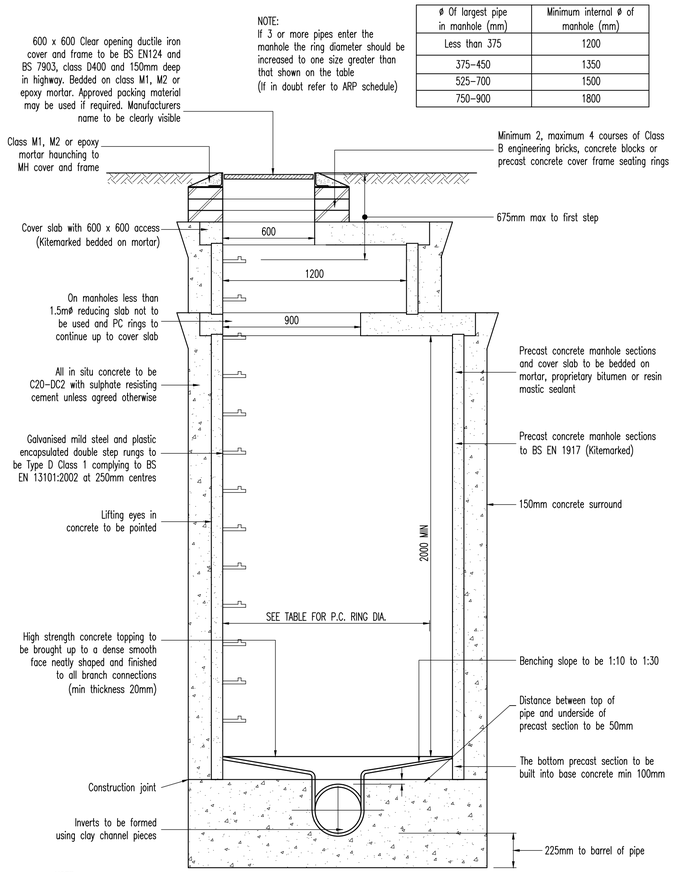
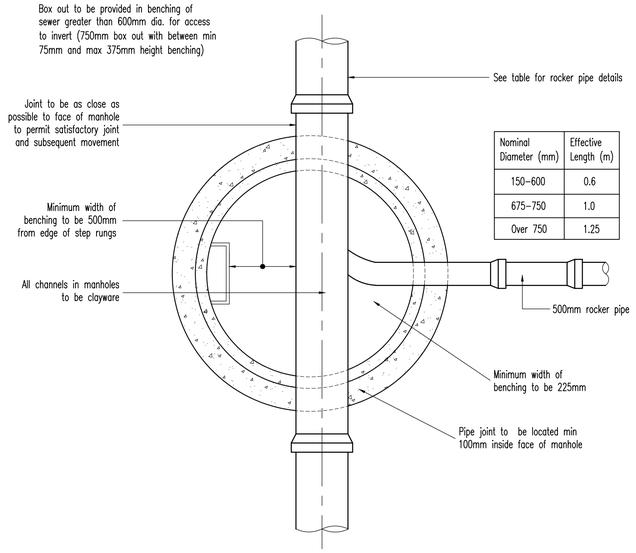


NOTE:
If 3 or more pipes enter the manhole the ring diameter should be increased to one size greater than that shown on the table
(If in doubt refer to ARP schedule)

ø Of largest pipe in manhole (mm)	Minimum internal ø of manhole (mm)
Less than 375	1200
375–450	1350
525–700	1500
750–900	1800

NOTE:
Box out to be provided in benching of sewer greater than 600mm dia. for access to invert (750mm box out with between min 75mm and max 375mm height benching)



Nominal Diameter (mm)	Effective Length (m)
150–600	0.6
675–750	1.0
Over 750	1.25

TYPICAL MANHOLE DETAIL–TYPE A

CODE FOR ADOPTION (2020)
Max depth from ground level to soffit of pipe 3.0m to 6.0
The design of the manhole will need to comply with the undertakers safety policy

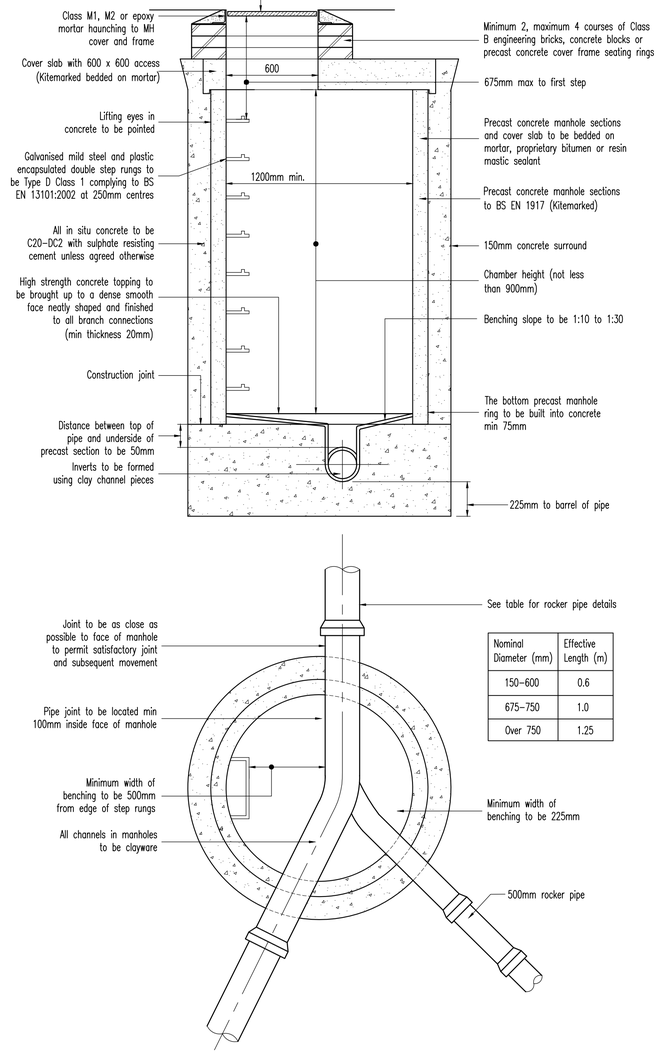
The manholes cover and frame should be in accordance with Brickhouse "Silent Knight" or similar approved

All custom built ironwork to be Hot Dipped Galvanized prior to fixing

Where a backdrop is connecting into an Easi–Base manhole, concrete surround have to be provided

NOTE:
If 3 or more pipes enter the manhole the ring diameter should be increased to one size greater than that shown on the table
(If in doubt refer to ARP schedule)

ø Of largest pipe in manhole (mm)	Minimum internal ø of manhole (mm)
Less than 375	1200
375–450	1350
525–700	1500
750–900	1800

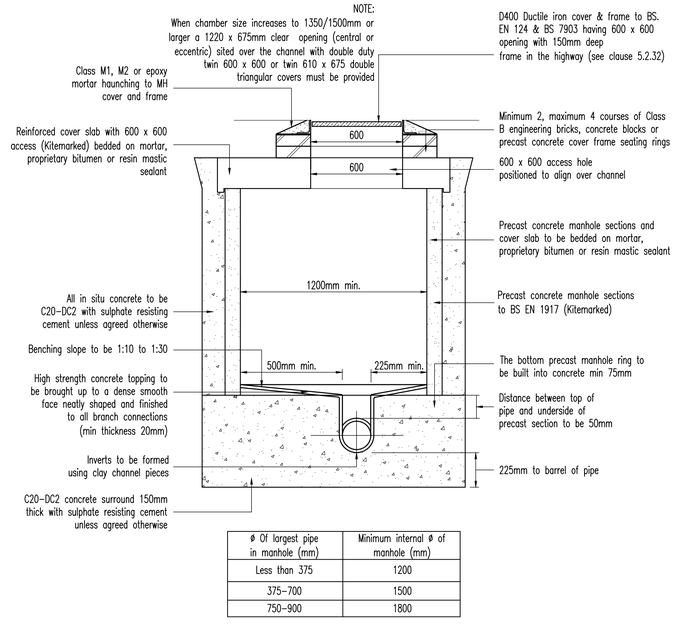


Nominal Diameter (mm)	Effective Length (m)
150–600	0.6
675–750	1.0
Over 750	1.25

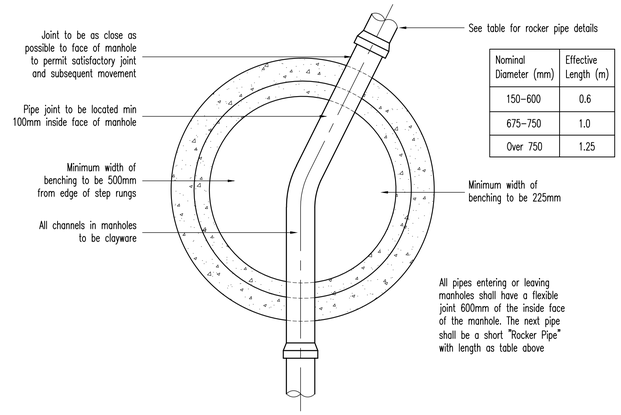
TYPICAL MANHOLE DETAIL–TYPE B

CODE FOR ADOPTION (2020)
Max depth from ground level to soffit of pipe 3.0m
The design of the manhole will need to comply with the undertakers safety policy

NOTE:
When chamber size increases to 1350/1500mm or larger a 1220 x 675mm clear opening (central or eccentric) sited over the channel with double duty twin 600 x 600 or twin 610 x 675 double triangular covers must be provided



ø Of largest pipe in manhole (mm)	Minimum internal ø of manhole (mm)
Less than 375	1200
375–700	1500
750–900	1800



Nominal Diameter (mm)	Effective Length (m)
150–600	0.6
675–750	1.0
Over 750	1.25

TYPICAL MANHOLE DETAIL–TYPE C SHALLOW MANHOLE

CODE FOR ADOPTION (2020)
Max depth from ground level to soffit of pipe 1.0m TO 1.5m
The design of the manhole will need to comply with the undertakers safety policy

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

N O T E S

Yorkshire Water General 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. Cover slabs must carry the BSI Kitemark or will be rejected by the 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 600x600mm for the Yorkshire Water specified cover size. Please refer to the Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for kitemarked cover slab opening sizes.
5. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
6. Sewers must have 5 metres clearance from trees and hedges.
7. 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 the granular bed and surround.
8. Adoptable plastic sewer pipes to be BSI Kitemarked (Certified to WIS 4–35–01 and BS/EN13476). Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to lay longer lengths.
9. 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.
10. 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.
11. Yorkshire Water policy is not to accept Type "C" brick manhole 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.
12. Surface water and foul rising mains to be provided with marker tape above the rising mains.
13. If plastic pipes are to be used then the following should apply:–
    a. All adoptable sewers to be BSI Kitemark (certified to WIS 4–35–01).
    b. Bedding and backfill material to conform to the requirements of Water industry specification 4–08–02 (Table A2)
14. Where plastic pipes are proposed for adoptable sewers, structural calculations for the plastic pipes and a site investigation report to prove that the ground condition is suitable for the plastic pipes are to be produced.
15. Where plastic pipes are installed into the ground prior to getting full technical approval, the developer must provide a CCTV survey of the prospectively adoptable sewers and a deformation test (Light–Line test) of the plastic pipes.
16. Demarcation chambers to be a min. 450mmø chamber for 100mmø foul & 150mmø surface water pipes up to 1.2m deep. For depths greater than 1.2m, restricted access opening to 350mm is required for safety reasons.
17. Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
18. Where a B125 cover and frame has been approved, this must not be coated in plastic and must have lifting eyes suitably sizes to accommodate standard lifting keys. Screw down covers are not acceptable.
19. 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 Land Drainage Authority/Land Drainage Section with regard to the disposal of the filter drain/land drainage runoff is required.
20. Sulphate resisting cement (C20–DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
21. 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/BSS911–1 2002). Plastic pipes should conform to WIS 4–35–01 and BS EN13476.6.
22. All levels of existing drainage to be confirmed prior to work commencing on site.
23. The contractor must allow for any fee's required for road and sewer opening permits, sewer connections and make the appropriate applications.
24. Bedding and backfill material to conform to the requirement of Water Industry Specification 4–08–02 (Table A2).

KMC Structures AIP – For MH chambers of 1500mm diameter and above.

Technical approval for the design of circular RC cover slabs up to and including 3.0m (internal diameter) will not be required subject to the following conditions:

1. Proof that the circular RC cover slabs units to be used at this site are marked with 'BS EN 1917' & 'BS 5911–3' R to confirm that the product represents a manufacture's declaration that the product meets the requirement of the standards.
2. Confirmation of Design Chemical Class (DC–Class) of concrete in the cover slab units.
3. Submission of a satisfactory Design & Check Certificate (Category 0) in compliance with BD2/12–Technical Approval of Highway Structures.
4. Submission of a satisfactory Construction Compliance Certificate in accordance with BD2/12 upon the completion of works.

Rev	By	Date	Revision	Chk	Apvd
/	JC	28.02.25	Issued for approval	MI	MI

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ARP Associates is a trading division of ARP Geotechnical Ltd, a company registered in England and Wales with company number 3771811, whose registered office is at 5/6 Northwest Business Park, Servia Hill, Leeds LS6 2QH

TITLE
TYPICAL DRAINAGE DETAILS SHEET 1 OF 2

PROJECT
BLACKMOORFOOT ROAD, HUDDERSFIELD

CLIENT
MILLER HOMES YORKSHIRE

DRAWING STATUS
PRELIMINARY

Scale	Date	Drawn	Chk.
AS SHOWN @ A1	FEB 25	JC	MI

Drg. No. 0425/92/07.01 Rev /