

Commonwealth of Pennsylvania  
Department of Transportation

**SPECIFICATION FOR BREAKAWAY STEEL SQUARE POSTS**

October 10, 1997

**1. DESCRIPTION**

This specification covers the requirements for furnishing breakaway steel square posts.

**2. GENERAL REQUIREMENTS**

All items shall conform to the required shape, dimensions, and gauge as indicated on the attached drawings.

**3. MATERIAL REQUIREMENTS**

**3.1 Sign Posts, Anchor Posts, Anchor Sleeves, and Splice Sleeves.** All units shall be roll formed conforming to ASTM A 570 or A 653, Grade 50, hot rolled carbon sheet steel in either 12 gauge (0.105 inch) or 14 gauge (0.083 inch).

**3.2 Bolts and Nuts.** These units shall be ASTM-307.

**4. FABRICATION REQUIREMENTS**

**4.1 Sign Posts, Anchor Posts, Anchor Sleeves, and Splice Sleeves.** All sign posts and splice sleeves shall have 7/16-inch diameter holes or die-cut knockouts on 1-inch centers on all four sides. All anchor posts and anchor sleeves shall have 7/16-inch diameter holes on 1-inch centers on all four sides.

**4.2 Auxiliary Fitting.** All fittings shall have 7/16-inch diameter holes and/or lugs, 1-inch on centers.

**4.3 Tolerances.** Tolerances shall conform to the following:

1. Permissible variation in straightness is 1/16-inch in 3 feet.
2. Standard corner radius is 5/32-inch  $\pm$  1/64-inch.
3. Weld flash on corner welded square tubing shall permit a 9/64-inch radius gauge to be placed in the corner.
4. Permissible tolerance on hole size is  $\pm$  1/64-inch.
5. Permissible tolerance on hole spacing is  $\pm$  1/8-inch in 4 feet.

6. Permissible squareness tolerances for square posts, anchors, and sleeves are  $\pm 0.09$ -inch for 1.5";  $\pm 0.010$ -inch for 1.75";  $\pm 0.012$ -inch for 2";  $\pm 0.014$ -inch for 2 3/16" and 2.25";  $\pm 0.016$ -inch for 2.5" square posts, anchors, and sleeves; and  $\pm 0.018$ -inch for 3" square anchors.

7. Permissible twist in 3 feet is 0.050-inch for 1.5"; 0.062-inch for 1.75" through 2.25" posts, anchors, and sleeves and 0.075-inch for 2.5" and 3" posts, anchors, and sleeves.

8. Consecutive size tubes 12 gauge (0.105-inch), or 14 gauge (0.083-inch), shall telescope freely for 10 feet.

## 5. COATING REQUIREMENTS

Galvanize or coat sign posts, anchor posts, anchor sleeves and splice sleeves by the hot-dip method both inside and out in accordance to ASTM A 653, Designation G90. A minimum coating weight of 0.90 ounce per square foot of surface area, triple-spot test, and minimum coating weight of 0.80 ounce per square foot of surface area, single-spot method is required. Welds shall be zinc coated after scarfing operation.

## 6. PACKAGING

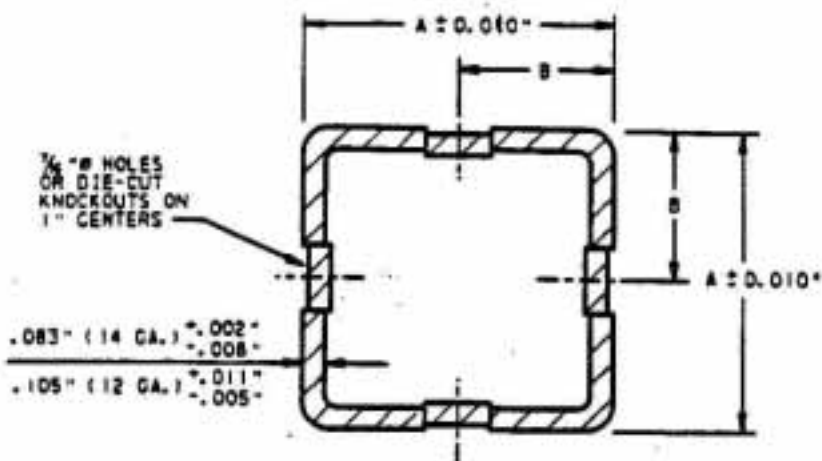
6.1 Bundling. The following items shall be bundled or boxed accordingly:

- ◆ Sign/Anchor Posts.....25 per bundle
- ◆ Anchor/Splice Sleeves.....25 per bundle
- ◆ Bolts and Nuts.....250 sets per box or bag
- ◆ Corner Bolts and Nuts.....250 sets per box or bag
- ◆ Drive Rivets.....250 sets per box

6.2 Crating. Small parts (such as auxiliary fittings in boxes, bolts and nuts in boxes or bags, drive rivets in boxes, and drive caps) shall be packed in wooded crates for shipping. More than one item may be combined in the same crate, but crates shall not exceed 2,000 pounds in total weight. The name and quantity of each commodity contained in the crate shall be clearly marked on all four sides of the crate.

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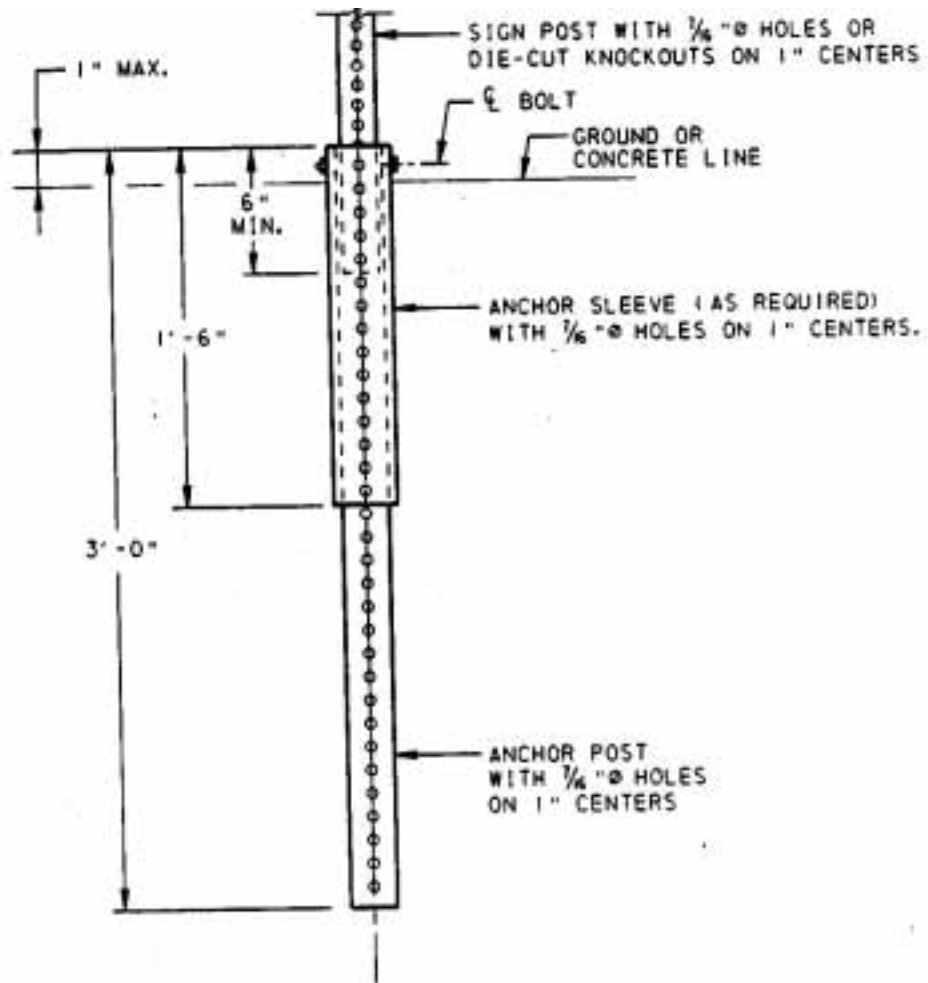
A. H. Breneman, P.E.  
Chief, Traffic Engineering and  
Operations Division  
Bureau of Highway Safety and  
Traffic Engineering



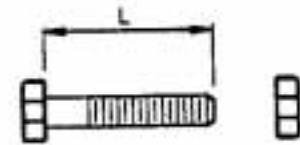
SIGN POST				ANCHOR POST				ANCHOR SLEEVE #				SPLICE SLEEVE			
SIZE	DIMENSION		GAUGE	SIZE	DIMENSION		GAUGE	SIZE	DIMENSION		GAUGE	SIZE	DIMENSION		GAUGE
	A	B			A	B			A	B			A	B	
1.75"	1 3/4"	1 1/8"	14	2.0"	2"	1"	12	2.25"	2 1/4"	1 1/8"	12	1.50"	1 1/2"	3/4"	14
2.0"	2"	1"	14	2.25"	2 1/4"	1 1/8"	12	2.50"	2 1/2"	1 1/4"	12	1.75"	1 3/4"	1/2"	14
2.25"	2 1/4"	1 1/8"	14	2.50"	2 1/2"	1 1/4"	12	3.00"	3"	1 1/2"	3/8"	2.00"	2"	1"	14

\* ONLY REQUIRED FOR INSTALLATIONS IN CONCRETE.

## STEEL SQUARE POSTS

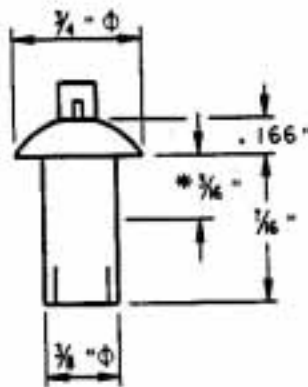
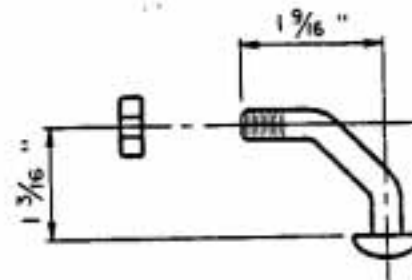
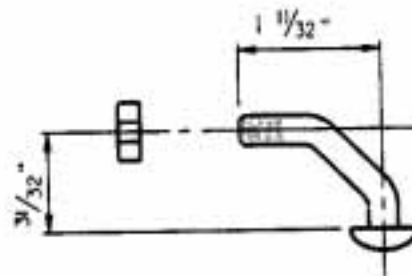


**INSTALLATION DETAIL**



SIGN POST SIZE	DIMENSION L
1.75"	3"
2.0"	3"
2.25"	3 1/2"
2.50"	3 1/2"

**3/8" BOLTS & NUTS**  
**CADMIUM PLATED STEEL**



\* NOMINAL GRIP

**3/8" DRIVE RIVET**  
**CADMIUM PLATED STEEL**

**5/16" CORNER BOLTS & NUTS**  
**CADMIUM PLATED STEEL**