

INTERIOR GIRDER MOMENT TABLE - BEAMS 2-11						
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Span 3
I_s	(in ⁴)	11,300	11,300	11,300	11,300	11,300
$I_c(n)$	(in ⁴)	24,701	-	24,701	-	24,701
$I_c(3n)$	(in ⁴)	17,940	-	17,940	-	17,940
$I_c(cr)$	(in ⁴)	-	13,725	-	13,725	-
S_s	(in ³)	623	623	623	623	623
$S_c(n)$	(in ³)	846	-	846	-	846
$S_c(3n)$	(in ³)	758	-	758	-	758
$S_c(cr)$	(in ³)	-	638	-	638	-
DC1	(k/ft)	0.727	0.727	0.727	0.727	0.727
M _{DC1}	(k)	444	464	22	464	444
DC2	(k/ft)	0.541	0.541	0.541	0.541	0.541
M _{DC2}	(k)	329	348	13	348	329
DW	(k/ft)	0.200	0.200	0.200	0.200	0.200
M _{DW}	(k)	121	129	5	129	121
M _{ℓ + IM}	(k)	825	751	573	751	825
M _u (Strength I)	(k)	2,592	2,523	1,054	2,523	2,592
φ _r M _n	(k)	4,122	3,033	4,122	3,033	4,122
f _s DC1	(ksi)	8.55	8.94	0.42	8.94	8.55
f _s DC2	(ksi)	5.21	6.55	0.21	6.55	5.21
f _s DW	(ksi)	1.92	2.43	0.08	2.43	1.92
f _s (ℓ + IM)	(ksi)	11.70	14.13	8.13	14.13	11.70
f _s (Service II)	(ksi)	30.89	36.29	11.28	36.29	30.89
0.95R _n F _y	(ksi)	47.50	47.50	47.50	47.50	47.50
f _s (Total)(Strength I)	(ksi)	-	-	-	-	-
φ _r F _n	(ksi)	-	-	-	-	-
V _r	(k)	27.88	-	27.62	-	29.53

* For Beams 5 thru 8, the load due to ComEd ductbanks is 105 pounds per linear foot.
For Beams 11 and 12, the load due to the City of Chicago ductbank is 35 pounds per linear foot.

INTERIOR GIRDER REACTION TABLE - BEAMS 2-11					
		S. Abut.	Pier 1	Pier 2	N. Abut.
R _{DC1}	(k)	26.12	62.97	62.97	26.12
R _{DC2}	(k)	18.88	46.88	46.88	18.88
R _{DW}	(k)	6.97	17.30	17.30	6.97
R _{ℓ + IM}	(k)	64.39	100.43	100.43	64.39
R _{Total}	(k)	116.36	227.58	227.58	116.36

- I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in⁴ and in³).
- $I_c(n), S_c(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in⁴ and in³).
- $I_c(3n), S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in⁴ and in³).
- $I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and in³).
- 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.).
- M_u (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{ℓ + IM}
- φ_rM_n: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
- f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_{nc}
- f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
M_{DC2} / S_{c(3n)} or M_{DC2} / S_{c(cr)} as applicable.
- f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
M_{DW} / S_{c(3n)} or M_{DW} / S_{c(cr)} as applicable.
- f_s (ℓ + IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
M_{ℓ + IM} / S_{c(n)} or M_{DW} / S_{c(cr)} as applicable.
- f_s (Service II): Sum of stresses as computed below (ksi).
f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3 f_s (ℓ + IM)
- 0.95R_nF_yf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
- f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
1.25 (f_{sDC1} + f_{sDC2}) + 1.5 f_{sDW} + 1.75 f_s (ℓ + IM)
- φ_rF_n: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- V_r: Maximum factored shear range in span computed according to Article 6.10.10.

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