



TYPICAL CROSS SECTION OF RCC CANTILEVER RETAINING WALL

PROVIDE 25 MM WIDE EXPANSION JOINT IN RETAINING WALL @ 30 M. c/c OR WHEN WALL DIRECTION CHANGES.

- FOR LAYOUT AND LEVEL DIFFERENCE ON EITHER SIDE OF RETAINING WALL, REFER ARCH/PH DRG.
- FOR RCC DETAILS OF DRAIN, REFER SEPARATE DRG.

NOMINAL COVER IN MM

MEMBER	NOMINAL COVER
BASE SLAB	50 MM.
STEM	45 MM.

WITH SURCHARGE OF 0.5 T / SQ. M. AT LEVEL - 1  
( PEDESTRIAN MOVEMENT )

WITH SURCHARGE OF 2 T / SQ. M. AT LEVEL - 1  
( VEHICLE MOVEMENT )

SCHEDULE OF RETAINING WALLS WITH ADJACENT DRAIN

DIFFERENCE BETWEEN LEVEL - 1 AND LEVEL - 2 H	FOUNDATION DEPTH D	BASE SLAB				STEM				SHEAR KEY		DISTRIBUTION REINFORCEMENT Z	SBC						
		B	b1	b2	d1	d2	TOP REINFORCEMENT		BOTTOM REINFORCEMENT		T			h1	REINFORCEMENT		h2	REINFORCEMENT	
							R	S	U	V					P	Q		X	Y
UP TO 1000	2000 ( MAX )	1675	450	925	400	200	10 # @ 200 c/c	—	10 # @ 200 c/c	—	300	—	10 # @ 200 c/c	—	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
1000 TO 2000	2000 ( MAX )	2200	550	1250	450	200	10 # @ 200 c/c	8 # @ 200 c/c	10 # @ 200 c/c	8 # @ 200 c/c	400	500	10 # @ 200 c/c	10 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
2000 TO 3000	2000 ( MAX )	2750	700	1550	550	250	10 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	8 # @ 200 c/c	500	1000	12 # @ 200 c/c	12 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
3000 TO 4000	2000 ( MAX )	3200	700	1900	650	300	12 # @ 200 c/c	12 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	600	1500	12 # @ 200 c/c	16 # @ 200 c/c	—	—	—	10 # @ 200 c/c	<= 20 T/SQ.M.
4000 TO 5000	2000 ( MAX )	3700	1000	2000	750	300	16 # @ 200 c/c	16 # @ 200 c/c	12 # @ 200 c/c	12 # @ 200 c/c	700	2000	16 # @ 200 c/c	16 # @ 200 c/c	300	10 # @ 200 c/c	—	10 # @ 200 c/c	<= 20 T/SQ.M.

SCHEDULE OF RETAINING WALLS WITHOUT ADJACENT DRAIN

DIFFERENCE BETWEEN LEVEL - 1 AND LEVEL - 2 H	FOUNDATION DEPTH D	BASE SLAB				STEM				SHEAR KEY		DISTRIBUTION REINFORCEMENT Z	SBC						
		B	b1	b2	d1	d2	TOP REINFORCEMENT		BOTTOM REINFORCEMENT		T			h1	REINFORCEMENT		h2	REINFORCEMENT	
							R	S	U	V					P	Q		X	Y
UP TO 1000	600	1000	250	550	300	200	10 # @ 200 c/c	—	10 # @ 200 c/c	—	200	—	10 # @ 200 c/c	—	—	—	—	8 # @ 200 c/c	<= 10 T/SQ.M.
1000 TO 2000	1000	1700	450	950	400	200	10 # @ 200 c/c	—	10 # @ 200 c/c	—	300	500	10 # @ 200 c/c	8 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
2000 TO 3000	1000	2200	550	1250	450	200	10 # @ 200 c/c	8 # @ 200 c/c	10 # @ 200 c/c	8 # @ 200 c/c	400	1000	10 # @ 200 c/c	10 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
3000 TO 4000	1250	2850	650	1700	550	250	10 # @ 200 c/c	12 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	500	1500	12 # @ 200 c/c	12 # @ 200 c/c	—	—	—	10 # @ 200 c/c	<= 20 T/SQ.M.
4000 TO 5000	1500	3450	900	1900	700	300	12 # @ 200 c/c	16 # @ 200 c/c	12 # @ 200 c/c	12 # @ 200 c/c	650	2000	12 # @ 200 c/c	16 # @ 200 c/c	300	10 # @ 200 c/c	—	10 # @ 200 c/c	<= 20 T/SQ.M.

SCHEDULE OF RETAINING WALLS WITH ADJACENT DRAIN

DIFFERENCE BETWEEN LEVEL - 1 AND LEVEL - 2 H	FOUNDATION DEPTH D	BASE SLAB				STEM				SHEAR KEY		DISTRIBUTION REINFORCEMENT Z	SBC						
		B	b1	b2	d1	d2	TOP REINFORCEMENT		BOTTOM REINFORCEMENT		T			h1	REINFORCEMENT		h2	REINFORCEMENT	
							R	S	U	V					P	Q		X	Y
UP TO 1000	2000 ( MAX )	1950	400	1200	400	200	10 # @ 200 c/c	8 # @ 200 c/c	10 # @ 200 c/c	—	350	—	10 # @ 200 c/c + 8 # @ 200 c/c	—	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
1000 TO 2000	2000 ( MAX )	2550	500	1600	550	200	10 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	8 # @ 200 c/c	450	500	10 # @ 200 c/c	12 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
2000 TO 3000	2000 ( MAX )	3000	600	1850	600	300	12 # @ 200 c/c	12 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	550	1000	12 # @ 200 c/c	16 # @ 200 c/c	—	—	—	10 # @ 200 c/c	<= 20 T/SQ.M.
3000 TO 4000	2000 ( MAX )	3500	900	1950	700	300	16 # @ 200 c/c	16 # @ 200 c/c	12 # @ 200 c/c	12 # @ 200 c/c	650	1500	16 # @ 200 c/c	16 # @ 200 c/c	300	10 # @ 200 c/c	—	10 # @ 200 c/c	<= 20 T/SQ.M.
4000 TO 5000	2000 ( MAX )	4050	1350	1950	800	350	16 # @ 200 c/c	20 # @ 200 c/c	16 # @ 200 c/c	16 # @ 200 c/c	750	2000	16 # @ 200 c/c	20 # @ 200 c/c	600	10 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	<= 20 T/SQ.M.

SCHEDULE OF RETAINING WALLS WITHOUT ADJACENT DRAIN

DIFFERENCE BETWEEN LEVEL - 1 AND LEVEL - 2 H	FOUNDATION DEPTH D	BASE SLAB				STEM				SHEAR KEY		DISTRIBUTION REINFORCEMENT Z	SBC						
		B	b1	b2	d1	d2	TOP REINFORCEMENT		BOTTOM REINFORCEMENT		T			h1	REINFORCEMENT		h2	REINFORCEMENT	
							R	S	U	V					P	Q		X	Y
UP TO 1000	600	1150	275	675	300	200	10 # @ 200 c/c	—	10 # @ 200 c/c	—	200	—	10 # @ 200 c/c	—	—	—	—	8 # @ 200 c/c	<= 10 T/SQ.M.
1000 TO 2000	1000	1950	400	1200	400	200	10 # @ 200 c/c	8 # @ 200 c/c	10 # @ 200 c/c	—	350	500	10 # @ 200 c/c	8 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
2000 TO 3000	1000	2500	525	1525	500	200	10 # @ 200 c/c	10 # @ 200 c/c	10 # @ 200 c/c	8 # @ 200 c/c	450	1000	10 # @ 200 c/c	12 # @ 200 c/c	—	—	—	8 # @ 200 c/c	<= 15 T/SQ.M.
3000 TO 4000	1250	3150	650	1950	600	300	12 # @ 200 c/c	16 # @ 200 c/c	10 # @ 200 c/c	12 # @ 200 c/c	550	1500	12 # @ 200 c/c	16 # @ 200 c/c	—	—	—	10 # @ 200 c/c	<= 20 T/SQ.M.
4000 TO 5000	1500	3800	1025	2075	750	300	16 # @ 200 c/c	16 # @ 200 c/c	12 # @ 200 c/c	16 # @ 200 c/c	700	2000	16 # @ 200 c/c	16 # @ 200 c/c	450	10 # @ 200 c/c	—	10 # @ 200 c/c	<= 20 T/SQ.M.

NOTES -

- ALL DIMENSIONS ARE IN MM. UNLESS NOTED OTHERWISE. NO DIMENSION SHALL BE SCALED OFF. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
  - ALL RCC WORK SHALL BE OF MINIMUM [M30] GRADE UNLESS NOTED OTHERWISE.
  - THE WORK SHALL BE STRICTLY IN ACCORDANCE WITH IS: 456 - 2000 UNLESS NOTED OTHERWISE.
  - REINFORCEMENT USED SHALL BE OF GRADE Fe 550 / Fe 500 TMT BARS CONFORMING TO IS: 1786 - 2008
  - ALL LEVELS AND DIMENSIONS INDICATED IN THIS DRG. ARE FROM THE CONCRETE SURFACE WITHOUT ANY FINISHES UNLESS NOTED OTHERWISE.
  - THIS DRG. SHALL BE READ IN CONJUNCTION WITH RELEVANT ARCHITECTURAL, PH AND STRUCTURAL DRAWINGS.
  - IN THE EVENT OF ANY DISCREPANCY BETWEEN STRUCTURAL DRGS. AND BASIC ARCHITECTURAL PH DRGS. OR BETWEEN DIFFERENT STRUCTURAL DRGS., UNDERSIGNED SHALL BE IMMEDIATELY INFORMED PRIOR TO TAKING FURTHER ACTION.
  - LAP LENGTH 'Ld' WITHOUT HOOKS SHALL BE AS GIVEN BELOW WHERE 'D' IS DIAMETER OF THE SMALLER LAPPING BAR.
- | CONCRETE GRADE  | M30  | M25  | M20  |
|-----------------|------|------|------|
| LAP LENGTH 'Ld' | 50 D | 54 D | 63 D |
- FOR LOCATION OF CONCEALED CONDUITS, PIPES AND OTHER CIVIL, PH, ELECTRICAL AND AIRCONDITIONING WORKS, INSERTS, CUTOUTS, HOLES, OPENINGS, ETC., REFER SEPARATE DRGS. BUT THESE SHALL BE LOCATED / FIXED PRIOR TO CONCRETING.
  - SPLICING OF BARS SHALL BE STAGGERED AND NOT MORE THAN 50 % OF BARS TO BE SPLICED AT ANY SECTION. C/C DISTANCE BETWEEN STAGGERED SPLICES SHALL BE MINIMUM 1.3 Ld.
  - BACKFILL MATERIAL SHALL BE NON - COHESIVE / WELL GRAVEL.

REV. NO.	DESCRIPTION	INITIAL	DATE
R2	GRADE OF STEEL CHANGED FROM Fe 500 TO Fe 550 / Fe 500D AND CORRESPONDING DETAILS CHANGED.	M. AGRAWAL A.P. BAVASKAR R. NAYAN	05-01-2024
R1	DETAIL OF RETAINING WALL WITHOUT ADJACENT DRAIN WITH LEVEL DIFFERENCE 4000 TO 5000 MM. REVISED		03-10-2013

REVISIONS

GOVT. OF INDIA  
**DIRECTORATE OF CONSTRUCTION SERVICES AND ESTATE MANAGEMENT**  
STRUCTURAL DESIGN SECTION  
VIKRAM SARABHAI BHAVAN, ANUSHAKTINAGAR, MUMBAI - 400094

DRN. BY	Revankar	TITLE
DRG. CHD.	Revankar	STANDARD DRAWING OF RCC. CANTILEVER RETAINING WALL
DESIGN BY	P. N. Saini	
DESIGN CHD.	V. P. Beldar	
APPROVED	M. Anant	
SCALE	NTS	

DRG. NO. - CED / STD / 7110      REV. R2