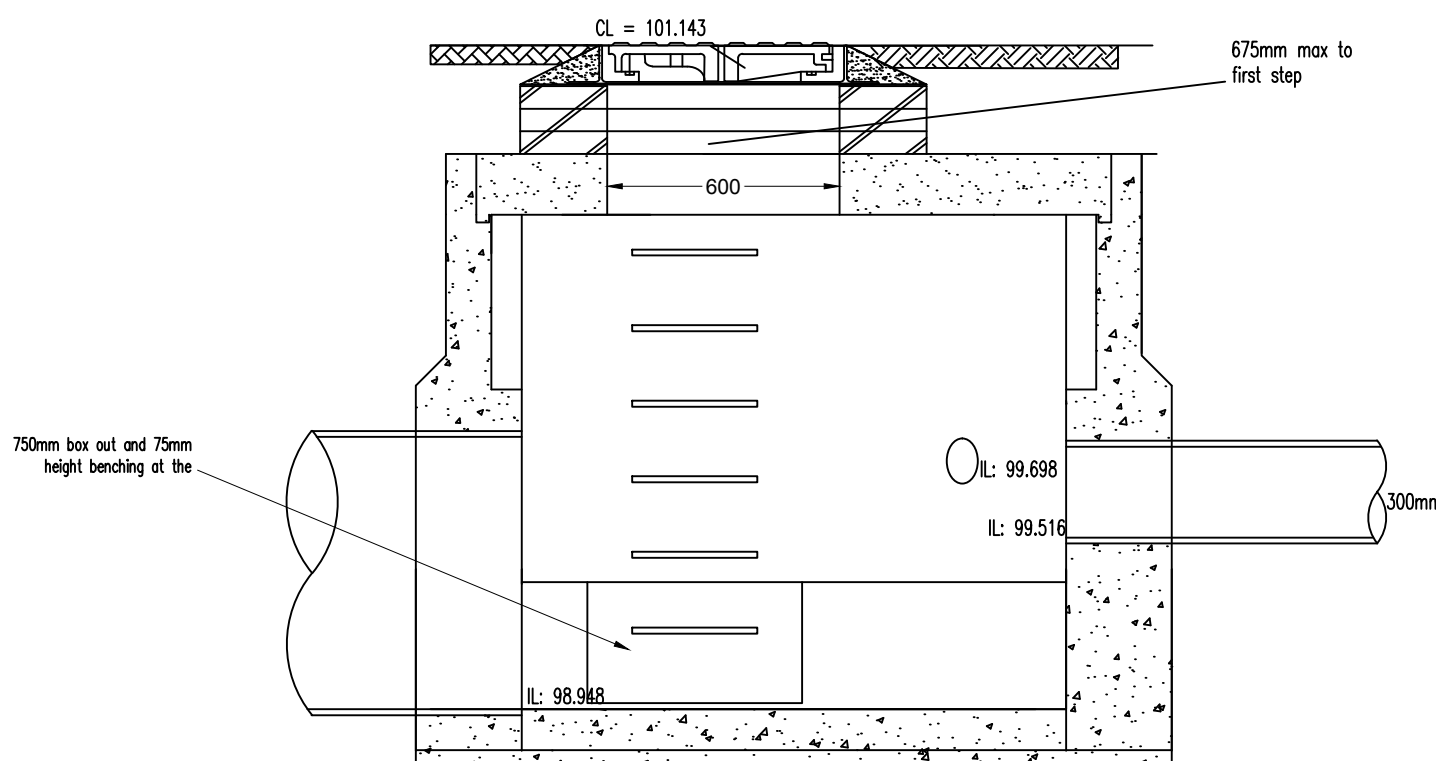
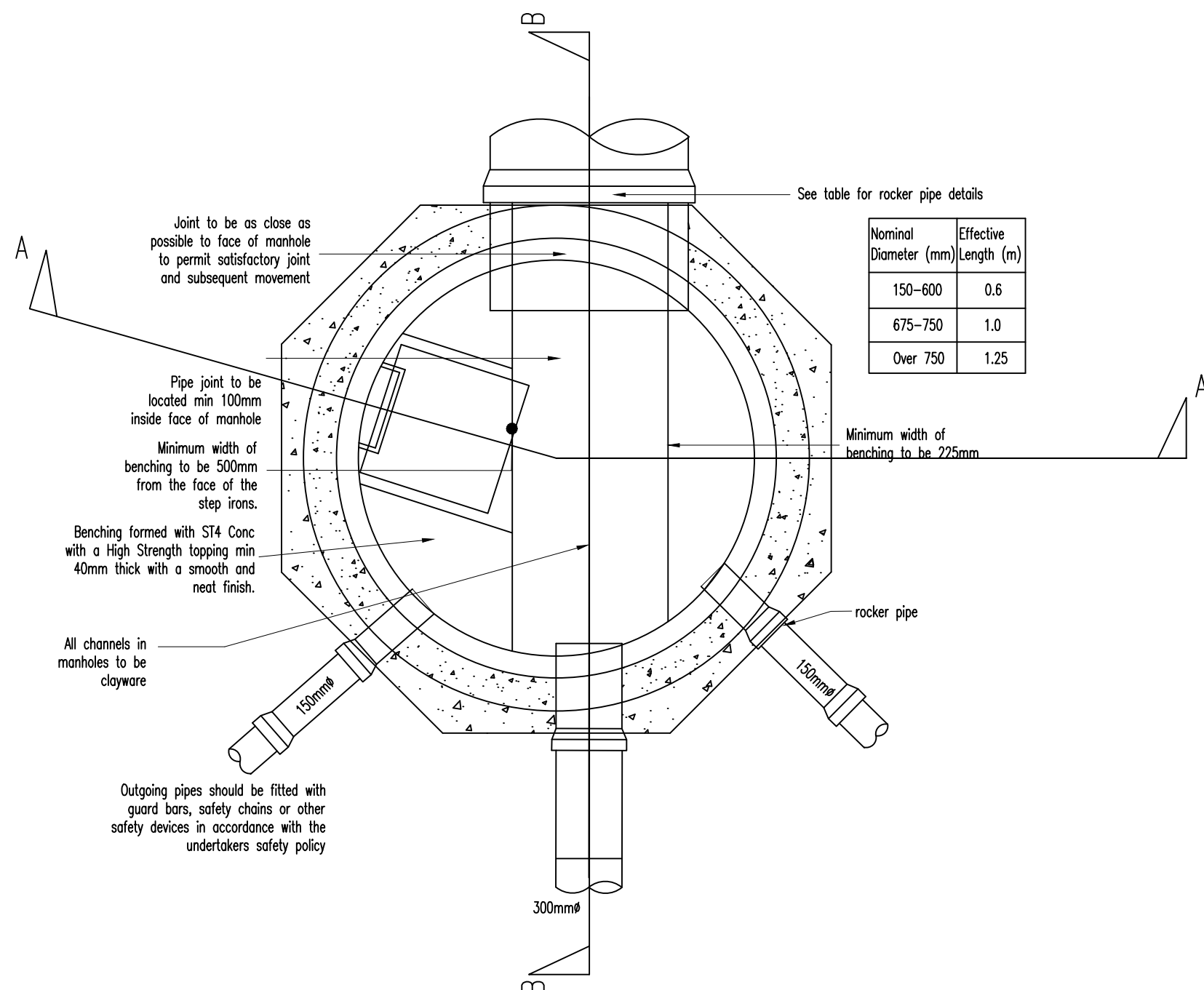




SECTION B-B



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

- All adoptable sewer works and material to be in accordance with "Design and Construction Guidelines" 2021, the relevant British/European and Yorkshire Water's standards/specifications/Addendum to the Mechanical and Electrical Specification and be Kitemarked.
- Manhole covers shall/must have a clear opening of 600mm and shall be Class D400 to BS EN 12440 and must be fitted with drainage highways
- Where a B125 cover and frame has not been approved, this **must** not be casted in plastic and must have lifting eyes suitable sized to accommodate standard lifting keys. Screw down covers are acceptable.
- Filled ground must be filled and consolidated under the supervision, and to the satisfaction, of Yorkshire Water before any sewer works are carried out
- The contractor is responsible for arranging the 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.
- Cover slabs must carry the BSI Kitemark or will be rejected by the Yorkshire Water Inspector.
- Where the clear opening of manholes/catchpits is different from the size of the frame and/or where the cover is to be fitted above ground, it must be fixed to the frame down to the minimum 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.
- Sulphate resistant cement (**D20-C2C2**) and precast concrete products must be used or a laboratory report proving that such materials are acceptable.
- Concrete pipe/sewers shown on drawings must be made of concrete, not kerb faces and service margins.
- Sewers must have 5 metres clearance from trees and hedges (please also see Figure 2.3 cover sheet to "Design and Construction Guidance" 2021 for restrictions on tree planting adjacent to sewers).
- Sewers to be laid in Class "B" bedding (150mm granular bed and surround). Where depth of cover is less than 1.2m, the drainage highways and verges of roads (less than 900mm non vehicular access areas) then a concrete slab must be provided above the granular bed and surround.
- Adoptable plastic sewer pipes to be BSI Kitemarked (Certified to WIS 4-31 and BS EN13476). Adoptable sewer pipes to be laid in maximum 3 metre lengths unless there is a specific operational need to say longer.
- Pipes and fittings in concrete in drains 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.
- Bedding and backfill material to conform to the requirement of Water Industry Specification 4-08-02 (**Table A2**).
- The chamber size of manholes with more than one connection in them may need to be increased in an attempt to accommodate the connections and bends.
- 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, and the top of the inlet and outlet pipes to be installed at least 150mm below the ring rim.
- Surface water and foul rising mains to be provided with marker tape above the rising mains.
- If plastic pipes are to be used then the following should apply:-
- a. All adoptable sewers to be 450mm or 600mm diameter (WIS 4-35-01).
- b. Bedding and backfill material to conform to the requirements of Water Industry Specification 4-08-02 (**Table A2**).
- c. Written proposals 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.
- d. Pipes are installed into the ground prior to getting full technical approval, the developer must provide a CCTV survey of the prospectively adopted sewers and a deformation test (Light Line Test) of the plastic pipes.
- e. Surface water pipes are to be installed at a minimum of 100mm/foal & 150mm/ou surface water pipes up to 1.2m deep. For depths greater than 1.2m, restricted access opening to 350mm is required for safety reasons.
- f. The depth of the manhole chamber to be 2m, where depth exceeds 2m, manhole to be constructed as type B manhole.
- Yorkshire Water is not obliged to accept filter drain/land drainage run-off into the public sewer network (**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 Land Drainage Authority/Land Drainage Section with regard to the disposal of the filter drain/land drainage run-off.
- Strength of vitrified clay pipes (if used) to be 40kN/m for 1000, 40kN/m for 1500, 45kN/m for 2250 and 72kN/m for 3000. All concrete pipes to be Class 120 complying to EN 1916/B5591.
- All levels of existing drainage to be confirmed prior to work commencing on site.
- The contractor must allow for any greater's required for road and sewer opening permits, sewer crossings, etc.
- All pipes with a diameter equal or greater than 450mm shall be concrete.
- Any existing sewers or culverts shown on this drawing are taken from records and exact location and depth should be confirmed by trial pits.
- There may be a requirement for the diversion or protection of statutory undertakers apparatus to facilitate the works shown on this drawing.
- Where pipes are brought into the site to accommodate the bedding for both pipes, approx 300mm if crossover is near the rocker then clearance needed may be increased.

General Notes

1. All private drainage shall comply with current building regulations
2. Drains passing through buildings shall be protected with a lintel over
3. No building to be constructed within 3m of an adoptable sewer
4. All manholes to be sited over an adoptable sewer with a minimum 1m from the water authority
5. Private drainage connections not direct to manholes are to be made via a 45 degree junction
6. Upon completion of the drainage works the contractor shall clean all drainage works by jetting, removing all debris from site. No debris shall be permitted to enter the public drainage or watercourse system. All works shall be CCTV surveyed with the DVD passed to Redrow Homes technical department for review
7. Any live connections to be picked up as part of the diversion works.

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