



MEMORANDUM

TO: District Engineers

DATE: April 19, 2011

FROM: David P. Hohmann, P.E.

SUBJECT: New and Revised Prestressed Concrete Beam Standard Drawings

New and revised prestressed concrete beam design standard drawings are posted on the TxDOT web site and are available for immediate use.

The factors warranting the revisions are:

- Use of a higher allowable compressive stress, 0.65f_{ci}, in determining initial concrete strength. The previous value was 0.60f_{ci}.
- Use of a lower maximum shear stress at beam ends, 0.18f_c, in determining final 28-day concrete strength. The previous value was 0.25f_c.
- Addition of the live load distribution factor for shear to the optional design information.

The following prestressed beam design standard drawings are revised:

- **BBND**
- **BBSDS-** and **BBSDO-** prefixes
- **DTBND**
- **IBND**
- **PSBSD**
- **PSBNS**, re-named to new standard drawing **PSBND**
- **UBND**

The re-design of standard box beam spans resulted in a maximum span length of 95-feet, down from 100-feet, for 34-inch deep box beams with the 24-foot roadway width. All relevant substructure and superstructure standard drawings (**ABB-24**, **BBB-24**, **SBBS-B34-24** and **SBBO-B34-24**) are revised to accommodate this reduction.

Specifically excluded from this revision are standard span beam designs for prestressed I-beams and double-tee beams, shown on all standard drawings with **IBSD-**, **DTBSDS-**, and **DTBSDO-** prefixes. Their revision is not considered necessary as all prestressed I-beam standard drawings will be retired in the near future and those for double-tee beams are being considered for retirement due to their very infrequent use.

Standard drawings for prestressed I-girder and decked slab beams are not included with this set of revisions since they already incorporate the factors previously listed.

Minor editorial changes to select prestressed concrete beam design standard drawings have also been made.

Standard drawings **IBNS** and **UBNS** are retired as standard drawings and removed from the Bridge Standards web page. These two drawings were only applicable for designs based on the *AASHTO Standard Specifications for Highway Bridges* and HS-20 live load.

These revised standard drawings apply to construction projects beginning with the November 2011 letting. Prior use is at the option of each District.

These and other bridge standard drawings are available on the Bridge Standards web pages in MicroStation® “dgn” and Adobe® Acrobat® “pdf” formats. See <http://www.dot.state.tx.us/business/standardplanfiles.htm> .

For questions or comments concerning these standard drawings, please contact John M. Holt, P.E., at (512) 416-2212 or Jon Ries at (512) 416-2191

Note: Original Signed By David P. Hohmann

cc: Federal Highway Administration
Bridge Design Consultants
Administration
Division and Office Directors
Directors of Transportation Planning and Development
District Bridge Engineers
Bridge Division Employees