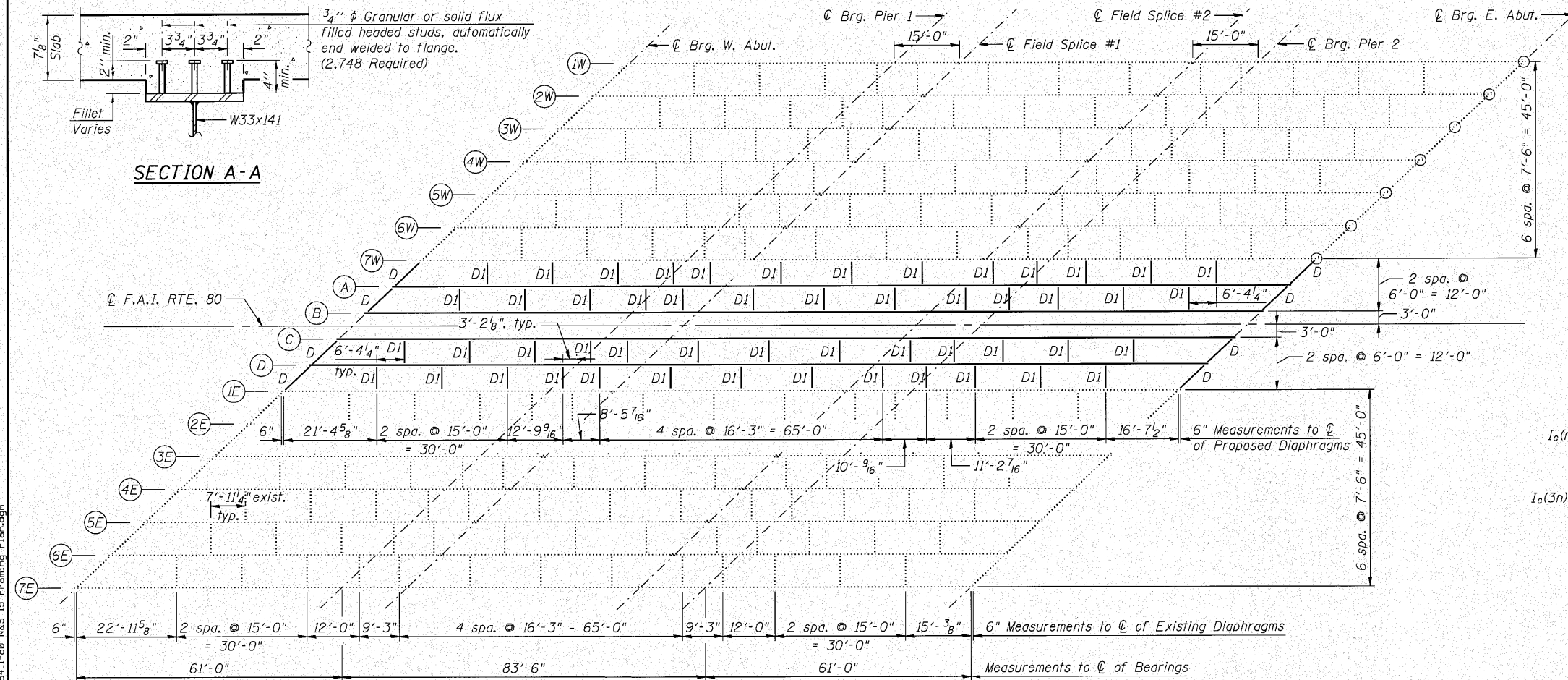


SECTION A-A



FRAMING PLAN

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	L. Sum	1.0
Stud Shear Connectors	Each	2,748

Notes:

- Contractor to verify existing dimensions in the field and make necessary approved adjustments prior to ordering materials.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- Top of Beam elevations shown on sheet S-16.

	0.4 Sp. 1 or 0.6 Sp. 3	Piers	0.5 Sp. 2
I_s	(in ⁴) 7,450	7,450	7,450
$I_c(n)$	(in ⁴) 17,516		17,516
$I_c(3n)$	(in ⁴) 12,859		12,859
S_s	(in ³) 447	447	447
$S_c(n)$	(in ³) 618		618
$S_c(3n)$	(in ³) 559		559
Z	(in ³)	514	
ρ	(k/')	0.729	0.729
$M \rho$	(k)	167	395
$s \rho$	(k/')	0.282	0.282
$M_s \rho$	(k)	67	138
$M \frac{L}{4}$	(k)	338	262
M_{IM}	(k)	91	65
$\frac{5}{3} [M \frac{L}{4} + I]$	(k)	714	546
M_o	(k)	1,232	1,403
M_u	(k)	3,042	1,964
$f_s \rho$ non-comp	(ksi)	4.47	10.59
$f_s \rho$ (comp)	(ksi)	1.44	3.71
$f_s \frac{5}{3} [M \frac{L}{4} + M_I]$	(ksi)	13.86	14.63
f_s (Overload)	(ksi)	19.77	28.94
f_s (Total)	(ksi)		
VR	(k)	47	53

	Abuts	Piers
$R \rho$	(k) 22.8	81.7
$R \frac{L}{4}$	(k) 34.5	47.4
R_I	(k) 8.6	11.9
R_{Total}	(k) 65.9	141.0

* Compact section

○ Location of Bearings to be repaired as per details on Sheet S-19.

- 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 (in⁴ and in³).
- $I_c(n), S_c(n)$: 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 (in⁴ and in³).
- $I_c(3n), S_c(3n)$: 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 (in⁴ and in³).
- Z: Plastic Section Modulus of the steel section in non-composite areas (in³).
- ρ : Un-factored non-composite dead load (kips/ft.).
- $M \rho$: Un-factored moment due to non-composite dead load (kip-ft.).
- $s \rho$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
- $M_s \rho$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- $M \frac{L}{4}$: Un-factored live load moment (kip-ft.).
- M_I : Un-factored moment due to impact (kip-ft.).
- M_o : Factored design moment (kip-ft.).
 $1.3 [M \rho + M_s \rho + \frac{5}{3} (M \frac{L}{4} + M_I)]$
- 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).
 $M \rho + M_s \rho + \frac{5}{3} (M \frac{L}{4} + M_I)$
- f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M \rho + M_s \rho + \frac{5}{3} (M \frac{L}{4} + M_I)]$
- VR: Maximum $\frac{L}{4}$ + impact shear range within the composite portion of the span for stud shear connector design (kips).

FILE NAME: m:\pro_13384\3_east\design\structural\1-80 over_n8s\ced\3384_1-80 FRAMING PLAN.dgn
 USER: rdenley
 DESIGNED: BWS
 CHECKED: EKM
 DRAWN: RD
 CHECKED: SCD
 PLOT DATE: 10/28/2010
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