



MEMORANDUM

TO: District Engineers

DATE: May 23, 2005

FROM: William R. Cox, P.E.

SUBJECT: New Culvert and Drainage Standard Drawings (English)

New culvert and drainage standard drawings with an issue date of May 2005 are posted on the TxDOT web site and are available for immediate use.

Significant revisions to culvert and drainage standard drawings include the following:

- Precast box culvert standard drawings have been revised to conform to ASTM C1433. The range of available design fill heights has been expanded to 30 ft. for boxes with spans of 7 ft. 0 in. or less, and 25 ft. for boxes with spans of 8 ft. 0 in. or greater.
- The BCS-SET.XLS spreadsheet, used to aid in the preparation of the Box Culvert Supplement (BCS) drawing and the appropriate safety end treatment drawing, has been modified to reflect the change to ASTM C1433 for precast concrete box culverts.
- Safety End Treatment standard drawings for box and pipe culverts have been revised to include an optional drilled epoxy anchorage system for the attachment of pipe runners.
- The Horizontal Inlet Type H (IL-H) is no longer provided as a standard drawing. It has been replaced by the Horizontal Inlet Type H with Grate (IL-H-G) and the Horizontal Inlet Type H with Lid (IL-H-L).

New drainage standard drawings and guide drawings include:

- Horizontal Inlet Type H with Grate (IL-H-G). This inlet is derived from the IL-H. The grate has been strengthened and enlarged to entirely cover the inlet opening. A cast-in-place concrete apron has also been added.
- Horizontal Inlet Type H with Lid (IL-H-L). This inlet is also derived from the IL-H. It features a precast concrete lid with a ring and cover for access. It also includes a cast-in-place concrete apron. As this inlet extends above the ground line, it can only be used in locations protected from errant vehicles.
- Bridge Drain Details (Welded) (BD-2). This guide drawing (not a standard drawing) provides guidance for the construction of a welded bridge deck drain similar to the cast steel bridge deck drain guide drawing (BD-1).

The English culvert and drainage standard drawings depict designs based upon AASHTO HS-20 loading. These HS-20 design-based culvert standard drawings may be used until further notice, even on projects that include bridge designs based on the AASHTO LRFD Bridge Design Specifications.

These reissued standard drawings apply to all construction projects starting with the November 2005 letting. Prior application is at the option of each district. These and other standard drawings are available from the Bridge Standards (English) web pages in MicroStation® "dgn" and Adobe® Acrobat® "pdf" formats. Please distribute this information to the appropriate district staff and area offices as well as consulting engineers working on TxDOT projects.

If you have questions or comments concerning these standards drawings, please contact Mark A. Steves, P.E., at (512) 416-2265, or Jon T. Ries at (512) 416-2191.

Note: Original signed by William R. Cox

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