

n-30-1-87728- Design Quality Assurance Bureau SUPERSEDED BY EFFECTIVE 7/11/02 EB 02-024		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 01-027
Title: STEEL BRIDGE RAILING - REVISION R2			
Distribution: ☐ Manufacturers (18) ☐ Surveyors (33) ☒ Main Office (30) ☒ Consultants (34) ☐ Local Govt. (31) ☐ Contractors (39) ☒ Regions/Agencies (32) ☐ _____ ()		Approved:  JAMES M. O'CONNELL Deputy Chief Engineer (Structures) 11.05.01 Date	

ADMINISTRATIVE INFORMATION:

This Engineering Instruction (EI) is effective with projects submitted for the letting of April 18, 2002. This (EI) supersedes no current issuances. Reference Engineering Bulletin (EB) 01-058 for superseded Bridge Detail (BD) sheets.

PURPOSE:

This (EI) establishes a new pay item (Item 568.54 M - Steel Bridge Railing (Three-Rail) to be included in Section 568 of the Standard Specifications. This (EI) also modifies Section 710-23 of the Standard Specifications.

TECHNICAL INFORMATION:

The three-rail curbless steel bridge railing has been introduced for use on structures that do not have pedestrian traffic and, therefore, do not warrant four-rail curbless steel bridge railing. The addition of the third rail placed at vehicle wheel height reduces the chance of the railing post being struck during vehicular impact. Transition details for the new railing are provided on the BD sheets. This railing is adequate for Test Level -4 (TL-4) service.

Significant changes have been made to the steel bridge railings already detailed on the BD sheets and in current use. A shelf angle connection for the lower TS 152x152x4.8 rail tube to the rail post replaces the previously detailed bolted connection on all steel bridge railing systems to eliminate the snagging potential of the bolt heads. Several changes have been incorporated as a result of the successful NCHRP 350 crash tests performed on the New England Transportation Consortium railing and are intended to reduce the potential for snagging when vehicular impact occurs. The changes are described in the following. A 22 mm diameter round head slotted bolt used in the rail tube to post connection replaces the previously detailed 22 mm diameter round head square necked bolt (carriage bolt). The number of anchor bolts used in the railing base plate has been reduced from five to four. The base plate configuration has been changed and the thickness has also been reduced.

The FHWA has determined the above changes do not significantly alter the strength or geometric configuration of the railing previously detailed and crash testing of the revised railings is not required. Crash test reports and background information are available through the Structures Division

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Standards Unit at the contact telephone number listed below. The changes described in this (El) are reflected on revised Bridge Detail sheets issued by EB 01-058 (See Distribution below). The anticipated cost impact of the changes to the previously detailed rail systems is negligible.

IMPLEMENTATION:

Make the following addition to Section 568 - Bridge and Culvert Railing of Addendum #2 to the Standard Specifications dated November 4, 1999:

Page V-25, line 10, *insert* the following pay item:

Item No.	Item	Pay Unit
568.54 M	Steel Bridge Railing (Three Rail)	Meter

Make the following changes to Section 710-23 Steel Bridge and Culvert Railing of Addendum #2 to the Standard Specifications dated November 4, 1999:

Page VII-23, *delete* lines 43 thru 44, and replace with the following:

Piece	ASTM Designation
Round Head Bolt	F568M - Class 8.8 or Class 8.8.3

Page VII-24, line 6, *insert* the following:

Angle (2)	A588M or A572M Grade 345 (A709M Grade 345 or 345W)
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DISTRIBUTION:

EB 01-058 issues revised Bridge Detail (BD) sheets BD-RS1R2 thru BD-RS8R2 with revised details for steel railing and transitions.

CONTACT:

Direct questions about this El to the Structures Division Standards Unit at 518-485-5748.