Refer to: HSA-10/WZ-114

Ms. Kathy Rogalla
Marketing Displays International
38271 W. Twelve Mile Road
Farmington Hills, MI 48331-3041

Dear Ms. Rogalla:

Thank you for your letter of requesting Federal Highway Administration (FHWA) acceptance of your company's portable sign stands as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter were drawings and product literature illustrating each of the stands. The stands, or ones similar to them, have been previously accepted by FHWA 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 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 follows. Additional details are shown, along with details of other accepted MDI stands, in the enclosed table.

MDI Model #s **5018SS and 5018NS** (SS is a Single Spring stand and NS refers to No Spring). These stands, which hold 36x36 or 48x48 rollup signs, are similar to the MDI 4818 stand which was found acceptable in our letter WZ-28, dated March 3, 2000 (see enclosed table for reference). The aluminum mast extends to the top of the sign and holds a flag bracket.

MDI Model #'s **5012SS and 5012 NS.** These are "compact" stands as discussed in our memorandum WZ-85 dated November 15, 2001. The signs are held at a height of 12 inches above the pavement, and the only structure above that height is the fiberglass bracing. You have requested their use with both 36x36 inch and 48x48 inch roll-up signs.

MDI Model # **3612 DLK** was accepted using a 36x36 inch roll up sign. Your request is to find it acceptable using a 48x48 inch roll up sign. This stand also qualifies as a "compact" stand.

Findings

The sign stands and sign sizes you have requested appear to be within the bounds of previously tested stands. They should perform in an acceptable manner. Therefore, the devices described above and shown in the enclosed drawings for reference are acceptable for use on the NHS under the range of conditions that the comparable signs were tested, when proposed by a State. Also, the "compact" sign stands are acceptable subject to the following conditions:

- Mounting height is between 300 mm to 460 mm (12 to 18 in) from the ground to the bottom of the sign.
- Square tube legs and the short mast should be no larger than 32 mm (1-1/4 in) on a side.
- Maximum vertical mast of steel or aluminum is no taller than necessary to grip the bottom of the vertical fiberglass brace. The mast may not extend to the middle or top of the sign. The grip should be a quick-release type that would allow the vertical fiberglass brace to pull out quickly, releasing the sign.
- Fiberglass bracing of the roll-up sign should be no wider than 32 mm (1-1/4 in).
- The horizontal fiberglass brace should be no thicker than 4.76 mm (3/16 in).
- The vertical fiberglass brace should be no thicker than 6.35 mm (1/4 in).

Please note the following standard provisions that 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-114 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.
- MDI's sign stands 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,

A. George Ostensen
Program Manager, Safety

Enclosure

MODEL #	LEGS	BASE	SIGN HEIGHT	UPRIGHT	MAST	HT TO TOP
4818	ALUM FIXED	2 SPRING	18"	ALUM	ALUM	86"
4812	ALUM FIXED	2 SPRING	12"	ALUM	ALUM	80"
4815RB	AL. TELESCOPING 89"	2 SPRING	14.5"	ALUM	ALUM	82.5"
4814DLK	AL. TELESCOPING 71"	2 SPRING	14.5"	ALUM	FIBERGLASS	82.5"
4814HDK	AL. TELESCOPING 88"	2 SPRING	14.5"	ALUM	FIBERGLASS	82.5"
50SM *	STEEL FIXED 82"	2 SPRING	18"	STEEL	STEEL	86"
30SM-PAKD	STEEL TELESCOPE 72"	WELD	12"	STEEL	FIBERGLASS?	80"
40SMU	STEEL TELESCOPE 72"	1 SPRING	12.75"	STEEL	FIBERGLASS	80.75"
4814CS	AL. TELESCOPING 71"	2 SPRING	13"	XTRA AL.	FIBERGLASS	81"
30CAM	STEEL TELESCOPE 72"	WELD	12.75"	STEEL	FIBERGLASS	80.75"
40CAM	STEEL TELESCOPE 72"	1 SPRING	12.75"	STEEL	FIBERGLASS	80.75"
4814SSCK	AL. TELESCOPING 72"	1 SPRING	12.75"	ALUM	FIBERGLASS	80.75"
4814NSCK	AL. TELESCOPING 72"	WELD	12.75"	ALUM	FIBERGLASS	80.75"
3612DLK**	AL. TELESCOPING 64"	2 SPRING	12"	ALUM	FIBERGLASS	73"
The five models below are those considered in this letter of acceptance, WZ-114						
5018SS	Aluminum fixed	1 Spring	18"	Alum	Alum	86 “
5018NS	Aluminum fixed	Weld	18"	Alum	Alum	86"
5012SS	Aluminum fixed ***	1 Spring	12"	Alum	Fiberglass	81"
5012NS	Aluminum fixed ***	Weld	12"	Alum	Fiberglass	81"
3612 DLK	Aluminum fixed ***	2 Springs	12"	Alum	Fiberglass	80"

* Tested head-on at TTI, ** 36" sign support ***Qualify as “compact” stands

Sec. 635.411 Material or product selection.

(a) Federal funds shall not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

(1) Such patented or proprietary item is purchased or obtained through competitive bidding with equally suitable unpatented items; or

(2) The State highway agency certifies either that such patented or proprietary item is essential for synchronization with existing highway facilities, or that no equally suitable alternate exists; or

(3) Such patented or proprietary item is used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes.

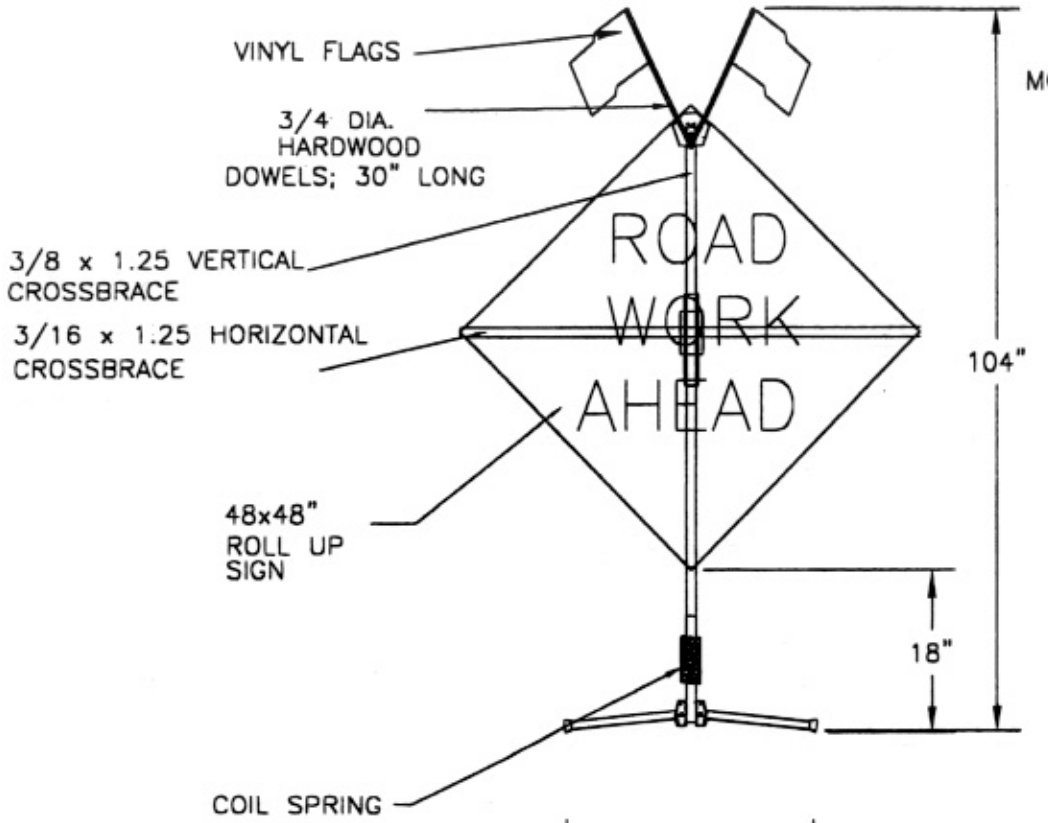
(b) When there is available for purchase more than one nonpatented, nonproprietary material, semifinished or finished article or product that will fulfill the requirements for an item of work of a project and these available materials or products are judged to be of satisfactory quality and equally acceptable on the basis of engineering analysis and the anticipated prices for the related item(s) of work are estimated to be approximately the same, the PS&E for the project shall either contain or include by reference the specifications for each such material or product that is considered acceptable for incorporation in the work. If the State highway agency wishes to substitute some other acceptable material or product for the material or product designated by the successful bidder or bid as the lowest alternate, and such substitution results in an increase in costs, there will not be Federal-aid participation in any increase in costs.

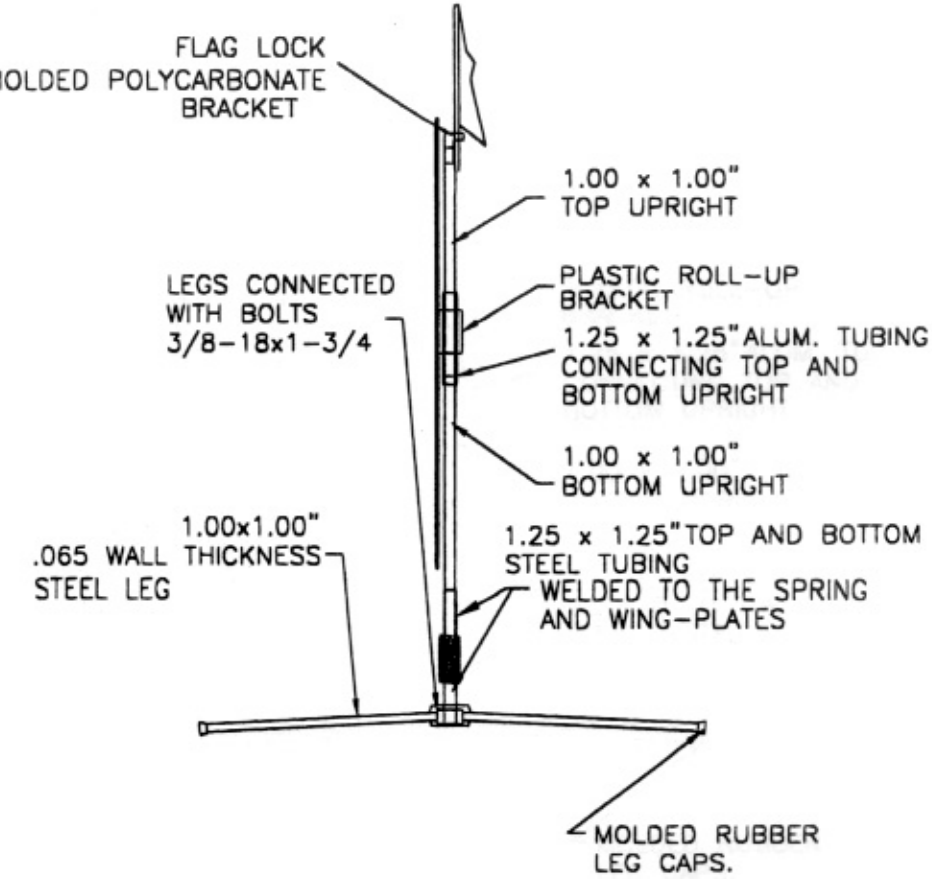
(c) A State highway agency may require a specific material or product when there are other acceptable materials and products, when such specific choice is approved by the Division Administrator as being in the public interest. When the Division Administrator's approval is not obtained, the item will be nonparticipating unless bidding procedures are used that establish the unit price of each acceptable alternative. In this case Federal-aid participation will be based on the lowest price so established.

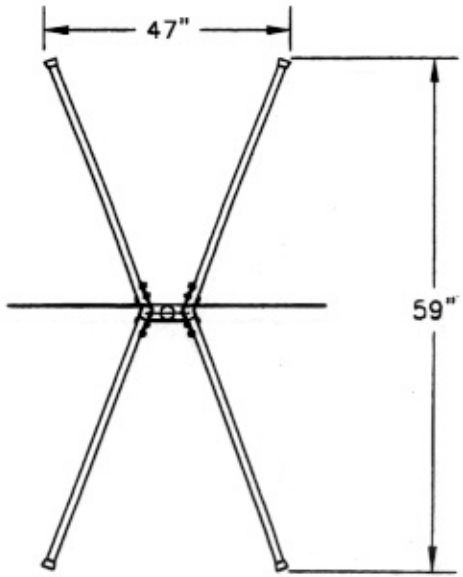
(d) Appendix A sets forth the FHWA requirements regarding (1) the specification of alternative types of culvert pipes, and (2) the number and types of such alternatives which must be set forth in the specifications for various types of drainage installations.

(e) Reference in specifications and on plans to single trade name materials will not be approved on Federal-aid contracts.

ENCLOSURE 2







SCHEMATIC DRAWING

WEIGHT:

ROLL-UP SIGN-- 5.5 LB

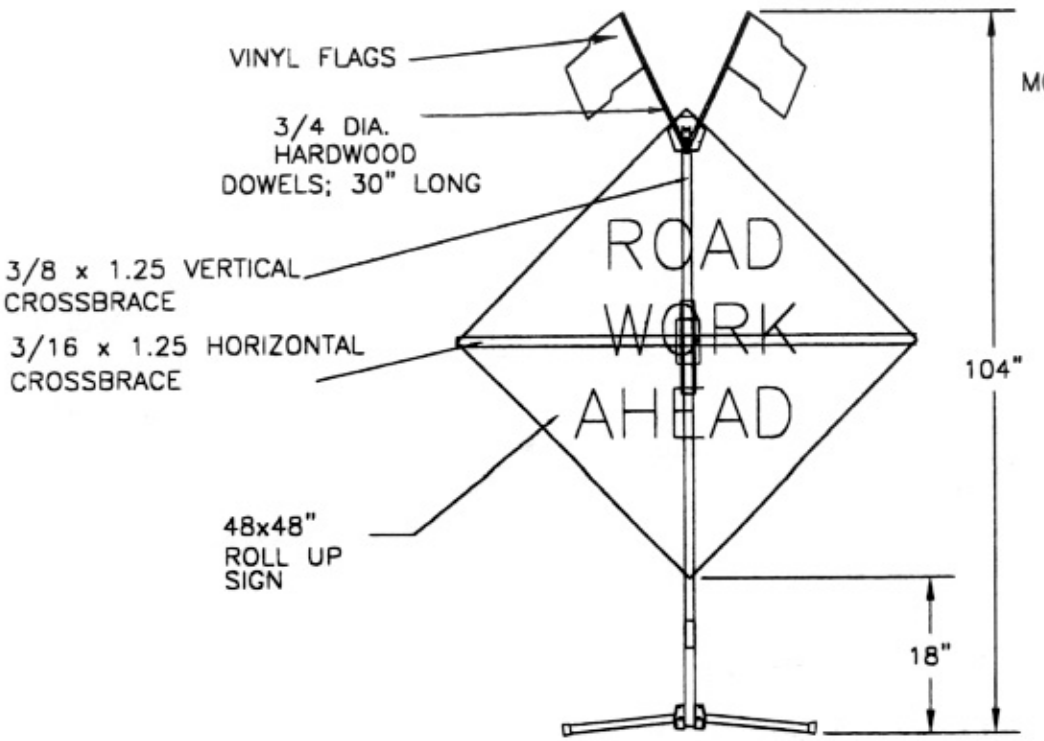
SIGN STAND WITH R.U SIGN BRACKETS--19.5 LB

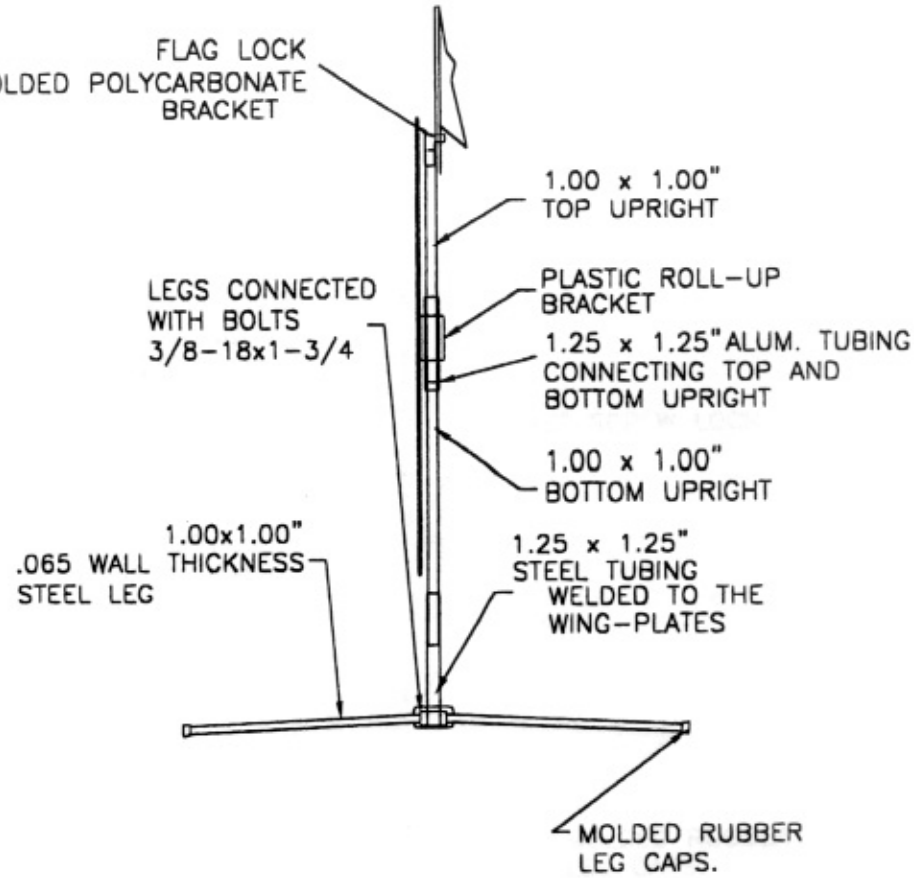
TOTAL --------25 LB

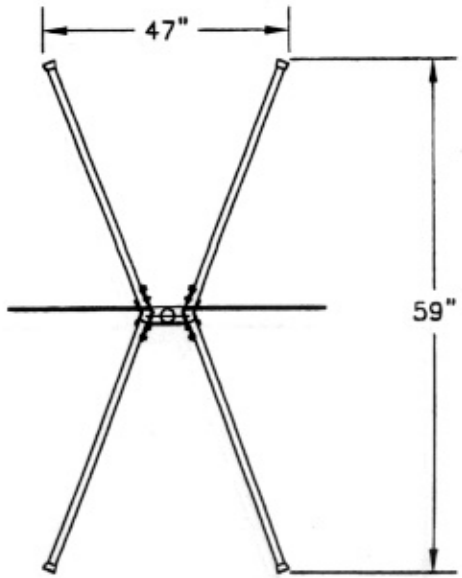
MDI

DATE: 02/18/02

NAME: MODEL 5018SS







WEIGHT:

ROLL-UP SIGN-- 5.5 LB

SIGN STAND WITH R.U SIGN BRACKETS--17 LB

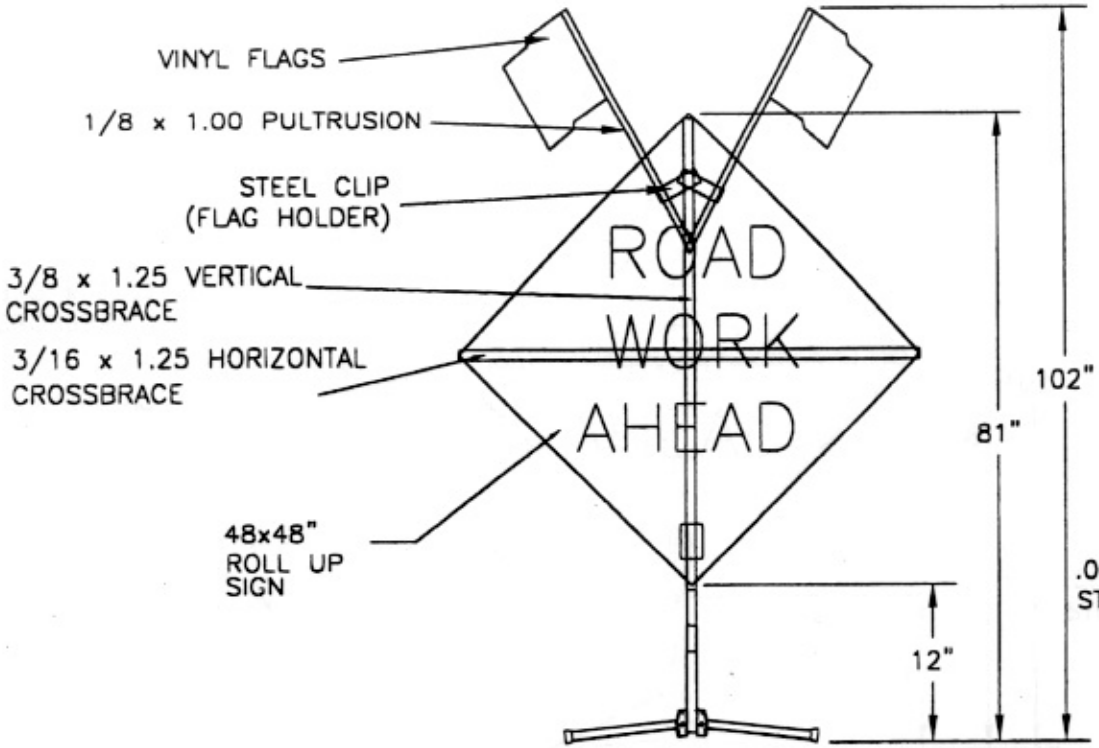
TOTAL - - - - - - - -22.5 LB

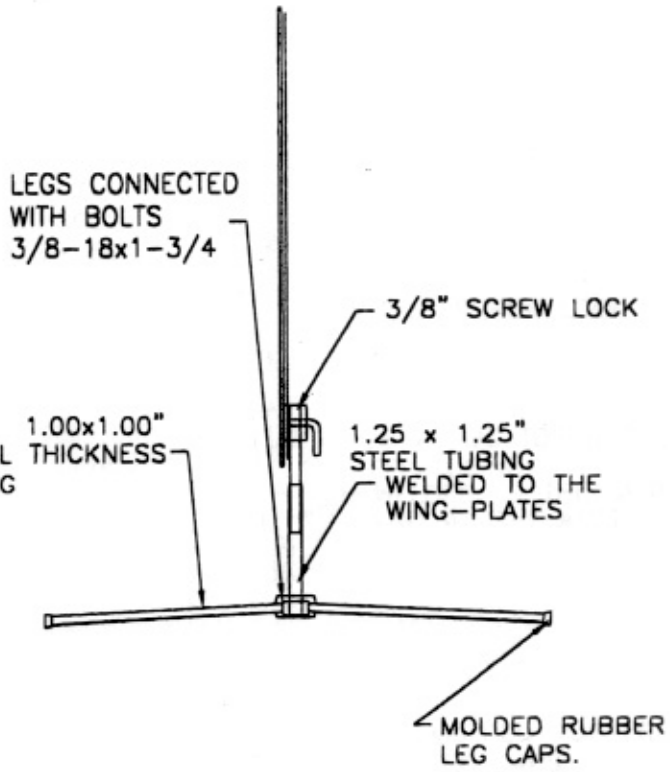
SCHEMATIC DRAWING

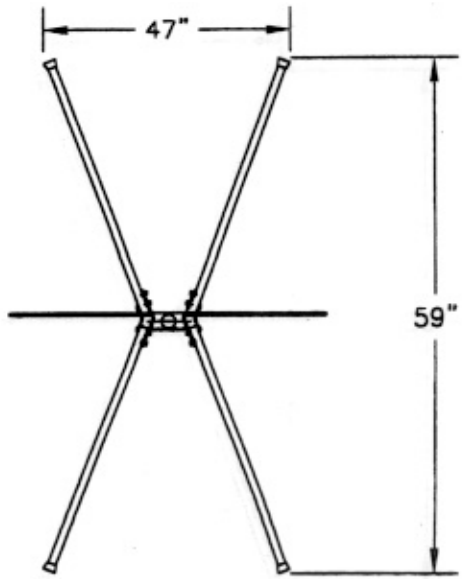
MDI

DATE: 02/18/02

NAME: MODEL 5018NS







WEIGHT:

ROLL-UP SIGN-- 5.5 LB

SIGN STAND WITH
R.U SIGN BRACKETS--14.5 LB

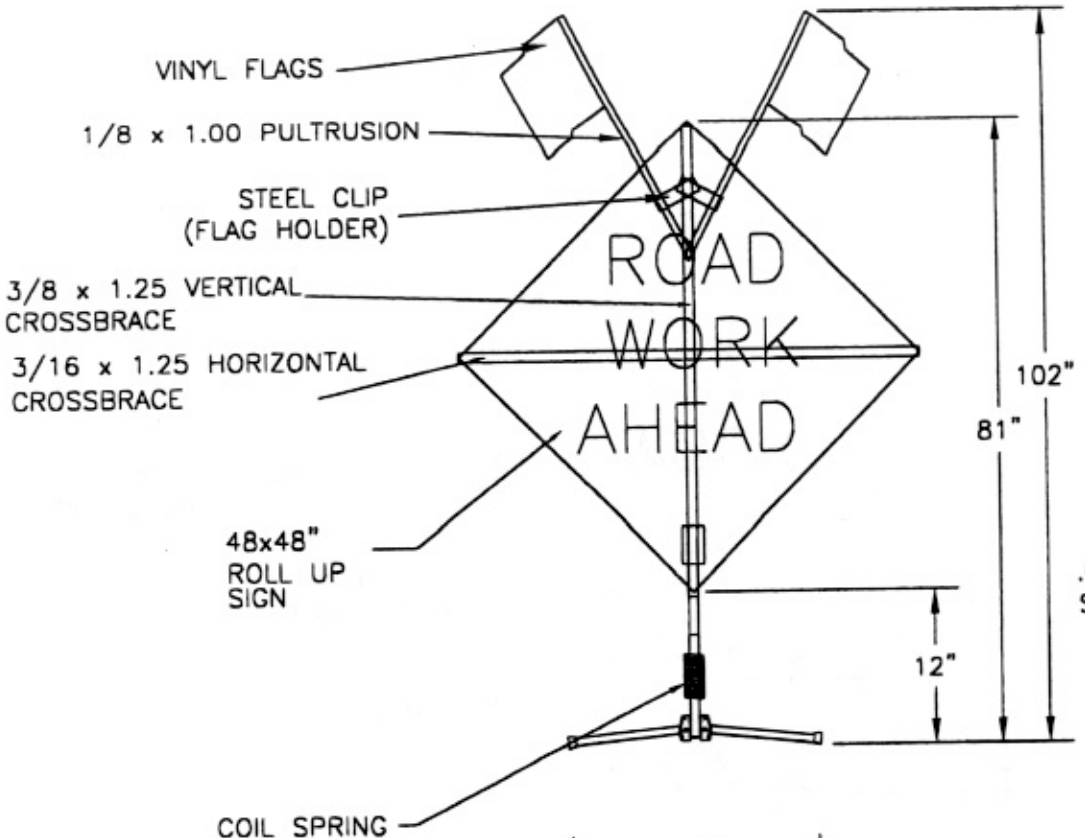
TOTAL--------20 LB

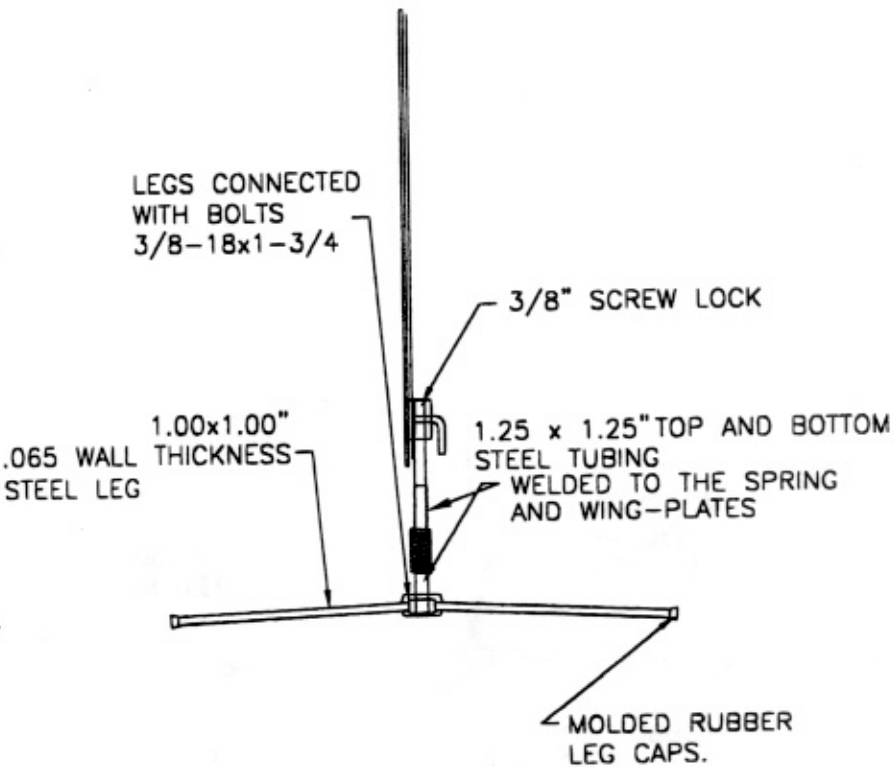
SCHEMATIC DRAWING

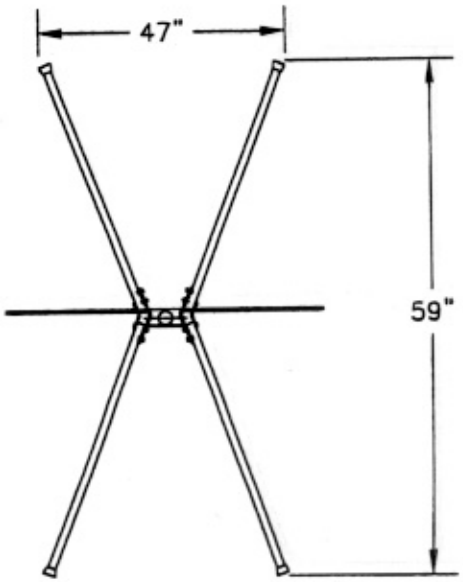
MDI

DATE: 02/18/02

NAME: MODEL 5012NS







WEIGHT:

ROLL-UP SIGN-- 5.5 LB

SIGN STAND WITH
R.U SIGN BRACKETS--16 LB

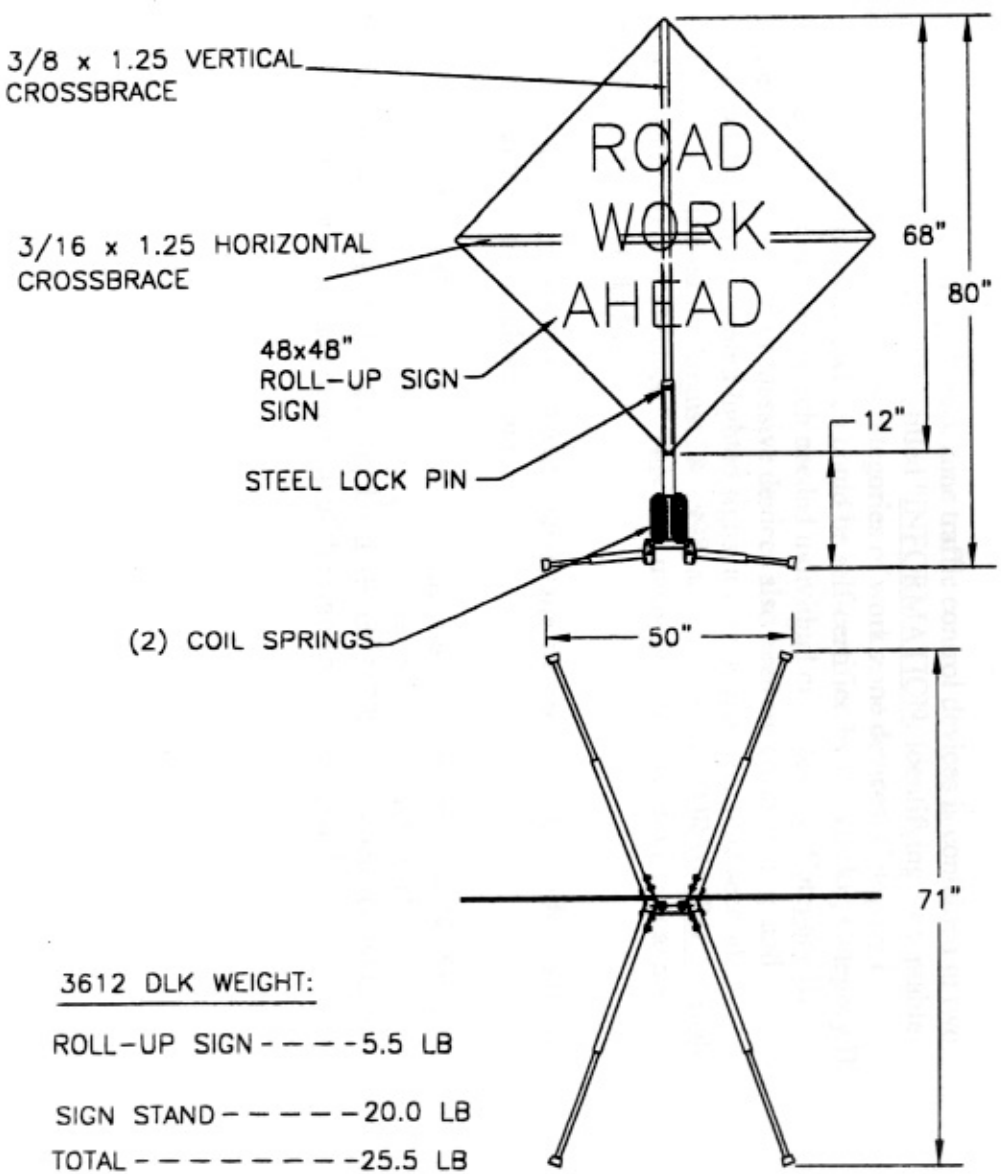
TOTAL --------21.5 LB

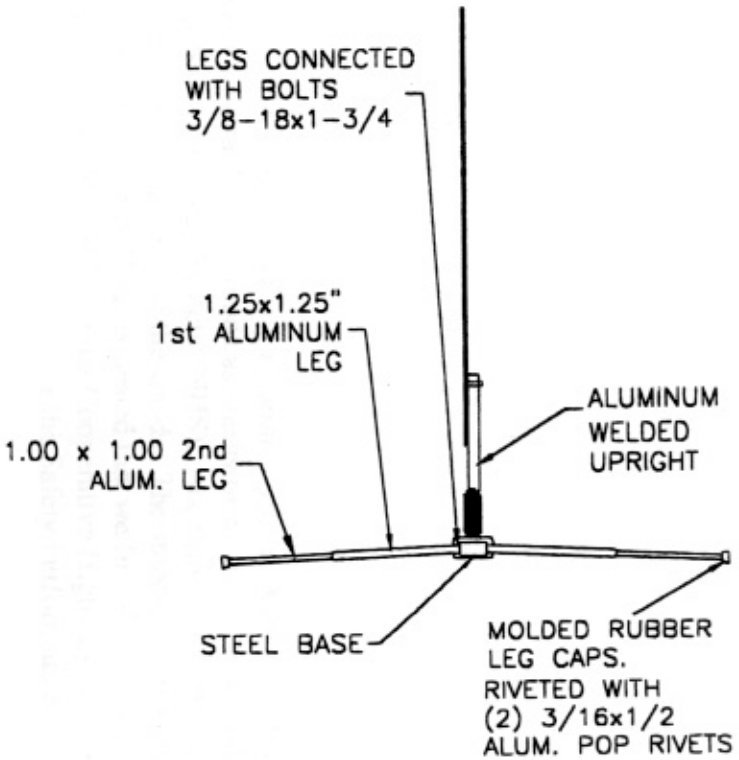
SCHEMATIC DRAWING

MDI

DATE: 02/18/02

NAME: MODEL 5012SS





3612 DLK WEIGHT:

ROLL-UP SIGN - - - - 5.5 LB

SIGN STAND - - - - - 20.0 LB

TOTAL - - - - - - - - 25.5 LB

MDI

DATE: 02/19/02

NAME: MODEL 3612 DLK

SCHEMATIC DRAWING