



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

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

July 17, 2025

In Reply Refer To:
HSST-1/WZ-457

Greg Spear
Cortina Safety Products
10706 West Grand Ave.
Franklin Park IL 60131

Dear Mr. Spear:

We received your initial correspondence on December 27, 2023, 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 19, 2024, we received a complete set of files needed to complete our review. We write to inform you that the device Rubber Base 07-841 is eligible for Federal-aid reimbursement. This letter is assigned Federal Highway Administration (FHWA) control number WZ-457.

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

Name of system: Rubber Base 07-841
Type of system: Work Zone
Test Level: Test Level 3
Testing conducted by: Calspan Corporation
Date of request: December 27, 2023

Information about the device, including material such as the eligibility request, crash test reports, drawings, or images are included in one or more attachment(s) to this letter.

Eligibility letter WZ-457 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 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

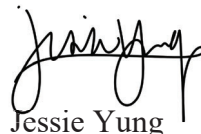
Issuance of this eligibility letter does not convey property rights of any sort nor any exclusive privilege. This letter is not authorization or consent by the government for the use, manufacture, or sale of any patented or proprietary system, device, design, product, or hardware for which the requester 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 eligibility letter is assigned FHWA control number WZ-457. It should only be reproduced in full with its attachment(s). This 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:	December 27, 2023	☒ New ☐ Resubmission
	Name:	Greg Spear	
	Company:	Cortina Safety Products	
	Address:	10706 West Grand Ave, Franklin Park, IL 60131	
	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 Traffic Control Devices	☒ Physical Crash Testing ☐ Engineering Analysis	Rubber Base 07-841	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:	Greg Spear	Same as Submitter ☒
Company Name:	Cortina Safety Productst	Same as Submitter ☒
Address:	10706 West Grand Ave, Franklin Park, IL 60131	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.		
Cortina Safety Products of Franklin Park, IL and Calspan Corporation share no financial interests between the two organizations. This includes no shared financial interest but not limited to: i. Compensation including wages, salaries , commissions, professional fees, or fees for business referrals iii. Research funding or other forms of research support; iv. Patents, copyrights , licenses, and other intellectual property interests; vi. Business ownership and investment interests;		

PRODUCT DESCRIPTION

☒ New Hardware or Significant Modification

☐ Modification to Existing Hardware

TThe Cortina Safety Rubber Base 07-841 is composed of a 38 lb pocket latch, rubber base and 4’x4’ sign. The height of the rollup sign is 48" tall and each sign is connected to the rubber base through a metal clasp on the bottom of the sign. This barricade is intended to be used as free-standing device.

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:	Benjamin Metzger	
Engineer Signature:	Benjamin Metzger Digitally signed by Benjamin Metzger Date: 2024.01.15 21:28:32 -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:

Required Test Number	Narrative Description	Evaluation Results
3-70 (1100C)	Designated to evaluate the ability of a small vehicle to activate any breakaway, fracture, or yielding mechanism. Is considered optional for work zone traffic control weighting less than 220 lb (100 kg)	Non-Relevant Test, not conducted

Required Test Number	Narrative Description	Evaluation Results
3-71 (1100C)	For this test, two Cortina rubber base signs were impacted. A single 1100C test vehicle was used in this testing where a single barricade orientated at 0° impacted one quarter point of the test vehicle's bumper while the other barricade orientated at 90°, located 25' down range from the first impact, impacted the test vehicle on the other quarter point of the front bumper. The Cortina Safety Products rubber base sign is under 220lbs and cannot cause sufficient velocity change that would result in exceeding occupant risk criteria limits. Therefore Test 71 was conducted without instrumentation for evaluating occupant risk values OIV and RA per MASH test description. The tests were conducted using a commercially available 2017 Nissan Versa compact small car with a test inertia mass of 2,429 lb [1,101.8 kg] . The barricades were free standing on pavement and not supported by any means. The test vehicle impacted the first barricade at 63.5 mph [102.2 km/h] and the second barricade at 60.2 mph [96.9 km/h]. Upon impact, both test articles shattered into small fragments and caused no damage to the test vehicle.	

3-72 (2270P)	For this test, two Cortina rubber base road signs were impacted. A single 2270P test vehicle was used in this testing where a single barricade orientated at 0° impacted one quarter point of the test vehicle's bumper while the other barricade orientated at 90°, located 25' down range from the first impact, impacted the test vehicle on the other quarter point of the front bumper. The Cortina Safety Products rubber base sign is under 220lbs and cannot cause sufficient velocity change that would result in exceeding occupant risk criteria limits. Therefore Test 72 was conducted without instrumentation for evaluating occupant risk values OIV and RA per MASH test description. The tests were conducted using a commercially available 2018 Dodge Ram 1500 pickup truck with a test inertia mass of 5,005 lb [2270.4 kg] . The signs were free standing on pavement and not supported by any means. The test vehicle impacted the first barricade at 62.8 mph [101.1 km/h] and the second barricade at 61.9 mph [99.6 kph]. Upon impact, both test articles shattered into small fragments and caused no damage to the test vehicle.	
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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 LLC	
Laboratory Signature:	Benjamin Metzger  Digitally signed by Benjamin Metzger Date: 2024.01.15 21:29:06 -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 :	L20-602 December 31, 2022	

Submitter Signature*: **Greg Spear**  Digitally signed by Greg Spear
Date: 2024.01.16 08:33:27 -06'00'

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



0.000 s

0.045 s

0.150 s

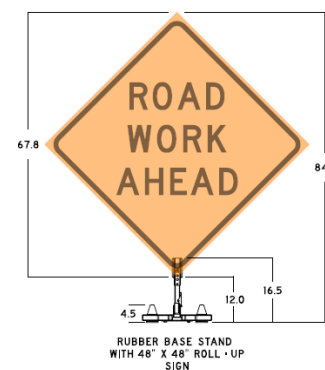
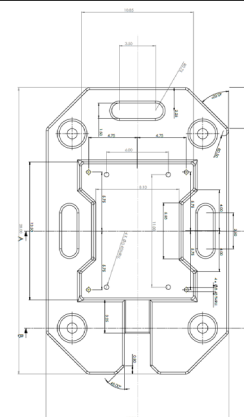
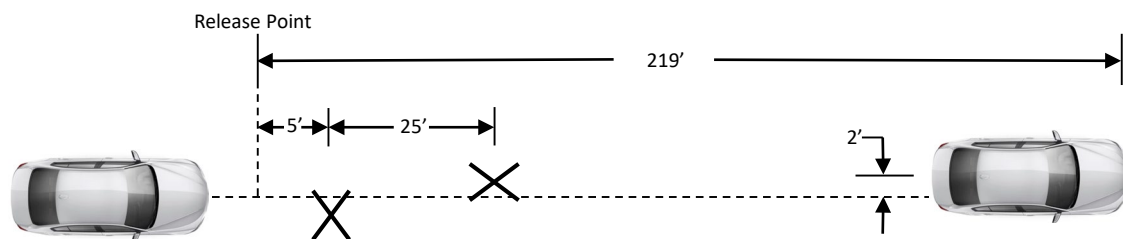
90° Impact



0.000 s

0.075 s

0.150 s



General Information

Test Agency Calspan Corporation
Test Standard Test No. MASH Test 3-71
Calspan Test No. BR0151
Test Date..... 2023-10-03

Test Article

Type Work-Zone Traffic Control Device
Name..... Cortina Safety Rubber Based Stand
Device Height..... 48 in Roll-Up Sign
Material or Key Elements 07-841 Rubber Base Stand with
38 lb Pocket Latch roll-up sign

Soil Type/Road Surface Asphalt

Test Vehicle

Type/Designation 1100C
Make and Model..... 2017 Nissan Versa
Curb 2,372.2 lb. (1,076.0 kg)
Test Inertial 2,429.9 lb. (1,102.2 kg)
Dummy..... N/A
Gross Static..... 2,429.9 lb. (1,102.2 kg)

Vehicle Dynamics

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

Maximum Test Debris Scatter

Longitudinal..... Sign separated from base, passed over
the test vehicle and article remained intact
Lateral.....

Impact Conditions 0°

Impact Speed 63.5 mph (102.2 km/h)
Target Impact Location..... 16.6 +/- 6 in (421 +/- 152mm) Passenger Side
Actual Impact Location..... 17.7 in (450 mm) Passenger Side
Impact Severity 327.58 kip-ft (444.15 kJ)
Exit Speed 62.1 mph (99.9 km/h)

Impact Conditions 90°

Impact Speed 60.2 mph (96.9 km/h)
Target Impact Location..... 16.6 +/- 6 in (421 +/- 152mm) Driver Side
Actual Impact Location..... 14.5 in (368 mm) Driver Side
Impact Severity 294.96 kip-ft (399.37 kJ)
Exit Speed 59.7 mph (96.1 km/h)

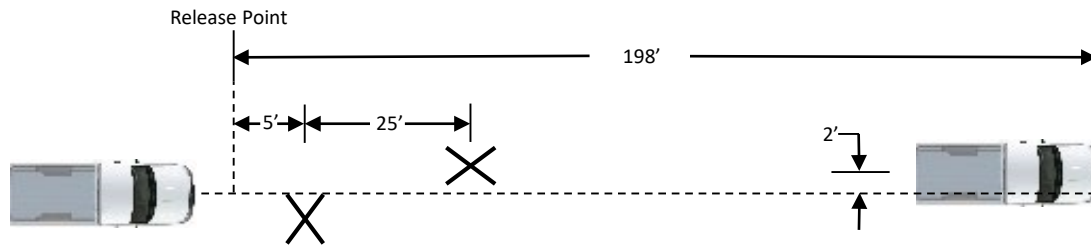
Post-Impact Trajectory

Trajectory/Heading Angle < 1 °
Vehicle Stability..... Satisfactory
Stopping Distance 219 ft down range after initial impact
2' left of center

Vehicle Damage

Vehicle Damage Scale..... FR-1 and FL-1
Vehicle Damage
Classification..... 12FLRN01 and 12FLN01
Maximum Deformation..... 0.0 in (0.0 mm)

0° Impact



General Information

Test Agency Calspan Corporation
 Test Standard Test No. MASH Test 3-72
 Calspan Test No. BR0152
 Test Date..... 2023-04-27

Test Article

Type Work-Zone Traffic Control Device
 Name Cortina Safety Rubber Based Stand
 Device Height..... 48 in Roll-Up Sign
 Material or Key Elements 07-841 Rubber Base Stand with 38 lb
 Pocket Latch roll-up sign

Soil Type/Road Surface Asphalt

Test Vehicle

Type/Designation 2270P
 Make and Model..... 2018 Dodge Ram 1500
 Curb 4,660.1 lb. (2113.8 kg)
 Test Inertial 5,005.4 lb. (2,270.4 kg)
 Dummy N/A
 Gross Static..... 5,005.4 lb. (2,270.4 kg)

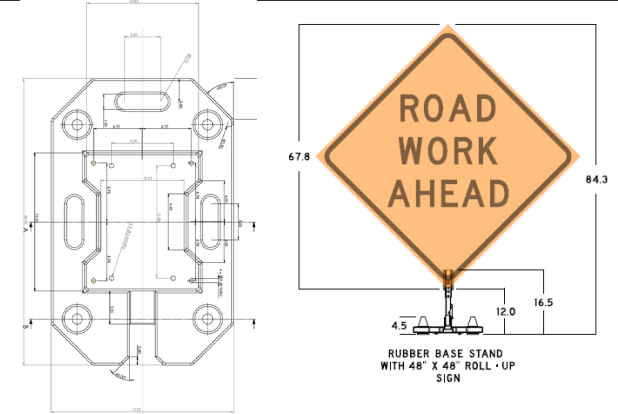
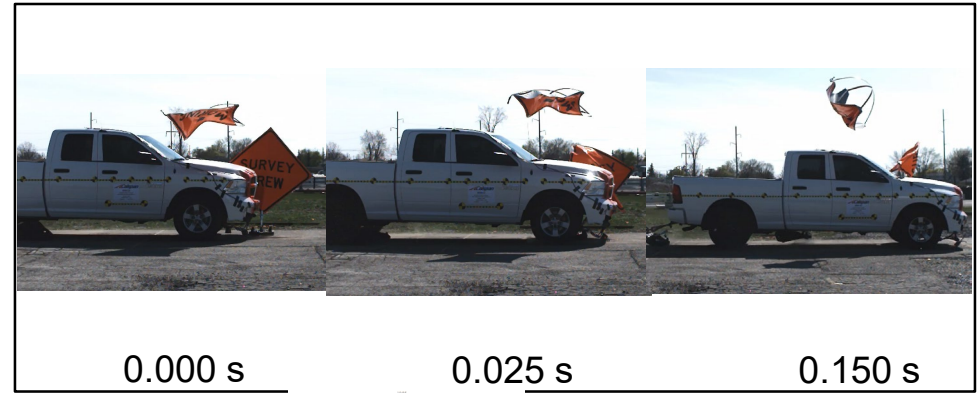
Vehicle Dynamics

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

Maximum Test Debris Scatter

Longitudinal..... Sign separated from base, passed over
 Lateral..... the test vehicle and article remained intact

90° Impact



Impact Conditions 0°

Speed 62.8 mph (101.0 km/h)
 Target Impact Location..... 19.6 +/- 6 in (498 +/- 152 mm) Passenger Side
 Actual Impact Location..... 20.4 in (518.2 mm)
 Impact Severity 659.03 kip-ft (893.53 kJ)
 Exit Speed 62.1 mph (99.9 km/h)

Impact Conditions 90°

Speed 61.9 mph (99.6 km/h)
 Target Impact Location..... 19.6 +/- 6 in (498 +/- 152 mm) Driver Side
 Actual Impact Location..... 21.8 in (553.7 mm)
 Impact Severity 641.04 kip-ft (869.14 kJ)
 Exit Speed 61.0 mph (98.2 km/h)

Post-Impact Trajectory

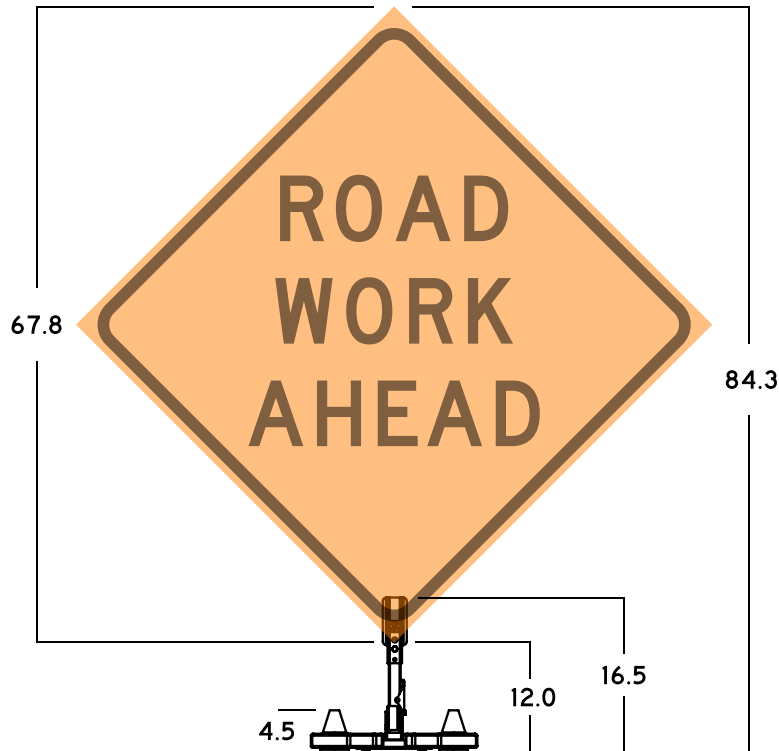
Trajectory/Heading Angle < 1°
 Vehicle Stability..... Satisfactory
 Stopping Distance 198 ft down range after impact.
 2' left of center

Vehicle Damage

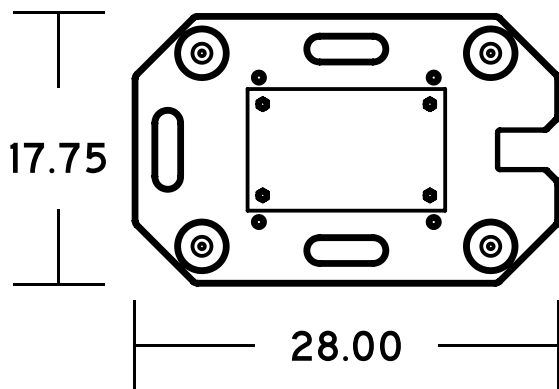
Vehicle Damage Scale..... FR-1 and FL-1
 Vehicle Damage
 Classification..... 12FLRN01 and 12FLN01
 Maximum Deformation..... 0.0 in (0.0 mm)

CORTINA SAFETY PRODUCTS

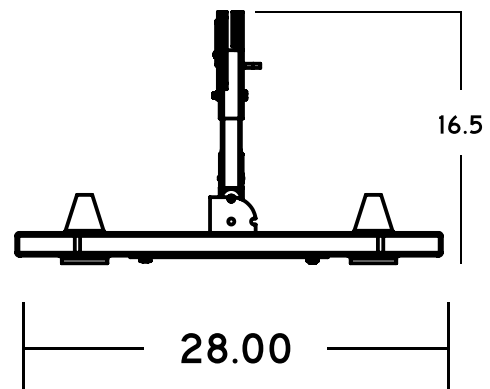
QuadraFlex VI Rubber Base Sign Stand



RUBBER BASE STAND
WITH 48" X 48" ROLL - UP
SIGN



RUBBER BASE
BOTTOM VIEW



RUBBER BASE
SIDE VIEW

Dimensions are in inches