



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

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

September 19, 2005

In Reply Refer To: HSA-10/WZ-215

Mr. Jeff Johnson
Trafficade Service
2533 West Holly Street
Phoenix, Arizona 85009

Dear Mr. Johnson:

Thank you for your letter of May 2, 2005, requesting the Federal Highway Administration (FHWA) acceptance of your company's Trafficade Vertical Panel as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). Accompanying your letter were reports of crash testing conducted by E-TECH Testing Services, Inc., and video of the tests. You requested that we find these devices 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 are those lightweight devices which are to be self-certified by the vendor, Category II devices are other lightweight devices which need individual crash testing but with reduced instrumentation, Category III devices are barriers and other fixed or heavy devices also needing crash testing with normal instrumentation, and Category IV devices are trailer mounted lighted signs, arrow panels, etc. for which crash testing requirements have not yet been established. 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 devices follows:

The Trafficade Service Inc., vertical panel is constructed of two 12" x 24" x 0.29" HDPE panels bolted to a 40.5" x 1.5" x 0.25" steel post using two 1/4" diameter Grade 2 bolts and 1/16" x 1.25" washers. The steel post is anchored in a crumb rubber base. The panel system also features a lightweight warning light that mounts above the vertical panel on the top portion of the steel post that is bent to accommodate it. The height from the ground to the top of the warning light is 51.25 inches.



Testing

Full-scale automobile testing was conducted on your company's devices. Two stand-alone examples of the device were tested in tandem, one head-on and the next placed six meters downstream turned at 90 degrees, as called for in our guidance memoranda.

The tests are summarized in the table below.

NCHRP Report 350 Test 3-71		
Test Number	58-6561-001	
Orientation	Head-on	90 degrees
Weight of mast,panels,light	7 kg	7 kg
Weight of rubber base	9.6 kg	9.6 kg
Mass of Test Vehicle	818 kg	
Impact Speed	99.7 km/hr	97.0 km/hr
Velocity Change	0.75 m/s	0.75 m/s
Extent of contact	Bumper and hood	Bumper and hood
Windshield Damage	none	none
Other notes	No significant windshield contact	

Findings

Damage was limited to the bumper, grille, and hood. There was no damage to the windshield. The results of the testing met the FHWA requirements and, therefore, the Trafficade Vertical Panels described above and detailed in the enclosed drawings are acceptable for use on the NHS under the range of conditions tested, when proposed by a State. The Trafficade Vertical Panel are also acceptable when used with substrates that are lighter than the 2.8 kg HDPE panels used in the crash tests.

Please note the following standard provisions that apply to the 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 the FHWA and the NCHRP Report 350.

- To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-215 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.
- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device for which the applicant is not the patent holder. The acceptance letter is limited to the crashworthiness characteristics of the candidate device, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

Sincerely yours,

/original signed by/

~for~

John R. Baxter, P.E.
Director, Office of Safety Design
Office of Safety

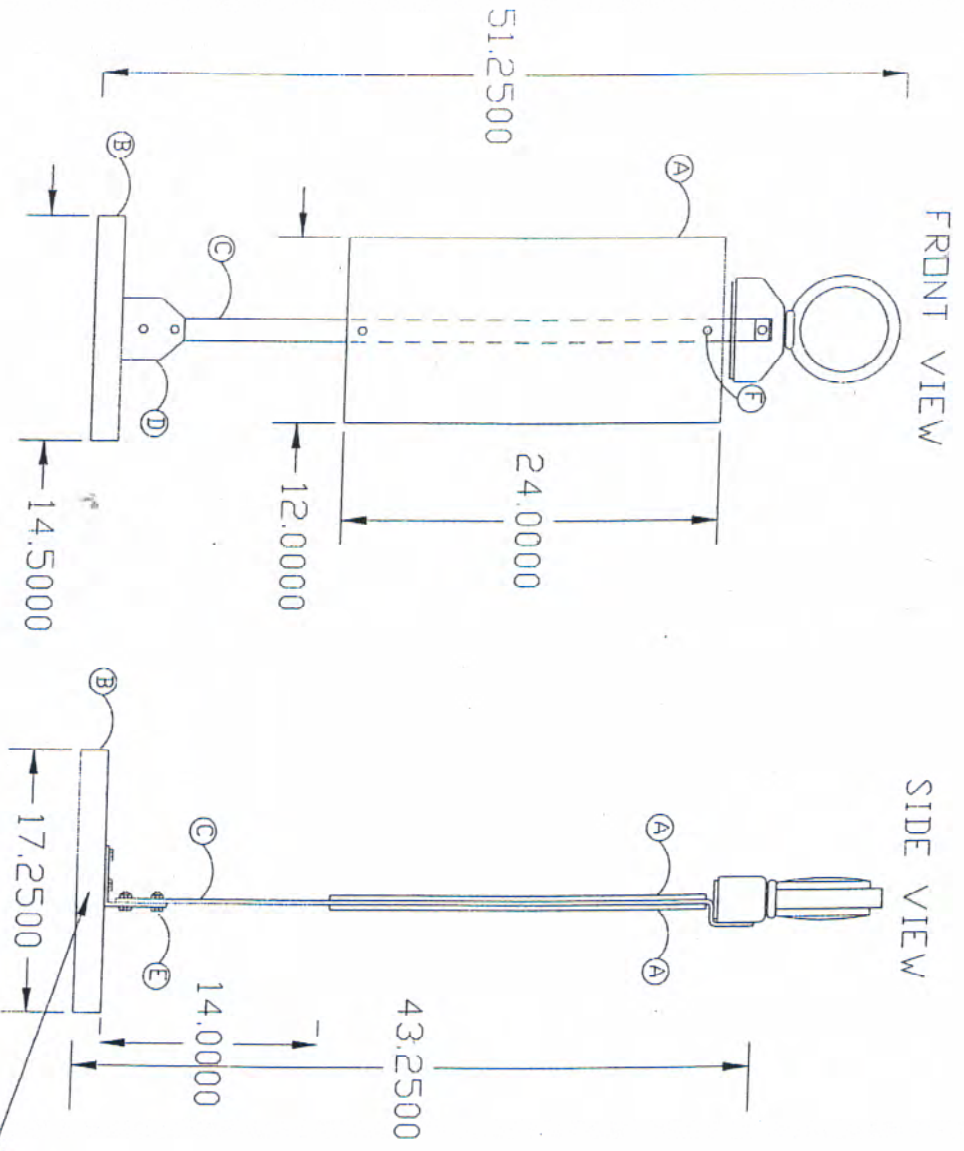
Enclosures

FHWA:HSA-10:NArtimovich:tb:x61331:9/15/05

File: h://directory folder/artimovich/WZ215-TrafficadeFIN

cc: HSA-10 (Reader, HSA-1; Chron File, HSA-10;
N.Artimovich, HSA-10)

TRAFFICCADE SERVICE, INC.
VERTICAL PANEL BARRICADE



COMPONENTS:	
A	12"x24"x.290° HDPE PANELS (2)
B	14.5" x 17.25" x 1.75" 21# CRUMB RUBBER BASE
C	405" x 1.5" x .25" STEEL POST
D	4" x 4" x 1/4" STEEL ANGLE BRKT.
E	3/8" x 1" GRADE 2 BOLTS (2)
F	1/4" x 1.5" GRADE 2 BOLTS (2) W/ 1/16" x 7/8" WASHER (4)
G	5/16" x 2" GRADE 2 BOLTS (2) W/ 1/15" x 1.25" WASHER (2)

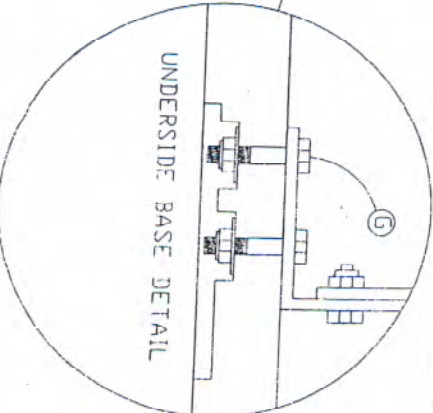


Illustration 1. Trafficcade Vertical Panel (1 of 1)

TRAFFICCADE
Work Zone Services

Drawn By: Jeff Johnson
Date: 3/29/2005
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Trafficcade Vertical Panel