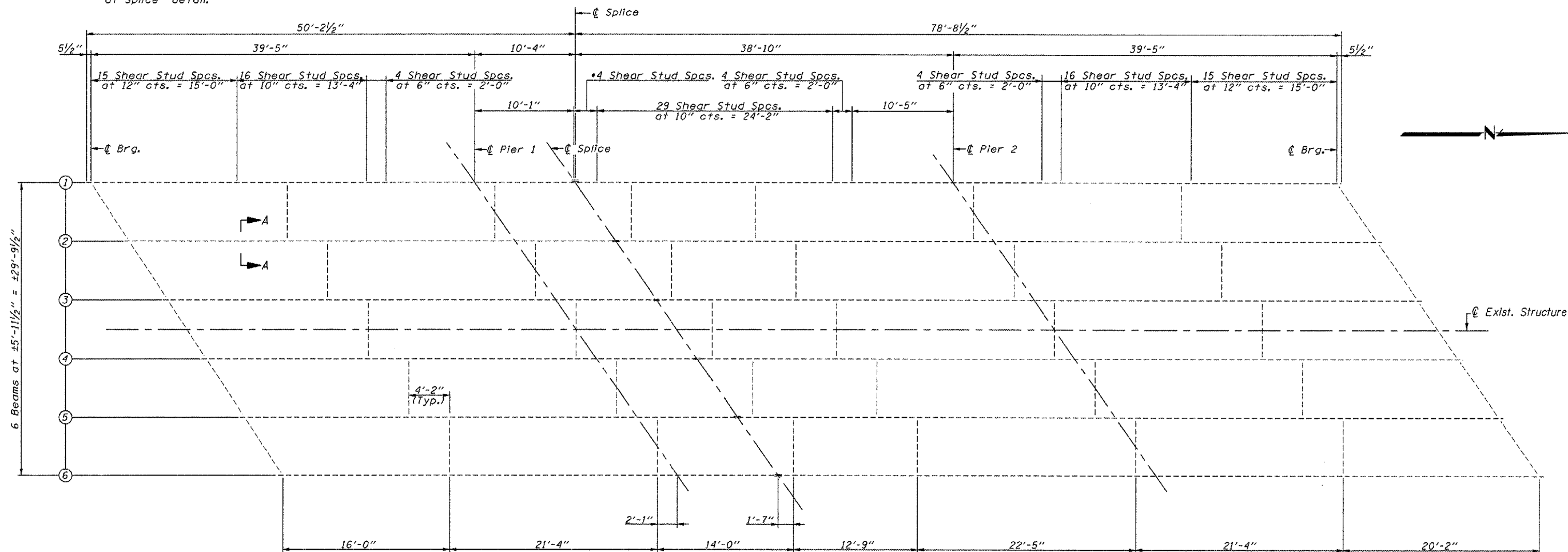


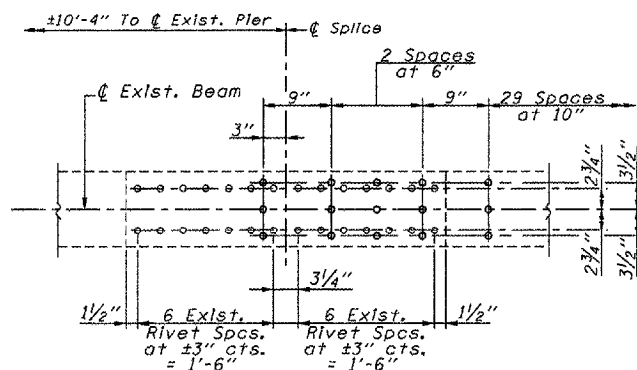
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 656	(11)	TAZEWELL	32	19
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
				CONTRACT NO. 68024

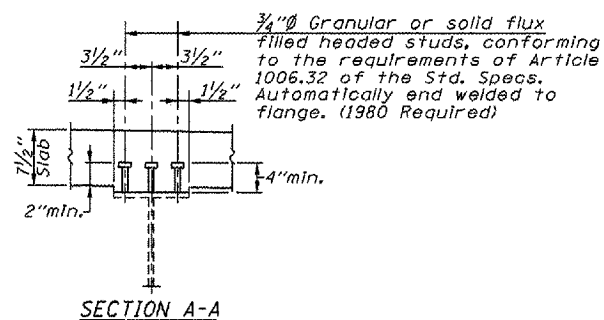
• Space shear studs to miss rivets on existing splice plates. See "Layout at Splice" detail.



PLAN
(Shear Studs Typ. All Beams)
(Existing Beams - 27 WF 94)



LAYOUT AT SPLICE DETAIL



SECTION A-A

	0.4 Span 1 0.6 Span 3	Pier 1 and Pier 2	0.5 Span 2
I_s	(in ⁴) 3080	3080	3080
I_c (n=9)	(in ⁴) 8993	—	8993
I_c (n=27)	(in ⁴) 6663	—	6663
S_s	(in ³) 224	224	224
S_c (n=9)	(in ³) 357	—	357
S_c (n=27)	(in ³) 324	—	324
ϕ	(K/ft.) .672	.822	.672
$M\ell$	(K) 71.9	158.0	69.6
$s\ell$	(K/ft.) .150	—	.150
$M_s\ell$	(K) 18.2	—	20.8
$M\ell$	(K) 201.5	110.9	232.6
M (Imp)	(K) 60.5	32.6	66.8
$s_3(M\ell + I)$	(K) 436.7	239.2	499.0
M_0	(K) 684.8	516.4	766.2
M_u	(K) 1020	—	1020
$fs\ell$ (non-comp)	(k.s.i.) 3.67	8.46	3.54
$fs\ell$ (comp)	(k.s.i.) 0.67	—	0.77
$fs\ell$ (k+I)	(k.s.i.) 14.68	12.81	16.77
fs (Overload)	(k.s.i.) 19.0	21.3	21.1
fs (Total)	(k.s.i.) —	27.7	—
VR	(K) 45.9	—	48.7

	Abuts.	Piers
$R\ell$	(K) 12.2	40.4
$R\ell$	(K) 32.6	39.4
Imp	(K) 9.8	11.6
R (Total)	(K) 54.6	91.4

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing fs (Total) & fs (Overload)
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing fs (Total) & fs (Overload).

VR is the maximum live load + impact shear range in span.
 M_a (Applied Moment) = $1.3 [M\ell + M_s\ell + \frac{1}{3}(M\ell + I)]$
 fs (Overload) is the sum of the stresses due to $M\ell + M_s\ell + \frac{1}{3}(M\ell + I)$.
 fs (Total) is the sum of the stresses due to $1.3 [M\ell + M_s\ell + \frac{1}{3}(M\ell + I)]$.
 $M\ell$ - Moment due to dead load on non-composite section.
 $M_s\ell$ - Moment due to dead load on composite section.
 $M\ell$ - Moment due to live load on non-composite section or composite section.
I - Live load impact.

DESIGNED	- MAH
CHECKED	- APH
DRAWN	- JRP
CHECKED	- MAH

STRUCTURAL STEEL DETAILS
IL. ROUTE 29 OVER CRANE CREEK
F.A.P. ROUTE 656 - SECTION (11)
TAZEWELL COUNTY
STA. 166+53.50
S.N. 090-0053