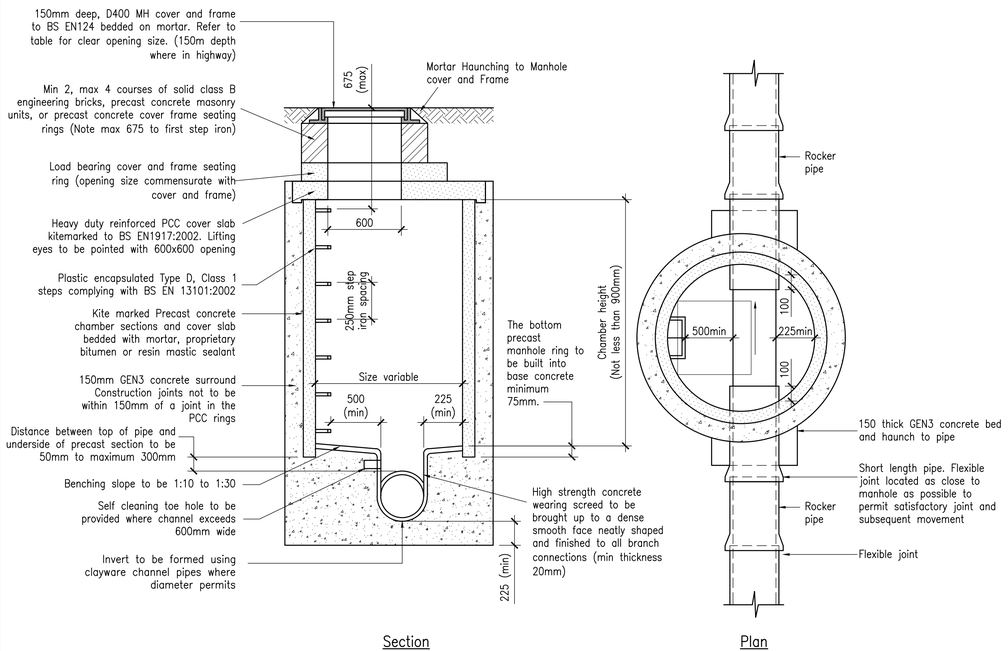
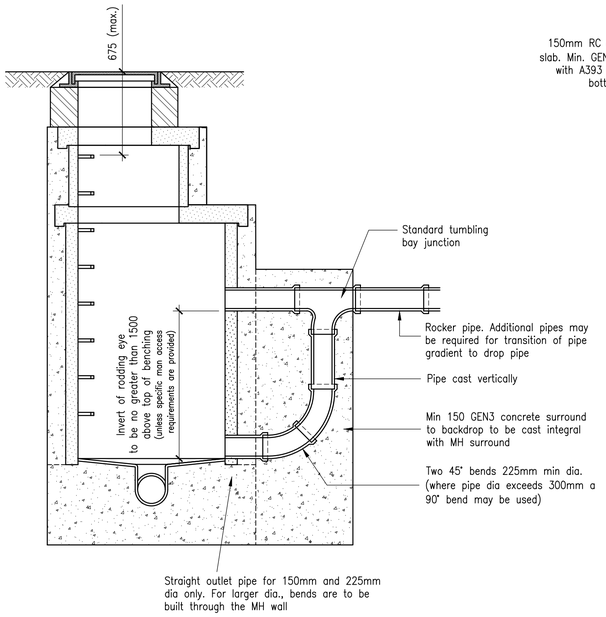
H-3-XXX-XXX



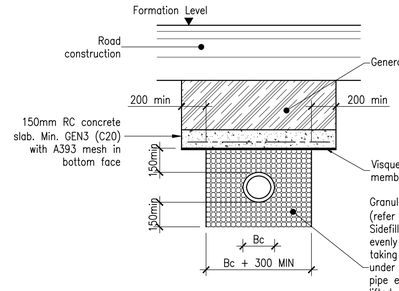
Typical Manhole Detail – Type B

(Depth from GL to soffit of pipe 1.5m to 3.0m)
Scale 1:25



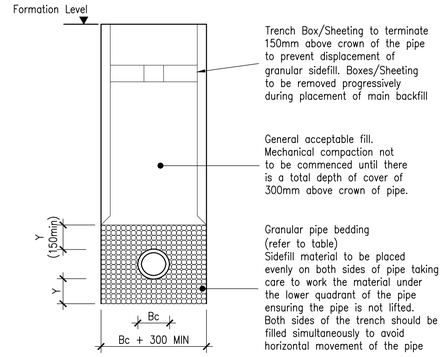
Typical Vertical Backdrop Detail

Scale 1:25



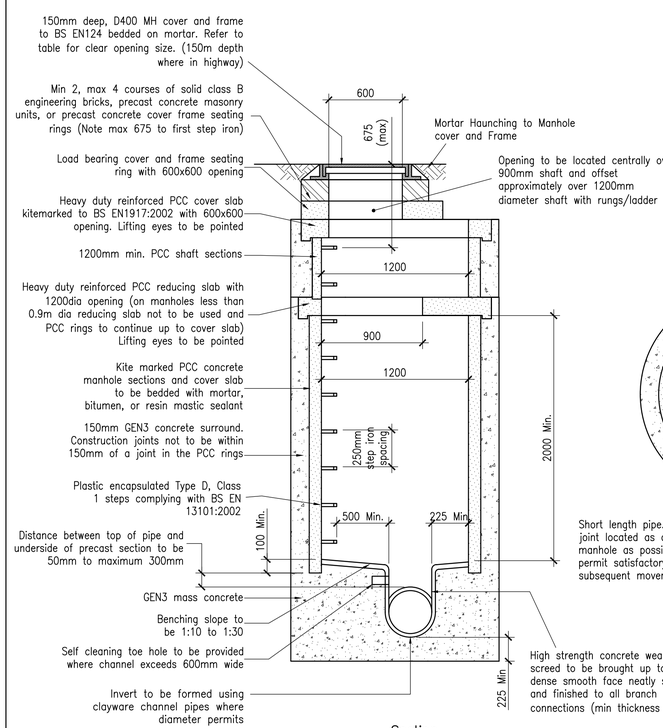
Concrete Protection

(Depths of cover less than 1.20m)
Scale 1:25



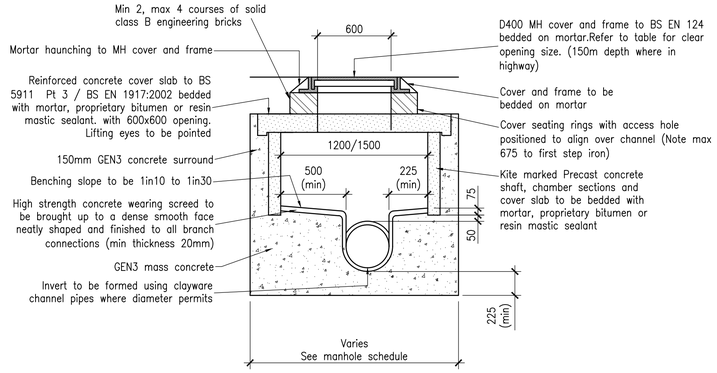
Class S Bedding Detail

(Rigid Pipe Trench Bedding Details)
Scale 1:25



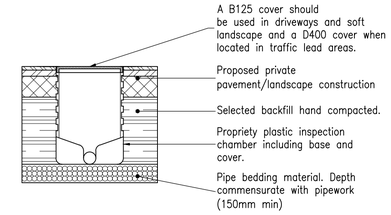
Typical Manhole Detail – Type A

(Depth from GL to soffit of pipe 3.0m to 6.0m)
Scale 1:25



Typical Manhole Detail Type B1/E

(Depth from GL to soffit of pipe < 1.5m Opening to be sited over the channel)
Scale 1:25



Demarcation Chamber Construction Detail

(Maximum depth 2.00m)
Scale 1:25

Manhole Access Requirements				
Shaft/chamber size DN	MH less than 1.5m depth		MH greater than or equal to 1.5m depth	
	Cover Slab	Cover and Frame	Cover Slab	Cover and Frame
1200	600 x 600 central	600x600	600 x 600 eccentric	600x600
1350–1500	1200 x 675 central	2 No. 600x600 twin covers	600 x 600 eccentric	600x600
1800–3000	1200 x 675 eccentric	2 No. 600x600 twin covers	600 x 600 eccentric	600x600

PIPES

The pipes detailed in the table below may be used when laying a lateral drain/sewer under public highway subject to acceptable mimimum gradients, also detailed below.

Product Name	Diameter (mm)	Manufacturer	Material
Supersleeve	100 & 150 (ID)	Hepworth	Vitrified Clay
Superseal	150 & 225 (ID)	Hepworth	Vitrified Clay
Densleeve	100, 150 & 225 (ID)	Naylor	Vitrified Clay
Denseal	100, 150 & 225 (ID)	Naylor	Vitrified Clay
Ultra–Drain	110 & 160 (OD)	Uponor	uPVC
Plastidrain	110 & 160 (OD)	Hepworth	uPVC
Osmadrain	110 & 160 (OD)	Wavin	uPVC
Osma UltraRib	150 & 225 (ID)	Wavin	uPVC
Solid Wall	110 & 160 (OD)	Marley	uPVC
Quantum	150 & 225 (ID)	Marley	uPVC
UndergroundDrain	110 & 160 (OD)	Polypipe	uPVC
Ridgisewer	150 & 225 (ID)	Polypipe	uPVC

Diameter	Gradient	
(mm)	Foul	S.W.
100	1:40	1:100
150	1:80	1:150
225	1:125	1:225

Note:

1. Vitrified Clay pipes shall comply with BS EN 265 and BS 65 (sw only)
2. uPVC pipes shall comply with the relevant provisions of BS4660 and BS EN 1401–1
3. Plastic chambers and rings shall comply with BS 7158 or BS EN 13598–1

BEDDING

Class 'S' bed and surround to be used when pipe is more than 1200mm from highway surface.
Concrete slab protection to be used when pipe is less than 1200mm from highway surface.

DEMARCATION CHAMBER

The chamber must be located just within the property boundary at the end of the public section of the lateral drain/sewer. The table below lists some acceptable chamber types.

Manufacturer	Product Name / Ref	Material	Maximum Depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIC	Polypropylene	Up to 1200mm	Class B125
Uponor	Inspection Chamber (450mmø)	Polypropylene	Up to 1200mm	Class B125
Marshalls	Inspection Chamber to BS5911 Pt 2	Precast Concrete	Up to 1000mm	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 2000mm	Class B125
Marley	Inspection Chamber (450mmø)	Polypropylene	Up to 1200mm	Class B125
Polypipe	110mm Inspection Chamber (460mmø)	Polypropylene	Up to 1200mm	Class B125
Polypipe	Non Man Entry Deep Inspection Chamber System	Polypropylene	Up to 2000mm	Class B125

Criteria for Lateral Drains/Sewers Unless Detailed Otherwise

Notes

Adoptable Drainage Notes

1. All adoptable sewer works and materials to be in accordance with "Sewers for Adoption" 6th Edition, 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 be Class D400 to BS EN 124 with 150mm deep frames in highways.
3. 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 load bearing slab shall 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.
4. Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.
5. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.
6. The chamber size of manholes with more than one connection in them may need to be increased an increment to accommodate connections and bends.
7. Manhole schedule setting out depicts notional pipe intersection points. Manhole chambers are to be positioned in a manner to provide minimum benching/landing requirements.
8. Sewers must have 5 metres clearance from trees and hedges (also refer to Figure 2.3 on p33 of SFA 6th edition for restrictions on tree planting adjacent to sewers.
9. 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.
10. Bedding and backfill material is to conform to the requirements of Water Industry Specification 4–08–02 (Table A2)
11. Where depth of cover to top of sewer is less than 1.2m in highways, and less than 0.9m in non–vehicular areas, then concrete concrete slab protection shall be used.
12. Location and level of existing sewers and services, including connection points, that are to remain on line of proposed sewers are to be trial holed and recorded prior to commencement of drainage works and the proposed sewer long–section verified.
13. Yorkshire Water policy is not to accept Type 'C' brick manholes and 1050mm dia manhole rings. Instead it is preferred that a type 'B1/E' manhole with 1200mm dia or 1500mm dia ring is used, with the opening sited over the channel where depth to pipe soffit is < 1.5m
14. No land drainage, watercourses or drainage from retaining walls should be connected to the adopted sewer either directly or indirectly.
15. Sulphate resisting cement (C20–DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.
16. Adoptable sewer pipes are to be laid on maximum 3 metre lengths unless there is a specific operational need to lay longer lengths.
17. Sewers to be laid in Class "S" bedding (150mm granular bed & surround). Where depth of cover to top of the sewer is less than 1.2m in highways & verges (or less than 900mm in none vehicular access areas) then a concrete slab should be provided above granular bed & surround.
18. Yorkshire Water is not obliged to accept filter/land drainage run–off into the public sewer network or adoptable drainage system (directly or indirectly). An alternative method of disposal of the land drainage run–off will therefore be required & 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.
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 Yorkshire Water would prefer clayware channel in manholes. We have found plastic channels are difficult to set in concrete because they float and a satisfactory finish cannot be obtained on the benching.
20. 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.
21. The clearance on the crossover points (min 300mm) between the surface water, foul sewers, rising main and other services should be sufficient clearance to provide 150mm granular bed and surround around both pipes.
22. New connections to the public sewer should be connected soffit–soffit unles stated otherwise.

Rev.	Content	Date
P1	Preliminary Issue	28.08.19

Client	Midlands Construction Ltd		
Project	Butt Lane Snaith		
Title	Adoptable Drainage Details		
Drawn JL	Date 08.19	Drg. No. 7849/029	Rev. P1
Scale 1:20 @A1	Checked JL		

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