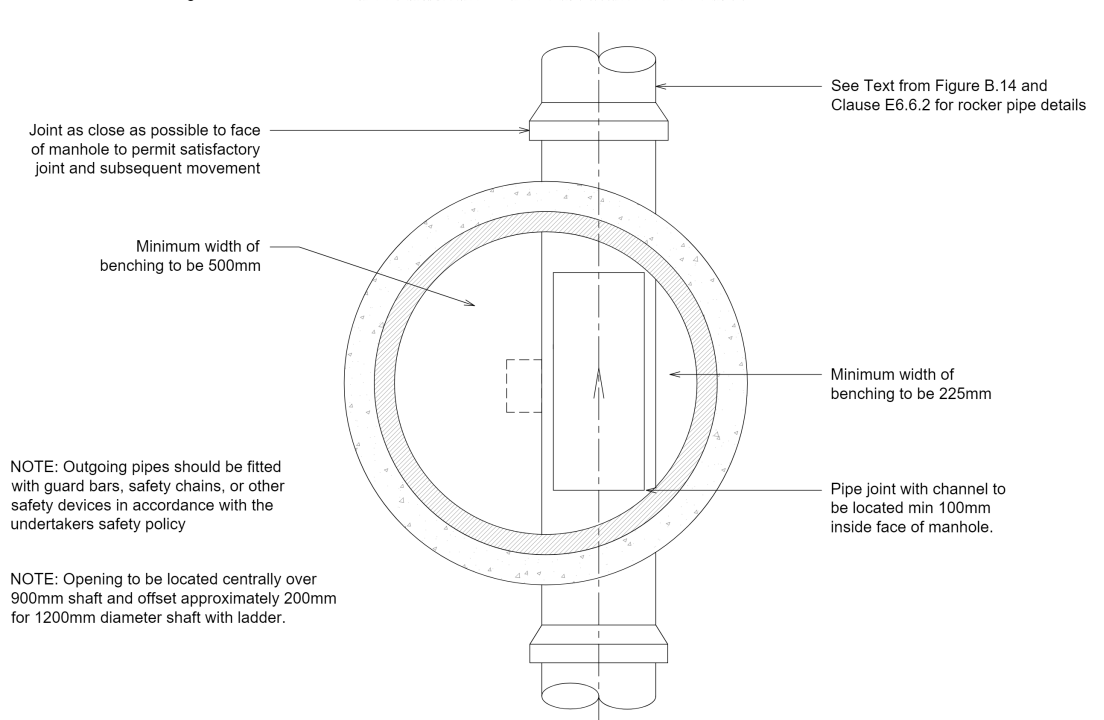
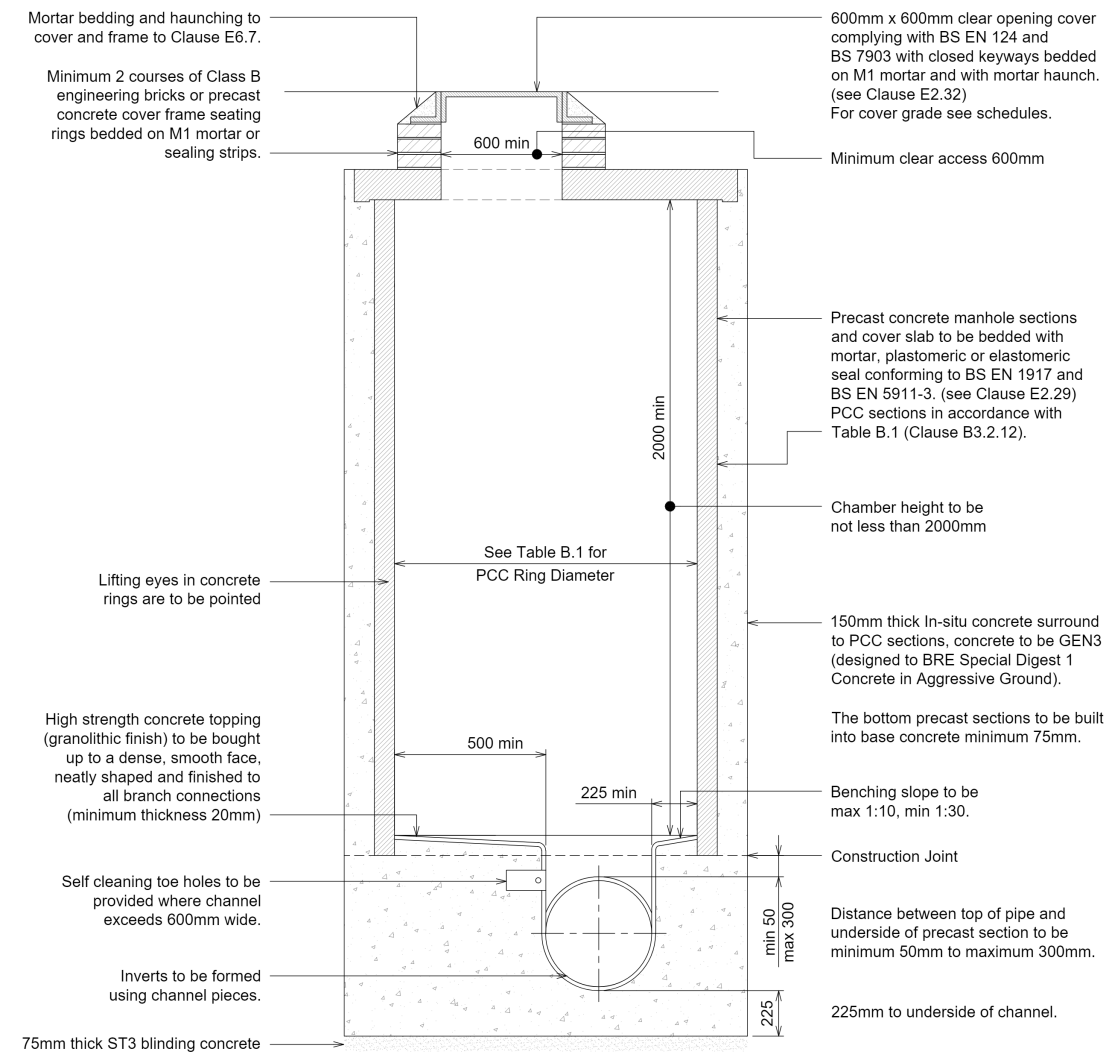


Typical Type 1B Chamber Detail

scale 1:25

- Depth from cover level to soffit of pipe 3.0m to 6.0m



NOTE: Outgoing pipes should be fitted with guard bars, safety chains, or other safety devices in accordance with the undertakers safety policy

NOTE: Opening to be located centrally over 900mm shaft and offset approximately 200mm for 1200mm diameter shaft with ladder.

Table B.1 - Clause B3.2.12 - Manhole Diameters

Nominal internal diameter of largest pipe in manhole (mm)	Minimum nominal internal dimension of manhole (mm)
Less than 375	1200
375 - 450	1350

Clause E6.7 - Setting Manhole Covers and Frames

1. Manhole frames shall be set to level, bedded and haunched externally over the base and sides of the frame in mortar, in accordance with the manufacturers instructions. The frame shall be seated on at least two courses of Class B engineering bricks, on precast masonry units or on precast concrete cover frame seating rings to regulate the distance between the top of the cover and the top rung of the ladder (to be no greater than 675mm). A mortar filler shall be provided where the corners to an opening in a slab are chamfered and the

Clause E2.29 - Precast Concrete Manhole Units

1. Precast concrete manhole units shall comply with BS EN 1917 and BS 5911-3. Units which imposed vertical loads are transferred to the structure. The profiles of joints between units shall be designed to withstand applied loadings from traffic. They shall be used where the soffit of the slab is not to be used.
2. Precast concrete chamber sections shall comply with BS EN 1917 and BS 5911-3.

Clause E2.32 - Manhole Covers and Frames

1. Manhole covers and frames shall comply with BS 7903 and Highways Agency specification for a non rocking design which does not allow water to be trapped.
2. Manhole covers on foul-only sewers shall be of a type which does not allow excessive surface water ingress.
3. As a minimum, Class D400 covers shall be used on pedestrian streets, hard shoulder and residential streets.
4. Minimum frame depths for NRSWA shall be as shown in Table E.6.
5. Class B125 covers shall be used in all other locations.
6. In situations where traffic loading is high, typical residential estate distribution areas, higher specification E600 covers shall be used.
7. All Manholes shall be the non vented type.

Table E.6 Minimum Frame Depths

NRSWA Road Category	Road Description
I	Trunk road and dual carriageway
II	All other A roads
III	Bus service roads
IV	All other roads and residential cul-de-sacs
-	Residential cul-de-sacs

Clause E2.37 - Ladders

1. Ladders in manholes and similar structures shall be made of mild steel or aluminium. They shall be in accordance with BS EN 14396, with width of rungs to be 200mm.
2. Mild steel ladders for vertical fixing shall be in accordance with BS EN 10025-2. After fabrication, ladders shall be painted in accordance with BS EN 1461.
3. Stainless steel ladders for vertical fixing shall be in accordance with BS EN 17-12-2 steel conforming to BS EN 10025-2.
4. GRP ladders shall be manufactured in accordance with BS EN 13706-2 and BS EN 13706-3. They shall be sealed against penetration from the ground. The joints between sections shall be at least 35mm apart.

Clause E6.6 - Pipes and Joints Adjacent to Manholes

1. Where rigid pipes are used, a flexible joint shall be provided as far as is feasible to the outside face of the manhole. The distance between the joint and the manhole shall be at least 150mm for pipe diameters less than 1000mm and shall be compatible with any subsequent pipe.
2. The recommended length of the flexible joint shall be as shown in Table E.12.

Table E.12 Rocker Pipes

Nominal Diameter (mm)	Effective Rocker Length (mm)
150 to 600	100
600 to 750	150
Over 750	200

Text taken from Figure B.14

1. Stub pipes into structures shall be in accordance with the manufacturers instructions.

500 - 700	1500
750 - 900	1800
Greater than 900	Pipe diameter + 900

- brickwork is not flush with the edges of the opening.
2. Frames for manhole covers shall be bedded in a polyester resin based mortar in all situations where covers are sited in NRSWA Road Categories I,II or III (i.e. all except residential cul-de-sacs).

2. No incoming branch is to be less than 100mm from the bottom of the pipes entering the bottom of the