



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

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

April 12, 2005

In Reply Refer To: HSA-10/WZ-205

Mr. Richard M. Heinz
Endless Visions, Incorporated
124 McAllister Street
Rushville, Illinois 62681

Dear Mr. Heinz:

Thank you for your letter of March 10, 2005, requesting the Federal Highway Administration (FHWA) acceptance of revisions to your company's J-4 Flagger's Workstation as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). Accompanying your letter were drawings of the redesigned devices and a description of the changes. You requested that we find these devices acceptable for use on the NHS under the provisions of the 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 device as originally crash tested follows:

The J-4 Flagger's Workstation is a Category III portable work zone traffic control device. It is remotely operated by the flagger who is standing in a safer location off of the traveled way. The device consists of a 12-volt battery pack, motor system, push bar handle, 180 degree rotating fiberglass telescopic pole supporting a dual face sign supported by a small steel frame. The portable device is supported by four retractable outriggers when in use and caster wheels



when moving from site to site. The outriggers are approximately 1030 mm by 1090 mm in the plan. The device is operated using a control box mounted on a 7.62-m extension cord. The overall height of the device was approximately 3.5 meters, and it weights approximately 93 kg. Details of the workstation are shown in the enclosed drawings for reference.

Testing

Full-scale automobile testing was conducted on the workstation. Two stand-alone examples of the device were tested in separate tests, one head-on and another turned at 90 degrees. Damage was limited to the front right corner of the test vehicle in the head-on impact with a very minor amount of floor pan deformation toward the occupants. The vehicle sustained moderate damage to the right front corner with a maximum exterior crush of 100 mm in the 90 degree impact. No deformation or intrusion into the passenger compartment resulted from the test. The FHWA acceptance letter WZ-119 was written to acknowledge compliance with our crashworthiness policies.

Revisions

Your present request is to make the following changes to the J4 Flagger Workstation:

- Two aluminum sections added to sign (paddle inserts)
- Shaft 2 5/8 inches taller
- Motor housing added
- Battery box changed from 16 gage to 11 gage steel
- Brain box two times larger
- Upgrades to components in brain box
- Center plate increased from 1/16 inch thick to ¼ inch
- Wire guard covering for strobe housing
- Retractable remote control reel added
- Optional 36x36 paddle

These modifications increase the weight of the J4 from 205 pounds to 260 pounds.

We concur in your assertion that the requested modifications are not likely to cause the J-4 Flagger Workstation to fail to meet the test criteria of the NCHRP Report 350, however we would recommend that you investigate the possibility of using lighter weight components to bring the weight back down towards the weight of the tested system. The device described above and shown in the enclosed drawings for reference is acceptable for use on the NHS under the range of conditions tested, when proposed by a State.

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-205 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.
- The J4 Flagger Workstation is a patented device and is 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 by a highway agency* for use on Federal-aid 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. These provisions do not apply to exempt non-NHS projects. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which is enclosed.
- This acceptance letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented device. Patent issues are to be resolved by the applicant and the patent owner.

Sincerely yours,

/original signed by Harry W. Taylor/

~for~

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

Enclosure

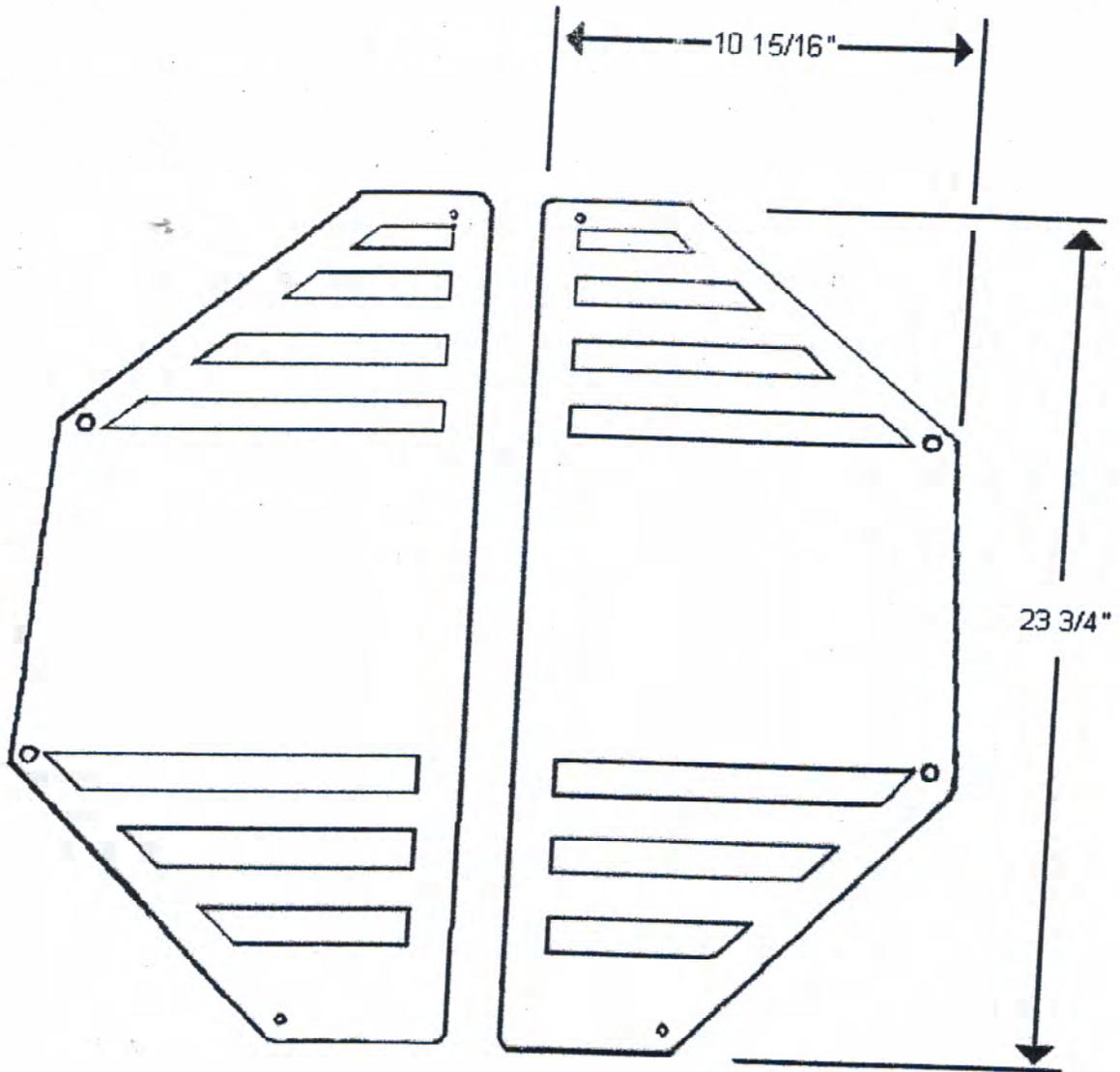
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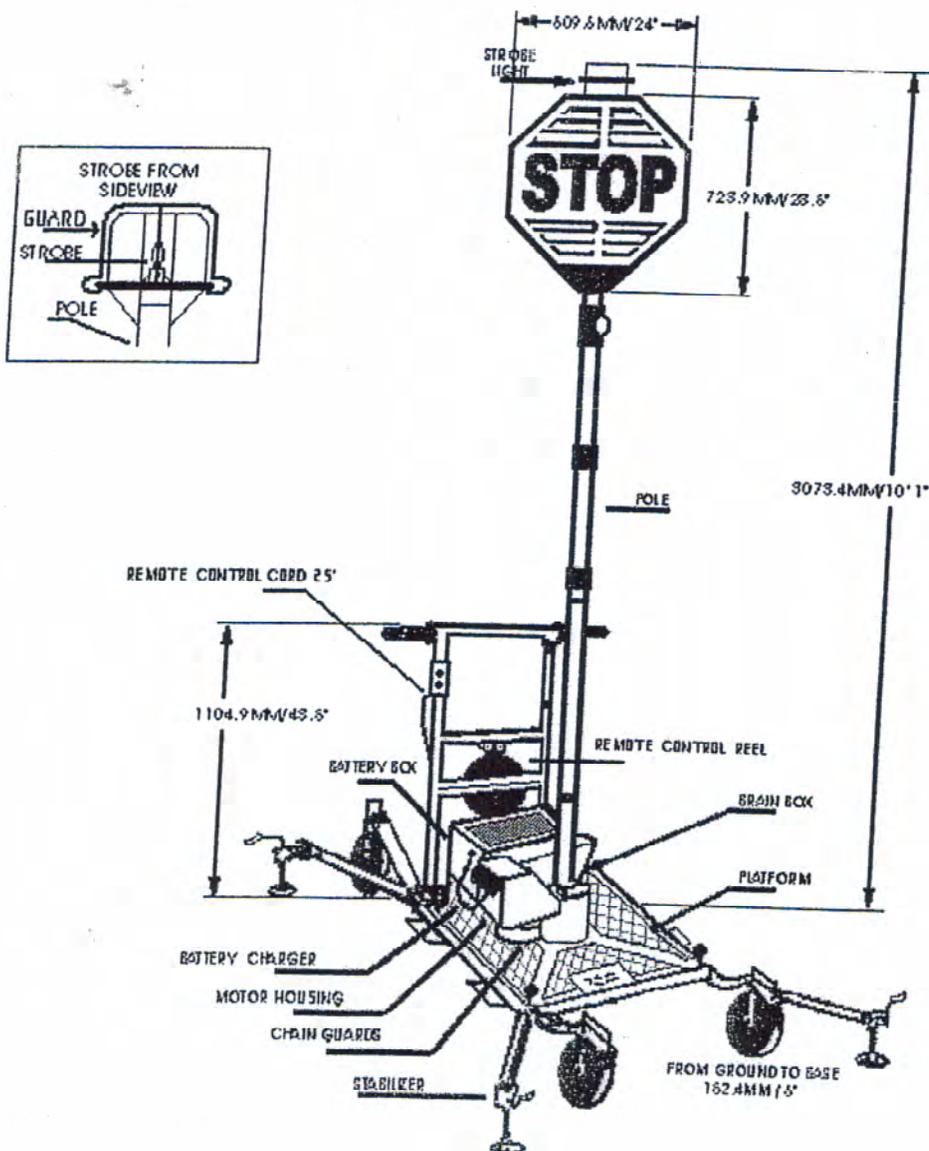
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J 4 Flagger's Workstation

Paddle Inserts

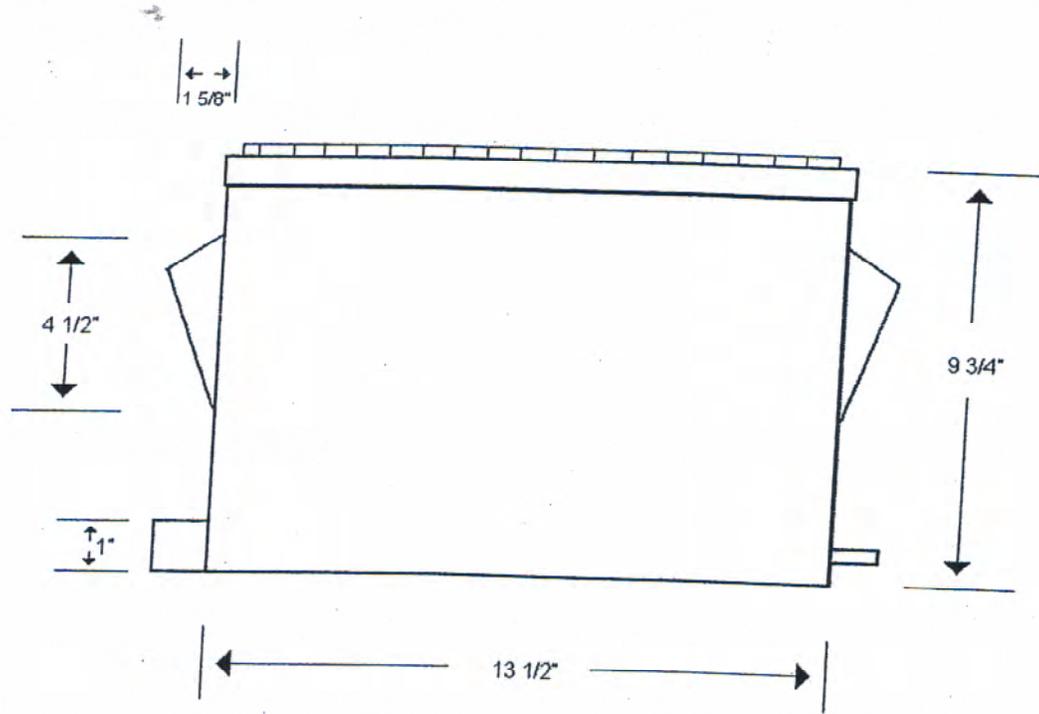


J4 FLAGGER'S WORKSTATION

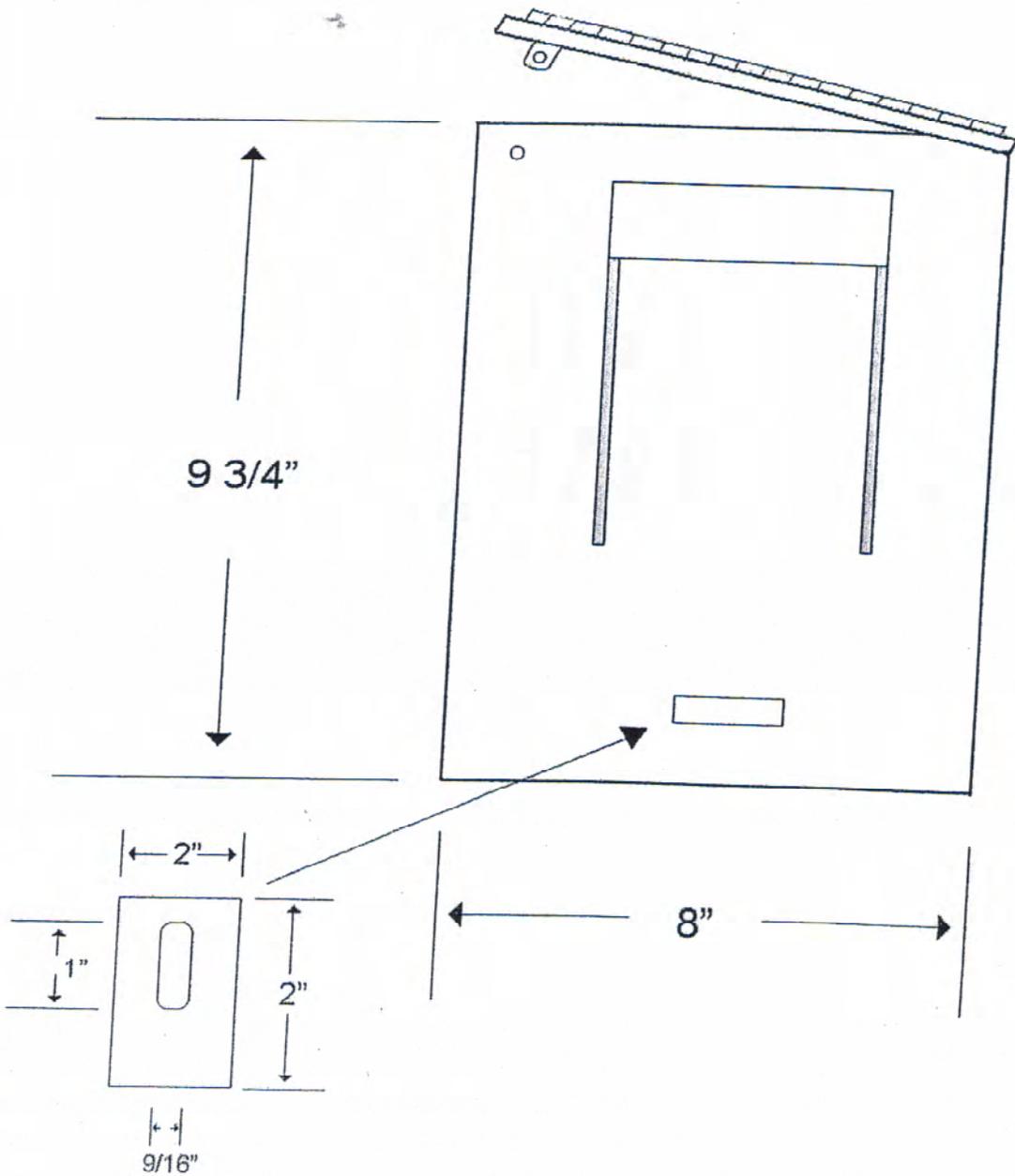


J 4 Flagger's Workstation

Battery Box-Front View



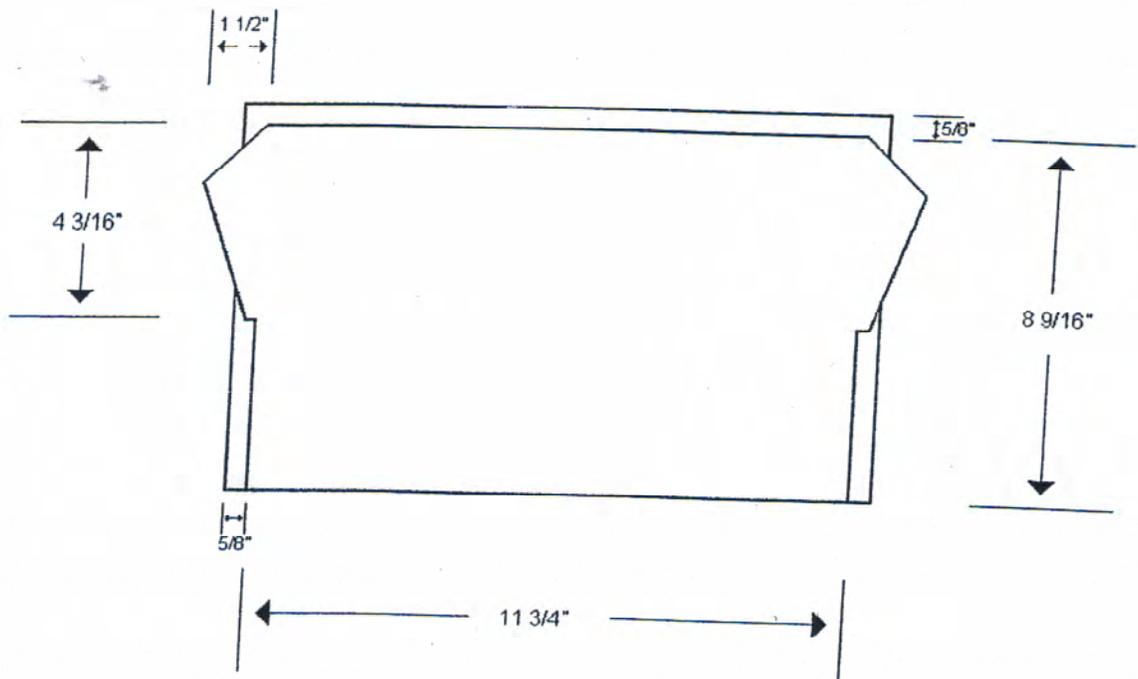
J 4 Flagger's Workstation Battery Box



J4 Flagger's Workstation

Brain Box

Front View



Top View

