U.S. Department of Transportation
Federal Highway Administration

August 15, 2022

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

In Reply Refer To:
HSST-1/WZ-445

Greg Spear
The Cortina Companies, Cortina Safety Products
10706 West Grand Ave,
Franklin Park, IL 60131
United States of America

Dear Mr. Spear:

We received your correspondence of January 28, 2022 requesting issuance of a reimbursement eligibility letter under the Federal-aid highway program for the roadside safety system, device, design, product, or hardware (collectively "device") described below. This letter is assigned Federal Highway Administration (FHWA) control number WZ-445.

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: Telespar Type III Barricade
Type of system: Work Zone
Test Level: Test Level 3
Testing conducted by: Applus IDIADA KARCO Engineering, LLC
Date of request: January 28, 2022

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-445 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-445. 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 Aimee Zhang at Aimee.Zhang@dot.gov.

Sincerely,

Michael S. Griffith
Director, Office of Safety Technologies
Office of Safety

Enclosures

Request for Federal Aid Reimbursement Eligibility of Highway Safety Hardware

Submitter	Date of Request:	January 28, 2022	◉ New ○ Resubmission
	Name:	Greg Spear	
	Company:	The Cortina Companies, Cortina Safety Products	
	Address:	10706 West Grand Ave. Franklin Park, IL 60131	
	Country:	United States of America	
	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	Cortina Telespar Type III 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:	Greg Spear	Same as Submitter ☒
Company Name:	The Cortina Companies, Cortina Safety Products	Same as Submitter ☒
Address:	10706 West Grand Ave. Franklin Park, IL 60131	Same as Submitter ☒
Country:	United States of America	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.

The Cortina Companies, Cortina Safety Products is the manufacturer and marketer of device.

Applus IDIADA KARCO Engineering, LLC (IDIADA KARCO) is an independent research and testing laboratory having no affiliation with any other entity. IDIADA KARCO is actively Involved In data acquisition and compliance/certification testing for a variety of government agencies and equipment manufacturers. The principals and staff of IDIADA KARCO have no past or present financial, contractual or organizational interest in any company or entity directly or indirectly related to the products that KARCO tests. If any financial interest should arise, other than receiving fees for testing, reporting, etc., with respect to any project, the company will provide, In writing, a full and immediate disclosure to the FHWA.

PRODUCT DESCRIPTION

(●) New Hardware or Significant Modification ( ) Modification to Existing Hardware

The Cortina Companies Telespar Type III Barricade is a work-zone traffic control device.
Further Description:
The as-tested device consisted of three (3) horizontal boards, two (2) steel uprights, two (2) steel feet, and two (2) optional standard barricade lights. Two (2) standard D-cell barricade lights were used during testing. The as-tested device had a total assembled weight of 54.0 lbs (24.5 kg). There were four (4) 25.0 lbs (11.3 kg) sandbags placed on top of the rear corners of the steel feet.
The horizontal boards are constructed of high-density polyethylene and measured 2.0 in. (51 mm) tall by 8.0 in. (203 mm) wide by 144.0 in. (3.7 m) long. The steel uprights and feet are made from 2 in. (51 mm) square tubular frame with .434 in. (11 mm) holes spaced 1 in. (0.03 mm) apart. The T-Slots in feet are designed to accept the uprights and mount with 7/16 in. (11.1 mm) through holes. When assembled, the steel uprights and the steel feet have a height of 66.0 in. (1.67 m). With the standard barricade light attached, the Telespar Type III Barricade has height of 73.25 in. (1.86 m).

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:	Noah Partida	
Engineer Signature:	Noah Partida — Digitally signed by Noah Partida DN: cn=Noah Partida, o, ou, email=noah.partida@idiada.com, c=US Date: 2022.05.27 14:30:14 -07'00'	
Address:	9270 Holly Road, Adelanto, CA 92301	Same as Submitter ☐
Country:	United States of America	Same as Submitter ☒

A brief description of each crash test and its result:

Required Test Number	Narrative Description	Evaluation Results
3-70 (1100C)	Designed to evaluate the ability of a small vehicle to activate any breakaway, fracture, or yielding mechanism. Is considered optional for work-zone traffic control devices weighing less than 220 lbs (100 kg). The as-tested device weighed 54.0 lbs (24.5 kg) and therefore Test 70 was not performed.	Non-Relevant Test, not conducted

Required Test Number	Narrative Description	Evaluation Results
3-71 (1100C)	An 1100C test vehicle approached the test articles at a nominal speed of 62 mph. The Telespar Type III Barricade was oriented at 90° and at 0°. The test vehicle impacted the 90° CIA device at a speed of 62.12 mph (99.97 km/h). Upon impact, the vehicle's front bumper fascia made contact with high-density polyethylene boards. The vehicle's front bumper fascia contacted the right steel upright causing it to yield in a predictable manner. As the vehicle proceeded forward the three (3) high-density polyethylene boards deformed around the vehicle and the left steel upright yielded. The occupant compartment was not penetrated and no deformation occurred to the test vehicle. The test vehicle impacted the 0° CIA device at a velocity of 63.26 mph (101.81 km/h). Upon impact, the vehicle's front bumper fascia contacted the high-density polyethylene boards. The left steel upright began deforming around the bumper fascia and hood. As the vehicle proceeded forward the three (3) high-density polyethylene boards began overriding the vehicle and the right steel upright began to yield. The occupant compartment was not penetrated and no deformation occurred to the test vehicle. The Telespar Type III Barricade met all the requirements for MASH Test 3-71.	PASS

3-72 (2270P)	A 2270P test vehicle approached the test article at a nominal speed of 62 mph. The Telespar Type III Barricade was oriented at 90° and at 0°. The test vehicle impacted the 90° CIA device at a speed of 62.72 mph (100.94 km/h). Upon impact, both steel uprights deformed around the vehicle's front end and the right steel upright broke into pieces. The three (3) high-density polyethylene boards detached from the steel uprights and were deformed. The vehicle overrode the two steel legs and one barricade light detached from the rail. The occupant compartment was not penetrated and no deformation occurred to the test vehicle. The test vehicle impacted the 0° CIA device at a velocity of 61.50 mph (98.98 km/h). Upon impact, the left steel upright deformed around the vehicle's front end and partially detached from the steel foot. The right steel upright and steel foot remained intact. The three (3) high-density polyethylene boards detached from the steel uprights and did not deform. One barricade light detached and impacted the vehicles windshield. The occupant compartment was not penetrated and no deformation occurred to the test vehicle. The Telespar Type III Barricade met all the requirements for MASH Test 3-72.	PASS

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:	Applus IDIADA KARCO Engineering, LLC.	
Laboratory Signature:	Noah Partida — Digitally signed by Noah Partida DN: cn=Noah Partida, o, ou, email=noah.partida@idiada.com, c=US Date: 2022.05.27 14:30:28 -07'00'	
Address:	9270 Holly Road, Adelanto, CA 92301	Same as Submitter ☐
Country:	United States of America	Same as Submitter ☒
Accreditation Certificate Number and Dates of current Accreditation period :	TL 371: July 1, 2019 - July 1, 2022	

Submitter Signature*: Greg Spear — Digitally signed by Greg Spear Date: 2022.05.31 07:03:11 -05'00'

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.

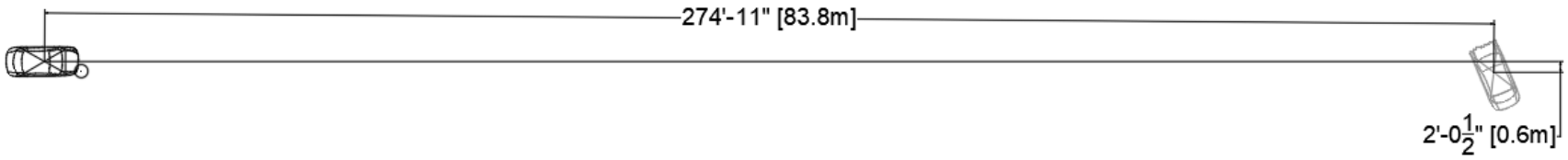
FHWA Official Business Only:

Eligibility Letter		
Number	Date	Key Words

MASH 2016 Test 3-71 Summary (P41214-01, 0° CIA)

0° CIA

0.000 seconds | 0.060 seconds | 0.120 seconds | 0.650 seconds | 0.710 seconds | 0.770 seconds



GENERAL INFORMATION

Test Agency	Applus IDIADA KARCO Engineering
Test Number	P41214-01
Test Designation	3-71
Test Date	7/8/21

TEST ARTICLE

Name / Model	Cortina Telespar Type III Barricade
Type	Work-Zone Traffic Control Device
Device Height	6.1 ft. (1.9 m)
Key Elements	Boards, Steel Uprights, Steel Feet
Road Surface	Smooth, clean Concrete

TEST VEHICLE

Type / Designation	1100C
Year, Make, and Model	2016 Kia Rio
Curb Mass	2,528.7 lbs (1,147.0 kg)
Test Inertial Mass	2,448.2 lbs (1,110.5 kg)
Gross Static Mass	2,621.3 lbs (1,189.0 kg)

Impact Conditions

Impact Velocity Device	63.26 mph (101.81 km/h)
Location/ Orientation	16.6 in. (422 mm) From Vehicle Centerline on Passenger Side
Device Angle	0.0°
Device Kinetic Energy	327.5 kip-feet (444.1 Kilojoules)
Minimum KE Required	288 kip-feet (390 Kilojoules)

Exit Conditions

Device Exit Velocity	60.78 mph (97.81 km/h)
Vehicle Resting Position	274.9 ft. (83.8 m) Downstream 2.0 ft. (0.6 m) Right
Vehicle Stability	Satisfactory
0° - Maximum Roll Angle	Did Not Exceed 75°
0° - Maximum Pitch Angle	Did Not Exceed 75°

** Not Applicable, device weighs less than 220 lbs (100 kg)*

Occupant Risk

Longitudinal OIV	Not Applicable*
Lateral OIV	Not Applicable*
Longitudinal RA	Not Applicable*
Lateral RA	Not Applicable*
THIV	Not Applicable*
PHD	Not Applicable*
ASI	Not Applicable*

Test Article Deflections

0° - Sign Debris Field (longitudinal)	215.5 ft. (65.7 m)
0° - Sign Debris Field (lateral)	11.9 ft. (3.6 m)

Vehicle Damage

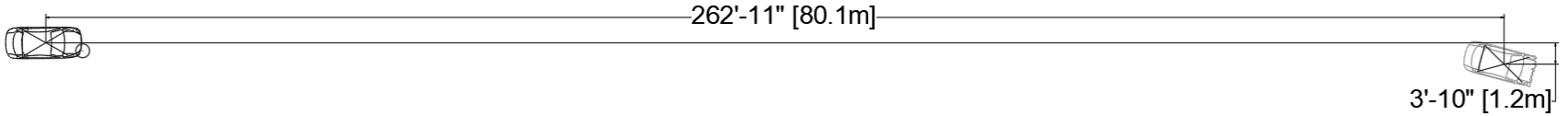
Vehicle Damage Scale	12-FC-1
CDC	12FDEN1
Maximum Deformation	MASH Deformation Limits Not Exceeded (0.0 in.) 0 mm

Figure 4 Summary of Test 3-71

MASH 2016 Test 3-71 Summary (P40333-01, 90°CIA)

90° CIA

0.000 seconds | 0.075 seconds | 0.150 seconds | 0.225 seconds | 0.300 seconds | 0.375 seconds



GENERAL INFORMATION

Test Agency	Applus IDIADA KARCO Engineering
Test Number	P40333-01
Test Designation	3-71
Test Date	3/18/21

TEST ARTICLE

Name / Model	Cortina Telespar Type III Barricade
Type	Work-Zone Traffic Control Device
Device Height	6.1 ft. (1.9 m)
Key Elements	Boards, Steel Uprights, Steel Feet
Road Surface	Smooth, clean Concrete

TEST VEHICLE

Type / Designation	1100C
Year, Make, and Model	2016 Kia Rio
Curb Mass	2,528.7 lbs (1,147.0 kg)
Test Inertial Mass	2,448.2 lbs (1,110.5 kg)
Gross Static Mass	2,621.3 lbs (1,189.0 kg)

Impact Conditions

Impact Velocity	62.12 mph (99.97 km/h)
Location/ Orientation	17.0 in. (431 mm) From Vehicle Centerline on Passenger Side
Device Angle	90.0°
Kinetic Energy	315.8 kip-feet (463.5 Kilojoules)
Minimum KE Required	288 kip-feet (390 Kilojoules)

Exit Conditions

Exit Velocity	61.06 mph (98.26 km/h)
Vehicle Resting Position	262.9 ft. (80.1 m) Downstream 3.8 ft. (1.2 m) Right
Vehicle Stability	Satisfactory
90° - Maximum Roll Angle	Did Not Exceed 75°
90° - Maximum Pitch Angle	Did Not Exceed 75°

** Not Applicable, device weighs less than 220 lbs (100 kg)*

Occupant Risk

Longitudinal OIV	Not Applicable*
Lateral OIV	Not Applicable*
Longitudinal RA	Not Applicable*
Lateral RA	Not Applicable*
THIV	Not Applicable*
PHD	Not Applicable*
ASI	Not Applicable*

Test Article Deflections

90° - Sign Debris Field (longitudinal)	75.7 ft. (23.1 m)
90° - Sign Debris Field (lateral)	1.6 ft. (0.5 m)

Vehicle Damage

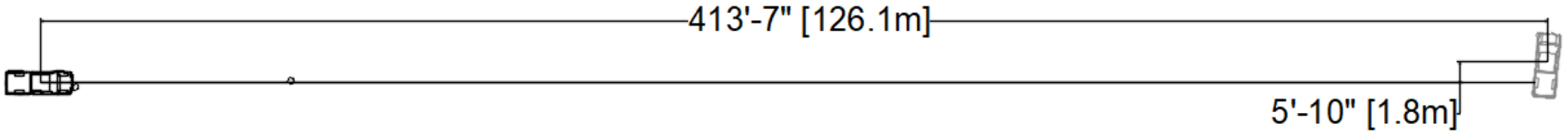
Vehicle Damage Scale	12-FC-1
CDC	12FDEN1
Maximum Deformation	MASH Deformation Limits Not Exceeded (0.0 in.) 0 mm

Figure 3 Summary of Test 3-71

MASH 2016 Test 3-72 Summary (P41215-01, 0° CIA)

0° CIA

0.650 seconds | 0.680 seconds | 0.710 seconds | 0.740 seconds | 0.770 seconds | 0.800 seconds



GENERAL INFORMATION

Test Agency	Applus IDIADA KARCO Engineering
Test Number	P41215-01
Test Designation	3-72
Test Date	7/8/21

TEST ARTICLE

Name / Model	Cortina Telespar Type III Barricade
Type	Work-Zone Traffic Control Device
Device Height	6.1 ft. (1.9 m)
Key Elements	Boards, Steel Uprights, Steel Feet
Road Surface	Smooth, clean concrete

TEST VEHICLE

Type / Designation	2270P
Year, Make, and Model	2015 RAM 1500
Curb Mass	5,045.2 lbs (2,288.5 kg)
Test Inertial Mass	5,009.9 lbs (2,272.5 kg)
Gross Static Mass	5,009.9 lbs (2,272.5 kg)

Impact Conditions

Impact Velocity	61.50 mph (98.98 km/h)
Location/ Orientation	17.9 in. (455 mm) From Vehicle Centerline on Passenger Side
Device Angle	0.0°
Device Kinetic Energy	633.5 kip-feet (858.9 Kilojoules)
Minimum KE Required	594 kip-feet (806 Kilojoules)

Exit Conditions

Exit Velocity	61.16 mph (98.4 km/h)
Vehicle Resting Position	413.6 ft. (126.1 m) Downstream 5.8 ft. (1.8 m) Left
Vehicle Stability	Satisfactory
0° - Maximum Roll Angle	Did Not Exceed 75°
0° - Maximum Pitch Angle	Did Not Exceed 75°

* Not Applicable, device weighs less than 220 lbs (100 kg)

Occupant Risk

Longitudinal OIV	Not Applicable*
Lateral OIV	Not Applicable*
Longitudinal RA	Not Applicable*
Lateral RA	Not Applicable*
THIV	Not Applicable*
PHD	Not Applicable*
ASI	Not Applicable*

Test Article Deflections

0° - Sign Debris Field (longitudinal)	85.3 ft. (26.0 m)
0° - Sign Debris Field (lateral)	3.5 ft. (1.1 m)

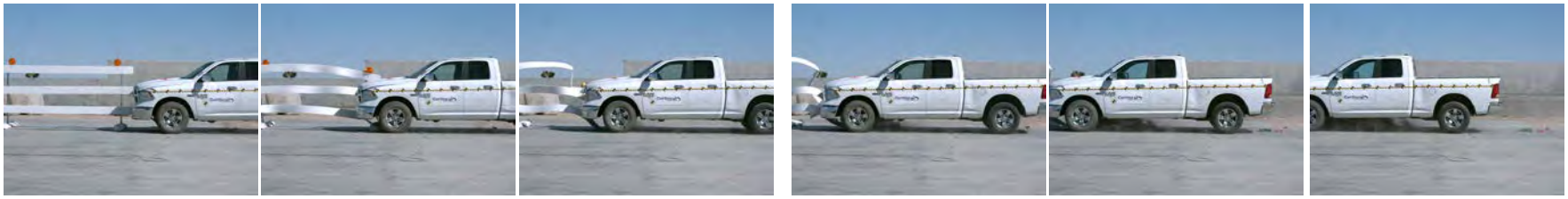
Vehicle Damage

Vehicle Damage Scale	12-FC-1
CDC	12FDEN1
0° - Maximum Deformation	0.1 in. (3 mm) Windshield

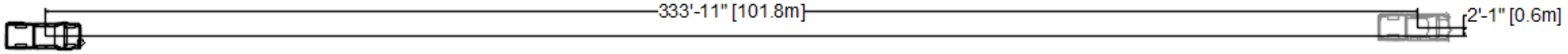
Figure 4 Summary of Test 3-72 (P41215-01, 0° CIA)

MASH 2016 Test 3-72 Summary (P40334-01, 90° CIA)

90° CIA



0.000 seconds | 0.030 seconds | 0.060 seconds | 0.090 seconds | 0.120 seconds | 0.150 seconds



GENERAL INFORMATION

Test Agency	Applus IDIADA KARCO Engineering
Test Number	P40334-01
Test Designation	3-72
Test Date	3/29/21

TEST ARTICLE

Name / Model	Cortina Telespar Type III Barricade
Type	Work-Zone Traffic Control Device
Device Height	6.1 ft. (1.9 m)
Key Elements	Boards, Steel Uprights, Steel Feet
Road Surface	Smooth, clean concrete

TEST VEHICLE

Type / Designation	2270P
Year, Make, and Model	2015 RAM 1500
Curb Mass	5,044.1 lbs (2,288.0 kg)
Test Inertial Mass	5,009.9 lbs (2272.5 kg)
Gross Static Mass	5,009.9 lbs (2272.5 kg)

Impact Conditions

Impact Velocity	62.72 mph (100.94 km/h)
Location/ Orientation	21.5 in. (545 mm) From Vehicle Centerline on Passenger Side
Device Angle	90.0°
Device Kinetic Energy	658.9 kip-feet (893.3 Kilojoules)
Minimum KE Required	594 kip-feet (806 Kilojoules)

Exit Conditions

Exit Velocity	60.73 mph (97.7 km/h)
Vehicle Resting Position	333.9 ft. (101.8 m) Downstream 2.1 ft. (0.6 m) Left
Vehicle Stability	Satisfactory
90° - Maximum Roll Angle	Did Not Exceed 75°
90° - Maximum Pitch Angle	Did Not Exceed 75°

* Not Applicable, device weighs less than 220 lbs (100 kg)

Occupant Risk

Longitudinal OIV	Not Applicable*
Lateral OIV	Not Applicable*
Longitudinal RA	Not Applicable*
Lateral RA	Not Applicable*
THIV	Not Applicable*
PHD	Not Applicable*
ASI	Not Applicable*

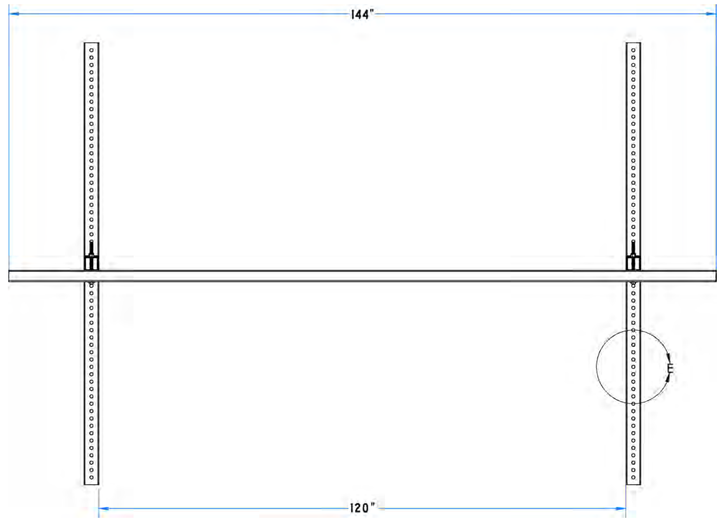
Test Article Deflections

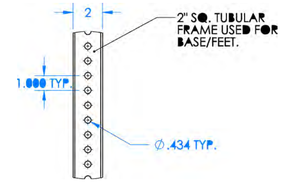
0° - Sign Debris Field (longitudinal)	68.1 ft. (20.8 m)
0° - Sign Debris Field (lateral)	24.3 ft. (7.4 m)

Vehicle Damage

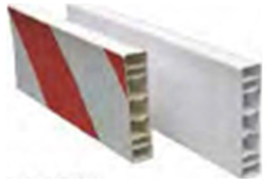
Vehicle Damage Scale	12-FD-1
CDC	12FDAW1
90° - Maximum Deformation	MASH Deformation Limits Not Exceeded (0.0 in.) 0 mm

Figure 3 **Summary of Test 3-72 (P40332-01, 90° CIA)**

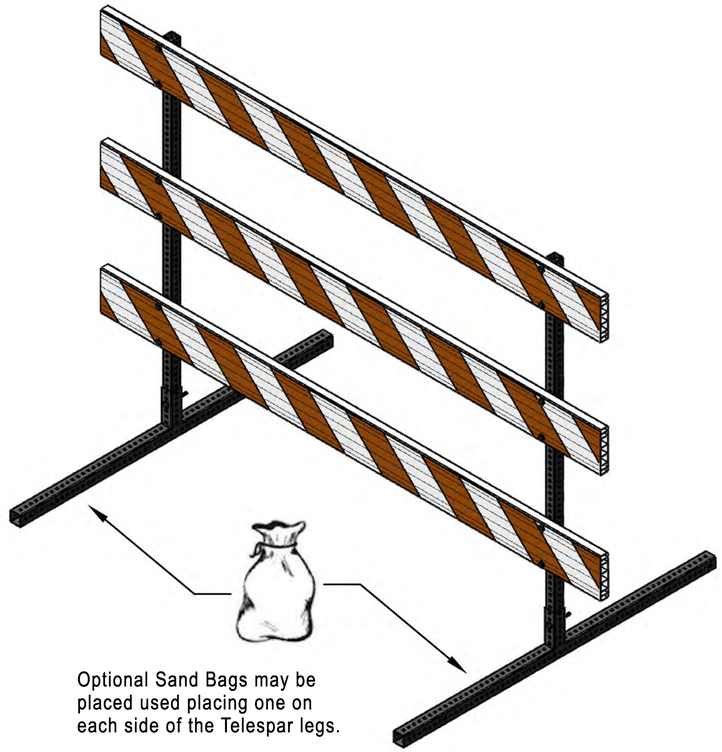




DETAIL E
TUBULAR HIGH STRENGTH FRAME CONSTRUCTION
SCALE 1 : 5

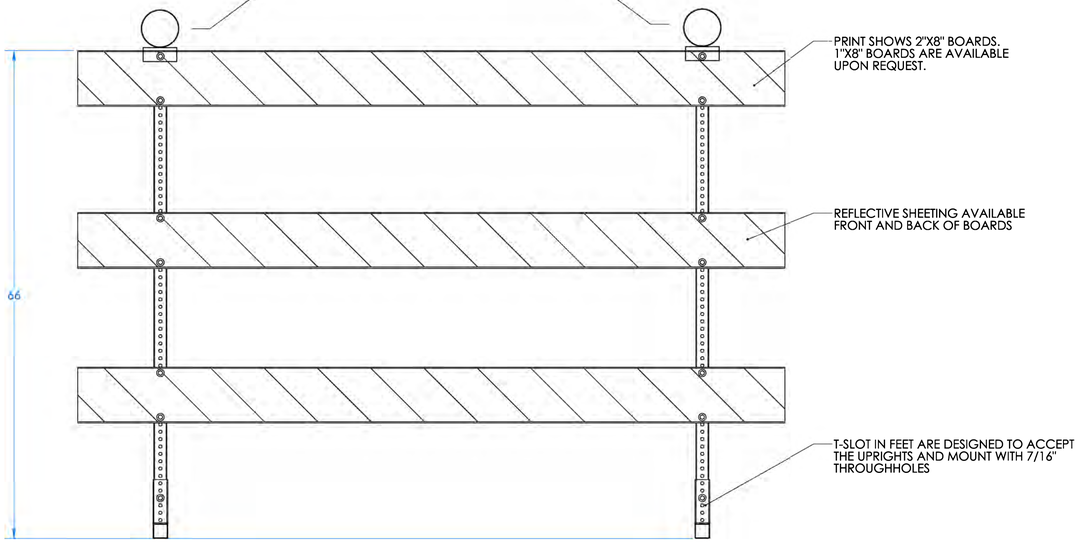


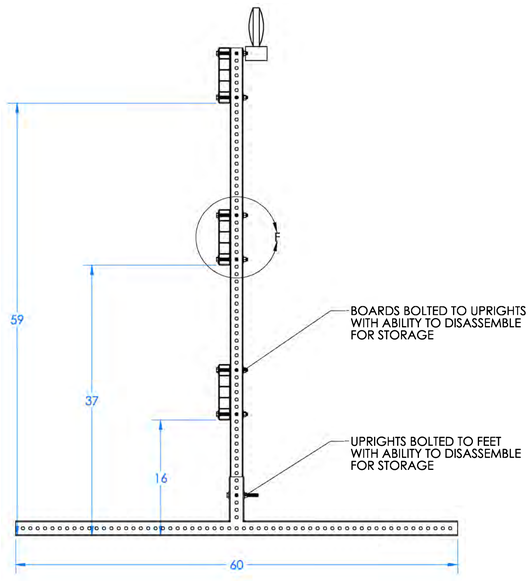
Boards are extruded using
High Density Poly Ethylene

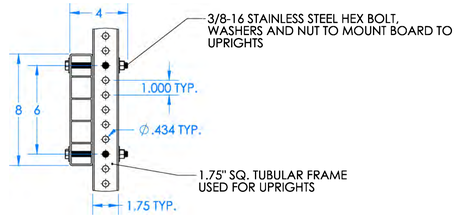


Optional Sand Bags may be placed used placing one on each side of the Telespar legs.

Optional standard barricade lights may be attached to each Telespar leg.







DETAIL F
BOARD MOUNTED TO UPRIGHT
SCALE 1 : 5

BOM	
2"X8"X144" Boards	3
STEEL UPRIGHTS	2
STEEL FEET	2
3/8-16"X4" BOLT ASSEMBLY	14
NEXT ASSY	USED ON
APPLICATION	DO NOT SCALE DRAWING

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONAL ± 1/32
ANGULAR: MACH ± .05° BEND ± .5°
TWO PLACE DECIMAL ± .020
THREE PLACE DECIMAL ± .005
INTERPRET GEOMETRIC TOLERANCING PER: ASME 14.5.5-2017
MATERIAL
High Density Poly Ethylene Boards
GLAVANIZED STEEL FRAME
FINISH

	NAME	DATE
DRAWN	SMB	3/7/18
CHECKED	VEB	3/7/18
ENG APPR.	JMG	
MFG APPR.	MG	
Q.A.	MS	

COMMENTS:
PART NUMBER IS BASED ON CONFIGURATION DEPENDANT ON SHEETING, SIDES OF SHEETING AND BOARD LENGTH. PLEASE REFER TO CATALOG FOR APPROPRIATE PART NUMBER

Cortina Safety Products

TELESPAR TYPE III BARRICADE
12 FOOT WIDE VERSION

SIZE **D** CSPG #97-1700-12 REV 0

SCALE: 1:10 WEIGHT: SHEET 3 OF 3