September 2, 1999

Refer to: HMHS-B55A

Steven O. Bradford, P.E.
Chief Bridge Engineer
Alaska Department of Transportation
and Public Facilities
3132 Channel Drive
Juneau, AK 99801-7898

Dear Mr. Bradford:

My May 18 letter to you accepted the Alaska Multi-State Bridge Rail as a National Cooperative Highway Research Program (NCHRP) Report 350 test level 4 (TL-4) design. On August 6, you requested that a transition design for this bridge railing also be accepted by the Federal Highway Administration at TL-4. To support your request, you also sent copies of two July 1999 reports prepared by the Texas Transportation Institute, “NCHRP Report 350 Test 4-21 of the Alaska Multi-State Bridge Rail Thrie-Beam Transition” and “NCHRP Report 350 Test 4-22 of the Alaska Multi-State Bridge Rail Thrie-Beam Transition” and videotapes showing the two tests that were conducted.

As shown in detail in Enclosure 1, the transition consists of nested 12-gage Thrie-beam panels supported by three 1982-mm long W150x13.5 steel posts on 953 mm centers followed by six 1982-mm long W150x13.5 steel posts spaced on 476 mm centers. All posts are set 1245 mm into the soil. The post immediately adjacent to the first bridge rail post is offset 1145 mm from the first bridge rail post. The Thrie-beam is connected to the bridge rail using a standard Thrie-beam Terminal Connector bolted to a special connection plate made from 10-mm and 13-mm thick steel plate and 10-mm and 6.35-mm thick steel angles. The concrete curb was flared back 114 mm over its last 457 mm to minimize wheel snagging at that point.
Based on staff review of the test reports and the videotapes, I concur that the transition design meets all appropriate evaluation criteria for a TL-4 design and it may be used in conjunction with your Multi-State Bridge Rail on the National Highway System when such use is requested by a transportation agency. I understand that the design, like the bridge rail, is nonproprietary and that copies of detailed plans and specifications can be obtained directly from you upon request.

Sincerely yours,

Dwight A. Horne
Director, Office of Highway Safety Infrastructure

2 Enclosures
Figure 1. Details of the Alaska Multi-State Bridge Rail Thrie-Beam Transition
Figure 2. Details of the bridge rail connection of Alaska Multi-State Bridge Rail Thrie-Beam Transition
Figure 11. Summary of Results for test 404311-5, NCHRP Report 350 test 4-21
Figure 11. Summary of results for test 404311-6, NCHRP Report 350 test 4-22.