

SKEW ANGLE (DEGREES)	FLARE ANGLE (DEGREES)	NOMINAL PIPE DIAMETER (mm)	TWIN PIPES								
			TYPE 1 - SLOPE AT 1.5: 1			TYPE 2 - SLOPE AT 2: 1			TYPE 3 - SLOPE AT 3: 1		
			CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)	CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)	CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)
15	20	1350	3.99	19.8	21.7	5.07	22.5	27.3	7.41	28.2	39.4
		1500	4.77	22.0	25.8	6.09	25.0	32.6	8.96	31.4	47.4
		1650	5.66	24.3	30.4	7.02	25.8	37.3	10.73	34.8	56.6
		1800	6.62	26.5	35.4	8.51	30.3	45.2	12.66	38.1	66.5
		1950	9.83	48.5	42.0	12.68	57.7	53.7	18.91	74.0	79.3
		2100	11.29	68.6	48.1	14.62	85.8	61.8	21.92	115.2	91.6
30	20	1350	4.53	22.1	24.6	5.79	25.3	31.2	8.54	32.1	45.4
		1500	5.42	24.5	29.3	6.96	28.1	37.2	10.33	35.7	54.7
		1650	6.44	27.1	34.6	8.30	31.1	44.2	12.39	39.5	65.3
		1800	7.54	29.6	40.3	9.75	34.1	51.7	14.62	43.3	76.7
		1950	11.20	51.9	47.8	14.52	64.4	61.5	21.84	85.6	91.5
		2100	12.87	78.6	54.7	16.75	95.7	70.7	25.35	133.2	105.9
45	20	1350	5.88	27.8	31.9	7.61	32.3	40.8	11.45	41.5	60.7
		1500	7.04	30.9	37.9	9.15	35.9	48.8	13.87	46.3	73.1
		1650	8.37	34.1	44.9	10.93	39.7	58.0	16.65	51.3	87.4
		1800	9.81	37.3	52.3	12.84	43.5	67.9	19.66	56.2	102.9
		1950	14.57	65.4	62.0	19.13	80.7	80.8	29.38	110.8	122.8
		2100	16.76	102.2	71.1	22.11	125.1	93.0	34.15	174.0	142.3
SKEW ANGLE (DEGREES)	FLARE ANGLE (DEGREES)	NOMINAL PIPE DIAMETER (mm)	ADDITIONAL PIPE								
			TYPE 1 - SLOPE AT 1.5: 1			TYPE 2 - SLOPE AT 2: 1			TYPE 3 - SLOPE AT 3: 1		
			CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)	CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)	CONC. VOLUME (m ³)	BAR REINF. (m)	FABRIC REINF. (m ²)
15	20	1350	1.50	5.0	7.5	1.78	5.0	8.9	2.35	5.0	11.6
		1500	1.80	5.5	9.1	2.16	5.5	10.8	2.86	5.5	14.1
		1650	2.15	6.1	10.8	2.35	4.2	11.6	3.44	6.1	17.0
		1800	2.53	6.6	12.7	3.05	6.6	15.2	4.08	6.6	20.1
		1950	3.66	7.1	14.6	4.42	7.1	17.6	5.94	7.1	23.4
		2100	4.15	7.5	16.6	5.03	7.5	20.0	6.80	7.5	26.8
30	20	1350	1.67	5.6	8.3	1.99	5.6	9.8	2.62	5.6	12.7
		1500	2.01	6.2	10.0	2.41	6.2	11.8	3.19	6.2	15.4
		1650	2.40	6.8	11.9	2.88	6.8	14.2	3.85	6.8	18.6
		1800	2.82	7.4	14.0	3.40	7.4	16.7	4.55	7.4	22.1
		1950	4.09	7.9	16.2	4.93	7.9	19.4	6.63	7.9	25.8
		2100	4.63	8.4	18.3	5.62	8.4	22.1	7.59	8.4	29.5
45	20	1350	2.06	6.8	9.9	2.45	6.8	11.7	3.23	6.8	15.1
		1500	2.48	7.5	12.0	2.96	7.5	14.2	3.93	7.5	18.4
		1650	2.96	8.3	14.3	3.55	8.3	17.0	4.73	8.3	22.3
		1800	3.47	9.0	16.9	4.18	9.0	20.1	5.60	9.0	26.5
		1950	5.03	9.6	19.5	6.07	9.6	23.4	8.16	9.6	30.9
		2100	5.69	10.2	22.1	6.90	10.2	26.6	9.33	8.5	35.4

NOTES :

1. REFER SD 1961 FOR CULVERT DETAILS.
2. ALL REINFORCEMENT BARS ARE 12 mm DIAMETER.
3. 10% ALLOWANCE HAS BEEN MADE FOR ON-SITE CUTTING AND SPLICING OF BAR REINFORCEMENT
4. ACTUAL FABRIC QUANTITIES SHALL BE CALCULATED BY THE CONTRACTOR. THE TABULATED AREAS ARE PROVIDED AS A GUIDE ONLY AND DO NOT INCLUDE ANY ALLOWANCE FOR BENDS OR LAPS OR CUTTING WASTAGE.

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AMEND.	Appd.	Date	AMENDMENTS

GENERAL NOTES / CROSS REFERENCES
 1. THE QUANTITIES ARE PROVIDED AS A GUIDE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTORS AND USERS OF THIS DRAWING TO CHECK AND ENSURE THAT THE QUANTITIES ARE ACCURATE BEFORE THEY ARE USED.



PRINCIPAL ROAD DESIGN ENGINEER'S DEPARTMENT

STANDARD DRAWING
 REINFORCED CONCRETE WINGWALL
 QUANTITIES
 SKEW MULTIPLE PIPE CULVERTS 1350 TO 2100 DIA. TYPES 1, 2 & 3

APPROVED <i>J. Cunningham</i>	DATE 12.95	SPEC. REF. No.	SHEET No.	DRAWING No.	AMENDMENT
				SD 1962	

PRINCIPAL RD ENGINEER