5.8.2.6 CRACK CONTROL REINFORCEMENT

An integral abutment need not be designed by the strut and tie model if the longitudinal reinforcement is determined by conventional beam analysis in BDM Article 11.6.1.3 and a minimum orthogonal grid of reinforcing bars is provided in accordance with the following table.

Strut and Tie - Minimum Crack Control Reinforcement (5.8.2.6)

		Minimum Rebar Spacing on each face to Meet S&T (in)					
Cap Width (ft)	As.req S&T in^2/ft **(each face)**	#4 0.20	#5 0.31	#6 0.44	#7 0.60	#8 0.79	#9 1.00
3.00	0.648	3.7	5.7	8.1	11.1	14.6	18.5
3.25	**0.702**	**3.4**	**5.3**	**7.5**	**10.3**	**13.5**	**17.1**
3.50	0.756	3.2	4.9	7.0	9.5	12.5	15.9
3.75	**0.810**	**3.0**	**4.6**	**6.5**	**8.9**	**11.7**	**14.8**
4.00	0.864	2.8	4.3	6.1	8.3	11.0	13.9
4.25	**0.918**	**2.6**	**4.1**	**5.8**	**7.8**	**10.3**	**13.1**
4.50	0.972	2.5	3.8	5.4	7.4	9.8	12.3
4.75	**1.026**	**2.3**	**3.6**	**5.1**	**7.0**	**9.2**	**11.7**
5.00	1.080	2.2	3.4	4.9	6.7	8.8	11.1
5.25	**1.134**	**2.1**	**3.3**	**4.7**	**6.3**	**8.4**	**10.6**
5.50	1.188	2.0	3.1	4.4	6.1	8.0	10.1
5.75	**1.242**	**1.9**	**3.0**	**4.3**	**5.8**	**7.6**	**9.7**
6.00	1.296	1.9	2.9	4.1	5.6	7.3	9.3
6.25	**1.350**	**1.8**	**2.8**	**3.9**	**5.3**	**7.0**	**8.9**
6.50	1.404	1.7	2.6	3.8	5.1	6.8	8.5
6.75	**1.458**	**1.6**	**2.6**	**3.6**	**4.9**	**6.5**	**8.2**
7.00	1.512	1.6	2.5	3.5	4.8	6.3	7.9

*Multiple layers of rebar can be used to meet strut and tie crack control requirements. This spreadsheet provides spacing for one layer on each face of the cap.

Revisions:
Oct 2023 Added new article.