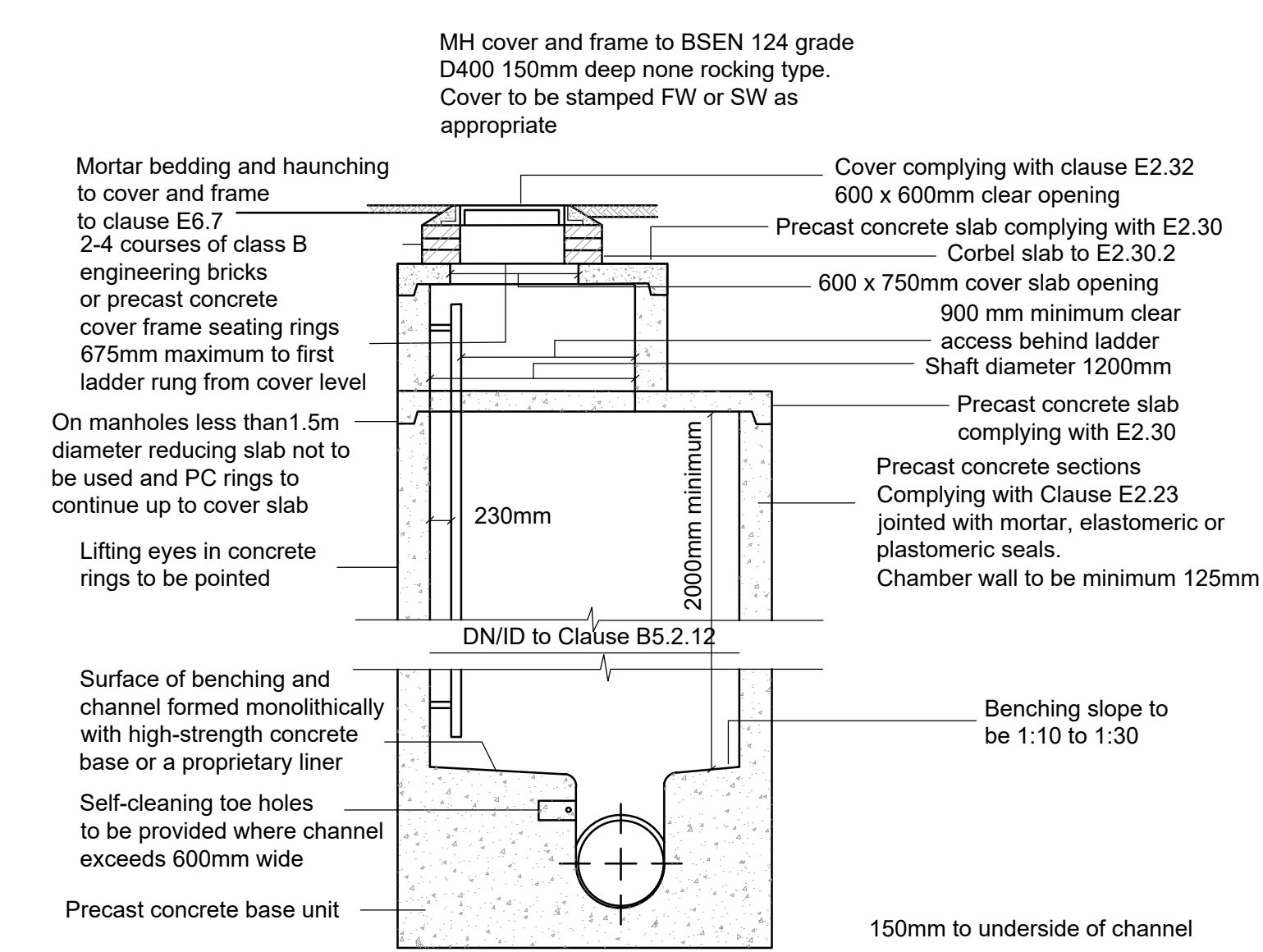
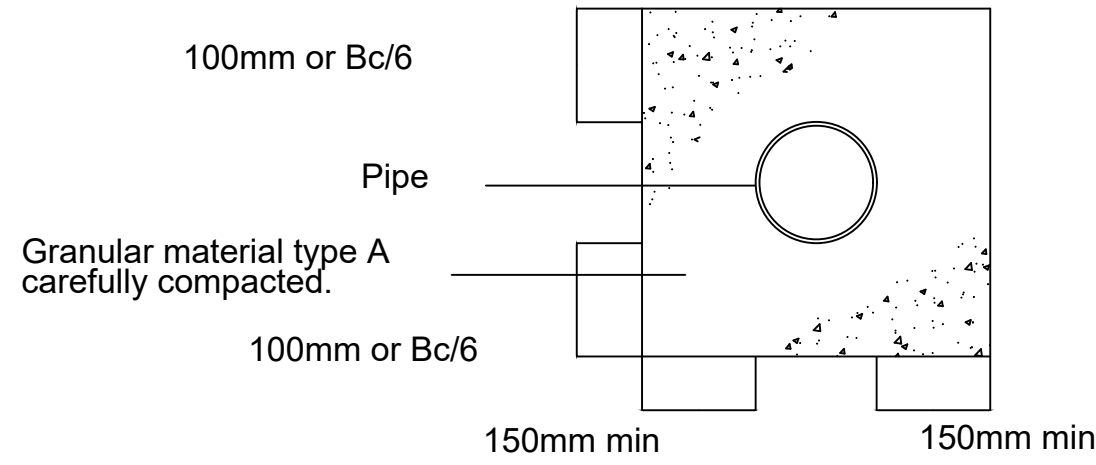




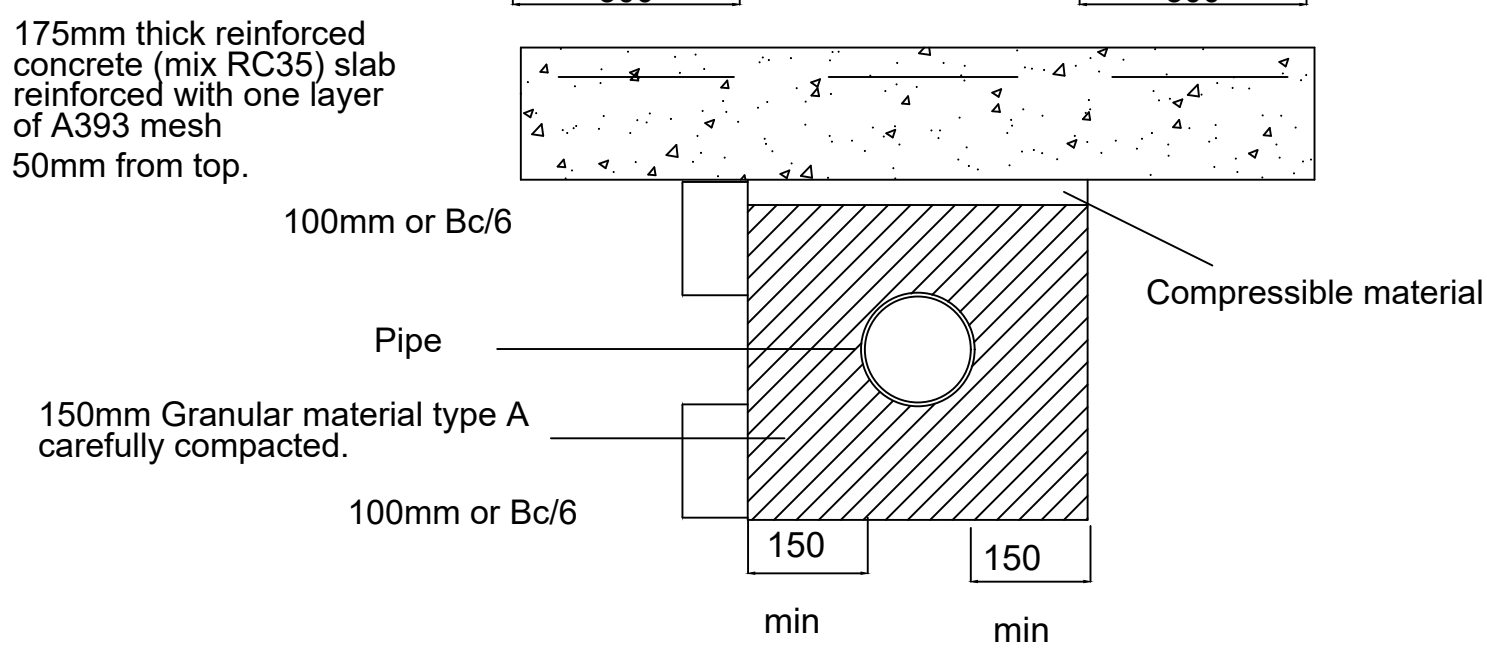
MANHOLE TYPE A1 - Fig B 4

depth to soffit 3 to 6m



CLASS S PIPE BEDDING

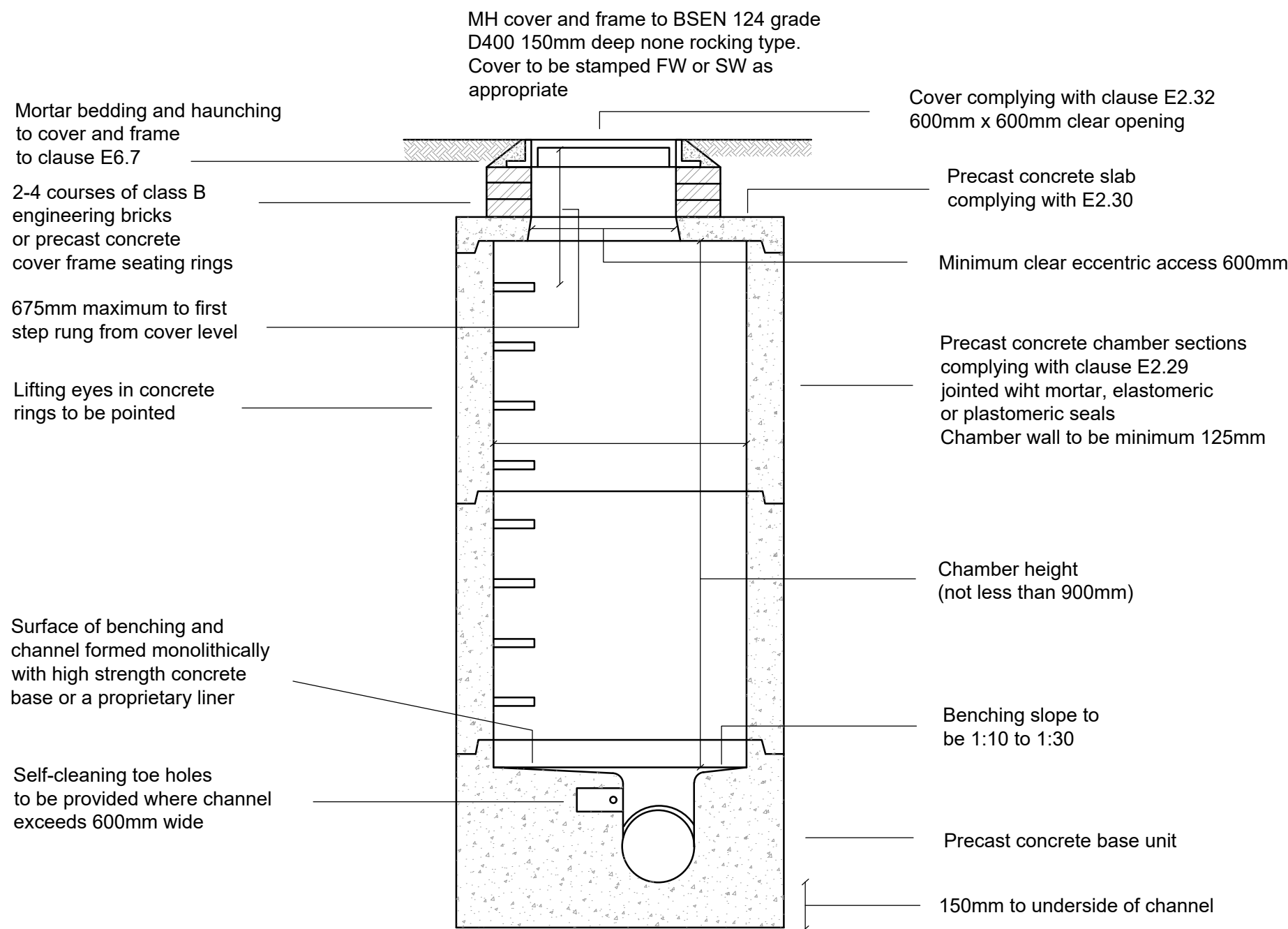
For clay and concrete pipes & foul rising main.



CLASS A PIPE BEDDING

AND CONCRETE PROTECTION DETAIL

FIGURE B27



MANHOLE TYPE B - Fig B9

depth to soffit 1.5 to 3m

INTERNAL DIAMETER OF CHAMBER RINGS	
DIAMETER OF LARGEST PIPE IN MANHOLE (m)	INTERNAL DIAMETER OF MANHOLE (mm)
Less than 375mm	1200
375-450	1350
500-700	1500
750-900	1800
Greater than 900	Pipe diameter + 900

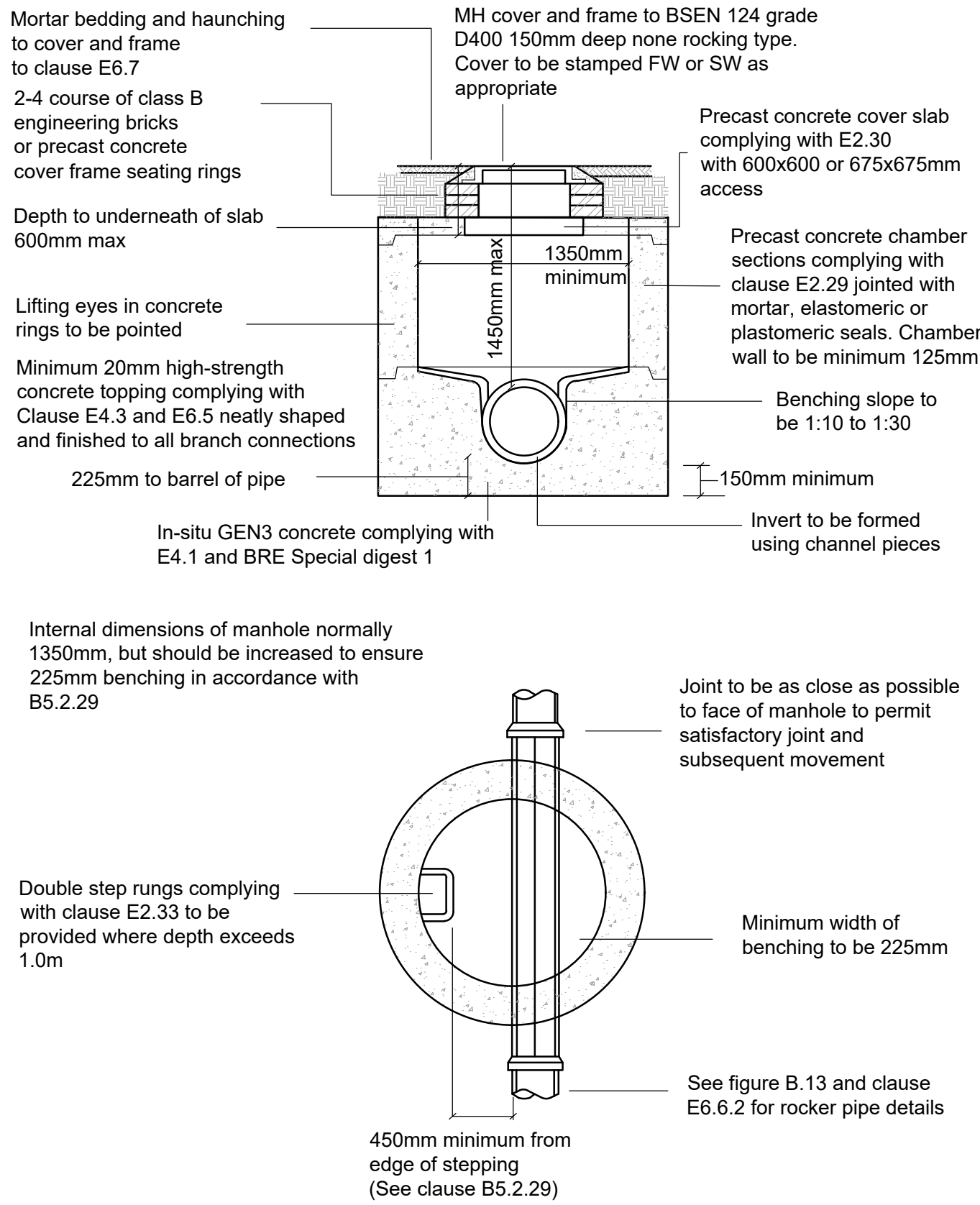
SCHEDULE OF MANHOLE SIZES TYPES A, B & C

*Note minimum diameters should be increased to provide minimum benching dimensions. Exact size of MH to be agreed on site with CoW to ensure all additional connections accommodated without compromising benching width

Type A Material

Nominal Size	Pipe Bedding Requirement
	mm
DN	
150	14 to 5 graded.
225 to 525	14 to 5 graded or 20 to 5 graded.
600 and above	14 to 5 graded or 20 to 5 graded or 40 to 5 graded.

PIPE BEDDING MATERIAL



MANHOLE TYPE C - Fig B15

depth to soffit less than 1.5m
Maximum pipe size 450mm dia

Notes

Any pipes and associated access upstream of the point of demarcation is private and should be constructed in accordance with building regulations

Proximity to structures

The external face of any new sewer or lateral drain should be at least 1.2m from any building or structure, or a distance equivalent to the depth of the sewer below the foundation (whichever is greater)*

- * Except where a sewer or lateral drain with an ID of 150mm or less, with an invert at least 150mm above the base of the foundation and no more than 1100mm deep and should be greater than 100mm from the foundation.

Where not possible, exceptions may be granted provided that

- at least 900mm separates the buildings/structures where a single sewer or lateral is proposed and 100mm where dual systems are proposed
- Depth to invert is no greater than the distance between the buildings/structures
- Sewers or laterals have a nominal ID of 150mm or less
- Sewers or lateral drains have an L of 150mm above the base of the highest foundation
- There is at least 350mm cover above the pipe and there is at least 100mm between the pipe wall and foundation

Note recommendations are intended to allow sufficient working space for future repairs (if required)

Foul sewers and lateral drains should not be constructed under any building or structure except they may cross under a boundary wall not greater than 1.8m high

Proximity to highway

To allow subsequent excavation for a new connection or a repair, pipes should be laid 1m from the kerbline and outside face of manholes 500mm from kerblines (where practicable)

Minimum cover to crown (gravity pipes without protection)

- Domestic gardens/pathways with no vehicle access - 350mm
- Domestic driveways, parking areas (vehicles limited to less than 7.5 tonnes) - 500mm
- Domestic driveways, parking areas (vehicles over 7.5 tonnes) - 900mm
- Agricultural land and public open space - 900mm
- Other highways and parking areas with unrestricted access to vehicles over 7.5 tonnes - 1200mm

Structural design and integrity

Buried pipes in accordance with BS EN 1295-1 and BS 9295

Where minimum covers (above) cannot be met, following protection measures should be provided

- Concrete slab in accordance with figure B 27 OR
- Concrete surround with flexible joints in accordance OR
- Ductile iron pipe

Where there is a risk of tree root intrusion, the sewer system should resist ingress via use of appropriate barrier system

Manholes (rather than inspection chambers) should be provided as a means of access where;

- Depth to soffit is greater than 2m OR
- Diameter of the largest sewer is greater than or equal to 450mm ID
- Where the chamber contains equipment (such as penstock or flow control) requiring maintenance
- Chambers serve more than 10 properties

Distances between access points

Inspection chambers - 45m

Manholes - 50m

Manhole notes

- n-fill covers should not be used unless the developer can demonstrate the cover can be lifted safely by two persons using standard lifting keys and the lateral forces applied by the n-fill will not deform the cover or frame
- Covers in accordance with E2.32 of the Civil Engineering Specification
- Frames and covers should be bedded using a mortar complying with requirements of Design Manual for Roads and Bridges 4.3 Part 5 HA/UK09
- Covers should be BS EN 124 D400, generally loading of residential roads is not sufficient to warrant E600.
- The first manhole upstream from the connection to the existing public sewer should (when constructed) be fitted with a temporary screen to prevent debris from entering. Screens should not be removed until immediately prior to occupation of the premises
- Steeper gradients are preferred to the use of backdrops, where pre-formed chamber bases are used, the angular displacement at the joints should comply with requirements of E5.9.4. Where impracticable, ramped backdrops are preferred

Precast concrete manholes

Shall comply with BS EN 1917 and BS 5911-3 and shall be manufactured from concrete with a design chemical class DC-4

Pipe surround materials

Processed granular and as-dug bedding, sidefill and surround materials shall comply with WIS 4-08-02 and BS EN 1610

Processed recycled granular bed and surround material shall comply with BS EN 13242

Verified Clay Pipes and Fittings

Verified clay pipes and fittings shall have flexible mechanical joints. Pipes shall comply with the relevant requirements of BS EN 295 and BS 65 (surface water pipes only).

Concrete Pipes and Fittings

Unreinforced and reinforced concrete pipes and fittings with flexible joints shall comply with the relevant provisions of BS EN 1916:2002 and BS5911-5:2004 + A1:2010.

All pipes and fittings shall have gasket-type joints of socket and socket or related form, unless otherwise agreed with the Highway and Flood Authority. Particular requirements from the options listed in Appendix A of BS 5911: Part 100 should be shown on the Drawings, March 2017 Version 4.1.5S

Ductile Iron Pipes and Fittings (Highway Authority approval required)

Ductile iron pipes and fittings shall comply with the relevant provisions of BS EN 598. Ductile iron pipelines shall be designed and installed in accordance with the manufacturer's instructions. The internal lining of the pipe, if necessary, shall resist attack by contaminants typically found in highway surface water runoff. The Developer will provide independent soil contamination and resistivity data to determine the required external anti corrosion coating for the pipes and type of pipe seal.

Thermoplastic solid wall pipes and fittings for gravity sewers

Thermoplastic pipes, joints and fittings shall comply with relevant provisions of BS EN 1401-1 (PVC-U) BS EN 1652-1 (PP) or BS EN 12956-1 (PE) as appropriate

Ancillary drainage fittings shall comply with BS EN 13598-1 or BS 4680 as appropriate

Thermoplastics structured wall pipe

Thermoplastic structured wall sewer pipes shall comply with BS EN 13476-1 and WIS 4-35-01 and BS EN 13476-2 or BS EN 13476-3. Pipes shall be BSI Kitemarked or have equivalent third part certification

Pipes less than or equal to 500mm in diameter shall have nominal short term ring stiffness not less than 8kN per m² (SN8). Stiffness of 2kN per m² (SN2) is acceptable for larger pipes subject to structural design load calculations in accordance with BS 5295:2019

Maximum length of pipe for laying is 3m or 10 x DN (whichever is greater)

PLEASE NOTE OUR NEW CONTACT DETAILS IN THE TITLE BOX

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client
project
Proposed residential development at York Gardens, Gosberton
title
Standard sewer details

gleeson				
Proposed residential development at York Gardens, Gosberton				
title				
Standard sewer details				
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scale	VARIOUS	size	A1	
purpose of issue				
Preliminary				
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