INTERIOR BEAM MOMENT TABLE						
		0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I_s	(in^4)	7800	7800	7800	7800	7800
$I_c(n)$	(in^4)	19,365	19,365	19,365	——	19,365
$I_c(3n)$	(in^4)	14,131	14,131	14,131	——	14,131
$I_c(cr)$	(in^4)	——	10,162	——	10,162	——
S_s	(in^3)	439	439	439	439	439
$S_c(n)$	(in^3)	629	629	629	——	629
$S_c(3n)$	(in^3)	565	565	565	——	565
$S_c(cr)$	(in^3)	——	495	——	495	——
DC1	(k/')	0.731	0.731	0.731	0.731	0.731
M_{DC1}	('k)	158	311	176	449	310
DC2	(k/')	0.030	0.030	0.030	0.030	0.030
M_{DC2}	('k)	7	13	7	18	13
DW	(k/')	0.275	0.275	0.275	0.275	0.275
M_{DW}	('k)	59	117	66	169	117
M_{L+IM}	('k)	557	565	620	710	756
M_U (Strength I)	('k)	1,268	1,569	1,413	2,080	1,901
$\phi_f M_n$	('k)	3,284	2,533	3,267	2,325	3,161
f_s DC1	(ksi)	4.32	8.50	4.81	12.27	8.47
f_s DC2	(ksi)	0.15	0.27	0.15	0.44	0.27
f_s DW	(ksi)	1.25	2.48	1.40	4.09	2.48
f_s (L + IM)	(ksi)	10.62	10.77	11.82	17.21	14.42
f_s (Service II)	(ksi)	19.52	25.25	21.73	39.17	29.97
$0.95R_hF_f$	(ksi)	47.5	47.5	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	——	——	——	——	——
$\phi_f F_n$	(ksi)	——	——	——	——	——
V_f	(k)	30.1	31.5	22.5	29.7	32.2

INTERIOR BEAM REACTION TABLE					
		S. Abut.	Pier 1	Pier 2	N. Abut.
R_{DC1}	(k)	15.2	53.0	63.6	21.3
R_{DC2}	(k)	0.6	2.2	2.6	0.9
R_{DW}	(k)	5.8	19.8	23.9	8.0
R_{L+IM}	(k)	60.2	112.2	113.3	65.4
R_{Total}	(k)	81.8	187.2	203.4	95.6

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 (superimposed) 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 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).

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

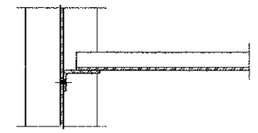
f_s (Service II): Sum of stresses as computed below (ksi).
$f_sDC1 + f_sDC2 + f_sDW + 1.3f_s(L+IM)$

$0.95R_hF_f$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

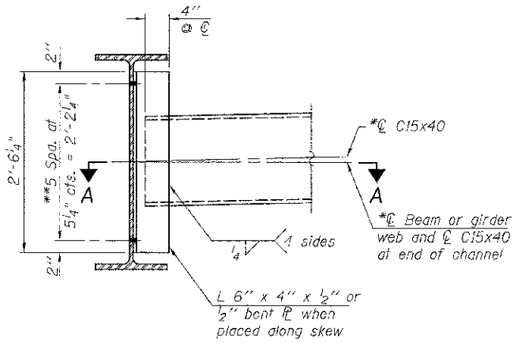
f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25(f_sDC1 + f_sDC2) + 1.5f_sDW + 1.75f_s(L+IM)$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Maximum factored shear range in span computed according to Article 6.10.10.



SECTION A-A



DIAPHRAGM D
(44 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, C15x50, if utilized, shall be provided at no additional cost to the Department.
**¾" ϕ HS bolts, 13/16" ϕ holes.
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.

STRUCTURAL STEEL DETAILS
C.H. 2 OVER SUGAR CREEK
SECTION 07-00073-00-BR
SCHUYLER COUNTY
STATION 20+00.00

SHEET NO. 11	ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17 SHEETS	CH 2	07-00073-00-BR	SCHUYLER	35	17
	SN 085-3056		CONTRACT NO. 93584		
	FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT BRS-0455(107)		

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