INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I_s	(in⁴)	2,850	2,850	2,850
$I_c(n)$	(in⁴)	9,235	—	9,235
$I_c(3n)$	(in⁴)	7,054	—	7,054
S_s	(in³)	213	213	213
$S_c(n)$	(in³)	340	—	340
$S_c(3n)$	(in³)	309	—	309
Z	(in³)	—	244	—
$DC1$	(k/')	0.836	0.836	0.836
M_{DC1}	('k)	38	123	83
$DC2$	(k/')	0.155	0.155	0.155
M_{DC2}	('k)	9	19	21
DW	(k/')	0.333	0.333	0.333
M_{DW}	('k)	20	39	44
M_{L+IM}	('k)	312	217	453
M_u (Strength I)	('k)	635	616	989
* $\phi_f M_n$, $\phi_f M_{nc}$	('k)	1,749	—	1,749
f_s DC1	(ksi)	2.2	7.0	4.7
f_s DC2	(ksi)	0.4	1.1	0.9
f_s DW	(ksi)	0.8	2.2	1.8
f_s 1.3(L+IM)	(ksi)	14.4	15.9	20.8
f_s (Service II)	(ksi)	17.8	26.2	28.2
** f_s (Total)(Strength I)	(ksi)	—	34.9	—
V_f	(k)	36.2		35.4

* Compact sections
** Non-Compact and slender sections

INTERIOR BEAM REACTION TABLE

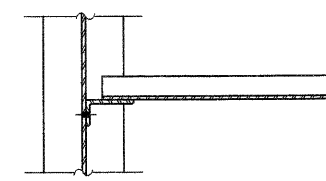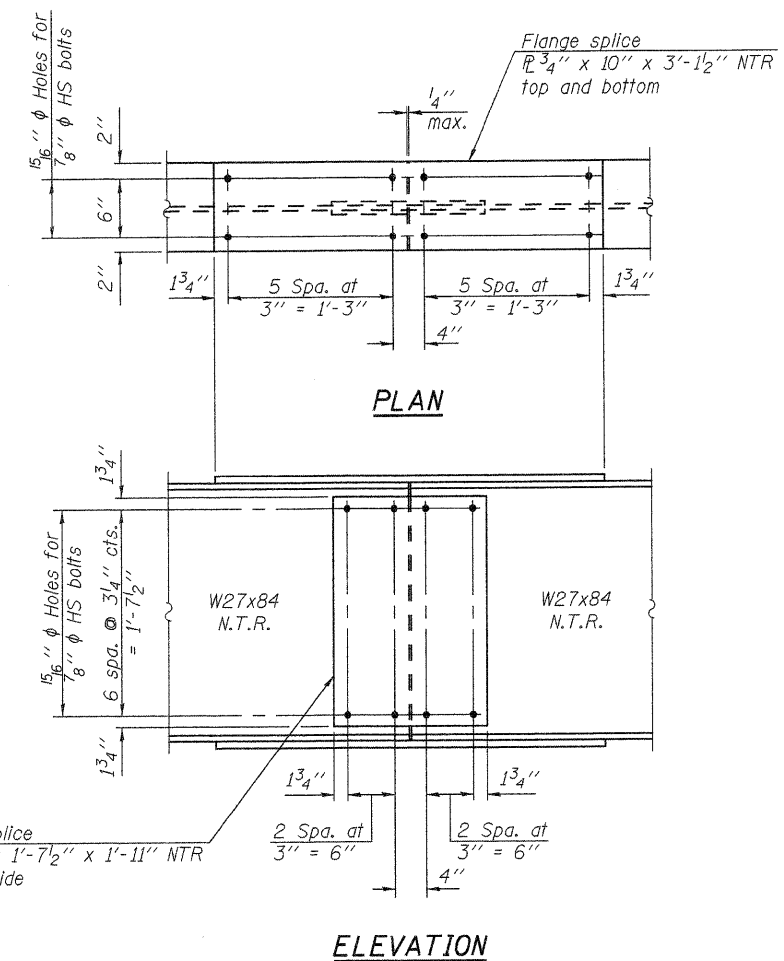|		Abuts.	Pier 1 & 2
R_{DC1}	(k)	8.1	34.9
R_{DC2}	(k)	1.7	6.4
R_{DW}	(k)	3.6	13.7
R_{L+IM}	(k)	53.4	84.9
R_{Total}	(k)	66.8	139.9

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) 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-Strength I, and Service II) due to short-term composite live loads (in.⁴ and in.³).
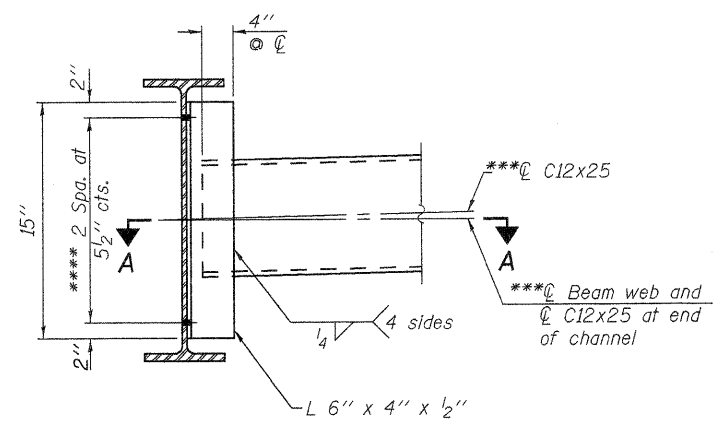
$I_c(3n)$, $S_c(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

Z: Plastic Section Modulus of the steel section in non-composite areas.

$DC1$: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

$DC2$: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L+IM}

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_{L+IM}

f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{L+IM}

V_f: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.
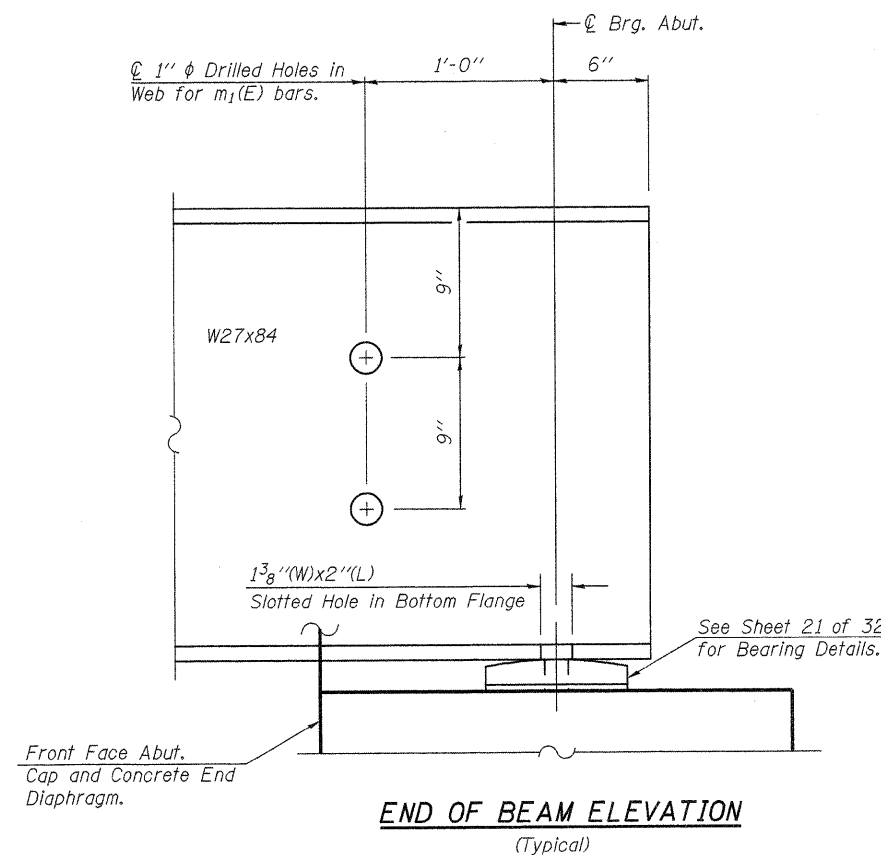

PLAN

Flange splice
℞³⁄₄″ x 10″ x 3'-1½″ NTR top and bottom

¹⁵⁄₁₆″ φ Holes for ⁷⁄₈″ φ HS bolts

5 Spa. at 3″ = 1'-3″

ELEVATION

Web splice
℞½″ x 1'-7½″ x 1'-11″ NTR each side

W27x84 N.T.R.

¹⁵⁄₁₆″ φ Holes for ⁷⁄₈″ φ HS bolts
6 Spa. @ 3¼″ cts. = 1'-7½″

SPLICE DETAIL
(12 Required)

SECTION A-A

END OF BEAM ELEVATION
(Typical)

℞ 1″ φ Drilled Holes in Web for $m_1(E)$ bars.

℞ Brg. Abut.

1'-0″   6″

9″

9″

W27x84

1³⁄₈″(W)x2″(L) Slotted Hole in Bottom Flange

Front Face Abut. Cap and Concrete End Diaphragm.

See Sheet 21 of 32 for Bearing Details.

INTERIOR DIAPHRAGM - D
(25 Req'd.)

***℞ C12x25
***℞ Beam web and ℞ C12x25 at end of channel

L 6″ x 4″ x ½″

15″
****2 Spa. at 5½″ cts.
4 sides

Note:
Two hardened washers required for each set of oversized holes.
***Alternate channels C12x30 are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
****³⁄₄″ φ HS bolts, ¹⁵⁄₁₆″ φ holes