

**GIRDER 5E MOMENT TABLE**

	0.4 Span 1	Pier 24	0.5 Span 2	Pier 25	0.5 Span 3	Pier 26	0.5 Span 4	Pier 27	0.6 Span 5
I <sub>s</sub>	(in <sup>4</sup> )	211,175	398,895	211,175	398,895	211,175	398,895	211,175	398,895
I <sub>c(n)</sub>	(in <sup>4</sup> )	427,725	422,655	427,725	422,655	427,725	422,655	427,725	422,655
I <sub>c(3n)</sub>	(in <sup>4</sup> )	316,093	422,655	316,093	422,655	316,093	422,655	316,093	422,655
S <sub>s</sub>	(in <sup>3</sup> )	4,097	6,879	4,097	6,879	4,097	6,879	4,097	6,879
S <sub>c(n)</sub>	(in <sup>3</sup> )	5,442	7,550	5,442	7,550	5,442	7,550	5,442	7,550
S <sub>c(3n)</sub>	(in <sup>3</sup> )	4,888	7,550	4,888	7,550	4,888	7,550	4,888	7,550
S <sub>x1</sub>	(in <sup>3</sup> )	81	202	81	202	81	202	81	202
DC1	(k/')	1.44	1.64	1.44	1.64	1.44	1.64	1.44	1.64
M <sub>DC1</sub>	(k)	3,513	9,572	3,350	9,676	3,353	9,776	3,381	9,770
DC2	(k/')	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
M <sub>DC2</sub>	(k)	539	1,311	520	1,341	521	1,352	527	1,334
DW	(k/')	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
M <sub>DW</sub>	(k)	1,027	2,496	990	2,555	992	2,576	1,004	2,542
M <sub>L + IM</sub>	(k)	4,427	5,794	4,715	6,222	4,840	6,255	4,751	5,865
M <sub>u</sub> (Strength I) *	(k)	15,070	28,861	15,303	29,916	15,540	30,157	15,440	29,356
M <sub>bl</sub>	(k)	19	16	19	17	19	18	19	17
f <sub>s</sub> DC1	(ksi)	10.29	16.70	9.81	16.88	9.82	17.05	9.90	17.04
f <sub>s</sub> DC2	(ksi)	1.32	2.08	1.28	2.13	1.28	2.15	1.29	2.12
f <sub>s</sub> DW	(ksi)	2.52	3.97	2.43	4.06	2.44	4.09	2.46	4.04
f <sub>s</sub> 1.3(L+IM)	(ksi)	12.69	11.97	13.51	12.86	13.87	12.93	13.62	12.12
f <sub>t</sub>	(ksi)	2.75	0.94	2.82	0.99	2.83	1.08	2.81	1.00
f <sub>s</sub> (Service II)	(ksi)	26.82	34.72	27.04	35.93	27.41	36.22	27.28	35.32
f <sub>s</sub> (Total)(Strength I) *	(ksi)	37.15	47.82	37.49	49.52	38.01	49.92	37.83	48.65
F <sub>cr</sub> (Service II)	(ksi)	39.35	47.91	39.35	47.91	39.35	47.91	39.35	47.91
V <sub>r</sub>	(k)	35.46	52.33	39.60	52.76	41.69	53.24	41.69	52.85
F <sub>cr</sub>	(ksi)	50.00	49.60	50.00	49.60	50.00	49.60	50.00	49.60

\* LRFD Strength I Load Combinations include an Operational Importance Factor,  $\gamma_I = 1.05$

*I<sub>s</sub>, S<sub>s</sub>: Non-composite moment of inertia and section modulus of the steel section used for computing f<sub>s</sub> (Total-Strength I, and Service II) due to non-composite dead loads (in<sup>4</sup> and in<sup>3</sup>).*

*I<sub>c(n)</sub>, S<sub>c(n)</sub>: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f<sub>s</sub> (Total-Strength I, and Service II) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).*

*I<sub>c(3n)</sub>, S<sub>c(3n)</sub>: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f<sub>s</sub> (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).*

*S<sub>x1</sub>: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in<sup>3</sup>).*

*DC1: Un-factored non-composite dead load (kips/ft.).*

*M<sub>DC1</sub>: 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<sub>DC2</sub>: 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<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).*

*M<sub>L + IM</sub>: Un-factored live load moment plus dynamic load allowance (Impact)(kip-ft.).*

*M<sub>u</sub> (Strength I): Factored design moment (kip-ft.).*  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L + IM}$

*M<sub>bl</sub>: Factored lateral bending moment for controlling flange plate (kip-ft.).*

*f<sub>t</sub>: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending (kip-ft.).*

*f<sub>s</sub> (Service II): Sum of stresses as computed from the moments below (ksi).*  
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{L + IM}$

*f<sub>s</sub> (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).*  
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L + IM}$

*F<sub>cr</sub> (Service II): Critical flange stress at Service II computed according to Article 6.10.4.2 (ksi).*

*F<sub>cr</sub>: Critical flange stress computed according to Article 6.10.7 or 6.10.8 (ksi).*

*V<sub>r</sub>: Maximum factored shear range computed according to Article 6.10.10.*

**Note:**  
*M<sub>L</sub> and R<sub>L</sub> include the effects of centrifugal force and superelevation.*

	Pier 23	Pier 24	Pier 25	Pier 26	Pier 27	E. Abut.
R <sub>DC1</sub>	(k)	123.3	436.0	435.6	437.3	441.5
R <sub>DC2</sub>	(k)	18.5	60.6	61.0	61.4	61.2
R <sub>DW</sub>	(k)	35.2	115.5	116.3	116.9	116.6
R <sub>L + IM</sub>	(k)	140.6	275.8	284.6	285.1	274.6
R <sub>Total</sub>	(k)	317.6	887.8	897.4	900.6	894.0

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