FIGURE B.8 **TYPICAL MANHOLE DETAIL - TYPE 1A** Depth from cover level to soffit of pipe 3 m to 6 m

Mortar bedding and haunching to cover and frame		600 mm x 600 mm clear opening cover complying with BS EN 124 and BS 7903
to Note 5		See Note 2
Minimum 2 courses of Class B engineering bricks or precast concrete		— Minimum clear access 600 mm
cover frame seating rings		900 mm minimum clear access behind ladder
675 mm maximum to first Iadder rung from cover level		——— Shaft diameter 1200 mm
On manholes less than 1.5 m diameter reducing slab not to be used and PC rings to continue up to cover slab	-230 mm	Precast concrete manhole sections and cover slab to be bedded with mortar, plastomeric —or elastomeric seal conforming to
In-situ concrete to be GEN3 (designed to BRE Special Digest 1— Concrete in Aggressive Ground)	-230 mm	BS EN 1917 and BS 5911-3 See Note 1
Lifting eyes in concrete	∧ ↓ ↓ ↓ ↓	 Concrete surround 150 mm thick
	Table A for PC ring diameter	The bottom precast section
High-strength concrete topping to be brought up to a dense, smooth face,		to be built into base concrete minimum 75 mm
neatly shaped and finished		Benching slope to
(minimum thickness 20 mm)		be 1:10 to 1:30 Construction joint
Self-cleaning toe holes to be provided where channel exceeds 600 mm wide		Distance between top of pipe and underside of precast section to be nimum 50 mm to maximum 300 mm
Inverts to be formed		-
		- See Figure B.14 and
Joint to be as close as possible to face of manhole to permit satisfactory joint and		Note 6 for rocker pipe details
subsequent movement		
Minimum width of benching for landing area to be 500 mm from the edge of the ladder to the edge of the channel		
Ladder complying with BS EN 14396 See Note 4		Minimum width of benching to be 225 mm
		Pipe joint with channel to be located minimum 100 mm inside face of manhole
Note: Opening to be located centrally over 900 mm shaft and offset approximately 200 for 1200 mm diameter shaft with ladder	mm	
	N	ot to scale

Table C

No	Nominal diameter (mm)	Maximum effective length (m)	
	150 - 600	0.6	
	601 - 750	1.00	
	over 750	1.25	

All pipes entering the bottom of the manhole to have soffits level.

FIGURE B.12 **TYPICAL MANHOLE DETAIL - TYPE 2**

Maximum depth from cover level to soffit of pipe 3.0 m

Mortar bedding and haunching to cover and frame to Note 5 Minimum 2 courses of Class B engineering bricks or precast	600 mm x 600 mm clear opening cover complying with BS EN 124 and BS 7903 See Note 2
concrete cover frame seating rings	——— Minimum clear access 600 mm
step rung from cover level	Precast concrete manhole sections and cover slab to be bedded with mortar, plastomeric or elastomeric seal conforming to
Lifting eyes in concrete rings to be pointed	BS EN 1917 and BS 5911-3 See Note 1
In-situ concrete to be GEN3	150 mm concrete surround
(designed to BRE Special Digest 1 Concrete in Aggressive Ground)	Chamber height (not less than 900 mm)
High-strength concrete topping to be brought up to a dense, smooth face,	Benching slope to be 1:10 to 1:30
neatly shaped and finished to all branch connections (minimum thickness 20 mm)	The bottom precast manhole ring to be built into base concrete minimum 75 mm
	Distance between top of pipe
Self-cleaning toe holes to be provided where channel exceeds 600 mm wide	 and underside of precast section to be minimum 50 mm to maximum 300 mm
Inverts to be formed	225 mm to underside of channel
Joint to be as close as possible	See Figure B.14 and Note 6
to face of manhole to permit	for rocker pipe details
Pipe joint with channel to be located minimum 100 mm inside face of manhole	
Double step rungs in accordance with BS EN 13101 See Note 3 for double step details	Minimum width of benching to be 225 mm
500 mm minimum from edge of stepping	

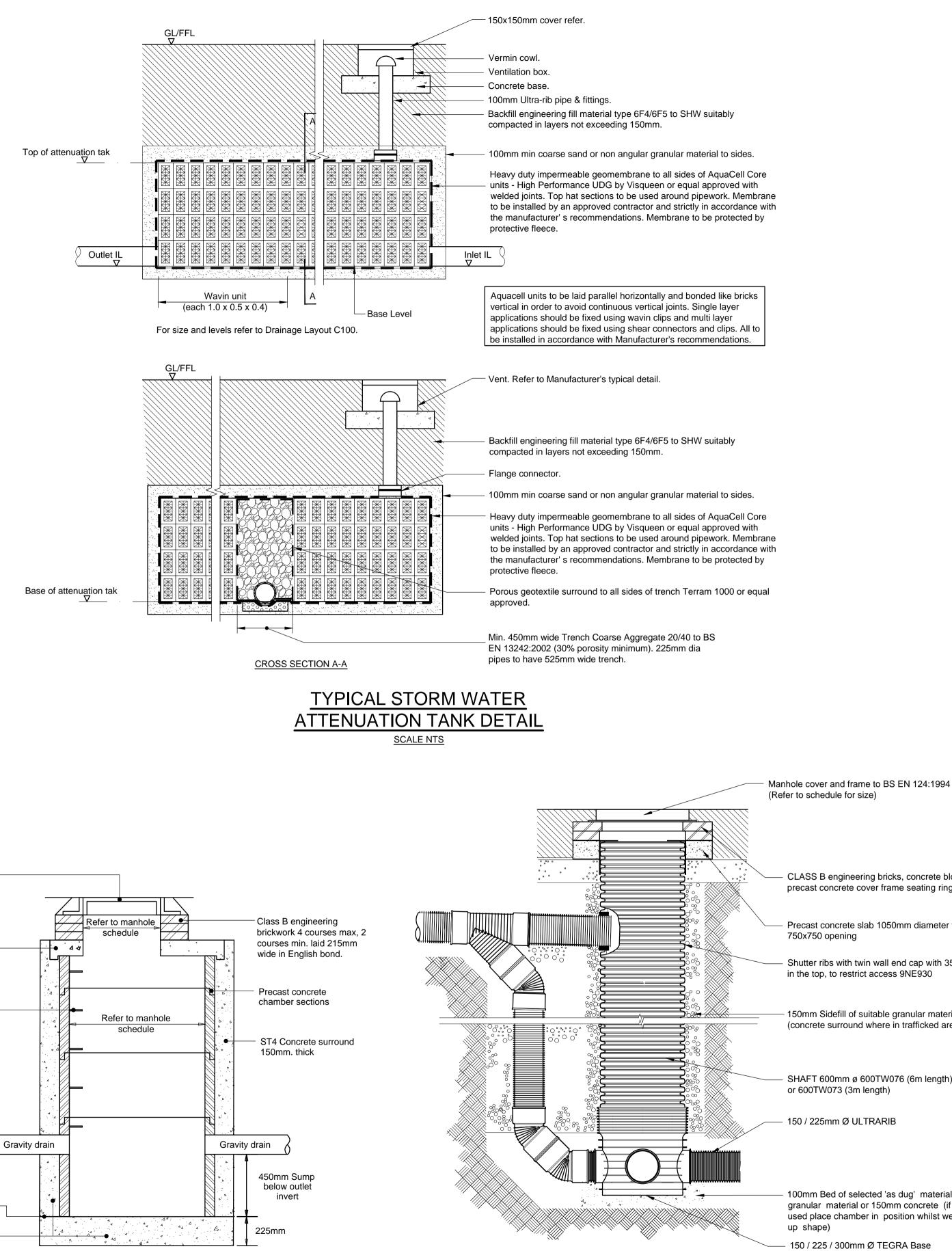
Cast iron cover and frame to BS EN 124:1994 (Refer to manhole schedule for size and load category).

150mm. Thick heavy duty reinforced concrete cover slab (B.S.5911) bedded with class M1 or M2 mortar or mastic sealant

Step irons or ladder To BS 1247. Max. 675mm from cover level to first step iron or ladder rung

Construction joint -

Grade C20P concrete to base and benching



CATCHPIT MANHOLE

Scale 1:20

TYPICAL 600Ø PPIC INSPECTION CHAMBER DETAIL BACKDROP SCALE 1:20

NOTES

- 1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SPECIALIST DRAWINGS AND SPECIFICATIONS
- 2. DO NOT SCALE FROM THIS DRAWING IN EITHER PAPER OR DIGITAL FORM. USE WRITTEN DIMENSIONS ONLY.
- 3. Invert levels and positions of existing drains / chambers / sewers where new connections are to be made must be checked and confirmed to the engineer prior to the commencement of any works.
- 4. All drainage works shall be carried out in accordance with the requirements of the Local Authority, the Environment Agency and in conjunction with all relevant British Standards, Codes of Practice and 'Sewers for Adoption' 7th Edition and any addendums as appropriate.
- 5. All drainage shall comply with the typical details and the requirements of BS EN 752 and Part H of the Building Regulations.
- 6. Any part of the existing drainage system to be retained as part of the new scheme shall be cleaned and inspected. Any structural defects shall be repaired using appropriate and approved means.
- 7. For setting-out dimensions of SVP's, RWP's etc, refer to Architect's or Mechanical Engineer's drawings. Positions shown are indicative and subject to final design.
- 8. All foul and RWP connections shall be 100mm diameter unless otherwise specified.
- 9. All precast concrete units used in the drainage works shall be manufactured using sulphate resisting cement.
- 10. Manhole covers and frames shall be to BS EN 124 and shall be Kitemarked. Covers and frames shall be heavy duty D400 in carriageways and vehicular areas and medium duty B125 in footways and soft landscaping. In blocked/concrete paved areas covers shall be recessed fabricated steel. All recessed covers shall in accordance with the FACTA association gradings.
- 11. All internal inspection chambers to be recessed, double sealed with screw down covers.
- 12. Cover levels are to be adjusted locally to suit finished ground levels.
- 13. At least one soil pipe at the head of each foul run shall vent to the atmosphere.
- 14. Existing drainage to be removed is to be broken out to bed level and void backfilled with granular material, compacted in layers not exceeding 250mm.
- 15. All drain runs from SVP's, stub stacks or FW gullies to be laid at 1:40 gradient unless otherwise stated. All RWP's to be laid 1:80 min unless otherwise stated.
- 16. All manholes / inspection chambers in block paved areas, to have recessed covers. MH covers in paved areas to have cover & frame orientated 'square' with paving to minimise cut slabs or blocks.
- 17. All private drainage to be laid to levels shown using flexibly jointed pipes, either uPVC to BS 4660 and BS 5481 or vitrified clayware to BS EN 295. Pipes below structural building slabs or basements shall be Cast Iron to BS 437.
- 18. Rodding eyes, etc are to be laid to manufacturers minimum cover and depth to allow adequate fall from adjoining unit.
- 19. All proposed trees to have appropriate tree barrier details linking pits to ensure roots are directed away from drainage.
- 20. Where new sewers are constructed within 5m of a new or existing tree the sewer sha be concrete encased against root intrusic drainage details.
- 21. All new drainage to be jetted and CCTV surveyed on completion. Contractor to make sure that the drainage is fully operational. Refer to Drainage maintenance manual for maintenance details.
- 22. All runs connecting into the public drainage network to be vitrified clay, extra length to BS EN 295 or BS65 with plain sleeved or socketed flexible joints.
- 23. CDM note: All pipework, silt traps, catchpits, trapped gullies and attenuation tanks to be regularly inspected every three months and cleared out on a regular frequency for the first nine months. After this period the frequency can be reduced to every six months. Porous surface to be regularly swept three times a year to remove the silt.
- 24. This drawing is to be read in conjunction with all relevant Conisbee drawings.
- 25. HEALTH AND SAFETY: The works shall be carried out by specialist competent and experienced contractors who are members of a recognised national organisation. Operatives shall have received full and appropriate training for the operations they are to undertake. All work shall be carried out in accordance with all pertinent Health and Safety Regulations.

NOT FOR CONSTRUCTION

P1 12.12.16	Issued for Information	JC	TG
Rev Date	Description	Drawn	Check



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Drawn JC
Engineer JC
Project No 140009
 Drawing No C132

Revision

P1

Drawing Status

Project

PRELIMINARY

Highgate Newton

Community Centre

London, N19 5DQ

DETAILS, SHEET 3

(Refer to schedule for size)

- CLASS B engineering bricks, concrete blocks or precast concrete cover frame seating rings
- Precast concrete slab 1050mm diameter with 750x750 opening
- Shutter ribs with twin wall end cap with 350mm hole in the top, to restrict access 9NE930
- 150mm Sidefill of suitable granular material (concrete surround where in trafficked areas).
- SHAFT 600mm ø 600TW076 (6m length) or 600TW073 (3m length)
- 150 / 225mm Ø ULTRARIB
- 100mm Bed of selected 'as dug' material or granular material or 150mm concrete (if concrete used place chamber in position whilst wet to take
- 150 / 225 / 300mm Ø TEGRA Base

Title

DRAINAGE CONSTRUCTION