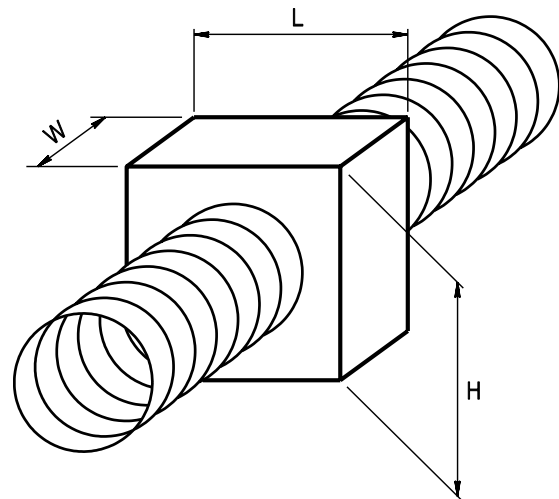


**CMP COLLAR**

STEEL REINFORCEMENT WILL BE REQUIRED FOR PIPE DIAMETERS > 60 IN [1500]



**TYPICAL CONCRETE COLLAR**

ROUND CMP COLLAR					
DIAMETER	L	H	W	CONCRETE	REINF. STEEL
				CY	LB
IN					
12	24	24	18	0.2	-
15	27	27	18	0.2	-
18	30	30	18	0.3	-
21	33	33	18	0.3	-
24	36	36	18	0.3	-
27	39	39	18	0.4	-
30	42	42	18	0.4	-
36	48	48	18	0.5	-
42	54	54	24	0.8	-
48	60	60	24	0.9	-
54	66	66	24	1.1	-
60	72	72	24	1.2	-
66	78	78	24	1.4	92
72	84	84	24	1.5	99
78	90	90	24	1.7	106
84	96	96	24	1.9	113
90	102	102	24	2.1	120
96	108	108	24	2.3	127
102	114	114	24	2.5	134
108	120	120	24	2.7	141
114	126	126	24	2.9	148
120	132	132	24	3.1	155

ROUND CMP COLLAR					
DIAMETER	L	H	W	CONCRETE	REINF. STEEL
				m <sup>3</sup>	kg
mm					
300	610	610	460	0.2	-
375	690	690	460	0.2	-
450	760	760	460	0.2	-
525	840	840	460	0.2	-
600	910	910	460	0.3	-
675	990	990	460	0.3	-
750	1070	1070	460	0.3	-
900	1220	1220	460	0.4	-
1050	1370	1370	610	0.6	-
1200	1520	1520	610	0.7	-
1350	1680	1680	610	0.8	-
1500	1830	1830	610	1.0	-
1650	1980	1980	610	1.1	42
1800	2130	2130	610	1.2	45
1950	2290	2290	610	1.4	48
2100	2440	2440	610	1.5	51
2250	2590	2590	610	1.7	54
2400	2740	2740	610	1.8	58
2550	2900	2900	610	2.0	61
2700	3050	3050	610	2.2	64
2850	3200	3200	610	2.4	67
3000	3350	3350	610	2.5	70

METRIC TABLE

**GENERAL NOTES**

- Concrete volumes listed are theoretical based on the minimum collar dimensions shown.
- Use pipe collars when other acceptable joining methods are not available as approved by the engineer.

Designed by: WBW  
 Drawn by: KAP  
 Checked by: RRC  
 Previous Dwg. No. 614-02B

**ROUND CMP COLLARS**

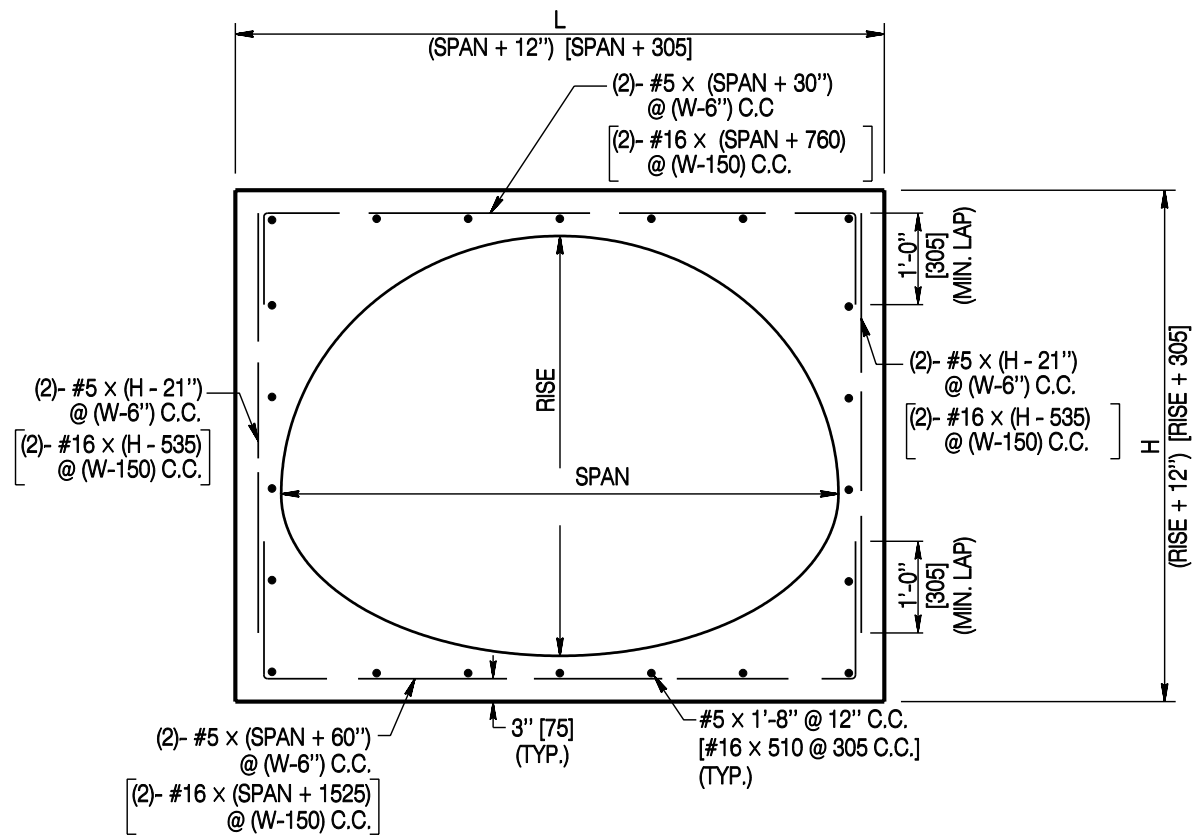


**PIPE COLLARS**

**STANDARD PLAN**

STANDARD PLAN NUMBER  
**603-5**  
 SHEET 1 of 4  
 Issued by: ENGINEERING SERVICES  
 Date Issued: NOVEMBER, 2004

Note: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.



**CMP-ARCH COLLAR**

STEEL REINFORCEMENT WILL BE REQUIRED FOR PIPE ARCHES > 71 IN x 47 IN [1775 x 1175]

CMP-ARCH COLLAR						
SPAN	RISE	L	H	W	CONCRETE	REINF. STEEL
IN					CY	LB
17	13	29	25	18	0.2	-
21	15	33	27	18	0.3	-
24	18	36	30	18	0.3	-
28	20	40	32	18	0.3	-
35	24	47	36	18	0.4	-
42	29	54	41	18	0.5	-
49	33	61	45	24	0.7	-
57	38	69	50	24	0.8	-
64	43	76	55	24	1.0	-
71	47	83	59	24	1.1	-
73	55	85	67	24	1.2	98
81	59	93	71	24	1.3	105
87	63	99	75	24	1.4	112
95	67	107	79	24	1.5	119
103	71	115	83	24	1.6	127
112	75	124	87	24	1.8	135
117	79	129	91	24	1.8	141
128	83	140	95	24	2.1	150
137	87	149	99	24	2.3	159
142	91	154	103	24	2.3	165

METRIC TABLE

CMP-ARCH COLLAR						
SPAN	RISE	L	H	W	CONCRETE	REINF. STEEL
mm					m <sup>3</sup>	kg
425	325	740	630	460	0.2	-
525	375	840	690	460	0.2	-
600	450	910	760	460	0.2	-
700	500	1020	810	460	0.2	-
875	600	1190	910	460	0.3	-
1050	725	1370	1040	460	0.4	-
1225	825	1550	1140	610	0.5	-
1425	950	1750	1270	610	0.6	-
1600	1075	1930	1400	610	0.7	-
1775	1175	2110	1500	610	0.8	-
1825	1375	2160	1700	610	0.9	44
2025	1475	2360	1800	610	1.0	48
2175	1575	2510	1910	610	1.0	51
2375	1675	2720	2010	610	1.2	54
2575	1775	2920	2110	610	1.3	58
2800	1875	3150	2210	610	1.4	61
2925	1975	3280	2310	610	1.4	64
3200	2075	3560	2410	610	1.6	68
3425	2175	3780	2510	610	1.8	72
3550	2275	3910	2620	610	1.8	75

EQUIVALENT SIZE CMP-ARCH	
2 2/3 IN x 1/2 IN CORR.	3 IN x 1 IN, 5 IN x 1 IN CORR.
IN x IN	IN x IN
42 x 29	40 x 31
49 x 33	46 x 36
57 x 38	53 x 41
64 x 43	60 x 46
71 x 47	66 x 51

METRIC TABLE

EQUIVALENT SIZE CMP-ARCH	
[68 x 12] CORR.	[75 x 25], [125 x 25] CORR.
mm x mm	mm x mm
1050 x 725	1000 x 775
1225 x 825	1150 x 900
1425 x 950	1325 x 1025
1600 x 1075	1500 x 1150
1775 x 1175	1650 x 1275

Note: Compute L and H using formulas shown in details above. Use the concrete volume shown for the equivalent pipe in the table for the pay quantity.

Designed by: WEBW  
 Drawn by: KAP  
 Checked by: RRC  
 Previous Dwg. No. 614-02B

**ARCH CMP COLLARS**

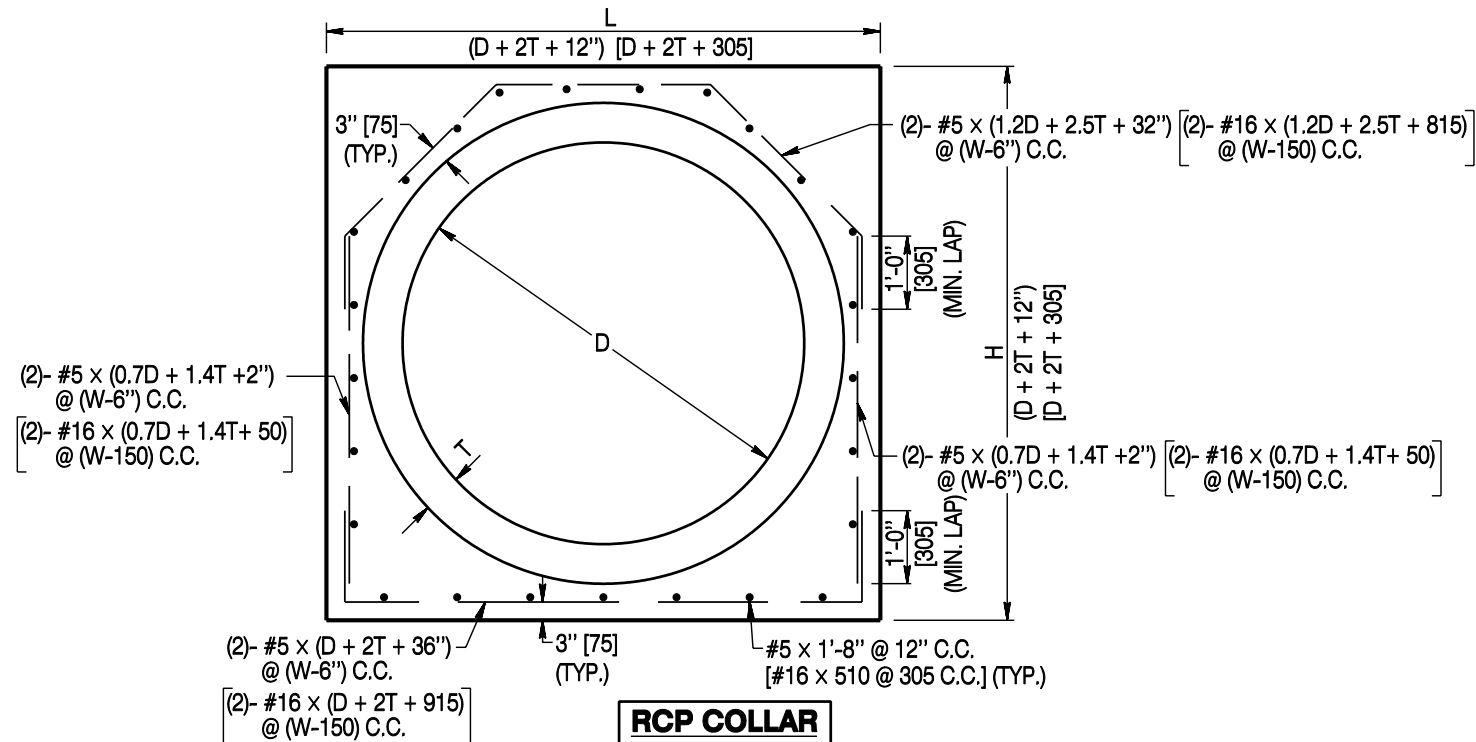
Note: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.



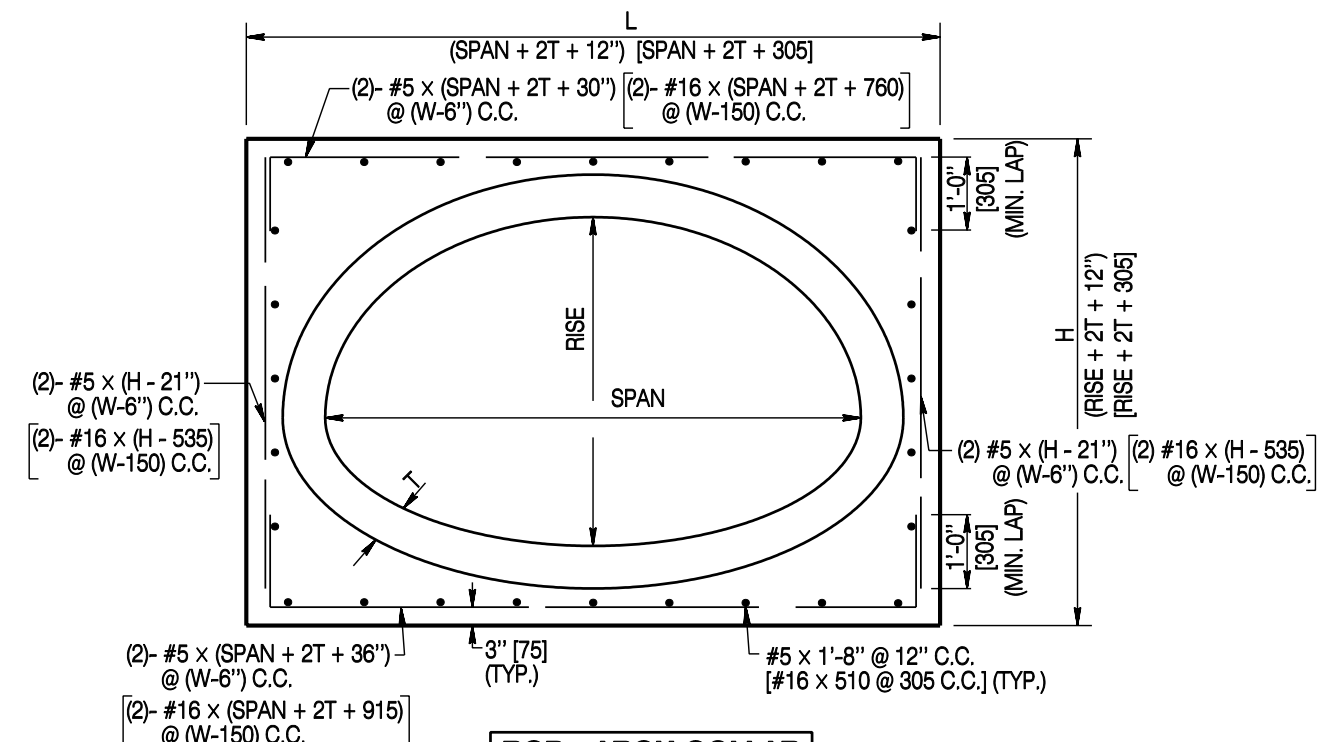
**PIPE COLLARS**

**STANDARD PLAN**

STANDARD PLAN NUMBER  
**603-5**  
 SHEET 2 of 4  
 Issued by: ENGINEERING SERVICES  
 Date Issued: NOVEMBER, 2004



STEEL REINFORCEMENT WILL BE REQUIRED FOR PIPE DIAMETERS > 60 IN [1500]



STEEL REINFORCEMENT WILL BE REQUIRED FOR PIPE - ARCH > 88 IN x 54 IN [2200 x 1350]

ROUND RCP COLLAR						
DIAMETER	T	L	H	W	CONCRETE	REINF. STEEL
IN					CY	LB
12	2	28	28	18	0.2	-
15	2 1/4	32	32	18	0.3	-
18	2 1/2	35	35	18	0.3	-
21	2 3/4	39	39	18	0.4	-
24	3	42	42	18	0.4	-
27	3 1/4	46	46	18	0.5	-
30	3 1/2	49	49	18	0.5	-
36	4	56	56	18	0.6	-
42	4 1/2	63	63	24	1.0	-
48	5	70	70	24	1.2	-
54	5 1/2	77	77	24	1.3	-
60	6	84	84	24	1.5	-
66	6 1/2	91	91	24	1.7	103
72	7	98	98	24	2.0	111
78	7 1/2	105	105	24	2.2	119
84	8	112	112	24	2.4	127
90	8 1/2	119	119	24	2.7	135
96	9	126	126	24	2.9	142
102	9 1/2	133	133	24	3.2	150
108	10	140	140	24	3.5	158
120	11	154	154	24	4.1	174

METRIC TABLE

ROUND RCP COLLAR						
DIAMETER	T	L	H	W	CONCRETE	REINF. STEEL
mm					m <sup>3</sup>	kg
300	50	710	710	460	0.2	-
375	60	810	810	460	0.2	-
450	65	890	890	460	0.2	-
525	70	990	990	460	0.3	-
600	75	1070	1070	460	0.3	-
675	80	1170	1170	460	0.4	-
750	90	1240	1240	460	0.4	-
900	100	1420	1420	460	0.5	-
1050	115	1600	1600	610	0.8	-
1200	125	1780	1780	610	0.9	-
1350	140	1960	1960	610	1.0	-
1500	150	2130	2130	610	1.1	-
1650	165	2310	2310	610	1.3	47
1800	180	2490	2490	610	1.5	50
1950	190	2670	2670	610	1.7	54
2100	205	2840	2840	610	1.8	58
2250	215	3020	3020	610	2.0	61
2400	230	3200	3200	610	2.2	64
2550	240	3380	3380	610	2.4	68
2700	255	3560	3560	610	2.7	72
3000	280	3910	3910	610	3.1	79

RCP PIPE - ARCH COLLAR							
SPAN	RISE	T	L	H	W	CONCRETE	REINF. STEEL
IN						CY	LB
22	14	2 1/2	39	31	18	0.3	-
29	18	3	47	36	18	0.4	-
36	23	3 1/2	55	42	18	0.5	-
44	27	4	64	47	18	0.6	-
51	31	4 1/2	72	52	24	0.9	-
59	36	5	81	58	24	1.1	-
65	40	5 1/2	88	63	24	1.2	-
73	45	6	97	69	24	1.3	-
88	54	7	114	80	24	1.7	-
102	62	8	130	90	24	2.0	140
122	77 1/2	9	152	108	24	3.2	167
138	87 1/8	10	170	120	24	3.9	187
154	96 7/8	11	188	131	24	4.5	205
168 3/4	106 1/2	10	201	139	24	5.0	218

METRIC TABLE

RCP PIPE - ARCH COLLAR							
SPAN	RISE	T	L	H	W	CONCRETE	REINF. STEEL
mm						m <sup>3</sup>	kg
550	350	65	990	790	460	0.2	-
725	450	75	1190	910	460	0.3	-
900	575	90	1400	1070	460	0.4	-
1100	675	100	1630	1190	460	0.4	-
1275	775	115	1830	1320	610	0.6	-
1475	900	125	2060	1470	610	0.8	-
1625	1000	140	2240	1600	610	0.9	-
1825	1125	150	2460	1750	610	1.0	-
2200	1350	180	2900	2030	610	1.3	-
2550	1550	205	3300	2290	610	1.5	64
3050	1950	230	3860	2740	610	2.4	76
3450	2175	255	4320	3050	610	3.0	85
3850	2425	280	4780	3330	610	3.5	93
4225	2675	255	5110	3530	610	3.9	99

Designed by: VIBW  
 Drawn by: KAP  
 Checked by: RRC  
 Previous Des. No. 614-02B

**ROUND AND ARCH RCP COLLARS**

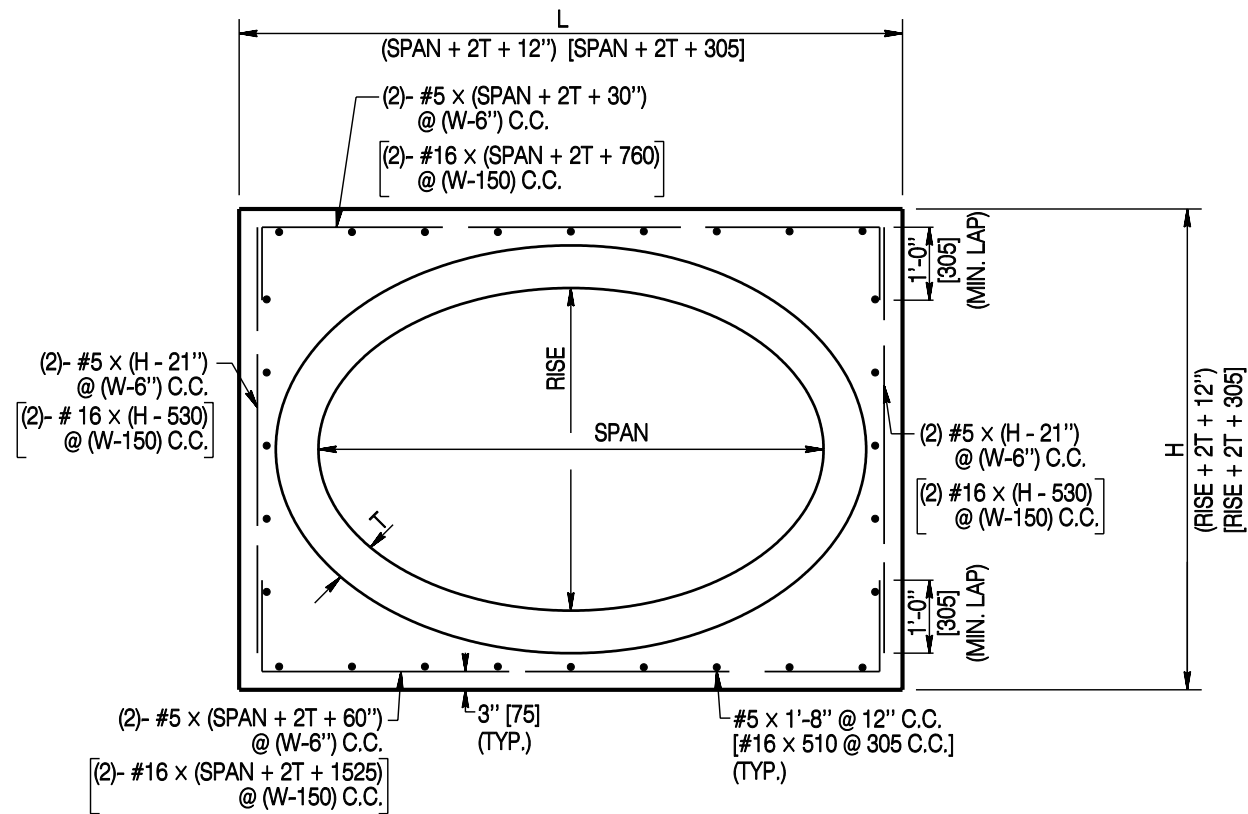
Note: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.



**PIPE COLLARS**

**STANDARD PLAN**

STANDARD PLAN NUMBER  
**603-5**  
 SHEET 3 of 4  
 Issued by: ENGINEERING SERVICES  
 Date Issued: NOVEMBER, 2004



**RCP - ELLIPTICAL COLLAR**

STEEL REINFORCEMENT WILL BE REQUIRED FOR ELLIPTICAL PIPE > 76 IN x 48 IN [1900 x 1200]

RCP - ELLIPTICAL COLLAR								
SPAN	RISE	T	L	H	W	CONCRETE	REINF. STEEL	
IN						CY	LB	
23	14	2 3/4	41	32	18	0.3	-	
30	19	3 1/4	49	38	18	0.4	-	
34	22	3 1/2	53	41	18	0.5	-	
38	24	3 3/4	58	44	18	0.6	-	
42	27	3 3/4	62	46	18	0.6	-	
45	29	4 1/2	66	50	18	0.7	-	
49	32	4 3/4	71	54	24	1.0	-	
53	34	5	75	56	24	1.1	-	
60	38	5 1/2	83	61	24	1.2	-	
68	43	6	92	67	24	1.4	-	
76	48	6 1/2	101	73	24	1.6	-	
83	53	7	109	79	24	1.8	121	
91	58	7 1/2	118	85	24	2.1	130	
98	63	8	126	91	24	2.3	139	
106	68	8 1/2	135	97	24	2.6	149	
113	72	9	143	102	24	2.8	157	
121	77	9 1/2	152	108	24	3.1	166	
128	82	9 3/4	160	114	24	3.4	175	
136	87	10	168	119	24	3.7	184	
143	92	10 1/2	176	125	24	4.0	193	
151	97	11	185	131	24	4.3	202	

METRIC TABLE

RCP - ELLIPTICAL COLLAR								
SPAN	RISE	T	L	H	W	CONCRETE	REINF. STEEL	
mm						m <sup>3</sup>	kg	
575	350	70	1040	810	460	0.3	-	
750	475	85	1240	970	460	0.3	-	
850	550	90	1350	1040	460	0.4	-	
950	600	95	1470	1120	460	0.4	-	
1050	675	95	1570	1170	460	0.5	-	
1125	725	115	1680	1270	460	0.5	-	
1225	800	120	1800	1370	610	0.8	-	
1325	850	125	1910	1420	610	0.8	-	
1500	950	140	2110	1550	610	0.9	-	
1700	1075	150	2340	1700	610	1.1	-	
1900	1200	165	2570	1850	610	1.3	-	
2075	1325	180	2770	2010	610	1.4	55	
2275	1450	190	3000	2160	610	1.6	59	
2450	1575	205	3200	2310	610	1.8	63	
2650	1700	215	3430	2460	610	2.0	68	
2825	1800	230	3630	2590	610	2.1	71	
3025	1925	240	3860	2740	610	2.4	75	
3200	2050	250	4060	2900	610	2.6	79	
3400	2175	255	4270	3020	610	2.8	83	
3575	2300	270	4470	3180	610	3.0	88	
3775	2425	280	4700	3330	610	3.3	92	

Designed by: WBW  
 Drawn by: KAP  
 Checked by: RRC  
 Previous Dwg. No. 614-02B

ELLIPTICAL RCP COLLARS

Note: Units shown in brackets [ ] are metric and are in millimeters (mm) unless other units are shown.



PIPE COLLARS

STANDARD PLAN

STANDARD PLAN NUMBER  
**603-5**  
 SHEET 4 of 4  
 Issued by: ENGINEERING SERVICES  
 Date Issued: NOVEMBER, 2004  
 FILE: j:\StanDual\_Std\_Wrk6035\_04.dgn