

July 17, 2002

HSA-10/B104

Gary L. Hoffman, P.E.
Chief Engineer for Highway Administration
Pennsylvania Department of transportation
400 North Street
Harrisburg, PA 17103

Dear Mr. Hoffman:

Your June 4 letter to Mr. Richard Powers of my staff requested Federal Highway Administration acceptance of a bridge rail design called the Pennsylvania Bridge Barrier. This design is similar to the currently accepted BR27C Test Level 4 (TL-4) bridge railing, but is 50 inches high and consists of two TS 5 x 4 x 5/16 rails supported by W8 x 28 posts on 7.5-foot centers. The support posts are bolted to a 24-inch tall reinforced concrete parapet that is 18 inches wide. The centers of the two rails are 35 inches and 48 inches above the bridge deck and in the same vertical plane as the concrete parapet.

To support your request, you also sent copies of a report entitled “Pennsylvania Bridge Rail – TL-5 Barrier” that included an analytical comparison of your proposed design with the Texas HT barrier and with a 42-inch tall F-shape barrier. Both of the latter are considered to be TL-5 designs based on full-scale crash testing. The analysis procedure was reviewed by our bridge engineers and found to be appropriate. One minor suggestion offered was that you consider using the same size anchor bolts on the field side of the post base plates as on the traffic side to minimize the potential for construction errors.

Based on staff review, I agree that the Pennsylvania Bridge Rail, as described above, is equivalent to an NCHRP Report 350 TL-5 design and it may be used on the National Highway System where such use is deemed appropriate by a highway agency. When you have finalized your drawing, please send an electronic copy in pdf format to Mr. Powers so it can be added to our safety hardware website.

Sincerely yours,

(original signed by Carol H. Jacoby)

Carol H. Jacoby, P.E.
Director, Office of Safety Design