

DRAINAGE REPORT



Project: Ambulance House, Littlehampton

Made by:	Date:	Project No:	Checked by:	Approved by:	Pages	Rev
MT	28/01/26	25196		MT	3	B

Item	Details and Design Rationale	References and output
Method of surface and foul water discharge	It is proposed to construct a block of flats on land previously occupied by the Ambulance Station on Paterson Wilson Road, Littlehampton. Surface water drainage strategy has been agreed through planning, this report outlines the detailed design. Surface water flows from new developments should be dealt with in the following order of preference: 1. Soakaways (infiltration drainage), 2. Attenuated discharge to a water course, 3. Attenuated discharge to a surface water sewer, 4. Attenuated discharge to a combined sewer. It was assumed at planning stage, based on a desk study of ground conditions, that infiltration drainage will not work. To confirm infiltration tests to BRE365 were attempted on 17th December 2025. Water level drop in the test pits was minimal for 4 hours, and the tests were abandoned. The site is effectively impermeable and infiltration drainage is not viable. Currently all surface water discharges to the on site combined sewer, which is connected to the wider local public combined sewer system. There are no adjacent watercourses or surface water sewers. Infiltration drainage has been confirmed to be unviable. Discharge of surface water will be via attenuated discharge to the on-site combined sewer, in line with the drainage strategy approved through planning. Foul water will also be directed to the on-site combined sewer. A S106, Consent to Connect application has been approved by the Water Authority.	Building Control Hierarchy

Calculations Attenuation Design	The new roof, access road and parking bays will create an impermeable area of 610m2. (0061ha) The drainage strategy report assesses the greenfield run-off rates for the design storms as: <table><tr><td>Q2</td><td>0.6l/s</td></tr><tr><td>Q30+40%CC</td><td>0.8ls</td></tr><tr><td>Q100+45%CC</td><td>0.9l/s</td></tr></table> It is not practical to achieve this with a single vortex valve so for simplicity of design the peak discharge rate has been set at 0.6l/s for all storm events. Flow control is by way of a vortex flow control device, with bypass door (100mm diameter) to be used in the event of blockage. Storage of excess flows is provided in the voids of the sub-base stone of the access and parking paving. The area of the paving is 353m2. The sub-base stone in the storage zone has a void ratio of 30%, therefore the effective base area of the storage is 105.9m2. The system has been modeled in InfoDrainage design software using the latest FEH rainfall data, and found to contain all design storms below ground,with a peak discharge rate of 0.6l/s. Please refer to the attached InfoDrainage report sheets and drawings for details.	Q2	0.6l/s	Q30+40%CC	0.8ls	Q100+45%CC	0.9l/s	
Q2	0.6l/s							
Q30+40%CC	0.8ls							
Q100+45%CC	0.9l/s							
SUDS Features and water quality	The layout incorporates the SUDS features identified and agreed in the strategy: •Permeable Pavements •Water butts •Raingardens •Filter drains All rainwater water discharges via one or more of these features, ensuring water quality limits are achieved as detailed in the strategy report.							

Exceedance	In any surface water design scenario it is possible that the peak design storm could be exceeded or the system could fail through damage or blockage. The exceedance flow route indicates how water will behave in this event, and must ensure that it is controlled and dispersed safely, avoiding risk to property or persons. The site falls towards the front gate. Levels will be set to ensure that Exceedance flows will emerge at the low point of the paving at the gate and flow safely away from neighbouring buildings, and disperse onto the highway. Replicating the existing flow path of excess surface water from the site. Given the constraints of the site and adjacent land this is the only available safe exceedance path.	
Foul Drainage	The new flats will discharge foul water to the existing, on-site, combined sewer under an 'indirect connection' S106 agreement with the Water Authority.	

Appended:

InfoDrainage model and results file

S106 approval letter

Drawings – Drainage Layout and Details – 25196/01 & 02

Ambulance House	Date: 28/01/2026			
	Designed by:	Checked by:	Approved By:	
	MT			
Report Details:				
Type: Inflows				
Storm Phase: Storm			Flow Construction Design:	

 1 - TOC

Area (ha)0.013

Type : Catchment Area

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	4
Percentage Impervious (%)	100

 3 - TOC

Area (ha)0.012

Type : Catchment Area

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	4
Percentage Impervious (%)	100

 5 (1) - TOC

Area (ha)0.036

Type : Catchment Area

Dynamic Sizing	
Runoff Method	Time of Concentration
Summer Volumetric Runoff	0.750
Winter Volumetric Runoff	0.840
Time of Concentration (mins)	4
Percentage Impervious (%)	100

Ambulance House	Date: 28/01/2026			
	Designed by:	Checked by:	Approved By:	
	MT			
Report Details:				
Type: Stormwater Controls Storm Phase: Storm				
			Flow Construction Design	

 5 (1)

Type : Pond

Dimensions			
Exceedance Level (m)		9.850	
Depth (m)		0.420	
Base Level (m)		9.430	
Freeboard (mm)		0	
Initial Depth (m)		0.000	
Porosity (%)		100	
Average Slope (1:X)		0.00	
Total Volume (m³)		44.478	
Depth (m)		Area (m²)	Volume (m³)
0.000		105.90	0.000
0.330		105.90	34.947

Inlets	
Inlet	
Inlet Type	Point Inflow
Incoming Item(s)	5 (1) - TOC
Bypass Destination	(None)
Capacity Type	No Restriction

Outlets	
Outlet	
Outgoing Connection	3.000
Outlet Type	Free Discharge

Advanced	
Perimeter	Circular
Length (m)	1.000
Friction Scheme	Manning's n
n	0.01

Ambulance House	Date: 28/01/2026			
	Designed by:	Checked by:	Approved By:	
	MT			
Report Details: Type: Manhole Schedule Storm Phase: Storm		Flow Construction Design		

Setting Out Information	
Easting Origin (m)	0.000
Northing Origin (m)	0.000
Orientation (Degrees anticlockwise from North)	0

Name	Cover Level (m) Invert Level (m)			Connection Details				Type		
Coordinates (m)	Depth (m)	Manhole Schematic	Manhole Size (m)	Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type	Flow Control Type	Flow Control IL (m)
Intersection (m)				Outgoing Connections				Cover		
1	9.850 9.450		Diameter / Length: 1.050					Manhole - Access Required	{a} Free Discharge	
E:342.300 N:180.000	0.400									
IP E:342.300 IP N:180.000				{a} 1.000	Pipe	9.450	Diam/Width 100	Not Applicable		
2	9.850 9.230		Diameter / Length: 1.050	{1} 1.000	Pipe	9.280	Diam/Width 100	Manhole - Access Required	{a} Free Discharge	
E:355.800 N:180.000	0.620									
IP E:355.800 IP N:180.000				{a} 1.001	Pipe	9.230	Diam/Width 150	Not Applicable		
5	9.850 8.710		Diameter / Length: 1.050	{1} 1.001	Pipe	8.710	Diam/Width 150	Manhole	{a} Hydro-Brake®	8.710
E:368.400 N:180.000	1.140			{2} 2.001	Pipe	8.710	Diam/Width 150			
				{3} 3.000	Pipe	8.710	Diam/Width 150			
IP E:368.400 IP N:180.000				{a} 1.002	Pipe	8.710	Diam/Width 150	Not Applicable		
3	9.850 9.450		Diameter / Length: 1.050					Manhole - Access Required	{a} Free Discharge	
E:368.400 N:202.500	0.400									
IP E:368.400 IP N:202.500				{a} 2.000	Pipe	9.450	Diam/Width 100	Not Applicable		

Ambulance House	Date: 28/01/2026			
	Designed by:	Checked by:	Approved By:	
	MT			
Report Details: Type: Manhole Schedule Storm Phase: Storm	Flow Construction Design			

Setting Out Information	
Easting Origin (m)	0.000
Northing Origin (m)	0.000
Orientation (Degrees anticlockwise from North)	0

Name	Cover Level (m) Invert Level (m)			Connection Details				Type		
Coordinates (m)	Depth (m)	Manhole Schematic	Manhole Size (m)	Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type	Flow Control Type	Flow Control IL (m)
Intersection (m)				Outgoing Connections				Cover		
4	9.850 9.230		Diameter / Length: 1.050	{1} 2.000	Pipe	9.280	Diam/Width 100	Manhole - Access Required	{a} Free Discharge	
E:368.400 N:189.000	0.620									
IP E:368.400 IP N:189.000				{a} 2.001	Pipe	9.230	Diam/Width 150	Not Applicable		
Outfall	9.850 8.580		Diameter / Length: 1.200	{1} 1.002	Pipe	8.580	Diam/Width 150	Manhole - Access Required		
E:372.600 N:180.000	1.270									
IP E:372.600 IP N:180.000								Not Applicable		

Ambulance House		Date: 28/01/2026							
		Designed by: MT		Checked by:					Approved By:
Report Details: Type: Inflow Summary Storm Phase: Storm		Flow Construction Design							

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
1 - TOC	1		Time of Concentration	0.013	100	0	100	0.013
3 - TOC	3		Time of Concentration	0.012	100	0	100	0.012
5 (1) - TOC	5 (1)		Time of Concentration	0.036	100	0	100	0.036
TOTAL		0.0		0.061				0.061

Ambulance House	Date: 28/01/2026			
	Designed by: MT	Checked by:	Approved By:	
	Flow Construction Design			
Report Details: Type: Outfall Details Storm Phase: Storm				

Outfalls

Outfall	Outfall Type	Gated	Fixed Surcharged Level (m)	Level Curve
Outfall	Free Discharge			

Ambulance House	Date: 28/01/2026			
	Designed by: MT	Checked by:	Approved By:	
Report Title: Rainfall Analysis Criteria	Flow Construction Design:			

Runoff Type	Dynamic
Output Interval (mins)	5
Time Step	Default
Urban Creep	Apply Global Value
Urban Creep Global Value (%)	0
Junction Flood Risk Margin (mm)	0
Perform No Discharge Analysis	☐

Ambulance House	Date: 28/01/2026		
	Designed by:	Checked by:	Approved By:
	MT		
Report Details: Type: Junctions Summary Storm Phase: Storm	Flow Construction Design		





FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	FEH: 2 years: +0 %: 15 mins: Winter	9.850	9.450	9.489	0.039	2.2	0.034	0.000	2.1	1.000	OK
2	FEH: 2 years: +0 %: 240 mins: Winter	9.850	9.230	9.486	0.256	0.5	0.222	0.000	0.5	2.917	Surcharged
5	FEH: 2 years: +0 %: 240 mins: Winter	9.850	8.710	9.486	0.776	1.2	0.672	0.000	0.5	14.058	Surcharged
3	FEH: 2 years: +0 %: 15 mins: Winter	9.850	9.450	9.488	0.038	2.0	0.033	0.000	1.9	0.921	OK
4	FEH: 2 years: +0 %: 240 mins: Winter	9.850	9.230	9.486	0.256	0.5	0.222	0.000	0.4	2.681	Surcharged
Outfall	FEH: 2 years: +0 %: 240 mins: Winter	9.850	8.580	8.593	0.013	0.5	0.000	0.000	0.5	13.185	OK

Ambulance House	Date: 28/01/2026			
	Designed by:	Checked by:	Approved By:	
	MT			
Report Details: Type: Junctions Summary Storm Phase: Storm	Flow Construction Design			



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	FEH: 30 years: +40 %: 240 mins: Winter	9.850	9.450	9.675	0.225	1.3	0.195	0.000	1.3	7.506	Surcharged
2	FEH: 30 years: +40 %: 240 mins: Winter	9.850	9.230	9.675	0.445	1.3	0.385	0.000	1.2	7.013	Surcharged
5	FEH: 30 years: +40 %: 240 mins: Winter	9.850	8.710	9.675	0.965	2.3	0.835	0.000	0.6	21.964	Surcharged
3	FEH: 30 years: +40 %: 240 mins: Winter	9.850	9.450	9.675	0.225	1.2	0.195	0.000	1.2	6.918	Surcharged
4	FEH: 30 years: +40 %: 240 mins: Winter	9.850	9.230	9.675	0.445	1.2	0.385	0.000	1.1	6.443	Surcharged
Outfall	FEH: 30 years: +40 %: 240 mins: Winter	9.850	8.580	8.594	0.014	0.6	0.000	0.000	0.6	15.297	OK

Ambulance House	Date: 28/01/2026		
	Designed by:	Checked by:	Approved By:
	MT		
Report Details: Type: Junctions Summary Storm Phase: Storm	Flow Construction Design		



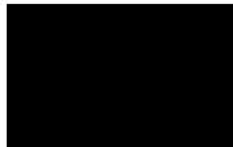


FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By: Max. Depth

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
1	FEH: 100 years: +45 %: 15 mins: Winter	9.850	9.450	9.777	0.327	9.0	0.283	0.000	7.2	3.974	Surcharged
2	FEH: 100 years: +45 %: 360 mins: Winter	9.850	9.230	9.769	0.539	1.2	0.467	0.000	1.1	9.959	Surcharged
5	FEH: 100 years: +45 %: 360 mins: Winter	9.850	8.710	9.769	1.059	2.2	0.917	0.000	0.6	32.607	Surcharged
3	FEH: 100 years: +45 %: 360 mins: Winter	9.850	9.450	9.769	0.319	1.2	0.276	0.000	1.1	9.713	Surcharged
4	FEH: 100 years: +45 %: 360 mins: Winter	9.850	9.230	9.769	0.539	1.1	0.467	0.000	1.0	9.166	Surcharged
Outfall	FEH: 100 years: +45 %: 240 mins: Winter	9.850	8.580	8.594	0.014	0.6	0.000	0.000	0.6	15.903	OK



Mark Taylor
Culcairn House, West Wing
Invergordon
Rossshire
IV18 0LG



Date
24 April 2026

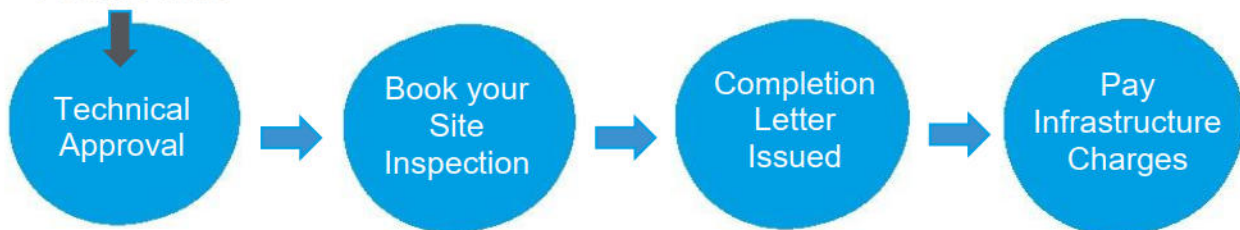


Dear Mr Taylor,

Application to Connect to the Public Sewerage System - Section 106.

Location: Old Ambulance Station, East Street, Littlehampton, West Sussex, BN17 6AR

You are here



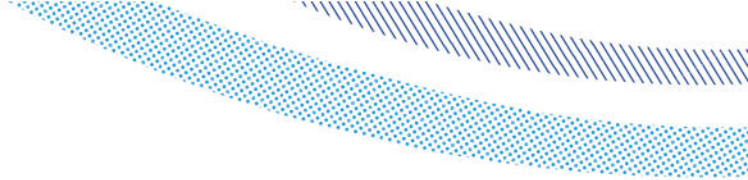
What happens next?

1. This is your technical approval.
2. Construction of the wastewater connection begins. Once completed, ensure you book a site inspection, so we know the connection is in line with your application.
3. Once the site inspection has confirmed the work is satisfactory, a completion letter will be issued. See the Essential Sewer Connection Information document to find out why this letter is important.
4. Your infrastructure charge invoice will be issued (if applicable*).

How to progress

To progress, select the **'Accept'** option on the Get Connected customer dashboard. Or, if you have further questions, please select the 'Query' option. If you do not wish to progress with the application, then please select the 'Withdraw' option.

Now you have received our approval, you will need to let us know when the work has been completed.



When work have been completed, please select '**Ready for Inspection**' on your Get Connected customer dashboard and contact our team by email at [REDACTED] with pictures of your connection.

Once we have confirmation we will send you a completion letter within 7 working days. It's important to ensure your connection is inspected to prevent any risk of disconnection at a later date

Technical Approval

We are pleased to advise that your Section 106 application to connect **Foul & Surface Water** to the **Combined** sewer, as shown on your drawing **25196/01 Rev P1** dated **17/12/25**, is approved by Southern Water. Our approval means we are satisfied with your connection method. Please note approval is valid for 2 years from date of issue and **should plans need to be revised please contact** [REDACTED]

Connections to existing/new Southern Water assets (i.e., manholes) and the arrangement of Southern Water assets (i.e., pipe junctions within manholes) should always be in accordance with the new Design and Construction Guidance manual ("the Code") and Southern Water's guidance documentation. [water.org.uk/sewerage-sector-guidance-approved-documents/](https://www.southernwater.co.uk/sewerage-sector-guidance-approved-documents/)

This Section 106 approval does not confirm that public sewer network capacity is available at your location for the proposed development. The availability of capacity may be assessed through the Pre-Planning Enquiry process.

Please note that your connection should not proceed if:

- There are unapproved changes to your submitted plan or to the intended connection point. Any unapproved changes may lead to us disconnecting your connection under Section 109 of the Water Industry Act 1991.
- The relevant Planning Authority has set out conditions relating to the site's drainage and those conditions have not yet been discharged.
- You have not consulted our Health and Safety Advisory that can be viewed at the following link [southernwater.co.uk/developing-building/health-and-safety](https://www.southernwater.co.uk/developing-building/health-and-safety)
- You have not obtained the necessary Building Regulations Approvals or, if relevant, obtained a Highway Authority Road Opening License.
- Landowner consent has not been obtained where your connection is to be made through another Party's land.

Yours sincerely,

[REDACTED]

Vicky Pearce
Technical Coordinator - Wastewater
Developer Services

[REDACTED]



Essential Sewer Connection Information

1. Site Inspection Checklist
2. What happens if the sewer connection is not inspected?
3. Adoption of a sewer
4. Infrastructure charges
5. Enforcement Policy

1. Site Inspection Checklist

We have prepared a site inspection checklist so that inspection of your sewer connection can be passed first time southernwater.co.uk/media/3028/ds-site-inspection-checklist.pdf

2. What happens if the sewer connection is not inspected and a completion letter is not issued?

Incidences where construction of the sewer connection has been completed but a site inspection has not been requested then the sewer connection application is not completed. You will need to request for a site inspection to finalise the application. If the sewer connection has not been built as per the designs submitted then we will ask you to rectify.

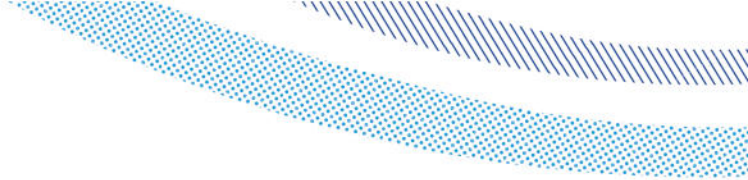
3. Adoption of a sewer

When a new development is planned, the developer can construct the sewers using approved materials and to a standard, which makes them suitable for adoption by Southern Water when construction is complete.

An adoption agreement can be entered into under Section 104 of the Water Industry Act 1991, prior to the sewers being built. This is the most desirable arrangement and if all new developments were covered by such adoption agreements, there would be few, if any, new private sewers on housing estates. However, there are many kilometres of existing private sewers that were built without an adoption agreement in place.

Section 102 of the Water Industry Act 1991 provides for the adoption of such sewers to be considered. It is important to draw a distinction between sewers, drains, and lateral drains:

- Sewers are pipes carrying sewage from more than one property
- Drains are pipes carrying sewage from only one property to the curtilage of the building or premises
- Lateral drains are those pipes which extend from the curtilage of a single building to the point of connection with an existing public or private sewer



To start the process of having the private sewer adopted, please visit our website and fill in the S102 Adoption Form.

4. Infrastructure charges

New developments increase the load on our networks and may require investment in upstream network reinforcement. This investment is funded through the Infrastructure Charge where the cost of network reinforcement is levied per property at the time of final connection.

* In addition to the sewer connection application charge, a charge for sewerage infrastructure is levied on each dwelling connecting onto the sewerage system. Non domestic properties will be individually assessed according to the number of appliances/fittings producing wastewater. Infrastructure charges are applicable even if the connection is made via a private sewer providing that the private sewer ultimately discharges into the public system.

There are three scenarios:

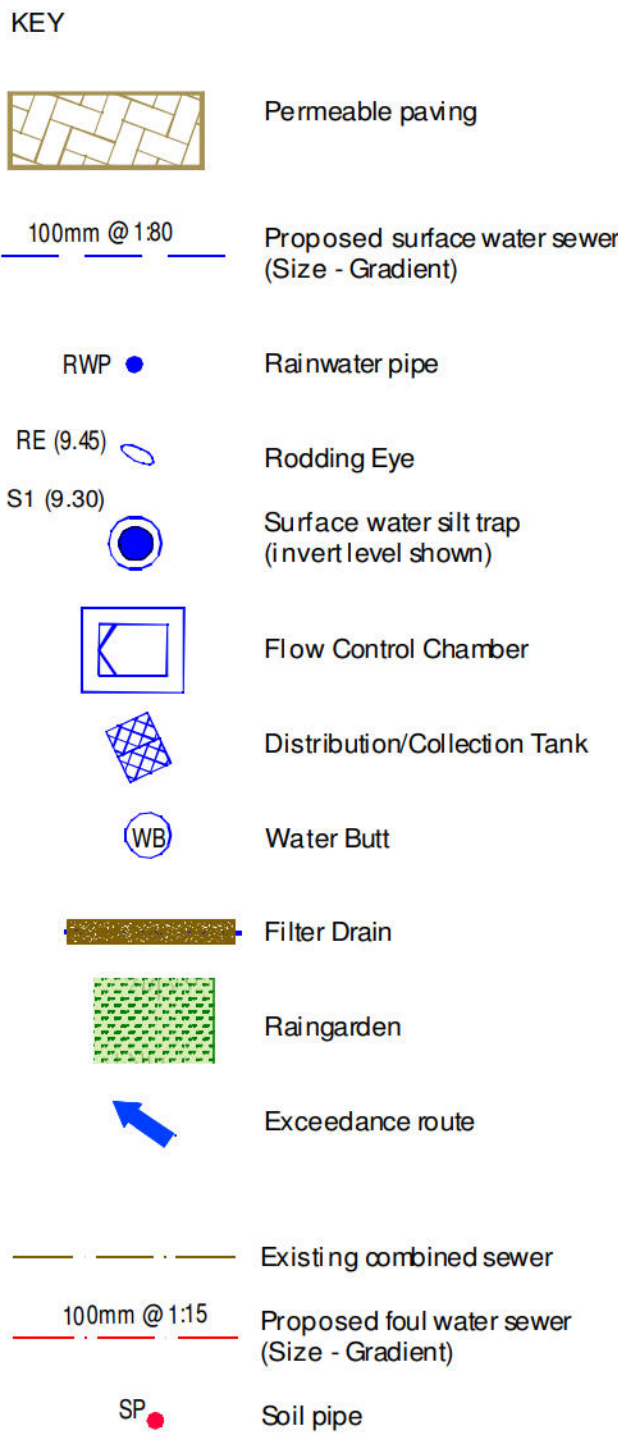
1. Water and wastewater connections are made within Southern Waters supply area. Infrastructure charges will be included in you water connection quote.
2. Water connections are made within another water company's supply zone and Wastewater is within the Southern Water supply area. Infrastructure charges will be invoiced following connection of the meters as advised by each water company.
3. You already have a water connection and require a wastewater connection in the Southern Water supply area. Infrastructure charges will be invoiced directly following completion of the wastewater connection.

For information and our current Connection Charges please refer to section 2 of the Southern Water Charging Arrangements [Connection charging arrangements \(southernwater.co.uk\)](https://www.southernwater.co.uk/connection-charging-arrangements)

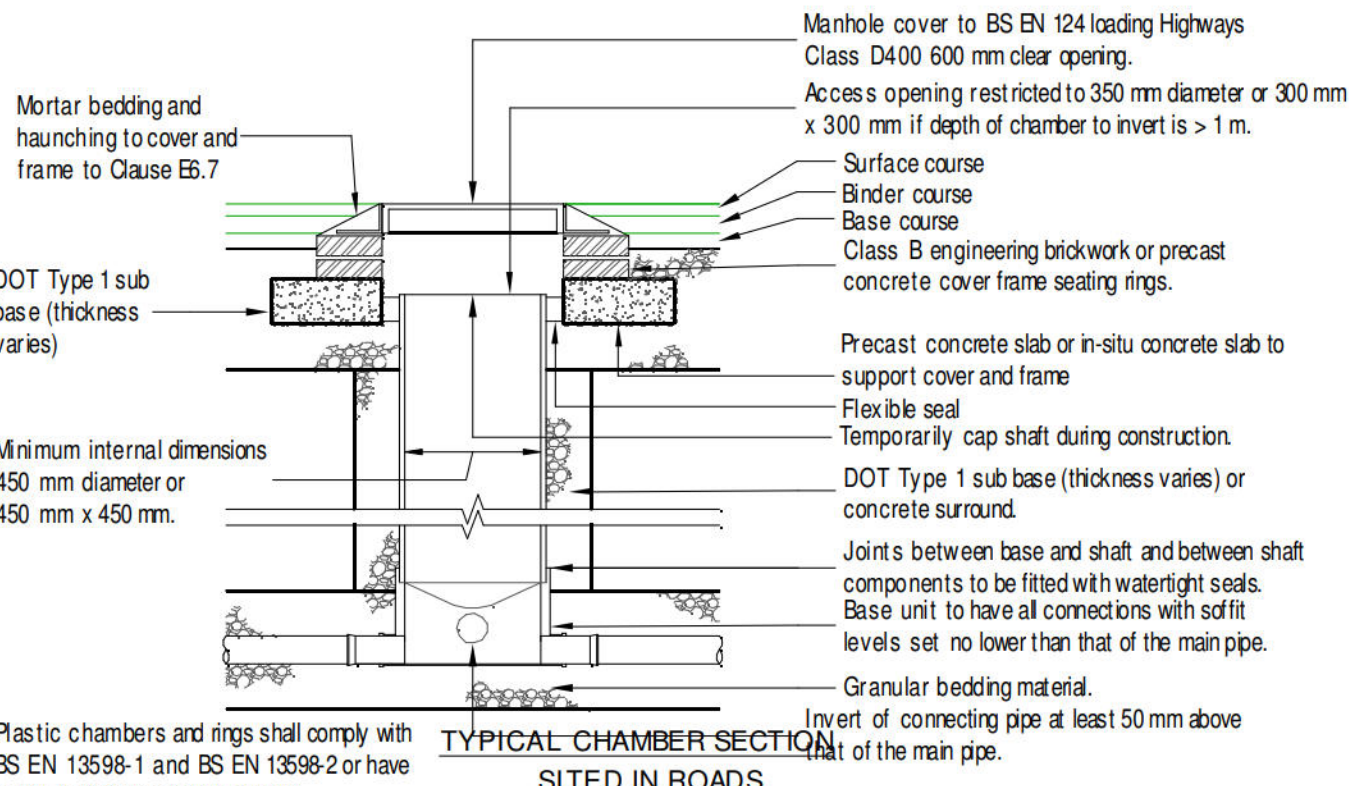
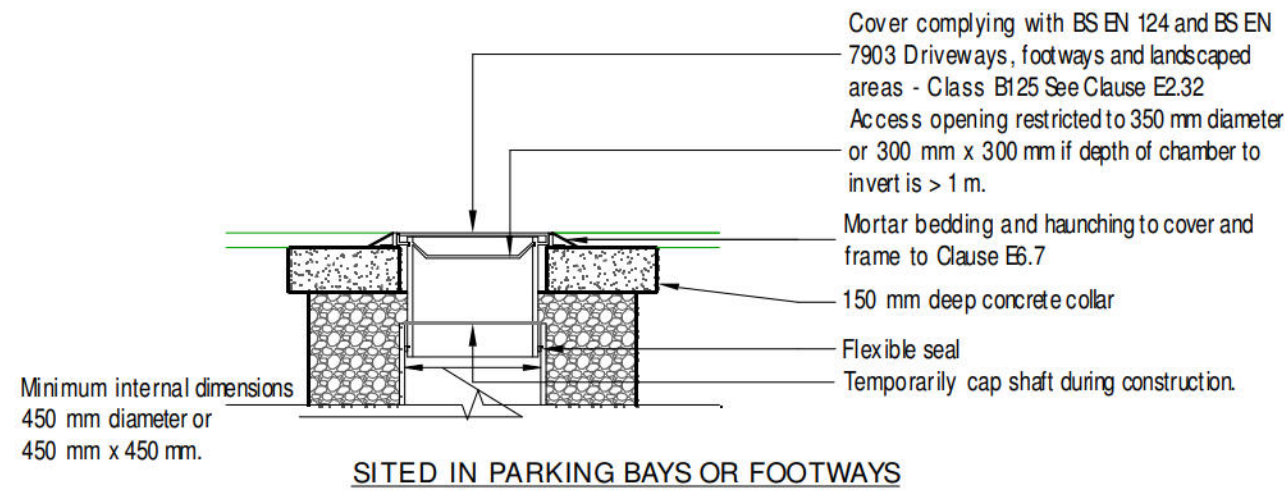
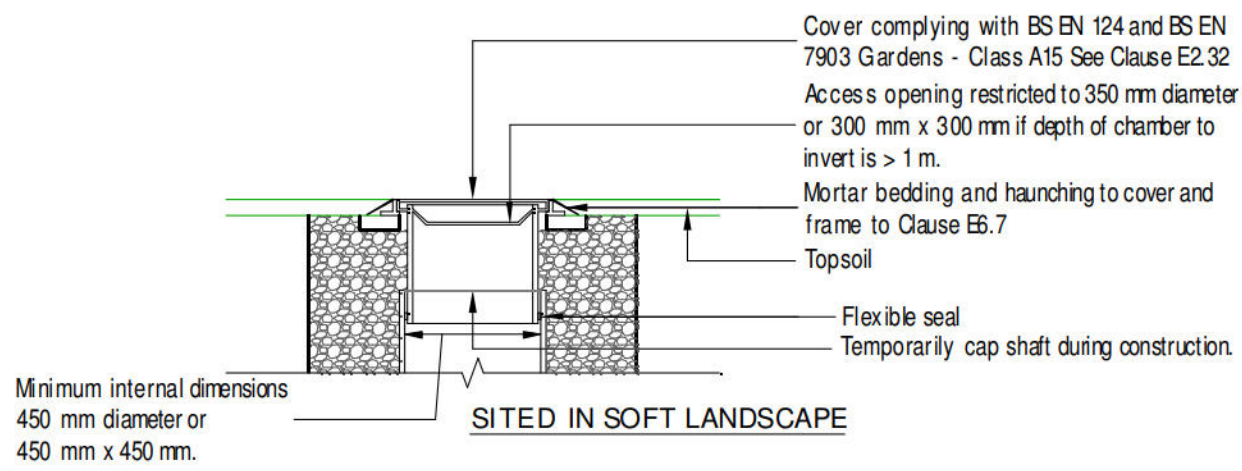
5. Enforcement Policy

It is an offence to not comply with the requirements of a S106 Water Industry Act 1991, which are detailed in the body of the letter. This can result in prosecution and a fine and/or removal of the illegal connection.

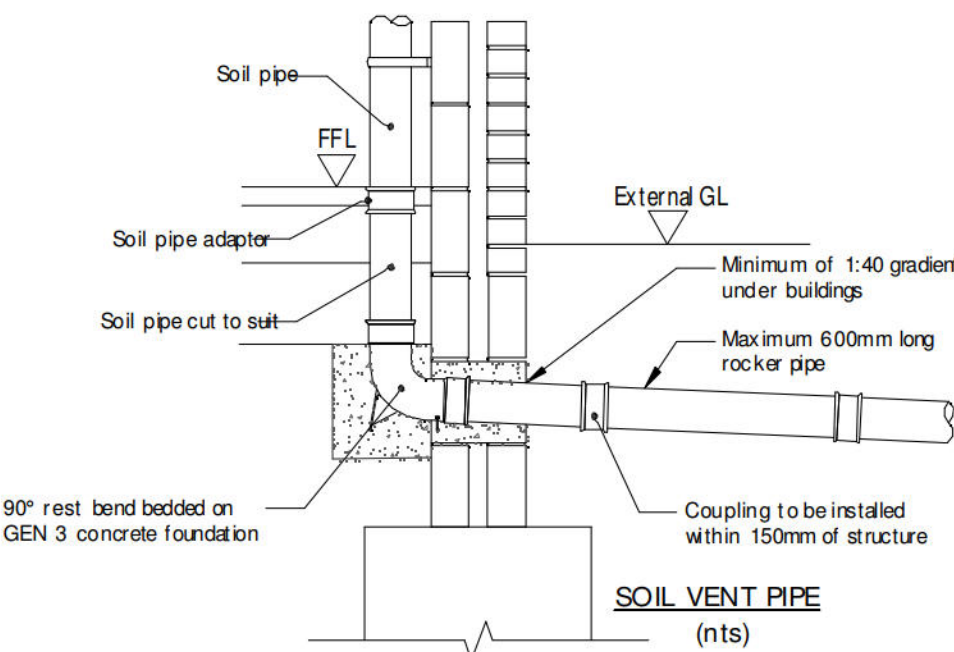
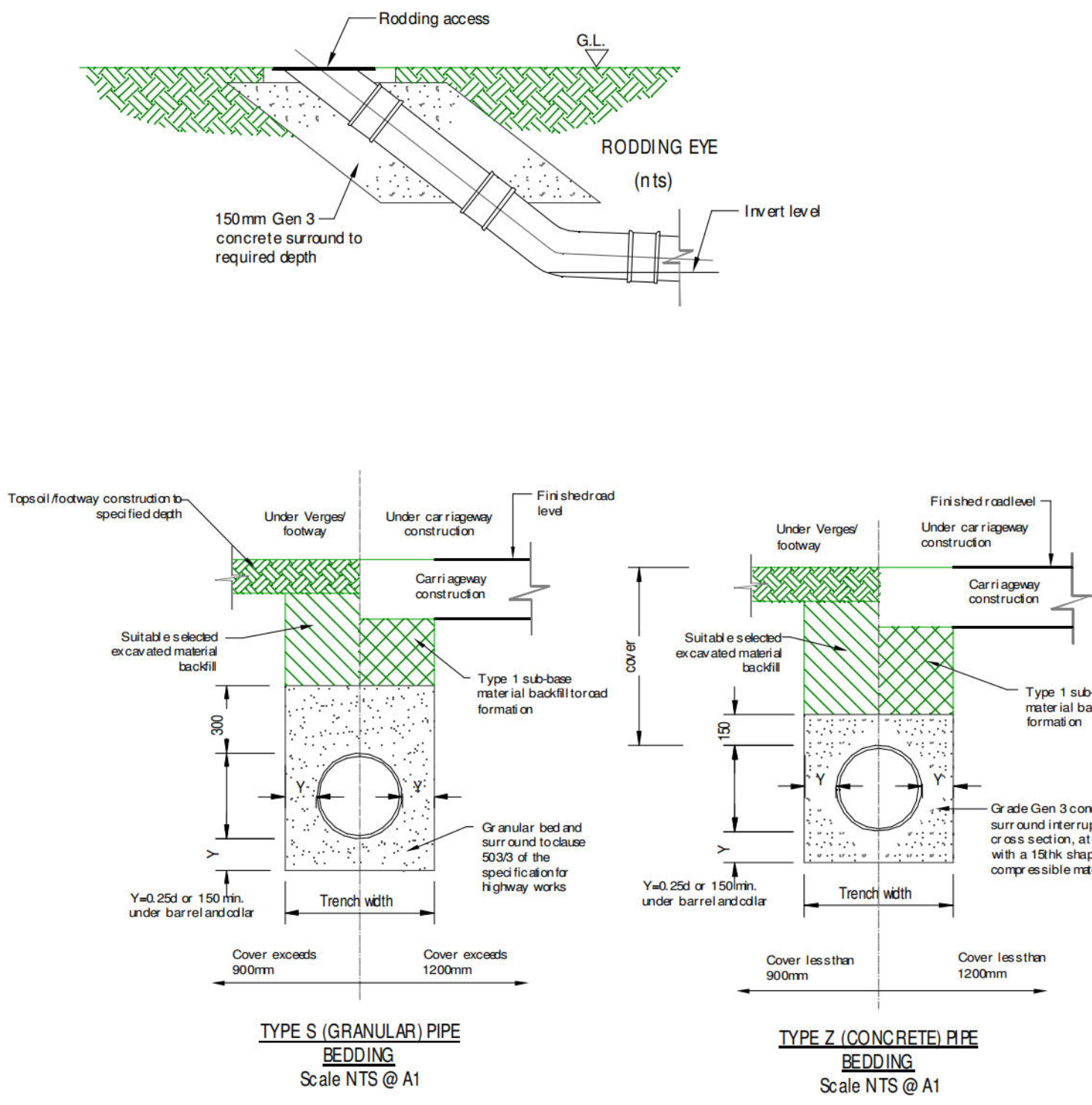
Please contact the Developer Services Team via the Get Connected customer dashboard / on  should you require any further advice.



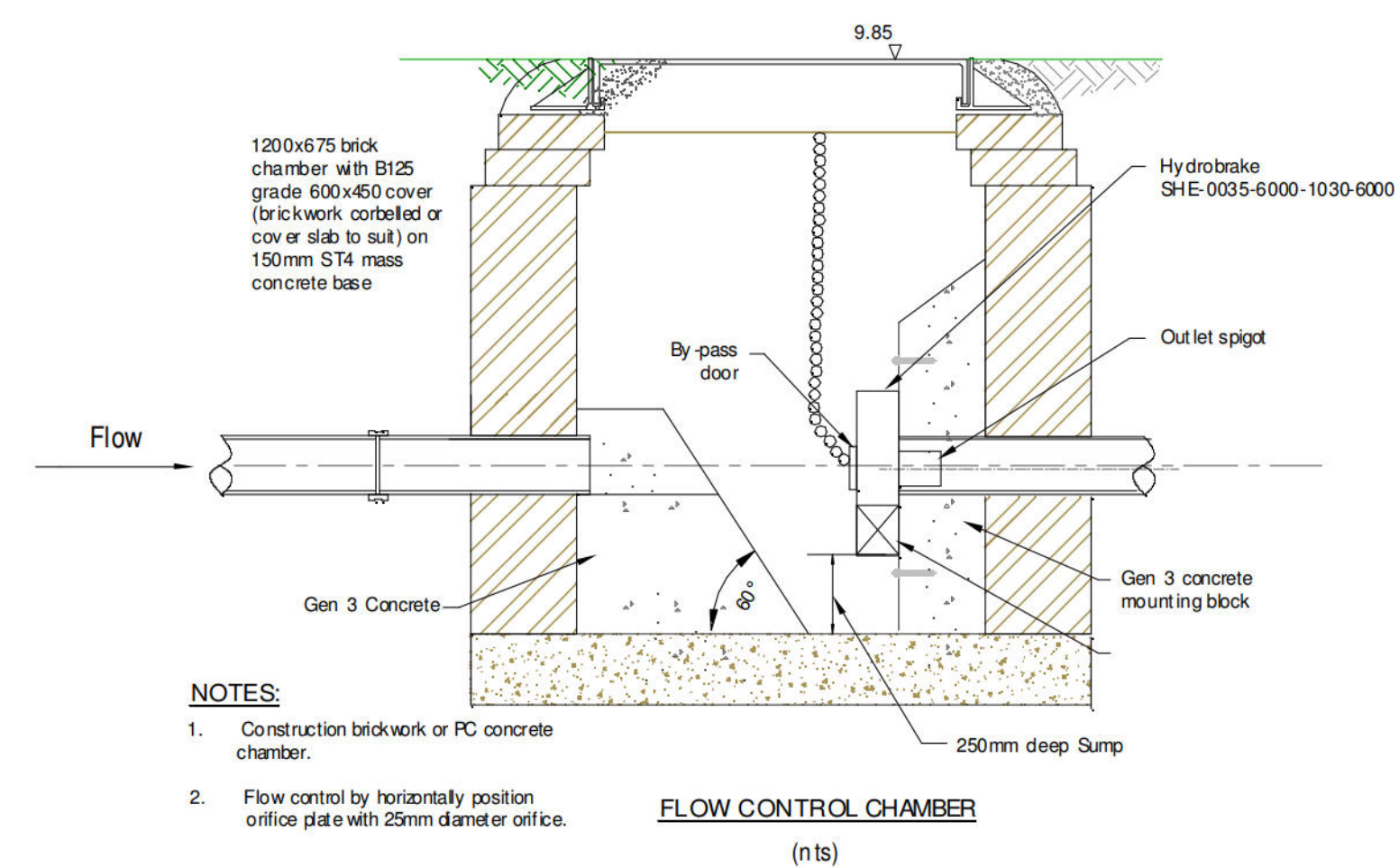
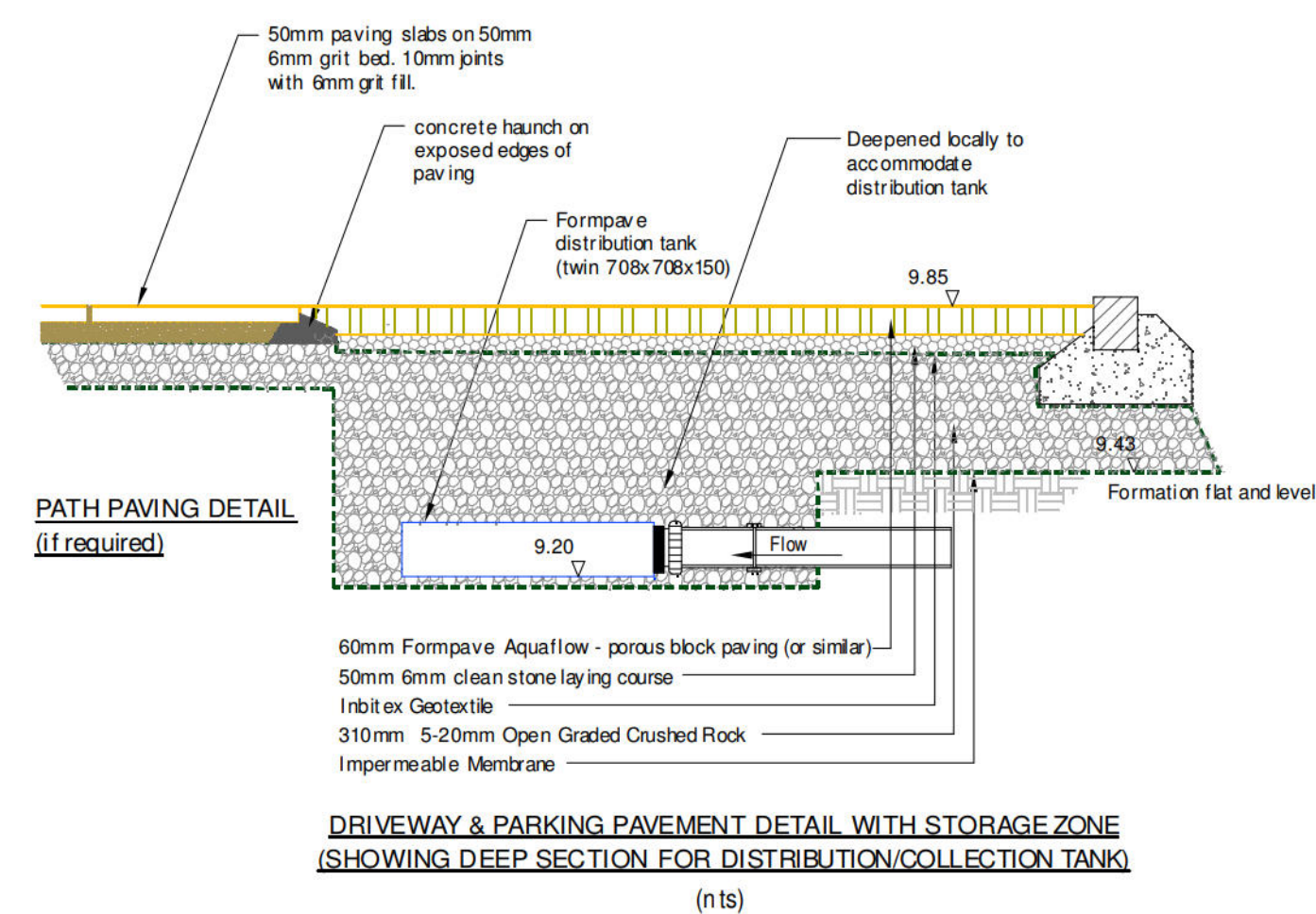
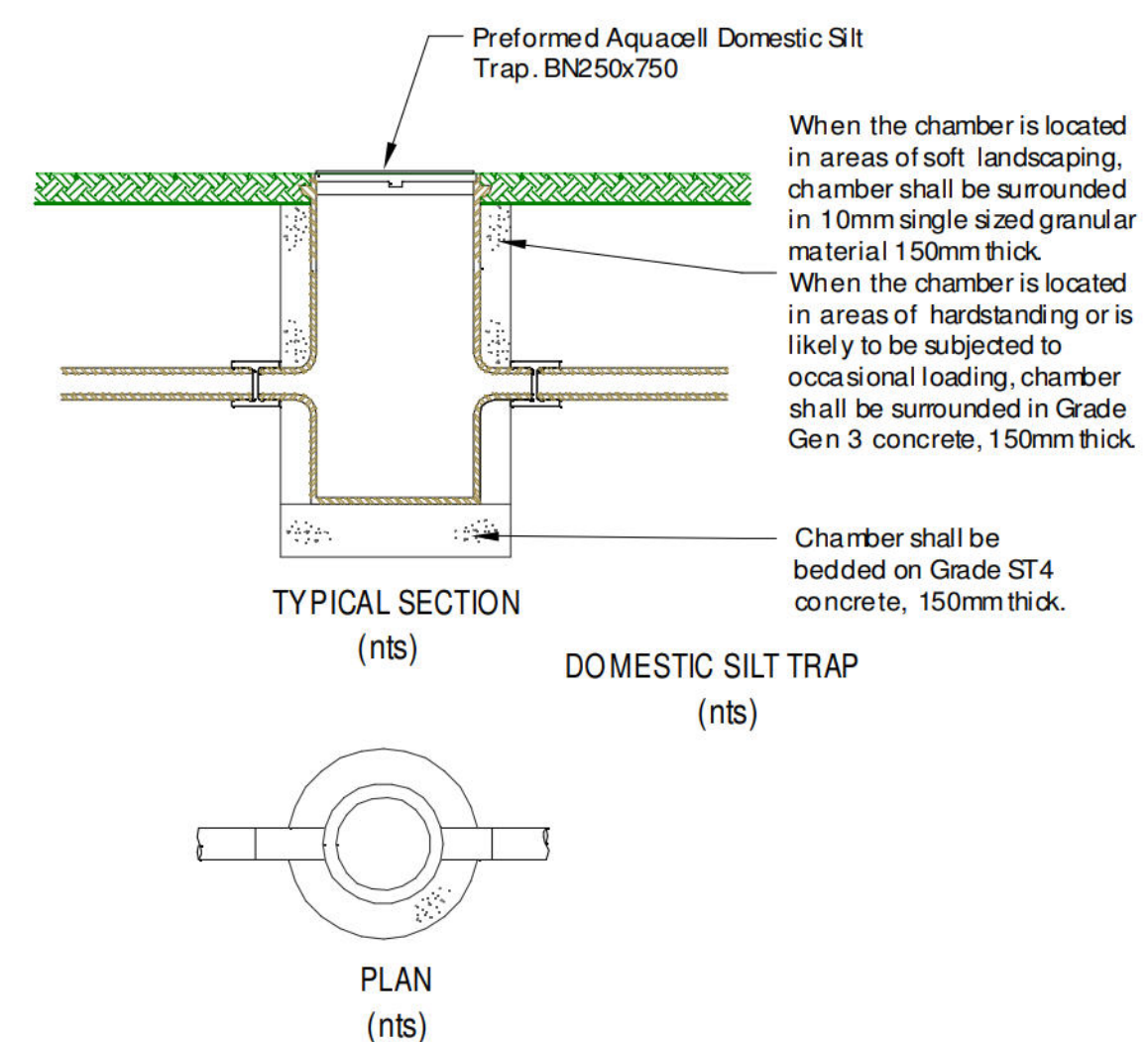
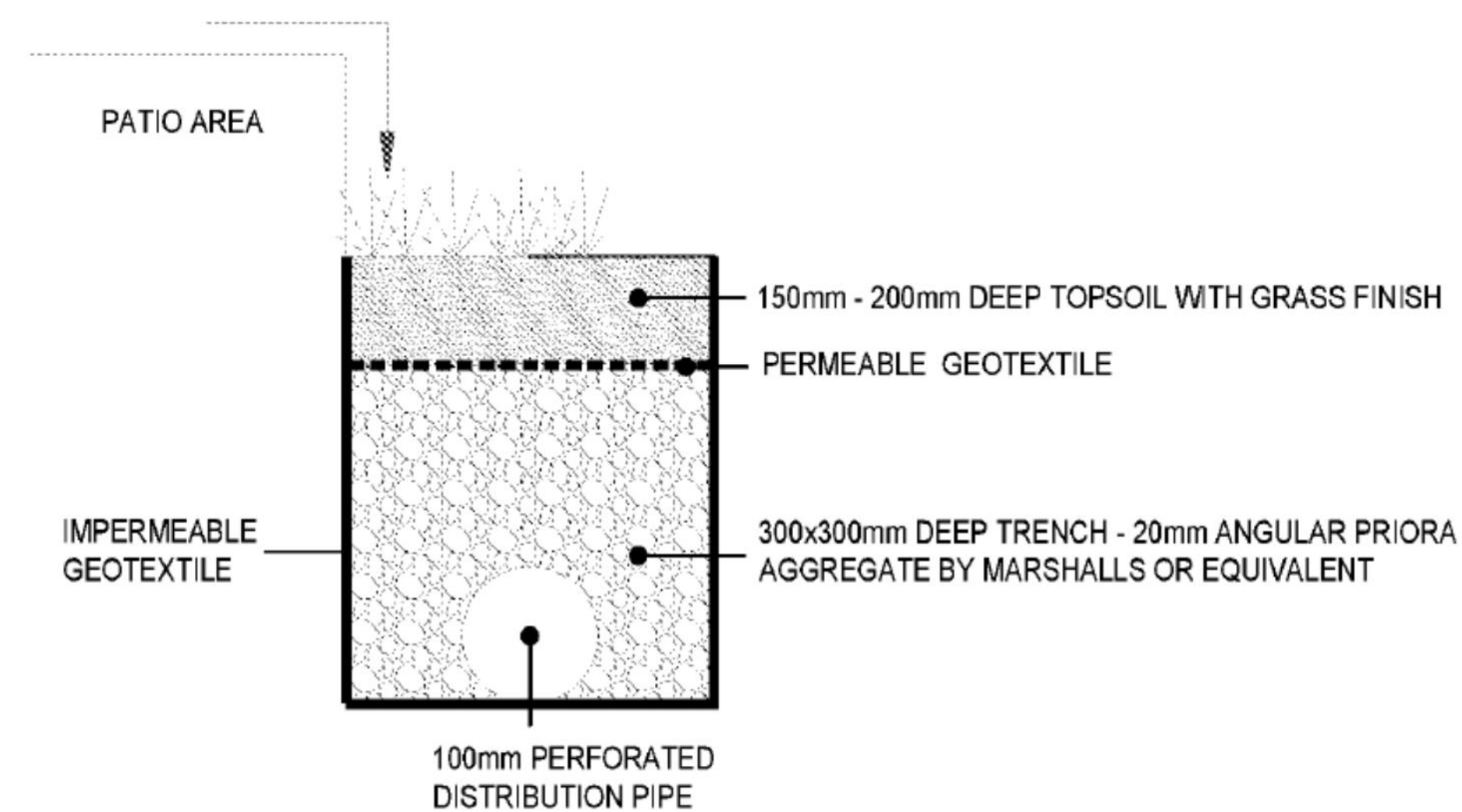
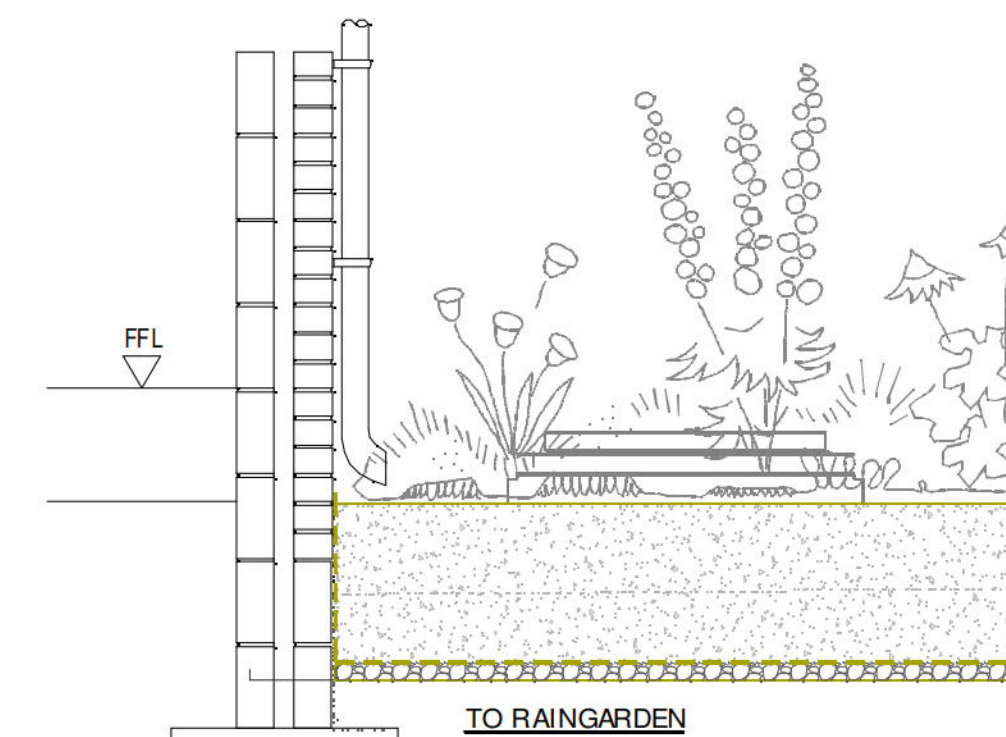
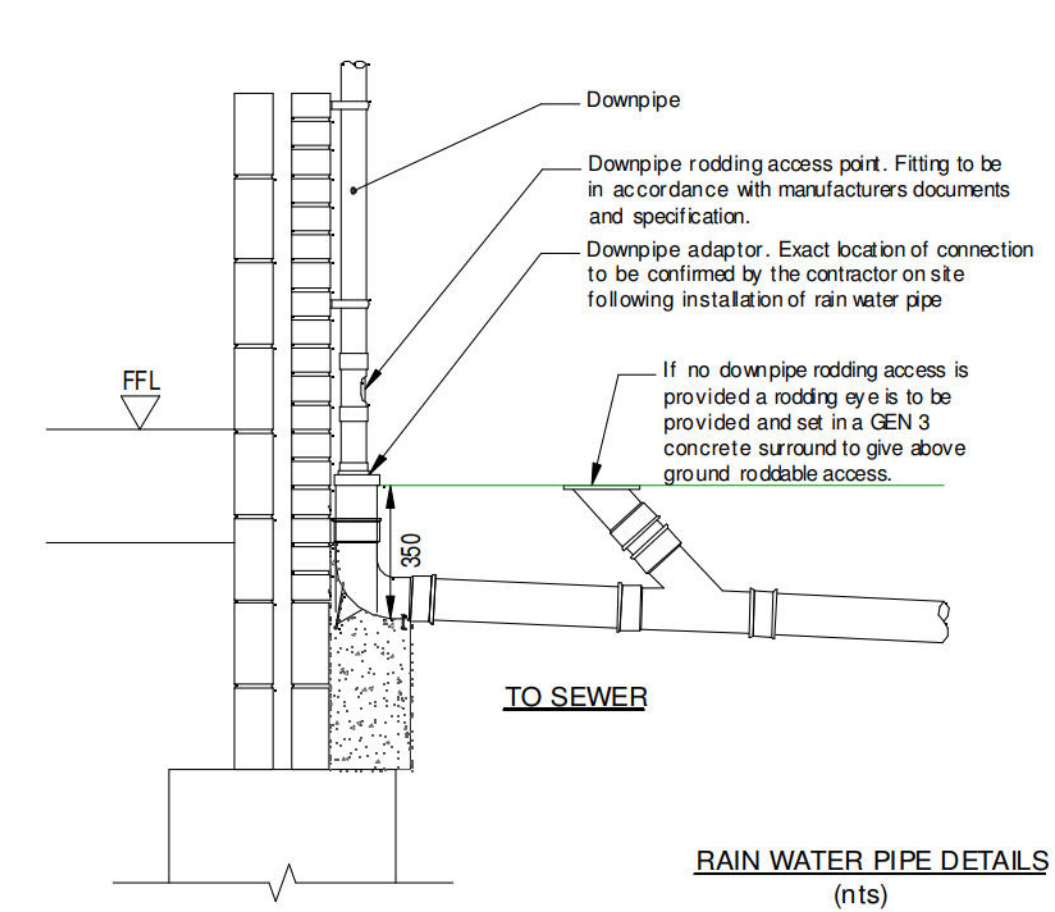
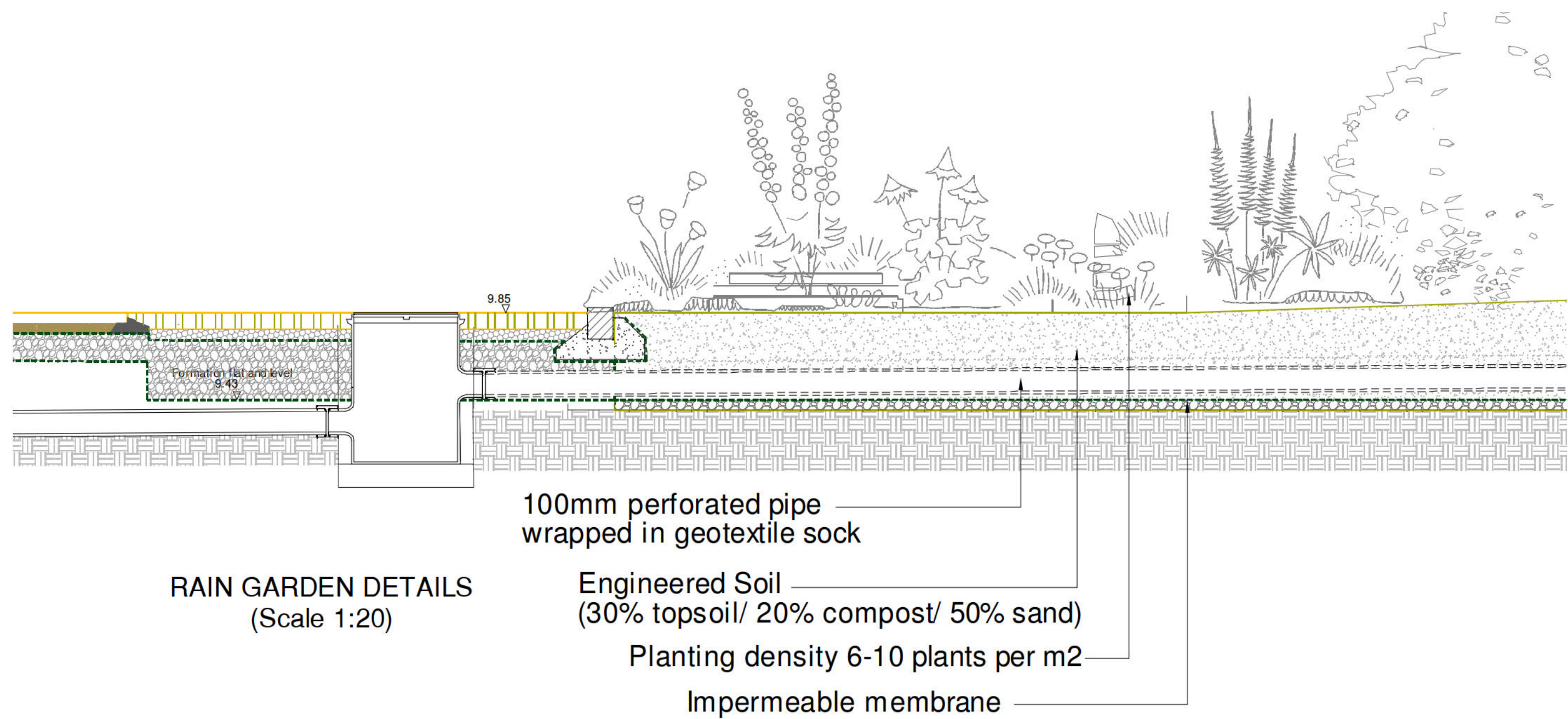
- NOTES: DRAINAGE
- This drawing to be read in conjunction with all relevant documents and specifications.
 - Dimensions not to be scaled.
 - The Contractor shall carry out a level check of the existing drainage and confirm the results to the Engineer for confirmation of the design, prior to the laying of any new drainage.
 - Covers & frames to existing chambers to be adjusted to suit new levels.
 - All manhole chamber covers to be installed parallel to final kerbs, edgings, paving joints or building lines.
 - This drawing details all below ground drainage up to finished floor level. For details of drainage above finished floor level, refer to Architect's drawings.
 - External private pipework may be either VC, thermoplastic structured wall sewer pipe, or PCV-u to BS EN 13476 160, and shall comply with WIS 4-35-01. Pipes shall be BS Kitemarked, or have equivalent third party certification.
 - All open drainage connections, svp's, gullies, manholes, etc. shall be protected throughout the construction period to prevent the ingress of debris to the systems.
 - All drainage to be laid within $\pm 10\text{mm}$ of the design invert levels and shall have a positive fall towards the outfall, no backfalls are permitted.
 - Pipe bedding and surround to be granular (type S), or concrete (type Z) depending on position and depth.



Type 3 Flexible Material Inspection Chamber
Scale 1:25



P2	Revs to council engineer comments	28/01/26 MT	
P1	Preliminary Issue	17/12/25 MT	
Rev	Description	Date	Chkd
flow DRAINAGE DESIGN t: 07837 685280 e: info@flowdrainagedesign.co.uk w: www.flowdrainagedesign.co.uk			
Client:	Agilitree		
Project:	Old Ambulance Station Littlehampton		
Title:	Drainage Layout & General Details		
Project Engineer:	M. Taylor	Scale: As Shown @ A1	
Project Director:		Date: Dec 2025	
Status:	PRELIMINARY		
Drawing No.	25196/01	Rev	P2



P1	Preliminary Issue	28/01/26	MT	
Rev	Description	Date	Chkd	
 t: 07837 685280 e: info@flowdrainagedesign.co.uk w: www.flowdrainagedesign.co.uk				
Client :		Agilitree		
Project:		Old Ambulance Station Littlehampton		
Title :		SUDS Details		
Project Engineer :		M. Taylor	Scale :	As Shown @A1
Project Director :			Date :	Dec 2025
Status :		PRELIMINARY		
Drawing No.		25196/02		Rev P1