STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INTERIOR GIRDER MOMENT TABLE (GIRDER - 4)				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	27867	47757	27867
$I_c(n)$	(in^4)	72717	55129	72717
$I_c(3n)$	(in^4)	53307	55129	53307
S_s	(in^3)	1185	1845	1185
$S_c(n)$	(in^3)	1659	1951	1659
$S_c(3n)$	(in^3)	1519	1951	1519
S_{xt}	(in^3)	49	101	49
DC1	(k/')	1.23	1.34	1.23
M_{DC1}	('k)	949	2053	740
DC2	(k/')	0.15	0.15	0.15
M_{DC2}	('k)	120	229	94
DW	(k/')	0.43	0.43	0.43
M_{DW}	('k)	368	704	288
M_L + IM	('k)	1450	1744	1386
Mu (Strength I)	('k)	4426	6961	3900
M_{bf}	('k)	25	5	26
f_s DC1	(ksi)	10	13	7
f_s DC2	(ksi)	1	1	1
f_s DW	(ksi)	3	2	2
f_s 1.3(L+IM)	(ksi)	14	14	13
f_f	(ksi)	6	1	6
f_s (Service II)	(ksi)	28	32	23
f_s (Total)(Strength I)	(ksi)	37	42	31
F_{cr} (Service II)	(ksi)	47.5	47.5	47.5
Vf	(k)	16	28	25
F_{cr}	(ksi)	-	-	-

EXTERIOR GIRDER MOMENT TABLE (GIRDER - 7)				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	27867	47757	27867
$I_c(n)$	(in^4)	70701	55129	70701
$I_c(3n)$	(in^4)	51439	55129	51439
S_s	(in^3)	1185	1845	1185
$S_c(n)$	(in^3)	1647	1951	1647
$S_c(3n)$	(in^3)	1501	1951	1501
S_{xt}	(in^3)	49	101	49
DC1	(k/')	1.13	1.24	1.13
M_{DC1}	('k)	975	1940	744
DC2	(k/')	0.15	0.15	0.15
M_{DC2}	('k)	127	231	99
DW	(k/')	0.41	0.41	0.41
M_{DW}	('k)	360	649	279
M_L + IM	('k)	1907	2108	1789
Mu (Strength I)	('k)	5255	7377	4603
M_{bf}	('k)	32	24	33
f_s DC1	(ksi)	10	13	8
f_s DC2	(ksi)	1	1	1
f_s DW	(ksi)	3	4	2
f_s 1.3(L+IM)	(ksi)	18	17	17
f_f	(ksi)	8	3	8
f_s (Service II)	(ksi)	32	35	28
f_s (Total)(Strength I)	(ksi)	43	46	37
F_{cr} (Service II)	(ksi)	47.5	47.5	47.5
Vf	(k)	24	40	32
F_{cr}	(ksi)	-	-	-

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) 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) due to long-term composite (superimposed) dead loads (in^4 and in^3).

S_{xt}: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (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.).

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

M_{bf}: Factored lateral bending moment for controlling flange plate (kip-ft.).

f_f: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + IM

f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM

F_{cr} (Service II): Critical flange stress at Service II computed according to Article 6.10.4.2 (ksi).

F_{cr}: Critical flange stress computed according to Article 6.10.7 or 6.10.8 (ksi).

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

Note:
M_L and R_L include the effects of centrifugal force and superelevation.

INTERIOR GIRDER REACTION TABLE (GIRDER-4) HL93 LOADING				
		N. Abut.	Pier	S. Abut.
R_{DC1}	(k)	52	175	45
R_{DC2}	(k)	7	20	6
R_{DW}	(k)	19	62	17
R_L + IM	(k)	101	186	97
R_{Total}	(k)	179	443	165

EXTERIOR GIRDER REACTION TABLE (GIRDER-7) HL93 LOADING				
		N. Abut.	Pier	S. Abut.
R_{DC1}	(k)	53	148	45
R_{DC2}	(k)	7	19	6
R_{DW}	(k)	19	52	16
R_L + IM	(k)	108	166	92
R_{Total}	(k)	187	385	159

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CHECKED	KJH

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MOMENT AND REACTION TABLES
STRUCTURE NO. 099-0348

SHEET NO.	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
SC-20	55	(99-1&2) R-6	WILL	756	546
SHEETS			CONTRACT NO. 60F12		
SC-37	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		