July 14, 2004

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,

/Original signed by Hari Kalla/

~for~

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