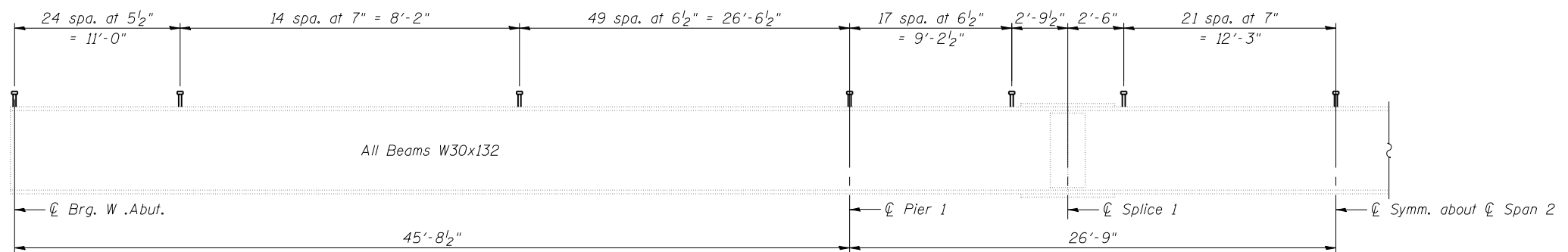


DIAPHRAGM LAYOUT



GIRDER ELEVATION

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).

Q : Un-factored non-composite dead load (kips/ft.).

M_Q : Un-factored moment due to non-composite dead load (kip-ft.).

s_Q : Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s Q$: 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.).

$1.3 [M_Q + M_s Q + \frac{5}{8} (M_L + M_I)]$

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.).

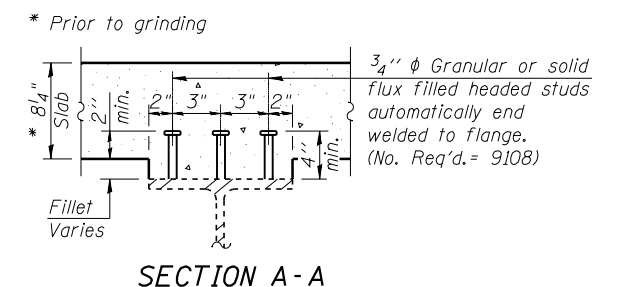
f_s (Overload): Sum of stresses as computed from the moments below (ksi). $M_Q + M_s Q + \frac{5}{8} (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3 [M_Q + M_s Q + \frac{5}{8} (M_L + M_I)]$

VR: Maximum \pm 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	Piers	0.5 Span 2
I_s	(in^4)	5770	5770	5770
$I_c(n)$	(in^4)	16,176	8,167	16,176
$I_c(3n)$	(in^4)	11,894	8,167	11,894
S_s	(in^3)	380	380	380
$S_c(n)$	(in^3)	573	448	573
$S_c(3n)$	(in^3)	517	448	517
Q	(k/ft)	0.977	0.977	0.977
M_Q	(k)	149	241	109
s_Q	(k/ft)	0.536	0.536	0.536
$M_s Q$	(k)	82	133	60
M_L	(k)	291	223	278
M_I	(k)	84	65	81
$\frac{5}{8} [M_L + M_I]$	(k)	625	480	599
M_a	(k)	1113	1111	999
M_u	(k)	2378	1829	2378
f_s Q non-comp	(ksi)	4.7	7.6	3.4
f_s Q (comp)	(ksi)	1.9	3.6	1.4
f_s $\frac{5}{8} [M_L + M_I]$	(ksi)	13.1	12.9	12.5
f_s (Overload)	(ksi)	19.7	24.1	17.3
f_s (Total)	(ksi)	25.6	31.3	22.5
VR	(k)	51.8	57.2	39.2

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



INTERIOR GIRDER REACTION TABLE		
	Abuts.	Piers
R_Q	(k)	59.4
R_L	(k)	35.9
R_I	(k)	10.4
R_{Total}	(k)	140.7

Abutment DL reactions include weight of diaphragm, approach slab and F.W.S.



JOB = 2276.3
 FILE = 0540057_0058-Steel.dgn
 DATE = 2/11/2013

DESIGNED - AAN
 CHECKED - MDC
 DRAWN - SJS
 CHECKED - MDC

REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GIRDER DETAILS
 STRUCTURE NO. 054-0057 (NB) & 054-0058 (SB)

SHEET NO. 19 OF 31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	D6 LOGAN CO BR 2011-1	LOGAN	429	218
CONTRACT NO. 72E11				

ILLINOIS FED. AID PROJECT