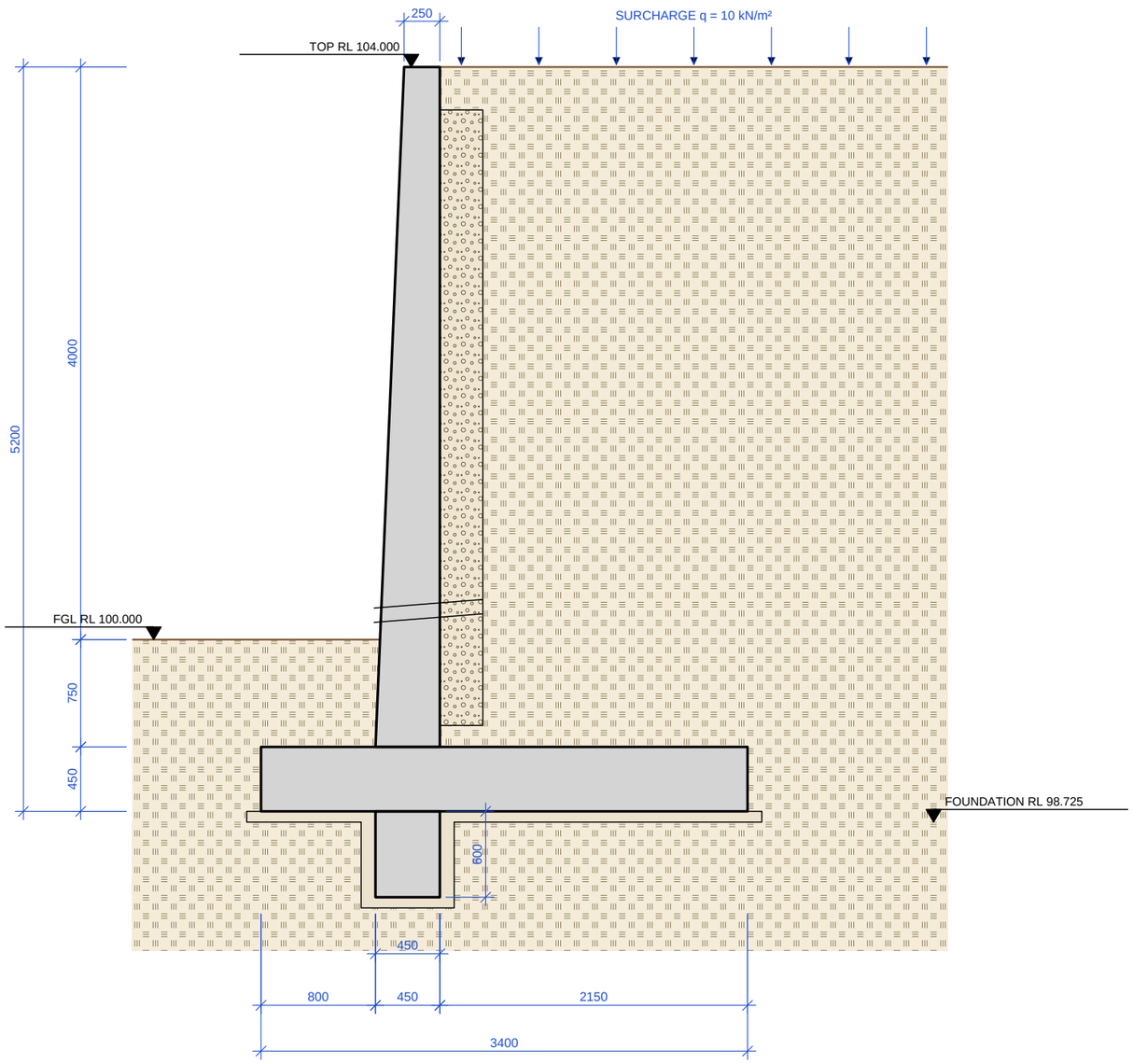
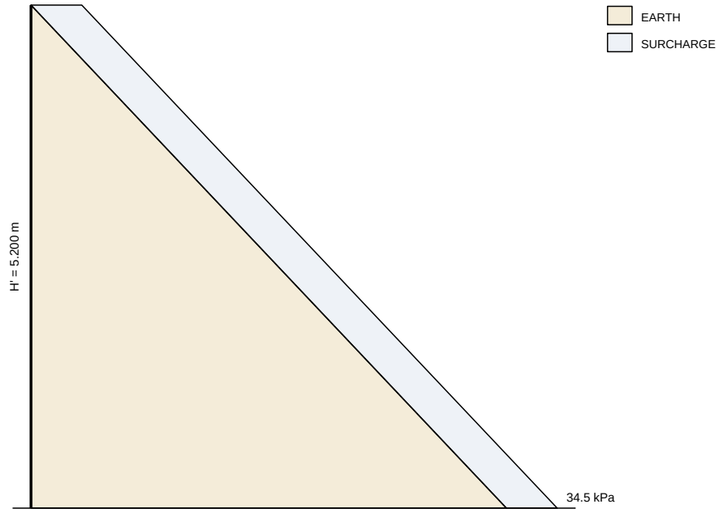


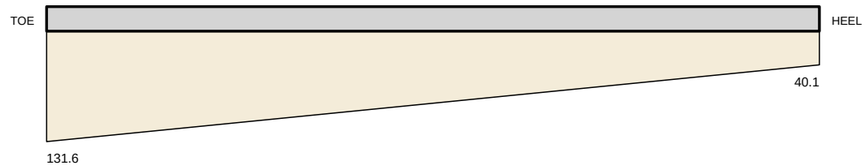
SECTION OF RETAINING WALL

SCALE 1:40

LATERAL PRESSURE ON THE VIRTUAL BACK



BASE PRESSURE (kPa)



e = 0.302 m, B/6 = 0.567 m, SBC = 200 kPa

CHECK	VALUE	LIMIT	
Overturning	2.64	≥ 1.4	OK
Sliding	1.48	≥ 1.4	OK
Max. base pressure	131.6 kPa	≤ 200	OK
Eccentricity	0.302 m	≤ 0.567	OK

NOTES

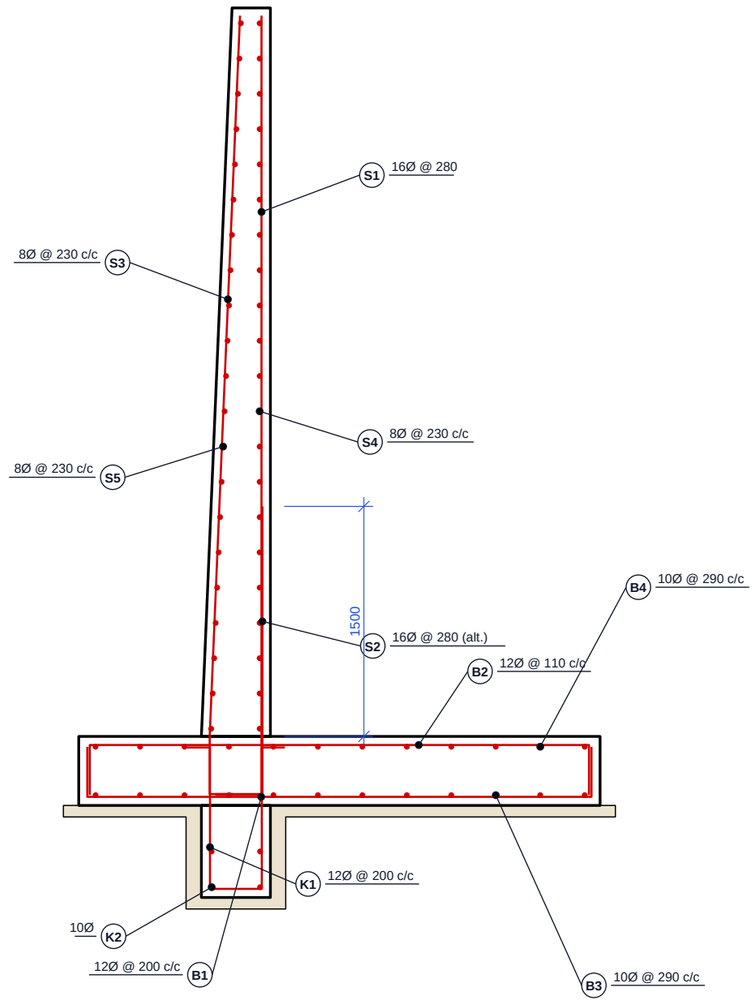
1. All dimensions are in mm and levels in m unless noted.
2. Backfill to be free draining granular material compacted in layers of 200 mm.
3. 100 mm Ø PVC weep holes at 1.5 m c/c with a 300 mm graded filter behind the stem.
4. Contraction joints at 8 to 10 m c/c; wall length considered 10 m.

Design: IS 456:2000 | Generated by nxstructural Retaining Wall Designer

CANTILEVER RETAINING WALL

GENERAL ARRANGEMENT

CLIENT	STRUCTURE			
-	T-SHAPED CANTILEVER WALL, H = 5.20 m			
DESIGNED	CHECKED	DATE	SCALE	SHEET
-	-	01-11-2026	AS SHOWN	1 of 3



REINFORCEMENT DETAILS - SECTION

SCALE 1:40

REINFORCEMENT SCHEDULE

MARK	BARS	LOCATION
S1	16Ø @ 280	Stem, earth face
S2	16Ø @ 280 (alt.)	Stem, earth face (curtailed)
S3	8Ø @ 230 c/c	Stem, front face
S4	8Ø @ 230 c/c	Stem horizontal, earth face
S5	8Ø @ 230 c/c	Stem horizontal, front face
B1	12Ø @ 200 c/c	Base bottom (transverse)
B2	12Ø @ 110 c/c	Base top (transverse)
B3	10Ø @ 290 c/c	Base bottom (longitudinal)
B4	10Ø @ 290 c/c	Base top (longitudinal)
K1	12Ø @ 200 c/c	Shear key U-bars
K2	10Ø	Shear key longitudinal

NOTES

1. Concrete M25, reinforcement Fe 500 (IS 1786).
2. Clear cover: stem 50 mm, base 50 mm.
3. Lap lengths (mm): 8Ø 390, 10Ø 490, 12Ø 590, 16Ø 780; laps staggered, not more than 50 % at a section.
4. Stem bars bent at the bottom mat towards the toe, leg 300 mm (Ld = 777 mm).
5. Alternate bars (S2) stop 1500 mm above the base: theoretical cut-off 1150 mm + max(d, 12ϕ), and at least Ld = 777 mm.
6. S1 and S2 are placed alternately.

Design: IS 456:2000 | Generated by nxstructural Retaining Wall Designer

CANTILEVER RETAINING WALL

REINFORCEMENT DETAILS

CLIENT	STRUCTURE
-	T-SHAPED CANTILEVER WALL, H = 5.20 m

DESIGNED	CHECKED	DATE	SCALE	SHEET
-	-	01-11-2026	AS SHOWN	2 of 3

BAR BENDING SCHEDULE - RETAINING WALL (10 m LONG)

MARK	MEMBER	DESCRIPTION	SHAPE	DIMENSIONS (mm)	DIA	SPACING	NOS	CUT LEN (m)	TOTAL (m)	kg/m	WEIGHT (kg)
S1	Stem	Main bars, earth face (full height)		a=5080, b=300	16	280	36	5.348	192.5	1.580	304.2
S2	Stem	Main bars, earth face (alternate, stop 1500 above base)		a=1876, b=300	16	280	35	2.150	75.2	1.580	118.9
S3	Stem	Vertical bars, front face		a=5080, b=150	8	230	44	5.214	229.4	0.395	90.6
S4	Stem	Horizontal bars, earth face		a=9900	8	230	21	9.900	207.9	0.395	82.1
S5	Stem	Horizontal bars, front face		a=9900	8	230	21	9.900	207.9	0.395	82.1
B1	Base slab	Transverse bars, bottom (toe), legs up		a=3288, b=326	12	200	50	3.892	194.6	0.889	173.0
B2	Base slab	Transverse bars, top (heel), legs down		a=3256, b=326	12	110	91	3.860	351.3	0.889	312.2
B3	Base slab	Longitudinal bars, bottom		a=9900	10	290	12	9.900	118.8	0.617	73.3
B4	Base slab	Longitudinal bars, top		a=9900	10	290	12	9.900	118.8	0.617	73.3
K1	Shear key	U-bars anchored in the base, legs bent along the top mat		a=338, b=922, c=150	12	200	50	2.386	119.3	0.889	106.0
K2	Shear key	Longitudinal bars		a=9900	10	-	4	9.900	39.6	0.617	24.4

STEEL ABSTRACT

DIAMETER (mm)	WEIGHT (kg)
8 mm	254.9
10 mm	171.1
12 mm	591.3
16 mm	423.2
TOTAL	**1,440.4 kg (1.440 t)**

NOTES / QUANTITIES

1. Cutting lengths deduct 2ϕ per 90° bend; bars over 12 m are lapped (IS 456 cl 26.2.5).
2. Concrete M25: 34.62 m³; steel 41.6 kg/m³.
3. Formwork 116.0 m²; PCC (75 mm) 2.55 m³.

Design: IS 456:2000 | Generated by nxstructural Retaining Wall Designer

CANTILEVER RETAINING WALL

BAR BENDING SCHEDULE

CLIENT	STRUCTURE
-	T-SHAPED CANTILEVER WALL, H = 5.20 m

DESIGNED	CHECKED	DATE	SCALE	SHEET
-	-	01-11-2026	NTS	3 of 3