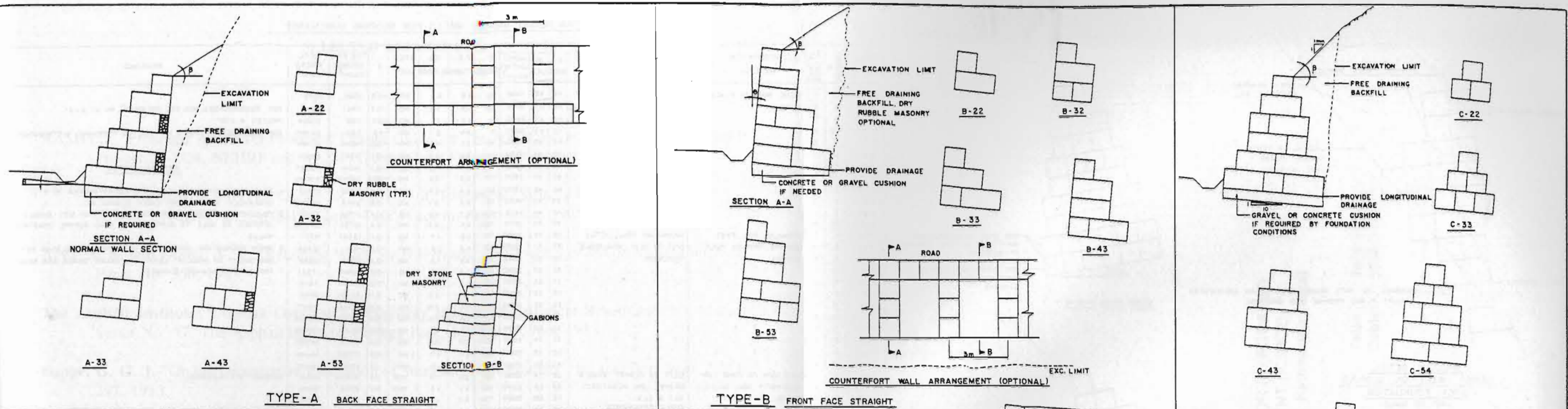


This annex contains the Figures 24.35 and 24.36.



**GABION WALLS FOR SLOPING SURCHARGE LOADS**

WALL TYPE	HEIGHT IN METERS	FOUNDATION MATERIAL	SUPPORTED SOIL TYPE DESCRIPTION	φ		MOIST UNIT WT (KG/M <sup>3</sup> )	θ	F.S	F.S	SPEC. KEY	TOE PRESSURE (KG/M <sup>2</sup> )	HEEL PRESSURE (KG/M <sup>2</sup> )	REMARKS	
				DEG	DEG									
A 32	3	2	SOUND ROCK IN PLACE OR BROKEN	45	45	1600	6	6.2	3.6	NO	-0.2	2703	7600	NOTE: φ IS THE DISTANCE FROM THE CENTER OF THE WALL BASE TO THE POINT OF EXIT OF THE RESULTANT OF FORCES. POSITIVE VALUES ARE TOWARD TOE, NEGATIVE VALUES ARE TOWARD THE HEEL OF WALL. BASE INCLINATION θ, SHOWN AT 6°, CONSTRUCTION AT 10° SATISFACTORY. WHEN FOUNDATION SOIL HAS θ LESS THAN 30° SLIDING KEY OR IMBEDMENT OF WALL AT LEAST 1.5m BELOW GRADE IS REQUIRED FOR SAFETY AGAINST SLIDING.
A 53	5	3	FREE DRAINING GRANULAR SOIL OR BROKEN ROCK GP, SW, SP.	45	45	1600	6	4.8	4.3	NO	-0.3	3852	12171	
A 63	6	3	"	45	45	1600	6	3.6	3.8	NO	-0.1	8061	13048	
A 63	6	3	"	45	45	1600	0	2.6	2.7	NO	0.2	14159	6258	
A 64	6	4	"	45	45	1600	6	5.5	4.0	NO	-0.5	1790	14837	
A 32	3	2	FREE DRAINING GRANULAR SOIL OR BROKEN ROCK	35	35	2080	6	3.6	1.8	NO	0.0	5548	5528	NOTE: TYPE C WALL MAY BE SUBSTITUTED FOR TYPE A WALL IN THIS SOIL, SPECIAL KEY REQUIRED FOR ALL CONFIGURATIONS. NOT RECOMMENDED. WIRING FOR SP. KEY IS MARGINAL.
A 33	5	3	GRANULAR SOIL LITTLE SILT OR CLAY, COHESION NEGLECTIBLE.	35	35	2080	6	2.9	1.5	NO	0.1	9948	7500	
A 63	6	3	"	35	35	2080	6	2.1	3.1	YES	0.3	19000	4165	
A 64	6	4	"	35	35	2080	6	3.3	3.2	YES	-0.1	7561	10615	
A 32	3	2	ROCK OR FIRM LOW PLASTICITY SOIL, GC, GM, SC, SM, SHALE.	28	28	2080	6	2.9	0.7	YES	0.1	7515	3348	NOTE: TYPE C WALL MAY BE USED IN PLACE OF TYPE B IN THIS SOIL. SPECIAL KEY REQUIRED FOR ALL CONFIGURATIONS.
A 43	4	3	"	28	28	2080	6	3.3	3.3	YES	0.0	5920	6012	
A 53	5	3	"	28	28	2080	6	2.3	2.3	YES	0.3	13870	3182	
A 64	6	4	"	28	28	2080	6	2.6	1.5	YES	0.2	11415	6334	
B 32	3	2	BROKEN OR IN PLACE SOUND ROCK	45	45	1600	6	4.9	4.1	NO	-0.1	6154	9215	UNBALANCED FOUND. PRESSURE θ = θ/6
B 53	5	3	"	45	45	1600	6	4.0	3.7	NO	0.0	14942	14466	
B 63	6	3	"	45	45	1600	6	3.0	3.3	NO	0.2	22705	11916	
B 32	3	2	"	45	45	1600	0	3.9	2.9	NO	0.0	9393	8919	
B 53	5	3	"	45	45	1600	0	3.3	2.8	NO	0.1	22724	14255	
B 63	6	3	"	45	45	1600	0	2.5	2.5	NO	0.3	34741	7692	
B 64	6	4	"	45	45	1600	0	4.1	3.1	NO	0.0	26373	25235	
B 32	3	2	FREE DRAINING GRANULAR SOIL OR BROKEN ROCK	35	35	2080	6	3.4	1.8	NO	0.1	9657	6989	NOTE: TYPE C MAY BE USED IN PLACE OF TYPE B IN THIS SOIL. SPECIAL KEY REQUIRED FOR ALL CONFIGURATIONS.
B 53	5	3	GRANULAR SOIL, LITTLE SILT OR CLAY, NEGLECTIBLE COHESION.	35	35	2080	6	2.8	1.6	NO	0.2	23005	8618	
B 63	6	3	"	35	35	2080	6	2.1	1.5	NO	0.5	36292	1732	
B 64	6	4	"	35	35	2080	6	3.3	1.8	NO	0.2	25747	14509	
B 32	3	2	ROCK OR FIRM LOW PLASTICITY SOILS SC, GC, SM, GM, SHALE.	28	28	2080	6	2.9	0.7	YES	0.1	11360	4389	NOTE: TYPE C MAY BE USED IN PLACE OF TYPE B IN THIS SOIL. SPECIAL KEY REQUIRED FOR ALL CONFIGURATIONS.
B 53	5	3	"	28	28	2080	6	2.3	2.7	YES	0.4	26228	2833	
B 64	6	4	"	28	28	2080	6	2.7	2.0	YES	0.4	28908	7029	
C 54	5	4	"	28	28	2080	6	3.6	2.1	YES	0.0	10868	9680	
C 65	6	5	"	28	28	2080	6	3.8	1.5	YES	0.0	11615	11598	

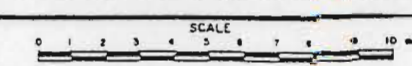
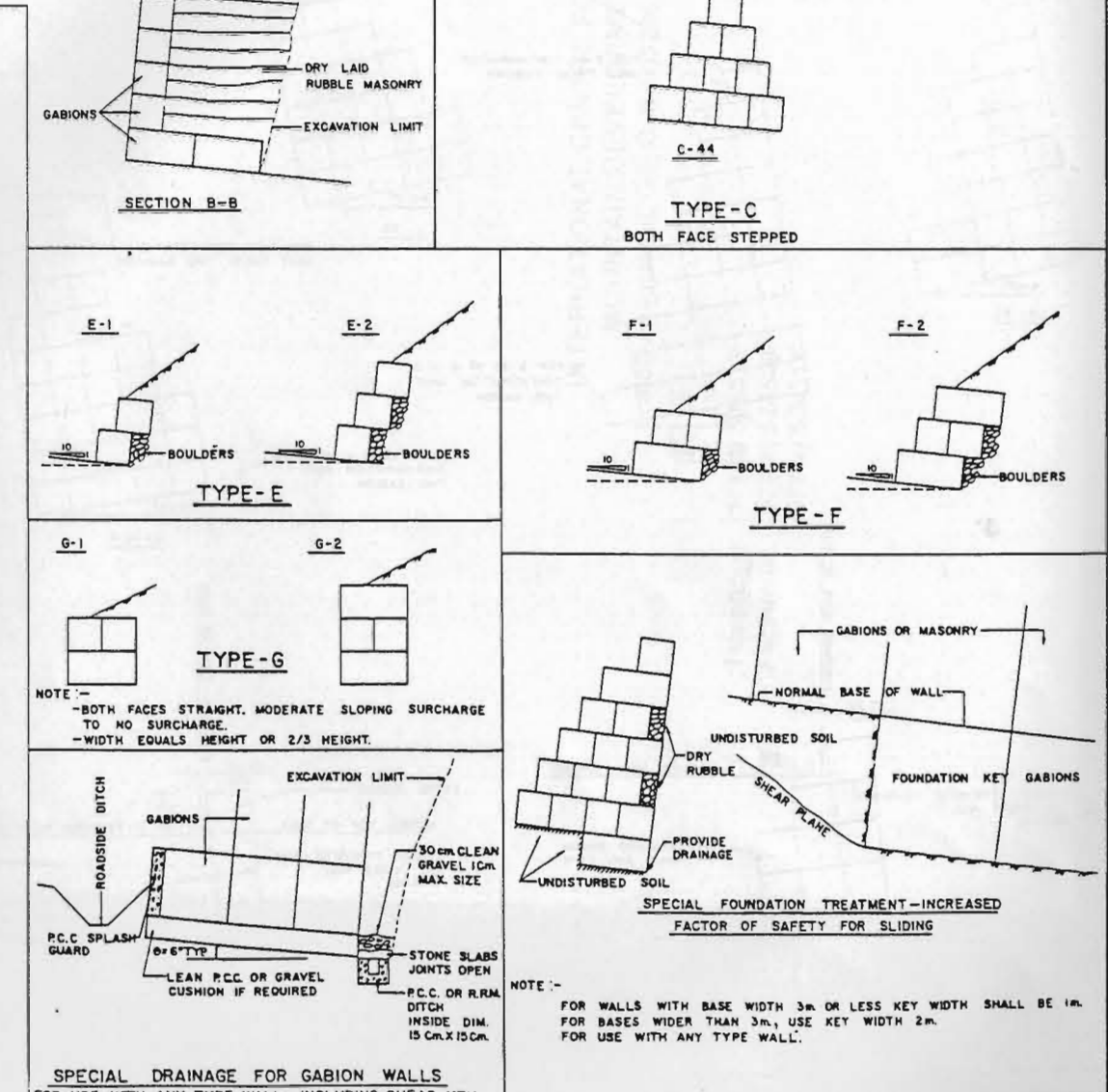
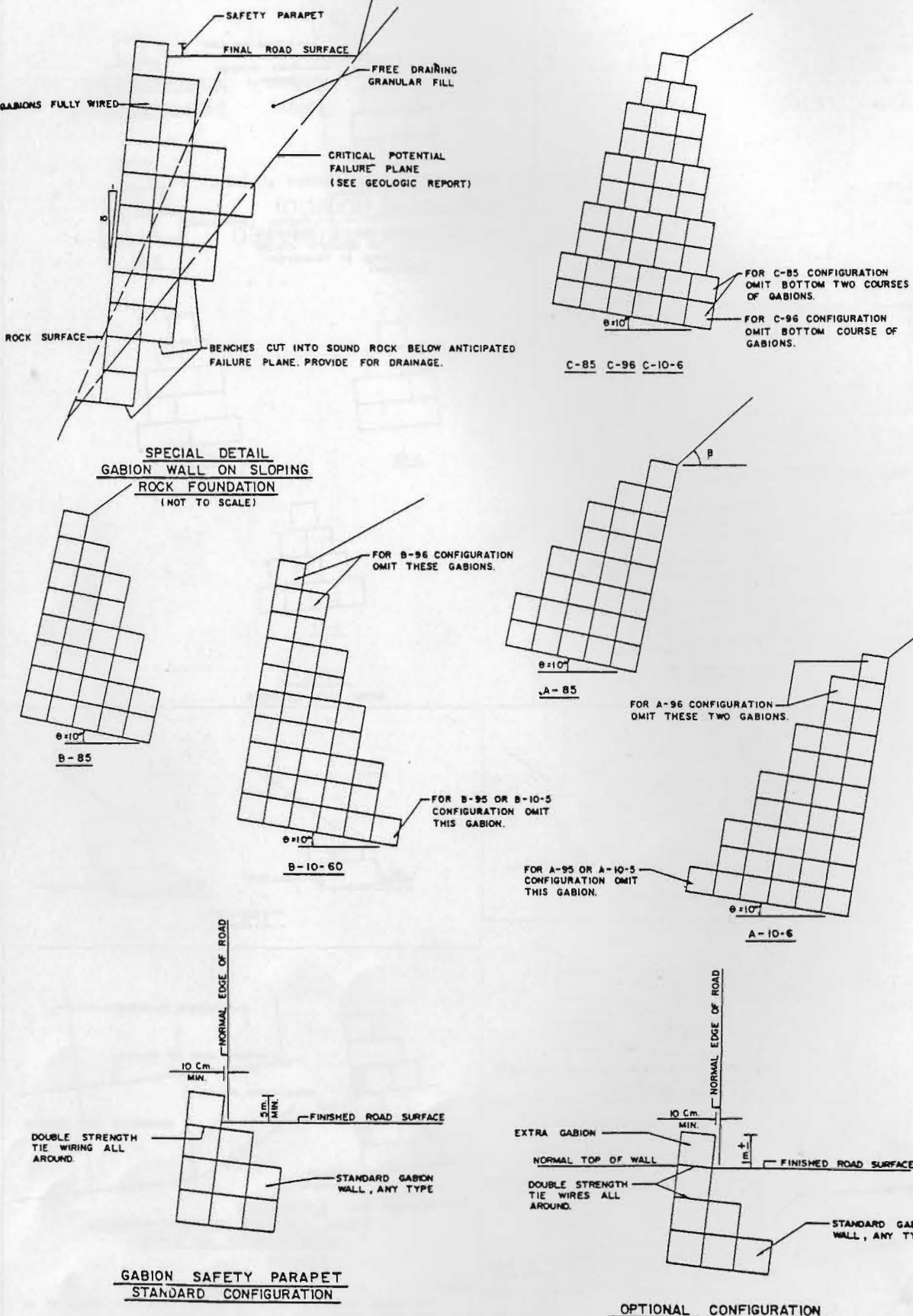


FIGURE 5.7 STANDARD GABION WALLS

Fig. 24.35 Standard gabion walls



EXTRA HEIGHT GABION WALLS FOR SLOPING SURCHARGE



WALL TYPE	HEIGHT (m)	BASE W/DTH	FOUNDATION MATERIAL	DESCRIPTION	SUPPORTED SOIL TYPE			θ (DEG)	F.S.	F.S. SLIDING	SPEC. KEY	TOE PRESSURE (KG/m <sup>2</sup> )	HEEL PRESSURE (KG/m <sup>2</sup> )	REMARKS	
					0 DEG	B DEG	MOIST UNIT WT (KG/m <sup>3</sup> )								
A 63	6	3	SOUND ROCK IN PLACE OR BROKEN.	FREE DRAINING GRANULAR SOIL OR BROKEN ROCK GW, GP, SW, SP.	45	45	1600	10	4.8	6.3	NO	-0.3	3589	16179	NOT RECOMMENDED, NEG TOE PRESSURE, OK AT θ = 6° PREFER θ < 10° NOT RECOMMENDED FOR θ > 6° DUE TO PRESSURE DISTRIBUTION.
A 64	6	4	"	"	45	45	1600	10	7.8	7.0	NO	-0.7	441	15947	
A 85	8	5	"	"	45	45	1600	10	6.9	7.1	NO	-0.7	1189	21064	
A 10-6	10	6	"	"	45	45	1600	6	5.9	5.3	NO	-1.0	333	24869	
B 63	6	3	"	"	45	45	1600	10	3.5	4.3	NO	-0.3	18684	16588	
B 64	6	4	"	"	45	45	1600	10	5.8	5.5	NO	-0.2	14567	24655	
B 85	8	5	"	"	45	45	1600	10	5.9	7.5	NO	-0.2	31216	45230	
B 10-6	10	6	"	"	45	45	1600	10	5.3	6.9	NO	-0.4	45848	50045	
C 54	5	4	"	"	45	45	1600	10	8.4	5.5	NO	-0.5	3208	17103	
C 85	8	5	"	"	45	45	1600	10	8.9	5.3	NO	0.6	2858	20638	
C 10-6	10	6	"	"	45	45	1600	10	5.3	4.7	NO	-0.4	11759	30101	
A 63	6	3	GRANULAR SOIL, FREE DRAINING, BROKEN ROCK W/FINES.	GRANULAR SOIL, LITTLE SILT OR CLAY, NEGLIGIBLE COHESION.	35	35	2080	10	2.6	1.7	NO	0.1	13357	8371	GENERAL NOTES 1. BASE INCLINATION θ SHOWN AT 10°, CONSTRUCTION AT 6° GENERALLY SATISFACTORY. CHECK SLIDING F.S. 2. FOUNDATION PRESSURES ARE GENERALLY HIGH. SITE SHOULD BE VERIFIED AS ABLE TO SUPPORT THE LOAD BEFORE CONSTRUCTING WALLS. 3. WHEN FOUNDATION SOIL HAS θ LESS THAN 30°, SLIDING KEY OR IMBEDMENT OF WALL AT LEAST 2m. BELOW GRADE ARE REQUIRED FOR SAFETY AGAINST SLIDING.
A 64	6	4	"	"	35	35	2080	10	4.2	1.8	NO	-0.3	461	12626	
A 85	8	5	"	"	35	35	2080	10	3.8	1.8	NO	-0.2	9028	15698	
A 10-6	10	6	"	"	35	35	2080	10	3.3	1.5	NO	-0.2	11098	17321	
B 63	6	3	"	"	35	35	2080	10	2.5	1.8	NO	0.3	31589	7614	
B 64	6	4	"	"	35	35	2080	10	4.1	2.2	NO	0.1	22561	18721	
B 85	8	5	"	"	35	35	2080	10	4.1	2.6	NO	0.2	45162	30417	
B 10-6	10	6	"	"	35	35	2080	10	3.6	2.5	NO	0.4	64575	30059	
C 54	5	4	"	"	35	35	2080	10	5.8	2.1	NO	-0.3	6370	15788	
C 65	6	5	"	"	35	35	2080	10	6.0	2.0	NO	-0.4	6733	16560	
C 85	8	5	"	"	35	35	2080	10	3.4	1.7	NO	.03	17799	16440	
C 10-6	10	6	"	"	35	35	2080	10	3.0	1.6	NO	0.2	25189	16407	
A 63	6	3	SOFT ROCK OR FIRM LOW PLASTICITY SOIL SC, GC, SM, GM.	SILTY TO CLAYEY SAND & GRAVEL. LOW PLASTICITY SILT & CLAY SHALE FRAGMENTS.	28	28	2080	10	2.0	1.4	YES	0.4	20204	1494	SLIDING F.S. MARGINAL.
A 64	6	4	"	"	28	28	2080	10	3.2	1.5	YES	0.0	8258	8804	NOT SATISFACTORY FOR THIS FOUND. SOIL (θ = 28°) NOT RECOMMENDED - PRESSURE DIST.
A 85	8	5	"	"	28	28	2080	10	2.9	1.5	YES	0.2	14558	9918	
A 10-6	10	6	"	"	28	28	2080	10	2.5	1.1	YES	0.3	18597	9498	
B 63	6	3	"	"	28	28	2080	10	2.0	2.2	YES	0.5	33724	-741	
B 64	6	4	"	"	28	28	2080	10	3.2	2.8	YES	0.3	23346	9387	
B 85	8	5	"	"	28	28	2080	10	3.0	2.0	YES	0.4	34965	11798	
B 10-6	10	6	"	"	28	28	2080	10	2.6	1.6	YES	0.7	49182	7933	
C 54	5	4	"	"	28	28	2080	10	4.7	2.9	YES	-0.1	8504	10812	
C 65	6	5	"	"	28	28	2080	10	4.9	2.1	YES	-0.1	9091	12708	
C 85	8	5	"	"	28	28	2080	10	2.8	1.7	YES	0.3	22979	10104	
C 10-6	10	6	"	"	28	28	2080	10	2.6	1.4	YES	0.5	31475	9928	SLIDING F.S. MARGINAL.
EXTRA HEIGHT GABION WALLS FOR NO SURCHARGE LOADS															
A 85	8	5	ANY FOUNDATION LISTED ABOVE	ANY BACKFILL LISTED ABOVE	28	0	2080	10	6.3	3.5	NO	-0.5	3469	16363	
A 10-6	10	6	"	"	28	0	2080	10	5.3	2.5	NO	-0.7	3293	18754	
B 85	8	5	"	"	28	0	2080	10	4.7	3.0	NO	0.2	17206	9910	
B 10-6	10	6	"	"	28	0	2080	10	3.8	2.4	NO	0.5	23946	7433	
C 85	8	5	"	"	28	0	2080	10	5.2	2.9	NO	-0.1	9958	12921	
C 10-6	10	6	"	"	28	0	2080	10	4.6	2.6	NO	-0.1	13260	14856	



FIGURE 5.8  
EXTRA HEIGHT GABION WALLS  
GABION SAFETY PARAPET

Fig. 24.36 Extra height gabion wall