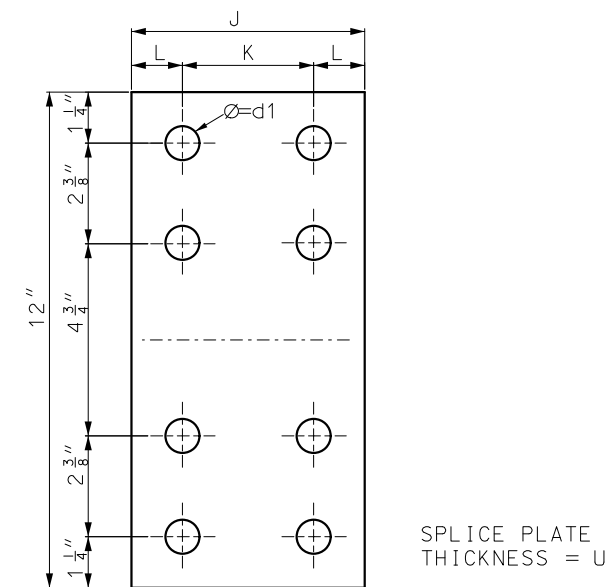
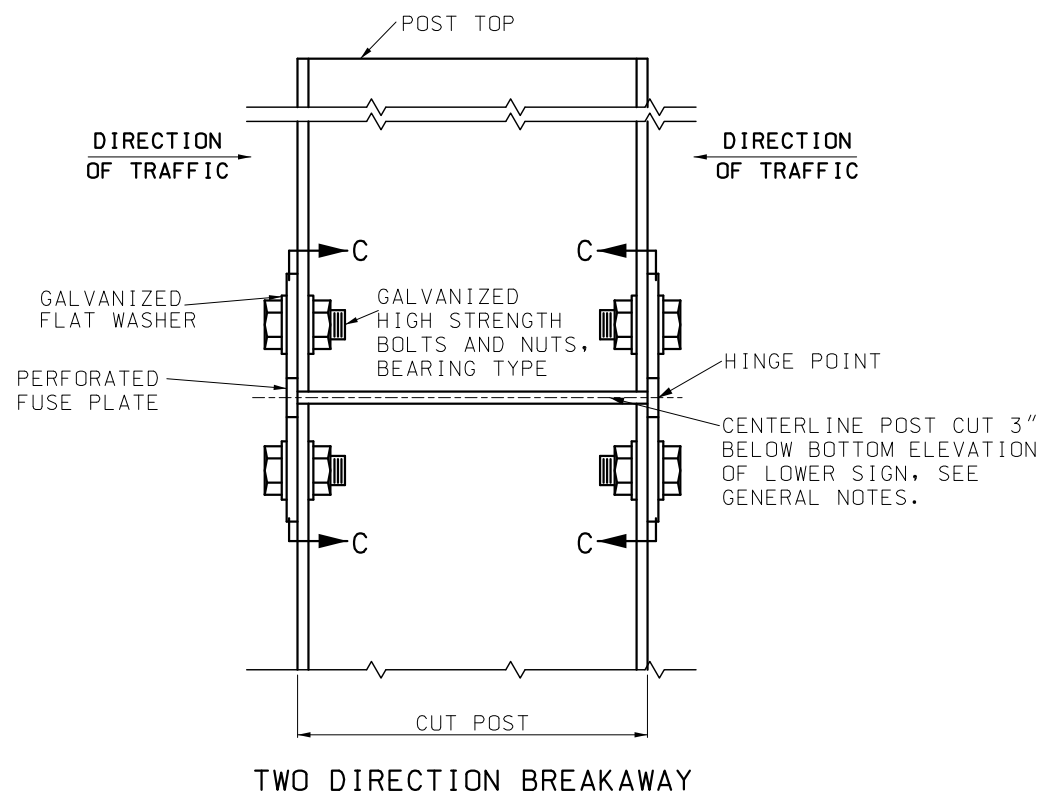
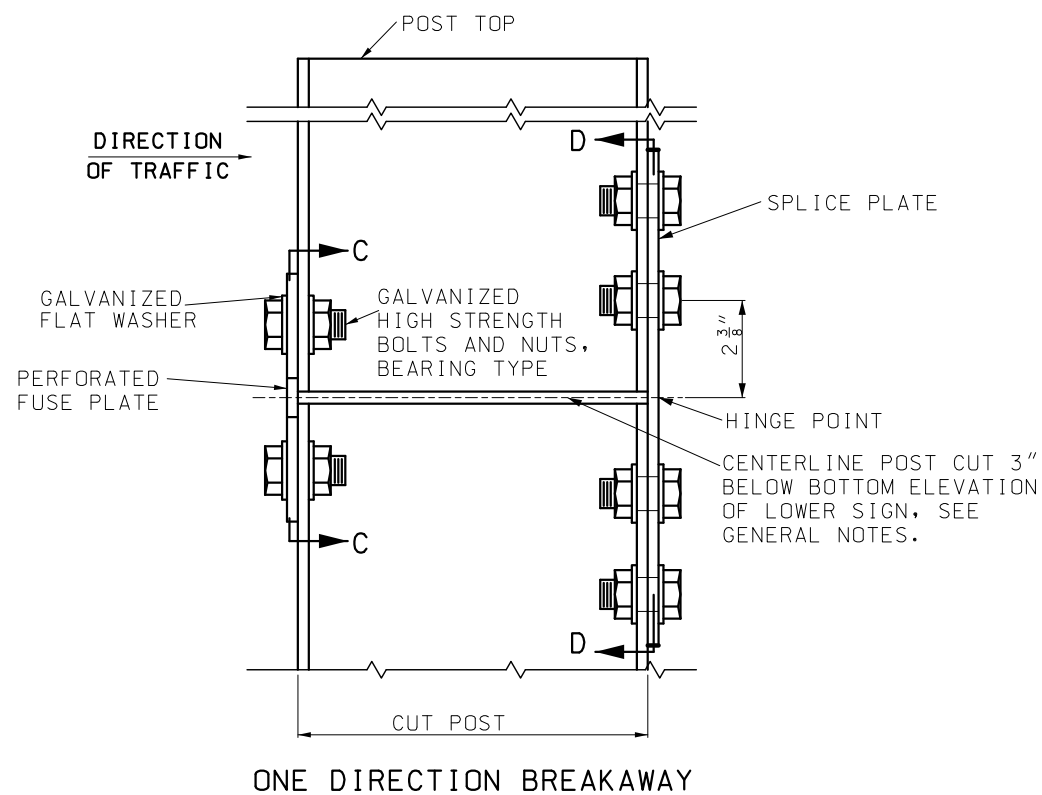


WIDE FLANGE STRUCTURAL STEEL POSTS DESIGN DATA								PERFORATED FUSE PLATE DATA TABLE																SPLICE PLATE DATA TABLE										
POST DES. NO.	NOM. SIZE (IN.)	WEIGHT		DEPTH (IN.)	FLANGE		WEB THICK (IN.)	POST DESIGN NO.	F (IN.)	G (IN.)	H (IN.)	J (IN.)	K (IN.)	L (IN.)	M (IN.)	N (IN.)	d1 (IN.)	d2 (IN.)	P (IN.)	BOLT DIA. (IN.)	WT. (EA.) (LBS.)	POST DESIGN NO.	J (IN.)	K (IN.)	L (IN.)	U (IN.)	d1 (IN.)	BOLT DIA. (IN.)	WT. (EA.) (LBS.)	WASHER				
		LB/FT	LB/IN		WIDTH (IN.)	THICK (IN.)																								OD IN.	ID IN.	THICK IN.		
1	W6	9	0.75	5 <sup>7</sup> / <sub>8</sub>	4	<sup>3</sup> / <sub>16</sub>	<sup>3</sup> / <sub>16</sub>	1	4 <sup>1</sup> / <sub>4</sub>	1	1 <sup>1</sup> / <sub>8</sub>	4	2 <sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	1	<sup>1</sup> / <sub>2</sub>	<sup>9</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>16</sub>	<sup>1</sup> / <sub>2</sub>	0.76	1	4	2 <sup>1</sup> / <sub>4</sub>	<sup>7</sup> / <sub>8</sub>	<sup>3</sup> / <sub>16</sub>	<sup>9</sup> / <sub>16</sub>	<sup>1</sup> / <sub>2</sub>	2.45	1 <sup>3</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	<sup>1</sup> / <sub>8</sub>		
2	W6	15	1.25	6	6	<sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	2	5	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	6	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	<sup>3</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	<sup>5</sup> / <sub>8</sub>	1.67	2	6	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>4</sub>	<sup>1</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	4.89	1 <sup>5</sup> / <sub>16</sub>	<sup>11</sup> / <sub>16</sub>	<sup>1</sup> / <sub>8</sub>		
3	W8	18	1.50	8 <sup>1</sup> / <sub>8</sub>	5 <sup>1</sup> / <sub>4</sub>	<sup>5</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	3	5	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	5 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	<sup>3</sup> / <sub>4</sub>	<sup>11</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	<sup>5</sup> / <sub>8</sub>	1.51	3	5 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>4</sub>	<sup>5</sup> / <sub>16</sub>	<sup>11</sup> / <sub>16</sub>	<sup>5</sup> / <sub>8</sub>	5.32					
4	W10	22	1.83	10 <sup>1</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	<sup>3</sup> / <sub>8</sub>	<sup>1</sup> / <sub>4</sub>	4	6	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	<sup>13</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	<sup>5</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	2.52	4	5 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	<sup>5</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	5.75	1 <sup>15</sup> / <sub>32</sub>	<sup>13</sup> / <sub>16</sub>	<sup>1</sup> / <sub>8</sub>		
5	W10	26	2.17	10 <sup>3</sup> / <sub>8</sub>	5 <sup>3</sup> / <sub>4</sub>	<sup>7</sup> / <sub>16</sub>	<sup>1</sup> / <sub>4</sub>	5	6	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>3</sup> / <sub>8</sub>	<sup>13</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>8</sub>	<sup>5</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	2.52	5	5 <sup>3</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>4</sub>	1 <sup>1</sup> / <sub>2</sub>	<sup>7</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	8.04					
6	W12	35	2.92	12 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub>	<sup>5</sup> / <sub>16</sub>	6	6	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	1 <sup>5</sup> / <sub>8</sub>	<sup>13</sup> / <sub>16</sub>	<sup>13</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	<sup>3</sup> / <sub>8</sub>	<sup>3</sup> / <sub>4</sub>	3.35	6	6 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	<sup>1</sup> / <sub>2</sub>	<sup>13</sup> / <sub>16</sub>	<sup>3</sup> / <sub>4</sub>	10.47					

THE WEIGHT OF STRUCTURAL STEEL POSTS SHOWN IN THE CONTRACT HAS BEEN COMPUTED USING THE WEIGHTS SHOWN.

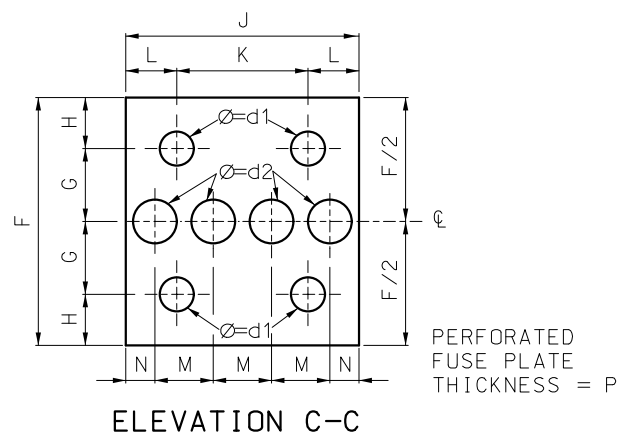


ELEVATION D-D

NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

FOR ROADWAYS WHERE TRAFFIC MAY STRIKE THE BACKSIDE OF THE POST, PERFORATED FUSE PLATES SHALL BE INSTALLED ON BOTH SIDES OF THE POST.



ELEVATION C-C

ALL HOLES SHALL BE DRILLED. ALL PLATE CUTS SHALL PREFERABLY BE SAW CUTS. HOWEVER: FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND.

PERFORATED FUSE PLATE AND SPICE PLATE SHALL BE FABRICATED FROM ASTM A 36 STRUCTURAL STEEL.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)



**POST INSTALLATION DETAILS**

**HINGE DETAILS**

**WIDE FLANGE (WF) POSTS**

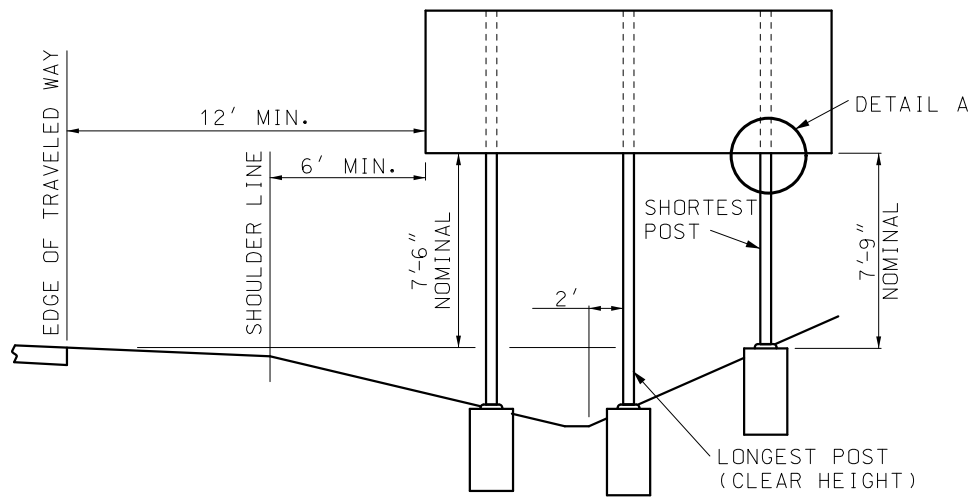
DATE EFFECTIVE: 01/01/2021

DATE PREPARED: 10/14/2020

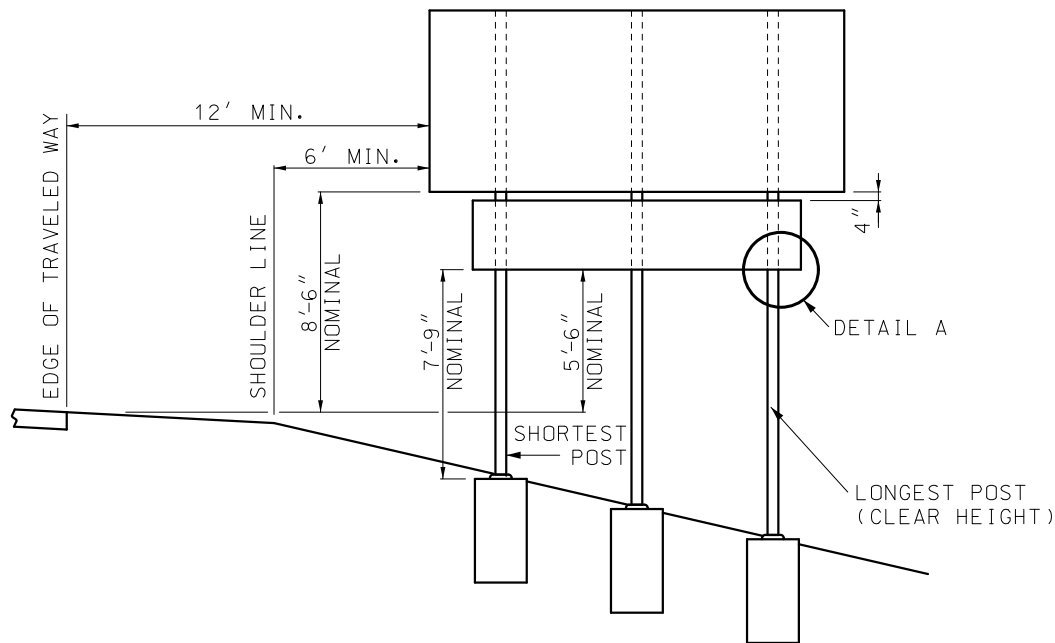
903.03BN

SHEET NO.  
2 OF 16

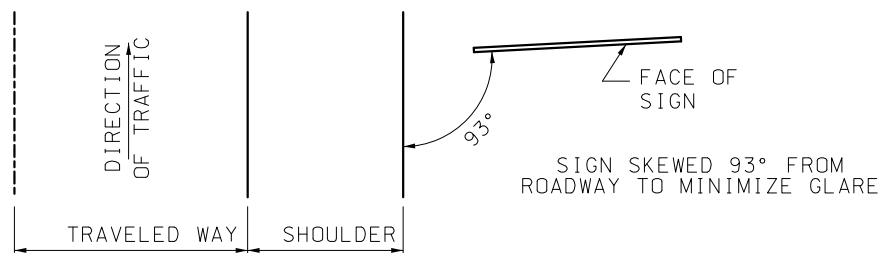
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



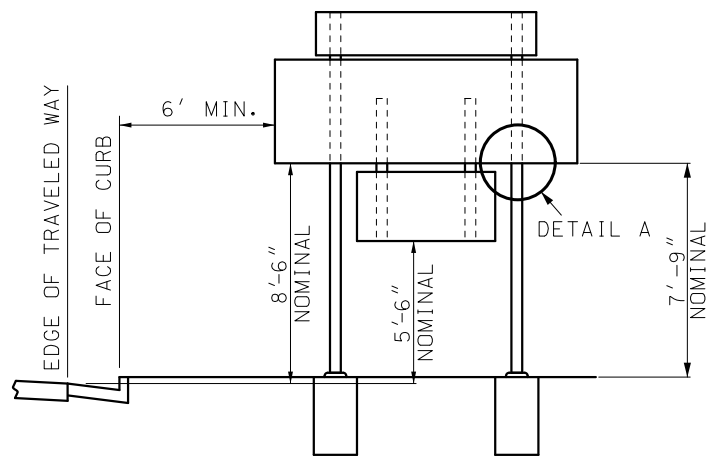
DITCH SECTION



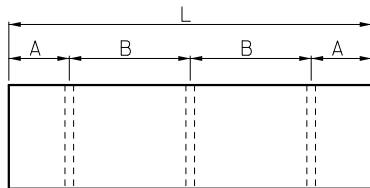
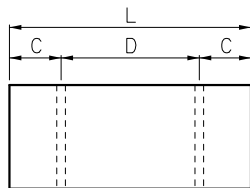
FILL SECTION



SIGN ORIENTATION



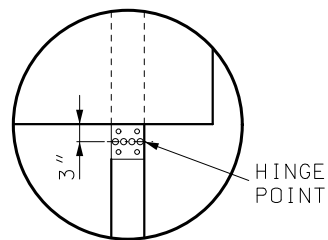
BARRIER CURB SECTIONS



$$A = 1/6(L) \quad C = 1/5(L)$$

$$B = 1/3(L) \quad D = 3/5(L)$$

POST SPACING



DETAIL A

NOTE: SEE SHEET 2 FOR FUSE PLATE DETAILS.

FOR POST DESIGNS NUMBERS 3, 4, 5 AND 6 HAVING WEIGHTS GREATER THAN 18LBS./FT., POSTS SHALL BE SPACED AT LEAST 7' APART.

FOR POST DESIGNS NUMBERS 1 AND 2, POSTS MAY BE SPACED LESS THAN 7' APART.

DO NOT USE THREE NUMBER 1 OR 2 POSTS FOR L LESS THAN 11'.

FOR L GREATER THAN 11' AND LESS THAN 17', 3 POSTS MAY BE USED DEPENDING ON SOIL CONDITIONS.

FOR L OF 6' TO 17' TYPICALLY USE 2 POSTS.



FOR L GREATER THAN 17' TYPICALLY USE 3 POSTS.

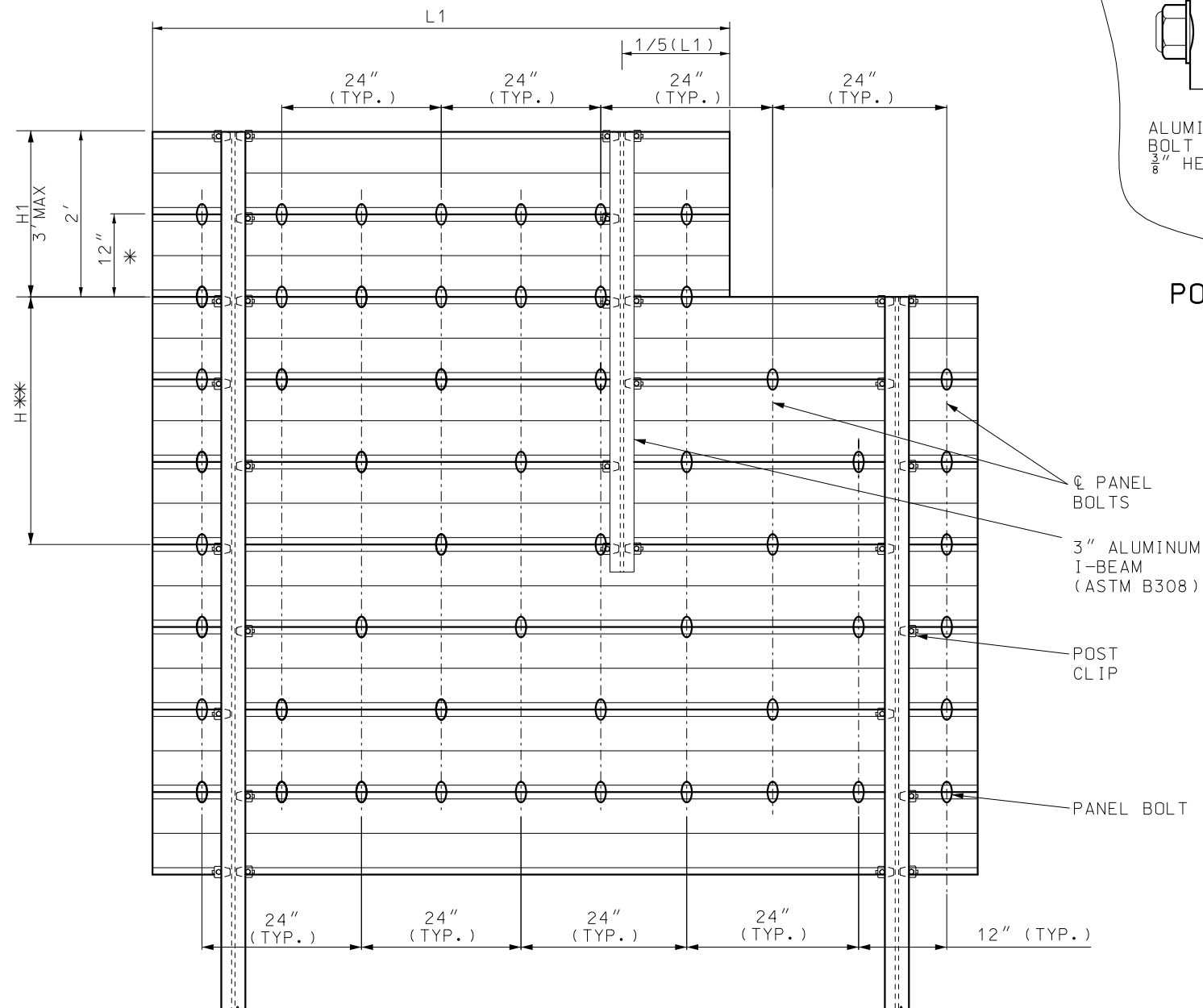
GENERAL NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

VERTICAL CLEARANCE FROM THE ROADWAY SHALL BE MET AND INCREASED ONLY TO MEET THE 7'9" MINIMUM VERTICAL CLEARANCE FROM THE GROUND.

POST SIZE IS DETERMINED USING SIGN HEIGHT, SIGN WIDTH AND CLEAR HEIGHT. THE CLEAR HEIGHT IS EQUAL TO THE LENGTH OF THE LONGEST POST MEASURED FROM THE GROUND TO THE BOTTOM OF THE SIGN.

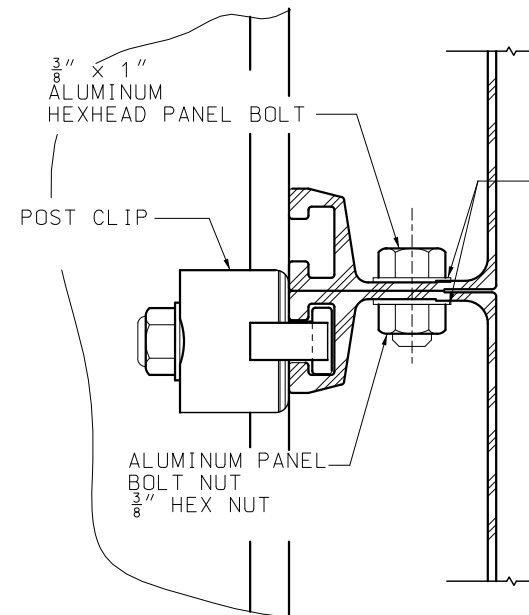
 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)		
	<b>POST INSTALLATION DETAILS</b> TYPICAL SECTION, MOUNTING HEIGHT AND POST SPACING WIDE FLANGE (WF) POSTS	
	DATE EFFECTIVE: 01/01/2021 DATE PREPARED: 10/14/2020	<b>903.03BN</b>



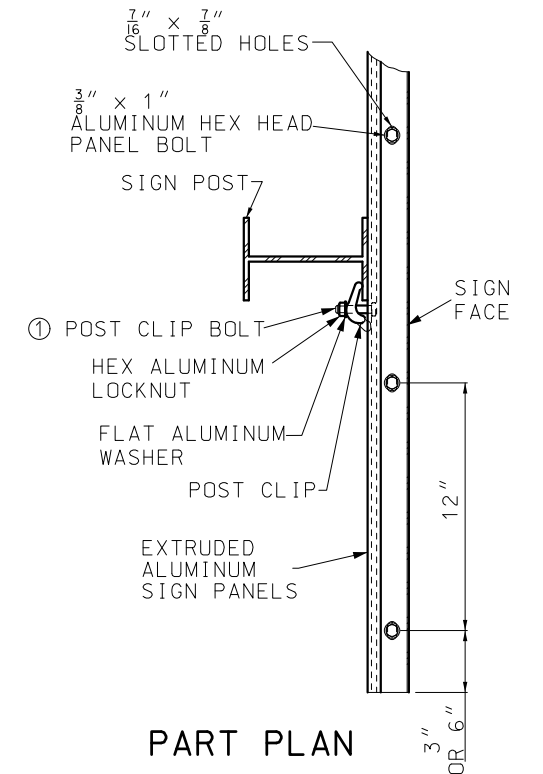
PANEL BOLT LOCATION

\* EXTRUDED ALUMINUM PANEL.

\*\* H = H1 + 12". H APPLIES TO SIGNS SUSPENDED ABOVE OR BELOW THE PRIMARY SIGN IF SECONDARY SIGN IS NOT ATTACHED TO THE MAIN SIGN POSTS.



POST CLIP DETAIL




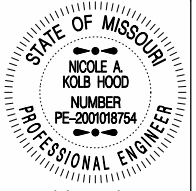
PART PLAN

① SIGNS SHALL BE FIELD ATTACHED TO POSTS WITH POST CLIPS AND BOLTS, SEE POST CLIP DETAIL. THE SHANK OF THE POST CLIP BOLT SHALL FIT TIGHTLY AGAINST THE POST FLANGE AFTER THE LOCKNUTS ARE TORQUED. LOCKNUTS ON THE POST CLIP BOLTS SHALL BE TORQUED TO 225 INCH-POUNDS WHEN USING DRY, CLEAN, UNLUBRICATED THREADS.

NOTES:

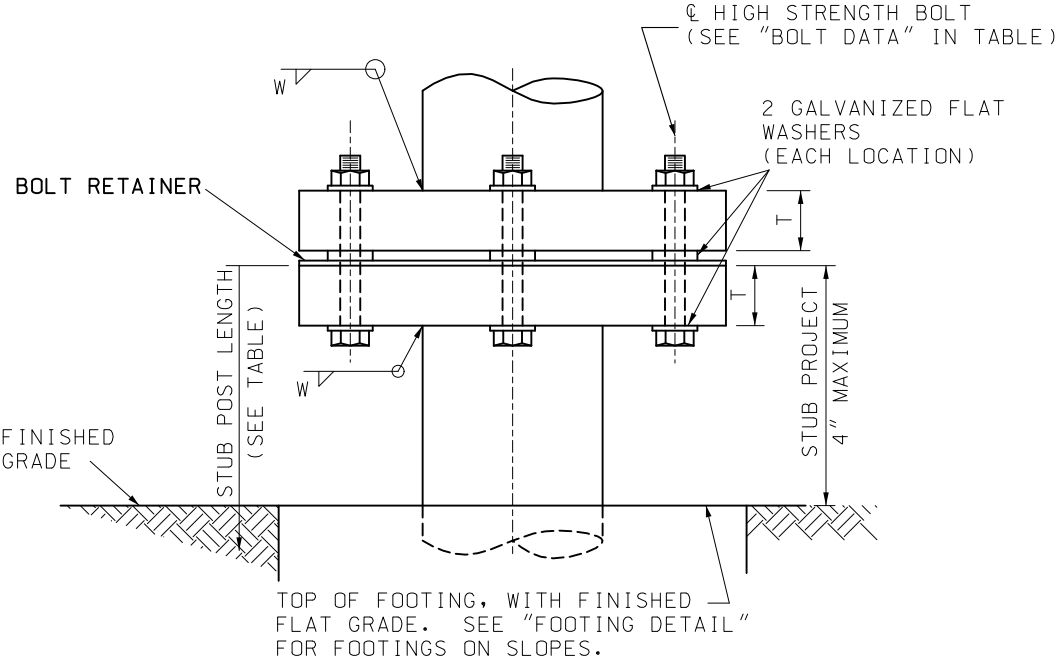
FOR GENERAL NOTES, SEE SHEET 1 OF 16.

FOR EXTRUDED ALUMINUM PANEL AND POST CLIP DETAILS, SEE STANDARD PLANS 903.02 SHEET 4 OF 7.

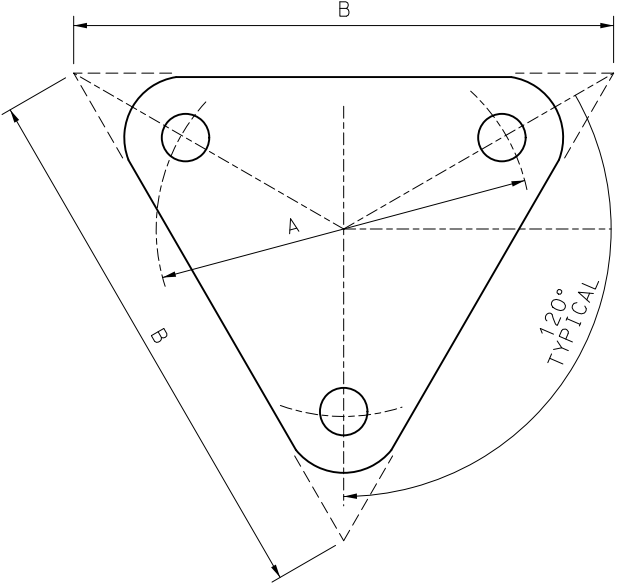
 <p><b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b></p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
 <p>STATE OF MISSOURI NICOLE A. KOLB HOOD NUMBER PE-2001018764 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p><b>SIGN MOUNTING DETAILS</b></p> <p><b>WIDE FLANGE (WF) POSTS</b></p>
<p>DATE EFFECTIVE: 01/01/2021</p> <p>DATE PREPARED: 10/14/2020</p>	<p><b>903.03BN</b></p>
<p>SHEET NO. 4 OF 16</p>	

ROUND PIPE POST FOR GROUND MOUNTED SIGNS												
POST	BOLT			WASHER			BASE CONNECTION DATA TABLE (IN.)					
NOM SIZE (IN.-ID)	DIA IN.	LENGTH IN.	TORQUE IN.-LB.	OD IN.	ID IN.	THICK IN.	A	B	C	R	T	W
2 1/2	1/2	3 1/2	140	1 1/16	17/32	1/8	6 1/4	9	1/4	9/32	1	1/4
3												
4	5/8	3 3/4	345	1 5/16	11/16	1/8	7 3/16	10	1/4	3/8	1	5/16

ROUND PIPE POST AND FOOTING DATA TABLE						
NOM. SIZE (IN.)	WEIGHT		STUB LENGTH	FOOTING		CONCRETE C.Y.
	LBS/FT	LBS/IN		DIA.	DEPTH	
2 1/2	5.79	0.48	4'- 3 1/2"	12"	4'-6"	0.13
3	7.58	0.63	4'- 3 1/2"	12"	4'-6"	0.13
4	10.79	0.90	5'- 3 1/2"	18"	5'-6"	0.36

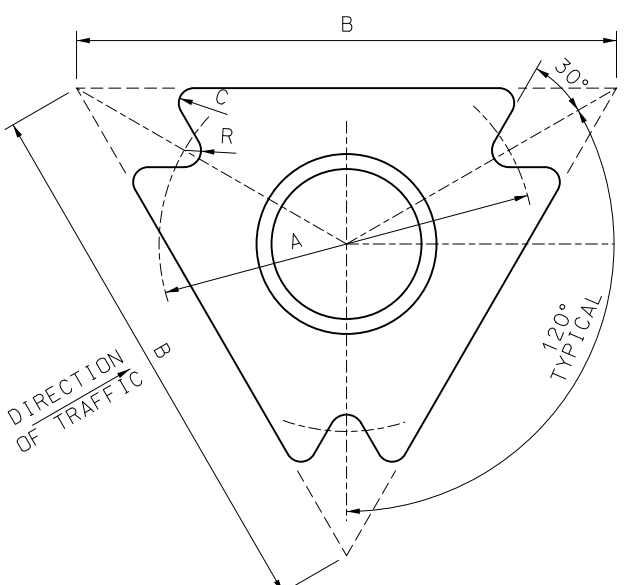


ELEVATION  
(STEEL PIPE POST BASE CONNECTION)  
MULTI-DIRECTION SLIP BASE



BOLT RETAINER

SHEET METAL BOLT RETAINER CUT FROM 30 GAUGE GALVANIZED SHEET METAL. PLACE BETWEEN BASE PLATES. SIZE VARIES TO FIT PLATE. BOLT HOLES SHALL BE 1/16" LARGER THAN REQUIRED BOLT SIZE.



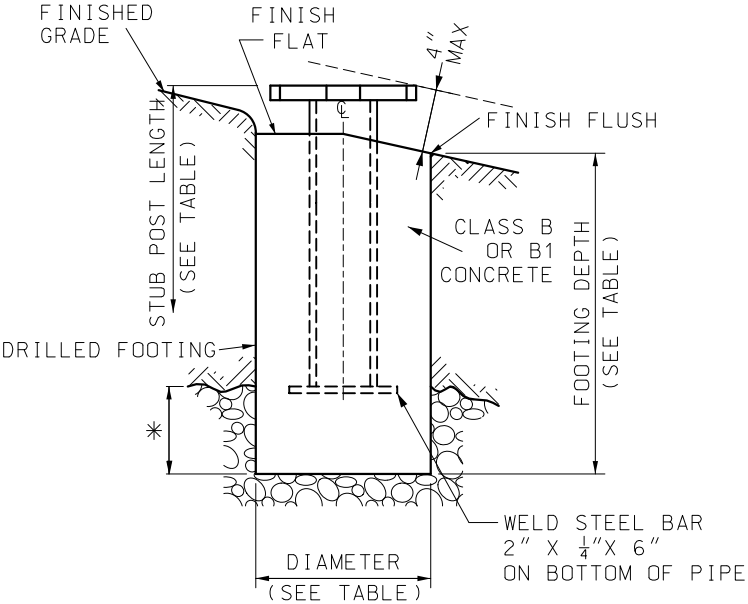
PLAN VIEW

ROLLED CRIMP TO ENGAGE PIPE O.D.



FRICTION CAP

NOTE:  
FOR GENERAL NOTES, SEE SHEET 1 OF 16.  
FOR MOUNTING HEIGHT AND OFFSET DETAILS, SEE STANDARD PLANS SHEET 10 OF 16.



FOOTING DETAIL

\* PIPE 3" DIA. AND UNDER:  
2' MAXIMUM IN ROCK,  
PIPE OVER 3" DIA.:  
3' MAXIMUM IN ROCK

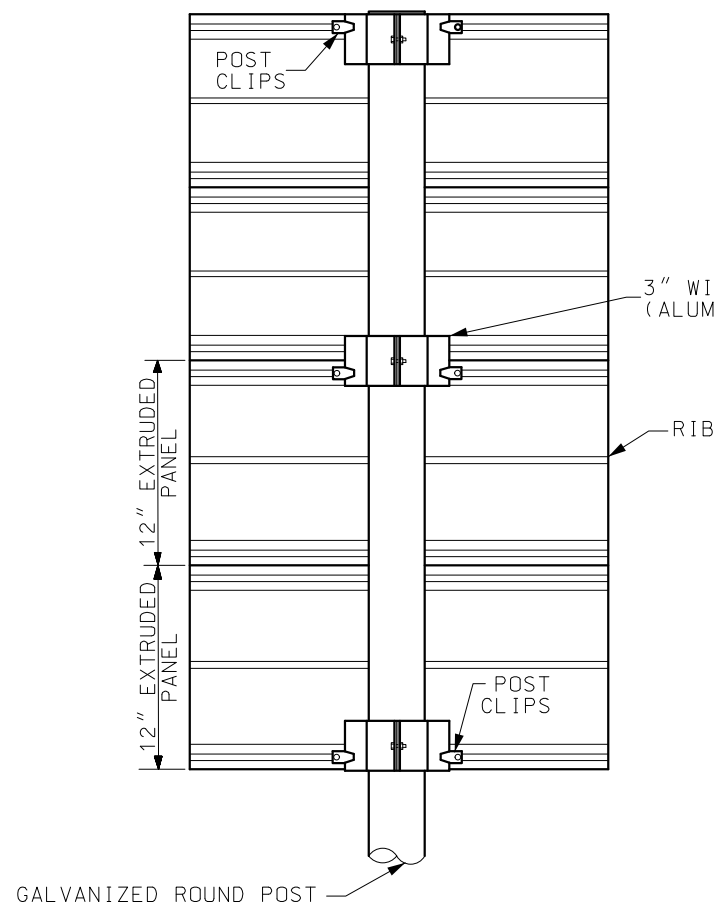
**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**  
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**POST INSTALLATION DETAILS**  
**PIPE POST**

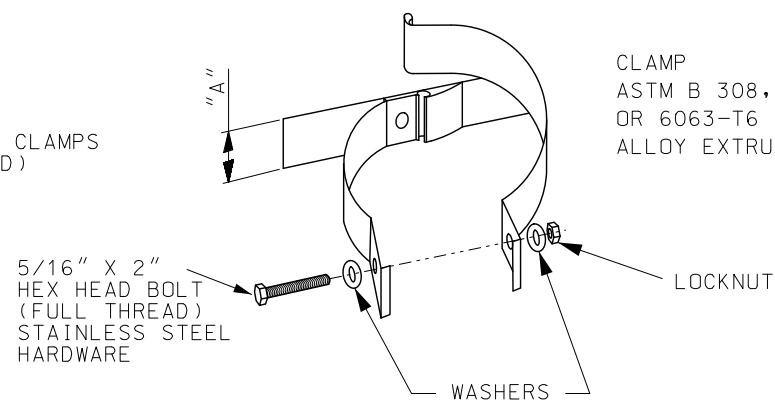
DATE EFFECTIVE: 01/01/2021  
DATE PREPARED: 10/14/2020

**903.03BN**

SHEET NO.  
**5 OF 16**

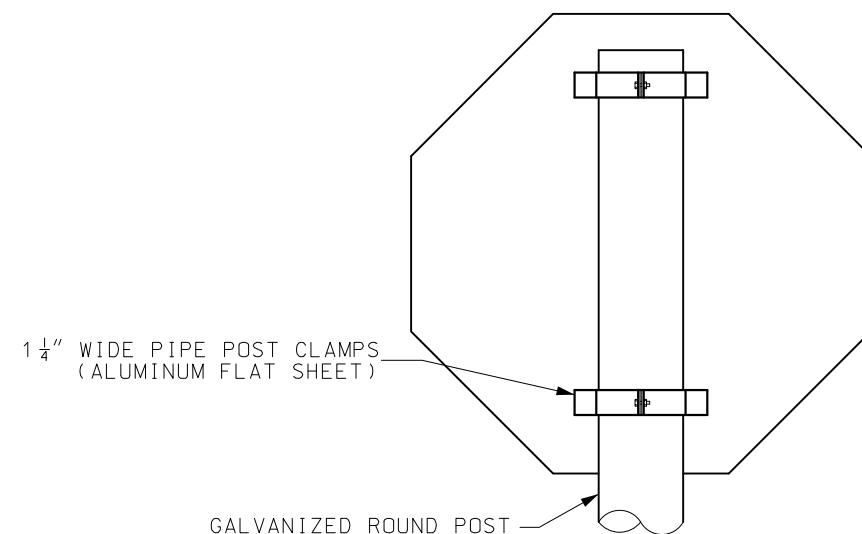


PROFILE VIEW

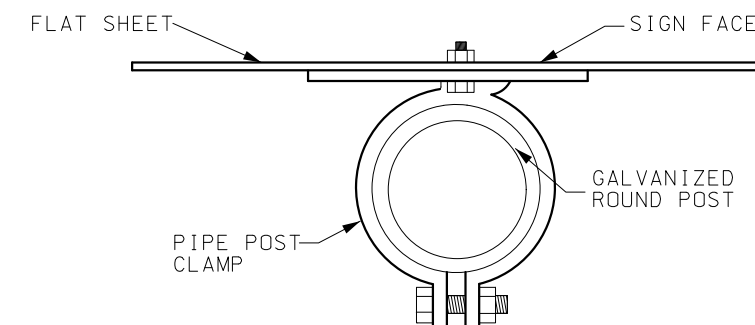


CLAMP TYPE SIGN SUPPORT  
FOR PIPE POST

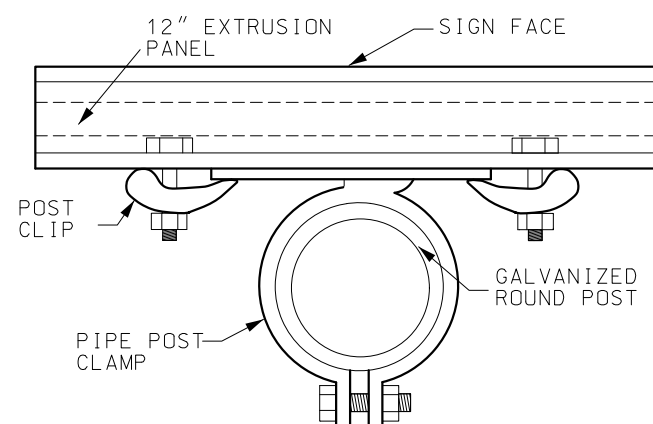
WIDTH OF PIPE POST CLAMP	
SIGN TYPE	MINIMUM "A"
FLAT	1 1/4"
STRUCTURAL	3"



PROFILE VIEW

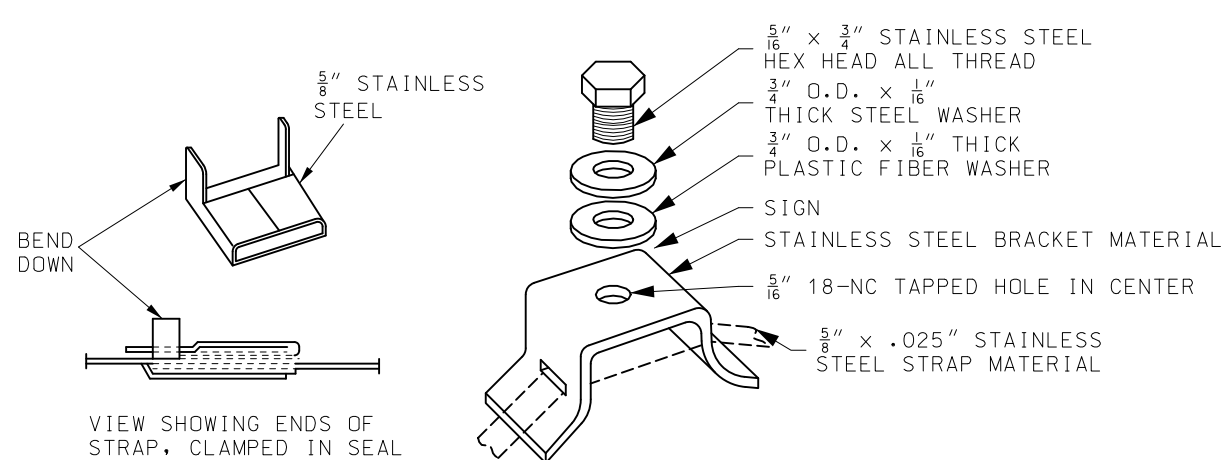


PLAN VIEW



PLAN VIEW

MOUNTING DETAILS FOR EXTRUDED PANELS  
ON PIPE POST



STRAP SEAL

FLARED LEG SIGN BRACKET

MOUNTING DETAILS FOR FLAT SHEET SIGNS  
ON ROUND STRUCTURES >4" PIPE POST

MOUNTING DETAILS  
FOR FLAT SHEET ON PIPE POST

NOTES:

FOR GENERAL NOTES, SHEET 1 OF 16.

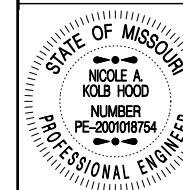
FOR MOUNTING HEIGHT AND OFFSET DETAILS, SEE  
SHEET 10 OF 16.

FOR DETAILS OF EXTRUDED ALUMINUM PANEL AND  
POST CLIP DETAILS, SEE STANDARD PLANS 903.02  
SHEET 4 OF 7.



MISSOURI HIGHWAYS AND TRANSPORTATION  
COMMISSION

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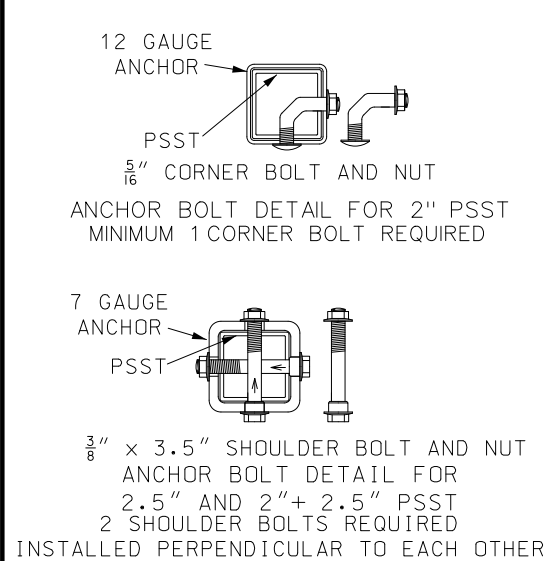
THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

SIGN MOUNTING DETAILS  
PIPE POST

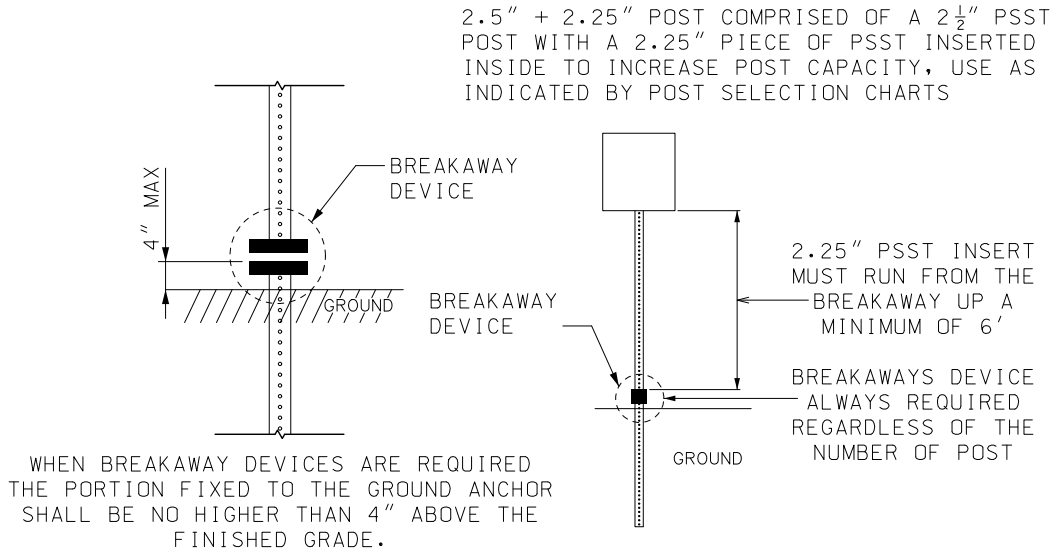
DATE EFFECTIVE: 01/01/2021  
DATE PREPARED: 10/14/2020

903.03BN

SHEET NO.  
6 OF 16

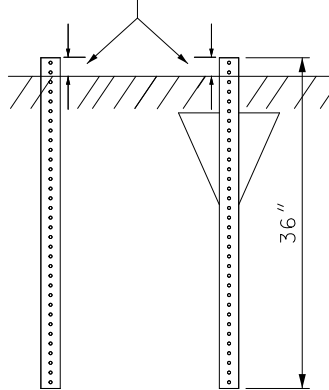


ANCHOR BOLT DETAIL



BREAKAWAY DETAILS  
2.5" + 2.25" POST DETAIL

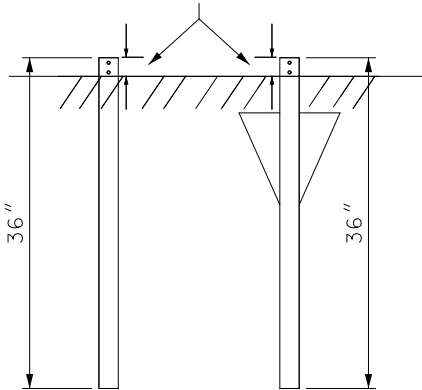
THE ANCHOR SHOULD BE A MAXIMUM OF 2.5" ABOVE THE GROUND LEVEL



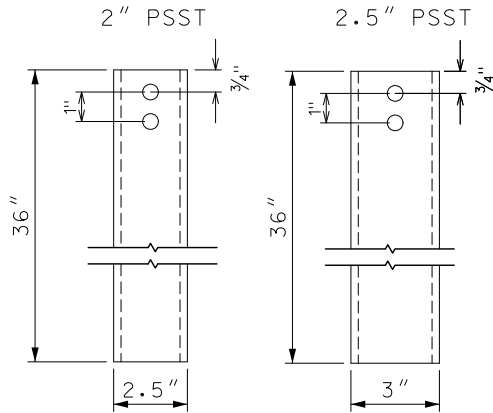
12 GAUGE

ANCHOR INSTALLATION DETAIL

THE ANCHOR SHOULD BE A MAXIMUM OF 2.5" ABOVE THE GROUND LEVEL



7 GAUGE



- BOLT HOLE DIAMETER -  $1\frac{1}{32}$ "  
- 2 PER SIGN ON ALL 4 SIDES

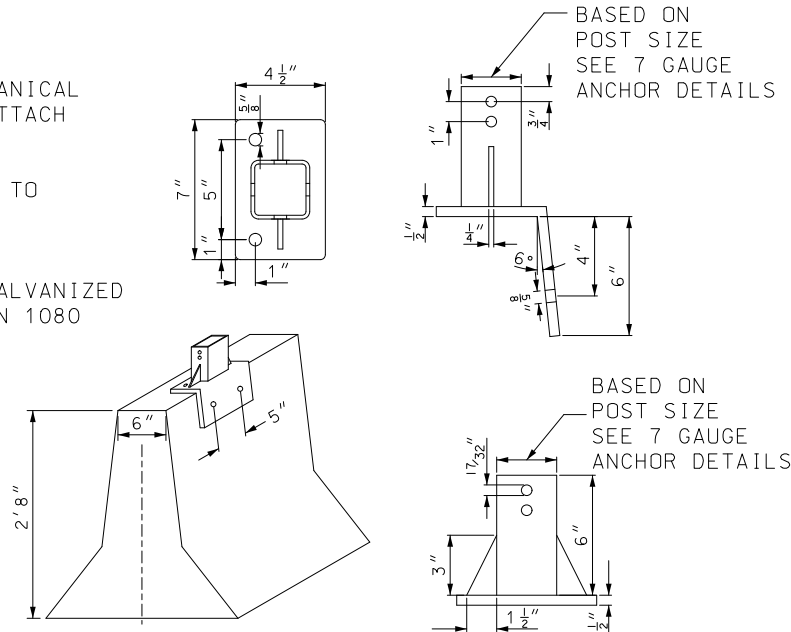
7 GAUGE ANCHOR  
FABRICATION DETAIL

ANCHOR TUBE SHALL BE 7 GUAGE

1/2" X 4 1/2" GALVANIZED MECHANICAL FASTENERS SHALL BE USED TO ATTACH ANCHOR TO BARRIER WALL

SHOULDER BOLTS SHALL BE USED TO ATTACH PSST POST TO ANCHOR (SEE STANDARD PLAN 903.03)

ANCHOR SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION PER SECTION 1080



BARRIER WALL  
MOUNTING DETAIL

POST AND ANCHOR DATA TABLE

POST		ANCHOR NORMAL OR OMNI-DIRECTIONAL		BREAKAWAY NEEDED		
				NUMBER OF POSTS		
GUAGE	SIZE	GUAGE	SIZE	1	2	3
12	2"x2"	12	2.25" X 2.25" X 36" OD	NO	NO	YES
		7 *	2.5" X 2.5" X 36" OD	NO	NO	YES
12	2.5"x2.5"	7 *	3" X 3" X 36" OD	NO	YES	YES
12	(2.5"x2.5")+(2.25"x2.25")	7 *	3" X 3" X 36" OD	YES	YES	YES

\* TO BE USED WITH CONCRETE FOOTINGS OR IS AN OPTION IN ROCK SOIL CONDITIONS

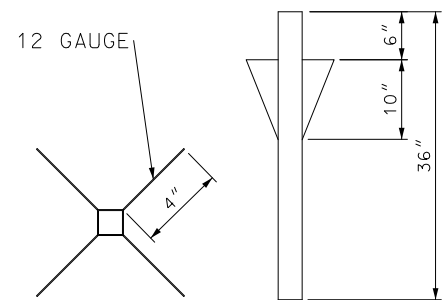
NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

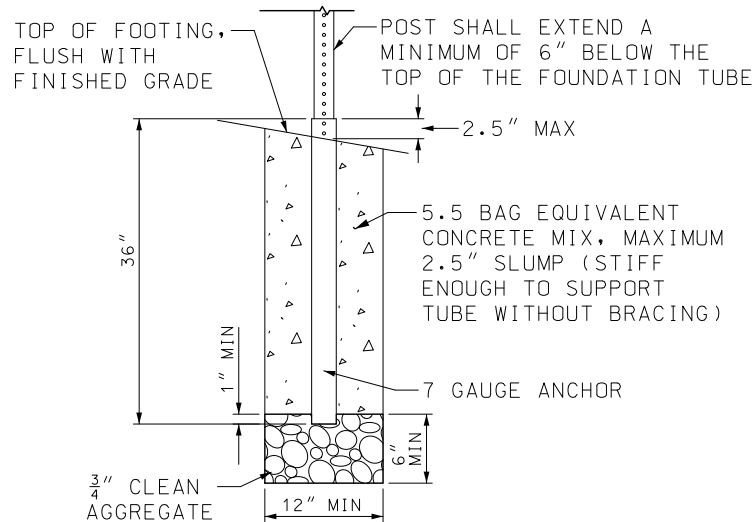
FOR MOUNTING HEIGHT AND OFFSET DETAILS, SEE SHEET 10 OF 16.

ALL BREAKAWAY DEVICES USED ON AN INSTALLATION SHALL BE CERTIFIED NCHRP 350 COMPLIANT.

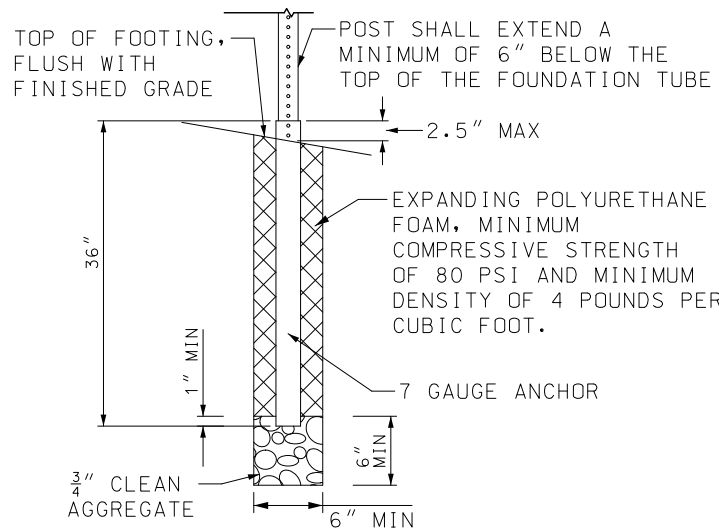
48" FOOTINGS MAY BE USED WITH 12 GAUGE OR 7 GAUGE ANCHORS.



OMNI-DIRECTIONAL ANCHOR  
DETAIL FOR BOTH  
12 AND 7 GAUGE



CONCRETE FOOTING DETAIL



EXPANDING FOAM FOOTING DETAIL

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**POST INSTALLATION  
DETAILS**

**PERFORATED SQUARE  
STEEL TUBE (PSST)**

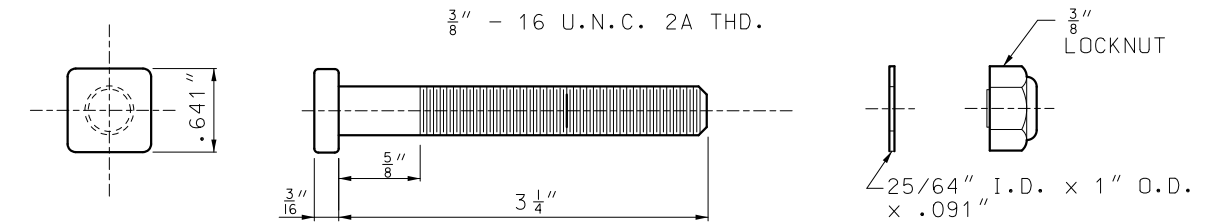
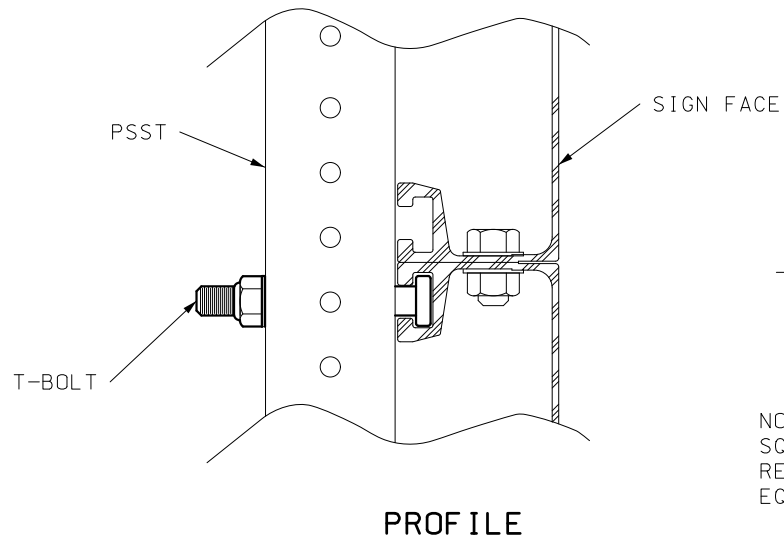
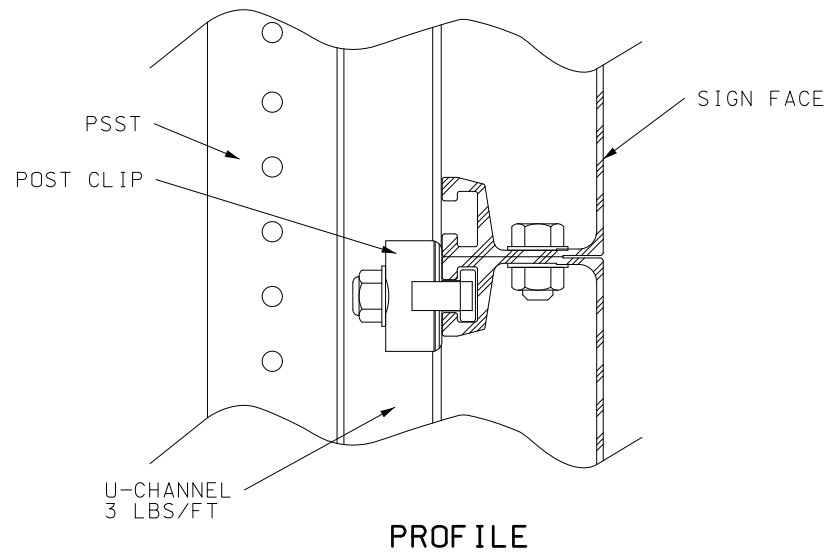
DATE EFFECTIVE: 01/01/2021  
DATE PREPARED: 10/14/2020

**903.03BN**

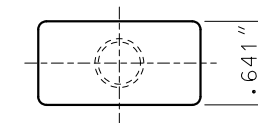
SHEET NO.  
**7 OF 16**

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED. REV.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



NOTE:  
SQUARE BOLT HEAD SHOWN MAY BE REPLACED WITH  
RECTANGULAR BOLT HEAD WITH THE NARROW DIMENSION  
EQUAL TO .641".



T-BOLT DETAIL

BOLT - 1 3/4 x ALUMINUM  
BOLT - 3 1/4 x ALUMINUM  
HEX LOCKNUT - 3/8" ALUMINUM  
WASHER - ALUMINUM

NOTES:  
- ALUMINUM BOLTS SHALL BE ASTM B 211, 2024-T4 OR 6061-T6  
- ALUMINUM FLAT WASHERS SHALL BE ASTM B 209, ALCLAD 2024-T4 OR 2024-T4  
- ALUMINUM LOCK NUTS (NYLON INSERT) SHALL BE ASTM B 211 OR 2017-T4

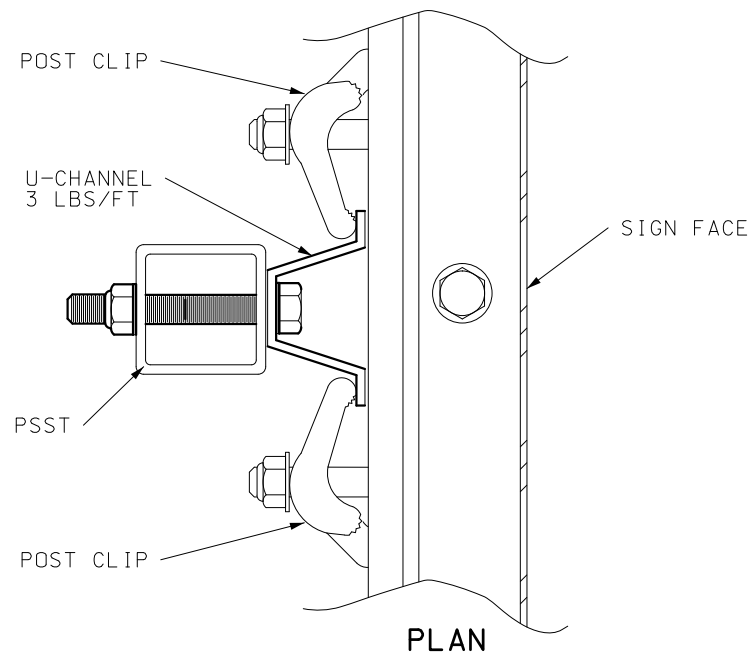
NOTES:

FOR THE GENERAL NOTES, SEE SHEET 1 OF 16.

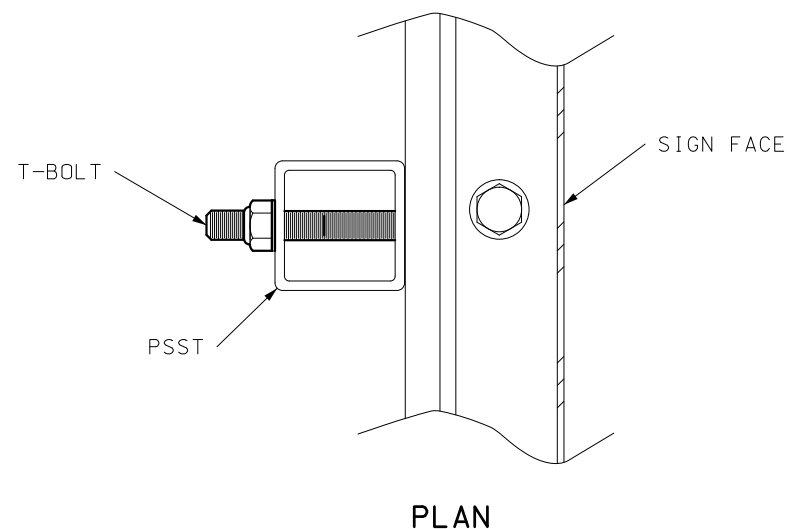
FOR MOUNTING HEIGHT AND OFFSET DETAILS, SEE  
SHEET 10 OF 16.

FOR POST CLIP DETAILS, SEE STANDARD PLANS  
903.02 SHEET 4 OF 7.

ALTERNATE PSST MOUNTING HARDWARE USE SHALL  
BE ON APPROVED LIST.





POST CLIP METHOD



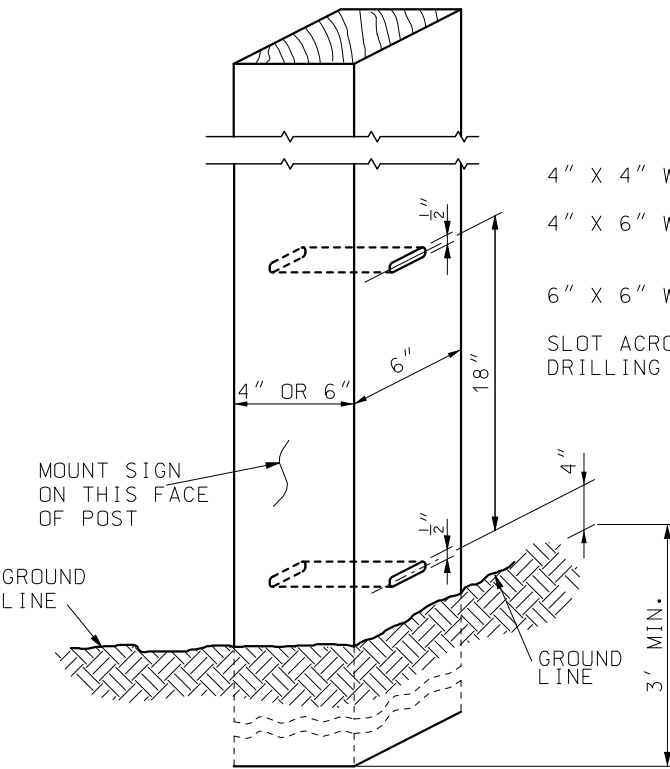
T-BOLT METHOD

## EXTRUDED PANEL MOUNTING DETAIL

NUMBER OF BOLTS TO ATTACH STEEL CHANNEL TO PSST POST	
SIGN HEIGHT	NO. OF BOLTS PER PSST POST USED
1'	2
2'	3
3'	4
4'	5
5'	6
6'	7
7'	8

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <b>STATE OF MISSOURI</b> NICOLE A. KOLB HOOD NUMBER PE-2001018754 PROFESSIONAL ENGINEER THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.	<b>SIGN MOUNTING DETAILS</b> <b>PERFORATED SQUARE STEEL TUBE (PSST)</b>
DATE EFFECTIVE: 01/01/2021 DATE PREPARED: 10/14/2020	<b>903.03BN</b> SHEET NO. 8 OF 16

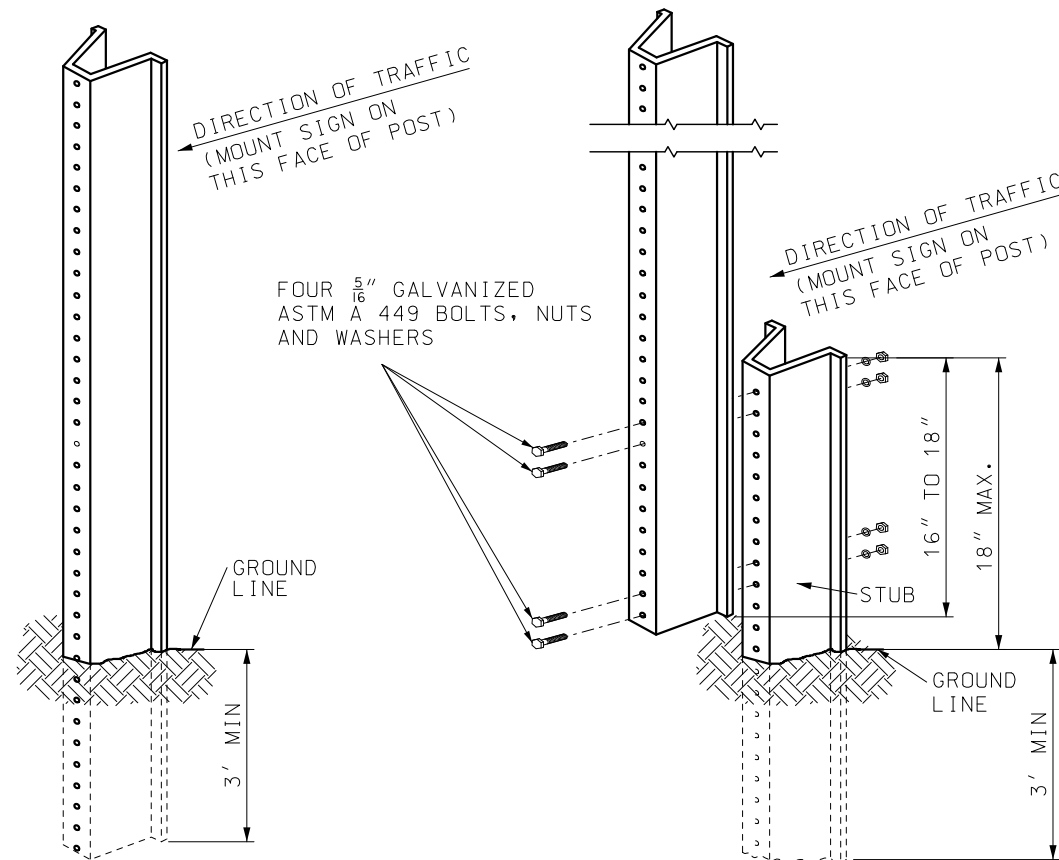




WOOD POST DETAIL

4" X 4" WOOD POST - NO SLOTS OR HOLES REQUIRED  
 4" X 6" WOOD POST - 1 1/2" X 1/2" SLOT ON 6" SIDE OR 1 1/2" DIA. HOLE ON 6" SIDE  
 6" X 6" WOOD POST - 2" X 1/2" SLOT OR 2" DIA. HOLE  
 SLOT ACROSS NEUTRAL AXIS FORMED BY SUCCESSIVE DRILLING WITH 1/2" BIT.

NUMBER OF BOLTS TO ATTACH STEEL CHANNEL TO WOOD POST	
SIGN HEIGHT	NO. OF BOLTS PER WOOD POST USED
1'	2
2'	3
3'	4
4'	5
5'	6
6'	7
7'	8



U-CHANNEL POST-STUB DETAIL

U-CHANNEL POST DETAIL  
OPTIONAL INSTALLATION

DIRECTION OF TRAFFIC  
(MOUNT SIGN ON THIS FACE OF POST)

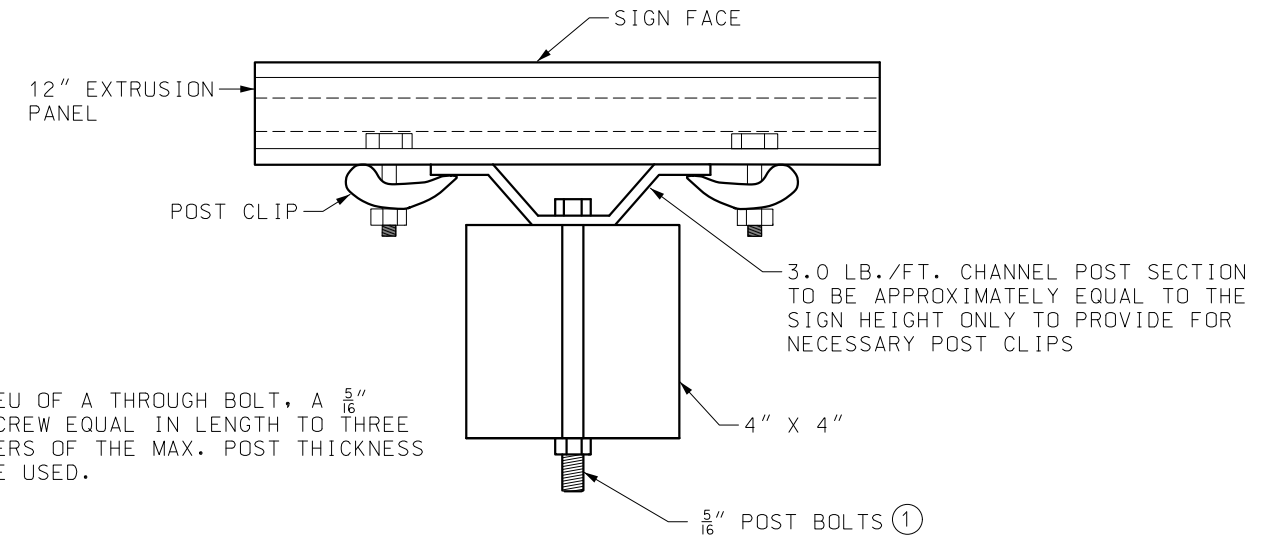
FOUR 5/16" GALVANIZED  
ASTM A 449 BOLTS, NUTS  
AND WASHERS

DIRECTION OF TRAFFIC  
(MOUNT SIGN ON THIS FACE OF POST)

16" TO 18"  
18" MAX.  
STUB

GROUND LINE

3' MIN



PLAN VIEW

MOUNTING DETAILS FOR EXTRUDED  
PANELS ON WOOD POST

① IN LIEU OF A THROUGH BOLT, A 5/16" LAG SCREW EQUAL IN LENGTH TO THREE QUARTERS OF THE MAX. POST THICKNESS MAY BE USED.

NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

ALL POSTS SHALL BE EMBEDDED A MINIMUM OF 3 FEET INTO THE GROUND.

U-CHANNEL POST-STUB OVERLAP SHALL BE POSITIONED ENTIRELY BETWEEN GROUND LINE AND 18" ABOVE GROUND LINE.

FOR POST SIZING SEE ENGINEERING POLICY GUIDE.

FOR POST CLIP DETAILS, SEE STANDARD PLANS 903.02 SHEET 4 OF 7.

FOR MOUNTING HEIGHT AND OFFSET DETAILS, SEE SHEET 10 OF 16.

SIGN AREA (SQ.FT.)	POST TYPE	
	U-CHANNEL	WOOD
≤ 10	1 - 3.0 LB./FT.*	1 - 4" X 4"*
> 10 ≤ 16	2 - 3.0 LB./FT.	2 - 4" X 4" 1 - 4" X 6"*
> 16 ≤ 24	2 - 3.0 LB./FT.	2 - 4" X 6"
> 24 ≤ 30	3 - 3.0 LB./FT.	2 - 4" X 6"
> 30 ≤ 50	N/A	2 - 6" X 6"

\* SIGNS GREATER THAN 4 FEET IN WIDTH REQUIRE TWO POSTS, EXCEPT DIAMOND SHAPED WARNING SIGNS, YIELD SIGNS, AND ONE WAY SIGNS.

POST SIZE REQUIREMENTS

**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

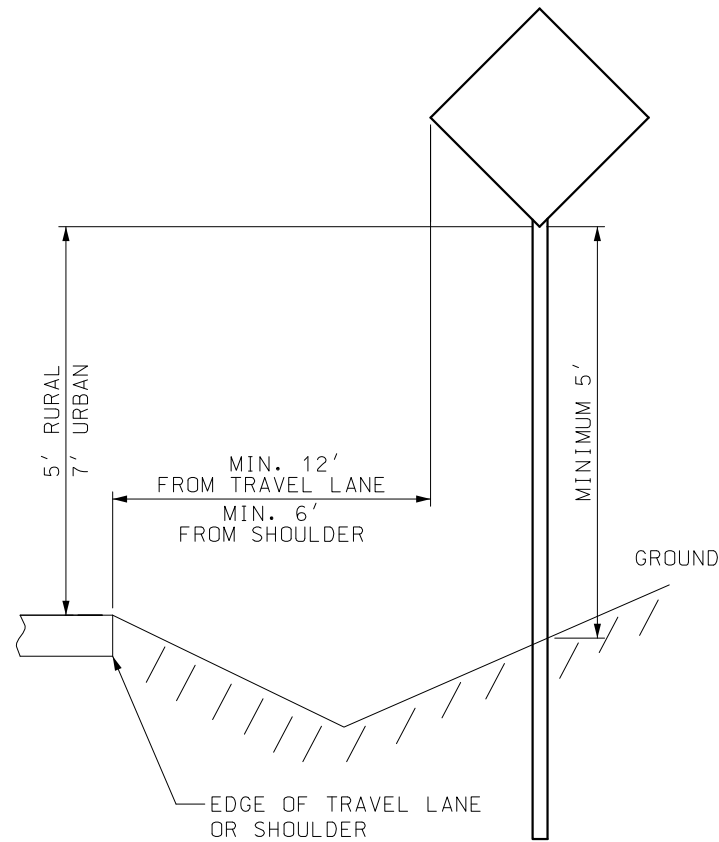
105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**SIGN MOUNTING DETAILS**  
WOOD AND  
U-CHANNEL POST

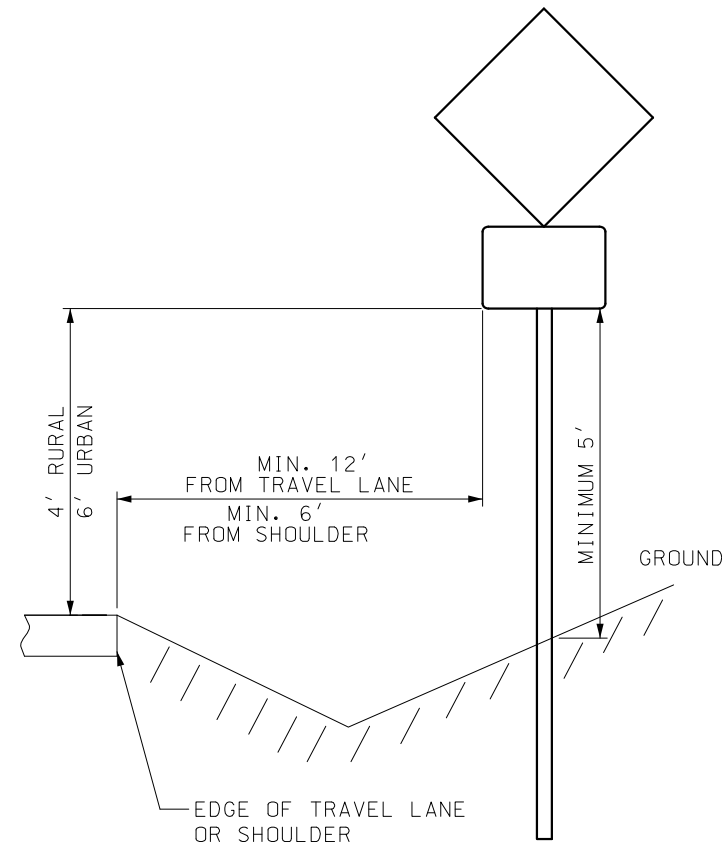
DATE EFFECTIVE: 01/01/2021  
DATE PREPARED: 10/14/2020

**903.03BN**

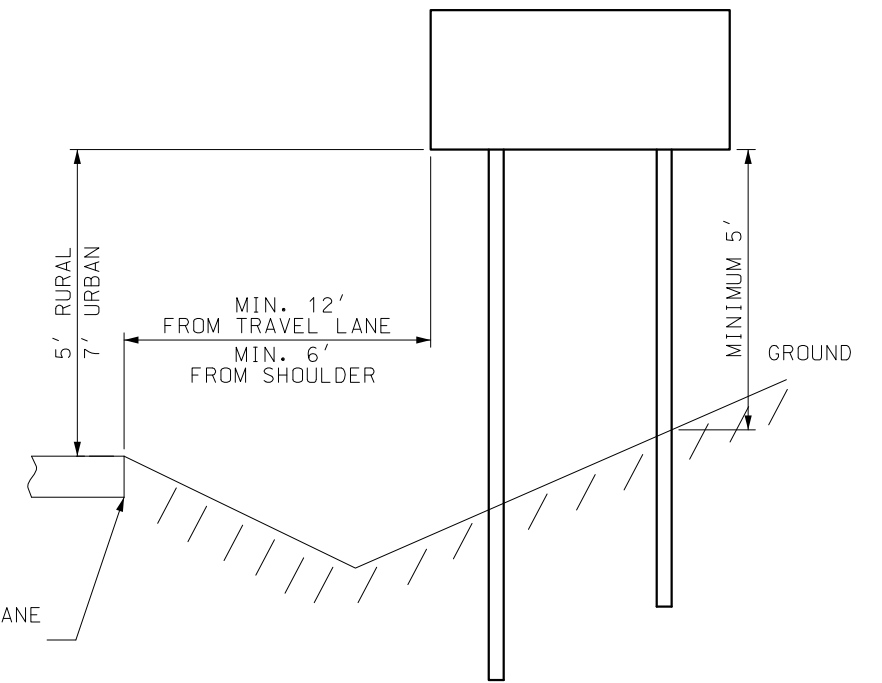
SHEET NO.  
9 OF 16



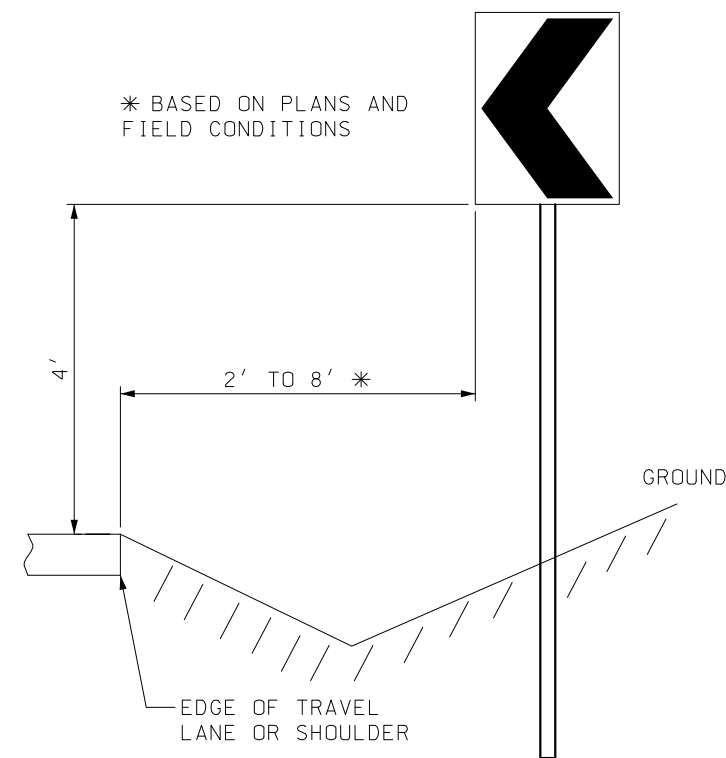
ONE POST - SINGLE SIGN



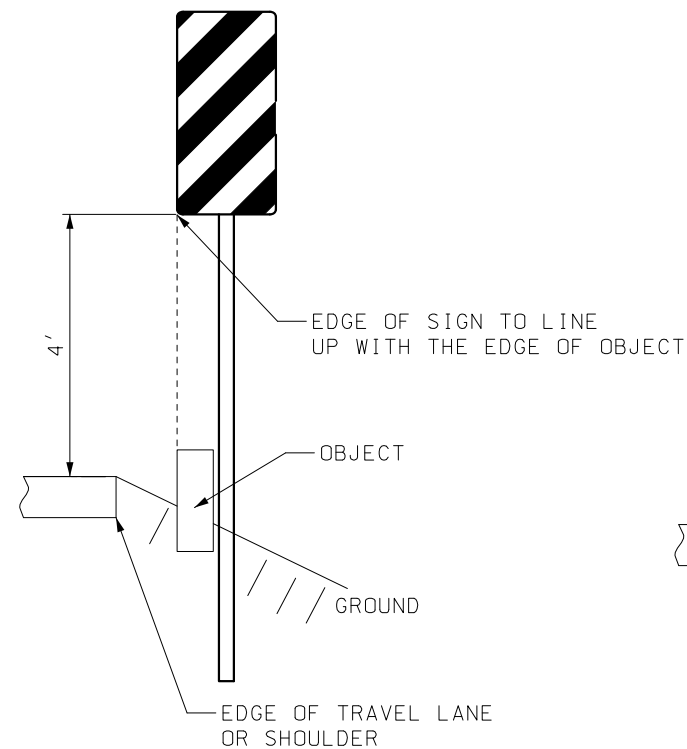
ONE POST - SINGLE SIGN WITH SUPPLEMENTAL PLAGUE



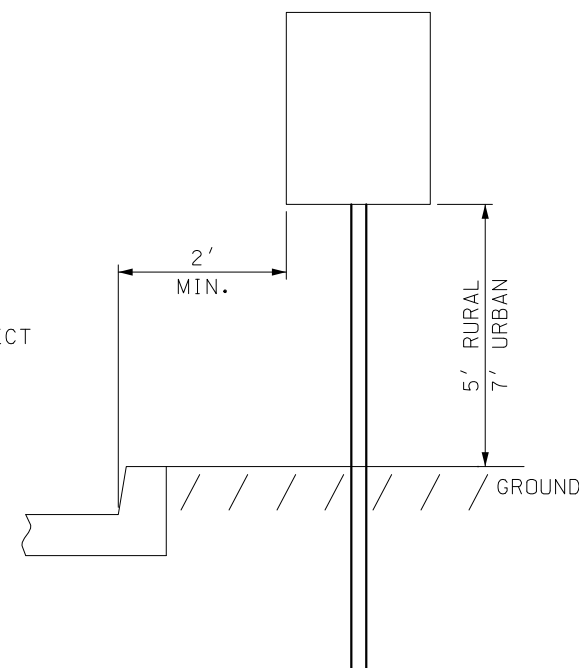
TWO POST



CHEVRON SIGN



TYPE III OBJECT MARKER



ADJACENT TO CURB


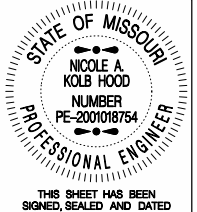
GENERAL NOTES:

SIGN MOUNTING BOLTS SHALL BE INSTALLED WITH A NYLON WASHER AGAINST THE SIGN FACE WITH A STEEL WASHER BETWEEN THE NYLON WASHER AND BOLT HEAD.

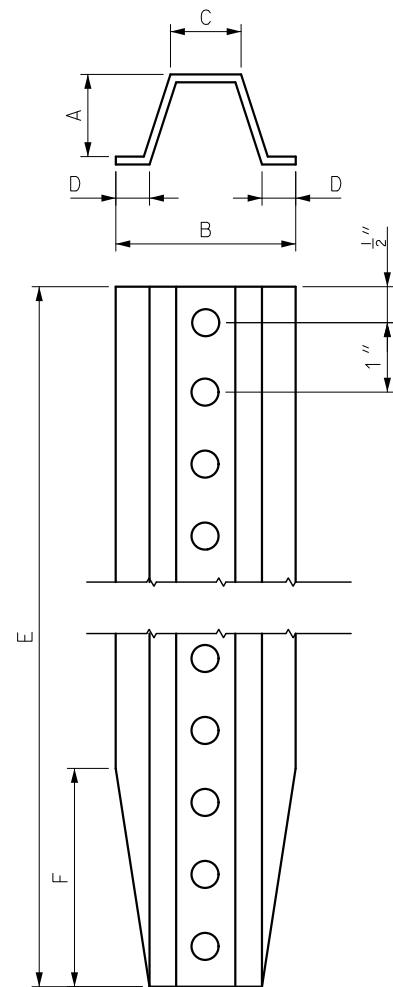
A LOCKNUT SHALL BE USED TO FASTEN THE SIGN TO THE POST.

VERTICAL CLEARANCE FROM THE ROADWAY SHALL BE MET AND INCREASED ONLY TO MEET THE 5' MINIMUM VERTICAL CLEARANCE FROM THE GROUND.

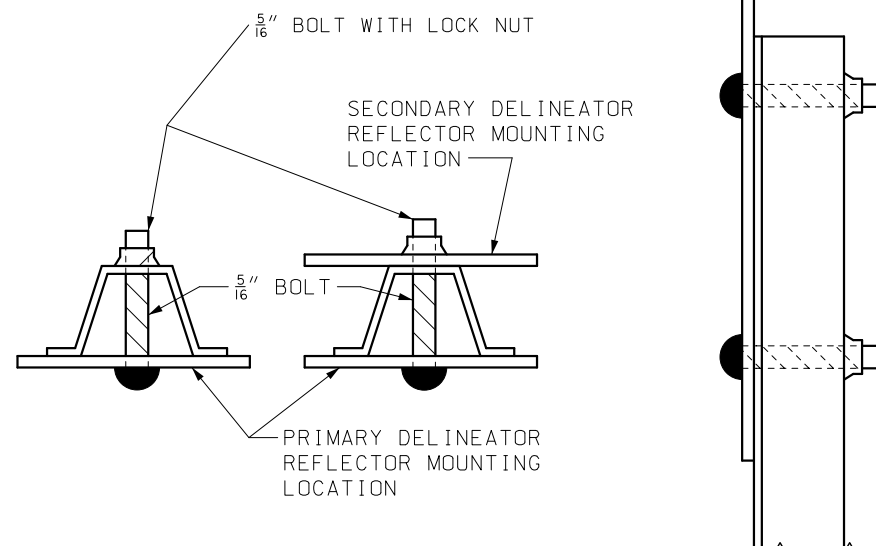
HORIZONTAL OFFSET MAY BE ADJUSTED BASED ON FIELD CONDITIONS.

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
	<b>SIGN MOUNTING DETAILS</b> MOUNTING HEIGHT & OFFSET PIPE POSTS, PSST, WOOD & U-CHANNEL POSTS
DATE EFFECTIVE: 01/01/2021 DATE PREPARED: 10/14/2020	<b>903.03BN</b> SHEET NO. 10 OF 16

MOUNTING HEIGHT DETAILS



GROUND MOUNT  
U-CHANNEL



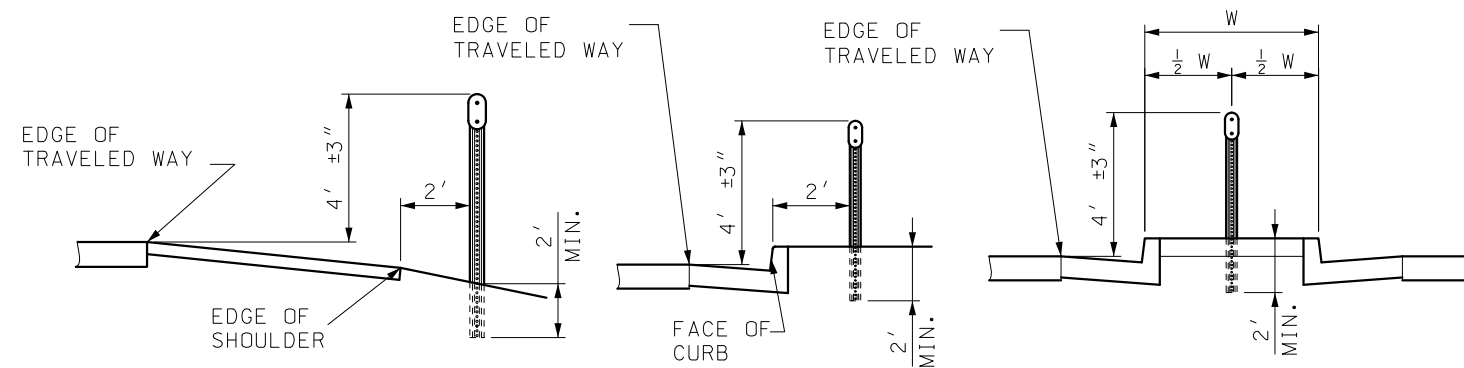
HOLE PUNCHING TO EQUAL  $\frac{3}{8}$ " DIAMETER HOLES, ONE INCH CENTER TO CENTER, BEGINNING ONE-HALF INCH FROM THE END AND CONTINUING THE ENTIRE LENGTH OF THE POST.

CHANNEL POST DELINEATOR							
LIMITS	LBS/FT (2)	DIMENSIONS - INCHES					
		A	B	C	D	E	F
NOMINAL	1.12	1	$2\frac{1}{4}$	$\frac{7}{8}$	$\frac{3}{8}$	84	1
TOLERANCE	± 5%	± $\frac{1}{8}$	± $\frac{1}{8}$	± $\frac{1}{8}$	± $\frac{1}{8}$	± 1	± $\frac{1}{4}$

(2) WEIGHT BEFORE GALVANIZING OR PUNCHING.

THE CHANNEL POST FOR DELINEATORS SHALL BE MANUFACTURED FROM DUCTILE ASTM A 36 OR ASTM A 1011 GR 60.

## CHANNEL POST DELINEATOR AND FASTENER DETAILS

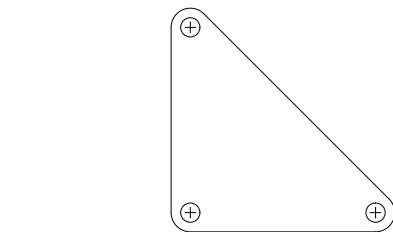


SHOULDER MOUNTED

OUTSIDE  
BARRIER CURB

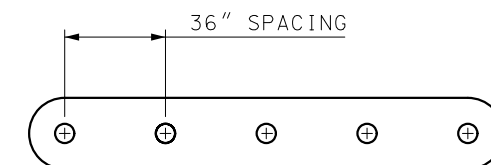
NARROW  
PAVED MEDIAN

## CHANNEL POST DELINEATOR MOUNTING DETAILS

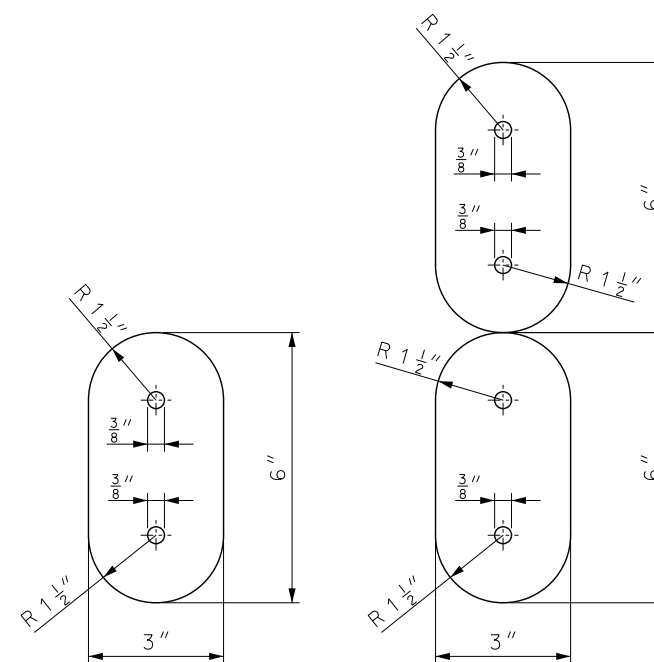


DELINEATOR PLACEMENT LOCATED  
AT THE RADIUS POINTS

## TUBULAR DELINEATOR PLACEMENT FOR ISLANDS



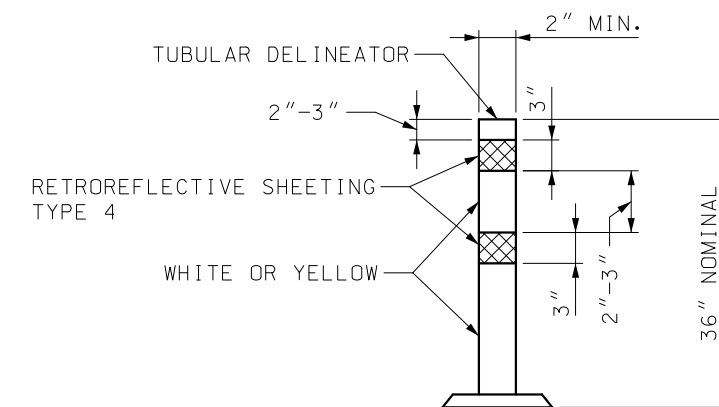
## DELINEATOR PLACEMENT FOR MEDIAN STRIPS



SINGLE

DOUBLE STACKED

## CHANNEL POST DELINEATOR REFLECTOR



## 36 INCH SURFACE-MOUNT DELINEATOR POST

## TUBULAR DELINEATOR DETAIL

COLOR OF TUBULAR DELINEATOR AND REFLECTIVE SHEETING SHALL MATCH THE COLOR OF THE CLOSEST PAVEMENT MARKING OR CURB MARKING.

TUBULAR DELINEATOR SHAPE MAY BE ROUND OR T-SHAPED. TUBULAR DELINEATOR SHALL BE PERMANENTLY MOUNTED TO THE PAVEMENT SURFACE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

### NOTES:

RETROREFLECTIVE YELLOW, WHITE OR RED SHEETING IN ACCORDANCE WITH ASTM D4956 TYPE 9 OR 11 SHALL BE APPLIED TO ONLY ONE SIDE OF THE DELINEATOR REFLECTOR BODY.

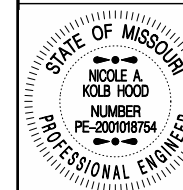
RETROREFLECTIVE SHEETING SHALL FOLLOW GUIDELINES OUTLINED IN SEC 1042.2.7.5 FOR CORRECT APPLICATION OF SHEETING TO DELINEATOR BODY. THE COLOR OF THE SHEETING SHALL MATCH THE CLOSEST ADJACENT PAVEMENT MARKING.

3" X 6" DELINEATOR BODY SHALL BE MADE FROM 0.080 INCH ALUMINUM.



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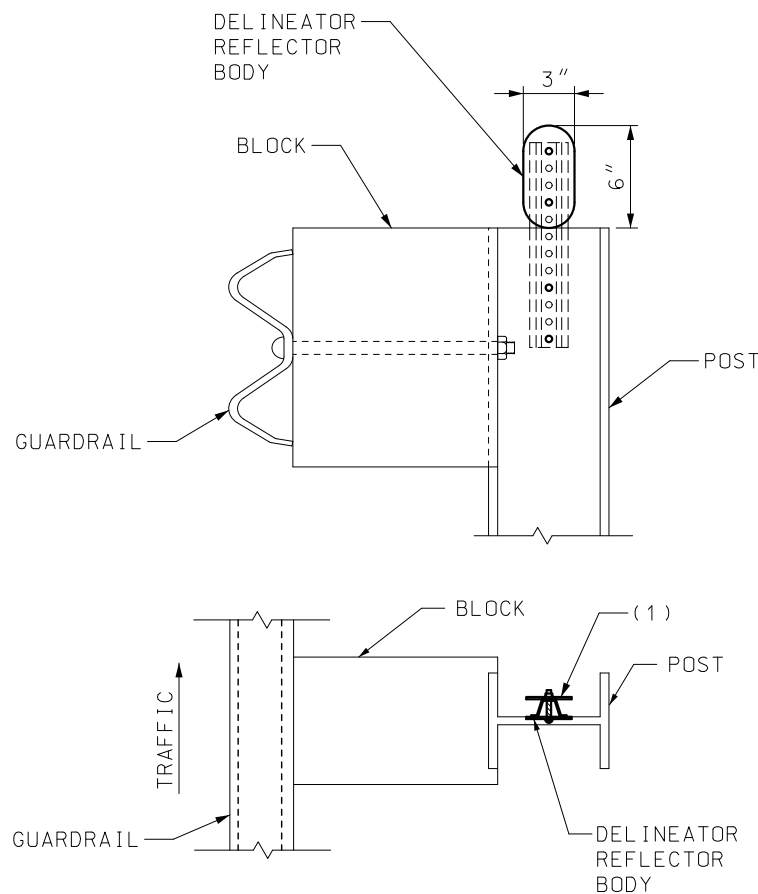
## SIGN MOUNTING DETAILS DELINEATORS

DATE EFFECTIVE: 01/01/2021  
DATE PREPARED: 10/14/2020

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SHEET NO.  
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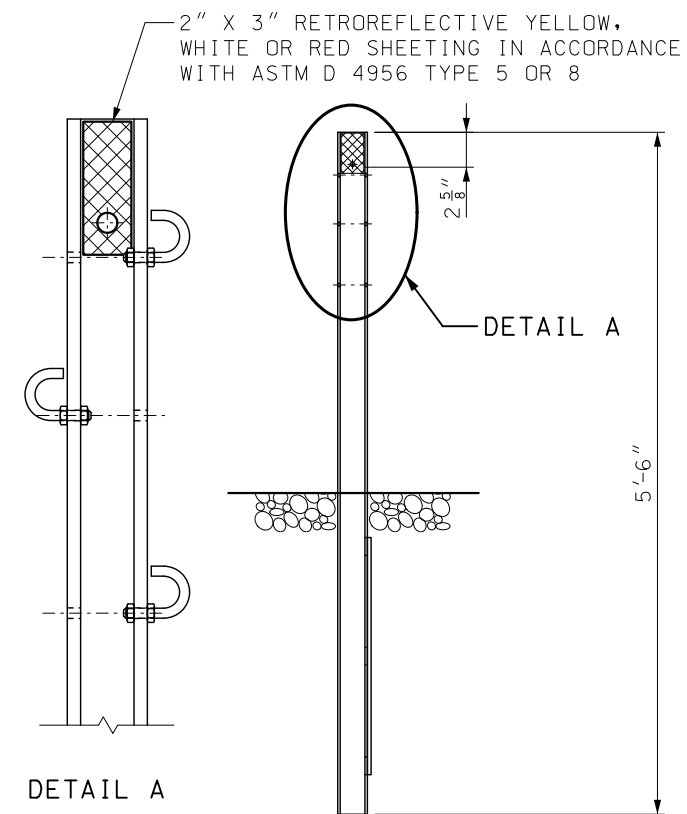




### DELINEATORS ON GUARDRAIL

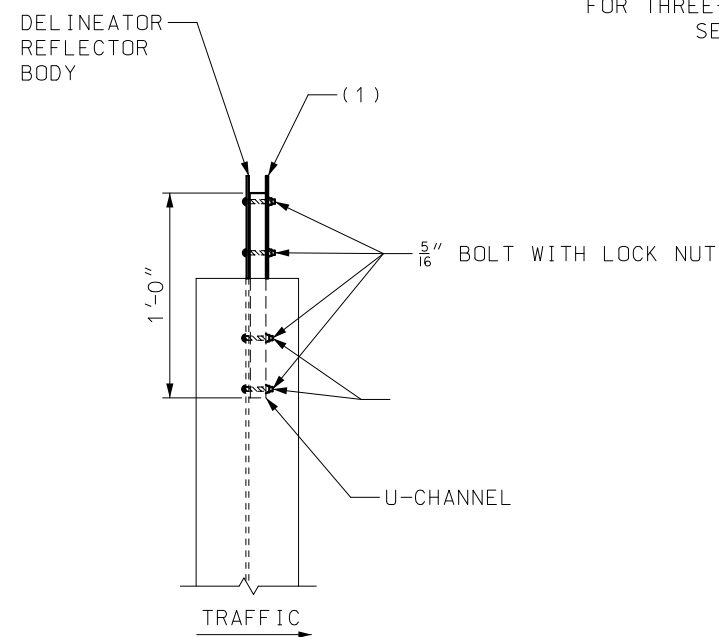
FOR GUARDRAIL DETAILS, SEE STD PLANS 606.00 AND 606.50.

(1) A SECONDARY DELINEATOR WITH RED SHEETING SHALL BE ATTACHED TO THE BACK SIDE OF THE CHANNEL WHEN THE DELINEATION IS PLACED ALONG AN INTERCHANGE RAMP AND COULD BE VIEWED BY WRONG WAY TRAFFIC.



### DELINEATORS ON THREE-STRAND MEDIAN GUARD CABLE

FOR THREE-STRAND GUARD CABLE DETAILS SEE STD PLANS 606.41.


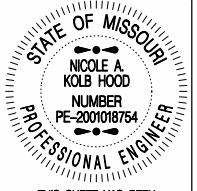


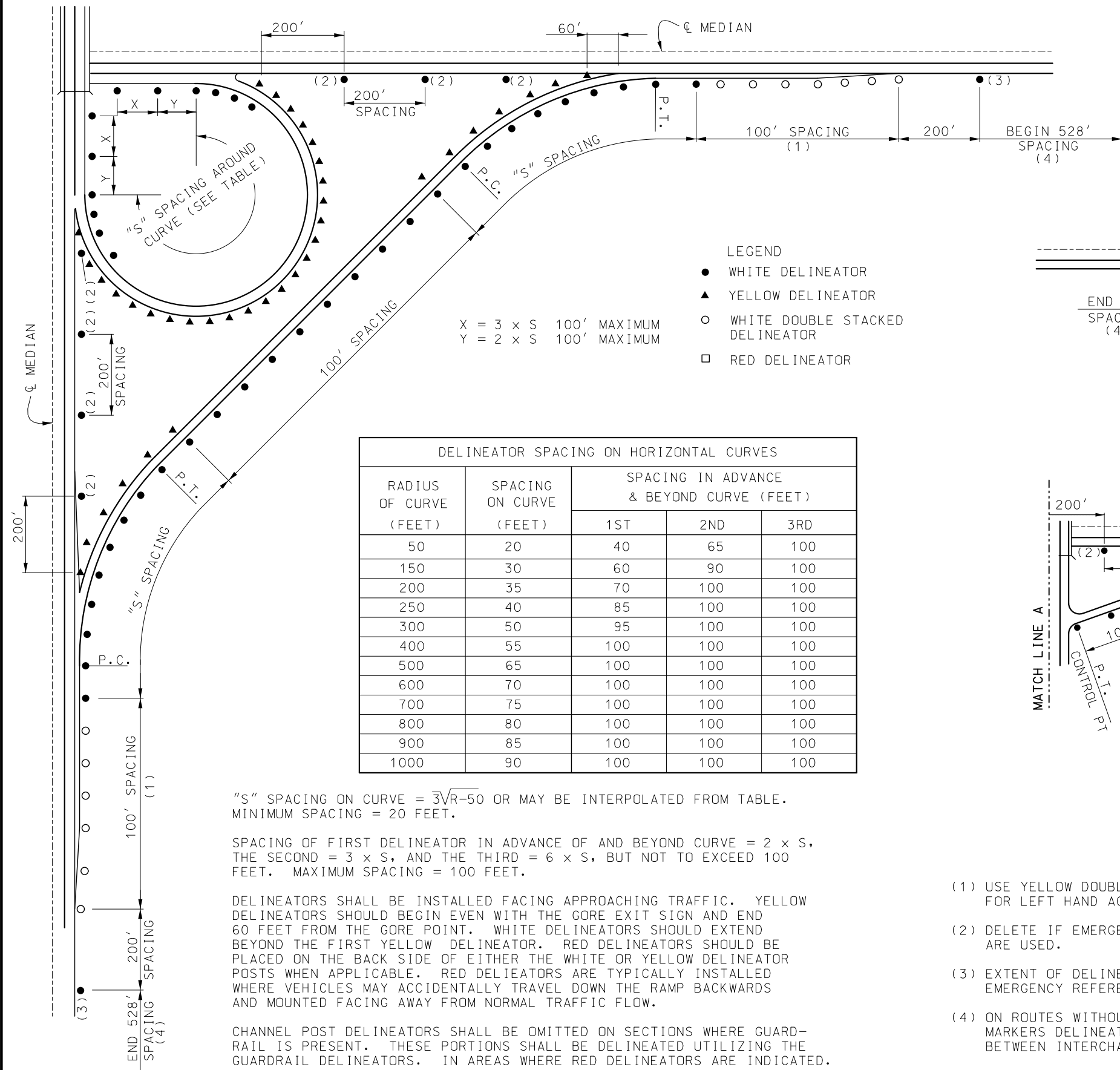
#### NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

RETROREFLECTIVE YELLOW, WHITE OR RED SHEETING IN ACCORDANCE WITH ASTM D 4956 TYPE 5 OR 8 SHALL BE APPLIED TO ONLY ONE SIDE OF THE CHANNEL POST DELINEATOR MOUNTED TOWARDS THE CHANNEL POST.

RETROREFLECTIVE SHEETING SHALL FOLLOW GUIDELINES OUTLINED IN SEC 1042.2.7 FOR CORRECT APPLICATION OF SHEETING TO DELINEATOR BODY. THE COLOR OF THE SHEETING SHALL MATCH THE CLOSEST ADJACENT PAVEMENT MARKING.

 <b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b> 105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)	
 <p>STATE OF MISSOURI NICOLE A. KOLB HOOD NUMBER PE-2001018754 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<b>SIGN MOUNTING DETAILS GUARDRAIL AND GUARDCABLE DELINEATORS</b>
DATE EFFECTIVE: 01/01/2021 DATE PREPARED: 10/14/2020	<b>903.03BN</b>
SHEET NO. 13 OF 16	



$$X = 3 \times S \quad 100' \text{ MAXIMUM}$$

$$Y = 2 \times S \quad 100' \text{ MAXIMUM}$$

- LEGEND
- WHITE DELINEATOR
  - ▲ YELLOW DELINEATOR
  - WHITE DOUBLE STACKED DELINEATOR
  - RED DELINEATOR

DELINEATOR SPACING ON HORIZONTAL CURVES				
RADIUS OF CURVE (FEET)	SPACING ON CURVE (FEET)	SPACING IN ADVANCE & BEYOND CURVE (FEET)		
		1ST	2ND	3RD
50	20	40	65	100
150	30	60	90	100
200	35	70	100	100
250	40	85	100	100
300	50	95	100	100
400	55	100	100	100
500	65	100	100	100
600	70	100	100	100
700	75	100	100	100
800	80	100	100	100
900	85	100	100	100
1000	90	100	100	100

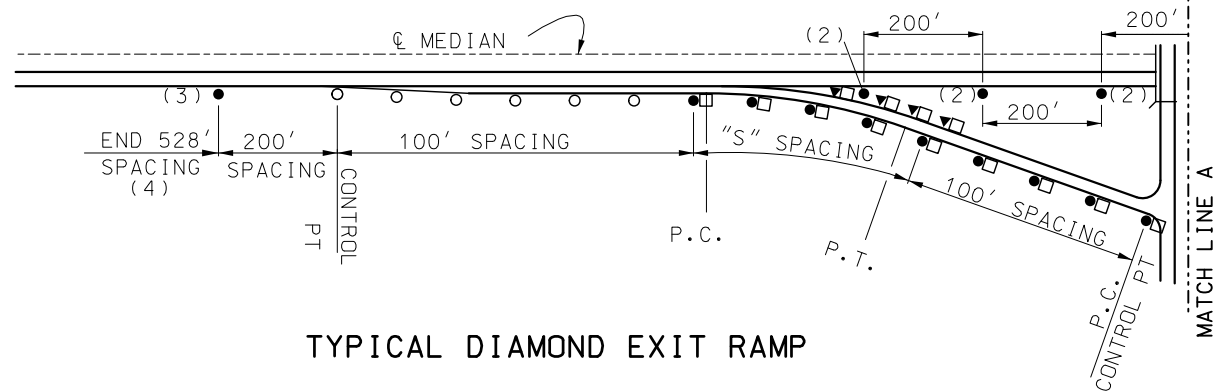
"S" SPACING ON CURVE =  $\sqrt[3]{R-50}$  OR MAY BE INTERPOLATED FROM TABLE.  
MINIMUM SPACING = 20 FEET.

SPACING OF FIRST DELINEATOR IN ADVANCE OF AND BEYOND CURVE =  $2 \times S$ , THE SECOND =  $3 \times S$ , AND THE THIRD =  $6 \times S$ , BUT NOT TO EXCEED 100 FEET. MAXIMUM SPACING = 100 FEET.

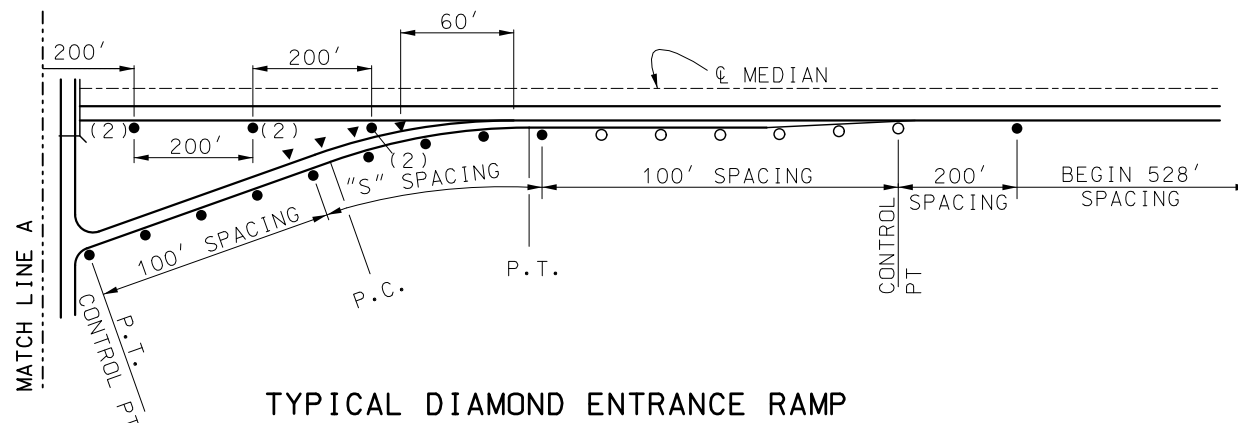
DELINEATORS SHALL BE INSTALLED FACING APPROACHING TRAFFIC. YELLOW DELINEATORS SHOULD BEGIN EVEN WITH THE GORE EXIT SIGN AND END 60 FEET FROM THE GORE POINT. WHITE DELINEATORS SHOULD EXTEND BEYOND THE FIRST YELLOW DELINEATOR. RED DELINEATORS SHOULD BE PLACED ON THE BACK SIDE OF EITHER THE WHITE OR YELLOW DELINEATOR POSTS WHEN APPLICABLE. RED DELIEATORS ARE TYPICALLY INSTALLED WHERE VEHICLES MAY ACCIDENTALLY TRAVEL DOWN THE RAMP BACKWARDS AND MOUNTED FACING AWAY FROM NORMAL TRAFFIC FLOW.

CHANNEL POST DELINEATORS SHALL BE OMITTED ON SECTIONS WHERE GUARD-RAIL IS PRESENT. THESE PORTIONS SHALL BE DELINEATED UTILIZING THE GUARDRAIL DELINEATORS. IN AREAS WHERE RED DELINEATORS ARE INDICATED. RED RETROREFLECTIVE SHEETING WILL BE PLACED ON THE BACK SIDE OF THE GUARDRAIL DELINEATOR.

REFLECTIVE SHEETING SHALL BE IN ACCORDANCE WITH SEC 1042.2.7.3.



TYPICAL DIAMOND EXIT RAMP




TYPICAL DIAMOND ENTRANCE RAMP  
TYPICAL INTERCHANGE

NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

THE CONTRACT UNIT PRICE FOR EACH CHANNEL POST DELINEATOR SHALL INCLUDE THE REFLECTOR, FASTENERS AND POST.

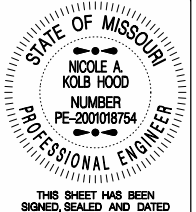
- (1) USE YELLOW DOUBLE STACKED DELINEATORS FOR LEFT HAND ACCEL/DECEL LANES.
- (2) DELETE IF EMERGENCY REFERENCE MARKERS ARE USED.
- (3) EXTENT OF DELINEATION ON ROUTES WITH EMERGENCY REFERENCE MARKERS.
- (4) ON ROUTES WITHOUT EMERGENCY REFERENCE MARKERS DELINEATORS SHALL BE INSTALLED BETWEEN INTERCHANGES EVERY 528'.



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**SIGN MOUNTING DETAILS  
INTERCHANGE DELINEATION**



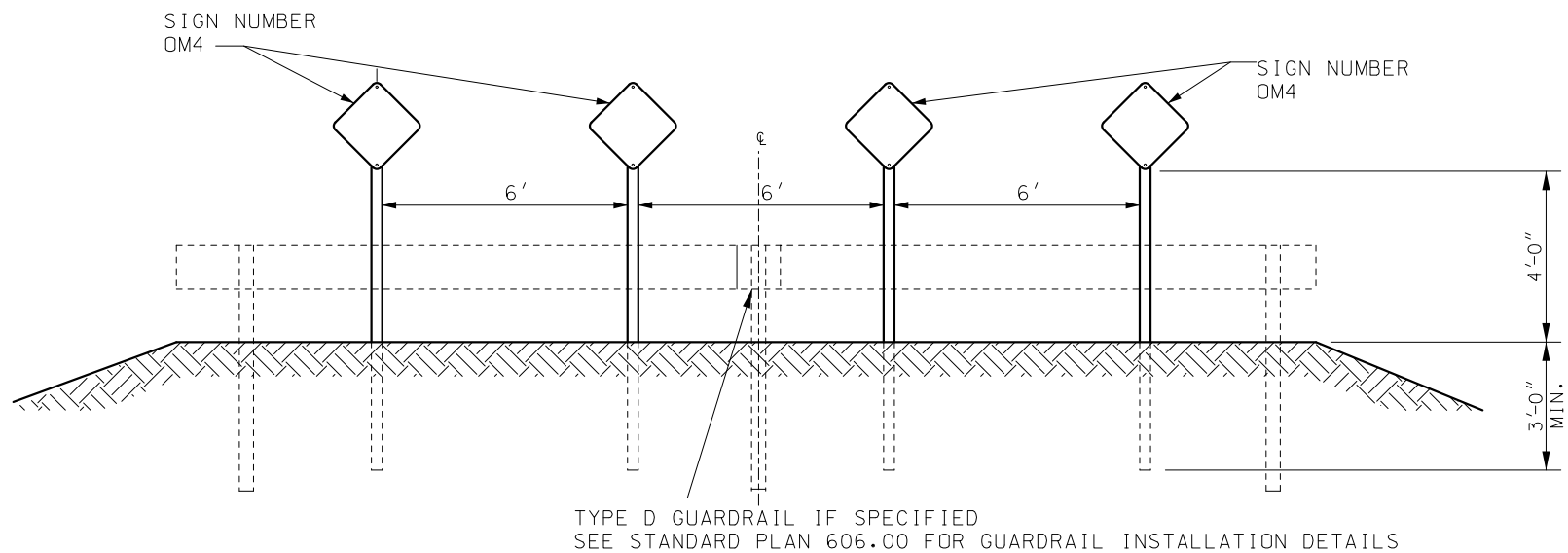
THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
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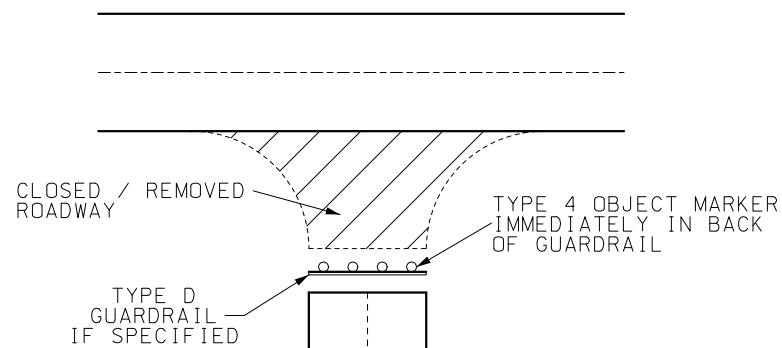
SHEET NO.  
**14 OF 16**

DATE EFFECTIVE: 01/01/2021

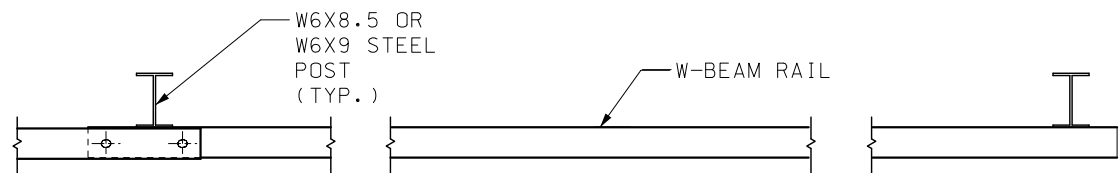
DATE PREPARED: 10/14/2020



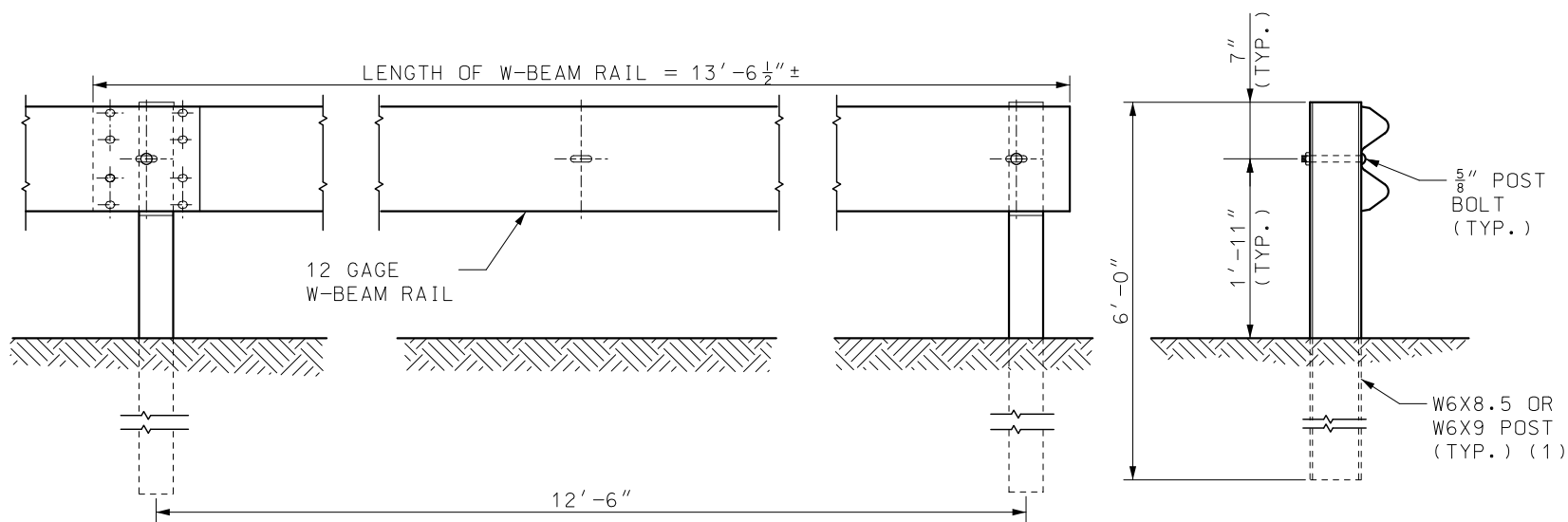
TYPE 4 OBJECT MARKER INSTALLATION



TYPICAL ROAD CLOSURE



PLAN

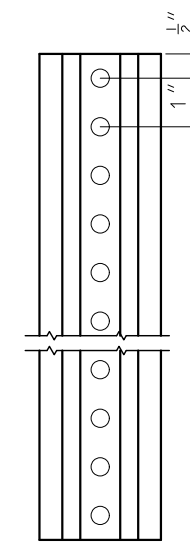


ELEVATION

STEEL POST

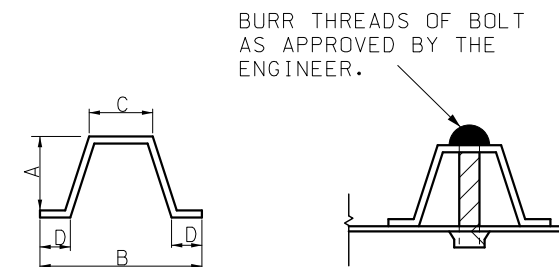
TYPE D GUARDRAIL

(1) THE CONTRACTOR MAY FURNISH EQUIVALENT SECTIONS FABRICATED FROM MATERIAL MEETING AND IN ACCORDANCE WITH SEC 1040.



STEEL OBJECT MARKER POST					
LIMITS	LBS/FT (2)	DIMENSIONS - INCHES			
		A	B	C	D
MIN.	2.40	1 1/4	2 1/2	1	1/2
MAX.	2.80	1 5/8	3 1/4	1 3/8	3/4

(2) WEIGHT BEFORE GALVANIZING OR PUNCHING. LIMITS SHOWN ARE ABSOLUTE. NO FURTHER WEIGHT, DIMENSIONAL OR COMMERCIAL TOLERANCE WILL BE ACCEPTABLE.



HOLE PUNCHING TO EQUAL 3/8" DIAMETER HOLES, ONE INCH CENTER TO CENTER, BEGINNING ONE-HALF INCH FROM THE END AND CONTINUING THE ENTIRE LENGTH OF THE POST.

OBJECT MARKER POST AND  
FASTENER DETAILS

NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

TYPE D GUARDRAIL IS ACCESS RESTRAINT AND VISUAL TARGET VALUE ONLY. IT HAS NO REDIRECTIVE CAPABILITY.



**MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION**

105 WEST CAPITOL  
JEFFERSON CITY, MO 65102  
1-888-ASK-MODOT (1-888-275-6636)

**SIGN MOUNTING DETAILS  
OBJECT MARKERS FOR  
ROAD CLOSURE**



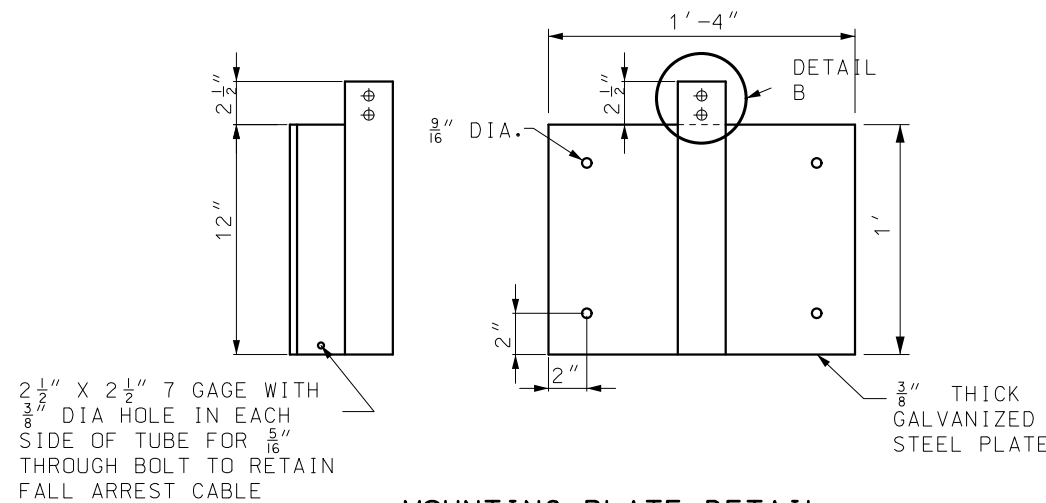
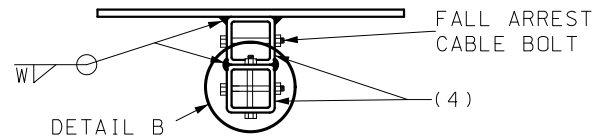
THIS SHEET HAS BEEN  
SIGNED, SEALED AND DATED  
ELECTRONICALLY.

**903.03BN**

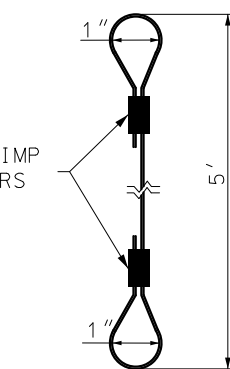
SHEET NO.  
**15 OF 16**

DATE EFFECTIVE: 01/01/2021

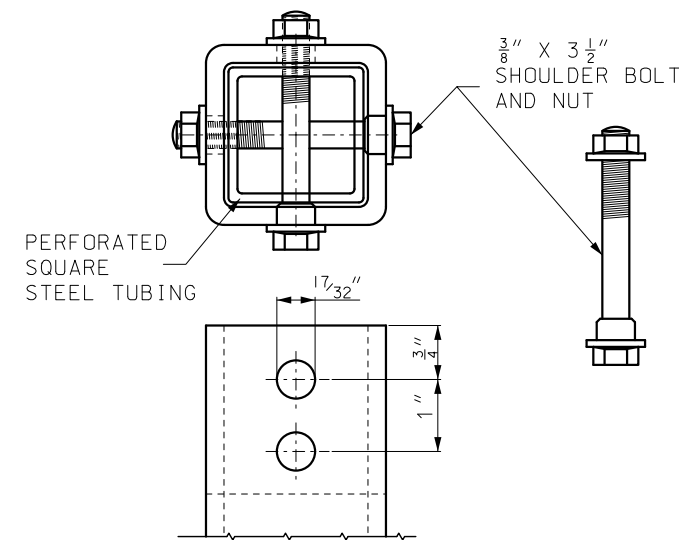
DATE PREPARED: 10/14/2020



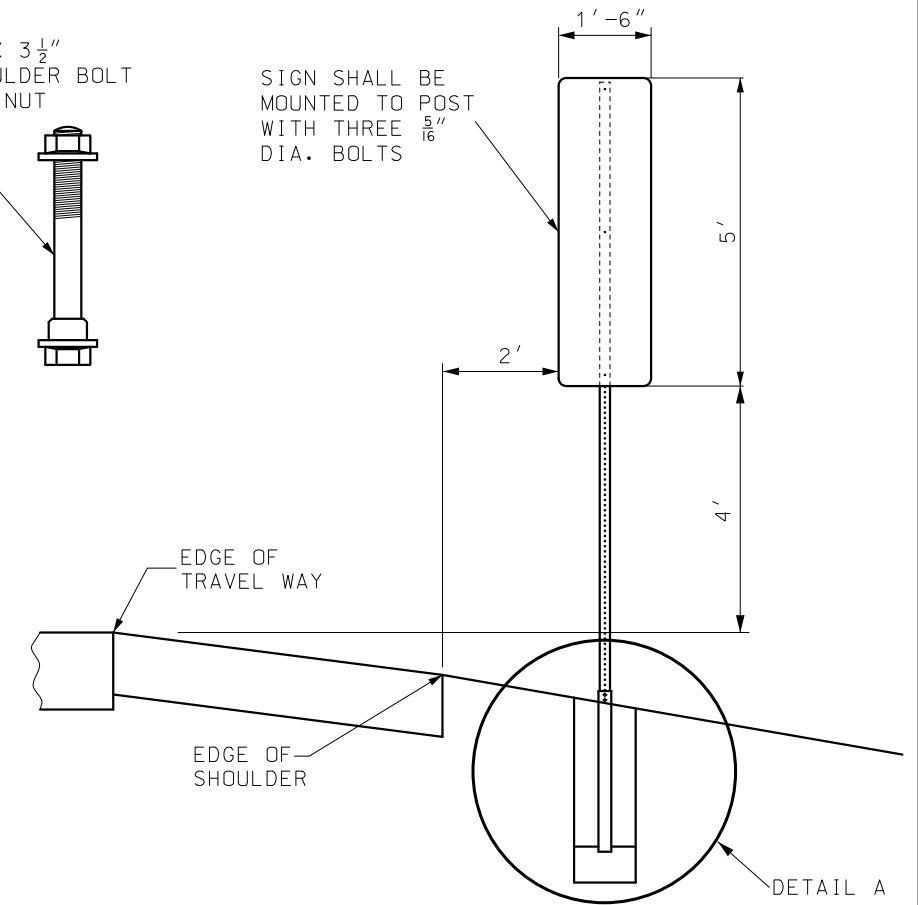
MOUNTING PLATE DETAIL



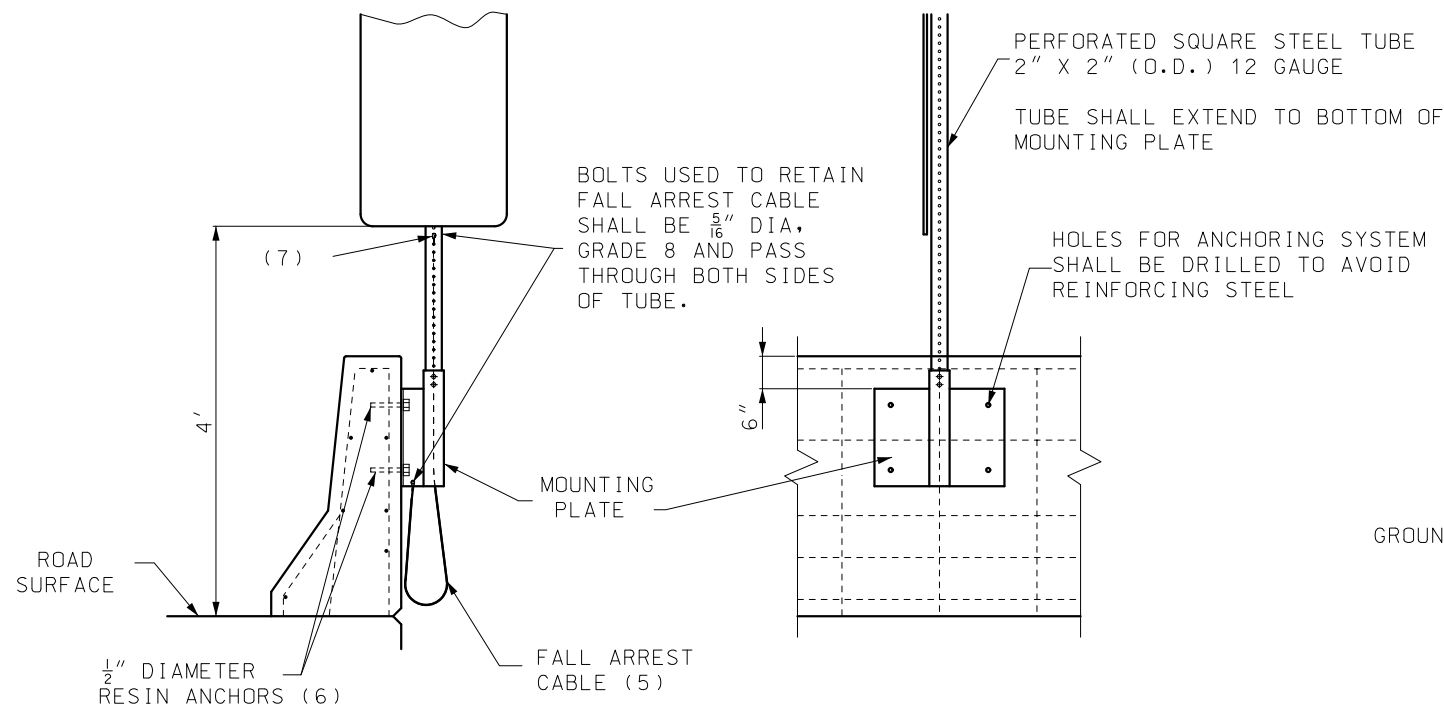
FALL ARREST CABLE DETAIL



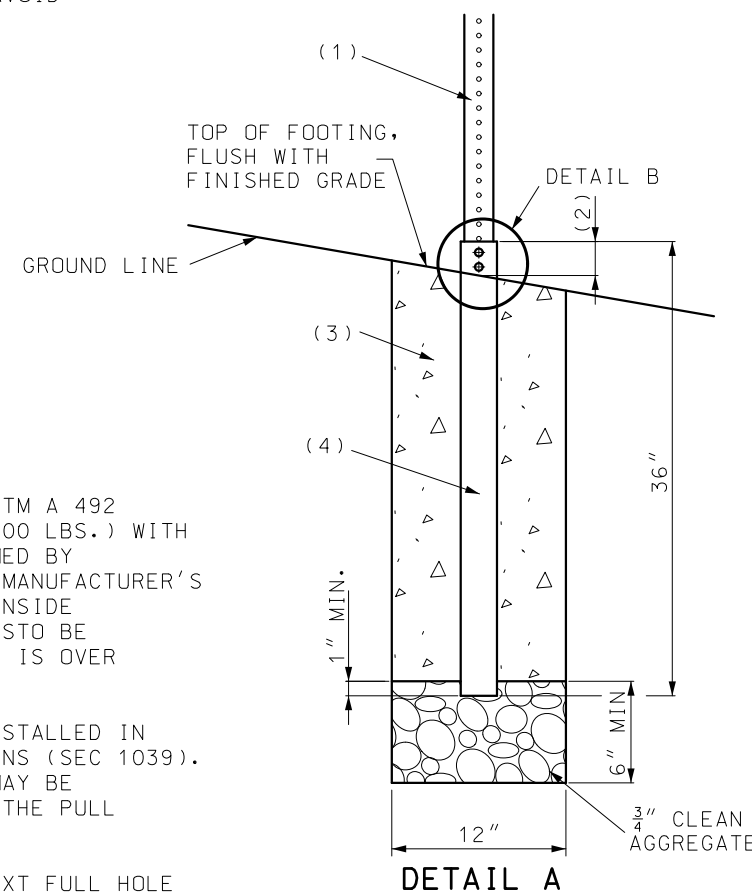
DETAIL B SHOULDER BOLT



GROUND INSTALLATION



BARRIER WALL INSTALLATION



DETAIL A

NOTES:

FOR GENERAL NOTES, SEE SHEET 1 OF 16.

PERFORATED SQUARE STEEL TUBE SHALL BE SECURED TO FOUNDATION TUBE OR BARRIER WALL MOUNTING PLATE WITH A SHOULDER BOLT PER PERFORATED SQUARE STEEL TUBE MANUFACTURER'S SPECIFICATION.

- (1) PERFORATED SQUARE STEEL TUBE 2" X 2" (O.D.) 12 GAUGE. TUBE SHALL EXTEND A MINIMUM OF 6" BELOW THE TOP OF THE FOUNDATION TUBE.
- (2) TUBE TO EXTEND ABOVE FOUNDATION ONLY ENOUGH TO ALLOW BOLT TO BE INSERTED 2 1/2" MAXIMUM.
- (3) CONCRETE MIX TO HOLD FOUNDATION TUBE PLUMB WITHOUT BRACING SHALL HAVE A MINIMUM OF 5.5 SACKS OF CEMENT PER CUBIC YARD AND A MAXIMUM SLUMP OF 2 1/2".
- (4) 2 1/2" X 2 1/2" (O.D.) SQUARE TUBE GALVANIZED 7 GAGE WITH TWO 17/32" DIAMETER HOLES IN EACH FACE 3/4" BELOW TOP OF TUBE.
- (5) 1/8" X 5' LONG STAINLESS STEEL CABLE (ASTM A 492 TYPE 304 MINIMUM BREAKING STRENGTH 200 LBS.) WITH A 1" DIA. LOOP AT EACH END FORMED BY MECHANICAL CRIMP TYPE CONNECTION PER MANUFACTURER'S SPECIFICATIONS. CABLE IS TO BE RUN INSIDE PERFORATED SQUARE STEEL TUBE. CABLE IS TO BE USED ONLY WHEN SIGN MOUNTING LOCATION IS OVER ANOTHER TRAVELWAY.
- (6) 1/2" DIAMETER RESIN ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD SPECIFICATIONS (SEC 1039). AN APPROVED MECHANICAL TYPE ANCHOR MAY BE USED IF THE DEVICE EQUALS OR EXCEEDS THE PULL TEST REQUIREMENTS OF SEC. 1039.
- (7) FALL ARREST CABLE TO BE SECURED TO NEXT FULL HOLE BELOW SIGN

<p><b>MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION</b></p> <p>105 WEST CAPITOL JEFFERSON CITY, MO 65102 1-888-ASK-MODOT (1-888-275-6636)</p>	
<p>STATE OF MISSOURI NICOLE A. KOLB HOOD NUMBER PE-2001018754 PROFESSIONAL ENGINEER</p> <p>THIS SHEET HAS BEEN SIGNED, SEALED AND DATED ELECTRONICALLY.</p>	<p><b>SIGN MOUNTING DETAILS EMERGENCY REFERENCE MARKERS</b></p>
<p>DATE EFFECTIVE: 01/01/2021 DATE PREPARED: 10/14/2020</p>	<p>903.03BN</p>
<p>SHEET NO. 16 OF 16</p>	