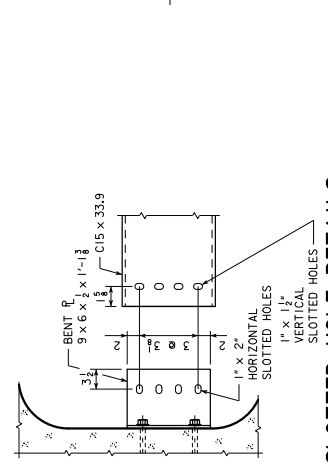
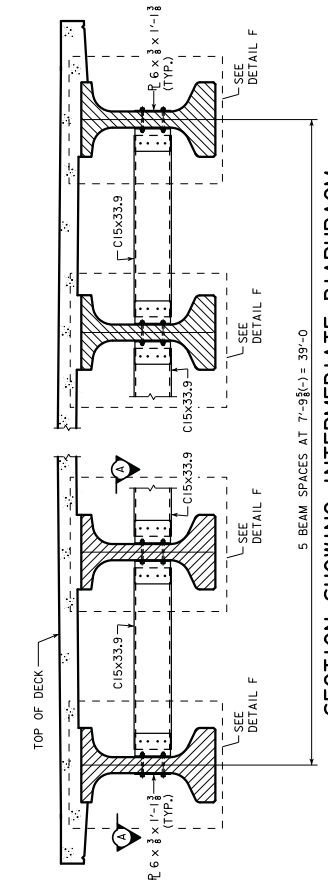


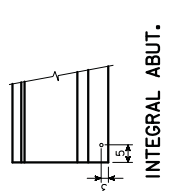
**INTERMEDIATE DIAPHRAGM BOLT HOLE LOCATIONS**



**SLOTTED HOLE DETAILS**

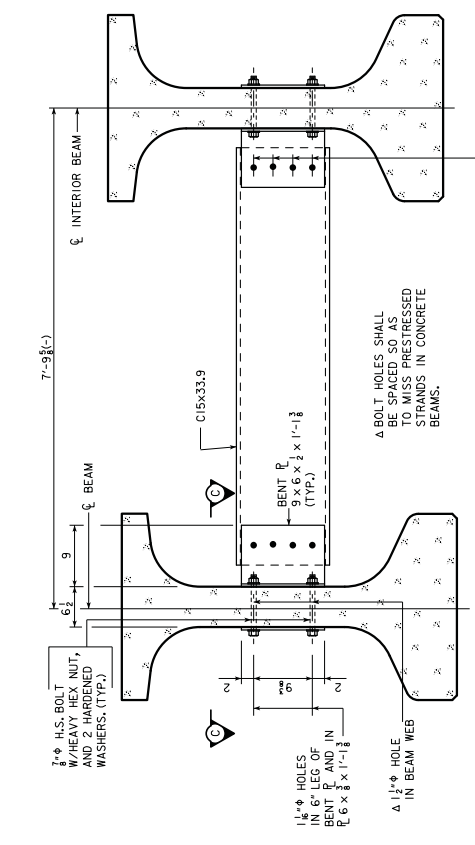


**SECTION SHOWING INTERMEDIATE DIAPHRAGM**

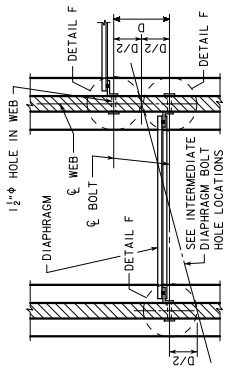


**INTEGRAL ABUT.**

**FIXED PIER**



**DETAIL F**



**PART SECTION A-A**

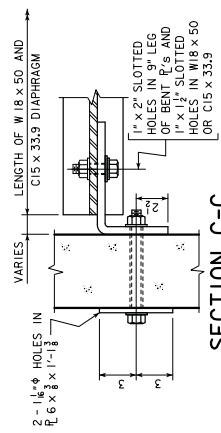
<b>STRUCTURAL STEEL</b>	9544 LBS.
<b>WEIGHT</b>	

NOTE: STRUCTURAL STEEL WEIGHT IS INCLUDED ON THE SUMMARY QUANTITIES SHEET.

**BULB TEE "D" BEAM INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL**

ONE BEAM CONNECTION (DETAIL "F" AND/OR DETAIL "G")	NO. OF BEAM CONNECTIONS	WEIGHT
2 - 7/8" x 9 1/2" H.S. BOLTS WITH NUTS & WASHERS = 4.8 LBS.	60	288
<b>ONE DETAIL "G"</b>		
2 - BENT 9 x 6 x 1/2 x 1-1/8 = 57.0 LBS.		
1 - BACKING 6 x 3/8 x 1-1/8 = 6.5 LBS.	60	510
<b>ONE DETAIL "F"</b>		
1 - BENT 9 x 6 x 1/2 x 1-1/8 = 28.5 LBS.	60	1710
<b>ONE DIAPHRAGM</b>		
8 - 1/2" x 2 1/2" H.S. BOLTS WITH NUTS & WASHERS = 10.3 LBS.	30	309
<b>LENGTH OF MEMBER</b>		
1 - C15 x 33.9 = 33.9 LBS./FT.	30	6727
<b>INTERMEDIATE DIAPHRAGM STRUCTURAL STEEL - TOTAL (LBS.)</b>		
		9544

**NOTES:**  
 ALL DIAPHRAGM MATERIALS, INCLUDING BOLTS, NUTS AND 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 1/2" HOLES FOR THE 8" H.S. BOLTS SHALL HAVE A 1/4" MIN. RADIUS 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 WITH THE FOLLOWING EXCEPTION: BOLTS IN DIAPHRAGMS LOCATED UNDER LONGITUDINAL BRIDGE FLOOR CONSTRUCTION JOINTS SHALL NOT BE TIGHTENED UNTIL STAGE TWO OF THE BRIDGE FLOOR HAS BEEN PLACED.



**SECTION C-C**

DESIGN FOR 30° SKEW, RT. AHEAD  
**409'-0" x 32'-0" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE**  
 137'-0" INTERIOR SPAN  
**INTERMEDIATE DIAPHRAGM DETAILS**  
 STA. 55+17  
 JULY, 2015  
**SIOUX COUNTY**