



**CAMBER DIAGRAM**

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

**\*\*\*\*\*TOP OF WEB ELEVATIONS**

	Girder #1	Girder #2	Girder #3	Girder #4	Girder #5
⊕ Brg. S. Abut.	564.23	564.45	564.66	564.66	564.64
⊕ Splice #1	569.70	569.87	570.05	570.00	569.94
⊕ Pier	570.59	570.74	570.89	570.82	570.73
⊕ Splice #2	571.48	571.62	571.74	571.64	571.53
⊕ Brg. N. Abut.	570.38	570.45	570.51	570.35	570.17

\*\*\*\*\* For Fabrication Only

		0.4 Sp. 1	Pier	0.6 Sp. 2
$I_s$	(in <sup>4</sup> )	42589	120596	42589
$I_c(n)$	(in <sup>4</sup> )	100728	-	100728
$I_c(3n)$	(in <sup>4</sup> )	73065	-	73065
$S_s$	(in <sup>3</sup> )	1370	3397	1370
$S_c(n)$	(in <sup>3</sup> )	1887	-	1887
$S_c(3n)$	(in <sup>3</sup> )	1707	-	1707
$\rho$	(k/')	1.03	1.77	1.03
$M_D$	(k)	1703	6722	1703
$s_D$	(k/')	0.50	-	0.52
$M_{sD}$	(k)	925	-	994
$M_L$	(k)	1572	1942	1572
$M_{IMP}$	(k)	266	329	266
$\phi_3 [M_L + M_{IMP}]$	(k)	3064	3785	3064
$M_a$	(k)	7400	13659	7489
$M_u$	(k)	8059	-	8059
$f_s \rho$ non-comp	(ksi)	14.92	23.75	14.92
$f_s \rho$ (comp)	(ksi)	6.5	-	6.99
$f_s \phi_3 [M_L + M_{IMP}]$	(ksi)	19.48	13.37	19.48
$f_s$ (Overload)	(ksi)	40.90	37.12	41.39
$f_s$ (Total)	(ksi)	-	48.25	-
VR	(k)	63.3	-	63.3

$I_s, S_s$ : 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 (in<sup>4</sup> and in<sup>3</sup>).

$I_c(n), S_c(n)$ : Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing  $f_s$  (Total and Overload) due to short-term composite live loads (in<sup>4</sup> and in<sup>3</sup>).

$I_c(3n), S_c(3n)$ : 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 and Overload) due to long-term composite (superimposed) dead loads (in<sup>4</sup> and in<sup>3</sup>).

$\rho$ : Un-factored non-composite dead load (kips/ft.).

$M_D$ : Un-factored moment due to non-composite dead load (kip-ft.).

$s_D$ : Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_{sD}$ : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M_L$ : Un-factored live load moment (kip-ft.).

$M_{IMP}$ : Un-factored moment due to impact (kip-ft.).

$M_a$ : Factored design moment (kip-ft.).

$1.3 [M_D + M_{sD} + \frac{5}{8} (M_L + M_I)]$

$M_u$ : 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).

$M_D + M_{sD} + \frac{5}{8} (M_L + M_I)$

$f_s$  (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

$1.3 [M_D + M_{sD} + \frac{5}{8} (M_L + M_I)]$

VR: Maximum  $\phi_3$  + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

		S. Abut.	Pier	N. Abut.
$R_D$	(k)	90.8	341.5	92.4
$R_L$	(k)	49.1	107.0	49.1
$R_I$	(k)	8.3	18.1	8.3
$R_{Total}$	(k)	148.2	466.6	149.8

\*\*\* Compact section  
 \*\*\*\* Braced non-compact and partially braced section

STRUCTURAL STEEL DETAILS (SHEET 2)  
 ANDREWS DRIVE over  
 U.S. ROUTE 40 : CSX RR and IL. WESTERN RR  
 SEC. 99-00036-00-BR  
 S.I.R. NO. 003-6000  
 CITY of GREENVILLE  
 BOND COUNTY  
 STATION 117+73.00  
 PROFESSIONAL DESIGN FIRM LICENSE #184-001084  
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 HANSON  
 Hanson Professional Services Inc.  
 JOB NO. 04S2012  
 DATE 12/10/08

LAYOUT: MIM 03/07/08  
 DRAWN: DAP 03/07/08  
 REVIEWED: MIM 03/07/08  
 12/23/2008  
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