

		Abut.	Pier
$R_{DC1}$	(k)	13.5	47.9
$R_{DC2}$	(k)	5.0	16.3
$R_{DW}$	(k)	6.0	19.2
$R_{L+IM}$	(k)	71.2	120.8
$R_{Total}$	(k)	95.7	204.2

$I_s, S_s$ : 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 ( $in^3$ ).

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.).

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$

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

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

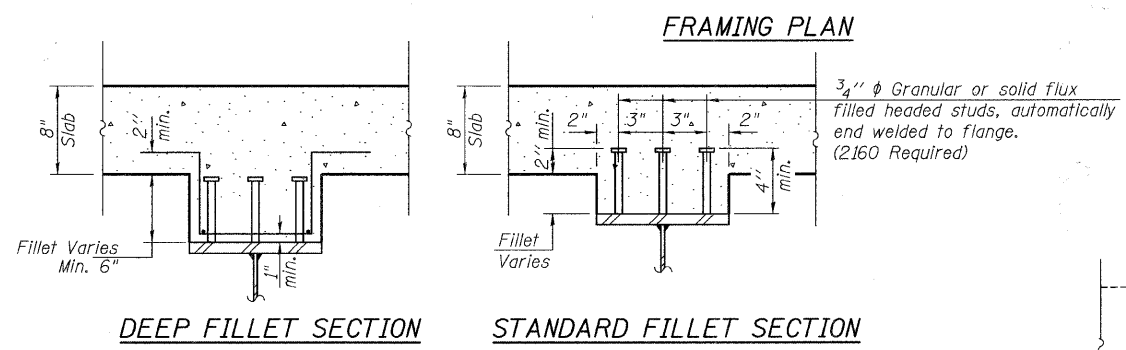
$f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).

$M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + IM$

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

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + IM$

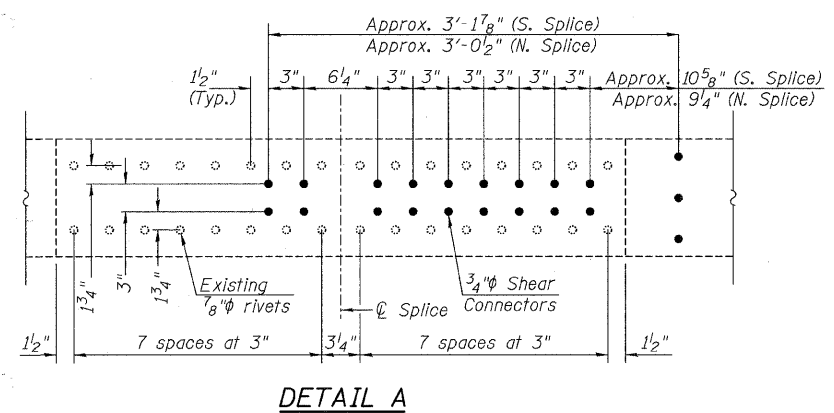
$V_r$ : Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



SECTION A-A

		0.4 Span 1 & 0.6 Span 3	Piers 1 & 2	0.5 Span 2
$I_s$	( $in^4$ )	4081	5817	4081
$I_c(n)$	( $in^4$ )	11583	-	11583
$I_c(3n)$	( $in^4$ )	8561	-	8561
$S_s$	( $in^3$ )	299	411	299
$S_c(n)$	( $in^3$ )	451	-	451
$S_c(3n)$	( $in^3$ )	408	-	408
Z	( $in^3$ )	-	464	-
DC1	(k/ft)	0.823	0.860	0.823
$M_{DC1}$	(k)	109	239	115
DC2	(k/ft)	0.286	0.286	0.286
$M_{DC2}$	(k)	44	66	56
DW	(k/ft)	0.338	0.338	0.338
$M_{DW}$	(k)	52	78	66
$M_L + IM$	(k)	492	344	515
$M_u$ (Strength I)	(k)	1130	1096	1213
$\phi_r M_n, \phi_r M_{nc}$	(k)	1768	-	1768
$f_s$ DC1	(ksi)	4.37	6.98	4.62
$f_s$ DC2	(ksi)	1.29	1.93	1.65
$f_s$ DW	(ksi)	1.53	2.28	1.94
$f_s$ 1.3(L+IM)	(ksi)	17.02	13.06	17.81
$f_s$ (Service II)	(ksi)	24.22	24.65	26.02
$f_s$ (Total Strength I)	(ksi)	-	32.14	-
$V_r$	(k)	41	-	39

\* Compact sections  
\*\* Non-Compact & Slender sections



DETAIL A

Note:  
See sheet 17 of 26 for Detail B, Diaphragm Details, and Beam Web Repair Details.

STRUCTURAL STEEL DETAILS  
JOLIET STREET (TR 851) OVER HICKORY CREEK  
SECTION 07-10117-00-BR  
WILL COUNTY  
STATION 9+97.55

SHEET NO. 16	RTE. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
26 SHEETS	TR 851	07-10117-00-BR	WILL	36	24
S.N. 099-3290			CONTRACT NO. 63642		
FED. ROAD DIST. NO. 7 ILLINOIS			FED. AID PROJECT BRS-		