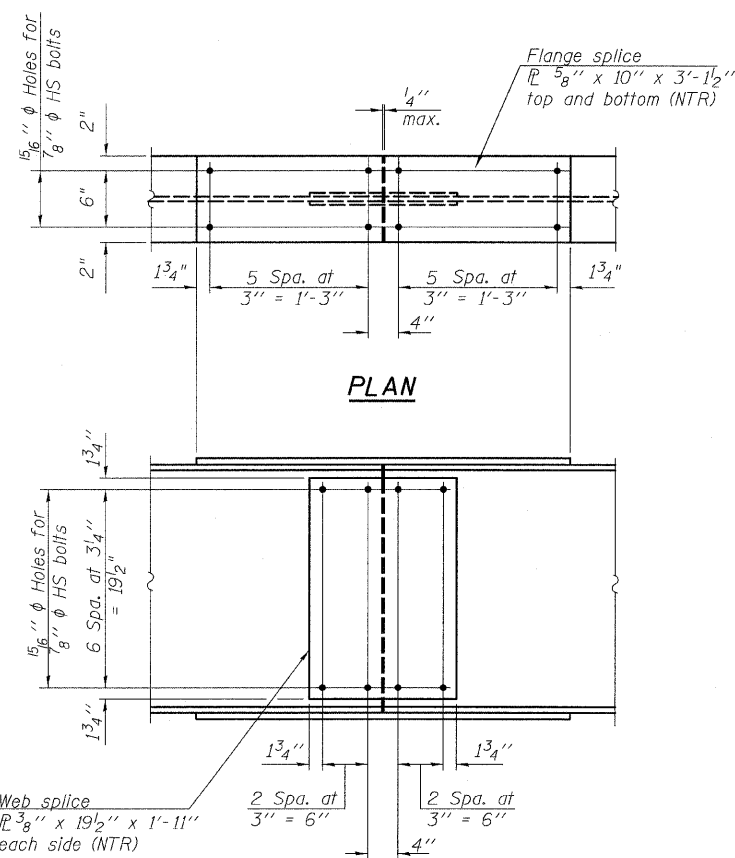


BEAM ELEVATION



ELEVATION

SPLICE DETAIL

(24 Required Total E.B. & W.B.)

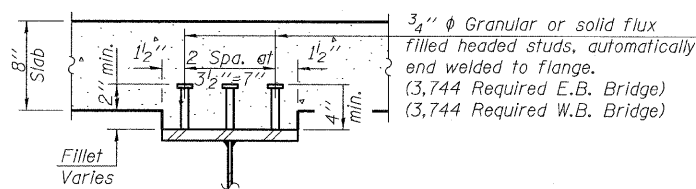
	0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in ⁴) 2850	2850	2850
$I_c(n)$	(in ⁴) 8939		8939
$I_c(3n)$	(in ⁴) 6817		6817
S_s	(in ³) 213	213	213
$S_c(n)$	(in ³) 337		337
$S_c(3n)$	(in ³) 306		306
Z	(in ³)		
Q	(k/')	.85	1.33
M_D	(k)	96	268
s_D	(k/')	.48	.48
M_{sD}	(k)	62	76
M_L	(k)	264	145
M_{1W}	(k)	77	42
$1.3 [M_D + M_L]$	(k)	568	312
M_a	(k)	944	754
M_u	(k)	1436	1598
f_s non-comp	(ksi)	5.4	15.1
f_s comp	(ksi)	2.4	-
f_s $1.3 [M_D + M_L]$	(ksi)	20.2	17.6
f_s (Overload)	(ksi)	28.0	32.7
f_s (Total)	(ksi)		42.5
VR	(k)	52.9	44.5

	Abut.	Pier
R_D	(k) 46.4	68.1
R_L	(k) 37.5	43.0
R_I	(k) 11.3	12.9
R_{Total}	(k) 95.2	124.0

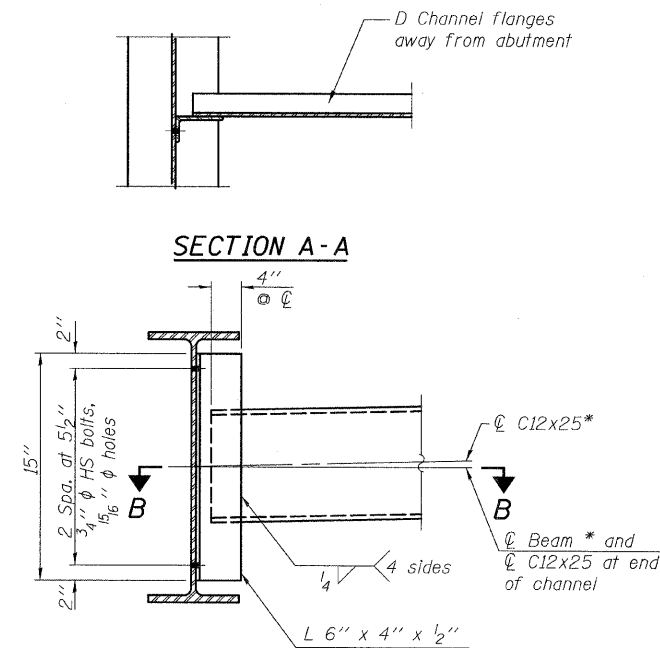
*Compact section
**Braced non-compact and partially braced section

Note:
Load carrying components designated "N.T.R." shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.

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.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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in.³).
 Q : 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_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M_D + M_{sD} + \frac{5}{3} (M_L + M_I)]$
 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).
 $M_D + M_{sD} + \frac{5}{3} (M_L + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M_D + M_{sD} + \frac{5}{3} (M_L + M_I)]$
 VR : Maximum $\frac{1}{4}$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).



SECTION A-A



DIAPHRAGM - D

(40 Req'd E.B., 40 Req'd W.B.)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channels C12x30 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.

FILE NAME =	USER NAME =	DESIGNED - DY	REVISIONS -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL STEEL DETAILS STRUCTURE NO. 006-0020 EB AND 006-0021 WB	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
TYLIN INTERNATIONAL	PLOT SCALE =	CHECKED - PF	REVISIONS -			80	[(06-5)HBR-1, VBR(06-6)]RS-3&I	BUREAU	249	82	
	PLOT DATE = 09/13/2011	DRAWN - DY	REVISIONS -			CONTRACT NO. 66686					
		CHECKED - PF	REVISIONS -			ILLINOIS FED. AID PROJECT					