LAND AT GLEBE FIELD AND THE VICARAGE

CARYLL PLACE, CHURCH STREET, WARNHAM, RH12 3XR

DRAINAGE VERIFICATION REPORT & MANAGEMENT AND MAINTENANCE PLAN

SHANLY HOMES

DOCUMENT REFERENCE:

23126-SWD-RP-01 | C01

WATER | ENVIRONMENT

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Authorisation and Version Control

Water Environment was commissioned by Shanly Homes to compile this Site Drainage Management and Maintenance Plan. This plan sets out the minimum maintenance and inspection requirements of the SuDS features implemented as part of the proposed scheme on the Land at Glebe Field and the Vicarage, Caryll Place, Church Street, Warnham, RH12 3XR.

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for and on behalf of Water Environment Limited

Document Version History

Rev	Date	Comments	Auth	Chck	Appr
P01	26/11/2025	Draft issue for comment	TM	TC	TC
C01	28/11/2025	Final Issue	TM	TC	TC

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1 INTRODUCTION

General Information

1.1 The proposed development, hereinafter referred to as 'the site' is located on the Land at Glebe Field and the Vicarage, Caryll Place, Church Street, Warnham, RH12 3XR.

1.2 As part of this scheme, a surface water drainage design incorporating various Sustainable Drainage Systems (SuDS) features has been designed to manage surface water runoff and prevent flooding at the site.

1.3 The aim of SuDS is to emulate the natural processes with the result that watercourse and storage areas receive the hydrological profiles under which they evolved, and that water quality in local ecosystems is protected or improved. Particularly, the benefits of SuDS are as follows:

- Control the flow, volume and frequency of water leaving the development area;
- Prevent pollution by intercepting silt and cleaning runoff from hard surfaces;
- Provide attractive surrounding for the community;
- Create opportunities for wildlife.

1.4 The drainage design for the site is detailed in the stormwater drainage design drawing completed by Glanville Group and approved by the LLFA, drawing reference 4170383-1000 T10. The design includes several features such as a Polypipe Rigistorm X4 Treatment Oil Separator, piped networks, linear drains, manholes, Geo-Cellular attenuation tanks and a surface water pump.

1.5 The purpose of the verification report is to discharge the condition 13 on DC/17/0566. This report confirms the remedials works have been completed as per the snag list and also provides a management and maintenance plan to satisfy condition 13. The remedial works undertaken have been managed by a qualified project manager and independently inspected and verified by Water Environment.

1.6 We note that a Drainage Verification Report was issued by Glanville Consultants in June 2019, reference HH4170383/KLJ/027. Horsham District Council has been reviewed and provided feedback regarding additional information.

1.7 Horsham District Council requires the SuDS design to be accompanied by a drainage Verification Report and Management and Maintenance plan for the drainage components to demonstrate how the drainage system is to be maintained for the lifetime of the development.

1.8 In this context, this report has been prepared to facilitate effective management, maintenance and long-term performance of the drainage systems over the lifetime of the development.

1.9 Water Environment was commissioned by Shanly Homes to carry out an inspection and Verification of the as-built drainage of the land at Glebe Field and the Vicarage located at Church Street, Warnham, West Sussex RH12 3XR.

1.10 The initial visual inspection of the site was completed by Water Environment on the 09th of January 2024 whereby it was clear that some of the works was not completed to the required standard.

1.11 A topographical survey and CCTV survey was thereafter completed and used to inform the construction defects and a remedials works package was compiled by Water Environment and issued on the 25th of June 2024 to rectify the drainage construction in accordance with the approved drainage strategy and best practices.

1.12 Remedial works begun in September 2024 and completed in December 2024. Photographic evidence of the remedial works are provided in the Appendix A of this report. Water Environment has undertaken the final inspection and approved the remedial works of the drainage system.

1.13 The site was visited again by Water Environment in January 2025 to inspect all remedial works. Comments were provided in a report following the inspection. Report reference 23126-DNG-SN-01. The contractor further provided CCTV evidence of the completed works following the second inspection report.

1.14 An as-built drawing has been produced and appended to this report. Reference to the as-build drawing 23126-DNG-SK-05.

1.15 A new Section 106 application was made by Water Environment to rectify the connection to the Southern Water Network. Refer to the approved Southern Water plan in Appendix A, reference 23126-SWD-CO-01.

Scope of Study

1.16 The SuDS Management and Maintenance Scheme addresses matters covered by the stormwater drainage detailed design planning condition 13. This plan considers the proprietary and funding aspects of the management and maintenance of the SuDS for the lifetime of the development concerning:

a. Ownership arrangements for the SuDS (or any part) including:

   i. Arrangements for adoption by any public authority or statutory undertaker; or

   ii. Transfer to a Management Body not falling within part i.

b. Frequency and detail of the management and maintenance of the SuDS.

c. Other aspects of the management and maintenance of the SuDS (not covered by any conditions) including the identity of the Management Body.

d. An outline of intended funding arrangements to secure the long-term management and maintenance of the SuDS (including a Management Covenant unless an appropriate alternative is agreed with the Council as part of the approved SuDS Management and Maintenance Scheme).

1.17 This document refers to the latest technical SuDS guidance within the CIRIA Report 'The SuDS Manual' (2015)[1]. All indications given in this report should also be used in accordance with the manufacturers recommendations relevant to the features installed and used on the site.

1.18 This report sets out the principles for the long-term management and maintenance of the surface water drainage system constructed at the site. This ensures that the property owner, or management company if applicable of the site is entrusted with a robust maintenance programme, ensuring the long-term performance of the surface water drainage network will meet the criteria to which it was designed.

[1] CIRIA, The SuDS Manual CIRIA C753, London 2015

2 MAINTENANCE REQUIREMENTS

Initial Maintenance

2.1 The surface water drainage system will be thoroughly cleaned and tested to ensure it has been built in accordance with the specifications. Additionally, a CCTV survey will be required to prove the condition of the pipe network.

2.2 The drainage system is now operating under a warranty from the contractor, to be maintained by the Resident's Association and their appointed agents for the correct operation and maintenance of the system components.

2.3 Should there be any issues related to the drainage network during the manufacturer warranty period, the Resident's Association will need to rely on the expertise of the manufacturer. Warranties from the surface water pump manufacturers are in place, residents through the management structure, are responsible for maintaining service agreements and adhering to the warranty requirements.

2.4 At the end of the warranty period for the surface water features, the drainage system will become the responsibility of the site freehold owners (The Residents Association).

2.5 The following paragraphs present the maintenance requirements of the different drainage and SuDS components. These items are identified on drawing reference 4170383-1000 T10, see appendices.

SuDS Feature: Gullies, Channel Drains and Slot Drains

2.6 Ownership of the gullies, channel drains and slot drains, and costs associated with their maintenance, will be the responsibility of freehold owners (The Residents Association). This will be administered through the management company Eaves Property Management Services on behalf of The Residents Association.

2.7 There are only gullies proposed as part of the drainage design. Table 1 below depicts the maintenance regime for gullies.

Table 1: Maintenance Regime for Gullies, Channel drains and Slot drains

Maintenance Schedule	Required Action	Typical 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
	Remove sediment from pre-treatment structures and/or internal forebays.	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlets and covers.	As required
Monitoring	Inspect/check all inlets and outlets to ensure that they are in good condition and operating as designed.	As required

SuDS Feature: Manholes, Catchpits and Pipework

2.8 Ownership of the manholes, catchpits and pipework, and costs associated with their maintenance, will be the responsibility of freehold owners (The Residents Association). This will be administered through the management company Eaves Property Management Services on behalf of The Residents Association.

2.9 Silt traps, manholes, catch pits and pipework will need to be inspected on a regular basis. It is suggested that these features are inspected every three months during the first year of the site operation. After this period, the frequency could be reduced to every six months.

2.10 Requirements to clean out these features will be identified during inspections and actions will need to be taken in reasonable time to prevent any blockages that can cause damage to the surrounding area of the site or to the feature itself. The Residents Association and Managing Agent have been formally advised of their obligations.

2.11 It is suggested that occasional CCTV inspection will need to be carried out to monitor the pipework conditions every ten years or when unexpected flooding issues occur.

2.12 Table 2 below depicts the maintenance regime for manholes and inspection chambers.

Table 2: Maintenance Regime for Manholes and Inspection Chambers (including catchpits)

Maintenance Schedule	Required Action	Typical 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.
	Remove sediment.	Monthly for 3 months, then annually.
	Ensure flow control devices are free from debris, blockages and in good condition.	Monthly.
Remedial maintenance	Repair/ rehabilitate inlets, outlets and covers.	As required.

SuDS Feature: Geo-Cellular Attenuation Tank

2.13 Ownership of the Geo-Cellular Attenuation Tanks, and costs associated with their maintenance, will be the responsibility of freehold owner (The Residents Association). This will be administered through the management company Eaves Property Management Services on behalf of The Residents Association.

2.14 Geo-Cellular tanks have been installed on the site to provide attenuation storage discharging at a controlled rate to a surface water package pump. Storm water will be temporarily stored in these tanks during peak events, when the incoming flow rates exceed the rate at which the surface water discharges to the Southern Water Manhole according to the approved Section 106 application design, refer to document 23126-SWD-CO-01 for the approved connection details to the Southern Water network.

2.15 Photographic evidence of the tanks installed was submitted by the Contractor and is appended to this report.

2.16 These tanks will need to be inspected on a regular basis. It is suggested to carry out inspection every three months during the first year of the site operation. After this period, the frequency could be reduced to every six months or annually as the manufacturer might recommend.

2.17 Occasional CCTV inspection will be needed to monitor the condition of the tanks. It is suggested that the pipework inlets and outlets to the tank should be surveyed every 5 years or when unexpected flooding problems occurred. The system is to be jetted clear if necessary and any defects to the pipework should be rectified in a reasonable timescale.

2.18 Any requirement for cleaning or maintenance of these features will need to be identified as part of the above inspections and action taken in reasonable time to prevent damage to the systems or the tanks themselves.

2.19 Chapter 21 of the SuDS Manual[2] (CIRIA Guide) provides general details for the maintenance of attenuation storage tanks, as shown in Table 3.

2.20 To mitigate against siltation, silt trap manholes are installed. Regular cleaning of the silt traps and catchpits will need to be undertaken to ensure that they are effective. Otherwise, if the trap is full, any additional debris will simply pass into the tank. Catchpits should be regularly inspected as described and any debris and silt removed from the sump.

Table 3: Operation and maintenance requirements for attenuation storage tanks

Maintenance schedule	Required action	Typical 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 of 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, outlets, 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

2.21 Geo-Cellular Attenuation Tanks are proposed of the following parts of the site:

- Under roads to the south of the site and west of the package pump.

[2] CIRIA, The SuDS Manual CIRIA C753, Chapter 21 Attenuation Storage Tanks, London 2015

SuDS Feature: Twin Storm Water Pump Station

2.22 Ownership of the stormwater pump, and costs associated with their maintenance, will be the responsibility of freehold owner (The Residents Association). This will administered through the CM Environmental Services on behalf of The Residents Association.

2.23 The pump is designed to discharge at 3 l/s into the oil separator. The pump commissioning certificates are appended to this report.

2.24 CM Environmental Services Limited have installed the surface water package pump on site. Servicing arrangements with CM Environmental are in place for the annual maintenance. Service agreements are appended to this document.

SuDS Feature: Polypipe Rigistorm X4 Treatment

2.25 Ownership of the treatment device and costs associated with the maintenance will be the responsibility of the freehold owner (The Residents Association). This will be administered through the management company Eaves Property Management Services on behalf of The Residents Association.

2.26 The Rigistorm X4 Treatment system is designed to be a low maintenance filtration system whereby the filters within the device will need to be replaced every two years.

Funding Management and Maintenance of Drainage Network

2.27 Ownership of entire drainage network components associated with the maintenance will be the responsibility of the freehold owner (The Residents Association). This will be administered through the management company Eaves Property Management Services on behalf of The Residents Association.

2.28 Funding relating to maintenance of external areas and Sustainable Drainage systems will be the responsibility of the freeholder (The Residents Association) and is administered through the Management Company.

2.29 Residents are individually responsible for maintenance of private drainage within their own property. Outside of private drains is the responsibility of The Residents Association and the appointed managing agent.

3 MANAGEMENT COMPANY DETAILS

3.1 Eaves Property Management Services

Company number: 11320518

Contact person: Beverley Eves

Address: Suite No. 1, Stubbings House, Henley Road, Maidenhead, SL6 6QL

Tell: 01628947908

e-mail: info@eavespropertymanagement.co.uk

3.2 CM Environmental Services Limited

Company number: 07084112

Contact person: Emma White

Address: Unit 1-2 Goodhill Court, Ilkeston, Derbyshire, DE7 4RT

Tell: 01156848356

e-mail: sales@cmenvironmentalltd.co.uk

3.3 The Residents Association: The Willows (Warnham) Residents Management Company Limited

Company number: 11971784

Contact person: Alan Chisholm

Address: Dulce Domum Alma Road, Eton Wick, Windsor, Berkshire, SL4 6JZ

e-mail: alan.chisholm@btinternet.com; beverley@eavespropertymanagement.co.uk

4 RECOMMENDATIONS

4.1 The development is now complete and this should be a live document for the duration of the site occupation.

4.2 An owner's manual was compiled by collating manufacturer's maintenance recommendations for the various elements relevant to the building and surrounding area. The completed owner's manual has been passed to the freehold landowners (The Residents Association) on the 31st of October 2025, during which commissioning certificates, O&M Manuals and maintenance strategy were issued to ensure that they are aware of the maintenance requirements.

4.3 All Inspections and maintenance will be recorded in the Maintenance Record included in Appendix C.

APPENDIX A: DRAWINGS AND PHOTOGRAPHIC EVIDENCE

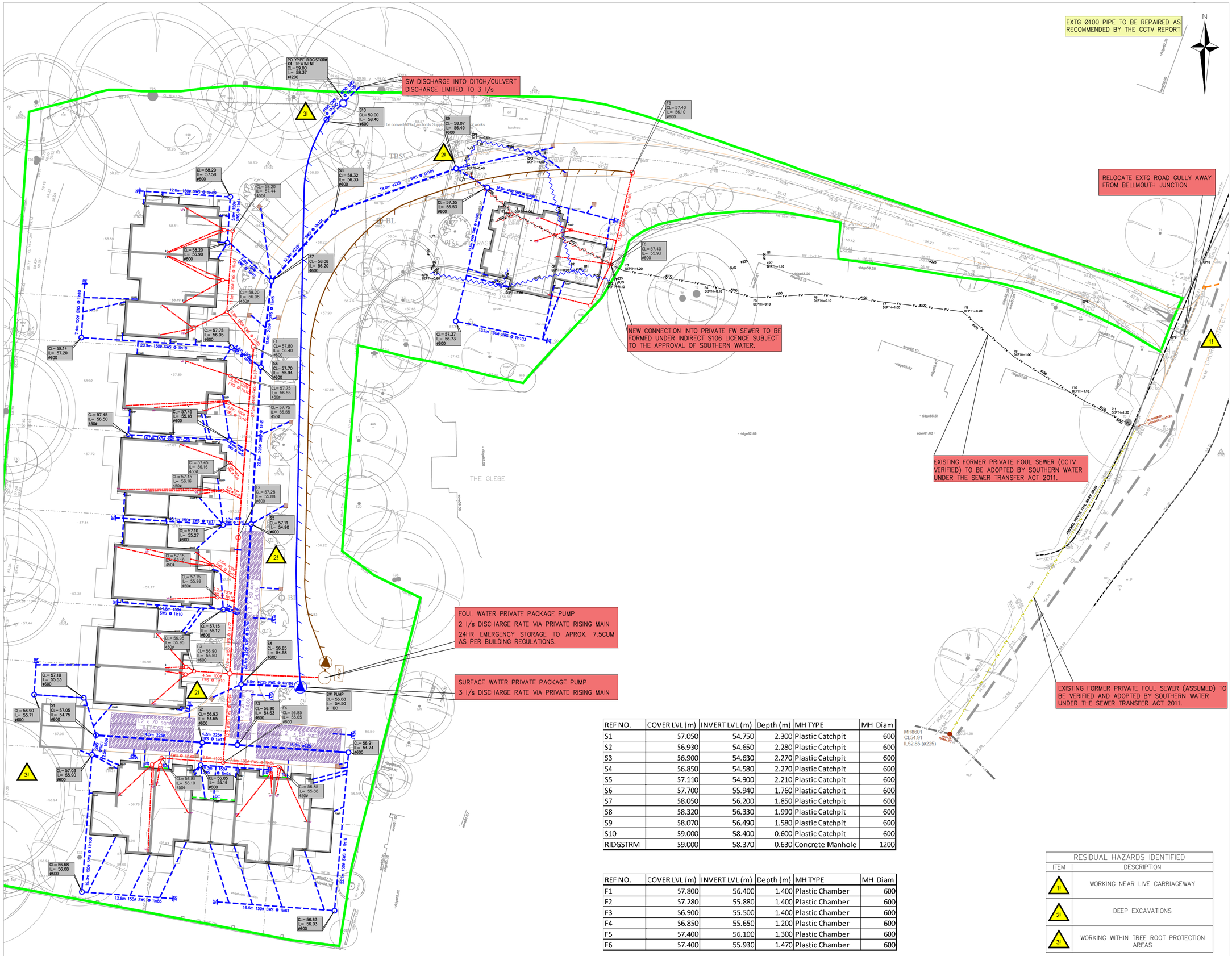
A.1 4170383-1000 T10 – Approved Drainage Design – Glanville

A.2 23126-DNG-SK-05 – As-Built drawing – Water Environment

A.3 23126-SWD-CO-01 – Section 106 Application to Southern Water – Water Environment

A.4 CCTV Survey report and drawing

A.5 Photographic report of remedial works



REF NO.	COVER LVL (m)	INVERT LVL (m)	Depth (m)	MH TYPE	MH Diam
S1	57.050	54.750	2.300	Plastic Catchpit	600
S2	56.930	54.650	2.280	Plastic Catchpit	600
S3	56.900	54.630	2.270	Plastic Catchpit	600
S4	56.850	54.580	2.270	Plastic Catchpit	600
S5	57.110	54.900	2.210	Plastic Catchpit	600
S6	57.700	55.940	1.760	Plastic Catchpit	600
S7	58.050	56.200	1.850	Plastic Catchpit	600
S8	58.320	56.330	1.990	Plastic Catchpit	600
S9	58.070	56.490	1.580	Plastic Catchpit	600
S10	59.000	58.400	0.600	Plastic Catchpit	600
RIDGSTRM	59.000	58.370	0.630	Concrete Manhole	1200

REF NO.	COVER LVL (m)	INVERT LVL (m)	Depth (m)	MH TYPE	MH Diam
F1	57.800	56.400	1.400	Plastic Chamber	600
F2	57.280	55.880	1.400	Plastic Chamber	600
F3	56.900	55.500	1.400	Plastic Chamber	600
F4	56.850	55.650	1.200	Plastic Chamber	600
F5	57.400	56.100	1.300	Plastic Chamber	600
F6	57.400	55.930	1.470	Plastic Chamber	600

RESIDUAL HAZARDS IDENTIFIED

ITEM	DESCRIPTION
1!	WORKING NEAR LIVE CARRIAGEWAY
2!	DEEP EXCAVATIONS
3!	WORKING WITHIN TREE ROOT PROTECTION AREAS

NOTES

1. DRAWING MUST NOT BE SCALED, WORK TO FIGURED DIMENSIONS ONLY.
1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS, DOCUMENTS AND SPECIFICATIONS. ANY IRREGULARITIES, INCONSISTENCIES OR QUERIES WITH THE DRAWING MUST BE RAISED WITH THE ENGINEER IMMEDIATELY.
2. THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNLESS SPECIFICALLY STATED AS 'FOR CONSTRUCTION' IN THE DRAWING STATUS.
3. SEE DRAWING 417038-1012 & 13 FOR DRAINAGE DETAILS
4. ALL SURFACE WATER INSPECTION CHAMBERS TO HAVE A 300mm SUMP (CATCHPIT)

KEY – GENERAL

- DENOTES SITE BOUNDARY
- DENOTES SITE LAYOUT
- DENOTES TOPO SURVEY

KEY – DRAINAGE

- DENOTES PUBLIC SEWER (FOUL & SURFACE WATER)
- DENOTES PRIVATE PLOT DRAINAGE (SURFACE WATER)
- DENOTES EXISTING SURFACE WATER DRAINAGE
- DENOTES EXISTING SURFACE WATER DRAINAGE TO BE REMOVED
- DENOTES PRIVATE (FOUL WATER)
- DENOTES EXISTING FOUL WATER DRAINAGE
- DENOTES EXISTING FOUL WATER DRAINAGE TO BE REMOVED
- DENOTES EXISTING FOUL WATER DRAINAGE (ASSUMED)
- DENOTES PRIVATE RISING MAIN (SURFACE WATER)
- DENOTES PRIVATE RISING MAIN (FOUL WATER)
- DENOTES IMPERMEABLY LINED SW STORAGE TANK
- DENOTES RODDING EYE
- DENOTES ROAD GULLEY
- DENOTES VENT PIPE
- DENOTES RAIN WATER PIPE
- DENOTES VENT
- DENOTES THRESHOLD CHANNEL
- DENOTES DRAINAGE CHANNEL
- DENOTES PRIVATE FOUL WATER PACKAGE PUMP (WITH EMERGENCY STORAGE WELL)
- DENOTES PRIVATE SURFACE WATER PACKAGE PUMP
- PRESUMED FOUL WATER MANHOLE AS SHOWN ON SOUTHERN WATER RECORDS

FOR CONSTRUCTION

Rev.	Description	Date	Chkd
C1	CONSTRUCTION ISSUE	03/07/18 SB	FG
T11	DRAINAGE AMENDED TO SUIT NEW BLOCK PLANS	29/06/18 SB	FG
T10	FW DRAINAGE AMENDED AS AGREED WITH SOUTHERN WATER	27/04/17 SB	FG
T9	MANHOLE SCHEDULES ADDED	21/03/17 SB	FG

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Client : SHANLY HOMES

Project : LAND AT GLEBE FIELD AND THE VICARAGE CHURCH STREET, WARNHAM, WEST SUSSEX

Title : PROPOSED DRAINAGE

Project Engineer :	F.G.	Scale :	1:250 @ A1
Project Director :	J.F.	Date :	AUGUST 17
Status :	TENDER		

Drawing No. 4170383-1000 Rev C1

NOTES

1. Dimensions in metres and levels in m AOD unless otherwise stated. Do not scale.
2. For information only, not for construction.
3. Based on layout by Glanville marked for construction, drawing reference 4170383-1000 C1.
4. Surface water sewers and route traced as per CCTV Survey by Flowrite.

Connection to Southern Water Manhole 7751 as agreed with Section 106 Application

Rigistorm X4 Treatment System

Surface Water Package Pump

Package Pumping System

Caryll Place

3&4 Caryll Pl

5&6 Caryll Pl

7 Caryll Pl

8 Caryll Pl

9 Caryll Pl

10 Caryll Pl

11 Caryll Pl

12 Caryll Pl

13 Caryll Pl

14 Caryll Pl

15 Caryll Pl

1&2 Caryll Pl

S7.1 S7.2 S7.2A S7 S8 S9 S9.1 S9.2 S5.1 S5.2 SS.1B SS.2 S4 S4.1 S1 S1.1 S1.2 S1.3 S2 S2.1 S3 S10 S10.1

RE1 RE2 RE3 RE5 RE7 RE8 RE9 RE10

LEGEND

- Site Boundary
- Surface Water Sewer
- Surface Water Rising Main
- Surface Water Inspection Chamber
- RE — Rodding Eye Location
- Pipework may need to be relaid subject to levels on site. Contractor to confirm
- Gully Locations

AS-BUILT

REV	DATE	AMENDMENTS	DRAW	APPR

WATER | ENVIRONMENT
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CLIENT: Shanly Homes

PROJECT: Land at Glebe Field and the Vicarage Church Street, Warnham, West Sussex

DRAWING: Asbuild stormwater drainage network

DRAWING NUMBER:	REVISION:
23126-DNG-SK-05	P01

SCALE @A1:	DATE:
1:200	26/11/2025

DRAWN BY:	CHECKED BY:	APPROVED BY:
TM	TC	TC

WATER | ENVIRONMENT

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Our Ref: 23126-SWD-CO-01 P01

25 June 2024

Southern Water
Southern House
Yeoman Road
Worthing
West Sussex
BN13 3NX

Dear Dannielle Clifford,

GLEBE FIELD AND THE VICARAGE, CHURCH STREET, WARNHAM
SECTION 106 APPLICATION

Your ref: 15189

Our ref: 23126 Church Street Warnham

In response to your request for further information dated 03 May 2024, each of the 3 points is addressed accordingly. The first point was:

1. *A revised drainage layout in compliance with Building Regulations Part H3. This is because where surface water is being considered to discharge to our network, your surface water drainage should be disposed of in accordance with the requirements of Building Regulations Part H3.*

   This states that rainwater shall discharge in order of priority, to:

   a) Reuse

   b) Infiltration

   c) Watercourse

   d) Storm/Surface Water Sewer

   e) Combined Sewer

   Whilst reuse does not strictly form part of this hierarchy, Southern Water would encourage the consideration of reuse for new developments.

   Where a surface water connection to the foul or combined sewer is being considered, this should be agreed by the Lead Local Flood Authority, in consultation with Southern Water.

WEL Response to Point 1:

As stated our submission, this is a retrospective application for a connection for a site which was built 4 years ago. As such, many of these key decisions have already been made prior to planning. There is no opportunity for water reuse and ground conditions are not suited to soakaways. Furthermore, the on-site drainage system is unfortunately not built in accordance to the approved drainage layout by Glanville, drawing reference 4170383-1000 REV T10, as referenced in Horsham District Council Letter of approval, reference DISC/17/0352.

The outfall for the approved drainage strategy was to the ditch at 3 litres per second, however the outfall was instead built by connecting a Ø150mm PVC pipe between the X4 Treatment (Oil Interceptor) and an existing Southern Water Manhole (7751).

While it is true to say that due process was not followed when this decision was made by the groundworker on site four years ago, in our opinion there is some merit in this idea. The existing ditch is immediately upstream of the as-built connection point and discharges into the existing Southern Water Surface Water sewer. The ditch discharges to the surface water sewer via an inlet headwall to a Ø225 VC pipe which is approximately 13.5m upstream of the Southern Water Manhole (7751). The existing ditch and inlet headwall is not well maintained and at the time of the CCTV survey was completely blocked. The CCTV also reveals an open joint between the inlet headwall and the Southern Water Manhole (7751) which will deteriorate with time. It is therefore likely that an outfall into the ditch will result in regular blockage and flooding of the footpath. By contrast, the connection into Southern Water Manhole (7751) is less likely to be blocked and the load on the public sewer will be unchanged.

The revised (as-built) drainage layout depicts a new Ø150mm Clay pipe between the X4 Treatment (Oil Interceptor) device to the Southern Water Manhole (7751) with the discharge rate of 3 litres per second. The revised drainage layout is appended to this letter, drawing reference 23126-SWD-DP-01-P01.

The second point was:

2. *A letter from Building Regulations and /or percolation test results to confirm that the surface water cannot be discharged to soakaways.*

WEL Response to Point 2:
A Ground Investigation Report was done by Aviron in July 2017, report reference 17-197.01. The Ground Investigation concluded that Infiltration/ Soakaway will not be possible in Section 9.8 & Section 10.2 of the report. The report indicates very weak Mudstone present at shallow depths between 2.50m BGL and 4.00m BGL.

The third point was:

3. *Confirmation on the pipe material that will be used to connect to the public sewer will be in clay.*

WEL Response to Point 3:
Recent CCTV investigation reveals that this pipe has been constructed with a new plastic connection and a buried joint onto the original clay pipe. We recognise that this is not an acceptable arrangement for an adoptable sewer and will need to be changed. The revised drainage layout will replace the Ø150 PVC between the X4 Treatment (Oil Interceptor) device to the Southern Water Manhole (7751) with a new Ø150mm Vitrified Clay pipe. Furthermore, the current Southern Water Manhole (7751) has a concrete slab as a cover which does not comply with adoptable standards so this slab will be replaced with an approved manhole cover. The replacement will be in accordance to Building Regulations Part H3 and the DCG for adoptable drainage.

On balance we believe that the connection to the existing surface water chamber 7751 is probably a better solution because all water from the ditch already discharges into the sewer only a few meters from the existing chamber. Connection directly to the existing chamber (as built) will be less-prone to blockage and flooding of the public footpath.

I trust that the above responses address the points you have raised, but please feel free to contact me if you need to discuss further.

Yours sincerely,

[redacted]

Tashveer Madanjith
MSc ((Env), BTech (Civil)
Graduate Engineer

Encl.
4170383-1000 REV T10 – Glanville – Approved Drainage Plan
DISC/17/0352 – Horsham District Council – Letter of approval
23126-SWD-DP-01-P01 – Water Environment – Revised Drainage Layout
17-197.01 – Aviron – Ground Investigation Report

N

Scale 1:50 (m)

0 0.5 1 2

Connection to Sewer Subject to restrospective S106 approval from Southern Water

Southern Water Manhole 7751
IL:57.55 mAOD
CL:58.40 mAOD
Concrete slab to be replaced with appropriate manhole cover

225ø 1/23 Vitrified Clay

225Ø 1/35 Concrete

150ø 1/50

Existing ø150mm PVC pipe to be replaced by ø150mm Vitrified Clay

X4 Treatment (Oil Interceptor)
IL:57.59 mAOD
CL:58.37 mAOD

MH32B (S10)
Rising Main Break Chamber
IL:57.82 mAOD
CL:58.14 mAOD



NOTES

1. Dimensions in metres and levels in m AOD unless otherwise stated. Do not scale.
2. Pipe alignments and gradients inferred as per CCTV Survey, Drawing reference 14494_F.

LEGEND

- Site Boundary
- Existing Surface Water Sewer
- Proposed Surface Water Sewer
- Site Location

FOR PLANNING

WATER | ENVIRONMENT
6 Coppergate Mews · Brighton Road · Surbiton · London · KT6 5NE
Tel: 020 8545 9720
Email: contact@waterenvironment.co.uk
Web: www.waterenvironment.co.uk

REV	DATE	AMENDMENTS	DR	AP

CLIENT: Shanly Homes

PROJECT: Land at Glebe Field and the Vicarage Church Street, Warnham, W. Sussex

DRAWING: Section 106 Application Revised Drainage Layout

SCALE @A4: 1:50

DATE: XX/05/2024

DRAWN: TM

CHECKED: AG

APPROVED: TC

DRAWING NO: 23126-SWD-DP-01

REVISION: P01

Flowrite Drainage Services Ltd.
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Project

Project Name: Warnham 9-25

Project Description: Survey of remedial repairs September 2025

Project Date: 13/09/2025

STRANDHILL
CIVIL ENGINEERING LTD.

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Warnham 9-25		13/09/2025

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Project Information

Project Name	Project Number	Project Date
Warnham 9-25		13/09/2025

Client

Company: Strandhill Civil Engineering Ltd.
Contact: D. Hayes
Department: Construction
Street: 1 Vancover Wharf
Town or City: Southampton
County: Hampshire
Post Code: SO10 7BN
Phone: 02380 431540
Email: D.Hayes@strandhillengineering.co.uk

Site

Company: Strandhill Civil Engineering
Contact: Site Manager
Street: Caryll Place
Town or City: Warnham
County: West Sussex
Post Code: RH12 3XR

Contractor

Company: Flowrite Drainage Services Ltd.
Contact: Tim Grant
Department: Director
Street: The Kilns, Lynwick Street
Town or City: Rudgwick, Horsham.
County: West Sussex
Post Code: RH12 3DG
Phone: 01403 822485
Mobile: 07768 596 281
Email: info@flowrite-drainage.co.uk

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Section Profile

Project Name	Project Number	Project Date
Warnham 9-25		13/09/2025

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
12	F6	F7	04/09/2025	Caryll place	Vitrified clay	3.84 m	3.84 m

Total: 1 Inspection x Circular 100 mm = 3.84 m Total Length and 3.84 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	S1.3	S1	03/09/2025	Caryll place	Polyethylene	5.55 m	5.55 m
2	RWP4	S1.1	03/09/2025	Caryll place	Polyethylene	3.15 m	3.15 m
5	S2.1	S2	03/09/2025	Caryll place	Polyvinyl chloride	3.23 m	3.23 m
7	S5.1B	S5.3	03/09/2025	Caryll place	Polyethylene	11.29 m	11.29 m
10	RE2	S9.1	03/09/2025	Caryll place	Polyethylene	18.28 m	18.28 m

Total: 5 Inspections x Circular 150 mm = 41.50 m Total Length and 41.50 m Inspected Length

Total: 6 Inspections = 45.33 m Total Length and 45.33 m Inspected Length

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Section Inspection - 03/09/2025 - S1.3X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	03/09/25	8:52	01	Rain	Yes	S1.3X

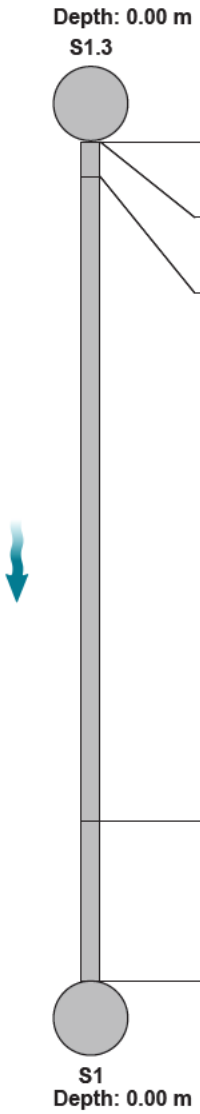
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S1.3
Road:	Caryll Place	**Inspected Length:**	5.55 m	**Upstream Pipe Depth:**	0.000 m
Location:	Road	**Total Length:**	5.55 m	**Downstream Node:**	S1
Surface Type:		**Joint Length:**	1.60 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyethylene
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S1.3	00:00:04		
0.00	WL	Water level, 5% of the vertical dimension	00:00:05		
0.23	LL	Line deviates left: slight	00:00:21		
4.49	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:37		
5.55	CPF	Finish node, catchpit, reference: S1	00:00:54		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 03/09/2025 - RWP4X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
2	2	03/09/25	9:04	01	Rain	Yes	RWP4X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP4
Road:	Caryll Place	**Inspected Length:**	3.15 m	**Upstream Pipe Depth:**	0.000 m
Location:	Gardens (private)	**Total Length:**	3.15 m	**Downstream Node:**	S1.1
Surface Type:		**Joint Length:**	1.60 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyethylene
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S1.1	00:00:03		
0.00	WL	Water level, 5% of the vertical dimension	00:00:05		
0.10	LU	Line deviates up	00:00:18		
1.25	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:25		
1.40	SC	Pipe size changes, new size(s), 100mm high	00:00:26		
3.08	LU	Line deviates up	00:00:34		
3.15	OCF	Finish node, other special chamber, reference: RWP4	00:00:43		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 03/09/2025 - S2.1X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	5	03/09/25	9:32	01	Rain	Yes	S2.1X

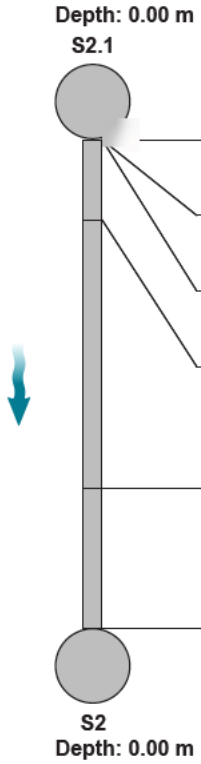
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S2.1
Road:	Caryll Place	**Inspected Length:**	3.23 m	**Upstream Pipe Depth:**	0.000 m
Location:	Road	**Total Length:**	3.23 m	**Downstream Node:**	S2
Surface Type:		**Joint Length:**	1.60 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S2.1	00:00:01		
0.00	WL	Water level, 5% of the vertical dimension	00:00:03		
0.00	JN	Junction at 9 o'clock, 150mm dia	00:00:26		
0.53	MCPE	Pipe material changes to polyethylene at this point	00:00:17		
2.30	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:26		
3.23	CPF	Finish node, catchpit, reference: S2	00:00:41		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 03/09/2025 - S5.1BX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	7	03/09/25	10:03	01	Rain	No	S5.1BX

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S5.1B
Road:	Caryll Place	**Inspected Length:**	11.29 m	**Upstream Pipe Depth:**	0.000 m
Location:	Footway	**Total Length:**	11.29 m	**Downstream Node:**	S5.3
Surface Type:		**Joint Length:**	1.60 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyethylene
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:98



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S5.1B	00:00:01		
0.00	WL	Water level, 0% of the vertical dimension	00:00:02		
6.92	JN	Junction at 12 o'clock, 150mm dia	00:00:30		
11.29	BRF	Finish node, major connection without manhole, reference: S5.3	00:00:57		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 03/09/2025 - RE2X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	10	03/09/25	10:30	01	Rain	Yes	RE2X

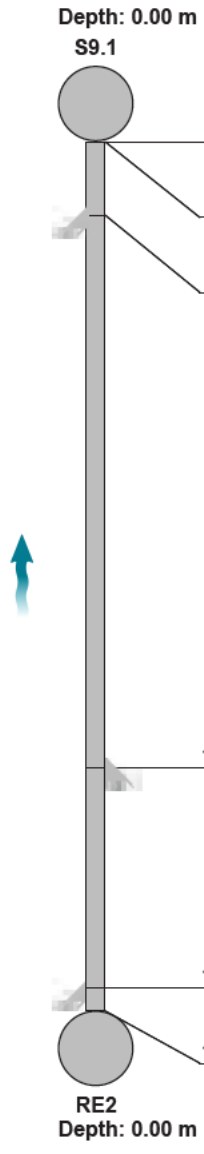
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Upstream	**Upstream Node:**	RE2
Road:	Caryll Place	**Inspected Length:**	18.28 m	**Upstream Pipe Depth:**	0.000 m
Location:	Gardens (private)	**Total Length:**	18.28 m	**Downstream Node:**	S9.1
Surface Type:		**Joint Length:**	3.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyethylene
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:159



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S9.1	00:00:02		
0.00	WL	Water level, 0% of the vertical dimension	00:00:04		
1.55	JN	Junction at 3 o'clock, 150mm dia	00:01:05		
13.15	JN	Junction at 10 o'clock, 150mm dia	00:01:12		
17.80	JN	Junction at 3 o'clock, 150mm dia	00:01:33		
18.28	REF	Finish node, rodding eye, reference: RE2	00:01:49		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 04/09/2025 - F6X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
12	12	04/09/25	11:51	01	Melting Snow Or Ice	Yes	F6X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
T Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Not Specified	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	F6
Road:	Caryll Place	**Inspected Length:**	3.84 m	**Upstream Pipe Depth:**	0.000 m
Location:	Road	**Total Length:**	3.84 m	**Downstream Node:**	F7
Surface Type:		**Joint Length:**	1.60 m	**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	**Material:**	Vitrified clay
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
Depth: 0.00 m **F6**					
0.00	IC	Start node, inspection chamber, reference: F6	00:00:00		
0.00	WL	Water level, 0% of the vertical dimension	00:00:00		
3.84	ICF	Finish node, inspection chamber, reference: F7	00:00:36		
F7 **Depth: 0.00 m**					

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Warnham_Remedials		19/07/2025

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Section Item 5: S2.1 > S2 (S2.1X) 3
Section Item 6: RE10 > S1.3 (RE10X) 4
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Section Item 11: RE2 > S9.1 (RE2X) 8
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New Foul pump Station

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info@flowrite-drainage.co.uk

Project

Project Name: Warnham_Remedials

Project Description: Survey of remedial repairs and alterations

Project Date: 19/07/2025

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CIVIL ENGINEERING LTD.

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Warnham_Remedials		19/07/2025

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Section Item 10: S7.2 > S7.2A (S7.2X) 7
Section Item 11: RE2 > S9.1 (RE2X) 8
Section Item 12: S5.1B > S5.3 (S5.1BX) 9

Flowrite Drainage Services Ltd.
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info@flowrite-drainage.co.uk

Project Information

Project Name	Project Number	Project Date
Warnham_Remedials		19/07/2025

Client

Company: Strandhill Civil Engineering Ltd.
Contact: D. Hayes
Department: Construction
Street: 1 Vancover Wharf
Town or City: Southampton
County: Hampshire
Post Code: SO10 7BN
Phone: 02380 431540
Email: D.Hayes@strandhillengineering.co.uk

Site

Company: Strandhill Civil Engineering
Contact: Site Manager
Street: Caryll Place
Town or City: Warnham
County: West Sussex
Post Code: RH12 3XR

Contractor

Company: Flowrite Drainage Services Ltd.
Contact: Tim Grant
Department: Director
Street: The Kilns, Lynwick Street
Town or City: Rudgwick, Horsham.
County: West Sussex
Post Code: RH12 3DG
Phone: 01403 822485
Mobile: 07768 596 281
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Section Profile

Project Name	Project Number	Project Date
Warnham_Remedials		19/07/2025

Circular, 100 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
10	S7.2	S7.2A	09/06/2025	Caryll Place	Polyvinyl chloride	4.22 m	4.22 m

Total: 1 Inspection x Circular 100 mm = 4.22 m Total Length and 4.22 m Inspected Length

Circular, 150 mm

Item No.	Upstream Node	Downstream Node	Date	Road	Material	Total Length	Inspected Length
1	RWP 4.1	S1.1	09/06/2025	Caryll Place	Polyvinyl chloride	3.50 m	3.50 m
3	S1.3	S1	09/06/2025	Caryll Place	Polyvinyl chloride	5.70 m	5.70 m
5	S2.1	S2	09/06/2025	Caryll Place	Polyvinyl chloride	4.22 m	4.22 m
6	RE10	S1.3	09/06/2025	Caryll Place	Polyvinyl chloride	14.78 m	**14.78 m**
7	S5.1	S5.1B	09/06/2025	Caryll Place	Polyvinyl chloride	8.74 m	8.74 m
9	S7.2A	S7	09/06/2025	Caryll Place	Polyvinyl chloride	2.32 m	2.32 m
11	RE2	S9.1	09/06/2025	Caryll Place	Polyethylene	17.52 m	17.52 m
12	S5.1B	S5.3	09/06/2025	Caryll Place	Polyvinyl chloride	13.68 m	13.68 m

Total: 8 Inspections x Circular 150 mm = 70.46 m Total Length and 70.45 m Inspected Length

Total: 9 Inspections = 74.68 m Total Length and 74.67 m Inspected Length

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Section Inspection - 09/06/2025 - RWP 4.1X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
1	1	09/06/25	12:15	01	No Rain Or Snow	No	RWP 4.1X

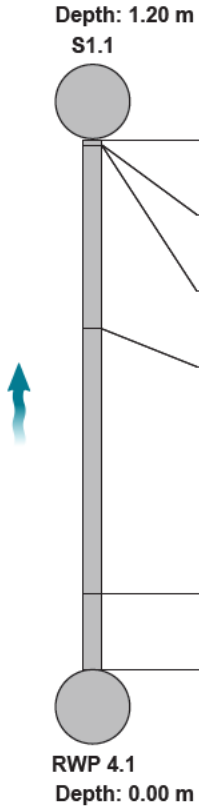
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Upstream	**Upstream Node:**	RWP 4.1
Road:	Caryll Place	**Inspected Length:**	3.50 m	**Upstream Pipe Depth:**	0.000 m
Location:	Road	**Total Length:**	3.50 m	**Downstream Node:**	S1.1
Surface Type:	Paving Slabs And Grass	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	1.200 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S1.1	00:00:04		
0.04	WL	Water level, 0% of the vertical dimension	00:00:11		
0.04	LU	Line deviates up	00:00:12		
1.25	SC	Pipe size changes, new size(s), 100mm high	00:00:29		
3.00	LU	Line deviates up	00:00:43		
3.50	OCF	Finish node, other special chamber, reference: RWP 4.1: RWP	00:01:03		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S1.3X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
3	3	09/06/25	12:26	01	No Rain Or Snow	No	S1.3X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S1.3
Road:	Caryll Place	**Inspected Length:**	5.70 m	**Upstream Pipe Depth:**	0.610 m
Location:	Road	**Total Length:**	5.70 m	**Downstream Node:**	S1
Surface Type:		**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S1.3	00:00:04		
0.00	WL	Water level, 0% of the vertical dimension	00:00:06		
0.42	LL	Line deviates left	00:00:21		
3.23	LU	Line deviates up	00:00:35		
5.70	MHF	Finish node, manhole, reference: S1	00:01:08		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S2.1X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
5	5	09/06/25	1:20	01	No Rain Or Snow	No	S2.1X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S2.1
Road:	Caryll Place	**Inspected Length:**	4.22 m	**Upstream Pipe Depth:**	0.970 m
Location:	Road	**Total Length:**	4.22 m	**Downstream Node:**	S2
Surface Type:		**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S2.1	00:00:01		
0.00	WL	Water level, 0% of the vertical dimension	00:00:03		
0.30	LD	Line deviates down	00:00:09		
0.72	LU	Line deviates up	00:00:16		
1.25	MCPE	Pipe material changes to polyethylene at this point	00:00:23		
3.00	JN	Junction at 10 o'clock, 150mm dia: from Road Gully	00:00:32		
3.60	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:35		
4.22	CPF	Finish node, catchpit, reference: S2	00:00:43		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - RE10X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
6	6	09/06/25	1:28	01	No Rain Or Snow	No	RE10X

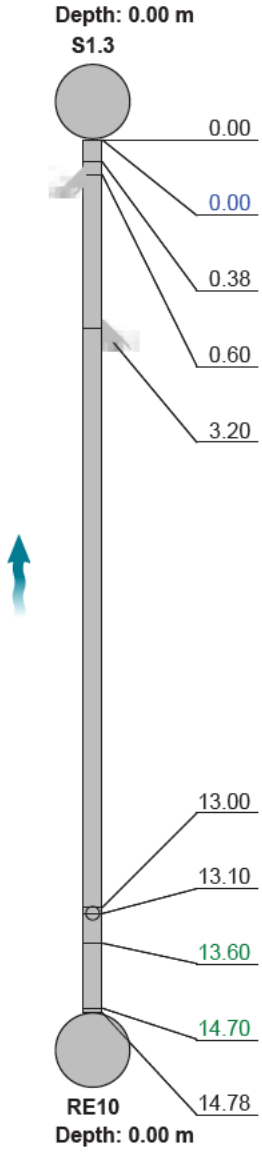
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Upstream	**Upstream Node:**	RE10
Road:	Caryll Place	**Inspected Length:**	14.78 m	**Upstream Pipe Depth:**	0.000 m
Location:	Road	**Total Length:**	14.78 m	**Downstream Node:**	S1.3
Surface Type:	Hedge	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:128



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S1.3	00:00:04		
0.00	WL	Water level, 5% of the vertical dimension	00:00:06		
0.38	MCPE	Pipe material changes to polyethylene at this point	00:00:18		
0.60	JN	Junction at 1 o'clock, 150mm dia	00:00:21		
3.20	JN	Junction at 11 o'clock, 150mm dia	00:00:33		
13.00	SC	Pipe size changes, new size(s), 100mm high	00:01:03		
13.10	JN	Junction at 12 o'clock, 100mm dia	00:01:04		
13.60	LL	Line deviates left	00:01:07		
14.70	LL	Line deviates left	00:01:13		
14.78	REF	Finish node, rodding eye, reference: RE10	00:01:28		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S5.1X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
7	7	09/06/25	1:38	01	No Rain Or Snow	No	S5.1X

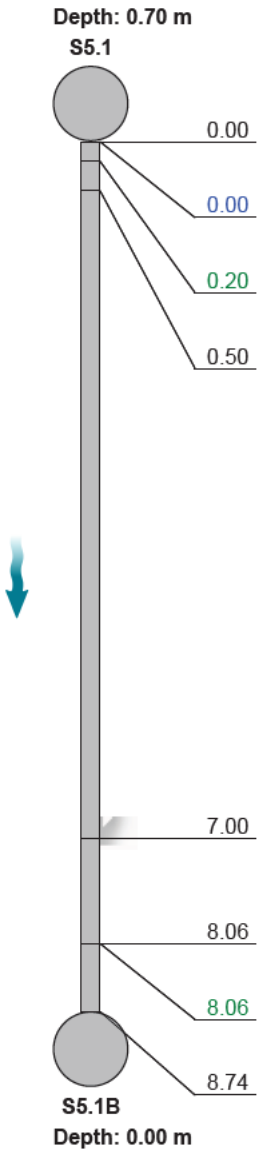
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Sewer	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S5.1
Road:	Caryll Place	**Inspected Length:**	8.74 m	**Upstream Pipe Depth:**	0.700 m
Location:	Gardens (private)	**Total Length:**	8.74 m	**Downstream Node:**	S5.1B
Surface Type:	Grass	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:76



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S5.1	00:00:02		
0.00	WL	Water level, 0% of the vertical dimension	00:00:03		
0.20	LL	Line deviates left	00:00:13		
0.50	MCPE	Pipe material changes to polyethylene at this point	00:00:14		
7.00	JN	Junction at 9 o'clock, 150mm dia	00:00:37		
8.06	MCPVC	Pipe material changes to polyvinyl chloride at this point	00:00:40		
8.06	LL	Line deviates left	00:00:40		
8.74	ICF	Finish node, inspection chamber, reference: S5.1B	00:00:54		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S7.2AX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
9	9	09/06/25	1:50	01	No Rain Or Snow	No	S7.2AX

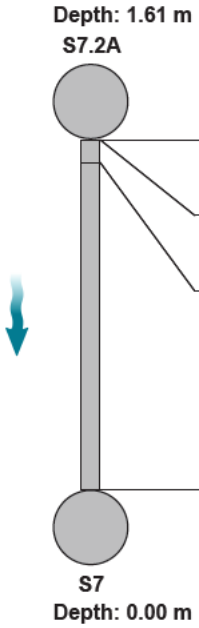
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S7.2A
Road:	Caryll Place	**Inspected Length:**	2.32 m	**Upstream Pipe Depth:**	1.610 m
Location:	Gardens (private)	**Total Length:**	2.32 m	**Downstream Node:**	S7
Surface Type:	Asphalt Highway And Sla	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S7.2A	00:00:01		
0.00	WL	Water level, 0% of the vertical dimension	00:00:03		
0.15	MCPE	Pipe material changes to polyethylene at this point	00:00:13		
2.32	CPF	Finish node, catchpit, reference: S7	00:00:33		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S7.2X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
10	10	09/06/25	1:57	01	No Rain Or Snow	No	S7.2X

Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S7.2
Road:	Caryll Place	**Inspected Length:**	4.22 m	**Upstream Pipe Depth:**	0.940 m
Location:	Road	**Total Length:**	4.22 m	**Downstream Node:**	S7.2A
Surface Type:	Paving Slabs	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	100 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:50



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S7.2	00:00:03		
0.00	WL	Water level, 0% of the vertical dimension	00:00:04		
4.22	ICF	Finish node, inspection chamber, reference: S7.2A	00:00:49		
4.22	JN	Junction at 6 o'clock, 150mm dia: Dropper to MH S7.2A	00:00:40		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - RE2X

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
11	11	09/06/25	2:01	01	No Rain Or Snow	No	RE2X

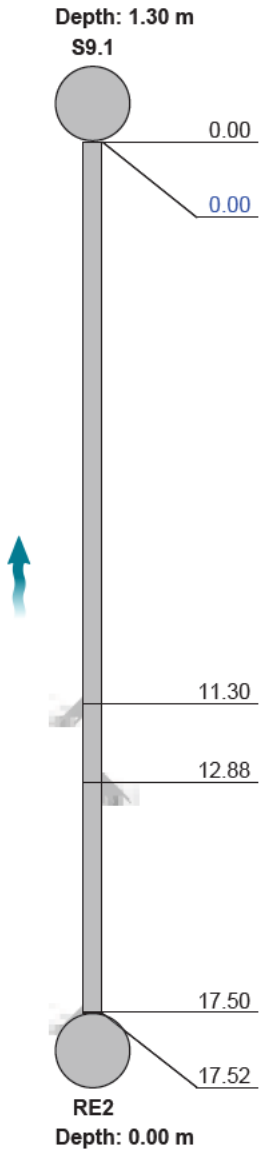
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Upstream	**Upstream Node:**	RE2
Road:	Caryll Place	**Inspected Length:**	17.52 m	**Upstream Pipe Depth:**	0.000 m
Location:	Gardens (private)	**Total Length:**	17.52 m	**Downstream Node:**	S9.1
Surface Type:	Grass	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	1.300 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyethylene
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

Comments:
Recommendations:

Scale: 1:152



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S9.1	00:00:01		
0.00	WL	Water level, 0% of the vertical dimension	00:00:08		
11.30	JN	Junction at 3 o'clock, 150mm dia	00:00:54		
12.88	JN	Junction at 10 o'clock, 150mm dia	00:01:02		
17.50	JN	Junction at 3 o'clock, 150mm dia	00:02:46		
17.52	REF	Finish node, rodding eye, reference: RE2	00:02:54		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0

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Section Inspection - 09/06/2025 - S5.1BX

Item No.	Insp. No.	Date:	Time:	Client`s Job Ref	Weather	Pre Cleaned	PLR
12	12	09/06/25	2:21	01	No Rain Or Snow	No	S5.1BX

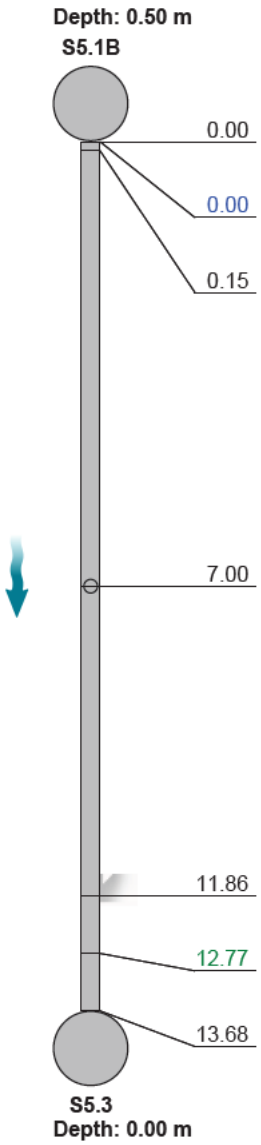
Operator	Vehicle	Camera	Preset Length	Legal Status	Alternative ID
N. Grant	Camera & Jetting	Maxprobe Push Rod	Not Specified	Private Drain	Not Specified

Town or Village:	Warnham	**Inspection Direction:**	Downstream	**Upstream Node:**	S5.1B
Road:	Caryll Place	**Inspected Length:**	13.68 m	**Upstream Pipe Depth:**	0.500 m
Location:	Gardens (private)	**Total Length:**	13.68 m	**Downstream Node:**	S5.3
Surface Type:	Paving Slabs	**Joint Length:**	6.00 m	**Downstream Pipe Depth:**	0.000 m

Use:	Surface water	**Pipe Shape:**	Circular
Type of Pipe:	Gravity drain/sewer	**Dia/Height:**	150 mm
Flow Control:	No flow control	**Material:**	Polyvinyl chloride
Year Constructed:	Not Specified	**Lining Type:**	No Lining
Inspection Purpose:	Post completion condition survey	**Lining Material:**	No Lining

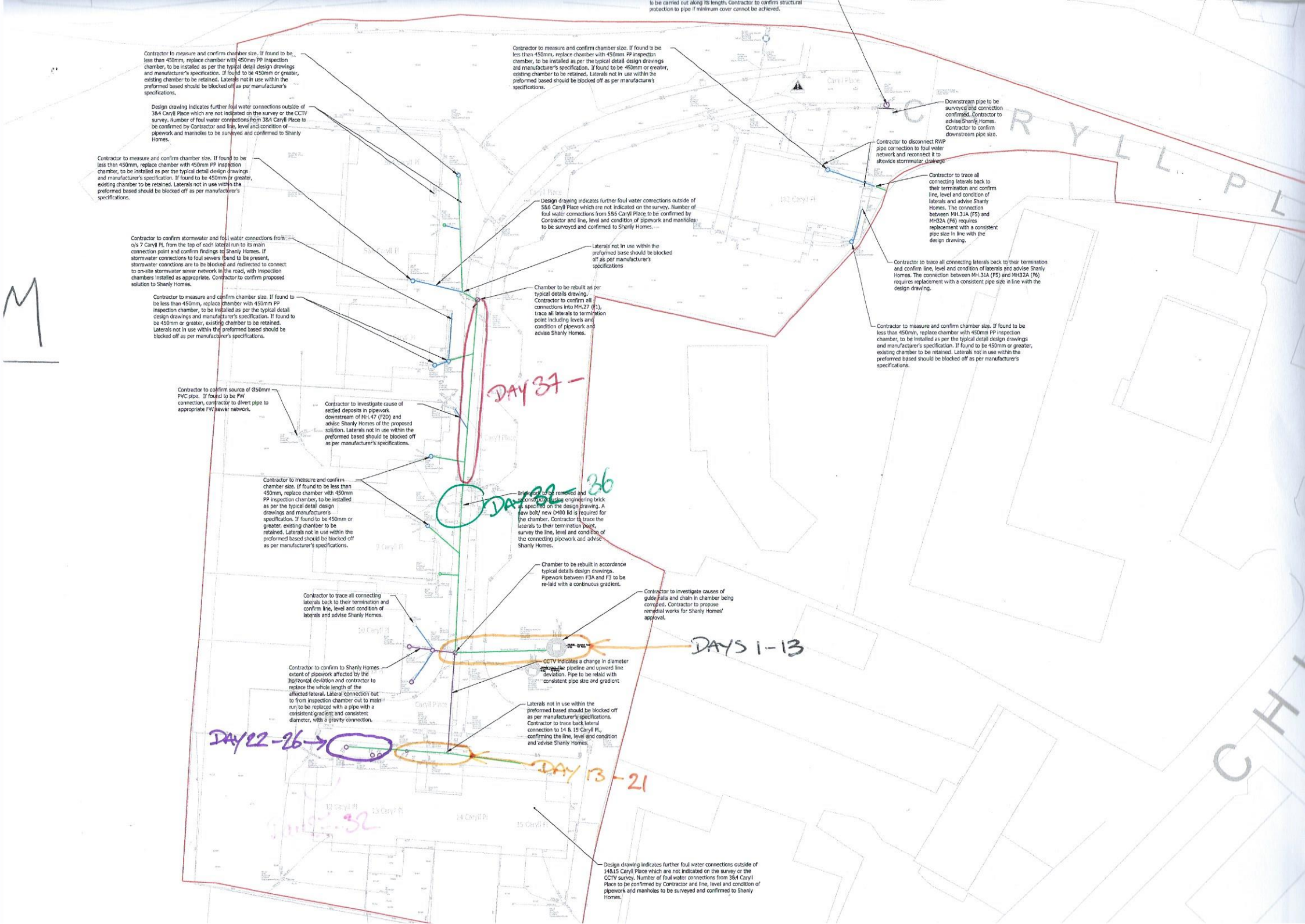
Comments:
Recommendations:

Scale: 1:119



Position [m]	Code	Observation	MPEG	Photo	Grade
0.00	IC	Start node, inspection chamber, reference: S5.1B	00:00:01		
0.00	WL	Water level, 0% of the vertical dimension	00:00:02		
0.15	MCPE	Pipe material changes to polyethylene at this point	00:00:15		
7.00	JN	Junction at 12 o'clock, 150mm dia: From RE6	00:00:35		
11.86	JN	Junction at 9 o'clock, 150mm dia	00:00:49		
12.77	LL	Line deviates left	00:00:52		
13.68	ICF	Finish node, inspection chamber, reference: S5.3	00:01:06		

Construction Features					Miscellaneous Features				
Structural Defects					Service & Operational Observations				
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	0	0.0	0.0	0.0	1.0


to be carried out along its length. Contractor to confirm structural protection to pipe if minimum cover cannot be achieved.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Design drawing indicates further foul water connections outside of 3&4 Caryll Place which are not indicated on the survey or the CCTV survey. Number of foul water connections from 3&4 Caryll Place to be confirmed by Contractor and line, level and condition of pipework and manholes to be surveyed and confirmed to Shanly Homes.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Contractor to confirm stormwater and foul water connections from o/s 7 Caryll Pl. from the top of each lateral run to its main connection point and confirm findings to Shanly Homes. If stormwater connections to foul sewers found to be present, stormwater conntions are to be blocked and redirected to connect to on-site stormwater sewer network in the road, with inspection chambers installed as appropriate. Contractor to confirm proposed solution to Shanly Homes.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Contractor to confirm source of Ø50mm PVC pipe. If found to be FW connection, contractor to divert pipe to appropriate FW sewer network.
Contractor to investigate cause of settled deposits in pipework downstream of MH.47 (F2D) and advise Shanly Homes of the proposed solution. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Contractor to trace all connecting laterals back to their termination and confirm line, level and condition of laterals and advise Shanly Homes.
Contractor to confirm to Shanly Homes extent of pipework affected by the horizontal deviation and contractor to replace the whole length of the affected lateral. Lateral connection out to from inspection chamber out to main run to be replaced with a pipe with a consistent gradient and consistent diameter, with a gravity connection.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Design drawing indicates further foul water connections outside of 5&6 Caryll Place which are not indicated on the survey. Number of foul water connections from 5&6 Caryll Place to be confirmed by Contractor and line, level and condition of pipework and manholes to be surveyed and confirmed to Shanly Homes.
Laterals not in use within the preformed base should be blocked off as per manufacturer's specifications
Chamber to be rebuilt as per typical details drawing. Contractor to confirm all connections into MH.27 (F1), trace all laterals to termination point including levels and condition of pipework and advise Shanly Homes.
DAY 37 -
Brickwork to be removed and reconstructed using engineering brick as specified on the design drawing. A new bolt/ new D400 lid is required for the chamber. Contractor to trace the laterals to their termination point, survey the line, level and condition of the connecting pipework and advise Shanly Homes.
Chamber to be rebuilt in accordance typical details design drawings. Pipework between F3A and F3 to be re-laid with a continuous gradient.
Contractor to investigate causes of guide rails and chain in chamber being corroded. Contractor to propose remedial works for Shanly Homes' approval.
DAYS 1-13
CCTV indicates a change in diameter and vertical pipeline and upward line deviation. Pipe to be relaid with consistent pipe size and gradient
Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications. Contractor to trace back lateral connection to 14 & 15 Caryll Pl., confirming the line, level and condition and advise Shanly Homes.
DAY 22-26
DAY 13-21
Design drawing indicates further foul water connections outside of 14&15 Caryll Place which are not indicated on the survey or the CCTV survey. Number of foul water connections from 3&4 Caryll Place to be confirmed by Contractor and line, level and condition of pipework and manholes to be surveyed and confirmed to Shanly Homes.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
Downstream pipe to be surveyed and connection confirmed. Contractor to advise Shanly Homes. Contractor to confirm downstream pipe size.
Contractor to disconnect RWP pipe connection to foul water network and reconnect it to sitewide stormwater drainage
Contractor to trace all connecting laterals back to their termination and confirm line, level and condition of laterals and advise Shanly Homes. The connection between MH.31A (F5) and MH32A (F6) requires replacement with a consistent pipe size in line with the design drawing.
Contractor to trace all connecting laterals back to their termination and confirm line, level and condition of laterals and advise Shanly Homes. The connection between MH.31A (F5) and MH32A (F6) requires replacement with a consistent pipe size in line with the design drawing.
Contractor to measure and confirm chamber size. If found to be less than 450mm, replace chamber with 450mm PP inspection chamber, to be installed as per the typical detail design drawings and manufacturer's specification. If found to be 450mm or greater, existing chamber to be retained. Laterals not in use within the preformed based should be blocked off as per manufacturer's specifications.
CARYLL PL
CH

PROJECT 19/08/2024, 13:37

warnham drainage remedial

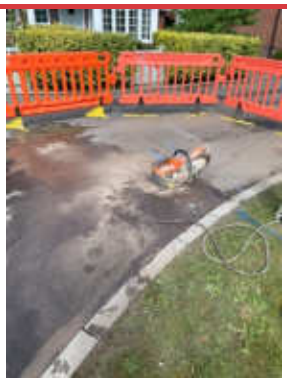
Monday 19 August 2024

Prepared For Shanly Homes

178 Issues Identified



DAY 1 SETUP



DAY 1



DAY 1



DAY 1



DAY 1



DAY 1



DAY 2



DAY 2



DAY 2



DAY 2



DAY 3



DAY 3



DAY 3



DAY 3



DAY 3



DAY 3



DAY 3

Small section of pipe has backfall towards MH. 16



DAY 4



DAY 4



DAY 4



DAY 5



DAY 5



DAY 5



DAY 6



DAY 6



DAY 7 TANK EMPTIED



DAY 7



DAY 7



DAY 7



DAY 7



DAY 7



DAY 7



DAY 7



DAY 7



DAY 7



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



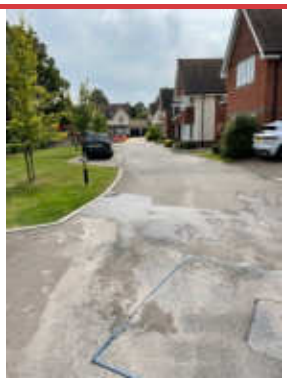
DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 8/9



DAY 10



DAY 10



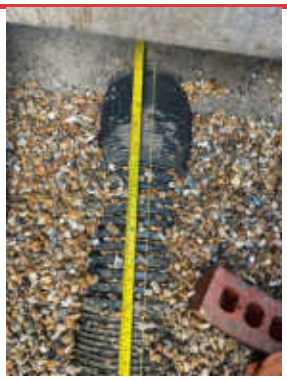
DAY 10



DAY 10



DAY 10



DAY 11



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DAY 12



DAY 13



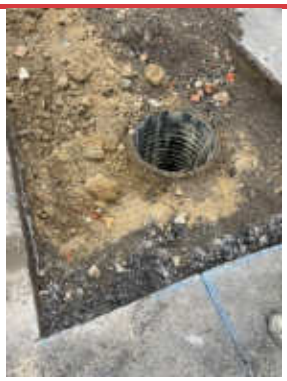
DAY 13



DAY 13



DAY 14



DAY 14



DAY 14



DAY 14



DAY 14



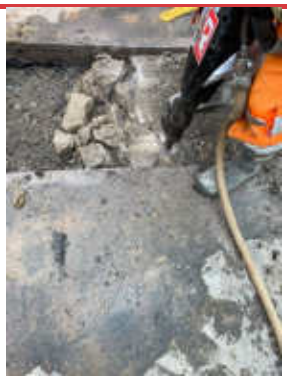
DAY 15



DAY 15



DAY 15



DAY 15



DAY 16



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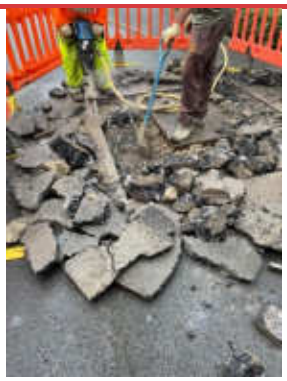
DAY 22



DAY 22



DAY 22



DAY 22



DAY 22



DAY 23 TO 25



DAY 23 TO 25



DAY 23 TO 25



DAY 23 TO 25



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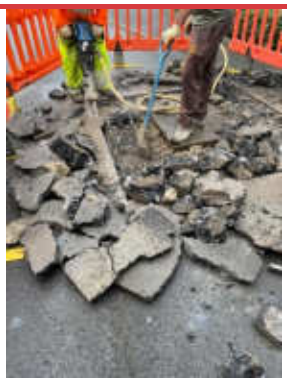


DAY 23 TO 25



DAY 26



DAY 26



DAY 26



DAY 27



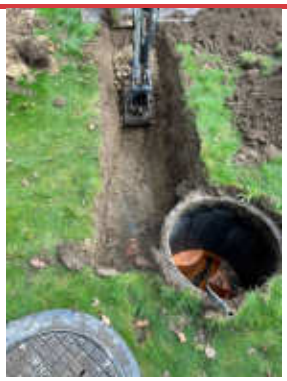
DAY 27



DAY 28



DAY 28



DAY 28



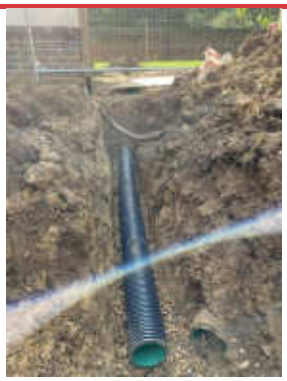
DAY 29



DAY 29



DAY 30



DAY 30



DAY 30



DAY 30



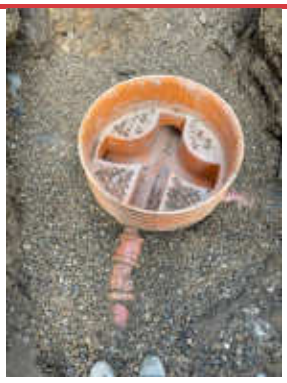
DAY 30



DAY 30



DAY 30



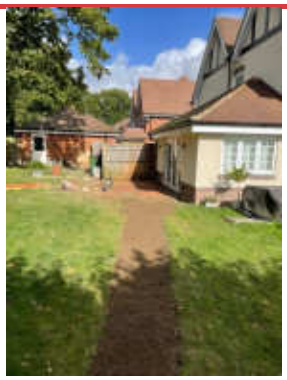
DAY 31



DAY 31



DAY 31



DAY 32



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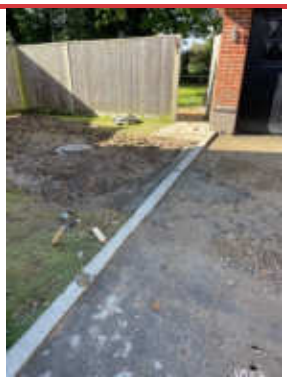
DAY 32



DAY 32



DAY 33



DAY 33



DAY 33



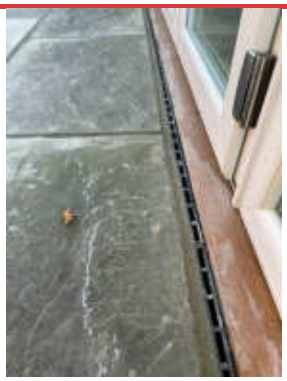
DAY 34&35



DAY 34&35



DAY 34&35



DAY 34&35



DAY 34&35

PROJECT 15/10/2024, 20:53

warnham report 2

Tuesday 15 October 2024

Prepared For Shanly Homes

136 Issues Identified



DAY 36



DAY 36



DAY 36



DAY 36



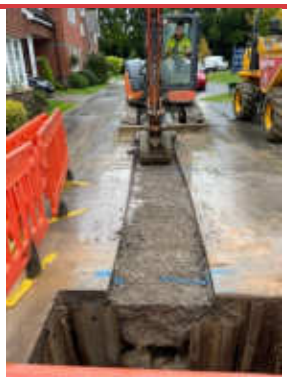
DAY 36



DAY 36



DAY 36



DAY 36



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DAY 38



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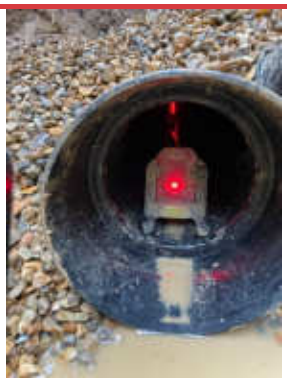

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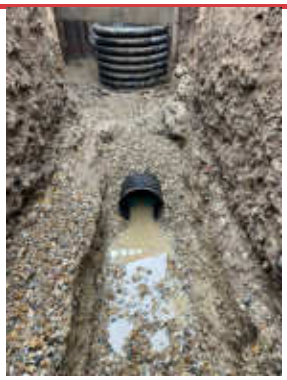
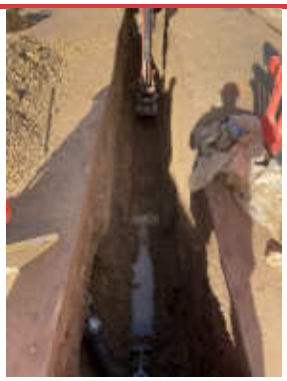


DAY 41



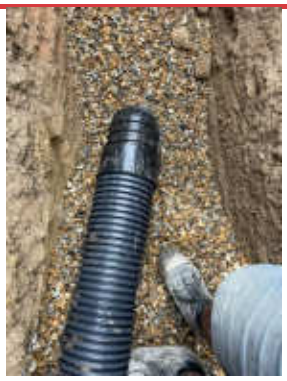
DAY 41



DAY 41



DAY 42-46



DAY 42-46



DAY 42-46



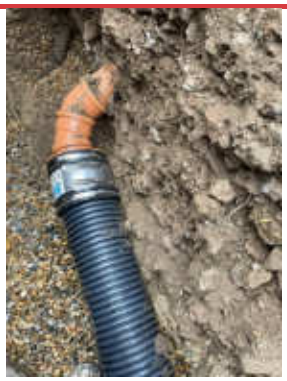
DAY 42-46



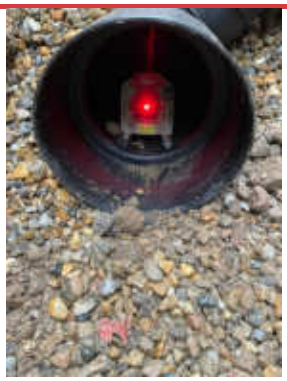
DAY 42-46



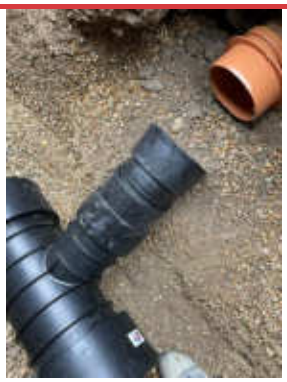
DAY 42-46



DAY 42-46



DAY 42-46



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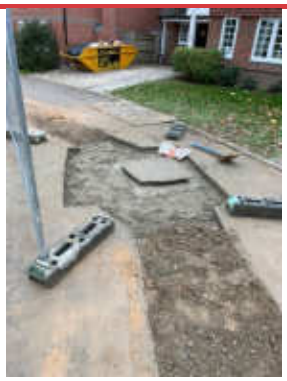

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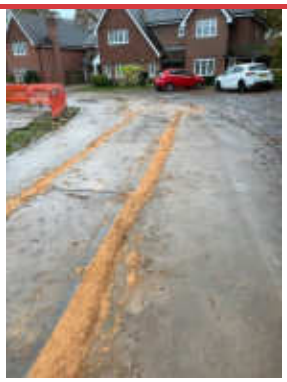

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DAYS 53 TO 57 RISING MAIN



DAYS 53 TO 57 RISING MAIN



DAYS 53 TO 57 RISING MAIN

PROJECT 10/12/2024, 11:56

warnham report 3

Tuesday 10 December 2024

Prepared For Shanly Homes

24 Issues Identified



DAYS 58 TO 63



DAYS 58 TO 63



DAYS 58 TO 63



DAYS 58 TO 63



DAYS 58 TO 63



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DAYS 64-68



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DAYS 64-68



DAYS 64-68



DAYS 64-68



DAYS 64-68

END OF REPORT

Tarmac top to be renewed in the new year following confirmation reports to say that the drainage is now satisfactory.

The Vicarge: Warnham: Photgraphic evidence of SUDS drainage installation within the site













APPENDIX B: MAINTENANCE AGREEMENTS AND PRODUCT SPECIFICATIONS

B.1 Surface Water Pump

B.2 Rigistorm X4 Treatment Device

CM Environmental Services Ltd

Commissioning Certificate

Certificate No:	CM12017

SITE ADDRESS & CONTACT DETAILS

Caryl Place,
Church St
Warnham
Horsham,
RH12 3XR

Contact Name: **Noel Hayes**

Daytime Telephone Number

Evening Telephone Number

Mobile Telephone Number: **07810 158145**

E-Mail Address: **N.Hayes@strandhillengineering.co.uk**

Pump Details

Pump Type	MWQ50/1100 Twin SW Pump Station
Panel Type	240v
Overload Setting	10
KW	1.1
Full Load Current	6,5

System Details

Chamber diameter	1800mm PCCR
Chamber depth	3000mm PCCR
Surface Water/ Foul/ Other	Surface
Discharge main	63mm existing

Service Requirements

Factory Recommended Service Interval: 12 monthly

Date commissioned: 30/1/24

Commissioned by: Pete Gordon *Fit out by Tom B and Joe B*
Additional comments:

Completed & tested.

Left original panel

Step irons should be fine as it's storm & floats away from them

Fitted new beacon on kiosk

cm environmental services
waste water specialists

T: 0115 6848356
F: 0115 9541275
E: sales@cmenvironmentalltd.co.uk

OPERATION AND MAINTENANCE MANUAL

MWQ Range

INTRODUCTION

Congratulations on the purchase of your CM Pumping Station. It is designed and manufactured by CM Environmental Ltd in the UK, with reliability and efficiency being prime objectives of our company.

CM REFERENCE	CM12017 - 30th January 2024
CUSTOMER	Strandhill Civil Engineering/Shanly Homes
SITE ADDRESS	6 Caryll Pl, Glebe Fields, Church Street, Warnham, West Sussex, RH12 3XR
PUMP SPECIFICATION	MWQ 50/1100
PUMP CHAMBER	1800mm (Dia) x 3000mm (D) PCCR—Supplied by others, existing 63mm black SDR17

We ask that you take time to fully read this manual to ensure that all the installation requirements are met and the operating principles are fully understood so that you can enjoy a trouble free system.

It is extremely important to read the health and safety information before working on the plant.

HEALTH & SAFETY

United Kingdom Health and Safety at Work Act 1974. Section 6a of this act requires manufacturers to advise their customers on the safety and the handling precautions to be observed when installing, operating, maintaining and servicing their products.

The user's attention is drawn to the following:

1. The appropriate sections of this manual must be read before working on the equipment.
2. Installation must only be carried out by suitably trained/qualified personnel.
3. Normal safety precautions must be taken and appropriate procedures observed to avoid accidents.

Refer to CM Environmental Ltd or your local distributor for any technical advice or product information.

Health

The following is extracted from a health warning card supplied to all CM Environmental Ltd staff. It is the client's responsibility to ensure that all necessary protective clothing/equipment is available.

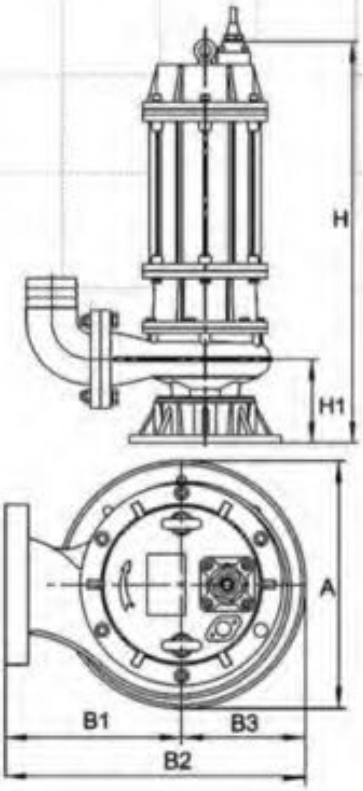
Leptospirosis: Are you at risk?

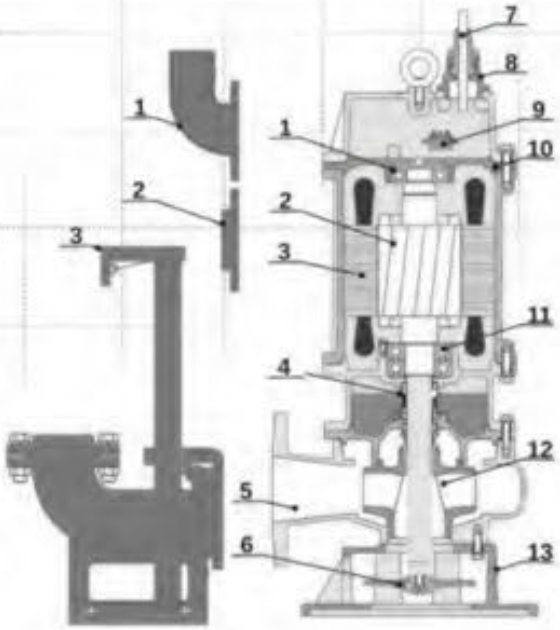
What is Leptospirosis?

There are two types of Leptospirosis affect people in the UK. The first is Weil's disease. This is a serious infection that is transmitted to humans by contact with soil, water or sewage which has been contaminated with urine from infected rats. The second is Hardjo type Leptospirosis which is transmitted from cattle to humans. Obviously, our main concern is transmission from sewage.

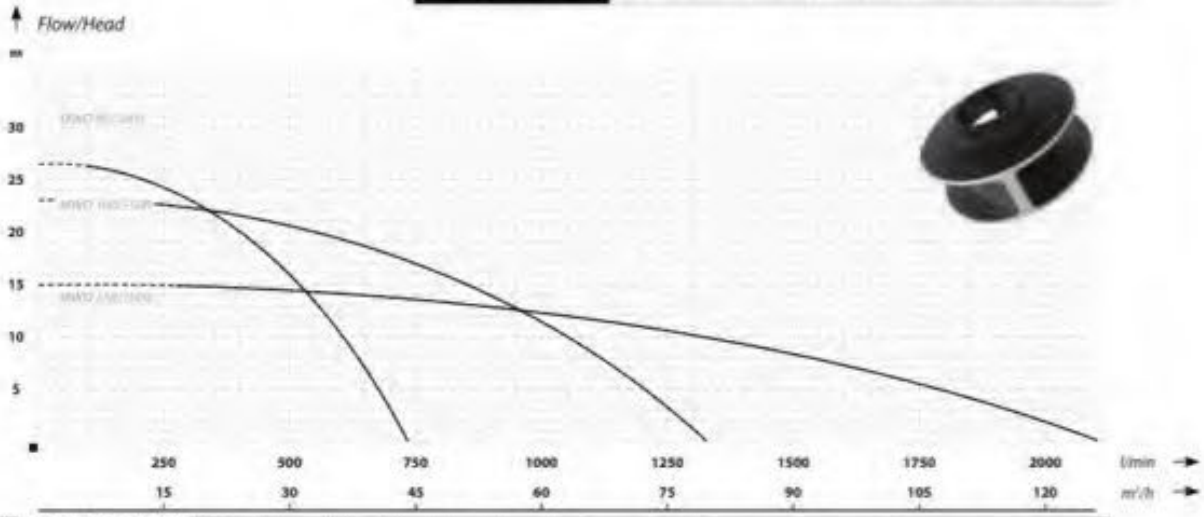


MWQ





Name	Dimensions (mm)					
	H	H1	A	B1	B2	B3
MWQ 50/1100	471	104	187	137	230	190
MWQ 50/1500	491	117	208	143	238	230
MWQ 80/2200	551/544	128	230	167	278	230
MWQ 50/3000	556/559	120	215	151	258	230
MWQ 80/3000	559/562	122	220	152	260	230
MWQ 100/5500	660	146	258	180	310	260
MWQ 150/7500	730	175	300	198	330	320



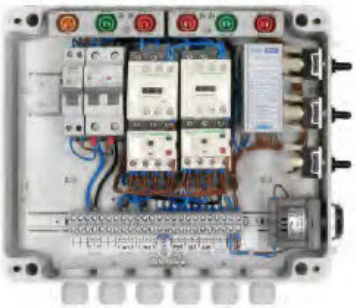
PARAMETERS

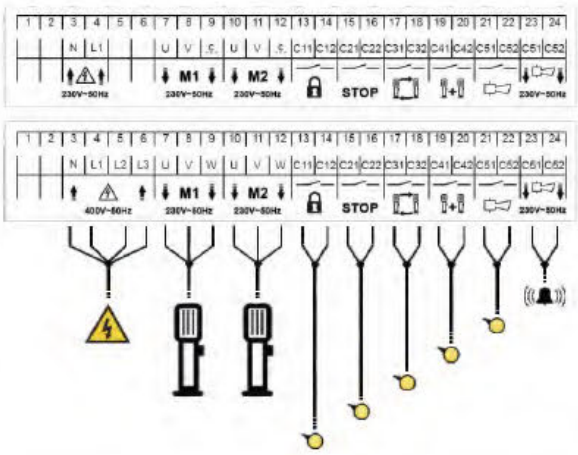
Name	Head (m)	Flow (l/min)	Motor power (kW)	Voltage (V)	Voltage (A)	Inlet/outlet DN	Agitator working range (mm)	Weight (kg)
MWQ 80/3000	26,5	740	3,0	400	6,1	80	1600	43
MWQ 100/5500	23	1320	5,5	400	9,5	100	2000	73
MWQ 150/7500	15	2100	7,5	400	15,4	150	2500	105

A3303A

QUADRO DE ALTERNÂNCIA COM ALARME - PARA 2 BOMBAS
ALTERNATING CONTROL BOX WITH ALARM - FOR 2 PUMPS

IP20
IK07





Apresentação

- Caixa plástica 300x250x140 mm em ABS cinza RAL7035 com dobradiça e com tampa transparente em policarbonato.
- Contactores e relés térmicos das marcas selecionadas
- Relé de alternância para comando de alternância e simultaneidade
- Funcionamento automático, manual ou desligado, comandado em cada uma das bombas de forma independente por comutador de 3 posições com cápsula protetora.
- Funcionamento do alarme sonoro em automático, teste ou desligado, por comutador de 3 posições com cápsula protetora, sem interferir no alarme luminoso.
- Proteção do circuito de comando e do circuito de potência através de disjuntor.
- Proteção do circuito de potência contra sobrecargas através de relé térmico.

Presentation

- 300x250x140 mm grey ABS RAL7035 plastic box with hinges and transparent polycarbonate lid.
- Contactor and overload relay with requested trademarks.
- Alternating and simultaneity control by a alternating relay.
- Buzzer and light alarm included.
- Automatic, Manual or OFF mode system controlled in each pump independently by a 3 positions toggle switch with rubber cap.
- Buzzer and light alarms controlled by a 3 positions toggle switch with rubber cap keeping the buzzer in automatic, test or OFF mode system, and not interfering with the light alarm.
- Protection of the command circuit and power circuit by a circuit breaker.
- Protection of the power circuit by an overlay relay.

Funcionamento

Depois de efetuadas todas as ligações corretamente, os relés térmicos deverão serregulados de acordo com as intensidades nominais dos motores. O quadro deverá apresentar todas as sinalizações desligadas exceto a de presença da fase do circuito de comando.

Com os comutadores na posição (AUT), sempre que o nível atingir o comando de arranque da 1ª bomba (C31-C32), será ligada uma das bombas alternadamente, só desligando quando o nível descer até ao nível de paragem (C21-C22). Se o nível subir até ao nível de simultaneidade (comando de arranque da 2ª bomba C41-C42), entrarão em funcionamento as 2 bombas em simultâneo, só desligando ambas quando o nível descer até ao nível de paragem (C21-C22).

A abertura do comando de segurança (C11-C12), faz desligar as bombas, independentemente das indicações dos comandos de arranque e de paragem. Caso não se pretenda fazer uso do comando de segurança, este deverá ser fechado através de um "shunt".

Sempre que o comando de alarme (C51-C52) fechar, será ligado o alarme luminoso e o alarme sonoro, podendo este ser desligado através do respetivo comutador.

Com o comutador do circuito de comando na posição manual, a correspondente bomba liga, independentemente do estado dos comandos de arranque, paragem e de segurança.

O disparo de qualquer dos relés térmicos devido a sobrecarga (sinalizadores vermelhos), faz com que a correspondente bomba se mantenha desligada independentemente das indicações de qualquer dos comandos.

Operation Mode

After doing correctly all the connections, the overload relays must be adjusted according to the motor`s In. The control box will maintain all the signaling OFF except phases presence signaling.

When the toggle switches are switched in the automatic mode (AUT), whenever the level reaches the start control of the 1st pump (C31-C32), one of the pumps turns ON alternately, only turning OFF when the level comes down beyond the stop level (C21-C22). If the level comes up the simultaneity level (2nd pump start control) (C41-C42), both pumps turn ON simultaneously, only turning OFF when the level comes down the stop level (C21-C22).

The opening of the safety control (C11-C12) turns OFF the pumps, independently of the indications of the start/stop control. If you don't want to use the safety control, it must be closed with a "shunt".

Whenever the alarm control (C51-C52) closes, the buzzer and light alarm will turn ON (red signal lamp). The buzzer can be turned OFF with the alarm toggle switch.

When the toggle switch of the control circuit is switched over the manual mode, the selected pump turns ON, independently of the state of the start/stop and safety controls.

The trip of any overload relay due to an overcharge (red signal lamp) turns OFF the correspondent pump, independently of the state of any control.

Códigos | Codes

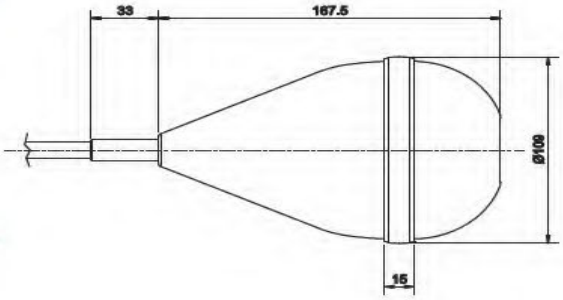
	Schneider Electric		Danfoss		WEG	
1~	5QA2M3303AT.02	1,6 ~ 2,5 A	5QA2M3303AD.02	1,8 ~ 2,8 A	5QA2M3303AW.02	1,8 ~ 2,8 A
	5QA2M3303AT.04	2,5 ~ 4,0 A	5QA2M3303AD.04	2,7 ~ 4,2 A	5QA2M3303AW.04	2,8 ~ 4,0 A
	5QA2M3303AT.06	4,0 ~ 6,0 A	5QA2M3303AD.06	4,0 ~ 6,2 A	5QA2M3303AW.06	4,0 ~ 6,3 A
	5QA2M3303AT.08	5,5 ~ 8,0 A	5QA2M3303AD.09	6,0 ~ 9,2 A	5QA2M3303AW.08	5,6 ~ 8,0 A
	5QA2M3303AT.10	7,0 ~ 10 A	5QA2M3303AD.12	8,0 ~ 12 A	5QA2M3303AW.10	7,0 ~ 10 A
	5QA2M3303AT.13	9,0 ~ 13 A			5QA2M3303AW.12	8,0 ~ 12,5 A
3~	5QA2T3303AT.02	1,6 ~ 2,5 A	5QA2T3303AD.02	1,8 ~ 2,8 A	5QA2T3303AW.02	1,8 ~ 2,8 A
	5QA2T3303AT.04	2,5 ~ 4,0 A	5QA2T3303AD.04	2,7 ~ 4,2 A	5QA2T3303AW.04	2,8 ~ 4,0 A
	5QA2T3303AT.06	4,0 ~ 6,0 A	5QA2T3303AD.06	4,0 ~ 6,2 A	5QA2T3303AW.06	4,0 ~ 6,3 A
	5QA2T3303AT.08	5,5 ~ 8,0 A	5QA2T3303AD.09	6,0 ~ 9,2 A	5QA2T3303AW.08	5,6 ~ 8,0 A
	5QA2T3303AT.10	7,0 ~ 10 A	5QA2T3303AD.12	8,0 ~ 12 A	5QA2T3303AW.10	7,0 ~ 10 A
	5QA2T3303AT.13	9,0 ~ 13 A			5QA2T3303AW.12	8,0 ~ 12,5 A

UKF10

UKF10

Level regulator freely suspended at the desired height on its own cable: according with the liquid level variation, it starts/stops the pump by it's angle position changes. This float switch is particularly suitable for the level control of sink water and dirty water systems. Main uses in sewage pump stations. Equipped with two chambers to grant shock and pressure resistance and 20 (8) Amps micro-switch.

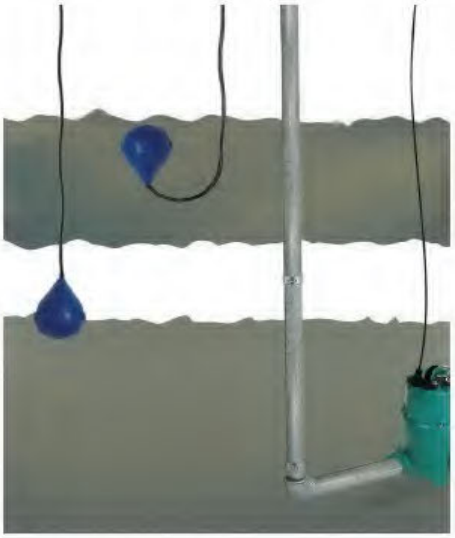




CONSTRUCTION FEATURES

Cable	H07 RN-F 3G1 H07 RN-F 3G1 Oil resistant PVC 3x1 A07 RN-F 3x1
Housing	Polypropilene
Cable grommet	EPDM
Power mains supply	20(8)A 250V
Protection degree	IP 68
Max operating depth	40 m - 131,2 ft
Max operating temperature	60 °C - 140 °F
Function class	I - II

APPROVAL CERTIFICATE	**Cable**
CE	3x1 PVC
CE - TÜV	3G1 H07 RN-F 3G1 H07 RN-F oil resistant 3x1 A07 RN-F



Standard Service Agreement

CM Environmental Services Limited, Unit 3-4, Goodhill Court, Hallam Fields Rd, Ilkeston, DE7 4RT
Tel: 0115 6848356 Fax: 0115 9541275 e-mail: sales@cmenvironmentalltd.co.uk
Web: www.cmenvironmentalltd.co.uk

SIGN & RETURN TO CMES / CUSTOMER COPY

Contract Ref: **CM**

SITE ADDRESS & CONTACT DETAILS (please ensure postcode is included.

Contact Name:

Daytime Telephone Number

Evening Telephone Number

Mobile Telephone Number

E-Mail Address

INVOICE ADDRESS (if different to SITE) & CONTACT DETAILS (please ensure postcode is included)

Contact Name:

Daytime Telephone Number

Evening Telephone Number

Mobile Telephone Number

E-Mail Address

SERVICING / DESLUDGE DETAILS

Maintenance Contract Period	1 / 3 / 5 years optional
Plant Type / ID	
Factory Recommended **SERVICE** Interval:	12 Monthly
Desludge required by our agents	Yes/ No* (Delete as applicable)
Factory Recommended **DESLUDGE** Interval:	N/A

TOTAL CHARGES

SERVICE/MAINTENANCE - cost per visit + parts + VAT	
DESLUDGE *(Prices subject to change & to be confirmed)*	Prices available on request

WHAT IS INCLUDED IN MY SERVICE AGREEMENT?

Electrical & Mechanical Testing *(See overleaf for more detailed information)*

FIRST SERVICE DATE:	DESLUDGE DATE:

I would like to take advantage of the above Standard Service Agreement and have read and agreed to the Terms & Conditions printed overleaf.

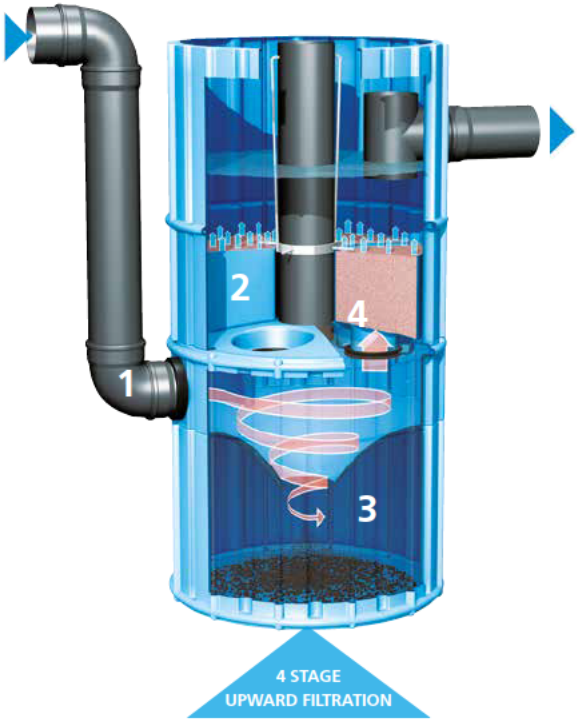
Signature: ..... Date: .....

Print Name: .....

For & On Behalf Of: .....

RIDGISTORM-X4 Stormwater Treatment System Data Sheet

RIDGISTORM-X4 is a chamber containing a 4 stage treatment device, used for the treatment of surface water run-off, providing high levels of contaminant removal, including hydrocarbons and heavy metals. Utilising a number of processes the RIDGISTORM-X4 Stormwater Treatment System consistently provides proven levels of protection for the downstream elements of the drainage system and local environment.



1 **Sedimentation:** Water is induced into a radical flow within the dynamic separator at the base of the unit, promoting sedimentation of solid particles.

2 **Filtration:** Water flows up from the separator and through removable filter elements. The filter elements remain saturated, minimising the risk of the filter elements clogging.

3 **Chemical Separation:** While passing through the filter unit, dissolved chemical pollutants are removed through a process of adsorption, absorption and precipitation.

4 **Oil Retention:** Water is finally discharged via an oil trap assembly which is designed to retain free floating oils in the event of a major spill.

Applications

RIDGISTORM-X4 is capable of cleaning surface water run-off from roofs, car parks, roads and heavily trafficked areas. The RIDGISTORM-X4 Stormwater Treatment System is a low maintenance solution for all surface water applications.

Key Features and Benefits

- Advanced 4 stage filtration system
- Treats water from roofs, car parks and roads
- Separates and removes silt heavy particles, oil, phosphorus and heavy metal pollutants
- Low maintenance – no moving parts
- Facilitates compliance with Water Framework Directive
- Surface water filter complying with DIN 1989-2 Type A
- Supplied within a pre-fabricated chamber delivered to site ready-to-install or as a stand alone unit
- Step irons to BS EN 13101 and ladders to BS EN 14396
- Integral lifting points available on request to improve Health and Safety of handling and installation
- Chamber is strong but light in weight, minimising Health and Safety risks.

RIDGISTORM-X4

PHYSICAL PROPERTIES	HEAVY TRAFFIC	TRAFFIC	ROOF
Height mm	1985	1985	1985
Diameter mm*	980	980	980
Chamber material**	PE	PE	PE
Weight kg*	122	122	122
Recommended max. catchment area m²	500	750	1000
Number of filter elements	4	4	4
Weight/element kg	54	34	34
Pipe connections mm	200	200	200

*Unit typically supplied within a pre-fabricated chamber. However these measurements may increase dependant on the proposed unit's general arrangements.
**Majority of components are polyethylene (PE), however other materials are used in the unit manufacture.

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RIDGISTORM-X4 Stormwater Treatment System Data Sheet

Performance

RIDGISTORM-X4 Stormwater Treatment System Chambers are fabricated from Ridgistorm-XL pipework, which is manufactured to meet the material requirements of BS EN 13476:2007 (Part 1-3). Filters have no moving parts and have an average expected lifespan of 2 years (based on nominal usage).

Stormwater treatment

RIDGISTORM-X4 has been designed to remove heavy particles, silt and nutrients and heavy metals such as copper, zinc and cadmium from the surface water to provide an environmentally sound solution which benefits the natural watercourse and increases biodiversity.

Improved surface water quality

RIDGISTORM-X4 minimises pollution of the natural watercourse and enables clean surface water run-off to be discharged from site. In line with new legislation and guidelines such as the Water Framework Directive (WFD), RIDGISTORM-X4 offers a regulatory-compliant solution for dealing with the issues of water quality.

Source control

RIDGISTORM-X4 improves water quality even before discharge from site by treating surface run-off as close to its source as possible. Once it has passed through the RIDGISTORM-X4 filter and used in conjunction with attenuation and flow control devices from Polypipe, water run-off can be discharged from site at an agreed rate, reducing the risk of downstream flooding.

Low maintenance

The advanced 4 stage filtration system within RIDGISTORM-X4 utilises no moving parts, providing a low maintenance solution for all surface water run-off applications. The filters within the unit only need to be replaced on average every two years, providing an easily maintainable solution on-site.

Easy to install

Polypipe can supply RIDGISTORM-X4 as a standalone unit, or housed within a pre-fabricated chamber. When housed within a chamber, the units are constructed off-site and delivered to site ready to install, making installation quicker, safer and easier with a much lower development footprint.

Function Principles



1. Contaminated surface water run-off is fed into the basal section of the filter. The angled inlet generates a radial flow pattern.



2. The hydrodynamic separator converts the radial flow to generate particle sedimentation to remove heavy debris and silt from the contaminated water. The sediment is then retained in a silt trap chamber below the separator for easy maintenance and access.



3. The filter element is housed in the central section of the RIDGISTORM-X4. The filter element is specifically designed for traffic, heavy traffic or roof applications and filters out fine materials in an up-flow process. Dissolved materials are absorbed by the filter, which will need to be replaced every two years on average.



4. Situated above the filter element is an oil retention unit which removes the remaining contaminants from the surface water run-off. The clean water then flows via the outlet to the soakaway or watercourse.

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RIDGISTORM-X4 Stormwater Treatment System Data Sheet

RIDGISTORM-X4 Traffic

Surface water filter complying with DIN 1989-2 Type A
For drained traffic areas to 750m²
Connections: at DN150 or DN200.
4 filter elements:
Material: Filter Substrate: Traffic
Weight per element: 16kg

RIDGISTORM-X4 Heavy Traffic

Surface water filter complying with DIN 1989-2 Type A
For drained traffic areas to 650m²
Connections: at DN150 or DN200
4 filter elements:
Material: Filter Substrate: Heavy Traffic
Weight per element: 32kg

RIDGISTORM-X4 Roof

Surface water filter complying with DIN 1989-2 Type A
For drained traffic areas to 1000m²
Connections: at DN150 or DN200
4 filter elements:
Material: Filter Substrate: Roof
Weight per element: 16kg

PARAMETER	UNIT	MAIN ROAD, DISTRIBUTOR		AIMS OF LAWA [1]	DRINKING WATER [2]	SEEPAGE [3]	RIDGISTORM-X4
		FROM	TO	PERMISSIBLE LIMIT	PERMISSIBLE LIMIT	CONTROL VALUE	AIM[5]
PHYSIO-CHEMICAL PARAMETERS				90-PERCENTILE			
Electrical conductivity	[uS/cm]	110	2400	-	2500	-	<1500
pH value	[-]	6.4	7.9	-	6.5 - 9.5	-	7.0 - 9.5
NUTRIENTS							
Phosphorous (Pges)	[mg/L]	0.23	0.34	-	-	-	0.20
Ammonium (NH_4)	[mg/L]	0.5	2.3	-	0.5	-	0.3
Nitrate (NO_3)	[mg/L]	0.0	16.0	-	50.0	-	-
HEAVY METALS							
Cadmium (Cd)	[µg/L]	0.3	13.0	1.0	5.0	5.0	<1.0
Zinc (Zn)	[µg/L]	120	2.000	500	-	500	<500
Copper (Cu)	[µg/L]	97	104	20	2000	50	<50[4]
Lead (Pb)	[µg/L]	11	525	50	10	25	<25[4]
Nickel (Ni)	[µg/L]	4	70	50	20	50	<20
Chromium (Cr)	[µg/L]	6	50	50	50	50	<50
ORGANIC SUBSTANCES							
Polynuclear aromatic hydrocarbons (PAK)	[µg/L]	0.2	17.1	-	0.1 (6 compounds)	0.2	<0.2
Petroleum-derived hydrocarbons (MKW)	[mg/L]	0.1	6.5	-	-	0.2	<0.2

1 Aims of the German working group on water issues of the Federal States and the Federal Government (LAWA) for surface water usage as potable drinking water (1998).
2 Permissible limit of the German Drinking Water Ordinance (2001).
3 Control value for seepage of the German Federal Soil Protection Act an Ordinance (1999) according to §8 1,2.
4 For copper and lead roofs a second treatment step is necessary.
5 The aims of the system refer to average annual loads.

Critical parameter, treatment necessary	
Treatment may be necessary, not generally	
No critical parameter	

For further information please see Technical Datasheet available on our website www.polypipe.com/toolbox

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Maintenance Instructions

Preparation for maintenance work



1. Position the rescue tripod above the opened shaft



2. Check the atmosphere in the shaft using the gas detector and monitor constantly



3. Put on safety harness



4. Hook into rescue winch



5. Climb into the shaft and position onto filter elements

Measurement of the silt level

If the silt level exceeds 20 cm, the silt must be extracted.



1. Remove the cover from the maintenance pipe
2. Lower the measuring disk down the maintenance pipe and make a note of the depth



3. Use a yardstick to determine the overall depth of the system; the difference between the overall depth and the disk depth is the silt level

Measurement of the permeability of the filter elements



1. Lower the pump with the flow meter, flow regulator and pipe into the shaft



2. Pump the water above the filter elements into the maintenance pipe; if the water level falls too low, top up with drinking water



3. Increase the flow until the top edge of the maintenance pipe or the output limit of the pump is reached; pump for ten minutes in stationary state



4. Read off the flow rate at the measuring device; the flow rate after 10 minutes of pumping time corresponds with the permeability of the filter elements, of the flow rate is less than 6 l/s, the filter elements must be flushed

Flushing the filter element



1. Insertion of the flushing lance via the maintenance pipe. Position the flushing head below a filter element. Position the wastewater pump above the filter elements and switch on.



2. Install the compressor and freshwater connection. Direct air and water into the flushing lance.



3. Carry out the flushing process until bubbles start to evenly rise over the entire filter element. Repeat the flushing procedure for all four filter elements. Then repeat the measurement of the permeability of the filter elements.

Preparations for filter removal



1. Pull the maintenance pipe out of the sleeve and lift it out of the shaft



2. Loosen the nut on the T-piece and remove it



3. Remove the T-piece completely and lift it out of the shaft



4. Pull outwards on both sides to loosen the buoyancy protection



5. Pull the buoyancy protection upwards and lift out of the shaft



6. These three parts are now positioned next to the shaft

Removing the filter elements



1. Hook the cable pull into the filter lug and pull the filter completely out of the shaft



2. Place the filter directly into the sump provided



3. Place other filter elements into the sump

Flushing the inside of the shaft



1. Lower the silt pump into the shaft through the suction pipe



2. Switch the pump on and pump off the water, observing drainage specifications



3. Pump the water off to the intermediate level, flushing the filter while doing so



4. Flush the inside of the shaft thoroughly with water from above



5. Thoroughly flush the filter element seals



6. When the shaft is clean the pump can be pulled out again

Preparing the installation of the filter elements



1. This is how the shaft now looks from the inside



2. Everything is prepared for filter installation



3. In case of the filters being replaced, the old filters are in the delivery container

Inserting the filters and fixing accessories



1. Lower the filters into the shaft with the winch and push into seals



2. Begin with the two filters underneath the outlet, then fasten the others



3. Insert the T-piece when all four filters have been installed



4. Tighten the lock nut on the T-piece

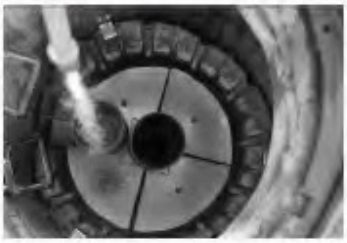


5. Push the buoyancy protection back on again and engage it



6. Push the overflow pipe onto the middle pipe

Leak check



1. Allow water to flow into the ring space between filters and shaft wall



2. Check whether the water level in the ring space remains constant



3. This is how the shaft looks after maintenance work has been completed. Please fill the system now with water until the drainage level.

APPENDIX C: MAINTENANCE RECORDS

C.1 Inspection and maintenance records

Date	Gullies, channel drains and slot drains			Attenuation tanks			Surface water package pump			Rigistorm X4 Treatment Device			Manholes and catchpits			Pipework			Details of works undertaken, and any maintenance or remedial actions required	Timescale for next inspection or actions to be undertaken
	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial		

Date	Gullies, channel drains and slot drains			Attenuation tanks			Surface water package pump			Rigistorm X4 Treatment Device			Manholes and catchpits			Pipework			Details of works undertaken, and any maintenance or remedial actions required	Timescale for next inspection or actions to be undertaken
	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial		

Date	Gullies, channel drains and slot drains			Attenuation tanks			Surface water package pump			Rigistorm X4 Treatment Device			Manholes and catchpits			Pipework			Details of works undertaken, and any maintenance or remedial actions required	Timescale for next inspection or actions to be undertaken
	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial	Inspection	Maintenance	Remedial		