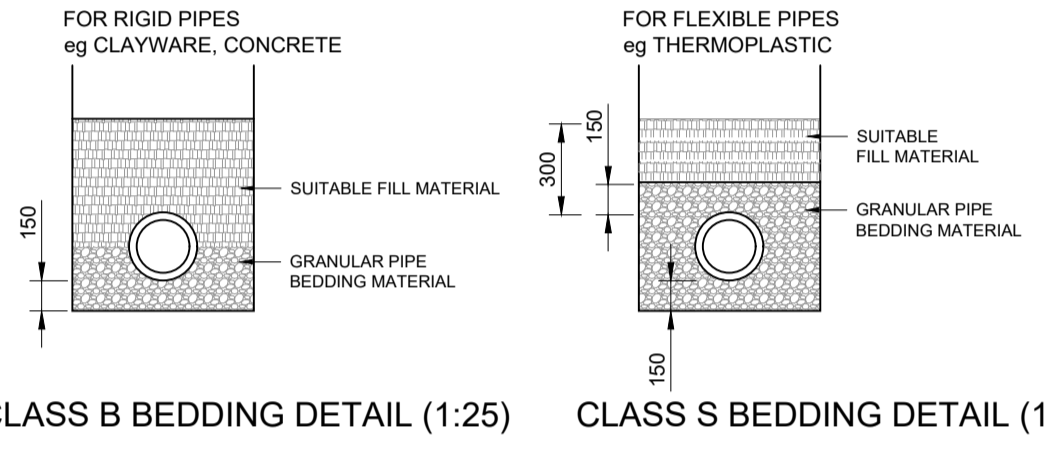


Proposed Surfaced and Drained Catchment Area (1:200)
Total area 421m²



CLASS B BEDDING DETAIL (1:25) **CLASS S BEDDING DETAIL (1:25)**

SUITABLE FILL: THE SUITABLE FILL SHALL BE SUITABLE FOR THE LOCATION AND SHALL BE CAREFULLY COMPACTED TO PROVIDE STABILITY WITHOUT DAMAGING THE PIPE. FILL UNDER CAR PARKING AREAS AND PRIVATE ROADS TO BE WELL COMPACTED GRADED MATERIAL. FILL UNDER ADOPTED ROADS TO BE TYPE 1 GRANULAR SUB-BASE.

WHERE THE PIPES ARE TO BE ADOPTED CLASS S BEDDINGS TO BE USED FOR EITHER RIGID OR FLEXIBLE PIPES

SIZE OF BEDDING MATERIAL		
ALL GRANULAR MATERIAL TO BE SINGLE SIZES OR GRADED IN ACCORDANCE WITH BS 882 BS197 BS377		
PIPE DIAMETER	NOMINAL SINGLE SIZED	GRADED
UP TO 100mm	10mm	
OVER 100mm TO 150mm	10mm or 14mm	5mm to 14mm
OVER 150mm TO 300mm	10mm, 14mm or 20mm	5mm to 14mm or 5mm to 20mm
OVER 300mm TO 550mm	14mm or 20mm	5mm to 14mm or 5mm to 20mm
OVER 550mm	14mm, 20mm or 40mm	5mm to 20mm or 5mm to 40mm

LIMITS OF COVER IN ANY WIDTH OF TRENCH			
NOMINAL SIZE	LAID IN FIELDS	LAID IN LIGHT ROADS	LAID IN MAIN ROADS
CLASS 120 CLAYWARE PIPES (CLASS B BEDDING)			
100-150mm	0.6m - 8.0m	1.2m - 8.0m	1.2m - 8.0m
225mm	0.6m - 5.0m	1.2m - 5.0m	1.2m - 4.5m
400mm	0.6m - 4.5m	1.2m - 4.5m	1.2m - 4.0m
600mm	0.6m - 4.5m	1.2m - 4.5m	1.2m - 4.0m
CLASS M CONCRETE PIPES (CLASS B BEDDING)			
300mm	0.6m - 3.0m	1.2m - 3.0m	1.2m - 2.5m
450mm	0.6m - 3.5m	1.2m - 3.5m	1.2m - 2.5m
600mm	0.6m - 3.5m	1.2m - 3.5m	1.2m - 3.0m
THERMOPLASTIC PIPES (CLASS S BEDDING)			
100 - 300mm	0.6m - 7.0m	0.9m - 7.0m	0.9m - 7.0m

WHERE COVER IS LESS THAN THE ALLOWABLE DEPTH PIPES TO HAVE A CLASS 2 CONCRETE SURROUND OR CONCRETE COVER SLAB PROTECTION

CONCRETE PROTECTION	
CLASS 1 SULPHATE CONDITIONS	
ADAPTABLE STANDARDS AND AREAS SUBJECT TO HEAVY LOADING	GEN3 OR ST4
AREAS SUBJECT TO LIGHT LOADING eg. PRIVATE DRIVES, SMALL CAR PARKS	GEN1 OR ST2
FOR BURIED CONCRETE EXPOSED TO SULPHATE CONDITIONS	
CLASS 2	FND 2
CLASS 3	FND 3
CLASS 4A	FND 4A
CLASS 4B	FND 4B

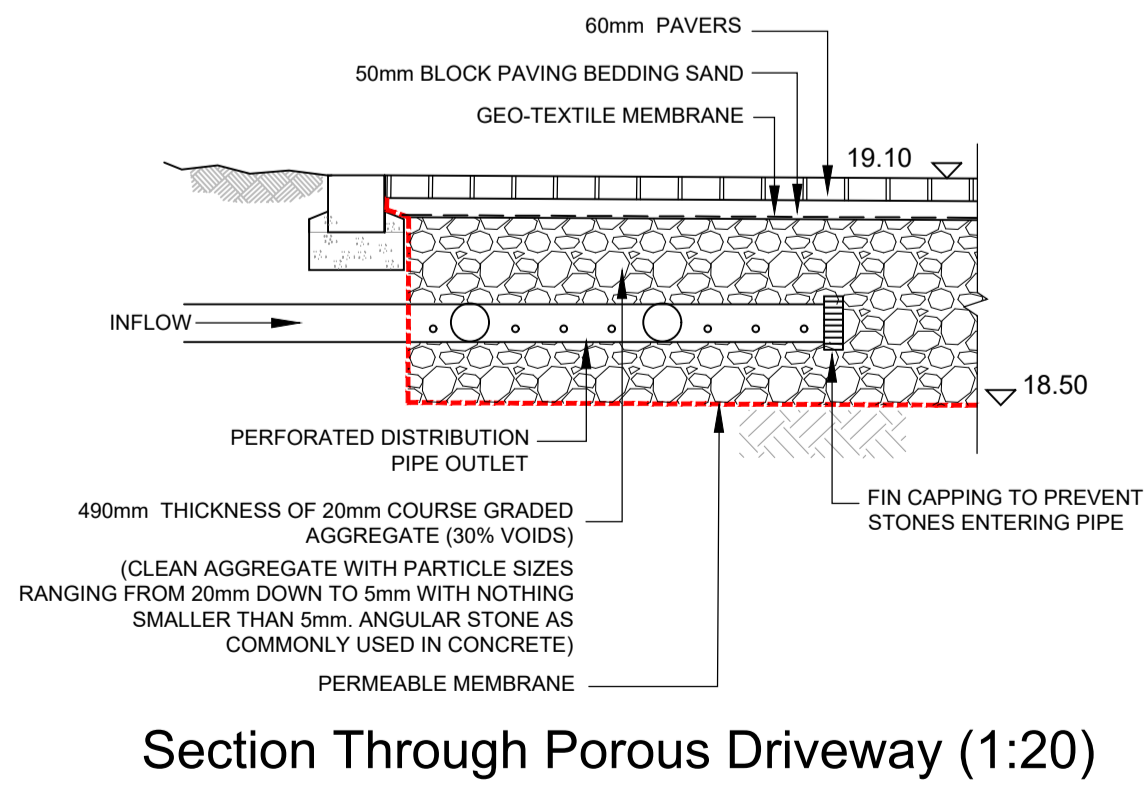
Drainage Layout plan (1:100)

Percolation tests were carried out in the grounds of the neighbouring property for the same client. The recorded infiltration rate was 7.46x10⁻⁶ m/s

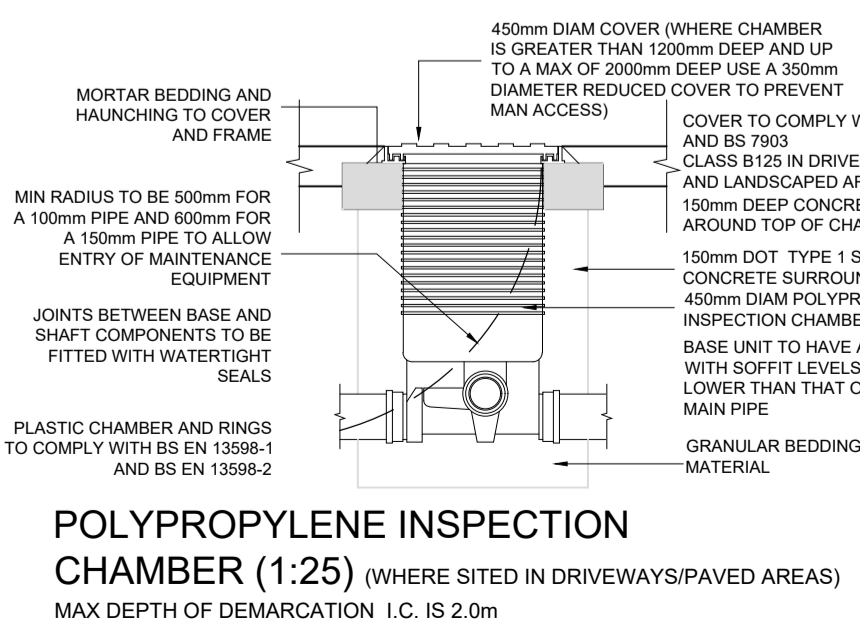
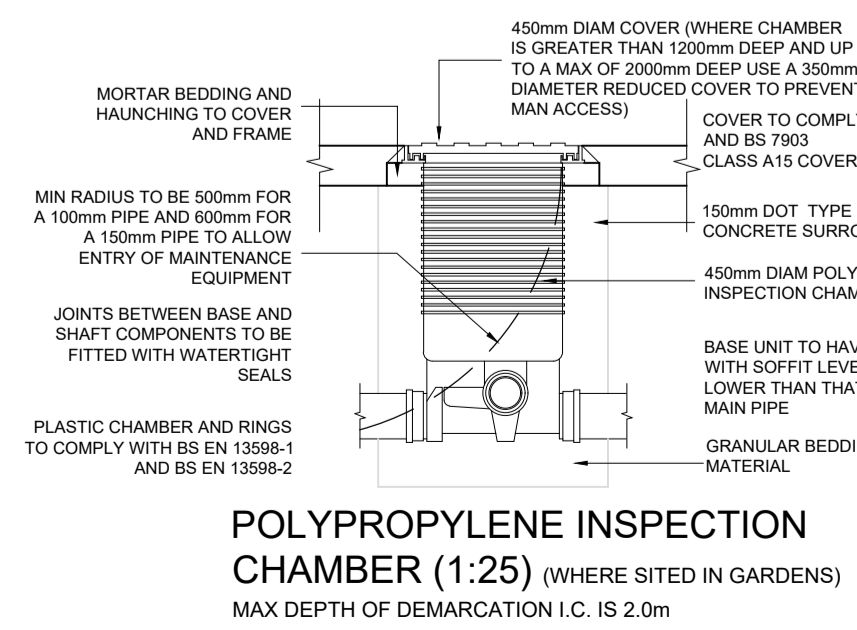
This figure has been used to calculate the size of the soakaway and the design of the porous paving. See Micro-drainage calculations.

Both infiltration devices have been designed to cater for a 1in100 year storm event with 30% allowance for climate change

Prior to construction further percolation tests will be carried out on the site to confirm this figure.



Section Through Porous Driveway (1:20)



This drawing is copyright of Topping Engineers LTD and must not be copied or reproduced in anyway without written consent.
DO NOT SCALE OFF THIS DRAWING

Notes:

- This drawing is to be read in conjunction with all relevant architect's and engineer's drawings.
- It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.

PRIVATE DRAINAGE NOTES

- COPYRIGHT IN THIS DOCUMENT BELONGS TO SHARPE TOPPING Ltd & ALL RIGHTS IN IT ARE RESERVED BY THE OWNER.
- NO PART OF THIS DRAWING MAY BE COPIED, TRANSFERRED, OR MADE AVAILABLE TO USERS OTHER THAN THE ORIGINAL RECIPIENT, INCLUDING ELECTRONICALLY, WITHOUT PRIOR PERMISSION FROM SHARPE TOPPING Ltd
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS & ENGINEERS DRAWINGS & SPECIFICATIONS.
- ALL DIMENSIONS ARE SHOWN IN MILLIMETRES.
- NO DIMENSIONS TO BE SCALED FROM THIS DRAWING.
- MANHOLES, SEWERS ETC AND ANY OTHER PART OF THE WORKS INTENDED FOR ADOPTION UNDER A SECTION 104 AGREEMENT OR GULLIES ETC INTENDED FOR ADOPTION AS HIGHWAY DRAINAGE ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE W.W.A. SPECIFICATION 'SEWERS FOR ADOPTION' 6th EDITION, AND TO THE REGULATORS APPROVAL.
- UN ADOPTED FW AND SW DRAINAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING REGULATIONS, BS 8301 AND RELEVANT AGREEMENT CERTIFICATES.
- DRAINS ARE TO BE CONSTRUCTED USING FLEXIBLY JOINTED VITRIFIED CLAY PIPES TO BS 65 'SUPER STRENGTH' SPECIFICATION (E.G. HEFORTH SUPERSLEEVE OR SIMILAR) OR UPVC BUILDING DRAINAGE SYSTEM PIPEWORK TO BS 4660 AND BS 2494. BEDDED AND BACKFILLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS REGARDING FILLING OF DRAIN TRENCHES ADJACENT TO DWELLINGS OR OTHER STRUCTURES TO BE IN ACCORDANCE WITH BS 8301 FIG.9.
- WHERE CLAY OR CONCRETE RIGID PIPES ARE LAID UNDER DRIVEWAYS THE MIN COVER WITHOUT CONCRETE PROTECTION IS 1200mm. WHERE PLASTIC FLEXIBLE PIPES (NOMINAL RING STIFFNESS SM4) IN CLASS S BEDDING ARE USED THE MIN DEPTH OF COVER BELOW DRIVEWAYS CAN BE REDUCED TO 900mm WITHOUT THE NEED FOR CONCRETE PROTECTION.
- ALL PIPES TO BE 100mm DIAMETER UNLESS STATED OTHERWISE.
- ACCESS FITTINGS AND INSPECTION CHAMBERS LESS THAN 1.2m DEEP ARE TO BE CLAYWARE OR PRE-FORMED POLYPROPYLENE AS APPROPRIATE TO THE NUMBER OF CONNECTIONS. POLYPROPYLENE CHAMBERS CAN BE USED UP TO 3m DEEP BUT REQUIRE MAX 350mm DIAM REDUCED COVER TO PREVENT MAN ENTRY. MANHOLE CHAMBERS ARE TO BE OF PRECAST CONCRETE CONSTRUCTION WITH 150mm INSITU CONCRETE SURROUND. INSPECTION CHAMBER SIZES ARE TO BE IN ACCORDANCE WITH TABLE 8 OF BS 8301.
- COVER LEVELS INDICATED ON THE DRAWING ARE NOMINAL AND MAY BE ADJUSTED TO SUIT FINISHED FOUND LEVELS AS NECESSARY.
- RAINWATER DOWNPIPES TO BE CONNECTED DIRECT TO DRAIN USING AN APPROPRIATE ADAPTOR AND REMOVABLE SECTION OF DOWNPIPE TO PERMIT RODDING ACCESS.
- WHERE DRAINS PASS THROUGH FOUNDATIONS OR OTHER RIGID STRUCTURES, A LITTLE OR SLEEVE IS TO BE USED AND PROVISION FOR FLEXIBILITY IS TO BE MADE WITH 'ROCKER PIPES'.
- ANY EXISTING LAND DRAINS SEVERED BY SITE OPERATIONS SHOULD BE DIVERTED AROUND ANY PROPERTIES AND RECONNECTED TO THE EXISTING LAND DRAINAGE SYSTEM VIA A SILT TRAP.
- THE POSITIONS OF SVPS, STUB-STACKS, W.C. OUTLETS ETC AND RAINWATER DOWNPIPES ARE TO BE ACCURATELY LOCATED FROM THE BUILDING WORKING DRAWINGS.
- DRAINS WITHIN AREAS OF 'MADE GROUND' TO BE CONSTRUCTED BY FIRST MAKING UP THE AREA TO APPROXIMATE FINISHED LEVEL AND THEN EXCAVATING THROUGH THE FILL MATERIAL INTO UNDISTURBED GROUND. THE DRAIN TRENCH IS THEN TO BE BACKFILLED TO FORMATION LEVEL USING SUITABLE GRANULAR FILL MATERIAL WELL COMPACTED IN LAYERS NOT EXCEEDING 225mm.
- PRIVATE DRAINAGE CONNECTIONS TO ADOPTABLE SEWERS TO BE VIA 45° JUNCTIONS AND NOT SADDLES.

No.	Revision	Date	Drawn
Status: Preliminary			
Client: Mr Nigel Adams			
Project: Laurel House, Stockton on the Forest			
Drawing title: Drainage Layout			
Drawn: AB	Chkd: AD	Date: April 2018	Scale: Var
Contract No: 18149	Dwg No: C-50	Revision: -	