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)	24,700.7	-	24,700.7	-	24,700.7
$I_c(3n)$	(in^4)	17,939.6	-	17,939.6	-	17,939.6
$I_c(cr)$	(in^4)	-	13,724.5	-	13,724.5	-
S_s	(in^3)	623	623	623	623	623
$S_c(n)$	(in^3)	845.9	-	845.9	-	845.9
$S_c(3n)$	(in^3)	758.2	-	758.2	-	758.2
$S_c(cr)$	(in^3)	-	637.9	-	637.9	-
DC1	(k/')	0.770	0.770	0.770	0.770	0.770
M_{DC1}	('k)	442	462	21	462	442
DC2	(k/')	0.486	0.486	0.486	0.486	0.486
M_{DC2}	('k)	295	312	11	312	295
DW	(k/')	0.250	0.250	0.250	0.250	0.250
M_{DW}	('k)	152	161	6	161	152
M_{L+IM}	('k)	825	742	573	761	825
M_u (Strength I)	('k)	2,592.1	2,508.0	1,052.7	2,541.3	2,592.1
$\phi_f M_n$	('k)	4,122.3	3,025.8	4,122.3	3,032.5	4,122.3
f_s DC1	(ksi)	8.51	8.90	0.40	8.90	8.51
f_s DC2	(ksi)	4.67	5.87	0.17	5.87	4.67
f_s DW	(ksi)	2.41	3.03	0.09	3.03	2.41
f_s (L+IM)	(ksi)	11.70	13.96	8.13	14.32	11.70
f_s (Service II)	(ksi)	30.80	35.95	11.23	36.42	30.80
$0.95R_hF_{yf}$	(ksi)	47.50	47.50	47.50	47.50	47.50
f_s (Total)(Strength I)	(ksi)	40.57	47.44	15.08	48.07	40.57
$\phi_f F_n$	(ksi)	50	50	50	50	50
V_f	(k)	27.89	49.40	27.63	49.40	29.54

INTERIOR GIRDER REACTION TABLE - BEAMS 2-11					
		S. Abut.	Pier 1	Pier 2	N. Abut.
R_{DC1}	(k)	26.04	62.78	62.78	26.04
R_{DC2}	(k)	16.93	42.04	42.04	16.93
R_{DW}	(k)	8.71	21.62	21.62	8.71
R_{L+IM}	(k)	64.39	100.42	100.42	64.39
R_{Total}	(k)	116.07	226.86	226.86	116.07

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 (in.^{4} and in.^{3}).

$I_c(n)$, $S_c(n)$: 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 (in.^{4} and in.^{3}).

$I_c(3n)$, $S_c(3n)$: 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 (in.^{4} and in.^{3}).

$I_c(cr)$, $S_c(cr)$: 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 (in.^{4} and in.^{3}).

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.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: 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).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$0.95R_hF_yf$: 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).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(L+IM)$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

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

Note:
M_{L} and R_{L} include the effects of centrifugal force and superelevation.

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0161709-60W25-S23-GirderReactionTbl.dgn	DESIGNED - MI, LAB, MMW	REVISED -	
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PLOT SCALE = 1:0.0000 '/ in.	CHECKED - MAI, MI, JJS	REVISED -	
PLOT DATE = 6/14/2013	DATE - 6/17/2013	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER MOMENT AND REACTION TABLES
STRUCTURE NO. 016-1709

SCALE: | SHEET S1-23 OF 51 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
90/94/290	2013-007R	COOK	317	167
		CONTRACT NO. 60W25		
	ILLINOIS FED. AID PROJECT			

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