



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

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

Refer to: HSA-1\WZ-62

Mr. George Giotis
Flasher Handling/United Rentals
125 Taylor Drive
Depew, NY 14043

Dear Mr. Giotis:

Thank you for your recent letters to Mr. Nicholas Artimovich of my office requesting Federal Highway Administration (FHWA) acceptance of your company's work zone traffic control devices. The letters covered by this reply are:

- September 6 and December 26, 2000 regarding the Direction Indicator
- October 25 and December 13, 2000 regarding the Bantam 2 Sign Stand with integral flag holder, and
- November 20, 2000, regarding the Featherweight 2 portable sign stand.

You requested that these devices be found acceptable as crashworthy traffic control devices for use in work zones on the National Highway System (NHS) under the provisions of National Cooperative Highway Research Program (NCHRP) Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features." Mr. Artimovich discussed with you the possible need for crash testing the devices as they were outside of the range we considered as crashworthy devices. Subsequently you provided additional product literature and information on both devices and we have reconsidered our position.

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 devices for which you are requesting acceptance follows:

Direction Indicator:

The Flasher Handling Direction Indicator is similar to your company's "Air Spill Barricade," which we found acceptable in our Acceptance Letter WZ-3 dated August 28, 1998. The Direction Indicator includes a 600 mm x 300 mm (24 inch x 12 inch) horizontal black arrow on a reflective orange background. The substrate used is a lightweight corrugated polyethylene plastic material made by Intoplast and weighs 0.14 kg (0.31 pounds.) This arrow panel is mounted atop a modified "Air Spill Barricade" (the vertical panel portion measures 300 mm x 600 mm, significantly shorter than the Air Spill Barricade itself.) The overall height of the Direction Indicator is 1200 mm (48 inches) from the bottom of the rubber or plastic base.

Bantam 2 With Flags:

The Bantam 2 without flags was found acceptable in our letter WZ-12 dated May 28, 1999. On September 29, 2000, you requested that the Bantam 2 be accepted with flags mounted at the top. We denied that request in our letter of October 27, 2000. Subsequently you redesigned the Bantam 2 to include a polycarbonate holding bracket for fiberglass flag supports that is integral to the roll-up sign "spreaders."

Featherweight 2 sign stand:

The Featherweight 2 sign stand is an "x-footprint" sign stand for supporting roll-up signs at a height of 60 inches. The steel legs telescope (31.75 mm or 1.25 inches maximum outside dimension) to provide a maximum spread of 2795 mm (110 inches) in the direction of traffic. The spring mechanism at the base consists of a 6.35 mm x 44.45 mm x 254 mm long (0.25 inch x 1.75 inch x 10 inch long) strip of 5160 spring steel. The aluminum mast also telescopes in three sections, from a maximum outside dimension of 44.45 mm (1.75 inches). It also has a bracket for holding three wood flag staffs. The stand has a mass of 15.8 kg (35 pounds.)

Findings

The "**Direction Indicator**" is a modification of the previously accepted "Air Spill Barricade" vertical panel assembly. The modifications consist of shortening the orange and white striped vertical portion, and adding a horizontal arrow panel to the top. Because of the use of small, lightweight materials, in this device, we find the modification acceptable, subject to the following special conditions:

- The vertical mast shall be 4.8 mm thick (3/16 inch), 44 mm (1.75 inches) wide fiberglass.
- The horizontal arrow panel and the vertical striped panel, if used, shall be made from corrugated polyethylene plastic not to exceed 10 mm (0.4 inches) thick.
- All panels shall be securely attached to the fiberglass upright using 6.35 mm x 19.05 mm (0.25 x 1.75 inch) Hex Bolts and 6.35 mm (0.25 inch) lock washers.
- At this time, no lights, signs, or other features may be attached above the horizontal arrow at the top of the Direction Indicator. We understand that you have completed crash testing with a light and will be forwarding the results to us in the near future.

The “**Bantam 2**” with integral flags is a modification of an acceptable “compact” x-footprint sign stand. (“Compact” sign stands have a short (305 to 460 mm, or 12 to 18 inches tall) steel or aluminum mast into which the vertical fiberglass “spreader” is inserted.) The lightweight flag assembly is securely mounted to the top of the 7.9 mm (5/16 inch) thick, 19.05 mm (1.75 inch) wide fiberglass vertical spreader. We expect that its behavior would be similar to other “compact” sign stands with flags that have been successfully tested as the materials that could impact the windshield are kept to their minimum dimensions.

The “**Featherweight 2**” portable sign support is similar to some other manufacturer’s stands that have been crash tested and found acceptable. Over the last three years crash testing of portable sign stands at the 1525 mm (5 foot) mounting height has shown that apparently minor variations in design can result in significant differences in performance (notably in the extent of windshield damage), and acceptable test level 3 performance is not guaranteed. We expect, however, that performance at test level 2 (TL-2) would be satisfactory because the force at which parts of the stand would contact the windshield is significantly reduced. Therefore, the Featherweight 2 with roll up signs and three flags with wood staffs is acceptable for use.

The devices described above and shown in the enclosed drawings for reference are acceptable for use as TL-2 devices on the NHS under the range of conditions tested, when proposed by a State.

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

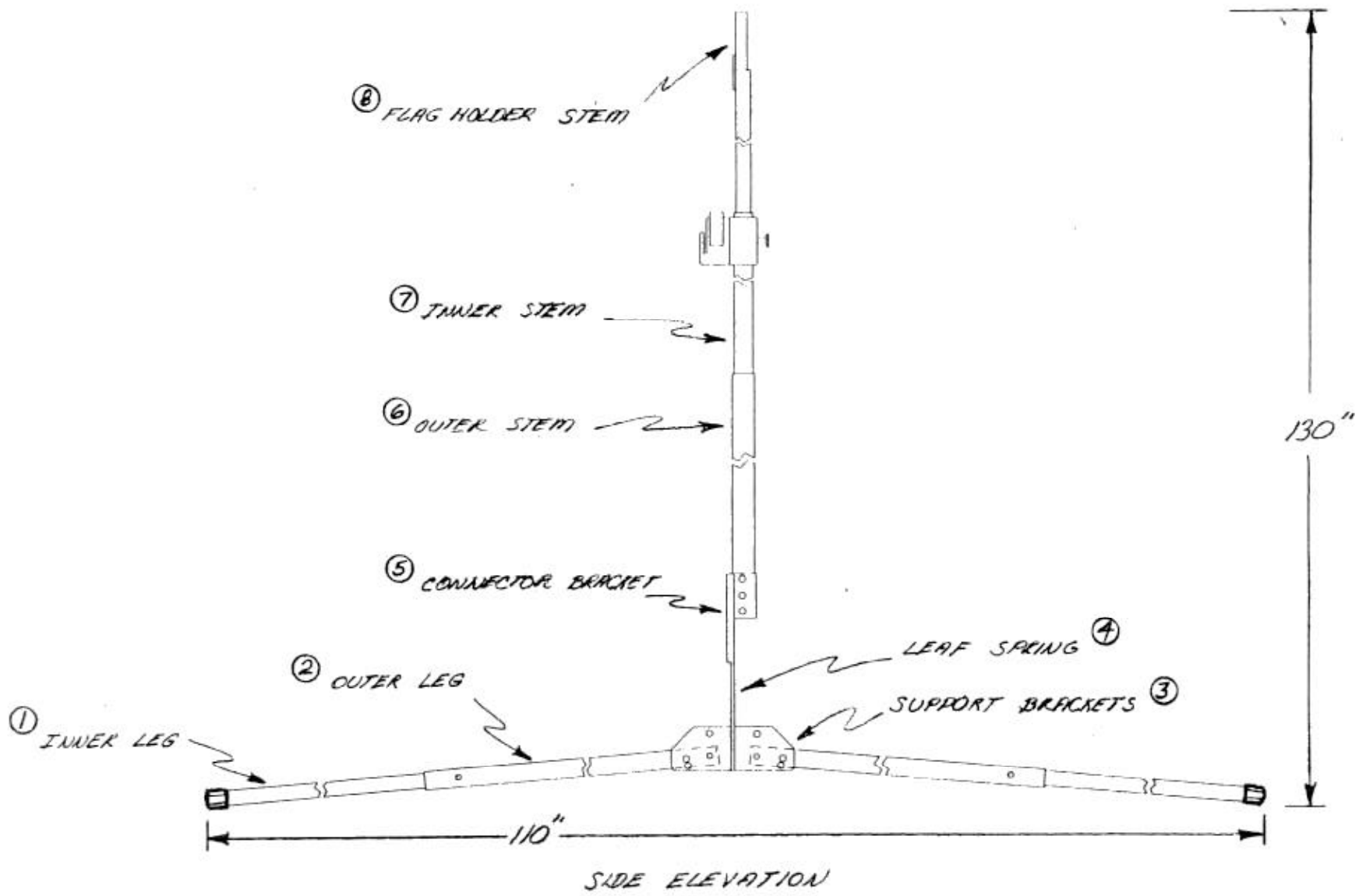
- ! Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- ! Any changes that may adversely influence the crashworthiness of the device will require a new acceptance 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-62 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.

! Flasher Handling work zone devices 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

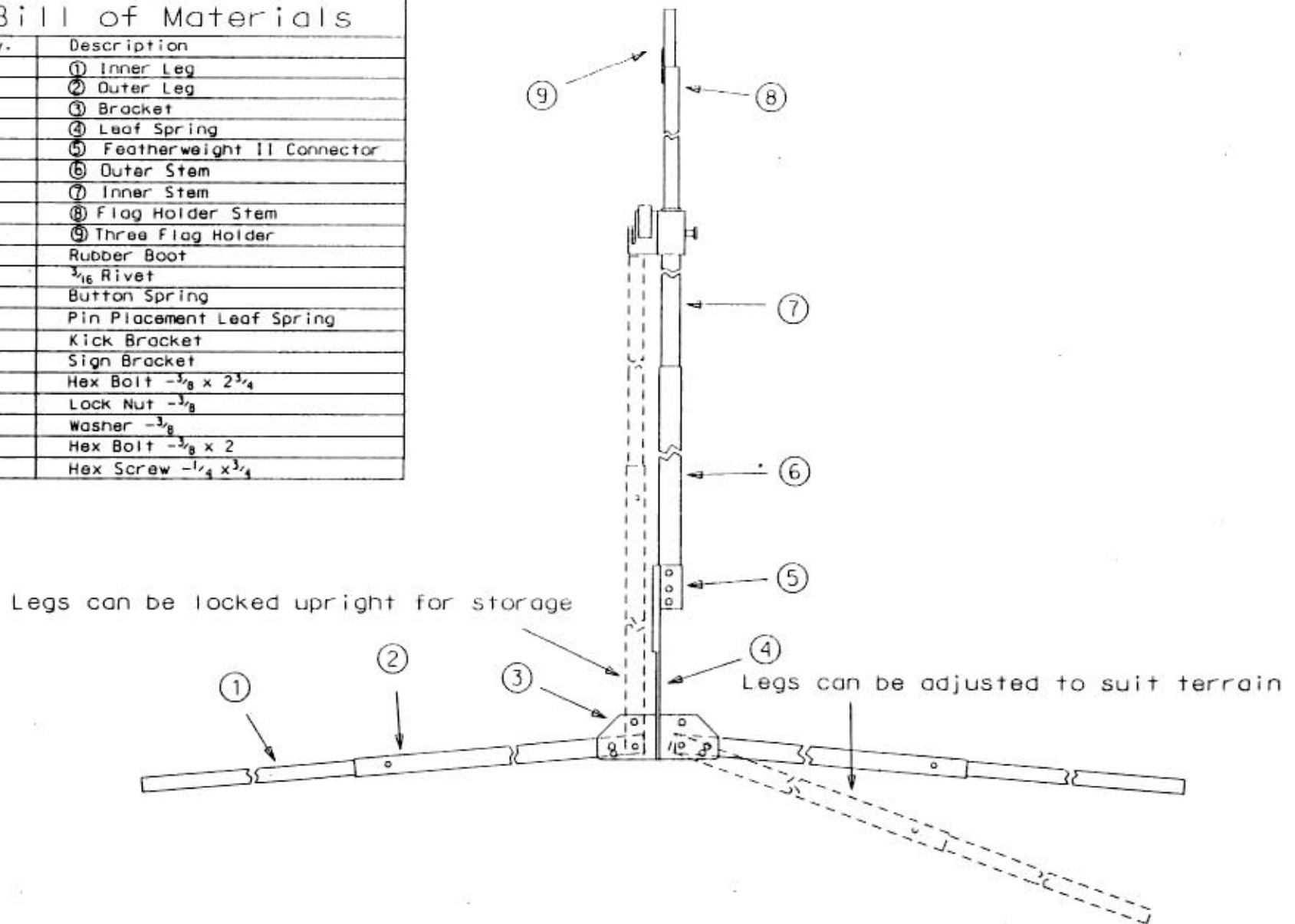
Enclosure



Featherweight II Portable Sign Stand	Flasher Handling Corporation 125 Taylor Drive Depew, New York 14043	Scale: 1 inch = 10 inches Drawn by: Randy Chugh Date: 7-20-00
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Bill of Materials

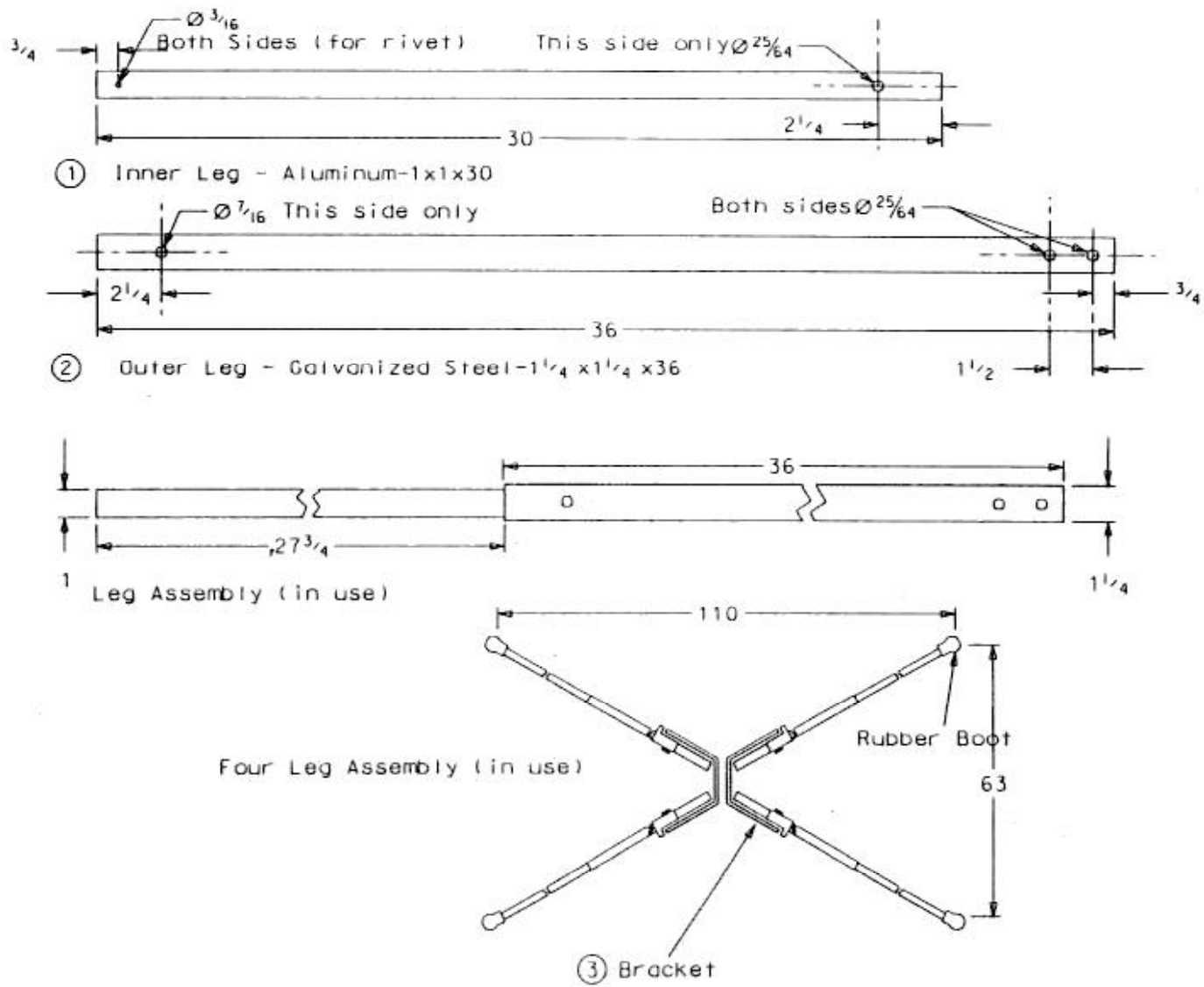
Qty.	Description
4	① Inner Leg
4	② Outer Leg
2	③ Bracket
1	④ Leaf Spring
1	⑤ Featherweight II Connector
1	⑥ Outer Stem
1	⑦ Inner Stem
1	⑧ Flag Holder
1	⑨ Three Flag Holder
4	Rubber Boot
8	$\frac{3}{16}$ Rivet
6	Button Spring
4	Pin Placement Leaf Spring
4	Kick Bracket
1	Sign Bracket
5	Hex Bolt $-\frac{3}{8} \times 2\frac{3}{4}$
9	Lock Nut $-\frac{3}{8}$
12	Washer $-\frac{3}{8}$
4	Hex Bolt $-\frac{3}{8} \times 2$
2	Hex Screw $-\frac{1}{4} \times 3\frac{3}{4}$



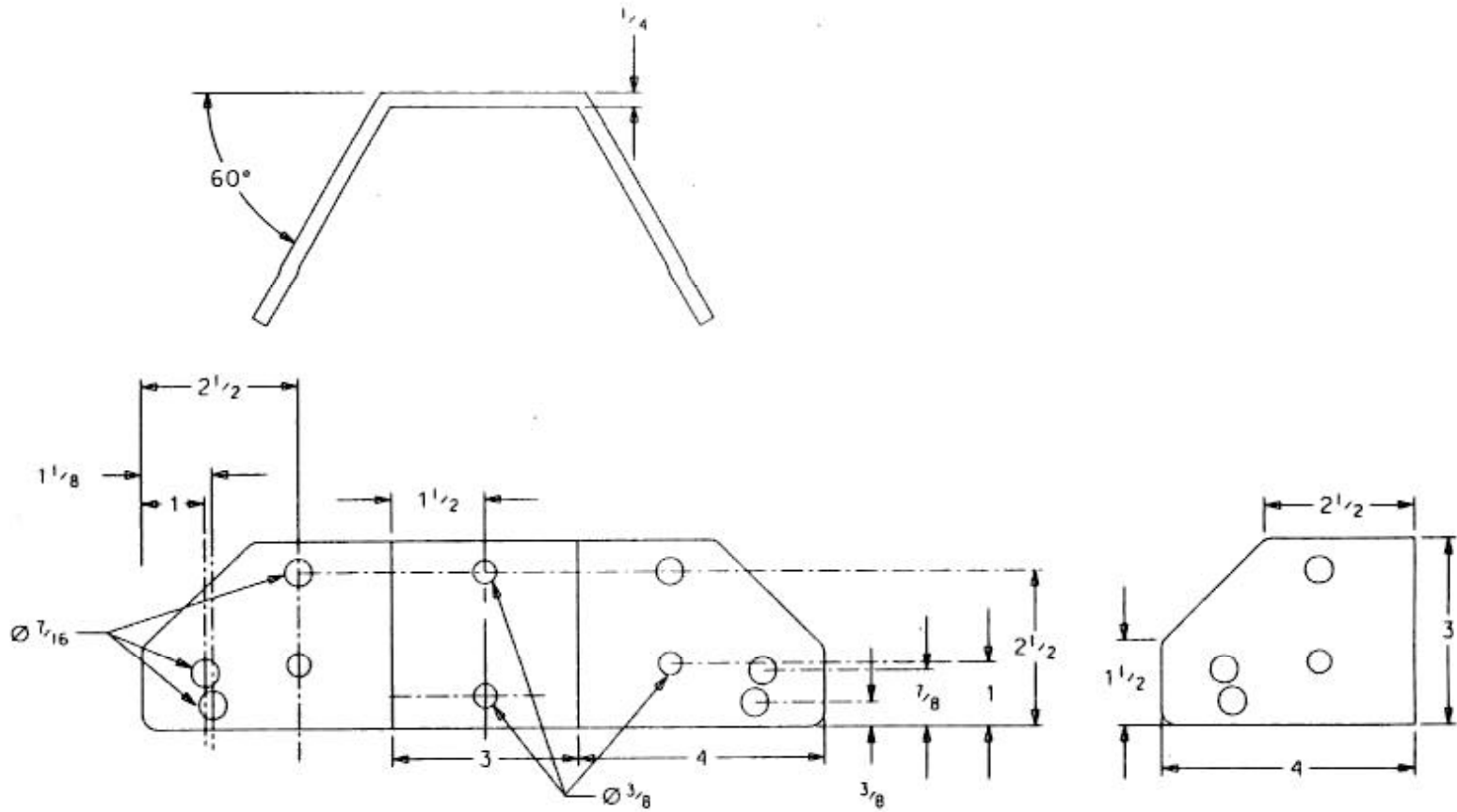
Featherweight II
Portable Sign Stand

Flasher Handling Corporation
125 Taylor Drive
Depew, New York 14043

Scale: 1 inch = 10 inches
Drawn by: Randy Chugh
Date: 7-20-00



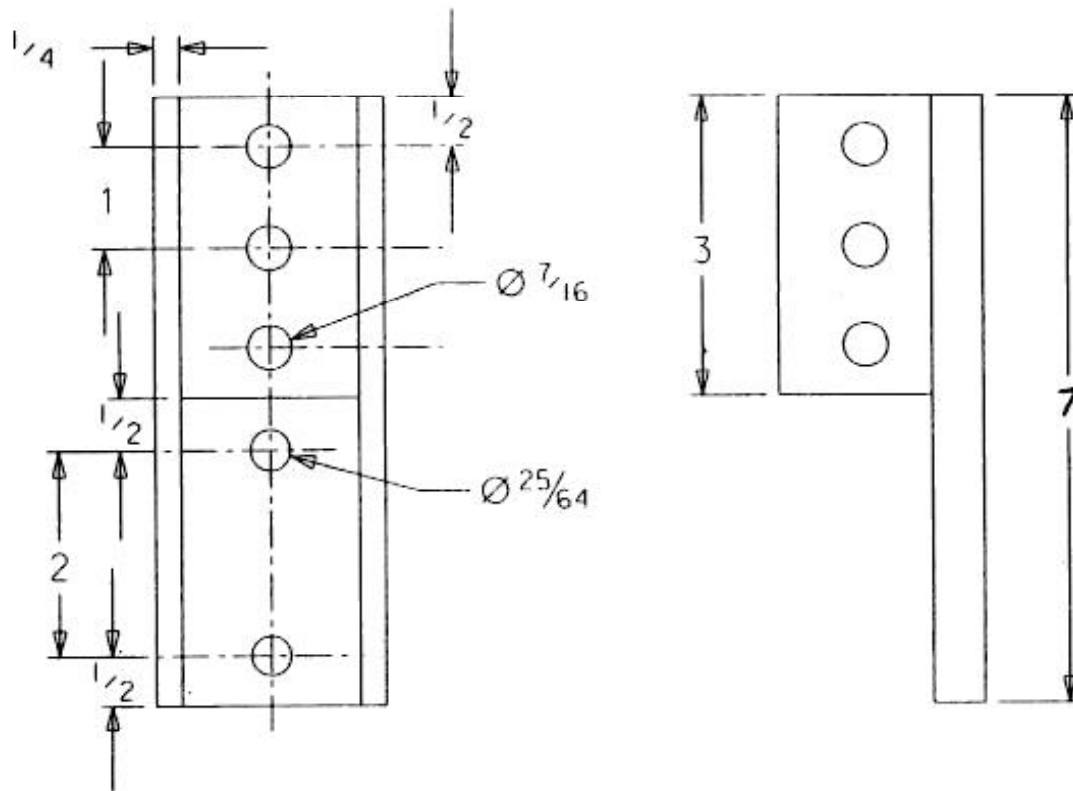
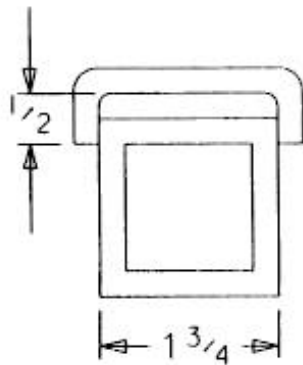
Leg Assembly	Flasher Handling Corporation 125 Taylor Drive Depew, New York 14043	Scale: 1 inch = 6 inches Drawn by: Randy Chugh Date: 7-20-00
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③ Bracket
Steel - $\frac{1}{4}$ x 3 x $11\frac{1}{2}$

Flasher Handling Corporation
125 Taylor Drive
Depew, New York 14043

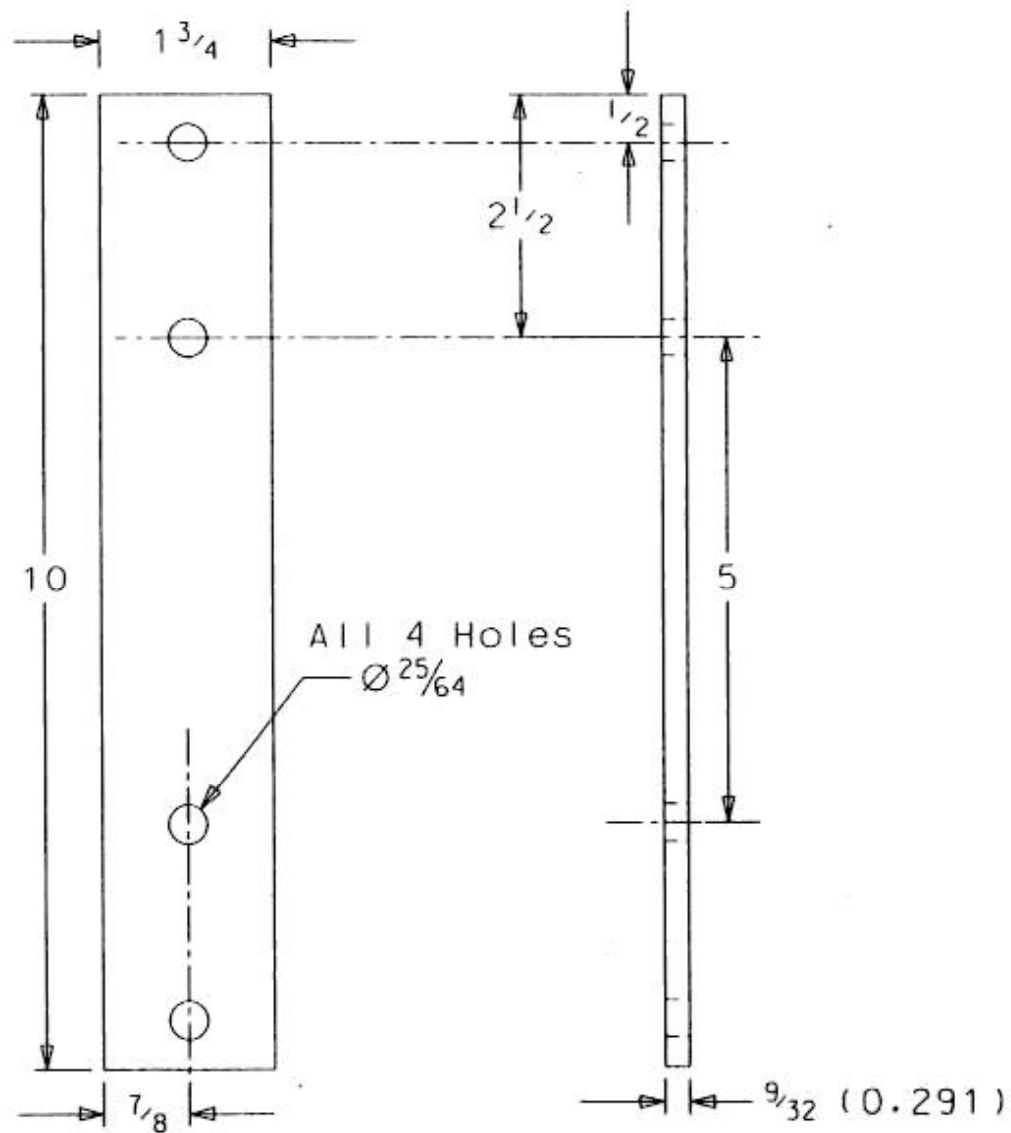
Scale: 1 inch = 3 inches
Drawn by: Randy Chugh
Date: 7-20-00



⑤ Featherweight II connector
 12 gage galvanized steel ($1\frac{3}{4} \times 1\frac{3}{4} \times 3$)
 welded to "U bar" ($\frac{1}{4} \times 3 \times 6$)

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 125 Taylor Drive
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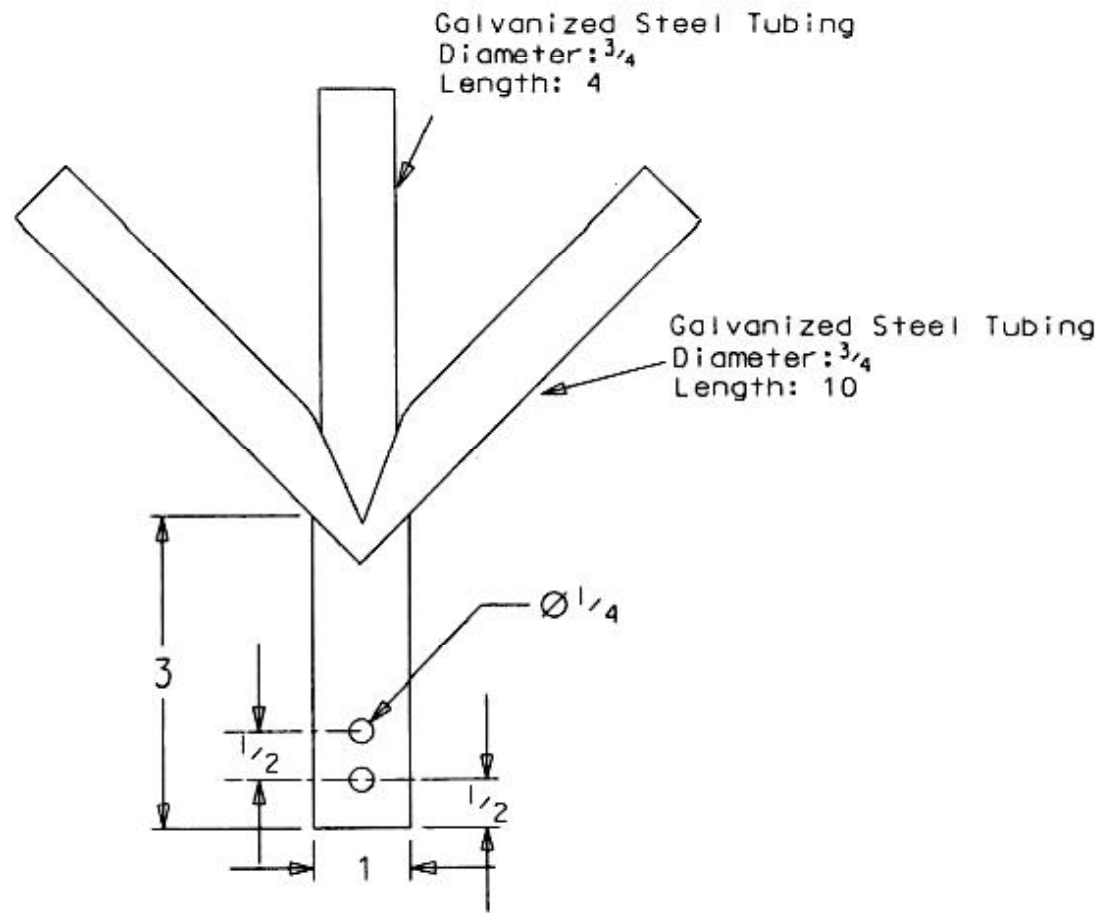
Scale: 1 inch = 2 inches
 Drawn by: Randy Chugh
 Date: 7-20-00



④ Leaf Spring
 5160 Spring Steel $\frac{1}{4} \times 1\frac{3}{4} \times 10$

Flasher Handling Corporation
 125 Taylor Drive
 Depew, New York 14043

Scale: 1 inch = 2 inches
 Drawn by: Randy Chugh
 Date: 7-20-00



<p>⑨ Three Flag Holder - Steel ($\frac{1}{8} \times 1 \times 3$) welded to two galvanized steel pipes which are welded together</p>	<p>Flasher Handling Corporation 125 Taylor Drive Depew, New York 14043</p>	<p>Scale: 1 inch = 2 inches Drawn by: Randy Chugh Date: 7-20-00</p>
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Flasher Handling's All New Direction Indicator

**PROVIDES MORE POSITIVE
GUIDANCE MAKING WORK
ZONES SAFER FOR MOTORISTS
AND WORK CREWS**

MODEL DI-22BQ

This device features a 60 cm (24") by 30 cm (12") horizontal black arrow on a panel of reflective orange (Engineer, High Intensity or Diamond Grade.)

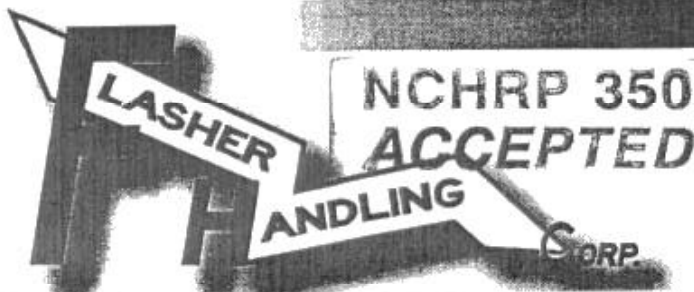
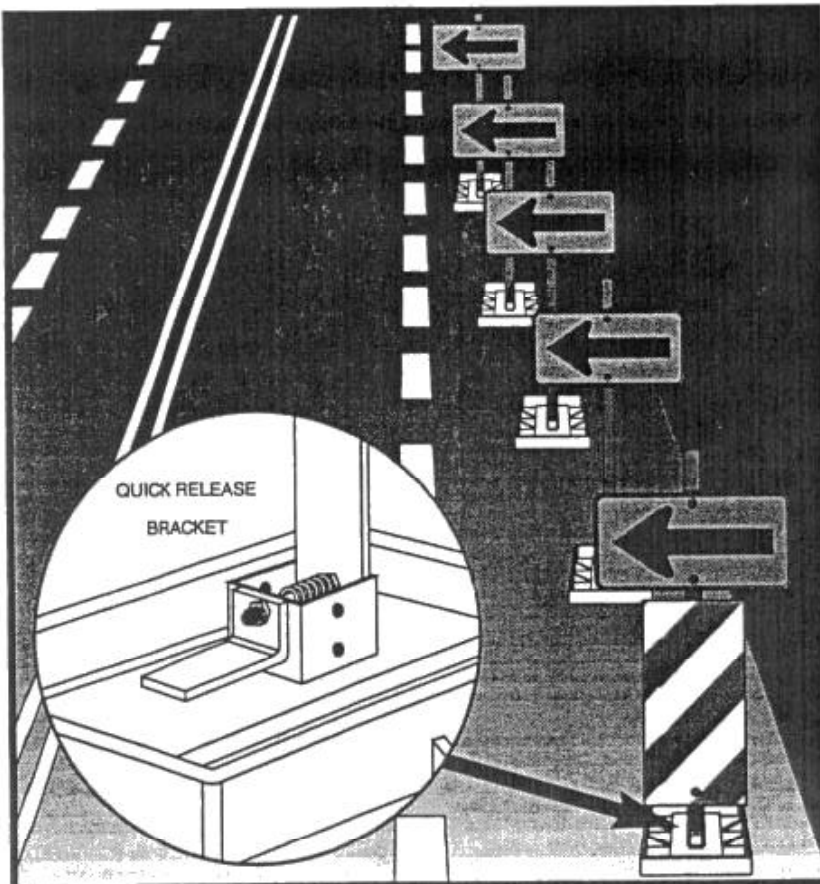
The plastic panel spills the air out the sides in high winds. For added stability a metal ballast plate has been fastened to the precision molded rubber base.

The post and panel assembly is inserted into a quick release bracket which has been secured to the ballast plate. The spring-loaded bracket is opened and closed by a foot pedal. When closed the bracket holds the post and panel so securely that the entire unit can be lifted off the ground by grabbing the top of the post.

Note: The same rubber base with a ballast plate is used interchangeably on our "Opposing Traffic Lane Divider" and the "Air Spill Barricade".

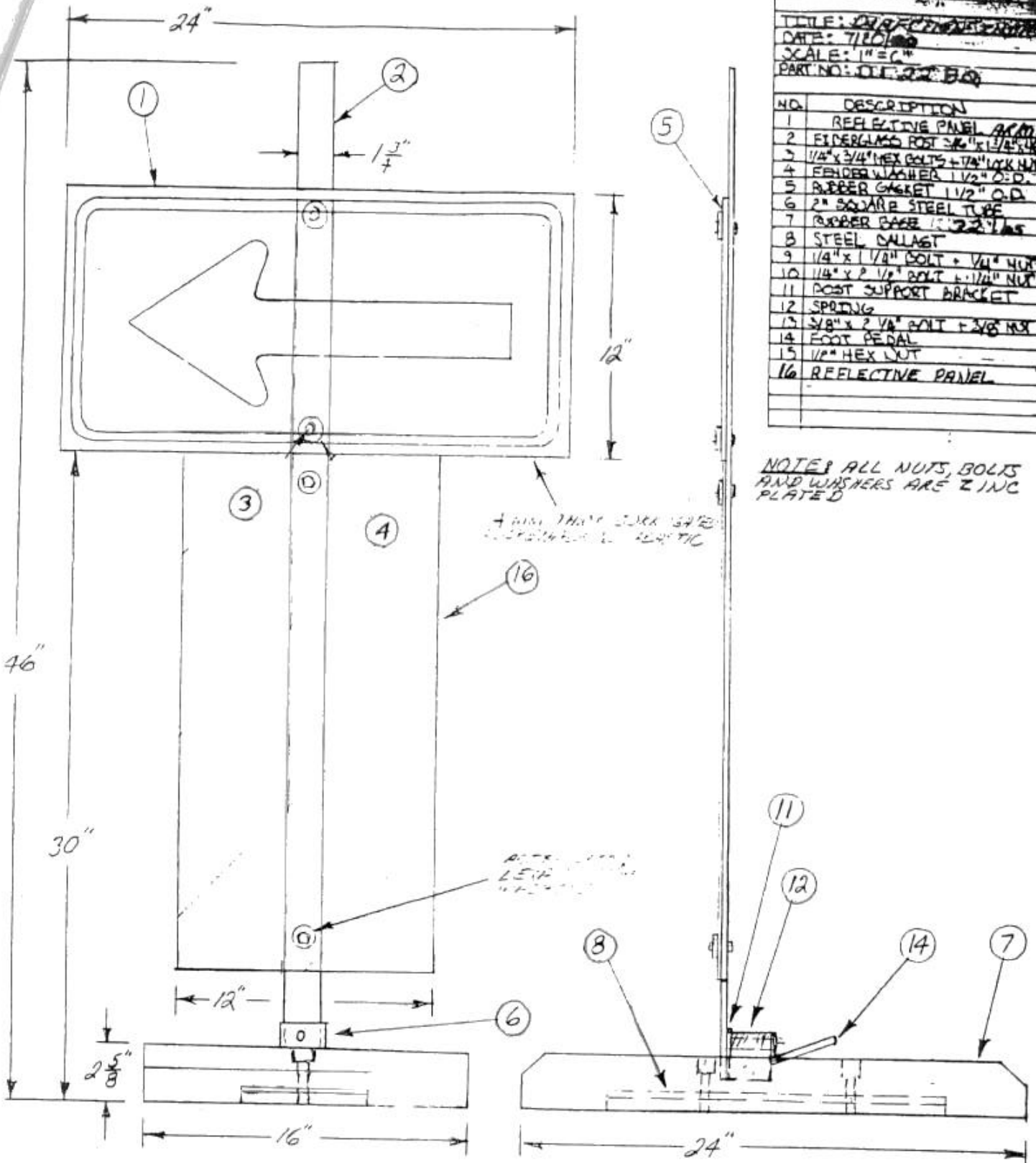
Options:

1. Detachable head flasher light.
2. Orange / white reflective diagonal panels can be attached beneath the arrow panel as shown on the first unit.



Flasher Handling Corporation

125 Taylor Drive • Depew, NY 14043-2014
Tel: 716-681-3000 • Fax: 716-681-1188
Customer Service: 1-800-451-9636
Visit us on the web at:
www.The-Flash.com



TITLE: <i>DR/FC/...</i>	
DATE: 7/10/60	
SCALE: 1"=6"	
PART NO: <i>DL-22-BQ</i>	
NO.	DESCRIPTION
1	REFLECTIVE PANEL <i>AC/...</i>
2	FIBERGLASS POST <i>3/4" x 1 1/4" x 46"</i>
3	1/4" x 3/4" HEX BOLTS + 1/2" LOCK NUTS
4	FENDER WASHERS 1 1/2" O.D.
5	RUBBER GASKET 1 1/2" O.D.
6	2" SQUARE STEEL TUBE
7	RUBBER BASE <i>12" x 24" x 1 1/2"</i>
8	STEEL CALLAST
9	1/4" x 1 1/4" BOLT + 1/4" NUT
10	1/4" x 2 1/2" BOLT + 1/4" NUT
11	POST SUPPORT BRACKET
12	SPRING
13	3/8" x 2 1/4" BOLT + 3/8" NUT
14	FOOT PEDAL
15	1/2" HEX NUT
16	REFLECTIVE PANEL