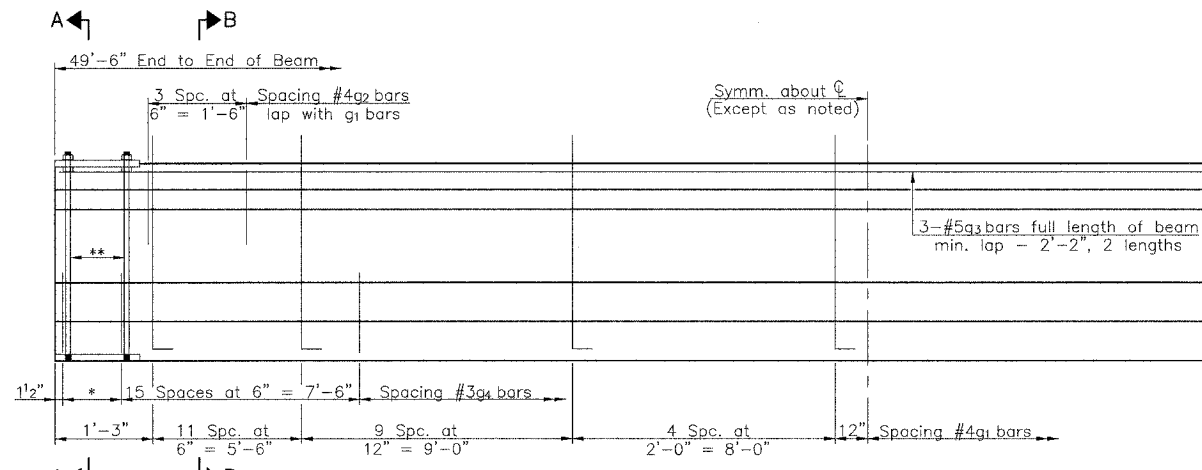


RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 28	*	**	24	15

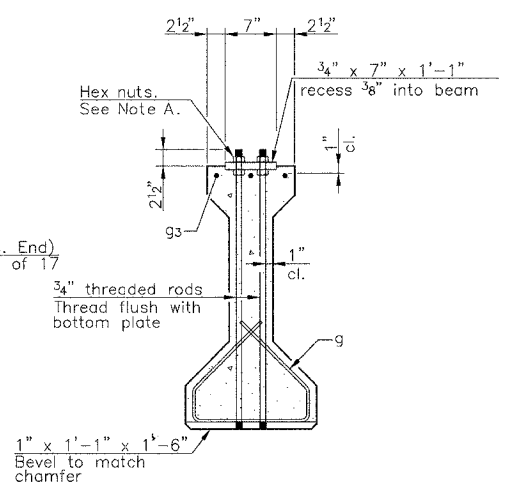
PROJECT BRS-1741(103)  
 \* 03-00085-00-BR & 03-00126-00-BR  
 \*\* MACOUPIN COUNTY & MONTGOMERY COUNTY  
 Sheet 11 of 17



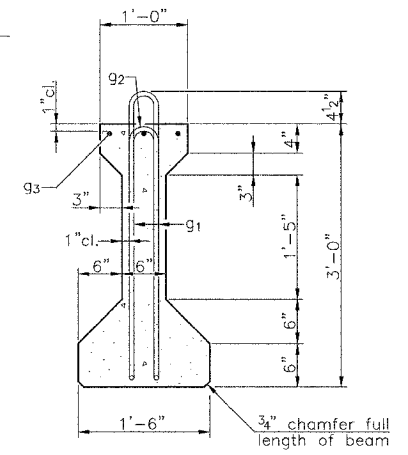
**ELEVATION OF BEAM**  
(Showing Reinforcement & Dimensions)

\* 3 Spc. at 3" = 9"  
 \*\* 4-3/4" Threaded Dowel Rods at 3" cts. (Ea. Face)

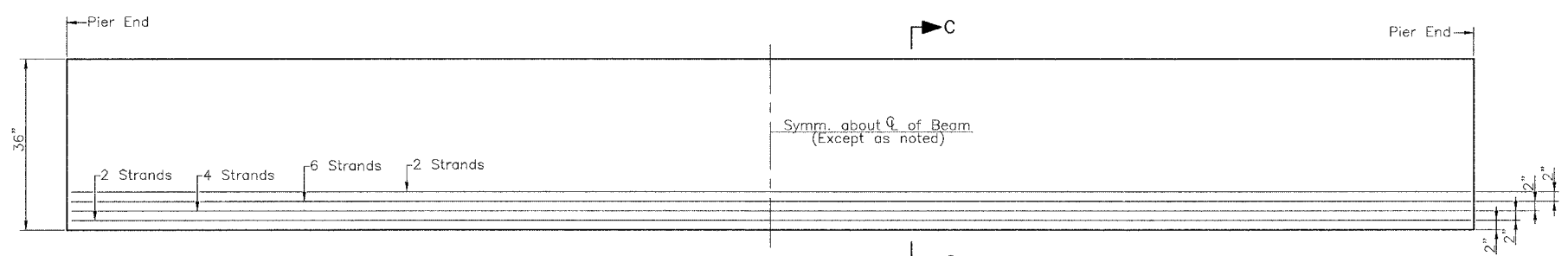
Note A:  
 Hex nuts (Top and Bottom) with lock washers top only. Tighten sufficiently to compress lock washers.



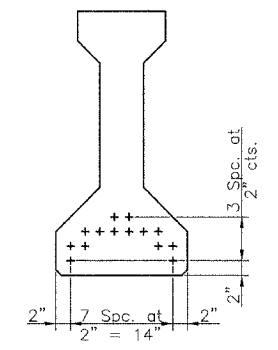
**SECTION A-A**



**SECTION B-B**



**ELEVATION OF BEAM**  
(Showing Prestressing Steel)



**SECTION C-C**

	0.4 Sp. #1	Pier 1 or 2	0.5 Sp. #2
I	(in <sup>4</sup> ) 48647		48647
I'	(in <sup>4</sup> ) 158721		158721
S <sub>b</sub>	(in <sup>3</sup> ) 3165		3165
S <sub>b</sub> '	(in <sup>3</sup> ) 5705		5705
S <sub>t</sub>	(in <sup>3</sup> ) 2358		2358
S <sub>t</sub> '	(in <sup>3</sup> ) 10123		10123
Q	(k/')	1.111	1.111
M <sub>D</sub>	(k)	151	325.16
s <sub>D</sub>	(k/')	0.303	0.303
M <sub>D</sub>	(k)	19	52
M <sub>L</sub>	(k)	161	206
M (Imp)	(k)	48	62

	0.4 Sp. #1	Pier 1 or 2	0.5 Sp. #2
I	(in <sup>4</sup> ) 48647		48647
I'	(in <sup>4</sup> ) 162780		162780
S <sub>b</sub>	(in <sup>3</sup> ) 3165		3165
S <sub>b</sub> '	(in <sup>3</sup> ) 5758		5758
S <sub>t</sub>	(in <sup>3</sup> ) 2358		2358
S <sub>t</sub> '	(in <sup>3</sup> ) 10688		10688
Q	(k/')	0.937	0.937
M <sub>D</sub>	(k)	127	275
s <sub>D</sub>	(k/')	0.303	0.303
M <sub>D</sub>	(k)	19	52
M <sub>L</sub>	(k)	149	192
M (Imp)	(k)	45	57

**NOTES**

I and I' are the moment of inertia and composite moment of inertia of the beam section.  
 S<sub>b</sub> and S<sub>b</sub>' are the non-composite and composite section modulus for the bottom fiber of the prestressed beam.  
 S<sub>t</sub> and S<sub>t</sub>' are the non-composite and composite section modulus for the top fiber of the prestressed beam.  
 M<sub>D</sub> is the moment due to dead loads on the non-composite prestressed beam. It is conservatively calculated at 0.5 of the span.  
 M<sub>L</sub> is the moment due to dead loads on the composite section.  
 M<sub>L</sub> is the moment due to live load on the composite section.  
 M (Imp) is the moment due to live load impact on the composite section.

BAR	NO.	SIZE	LENGTH	SHAPE
g1	50	#4	7'-5"	∩ L
g2	8	#4	3'-10"	∩
g3	6	#5	25'-8"	—
g4	34	#3	4'-1"	∩
g6	4	#8	3'-9"	∩

Notes:  
 See sheet 12 of 17 for additional details and Bill of Material.  
 Required release strength, f'ci, shall be 5000 psi.

**BEAM DETAILS (SPAN 2)**  
 C.H. 28 OVER MACOUPIN CREEK  
 SECTION 03-00085-00-BR  
 MACOUPIN COUNTY  
 SECTION 03-00126-00-BR  
 MONTGOMERY COUNTY

	Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 1 Pier 2 Span 3
R <sub>D</sub>	(k) 18.3	18.3	26.8
R <sub>sD</sub>	(k) 3.9	7.2	7.2
R <sub>L</sub>	(k) 28.1	19	19
Imp.	(k) 8.4	5.7	5.7
R (Total)	(k) 58.7	50.2	58.7

\* The total R<sub>sD</sub>, R<sub>L</sub>, 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 shall be based on the maximum reactions of either span.

	Abut.	Pier 1 Span 1 Pier 2 Span 3	Pier 1 Span 1 Pier 2 Span 3
R <sub>D</sub>	(k) 15.3	15.3	22.7
R <sub>sD</sub>	(k) 3.9	7.2	7.2
R <sub>L</sub>	(k) 26.1	17.7	17.7
Imp.	(k) 7.8	5.3	5.3
R (Total)	(k) 53.1	45.5	52.9

\* The total R<sub>sD</sub>, R<sub>L</sub>, 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 shall be based on the maximum reactions of either span.

FILE NAME: MAC035B1 2 (REV. 8/4/08)