U.S. Department
of Transportation
**Federal Highway
Administration**

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

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Refer to: HMHS-CC40A

Dean L. Sicking, Ph.D, P.E.
Director, Midwest Roadside Safety Facility
University of Nebraska Lincoln
W348 Nebraska Hall
P.O. Box 880531
Lincoln, NE 68588-0531

Dear Dr. Sicking:

Your January 21 letter to Mr. Richard Powers of my staff requested formal Federal Highway Administration acceptance of a modified Sequential Kinking Terminal (SKT) at NCHRP Report 350 test level 2 (TL-2). The original SKT-350 was accepted as a test level 3 (TL-3) w-beam terminal in my April 2, 1997, letter to Mr. Kaddo Kothmann.

As stated in your request, the only difference between the proposed TL-2 design and the current TL-3 design is the total number of breakaway posts used in the terminal. Whereas the TL-3 terminal had eight breakaway posts, the TL-2 design has only five breakaway posts, the last three breakaway posts in the original design being replaced with standard line posts. The post spacing for all posts remains the same for both designs at 1905 mm. When the original SKT-350 was impacted head-on at 100 km/h with an 820-kg car, less than 7600 mm of rail was extruded. Since the modified design will allow this much w-beam rail to be extruded before a vehicle reaches the non-breakaway line posts, the proposed TL-2 design actually meets TL-3 evaluation criteria for this particular test. In the 100 km/h, head-on pickup truck test, the SKT-350 extruded approximately 15.25 m of rail. You stated that the SKT-350 absorbs energy at a relatively constant rate. Therefore, at the TL-2 impact speed of 70 km/h, slightly less than half of the impact energy would result in about half of that amount of rail being deformed. Again, this would result in the truck coming to a stop prior to reaching the standard line posts. Based on the results of the redirection test with the pickup truck that was conducted on the ***flared*** TL-2 FLEAT terminal, we also conclude that this test can be waived for the ***tangent*** TL-2 SKT-350.

Based on the above, we consider the modified SKT-350, as described above, to be acceptable for use on the National Highway System as a TL-2 terminal when such use is requested by a transportation agency. Users should be advised that, as with all test level 2 terminals, the TL-2 SKT-350 is most appropriate for use at locations where operating speeds are expected to be at or below the TL-2 speed of 70km/h.

Sincerely yours,

Dwight A. Horne

Dwight A. Horne
Director, Office of Highway Safety Infrastructure