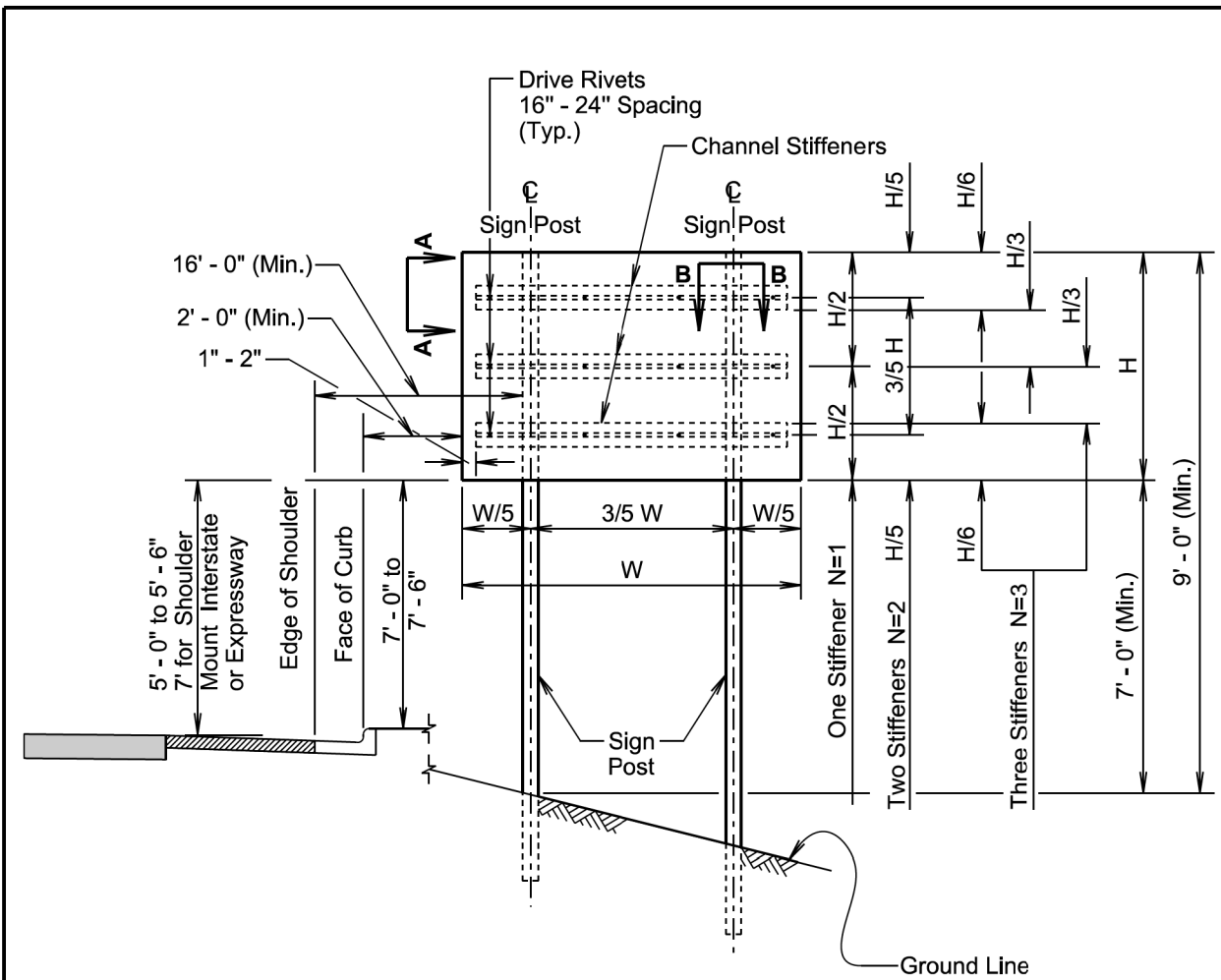
(Typical sign and stiffener details.)

∅ A plastic washer, as recommended by the sheeting manufacturer, will be installed between the sign face and the metal washer shown.

November 19, 2020

	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
		Sheet 1 of 2

Published Date: 2024



TWO POST BREAKAWAY SIGN SUPPORTS

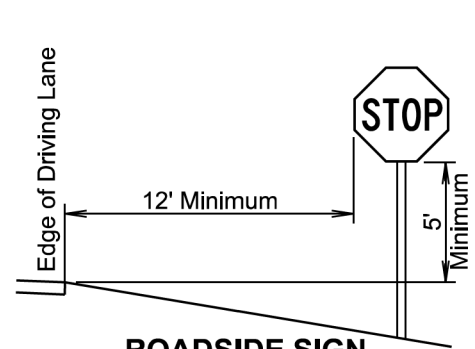
GENERAL NOTES:

The number of stiffeners used (N) will be as follows:
 If $H \leq 2' - 0''$ then $N = 1$
 if $2' - 0'' < H \leq 8' - 0''$ then $N = 2$
 if $8' - 0'' < H \leq 15' - 0''$ then $N = 3$
 where H is the vertical dimension of the sign.

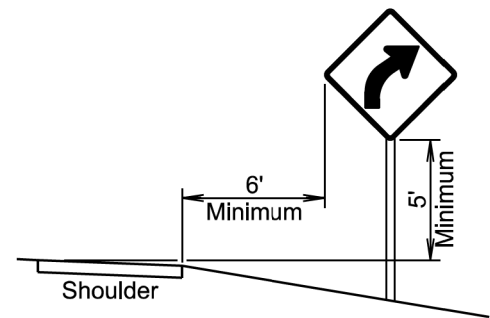
A minimum of two bolts will be required to fasten the sign to each post.

November 19, 2020

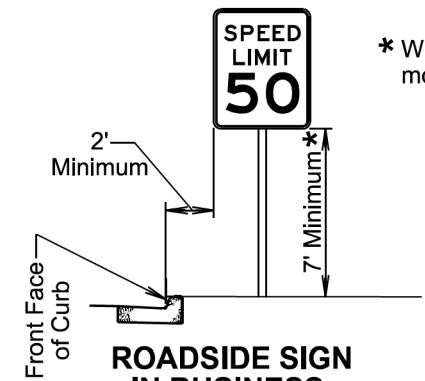
Published Date: 2024	SD DOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 2 of 2



ROADSIDE SIGN IN RURAL AREA

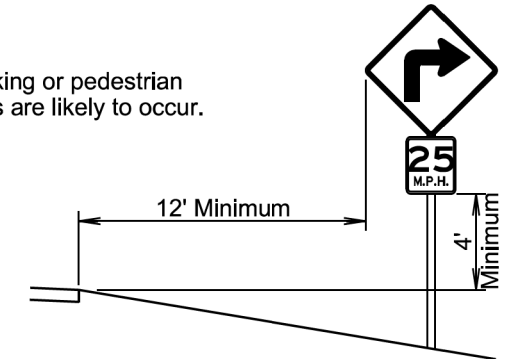


ROADSIDE SIGN IN RURAL AREA
(If shoulder width is greater than 6 foot)

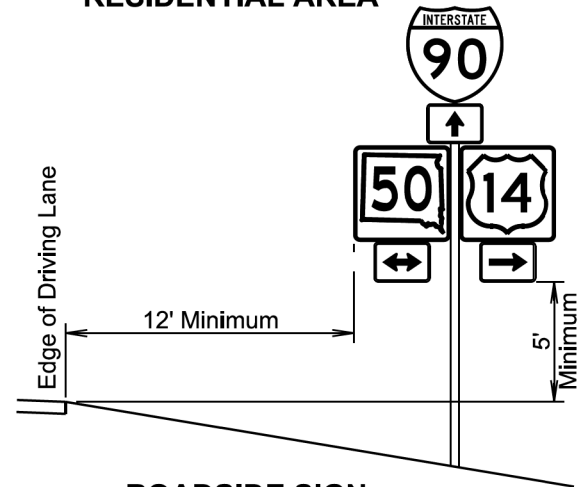


ROADSIDE SIGN IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREA

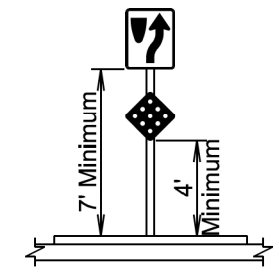
* Where parking or pedestrian movements are likely to occur.



WARNING SIGN ADVISORY SPEED PLAQUE IN RURAL AREA



ROADSIDE SIGN IN RURAL AREA



SIGN ON NOSE OF MEDIAN

November 19, 2020

Published Date: 2024	SD DOT	OFFSETS FOR SIGN INSTALLATION	PLATE NUMBER 632.90
			Sheet 1 of 1

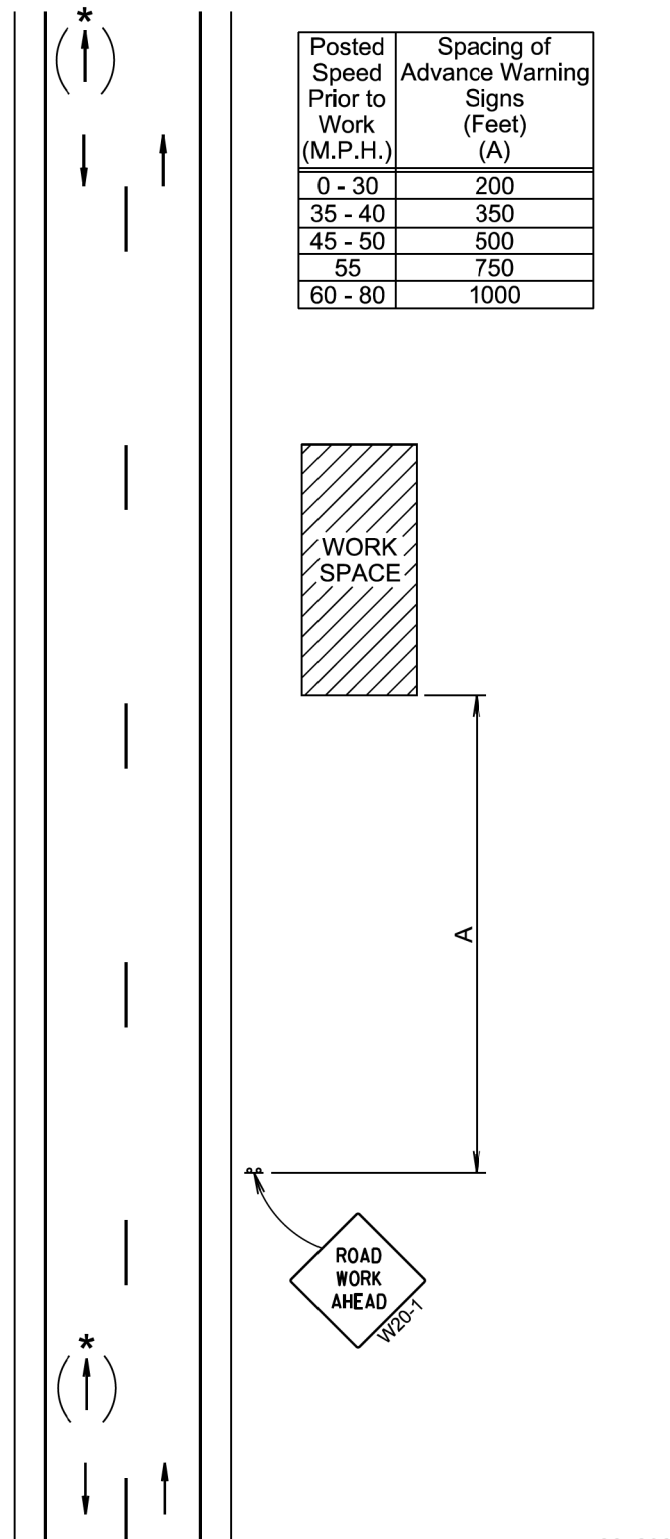
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated will be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

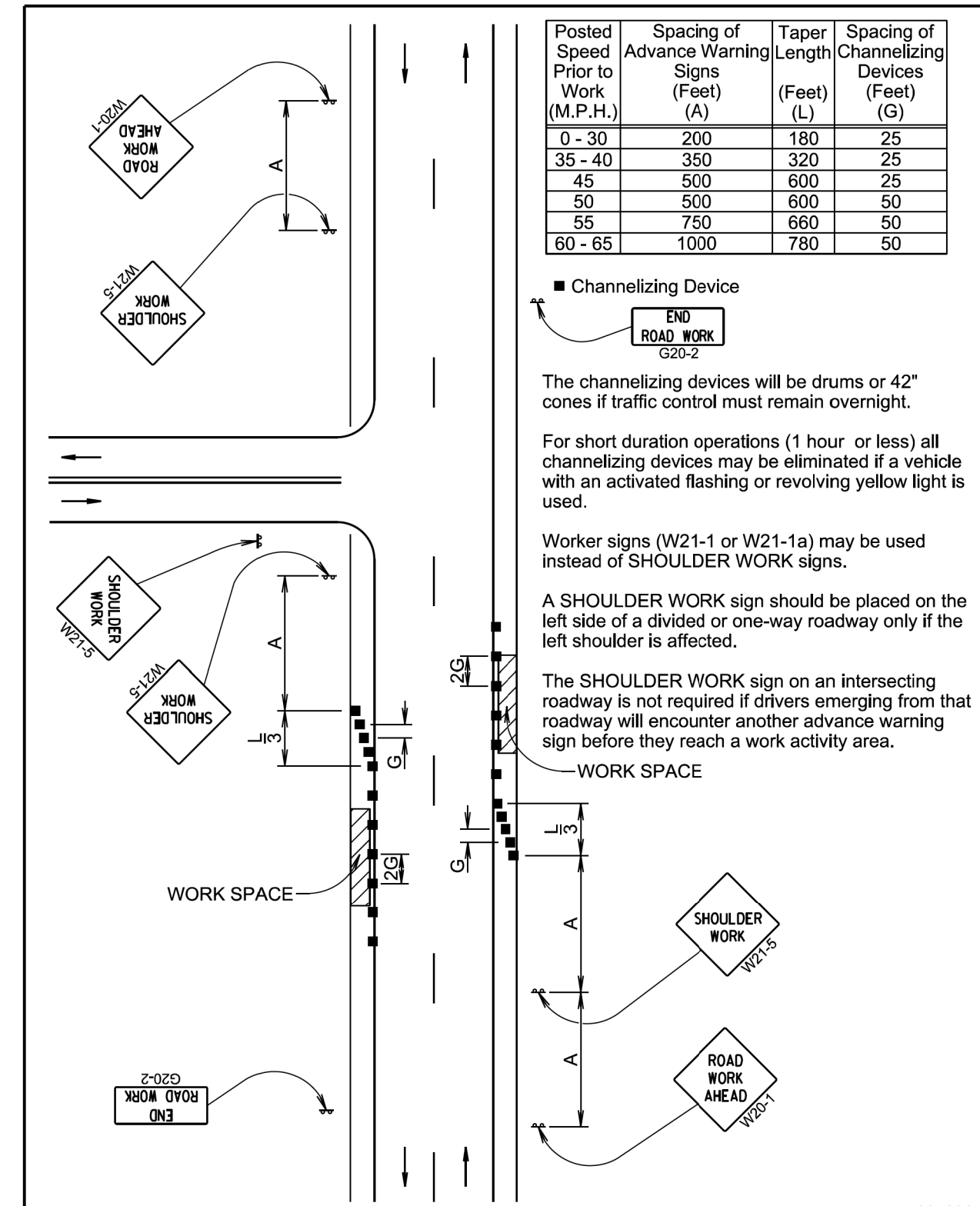
For short term, short duration, or mobile operations, all signs and channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.



January 22, 2021

SD DOT	WORK BEYOND THE SHOULDER	PLATE NUMBER 634.01
		Sheet 1 of 1

Published Date: 2024



The channelizing devices will be drums or 42" cones if traffic control must remain overnight.

For short duration operations (1 hour or less) all channelizing devices may be eliminated if a vehicle with an activated flashing or revolving yellow light is used.

Worker signs (W21-1 or W21-1a) may be used instead of SHOULDER WORK signs.

A SHOULDER WORK sign should be placed on the left side of a divided or one-way roadway only if the left shoulder is affected.

The SHOULDER WORK sign on an intersecting roadway is not required if drivers emerging from that roadway will encounter another advance warning sign before they reach a work activity area.

January 22, 2021

SD DOT	WORK ON SHOULDERS	PLATE NUMBER 634.03
		Sheet 1 of 1

Published Date: 2024

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Spacing of Channelizing Devices (Feet) (G)
0 - 30	200	25
35 - 40	350	25
45	500	25
50	500	50
55	750	50
60 - 65	1000	50

- Flagger
- Channelizing Device

For low-volume traffic situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger may be used.

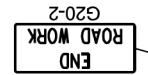
The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short duration operations (1 hour or less).

For tack and/or flush seal operations, when flaggers are not being used, the FRESH OIL sign (W21-2) will be displayed in advance of the liquid asphalt areas.

Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

The channelizing devices will be drums or 42" cones.

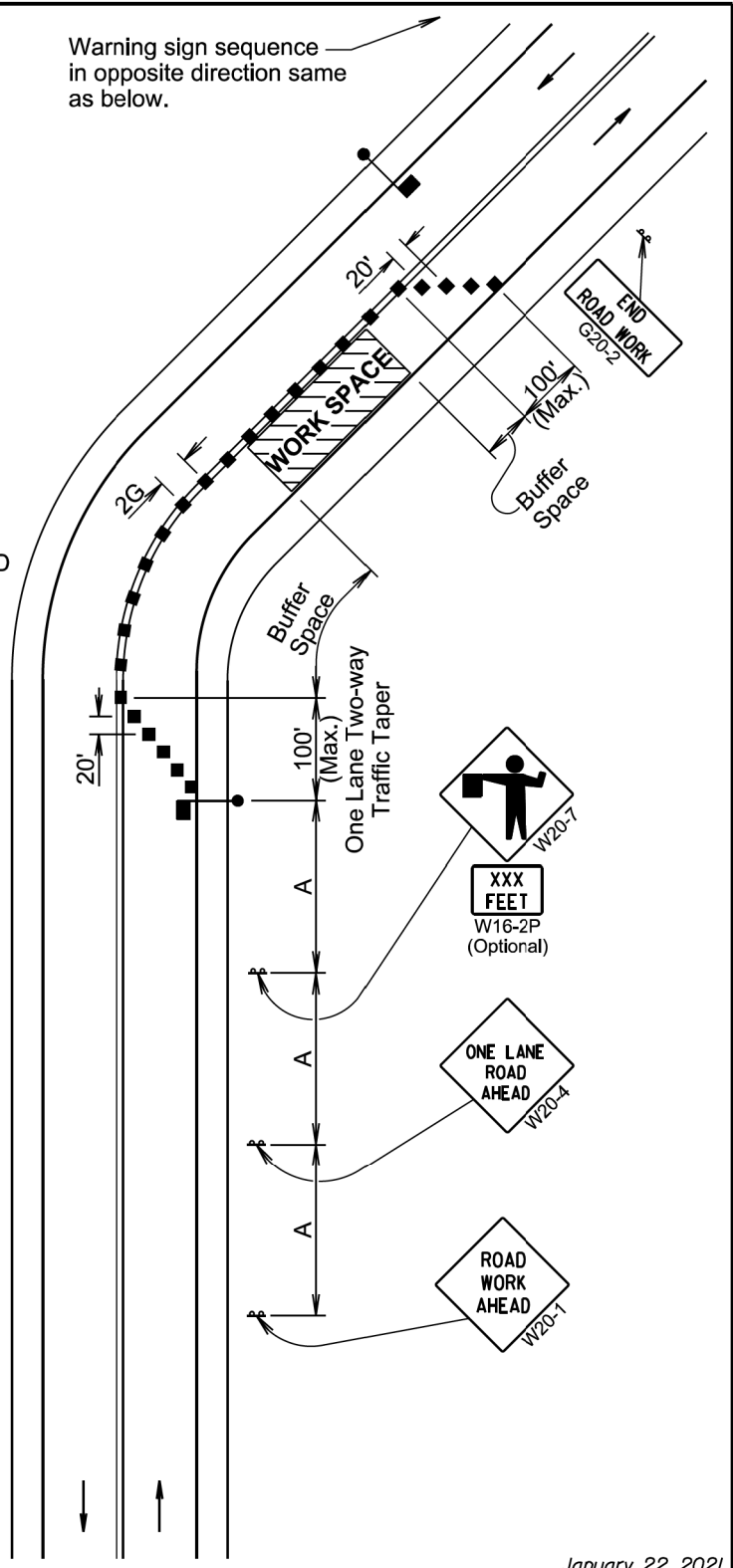
Channelizing devices are not required along the centerline adjacent to work area when pilot cars are utilized for escorting traffic through the work area.



Channelizing devices and flaggers will be used at intersecting roads to control intersecting road traffic as required.

The buffer space should be extended so that the two-way traffic taper is placed before a horizontal or vertical curve to provide adequate sight distance for the flagger and queue of stopped vehicles.

The length of A may be adjusted to fit field conditions.



January 22, 2021

SD DOT	LANE CLOSURE WITH FLAGGER PROVIDED	PLATE NUMBER 634.23
		Sheet 1 of 1

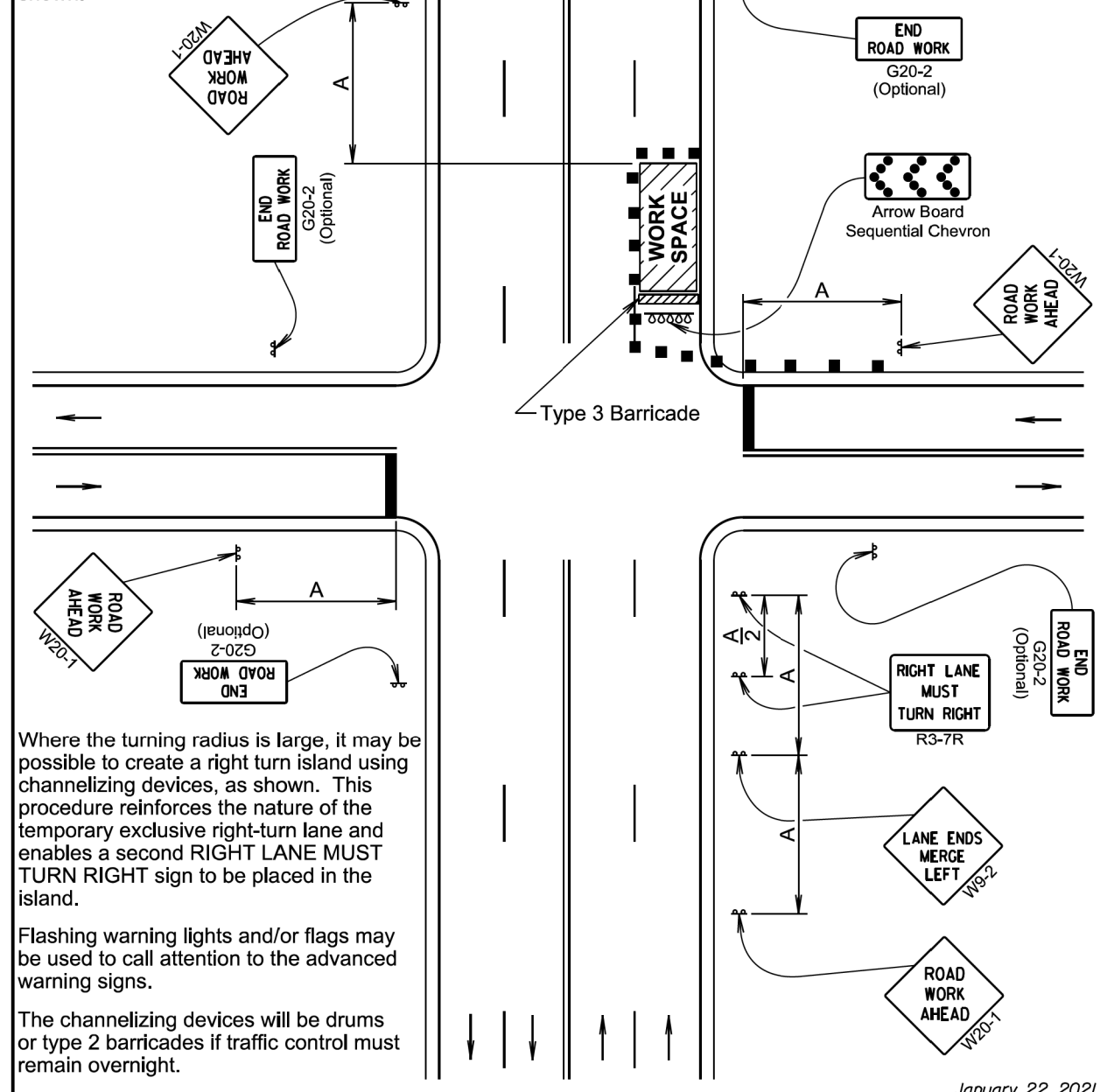
Published Date: 2024

For intersection approaches reduced to a single lane, left-turning movements may be prohibited to maintain capacity for through traffic.

The standard procedure is to close on near side of the intersection any lane that is not carried through the intersection. However, when this results in the closing of a right lane having significant right-turning movements, then the right lane may be restricted to right turns only, as shown.

Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500

- Channelizing Device



Where the turning radius is large, it may be possible to create a right turn island using channelizing devices, as shown. This procedure reinforces the nature of the temporary exclusive right-turn lane and enables a second RIGHT LANE MUST TURN RIGHT sign to be placed in the island.

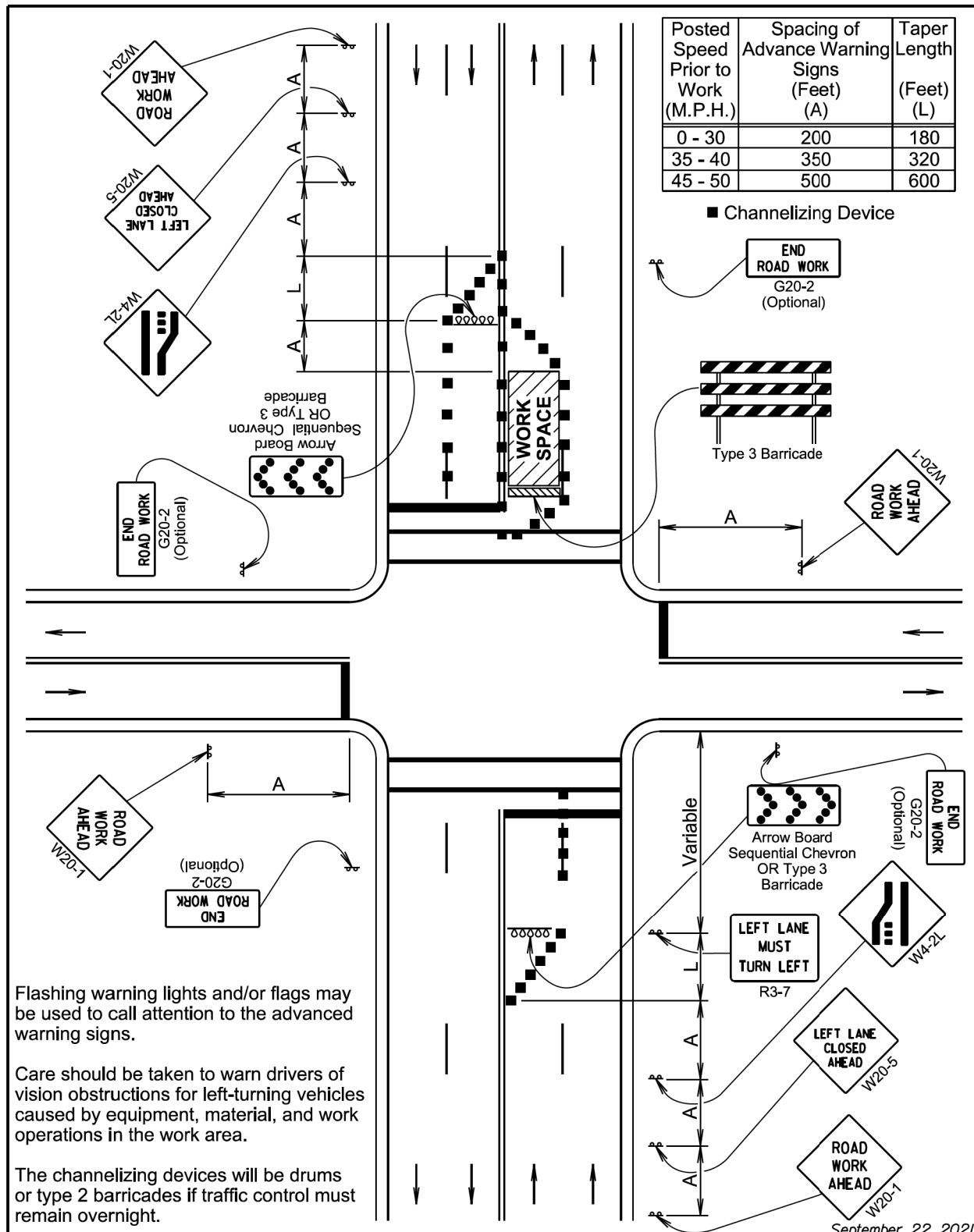
Flashing warning lights and/or flags may be used to call attention to the advanced warning signs.

The channelizing devices will be drums or type 2 barricades if traffic control must remain overnight.

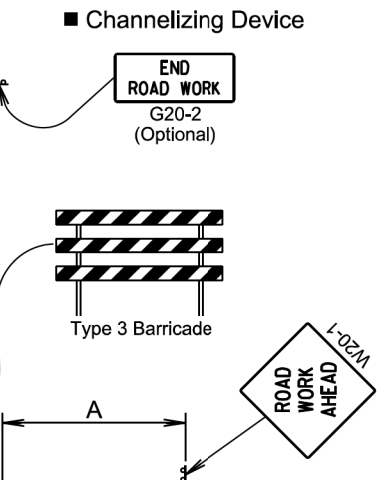
January 22, 2021

SD DOT	RIGHT LANE CLOSURE FAR SIDE OF INTERSECTION	PLATE NUMBER 634.42
		Sheet 1 of 1

Published Date: 2024

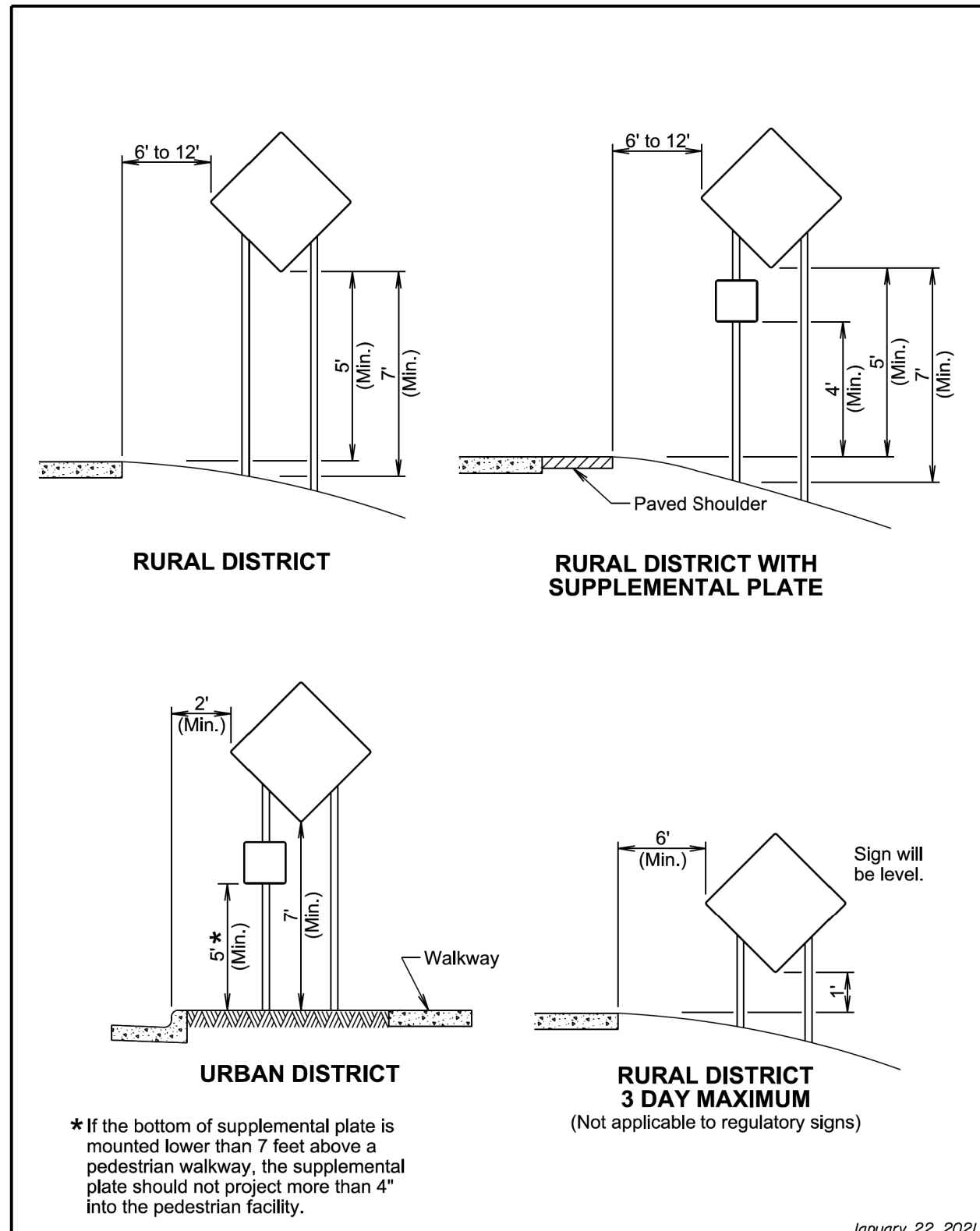


Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)	Taper Length (Feet) (L)
0 - 30	200	180
35 - 40	350	320
45 - 50	500	600



Published Date: 2024	SD DOT	LEFT LANE CLOSURE FAR SIDE OF INTERSECTION	PLATE NUMBER 634.43
			Sheet 1 of 1

September 22, 2021



Published Date: 2024	SD DOT	CRASHWORTHY SIGN SUPPORTS (Typical Construction Signing)	PLATE NUMBER 634.85
			Sheet 1 of 1

January 22, 2021