

April 11, 2003

HSA-10/CC12L

Hayes E. Ross, Jr., P.E., Ph. D.
Professor Emeritus and Research Engineer
Texas Transportation Institute
3135 TAMU
College Station, TX 77843-3135

Dear Dr. Ross:

In your April 7 letter, you requested formal acceptance of a modified post design for use with either the ET or ET-Plus W-beam guardrail terminal. Previous acceptances have allowed the use of timber CRT posts, steel Hinged Breakaway Posts (HBA), or W200 x 15 (W8 x 10) Steel Yielding Terminal Posts (SYTP) in post positions 2 and beyond.

Your modified design substituted a standard 1830-mm (6-ft) long steel line post [W150 x 13 (W6 x 8.5/9)] with one 13-mm (0.5-inch) diameter hole in each flange (4 total) at the ground line for the previously approved W200 x 15 (W8 x 10) Steel Yielding Terminal Post (SYTP) with 21-mm (0.8125-inch) diameter holes in each flange. The holes are centered 725 mm (28.5 inches) from the top of the post and approximately 20 mm (0.75 inch) in from the outside edge of the flanges. These dimensions are shown in the enclosure to this letter.

To demonstrate that the smaller posts had adequate lateral strength to contain and redirect a vehicle, you ran NCHRP Report 350 test 3-35 and documented the results in a Texas Transportation Institute report dated October 2002 and entitled "NCHRP Report 350 Test 3-35 of the ET-Plus with Steel Cable Release Post and Optimized Steel Yielding Terminal Posts." The test installation consisted of an ET-Plus head on a previously accepted Cable Release Post (CRP) end post and seven modified W150 x 13 (W6 x 8.5/9) SYTP posts. In this test, the pickup truck impacted at 19.5 degrees and 102.4 km/h (63 mph) and was contained and redirected. All appropriate evaluation criteria were met.

You also provided data showing that the weak axis strength of the modified posts was between that of the W200 x 15 (W8 x 10) SYTP posts and standard CRT posts, both of which have been successfully tested in end-on impacts previously. Thus, I agree that tests 3-10 and 3-11 can be waived. I further agree that tests 3-32, 3-33, 3-34, and 3-39 can be waived because the use of W150 x 13 (W6 x 8.5/9) SYTP posts are unlikely to change the results of earlier tests on installations using other post options.

Therefore, the modified line posts as described above may be used in post positions 2 through 8 with either the ET or the ET-Plus terminals and with a CRP or HBA post at

post position 1 and these alternative designs are acceptable for use as NCHRP Report 350 test level 3 (TL-3) terminals.

Sincerely yours,

(original signed by Harry W. Taylor)

for:

Michael S. Griffith
Acting Director, Office of Safety Design
Office of Safety

Enclosure