

GIRDER NO. 7 MOMENT TABLE

	0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.6 Span 3
Is	115482	191611	115482	124165	107330
Ic (n)	200151	---	200151	---	190621
Ic (3n)	152658	---	152658	---	144237
Ss	2678	4342	2678	2863	2489
Sc (n)	3315	---	3315	---	3132
Sc (3n)	3011	---	3011	---	2829
Sbi	75.0	141.7	75.0	74.3	60.8
φ	0.96	1.52	0.96	1.40	0.95
M _ℓ	1993	6887	1578	4389	1294
s _ℓ	0.42	---	0.42	---	0.42
Ms _ℓ	894	---	750	---	602
M _t	1441	1915	1397	1353	1031
M (Imp)	225	288	203	217	185
S ₃ [M _t +M(Imp)]	2782	3679	2672	2621	2031
Ma	7371	13735	6499	9113	5104
Mbi	7	17	0	8	2
fs _ℓ (non-comp)	8.9	19.0	7.1	18.4	6.2
fs _ℓ (comp)	3.6	---	3.0	---	2.6
fs ₃ [M _t +M(Imp)]	10.1	10.2	9.7	11.0	7.8
fw	1.2	1.5	0.0	1.4	0.3
fs+fw (Overload)	23.5	28.1	19.8	28.3	16.8
fs (Total)	29.3	38.0	25.6	38.2	21.5
fs (Total)+fw	30.5	36.5	25.7	36.8	21.9
VR	71.2	---	70.6	---	60.5
Fb	50.0	47.6	50.0	48.4	50.0

GIRDER NO. 8 MOMENT TABLE

	0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.6 Span 3
Is	115482	191611	115482	124165	107330
Ic (n)	200151	---	200151	---	190621
Ic (3n)	152658	---	152658	---	144237
Ss	2678	4342	2678	2863	2489
Sc (n)	3315	---	3315	---	3132
Sc (3n)	3011	---	3011	---	2829
Sbi	75.0	141.7	75.0	74.3	60.8
φ	0.96	1.52	0.96	1.40	0.95
M _ℓ	2180	6908	1638	4514	1348
s _ℓ	0.42	---	0.42	---	0.42
Ms _ℓ	975	---	788	---	626
M _t	1246	1568	1199	1186	915
M (Imp)	195	236	174	190	164
S ₃ [M _t +M(Imp)]	2406	3012	2293	2298	1803
Ma	7229	12897	6135	8856	4909
Mbi	6	16	3	8	5
fs _ℓ (non-comp)	9.8	19.1	7.3	18.9	6.5
fs _ℓ (comp)	3.9	---	3.1	---	2.7
fs ₃ [M _t +M(Imp)]	8.7	8.3	8.3	9.6	6.9
fw	1.0	1.4	0.5	1.3	0.9
fs+fw (Overload)	23.1	26.3	19.2	27.5	16.8
fs (Total)	29.1	35.6	24.4	37.1	20.9
fs (Total)+fw	30.1	34.3	24.9	35.8	21.8
VR	61.6	---	63.7	---	61.4
Fb	50.0	47.3	50.0	47.8	50.0

GIRDER NO. 9 MOMENT TABLE

	0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.6 Span 3
Is	115482	191611	115482	124165	107330
Ic (n)	200151	---	200151	---	190621
Ic (3n)	152658	---	152658	---	144237
Ss	2678	4342	2678	2863	2489
Sc (n)	3315	---	3315	---	3132
Sc (3n)	3011	---	3011	---	2829
Sbi	75.0	141.7	75.0	74.3	60.8
φ	0.96	1.52	0.96	1.40	0.95
M _ℓ	2357	7298	1686	4367	1396
s _ℓ	0.42	---	0.42	---	0.42
Ms _ℓ	1050	---	821	---	646
M _t	1170	1464	1115	1054	881
M (Imp)	183	221	162	169	158
S ₃ [M _t +M(Imp)]	2259	2814	2132	2042	1734
Ma	7366	13145	6030	8332	4909
Mbi	5	6	6	8	5
fs _ℓ (non-comp)	10.6	20.2	7.6	18.3	6.7
fs _ℓ (comp)	4.2	---	3.3	---	2.7
fs ₃ [M _t +M(Imp)]	8.2	7.8	7.7	8.6	6.6
fw	0.9	0.5	0.9	1.2	1.1
fs+fw (Overload)	23.6	27.6	19.2	25.9	16.9
fs (Total)	29.8	36.3	24.1	34.9	21.0
fs (Total)+fw	30.7	35.8	25.0	33.7	22.0
VR	66.0	---	66.8	---	58.5
Fb	50.0	49.3	50.0	47.1	50.0

GIRDER NO. 7 REACTION TABLE

	S. Abut.	Pier 1	Pier 2	N. Abut.
R _ℓ	84.0	379.7	286.3	71.5
R _t	39.5	60.0	88.3	33.9
Imp.	6.2	54.2	8.9	6.1
R (Total)	129.7	493.9	383.5	111.5

GIRDER NO. 8 REACTION TABLE

	S. Abut.	Pier 1	Pier 2	N. Abut.
R _ℓ	92.2	321.6	277.1	72.7
R _t	38.9	45.5	75.2	35.8
Imp.	6.1	41.1	7.6	6.4
R (Total)	137.2	408.2	359.9	114.9

GIRDER NO. 9 REACTION TABLE

	S. Abut.	Pier 1	Pier 2	N. Abut.
R _ℓ	97.6	363.8	260.7	76.4
R _t	40.6	50.2	74.7	40.2
Imp.	6.3	45.3	7.5	7.2
R (Total)	144.5	459.3	342.9	123.8

Notes:

Fb - Maximum allowable stress Fbu or Fby computed according to AASHTO [Guide Specifications for Horizontally Curved Highway Bridges Section 2.12(B) and 2.16].

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).

Ic(n) and Sc(n) are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.

Ic(3n) and Sc(3n) are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)

VR is the maximum Live Load + Impact shear range in span.

Ma (Applied Moment) = 1.3[M_ℓ + Ms_ℓ + S₃(M_t + M (Imp))].

(fs + fw) (Overload) is the sum of the stress due

to M_ℓ + Ms_ℓ + S₃(M_t + M (Imp)) + (Mbi / 1.3)

fs (Total) is the sum of the stress due

to 1.3[M_ℓ + Ms_ℓ + S₃(M_t + M (Imp))].

Sbi is the section modulus for one flange plate for lateral flange bending.

Mbi is the lateral bending moment for flange plate (factored).

fw is the calculated normal stress at the edge of flange

due to lateral bending (factored).

M_t and R_t include the effects of centrifugal force and superelevation.

**GIRDER MOMENT AND REACTION TABLES
RAMP B OVER FAP RTE 310
SECTION 60-15HB-3
MADISON COUNTY
STATION 17+72.64 (RAMP B)
SN 060-0332**

DESIGNED	ADL
CHECKED	WLW
DRAWN	BGJ
CHECKED	WLW