Signs

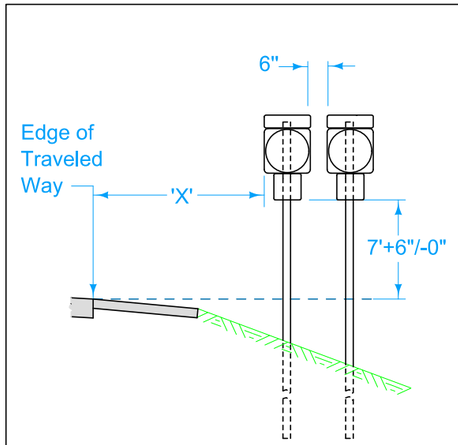
SI

SECTION

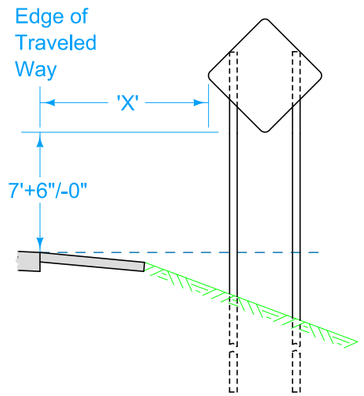
Signs

SI

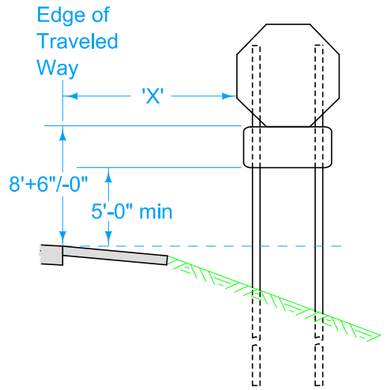
NO.	DATE	TITLE
SI-101	04-19-16	Locations - Type 'A' Signs
SI-102	04-19-16	Locations - Type 'B' Signs
SI-111	04-19-16	Support Structures - Wood Posts
SI-112	04-19-16	Footings For Steel Breakaway Posts
SI-113	10-15-19	Support Structures - Steel Breakaway Posts
SI-114	04-19-16	Support Structures - Steel Breakaway Posts Rectangular Tube
SI-119	10-17-17	Support Structures - Mounting Brackets
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
SI-171	04-18-17	Reference Location Sign Posts
SI-172	04-19-16	Delineators
SI-173	04-19-16	Object Markers
SI-174	04-21-20	Emergency Management Ramp Signing
SI-175	04-19-16	Chevrons
SI-181	10-18-16	Permanent Road Closure - Rural
SI-182	04-19-16	Permanent Road Closure - Urban
SI-211	10-18-22	Object Marker and Delineator Placement with Guardrail
SI-241	04-20-21	Sign Placement Approaching a Railroad Crossing
SI-881	04-16-19	Special Signs for Workzones
SI-882	10-18-16	Special Signs for Restricted Width Traffic Control Zones



FRONT VIEW
ROUTE DIRECTION MARKER

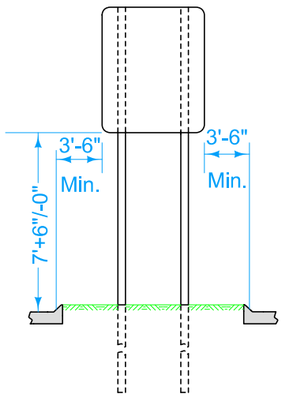


FRONT VIEW
SIGN



FRONT VIEW
SIGN WITH
ADVISORY PLATE

TYPE 1 INSTALLATION



FRONT VIEW
SIGN LOCATION
Type 3 Installation

Type 3 installation is intended to show the requirements for a Type 'A' sign when installed in an island or median (where traffic passes on both sides of the sign) as well

installed adjacent to a curbed roadway (sign may be located on either side of a roadway as specified in project plans).

Final sign location will be at the discretion of the Engineer.

Use the Type 1 installation in any case except where:
(A) Specified otherwise in the plans.
(B) Directed otherwise by the Engineer.
(C) A Type 3 installation is required due to location in an island or gore area.

Possible Contract Items:
- Remove and Reinstall Sign as per plan
- Wood Posts for Type A or B signs, 4in x 6in
- Perforated Square Steel tube Post (Anchor Series)
- Type A Signs, Sheet Aluminum
- Install Type A Sign

Possible Tabulations:
- 190-51
- 190-61
- 190-62
- 190-66

IOWA DOT

REVISION
1 | 04-19-16

STANDARD ROAD PLAN

SI-101

SHEET 1 of 1

REVISIONS: Changed Lane Edge Line' to 'Edge of Traveled Way', Replaced 'Y' with numerical value including tolerance. Removed advisory sign from middle view.

APPROVED BY DESIGN METHODS ENGINEER

LOCATIONS-
TYPE 'A' SIGNS

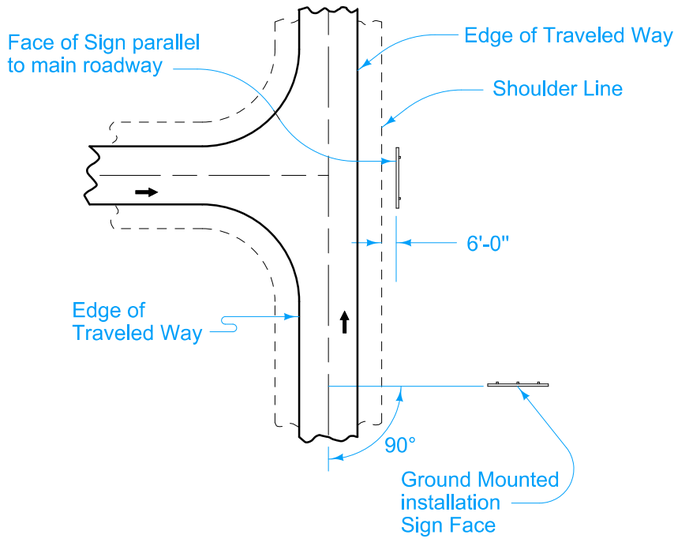
Modification of plan requirements will be permitted only as physical conditions require and are subject to the following limitations:

Provide breakaway sign posts that are a minimum length of 7'-4" plus the height of the sign, unless noted otherwise in the tabulations.

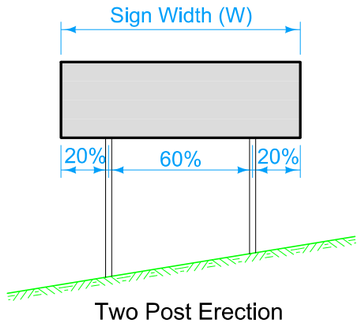
Obtain the Engineer's approaval for spacing between signs less than 800 feet.

Set all signs level.

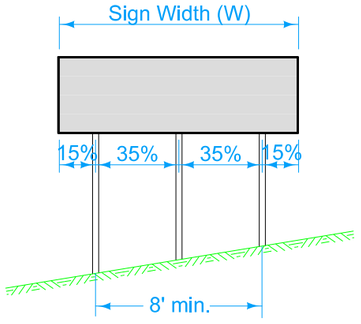
Do not modify sign location without approval of the Engineer.



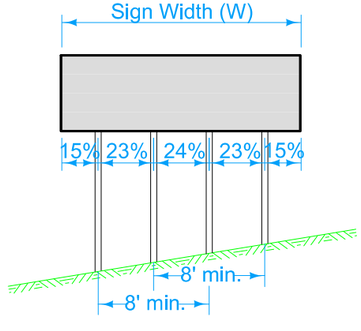
SIGN ORIENTATION PLAN



Two Post Erection



Three Post Erection



Four Post Erection

POST POSITION DETAIL

Possible Contract Items:

- Install Type B Sign
- Perforated Square Steel Tube Posts
- Perforated Square Steel Tube Post Anchor (series)
- Remove and Reinstall Signs as Per Plan
- Type B Signs
- Wood Posts for Type A or B Signs, 4 in. x 6 in.
- Steel Breakaway Sign Post for Type A or B Signs
- Concrete Footing for Breakaway Sign Post

Possible Tabulations:

- 190-50
- 190-61

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-19-16

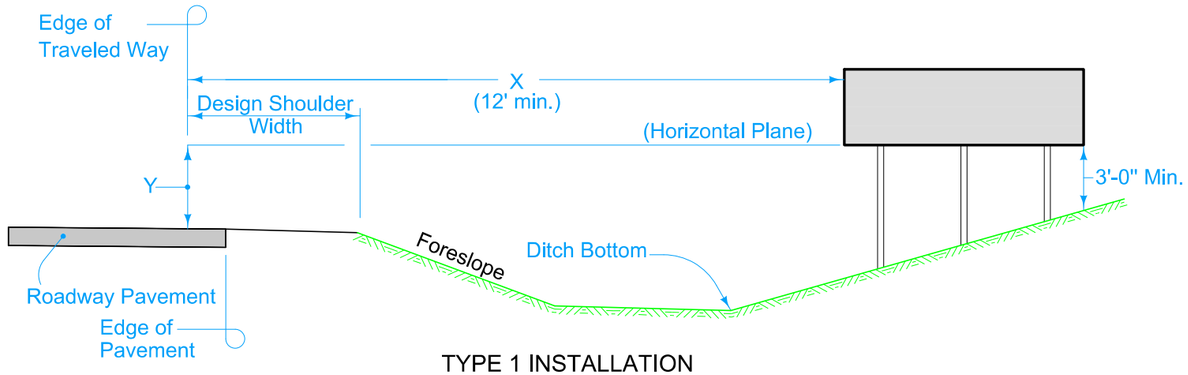
SI-102

SHEET 1 of 2

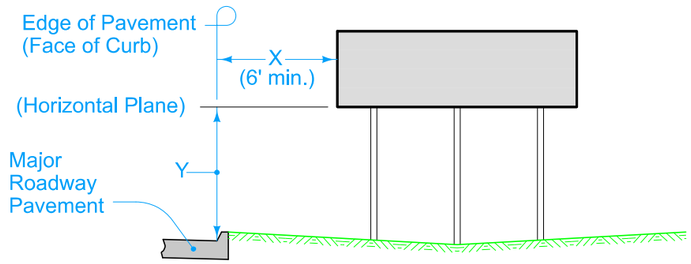
REVISIONS: Changed 'Lane Edge Line' to 'Edge of Traveled Way', modified notes and added Possible Contract Items and Tabs, Added FOUR POST DETAIL

APPROVED BY DESIGN METHODS ENGINEER

LOCATIONS - TYPE 'B' SIGNS

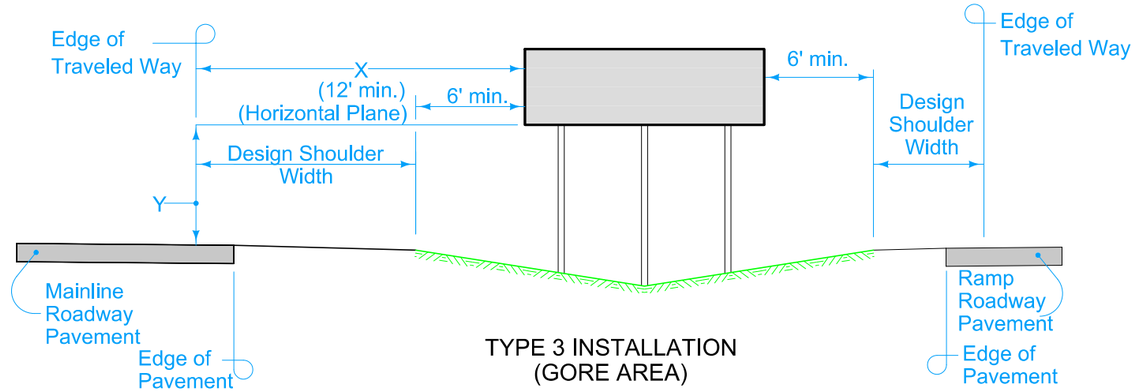


TYPE 1 INSTALLATION
(OFFSET)



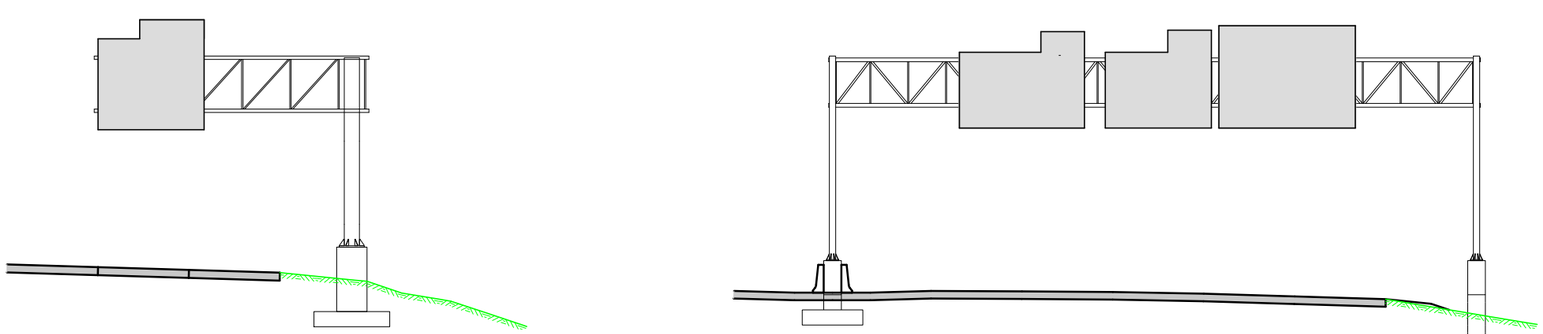
TYPE 2 INSTALLATION
(CURBED SECTION)

Details indicated are for an installation adjacent to a curbed roadway. The sign may be located on either side of the roadway, or in a gore area where curbed roadways pass on both sides, such as an urban freeway exit ramp. When located in a gore area, install where the width between curbs is no less than 12 feet plus sign width.



TYPE 3 INSTALLATION
(GORE AREA)

Details indicated are for an installation in a gore area where traffic on non-curbed roadways passes on both sides of the sign, such as the exit ramp for a rural type interchange.



TYPE 4 INSTALLATION (1)
(OVERHEAD SUPPORT STRUCTURES)

(1) Refer to the Office of Bridges and Structures' Sign Truss Standards as detailed in the contract documents. Cantalevers are special designs detailed elsewhere in the contract documents.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-19-16

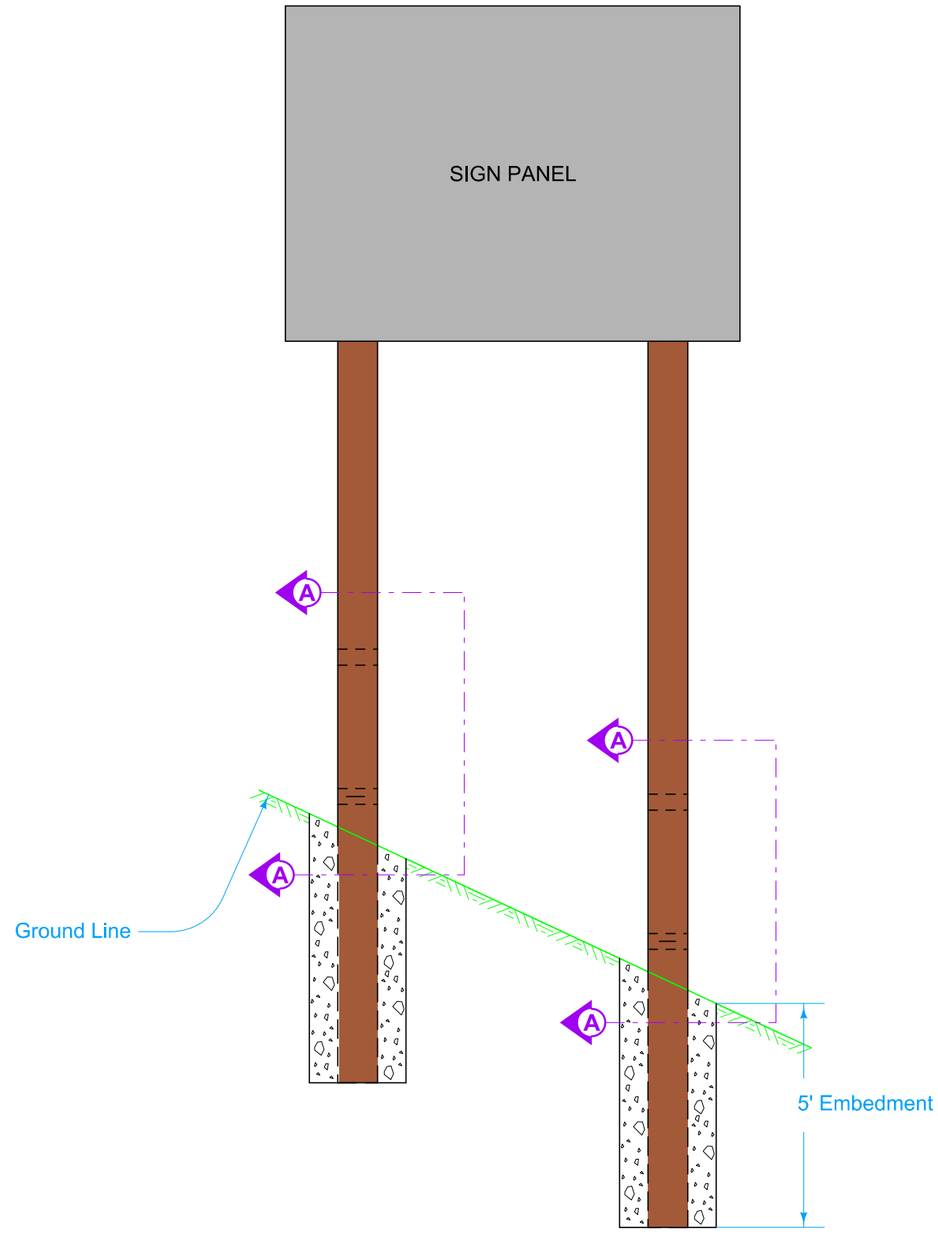
SI-102

SHEET 2 of 2

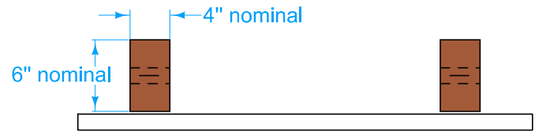
REVISIONS: Changed 'Lane Edge Line' to 'Edge of Traveled Way', modified notes and added Possible Contract Items and Tabs, Added FOUR POST DETAIL.

APPROVED BY DESIGN METHODS ENGINEER

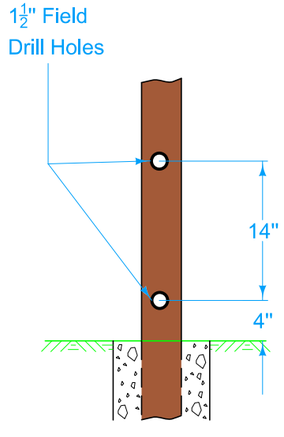
LOCATIONS -
TYPE 'B' SIGNS



FRONT VIEW



Top View



Section A-A

Possible Contract Item:
Wood Posts for Type A or Type B Signs, 4 in. x 6 in.

Possible Tabulations:

190-50
190-51

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-19-16

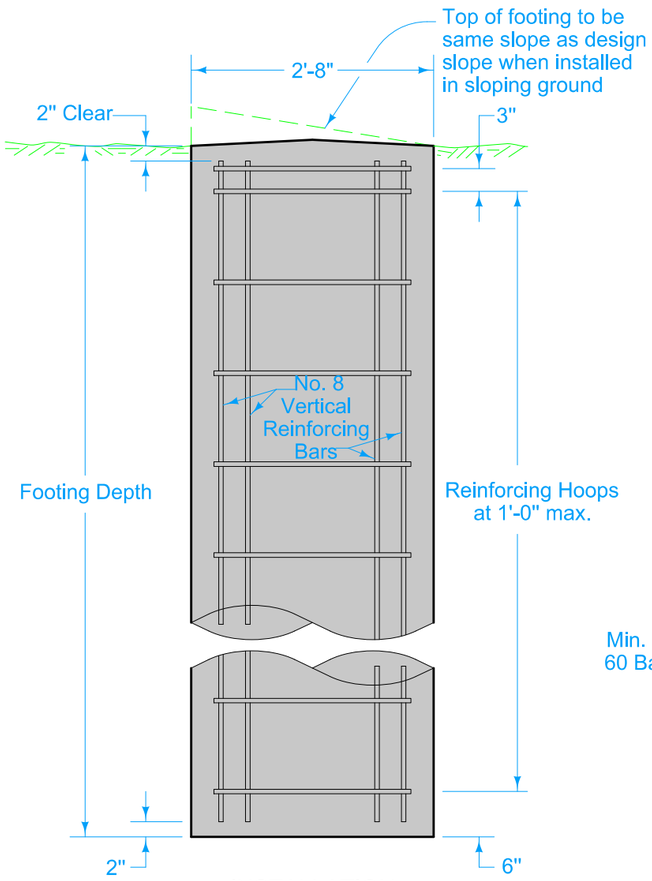
SI-111

SHEET 1 of 1

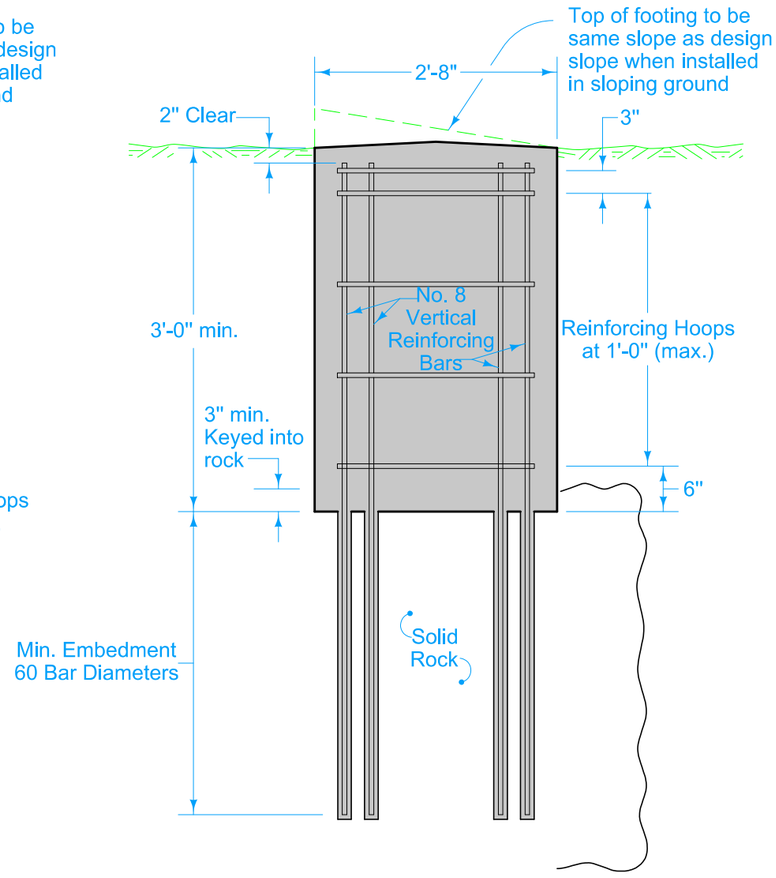
REVISIONS: Added "nominal" to wood post dimensions. Labeled 5' depth of post embedment. Added possible tabulations and replaced DOT logo in title block.

APPROVED BY DESIGN METHODS ENGINEER

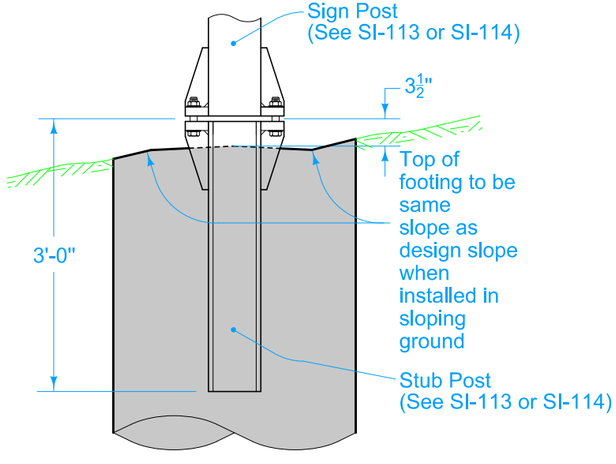
SUPPORT STRUCTURES - WOOD POSTS



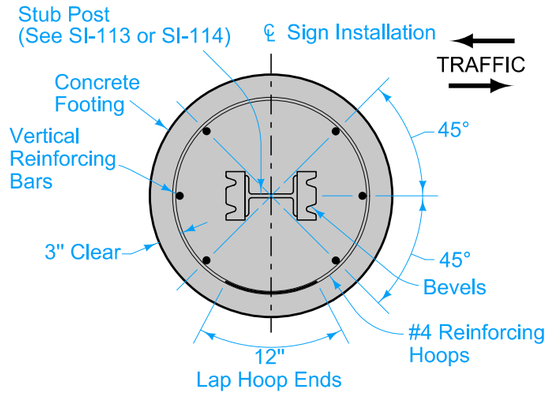
INSTALLATION
NORMAL FOOTING IN EARTH



ALTERNATE DESIGN (3)
FOOTING IN SOLID ROCK



BREAKAWAY POST INSTALLATION



PLAN
(Reinforcing Placement and Sign Orientation)

Construct the footing as shown for normal footing in earth. Where solid rock is encountered, the alternate design for footing in solid rock may be used with the approval of the Engineer.

Dispose of all excavation for the footing in the area adjacent to the footing and shape to normal ground contour, unless directed otherwise by the Engineer.

Hold the stub post in proper position by an approved device to ensure that it remains in proper position upon completion of concrete placement.

The contract price for size of footing required is full compensation for footing as detailed hereon, including all necessary excavation. Excavation in Unexpected Rock will be paid for according to Article 2524.05, I, of the Standard Specifications.

(1) Lengths are for normal footings. Required length may vary where alternate rock design is used.

(2) Refer to the contract documents for post size.

(3) Set vertical bars in solid rock as follows:
1. Drill holes twice bar diameter and fill with water.
2. When hole is fully saturated, blow water out and fill two-thirds depth with sand cement mortar.
3. Insert bar and consolidate mortar.
4. Fill hole to top with mortar.

Possible Contract Item:
Concrete Footing for Breakaway Sign Post

FOOTING REINFORCING DATA			
Standard (2)	Post Size	Footing Depth	Vertical Rein. Bar Length (1)
SI-113	W6x12	6'-0"	5'-8"
	W8x21	7'-6"	7'-2"
	W12x26	9'-0"	8'-8"
SI-114	4"x6"	7'-6"	7'-2"

IOWA DOT
STANDARD ROAD PLAN

REVISION
New 04-19-16

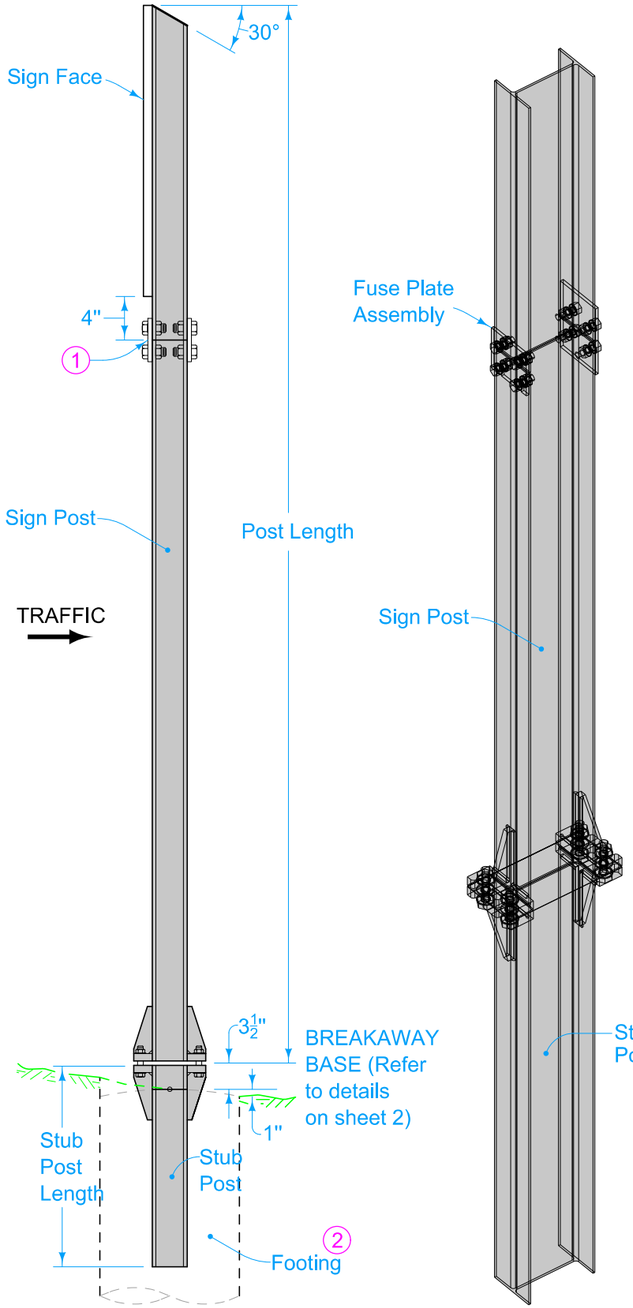
SI-112

SHEET 1 of 1

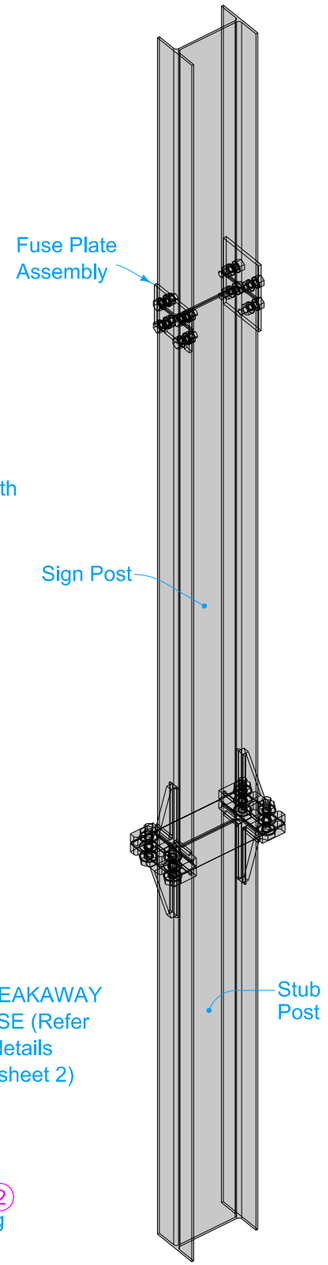
REVISIONS: New. Combined footing information previously shown on SI-113 and SI-114. Added Reference to 2540.05, I in notes.

APPROVED BY DESIGN METHODS ENGINEER

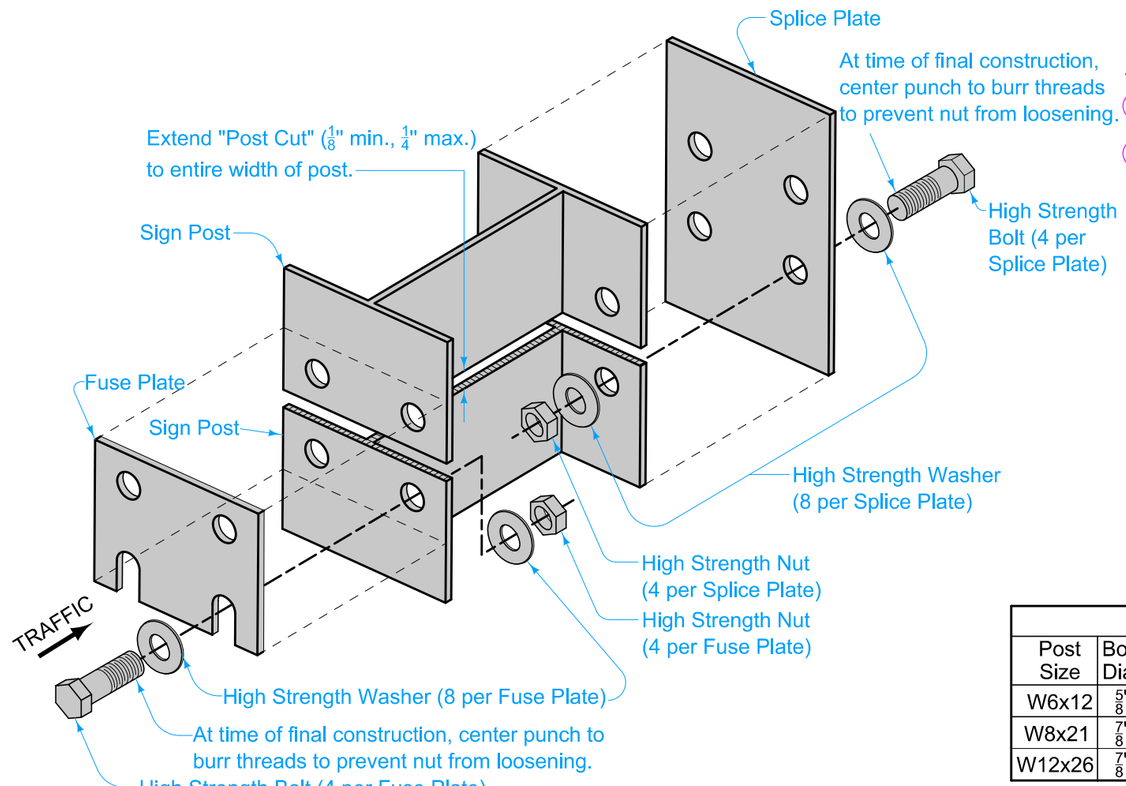
FOOTINGS FOR STEEL BREAKAWAY POSTS



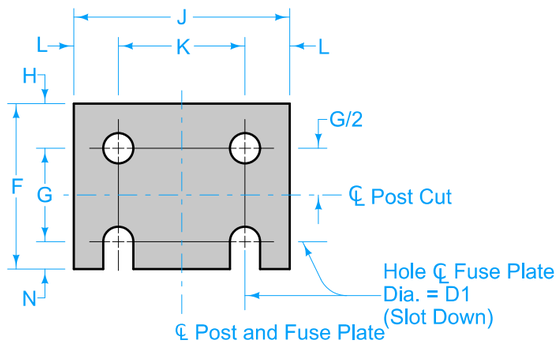
SIGN INSTALLATION
Side View



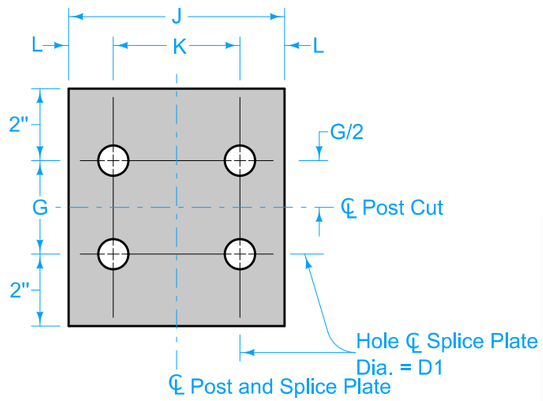
STUB & SIGN POSTS
3d View



FUSE PLATE ASSEMBLY



FUSE PLATE
(Thickness T3)



SPLICE PLATE
(Thickness T4)

Plumb signpost by installing brass stock or strip shims complying with ASTM B36. Furnish two shims each of 0.012" and 0.032" thickness (total of 4 per post).

1. Not for single post installations.
2. Refer to Standard Road Plan SI-112 for footing information.

FUSE AND SPLICE PLATE DATA

Post Size	Bolt Dia.	F	G	H	J	K	L	N	D1	T3	T4
W6x12	5/8"	3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	11/16"	3/8"	1/4"
W8x21	7/8"	4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	5/8"	3/8"
W12x26	7/8"	5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	5/8"	3/8"

Possible Contract Item:
Steel Breakaway Sign Post for Type A or B Signs

IOWA DOT
STANDARD ROAD PLAN

REVISION
7 | 10-15-19

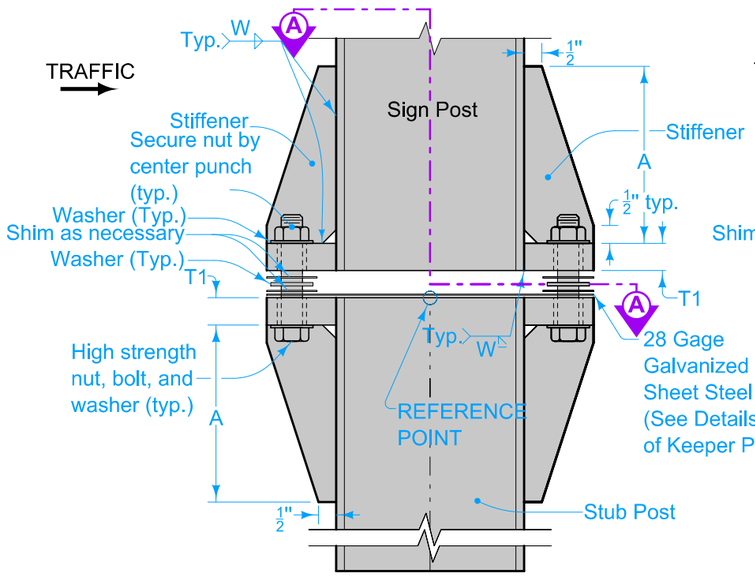
SI-113

SHEET 1 of 2

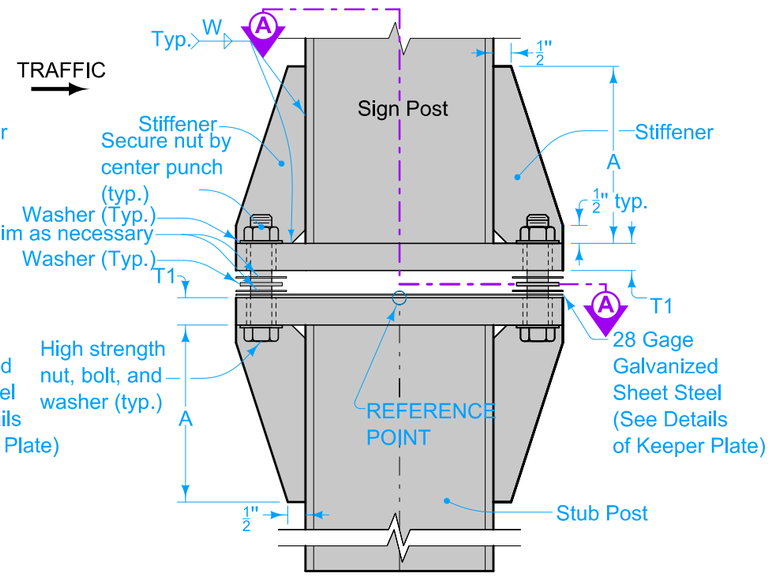
REVISIONS: Modified C dimension for W 6 x 12 post in BREAKAWAY BASE DATA table on Sheet 2.

APPROVED BY DESIGN METHODS ENGINEER

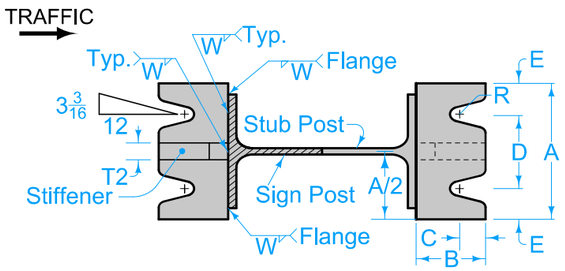
SUPPORT STRUCTURES - STEEL BREAKAWAY POSTS



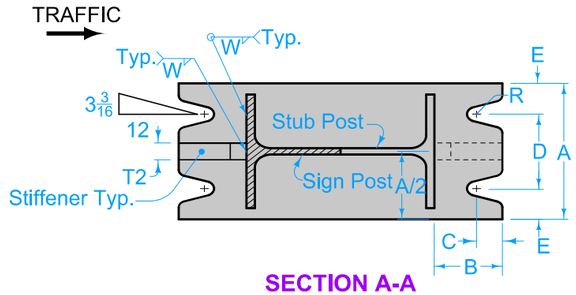
BREAKAWAY BASE
Side View
(Alternate 1)



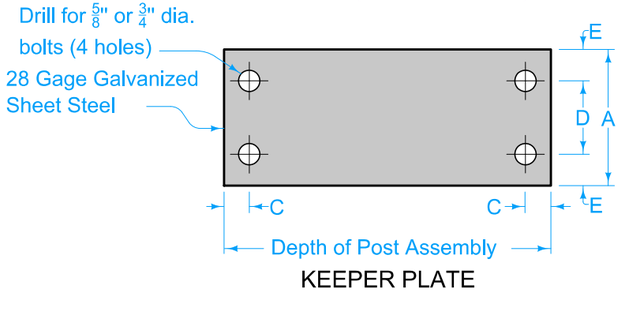
BREAKAWAY BASE
Side View
(Alternate 2)



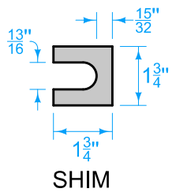
SECTION A-A
PLAN - BASE
(ALTERNATE 1)



SECTION A-A
PLAN - BASE
(ALTERNATE 2)



KEEPER PLATE



SHIM

BREAKAWAY BASE DATA										
Post Size	Bolt Size & Torque	A	B	C	D	E	T1	T2	W	R
W 6 x 12	5/8" dia. x 2 3/4" Torque = 37.50 ft. lbs.	5"	2"	3/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	11/32"
W 8 x 21 W 12 x 26	3/4" dia. x 3 1/2" Torque = 62.50 ft. lbs.	6"	2 1/4"	7/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"

The following Base Plate alternates are considered equivalent:

Alternate 1 - Weld base plates (2 each), to sides of signpost and stub post flanges.

Alternate 2 - Weld base plate (1 each) to end of sign post and stub post. Properly match and align the bolt holes and notches in the stub post plate and the sign post plate as indicated herein.

Grind smooth all welds and galvanizing between Base Plates.

IOWA DOT
STANDARD ROAD PLAN

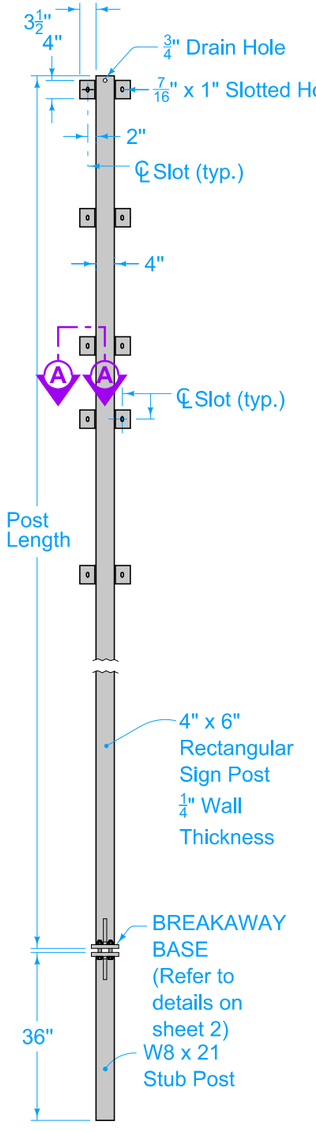
REVISION	
7	10-15-19

SI-113
SHEET 2 of 2

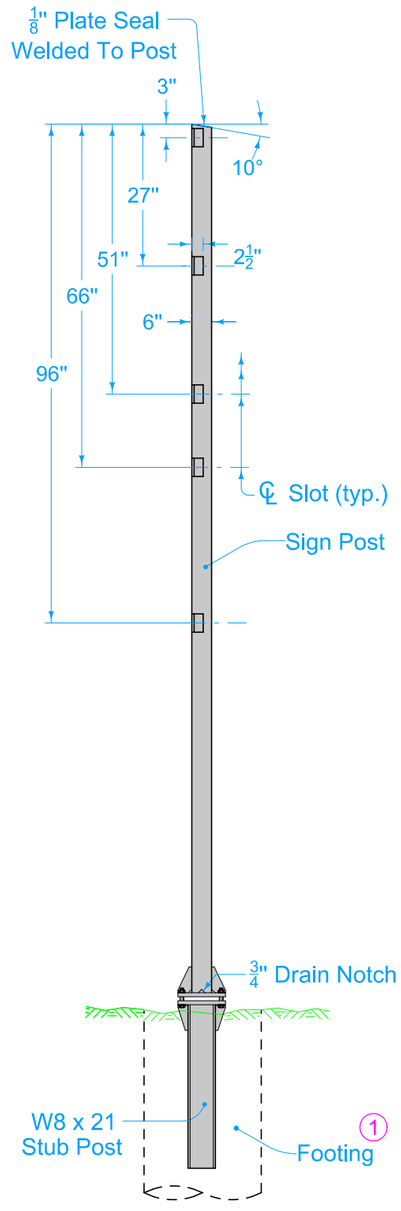
REVISIONS: Modified C dimension for W 6 x 12 post in BREAKAWAY BASE DATA table on Sheet 2.

APPROVED BY DESIGN METHODS ENGINEER

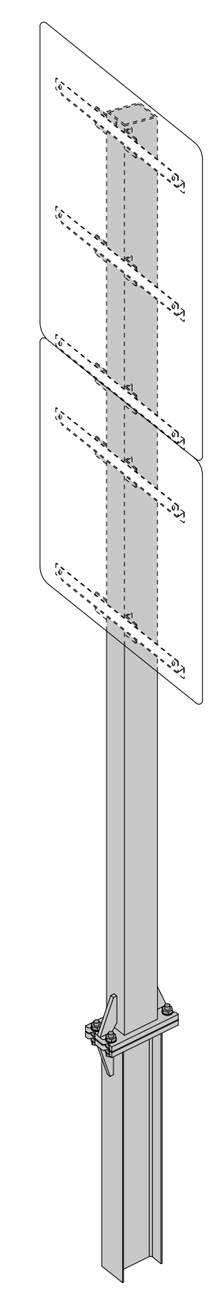
SUPPORT STRUCTURES - STEEL BREAKAWAY POSTS



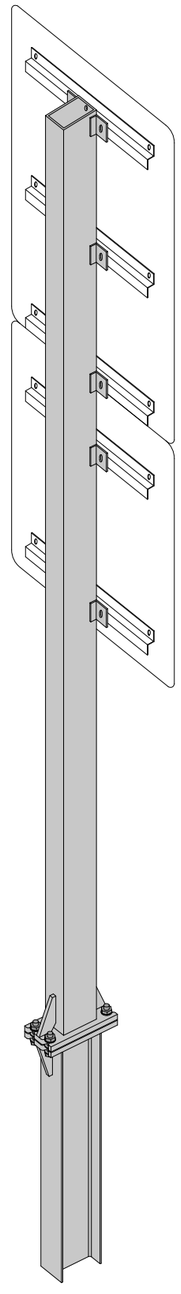
FRONT ELEVATION



SIDE ELEVATION



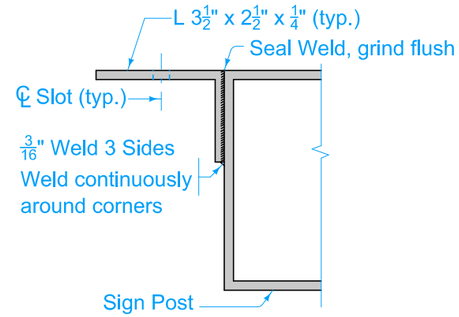
OBLIQUE FRONT VIEW



OBLIQUE BACK VIEW

Plumb signpost by installing brass stock or strip shims complying with ASTM B 36. Furnish two shims each of 0.012" and 0.032" thickness (total of 4 per post).

1 Refer to Standard Road Plan SI-112 for footing information.



SECTION A-A

Possible Contract Item:
Steel Breakaway Sign Post, Rectanguler Tube

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	04-19-16

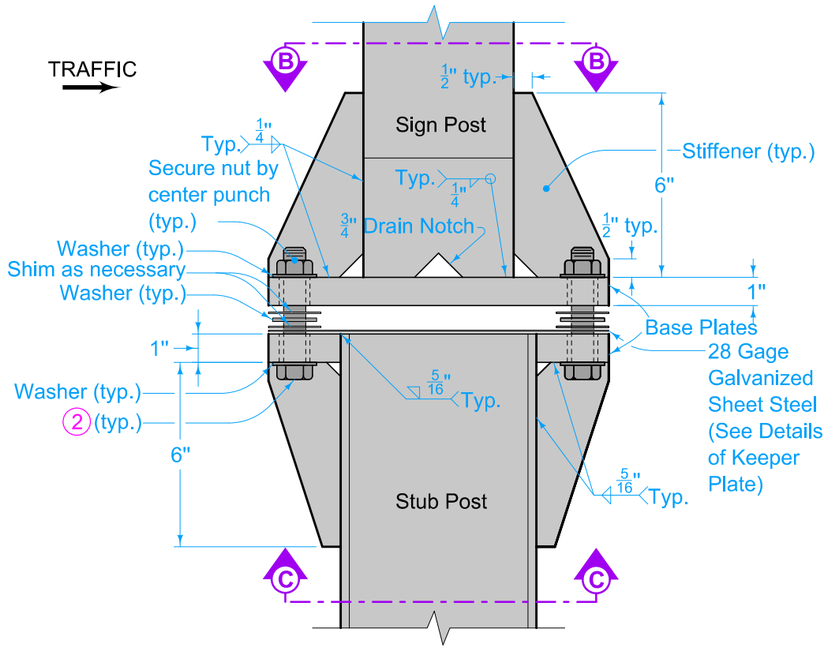
SI-114

SHEET 1 of 2

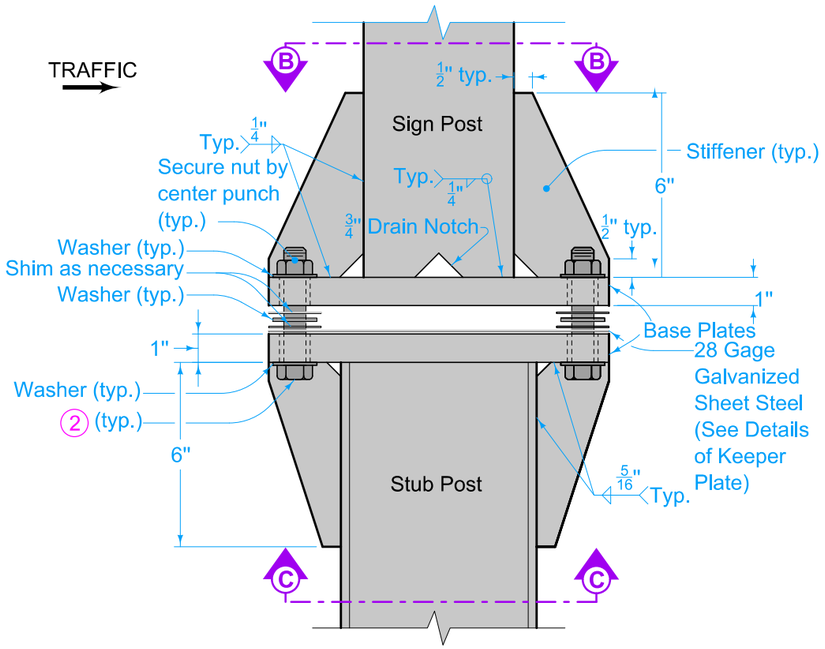
REVISIONS: Moved footing information to SI-112. Changed title and added oblique views.

APPROVED BY DESIGN METHODS ENGINEER

FREEWAY/EXPRESSWAY SPEED LIMIT SUPPORT POSTS



BREAKAWAY BASE
Side View
(Alternate 1)



BREAKAWAY BASE
Side View
(Alternate 2)

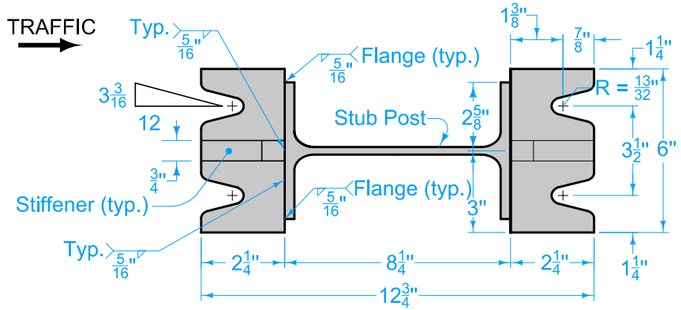
The following Base Plate alternates are considered equivalent:

ALTERNATE 1 - Weld base plates (2 each) to sides of stub post flanges.

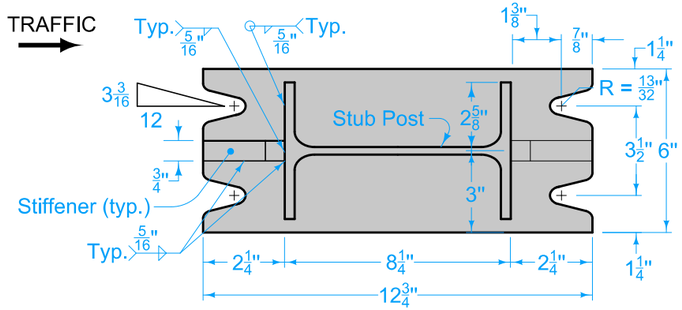
ALTERNATE 2 - Weld base plate (1 each) to end of stub post. During assembly, properly match and align the bolt holes and notches in the stub post plate and the sign post plate as indicated hereon.

Grind smooth all welds and galvanizing between Base Plates.

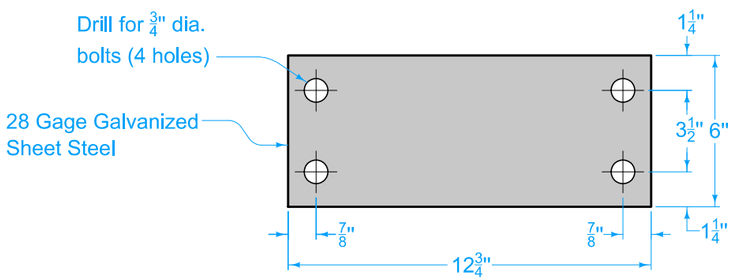
(2) $\frac{3}{4}$" dia. x $3\frac{1}{2}$"
Torque = 62.50 ft. lbs.



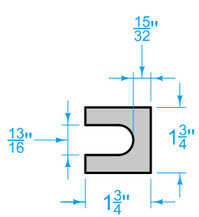
SECTION C-C
PLAN - BASE
(ALTERNATE 1)



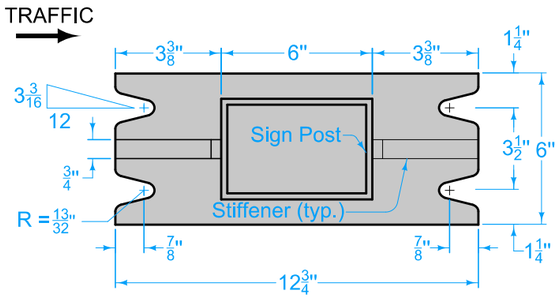
SECTION C-C
PLAN - BASE
(ALTERNATE 2)



KEEPER PLATE



SHIM



SECTION B-B
PLAN - BASE

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	04-19-16

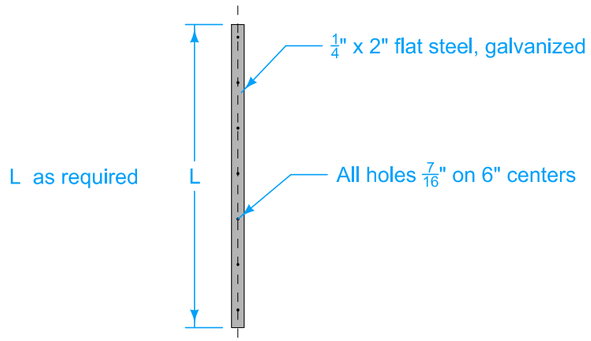
SI-114

SHEET 2 of 2

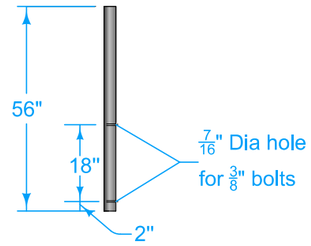
REVISIONS: Moved footing information to SI-112. Changed title and added oblique views.

APPROVED BY DESIGN METHODS ENGINEER

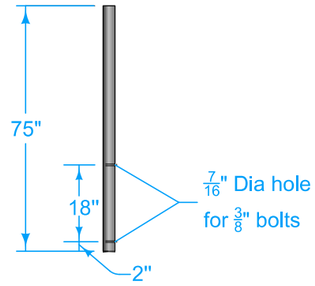
FREEWAY/EXPRESSWAY
SPEED LIMIT
SUPPORT POSTS



AUXILIARY
SIGN MOUNTING BAR
Type 1

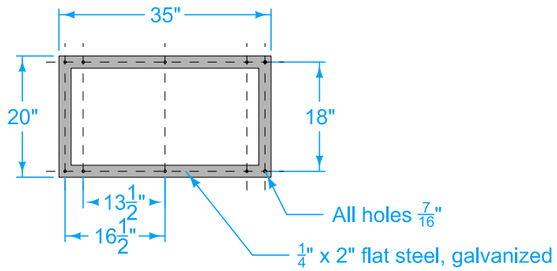


PIPE DETAIL
(Bracket 'F')
Type 4A

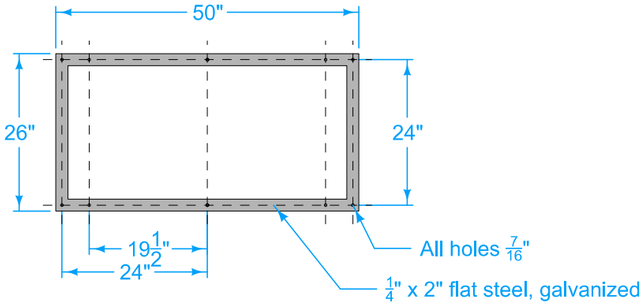


PIPE DETAIL
(Bracket "F, ")
Type 4B

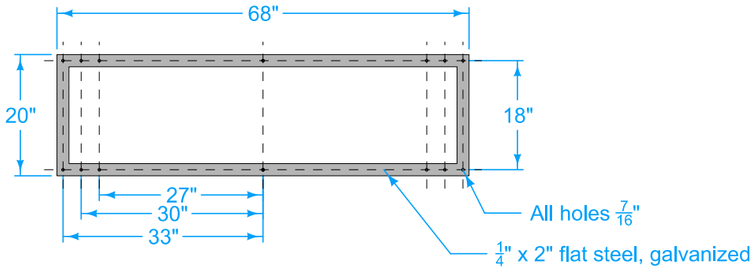
Bid price for the brackets is to include the necessary mounting bolts, washers, nuts, and set screws.



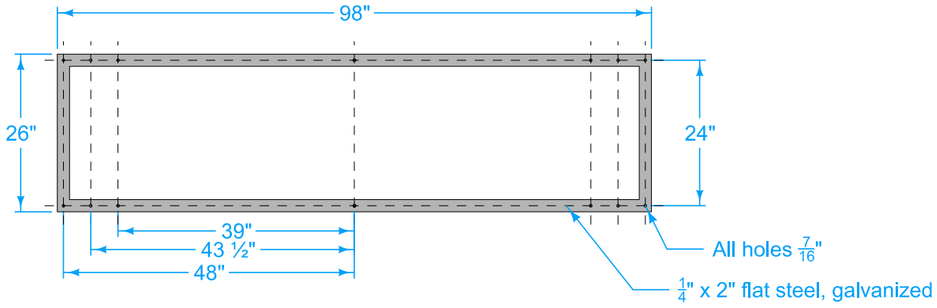
ONE POST
SIGN MOUNTING BRACKET
FOR 24" ROUTE SHIELDS
Type 2



ONE POST
SIGN MOUNTING BRACKET
FOR 36" ROUTE SHIELDS
Type 5



TWO POST
SIGN MOUNTING BRACKET
FOR 24" ROUTE SHIELDS
Type 3



TWO POST
SIGN MOUNTING BRACKET
FOR 36" ROUTE SHIELDS
Type 6

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-17-17

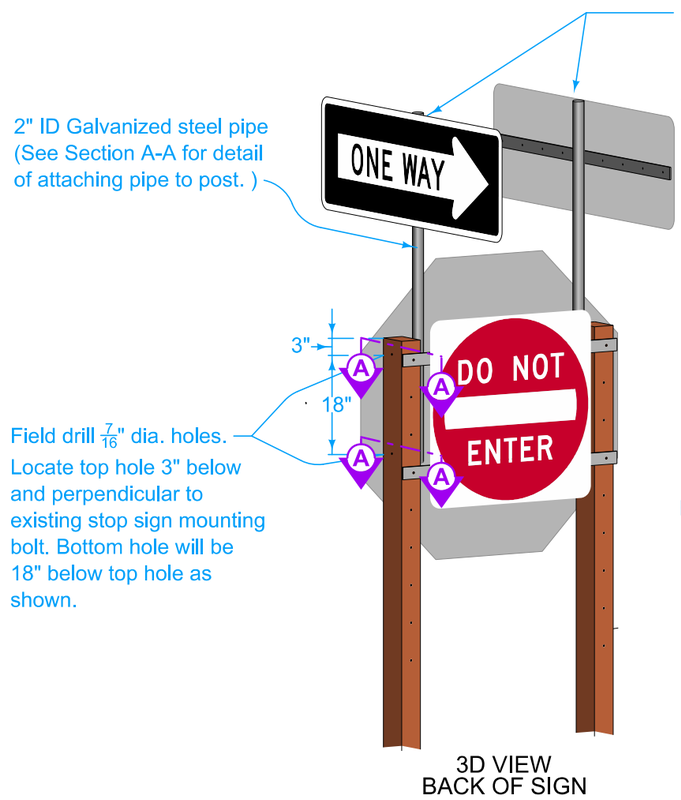
SI-119

SHEET 1 of 2

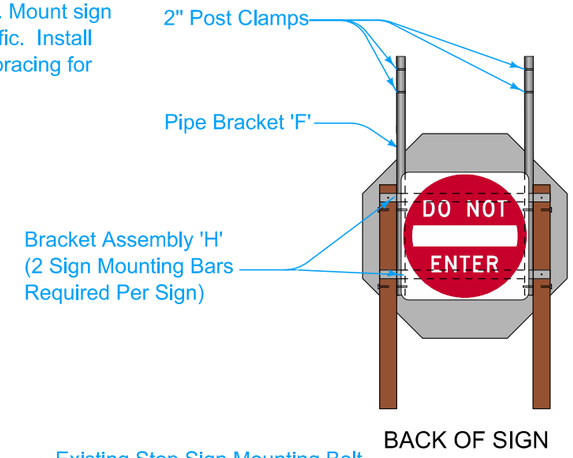
REVISIONS: Auxiliary sign mounting brackets have been added to 3D VIEW BACK OF SIGN on page 2.

APPROVED BY DESIGN METHODS ENGINEER

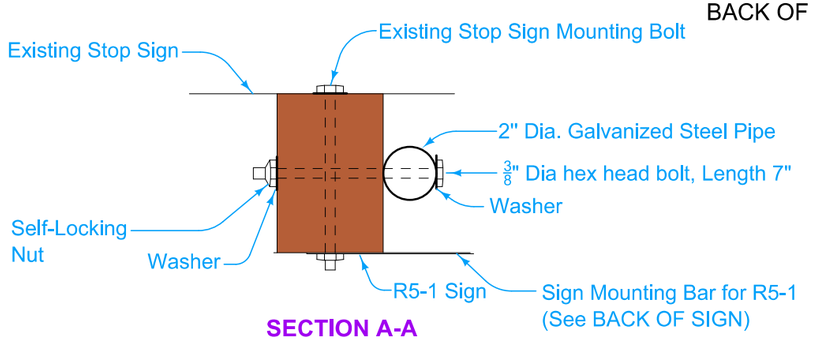
SUPPORT STRUCTURES - MOUNTING BRACKETS



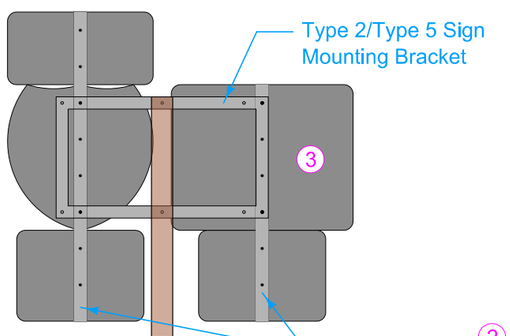
3D VIEW
BACK OF SIGN



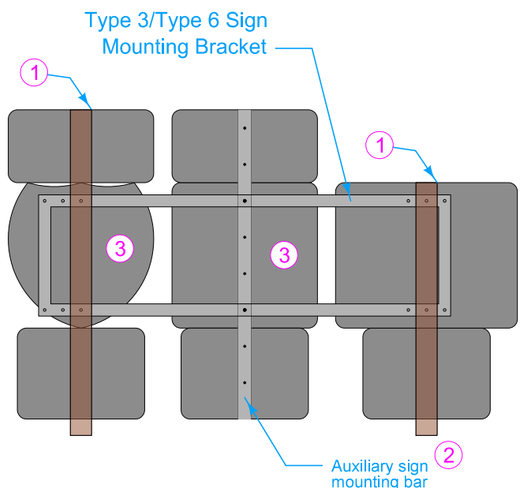
BACK OF SIGN



SECTION A-A



TYPICAL MOUNTING BRACKET ARRANGEMENT
FOR SINGLE WOOD POST INSTALLATION



TYPICAL MOUNTING BRACKET ARRANGEMENT
FOR TWO WOOD POST INSTALLATION

1. Mount the wood post so that the top is flush with the top of the sign panel.
2. Extend the Auxiliary Sign Mounting Bracket to the full length of the proposed mounted sign assembly.
3. Maintain a 3 inch space between Route Shields. This should be accomplished by using different drilled holes specified on the brackets, and will vary depending on the number of 2 or 3 digit signs in the assembly.
4. Perforated square steel tube (PSST) posts may be substituted for wood posts if approved by the Engineer.

IOWA DOT

STANDARD ROAD PLAN

REVISION
3 | 10-17-17

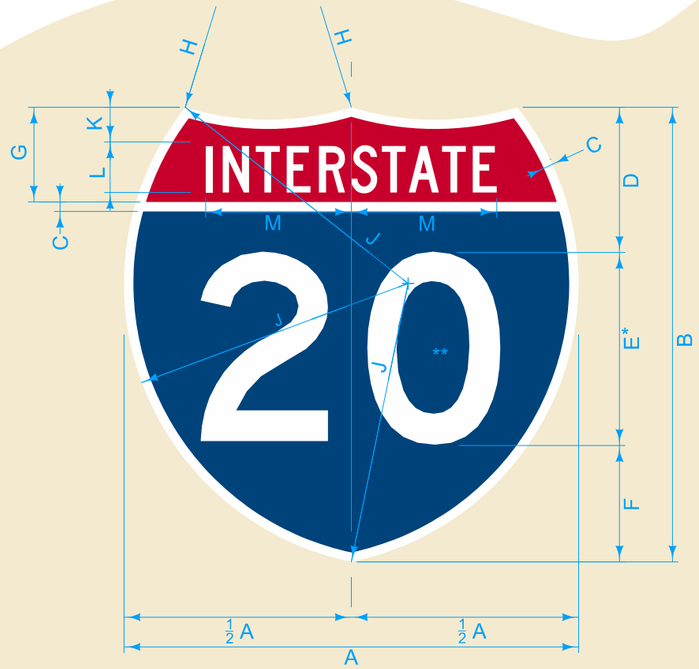
SI-119

SHEET 2 of 2

REVISIONS: Auxiliary sign mounting brackets have been added to 3D VIEW BACK OF SIGN on page 2.

APPROVED BY DESIGN METHODS ENGINEER

SUPPORT STRUCTURES - MOUNTING BRACKETS



* Series 2000 Standard Alphabets.

** Optically space numerals about vertical center line.

INTERSTATE ROUTE MARKERS

Sign	Width A	Height B	Border Thick. C	Numeral Top Offset D	Numeral Height & Font E	Numeral Bottom Offset F	Upper Section Height G	Top Radius H	Side Radius J	Text Top Offset K	Text Height & Font L	Text Length Lt & Rt M
2 Digit Routes	48	48	1	15.375	20 C	12.625	10	30	30	4	5 C	15.307
	36	36	0.75	11.5	15 C	9.5	7.5	22.5	22.5	2.75	4 C	12.246
	24	24	0.5	7.625	10 C	6.375	5	15	15	2	2.5 C	7.658
	15	15	0.3125	4.75	6.35	3.9	3.125	9.375	9.375	1	1.75	5.32
	13	13	0.271	4.125	5.5 C	3.375	2.708	8.125	8.125	0.875	1.5 C	4.6125
	10	10	0.208	3.25	4.25 C	2.5	2.083	6.25	6.25	0.75	1 C	3.075
	6	6	0.125	2	2.5 C	1.5	1.25	3.75	3.75	0.5	0.625 C	1.92
3 Digit Routes	60	48	1	15.375	20 B	12.625	10	48	34	4	5 E	21.818
	45	36	0.75	11.5	15 B	9.5	7.5	36	25.5	2.75	4 E	17.455
	30	24	0.5	7.625	10 B	6.375	5	24	17	2	2.5 E	10.911
	18.75	15	0.3125	4.75	6.35	3.9	3.125	15	10.625	1	1.75	7.58
	16.25	13	0.271	4.125	5.5 B	3.375	2.708	13	9.2083	0.875	1.5 E	6.57
	12	10	0.208	3.25	4.25 B	2.5	2.083	10	7.0833	0.75	1 E	4.38
	7.5	6	0.125	2	2.5 B	1.5	1.25	6	4.25	0.5	0.625 E	2.74

All dimensions are in inches unless otherwise designated.

COLORS:
Text: White
Border: White
Background (Interstate): Red
Background (Route No.): Blue

IOWA DOT

REVISION

4	10-16-18

STANDARD ROAD PLAN

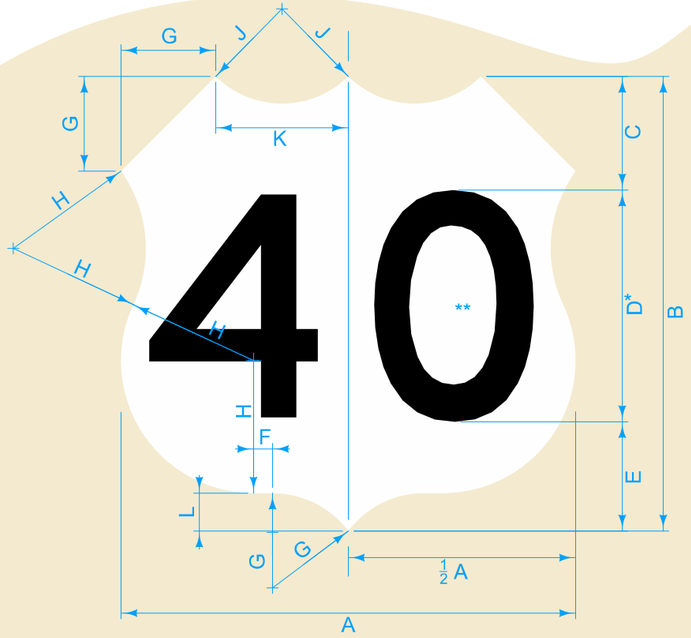
SI-121

SHEET 1 of 5

REVISIONS: Added 15" tall route shields for Interstates, U.S. Hwys, & IA Hwys.
Added Circle Note 2 to Sheet 4.

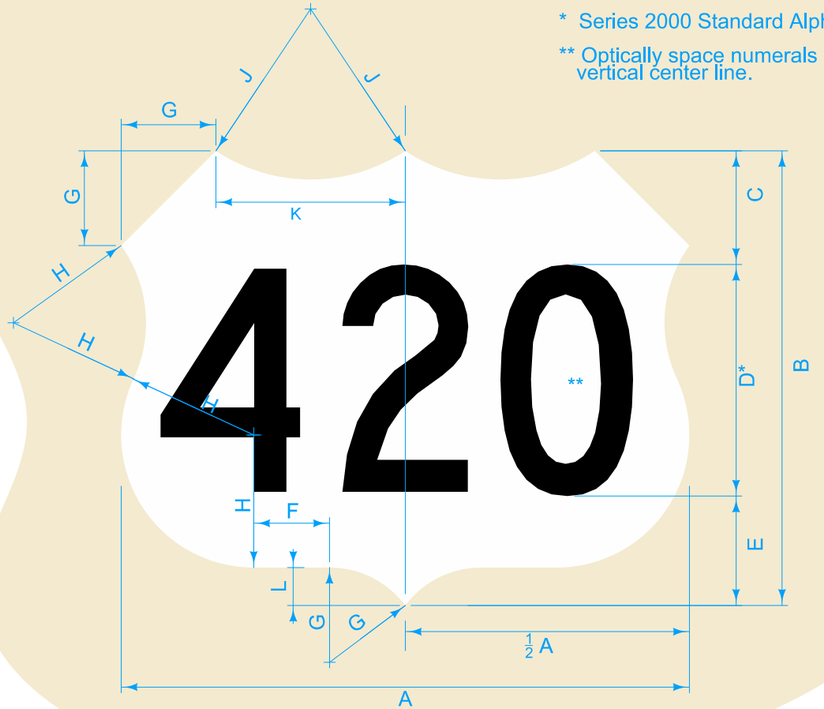
APPROVED BY DESIGN METHODS ENGINEER

FABRICATION - SIGN LEGEND COMPONENTS



* Series 2000 Standard Alphabets.

** Optically space numerals about vertical center line.



US ROUTE MARKERS

(1) Black borders added to route shields will not be accepted.

Sign	Width A	Height B	Numeral Top Offset C	Numeral Height & Font D	Numeral Bottom Offset E	Bottom Tangent Length F	Upper Section Height G	Corner & Top Radius H	Side Radius J	Top Radius K	Bottom Tangent Offset L
1 Digit Routes	48	48	11	24 D	13	2	10	14	10	14	4
	36	36	8.25	18 D	9.75	1.5	7.5	10.5	7.5	10.5	3
	24	24	5.5	12 D	6.5	1	5	7	5	7	2
	15	15	3.45	7.5 D	4	0.625	3.125	4.375	3.125	4.375	1.25
	13	13	3	6.5 D	3.5	0.542	2.708	3.792	2.708	3.792	1.083
	10	10	2.25	5 D	2.75	0.417	2.083	2.917	2.083	2.917	0.833
	6	6	1.375	3 D	1.625	0.25	1.25	1.75	1.25	1.75	0.5
2 Digit Routes	48	48	11	24 C	13	2	10	14	10	14	4
	36	36	8.25	18 C	9.75	1.5	7.5	10.5	7.5	10.5	3
	24	24	5.5	12 C	6.5	1	5	7	5	7	2
	15	15	3.45	7.5 C	4	0.625	3.125	4.375	3.125	4.375	1.25
	13	13	3	6.5 C	3.5	0.542	2.708	3.792	2.708	3.792	1.083
	10	10	2.25	5 C	2.75	0.417	2.083	2.917	2.083	2.917	0.833
	6	6	1.375	3 C	1.625	0.25	1.25	1.75	1.25	1.75	0.5
3 Digit Routes	60	48	11	24 B	13	8	10	14	18	20	4
	45	36	8.25	18 B	9.75	5.5	7.5	10.5	13.5	15	3
	30	24	5.5	12 B	6.5	4	5	7	9	10	2
	18.75	15	3.45	7.5 B	4	2.5	3.125	4.375	5.625	6.25	1.25
	16.25	13	3	6.5 B	3.5	2.167	2.708	3.792	4.875	5.416	1.083
	12	10	2.25	5 B	2.75	1.417	2.083	2.917	3.439	3.917	0.833
	7.5	6	1.375	3 B	1.625	1	1.25	1.75	2.25	2.5	0.5

All dimensions are in inches unless otherwise designated.

COLORS:
Text: White
Shield: White

IOWA DOT

STANDARD ROAD PLAN

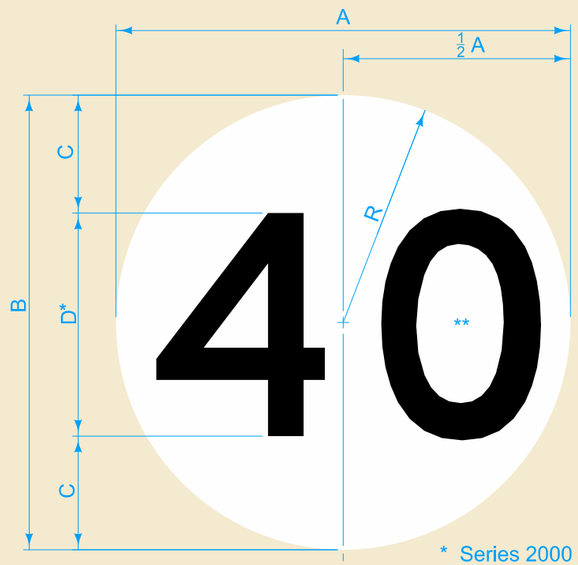
REVISION	
4	10-16-18

SI-121

REVISIONS: Added 15" tall route shields for Interstates, U.S. Hwys, & IA Hwys.
Added Circle Note 2 to Sheet 4.

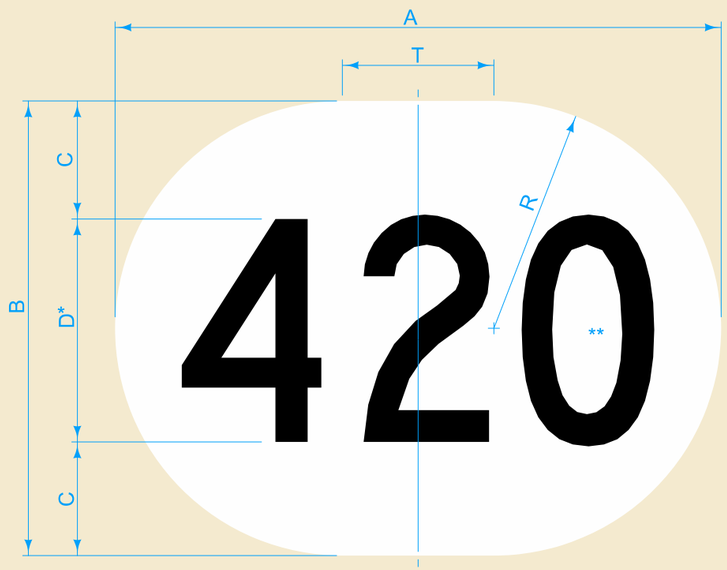
APPROVED BY DESIGN METHODS ENGINEER

FABRICATION -
SIGN LEGEND COMPONENTS



* Series 2000 Standard Alphabets.

** Optically space numerals about vertical center line.



STATE ROUTE MARKERS

① Black borders added to route shields will not be accepted.

Sign	Width A	Height B	Numeral Offset C	Numeral Height & Font D	Radius R	Tangent T
1 Digit Routes	48	48	12	24 D	24	-
	36	36	9	18 D	18	-
	24	24	6	12 D	12	-
	15	15	3.75	7.5 D	7.5	-
	13	13	3.25	6.5 D	6.5	-
	10	10	2.5	5 D	5	-
	6	6	1.5	3 D	3	-
2 Digit Routes	48	48	12	24 C	24	-
	36	36	9	18 C	18	-
	24	24	6	12 C	12	-
	15	15	3.75	7.5 C	7.5	-
	13	13	3.25	6.5 C	6.5	-
	10	10	2.5	5 C	5	-
	6	6	1.5	3 C	3	-
3 Digit Routes	60	48	12	24 B	24	12
	45	36	9	18 B	18	9
	30	24	6	12 B	12	6
	18.75	15	3.75	7.5 B	7.5	3.75
	16.25	13	3.25	6.5 B	6.5	3.25
	12	10	2.5	5 B	5	2
	7.5	6	1.5	3 B	3	1.5

All dimensions are in inches unless otherwise designated.

COLORS:
Text: Black
Shield: White

IOWA DOT

STANDARD ROAD PLAN

REVISION 4 10-16-18

SI-121

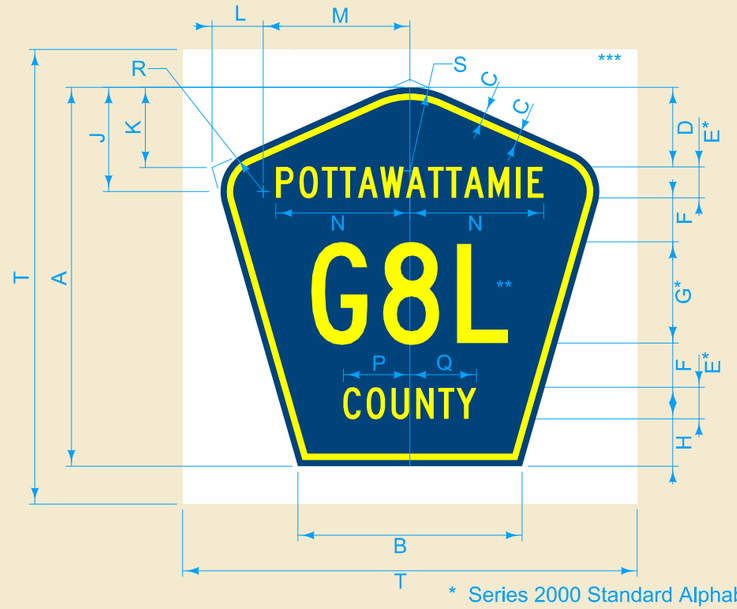
SHEET 3 of 5

REVISIONS: Added 15" tall route shields for Interstates, U.S. Hwys, & IA Hwys.
Added Circle Note 2 to Sheet 4.

APPROVED BY DESIGN METHODS ENGINEER

FABRICATION -
SIGN LEGEND COMPONENTS

② Yellow sheeted background plaque will not be accepted.



* Series 2000 Standard Alphabets.

** Optically space numerals about vertical center line.

** County shield centered horizontally and vertically on white background plaque

COUNTY ROUTE MARKER

All dimensions are in inches unless otherwise designated.

COLORS:
Text: Yellow
Border: Yellow
Shield: Blue
Background: White

Sign	Height	Bottom Width	Border Thick. & Indent	County Top Offset	County Text Hgt & Font	Numeral Offset	Numeral Height & Font	County Bottom Offset	Radius Vertical Offset	Corner Vertical Offset	Corner Lateral Offset	Radius Lateral Offset	County Name Lt & Rt	County Text Left	County Text Right	Side Radius	Top Radius	Backgrnd Plaque
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
All Routes	36	21.25	0.5	7	3 C	3	12 C	4	10	6.75	4.75	14	VAR	7.5	7.75	4	10	42

IOWA DOT

STANDARD ROAD PLAN

REVISION 4 10-16-18

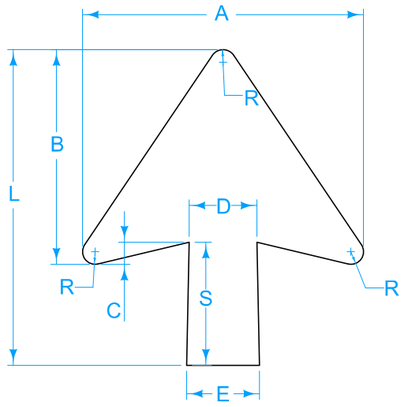
SI-121

SHEET 4 of 5

REVISIONS: Added 15" tall route shields for Interstates, U.S. Hwys, & IA Hwys.
Added Circle Note 2 to Sheet 4.

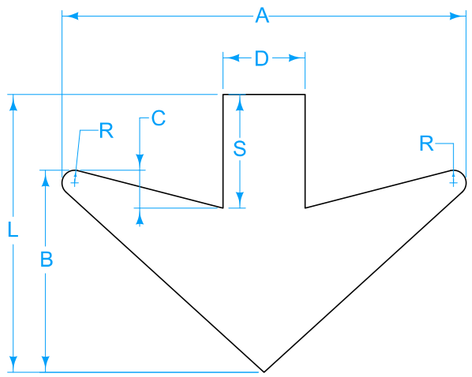
APPROVED BY DESIGN METHODS ENGINEER

FABRICATION -
SIGN LEGEND COMPONENTS



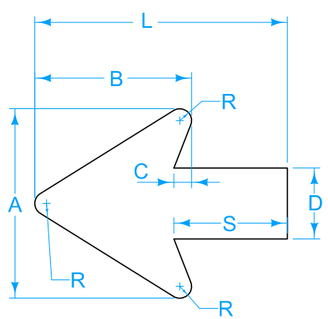
ID	Length	Head Width	Head Length	Draft	Radius	Tip	Shaft Width at Head	Shaft Width at Tail	Shaft Length	Letter Size
	L	A	B	C	R	G	D	E	S	
I-A	17	15.125	11.5625	1.3125	0.8125	Round	3.75	4.03	6.75	8
I-B	25	15.125	11.5625	1.3125	0.8125	Round	3.75	4.36	14.75	8
I-C	20	18.25	14	1.5	0.75	Round	4.5	4.81	7.5	10-13.3
I-D	30	18.25	14	1.5	0.75	Round	4.5	5.23	17.5	10-13.3
I-E	25	22.25	17	1.75	1	Round	5.375	5.78	9.75	16
I-F	35	22.25	17	1.75	1	Round	5.375	6.2	19.75	16

TYPE I



ID	Length	Head Width	Head Length	Draft	Radius	Tip	Shaft Width at Head	Shaft Width at Tail
	L	A	B	C	R	G	D	E
II-B	16	24	12	2.25	0.75	Point	4.875	6.25
II-A	22	32	16	3	1	Point	6.5	9

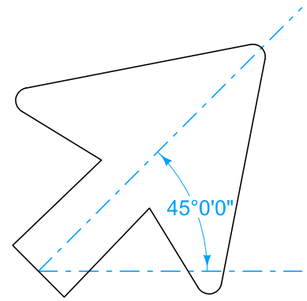
TYPE II



ID	Length	Head Width	Head Length	Draft	Radius	Tip	Shaft Width at Head	Shaft Length
	L	A	B	C	R	G	D	S
III-4S	6	4	3.3125	0.375	0.25	Round	1.5	3.0625
III-4L	12	4	3.3125	0.375	0.25	Round	1.5	9.0625
III-5S	8	5	4.140625	0.46875	0.3125	Round	1.875	4.328
III-5L	12	5	4.140625	0.46875	0.3125	Round	1.875	8.328
III-6S	8	6	4.96875	0.5625	0.375	Round	2.25	3.59375
III-6L	14	6	4.96875	0.5625	0.375	Round	2.25	9.59375
III-8S	10.5	8	6.625	0.75	0.5	Round	3.0	4.625
III-8L	14	8	6.625	0.75	0.5	Round	3.0	8.125

TYPE III

(2) Type II-A arrows should be used in all typical"down arrow" applications except where not practical due to size constraints.



I-E, 45

ARROW DESIGNATION:
Each arrow used on a guide sign is identified by a two part code as follows:
Part 1 is the arrow ID number
Part 2 is the angle in degrees between the center line of the arrow and the horizontal

All dimensions are in inches unless otherwise designated.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-16-18

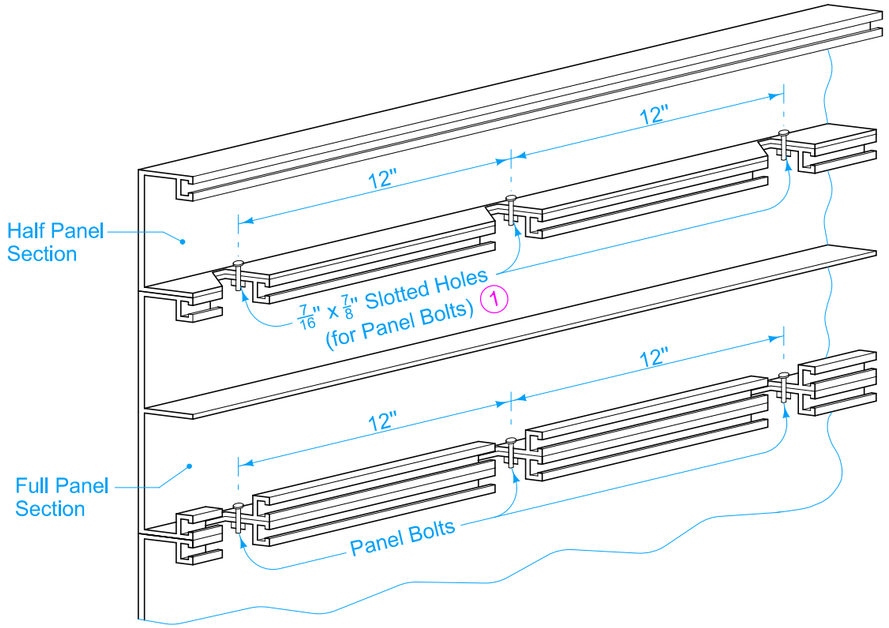
SI-121

SHEET 5 of 5

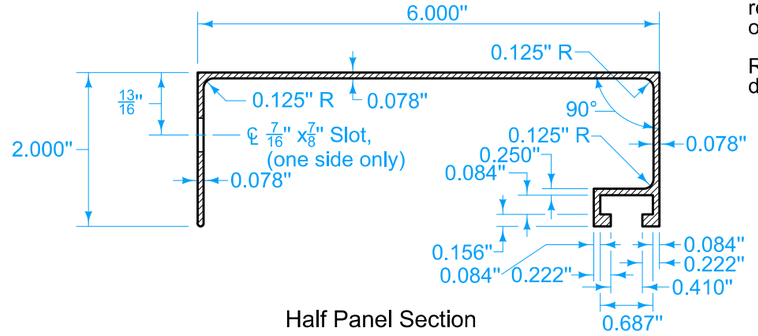
REVISIONS: Added 15" tall route shields for Interstates, U.S. Hwys, & IA Hwys.
Added Circle Note 2 to Sheet 4.

APPROVED BY DESIGN METHODS ENGINEER

FABRICATION -
SIGN LEGEND COMPONENTS



ASSEMBLY DETAIL



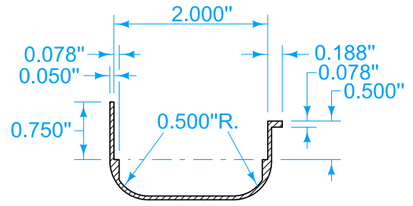
Half Panel Section

Panel bolt slotted holes spaced at 12 inch centers shall be located along the full length of each panel, such that the outermost slots are of equal distances (not to exceed 6 inches) from the ends of the panel.

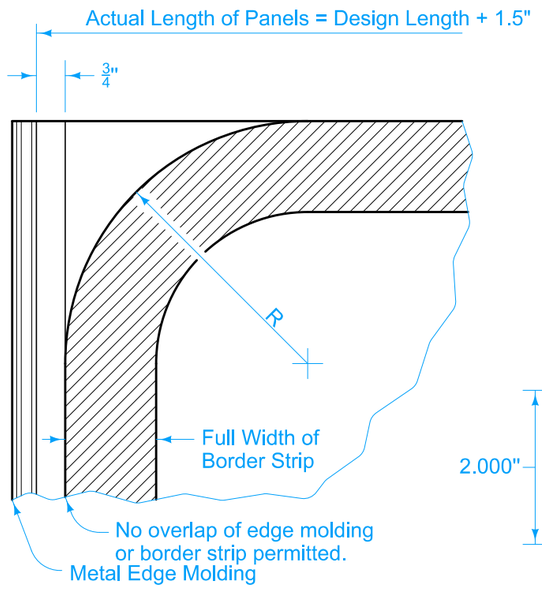
Signs shall be made up of full panels unless a half panel is required, in which case it shall be placed at the top edge of the sign.

Refer to detail project plans and summary sheet for exact data for individual sign fabrication requirements.

(1) Two washers per panel bolt, one each side of sign.

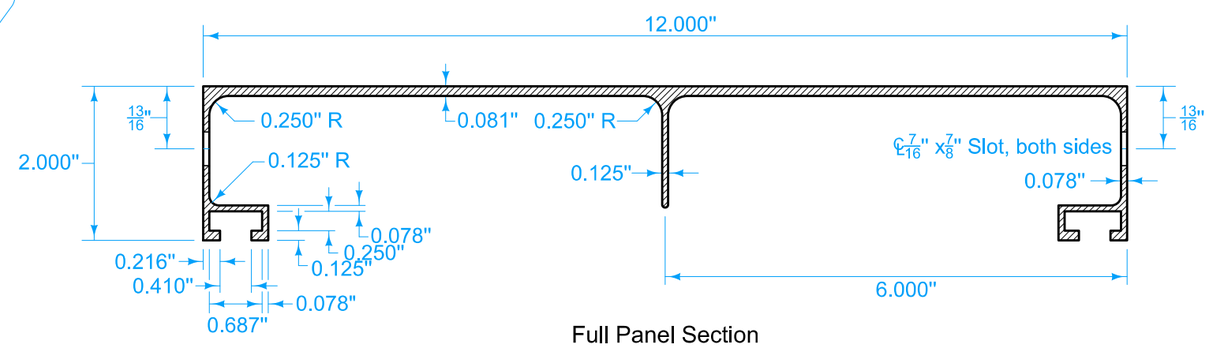


EDGE MOLDING



EDGE MOLDING BORDER STRIP DETAIL

Edge molding shall be installed full length of each vertical side of each sign. Attach in accordance with current specifications.



Full Panel Section

STANDARD STRUCTURAL SIGN PANELS

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-20-20

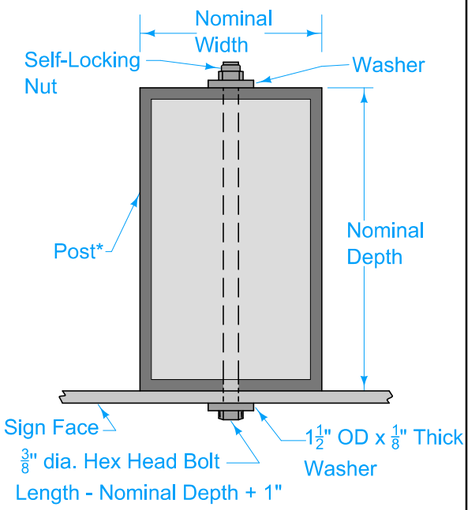
SI-123

SHEET 1 of 1

REVISIONS: Modified dimension from 0.78 to 0.078 in Full Panel Section.

APPROVED BY DESIGN METHODS ENGINEER

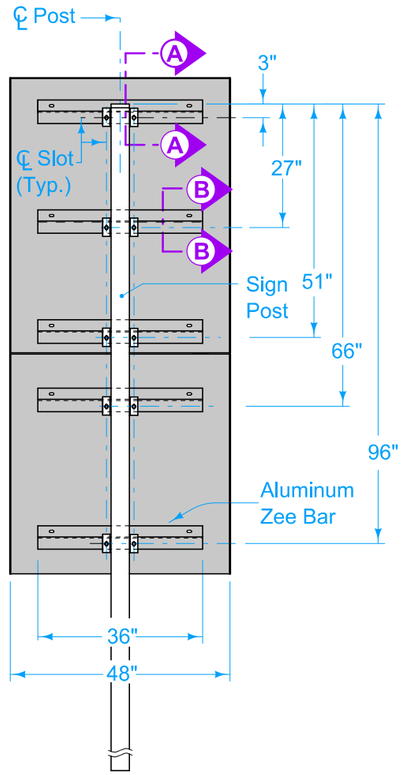
FABRICATION - TYPE 'B' SIGNS



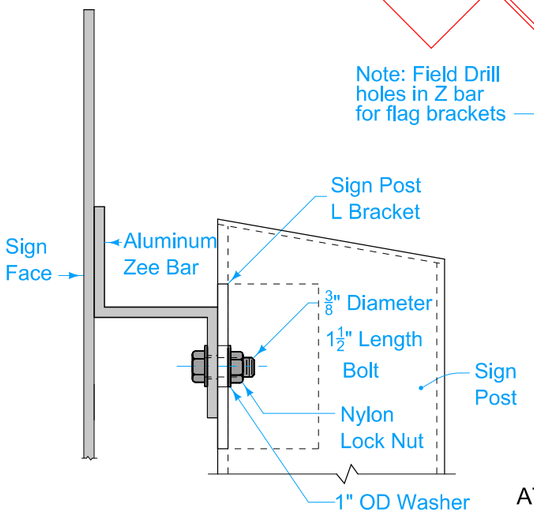
PLAN

*NOTE: Treated Wood
or Perforated Square Tube Post

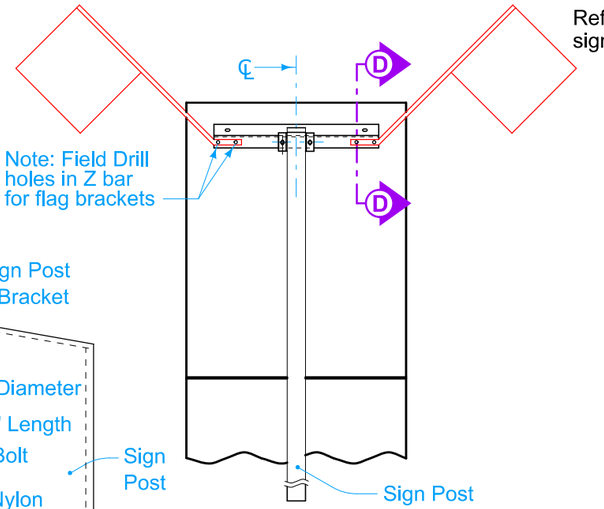
WOOD OR PERFORATED SQUARE
TUBE POST ATTACHMENT



BACK ELEVATION
4" x 6" RECTANGULAR TUBE
POST ATTACHMENT DETAILS

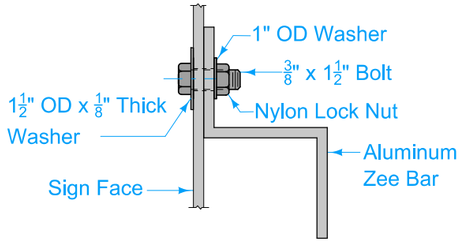


SECTION A-A

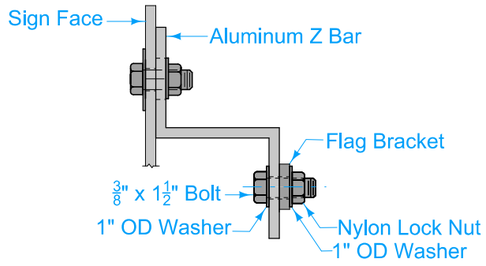


BACK ELEVATION
ATTACHMENT DETAILS
FOR FLAGS

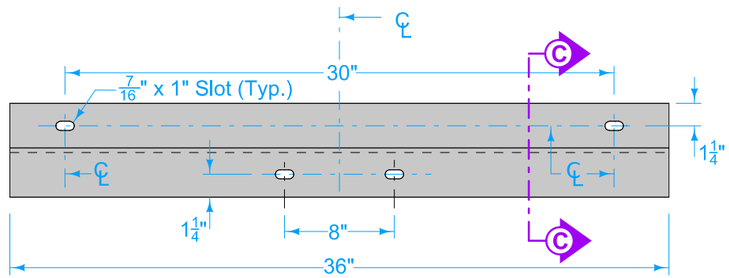
Refer to SI-114 for details of steel breakaway sign post rectangular tube.



SECTION B-B

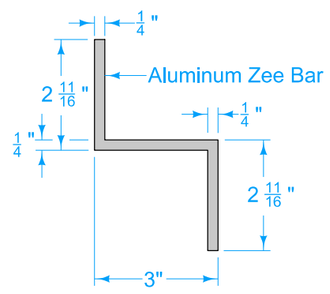


SECTION D-D



ALUMINUM ZEE BAR

RECTANGULAR TUBE
POST ATTACHMENT



SECTION C-C

Possible Contract Items:
Steel Breakaway Sign Post
Wood Sign Post

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	10-18-16

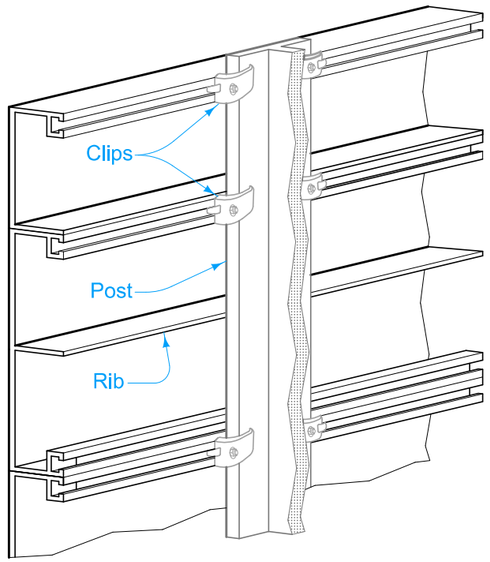
SI-131

SHEET 1 of 1

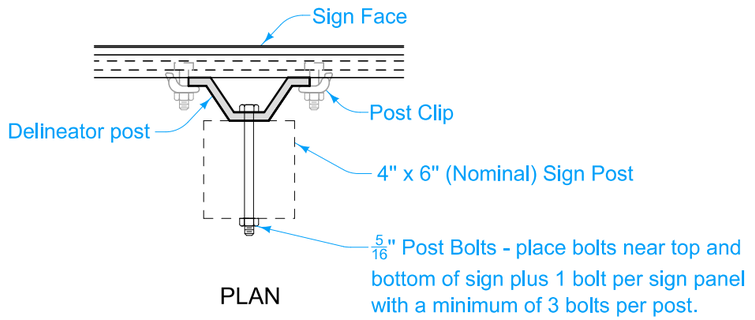
REVISIONS: Replaced old Iowa DOT logo with new logo.

APPROVED BY DESIGN METHODS ENGINEER

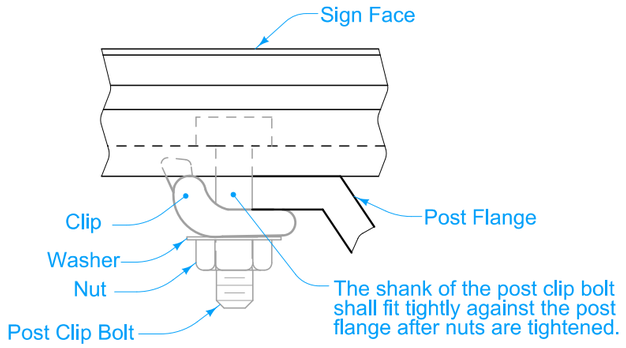
**INSTALLATION -
TYPE 'A' SIGNS**



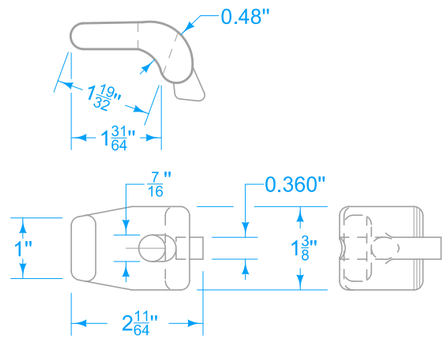
TYPE 1 ATTACHMENT
Type 1 Attachment shall be used for all signs placed on metal breakaway posts.



PLAN



CLIP INSTALLATION



POST CLIP

Position the EXIT NUMBER PANEL above the guide sign aligned with the edge of the guide sign indicating direction of exit.

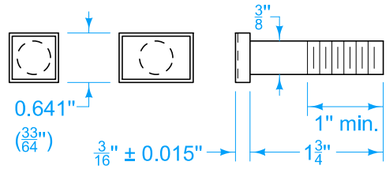
If the bolt holes in the top panel and the bottom panel of the two signs line up, panel bolts are to be used.

If the angle fasteners can not be horizontally placed as shown, they can be moved so as to securely hold the top sign.

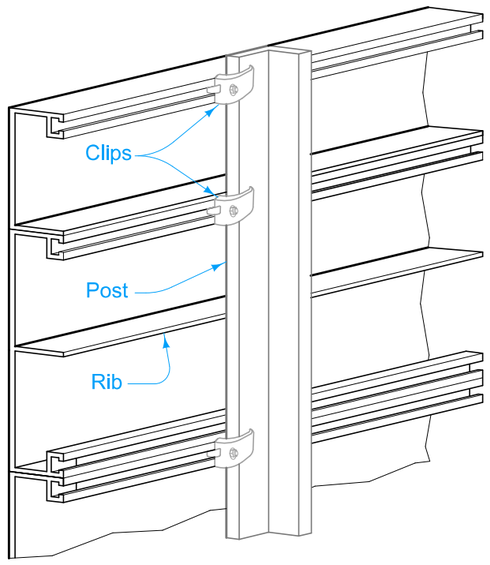
A post clip is required on each angle at top of panel and each extrusion joint.

The aluminum angles are considered part of the mounting hardware and are to be furnished by the Contractor as an incidental item. No separate payment will be made for aluminum angles.

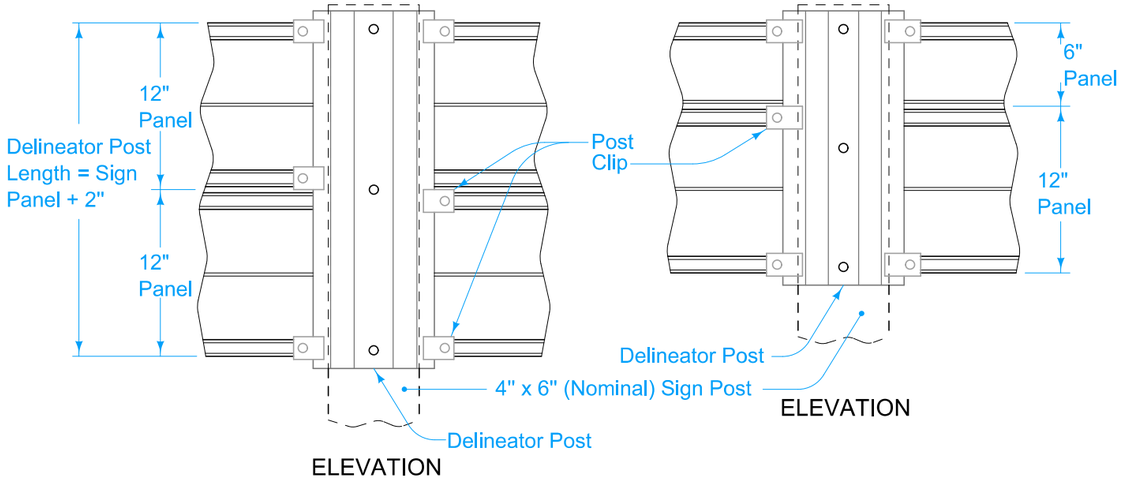
Use cast aluminum post clips and stainless steel nuts, bolts, and washers for post clips meeting the requirements of Article 4186.09, B of the Standard Specifications.



CLIP BOLT
(Square or Rectangualr Head Optional)



TYPE 4 ATTACHMENT
Type 4 Attachment shall be used for all signs mounted on overhead sign support structures.



ELEVATION

ELEVATION

TYPE 3 ATTACHMENT
Use Type 3 Attachment for all signs with wood posts.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	04-17-18

SI-132

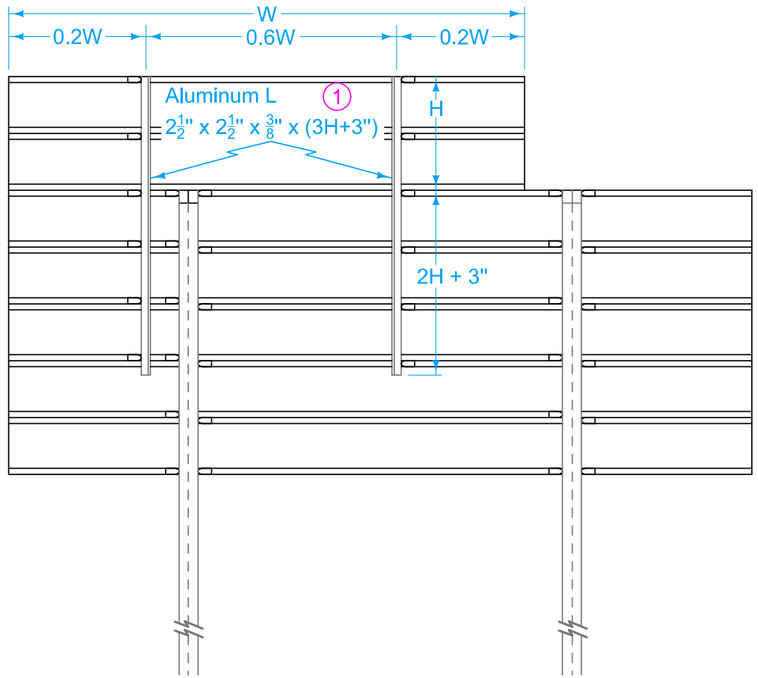
SHEET 1 of 2

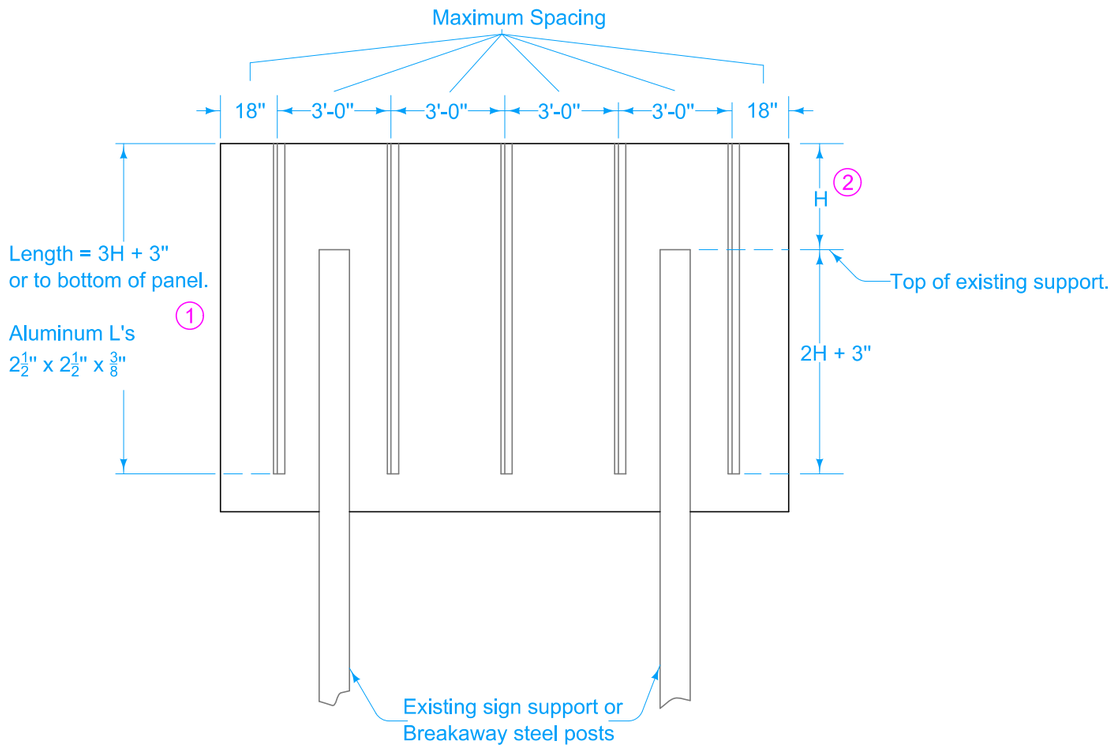
REVISIONS: Added thickness dimension for post clip. Specified material for the post clip, and the nut, bolt, and washer fastening the post clip.

APPROVED BY DESIGN METHODS ENGINEER

INSTALLATION - TYPE 'B' SIGNS

1. Do not allow the aluminum L to extend below the bottom of the major sign.
2. Sign height added above existing supports.





GUIDE SIGNS

IOWA DOT

STANDARD ROAD PLAN

REVISION	
4	04-17-18

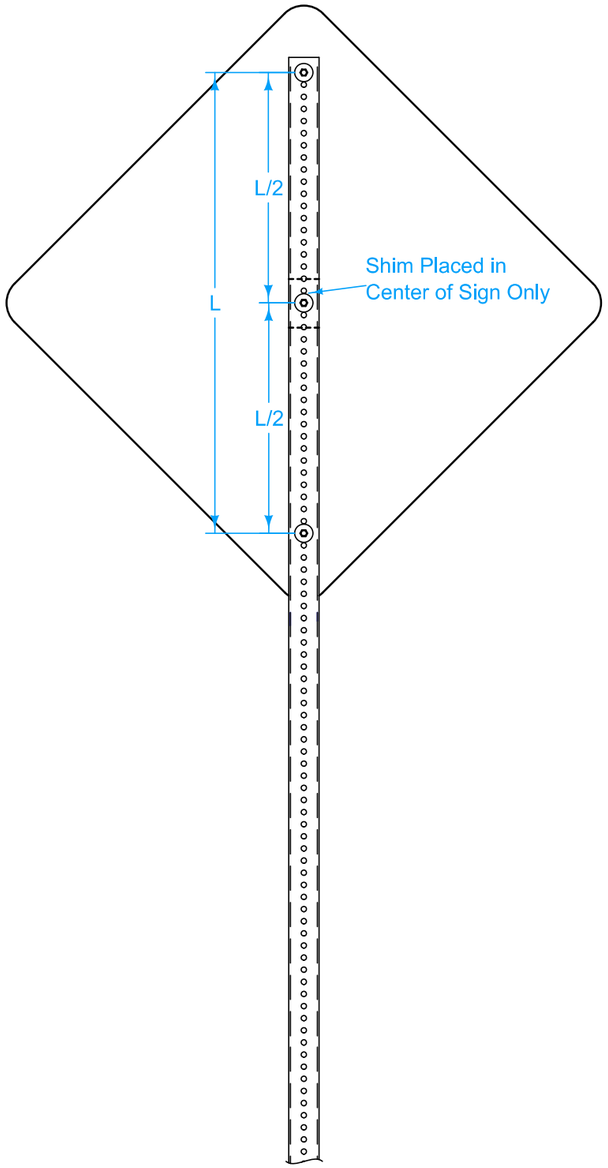
SI-132

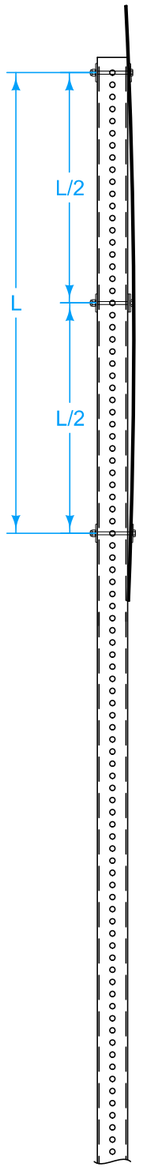
SHEET 2 of 2

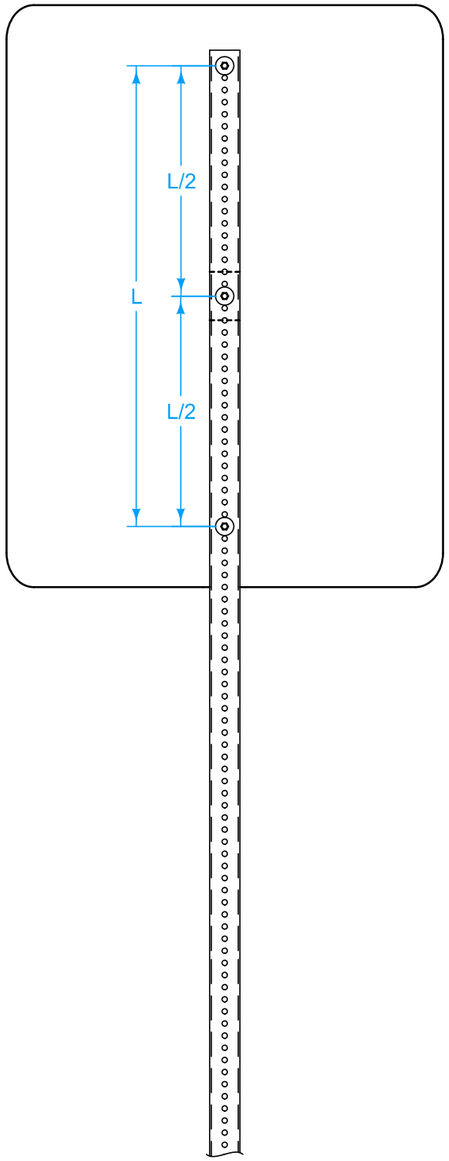
REVISIONS: Added thickness dimension for post clip. Specified material for the post clip, and the nut, bolt, and washer fastening the post clip.

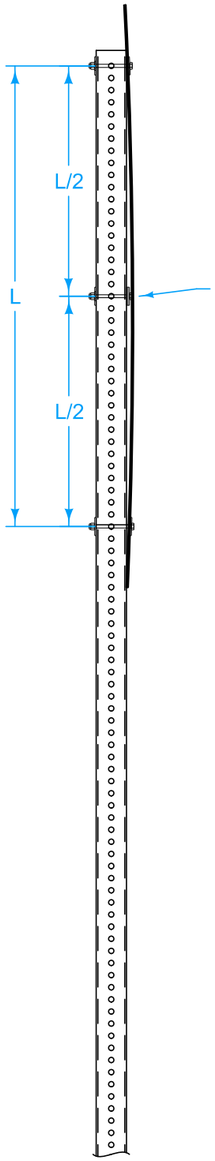
APPROVED BY DESIGN METHODS ENGINEER

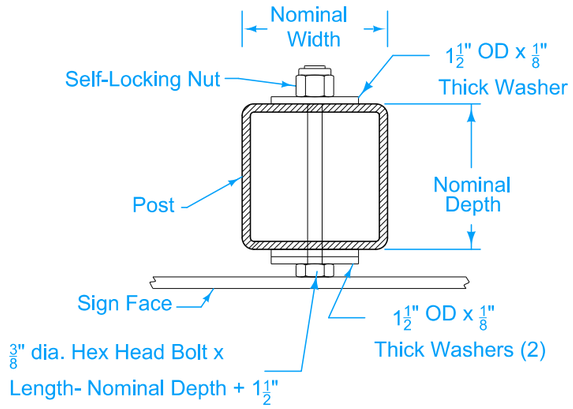
INSTALLATION - TYPE 'B' SIGNS



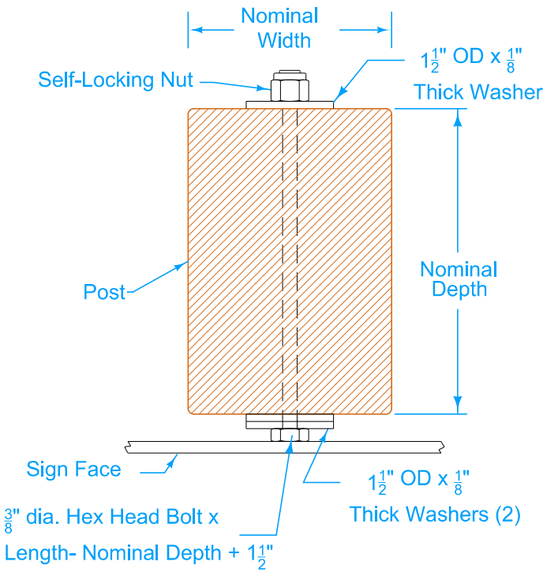








SHIM ATTACHMENT DETAIL
FOR PSST POST



SHIM ATTACHMENT DETAIL
FOR WOOD POST

NOTE: FOR SINGLE POST WITH SIGN WIDTH > 24" AND HEIGHT > 24"
FOR SHEET ALUMINUM SIGNS ONLY

IOWA DOT

REVISION

New	10-17-17

STANDARD ROAD PLAN

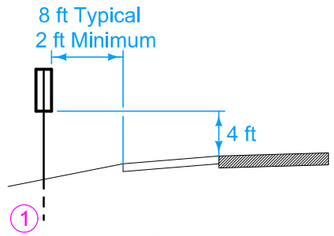
SI-133

SHEET 1 of 1

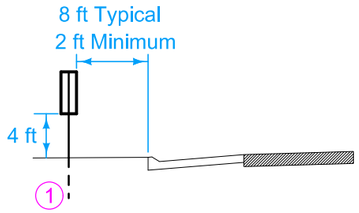
REVISIONS: New.

APPROVED BY DESIGN METHODS ENGINEER

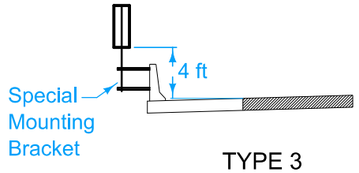
INSTALLATION - TYPE "A" SIGN SHIM



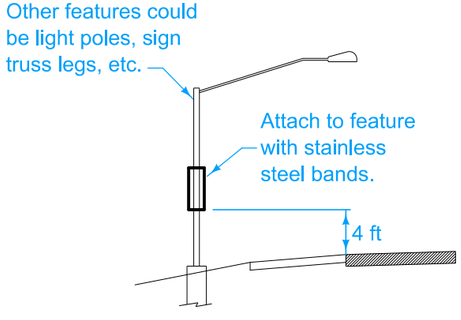
TYPE 1
SHOULDER INSTALLATION



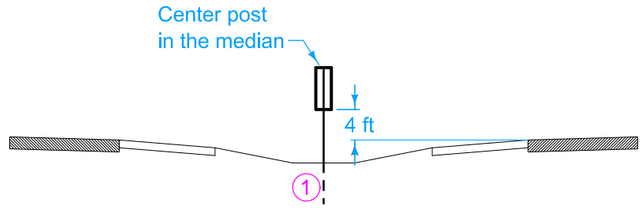
TYPE 2
CURB INSTALLATION



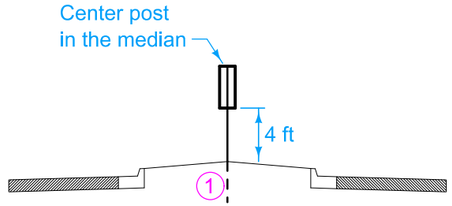
TYPE 3
BRIDGE BARRIER RAIL INSTALLATION



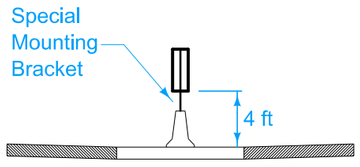
TYPE 4
ATTACHMENT TO OTHER FEATURE



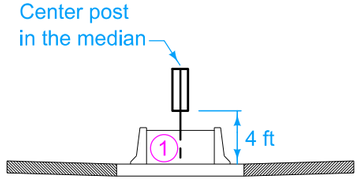
TYPE 5
DEPRESSED MEDIAN INSTALLATION



TYPE 6
RAISED MEDIAN INSTALLATION



TYPE 7
FULL MEDIAN BARRIER RAIL INSTALLATION



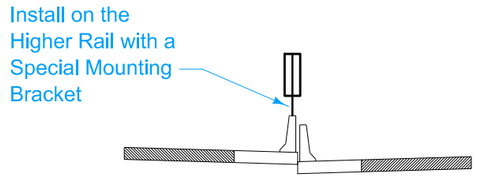
TYPE 8
SPLIT MEDIAN BARRIER RAIL INSTALLATION

Furnish Type 1 delineator posts for each location unless specified otherwise in the plans.

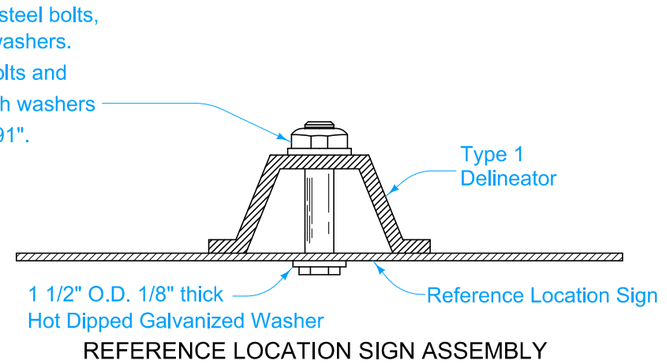
$\frac{3}{8}$" or $\frac{7}{16}$" holes in delineators are acceptable.

All dimensions are in inches unless otherwise designated.

(1) Install post of sufficient length to provide a minimum of 30 inches of embedment when installed at the specified mounting height.



TYPE 9
SPLIT MEDIAN BARRIER RAIL INSTALLATION
WITH GRADE DIFFERENTIAL



REFERENCE LOCATION SIGN ASSEMBLY
TOP VIEW

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	04-18-17

SI-171

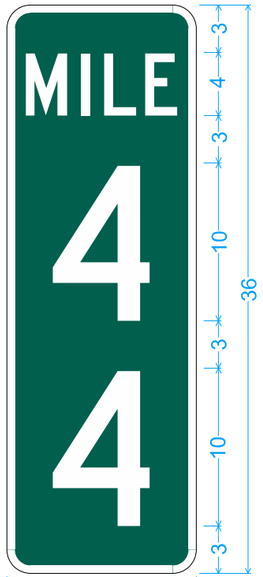
SHEET 1 of 4

REVISIONS: Changed title and "milepost" to new Reference Location Sign naming.

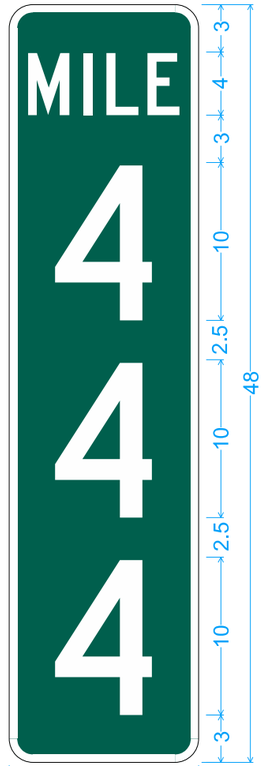
APPROVED BY DESIGN METHODS ENGINEER

REFERENCE LOCATION SIGN POSTS

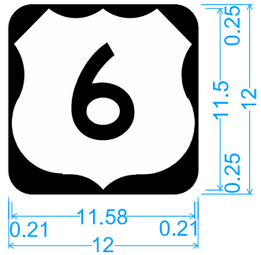
D10-1A;
1.50" Radius, 0.50" Border, White on Green;
[MILE] C 2K;
[4] C 2K;



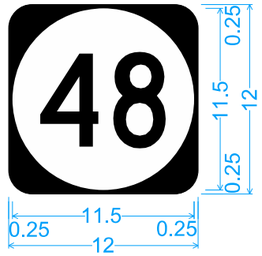
D10-2A;
1.50" Radius, 0.50" Border, White on Green;
[MILE] C 2K;
[4] C 2K; [4] C 2K;



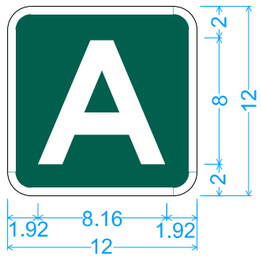
D10-3A;
1.50" Radius, 0.50" Border, White on Green;
[MILE] C 2K;
[4] C 2K; [4] C 2K;
[4] C 2K;



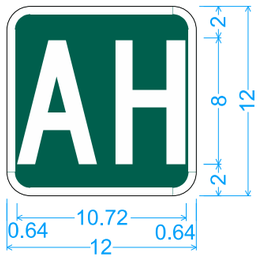
D10-5A;
1.50" Radius, No border, White on Black;



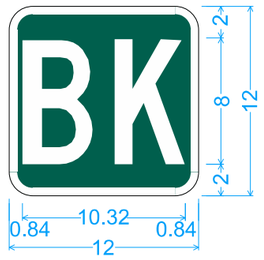
1.50" Radius, No border, White on Black;
Rounded Rectangle 5.75" Radius;



D10-7A;
1.50" Radius, 0.50" Border, White on Green;
[A] E 2K;



D10-8A;
1.50" Radius, 0.50" Border, White on Green;
[AH] C 2K;



D10-9A;
1.50" Radius, 0.50" Border, White on Green;
[BK] C 2K;

IOWA DOT

REVISION
3 | 04-18-17

STANDARD ROAD PLAN

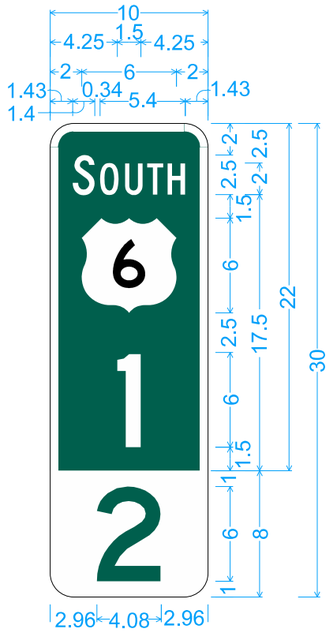
SI-171

SHEET 2 of 4

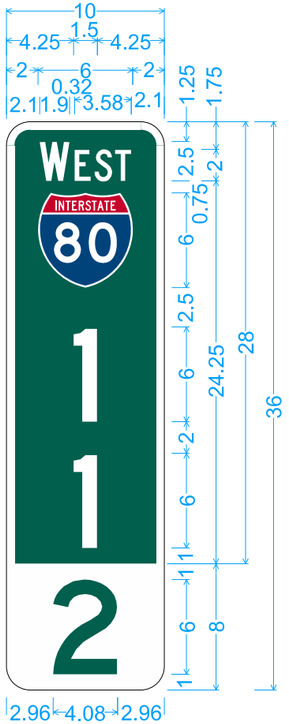
REVISIONS: Changed title and "milepost" to new Reference Location Sign naming.

APPROVED BY DESIGN METHODS ENGINEER

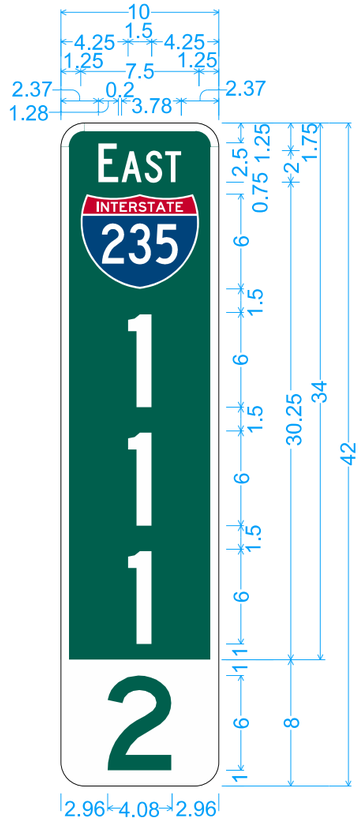
REFERENCE LOCATION SIGN POSTS



D10-1D;
1.50" Radius, 0.50" Border, White on Green;
[SOUTH] C 2K;
[1] D 2K;
1.50" Radius, No border, Green on White;
[2] D 2K;



D10-2D;
1.50" Radius, 0.50" Border, White on Green;
[WEST] C 2K;
[1] D 2K;
[1] D 2K;
1.50" Radius, No border, Green on White;
[2] D 2K;



D10-3D;
1.50" Radius, 0.50" Border, White on Green;
[EAST] C 2K;
[1] D 2K;
[1] D 2K;
[1] D 2K;
1.50" Radius, No border, Green on White;
[2] D 2K;

IOWA DOT

REVISION

3	04-18-17

STANDARD ROAD PLAN

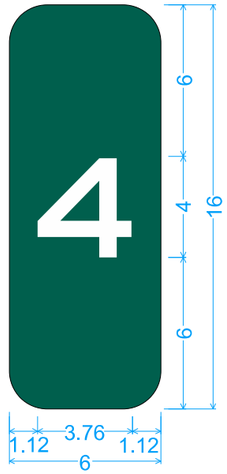
SI-171

SHEET 3 of 4

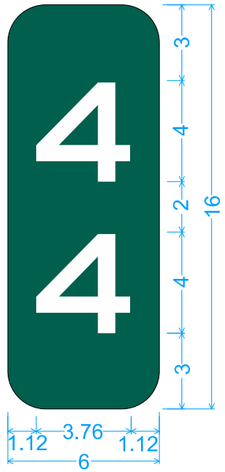
REVISIONS: Changed title and "milepost" to new Reference Location Sign naming.

APPROVED BY DESIGN METHODS ENGINEER

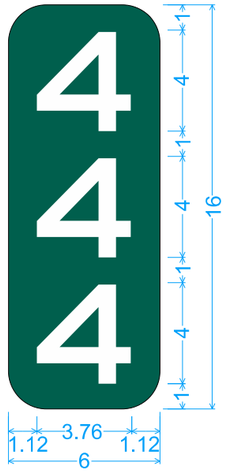
REFERENCE LOCATION SIGN POSTS



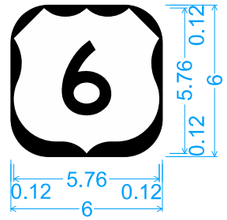
D10-1;
1.50" Radius, No border, White on Green;
[4] E 2K;



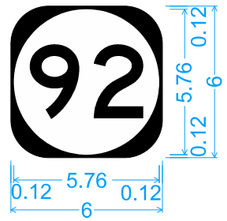
D10-2;
1.50" Radius, No border, White on Green;
[4] E 2K;
[4] E 2K;



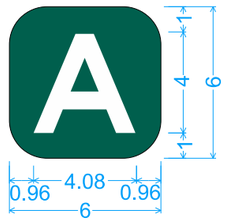
D10-3;
1.50" Radius, No border, White on Green;
[4] E 2K;
[4] E 2K;
[4] E 2K;



D10-5;
1.50" Radius, No border, White on Black;



D10-6;
1.50" Radius, No border, White on Black;
State Highway 92 M1-5;



D10-7;
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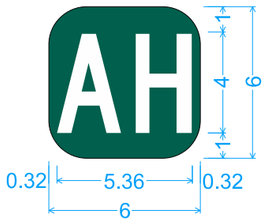
[A] E 2K;



D10-8;
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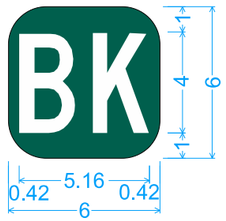
[AH] C 2K;



D10-9;
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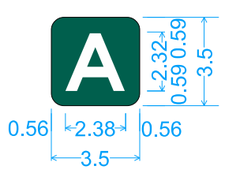
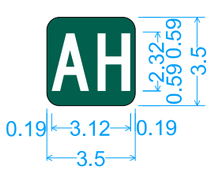
[BK] C 2K;



0.50" Radius, No border, White on Green;
[A] E 2K;



0.50" Radius, No border, White on Green;
[AH] C 2K;

0.50" Radius, No border, White on Green;
[BK] C 2K;

IOWA DOT

STANDARD ROAD PLAN

REVISION
3 | 04-18-17

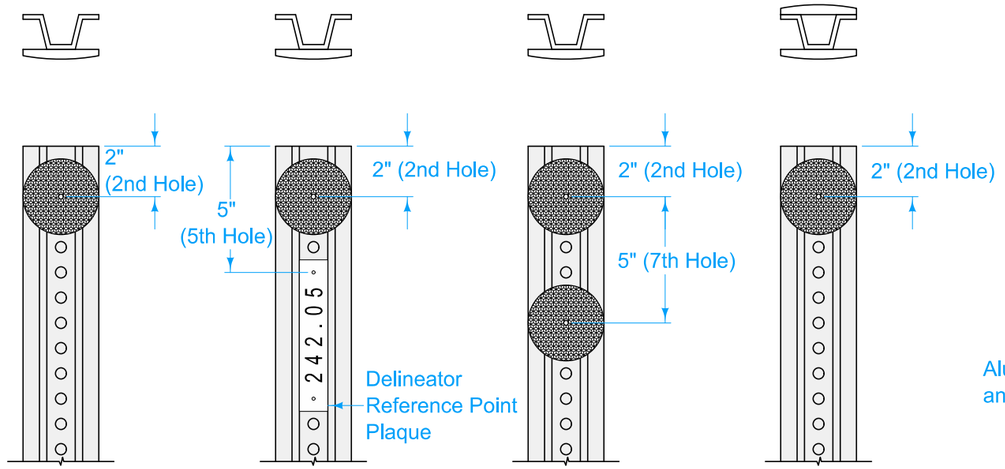
SI-171

SHEET 4 of 4

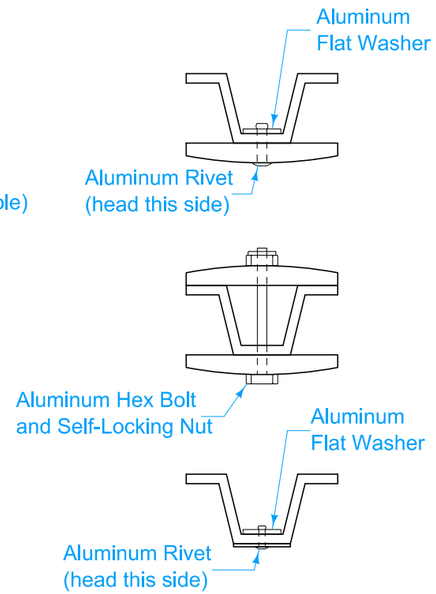
REVISIONS: Changed title and "milepost" to new Reference Location Sign naming.

APPROVED BY DESIGN METHODS ENGINEER

REFERENCE LOCATION SIGN POSTS



RIGID DELINEATOR MOUNTINGS



ATTACHMENTS

Place delineators at a constant distance from the edge of traveled way and/or the edge of shoulder.

The delineator height is measured from the edge of traveled way or the face of curb.

When placed behind curb, the delineator offset is measured from the face of curb. Allowable offsets are 2 feet minimum and 8 feet maximum. If the curb is part of a shoulder, maintain at least a minimum 8 foot offset from the edge of traveled way.

When placed on the foreslope, the delineator offset is measured from the edge of shoulder. Allowable offsets are 2 feet minimum and 8 feet maximum. However, for shoulders less than 6 feet in width, maintain a minimum 8 feet to the edge of traveled way.

Refer to the project plans for specific offset dimensions.

Furnish white, yellow, and/or red reflectors as specified in the project plans.

Furnish Type I delineator posts. Post lengths are to be sufficient to ensure the proper installation height and provide a minimum of 2'-6" embedment. See Table I for post lengths for various slope and offset conditions.

3/8" or 7/16" holes in the delineators are acceptable.

Install delineators truly vertical.

Delineators placed along freeways and expressways are to be spaced every 0.05 mile along the thru roadway. Placements are based on the reference post marker. A Delineator Reference Point Plaque is required on each delineator for both directions of travel.

Fabricate plaques from 0.063 inch thick sheet aluminum of the appropriate dimensions. Use non-reflectorized sheeting. White for the background, and black for the numerals.

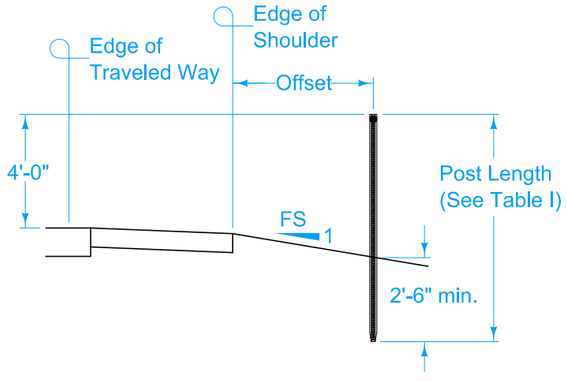
Attach single reflectors to the post with an aluminum, brazier head, blind rivet of $\frac{3}{16}$ inch diameter and a grip range of 0.376 to 0.625 inches, and an aluminum flat washer of 0.193 in. ID x 0.750 in. OD x 0.091 in. thickness.

Attach back to back reflectors to the post with an aluminum $\frac{3}{16}$ in. dia x $2\frac{1}{2}$ in. length hex head bolt with a matching self-locking nut.

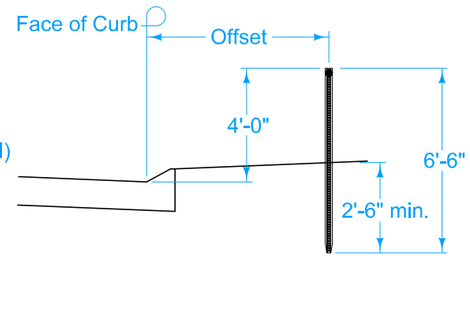
Attach plaques to the post with an aluminum, brazier head, blind rivet of $\frac{1}{8}$ inch diameter and a grip range of 0.126 to 0.250 inches, and an aluminum flat washer of 0.129" ID x 0.750" OD x 0.091" thickness.

Furnish materials complying with Section 4186 of the Standard Specifications.

Post Lengths for Shoulder Installation					
Offset	Foreslope Rate (FS:1)				
ft	10:1	6:1	4:1	3:1	2:1
2	8	8	8	8	8
4	8	8	8	10	10
6	8	8	10	10	10
8	8	10	10	10	12

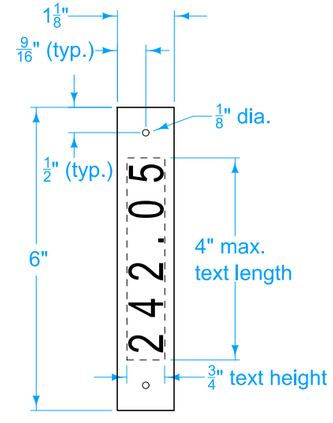


Shoulder Installation



Curb Installation

DELINEATOR POST LOCATIONS



DELINEATOR REFERENCE POINT PLAQUE

Possible Contract Items:
- Delineator, Rigid - Type I
- Delineator, Rigid - Type IA
- Delineator, Rigid - Type II
- Delineator, Rigid - Type III

Possible Tabulation:
190-25

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	04-19-16

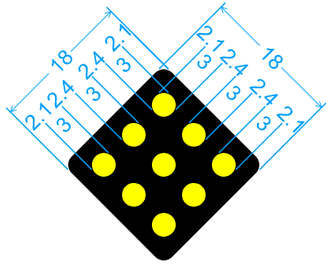
SI-172

SHEET 1 of 1

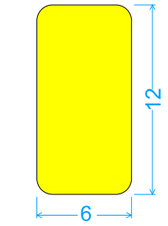
REVISIONS: Widened general notes column to add possible contract items and possible tabulation.

APPROVED BY DESIGN METHODS ENGINEER

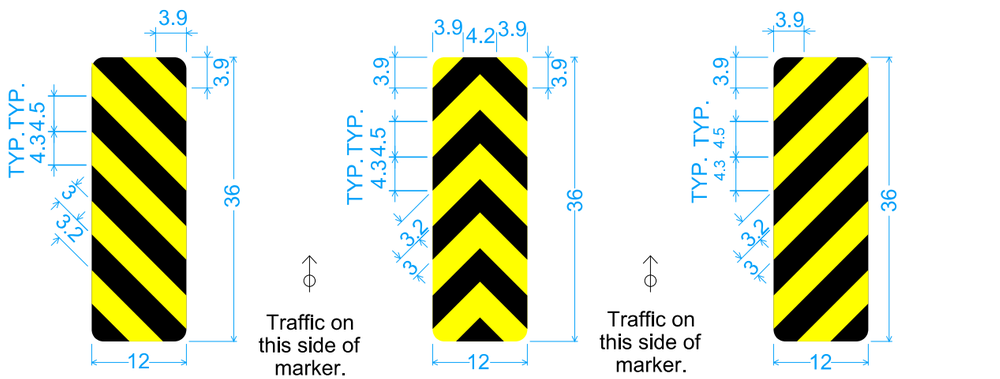
DELINEATORS



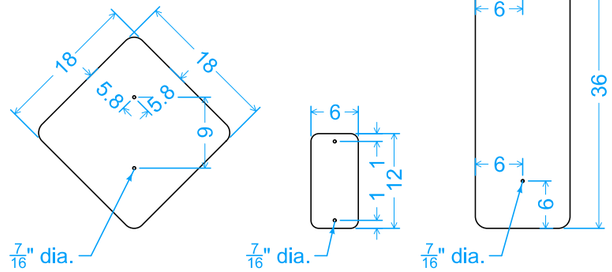
TYPE 1 OBJECT MARKER



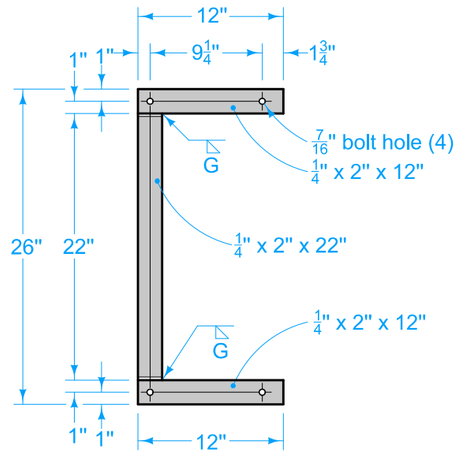
TYPE 2 OBJECT MARKER



TYPE 3 OBJECT MARKERS



SIGN BLANKS



OFFSET BRACKET
Galvanize in accordance with AASHTO M 111.

Fabricate object markers from materials complying with Section 4186 of the Standard Specifications.

Buttons on Type 1 Object Markers may consist of yellow reflectors or yellow reflective sheeting. Do not mix types on any single object marker. When reflectors are used, attach to sign blank with an aluminum, brazier head, blind rivet of $\frac{3}{16}$ inch diameter and a grip range of $\frac{1}{8}$ to $\frac{3}{8}$ inches.

Install object markers truly vertical.

Ensure top of post does not extend above top of object marker.

Possible Contract Item:
Object Marker

Possible Tabulation:
190-25

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	04-19-16

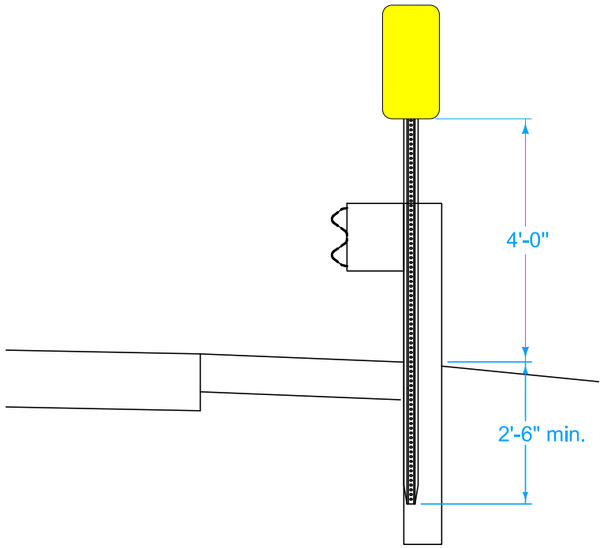
SI-173

SHEET 1 of 2

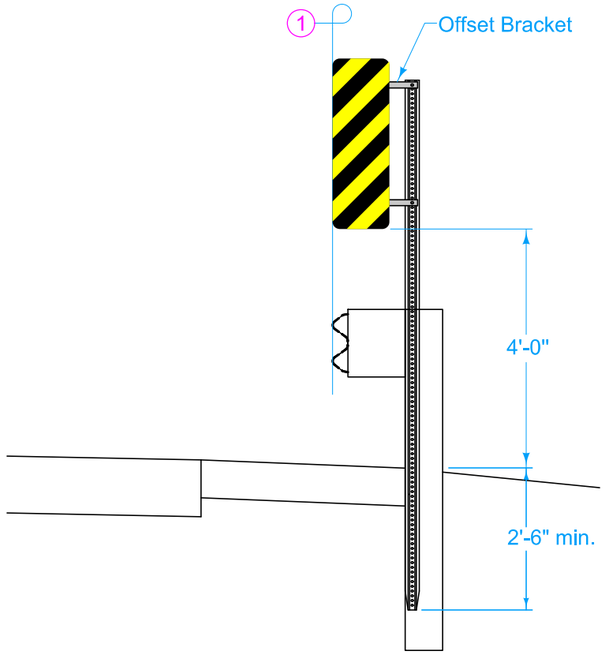
REVISIONS: Removed OM1-1, OM1-3, and .063" aluminum call out on page 1. Modified general notes, drawing labels, and changed dimensions to 1 pt of accuracy.

APPROVED BY DESIGN METHODS ENGINEER

OBJECT MARKERS

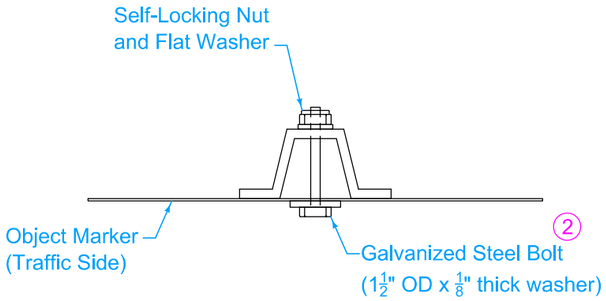


TYPE 2

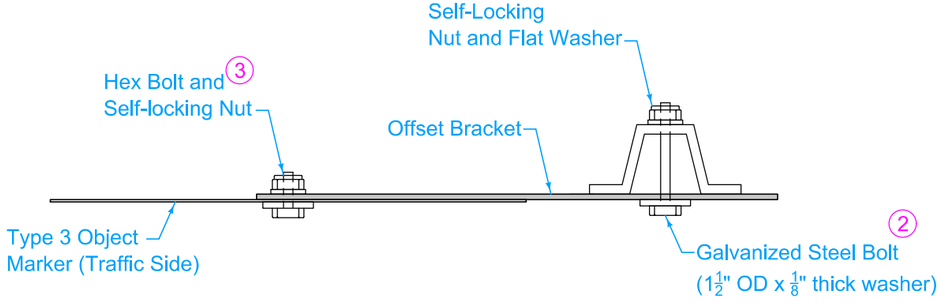


TYPE 3

INSTALLATION AT GUARDRAIL LOCATIONS



STANDARD ATTACHMENT



OFFSET BRACKET ATTACHMENT

1. Install Type 3 Object Markers so the inside edge of the marker is in line with the inner edge of the obstruction.

2. Attach object marker or offset bracket to the delineator post at two locations. Use the following per bolt hole location:

   -one galvanized $\frac{5}{16}$ in. dia x $2\frac{1}{4}$ in. length hex head bolt with matching self locking nut.

   -galvanized steel washer, $\frac{11}{32}$" ID, $1\frac{1}{2}$" OD, $\frac{1}{8}$" thick under the head of the bolt.

3. When Type 3 Object Marker is installed on an offset bracket, attach marker to bracket at two locations. Use the following per bolt hole location:

   -one $\frac{5}{16}$ in. dia x $1\frac{1}{2}$ in. length hex head bolt with matching self locking nut.

   -galvanized steel washer, $\frac{11}{32}$" ID, $1\frac{1}{2}$" OD, $\frac{1}{8}$" thick under the head of the bolt.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
1	04-19-16

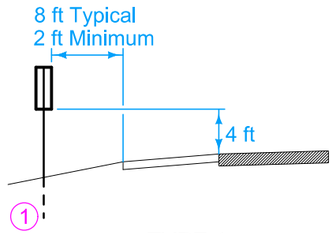
SI-173

SHEET 2 of 2

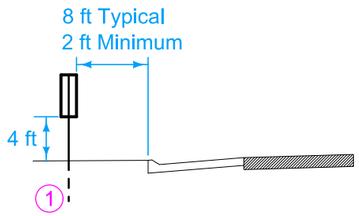
REVISIONS: Removed OM1-1, OM1-3, and .063" aluminum call out on page 1. Modified general notes, drawing labels, and changed dimensions to 1 pt of accuracy.

APPROVED BY DESIGN METHODS ENGINEER

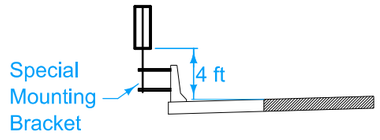
OBJECT MARKERS



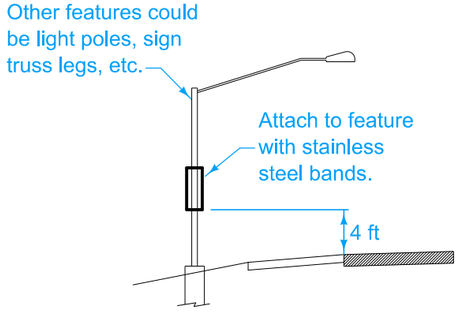
TYPE 1
SHOULDER INSTALLATION



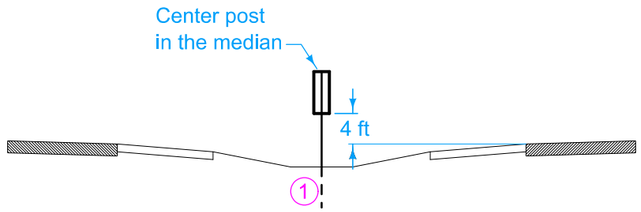
TYPE 2
CURB INSTALLATION



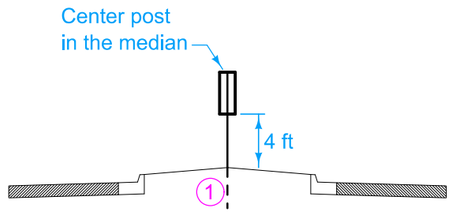
TYPE 3
BRIDGE BARRIER RAIL INSTALLATION



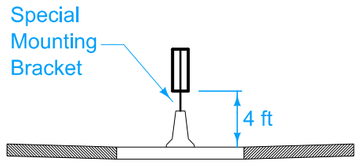
TYPE 4
ATTACHMENT TO OTHER FEATURE



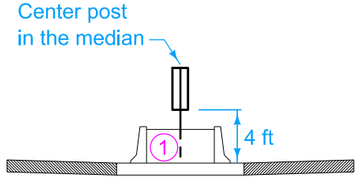
TYPE 5
DEPRESSED MEDIAN INSTALLATION



TYPE 6
RAISED MEDIAN INSTALLATION



TYPE 7
FULL MEDIAN BARRIER RAIL INSTALLATION



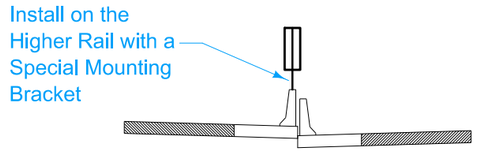
TYPE 8
SPLIT MEDIAN BARRIER RAIL INSTALLATION

Furnish Type 1 delineator posts for each location unless specified otherwise in the plans.

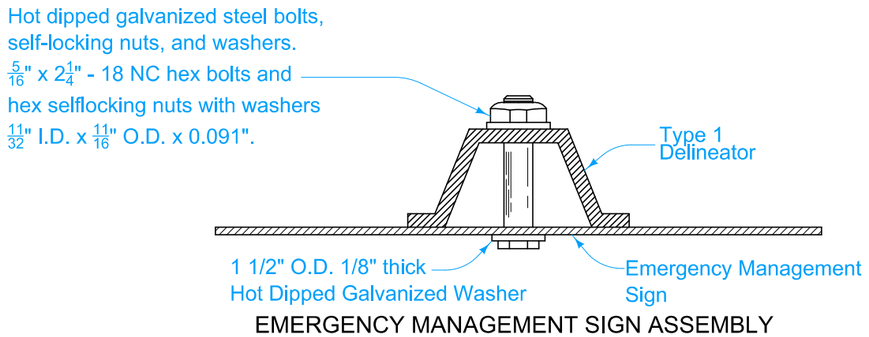
$\frac{3}{8}$" or $\frac{7}{16}$" holes in delineators are acceptable.

All dimensions are in inches unless otherwise designated.

(1) Install post of sufficient length to provide a minimum of 30 inches of embedment when installed at the specified mounting height.



TYPE 9
SPLIT MEDIAN BARRIER RAIL INSTALLATION
WITH GRADE DIFFERENTIAL



EMERGENCY MANAGEMENT SIGN ASSEMBLY
TOP VIEW

IOWA DOT

STANDARD ROAD PLAN

REVISION	
New	04-21-20

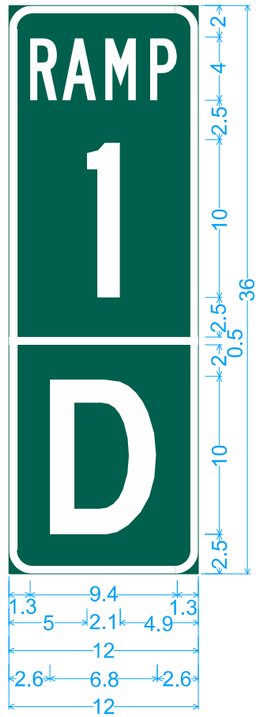
SI-174

SHEET 1 of 2

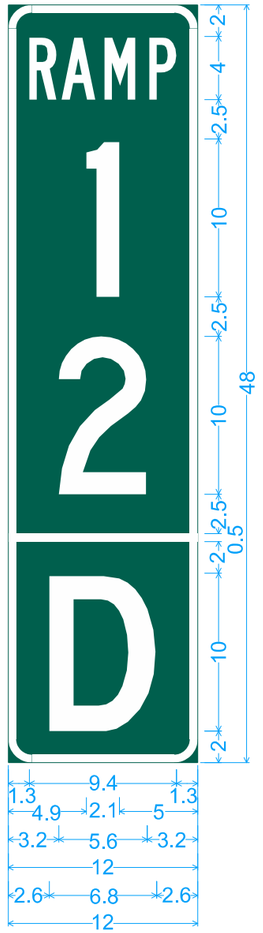
REVISIONS: New.

APPROVED BY DESIGN METHODS ENGINEER

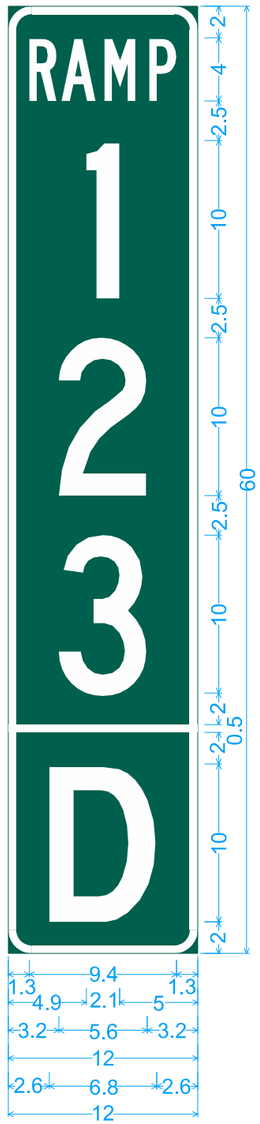
EMERGENCY MANAGEMENT RAMP SIGNING



1.5" Radius, 0.5" Border, White on Green;
[RAMP] B 2K;
[1] C 2K; [D] D 2K;



1.5" Radius, 0.5" Border, White on Green;
[RAMP] B 2K;
[1] C 2K; [2] C 2K;
[D] D 2K;



1.5" Radius, 0.5" Border, White on Green;
[RAMP] B 2K;
[1] C 2K; [2] C 2K;
[3] C 2K; [D] D 2K;

IOWA | DOT

STANDARD ROAD PLAN

REVISION	
New	04-21-20

SI-174

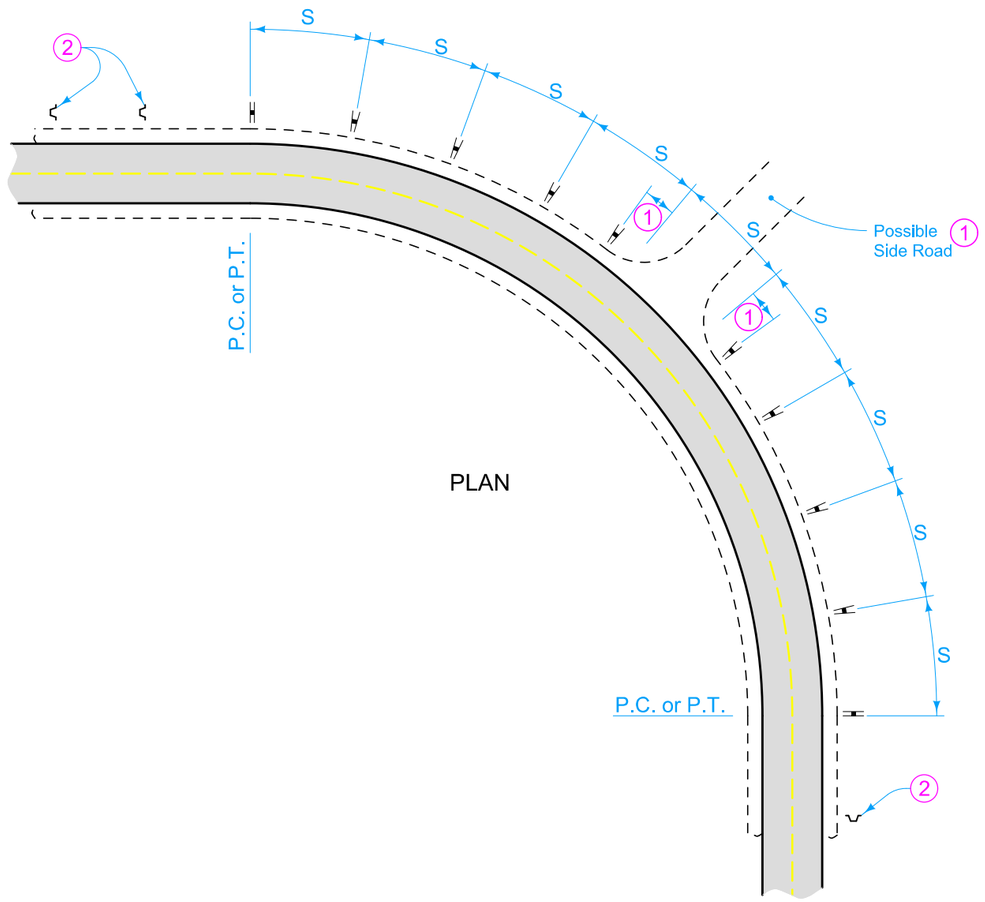
SHEET 2 of 2

REVISIONS: New.

APPROVED BY DESIGN METHODS ENGINEER

EMERGENCY MANAGEMENT
RAMP SIGNING

DESIGNER INFORMATION



PLAN

To be effective, Chevron Sign Panels should be visible for at least 500 feet. Attach Chevron Sign Panels to the adjustable brackets at an angle so headlight beams are not reflected back into the driver's eye.

Furnish adjustable brackets in all aluminum or all galvanized steel products. Include locking devices on all bolts.

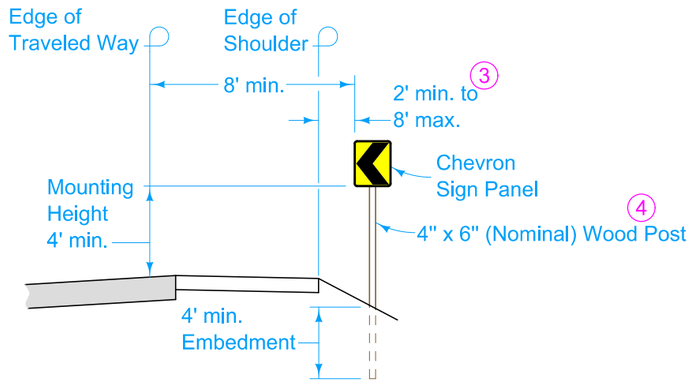
Each correctly installed "Guidance Marker, Chevron W1-8 (Special)" will be counted and paid for at the contract unit price. Payment is full compensation for furnishing and installing one wood post, two chevron W1-8 sign panels, approved mounting brackets, braces, and all work necessary to install as shown.

(1) Adjust chevron locations as necessary to meet S as near as possible.

(2) Possible delineators.

(3) Align horizontal placement of Chevrons with roadway delineators if applicable.

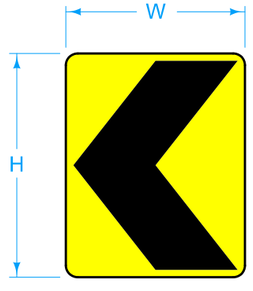
(4) Perforated Square Steel Tube (PSST) may be substituted for the wood post if allowed by the Engineer.



TYPICAL SECTION

LEGEND

Guidance Marker, Chevron



CHEVRON SIGN PANEL (W1-8)

Colors: Chevron - Black (non-reflective)
Background - Yellow (reflective)

Possible Contract Item:
Guidance Marker, Chevron W1-8 (Special)

Possible Tabulation:
108-34

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	04-19-16

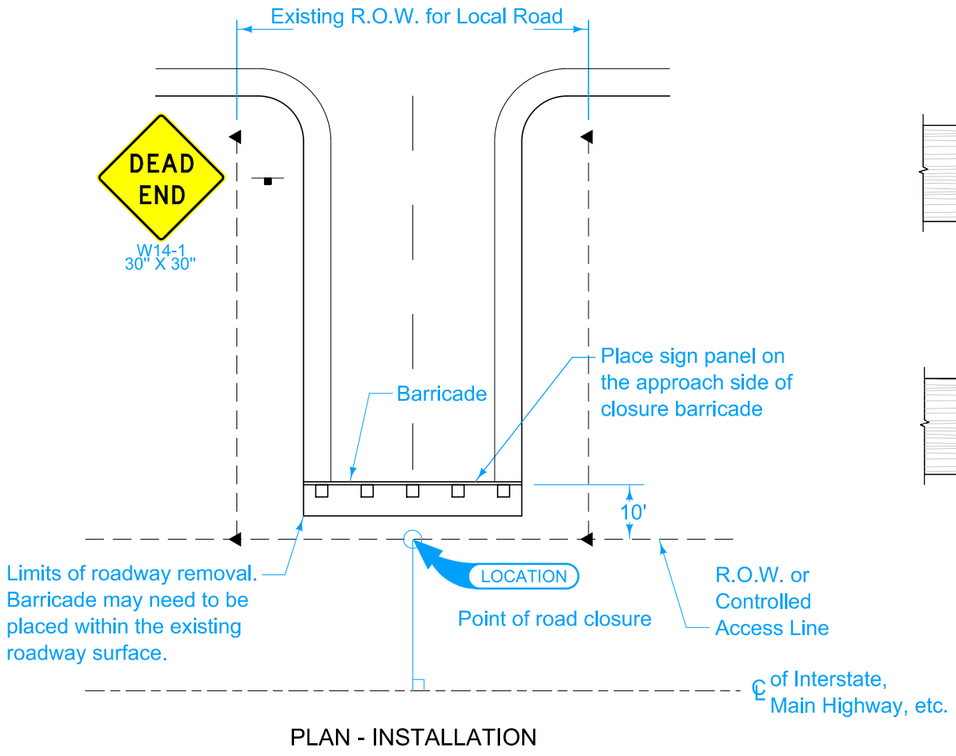
SI-175

SHEET 1 of 1

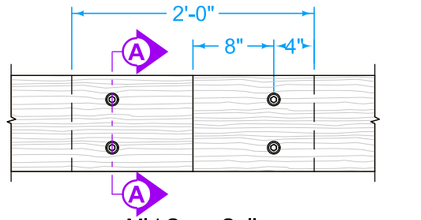
REVISIONS: Changed mounting height to match MUTCD. Removed views of brackets no longer used. Added circle note 4.

APPROVED BY DESIGN METHODS ENGINEER

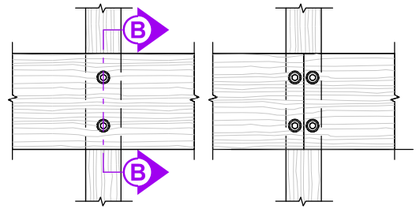
CHEVRONS



PLAN - INSTALLATION

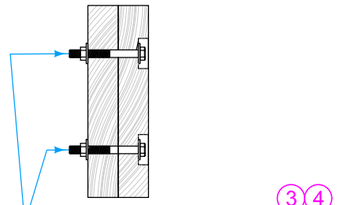


Mid Span Splice
(Front View)



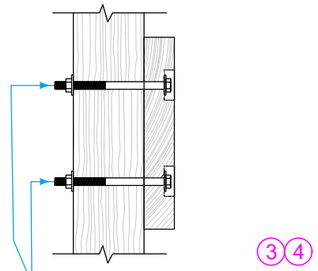
Typical Post Splice Option

WOOD FRAME ASSEMBLY



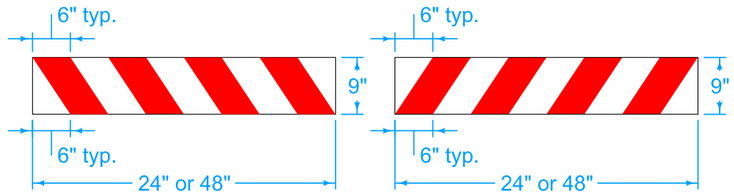
3/8" x 3 1/2" Hex Head Bolt, Nut, and (2) Flat Washers (3)(4)

SECTION A-A



3/8" x 6" Hex Head Bolt, Nut, and (2) Flat Washers (3)(4)

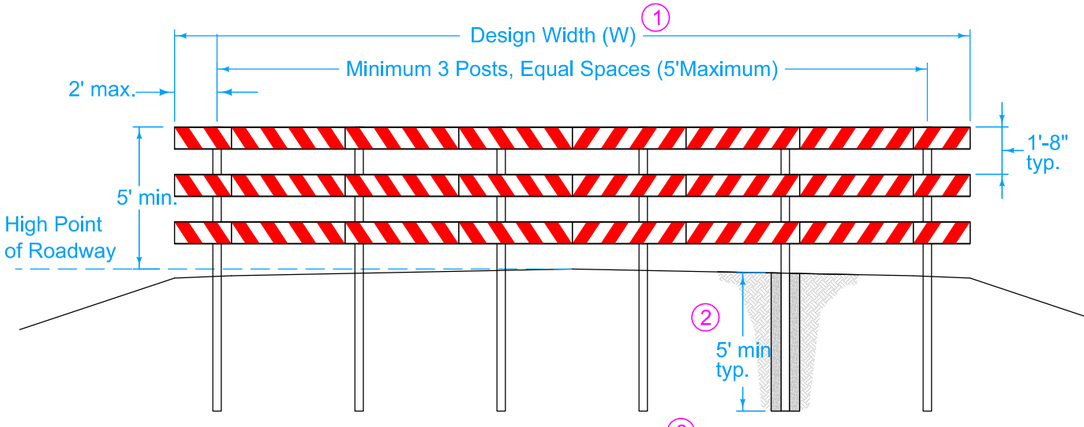
SECTION B-B



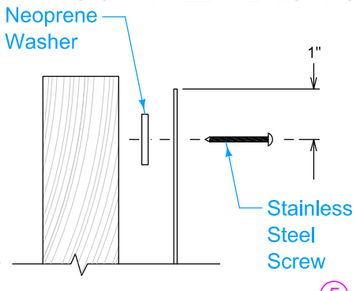
IA OC7-1AL: 24 IA OC7-1BL: 48
No Border, White; Red Diagonal

IA OC7-1AR: 24 IA OC7-1BR: 48
No Border, White; Red Diagonal

SIGN PANEL FABRICATION (5)



APPROACH VIEW (6)



SIGN PANEL INSTALLATION (5)

Possible Contract Item:
Permanent Road Closure, Rural, SI-181

Possible Tabulation:
102-4

Price bid for "Permanent Road Closure, Rural, SI-181" includes furnishing and installing the barricade, signs, posts, and hardware.

The length will be measured in linear feet based on the width of standard sign panels installed.

The Contractor will be paid the contract unit price per linear foot.

Minimum Barricade length = design width (W).

(1) Design width (W) equals width of existing roadway and shoulders.

(2) Install posts accordind to Section 2524.03.B.1 of the Standard Specifications.

(3) Assemble the wood frame with standard strength, hot dip galvanized bolts, nuts and washers according to the following specifications:

Bolts - ASTM A307
Nuts - ASTM A563
Washers - ASTM F884
Galvanization - ASTM F2329.

(4) Recess all bolt heads in a $1\frac{1}{4}$ inch diameter x $\frac{1}{2}$ inch deep hole to allow sign panels to lay flush on the planks.

(5) Use 0.063 inch aluminum blank for sign panel. Install sign panel meeting the requirements of Section 2524 of the Standard Specifications. Attach sign panels to the planks along the top and bottom at 2 foot centers using #10 x $1\frac{1}{4}$ inch self-drilling, phillips, pan head, 18-8 stainless steel screws. Use a 1 in. OD x $\frac{1}{8}$ in. thick neoprene washer between the sign panel and the treated wood plank to prevent corrosion.

(6) Use pressure treated 4 in. x 4 in. x 12 ft. nominal boards for posts, and pressure treated 2 in. x 10 in. x variable length nominal boards for planks. Use planks of sufficient length to span at least 2 posts.

IOWA DOT

REVISION
2 | 10-18-16

STANDARD ROAD PLAN

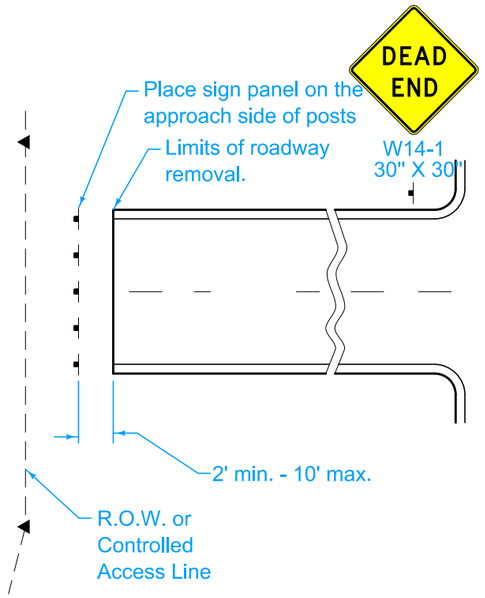
SI-181

SHEET 1 of 1

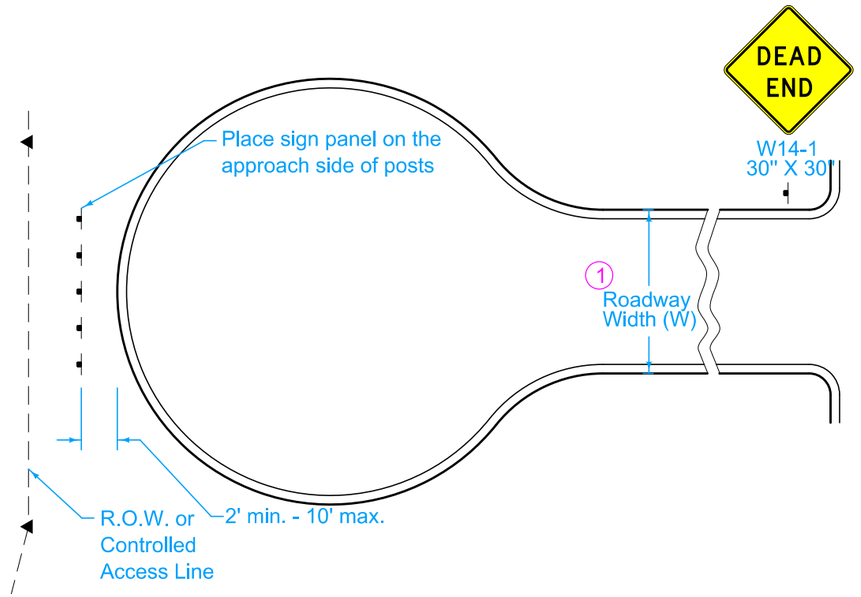
REVISIONS: Replaced old Iowa DOT logo with new logo.

APPROVED BY DESIGN METHODS ENGINEER

PERMANENT ROAD CLOSURE - RURAL



DEAD END WITHOUT CUL-DE-SAC

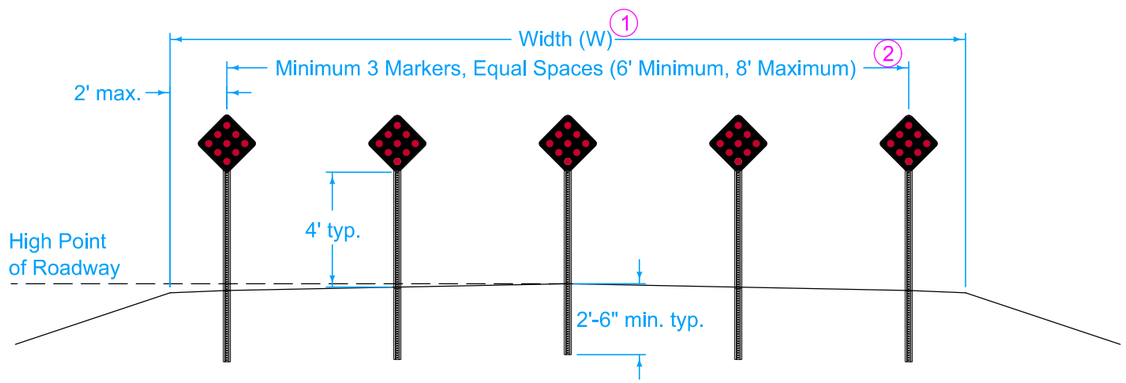


DEAD END WITH CUL-DE-SAC

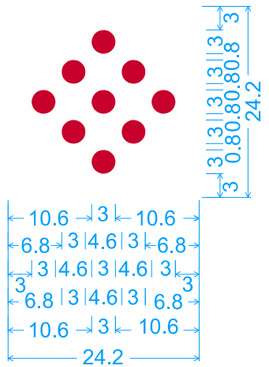
Price bid for "Permanent Road Closure, Urban, SI-182" includes furnishing and installing the closure, signs, posts, and hardware.

Closures will be counted and the contractor will be paid the contract unit price for each closure.

1. Width includes the width of the existing roadway and shoulders.
2. Type I delineator posts.
3. Use 0.063 inch aluminum blank with Type IV retro reflective sheeting for sign panel.



APPROACH VIEW



OM4-2;
18.0" across sides 1.5" Radius,
No border, Black;
3

END OF ROADWAY MARKER FABRICATION

Possible Contract Item:
Permanent Road Closure, Urban, SI-182

Possible Tabulation:
102-4

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-19-16

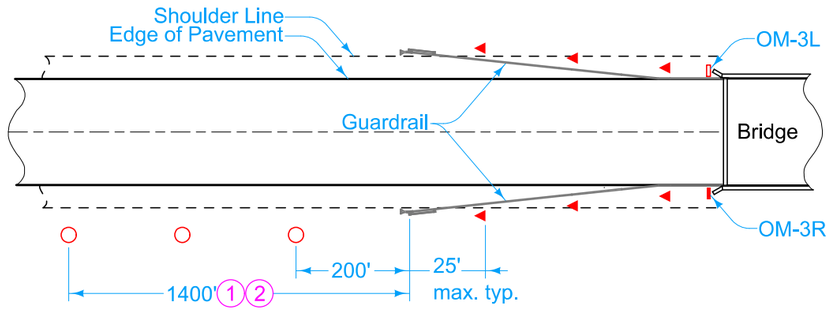
SI-182

SHEET 1 of 1

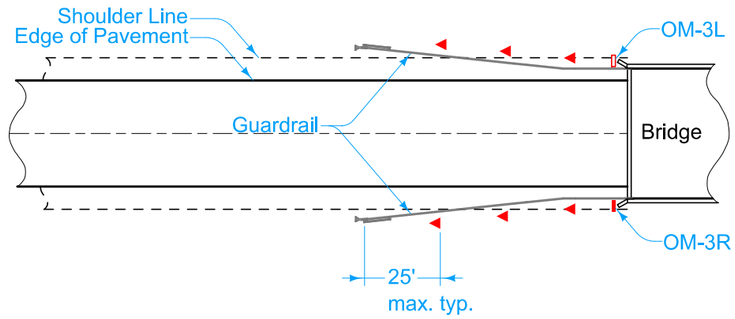
REVISIONS: Removed OM4-1 and OM4-3 from END OF ROADWAY MARKER FABRICATION detail. Revised note 3 and APPROACH VIEW detail.

APPROVED BY DESIGN METHODS ENGINEER

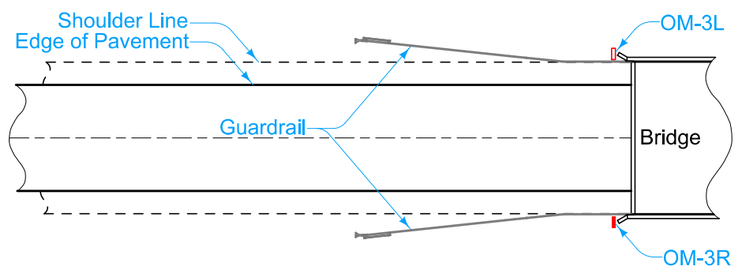
PERMANENT ROAD CLOSURE - URBAN



TYPE 1
BRIDGE OR CONCRETE BARRIER RAIL
(LESS THAN FULL SHOULDER WIDTH AND BRIDGE/ROADWAY WIDTH LESS THAN 30 FT.)



TYPE 2
BRIDGE OR CONCRETE BARRIER RAIL
(LESS THAN FULL SHOULDER WIDTH AND BRIDGE/ROADWAY WIDTH 30 FT. OR GREATER)



TYPE 3
BRIDGE OR CONCRETE BARRIER RAIL
(FULL SHOULDER WIDTH)

INSTALLATION AT BRIDGES

LEGEND

- Type 3 Object Marker, Left (OM-3L)
- Type 3 Object Marker, Right (OM-3R)
- Type 2 Object Marker
- Rigid Delineator, Type 1 White

See SI-172 for details of Delineators and SI-173 for details of Object Markers.

TYPE 1:
Beginning 25 feet from the approach end of guardrail, install Type 2 Object Markers at 25 foot intervals behind the guardrail. Install Type 3 Object Marker at the bridge ends. On paved roadways only, install 7 Single White Delineators at 200 foot spacing beginning 200 feet in front of the approach end of the guardrail. For ramp terminals see note 2.

TYPE 2:
Beginning 25 feet from the approach end of guardrail, install Type 2 Object Markers at 25 foot intervals behind the guardrail. Install Type 3 Object Marker at the bridge ends.

TYPE 3:
Install Type 3 Object Markers at the bridge ends.

(1) Not required on projects where delineators are proposed or installed throughout the length of the project.

(2) At ramp terminals only, install Single White Delineators as follows: Place first delineator at location where near ramp terminal radius meets the edge of the through pavement. Place additional delineator(s) spaced equally (spacing not to exceed 200 feet) between first delineator and guardrail.

IOWA DOT
STANDARD ROAD PLAN

REVISION	
3	10-18-22

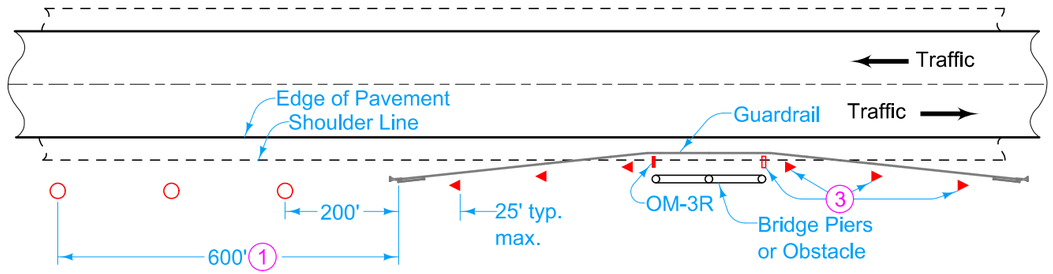
SI-211
SHEET 1 of 3

REVISIONS: Removed OM-3L from Type 8.

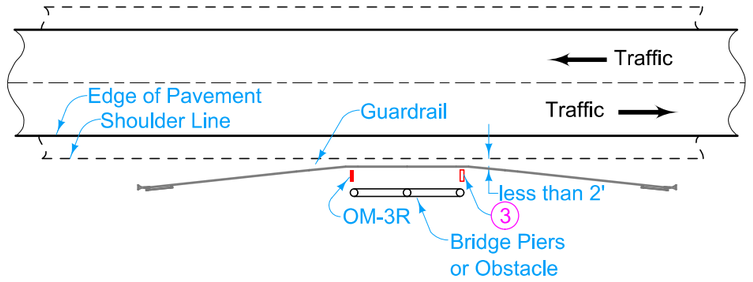
APPROVED BY DESIGN METHODS ENGINEER

OBJECT MARKER AND DELINEATOR PLACEMENT WITH GUARDRAIL

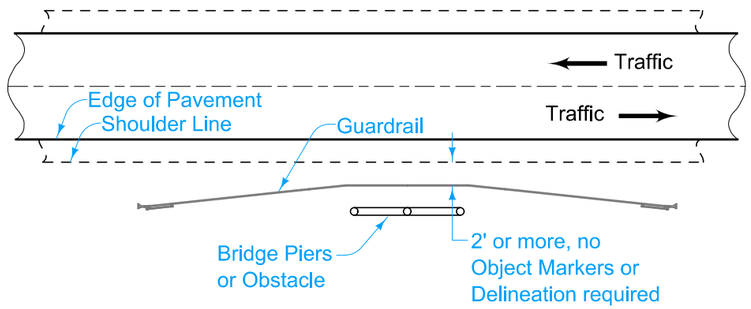
TYPE 4:
Beginning 25 feet from the approach end of guardrail, install Type 2 Object Markers at 25 foot intervals behind the guardrail. Beginning 200 feet in front of approach end of the guardrail, install 3 Single White Delineators at 200 foot spacing. Additional markers as shown.



TYPE 4
MARKING SIDE OBSTACLES
(STEEL BEAM GUARDRAIL ON THE SHOULDER)



TYPE 5
MARKING SIDE OBSTACLES
(STEEL BEAM GUARDRAIL LESS THAN 2 FT. FROM THE SHOULDER LINE)



TYPE 6
MARKING SIDE OBSTACLES
(STEEL BEAM GUARDRAIL 2 FT. OR MORE FROM THE SHOULDER LINE)

INSTALLATION AT SIDE OBSTACLES

LEGEND

- Type 3 Object Marker, Left (OM-3L)
- Type 3 Object Marker, Right (OM-3R)
- Type 2 Object Marker
- Rigid Delineator, Type 1 White

(1) Not required on projects where delineators are proposed or installed throughout the length of the project.

(3) Type 2 and Type 3 Object Marker at trailing end of obstacle not required when one-way traffic exists.

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-18-22

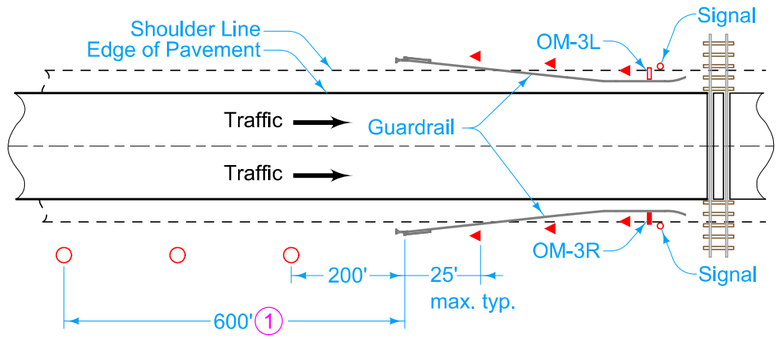
SI-211

SHEET 2 of 3

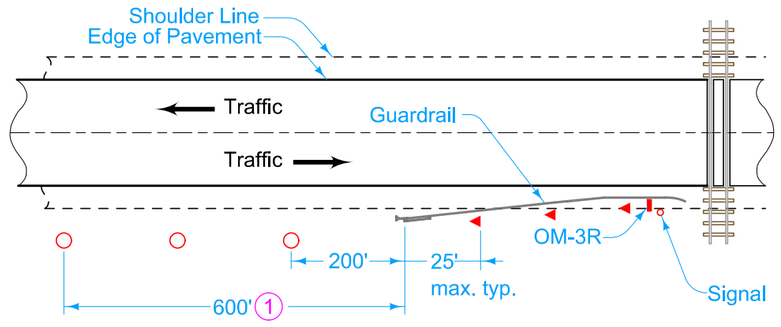
REVISIONS: Removed OM-3L from Type 8.

APPROVED BY DESIGN METHODS ENGINEER

OBJECT MARKER AND DELINEATOR PLACEMENT WITH GUARDRAIL



TYPE 7
MARKING RAILROAD CROSSING SIGNALS
(ONE-WAY TRAFFIC)



TYPE 8
MARKING RAILROAD CROSSING SIGNALS
(TWO-WAY TRAFFIC)

TYPE 7:
Beginning 25 feet from the approach end of guardrail, install Type 2 Object Markers at 25 foot intervals behind the guardrail. Beginning 200 feet in front of approach end of the outside guardrail, install 3 Single White Delineators at 200 foot spacing.

TYPE 8:
Beginning 25 feet from the approach end of guardrail, install Type 2 Object Markers at 25 foot intervals behind the guardrail. Beginning 200 feet in front of approach end of the right guardrail, install 3 Single White Delineators at 200 foot spacing.

(1) Not required on projects where delineators are proposed or installed throughout the length of the project.

LEGEND

- Type 3 Object Marker, Left (OM-3L)
- Type 3 Object Marker, Right (OM-3R)
- Type 2 Object Marker
- Rigid Delineator, Type 1 White

INSTALLATION AT RAILROADS

IOWA DOT

STANDARD ROAD PLAN

REVISION	
3	10-18-22

SI-211

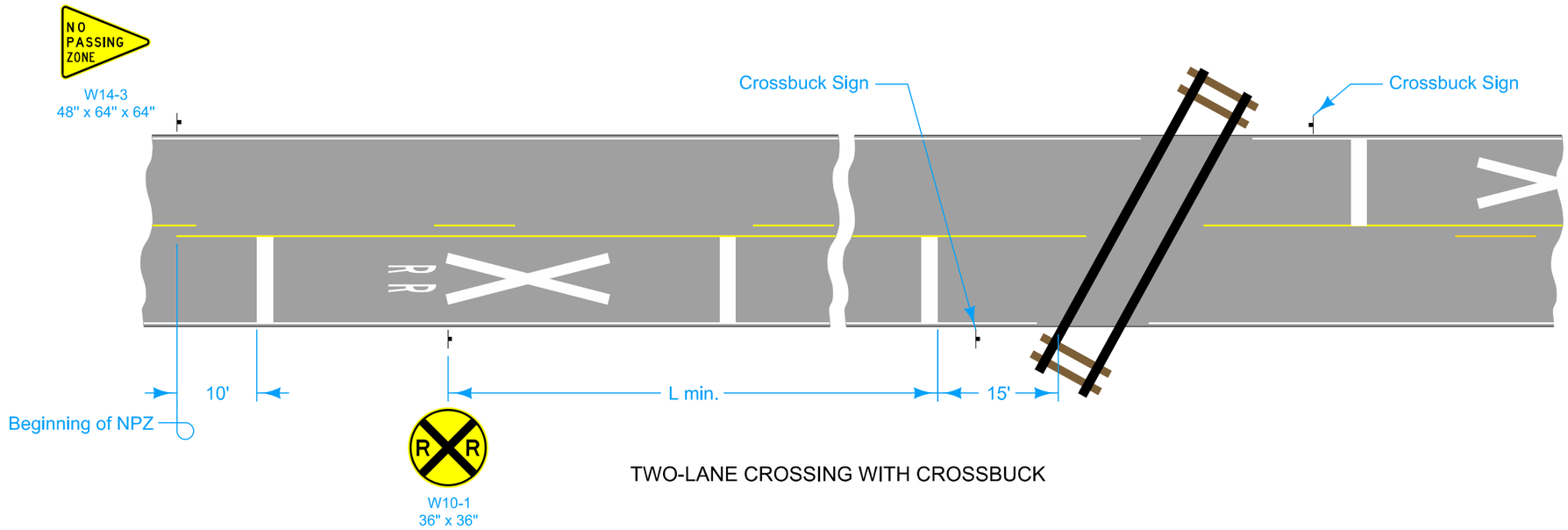
SHEET 3 of 3

REVISIONS: Removed OM-3L from Type 8.

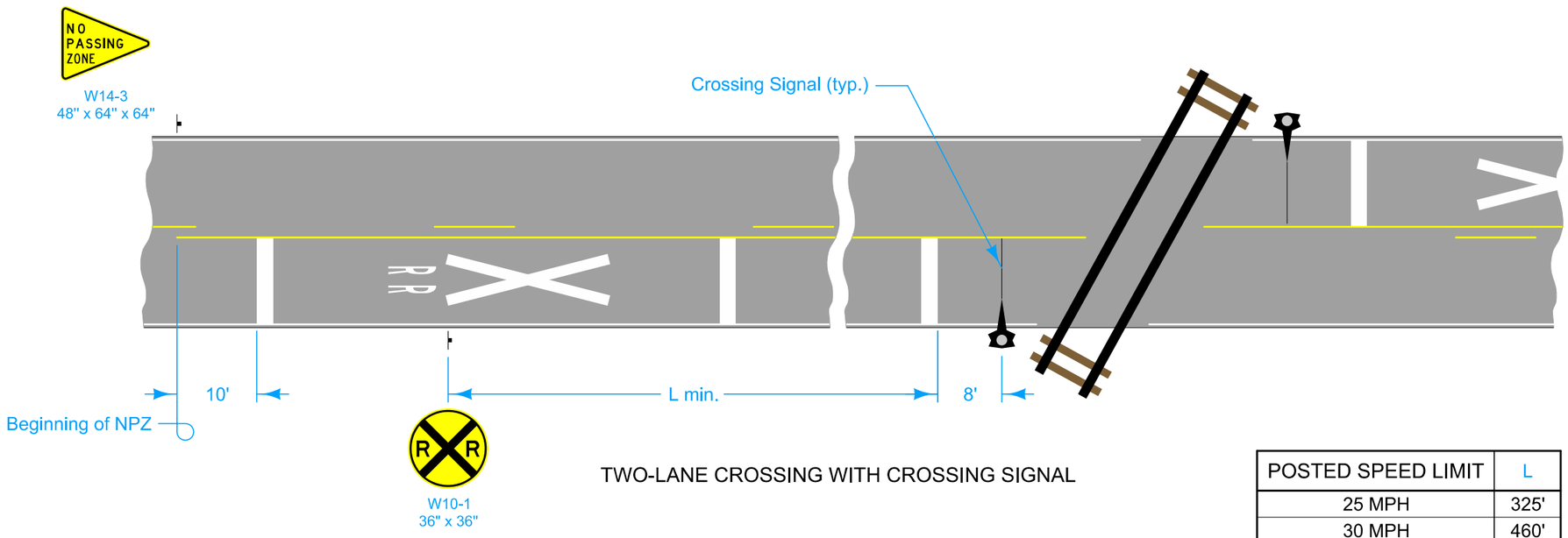
APPROVED BY DESIGN METHODS ENGINEER

OBJECT MARKER AND DELINEATOR PLACEMENT WITH GUARDRAIL

For pavement marking information, see PM-240 and PM-242.



TWO-LANE CROSSING WITH CROSSBUCK



TWO-LANE CROSSING WITH CROSSING SIGNAL

POSTED SPEED LIMIT	L
25 MPH	325'
30 MPH	460'
35 MPH	565'
40 MPH	670'
45 MPH	775'
50 MPH	885'
55 MPH	990'
60 MPH	1100'
65 MPH	1200'

LEGEND

Traffic Sign

IOWA DOT

STANDARD ROAD PLAN

REVISION	
2	04-20-21

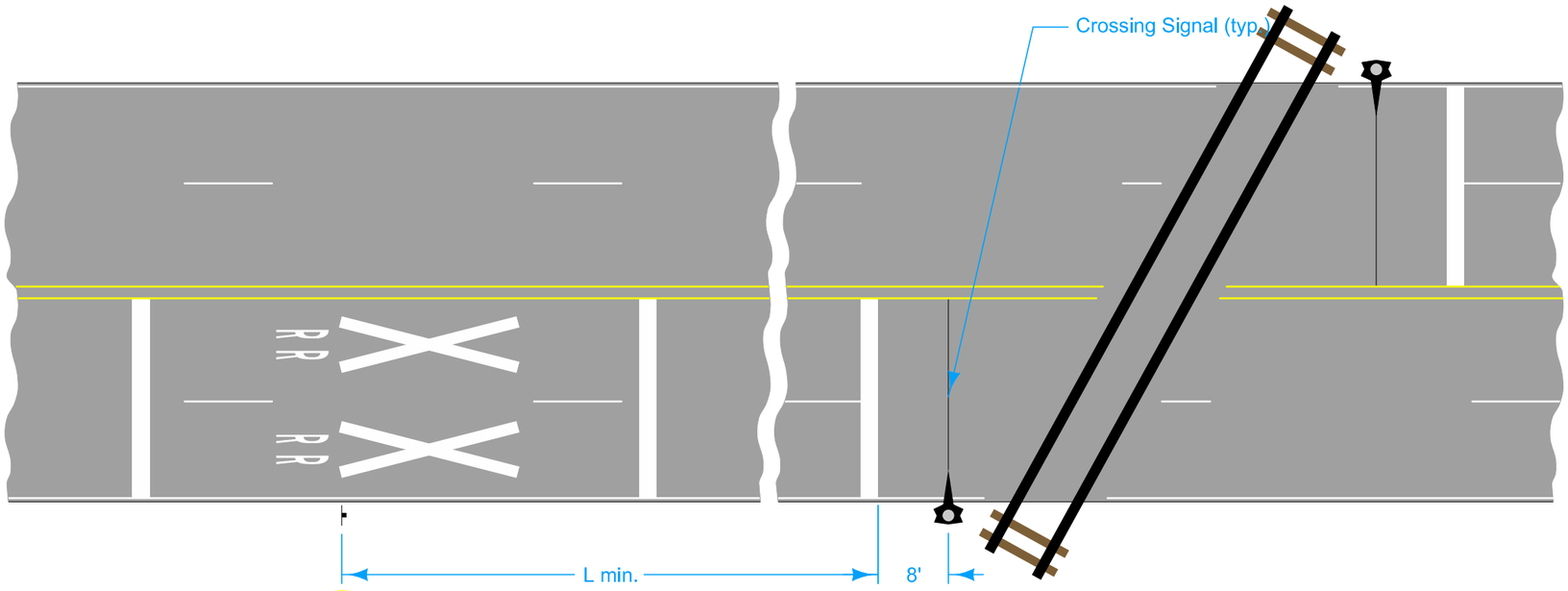
SI-241

SHEET 1 of 2

REVISIONS: Modified paint lines at railroad tracks.

APPROVED BY DESIGN METHODS ENGINEER

SIGN PLACEMENT
APPROACHING A RAILROAD CROSSING



W10-1
36" x 36"

FOUR-LANE CROSSING WITH CROSSING SIGNAL

POSTED SPEED LIMIT	L
25 MPH	325'
30 MPH	460'
35 MPH	565'
40 MPH	670'
45 MPH	775'
50 MPH	885'
55 MPH	990'
60 MPH	1100'
65 MPH	1200'

LEGEND

Traffic Sign

IOWA DOT

STANDARD ROAD PLAN

REVISION
2 | 04-20-21

SI-241

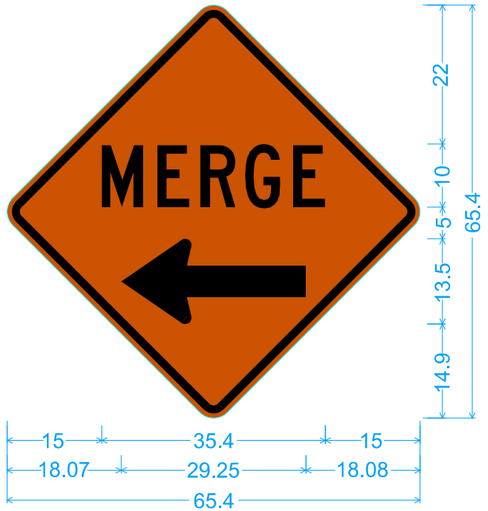
SHEET 2 of 2

REVISIONS: Modified paint lines at railroad tracks.

APPROVED BY DESIGN METHODS ENGINEER

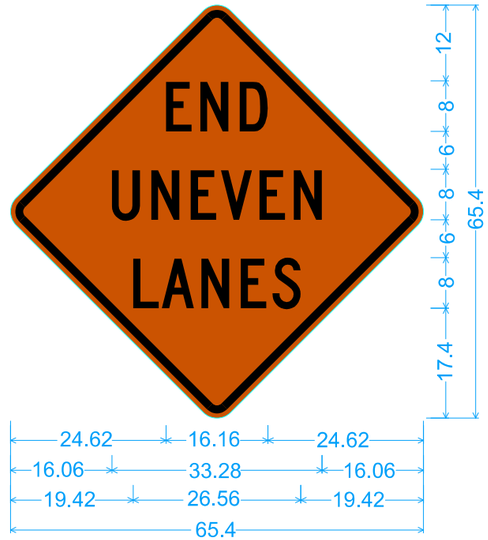
SIGN PLACEMENT
APPROACHING A RAILROAD CROSSING

W4-2M



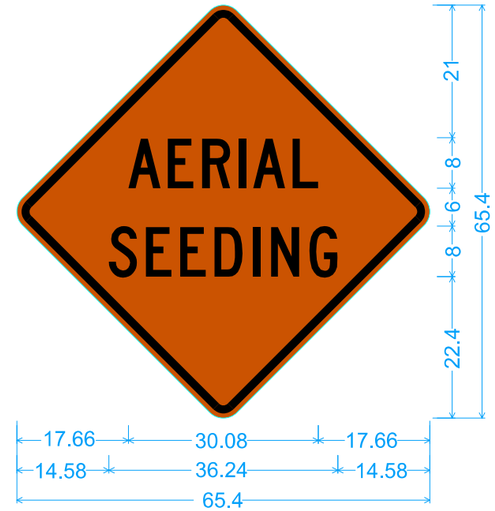
W4-2M;
48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[MERGE] C 2K;
Standard Arrow Custom 29.25" X 13.50" 180{;

W8-11A



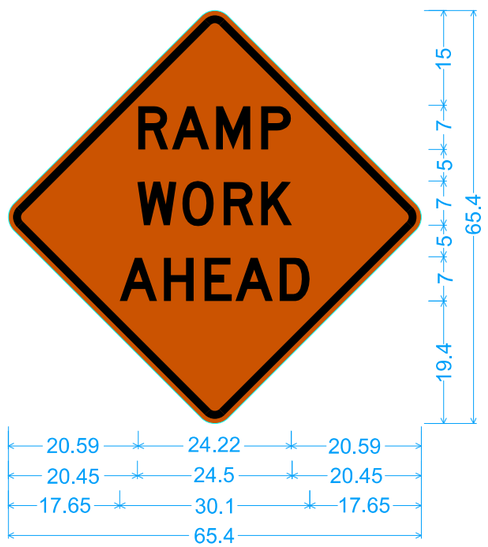
W8-11A;
48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[END] C 2K; [UNEVEN] C 2K; [LANES] C 2K;

W21-9



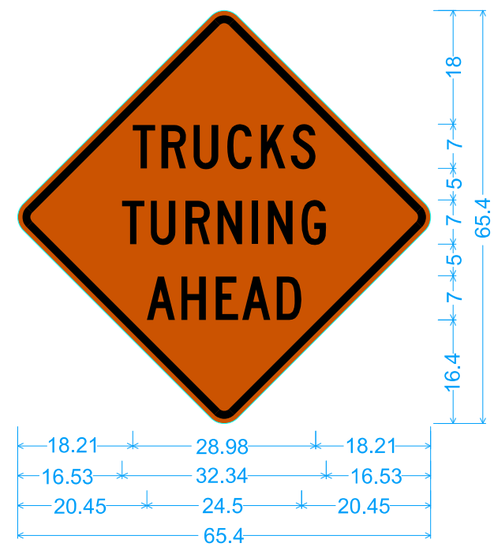
W21-9;
48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[AERIAL] C 2K; [SEEDING] C 2K;

W20-1A



W20-1A;
48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[RAMP] D 2K; [WORK] D 2K; [AHEAD] D 2K;

W21-3A



W20-1A;
48.00" across sides 3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[TRUCKS] C 2K; [TURNING] C 2K;
[AHEAD] C 2K;

IOWA DOT

STANDARD ROAD PLAN

REVISION	
6	04-16-19

SI-881

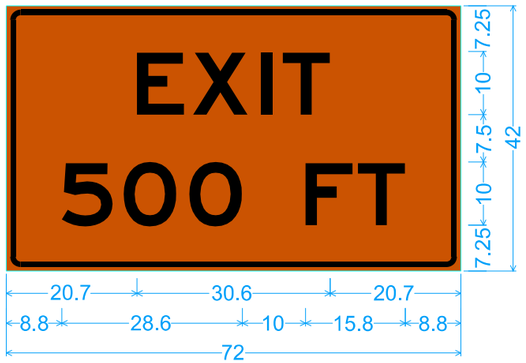
SHEET 1 of 4

REVISIONS: Added WORK ZONE sign to page 4.

APPROVED BY DESIGN METHODS ENGINEER

SPECIAL SIGNS FOR WORKZONES

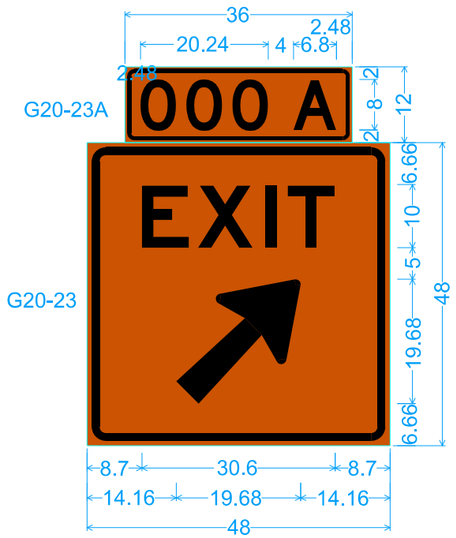
G20-22



2.25" Radius, 0.88" Border, 0.63" Indent, Black on Orange;
[EXIT] E 2K; [500 FT] E 2K;

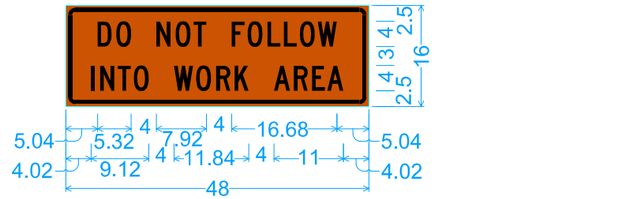
G20-23A

G20-23



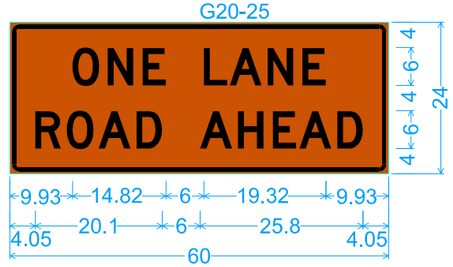
G20-23A;
0.63" Border, 0.38" Indent, Black on Orange;
[000 A] D 2K;
G20-23;
1.25" Border, 0.75" Indent, Black on Orange;
[EXIT] E 2K; Arrow 80 - 25.00" 45{;

G20-24



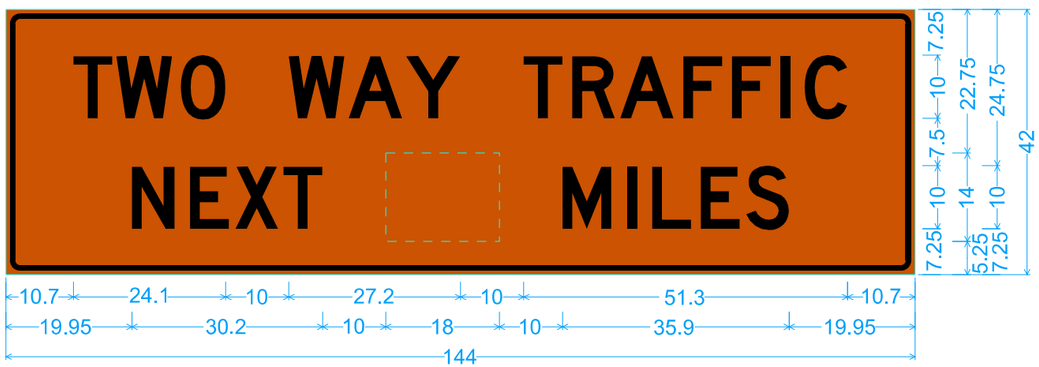
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[DO NOT FOLLOW] C 2K;
[INTO WORK AREA] C 2K;

G20-25



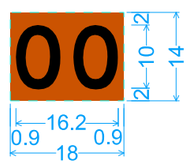
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[ONE LANE] D 2K; [ROAD AHEAD] D 2K;

G20-21



2.25" Radius, 0.88" Border, 0.63" Indent, Black on Orange;
[TWO WAY TRAFFIC] D 2K; [NEXT] D 2K; G20-21A; [MILES] D 2K;

G20-21A



G20-21A;
No border, Black on Orange;
[00] D 2K;

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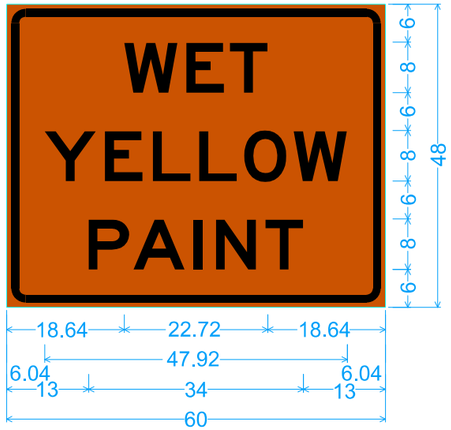
REVISIONS: Added WORK ZONE sign to page 4.

APPROVED BY DESIGN METHODS ENGINEER

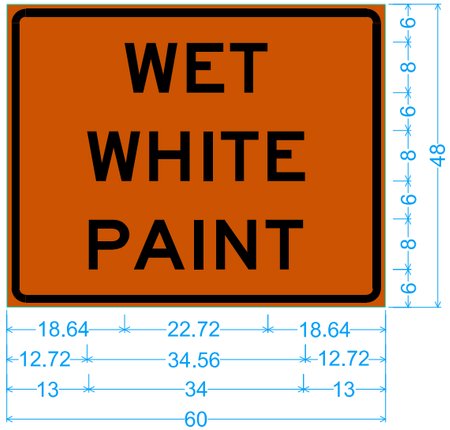
SPECIAL SIGNS FOR WORKZONES

G40-1



3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[WET] E 2K; [YELLOW] E 2K;
[PAINT] E 2K;

G40-2



3.00" Radius, 1.25" Border, 0.75" Indent, Black on Orange;
[WET] E 2K; [WHITE] E 2K; [PAINT] E 2K;

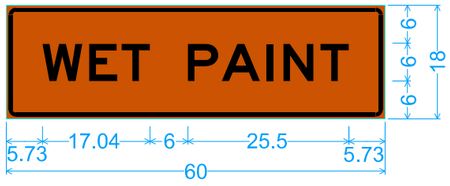
G23-1

2.25" Radius, 0.88" Border, 0.63" Indent, Black on Orange;
[FRESH] D 2K specified length;
[OIL] D 2K specified length;

G21-2

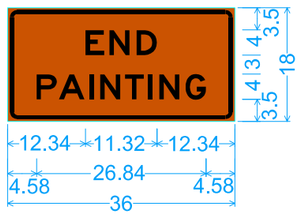
1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[FRESH OIL] C 2K;

G40-3



1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[WET PAINT] E 2K;

G40-4



1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[END] E 2K;
[PAINTING] E 2K;

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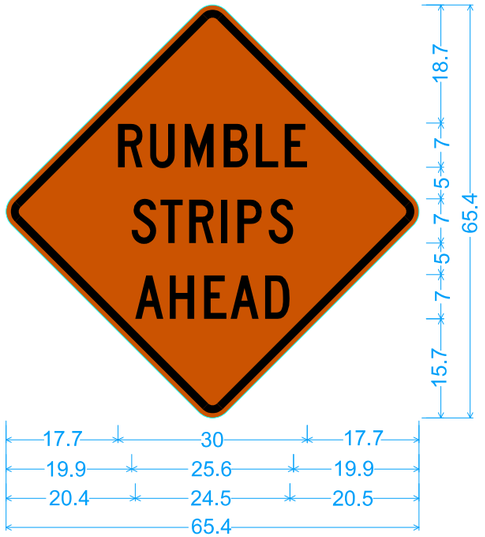
REVISIONS: Added WORK ZONE sign to page 4.

APPROVED BY DESIGN METHODS ENGINEER

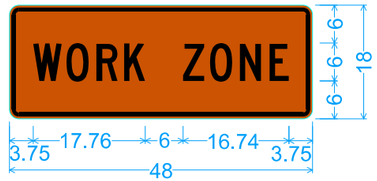
SPECIAL SIGNS FOR WORKZONES

W20-9



W20-9;
48.0" across sides 3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[RUMBLE] C 2K; [STRIPS] C 2K; [AHEAD] C 2K;

G20-26



1.50" Radius, 0.63" Border, 0.38" Indent, Black on Orange;
[WORK ZONE] C 2K;

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REVISIONS: Added WORK ZONE sign to page 4.

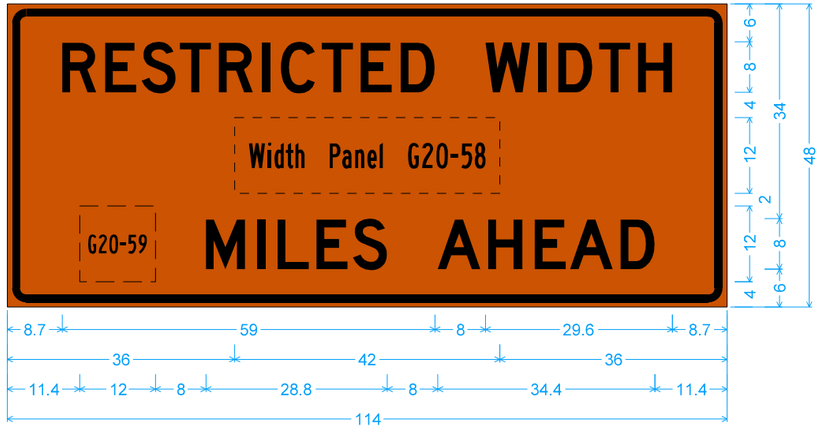
APPROVED BY DESIGN METHODS ENGINEER

SPECIAL SIGNS FOR WORKZONES

G20-51

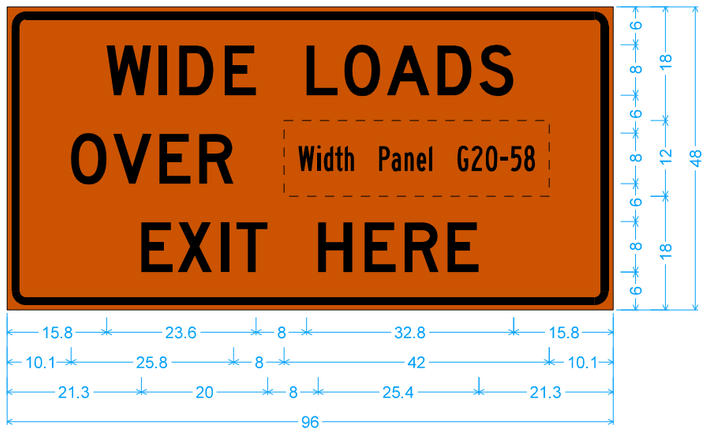
3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[RESTRICTED WIDTH] D 2K; [MILES AHEAD] D 2K; [USE NEXT EXIT] D 2K;

G20-52



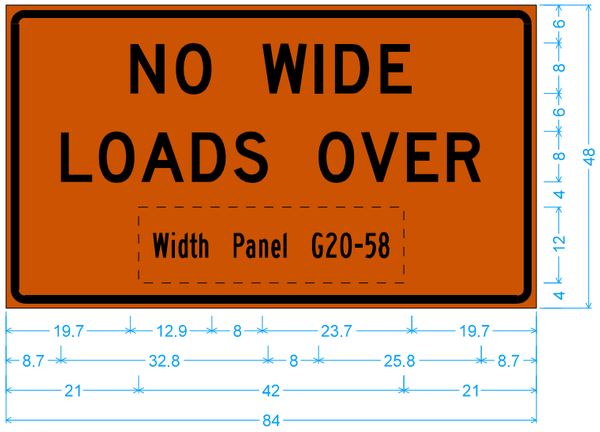
3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[RESTRICTED WIDTH] D 2K; [MILES AHEAD] D 2K;

G20-53



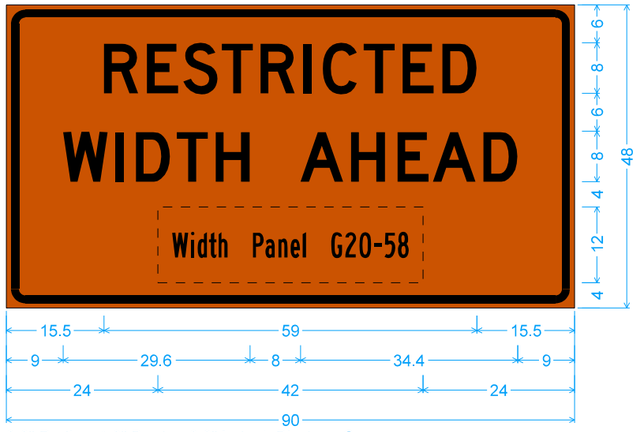
3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[WIDE LOADS] D 2K; [OVER] D 2K; [EXIT HERE] D 2K;

G20-54



3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[NO WIDE] D 2K; [LOADS OVER] D 2K;

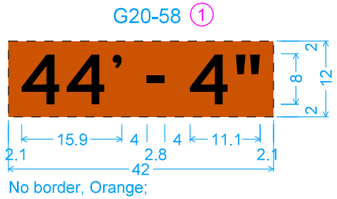
G20-55



3.0" Radius, 1.3" Border, 0.8" Indent, Black on Orange;
[RESTRICTED] D 2K; [WIDTH AHEAD] D 2K;

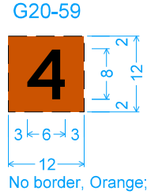
(1) See TC-81 for requirement of restricted width dimension.

G20-58 (1)



No border, Orange;
[44'] Black D 2K;
[-] Black D 2K;
[4"] Black D 2K;

G20-59



No border, Orange;
[4] Black D 2K;

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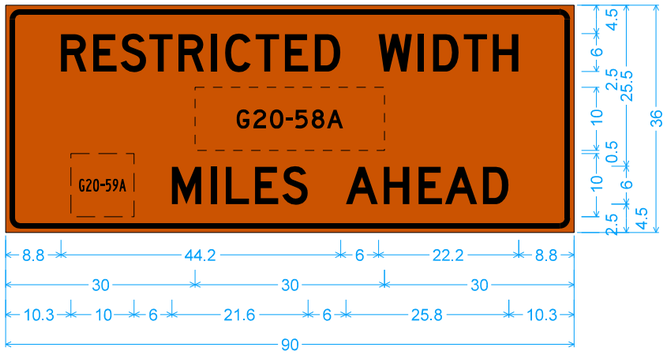
REVISIONS: Replaced old Iowa DOT logo with new logo.

APPROVED BY DESIGN METHODS ENGINEER

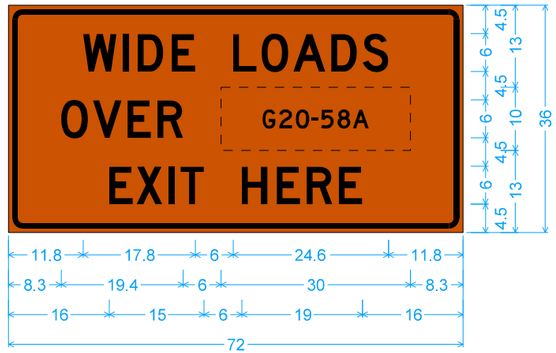
SPECIAL SIGNS FOR RESTRICTED WIDTH TRAFFIC CONTROL ZONES

G20-52A



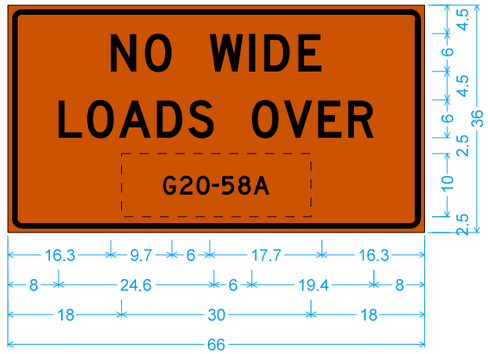
2.3" Radius, 0.9" Border, 0.6" Indent, Black on Orange;
[RESTRICTED WIDTH] D 2K; [MILES AHEAD] D 2K;

G20-53A



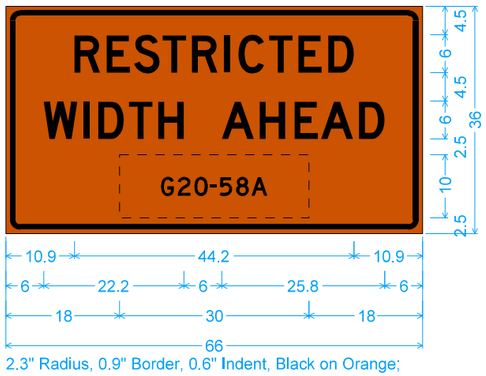
2.3" Radius, 0.9" Border, 0.6" Indent, Black on Orange;
[WIDE LOADS] D 2K; [OVER] D 2K;
[EXIT HERE] D 2K;

G20-54A



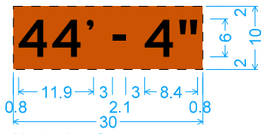
2.3" Radius, 0.9" Border, 0.6" Indent, Black on Orange;
[NO WIDE] D 2K; [LOADS OVER] D 2K;

G20-55A



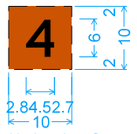
2.3" Radius, 0.9" Border, 0.6" Indent, Black on Orange;
[RESTRICTED] D 2K; [WIDTH AHEAD] D 2K;

G20-58A (1)



No border, Orange;
[44'] Black D 2K;
[-] Black D 2K;
[4"] Black D 2K;

G20-59A



No border, Orange;
[4] Black D 2K;

(1) See TC-81 for requirement of restricted width dimension.

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SHEET 2 of 2

REVISIONS: Replaced old Iowa DOT logo with new logo.

APPROVED BY DESIGN METHODS ENGINEER

SPECIAL SIGNS FOR RESTRICTED WIDTH TRAFFIC CONTROL ZONES