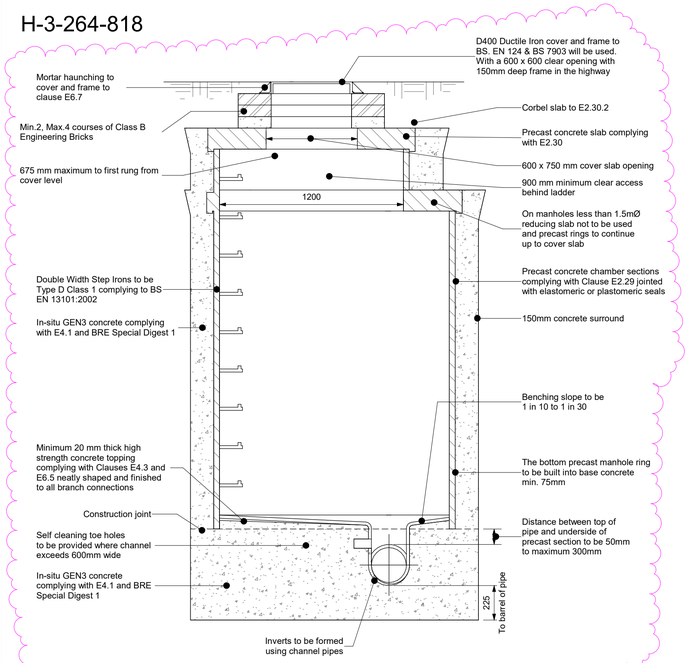
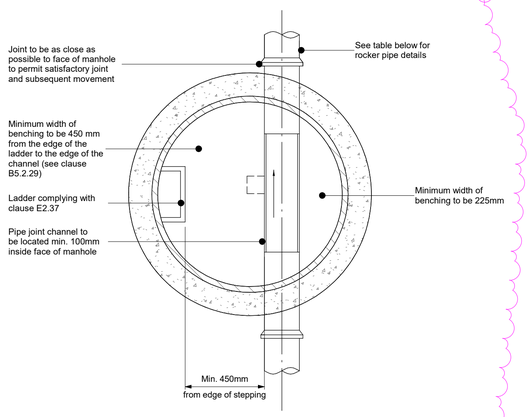
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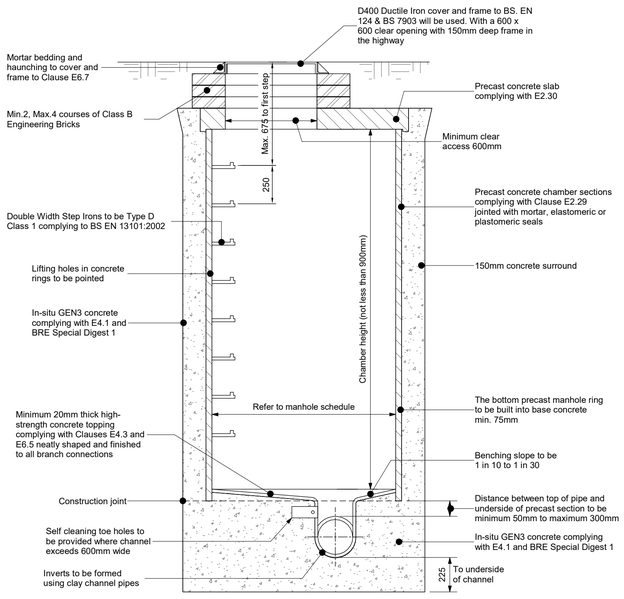


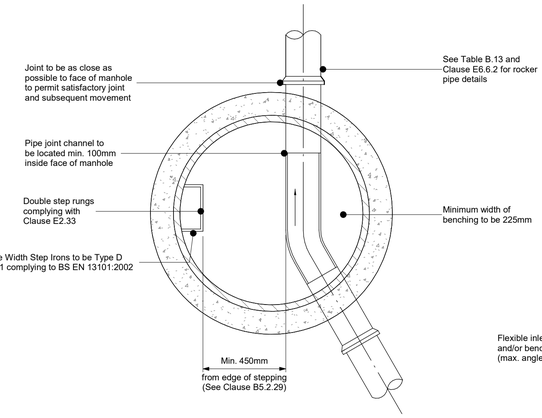


Manhole Type `A' Details
Scale 1:20

Depth of cover to soffit of pipe 3m to 6m with ladder and reducing slab
Rigid material construction with concrete surround

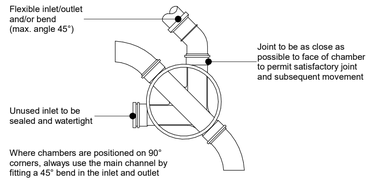
3 Drainage - Manholes A
1 : 20

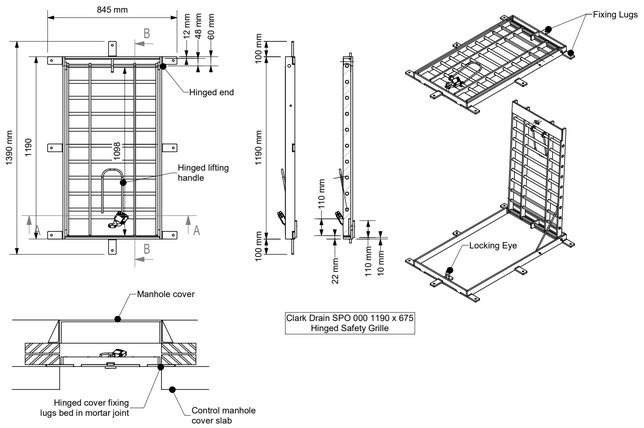




Manhole Type `B' Details
(Depth from cover level to soffit of pipe 1.5m to 3m
Alternative rigid material construction with concrete surround)

1 Drainage - Manholes B
1 : 20

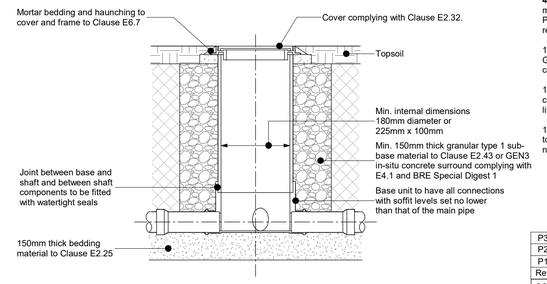




Clark Drain SPO 000 1190 x 675
Hinged Safety Grille

6 Drainage - Control Manhole Safety Grille
1 : 20

Plastic chambers and rings shall comply with Clause E2.31



Inspection Chamber Type `E' Details
Depth from cover level to soffit of pipe up to 2m
Flexible material construction for use in
Domestic gardens

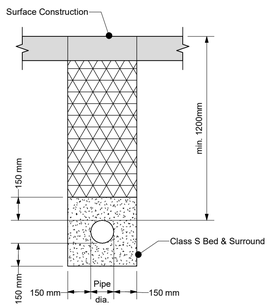
7 Drainage - Inspection Chamber E
1 : 20

Table B.13

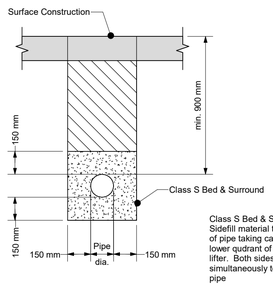
Rigid pipes built into manhole should have a flexible joint as close as feasible to the external face of the structure and the length of the next rocker pipe should be as shown.

Nominal diameter (mm)	Maximum effective length (m)
150 - 600	0.6
601 - 750	1.00
over 750	1.25

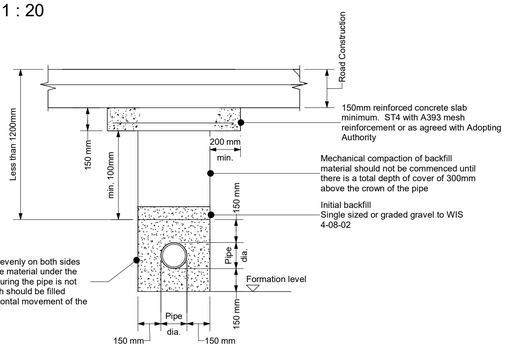
All pipes entering the bottom of the manhole to have soffits level.



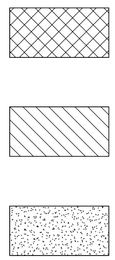
Applicable Under Roads/Parking Areas Where Drains Have More Than 1200mm Cover



Applicable Under Footways/Planting Areas Where Drains Have More Than 900mm Cover



Applicable Under Vehicular Access Areas Where Drains Have Less Than 1200mm Cover & Under Non-Vehicular Access Areas Where Drains Have Less Than 900mm Cover



Type 1 granular material placed in layers not exceeding 250mm thick, each layer being well compacted. Mechanical compaction equipment must not be used until there is a min. 450mm thickness of compacted material above the crown of the pipe

Selected excavated material placed in layers not exceeding 300mm thick, each layer being well compacted. Mechanical compaction equipment must not be used until there is a min. 450mm thickness of compacted material above the crown of the pipe

Single sized clean granuar material lightly compacted in 150mm thick layers

Pipe Size	Aggregate Size
150mm ∅	14mm
1200mm ∅	40mm

2 Drainage - Backfilling Details - Adoptable
1 : 20

Note:

No work is to be carried out until the appropriate techincal approvals are in place and relevant planning conditions are discharged. Any work carried out on site before technical approval is obtained and planning conditions are discharged is entirely at the contractors risk.

Drainage Notes

1. All design work has been carried out with health & safety aspects given full consideration. Wherever possible risks have been eliminated from the design, however due to the nature of this type of work it is not possible to remove all risk.

The contractor shall provide satisfactory responses via suitable method statements as to the manner in which they propose to carry out the work and deal with any highlighted risk, in particular the following :-

· All trench excavations, regardless of depth.
· Guarding to edges of excavations to prevent injury.
· Guarding of the works outside normal working hours.
· Undermining of adjacent roads or structures.
· Confined spaces operations.
· Dealing with existing services.
· Traffic management on existing highways.
· Procedures to be followed in the event of an emergency.
· Methods of working where ground contamination may be present. · Dealing with existing sewer flows.

The above list is by no means exhaustive, but does highlight operations that present a risk to both contractors and the general public.

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 regarding the disposal of the filter drain/land drainage run-off.

5. Cover slabs must carry the BSI kite mark 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 load bearing slab should be fitted above the cover slab to bring the size down to 600 x 600mm 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.

6. The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service margins.

7. Sulphate resistant cement (C20-DC2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

8. Sewers must have 5 metres clearance from trees and hedges or the width of the canopy at mature height.

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 nonvehicular 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. Yorkshire Water policy is that Type "C" brick manholes and 1050mm diameter manhole rings are not preferred. Instead, it is preferred that you use a type "B" manhole with 1200mm diameter or 1500mm diameter rings, with the opening sited over the channel where depth of cover to pipe soffit is 1 - 1.5m.

12. 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 require clay ware channel in manholes.

13. All levels related to Met Geo-environmental P20-00984. Using the OS GPS Network and applying OSGM15 National Geoid Model to obtain local area corrections.

14. 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.

15. There must be enough clearance at crossovers to accommodate bedding to both pipes, approx. 300mm ; if crossover is near the rocker then the clearance needed may need to be increased".

Rev	Revision Description	By	Chk	Date
P3	Updated to suit YW comments	LW	MH	16.09.22
P2	Manhole Type A added	LW	MH	11.08.22
P1	First Issue	LW	MH	04.03.22

SCALE @ A1	ISSUING OFFICE	MSJ PROJECT NUMBER
1 : 20	Leeds	219112

STATUS	PURPOSE OF ISSUE
S0	WORK IN PROGRESS

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PROJECT
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TITLE
Adoptable Drainage Details
Sheet 1 of 2

CLIENT
Vistry

DRAWING NUMBER	REV
219112-MSJ-ZZ-XX-DR-D-4115	P3