

INTERIOR BEAM MOMENT TABLE								
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4
$I$	(in <sup>4</sup> )	144,117	-	144,117	-	144,177	-	144,177
$I'$	(in <sup>4</sup> )	381,751	-	381,751	-	381,751	-	381,751
$S_b$	(in <sup>3</sup> )	6,834	-	6,834	-	6,833	-	6,833
$S_b'$	(in <sup>3</sup> )	11,081	-	11,081	-	11,081	-	11,081
$S_t$	(in <sup>3</sup> )	5,355	-	5,355	-	5,356	-	5,356
$S_t'$	(in <sup>3</sup> )	28,175	-	28,175	-	28,175	-	28,175
$DC1$	(k/')	1.24	-	1.24	-	1.24	-	1.24
$M_{DC1}$	(k)	768.0	-	716.3	-	941.5	-	708.0
$DC2$	(k/')	0.15	0.15	0.15	0.15	0.15	0.15	0.15
$M_{DC2}$	(k)	57.8	70.7	21.4	60.8	42.6	83.7	52.3
$DW$	(k/')	0.27	0.27	0.27	0.27	0.27	0.27	0.27
$M_{DW}$	(k)	103.1	134.3	38.1	116.3	75.7	159.0	93.2
$M_L + IM$	(k)	767.0	722.0	627.0	740.0	702.0	797.0	773.0

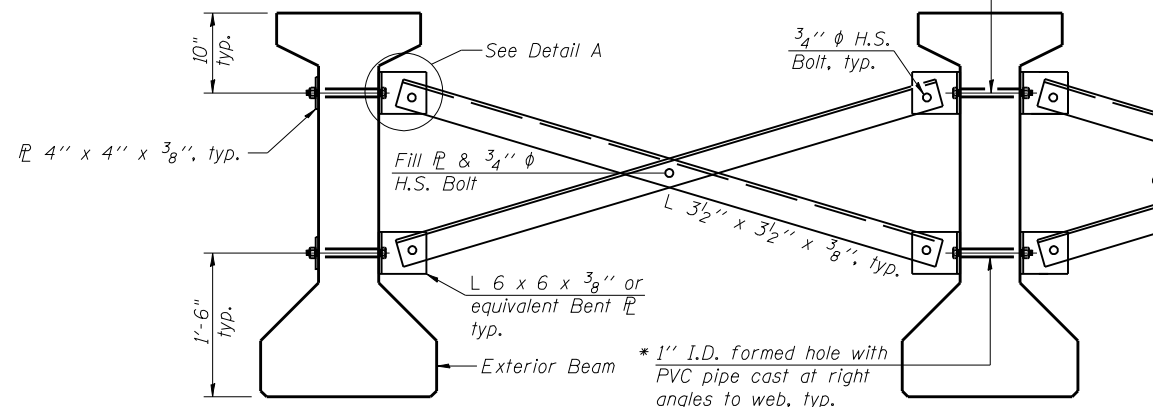
INTERIOR BEAM REACTION TABLE									
		W. Abut.	Pier 1 Span 1	Pier 1 Span 2	Pier 2 Span 2	Pier 2 Span 3	Pier 3 Span 3	Pier 3 Span 4	E. Abut.
$R_{DC1}$	(k)	42.7	42.7	42.0	42.0	48.2	48.2	42.7	42.7
* $R_{DC2}$	(k)	4.2	5.9	5.9	5.4	5.4	6.4	6.4	4.0
* $R_{DW}$	(k)	7.4	10.4	10.4	9.6	9.6	11.4	11.4	7.1
* $R_L + IM$	(k)	66.3	49.1	49.1	49.4	49.4	52.1	52.1	66.5
$R_{Total}$	(k)	120.6	108.1	107.5	106.5	112.6	118.2	112.7	120.2

\* The total  $R_{DC2}$ ,  $R_{DW}$  and  $R_L + IM$  are assumed to be distributed evenly to each bearing line at a pier regardless of the span ratios. The bearing design at a pier is based on the maximum reactions of either span.

$I$ : Non-composite moment of inertia of beam section (in<sup>4</sup>).  
 $I'$ : Composite moment of inertia of beam section (in<sup>4</sup>).  
 $S_b$ : Non-composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_b'$ : Composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t$ : Non-composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $S_t'$ : Composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).  
 $DC1$ : Un-factored non-composite dead load (kips/ft.).  
 $M_{DC1}$ : Un-factored moment due to non-composite dead load (kip-ft.).  
 $DC2$ : Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).  
 $M_{DC2}$ : Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).  
 $DW$ : Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).  
 $M_{DW}$ : Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).  
 $M_L + IM$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

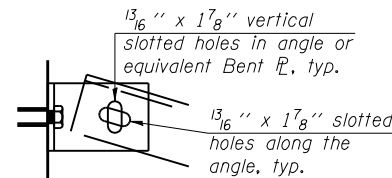
\* Fabricator shall locate to miss strands within permissible tolerances.

$\frac{3}{4}$ "  $\phi$  A307 Bolts with lock nuts., typ.  
 Bolts through the concrete web shall be tightened to snug tight only.



Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.  
 Two hardened washers are required for each set of oversized holes.  
 All holes shall be  $\frac{15}{16}$ "  $\phi$  unless otherwise noted.  
 $\frac{5}{16}$ " x 3" x 3" plate washers are required over all slotted holes.  
 All bolts shall be galvanized according to AASHTO M232.  
 Bracing shall be installed as beams are erected and tightened as soon as possible during erection.  
 Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete I-Beams.



DETAIL A

PERMANENT BRACING DETAILS

**EFK Moen, LLC**  
 Civil Engineering Design  
 331 Salem Place, Suite 225  
 Fairview Heights, IL 62208  
 Phone 618-206-4250

USER NAME = cdl	DESIGNED - CTW	REVISED -
PLOT SCALE = 0.2" = 1' / IN.	CHECKED - CDL	REVISED -
PLOT DATE = 3/24/2014	DRAWN - CTW	REVISED -
	DATE - 3/24/2014	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

48" PPC I-BEAM DETAILS (2 OF 2)  
 STRUCTURE NO. 092-0207

SHEET NO. 23 OF 33 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
711	116BR-1	VERMILION	84	53
CONTRACT NO. 70614				
ILLINOIS FED. AID PROJECT				

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