April 9, 2002

Keith R. Lane, P.E.
Director of Research and Materials
Bureau of Engineering and Highway Operations
Connecticut Department of Transportation
280 West Street
Rocky Hill, Connecticut 06067-3502

Dear Mr. Lane:

With your October 10, 2001 letter to Mr. Frederick Wright, former Federal Highway Administration Program Manager for the Safety Core Business Unit, you sent the final test report in a series of tests conducted over the past six years to certify the Connecticut Impact Attenuation System (CIAS) as a National Cooperative Highway Research Program (NCHRP) Report 350 test level 3 (TL-3) crash cushion.

The CIAS is a unique attenuator that “captures” vehicles impacting at or near the nose and along its front sides, while redirecting vehicles impacting near the back of the unit. As shown in greater detail in Enclosure 1, the CIAS consists of twelve steel cylinders 1.22 m in diameter and two cylinders 0.91 m in diameter. Each cylinder is 1.22-m high. Wall thickness varies from 6.35 mm for the three cylinders attached to the backup structure to 7.94 mm for the next two cylinders to 4.76 mm for the remaining large-diameter cylinders. The two 0.91 m diameter cylinders are made from 8-gauge plate steel. The CIAS array is set on two steel skid rails bolted to a concrete pad and connected to a 1980-mm wide backup wall with L-brackets on each side of the wall. These L-brackets are the only significant modification from the original design. They serve to offset the rear-most cylinders 610 mm from the edge of the wall to minimize vehicular snagging at this point.

NCHRP Report 350 tests 3-32, 3-33, 3-34 and 3-35 (note: test 3-35 was originally run as test 3-38) were successfully conducted. I consider tests 3-35 and 3-38 to be essentially the same tests for the CIAS design and note that test 3-35 demonstrated an acceptable redirectional capability of the CIAS in a side impact near the back of the array after the design was modified as noted above. Test 3-30 is similar to the head-on small car test run under NCHRP Report 230 guidelines and was waived as previously agreed by our respective staff members. Test 3-31 was considered unnecessary based on the results of test 3-33. Consequently, the CIAS, as tested, may be considered an NCHRP Report 350 TL-3 crash cushion and may be used on the National Highway System in gore areas and other locations where traffic can pass on either side of the array and opposite-direction impacts are not a concern.

I understand that the CIAS, while patented, is not proprietary and that plans, specifications, and additional information on its cost and performance can be
obtained through Mr. James Sime, Manager of Research, at (860) 258-0309 or via e-mail at james.sime@po.state.ct.us.

Sincerely yours,

(official signed by A. George Ostensen)

A. George Ostensen
Program Manager, Safety

Enclosure