



U.S. Department
Of Transportation
**Federal Highway
Administration**

400 Seventh St., S.W.
Washington, D.C. 20590

February 3, 1998

Refer to: HNG-14/SS-78

Mr. Frank T. Ellis
Highway Post Sales
SMI Steel-Southern Post Company
14340 Torrey Chase Boulevard- Suite 360
Houston, Texas 77014

Dear Mr. Ellis:

This is in reply to your January 13 letter to Mr. Henry Rentz regarding your company's steel flanged channel sign posts. You requested that your 3.0-kg/m (2.0-lb/ft) and 3.7-kg/m (2.5-ol/ft) posts meeting the requirements of ASTM A499-81 (re-rolled rail steel), Grade 60, be found acceptable for use on the National Highway System (NHS) where breakaway supports are required. You requested that one or two posts be acceptable within a 2.1-meter span when buried directly into strong soil, and up to 3 posts be found acceptable within a 2.1meter span when used with an overlap splice. In addition, you indicated that the spliced posts require soil plates on the stubs when used in "weak" soil. Drawings of the post sections are enclosed. You described your lap-splice hardware as follows:

1. Spacers: 25.4-mm (1.0-inch) diameter x 15.876-mm (0.625-inch) thick with 11.125-mm (0.438-inch hole), zinc plated;
2. Bolts: Hex head, fully threaded Grade 9, 7.9375-mm (5/16-inch) – 18 UNC x 1.5-inch (38-mm);
3. Nuts: Hex head, integral flanged lock nut, or standard Grade 9 hex head nut and lock washer.

The soil plates required in weak soil are to have a minimum size of 360 mm x 360 mm and 6.3 mm thick.

The following table summarizes the range of acceptable installations that have been tested using re-rolled rail steel U-channel supports:

Summary of Prior Testing on 4.5-kg/m (3lb/ft) U-Channel Posts

	Strong Soil Direct Bury	Strong Soil Spliced*	Weak Soil Direct Bury	Weak Soil Spliced*
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One Post	Yes	Yes	No	Yes**
Two Posts	Yes***	Yes	No	Yes**
Three Posts	No	Yes	No	Yes**

Notes:

*Spacers used in U-Channel overlap splices were internally threaded. The bolts in the splices were spaced at 100-mm center to center.

**Full scale testing has been done in weak soil on a spliced triple-post U-Channel support with soil plates on each base post. These soil plates (minimum size of 360 mm x 360 mm x 6.3 mm thick) are necessary for breakaway purposes when spliced U-channel supports are used in weak soil.

***A 1995 test of this configuration with a 1.5-m sign mounting height resulted in unacceptable roof and windshield deformation (velocity change was acceptable). Therefore, a minimum mounting height of 2.1 m to the bottom of the sign, as is recommended for all breakaway sign support installations, is necessary to avoid large passenger compartment deformation.

Your company's posts, fastener hardware, and soil plates are equivalent to breakaway supports previously found acceptable. Therefore, your company's 3.0-kg/m and 3.7-kg/m U-channel sign supports, conforming to ASTM A499-81, Grade 60 steel and the configurations outlined in the table above, are acceptable for use on the NHS, subject to the conditions cited, when requested by a State.

Our acceptance is limited to the breakaway characteristics of the supports systems and does not cover their structural features. Presumably you will supply potential users with sufficient information on structural design and installation requirements to ensure proper performance. We anticipate that the States will require certification from SMI Steel that the posts furnished have essentially the same chemistry, mechanical properties, and geometry as those you have described to us, and that they will meet the Federal Highway Administration change in velocity requirements.

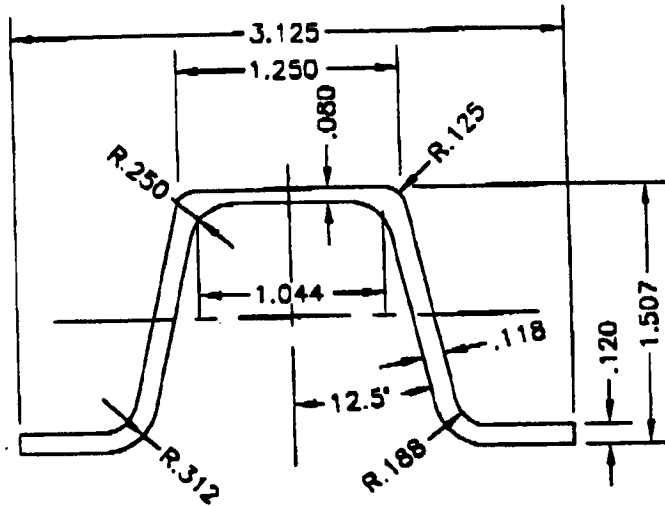
Sincerely yours,

Dwight A. Horne
Chief, Federal-Aid and Design
Division

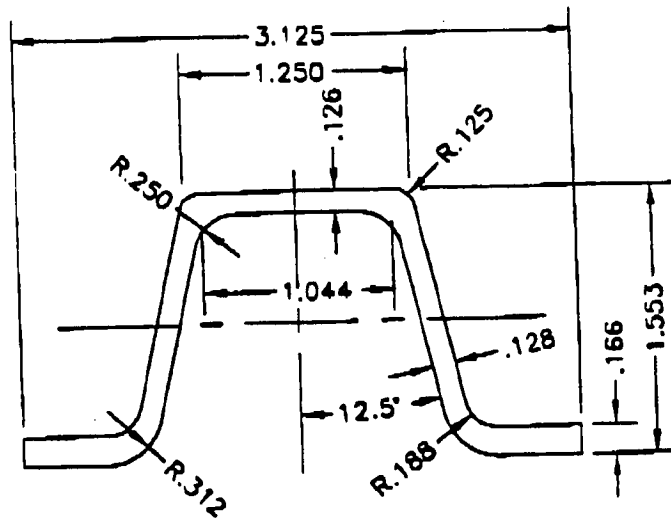
Enclosure

Geometric and Safety Design Acceptance Letter SS-78

Enclosure: Sheet 1 of 2



D		
C		
B		
A		
REV.	DATE	DESCRIPTION
SMI STEEL - ARKANSAS		SCALE: 1:1
COLD DRAWING 2.0#/FT SIGN POST.		DRAWN BY: JEM DATE: 10/30/97
		COLDSP2-0



D		
C		
B		
A		
REV.	DATE	DESCRIPTION
SMI STEEL - ARKANSAS		SCALE: 1:1
COLD DRAWING 2.5#/FT SIGN POST		DRAWN BY: JEM DATE: 10/30/97
		COLDSP2-5