



	0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in ⁴) 35,665	82,449	33,062
$I_c(n)$	(in ⁴) 84,824	-	76,220
$I_c(3n)$	(in ⁴) 61,444	-	56,088
S_s	(in ³) 1609	2,971	1,408
$S_c(n)$	(in ³) 2,069	-	1,815
$S_c(3n)$	(in ³) 1,916	-	1,679
Z	(in ³) -	-	-
DC1	(k/ft.) 1.19	1.40	1.17
M _{DC1}	(k) 1,580	3,617	1,276
DC2	(k/ft.) 0.263	0.263	0.263
M _{DC2}	(k) 387	696	328
DW	(k/ft.) 0.433	0.433	0.433
M _{DW}	(k) 636	1,146	539
M _{ℓ + IM}	(k) 2,442	2,275	2,234
M _u (Strength I)	(k) 7,687	11,092	6,722
* $\phi_r M_n, \phi_r M_{nc}$	(k) 9995	-	8,960
f_s DC1	(ksi) 11.8	14.6	10.9
f_s DC2	(ksi) 2.4	2.8	2.3
f_s DW	(ksi) 4.0	4.6	3.9
f_s 1.3(ℓ+IM)	(ksi) 18.4	11.9	19.2
f_s (Service II)	(ksi) 36.6	34.0	36.3
** f_s (Total)(Strength I)	(ksi) -	44.8	-
V _r	(k) 65.0	-	64.6

* Compact sections
** Non-Compact and slender sections

	S. Abut.	Pier	N. Abut.
R _{DC1}	(k) 62.7	226.7	56.5
R _{DC2}	(k) 14.3	47.1	13.2
R _{DW}	(k) 23.5	77.6	21.7
R _{ℓ + IM}	(k) 115.5	219.6	112.6
R _{Total}	(k) 216.0	571.0	204.0

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 (in⁴ and in³).

$I_c(n), S_c(n)$: 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 (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 (in⁴ and in³).

Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).

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}
 $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).
 $\phi_r M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (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}
V_r: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	L. Sum	1
Stud Shear Connectors	Each	7328

NOTES:

- All structural steel for girders and splice plates shall conform to the requirements of AASHTO M270, Grade 50. All other structural steel shall conform to the requirements of AASHTO M270, Grade 36.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

TYLIN INTERNATIONAL	USER NAME =	DESIGNED - JKO	REVISED -
	PLOT SCALE =	CHECKED - CPT	REVISED -
	PLOT DATE = 5/5/2011	DRAWN - TSK	REVISED -
		CHECKED - JKO	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-1196

SHEET NO. 23 OF 40 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	1313.1B-1	COOK	162	84
ILLINOIS FED. AID PROJECT			CONTRACT NO. 60K14	