



Drainage Strategy

AEG6735_BN5_Henfield_07_A

Site Address: Stonepit Lane

Henfield

BN5 9QU

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UK Experts in Flood Modelling, Flood Risk
Assessments, and Surface Water Drainage Strategies

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Site Location: Stonepit Lane, Henfield, BN5 9QU

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3	10/06/2026	Daniel Buciak	James Mahoney	James Mahoney	Updated to address drainage officer comments, foul strategy updated, infiltration testing appended

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1. Introduction

- 1.1. Aegaea were commissioned by the Client to prepare a Drainage Strategy to support a planning application associated with the proposed development on land at Stonepit Lane, Henfield, BN5 9QU.
- 1.2. The development proposals comprise the erection/stationing of 3 no. static caravans for residential purposes along with utility buildings, the formation of hardstanding and associated landscaping.
- 1.3. The proposed development layout drawings are contained within Appendix A.

Site Overview

- 1.4. The site of the proposed development is shown in the location plan, Figure 1, below.

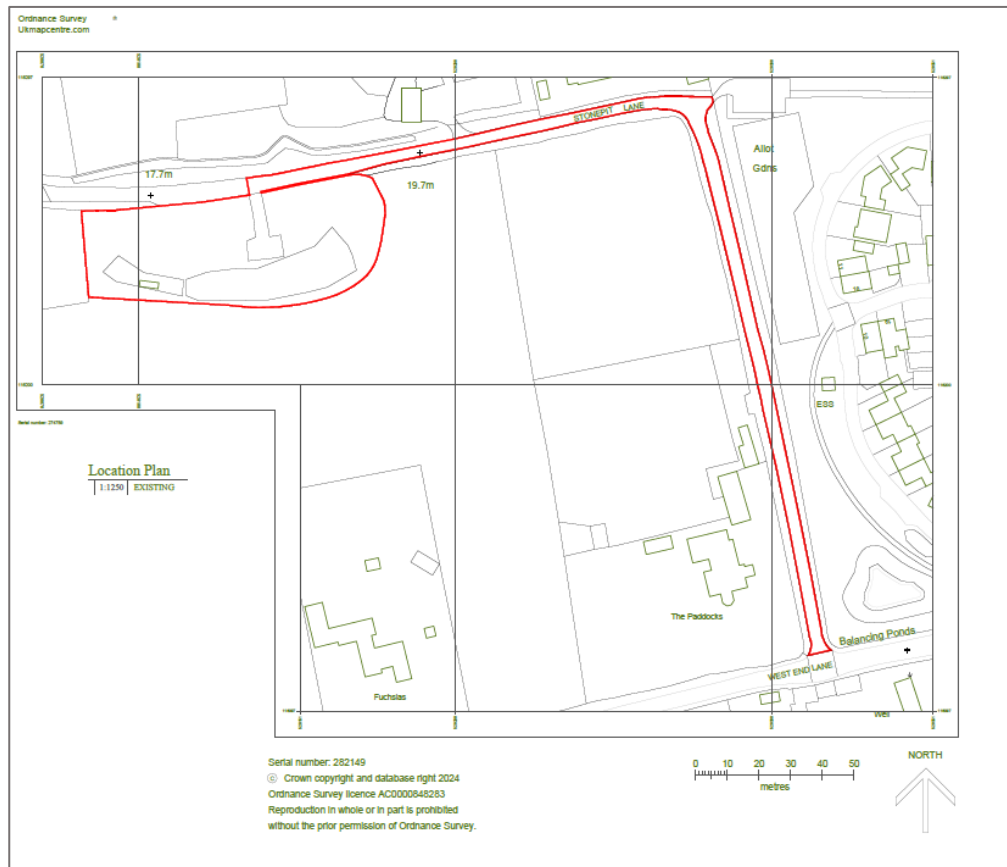


Figure 1: Site Location Plan

- 1.5. The site (excluding areas of Stonepit Lane) measures approximately 0.32 hectares and was previously part of a stone quarry. There is a small container/storage building to the western half of the site. The site has access and hardstanding onto Stonepit Lane and the remainder of the site is relatively open and laid to grass with several trees located within the site.
- 1.6. The general topography across the site comprises as fall northwards towards Stonepit Lane. There is also a fall from east to west across the site and relatively nominal fall within the central part of the site. A copy of the topographical survey is contained in Appendix A.

Existing Drainage Arrangements

- 1.7. No existing drainage arrangements have been identified within the vicinity of the site. A copy of the public sewer records is contained in Appendix B.

Runoff Rates

- 1.8. An assessment of greenfield runoff rates based on the proposed development impermeable areas (circa 840m²) was made using the pre-development calculator in Causeway Flow software based on the input parameters shown in Figure 2 below.

Pre-development discharge

Site Makeup

Greenfield Method

Positively Drained Area (ha)

SAAR (mm)

Soil Index

SPR

Region

Betterment (%)

QBar (l/s)

Return Period (years)	Growth Factor	Q (l/s)
1	0.85	0.3
30	2.40	0.8
100	3.19	1.1

Figure 2: Extract from Causeway Flow Greenfield Runoff Rate Calculator

1.9. The greenfield runoff rates for the proposed development site are set out in the Table 1 below.

Return Period	Greenfield Runoff Rate
Q_{BAR}	0.3 l/s
1 in 1 Year	0.2 l/s
1 in 30 Year	0.8 l/s
1 in 100 Year	1.1 l/s

Table 1: Greenfield Runoff Rates

1.10. The table above shows that due to the small nature of the proposed development and the associated soil class type, greenfield runoff rates are extremely low.

2. Surface Water Drainage Strategy

Ground Conditions

- 2.1. A review of publicly available information (LandIS – Soilscales) indicates that the site is located within an area of freely draining lime-rich loamy soils underlain by Lower Greensand Group – Sandstone bedrock formation.
- 2.2. Infiltration testing has been carried out onsite in accordance with BRE Digest 365, an infiltration rate between 7.8×10^{-4} m/s and 6.2×10^{-4} m/s was obtained with a average rate of 6.8×10^{-4} m/s. No groundwater was encountered during the testing and is anticipated to be we
- 2.3. The infiltration test is contained in Appendix C.
- 2.4. Historical BGS borehole records show a borehole (ref: TQ11NE6) located c. 200m southwest of the site. The resting water level was noted at 3.5m below ground level.
- 2.5. The SFRA presents the GeoSmart 2019 national groundwater flood risk dataset to provide groundwater flood risk data. This dataset provides a preliminary indication of groundwater flood risk on a 5m grid and shows areas of potential groundwater emergence, with different classifications:
 - Class 1 – High Risk: There is a high risk of groundwater flooding in this area with a chance of greater than 1% annual probability of occurrence or more frequent.
 - Class 2 – Moderate Risk: There is a moderate risk of groundwater flooding in this area with a chance of greater than 1% annual probability of occurrence.
 - Class 3 – Low Risk: There is a low risk of groundwater flooding in this area with a chance of greater than 1% annual probability of occurrence.
 - Class 4 - Negligible Risk: There is a negligible risk of groundwater flooding in this area and any groundwater flooding incidence has a chance of less than 1% annual probability of occurrence.
- 2.6. Figure 2 shows the site in an area of 'Class 4 - Negligible Risk' of groundwater flooding.



Figure 2: 2019 GeoSmart Groundwater Flood Risk dataset (Horsham SFRA 2024) Site Location shown by red circle

Proposed Drainage Strategy

- 2.7. Current guidance indicates that the following surface water disposal options should be considered, listed in order of preference:
- i. **Disposal via on-site infiltration systems:** It is proposed that surface water runoff from the proposed development is discharged to ground through onsite infiltration system.
 - ii. **Disposal to a watercourse/surface water body:** There are no watercourses or surface water bodies within the vicinity of the site.
 - iii. **Disposal to surface water sewer:** There are no public surface water sewers located within the vicinity of the site.
 - iv. **Disposal to combined sewer:** There are no public combined sewers located within the vicinity of the site.

- 2.8. The surface water runoff from the proposed development will be managed through a series of SuDS features. Runoff from roof areas would be conveyed to rainwater harvesting units that will provide grey water into the proposed development. The rainwater tank would have an overflow into the mains drainage which, in accordance with the SuDS hierarchy, will discharge surface water flows into the ground via a deepened permeable paving system.
- 2.9. The proposed drainage features have been sized to accommodate surface water runoff from all proposed impermeable areas on site, including all modelled 1 in 100-year storm events with an appropriate allowance (45%) made for climate change and 10% Urban Creep allowance.
- 2.10. The proposed drainage layout and details can be found in Appendix D. Supporting drainage calculations are contained within Appendix E.

3. Future Maintenance Strategy

General Maintenance

- 3.1. The surface water drainage network will be managed throughout the lifetime by the owners of the proposed development in accordance with details set out below.
- 3.2. All drainage, whether piped or SuDS require regular maintenance. The tables below provide an overview of general maintenance tasks and frequency of which they need to be undertaken.

Maintenance Schedule	Required Action	Typical frequency
Regular Maintenance	Inspect for sediment and debris in catchpit manholes and gullies. Clean out as required	Twice Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
	Trimming any roots that may be causing blockages	Annually (or as required)
Occasional Maintenance	Remove sediment and debris in catchpits, gullies, attenuation devices and inside concrete manhole rings.	As required, based on inspections.
Remedial actions	Reconstruct and/or replace components, if performance deteriorates or failure/blockage occurs.	As required
	Replacement of clogged components (flow restriction)	As required
Monitoring	Inspect silt traps/gullies/catchpits and note rate of sediment accumulation.	Monthly in the first year and then annually
	Check attenuation devices	Annually

General maintenance for Surface Water Drainage Systems as per CIRIA C753.

- 3.3. The required maintenance for each component making up the drainage system is scheduled in the tables below, based on CIRIA report C753 – The SuDS manual.

SuDS Checklist

3.4. The following lists the SuDS components and extra features which are found on site:

- **Permeable Paving** treats and conveys surface water flows whilst utilising natural losses that promote infiltration into underlying soils.
- **Manholes and inspection chambers** are provided on pipe bends or junctions and will allow access and cleaning of the system as necessary.
- **Below ground drainage** pipes convey water and should be free from obstruction at all times to allow free flow.

Surface Water Drainage Systems

Maintenance Schedule	Required Action	Typical frequency
Regular Maintenance	Inspect for sediment and debris in catchpit manholes and gullies. Clean out as required	Twice Annually
	Cleaning of gutters and any filters on downpipes	Annually (or as required based on inspections)
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Remedial actions	Reconstruct and/or replace components, if performance deteriorates or failure/blockage occurs.	As required
	Replacement of clogged components (flow restriction)	As required
Monitoring	Inspect silt traps/gullies/catchpits and note rate of sediment accumulation.	Monthly in the first year and then annually
	Check attenuation devices	Annually

Permeable Paving

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment.
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying.	As required – once per year on less frequently used pavements
Remedial Maintenance	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving.	As required
	Remediate work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material.	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is
Monitoring	Initial inspection	Monthly for three months after installation
	Inspect for evidence of poor operation and/or weed growth – if required, take remedial action.	Three-monthly, 48 hr after large storms in the first six months
	Inspect silt accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

4. Pollution Prevention & Water Quality Management

SuDS Mitigation Indices

- 4.1. Chapter 26 of the CIRIA C753 The SuDS Manual, provides design advice to meet water quality standards by adopting the SuDS train treatment mechanism and thereby reduce the risk of pollution by evaluating potential pollution hazards at the outset.
- 4.2. The proposed site layout provides the opportunity to introduce SuDS into the scheme to reduce potential contaminant risk further. Runoff from individual property driveways, residential car parks and low traffic roads are generally viewed as low risk (as per Table 26.2 of C753), shown in the tables below.

Land Use	Pollution Hazard Level	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Individual property driveways, residential car parks and low traffic roads	Low	0.5	0.4	0.4

Pollutant Hazard Indices

	Mitigation Indices				Indices for Calculation		
	TSS	Metals	Hydrocarbons		TSS	Metals	Hydrocarbons
Permeable Paving	0.7	0.6	0.7	100%	0.7	0.6	0.7
Total Mitigation Indices score					0.7	0.6	0.7
Sufficiency of Pollution Mitigation Indices					Sufficient (No additional mitigation required)		

SuDS Mitigation Indices

- 4.3. The mitigation indices offered by the proposed SuDS features exceed the hazard indices from roof areas and therefore provides adequate mitigation. It is therefore considered that the proposed SuDS features on site are appropriate and acceptable in terms of water quality.

5. Foul Drainage Strategy

- 5.1. Public sewer records contained in Appendix B show there are no foul sewers within the vicinity of the site.
- 5.2. Discharge to ground, i.e. drainage field, has been considered; however, due to site constraints, including root protection areas, and offsets from buildings and boundaries, this is not considered to be a feasible option. There is insufficient space to facilitate a drainage field to the east of the site due to their size requirements and limited space constraints. A package treatment plant was considered but as there is no identified watercourse or suitable outfall this has been discounted.
- 5.3. Based on the above it is proposed that foul flows are conveyed towards a cesspool for regular emptying. Each plot is proposed to be served by its own cesspool.
- 5.4. The foul drainage has been designed in accordance with Building Regulations Part H and the DCG where a 100mm diameter pipe, laid at a minimum gradient of 1 in 80, has sufficient capacity for up to 10 dwellings. Building Regs Part H states "sewers (i.e a drain serving more than property) should normally have a minimum diameter of 100mm when serving no more than 10 dwellings.
- 5.5. The DCG states (Section B3.1.1) that the peak design flow rates for dwellings should be 4000 litres per dwelling per day (0.05 litres per second per dwelling). For the proposed development of 3 dwellings this results in circa 0.15 l/s. Note: This is a design peak flow rate not a daily average water usage and represents the peak flow rate from a number of appliances. Reducing daily water usage does not necessarily reduce the peak flow rate
- 5.6. The required cesspool capacity has been calculated in accordance with Building regulations (Document H) specifies that cesspools should be sized 18,000 litres per 2 users, with additional 6,800 litres for each additional user, resulting in a required capacity of 106,400 litres.

6. Future Foul Maintenance Strategy

Management

- 6.1. The key elements of the foul drainage network will require periodic maintenance to prevent failure of the system and/or a reduction in capacity. The below sets out the various drainage items to be maintained, identifies who is responsible and the frequency of maintenance.
- 6.2. A sewage treatment plant service agreement will be appointed prior to first occupation to ensure a suitably appointed service provider is in place. This will that outlines a comprehensive maintenance plan for the proposed sewage treatment system. It includes regular inspections, maintenance tasks, and often additional benefits to ensure your system's optimal performance

Responsibility	Feature	Required Action	Typical frequency
Owner / Occupier Appointed Management Company	Private Drains	Inspection	CCTV survey every 5-10 years
		Regular Maintenance	As required, Jet clean system fully following inspection
		Remedial / Occasional Maintenance	Carry out remedial works as identified in CCTV survey.
Owner / Occupier Appointed Management Company	Cesspool	Visual checks for leaks, blockages, or abnormal smells	Weekly/monthly
		Ensure air vents and blowers are clear and unobstructed	Weekly/monthly
		Regular and Occasional Maintenance, is to be carried out by service agreement with a suitably appointed supplier which will set out actions such as sludge level checks, effluent quality tests, control system checks and internal inspections	Annual/Bi-Annual Occasional Maintenance

Appendix A - Site Layout Plans & Topographical Survey

Condition No. 5

No part of the development hereby permitted shall be first occupied until full details of all hard and soft landscaping works shall have been submitted to and approved, in writing, by the Local Planning Authority.

The details shall include plans and measures addressing the following:

- Details of all existing trees and planting to be retained and measures to protect their root protection areas;
- Details of all proposed trees and planting, including schedules specifying species, planting size, densities and plant numbers and tree pit details;
- Details of all hard surfacing materials and finishes;
- Details of all boundary treatments.

The approved landscaping scheme shall be fully implemented in accordance with the approved details within the first planting season following the first occupation of any part of the development. Unless otherwise agreed as part of the approved landscaping, no trees or hedges on the site shall be willfully damaged or uprooted, felled/removed, topped or lopped without the previous written consent of the Local Planning Authority until 5 years after completion of the development. Any proposed or retained planting, which within a period of 5 years, dies, is removed, or becomes seriously damaged or diseased shall be replaced in the next planting season with others of similar size and species unless the Local Planning Authority gives written consent to any variation.



Bat box



Bird box



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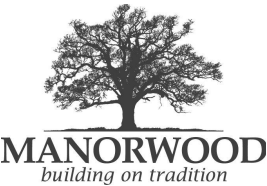
All dimensions must be checked on site prior to commencement of works.

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This information can be provided on request; however, it is anticipated that the full extent of residual risks will be identified during the detailed Building Regulations or construction design Status and prior to construction works commencing on site.

All responsibilities and duties of Principle Designer as stated within the above regulations now revert to the client unless Manorwood are appointed to undertake Building Regulations or construction drawings.



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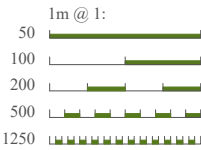
Drawing Block Plan

Submission **Planning**

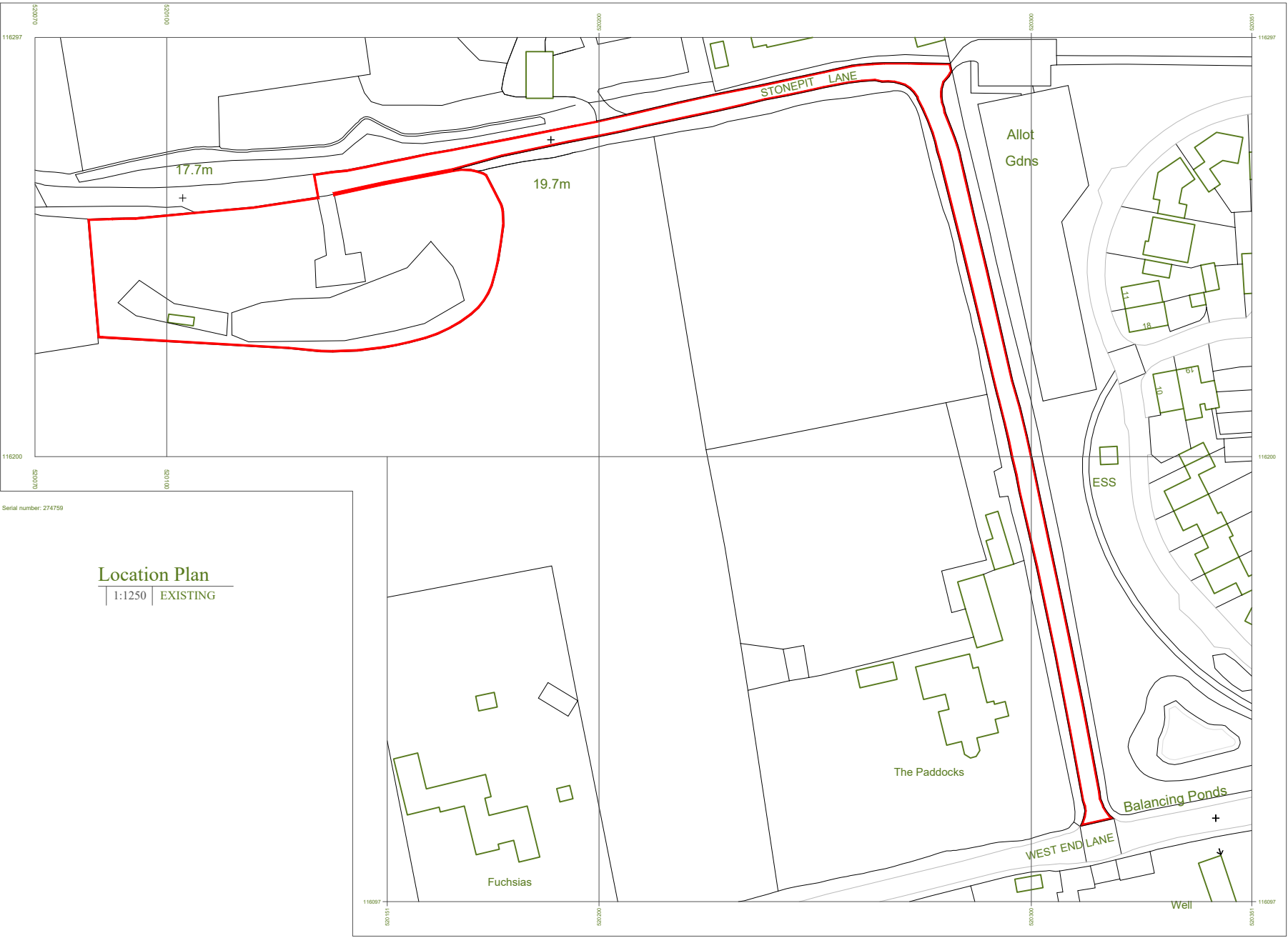
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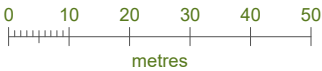


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Location Plan
1:1250 EXISTING

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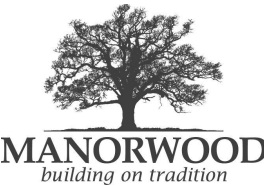
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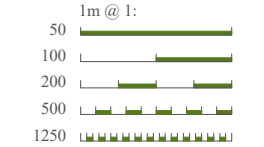
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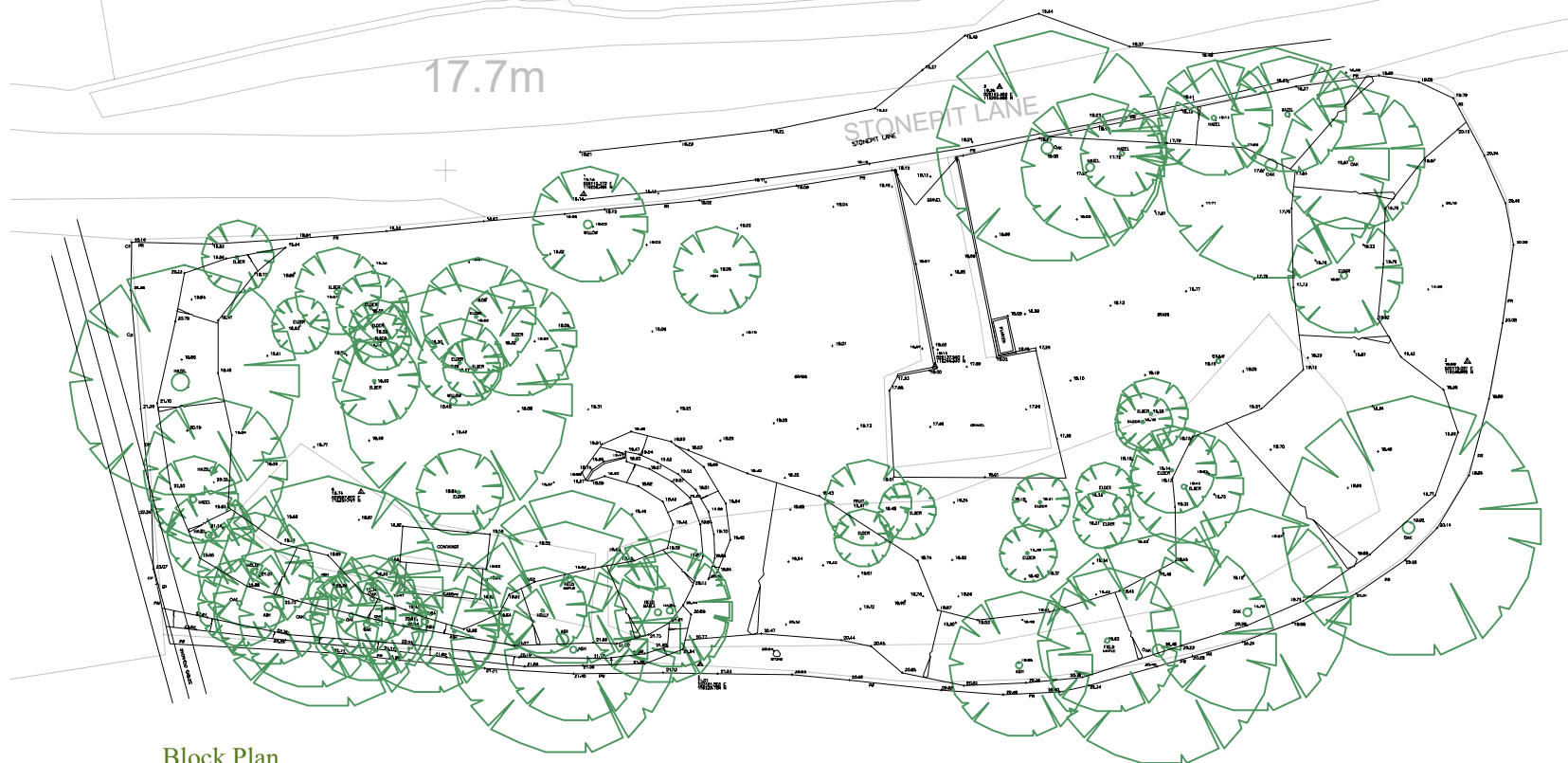
Drawing Location Plan

Submission Planning

Revision

00 12.02.2025





Block Plan

1:500 | EXISTING

Appendix B - Sewer Records



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The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2025 Ordnance Survey AC0000808122. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.
WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement.

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nick@aegaea.com
6735



Wastewater Plan A1
Powered by digipal

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
5001	F	0.00	0.00	
5002	F	0.00	0.00	
5003	F	0.00	0.00	
5902	F	0.00	0.00	
6001	F	19.79	17.94	
6002	F	19.48	17.57	
6003	F	19.35	17.38	
6005	F	19.51	17.77	
6101	F	19.73	18.64	
6102	F	25.29	0.00	
6103	F	25.28	21.93	
6104	F	25.31	23.39	
6105	F	0.00	0.00	
6303	F	0.00	0.00	
6408	F	0.00	0.00	
6902	F	15.79	14.30	
6051	S	0.00	0.00	
6052	S	0.00	0.00	
6151	S	0.00	0.00	

[illegible][illegible][illegible][illegible][illegible]

Appendix C - Infiltration Tests

Percolation test and calculations

Land at Stonepit Lane Henfield West Sussex

The test procedure:

An infiltration test was carried out to establish the suitability of the ground for infiltration.

The test was carried out in accordance with BRE Digest 365

The test was carried out in October 2025

1. A test hole was excavated to a size of 1500mm long x 1000mm wide x 1000mm deep
2. The test holes was filled with water from a 1500 litre IBC container and allowed to seep away until empty
3. Once the hole had drained it was filled to a depth of 750mm (3/4 depth) with water from a 1500 litre IBC container and timed to see how long the water took to percolate through the soil to a depth of 250mm (1/4 depth)
4. Care was taken to avoid abnormal conditions, i.e. heavy rain, severe frost, and drought.
5. The test is carried out three times and average results used
6. The infiltration rate is calculated as follows:

Soil infiltration rate $f =$

$$\frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$$

where:

V_{p75-25} = the effective storage volume of water in the soakage trial pit between 75% and 25% effective storage depth (in this case $1.5 \times 1 \times (0.75-0.25) = 0.75 \text{ m}^3$)

a_{s50} = the internal surface area of the soakage trial pit up to 50% effective storage depth and including the base area (in this case $(1.5 \times 1) + (0.5 \times 1 \times 1) + (0.5 \times 1 \times 1) + (0.5 \times 1.5 \times 1) + (0.5 \times 1.5 \times 1) = 4\text{m}^2$)

t_{p75-25} = the time for the water level to fall from 75% to 25% effective storage depth

Results

The following sets out the results

Test no.	V_{p75-25}	a_{s50}	t_{p75-25}	$f = \text{infiltration rate}$ $\frac{V_{p75-25}}{a_{s50} \times t_{p75-25}}$
1	0.75	4	240 (4 minutes)	0.000780
2	0.75	4	300 (5 minutes)	0.000623
3	0.75	4	300 (5 minutes)	0.000623

Average VP value = $0.00068 = 6.8 \times 10^{-4}$ m/second

Typical acceptable values are 1×10^{-5} to 1×10^{-4}

Values higher than this are suitable but considered to be extremely fast draining so groundwater vulnerability and source protection zones should be considered where run off from treatment plants is proposed.

As the result falls within the acceptable range the soil appears to be suitable for infiltration

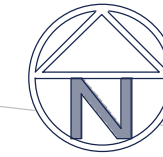
Summary

Infiltration tests have been undertaken at the site in accordance with BRE365

These demonstrate that the soils are suitable for infiltration

Appendix D - Proposed Drainage Arrangements

	PROPOSED SURFACE WATER SEWER
	PROPOSED PERFORATED PIPE
	PROPOSED SURFACE WATER INSPECTION CHAMBER
	PROPOSED RODDING EYE
	PROPOSED PERMEABLE PAVING
	PROPOSED CESSPOOL
	PROPOSED RAINWATER HARVESTING TANK
	CONTRIBUTING AREA (841m ²)
	PROPOSED FOUL WATER SEWER
	PROPOSED FOUL INSPECTION CHAMBER (450mmØ)
	EXCEEDANCE FLOW ROUTES



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
REFER TO THE RELEVANT CONSTRUCTION (DESIGN AND MANAGEMENT)
DOCUMENTATION WHERE APPLICABLE.
IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY
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2. POSITIONS OF EXISTING SERVICES/STATUTORY UNDERTAKERS APPARATUS ADJACENT TO OR CROSSING PROPOSED EXCAVATIONS ARE TO BE CONFIRMED PRIOR TO START ON SITE.
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4. THIS DRAWING IS SCHEMATIC FOR CLARITY ONLY, POSITIONS OF PIPE RUNS AND MANHOLES MAY VARY ON SITE DUE TO SITE CONDITIONS.
5. WHERE EXISTING OR PROPOSED TREES ARE ADJACENT TO ACCESS ROADS OR DRAINAGE, ROOT BARRIERS (TYPE TO BE APPROVED) ARE REQUIRED TO PREVENT STRUCTURAL DAMAGE.
6. ANY ANOMALY OR CONTRADICTIONS BETWEEN ANY OF THE ABOVE IS TO BE REPORTED IMMEDIATELY.
7. THE DESIGN IS TO COMPLY IN ALL ASPECTS WITH THE CURRENT BRITISH STANDARDS, BUILDING REGULATIONS AND BUILDING LEGISLATION ETC.
8. ALL PIPE SIZES, CHAMBER DEPTHS, SIZE & QUANTITY SUBJECT TO REVIEW AND DETAILED DESIGN. ALL ADOPTED PIPE WORK ROUTING AND ANY EASEMENTS SUBJECT TO FULL DESIGN REVIEW AND APPROVAL BY THE RELEVANT BODIES.
9. DRAINAGE DESIGN SUBJECT TO DETAILED LEVELS AND EXTERNAL WORKS DESIGN.
10. SUBJECT TO DETAILED DESIGN AND APPROVAL.

Rev	Date	Description	By
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Project
**STONEPIT LANE
HENFIELD**

Title

DRAINAGE STRATEGY PLAN

Drawn	Checked	Approved	Date	Scale @ A2
DB	JM	JM	JAN 2025	1:200

FOR PLANNING

degadea
water, civils and environment



FIGURE B.19
TYPICAL INSPECTION CHAMBER DETAIL - TYPE D

FLEXIBLE MATERIAL CONSTRUCTION ALTERNATIVE TOP DETAILS FOR USE IN AREAS OF LIGHT VEHICLE LOADING
OR LANDSCAPED AREAS

PLASTIC CHAMBERS AND RINGS SHALL COMPLY WITH CLAUSE E2.31

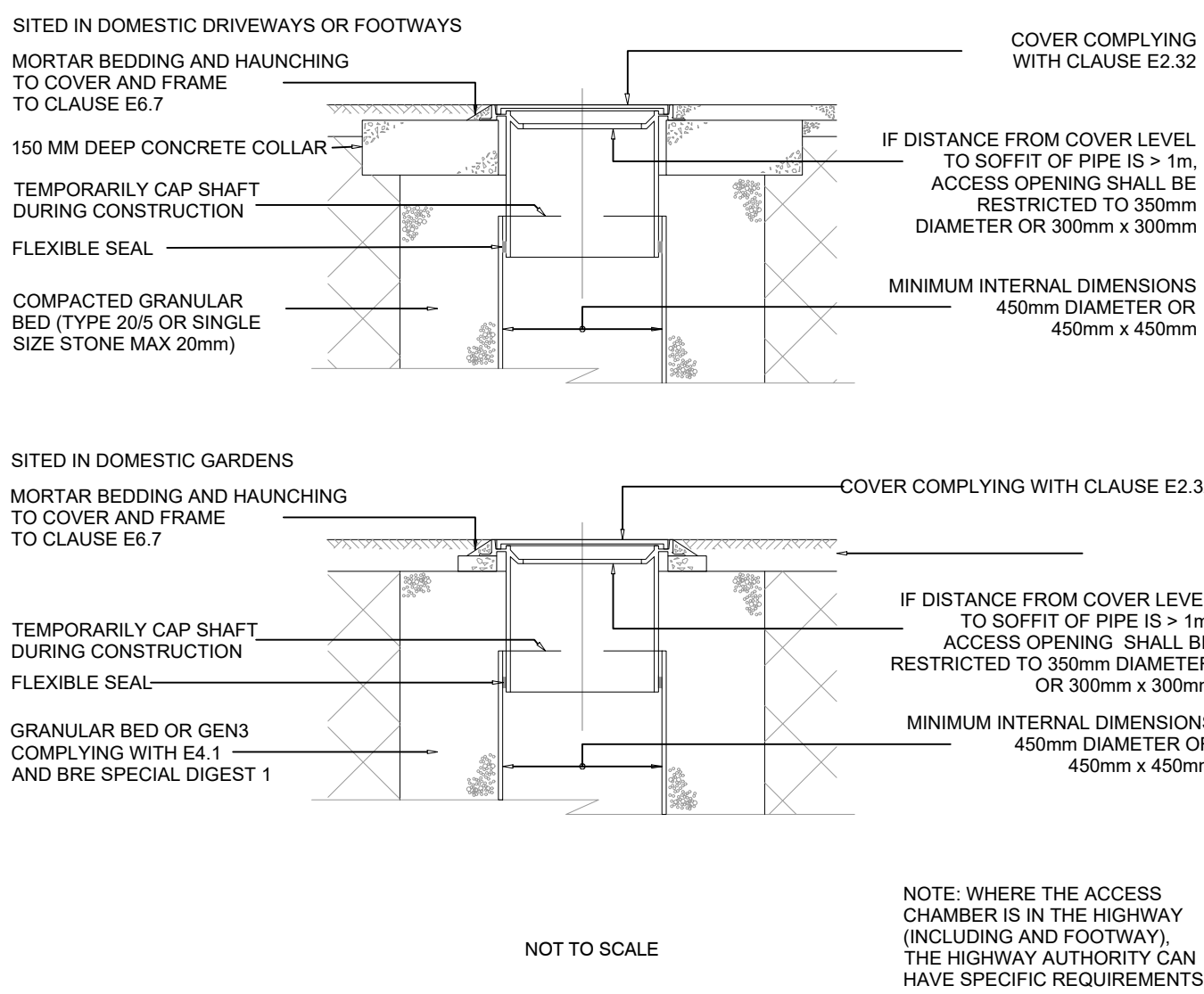
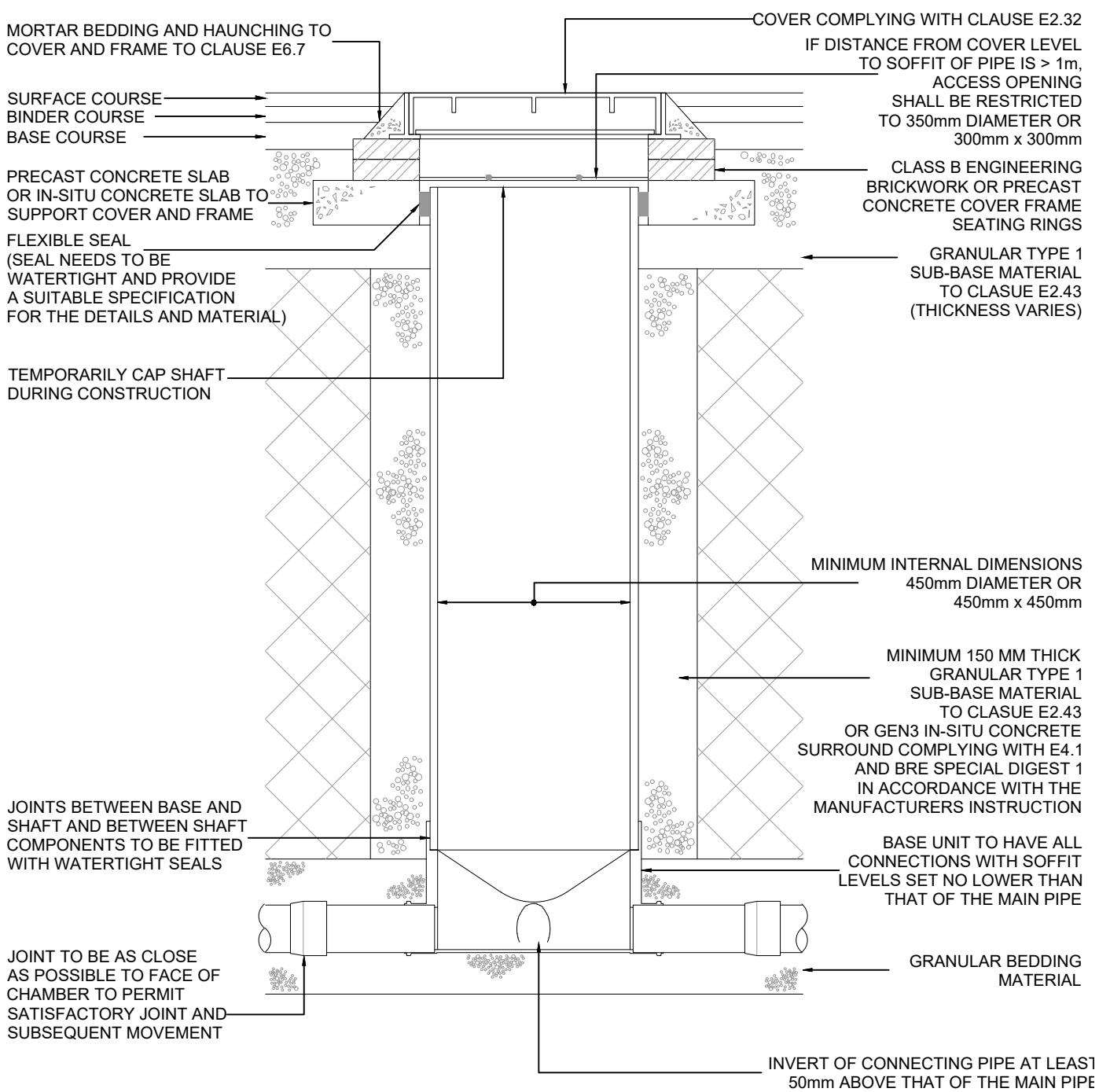


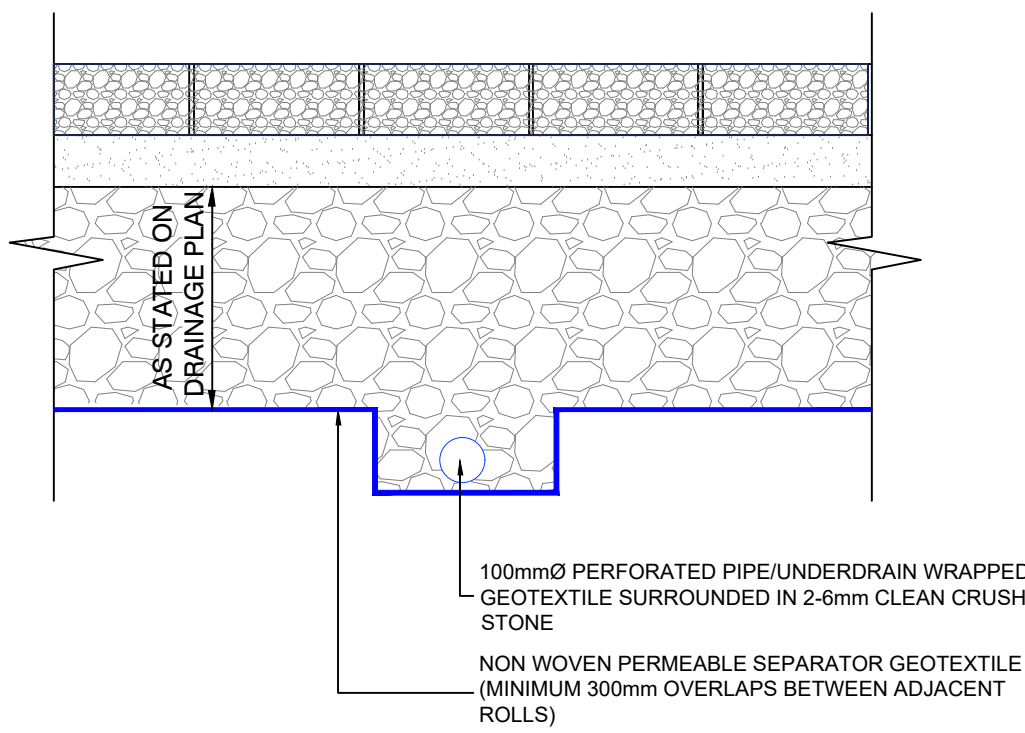
FIGURE B.18
TYPICAL INSPECTION CHAMBER DETAIL - TYPE D

DEPTH FROM COVER LEVEL TO SOFFIT OF PIPE UP TO 3m
FLEXIBLE MATERIAL CONSTRUCTION FOR USE IN AREAS SUBJECT TO VEHICLE LOADING

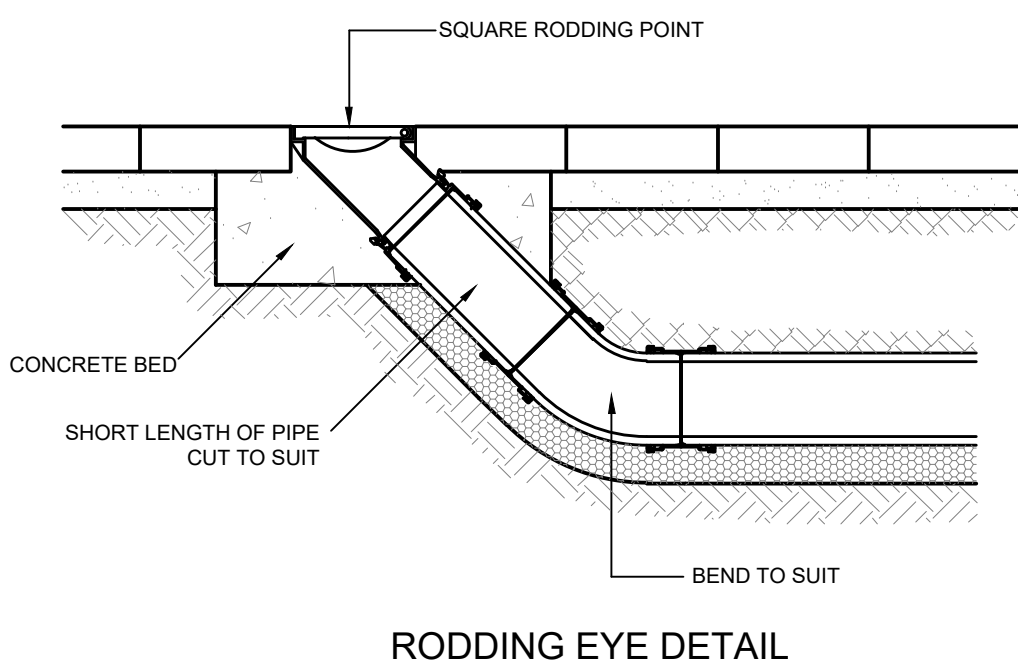
PLASTIC CHAMBERS AND RINGS SHALL COMPLY WITH CLAUSE E2.31



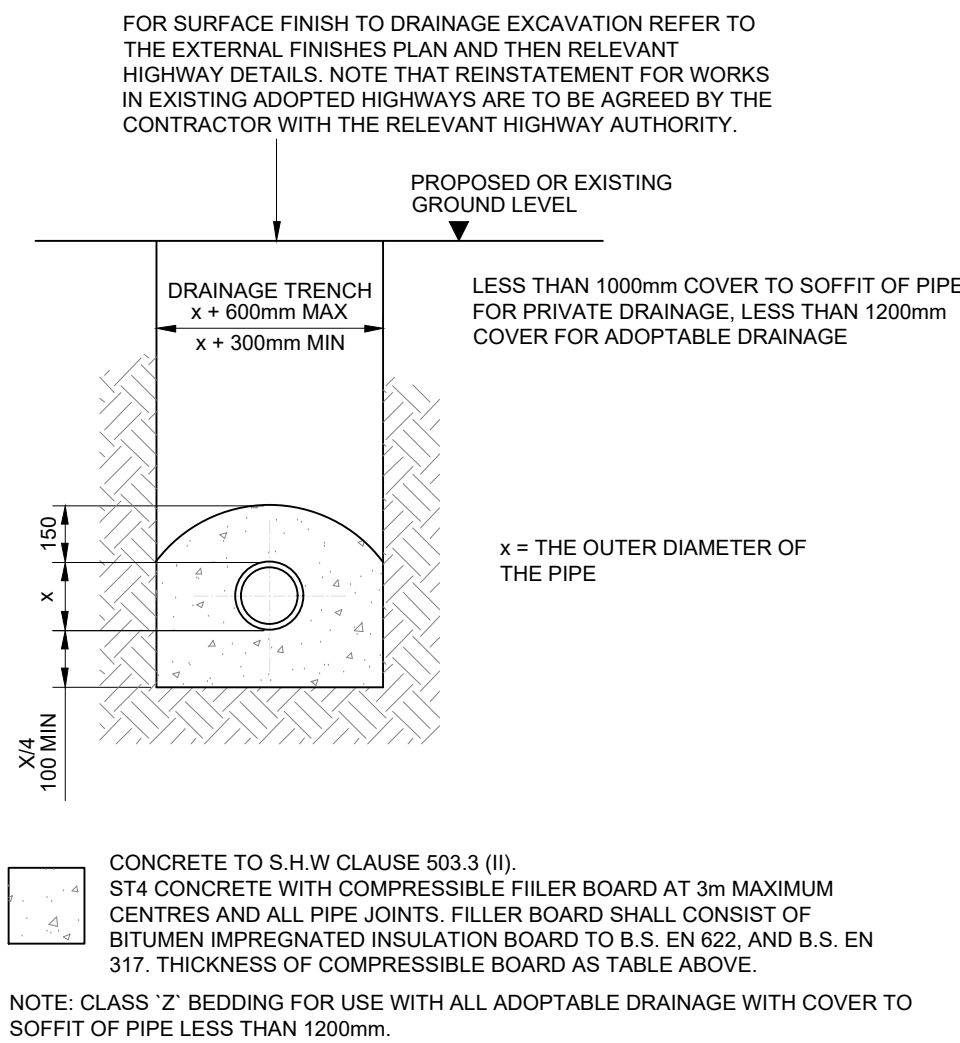
NOTE: WHERE THE ACCESS CHAMBER IS IN THE HIGHWAY THE
HIGHWAY AUTHORITY CAN HAVE SPECIFIC REQUIREMENTS
NOT TO SCALE



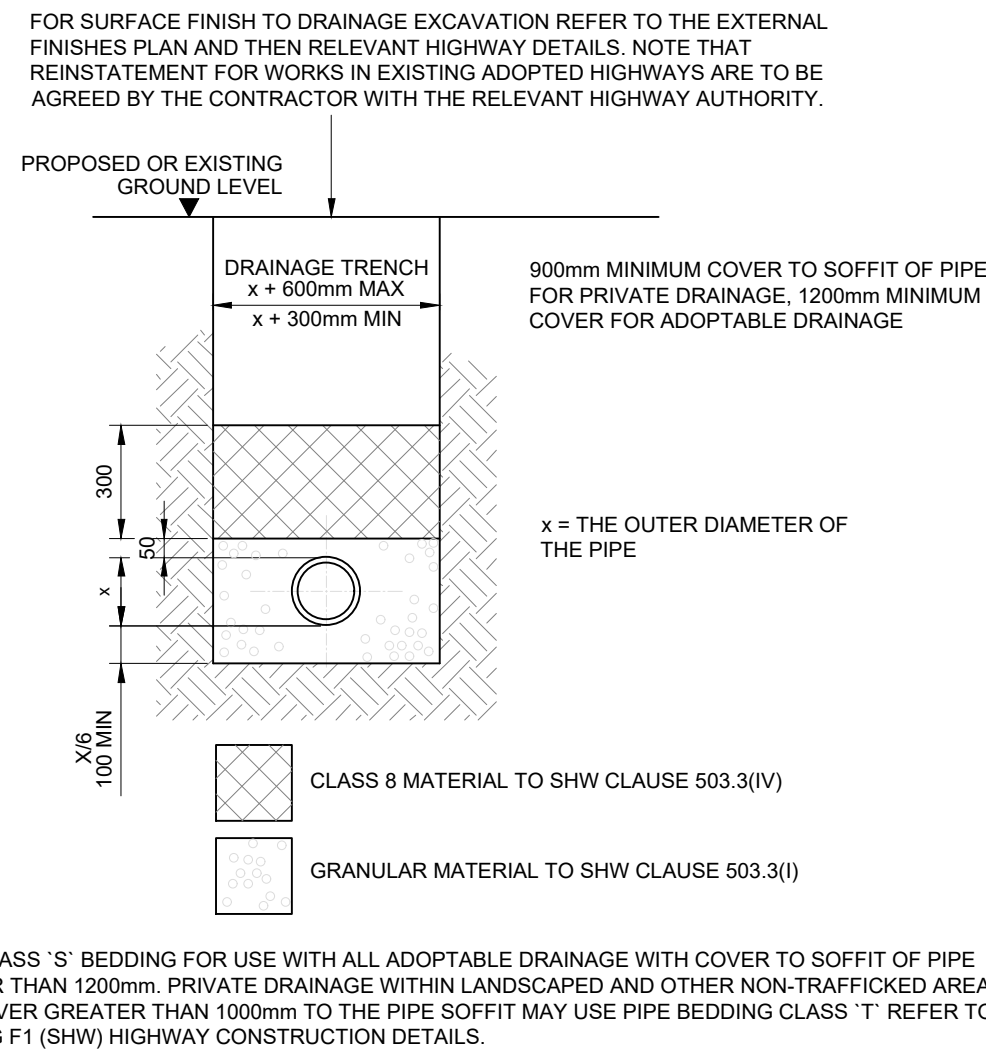
DRAINAGE TRENCH WITHIN PERMEABLE PAVING



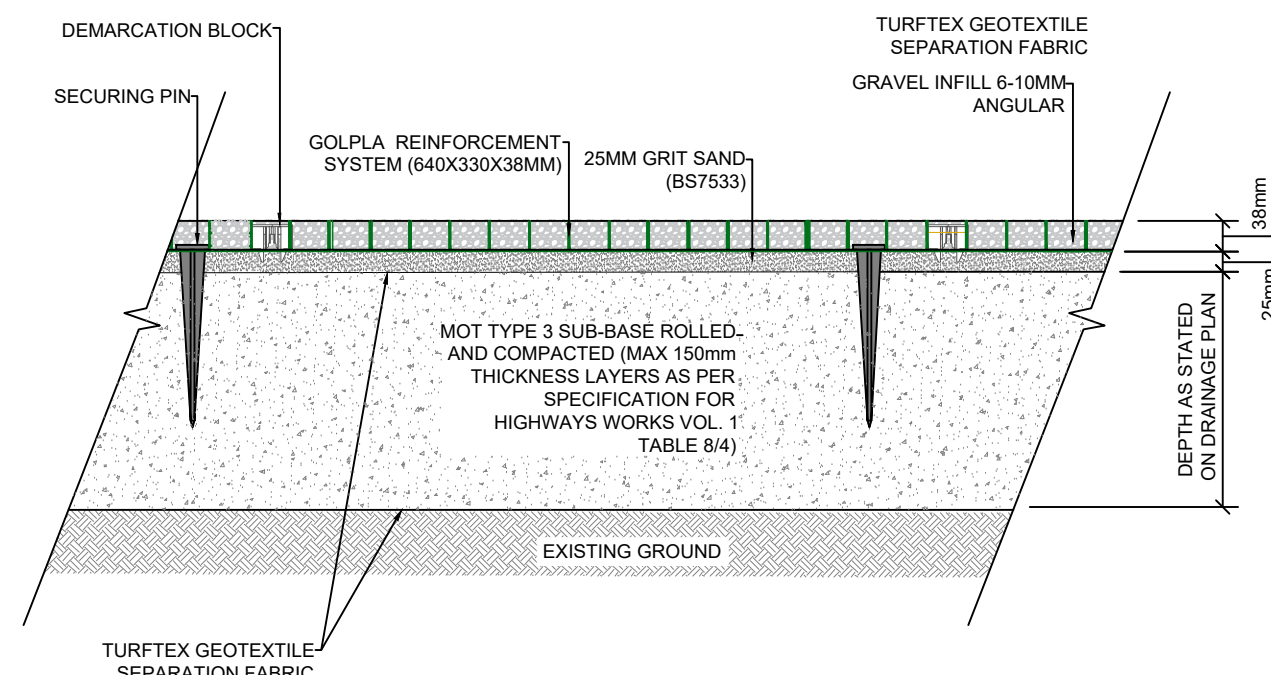
RODDING EYE DETAIL



CLASS 'Z' PIPE BEDDING



CLASS 'S' PIPE BEDDING



PROPOSED GRAVEL DRIVES
PERMEABLE SURFACE

- DO NOT SCALE THIS DRAWING. USE FIGURED DIMENSIONS ONLY.
THE CONTRACTOR MUST CHECK & VERIFY ALL DIMENSIONS ON SITE.
ANY DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER
FOR CLARIFICATION BEFORE PROCEEDING.
THIS DRAWING IS COPYRIGHT AND OWNED BY AEGAEA.
- SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
REFER TO THE RELEVANT CONSTRUCTION (DESIGN AND MANAGEMENT)
DOCUMENTATION WHERE APPLICABLE.
IT IS ASSUMED THAT ALL WORKS ON THIS DRAWING WILL BE CARRIED OUT BY
A COMPETENT CONTRACTOR, WORKING WHERE APPROPRIATE TO AN
APPROVED METHOD STATEMENT.
- NOTES
1. ALL ADOPTABLE DRAINAGE WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE DESIGN AND CONSTRUCTION GUIDANCE FOR FOUL AND SURFACE WATER SEWERS (DCG).
 2. LOCATION AND INVERT LEVELS OF DOWNSTREAM DRAINAGE CONNECTION POINTS ARE TO BE CONFIRMED.
 3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAWINGS/SPECIFICATIONS.
 4. DO NOT SCALE FROM THIS DRAWING. USE FIGURED DIMENSIONS ONLY. ALL DIMENSIONS ARE IN METERS.
 5. ALL THE ABOVE REQUIREMENTS SHALL APPLY UNLESS OTHERWISE STATED IN THE GENERAL ARRANGEMENT DRAWINGS/SPECIFICATION. IN THE EVENT OF A CONTRADICTION THE CONTRACT SPECIFIC DOCUMENTS SHALL BE DEEMED TO PREVAIL.
 6. THE CONTRACTOR IS TO CHECK AND VERIFY ALL SITE DIMENSIONS AND LEVELS, INCLUDING EXISTING SEWER INVERT LEVELS AND UTILITIES, PRIOR TO START ON SITE.
 7. POSITIONS OF EXISTING SERVICES/STATUTORY UNDERTAKERS APPARATUS ADJACENT TO OR CROSSING PROPOSED EXCAVATIONS ARE TO BE CONFIRMED PRIOR TO START ON SITE.
 8. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH AND CHECKED AGAINST ALL ENGINEERING DETAILS, SPECIFICATIONS, GEOTECHNICAL AND OTHER RELEVANT DOCUMENTATION PROVIDED.
 9. THIS DRAWING IS SCHEMATIC FOR CLARITY ONLY. POSITIONS OF PIPE RUNS AND MANHOLES MAY VARY ON SITE DUE TO SITE CONDITIONS.
 10. WHERE TREES ADJACENT TO DRAINAGE ARE PROPOSED, ROOT BARRIERS ARE REQUIRED TO PREVENT STRUCTURAL DAMAGE.
 11. ANY ANOMALY OR CONTRADICTIONS BETWEEN ANY OF THE ABOVE IS TO BE REPORTED IMMEDIATELY.
 12. THE CONTRACTOR IS TO COMPLY IN ALL ASPECTS WITH THE CURRENT BRITISH STANDARDS, BUILDING REGULATIONS AND BUILDING LEGISLATION ETC.
 13. SUBJECT TO APPROVAL.

A03	08.04.25	PERMEABLE SURFACE/SUB-BASE DETAILS UPDATED	DB
A02	03.03.25	UPDATED TO LATEST LAYOUT	DB
A01	06.02.25	FIRST ISSUE	DB
Rev	Date	Description	By

Client	MANORWOOD		
Project	STONEPIT LANE HENFIELD		
Title	DRAINAGE DETAILS		
Project No.	Drawing No.	Revision	
AEG6735	CIV-002	A03	
Drawn	Checked	Approved	Date
DB	JM	JM	JAN 2025
Scale @ A1	1:200		
Drawing Status	FOR PLANNING		

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	5	Maximum Rainfall (mm/hr)	550.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	1.000	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
1	0.090	5.00	18.250	Manhole	450	346.523	-37.511	0.050	18.200
2			18.300	Junction	400	356.139	-36.219	0.200	18.100

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	T of C (mins)	Rain (mm/hr)
DUMMY OVERFLOW	1	2	9.702	0.600	18.200	18.100	0.100	97.0	50	Circular	5.33	10.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
DUMMY OVERFLOW	1	2	0.488	1.0	3.3	0.000	0.150	0.090	0.0

Appendix E - Proposed Drainage Calculations

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
DUMMY OVERFLOW	9.702	97.0	50	Circular	18.250	18.200	0.000	18.300	18.100	0.150

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type
DUMMY OVERFLOW	1	450	Manhole	Adoptable	2	400	Junction

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	346.523	-37.511	18.250	0.050	450				
							0 DUMMY OVERFLOW	18.200	50
2	356.139	-36.219	18.300	0.200	400				
							1 DUMMY OVERFLOW	18.100	50

Simulation Settings

Rainfall Methodology	FEH-22	Winter CV	1.000	Drain Down Time (mins)	240	Check Discharge Rate(s)	x
Rainfall Events	Singular	Analysis Speed	Detailed	Additional Storage (m³/ha)	0.0	Check Discharge Volume	x
Summer CV	1.000	Skip Steady State	x	Starting Level (m)			

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	10	0	30	0	10	0
5	0	10	0	100	45	10	0
10	0	10	0				

Node 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	2.23200	Porosity	0.30	Width (m)	12.960	Depth (m)	0.550
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	17.650	Length (m)	33.000	Inf Depth (m)	
Safety Factor	5.0	Time to half empty (mins)	0	Slope (1:X)	200.0		

Other (defaults)

Entry Loss (manhole)	0.250	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.250	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Results for 1 year +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	11	17.685	-0.515	12.1	0.4785	0.0000	OK
15 minute summer	2	1	18.100	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	DUMMY OVERFLOW	2	0.0	0.000	0.000	0.0000	0.0
15 minute summer	1	Infiltration		11.2				

Results for 5 year +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	17.725	-0.475	28.9	2.1722	0.0000	OK
15 minute summer	2	1	18.100	0.000	0.0	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	DUMMY OVERFLOW	2	0.0	0.000	0.000	0.0000	0.0
15 minute summer	1	Infiltration		24.0				

Results for 10 year +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	17.740	-0.460	36.2	3.1496	0.0000	OK
15 minute summer	2	1	18.100	0.000	0.0	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	DUMMY OVERFLOW	2	0.0	0.000	0.000	0.0000	0.0
15 minute summer	1	Infiltration		28.9				

Results for 30 year +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	17.761	-0.439	47.0	4.7593	0.0000	OK
15 minute summer	2	1	18.100	0.000	0.0	0.0000	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	DUMMY OVERFLOW	2	0.0	0.000	0.000	0.0000	0.0
15 minute summer	1	Infiltration		35.5				

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 100.00%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	13	17.824	-0.376	85.5	11.7413	0.0000	OK
15 minute summer	2	1	18.100	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	DUMMY OVERFLOW	2	0.0	0.000	0.000	0.0000	0.0
15 minute summer	1	Infiltration		53.0				