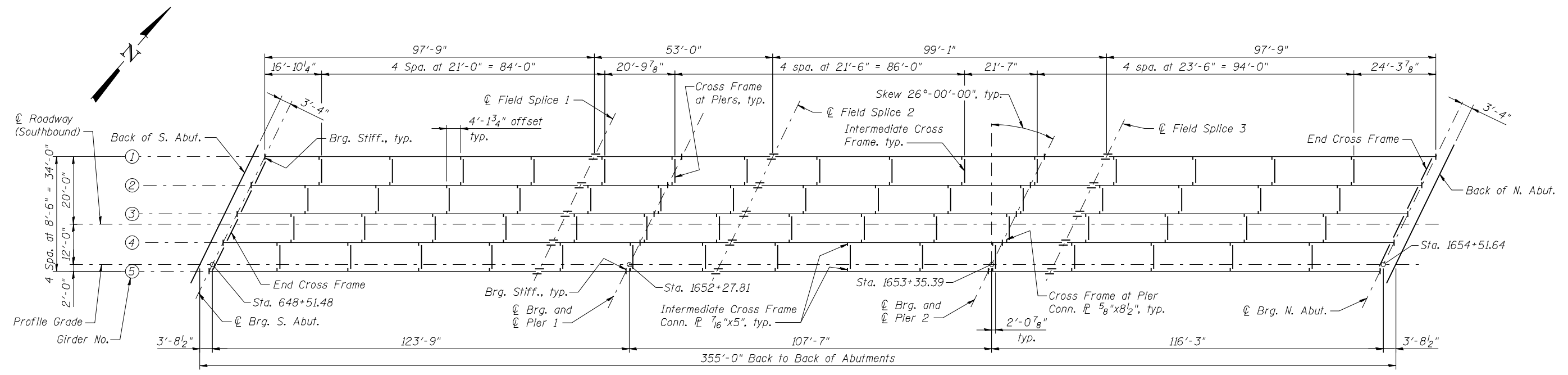


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FRAMING PLAN

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I_s	29007	45007	25665	45007	26837
$I_c(n)$	81701	54884	69599	54884	73704
$I_c(3n)$	58640	54884	50959	54884	53604
$I_c(cr)$	35343	54922	31169	54922	32628
S_s	1194	1450	979	1450	1051
$S_c(n)$	1724	1986	1431	1986	1528
$S_c(3n)$	1571	1986	1300	1986	1391
$S_c(cr)$	1298	1999	1067	1999	1145
DC1	1.10	1.16	1.08	1.16	1.08
M_{DC1}	1364	1731	-16	1547	1175
DC2	0.21	0.21	0.21	0.21	0.21
M_{DC2}	266	313	9	287	231
DW	0.38	0.38	0.38	0.38	0.38
M_{DW}	477	560	17	515	414
$M_{\ell + IM}$	1916	2032	1296	1990	1725
M_u (Strength I)	6106	6951	2285	6548	5397
$\phi_r M_n$	8223	8300	7622	8315	7295
f_s DC1	13.7	14.3	-0.2	12.8	13.4
f_s DC2	2.0	1.9	0.1	1.7	2.0
f_s DW	3.6	3.4	0.2	3.1	3.6
f_s ($\ell + IM$)	13.3	12.3	10.9	12.0	13.5
f_s (Service II)	36.7	35.6	14.2	33.3	36.6
$0.95R_n F_y f$	47.5	47.5	47.5	47.5	47.5
f_s (Total)(Strength I)	48.5	46.8	19.1	43.9	48.3
$\phi_r F_n$	50.0	50.0	50.0	50.0	50.0
V_f	26.9	30.4	24.7	29.6	26.3

	S. Abut.	Pier 1	Pier 2	N. Abut.
R_{DC1}	56.7	147.4	137.8	52.1
R_{DC2}	10.7	27.4	26.2	9.8
R_{DW}	19.2	49.2	46.9	17.6
$R_{LL + IM}$	93.2	167.7	174.0	102.1
R_{Total}	179.8	391.7	384.9	181.6

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) in uncracked sections 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) in uncracked sections, due to long-term composite (superimposed) dead loads (in⁴ and in³).
 $I_c(cr), S_c(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in⁴ and 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.).
 $M_{\ell + IM}$: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
 M_u (Strength I): Factored design moment (kip-ft.).
 $1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{\ell + IM}$
 $\phi_r M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft.).
 f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
 M_{DC1} / S_{nc}
 f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
 $M_{DC2} / S_c(3n)$ or $M_{DC2} / S_c(cr)$ as applicable.
 f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
 $M_{DW} / S_c(3n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s ($\ell + IM$): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
 $M_{\ell + IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.
 f_s (Service II): Sum of stresses as computed below (ksi).
 $f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (\ell + IM)$
 $0.95R_n F_y f$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
 f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
 $1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (\ell + IM)$
 $\phi_r F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
 V_f : Maximum factored shear range in span computed according to Article 6.10.10.

Notes:

M_{ℓ} and R_{ℓ} include the effects of centrifugal force and superelevation.

Notes:

For Structural Steel notes, see sheet C32.
 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.



USER NAME =	DESIGNED - M. CRONIN	REVISED -
	CHECKED - R. RILEY	REVISED -
PLOT DATE = 17-OCT-2012	DRAWN - E. KRACK	REVISED -
	CHECKED - J. SMITH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN AND DESIGN DATA - S.B.
STRUCTURE NO. 082-0334 (N.B.) & 082-0335 (S.B.)

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
788	520-1-2HVB	ST. CLAIR	237	86
ILLINOIS FED. AID PROJECT			CONTRACT NO. 76848	