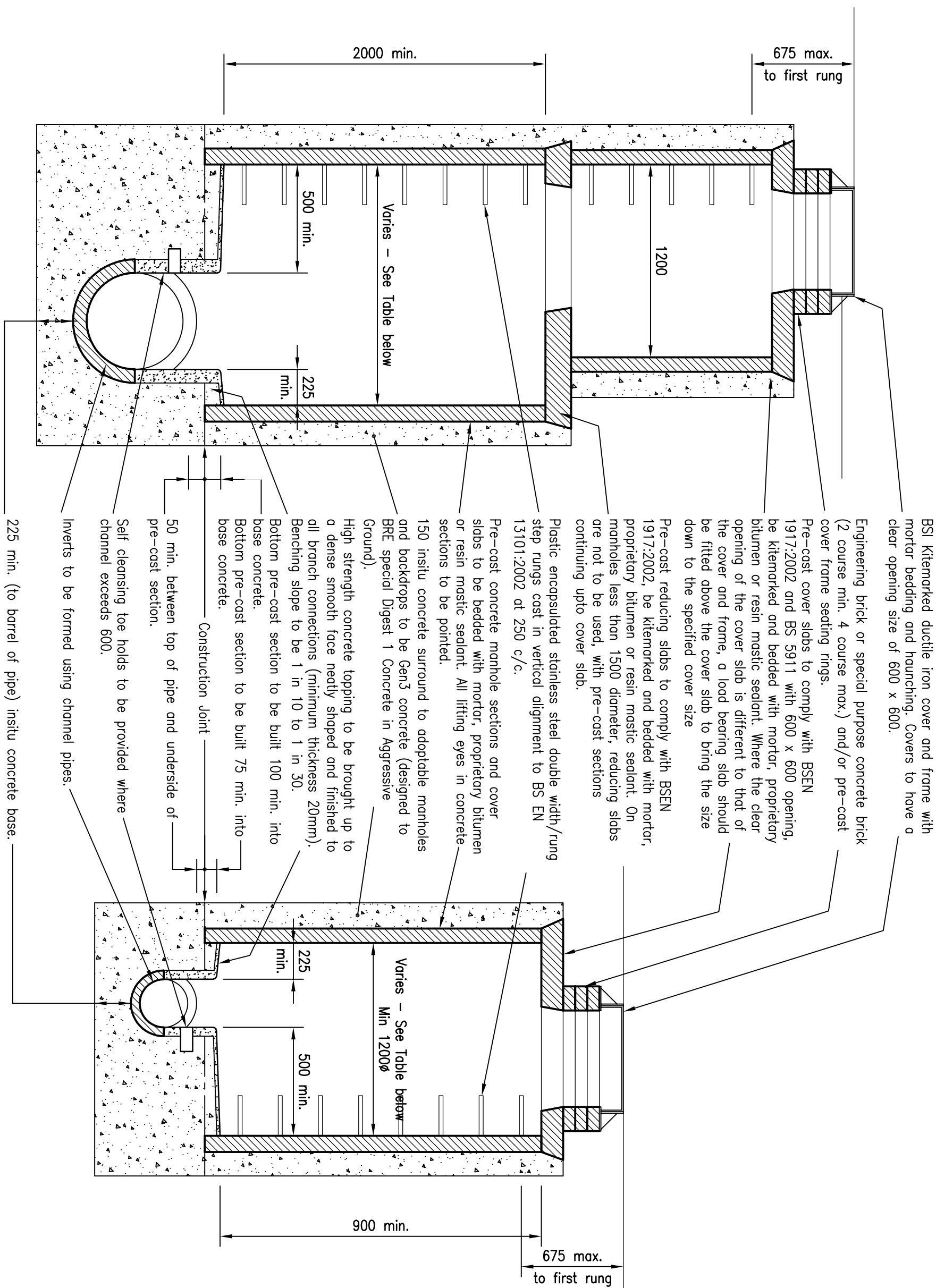


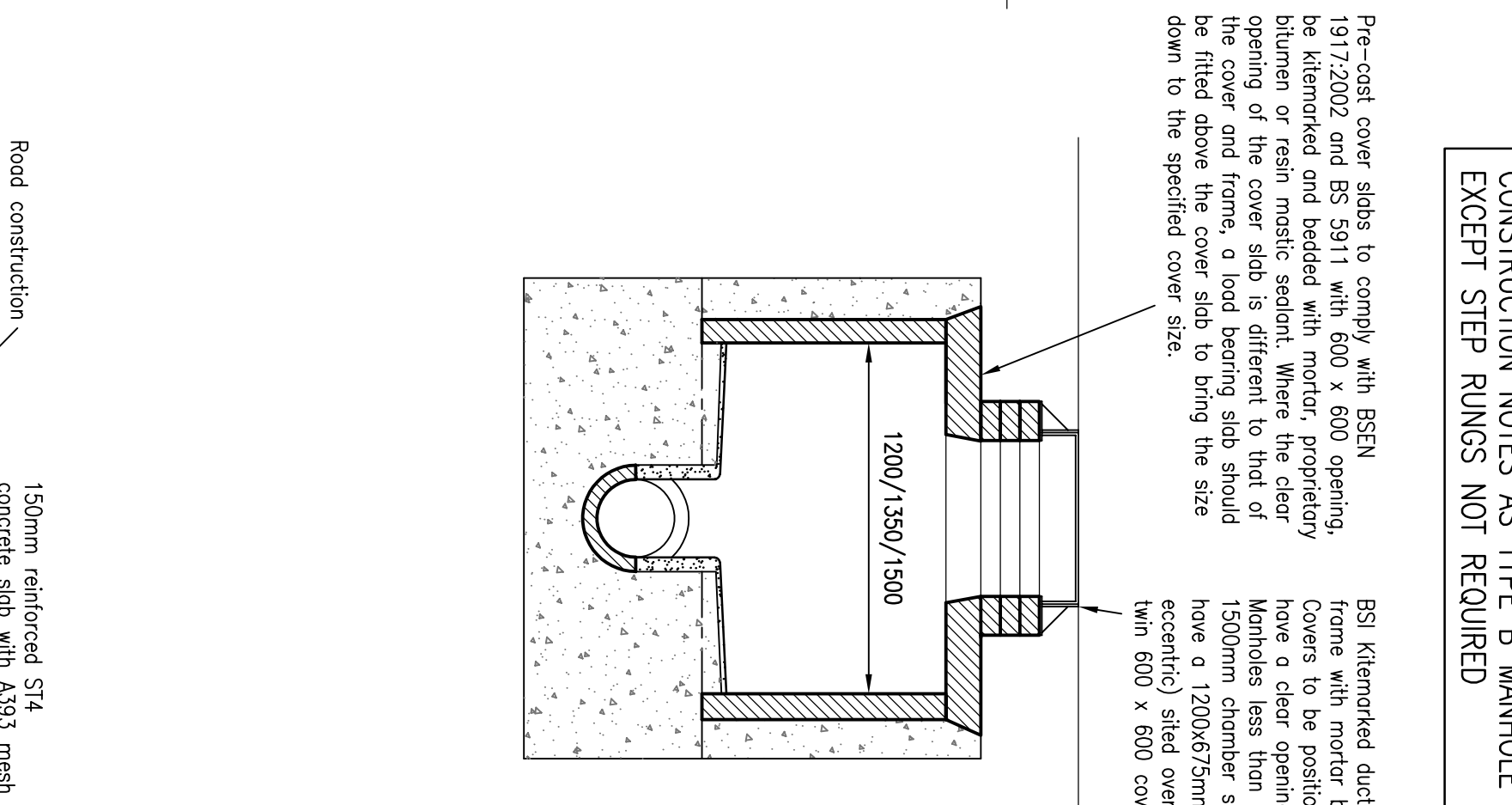
TYPE A MANHOLE TYPICAL DETAILS

Depth to soffit 3m to 6m



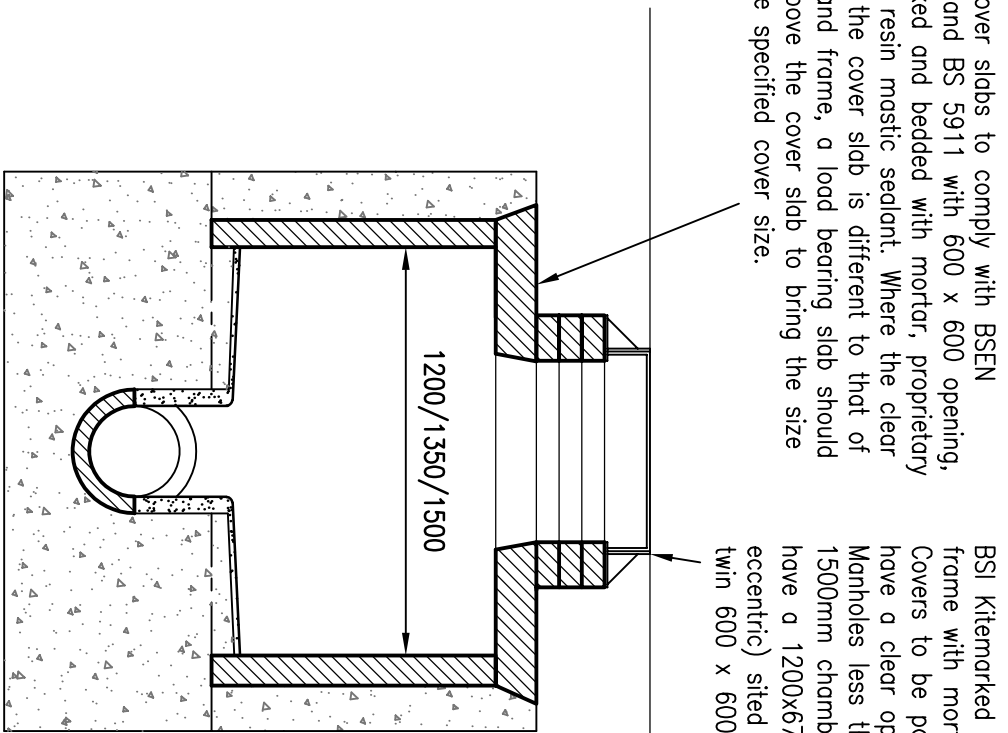
TYPE B MANHOLE TYPICAL DETAILS

Depth to soffit 1.5m to 3m



TYPE B1/E MANHOLE TYPICAL DETAILS

Depth to soffit 1m to 1.5m



CONSTRUCTION NOTES AS TYPE B MANHOLE EXCEPT STEP RUNS NOT REQUIRED

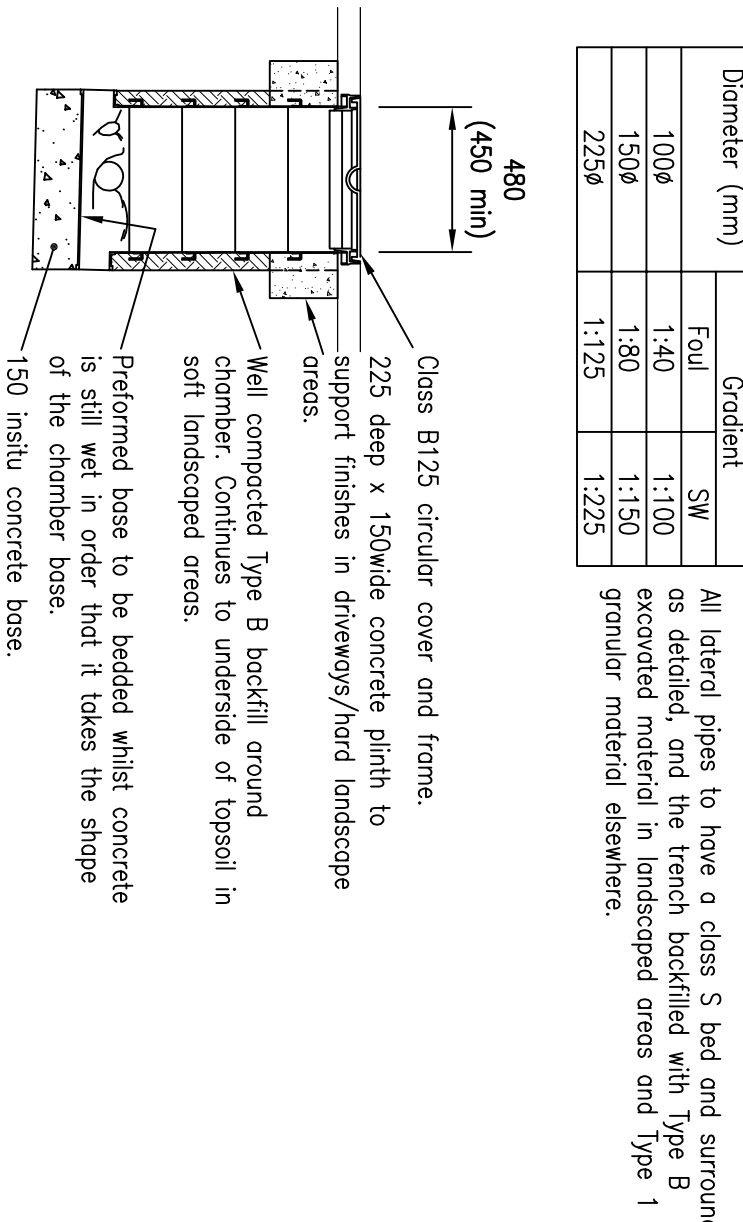
Pre-cast cover slabs to comply with BS EN 1917:2002, and BS 5911 with 600 x 600 opening, be kitemarked and bedded with mortar, proprietary blumen or resin mastic sealant. Where the clear opening of the cover slab is different to that of the cover and frame, a load bearing slab should be fitted over the cover slab to bring the size down to the specified cover size.

BSI Kitemarked ductile iron cover and frame with mortar bedding and haunching. Covers to be positioned over channel and have a clear opening size of 600 x 600. Manholes less than 1.5m to soffit with 1500mm chamber size or larger should have a 1200x675mm opening (central or eccentric) steel over slab with double rim 600 x 600 covers.

TYPE C DEMARCATION CHAMBER DETAILS

Depth to invert less than 1.2m

if depth to invert is greater than 1.2m standard Type B and B1 manhole one to be used. Details shown are based on Hepworth PPC.



MINIMUM LATERAL GRADIENTS

Diameter (mm)	Gradient
1000	1:100
1500	1:150
2250	1:125

All lateral pipes to have a class S bed and surround as detailed, and the trench backfilled with Type B excavated material in landscaped areas and Type 1 granular material elsewhere.

ALLOWABLE LATERAL PIPE MANUFACTURERS

Product Name	Diameter (mm)	Manufacturer	Material
SuperSew	100 & 150 (D)	Hepworth	Virtual Clay
Denseflow	100, 150 & 225 (D)	Naylor	Virtual Clay
Densel	100, 150 & 225 (D)	Naylor	Virtual Clay
Ultra-Dron	110 & 160 (OD)	Hepworth	UPVC
Prestidon	110 & 160 (OD)	Wavin	UPVC
Omni UltraRb	150 & 225 (D)	Wavin	UPVC
Solid Wall	150 & 225 (D)	Motley	UPVC
Quantum	110 & 160 (OD)	Motley	UPVC
Underground Drain	110 & 160 (OD)	PolyPipe	UPVC
Ridgeseal	150 & 225 (D)	PolyPipe	UPVC

Verified clay pipes to BS EN 295 Kitemarked

Unpasticised PVC pipes to BS 4680:2000 & BS EN 1401-1 Kitemarked

Structured Wall Unpasticised PVC pipes to MS 4-35-01 Kitemarked

ALLOWABLE DEMARCATION CHAMBER MANUFACTURERS

Manufacturer	Product Name	Material	Max Depth	Cover Type
Naylor	Plastic Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Hepworth	PPIC	Polypropylene	Up to 1200mm	Class B125
Lincor	Inspection Chamber (450mm)	Polypropylene	Up to 1200mm	Class B125
Morshals	Inspection Chamber to BS5911 pt 2	PPC	Up to 1000mm	Class B125
Wavin	Omni UltraRb Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Wavin	Gardnora Unversal Inspection Chamber	Polypropylene	Up to 1200mm	Class B125
Motley	Inspection Chamber (450mm)	Polypropylene	Up to 1200mm	Class B125
PolyPipe	110mm Inspection Chamber (450mm)	Polypropylene	Up to 1200mm	Class B125

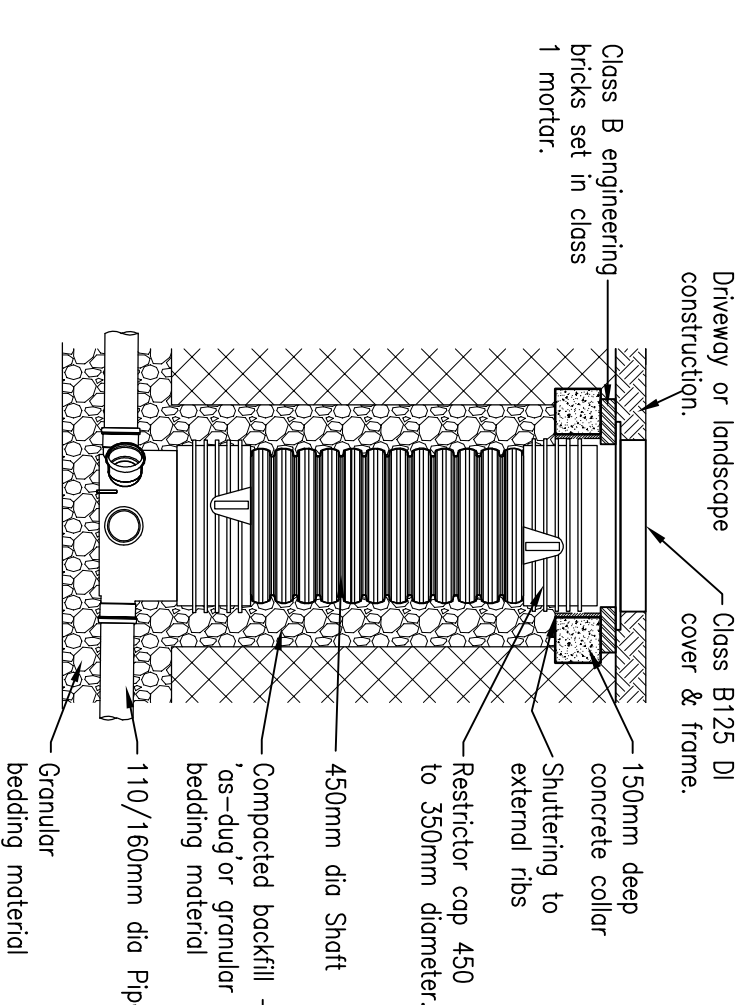
Precast concrete to BS 5911-Part 2 and BS 8301 Kitemarked, up to 1.0m deep

Polypropylene Inspection Chambers to BS 7158:2001 Kitemarked, min. 450mm diameter up to 2.0m deep.

TYPE H DEMARCATION CHAMBER DETAILS

Depth to soffit 1.2m to 2.0m

DETAILS SHOWN ARE BASED ON WAIN 450 RANGE



Information within this drawing is not necessarily produced to scale. Always use figured dimensions and co-ordinates - if in doubt, ask.

NOTES

- All pipes shall be either:
 - A - Verified clay to BS EN 295 with a minimum crushing strength as follows:
 - 300 dia. - 40 kN/m
 - 150 dia. - 30 kN/m
 - 300 dia. - 72 kN/m
 - B - PVC certified to MS 4-35-01
 - C - Class 120 concrete to BS 5911-1:2002/EN 1916.
- All pipes should always connect soffit to soffit unless noted otherwise.
- All adoptable sewer works and materials to be in accordance with Sewers for Adoption 6th Edition, the relevant British/European and Yorkshire Water (Environment)/Adoption to the Mechanical and Electrical Specification and Kitemarked.
- All sewers to have BSI Kitemark status (certified to MS 4-35-01 & BS EN 13470). Maximum pipe length to be 5m. Plastic channel sections in manholes are not acceptable. Clay channel sections shall be used.
- Sewers to be laid in Class "C" bedding (150mm granular bed and surround). Where depth of cover to soffit is less than 1.2m in highways and verges (or less than 900mm in more vehicle access areas) then a reinforced 150mm concrete slab should be provided above granular bed and surround, bedding and backfill material to conform to MS 4-06-02 (Table 2) for PVC pipes.
- Manhole covers shall have a clear opening of 600 and shall be class D400 to BS EN 124 with 150 deep frames in highways. Covers to have closed keyways and one to be bedded on steel strims with 13 motor haunching.
- Pipes entering manholes and road gullies shall have a flexible joint within 600 of the inside the manhole or gully joining with a short blocker pipe.
- The adoptable sewers should be a minimum of 1m and manholes 0.5m from kerb faces and service manholes.
- Sewers must have 5m clearance from trees and hedges (refer to Figure 2.3 page 33 in 'Sewers For Adoption' 6th Edition for restrictions on tree planting adjacent to sewers).
- All trenches in roads and paved areas shall be backfilled with Type 1 DOT granular sub-base material, or other granular material approved by the highway authority.
- Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer work are carried out.
- All manhole concrete to be designated min F400 to BS 6850-1 unless agreed otherwise.
- The invert levels at the proposed points of connection to existing public sewers shall be checked before any new drains are constructed. Any variation to the levels shown on the drawing shall be notified to Yorkshire Water.
- The chamber size of manholes with more than one connection in them may need to be increased by an increment to accommodate the connections and bends.
- Cover levels are indicative only. Covers to be set to suit combined/gradients of existing and proposed roads.
- Cover slabs must carry the BSI Kitemark or will be rejected by the Yorkshire Water inspectors. Where the clear opening of the chamber is not provided adjacent to the sewer, the cover and frame shall be constructed and bedded in accordance with cover slab to bring the size down to 600x600, refer to CP54 Technical Bulletin issued autumn 2004 for Kitemarked cover slab opening sizes.
- All surface water lateral sewers and drains to be 1500 unless noted otherwise. All foul lateral sewers and drains to be 1000 unless noted otherwise.
- Yorkshire Water policy is not to accept Type "C" brick manholes and 1050mm manhole rings, instead use type "B" manhole with 1200mm or 1500mm rings, 1-1.5m.
- Yorkshire Water is not obliged to accept filter drain/land drainage run off into the public sewer network or adoptable drainage system (directly or indirectly). Any contribution of surface water to the public sewer network will be treated as a contribution and will be dealt with in the usual statutory, land drainage section with regard the disposal of land drainage.

REV	DESCRIPTION	SIG	CHK	DATE
A	First Issue			

MILLER HOMES

HONEWELL LANE, BARNESLEY

TYPICAL MANHOLE AND PIPE BEDDING DETAILS

Eastwood & Partners
CONSULTING ENGINEERS
St. Andrews House
23 Kingfield Road
Sheffield
S11 9AS
Tel 0114 255 4554
Fax 0114 255 4330
mail@eastwoodandpartners.com
www.eastwoodandpartners.com

SCALE WHEN PLOTTED AT A1

1:25 PRELIMINARY

DRAWN CHECKED DATE DRAWING NUMBER REV

RJ CH 12.07.16 36903/020 A