



February 24, 2012

In Reply Refer To: HSST/B-234

FHWA-NC DIVISION

Mr. Earl Dubin Structural Engineer North Carolina Division Federal Highway Administration 310 New Bern Avenue, Suite 410 Raleigh, NC 27601-1418

Dear Mr. Dubin:

This letter is in response to your request for the Federal Highway Administration (FHWA) to review a roadside safety system for eligibility for reimbursement under the Federal-aid highway program.

Name of system: North Carolina TL3 and TL4 Vertical Wall Bridge Rail

Type of system: NCHRP Report 350 Bridge Barrier

Test Level: TL3 and TL4 Testing conducted by: 'n/a'

Task Force 13 Designator: SBC55d-e Date of request: December 1, 2011

Date initially acknowledged: December 1, 2011 Date of completed package: December 1, 2011

## Decision:

The following device is eligible, with details provided below and in the drawings which are enclosed as an integral part of this letter:

 North Carolina 32-inch TL3 Vertical Wall Bridge Rail, and 42-inch TL4 Vertical Wall Bridge Rail

Based on a review of the engineering analysis as submitted by the North Carolina Department of Transportation (NCDOT) Bridge Engineer certifying the device described herein meets the crashworthiness criteria of the National Cooperative Highway Research Program (NCHRP) Report 350, the device is eligible for reimbursement under the Federal-aid highway program. Eligibility for reimbursement under the Federal-aid highway program does not establish approval or endorsement by the FHWA for any particular purpose or use.

The FHWA, the Department of Transportation, and the United States Government do not endorse products or services and the issuance of a reimbursement eligibility letter is not an endorsement of any product or service.

## Requirements

The NC DOT has requested the proposed North Carolina TL3 and TL4 Vertical Wall Bridge Rail be granted eligibility for reimbursement under the Federal-aid highway program based upon comparison to the existing successfully crash tested as per NCHRP Report 350 vertical wall barrier as per FHWA memo entitled Crash Testing of Bridge Railings dated May 30, 1997 [http://safety.fhwa.dot.gov/roadway\_dept/policy\_guide/road\_hardware/barriers/bridgerailings/docs/bridge.pdf]. In addition, the NCDOT submitted an engineering analysis to prove the concrete barrier section is equal to or greater than the existing crash tested barrier. The North Carolina TL3 and TL4 Vertical Wall Bridge Rail details and the as submitted engineering analysis are included with this correspondence as enclosures.

## **Findings**

The NCDOT has requested the changes as described herein as non-significant, effect is positive or inconsequential. For modifications that do not affect the structure of the hardware, FHWA accepts an engineering analysis as a basis for continued eligibility. The NCDOT therefore submitted computations that demonstrate the as described changes to have no adverse affect on the crash test performance of the hardware. Therefore, the as described system is eligible for reimbursement and may be installed under the range of conditions tested.

Please note the following standard provisions that apply to FHWA eligibility letters:

- This letter provides a AASHTO/ARTBA/AGC Task Force 13 designator that should be used for the purpose of the creation of a new and/or the update of existing Task Force 13 drawing for posting on the on-line 'Guide to Standardized Highway Barrier Hardware' currently referenced in AASHTO Roadside Design Guide.
- This finding of eligibility is limited to the crashworthiness characteristics of the systems and does not cover their structural features, nor conformity with the Manual on Uniform Traffic Control Devices.
- Any changes that may influence the crashworthiness of the system will require a new reimbursement eligibility letter.
- Should the FHWA discover that the qualification testing was flawed, that in-service performance reveals safety problems, or that the system is significantly different from the version that was crash tested, we reserve the right to modify or revoke this letter.
- You will be expected to supply potential users with sufficient information on design and installation requirements to ensure proper performance.
- You will be expected to certify to potential users that the hardware furnished has the same chemistry, mechanical properties, and geometry as that submitted for review, and that it will meet the crashworthiness requirements of the NCHRP Report 350.
- To prevent misunderstanding by others, this letter of eligibility is designated as number B-234 and shall not be reproduced except in full. This letter and the test documentation upon which it is based are public information. All such letters and documentation may be reviewed at our office upon request.
- This letter shall not be construed as authorization or consent by the FHWA to use, manufacture, or sell any patented system for which the applicant is not the patent holder.

The finding of eligibility is limited to the crashworthiness characteristics of the candidate system, and the FHWA is neither prepared nor required to become involved in issues concerning patent law. Patent issues, if any, are to be resolved by the applicant.

• The North Carolina TL3 and TL4 Vertical Wall Bridge Rail are considered generic bridge railings.

Sincerely yours,

Michael S. Griffith

Director, Office of Safety Technologies

Office of Safety

Enclosures