

ROUTE NO.	SECT.	COUNTY	SHEET NO.	TOTAL SHEETS
F.A.I. 74	(72-7) R-3	PEORIA	461	1360
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

CONTRACT NO. 68200

**INTERIOR BEAM REACTION TABLE 1-9
SOUTH VAULTED SPAN 1**

		S. Approach Bent	S. Abutment
$R\bar{Q}$	(kN)	140	140
$R_s\bar{Q}$	(kN)	61	61
$R\bar{L}$	(kN)	171	171
Imp.	(kN)	47	47
R (Total)	(kN)	419	419

**INTERIOR BEAM REACTION TABLE
SPANS 2,3, AND 4**

1829 mm Bulb-T PPC I-BEAM	S. Abut.	Pier 1 Span 2	Pier 1 Span 3	Pier 2 Span 3		Pier 2 Span 4		N. Abut.	
	10-17	10-17	10-17	10-12	13-17	10-12	13-17	10-12	13-17
$R\bar{Q}$	(kN)	374	374	428	428	404	370	404	370
$R_s\bar{Q}$	(kN)	126	196	196	195	195	195	124	124
$R\bar{L}$	(kN)	222	189	189	203	188	203	256	221
Imp.	(kN)	47	40	38	41	38	44	55	48
R (Total)	(kN)	769	799	851	867	849	846	839	763

**INTERIOR BEAM MOMENT TABLE 1-9
SOUTH VAULTED SPAN 1**

		0.5 Span
I	(10 ⁶ mm ⁴)	37859
I'	(10 ⁶ mm ⁴)	112990
S_b	(10 ³ mm ³)	84431
S_b'	(10 ³ mm ³)	142246
S_t	(10 ³ mm ³)	61221
S_t'	(10 ³ mm ³)	414384
\bar{Q}	(kN/m)	15.8
$M\bar{Q}$	(kN·m)	616
$s\bar{Q}$	(kN/m)	6.88
$M_s\bar{Q}$	(kN·m)	299
$M\bar{L}$	(kN·m)	581
M (Imp)	(kN·m)	159

**INTERIOR BEAM MOMENT TABLE
SPANS 2,3 AND 4**

1829 mm Bulb-T PPC I-BEAM	0.4 Span 2	Pier 1	0.5 Span 3	Pier 2		0.6 Span 4	
	10-17	10-17	10-17	10-12	13-17	10-12	13-17
I	(10 ⁶ mm ⁴)	227218	227218	227218	227218	227218	227218
I'	(10 ⁶ mm ⁴)	430400	-	430400	-	452170	430400
S_b	(10 ³ mm ³)	244428	244428	244428	244428	244428	244428
S_b'	(10 ³ mm ³)	321372	-	321372	-	326958	321372
S_t	(10 ³ mm ³)	252689	252689	252689	252689	252689	252689
S_t'	(10 ³ mm ³)	878834	-	878834	-	1013740	878834
\bar{Q}	(kN/m)	22.4	22.4	22.4	22.4	24.5	22.4
$M\bar{Q}$	(kN·m)	3115	0	4075	0	3328	3042
$s\bar{Q}$	(kN/m)	9.79	9.79	9.79	9.79	9.79	9.79
$M_s\bar{Q}$	(kN·m)	809	1281	557	1233	807	791
$M\bar{L}$	(kN·m)	1295	1327	1220	1512	1265	1270
M (Imp)	(kN·m)	276	283	244	325	272	273

Legend:

I and I' are the moment of inertia and composite moment of inertia of the beam section.
 S_b and S_b' are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.
 S_t and S_t' are the non-composite and composite section modulus for the top fiber of the prestressed beam.
 $M\bar{Q}$ is the moment due to dead loads on non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.
 $M_s\bar{Q}$ is the moment due to dead loads on the composite section.
 $M\bar{L}$ 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 2 Span 3, etc. 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-1 AND B-4 OVER F.A.I. ROUTE 74 (I-74) RAMPS A-3 AND B-3 F.A.I. ROUTE 74 SECTION (72-7) R-3 PEORIA COUNTY STATION 10+779.03 STRUCTURE NUMBER 072-0183		
PARSONS TRANSPORTATION GROUP CHICAGO, ILLINOIS		
DRAWING NO. 18	SCALE N.T.S.	DATE 2-18-03
		SHEET NO. 18

Time: 10:04:41 AM

Date: 1/19/2004

File name: P:\643996\structure\072-0183\Sheet\Tracings\ST0002-10720183.dgn

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