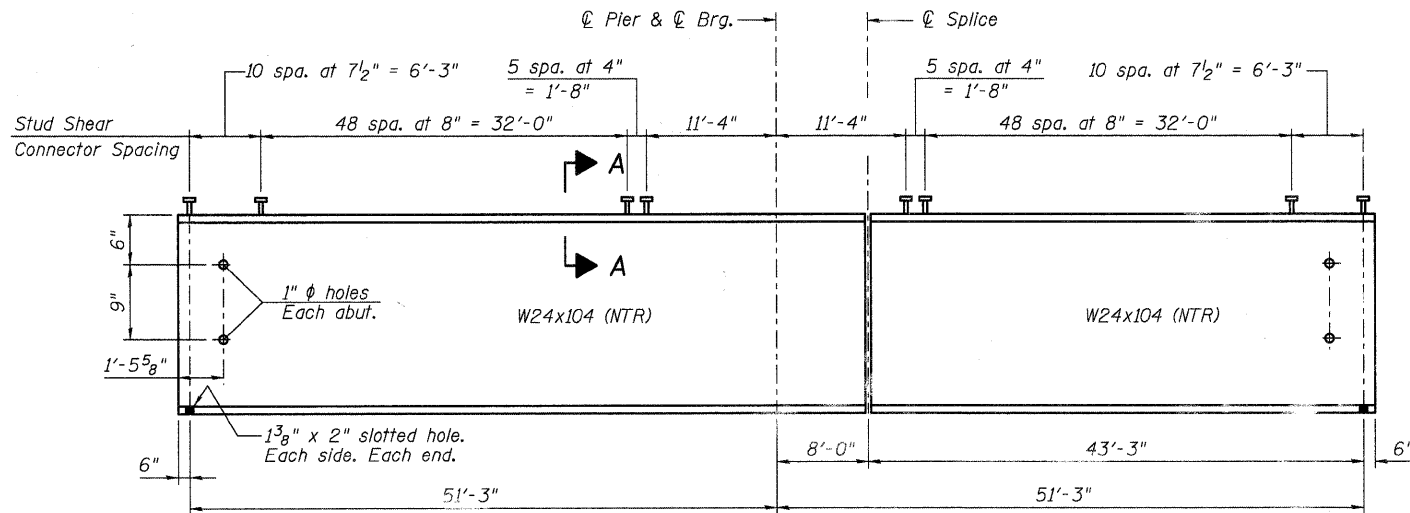


**FRAMING PLAN**

"D" denotes Interior Diaphragm. See Sheet 14 of 21.



**ELEVATION**

**TOP OF BEAM ELEVATIONS**

(For Fabrication Only)

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5
℄ Brg. W. Abut.	755.19	755.32	755.46	755.46	755.45
℄ Brg. Pier	755.49	755.64	755.79	755.94	756.05
℄ Splice	755.48	755.65	755.82	755.99	756.12
℄ Brg. E. Abut.	755.34	755.63	755.93	756.22	756.46

**INTERIOR GIRDER MOMENT TABLE**

		0.4 Sp 1 0.6 Sp 2	Pier
$I_s$	(in <sup>4</sup> )	3,100	3,100
$I_c(n)$	(in <sup>4</sup> )	9,016	---
$I_c(3n)$	(in <sup>4</sup> )	6,693	---
$S_s$	(in <sup>3</sup> )	258	258
$S_c(n)$	(in <sup>3</sup> )	387	---
$S_c(3n)$	(in <sup>3</sup> )	350	---
$Z$	(in <sup>3</sup> )	---	289
DC1	(k/ft)	0.80	0.80
$M_{dc1}$	(k)	147	263
DC2	(k/ft)	0.18	0.18
$M_{dc2}$	(k)	38	47
DW	(k/ft)	0.30	0.30
$M_{DW}$	(k)	63	78
$M_k + IM$	(k)	573	302
$M_u$ (Strength I)	(k)	1,329	1,033
$\phi_r M_n, \phi_r M_{nc}$	(k)	1,956	1,204
$f_s$ DC1	(ksi)	6.83	12.23
$f_s$ DC2	(ksi)	1.30	2.19
$f_s$ DW	(ksi)	2.16	3.63
$f_s$ 1.3( $\ell + IM$ )	(ksi)	23.10	18.26
$f_s$ (Service II)	(ksi)	33.39	36.31
$V_r$	(k)	20.9	---

\* Compact section

**INTERIOR GIRDER REACTION TABLE**

		Abut.	Pier
$R_{DC1}$	(k)	16.2	51.3
$R_{DC2}$	(k)	3.7	11.0
$R_{DW}$	(k)	6.2	13.4
$R_k + IM$	(k)	66.3	93.8
$R_{Total}$	(k)	92.4	174.5

$I_s, S_s$ : 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>).

$I_c(n), S_c(n)$ : 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<sup>4</sup> and in<sup>3</sup>).

$I_c(3n), S_c(3n)$ : 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<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.).

$M_{dc1}$ : 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.).

$M_k + IM$ : Un-factored live load moment plus dynamic load allowance (Impact) (kip-ft.).

$M_u$  (Strength I): Factored design moment (kip-ft.).

$1.25 (M_{dc1} + M_{dc2}) + 1.5 M_{DW} + 1.75 M_k + IM$

$\phi_r M_n$ : 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.).

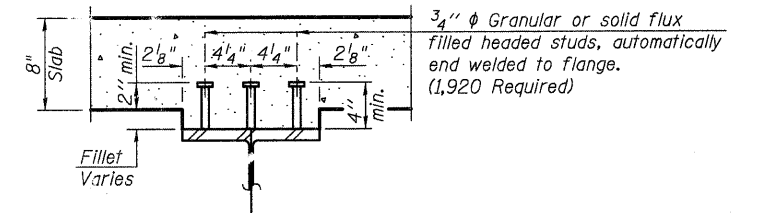
$f_s$  (Service II): Sum of stresses as computed from the moments below (ksi).

$M_{dc1} + M_{dc2} + M_{DW} + 1.3 M_k + IM$

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

$1.25 (M_{dc1} + M_{dc2}) + 1.5 M_{DW} + 1.75 M_k + IM$

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



**SECTION A-A**

**NOTES:**

- All beams shall be W24x104 AASHTO M270 Grade 50W (NTR). All diaphragms and connecting angles shall be AASHTO M270 Grade 50W. All bearing plates shall be AASHTO M270 Grade 50W.
- All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted.
- Load carrying components designated "NTR" shall conform to the Supplemental Requirements for Notch Toughness, Zone 2.
- Anchor Bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.
- Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

**FRAMING PLAN & BEAM DETAILS  
STRUCTURE NO. 045-3020**

DESIGNED - DLS
CHECKED - AEU
DRAWN - AWH
CHECKED - DLS

**WILLS BURKE KELSEY ASSOCIATES LTD.**  
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St. Charles, Illinois 60174  
(630) 443-7755

SHEET NO. 13	F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
21 SHEETS	2332	03-14185-02-BR	KANE	73	37
FED. ROAD DIST. NO.			ILLINOIS	FED. AID PROJECT	
CONTRACT NO. 63521					