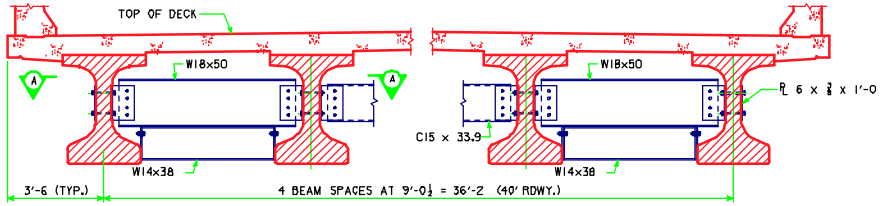
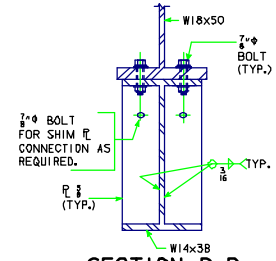
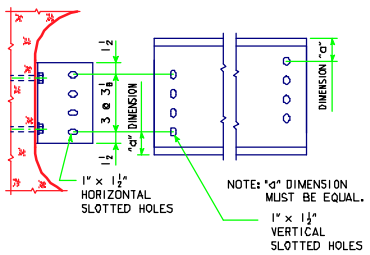


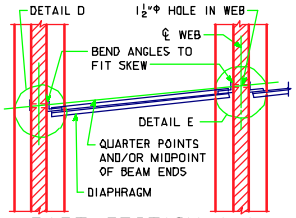

SECTION SHOWING INTERMEDIATE DIAPHRAGM




SECTION B-B

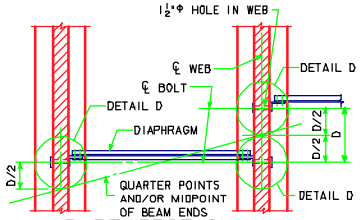



SLOTTED HOLE DETAILS



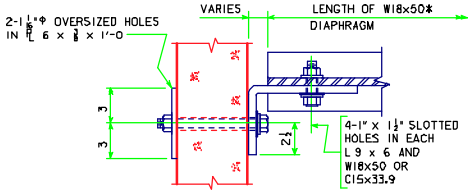

PART SECTION A-A

FOR BRIDGES SKEWED 0° & 5°
NOTE: THE W14x38 WILL REQUIRE BEVELED ENDS TO MATCH THE SKEW.



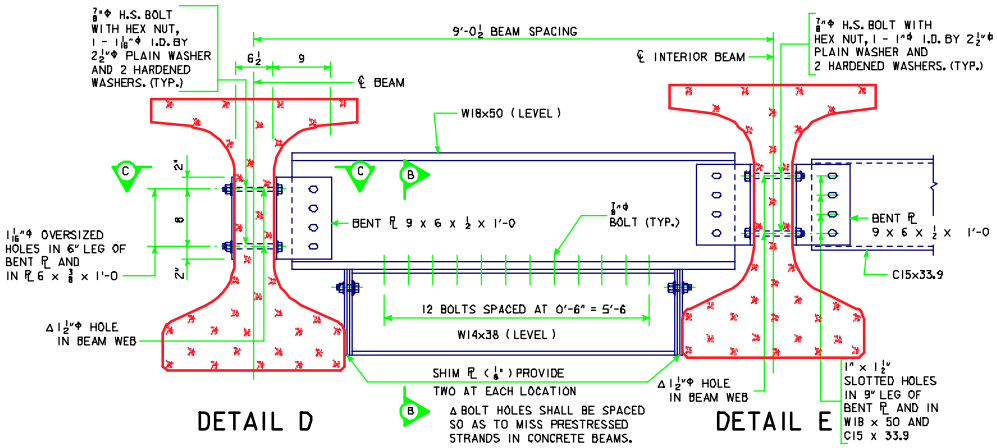

PART SECTION A-A

FOR BRIDGES SKEWED 10° OR 15°




SECTION C-C

* THE LENGTH OF THE W18x50 AND C15x33.9 SHOWN IN THE TABLE IS BASED ON A CLEARANCE OF 2 1/4 BETWEEN THE FACE OF BEAM WEB AND END OF THE W18x50 AND C15x33.9




DETAIL D

DETAIL E

NOTE: W18x50 AND W14x38 SHALL BE INSTALLED ONLY IN THE OUTSIDE BAYS.

## BULB TEE BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL PER BRIDGE

| SKEW DESIGNATION | | 0° & 5° | | | | 10° & 15° | | | |
|---|---|---|---|---|---|---|---|---|---|
| BEAM DESIGNATIONS / PIECE DESCRIPTIONS | | BTD110, BTD115, & BTD120 | | BTD125 & BTD130 | | BTD110, BTD115, & BTD120 | | BTD125 & BTD130 | |
| | | NO. | WEIGHT | NO. | WEIGHT | NO. | WEIGHT | NO. | WEIGHT |
| 7/8"Φ x 9" H.S. BOLTS WITH NUTS & WASHERS = 2.2 LB | | 20 | 44 | 60 | 132 | 32 | 70 | 96 | 211 |
| 7/8"Φ x 2 1/2" H.S. BOLTS WITH NUTS & WASHERS = 1.0 LB | | 176 | 176 | 528 | 528 | 176 | 176 | 528 | 528 |
| BENT PL 9 x 6 x 1/2 x 1'-0 = 25.5 LB | | 16 | 408 | 48 | 1,224 | 16 | 408 | 48 | 1,224 |
| BACKING PL 6 x 3/8 x 1'-0 = 7.65 LB | | 4 | 31 | 12 | 92 | 16 | 122 | 48 | 367 |
| PL 6 3/4 x 1'-2 x 5/8 = 10.0 LB | | 8 | 80 | 24 | 240 | 8 | 80 | 24 | 240 |
| PL 6 3/4 x 1'-2 x 1/8 = 3.3 LB | | 16 | 53 | 48 | 158 | 16 | 53 | 48 | 158 |
| | | | | | | | | | |
| | | | | | | | | | |
| | LENGTH | | | | | | | | |
| W18x50 = 50 LB/FT | 8'-1 1/2 | 4 | 1,625 | 12 | 4,875 | 4 | 1,625 | 12 | 4,875 |
| W14x38 = 38 LB/FT | 6'-5 1/2 | 4 | 982 | 12 | 2,945 | 4 | 982 | 12 | 2,945 |
| C15x33.9 = 33.9 LB/FT | 8'-1 1/2 | 4 | 1,102 | 12 | 3,305 | 4 | 1,102 | 12 | 3,306 |
| | | | | | | | | | |
| | | | | | | | | | |
| INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LB) | | 4,501 | | 13,499 | | 4,618 | | 13,854 | |

## NOTES:

ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

SHOP DRAWINGS OF THE STEEL DIAPHRAGMS SHOWING LAYOUT AND DETAILS OF THE DIAPHRAGMS SHALL BE SUBMITTED FOR APPROVAL.

ALL COSTS FOR FURNISHING AND INSTALLING STEEL INTERMEDIATE DIAPHRAGMS SHALL BE INCLUDED IN THE PRICE BID FOR STRUCTURAL STEEL.

THE 1 1/2"Φ HOLES FOR THE 7/8"Φ H.S. BOLTS SHALL BE CAST INTO THE WEB. DRILLING IS NOT ALLOWED.

THE 7/8"Φ H.S. BOLTS THROUGH THE WEB SHALL HAVE A THREAD LENGTH OF 3" MIN. AND 4" MAX. AND SHALL MEET THE REQUIREMENTS OF ASTM A449.

ALL BOLTS ARE TO BE TIGHTENED PRIOR TO PLACING BRIDGE FLOOR CONCRETE.

LATEST REVISION DATE

APPROVED BY BRIDGE ENGINEER

Iowa Department of Transportation
Highway Division

STANDARD DESIGN - 40' ROADWAY, 2 SPAN BRIDGES

PRETENSIONED PRESTRESSED BULB TEE CONCRETE BEAM BRIDGES

ALL SPANS — JULY, 2004

STEEL INTERMEDIATE DIAPHRAGM DETAILS

BT40-SDI-04