

300 mm
200
100
50
10 mm

TABLE (i)

Diameter of largest pipe in manhole (mm)	Internal diameter of manhole (mm)
Less than 375	1200 (1050 where depth to soffit is 1.35m to 1.5m)
375 - 700	1500
750 - 900	1800
Greater than 900	Consult Undertaker/Engineer's Specification

TABLE (ii)

Pipe Diameter (mm)	Rocker Pipe Length (mm)
150 - 600	600
601 - 750	1000
> 750	1250

ALL PCC RINGS ARE TO BE SPIGOT AND SOCKET BOND CONSTRUCTION.

TABLE (iii)

MH Location	Cover Grade	Test Load
Non-trafficked/ Pedestrian areas	A15	15
Private drives	B125	125
Parking courts	C250	250
Carriageway	D400	400
Airfields/Dockyards	E600	600
Airfields/Dockyards	F900	900

TABLE (iv)

NRSWA Road Category	Description	Minimum Frame Depth (mm)
I	Trunk roads and dual carriageways	150
II	All other 'A' roads	150
III	Bus Services	150
IV	All other roads except residential cul-de-sacs	150
	Residential cul-de-sacs	100

HIGH STRENGTH TOPPING (vi)

- High-strength concrete topping shall be produced, laid and finished in accordance with the relevant provisions of BS 8204: Part 2 and the following approximate proportions by weight shall be used: 1 part cement, 1 part natural sand and 2 parts single sized coarse aggregate.

RECESSED COVERS (viii)

- Where inspection chamber is located in areas of block paving it shall be fitted with a recessed cover to accommodate paving blocks.

MANHOLE COVERS & FRAMES (ix)

- Manhole cover and frames shall comply with the relevant provisions of BS EN 124, BS 7903 and Highway Agency Guidance Document HA 104/02. They shall be of a non-rocking design which does not rely on the use of cushion inserts.
- All manhole covers shall be the non-ventilating type and shall have closed keyways.
- Refer to TABLE (iv) for frame depths.
- Refer to Manhole Schedule/Drainage Drawing for cover grades.

Catchpit Sizing:

Pipe Depth	Catchpit Dia.
<1000mm	900Ø
1000-1350mm	1050Ø
1350-2700mm	1200Ø

PRE-CAST CONCRETE PRODUCTS (x)

- Products shall comply with the relevant provisions of BS 5911: Part 2, 200 & 230.

Type	Internal Sizes			Cover Sizes	
	Depth to invert (m)	Length x Width (mm)	Circular (mm)	Length x Width (mm)	Circular (mm)
Rodding Eye		As Drain but Minimum 100mm			
Shallow Access					
Small	0.6 or less	150x100	150	150x100	150
Large	-	225x100	-	225x100	-
Inspection Chamber	0.6 or less	-	190	-	190
	1.0 or less	450x450	450	450x450	450
Manhole	1.5 or less	1200x750	1050	600x600	600
	Over 1.5	1200x750	1200	600x600	600
Manhole Shaft	Over 2.7	900x840	900	600x600	600

BUILDING REGULATIONS MINIMUM DIMENSIONS FOR MANHOLES

(Not to Scale)

This plan complies with the Building Regulations 2002 Section 'H' - Drainage & Waste Disposal.

PIPEWORK SPECIFICATIONS

Unless otherwise qualified on the drawings all pipe materials shall be selected as follows:

CLAY: (100Ø-1200Ø)

All pipe shall be Class 120 clayware to BS EN 295-1:1991.

UPVC: (100Ø-1100Ø)

All pipes shall be to BS EN 1401-1:1998.

All pipes shall be ribbed 'twin wall' to provide a suitable network (pipes & couplings).

CONCRETE: (225Ø-3000Ø)

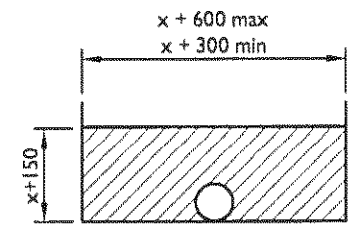
All pipes shall be to BS EN 591-1:2002.

ALL materials shall be BBA certified.

For Public Highway Drainage all materials shall comply with the Specification for Highway Works.

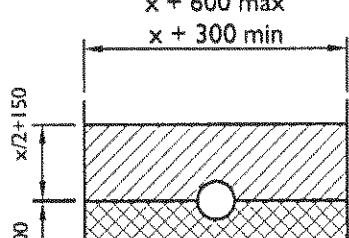
1:20 @ A1
1:40 @ A3
0 200 400 600 800 1000 1200 1400 1600 1800 2000 mm

LIMITS OF COVER FOR STANDARD STRENGTH RIGID PIPE IN ANY WIDTH OF TRENCH							
		Fields and gardens		Light traffic roads		Heavy traffic roads	
		MIN	MAX	MIN	MAX	MIN	MAX
PIPE BORE BEDDING CLASS		MIN	MAX	MIN	MAX	MIN	MAX
100mm	D or N F B	0.4	4.2	0.7	4.1	0.7	3.7
		0.3	5.8	0.5	5.8	0.5	5.5
		0.3	7.4	0.4	7.4	0.4	7.2
150mm	D or N F B	0.6	2.7	1.1	2.5	--	--
		0.6	3.9	0.7	3.8	0.7	3.3
		0.6	5.0	0.6	5.0	0.6	4.6
225mm	D or N F B	--	--	--	--	--	--
		0.6	2.5	1.2	2.1	--	--
		0.6	3.3	0.8	3.2	0.9	2.4



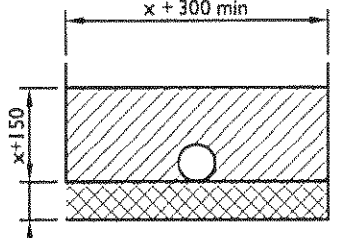
CLASS 'D' PIPE BEDDING

High standard of workmanship required not to be used unless accurate hand trimming by shovel is possible



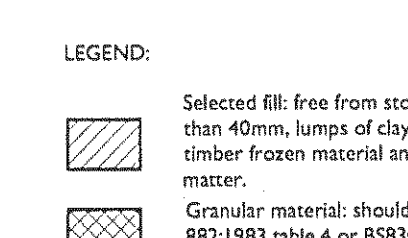
CLASS 'B' PIPE BEDDING

Generally suitable in all soil conditions granular fill to half depth of pipe



CLASS 'N' PIPE BEDDING

Where accurate hand trimming is not possible class N is an alternative to class D

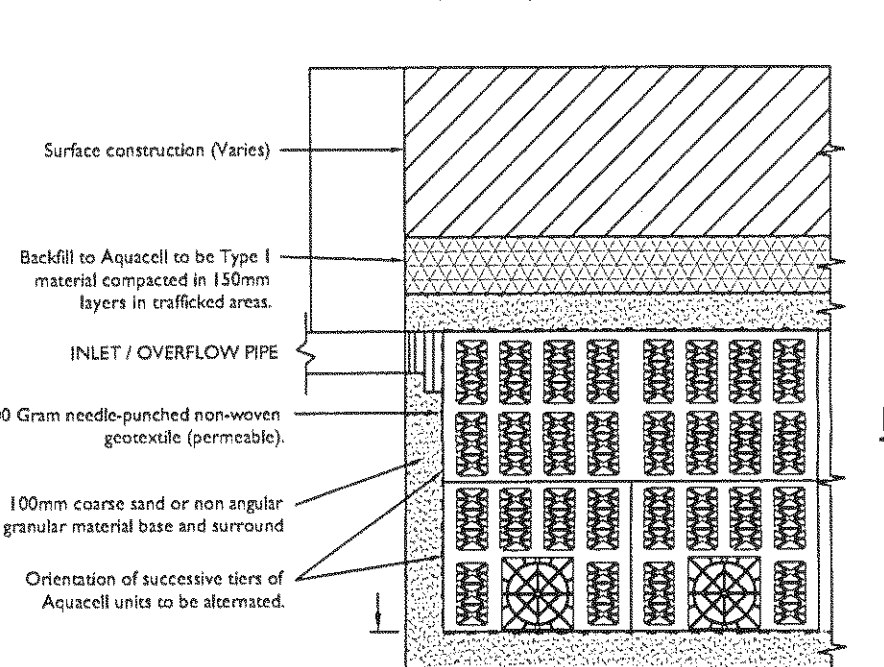


CLASS 'N' PIPE BEDDING

Generally suitable in all soil conditions granular fill to half depth of pipe

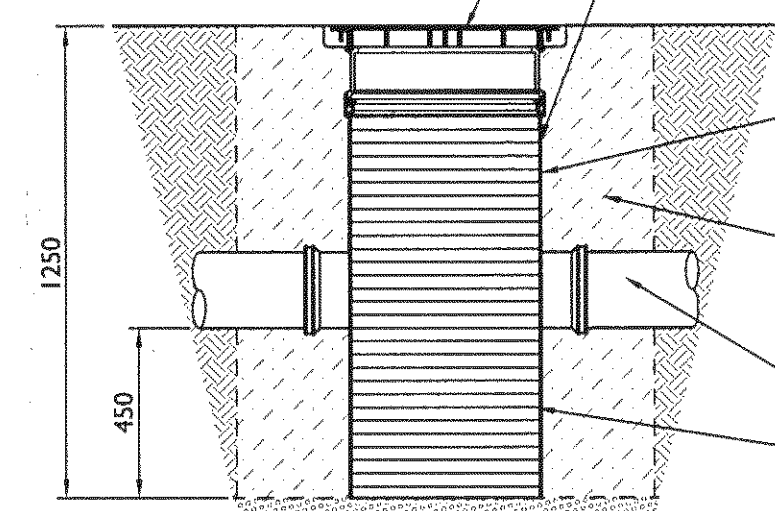
PIPE BEDDING DETAILS (PRIVATE DRAINS)

(Scale 1:20)



AQUACELL SOAKAWAY DETAIL

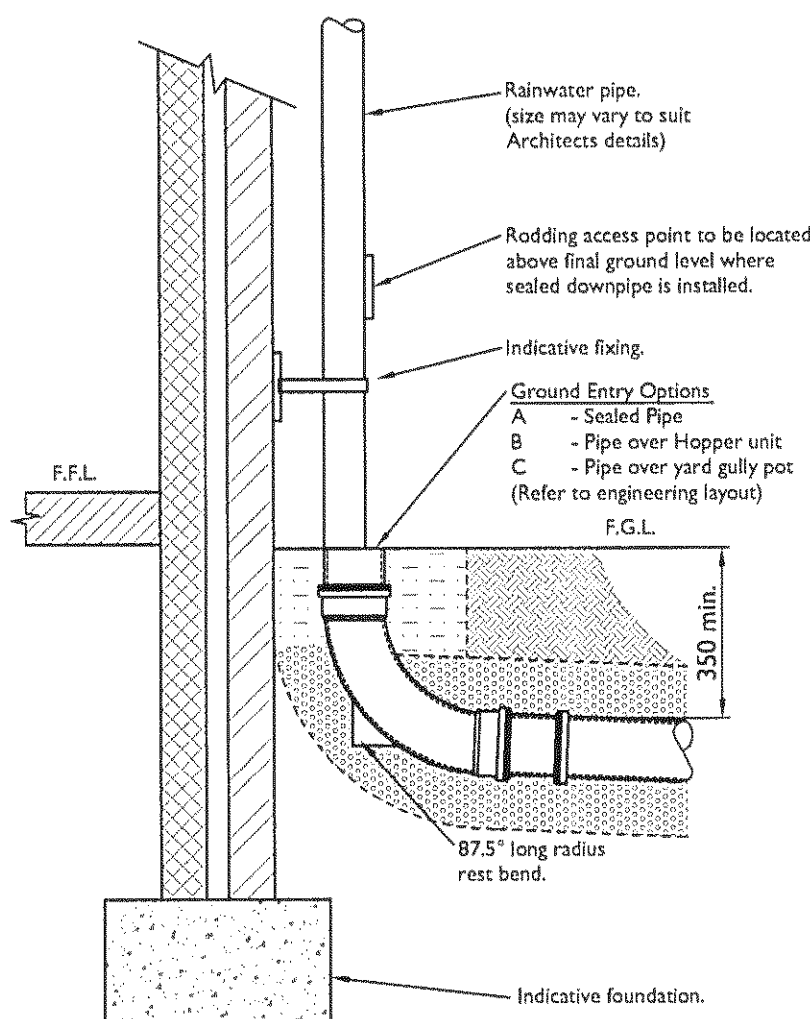
(Scale 1:20)



POLYPROPYLENE SHALLOW SILT TRAP DETAIL (500Ø)

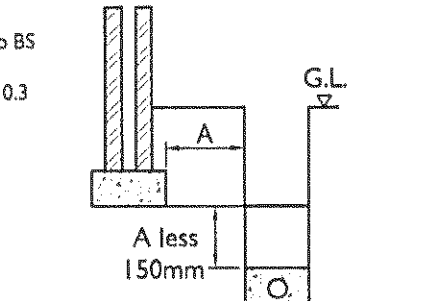
(Scale 1:20)

Depth to invert 1.25m (standard unit)
Silt Traps installed greater than single unit depth to be extended using Wavin inspection chamber shaft units.



DETAIL OF RAINWATER PIPE

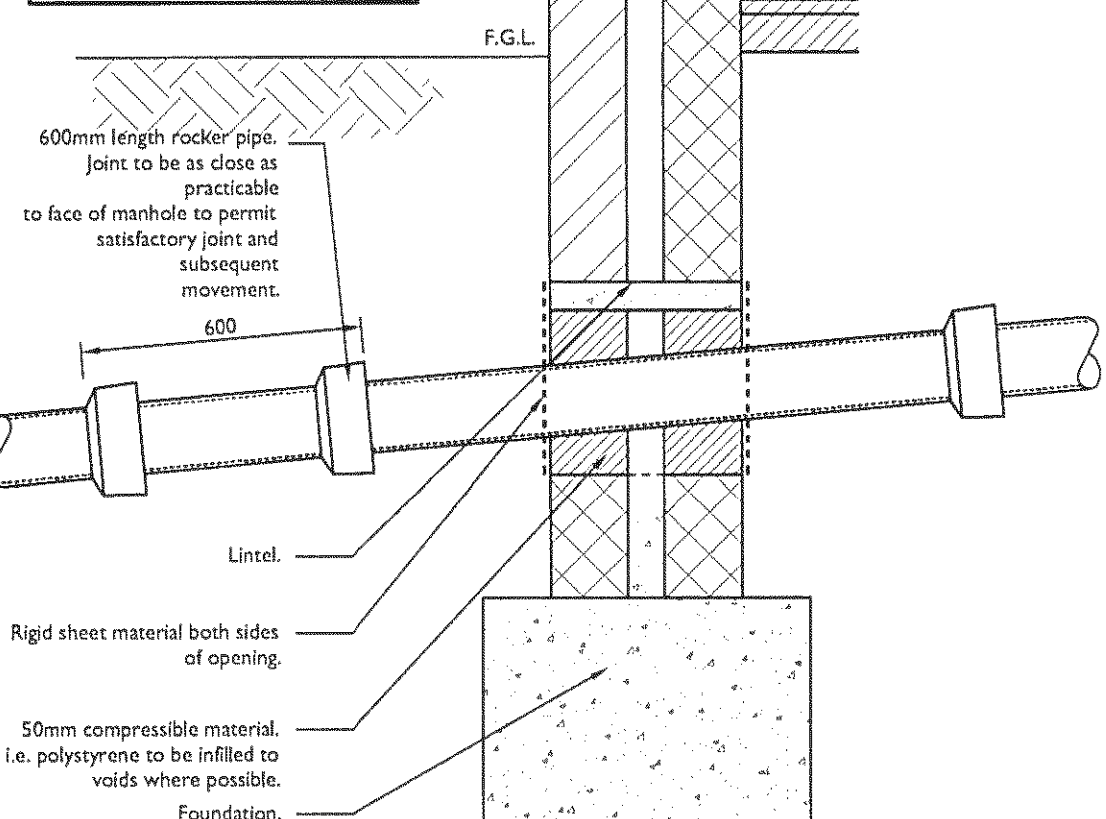
(Scale 1:20)



DETAIL OF PIPE RUNS NEAR BUILDINGS

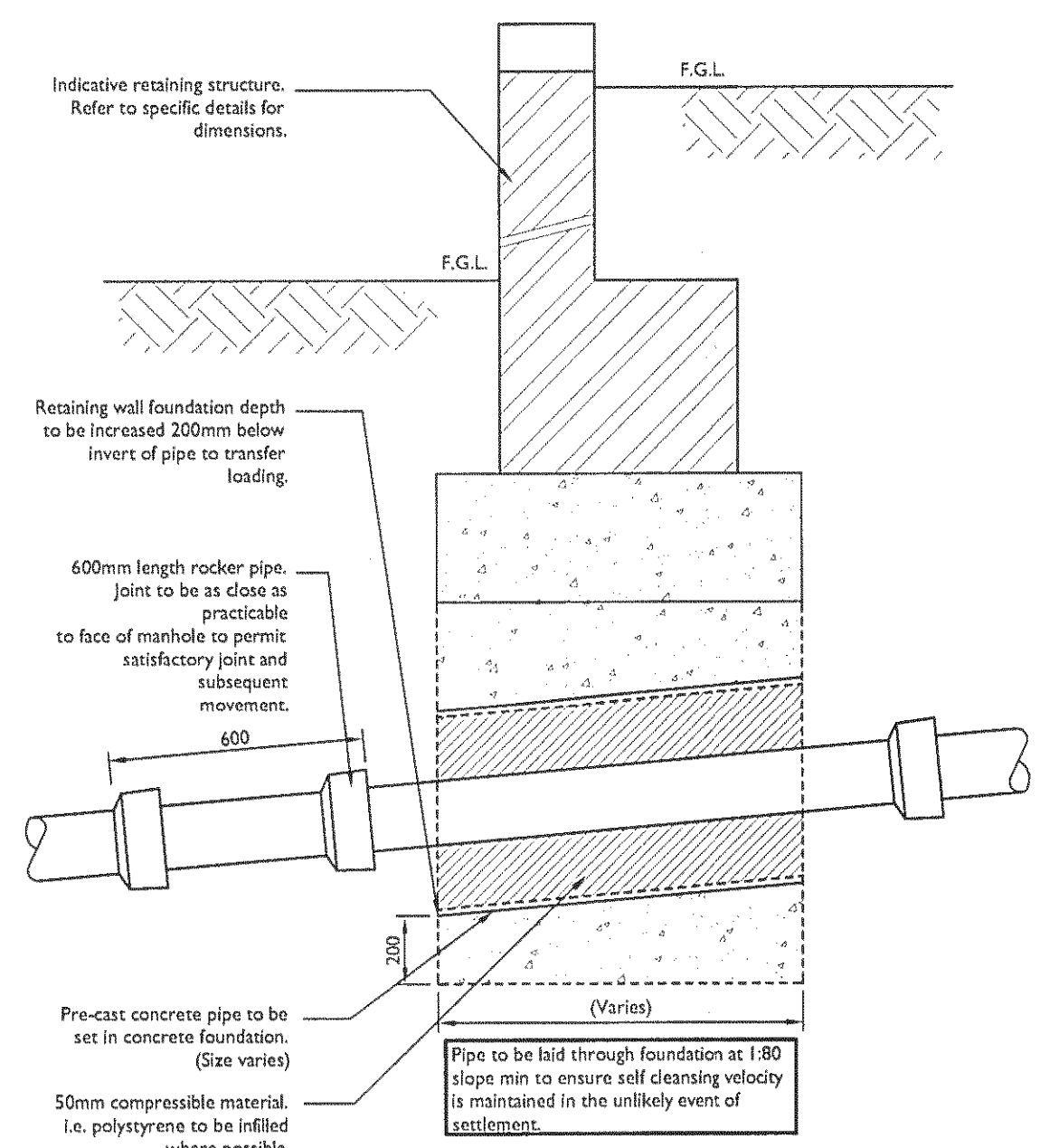
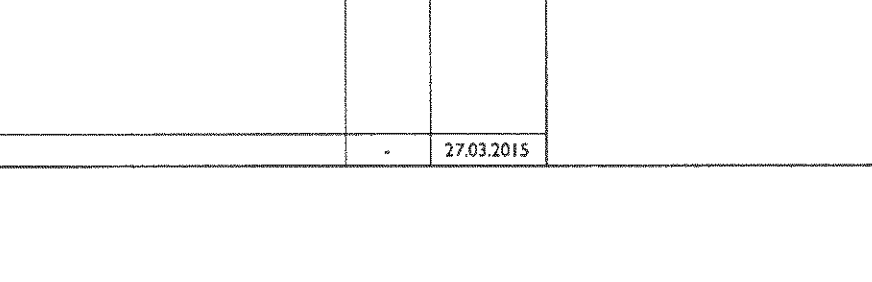
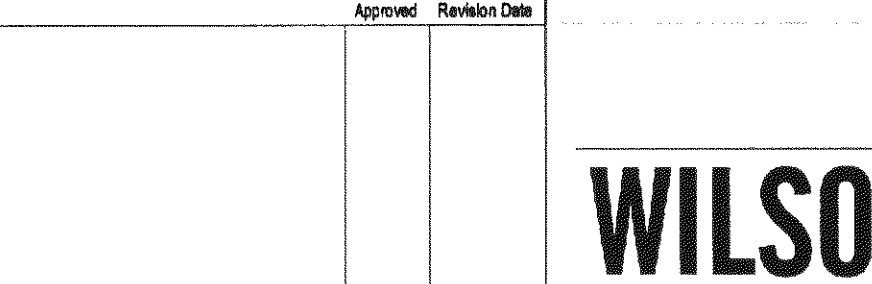
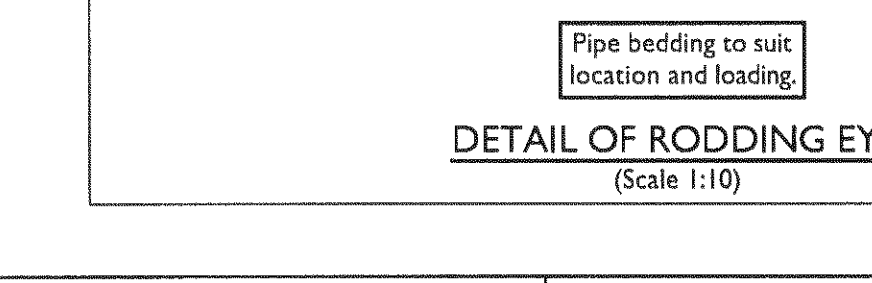
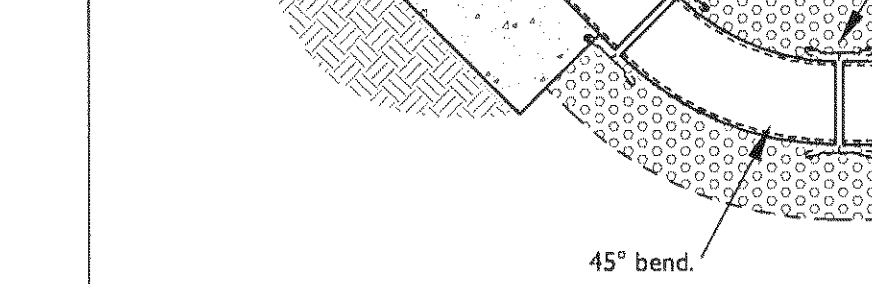
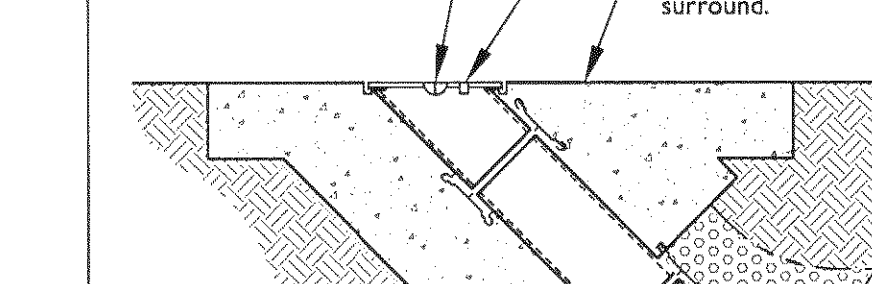
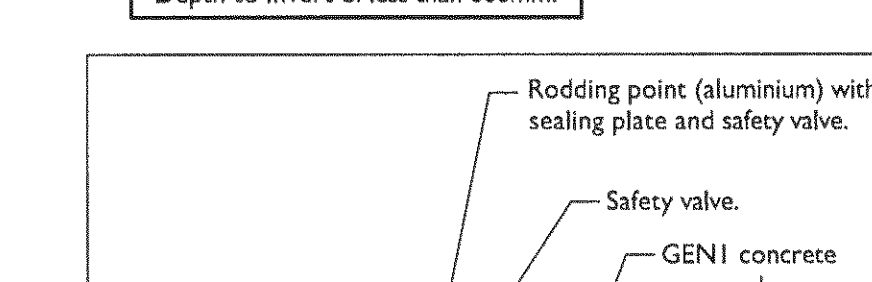
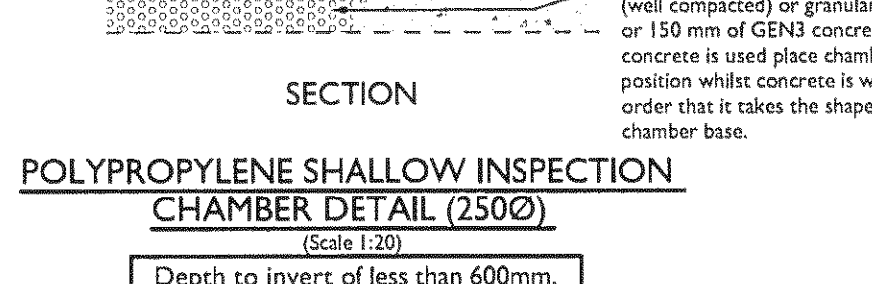
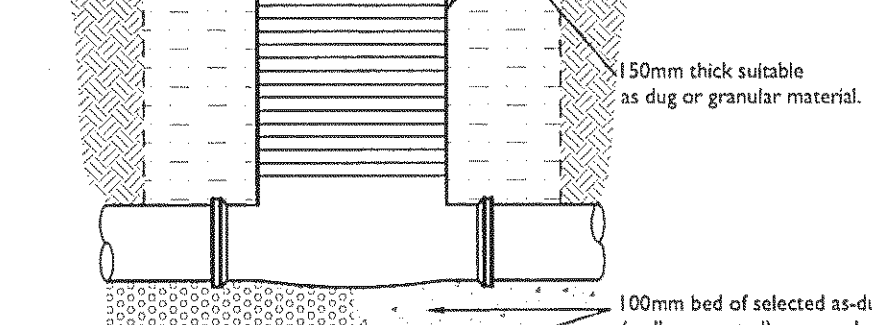
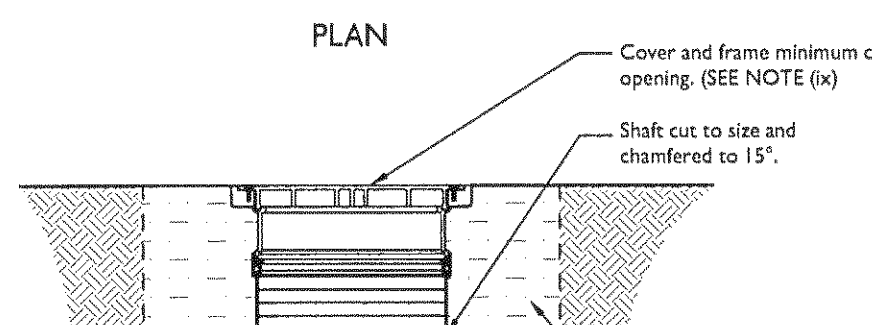
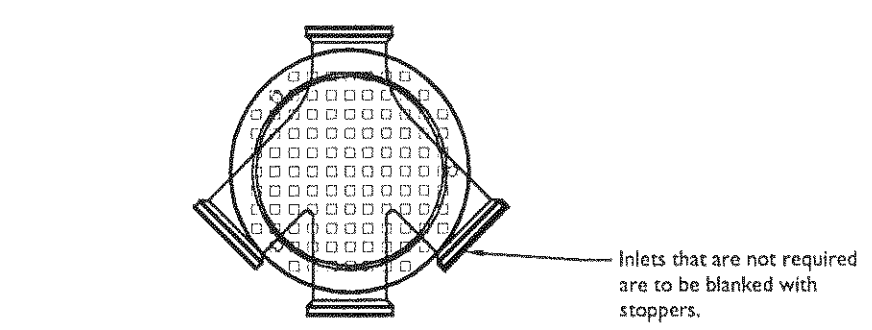
(Not to Scale)

Arched or lintelled opening to give 50mm min clearance all around the pipe.
Mask opening both sides with rigid sheet material to prevent overspill of fill or entry for vermin.
Pipe to be laid through foundation at 1:80 slope min to ensure self cleansing velocity is maintained in the unlikely event of settlement.



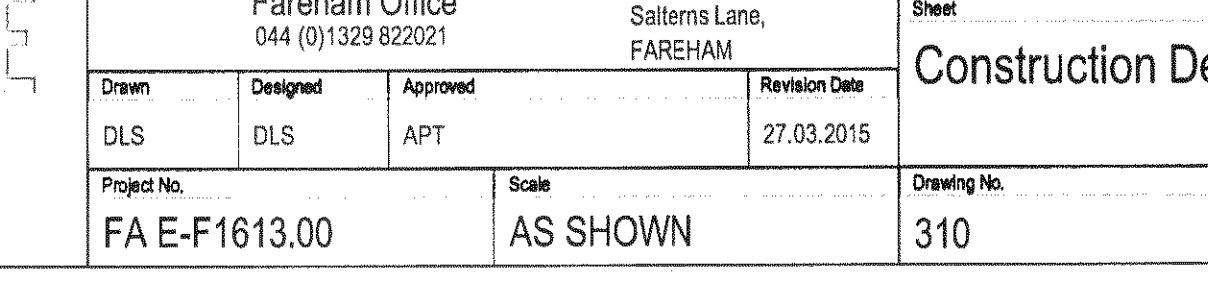
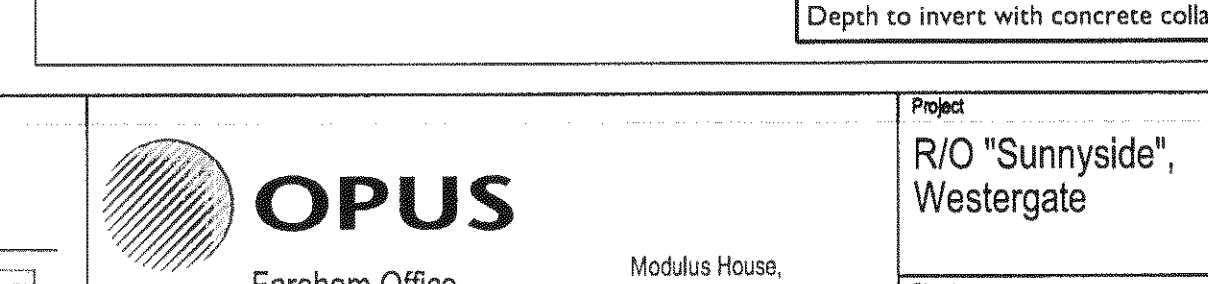
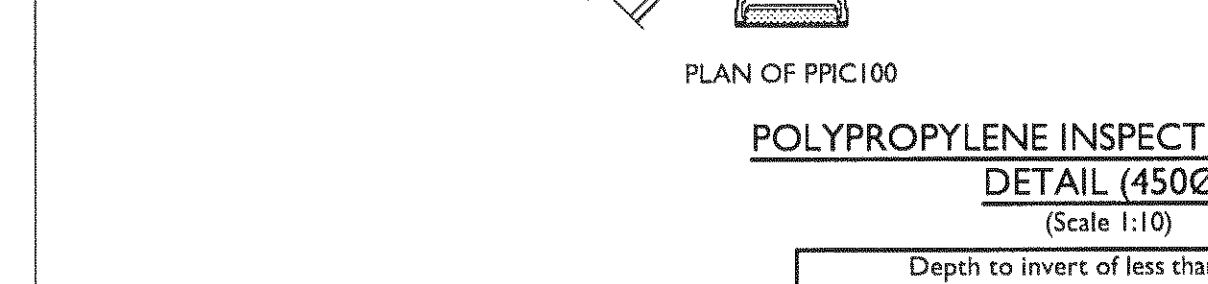
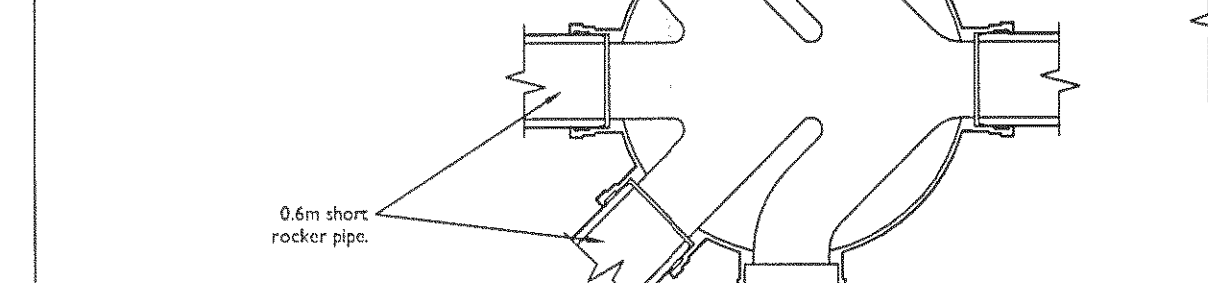
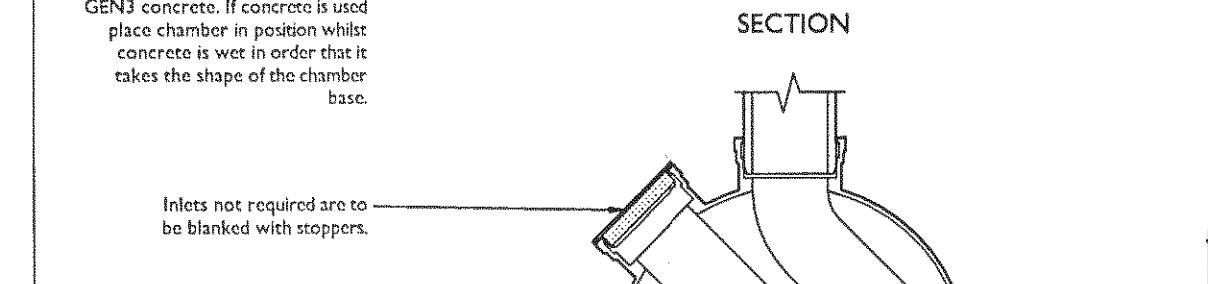
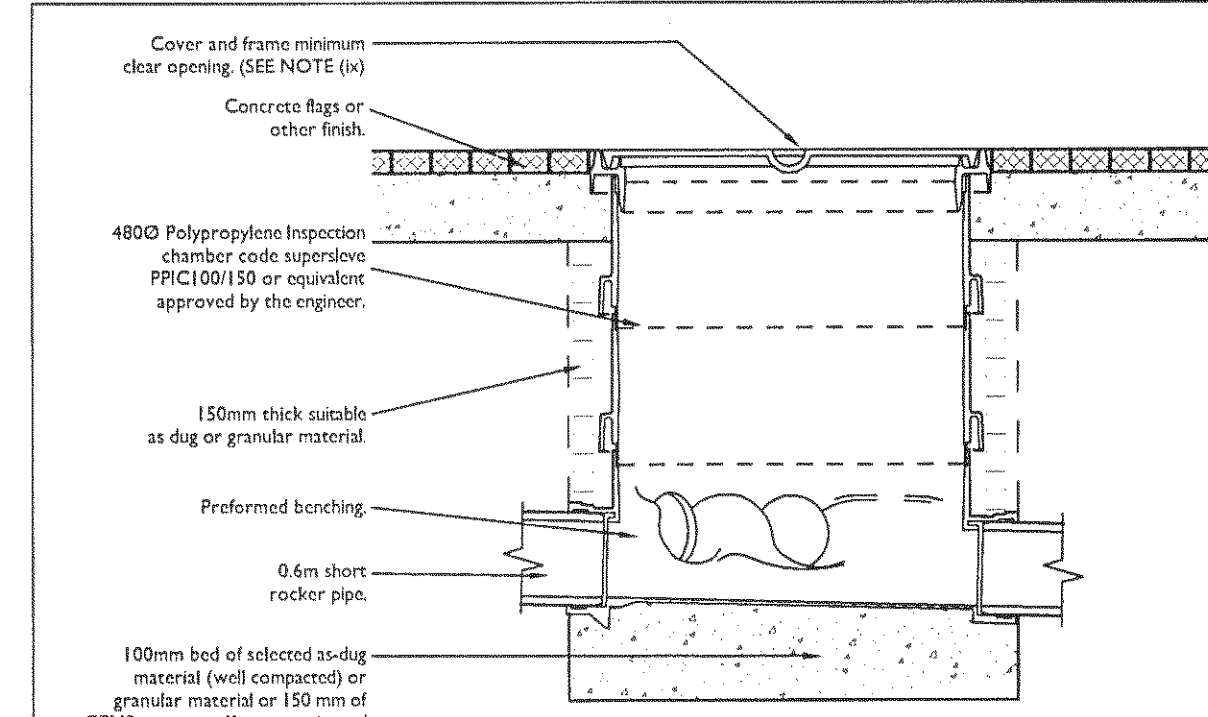
TYPICAL SECTION DETAILING PIPE 'SLEEVE' THROUGH LINTEL OPENING

(Scale 1:20)



TYPICAL SECTION DETAILING PIPE 'SLEEVE' THROUGH BRICKWORK RETAINING WALL/FOUNDATION

(Scale 1:20)



STANDARD NOTES:

- This drawing is to be read in conjunction with all other OPUS drawings, and with all relevant Architect's and Engineer's drawings and specification.
- No dimensions are to be scaled from this drawing. Unless noted otherwise all dimensions are in millimeters and all levels are in metres from the site datum. All dimensions to be checked on site. All details and dimensions relating to sub-Contractors work must be checked and agreed between the sub-Contractor or supplier and the general Contractor.
- The electronic information from this drawing cannot be guaranteed as dimensionally drawn exact. Figured dimensions must be used for setting out and detailing. OPUS logos and company information must be removed from copies if information is re-used.
- The main Contractor is responsible for the design of all temporary works, and is also responsible for the safe maintenance and stability of existing buildings at all times.
- The main Contractor is responsible for the mitigation of all occurrences of ground water during the construction period.
- Any information given regarding existing underground services is given in good faith after consultation with the relevant authority, however accuracy is not guaranteed. The main Contractor is responsible for checking all information on site prior to work commencing and taking due care and attention whilst undertaking the works.
- The contractor must comply with all current legislation relating to Health & Safety.

PRELIMINARY

Revision	Amendment	Approved	Revision Date
P1	FIRST ISSUE.		27.03.2015

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Drawn	Designed	Approved	Revision Date
DLS	DLS	APT	27.03.2015