



R18-0072

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2-19-20

ET20003

Revision:

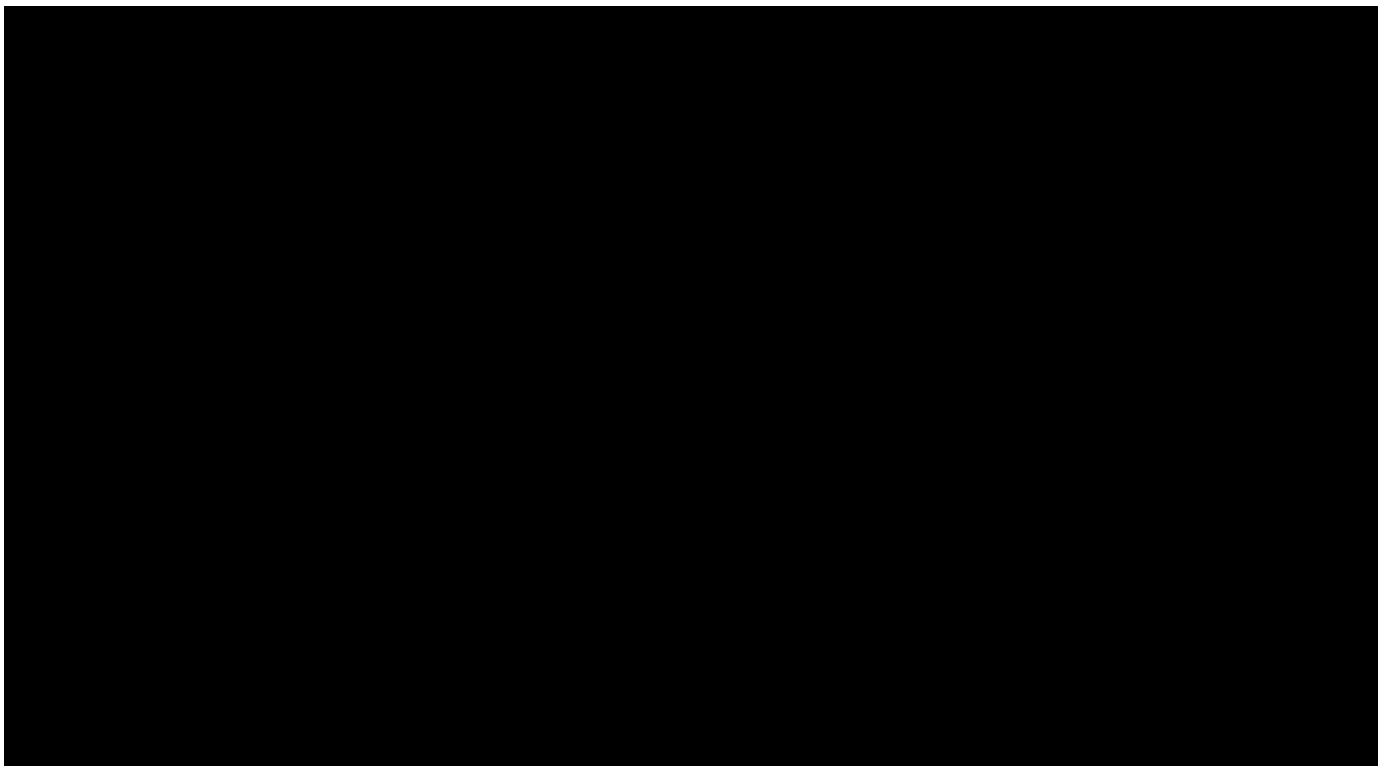
Reported by: \_\_\_\_\_

Approved by: \_\_\_\_\_

## Side impact guard test

### Objective

To test the [REDACTED] side impact guard constructed using [REDACTED] steel.



The [REDACTED] side impact guard is a reproduction of [REDACTED] [REDACTED] that has passed vehicle crash testing.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

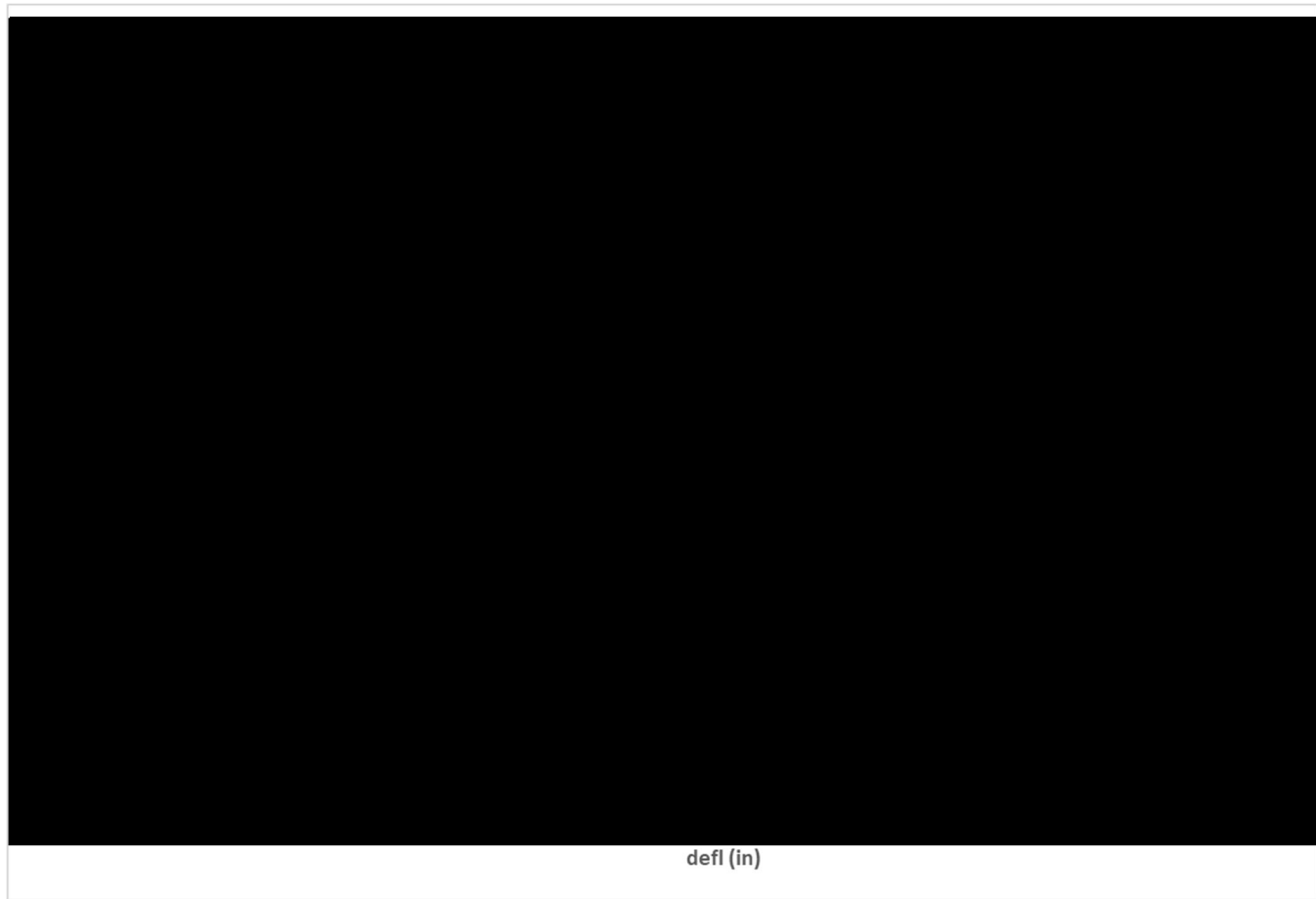
[REDACTED]

[REDACTED]

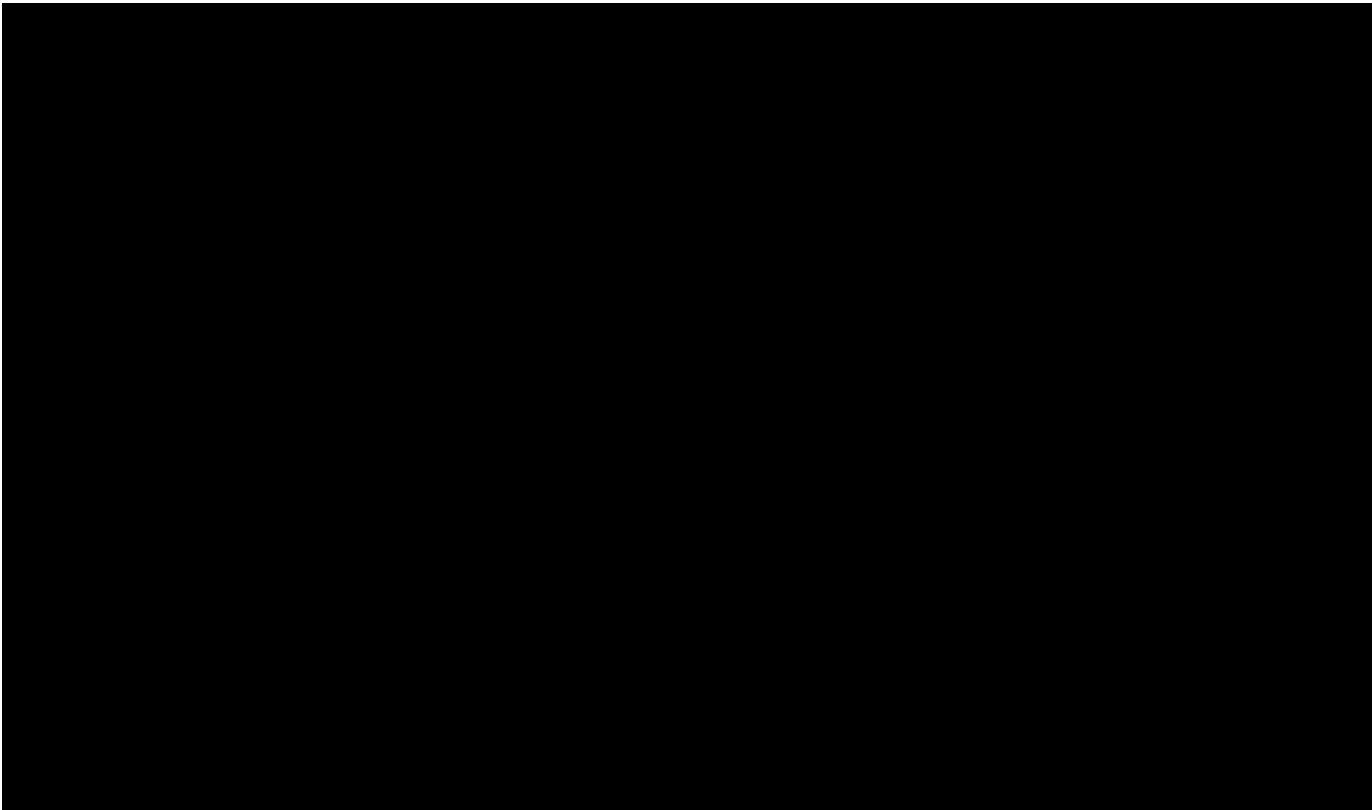
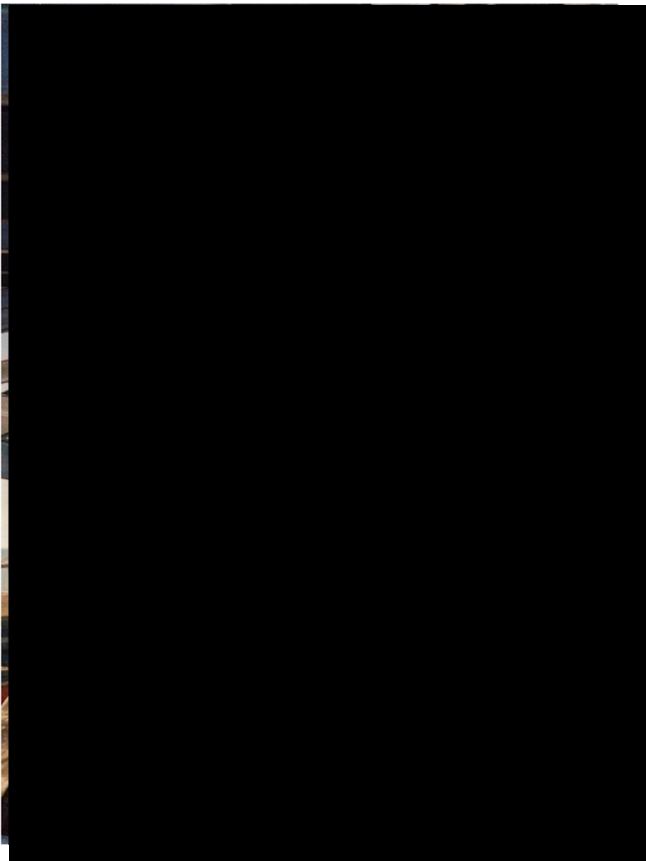
[REDACTED]

[REDACTED]

The second [REDACTED] was constructed using [REDACTED].



Side Guard	Peak Load
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]





R21-0010

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Reported by: \_\_\_\_\_

Approved by: \_\_\_\_\_

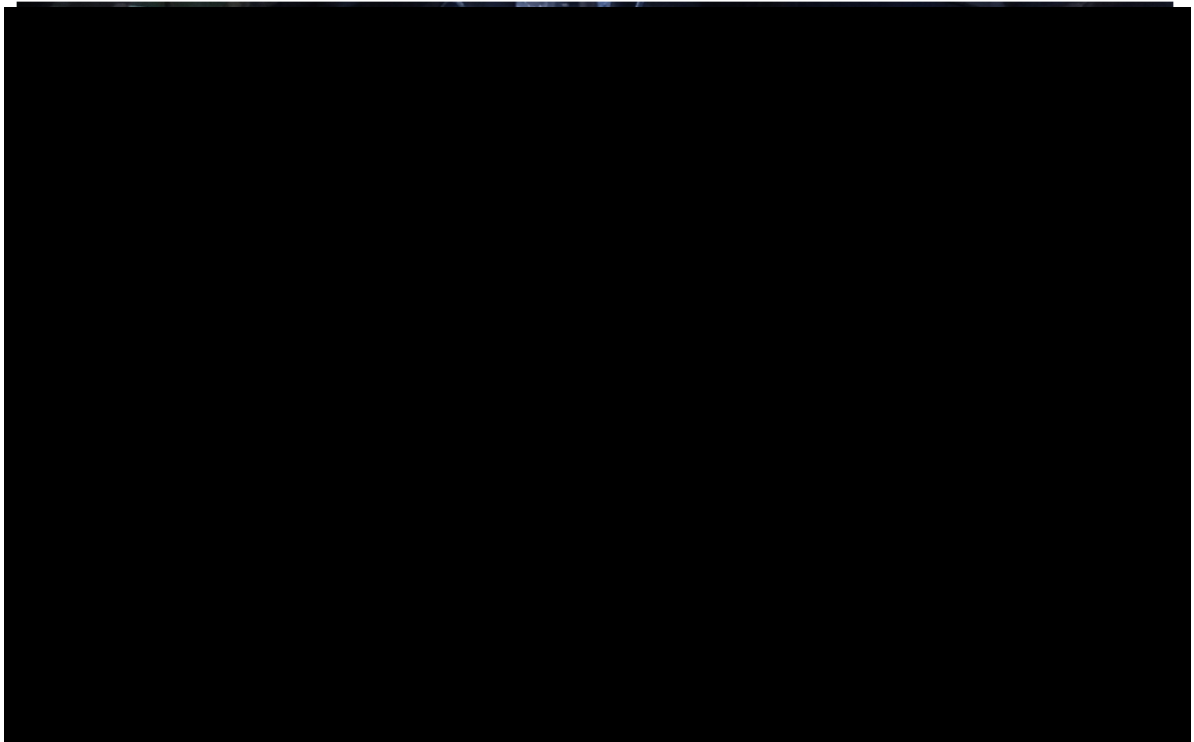
**Push test of 2 [REDACTED] assemblies**

Purpose for Testing

Test [REDACTED] placed [REDACTED] inches apart. The [REDACTED] wide load applicator is placed to only engage [REDACTED]. The bracing needs to resist a lateral load (as shown below) of [REDACTED] and a longitudinal load of [REDACTED].

Test Set-up

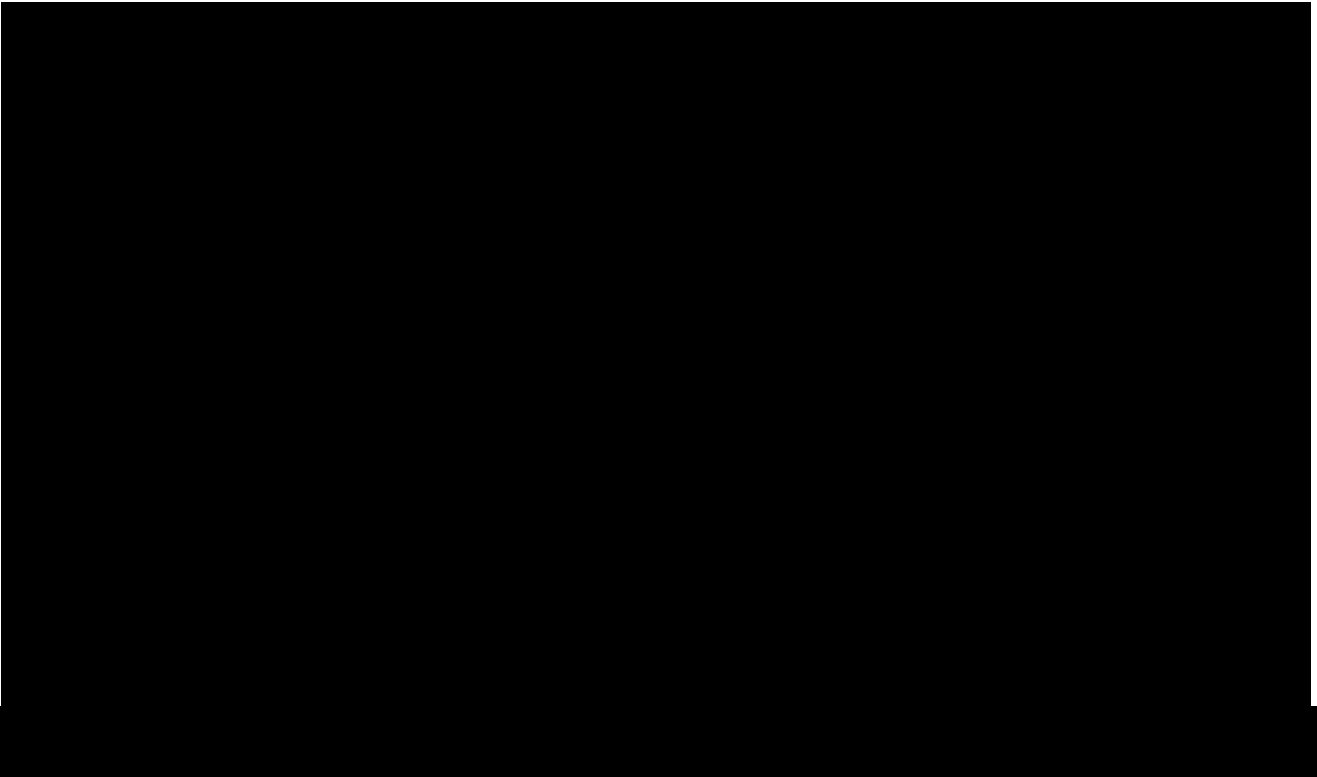
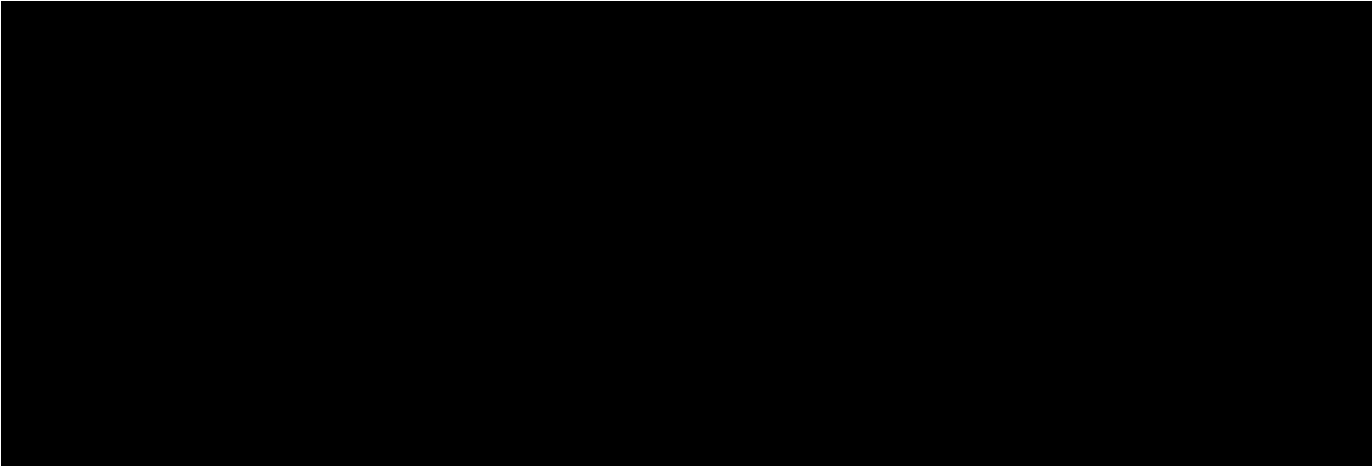
The [REDACTED] brace consists of [REDACTED] diameter [REDACTED]. A [REDACTED] [REDACTED] connects the [REDACTED] braces.



The load applicator is positioned to engage [REDACTED]. The edge of the load applicator is [REDACTED].

Test Results

The [redacted] tube tore at the channel mounting it to the diagonal brace.



defl (in)

The diagonal braces

[Redacted]

[Redacted]

[Redacted]

[Redacted]



R21-0011

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ET22001, Dynamic Crash test

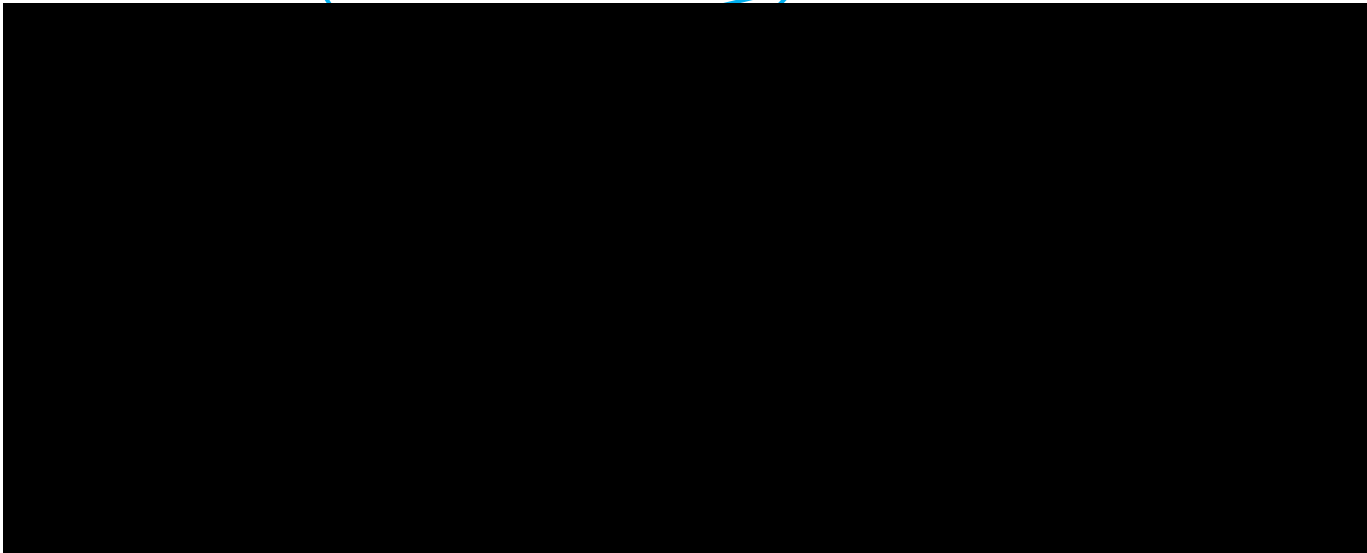
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Approved by: \_\_\_\_\_

## Dynamic Crash Test of Side Impact Guard

### Purpose for Testing

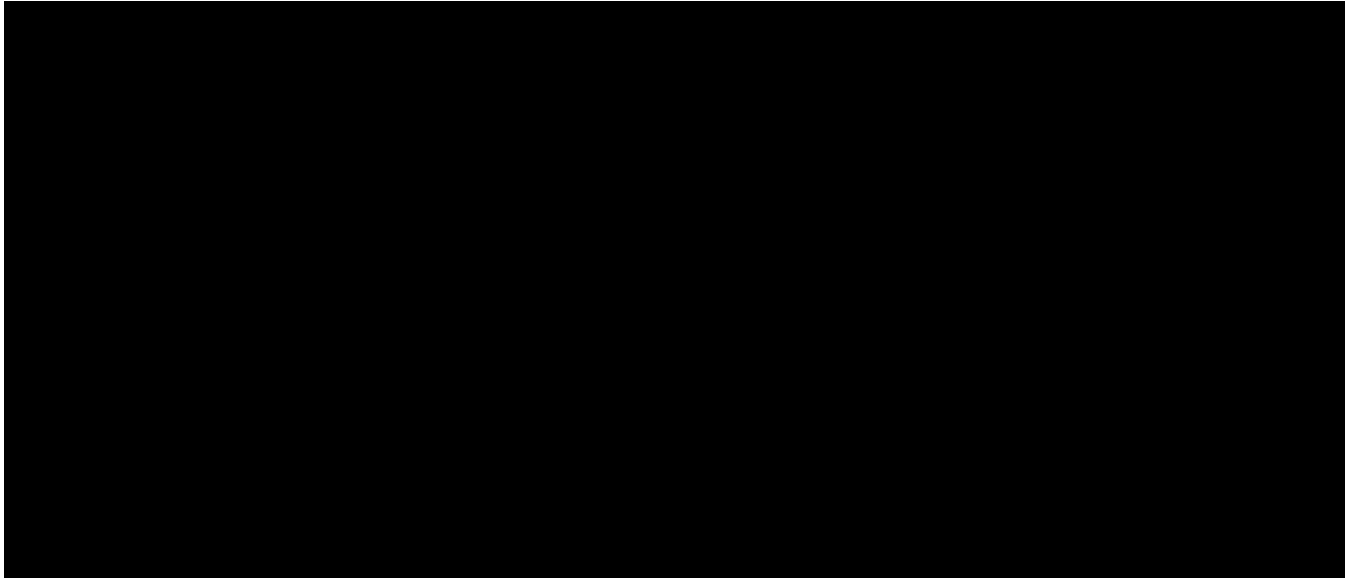
This test is to determine [REDACTED] Side Impact Guard performs during a 35mph crash test



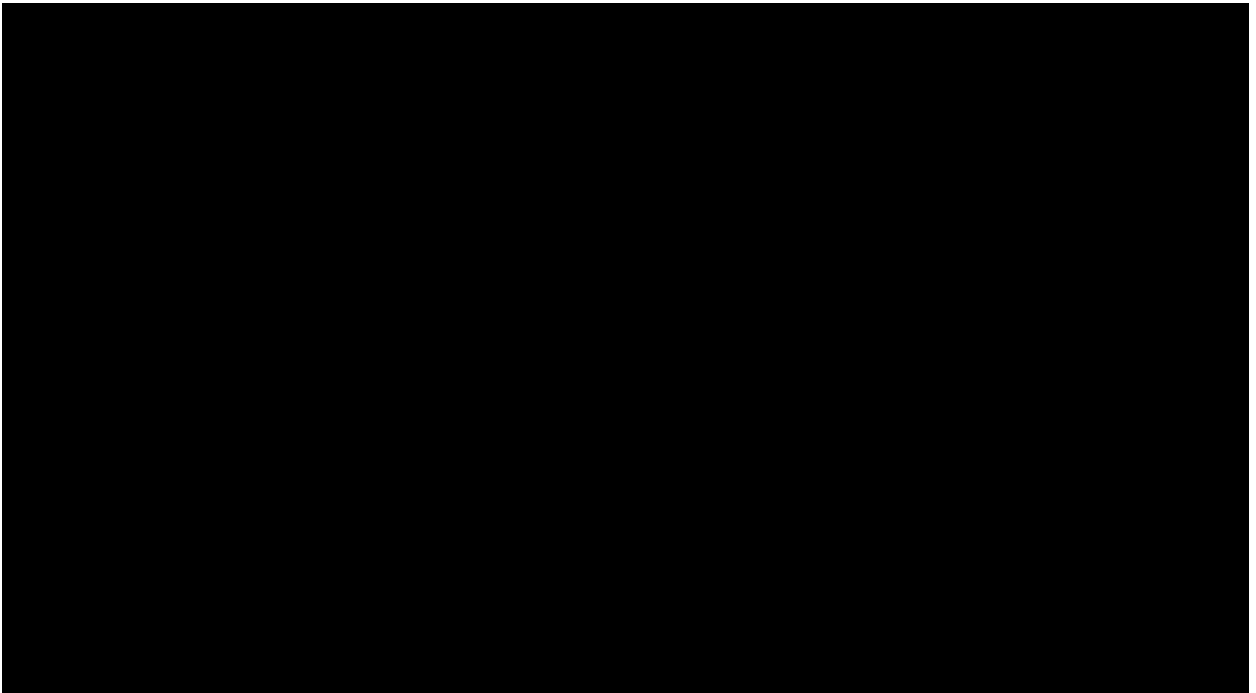
### Test Set-up

A trailer with the Side impact guard was delivered to MGA for the test.

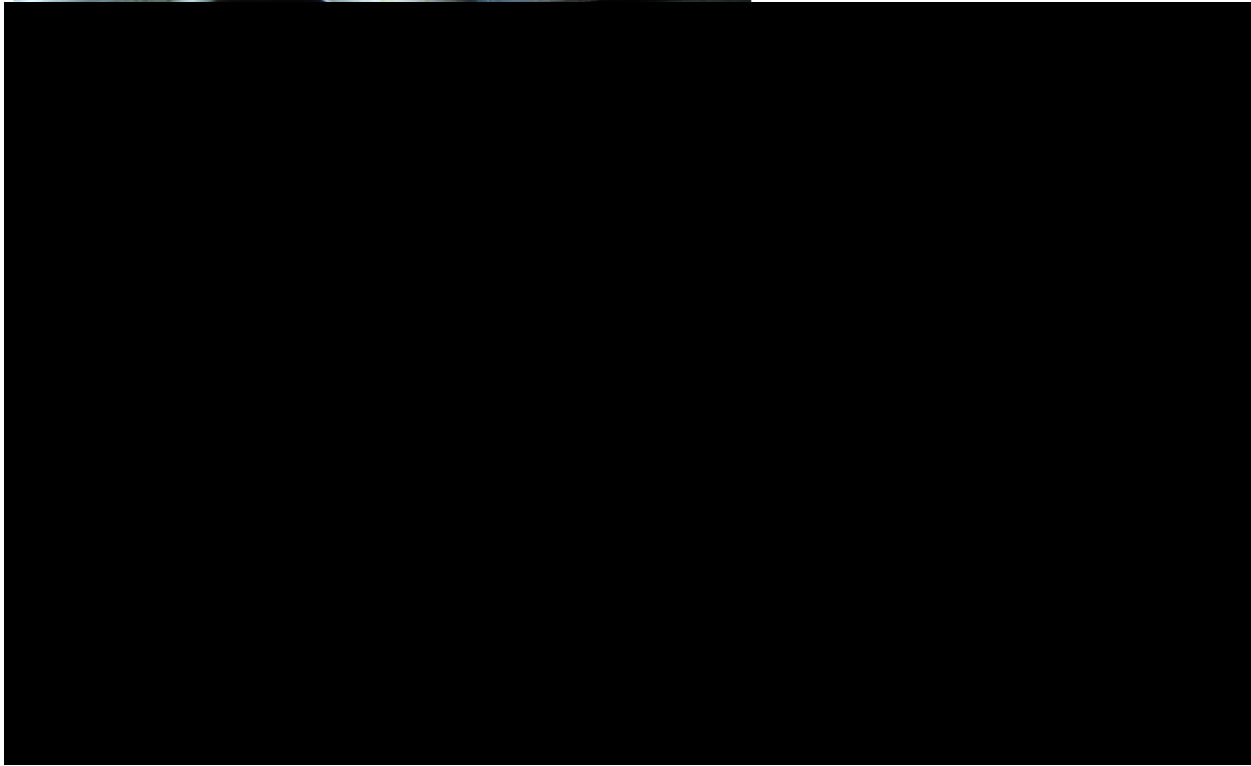
A [REDACTED] was available as a bullet car. A [REDACTED] is used by [REDACTED] for crash testing. Weight was added to the [REDACTED] to bring it to a total weight of [REDACTED] s. A [REDACTED] has a curb weight of approximately [REDACTED]. The dimensions at the front of the vehicles are similar but the [REDACTED]. The GVWR of a [REDACTED]. The damage to the [REDACTED] could be higher due to it being [REDACTED].



A [REDACTED] camera is placed forward of the landing gear on the impacted side and one camera is placed near the landing gear leg on the far side looking at the back of the impact.

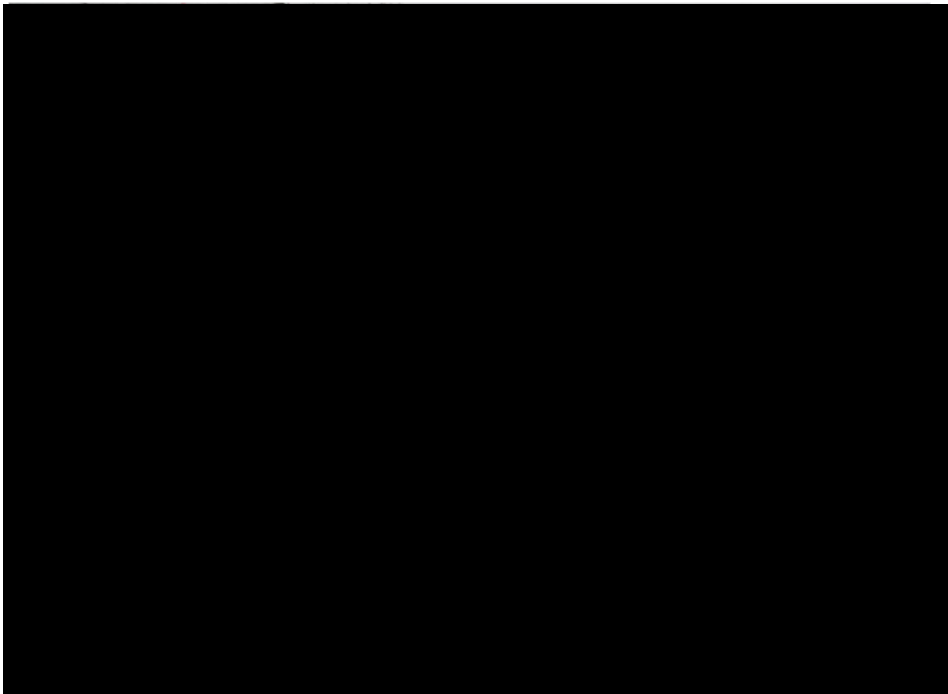


There is a camera placed at the rear on the non-impact side to capture the trailer box deflection and a camera placed under the trailer closer to the point of impact.



Test Results

The goal of preventing the A pillar from contacting the lower rail [REDACTED].



The trailer [redacted]. The trailer also [redacted]  
[redacted].

[REDACTED]

[REDACTED]

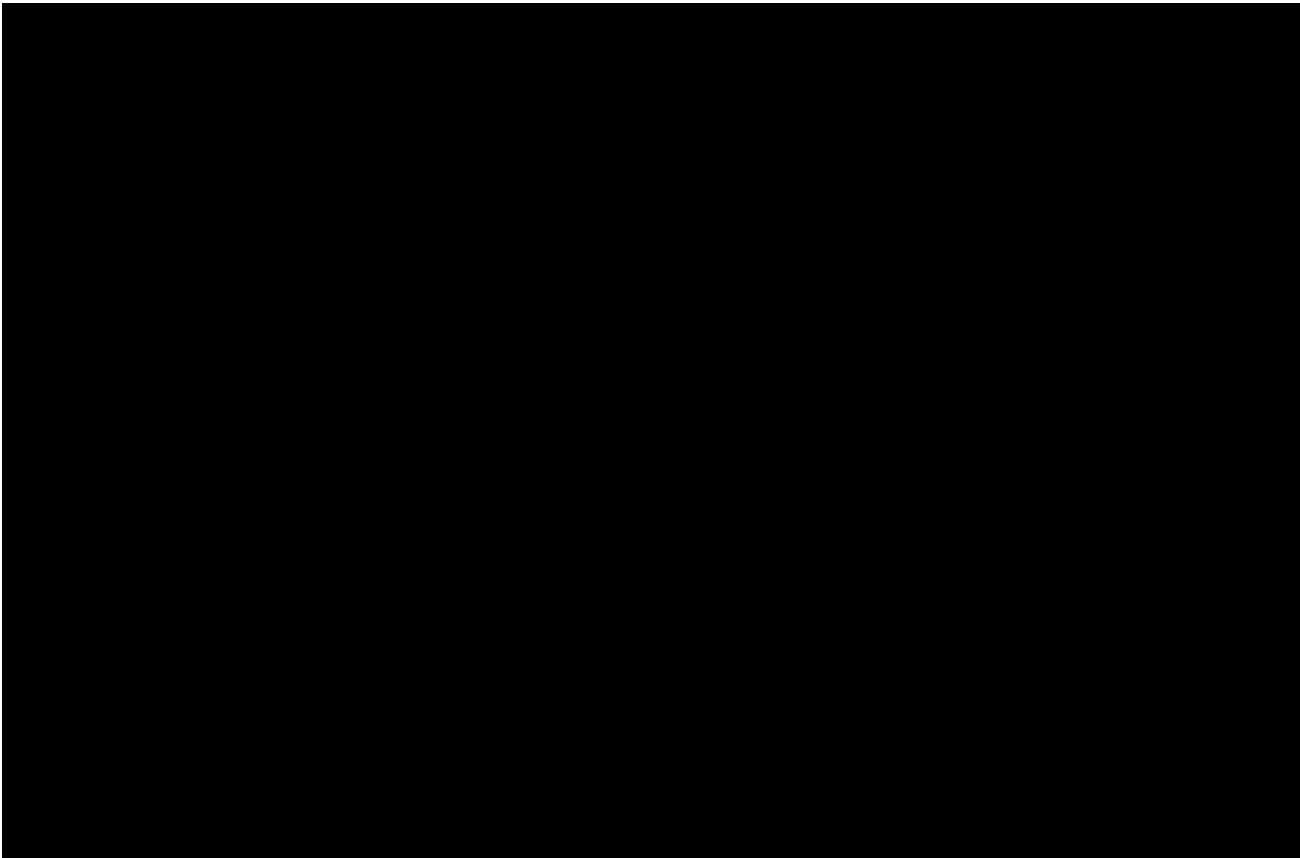
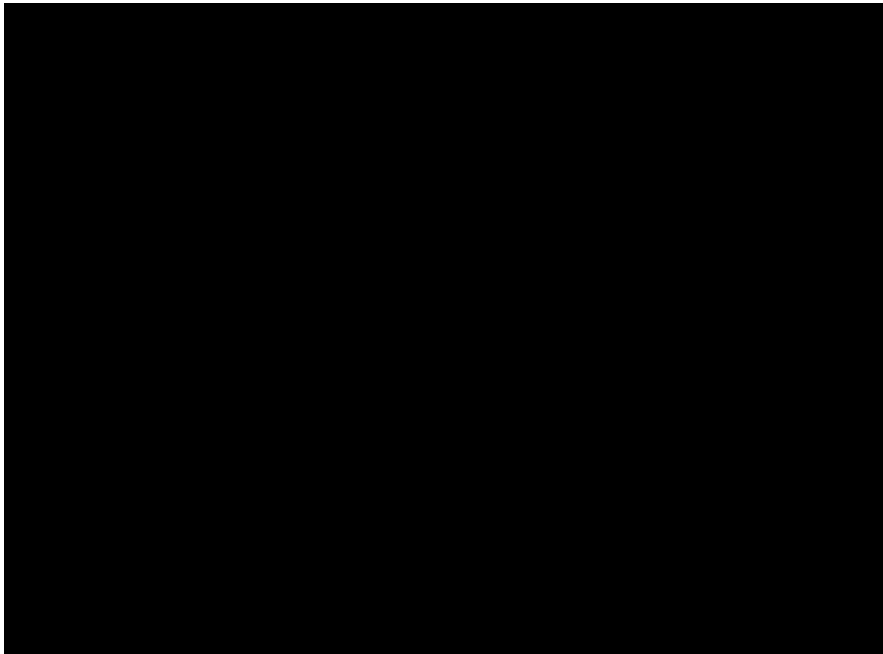
[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

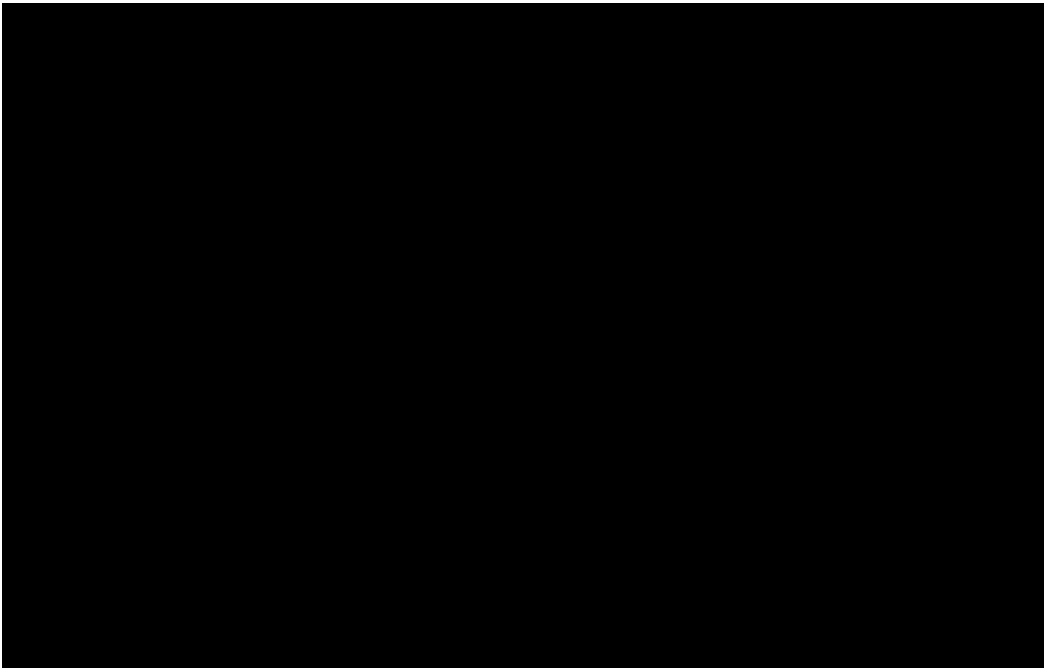


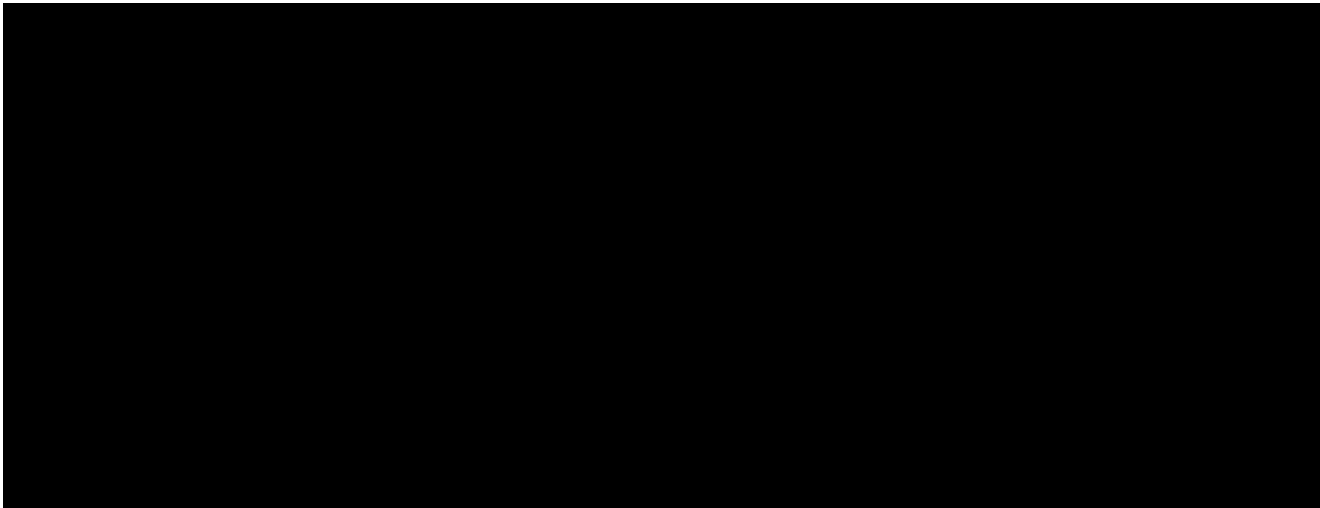
[REDACTED]

[REDACTED]

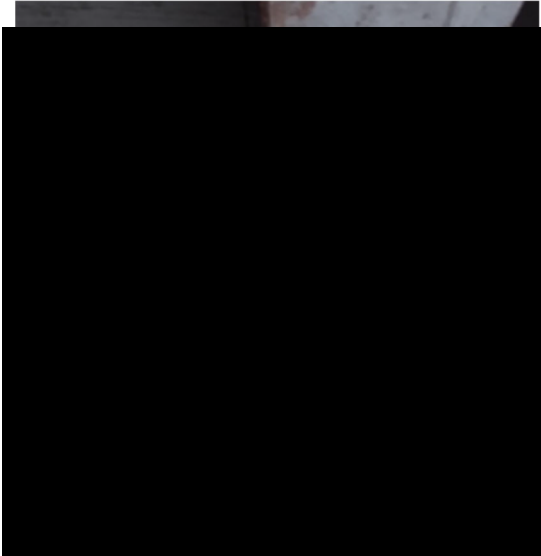
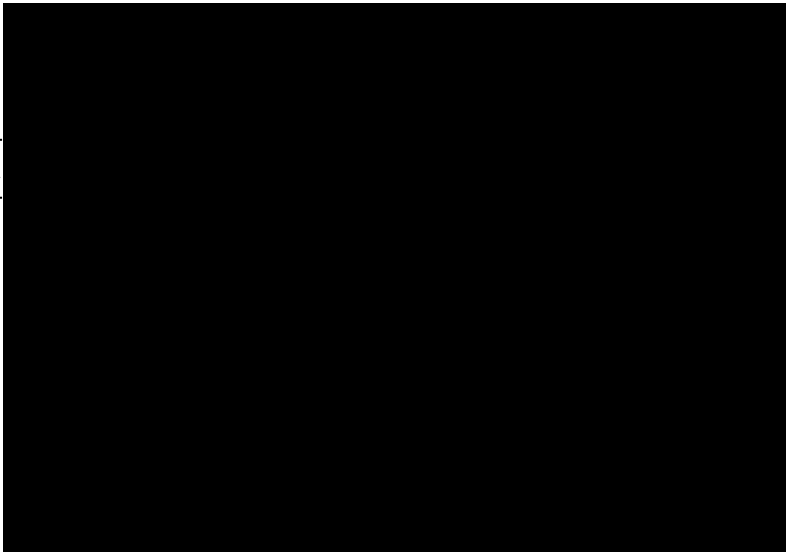
[REDACTED]

[REDACTED]

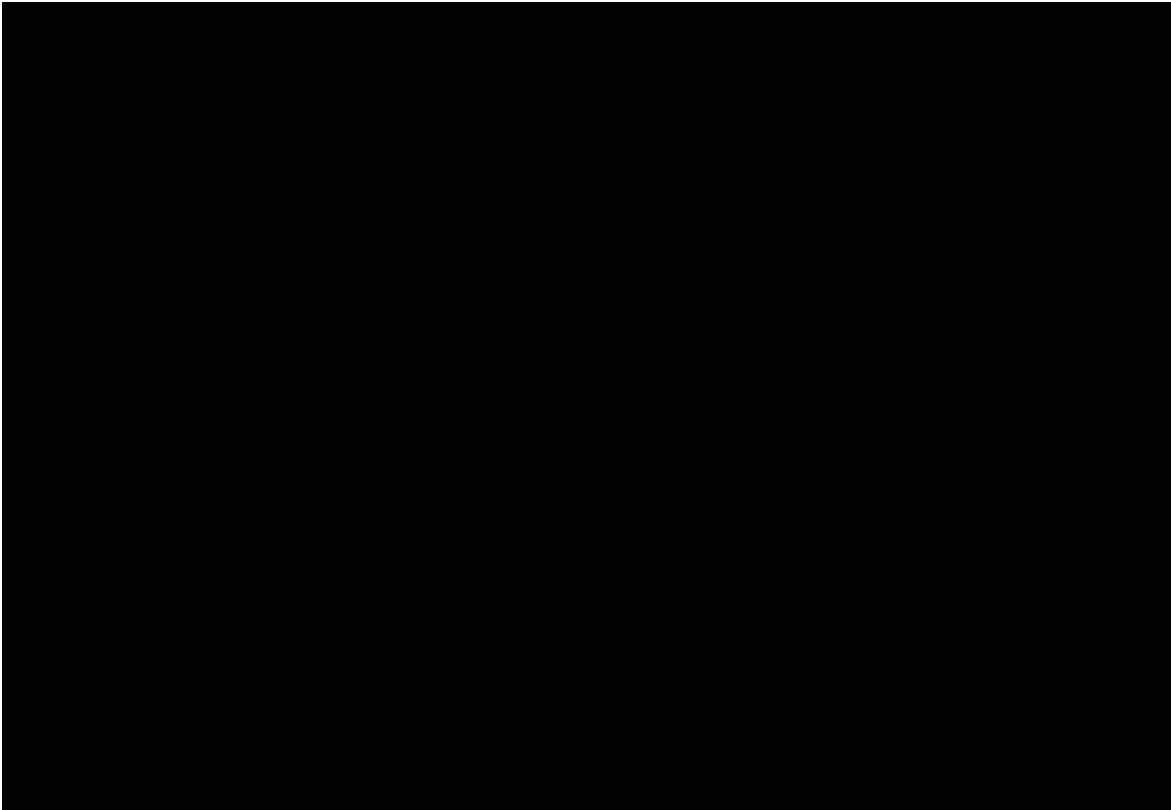




Sta



4. Ridge panel. The panel



5. The horizontal aluminum tube



Conclusions

1. The [redacted] upper and [redacted] center mount [redacted].
2. The [redacted].
3. The panel [redacted].

1. [redacted] the horizontal tube [redacted].
2. Ridge Panel
  - a. [redacted].
3. [redacted].



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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