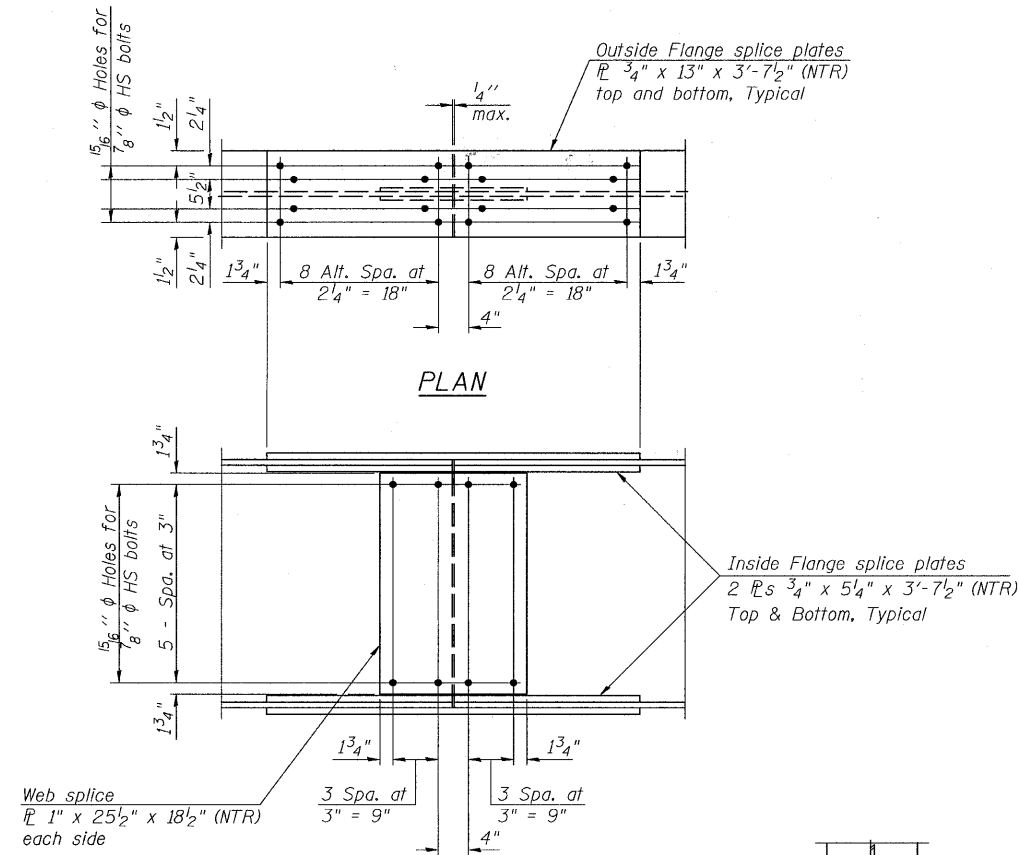
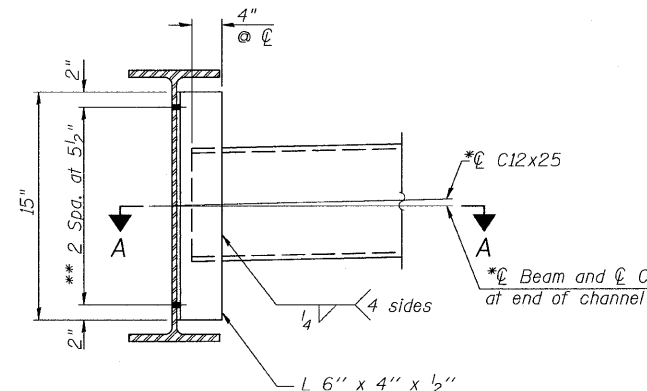
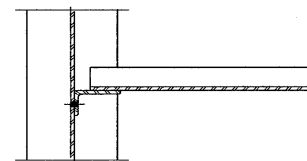


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SPLICE DETAIL
(24 Required)



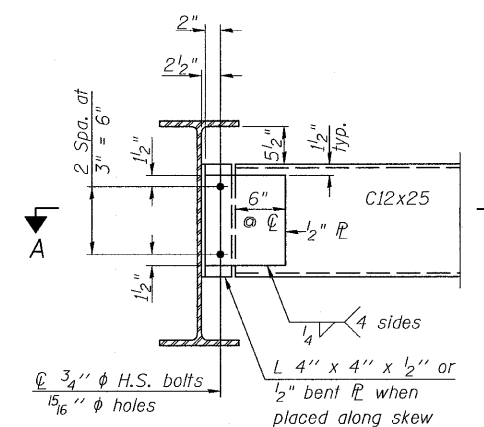
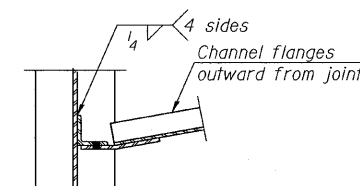
DIAPHRAGM B
(65 Required)

Note:
Two hardened washers required for each set of oversized holes.
*Alternate channel C12x30 is 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.
**3/4" ϕ HS bolts, 15/16" ϕ holes

INTERIOR GIRDER MOMENT TABLE							
	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4
I_s	(in ⁴) 5,147.0	5,147.0	5,147.0	5,147.0	5,147.0	5,147.0	5,147.0
$I_c(n)$	(in ⁴) 13,758.0	---	13,758.0	---	13,758.0	---	13,758.0
$I_c(3n)$	(in ⁴) 9,702.0	---	9,702.0	---	9,702.0	---	9,702.0
S_s	(in ³) 412.0	412.0	412.0	412.0	412.0	412.0	412.0
$S_c(n)$	(in ³) 613.0	---	613.0	---	613.0	---	613.0
$S_c(3n)$	(in ³) 544.0	---	544.0	---	544.0	---	544.0
Z	(in ³) 466.0	466.0	466.0	466.0	466.0	466.0	466.0
DC1	(k/')	0.812	0.962	0.812	0.962	0.812	0.812
MDC1	(k)	157.8	405.6	204.9	480.2	212.0	388.9
DC2	(k/')	0.150	---	0.150	---	0.150	---
MDC2	(k)	29.1	---	37.8	---	39.1	---
DW	(k/')	0.266	0.266	0.266	0.266	0.266	0.266
MDW	(k)	51.8	112.4	67.2	133.0	69.6	107.7
$M_k + IM$	(k)	578.0	418.6	717.8	498.8	725.7	413.1
M_u (Strength I)	(k)	1,322.8	1,408.2	1,660.3	1,672.7	1,688.3	1,370.6
$\phi_f M_n, \phi_f M_{nc}$	(k)	2,748.0	---	2,748.0	---	2,748.0	---
f_s DC1	(ksi)	4.6	11.8	6.0	14.0	6.2	11.3
f_s DC2	(ksi)	0.64	---	0.83	---	0.86	---
f_s DW	(ksi)	1.14	3.27	1.48	3.87	1.54	3.14
f_s 1.3($k + IM$)	(ksi)	14.71	15.85	18.27	18.89	18.47	15.64
f_s (Service II)	(ksi)	21.09	30.94	26.55	36.75	27.04	30.11
f_s (Total)(Strength I)	(ksi)	---	41.01	---	48.72	---	39.92
V_f	(k)	21.8	---	18.3	---	20.4	---

* Compact sections
** Non-Compact and slender sections

INTERIOR GIRDER REACTION TABLE						
		S. Abut.	Pier 1	Pier 2	Pier 3	N. Abut.
R_{DC1}	(k)	16.1	58.3	63.2	56.8	14.5
R_{DC2}	(k)	3.2	10.4	11.6	10.1	2.9
R_{DW}	(k)	5.7	18.6	20.7	18.2	5.1
$R_k + IM$	(k)	65.0	116.5	124.5	114.5	63.3
R_{Total}	(k)	90.0	203.8	220.0	199.6	85.8



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

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 (in⁴ and in³).
 $I_c(n), S_c(n)$: 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 (in⁴ and in³).
 $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).
DC1: Un-factored non-composite dead load (kips/ft.).
MDC1: 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.).
MDC2: 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.).
MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
 $M_k + IM$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
 M_u (Strength I): Factored design moment (kip-ft.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k + IM$
 $\phi_f M_n$: 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).
 $M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_k + IM$
 f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_k + IM$
 V_f : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.

TOP OF BEAM ELEVATIONS
(For Fabrication Only)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6
Brig S Abut	831.94	831.99	832.03	831.97	831.82	831.65
Brig Pier 1	832.23	832.33	832.39	832.37	832.26	832.13
Splice # 1	832.28	832.39	832.46	832.45	832.34	832.22
Splice # 2	832.13	832.27	832.39	832.41	832.33	832.23
Brig Pier 2	832.05	832.19	832.33	832.36	832.28	832.19
Splice # 3	831.97	832.12	832.25	832.29	832.23	832.15
Splice # 4	831.37	831.56	831.72	831.80	831.77	831.73
Brig Pier 3	831.20	831.39	831.56	831.64	831.62	831.59
Brig N Abut	830.22	830.45	830.65	830.76	830.78	830.78

Notes:
Interior Diaphragms, End diaphragms, connecting plates, and connecting angles may be AASHTO M270 Grade 36.
Beam sections and all splice plates shall be AASHTO M270 Grade 50.

STEEL DETAILS
S.N. 101-0120

DESIGNED	SCD
CHECKED	DRB
DRAWN	THW
CHECKED	SCD



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SHEET NO.	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
15 OF 34 SHEETS	301	(1-1HB-1)D	WINNEBAGO	55	31
CONTRACT NO. 64E11					
ILLINOIS FED. AID PROJECT					