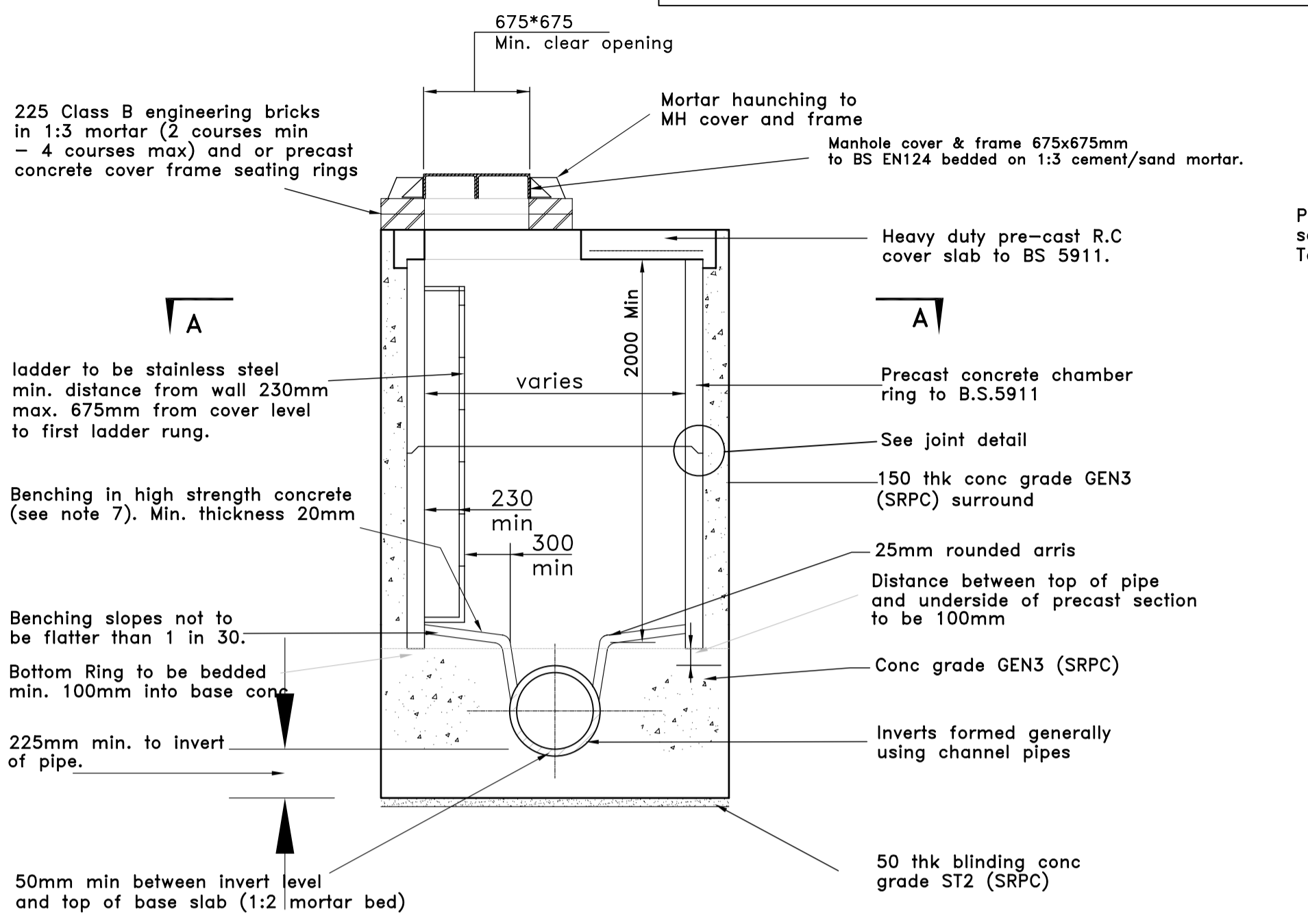
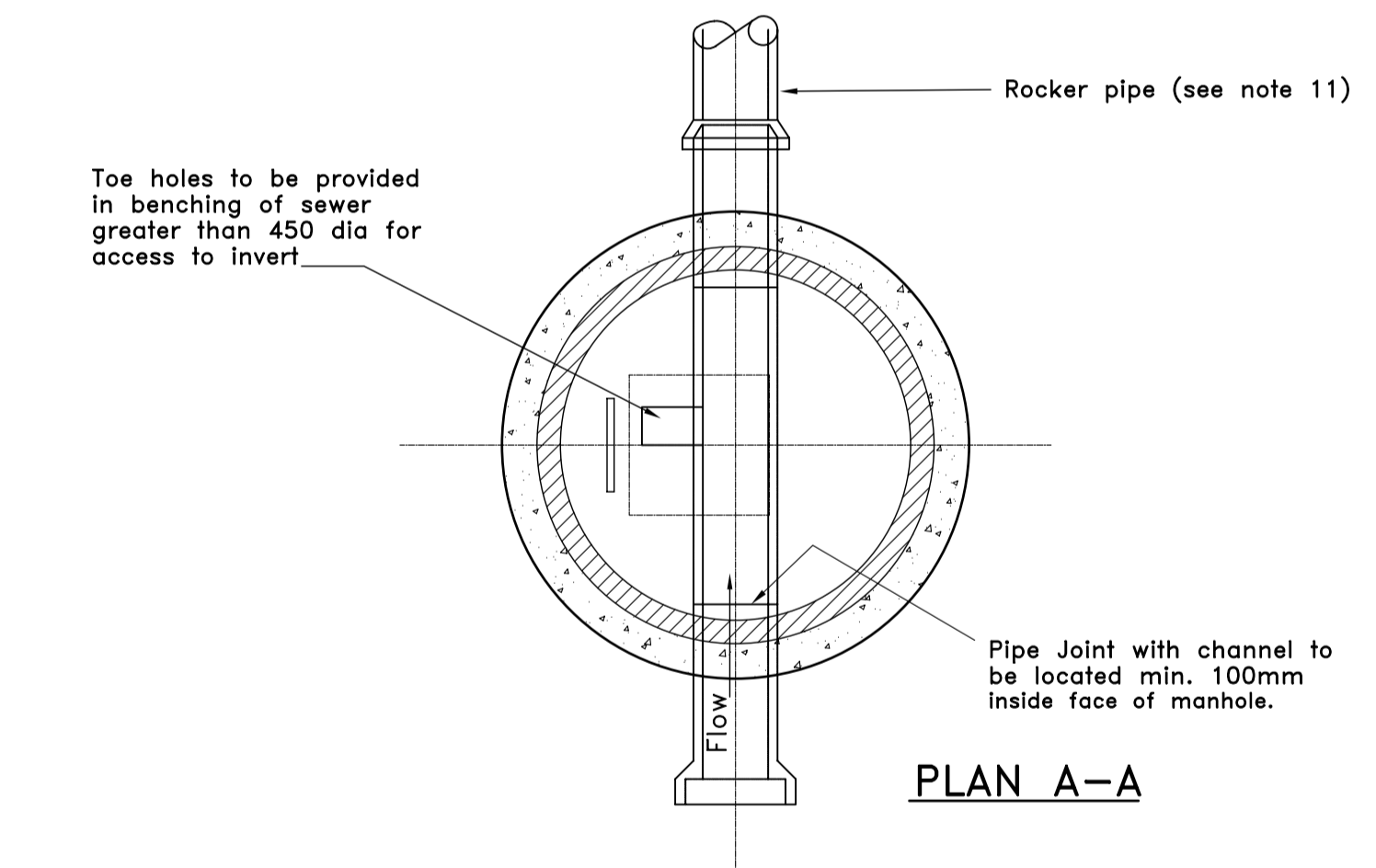


**NOTE**

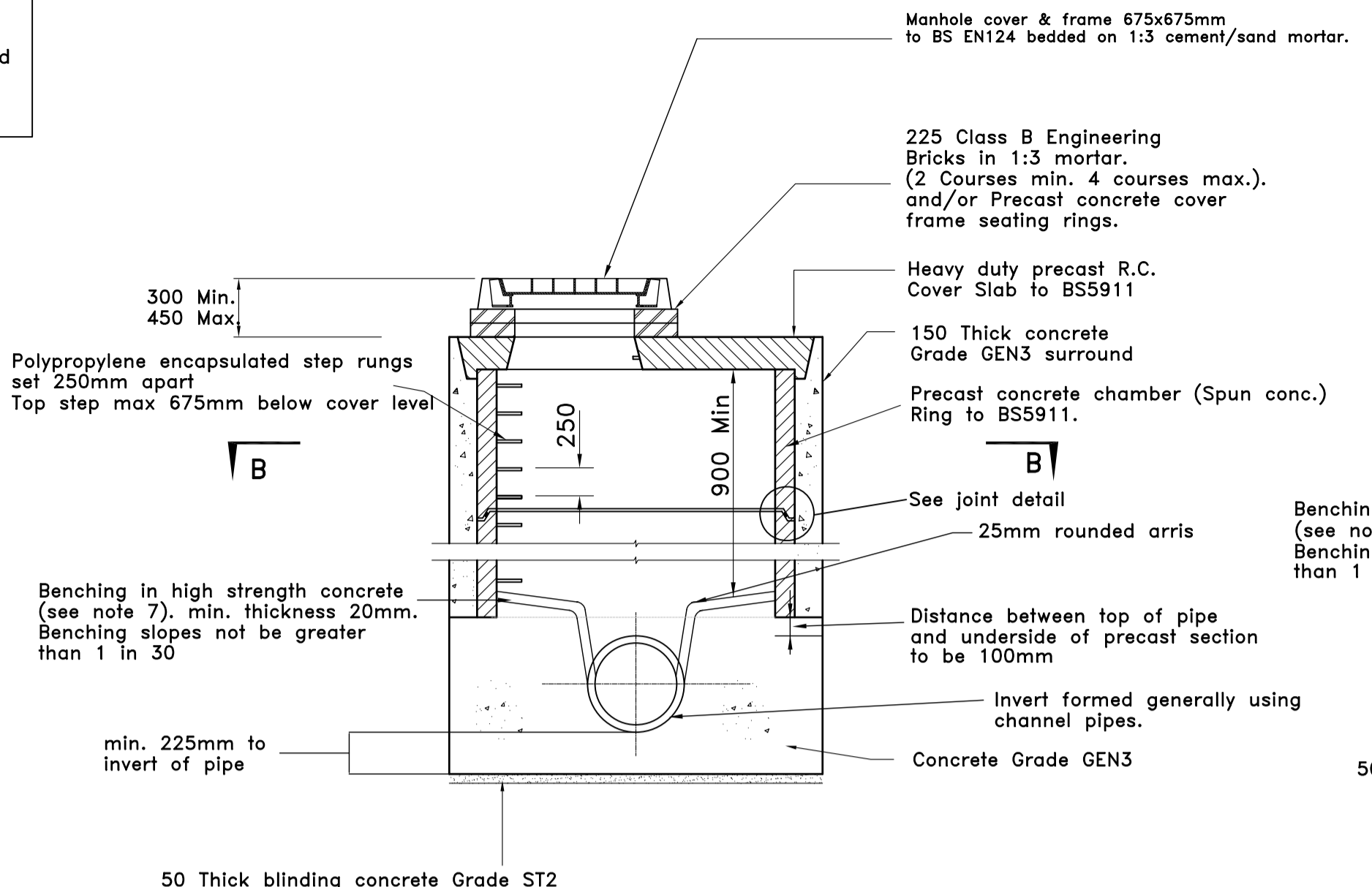
On type A manholes oversize cover slab may be required to maintain 675x675mm clear opening when ladder is fitted.



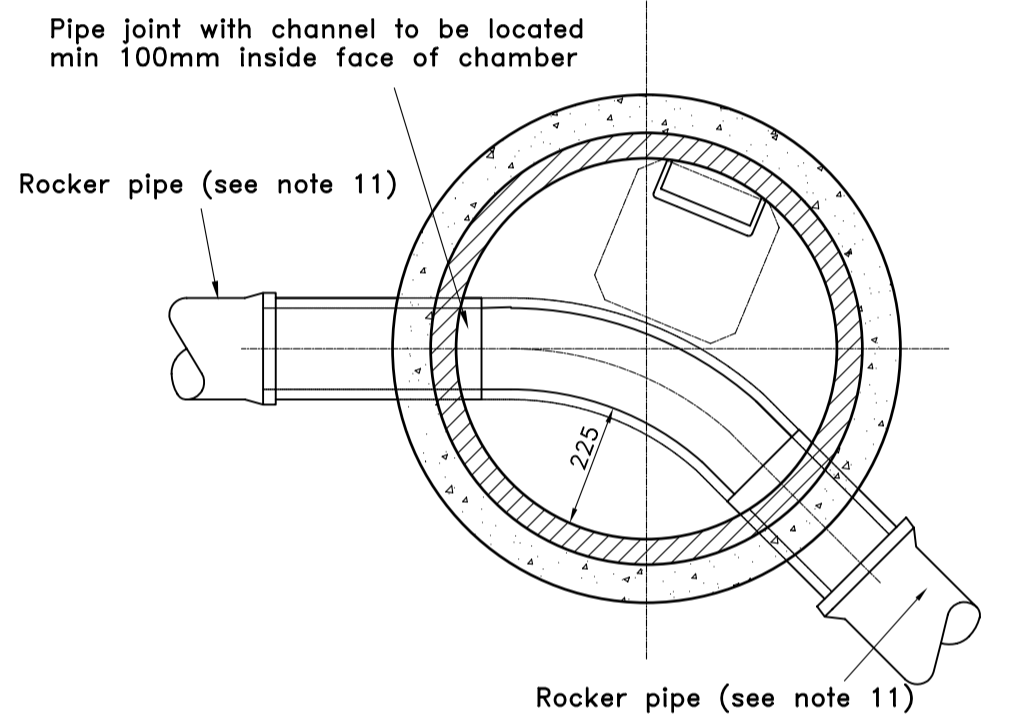
**TYPICAL MANHOLE DETAIL – TYPE A  
DEPTH TO SOFFIT OVER 3.0m**



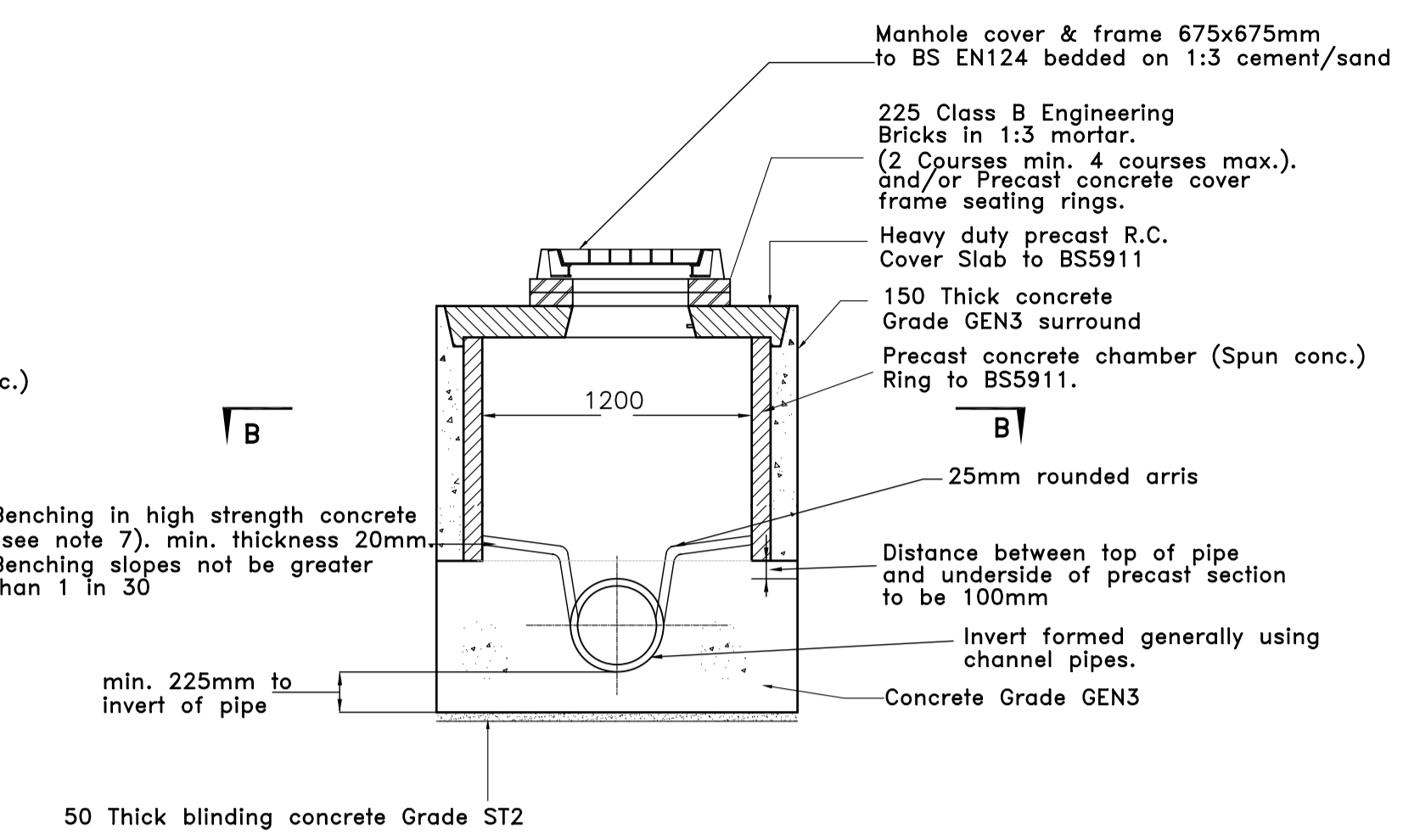
**PLAN A-A**



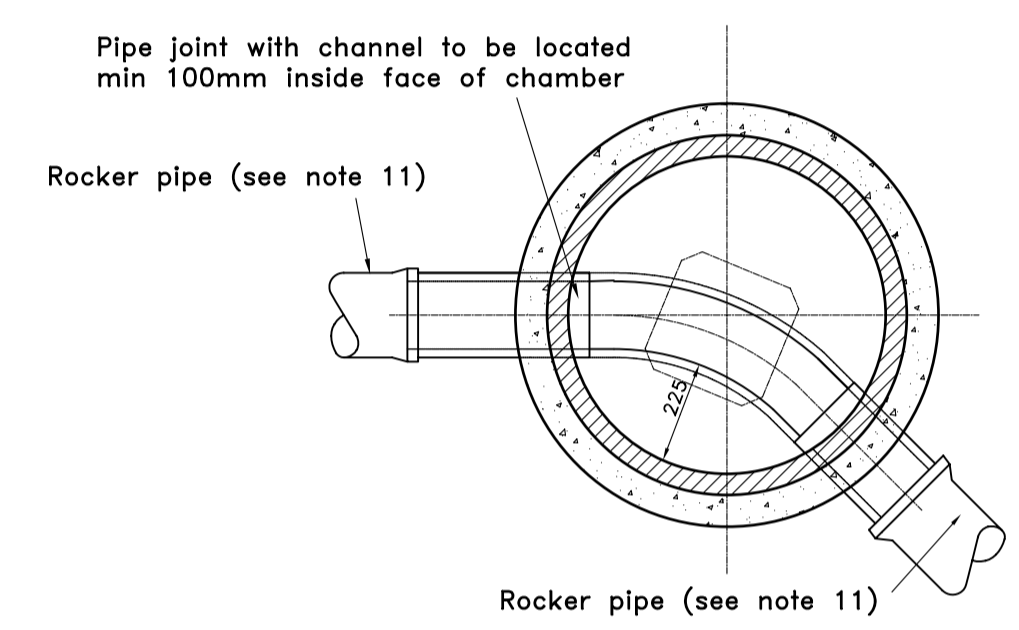
**TYPICAL MANHOLE DETAIL – TYPE B  
DEPTH TO SOFFIT 1.5m – 3.0m**



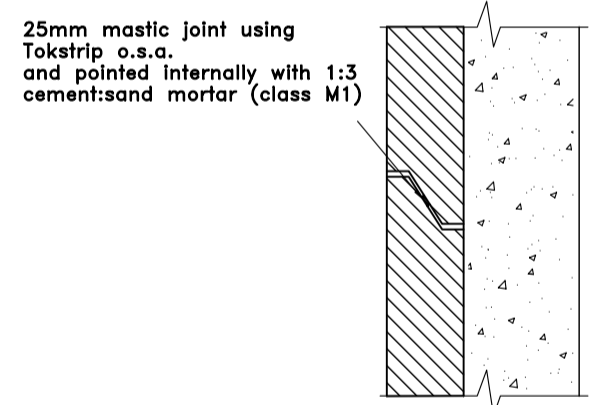
**PLAN B-B**



**TYPICAL MANHOLE DETAIL – TYPE E  
DEPTH TO SOFFIT 1.0m – 1.5m  
MAX SEWER DIAMETER 375MM**

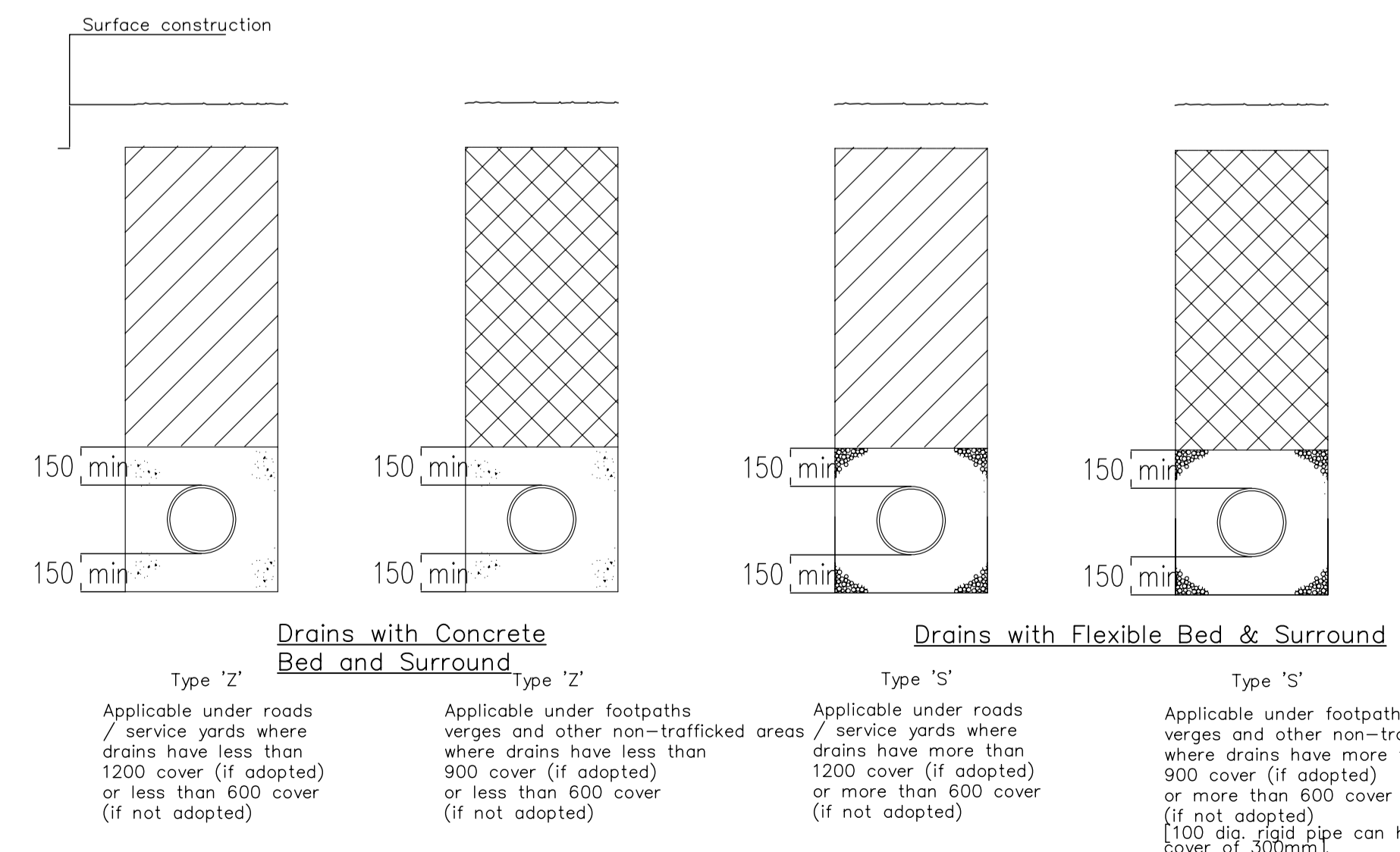


**PLAN B-B**

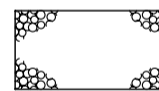


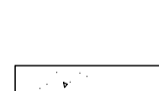


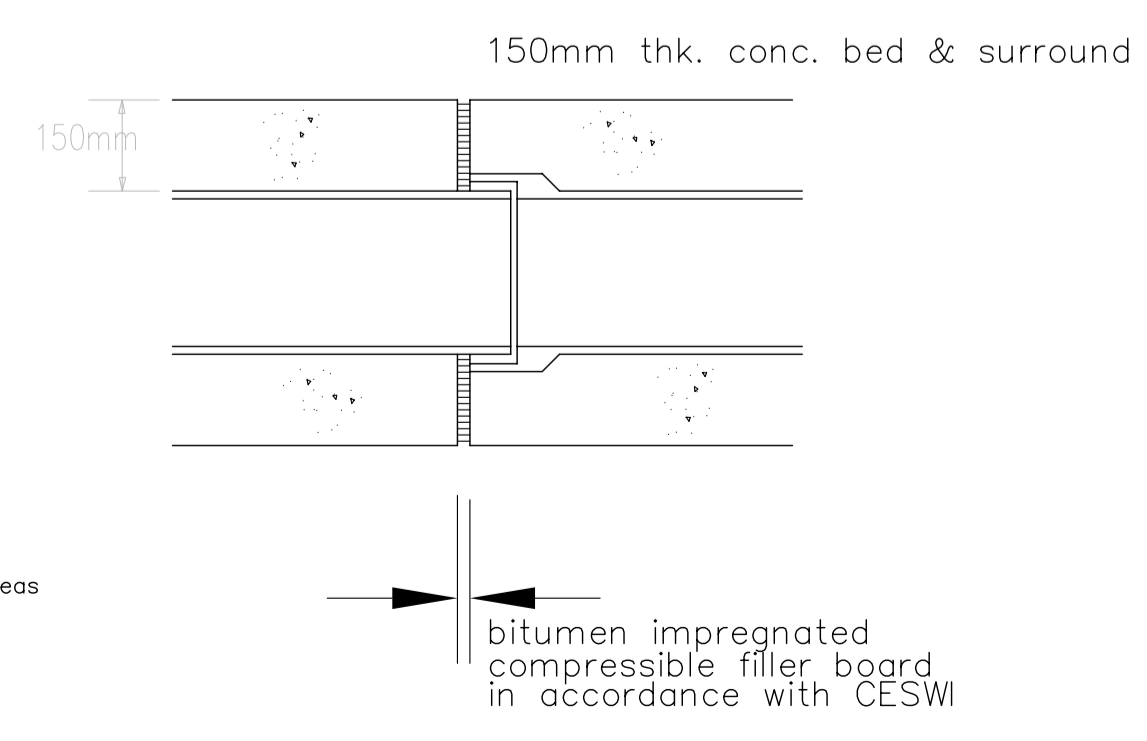
**JOINT DETAIL**

The sizes quoted are the minimum. If two or more pipes enter the manhole, the manhole size should be sufficient to accommodate adequate benching in accordance with Engineers requirements.



**BEDDING & TRENCH DETAILS**

-  Granular material in accordance with CESWI
-  Selected clean excavated material in accordance with CESWI layers not exceeding 250mm (unconsolidated thickness) and then fully compacted.
-  Granular sub base material (DoT TYPE 1) deposited in layers not exceeding 225mm (unconsolidated thickness) and then fully compacted.
-  Grade ST4 concrete (20mm aggregate)



**SECTION ON DRAIN WITH BED TYPE Z @ PIPE JOINTS**

TRENCH WIDTHS	
DIA. OF DRAIN	WIDTH
100	550
150	600
225	700
300	750
375	1050
450	1150
525	1200
600	1350
675	1450
750	1500
825	1600
900	1900
975	2000
1050	2300
1200	2300
OVER 1200	DIA. + 1000

PIPE DIA.	MANHOLE DIA.
less than 375mm	1200
375-450	1500
500-700	1500
750-900	1800
1050-1200	To be agreed with Engineers requirements

**MANHOLE CHAMBER DIAMETERS**

**NOTE**  
Where drains are laid under buildings refer to engineer for further details.

**NOTE**  
No mechanical compaction within 300mm of crown of pipe.

- NOTES**
- All sewers to be constructed in accordance with W.S.A. SEWERS FOR ADOPTION (6th Edition) and Civil Engineering Specification for the Water Industry (CESWI) 6th Edition.
  - This drawing is to be read in conjunction with all other relevant Engineers and Architects details.
  - All work is to be carried out in accordance with the current British Standards, B.S. codes of practice & Building Regulations.
  - Refer to CESWI for concrete grades & sand / cement mortar grades. Use Polyester resin mortar where covers and frames situated in NRSWA road categories I, II or III.
  - All pipes entering & exiting manholes are to be connected with pipe soffits level.
  - Pre-formed channels are to be used at manholes.
  - High strength concrete benching to be steel trowelled to a dense smooth face neatly shaped & finished to all branch connections & laid in accordance with the CESWI.
  - All dimensions are in millimetres unless noted otherwise.
  - Pipe bends to suit direction of flow.
  - All manhole covers and frames to be Ductile Iron Heavy Duty Grade D400 double triangular to BS EN 124.
  - First flexible joint in pipes adjacent to a manhole shall be a max. 600mm from inside face of manhole, connecting to rocker pipe. For pipe diameters 150 – 450 the rocker pipe length shall be 500mm-750mm and for pipe diameters 451 – 675 rocker pipe shall be 750mm-1000mm.
  - All trenches within adoptable highway to be backfilled with Type 1 material.
  - Drawing is not to be scaled. All dimensions are to be checked on site.

**PRELIMINARY**

**Armstrong Stokes & Clayton Limited**  
 Civil & Structural Engineering Consultants  
 The Book Shop Chambers, 54 King Street, Southwell, Nottinghamshire, NG25 0EN  
 Tel: 01636 814 815 Fax: 01636 816 343  
 Client:

**Pevelin Homes Limited**  
 Job Title:  
 Proposed Development at Burton Road  
 Tutbury  
 Staffordshire

Drawing Title:  
**Drainage Details**  
 Drawing number:  
**P119A/309/P**

Drawn: JDS Date: August 2012 Scale: N.T.S. **A1**

Preliminary  Detailed  Tender  As Built