U.S. Department of Transportation
Federal Highway Administration

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

March 10, 2026

In Reply Refer To:
HSST-1/B-394

Pretred
Vincent Powell
3700 Salida St. Unit 20
Aurora, CO 80011

Dear Mr. Powell:

We received your correspondence on September 16, 2024 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. We write to inform you that the device Pretred, 8ft TL2, Sustainable Rubber Barrier is eligible for Federal-aid reimbursement. This letter is assigned Federal Highway Administration (FHWA) control number B-394.

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

Name of system: Pretred, 8ft TL2, Sustainable Rubber Barrier
Type of system: Barrier
Test Level: TL-2
Testing conducted by: Calspan
Date of request: September 11, 2024

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

The Pretred, 8ft TL2, Sustainable Rubber Barrier is a free standing rubber longitudinal barrier which measures 8 ft (2.4 m) long, 34.5 in (876.3 mm) tall, 22.5 in (571.5 mm) wide at the base, and 20 in (508 mm) wide at top. Each barrier has three #5 A706 grade 60 looped rebar at both ends of each block which are connected to the other barriers using a 1-1/4 in (31.7 mm) diameter x 25 in (635 mm) long dropped pins. Each of the barriers was constructed using a proprietary rubber blend which was molded around the rebar to give each of the barriers their shape. Each barrier weighs approximately 2,400 lbs.

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 B-394 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

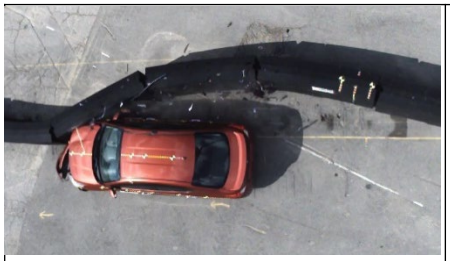
To prevent any misunderstanding, and as discussed above, this Federal-aid eligibility letter is assigned FHWA control number B-394. It should only be reproduced in full with its attachment(s). This Federal-aid eligibility letter and the material offered by the requester supporting its issuance is public 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.

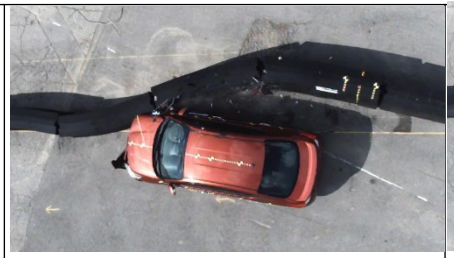
Sincerely,

Jessie Yung
Director, Office of Safety Technologies
Office of Safety

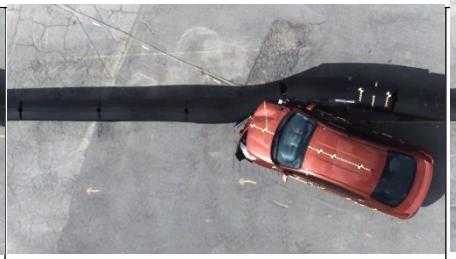
Enclosures



0.500 s

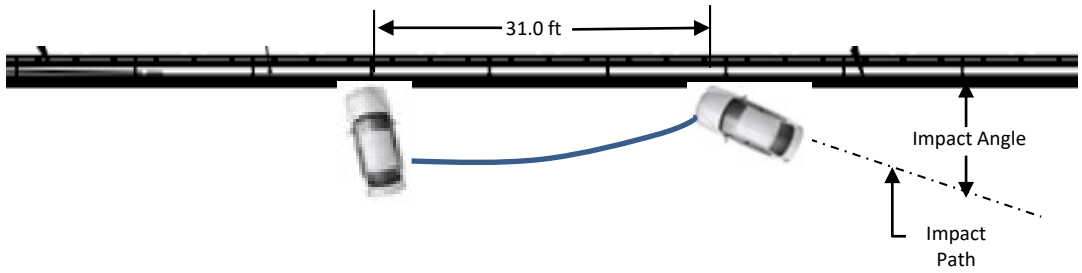


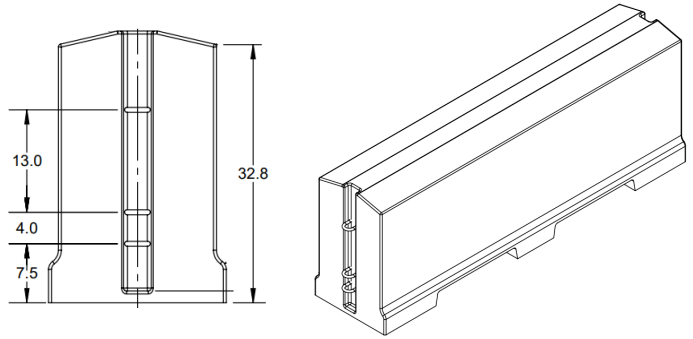
0.350 s



0.150 s

0.000 s





General Information
- Test Agency ..... Calspan LLC
- Test Standard Test No. ..... MASH Test 2-10
- Calspan Test No. BR0252
- Test Date 2024-07-18

Test Article
- Type ..... Longitudinal Barrier
- Name..... Pretred, 8ft TL2, Sustainable Rubber Barrier
- Installation Length ..... 216 ft (65.84 m)
- Material or Key Elements ... Twenty-seven 8 ft (2.4 m) long sections of barriers manufactured from rubber. 32.8 in (833.1 mm) above pavement x 22.5 in (571.5 mm) wide at the base x 20 in (508 mm) wide at top, containing three #5 A706 grade 60 looped rebar at both ends of each block anchored with A36 steel plates at the open end of loops inside the rubber blocks. Blocks are free standing without any connection to surface below.

Soil Type and Condition ..... Asphalt surface

Test Vehicle
- Type/Designation 1100C
- Make and Model..... 2019 Nissan Versa
- Curb ..... 2,302 lb (1,044 kg)
- Test Inertial ..... 2,377 lb (1,078 kg)
- Dummy ..... 165 lb (75 kg)
- Gross Static .....2,542 lb (1,153 kg)

Impact Conditions
- Speed ..... 45.3 mi/h (73.0 km/h)
- Angle..... 25.4°
- Location/Orientation..... 6.5 ft (2,000 mm) Upstream of joint #14

Impact Severity ..... 30.1 kip-ft (40.8 kJ)

Exit Conditions
- Speed .....0 mi/h (0 km/h)
- Trajectory/Heading Angle ... Rested next to barrier

Occupant Risk Values
- Longitudinal OIV ..... 21.4 ft/s (6.5 m/s)
- Lateral OIV..... 11.5 ft/s (3.5 m/s)
- Longitudinal Ridedown .....-6.4 g
- Lateral Ridedown..... -3.6 g
- THIV..... 7.7 m/s
- ASI 1.11

Max. 0.050-s Average
- Longitudinal ..... 8.9 g
- Lateral..... 6.2 g
- Vertical..... 1.0 g

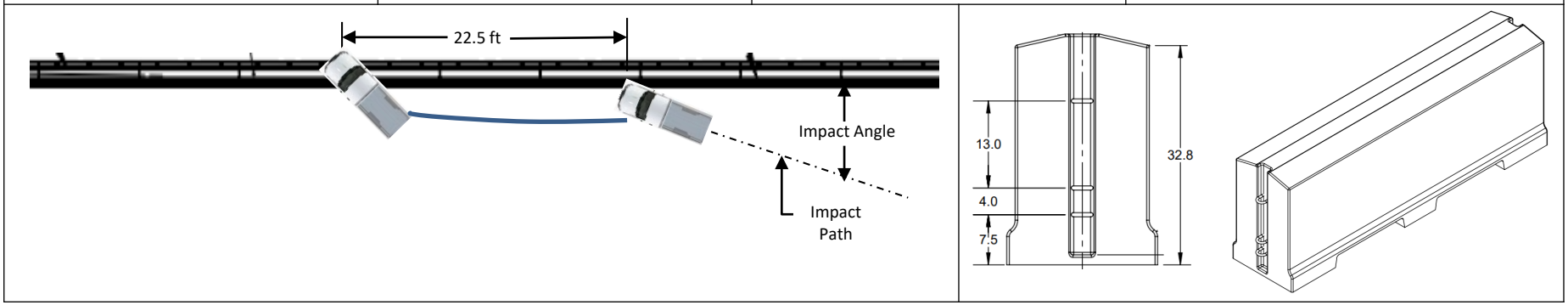
Post-Impact Trajectory
- Stopping Distance..... 31.0 ft (9.4 m) downstream 0 ft (0 m) of the barrier line

Vehicle Stability
- Maximum Yaw Angle .....23.7°
- Maximum Pitch Angle ..... 2.1°
- Maximum Roll Angle..... 4.6°
- Vehicle Snagging..... No
- Vehicle Pocketing ..... No

Test Article Deflections
- Dynamic..... 52.4 in (1,330.2 mm)
- Static..... 46.5 in (1181.1 mm)
- Working Width……74.8 in (1,900.2 mm)

Vehicle Damage
- VDS 01RFQ2
- CDC 01RFEW2
- Max. Exterior Deformation ..... 5.5 in (139.7 mm)
- Max. Occupant Comp. Deformation ..... 0.0 in (0.0 mm)

Summary of Results for *MASH* Test 2-10 on Pretred, 8ft TL2, Sustainable Rubber Barrier



General Information
- Test Agency ..... Calspan LLC
- Test Standard Test No. ..... MASH Test 2-11
- Calspan Test No. BR0251
- Test Date 2024-07-16

Test Article
- Type ..... Longitudinal Barrier
- Name..... Pretred, 8ft TL2, Sustainable Rubber Barrier
- Installation Length ..... 216 ft (65.84 m)
- Material or Key Elements ... Twenty-seven 8 ft (2.4 m) long sections of barriers manufactured from rubber. 32.8 in (833.1 mm) above pavement x 22.5 in (571.5 mm) wide at the base x 20 in (508 mm) wide at top, containing three #5 A706 grade 60 looped rebar at both ends of each block anchored with A36 steel plates at the open end of loops inside the rubber blocks. Blocks are free standing without any connection to surface below.

Soil Type and Condition ..... Asphalt surface

Test Vehicle
- Type/Designation 2270P
- Make and Model..... 2018 Dodge Ram
- Curb ..... 4,824 lb (2,188 kg)
- Test Inertial ..... 4,930 lb (2,236 kg)
- Dummy ..... N / A
- Gross Static .....4,930 lb (2,236 kg)

Impact Conditions
- Speed ..... 45.4 mi/h (73.1 km/h)
- Angle..... 26.2°
- Location/Orientation..... 6.5 ft (2,000 mm) Upstream of joint #14

Impact Severity ..... 66.3 kip-ft (89.9 kJ)

Exit Conditions
- Speed .....0 mi/h (0 km/h)
- Trajectory/Heading Angle ... Rested on the barrier

Occupant Risk Values
- Longitudinal OIV ..... 23.1 ft/s (7.0 m/s)
- Lateral OIV..... 7.6 ft/s (2.3 m/s)
- Longitudinal Ridedown .....-5.3 g
- Lateral Ridedown..... 4.2 g
- THIV..... 7.4 m/s
- ASI 0.84

Max. 0.050-s Average
- Longitudinal ..... 8.5 g
- Lateral..... 4.9 g
- Vertical..... 2.1 g

Post-Impact Trajectory
- Stopping Distance..... 22.5 ft (6.9 m) downstream 0 ft (0 m) of the barrier line

Vehicle Stability
- Maximum Yaw Angle .....54.9°
- Maximum Pitch Angle ..... 38.2°
- Maximum Roll Angle..... 43.2°
- Vehicle Snagging..... No
- Vehicle Pocketing ..... No

Test Article Deflections
- Dynamic..... 79.9 in (2,030.3 mm)
- Static..... 59.0 in (1498.5 mm)
- Working Width……124.8 in (3,170.1 mm)

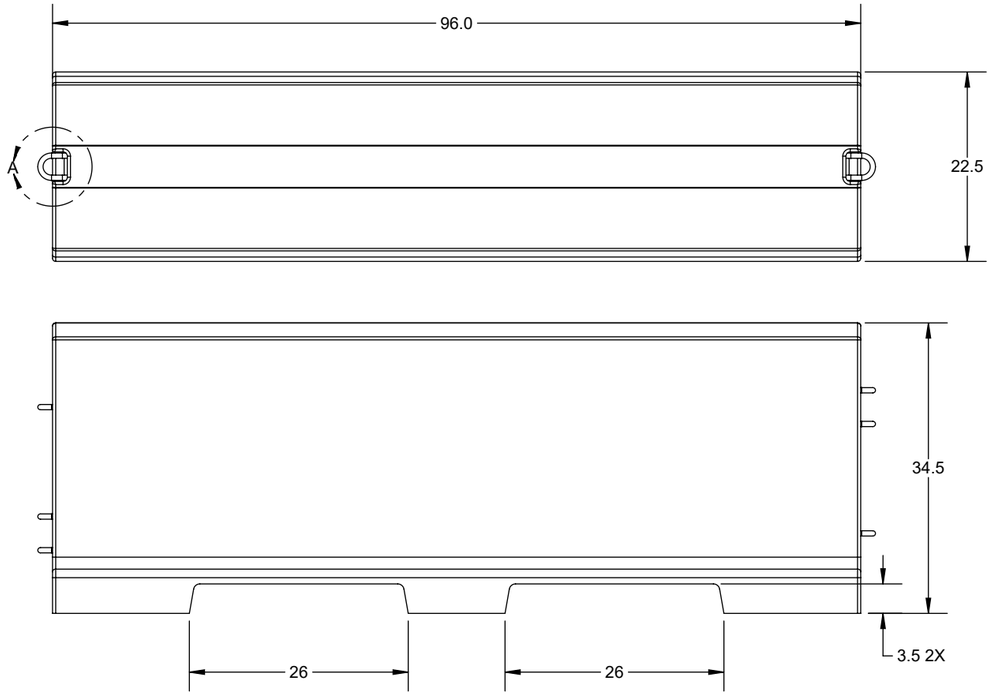
Vehicle Damage
- VDS 01RFQ1
- CDC 01RFEW1
- Max. Exterior Deformation ..... 1.2 in (30.5 mm)
- Max. Occupant Comp. Deformation ..... 0.0 in (0.0 mm)

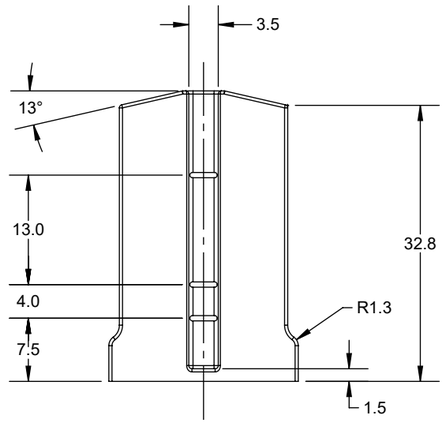
Summary of Results for *MASH* Test 2-11 on Pretred, 8ft TL2, Sustainable Rubber Barrier

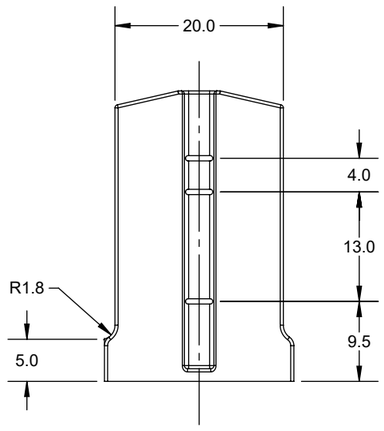
NOTES:
1. MANUFACTURE ACCORDING TO ELECTRONIC PROFILE UNLESS OTHERWISE SPECIFIED. DIMENSIONS INDICATED ARE FOR REFERENCE OR QA ONLY.
2. WEIGHT: 2400 LBS.
3. MATERIAL:
   1. PRETRED PROPRIETARY RUBBER MIX
   2. REBAR: #5 A706 GRADE 60 MINIMUM
   3. PLATE: A36 STEEL MINIMUM

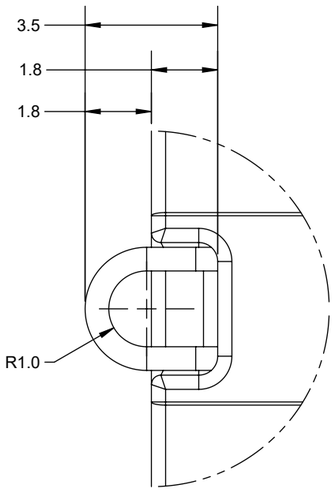
REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
IR	INITIAL RELEASE	7/11/2024	VPOWELL
A	PRODUCTION RELEASE	9/4/2024	VPOWELL
B	ADDED DETAIL VIEW AND LOOP END DIMS	12/17/2024	GRQ

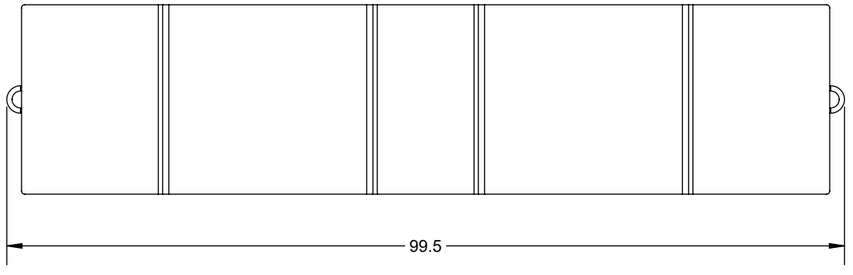


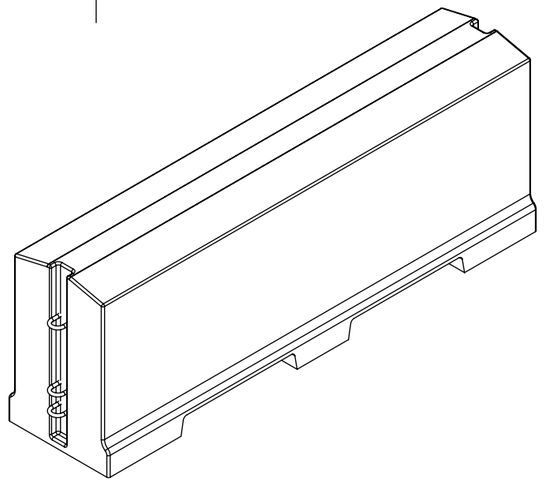






DETAIL A
SCALE 1 : 4





PRETRED
BUILD A BETTER WAY

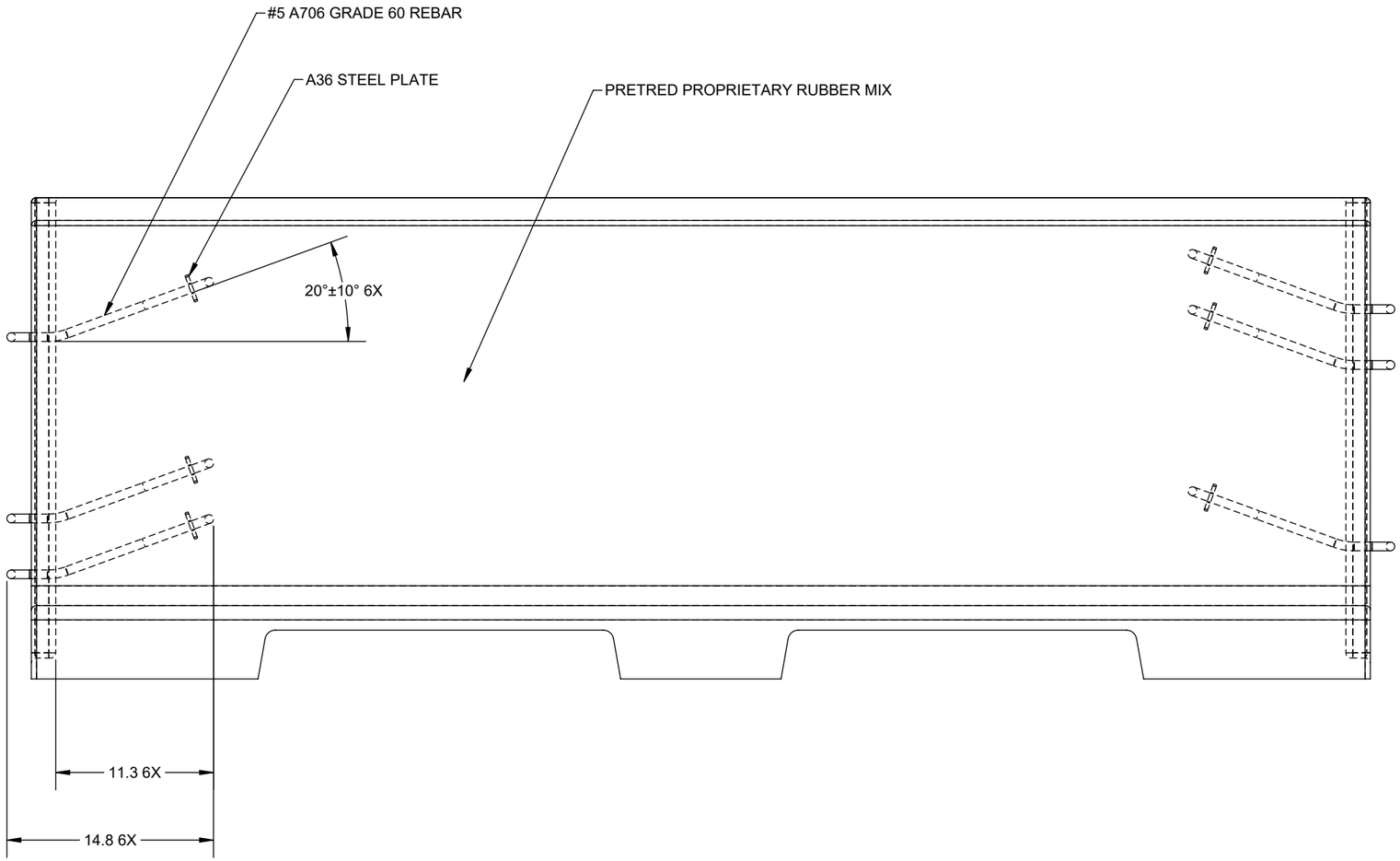
TOLERANCES UNLESS OTHERWISE NOTED		
DIM	MM	INCH
.X	±6.35	±.25
.XX	±3.175	±.125

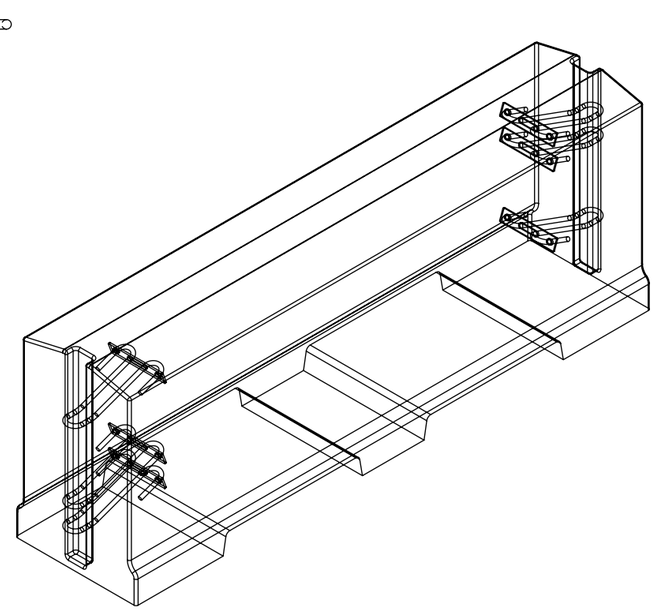
PRIMARY UNITS: INCHES
SECONDARY UNITS: [MM]
THIRD ANGLE PROJECTION
ANGLES ± 1.0°

PROJECT: COLORADO BARRIER

DESCRIPTION: **Pretred, 8ft TL2, Sustainable Rubber Barrier**

DRAWN BY: GRQ
DRAWN DATE: 7/8/2024
SCALE: DO NOT SCALE
PART NUMBER: RW-10-DOT-9622345-BK-FS





SEE PAGE (1) FOR NOTES, REVISIONS & MATERIALS.

PRETRED
BUILD A BETTER WAY

TOLERANCES UNLESS OTHERWISE NOTED		
DIM	MM	INCH
.X	±6.35	±.25
.XX	±3.175	±.125

PRIMARY UNITS: INCHES
SECONDARY UNITS: [MM]

THIRD ANGLE PROJECTION

ANGLES ± 1.0°

PROJECT: COLORADO BARRIER

DESCRIPTION: **Pretred, 8ft TL2, Sustainable Rubber Barrier**

DRAWN BY: GRQ

DRAWN DATE: 7/8/2024

SCALE: DO NOT SCALE

PART NUMBER: RW-10-DOT-9622345-BK-FS

PAGE 2 OF 2

REV. B