

CONCRETE COLLAR FOR PRECAST BOX CULVERTS

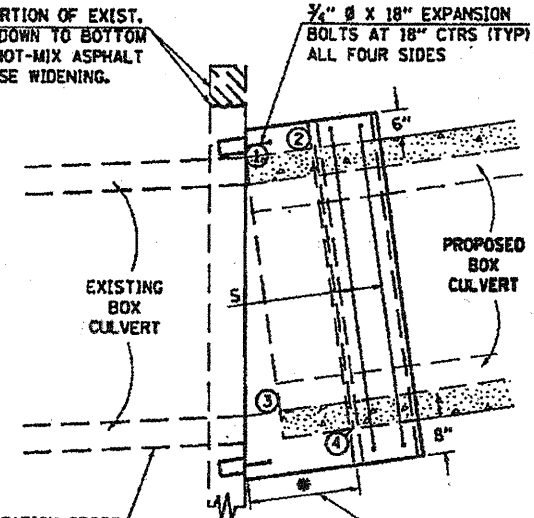
Sheet 31
Contract 99905

**TABULATION OF CLASS SI CONCRETE (EST) **
FOR 1 COLLAR**

SPAN X RISE	LARGEST GAP AWAY FROM BUTTED CORNER *																								
	0"	6"	12"	18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"	90"	96"	102"	108"	114"	120"	126"	132"	138"	144"
	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS	CU YDS
2' X 2'	0.26	0.35	0.44	0.54	0.63	0.72	0.82																		
3' X 2'	0.30	0.41	0.52	0.63	0.74	0.85	0.96	1.07	1.18																
3' X 3'	0.34	0.46	0.59	0.71	0.84	0.97	1.09	1.22	1.34																
4' X 2'	0.36	0.50	0.64	0.78	0.92	1.07	1.21	1.35	1.49	1.63	1.78														
4' X 3'	0.39	0.55	0.71	0.87	1.03	1.19	1.35	1.51	1.67	1.82	1.98														
4' X 4'	0.43	0.61	0.78	0.96	1.13	1.31	1.49	1.66	1.84	2.01	2.19														
5' X 2'	0.41	0.59	0.77	0.95	1.12	1.30	1.48	1.66	1.83	2.01	2.19	2.37	2.54												
5' X 3'	0.45	0.65	0.84	1.04	1.23	1.43	1.63	1.82	2.02	2.21	2.41	2.61	2.80												
5' X 4'	0.49	0.70	0.92	1.13	1.35	1.56	1.77	1.99	2.20	2.42	2.63	2.85	3.06												
5' X 5'	0.52	0.76	0.99	1.22	1.46	1.69	1.92	2.16	2.39	2.62	2.85	3.09	3.32												
6' X 2'	0.47	0.69	0.90	1.12	1.34	1.55	1.77	1.99	2.20	2.42	2.64	2.85	3.07	3.29	3.50										
6' X 3'	0.51	0.74	0.98	1.22	1.45	1.69	1.93	2.16	2.40	2.64	2.87	3.11	3.35	3.58	3.82										
6' X 4'	0.54	0.80	1.06	1.31	1.57	1.83	2.08	2.34	2.60	2.85	3.11	3.37	3.62	3.88	4.14										
6' X 5'	0.58	0.86	1.13	1.41	1.69	1.97	2.24	2.52	2.80	3.07	3.35	3.63	3.90	4.18	4.46										
6' X 6'	0.62	0.92	1.21	1.51	1.81	2.10	2.40	2.70	2.99	3.29	3.59	3.88	4.18	4.48	4.77										
7' X 4'	0.60	0.90	1.21	1.51	1.81	2.11	2.42	2.72	3.02	3.32	3.63	3.93	4.23	4.53	4.84	5.14	5.44								
7' X 5'	0.64	0.96	1.29	1.61	1.93	2.26	2.58	2.91	3.23	3.55	3.88	4.20	4.53	4.85	5.17	5.50	5.82								
7' X 6'	0.67	1.02	1.37	1.71	2.06	2.40	2.75	3.09	3.44	3.79	4.13	4.48	4.82	5.17	5.51	5.86	6.21								
7' X 7'	0.71	1.08	1.45	1.81	2.18	2.55	2.92	3.28	3.65	4.02	4.38	4.75	5.12	5.49	5.85	6.22	6.59								
8' X 4'	0.64	0.97	1.30	1.62	1.95	2.27	2.60	2.92	3.25	3.57	3.90	4.23	4.55	4.88	5.20	5.53	5.85	6.18	6.51						
8' X 5'	0.68	1.03	1.38	1.72	2.07	2.42	2.76	3.11	3.46	3.81	4.15	4.50	4.85	5.19	5.54	5.89	6.24	6.58	6.93						
8' X 6'	0.72	1.09	1.46	1.82	2.19	2.56	2.93	3.30	3.67	4.04	4.41	4.78	5.14	5.51	5.88	6.25	6.62	6.99	7.36						
8' X 7'	0.76	1.15	1.54	1.93	2.32	2.71	3.10	3.49	3.88	4.27	4.66	5.05	5.44	5.83	6.22	6.61	7.00	7.39	7.78						
8' X 8'	0.79	1.20	1.62	2.03	2.44	2.85	3.26	3.68	4.09	4.50	4.91	5.32	5.74	6.15	6.56	6.97	7.38	7.80	8.21						
9' X 5'	0.74	1.14	1.54	1.94	2.34	2.74	3.14	3.54	3.94	4.33	4.73	5.13	5.53	5.93	6.33	6.73	7.13	7.53	7.93	8.33	8.73				
9' X 6'	0.77	1.20	1.62	2.04	2.47	2.89	3.31	3.73	4.16	4.58	5.00	5.43	5.85	6.27	6.69	7.12	7.54	7.96	8.39	8.81	9.23				
9' X 7'	0.81	1.26	1.70	2.15	2.60	3.04	3.49	3.93	4.38	4.83	5.27	5.72	6.16	6.61	7.05	7.50	7.95	8.39	8.84	9.29	9.73				
9' X 8'	0.85	1.32	1.79	2.26	2.73	3.19	3.66	4.13	4.60	5.07	5.54	6.01	6.48	6.95	7.42	7.89	8.35	8.82	9.29	9.76	10.23				
9' X 9'	0.89	1.38	1.87	2.36	2.85	3.35	3.84	4.33	4.82	5.32	5.81	6.30	6.79	7.29	7.78	8.27	8.76	9.25	9.75	10.24	10.73				
10' X 5'	0.79	1.25	1.71	2.16	2.62	3.07	3.53	3.98	4.44	4.90	5.35	5.81	6.26	6.72	7.17	7.63	8.09	8.54	9.00	9.45	9.91	10.37	10.82		
10' X 6'	0.83	1.31	1.79	2.27	2.75	3.23	3.71	4.19	4.67	5.16	5.64	6.12	6.60	7.08	7.56	8.04	8.52	9.00	9.48	9.96	10.44	10.92	11.40		
10' X 7'	0.87	1.37	1.88	2.38	2.89	3.39	3.90	4.40	4.91	5.41	5.92	6.42	6.93	7.44	7.94	8.45	8.95	9.46	9.96	10.47	10.97	11.48	11.98		
10' X 8'	0.91	1.44	1.97	2.49	3.02	3.55	4.08	4.61	5.14	5.67	6.20	6.73	7.26	7.79	8.32	8.85	9.38	9.91	10.44	10.97	11.50	12.03	12.56		
10' X 9'	0.94	1.50	2.05	2.61	3.16	3.72	4.27	4.82	5.38	5.93	6.49	7.04	7.60	8.15	8.71	9.26	9.81	10.37	10.92	11.48	12.03	12.59	13.14		
10' X 10'	0.98	1.56	2.14	2.72	3.30	3.88	4.45	5.03	5.61	6.19	6.77	7.35	7.93	8.51	9.09	9.67	10.25	10.83	11.41	11.98	12.56	13.14	13.72		
11' X 4'	0.81	1.30	1.79	2.28	2.77	3.26	3.75	4.24	4.73	5.22	5.71	6.19	6.68	7.17	7.66	8.15	8.64	9.13	9.62	10.11	10.60	11.09	11.58	12.07	12.55
11' X 6'	0.89	1.43	1.97	2.51	3.05	3.60	4.14	4.68	5.22	5.76	6.30	6.85	7.39	7.93	8.47	9.01	9.55	10.10	10.64	11.18	11.72	12.26	12.80	13.35	13.89
11' X 8'	0.96	1.56	2.15	2.74	3.34	3.93	4.53	5.12	5.72	6.31	6.90	7.50	8.09	8.69	9.28	9.87	10.47	11.06	11.66	12.25	12.84	13.44	14.03	14.63	15.22
11' X 10'	1.04	1.68	2.33	2.98	3.62	4.27	4.92	5.56	6.21	6.86	7.50	8.15	8.80	9.44	10.09	10.74	11.38	12.03	12.67	13.32	13.97	14.61	15.26	15.91	16.55
11' X 11'	1.07	1.75	2.42	3.09	3.76	4.44	5.11	5.78	6.46	7.13	7.80	8.47	9.15	9.82	10.49	11.17	11.84	12.51	13.18	13.86	14.53	15.20	15.88	16.55	17.22
12' X 4'	0.87	1.42	1.97	2.52	3.07	3.63	4.18	4.73	5.28	5.83	6.38	6.93	7.48	8.03	8.58	9.13	9.69	10.24	10.79	11.34	11.89	12.44	12.99	13.54	14.09
12' X 6'	0.94	1.55	2.16	2.76	3.37	3.98	4.58	5.19	5.80	6.40	7.01	7.62	8.22	8.83	9.44	10.04	10.65	11.25	11.86	12.47	13.07	13.68	14.29	14.89	15.50
12' X 8'	1.02	1.68	2.34	3.00	3.67	4.33	4.99	5.65	6.31	6.98	7.64	8.30	8.96	9.63	10.29	10.95	11.61	12.27	12.94	13.60	14.26	14.92	15.58	16.25	16.91
12' X 10'	1.09	1.81	2.53	3.25	3.96	4.68	5.40	6.12	6.83	7.55	8.27	8.99	9.70	10.42	11.14	11.86	12.57	13.29	14.01	14.73	15.44	16.16	16.88	17.60	18.31
12' X 12'	1.17	1.94	2.71	3.49	4.26	5.03	5.81	6.58	7.35	8.13	8.90	9.67	10.44	11.22	11.99	12.76	13.54	14.31	15.08	15.86	16.63	17.40	18.18	18.95	19.72

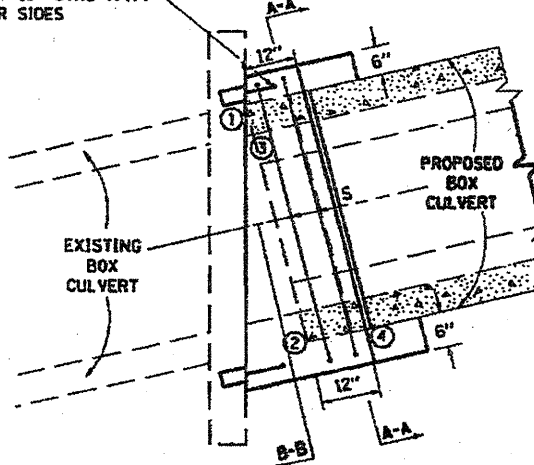
** FOR INFORMATION ONLY

REMOVE PORTION OF EXIST. HEADWALL DOWN TO BOTTOM OF PROP. HOT-MIX ASPHALT BASE COURSE WIDENING.

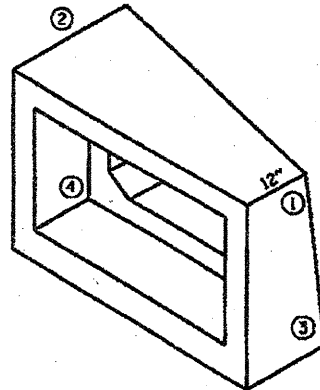


SIDE VIEW

3/4" Ø X 18" EXPANSION BOLTS AT 18" CTRS (TYP) ALL FOUR SIDES

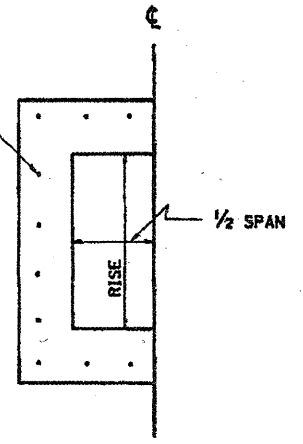


TOP VIEW

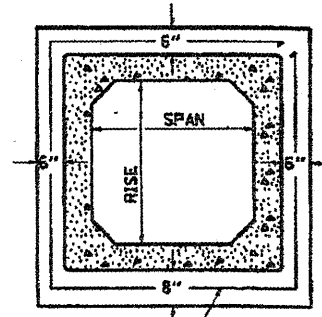


ISOMETRIC VIEW

3/4" Ø X 18" EXPANSION BOLTS AT 18" CTRS (TYP) ALL FOUR SIDES



SECTION B-B



SECTION A-A

NOTES:

ANCHOR BOLTS, MEETING THE REQUIREMENTS OF ARTICLE 1006.09 OF THE STANDARD SPECIFICATIONS, SHALL EXTEND A MINIMUM OF 9 INCHES INTO THE NEW CONCRETE. EXPANSION SHIELDS SHALL PROVIDE A MINIMUM CERTIFIED PROOF LOAD OF 4080 POUNDS.

THE CONCRETE COLLAR SHALL NOT BE PAID FOR SEPARATELY WHEN CONSTRUCTED IN CONJUNCTION WITH PRECAST BOX CULVERTS, BUT SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR PRECAST CONCRETE BOX CULVERTS. THIS PRICE SHALL ALSO INCLUDE THE REINFORCEMENT BARS, EXPANSION BOLTS AND THE REMOVAL OF SUCH PORTIONS OF THE EXISTING HEADWALLS AS MAY BE REQUIRED. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.

REVISIONS	
DRAWN	9-12-88
REVISED	8-16-94
REVISED	01-11-07
REVISED	3-27-08

STD. 9-78