

WZ-32



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

February 25, 2000

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

Refer to: HMHS-10

Mr. Jeff Peterson
General Manager
Pacific Safety Supply, Inc.
1845 Anunsen St., NE.
Salem, OR 97303

Dear Mr. Peterson:

Thank you for your letter of November 16, 1999, requesting Federal Highway Administration (FHWA) acceptance of a number of your company's safety devices as crashworthy traffic control devices for use in work zones on the National Highway System (NHS). The devices had previously been found acceptable under FHWA acceptance letter WZ-17 issued to Dicke Tool Company. You requested that we find certain of these devices that are manufactured by Dicke Tool for your company acceptable for use on the NHS.

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 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, 1999, and is titled "INFORMATION: Crash Tested Work Zone Traffic Control Devices." This recent memorandum lists devices that are acceptable under Categories I, II, and III. Your company's devices are classified as Category II.

The table below outlines the dimensions of the tested stands. Drawings are included as an enclosure to this letter.

Stand Number	PS-3330-S Stand	PS-3000-S Stand
Test Number	D-G	D-12
System Designation	12	23
Legs	Rigid Aluminum	Telescoping Aluminum
Base	Double Spring	Double Spring
Mast	Aluminum, extra height	Aluminum, half height

Horizontal Spreader	Fiberglass, 6.35 mm	Fiberglass 4.72 mm
Height (excluding flags)	2051 mm	2178 mm
Flag staffs	Wood	Fiberglass
Orientation	Head on	Head on
Vehicle Impact Speed	103.1 km/h	104.0 km/h
Windshield Damage	I Crackine	Minor Cracking

SIGN: All sign panels were vinyl "roll-up" material, specifically "Reflexite Superbright."

LEGS: All legs are of square tubular aluminum, Rigid-legs are 31.75 mm square. Telescoping legs are 31.75 mm and 25.45 mm square.

BASE: "Double Spring" are steel with a double torsion spring system.

MAST: "Alum., extra height" is a square tubular aluminum support of three components. The mast extends above the top of the sign panel to support flags.

"Alum., half height" is a square tubular aluminum support of two components. The mast extends to the center of the sign panel.

HEIGHT: This is the height from the ground to the top of the sign panel. In system # 12 the flags are elevated 331 mm above the sign. In all others the flag support is at the top of the sign.

FLAGS: Material of flagstaff:

Wood = 610 mm long, 19 mm diameter wood rod.

Fiber. = 559 mm long fiberglass

As part of this testing program, full-scale automobile testing was conducted on various portable sign supports. Early on, two examples of each device were tested in tandem, one head-on and the next at 90 degrees, as called for in our guidance memoranda. Repeated testing of portable sign stands with roll-up signs showed that the second device struck did not show any more potential to penetrate the occupant compartment or to cause the vehicle to go out of control. Later tests were, therefore, conducted with two different devices being struck in tandem. Because the devices are free-standing and have a mass such that significant vehicle velocity change was not expected, measurement of occupant impact velocities and ride down accelerations were not conducted. The primary purpose of the tests was to assess the potential for occupant compartment intrusion and the test vehicle's post-impact trajectory.

The following devices made for your company were tested with successful results:

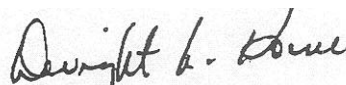
(System 12) Model numbers PS-3330-S or DF3330. A double-torsion, spring mounted sign support with a 12.19-mm square vinyl sign mounted at 337 mm with three wood-staffed flags at 2057 mm, and

(System 23) Model number PS-3000-S. A double-torsion, spring mounted sign support with a 1214-mm x 1219-mm vinyl sign mounted at 470 mm and two fiberglass flags mounted at 2178 mm.

The results of this testing met the FHWA requirements and, therefore, these two devices are acceptable for use on the NHS under the range of conditions tested, when proposed by a State. 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. 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 Pacific Safety Systems that the hardware furnished has essentially the same chemistry, mechanical properties, and geometry as those which were tested and submitted for acceptance. To prevent misunderstanding by others, this letter of acceptance, designated as number WZ- 29, shall not be reproduced except in full.

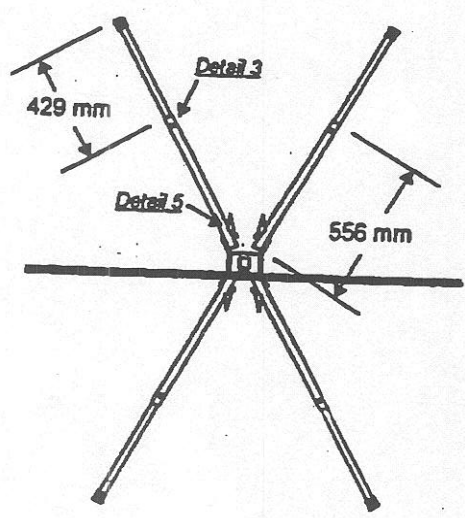
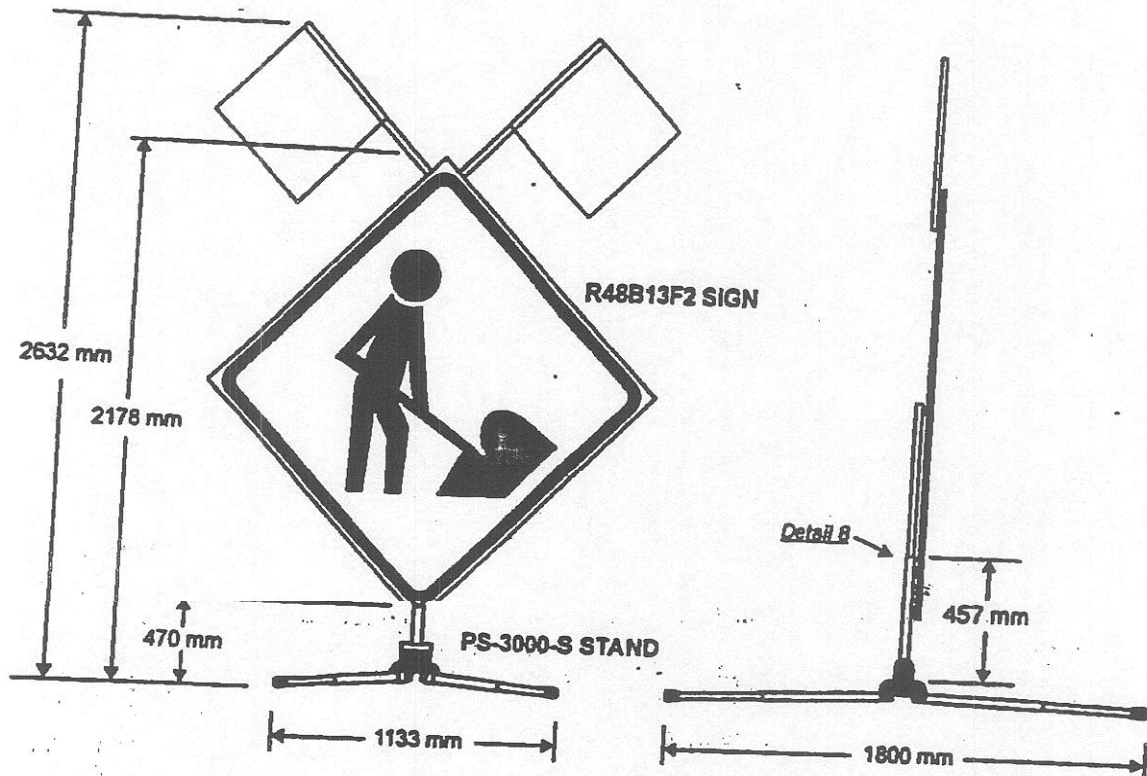
Your traffic control devices may be patented products or contain patented features. If so, they would be considered "proprietary." The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed 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. Home
Director, Office of Highway Safety Infrastructure

2 Enclosures



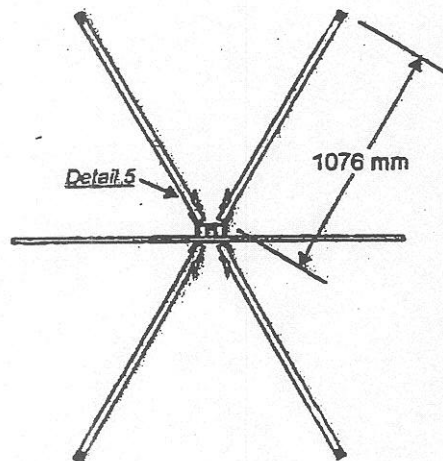
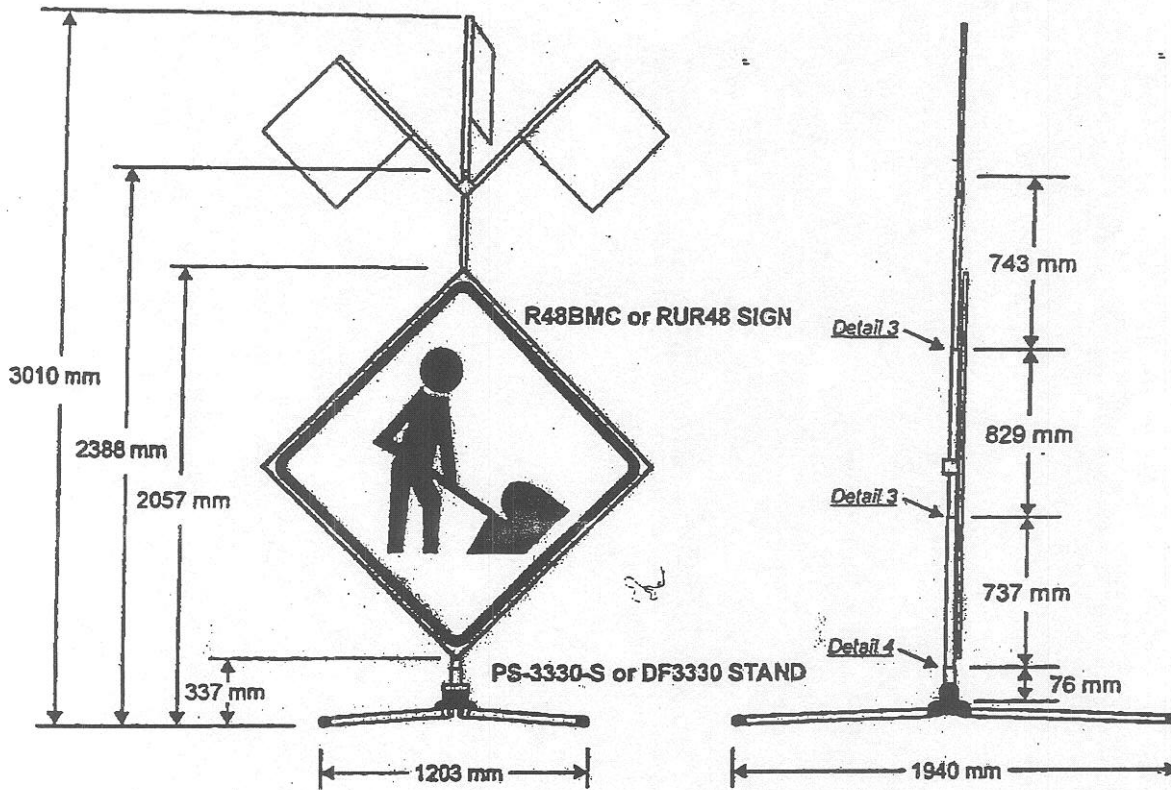
PS-3000-S STAND

- Base- Steel with double torsion spring system
- Legs- Telescopic 31.68 mm and 25.35 mm sq. aluminum tubing with 2.45 mm and 2.44 mm wall thickness, respectively

R48B13F2 SIGN

- Panel- Reflective vinyl, 1214 mm x 1219 mm
- Crossbrace- Vertical member is 6.32 mm th. x 31.30 mm x 1676 mm long fiberglass with 25.32 mm sq. x 2.50 mm wall x 828 mm long aluminum tube
- Crossbrace- Horizontal member is 4.72 mm th. x 30.97 mm w x 1676 mm long fiberglass
- 2 Flags- 457 mm x 457 mm vinyl with 3.20 mm th. x 24.95 mm w x 610 mm long fiberglass staff

Figure 39. System No. 23 Sign Support Details, Test D-12



PS-3330-S or DF3330 STAND

- Base- Steel with double torsion spring system
- Mast- 3 stage sq. aluminum tubing with 2.54 mm wall thickness
- Legs- 31.75 mm sq. x 2.54 mm wall x 1076 mm long aluminum legs

R48BMC or RUR48 SIGN

- Reflexite – super bright
- Panel- Reflective vinyl, 1219 mm x 1219 mm
- Crossbrace- Vertical member is 6.35 mm th. x 31.75 mm x 1676 mm long fiberglass
- Crossbrace- Horizontal member is 6.35 mm th. x 31.75 mm w x 1676 mm long fiberglass
- 3 Flags- 457 mm x 464 mm vinyl with 610 mm long (19.05 mm dia.) wood staff

Figure 17. System No. 12 Sign Support Details, Test D-6

the request. The RFWA 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 RFWA 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 RFWA 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. 26, 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 com-

petitive 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 alternate. 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 war-

ranty 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
Slide-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.