

# 2010 Interim Revisions Related to Concrete Structures Part 1



by Dr. Dennis R. Mertz

**A**t their annual meeting in New Orleans, La., in July 2009, the American Association of State Highway and Transportation Officials (AASHTO) Subcommittee on Bridges and Structures (SCOBS) considered and adopted five agenda items specifically related to concrete structures. Technical Committee T-10, Concrete Design, developed Agenda Items 9, 10, 12, 14, and 15 over the past several years and moved them to the subcommittee ballot for consideration in New Orleans. The agenda items represent revisions and additions to the AASHTO *LRFD Bridge Design Specifications*. These agenda items along with the complete list of items for the recent SCOBS meeting can be found on the AASHTO website at <http://cms.transportation.org/?siteid=34&pageid=1484>. This article and the article in the next issue will review the 2009 concrete-structures agenda items, which will become the 2010 interim revisions.

**Agenda Item 9** makes revisions and additions to Article 5.14.2 for segmental construction. Segmental construction equipment loads were previously defined by the two-letter abbreviation, CE. This was in conflict with the use of CE as the abbreviation for centrifugal loads in Section 3, Loads and Load Factors. For clarity, segmental construction equipment loads are now defined by the three-letter abbreviation, CEQ, in Article 5.14.2.3.2.

Reference to Types A and B joints has been removed from Article 5.14.2.3.3. These references are no longer needed since dry joints (Type B) were eliminated from the specifications. In addition, clarification is provided for Table 5.14.2.3.3-1 indicating that the table applies to vertically post-tensioned substructures, not to cast-in-place substructures supporting segmental superstructures.

The load combinations required at the strength limit state during construction are clarified through revisions to Article 5.14.2.3.4. Wind loads, WS, critical to the design of columns especially prior to span closure, were not explicitly required in Article 5.14.2.3.4. This revision explicitly requires the general load combinations of Table 3.4.1-1 including wind loads be used for design of substructures of post-tensioned segmental bridges. Finally, the proper provisions for the design of segmental bridge substructures and nonsegmentally constructed substructures are cited.

**Agenda Item 10.** In the 2005 interim revisions to the *LRFD Specifications*, Article 5.8.2.6 was revised to be consistent with the AASHTO *Standard Specifications for Highway Bridges* with regard to the use of longitudinal bent bars as transverse reinforcement. The revisions did not include all the associated provisions from the *Standard Specifications* governing bent-up bars. Agenda Item 10 includes those provisions required to complete the revision.

**Agenda Item 12** revises Article 5.9.5.3 relating to the approximate estimate of time-dependent losses in prestressed concrete members. Table 5.9.5.3-1 has been deleted from the specifications. This action was taken because the approximate estimate of time-dependent losses shown in the table did not conform to the ones calculated using the newer refined estimate of time-dependent losses of Article 5.9.5.4. In addition, clarification is provided as to when the application of the equations of Article 5.9.5.3, the approximate estimate, is appropriate and when the refined estimates of Article 5.9.5.4 are required.

The additions and revisions represented by Agenda Items 14 and 15 will be reviewed and discussed in the next issue of *ASPIRE*.™

