BILL OF REINFORCING FOR ONE HEADWALL 45° SKEW CULVERT SPAN X CULVERT HEIGHT

LOCATION	SHAPE	SIZE	MARK	3600x3600 NO.	LENGTH	MASS	3600x3000 NO.	LENGTH	MASS	3600x2400 NO.	LENGTH	MASS	3600x1800 NO.	LENGTH	MASS	3000x3600 NO.	LENGTH	MASS	3000x3000 NO.	LENGTH	MASS	3000x2400 NO.	LENGTH	MASS	3000x1800 NO.	LENGTH	MASS	MARK
FENCE ANCHOR		15	fa	2	980	3	2	980	3	2	980	3	2	930	3	2	930	3	2	930	3	2	930	3	2	930	3	fa
WINGWALL BFH L		15	b1	1	22 430	35	1	18 930	30	1	15 430	24	1	11 930	19	1	22 430	35	1	18 930	30	1	15 430	24	1	11 930	19	b1
WINGWALL BFH R		15	b2	1	18 800	22	1	11 700	18	1	9600	15	1	7500	12	1	13 800	22	1	11 700	18	1	9600	15	1	7500	12	b2
WINGWALL BFH L		15	b3	10 (LENGTH VARIES)	5700 TO 21 450	213	8 (LENGTH VARIES)	5700 TO 17 950	149	6 (LENGTH VARIES)	5700 TO 14 450	95	4 (LENGTH VARIES)	5700 TO 10 950	52	10 (LENGTH VARIES)	5700 TO 21 450	213	8 (LENGTH VARIES)	5700 TO 17 950	149	6 (LENGTH VARIES)	5700 TO 14 450	95	4 (LENGTH VARIES)	5700 TO 10 950	52	b3
WINGWALL BFH R		15	b4	10 (LENGTH VARIES)	3780 TO 13 220	133	8 (LENGTH VARIES)	3780 TO 11 120	94	6 (LENGTH VARIES)	3780 TO 9020	60	4 (LENGTH VARIES)	3780 TO 6920	34	10 (LENGTH VARIES)	3780 TO 13 220	133	8 (LENGTH VARIES)	3780 TO 11 120	94	6 (LENGTH VARIES)	3780 TO 9020	60	4 (LENGTH VARIES)	3780 TO 6920	34	b4
WINGWALL FFH L		15	b5	1	22 430	35	1	18 930	30	1	15 430	24	1	11 930	19	1	22 430	35	1	18 930	30	1	15 430	24	1	11 930	19	b5
WINGWALL FFH R		15	b6	1	18 800	22	1	11 700	18	1	9600	15	1	7500	12	1	13 800	22	1	11 700	18	1	9600	15	1	7500	12	b6
WINGWALL FFH L		15	b7	11 (LENGTH VARIES)	3960 TO 21 450	219	9 (LENGTH VARIES)	3960 TO 17 950	155	7 (LENGTH VARIES)	3960 TO 14 450	101	5 (LENGTH VARIES)	3960 TO 10 950	59	11 (LENGTH VARIES)	3960 TO 21 450	219	9 (LENGTH VARIES)	3960 TO 17 950	155	7 (LENGTH VARIES)	3960 TO 14 450	101	5 (LENGTH VARIES)	3960 TO 10 950	59	b7
WINGWALL FFH R		15	b8	11 (LENGTH VARIES)	2730 TO 13 220	138	9 (LENGTH VARIES)	2730 TO 11 120	98	7 (LENGTH VARIES)	2730 TO 9020	65	5 (LENGTH VARIES)	2730 TO 6920	38	11 (LENGTH VARIES)	2730 TO 13 220	138	9 (LENGTH VARIES)	2730 TO 11 120	98	7 (LENGTH VARIES)	2730 TO 9020	65	5 (LENGTH VARIES)	2730 TO 6920	38	b8
CENTER WALL EFH		15	b9	21 (LENGTH VARIES)	1780 TO 10 970	209	13 (LENGTH VARIES)	1780 TO 9290	147	13 (LENGTH VARIES)	1750 TO 7590	95	9 (LENGTH VARIES)	1780 TO 5890	54	21 (LENGTH VARIES)	1780 TO 10 970	209	17 (LENGTH VARIES)	1780 TO 9290	147	15 (LENGTH VARIES)	1750 TO 7590	95	9 (LENGTH VARIES)	1780 TO 5890	54	b9
WINGWALL FFV L		15	c1	72 (LENGTH VARIES)	880 TO 4480	300	60 (LENGTH VARIES)	880 TO 2850	221	49 (LENGTH VARIES)	880 TO 3290	158	37 (LENGTH VARIES)	830 TO 2680	102	72 (LENGTH VARIES)	810 TO 4450	298	60 (LENGTH VARIES)	810 TO 3840	219	49 (LENGTH VARIES)	810 TO 3270	157	37 (LENGTH VARIES)	810 TO 2680	101	c1
WINGWALL FFV R		15	c2	43 (LENGTH VARIES)	840 TO 4440	178	36 (LENGTH VARIES)	840 TO 3840	152	29 (LENGTH VARIES)	840 TO 3240	93	22 (LENGTH VARIES)	840 TO 2640	60	43 (LENGTH VARIES)	820 TO 4420	177	36 (LENGTH VARIES)	820 TO 3820	151	29 (LENGTH VARIES)	820 TO 3220	92	22 (LENGTH VARIES)	820 TO 2620	59	c2
WINGWALL FFV L		15	c3	2	4370	14	2	3770	12	2	3170	10	2	2570	8	2	4350	14	2	3750	12	2	3150	10	2	2550	8	c3
WINGWALL FFV R		15	c3	2	4370	14	2	3770	12	2	3170	10	2	2570	8	2	4350	14	2	3750	12	2	3150	10	2	2550	8	c3
CENTER WALL EFV		15	c4	2	500	2	2	490	2	2	490	2	2	490	2	2	480	2	2	470	1	2	470	1	2	470	1	c4
CENTER WALL EFV		15	c5	67 (LENGTH VARIES)	540 TO 3760	226	56 (LENGTH VARIES)	540 TO 3150	163	45 (LENGTH VARIES)	540 TO 2570	110	34 (LENGTH VARIES)	530 TO 1980	67	67 (LENGTH VARIES)	520 TO 3740	224	56 (LENGTH VARIES)	520 TO 3140	161	45 (LENGTH VARIES)	520 TO 2550	108	34 (LENGTH VARIES)	510 TO 1960	66	c5
CENTER WALL EFV		15	c6	3	3950	18	3	3250	15	3	2650	12	3	2050	10	3	3810	18	3	3210	15	3	2610	12	3	2010	9	c6
WINGWALL BFV L		15	c7	15 (LENGTH VARIES)	830 TO 1550	28	15 (LENGTH VARIES)	830 TO 1550	28	15 (LENGTH VARIES)	830 TO 1550	28	15 (LENGTH VARIES)	830 TO 1550	28	15 (LENGTH VARIES)	810 TO 1580	28	15 (LENGTH VARIES)	810 TO 1580	28	15 (LENGTH VARIES)	810 TO 1530	28	15 (LENGTH VARIES)	810 TO 1530	28	c7
WINGWALL BFV R		15	c8	4 (LENGTH VARIES)	840 TO 1100	6	4 (LENGTH VARIES)	840 TO 1100	6	4 (LENGTH VARIES)	840 TO 1100	6	4 (LENGTH VARIES)	840 TO 1100	6	4 (LENGTH VARIES)	820 TO 1080	6	4 (LENGTH VARIES)	820 TO 1080	6	4 (LENGTH VARIES)	820 TO 1080	6	4 (LENGTH VARIES)	820 TO 1080	6	c8
WINGWALL BFV L		15	c9	57 (LENGTH VARIES)	2800 TO 5680	374	45 (LENGTH VARIES)	2800 TO 5050	278	34 (LENGTH VARIES)	2800 TO 4490	195	22 (LENGTH VARIES)	2800 TO 3880	115	57 (LENGTH VARIES)	2780 TO 5660	378	45 (LENGTH VARIES)	2780 TO 5040	276	34 (LENGTH VARIES)	2780 TO 4470	194	22 (LENGTH VARIES)	2780 TO 3860	115	c9
WINGWALL BFV R		15	c10	39 (LENGTH VARIES)	2380 TO 5640	246	32 (LENGTH VARIES)	2380 TO 5040	186	25 (LENGTH VARIES)	2380 TO 4440	134	18 (LENGTH VARIES)	2380 TO 3840	88	39 (LENGTH VARIES)	2360 TO 5620	244	32 (LENGTH VARIES)	2360 TO 5020	185	25 (LENGTH VARIES)	2360 TO 4420	138	18 (LENGTH VARIES)	2360 TO 3820	87	c10
WINGWALL BFV L		15	c11	41	3150	203	30	3150	148	18	3150	89	---	---	0	41	3150	203	30	3150	148	18	3150	89	---	---	0	c11
WINGWALL BFV R		15	c11	26	3150	129	19	3150	94	12	3150	59	---	---	0	26	3150	129	19	3150	94	12	3150	59	---	---	0	c11
WINGWALL BFV L		15	c12	1	5570	9	1	4970	8	1	4370	7	1	3770	6	1	5550	9	1	4950	8	1	4350	7	1	3750	6	c12
WINGWALL BFV R		15	c12	2	5570	17	2	4970	15	2	4370	14	2	3770	12	2	5550	17	2	4950	15	2	4350	14	2	3750	12	c12
APRON LONG BOT		15	d1	17	11 670	511	17	9970	266	17	8270	221	17	6580	176	13	11 670	398	13	9970	208	13	8270	169	13	6580	134	d1
APRON LONG BOT L		15	d2	3	21 170	100	3	17 680	83	3	14 200	67	3	10 730	51	3	21 170	100	3	17 680	83	3	14 200	67	3	10 730	51	d2
APRON LONG BOT R		15	d3	3	12 790	60	3	10 700	50	3	8610	41	3	6540	31	3	12 790	60	3	10 700	50	3	8610	41	3	6540	31	d3
APRON LONG TOP		20	f1	24	11 670	660	24	9970	564	24	8270	467	24	6580	372	20	11 670	550	20	9970	470	20	8270	390	20	6580	310	f1
APRON LONG TOP L		20	f2	17 (LENGTH VARIES)	760 TO 10 450	224	14 (LENGTH VARIES)	870 TO 8760	159	11 (LENGTH VARIES)	980 TO 7060	104	8 (LENGTH VARIES)	1090 TO 5360	61	17 (LENGTH VARIES)	760 TO 10 450	224	14 (LENGTH VARIES)	870 TO 8760	159	11 (LENGTH VARIES)	980 TO 7060	104	8 (LENGTH VARIES)	1090 TO 5360	61	f2
APRON LONG TOP R		20	f3	5 (LENGTH VARIES)	1450 TO 10 570	141	5 (LENGTH VARIES)	720 TO 8870	102	7 (LENGTH VARIES)	1040 TO 7170	68	7 (LENGTH VARIES)	1360 TO 5470	40	10 (LENGTH VARIES)	1490 TO 10 570	141	7 (LENGTH VARIES)	1040 TO 8870	102	7 (LENGTH VARIES)	1040 TO 7170	68	5 (LENGTH VARIES)	1360 TO 5470	40	f3
APRON LONG TOP L		20	f4	1	22 430	53	1	18 930	45	1	15 430	36	1	11 930	28	1	22 430	53	1	18 930	45	1	15 430	36	1	11 930	28	f4
APRON LONG TOP R		20	f5	1	18 800	32	1	11 700	28	1	9600	23	1	7500	18	1	13 800	32	1	11 700	28	1	9600	23	1	7500	18	f5
PARAPET VERT		15	j1	54	2040	173	53	2040	170	53	2040	170	52	2040	157	46	2040	147	45	2040	144	45	2040	144	44	2040	141	j1
PARAPET HORIZ		25	j1	4	11 340	178	4	11 120	175	4	11 120	175	4	11 020	173	4	9640	151	4	9440	148	4	9430	148	4	9320	146	j1
APRON TRANS TOP		20	m1	19 (LENGTH VARIES)	8880 TO 9820	419	19 (LENGTH VARIES)	8720 TO 9670	411	16 (LENGTH VARIES)	8720 TO 9510	343	8 (LENGTH VARIES)	8640 TO 9010	166	17 (LENGTH VARIES)	7580 TO 8370	318	17 (LENGTH VARIES)	7370 TO 8210	312	17 (LENGTH VARIES)	7370 TO 8210	312	11 (LENGTH VARIES)	7290 TO 7820	196	m1
APRON TRANS TOP		20	m2	13 (LENGTH VARIES)	9860 TO 11 120	321	5 (LENGTH VARIES)	9710 TO 10 130	117	---	---	0	12 (LENGTH VARIES)	5070 TO 7380	176	18 (LENGTH VARIES)	8450 TO 10 240	396	10 (LENGTH VARIES)	8300 TO 9250	207	2 (LENGTH VARIES)	8300 TO 8410	39	6 (LENGTH VARIES)	5100 TO 6150	79	m2
APRON TRANS TOP		20	m3	17 (LENGTH VARIES)	5690 TO 8210	278	17 (LENGTH VARIES)	5180 TO 7700	258	17 (LENGTH VARIES)	4740 TO 7260	240	8 (LENGTH VARIES)	3800 TO 4900	82	14 (LENGTH VARIES)	5240 TO 7290	207	14 (LENGTH VARIES)	4780 TO 6780	190	14 (LENGTH VARIES)	4290 TO 6340	175	8 (LENGTH VARIES)	3820 TO 4920	82	m3
APRON TRANS TOP		20	m4	7	5660	147	11	5180	193	11	4720	122	11	4240	110	9	5160	109	9	4700	100	9	4270	91	9	3810	81	m4
APRON TRANS BOT		20	m5	24 (LENGTH VARIES)	8890 TO 16 050	699	20 (LENGTH VARIES)	8620 TO 14 700	549	16 (LENGTH VARIES)	8350 TO 13 420	415	12 (LENGTH VARIES)	8590 TO 12 110	292	24 (LENGTH VARIES)	7000 TO 14 860	604	20 (LENGTH VARIES)	6980 TO 13 010	470	16 (LENGTH VARIES)	6930 TO 11 780	352	12 (LENGTH VARIES)	6890 TO 10 410	244	m5
CURTAIN HORIZ		20	p1	4	10 510	99	4	10 440	98	4	10 440	98	4	10 400	98	4	8810	83	4	8740	82	4	8740	82	4	8700	82	p1
CURTAIN HORIZ L		20	p2	4	12 740	120	4	10 840	102	4	8940	84	4	7040	66	4	12 740	120	4	10 840	102	4	8940	84	4	7040	66	p2
CURTAIN HORIZ R		20	p3	4	4700	44	4	4090	39	4	3480	33	4	2870	27	4	4700	44	4	4090	39	4	3480	33	4	2870	27	p3
WING SLOPE EF L		20	s1	2	8720	18	2	8720	18	2	3720	18	2	3720	18	2	3720	18	2	3720	18	2	3720	18	2	3720	18	s1
WING SLOPE EF R		20	s2	2	3760	13	2	2760	13	2	2760	13	2	2760	13	2	2760	13	2	2760	13	2	2760	13	2	2760	13	s2
WING SLOPE EF L		20	s3	2	19 670	93	2	16 120	76	2	12 570	59	2	9020	42	2	19 670	93	2	16 120	76	2	12 570	59	2	9020	42	s3
WING SLOPE EF R		20	s4	2	12 450	59	2	10 270	48	2	8080	38	2	5900	28	2	12 450	59	2	10 270	48	2	8080	38	2	5900	28	s4
WING SLOPE EF L		20	s5	1	22 720	54	1	19 180	45	1	15 620	37	1	12 070	28	1	22 720	54	1	19 180	45	1	15 620	37	1	12 070	28	s5
WING SLOPE EF R		20	s6	1	14 260	34	1	12 080	28	1	9910	23	1	7710	18	1	14 260	34	1	12 080	28	1	9910	23	1	7710	18	s6
CENTER WALL EFH		20	s7	2	11 690	55	2	9910	47	2	8110	38	2	6320	30	2	11 690	55	2	9910	47	2	8110	38	2	6320	30	s7
CURTAIN VERT		15	t1	64	2410	242	56	2260	199	50	2110	166	43	1960	132	59	2410	223	52	2260	185	46	2110	152	39	1960	120	t1
REINF STEEL				7425 kg			5886 kg			4623 kg			3257 kg			6916 kg			5448 kg			4158 kg			2922 kg		
ESTIMATED QUANTITIES CONC	PARAPET			2.8			2.7			2.7			2.6			2.5			2.4			2.4			2.8		
	WINGS			30.8	101.5 m^3		18.6	74.2 m^3		12.5	55.5 m^3		5.9	38.2 m^3		30.8	92.9 m^3		18.6	67.1 m^3		12.5	49.8 m^3		5.9	33.8 m^3		
ONE HEADWALL	FOOTING			67.9			52.9			40.3			28.7			59.6			46.1			34.9			24.6		

REVISED 04-02 - VARIOUS LENGTHS ADJUSTED FOR CONSISTENCY. CONCRETE QUANTITIES ADJUSTED.
REVISED 1/98; BEND DIMENSIONS OF i1 BAR CHANGED.

XXXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXXX