r:\dgn\metric\stdplans\rcb\rcb-90m2m.dgn

11-MAY-1999 14:58

Dimensions

Clear Opening No.		Barrel T	N	E	Headwall B	J	F	G	H	L	P	M
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2100	2100	2										15 180
		3										17 500
		4	290	220	550	200	1450	260	2200	2690	5380	5160 19 820
		5										22 140
		6										24 460
2400	2400	2										17 100
		3										19 720
		4	320	220	600	260	1700	305	2560	3020	6040	5820 22 340
		5										24 960
		6										27 580
2700	2700	2										19 040
		3										21 980
		4	350	240	720	260	1950	305	2930	3350	6700	6460 24 920
		5										27 860
		6										30 800
3000	3000	2										20 940
		3										24 200
		4	370	260	830	260	2150	305	3240	3670	7340	7080 27 460
		5										30 720
		6										33 980

Quantities

Clear Opening No.		Per 0.5m of Barrel		13.0m Culvert▲		Headwall ▲▲	
mm	mm		Steel Kg	Concrete m3	Steel Kg	Concrete m3	
2100	2100	2	198.72	2.10	7455	85.21	1144 15.28
		3	282.44	3.01	9791	110.70	1224 16.27
		4	370.01	3.91	12 232	136.19	1306 17.27
		5	457.58	4.81	14 687	161.68	1395 18.26
		6	549.01	5.72	17 233	187.17	1479 19.25
2400	2400	2	223.02	2.54	8745	110.91	1473 22.44
		3	315.65	3.64	11 331	141.94	1562 23.63
		4	416.17	4.74	14 132	172.97	1656 24.81
		5	516.69	5.85	16 946	204.00	1756 26.00
		6	609.32	6.95	19 532	235.03	1845 27.18
2700	2700	2	264.68	3.11	11 543	136.22	2330 27.63
		3	376.95	4.47	14 671	174.14	2435 29.00
		4	497.97	5.82	18 060	212.06	2551 30.37
		5	621.10	7.17	21 473	249.98	2662 31.74
		6	731.25	8.53	24 544	287.90	2766 33.11
3000	3000	2	317.10	3.68	14 194	161.52	2975 32.94
		3	462.02	5.27	18 218	206.13	3103 34.50
		4	606.94	6.87	22 255	250.75	3237 36.05
		5	742.09	8.47	26 013	295.37	3359 37.61
		6	877.24	10.06	29 771	339.99	3481 39.17

▲ Quantity includes 2 Headwalls
▲▲ Quantity for 1 Headwall

All dimensions are in millimeters (mm) unless otherwise noted.

Barrel Reinforcement (Per 13.0 M Culvert)

Clear Opening No.		#20 Bars A Spacing	No.	#20 Bars B Length	No.	#20 Bars D Length	No.	#20 Bars G Length	No.	#15 Bars H Length	No.	#15 Bars K Length	No.	#15 Bars K1 Spacing	No.	#15 Bars C* Length
mm	mm	mm		mm		mm		mm		mm		mm		mm		mm
2100	2100			4760		7040		7580				180		90		61
				7080		9360		9900				270		180		86
		310	45	9400	45	11 680	45	13 210*	90	2140	360	3130	270	2050	300	111
				11 720		14 990*		15 530*			450		360		136	14 310
				15 030*		17 310*		17 850*			540		450		161	
2400	2400			5360		7640		8240				184		92		68
				7980		10 260		10 860				276		184		94
		300	46	10 600	46	13 870*	46	14 470*	92	2470	368	3460	276	2080	300	120 14 310
				14 210*		16 490*		17 090*			460		368		146	
				16 830*		19 110*		19 710*			552		460		172	
2700	2700			6020		8260		8960			204		102		75	
				8960		11 200		11 900			306		204		106	
		270	51	11 900	51	15 130*	51	15 830*	102	2800	408	3790	306	2110	300	137 14 310
				15 830*		18 550*		18 780*			510		408		168	
				18 770*		21 010*		21 710*			612		510		199	
3000	3000			6680		8880		9660			228		114		86	
				9940		13 130*		13 910*			342		228		122	
		240	57	14 190*	57	16 390*	57	17 170*	114	3120	456	4110	342	2130	300	158 14 310
				17 450*		19 650*		20 430*			570		456		194	
				20 710*		22 910*		23 690*			684		570		230	

*Includes 1 - 990 mm lap splice

Headwall Reinforcement (Per Headwall)

Clear Opening No.		Size	No.	Spc.	Bars E * Length	Bars E1 Length	Bars O Length	#10 Bars O1 No.	Length	#10 Bars T No.	Length	#10 Bars T1 No.	Length	#15 Bars P No.	Length	#15 Bars P1 No.	Length	#15 Bars J No.	Length	#15 Bars J1 No.	Length	#15 Bars M No.	Length	#10 Bars N No.	Length	#20 Bars X■ Spacing	No.	Length
mm	mm			mm	mm	mm	mm		mm		mm		mm		mm		mm		mm		mm		mm		mm			mm
2100	2100																									Approx.		
																						6340	16					
																						8660	24					
																						10 980	32					
																						14 110*	40					
																						16 430*	48					
2400	2400																											
		20	36	300	1995	2440	2560	440	8	4270	285	16	690	285	20	4270	295	18	690	295	4	10 980	32	770	295	36	600	
2700	2700																											
3000	3000																											

*Includes 1 - 990 mm lap splice
* Includes 1 - 810 mm lap splice

+Includes 1 - 570 mm lap splice
■Bars to be smooth and greased for 300 mm of length
* Includes 1 - 810 mm lap splice

* Includes 1 - 990 mm lap splice for #20 and 1 - 1280 mm lap splice for #25

Clear Opening No.		Size	No.	Spacing	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length	No.	Length
mm	mm			mm		mm		mm		mm		mm		mm		mm		mm		mm		mm		mm		mm
2100	2100					4760		7040		7580				180		90		61								
						7080		9360		9900				270		180		86								
				310	45	9400	45	11 680	45	13 210*	90	2140	360	3130	270	2050	300	111								
						11 720		14 990*		15 530*			450		360		136	14 310								
						15 030*		17 310*		17 850*			540		450		161									
2400	2400					5360		7640		8240				184		92		68								
						7980		10 260		10 860				276		184		94								
		300	46			10 600	46	13 870*	46	14 470*	92	2470	368	3460	276	2080	300	120	14 310							
						14 210*		16 490*		17 090*			460		368		146									
						16 830*		19 110*		19 710*			552		460		172									
2700	2700					6020		8260		8960			204		102		75									
						8960		11 200		11 900			306		204		106									
		270	51			11 900	51	15 130*	51	15 830*	102	2800	408	3790	306	2110	300	137	14 310							
						15 830*		18 550*		18 780*			510		408		168									
						18 770*		21 010*		21 710*			612		510		199									
3000	3000					6680		8880		9660			228		114		86									
						9940		13 130*		13 910*			342		228		122									
		240	57			14 190*	57	16 390*	57	17 170*	114	3120	456	4110	342	2130	300	158	14 310							
						17 450*		19 650*		20 430*			570		456		194									
						20 710*		22 910*		23 690*			684		570		230									

Clear Opening No.		#15 Bars C* Spacing	No.	Length
mm	mm	mm		mm
2100	2100			
2400	2400			
2700	2700			
3000	3000			

SHEET NUMBER	
FEDERAL PROJECT	
STATE PROJECT	
PARISH	

STATE OF LOUISIANA

REINFORCED CONCRETE BOX CULVERTS
2100, 2400, 2700 & 3000 mm
MULTIPLE BARRELS - 90 DEGREE

STANDARD PLAN RCB-90M2M

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
botp

HYDRAULICS SECTION

DESIGNED	BADEAUX ENG.		
CHECKED			
DETAILED	T. BAKER SMITH		
CHECKED			
DATE			
SHEET	2 OF 2		

DATE	BY	APPROVED	REVISION DESCRIPTION

APPROVED BY CHIEF ENGINEER Original Signed by Chief Engineer DATE: 5-24-99