C0 Preface

2024 ~ Lap and Development Lengths

Starting with the July 2023 release and all releases up to and including the January 2024 release of the Iowa DOT working standards included rebar development and lap length updates based on the 2017 AASHTO *LRFD Bridge Design Specifications*, 8th Edition. These working standards shall be incorporated into project details starting with the October 2024 letting. The signed standard plans have rebar development and lap lengths based on the 2014 AASHTO *LRFD Bridge Design Specifications*, 7th Edition and will be updated to the 8th edition by BSB as time permits. The signed standard plans should be used "as is" until they are updated by BSB.

2024 ~ Deck on Beam Changes

Starting with the July 2023 release and all releases up to and including the January 2024 release of the Iowa DOT working standards included the following changes to the deck on beam details:

- Interior deck thickness increases from 8 inches to 8.5 inches.
- Thickness of the deck overhang tapers increases from a permissible range of 9.00 to 10.25 inches at exterior beam top flange edge to a permissible range of 10.25 to 11 inches. Thickness of deck overhang tapers increases from 8.75 inches for PPCBs and 9 inches for steel beams at edge of deck to 10 inches for both.
- Top of deck built-in (sacrificial) wearing surface increases from 0.50 inches to 0.75 inches.
- Concrete cover increases from 2.5 inches to 2.75 inches for topmost layer of deck reinforcement and from 1 inch to 1.5 inches for bottommost layer of deck reinforcement.
- Top of deck transverse reinforcement in the deck overhang changes from straight bars to hooked bars.

These working standards shall be incorporated into project details starting with the October 2024 letting. The signed standard plans do not include these updates and should be used "as is" until they are updated by BSB. This item does not involve an LRFD exception but is included here since it involves a significant change in practice.

2024 ~ MASH Rail Implementation

Starting with the July 2023 release and all releases up to and including the January 2024 release of the Iowa DOT working standards includes phasing out of the 34-inch tall TL-4 and 44-inch tall TL-5 NCHRP 350 F-shape barrier rails to be replaced with the 38-inch tall TL-4 and 44-inch tall TL-5 MASH single slope barrier rails. These working standards shall be incorporated into project details starting with the October 2024 letting. The signed standard plans do not include the updates and should be used "as is" until they are updated by BSB.

1 January 2009 ~ Policy for LRFD Design

FHWA LRFD Policy Memorandum and Attached Letter (Memorandum)

MEMORANDUM

Subject: **INFORMATION**: Clarification of LRFD Policy Memorandum

Date: January 22, 2007

From: */s/ Original Signed by*
M. Myint Lwin, P.E., S.E.
Director, Office of Bridge Technology

Reply to Attn of: HIBT-10

To: Directors of Field Services
Resource Center Director
Division Administrators
Federal Lands Highway Division Engineers

On June 28, 2000, FHWA issued a Policy Memorandum announcing its decision regarding a transition time frame for the use of Load and Resistance Factor Design (LRFD) for the design of new bridges on Federal-aid funded projects. According to the memo, all new bridges on which States initiate preliminary engineering after October 1, 2007, shall be designed by the AASHTO LRFD Bridge Design Specification. States unable to meet this date shall provide justification and a schedule, acceptable to the FHWA, to complete the transition.

The purpose of the memorandum herein is to provide FHWA Division Offices, States, and local governments with clarifications regarding FHWA's LRFD Policy Memorandum.

- The term "preliminary engineering" as stated in the LRFD Policy Memorandum shall be interpreted as the initiation of the studies or design activities related to identification of the type, size, and/or location of bridges. The term "initiate" means the date when Federal-aid funds are obligated for preliminary engineering. In cases where Federal-aid funds are not used in preliminary engineering, but are used in construction or other phases of the project, the term "initiate" means the date when the State obligates or expends their own funds for preliminary engineering.
- Superstructure, substructure, and foundation bridge elements shall be designed by LRFD.
- For modifications to existing structures, States have the option of using the LRFD Specifications or the specifications which were used for the original design.
- Shelved bridge projects designed and packaged for construction prior to October 1, 2007, are not subject to the LRFD Policy Memorandum, unless a redesign is required by the State after October 1, 2007.
- The term "new bridges" as stated in the LRFD Policy Memorandum shall be interpreted to include both new and total replacement bridges.
- Finally, the policy applies to all States-initiated Federal-aid funded projects, not just those funded with Highway Bridge Program funds, including on system and off-system projects.

If you have any questions, please feel free to contact Dr. Firas Sheikh Ibrahim at 202-366-4598, or Firas.Ibrahim@dot.gov.

Attachment: LRFD Policy Memorandum (See below.)

U.S. Department of Transportation
Federal Highway Administration

1200 New Jersey Avenue SE
Washington, D.C. 20590

June 28, 2000

Refer to: HIBT

David H. Pope, P.E.
Chairman, Highway Subcommittee on Bridges and Structures
Wyoming Department of Transportation
5300 Bishop Boulevard
Cheyenne, WY 82009-3340

Dear Mr. Pope:

Thank you for the letter of June 20, 2000. We appreciate receiving the advice and recommendation of the AASHTO Highway Subcommittee on Bridges and Structures and its member State bridge engineers on the time frame goals for the use of Load and Resistance Factor Design (LRFD) for the design of bridges. We concur in recommended

time frames and would be pleased to work in partnership with the States to attain the listed four goals which, to repeat, are:

1. All new bridges on which States initiate preliminary engineering after October 1, 2007, shall be designed by the LRFD Specifications.
2. All new culverts, retaining walls, and other standard structures on which States initiate preliminary engineering after October 1, 2010, shall be designed by LRFD Specifications, with the assumption that the specifications and software for these structures are "mature" at this time.
3. States unable to meet these dates will provide justification and a schedule for completing the transition to LRFD.
4. For modifications to existing structures, States would have the option of using LRFD Specifications or the specifications which were used for the original design.

A copy of this letter and yours are being provided to the State bridge engineers and our FHWA field offices so that they are aware of FHWA's decision on this matter.

Sincerely yours,

/s/ original signed by
David H. Densmore
Director of Bridge Technology

Enclosure

2011 ~ Increase Class C Concrete Strength to 4.0 ksi

In recent years the typical concrete strengths achieved by Class C concrete have been greater than the 3500 psi used for design. For structural components a higher strength concrete would be advantageous, and for a few of the longer prestressed concrete beams 4.0 ksi concrete is required for the bridge deck. After checking with state and district materials engineers it was decided to increase the design strength for Class C concrete to 4.0 ksi for design, except when a higher strength is required. The increase in design strength also requires an increase in minimum flexural strength to 575 psi for form removal. The change from psi to ksi units for design strength is consistent with the transition to AASHTO LRFD Specifications.