

Bridge Design Manual - LRFD
Archive Manual Notices

Manual Notice 2023-1

From: Graham Bettis, P.E., Director, Bridge Division

Manual: *Bridge Design Manual - LRFD*

Effective Date: January 17, 2023

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the AASHTO LRFD Bridge Design Specifications, to which designers should adhere unless directed otherwise by this document.

Changes

Updates consist of the following: Chapter 2 Section 1 added clarifying language for Article 1.3.4 related to redundancy, and Article 1.2 related to Extreme Event Limit States. Chapter 2 Section 2 added consideration of when to include future wearing surface to the dead load. Chapter 3 Section 2, Design Criteria for Empirical Design of Article 9.7.2 and Traditional Design of Article 9.7.3 added language for decks over continuous beams. Chapter 3 Section 4, Design Criteria for pretensioned concrete I girders added a 'not' to the statement on using both draped and straight strands with debonding. Chapter 3 Section 16 added self-weight of spliced precast girder. Chapter 3 Section 17 updated terminology. Chapter 3 Section 18 is a new section for prefabricated superstructure alternatives. Chapter 4 Section 5 updated detailing requirements for inverted tee reinforced concrete bent caps. Chapter 4 Section 6 is a new section for steel straddle bent caps. Chapter 4 Section 7 updated vehicular collision design requirements for columns for multi column bents. Chapter 4 Section 11 is a new section for precast and prefabricated substructure alternatives. Chapter 6 updated title and removed Overview section. Chapter 6 Section 1 was changed to Procedure for Archiving Design Notes and General section was added. Chapter 6 Design Notes and Calculations Section 2 is a new section on quality control and quality assurance.

Supersedes

This revision supersedes version 2021-1 (November 2021).

Contact

For more information about any portion of this manual, please contact the Design Section Director of the Bridge Division.

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Manual Notice 2021-1

From: Graham Bettis, P.E., Director, Bridge Division

Manual: *Bridge Design Manual - LRFD*

Effective Date: November 01, 2021

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Updates consist of the following: In general, updates were made throughout in order to adopt the 9th edition of the AASHTO LRFD Bridge Design Specification. Chapter 1 is updated to include links to companion manuals and guides. Chapter 2 and Chapter 4 are updated for the latest requirements for vehicle collision force and bent design for vehicle collision. Chapter 3 is updated with respect to debonding strands of pretensioned girders/beams and splice girder design. Non-contact lap splice requirements were moved from various sections of Chapter 4 to Chapter 5, Section 6 and updated to include dissimilar shapes. An additional section is added to Chapter 5, requiring load rating of all new designs. Chapter 6 is updated for the current file delivery requirements for design notes. .

Supersedes

This revision supersedes version 2020-1.

Contact

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Manual Notice 2020-1

From: Graham Bettis, P.E., Director, Bridge Division

Manual: *Bridge Design Manual - LRFD*

Effective Date: January 01, 2020

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Updates consist of the following: Chapter 1 includes the deletion of the Revision History Table. Chapter 2 is updated to include the Extreme Event III loading combination which relates to structural member or component failure. An additional section is added to Chapter 3, System Redundancy Evaluation for Steel Twin Tub Girders, requiring all newly steel twin tub girder bridges to be designed for system redundancy.

Supersedes

This revision supersedes version 2018-1.

Contact

For more information about any portion of this manual, please contact the Design Section Director of the Bridge Division.

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Manual Notice 2018-1

From: Gregg A. Freeby, P.E., Director, Bridge Division

Manual: *Bridge Design Manual - LRFD*

Effective Date: July 31, 2018

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Revisions to manual to conform to the 8th Edition of the AASHTO LRFD Bridge Design Specifications with Interims. Updates generally consist of the following: Updated equation numbers relating to AASHTO LRFD BDS Chapter 5 organizational changes; Removed Section 9 of Chapter 3 for Pretensioned Concrete Double-Tee Beams; Added requirement to specify fit condition for steel plate girder spans in Chapter 3 Sections 13 and 14; Added requirement for primary method of splicing in plans to be bolted in Chapter 3 Sections 13 and 14; Added spacing and geometric requirements for access openings in segmental spans in Chapter 3 Section 15; Relocated column collision guidance from Chapter 2 Section 2 to Chapter 4 Sections 6 and 7; Added Section 9, Chapter 4, for Lateral Restraint of Bridge Superstructures on Substructures; Per updates to AASHTO, revised language in Chapter 5 Section 3 to no longer disregard nodal analysis for large nodes; Added Section 5, in Chapter 5 for Culverts; Added Chapter 6 for Archiving Design Notes; minor revisions in various chapters to reference current editions of publications; minor editorial revisions.

Supersedes

This revision supersedes version 2015-1.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2015-1

From: Gregg A. Freeby, P.E., Director, Bridge Division

Manual: Bridge Design Manual - LRFD

Effective Date: October 01, 2015

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Revisions to manual to conform to the 7th Edition of the AASHTO LRFD Bridge Design Specifications with Interims. Generally, revisions to manual to update information in Chapter 2 regarding vehicular collision force; add information in Chapter 3 regarding Spliced Precast Girders; add information for Spread Slab Beams; revised deck design and detailing; revised minimum number of I-girders per span; added straight strand with debonding designs for pretensioned I-girders; revised prestress losses; added information in Chapter 4 regarding Columns for Single Column Bents or Piers; added grades higher than grade 60 reinforcement; added limits for service load cracking in straddle bent caps; removed 22 ksi limit for dead load stress; minor revisions in various chapters to reference current editions of publications; minor editorial revisions.

Supersedes

This revision supersedes version 2013-1.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2013-1

From: Gregg A. Freeby, P.E., Director, Bridge Division

Manual: Bridge Design Manual - LRFD

Effective Date: March 11, 2013

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Revisions to manual to conform to the 6th Edition of the AASHTO LRFD Bridge Design Specifications. Generally, revision to manual to update information in Chapter 2 regarding vehicular collision force; add information in Chapter 3 regarding Segmental Spans; add upper limits on pre-tensioned girder concrete strength; add minimum number of beams in a roadway width; add overlay information for Decked Slab Beams; revise material grades and flange width for plate girders; add information in Chapter 4 regarding Post-tensioned Concrete Bent Caps; add minimum drilled shaft sizes; minor revisions in various chapters to reference current editions of publications; minor editorial revisions.

Supersedes

This revision supersedes version 2011-1.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2011-1

From: Gregg A. Freeby, P.E., Director, Bridge Division

Manual: Bridge Design Manual - LRFD

Effective Date: December 22, 2011

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

Revisions to manual to add information in Chapter 3 regarding Concrete Deck Slabs on Spread Box Beams (X-Beams) and Prestressed Concrete Spread Box Beams (X-Beams); minor revisions in various chapters to reference current editions of publications.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2010-1

From: David P. Hohmann, P.E.
Manual: Bridge Design Manual - LRFD
Effective Date: October 01, 2010

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

This manual revises policy on concrete deck slabs on stringers, minimum shear reinforcing for inverted tee bent caps and steel-reinforced elastomeric bearings. It also adds information on pre-stressed concrete deck slab beams.

This manual has been revised to be current with the *AASHTO LRFD Bridge Design Specifications*, 5th Edition (2010).

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2009-1

From: David P. Hohmann, P.E.
Manual: Bridge Design Manual - LRFD
Effective Date: May 01, 2009

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

This manual revises policy on foundation load calculations; revises policy on live load deflection check; revises policy on use of empirical design method for slab design; updates prestressed concrete design criteria; revises debonding limits for prestressed concrete design; adds requirements for considering corrosion protection measures; clarifies policy on bearing pad design; revises policy on calculating live load distribution factors for double-tee beams; and corrects minor editorial errors.

This manual has been revised to be current with the *AASHTO LRFD Bridge Design Specifications*, 4th Edition (2007) and 2008 Interim Revisions.

This revision supersedes version 2008-1.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

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Manual Notice 2008-1

From: William R. Cox, P.E.

Manual: LRFD Bridge Design Manual

Effective Date: July 01, 2008

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, to which designers should adhere unless directed otherwise by this document.

Changes

This manual has been revised to be current with the 2007 4th Edition of the *AASHTO LRFD Bridge Design Specifications*. It adds information in Chapter 5 for strut-and-tie design method; revises requirements for foundation load calculations; revises interface shear transfer requirements for pre-stressed beams; clarifies policy on live load distribution factors for beam design; revises policy on debonding design; and corrects inverted tee design formulas.

This revision supersedes version 2007-1.

Contact

For more information about any portion of this manual, please contact the Design Section of the Bridge Division.

Archives

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Manual Notice 2006-1

From: William R. Cox, P.E.

Manual: *LRFD Bridge Design Manual*

Effective Date: May 01, 2006

Purpose

This manual documents policy on bridge design in Texas. It assists Texas bridge designers in applying provisions documented in the *AASHTO LRFD Bridge Design Specifications*, which designers should adhere to unless directed otherwise by this document.

Changes

This revision adds information on cast-in-place concrete slab spans, straight plate girders, and curved plate girders.

This revision also includes minor corrections and editorial adjustments.

Contact

For more information about any information of this manual, please contact the Design Section of the Bridge Division.