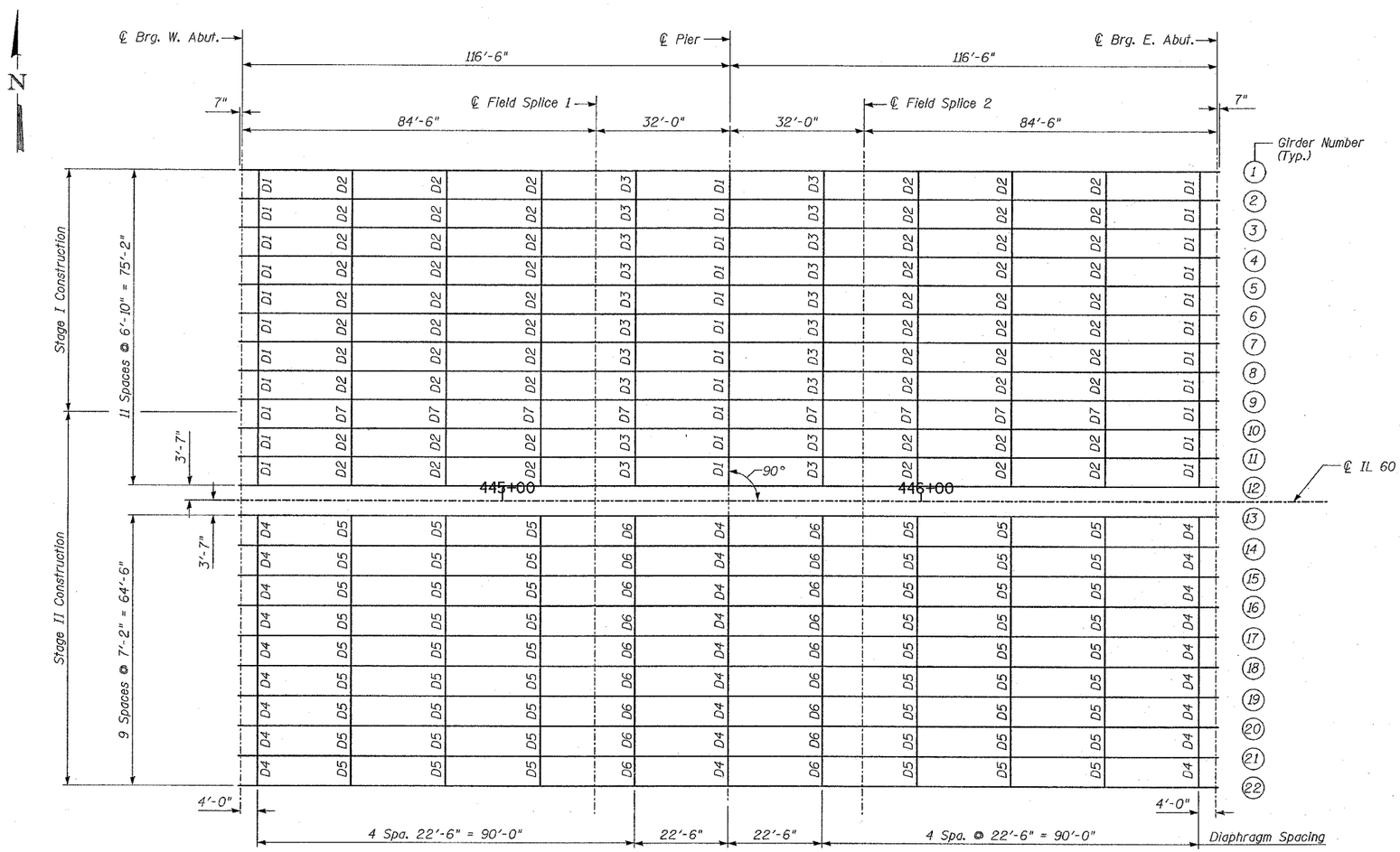
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
335	119R-2	LAKE	439	270
STA. 432+83.12		TO STA. 470+56.84		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

60B01



FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE			
		0.4 Sp. 1 or 0.6 Sp. 2	Pier
I_s	(in^4)	16,853	33,130
$I_c(n)$	(in^4)	39,143	
$I_c(3n)$	(in^4)	28,873	
S_s	(in^3)	875	1,523
$S_c(n)$	(in^3)	1,139	
$S_c(3n)$	(in^3)	1,051	
Z	(in^3)	-	-
$\wp$	(k/')	0.996	1.596
$M\wp$	('k)	798	2,732
$s\wp$	(k/')	0.47	
$M_s\wp$	('k)	439	
M'_L	('k)	982	915
M_{Imp}	('k)	196	183
$\frac{5}{3}[M'_L + Imp]$	('k)	1,963	1,830
M_a	('k)	4,160	5,931
M_u	('k)	4,385	-
f_s $\wp$ non-comp	(ksi)	10.9	21.5
f_s $\wp$ (comp)	(ksi)	5.0	
f_s $\frac{5}{3}[M'_L + M_{Imp}]$	(ksi)	20.7	14.4
f_s (Overload)	(ksi)	36.6	35.9
f_s (Total)	(ksi)	47.6	46.7
VR	(k)	56.8	

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 $in.^3$).

Z: Plastic Section Modulus of the steel section in non-composite areas ($in.^3$).

$\wp$: Un-factored non-composite dead load (kips/ft.).

$M\wp$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\wp$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

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

M'_L: Un-factored live load moment (kip-ft.).

M_{Imp}: Un-factored moment due to impact (kip-ft.).

M_a: Factored design moment (kip-ft.).
$1.3\ [M\wp + M_s\wp + \frac{5}{3}(M'_L + M_{Imp})]$

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).
$M\wp + M_s\wp + \frac{5}{3}(M'_L + M_{Imp})$

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\wp + M_s\wp + \frac{5}{3}(M'_L + M_{Imp})]$

VR: Maximum L + impact horizontal shear range within the composite portion of the span for stud shear connector design (kips).

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
$R\wp$	(k)	59.7	217.4
R'_L	(k)	42.5	76.7
Imp.	(k)	8.5	10.7
R_{Total}	(k)	110.7	304.8

NOTES

All structural steel for girders and splice plates shall conform to the requirements of AASHTO M270, Grade 50. All other structural steel shall conform to the requirements of AASHTO M270, Grade 36.

Load carrying components designated "NTR" shall conform to the supplemental requirements for Notch Toughness, Zone 2.

All cross frames or diaphragms shall be installed as steel is erected and secured with erection pins or bolts except as otherwise noted. Individual cross frames or diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Furnishing and Erecting Structural Steel	L SUM	1
Stud Shear Connectors	Each	13,860

SHEET S-23 OF S-53

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

FRAMING PLAN

ILLINOIS 60 OVER I-94

F.A.P. RTE. 335 SECTION 119R-2

LAKE COUNTY STA. 445+54.14

S.N. 049-2012 ISTHA BRIDGE NO. 407

DESIGNED BY: SP

DRAWN BY: SP

CHECKED BY: PDF

SCALE:

DATE: MAY 8, 2007

T·Y·LIN INTERNATIONAL

F'/LF $TIME$ $DATE$