



Bonhams, Hoe Lane, Flansham, PO22 8NP

SURFACE WATER DRAINAGE MAINTENANCE AND MANAGEMENT PLAN

For Residential Development

On behalf of Victor Coutin

8693-RGP-ZZ-00-RP-C-0501 P1

May 2025

www.rgp.co.uk

DOCUMENT CONTROL

Project: Bonhams, Hoe Lane, Flansham, PO22 8NP
For Residential Development

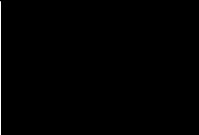
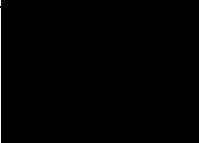
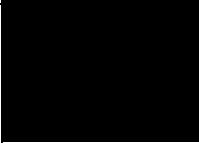
Project Location: Bonhams, Hoe Lane, Flansham, PO22 8NP

Report Type: Surface Water Drainage Maintenance and Management Plan

Client: Victor Coutin

Reference: 8693-RGP-ZZ-00-RP-C-0501 P1

Document Checking

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Status

Issue	Date	Amendment	Issued by
P01	19/05/2025	First Issue	D. Booth

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1 INTRODUCTION

1.1 Planning Consent Requirements

1.1.1 This Surface Water Drainage Maintenance and Management Plan has been prepared on behalf of Victor Coutin to support the Discharge of Condition 5 of the planning permission Y/78/24/S73 for the proposed residential development of 4no. 4-bed detached dwellings on land at Bonhams, Hoe Lane, Flansham, PO22 8NP.

1.1.2 Condition 4 requires that details of the proposed surface water scheme are approved by the LPA, Arun District Council. No building shall be occupied until the complete surface water drainage system serving the property has been implemented in accordance with the agreed details and the details so agreed shall be maintained in good working order in perpetuity.

1.2 Report Purpose and Scope

1.2.1 The Plan sets out the principles for the long-term maintenance arrangement for the surface water drainage system at the development. This will enable the continuing operation, of the surface water drainage to the design performance standards, for the lifetime of the development.

1.2.2 This Surface Water Drainage Maintenance and Management report has been developed to the requirements of Arun DC Surface Water Drainage Maintenance and Management Checklist (v1.1, Sep 2024), and in accordance with the guidance in CIRIA C753 – The SUDS Manual.

1.2.3 This first issue of this Plan is based on following Engineering drawings, which are included in APPENDIX 1 .

Drawing Number	Revision	Drawing Title
8693-RGP-ZZ-00-DR-C-0500	P1	SURFACE WATER DRAINAGE PROPOSED LAYOUT PLAN
8693-RGP-ZZ-00-DE-C-0501	P1	SURFACE WATER DRAINAGE PROPOSED CONSTRUCTION DETAILS
8693-RGP-ZZ-00-DR-C-0503	P1	ORDINARY WATERCOURSE LAND DRAINAGE CONSENT DITCH SECTIONS
	P1	SURFACE WATER PIPE AND MANHOLE SCHEDULES

1.2.4 These drawings are not yet approved by Arun DC. This Plan is a live document and will be updated on approval of Drainage Drawings. This Plan will also serve as a record of the maintenance and management of the surface water drainage system.

1.3 Maintenance Responsibility

1.3.1 The surface water drainage network is to be maintained by a Management Company, appointed by the Client. All future property owners should be advised that an annual management fee will need to be paid to the management company for this service.

1.3.2 The Management Company shall carry out, as a minimum, the maintenance of the features listed in this report and inspection checks should be undertaken by a qualified and competent person, at the minimum intervals within the schedules. A Maintenance Log shall be maintained of the inspections, maintenance, and remediation actions taken.

2 SURFACE WATER DRAINAGE SYSTEM SUMMARY

2.1 What are SUDS?

- 2.1.1 The surface water drainage system has been designed as a Sustainable Urban Drainage System (SuDS). The objective of a SUDS scheme is to achieve benefits in water quantity, water quality, amenity and biodiversity through surface water management, by using engineering solutions that mimic natural processes of rainwater drainage.
- 2.1.2 The SUDS Management Train is a way of managing stormwater runoff by using a series of different drainage techniques in sequence, to control the flow rate, volume and quality of surface water from the site, prior to discharge into the natural environment.
- 2.1.3 Source Control features manage runoff directly where the rain falls on roofs, parking or roads, to capture, slow down and treat water before it enters the piped drainage system.
- 2.1.4 Site Control features collect water from the upstream source control features, and provide storage, flow control and additional treatment as required, in order to meet the discharge requirements.

2.2 Site Drainage Strategy

- 2.2.1 A plan illustrating the proposed surface water drainage system is included in APPENDIX 1 .
- 2.2.2 The drainage system for the site is described from upstream to downstream of the network:
- 2.2.3 Each property will be fitted with a rainwater butt to store run-off from the roof. This will act as source control, and allow residents to re-use rainwater for gardening and other outdoor activities.
- 2.2.4 The courtyard and carparking areas are designed as a permeable pavement. This will act as source control for both the carpark and roof catchment areas. Perforated pipes at the downstream extents provide an outflow route to the attenuation tank, via the under-drained swale.
- 2.2.5 Runoff from the access road will discharge over-the-edge to the under-drained swale (swale with a filter drain), which will act as source control and first-flush interception for the road area.
- 2.2.6 Site Control is provided via a geocellular crate attenuation tank, which is located at a depth of approximately 2m below ground level. This depth is required in order to achieve a gravity solution.
- 2.2.7 A hydro-brake flow control is proposed at SW MH25, downstream of the attenuation tank and access road swale. Flows will be controlled to a 0.7l/s peak discharge rate, up to the 100 year + 45% climate change +10% urban creep design storm. This is equivalent to the QBar greenfield (pre-development) runoff rate for the positively drained area.
- 2.2.8 Discharge is via a new headwall into an ordinary watercourse to the north of Hoe Lane. This watercourse is owned and maintained by West Sussex County Council.

2.3 Design Storm Events

- 2.3.1 The 'design storm' is a simulated rainfall event with a specific intensity and duration used to design the capacity of the drainage system. Design storms are described by their return period, which is the likelihood of the storm happening in any given year. It doesn't mean the storm will happen every X years. A 1 in 30 year storm has a 3.3% chance of happening each year, and a 1 in 100 year storm has a 1.0% chance of happening each year.
- 2.3.2 An allowance for climate change is added to the design storms to account for the predicted increase in rainfall over the lifetime of the development. For the 1 in 30 year storm, the climate change allowance is 40%, and for the 1 in 100 year storm, the climate change allowance is 45%.
- 2.3.3 In addition, an allowance for urban creep accounts for the potential increase in impermeable surfaces within residential developments due to small-scale development like extensions or paving. The urban creep factor applied for the lifetime of the development is 10%.
- 2.3.4 The design storms listed below all include the allowances for climate change and urban creep.
- 2.3.5 The drainage conveyance features (pipes and swales) have been sized so that no flooding of the drainage network will occur up to the 30-year design storm event.
- 2.3.6 The attenuation storage is designed to have capacity to store the 100-year design storm event. This includes an allowance for 48 hours of surcharging of the receiving watercourse, which may prevent discharge from the network during or immediately after this extreme storm event.
- 2.3.7 In addition, the attenuation is designed to have a half-empty time of less than 24 hours for the 30-year design storm event. This means the attenuation tank has capacity to receive storm events which may happen in close succession.
- 2.3.8 The above design return periods are based on the assumption that the surface water drainage system will be regularly inspected, maintained, and kept in good working order.
- 2.3.9 A lack of maintenance or incorrect maintenance could reduce the capacity of the system to store flows, and control the discharge flows to the design rate. This could result in an increase in flood risk within the site, or downstream of the site. It could also result in surface water not receiving adequate treatment, and polluted flows entering the watercourse. THE MAINTAINANCE OF THE SURFACE WATER DRAINAGE IN ACCORDANCE WITH THIS PLAN IS THEREFORE VERY IMPORTANT.

2.4 Exceedance Routes

- 2.4.1 Design exceedance flows are surface water flows which are in excess of the design return periods. They have been considered in the design in order to limit the risk in the event of failure or exceedance of the surface water drainage system.
- 2.4.2 The levels of the courtyard car park are designed to direct flows towards the gardens and green spaces, and away from the residential properties. The exceedance route from the attenuation tank should be directed down the access road, towards the ditch at Hoe Lane. This path ensures there is no increased flood risk to the proposed properties, or to the existing property of Bonhams.

3 MAINTENANCE AND INSPECTIONS

3.1 Maintenance Access

- 3.1.1 The surface water drainage network has been designed to be easily accessible for maintenance access.
- 3.1.2 Some laterals connecting the downpipes are located within private garden areas, and homeowners will need to be notified when access is required to these rodding eyes and catchpit chambers.
- 3.1.3 The majority of the drainage system is located within communal areas of the private land, and is freely accessible. Chambers have been provided at regular intervals and at pipe bends to allow for inspection and maintenance access.
- 3.1.4 In the event that tanker access is required to attenuation tank, the tanker should be parked on the access road. Sufficient space is available in the courtyard to allow the tank to turn around, and avoid the need to reverse in or out.

3.2 Construction and Handover

- 3.2.1 The Contractor will maintain the proposed drainage system during construction, and until hand-over of the site.
- 3.2.2 Upon completion, the Principal Contractor will collate the data sheets, operation and maintenance details of all materials and components used in the construction of the site drainage system, and they will be incorporated into this document.
- 3.2.3 A pre-handover inspection of the constructed drainage network will be undertaken, and provided to the Management Company in the hand-over documents.

3.3 Maintenance

- 3.3.1 The maintenance activities in the schedules below have been grouped into the following categories:
 - Regular maintenance
 - Occasional Maintenance
 - Remedial Actions
 - Inspection
- 3.3.2 The following Tables describe the maintenance and inspection plan for the different elements of the surface water drainage network.

Table 1 - Permeable pavement (gravel) Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	Rainwater landing on the surface is filtered and stored in the permeable sub-base. Debris such as leaves or fine silts can reduce the permeability of the surface and/or sub-base, and may result in water ponding on the surface.	
Regular Maintenance	Litter / debris removal	Monthly
	Weed control	Seasonal
Occasional Maintenance	Sediment Management – clean perforated underdrain	Yearly (or as required subject to regular inspection)
Remedial maintenance	Replace permeable sub-base if sediment accumulation is preventing infiltration of surface water	As required
Inspection	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action	Three-monthly, 48h after large storms in the first six months
	Monitor chambers for silt accumulation	Monthly for three months and Annually after

Table 2 - Swale Maintenance Schedule Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	Rainwater landing on the access road flows over the edge into the swale. The swale filters and stores the runoff. A filter drain under the base of the swale provides a route into the attenuation tank and flow control chamber. Excess vegetation or debris can reduce the storage capacity of the swale, and may result in flows over-topping the swale during large storm events.	
Regular Maintenance	Litter / debris removal	Monthly
	Grass cutting	Seasonal
Occasional Maintenance	Sediment Management – clean perforated underdrain	Yearly (or as required subject to regular inspection)
Remedial maintenance	Re-profile sides or base of swale to design dimensions	As required
	Replace permeable sub-base if sediment accumulation is preventing infiltration of surface water	
Inspection	Inspect for evidence of poor operation and/or weed growth - if required, take remedial action	Three-monthly, 48h after large storms in the first six months
	Monitor swale and inspection chambers for silt accumulation	Monthly for three months and Annually after

Table 3 – Drainage Chambers and Pipework Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	Carrier drains and filter drains convey the surface water from the source to the discharge point at the watercourse. Catchpit chambers allow for inspection and access along the network, and capture sediment and debris.	
Regular Maintenance	Removal of litter / debris / sediment	Annually
Occasional Maintenance	CCTV inspection and jetting	Every 5 years or as required by inspection
Remedial maintenance	Repair from damage	As required
Inspection	Inspect chambers to check for sediment / debris in catchpit sumps	Annually

Table 4 – Geocellular attenuation tank

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	Geocellular crates have a high void ratio and are designed to store surface water, prior to release at a controlled rate. The tank is designed with a concrete surround to prevent flotation, and with a root barrier to prevent damage from nearby trees.	
Regular Maintenance		
Occasional Maintenance	Sediment Management	Yearly (or as required subject to regular inspection)
Remedial maintenance	Repair / rehabilitation of inlets, outlets, and vents	As required
	Replacement of impermeable geomembrane and/or root barrier if tree roots or holes are found	
Inspection	Inspect all inlets, outlets, and vents to ensure they are in good condition and operating as designed	Annually and after large storms
	Inspect inside of tank for sediment build up	Annually
	CCTV inspection to check for visible signs of impermeable geomembrane failure including root penetration	Every 5 years or as required

Table 5 – Flow Control (Hydrobrake) Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	The flow control chamber restricts the rate of outflow to the agreed design discharge rates. Blockage of the flow control device could result in flooding of the upstream network.	
Regular Maintenance	Litter / debris removal	Monthly or as required
Occasional Maintenance	Sediment removal	Annually
Remedial maintenance	Repair from damage	As required
Inspection	Inspect chamber for debris or damage to flow control device	Every 3 months, and after large storms

Table 6 – Headwall and Flap Valve Maintenance Schedule

Maintenance Schedule	Required Action	Typical Frequency
Typical Performance	The headwall protects the banks of the watercourse at the point of the outflow pipe to prevent erosion and scour. During periods of high flow, the flap valve presents the watercourse flows entering the drainage system, which could cause flooding.	
Regular Maintenance	Clear vegetation or debris from headwall	Seasonally, or as required by inspection
Occasional Maintenance		
Remedial maintenance	Repair from damage Replace Flap Valve	As required Works to watercourse will need permission from LLFA
Inspection	Check flap valve for any signs of damage, leaks, or debris buildup & if it is free moving and not stuck	Quarterly
	Check headwall is free of vegetation and debris	
	Check for signs of scour or erosion at headwall	

3.4 Inspection and Maintenance Records

- 3.4.1 The Management Company is responsible for maintaining records of the drainage inspections and maintenance activities.
- 3.4.2 The records should include a check list is provided to facilitate consistent inspection of the condition of the system and a maintenance record pro-forma.
- 3.4.3 The Management Company is responsible for the production of these documents to meet their requirements and methods of working.

3.5 Disposal of Waste

- 3.5.1 Green waste and organic sediments arising from the maintenance activities are to be stored or disposed of in accordance with the agreed green waste strategy for the communal landscaped areas.
- 3.5.2 Other waste from maintenance activities is disposed of in accordance with the agreed waste disposal strategy for the communal site areas.

4 EVALUATION AND MODIFICATION

- 4.1.1 The Management Company is responsible for the periodic evaluation of the maintenance regime. This is recommended to take place on a yearly basis, at minimum.
- 4.1.2 Updates to the frequency or activities required for all types of maintenance or inspection should be recorded in this document.
- 4.1.3 If alterations are to be made to the development or, works are to be carried out which may affect the surface water drainage system, advice should be sought from the original Designer, RGP (<https://www.rgp.co.uk/contact-us/>), or a competent Civil Engineering consultant.

5 HEALTH AND SAFETY

- 5.1.1 The Engineer's Residual Design Risks are recorded on the Proposed Drainage Strategy plan, in APPENDIX 1 .
- 5.1.2 Those responsible for the maintenance should follow relevant Health and Safety Legislation for all activities listed within this document.
- 5.1.3 The Management Company is responsible for preparing a Safe Method of Works to be followed when undertaking drainage maintenance and inspection activities.

APPENDIX 1 PROPOSED SURFACE WATER DRAINAGE DRAWINGS



RGP - Transport Planning and Infrastructure Design Consultants

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London Office 10 York Road, London SE1 7ND

RGP Consulting Engineers Limited • Registered on England No. 4237910 • Registered Office: Mill Pool House, Mill Lane, Godalming, Surrey GU7 1EY • Vat Registration No. 771 9281 04



NOTES:

- The valve plate and the back plate are produced using HDPE/SS
- The hinge pin and ballast weight are produced in SS316 as standard
- The ballast weight can be easily adjusted if required
- The sealing arrangement consists of an EPDM lips seal in the back plate
- The valve plate is also installed on an angle in relation to the back plate to ensure a good seal

Material: HDPE, SS316, EPDM

Opening: $\varnothing 150\text{mm}$

Max load from bottom invert level (B.I.L.):

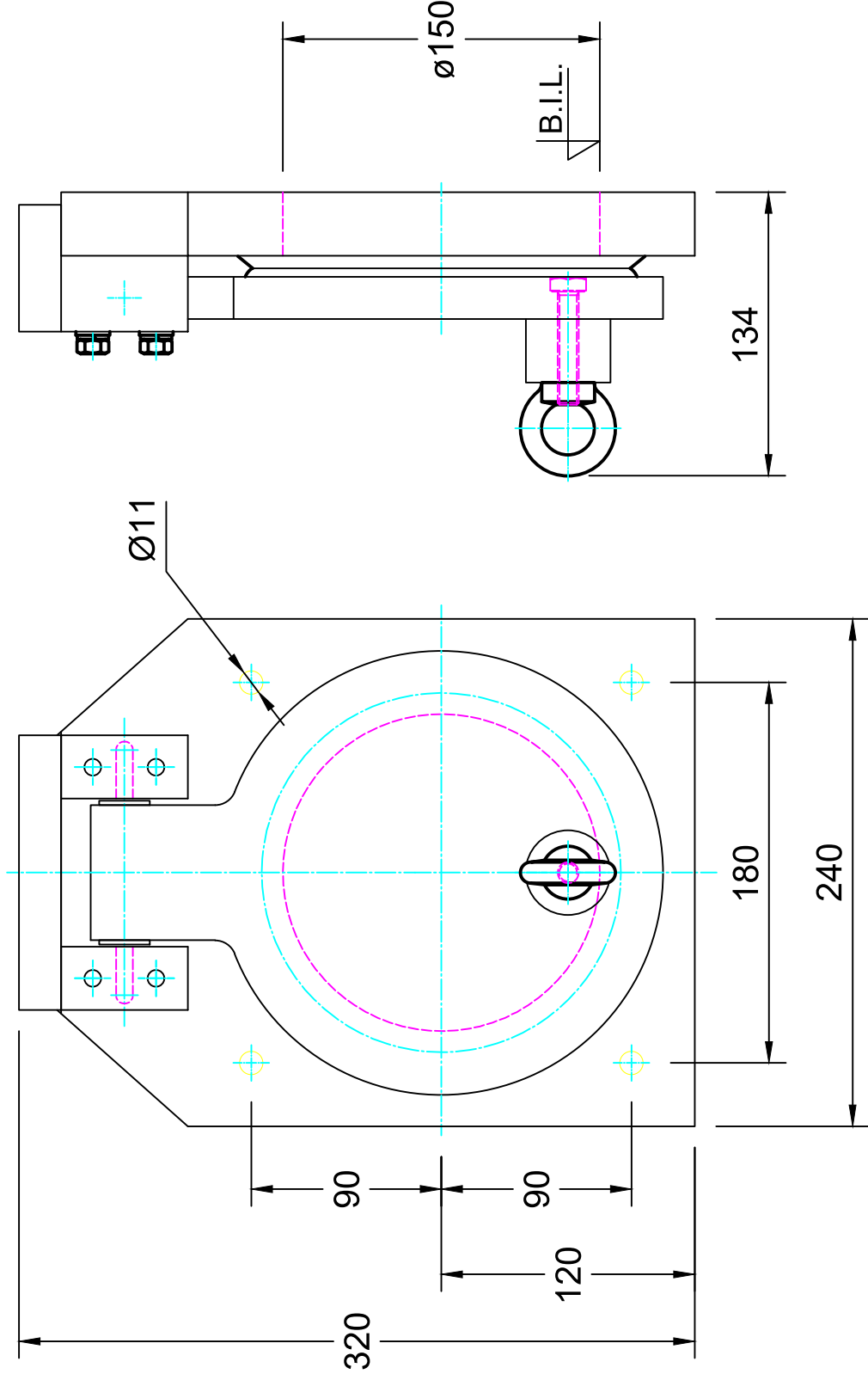
1.3MWC long period (≈ 50 years)

5MWC short period (≈ 72 hours)

Number of chemical anchors M8: 4

pieces

All dimensions in mm



REV NO:

DATE:

DESCRIPTION:



ADDRESS: ALTHON LIMITED
VULCAN ROAD SOUTH
WIDEN
NORFOLK
NR6 6AF
TEL: 01603 488700
FAX: 01603 488598
EMAIL: sales@althon.co.uk
WEBSITE: www.althon.co.uk

PROPRIETARY & CONFIDENTIAL

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DRAWING TITLE:

150mm
Square Flap Valve

CLIENT:

SCALE:

PAPER:

DATE:

31 - 07 - 17

SHEET NO:

01 OF 01

WEIGHT:

3.3kg

PRODUCT NAME:

ATK 150

DRAWING No:

DO NOT SCALE DRAWING

FLAP VALVE TYPE ATK-GV

The customer has to check upon delivery the goods supplied by Althon on completeness and damage or fracture. If the goods are not complete or damaged the customer has to respond by return and at the latest within 1 week after receipt of goods. The customer can not claim guarantee, if :

- these installation instructions are not strictly followed
- upon installation the supplied goods the conditions for installation were not in conformance with our installation manual
- a third party has modified the goods supplied

BEFORE INSTALLATION

- Check before installation the smoothness of the wall at the location of the frame plate of the flap valve by means of a rule.
- Check the concrete wall also on small local pits and lumps so that the neoprene tape (which is to be fixed at the back plate) can function properly and seals well between the frame plate and the wall.

INSTALLATION

- Copy / Mark the two anchor holes (outside the hinges on the frame) of the frame / anchor plate to the wall.
- Drill these two holes and mount the anchors in conformance with the instructions of the supplier of the chemical anchors. Pay attention to the time required for the hardening of the chemical substance.
- Mount the flap valve by hanging it onto these two anchors, which have already been fixed.
- Check if the flap valve is positioned completely vertically and copy / mark the positions of the remaining mounting holes on the wall. Remove the flap valve again.
- Drill the other holes and place the chemical capsules in the holes, not the anchor bars!!

(please note ATK-GV till Ø 500 will be supplied without neoprene sealing tape, while it has an integrated EPDM lip seal on the back of the frame plate). For these dimensions, the actions regarding the neoprene can be skipped)

- Fix the supplied neoprene sealing tape over the anchor holes at the backside of

the frame / anchor plate all around the opening.

- Make the holes for the anchors in the neoprene tape.
- Hang the flap valve back to the wall onto the two anchors bars.
- Mount the anchors bars in conformance with the instructions of the supplier of the chemical anchors. Remove all material which comes out of the holes. Pay attention to the time required for the hardening of the chemical substance.
- Tighten the anchors equably so that a good sealing to the wall is obtained without deformation of the anchor plate / plate. Check the smoothness.
- Check if the frame plate is not deformed to the extent that the door of the flap valve does not seal anymore against the rubber sealing in the frame plate.

PUTTING INTO USE

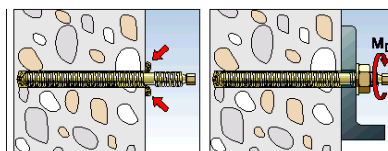
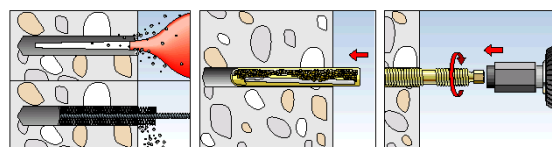
- Remove all protection applied
- Check the functioning of the flap valve by opening and closing the door a few times as there has to be a sealing between the anchor/frame plate and the door.

SPECIAL CARE ABOUT CHEMICAL ANCHORS

°C	+20	20 min.
	+10	30 min.
	0	1 h
	-5	5 h

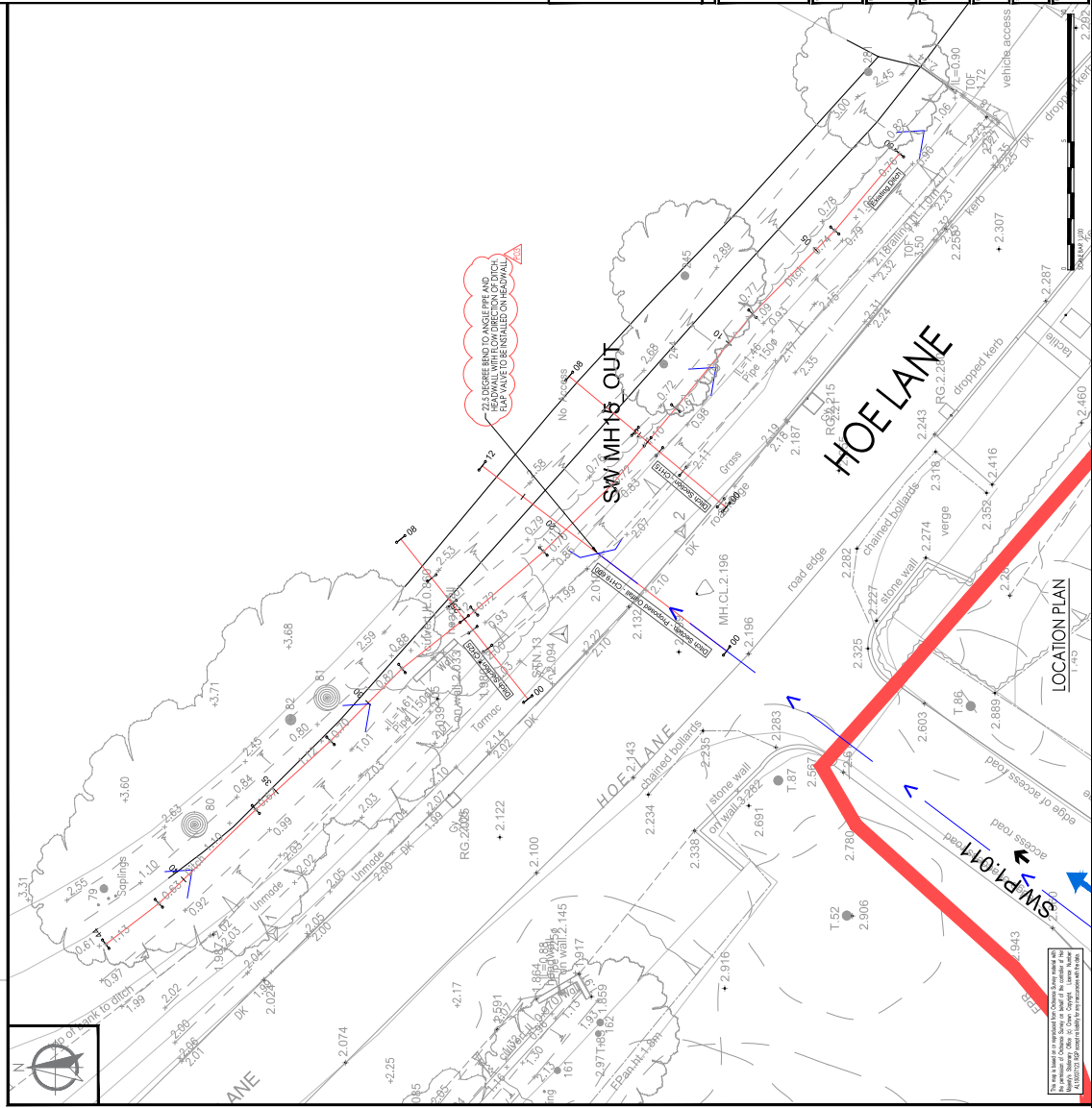
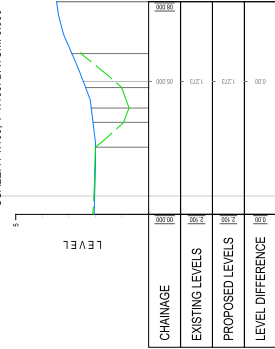
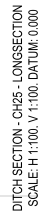
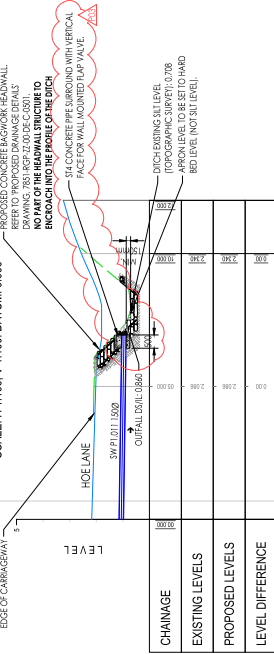
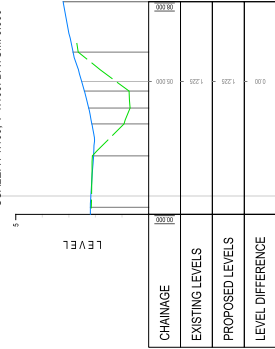
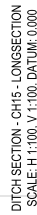
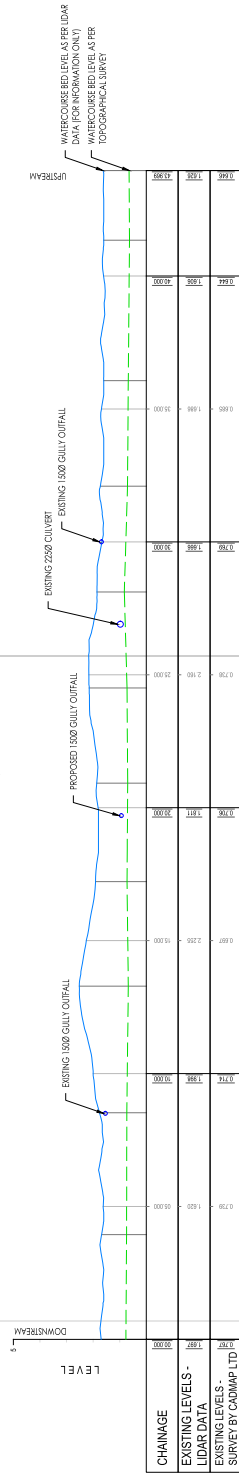
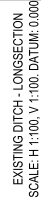
Bear in mind the setting times!

Installation diagram



NOTES:

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL LEVELS ARE IN METERS ABOVE ORDNANCE DATUM (AOD), UNLESS NOTED OTHERWISE.
3. RCP SURFACE WATER DESIGN HAS BEEN DEVELOPED BASED ON:
a. WHALEBACK DRAWING W/1595-3 SITE PLAN (REV A, 05/22).
b. TOPOGRAPHICAL SURVEY (2021)
c. WATERCOURSE TOPOGRAPHICAL SURVEY, CAWAP, CAN/24/256, SUBMITTED OCTOBER 2024
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE PROPOSED DRAINAGE STRATEGY DRAWING T81-RCP-EZ-00-D-0500 AND PROPOSED DRAINAGE DETAILS DRAWING T81-RCP-EZ-00-D-0501.



P03	ARJIN DISCHARGE CONSENT COMMENTS 24/11	AS	D8	27.11.24
P01	ARJIN DISCHARGE CONSENT COMMENTS 31/10	AS	D8	06.11.24
P01	FIRST ISSUE	AS	D8	22.10.24

[illegible]



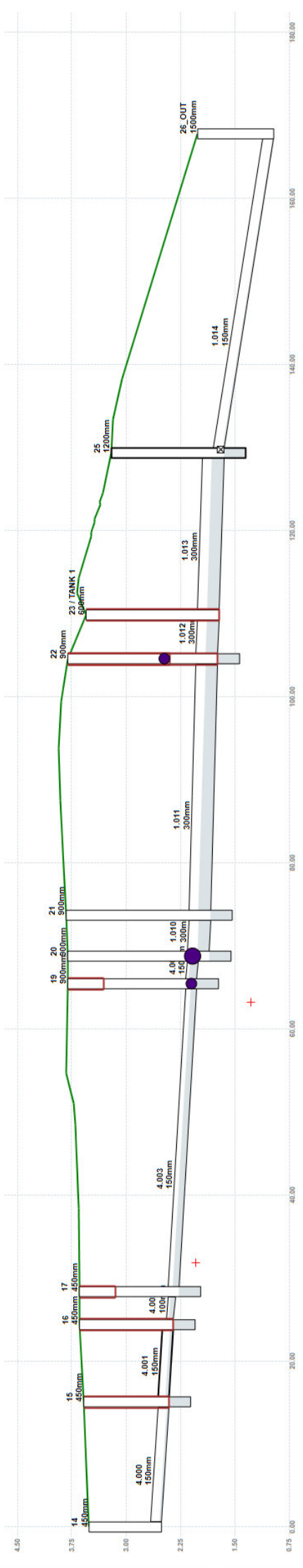
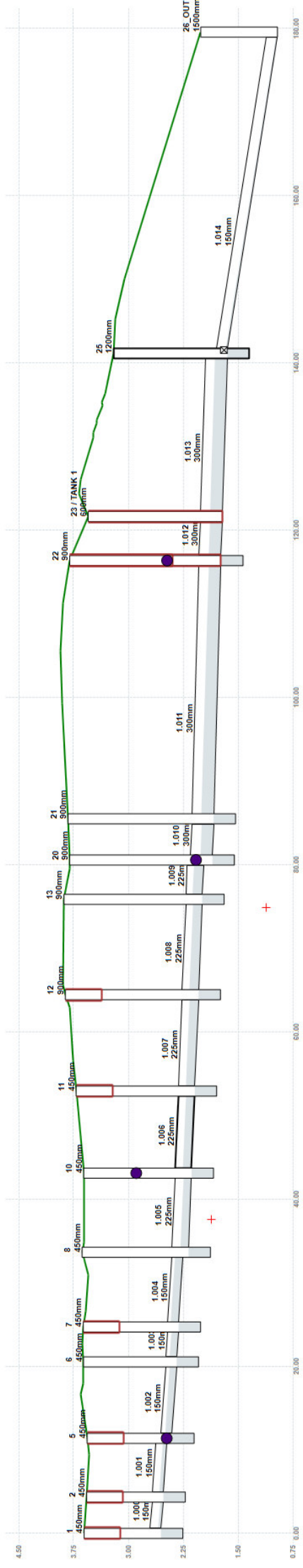
Job No	8693	Surface Water Drainage		Date	16/05/2025	Prepared by:	A. Stijne
Project	Bonhams, Flansham	Manhole Schedule		Revision	FLOW P1	Checked by:	D. Booth

MH No.	Manhole Type	Diameter (mm)	Cover Level (m)	Total Depth (m)	Sump (m)	Easting (m)	Northing (m)	Cover Class BS EN 124	Comments
SW MH1	Catchpit	450	3.604	1.350	0.300	496125.299	101066.513	C250	
SW MH2	Catchpit	450	3.570	1.350	0.300	496127.913	101063.045	C250	
SW MH3	Catchpit	450	3.513	1.350	0.300	496118.538	101053.295	B125	
SW MH4	Catchpit	450	3.515	1.374	0.300	496121.596	101054.447	B125	
SW MH5	Catchpit	450	3.565	1.464	0.300	496127.200	101056.557	C250	
SW MH6	Catchpit	450	3.613	1.573	0.300	496135.386	101054.732	C250	
SW MH7	Catchpit	450	3.616	1.604	0.300	496136.244	101050.644	C250	
SW MH8	Catchpit	450	3.634	1.757	0.300	496144.971	101052.534	C250	
SW MH9	Catchpit	450	3.614	0.750		496137.981	101067.176	C250	
SW MH10	Catchpit	450	3.610	1.775	0.300	496142.194	101061.585	C250	
SW MH11	Catchpit	450	3.715	1.924	0.300	496151.935	101062.764	C250	
SW MH12	Catchpit	900	3.863	2.123	0.300	496163.469	101062.461	C250	
SW MH13	Catchpit	900	3.880	2.191	0.300	496174.863	101062.151	C250	
SW MH14	Catchpit	450	3.509	1.000		496113.388	101087.120	B125	
SW MH15	Catchpit	450	3.581	1.473	0.300	496127.119	101080.890	B125	
SW MH16	Catchpit	450	3.641	1.595	0.300	496134.245	101075.127	B125	
SW MH17	Catchpit	450	3.643	1.674	0.300	496137.866	101076.782	C250	
SW MH18	Catchpit	450	3.800	2.000	0.300	496173.157	101078.179	A15	
SW MH19	Catchpit	900	3.802	2.080	0.300	496171.374	101066.669	C250	
SW MH20	Catchpit	900	3.804	2.254	0.300	496174.695	101066.853	A15	
SW MH21	Catchpit	900	3.824	2.290	0.300	496179.564	101067.606	A15	
SW MH22	Catchpit	900	3.802	2.371	0.300	496207.331	101077.698	A15	
TANK 1	Geocellular Tank	N/A	VARIABLES	VARIABLES		496205.165	101082.503	N/A	REFER TO DRAINAGE STRATEGY DRAWING FOR TANK DETAILS INCLUDING DIMENSIONS, COVER AND LEVELS.
SW MH24	Rodding Eye	150	3.270	0.750		496217.564	101092.889	A15	
SW MH25	Catchpit	1200	3.200	1.965	0.300	496219.657	101095.563	C250	HYDROBRAKE FLOW CONTROL CHAMBER. REFER TO DRAINAGE STRATEGY DRAWING FOR FLOW CONTROL DETAILS
SW MH26_OUT	Headwall	N/A	2.010	N/A		496243.352	101125.830	-	1500MM WIDE BAGWORK HEADWALL & FLAP VALVE. REFER TO PROPOSED DRAINAGE DETAILS DRAWING AND DITCH SECTIONS DRAWINGS FOR DETAILS



Job No	8693	Subject		Surface Water Drainage Pipe Schedule		Date		16/05/2025	Prepared by:		A. Stijne
Project	Bonhams, Flansham					Revision		FLOW P1	Checked by:		D. Booth

Pipe No.	Type	Dia (mm)	Length (m)	Slope (1:X)	Fall (m)	US MH	US Node CL (m)	US IL (m)	US Depth (m)	DS MH	DS Node CL (m)	DS IL (m)	DS Depth (m)
SW P1.000	Filter	150	4.343	127.7	0.034	SW MH1	3.604	2.554	0.900	SW MH2	3.570	2.520	0.900
SW P1.001	Filter	150	7.030	150.0	0.047	SW MH2	3.570	2.520	0.900	SW MH5	3.565	2.473	0.942
SW P2.000	Carrier	150	3.268	150.0	0.022	SW MH3	3.513	2.463	0.900	SW MH4	3.515	2.441	0.924
SW P2.001	Carrier	150	5.988	150.0	0.040	SW MH4	3.515	2.441	0.924	SW MH5	3.565	2.401	1.014
SW P1.002	Filter	150	9.144	150.0	0.061	SW MH5	3.565	2.401	1.014	SW MH6	3.613	2.340	1.123
SW P1.003	Filter	150	4.179	150.0	0.028	SW MH6	3.613	2.340	1.123	SW MH7	3.616	2.312	1.154
SW P1.004	Filter	150	8.929	150.0	0.060	SW MH7	3.616	2.312	1.154	SW MH8	3.634	2.252	1.232
SW P1.005	Filter	225	9.467	225.0	0.042	SW MH8	3.634	2.177	1.232	SW MH10	3.610	2.135	1.250
SW P3.000	Filter	150	7.001	148.9	0.047	SW MH9	3.614	2.864	0.600	SW MH10	3.610	2.817	0.643
SW P1.006	Filter	225	9.812	225.0	0.044	SW MH10	3.610	2.135	1.250	SW MH11	3.715	2.091	1.399
SW P1.007	Filter	225	11.538	225.0	0.051	SW MH11	3.715	2.091	1.399	SW MH12	3.863	2.040	1.598
SW P1.008	Filter	225	11.398	225.0	0.051	SW MH12	3.863	2.040	1.598	SW MH13	3.880	1.989	1.666
SW P1.009	Carrier	225	4.705	225.0	0.021	SW MH13	3.880	1.989	1.666	SW MH20	3.804	1.968	1.611
SW P4.000	Filter	150	15.078	149.3	0.101	SW MH14	3.509	2.509	0.850	SW MH15	3.581	2.408	1.023
SW P4.001	Filter	150	9.289	149.8	0.062	SW MH15	3.581	2.408	1.023	SW MH16	3.641	2.346	1.145
SW P4.002	Carrier	100	3.981	147.5	0.027	SW MH16	3.641	2.346	1.195	SW MH17	3.643	2.319	1.224
SW P4.003	Filter	150	37.084	150.1	0.247	SW MH17	3.643	2.269	1.224	SW MH19	3.802	2.022	1.630
SW P5.000	Filter	150	11.647	150.0	0.078	SW MH18	3.800	2.100	1.550	SW MH19	3.802	2.022	1.630
SW P4.004	Filter	150	3.326	151.2	0.022	SW MH19	3.802	2.022	1.630	SW MH20	3.804	2.000	1.654
SW P1.010	Carrier	300	4.927	307.9	0.016	SW MH20	3.804	1.850	1.654	SW MH21	3.824	1.834	1.690
SW P1.011	Filter	300	30.889	299.9	0.103	SW MH21	3.824	1.834	1.690	SW MH22	3.802	1.731	1.771
SW P1.012	Carrier	300	5.271	170.0	0.031	SW MH22	3.802	1.731	1.771	TANK 1	3.550	1.700	1.550
SW P1.013	Carrier	300	19.509	298.8	0.065	TANK 1	3.550	1.600	1.650	SW MH25	3.200	1.535	1.365
SW P6.000	Filter	150	18.676	150.0	0.125	SW MH24	3.270	2.520	0.600	SW MH22	3.802	2.395	1.257
SW P1.014	Carrier	150	38.439	56.9	0.675	SW MH25	3.200	1.535	1.515	SW MH26_OUT	2.010	0.860	1.000



Project: 8693 Bonhams C
FLOW Model Revision: P1
Date: 15/05/2025
Surface Water Drainage Network Long Sections showing crossings with Foul Drainage Network

Project	8693 Bonhams Drainage Strategy			Date	15/05/2025
Subject	Designer's Risk Register			Prepared by:	A. Sijne
Document Reference	8693-RGP-ZZ-00-HS-C-0001			Checked by:	D. Booth
Revision	P01				

Design Risk No	Date	Raised by	Location	Hazard	Proposed Design Mitigation (ERIC)	Date Resolved	Agreed Design Mitigation (ERIC)	Evidence Reference	Significant Residual Risk (Yes / No)
DR-01	30/04/2024	A. Sijne	Hoe Lane	Existing underground utilities in Hoe Lane, within work area.	I - Desktop C2 utility records to be obtained prior to works C - The actual position of utility services must be located, identified and clearly marked prior to any excavation or other intrusive works.	30/04/2024	As per proposed mitigation	8693-RGP-ZZ-XX-DR-C-0500-P05 - Proposed Drainage Strategy	Yes
DR-02	30/04/2024	A. Sijne	Site wide	Working near water - pond, watercourses	I - The presence of ponds and watercourses to be clearly marked on engineering drawings C - Contractor to employ safe methods of work to prevent risk of drowning from working near water	30/04/2024	As per proposed mitigation	8693-RGP-ZZ-XX-DR-C-0500-P05 - Proposed Drainage Strategy	Yes
DR-03	30/04/2024	A. Sijne	Site wide	Southern Water 600mm dia. foul rising main crosses through site	R - Site layout to be amended to achieve required 3.5m easement (SW letter DSA000013238, 13/07/2022) R - Actual position of sewer to be surveyed to verify location as shown on Southern Water desktop C2 records I - Position of sewer and easement to be shown on Engineering drawings C - Construction works should avoid the SW easement and comply with SW guidelines for construction near their apparatus	14/04/2025	R - Site layout Rev C achieves required 3.5m easement (confirmed in SW letter DSA000013238, 09/04/2025) R - Actual position of sewer surveyed and results provided to Southern Water for their approval. Actual location shown on Engineering drawings I - Position of sewer and easement shown on Engineering drawings C - Construction works should avoid the SW easement and comply with SW guidelines for construction near their apparatus C - Contractor to obtain SW approval of H&S 460 Form prior to works	8693-RGP-ZZ-XX-DR-C-0500-P05 - Proposed Drainage Strategy	Yes
DR-04	28/04/2025	A. Sijne	Hoe Lane watercourse	Headwall works to comply with West Sussex discharge consent requirements	F - Application to be made for West Sussex discharge consent to watercourse	29/11/2024	F - West Sussex discharge consent obtained I - Discharge consent requirements shown on Engineering drawings C - Contractor to construct headwall in accordance with requirements, NO PART OF THE HEADWALL STRUCTURE TO ENCROACH INTO THE PROFILE OF THE DITCH	7851-RGP-ZZ-00-DR-C-0001 P1 - LOCATION PLAN 8693-RGP-ZZ-00-DE-C-0501 P06 - PROPOSED DRAINAGE DETAILS 8693-RGP-ZZ-00-DR-C-0503 P03 - DRAINAGE DITCH SECTIONS	Yes