December 9, 2003

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
Test Report
Certification Test

Revision: 10/16/03

Test Date: 10/16/03

Test Article: ABSORB 350 to SafeGuard Link
Prepared by: J.D. Shewmaker
STI Test #: LAB06
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NOTES:
1) PART SAME AS BSJ PART NO. 8603716.
2) PART REPLACEMENT FOR BSJ PART NO. 8609123.

SPECIFICATIONS:
1) MATERIAL: ASTM A-36/HB151 OR EQUIVALENT.
2) HOT DIPPED GALVANIZED PER ASTM A-123.