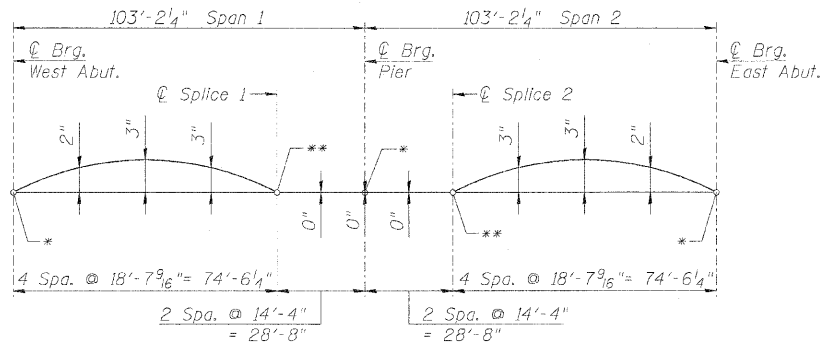


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

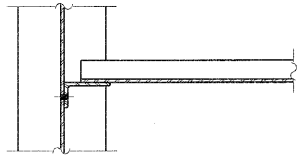


CAMBER DIAGRAM

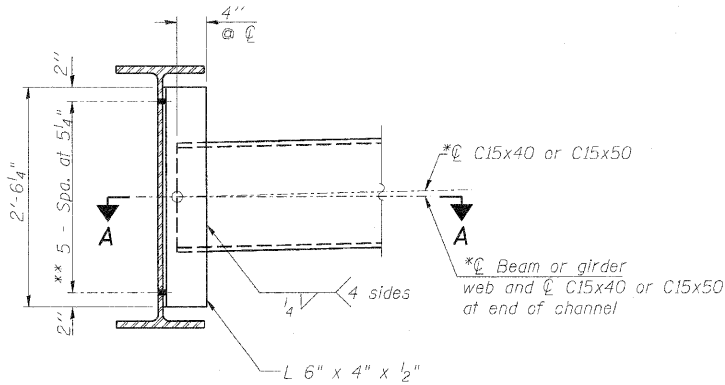
* See Table for Final Top of Web Elevations at abutments and piers.
** Theoretical Top of Web Elevations before dead load deflections.

TOP of WEB ELEVATIONS TABLE
For Fabrication Only

Girder Number	C Brg. W. Abut.	C Splice No. 1	C Brg. Pier	C Splice No. 2	C Brg. E. Abut.
Girder 1	575.12	575.10	575.10	575.09	575.09
Girder 2	575.47	575.46	575.45	575.44	575.43
Girder 3	575.83	575.81	575.80	575.79	575.78
Girder 4	576.19	576.16	576.15	576.14	576.12
Girder 5	576.54	576.51	576.50	576.49	576.47
Girder 6	576.90	576.86	576.85	576.84	576.81



SECTION A-A



INTERIOR DIAPHRAGM
(65 Required)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
The alternate, if utilized, shall be provided at no additional cost to the Department.
**3/4" ϕ HS bolts, 15/16" ϕ holes

INTERIOR GIRDER MOMENT TABLE		
	0.4 Span 1 or 0.6 Span 2	Pier
I_s	(in ⁴) 13154	24826
$I_e(n)$	(in ⁴) 40897	-
$I_e(3n)$	(in ⁴) 28489	-
S_s	(in ³) 970	1241
$S_e(n)$	(in ³) 1321	-
$S_e(3n)$	(in ³) 1226	-
Z	(in ³) -	1358
ϕ	(k/ft) 1.002	1.620
$M\phi$	(k) 653	2322
$s\phi$	(k/ft) 0.519	-
$M_s\phi$	(k) 397	-
M_L	(k) 995	793
M_{IM}	(k) 218	174
$\phi_s [M_L + I]$	(k) 2022	1610
M_o	(k) 3992	5113
M_u	(k) 5968	5657
$f_s \phi$ non-comp	(ksi) 8.08	22.45
$f_s \phi$ (comp)	(ksi) 3.88	-
$f_s \phi_s [M_L + M_I]$	(ksi) 18.36	15.57
f_s (Overload)	(ksi) 30.32	38.02
VR	(k) 71	-

***Compact section

INTERIOR GIRDER REACTION TABLE		
	W. Abut. or E. Abut.	Pier
$R\phi$	(k) 57.4	204.8
R_L	(k) 53.6	80.1
R_I	(k) 11.7	17.6
R_{Total}	(k) 122.7	302.4

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in⁴ and in³).
 $I_e(n), S_e(n)$: Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in⁴ and in³).
 $I_e(3n), S_e(3n)$: 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in³).
 ϕ : Un-factored non-composite dead load (kips/ft.).
 $M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 M_L : Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_o : Factored design moment (kip-ft.).
 $1.3 [M\phi + M_s\phi + \frac{3}{2} (M_L + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{3}{2} (M_L + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\phi + M_s\phi + \frac{3}{2} (M_L + M_I)]$
VR: Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).

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

STRUCTURAL STEEL DETAILS - W.B.I.
STRUCTURE NUMBERS 081-0026 (E.B.) & 081-0027 (W.B.)

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JOB NO.
05R1532A
DATE
05/21/10

SHEET NO. 23
40 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
280	81-11B-11R	Rock Island	503	436
CONTRACT NO. 64815				
ILLINOIS FED. AID PROJECT				