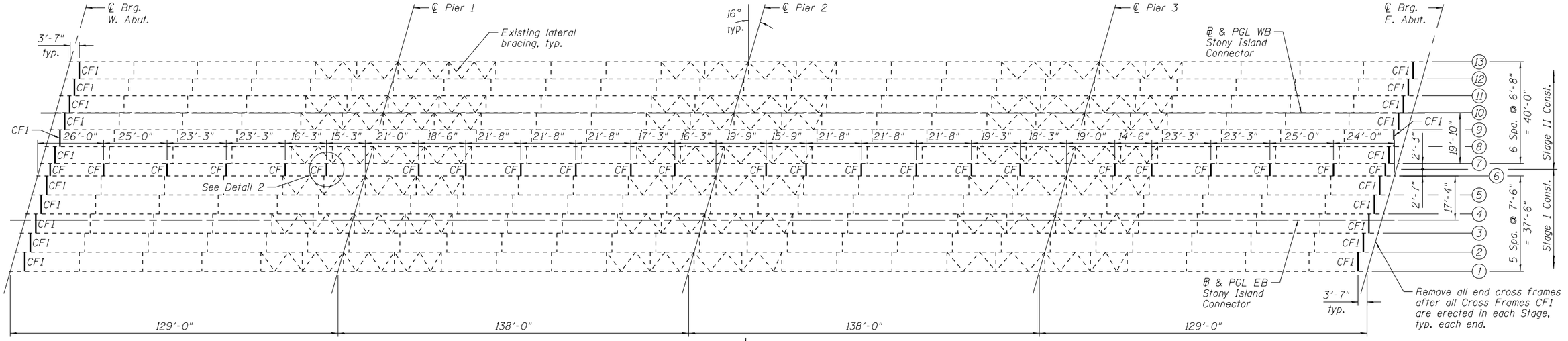
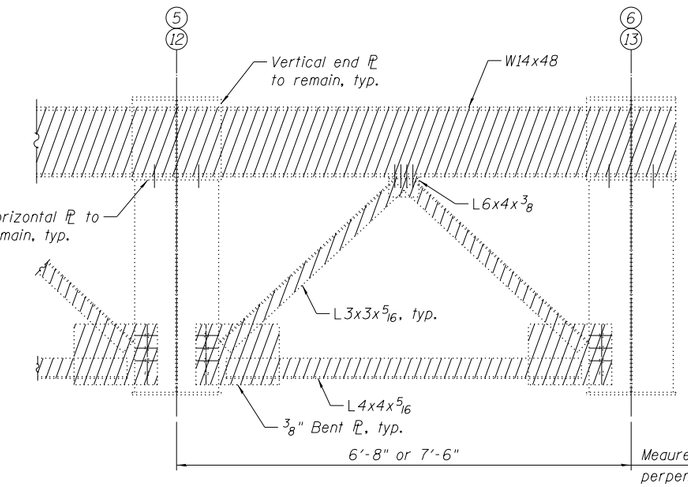


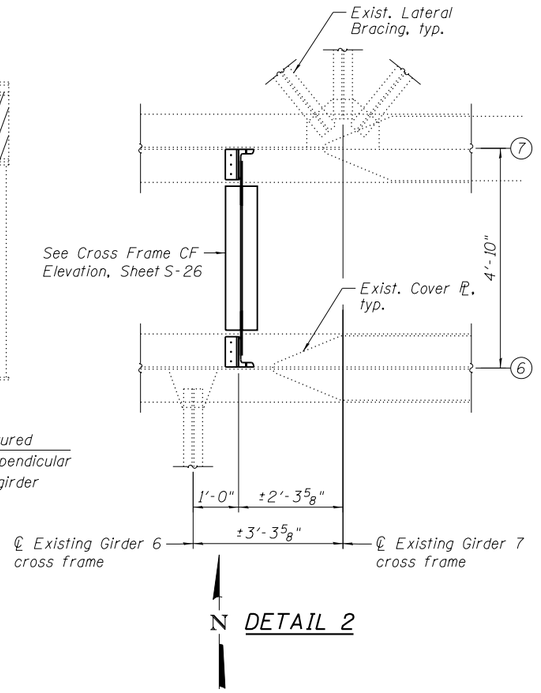
FRAMING PLAN

N



END CROSS FRAME ELEVATION

(Looking Upstation)



LEGEND

Structural Steel Removal

GIRDERS 2 THRU 5 MOMENT TABLE					
		0.4 Sp. 1 or 0.6 Sp. 4	Pier 1 or Pier 3	0.5 Sp. 2 or 0.5 Sp. 3	Pier 2
I_s	(in^4)	61,196	82,702	47,959	73,263
$I_c(n)$	(in^4)	114,391	-	95,924	-
$I_c(3n)$	(in^4)	87,126	-	72,322	-
$I_c(cr)$	(in^4)	-	91,883	-	82,264
S_s	(in^3)	1,943	2,574	1,541	2,298
$S_c(n)$	(in^3)	2,362	-	1,944	-
$S_c(3n)$	(in^3)	2,190	-	1,790	-
$S_c(cr)$	(in^3)	-	2,667	-	2,393
$\mathcal{D}$	(k/')	1.17	1.24	1.12	1.21
$M\mathcal{D}$	('k)	1,419	2,314	719	1,679
$s\mathcal{D}$	(k/')	0.50	0.50	0.50	0.50
$M_s\mathcal{D}$	('k)	605	989	325	749
$M\mathcal{L}$	('k)	1,122	1,309	936	1,226
M_I	('k)	221	253	178	233
$\frac{5}{3}[M\mathcal{L} + M_I]$	('k)	2,239	2,603	1,857	2,432
M_a	('k)	5,541	7,678	3,771	6,317
* M_u	('k)	8,276	-	7,640	-
f_s $\mathcal{D}$ non-comp	(ksi)	8.76	10.79	5.60	8.76
f_s $\mathcal{D}$ (comp)	(ksi)	3.31	4.45	2.18	3.75
f_s $\frac{5}{3}$ $[M\mathcal{L} + M_I]$	(ksi)	11.38	11.71	11.47	12.20
f_s (Overload)	(ksi)	23.45	26.95	19.24	24.72
** f_s (Total)	(ksi)	-	35.03	-	32.13
VR	(k)	65.8	71.5	51.6	71.5

GIRDERS 2 THRU 5 REACTION TABLE				
		W. Abut. or E. Abut.	Pier 1 or Pier 3	Pier 2
$R\mathcal{D}$	(k)	83.2	255.8	215.3
$R\mathcal{L}$	(k)	49.5	89.5	86.4
R_I	(k)	9.7	17.3	16.4
R_{Total}	(k)	142.4	362.6	318.1

* 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 ($in.^4$ and $in.^3$).

$I_c(n)$, $S_c(n)$: 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 ($in.^4$ and $in.^3$).

$I_c(3n)$, $S_c(3n)$: 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 ($in.^4$ and $in.^3$).

$I_c(cr)$, $S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total and Overload) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

$\mathcal{D}$: Un-factored non-composite dead load (kips/ft.).

$M\mathcal{D}$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\mathcal{D}$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\mathcal{D}$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

$M\mathcal{L}$: Un-factored live load moment (kip-ft.).

M_I: Un-factored moment due to impact (kip-ft.).

M_a: Factored design moment (kip-ft.). $1.3\ [M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_I)]$

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). $M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_I)$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi). $1.3\ [M\mathcal{D} + M_s\mathcal{D} + \frac{5}{3}(M\mathcal{L} + M_I)]$

VR: Maximum $\mathcal{L}$ + impact shear range within the composite portion of the span for stud shear connector design (kips).

Notes:

1. See Sheet S-26 for Cross Frame CF and Cross Frame CF1 details.

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USER NAME =	DESIGNED - BAK	REVISED -
	CHECKED - TL	REVISED -
PLOT SCALE =	DRAWN - MTR	REVISED -
PLOT DATE = 03/29/2013	CHECKED - TL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS I
STRUCTURE NO. 016-2440
SHEET NO. S-25 OF S-47 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
94	2012-059-BR	COOK	631	453
		CONTRACT NO. 60J12		
	ILLINOIS FED. AID PROJECT			