



**Division of Transportation
System Development**
Bureau of Structures
PO Box 7916
Madison, WI 53707-7916

**Scott Walker, Governor
Mark Gottlieb, Secretary**
Internet: www.dot.wisconsin.gov

Bill Oliva, Structures Development Chief
Telephone: 608-266-0075
Facsimile (FAX): 608-266-5166
E-mail: william.oliva@dot.wi.gov

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Distribution: Users of Wisconsin Department of Transportation Bridge Manual

RE: Interim Policy on the use of Aesthetic Barriers on Bridges

There is an increased frequency of the use of vehicle Barrier and Railing combinations on structures in Wisconsin that incorporates new and unique aesthetic details. There is also more information now available that addresses the Safety and Crash Worthiness of vehicle barriers (AASHTO Roadside Design Guide 4th addition - 2011, Manual for Assessing Safety Hardware- 2009, NCHRP Report 554, and other publications).

As the application of these new vehicle barrier are under consideration, design, and review, it is apparent that new policies need to be developed and applied to projects to promote safe vehicle barrier systems that are consistent with the improved understanding of desirable safety features as outlined in the updated testing and publications. The development of these new policies will require interpretation of the information from various documents relevant to the types of barrier and rail systems used in Wisconsin. Input from a number of stake holders including FHWA, The Department's Bureau of Project Development - Roadway Standards & Methods Section, Bureau of Structures - Development Section, and various research institutions will be required to interpret the documents and build consensus on emerging policies. This process will be ongoing and dependent on the release of new information and the process of policy development.

However, there is a clear need to define an interim policy that will aid in the development of projects currently underway. Therefore, The Bureau of Structures Development Section is issuing the following Interim Policy related to Concrete Barriers on Bridges.

Interim Policy related to Concrete Barriers and Aesthetics:

- All Concrete Vehicle Barriers must meet Crash Testing Guidelines as outlined in Chapter 30 of the Bridge Manual.
- The top surface of Concrete Vehicle Barriers must be continuous without raised features that can serve as a blunt end for impact or snag points for vehicles.
- For vehicle barriers on raised sidewalks with posted roadway speed of 40 MPH or lower, any raised feature (Pilasters or other) must be placed a minimum of one foot (1'-0") behind the front face (roadway side) of a vertical faced barrier. If a railing is placed on the top of the concrete barrier, the railing should be continuous along the length of the barrier eliminating snag points for vehicles.

- For vehicle barriers on high speed roadway (posted greater than 40 MPH), any raised feature that could serve as a blunt end or snag point must be a minimum of two feet six inches (2'-6") behind the front face toe of the barrier. Any railing placed on the top of the vehicle barrier must be continuous and meet crash testing criteria as outlined in Chapter 30 of the Bridge Manual.
- Any textures or patterns on the roadway face of a vertical face vehicle barrier are limited to a maximum depth of ½ inch and subject to the guidelines of NCHRP Report 554. Many of the typical aesthetic form liner patterns are not acceptable for use on the vehicle face of concrete barriers.

If you have any comments or questions regarding the interim policy please do not hesitate to Aaron Bonk, Development Engineer (608) 261-0261 or myself at (608) 266-0075.

Sincerely,

William Oliva, P.E.
Chief, Structures Development Section
WisDOT DTSD – Bureau of Structures

CC: Scot Becker, PE, Director, WisDOT, DTSD - Bureau of Structures
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