



Illinois Department of Transportation

Memorandum

To: ALL BRIDGE DESIGNERS
From: D. Carl Puzey
Subject: Vehicle Collision Force
Date: April 16, 2012

12.1

A handwritten signature in cursive script, reading "D. Carl Puzey".

Article 3.6.5 - "Vehicle Collision Force" of the AASHTO LRFD Bridge Design Specifications was recently updated in the new 2012 (6th edition) version of the code; however, the 2012 Illinois Bridge Manual revisions did not fully address the Department's strategy for dealing with this issue. This memorandum is intended to clarify the Department's position regarding this article of the code and supersedes the provisions of Article 3.9.3.7 of the 2012 Bridge Manual.

The new standard crashwall height on piers adjacent to vehicle traffic shall be 5'-0" above the finished ground line at the pier, regardless of the design load.

All new piers adjacent to interstate traffic and all new piers supporting interstate traffic and adjacent to vehicular traffic shall be considered "critical or essential" for vehicle collision forces. These piers shall be designed to provide structural resistance for a vehicle collision having an equivalent static force of magnitude, angle and height as described in the AASHTO Specifications. All other new piers adjacent to vehicular traffic shall be considered "typical" and shall be evaluated according to the commentary provisions of Article 3.6.5 using a projected ADTT at half the design life of the structure. Piers requiring vehicle collision force design shall be designed to provide structural resistance for the vehicle design force. Other vehicle collision force mitigation options described in the AASHTO Specifications may only be utilized when approved by the Bureau of Bridges and Structures. The Department does permit uplift on footings or tension in piles for this extreme event loading condition but recommends that appropriate anchorage details be provided for these cases.

The vehicle collision force provisions shall not be applicable to MSE walls or existing piers. Piers adjacent to railways shall satisfy the crashwall height and train collision requirements as specified in the AREMA Manual for Railway Engineering.

This policy shall be effective immediately on all applicable projects. If there are any questions regarding this policy please contact Gary Kowalski at (217) 785-2914.

KLR/kktABD12.1vehicularcollisionforce-20120416