



FRAMING PLAN

	0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in ⁴) 48,648		48,648
I'	(in ⁴) 164,321		164,321
S_b	(in ³) 3,165		3,165
S_b'	(in ³) 5,778		5,778
S_t	(in ³) 2,358		2,358
S_t'	(in ³) 21,730		21,730
Q	(k/ft) 0.96		0.96
M_Q	(k) 138		288
s_Q	(k/ft) 0.37	0.37	0.37
M_{s_Q}	(k) 25	71	46
M_L	(k) 160	154	202
M_I	(k) 48	46	58

	0.4 Sp. 1 0.6 Sp. 3	Pier 1 or 2	0.5 Sp. 2
I	(in ⁴) 48,648		48,648
I'	(in ⁴) 154,436		154,346
S_b	(in ³) 3,165		3,165
S_b'	(in ³) 5,648		5,648
S_t	(in ³) 2,358		2,358
S_t'	(in ³) 17,800		17,800
Q	(k/ft) 0.86		0.86
M_Q	(k) 125		259
s_Q	(k/ft) 0.37	0.37	0.37
M_{s_Q}	(k) 25	71	46
M_L	(k) 133	129	168
M_I	(k) 40	38	48

	Abutments	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
R_Q	(k) 16.3	16.3	23.4
R_{s_Q}	(k) 4.4	8.5	9.3
R_L	(k) 27.1	30.4	32.6
R_I	(k) 8.1	9.0	9.7
R_{Total}	(k) 55.9	64.2	75.0

	Abutments	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 2 Pier 2 Span 2
R_Q	(k) 14.7	14.7	21.1
R_{s_Q}	(k) 4.4	8.5	9.3
R_L	(k) 22.6	25.3	27.2
R_I	(k) 6.8	7.6	8.1
R_{Total}	(k) 48.5	56.1	65.7

* The total R_{s_Q} , R_L , and impact reactions are assumed to be distributed evenly to each bearing line at a pier regardless of the span ratios. The bearing design at a pier is based on the maximum reactions of either span.

- I : Non-composite moment of inertia of beam section (in⁴).
- I' : Composite moment of inertia of beam section (in⁴).
- S_b : Non-composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_b' : Composite section modulus for the bottom fiber of the prestressed beam (in³).
- S_t : Non-composite section modulus for the top fiber of the prestressed beam (in³).
- S_t' : Composite section modulus for the top fiber of the prestressed beam (in³).
- Q : Un-factored non-composite dead load (kips/ft.).
- M_Q : Un-factored moment due to non-composite dead load conservatively taken at 0.5 of the span (kip-ft.).
- s_Q : Un-factored long-term composite (superimposed) dead load (kips/ft.).
- M_{s_Q} : Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).
- M_L : Un-factored live load moment on the composite section (kip-ft.).
- M_I : Un-factored moment due to impact on the composite section (kip-ft.).

FILE NAME	USER NAME =	DESIGNED ADL	REVISED -
		CHECKED RJP	REVISED -
	PLOT SCALE =	DRAWN RJP	REVISED -
	PLOT DATE =	CHECKED ADL	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN
STRUCTURE NO. 011-0037

SHEET NO. 16 OF 34 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
322	11-10	CHRISTIAN	437	216
CONTRACT NO. 72961				
ILLINOIS FED. AID PROJECT				
Klingner & Associates P.C.				