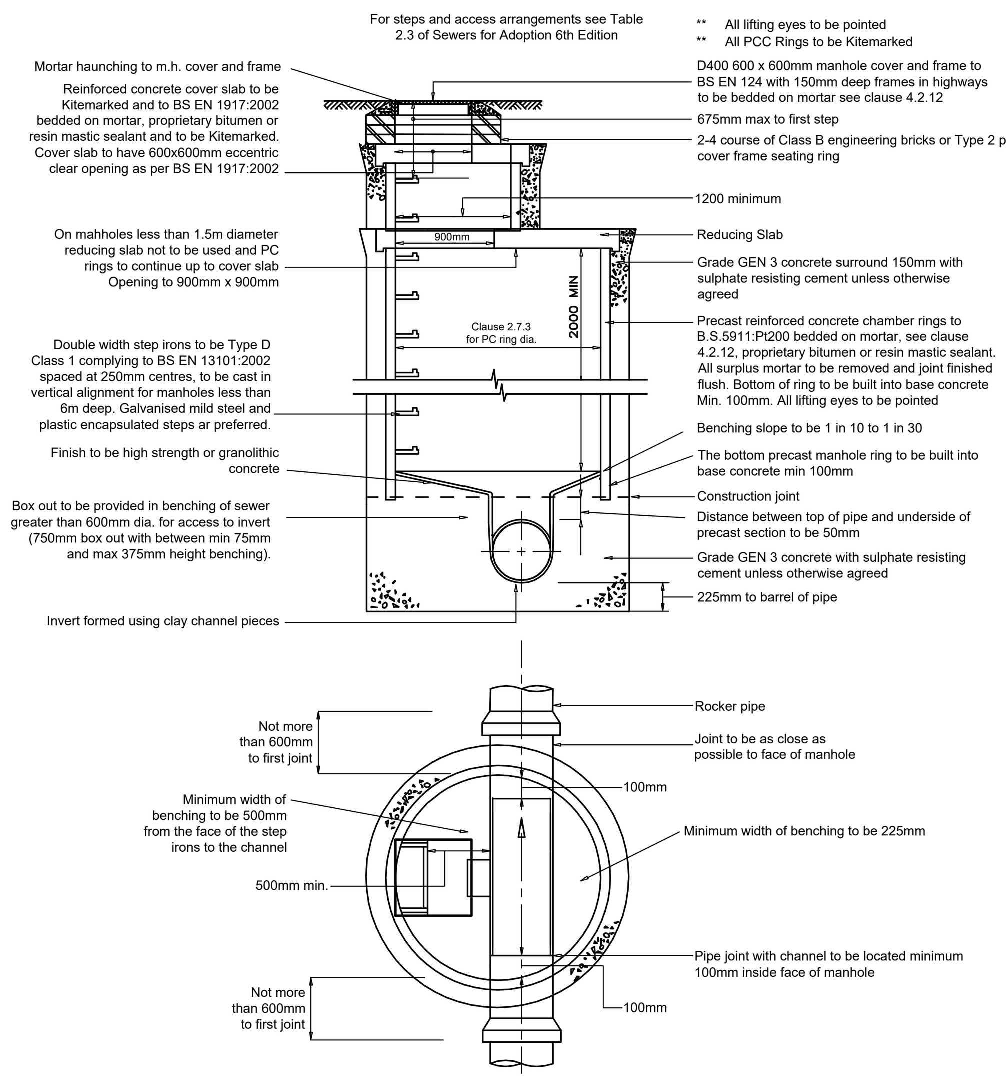
Typical Manhole Detail - Type A
Depth from Ground Level to Soffit of Pipe 3m to 6m

For steps and access arrangements see Table 2.3 of Sewers for Adoption 6th Edition

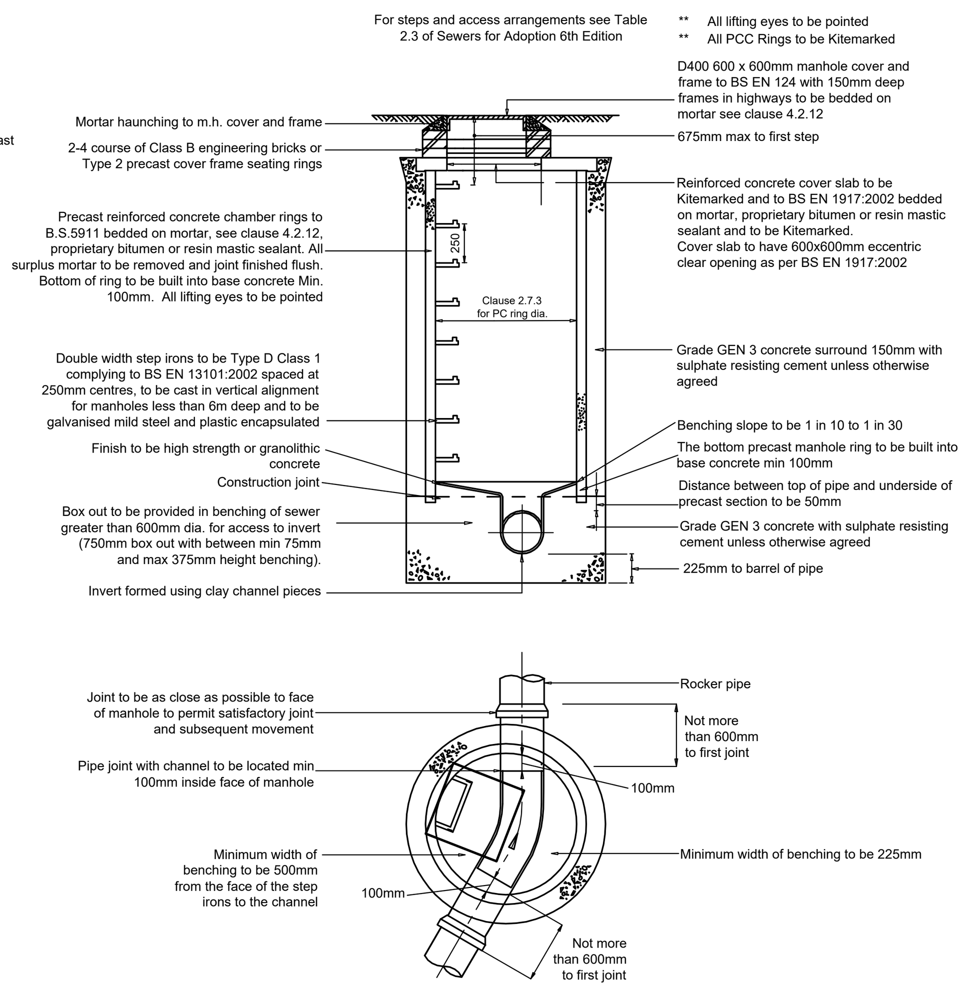
** All lifting eyes to be pointed
** All PCC Rings to be Kitemarked



Typical Manhole Detail - Type B
Maximum Depth from Ground Level to Soffit of Pipe 3.0m

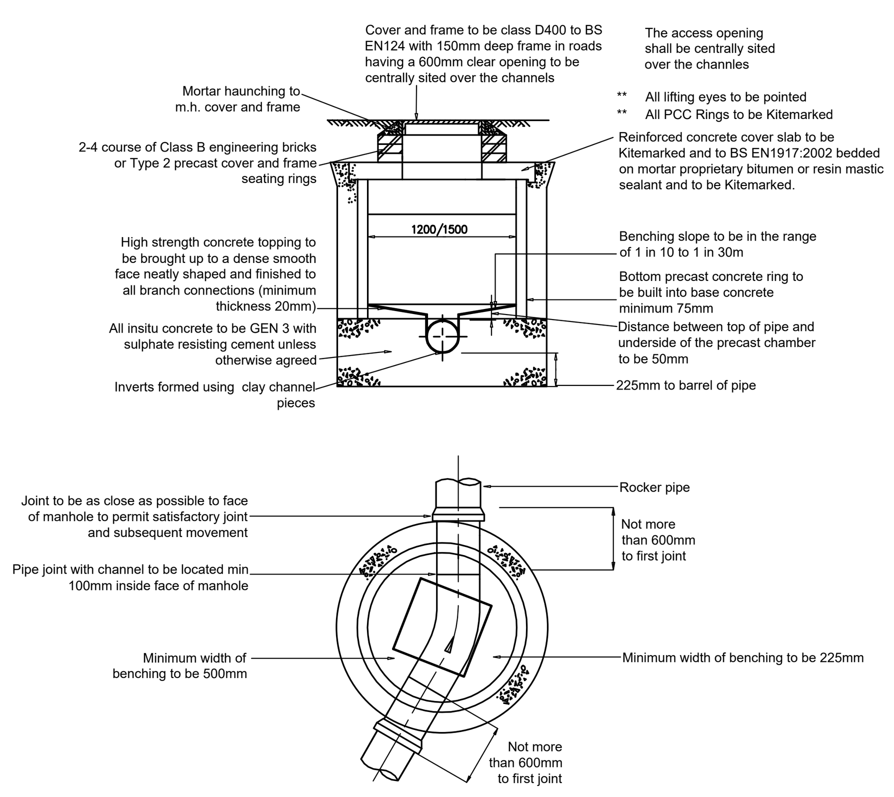
For steps and access arrangements see Table 2.3 of Sewers for Adoption 6th Edition

** All lifting eyes to be pointed
** All PCC Rings to be Kitemarked



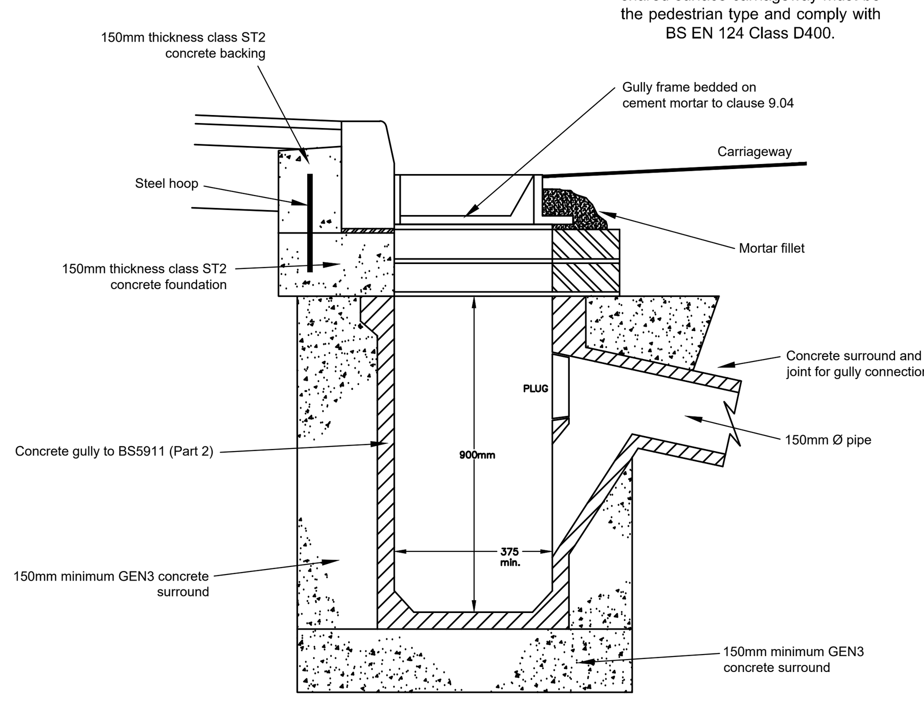
Typical Manhole Detail - Type C
Depth from Ground Level to Soffit of Pipe Less than 1.5m

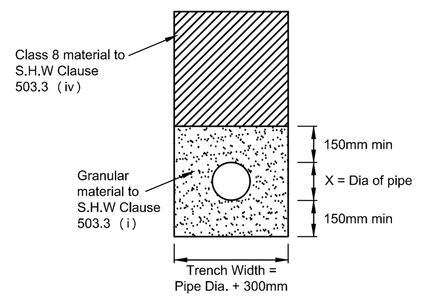
NOTE: Manholes less than 1.5m to soffit with 1500mmØ chamber size or larger should have a 1200 x 600 (central or eccentric) sited over the channel with double twin 600 x 600 covers.



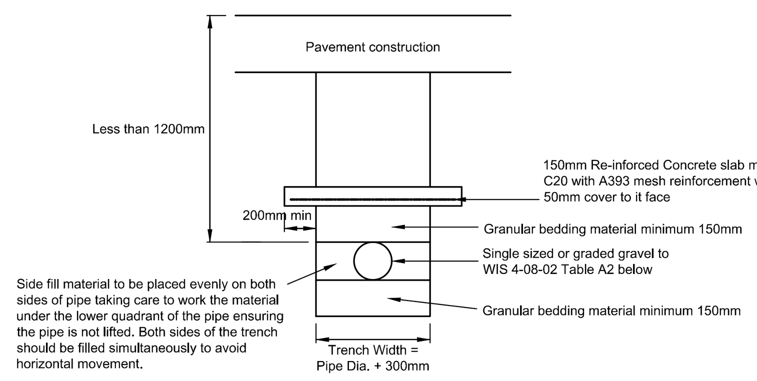
Private Precast Concrete Road Gully

The gully grate and frames in the shared surface carriageway must be the pedestrian type and comply with BS EN 124 Class D400.



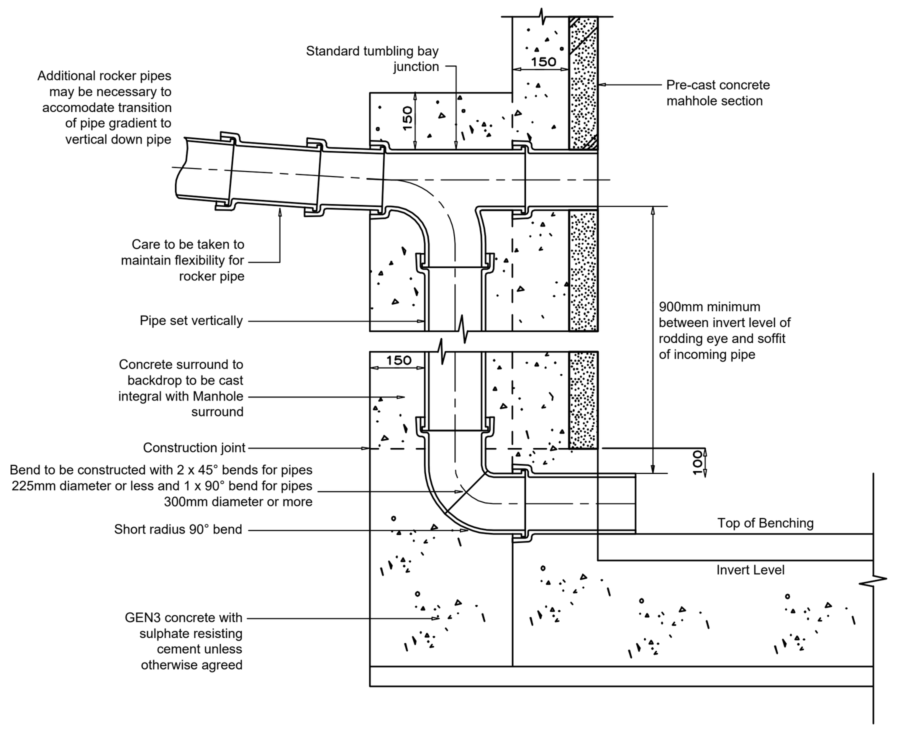


TYPICAL CLASS S SURROUND DETAIL
N.T.S

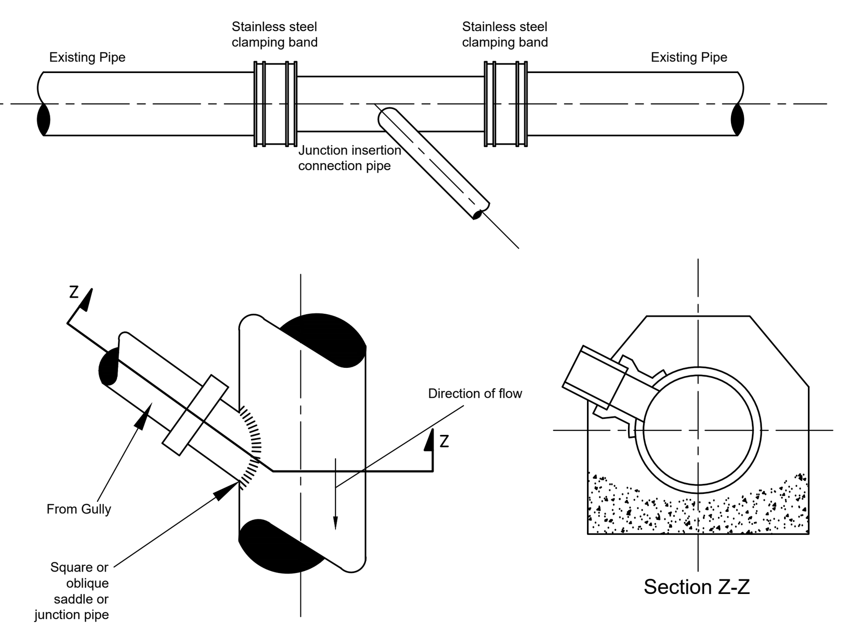


CONCRETE PROTECTION DETAIL
where cover is less than 1.2m in highway and less tan 0.90m in landscaped areas
N.T.S

Typical Vertical Backdrop Detail
Note: Steeper gradients are preferred to the use of backdrops

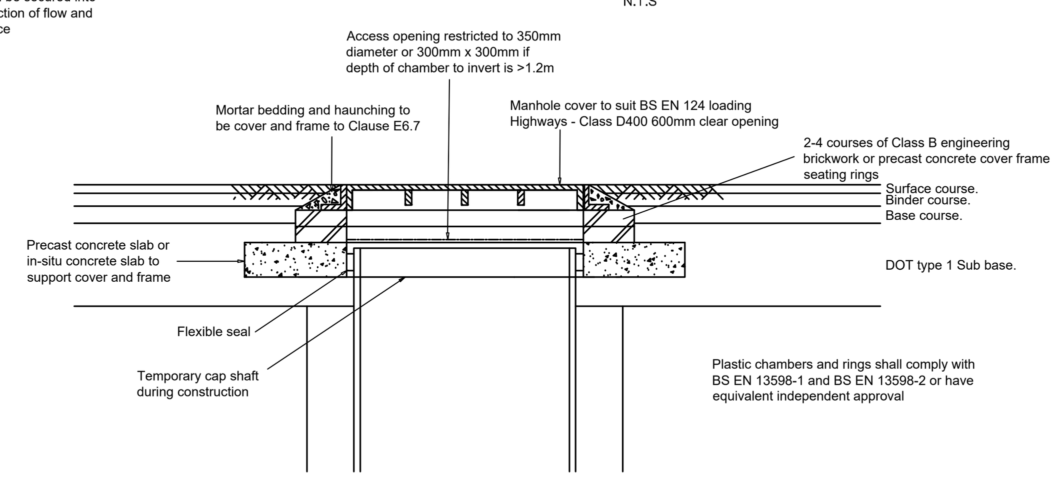


Propriety Junction Piece



PLAN (PRIVATE)

Junction or saddle connection should be the oblique (Y piece) variety and should be secured into the sewer with bandseal couplings, with the incoming branch aligned in the direction of flow and positioned at 10 o'c;ock or 2 o'clock on the sewer section clock face



Typical Inspection Chamber Detail - Type D - D400 Cover

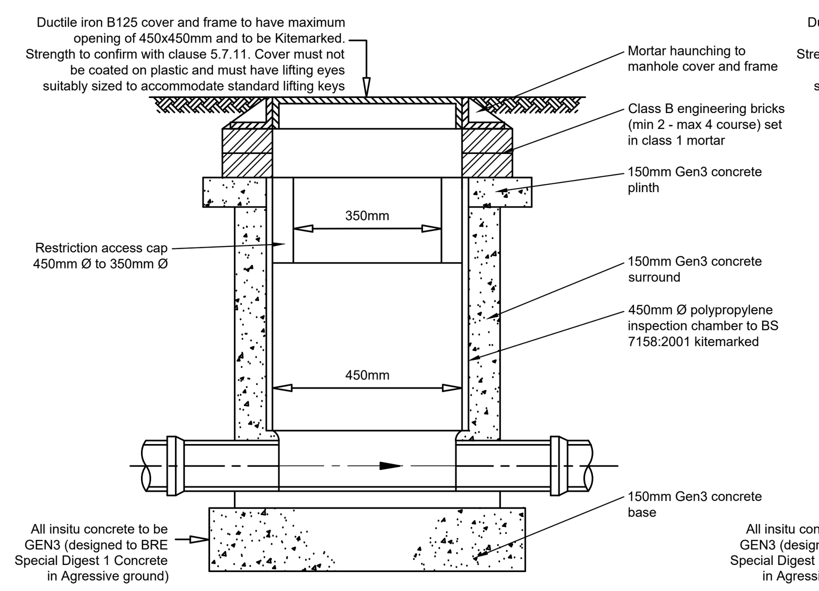
Typical Demarcation Chamber Detail TYPE D
Reduced Access (RAPPIC)

Precast concrete chamber to BS 5911:Part 2 & BS8301 kitemarked upto 1.0m deep
Polypropylene inspection chambers to BS 7158:2001 kitemarked, minimum 450mm Ø upto 1.2m deep

Depth from cover level to invert of pipe chamber greater than 1.2m
Maximum lateral drain diameter 150mm

B125 cover should be used in driveways and soft landscaped areas and a D400 when located in trafficked areas

Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable



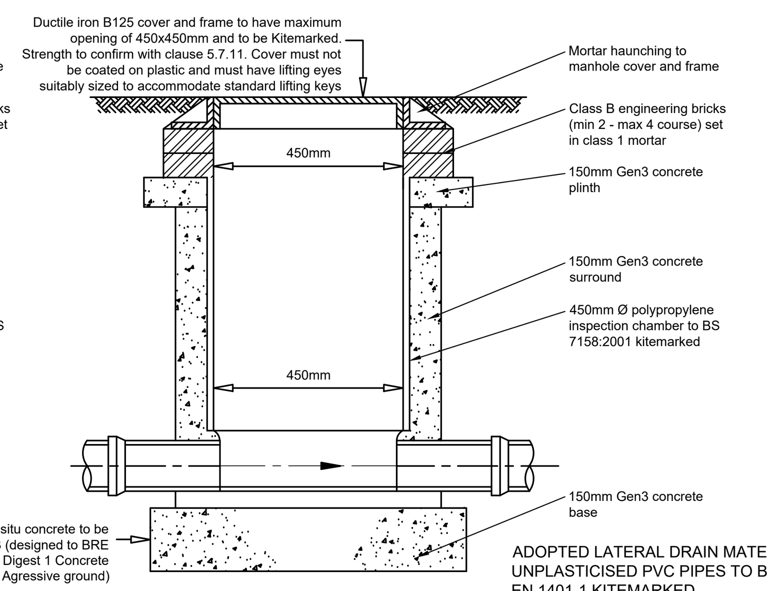
If Demarcation Chamber exceeds 3.00m to soffit in depth then the chamber should be constructed as a Type A manhole

Typical Demarcation Chamber Detail TYPE D
Normal Access (PPIC)

Precast concrete chamber to BS 5911:Part 2 & BS8301 kitemarked upto 1.0m deep
Polypropylene inspection chambers to BS 7158:2001 kitemarked, minimum 450mm Ø upto 1.2m deep

Depth from cover level to invert of pipe chamber less than 1.2m
Maximum lateral drain diameter 150mm

B125 cover should be used in driveways and soft landscaped areas and a D400 when located in trafficked areas



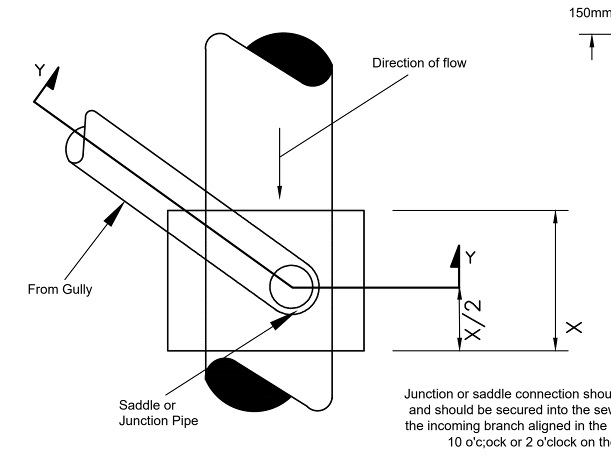
If Demarcation Chamber exceeds 3.00m in depth to soffit then the chamber should be constructed as a Type A manhole

ADOPTED LATERAL DRAIN MATERIAL TO BE UNPLASTICISED PVC PIPES TO BS 4660:2000 AND BS EN 1401-1 KITEMARKED

Yorkshire Water approved manufactures of Lateral Drainage materials are Hepworth, Marley, Marshalls, Naylor, Polypipe, Uponor, and Wavin. The contractor/developer to confirm manufacturer prior to works commencing on site.

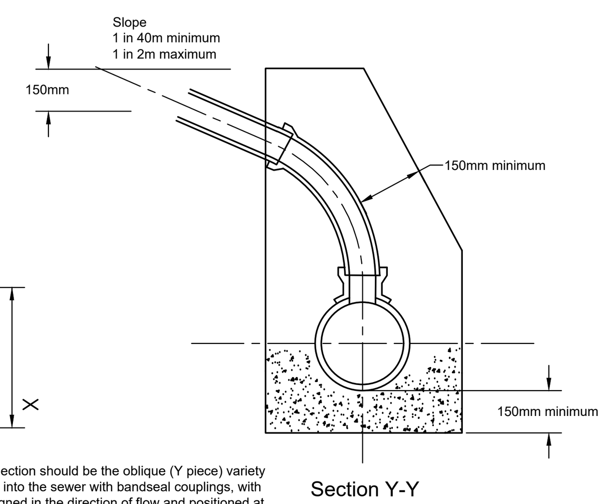
Saddles not appropriate for gully connections unless pipe diameter is in excess of 300mm

Figure A (PRIVATE)
Connection to Crown of Surface Water Sewer or French Drain



Plan

Junction or saddle connection should be the oblique (Y piece) variety and should be secured into the sewer with bandseal couplings, with the incoming branch aligned in the direction of flow and positioned at 10 o'c;ock or 2 o'clock on the sewer section clock face



Section Y-Y

Figure B (PRIVATE)
Connection to side of Surface Water Sewer or French Drain

YORKSHIRE WATER NOTES:

1. All adoptable sewer works and material to be in accordance with "Code for Adoption" the Relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and Kitemarked.
2. 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.
3. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
4. Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network or adoptable drainage system (directly or in-directly). An alternative method of disposal of the land drainage run-off 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 run-off.
5. 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.
6. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
7. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
8. "Sewers must have 5 metres clearance from trees and hedges.
9. 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 provided above granular bed and surround.
10. Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (Table A2).
11. 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.
12. 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.
13. 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.
14. The minimum crushing strength for clay pipes should be as follows: 100mm dia. 40KN/m, 150mm dia. 40KN/m, 225mm dia. 45KN/m and 300mm dia. 72KN/m. The minimum crushing strength for concrete pipes should be - (Class 120 to EN 1916/BS5911-1 2002). Plastic pipes should conform to WIS 4-35-01 and BS EN13476.
15. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sized to accommodate standard lifting keys. Screw down covers are not acceptable.
16. There should be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm : if crossover is near the rocker then the clearance needed may be increased".

OTHER NOTES:

17. The existing sewers and culverts shown on this drawing are taken from various archives, drainage plans and sewer records. Some of this information is contradictory and the locations shown are interpreted using existing features and manhole locations shown on the survey. The exact depth and location should be verified on-site prior to commencing construction.
18. All drainage works that shall be adopted by Yorkshire Water to be subject to their approval prior to commencement on site.
19. All hard standing and impermeable areas outside the adopted highway boundary to be drained and collected in private drainage systems and discharged into the surface water sewer before water encroaches onto the public highway.
20. Gullies should not be located in the area of dropped crossings.
21. Granular bedding for pipes shall consist of aggregates from natural sources complying with the relevant provisions of BS 882 sized in accordance with the table across.
22. All pipes with a diameter larger or equal to 300mm shall be concrete. Pipes with a diameter less than 300mm shall be clay.
23. Vitrified clay pipes and fittings for sewers shall have flexible mechanical joints. Pipes for foul Sewers and surface water Sewers shall comply with relevant requirements of BS EN295 and BS 65 (surface water pipes only).
24. All private work to be in accordance with current building regulations.
25. Drains passing through buildings to be protected with lintel cover.
26. No building to take place within 3.0m to the edge of an adoptable sewer dependant on the size and diameter of the sewer.
27. No services to be sited over or within 1.0m of an adoptable sewer.
28. Private drainage connections not direct to manholes are to be made via a 45 degree junction and not saddles

Standard Drainage Notes:

1. All dimensions in millimetres unless stated otherwise.
2. Except where otherwise indicated gully gratings and frames are to be set at a level 6mm below finished carriageway level.
3. One vertical joint per course of brickwork shall be left open to allow drainage during construction.
4. The minimum depth from the top of grating to the top of gully outlet is to be 750mm when the connecting pipe is under carriageway and 60mm elsewhere.
5. All concrete and concrete products below ground to be sulphate resisting.
6. Gully pots are to be of pre cast concrete to BS5911 Part 2. Gully pots shall be trapped and provided with hot dipped galvanised stopper and chain with bayonet type fixing.
7. Road gully gratings and frames to be Type C250 grate and frame, kitemarked, heavy duty ductile iron to EN124: Part 1: 1995, non rock with captive hinge, 2 set on 2 courses of class B engineering brickwork bedded on class 1 mortar minimum depth of gully frame to be 100mm.
8. Class 1 mortar to Design (i) to SHW series 2400.
9. The contractor is obliged to obtain the necessary road opening and/or sewer connection licenses prior to work commencing on site.
10. Stainless steel clamping bands shall comply with water industry specification No. 4-41-01.
11. Junction pipe shall be salt glaze only.
12. For 150mm and 225mm diameter pipes, saddles are not acceptable. The connection into existing pipes should be via a propriety junction piece inserted into the main pipe run, fixed with clamping bands.
13. Step irons to comply with all relevant provisions set out in BS1247 Part 1 or 2.

Chamber Note:

1.0 Chambers

1.1 Particular requirements are as follows:

1.1.1 For manholes and man entry catchpits

A. Covers and frames shall comply with the following additional fitness-for purpose requirements:

For MA60 access covers and frames with 675 x 675 eccentric clear opening:
i) Frame may be grey iron of ductile iron, cover shall be ductile iron with double triangular configuration (non rock).
ii) Minimum depth of manhole frame to be 150mm.
iii) Bearing area of frame hall be solid and be not less than 100mm wide, with external corners of the bearing area being either square, curved or mitred shape in plan with the resulting bearing area width at that feature being not less than 95mm.
iv)The solid bearing area of frame may have hand holes amd drainage holes in any side of the frame providing that the total area of the holes in any one side does not exceed 60cm² and that no hole is situated within a quadrant of the bearing area of he frame at an external corner, such holes shall be positioned as near as possible to the external edge of the frame.

For MA60 access covers and frame with 675 x 675mm eccentric clear opening - (to HCD drawing No F3 application)
i) Shall be of ductile iron with double triangular cover configuration.
ii)Frame shall be at least 100mm deep.
iii) Bearing area of frame shall be solid and not less than 100mm wide.

For mat covers and frames:
i) Frame and cover shall be grey iron, sincle triangular cover.
ii) Frame shall be at least 150mm deep.
iii) Bearing area of frame shall be solid and not less than 100mm in width.

For MB2-60/45 covers and frames
i) Ductile iron cover and frame, single rectangular cover.
ii) Frame shall be at least 75mm deep.
iii) Bearing area of frame shall be not less than 75mm in width.

1.1.2 Ironwork on mortar bedding shall not be trafficked until mortar strength is expected to be 16N/mm².

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Rev:	Date:	Amendment:	DRN	CHK	APR

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Client: Chartford Homes

Status:

Scale: NTS
Size: A1 - 841 x 594
Drawn: NB
Chkd: IE
Appvd:

Project: Residential Development
Northorpe Lane, Mirfield

Title: Drainage Standard Details

Drawing No: 25/376/500/004
Revision: -
Job No: 25-376
Date: 12.12.25

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