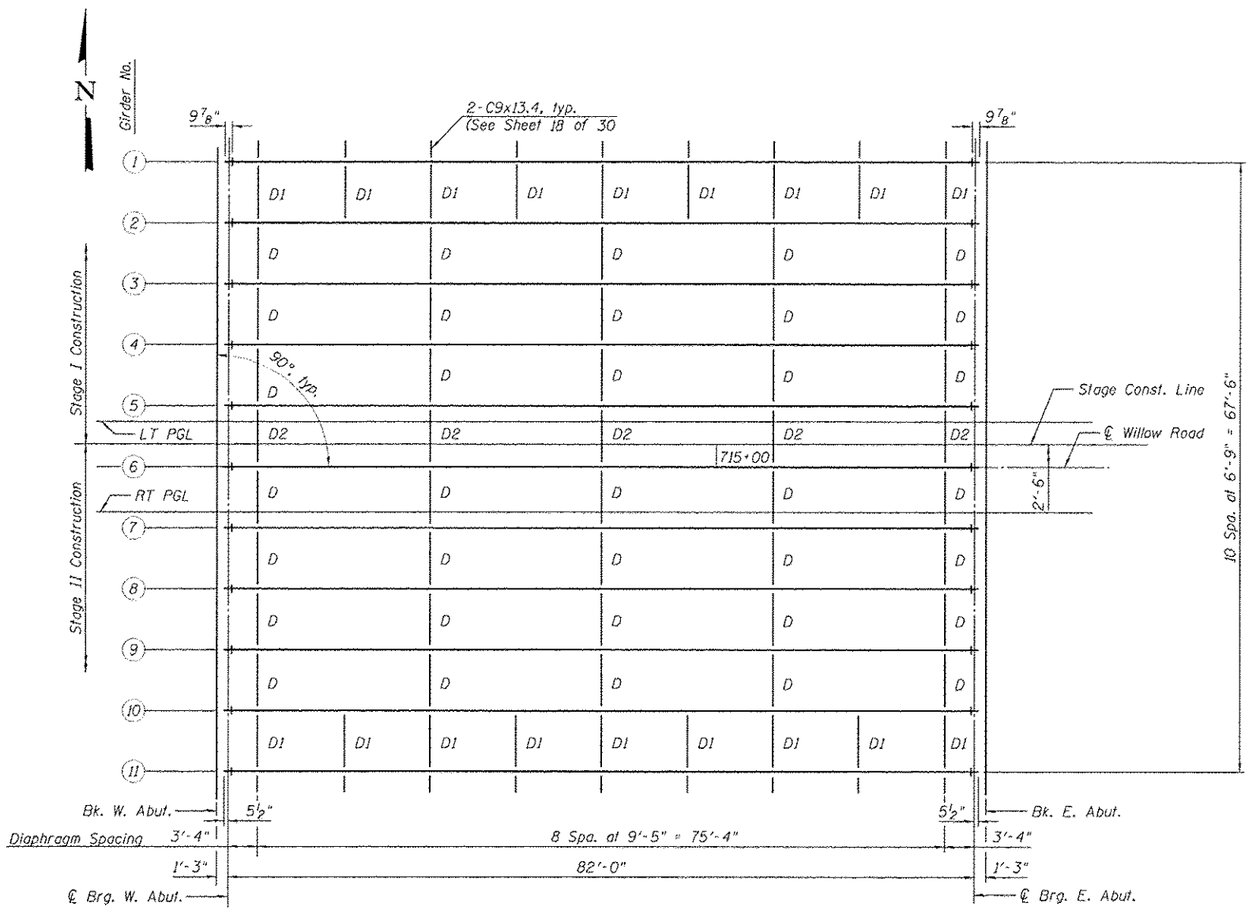
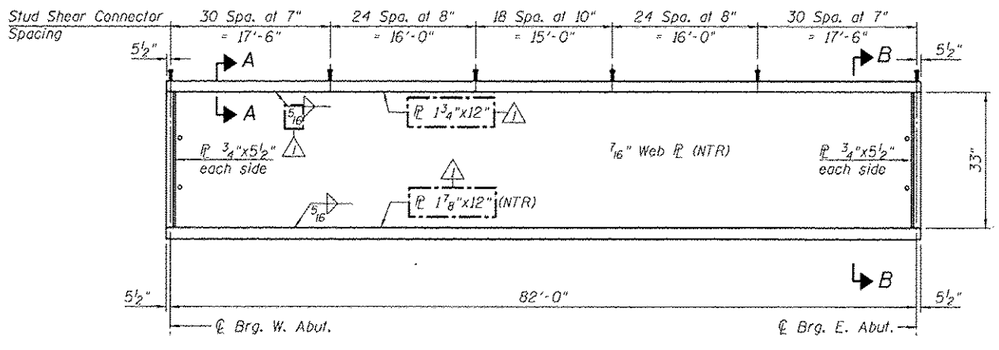


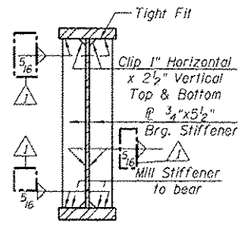
FRAMING PLAN



GIRDER ELEVATION

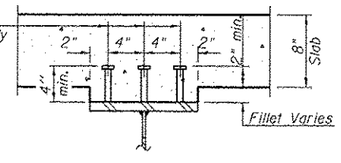
INTERIOR GIRDER MOMENT TABLE		0.5 Span
I_s	(in^4)	14,490
$I_c(n)$	(in^4)	31,452
$I_c(3n)$	(in^4)	23,382
S_s	(in^3)	809
$S_c(n)$	(in^3)	1032
$S_c(3n)$	(in^3)	952
DC1	(k/')	0.93
M_{DC1}	('k)	779
DC2	(k/')	0.45
M_{DC2}	('k)	382
DW	(k/')	0.20
M_{DW}	('k)	168
M_{L+IM}	('k)	1232
M_u (Strength I)	('k)	3859
$\phi_f M_n$	('k)	4780
f_s DC1	(ksi)	11.5
f_s DC2	(ksi)	4.8
f_s DW	(ksi)	2.1
f_s (L+IM)	(ksi)	14.3
f_s (Service II)	(ksi)	37.1
$0.95R_hF_{yf}$	(ksi)	47.5
f_s (Total)(Strength I)	(ksi)	-
$\phi_f F_n$	(ksi)	-
V_r	(k)	48.5

INTERIOR GIRDER REACTION TABLE		Abut.
R_{DC1}	(k)	38.9
R_{DC2}	(k)	18.7
R_{DW}	(k)	8.2
R_{L+IM}	(k)	80.6
R_{Total}	(k)	146.4



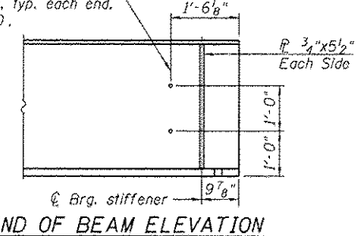
SECTION B-B

3/4" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (No. Req'd= 4,191)



SECTION A-A

℄ 1" ϕ holes thru web for $m_2(E)$, $m_5(E)$ or $m_7(E)$ bars.
℄ 1¼" ϕ holes thru Beam 6 web for $m_6(E)$ bars, typ. each end. See sheet 12 of 30.



END OF BEAM ELEVATION

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 ($in.^4$ 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-Strength I, and Service II) in uncracked sections 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-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

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+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

M_u (Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+IM}$

$\phi_f M_n$: 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 (L+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).
$M_{L+IM} / S_c(n)$ or $M_{DW} / S_c(cr)$ as applicable.

f_s (Service II): Sum of stresses as computed below (ksi).
$f_{sDC1} + f_{sDC2} + f_{sDW} + 1.3\ f_s(L+IM)$

$0.95R_hF_{yf}$: 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).
$1.25\ (f_{sDC1} + f_{sDC2}) + 1.5\ f_{sDW} + 1.75\ f_s(L+IM)$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V_r: Maximum factored shear range in span computed according to Article 6.10.10.

Notes:

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

All plates of girder including bearing stiffeners shall be AASHTO M 270, Grade 50.

All diaphragms, angles and connecting plates, may be AASHTO M270, Grade 36.

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2/20/2013

TranSystems

USER NAME = jrmichow	DESIGNED - JRM	REVISED ⚠1 12/19/2012 JRM
	CHECKED - DL	REVISED -
PLOT SCALE = 16.0 '/ in.	DRAWN - DMG	REVISED -
PLOT DATE = 12/28/2012	CHECKED - DL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 016-2844
SHEET NO. 19 OF 30 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
0305	(1920.01,1518.2022&1922.48)R	COOK	919	469
		CONTRACT NO. 60T35		
	ILLINOIS FED. AID PROJECT			