

December 9, 2003

HSA-10/CC66B

Owen S. Denman, P.E.  
President  
Barrier Systems, Inc.  
180 River Road  
Rio Vista, CA 94571-1208

Dear Mr. Denman:

In your November 3 letter, you requested formal Federal Highway Administration (FHWA) acceptance of the ABSORB 350 Non-Redirective Crash Cushion as a crashworthy end treatment for use with Barrier Systems' SafeGuard Link System. The SafeGuard Link barrier was accepted for use on the National Highway System in Ms. Carol H. Jacoby's November 4, 2002 letter to you (acceptance letter B108). The ABSORB 350 was previously accepted for use with your Quickchange Moveable Barrier (QMB) and with temporary and permanent concrete barriers in acceptance letters B66 and B66A, dated April 11 and May 27, 2000, respectively.

In a second letter, also dated November 3, you requested FHWA acknowledgement and acceptance of a simplified hinge connection between the ABSORB 350 elements intended to replace the original design when the ABSORB 350 is used to shield temporary barrier other than the QMB.

To support your request, you included copies of two abbreviated test reports, and movies of the tests that were conducted in both VHS and digital formats. The first report summarized NCHRP Report 350 Test 3-41 with a pickup truck impacting a nine-unit ABSORB 350 shielding temporary concrete barrier to demonstrate the acceptability of the new hinge design in a head-on crash. The second report summarized NCHRP Report 350 Test 3-38 in which the pickup truck impacted the rearmost corner of the ABSORB 350 at its connection to the SafeGuard Link System. The new hinge design was also used in this test installation.

Based on staff review of the test data, I find the ABSORB 350, with the new hinge design shown in Enclosures 1 and 2, satisfies the NCHRP Report 350 evaluation criteria for a test level 3 device and may be used to shield the end of your SafeGuard Link Barrier when the connection assembly shown in Enclosure 3 is used between the crash cushion and the barrier proper. The new hinge design can also be used when the ABSORB 350 system is used to shield temporary or permanent concrete barrier.

As specifically noted on the previous acceptance letters for the ABSORB 350, it is a non-redirecting, gating crash cushion. Non-redirective, gating systems are designed to allow penetration into the area behind the system when struck at an angle on the side by an errant motorist. Furthermore, as seen in test 3-38, some high-angle, high-speed impacts into the side of the ABSORB 350 attenuator can result in vehicular vaulting and subsequent intrusion over 100 feet into the area behind the barrier, thus requiring a

significant clear runout area. This fact must continue to be stressed in your product literature and to your customers to ensure proper barrier design and layouts in the field, particularly when the ABSORB 350 is used to shield permanent concrete barrier.

Sincerely yours,

(original signed by John R. Baxter)

John R. Baxter, P.E.  
Director, Office of Safety Design  
Office of Safety

3 Enclosures

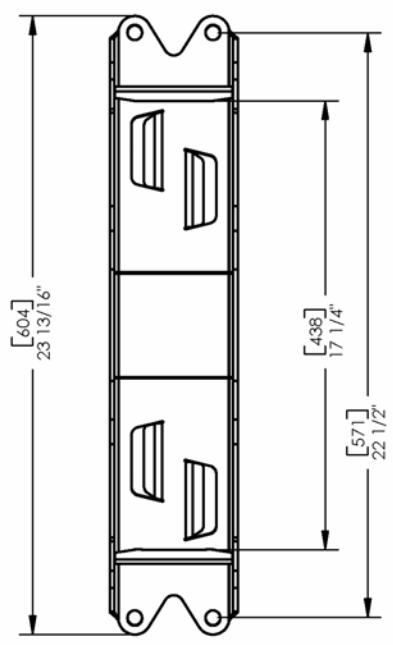
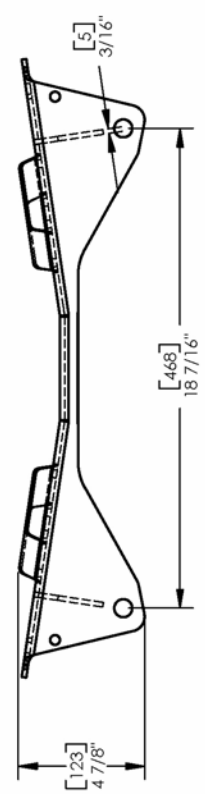
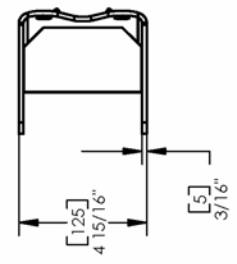
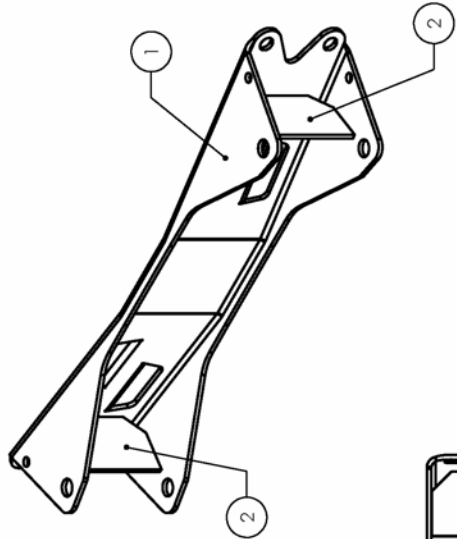
ITEM	QTY	DWG	PART DESCRIPTION	SPECIFICATION	PART #
1	1		MALE HINGE	NA	B031103
2	2		GUSSET	NA	B031104

**NOTES:**

- 1.) PART SAME AS BSI PART No. B030716.
- 2.) PART REPLACEMENT FOR BSI PART No. B991213.

**SPECIFICATIONS:**

- 1.) MATERIAL ASTM A36 HRMS OR EQUIVALENT.
- 2.) HOT DIPPED GALVANIZED PER ASTM A-123.



REV	CHANGES	DATE	BY	REC'D	NEXT ASSY	ITEM
1			NA		1	

SCALE: 1:4	Standard Tolerance Angular ±12 Deg Forming Dec. XXX±.010 Dec. XX±.020
DRAWN BY: 11/03/03	DATE: 11/03/03
BY: JSM	BY: JSM
TITLE: HINGE, MALE, ABSORB 350	
MODEL: B031101-0	REV:

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 proprietary to Banner Systems  
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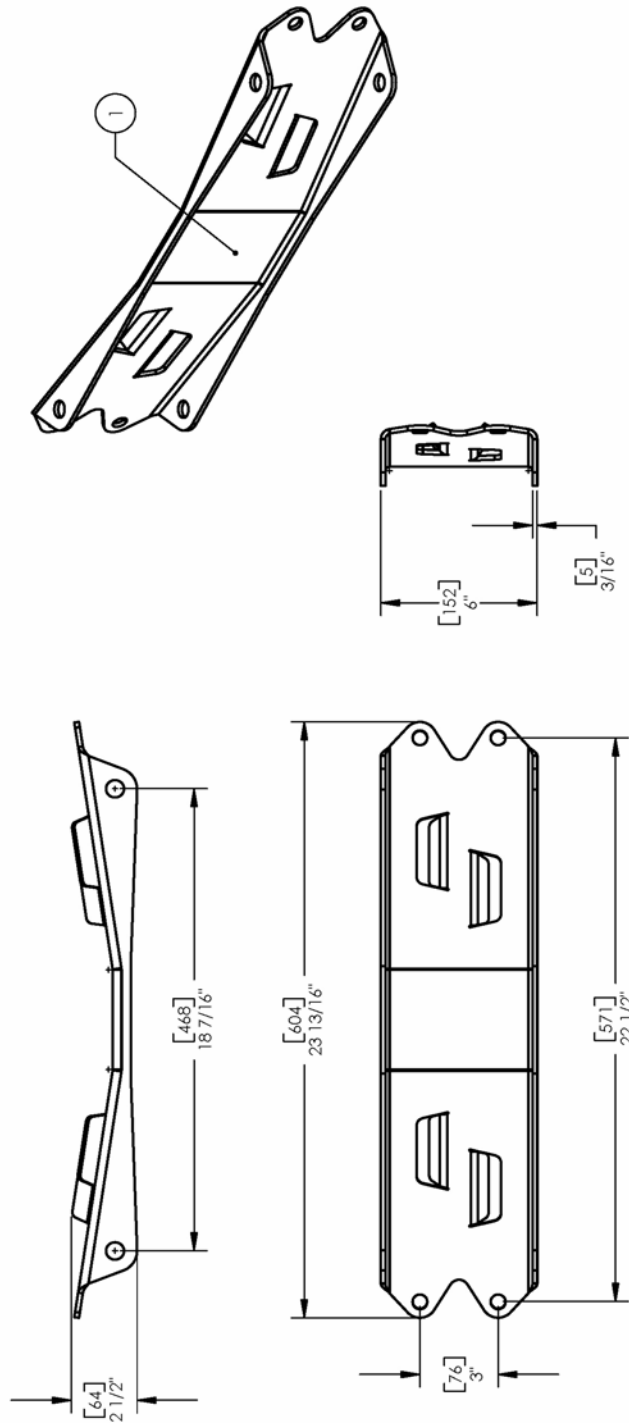
ITEM	QTY / PART DESCRIPTION	SPECIFICATION	DWG #
1	1 SHEET	3/16" ASTM A36 HRMS	800178

NOTES:

- 1.) PART SAME AS BSI PART No. B030622.
- 2.) PART IS A REPLACEMENT FOR BSI PART No. B991214.

SPECIFICATIONS:

- 1.) MATERIAL ASTM A36 HRMS OR EQUIVALENT.
- 2.) HOT DIPPED GALVANIZED PER ASTM A-123.



Standard Systems 14102 Ave Fremont, CA 94538 Doc: XXX-000 Rev: 200-000		SCALE: 1:4 DATE: 11/20/03 DRAWN BY: JSM	MODEL: B031102-0 REV:
© 2003 Banner Systems Inc. This information herein is proprietary to Banner Systems Inc. and shall not be disclosed, duplicated or used otherwise without the express written approval of Banner Systems Inc.	TITLE: HINGE, FEMALE, ABSORB 350	DATE BY: 1 RECD: 1 NEXT ASSY: NA ITEM: 1	CHANGES:

