


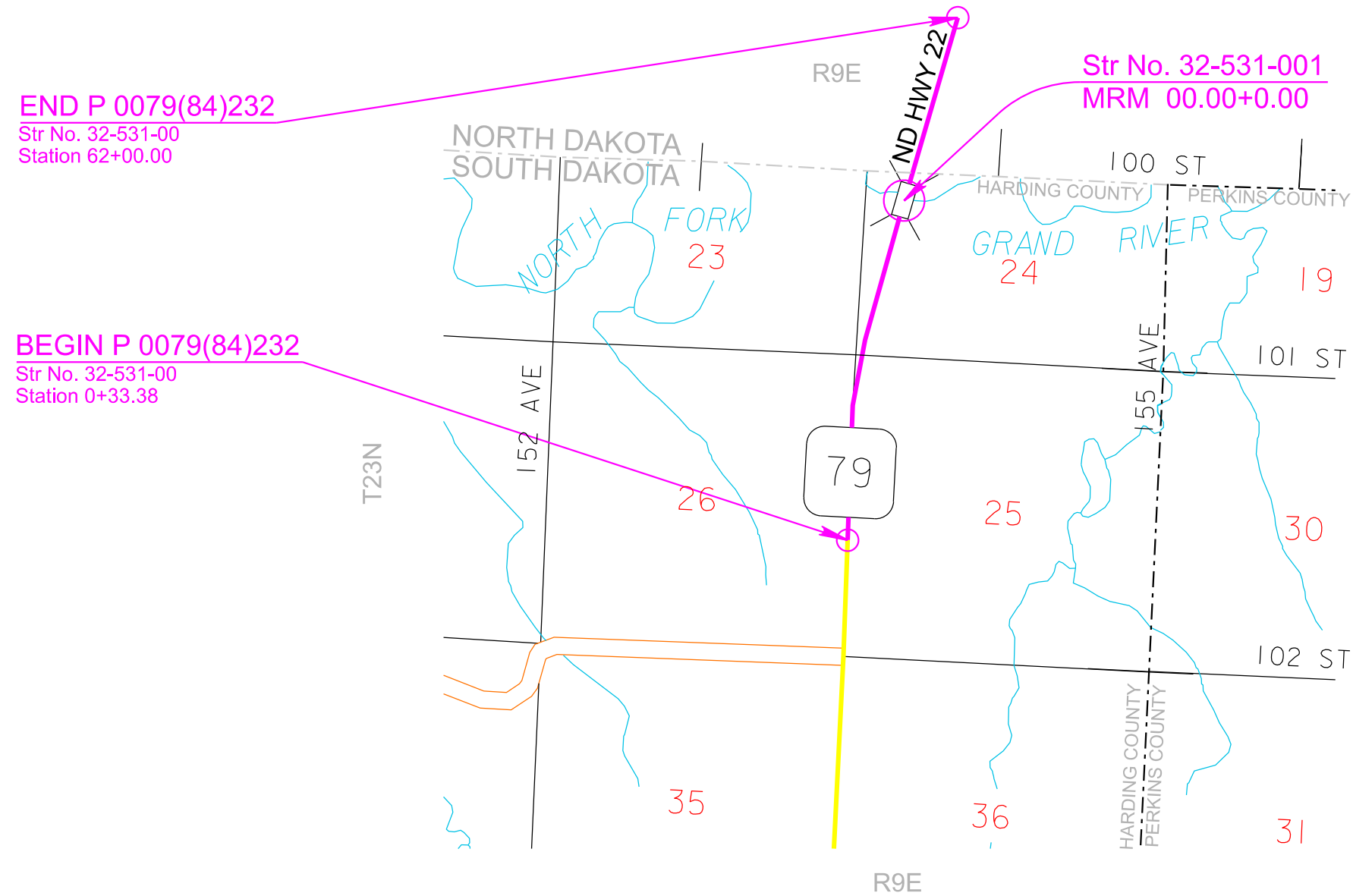
SECTION S: PERMANENT SIGNING PLANS

	PROJECT	SECTION	SHEET
	P 0079(84)232	S	1/15

Plotting Date: 07/29/2024

INDEX OF SHEETS

- S1 General Layout with Index
- S2-S4 Estimate with General Notes and Tables
- S5 Sign Details
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SECTION S – ESTIMATE OF QUANTITIES

BID ITEM NUMBER	ITEM	QUANTITY	UNIT
110E0130	Remove Traffic Sign	7	Each
110E7150	Remove Sign for Reset	8	Each
632E1320	2.0"x2.0" Perforated Tube Post	87.9	Ft
632E2022	4"x4" White Delineator Back to Back with 1.12 Lb/Ft Post	32	Each
632E2220	Guardrail Delineator	18	Each
632E2510	Type 2 Object Marker Back to Back	13	Each
632E3203	Flat Aluminum Sign, Nonremovable Copy High Intensity	19.5	SqFt
632E3205	Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity	23.0	SqFt
632E3500	Reset Sign	8	Each

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 U-Channel stiffeners 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 U-Channel will be 2 inches in width and free of holes. The U-Channel stiffeners 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 3/8-inch diameter rust proof machine sign bolts, flat metal washers, neoprene washers (against the sign sheeting), lock washers, and nuts to fasten the sign to the channel aluminum and posts. A minimum of two bolts will extend through each post.

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 sign 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.

REMOVE SIGN FOR RESET AND RESET SIGN

Signs that are scheduled for reset will be dismantled and reassembled to the extent needed by the Contractor to properly reset the sign. Signs will be handled with care so that the existing signs, posts, and bases are not damaged during the relocation process. The Contractor will replace and pay for any reset signs damaged in their care. The Contractor will remove and dispose of any existing posts for all reset signs that require use of new posts as shown in the Table of Permanent Signing.


All costs for removing, dismantling, and disposing of any existing posts will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing signs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign 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 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" or "Flat Aluminum Sign, Nonremovable Copy Super/Very High Intensity".

	PROJECT	SECTION	SHEET
	P 0079(84)232	S	2/15

Plotting Date: 09/17/2024 Revised: 9/17/2024 - kv

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.

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.

DIGITALLY PRINTED SIGNS (continued)

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.

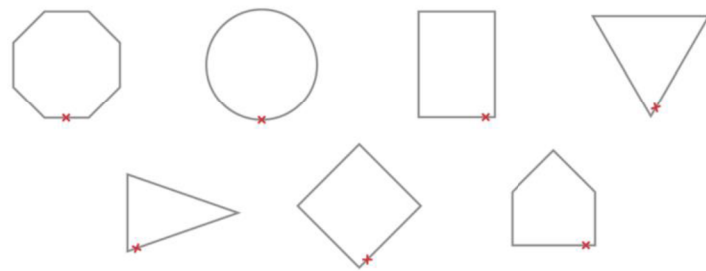
CERTIFIED DIGITAL SIGN FABRICATOR

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.



SQUARE TUBE ANCHOR SLEEVE

The Contractor will furnish and install new 2.5" x 2.5" x 18", 12 Gauge square tube anchor sleeve or equivalent components as approved by the Engineer for 2.0" x 2.0" perforated tube posts. A 2.25" x 2.25" x 4', 12 Gauge perforated tube post will be used as the anchor post for installation with the square tube anchor sleeve.

MILEAGE REFERENCE MARKERS

Mileage Reference Markers (MRMs) are expected to be disturbed with this project. If an MRM is attached to a sign listed for replacement it will be salvaged and reattached to the new sign in the same location.

The following MRMs will be removed for reset and reset after the project is complete.

- MRM 232
- MRM 232.25
- MRM 232.30

All costs for removing existing MRMs will be incidental to the contract unit price per each for "Remove Sign for Reset". All costs for resetting the existing MRMs will be incidental to the contract unit price per each for "Reset Sign". All quantities for Remove Sign for Reset and Reset Sign will be per assembly at the contract unit price per each.

TABLE OF GURADRAIL DELINEATORS

Guardrail Delineators			
Location	On End	Off End	Total:
Hwy 79 NB	5	4	9
Hwy 79 SB	5	4	9
Total:			18

TABLE OF DELINEATORS

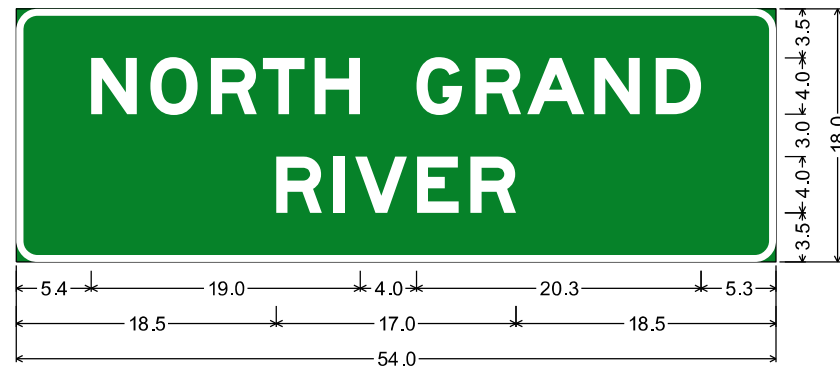
STA	DIR CRV	TOTAL SEGMENT LENGTH (MI)	TOTAL SEGMENT LENGTH (FT)	Curve Length	Deflection Angle	Degree of Curvature	Radius	Spacing	1st Delin. From Curve (2S)	2nd Delin. From Curve (3S)	3rd Delin. From Curve (6S)	# Delins. Outside of Curve	# Delins. Inside of Curve	Total Delins. Per Curve
10+00	72+86	1.19	6,286											
11+40	R	1346.7	13.35	0.99	5780.0	225	300	300	300	6	3	9		
55+90	L	1352.8	13.41	0.99	5780.0	225	300	300	300	6	3	9		
									0	0	0	0		
									0	0	0	0		

Total Length of Curves (Ft)	2700	Total Delineators for Curves (Includes the 3 in advance of and also the 3 proceeding away from the curve for each location)	18
Total Length of Tangents (Ft)	3586	Total Delineators for Tangents	14
TOTAL (4"x4" White Back to Back with 1.12 Lb/Ft Post) DELINEATORS			32

PCN 06TD - PERMANENT SIGNING

LOCATION		SIGN													POST			WORK TO BE DONE	LF of 2.0"	FLAT ALUMINUM SIGN		REMOVE SIGN	REMOVE SIGN FOR RESET & RESET SIGN				
Hwy	Existing	New	Side of Road	Description	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
SD 79	MRM - 231.0+0.539 STA - 14+04 - 19.0 Rt	TO BE DETERMINED AFTER CONSTRUCTION	RIGHT	W4-13: NO PASSING ZONE	48	36	NORTH	ROW	YES	FLAT ALUM	YES	5.6	XI	YES	10.4	25.9			2.0	1	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	10.4	6.0	1		
SD 79	MRM - 231.00+0.669 STA - 20+82 - 59.0 Lt	TO BE DETERMINED AFTER CONSTRUCTION	LEFT	W4-13: NO PASSING ZONE	48	36	SOUTH	ROW	YES	FLAT ALUM	YES	5.6	XI	YES	10.4	25.9			2.0	1	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	10.4	6.0	1		
SD 79	MRM - 232.00+0.128 STA - 42+03 - 28.0 Lt	TO BE DETERMINED AFTER CONSTRUCTION	RIGHT	W4-13: NO PASSING ZONE	48	36	NORTH	ROW	YES	FLAT ALUM	YES	5.6	XI	YES	10.4	25.9			2.0	1	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	10.4	6.0	1		
SD 79	MRM - 232.00+0.139 STA - 42+45 - 81.0 Lt	42+45 - 25.0' Lt	LEFT	R2-1: SPEED LIMIT 65	24	30	NORTH	ROW	YES	FLAT ALUM	YES	5.0	XI	YES	9.1	25.0	-	-	2.0	1	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	9.1	5.0	1		
SD 79	MRM - 232.00+0.204 STA - 45+74 - 82.0 Lt	45+50 - 25.0' Lt	LEFT	M3-3B: DIRECTIONAL MARKER - SOUTH - SD	24	12	NORTH	ROW	YES	FLAT ALUM	YES	2.0	IV	YES	9.8	25.0	-	-	2.0	1	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	2.0		1		
				M1-5: ROUTE MARKER - SD 79	24	24			YES	FLAT ALUM	YES	4.0	IV										4.0				
SD 79	MRM - 232.00+0.212 STA - 46+43 - 82.0 Lt	46+50 - 29.2' Lt	LEFT	WELCOME TO SOUTH DAKOTA GREAT FACES GREAT PLACES	72	36	NORTH	ROW	NO	FLAT ALUM	YES	69.0	IV	NO	-	29.2	-	32.8	-	-	-	REMOVE EXISTING SIGN FOR RESET. REMOVE EXISTING POSTS AND BASE ASSEMBLIES FOR RESET. RESET EXISTING SIGN ON EXISTING POSTS WITH EXISTING BASES AT NEW LOCATION AS SPECIFIED				1	
SD 79	MRM - 232.00+0.310 STA - 51+57 - 33.0 Lt	51+55 - 28.8' Rt	RIGHT	NORTH GRAND RIVER	54	18	SOUTH	ROW	YES	FLAT ALUM	YES	6.8	IV	YES	9.6	28.8	10.3	31.5	2.0	2	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	19.9	6.8	1		
SD 79	MRM - 232.00+0.351 STA - 53+77 - 73.0 Lt	53+80 - 28.8' Lt	LEFT	NORTH GRAND RIVER	54	18	NORTH	ROW	YES	FLAT ALUM	YES	6.8	IV	YES	8.7	28.8	9.2	31.2	2.0	2	NO	REMOVE EXISTING SIGN, POST AND BASE ASSEMBLY. INSTALL NEW SIGN ON NEW POST WITH NEW BASE ASSEMBLY AT NEW LOCATION AS SPECIFIED.	17.9	6.8	1		
ND 22	STA - 58+00 - 14.5 Lt	58+00 - 28.0' Rt	RIGHT	WELCOME TO NORTH DAKOTA	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	28.0	-	-	-	-	-	REMOVE EXISTING SIGN FOR RESET. REMOVE EXISTING POSTS AND BASE ASSEMBLIES FOR RESET. RESET EXISTING SIGN ON EXISTING POSTS WITH EXISTING BASES AT NEW LOCATION AS SPECIFIED.				1	
ND 22	STA - 59+90 - 8.7 Lt	59+90 - 25.0' Rt	RIGHT	DIRECTIONAL MARKER - NORTH - ND	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	25.0	-	-	-	-	-	REMOVE EXISTING SIGN FOR RESET. REMOVE EXISTING POSTS AND BASE ASSEMBLIES FOR RESET. RESET EXISTING SIGN ON EXISTING POSTS WITH EXISTING BASES AT NEW LOCATION AS SPECIFIED.				1	
				M1-5: ROUTE MARKER - ND 22	-	-	SOUTH		NO	FLAT ALUM	YES	-	-														
ND 22	STA - 61+99 - 4.7 Lt	62+00 - 25.0' Rt	RIGHT	R2-1: SPEED LIMIT 65	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	25.0	-	-	-	-	-	REMOVE EXISTING SIGN FOR RESET. REMOVE EXISTING POSTS AND BASE ASSEMBLIES FOR RESET. RESET EXISTING SIGN ON EXISTING POSTS WITH EXISTING BASES AT NEW LOCATION AS SPECIFIED.				1	
ND 22	STA - 64+00 - 6.5 Rt	64+00 - 26.0' Rt	RIGHT	D2-1: DESTINATION DISTANCE REEDER 12	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	28.0	-	-	-	-	-	REMOVE EXISTING SIGN FOR RESET. REMOVE EXISTING POSTS AND BASE ASSEMBLIES FOR RESET. RESET EXISTING SIGN ON EXISTING POSTS WITH EXISTING BASES AT NEW LOCATION AS SPECIFIED.				1	
			RIGHT	MRM 232	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	20.0	-	-	-	-	-	REMOVE EXISTING MRM FOR RESET. RESET EXISTING MRM ON EXISING POSTS.				1	
			RIGHT	MRM 232.25	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	20.0	-	-	-	-	-	REMOVE EXISTING MRM FOR RESET. RESET EXISTING MRM ON EXISING POSTS.				1	
			RIGHT	MRM 232.30	-	-	SOUTH	ROW	NO	FLAT ALUM	YES	-	-	NO	-	20.0	-	-	-	-	-	REMOVE EXISTING MRM FOR RESET. RESET EXISTING MRM ON EXISING POSTS.				1	
TOTALS:																					87.9	19.5	23.0	7.0	8.0		

Sign Details




1.5" Radius, 0.5" Border, White on Green;
 "NORTH GRAND", E Mod 2K; "RIVER", E Mod 2K;

Table of letter and object lefts

N	O	R	T	H	G	R	A	N	D
5.4	9.5	13.9	17.5	21.3	28.5	32.6	36.4	41.1	45.5
R	I	V	E	R					
18.5	22.5	24.1	28.5	32.3					

WIDTH x HEIGHT	4' 6" x 1' 6"	
BORDER WIDTH	0.5" inset 0"	
CORNER RADIUS	1.5"	
BACKGROUND	TYPE:	Type IV High Intensity
	COLOR:	GREEN
LEGEND / BORDER	TYPE:	Type IV High Intensity
	COLOR:	WHITE

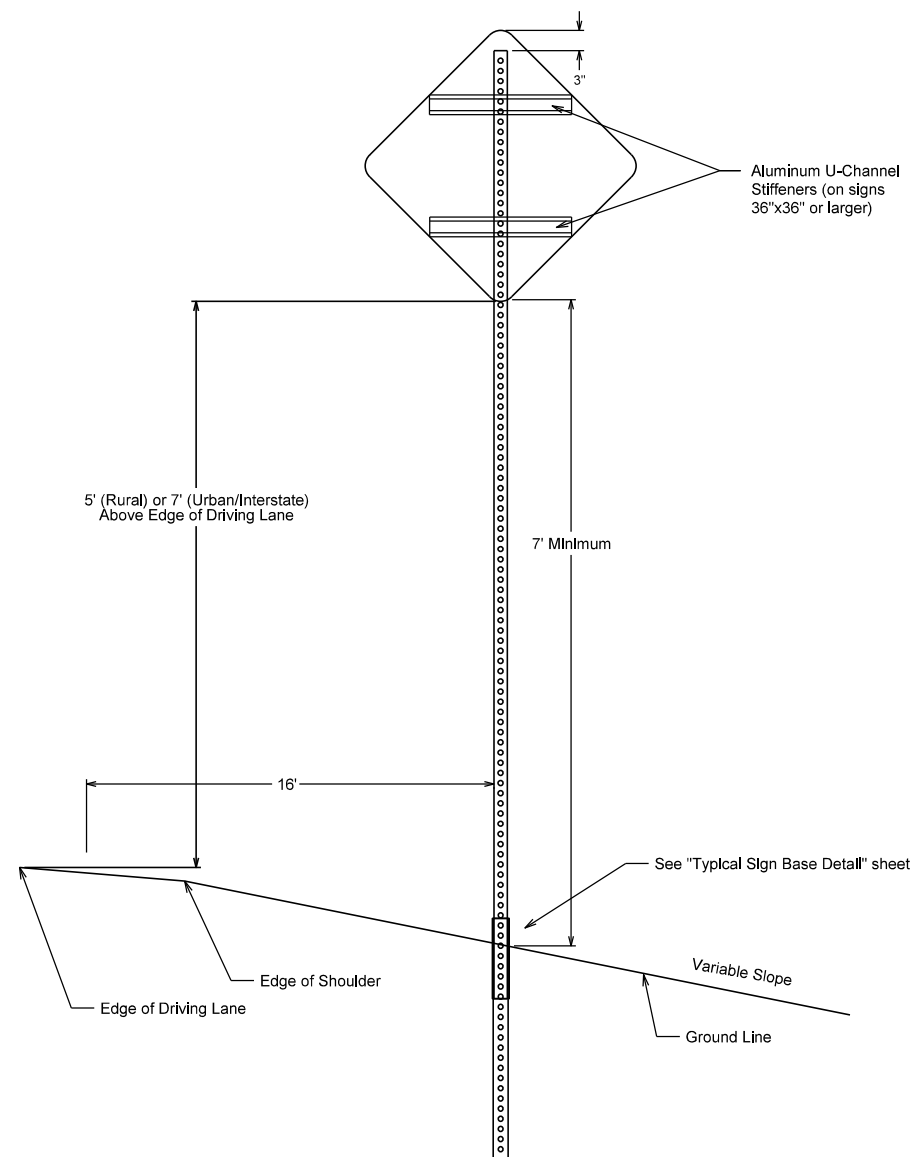
TYPICAL ERECTION DETAILS FOR WARNING SIGNS

	PROJECT	SECTION	SHEET
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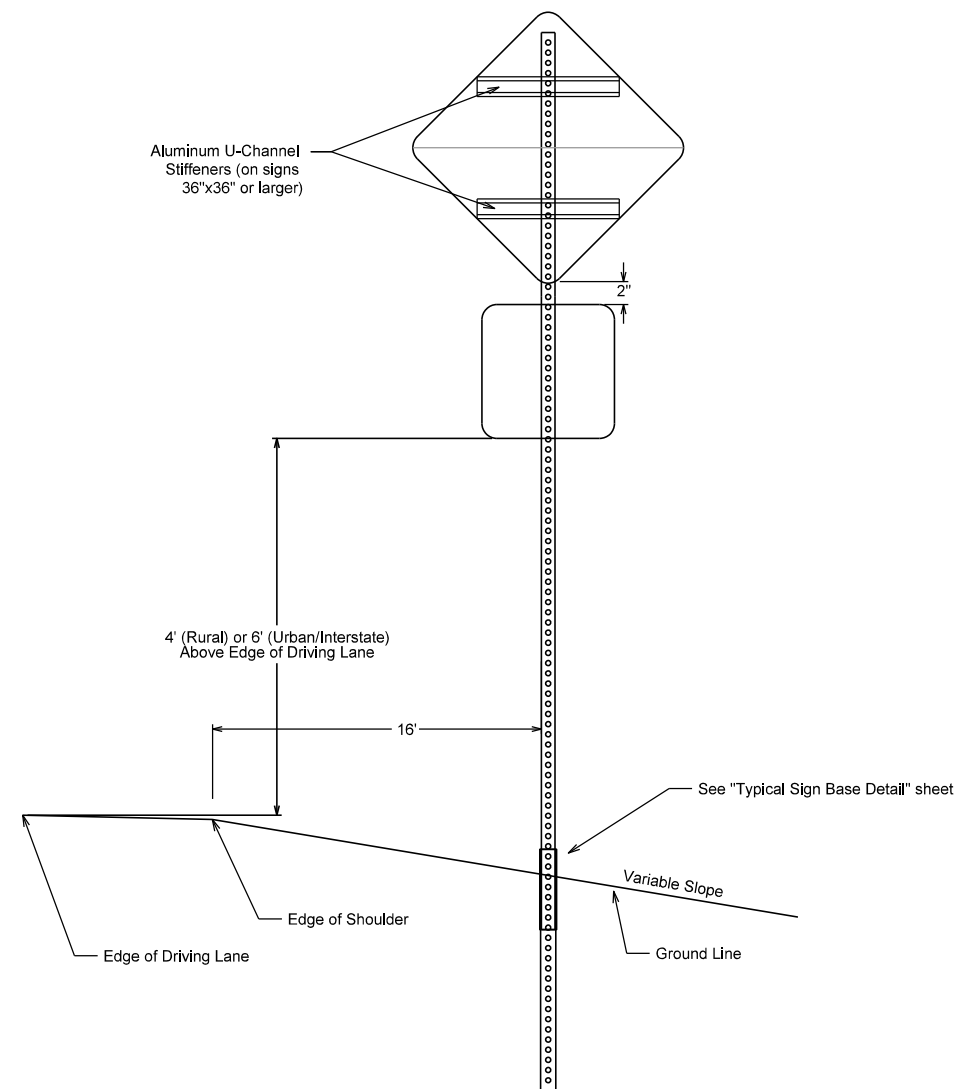
ONE-POST ASSEMBLY

(Drawing shown from face of sign)



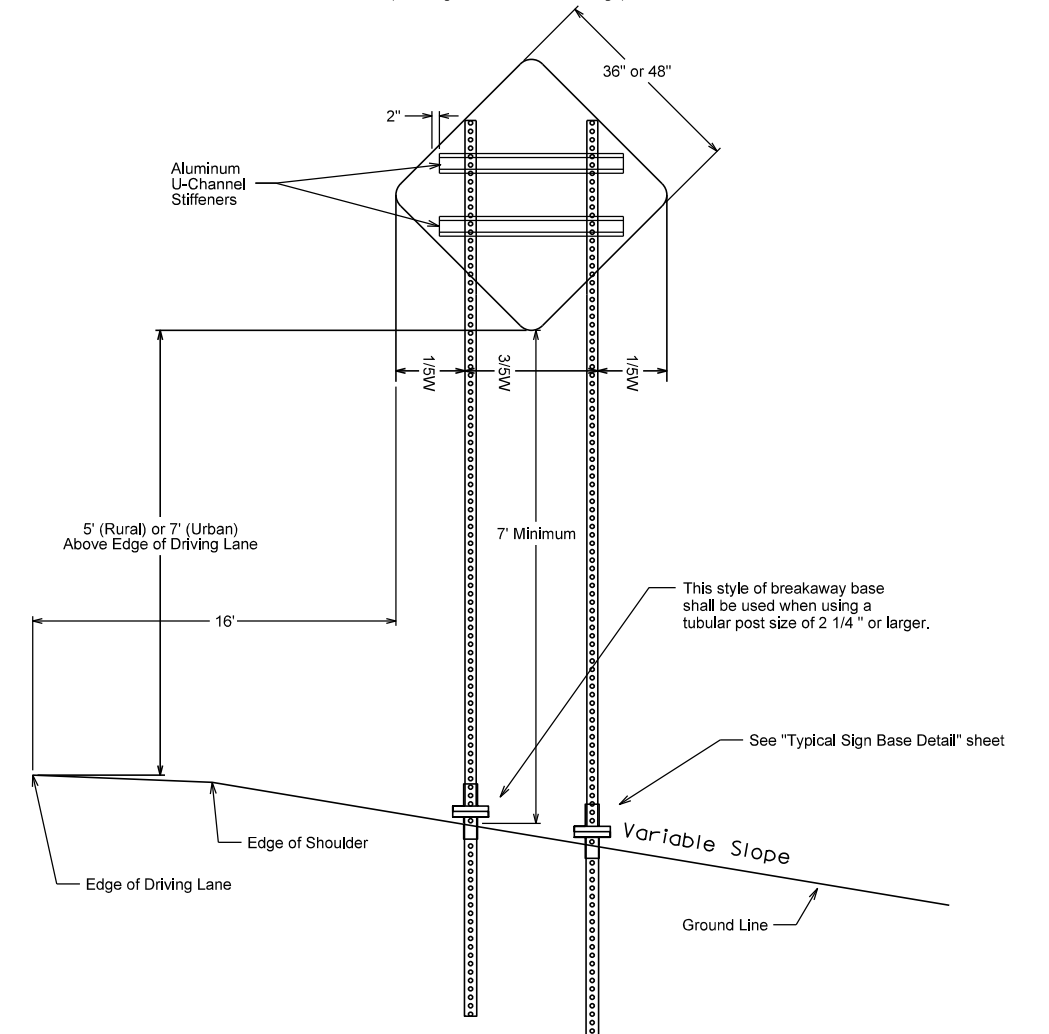
WITH SUPPLEMENTAL SIGN

(Drawing shown from face of sign)



TWO-POST ASSEMBLY

(Drawing shown from face of sign)

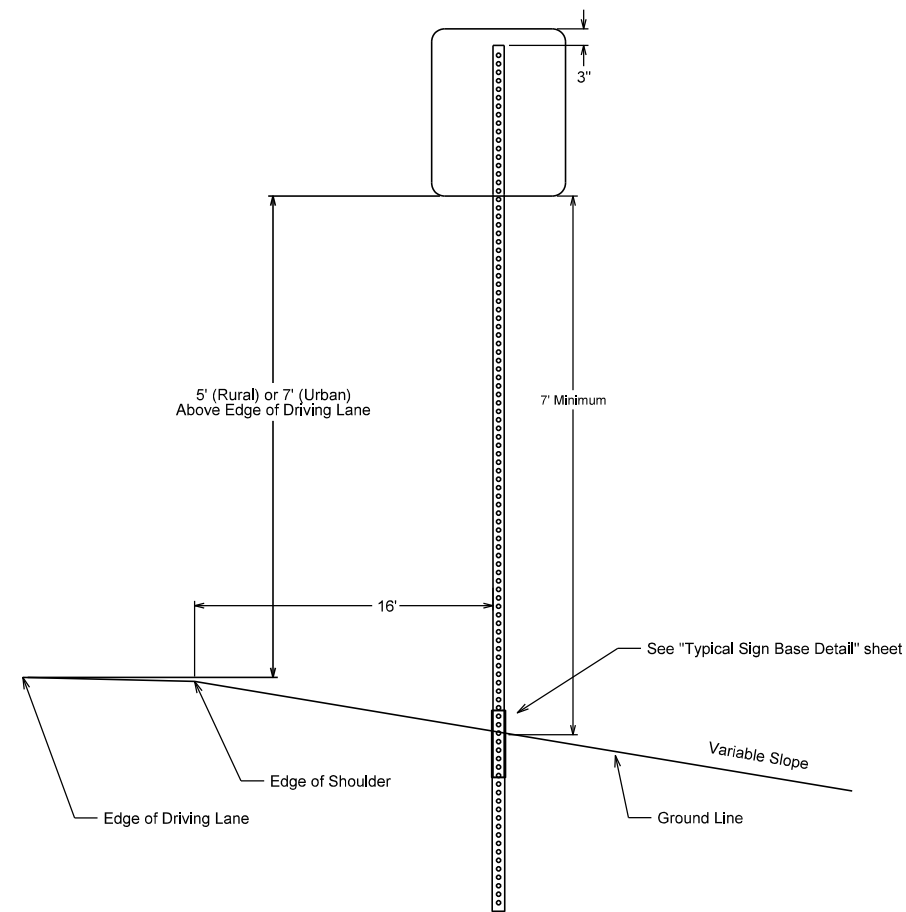


TYPICAL ERECTION DETAILS FOR SQUARE OR RECTANGULAR SIGNS

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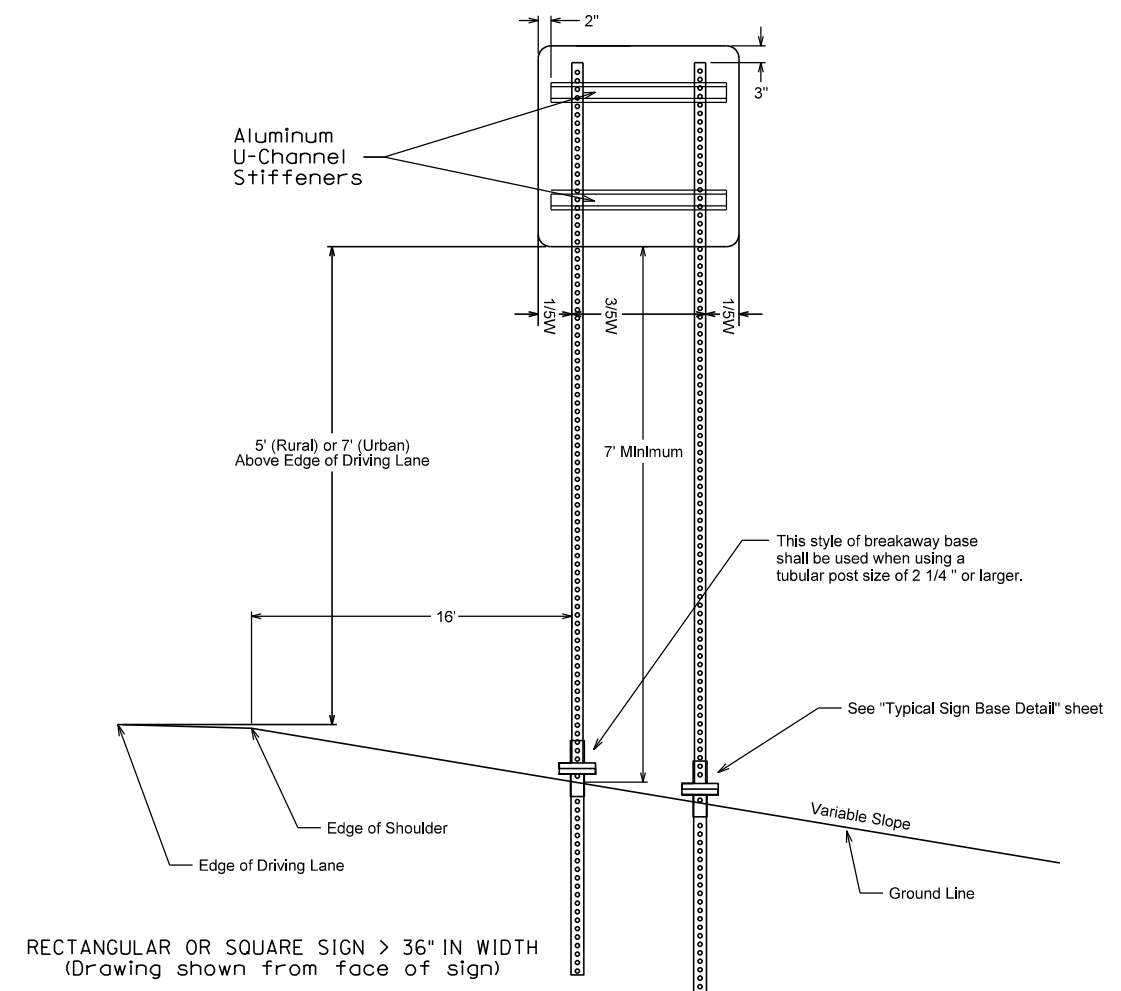
Plotting Date: 07/29/2024

RECTANGULAR OR SQUARE SIGN < 36" IN WIDTH
ONE-POST ASSEMBLY
(Drawing shown from face of sign)



RECTANGULAR OR SQUARE SIGN < 36" IN WIDTH

RECTANGULAR OR SQUARE SIGN 36" IN WIDTH OR GREATER
TWO-POST ASSEMBLY
(Drawing shown from face of sign)



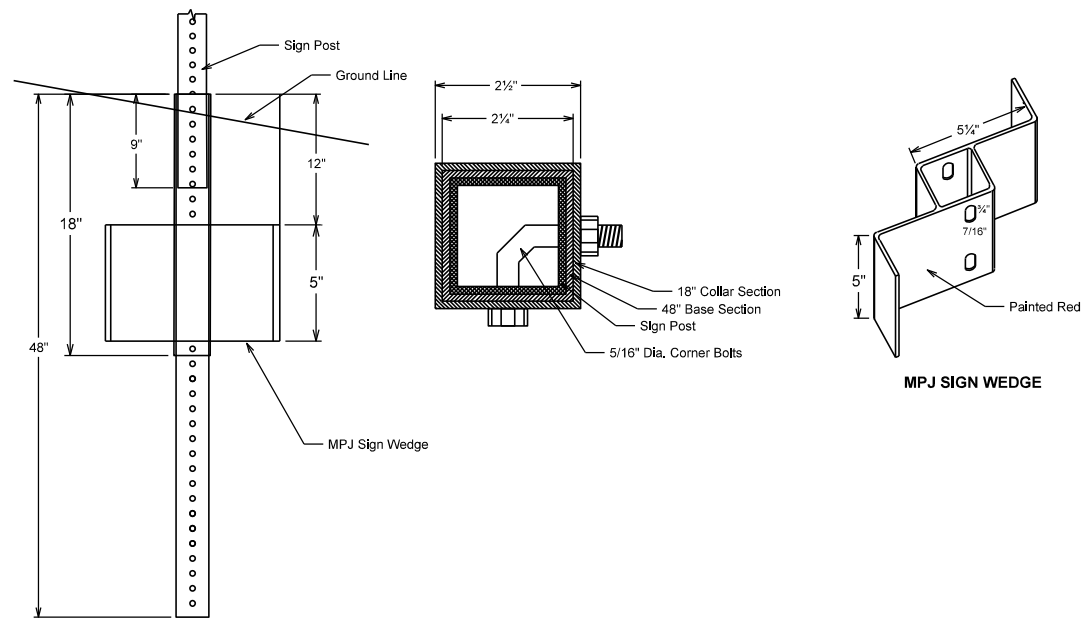
RECTANGULAR OR SQUARE SIGN > 36" IN WIDTH
(Drawing shown from face of sign)

TYPICAL SIGN BASE DETAIL

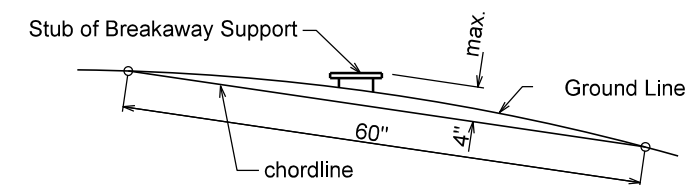
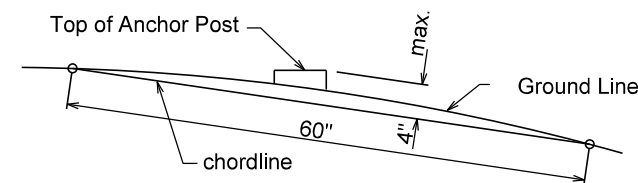
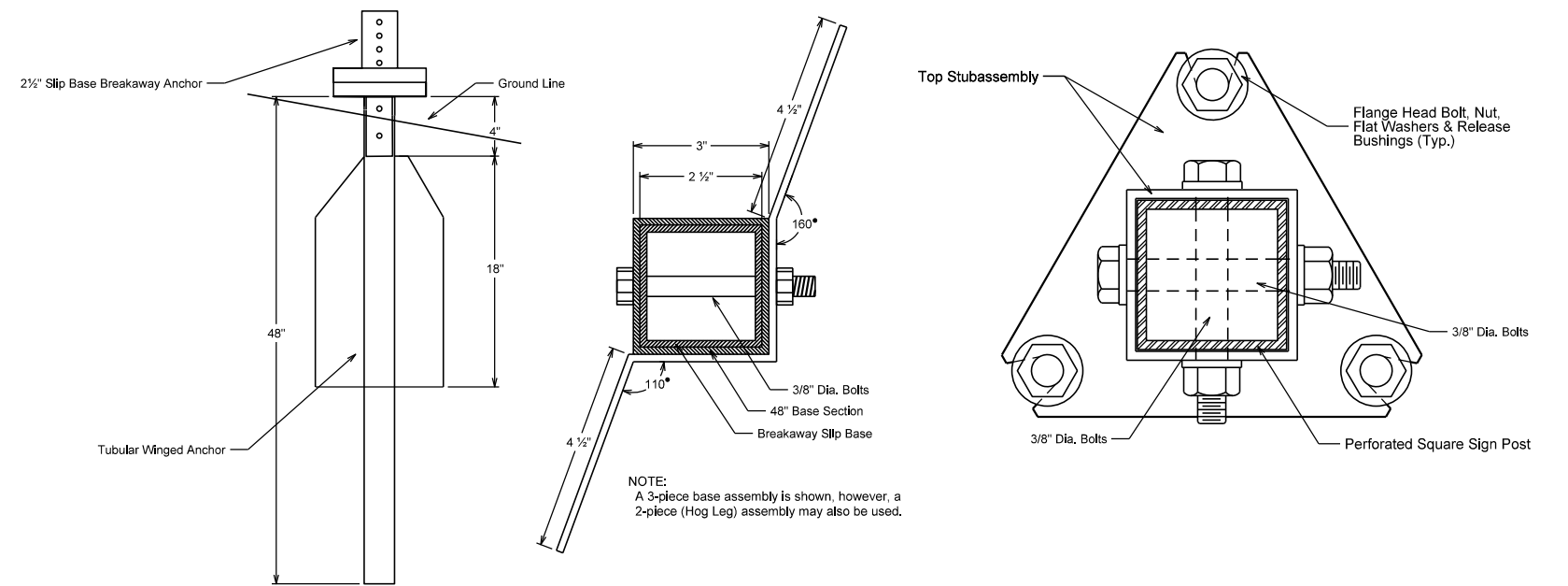
SD DOT	PROJECT	SECTION	SHEET
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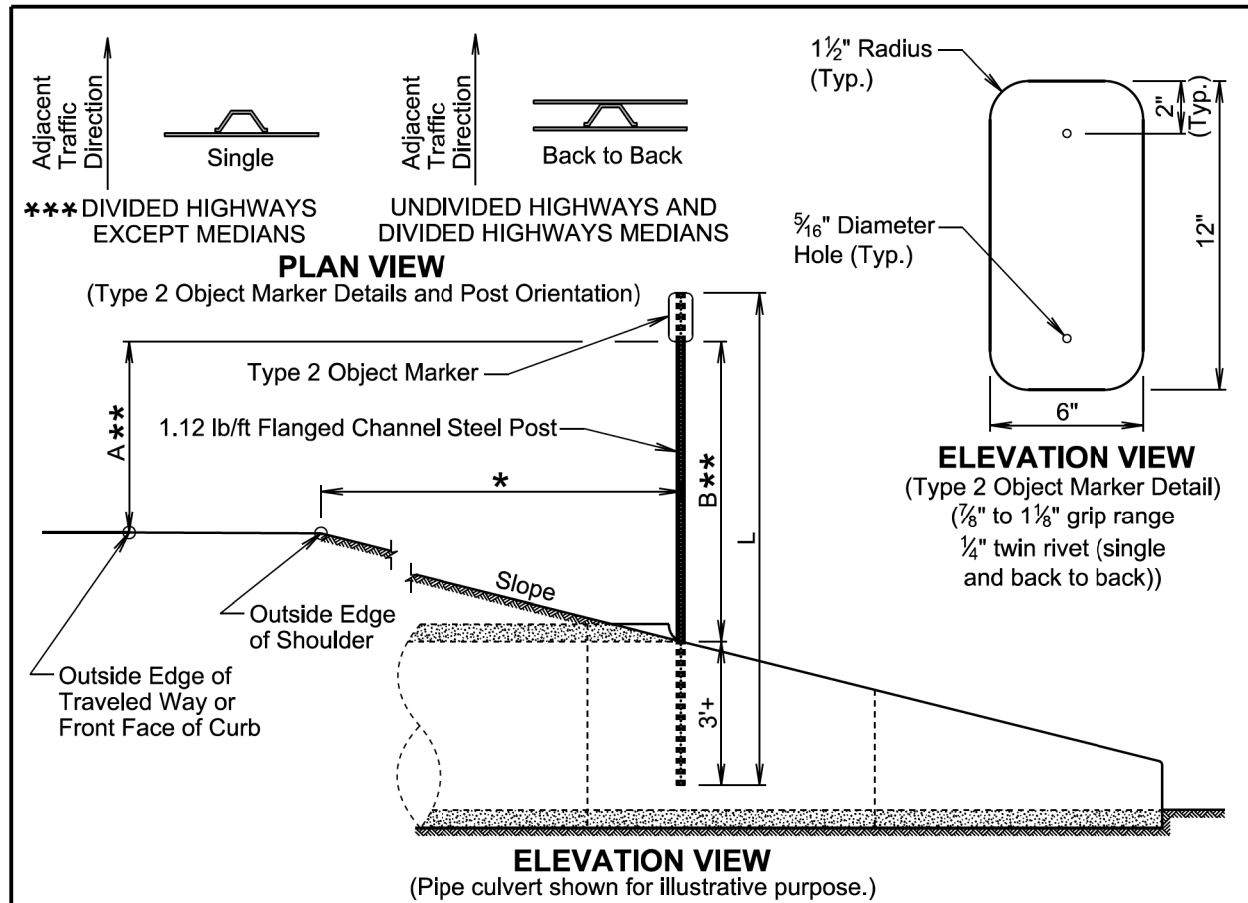
Plotting Date: 07/29/2024

SIGN BASE DETAILS FOR A 2" SIGN POST



SIGN BASE DETAILS FOR A 2 1/2" SIGN POST





ELEVATION VIEW
(Type 2 Object Marker Detail)
($\frac{7}{8}$ " to $1\frac{1}{8}$ " grip range
 $\frac{1}{4}$ " twin rivet (single
and back to back))

TYPE 2 OBJECT MARKER POST LENGTHS										
OFFSET (*)	1'	2'	3'	4'	5'	6'	7'	8'	Greater Than 8'	
POST LENGTH (L)										
SLOPE	3:1	8'-6"	8'-9"	9'-3"	9'-6"	9'-9"	10'-3"	10'-6"	10'-9"	8'-0"
	4:1	8'-6"	8'-9"	9'-0"	9'-3"	9'-9"	9'-9"	10'-0"	10'-3"	8'-0"
	5:1	8'-3"	8'-6"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	9'-9"	8'-0"
	6:1	8'-3"	8'-6"	8'-9"	8'-9"	9'-0"	9'-3"	9'-3"	9'-6"	8'-0"

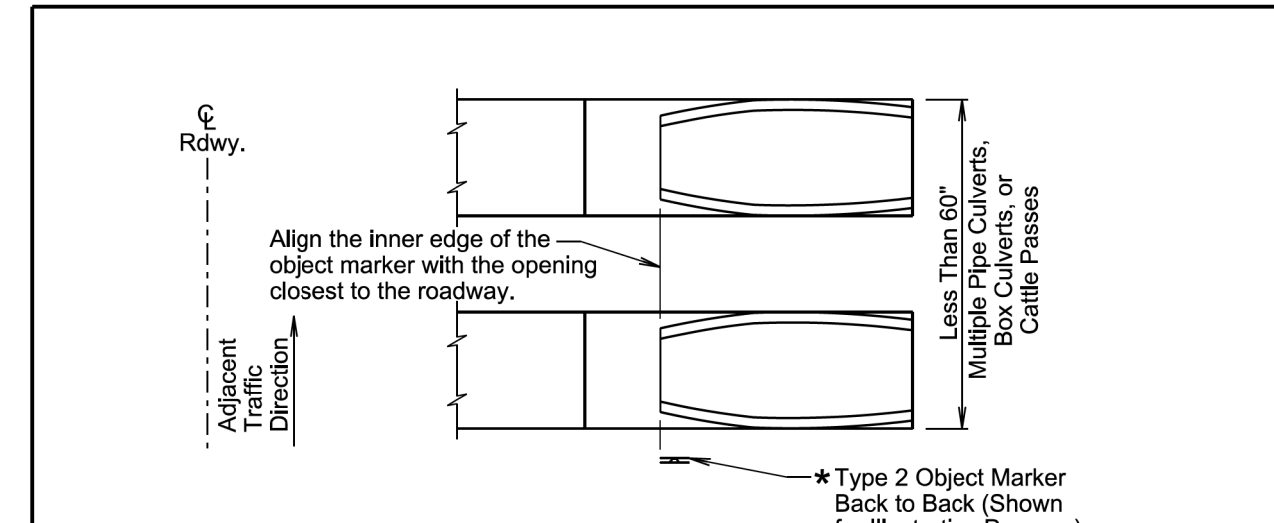
GENERAL NOTES:

- *** The type 2 object marker may be installed back to back when specified in the plans.
Post Length L was calculated based on a shoulder width of 6 feet at a crossslope of 4 percent and L was rounded up to the nearest 3 inches.
- ** Dimension A is 4 feet when the Offset * is 8 feet and less. Dimension B is 4 feet when Offset * is greater than 8 feet.
The type 2 object marker and the 1.12 lb/ft flanged channel steel post will be in conformance with Specifications Section 982.2 J.
Payment for the type 2 object marker will be in conformance with Specification Section 632.5 B.

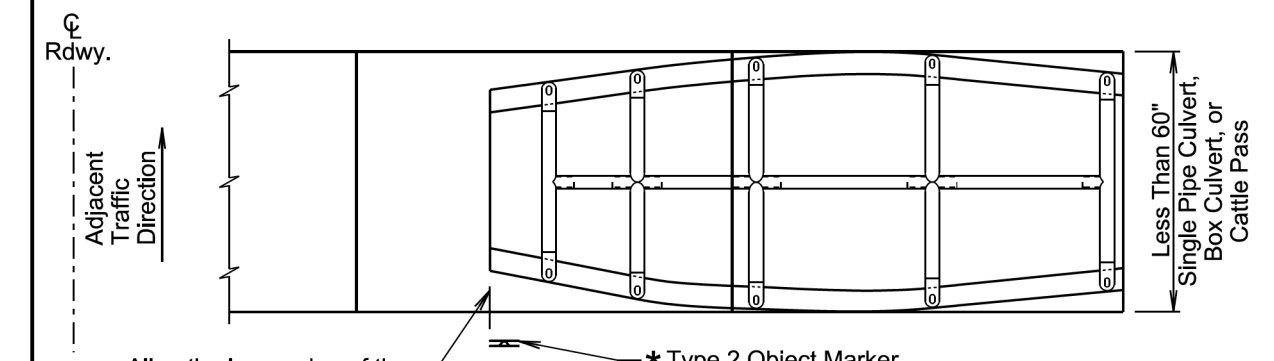
December 23, 2019

SD DOT	TYPE 2 OBJECT MARKER (DIRECT DRIVE)	PLATE NUMBER 632.01
		Sheet 1 of 1

Published Date: 2025



PLAN VIEW
(For Multiple Pipe Culverts, Box Culverts, and Cattle Passes)
(Pipe culverts shown for illustrative purpose.)
(Embankment is not shown.)



PLAN VIEW
(For Single Pipe Culvert, Box Culvert, and Cattle Pass)
(Pipe culvert shown for illustrative purpose.)
(Embankment is not shown.)

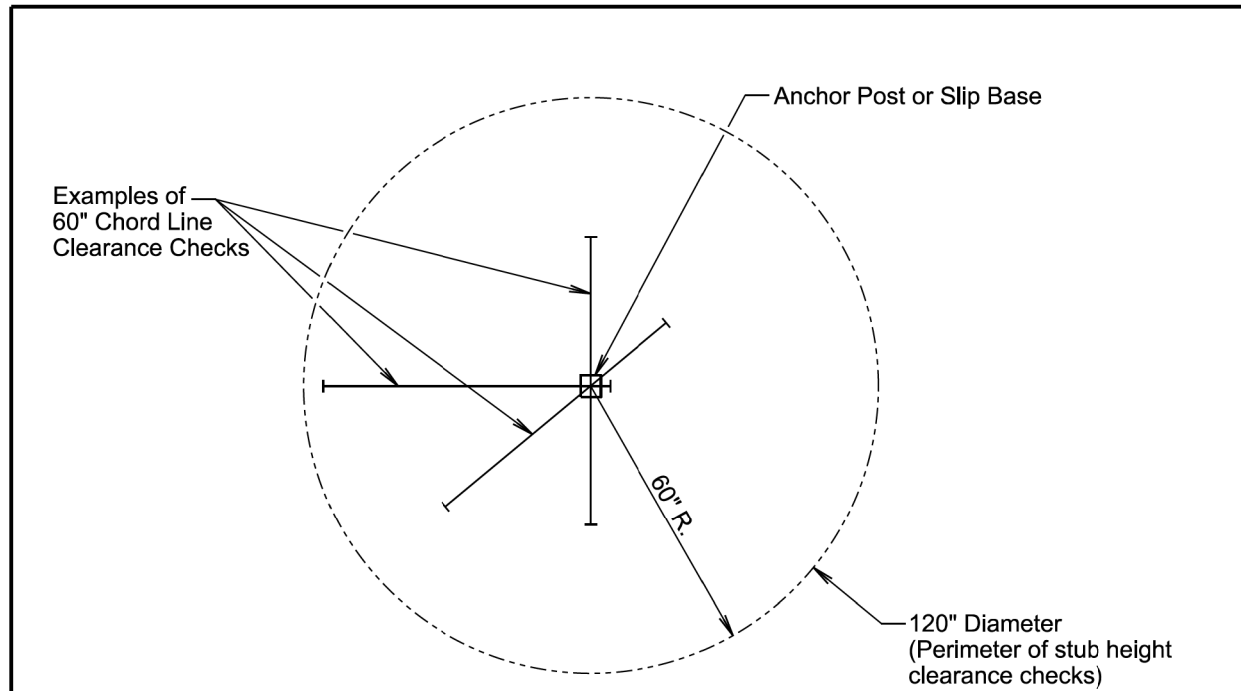
GENERAL NOTES:

- This standard plate will be used in conjunction with standard plate 632.01.
- * The type 2 object markers will be installed at the locations shown above. The type 2 object markers, single faced or back to back, will be as specified in the plans.

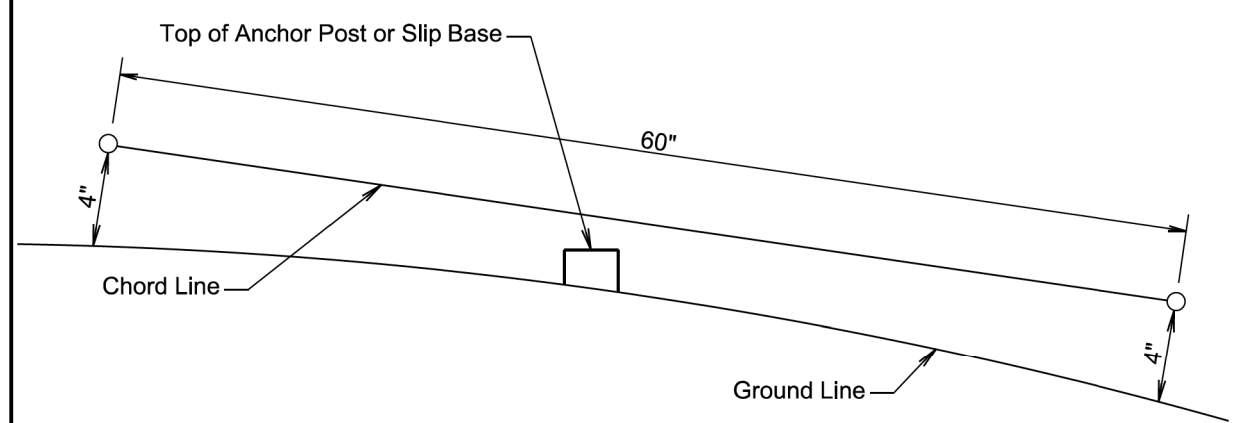
December 23, 2019

SD DOT	TYPE 2 OBJECT MARKER AT PIPE CULVERTS, BOX CULVERTS, AND CATTLE PASSES (Less than 60" Overall Width)	PLATE NUMBER 632.03
		Sheet 1 of 1

Published Date: 2025



PLAN VIEW
(Examples of stub height clearance checks)



ELEVATION VIEW

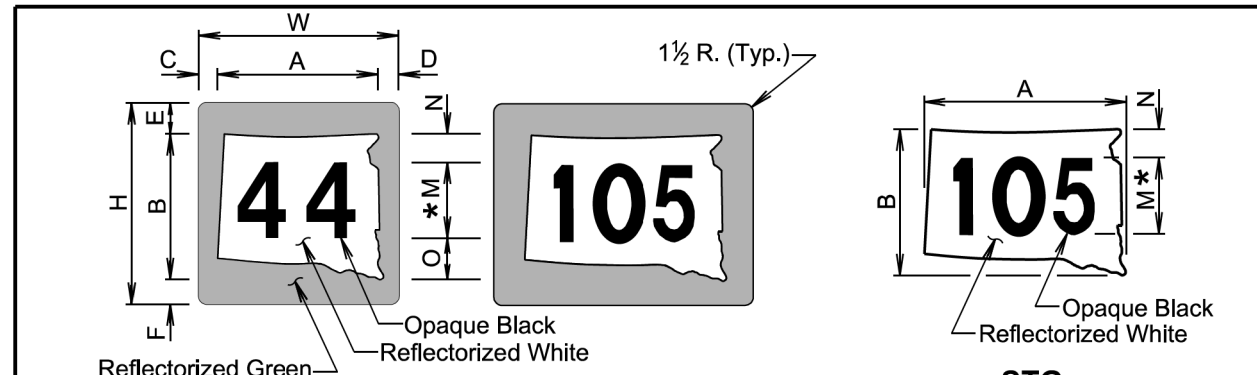
GENERAL NOTES:

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

Published Date: 2025	SD DOT	BREAKAWAY SUPPORT STUB CLEARANCE	PLATE NUMBER 632.18
			Sheet 1 of 1



M1-5

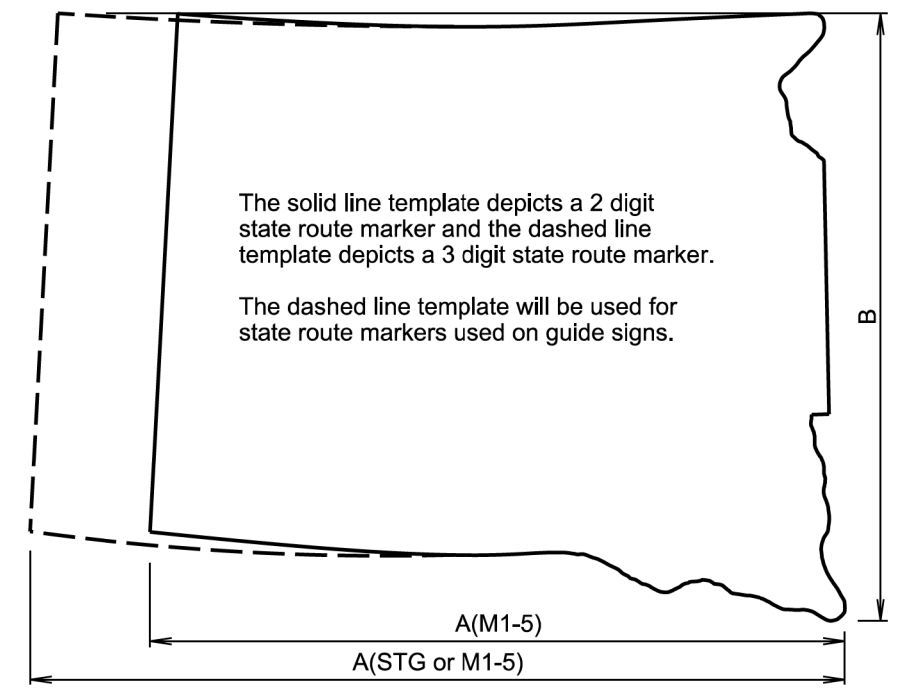
SIGN CODE	WxH	A	B	C	D	E	F	M*	N	O
M1-5	24x24	20½	18	2	1½	3½	2½	12D	2	4
M1-5 **	30x24	24	18	2¼	1¾	3½	2½	12D	2	4
M1-5	30x30	25⅝	22½	2½	1⅞	4⅜	3⅞	15D	2½	5
M1-5	36x36	30¾	27	3	2¼	5¼	3¾	18D	3	6

STG

SIGN CODE	AxB	M*	N
STG-24	24x18	10D	4
STG-32	32x24	12D	4¾
STG-48	48x36	18D	7
STG-64	64x48	24D	9½

* In the few cases where there is not enough space for the numerals, the standard D series font may be replaced with C series font if approved by the Engineer.

** 3 Digits



TEMPLATE FOR STATE ROUTE MARKER

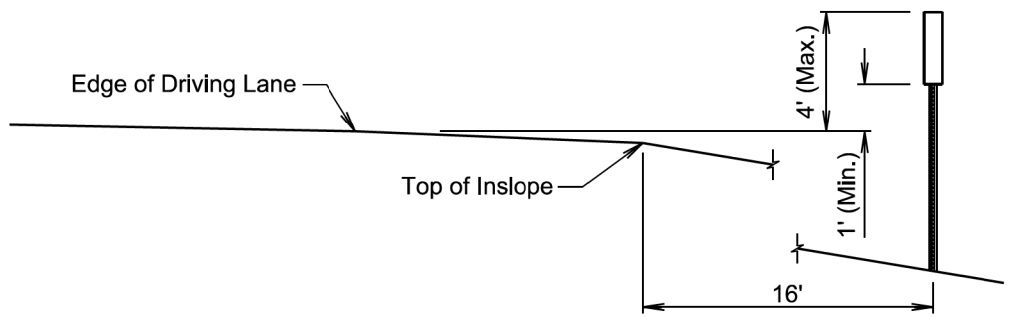
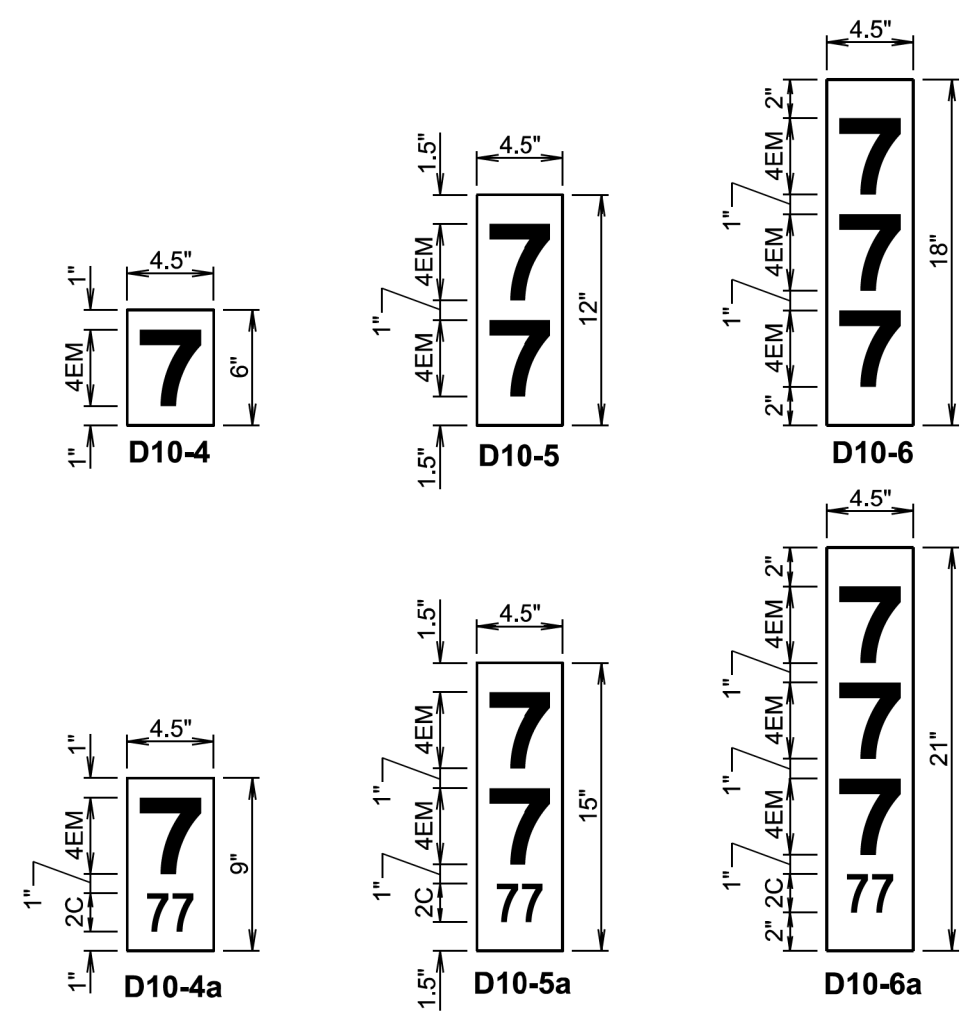
GENERAL NOTES:

The unit for all dimensions shown is inches.

Numerals will be D series font for all state route markers except as noted above.

December 23, 2019

Published Date: 2025	SD DOT	STATE ROUTE MARKERS	PLATE NUMBER 632.20
			Sheet 1 of 1



GENERAL NOTES:

Background will be high intensity green.

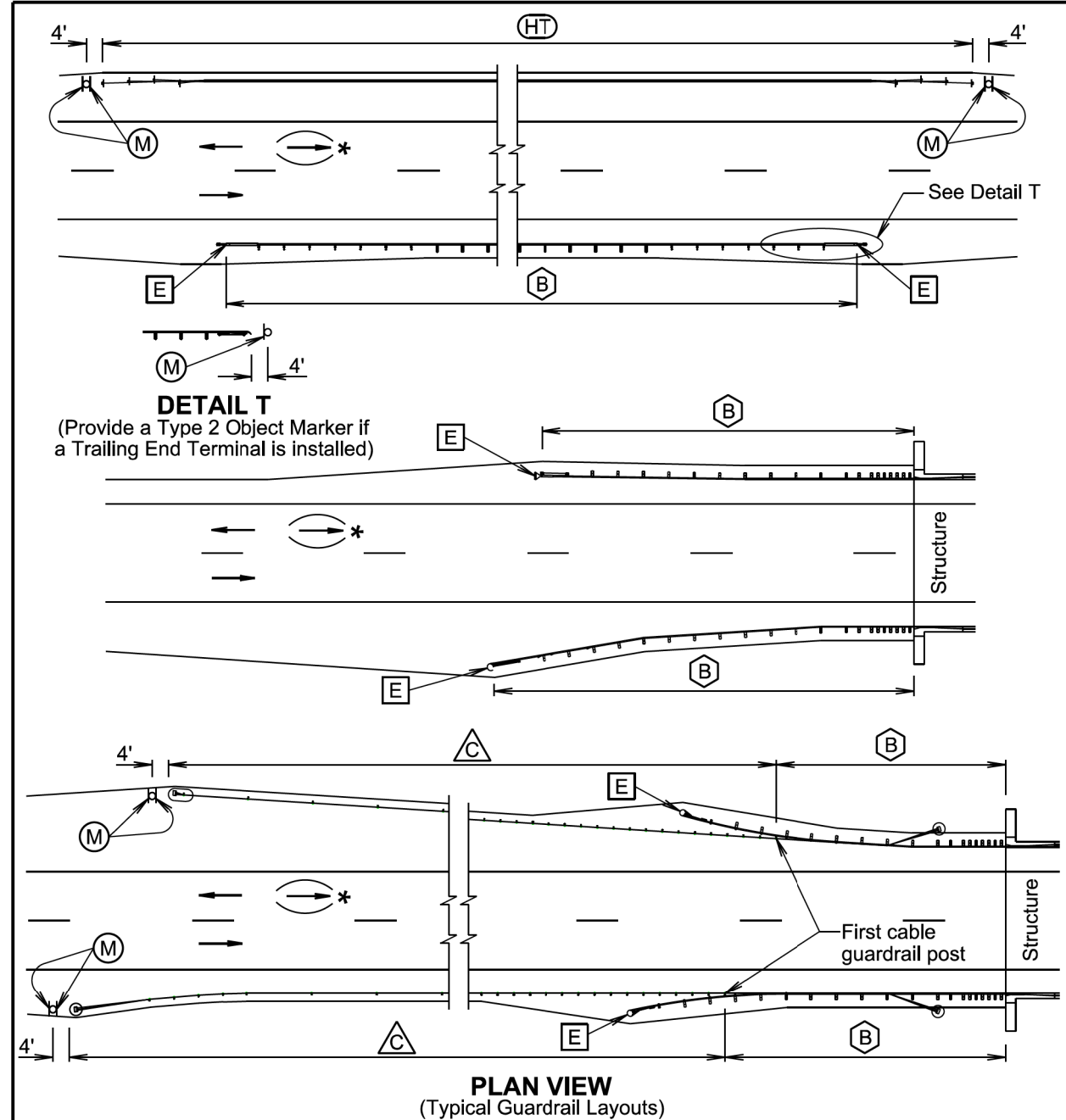
Legend will be high intensity white.

Signs will have squared corners with no border.

Sign locations will be staked by the Engineer.

December 23, 2019

SD DOT	NON-INTERSTATE MILEAGE REFERENCE MARKERS	PLATE NUMBER 632.30
		Sheet 1 of 1
Published Date: 2025		

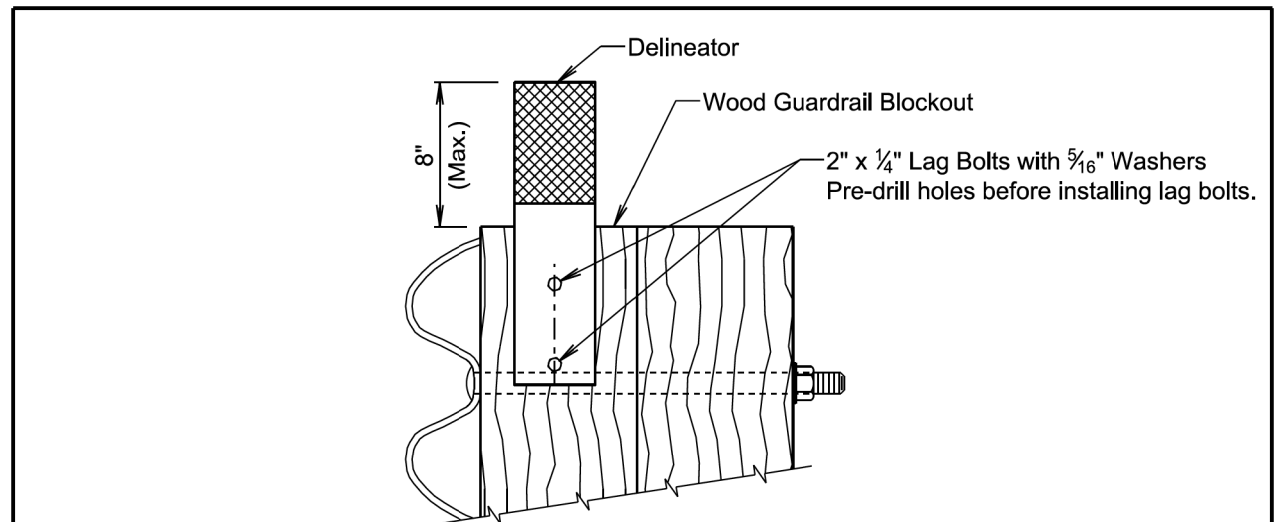


- (B) Steel Beam Guardrail Delineation
- (HT) High Tension Cable Guardrail Delineation
- (E) Guardrail End Terminal Object Marker
- (M) Type 2 Object Marker
- (C) 3 Cable Guardrail (Low Tension) Delineation

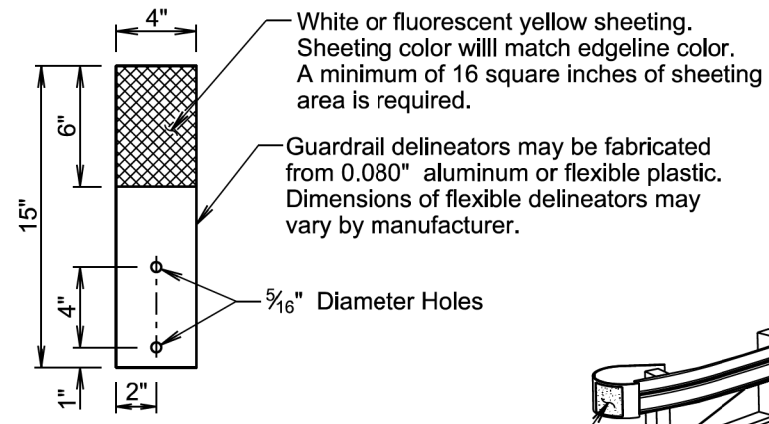
*For two-way traffic, install delineation at the opposite end of structure the same as shown. Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

March 31, 2024

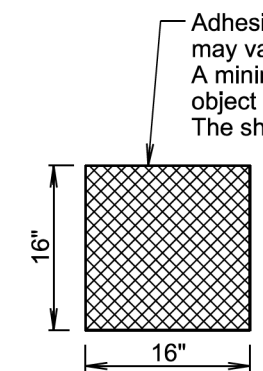
SD DOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 1 of 4
Published Date: 2025		



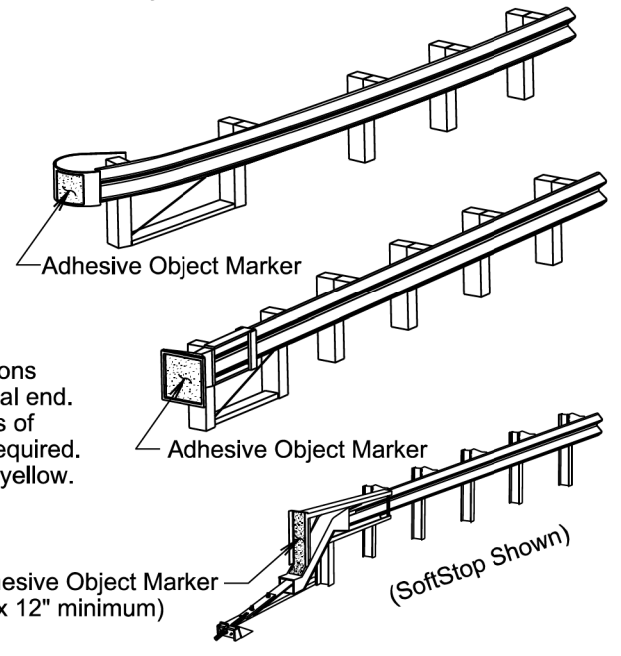
B STEEL BEAM GUARDRAIL DELINEATION



DELINEATOR
(For Steel Beam Guardrail)



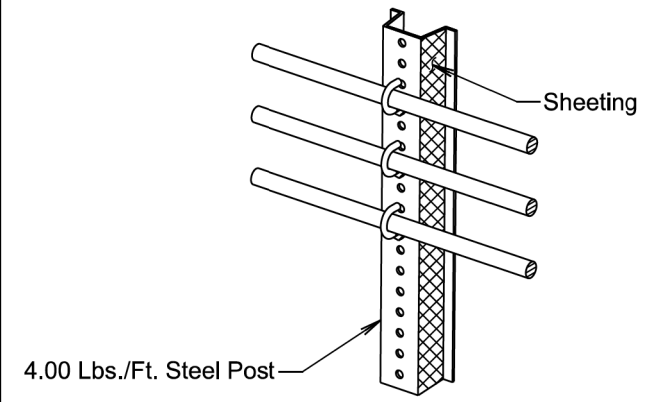
ADHESIVE OBJECT MARKER



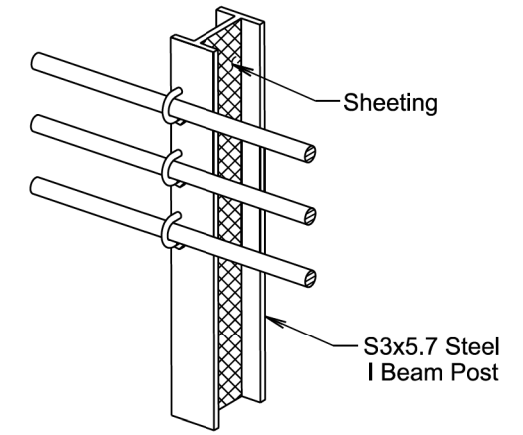
E GUARDRAIL END TERMINAL OBJECT MARKER

March 31, 2024

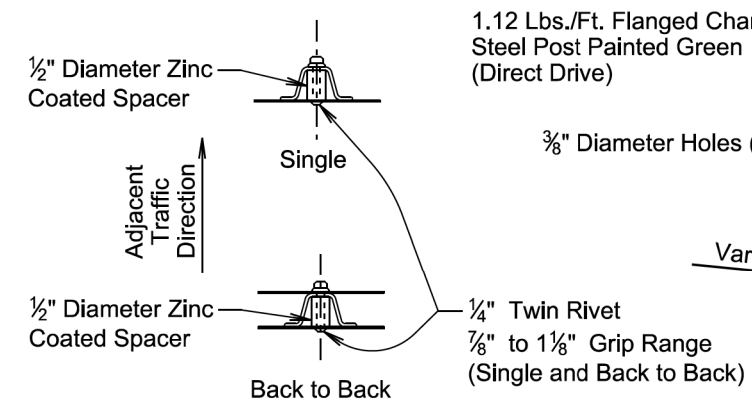
Published Date: 2025	SD DOT	DELINEATION GUARDRAIL	PLATE NUMBER 632.40
			Sheet 2 of 4



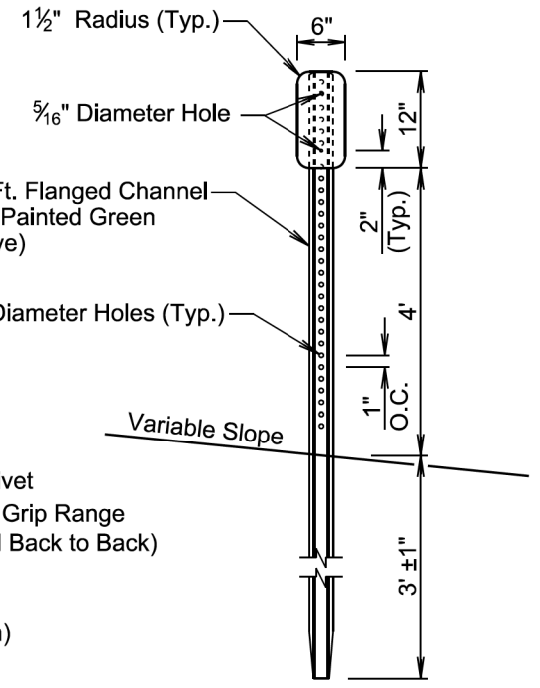
C 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



C 3 CABLE GUARDRAIL (LOW TENSION) DELINEATION



PLAN VIEW
(Type 2 Object Marker Details and Post Orientation)



ELEVATION VIEW

M (Type 2 Object Marker)
(For Marking 3 Cable Guardrail (Low Tension) Anchor, High Tension Cable Guardrail Anchor, and Trailing End Terminal)

March 31, 2024

Published Date: 2025	SD DOT	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
			Sheet 3 of 4

GENERAL NOTES:

The delineation of high tension cable guardrail will be reflective sheeting placed back to back on every third post cap or cable spacer. Maximum spacing of delineation will not exceed 35 feet. The sheeting will be type XI in conformance with ASTM D4956. The color of the reflective sheeting will be the same as the nearest pavement marking.

The delineators for steel beam guardrail and sheeting on 3 cable guardrail (low tension) posts will be covered with a minimum of 16 square inches of reflective sheeting. The reflective sheeting will be type XI in conformance with ASTM D4956. Along two-way roadways the sheeting will be on both sides of the delineators and guardrail posts and will be white in color. For one-way roadways the sheeting will only be required on the side facing traffic and the color will be the same as the nearest pavement marking, yellow on the left side of the roadway and white on the right side.

When steel beam guardrail is attached to a bridge the first delineator will be attached to the post nearest the bridge.

At bridges with guardrail less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object marker. The spacing between the delineators will be approximately one third of the length of the guardrail.

At bridges with guardrail 200 feet and greater in length, including bridges that have steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

Steel beam guardrail that is not attached to a bridge and is less than 200 feet in length, a minimum of 4 delineators will be placed in addition to the end terminal yellow object markers. The spacing between the delineators will be approximately one third of the length of the guardrail.

Steel beam guardrail that is not attached to a bridge and is 200 feet and greater in length, including steel beam guardrail transitioning to 3 cable guardrail (low tension), the delineators will be placed at a spacing of approximately 50 feet. Delineation will extend throughout the length of the guardrail system.

All costs for furnishing and installing single or back to back guardrail delineation on 3 cable guardrail and steel beam guardrail will be included in the contract unit price per each for "Guardrail Delineator".

All costs for furnishing and installing the reflective sheeting on the cable spacers or post caps for the high tension cable guardrail will be incidental to the respective high tension cable guardrail contract item.

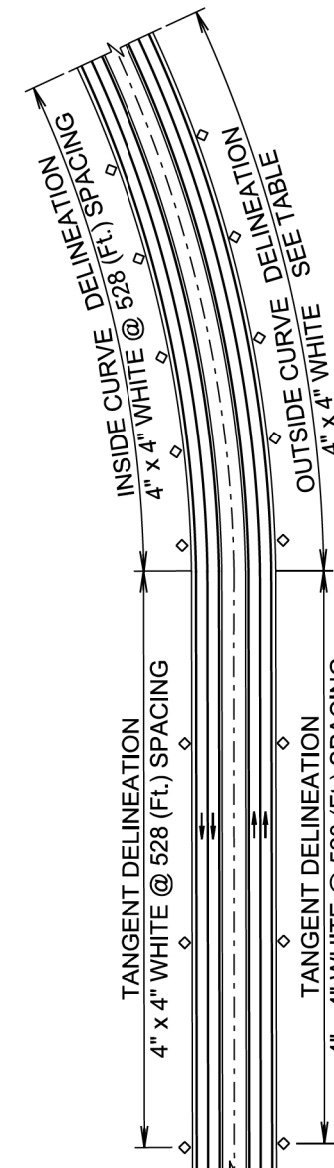
An adhesive object marker will be placed on the end of the W beam guardrail or MGS end terminal. The adhesive object marker dimensions may vary due to the shape of the terminal end. A minimum of 256 square inches of object marker reflective sheeting area is required on end terminals with sufficient surface area. Other end terminals (SoftStop) will require an adhesive object marker with a minimum size of 6" x 12". The reflective sheeting will be fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the adhesive object marker will be incidental to various contract items.

A type 2 object marker will be placed adjacent to the 3 cable guardrail (low tension) anchor, high tension cable guardrail anchor, and trailing end terminal at the location noted on sheet 1 of this standard plate. The type 2 object marker (6" x 12") will have fluorescent yellow type XI sheeting in conformance with ASTM D4956. All costs for furnishing and installing the type 2 object marker including the steel post, 6" x 12" reflective panel, and hardware will be included in the contract unit price per each for "Type 2 Object Marker" for single-sided and "Type 2 Object Marker Back to Back" for back to back type 2 object markers.

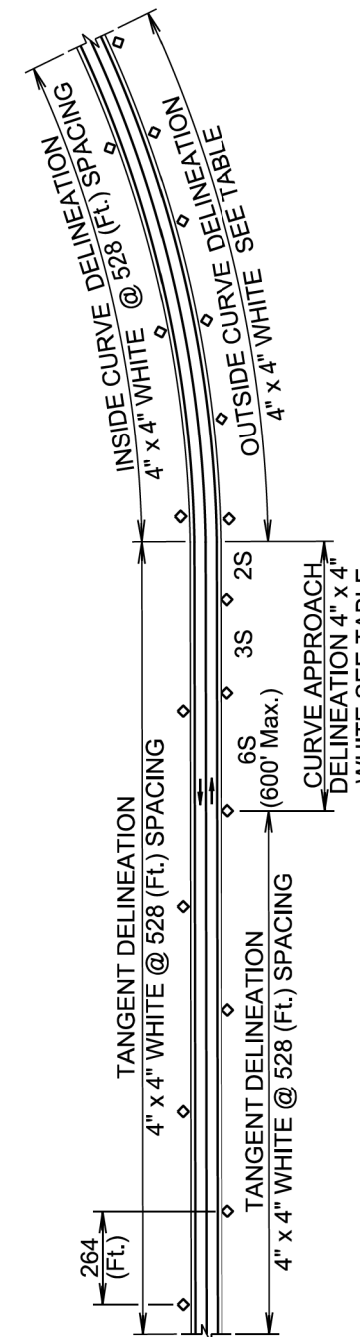
March 31, 2024

	DELINEATION OF GUARDRAIL	PLATE NUMBER 632.40
		Sheet 4 of 4

Published Date: 2025



PLAN VIEW
(Divided Roadway)



PLAN VIEW
(Undivided Roadway)

March 31, 2024

	DELINEATOR INSTALLATION SPACING	PLATE NUMBER 632.46
		Sheet 1 of 2

Published Date: 2025

GENERAL NOTES:

Delineators will be located from 2 to 8 feet outside of the outer edge of shoulder. When a roadside barrier or other obstruction intrudes into the space between the pavement edge and the extension of the line of delineators, the delineators should be in line with the barrier or in line with the innermost edge of the obstruction.

When normal spacing is interrupted by driveways, crossroads, or approaches, delineators falling within such areas may be moved in either direction a distance not exceeding one-quarter of the standard spacing. Delineators still falling within such areas should be eliminated.

The spacing for specific radii may be interpolated from the table. The minimum spacing should be 20 feet. The spacing on curves should not exceed 300 feet. In advance of or beyond a curve, and proceeding away from the end of the curve, the spacing of the first delineator is 2S, the second 3S, and the third 6S, but not to exceed 300 feet. S refers to the delineator spacing for specific radii computed from the formula $S = 3\sqrt{R - 50}$. The distances for S shown in the table were rounded to the nearest 5 feet.

Curve approach delineation is not required if curve delineation spacing exceeds 100 ft.

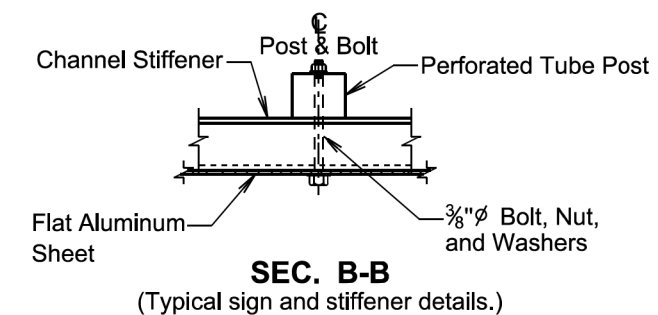
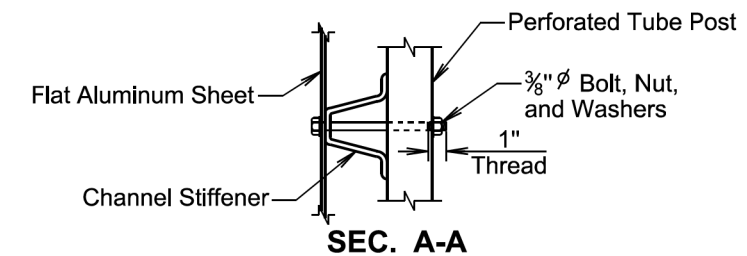
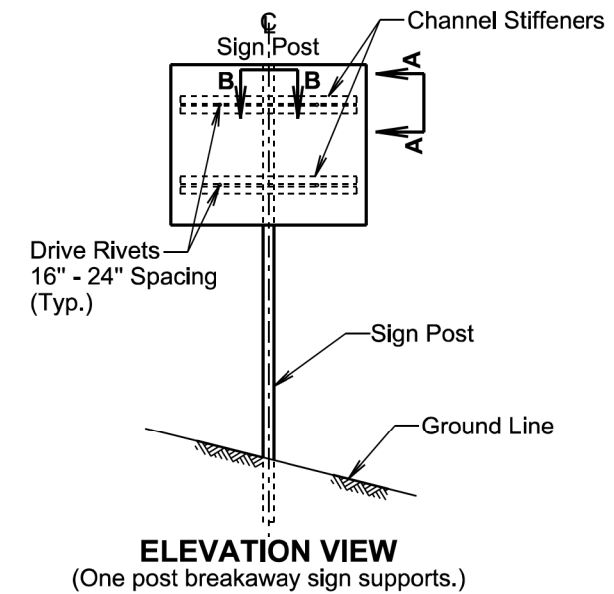
Back-to-back delineation is required for two-way traffic, single-sided delineation for one-way traffic.

DELINEATOR SPACING OUTSIDE CURVE				
Radius of Curve (Ft.)	Curve Delineator Spacing (Ft.)	Curve Approach Spacing (Ft.)		
		A	B	C
50	20	40	65	125
115	25	50	75	150
150	30	60	90	180
180	35	70	110	215
250	40	85	125	250
300	45	95	140	285
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

March 31, 2024

	DELINEATOR INSTALLATION SPACING	PLATE NUMBER 632.46
		Sheet 2 of 2

Published Date: 2025

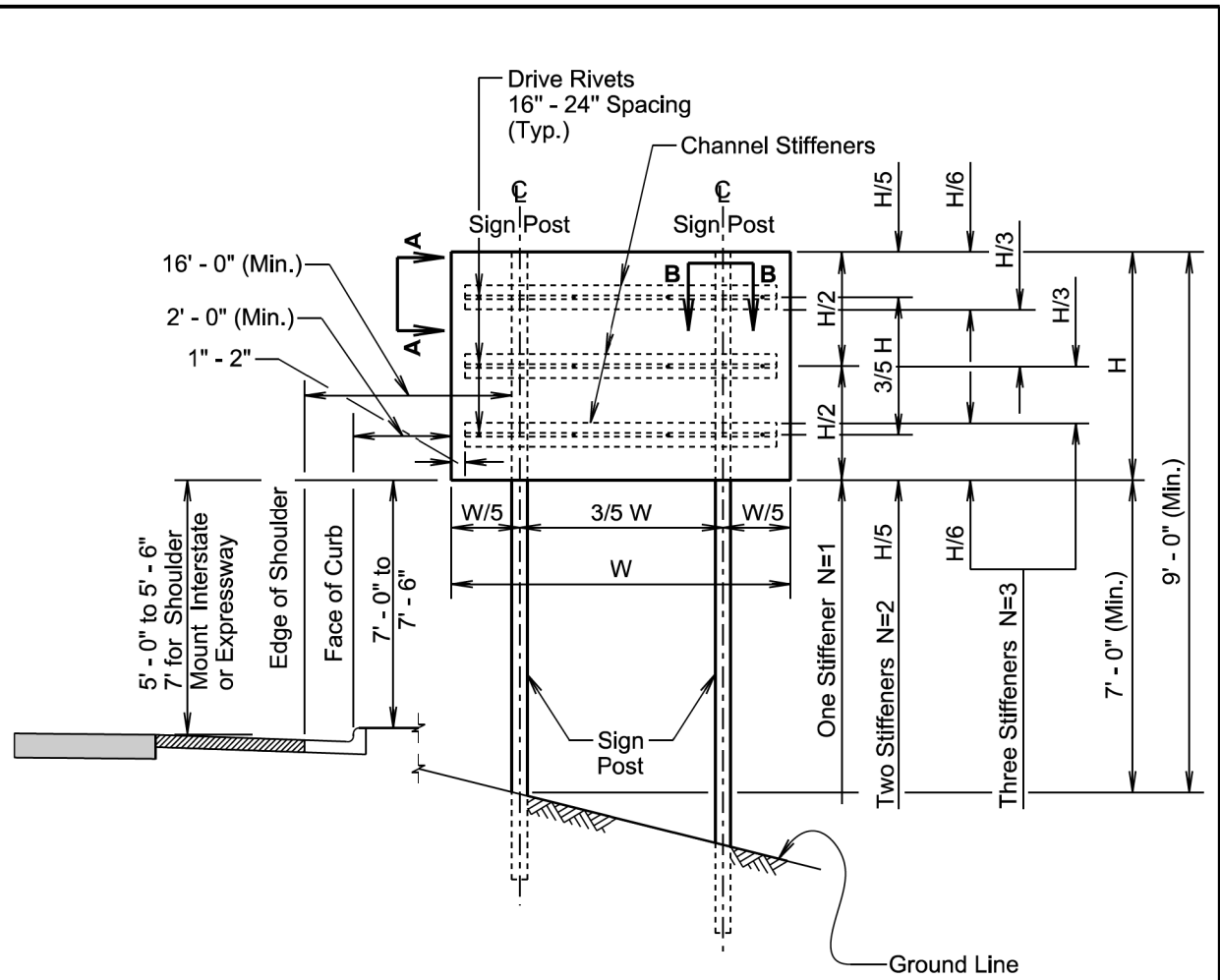


∅ A plastic washer, as recommended by the sheeting manufacturer, will be installed between the sign face and the metal washer shown.

November 19, 2020

	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
		Sheet 1 of 2

Published Date: 2025



TWO POST BREAKAWAY SIGN SUPPORTS

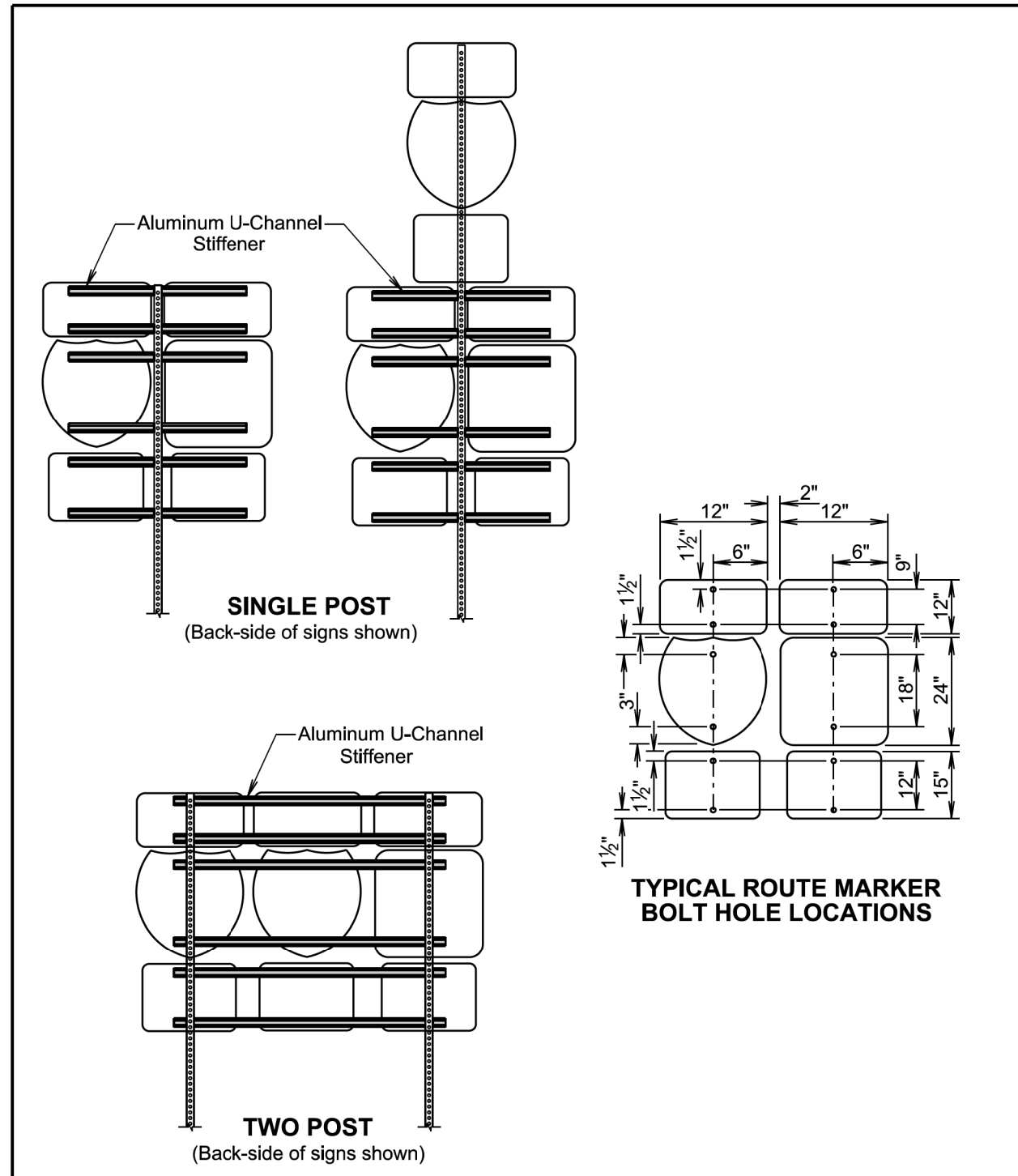
GENERAL NOTES:

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: 2025	SD DOT	SIGN STIFFENER DETAILS	PLATE NUMBER 632.60
			Sheet 2 of 2



November 19, 2020

Published Date: 2025	SD DOT	MULTIPLE ROUTE MARKER SIGN STIFFENER INSTALLATION DETAILS	PLATE NUMBER 632.62
			Sheet 1 of 1