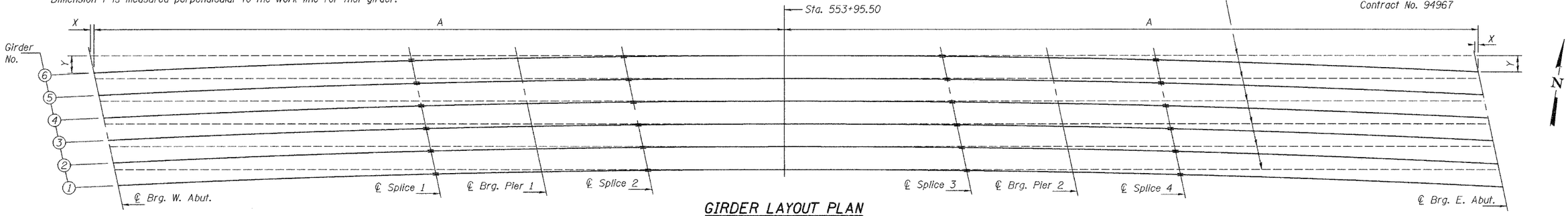
Notes: Work lines and X, Y, and A dimensions shown for a local tangent to each girder at Sta. 553+95.50.
For each girder:
Dimension A is measured from Sta. 553+95.50 to the noted location along the work line for that girder.
Dimensions A and X are measured parallel to the work line for that girder.
Dimension Y is measured perpendicular to the work line for that girder.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 327	(51-23) B-3	LAWRENCE	56	34
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 17
29 SHEETS

Contract No. 94967



GIRDER LAYOUT PLAN

TABLE OF LAYOUT DIMENSIONS

	℄ Brg. W. Abut.			℄ Field Splice 1			℄ Brg. Pier 1			℄ Field Splice 2			℄ Field Splice 3			℄ Brg. Pier 2			℄ Field Splice 4			℄ Brg. E. Abut.		
	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y	A	X	Y
Girder 1	219'-5 1/8"	1'-1"	5'-1 3/8"	118'-3"	3 3/4"	1'-5 3/4"	83'-4 1/4"	1 7/8"	8 7/8"	48'-4 1/4"	5/8"	3"	56'-8 1/8"	7/8"	4 1/8"	91'-8 1/8"	2 1/4"	10 3/4"	127'-0 7/8"	4 3/8"	1'-8 5/8"	229'-8 1/8"	1'-2 1/4"	5'-7 1/4"
Girder 2	221'-0"	1'-1 1/4"	5'-2 1/8"	119'-10"	3 7/8"	1'-6 1/4"	84'-11 3/8"	2"	9 1/8"	49'-11 1/4"	5/8"	3 1/8"	55'-0 7/8"	7/8"	3 7/8"	90'-0 7/8"	2 1/4"	10 3/8"	125'-5 5/8"	4 1/4"	1'-8"	228'-0 3/4"	1'-2 1/8"	5'-6 1/8"
Girder 3	222'-7"	1'-1 3/8"	5'-2 7/8"	121'-5 1/8"	4"	1'-6 3/4"	86'-6 3/8"	2"	9 1/2"	51'-6 3/8"	3/4"	3 3/8"	53'-5 3/4"	3/4"	3 5/8"	88'-5 3/4"	2 1/8"	10"	123'-10 3/8"	4 1/8"	1'-7 1/2"	226'-5 1/2"	1'-1 7/8"	5'-5 1/8"
Girder 4	224'-2"	1'-1 1/2"	5'-3 3/4"	123'-0 1/8"	4 1/8"	1'-7 1/8"	88'-1 1/2"	2 1/8"	9 7/8"	53'-1 1/2"	3/4"	3 5/8"	51'-10 1/2"	3/4"	3 3/8"	86'-10 1/2"	2"	9 5/8"	122'-3 1/8"	4"	1'-7"	224'-10 1/8"	1'-1 5/8"	5'-4 1/8"
Girder 5	225'-8 7/8"	1'-1 3/4"	5'-4 1/2"	124'-7 1/8"	4 1/8"	1'-7 5/8"	89'-8 1/2"	2 1/8"	10 1/8"	54'-8 1/2"	3/4"	3 3/4"	50'-3 3/8"	5/8"	3 1/4"	85'-3 1/4"	2"	9 1/4"	120'-7 7/8"	3 7/8"	1'-6 3/8"	223'-2 3/4"	1'-1 3/8"	5'-3 1/8"
Girder 6	227'-3 7/8"	1'-1 7/8"	5'-5 3/8"	126'-2 1/8"	4 1/4"	1'-8 1/8"	91'-3 5/8"	2 1/4"	10 1/2"	56'-3 5/8"	7/8"	4"	48'-8 1/8"	5/8"	3"	83'-8 1/8"	1 7/8"	8 7/8"	119'-0 5/8"	3 3/4"	1'-5 7/8"	221'-7 3/8"	1'-1 1/4"	5'-2 1/8"

INTERIOR GIRDER MOMENT TABLE - GIRDER 5				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	36313	79341	36313
$I_c(n)$	(in^4)	87808		87808
$I_c(3n)$	(in^4)	63953		63953
S_s	(in^3)	1296	2479	1296
$S_c(n)$	(in^3)	1753		1753
$S_c(3n)$	(in^3)	1602		1602
S_{xt}	(in^3)	1617		1628
DC1	(k/')	1.00	1.30	1.00
M_{DC1}	('k)	1087	3391	959
DC2	(k/')	0.14		0.14
M_{DC2}	('k)	185		184
DW	(k/')	0.34	0.34	0.34
M_{DW}	('k)	428	901	424
M_{L+Imp}	('k)	2043	2224	2163
M_u (Strength I)	('k)	5807	9482	5850
M_{bl}	('k)	11.1	12.2	12.7
f_s DC1	(ksi)	10.1	16.4	8.9
f_s DC2	(ksi)	1.4		1.4
f_s DW	(ksi)	3.2	4.4	3.2
f_s 1.3(L+I)	(ksi)	18.2	14.0	19.2
f_t	(ksi)	2.8	1.4	3.2
f_s (Service II)	(ksi)	32.9	34.8	32.7
f_s (Total)(Strength I)	(ksi)	43.7	45.9	43.5
F_{cr} (Service II)	(ksi)	47.5	40.0	47.5
V_f	(k)	26.2		21.6
F_{cr}	(ksi)	50	50	50

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) 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) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

S_{xt}: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange ($in.^3$).

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

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

M_{bl}: Factored lateral bending moment for controlling flange plate (kip-ft.).

f_t: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending (kip-ft.).

f_s (Service II): Sum of stresses as computed from the moments below (ksi).
$M_{DC1} + M_{DC2} + M_{DW} + 1.3\ M_{L+Imp}$

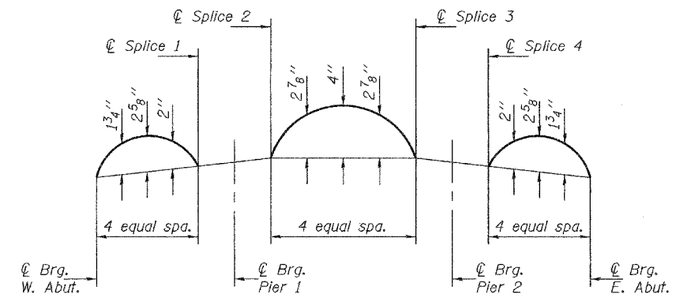
f_s (Total)(Strength I): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{L+Imp}$

F_{cr} (Service II): Critical flange stress at overload computed according to Article 6.10.4.2 (ksi).

F_{cr}: Critical flange stress computed according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Factored shear range computed according to Article 6.10.10.

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



CAMBER DIAGRAM

*TOP OF WEB ELEVATIONS

	℄ Brg. W. Abut.	℄ Splice 1	℄ Brg. Pier 1	℄ Splice 2	℄ Splice 3	℄ Brg. Pier 2	℄ Splice 4	℄ Brg. E. Abut.
Girder 1	437.67	438.38	438.53	438.69	438.68	438.51	438.33	437.59
Girder 2	437.77	438.49	438.65	438.81	438.79	438.62	438.45	437.72
Girder 3	437.88	438.59	438.75	438.91	438.91	438.75	438.58	437.85
Girder 4	437.98	438.69	438.85	439.01	439.03	438.87	438.70	437.97
Girder 5	438.08	438.80	438.96	439.12	439.15	438.99	438.82	438.10
Girder 6	438.18	438.90	439.06	439.23	439.26	439.11	438.95	438.23

*For fabrication use only.

INTERIOR GIRDER REACTION TABLE			
		Abuts.	Piers
R_{DC1}	(k)	46.9	189.7
R_{DC2}	(k)	7.1	25.9
R_{DW}	(k)	17.0	60.7
R_{L+Imp}	(k)	83.5	167.8
R_{Total}	(k)	154.5	444.1

DESIGNED	Chad E. Hodel
CHECKED	Mark D. Shaffer
DRAWN	h.t. duong
CHECKED	CEH/MDS

Oct. 2, 2007
EXAMINED Thomas J. Domagalski
ENGINEER OF BRIDGE DESIGN
PASSED Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
F.A.P. RT. 327 - SEC. (51-23)B-3
LAWRENCE COUNTY
STATION 553+95.50
STRUCTURE NO. 051-0063

\projects\hti00025\051oo63.cgn 10/2/2007 1:04:21 PM