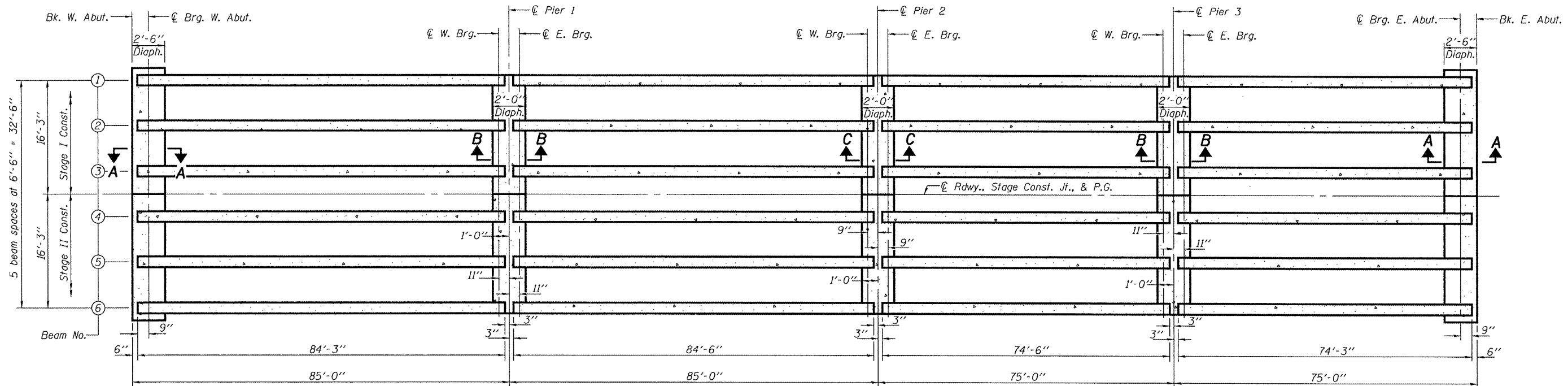


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 17
FAP 769	110B-2	MACOUPIN	98	57	38 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Contract #72813



FRAMING PLAN

Note:  
For Sections A-A, B-B, and C-C, see sheet 16 of 38.

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.5 Sp. 3	Pier 3	0.6 Sp. 4
$I$ (in <sup>4</sup> )	144117	-	144117	-	144117	-	144117
$I'$ (in <sup>4</sup> )	384603	-	384603	-	384603	-	384603
$S_b$ (in <sup>3</sup> )	6834	-	6834	-	6834	-	6834
$S_b'$ (in <sup>3</sup> )	11112	-	11112	-	11112	-	11112
$S_t$ (in <sup>3</sup> )	5355	-	5355	-	5355	-	5355
$S_t'$ (in <sup>3</sup> )	28723	-	28723	-	28723	-	28723
$DC1$ (k/ft)	1.264	-	1.264	-	1.264	-	1.264
$M_{DC1}$ (k)	1088	-	1102	-	854	-	842
$DC2$ (k/ft)	0.150	0.150	0.150	0.150	0.150	0.150	0.150
$M_{DC2}$ (k)	80	116	42	71	27	86	64
$DW$ (k/ft)	0.325	0.325	0.325	0.325	0.325	0.325	0.325
$M_{DW}$ (k)	173	251	92	153	59	186	138
$M_k \cdot Imp$ (k)	1043	1026	847	885	749	868	898

	W. Abutment	Pier 1 Span 1	Pier 1 Span 2	Pier 2 Span 2	Pier 2 Span 3	Pier 3 Span 3	Pier 3 Span 4	E. Abutment
$R_{DC1}$ (k)	52.9	52.9	53.7	53.7	47.4	47.4	46.6	46.6
$R_{DC2}$ (k)	4.9	7.3	7.3	5.6	5.6	6.3	6.3	4.4
$R_{DW}$ (k)	10.6	15.8	15.8	12.2	12.2	13.6	13.6	9.5
$R_k \cdot Imp$ (k)	75.1	62.4	62.4	56.4	56.4	55.9	55.9	72.1
$R_{Total}$ (k)	143.5	138.4	139.2	127.9	121.6	123.2	122.4	132.6

\* The total  $R_{DC2}$ ,  $R_{DW}$  and  $R_k \cdot Imp$  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 (in<sup>4</sup>).
- $I'$ : Composite moment of inertia of beam section (in<sup>4</sup>).
- $S_b$ : Non-composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).
- $S_b'$ : Composite section modulus for the bottom fiber of the prestressed beam (in<sup>3</sup>).
- $S_t$ : Non-composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).
- $S_t'$ : Composite section modulus for the top fiber of the prestressed beam (in<sup>3</sup>).
- $DC1$ : 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.).
- $M_k \cdot Imp$ : Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

DESIGNED	Tom Kurtenbach
CHECKED	Jay Edwards
DRAWN	BECKY M. LEACH
CHECKED	TK/JE

June 17, 2008  
 EXAMINED *Thomas J. Demagallo*  
 ENGINEER OF BRIDGE DESIGN  
 PASSED *Robert E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

FRAMING PLAN  
 F.A.P. ROUTE 769 - SEC. 110B-2  
 MACOUPIN COUNTY  
 STATION 104+41.00  
 STRUCTURE NO. 059-0509