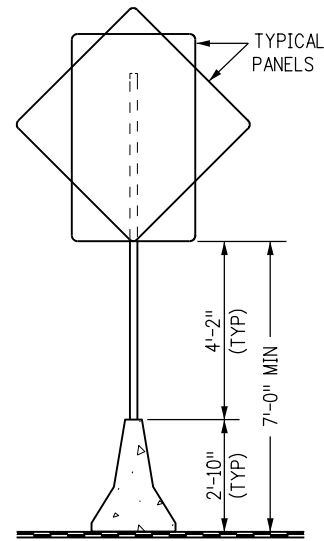


**GENERAL NOTES**

- FOR DETAILS OF CONCRETE BARRIER (CAST-IN-PLACE AND/OR PRECAST), SEE STANDARD PLANS M-606-13, M-606-14, AND M-606-15.
- FOR SIGN PANEL FABRICATION DETAILS, SEE STANDARD PLANS S-614-2, S-614-3, AND S-614-4.
- SOCKET SYSTEMS AND SLIP BASES SHALL BE ASSEMBLED ACCORDING TO STANDARD PLAN S-614-8.
- BARRIER WALLS SHALL BE SUPPORTED TO PREVENT DEFORMATION DURING PLACEMENT OF SLIPBASE STUB OR SOCKET ON CAST-IN-PLACE INSTALLATIONS.
- THE ENGINEER SHALL ESTABLISH LOCATIONS FOR ALL SIGN POSTS IN ACCORDANCE WITH DETAILS SHOWN ON THE PLANS.
- ALL SIGN POSTS SHALL BE MOUNTED PLUMB.
- BOLTS, NUTS, WASHERS AND ANCHOR BOLTS SHALL CONFORM TO ASTM A307. THEY SHALL ALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 OR ASTM A164.
- ALL STEEL CUTS SHALL PREFERABLY BE SAW CUTS; HOWEVER, FLAME CUTTING WILL BE PERMITTED PROVIDED ALL EDGES ARE GROUND.
- MOUNTING SYSTEM FOR EACH SIGN LOCATION SHALL BE AS SHOWN ON THE PLANS.
- ALL WELDING IS TO BE IN ACCORDANCE WITH AWS SPECIFICATIONS OF CURRENT ISSUE AND SHALL BE CONTINUOUS.
- ANCHOR BOLTS FOR RETRO-FIT INSTALLATION SHALL BE 'HILTI KWIK HUS-EZ' SCREW ANCHORS AND SHALL BE DRILLED AND FILLED WITH APPROVED EPOXY GROUT IN 2 INCH HOLES FOR 7/8-INCH BOLTS AND 1-1/2 INCH HOLES FOR 1/2-INCH BOLTS.
- RETRO-FIT INSTALLATION PROCEDURE SHALL NOT BE USED ON NEW CONSTRUCTION WITHOUT APPROVAL OF THE ENGINEER.
- SIGN PANELS, MOUNTED ON CONCRETE BARRIER, SHALL NOT ENCRDACH THE TRAVEL LANE.

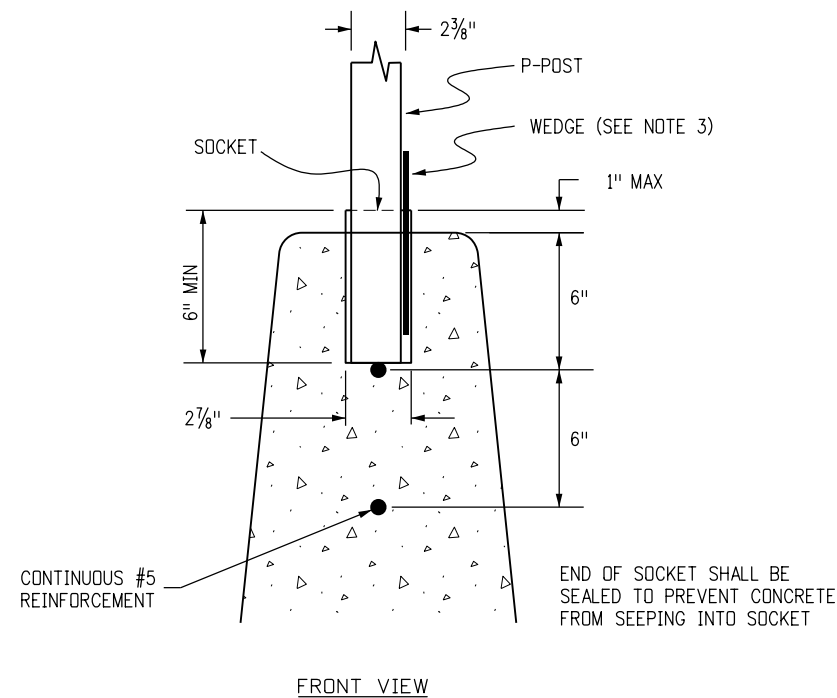


**TYPICAL ELEVATION**

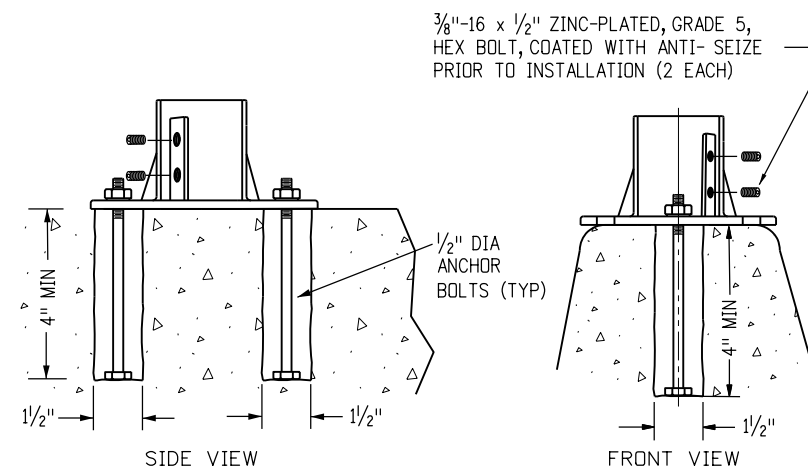
POST SELECTION TABLE (90 MPH WIND LOAD DESIGN)		SIGN PANEL WIDTH						
SIGN PANEL HEIGHT								
	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	5'-0"	
1'-6"	P	P	P	P	P	P	P1	
2'-0"	P	P	P	P	P	P	P1	
2'-6"	P	P	P	P	P1	P1	P1	
3'-0"	P	P	P	P	P1	P1	P1	
3'-6"	P	P	P1	P1	P1	P1	P1	
4'-0"	P	P	P1	P1	P1	P1	P1	
5'-0"	P1	P1	P1	P1	P1	P1	P1	
6'-0"	P1	P1	P1	P1	P1	P1	P1	
7'-0"	P1	P1	P1	P1	P1	P1	P2	
8'-0"	P1	P1	P1	P1	P2	P2	P2	

**DIAMOND PANELS (30", 36" AND 48" SIDES) - P1**

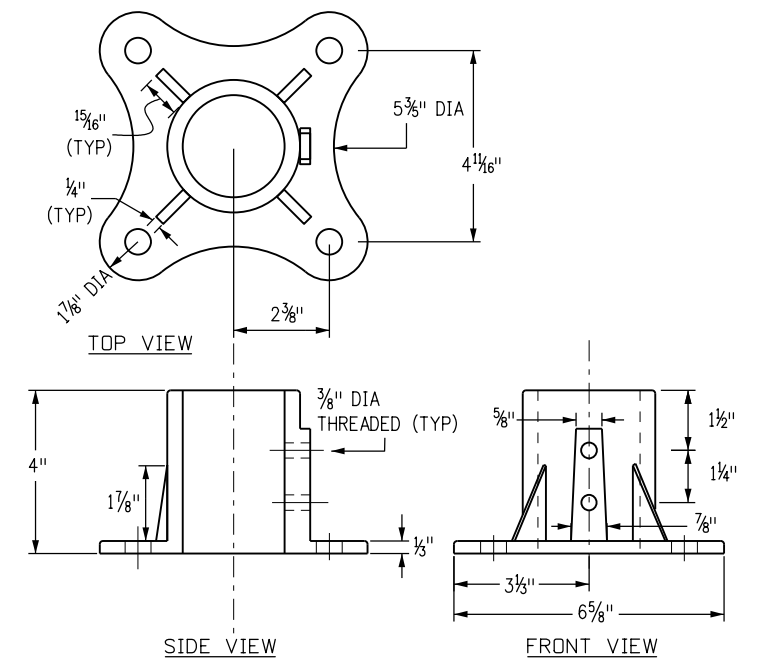
POST TYPE	P	P1	P2	FOR DETAILED POST SPECIFICATIONS SEE STANDARD PLAN S-614-8
OUTSIDE DIAMETER	2.375"	2.875"	2.875"	
WALL THICKNESS	0.080"	0.160"	0.276"	



**SOCKET SYSTEM (P POST ONLY)**



**SURFACE MOUNT CASTING (P POST ONLY)**



**SURFACE MOUNT CASTING DETAIL (P POST ONLY)**

**CAST-IN-PLACE CONCRETE BARRIER INSTALLATION**

**RETRO-FIT CONCRETE BARRIER INSTALLATION**

Computer File Information		Sheet Revisions		Colorado Department of Transportation		CONCRETE BARRIER SIGN POST INSTALLATIONS		STANDARD PLAN NO.	
Creation Date: 07/04/12		Date:	Comments		2829 W. Howard Pl. Denver, CO 80204 Phone: 303-757-9436 FAX: 303-757-9219	<b>CONCRETE BARRIER SIGN POST INSTALLATIONS</b>		S-614-21	
Created By: Lee		09/21/20	REVISION OF NOTE 13					Standard Sheet No. 1 of 2	
Last Modification Date: 09/21/2020					MKB	Issued By: Traffic & Safety Engineering Branch July 31, 2019		Project Sheet Number:	
Last Modified By: DiNardo									
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English									

### SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE REQUIREMENTS

FOR 2 7/8 INCH POSTS (P1 OR P2 POSTS)  
 FOR CONCRETE SURFACES GREATER THAN 7 INCHES THICK  
 FOR CONCRETE SURFACES GREATER THAN 12 INCHES IN WIDTH

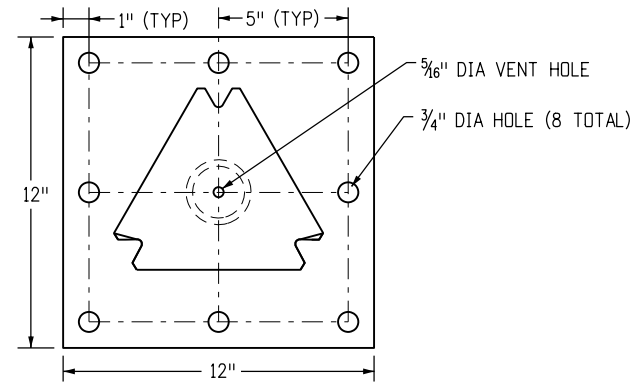
#### MOUNTING HARDWARE

- 8 - EACH 5/8" x 5 1/2" INCH LONG 'HILTI KWIK HUS-EZ' SCREW ANCHORS
- 16 - EACH 5/8" INCH FLAT WASHERS
- 8 - EACH 5/8" INCH LOCK WASHERS
- 8 - EACH 5/8" INCH NUTS

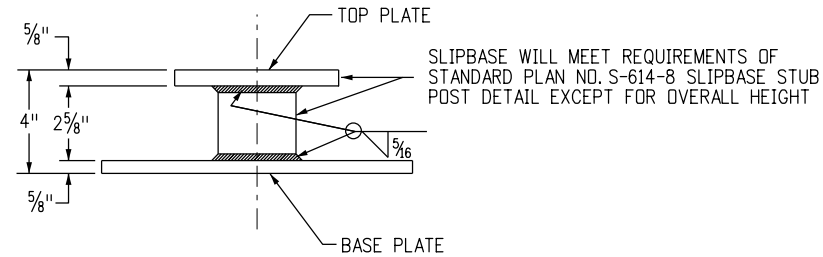
ALL HARDWARE WILL BE GALVANIZED OR ZINC PLATED.

#### INSTALLATION REQUIREMENTS:

- DRILL: (8) - 5/8" INCH HOLES 6 INCH DEEP, CLEAN HOLE PRIOR TO INSTALLING ANCHORS
- USE ADDITIONAL WASHERS FOR SHIMMING TO LEVEL BASE PLATE.

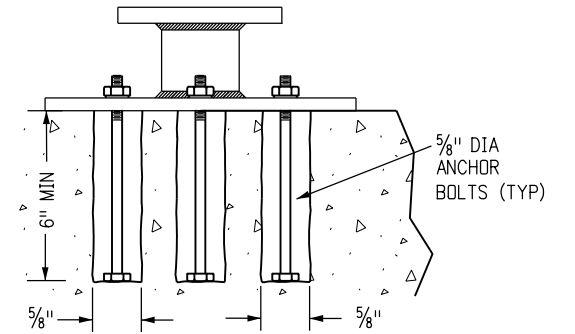


TOP VIEW



SIDE VIEW

**BASE PLATE FABRICATION REQUIREMENTS:**  
 BASE PLATE: 3/4" INCH ASTM A 36 PLATE STEEL  
 PIPE STUB: 3 INCH NOMINAL SCHEDULE 80, ASTM A 500 GR B  
 TOP PLATE: MUST BE COMPATIBLE WITH SLIPBASE CASTING FROM STANDARD PLAN NO. S-614-8  
 MEET ASTM A 123 GALVANIZING AFTER FABRICATION IS COMPLETED.



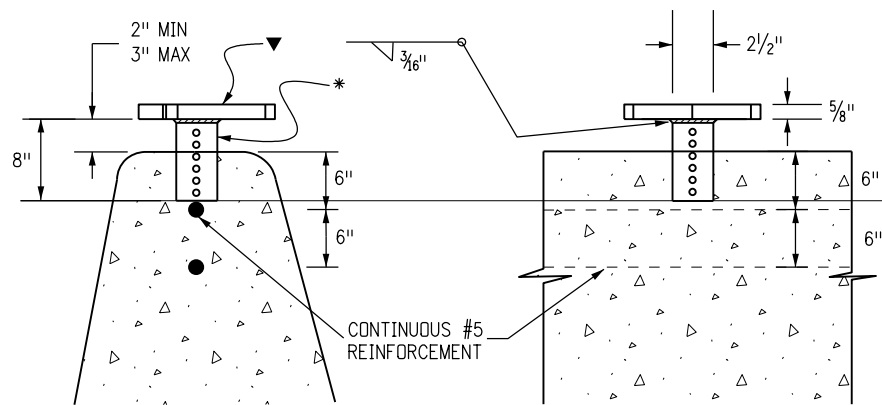
SIDE VIEW

### SURFACE MOUNT SLIPBASE TUBULAR STEEL SIGN BASE NOTES

1. REFER TO SIGNING PLANS FOR SIGN LOCATIONS AND HEIGHT
2. MINIMUM ALLOWABLE TENSION CAPACITY FOR WEDGE ANCHORS = 3000 LBS.
3. MAXIMUM ALLOWABLE MOMENT FOR SIGN BASE = 5.13 kip-ft.

### SURFACE MOUNT CASTING DETAIL (P1 & P2 POSTS)

### SURFACE MOUNT CASTING (P1 & P2 POSTS)



FRONT VIEW

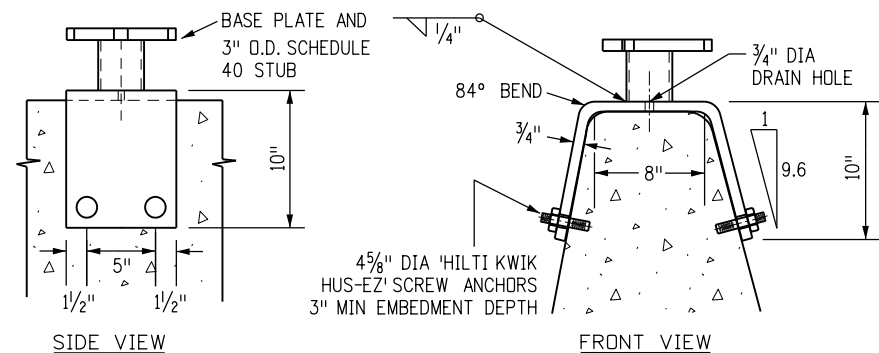
SIDE VIEW

▼ BASE PLATE SHALL BE 5/8" ASTM A-36, 441 OR 572 STEEL PLATE. SEE STANDARD PLAN S-614-8 FOR DIMENSIONS.

\* BASE STUB SHALL BE 2 1/2" SQUARE 10 GAGE PERFORATED TUBING, FABRICATED AND GALVANIZED CONFORMING TO ASTM A-153

### SLIPBASE BARRIER STUB (P1 & P2 POSTS)

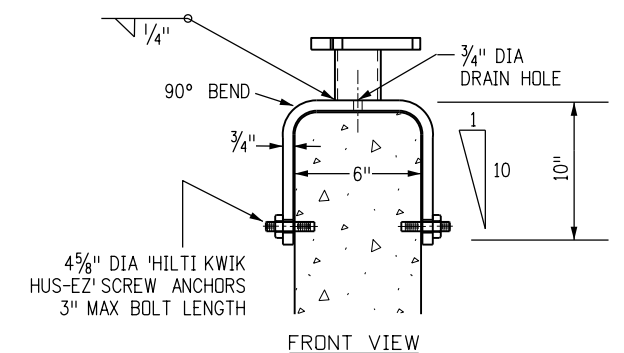
### CAST-IN-PLACE CONCRETE BARRIER INSTALLATION



SIDE VIEW

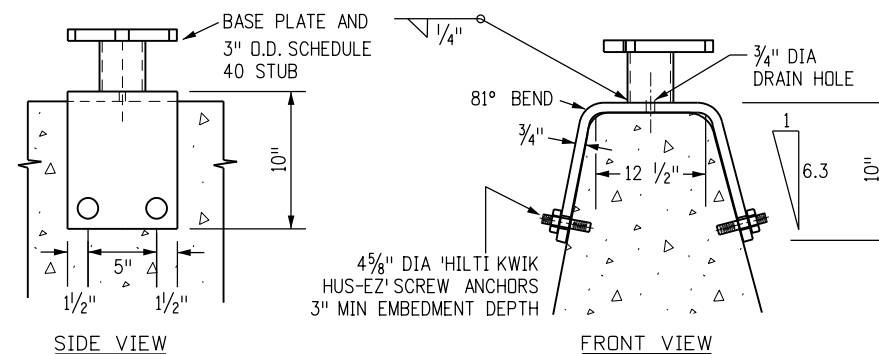
FRONT VIEW

TYPE 7 INSTALLATION



FRONT VIEW

CONCRETE GLARE SCREEN INSTALLATION



SIDE VIEW

FRONT VIEW

TYPE 9 INSTALLATION

### SADDLE BRACKET (P1 & P2 POSTS)

### RETRO-FIT CONCRETE BARRIER INSTALLATION

#### Computer File Information

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Created By: Lee
Last Modification Date: 09/21/2020
Last Modified By: KERSHNER
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English

#### Sheet Revisions

Date:	Comments
09/21/20	CREATED NEW BRACKET DETAILS AND ANGLE FOR TYPE 9 BARRIER

Colorado Department of Transportation



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Traffic & Safety Engineering

MKB

## CONCRETE BARRIER SIGN POST INSTALLATIONS

Issued By: Traffic & Safety Engineering Branch July 31, 2019

STANDARD PLAN NO.

S-614-21

Standard Sheet No. 2 of 2

Project Sheet Number: