

STRUCTURES MANUAL INTRODUCTION - REVISION HISTORY

Introduction Link for the introduction added to the homepage for clarity.

I.6 Adoption of the latest editions and interim revisions of multiple references.
To add the relevant references to the Structures Manual.

I.12 Content reorganization

VOLUME 1 - REVISION HISTORY

- 1.3**..... Updated cross-references for the AASHTO LRFD Bridge Specifications.
- 1.4.2**..... Cheekwalls are an aesthetic element and 2" cover is adequate. This will reduce the total thickness of the cheekwall.
- 1.4.3**..... The change is implemented to ensure that designers coordinate with both the State Materials Office and the Structures Design Office when designing superstructure components located within splash zones.
- The Structures Manual has been updated to reflect the language and requirements of the Standard Specifications.
- 1.4.5**..... The change is made to clearly state the Department's requirement for surface finishes.
- 1.6.1**..... The Modification for Non-Conventional Projects Box was added to provide instructions for the use of undercut anchors on Non-Conventional Projects.
- 1.6.2**..... Adhesive Bonded Anchor Systems are not allowed for any application where they are in predominantly sustained tension loads, due to tendency of the adhesive to creep.
- 1.11.1**..... New criteria to provide guidance to designers.
- 1.11.2**..... The change is made to clarify the existing language.
- 1.11.4**..... The modified language clarifies that the tangent length at the anchorage is required for all tendons. Commentary is added to give the reasoning behind the requirement.
- 1.11.5**..... The change is made to clarify the existing language.
- 1.14**..... Content reorganization.
- 1.15**..... To account for variation in surface preparation and compensate for the structural non-redundancy.
- 2.2**..... Incorrect Standard Plans references.
- Added the weight for the temporary K-barrier.
- 2.4.1**..... The modification was made to clarify the requirements for wind speeds for Monroe County and the Monroe Islands.
- 2.10**..... Additional guidance is provided to compensate for the lack of redundancy.
- 2.11.11**..... To clarify the requirement.

- 2.12** To provide direction on which limit state to evaluate tensile stresses for transverse, prestressed members.
- 3.5.1** Content modification.
- 3.5.5** To provide additional design guidance.
- 3.5.13** 20" piles are so rarely used on projects, they are no longer economical.
- 3.5.19** Revision to insure load transfer capability.
- 3.5.20** New criteria is added for auger cast piles.
- 3.6.2** To provide additional design guidance.
- 3.6.6** Incorrect reference.
- 3.6.9** Language was added to clarify that the provisions of this section also apply to pier columns on shafts.
- 3.11.1** To clarify the design criteria.

The limits on tensile stresses are applicable to substructure as well as the superstructure. The revision adds the tensile stress limits to the substructure section.

To account for variation in surface preparation and compensate for the structural non-redundancy.

Table 3.11.1-1 and Table 3.11.1-3 The modification is made to clarify the existing language.

- 3.11.2** To clarify the existing language.
- 3.11.5** To clarify the current language.
- 3.12** Incorrect references to Developmental Design Standard and Standard Plans Instructions.

Note added to clarify maximum wall height limitation.

- 3.14.3** To use a prescriptive fender design.
- 4.1** Point A: To state the non-redundant concrete bridge superstructure systems which are permitted to be used.

Point B: To account for variation in surface preparation and compensate for the structural non-redundancy

- 4.2.2** Content clarification and reorganization.
- 4.2.5** Correction to existing content.

- 4.5.1** The modification is made to clarify the existing language.
- 4.5.2** 1) The limits on tensile stresses are applicable to substructure as well as the superstructure. The revision adds the tensile stress limits to the substructure section.
- 2) The critical load combination could either be Service I or Service III depending on the application. The revision adds the requirement to check Service III where applicable.
- 4.6.3** To clarify continuity tendon requirements.
- The modification is made to more accurately depict the haunch.
- 4.8.3** The language was modified to add a new requirement for U-girders.
- 4.8.4** Additional Criteria is added for U-girder design.
- 5.1** To state the non-redundant steel superstructure systems which are permitted to be used.
- 5.1.2** Transportation of girders up to 145 feet in length and 160,000 pounds does not require coordination through the Department's Permit Office. This requirement is the same for both girders made from concrete and steel.
- 5.3.1** Clarification that HPS is required for the critical, non-redundant load carrying members.
- 5.3.2** Incorrect format of section.
- 5.11.2** The weld filler metal strength as specified by the designer must be stated on the plans to communicate the strength requirement.
- 6.4** The change in the SDG is made to be consistent with the naming of the joint type in the Standard Specifications for Road and Bridge Construction.
- 6.4.3** The change in the SDG is made to be consistent with the naming of the joint type in the Standard Specifications for Road and Bridge Construction.
- 6.4.4** The change in the SDG is made to be consistent with the naming of the joint type in the Standard Specifications for Road and Bridge Construction.
- 6.5.2** This language was revised to clarify our intent with regard to bearing component replacement.
- 6.5.4** New criteria is added to prevent steel bridge units from floating.
- 6.7.6** The DDE is the appropriate contact for guidance on traffic railings.

- 6.8.5** Content reorganization. In previous versions of the Manual, the criteria for section 6.8.5 was stated in 1.1.8. The requirement has been moved from 1.1.8 to 6.8.5.
- 7.1.1** Additional load rating procedure C.4 was removed in a previous update, but the reference to it is still there.
- 7.3.4** SDG 7.3.4.B is meant to apply to both the superstructure and substructure, not just the superstructure, so it has been modified for clarity.
Modification to address substructure and foundation analysis requirements for minor widening case.
- 9.2.1** The Structures Manual has been updated to reflect the language and requirements of the Standard Specifications.

Updated cost information.
- 9.2.2** Updated cost information.

We have established pay items for different coating systems for steel girders that will allow better estimates in the future.
- 10.4** Design life was specified for pedestrian bridges for wind load determination, since the AASHTO Guide Specification for Pedestrian Bridges referred to the LTS for wind loads. We are now referencing SDG Table 2.4.1-1 for design wind speed for clarity and simplicity.
Content reorganization. In previous versions of the Manual, the criteria for point 10.4.J was stated in 4.2.2.E. The requirement has been moved from 4.2.2.E to 10.4.J.
- 10.6** To state the material requirements for pedestrian bridge decks.
- 10.17** Content reorganization, the criteria for this section have been moved to SDG Chapter 1.14
- 11.6.3** The change in criteria reflects information gained from research.

VOLUME 2 - REVISION HISTORY

- 1.2** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 1.4** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 2.1** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 2.6** Statute change eliminated the Certificate of Authorization for engineering firms.
- 2.11.3** To simplify our directions for dimensioning angles.
- 2.12** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 2.14** Modifications to multiple sections of the SDM to consistently reference Complementary Skew Angle instead of Skew Angle.
- 3.1** The modifications are made to correct references to the CADD Manual and the CADD Office.
- The deleted sentences conflicted with current policy of requiring all concrete box culverts, three-sided culverts and bridge culverts to be prepared as a structures component set of plans.
- 3.5** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 3.7** Correction required.
- 3.8** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 4.1** The modifications are made to correct references to the CADD Manual and the CADD Office.
- 5.1** These changes are to bring the Structures Manual into compliance with the rule change.
- 5.2** These factors can significantly affect the design and we want them listed on the plans.
- To be consistent with the Standard Specifications.
- A reduced concrete cover is now allowed for cheekwalls.
- 5.3** The weld filler metal strength as specified by the designer must be stated on the plans to communicate the strength requirement.

- 7.3** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 11.2** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 12.2** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 12.3** For completeness of the drawing.
- 12.5** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 13.3** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 13.7** To be consistent with the AASHTO requirements.
- 15.2** Modifications to multiple sections of the SDM to consistently reference Complimentary Skew Angle instead of Skew Angle.
- 15.8** To use the appropriate terminology.

To provide flexibility based on aesthetic requirements.
- 16.1** To update to the most current release.
- 16.8** A connection plate is added to resist out of plane bending.
- 16.11** To Update to the most current release.
- 21.1.1** FHWA announced that they are repealing the Proprietary Product regulation 635.411, effective 29 OCT 2019. Reference to this regulation has been removed.
- 23.7** Revision to correct CL Beam callout, incorrectly shown as CL Pier.
- 24.6** The modifications are made to correct references to the CADD Manual and the CADD Office.

VOLUME 3 - REVISION HISTORY

2.4.2.4 Content reorganization and updated criteria.

3.8 Content reorganization and updated criteria.

3.8.2 Content reorganization and updated criteria.

3.8.7 Content reorganization and updated criteria.

4.7 Content reorganization and updated criteria.

13.6.1.1 Content reorganization and updated criteria.

13.8 Criteria is added for auger cast piles.

18.1 Content reorganization and updated criteria.

18.2 To be consistent with the language in the FDM.

Content reorganization and updated criteria.

18.3 To be consistent with the language in the FDM.

Content reorganization and updated criteria.

Clarification of requirements for analysis and Design Variation.

VOLUME 4 - REVISION HISTORY

- 2** To be consistent with the Standard Specifications.
- 2.1** To be consistent with the Standard Specifications.
- 2.2** To be consistent with the Standard Specifications.
- 2.3** To be consistent with the Standard Specifications.
- 3.3** To be consistent with the Standard Specifications.
- 7.1** To reflect current policy.
- 7.3** To reflect current policy.