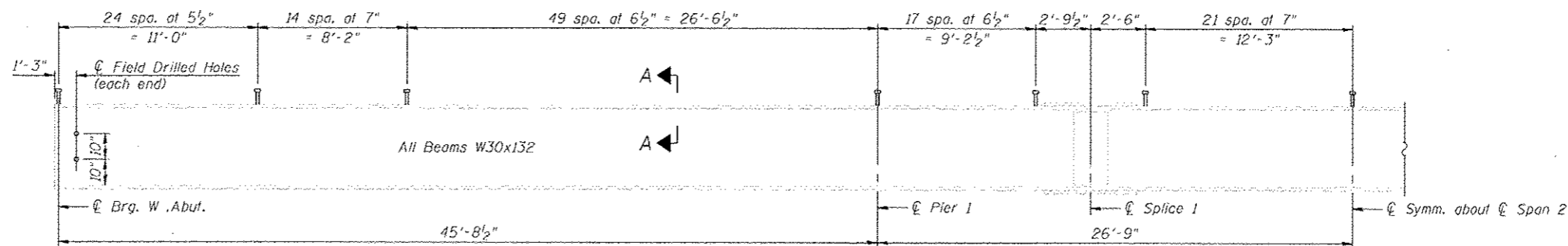


DIAPHRAGM LAYOUT



HALF BEAM 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_{sQ} : 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_o : Factored design moment (kip-ft.).

$1.3 [M_Q + M_{sQ} + \frac{2}{3} (M_L + M_I)]$

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).

$M_Q + M_{sQ} + \frac{2}{3} (M_L + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).

$1.3 [M_Q + M_{sQ} + \frac{2}{3} (M_L + M_I)]$

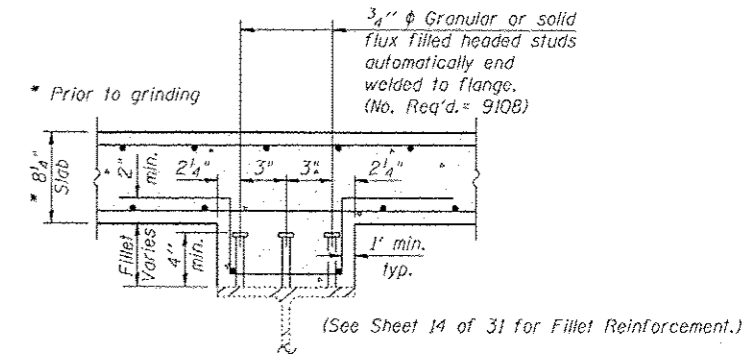
VR: Maximum $\frac{1}{4}$ impact shear range within the composite portion of the span for stud shear connector design (kips).

	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_{sQ}	(k) 82	133	60
M_L	(k) 291	223	278
M_I	(k) 84	65	81
M_o	(k) 625	480	599
M_u	(k) 1113	1111	999
M_u	(k) 2378	1829	2378
f_s non-comp	(ksi) 4.7	7.6	3.4
f_s comp	(ksi) 1.9	3.6	1.4
f_s [M _o + 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	57.2

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

	Abuts.	Piers
R_Q	(k) 59.4	83.2
R_L	(k) 35.9	44.6
R_I	(k) 10.4	12.9
R_{Total}	(k) 105.7	140.7

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



SECTION A-A

REV. SHEET G-3-13