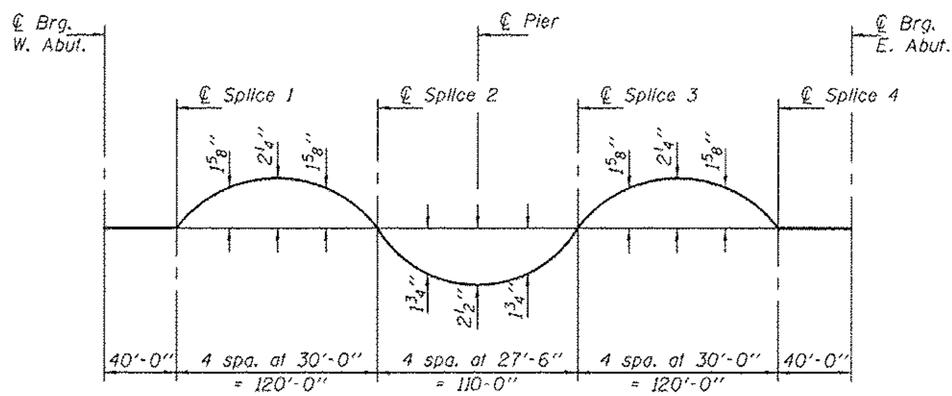

CAMBER DIAGRAM

*TOP OF GIRDER WEB ELEVATIONS (E.B.)

Location	℄ Brg. W. Abut.	℄ Splice 1	℄ Splice 2	℄ Brg. Pier	℄ Splice 3	℄ Splice 4	℄ Brg. E. Abut.
Girder 1	710.10	710.16	710.71	710.94	711.17	711.88	712.20
Girder 2	710.24	710.30	710.85	711.08	711.31	712.02	712.34
Girder 3	710.36	710.42	710.97	711.20	711.43	712.14	712.46
Girder 4	710.26	710.33	710.88	711.11	711.34	712.04	712.37
Girder 5	710.13	710.20	710.74	710.97	711.20	711.91	712.24
Girder 6	709.97	710.04	710.58	710.81	711.04	711.75	712.08

*For fabrication use only.

*TOP OF GIRDER WEB ELEVATIONS (W.B.)

Location	℄ Brg. W. Abut.	℄ Splice 1	℄ Splice 2	℄ Brg. Pier	℄ Splice 3	℄ Splice 4	℄ Brg. E. Abut.
Girder 7	709.97	710.04	710.58	710.81	711.04	711.75	712.08
Girder 8	710.13	710.20	710.74	710.97	711.20	711.91	712.24
Girder 9	710.26	710.33	710.88	711.11	711.34	712.04	712.37
Girder 10	710.36	710.42	710.97	711.20	711.43	712.14	712.46
Girder 11	710.24	710.30	710.85	711.08	711.31	712.02	712.34
Girder 12	710.10	710.16	710.71	710.94	711.17	711.88	712.20

*For fabrication use only.

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 2	Pier
I_s	(in⁴)	184991	264204
$I_c(n)$	(in⁴)	309073	404536
$I_c(3n)$	(in⁴)	239549	323073
$I_c(cr)$	(in⁴)	——	282916
S_s	(in³)	4204	5871
$S_c(n)$	(in³)	5006	6701
$S_c(3n)$	(in³)	4624	6279
$S_c(cr)$	(in³)	——	6656
DC1	(k/')	1.366	1.529
M_{DC1}	('k)	4189.2	8340.7
DC2	(k/')	0.173	0.173
M_{DC2}	('k)	541.7	1044.9
DW	(k/')	0.383	0.383
M_{DW}	('k)	1199.2	2313.2
M_{LL+IM}	('k)	3902.3	4210.0
M_u (Strength I)	('k)	14541.5	22569.2
$\phi_f M_n$	('k)	24475.9	26246.9
f_s DC1	(ksi)	12.0	17.0
f_s DC2	(ksi)	1.4	1.9
f_s DW	(ksi)	3.1	4.2
f_s (LL+IM)	(ksi)	9.4	7.6
f_s (Service II)	(ksi)	28.6	33.0
$0.95R_hF_{yf}$	(ksi)	47.5	47.5
f_s (Total)(Strength I)	(ksi)	——	43.2
$\phi_f F_n$	(ksi)	——	50.0
V_f	(k)	68.4	65.5

INTERIOR GIRDER REACTION TABLE

		Abutments	Pier
R_{DC1}	(k)	103.7	375.1
R_{DC2}	(k)	13.7	46.9
R_{DW}	(k)	30.4	103.9
R_{LL+IM}	(k)	118.9	253.9
R_{Total}	(k)	266.7	779.8

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_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}$

$\phi_f M_n$: 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 (LL+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).
$M_{LL+IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3 f_s(LL + IM)$

$0.95R_hF_{yf}$: 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).
$1.25 (f_{sDC1} + f_{sDC2}) + 1.5 f_{sDW} + 1.75 f_s(LL + IM)$

$\phi_f F_n$: 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.

DESIGNED - Nick R. Barnett	EXAMINED [signature] ACTING ENGINEER OF BRIDGE DESIGN	DATE - OCTOBER 4, 2013	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - Frank W. Sharpe			
DRAWN - h.t. duong	PASSED [signature] ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED —	
CHECKED - NBB/FWS/GRA		REVISED —	

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 101-0197 (E.B.) & 101-0198 (W.B.)

SHEET NO. 29 OF 50 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
301	3BR & 3BR-1	WINNEBAGO	290	204

CONTRACT NO. 64D19

ILLINOIS FED. AID PROJECT