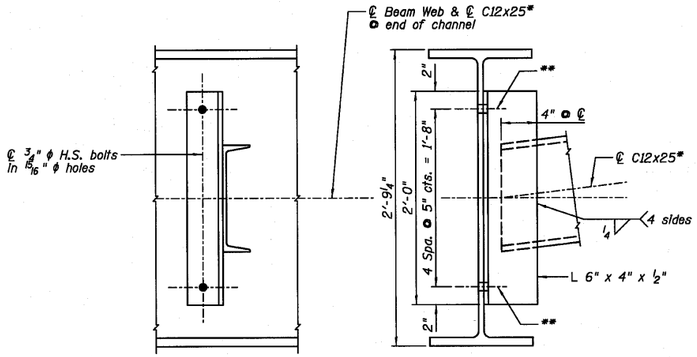
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

	INTERIOR BEAM MOMENT TABLE			
			0.4 Sp. 1 or 0.6 Sp. 2	Pier
	I_s	(in^4)	7450	7450
	$I_c(n)$	(in^4)	19002	
	$I_c(3n)$	(in^4)	13812	
	S_s	(in^3)	448	448
	$S_c(n)$	(in^3)	646	
	$S_c(3n)$	(in^3)	581	
	Z	(in^3)		514
	DC1	(k/')	0.760	0.760
	M_{DC1}	('k)	272	478
	DC2	(k/')	0.150	0.150
	M_{DC2}	('k)	60	78
	DW	(k/')	0.267	0.267
	M_{DW}	('k)	107	139
	M_{L+IM}	('k)	798	541
	M_u (Strength I)	('k)	1972	1850
*	$\phi_f M_n$, $\phi_f M_{nc}$	('k)	3241	2142
	f_s DC1	(ksi)	7.3	12.8
	f_s DC2	(ksi)	1.2	2.1
	f_s DW	(ksi)	2.2	3.7
	f_s 1.3(L+IM)	(ksi)	19.3	18.8
	f_s (Service II)	(ksi)	30.0	37.5
**	f_s (Total)(Strength I)	(ksi)		
	V_f	(k)	22.6	

* Compact Sections
** Non-Compact and Slender Sections

INTERIOR BEAM REACTION TABLE			
		Abut.	Pier
R_{DC1}	(k)	28.8	67.6
R_{DC2}	(k)	24.4	12.9
R_{DW}	(k)	7.6	22.9
R_{L+IM}	(k)	67.8	97.5
R_{Total}	(k)	128.6	200.9

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) 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) 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. Omit line in Moment Table if not used in design calculations ($in.^3$).
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 (kip-ft.).
$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).
f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+IM}$
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$
V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

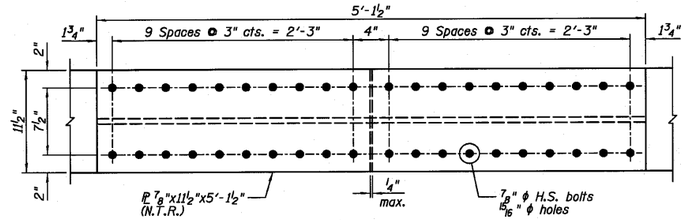


DIAPHRAGM D
(35 - Required)

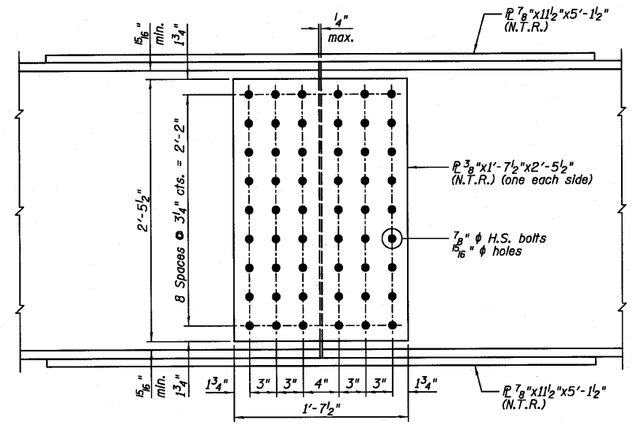
Note:
Two hardened washers required for each set of oversized holes.

*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on C12x25 section. The C12x30, if utilized, shall be provided at no extra cost to the department.

**The connection angles on Beam 3 near the Stage Construction Line shall have 15/16" x 1 7/8" vertical slotted holes. The bolts in the slotted holes shall be finger tight until the Stage II deck pour is completed. The slotted holes in the connection angles shall be positioned to allow the bolts to move from one end of the slotted hole to the opposite end under deck load. The holes shall be positioned allowing maximum bolt displacement without laterally stressing the beams. No slotted holes are allowed on the beams.



TOP AND BOTTOM FLANGE



WEB

SPLICE DETAILS
(6 - Required)

NOTES:
1.) See Sheet B14 for Splice and Diaphragm Locations.
2.) Load carrying components designated N.T.R. shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
3.) All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

DESIGNED	SDH
CHECKED	JML
DRAWN	DJM
CHECKED	MSW
DATE	10/08/10

STRUCTURAL STEEL
STRUCTURE NO. 006-0181

Farnsworth GROUP, INC.
2709 McGraw Drive
Bloomington, Illinois 61704
309/663-8435, 309/663-1571 fax

SHEET NO. B15
23 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
698	(101 BR)BR	BUREAU	47	29
		CONTRACT NO. 66910		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

24-8371