

EXTERIOR GIRDER MOMENT TABLE											
		Unit 1						Unit 2			
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4	0.4 Sp. 5	Pier 5	0.6 Sp. 6
I_s	(in ⁴)	107974	107974	107974	107974	107974	107974	107974	178348	178348	178348
$I_c(n)$	(in ⁴)	182533	182533	182533	182533	182533	182533	182533	276839	276839	276839
$I_c(3n)$	(in ⁴)	141179	141179	141179	141179	141179	141179	141179	220185	220185	220185
$I_c(cr)$	(in ⁴)	118836	118836	118836	118836	118836	118836	118836	191719	191719	191719
S_s	(in ³)	2938	2938	2938	2938	2938	2938	2938	4350	4350	4350
$S_c(n)$	(in ³)	3479	3479	3479	3479	3479	3479	3479	4960	4960	4960
$S_c(3n)$	(in ³)	3226	3226	3226	3226	3226	3226	3226	4655	4655	4655
$S_c(cr)$	(in ³)	3042	3042	3042	3042	3042	3042	3042	4456	4456	4456
DC1	(k/')	1.091	1.091	1.091	1.091	1.091	1.091	1.091	1.211	1.211	1.211
M _{DC1}	(k)	2620.8	4195.0	1871.6	3746.2	1871.6	4195.0	2620.8	3606.3	6361.5	3606.3
DC2	(k/')	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150	0.150
M _{DC2}	(k)	336.4	538.5	240.3	480.9	240.3	538.5	336.4	423.1	746.3	423.1
DW	(k/')	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325	0.325
M _{DW}	(k)	729.0	1166.8	520.6	1042.0	520.6	1166.8	729.0	916.7	1617.1	916.7
M _{ℓ + IM}	(k)	2766.5	1965.7	2656.0	2592.6	2656.0	1965.7	2766.5	3256.5	3033.6	3256.5
M _u (Strength I)	(k)	9631.3	11107.2	8068.8	11384	8068.8	11107.2	9631.3	12110.8	16619.2	12110.8
φ _r M _n	(k)	17367	13234	17367	13234	17367	13234	17367	23604	18805	23604
f _s DC1	(ksi)	10.704	17.134	7.645	15.301	7.645	17.134	10.704	9.949	17.549	9.949
f _s DC2	(ksi)	1.251	2.003	0.894	1.897	0.894	2.003	1.251	1.091	1.924	1.091
f _s DW	(ksi)	2.712	4.340	1.936	4.110	1.936	4.340	2.712	2.363	4.169	2.363
f _s (ℓ+IM)	(ksi)	9.542	6.780	9.161	10.227	9.161	6.780	9.542	7.879	7.339	7.879
f _s (Service II)	(ksi)	27.072	32.292	22.385	34.604	22.385	32.292	27.072	23.645	33.183	23.645
0.95R _n F _{yf}	(ksi)	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500	47.500
V _r	(k)	27.1	28.9	23.3	28.9	23.3	28.9	27.1	27.5	26.5	27.5

INTERIOR GIRDER REACTION TABLE									
		Unit 1				Unit 2			
		N. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	S. Abut.	
R _{DC1}	(k)	73.4	230.1	215.0	230.1	73.4	91.1	302.7	91.1
R _{DC2}	(k)	10.1	31.5	29.5	31.5	10.1	11.3	37.5	11.3
R _{DW}	(k)	21.8	68.3	63.8	68.3	21.8	24.5	81.2	24.5
R _{ℓ + IM}	(k)	99.4	215.2	215.0	215.2	99.4	103.5	228.1	103.5
R _{Total}	(k)	204.7	545.1	523.3	545.1	204.7	230.4	649.5	230.4

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 $M_{ℓ + IM} / S_c(cr)$ 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).

V_r: Maximum factored shear range in span computed according to Article 6.10.10.

Note:
M_{ℓ + IM} and R_ℓ include the effects of centrifugal force and superelevation.



USER NAME =	DESIGNED - RLM	REVISED
	CHECKED - JTH	REVISED
PLOT SCALE =	DRAWN - PRC	REVISED
PLOT DATE = 2/1/2013	CHECKED - RLM	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DESIGN DATA TABLES AND NOTES
STRUCTURE NO. 014-0033

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
42	1-1BR-2	CLINTON	159	103
CONTRACT NO. 76479				
SHEET NO. 34 OF 61 SHEETS				
ILLINOIS FED. AID PROJECT				