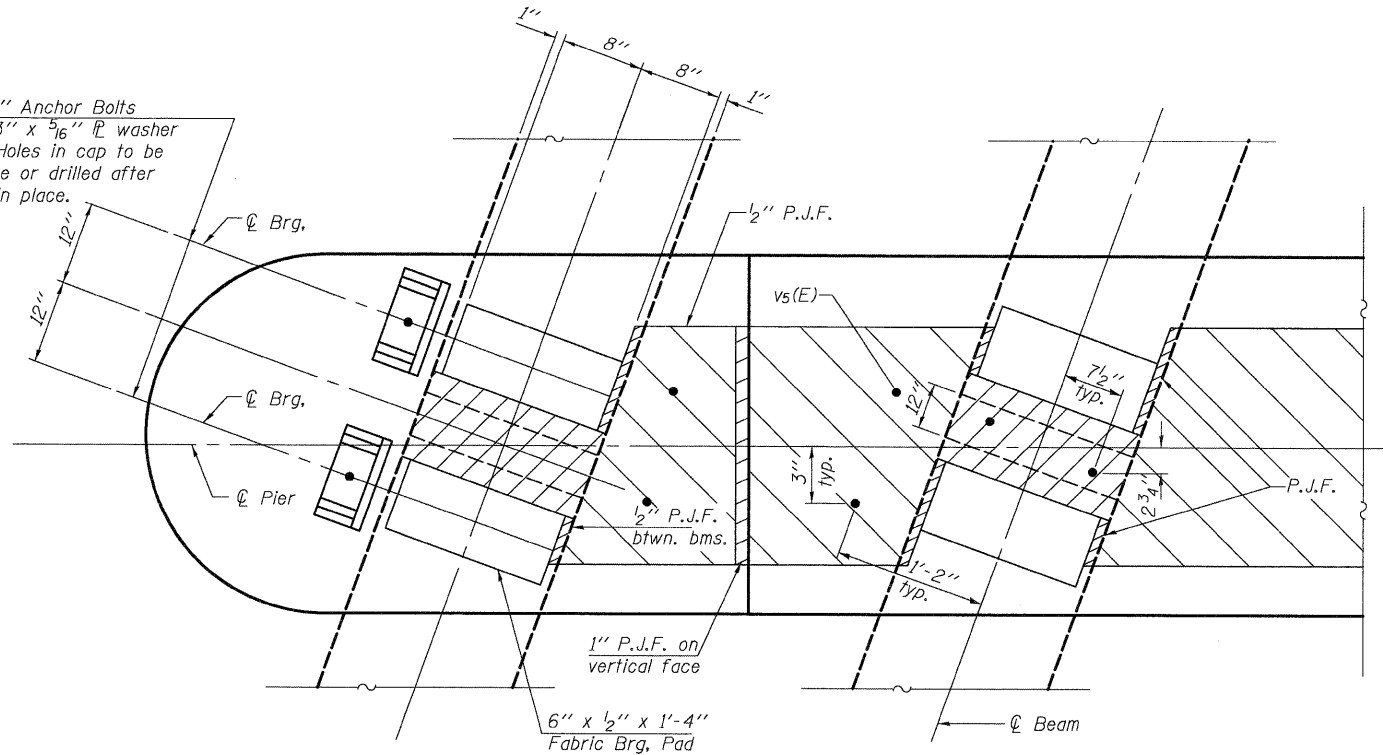


1/2" X 18" Anchor Bolts with 3" x 3" x 5/16" PL washer under nut. Holes in cap to be cast in place or drilled after beams are in place.



**PLAN AT PIER**

(Showing bearing pad and PJF details)

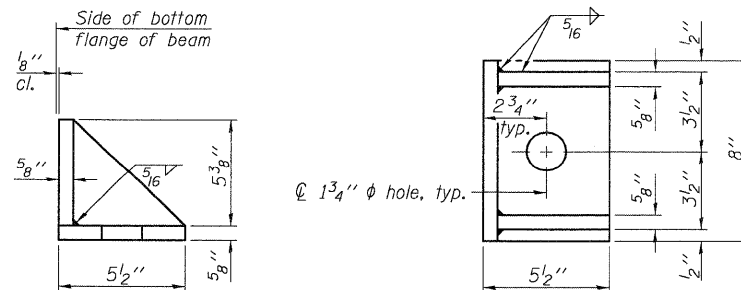
**Notes:**  
 Reinforcement bars in diaphragm are billed with superstructure on sheet 18 of 45.  
 Concrete in diaphragm is included with Concrete Superstructure on sheet 18 of 45.  
 For details of bars s(E), s<sub>1</sub>(E) and s<sub>2</sub>(E) see sheet 18 of 45.  
 The s(E), s<sub>1</sub>(E) and s<sub>2</sub>(E) bars shall be placed parallel to the beams.  
 Spacing for these bars shall be at right angles to the beams.  
 See sheet 19 of 45 for Sections A-A and B-B.  
 Cost of 90 Lb. roofing felt is included with Concrete Superstructure.  
 The side retainer shall be galvanized after shop fabrication according to AASHTO M 111.  
 Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (F<sub>y</sub>=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts for side retainers may be either cast in place or installed in holes drilled after the supporting member is in place and prior to pouring the deck.

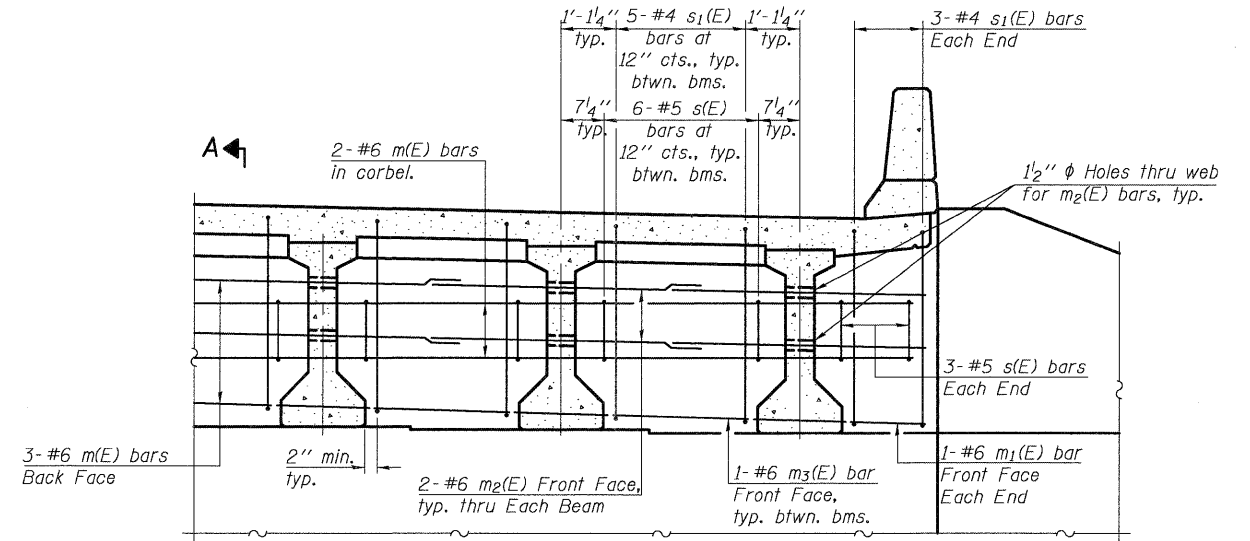
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Cost of side retainer and anchor bolts shall be included with Concrete Structures.

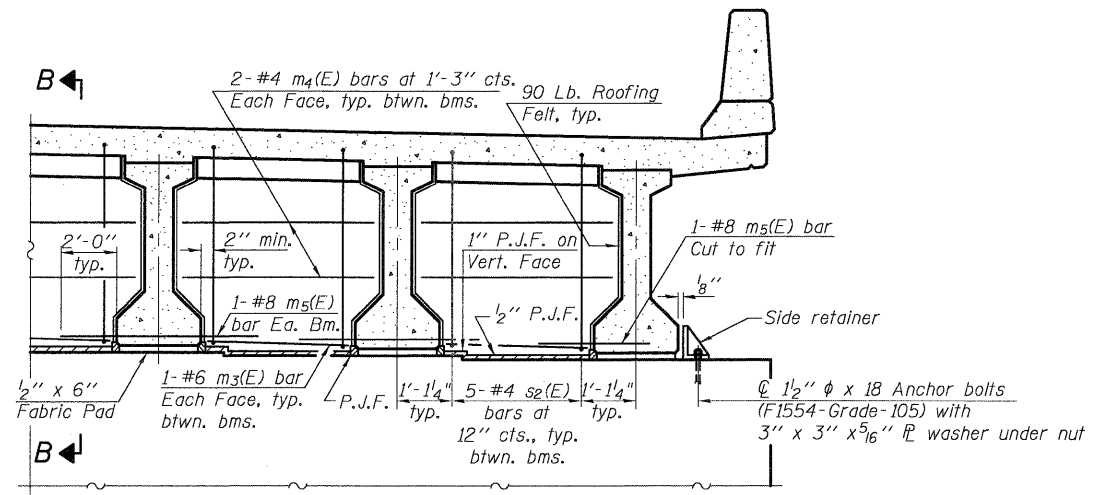


**SIDE RETAINER**

(2 required each side of pier).  
 Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



**DIAPHRAGM ELEVATION AT ABUTMENT**



**DIAPHRAGM AT PIER**

**MIN. BAR LAP**  
 #6 bar = 2'-9"

**DIAPHRAGM DETAILS**  
 SN 006-0172 (EB) & SN 006-0173 (WB)

PLOT DATE = 05/08/2009  
 FILE NAME = ..\060172\0173-66908-020-diaphragm-details.dgn  
 USER NAME = CFC

PI-2DI 10-1-08

**CB Coombe-Bloxdorf P.C.**  
 -CIVIL ENGINEERS-  
 -STRUCTURAL ENGINEERS-  
 -LAND SURVEYORS-  
 Design Firm License No. 184-002703

PROJECT NO. 05061	SCALE
DATE 8/05/09	DESIGN BY RM/MCB
DRAWN BY TFG	CHECKED BY MCR

SHEET NO. 20	F.A.I. RTE. 80	SECTION *	COUNTY BUREAU	TOTAL SHEETS 344	SHEET NO. 173
45 SHEETS	CONTRACT NO. 66908				
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT					

\*06-17BR & BR-1, TVB-M, 6BR & 6, 7 RS-1 & 1J