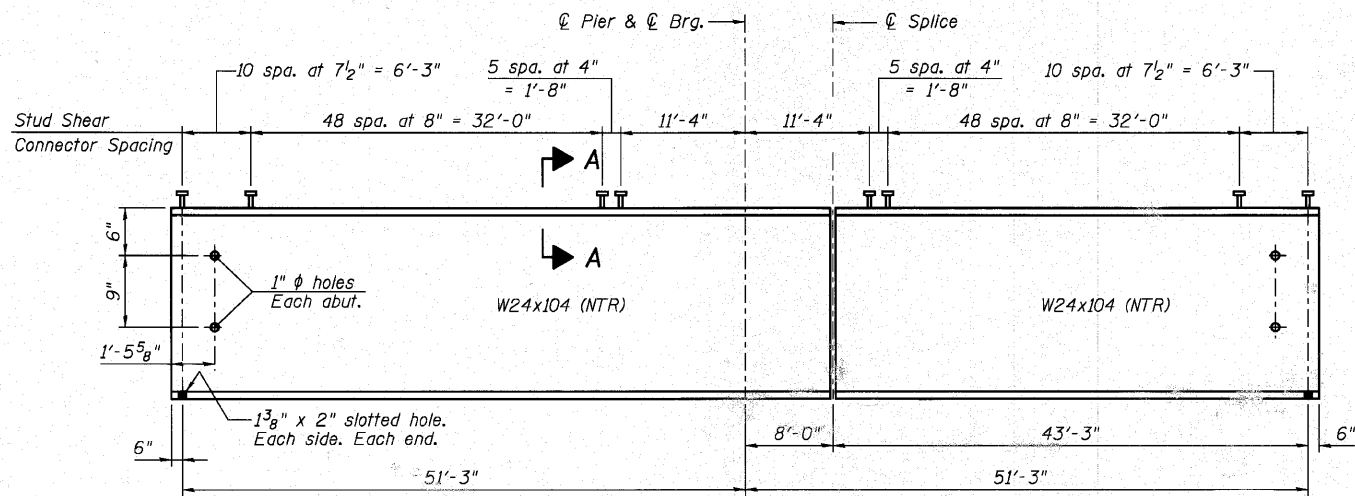


FRAMING PLAN

"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

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

		0.4 Sp 1 0.6 Sp2	Pier
I_s	(in ⁴)	3,100	3,100
$I_c(n)$	(in ⁴)	9,016	---
$I_c(3n)$	(in ⁴)	6,693	---
S_s	(in ³)	258	258
$S_c(n)$	(in ³)	387	---
$S_c(3n)$	(in ³)	350	---
Z	(in ³)	---	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
$M_L + I_M$	(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(L+IM)	(ksi)	23.10	18.26
f_s (Service II)	(ksi)	33.39	36.31
V_r	(k)	20.9	---

* Compact section

		Abut.	Pier
R_{DC1}	(k)	16.2	51.3
R_{DC2}	(k)	3.7	11.0
R_{DW}	(k)	6.2	13.4
$R_L + I_M$	(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 (in⁴ and in³).

$I_c(n), S_c(n)$: 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 (in⁴ and in³).

$I_c(3n), S_c(3n)$: 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 (in⁴ and in³).

Z : Plastic Section Modulus of the steel section in non-composite areas. Omit line in Moment Table if not used in design calculations (in³).

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.).

$M_L + I_M$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

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

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + I_M$

$\phi_r M_n$: 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.).

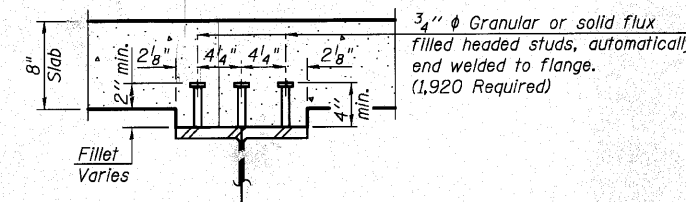
f_s (Service II): Sum of stresses as computed from the moments below (ksi).

$M_{DC1} + M_{DC2} + M_{DW} + 1.3 M_L + I_M$

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

$1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_L + I_M$

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

WILLS BURKE KELSEY ASSOCIATES LTD. 116 West Main Street, Suite 201 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
	CONTRACT NO. 63521					
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT			

FILE NAME = P:\CUBEL WEST Projects\045-3020\045-3020-013-Framing_Plan.dgn
 PLOT CREATION DATE = 12/19/2010