

Section 1094

1 1092-3 CERTIFICATION

2 Provide a Type 6 material certification in accordance with Article 106-3 for all retroreflective
3 sheeting used in the manufacture of signs certifying that the sheeting meets Section 1092.

4 SECTION 1094 5 GROUND MOUNTED SIGNS

6 1094-1 GROUND-MOUNTED SIGN SUPPORTS

7 (A) Breakaway or Simple Steel Beam Sign Supports

8 Fabricators of breakaway or simple steel beam sign supports shall be AISC Category I
9 certified.

10 Steel supports for Type A and B ground mounted signs shall be galvanized rolled steel
11 sections, either breakaway or simple design, as required by the contract. Fabricate
12 supports from plates, W shapes, and S shapes, as required by the contract, and they shall
13 conform to ASTM A36. Splices in the supports will not be permitted. Perform
14 galvanizing before assembly that conforms to ASTM A123. Cutting steel supports to
15 length after they have been galvanized will not be permitted in new construction. The
16 support(s) shall be uniformly straight to within 1/8" tolerance for pieces less than 20 ft in
17 length, and 1/4" tolerance for pieces over 20 ft in length.

18 Fabricate high strength bolts, nuts and washers required for breakaway supports from
19 steel in accordance with ASTM A325 and galvanize in accordance with ASTM B695,
20 Class 55.

21 (B) Three Pound Steel U-Channel Posts

22 Make 3-lb steel U-channel posts out of rerolled rail steel or new billet steel, conforming
23 to the mechanical requirements of ASTM A499, Grade 60, and the chemical
24 requirements of ASTM A1, for rails having nominal weights of 91 lb/yd or greater.
25 Proportion the cross section so a moment of 1,450 ft-lb, applied to the cross section
26 normal to the flanges, will produce an extreme fiber stress no greater than 39,500 psi.
27 Use posts that weight 3 lb/lf. Punch or drill all posts with 3/8" diameter holes on the
28 centerline, spaced 1" on centers, starting 1" from the top and extending to the bottom of
29 the posts. Galvanize these posts after fabrication for the full length and total area in
30 accordance with ASTM A123. The zinc coating inside of the 3/8" diameter holes shall
31 not exceed Specification requirements enough to prevent a 5/16" diameter bolt from
32 freely passing through.

33 Use U-channel post sections of the same general configuration as that shown in the
34 contract, however minor variations may be considered acceptable by the Engineer
35 provided all other requirements are met.

36 (C) Two Pound Steel U-Channel Posts

37 Use 2-lb steel U-channel posts that are variable length galvanized steel, U-shaped
38 channel posts.

39 Fabricate the U-channel posts from steel meeting ASTM A1008 or ASTM A499, or
40 an approved alternate. The posts shall weigh 2 lb/lf, and be of the length necessary to
41 meet the erection requirements of the contract. Before galvanizing, punch or drill
42 3/8" diameter holes on 1" centers, beginning 1" from the top of the post, for a minimum
43 distance equal to the vertical dimension of the respective sign or mile marker. Galvanize
44 these posts after fabrication in accordance with ASTM A123. The zinc coating inside of
45 the 3/8" diameter holes shall not exceed Specification requirements enough to prevent
46 a 5/16" diameter bolt from freely passing through.

1 U-channel post sections shall be of the same general configuration as that shown in the
 2 contract, however, minor variations may be considered acceptable by the Engineer,
 3 provided all other requirements are met.

4 **(D) Steel Square Tube Posts**

5 Use steel square tube posts of variable length galvanized steel. The post shall be
 6 a minimum 14 gauge steel square tube. Before galvanizing punch or drill all posts with
 7 3/8" diameter holes on the centerline, spaced 1" on centers, starting 1" from the top and
 8 extending to the bottom of the posts.

9 Galvanize these posts after fabrication for the full length and total area in accordance
 10 with ASTM A123. G90 zinc coating shall not be accepted. The zinc coating inside of
 11 the 3/8" diameter holes shall not exceed Specification requirements enough to prevent
 12 a 5/16" diameter bolt from freely passing through.

13 Steel square tube sections shall be of the same general configuration as that shown in the
 14 contract, however, minor variations may be considered acceptable by the Engineer,
 15 provided all other requirements are met.

16 **(E) Wood Supports**

17 Wood supports shall conform to Articles 1082-2 and 1082-3.

18 **1094-2 RIVETS FOR SIGN OVERLAYS**

19 Rivets for sign overlays shall be 1/8" diameter aluminum rivets of the pull through type, and
 20 be approved by the Engineer. Submit for approval several samples of rivets, along with
 21 adequate descriptive catalog literature.

22 **SECTION 1096**
 23 **OVERHEAD SIGN STRUCTURES**

24 **1096-1 ALUMINUM OVERHEAD SIGN STRUCTURES**

25 Materials for aluminum overhead sign structures shall conform to Article 1092-1 and
 26 *AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and*
 27 *Traffic Signals*. Where the Contractor proposes to use materials that are not covered by these
 28 references, such use will be contingent on the Engineer's approval of these materials.

29 **1096-2 STEEL OVERHEAD SIGN STRUCTURES**

30 Use Category I certified by the American Institute of Steel Construction Fabricators for steel
 31 overhead sign structures as required by Subarticle 1072-1(A). Use either structural carbon
 32 steel or structural low-alloy steel for steel overhead sign structures meeting *AASHTO LRFD*
 33 *Bridge Design Specifications*. Other steel may be used, subject to the approval of the
 34 Engineer. Structural steel that has been cold-rolled to increase the yield strength will be
 35 permitted. Mechanically galvanize all fasteners. Hot-dip galvanize all other components of
 36 the structural assembly after fabrication has been completed. The galvanizing shall meet
 37 ASTM B695, Class 55, for fasteners and ASTM A123 for other structural steel.

38 **1096-3 WELDING**

39 Perform all welding in the fabrication of the supports by AWS certified welders. Furnish
 40 a copy of the AWS certification for each welder used for fabrication. All welds shall be free
 41 of cracks, blow holes, slag, and other irregularities, and be wire brushed, sandblasted or
 42 otherwise cleaned.

43 Aluminum welding processes and procedures, shielding gases, preparation, weld quality,
 44 inspection and correction of welds, and the qualification of welding procedures, welders and
 45 welding operators will be governed by the AWS Structural Welding Code, D1.2.