

February 1, 2002

HSA-10/B-95

**Mr. Rodney A. Boyd
President, Highway Safety Products Group
Trinity Industries, Inc.
Post Office Box 568887
Dallas, Texas 75356-8887**

Dear Mr. Boyd:

In his January 14 letter to Mr. Richard Powers of my staff, Mr. Don Johnson requested formal Federal Highway Administration acceptance of a new guardrail post (called the O-Post) as an alternative to a standard W150 x 13 steel post for use with w-beam guardrail and asked that our response be sent to you. To support his request, he also provided a copy of a Southwest Research Institute test report dated January 2002, entitled "Full-Scale Crash Evaluation of a 12-Gauge W-Beam G4-1S Guardrail System with O-Posts Used as Line Posts" and copies of the crash test videotape.

The test installation was a modified strong steel post w-beam guardrail 53.3-m long. The modification was the substitution of your new O-Post for the standard W150 x 12.6 support posts in the impact area (post numbers 12 through 18). Routed timber offset blocks measuring 140 mm x 195 mm x 360 mm were used on all posts. The O-Posts were made from AASHTO M-180 12-gauge steel formed into a fluted C-shape with rolled edges as shown on the enclosure. All posts were 1830-mm long and were installed on 1900-mm centers. The height above ground to the center of the rail was 550 mm.

The installation was tested with a 2000-kg pickup truck impacting at 96.8 km/h and at an impact angle of 25.8 degrees. As noted in the test summary sheet, the test vehicle was contained and redirected upright. Maximum occupant impact velocity was reported to be 4.5 m/s and the subsequent ridedown acceleration was 12.6 g's, both values being below the preferred limits of 9 m/s and 15 g's, respectively. The vehicle roll angle was 11.9 degrees. The dynamic deflection of the barrier system was 1030 mm. We agree with the researchers' contention that the Report 350 occupant severity test with the 820-kg car may be waived in light of the barrier's performance with the pickup truck. The reported deflection was very similar to the deflection noted in the Texas Transportation Institute test 3-11 of the standard strong steel post w-beam with wood offset blocks.

Based on the information you provided, I agree that the O-Post may be considered acceptable for use on the National Highway System as a substitute for the standard steel post currently used in the modified G4(1S) barrier system when such use is requested by the contracting highway agency. It must be used with a wood or

plastic offset block and oriented as tested with the open side of the post facing the downstream end of the barrier installation. Please note that this acceptance is only for the use of these posts in the barrier proper. They cannot be used in any of the guardrail terminals that require weakened or breakaway posts unless specifically tested for that application. Please note also that this acceptance is based on the reported crash performance of your posts and is not meant to address their installation, maintenance or repair characteristics. Since your post is a proprietary design, the provisions of Section 635.411 (Material or product selection) of Title 23, Code of Federal Regulations apply.

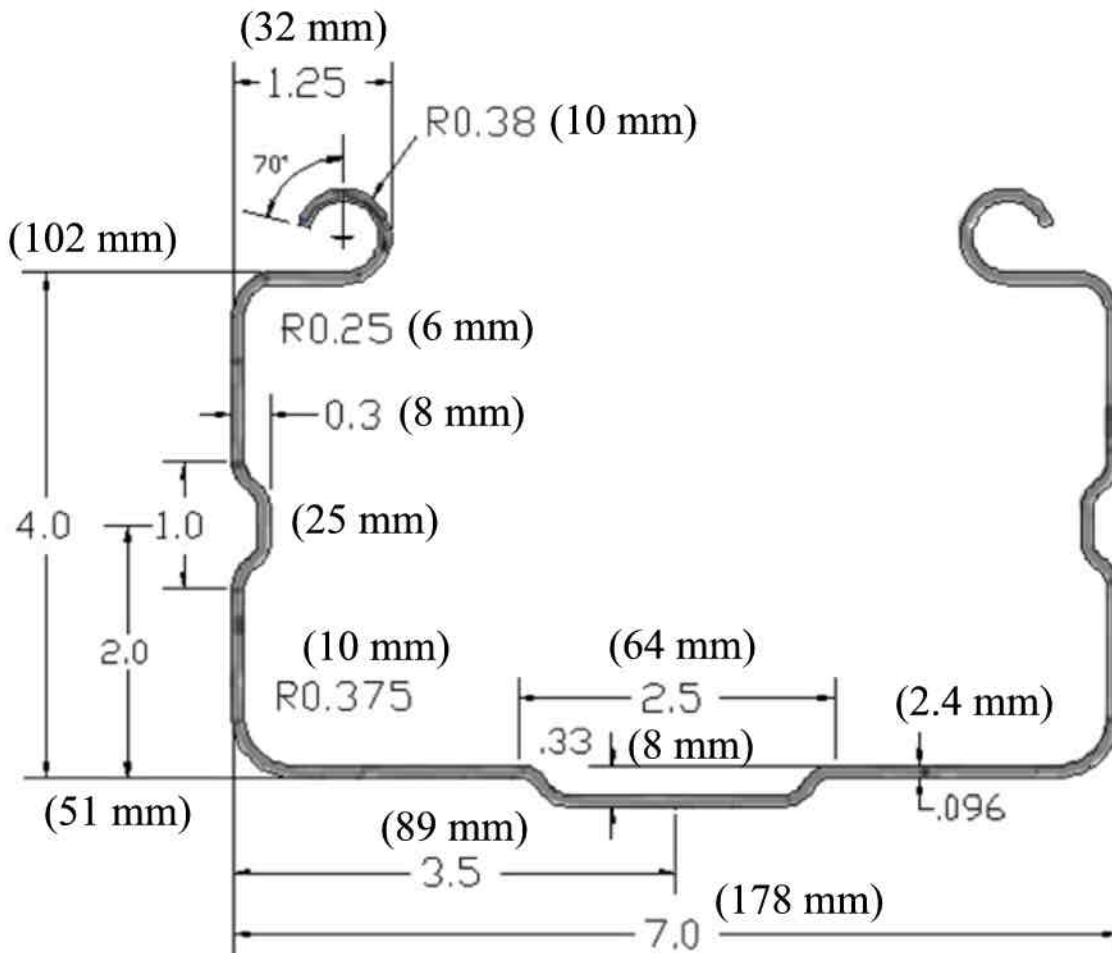
Please do not hesitate to call Mr. Powers at (202) 366-1320 if you have any questions regarding this acceptance of your product.

Sincerely yours,

(original signed by Michael L. Halladay)

**Michael L. Halladay
Acting Program Manager, Safety**

Enclosure



O Post Cross-Section

Flat sheet width = 18.875 in (479 mm)

All dimensions prior to galvanizing