TOP OF WEB ELEVATIONS STR. NO. 100-0093 *								
Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8
℄ Brg. W. Abut.	471.571	471.885	472.195	472.504	472.775	472.982	473.019	473.030
℄ Splice 1	472.568	472.864	473.157	473.448	473.702	473.892	473.911	473.905
℄ Pier 1	473.499	473.778	474.054	474.328	474.565	474.737	474.739	474.715
℄ Splice 2	474.258	474.524	474.789	475.050	475.275	475.435	475.425	475.389
℄ Splice 3	475.700	475.930	476.157	476.382	476.569	476.692	476.645	476.573
℄ Pier 2	475.880	476.097	476.312	476.525	476.700	476.816	476.756	476.672
℄ Splice 4	476.288	476.488	476.686	476.881	477.040	477.143	477.067	476.965
℄ Brg. E. Abut.	476.657	476.840	477.020	477.198	477.339	477.415	477.321	477.202

TOP OF WEB ELEVATIONS STR. NO. 100-0094 *								
Location	Girder 9	Girder 10	Girder 11	Girder 12	Girder 13	Girder 14	Girder 15	Girder 16
℄ Brg. W. Abut.	473.635	473.905	474.150	474.224	474.233	474.206	474.176	474.143
℄ Splice 1	474.435	474.688	474.915	474.971	474.964	474.919	474.871	474.822
℄ Pier 1	475.172	475.407	475.617	475.656	475.631	475.569	475.504	475.437
℄ Splice 2	475.793	476.016	476.214	476.242	476.205	476.130	476.054	475.975
℄ Splice 3	476.817	477.003	477.164	477.154	477.080	476.969	476.865	476.749
℄ Pier 2	476.864	477.038	477.187	477.165	477.079	476.956	476.836	476.707
℄ Splice 4	477.083	477.240	477.371	477.332	477.229	477.088	476.945	476.800
℄ Brg. E. Abut.	477.245	477.384	477.498	477.442	477.321	477.163	477.003	476.840

* For Fabrication Only

INTERIOR GIRDER REACTION TABLE HL93 Loading					
		W. Abut.	Pier 1	Pier 2	E. Abut.
R_{DC1}	(k)	19.99	120.93	120.93	19.99
R_{DC2}	(k)	2.69	16.24	16.24	2.69
R_{DW}	(k)	7.87	47.54	47.54	7.87
R_{LL+IM}	(k)	93.26	165.51	165.51	80.88
R_{Total}	(k)	123.80	350.21	350.22	111.42

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1/ 0.6 Sp. 3	Pier 1/ Pier 2	0.5 Sp. 2
I_s	(in^4)	21467	33990	21832
$I_c(n)$	(in^4)	51508	71281	59467
$I_c(3n)$	(in^4)	38255	53294	42731
$I_c(cr)$	(in^4)		39833	
S_s	(in^3)	826	1271	961
$S_c(n)$	(in^3)	1154	7177	1377
$S_c(3n)$	(in^3)	1049	2960	1251
$S_c(cr)$	(in^3)		1661	
DC1	(k/')	0.931	0.993	0.937
M_{DC1}	('k)	154	1422	904
DC2	(k/')	0.13	0.13	0.13
M_{DC2}	('k)	31	164	151
DW	(k/')	0.366	0.366	0.366
M_{DW}	('k)	89	481	442
M_{LL+IM}	('k)	1062	1284	1671
M_u(Strength I)	('k)	2223	4951	4906
$\phi_f M_n$	('k)	4615	5294	5135
f_s DC1	(ksi)	2.2	13.4	11.3
f_s DC2	(ksi)	0.3	1.2	1.3
f_s DW	(ksi)	0.9	3.5	3.9
f_s (LL+IM)	(ksi)	12.2	9.3	16.0
f_s (Service II)	(ksi)	19.3	30.2	37.3
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	24.4	46.8	47.8
$\phi_f F_n$	(ksi)			
V_f	(k)	35.4	55.0	40.9

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 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 (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 plus impact loads as calculated below (ksi).
$M_{LL+IM} / S_c(3n)$ or $M_{LL+IM} / S_c(cr)$ as applicable.

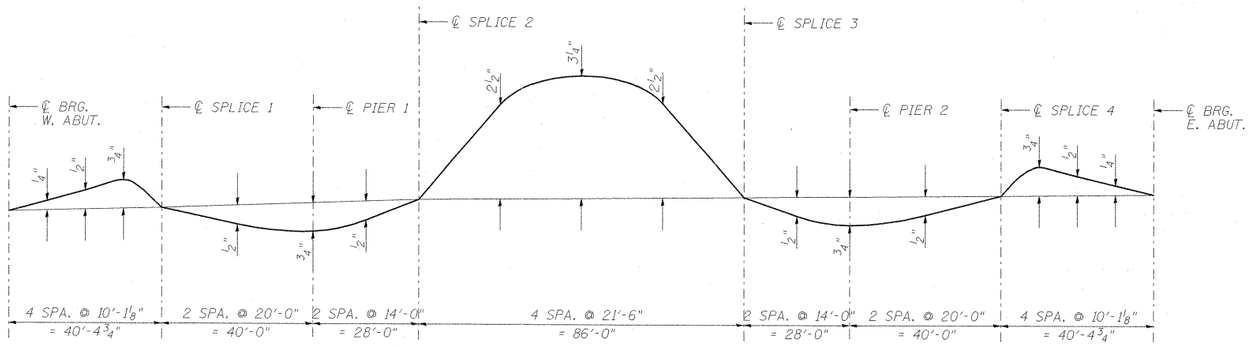
f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(LL+IM)$

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

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7.2 (ksi).

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



CAMBER DIAGRAM

CMT
CRAWFORD MURPHY & TILLY, INC.
CONSULTING ENGINEERS
SPRINGFIELD, IL ■ AURORA, IL ■ ST. LOUIS, MO
ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL

USER NAME = Gary Davis	DESIGNED - MCC	REVISED -	
	CHECKED - ATI	REVISED -	
PLOT SCALE =	DRAWN - GLD	REVISED -	
PLOT DATE = 1/10/2012	CHECKED - ATI	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CAMBER DIAGRAM
STRUCTURE NO. 100-0093 (W.B.) & 100-0094 (E.B.)
SHEET NO.S-240F S-41 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
331	(1X-1)VB-1	WILLIAMSON	367	190
		CONTRACT NO. 98859		
	ILLINOIS FED. AID PROJECT			

FILE NAME = i:\dot\09D6603\dgn\cadd_sheets\structural plans\bnsf rr bridge\CAMBER DIAGRAM.dgn