



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

May 24, 2000

WZ-33
400 Seventh St., S.W.
Washington, D.C. 20590
Refer to: HSA-1

Mr. Scott Behm
Three D Traffic Works, Inc.
430 North Varney St.
Burbank, CA 91502

Dear Mr. Behm:

Thank you for your letter of April 12, 2000, providing additional information on your company's work zone barricades. This was a follow up to your letter of December 2, 1999, requesting Federal Highway Administration (FHWA) acceptance of your company's "TD2000 Works Barricade" as a crashworthy traffic control device for use in work zones on the National Highway System (NHS). Accompanying your initial letter was a report from E-TECH Testing Services, Inc., and videos of the crash test. You requested that we find the device 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." Your recent letter requested acceptance of wider barricades and provided additional drawings.

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.

The TD2000 is an all-plastic, lightweight portable barricade made from a specially formulated polypropylene plastic with UV stabilizers and cold weather modifications. It is available in the Manual on Uniform Traffic Control Device (MUTCD) Type I or Type II configurations in widths of 610, 762, 813, and 914 mm (24, 30, 32, 36-inches). A 610 mm wide Type I barricade was selected for testing. Drawings of the tested barricades are enclosed. A summary of the crash test, wherein one barricade was struck head on and a second barricade 6 meters downstream was struck at 90 degrees, is presented in the following table. Both barricades had ToughLite 2000 warning lights attached.

| | | |
|------------------------------|---|--------------------------|
| Parameter | Test 14-0159-001 (NCHRP 350 Test 3-71) | |
| Vehicle mass | Curb mass 737 kg, Test inertial mass 823 kg | |
| Height to top of barricade | 1156 mm | |
| Barricade mass without light | 6.0 kg | |
| Barricade mass with light | 7.3 kg | |
| Barricade Orientation | Head on | 90 degrees |
| Vehicle impact speed | 100.4 km/h | 99.0 km/h |
| Vehicle velocity change | 1.4 km/hr or 0.39 m/s | 1.4 km/hr or 0.39 m/s |
| Vehicle crush | Denting of hood and grill | Cosmetic damage to grill |
| Windshield damage | No contact | No contact |

During the tests there was no damage to the windshield, no occupant compartment deformation, and no potential for any part of the test articles to penetrate the passenger compartment. The results of this testing met the FHWA requirements and, therefore, the "TD2000 Works Barricade" MUTCD Type I, with a ToughLite 2000 or equivalent, is acceptable for use as Test Level 3 device on the NHS under the range of conditions tested, when proposed by a State. As the MUTCD Type II version of your barricade only differs by the addition of a strip of reflective sheeting to the same lower rail that was in the tested barricades, the "TD2000 Works Barricade" will be acceptable as a MUTCD Type II barricade as well.

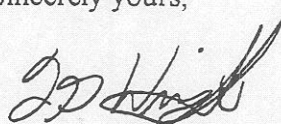
The TD 2000 Works Barricades up to a width of 914 mm use the same frame as the tested barricades, but have longer panels. The E-Tech Testing Services have indicated that the impact performance of the wider barricades would be essentially the same as the tested barricade. Therefore, your barricades with panels up to 914 mm long are also acceptable for use.

Our acceptance is limited to the crashworthiness characteristics of the barricades and does not cover structural features, nor conformity with the MUTCD. Presumably, you will supply potential users with sufficient information on design and installation requirements to ensure proper performance. We anticipate that the States will require certification from Three D Traffic Works 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-33, shall not be reproduced except in full.

The TD2000 Works Barricades are patented products and 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.

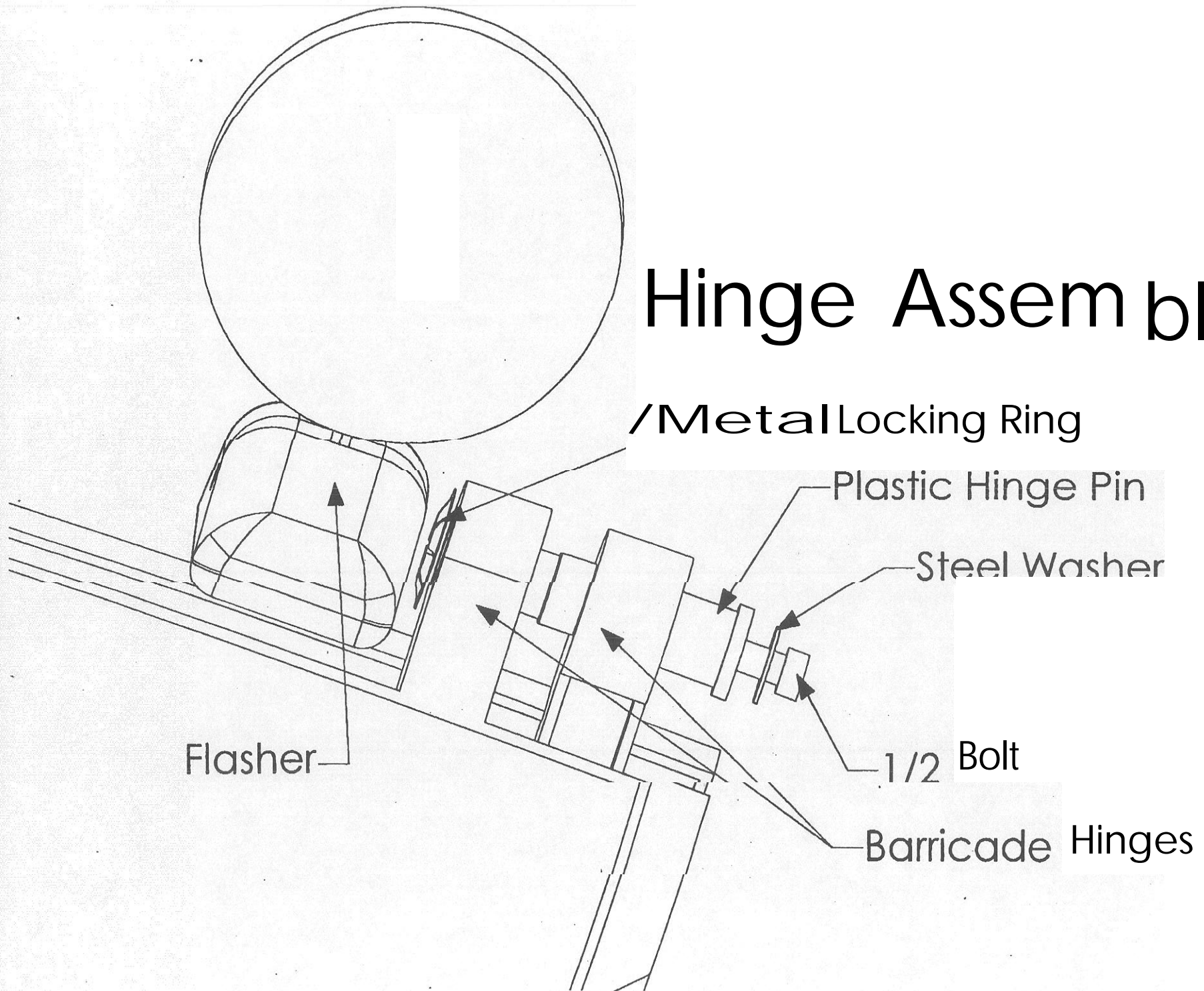
Sincerely yours,



Frederick G. Wright, Jr.
Program Manager, Safety

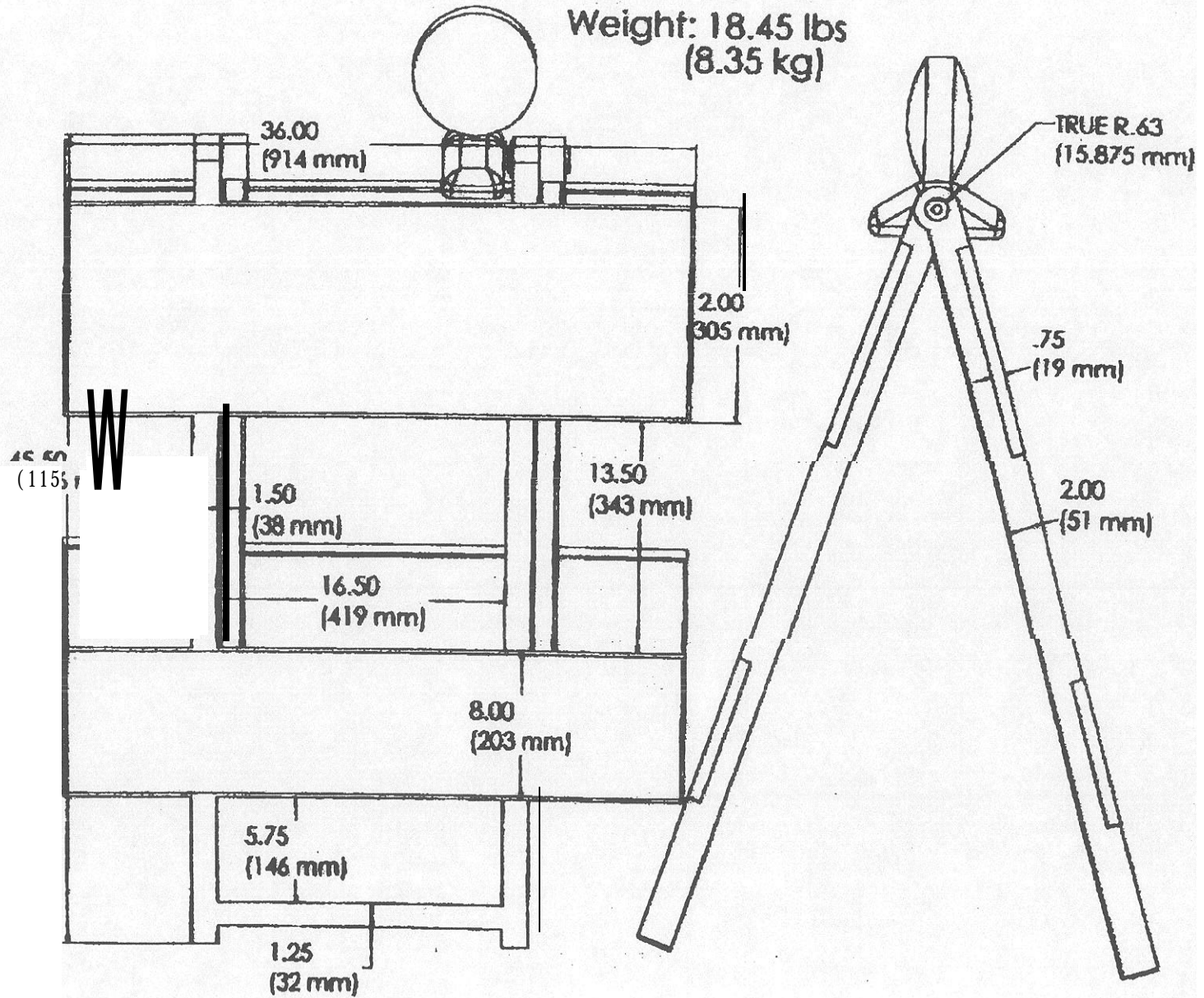
2 Enclosures

Hinge Assembly

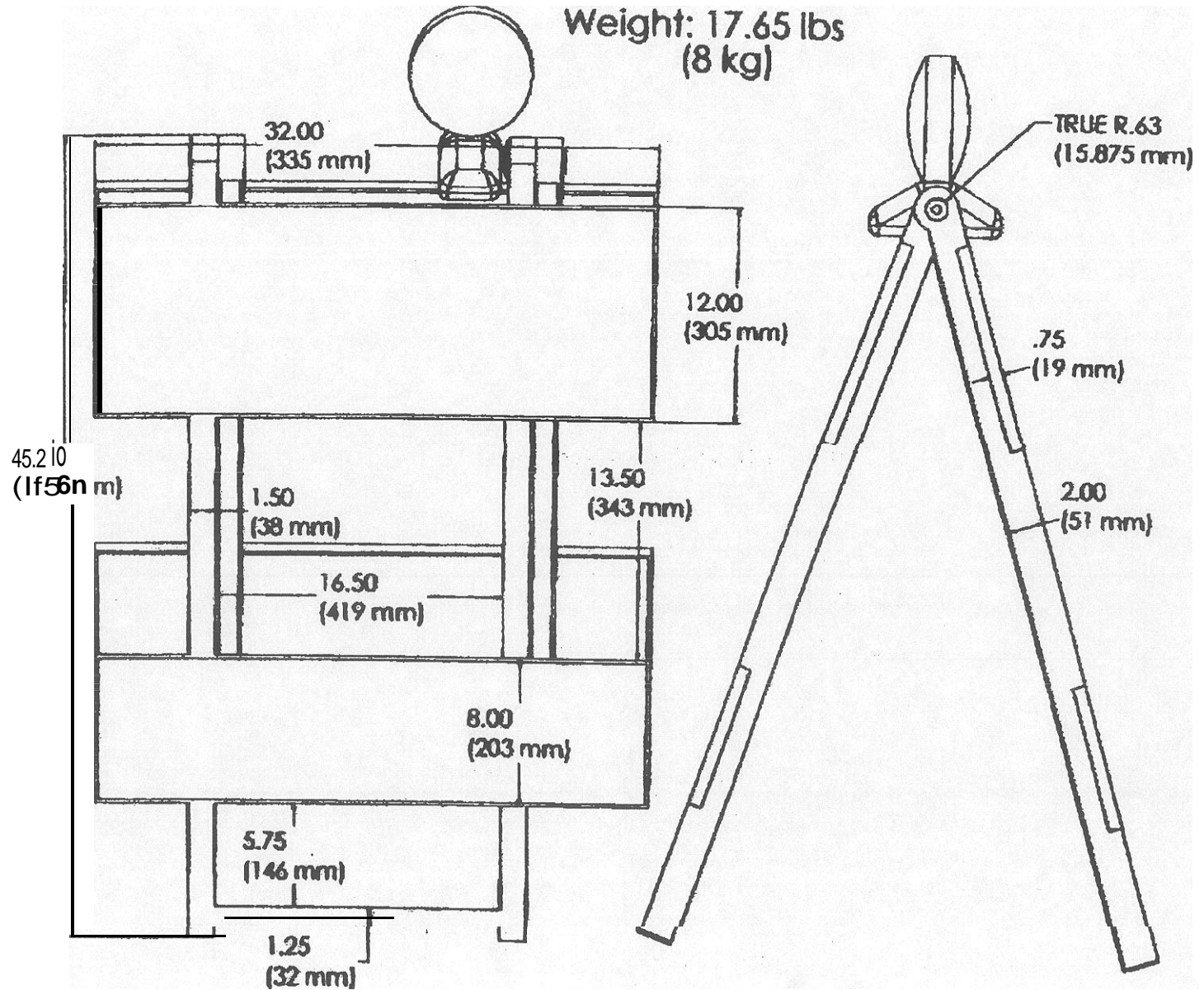


Plastic Type II Barricade

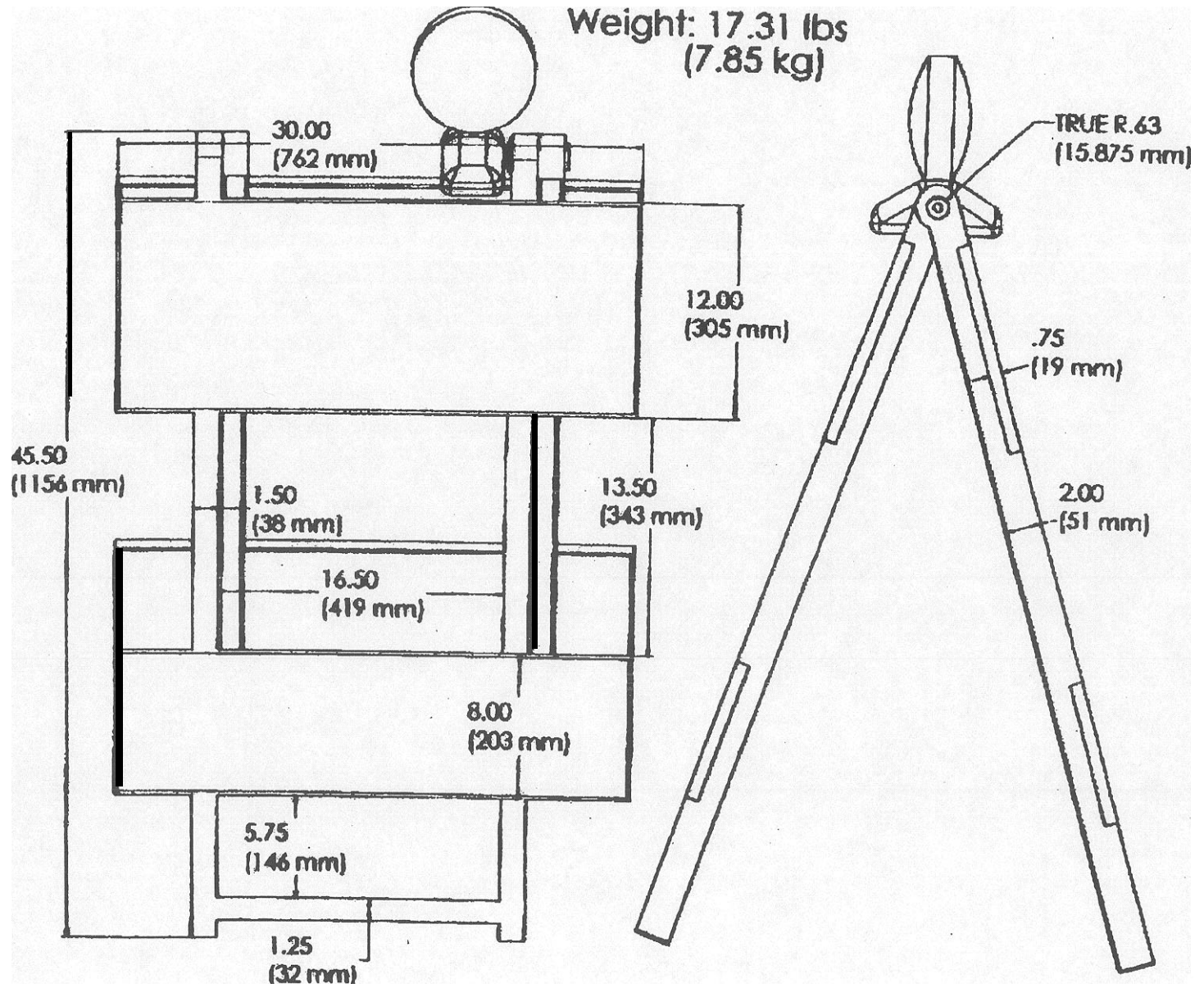
Weight: 18.45 lbs
(8.35 kg)



Plastic Type II Barricade



Plastic Type II Barricade



Plastic Type II Barricade

Weight: 16.1 lbs
(7.3 kg)

