



PARTIAL FRAMING PLAN (SPAN 41)

NOTES:

- For details of structural steel repair and removal see Sheet SF8, SF9 & SF11.
- For details of existing pin and link connection removal, see Sheet SF11.
- For details of bolted splice and diaphragms, see Sheet SF12.

INTERIOR GIRDER MOMENT TABLE (Spans 41-44 only)								
		0.4 Span 41	Pier 42	0.5 Span 42	Pier 43	0.5 Span 43	Pier 44	0.6 Span 44
I_s	(in ⁴)	10,361	39,581	32,799	39,581	22,830	46,472	39,581
$I_c(n)$	(in ⁴)	24,953	39,581	69,594	39,581	54,007	46,472	79,803
$I_c(3n)$	(in ⁴)	18,410	---	53,109	---	41,127	---	61,043
S_s	(in ³)	572	1267	1058	1267	746	1475	1267
$S_c(n)$	(in ³)	798	---	1344	---	1018	---	1563
$S_c(3n)$	(in ³)	724	---	1249	---	938	---	1458
Z	(in ³)	---	---	---	---	---	---	---
ϕ	(k/')	0.990	1.248	0.995	1.244	0.959	1.268	1.019
$M\phi$	(k)	336.7	1131.0	420.7	974.9	277.7	1336.3	788.8
$s\phi$	(k/')	0.225	---	0.225	---	0.225	---	0.225
$M_s\phi$	(k)	85.9	---	109.9	---	85.6	---	184.2
$M\phi$	(k)	595.4	601.4	860.5	649.2	730.0	705.1	950.9
M_I	(k)	147.1	140.1	189.6	143.4	161.5	156.0	210.3
M_a	(k)	2161.1	3080.0	2969.4	2988.1	2407.7	3606.6	3786.0
M_u	(k)	2856.8	---	5481.2	---	4612.3	---	5007.4
$f_s \phi$ non-comp	(ksi)	7.1	10.7	4.8	9.2	4.5	10.9	7.5
$f_s \phi$ (comp)	(ksi)	1.4	---	1.1	---	1.1	---	1.5
$f_s \phi [M\phi + M_I]$	(ksi)	18.6	11.7	15.7	12.5	17.5	11.7	14.9
f_s (Overload)	(ksi)	27.1	22.4	21.5	21.8	23.1	22.6	23.9
f_s (Total)	(ksi)	---	29.2	---	28.3	---	29.3	---
VR	(k)	65.1	---	59.8	---	60.1	---	56.7

INTERIOR GIRDER REACTION TABLE						
		Pier 41	Pier 42	Pier 43	Pier 44	Pier 45
$R\phi$	(k)	32.9	126.0	117.9	140.0	48.9
$R\phi$	(k)	48.6	68.9	71.9	74.1	51.3
R_I	(k)	12.0	11.3	11.0	11.3	11.3
R_{Total}	(k)	93.5	206.2	200.7	225.5	111.5

* Compact section
 ** Braced non-compact and partially braced section

I_s, S_s : Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) 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 and Overload) 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 and Overload) due to long-term composite (superimposed) dead loads (in⁴ and in³).
 Z : Plastic Section Modulus of the steel section in non-composite areas (in³).
 ϕ : Un-factored non-composite dead load (kips/ft.).
 $M\phi$: Un-factored moment due to non-composite dead load (kip-ft.).
 $s\phi$: Un-factored long-term composite (superimposed) dead load (kips/ft.).
 $M_s\phi$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
 $M\phi$: Un-factored live load moment (kip-ft.).
 M_I : Un-factored moment due to impact (kip-ft.).
 M_a : Factored design moment (kip-ft.).
 $1.3 [M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)]$
 M_u : Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).
 f_s (Overload): Sum of stresses as computed from the moments below (ksi).
 $M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)$
 f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
 $1.3 [M\phi + M_s\phi + \frac{2}{3} (M\phi + M_I)]$
 VR : Maximum ϕ + impact shear range within the composite portion of the span for stud shear connector design (kips).

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FILE NAME =	USER NAME = tjjenicke	DESIGNED - TJJ	REVISED -
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**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**PARTIAL FRAMING PLAN AND MOMENT & REACTION TABLES
 STRUCTURE NO. 016-1026**

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
372	2013-038B-R	COOK	821	553
CONTRACT NO. 60J16				
ILLINOIS FED. AID PROJECT				

SHEET NO. SF10 OF SF17 SHEETS