U.S. Department
of Transportation

**Federal Highway
Administration**

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

September 27, 1994

Refer to: HNG-14

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

Dear Mr. Essex:

Your September 7 and September 19 letters provided crash test data on the TRITON barrier and a summary of encroachment probabilities intended to show that the TRITON could be expected to perform satisfactorily under many work zone conditions. Based on these data, you requested that the Federal Highway Administration (FHWA) accept the TRITON for use at locations where speeds would be as high as 100 km/h. Our original acceptance letter limited its use to locations where expected speeds were under 70 km/h. This acceptance was based on successful completion of the National Cooperative Highway Research Program (NCHRP) Report 350 test series for a Test Level 2 barrier.

We readily acknowledge that the TRITON, like all longitudinal barriers, is capable of containing and redirecting vehicles striking it at higher speeds and lesser angles than those under which it was formally qualified, and that it is a very forgiving barrier when struck. We further acknowledge that in some work zones, the likelihood of high-angle, high-speed impacts, or impacts by large trucks may be low. However, since reliable data on the nature and extent of roadside encroachments in work zones are limited, we are not in a position to offer blanket acceptance of TRITON in all 100 km/h situations. Work zone safety continues to be an FHWA emphasis area and it is in the best interests of all parties that the level of protection given to motorists and workers- in construction and maintenance zones remains high. The TRITON barrier should not be considered an across-the-board substitute for precast concrete barrier, and it should not be used in locations where impacts by trucks heavier than 2000 kg are a significant concern.

In direct response to your request, we shall continue to encourage and support the use of TRITON under any one of the following conditions:

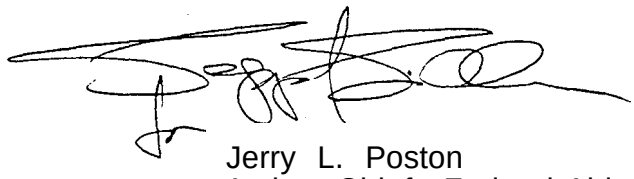
1. In work zones with vehicular speeds of 70 km/h or less.

2. In work zones where the TRITON is used in lieu of cones or plastic drums.

3. In work zones of short duration, regardless of speed, where some risk to motorists and workers is acknowledged, but considered acceptable by the agency conducting the work.

In all of the cases suggested above, the roadside surface condition and the available deflection distance from the barrier to fixed objects, edge drop-offs, and workers must be consistent with TRITON performance characteristics. This determination can be made from the deflection-impact severity curve which was submitted with your request and will be sent to FHWA field offices with a copy of this letter.

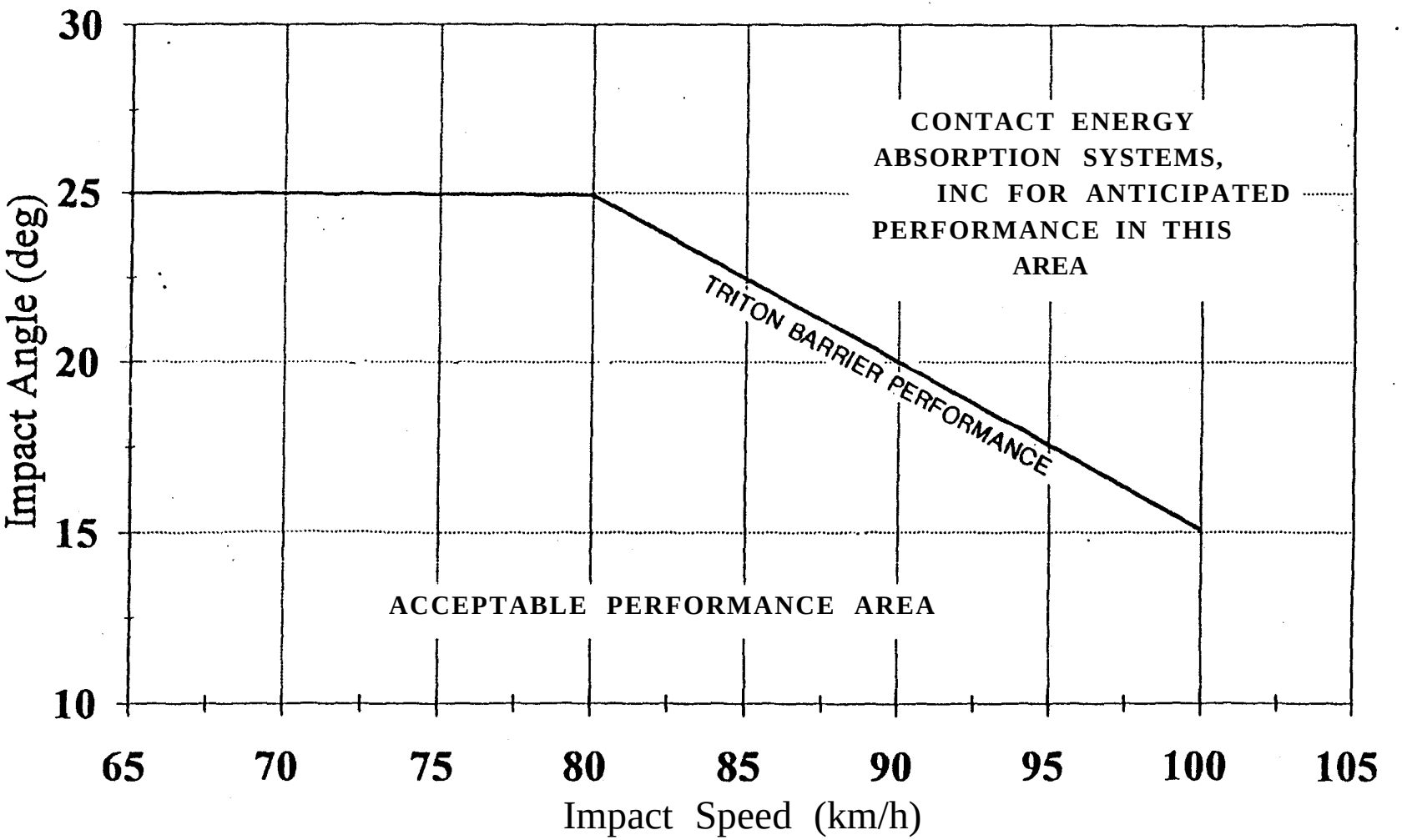
Sincerely yours,



Jerry L. Poston
Acting Chief, Federal-Aid and Design Division

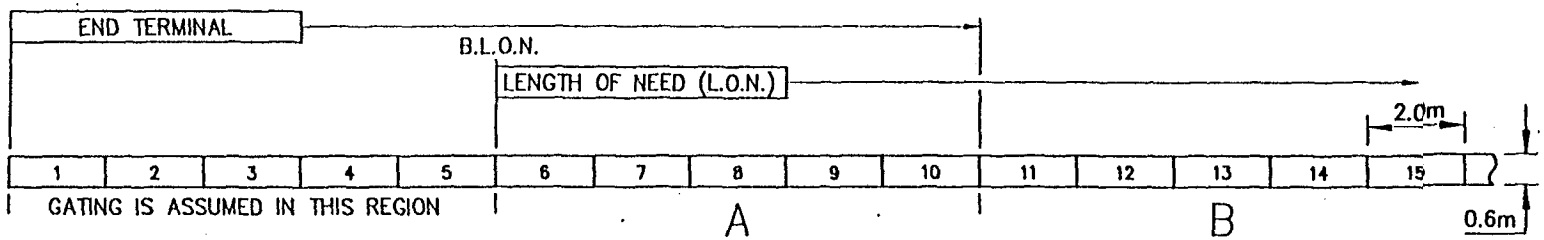
TRITON BARRIER Performance

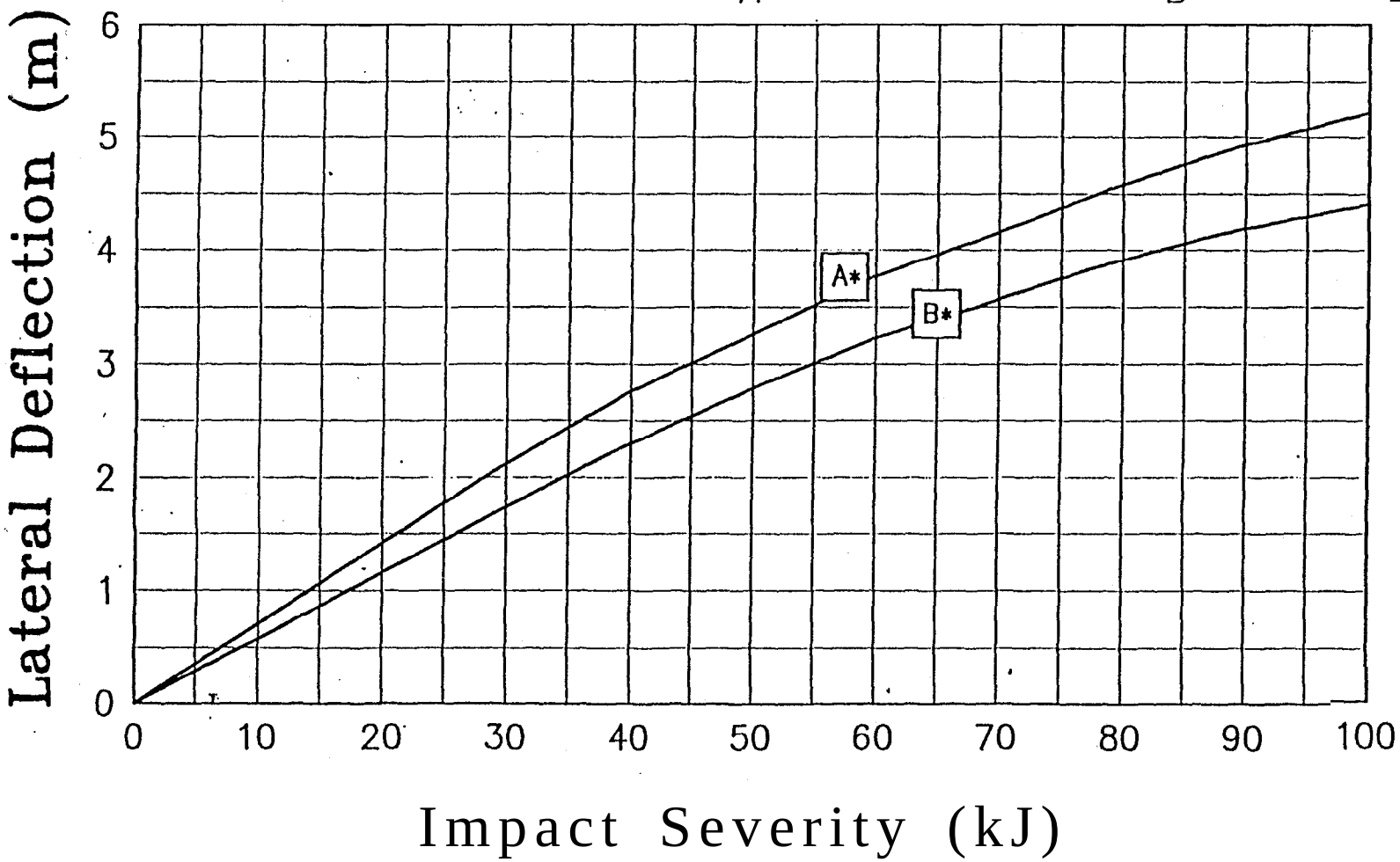
(angled impact test conditions)



9/15/94

TRITON Installation Deflection Curves
Impacts in Regions A and B





* Data for curves A and B were obtained from test conducted on installation positioned on a' clean asphalt foundation with less than 5% cross slope using 820 to 2000 kg vehicles. When setting up work zones, the expected lateral deflection of the barrier should be accounted for to ensure maximum protection of the workers