INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	9040	9040	9040
$I_c(n)$	(in^4)	23,061	-	23,061
$I_c(3n)$	(in^4)	16,695	-	16,695
$I_c(cr)$	(in^4)	-	11,814	-
S_s	(in^3)	504	504	504
$S_c(n)$	(in^3)	728	-	728
$S_c(3n)$	(in^3)	653	-	653
$S_c(cr)$	(in^3)	-	567	-
DC1	(k/')	0.83	0.83	0.83
M_{DC1}	('k)	344	429	109
DC2	(k/')	0.11	0.11	0.11
M_{DC2}	('k)	44	55	14
DW	(k/')	0.28	0.28	0.28
M_{DW}	('k)	116	145	37
M_{L+IM}	('k)	758	632	547
M_u (Strength I)	('k)	1986	1929	1167
$\phi_f M_n$	('k)	3647	2917	3683
f_s DC1	(ksi)	8.19	10.21	2.59
f_s DC2	(ksi)	0.81	1.16	0.26
f_s DW	(ksi)	2.13	3.07	0.68
f_s (L+IM)	(ksi)	12.49	13.38	9.02
f_s (Service II)	(ksi)	27.36	31.83	15.26
$0.95R_hF_{yf}$	(ksi)	47.50	47.50	47.50
f_s (Total)(Strength I)	(ksi)	-	-	-
$\phi_f F_n$	(ksi)	-	-	-
V_f	(k)	50.6	-	46.4

INTERIOR BEAM REACTION TABLE				
		N. Abut.	Pier	S. Abut.
R_{DC1}	(k)	23.9	65.9	13.9
R_{DC2}	(k)	3.1	8.4	1.8
R_{DW}	(k)	8.1	22.2	4.7
R_{L+IM}	(k)	74.0	112.7	65.1
R_{Total}	(k)	109.1	209.2	85.5

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).
$M_{L+IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.

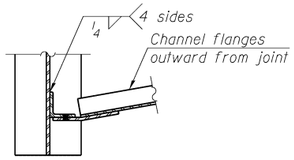
f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$0.95R_hF_{yf}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

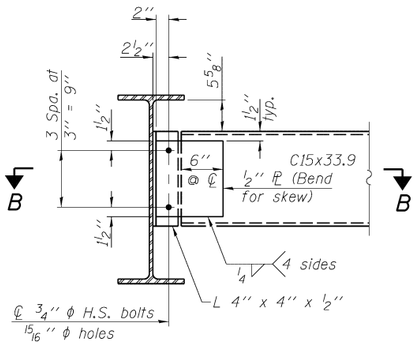
f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(L+IM)$

$\phi_f F_n$: 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.

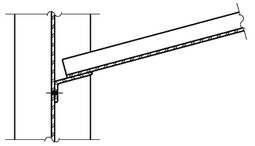


SECTION B-B

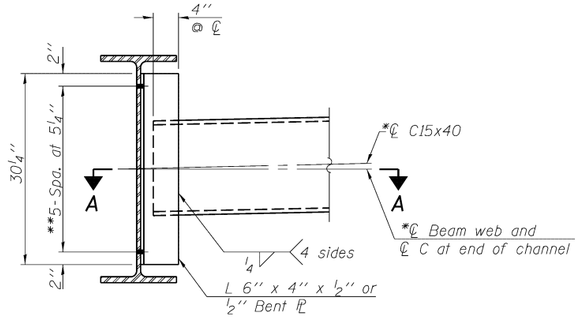


END DIAPHRAGM D2

Note:
Two hardened washers required for each set of oversized holes.

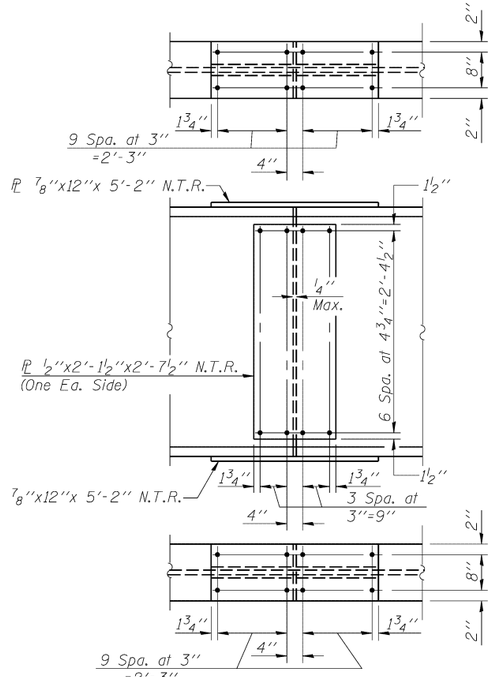


SECTION A-A



INTERIOR DIAPHRAGM D1

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels C15x50 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.
**¾" ϕ HS bolts, 15/16" ϕ holes



FIELD SPLICE DETAIL

Notes:
Use 7/8" ϕ H.S. bolts with 15/16" ϕ holes for all splice connections.
Load carrying components designated "N.T.R." shall conform to the Impact Testing Requirement, Zone 2.
All splice ℙ's shall conform to the requirements of AASHTO M270 Grade 50.

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630.724.9202 fax
www.v3co.com

USER NAME =	DESIGNED - WJV	REVISED	
	CHECKED - CJB	REVISED	
PLOT SCALE =	DRAWN - WJV	REVISED	
PLOT DATE =	CHECKED - CJB	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 016-1350
SHEET NO. 18 OF 35 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
353	11-Y-A	COOK	354	203
		CONTRACT NO. 60R19		
		ILLINOIS FED. AID PROJECT		