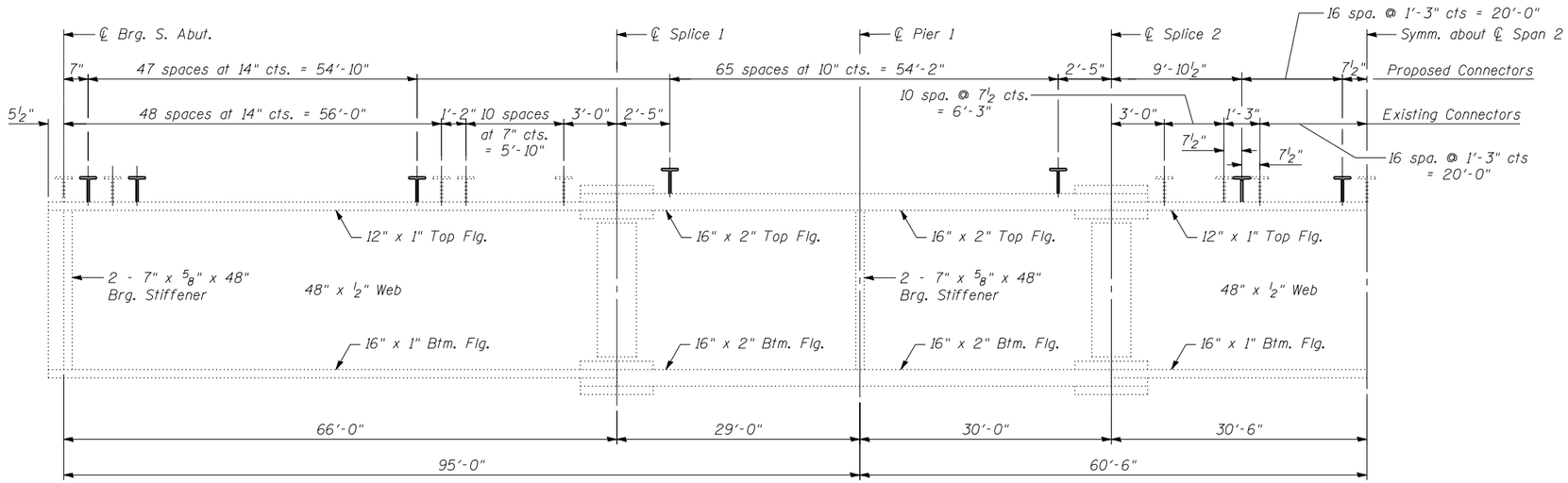
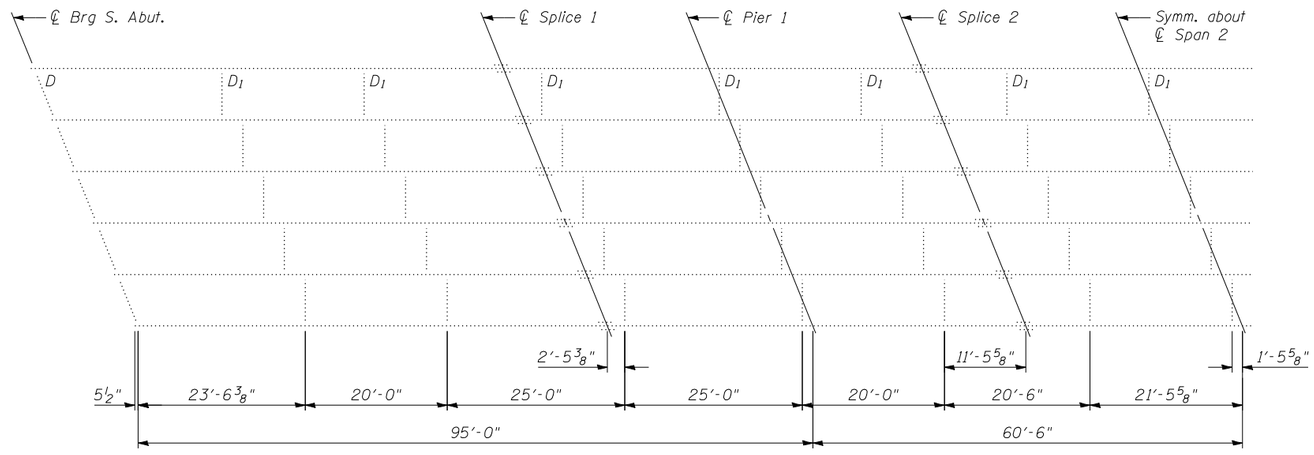
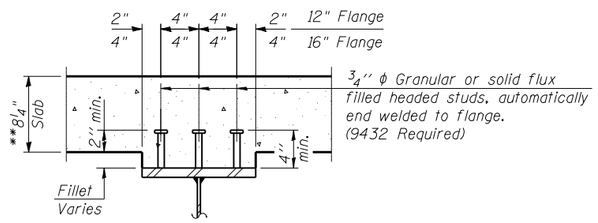


GIRDER ELEVATION



DIAPHRAGM LAYOUT



SECTION A-A

**Prior to Grinding

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).

$\mathcal{D}$: 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_L: Un-factored live load moment (kip-ft.).

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

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

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).
$M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M_L + M_I)$

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

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

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	21233	44629	21233
$I_c(n)$	(in^4)	51303	82087	51303
$I_c(3n)$	(in^4)	37809	62711	37809
S_s	(in^3)	919	1717	919
$S_c(n)$	(in^3)	1234	2051	1234
$S_c(3n)$	(in^3)	1134	1912	1134
$\mathcal{D}$	(k/')	1.042	1.142	1.072
$M\mathcal{D}$	('k)	546	1457	502
$s\mathcal{D}$	(k/')	0.338	0.338	0.338
$M_s\mathcal{D}$	('k)	210	391	228
ML	('k)	764	776	831
M_I	('k)	174	167	169
$\frac{5}{3}[ML + M_I]$	(ksi)	1563	1572	1667
M_a	('k)	3015	4446	3116
* M_u	('k)	4805	6220	3451
$f_s\mathcal{D}$ (non-comp)	(ksi)	7.1	10.2	6.6
$f_s\mathcal{D}$ (comp)	(ksi)	2.2	2.5	2.4
$f_s\ \frac{5}{3}[ML + M_I]$	(ksi)	15.2	9.2	16.2
f_s (Overload)	(ksi)	24.6	21.8	25.2
f_s (Total)	(ksi)			
VR	(k)	57.4	60.5	48.6

* Compact Sections

INTERIOR GIRDER REACTION TABLE

		Abutments	Piers
$R\mathcal{D}$	(k)	46.1	170.2
RL	(k)	41.5	72.5
R_I	(k)	9.4	15.8
R_{Total}	(k)	97.0	258.5

Abutment DL Reactions include weight of diaphragm and the weight of approach slab and F.W.S.

Coombe-Bloxdorf P.C.
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CB PROJECT NO 10007-3	PLOT DATE = 3/18/2013	CHECKED - RKM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 054-0063 (N.B.) & 054-0064 (S.B.)
SHEET NO. 25 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	D6 LOGAN CO BR 2011-1	LOGAN	429	310
		CONTRACT NO. 72E11		
ILLINOIS	FED. AID PROJECT			