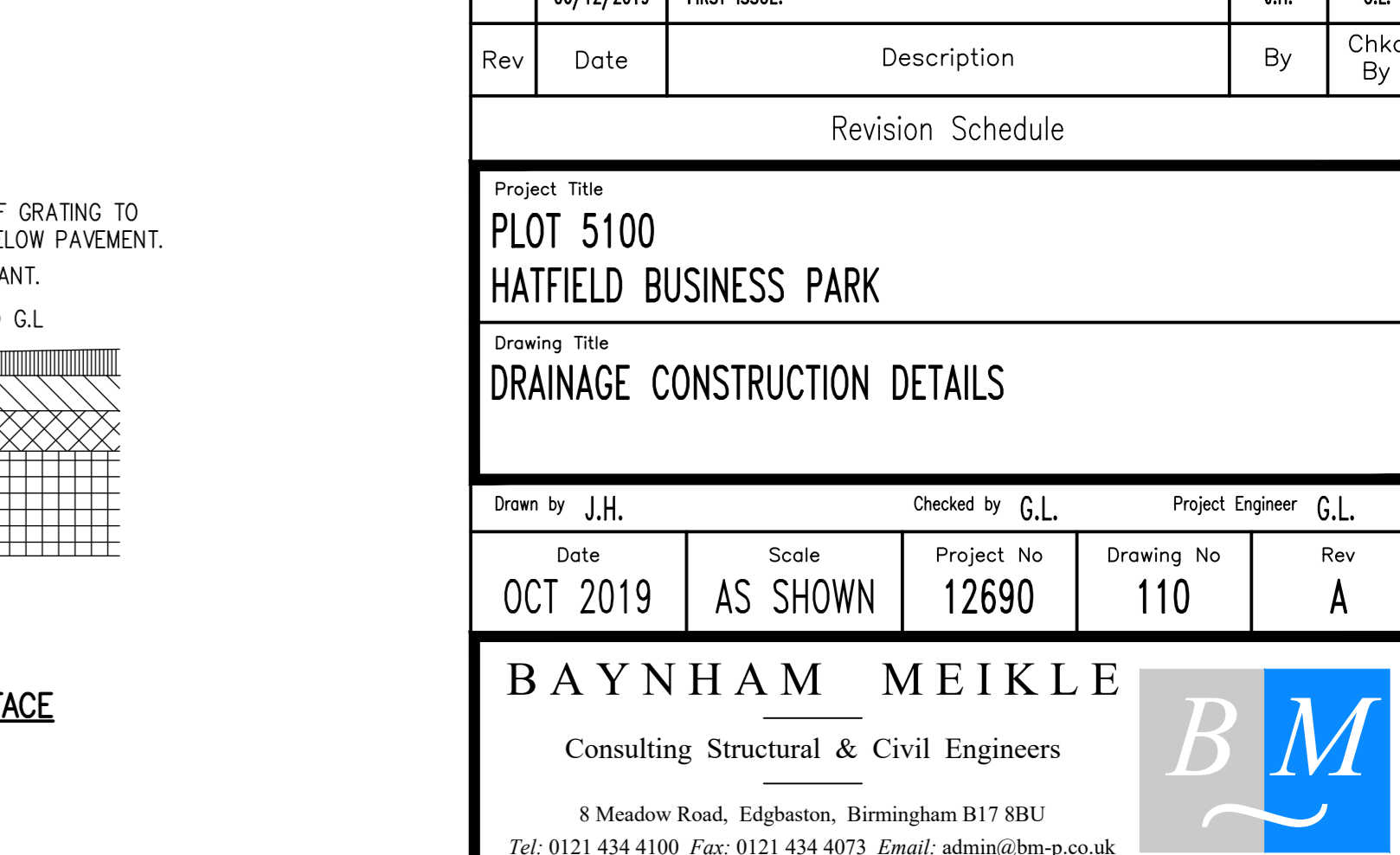
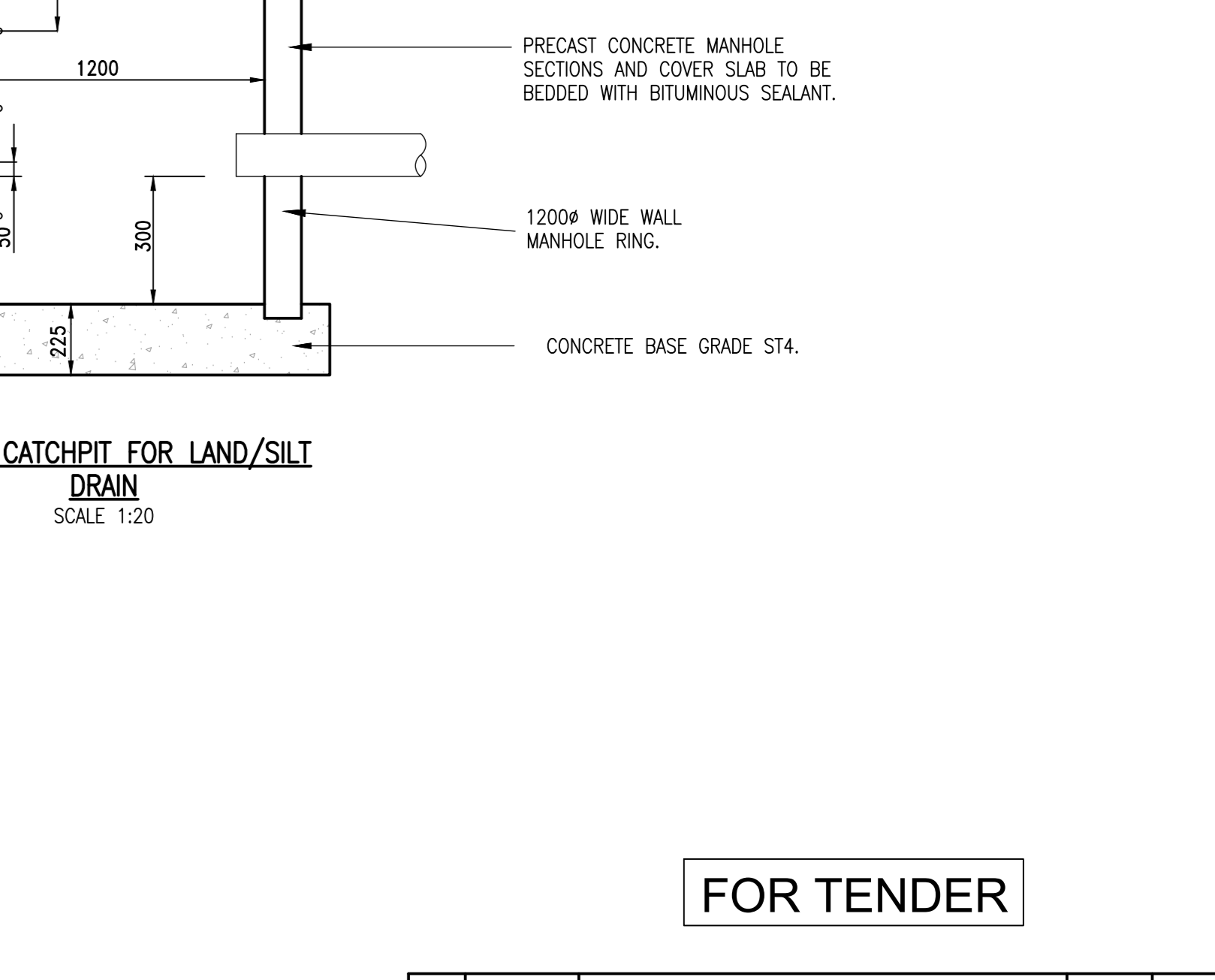
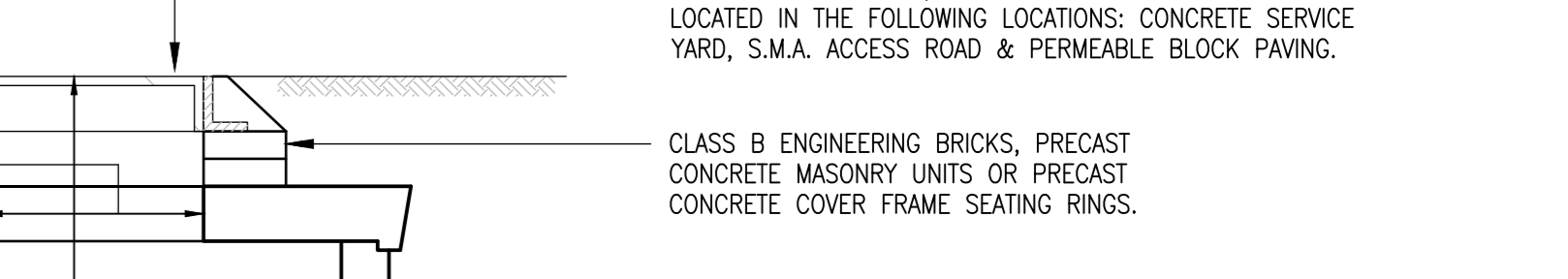
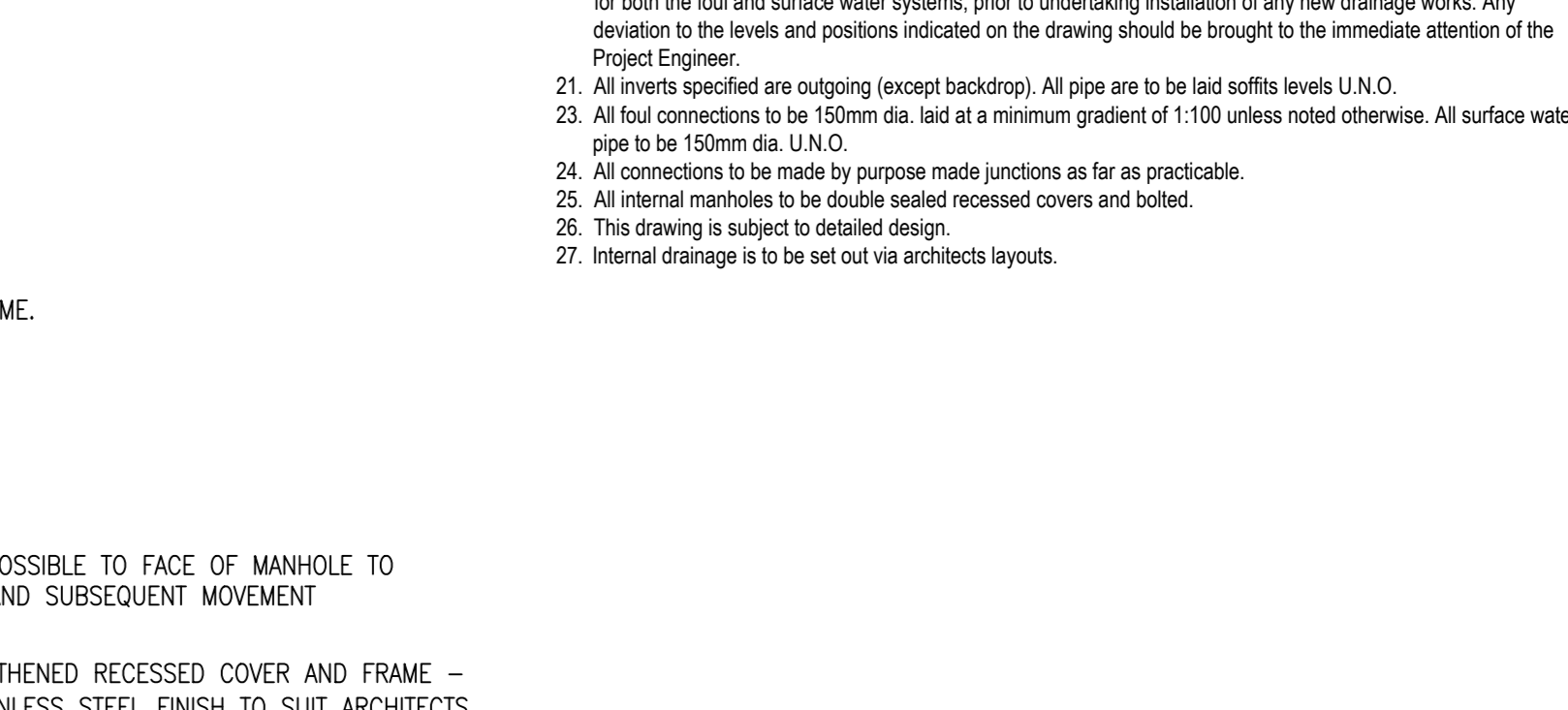
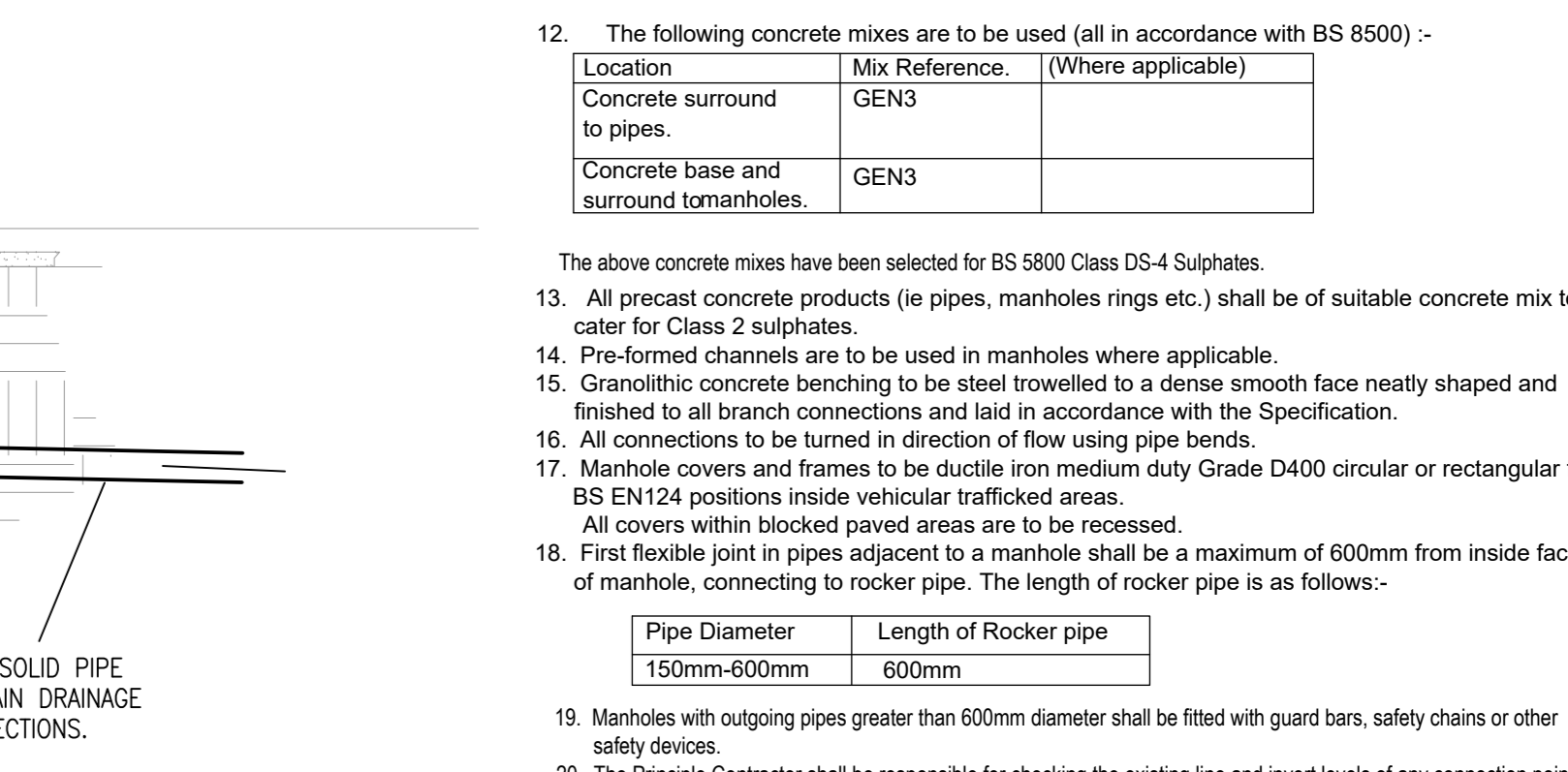
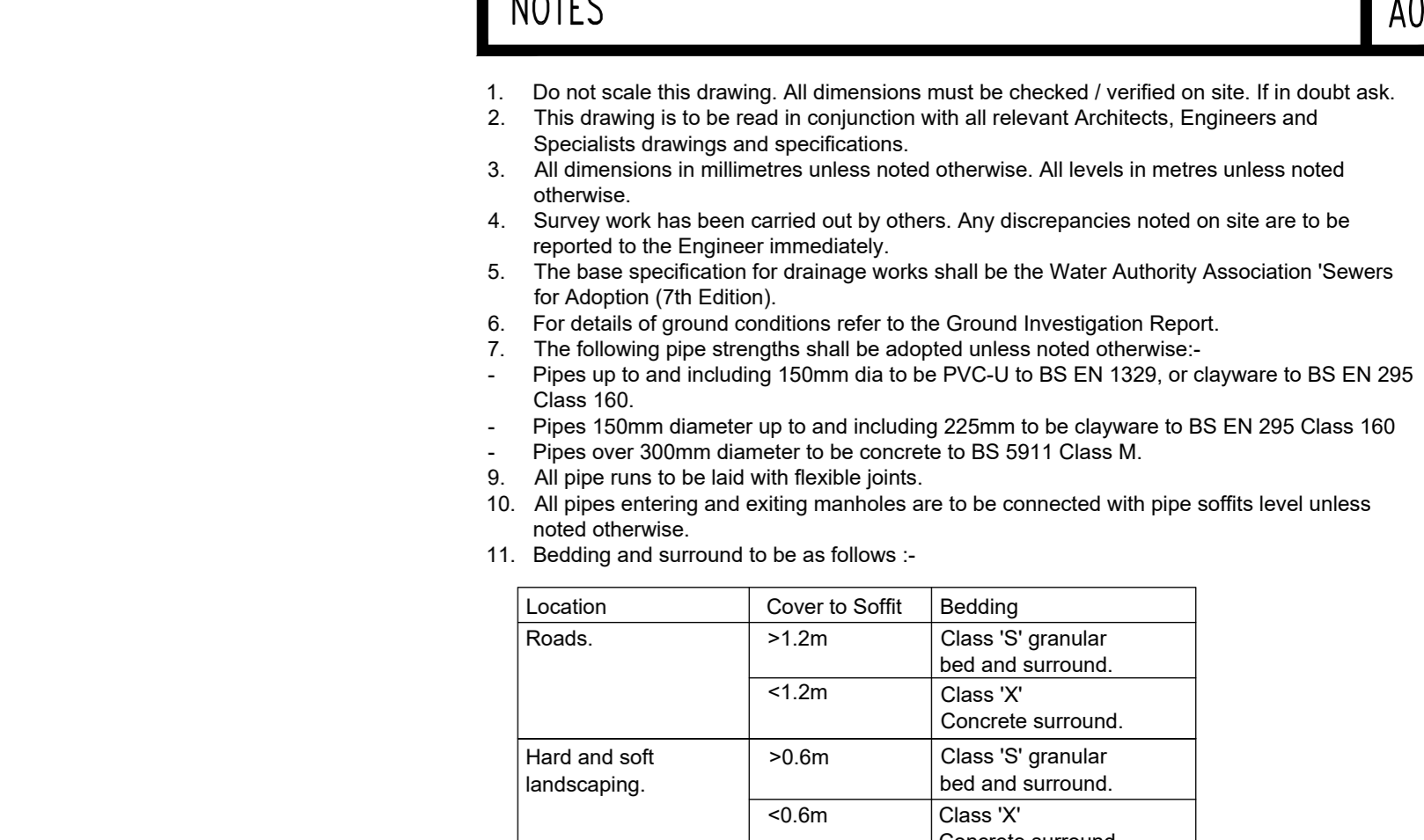
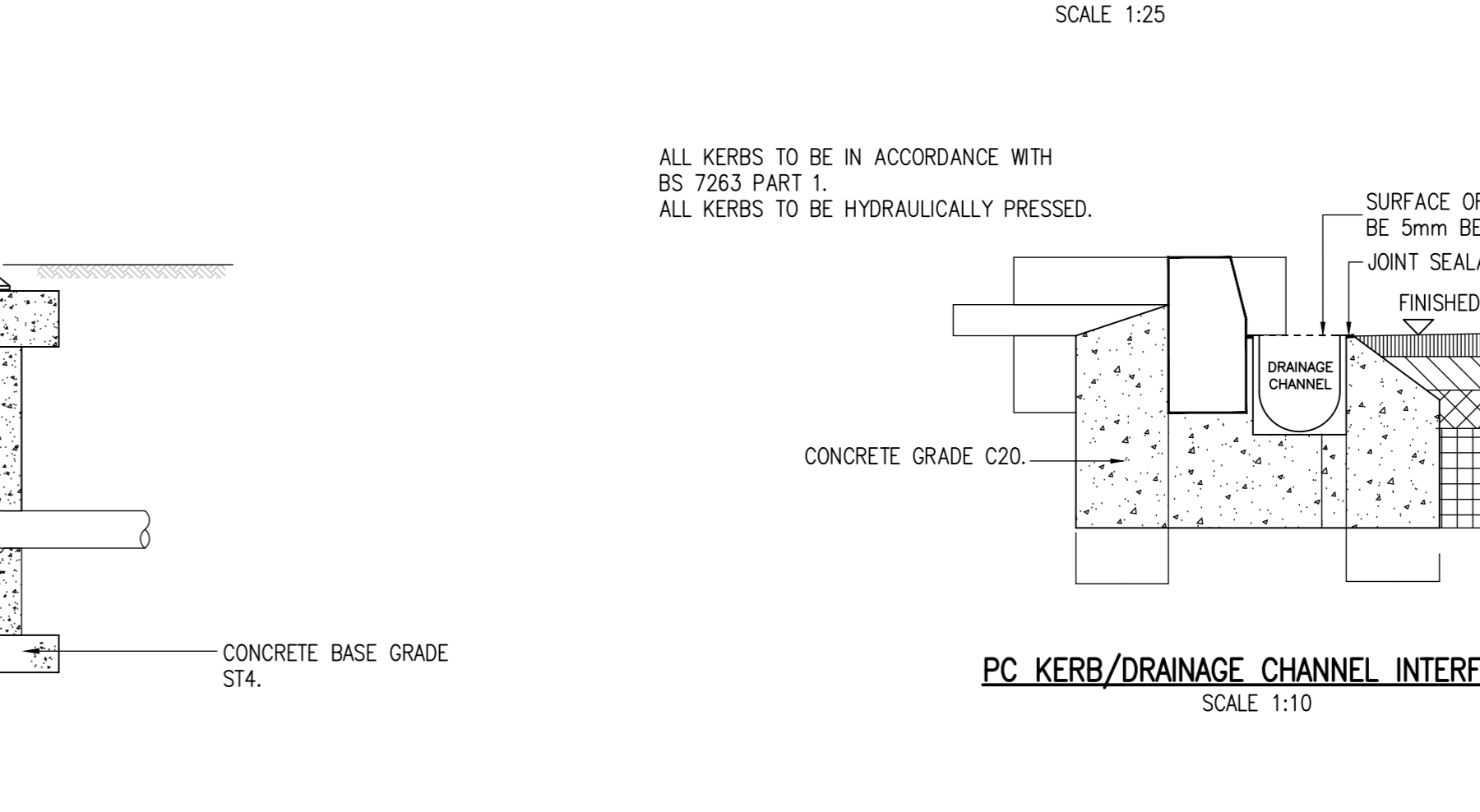
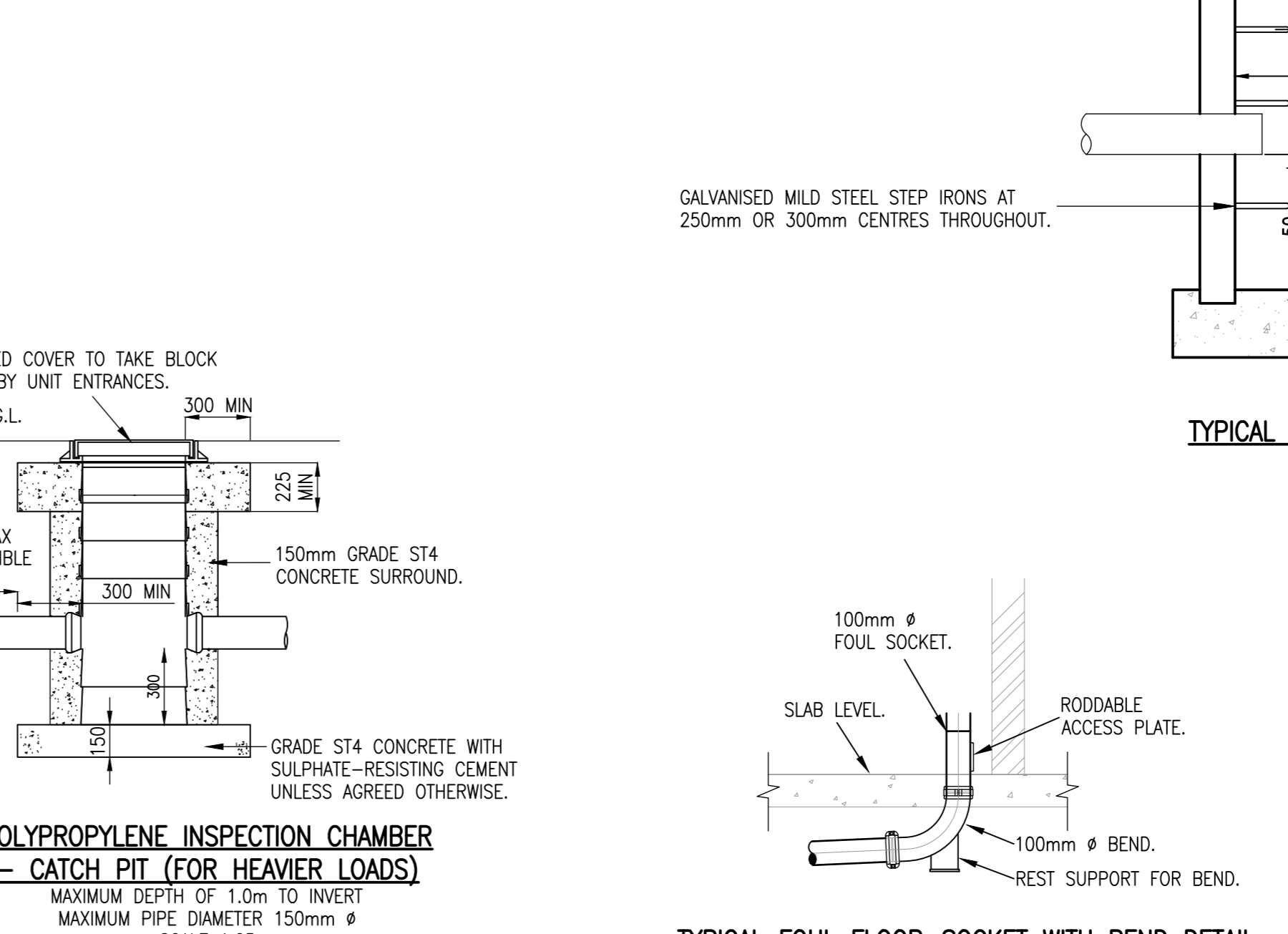
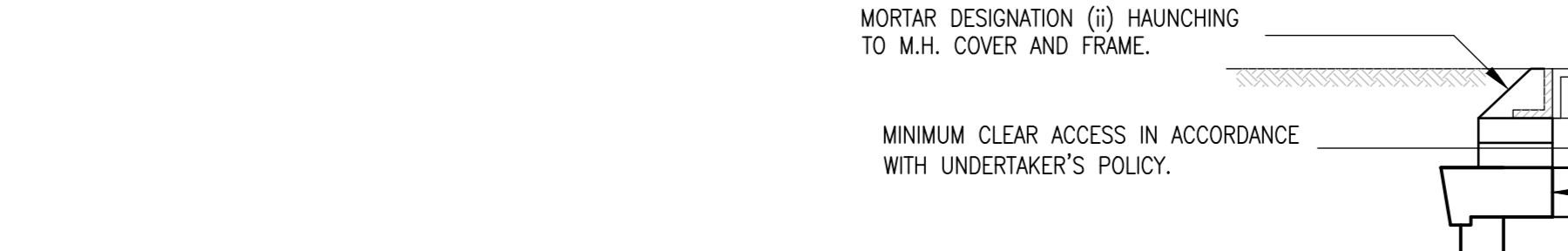
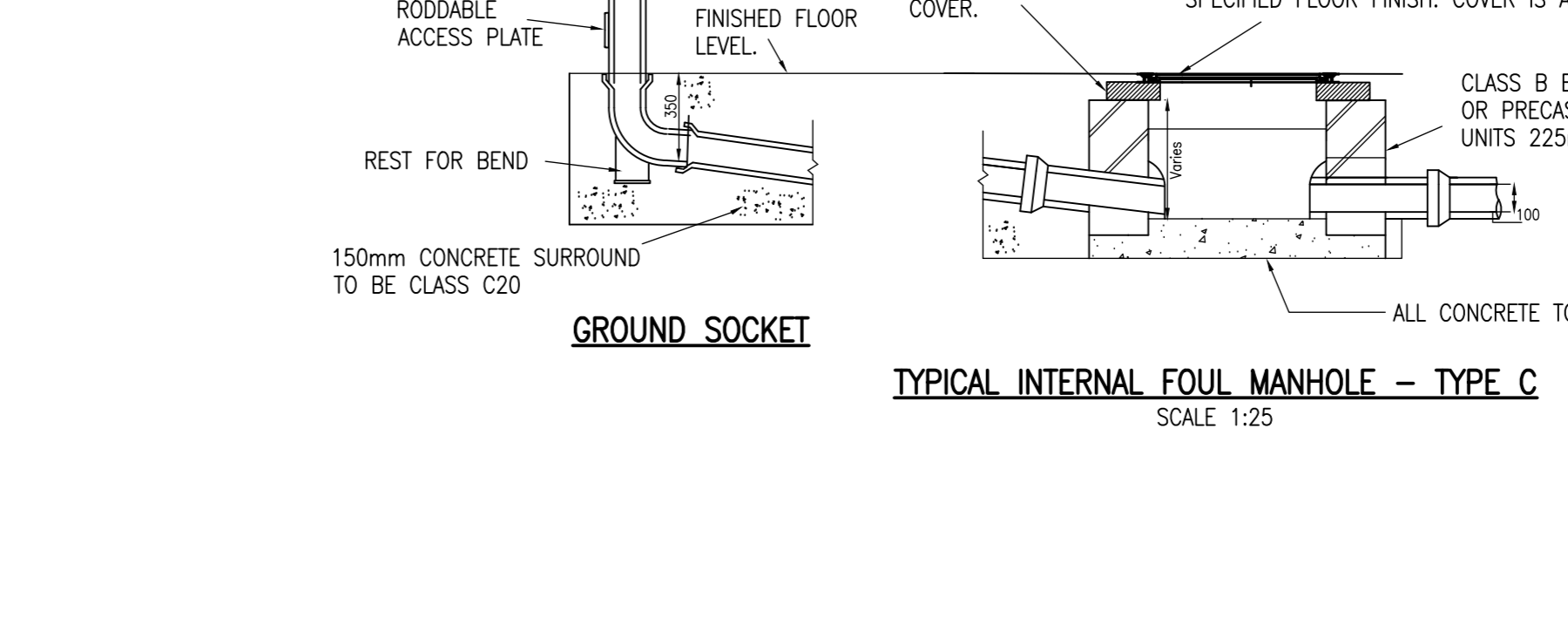
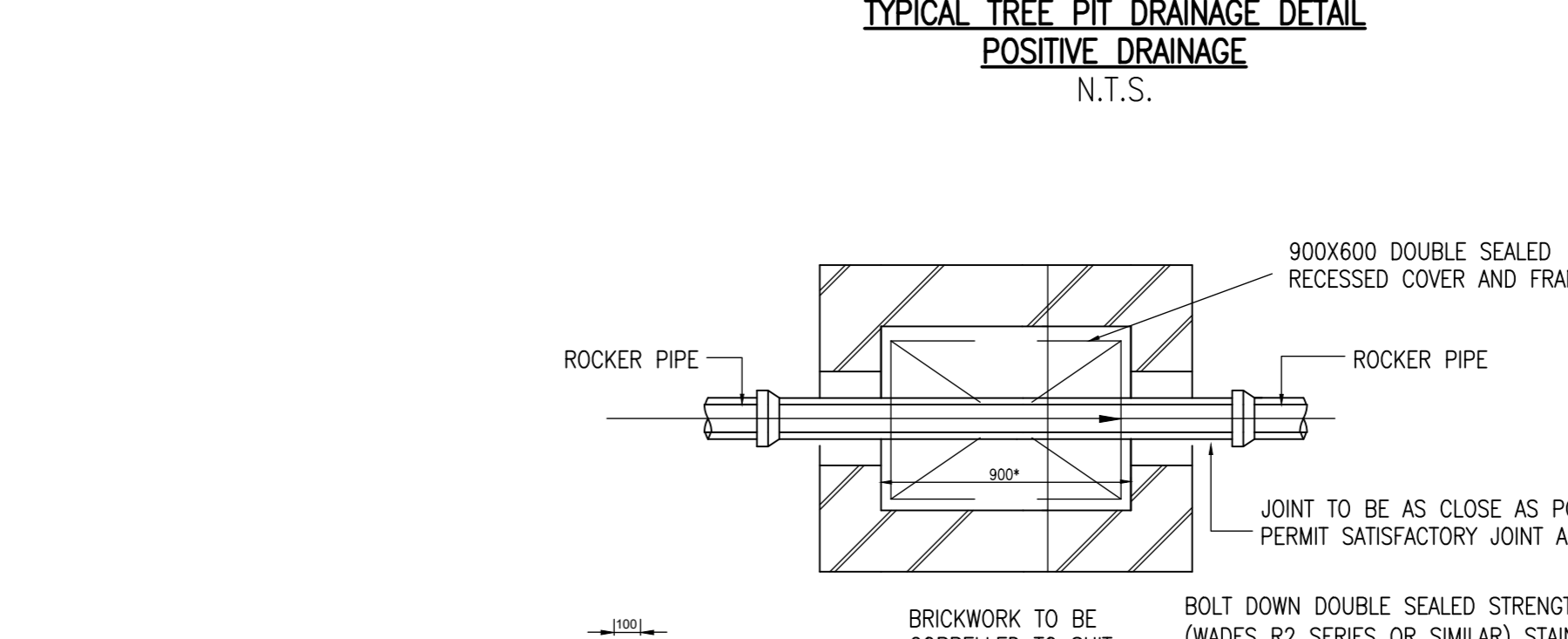
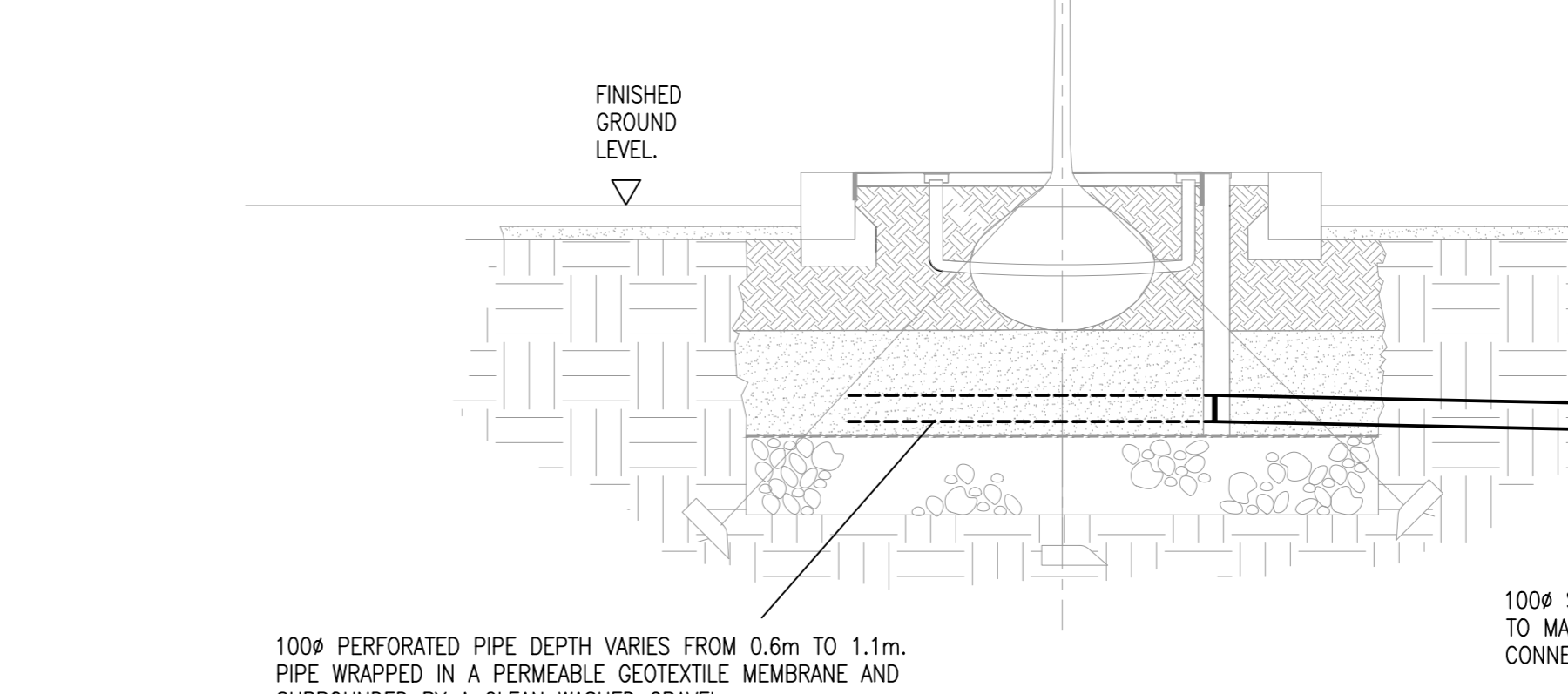
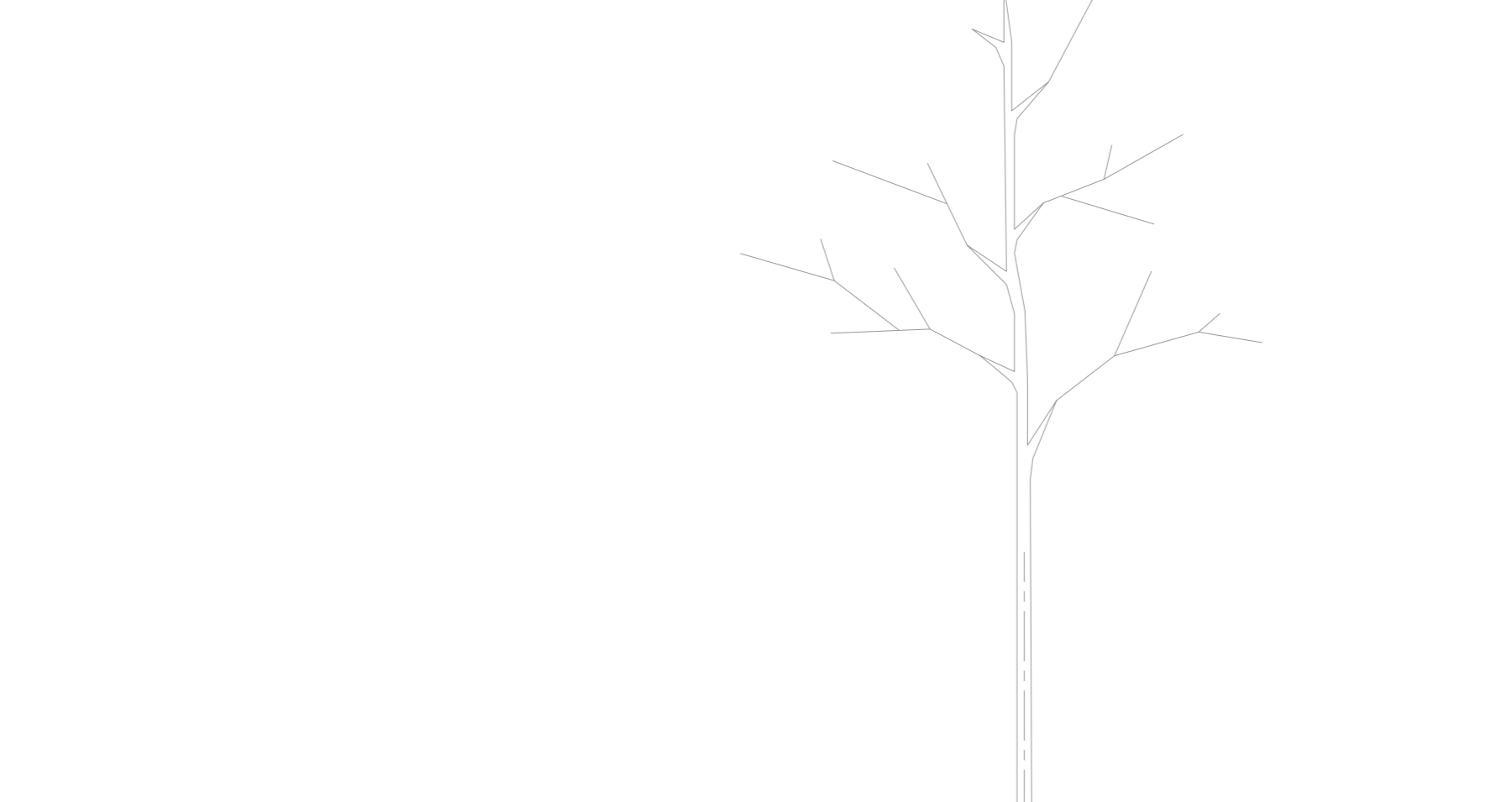
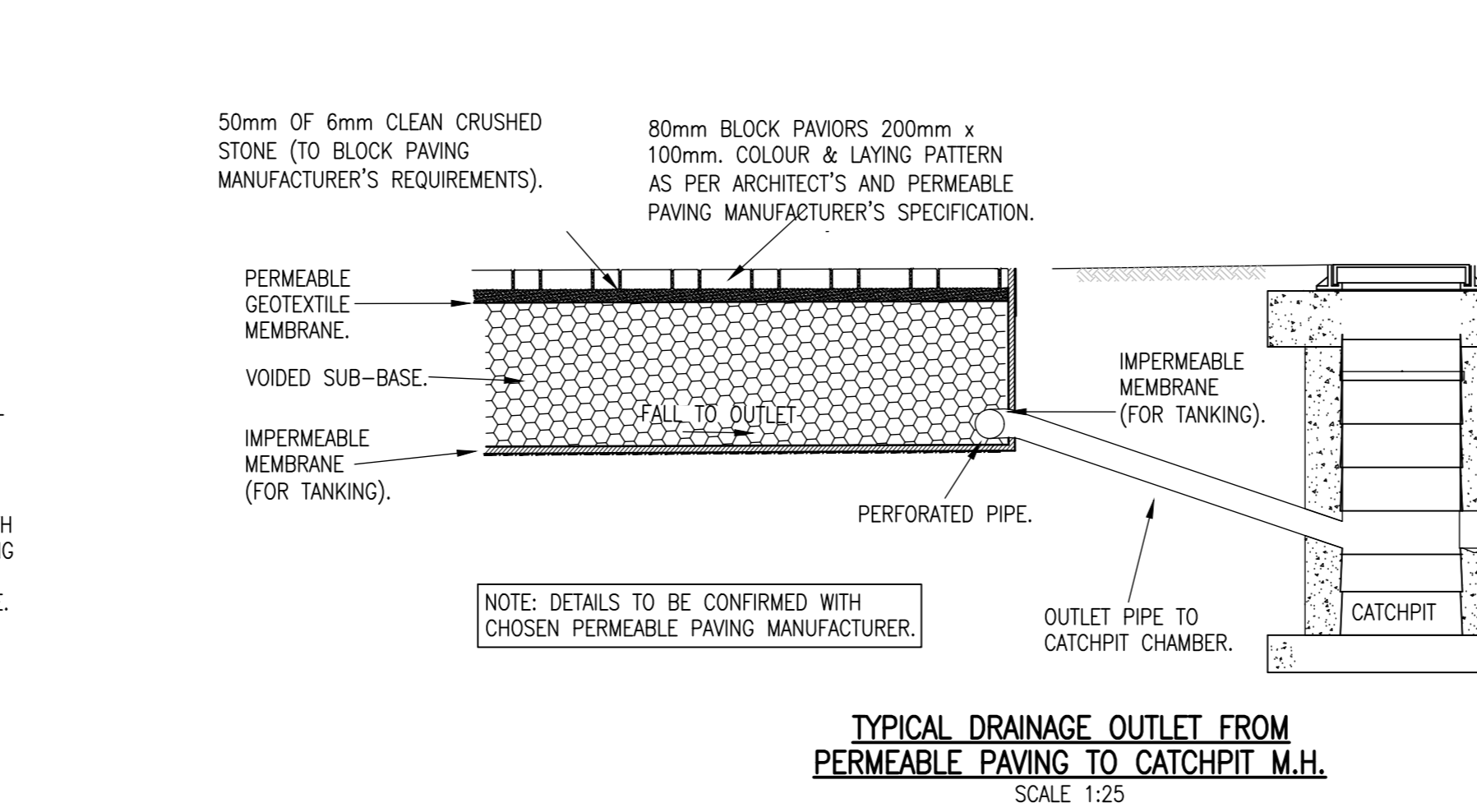
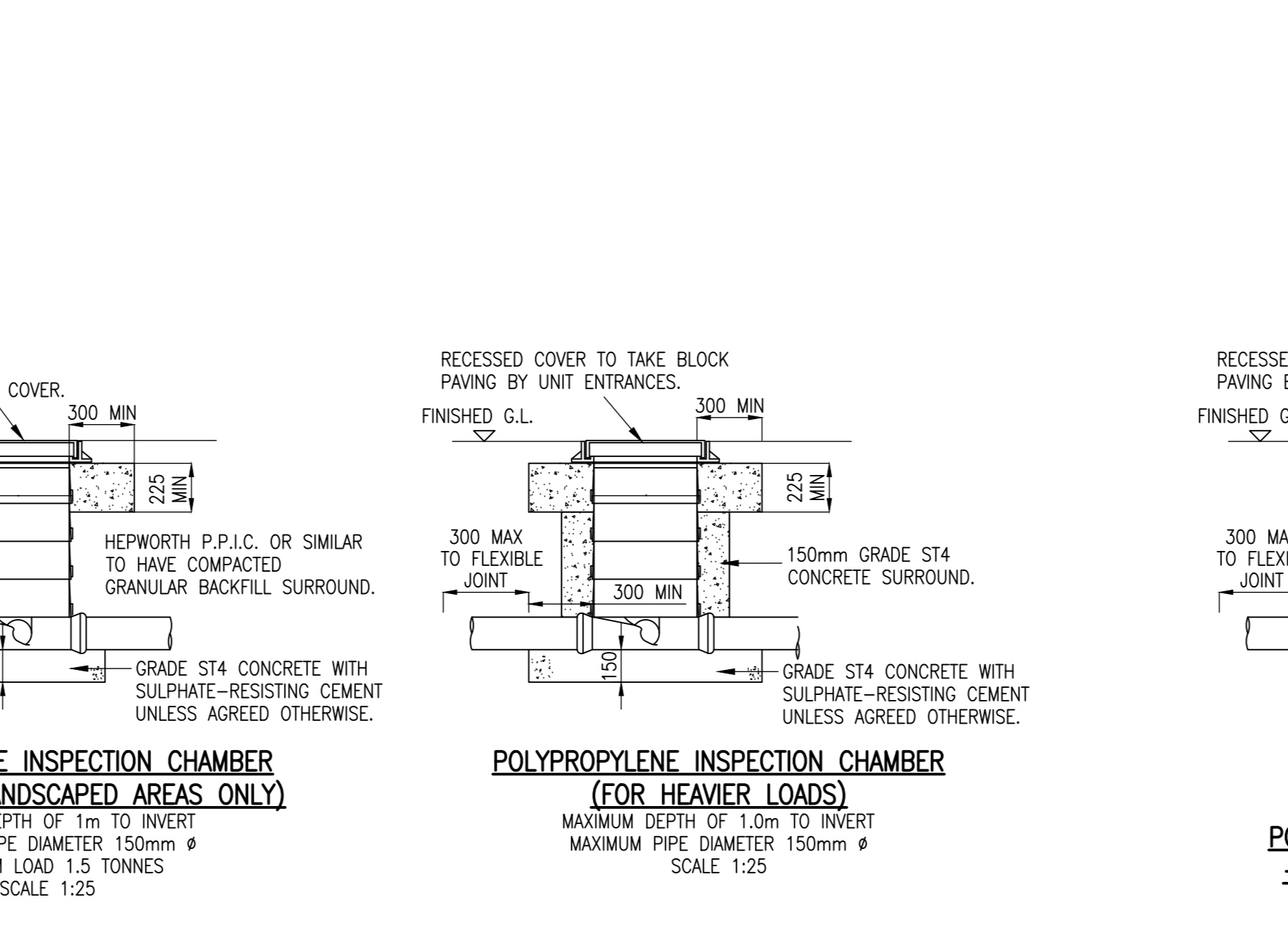
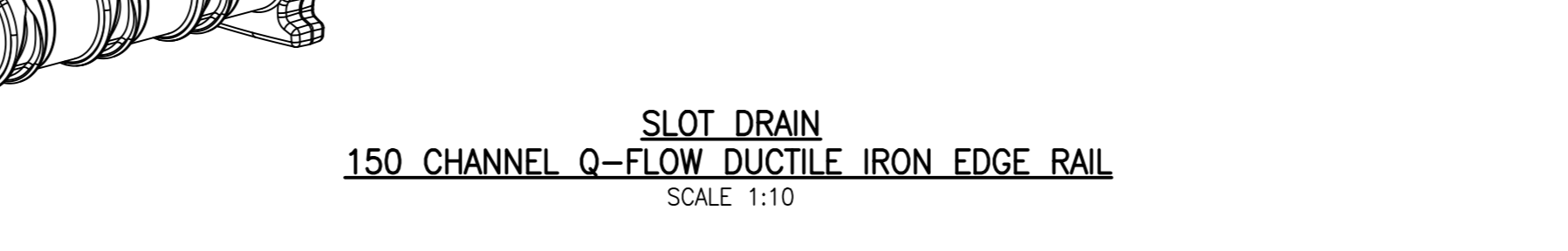
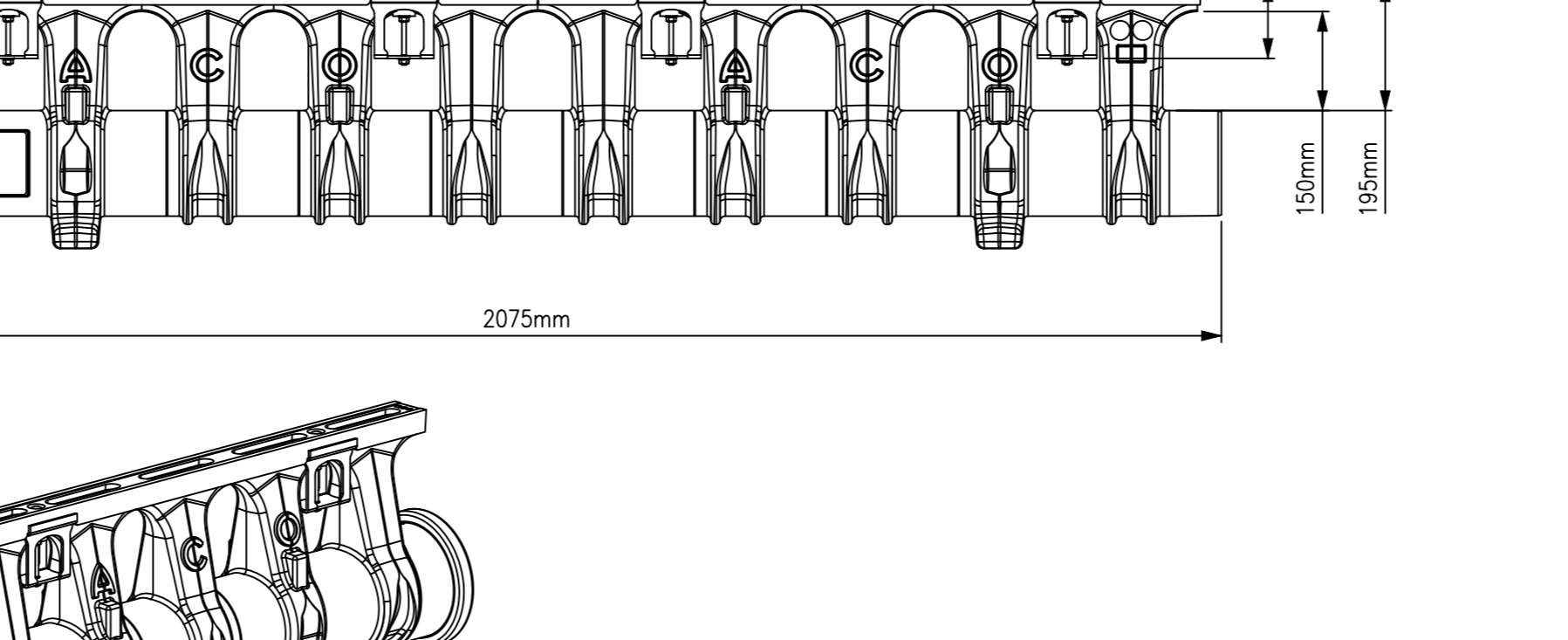
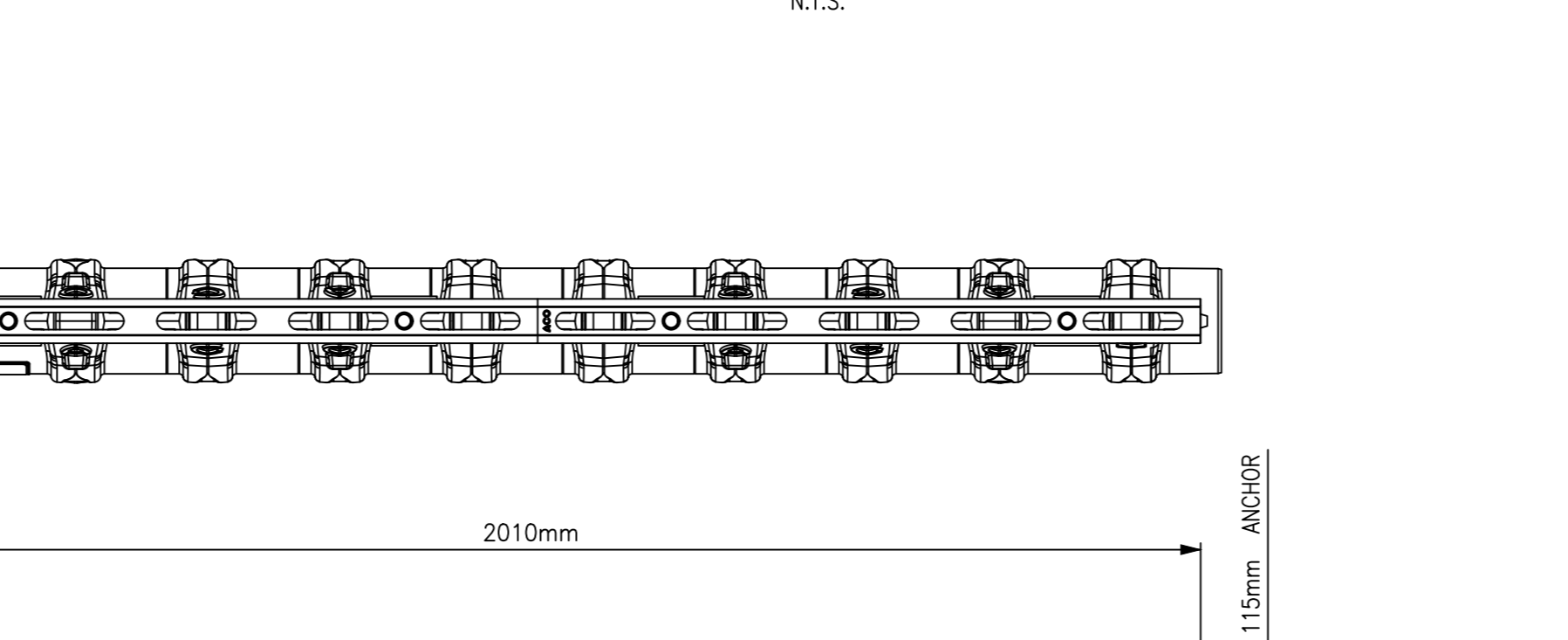
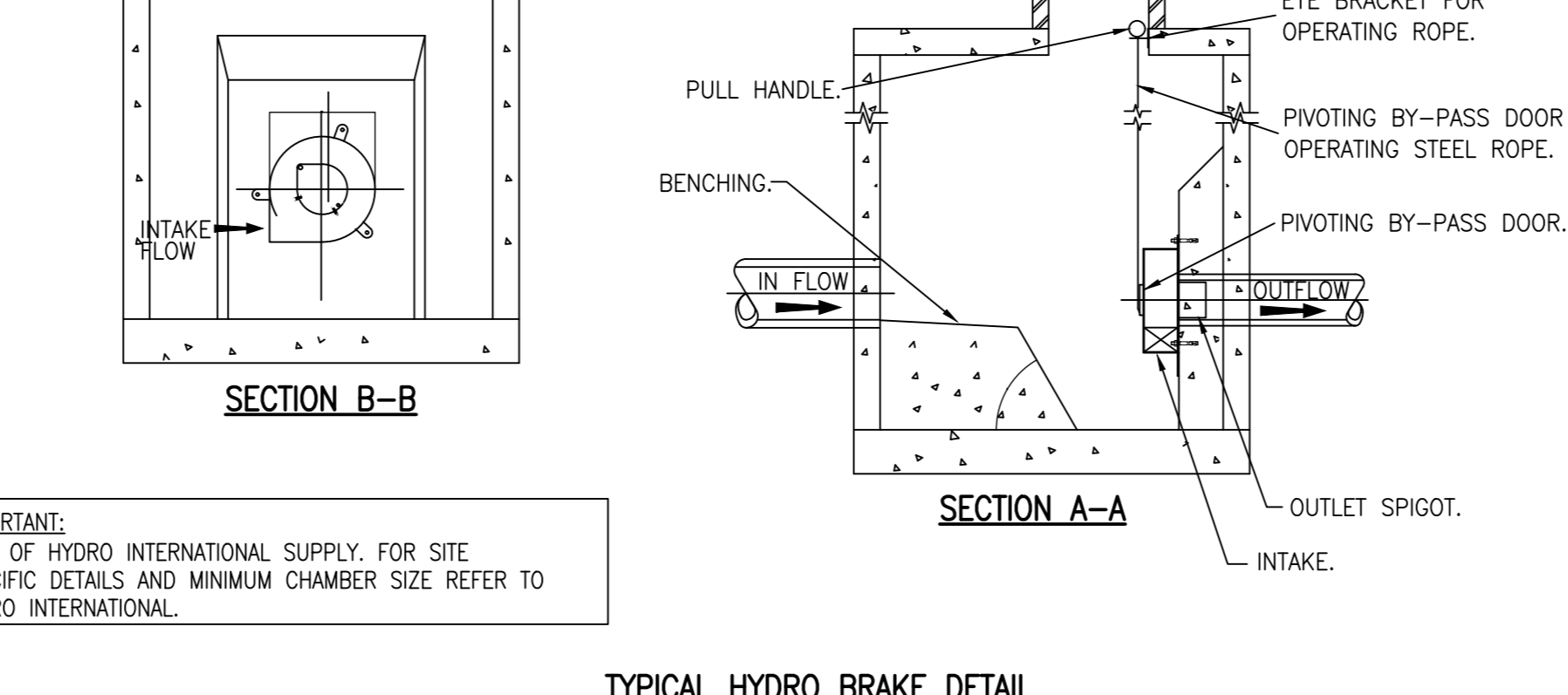
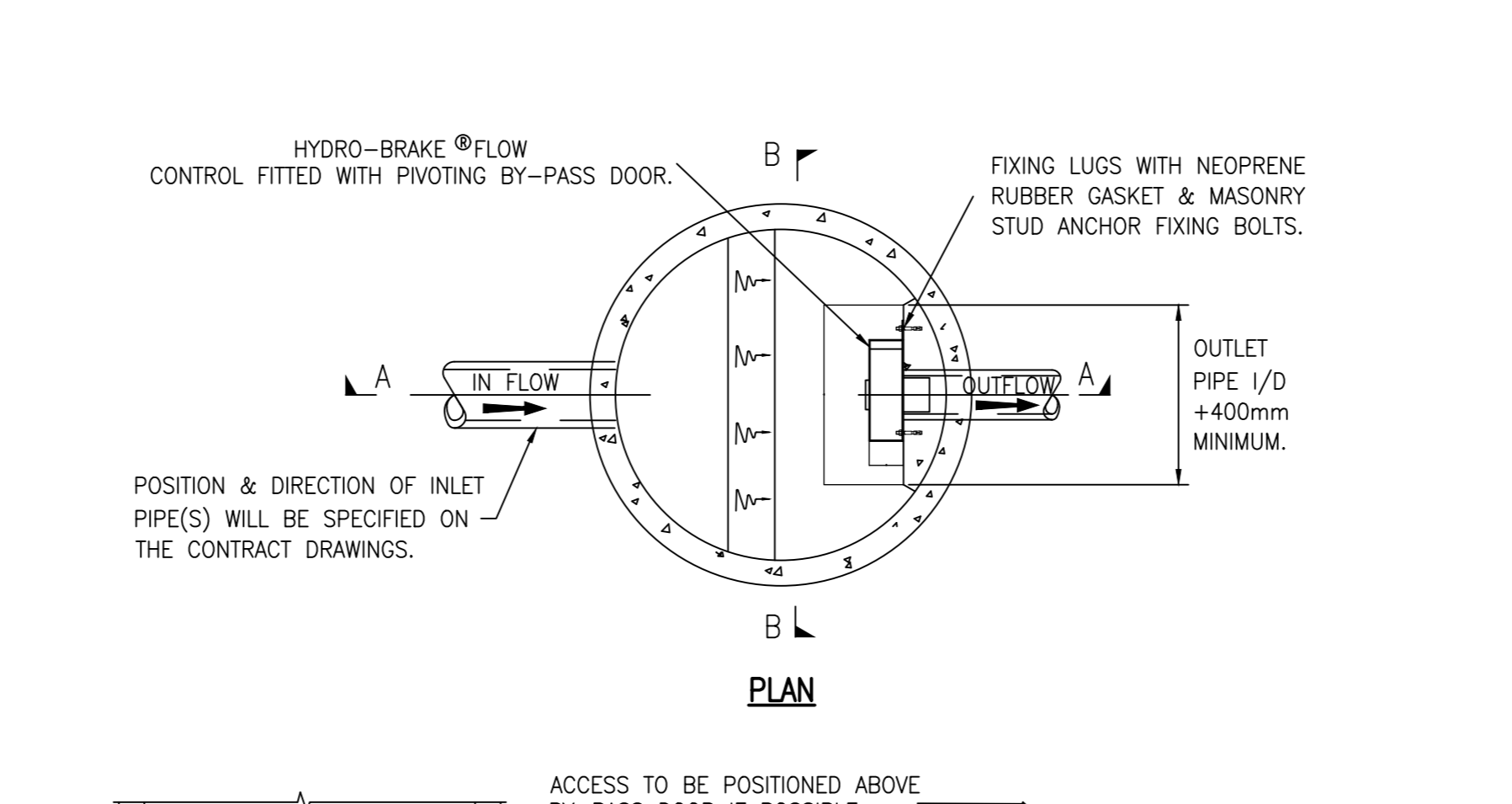
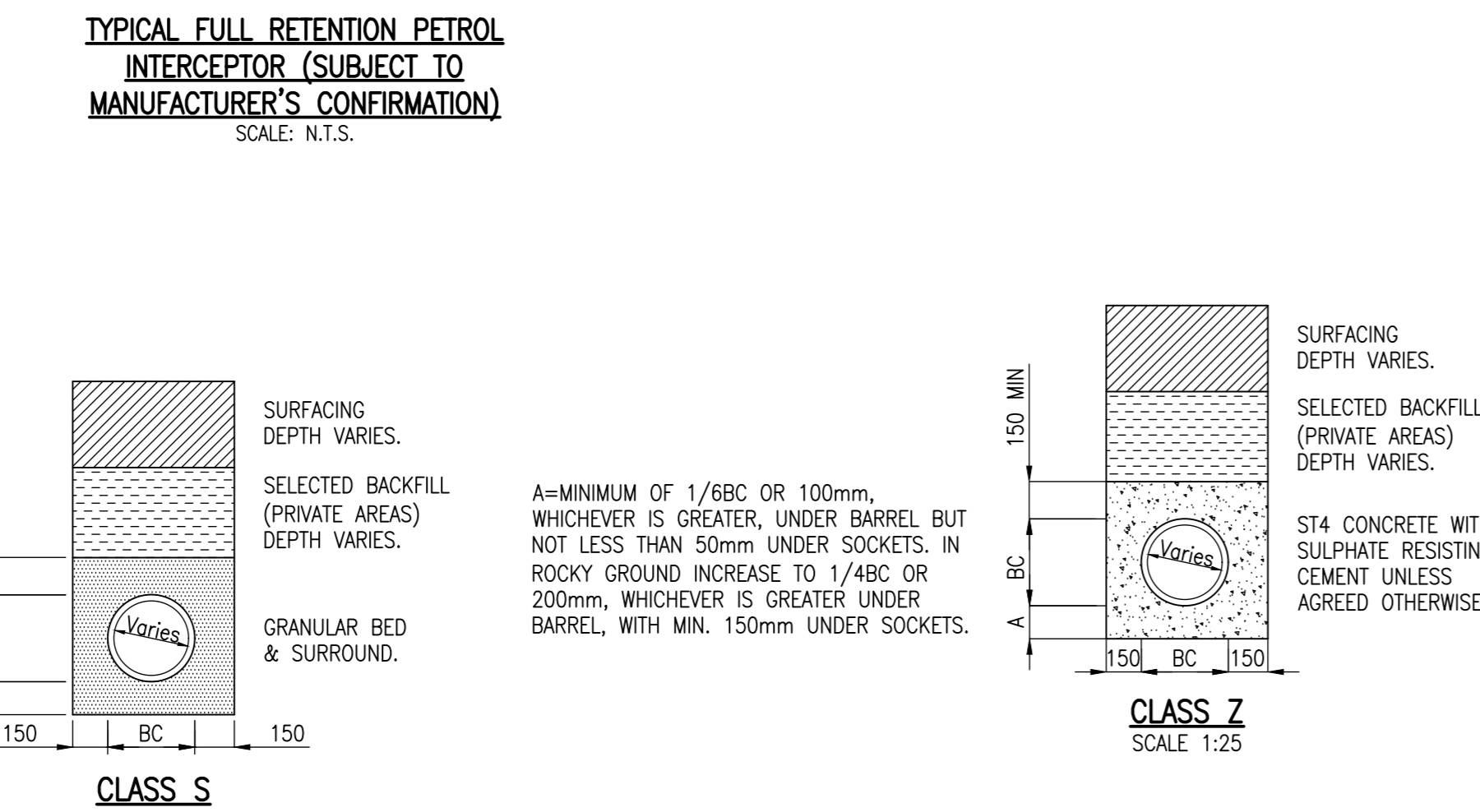
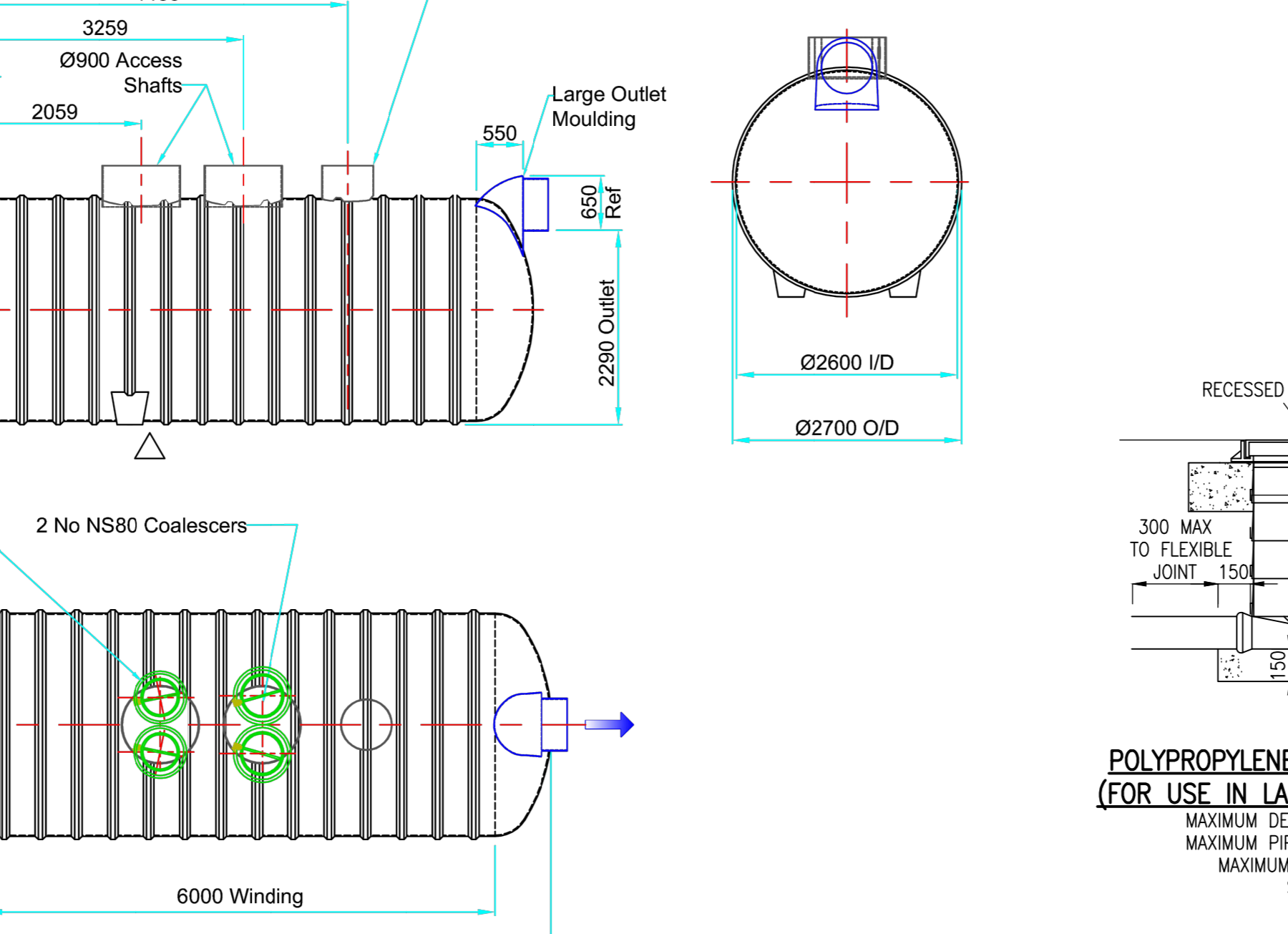
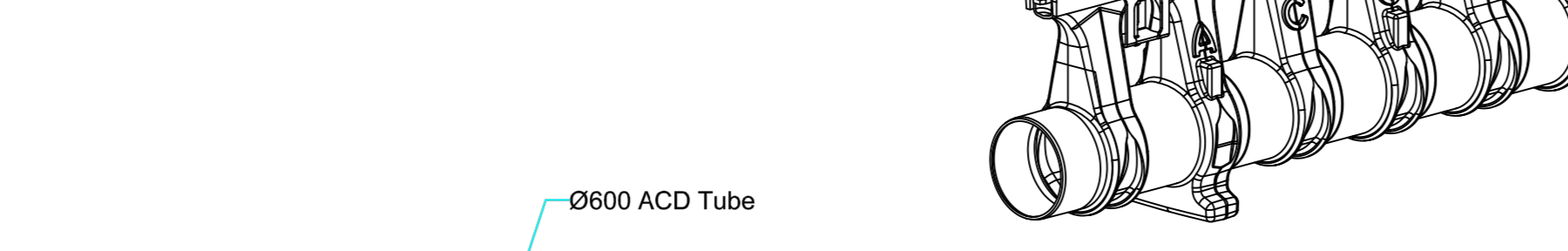
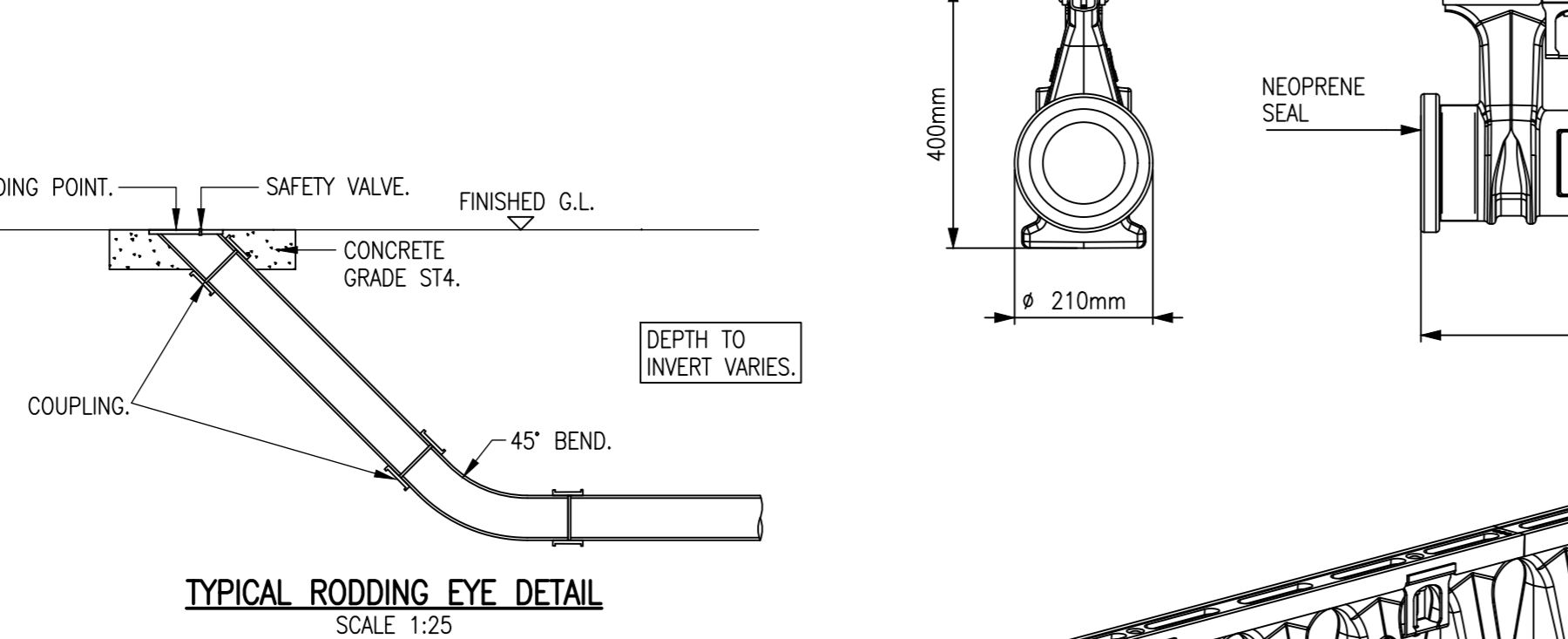
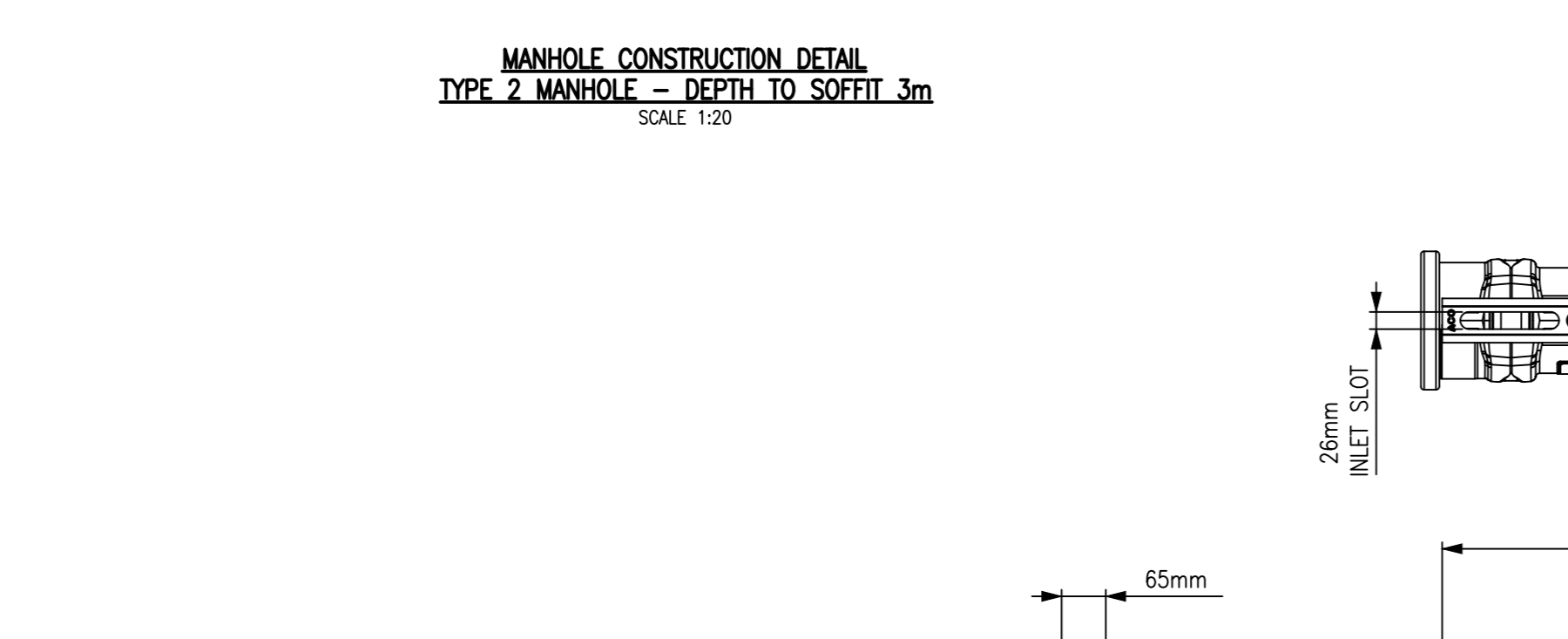
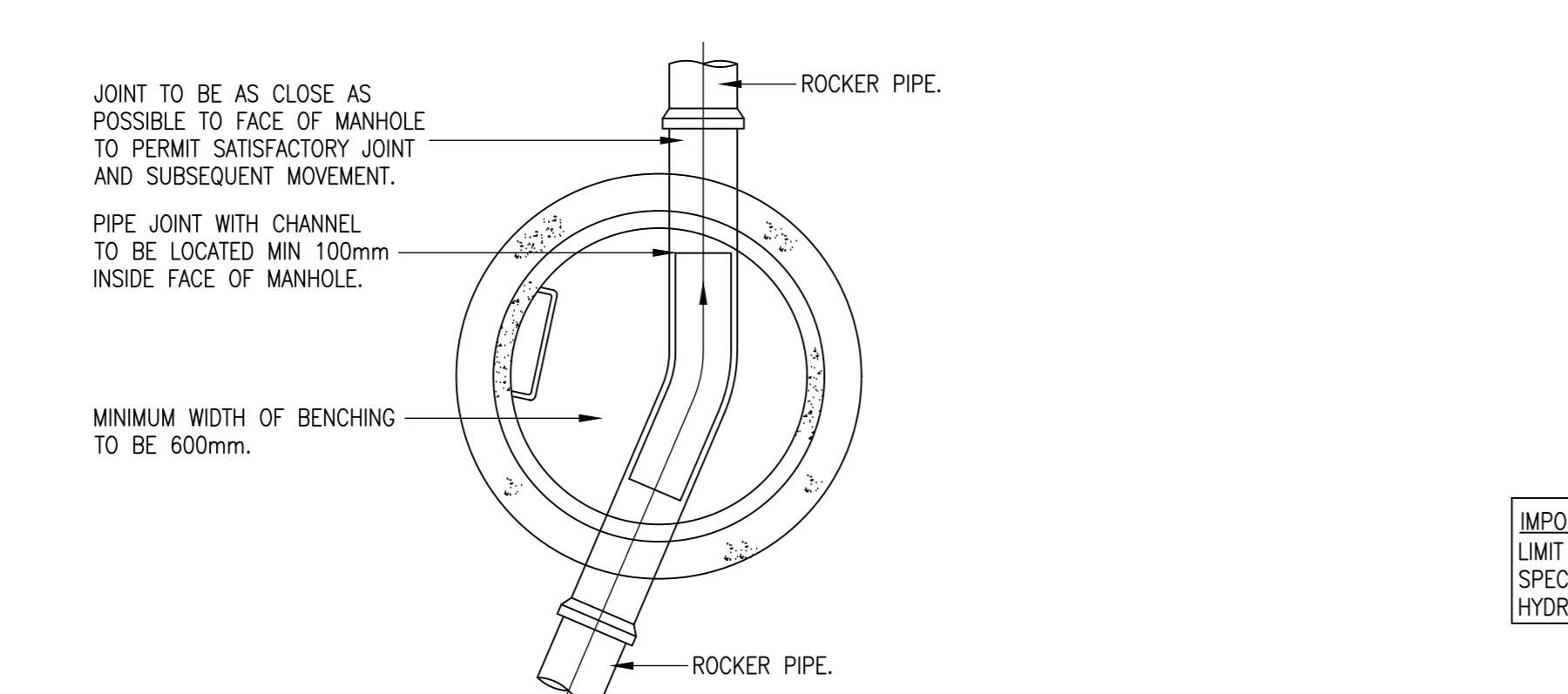
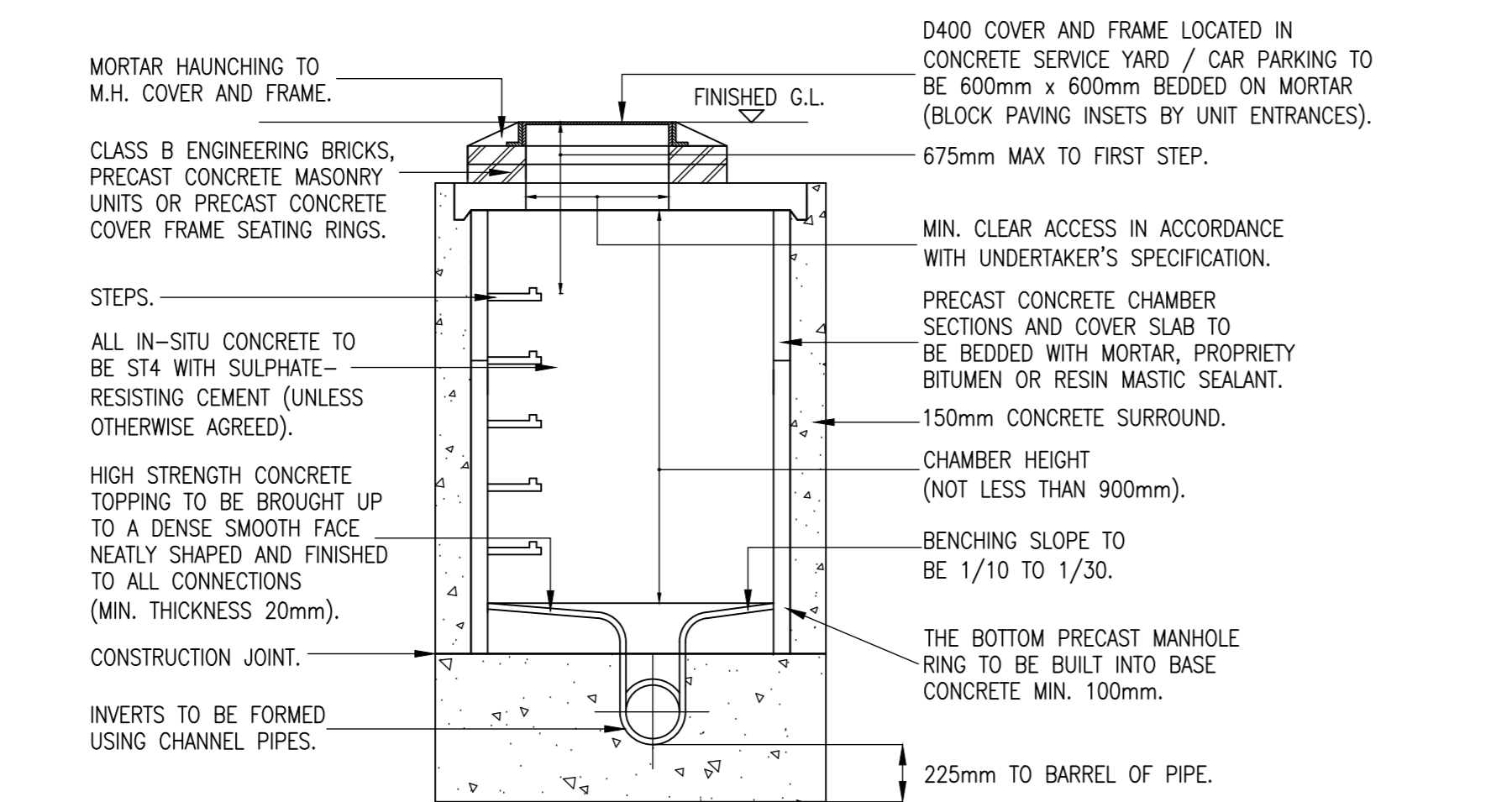
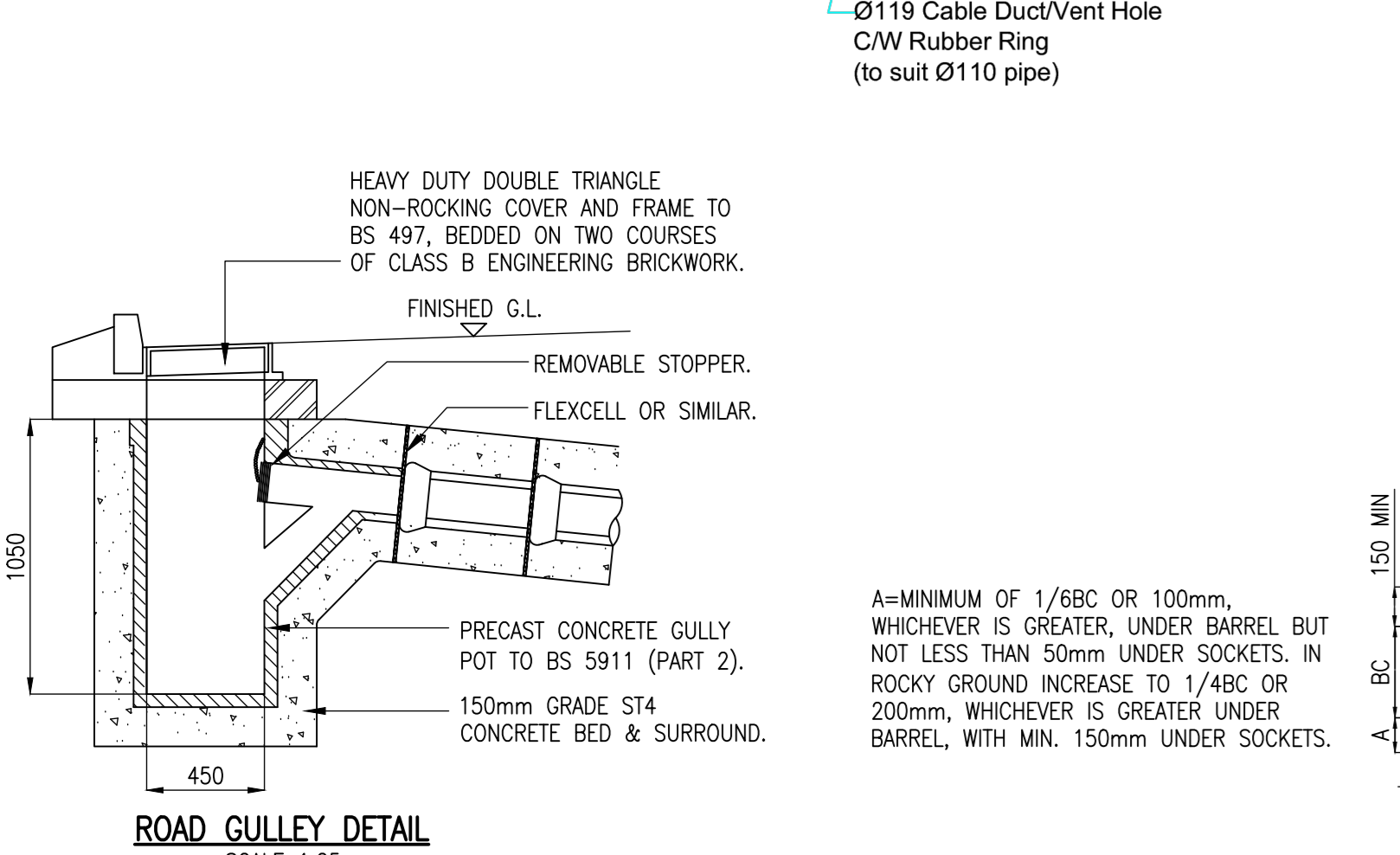
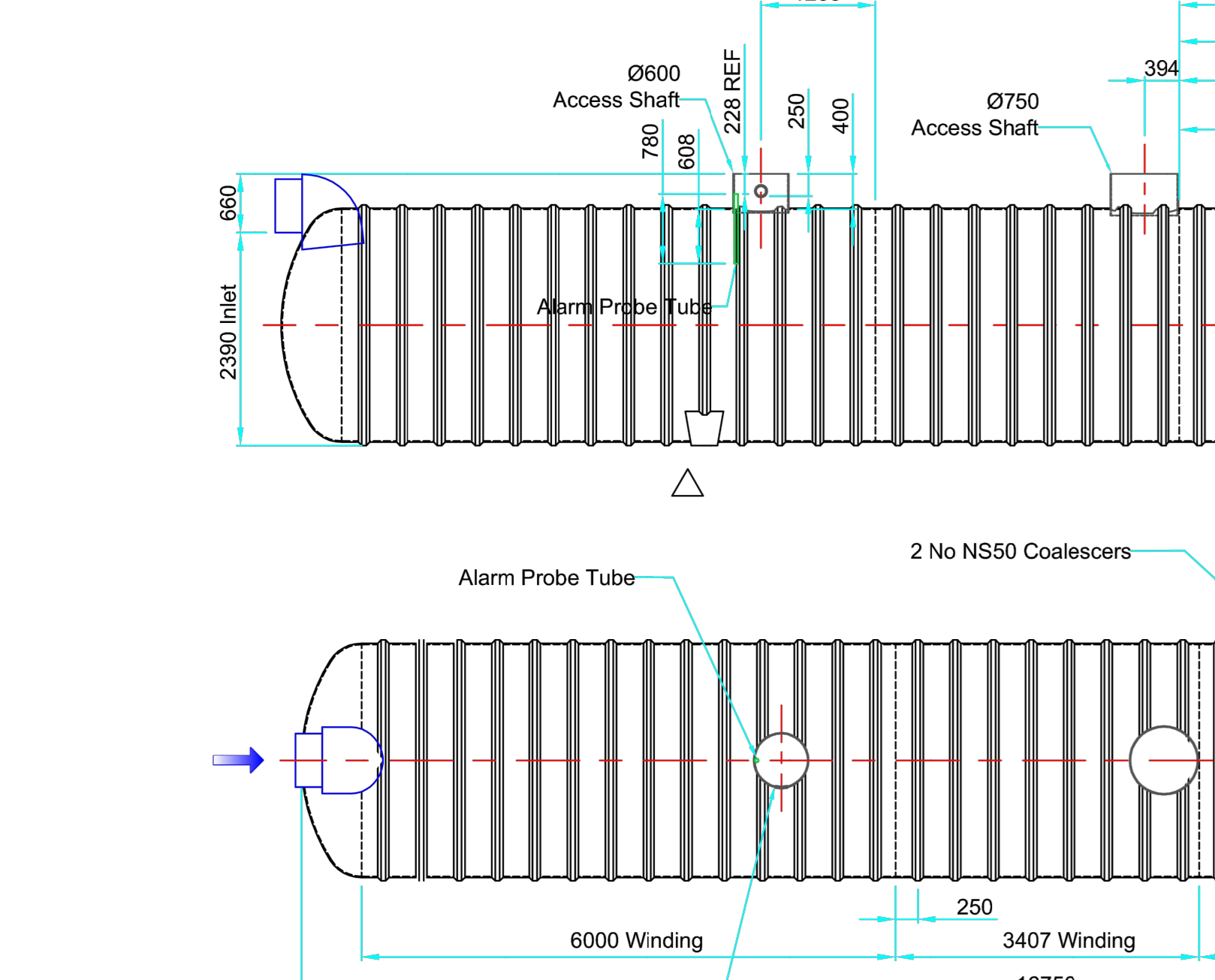
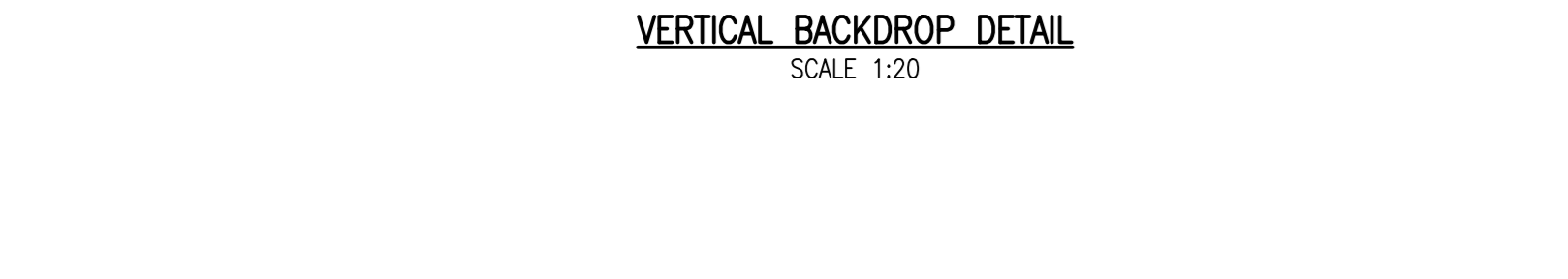
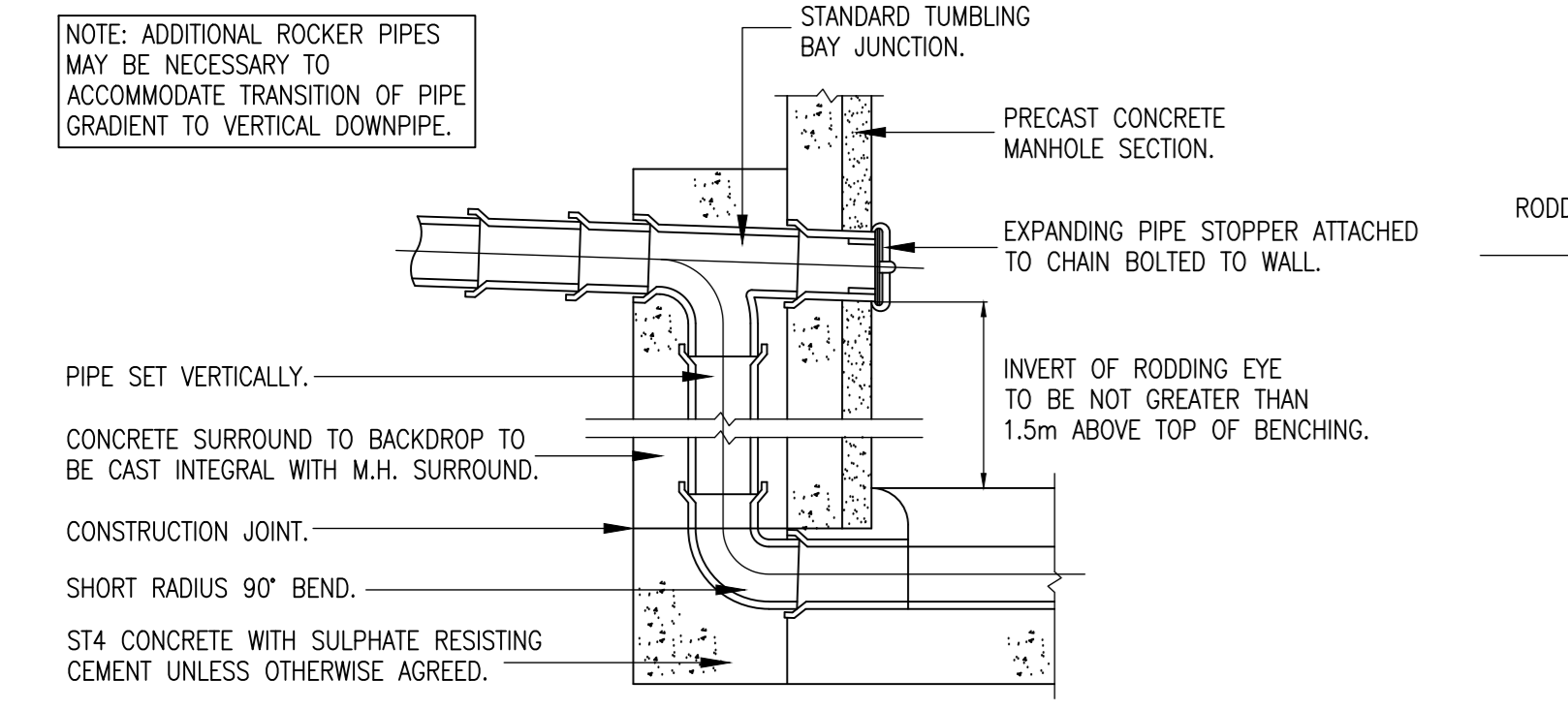
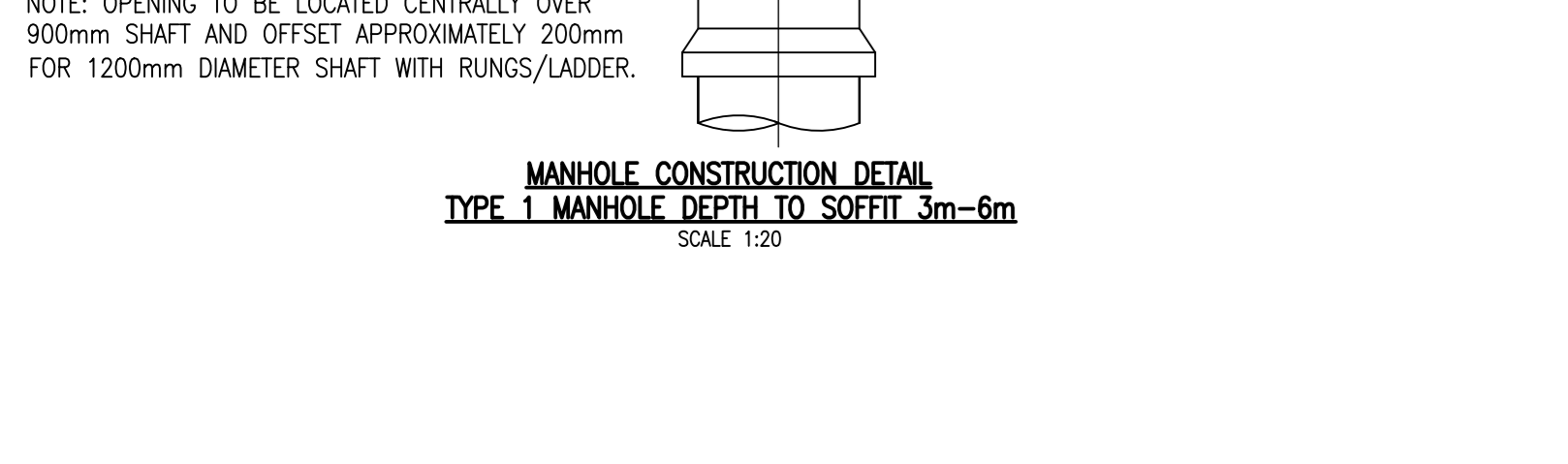
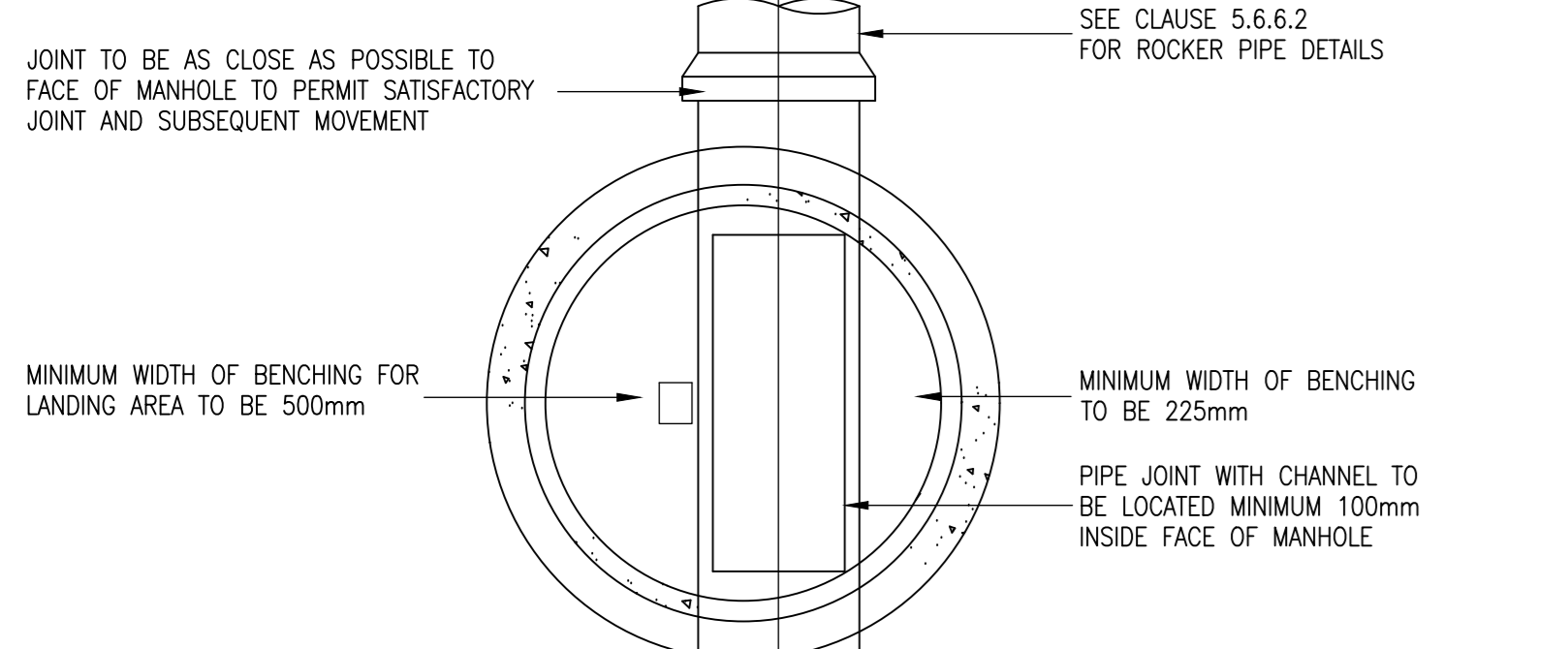
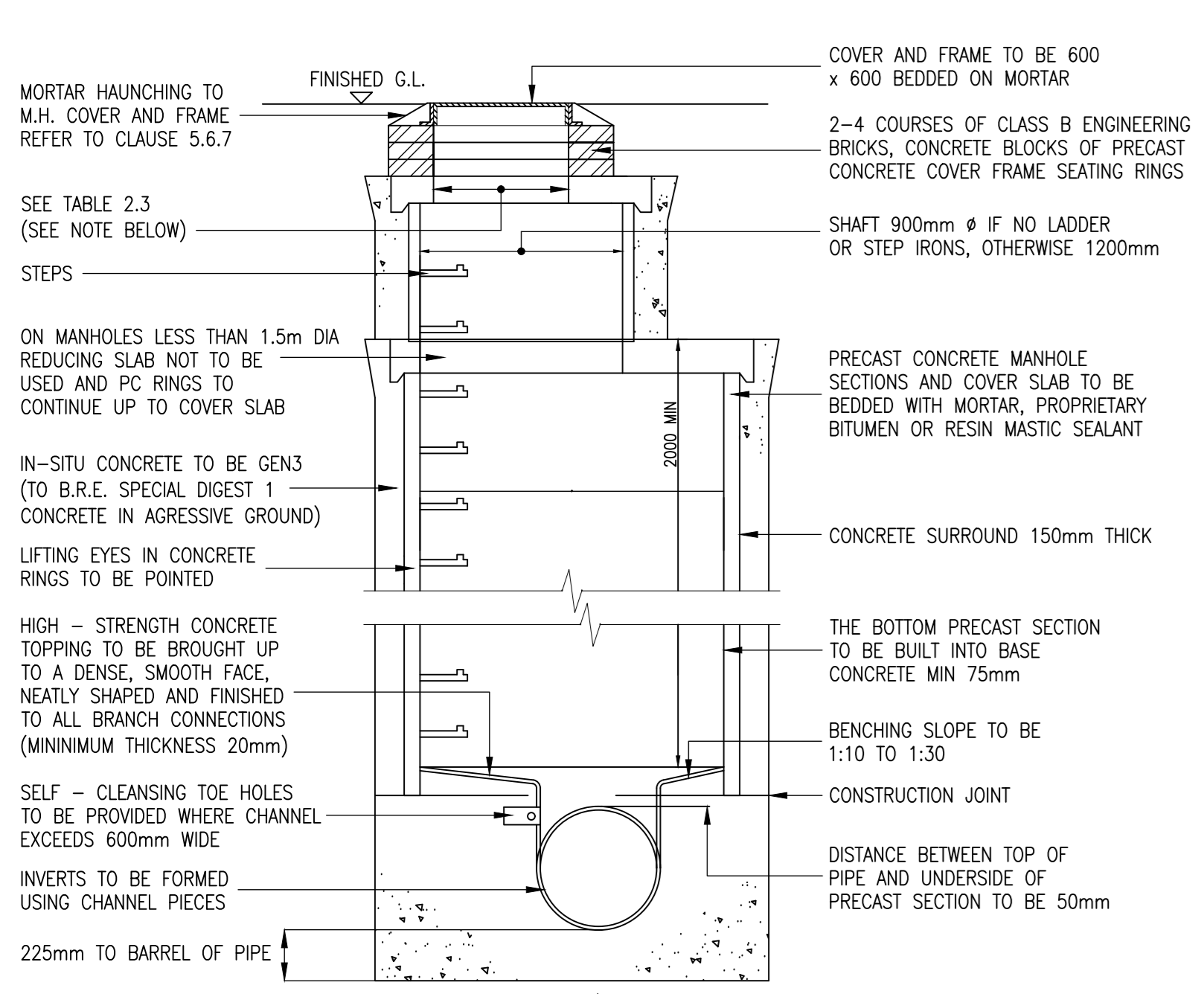


- Do not scale this drawing. All dimensions must be checked / verified on site. If in doubt ask.
- This drawing is to be read in conjunction with all relevant Architects, Engineers and Specialists drawings and specifications.
- All dimensions in millimetres unless noted otherwise. All levels in metres unless noted otherwise.
- Survey work has been carried out by others. Any discrepancies noted on site are to be reported to the Engineer immediately.
- The base specification for drainage works shall be the Water Authority Association 'Sewers for Adoption' (7th Edition).
- For details of ground conditions refer to the Ground Investigation Report.
- The following pipe strengths shall be adopted unless noted otherwise:-
 - Pipes 150mm diameter up to and including 225mm to be clayware to BS EN 295 Class 160.
 - Pipes over 225mm diameter to be concrete to BS 5911 Class M.
- All pipe runs to be laid with flexible joints.
- All pipes entering and exiting manholes are to be connected with pipe sockets level unless noted otherwise.
- Bedding and surround to be as follows :-

| Location | Cover to Soffit | Bedding |
|---------------------------|-----------------|--------------------------------------|
| Roads | +1.2m | Class 'S' granular bed and surround. |
| | +1.2m | Class 'X' Concrete surround. |
| Hard and soft landscaping | +0.6m | Class 'S' granular bed and surround. |
| | +0.6m | Class 'X' Concrete surround. |

- The following concrete mixes are to be used (all in accordance with BS 8500) :-
 Concrete surround to pipes: GEN3
 Concrete base and surround to manholes: GEN3

- The above concrete mixes have been selected for BS 8900 Class C5-4 Sulphates.
- All precast concrete products (ie pipes, manholes rings etc.) shall be of suitable concrete mix to cater for Class 2 sulphates.
 - Pre-formed channels are to be used in manholes where applicable.
 - Granolithic concrete benching to be steel trowelled to a dense smooth face neatly shaped and finished to all branch connections and laid in accordance with the Specification.
 - All connections to be formed in direction of flow using pipe benches.
 - Manhole covers and frames to be ductile iron medium duty Grade D400 circular or rectangular to BS EN 24 positions inside vehicular trafficked areas. All covers within blocked paved areas are to be covered.
 - First flexible joint in pipes adjacent to a manhole shall be a maximum of 600mm from inside face of manhole, connecting to rocker pipe. The length of rocker pipe is as follows:-
- | Pipe Diameter | Length of Rocker pipe |
|---------------|-----------------------|
| 150mm-600mm | 600mm |
- Manholes with outgoing pipes greater than 60mm diameter shall be fitted with guard bars, safety chairs or other safety devices.
 - The Principal Contractor shall be responsible for checking the existing line and invert levels of any connection points for both the foul and surface water systems, prior to undertaking installation of any new drainage works. Any deviation to the levels and positions indicated on the drawing should be brought to the immediate attention of the Project Engineer.
 - All inverts specified are outgoing (except backing). All pipe are to be laid soffit levels U.N.O.
 - All four connections to be 150mm dia. laid at a minimum gradient of 1:100 unless noted otherwise. All surface water pipe to be 150mm dia. U.N.O.
 - All connections to be made by purpose made joints as far as practicable.
 - All internal manholes to be double sealed recessed covers and sockets.
 - This drawing is subject to detailed design.
 - Internal drainage is to be set out by architects layouts.



| Rev | Date | Description | By | Chkd By |
|-----|------------|--------------|------|---------|
| - | 06/12/2019 | FIRST ISSUE. | J.H. | G.L. |

Revision Schedule

Project Title
PLOT 5100 HATFIELD BUSINESS PARK

Drawing Title
DRAINAGE CONSTRUCTION DETAILS

Drawn by: J.H. Checked by: G.L. Project Engineer: G.L.

Date: OCT 2019 Scale: AS SHOWN Project No: 12690 Drawing No: 110 Rev: A

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FOR TENDER