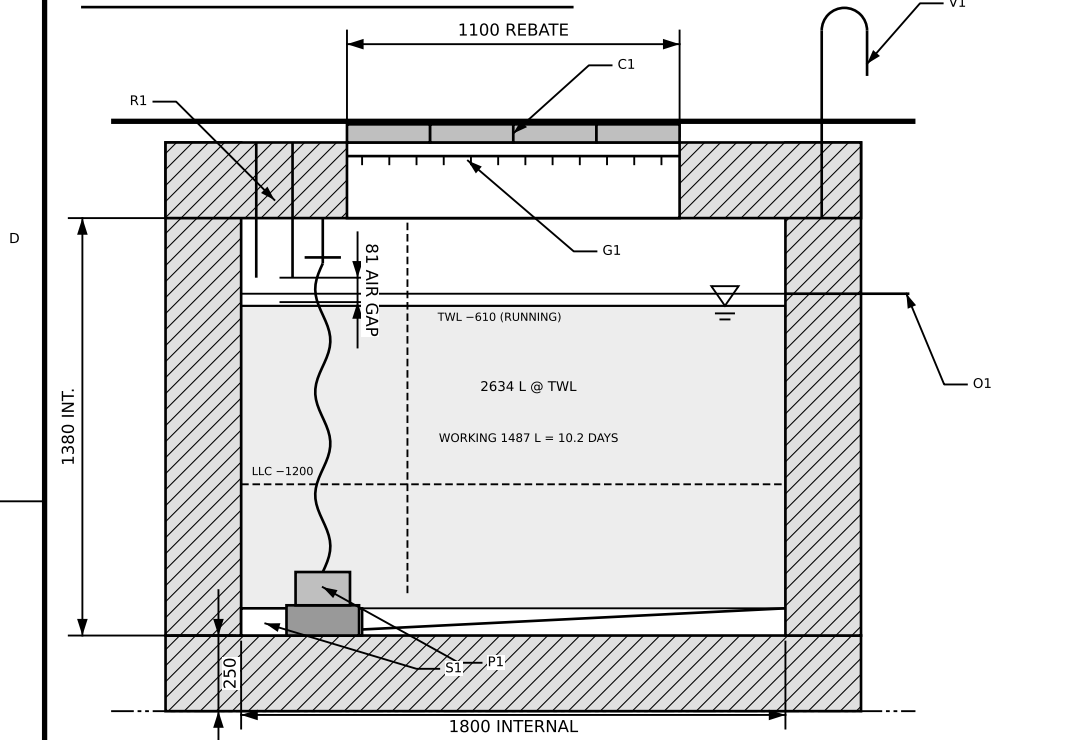


RESERVOIR — SECTION B-B · SCALE 1:25



RESERVOIR LEVEL SCHEDULE — REV E (mm rel. FPL 0.000). RELIEF MUST ALWAYS PRECEDE SURCHARGE.

LEVEL	ELEV.	VOLUME / SET BY
Formation / base underside	−1950	75 blinding on 1200 ga PE
Sump pocket invert, 400 × 400	−1700	Silt collection, wet-vacuum removal
Structural base top (datum floor)	−1700	0 L
Falls screed, high side (1:20)	−1610	Screed occupies 113 L
Pump bell mouth	−1500	200 above the sump invert
LOW-LEVEL LOCKOUT LLC	−1200	1147 L dead · 300 above the bell
TOP WATER LEVEL TWL — PUMP RUNNING	−610	2634 L · electronic fill setpoint
Static level after 31 L drain-back	−598	2662 L · TWL + 12 mm
Mechanical float-valve BACKSTOP	−585	2697 L · 25 ABOVE TWL, 15 below the crest
OVERFLOW WEIR CREST (DN80)	−570	2735 L · ≥25 below the peak surface
Surface at max. overflow, 86 L/min	−545	2798 L · 25 mm of head on a DN80 crest
DN110 RETURN ARRIVAL INVERT (1:60)	−517	28 mm ABOVE the peak overflow surface
Internal soffit	−320	3365 L
Cover-frame rebate formation	−160	1100 × 1100 × 90 deep; slab locally 340
Roof slab top (general)	−70	250 thick
Working volume LLC → TWL	590	1487 L = 10.2 days at 146 L/day
Air gap, invert −517 to static −598	82	≥50 required. A DRAINAGE dimension —
		NOT a BS EN 1717 backflow air gap

SECTION KEY

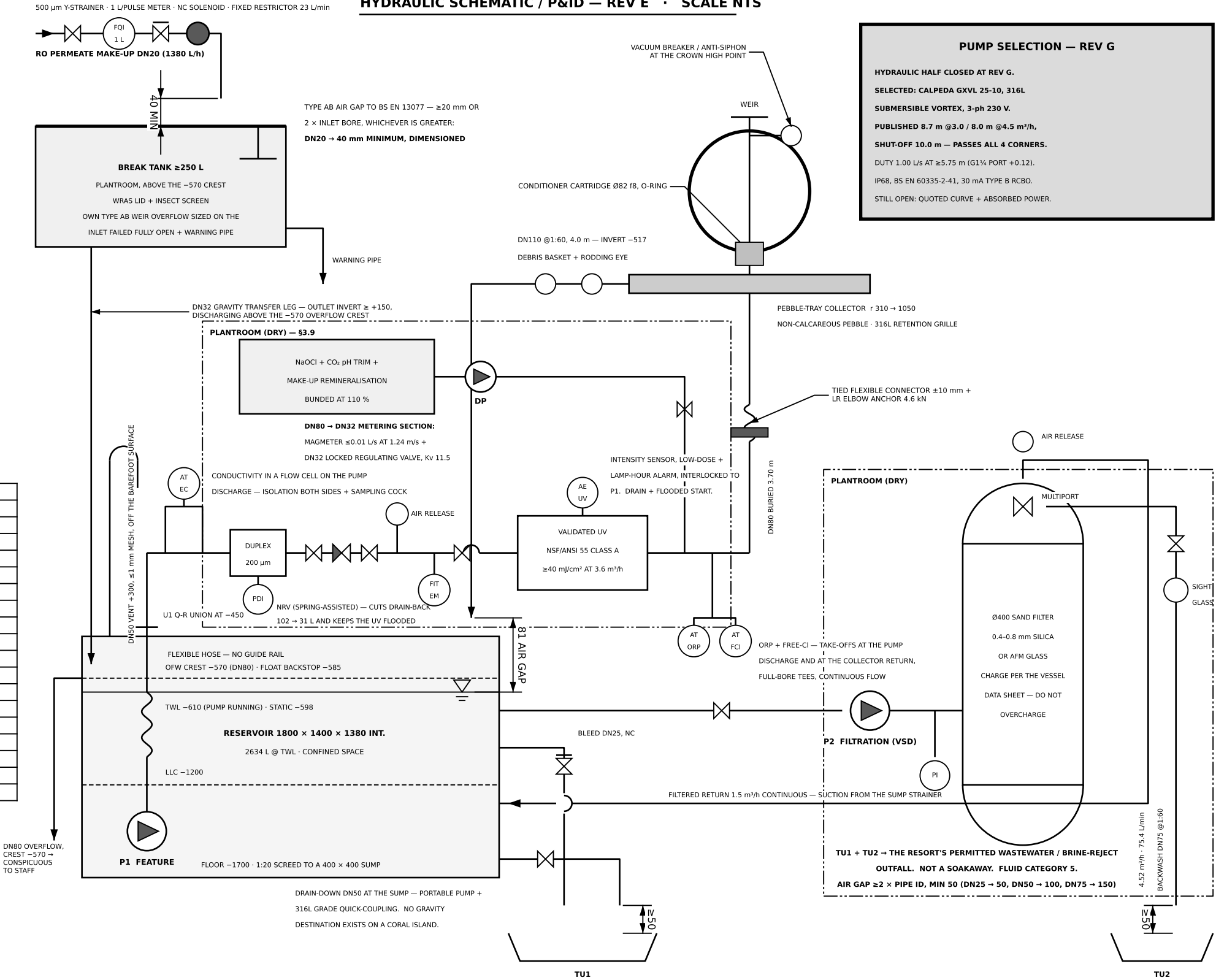
- C1 4-LEAF 316 RECESSED PAVING-INFILL COVER, EN 124 B125, 900 × 900 CLEAR IN AN 1100 × 1100 × 90 DEEP REBATE (slab locally 340 at the trimmer). EACH LEAF ≤40 kg FILLED, lifting keys supplied, two-person lift. SEALED with a continuous EPDM gasket and stainless clamping. Two leaves would have been =72 kg each and the recess had ZERO depth left for the tray.
- G1 LOAD-RATED 316L SAFETY GRILLE BENEATH THE COVER — hinged, retained, ≤100 mm aperture. THE DROP IS 540 mm OF FREE FALL PLUS 1090 mm OF WATER = 1630 mm.
- P1 SUBMERGED FEATURE PUMP on a 316L pedestal: flexible hose rising to a QUICK-RELEASE UNION AT −450 ±25; lifting chain to grade. NO GUIDE RAIL / AUTO-COUPLING.
- S1 1:20 NON-STRUCTURAL SCREED TO A 400 × 400 SUMP POCKET, 316L washdown quick-coupling, DN50 drain-down. Solids removal is by WET-VACUUM WAND — no realistic fall transports coral sand.
- V1 DN50 316L VENT SWAN-NECK ≥300 above paving AND above the design floor level, ≤1 mm mesh, TERMINATED OFF THE BAREFOOT SURFACE.
- O1 DN80 OVERFLOW / WARNING PIPE, CREST −570, sized on the RESTRICTED make-up 23 L/min + 5.2 L/min projected-catchment storm = 29 L/min at 12 mm of head. Discharge conspicuous TO STAFF.
- R1 DN110 GRAVITY RETURN, 4.0 m at 1:60, ARRIVING AT INVERT −517 (d/D 0.219, v 0.73 m/s, τ 2.21 N/m² — self-cleansing). Rocker pipes at each structure; the post-installation invert survey is a HOLD POINT.

PUMP DUTY ENVELOPE — REV E. Rev D quoted 3.0 m, computed at the single most favourable system state.

TDH CORNER	STATIC	TDH	P_elec
TWL clean	2.610	4.505 m	147 W
TWL fouled	2.610	5.005 m	163 W
LLC clean	3.200	5.095 m	166 W
LLC FOULED — GOVERNS	3.200	5.595 m	182 W

THE REV D DUTY EXCEEDED THE SHUT-OFF HEAD OF THE MACHINE CLASS DISCUSSED (4.5-5.0 m). FLOW WOULD GO TO ZERO — AT LOW TANK LEVEL IN DIRTY CONDITION, EXACTLY WHEN IT WOULD NOT BE DIAGNOSED AS A PUMP-SIZING ERROR.

HYDRAULIC SCHEMATIC / P&ID — REV E · SCALE NTS



RESERVOIR, TEMPORARY WORKS AND CONTROLS

1. CRACK WIDTH w_k ≤0.15 mm (BS EN 1992-3 TC1). BS 8102 Type A external tanking to the OUTER face + Type B watertight concrete. INTERNAL WRAS / NSF-61 SOLVENT-FREE EPOXY LINING TO ALL INTERNAL FACES.
2. CONSTRUCTION-STAGE FLOTATION GOVERNS AND FAILS: $U_0/9W = 1.098$ with the roof absent — it is a quarter of the stabilising weight and is not there during dewatering. REQUIRES CONTINUOUS DEWATERING WITH A STANDBY PUMP AND A STANDBY GENERATOR, OR ≥800 mm OF WATER BALLAST RETAINED. The in-service empty case passes at 0.542.
3. WELLPOINT DEWATERING, NOT AN OPEN SUMP; include the piping / base-heave check. Permitted discharge point with turbidity and settlement control — EPA consent BEFORE issue.
4. Settlement monitoring of the sphere pad throughout dewatering: =1.5 mm is the same order as the ±1.0 mm weir-level tolerance the clinging-film design depends on.
5. Pour sequence: base in one pour, walls in one pour, hydrophilic waterstop at the kicker, 7-day continuous wet curing.
6. RESERVOIR, COLLECTOR CHAMBER AND THE ANCHORAGE PIT AT −450 ARE ALL CONFINED SPACES. Continuous forced ventilation DURING occupancy: gas-test suite O₂, LEL, H₂S, CO, Cl₂; pump, lighting, dosing and UV electrically AND chemically isolated and LOCKED OFF; fixed 316L ladder plus a cast-in davit / tripod anchor socket.
7. CONTROLS: S7-1200 class PLC — ≥16 DI, ≥8 AI (4-20 mA), ≥12 DO, ≥2 AO, plus hardwired safety trips. A LOGO! class unit has no analogue inputs and cannot run this plant.
8. DEAD-LEG SCHEDULE REQUIRED (HSG274 Pt 3): drain-down, wash-down, bleed, make-up downstream of the break tank, backwash waste, and the filter when idle. ≤2×D rule; weekly automatic flush solenoids, logged; the filtration loop runs continuously.
9. WASH-DOWN: a "Type AA hose union tap" is not a thing. Fit a TYPE DC PIPE INTERRUPTER with a permanent atmospheric vent, or feed wash-down from the break tank.

PUMP SELECTION — REV G

HYDRAULIC HALF CLOSED AT REV G.

SELECTED: CALPEDA GXVL 25-10, 316L

SUBMERSIBLE VORTEX, 3-ph 230 V.

PUBLISHED 8.7 m @3.0 / 8.0 m @4.5 m³/h,

SHUT-OFF 10.0 m — PASSES ALL 4 CORNERS.

DUTY 1.00 L/s AT ≥5.75 m (G1¼ PORT +0.12).

IP68, BS EN 60335-2-41, 30 mA TYPE B RCBO.

STILL OPEN: QUOTED CURVE + ABSORBED POWER.

SPA FOUNTAIN — B7 SPA, MALDIVES

SPA-F-SH09 — RESERVOIR, PLANT AND HYDRAULIC SCHEMATIC (P&ID)

DRAWN: NaXief Eng.	CHECKED: NX 2026-09-06	APPROVED: I. NAZEEF 2026-09-06	STATUS: IFF REV G.3
DATE: 2026-09-06	REV: G.3	UNITS: mm	SCALE: AS NOTED
A3 · SHEET 9/25			

ISSUED FOR FABRICATION — REV G.3 · HOLD POINTS PER SH42

WORK TO FIGURED DIMENSIONS · ISO 2768-mK U.O.S.