STRUCTURES DESIGN BULLETIN 14-07

(FHWA Approved: May 31, 2014)

DATE: June 2, 2014

TO: District Directors of Transportation Operations, District Directors of Transportation Development, District Design Engineers, District Construction Engineers, District Structures Design Engineers, District Maintenance Engineers

FROM: Robert V. Robertson, P. E., State Structures Design Engineer

COPIES: Brian Blanchard, Tom Byron, Duane Brautigam, David Sadler, Tim Lattner, Jeffrey Ger (FHWA)

SUBJECT: Attachments to Traffic Railings

This bulletin clarifies existing policy for attaching sign supports and other miscellaneous items to bridge and retaining wall mounted traffic railings.

REQUIREMENTS

1. Replace *Structures Design Guidelines* Appendix 1A with the figures shown in the Attachment to this bulletin.

2. Add the following new paragraph and figure to *Structures Design Guidelines* 1.9:

   D. Attach supports for sign structures and other similar miscellaneous items to the back face of New Jersey Shape, F-Shape, Vertical Face and structurally continuous Post and Beam outside shoulder traffic railings using the details shown in Figure 1.9-1. See also *PPM* Volume 1, Section 7.1.2 for additional requirements. Contact the Structures Design Office for guidance when attaching supports to all other traffic railing types. Do not attach supports to traffic railings within 5 feet of an open joint in the railing. Check the capacity of the traffic railing and the deck at the support location using the Strength III, Service I and Extreme Event II load combinations. Although intended for use with the outside shoulder traffic railing types listed, the details presented in Figure 1.9-1 can also be used for attaching items to concrete pedestrian railings.
3. Replace Structures Design Guidelines 6.7.2.A with the following:

A. The use of a non-FDOT standard or new structure mounted traffic railing requires the prior approval of the Structures Design Office. Proposed modifications to standard traffic railings also require prior Structures Design Office approval. Such proposed modifications may include but are not limited to reinforcement details, surface treatments, material substitutions, geometric discontinuities along the length of the railing, non-standardized attachments that do not meet the requirements of SDG 1.9, non-standardized and unfilled pockets or blockouts, end transition details and traffic face geometry.
COMMENTARY

The criteria and details for attaching sign supports and other miscellaneous items to traffic railings presented in this bulletin are intended to preserve the crashworthiness of the traffic railings.

IMPLEMENTATION

This is a clarification of existing policy valid for all projects.

CONTACT

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RVR/CEB
Attachment
ALLOWABLE CONNECTION TYPES FOR MISCELLANEOUS ATTACHMENTS - SUPERSTRUCTURES

PRETENSIONED CONCRETE I-BEAMS
(Florida-T Beam shown; AASHTO, Inverted-T & Florida Bulb-T Beams similar)

PRETENSIONED/POST-TENSIONED CONCRETE I-BEAMS
(Florida-T Beam shown; AASHTO & Florida Bulb-T Beams similar)

PRETENSIONED CONCRETE FLORIDA-U BEAMS

PRESTRESSED SLAB UNITS

CIP FLAT SLABS

ATTACHMENT TYPES

1. Cast-in Inserts
2. Cast-in Inserts or Bolts
3. Formed Holes for through-bolting
4. Field drilled Holes
5. All NON-STANDARD Attachments or Anchorages permitted.
6. All Field drilled Holes, Cast in Inserts or Formed Holes permitted

PEDESTRIAN RAILING DETAIL
(Typical All Superstructures)

CIP CONCRETE BOX GIRDER
(No Post-tensioning)

STEEL BOX GIRDER

POST-TENSIONED CONCRETE BOX GIRDER

Inside box

1 & 3 inside box

(All Steel Members)

(All Steel Members)

(Under side of Deck)

(Under side of Deck)

See Superstructure requirements

*Attach Sign Supports at Cross Frames or provide supplemental bracing designed by the Bridge EDR.