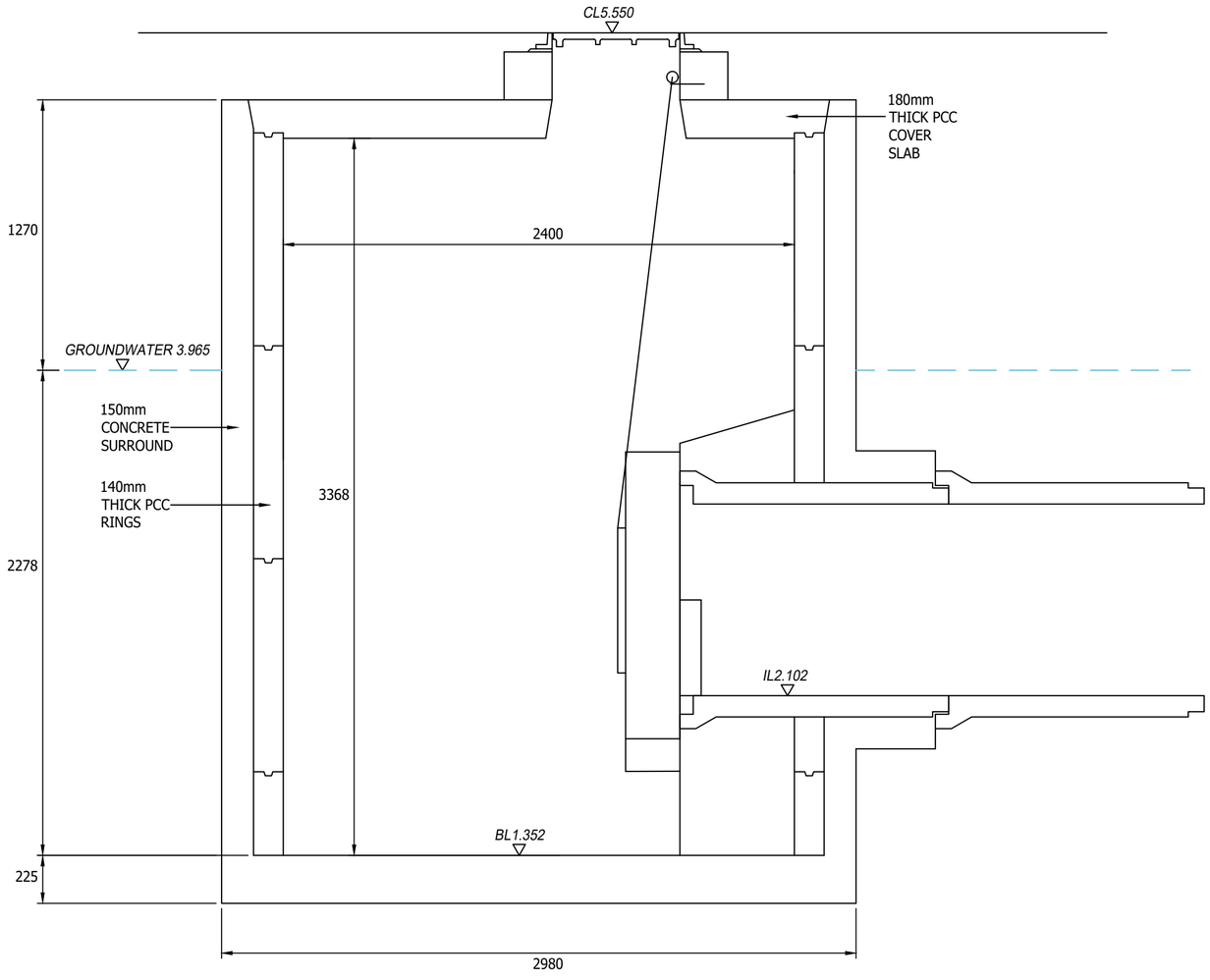


SWMH45 CONTROL

FLOTATION CALCULATIONS

WATER DISPLACED BY CHAMBER:

2.4m I/DIA., VOLUME	= πr^2 x d
	= π x 1.490² x 2.503
	= 17.458m³
MASS = pw x V	= 1000 kg/m³ x 17.458
	= 17458 kg
x g (9.8 m/s²)	= 171088.4 N
	= 171.088 kN
FACTOR OF SAFETY	= 1.2
i.e 171.088 x 1.2	**= 205.306 kN** (BUOYANCY FORCE)

CHAMBER SELF-WEIGHT:

COVER SLAB	= 2865 kg
x g (9.8 m/s²)	= 28077 N
	= 28.077 kN
RINGS (excl. base)	= 3.368m DEEP
RINGS (area)	= $\pi r^2_{(1)} - \pi r^2_{(2)}$
	= (π x 1.34²) - (π x 1.20²)
	= 5.641 - 4.524
	= 1.117m²
RINGS (volume)	= 1.117 x 3.368 = 3.762m³
MASS	= 3.762m³ x 2140 kg/m³
	= 8050 kg
x g (9.8 m/s²)	= 78890 N
	= 78.89 kN
SURROUND (excl. base)	= 3.548m DEEP
SURROUND (area)	= $\pi r^2_{(3)} - \pi r^2_{(1)}$
	= (π x 1.49²) - (π x 1.34²)
	= 6.975 - 5.641
	=1.334m²
RINGS (volume)	= 1.334 x 3.548 = 4.733m³
MASS	= 4.733m³ x 2500 kg/m³
	= 11832.5 kg
x g (9.8 m/s²)	= 115958.5 N
	= 115.95 kN
CONCRETE BASE	= 0.225m DEEP
BASE (volume)	= πr^2 x d
	= (π x 1.49²) x 0.225
	= 1.569m³
MASS	= 1.569m³ x 2500 kg/m³
	= 3922.5 kg
x g (9.8 m/s²)	= 38440.5 N
	= 38.44 kN

i.e. CHAMBER SELF-WEIGHT TOTAL
= 28.077 + 78.89 + 115.95 + 38.44
= 261.357 kN

261.357 > 205.306 kN ∴OK (NO FLOTATION)

Notes

1. The location, size, depth and identification of existing services that may be shown or referred to on this drawing have been assessed from non intrusive observations , record drawings or the like. The contractor shall safely carry out intrusive investigations, trial holes or soundings prior to commencing work to satisfy himself that it is safe to proceed and that the assessments are accurate. Any discrepancies shall be notified to gta prior to works commencing.

2. Prior to commencement of works the contractor shall provide co-ordinated and dimensioned installation drawings and calculations and allow 10 working days for gta`s checking procedure prior to proceeding with those works or the ordering of materials.

3. Tender or billing drawings shall not be used for construction or the ordering of materials.

4. Do not scale. All dimensions and levels to be site confirmed.

5. This drawing shall be read in conjunction with all relevant architects, consultants drawings and specifications, together with H&S plan requirements

6. Copyright : This drawing must not be copied, amended nor reproduced without the prior written agreement of gta.

Rev	Amendments	Date	Dsn	Chk
T1	INITIAL ISSUE	12.02.20	DMS	ds

Status: INFORMATION

Client: BARRATT HOMES

Project: PEBBLE WALK, SINAH LANE HAYLING ISLAND, HANTS

Title: FLOTATION CALCULATIONS SWMH45

Date: FEBRUARY 2020	Scale @ A2: 1:20
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