WZ-20

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

October 28, 1999

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

Refer to: HMHS

Mr. John Sarkisian
National Sales Manager
Market Displays International
38271 W. Twelve Mile Road
Farmington Hills, Michigan 48331-3041

Dear Mr. Sarkisian:

Thank you for your letter of June 15 requesting Federal Highway Administration (FHWA) acceptance of certain of your company's portable sign stands as crashworthy traffic control devices for use in work zones on the National Highway System. The letter was a follow-on to your December 10, 1998, letter which included a comparison of your company's stands to other portable sign stands that had been tested by the Texas Transportation Institute. You requested that we find Model 4814SSCK 3OCAM, 4OCAM, and 4814CS portable sign stands acceptable for use on the National Highway System based on their similarity to the-crash tested stands. On September 9, 1999, you provided additional information and also requested acceptance of two additional stands, the 4814NSCK and the 3612DLK.

Unifying features of these six "X-footprint" stands is that they consist of steel or aluminum telescoping legs, a vertical upright to support the roll-up sign, and a diamond shaped sign panel supported by horizontal and vertical fiberglass ribs (1220~mm (48-inch) square or 914~mm (36-inch square signs.) A significant deviation, however, is the mid-height mast of the 4814CS stand. Whereas the other three stands support the roll-up sign frame near the base, the 4814CS attaches to the middle of the sign bracing. We are not aware of any examples of a sign stands like that tested in the public domain. This stand will require crash testing prior to our review for acceptance.

The five remaining stands have little or no metal structure above the point at which the vertical fiberglass cross-bracing is enclosed. We have observed crash tests where roll-up signs mounted in this manner pass over the vehicle generally only doing minor damage to the windshield. No impacts have been observed where the windshield was penetrated. Of course, vehicle speed and trajectory are not affected to any great degree in tests of "compact" sign stands of this sort. These five signs are summarized in the following table and illustrated in the enclosed drawings:

Model #	Leg construction	Base	Sign Ht.	Upright	Mast	Ht to Top
3ocAM	STEEL 183Omm TELESCOPE (72")	W E L D	324 mm (12.75")	STEEL 667 mm	FIBERGLASS	2050 mm (80.75")
4ocAM	STEEL 1830 mm TELESCOPE (72")	1 SPRING	324mm (12.75")	STEEL 667 mm	FIBERGLASS	2050 mm (80.75")
4814SSCK	ALUMINUM 1830 mm TELESCOPING (72")	1 SPRING	324 mm (12.75")	ALUM 667 mm	FIBERGLASS	2050 mm (80.75")
4814NSCK	ALUMINUM 1830 mm TELESCOPING (72")	WELD	1324mm (2.75")	ALUM 667 mm	FIBERGLASS	2050 mm (80.75")
3612DLK*	ALUMINUM1625mm TELESCOPING (64")	2 Spring	305mm A L (12")	U M 585 mm	FIBERGLASS	1855 mm (73")

* The 3612DLK holds a 914~mm square roll-up sign. The other stands hold 1220~mm square roll-up signs.

On July 16, 1998, we wrote to you and accepted the 4814 DLK /4814 HDK portable sign stands as being similar to stands that were successfully tested for the Texas Department of Transportation. These sign stands also have no metal structure above the low base-mast holding the bottom of the fiberglass cross brace. The signs listed above can expected to perform in the same manner.

Therefore, your company's portable sign stands 4814SSCK 3OCAM, 4OCAM, 4814NSCK, and 3612DLK are acceptable for use on the National Highway System when requested by a State, subject to the conditions noted below. Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover their structural features, nor conformity of the devices with the Manual on Uniform Traffic Control Devices. 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 MD1 that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance. To prevent misunderstanding by others, this letter of acceptance, designated as number WZ-20, shall not be reproduced except in full.

You asked that we find these signs acceptable with a 9.52-mm (3/8-inch) thick vertical fiberglass rib. The "compact" type signs tested for Texas Department of Transportation used the 6.35~mm (l/4-inch) thick vertical rib. Until the thicker rib is verified by crash testing of your sign stands we recommend that the 6.35~mm thick vertical rib be used.

The following conditions apply to the five portable sign stands described above:

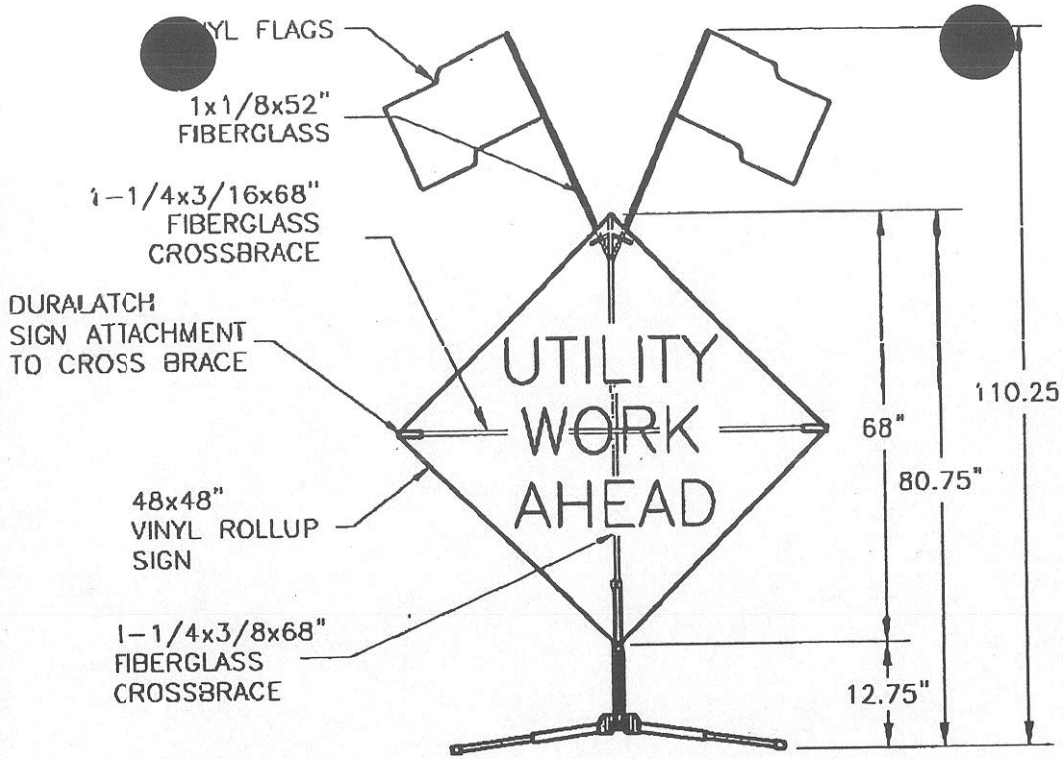
- Sign panel must be plastic/fabric "roll-up" type material
- Vertical support above base is 6.35~mm thick x 31.75~mm wide (3/8-inch thick x 1 l/4-inch wide) fiberglass
- Horizontal brace is 4.76-mm thick x 3 1.75~mm wide (3/l 6-inch thick x 1 l/4-inch wide) fiberglass
- No metal mast may be used to support the sign (above the low base mass assembly)
- Stands using thicker fiberglass ribs, lights, or flag assemblies should be tested to assess crashworthiness

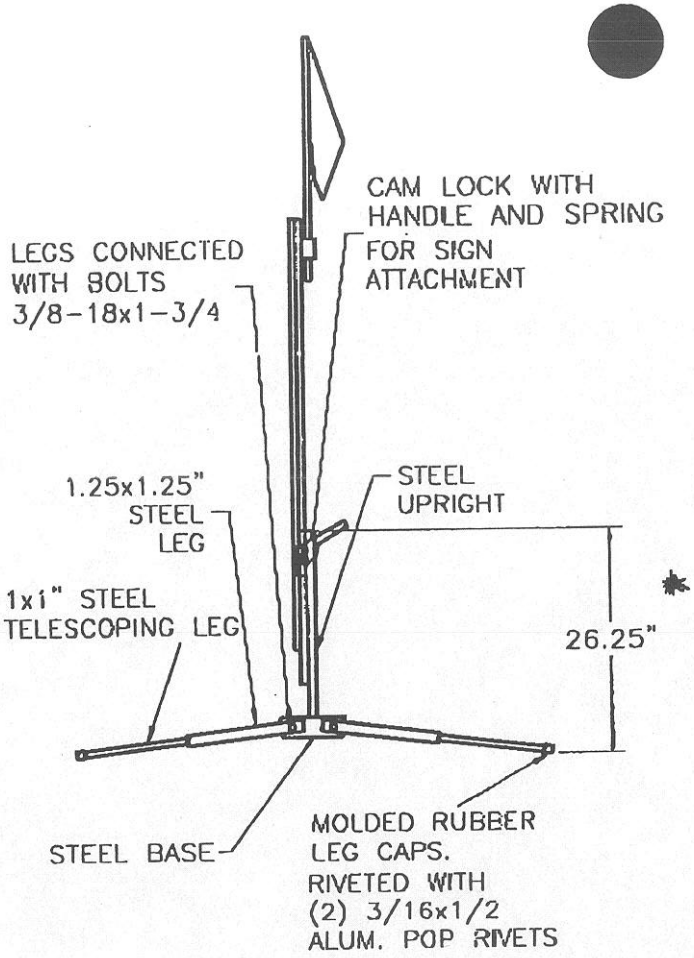
If any of these devices is a patented product, it will be considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under 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.

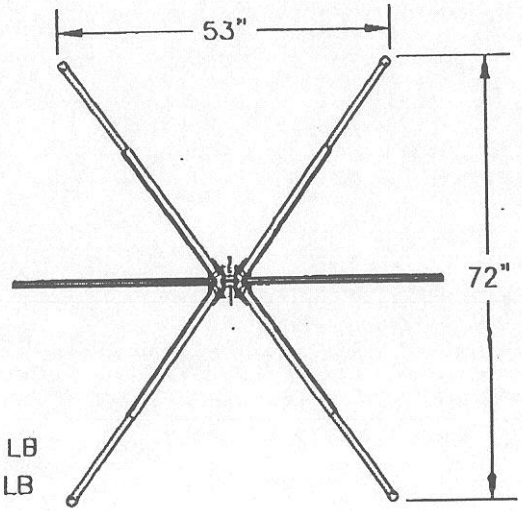
Sincerely yours,

Dwight A. Horne
Director, Office of Highway Safety
Infrastructure

3 Enclosures







30 CAM WEIGHT:

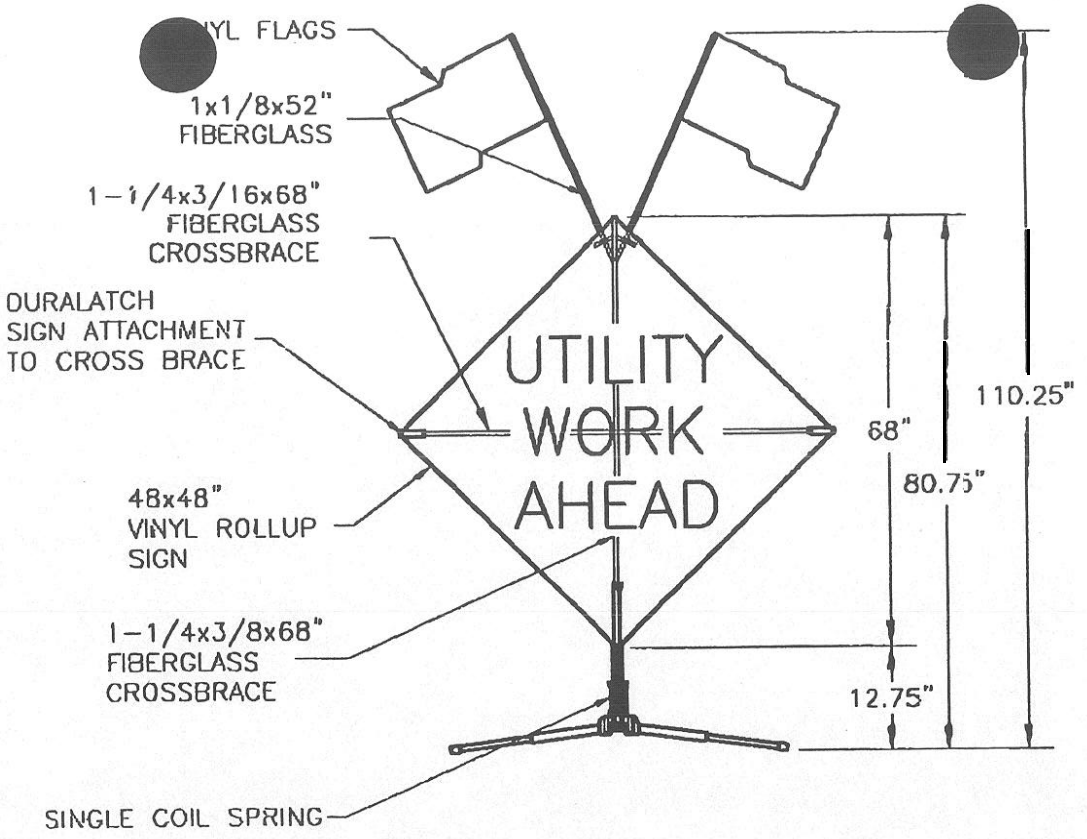
SIGN,CROSSBRACES
& FLAGS - - - - - 7.4 LB
SIGN STAND - - - - - 26 LB
TOTAL - - - - - - - - 33.4 LB

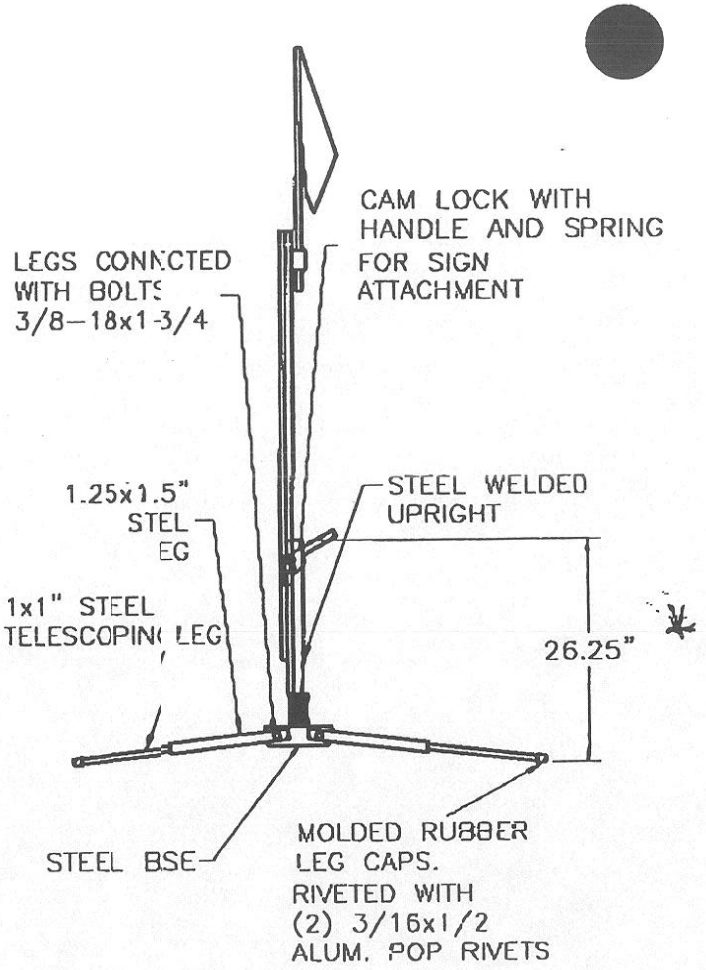
SCHEMATIC DRAWING

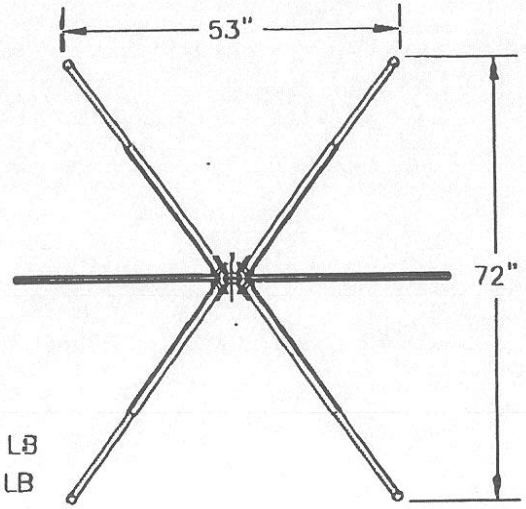
MDI

DATE:06/16/98

NAME: MODEL 30 CAM







40 CAM WEIGHT:

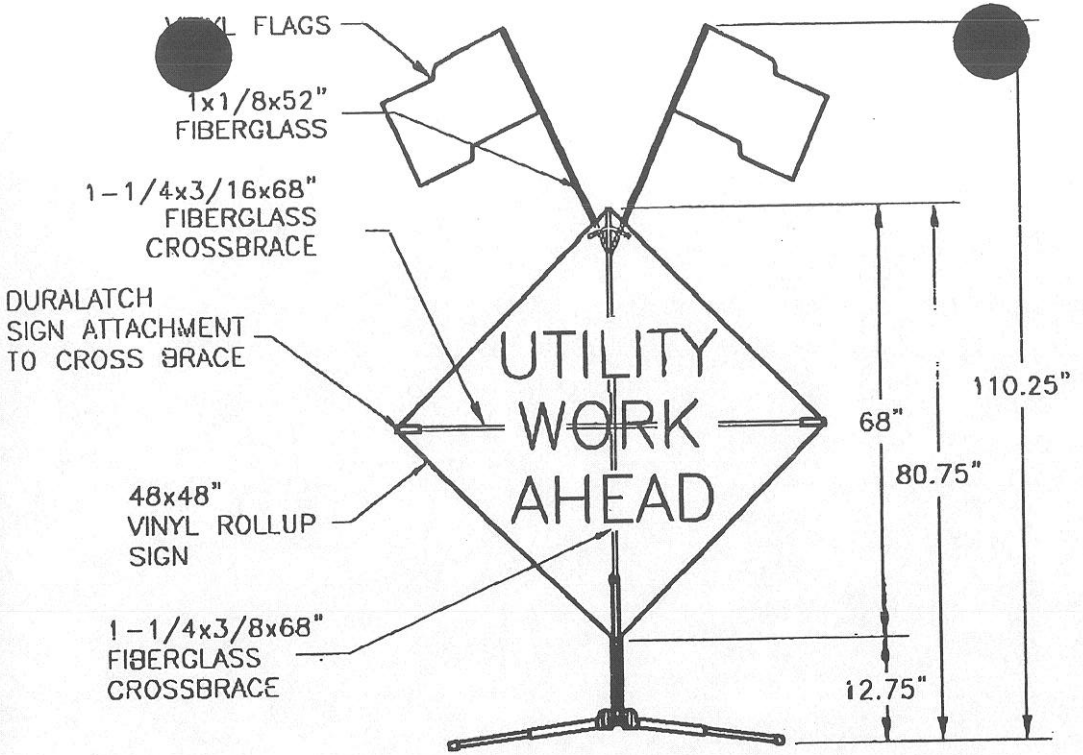
SIGN,CROSSBRACES
& FLAGS - - - - - 7.4 LB
SIGN STAND - - - - - 27 LB
TOTAL - - - - - - - - 34.4 LB

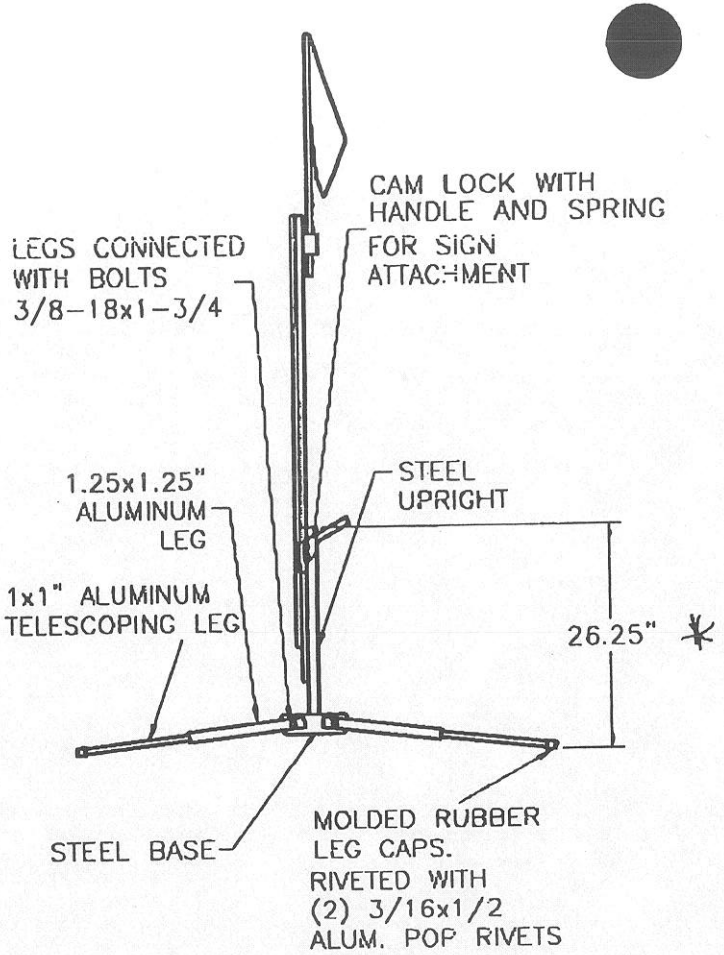
SCHEMATIC DRAWING

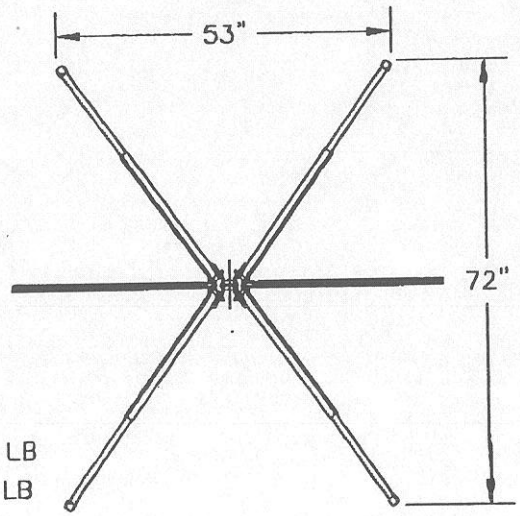
MDI

DATE:06/16/98

NAME: MODEL 40 CAM







30 CAM WEIGHT:

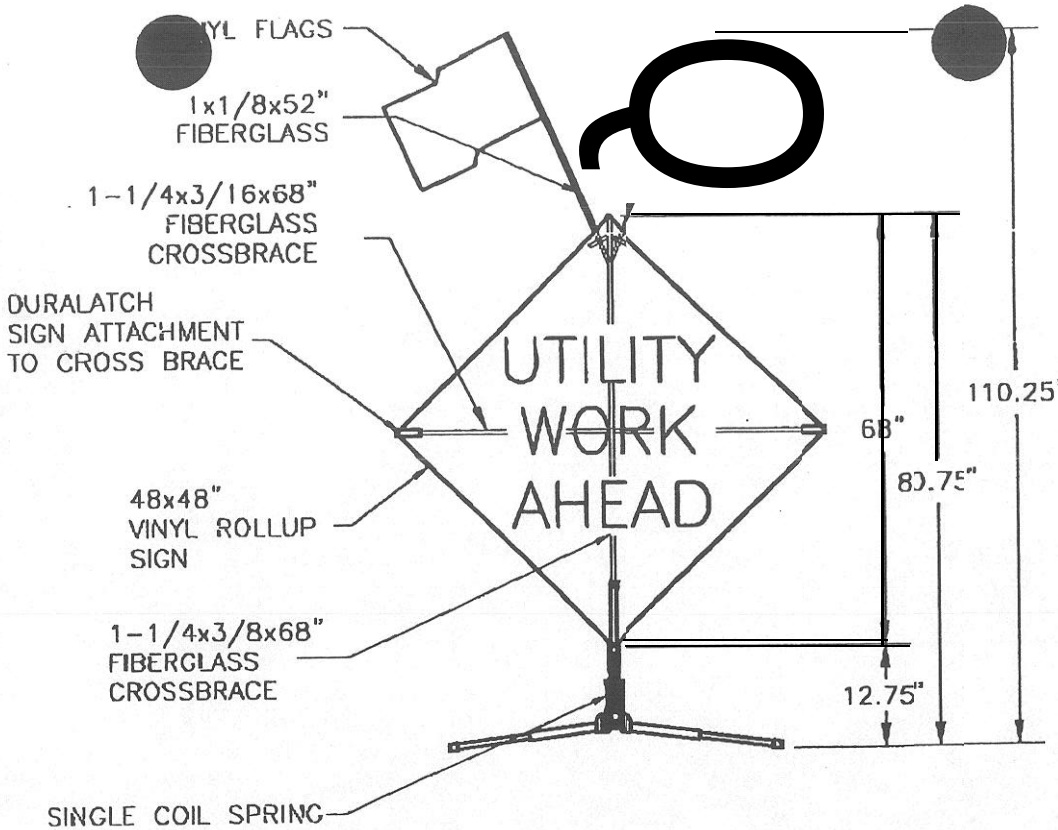
SIGN,CROSSBRACES & FLAGS - - - - - 7.4 LB
SIGN STAND - - - - - 20 LB
TOTAL - - - - - - - - 27.4 LB

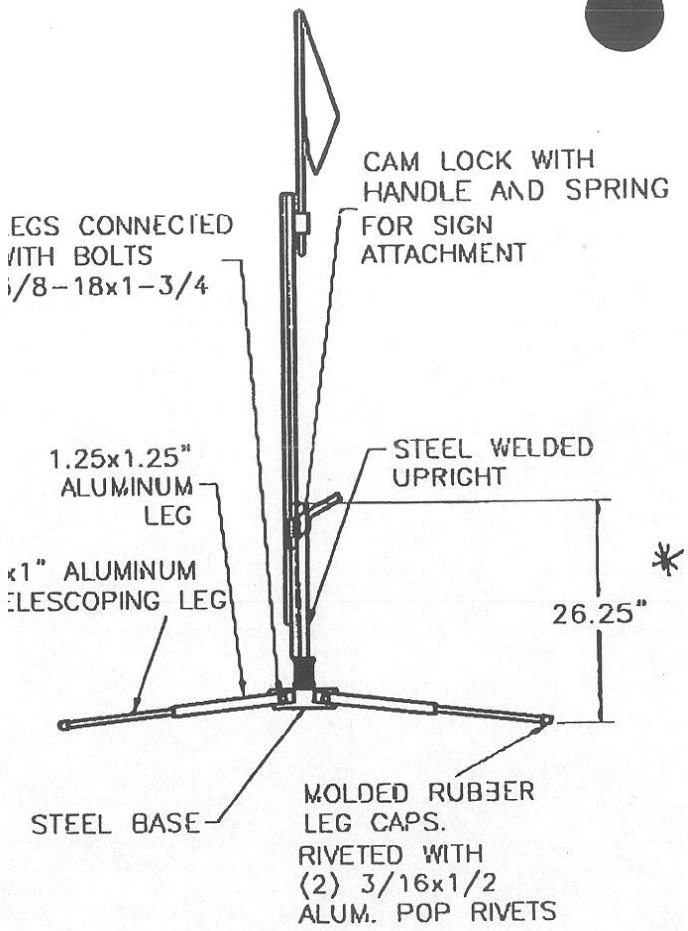
SCHEMATIC DRAWING

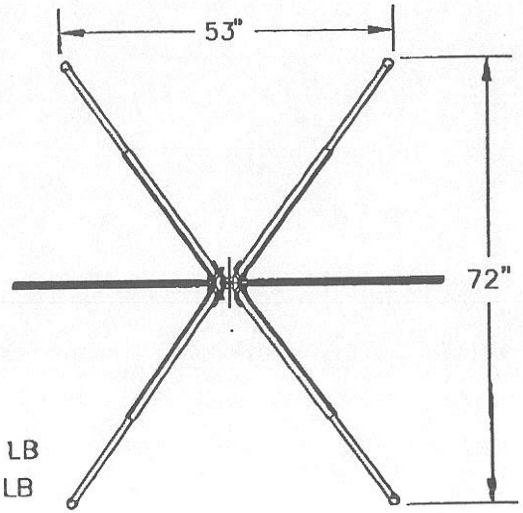
MDI

DATE:09/10/99

NAME: MODEL 4814 NSCK







4814 SSCK WEIGHT:

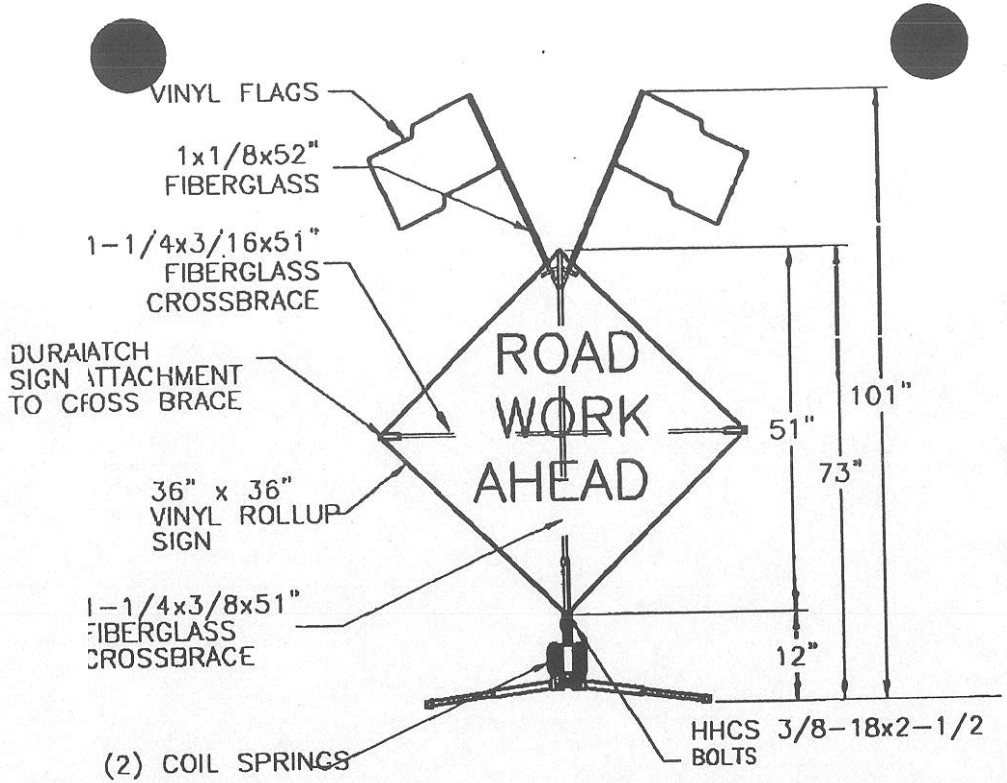
SIGN,CROSSBRACES
& FLAGS - - - - - 7.4 LB
SIGN STAND - - - - - 21 LB
TOTAL - - - - - - - - 28.4 LB

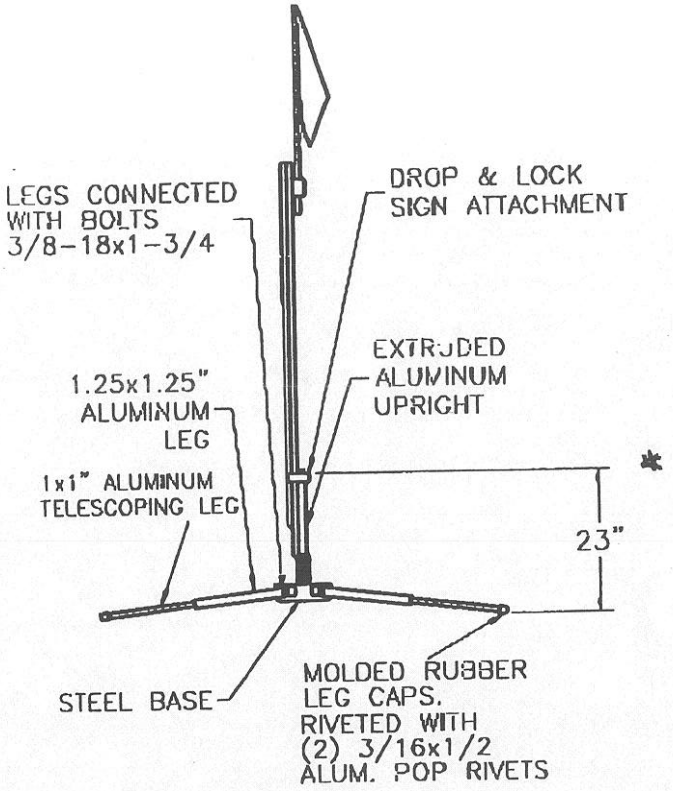
SCHEMATIC DRAWING

MDI

DATE:06/16/98

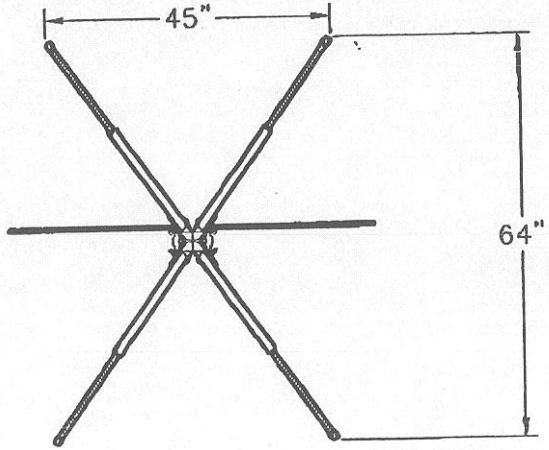
NAME: MODEL 4814 SSCK





WEIGHT:3612DLK

SIGN, CROSSBRACES & FLAGS - - - 5.6 LB;
SIGN STAND- - 16 LB;
TOTAL - - - 21.6 LB;



SCHEMATIC DRAWING

MDI

DATE:06/16/98

NAME: MODEL 3612 DLK

the request. The RFHWA will have approval authority on the request.

(3) Requests for waivers may be made for specific projects, or for certain materials or products in specific geographic areas, or for combinations of both, depending on the circumstances.

(4) The denial of the request by the RFHWA may be appealed by the State to the Federal Highway Administrator (Administrator), whose action on the request shall be considered administratively final.

(5) A request for a waiver which involves nationwide public interest or availability issues or more than one FHWA region may be submitted by the RFHWA to the Administrator for action.

(6) A request for waiver and an appeal from a denial of a request must include facts and justification to support the granting of the waiver. The FHWA response to a request or appeal will be in writing and made available to the public upon request. Any request for a nationwide waiver and FHWA's action on such a request may be published in the FEDERAL REGISTER for public comment.

(7) In determining whether the waivers described in paragraph (c)(1) of this section will be granted, the FHWA will consider all appropriate factors including, but not limited to, cost, administrative burden, and delay that would be imposed if the provision were not waived.

(d) Standard State and Federal-aid contract procedures may be used to assure compliance with the requirements of this section.

[48 FR 53104, Nov. 25, 1983, as amended at 49 FR 18821, May 3, 1984; 58 FR 38975, July 21, 1993]

EDITORIAL NOTE: For a waiver document affecting §635.410, see 60 FR 15478, Mar. 24, 1995.

§ 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.

§ 635.413 Warranty clauses.

The SHA may include warranty provisions in National Highway System (NHS) construction contracts in accordance with the following:

(a) Warranty provisions shall be for a specific construction product or feature. Items of maintenance not eligible for Federal participation shall not be covered.

(b) All warranty requirements and subsequent revisions shall be submitted to the Division Administrator for advance approval.

(c) No warranty requirement shall be approved which, in the judgment of the Division Administrator, may place an undue obligation on the contractor for items over which the contractor has no control.

(d) A SHA may follow its own procedures regarding the inclusion of warranty provisions in non-NHS Federal-aid contracts.

[60 FR 44274, Aug. 25, 1995]

§ 635.417 Convict produced materials.

(a) Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if such materials have been:

(1) Produced by convicts who are on parole, supervised release, or probation from a prison or

(2) Produced in a qualified prison facility and the cumulative annual production amount of such materials for use in Federal-aid highway construction does not exceed the amount of such materials produced in such facility for use in Federal-aid highway construction during the 12-month period ending July 1, 1987.

(b) *Qualified prison facility* means any prison facility in which convicts, during the 12-month period ending July 1, 1987, produced materials for use in Federal-aid highway construction projects.

[53 FR 1923, Jan. 25, 1988, as amended at 58 FR 38975, July 21, 1993]

APPENDIX A TO SUBPART D—SUMMARY OF ACCEPTABLE CRITERIA FOR SPECIFYING TYPES OF CULVERT PIPES

Type of drainage installation	Alternatives required			AASHTO designations to be included with alternatives	Application	Remarks
	Yes	No	Number			
Cross drains under high-type pavement.[1]	.....	X	.....	.....	Statewide	Any AASHTO-approved material.[2]
Other cross-drain installations.	X	.....	3 minimum	M–170 and M–190.	.....do	Do.[2]
Side-drain installations	X	.....	.....do	M–36	.....do	Do.[2]
Special installation conditions.	.....	X	.....	.....	Individual installation.	Specified to meet special conditions.
Special drainage systems (storm sewers, inverted siphons, etc.).	.....	X	.....	.....	.....do	Specified to meet site requirements.

[1] High-type pavement is generally described as FHWA construction type codes I, J, K, L, and plant mix and penetration macadam segments, respectively shown in the right-hand columns of type codes G and H having a combined thickness of surface and base of 7 in or more (or equivalent) or that are constructed on rigid bases.

[2] Types not included in currently approved AASHTO specifications may be specified if recommended by the State with adequate justification and approved by FHWA.

Subpart E—Interstate Maintenance Guidelines

SOURCE: 45 FR 20793, Mar. 31, 1980, unless otherwise noted.

§ 635.501 Purpose.

To prescribe Interstate maintenance guidelines and establish the policy and procedures to insure that the condition of Interstate routes is maintained at the level required by the purposes for which they were designed.