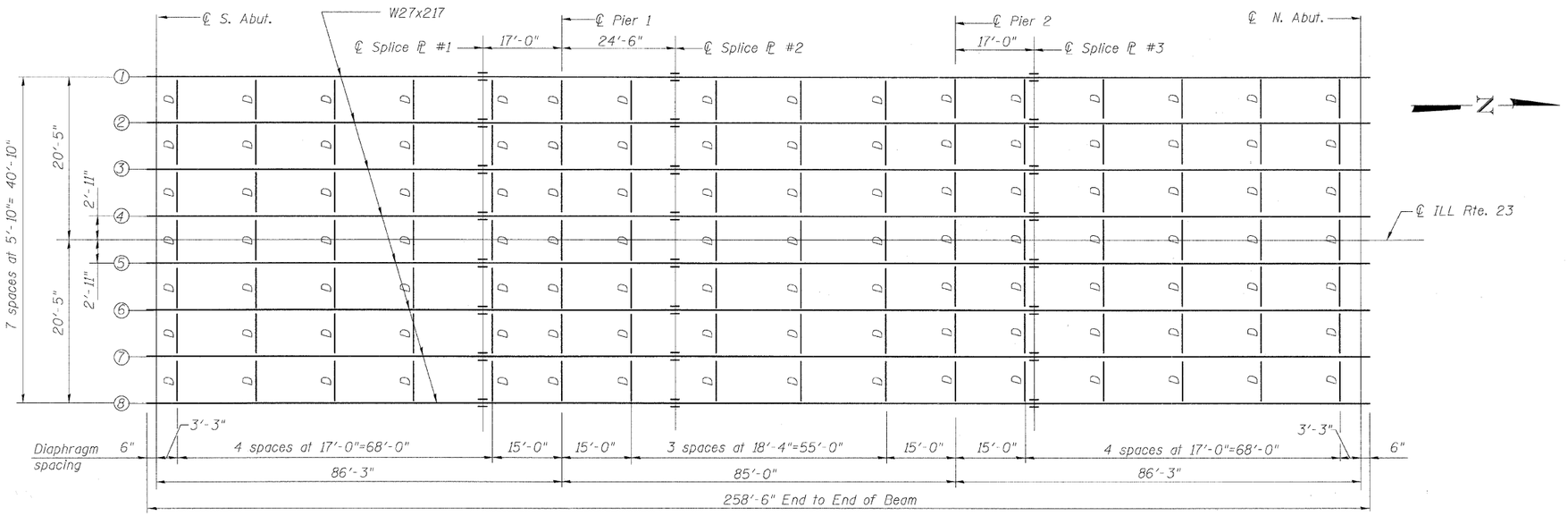
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 324	23B (1&2)F	MCHENRY	17	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO.
SHEETS

Contract # 60E54



FRAMING PLAN

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Piers	0.5 Sp. 2
I_s	(in^4)	8,910	8,910	8,910
$I_c(n)$	(in^4)	20,915	8,910	20,915
$I_c(3n)$	(in^4)	14,847	8,910	14,847
S_s	(in^3)	627	627	627
$S_c(n)$	(in^3)	881	627	881
$S_c(3n)$	(in^3)	783	627	783
DC1	(k/')	0.844	0.844	0.844
M_{DC1}	('k)	506	620	142
DC2	(k/')	0.113	0.113	0.113
M_{DC2}	('k)	71	74	28
DW	(k/')	0.275	0.275	0.275
M_{DW}	('k)	174	180	68
M_{L+Imp}	('k)	1,015	711	787
M_u(Strength I)	('k)	2,758	2,381	1,693
$\phi_f M_n$, $\phi_f M_{nc}$	('k)	3,880	—	3,880
f_s DC1	(ksi)	9.68	11.87	2.72
f_s DC2	(ksi)	1.09	1.42	0.43
f_s DW	(ksi)	2.67	3.45	1.04
f_s 1.3(L+I)	(ksi)	17.97	17.69	13.94
f_s (Service II)	(ksi)	31.41	34.43	18.13
f_s (Total)(Strength I)	(ksi)	—	45.61	—
V_f	(k)	20.11	—	17.14

INTERIOR GIRDER REACTION TABLE HL93 Loading			
		Abut.	Pier
R_{DC1}	(k)	29.99	79.45
R_{DC2}	(k)	4.02	10.53
R_{DW}	(k)	9.78	25.63
R_{L+Imp}	(k)	71.92	109.54
R_{Total}	(k)	115.71	225.15

BEARING SEAT ELEVATIONS (For Information Only)				
Beam \ Loc.	℄ S. Abut.	℄ Pier 1	℄ Pier 2	℄ N. Abut.
Beam No.1	801.21	801.54	801.96	802.50
Beam No.2	801.33	801.66	802.08	802.62
Beam No.3	801.44	801.77	802.19	802.73
Beam No.4	801.53	801.86	802.28	802.82
Beam No.5	801.53	801.86	802.28	802.82
Beam No.6	801.44	801.77	802.19	802.73
Beam No.7	801.33	801.66	802.08	802.62
Beam No.8	801.21	801.54	801.96	802.50

TOP OF BEAM ELEVATIONS (For Fabrication Only)							
Beam \ Loc.	℄ S. Abut.	℄ Pier 1	℄ Pier 2	℄ N. Abut.	℄ Splice No.1	℄ Splice No.2	℄ Splice No.3
Beam No.1	803.75	804.19	804.61	805.04	804.10	804.31	804.70
Beam No.2	803.88	804.31	804.73	805.16	804.22	804.43	804.82
Beam No.3	803.98	804.42	804.84	805.27	804.33	804.54	804.93
Beam No.4	804.07	804.51	804.93	805.36	804.42	804.63	805.02
Beam No.5	804.07	804.51	804.93	805.36	804.42	804.63	805.02
Beam No.6	803.98	804.42	804.84	805.27	804.33	804.54	804.93
Beam No.7	803.88	804.31	804.73	805.16	804.22	804.43	804.82
Beam No.8	803.75	804.19	804.61	805.04	804.10	804.31	804.70

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 $in.^3$).

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.).
$1.25\,(M_{DC1} + M_{DC2}) + 1.5\,M_{DW} + 1.75\,M_{L+Imp}$

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 (kip-ft.).

$\phi_f M_{nc}$: Compact non-composite negative moment capacity computed according to Article A6.1.1 (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).
$1.25\,(M_{DC1} + M_{DC2}) + 1.5\,M_{DW} + 1.75\,M_{L+Imp}$

V_f: Factored shear range computed according to Article 6.10.10.

DESIGNED	W.L.A
CHECKED	C.J.B
DRAWN	D.R.P
CHECKED	P.J.M

Note:

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.

V3 Companies of Illinois Ltd.
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FRAMING PLAN

ILL. ROUTE 23 OVER
KISHWAUKEE RIVER
F.A.P. RT. 324 - SEC. 23B (1&2)F
MCHENRY COUNTY
STATION 69+02.50
STRUCTURE NO. 056-0001

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