

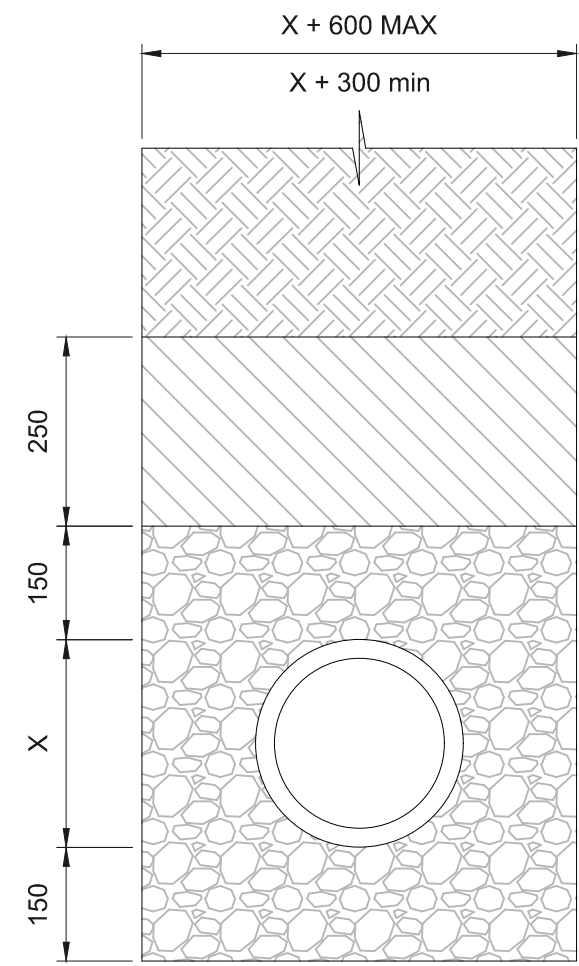
Yorkshire Water reference number:

YORKSHIRE WATER NOTES:-

- All adoptable sewer works and material to be in accordance with "Sewers for Adoption" 6th Edition, The Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum and Kitemarked".
- Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.
- Fill ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
- Yorkshire Water is not obliged to accept filter drain/land drainage runoff into the public sewer network or adoptable drainage System (directly or in-directly). An alternative method of disposal of the land drainage runoff will therefore be required and you will have to liaise with the Local Authority, Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff.
- Cover slabs must carry the BSI Kitemark or will be rejected by Yorkshire Water Inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for Kitemarked cover slab opening sizes.
- Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
- "Sewers must have 5 metres clearance from trees and hedges (please also refer to Figure 2.3 on page 33 in "Sewers for Adoption" 6th Edition for restrictions on tree planting adjacent to sewers)".
- Sewers to be laid in Class "S" Bedding (150mm granular bed and surround). Where depth of cover to top of the sewer is less than 1.2m in highways and verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provide above granular bed and surround.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
- The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate the connections and bends.
- Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm dia manhole rings. Instead it is preferred that you use a type "B" manhole with 1200mm dia or 1500mm dia rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m."

NOTES

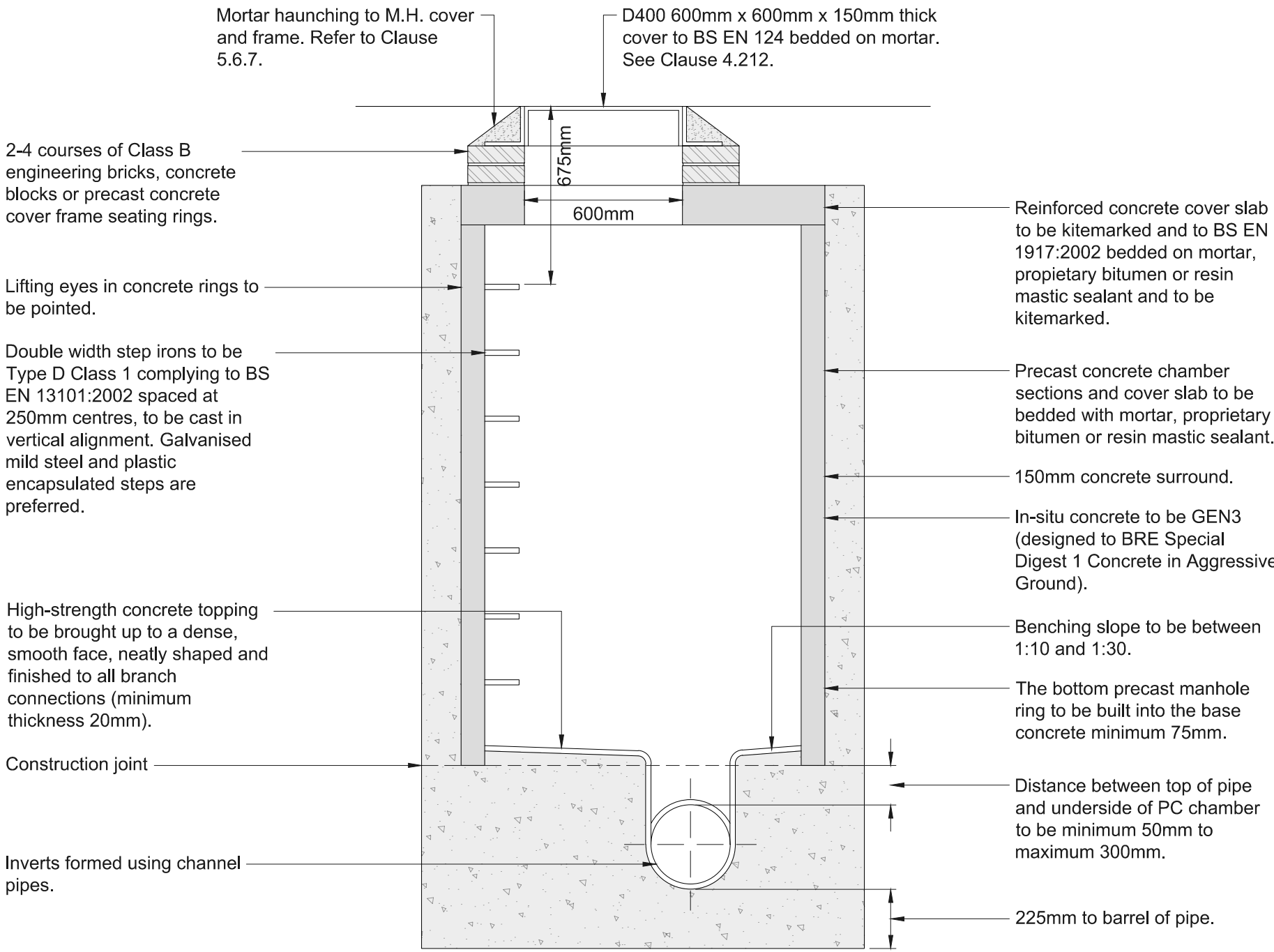
- Existing live connections to be reinstated into the diverted sewer where necessary.
- Existing public sewer to be abandoned to be grubbed up once disused and where reasonably practical.
- Sewers must have a 5.0m clearance from trees and hedges. Existing trees and hedges within the 5.0m of the adopted sewer are to be removed. Due to the proximity of the existing trees the diverted sewer should be laid in ductile iron pipe.



KEY

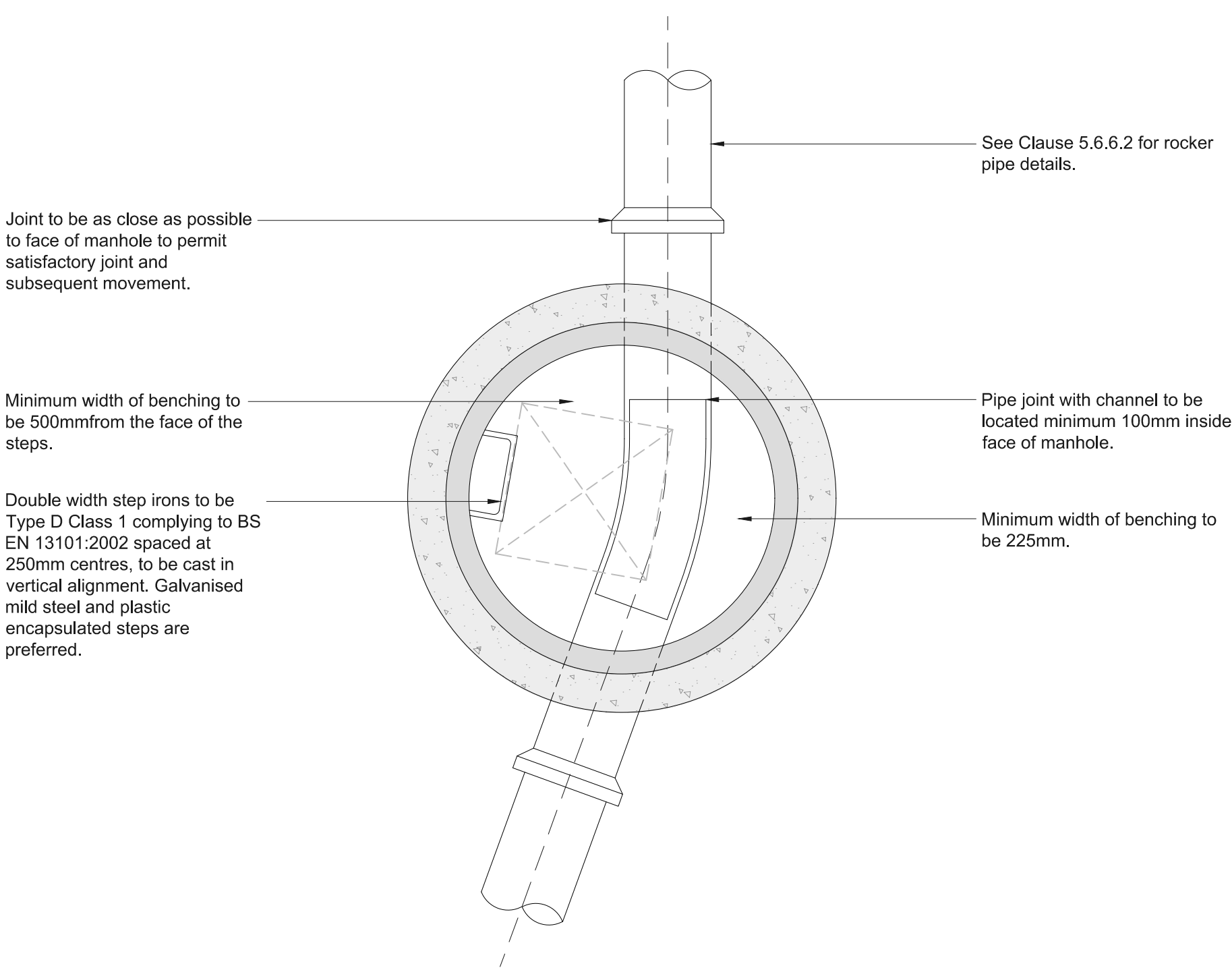
- TYPE A OR C FILTER MATERIAL - GRADED AGGREGATE EITHER 2/14MM OR 4/20MM OF EITHER GRAVEL, CRUSHED ROCK OR RECYCLED AGGREGATE.
- CLASS 8 MATERIAL - GRADED AGGREGATE 0/6MM OF EITHER GRAVEL CRUSHED ROCK OR RECYCLED AGGREGATE.
- BACKFILLED EXCAVATED MATERIAL

TYPE 'S' BEDDING - GRANULAR BED AND SURROUND
(SCALE 1:10)



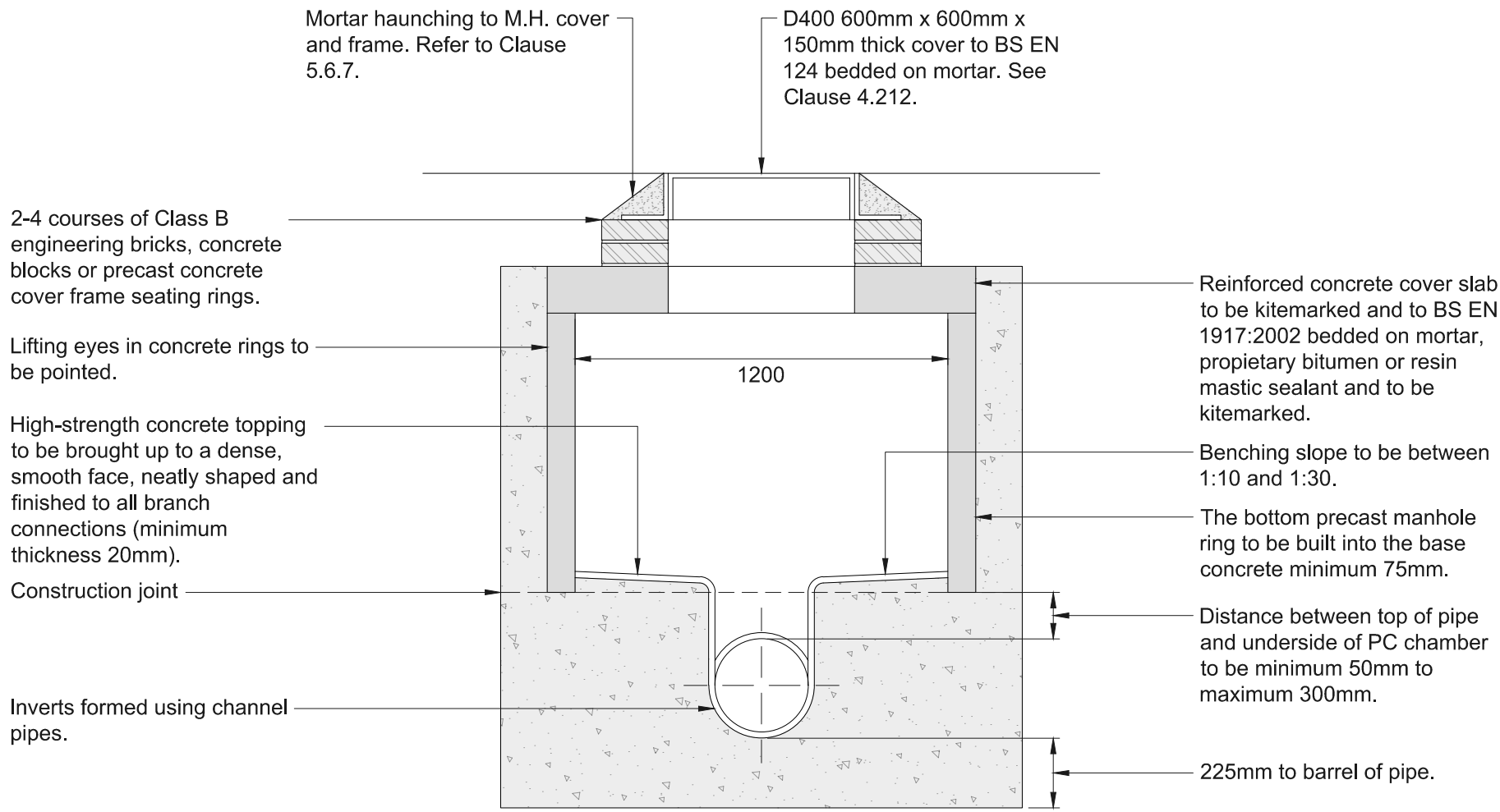
Typical Manhole Detail - Type B - Section
(Scale 1:20)

Depth from cover level to Soffit of pipe 1.500m - 3.000m.



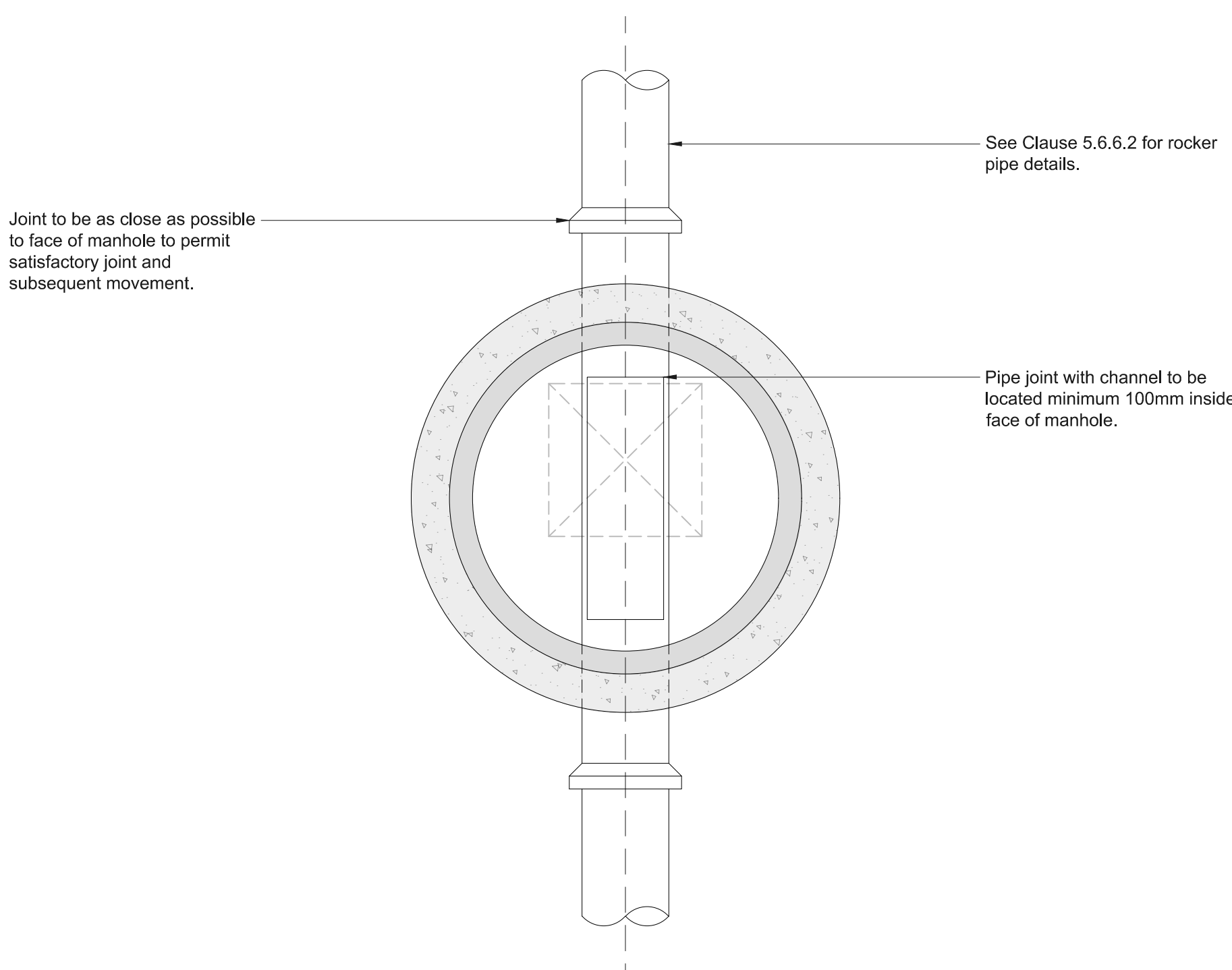
Typical Manhole Detail - Type B - Plan
(Scale 1:20)

Depth from cover level to Soffit of pipe 1.500m - 3.000m.



Typical Manhole Detail - Type E - Section
(Scale 1:20)

Depth from cover level to Soffit of pipe 1.000m - 1.500m.



Typical Manhole Detail - Type E - Plan
(Scale 1:20)

Depth from cover level to Soffit of pipe 1.000m - 1.500m.
Maximum sewer diameter 375mm

Notes

- Do not scale this drawing. All dimensions must be checked/ verified on site. If in doubt ask.
- This drawing is to be read in conjunction with all relevant architects, engineers and specialists drawings and specifications.
- All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
- Any discrepancies noted on site are to be reported to the engineer immediately.

Drainage Notes

- This drawing is based on Site Layout Plan 16/009/120 produced by SLA design.
- All pipes shall be either:
A - Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01 and BS/EN13476). Adoptable plastic sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
OR
B - Vitrified clay to BS EN 295 with a minimum crushing strength as follow :-
150 dia - 40 kN/m
225 dia - 45 kN/m
300 dia - 72 kN/m
OR
C - Class 120 concrete (40kN/m min to BS 5911)
- Pipes of 375mmØ or greater shall be concrete conforming to BS5911 Part 100.
- All pipes are to be laid soffits level at manholes unless noted otherwise.
- All adoptable sewer works and materials to be in accordance with "Sewers for Adoption" (6th edition), the relevant British/European standards and Yorkshire Water standards/requirements/addendum and be kitemarked.
- Manhole covers shall have a clear opening of 600 and shall be class D400 to BS EN 124 with 150 deep frames in highways. Covers to have closed keyways and are to be bedded on steel shims with 1:3 mortar haunching.
- Pipes entering manholes and road gullies shall have a flexible joint within 600 of the inside the manhole or gully joining with a short Rocker pipe.
- Plastic channel sections in manholes are not acceptable and clayware is preferable. Plastic channels are difficult to set in concrete and a satisfactory finish cannot be obtained on the benching.
- Sewers to be laid on a class S bedding (150mm granular bed and surround). Where depth of cover to top of sewer is less than 1.2m in highways and verges (or less than 0.9m in none vehicular access areas), a concrete slab is to be provided above the granular bed and surround.
- All trenches in roads and paved areas shall be backfilled with Type 1 DOT granular sub-base material, or other granular material approved by the highway authority.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
- Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
- The invert levels at the proposed points of connection to existing public sewers shall be checked before any new drains are constructed. Any variation to the levels shown on the drawing shall be notified to FR Consulting Engineers Ltd.
- The chamber size of manholes with more than one connection in them may need to be increased by an increment to accommodate the connections and bends.

B	22.06.17	Construction details updated. Drawing title revised	SG	FR
A	25.04.17	Revised to suit Yorkshire Waters comments.	CB	FR
Rev	Date	Details of issue / revision	Dwn	Rev

Issues & Revisions

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Client			
THE COALFIELDS REGENERATION TRUST			
Project Title			
WASHINGTON ROAD GOLDTHORPE			
Drawing Title			
DRAINAGE CONSTRUCTION DETAILS			
Drawn:	S. Griffiths	Reviewed:	F. Raja
BWB Ref:	LDC 2004	Date:	08-03-16 Scale@A1: 1:125
Drawing Status			
PRELIMINARY			
Project - Originator - Zone - Level - Type - Role - Number	Status		Rev
GOL-BWB-HDG-XX-DR-D-503	D2		B