INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3
I_s	(in⁴)	7800	7800	9040	9040	7800
$I_c(n)$	(in⁴)	22453		24909		22453
$I_c(3n)$	(in⁴)	16194		17883		16194
$I_c(cr)$	(in⁴)		10836		12161	
S_s	(in³)	439	439	504	504	439
$S_c(n)$	(in³)	682		764		682
$S_c(3n)$	(in³)	610		683		610
$S_c(cr)$	(in³)		741		807	
$DC1$	(k/')	0.817	0.817	0.832	0.832	0.817
M_{DC1}	('k)	243	317	115	545	371
$DC2$	(k/')	0.129	0.129	0.129	0.129	0.129
M_{DC2}	('k)	39	52	17	88	60
DW	(k/')	0.308	0.308	0.308	0.308	0.308
M_{DW}	('k)	94	123	41	209	144
$M_{L + IM}$	('k)	598	575	592	778	720
M_u (Strength I)	('k)	1539	1653	1262	2466	2014
* $\phi_f M_n$	('k)	3448	2633	3787	2967	3317
f_s DC1	(ksi)	6.64	8.67	2.74	12.98	10.14
f_s DC2	(ksi)	0.77	0.84	0.30	1.31	1.18
f_s DW	(ksi)	1.85	1.99	0.72	3.10	2.83
f_s (L+IM)	(ksi)	10.51	9.32	9.29	11.55	12.65
f_s (Service II)	(ksi)	22.92	23.61	15.81	32.42	30.61
f_s (Total) (Strength)	(ksi)	-	-	-	-	-
V_f	(k)	44.62	48.57	29.88	50.17	32.08

* Compact Section

INTERIOR BEAM REACTION TABLE

		E. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	W. Abut.
R_{DC1}	(k)	20	56	71	71	56	20
R_{DC2}	(k)	3	9	11	11	9	3
R_{DW}	(k)	8	22	27	27	22	8
$R_{L + IM}$	(k)	66	99	115	115	99	80
R_{Total}	(k)	97	186	224	224	186	111

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.).

$M_{L + IM}$: 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 (kip-ft.) and appendix A criteria for negative moment.

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

$0.95R_h F_y f$: 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 6.10.7.2 (ksi).

V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.
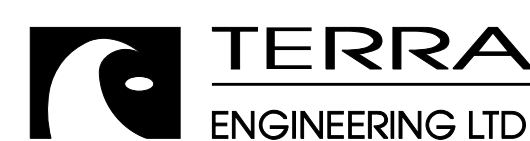
* TOP OF BEAM ELEVATIONS
(Northbound)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7
℄ Brg. E. Abut.	692.74	692.82	692.88	692.93	692.85	692.70	692.53
℄ Brg. Pier #1	693.15	693.24	693.32	693.38	693.31	693.17	693.01
℄ Splice #1	693.26	693.35	693.43	693.49	693.42	693.29	693.14
℄ Brg. Pier #2	693.54	693.65	693.74	693.81	693.76	693.64	693.49
℄ Splice #2	693.63	693.74	693.83	693.91	693.86	693.74	693.60
℄ Splice #3	693.62	693.75	693.85	693.94	693.90	693.80	693.67
℄ Brg. Pier #3	693.62	693.75	693.85	693.95	693.91	693.81	693.68
℄ Splice #4	693.61	693.75	693.87	693.97	693.95	693.86	693.74
℄ Brg. Pier #4	693.56	693.70	693.83	693.93	693.91	693.82	693.71
℄ Brg. W. Abut.	693.37	693.53	693.66	693.78	693.77	693.70	693.60

* TOP OF BEAM ELEVATIONS
(Southbound)

Location	Beam 8	Beam 9	Beam 10	Beam 11	Beam 12	Beam 13	Beam 14
℄ Brg. E. Abut.	692.25	692.31	692.35	692.32	692.16	691.99	691.80
℄ Brg. Pier #1	692.80	692.87	692.92	692.90	692.76	692.60	692.42
℄ Splice #1	692.94	693.02	693.07	693.06	692.91	692.76	692.58
℄ Brg. Pier #2	693.35	693.44	693.50	693.50	693.37	693.23	693.06
℄ Splice #2	693.47	693.57	693.63	693.64	693.51	693.37	693.21
℄ Splice #3	693.60	693.71	693.79	693.80	693.69	693.56	693.41
℄ Brg. Pier #3	693.64	693.74	693.83	693.85	693.73	693.61	693.46
℄ Splice #4	693.76	693.87	693.97	694.00	693.90	693.79	693.65
℄ Brg. Pier #4	693.74	693.86	693.96	693.99	693.90	693.79	693.66
℄ Brg. W. Abut.	693.69	693.82	693.93	693.98	693.89	693.79	693.67

* For fabrication use only

TERRA ENGINEERING LTD.

USER NAME =		
DESIGNED - EA	REVISED	
CHECKED - OY	REVISED	
PLOT SCALE =	DRAWN - CM	REVISED
PLOT DATE =	CHECKED - JB	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL DETAILS
STRUCTURE NOS. 038 - 0013 & 0014
SHEET NO. S31 OF S71 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	38-2HVB, HVBR-1	IROQUOIS	146	70

CONTRACT NO. 66942

ILLINOIS FED. AID PROJECT