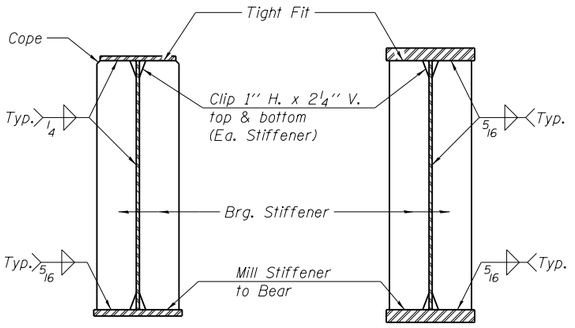


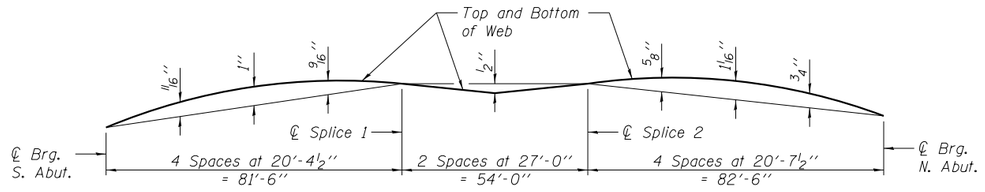
AT ABUTMENT AT PIER

BEARING STIFFENER DETAIL

TOP OF WEB ELEVATIONS

(For Fabrication Only)

	℄ Brg. S. Abut.	℄ Splice 1	℄ Pier	℄ Splice 2	℄ Brg. N. Abut.
Girder 10	818.70	819.23	819.28	819.42	819.45
Girder 11	818.60	819.13	819.18	819.32	819.35
Girder 12	818.49	819.02	819.07	819.21	819.24



CAMBER DIAGRAM

**** INTERIOR GIRDER MOMENT TABLE				
			0.4 Sp. 1 or 0.6 Sp. 2	Pier
	I_s	(in^4)	20770	51140
	$I_c(n)$	(in^4)	55600	--
	$I_c(3n)$	(in^4)	39600	--
	$I_c(cr)$	(in^4)	--	56980
	S_s	(in^3)	1070	2006
	$S_c(n)$	(in^3)	1449	--
	$S_c(3n)$	(in^3)	1333	--
	$S_c(cr)$	(in^3)	--	2078
	$\mathcal{D}$	(k/')	0.978	1.143
	$M\mathcal{D}$	('k)	694	-1810
	$s\mathcal{D}$	(k/')	0.466	0.466
	$M_s\mathcal{D}$	('k)	397	-791
	$M\ell$	('k)	870	-967
	M_I	('k)	186	-207
	$\frac{5}{3}[M\ell + I]$	('k)	1760	-1957
	M_a	('k)	3706	-5925
*	M_u	('k)	4348	--
	f_s $\mathcal{D}$ non-comp	(ksi)	7.8	10.8
	f_s $\mathcal{D}$ (comp)	(ksi)	3.6	4.6
	f_s $\frac{5}{3}[M\ell + M_I]$	(ksi)	14.6	11.3
	f_s (Overload)	(ksi)	26.0	26.7
**	f_s (Total)	(ksi)	--	34.7
	VR	(k)	68.5	66.5

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

**** INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
$R\mathcal{D}$	(k)	56.5	211.0
$R\ell$	(k)	46.6	79.0
R_I	(k)	10.0	16.9
R_{Total}	(k)	113.1	306.9

**** Girder 11 governs the design of the new girders (Girders 10 thru 12)

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 $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and deck reinforcement, used for computing f_s(Total and Overload) due to long-term composite (superimposed) dead loads and short term composite live loads ($in.^4$ and $in.^3$).

$\mathcal{D}$: Un-factored non-composite dead load (kips/ft.).

$M\mathcal{D}$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\mathcal{D}$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\mathcal{D}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\ell$: Un-factored live load moment (kip-ft.).

M_I: Un-factored moment due to impact (kip-ft.).

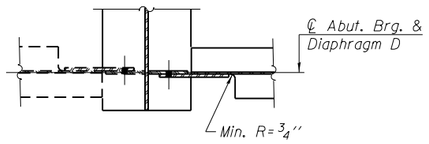
M_a: Factored design moment (kip-ft.).
$1.3\ [\ M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}\ (M\ell + M_I)]$

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.).

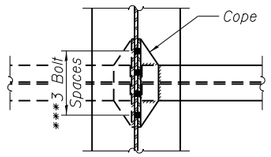
f_s (Overload): Sum of stresses as computed from the moments below (ksi).
$M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}\ (M\ell + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}\ (M\ell + M_I)]$

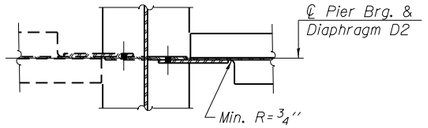
VR: Maximum ℓ + impact shear range within the composite portion of the span for stud shear connector design (kips).



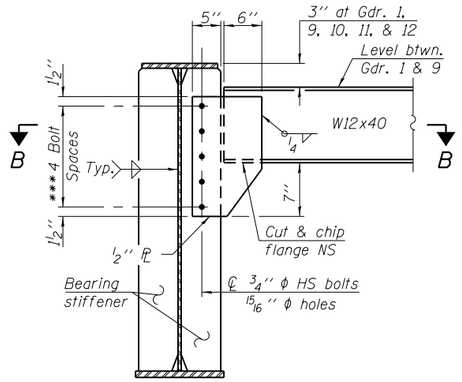
SECTION B-B



SECTION C-C

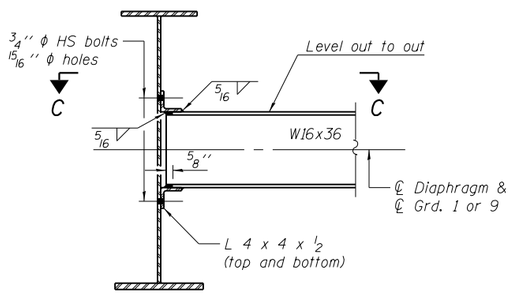


SECTION D-D



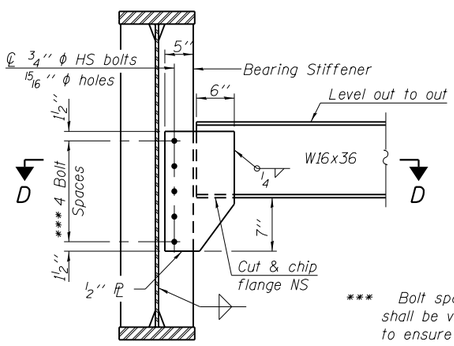
END DIAPHRAGM D

(22 Required)



INTERIOR DIAPHRAGM D1

(24 Required)



INTERIOR DIAPHRAGM D2

(3 Required)

Notes:
Two hardened washers required for each set of oversized holes.
Disconnect interior diaphragms between Girders 4 and 5 prior to each deck pour. Reconnect with new bolts upon completion of the deck pour.
End diaphragms and plates shall be hot dip galvanized according to Article 520.03 of the Standard Specifications.

*** Bolt spacing and plate dimensions of existing diaphragms shall be verified in field prior to fabrication of new diaphragms to ensure fit when attaching to existing members. Holes in new connector plates may be field-drilled to match existing.

FILE NAME = 072Ø146-68683-Ø24-Steel Details.dgn	USER NAME = baswanson	DESIGNED - BAS	REVISED
MAURER-STUTZ ENGINEERS SURVEYORS		CHECKED - JAE	REVISED
	PLOT SCALE =	DRAWN - BAS	REVISED
	PLOT DATE = 1/24/2014	CHECKED - RAL	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 072-0146
SHEET NO. 24 OF 36 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
318	(72-7HB)BY	PEORIA	487	311
		CONTRACT NO. 68683		
	ILLINOIS FED. AID PROJECT			