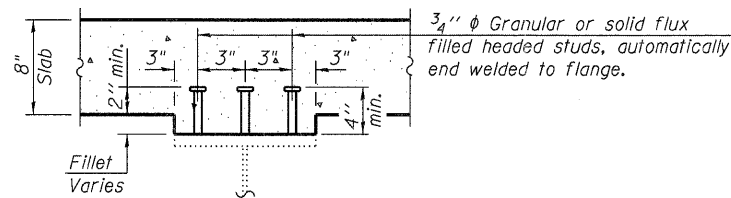
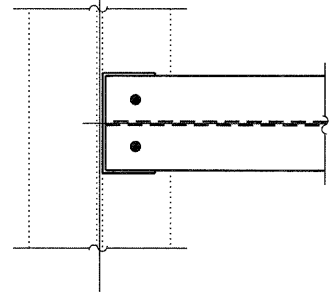
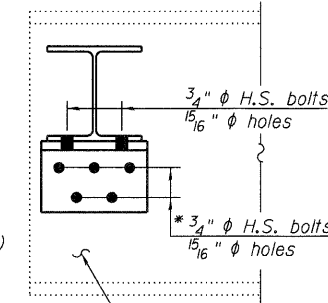
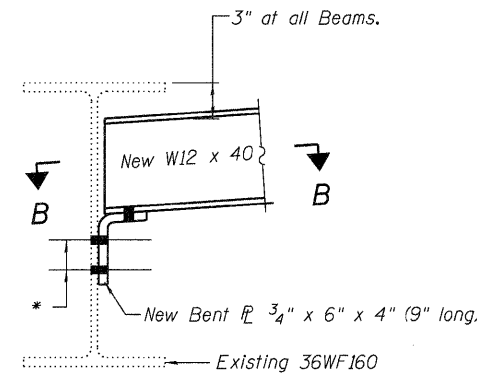


BEAM ELEVATION



SECTION A-A

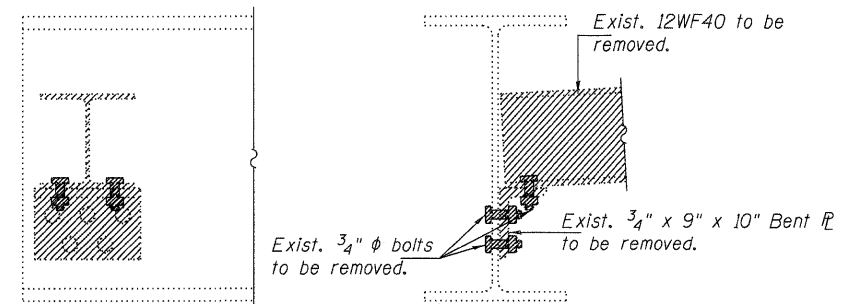


SECTION B-B

* Field drill 1 5/16" ϕ holes in bent ℓ using holes in existing beam as template. Cost included with "Furnishing and Erecting Structural Steel."

END DIAPHRAGM "D"
(Total 16 required)

Note:
Two hardened washers shall be required over all oversized holes for new diaphragms.



END DIAPHRAGM "D" REMOVAL DETAIL
(Total 20 Diaphragms to be removed. Cost included with Structural Steel Removal)

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 & 2	0.5 Sp. 2
I_s	(in ⁴)	9739	9739	9738.8
$I_c(n)$	(in ⁴)	23569		23569
$I_c(3n)$	(in ⁴)	17266	17266	17266
$I_c(cr)$	(in ⁴)		12382	
S_s	(in ³)	541	541	541
$S_c(n)$	(in ³)	760		760
$S_c(3n)$	(in ³)	592	592	592
$S_c(cr)$	(in ³)		603	
Z	(in ³)			
ϕ	(k/')	0.877	0.877	0.877
$M\phi$	(k)	236.44	384.72	183.78
$s\phi$	(k/')	0.309	0.309	0.309
$M_s\phi$	(k)	83.12	137.15	63.08
$M\ell$	(k)	384	311.47	369.52
M_{IM}	(k)	103.3	80.6	93.8
$^{5/8}[M\ell + i]$	(k)	812.2	653.5	772.3
M_o	(k)	1471.2	1527.9	1324.8
M_u	(k)	1963		1936
$f_s \phi$ non-comp	(ksi)	5.2	8.5	4.1
$f_s \phi$ (comp)	(ksi)	1.7	2.7	1.3
$f_s [^{5/8}[M\ell + M_{IM}]]$	(ksi)	1.1	1.1	1.0
f_s (Overload)	(ksi)	19.8	24.3	17.5
f_s (Total)	(ksi)		31.5	
VR	(k)	53.89	57	42.66

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).

$I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and deck based upon the cracked concrete section with negative moment reinforcement. Used for computing f_s (Total and Overload) due to short and long-term composite dead and live loads in the negative moment region.

Z : Plastic Section Modulus of the steel section in non-composite areas (in³).

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

$M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).

$M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\ell$: Un-factored live load moment (kip-ft.).

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

M_o : Factored design moment (kip-ft.).

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\ell + M_i)]$

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).

$M\phi + M_s\phi + \frac{5}{8} (M\ell + M_i)$

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

$1.3 [M\phi + M_s\phi + \frac{5}{8} (M\ell + M_i)]$

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

INTERIOR GIRDER REACTION TABLE			
	W. Abut. & E. Abut.	Pier 1 & 2	
$R\phi$	(k)	56.1	87.4
$R\ell$	(k)	38.13	41.69
R_i	(k)	10.25	11.2
R_{Total}	(k)	104.48	140.29

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	4,760
Structural Steel Removal	Pound	5,940
Stud Shear Connectors	Each	6,516

* Compact section
** Braced non-compact and partially braced section.
*** Includes Approach Slab Dead Load Reaction at abutments.