

SuDS Maintenance

Foundation House

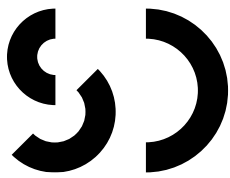
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25/03/2025

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1749-SDE-XX-XX-RP-C-0010



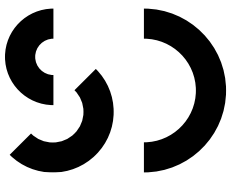


Revision:	Date:	Reason:	Initials:
001	27/02/2025	Initial Issue	LH
002	11/03/2025	Updated following comments	LH
003	25/03/2025	Updated following comments	LH

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1. Introduction

This document sets out the principles for the long-term management and maintenance by First Garden Cities Homes of the proposed surface water drainage system for the Foundation House.

The purpose of this document is to ensure that First Garden Cities Homes has a robust inspection and maintenance plan going forwards. This ensures the optimum operation of the surface water drainage system and that it will be continually maintained for the lifetime of the development. This will contribute to reducing the risk of surface water flooding both on- and off-site.

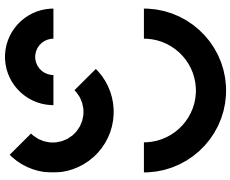
First Garden Cities Homes should follow relevant health and safety legislation for all activities listed within this report (including lone working, if relevant). Method statements and risk assessments should always be undertaken.

This document has been produced by SD Engineers on behalf of their client. This document describes the typical management and maintenance tasks that are known at the design stage (maintenance frequencies and typical tasks, for example). These have been drawn from industry guidance such as CIRIA C753 - The SuDS Manual – and manufacturer's own guidance.

Maintenance is considered as a construction activity under the CDM Regulations 2015. Under the CDM Regulations, it is a requirement that a competent person be appointed to carry out a required role. They must have sufficient knowledge of the specific tasks to be undertaken, as well as sufficient experience and ability to carry out their duties in relation to the task in a way that secures health and safety on site.

In recognition of the requirements of the CDM Regulations 2015, this surface water management and maintenance plan expects that the maintenance work carried out by First Garden Cities Homes must have prior knowledge of the drainage components and SuDS systems on site.

There are limitations on what this document can prescribe at this time. At this stage this document cannot name the specific equipment to be used. Related to this, this document is unable to provide method statements for exactly how maintenance practices will be carried out. These can only be determined at the time of the maintenance being carried out and the exact maintenance need. Therefore, this is to be the responsibility of First Garden Cities Homes. We urge First Garden Cities Homes to record this information and make it available to the Local Planning Authority (LPA), if required to do so. This needs to be a living document that is owned and maintained First Garden Cities Homes.



2. Maintenance Categories

There are three categories of maintenance activities referred to in this report. These are:

Regular maintenance (including inspections and monitoring)

Regular maintenance consists of basic tasks done on a frequent and predictable schedule, including inspections, vegetation management, and litter, silt and debris removal.

Occasional maintenance

Occasional maintenance comprises tasks that are likely to be required periodically, but on a much less frequent and predictable basis than the routine tasks (sediment removal is an example).

Remedial maintenance

Remedial maintenance comprises of intermittent tasks that may be required to rectify faults associated with the system. The likelihood of faults can be minimised by correct installation, regular inspection and timely maintenance. Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events and, as such, timings are difficult to predict.

This document should be read in conjunction with the design drawings of the drainage system, so that the location and type of each feature can be recognised and understood.

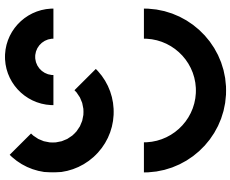
3. The Surface Water Drainage System

The proposed surface water drainage system is made up of several components. These include:

- Permeable paving
- Catchpit manholes/silt traps
- Geocellular storage crates
- Hydrobrake
- Manholes
- Pipes.

All components should be installed and maintained in accordance with the manufacturer's instructions and to the levels/arrangement as defined on the designer's drawings. Not doing so will invalidate any warranty provided by the manufacturer. The designer's drawings have been appended to this document for information.

All maintenance and cleaning must be carried out in accordance with manufacturer's recommendations and by suitably qualified staff.



4. General Maintenance Principles

All surface water drainage systems, whether piped gravity systems, Sustainable Drainage Systems (SuDS), or flow control devices, require regular maintenance to keep them working at optimum efficiency and capacity.

Timely and adequate maintenance will increase the lifespan of all the drainage components. Inadequate maintenance will do the reverse. Therefore, the projected lifespan and anticipated replacement date of each drainage component cannot be forecast at the time of this document being produced.

First Garden Cities Homes are responsible for the maintenance of the surface water drainage system.

Construction activities can create and discharge significant quantities of sediment that will quickly clog the surface water drainage system. Therefore, construction-stage sediment removal is required immediately post-construction. This may require several cleans of the system during the first year after installation. The site manager should assess this and carry out cleaning as necessary.

Catchpit manholes/silt traps have been specified upstream of the geocellular tank. They will remove gross solids and most silts. It is important that any debris build-up in the catchpit manholes/silt traps is removed at regular intervals. This will reduce the risk of the geocellular tank becoming silted up. It will maintain its design capacity and function.

Cleaning should also take place after large storms when there have been increased surface water flows and visible entrainment and deposition of debris.

An increased frequency of inspection and maintenance should be programmed into the autumn and winter months in acknowledgement that:

- Leaf fall from deciduous trees in autumn will result in an increased amount of leaf litter and an elevated blockage risk of drainage infrastructure.
- Increased rainfall during winter months will result in greater quantities of water moving through the drainage system and a greater input of silt and other debris.

Table 1 provides an overview of typical maintenance tasks and the frequency with which they need to be undertaken. Section 5 – Inspection and Maintenance Frequency of Components – will ascribe typical maintenance frequencies and tasks to the specific components used within the surface water drainage system.

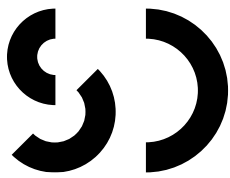


Table 1 Typical Maintenance Tasks and Frequencies

Activity	Indicative Frequency	Typical Tasks
Routine/regular maintenance	Monthly to annually	• Litter picking • Silt removal • Inspection of all inlets, outlets and control structures • Weed removal and invasive plant control
Occasional maintenance	Annually up to 25 years	• Silt control around components • Vegetation management around components • Sweeping of pavement areas to remove surface silt • Silt removal from catchpits, cellular storage structures.
Remedial maintenance	As required	• Inlet/outlet repair • Erosion repairs • Reinstatement of edgings • Reinstatement following pollution • Removal of silt build-up and leaf litter after storms • Repair of vandalism • Replacement of any blocked filter membranes/materials

5. Inspection and Maintenance Frequency of Components

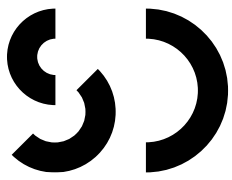
Table 5.1 on the next page lists each of the components used within the site's surface water drainage system. It suggests an indicative maintenance frequency for each component and ascribes typical maintenance tasks to them.

This list is not exhaustive, nor is it prescriptive. As mentioned in Section 3, additional, unscheduled maintenance may be required following adverse weather conditions or after autumn leaf falls. Additional maintenance tasks may be required to adequately clean and maintain individual components.

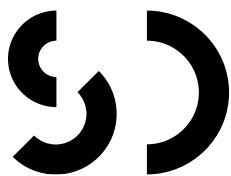
The list of components should be cross-referenced with the designers' drawings (appended to this document) so that the location of each component can be identified.

It is the responsibility of First Garden Cities Homes to ensure that all necessary maintenance activities are carried out in a timely manner and that the design performance of each drainage component is preserved.

If there is any uncertainty regarding the correct and safe methods of cleaning, or what equipment should be used, the manufacturer should be consulted.



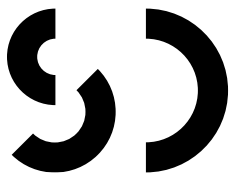
Activity	Indicative Frequency	Typical Tasks
Catchpit Manholes/Silt Traps	Annually	- Inspect/identify any damage or areas that are not operating correctly - Remove silt, litter, leaves and other detritus. Inspect once clean.
Pipes	As required	- Identify any pipes that may not be operating properly and employ a competent, qualified contractor to inspect using CCTV. - If the pipe is blocked with silt or debris, the pipe should be jetted clean from an upstream access point. All silt and debris should be captured and removed at a downstream access point. - Inspect once clean. If any other defects are encountered (cracks, displaced joints, root ingress), appropriate solutions should be discussed with a competent and qualified contractor. These services are usually provided by the same companies that offer CCTV surveys and pipe jetting services.
Manholes	Annually	- Inspect/identify any damage or areas that are not operating correctly - Remove silt, litter, leaves and other detritus. Inspect once clean.
Geocellular Storage Crates	Every three months for the first year, then annually thereafter	- Contact manufacturer for instruction on approved and safe inspection and maintenance practices - Inspect/identify any areas that are not operating correctly - Remove debris from catchment surface - Remove sediment from pre-treatment structures - Check for silt build-up and flush and remove as required. - Inspect once clean. See Table 21.3 of CIRIA C753 for more information.
Hydrobrake chamber	Every three months for the first year, then annually thereafter	- Contact manufacturer for instruction on approved and safe inspection and maintenance practices. - Inspect Hydrobrake and check functionality. Remove any detritus as required. - Inspect once clean. Refer to appended Hydrobrake maintenance and safety sheet.
Permeable paving	Once a year after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or	- Agitate surface by means of mechanical sweeping or vacuuming to ensure no vegetation or moss is allowed to establish and grow in the joints. - Mechanical sweeping of CBPP and refilling of joints with the correct aggregate need only be carried out at intervals of 5 years or so



	manufacturer's recommendations.	- Remove weeds from the surface through the application of Glyphosate-based weed killers - Stabilise and mow contributing and adjacent areas. - Inspect once clean. - See Table 20.15 of CIRIA C753 for more information. - Permeable paving has a nominal 25 year lifespan, if correctly and regularly maintained. - When subjected to low level oil drips permeable pavements can continue to biodegrade hydrocarbons indefinitely. Major oil spills have the potential to contaminate the surface and the underlying crushed stone. In the event of a major oil spill, the area of block pavements and crushed stone that is affected should be removed, cleaned and reinstalled.
Catchpit Manholes/Silt Traps	Annually	- Inspect/identify any damage or areas that are not operating correctly - Remove silt, litter, leaves and other detritus. Inspect once clean.
Pipes	As required	- Identify any pipes that may not be operating properly and employ a competent, qualified contractor to inspect using CCTV. - If the pipe is blocked with silt or debris, the pipe should be jetted clean from an upstream access point. All silt and debris should be captured and removed at a downstream access point. - Inspect once clean. If any other defects are encountered (cracks, displaced joints, root ingress), appropriate solutions should be discussed with a competent and qualified contractor. These services are usually provided by the same companies that offer CCTV surveys and pipe jetting services.
Manholes	Annually	- Inspect/identify any damage or areas that are not operating correctly - Remove silt, litter, leaves and other detritus. Inspect once clean.

Upon completion of maintenance activities, a record should be kept of the work carried out. This should be retained, and an annual maintenance report should be compiled, which should include the following:

- Observations resulting from inspections
- Maintenance and operation activities undertaken during the year
- Recommendations for inspections and maintenance programmes for the following year



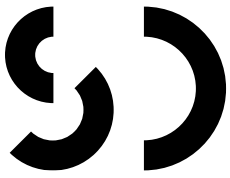
Appendix B shows a table with suggested information should be recorded and included with the maintenance plan. As mentioned in the introduction to this document, this should be a living document and regularly updated, as required.

The Local Planning Authority may request to check and sign off any maintenance activities. Therefore, it is the recommendation that the LPA is contacted prior to any scheduled routine maintenance. The table mentioned above and on the next page, as well as the annual maintenance report, should be offered to the LPA for their records and approval.

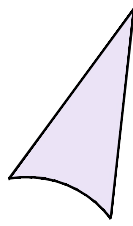
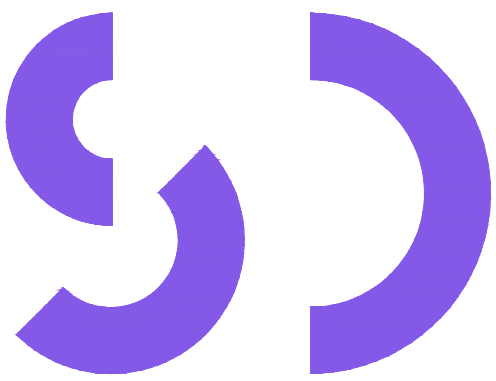
6. Responsible Parties

In residential developments such as this where the local sewer authority does not adopt the system, a management company or residents' association will be responsible for maintaining the private drainage systems. At which point the developer enters into negotiation with a management company, a copy of this document shall be issued to all parties and stakeholders with the information in Table 3 updated and maintained.

Management Company	First Garden Cities Homes
Address	Pioneer House, Norton Way South, Letchworth Garden City, SG6 1NY
Contact Person	First Garden Cities Homes
Telephone Number	01462 683307
Email	enquiries@fgch.co.uk



Appendix A – Proposed Drainage Layout



- Notes**
1. These drawings are not to be used for setting out purposes. Refer to the latest Architect's information and site measure as required.
 2. Contact SD Engineers in the event of any discrepancies between findings on site and these drawings.
 3. Drawing is to be read in conjunction with the SD Engineer's Specification and General Notes.
 4. 3D views are indicative only and conflicting 2D information should take precedence. If in doubt contact SD Engineers prior to starting works.

Information Received
This drawing has been developed using information received up to and including:

24/05/2024

Where information provided to us is incomplete or subject to change, our drawings will need to be updated accordingly.

Note
All roads, except those marked, are proposed to be permeable block paving allowing rainfall to infiltrate directly to the ground. Impermeable surfacing to be asphalt draining to existing sewer at restricted rate via flow control.

Note
Channel drains within roads to be ACO Multidrain or similar approved, suitable for D400 load class and installed strictly in accordance with the manufacturers recommendations. Sump outlets to be provided at connections to below ground drainage.

Note
All existing private drainage within the building footprints are to be grubbed out, and all private drains outside of the footprint are to be capped and grouted.

Note
Any FW stacks branching to have above ground rodding access

Foundation House, Letchworth
SDE1749

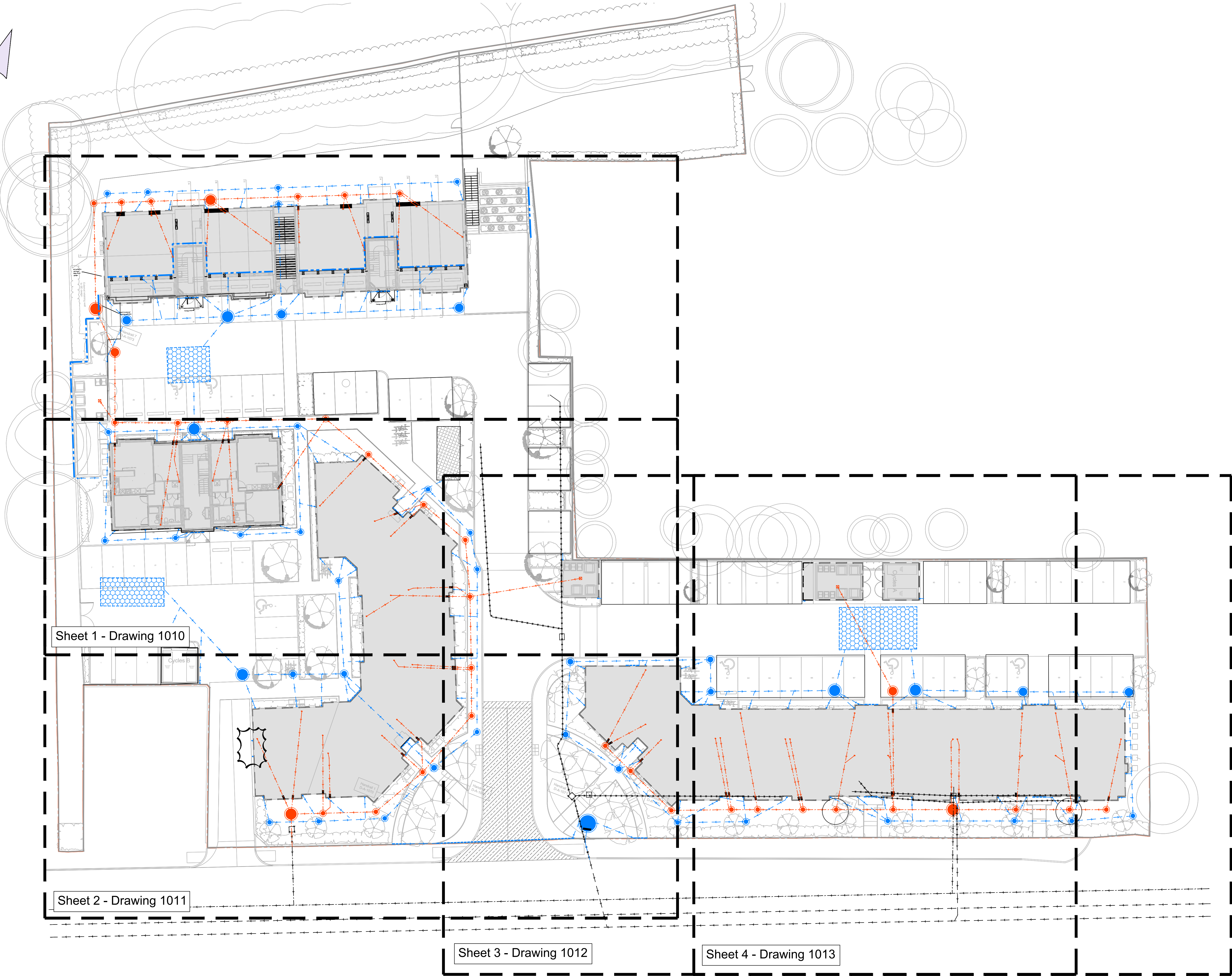
Proposed Drainage Layout
Overview

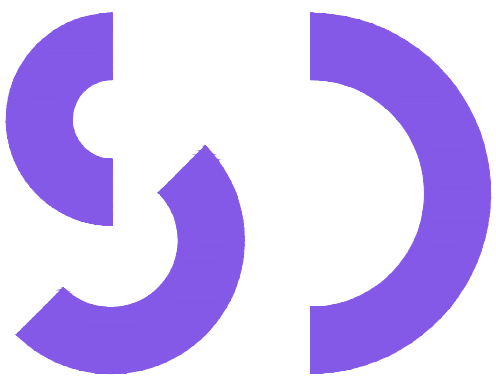
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Reviewed CC	Date 24/05/2024
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Approved CC	Scale 1:200 at A1
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FHL-SDE-XX-00-D-C-1000	S1	C08
Project	Originator	Volume
Level	Type	Rule
No.	Status	Revision





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06/01/2025

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Foundation House, Letchworth
SDE1749

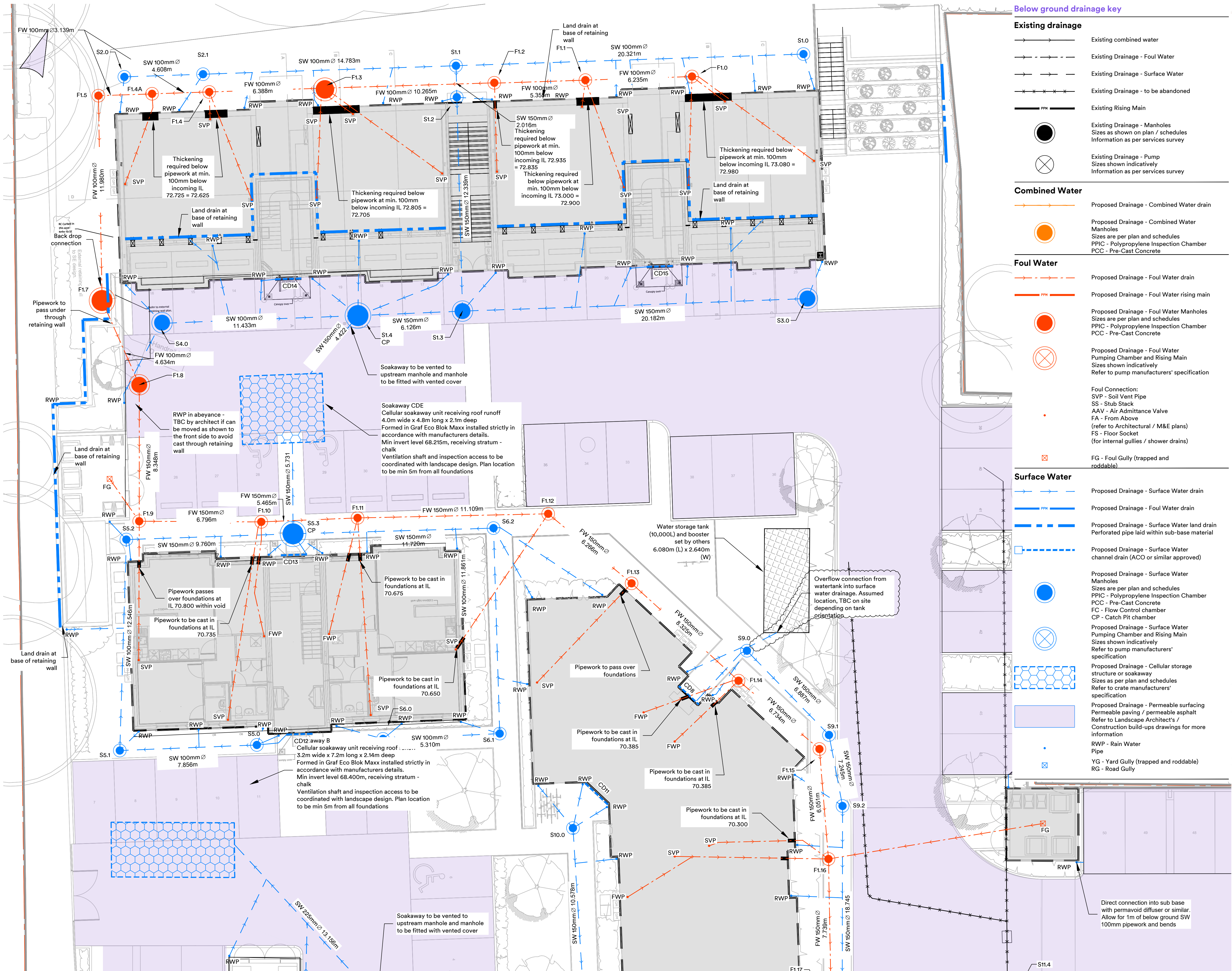
Proposed Drainage Layout
Sheet 1

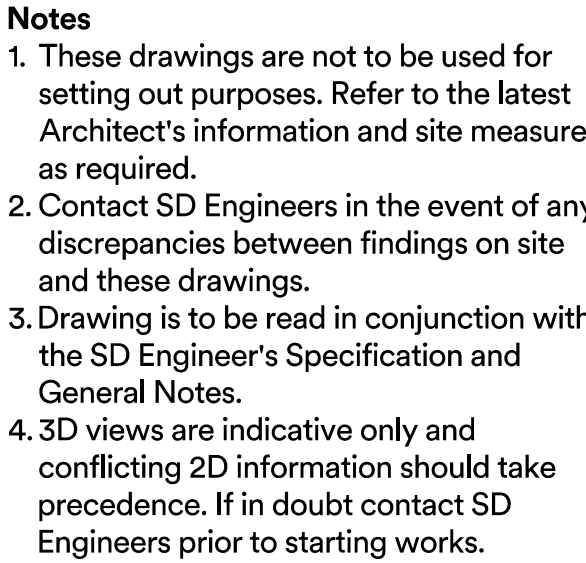
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Approved CC	Scale 1:100 at A1

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Project Originator Volume Level Type Rule No. Status Revision		

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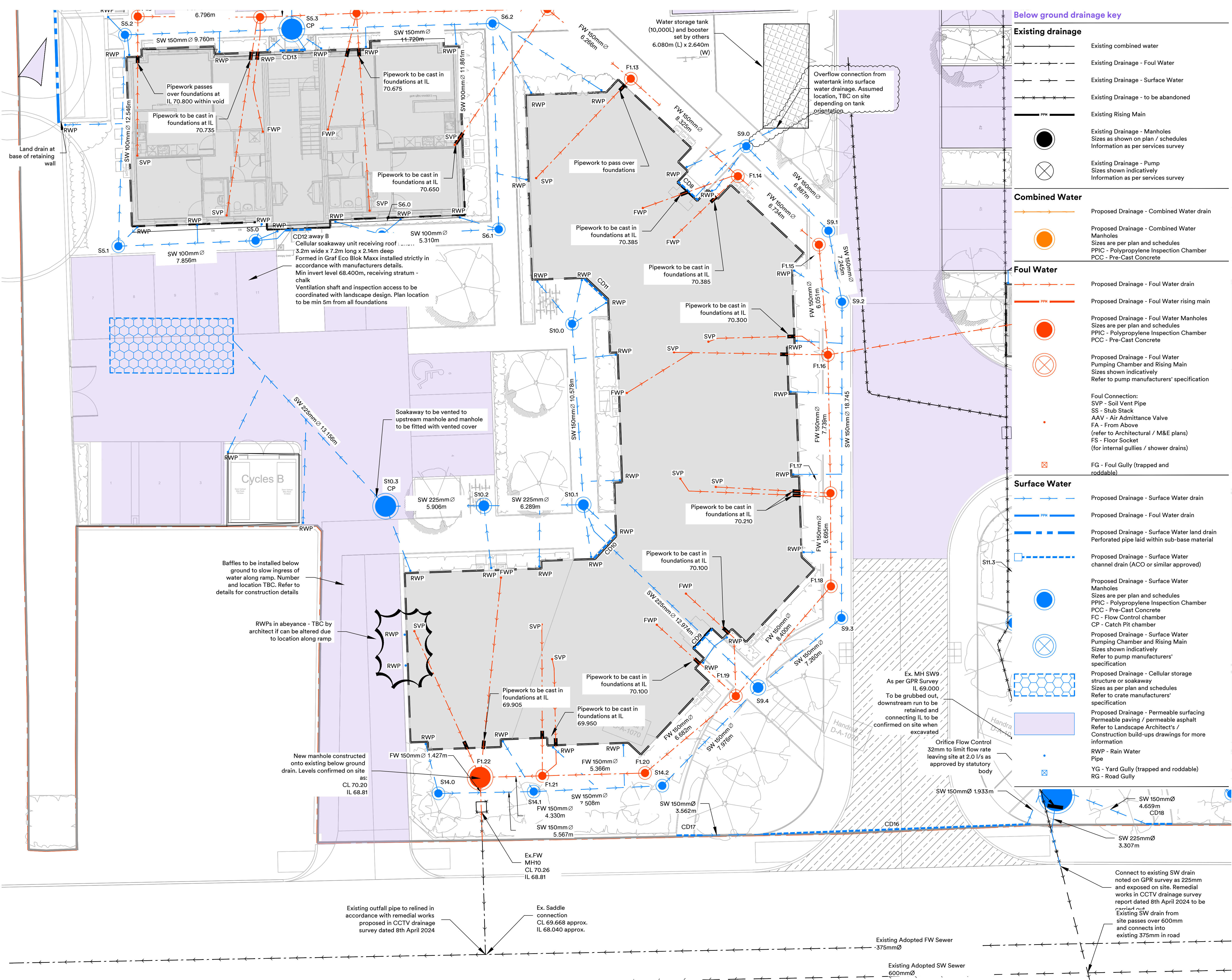
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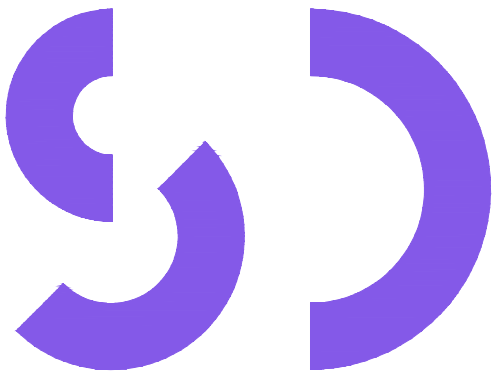
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above ground rodding access

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Proposed Drainage Layout
Sheet 3

Drawn
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Status
As-Built

Reviewed
CC

Date
24/05/2024

Approved
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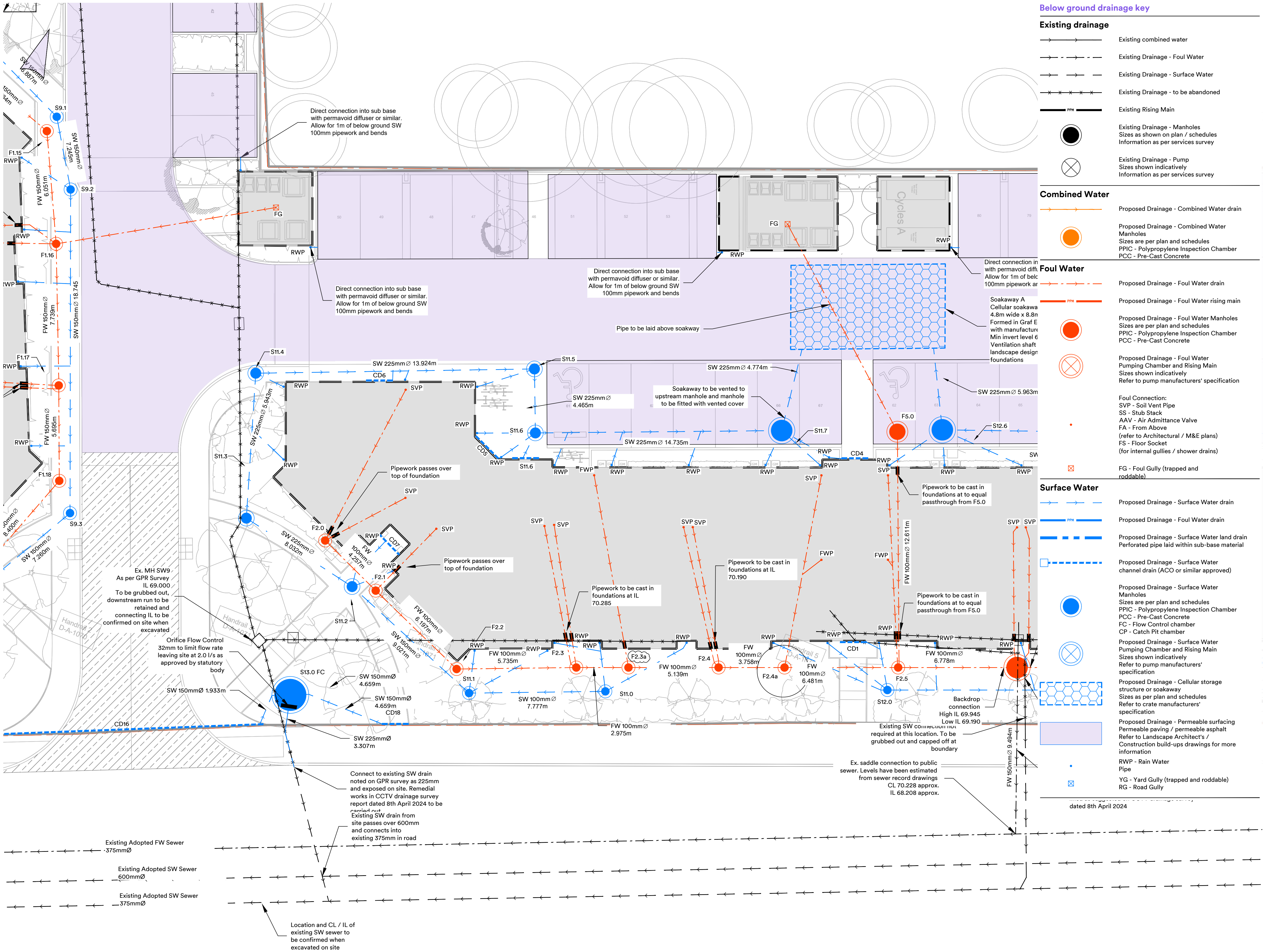
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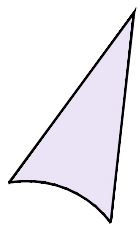
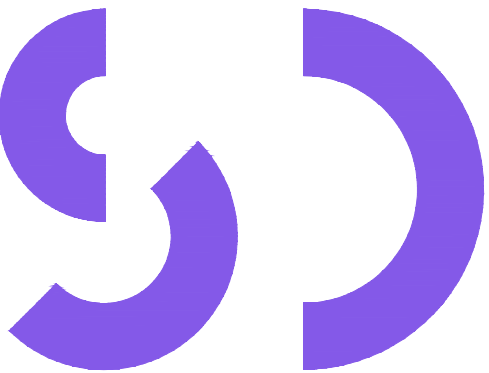
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Proposed Drainage Layout
Sheet 4

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Status
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Date
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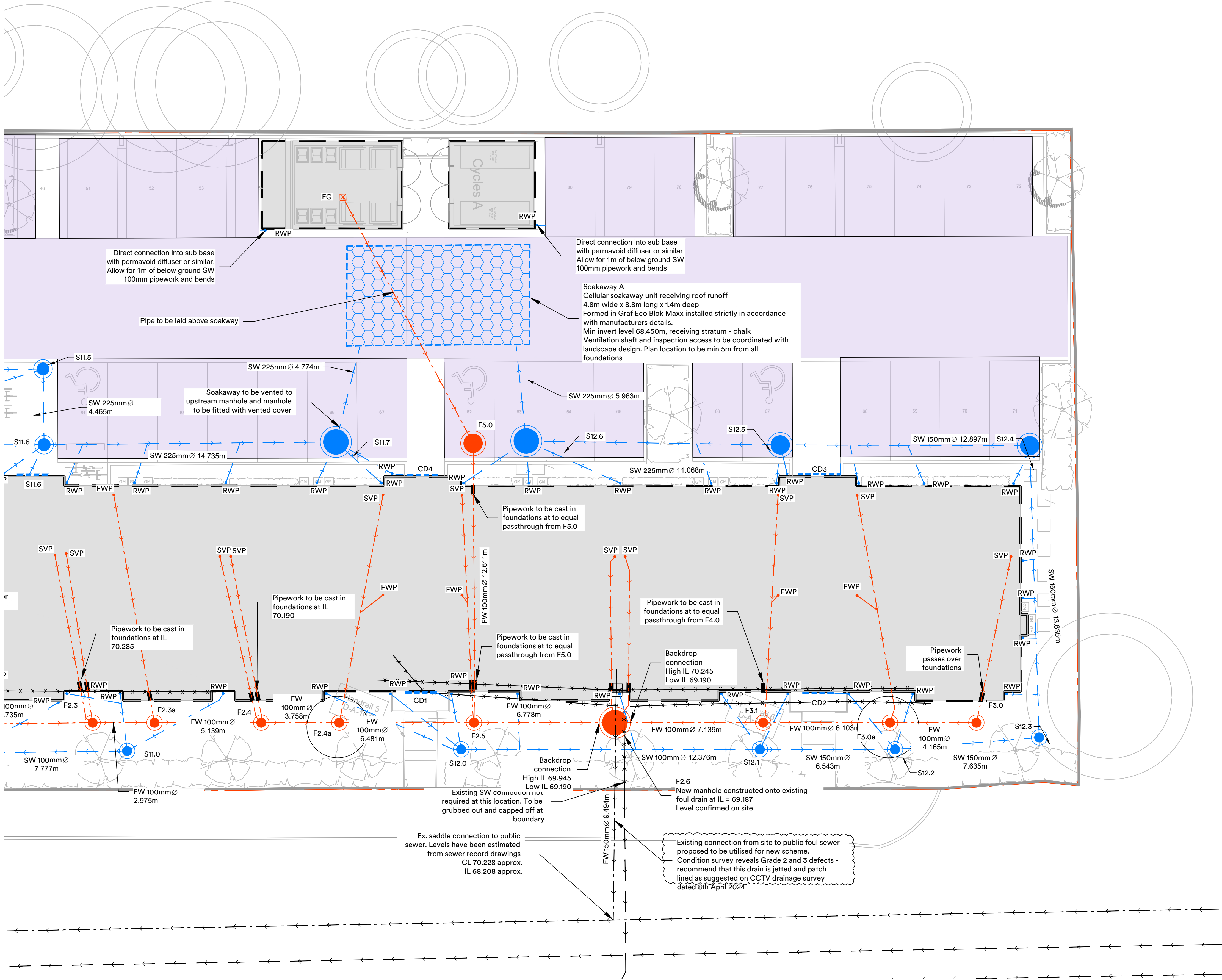
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Below ground drainage key

Existing drainage

- Existing combined water
- Existing Drainage - Foul Water
- Existing Drainage - Surface Water
- Existing Drainage - to be abandoned
- Existing Rising Main
- Existing Drainage - Manholes
Sizes as shown on plan / schedules
Information as per services survey
- Existing Drainage - Pump
Sizes shown indicatively
Information as per services survey

Combined Water

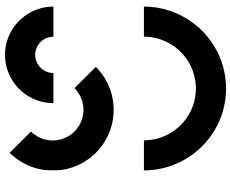
- Proposed Drainage - Combined Water drain
- Proposed Drainage - Combined Water Manholes
Sizes are per plan and schedules
PPIC - Polypropylene Inspection Chamber
PCC - Pre-Cast Concrete

Foul Water

- Proposed Drainage - Foul Water drain
- Proposed Drainage - Foul Water rising main
- Proposed Drainage - Foul Water Manholes
Sizes are per plan and schedules
PPIC - Polypropylene Inspection Chamber
PCC - Pre-Cast Concrete
- Proposed Drainage - Foul Water Pumping Chamber and Rising Main
Sizes shown indicatively
Refer to pump manufacturers' specification
- Foul Connection:
SVP - Soil Vent Pipe
SS - Stub Stack
AAV - Air Admittance Valve
FA - From Above
FS - Floor Socket
(for internal gullies / shower drains)
- FG - Foul Gully (trapped and roddable)

Surface Water

- Proposed Drainage - Surface Water drain
- Proposed Drainage - Foul Water drain
- Proposed Drainage - Surface Water land drain
Perforated pipe laid within sub-base material
- Proposed Drainage - Surface Water channel drain (ACO or similar approved)
- Proposed Drainage - Surface Water Manholes
Sizes are per plan and schedules
PPIC - Polypropylene Inspection Chamber
PCC - Pre-Cast Concrete
FC - Flow Control chamber
CP - Catch Pit chamber
- Proposed Drainage - Surface Water Pumping Chamber and Rising Main
Sizes shown indicatively
Refer to pump manufacturers' specification
- Proposed Drainage - Cellular storage structure or soakaway
Sizes as per plan and schedules
Refer to grate manufacturers' specification
- Proposed Drainage - Permeable surfacing
Permeable paving / permeable asphalt
Refer to Landscape Architect's / Construction build-ups drawings for more information
- RWP - Rain Water Pipe
- YG - Yard Gully (trapped and roddable)
- RG - Road Gully



Appendix B – Maintenance Record

Suggested Maintenance Record

Date	Component requiring maintenance	Issues prompting maintenance	Scheduled maintenance (Y/N)	Maintenance carried out	Additional works required (Y/N). If yes, please detail	Next scheduled date of inspection and maintenance



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