

IOWA DEPARTMENT OF TRANSPORTATION

To Office Bridges and Structures Date December 1, 2010
Attention All Employees Ref No. 521.1
From Gary Novey
Office Bridges and Structures
Subject Revision of Steel Diaphragms Standards 1036-BTBW, 1036-BTBR, 1036CR, 1036CW, 1036DR, 1036DW, 1036-BTER, 1036-BTEW, 4730, 4748, 4770, & 4790 (CADD M0186)

The revised standards are located in the EnglishBeams.dgn file. Electronic copies are available in the following Office of Bridges and Structures standard directory
W:\Highway\Bridge\Standards\Bridges and on the Internet:

<http://www.iowadot.gov/bridge/standard.htm>

This Cadd Memo is for the revision of the Steel Intermediate Diaphragms for the Bulb Tee “D” Beams and “E” Beams. The reason for the revision is a conflict with the deflected strands interfering with the bolt holes openings for the intermediate steel diaphragms.

The rules of locating the diaphragm bolt holes are:

- BTD beams with lengths of 50’ thru 120’ will have the diaphragms located at the center of each beam length.
- BTD beams with lengths of 125’ thru 135’ will have 2 diaphragms per beam length. These locations are at 20’ on each side of the center of each beam length.
- BTE beams with lengths of 60’ thru 120’ will have the diaphragms located at the center of each beam length.
- BTE beams with lengths of 125’ thru 155’ will have 2 diaphragms per beam length. These locations are at 20’ on each side of the center of each beam length.
- For bridges with the diaphragms staggered on the beam web due to the skew, each staggered set of diaphragm holes shall be located at an equal distance from the centerline of the beam length.

The 1036 standards had the “INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATION” details changed to reflect the 2 intermediate diaphragms for the 125 foot and greater beam lengths.

The 4730, 4748, 4770, and 4790 standards have a reference to the number of intermediate diaphragms in the encircled 1 reference note. This note was changed on each of these standards to reflect 2 steel diaphragms, instead of 3, for the 125 foot and greater beam lengths.

Included in this revision is the addition of an alternate detail (Section C-C) shown outside the border sheet which is showing the bent plates bent at a angle less than and greater than 90 degrees when the diaphragms are not perpendicular to the beams for skews 7 degrees 30 minutes and less. This alternate detail has been added to standards 1036-BTBW, 1036-BTBR, 1036CR, 1036CW, 1036DR, 1036DW, 1036-BTER & 1036-BTEW.

One last revision change is the renaming of the 1036CR, 1036CW, 1036DR, & 1036DW standards to include BT (Bulb Tee) in the naming of the diaphragm standards so they are associated with the BT beam types. These standards will be renamed to 1036BTCR, 1036BTCW, 1036BTDR, & 1036BTDW.

For any questions, please check with Stuart Nielsen or Thayne Sorenson.

GAN/ssn