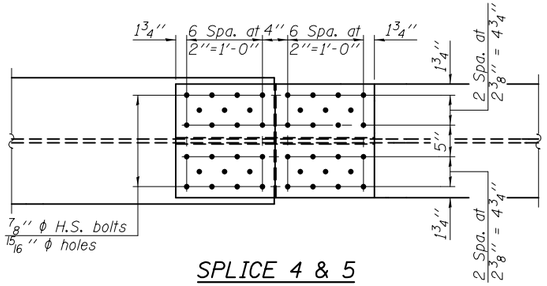
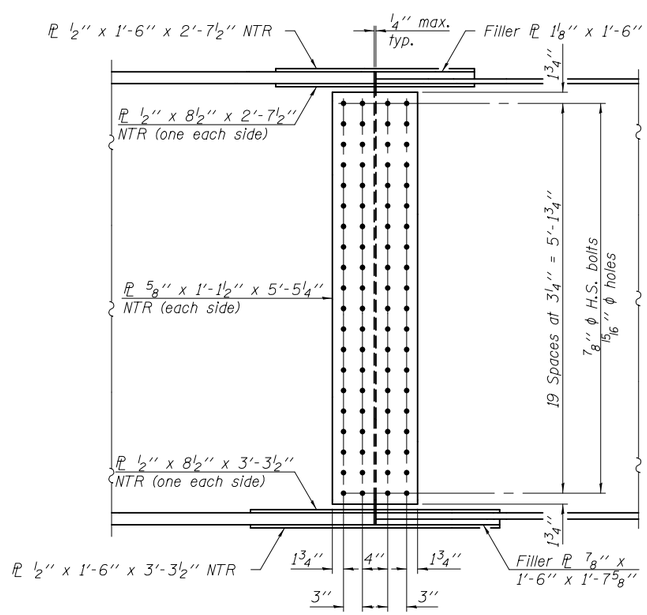
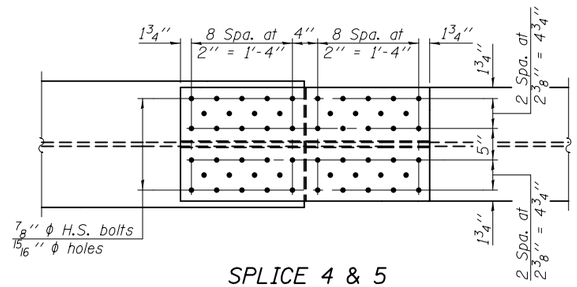


SPLICE 4 & 5
PLAN
(Looking at top of top flange)



SPLICE 4 & 5
ELEVATION

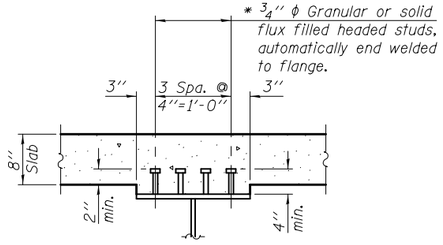


SPLICE 4 & 5
PLAN
(Looking at bottom of bottom flange)

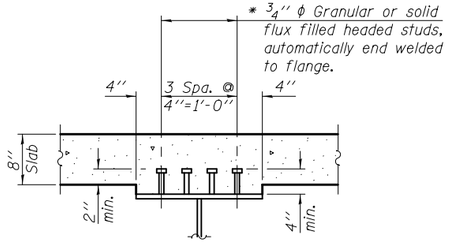
INTERIOR GIRDER MOMENT TABLE						
		0.4 Sp. 1 or 0.6 Sp. 5	Pier 1 & 4	0.5 Span 2 & 4	Pier 2 & 3	0.5 Span 3
I_s	(in^4)	60186	127454	53423	107946	53423
$I_c(n)$	(in^4)	138878	210551	119712	185865	119712
$I_c(3n)$	(in^4)	99154	164216	86961	143302	86961
$I_c(cr)$	(in^4)	-	138966	-	119179	-
S_s	(in^3)	1974	3516	1625	3009	1625
$S_c(n)$	(in^3)	2654	4091	2206	3567	2206
$S_c(3n)$	(in^3)	2400	3820	1989	3313	1989
$S_c(cr)$	(in^3)	-	3625	-	3120	-
DC1	(k/')	1.049	1.244	1.024	1.188	1.024
M_{DC1}	('k)	2074	4120	807	3123	1280
DC2	(k/')	0.15	0.15	0.15	0.15	0.15
M_{DC2}	('k)	298	536	129	422	186
DW	(k/')	0.367	0.367	0.367	0.367	0.367
M_{DW}	('k)	728	1311	315	1033	454
M_{L+IM}	('k)	2564	3050	2059	2859	2144
M_u (Strength I)	('k)	8544	13123.5	5245.7	10985	6265.2
$\phi_f M_n$	('k)	12486	-	11390.1	-	11075.6
f_s DC1	(ksi)	12.6	14.1	6.0	12.5	9.5
f_s DC2	(ksi)	1.5	1.8	0.8	1.6	1.1
f_s DW	(ksi)	3.6	4.3	1.9	4.0	2.7
f_s (L+IM)	(ksi)	11.6	10.1	11.2	11.0	11.7
f_s (Service II)	(ksi)	32.8	33.3	23.3	32.4	28.5
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	-	44.0	-	42.8	-
$\phi_f F_n$	(ksi)	-	50.0	-	50.0	-
V_f	(k)	62.9	64.3	48.5	68.9	48.4

INTERIOR GIRDER REACTION TABLE				
		Abut.	Pier 1 & 4	Pier 2 & 3
R_{DC1}	(k)	67.9	230.1	197.1
R_{DC2}	(k)	9.5	30.0	26.4
R_{DW}	(k)	23.2	73.3	64.5
R_{L+IM}	(k)	117.3	219.0	214.5
R_{Total}	(k)	217.9	552.4	502.5

Notes:
Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.
All splice plates, including filler plates, shall be AASHTO M270, Gr. 50W.



SECTION A-A
(Typical for 18" flanges)



SECTION B-B
(Typical for 20" flanges)

* Total studs required = 25,152

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 $M_{L+IM} / S_c(cr)$ 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.

DESIGNED	-	DAVID H. RICHTER	
CHECKED	-	JUSTIN T. BELUE	
DRAWN	-	MICHAEL B. MOSSMAN	
CHECKED	-	J.T.B. / D.H.R.	

EXAMINED — PASSED

ACTING ENGINEER OF BRIDGE DESIGN

ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE - OCTOBER 4, 2013

REVISED ___

REVISED ___

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 046 – 0135 (NB) & 046 – 0136 (SB)
SHEET NO. 37 OF 79 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(140)BR&BR-1	KANKAKEE	183	77
		CONTRACT NO. 66750		
	ILLINOIS FED. AID PROJECT			