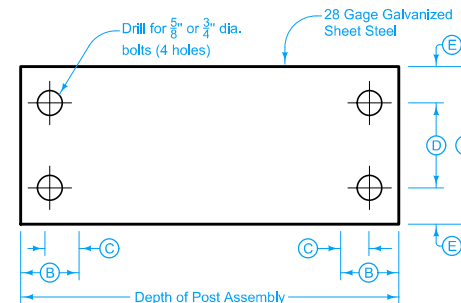
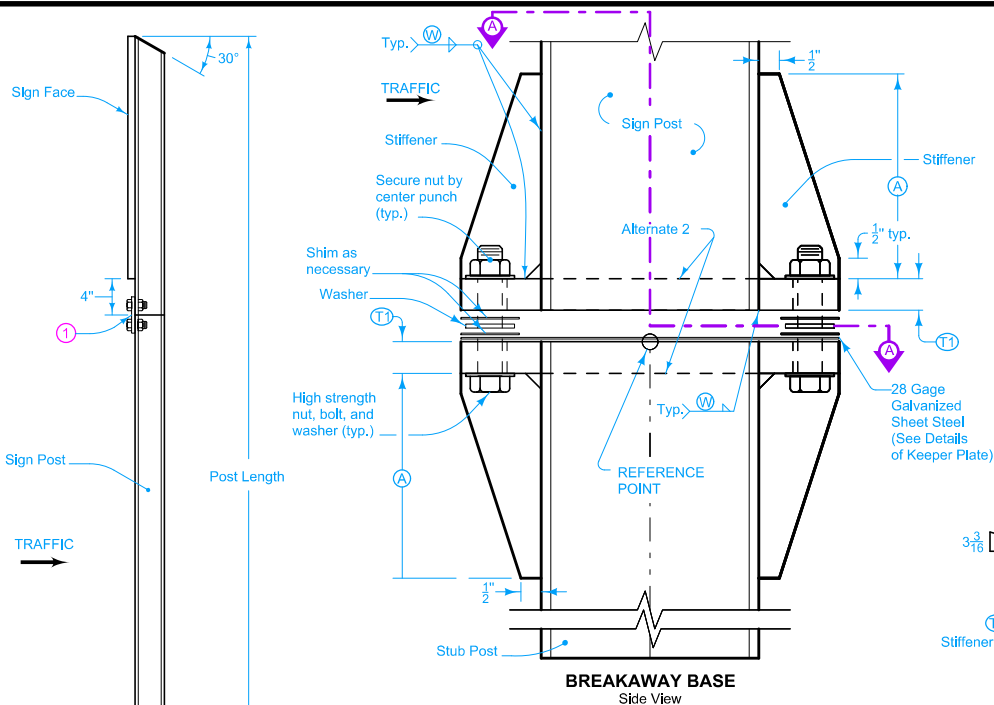
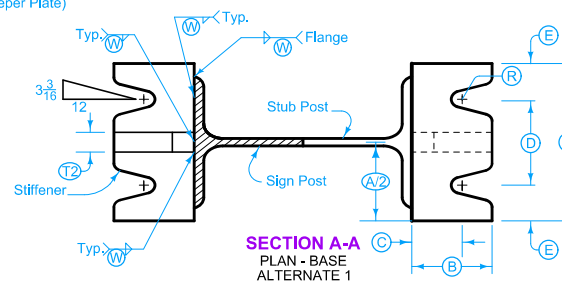
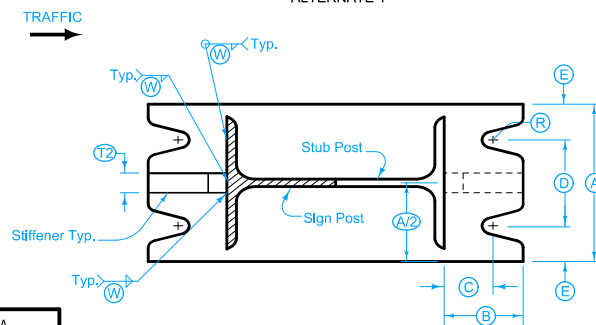




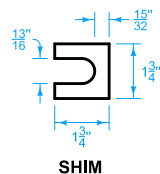
KEEPER PLATE



SECTION A-A  
PLAN - BASE  
ALTERNATE 1



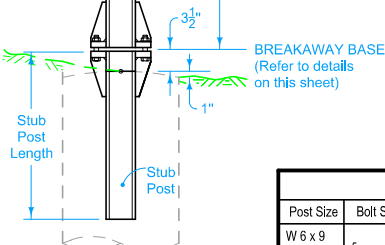
SECTION A-A  
PLAN - BASE  
ALTERNATE 2



SHIM

| BREAKAWAY BASE DATA |                                               |     |        |        |        |        |      |        |        |
|---------------------|-----------------------------------------------|-----|--------|--------|--------|--------|------|--------|--------|
| Post Size           | Bolt Size & Torque                            | (A) | (B)    | (C)    | (D)    | (E)    | (T1) | (T2)   | (R)    |
| W 6 x 9             | 5/8" dia. x 2 3/4"<br>Torque = 37,50 ft. lbs. | 5"  | 2"     | 1 1/4" | 2 3/4" | 1 1/8" | 3/4" | 1 1/2" | 1 1/4" |
| W 6 x 12            |                                               |     |        |        |        |        |      |        |        |
| W 6 x 15            |                                               |     |        |        |        |        |      |        |        |
| W 8 x 18            |                                               |     |        |        |        |        |      |        |        |
| W 8 x 21            | 3/4" dia. x 3 1/2"<br>Torque = 62,50 ft. lbs. | 6"  | 2 1/4" | 1 3/8" | 3 1/2" | 1 1/4" | 1"   | 3/4"   | 1 3/8" |
| W 10 x 22           |                                               |     |        |        |        |        |      |        |        |
| W 10 x 26           |                                               |     |        |        |        |        |      |        |        |
| W 12 x 26           |                                               |     |        |        |        |        |      |        |        |

| POST DATA |             |
|-----------|-------------|
| Post Size | Stub Length |
| W 6 x 9   | 2'-6"       |
| W 6 x 12  |             |
| W 6 x 15  |             |
| W 8 x 18  |             |
| W 8 x 21  | 3'-0"       |
| W 10 x 22 |             |
| W 10 x 26 |             |
| W 12 x 26 |             |



SIGN INSTALLATION  
Side View

Place signpost by installing shims. Furnish two shims each of 0.012" and 0.032" thickness (total of 4 per post). Shims to be brass stock or strip conforming to ASTM B 36.

Grind smooth all welds and galvanizing between Base Plates.

(W) Welds to be continuous fillet welds and of a depth equal to the thickness of the flange for the post unless otherwise specified.

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.

Base Plate(s);  
The following alternates are considered equivalent:

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

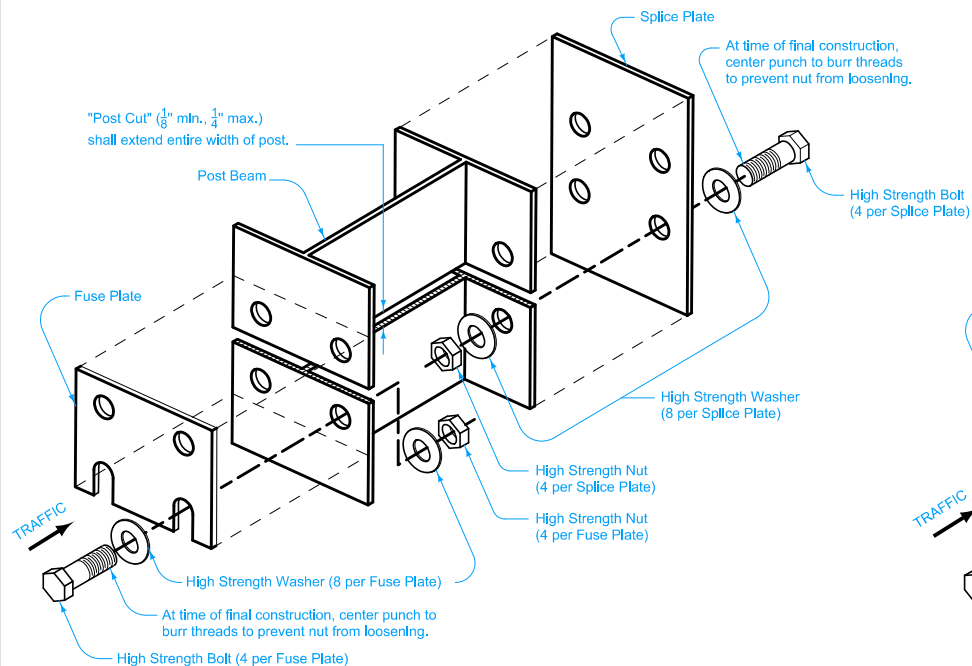
Alternate 2 - Weld base plate (1 each) to end of sign post and stub post by continuous fillet weld. Properly match and align the bolt holes and notches in the stub post plate and the sign post plate as indicated herein.

The contract price for size of footing required to be full compensation of footing as detailed hereon, including all necessary excavation regardless of character.

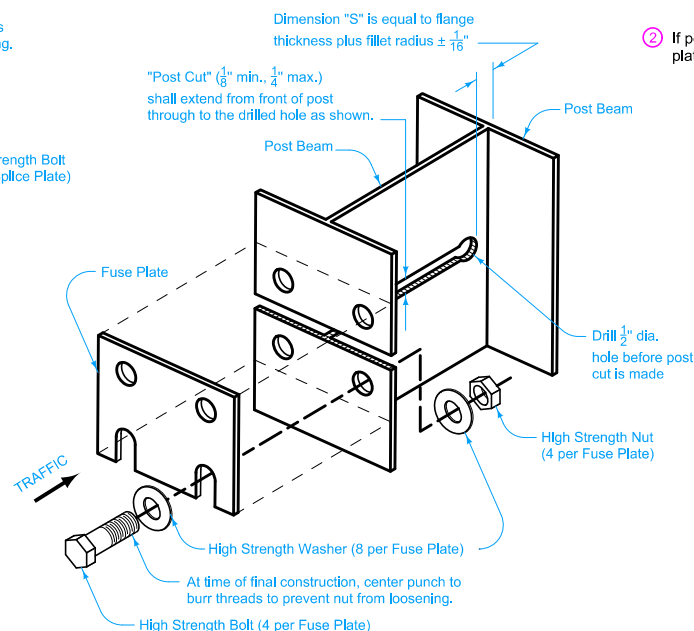
① Not for single post installations.

Possible Contract Item:  
Steel Breakaway Sign Post

|                                                                                                                                                                                                                                                           |                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| <p>Iowa Department of Transportation</p> <p><b>STANDARD ROAD PLAN</b></p> <p>REVISIONS: Added alternate base plates.</p> <p><i>Deanna Muford</i><br/>APPROVED BY DESIGN METHODS ENGINEER</p> <p><b>SUPPORT STRUCTURES -<br/>STEEL BREAKAWAY POSTS</b></p> | <p>REVISION</p> <p>4 10-18-11</p> |
|                                                                                                                                                                                                                                                           | <p><b>SI-113</b></p>              |
|                                                                                                                                                                                                                                                           | <p>SHEET 1 of 3</p>               |
|                                                                                                                                                                                                                                                           |                                   |



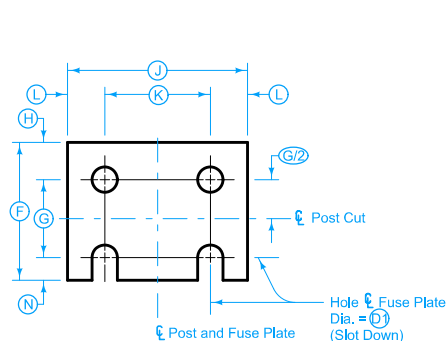
**Hinge Alternate 1**  
(With Splice Plate)



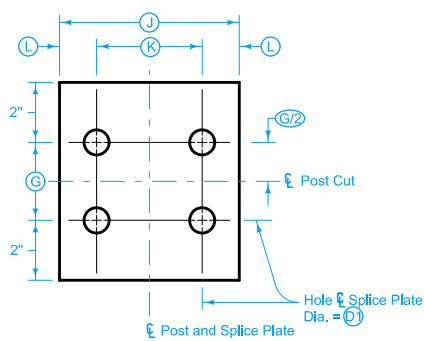
**Hinge Alternate 2**  
(One-Piece Post)

② If post is to be transported after cut is made, bolt a "splice plate" to front of post to prevent damage to the post.

# **FUSE PLATE ASSEMBLY**



**FUSE PLATE**  
(Thickness 13)



**SPLICE PLATE**  
(Thickness 14)

| Bolt Size | Torque       |
|-----------|--------------|
| 1"        | 100 Ft. Lbs. |
| 5/8"      | 180 Ft. Lbs. |
| 3/4"      | 320 Ft. Lbs. |
| 7/8"      | 470 Ft. Lbs. |

| FUSE AND SPLICE PLATE DATA |           |        |        |        |        |        |        |      |        |      |      |  |
|----------------------------|-----------|--------|--------|--------|--------|--------|--------|------|--------|------|------|--|
| Post Size                  | Bolt Dia. | F      | G      | H      | J      | K      | L      | N    | D      | T3   | T4   |  |
| W6x9                       | 1/2"      | 3 3/8" | 2"     | 1 3/8" | 4"     | 2 1/4" | 7/8"   | 3/2" | 0 1/8" | 1/4" | 1/4" |  |
| W6x12                      | 5/8"      | 3 3/4" | 2"     | 1 3/8" | 4"     | 2 1/4" | 7/8"   | 5/8" | 11/16" | 3/8" | 1/4" |  |
| W6x15                      | 3/4"      | 4 1/2" | 2 1/2" | 1 3/4" | 6"     | 3 1/2" | 1 1/4" | 3/4" | 13/16" | 1/2" | 1/4" |  |
| W8x18                      | 3/4"      | 4 1/2" | 2 3/4" | 1 3/4" | 5 1/4" | 2 3/4" | 1 1/4" | 3/4" | 13/16" | 1/2" | 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" |  |
| W10x22                     | 7/8"      | 5 3/8" | 3"     | 1 1/2" | 5 3/4" | 2 3/4" | 1 1/2" | 7/8" | 15/16" | 5/8" | 3/8" |  |
| W10x26                     | 7/8"      | 5 3/8" | 3"     | 1 1/2" | 5 3/4" | 2 3/4" | 1 1/2" | 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" |  |

Iowa Department of Transportation

REVISION

|   |          |
|---|----------|
| 4 | 10-18-11 |
|---|----------|

**STANDARD ROAD PLAN**

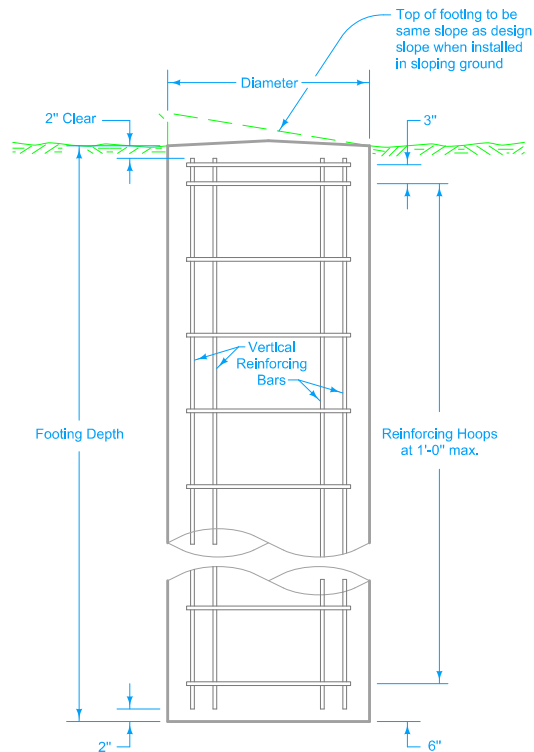
REVISIONS: Added alternate base plates.

*Deanna Muford*  
APPROVED BY DESIGN METHODS ENGINEER

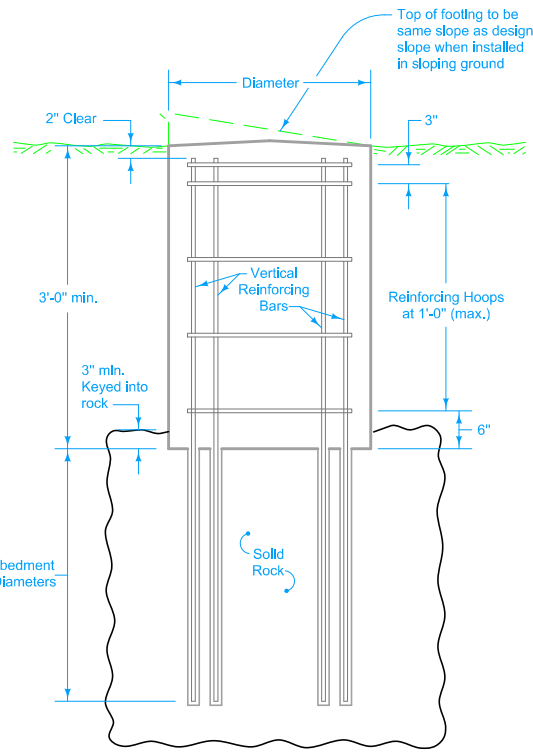
**SUPPORT STRUCTURES - STEEL BREAKAWAY POSTS**

**SI-113**

SHEET 2 of 3



**INSTALLATION  
NORMAL FOOTING IN EARTH**

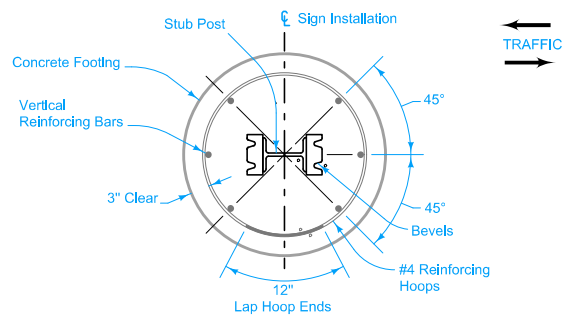


**ALTERNATE DESIGN  
FOOTING IN SOLID ROCK**

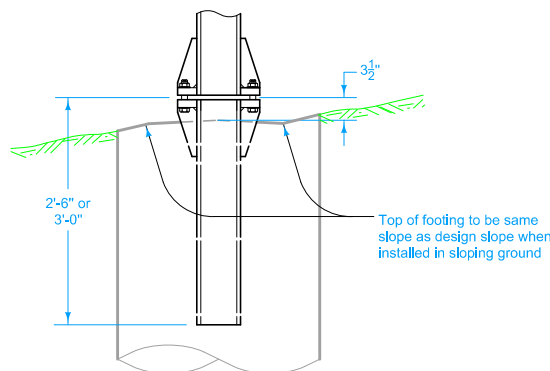
③ Lengths are for normal footings. Required length may vary where alternate rock design is used.

④ 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.

| FOOTING REINFORCING DATA |             |          |       |                    |          |
|--------------------------|-------------|----------|-------|--------------------|----------|
| Post Size                | Stub Length | Footing  |       | Vertical Rein. Bar |          |
|                          |             | Diameter | Depth | Size               | Length ③ |
| W6x9                     | 2'-6"       | 2'-0"    | 6'-0" | No. 6              | 5'-8"    |
| W6x12                    | 2'-6"       | 2'-0"    | 6'-0" | No. 6              | 5'-8"    |
| W6x15                    | 2'-6"       | 2'-0"    | 6'-6" | No. 6              | 6'-2"    |
| W8x18                    | 2'-6"       | 2'-0"    | 7'-0" | No. 6              | 6'-8"    |
| W8x21                    | 3'-0"       | 2'-8"    | 7'-6" | No. 8              | 7'-2"    |
| W10x22                   | 3'-0"       | 2'-8"    | 8'-0" | No. 8              | 7'-8"    |
| W10x26                   | 3'-0"       | 2'-8"    | 8'-6" | No. 8              | 8'-2"    |
| W12x26                   | 3'-0"       | 2'-8"    | 9'-0" | No. 8              | 8'-8"    |



**PLAN**  
(Reinforcing Placement and Sign Orientation)



**BREAKAWAY POST INSTALLATION**



**Iowa Department  
of Transportation**

**STANDARD ROAD PLAN**

REVISIONS: Added alternate base plates.

*Deanna Muford*  
APPROVED BY DESIGN METHODS ENGINEER

**SUPPORT STRUCTURES -  
STEEL BREAKAWAY POSTS**

|          |          |
|----------|----------|
| REVISION |          |
| 4        | 10-18-11 |

**SI-113**

SHEET 3 of 3