August 15, 2003

HSA-10/B56B

Mr. David Hubbell
Structures of Ironwood
P.O. Box 600
Saranac Lake, New York 12983

Dear Mr. Hubbell:

In your July 17 letter to Mr. Richard Powers of my staff, you requested acceptance of a modification to the design of your Ironwood barrier. The original design was approved for use on the National Highway System in Mr. Dwight A. Horne's June 18, 1999 letter to you.

You have requested the use of a 203-mm deep by 178-mm wide timber rail element as an alternative to the originally tested 203-mm diameter round timber rail. This alternative design serves to increase the effective height of the barrier by changing the traffic face of the rail (i.e., the 203-mm dimension) from a curved surface to a vertical surface. Even with the change in rail shape, the Ironwood barrier should be installed at a **minimum** height of 660 mm to the top of the rail as tested, but a mounting height up to 710 mm is suggested to increase the performance limits of the barrier. Since Ironwood is a weak-post design, vehicular snagging on the posts is not likely at the higher rail height and a higher rail is likely to perform better under varied crash scenarios.

I find your request to use rectangular timber rails as an alternative to round rails on the TL-3 Ironwood barrier to be acceptable. The same timber species/specifications noted for the round rail will apply to the alternative design.

Sincerely yours,

(original signed by John Baxter)

John Baxter
Director, Office of Safety Design
Office of Safety