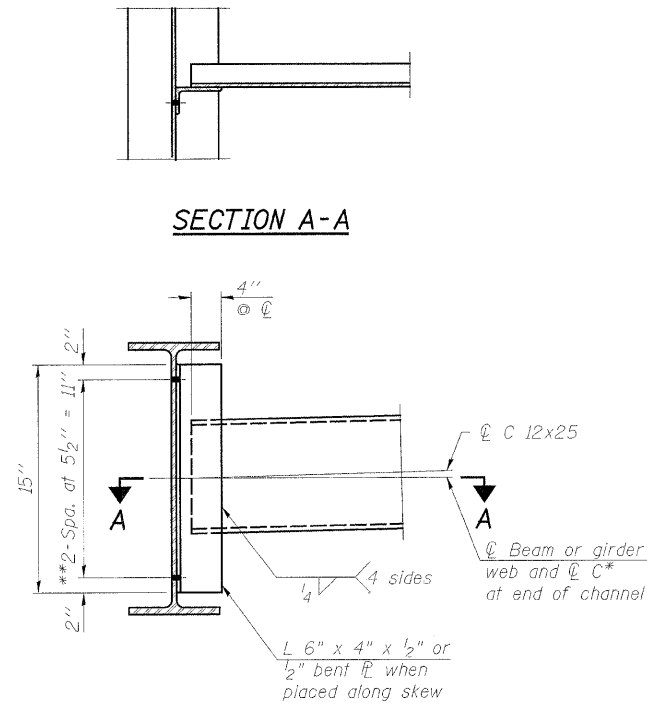


DATE	SECTION	COUNTY	SHEETS	SHEET
5/5/14	04-00343-00-BR	WINNEBAGO	92	33
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-BRM-5099(75)		

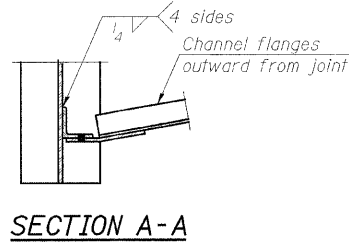
Structural Sheet 9A of 22A



INTERIOR DIAPHRAGM-D1

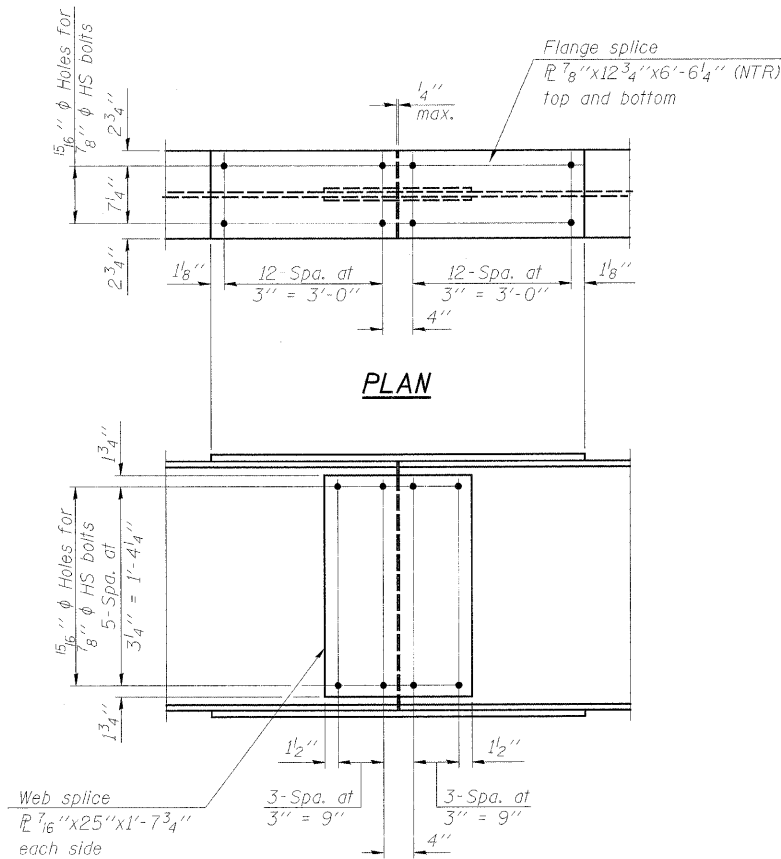
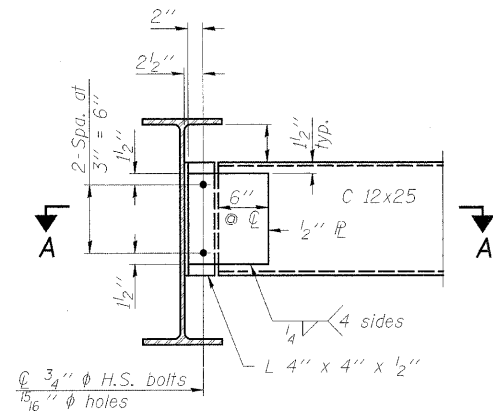
Note:
Two hardened washers required for each set of oversized holes.

- * Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.
- ** 3/4" HS bolts, 5/16" holes



END DIAPHRAGM-D

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



ELEVATION

SPLICE DETAIL
(24 Required)

	0.4 Sp. 1 0.6 Sp. 3	Pier #1 or #2	0.5 Sp. 2
I_s (in ⁴)	3,540	3,540	3,540
I_c (in ⁴)	9,321	9,321	9,321
I_c (sn) (in ⁴)	6,815	6,815	6,815
S_s (in ³)	291	291	291
S_c (in ³)	419	419	419
S_c (sn) (in ³)	379	379	379
Z (in ³)		327	
ϕ (k/ft.)	0.72	1.16	0.72
$M\phi$ (k)	154	411	133
$s\phi$ (k/ft.)	0.44		0.44
$M_s\phi$ (k)	104		107
$M\phi$ (k)	382	247	431
M (Imp) (k)	106	66	112
$\phi_2[M\phi + M(imp)]$ (k)	813	522	905
M_o (k)	1,392	1,213	1,489
M_u (k)	2,057	1,353	2,057
$f_s\phi$ non-comp (k.s.i.)	6.4	16.9	5.5
$f_s\phi$ (comp) (k.s.i.)	3.3		3.4
$f_s\phi_3(\phi + imp)$ (k.s.i.)	23.3	21.5	25.9
f_s (Overload) (k.s.i.)	33.0	38.4	34.8
f_s (Total) (k.s.i.)	42.9	49.9	45.2
VR (k)	81		92

	Abut.	Pier
$R\phi$ (k)	24.5	78.3
$R\phi$ (k)	40.2	56.6
Imp. (k)	11.2	15.2
R (Total) (k)	75.9	150.1

TOP OF FLANGE ELEVATIONS
(For Fabrication Use Only)

Beam	Location	¢ Brg. W. Abut.	¢ Splice No. 1	¢ Brg. Pier #1	¢ Splice No. 2	¢ Splice No. 3	¢ Brg. Pier #2	¢ Splice No. 4	¢ Brg. E. Abut.
1		731.090	731.408	731.491	731.574	731.839	731.888	731.937	732.140
2		731.246	731.555	731.635	731.716	731.971	732.018	732.064	732.258
3		731.385	731.684	731.762	731.841	732.086	732.131	732.175	732.359
4		731.429	731.719	731.794	731.871	732.107	732.149	732.190	732.366
5		731.378	731.659	731.732	731.806	732.033	732.072	732.112	732.278
6		731.311	731.582	731.653	731.725	731.942	731.979	732.016	732.173

STRUCTURAL STEEL DETAILS
BELTLINE ROAD OVER ILLINOIS RAILNET
FAU ROUTE 5154 SECTION 04-00343-00-BR
WINNEBAGO COUNTY
STA. 148+18.00 (S.N. 101-0172)