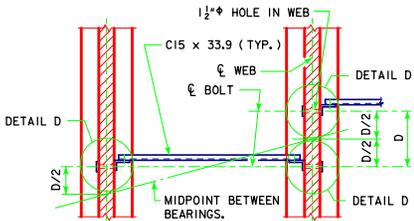
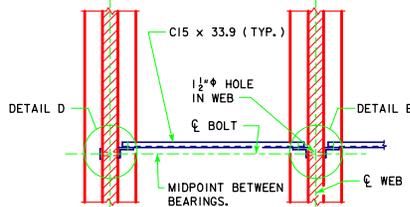


SECTION SHOWING INTERMEDIATE DIAPHRAGM



SECTION A-A
FOR 15° AND 30° SKEW BRIDGES



SECTION A-A
FOR 0° SKEW BRIDGES

**INTERMEDIATE DIAPHRAGM
STRUCTURAL STEEL**

ONE CONNECTION DETAIL "E"

2 - 1/2" x LENGTH H.S. BOLTS WITH NUTS AND WASHERS		
WEB THICKNESS	LENGTH OF H.S. BOLTS	WEIGHT PER DETAIL "E"
6"	9"	4.30 LBS.
7"	10"	4.66 LBS.
9"	12"	5.34 LBS.
2 - L 6 x 4 x 1/2 x 1'-3 1/4 = 41.2 LBS.		

ONE CONNECTION DETAIL "D"

2 - 1/2" x LENGTH H.T.S. BOLTS WITH NUTS AND WASHERS		
WEB THICKNESS	LENGTH OF H.S. BOLTS	WEIGHT PER DETAIL "D"
6"	9"	4.30 LBS.
7"	10"	4.66 LBS.
9"	12"	5.34 LBS.
1 - BACKING L 4 x 3/8 x 1'-3 1/4 = 6.5 LBS.		
1 - L 6 x 4 x 1/2 x 1'-3 1/4 = 20.6 LBS.		

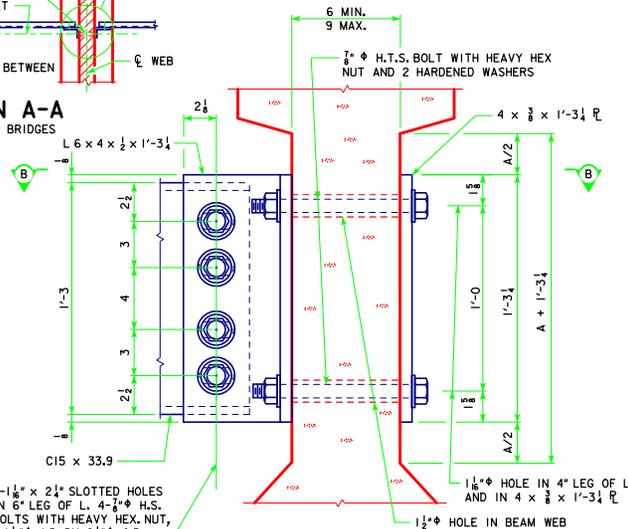
ONE C15 x 33.9 DIAPHRAGM

WEB THICKNESS	7'-0"	
	BEAM SPACING	UNIT WEIGHT (LBS.)
6"	6'-2 5/8"	210.8
7"	6'-1 1/8"	208.0
9"	5'-11 1/8"	202.4

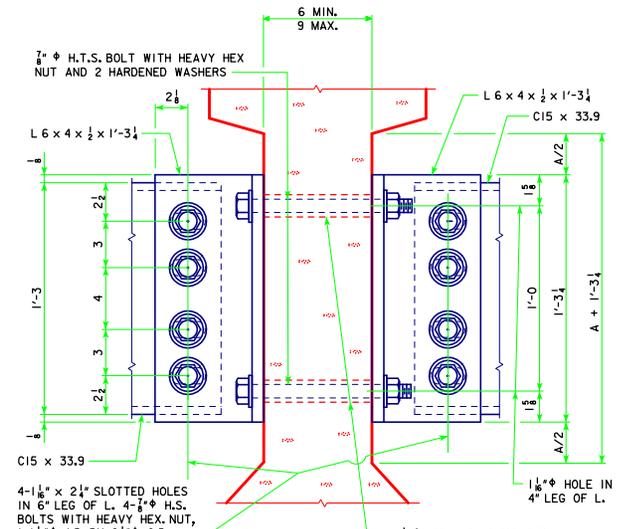
DIAPHRAGM CONNECTION BOLTS

8 - 7/8" x 0'-2 1/4" H.S. BOLTS WITH NUTS AND WASHERS, PER UNIT DIAPHRAGM
10.3 LBS.

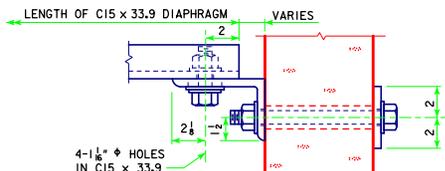
* THE LENGTH OF THE C15 x 33.9 SHOWN IN THE TABLE IS BASED ON A VARIABLE CLEARANCE OF 1/16" TO 2/16" BETWEEN THE FACE OF BEAM WEB AND END OF C15 x 33.9.



DETAIL D



DETAIL E



SECTION B-B

BEAM SERIES	DIMENSIONS	
	A + 1'-3 1/4"	A/2
A	1'-4"	3/8"
B	1'-8"	2 3/8"
C	2'-1"	4 7/8"
D	2'-7 1/2"	8 5/8"

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

THE 7/8" 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 - 30' ROADWAY, SINGLE SPAN BRIDGE
**PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGES**

APRIL, 2012

**INTERMEDIATE STEEL
DIAPHRAGMS**

H30SI-30-12