U.S. Department
of Transportation
Federal Highway Administration

400 Seventh St., S.W.
Washington, D.C. 20590

October 20, 2005

In Reply Refer To: HSA-10/CC-64F

Mr. Albert W. Unrath Sr.
Albert W. Unrath, Inc.
P.O. Box 317
Line Lexington, Pennsylvania 18932-0317

Dear Mr. Unrath:

In my December 21, 2004, acceptance letter, CC-64E, your 198-cm (78-in) long U-MAD truck mounted attenuator (TMA) was recognized as a test level 2 (TL-2) TMA acceptable for use on the National Highway System (NHS). This acceptance was based on the successful completion of the TMA tests 2-50 and 2-51. On September 30, 2005, you sent a letter to Mr. Richard Powers' attention, requesting the FHWA's confirmation that this same unit also meets the NCHRP Report 350 evaluation criteria for optional TMA tests 2-52 and 2-53.

To support your request, you sent copies of two test reports prepared by the Transportation Research Center at East Liberty, Ohio, entitled "NCHRP Report 350 Test 2-53 of the U-MAD 70K Truck Mounted Attenuator – TRC Inc. Test Number: 050728-1", and NCHRP Report 350 Test 2-52 of the U-MAD 70K Truck Mounted Attenuator – TRC Inc. Test Number: 050728-2", both dated July-August 2005. In test 2-53, a 2000-kg pickup truck impacted the TMA at a 10-degree angle relative to the TMA centerline and offset 1/4 of the vehicle width. The impact speed was 67.0 km/h. The occupant impact velocity was reported to be 10.0 m/sec and the ridedown acceleration 11.9 g's. The 9003.8 kg support vehicle rolled ahead 3.2 meters. In test 2-52, the pickup truck impacted the TMA at zero degrees and offset 1/3 of the vehicle width. The impact speed in this test was 67.1 km/h. The occupant impact velocity was reported to be 10.5 m/sec and the ridedown acceleration 15.6 g's. The support vehicle rolled ahead 3.3 meters. You noted that in both tests, the impacting vehicle came to rest in contact with the crushed TMA with a yaw angle less than 10 degrees, thus making it unlikely that the pickup truck would have blocked adjacent traffic lanes.

I agree that your 198-cm (78-inch) long TL-2 U-MAD has now been shown to meet Report 350 evaluation criteria for the two optional TMA tests and may continue to be used on the NHS when such use is deemed appropriate by the contracting authority. It was noted that neither test report contained a dimensioned drawing of the TL-2 unit in the body of the report and that the separate drawing that was sent showed an incorrect length of only 183 cm (72 inches). Please resubmit a corrected drawing at your earliest convenience.

The following standard provisions that apply to the FHWA letters of acceptance were included in the original acceptance letter, but are repeated below for ready reference:

- Our acceptance is limited to the crashworthiness characteristics of this TMA and does not cover its structural features, durability, or ease of repair.
- Any changes that may adversely influence the crashworthiness of the device will require a new acceptance letter.
- Should the FHWA discover that in-service performance reveals unacceptable safety problems, or that the device being marketed is significantly different from the version that was accepted for use on the NHS, this letter may be modified or revoked.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance. Such information shall include your specifications for all user-supplied mounting hardware.
- You will be expected to certify to potential users that the hardware furnished, including any mounting hardware, has essentially the same chemistry, mechanical properties, and geometry as that submitted for acceptance.
- To prevent misunderstanding by others, this letter of acceptance, designated as number CC-64F shall not be reproduced except in full. This letter, and the documentation upon which this letter is based, is public information. All such letters and documentation may be reviewed at our office upon request.
- The U-MAD 70K includes patented components and is considered to be a proprietary device. The use of proprietary work zone traffic control devices in Federal-aid projects is generally of a temporary nature. They are selected by the contractor for use as needed and removed upon completion of the project. Under such conditions they can be presumed to meet requirement "a" given below for the use of proprietary products on Federal-aid projects. On the other hand, if proprietary devices are specified for use on Federal-aid projects, except exempt, non-NHS projects, they: (a) must be supplied through competitive bidding with equally suitable non-patented items; (b) the highway agency must certify that they are essential for synchronization with existing highway facilities or that no equally suitable alternative exists or; (c) they must be used for research or for a distinctive type of construction on relatively short sections of road for experimental purposes. Our regulations concerning proprietary products are contained in Title 23, Code of Federal Regulations, Section 635.411, a copy of which has been previously provided for your ready reference.

Sincerely yours,

/original signed by George Ed Rice, Jr./

~for~

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