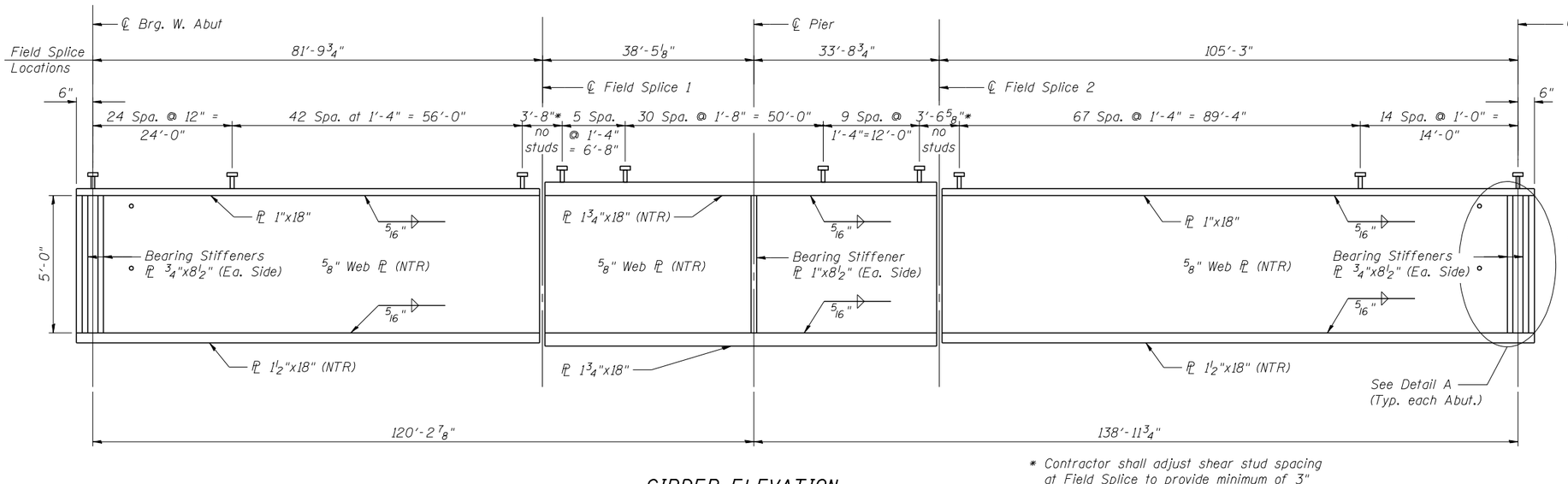
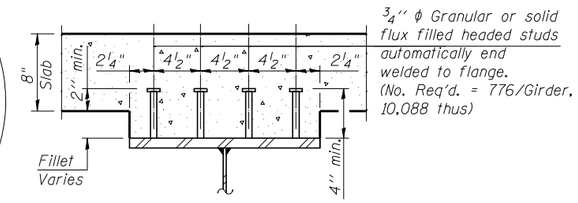


GIRDER ELEVATION

* Contractor shall adjust shear stud spacing at Field Splice to provide minimum of 3" clearance from shear stud to splice plate.



3/4" ϕ Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd. = 776/Girder. 10,088 thus)

SECTION A-A

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier	0.6 Sp. 2
I_s	(in^4)	52,573	71,322	52,573
$I_c(n)$	(in^4)	116,170	132,081	116,170
$I_c(3n)$	(in^4)	84,892	100,726	84,892
$I_c(cr)$	(in^4)	-	82,204	-
S_s	(in^3)	1,872	2,246	1,872
$S_c(n)$	(in^3)	2,420	2,722	2,420
$S_c(3n)$	(in^3)	2,220	2,525	2,220
$S_c(cr)$	(in^3)	-	2,853	-
DC1	(k/')	1.219	1.28	1.219
M_{DC1}	('k)	995	2,855	1,698
DC2	(k/')	0.354	0.354	0.354
M_{DC2}	('k)	296	795	503
DW	(k/')	0.417	0.417	0.417
M_{DW}	('k)	349	935	592
M_{L+IM}	('k)	1,847	2,169	2,133
M_u (Strength I)	('k)	5,368	9,762	7,372
$\phi_f M_n$	('k)	12,312	10,589	12,121
f_s DC1	(ksi)	6.4	15.3	10.9
f_s DC2	(ksi)	1.6	3.3	2.7
f_s DW	(ksi)	1.9	3.9	3.2
f_s (L+IM)	(ksi)	9.2	9.1	10.6
f_s (Service II)	(ksi)	21.8	34.3	30.6
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	-	45.0	-
$\phi_f F_n$	(ksi)		47.1	
V_f	(k)	68.8		63.8

INTERIOR GIRDER REACTION TABLE				
		W. Abut.	Pier	E. Abut.
R_{DC1}	(k)	51.1	206.2	65.5
R_{DC2}	(k)	14.7	58.2	18.9
R_{DW}	(k)	17.3	68.6	22.2
R_{L+IM}	(k)	104.2	212.1	108.8
R_{Total}	(k)	187.3	545.0	215.4

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 $in.^3$).

$I_c(cr)$, $S_c(cr)$: 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 ($in.^4$ 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 $M_{L+IM} / S_c(cr)$ 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 (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).

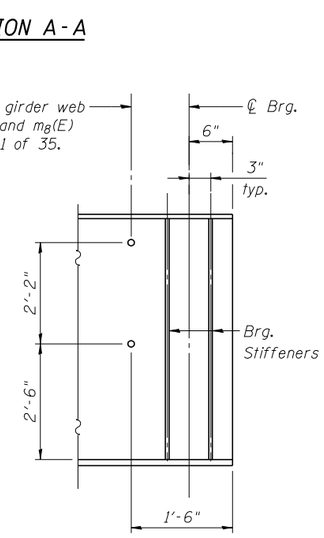
V_f: Maximum factored shear range in span computed according to Article 6.10.10.

Note:
M_{L+IM} and R_{L+IM} include the effects of centrifugal force and superelevation.

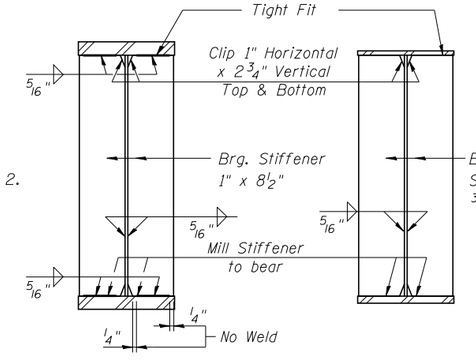
NOTES:

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

℄ 1 3/4" ϕ Holes in girder web for $m_1(E)$, $m_7(E)$ and $m_8(E)$ bars. See sheet 11 of 35.



DETAIL "A"



SECTION AT PIER

SECTION AT ABUTMENT

TY·LIN INTERNATIONAL	USER NAME =	DESIGNED - PK	REVISED -	
		CHECKED - SP	REVISED -	
	PLOT SCALE =	DRAWN - PK	REVISED -	
	PLOT DATE =	CHECKED - SP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GIRDER ELEVATIONS & DETAILS
STRUCTURE NO. 099-0526
SHEET NO. 18 OF 35 SHEETS

F.A.I RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	99-1HB-R	WILL	63	40
		CONTRACT NO. 60T40		
	ILLINOIS FED. AID PROJECT			

5/4/2012

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