



U.S. Department
of Transportation
Federal Highway

Administration

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

Refer to: HSA-10/WZ-82

Ms. Christine Nesser
Three D Traffic Works, Inc.
430 N. Varney Street
Burbank, CA 91502

Dear Ms. Nesser:

Thank you for your letter of July 18 requesting Federal Highway Administration (FHWA) acceptance of your company's Type III barricades as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Your letter was an update to your request of April 26 and compared your barricades to others that have already been crash tested and found acceptable by the FHWA. You requested that we find your company's Type III barricades acceptable for use on the NHS under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features."

Introduction

The FHWA guidance on crash testing of work zone traffic control devices is contained in two memoranda. The first, dated July 25, 1997, titled "INFORMATION: Identifying Acceptable Highway Safety Features," established four categories of work zone devices: Category I devices were those lightweight devices which could be self-certified by the vendor, Category II devices were other lightweight devices which needed individual crash testing, Category III devices were barriers and other fixed or massive devices also needing crash testing, and Category IV devices were trailer mounted lighted signs, arrow panels, etc. The second guidance memorandum was issued on August 28, 1998, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This later memorandum lists devices that are acceptable under Categories I, II, and III.

A brief description of the device for which you are requesting acceptance follows:

1. Type III Plastic and Metal Barricade, Model No. TD 2000, with 25.4 mm (1 inch) extruded board manufactured by Davidson Plastics Corporation with metal uprights and metal feet. Overall mass of this barricade is 22.25 kg (49 pounds.)
2. Type III Plastic and Metal Barricade, Model No. TD 2000, with 50.8 mm mm (2 inch) injection-molded board manufactured by Three D Traffic Works, Inc. with metal uprights and metal feet. Overall mass of this barricade is 29 kg (64 pounds.)

Both barricades use a frame similar to that in the generic Type III barricade described in our Acceptance Letters WZ-6 dated November 23, 1998, and WZ-54 dated September 15, 2000. The horizontal legs are fabricated from 1525 mm (60 inches) long hot-rolled high carbon steel 38 mm x 38 mm x 3.2 mm thick (1.5 inch x 1.5 inch x 1/8 inch thick) angles, either painted or galvanized. A 51 mm (2 inch) square 11 gage steel tube 200 mm (8 inches) long is welded to each leg 460 mm (18 inches) from the upstream end. These stubs support the 1600 mm (63 inches) long hot-rolled high carbon steel 38.1 mm x 38.1 mm x 3.2 mm thick (1.5 inch x 1.5 inch x 1/8 inch thick) vertical uprights. Reflective sheeting is affixed to 200 mm (8 inch) wide by 2438 mm (8 feet) long hollow plastic boards. The plastic boards are affixed to the vertical uprights with 3/8"-16 x 1 3/4" Steel Hex Bolts, Class #2 3/8"-16 Steel Hex Nuts and Steel flat lock washers.

The 25.4 mm (1 inch) extruded plastic boards have been successfully crash tested on similar Type III barricade frames by Davidson plastics, from whom you purchase these boards. The 51 mm (2 inch) injection molded plastic boards that your company produces is made of UV stabilized impact molded polypropylene and has an open rib configuration on the back.

Testing

Testing of the Type III barricade with Davidson Plastics rails was successful, and is detailed in our acceptance letter WZ-39 and modified in WZ-63, dated June 29, 2000, and December 16, 2000, respectively. The 51 mm boards are significantly heavier (5 kg, 11 pounds) than the tested 25.4 mm boards (2.75 kg, 6 pounds), but the overall mass of the Type III barricade using the 51 mm boards is similar to the generic barricade tested with plywood panels (7.3 kg, 16 pounds) by Bent Manufacturing (see WZ-6 and WZ-54 referenced above.) We consider the 51 mm panel barricade to be comparable to the Bent/Generic barricade rather than the Davidson barricade.

Findings

The results of the Davidson Plastics and Bent Manufacturing testing met the FHWA requirements and the Type III barricades were found acceptable. The Three D barricades are sufficiently similar to the tested Type III barricades that they, too, are considered acceptable. Therefore, the devices described above and shown in the enclosed drawings for reference, plus smaller Type III barricades in the same family of products are acceptable for use as Test Level 3 devices on the NHS under the range of conditions tested, when proposed by a State. Please note that barricade panels must be rigidly attached to the barricade frame using bolts, nuts, and washers similar to those used on the tested barricades. Barricade rails should not extend more than 200 mm (8 inches) beyond the uprights.

Please note the following standard provisions which apply to FHWA letters of acceptance:

- Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was crash tested, it reserves the right to modify or revoke its acceptance.
- You will be expected to supply potential users with sufficient information on design and

installation requirements to ensure proper performance.

- You will be expected to certify to potential users that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance, and that they will meet the crashworthiness requirements of FHWA and NCHRP Report 350.
- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-82 shall not be reproduced except in full. This letter, and the test documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.
- Three D Traffic Works products may include patented components and if so are considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.

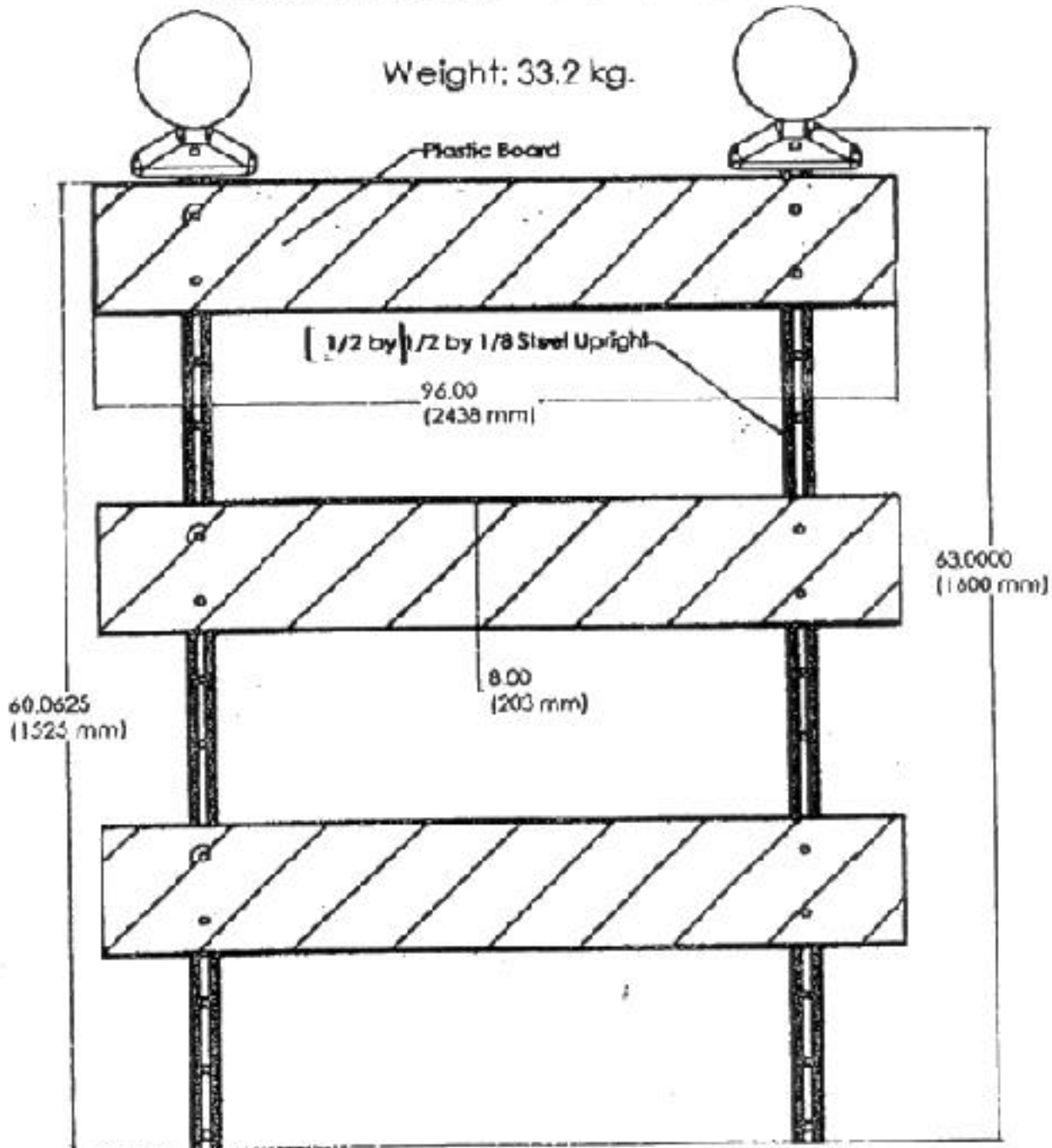
Sincerely yours,

Frederick G. Wright, Jr.
Program Manager, Safety

Enclosure

Type III Plastic and Metal Barricade

Weight: 33.2 kg.



1/2 x 1/2 x 1/8 STEEL UPRIGHT

Metal Foot: 17.6 kgs

