



U.S. Department
of Transportation

**Federal Highway
Administration**

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

May 8, 1998

Refer to: HNG-14

J. M. Essex, P.E.
Senior Vice President, Sales
Energy Absorption Systems, Inc.
One East Wacker Drive
Chicago, Illinois 60601

Dear Mr. Essex:

In your April 1 letter to Mr. Henry Rentz, you requested acceptance of a modified Triton barrier at the National Cooperative Highway Research Program (NCHRP) Report 350 test level 3 (TL-3) and acceptance of the Triton barrier as its own nonredirecting TL-3 end treatment when the initial module is installed upside down and left empty of water. This letter contains the Federal Highway Administration's response to the end treatment request. The barrier itself was accepted as a TL-3 system in my May 7 letter to you.


To support your request, you sent copies of your report entitled "TRITON BARRIER TL-3 End Treatment: Qualification to the NCHRP Report 350 Test Level 3 - Engineering Summary," dated December 19, 1997, which included the full report prepared by E-TECH Testing Services, Inc., entitled "NCHRP Report 350 Crash Test Results for the TRITON BARRIER TL-3 End Treatment," also dated December 1997, and a video tape showing the full scale tests that you conducted on the Triton TL-3 end treatment. The TRITON BARRIER TL-3 End Treatment consists of ten sections. The first, or lead section, is an inverted, empty TL-2 TRITON module supported and raised 130 mm by a modified plastic pedestal. Sections two through ten are standard TL-2 TRITON modules filled with water and set on 178-mm high plastic pedestals. Thus, sections two through ten are identical to the TRITON BARRIER TL-3 modules to which the end terminal must be attached. The terminal system is shown on Enclosure 1.

Since the TRITON end treatment is a nonredirective terminal, NCHRP Report 350 guidelines recommend tests 3-40 through 3-44 be conducted. We note that all five tests were run and we agree that appropriate evaluation criteria were met in each test. Enclosure 2 shows the test matrix that you ran and summarizes the evaluation criteria for each test. Enclosure 3 provides

additional information on the individual tests, including the final stopping position of the test vehicles. We also noted that a concrete backup was used in each of your terminal tests. While this did not affect the test results, users must be made aware that the TRITON End Terminal is not acceptable for shielding longitudinal barriers other than the TRITON BARRIER TL-3 itself.

Based on our review of the information you provided, we concur that the TRITON BARRIER TL-3 end treatment, as tested, meets the acceptance criteria for an NCHRP Report 350 TL-3 nonredirective terminal when used to shield the end of a length of Triton TL-3 barrier. It may be used on the National Highway System (NHS) when such use is specified by, or acceptable to, a transportation agency. Because it is a proprietary device, its use on Federal-aid projects, except exempt, non-NHS projects, remains subject to the conditions listed in Title 23, Code of Federal Regulations, Section 635.411 when its use is specified by the contracting authority.

Sincerely yours,



Dwight A. Horne
Chief, Federal-Aid and Design Division

3 Enclosures

Federal Highway Administration
HNG-14:RPowers:366-1320:5-7-98:rp:ESSEX1
copies to:
HNG-1 HNG-10 HNG-14 Reader, 3128
Reader, 3128 RAs HFL-1 HHS-10 HSR-20 HNG-20

Geometric and Safety Design Acceptance Letter: ~~C-46~~
C-47