



U.S. Department
of Transportation

**Federal Highway
Administration**

July 14, 2004

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

In Reply Refer to: HSA-10/CC-40B

Mr. Kaddo Kothmann
President
Road Systems, Incorporated
3616 Howard County Airport Road
Big Spring, Texas 79720

Dear Mr. Kothmann:

Your April 20, 2004, letter provided the Federal Highway Administration (FHWA) information on the crash-test performance of a modified Sequential Kinking Terminal (SKT-LT), details of which were contained in a December 18, 2003, report from the Midwest Roadside Safety Facility (MwRSF) entitled "Performance Evaluation of the SKT-MGS End Terminal – NCHRP 350 Test 3-31" and a March 3, 2004, report entitled "Performance Evaluation of the FLEAT-MGS End Terminal with Redesigned Breakaway Posts and End Anchorage – NCHRP Report 350 Test 3-35 (FLEAT-7)."

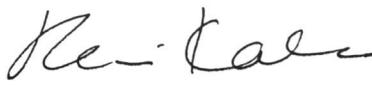
After discussions between you, Dr. Dean Sicking at the MwRSF and Mr. Richard Powers of my staff, it was agreed that the only acceptance requested at this time was for a reduction in the number of breakaway posts for the current SKT-350. Whereas the original SKT-350 was 15.2 m long and had a total of eight breakaway posts, the modified design is 11.43-m long and has only six breakaway posts.

The National Cooperative Highway Research Program (NCHRP) Report 350 requires up to seven crash tests to determine the adequacy of a traffic barrier terminal/crash cushion at test level 3 (TL-3). However, since all you are currently requesting is acceptance of a reduced-length design, only those tests that are likely to be affected by the shorter length are necessary. You successfully completed test 3-31 (head-on with the 2000-kg pickup truck) and test 3-35 (20-degree impact with the pickup truck at post 3). In both tests, the W-beam terminals were connected to your MGS guardrail system in which the top of the W-beam rail is 787 mm (31 inches) above the ground. The above-ground height of the breakaway terminal posts was adjusted accordingly. While this additional height is unlikely to adversely affect the results of test 3-31, I believe the length of need test, 3-35, would be more critical if the SKT-LT were connected to standard W-beam. Thus, although you tested a six-post design, I am willing only to give a *conditional* acceptance of that design, the condition being that test 3-35 be successfully run on the six post design connected to a standard W-beam barrier. However, until that test is conducted, a seven breakaway post design is considered to meet the appropriate evaluation



criteria contained in NCHRP Report 350 and may be used on projects on the National Highway System (NHS) as a TL-3 terminal when selected by a State highway agency. Since your product is proprietary, its use on Federal-aid highway projects, except exempt, non-NHS projects, is subject to the conditions stated in Title 23, Code of Federal Regulations, Section 635.411.

Sincerely yours,

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