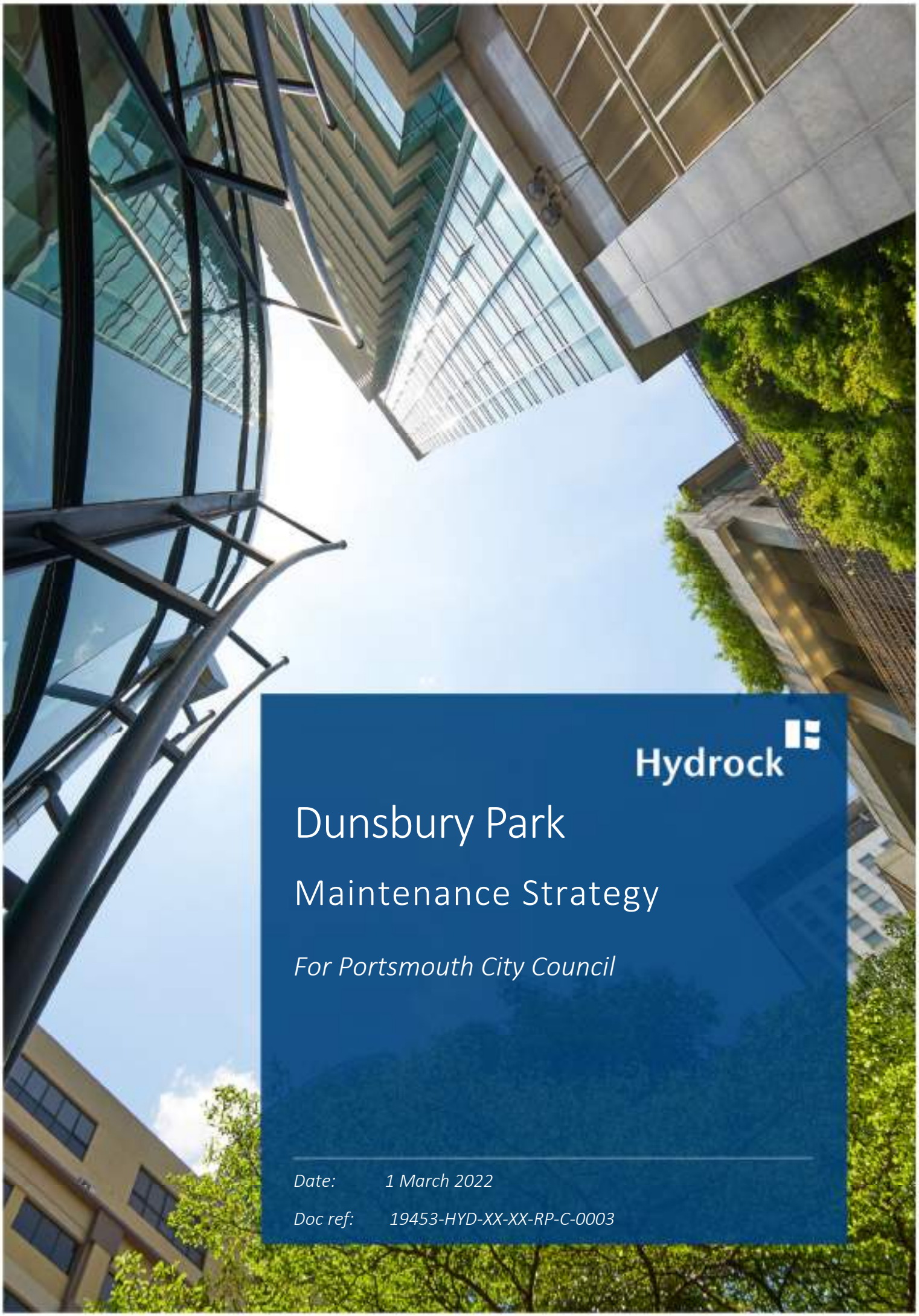

Hydrock

# Dunsbury Park

## Maintenance Strategy

*For Portsmouth City Council*

*Date:* *1 March 2022*

*Doc ref:* *19453-HYD-XX-XX-RP-C-0003*

# DOCUMENT CONTROL SHEET

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# 1. POST DEVELOPMENT DRAINAGE

The below ground drainage system at Dunsbury Park, Plot 5 consists of separate foul and surface water systems, both of which drain off-site by gravity. Both systems discharge via a connection to existing foul and surface water manholes to the south-east of the site, the maintenance of which is not the responsibility of plot 5's tenants.

The surface water from the site is drained through pipes, inspection chambers, gullies, channels and SUDS structures, which are detailed in more detail later within this report.

All drainage systems should be inspected at regular intervals then, if necessary, cleaned and repaired to ensure that system performance is maintained.

This guide includes recommendations on the methods and frequency of the inspection and cleaning but local factors may influence this, therefore this manual should be appended to include any revises or additional requirements determined during the life of the development.

See **Appendix A** for Drainage Layout.

# 2. INSPECTION AND CLEANING OF FOUL DRAINAGE

Inspection chambers, gullies and channels should be fully inspected regularly, at least annually, by removing covers and checking for obstructions, silt and damage.

The following should be carried out when cleaning a drainage system:

- Covers of inspection chambers and manholes should be removed and the sides, benching and channels cleaned.
- Main and branch drains should be cleaned and should be flushed with clean water afterwards. Any obstructions found should be removed and not flushed into the system.
- Periodically, accumulated deposits in gullies should be removed. The traps should then be plunged and thoroughly flushed out with clean water.
- Covers of inspection chambers and gullies should be replaced, bedded in suitable grease or other sealing material and/or bolted down as appropriate to the type. Missing bolts and broken items should be renewed.

# 3. METHODS OF CLEANING

The drainage system should be cleaned, as appropriate, using one or more of the following methods:

## 3.1 Rodding

Appropriate cleaning tools and techniques should be chosen to avoid damage to the pipework during the cleaning process. A set of rods with appropriate ends is basic useful equipment.

It is important that correctly designed propriety ends are used on the rods. Makeshift devices attached to the ends of rods should be avoided, as they are not effective as the correctly designed article and could become detached and create a blockage which would be difficult to remove. Furthermore, is it possible that such devices could cause damage to the pipeline.

If the rods have brass ferrules, they should be checked to ensure that their fastenings are secure and that there are no protruding shoulders or fastenings, as these can cause damage to drain lines, especially when entering through rodding eyes.

### 3.2 Jetting

High pressure jetting techniques are suitable for use with all currently available pipe materials and should also be considered.

### 3.3 Hydraulic Rams, Compressed Air or Other Gases

Equipment is available for use with all sizes of drain likely to be encountered in building drainage and is suitable for use with all currently available pipe materials. The principle of operation is that a shock wave is induced and is transmitted by water to the point of blockage and the technique is effective where the pipe is surcharged or can be filled with water from the blockage to a point where the equipment can be used.

## 4. INSPECTION AND CLEANING OF SURFACE WATER DRAINAGE

Gutter, rainwater pipes, outlets and gratings should be inspected and thoroughly cleaned annually, or more frequently, where it is near trees or may be subjected to extreme temperatures. For a full statement on the cleaning and maintenance of gutters and rainwater pipes refer to the Mechanical services Operating and Maintenance Manual.

Gullies and channels should be inspected and cleaned out regularly. The frequency of inspection and cleaning should be based on local experience.

Defects should be remedied as soon as possible after being noted to prevent additional problems arising.

Methods for cleaning surface water drainage are the same as foul drains, as previously described.

The record drawings issued with the building's operating and maintenance manuals, should be kept in a safe place, preferably on the property concerned, so that in the event of drainage problems the drawings can be referenced.

Maintenance instructions for pumps, rainwater harvesting and other systems, where installed will be in accordance with the manufacturer's instructions. It is often sensible to enter into a maintenance contract with a trusted and suitable company, which would ensure specialist equipment is correctly maintained in addition to an emergency service in event of failure.

## 5. PETROL INTERCEPTORS

### 5.1 Maintenance Periods

It is important that regular maintenance is carried out, but the time period between maintenance operations will vary. Due to the different types and amounts of contaminates entering the separator. Separators specified are fitted with alarms that alert site users that a unit is close to capacity and will require imminent attention.

It is important to examine the separator at regularly intervals, at least every 6 months, to determine how much water (light liquid sediment) has accumulated and that monitoring equipment is still functioning.

### 5.2 Cleaning

- Cone off the area around the separator and remove the manhole lid(s)
- All parts of the separator system should be completely emptied. Using a gully sucker, first remove the floating light liquid from each area where this has accumulated then remove all the settled sediment. This will be found generally in the area of the separator inlet. Finally pump out the remaining water.
- Clean all parts of the separator using a hose and clean water, disposing of contaminated water properly.

## 6. INSPECTION AND MAINTENANCE OF SUSTAINABLE URBAN DRAINAGE SYSTEMS

Surface water from the development is drained through a series of pipes, manholes, gullies, channels and Sustainable Urban Drainage Systems (SUDS). SUDS systems comprise of various components that are designed to:

- Reduce flooding
- Improve water quality of the run-off
- Create a better environment

The SUDS components used at Dunsbury Park, Plot 5 are list below and are indicated on the drainage layout:

- Permeable paving
- Attenuation tanks
- Filter trenches/drains

The maintenance recommendations contained within the following pages are general and should be in addition to the manufacturer's recommendations of specialist material and method.

Portsmouth City Council will retain responsiblity for the maintenance of the sustainable drainage systems for the Dunsbury Park development.

The following information should be passed to the development operator to ensure that future maintenance is carried out in a safe and proper manner.

*Table 6.1: Proposed Schedule of Maintenance for Below Ground Drainage*

| Permeable Paving - Operation and maintenance requirements in accordance with CIRIA C753 - The SuDS Manual | | |
|---|---|---|
| Maintenance Schedule | Required Action | Frequency |
| Regular maintenance | Brushing and vacuuming (standard cosmetic sweep over whole surface). | Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surfaces from adjacent impermeable areas as this area is most likely to collect the most Sediment. |
| Occasional maintenance | Stabilise and mow contributing and adjacent areas. | As required. |
| | Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying. | As required – once per year on less frequently used pavements. |
| Remedial actions | Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50 mm of the level of the paving. | As required. |
| | Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material. | As required. |
| | Rehabilitation of surface and upper substructure by remedial sweeping. | Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging). |
| Monitoring | Initial inspection. | Monthly for three months after installation. |
| | Inspect for evidence of poor operation and/or weed growth – if required, take remedial action. | Three-monthly, 48 h after large storms in first six months. |
| | Inspect silt accumulation rates and establish appropriate brushing frequencies. | Annually. |
| | Monitor inspection chambers. | Annually. |
| Reference should be made to the manufacturer recommendations where applicable | | |

| Underground Cellular Tanks - Operation and maintenance requirements in accordance with CIRIA C753 - The SuDS Manual | | |
|---|---|---|
| Maintenance Schedule | Required Action | Frequency |
| Regular maintenance | Inspect and identify any areas that are not operating correctly. If required, take remedial action. | Monthly for 3 months, then annually. |
| | Remove debris from the catchment surface (where it may cause risks to performance). | Monthly. |
| | For systems where rainfall infiltrates into the tank from above, check surface or filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary | Annually. |
| | Remove sediment from pre-treatment structures and / or internal forebays. | Annually, or as required. |
| Remedial actions | Repair / rehabilitate inlets, outlet, overflows and vents. | As required. |
| Monitoring | Inspect / check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed. | Annually. |
| | Survey inside of tank for sediment build-up and remove if necessary. | Every 5 years or as required. |
| Reference should be made to the manufacturer recommendations where applicable | | |

| Filter Strip - Operation and maintenance requirements in accordance with CIRIA C753 - The SuDS Manual | | |
|---|---|---|
| Maintenance Schedule | Required Action | Frequency |
| Regular maintenance | Remove litter and debris | Monthly, (or as required). |
| | Cut grass - to retain height within specified design range | Monthly (during growing season), or as required. |
| | Manage other vegetation and remove nuisance plants. | Monthly (at start, then as required). |
| | Inspect filter strip surface to identify evidence of erosion, poor vegetation growth, compaction, ponding, sedimentation and contamination (e.g. oils). | Monthly (at start, then half yearly). |
| | Check flow spreader and filter strip surface for evens gradients. | Monthly (at start, then half yearly). |
| | Inspect gravel flow spreader upstream of filter strip for clogging. | Monthly (at start, then half yearly). |
| | Inspect silt accumulation rate and establish appropriate removal frequencies. | Monthly (at start, then half yearly). |
| Occasional maintenance | Re-seed areas of poor vegetation growth, alter plant types to better suit conditions, if required | As required or if bare soil is exposed over > 10% of the filter strip area. |
| Remedial actions | Repair erosion or other damage by re-turfing or reseeding. | As required. |
| | Relevel uneven surfaces and reinstate design levels | As required. |
| | Scarify and spike topsoil layer to improve infiltration performance, break up silt deposits and prevent compaction of the soil surface. | As required. |
| | Remove build-up of sediment on upstream gravel trench, flow spreader or at top of filter strip. | As required. |
| | Remove and dispose of oils or petrol residues using safe standard practices. | As required. |

| Filter Drain - Operation and maintenance requirements in accordance with CIRIA C753 - The SuDS Manual | | |
|---|---|---|
| Maintenance Schedule | Required Action | Frequency |
| Regular maintenance | Remove litter (including leaf litter) and debris from filter drain surface, access chambers and pre-treatment devices. | Monthly, (or as required). |
| | Inspect filter drain surface, inlet/outlet pipework and control systems for blockages, clogging, standing water and structural damage. | Monthly. |
| | Inspect pre-treatment systems, inlet and perforated pipework for silt accumulation, establish appropriate silt removal frequencies. | Six monthly. |
| | Remove sediment from pre-treatment devices. | Six monthly or as required. |
| Occasional maintenance | Remove or control tree roots where they are encroaching the sides of the filter drain, using recommended methods (e.g. NJUG, 2007 or BS 3998:2010). | As required. |
| | At location with high pollution loads, remove surface geotextile and replace, and wash or replace overlying filter medium. | Five yearly or as required. |
| | Clear perforated pipe of blockages. | As required. |

| Other Drainage Items - Ownership & Maintenance Responsibility Matrix | | |
|---|---|---|
| Feature | Maintenance | Frequency |
| Private Drains | Inspection | CCTV survey every 5-10 years. |
| | Regular Maintenance | Jet clean system fully every 5-10 years. (Recommend prior to CCTV drainage survey is) |
| | Remedial / Occasional Maintenance | Carry out remedial works as identified in CCTV survey. |
| Discharge orifice manholes/flow control devices | Inspection | Quarterly |
| | Regular Maintenance | Remove silt and debris as necessary to prevent build up. |
| Gully / Drainage Channels | Inspection | Quarterly |
| | Regular Maintenance | Remove silt and debris as necessary to prevent build up. |

A formal review of the risks should be undertaken on an annual basis:

*Table 6.2: Proposed Operational Schedule for Below Ground Drainage*

| Operation | Risks | Mitigating Measures |
|---|---|---|
| Access to manholes for Inspection and Maintenance. | 1. Confined spaces | 1. Entry to confined space to be minimised and, where unavoidable, to be carried out by appropriately trained personnel |
| Removal of silt from outfall | 1. Risk to members of the public<br>2. Open Water | 1. Access to hazardous areas by members of the public to be prohibited.<br>2. To be carried out by appropriately trained personnel |
| Removal of silt from drainage channel | 1. Risk to members of the public | 1. Access to hazardous areas by members of the public to be prohibited |

All inspection and maintenance works should take into consideration the implications of 'lone working'. An assessment should be carried out and the risks mitigated accordingly.

# Appendix A

*Drainage Layout*

## LEGEND

### PROPOSED DRAINAGE - FOUL

100Ø@1:100 — FOUL WATER DRAIN - **PVCu**
Approx. gradient and diameter as noted, 100mm Ø UNO

FW-01 — FOUL WATER MANHOLE
PC Ring 1.2m Ø UNO

FW-01 — FOUL WATER INSPECTION CHAMBER
PVCu 450mm Ø. Max 1.2m depth - reduced access to 3.0m

*Note: All internal foul MH's and IC's to have recessed covers. double sealed and locking to prevent odours. Refer to layout for location.*

SAC — FOUL WATER SHALLOW ACCESS CHAMBER
Max depth to invert 600mm from GL, 300mm Ø

RE — FOUL RODDING EYE
Ø as noted

YG — FOUL YARD GULLY (to be trapped)
Gully reference as noted on drawing.
Cover grade to suit loading.

FD — FLOOR DRAIN (to be trapped)
Internal use only, refer to architect for details / specification.
Roddable from above slab into standard (01) fitting.
Floor Drain / Gully to be kept charged to avoid odours.

01 & 01A — FOUL OUTLET / STACK POSITION
Shown indicative, refer to architect for setting out.
All branches 100mm Ø UNO.
01 - Outlet connects into standard 90° rest bend.
01A - Indicates access required in above slab plumbing for rodding, refer to service engineers drawings for details.
SVP - Indicates soil vent pipe by service engineer: with access.

### PROPOSED DRAINAGE - STORM

150Ø@1:100 — STORM WATER DRAIN - **PVCu**
Approx. gradient and diameter as noted, 150mm Ø UNO

SW-01 — STORM WATER MANHOLE
PC Ring 1.2m Ø UNO

SW-01 — STORM WATER INSPECTION CHAMBER
PVCu 450mm Ø. Max 1.2m depth - reduced access to 3.0m

RE — STORM RODDING EYE
Ø as noted

SILT TRAP

CONCRETE ENCASEMENT TO PIPE
Refer to limits of cover table drawing 7101

01 & 01A — RAIN WATER OUTLET
Shown indicative, refer to architect for setting out.
Refer to rainwater pipe details for branch Ø.
01 - Outlet connects into standard 90° rest bend.
01A - Indicates access required in above slab plumbing for rodding, refer to service engineers drawings for details.

AG — RAIN WATER OUTLET ACCESS GULLY
AG - Outlet connects to gully.

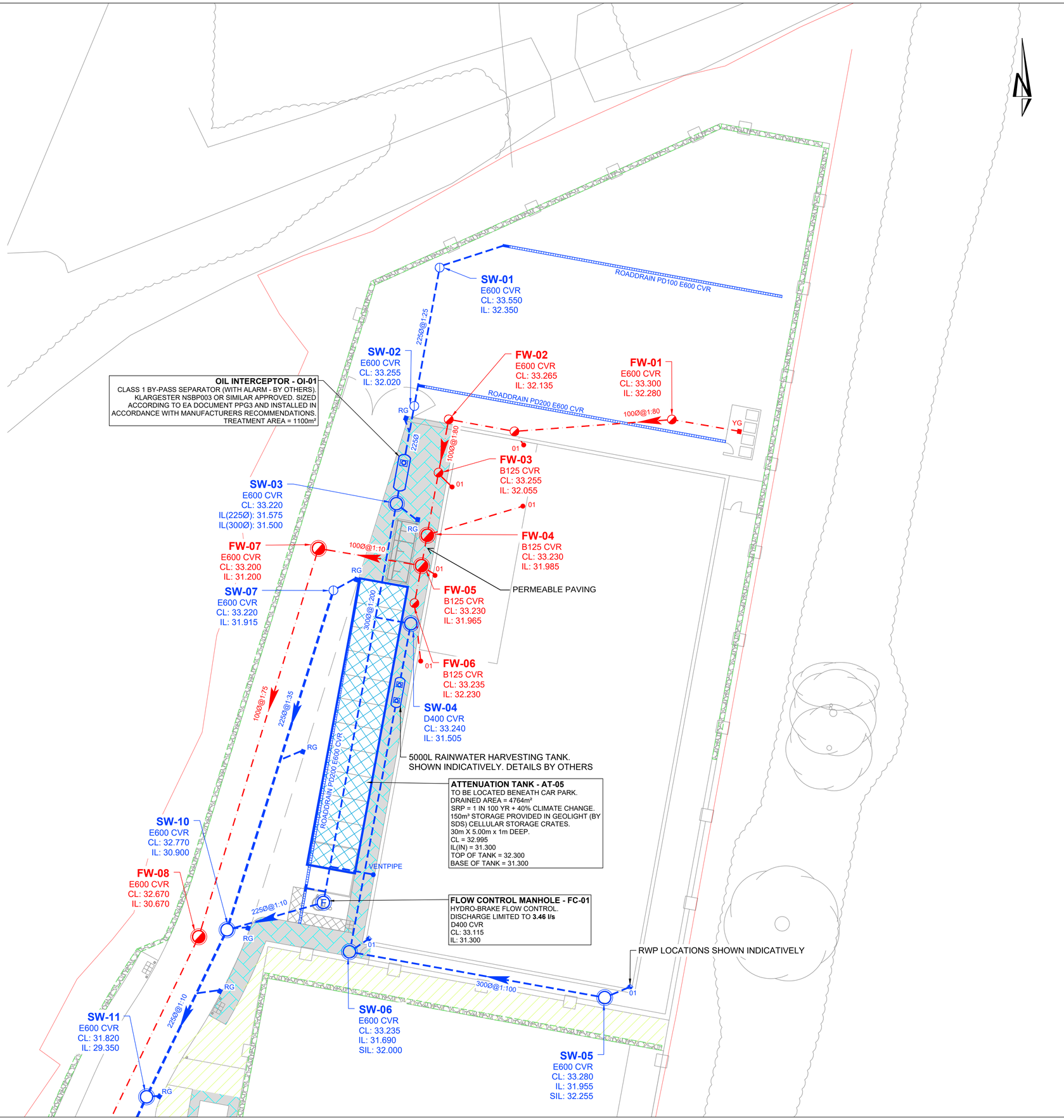
RG — ROAD GULLY (to be trapped)

YG — YARD GULLY (to be trapped)

PG — PAVED AREA GULLY (to be trapped)

DC — DRAINAGE CHANNEL
(Refer to layout for specification)

TH — THRESHOLD DRAINAGE CHANNEL
(Refer to architect for details / specification)




KEY PLAN

NOTES

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4. Levels shown in metres above Ordnance Datum (mAOD).
5. All private drainage to comply with current Building Regulations, BS EN-752 Drain and Sewer systems outside Buildings and other relevant British Standards and Codes of Practices.
6. All external drainage within trafficked areas with less than 1.2m cover to have type Z concrete bed and surround. All external drainage within landscaped areas with cover less than 0.6m to have type Z concrete bed and surround. All drainage with greater cover than the minimum required to have type S bed and surround.
7. All drainage to be laid soffit to soffit unless otherwise shown.
8. The Contractor is to verify the line, level and diameter of existing sewers before commencing drainage works.
9. All foul drainage to be minimum 100mm diameter, all surface water drainage to be minimum 150mm diameter unless otherwise shown.
10. Cover levels shown on this drawing refer to approximate surface levels. It is the contractors responsibility to ensure that access covers and frames are set at the final surface levels.
11. Where possible the contractor is to orientate manhole biscuits and covers to locate them parallel to kerbs and paving.
12. The Contractor should comply with hs(g) 47 "Avoiding Danger from Underground Services" when excavating around existing services.
13. It is the contractors responsibility to determine the location and depth of all existing services, mains and cables prior to construction.
14. Contractor to provide temporary screens in each of the down stream manholes during the construction period of the development in accordance with SFA 2.9.10 and the local sewerage undertakers requirements.
15. All in-situ concrete and precast concrete components to be manufactured using Sulphate Resisting Portland Cement, (SRPC) to BS 4027, if required, subject to soil conditions. Manhole components to be to BS EN 1917:2002.
16. All ironwork to be kite marked by BSI or certified by equal inspection authority.
17. All redundant connections to be capped off and grouted from the down stream manhole.
18. All new drainage pipes to be jetted, CCTV surveyed with DVD recording and any defects highlighted to the supervising officer. Following the rectification of any defects, the drain is to be re-surveyed with CCTV and the recordings made available to the project manager/engineer.
19. Prior to commencing the works the contractor is to confirm details of the existing drainage system as noted on the drawing.
20. Prior to commencing the works the contractor is to undertake the drainage investigation work as noted on the drawing.

| REV | REVISION NOTES/COMMENTS | | | | | |
|---|---|---|---|---|---|---|
| | DRAWN BY | DATE | CHECKED BY | DATE | APPROVED BY | DATE |
| C04 | DRAWING SCALE NOTE AMENDED TO SHOW 1:200 SCALE | | | | | |
| | H.MILLER | 20/02/23 | H.MILLER | 20/02/23 | J.MAGEE | 20/02/23 |
| C03 | FOUL STACKS UPDATED TO FINAL ARCHITECT POSITIONS | | | | | |
| | H.MILLER | 02/02/23 | A. TODD | 02/02/23 | J. MAGEE | 02/02/23 |
| C02 | UPDATED STACK LOCATIONS TO POSITIONS SPECIFIED BY ARCHITECT | | | | | |
| | H.MILLER | 16/11/22 | A. TODD | 16/11/22 | J. MAGEE | 16/11/22 |
| C01 | FOR CONSTRUCTION | | | | | |
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| P01 | SUITABLE FOR REVIEW | | | | | |
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CLIENT
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PROJECT
DUNSBURY PARK
UNITS 500, 501 & 502

TITLE
DRAINAGE LAYOUT
SHEET 1

| HYDROCK PROJECT NO. | SCALE @ A1 |
|---|---|
| C-19453-C | 1:200 |

| STATUS DESCRIPTION | STATUS |
|---|---|
| SUITABLE FOR CONSTRUCTION | A |

| DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) | REVISION |
|---|---|
| G1129-HYD-ZZ-XX-DR-C-7010 | C04 |

## LEGEND

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Gully reference as noted on drawing.
Cover grade to suit loading.

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Roddable from above slab into standard (01) fitting.
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Shown indicative, refer to architect for setting out.
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CONCRETE ENCASEMENT TO PIPE
Refer to limits of cover table drawing 7101

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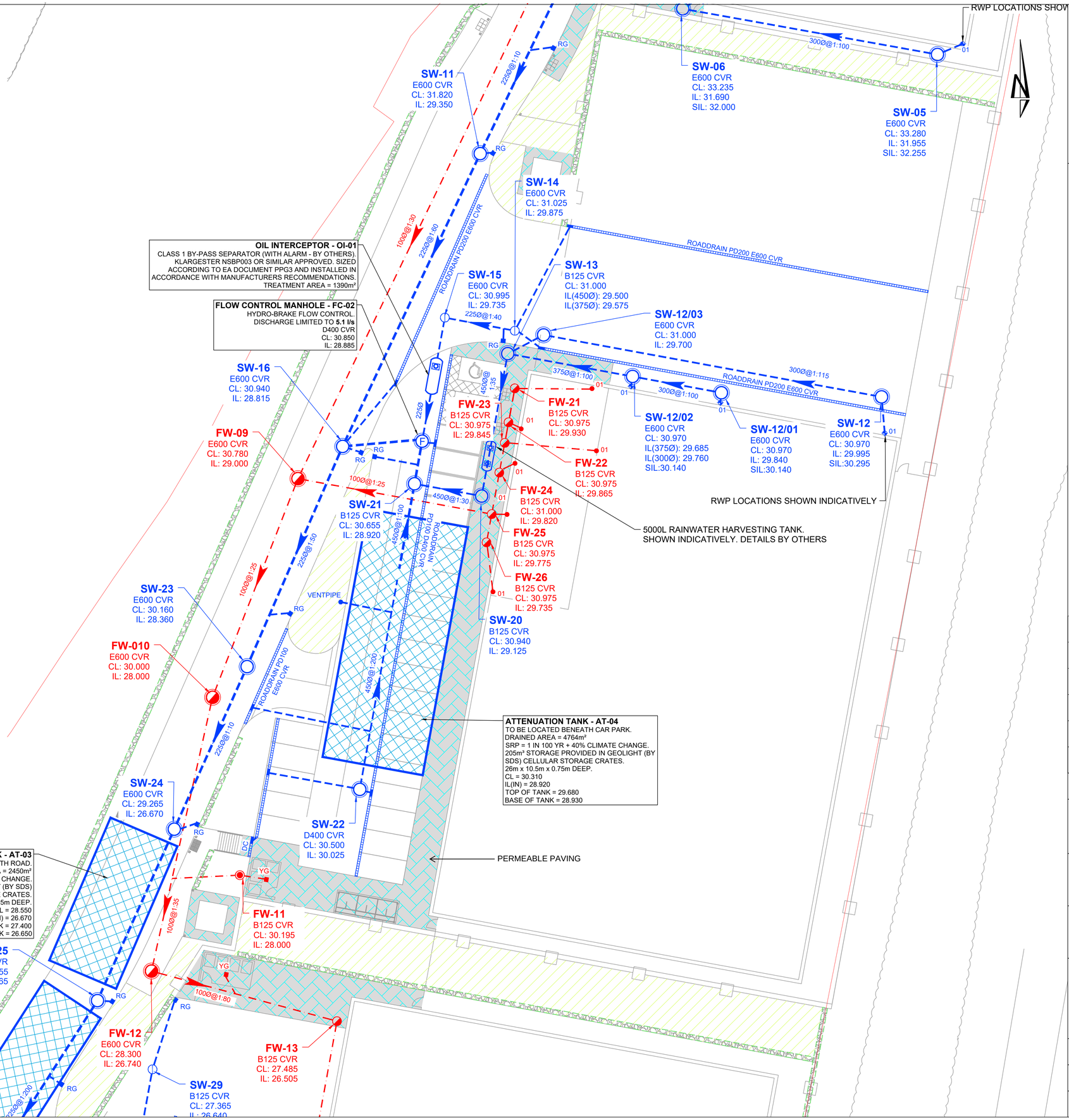


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| | H.MILLER | 20/02/23 | H.MILLER | 20/02/23 | J.MAGEE | 20/02/23 |
| C04 | FOUL STACKS UPDATED TO FINAL ARCHITECT POSITIONS | | | | | |
| | H.MILLER | 02/02/23 | A. TODD | 02/02/23 | J. MAGEE | 02/02/23 |
| C03 | FW-13 LOCATION UPDATED, 501 ATTENUATION TANK AMENDED | | | | | |
| | H.MILLER | 15/12/22 | A. TODD | 15/12/22 | J. MAGEE | 15/12/22 |
| C02 | UPDATED STACK LOCATIONS TO POSITIONS SPECIFIED BY ARCHITECT | | | | | |
| | H.MILLER | 16/11/22 | A. TODD | 16/11/22 | J. MAGEE | 16/11/22 |
| C01 | FOR CONSTRUCTION | | | | | |
| | H.MILLER | 08/08/22 | A. TODD | 08/08/22 | J. MAGEE | 08/08/22 |
| P01 | SUITABLE FOR REVIEW | | | | | |
| | H.MILLER | 25/07/22 | A. TODD | 25/07/22 | J. MAGEE | 25/07/22 |


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CLIENT
GLENCAR CONSTRUCTION LTD.

PROJECT
DUNSBURY PARK
UNITS 500, 501 & 502

TITLE
DRAINAGE LAYOUT
SHEET 2

| HYDROCK PROJECT NO. | SCALE @ A1 | |
|---|---|---|
| C-19453-C | 1:200 | |
| STATUS DESCRIPTION | | STATUS |
| SUITABLE FOR CONSTRUCTION | | A |
| DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) | | REVISION |
| G1129-HYD-ZZ-XX-DR-C-7011 | | C05 |

## LEGEND

### PROPOSED DRAINAGE - FOUL

100Ø@1:100 — FOUL WATER DRAIN - **PVCu**
Approx. gradient and diameter as noted, 100mm Ø UNO

FW-01 — FOUL WATER MANHOLE
PC Ring 1.2m Ø UNO

FW-01 — FOUL WATER INSPECTION CHAMBER
PVCu 450mm Ø. Max 1.2m depth - reduced access to 3.0m

*Note: All internal foul MH's and IC's to have recessed covers. double sealed and locking to prevent odours. Refer to layout for location.*

SAC — FOUL WATER SHALLOW ACCESS CHAMBER
Max depth to invert 600mm from GL, 300mm Ø

RE — FOUL RODDING EYE
Ø as noted

YG — FOUL YARD GULLY (to be trapped)
Gully reference as noted on drawing.
Cover grade to suit loading.

FD — FLOOR DRAIN (to be trapped)
Internal use only, refer to architect for details / specification.
Roddable from above slab into standard (01) fitting.
Floor Drain / Gully to be kept charged to avoid odours.

01 & 01A — FOUL OUTLET / STACK POSITION
Shown indicative, refer to architect for setting out.
All branches 100mm Ø UNO.
01 - Outlet connects into standard 90° rest bend.
01A - Indicates access required in above slab plumbing for rodding, refer to service engineers drawings for details.
SVP - Indicates soil vent pipe by service engineer: with access.

### PROPOSED DRAINAGE - STORM

150Ø@1:100 — STORM WATER DRAIN - **PVCu**
Approx. gradient and diameter as noted, 150mm Ø UNO

SW-01 — STORM WATER MANHOLE
PC Ring 1.2m Ø UNO

SW-01 — STORM WATER INSPECTION CHAMBER
PVCu 450mm Ø. Max 1.2m depth - reduced access to 3.0m

RE — STORM RODDING EYE
Ø as noted

SILT TRAP

CONCRETE ENCASEMENT TO PIPE
Refer to limits of cover table drawing 7101

01 & 01A — RAIN WATER OUTLET
Shown indicative, refer to architect for setting out.
Refer to rainwater pipe details for branch Ø.
01 - Outlet connects into standard 90° rest bend.
01A - Indicates access required in above slab plumbing for rodding, refer to service engineers drawings for details.

AG — RAIN WATER OUTLET ACCESS GULLY
AG - Outlet connects to gully.

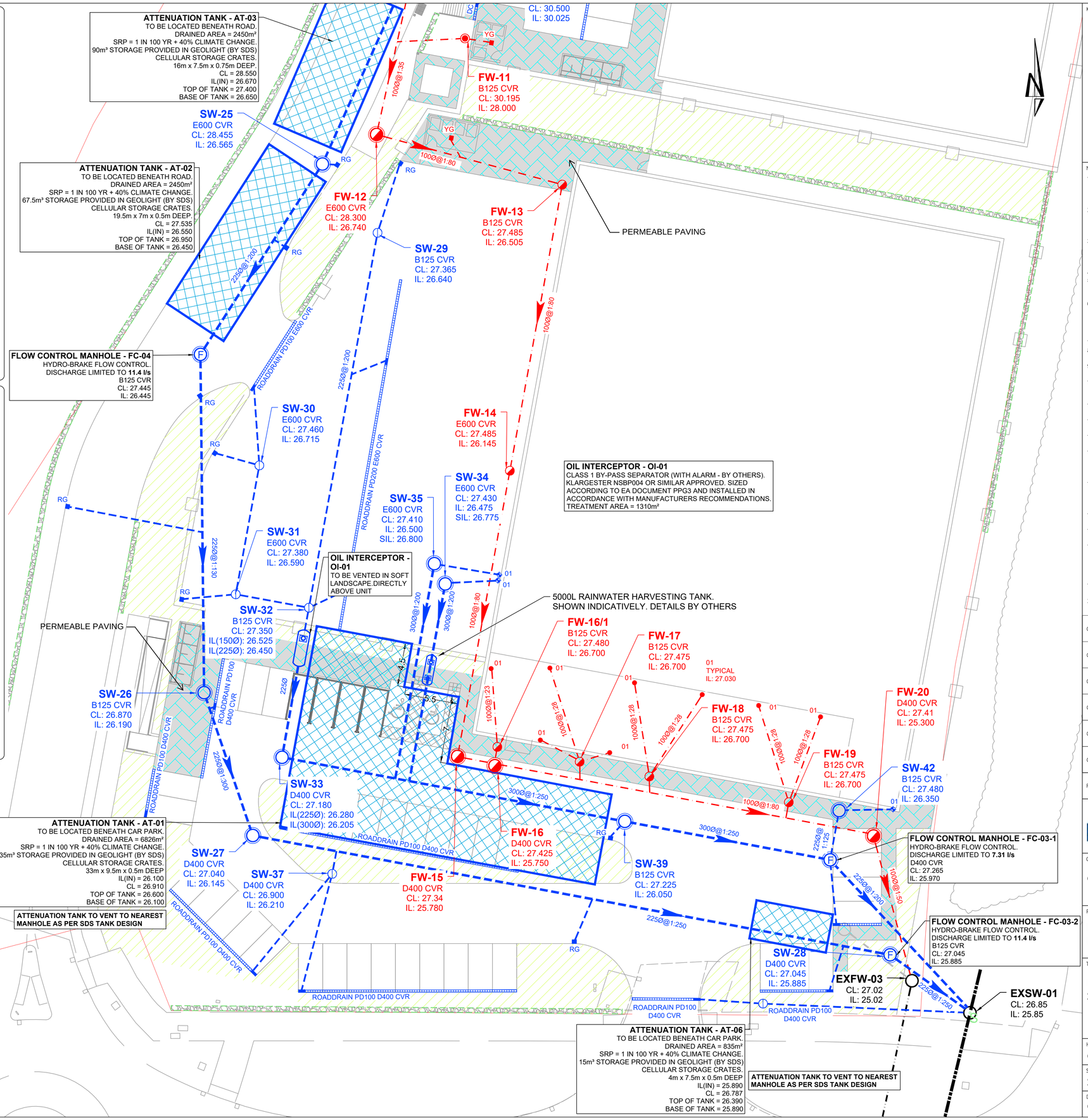
RG — ROAD GULLY (to be trapped)

YG — YARD GULLY (to be trapped)

PG — PAVED AREA GULLY (to be trapped)

DC — DRAINAGE CHANNEL
(Refer to layout for specification)

TH — THRESHOLD DRAINAGE CHANNEL
(Refer to architect for details / specification)




KEY PLAN

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. The DWG file is issued for the purposes of coordination only and do not represent formal drawing issue and are not to be reprinted in any form. Formal issue of drawings is via DWF, Adobe PDF files and/or hard copies and their associated information issue sheets.
3. Note that all care has been taken with the export of DWG files and their content, but we recommend that you make due dimensional checks before using any DWG file information. Any errors found are to be reported to Hydrock immediately.
4. Levels shown in metres above Ordnance Datum (mAOD).
5. All private drainage to comply with current Building Regulations, BS EN-752 Drain and Sewer systems outside Buildings and other relevant British Standards and Codes of Practices.
6. All external drainage within trafficked areas with less than 1.2m cover to have type Z concrete bed and surround. All external drainage within landscaped areas with cover less than 0.6m to have type Z concrete bed and surround. All drainage with greater cover than the minimum required to have type S bed and surround.
7. All drainage to be laid soffit to soffit unless otherwise shown.
8. The Contractor is to verify the line, level and diameter of existing sewers before commencing drainage works.
9. All foul drainage to be minimum 100mm diameter, all surface water drainage to be minimum 150mm diameter unless otherwise shown.
10. Cover levels shown on this drawing refer to approximate surface levels. It is the contractors responsibility to ensure that access covers and frames are set at the final surface levels.
11. Where possible the contractor is to orientate manhole biscuits and covers to locate them parallel to kerbs and paving.
12. The Contractor should comply with hs(g) 47 "Avoiding Danger from Underground Services" when excavating around existing services.
13. It is the contractors responsibility to determine the location and depth of all existing services, mains and cables prior to construction.
14. Contractor to provide temporary screens in each of the down stream manholes during the construction period of the development in accordance with SFA 2.9.10 and the local sewerage undertakers requirements.
15. All in-situ concrete and precast concrete components to be manufactured using Sulphate Resisting Portland Cement, (SRPC) to BS 4027, if required, subject to soil conditions. Manhole components to be to BS EN 1917:2002.
16. All ironwork to be kite marked by BSI or certified by equal inspection authority.
17. All redundant connections to be capped off and grouted from the down stream manhole.
18. All new drainage pipes to be jetted, CCTV surveyed with DVD recording and any defects highlighted to the supervising officer. Following the rectification of any defects, the drain is to be re-surveyed with CCTV and the recordings made available to the project manager/engineer.
19. Prior to commencing the works the contractor is to confirm details of the existing drainage system as noted on the drawing.
20. Prior to commencing the works the contractor is to undertake the drainage investigation work as noted on the drawing.

| REV | REVISION NOTES/COMMENTS | | | | | |
|---|---|---|---|---|---|---|
| | DRAWN BY | DATE | CHECKED BY | DATE | APPROVED BY | DATE |
| C06 | DRAWING SCALE NOTE AMENDED TO SHOW 1:200 SCALE | | | | | |
| | H.MILLER | 20/02/23 | H.MILLER | 20/02/23 | J.MAGEE | 20/02/23 |
| C05 | OIL INTERCEPTORS AND ATTENUATION TANK VENTING LOCATIONS/ NOTES ADDED | | | | | |
| | H.MILLER | 11/11/22 | A.TODD | 11/11/22 | A.TODD | 11/11/22 |
| C04 | UNIT 500 SIPHONIC DRAINAGE POSITIONS COORDINATED WITH SPECIAILISTS | | | | | |
| | H.MILLER | 03/11/22 | A.TODD | 03/11/22 | A.TODD | 03/11/22 |
| C03 | UNIT 500 STACK POSITIONS COORDINATED WITH ARCHITECTS LAYOUT<br>FOUL MANHOLE FW-16/1 ADDED | | | | | |
| | H.MILLER | 29/09/22 | J.MAGEE | 29/09/22 | J. MAGEE | 29/09/22 |
| C02 | FOR CONSTRUCTION | | | | | |
| | H.MILLER | 18/08/22 | A. TODD | 18/08/22 | J. MAGEE | 18/08/22 |
| C01 | FOR CONSTRUCTION | | | | | |
| | H.MILLER | 08/08/22 | A. TODD | 08/08/22 | J. MAGEE | 08/08/22 |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PROJECT
DUNSBURY PARK
UNITS 500, 501 & 502

TITLE
DRAINAGE LAYOUT
SHEET 3

| HYDROCK PROJECT NO. | SCALE @ A1 |
|---|---|
| C-19453-C | 1:200 |

| STATUS DESCRIPTION | STATUS |
|---|---|
| SUITABLE FOR CONSTRUCTION | A |

| DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) | REVISION |
|---|---|
| G1129-HYD-ZZ-XX-DR-C-7012 | C06 |