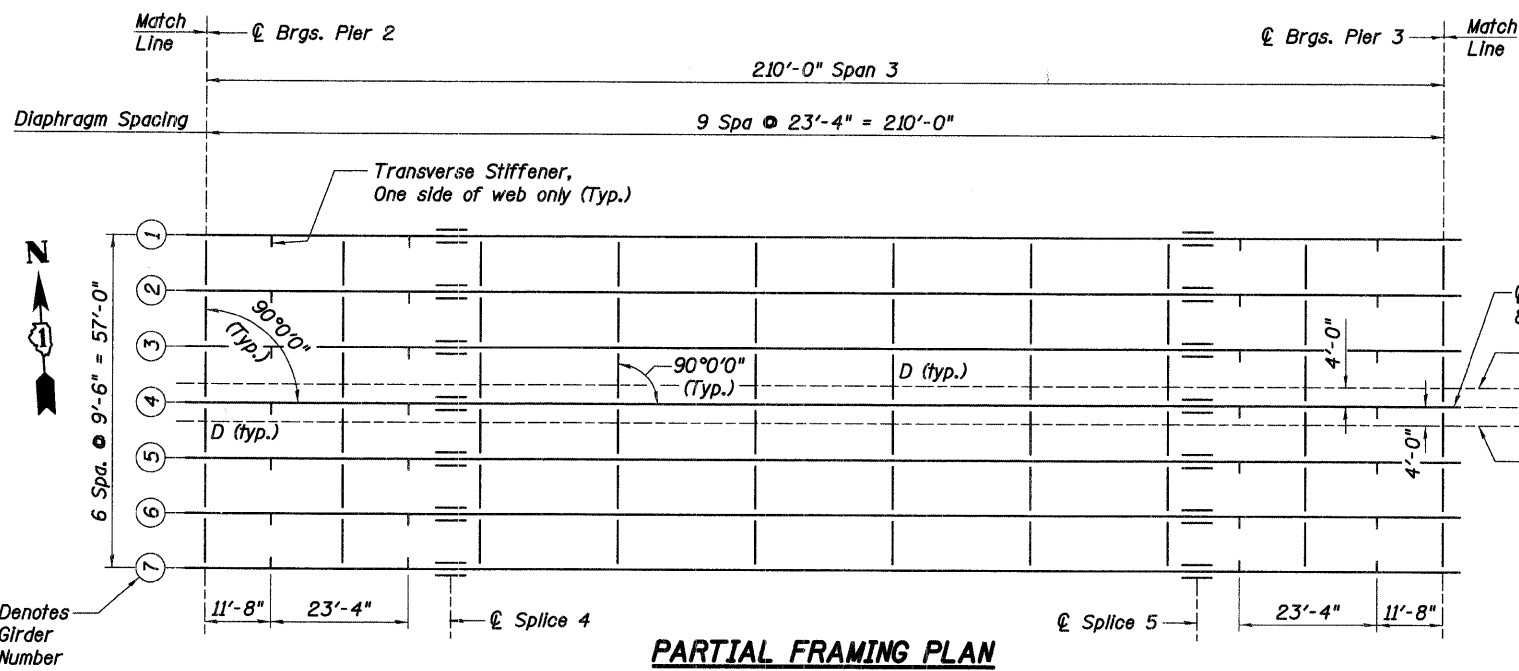


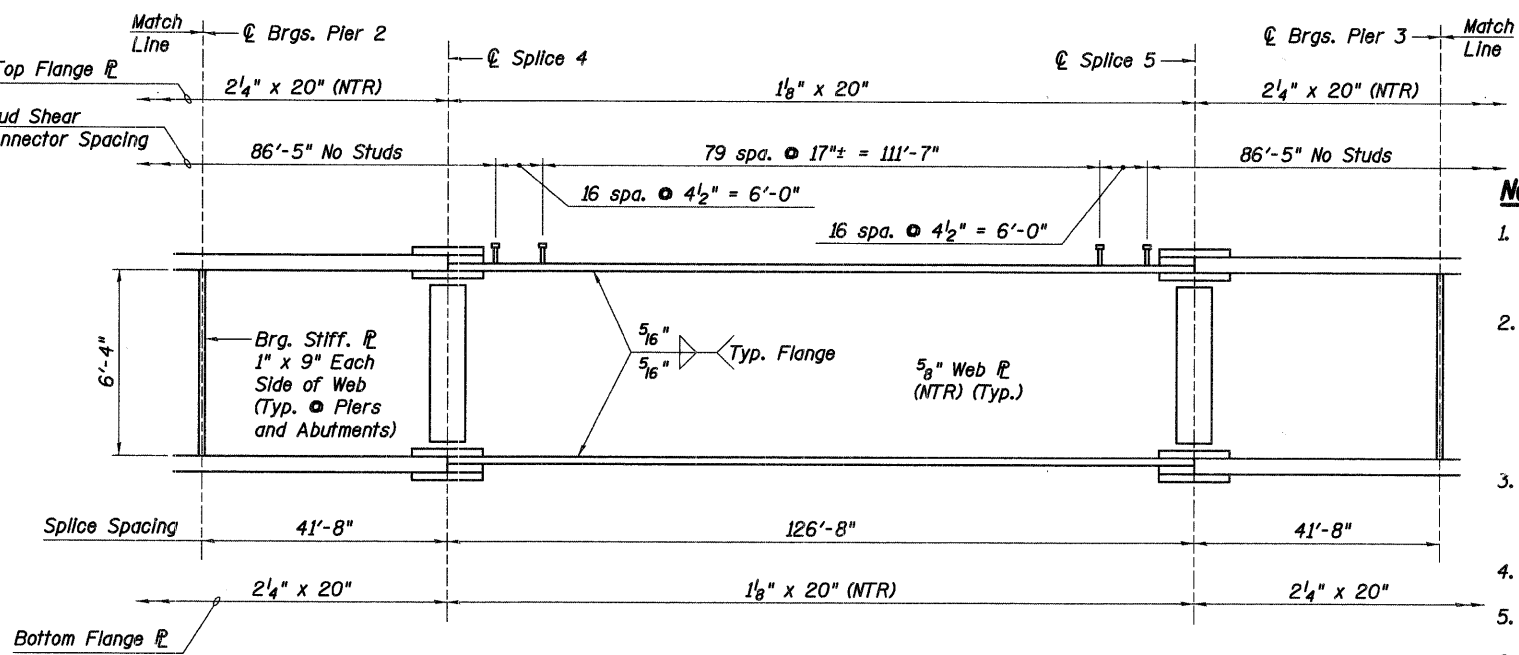
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
361	06-00214-20-BR	KANE	320	132
STA. 511+80.00		TO STA. 609+14.92		
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		
SHEET NO. S27 OF S108				



**INTERIOR GIRDER MOMENT TABLE**

	0.4 Sp. 1	Pier 1	0.5 Sp. 2 0.5 Sp. 3 0.5 Sp. 4	Pier 2	Pier 3	Pier 4	0.6 Sp. 5
$I_s$	(in <sup>4</sup> )	56,561	176,971	89,785	160,669	160,669	89,785
$I_o(n)$	(in <sup>4</sup> )	110,315	--	180,259	--	--	180,259
$I_o(3n)$	(in <sup>4</sup> )	83,830	--	135,981	--	--	135,981
$S_s$	(in <sup>3</sup> )	1,950	4,370	2,295	3,992	3,992	2,295
$S_o(n)$	(in <sup>3</sup> )	2,394	--	2,923	--	--	2,923
$S_o(3n)$	(in <sup>3</sup> )	2,224	--	2,684	--	--	2,684
Z	(in <sup>3</sup> )	--	--	--	--	--	--
DC1	(k/')	1.32	1.67	1.32	1.63	1.63	1.32
M <sub>DC1</sub>	(k)	2,724	6,775	2,005	5,796	6,161	2,122
DC2	(k/')	0.15	--	0.15	--	--	0.15
M <sub>DC2</sub>	(k)	311	--	237	--	--	246
DW	(k/')	0.40	0.40	0.40	0.40	0.40	0.40
M <sub>DW</sub>	(k)	840	1,788	641	1,515	1,612	1,545
M <sub>ℓ + IM</sub>	(k)	3,085	4,008	3,176	3,826	3,618	3,015
M <sub>u</sub> (Strength I)	(k)	10,453	18,165	9,322	16,213	16,451	9,232
* $\phi_r M_n, \phi_r M_{nc}$	(k)	11,796	--	14,796	--	--	14,738
$f_s$ DC1	(ksi)	16.8	18.6	10.5	17.4	18.5	11.1
$f_s$ DC2	(ksi)	1.7	--	1.1	--	--	1.1
$f_s$ DW	(ksi)	4.5	4.9	2.9	4.6	4.8	3.0
$f_s$ 1.3(ℓ+IM)	(ksi)	20.1	14.3	17.0	15.0	14.1	16.1
$f_s$ (Service II)	(ksi)	43.1	37.8	31.5	37.0	37.4	31.3
** $f_s$ (Total)(Strength I)	(ksi)	--	49.9	--	48.8	49.3	--
V <sub>r</sub>	(k)	35.9	--	32.5	--	--	36.7

\* Compact sections  
\*\* Non-Compact and slender sections



**Notes:**

- For additional Framing Plan and Girder Elevation information, see sheets S26 and S28 of S108.
- All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements Notch Toughness, Zone 2.
- For Diaphragm details, see sheet S29 of S108.
- For Splice details, see sheet S30 of S108.
- The structural steel for girders, bearing stiffeners, and splice plate material except fill plates shall conform to the requirements of AASHTO M270, Gr. 50.

$I_s, S_s$ : 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<sup>4</sup> and in<sup>3</sup>).

$I_o(n), S_o(n)$ : 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<sup>4</sup> and in<sup>3</sup>).

$I_o(3n), S_o(3n)$ : 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<sup>4</sup> and in<sup>3</sup>).

Z: Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in<sup>3</sup>).

DC1: Un-factored non-composite dead load (kips/ft.).

M<sub>DC1</sub>: 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<sub>DC2</sub>: 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<sub>DW</sub>: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M<sub>ℓ + IM</sub>: Un-factored live load moment plus dynamic load allowance (Impact) (kip-ft.).

M<sub>u</sub> (Strength I): Factored design moment (kip-ft.). 1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M<sub>ℓ + IM</sub>

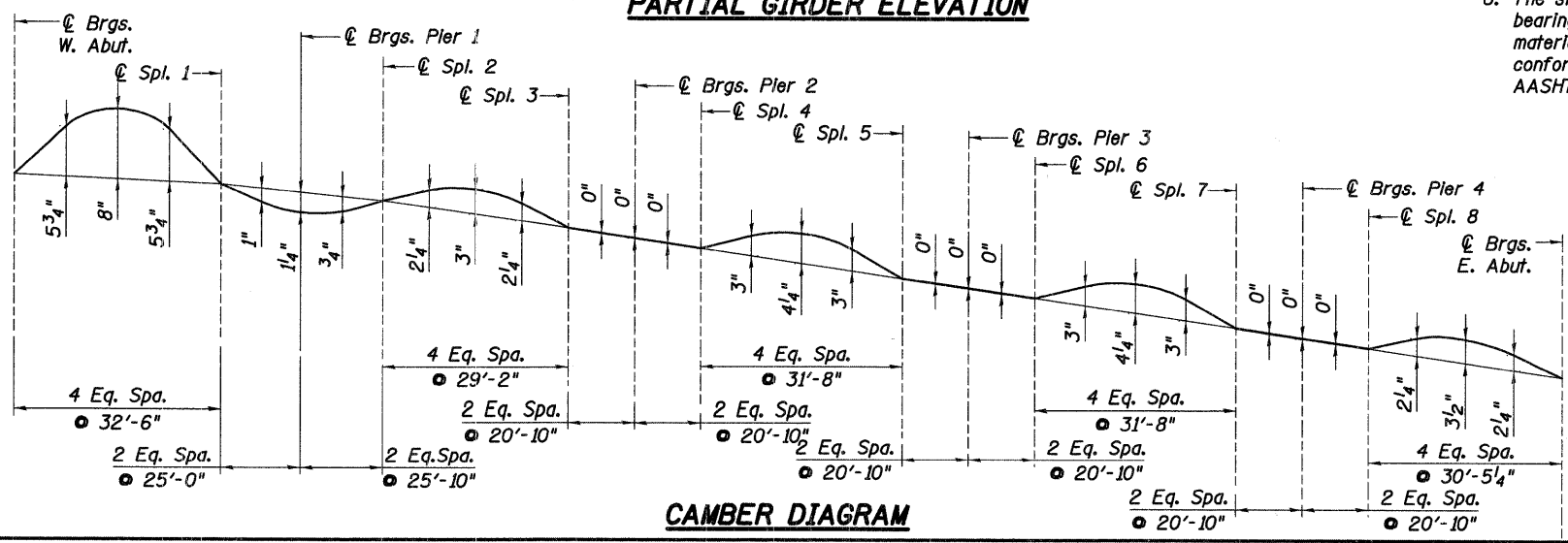
$\phi_r M_n$ : Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_r M_{nc}$ : 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 on non-compact section (ksi).

$f_s$  (Total)(Strength I): 1.25 (M<sub>DC1</sub> + M<sub>DC2</sub>) + 1.5 M<sub>DW</sub> + 1.75 M<sub>ℓ + IM</sub>

V<sub>r</sub>: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.



**INTERIOR GIRDER REACTION TABLE**

	W. Abut.	Pier 1	Pier 2	Pier 3	Pier 4	E. Abut.
R <sub>DC1</sub> (k)	85	306	285	293	291	75
R <sub>DC2</sub> (k)	10	33	30	31	31	9
R <sub>DW</sub> (k)	26	89	82	85	84	23
R <sub>ℓ + IM</sub> (k)	126	279	281	276	272	124
R <sub>Total</sub> (k)	162	707	678	685	678	231

**REVISIONS**

NAME	DATE

**Baker**  
Baker Engineering, Inc.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**FRAMING PLAN AND GIRDER ELEVATION II**

STEARNS ROAD OVER THE FOX RIVER PUBLIC WATERS  
STRUCTURE NUMBER 045-3166  
KANE COUNTY FAP 361 SECTION 06-00214-20-BR  
STATION 571+42.96    DESIGNED: GWG    DRAWN: SGW  
DATE: JANUARY 16, 2009    CHECKED: KPZ    CHECKED: KPZ