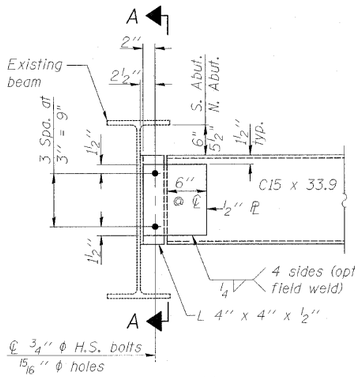
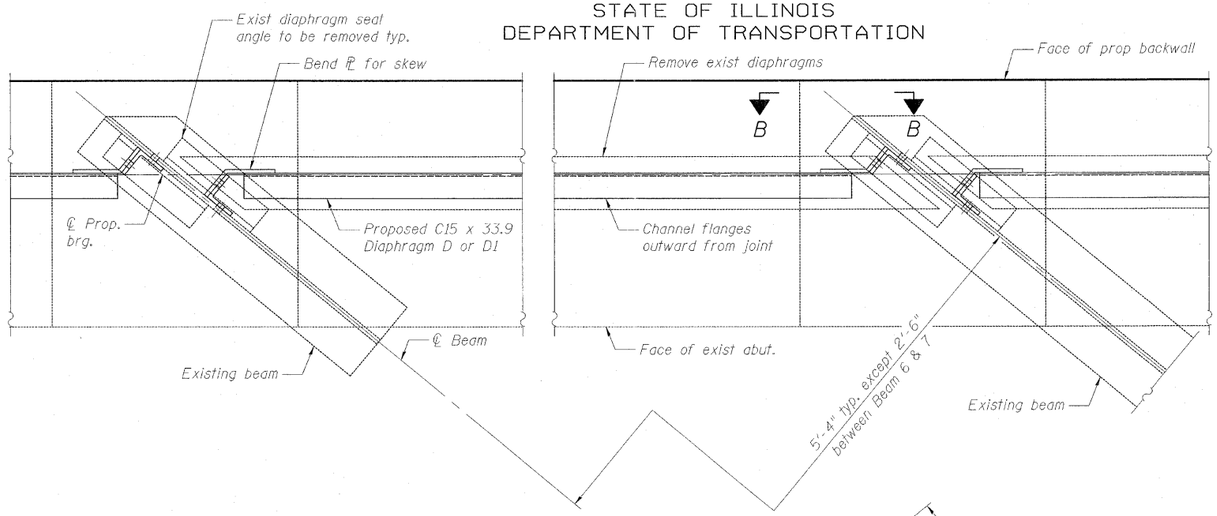
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



VIEW B-B
END DIAPHRAGM - D1
(20 Required)



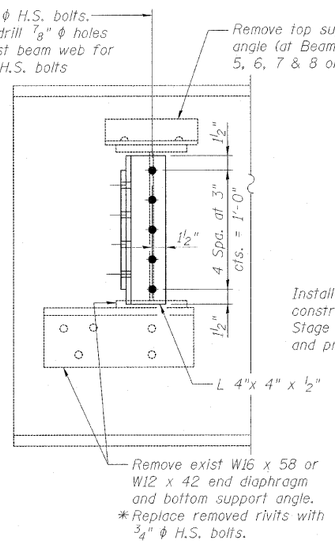
END DIAPHRAGM PLAN VIEW

		EXISTING EXTERIOR GIRDER MOMENT TABLE		
		0.4 Sp. 1 OR 0.6 Sp. 3	Pier 1 OR Pier 2	0.5 Sp. 2
I_s	(in^4)	11,300	***17,952	11,300
$I_c(n)$	(in^4)	26,090	-	26,090
$I_c(3n)$	(in^4)	18,838	-	18,838
S_s	(in^3)	623	944	623
$S_c(n)$	(in^3)	868	-	868
$S_c(3n)$	(in^3)	776	-	776
Z	(in^3)	-	***1,068	-
w_{ℓ}	(k/')	1.033	1.514	1.033
M_{ℓ}	('k)	350.3	1,065.2	349.2
s_{ℓ}	(k/')	0.415	-	0.415
$M_{s\ell}$	('k)	152.3	-	168.0
M_L	('k)	435.3	342.3	472.4
M_{IM}	('k)	109.9	81.9	108.7
$\frac{5}{3}[M_L + I]$	('k)	909	707	969
M_a	('k)	1,835	2,304	1,931
* M_u	('k)	3,060	2,937	3,060
f_s ℄ non-comp	(ksi)	6.75	13.55	6.75
f_s ℄ (comp)	(ksi)	2.35	-	2.6
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)	12.6	9.0	13.3
f_s (Overload)	(ksi)	21.7	22.6	22.8
** f_s (Total)	(ksi)	-	-	
VR	(k)	48.1	-	37.1

EXISTING EXTERIOR GIRDER REACTION TABLE			
		N. Abut. OR S. Abut	Pier 1 OR Pier 2
R_{ℓ}	(k)	38.8	136.6
R_L	(k)	34.6	43.9
R_I	(k)	8.7	10.5
R_{Total}	(k)	82.1	191.0

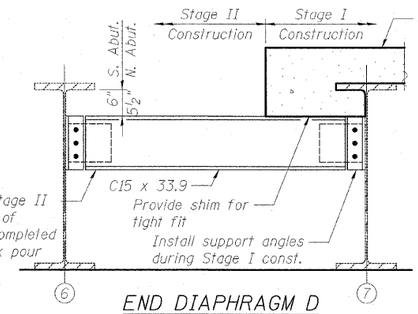
* Compact section
** Braced non-compact and partially braced section
*** Includes Cover Plate

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}).
Z: Plastic Section Modulus of the steel section in non-composite areas (in.^{3}).
w_{ℓ}: Un-factored non-composite dead load (kips/ft.).
M_{ℓ}: Un-factored moment due to non-composite dead load (kip-ft.).
s_{ℓ}: Un-factored long-term composite (superimposed) dead load (kips/ft.)
$M_{s\ell}$: 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.). $1.3\,[M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)]$
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). $M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)$
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\,[M_{\ell} + M_{s\ell} + \frac{5}{3}(M_L + M_I)]$
VR: Maximum L + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

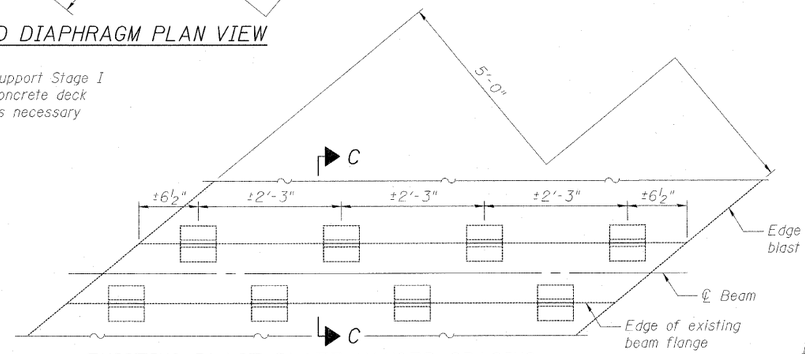


SECTION A-A

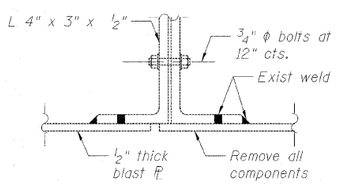
* Cost included with Furnishing and Erecting Structural Steel.



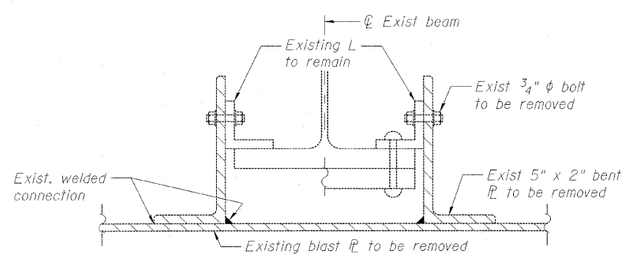
END DIAPHRAGM D
(2 Required)
Connection details similar to Diaphragm D1



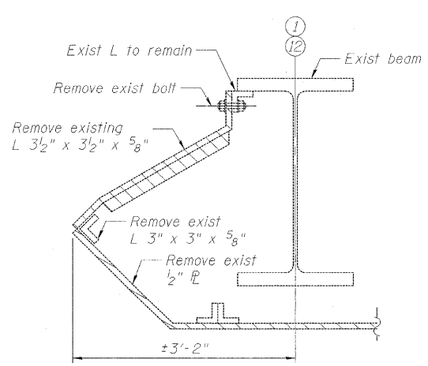
EXISTING BLAST PLATE HANGER SPACING
(Typical at each beam)



BLAST PLATE SPLICE DETAIL
(See framing plan for locations)



SECTION C-C
BLAST PLATE HANGER DETAIL



DETAIL A

BILL OF MATERIAL

Item	Unit	Quantity
Furnish & Erect Structural Steel	Pound	6,900
Structural Steel Removal	Pound	29,160
Jacking Existing Superstructure	L. Sum	1

Notes:
Prior to ordering any material, the Contractor shall verify dimensions of the diaphragms.

Removal of blast plate attachment components will not be measured for payment, but shall be included in the cost of Structural Steel Removal.

See S-24 of S-34 for superstructure jacking requirements.

DESIGNED	- DF
CHECKED	- TAH
DRAWN	- LAM
CHECKED	- DF

BOWMAN, BARRETT & ASSOCIATES INC.
CONSULTING ENGINEERS
Chicago, Illinois
312.228.0100
www.bbandainc.com
Job. No. 910

SHEET NO. S-22	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S-34 SHEETS	3887	R-VB-R	KANE	83	56
			CONTRACT NO. 60C06		
	FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT		

BEAM DETAILS
STRUCTURE NO. 045-0016