



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

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

September 21, 1995

Refer to: HNG-14/SS-46A

Mr. Vincent F. Schimmoller
Regional Administrator (HRA-08)
Lakewood, Colorado

Dear Mr. Schimmoller:

This is in response to the South Dakota's Division Office memorandum dated September 7 requesting FHWA acceptance of the subject sign support that was crash tested for the State of South Dakota. You enclosed a copy of the report, dated July 1995, of the two crash tests conducted by the Federal Outdoor Impact Laboratory in McLean, Virginia.

The supports were dual post, 102-mm x 152-mm full dimension western red cedar with no weakening features, embedded 1220 mm into S-2 (weak) soil. The two posts were spaced 900 mm apart and both were struck with the test vehicle. The bottom of the 600-mm x 1500-mm, 3-mm thick aluminum sign panel was 2100 mm above the ground.

Full-scale crash testing was done in accordance with the National Highway Cooperative Research Program Report 350 Recommended Procedures for the Safety Performance Evaluation of Highway Features. Requirements for breakaway supports are found in the American Association of State Highway and Transportation Officials' (AASHTO) Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals. These specifications have been adopted by the FHWA. A summary of the crash test results is found below:

Test Number	95F005	95F006
Vehicle Mass, kg	839	839
Vehicle Impact Speed, m/s	939 (35.6 km/h)	26.9 (96.8 km/h)
Vehicle Velocity Change, m/s	3.1	2.6
Occupant Impact Speed, m/s	2.3	1.9
Stub Height	None	None

These results meet the change-in-velocity and stub height requirements of the AASHTO and the FHWA. Because tests of wood posts in weak soils have been shown to be "worst-case" tests, further testing in strong soil is not deemed necessary. Therefore, the subject dual-post western red cedar sign supports are acceptable for use on the National

Highway System, when selected by a highway agency. This acceptance does not cover the structural aspects of the sign support system. We assume that the State will develop wood grading and design specifications to ensure that in-service sign supports are comparable to those used in the crash tests.

Sincerely yours,

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

Supplement to Geometric and Roadside Design Acceptance Letter No. SS-46