

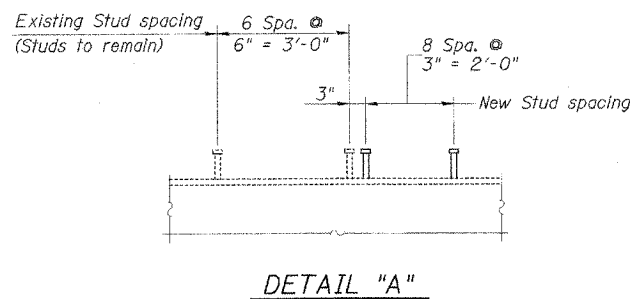
**EXISTING BEAM ELEVATION**  
(36 WF 135)

	0.4 Span 1 0.6 Span 3	Pier 1 & 2	0.5 Span 2
$I_s$ (in <sup>4</sup> )	7800	11374	7800
$I_o$ (in <sup>4</sup> )	22518	—	22518
$I_c$ (3n) (in <sup>4</sup> )	16407	—	16407
$S_s$ (in <sup>3</sup> )	439	623	439
$S_c$ (n) (in <sup>3</sup> )	679	—	679
$S_c$ (3n) (in <sup>3</sup> )	611	—	611
$\phi$ (k/ft.)	0.91	1.43	0.91
$M\phi$ (k)	250	520	71
$s\phi$ (k/ft.)	0.52	—	0.52
$Ms\phi$ (k)	155	—	69
$M\phi$ (k)	470	261	380
$M$ (Imp) (k)	127	71	102
$^5_3[M\phi + M(imp)]$ (k)	995	553	803
$Ma$ (k)	1820	1395	1226
$fs\phi$ non-comp (k.s.i.)	6.8	10.0	1.9
$fs\phi$ (comp) (k.s.i.)	3.0	—	1.4
$fs\phi_3$ (k + imp) (k.s.i.)	17.6	10.7	14.2
$fs$ (Overload) (k.s.i.)	27.4	20.7	17.5
$fs$ (Total) (k.s.i.)	35.6	26.9	22.8
VR (k)	57.6	—	61.2

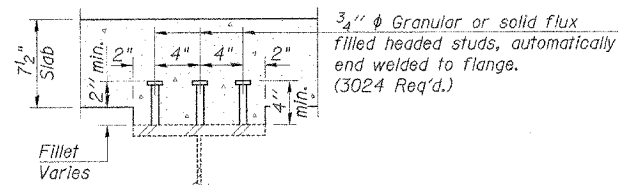
	ABUTS.	PIER
$R\phi$ (k)	34.0	95.4
$R\phi$ (k)	40.4	48.3
Imp. (k)	10.9	13.1
$R$ (Total) (k)	85.3	156.8

$I_s$  and  $S_s$  are the moment of inertia and section modulus of the steel section used in computing  $fs$  (Total & Overload).  
 $I_o$  and  $S_o$  are the moment of inertia and section modulus of the composite section used in computing stresses due to Live Load.  
 $I_c$  and  $S_c$  are the moment of inertia and section modulus of the composite section used in computing stresses due to superimposed dead loads. (see AASHTO 10.38)  
 VR is the maximum Live Load + Impact shear range in span.  
 $Ma$  (Applied Moment) =  $1.3[M\phi + Ms\phi + ^5_3(M\phi + M(imp))]$ .  
 $fs$  (Overload) is the sum of the stresses due to  $M\phi + Ms\phi + ^5_3(M\phi + M(imp))$ .  
 $fs$  (Total) (Non-compact section) is the sum of the stresses due to  $1.3[M\phi + Ms\phi + ^5_3(M\phi + M(imp))]$ .

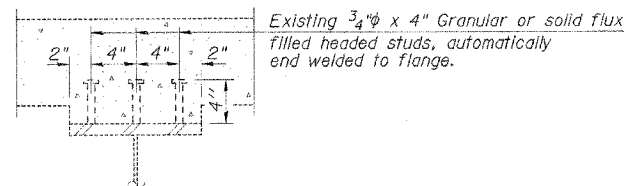
**NOTE:**  
 All existing headed studs are to remain. Any studs damaged during concrete removal shall be repaired or replaced according to Article 501.03 of the Standard Specifications.



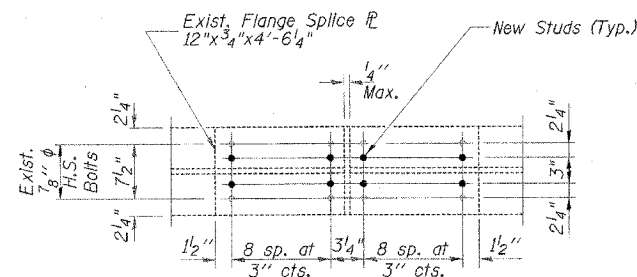
**DETAIL "A"**



**SECTION C-C**  
(Showing New Studs)



**SECTION D-D**  
(Showing Exist. Studs)



**VIEW B-B**

REVISIONS		ILLINOIS DEPARTMENT OF TRANSPORTATION STRUCTURAL STEEL DETAILS F.A.P. ROUTE 805 SECTION 122VBR-1 ST. CLAIR COUNTY ILLINOIS ROUTE 161 OVER METRO-LINK STATION 69+96.56 S.N. 082-0091
NAME	DATE	
		SCALE: NONE DRAWN BY: GLD
		DATE: 7/03/06 CHECKED BY: GBR

**CMT**  
 CRAWFORD MURPHY & TILLY, INC.  
 CONSULTING ENGINEERS  
 SPRINGFIELD, IL ■ ALBANY, IL ■ ST. LOUIS, MO  
 ROCKFORD, IL ■ PEORIA, IL ■ CHICAGO, IL