U.S. Department of Transportation
Federal Highway Administration

1200 New Jersey Ave., SE
Washington, D.C. 20590

September 4, 2012

In Reply Refer To:
WZ-320

Glenda Bleau
MDI Traffic Control Products
38271 W Twelve Mile Road
Farmington Hills, Michigan 48331

Dear: Ms. Bleau:

This letter is in response to your request for the Federal Highway Administration (FHWA) to review a roadside safety system for eligibility for reimbursement under the Federal-aid highway program.

Name of system:	MDI 5012SSALPT Sign Stand
Type of system:	X-Footprint compact portable sign stand
Test Level:	NCHRP Report 350 Test Level 3
Testing conducted by:	N/A
Date of request:	April 13, 2012

Decision
The following device is eligible, with details provided in the form which is attached as an integral part of this letter:
MDI 5012SSALPT X-footprint compact portable Sign Stand

Based on a review of a comparison of the subject portable sign stand to prior crash test results detailed in FHWA Letters WZ-28 and WZ-114 submitted by the manufacturer certifying the device described herein meets the crash test and evaluation criteria of the National Cooperative Highway Research Program (NCHRP) Report 350, the device is eligible for reimbursement under the Federal-aid highway program. Eligibility for reimbursement under the Federal-aid highway program does not establish approval or endorsement by the FHWA for any particular purpose or use.

The FHWA, the Department of Transportation, and the United States Government do not endorse products or services and the issuance of a reimbursement eligibility letter is not an endorsement of any product or service.

FHWA: HSST: NArtimovicht: sf: x61331:8/21/12
File: s: //directory folder/HSST/Artimovich/WZ-320
cc: HSST (NArtimovich; JDewar)

Requirements
To be found eligible for Federal-aid funding, roadside safety devices should meet the crash test and evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350 or the American Association of State Highway and Transportation Officials' Manual for Assessing Safety Hardware (MASH).

Description
The device and supporting documentation are described in the attached form. The requested stand, 5012SSALPT has a shorter upright mast but has the same base as both the 4884CS and 5018SS stands which were detailed in FHWA Letters WZ-28 dated March 3, 2000, andWZ-114 dated April 9, 2002, respectively.

Summary and Standard Provisions
Therefore, the system described and detailed in the attached form is eligible for reimbursement and may be installed under the range of conditions tested.

Please note the following standard provisions that apply to FHWA eligibility letters:

- This finding of eligibility does not cover other structural features of the systems, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may influence system conformance with NCHRP Report 350 criteria will require a new reimbursement eligibility letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals safety problems, or that the system is significantly different from the version that was crash tested, we reserve the right to modify or revoke this letter.
- You are expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You are expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the crash test and evaluation criteria of the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of eligibility is designated as number WZ-320 and shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed at our office upon request.
- This letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder. The FHWA does not become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

- The MDI sign stands are patented products and considered proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects: (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with the 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.

Sincerely yours,

Michael S. Griffith
Director, Office of Safety Technologies

Enclosures

U.S. Department
of Transportation
Federal Highway Administration

1200 New Jersey Ave., SE
Washington, D.C. 20590

Sept 4, 2012

In Reply Refer To:
WZ-320

Glenda Bleau
MDI Traffic Control Products
38271 W Twelve Mile Road
Farmington Hills, Michigan 48331

Dear: Ms. Bleau:

This letter is in response to your request for the Federal Highway Administration (FHWA) to review a roadside safety system for eligibility for reimbursement under the Federal-aid highway program.

Name of system:	MDI 5012SSALPT Sign Stand
Type of system:	X-Footprint compact portable sign stand
Test Level:	NCHRP Report 350 Test Level 3
Testing conducted by:	N/A
Date of request:	April 13, 2012

Decision
The following device is eligible, with details provided in the form which is attached as an integral part of this letter:
MDI 5012SSALPT X-footprint compact portable Sign Stand

Based on a review of a comparison of the subject portable sign stand to prior crash test results detailed in FHWA Letters WZ-28 and WZ-114 submitted by the manufacturer certifying the device described herein meets the crash test and evaluation criteria of the National Cooperative Highway Research Program (NCHRP) Report 350, the device is eligible for reimbursement under the Federal-aid highway program. Eligibility for reimbursement under the Federal-aid highway program does not establish approval or endorsement by the FHWA for any particular purpose or use.

The FHWA, the Department of Transportation, and the United States Government do not endorse products or services and the issuance of a reimbursement eligibility letter is not an endorsement of any product or service.

Requirements
To be found eligible for Federal-aid funding, roadside safety devices should meet the crash test and evaluation criteria contained in the National Cooperative Highway Research Program (NCHRP) Report 350 or the American Association of State Highway and Transportation Officials' Manual for Assessing Safety Hardware (MASH).

Description
The device and supporting documentation are described in the attached form. The requested stand, 5012SSALPT has a shorter upright mast but has the same base as both the 4884CS and 5018SS stands which were detailed in FHWA Letters WZ-28 dated March 3, 2000, andWZ-114 dated April 9, 2002, respectively.

Summary and Standard Provisions
Therefore, the system described and detailed in the attached form is eligible for reimbursement and may be installed under the range of conditions tested.

Please note the following standard provisions that apply to FHWA eligibility letters:

- This finding of eligibility does not cover other structural features of the systems, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may influence system conformance with NCHRP Report 350 criteria will require a new reimbursement eligibility letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals safety problems, or that the system is significantly different from the version that was crash tested, we reserve the right to modify or revoke this letter.
- You are expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You are expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the crash test and evaluation criteria of the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of eligibility is designated as number WZ-320 and shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed at our office upon request.
- This letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder. The FHWA does not become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

- The MDI sign stands are patented products and considered proprietary. If proprietary systems are specified by a highway agency for use on Federal-aid projects: (a) they must be supplied through competitive bidding with equally suitable unpatented items; (b) the highway agency must certify that they are essential for synchronization with the 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.

Sincerely yours,

Michael S. Griffith

Michael S. Griffith
Director, Office of Safety Technologies

Enclosures

Attachment 1

Page 1	**FEDERAL HIGHWAY ADMINISTRATION** **OFFICE OF SAFETY DESIGN** **Category 2 Work Zone Device Acceptance Letter**	Letter Number WZ-320 Date 4-13-12
Contact Info	Petitioner / Developer Name and Address: MDI Traffic Control Products 38271 W Twelve Mile Road Farmington Hills, MI 48331	
	I herby certify that the device(s) covered by this Acceptance Letter meet(s) the crash – worthiness test and evaluation requirements of the FHWA and NCHRP Report 350.	
Signature	Glenda Bleau	
Telephone #	(248) 488-5704	
Email Address	gbleau@mdiworldwide.com	
	Laboratory / Engineer Name and Address Christopher Larsen 38271 W Twelve Mile Road Farmington Hills, MI 48331	
☐	I hereby certify that the testing that supports this Acceptance Letter was conducted in accordance with NCHRP Report 350 guidelines, that the device(s) tested is/are accurately described on this form, and that the test results indicate that the device meets all applicable NCHRP Report 350 evaluation criteria.	
☑	I have evaluated the requested modifications to these devices previously found acceptable by the FHWA in Acceptance Letter WZ-18, 114, and hereby certify that, in my opinion, the modifications do not adversely affect the crash performance of the devices. I also certify that these devices are accurately described on this form.	
Signature	Chris Larsen	
Telephone #	(248) 488-5701	
Email Address	clarsen@mdiworldwide.com	
Keywords:		
	Type of Device (See page 3) X-Footprint Sign Stand	
	Composition of Sign or Rail substrate (See Page 3) Roll-up / Fabric (with fiberglass spreaders – aluminum or steel spreaders are not allowed	
	Thickness of substrate (inches):	
	Height of sign from the ground (inches), if applicable: (See Page 3) Low: 12 to 18 inches above the pavement	
	Flags and or lights present during test? Indicate number of each: # of flags: # of lights: Weight of lights: ea.	
Device Name		
Detailed Desc. Of Device, Materials, sizes, Fasteners, Substrates Foundation, Aux. Features Ballast, etc.	(May be attached on separate page(s) See attached	

W2-320

Page 2	**FEDERAL HIGHWAY ADMINISTRATION** **OFFICE OF SAFETY DESIGN** **Category 2 Work Zone Device Acceptance Letter**	Letter Number Date
	Mandatory Attachments	
	Attachment # 1: Test data summary page(s)	
	Attach. #1a — Test #	
	Attach. #1b — Test #	
	Attach. #1c — Test #	
	Attach. #1d — Test #	
Alternative	**Attachment # 1:** Description and discussion of modification(s) to crash tested and/or accepted device.	
	Date:	
	Attachment # 2: PDF drawing(s) of device(s)	
	Attach. #2a — Drawing Title: 5012SSALPT	
	Drawing #: ZA-06977-01	
	Attach. #2b — Drawing Title:	
	Drawing #:	
	Attach. #2c — Drawing Title:	
	Drawing #:	
	Attach. #2d — Drawing Title:	
	Drawing #:	
	Attach. #2e — Drawing Title:	
	Drawing #:	
	Attach. #2f — Drawing Title:	
	Drawing #:	
	Attach. #2g — Drawing Title:	
	Drawing #:	

Page 3	FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter	Letter Number Date

WZ-320

Please select from the following Keywords for "Type of Device":

Longitudinal Channelizing Barricade
Curb (Curb channelizer system with or without road tubes or other channelizers)
Drum
H-Footprint Sign Stand
X-Footprint Sign Stand
Trailer Mounted Signs (Does not include arrow boards or variable message signs or other Category 4 trailer mounted devices.)
Automated Flagger Device (not trailer mounted)
Tripod Sign Stand
Type I Barricade
Type II Barricade
Type III Barricade
Vertical Panel
Intrusion Detector
Ballast (Action relates to ballast on one or more devices)
Channelizer (Individual units unlike cones, road tubes, or drums)

Please select from the following Keywords for "Sign Substrate":

Roll-up / Fabric (with fiberglass spreaders – aluminum or steel spreaders are not allowed.)
Plywood
Aluminum – Solid
Aluminum – Laminate
Corrugated Plastic
Extruded Plastic
Waffleboard Plastic
Wood / Lumber

Please select from the following Keywords for "Height of Sign":

The distance to the lowest point on the sign is:

Low	12 to 18 inches above the pavement
Mid-A	20 to 24 inches above the pavement
Mid-B	25 to 36 inches above the pavement
Mid-C	37 to 59 inches above the pavement
Tall	60 to 71 inches above the pavement
Oversized	72 inches and taller

Page 4	FEDERAL HIGHWAY ADMINISTRATION OFFICE OF SAFETY DESIGN Category 2 Work Zone Device Acceptance Letter			Letter Number Date

WZ-320

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, or 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 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.
- If the subject of this letter is a patented device it is 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 by a highway agency* for use on Federal-aid 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.
- This Acceptance Letter shall not be construed as authorization or consent by the Federal Highway Administration to use, manufacture, or sell any patented device for which the applicant is not the patent holder. The Acceptance Letter is limited to the crashworthiness characteristics of the candidate device, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

U.S. Department
of Transportation
Federal Highway
Administration

April 9, 2002

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

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.
- MDT'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

WZ-.28

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

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

March 3, 2000

Refer to: HSA-1

Mr. John Sarkisian
Marketing Displays International
38271 W. Twelve Mile Road
Farmington Hills, Michigan 48331-3041

Dear Mr. Sarkisian:

Thank you for your letter of November 8, 1999, requesting Federal Highway Administration (FHWA) acceptance of a number of your company's portable sign stands as a crashworthy traffic control devices for use in work zones on the National Highway System (NHS). Accompanying your letter was a copy of the crash test report by Safety Quest, Inc., and video documentation of the crash tests. You requested that we find the three tested devices, as well as certain devices of similar design, acceptable for use on the National Highway System under the provisions of National Cooperative Highway Research Program Report 350 "Recommended Procedures for the Safety Performance Evaluation of Highway Features." You provided additional information on January 18, 2000, regarding specific product requests.

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 latest memorandum lists devices that are acceptable under Categories I, II, and III.

Full-scale automobile testing was conducted on a number of your company's portable sign supports. 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.

All stands have square aluminum legs and aluminum upright masts and were tested with 1219 x 1219-mm roll-up signs. All signs were affixed with warning flags on either fiberglass staffs or wood dowels. The tested stands were: MDI 4814 CS Compact Sign Stand. This is a dual vertical spring mounted support for roll-up signs. The legs telescope to a maximum spread of 1800-mm (71 inches) in the direction of traffic, and the upright mast is 1260-mm (49.5 inches) high. It was tested with a sign mounted 368-mm (14 inches) from the pavement to the bottom of the sign.

MDI 4884 CS Compact Sign Stand
This is a single vertical spring mounted support for roll-up signs. The rigid legs have a maximum spread of 2800-mm (110 inches), and the upright mast extends to a maximum height of 3030-mm (119 inches) to the top of the sign. It was tested with a sign mounted with its lowest point 2134-mm (84 inches) above the pavement.

MDI 4860 KA
This is a dual vertical spring mounted support for roll-up signs. The rigid legs have a maximum spread of 3124-mm (123 inches), and the upright mast extends to a maximum height of 3350- mm (132 inches) to the top of the sign. It was tested with a sign mounted with its lowest point 1524-mm (60 inches) above the pavement.

Test Number	SQI99002-MDI4	SQI99002-MDI5	SQI99002-MDI6
Device Number	MDI 4814 CS	MDI 4884 CS	MDI 4860 KA
Test Article Mass (each)	13.8 kg	22 kg	23.1 kg
Ballast Used (each)	None	None	None
Sign Mounting Height	368 mm	2134 mm	1524 mm
Lights	None	None	None
Flagstaffs	2 Fiberglass	3 Fiberglass	3 Wood
Vehicle Test Inertial Mass	814 kg	814 kg	814 kg
Vehicle Impact Speed, Head – on	103 km/hr	101 km/hr	101 km/hr
Windshield Damage	Extensive localized cracking	Extensive localized cracking	Minor damage
Other Damage	Dents to bumper and hood	Dents to bumper, hood, and roofline	Dents to bumper, hood, and roofline. Fuel leak.
Vehicle Velocity Change	Judged Negligible	Judged Negligible	Judged Negligible

During the tests the most extensive windshield damage was significant cracking confined to the immediate vicinity of the impact. There were no holes through the glass, though both inner and outer layers of the windshield were cracked. There was no occupant compartment intrusion observed, and only minor deformation of the roofline occurred. No test article debris showed

potential for penetrating the occupant compartment. After the final test run, the fuel tank was found to be leaking. This may be the result of impacting six sign stands, as the same vehicle was used for all three tests with only the windshield being replaced between tests.

The results of this testing met the FHWA requirements and, therefore, the devices above and illustrated in the enclosures are acceptable for use on the NHS under the range of conditions tested, when proposed by a State.

You also requested acceptance of certain portable stands by virtue of their similarity to the stands that were tested:

> Model 4860 was tested at 0 and at 90 degrees. This metal unistrut support carried a roll-up sign mounted at 1524 mm. You requested acceptance for model 4850 with sign mounted as shown in the enclosed drawing, and model 4860 with sign mounted at 2.1-m (7 feet). Stand 4850 is comparable in design to the tested 4860, and holds the sign at the same height.

Although there are some differences in the layout of the legs and the manner in which the sign attaches to the stand, we concur that performance would be similar. Stand 4860 was tested at 1524-m and we concur that the same stand would perform acceptably at 2.1- m because of the greater likelihood that the test article would go over the vehicle without further damage. Stand models 4818 and 1812 have similar bases and mast structure but do not hold the sign as high as the tested Model 4860.

However, your stand Model 50SM which holds signs at similar mounting heights has been tested successfully.

> Model 4814CS was tested at 0 and 90 degrees. This stand has an aluminum mast up to a point in the middle of the roll-up sign bracing.

It carries a sign mounted at 370-mm. You requested acceptance for model 4815 which only differs in the length of the legs and in the specific method of attaching the sign to the stand. We concur that the performance of the Model 4815 stand would be comparable to the 4814 CS.

You also requested that we specifically mention sign stand Model 4814K. This stand is identical to the 4814DLK stand previously accepted in a letter dated July 16, 1998, except it does not have the "drop-n-lock" feature. Because of the low mounting height this difference should not be significant, therefore, we concur in this request.

Finally, you asked that we amend our acceptance letter WZ-20 , dated October 28, 1999, based on the results of the latest testing.

In the earlier letter we had limited your sign stands to a vertical fiberglass upright of a thickness no greater than 6.35mm (1/4 inch). The Safety Quest testing showed that a 9.52-mm thick upright was acceptable. The Safety Quest testing also showed that your flag assemblies with fiberglass supports were acceptable when tested with roll-up signs. Therefore, we consider your crash tested sign stands as acceptable with vertical fiberglass uprights with a maximum thickness of 9.52-mm and when using flag assemblies mounted on top.

In summary, the stands we find acceptable are the tested 4814 CS, 4884CS, 4860 KA and the similar stands 4850, 4860 with 2.1 m mounting height, 4812, 4818, 4815, and 4814 K, as shown in the enclosed drawings.

Our acceptance is limited to the crashworthiness characteristics of the devices and does not cover 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 MDI 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-28, shall not be reproduced except in full.

If components of your portable sign stands are patented products they may 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.

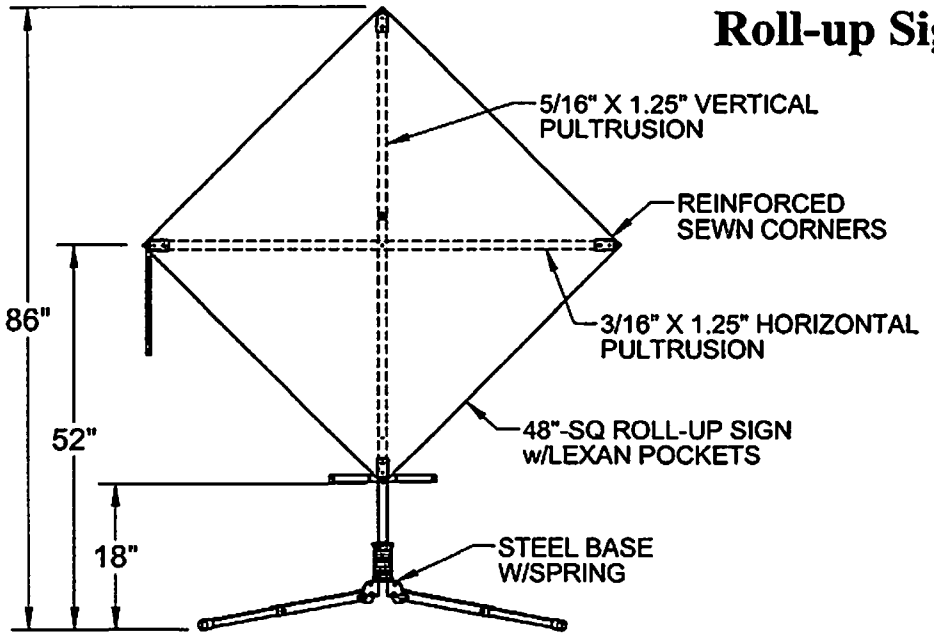
Sincerely yours

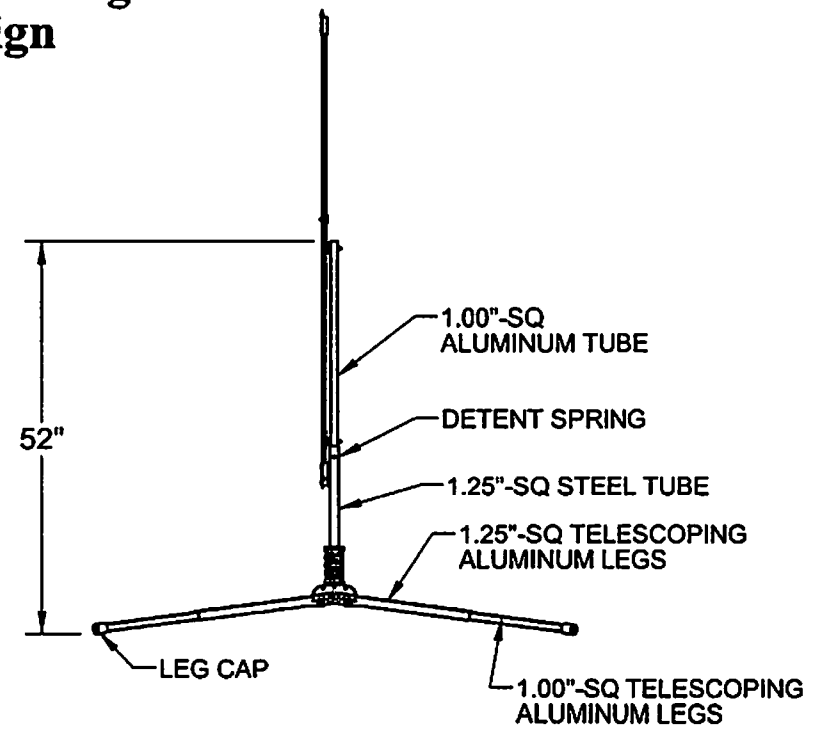
Dwight A. Horne

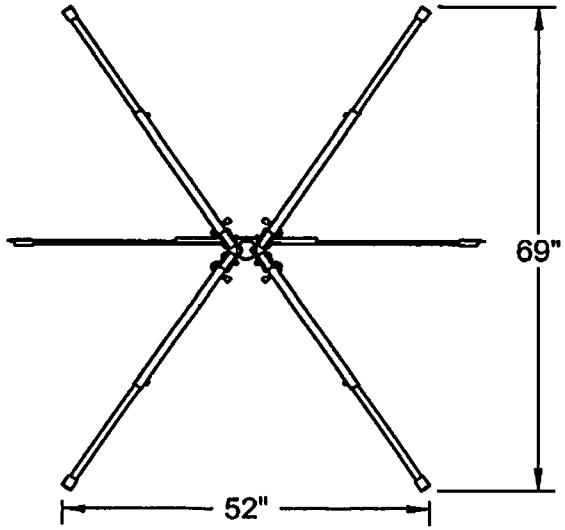
Dwight A. Horne
Director, Office of Highway Safety Infrastructure

2 Enclosures

5012SSALPT
Schematic Drawing
Roll-up Sign







WEIGHT:

ROLL-UP SIGN: 10 LBS. w/ALUM TUBE

SIGNSTAND:18 LBS.

TOTAL:28 LBS.

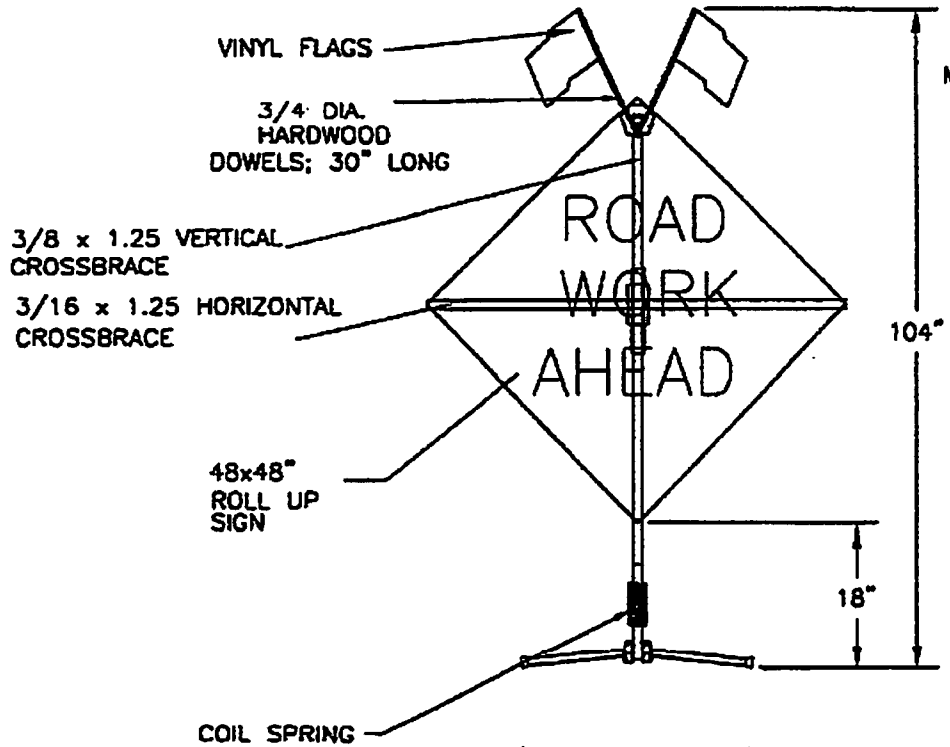
MDI® WORLDWIDE

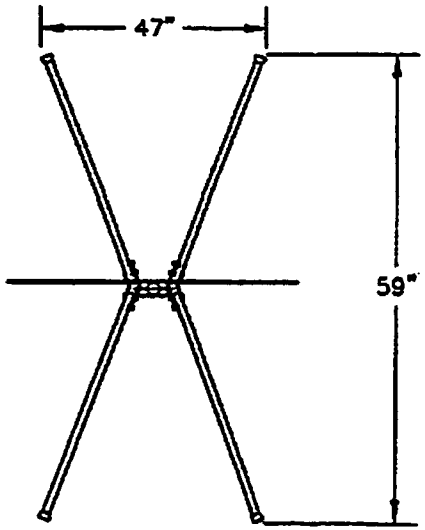
MDI Traffic Control Products, 38271 West 12 Mile Road, Farmington Hills, MI 48331-3041 800-521-6776

ZA-06977-01

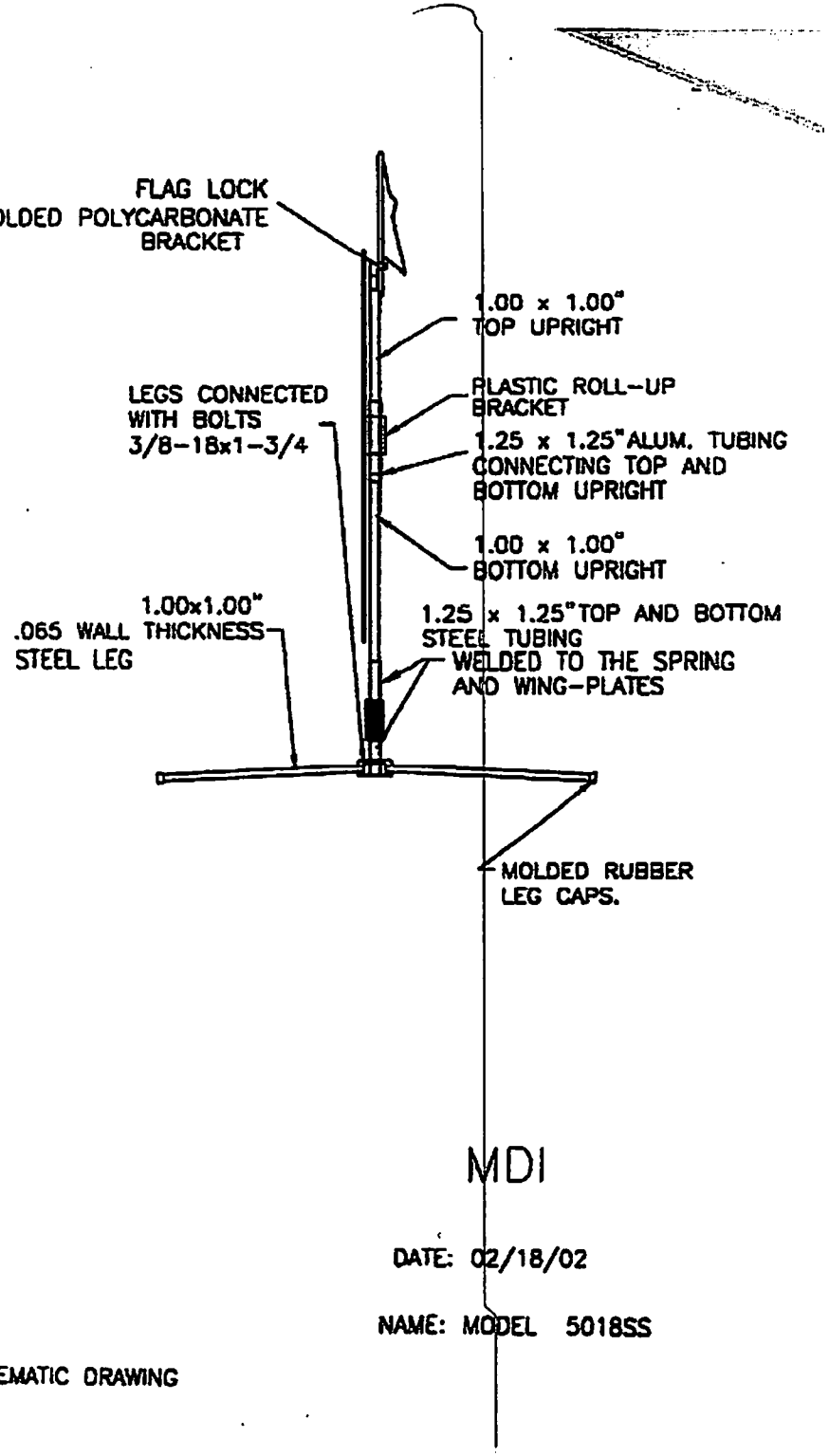
ZA-06977-01

ZA-06977-01





SCHEMATIC DRAWING



WEIGHT:

ROLL-UP SIGN-- 5.5 LB

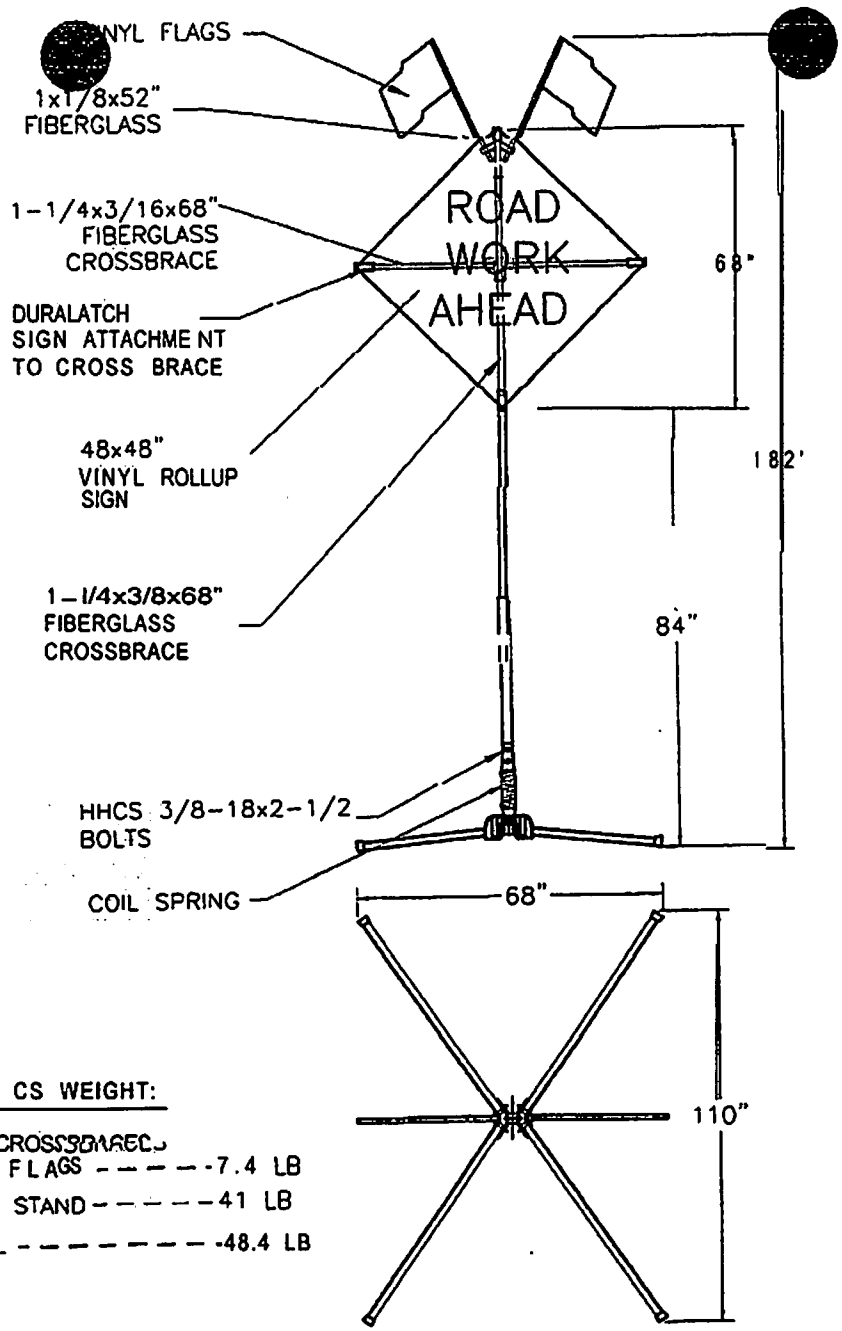
SIGN STAND WITH R.U SIGN BRACKETS--19.5 LB

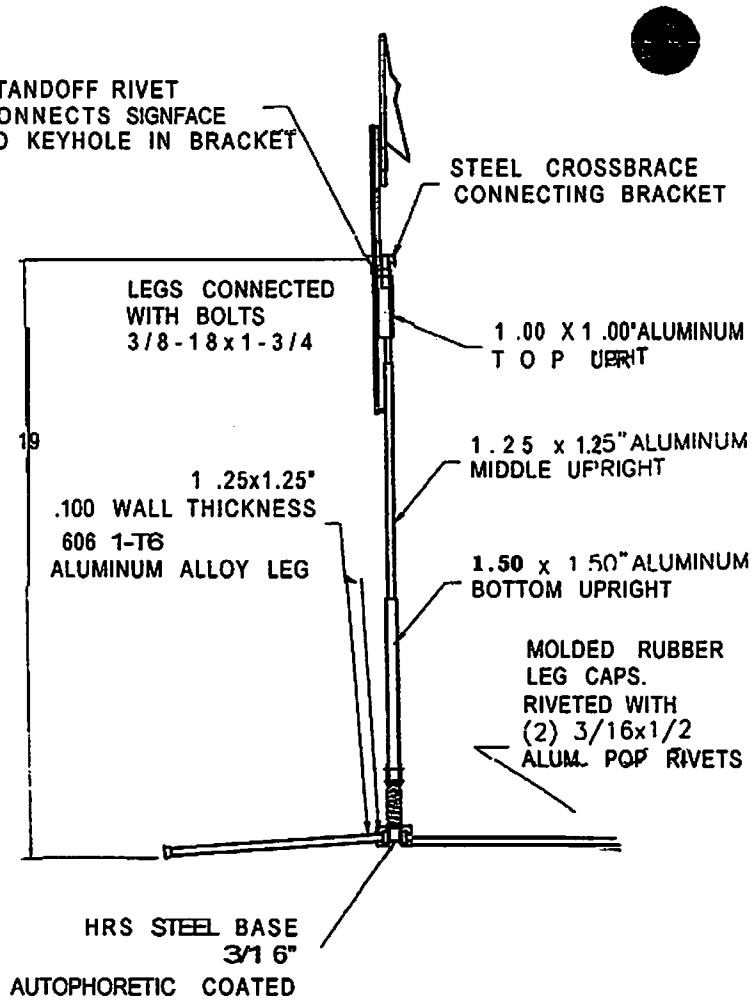
TOTAL--------25 LB

MDI

DATE: 02/18/02

NAME: MODEL 5018SS





4884 CS WEIGHT:

SIGN,CROSSBRACES & FLAGS - - - - -7.4 LB
SIGN STAND - - - - - -41 LB
TOTAL - - - - - - - - -48.4 LB

MDI

Date:03/1 O/99

NAME: MODEL 4884 CS

SCHEMATIC DRAWING