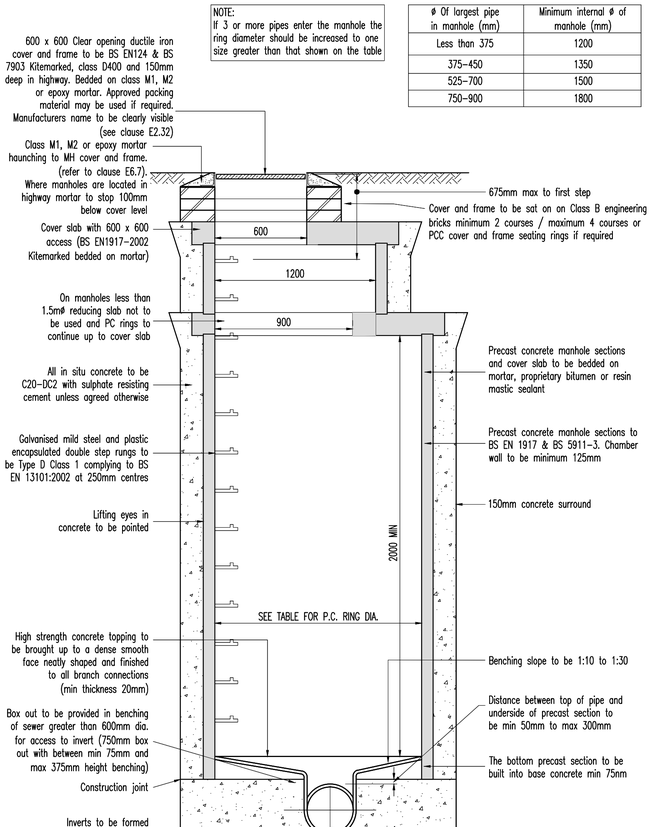
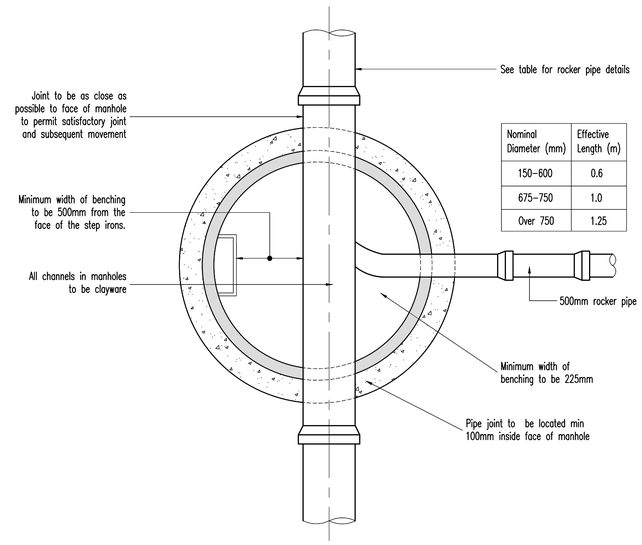
H-3-264-715

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

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





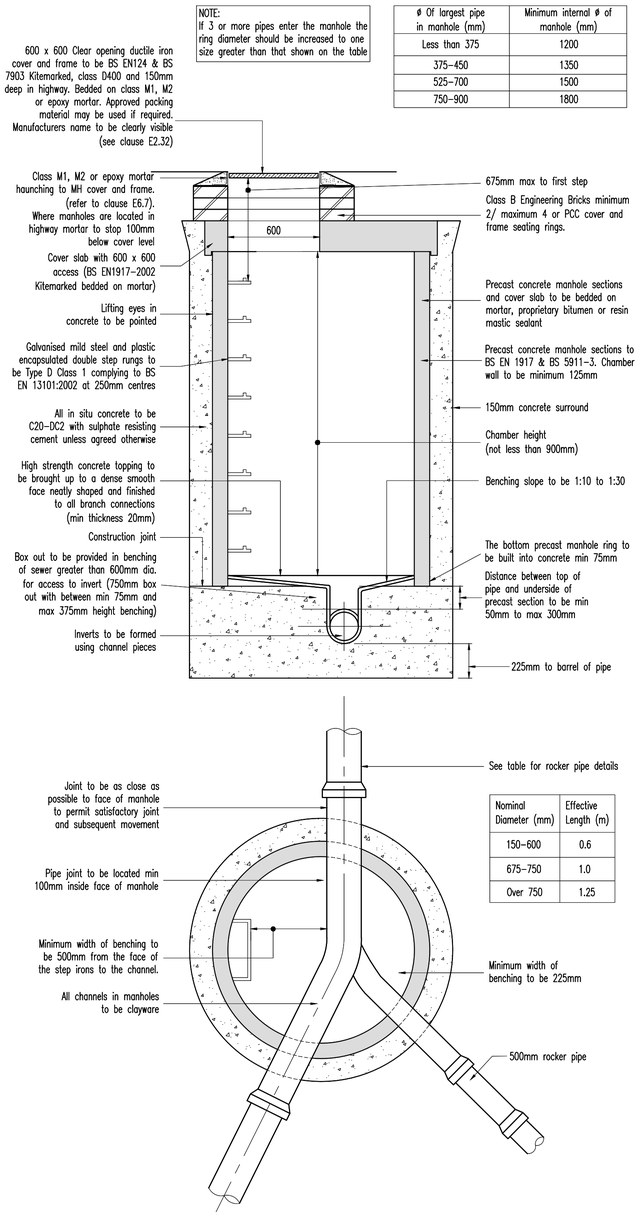
Nominal Diameter (mm)	Effective Length (m)
150–600	0.6
675–750	1.0
Over 750	1.25

TYPICAL MANHOLE DETAIL–TYPE A

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

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

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

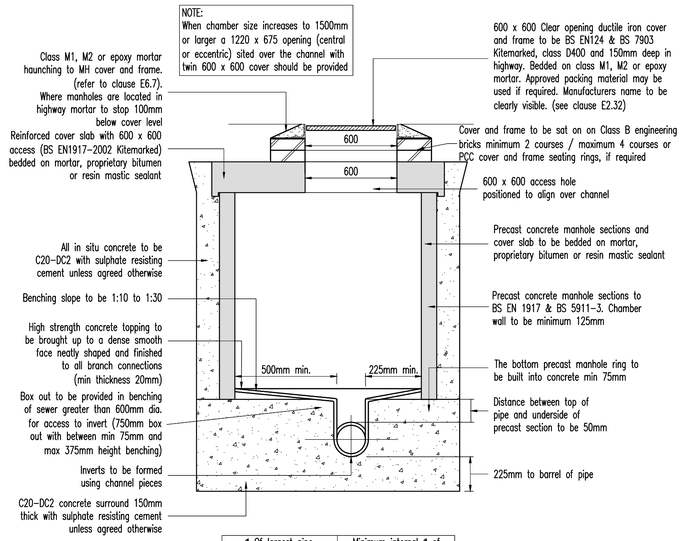


Nominal Diameter (mm)	Effective Length (m)
150–600	0.6
675–750	1.0
Over 750	1.25

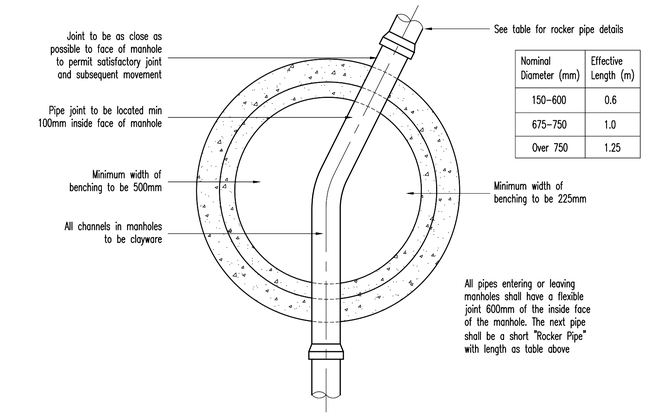
TYPICAL MANHOLE DETAIL–TYPE B

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 1500mm or larger a 1220 x 675 opening (central or eccentric) sited over the channel with twin 600 x 600 cover should 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 B1E

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

PIPES			
Product Name	Diameter (mm)	Manufacturer	Material
Supersleve	100 & 150 (I.D.)	Hepworth	Vitrified Clay
Superseal	150 & 225 (I.D.)	Hepworth	Vitrified Clay
Densleeve	100, 150 & 225 (I.D.)	Naylor	Vitrified Clay
Denseal	100, 150 & 225 (I.D.)	Naylor	Vitrified Clay
Ultra–Drain	110 & 160 (O.D.)	Uponor	Vitrified Clay
Plastidrain	110 & 160 (O.D.)	Hepworth	UPVC
OsmaDrain	110 & 160 (O.D.)	Wavin	UPVC
Osma UltraRib	150 & 225 (I.D.)	Wavin	UPVC
Solid Wall	110 & 160 (O.D.)	Marley	UPVC
Quantum	150 & 225 (I.D.)	Marley	UPVC
Underground Drain	110 & 160 (O.D.)	Polypipe	UPVC
Ridgisewer	150 & 225 (I.D.)	Polypipe	UPVC

DEMARCATION CHAMBER				
Manufacturer	Product Name	Material	Max Depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIC	Polypropylene	Up to 1200mm	Class B125
Uponor	Inspection Chamber (450mm ø)	Polypropylene	Up to 1200mm	Class B125
Marshalls	Inspection Chamber to BS5911 pt2	Precast Concrete	Up to 1200mm	Class B125
Wavin	Osma UltraRib Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	OsmaDrain Universal Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	Non Entry Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Marley	Inspection Chamber (450mm ø)	Polypropylene	Up to 1200mm	Class B125
Polypipe	110 Inspection Chamber (460mm ø)	Polypropylene	Up to 1200mm	Class B125
Polypipe	Non man Entry Deep Inspection Chamber System	Polypropylene	Up to 2000mm	Class B125

MANUFACTURERS LIST

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

N O T E S

SUBJECT TO THE APPROVAL OF ALL RELEVANT AUTHORITIES

DO NOT SCALE | ORIGINAL DRAWING SIZE A1

Yorkshire Water General Notes

1. This drawing is to be read in conjunction with all relevant OEC Consulting Engineers and Architects drawings and project specifications.
2. All adoptable sewer works and material to be in accordance with "the Code" Version 2.1 2021, the relevant British/European and Yorkshire Water's Standards/Requirements/Addendum to the Mechanical and Electrical Specification and be Kitemarked.
3. The location, size and depth of all existing drains/sewers and services shall be established by the contractor prior to commencement of works on site. Any discrepancies from the information indicated on these drawings shall immediately be brought to the attention of the engineers.
4. All levels and dimensions shall be verified on site prior to commencement of any works. Any discrepancies shall immediately be brought to the attention of the engineers.
5. Sewers must have 5 metres clearance from trees and hedges.
6. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
7. All connections to public sewers to be a minimum of 150mm ø via a 45° junction.
8. 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.
9. 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.
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. 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.
12. 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.
13. 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.
14. Maximum depth of demarcation chamber to be 2m, where depth exceeds 2m, manhole to be constructed as Type B manhole.
15. Demarcation chambers to be a min. 450mmø chambers 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.
16. 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.
17. 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.
18. 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 the Water Industry Specification 4–08–02 (Table A2)
19. 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 clayware is preferable. Plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
13. Filled ground or soft spots must be excavated, backfilled and consolidated under the supervision, and to the satisfaction of Yorkshire Water before any sewer works are carried out.
14. Sulphate resisting cement (C20–DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
15. The minimum crushing strength of vitrified clay pipes (if used) should be as follows: 100ø 40KN/m, 150ø 40KN/m, 225ø 45KN/m and 300ø 75KN/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.
16. Surface water and foul rising mains to be provided with marker tape above the rising mains.
17. 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.
18. All excavations in areas of high water tables and granular materials with high sand/silt contents shall be wrapped with a suitable geotextile filter membrane to prevent migration of sands/silts. Full height clay stanks across trenches and/or at manhole locations at 25m intervals to restrict water movement along the excavation shall be provided.
19. All works within the public highway to be reinstated to the highway authority requirements. All drainage connections onto adoptable drainage systems shall be carried out to the water authority's approval.
20. The contractor must allow for any fee's required for road and sewer opening permits, sewer connections and make the appropriate applications.
21. Where there are double road gullies, the gully leads shall be connected onto separate pipe lengths.

Rev	By	Date	Description	Chk
/	CG	03.03.23	Issued for approval	WW

CONSULTING ENGINEERS LTD
Flexspace • Monckton Road • Wakefield • WF2 7AS
T: 01924 792312 • E: info@oecconsult.co.uk • W: www.oecconsult.co.uk

Client
YORKSHIRE CHOICE HOMES

Project
WESTFIELD LANE,
WYKE

Title
TYPICAL DRAINAGE DETAILS
SHEET 1 OF 2

Scale	Drawn	Checked	Date
1:20	ZA	WW	MARCH.23

Drawing Status
APPROVAL

Job No.	Drawing No.	Revision
124.008	07.01	/