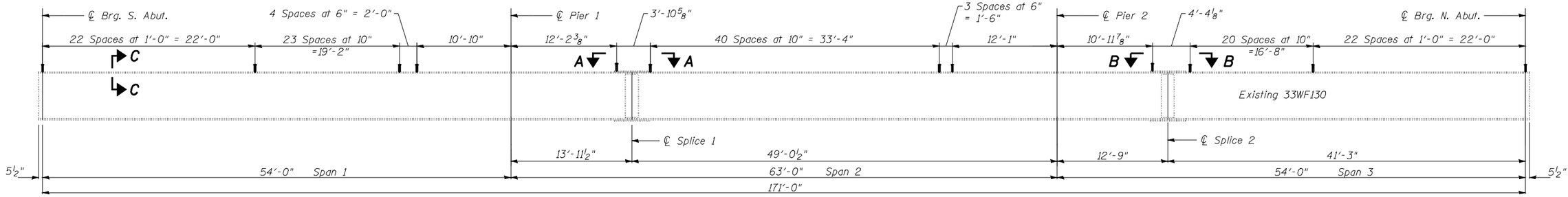
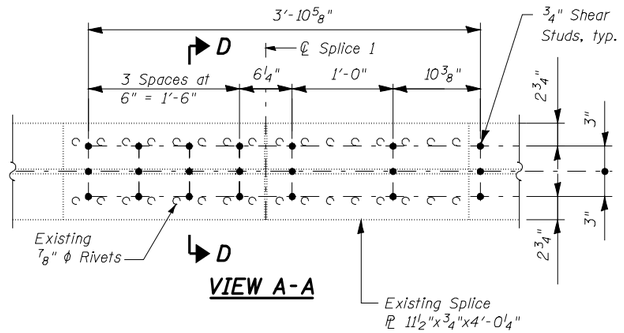
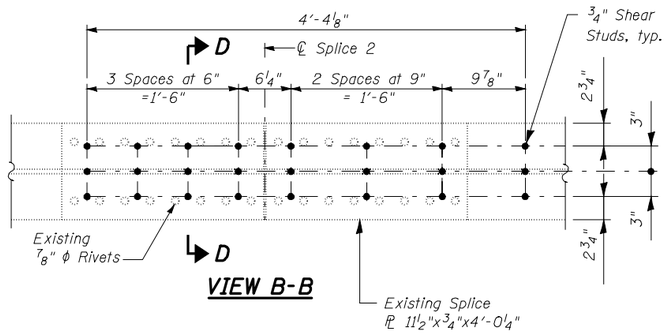
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

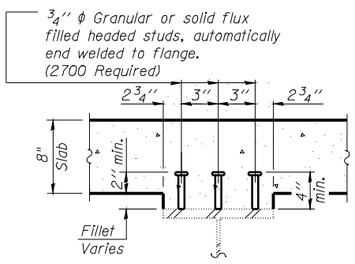


EXISTING BEAM ELEVATION

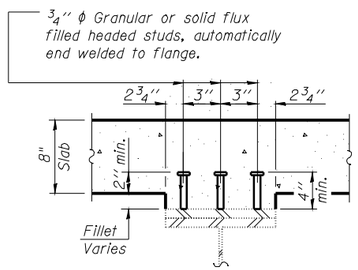
Showing Stud Shear Connector Spacing







SECTION C-C



SECTION D-D

(At Existing Splice ℄)

INTERIOR BEAM MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Sp. 2
I_s	(in^4)	6699	6699	6699
$I_c(n)$	(in^4)	18161	-	18161
$I_c(3n)$	(in^4)	13173	-	13173
S_s	(in^3)	405	405	405
$S_c(n)$	(in^3)	605	-	605
$S_c(3n)$	(in^3)	543	-	543
Z	(in^3)	-	466	-
$\mathcal{D}$	(k/')	0.80	0.82	0.80
$M_{\mathcal{D}}$	('k)	169	279	123
$s_{\mathcal{D}}$	(k/')	0.02	-	0.02
$M_s\mathcal{D}$	('k)	4	-	3
$M_{\mathcal{L}}$	('k)	332	174	332
M_{IM}	('k)	93	47	88
$\frac{5}{3}[M_{\mathcal{L}} + I]$	('k)	708	368	700
M_a	('k)	1146	842	1074
* M_u	('k)	1894	1282	1894
f_s $\mathcal{D}$ non-comp	(ksi)	5.0	8.3	3.6
f_s $\mathcal{D}$ (comp)	(ksi)	0.1	-	0.1
f_s $\frac{5}{3}[M_{\mathcal{L}} + M_I]$	(ksi)	14.0	10.9	13.9
f_s (Overload)	(ksi)	19.1	19.2	17.6
** f_s (Total)	(ksi)	-	-	-
VR	(k)	32.5	-	33.5

*Compact section
**Braced non-compact and partially braced section

INTERIOR BEAM REACTION TABLE			
		Abuts.	Piers
$R_{\mathcal{D}}$	(k)	17.9	53.0
$R_{\mathcal{L}}$	(k)	31.6	36.6
R_I	(k)	8.8	7.6
R_{Total}	(k)	58.3	97.2

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 ($in.^3$).

$\mathcal{D}$: Un-factored non-composite dead load (kips/ft.).

$M_{\mathcal{D}}$: Un-factored moment due to non-composite dead load (kip-ft.).

$s_{\mathcal{D}}$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

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

$M_{\mathcal{L}}$: Un-factored live load moment (kip-ft.).

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

M_a: Factored design moment (kip-ft.).
$1.3\ [M_{\mathcal{D}} + M_s\mathcal{D} + \frac{5}{3}(M_{\mathcal{L}} + M_I)]$

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).
$M_{\mathcal{D}} + M_s\mathcal{D} + \frac{5}{3}(M_{\mathcal{L}} + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M_{\mathcal{D}} + M_s\mathcal{D} + \frac{5}{3}(M_{\mathcal{L}} + M_I)]$

VR: Maximum $\mathcal{L}$ + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

DESIGNED	CMW
CHECKED	JSA
DRAWN	TJW
CHECKED	CMW

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STRUCTURAL STEEL DETAILS
STRUCTURE NO. 085-0001

SHEET NO. 15 20 SHEETS	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	310 (US 67)	(87B) BR	SCHUYLER	80	56
			CONTRACT NO. 72B95		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		