

SuDS and Drainage Report

63 Annandale Avenue, Bognor Regis

Rev: I

Ref: **C4138**

CGS Civils Ltd
Richard Cobden House
Lion Street
Chichester



Document Control

Project Number	C41388		
Date	19 th June 2026	Revision	1
Author	Klaudia Czajka-Knutelska	Signature	

Revision History

Date	Revision	Author	Approved
19.06.2026	CS	KCK	CS

Contents

1 INTRODUCTION 4

2 THE SITE..... 4

3 EXECUTIVE SUMMARY: 5

4 SITE GEOLOGY 5

5 EXISTING DRAINAGE 7

6 PROPOSED DRAINAGE STRATEGY 8

7 COMPLIANCE WITH NATIONAL SUDS STANDARDS AND PRINCIPLES.....10

8 SUMMARY AND CONCLUSIONS 14

9 APPENDICES 15

1 Introduction

- 1.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at 63 Annandale Avenue, Bognor Regis.
- 1.1.2 The proposed development will consist of the construction of a block of flats. The proposed development is located at OS Grid Reference **SZ 93436 99846** and has the post code **PO21 2ET**.
- 1.1.3 The purpose of this drainage strategy is to demonstrate how the development area can be satisfactorily drained without increasing flood risk onsite and elsewhere.
- 1.1.4 This document has been prepared with reference to:
 - National Planning Policy Framework (NPPF)
 - DEFRA: Sustainable Drainage Systems: Non-Statutory technical standards for sustainable drainage systems
 - DEFRA: National Standards for Sustainable Drainage Systems (SuDS)
 - The SuDS Manual (C753)
 - Building Regulations Document H
 - West Sussex County Council Local Flood Risk Management Strategy

2 The Site

- 2.1.1 CGS Civils Ltd has been appointed to undertake a drainage strategy report for a proposed development at 63 Annandale Avenue, Bognor Regis.



Fig 1. Site Location

- 2.1.2 The site currently contains two buildings with a total roof area of 182 m² and 236 m² of hardstanding (driveway and footpath).
- 2.1.3 The proposed development involves the demolition of 63 Annandale Avenue and the construction of a block of flats. The proposed scheme will result in a total of 225 m² of impermeable area. The parking area and footpaths will be constructed using permeable paving to allow surface water runoff to infiltrate into the ground. Proposed development will result in a net reduction in impermeable area, thereby reducing surface water runoff rates and volumes from the site.

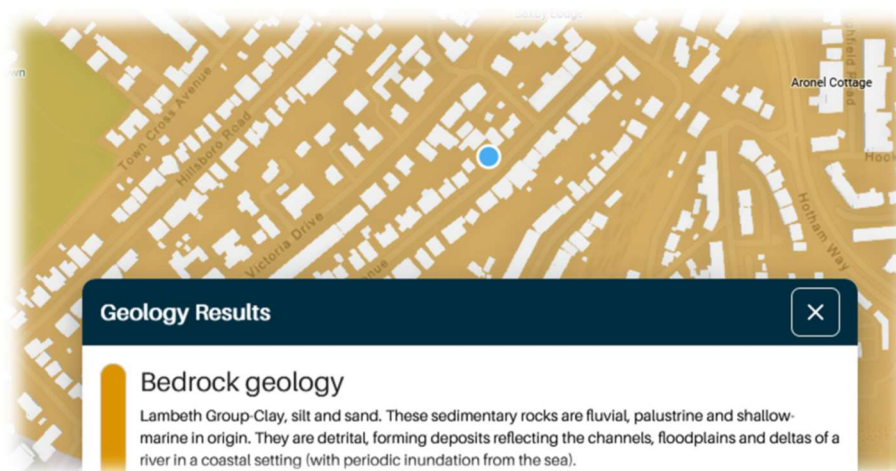
3 Executive Summary:

- 3.1.1 Surface water runoff will be discharged to ground via infiltration. Runoff from the roof areas are to be captured into a positive drainage network prior to discharged into onsite geocellular soakaway. The runoff from the hard landscaped areas is to freely drain to ground via infiltration.
- 3.1.2 The network will also make use of a standard geocellular soakaway where required in order to cater for the 1 in 100-year storm +45% CCA +10% urban creep. All features have been designed to the appropriate assumed infiltration rates of $3.0 \times 10^{-5} \text{m/s}$.

4 Site Geology

4.1 British Geological Survey information

- 4.1.1 The British Geological Survey confirms the bedrock geology to be made up of Lambeth Group-Clay, silt and sand. The BGS website confirms the superficial deposits on site to be made up of River Terrace Deposits (Undifferentiated)-Sand, silt and clay.
- 4.1.2 The British Geological survey also holds records of historical boreholes near the site which give some insight into the ground geology.
- Borehole SZ99NW31 (Located approx. 170m West of the site) – Ground geology (Clay, chalk.)
 - Borehole SZ99NW28 (Located approx. 235m East of the site) – Ground geology (Clay, sand and gravel.)
- 4.1.3 BGS Historical Borehole Logs can be found at **Appendix B**.



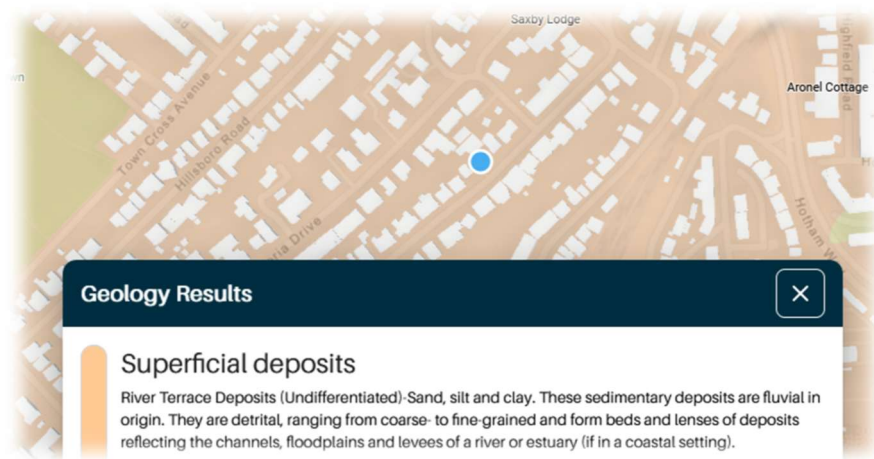


Fig 2. British Geological Survey

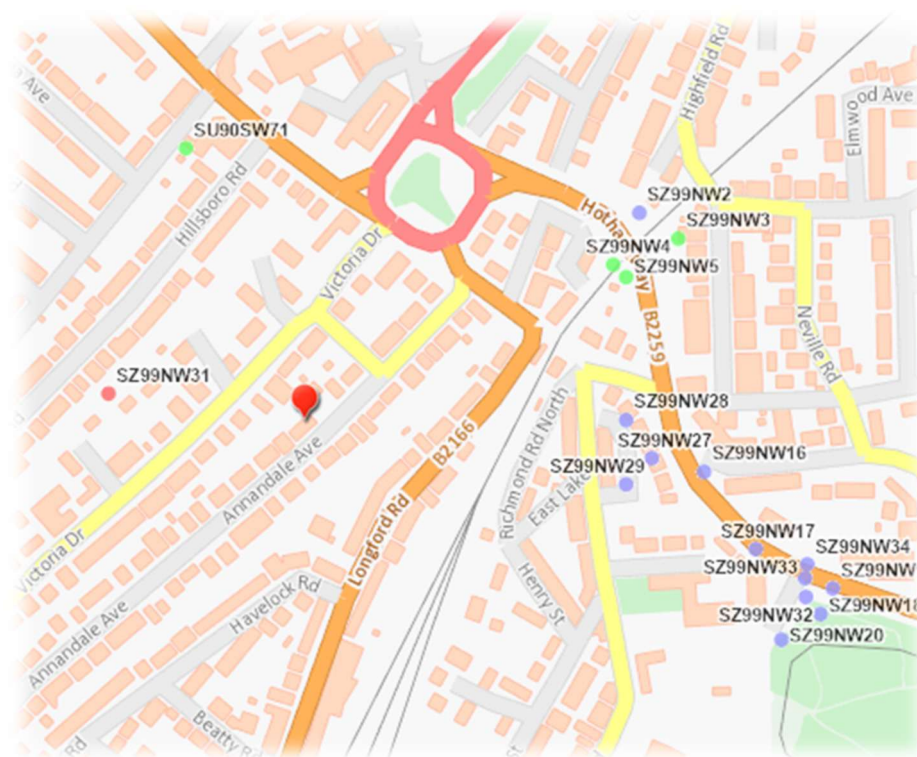


Fig 3. British Geological Survey

Snippet from BGS Website showing the Historical Borehole Log location

4.2 Geological Assessment

- 4.2.1 No intrusive ground investigation testing has been carried out, however based on the available information on Planning Portal and BGS Portal it is confirmed that proposed development is located within the area underlain by soils with poor-good infiltration potential.
- 4.2.2 The nearest borehole logs indicates that site is underlain by Lambeth Group-Clay, silt and sand with to poor-good potential for infiltration.
- 4.2.3 Infiltration rates shall be confirmed by winter BRE365 infiltration testing and supported by full winter groundwater monitoring.

5 Existing Drainage

- 5.1.1 A CCTV survey was undertaken on site to identify existing surface and foul water discharge points. The survey confirmed one recorded rainwater pipe (RWP) per building, which are understood to discharge surface water to ground.
- 5.1.2 The site includes areas of hardstanding constructed in tarmac and blockwork setts, which suggests that surface water is currently likely to discharge both to ground and overland, following the existing site topography.
- 5.1.3 The existing drainage CCTV survey is provided in **Appendix B**.

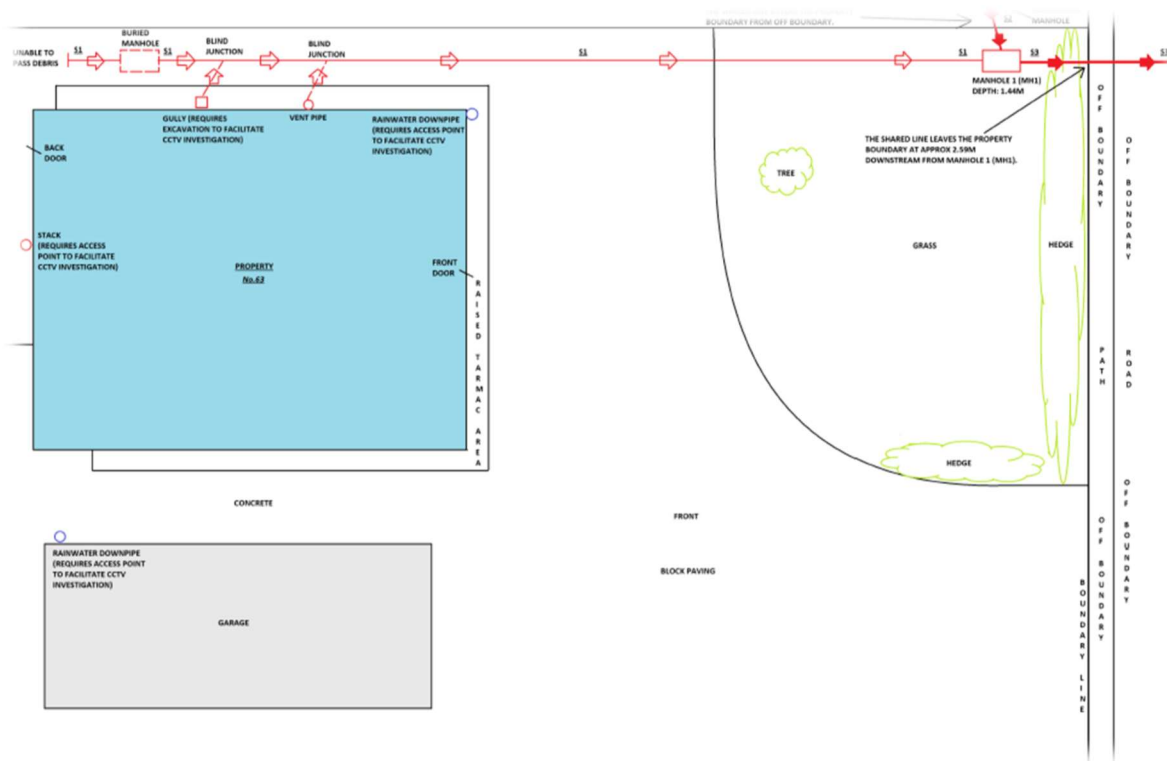


Fig 4. CCTV survey

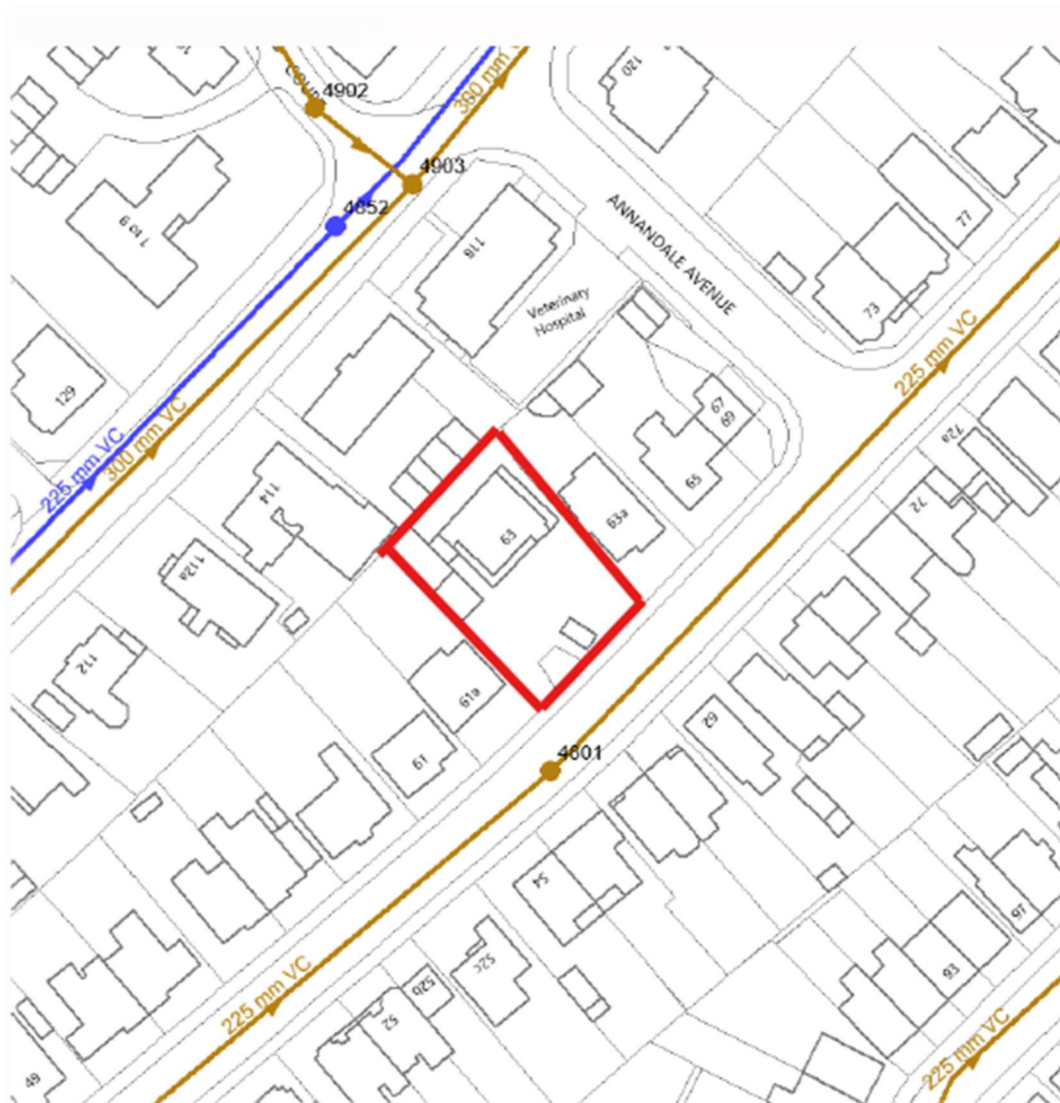


Fig 5. Sewer Records

6 Proposed Drainage Strategy

6.1 SuDS Hierarchy

- 6.1.1 All options for the destination of run-off generated on site have been assessed in line with the SuDS hierarchy as set out in Building Regulations Part H document and DEFRA's Draft National Standards for SuDS.

Table 1. SuDS Hierarchy

Discharge Destination	
Rainwater Harvesting	Yes- 1500 l Rainwater Harvesting Tank
Interception Features	Yes- bio-retention planters and permeable paving.
Discharge to Ground	Soakaway and porous paving based on assumed infiltration rate of 3.0×10^{-5} m/s.
Discharge to Watercourse	n/a
Discharge to Surface Water Sewer	n/a
Discharge to Other Sewer	n/a

6.2 Proposed Hydraulic Calculation Specifications:

Table 2. Hydraulic Calculations

Hydraulic Calculations Settings:	
Rainfall Methodology	FEH-22
Volumetric Run-off Coefficient Cv	1
CV Winter and Summer	1
Additional Storage (m ³ / ha)	0.0
Maximum Rainfall (mm/hr)	75
Urban Creep	10%
Infiltration	Assumed worst-case infiltration
Soakaway Design	Base Coefficient (m/hr): 0.00000
	Side Coefficient (m/hr): 0.10800
	Factor of Safety: 2
	Porosity: 95%
	Time to Half Empty (mins): 1340

Hydraulic Calculations Settings:	
Rainfall Methodology	FEH-22
Volumetric Run-off Coefficient Cv	1
CV Winter and Summer	1
Additional Storage (m ³ / ha)	0.0
Maximum Rainfall (mm/hr)	75
Urban Creep	10%
Infiltration	Assumed worst-case infiltration
Permeable paving	Base Coefficient (m/hr): 0.10800
	Side Coefficient (m/hr): 0.00000
	Factor of Safety: 2
	Porosity: 30%
	Time to Half Empty (mins): 19

6.3 Surface Water Drainage

- 6.3.1 Available geological mapping indicates that the site is underlain by River Terrace Deposits comprising sand, silt and clay, with the Lambeth Group (clay, silt and sand) forming the underlying bedrock. Based on the published geological information, the site is considered to have moderate infiltration potential.
- 6.3.2 Accordingly, infiltration drainage has been identified as a potentially suitable SuDS option at this stage of assessment. An indicative infiltration rate of 3.00×10^{-5} m/s (assumed) has been adopted for the purposes of this preliminary drainage strategy. However, the feasibility of infiltration drainage and the proposed infiltration rate remain subject to confirmation through site-specific infiltration testing undertaken in accordance with winter BRE 365. In addition, winter groundwater monitoring should be undertaken to establish the maximum seasonal groundwater level and to confirm that adequate clearance can be maintained between the base of any infiltration device and the groundwater table in accordance with current SuDS requirements.
- 6.3.3 A CCTV survey confirmed existing surface water discharge points to ground. Whilst this does not constitute a formal assessment of infiltration capacity, it indicates that infiltration may already be occurring on site and supports the preliminary assumption that infiltration-based SuDS are feasible.
- 6.3.4 Roof surface water runoff is proposed to be collected via a positive drainage network and discharged into onsite geocellular soakaway. The proposed soakaway has been designed using the assumed infiltration rate of 3.0×10^{-5} m/s. All infiltration features on site have been designed to cater for the 1 in 100-year +45% storm +10% urban creep.

- 6.3.5 All the proposed permeable areas are to be freely drained to ground via porous construction. All infiltration features on site have been designed to an assumed infiltration of 3.0×10^{-5} m/s and to cater for the 1 in 100-year +45% storm +10% urban creep.
- 6.3.6 The proposed drainage network will also incorporate bio-retention planters, which will provide water quality treatment, amenity and biodiversity benefits. These measures will facilitate the interception of the first 5mm of rainfall and will reduce the overall volume of surface water discharge from the site.
- 6.3.7 The proposed drainage drawings and hydraulic calculations can be found at **Appendix B**.

7 Compliance with National SuDS Standards and Principles

- 7.1.1 The current national SuDS standards comprise 7 standards supported by 11 design principles. The tables below summarise how the proposed drainage strategy for 63 Annandale Avenue responds to these requirements.

Standard	Requirement	Project response
1	Runoff destinations	Rainwater harvesting has been included.
2	Management of everyday rainfall	Rainfall is managed close to source by rainwater harvesting, bio retention and permeable paving, reducing routine runoff from the site.
3	Management of extreme rainfall and flooding	Roof drainage is directed to infiltration features sized for the 1 in 100-year +45% climate change storm with 10% urban creep. The infiltration-led strategy avoids increasing flood risk elsewhere. Any exceedance routes are directed safely away from habitable areas and towards the road.
4	Water quality	Runoff from roofs and parking areas is treated through the SuDS management train. Permeable paving and infiltration components provide pollutant mitigation in accordance with the simple index approach.
5	Amenity	The drainage strategy uses source control and permeable surfacing integrated within the site layout rather than relying solely on conventional buried drainage. Given the restrictive nature of the site, open SuDS are not considered appropriate. However, the inclusion of SuDS planters will provide amenity benefits.
6	Biodiversity	Given the small nature of the site, it will not be appropriate to utilise open SuDS however, the use of SuDS planters will provide biodiversity benefits.
7	Construction, operation, maintenance and structural integrity	The proposed SuDS components are conventional, buildable and maintainable. Long-term maintenance is addressed within the maintenance schedule and the design respects monitored groundwater levels.

Compliance Table A. Summary of compliance with the 7 national SuDS standards

The proposed drainage design also follows the 11 underpinning principles of the national standards as summarised below.

Principle	Summary	Project response
1	Natural approach to managing water	Surface water is retained and managed on site at source using infiltration in the form of soakaways, permeable paving.
2	Management train close to source	Varying SuDS features are used together, with re-use, permeable surfacing and soakaways operating and discharging to source.
3	SuDS approach	The strategy manages runoff quantity, water quality and long-term maintenance in an integrated manner.
4	Early and integrated design	Drainage has been considered alongside site levels, site layout, groundwater conditions. The drainage strategy has also been developed with reference to the site's anticipated infiltration potential based on British Geological Survey (BGS) mapping and available site information.
5	Site layout informed by drainage	The proposed infiltration features have been considered separately within the drainage design. The drainage strategy has been developed to reflect variations in site levels and the assumed infiltration characteristics of the underlying ground, based on BGS geological information
6	Follow natural drainage routes	The layout allows runoff to be managed in accordance with site topography and infiltration opportunities.
7	Take account of local policy and flood evidence	The design is based on BGS data and current national and local SuDS standards. BRE365 testing in winter and groundwater monitoring should be carried out to further support design.
8	Early engagement with the authority	The report format and supporting evidence are intended to support the planning application.
9	Demonstrate compliance from concept stage	Compliance with the national standards is addressed within this planning-stage drainage strategy rather than deferred entirely to later stages.
10	Show how the standards are met in site design	The report sets out the hierarchy, hydraulic basis, water quality approach in one coordinated document.
11	Consider phasing where relevant	The development is small and not expected to be phased; however, the strategy is capable of being delivered in a single coordinated phase.

Compliance Table B. Summary of compliance with the 11 SuDS design principles

7.2 Water Quality

- 7.2.1 A key requirement of any SuDS system is that it protects the receiving water body from the risk of pollution.
- 7.2.2 Frequent and short duration rainfall events are those that are most loaded with potential contaminants (silts, fines, heavy metals, and various organic and inorganic contaminants) Therefore the first 5-10mm of rainfall should be adequately treated with SuDS.
- 7.2.3 The new SuDS Manual (Ciria C753, November 2015) introduces slightly different approach compared to the previous version for the water quality management of surface water. The Manual describes risks posed by the surface water runoff to the receiving environment as a function of:
- The pollution hazard at a particular site (i.e., the pollution source)
 - The effectiveness of SuDS treatment components in reducing levels of pollutants to environmentally acceptable levels
 - The sensitivity of the receiving environment
- 7.2.4 The EA website indicates that the site does not lie within a Source Protection Zone.
- 7.2.5 The recommended approaches for water quality risk management are given in the SuDS Manual Table 26.1.

Table 26.1 from SuDS manual. Approaches to Water Quality Risk Management

Table 26.1 Approaches to Water Quality Risk Management			
Design method	Hazard Characterisation	Risk Reduction	
		For Surface Water	For Groundwater
Simple Index Approach	Simple pollution hazard indices based on land use (Table 26.2)	Simple SuDS hazard mitigation indices (Table 26.3)	Simple SuDS hazard mitigation indices (Table 26.4)
Risk Screening	Factors characterising traffic density and extent of infiltration likely to occur (Table 26.5)	N/A	Factors characterising unsaturated soil depth and type, and predominant flow type through the soils (Table 26.5)
Detailed Risk Assessment	Site specific information used to define likely pollutants and their significance	More detailed, component specific performance information used to demonstrate that the proposed SuDS components reduce the hazard to acceptable levels	
Process-based treatment modelling	Time series rainfall used with generic pollution characteristics to determine statistical distributions of likely concentrations and loadings in the runoff	Models that represent the treatment processes in the proposed SuDS components give estimates of reductions in even mean discharge concentrations and total annual load reductions delivered by the system	

- 7.2.6 As per Table 26.1 Simple Index approach will be used as a design method for this site.
- 7.2.7 Table 26.2 will provide hazard classification of different land uses. The land uses for the surface water drainage for this site are.
- Residential Roofs
 - Individual Property driveways and residential car parks
- 7.2.8 To deliver adequate treatment, the selected SuDS components should have a total pollution mitigation index for each contaminant type that equals or exceeds the pollution hazard index for each contaminant type. Therefore, the following must be achieved for the surface running off the site.

Total SuDS mitigation index $\geq$ pollution hazard index

- 7.2.9 Pollution Hazard Indices are given for different land uses in Table 26.2 of the SuDS manual;

Table 26.2 from SuDS manual. Pollution Hazard Indices for Different Land Use Classifications

Table 26.2 Pollution hazard indices for different land use classifications				
Land Use	Pollution Hazard Level	Total Suspended solids (TSS)	Metals	Hydro-Carbons
Residential roofs	Very Low	0.2	0.2	0.05
Other roofs (Typically commercial/industrial roofs)	Low	0.3	0.2 (up to 0.8 where there is potential for metals to leach from the roof)	0.05
Individual property driveways, residential car parks, low traffic roads (e.g., cul-de-sacs, homezones and general access roads) and non-residential car parking with infrequent change (e.g., schools, offices) i.e., < 300 traffic movements/day	Low	0.5	0.4	0.4
Commercial yard and delivery areas, non-residential car parking with frequent change (e.g., hospitals, retail), all roads except low traffic roads and trunk roads/motorways	Medium	0.7	0.6	0.7
Sites with heavy pollution (e.g., haulage yards, lorry parks, highly frequented lorry approaches to industrial estates, waste sites), sites where chemicals and fuels (other than domestic fuel oil) are to be delivered, handled, stored, used or manufactured; industrial sites; trunk roads and motorways	High	0.8	0.8	0.9

7.2.10 From Table 26.2 the following information is tabulated in Table I

Table 3: Pollution hazard index and destination of runoff for the proposed site

Table 3: Pollution Hazard Index and Destination of runoff for the proposed Site						
Land Use	Destination of Runoff	Pollution Hazard Level	Total Solids	Suspended	Metals	Hydrocarbons
Residential Roof	Ground Water	Very Low	0.2	0.2	0.2	0.05
Individual driveways, residential car parks and low traffic roads	Ground water	Low	0.5	0.4	0.4	0.4

7.2.11 The SuDS mitigation index will be obtained from Table 26.4 (for groundwater) of the SuDS manual.

Table 26.4 from SuDS manual. Indicative SuDS Mitigation Indices for discharges to ground waters.

7.2.12 SuDS mitigation index are tabulated in Table 5 as followed.

Table 26.4 Indicative SuDS mitigation indices for discharges to groundwater			
Characteristics of the material overlying the proposed infiltration surface, through which the runoff percolates	TSS	Metals	Hydrocarbons
A layer of dense vegetation underlain by a soil with good containment attenuation potential of at least 300mm in depth	0.6	0.5	0.6
A soil with good contaminant attenuation potential of at least 300mm in depth	0.4	0.3	0.3
Infiltration trench (where a suitable depth of filtration material is included that provides treatment, i.e., graded gravel with sufficient smaller particles but not single size coarse aggregate such as 20mm gravel) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth.	0.4	0.4	0.4
Constructed permeable pavement (where a suitable filtration later is included that provides treatment, and including a geotextile at the base separating the foundation from the subgrade) underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.7	0.6	0.7
Bioretention underlain by a soil with good contaminant attenuation potential of at least 300mm in depth	0.8	0.8	0.8
Proprietary treatment systems	These must demonstrate that they can address each of the contaminant types to acceptable levels for inflow concentrations relevant to the contributing drainage area		

Table 4: SuDS mitigation index

Table 4 Mitigation Indices						
Runoff Source	Destination of Runoff	Mitigation Index Source	Type of SuDS Component	Total Suspended Solids (TSS)	Metals	Hydrocarbons
Individual driveways, residential car parks and low traffic roads	Ground water	Table 26.4 (for ground waters)	Permeable Pavement	0.7	0.6	0.7

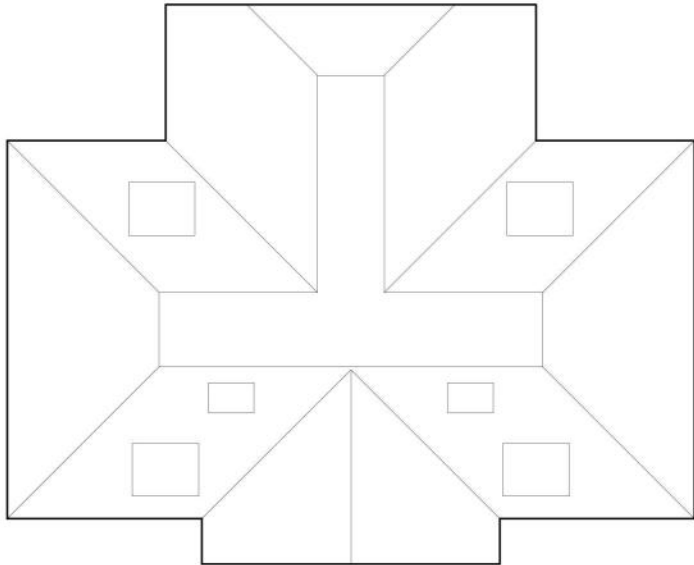
7.2.13 The above analysis demonstrates that the SuDS devices within the design will mitigate any pollution present within the surface water system.

8 Summary and Conclusions

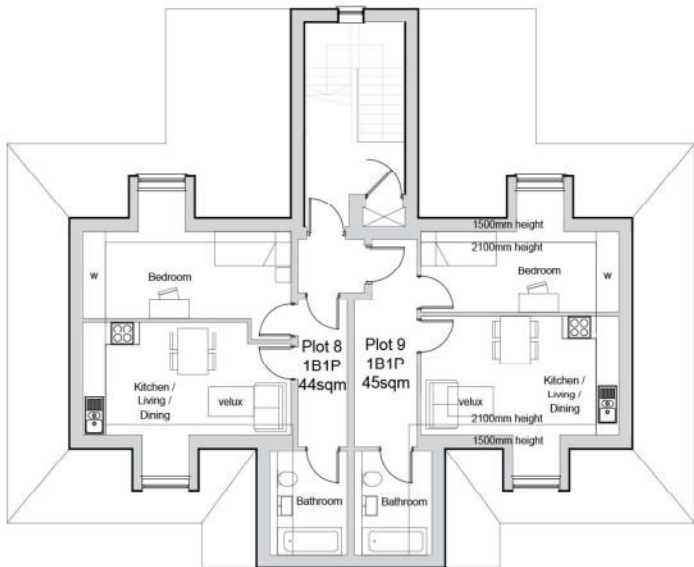
- 8.1.1 CGS Civils has been instructed to produce a Drainage statement under National Planning Policy Framework (NPPF) to support the Planning Application for a block of block of flats.
- 8.1.2 The surface water runoff from roof areas will be discharged into the ground using an underground geocellular soakaway, while all hard-paved areas will be constructed using self-draining porous paving. All features have been designed to the recorded worst-case infiltration rate and to the 1 in 100-year storm + 45% +10% urban creep.
- 8.1.3 The report has demonstrated that the proposed drainage measures ensure that suitable means of surface water drainage can be achieved for the proposed development.
- 8.1.4 A maintenance schedule has been written up for the drainage network including the SuDS features and can be found as a separate document.

9 Appendices

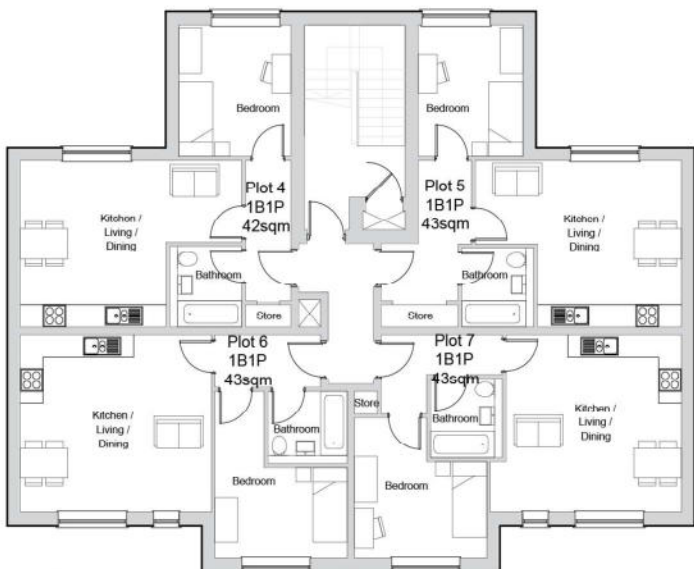
9.1 Appendix A – Site Plan



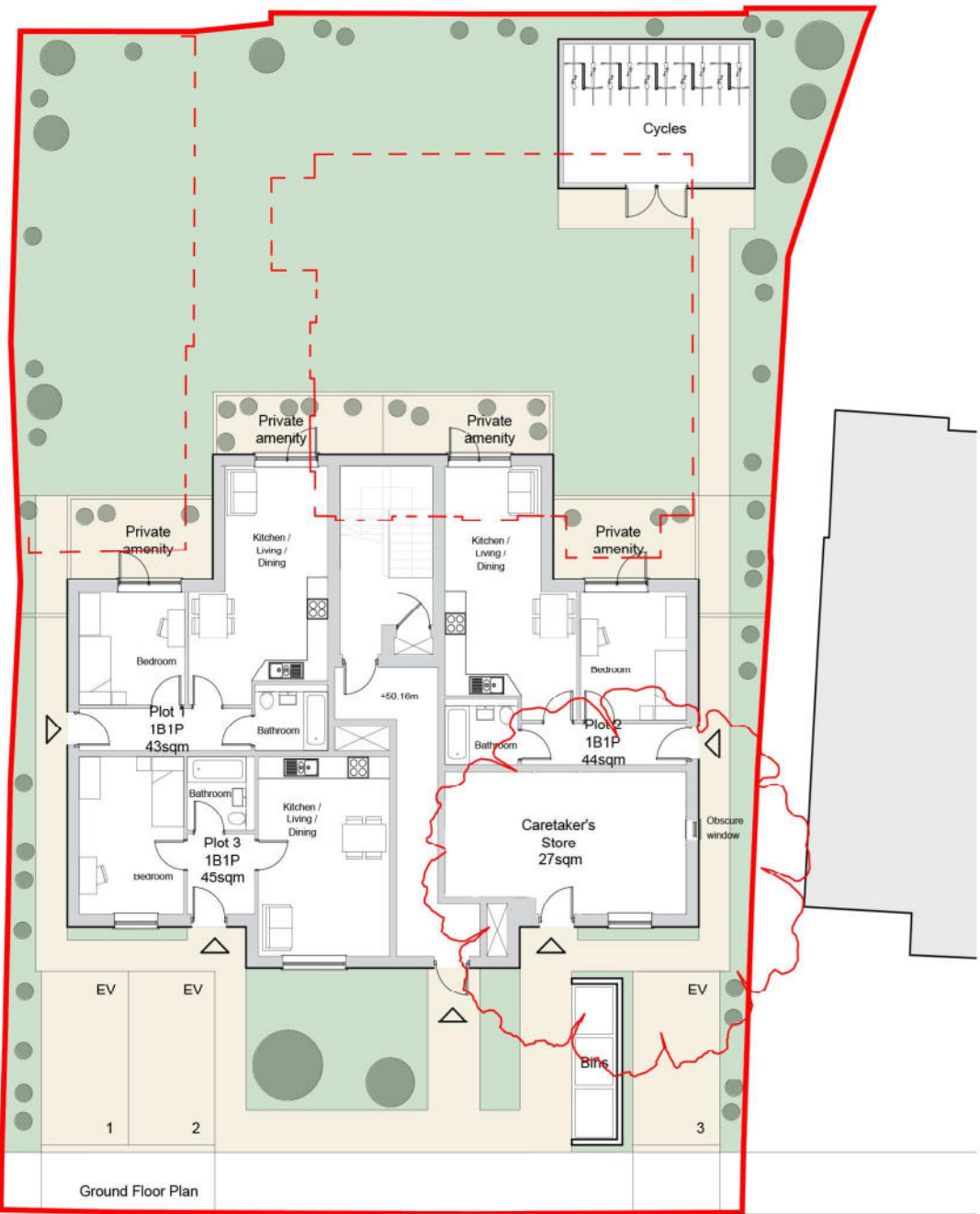
Roof Plan



Second Floor Plan



First Floor Plan



Ground Floor Plan

Key
Red Line Boundary



0m 1m 2m 5m

PROJECT
63 Annandale Avenue,
Bognor

DRAWING
Proposed Floor Plans

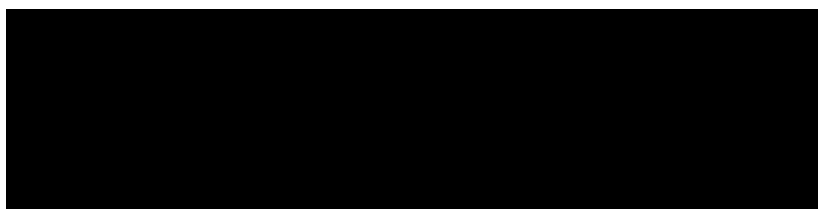
DRAWING NUMBER
ANN_PL_003

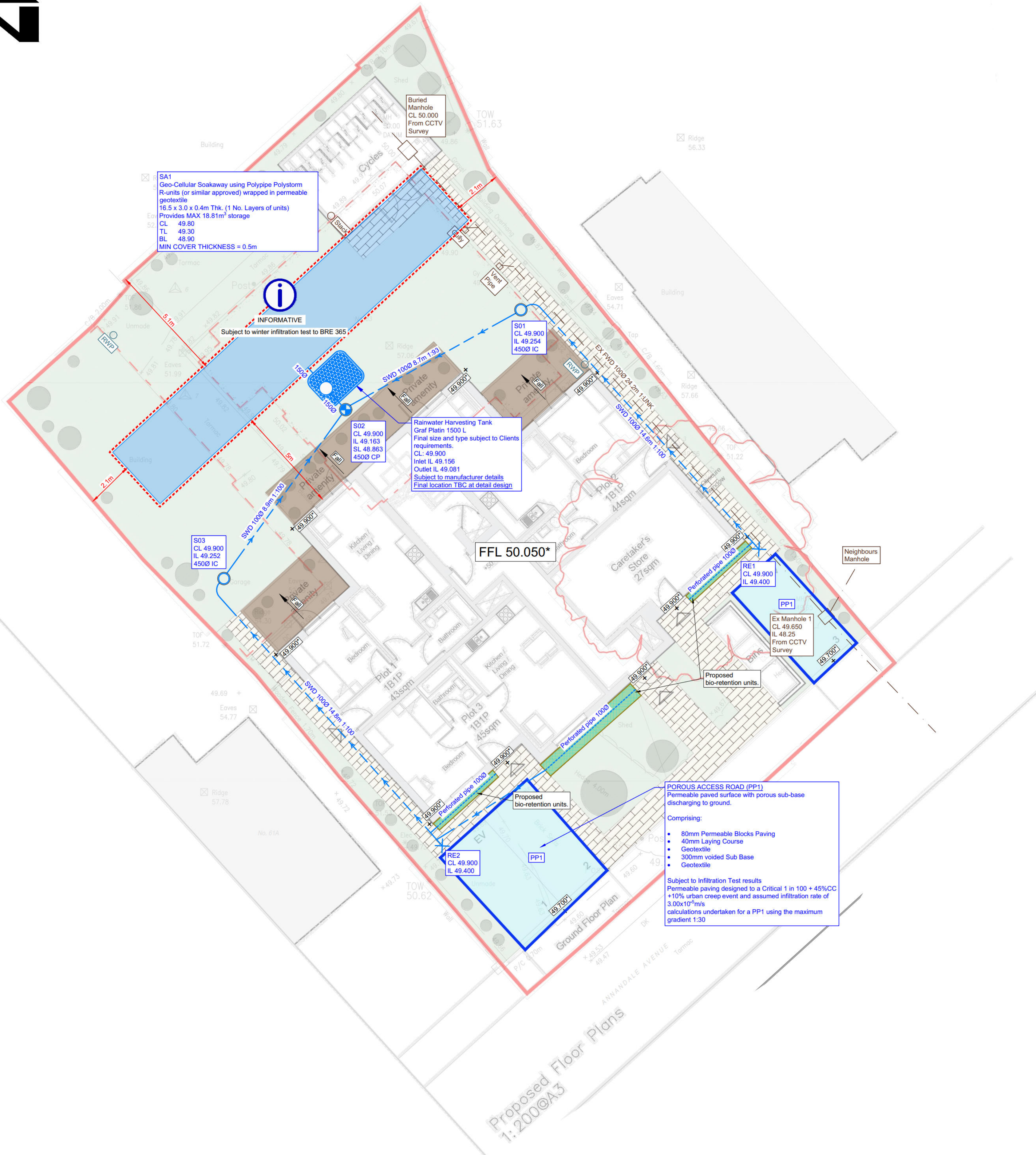
REVISION
D

SCALE
1:200@A3

DATE
19.03.26

9.2 **Appendix B – Drainage Layout**





DRAINAGE LEGEND

EXISTING FEATURES

- Ex FWD - Existing combined water sewer and manhole
- Ex SWD - Existing surface water sewer and manhole
- Existing foul/surface water sewer/drain and manhole to be abandoned
- Ex FWD - Existing private combined water drain and manhole
- Ex SWD - Existing private surface water drain and manhole

Existing foul/surface water sewer/drain and manhole as taken from Rexaus Group T/A Drain Detectives dated 09/03/2026.

PROPOSED FEATURES

- SWD - Surface Water Drainage
- Rainwater pipe
- Storm water access chamber (3000)
- Storm water inspection chamber (4500)
- Extent of permeable paving with porous sub-base
- Storm water catchpit chamber (4500)
- Storm water rodding eye
- Proposed permeable Footpath areas
- Proposed Patio areas
- Proposed Bio-Retention planters
- Proposed surface level (indicative only)
- Finished floor level (assumed)
- Pipe info - diameter, length, gradient, bedding type

ABBREVIATIONS

- MH - MANHOLE
- IC - INSPECTION CHAMBER
- AC - ACCESS CHAMBER
- CP - CATCHPIT
- BC - BRAKE CHAMBER
- RE - RODDING EYE
- IL - INVERT LEVEL
- SL - SUMP LEVEL
- RA - RESTRICTED ACCESS COVER
- CL - COVER LEVEL
- TL - TOP OF CELLULAR SA
- BL - BASE OF CELLULAR SA
- FL - FORMATION LEVEL

Site Specific Notes

- All storage volumes and flow controls are designed to the critical 1 in 100 year + 45% climate change event and 10% allowance for urban creep.
- Proposed SW drainage designed based on desktop study, available BGS Historical Borehole Logs, CCTV Survey and topographical survey information.
- All infiltration structures designed to assumed infiltration rate of 3.0x10⁻⁵m/s.
- Infiltration rate shall be confirmed through winter BRE365 infiltration testing and winter groundwater monitoring prior to detailed design.
- All infiltration structures to be located min 5m from any building and with min 500mm cover to units (see drawing for variations).
- Proposed drainage layout subject to external levels designed by others.
- *CL and IL inspection chambers indicative only.

STANDARD DRAINAGE NOTES

- DO NOT SCALE FROM THIS DRAWING. REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
- ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
- ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
- BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
- ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT. THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
- COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
- ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA.
- ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, TO BE VITRIFIED CLAY TO BS EN 295 AND BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 AND BS5911:PART 1.
- ROAD GULLY OUTLET PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
- ALL ADOPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATION LAID DOWN IN 'SEWERS FOR ADOPTION' 6th EDITION, WITH A VIEW TO ADOPTION UPON COMPLETION OF WORKS.
- ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
- THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWINGS CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
- STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
- IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
- NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
- ALL EXISTING MANHOLE COVER'S, GULLIES, ETC. ARE TO BE RAISED/LOWERED TO SUIT NEW LEVELS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT
- UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION
- PROPRIETARY PRODUCTS TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S GUIDANCE.
- MANHOLE AND CHAMBER COVER GRADES:
 - 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
 - 'B125' IN ALL DRIVEWAYS
 - 'C250' IN PRIVATE PARKING AREAS
 - 'D400' IN CARRIAGEWAY/ACCESS ROAD

Prefixed to drawing numbers shall signify the following:-

PL = PLANNING	Shall not be used for contract or construction purposes
P = PRELIMINARY	Shall not be used for contract or construction purposes
T = TENDER	Shall not be used for construction purposes
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

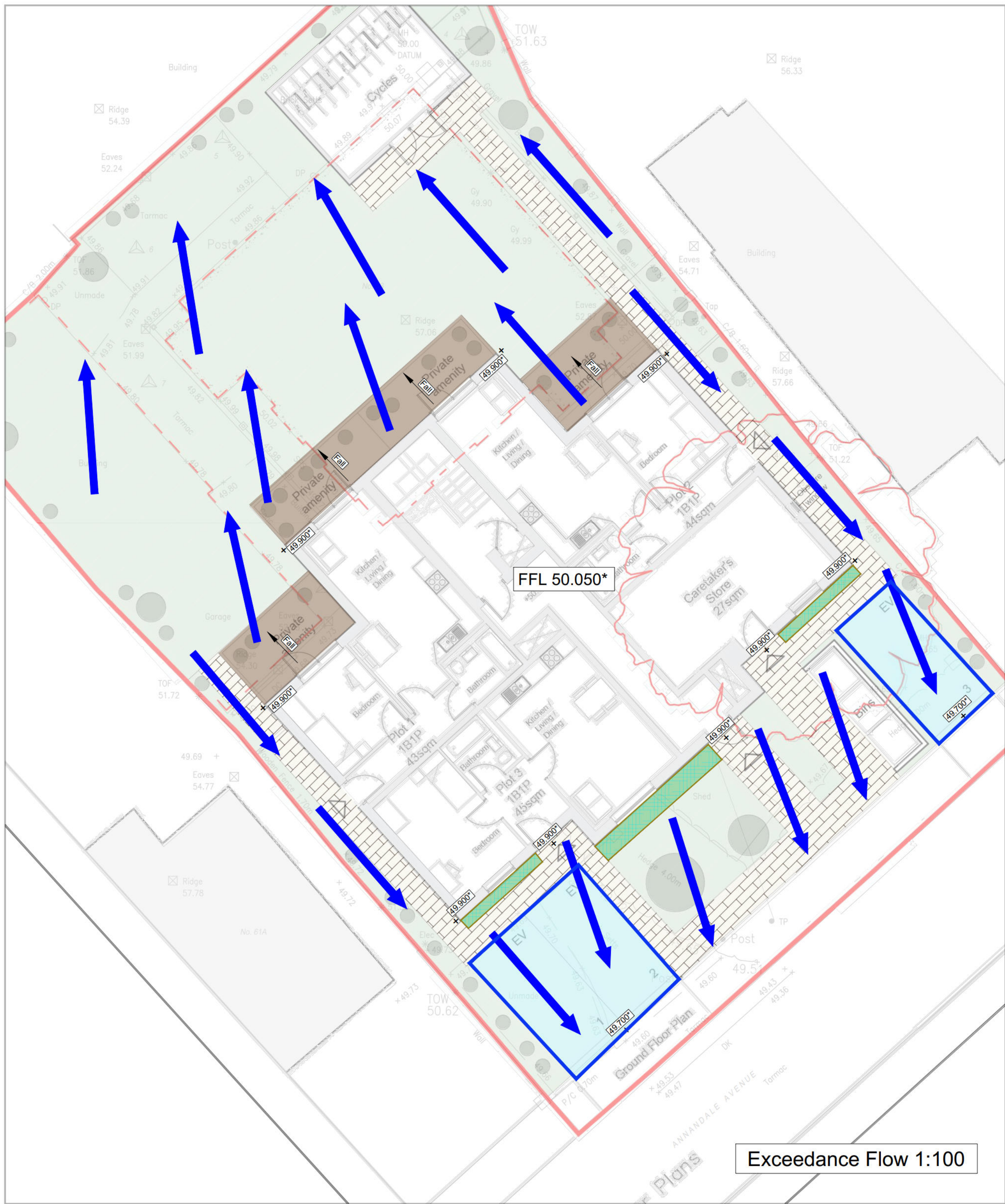
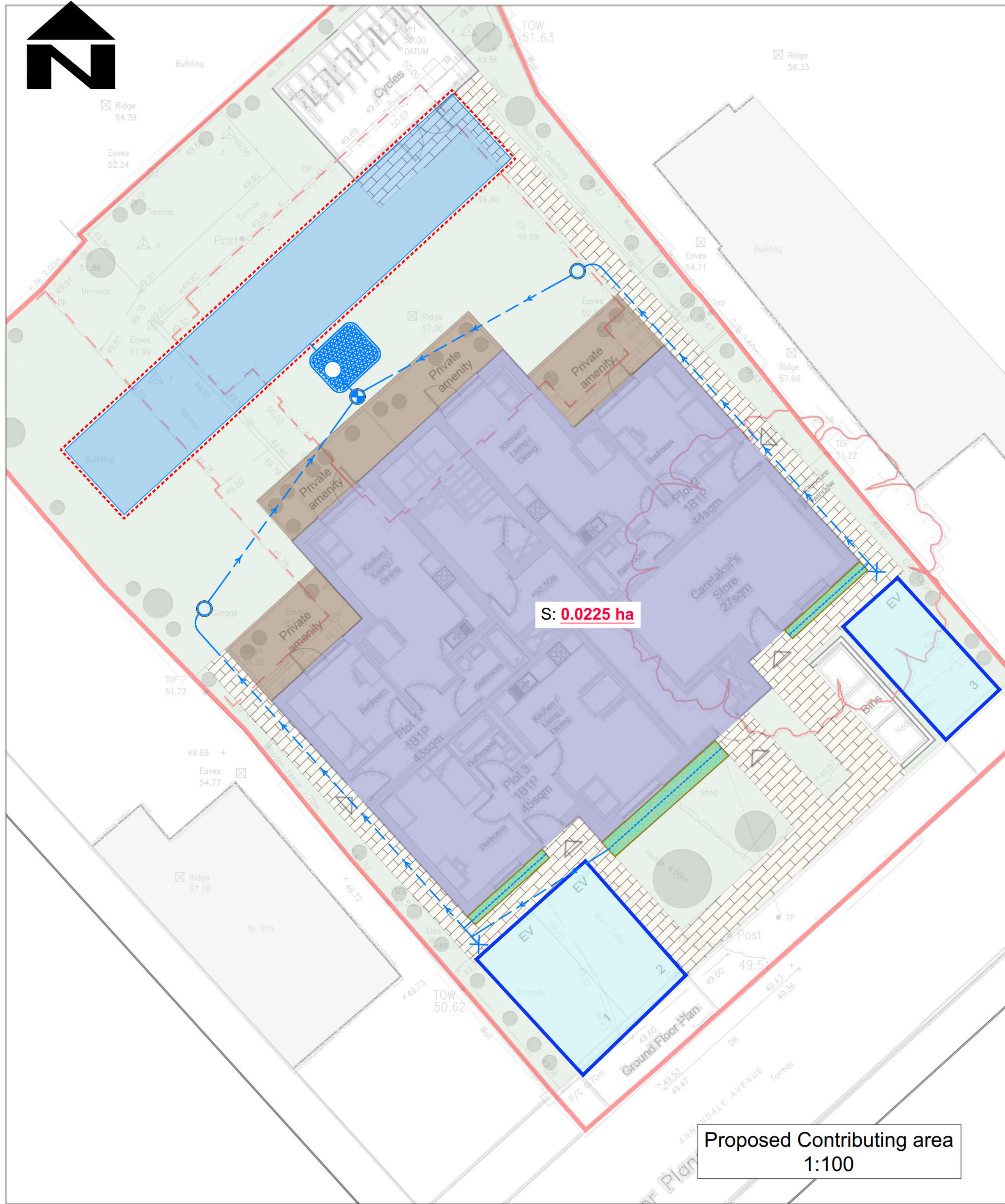
P-	19.06.26	PRELIMINARY ISSUE	KCK	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP

 Consulting Civil Engineers					
CLIENT WSX2 SPECIALIST HOUSING LTD					
ARCHITECT -					
JOB TITLE 63 ANNANDALE AVENUE, BOGNOR REGIS, PO21 2ET					
DRAWING TITLE PROPOSED SW DRAINAGE STRATEGY					
DRAWN KCK	ENGINEER CS	CHECKED CS	APPROVED CS		
DATE JUNE 2026	SCALE @ A1 1:100				
JOB No. C4138	STATUS P	DRAWING No. 101	REV. P-		

FOR PLANNING ONLY

DESIGN SUBJECT TO THE APPROVAL OF:
PLANNING AUTHORITY
BUILDING CONTROL
WATER AUTHORITY

DESIGN SUBJECT TO THE CONFIRMATION OF:
EXTERNAL LEVELS DESIGN
GROUNDWATER DEPTH
LOCATION AND DEPTH OF EXISTING UTILITIES
ROOT PROTECTION AREAS



CONTRIBUTING AREA PLAN (1:200)

- Proposed roof areas: **0.0225 ha**
- Proposed permeable areas: **0.004 ha** (included from drainage calculations)
- Proposed permeable footpath areas (excluded from drainage calculations)
- Proposed Patio areas (excluded from drainage calculations)
- Proposed Bio-Retention

BLUE ARROWS SHOW ROUTE OF EXCEEDANCE FLOWS FROM PROJECTED POINTS OF EMERGENCE TOWARDS DIRECTION OF FALL.

ALL STRUCTURES DESIGNED TO ACCOMMODATE BELOW GROUND THE CRITICAL 1 IN 100 YEAR STORM EVENT PLUS 45% EXCEEDANCE WOULD ONLY OCCUR IN STORMS OF GREATER INTENSITY THAN THIS.

- STANDARD DRAINAGE NOTES
- DO NOT SCALE FROM THIS DRAWING. REFER TO FIGURED DIMENSIONS ONLY. THE CONTRACTOR SHOULD CHECK ALL DIMENSIONS ON SITE.
 - ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS ARE IN METERS UNLESS NOTED OTHERWISE.
 - THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECT AND ENGINEERING DETAILS, DRAWINGS AND SPECIFICATIONS.
 - ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT AND/OR ENGINEER IMMEDIATELY, SO THAT CLARIFICATION CAN BE SOUGHT PRIOR TO THE COMMENCEMENT OF WORK.
 - BEFORE COMMENCING CONSTRUCTION THE CONTRACTOR MUST CHECK THE INVERT LEVELS OF EXISTING SEWERS TO WHICH CONNECTIONS ARE MADE. IN ADDITION THE CONTRACTOR MUST LOCATE AND DETERMINE INVERT LEVELS OF THE EXISTING SPURS TO WHICH CONNECTIONS ARE PROPOSED. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER IMMEDIATELY, PRIOR TO CONSTRUCTION.
 - ALL DRAINAGE WORKS SHOULD COMMENCE AT THE PROPOSED DOWNSTREAM CONNECTION POINT. THE WORKS CONTINUING UPSTREAM FOLLOWING CONFIRMATION OF THE TIE-IN INVERT LEVELS TO THE ENGINEER. CONNECTIONS TO MANHOLES OR LARGER SIZED PIPES ETC. SHOULD BE SOFFIT TO SOFFIT UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, IF THIS IS NOT POSSIBLE INFORM THE ENGINEER IMMEDIATELY.
 - COVER LEVELS SHOWN ARE APPROXIMATE. COVERS AND FRAMES SHALL BE SET TO FINISHED GROUND LEVELS AND FALLS.
 - ALL UN-REFERENCED PIPES ARE TO BE 100mm DIA.
 - ALL PIPES TO BE ADOPTED, OR CONNECTING TO ADOPTED SEWERS, TO BE VITRIFIED CLAY TO BS EN 295 AND BS65 (SWS ONLY), OR CONCRETE PIPES TO BE EN 1916 AND BS5911-PART 1.
 - ROAD GULLY OUTLET PIPES ARE TO BE 150mm DIA. WITH CONCRETE SURROUND AND FLEXIBLE JOINTS. ALL GULLIES SHALL BE FITTED WITH GRADE D400 GRATINGS AND FRAMES TO BS EN124, UNLESS OTHERWISE STATED.
 - ALL ADOPTABLE SEWERS SHALL BE CONSTRUCTED TO THE STANDARDS AND SPECIFICATION LAID DOWN DOWN IN 'SEWERS FOR ADOPTION' 6th EDITION, WITH A VIEW TO ADOPTION UPON COMPLETION OF WORKS.
 - ALL PRIVATE DRAINAGE TO BE IN ACCORDANCE WITH THE BUILDING REGULATIONS APPROVED DOCUMENT PART-H, AND TO THE SATISFACTION OF THE BUILDING CONTROL INSPECTOR.
 - THE CONTRACTOR IS TO KEEP A RECORD OF ANY VARIATIONS MADE ON SITE, INCLUDING THE RELOCATION OF SEWERS OR DRAINS, SO THAT AN AS CONSTRUCTED DRAWING CAN BE PREPARED UPON COMPLETION OF THE PROJECT.
 - STUB CONNECTIONS TO ADOPTABLE MANHOLES SHALL BE MADE FROM VITRIFIED CLAY AND CONSIST OF TWO ROCKER PIPES LAID AT THE SAME GRADIENT AS THE UP OR DOWNSTREAM PIPE.
 - IF ANY SUB SOIL DRAINAGE SYSTEMS ARE UNCOVERED DURING THE WORKS CONTACT THE ENGINEER FOR INSTRUCTIONS. SUB SOIL DRAINS ARE TO BE DIVERTED AROUND NEW WORKS AND CONNECTED INTO THE SURFACE WATER.
 - NO PRIVATE AREAS ARE TO DRAIN ONTO ADOPTABLE AREAS AND VICE VERSA.
 - ALL EXISTING MANHOLE COVER, GULLIES, ETC. ARE TO BE RAISED/LOWERED TO SUIT NEW LEVELS.
 - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONFIRM THE LOCATION AND DEPTH OF ALL EXISTING SERVICES AND UTILITIES THAT MAY BE PRESENT.
 - UPON COMPLETION BUT PRIOR TO HANDOVER, CONTRACTOR TO CARRY OUT FULL CCTV SURVEY OF DRAINAGE SYSTEM WHICH IS TO BE REVIEWED BY ENGINEER TO ENSURE SATISFACTORY INSTALLATION.
 - PROPRIETARY PRODUCTS TO BE INSTALLED IN FULL ACCORDANCE WITH MANUFACTURER'S GUIDANCE.
 - MANHOLE AND CHAMBER COVER GRADES:
 - 'A15' IN ALL LANDSCAPED AREAS AND ON FOOTPATHS
 - 'B125' IN ALL DRIVEWAYS
 - 'C250' IN PRIVATE PARKING AREAS
 - 'D400' IN CARRIAGEWAY/ACCESS ROAD

Prefix to drawing numbers shall signify the following:-

PL = PLANNING	Shall not be used for contract or construction purposes
P = PRELIMINARY	Shall not be used for contract or construction purposes
T = TENDER	Shall not be used for construction purposes
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

P-	19.06.26	PRELIMINARY ISSUE	KCK	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP

 Consulting Civil Engineers				
CLIENT WSX2 SPECIALIST HOUSING LTD				
ARCHITECT -				
JOB TITLE 63 ANNANDALE AVENUE, BOGNOR REGIS, PO21 2ET				
DRAWING TITLE PROPOSED CONTRIBUTING AREA AND ECEEDANCE FLOWS				
DRAWN KCK	ENGINEER CS	CHECKED CS	APPROVED CS	
DATE JUNE 2026		SCALE @ A1 1:100		
JOB No. C4138	STATUS P	DRAWING No. 201		REV. P-

FOR PLANNING ONLY

FIGURE B 23
TYPICAL INSPECTION CHAMBER DETAIL - TYPE E

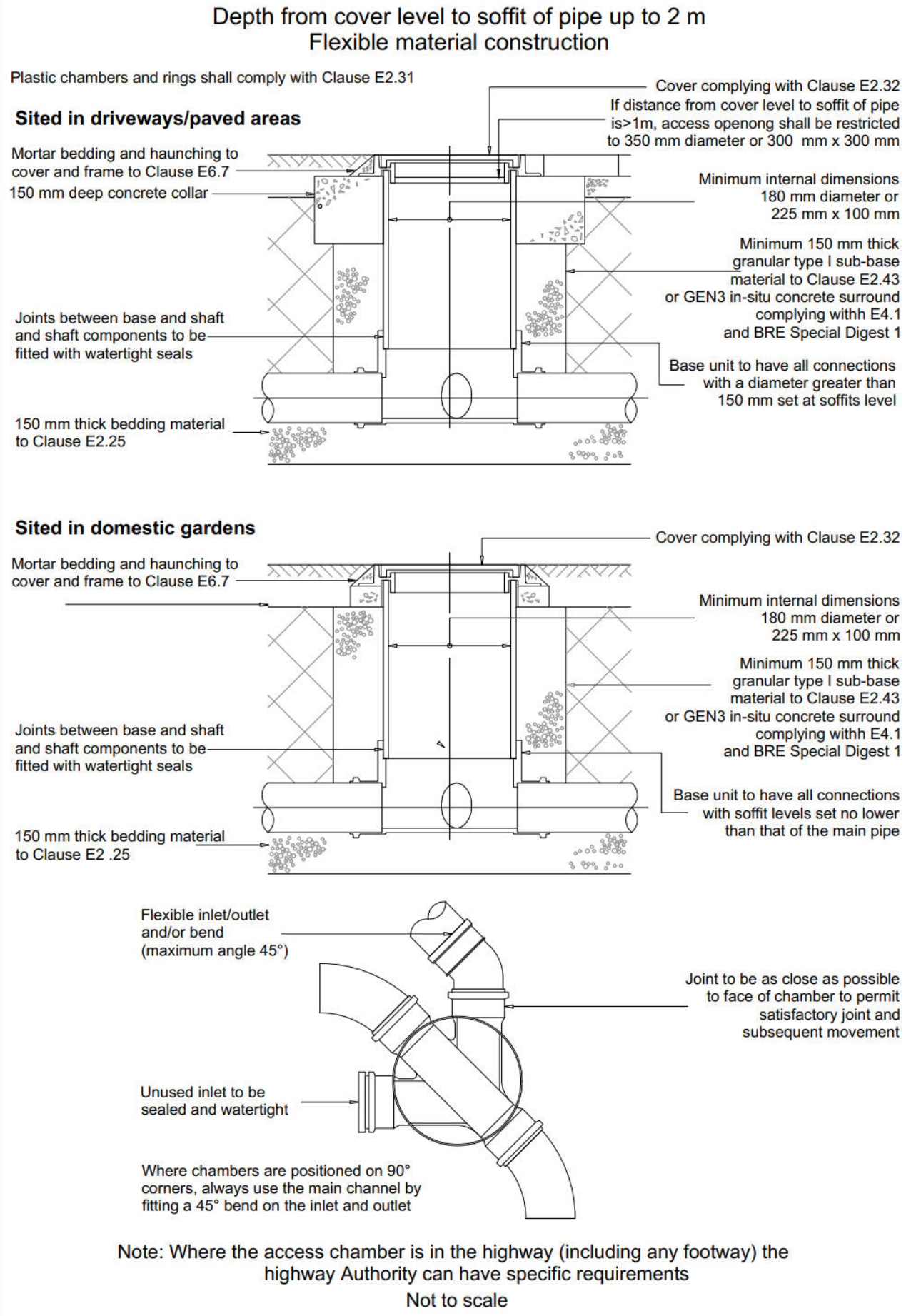
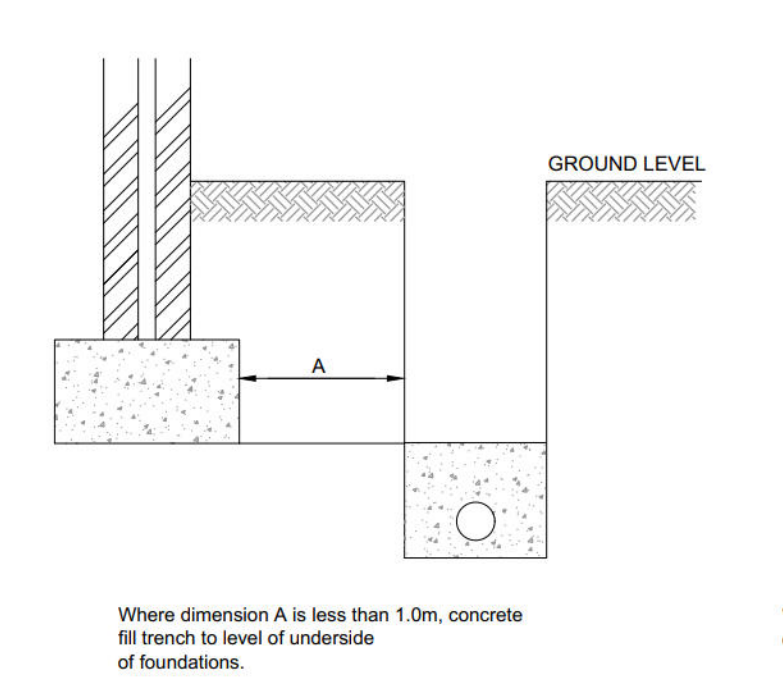
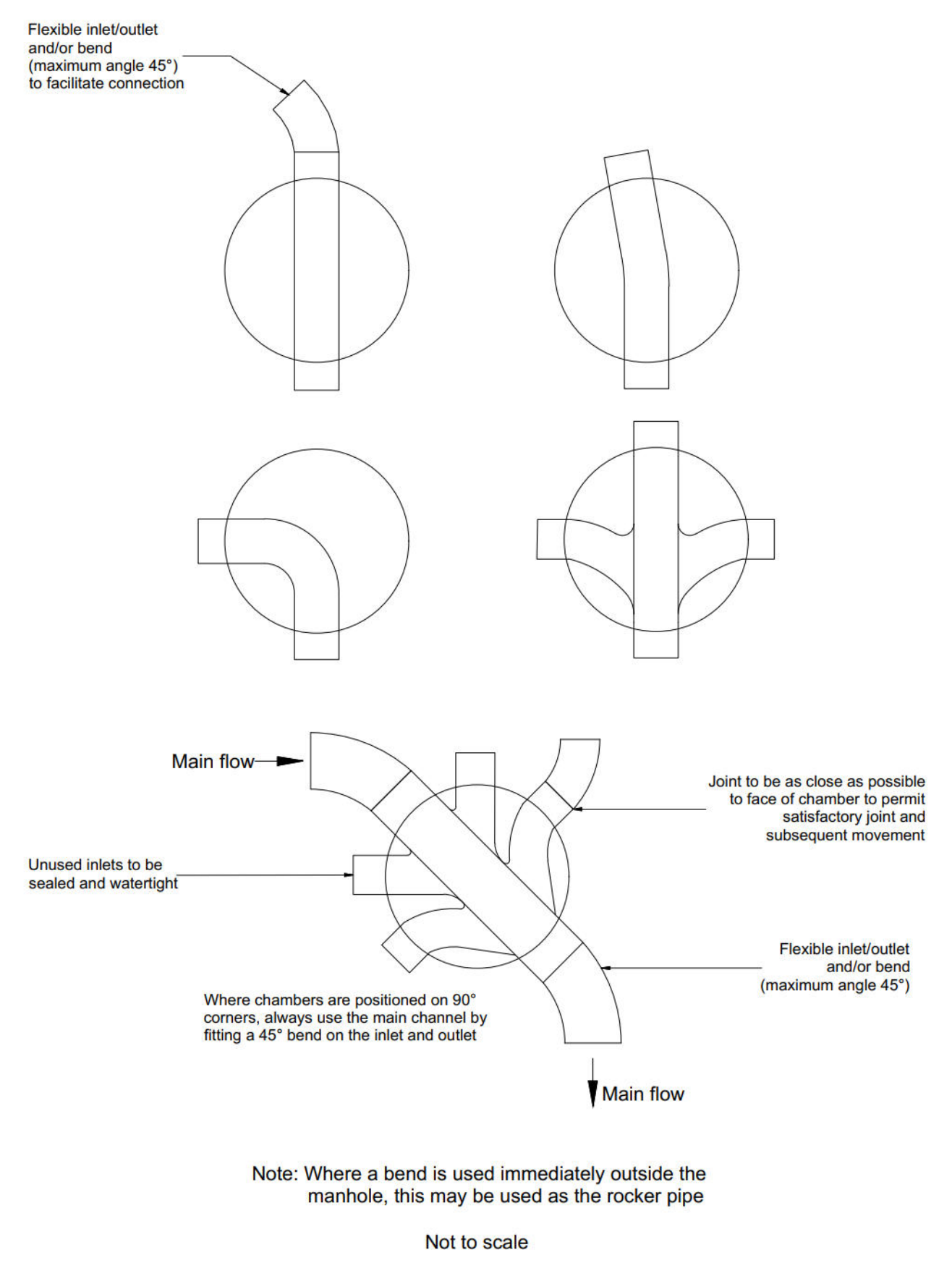
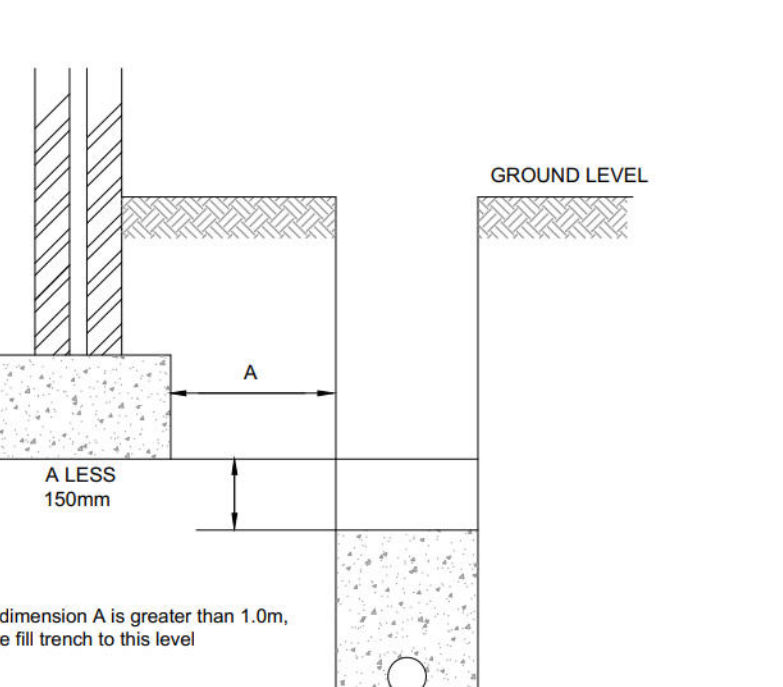
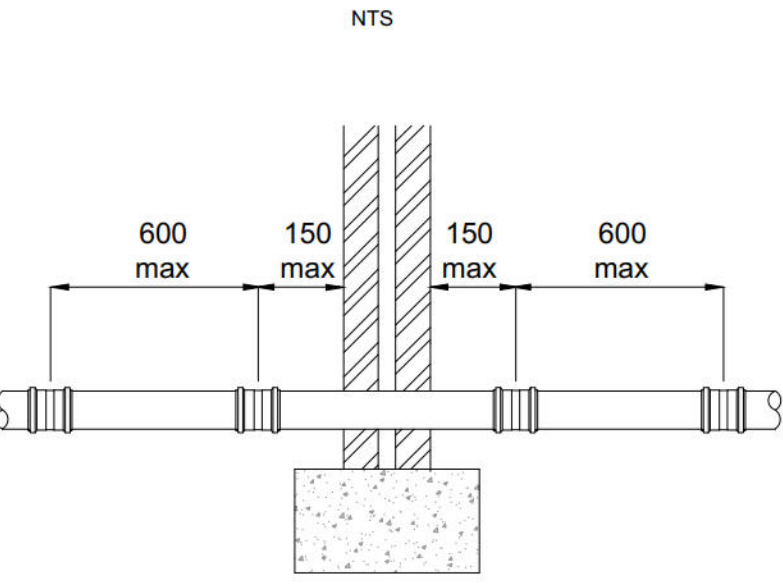


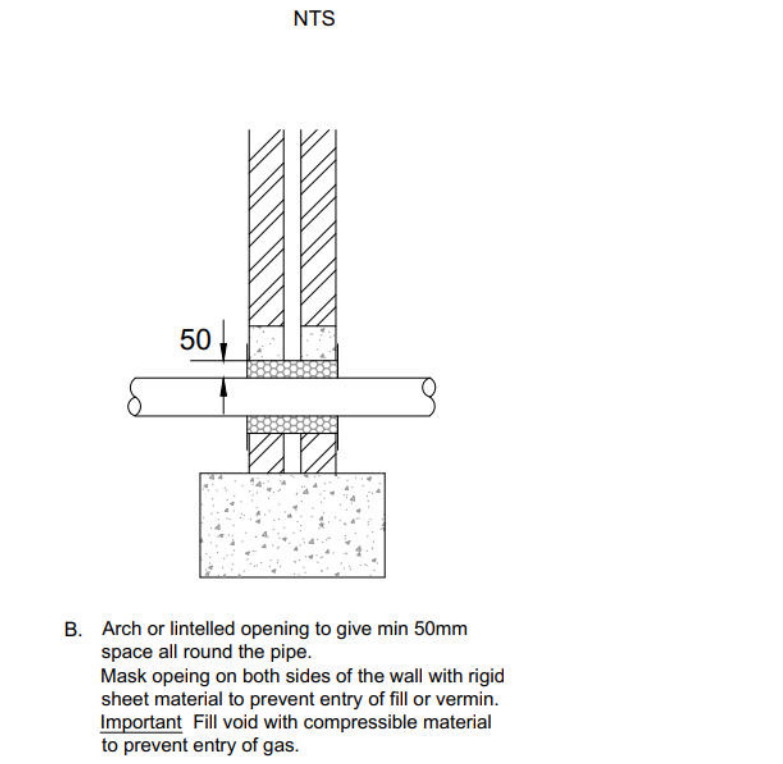
FIGURE B 22
TYPICAL BASE LAYOUTS FOR TYPE D CHAMBERS



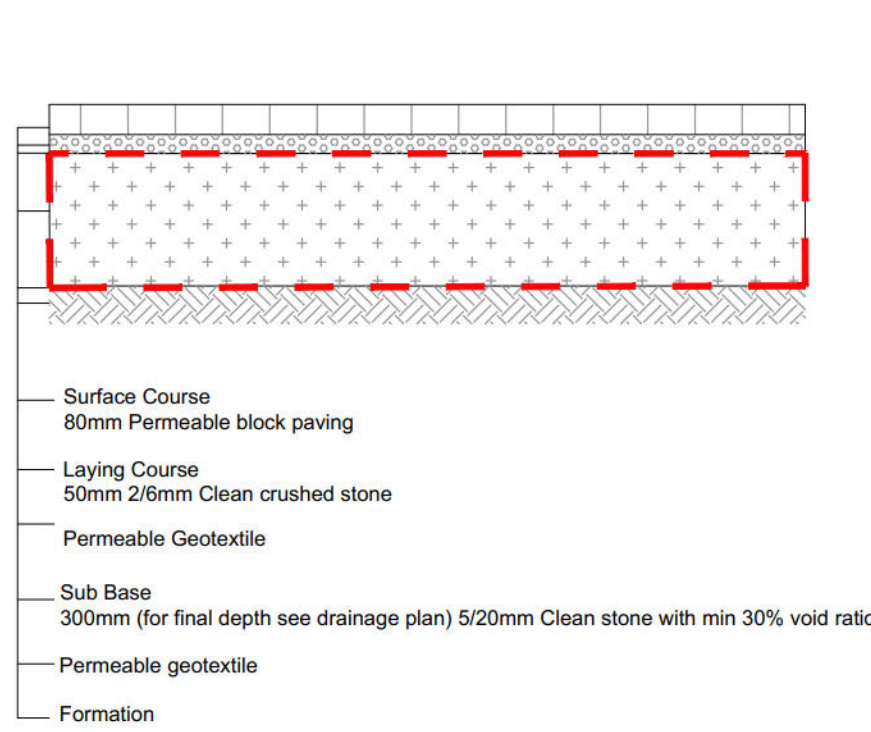
Pipes near buildings



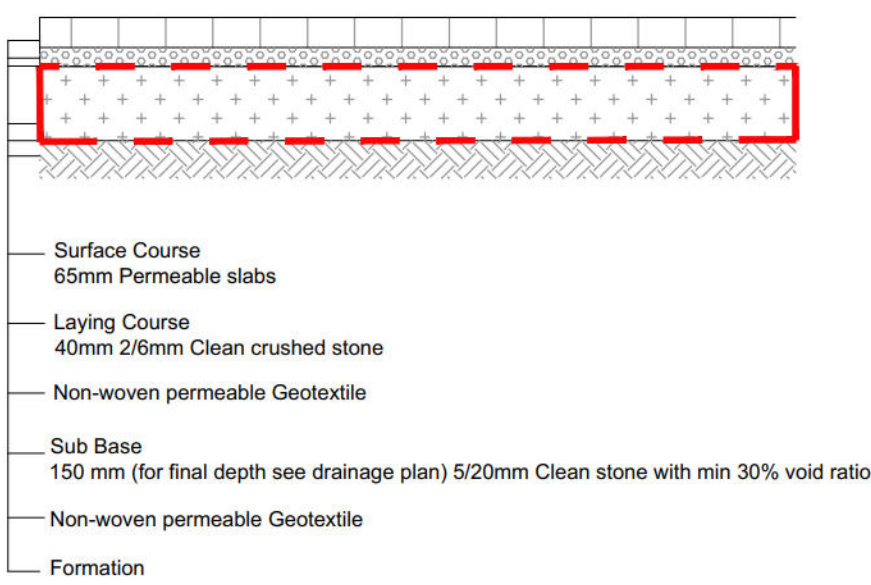
Pipes near buildings



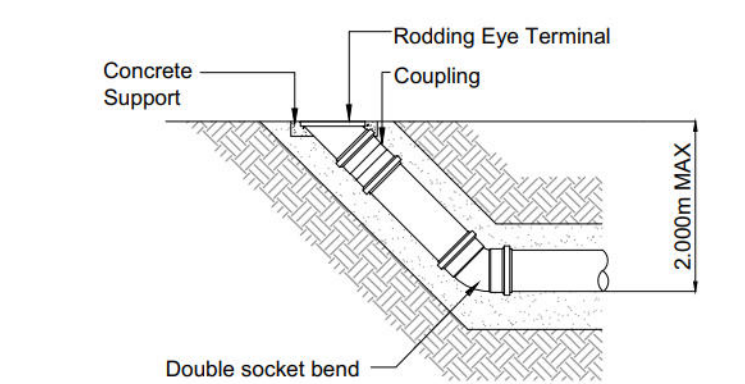
Pipes through wall detail



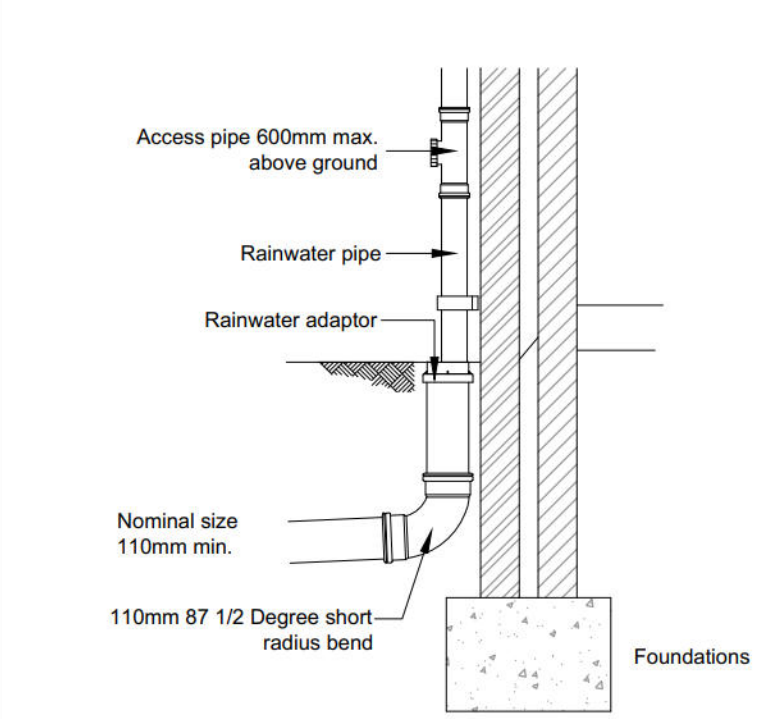
Proposed Permeable block paving
Driveway Construction
(Design based on assumed CBR > 3%)
(Final subbase depth subject to CBR test)



PP2
Proposed Permeable patio paving
Construction
(Design based on assumed CBR > 3%)
(Final subbase depth subject to CBR test)

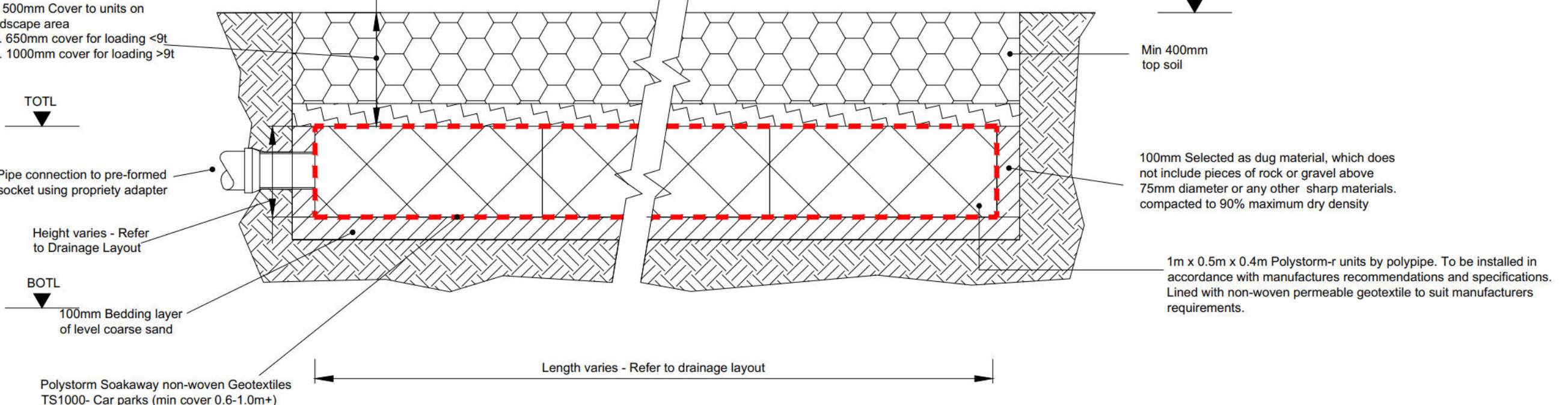


Rodding eye detail



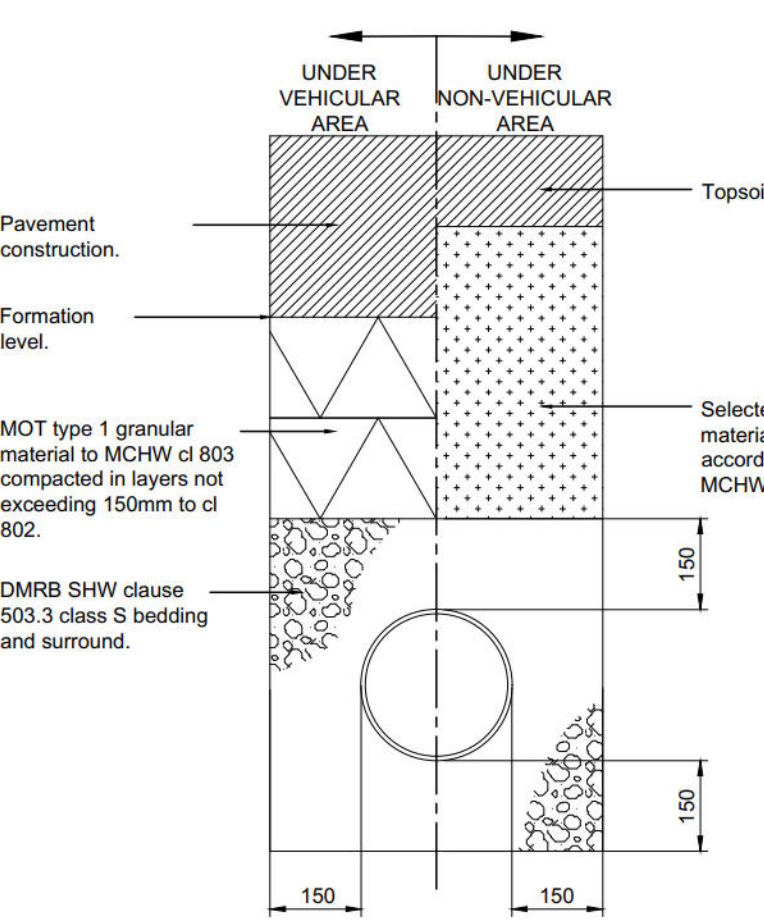
External Rainwater
Pipe to Drain

1:20

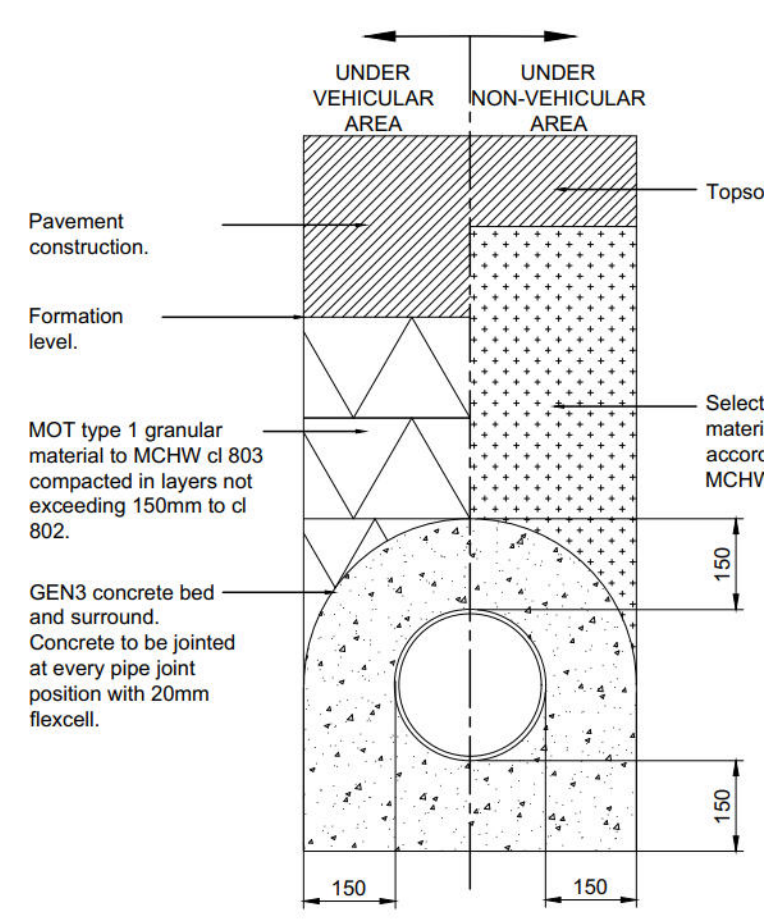


Trench soakaway using Polystorm-R Geomodular units

All storage tank drainage works shall be carried out in accordance with the specifications, method statements and recommendations of Polypipe

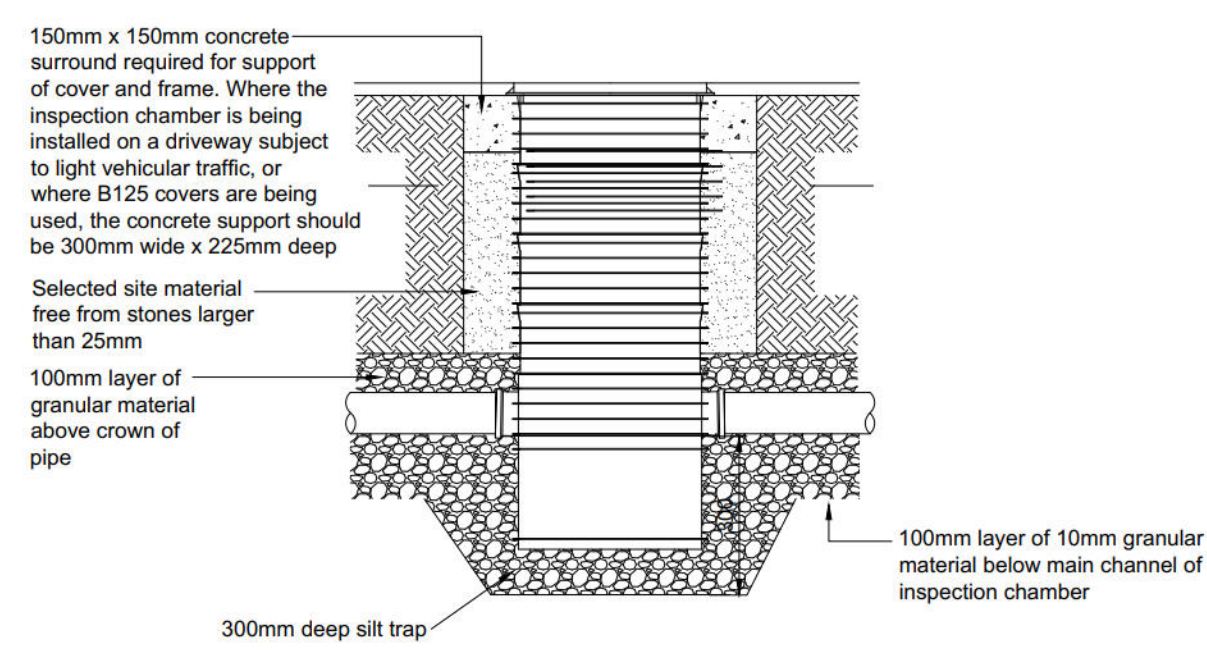


Class S granular pipe bed and surround
To be used for plastic, vitrified and concrete pipework where cover to crown is greater than 900mm.



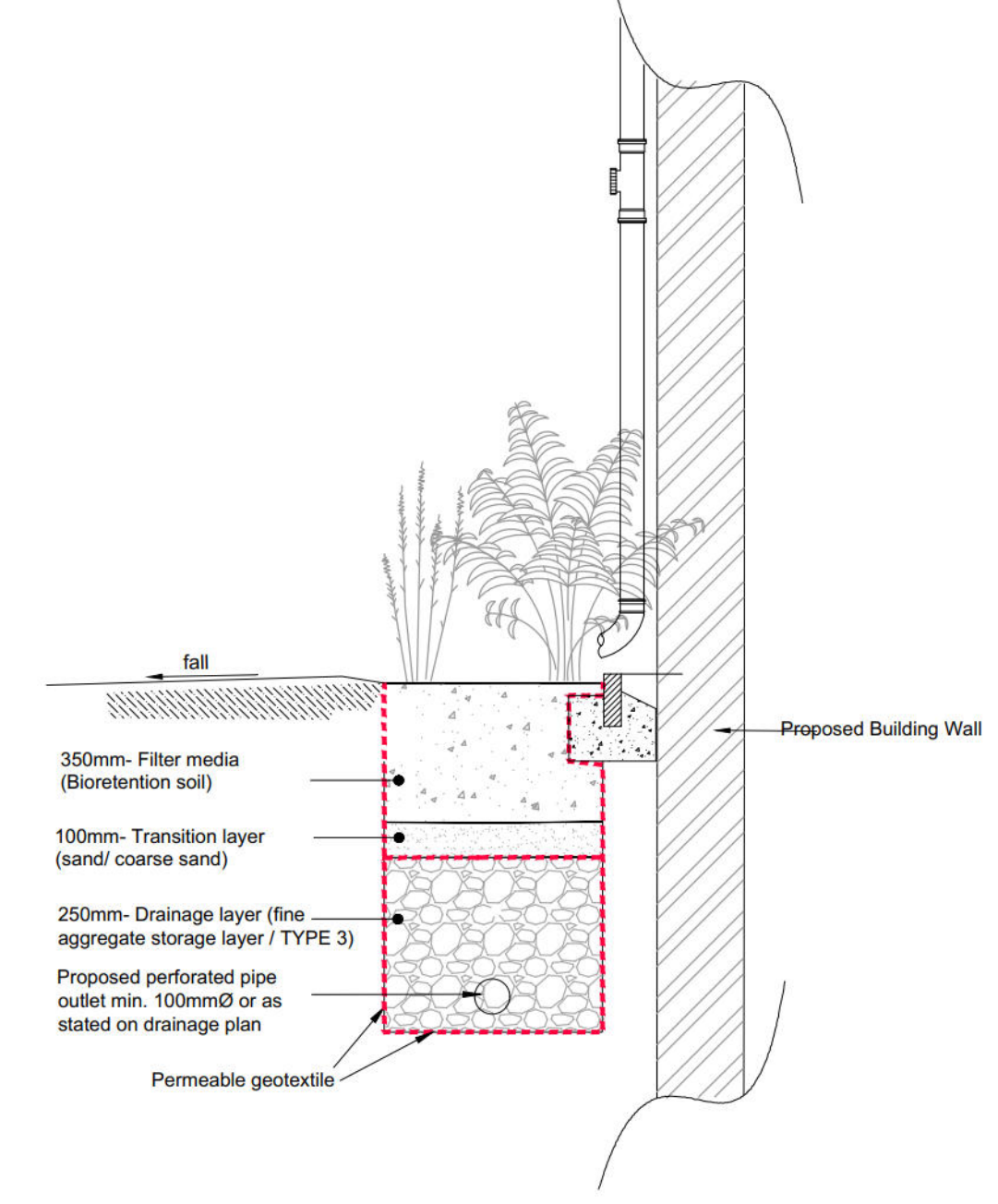
Class Z concrete pipe bed and surround
To be used for plastic, vitrified and concrete pipework where cover to crown is less than 900mm.

Pipe Bedding Details



460mmØ Polypipe basic silt trap detail

SCALE 1:20



Proposed Bio-retention Unit
Typical Detail
(Scale 1:20)

Prefix to drawing numbers shall signify the following:-

PL = PLANNING	Shall not be used for contract or construction purposes
P = PRELIMINARY	Shall not be used for contract or construction purposes
T = TENDER	Shall not be used for construction purposes
C = CONSTRUCTION	These are the only drawings that shall be used for construction purposes
R = RECORD	Record of actual completed work

P-	19.06.26	PRELIMINARY ISSUE	KCK	CS	CS
REV	DATE	DESCRIPTION	BY	CHK	APP
 Consulting Civil Engineers					
CLIENT WSX2 SPECIALIST HOUSING LTD					
ARCHITECT -					
JOB TITLE 63 ANNANDALE AVENUE, BOGNOR REGIS, PO21 2ET					
DRAWING TITLE PROPOSED TYPICAL CONSTRUCTION DETAILS					
DRAWN KCK	ENGINEER CS	CHECKED CS	APPROVED CS		
DATE JUNE 2026	SCALE @ A1 AS SHOWN				
JOB No: C4138	STATUS P	DRAWING No: 501	REV. P-		

FOR PLANNING ONLY

Project

Project Name: 63 Annandale Avenue PO21 2ET
Project Description: General CCTV - Condition Check
Project Number: JSD9596
Project Status: Complete
Project Date: 09/03/2026
Inspection Standard: MSCC4 Sewers & Drainage GB (SRM4 Scoring)



Scoring Summary

Project Name
63 Annandale Avenue PO21 2ET

Project Number
JSD9596

Project Date
09/03/2026

Structural Defects

- Grade 3: Best practice suggests consideration should be given to repairs in the medium term.
- Grade 4: Best practice suggests consideration should be given to repairs to avoid a potential collapse.
- Grade 5: Best practice suggests that this pipe is at risk of collapse at any time. Urgent consideration should be given to repairs to avoid total failure.

Section	PLR	Grade	Description
2	NEIGH MHX	3	Deformed drain or sewer, 20%

Service / Operational Condition

- Grade 3: Best practice suggests consideration should be given to maintenance activities in the medium term.
- Grade 4: Best practice suggests consideration should be given to maintenance activity to avoid potential blockages.
- Grade 5: Best practice suggests that this pipe is at a high risk of backing up or causing flooding.

Section	PLR	Grade	Description
1	UNKNOWNX	4	Settled deposits, coarse, 50% cross-sectional area loss
2	NEIGH MHX	3	Roots, mass at joint, 15% cross-sectional area loss
3	MH1X	5	Roots, mass at joint, 80% cross-sectional area loss

Abandoned Surveys

Section	PLR	Description
1	UNKNOWNX	Survey abandoned

Information

These scoring summaries are based on the SRM grading from the WRc.

Project Pictures

Project Name	Project Number	Project Date
63 Annandale Avenue PO21 2ET	JSD9596	09/03/2026



1

Defect Grade Description (Section)

Project Name 63 Annandale Avenue PO21 2ET	Project Number JSD9596	Project Date 09/03/2026
---	----------------------------------	-----------------------------------

1:	Brick: Minor structural defects. Other: Minor structural defects, i.e. open or displaced joints without additional characteristics. Acceptable structural condition.
2:	Brick: Circumferential cracking. Single longitudinal crack. Surface mortar loss (depth missing < 15 mm). Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). Other: Circumferential cracking. Surface damage - spalling slight (breaking away of small fragments from the surface). Surface damage - wear slight (increased roughness). Minimal collapse likelihood in the short term but potential for further deterioration.
3:	Brick: Total mortar loss (depth missing > 50 mm) without other defects. More than one longitudinal crack (at a single location). Multiple cracking. Single bricks displaced. Deformation < 5%, no fracture and only moderate mortar loss. Surface damage - spalling medium (large areas of chipped brick). Surface damage - wear medium (entire surface of brick is missing). Other: Fracture with no deformation or deformation < 5%. Longitudinal cracking or multiple cracking. Minor loss of level. Severe joint defects i.e. Surface damage - spalling medium. Surface damage - wear medium. Collapse unlikely in the near future but further deterioration likely
4:	Brick: Total mortar loss (depth missing > 50mm) with deformation > 10%; deformation up to 10% and fractured; displaced or hanging brickwork; small number of missing bricks; dropped invert (drop > 20mm); moderate loss of level; surface damage - large spalling (entire surface of brick is missing); surface damage - large wear (entire surface of brick is missing). Other: Broken; deformation up to 10% and broken; fracture with deformation 5-10%; multiple fractures; serious loss of level; serious joint defects with voids or soil visible (open joint with > 50mm soil or void visible or joint displacement > 25% of diameter); surface damage - entire area of pipe surface is missing or severely worn. Collapse likely in the foreseeable future
5:	Brick: Already collapsed; missing Invert; deformation > 10% and fractured; displaced or hanging brickwork and deformation < 10%; extensive areas of missing brickwork. Other: Already collapsed; deformation > 10% and broken; extensive areas of pipe fabric missing; fractures with deformation > 10% Collapsed or collapse imminent



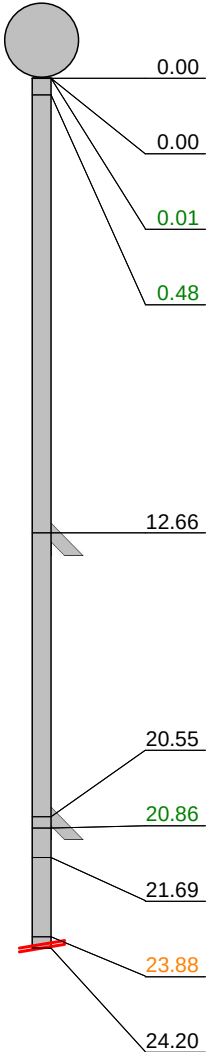
Section Inspection - 24/02/2026 - UNKNOWNX

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
1	1	24/02/26	11:36	JSD9596	No Rain Or Snow	No	UNKNOWNX
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
Dan		LV67 HKJ		Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Bognor Regis	Inspection Direction:	Upstream	Upstream Node:	UNKNOWN
Road:	63 Annandale Avenue	Inspected Length:	24.20 m	Upstream Pipe Depth:	0.000 m
Location:	Gardens	Total Length:	24.20 m	Downstream Node:	MH1
Surface Type:		Joint Length:		Downstream Pipe Depth:	1.440 m
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection of condition		Lining Material:	No Lining	

Comments:

Recommendations:

Scale:	1:210	Position [m]	Code	Observation	MPEG	Photo	Grade																																																												
Depth: 1.44 m MH1  <table><tr><td>0.00</td><td>MH</td><td>Start node, manhole, reference: MANHOLE 1 (MH1)</td><td>00:00:09</td><td>UNKNOWN NX_3b2c1061-6c95-</td><td></td></tr><tr><td>0.00</td><td>WL</td><td>Water level, 0% of the vertical dimension</td><td>00:00:09</td><td>UNKNOWN NX_45a1e1be-29f3-4</td><td></td></tr><tr><td>0.01</td><td>RF</td><td>Roots, fine</td><td>00:00:09</td><td>UNKNOWN NX_2971a787-41ec-</td><td>2</td></tr><tr><td>0.48</td><td>RFJ</td><td>Roots, fine at joint</td><td>00:00:22</td><td>UNKNOWN NX_96da4866-93d6-</td><td>2</td></tr><tr><td>12.66</td><td>JN</td><td>Junction at 9 o'clock, diameter: 100mm</td><td>00:01:35</td><td>UNKNOWN NX_2e3493d6-f1b9-4</td><td></td></tr><tr><td>20.55</td><td>JXD</td><td>Defective junction, damaged at 9 o'clock, diameter: 100mm: CRACKED & ROOT INFILTRATED</td><td>00:02:09</td><td>UNKNOWN NX_8ab6bb7f-afb5-4</td><td></td></tr><tr><td>20.86</td><td>RFJ</td><td>Roots, fine at joint</td><td>00:02:26</td><td>UNKNOWN NX_01b833da-1af9-4</td><td>2</td></tr><tr><td>21.69</td><td>REM</td><td>General remark: **ENTERS BURIED MANHOLE**</td><td>00:02:35</td><td>UNKNOWN NX_93352ea6-d9c8-</td><td></td></tr><tr><td>23.88</td><td>DER</td><td>Settled deposits, coarse, 50% cross-sectional area loss</td><td>00:02:53</td><td>UNKNOWN NX_ee8bb757-b272-</td><td>4</td></tr><tr><td>24.20</td><td>SA</td><td>Survey abandoned: S/A - UNABLE TO PASS DEBRIS</td><td>00:02:56</td><td>UNKNOWN NX_c0d73047-4b10-</td><td></td></tr></table>								0.00	MH	Start node, manhole, reference: MANHOLE 1 (MH1)	00:00:09	UNKNOWN NX_3b2c1061-6c95-		0.00	WL	Water level, 0% of the vertical dimension	00:00:09	UNKNOWN NX_45a1e1be-29f3-4		0.01	RF	Roots, fine	00:00:09	UNKNOWN NX_2971a787-41ec-	2	0.48	RFJ	Roots, fine at joint	00:00:22	UNKNOWN NX_96da4866-93d6-	2	12.66	JN	Junction at 9 o'clock, diameter: 100mm	00:01:35	UNKNOWN NX_2e3493d6-f1b9-4		20.55	JXD	Defective junction, damaged at 9 o'clock, diameter: 100mm: CRACKED & ROOT INFILTRATED	00:02:09	UNKNOWN NX_8ab6bb7f-afb5-4		20.86	RFJ	Roots, fine at joint	00:02:26	UNKNOWN NX_01b833da-1af9-4	2	21.69	REM	General remark: **ENTERS BURIED MANHOLE**	00:02:35	UNKNOWN NX_93352ea6-d9c8-		23.88	DER	Settled deposits, coarse, 50% cross-sectional area loss	00:02:53	UNKNOWN NX_ee8bb757-b272-	4	24.20	SA	Survey abandoned: S/A - UNABLE TO PASS DEBRIS	00:02:56	UNKNOWN NX_c0d73047-4b10-	
0.00	MH	Start node, manhole, reference: MANHOLE 1 (MH1)	00:00:09	UNKNOWN NX_3b2c1061-6c95-																																																															
0.00	WL	Water level, 0% of the vertical dimension	00:00:09	UNKNOWN NX_45a1e1be-29f3-4																																																															
0.01	RF	Roots, fine	00:00:09	UNKNOWN NX_2971a787-41ec-	2																																																														
0.48	RFJ	Roots, fine at joint	00:00:22	UNKNOWN NX_96da4866-93d6-	2																																																														
12.66	JN	Junction at 9 o'clock, diameter: 100mm	00:01:35	UNKNOWN NX_2e3493d6-f1b9-4																																																															
20.55	JXD	Defective junction, damaged at 9 o'clock, diameter: 100mm: CRACKED & ROOT INFILTRATED	00:02:09	UNKNOWN NX_8ab6bb7f-afb5-4																																																															
20.86	RFJ	Roots, fine at joint	00:02:26	UNKNOWN NX_01b833da-1af9-4	2																																																														
21.69	REM	General remark: **ENTERS BURIED MANHOLE**	00:02:35	UNKNOWN NX_93352ea6-d9c8-																																																															
23.88	DER	Settled deposits, coarse, 50% cross-sectional area loss	00:02:53	UNKNOWN NX_ee8bb757-b272-	4																																																														
24.20	SA	Survey abandoned: S/A - UNABLE TO PASS DEBRIS	00:02:56	UNKNOWN NX_c0d73047-4b10-																																																															
STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade																																																										
0	0.0	0.0	0.0	1.0	4	5.0	0.3	8.0	4.0																																																										

Section Pictures - 24/02/2026 - UNKNOWNX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	UNKNOWNX	JSD9596	JSD9596



UNKNOWNX_3b2c1061-6c95-4655-96e3-44802cee786f_202
60309_150213_458.jpg, 00:00:09, 0.00 m
Start node, manhole, reference: MANHOLE 1 (MH1)



UNKNOWNX_45a1e1be-29f3-454e-84f0-9b7c49525b5a_202
60309_150219_777.jpg, 00:00:09, 0.00 m
Water level, 0% of the vertical dimension



UNKNOWNX_2971a787-41ec-4201-896a-60063f1a6843_202
60309_150431_186.jpg, 00:00:09, 0.01 m
Roots, fine



UNKNOWNX_96da4866-93d6-40c9-935e-2d70b43f70ff_2026
0309_150543_965.jpg, 00:00:22, 0.48 m
Roots, fine at joint

Section Pictures - 24/02/2026 - UNKNOWNX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	UNKNOWNX	JSD9596	JSD9596



UNKNOWNX_2e3493d6-f1b9-4e51-ab53-bfb978736c69_20260309_150812_778.jpg, 00:01:35, 12.66 m
Junction at 9 o'clock, diameter: 100mm



UNKNOWNX_8ab6bb7f-afb5-46a2-97ad-c9e97d645cf4_20260309_150852_478.jpg, 00:02:09, 20.55 m
Defective junction, damaged at 9 o'clock, diameter: 100mm, CRACKED & ROOT INFILTRATED



UNKNOWNX_01b833da-1af9-40f4-82e7-59b4f9813641_20260309_150915_546.jpg, 00:02:26, 20.86 m
Roots, fine at joint



UNKNOWNX_93352ea6-d9c8-4492-ad93-76e1ca90c46c_20260309_150944_449.jpg, 00:02:35, 21.69 m
General remark, **ENTERS BURIED MANHOLE**

Section Pictures - 24/02/2026 - UNKNOWNX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
1	Upstream	UNKNOWNX	JSD9596	JSD9596



UNKNOWNX_ee8bb757-b272-4aac-8351-86a90515e417_20260309_151006_881.jpg, 00:02:53, 23.88 m
Settled deposits, coarse, 50% cross-sectional area loss



UNKNOWNX_c0d73047-4b10-4f56-afd4-2bcc42f0deb9_20260309_151038_481.jpg, 00:02:56, 24.20 m
Survey abandoned, S/A - UNABLE TO PASS DEBRIS



Section Inspection - 24/02/2026 - NEIGH MHX

Item No. 2	Insp. No. 1	Date 24/02/26	Time 11:35	Client's Job Ref JSD9596	Weather No Rain Or Snow	Pre Cleaned No	PLR NEIGH MHX
Operator Dan		Vehicle LV67 HKJ		Camera Push Rod	Preset Length Not Specified	Legal Status Not Specified	Alternative ID Not Specified

Town or Village:	Bognor Regis	Inspection Direction:	Upstream	Upstream Node:	NEIGH MH
Road:	63 Annandale Avenue	Inspected Length:	3.07 m	Upstream Pipe Depth:	0.000 m
Location:	Gardens	Total Length:	3.07 m	Downstream Node:	MH1
Surface Type:		Joint Length:		Downstream Pipe Depth:	1.440 m
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Pitch fibre		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection of condition	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:50	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 1.44 m MH1 </							

Section Pictures - 24/02/2026 - NEIGH MHX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	NEIGH MHX	JSD9596	JSD9596



NEIGH
MHX_12957fd7-d5b7-4a95-a9a2-5440e2683dfa_20260309_1
51253_204.jpg, 00:00:07, 0.00 m
Start node, manhole, reference: MANHOLE 1 (MH1)



NEIGH
MHX_e6d13b93-f12c-4e34-b2fd-53931f37d549_20260309_15
1300_537.jpg, 00:00:07, 0.00 m
Water level, 0% of the vertical dimension



NEIGH
MHX_cbc27641-9414-4772-a36f-8aa1791142d9_20260309_1
51317_993.jpg, 00:00:16, 0.09 m
Deformed drain or sewer, 10%



NEIGH
MHX_1eb83b89-b91b-4ed7-9275-ab4ff6b04c27_20260309_1
51341_728.jpg, 00:00:26, 0.57 m
Deformed drain or sewer, 10%

Section Pictures - 24/02/2026 - NEIGH MHX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	NEIGH MHX	JSD9596	JSD9596



NEIGH
MHX_ac232ef7-f446-47b7-ab60-7a0adf0db53f_20260309_15
1407_697.jpg, 00:00:28, 1.00 m
General remark, ****BOUNDARY POINT****



NEIGH
MHX_d0afc9db-651f-46b0-b605-d325d48d1f4a_20260309_15
1421_041.jpg, 00:00:30, 1.44 m
Deformed drain or sewer, 5%



NEIGH
MHX_8c17c4af-3b21-4ba9-a9eb-daf083b01de2_20260309_1
51444_714.jpg, 00:00:34, 2.11 m
Deformed drain or sewer, 20%



NEIGH
MHX_f2197242-dbd2-46cd-88c3-e7852d7478fe_20260309_1
51452_767.jpg, 00:00:34, 2.11 m
Roots, fine

Section Pictures - 24/02/2026 - NEIGH MHX

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
2	Upstream	NEIGH MHX	JSD9596	JSD9596



NEIGH
MHX_353d599e-86f2-49f9-b787-79dede56729a_20260309_1
51525_153.jpg, 00:00:38, 2.68 m
Roots, mass at joint, 15% cross-sectional area loss



NEIGH
MHX_98e14b0c-5078-47af-9d1d-c4fecb05a7b2_20260309_1
51545_215.jpg, 00:00:38, 2.68 m
Material changes to polyvinyl chloride



NEIGH
MHX_c82c0c81-083f-4f50-9db9-eb937cbde540_20260309_15
1618_648.jpg, 00:00:42, 3.07 m
Finish node, manhole, reference: ENTERS MANHOLE IN THE
NEIGHBOURING PROPERTY



Section Inspection - 24/02/2026 - MH1X

Item No.	Insp. No.	Date	Time	Client's Job Ref	Weather	Pre Cleaned	PLR
3	1	24/02/26	11:35	JSD9596	No Rain Or Snow	No	MH1X
Operator		Vehicle		Camera	Preset Length	Legal Status	Alternative ID
Dan		LV67 HKJ		Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Bognor Regis	Inspection Direction:	Downstream	Upstream Node:	MH1
Road:	63 Annandale Avenue	Inspected Length:	7.39 m	Upstream Pipe Depth:	1.440 m
Location:	Gardens	Total Length:	7.39 m	Downstream Node:	MAIN SEWER
Surface Type:		Joint Length:		Downstream Pipe Depth:	0.000 m
Use:	Foul	Pipe Shape:	Circular		
Type of Pipe:	Gravity drain/sewer	Dia/Height:	100 mm		
Flow Control:	No flow control	Pipe Material:	Vitrified clay pipe (i.e. all clayware)		
Year Constructed:	Not Specified	Lining Type:	No Lining		
Inspection Purpose:	Routine inspection of condition	Lining Material:	No Lining		

Comments:

Recommendations:

Scale:	1:64	Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 1.44 m MH1							
		0.00	MH	Start node, manhole, reference: MANHOLE 1 (MH1)	00:00:07	MH1X_ad aec02f-18 b5-4ac4-9	
		0.00	WL	Water level, 0% of the vertical dimension	00:00:07	MH1X_0e 4f395e-c6 61-44f3-be	
		0.02	RMJ	Roots, mass at joint, 80% cross-sectional area loss	00:00:07	MH1X_5f8 6450e-be3 e-4e2f-bdc	5
		1.72	DEEJ	Attached deposits, encrustation at joint from 4 o'clock to 8 o'clock, 20% cross-sectional area loss	00:00:25	MH1X_87 134125-87 be-4706-8	3
		2.59	REM	General remark: **BOUNDARY POINT**	00:00:29	MH1X_6f6 5906a-06d 3-45d4-b1	
		6.24	CCJ	Crack, circumferential at joint from 8 o'clock to 12 o'clock	00:00:43	MH1X_b7 e21036-a7 85-4a45-a	2
		7.39	MHF	Finish node, manhole, reference: MAIN SEWER	00:00:51	MH1X_0cc 10ae4-ed4 5-402d-be	
MAIN SEWER Depth: 0.00 m							

STR No. Def	STR Peak	STR Mean	STR Total	STR Grade	SER No. Def	SER Peak	SER Mean	SER Total	SER Grade
1	10.0	1.4	10.0	2.0	2	20.0	3.0	22.0	5.0

Section Pictures - 24/02/2026 - MH1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	MH1X	JSD9596	JSD9596



MH1X_adaec02f-18b5-4ac4-94d2-7f08acbe9c62_20260309_1
51823_216.jpg, 00:00:07, 0.00 m
Start node, manhole, reference: MANHOLE 1 (MH1)



MH1X_0e4f395e-c661-44f3-bef8-d5092db76894_20260309_1
51829_347.jpg, 00:00:07, 0.00 m
Water level, 0% of the vertical dimension



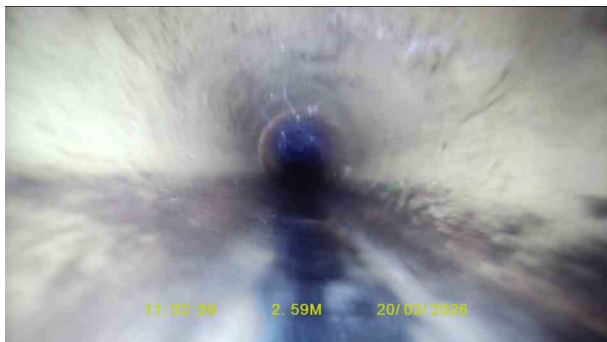
MH1X_5f86450e-be3e-4e2f-bdc8-18a30d40e5f7_20260309_1
52026_783.jpg, 00:00:07, 0.02 m
Roots, mass at joint, 80% cross-sectional area loss



MH1X_87134125-87be-4706-885c-f264c308d8d2_20260309_1
152055_841.jpg, 00:00:25, 1.72 m
Attached deposits, encrustation at joint from 4 o'clock to 8 o'clock, 20% cross-sectional area loss

Section Pictures - 24/02/2026 - MH1X

Item No.	Inspection Direction	PLR	Client's Job Ref	Contractor's Job Ref
3	Downstream	MH1X	JSD9596	JSD9596



MH1X_6f65906a-06d3-45d4-b19d-5ec31823dcc2_20260309_152124_095.jpg, 00:00:29, 2.59 m
General remark, ****BOUNDARY POINT****



MH1X_b7e21036-a785-4a45-a376-16d1e7c6e280_20260309_152237_006.jpg, 00:00:43, 6.24 m
Crack, circumferential at joint from 8 o'clock to 12 o'clock



MH1X_0cc10ae4-ed45-402d-be3a-c95dfc9df374_20260309_152253_760.jpg, 00:00:51, 7.39 m
Finish node, manhole, reference: MAIN SEWER

9.3 Appendix C – Surface Water Calculations

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	4.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	75.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SA			49.800	450	993.355	1019.636	1.000
PP1	0.002		49.600	450	1011.205	999.961	0.420
RE1		4.00	49.900	450	1013.884	1010.612	0.500
RE2		4.00	49.900	450	1000.230	997.792	0.500
S01	0.011	4.00	49.900	450	1003.612	1020.849	0.645
S02			49.900	450	996.035	1016.609	0.738
S03	0.011	4.00	49.900	450	990.834	1009.291	0.648

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
2.000	RE1	S01	14.502	0.600	49.400	49.255	0.145	100.0	100	4.31	58.5
2.001	S01	S02	8.683	0.600	49.255	49.162	0.093	93.4	100	4.50	58.5
1.002	S02	SA	4.043	0.600	49.162	48.800	0.362	11.2	150	4.54	58.5
1.000	RE2	S03	14.850	0.600	49.400	49.252	0.148	100.0	100	4.32	58.5
1.001	S03	S02	8.978	0.600	49.252	49.162	0.090	100.0	100	4.52	58.5

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	0.769	6.0	0.0	0.400	0.545	0.000	0.0	0	0.000
2.001	0.796	6.3	2.3	0.545	0.638	0.011	0.0	43	0.740
1.002	3.031	53.6	4.6	0.588	0.850	0.022	0.0	30	1.860
1.000	0.769	6.0	0.0	0.400	0.548	0.000	0.0	0	0.000
1.001	0.769	6.0	2.3	0.548	0.638	0.011	0.0	43	0.721

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)
2.000	14.502	100.0	100	Circular	49.900	49.400	0.400	49.900	49.255	0.545
2.001	8.683	93.4	100	Circular	49.900	49.255	0.545	49.900	49.162	0.638
1.002	4.043	11.2	150	Circular	49.900	49.162	0.588	49.800	48.800	0.850
1.000	14.850	100.0	100	Circular	49.900	49.400	0.400	49.900	49.252	0.548

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.000	RE1	450	Manhole	Adoptable	S01	450	Manhole	Adoptable
2.001	S01	450	Manhole	Adoptable	S02	450	Manhole	Adoptable
1.002	S02	450	Manhole	Adoptable	SA	450	Manhole	Adoptable
1.000	RE2	450	Manhole	Adoptable	S03	450	Manhole	Adoptable

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)
1.001	8.978	100.0	100	Circular	49.900	49.252	0.548	49.900	49.162	0.638
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type		
1.001	S03	450	Manhole	Adoptable	S02	450	Manhole	Adoptable		

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
SA	993.355	1019.636	49.800	1.000	450		1	1.002	48.800	150
PP1	1011.205	999.961	49.600	0.420	450					
RE1	1013.884	1010.612	49.900	0.500	450		0	2.000	49.400	100
RE2	1000.230	997.792	49.900	0.500	450		0	1.000	49.400	100
S01	1003.612	1020.849	49.900	0.645	450		1	2.000	49.255	100
S02	996.035	1016.609	49.900	0.738	450		1	2.001	49.162	100
							2	1.001	49.162	100
							0	1.002	49.162	150
S03	990.834	1009.291	49.900	0.648	450		1	1.000	49.252	100
							0	1.001	49.252	100

Simulation Settings

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

Storm Durations

15	30	60	120	180	240	360	480	600	720	960	1440
----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	------

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
10	0	0	0
30	0	0	0
30	40	0	0
100	0	0	0
100	45	10	0

Node SA Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	48.800	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.10800	Time to half empty (mins)	1340	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	16.500	Number Required	1
Porosity	0.95	Pit Length (m)	3.000		

Node PP1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.10800	Invert Level (m)	49.180	Slope (1:X)	30.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	19	Depth (m)	0.300
Safety Factor	2.0	Width (m)	2.500	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Results for 10 year 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
720 minute winter	SA	690	48.999	0.199	0.6	9.3767	0.0000	OK
30 minute summer	PP1	23	49.330	0.150	0.7	0.2408	0.0000	OK
15 minute summer	RE1	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	RE2	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S01	10	49.322	0.067	4.5	0.0107	0.0000	OK
15 minute summer	S02	9	49.211	0.049	9.0	0.0078	0.0000	OK
15 minute summer	S03	10	49.320	0.068	4.5	0.0109	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
720 minute winter	SA	Infiltration		0.1			
30 minute summer	PP1	Infiltration		0.2			
15 minute summer	RE1	2.000	S01	0.0	0.000	0.000	0.0405
15 minute summer	RE2	1.000	S03	0.0	0.000	0.000	0.0424
15 minute summer	S01	2.001	S02	4.5	0.970	0.719	0.0403
15 minute summer	S02	1.002	SA	9.1	2.516	0.169	0.0181
15 minute summer	S03	1.001	S02	4.5	0.957	0.745	0.0421

Results for 30 year 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
720 minute summer	SA	720	49.044	0.244	1.2	11.5247	0.0000	OK
60 minute summer	PP1	40	49.360	0.180	0.7	0.3404	0.0000	OK
15 minute summer	RE1	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	RE2	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S01	10	49.337	0.082	5.8	0.0130	0.0000	OK
15 minute summer	S02	9	49.217	0.055	11.6	0.0088	0.0000	OK
15 minute summer	S03	10	49.336	0.084	5.8	0.0133	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
720 minute summer	SA	Infiltration		0.1			
60 minute summer	PP1	Infiltration		0.2			
15 minute summer	RE1	2.000	S01	0.0	0.000	0.000	0.0496
15 minute summer	RE2	1.000	S03	0.0	0.000	0.000	0.0519
15 minute summer	S01	2.001	S02	5.8	1.037	0.927	0.0482
15 minute summer	S02	1.002	SA	11.7	2.594	0.218	0.0248
15 minute summer	S03	1.001	S02	5.8	1.024	0.960	0.0505

Results for 30 year +40% CC 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
1440 minute winter	SA	1320	49.118	0.318	0.6	15.0254	0.0000	OK
60 minute summer	PP1	42	49.400	0.220	0.9	0.5038	0.0000	OK
15 minute summer	RE1	10	49.415	0.015	0.5	0.0024	0.0000	OK
15 minute summer	RE2	10	49.419	0.019	0.5	0.0031	0.0000	OK
15 minute summer	S01	10	49.416	0.161	8.1	0.0256	0.0000	SURCHARGED
15 minute summer	S02	9	49.223	0.061	15.1	0.0097	0.0000	OK
15 minute summer	S03	10	49.419	0.167	8.1	0.0265	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
1440 minute winter	SA	Infiltration		0.2			
60 minute summer	PP1	Infiltration		0.2			
15 minute summer	RE1	2.000	S01	-0.5	-0.090	-0.077	0.0623
15 minute summer	RE2	1.000	S03	-0.5	-0.090	-0.080	0.0659
15 minute summer	S01	2.001	S02	7.6	1.108	1.213	0.0557
15 minute summer	S02	1.002	SA	15.2	2.650	0.283	0.0360
15 minute summer	S03	1.001	S02	7.5	1.101	1.246	0.0576

Results for 100 year 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
960 minute winter	SA	915	49.089	0.289	0.8	13.6302	0.0000	OK
30 minute winter	PP1	25	49.387	0.207	0.9	0.4464	0.0000	OK
15 minute summer	RE1	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	RE2	1	49.400	0.000	0.0	0.0000	0.0000	OK
15 minute summer	S01	10	49.387	0.132	7.2	0.0209	0.0000	SURCHARGED
15 minute summer	S02	9	49.220	0.058	13.9	0.0093	0.0000	OK
15 minute summer	S03	10	49.391	0.139	7.2	0.0221	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
960 minute winter	SA	Infiltration		0.2			
30 minute winter	PP1	Infiltration		0.2			
15 minute summer	RE1	2.000	S01	0.0	0.000	0.000	0.0567
15 minute summer	RE2	1.000	S03	0.0	0.000	0.000	0.0581
15 minute summer	S01	2.001	S02	7.0	1.023	1.114	0.0546
15 minute summer	S02	1.002	SA	13.9	2.625	0.260	0.0318
15 minute summer	S03	1.001	S02	7.0	1.024	1.152	0.0565

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.84%

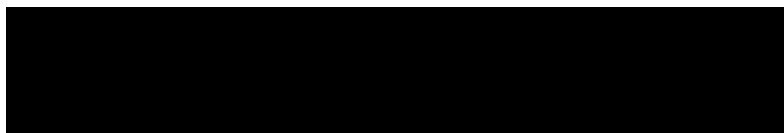
Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
600 minute winter	SA	570	49.724	0.924	1.8	18.9804	0.0000	OK
60 minute summer	PP1	42	49.455	0.275	1.4	0.7843	0.0000	OK
600 minute winter	RE1	570	49.724	0.324	0.1	0.0515	0.0000	FLOOD RISK
600 minute winter	RE2	570	49.724	0.324	0.1	0.0515	0.0000	FLOOD RISK
600 minute winter	S01	570	49.724	0.469	0.9	0.0745	0.0000	FLOOD RISK
600 minute winter	S02	570	49.724	0.562	1.8	0.0893	0.0000	FLOOD RISK
600 minute winter	S03	570	49.724	0.472	0.9	0.0750	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
600 minute winter	SA	Infiltration		0.2			
60 minute summer	PP1	Infiltration		0.3			
600 minute winter	RE1	2.000	S01	-0.1	-0.014	-0.014	0.1135
600 minute winter	RE2	1.000	S03	-0.1	-0.014	-0.014	0.1162
600 minute winter	S01	2.001	S02	0.9	0.660	0.144	0.0679
600 minute winter	S02	1.002	SA	1.8	1.161	0.034	0.0712
600 minute winter	S03	1.001	S02	0.9	0.650	0.149	0.0702

Node Name	RE2	S03	S05A
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 44.000			
Link Name	1.000	1.001	
Section Type	100mn	100i	15
Slope (1:X)	100.0	100.1	
Cover Level (m)	49.900	49.900	49.800
Invert Level (m)	49.400	49.252	48.162
Length (m)	14.85	08.974	

Node Name	RE1	S01	S02
A4 drawing Hor Scale 1500 Ver Scale 100 Datum (m) 44.000			
Link Name	2.000	2.00	
Section Type	100mn	100	
Slope (1:X)	100.0	93.4	
Cover Level (m)	49.900	49.900	49.900
Invert Level (m)	49.400	49.255	49.162
Length (m)	14.50	28.68	

9.4 **Appendix D – Borehole Logs**



SZ 9327 9985

Su 90 SW

SZ99/2

332/61 Formerly Mr. G. Holmes' meadow, South Bersted, Bognor Regis

(a) Hillsboro' Engineering Co., Hillsboro' Road. (Sealed). W.S.Sx. II, p. 203.
Surface +16. Shaft 14; rest bore. Depth 90. Ck -12. Water struck at -58.
R.W.L. -24. Dando, 1899.

(b) St. Ervan, Victoria Drive. (Filled in). W.S.Sx. II, p. 203. Surface +12.
Ck -61. Water struck at -118. R.W.L. -21. Dando, 1899.

(b) Drift)	...	...	...	73	73
RB)	...	...	...	104	177
Uck	...	...	...		

(a) Drift)		28	} 90
RB)	Clay	62	
28'			
Uck	Chalk		
62'			

(b) Drift)	Clay	73	73
RB)			
73'			
Uck	Chalk	104	177
104			

332/
61

A - Su 90/71

B - SZ99/2



Norwest Holst Soil Engineering Ltd. BOREHOLE LOG

Borehole No.

2

Contract No. F4286

Location Bognor Regis

Client Arun District Council

Method of Boring Percussion

Diameter of Borehole 150mm

Sheet 1 of 1

Chainage

Ground Level

Date 4.7.79

SZ99NW 28

Description of Strata	Legend	Depth Below G.L. (m)	Thickness of Strata (m)	Type of sample	C ₂ kN/m ²	φ deg	m.c. %	γ ₃ Mg/m ³	N
MADEGROUND: topsoil, clay and brick rubble		1.00	1.00	0.50 1.00					10
Medium dense brown SAND and GRAVEL		2.30	1.30	1.00					16
Firm red/brown mottled silty CLAY				2.50 4.00 5.50 6.50 7.50 8.00	50 65 70	0 0 0	22 21 18	1.97 2.01 1.90	
Key ☐ Undisturbed Sample ☐ Disturbed Sample <input type="triangle"/> Water Sample <input type="I"/> Penetration Test φ Angle of Friction m.c. Moisture Content γ Bulk Density N S.P.T. Value C Apparent Cohesion		Remarks (Observations of Ground Water etc.) Water struck at 1.40m Standing at 6.20m Water levels are subject to seasonal or tidal variations and should not be taken as constant							