



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

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

May 5, 2026

In Reply Refer To:
HSST-1/WZ-474

Mr. Justin Maxwell
G.M. Sipes Construction, Inc.
503 E. Adams
P.O. Box 109
Rushville, IL 62681

Dear Mr. Maxwell:

We received your initial correspondence on March 27, 2025, requesting issuance of a Federal-aid reimbursement eligibility letter under the Federal-aid highway program for the roadside safety system, device, design, product, or hardware (collectively “device”) described below. On December 18, 2025, we received a complete set of files needed to complete our review. We write to inform you that the device G.M. Sipes Construction, Inc. Directional Barricade is eligible for Federal-aid reimbursement. This letter is assigned Federal Highway Administration (FHWA) control number WZ-474.

ELIGIBILITY LETTERS

The FHWA issues Federal-aid reimbursement eligibility letters for new roadside safety devices that are crash tested in accordance with the industry standard of the American Association of State Highway and Transportation Officials (AASHTO) Manual for Assessing Safety Hardware (MASH).

FHWA, the Department of Transportation, and the United States (government) do not regulate roadside safety devices, crash test facilities, or the manufacturing industry. Issuance of eligibility letters is discretionary and provided only as a service to the states. FHWA may, at its discretion, decline to issue, revise, or rescind an eligibility letter. Eligibility letters are only issued by the FHWA Office of Safety.

Eligibility letters are issued only as notice to the states that a device is eligible for reimbursement under the Federal-aid highway program. They do not establish approval or certification for any other purpose. Issuance of an eligibility letter is not a prerequisite or requirement for state transportation agencies seeking to use Federal-aid funds for roadside safety devices. State agencies may use a device for which an eligibility letter has not been issued and seek Federal-aid reimbursement.

FEDERAL-AID REIMBURSEMENT

The request for issuance of this letter certified the device was crash tested in accordance with the industry standard of AASHTO’s MASH. This eligibility letter is based on that certification and

the documentation offered in support of its issuance. The device described below is eligible for reimbursement under the Federal-aid highway program.

Name of system: G.M. Sipes Construction, Inc. Directional Barricade

Type of system: Work-Zone Traffic Control Device

Test Level: TL-3

Testing conducted by: Calspan LLC

Date of request: March 27, 2025

The device and as-tested condition(s) is described as follows:

“The Directional Barricade test article is composed of a base, double sided plastic boards and support legs. The overall dimensions including height, base width and base length of the test article are 39.5 in (1,003 mm) x 16 in (406.4 mm) x 26 in (660.4 mm), respectively. The height of base support is 3" (76.2 mm). 24 in x 12 in (609.6 mm x 304.8 mm) top, 8 in x 12 in (203.2 mm x 304.8 mm) middle and 8 in x 12 in (203.2 mm x 304.8 mm) bottom boards are supported using 1.5 in x ¾ in (38.1 mm x 19.1 mm) plastic bars. The Directional Barricade is equipped with a traffic light at the top and panels are mounted on both sides of the barricade. The traffic light was a 3-Volt Amber LED Barricade Flasher and it was a 3rd party purchase. The dimensions of the flasher were around 10.5 inches high, 7 inches wide, and 3.5 inches deep, often featuring a 7-inch diameter lens and house in high-impact polypropylene with amber polycarbonate lenses for visibility and durability, running on two D-cell batteries for extended life. The test articles are surface mounted and required no installation. Weight of the test article was approx.. 44.4 lb (20.1kg) including the base.”

Information about the device, including documentation such as the eligibility request, crash test reports, drawings, or images are available upon request.

Eligibility letter WZ-474 is inapplicable to devices, optional equipment, alternate materials, or other features that were not crash tested in accordance with AASHTO’s MASH.

This letter is issued only for the subject device as crash tested under AASHTO’s MASH. Later modification(s) of the device are not eligible for Federal-aid reimbursement under this letter.

Notice of later modification(s) should be given to transportation agencies, facility owners, and operators (collectively “agencies”).

Agencies should be provided appropriate information about the device’s design, installation, maintenance, materials, and mechanical properties.

Issuance of this letter is discretionary, and it may be revised or rescinded at FHWA’s discretion. This letter is not a determination of compliance with the Build America Buy America Act, the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD) or ownership of any intellectual property rights.

This eligibility letter is not a determination by the government that a crash involving the subject device will result in any particular outcome. It is limited to only the device's eligibility for Federal-aid reimbursement.

INTELLECTUAL PROPERTY

Issuance of this eligibility letter does not convey property rights of any sort nor any exclusive privilege. This letter is not authorization or consent by the government for the use, manufacture, or sale of any patented or proprietary system, device, design, product, or hardware for which the requester is not the patent owner. Eligibility letters are not an expression of any view, position, or determination by the government as to the validity, scope, or ownership of any intellectual property rights to a specific device. These letters do not grant, impute, suggest, or otherwise establish any ownership, distribution, or licensing rights to the requester. The government expresses no opinion about the intellectual property rights relating to any device for which this or any other eligibility letter is issued.

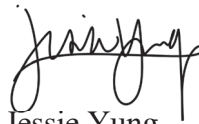
PUBLIC DISCLOSURE

To prevent any misunderstanding, and as discussed above, this Federal-aid eligibility letter is assigned FHWA control number WZ-474. It should only be reproduced in full with its attachment(s). This Federal-aid eligibility letter and the material offered by the requester supporting its issuance is public information. All eligibility letters and supporting material are subject to public disclosure under the Freedom of Information Act (FOIA). Eligibility letters are available to the public at

https://safety.fhwa.dot.gov/roadway_dept/countermeasures/reduce_crash_severity/.

If you have any questions, please contact Paul LaFleur at Paul.LaFleur@dot.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jessie Yung', with a stylized flourish at the end.

Jessie Yung
Director, Office of Safety Technologies
Office of Safety

Enclosures

Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

Submitter	Date of Request:	March 07, 2025	☒ New ☐ Resubmission
	Name:	Justin Maxwell	
	Company:	G.M. Sipes Construction, Inc.	
	Address:	503 E. Adams, P.O. Box 109, Rushville, IL 62681	
	Country:	USA	
	To:	Michael S. Griffith, Director FHWA, Office of Safety Technologies	

I request the following devices be considered eligible for reimbursement under the Federal-aid highway program.

Device & Testing Criterion - Enter from right to left starting with Test Level

System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level
'WZ': Crash Worthy Work Zone	☒ Physical Crash Testing ☐ Engineering Analysis	Directional Barricade	AASHTO MASH	TL3

By submitting this request for review and evaluation by the Federal Highway Administration, I certify that the product(s) was (were) tested in conformity with the AASHTO Manual for Assessing Safety Hardware and that the evaluation results meet the appropriate evaluation criteria in the MASH.

Individual or Organization responsible for the product:

Contact Name:	Justin Maxwell	Same as Submitter ☒
Company Name:	G.M. Sipes Construction, Inc.	Same as Submitter ☒
Address:	503 E. Adams, P.O. Box 109, Rushville, IL 62681	Same as Submitter ☒
Country:	USA	Same as Submitter ☒
Enter below all disclosures of financial interests as required by the FHWA 'Federal-Aid Reimbursement Eligibility Process for Safety Hardware Devices' document.		
Calspan was contracted by G.M. Sipes Construction, Inc. to perform full scale crash testing of the Directional Barricade. There are no shared financial interests in the Work Zone Traffic Control Device by Calspan, or between G.M. Sipes Construction, Inc. and Calspan, other than costs involved in the actual crash tests of the Work Zone Traffic Control Device to existing MASH protocols and reports for this submission to the FHWA.		

PRODUCT DESCRIPTION

[Help](#)

- ☒ New Hardware or Significant Modification
 ☐ Modification to Existing Hardware

The Directional Barricade test article is composed of a base, double sided plastic boards and support legs. The overall dimensions including height, base width and base length of the test article are 39.5 in (1,003 mm) x 16 in (406.4 mm) x 26 in (660.4 mm), respectively. The height of base support is 3" (76.2 mm). 24 in x 12 in (609.6 mm x 304.8 mm) top, 8 in x 12 in (203.2 mm x 304.8 mm) middle and 8 in x 12 in (203.2 mm x 304.8 mm) bottom boards are supported using 1.5 in x ¾ in (38.1 mm x 19.1 mm) plastic bars. The Directional Barricade is equipped with a traffic light at the top and panels are mounted on both sides of the barricade. The traffic light was a 3-Volt Amber LED Barricade Flasher and it was a 3rd party purchase. The dimensions of the flasher were around 10.5 inches high, 7 inches wide, and 3.5 inches deep, often featuring a 7-inch diameter lens and housed in high-impact polypropylene with amber polycarbonate lenses for visibility and durability, running on two D-cell batteries for extended life. The test article is surface mounted and required no installation. Weight of test article was approx. 44.4 lb (20.1 kg) including the base.

CRASH TESTING

By signature below, the Engineer affiliated with the testing laboratory, agrees in support of this submission that all of the critical and relevant crash tests for this device listed above were conducted to meet the MASH test criteria. The Engineer has determined that no other crash tests are necessary to determine the device meets the MASH criteria.

Engineer Name:	Ali O. ATAHAN	
Engineer Signature:	Ali O. Atahan	Digitally signed by Ali O. Atahan Date: 2025.12.18 16:12:59 -05'00'
Address:	4455 Genesee Street, Cheektowaga, NY 14225	Same as Submitter ☐
Country:	USA	Same as Submitter ☐

A brief description of each crash test and its result: [Help](#)

Required Test Number	Narrative Description	Evaluation Results
3-70 (1100C)	Per MASH 2016 Table 2-5, Test 70 is designed to evaluate the ability of small vehicles to activate and breakaway, fracture, or yielding mechanism associated with the work zone feature during low-speed impacts. For free-standing and lightweight test articles velocity changes during low-speed impacts will be within acceptable limits, even when a breakaway, frangible or yielding designs are not utilized. Therefore, Test 70 is considered optional and non-critical for work zone traffic control devices weighing less than 220 lb (100 kg). Thus, Test 3-70 on Directional Barricade was not performed because this particular work zone device weighed only 44.4 lb (20.1 kg).	Non-Relevant Test, not conducted

Required Test Number	Narrative Description	Evaluation Results
3-71 (1100C)	For this test, two Directional Barricades were impacted head on at 0 and 90 degrees to evaluate test article's behavior. The primary evaluation is based on intrusion into the occupant compartment, windshield damage, and vehicle stability. Lightweight devices such as the Directional Barricades cannot cause sufficient velocity change that would result in exceeding occupant risk criteria limits. Therefore, test 3-71 was conducted without instrumentation for evaluating occupant risk values OIV and RA per MASH test description. The test was conducted using a commercially available 2019 Nissan Versa small car with a test inertia mass of 2,418 lb (1,097 kg). The test vehicle impacted the first test article oriented at 0 degree within the driver side quarter point of the vehicle and then impacted the 90 degree test article within the passenger side quarter point. Shortly after impact the barricade placed at 0 degree separated from its support and pushed away from the path of the vehicle. Soon after the vehicle contacted barricade placed at 90 degrees. It was also separated from its support upon impact and the vehicle passed under the barricade. The vehicle was allowed to continue on its normal path until a system abort cable was actuated to bring it to a final controlled stop. The test vehicle's occupant compartment was not penetrated by the test article and there was no cab deformation. Debris from the test articles did not block the driver's vision. The vehicle remained upright and did not exceed 75 degree roll and pitch throughout the test. The vehicle did not leave its lane and its trajectory was stable after impact. TEST RESULT = PASS	

3-72 (2270P)	For this test, two Directional Barricades were impacted head on at 0 and 90 degrees to evaluate test article's behavior. The primary evaluation is based on intrusion into the occupant compartment, windshield damage, and vehicle stability. Lightweight devices such as the Directional Barricades cannot cause sufficient velocity change that would result in exceeding occupant risk criteria limits. Therefore, test 3-72 was conducted without instrumentation for evaluating occupant risk values OIV and RA per MASH test description. The test was conducted using a commercially available 2019 Dodge Ram 1500 pickup truck with a test inertia mass of 5,061 lb (2,296 kg). The barricades placed at 0° and 90° degrees were separated from their bases upon impact and both barricades were pushed away by the impacting pickup. The vehicle was allowed to continue on its normal path until a system abort cable was actuated to bring it to a final controlled stop. The test vehicle's occupant compartment was not penetrated by the test article and there was no cab deformation. Debris from the test articles did not block the driver's vision. The vehicle remained upright and did not exceed 75 degrees roll and pitch throughout the test. The vehicle did not leave its lane and its trajectory was stable after impact. TEST RESULT = PASS	
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Full Scale Crash Testing was done in compliance with MASH by the following accredited crash test laboratory (cite the laboratory's accreditation status as noted in the crash test reports.):

Laboratory Name:	Calspan Corporation	
Laboratory Signature:	Ali O. Atahan	Digitally signed by Ali O. Atahan Date: 2025.12.18 16:13:12 -05'00'
Address:	4455 Genesee Street Cheektowaga, NY 14225	Same as Submitter ☐
Country:	USA	Same as Submitter ☐
Accreditation Certificate Number and Dates of current Accreditation period :	L24-616 August 13, 2024 - November 30, 2026	

Submitter Signature*:

[Submit Form](#)

ATTACHMENTS

Attach to this form:

- 1) Additional disclosures of related financial interest as indicated above.
- 2) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
- 3) A drawing or drawings of the device(s) that conform to the Task Force-13 Drawing Specifications [[Hardware Guide Drawing Standards](#)]. For proprietary products, a single isometric line drawing is usually acceptable to illustrate the product, with detailed specifications, intended use, and contact information provided on the reverse. Additional drawings (not in TF-13 format) showing details that are relevant to understanding the dimensions and performance of the device should also be submitted to facilitate our review.

FHWA Official Business Only:

Eligibility Letter		
Number	Date	Key Words

0° Impact

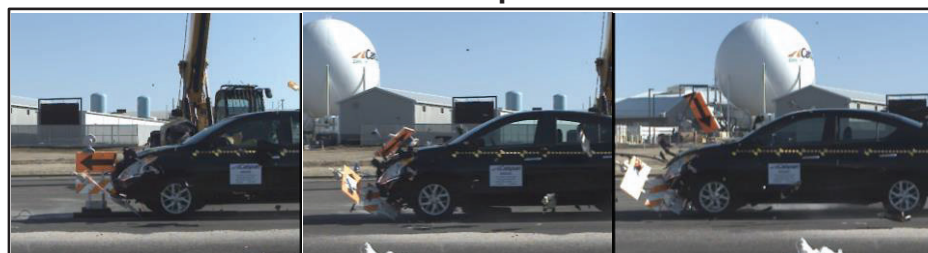


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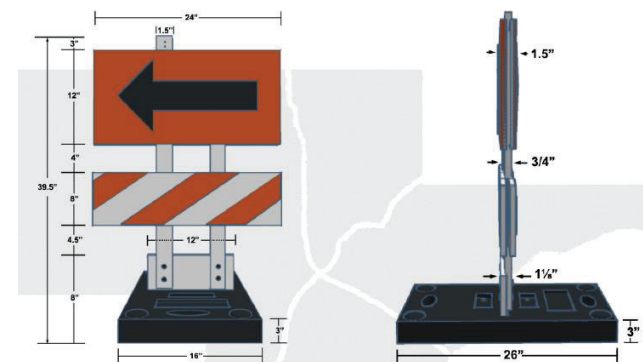
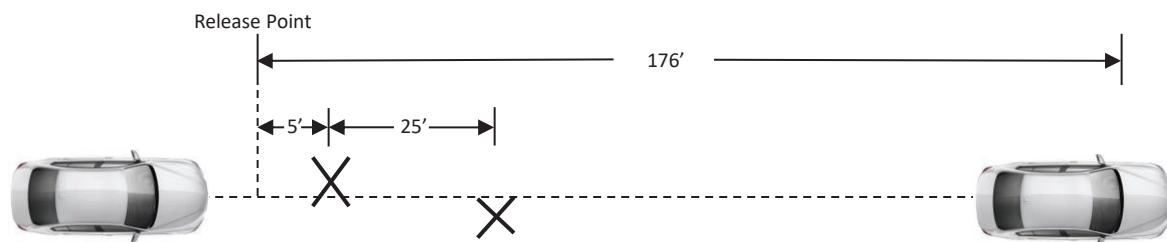
90° Impact



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General Information

Test Agency Calspan LLC
Test Standard Test No. MASH Test 3-71
Calspan Test No. BR0306
Test Date..... 2025-03-18

Test Article

Type Work-Zone Traffic Control Device
Name..... G.M. Sipes Construction Inc.
Directional Barricade
Device Dimensions..... 39.5 in H x 26 in L x 24 in W
Material or Key Elements Free standing directional plastic barricade with a base and reflective boards.

Soil Type/Road Surface Asphalt

Test Vehicle

Type/Designation 1100C
Make and Model..... 2019 Nissan Versa
Curb 2,375 lb (1,077 kg)
Test Inertial 2,418 lb (1,097 kg)
Dummy..... N/A
Gross Static..... 2,418 lb (1,097 kg)

Vehicle Dynamics

Pitch..... 0°
Roll..... 0°
Yaw..... 0°

Maximum Test Debris Scatter

Longitudinal..... First barricade separated from its base and was pushed away from vehicle while second barricade went over the vehicle. Both barricades were damaged and vehicle remained stable.
Lateral.....

Impact Conditions 0°

Speed 62.9 mph (101.2 km/h)
Target Impact Location..... 17.5 in (444.5 mm) Driver Side
Actual Impact Location..... 16.9 in (429.3 mm) Driver Side
Impact Severity 319 kip-ft (433 kJ)
Exit Speed 62.4 mph (100.4 km/h)

Impact Conditions 90°

Speed 62.0 mph (99.8 km/h)
Target Impact Location..... 17.7 in (449.5 mm) Passenger Side
Actual Impact Location..... 15.1 in (383.5 mm) Passenger Side
Impact Severity 291 kip-ft (395 kJ)
Exit Speed 61.3 mph (98.6 km/h)

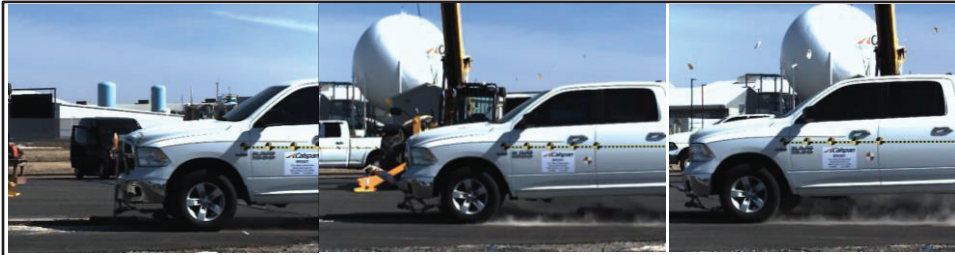
Post-Impact Trajectory

Trajectory/Heading Angle < 1 °
Vehicle Stability..... Satisfactory
Stopping Distance 176 ft (53.6 m) down range after initial impact
0' (0 m) of center

Vehicle Damage

Vehicle Damage Scale..... FR-1 and FL-1
Vehicle Damage
Classification..... 12FLRN01 and 12FLN01
Maximum Deformation..... 0 in (0 mm)

0° Impact

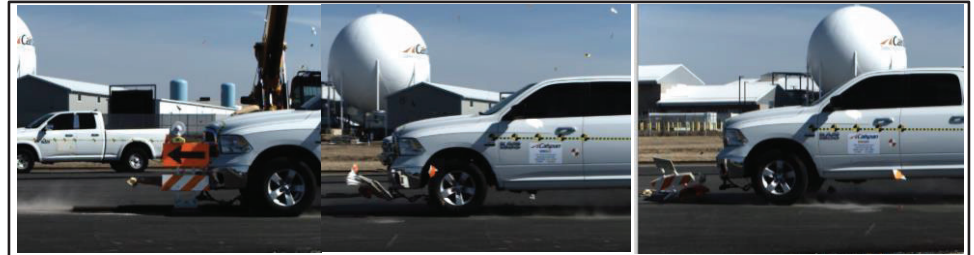


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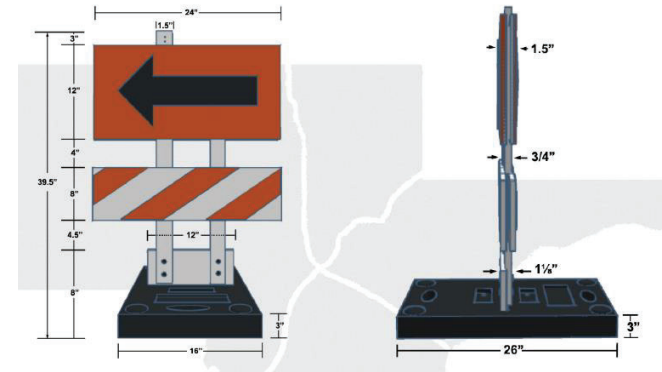
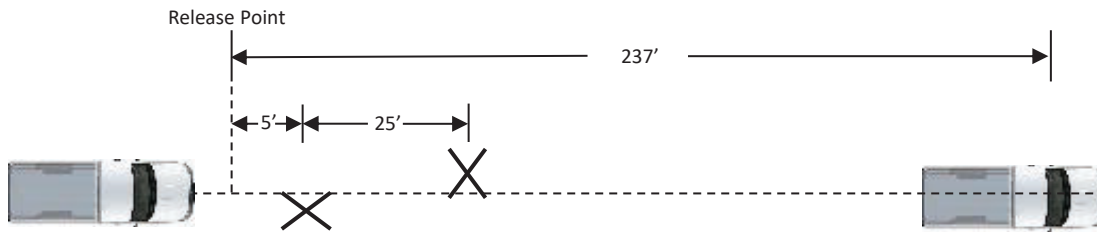
90° Impact



0.000 s

0.100 s

0.170 s



General Information

Test Agency Calspan LLC
Test Standard Test No. MASH Test 3-72
Calspan Test No. BR0307
Test Date..... 2025-03-13

Test Article

Type Work-Zone Traffic Control Device
Name..... G.M. Sipes Construction Inc.
Directional Barricade
Device Dimensions..... 39.5 in H x 26 in L x 24 in W
Material or Key Elements Free standing directional plastic barricade with a base and reflective boards.

Soil Type/Road Surface Asphalt

Test Vehicle

2270P
Type/Designation 2019 Dodge Ram 1500
Make and Model..... 5,022 lb (2,278 kg)
Curb 5,061 lb (2,296 kg)
Test Inertial N/A
Dummy 5,061 lb (2,296 kg)
Gross Static.....

Vehicle Dynamics

0°
Pitch..... 0°
Roll..... 0°
Yaw.....

Maximum Test Debris Scatter

Upon impact both barricades separated from their
Longitudinal..... bases and pickup pushed them forward. Both
Lateral..... barricades deformed and vehicle remained stable.

Impact Conditions 0°

Speed 63.8 mph (102.6 km/h)
Target Impact Location..... 20.4 in (518.2 mm) passenger side
Actual Impact Location..... 19.6 in (497.8 mm) passenger side
Impact Severity 687 kip-ft (932 kJ)
Exit Speed 62.1 mph (99.9 km/h)

Impact Conditions 90°

Speed 61.3 mph (98.7 km/h)
Target Impact Location..... 21.8 in (553.7 mm) driver side
Actual Impact Location..... 21.4 in (543.5 mm) driver side
Impact Severity 637 kip-ft (863 kJ)
Exit Speed 59.9 mph (96.4 km/h)

Post-Impact Trajectory

Trajectory/Heading Angle < 1 °
Vehicle Stability..... Satisfactory
Stopping Distance 237 ft (72.2 m) down range after impact.
0 ft (0) of center

Vehicle Damage

Vehicle Damage Scale..... FR-1 and FL-1
Vehicle Damage
Classification..... 12FLRN01 and 12FLN01
Maximum Deformation..... 0 in (0 mm)

Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

Submitter	Date of Request:	March 07, 2025	☒ New ☐ Resubmission
	Name:	Justin Maxwell	
	Company:	G.M. Sipes Construction, Inc.	
	Address:	503 E. Adams, P.O. Box 109, Rushville, IL 62681	
	Country:	USA	
	To:	Michael S. Griffith, Director FHWA, Office of Safety Technologies	

I request the following devices be considered eligible for reimbursement under the Federal-aid highway program.

Device & Testing Criterion - Enter from right to left starting with Test Level

System Type	Submission Type	Device Name / Variant	Testing Criterion	Test Level
'WZ': Crash Worthy Work Zone	☒ Physical Crash Testing ☐ Engineering Analysis	Directional Barricade	AASHTO MASH	TL3

By submitting this request for review and evaluation by the Federal Highway Administration, I certify that the product(s) was (were) tested in conformity with the AASHTO Manual for Assessing Safety Hardware and that the evaluation results meet the appropriate evaluation criteria in the MASH.

Individual or Organization responsible for the product:

Contact Name:	Justin Maxwell	Same as Submitter ☒
Company Name:	G.M. Sipes Construction, Inc.	Same as Submitter ☒
Address:	503 E. Adams, P.O. Box 109, Rushville, IL 62681	Same as Submitter ☒
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Calspan was contracted by G.M. Sipes Construction, Inc. to perform full scale crash testing of the Directional Barricade. There are no shared financial interests in the Work Zone Traffic Control Device by Calspan, or between G.M. Sipes Construction, Inc. and Calspan, other than costs involved in the actual crash tests of the Work Zone Traffic Control Device to existing MASH protocols and reports for this submission to the FHWA.		

PRODUCT DESCRIPTION

[Help](#)

- ☒ New Hardware or Significant Modification
 ☐ Modification to Existing Hardware

The Directional Barricade test article is composed of a base, double sided plastic boards and support legs. The overall dimensions including height, base width and base length of the test article are 39.5 in (1,003 mm) x 16 in (406.4 mm) x 26 in (660.4 mm), respectively. The height of base support is 3" (76.2 mm). 24 in x 12 in (609.6 mm x 304.8 mm) top, 8 in x 12 in (203.2 mm x 304.8 mm) middle and 8 in x 12 in (203.2 mm x 304.8 mm) bottom boards are supported using 1.5 in x ¾ in (38.1 mm x 19.1 mm) plastic bars. The Directional Barricade is equipped with a traffic light at the top and panels are mounted on both sides of the barricade. The traffic light was a 3-Volt Amber LED Barricade Flasher and it was a 3rd party purchase. The dimensions of the flasher were around 10.5 inches high, 7 inches wide, and 3.5 inches deep, often featuring a 7-inch diameter lens and housed in high-impact polypropylene with amber polycarbonate lenses for visibility and durability, running on two D-cell batteries for extended life. The test article is surface mounted and required no installation. Weight of test article was approx. 44.4 lb (20.1 kg) including the base.

CRASH TESTING

By signature below, the Engineer affiliated with the testing laboratory, agrees in support of this submission that all of the critical and relevant crash tests for this device listed above were conducted to meet the MASH test criteria. The Engineer has determined that no other crash tests are necessary to determine the device meets the MASH criteria.

Engineer Name:	Ali O. ATAHAN	
Engineer Signature:	Ali O. Atahan	Digitally signed by Ali O. Atahan Date: 2025.12.18 16:12:59 -05'00'
Address:	4455 Genesee Street, Cheektowaga, NY 14225	Same as Submitter ☐
Country:	USA	Same as Submitter ☐

A brief description of each crash test and its result: [Help](#)

Required Test Number	Narrative Description	Evaluation Results
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Laboratory Name:	Calspan Corporation	
Laboratory Signature:	Ali O. Atahan	Digitally signed by Ali O. Atahan Date: 2025.12.18 16:13:12 -05'00'
Address:	4455 Genesee Street Cheektowaga, NY 14225	Same as Submitter ☐
Country:	USA	Same as Submitter ☐
Accreditation Certificate Number and Dates of current Accreditation period :	L24-616 August 13, 2024 - November 30, 2026	

Submitter Signature*:

[Submit Form](#)

ATTACHMENTS

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- 1) Additional disclosures of related financial interest as indicated above.
- 2) A copy of the full test report, video, and a Test Data Summary Sheet for each test conducted in support of this request.
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FHWA Official Business Only:

Eligibility Letter		
Number	Date	Key Words