

**INTERIOR BEAM REACTION TABLE 1-8  
NORTH VAULTED SPAN 1**

914 mm PPC I-BEAM	N. Approach Bent	N. Abutment
R <sub>Q</sub> (kN)	113	113
R <sub>sQ</sub> (kN)	53	53
R <sub>L</sub> (kN)	180	180
Imp. (kN)	52	52
R (Total) (kN)	398	398

**INTERIOR BEAM REACTION TABLE 9-17  
SPANS 2 AND 3**

1829 mm PPC Bulb T Beam	N. Abut.	Pier 1 Span 2	Pier 1 Span 3	S. Abut.
R <sub>Q</sub> (kN)	276	276	424	424
R <sub>sQ</sub> (kN)	50	150	150	113
R <sub>L</sub> (kN)	195	170	170	202
Imp. (kN)	46	40	33	39
R (Total) (kN)	567	636	777	778

**INTERIOR BEAM MOMENT TABLE 1-8  
NORTH VAULTED SPAN 1**

914mm PPC I-BEAM	0.5 Span
I (10 <sup>6</sup> mm <sup>4</sup> )	20249
I' (10 <sup>6</sup> mm <sup>4</sup> )	71834
S <sub>b</sub> (10 <sup>3</sup> mm <sup>3</sup> )	51867
S <sub>b</sub> ' (10 <sup>3</sup> mm <sup>3</sup> )	96515
S <sub>t</sub> (10 <sup>3</sup> mm <sup>3</sup> )	38643
S <sub>t</sub> ' (10 <sup>3</sup> mm <sup>3</sup> )	423250
Q (kN/m)	14.9
M <sub>Q</sub> (kN·m)	430
s <sub>Q</sub> (kN/m)	6.32
M <sub>sQ</sub> (kN·m)	201
M <sub>L</sub> (kN·m)	512
M (Imp) (kN·m)	146

**INTERIOR BEAM MOMENT TABLE 9-17  
SPANS 2 AND 3**

1829 mm PPC Bulb T Beam	0.4 Span 2	Pier 1	0.6 Span 3
I (10 <sup>6</sup> mm <sup>4</sup> )	227220	227220	227220
I' (10 <sup>6</sup> mm <sup>4</sup> )	416430	-	416430
S <sub>b</sub> (10 <sup>3</sup> mm <sup>3</sup> )	244428	244428	244428
S <sub>b</sub> ' (10 <sup>3</sup> mm <sup>3</sup> )	317592	-	317592
S <sub>t</sub> (10 <sup>3</sup> mm <sup>3</sup> )	252635	252635	252635
S <sub>t</sub> ' (10 <sup>3</sup> mm <sup>3</sup> )	804245	-	804245
Q (kN/m)	21.20	21.20	21.20
M <sub>Q</sub> (kN·m)	1789	0	4222
s <sub>Q</sub> (kN/m)	7.00	7.00	7.00
M <sub>sQ</sub> (kN·m)	143.10	1058.00	915.00
M <sub>L</sub> (kN·m)	884	1187	1358
M (Imp) (kN·m)	210	282	265

**Legend:**

I and I' are the moment of inertia and composite moment of inertia of the beam section.  
S<sub>b</sub> and S<sub>b</sub>' are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.  
S<sub>t</sub> and S<sub>t</sub>' are the non-composite and composite section modulus for the top fiber of the prestressed beam.  
M<sub>Q</sub> is the moment due to dead loads on non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.  
M<sub>sQ</sub> is the moment due to dead loads on the composite section.  
M<sub>L</sub> is the moment due to live load on the composite section.  
M (Imp) is the moment due to live load impact on the composite section.  
Pier 1 Span 2, Pier 1 Span 3, are the loads distributed to each girder. The diaphragm weight is not included in the dead load.

REVISION	DATE	DESCRIPTION
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION		
BEAM REACTION AND MOMENT TABLE		
RAMPS B-3 AND B-5 OVER WAR MEMORIAL DR. AND RAMP B-6 F.A.I. ROUTE 74 SECTION (72-7) R-3 PEORIA COUNTY STA. 10+618.61 (RAMP B-3) STA. 10+472.60 (RAMP B-5) STRUCTURE NUMBER 072-0190		
PARSONS TRANSPORTATION GROUP CHICAGO, ILLINOIS		
DRAWING NO. 16	SCALE N.T.S.	DATE 2-21-03
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