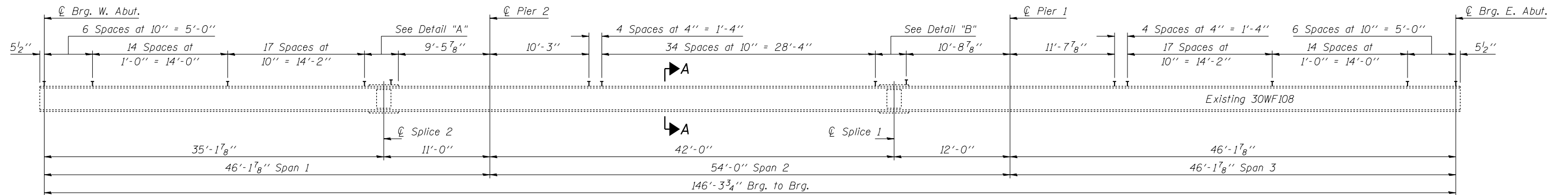


STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

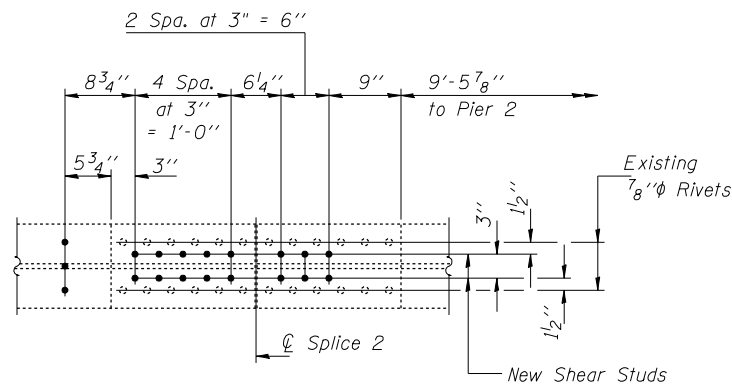
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 10
F.A.I. 55	(84-2B-1)1-1	SANGAMON	31	19	14 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72349

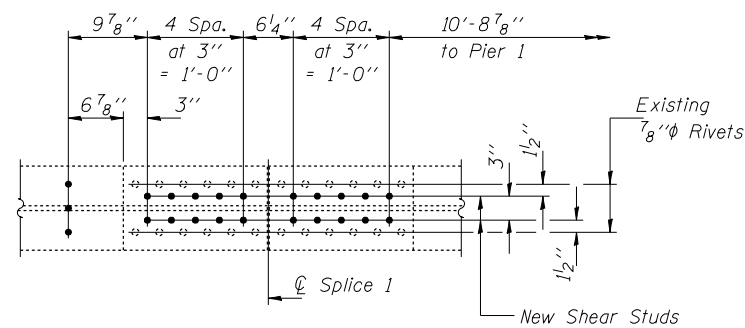


EXISTING BEAM ELEVATION

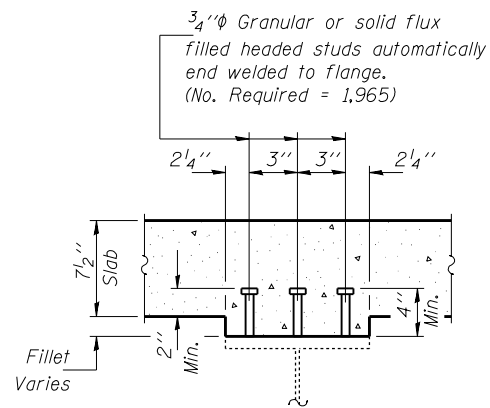
Showing Stud Shear Connector spacing.



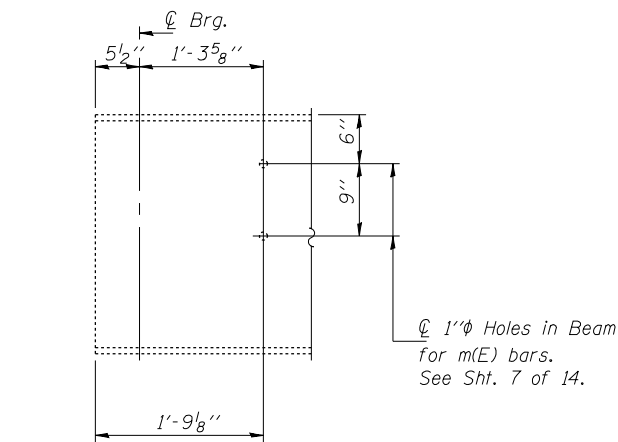
DETAIL "A"



DETAIL "B"



SECTION A-A



END OF BEAM ELEVATION

	0.4 Sp. 1 or 0.6 Sp. 3	Pier	0.5 Sp. 2
I_s (in ⁴)	4,470	4,470	4,470
I_c (n) (in ⁴)	12,476	—	12,476
I_c (3n) (in ⁴)	9,178	—	9,178
S_s (in ³)	299	299	299
S_c (n) (in ³)	452	—	452
S_c (3n) (in ³)	408	—	408
D (K/ft.)	.727	.988	.727
$M\emptyset$ (K)	112.8	233.4	82.2
$s\emptyset$ (K/ft.)	.261	—	.261
$Ms\emptyset$ (K)	46.5	—	44.5
$M\emptyset$ (K)	328.6	157.5	339.7
M (Imp) (K)	87.3	45.0	86.2
$5_3[M\emptyset + M(\text{Imp})]$ (K)	693.2	337.5	709.8
M_a (K)	1,108.3	742.2	1,087.5
M_u (K)	1,189.0	—	1,250.9
$fs\emptyset$ non-comp (k.s.i.)	4.5	9.4	3.3
$fs\emptyset$ (comp) (k.s.i.)	1.4	—	1.3
$fs^{5_3}(L + \text{Imp})$ (k.s.i.)	18.4	13.5	18.8
fs (Overload) (k.s.i.)	24.3	22.9	23.4
fs (Total) (k.s.i.)	—	29.8	—
VR (K)	52.3	—	43.9

* Includes effects of centrifugal force and superelevation.

	Abutments	Piers
$R\emptyset$ (K)	17.7	54.6
$R\emptyset$ (K)	38.2	46.0
Imp. (K)	10.1	12.2
R (Total) (K)	66.0	112.8

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing fs (Total & Overload).
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing fs (Total & Overload).
 VR is the maximum live Load + Impact shear range in span.
 M_a (Applied Moment) = $1.3[M\emptyset + Ms\emptyset + 5_3(M\emptyset + I)]$.
 M_u is the Full Plastic Moment Capacity for Compact, Braced section.
 fs (Overload) is the sum of the stresses due to $M\emptyset + Ms\emptyset + 5_3(M\emptyset + I)$.
 fs (Total) is the sum of the stresses due to $1.3[M\emptyset + Ms\emptyset + 5_3(M\emptyset + I)]$.
 $M\emptyset$ - Moment due to dead loads on non-composite section.
 $Ms\emptyset$ - Moment due to dead loads on composite section.
 $M\emptyset$ - Moment due to live loads on composite section.
 I - Live load impact.

**** TOP OF BEAM ELEVATIONS**

Loc.	Bm.	Bm. 1	Bm. 2	Bm. 3	Bm. 4	Bm. 5
⊖ Brg. W. Abut.	550.52	550.60	550.68	550.76	550.84	550.84
⊖ Splice 2	550.46	550.58	550.70	550.82	550.95	550.95
⊖ Pier 2	550.46	550.59	550.72	550.85	550.98	550.98
⊖ Splice 1	550.50	550.65	550.80	550.96	551.11	551.11
⊖ Pier 1	550.53	550.69	550.84	551.00	551.15	551.15
⊖ Brg. E. Abut.	550.67	550.83	550.98	551.14	551.29	551.29

** For Information Only.

Note: Top of the beam elevations are given from the existing plans. In order to convert these to the current survey, subtract 0.25 ft. from each elevation.

DESIGNED Tom L. Kurtenbach
 CHECKED Philip E. Coppernoll
 DRAWN John F. Schneller Jr.
 CHECKED T.L.K. / P.E.C.

March 5, 2008
 EXAMINED Thomas J. Samagalski
 PASSED Ralph E. Anderson
 ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL
F.A.I. ROUTE 55 - SEC. (84-2B-1)1-1
SANGAMON COUNTY
STATION 36+16.64
STRUCTURE NO. 084-0025