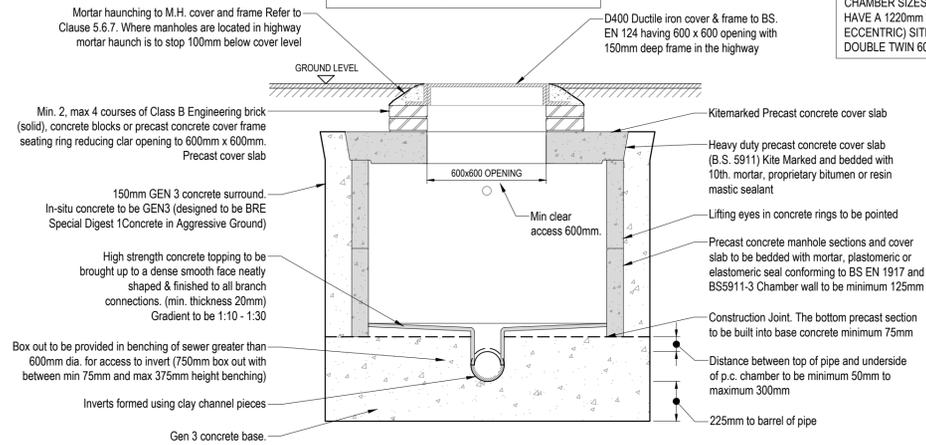


H-3-264-443

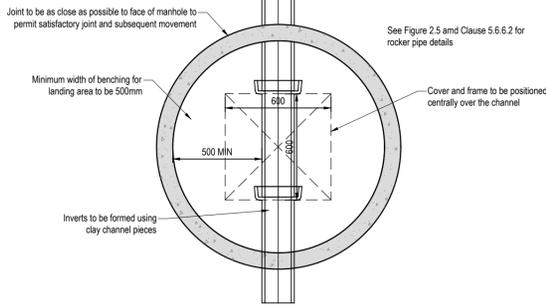
SELECTION OF THIS TYPE OF MANHOLE RESTRICTED TO LOCATIONS WHERE GRADE B COVERS ARE TO BE USED (DUE TO LOAD CAPACITY LIMITATIONS OF SLAB)

MANHOLES LESS THAN 1500mm TO SOFFIT WITH CHAMBER SIZES OF 1500mm OR LARGER SHOULD HAVE A 1220mm X 600mm OPENING (CENTRAL OR ECCENTRIC) SITED OVER THE CHANNEL WITH DOUBLE TWIN 600mm X 600mm COVERS



TYPICAL TYPE 'B1/E' MANHOLE SECTION
DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE LESS THAN 1.5m
SCALE 1:20

ALL PRECAST CONCRETE TO BS 5911.2 & BS 8301 KITEMARKED.



TYPICAL TYPE 'B1/E' MANHOLE PLAN
DEPTH FROM GROUND LEVEL TO SOFFIT OF PIPE LESS THAN 1.5m
SCALE 1:20

SCHEDULE OF CHAMBER DIAMETERS	
DIA. OF LARGEST PIPE IN MANHOLE	INTERNAL DIA. OF MANHOLE
LESS THAN 375Ø	1200
375-700 (incl)	1500
750-900 (incl)	1800
>900	2100+

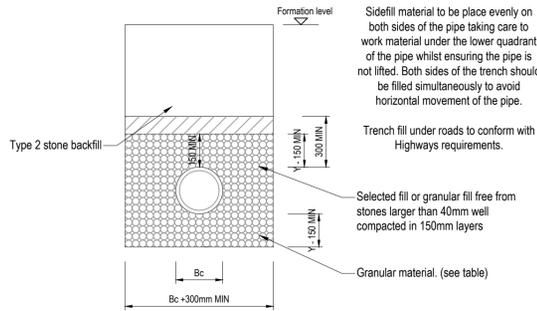
NOTE: CHAMBER SIZES OF MANHOLES WITH MORE THAN ONE CONNECTION MAY NEED TO BE INCREASED AN INCREMENT TO ACCOMMODATE.

NOMINAL SIZE	EFFECTIVE LENGTH (m)
150 TO 600	0.60
601 TO 750	1.00
OVER 750	1.25

TYPE B MANHOLE DETAILS MAY BE APPLIED TO TYPE A MANHOLES FOR CHAMBER DIAMETERS LESS THAN 1500Ø UP TO 6.0m DEPTH TO SOFFIT.

1050Ø MANHOLES ARE ONLY ACCEPTABLE AS DEMARCATION CHAMBERS, WHERE THE APPLICATION ON AN ADAPTABLE SYSTEM DIFFERS FROM A DEMARCATION CHAMBER A MINIMUM OF 1200Ø SHALL BE USED

Boxing / sheeting to be removed progressively during placement of the main backfill above the pipe to prevent displacement of the granular material.



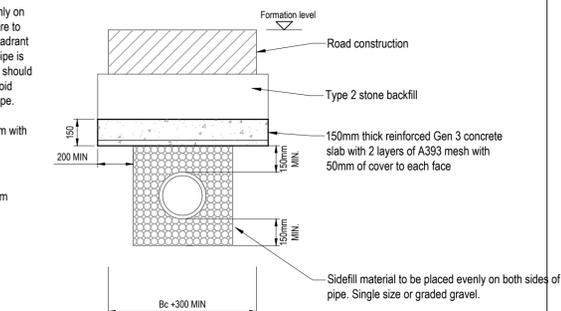
CLASS S DETAIL

Sidfill material to be placed evenly on both sides of the pipe taking care to work material under the lower quadrant of the pipe whilst ensuring the pipe is not lifted. Both sides of the trench should be filled simultaneously to avoid horizontal movement of the pipe.

Trench fill under roads to conform with Highways requirements.

Selected fill or granular fill free from stones larger than 40mm well compacted in 150mm layers

Granular material. (see table)

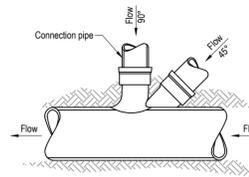


CLASS S DETAIL WITH RC SLAB
COVER < 1200mm FOR HIGHWAYS COVER < 900mm FOR NON-VEHICULAR ACCESS

NOTES
A) Bc = OUTSIDE DIAMETER OF PIPE BARREL.
B) Y = FOR UNIFORM SOILS.
SLEEVE JOINTED PIPES, MIN. 150mm OR 1/2 Bc, WHICHEVER IS THE GREATER.
SOCKETED PIPE, MIN. 150mm OR 1/2 Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 50mm UNDER SOCKETS.
FOR ROCK OR MIXED SOILS CONTAINING ROCK BANDS, BOULDERS, STONES OR OTHER IRREGULAR HARD SPOTS:
SLEEVE JOINTED PIPES, MIN. 150mm OR 1/2 Bc, WHICHEVER IS THE GREATER.
SOCKETED PIPE, MIN. 200mm OR 1/2 Bc, WHICHEVER IS THE GREATER UNDER BARRELS AND NOT LESS THAN 150mm UNDER SOCKETS.

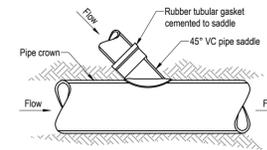
NOMINAL PIPE DIA (mm)	SINGLE SIZED (mm)	GRADED (mm)
150	10 or 14	14 to 5
200 to 300	10, 14 or 20	14 to 5 or 20 to 5
375 to 525	14 or 20	14 to 5 or 20 to 5
Greater than 525	14, 20 or 40	14 to 5, 20 to 5 or 40 to 5

GRANULAR BEDDING MATERIAL
(ALL AGGREGATES TO TABLE 4 OF BS 882:1983)



TYPICAL JUNCTION CONNECTION DETAIL

OBLIQUE OR SQUARE CURVED JUNCTION CONNECTION TO BE USED WHEN PUBLIC SEWER IS NOT 3 PIPE SIZES LARGER THAN THE LATERAL (CONNECTION) TO BE CONNECTED



TYPICAL SADDLE CONNECTION DETAIL

SADDLE CONNECTION INTO PUBLIC SEWER IS ACCEPTABLE WHEN SEWER DIAMETER IS THREE INCREMENTS LARGER THAN CONNECTION DIAMETER. SADDLE CONNECTIONS MUST BE POSITIONED AT 10 O'CLOCK OR 2 O'CLOCK AND AT AN ANGLE OF 45°. SADDLES SHALL BE THE SAME MATERIAL AS EXISTING SEWER.

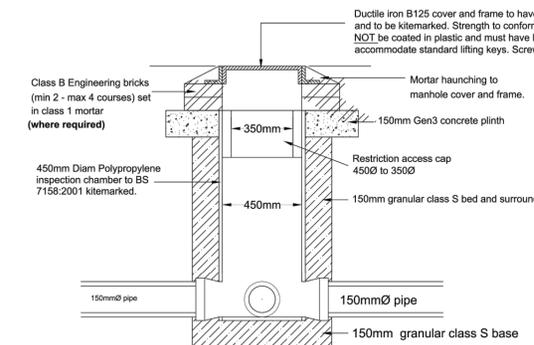
THE TABLE BELOW SHOWS IF A JUNCTION OR SADDLE MAY BE USED FOR VARIOUS PUBLIC SEWER AND LATERAL COMBINATIONS

LATERAL (dia in mm)		PUBLIC SEWER DIAMETER (mm)									
		100	150	225	300	375	450	525	600	675	750
100	JN	JN	JN	SA							
	150	JN	JN	JN	SA						
	225		JN	JN	JN	SA	SA	SA	SA	SA	SA
	300			JN	JN	JN	SA	SA	SA	SA	SA
	375				JN	JN	JN	SA	SA	SA	SA
450					JN	JN	JN	SA	SA	SA	

JN = JUNCTION
SA = SADDLE

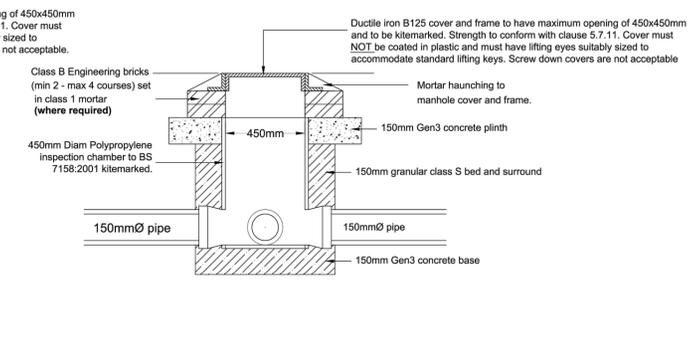
DEMARCATION CHAMBER LOCATED IN GARDENS DETAIL

Depth from cover level to invert level of pipe chamber greater than 1200mm (maximum depth 2000mm). Maximum lateral drain diameter 150mm



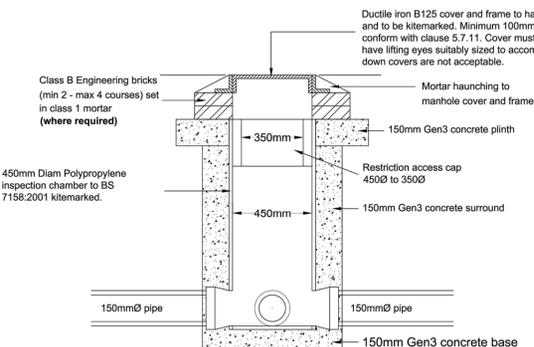
DEMARCATION CHAMBER LOCATED IN GARDENS DETAIL

Depth from cover level to invert level of pipe chamber less than 1200mm. Maximum lateral drain diameter 150mm



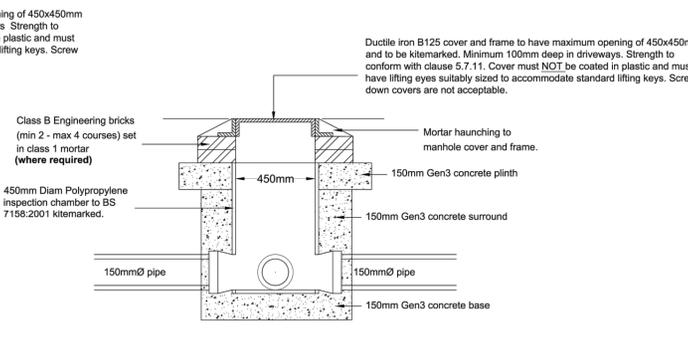
DEMARCATION CHAMBER LOCATED IN DRIVEWAY

Depth from cover level to invert level of pipe chamber greater than 1200mm (maximum depth 2000mm). Maximum lateral drain diameter 150mm



DEMARCATION CHAMBER LOCATED IN DRIVEWAY

Depth from cover level to invert level of pipe chamber less than 1200mm. Maximum lateral drain diameter 150mm



Pipes

Diameter (mm)	Gradient	S.W.
100	Foul	-
150	1:80	1:80

Vitrified clay pipes to BS EN 295 kitemarked.
Unplasticised PVC pipes to BS 4660:200 & BS EN 1401-1 kitemarked.
Structured Wall Unplasticised PVC pipes to WIS 4-35-01 kitemarked.

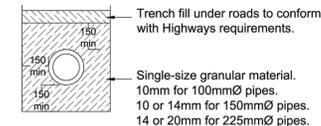
Demarcation chamber covers & frames

Surface	Class (Loading in kN)	Loading
Road	D400	Vehicle Impact
Footway & Driveway	B125	Occasional vehicle loading
Gardens	B125	Pedestrian/cyclist

Minimum depth of Lateral drains

Location	Minimum Depth (m)
Gardens	0.9
Agricultural/Open spaces	0.9
Driveways (trafficked areas)	1.2 (see detail)

LATERAL DRAIN BEDDING DETAIL



Trench fill under roads to conform with Highways requirements.

Single-size granular material.
10mm for 100mmØ pipes.
10 or 14mm for 150mmØ pipes.
14 or 20mm for 225mmØ pipes.

Notes:

This drawing is copyright and must not be copied in part or in whole unless agreed with Ave Consulting Ltd.

All dimensions are in millimetres unless noted otherwise.

DO NOT SCALE THIS DRAWING - IF IN DOUBT ASK

- All dimensions & levels to be checked by the contractor prior to commencement of work, any discrepancy shall be reported immediately to Ave Consulting Ltd.
- All work shall be carried out in accordance with Local Authority, statutory authority, health & safety requirements and regulations.
- The drawings shall be read in accordance with all other contract documents relevant at that time of issue and during the period of the contract.
- The contractor must ensure the overall stability of the works is adequate at all stages of the construction.
- No allowance has been made for cutouts, holes, notches, etc. for services. All of these are to be agreed prior to the start of the works.

General Notes

All adoptable sewer works and material to be in accordance with 'Sewers for Adoption' 6th Edition, the relevant British/European and Yorkshire Water's standards/requirements/appendix and Kitemarked.

Manhole covers shall have a clear opening of 600mm and shall be Class D400 to BS EN 124 with 150mm deep frames in highways.

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.

Filled ground must be filled and consolidated under the supervision and to the satisfaction of Yorkshire Water before any sewer works are carried out.

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). 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 Yorkshire Water's inspector. Where the clear opening of the Kitemarked product is different to that of the cover and frame, a loading bearing slab should be fitted above the cover slab to bring the size down to 600mm x 600mm for the Yorkshire Water specified cover size. Please refer to Concrete Pipe Systems Association (CPSA), 'Technical Bulletin' issued autumn 2004 for Kitemarked cover slab opening sizes.

Sulphate resistant cement (C20-0C2) and precast concrete products must be used or a laboratory report provided proving that such precautions are not necessary.

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

Sewers must have 5 metres clearance from trees and hedges (please also refer to figure 2.3 on page 33 in 'Sewers for Adoption' 6th Edition for restrictions on tree planting adjacent to sewers).

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 non-vehicular access areas) then a concrete slab should be provided above granular bed and surround.

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 an increment to accommodate the connections and bends.

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

Adoptable plastic sewer pipes to be BSI Kitemarked (certified to WIS 4-35-01 and BS EN 13476). Adoptable plastic sewer to be laid in maximum 3 meter lengths unless there is a specific operational need to lay longer lengths. Plastic channel sections in manholes are not acceptable and Yorkshire Water would prefer clayware channel sections in manholes. We have found that plastic channels are difficult to set in concrete because they float and a satisfactory finish can not be obtained on the benching.

HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks associated with the types of work detailed on this drawing please consider the following:

- Construction:
- Existing live storm and foul sewers present on site.
 - Existing buried and overhead services are present on site.
 - Sewers > 3m in depth - risks falling from height and confined spaces.
 - Working near watercourses - waterborne diseases and pathogens are a potential hazard to health.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.

Rev	Details	By	Chk	Date
A	Updated to Yorkshire Water S104 comments	D.H.	D.H.	17.03.2020
Ø	Initial issue	S.T.P.	J.J.B.	23.01.2020

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Client:	Avant Homes
Project:	Mosborough
Title:	MH Standard Details Sheet 1
Drawn:	STP
Checked:	JJB
Date:	Jan 2020
Scale:	1:20
Original dwg size:	A1
Rev:	A
Drawing Number:	P2741-10-01