



Abingdon Road, Clifton Hampden

SuDS Maintenance and Management Plan

On behalf of **Thomas Homes Ltd**



Project Ref: 332110526 | Rev: - | Date: November 2023

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For and on behalf of Stantec UK Limited				

Revision	Date	Description	Prepared	Reviewed	Approved
-	November 2023	First Issue	VT	JS	SH

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1 Introduction and Description of Site

1.1 Background

- 1.1.1 Stantec UK Ltd (Stantec) have been commissioned by Thomas Homes Ltd to assist with the drainage input to the planning application for the proposed development located to the north and south of Abingdon Road, Clifton Hampden, Oxfordshire. This maintenance plan will outline the maintenance requirements to ensure the long-term operation of the drainage systems is as designed.
- 1.1.2 This document is based on CIRIA publication C753 (The SuDS Manual) 2015 and sets out a summary of the sustainable drainage systems (SuDS) onsite and specific requirements for maintenance during the operational lifetime of the development.
- 1.1.3 Appropriate maintenance to SuDS infrastructure ensures the infrastructure operates within acceptable tolerances. Therefore, ensuring the continued reduction in local flood risk through attenuation and controlled discharge of surface water run-off on-site.
- 1.1.4 This SuDS maintenance plan should be read in conjunction with Stantec's drawings 332110526-2001-001 and 332110526-2001-002, included as Appendix B, and the Surface Water Drainage Strategy report, 332110526-2001-R001.

1.2 Site Location

- 1.2.1 The Site is located on the north-western edge of the village of Clifton Hampden and is split into two parts, situated to the north and south of A415 Abingdon Road. The northern parcel is at National Grid Reference 454560E 195650N, with a postcode of OX14 3EG. The southern parcel is at National Grid Reference 454480E 195510N, with an approximate postcode of OX14 3DE. A site location plan is shown in Appendix A.
- 1.2.2 The total area of the Site is approximately 4.45ha. The northern section occupies an area of 3.05ha, and the southern section having an area of 1.4ha.

2 Surface Water Drainage Design

2.1 Drainage Design Summary

- 2.1.1 The proposed drainage arrangements are included within Appendix B for information.
- 2.1.2 The drainage design has been conducted in accordance with Oxfordshire County Council (the LLFA)'s "Local Standards and Guidance for Surface Water Drainage on Major Development in Oxfordshire", December 2021. The northern and southern sides of the site are proposed to discharge at a run-off rate of 2 l/s to an existing watercourse. This scheme will utilise geo-cellular attenuation crates and flow control devices to provide this restricted outflow rate.

2.2 Description of Features

- 2.2.1 With reference to the design proposals set out on drawings 332110526-2001-001 and 332110526-2001-002 (Appendix B), Table 2.1 below outlines which organisation or person is responsible for the maintenance of each of the elements of the sustainable drainage systems for this scheme.

Table 2.1: Proposed SuDS Features Maintenance Responsibility

Proposed SuDS Feature	Maintenance Responsibility
Filter Drains	Private Maintenance Company
Flow Control Devices	Private Maintenance Company
Porous Pavement	Private Maintenance Company
Catchpits	Private Maintenance Company

3 Maintenance Requirements

3.1 Types of Maintenance

3.1.1 Maintenance requirements for the features in Table 2.1 have been reviewed and summarised in accordance with C753, the SuDS maintenance manual 2015, below:

- **Regular Maintenance:** consists of basic tasks carried out to a frequent and predictable schedule, including inspections/monitoring, silt or oil removal if required more frequently than once per year, vegetation management, sweeping of surfaces and litter and debris removal.
- **Occasional Maintenance:** comprises tasks that are likely to be required periodically, but on a much less frequent (typically less than yearly) and much less predictable basis than the regular tasks. Tasks considered occasional maintenance include sediment removal and filter replacement.
- **Remedial Actions:** describes the intermittent tasks that may be required to rectify faults associated with the system, although the likelihood of faults can be minimised by regular maintenance activities. Where remedial work is found to be necessary, it is likely to be due to site-specific characteristics or unforeseen events, and so timings are difficult to predict. Remedial maintenance can comprise activities such as: inlet and outlet repairs, reinstatement or realignment of edgings, infiltration surface rehabilitation, replacement of blocked filter materials/fabrics, construction stage sediment removal (although this activity should have been undertaken before the start of the maintenance contract) and system rehabilitation immediately following a pollution event.

3.1.2 It is important to note that all maintenance operations should be undertaken in accordance with the chosen manufacturer's guidance, recommendations, and best practice.

3.2 Filter Drains

3.2.1 Filter drains will require regular maintenance to ensure continuing operation to design performance standards. Regular inspection and maintenance are important for the effective operation of filter drains as designed.

3.2.2 Litter (including leaf litter) and debris removal should be undertaken as part of general landscape maintenance for the site and before any other SuDS management task. All litter should be removed from site.

3.2.3 Sediments excavated from upstream pre-treatment devices that receive runoff from residential or standard road and roof areas are generally not toxic or hazardous material and can therefore be safely disposed of by either land application or landfilling. However, consultation should take place with the environmental regulator to confirm appropriate waste management protocols and compliance with legislation. Sediment testing may be required before sediment excavation to determine its classification and appropriate disposal methods. In the majority of cases, it will be acceptable to distribute the sediment on site, if there is an appropriate safe and acceptable location to do so.

3.2.4 Table 3.1 provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive, and some actions may not always be required.

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

Table 3.1: Maintenance Requirements for Filter Drains

3.3 Flow Control Devices

3.3.1 Flow control devices required regular inspection for blockages to ensure they perform as intended. The table below provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive, and some actions may not always be required.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Removal of debris blocking or restricting flow control device.	As required
Monitoring	Inspect chamber and flow device regularly for blockages and high water levels.	Monthly, or as required if more frequent.

Table 3.2: Maintenance Requirements for Flow Control Devices

3.4 Porous Pavements

3.4.1 Regular inspection and maintenance are important for the effective operation of pervious pavements. Maintenance responsibility for a pervious pavement and its surrounding area should be placed with an appropriate responsible organisation. Before handing over the pavement to the client, it should be inspected for clogging, litter, weeds and water ponding, and all failures should be rectified. After handover, the pavement should be inspected regularly, preferably during and after heavy rainfall to check effective operation and to identify and areas of ponding.

3.4.2 Pervious pavements need to regularly be cleaned of silt and other sediments to preserve their infiltration capacity. The construction industry's experience suggests that sweeping once per year should be sufficient to maintain an acceptable infiltration rate on most sites. However, in some instance, more or less sweeping may be required and the frequency should be adjusted to suit site-specific circumstances and should be informed by inspection reports.

- 3.4.3 A brush and suction cleaner (which can be a lorry-mounted device or a smaller precinct sweeper) should be used for regular sweeping. Care should be taken in adjusting vacuuming equipment to avoid removal of jointing material. Any lost material should be replaced. It is also possible to clean the surface using lightweight rotating brush cleaners combined with power spraying hot water.
- 3.4.4 If the surface has clogged then a more specialist sweeper with water jetting and oscillating and rotating brushes may be required, to restore the surface infiltration rate to an acceptable level.
- 3.4.5 For concrete block permeable paving the design life should be no different from standard paving, assuming that an effective maintenance regime is in place to minimise risks of infiltration clogging.
- 3.4.6 The reconstruction of failed areas of concrete block pavement should be less costly and disruptive than the rehabilitation of continuous concrete or asphalt porous surfaces due to the reduced area that is likely to be affected. Materials removed from the voids or the layers below the surface may contain heavy metals and hydrocarbons and may need to be disposed of as controlled waste. Sediment testing should be carried out before disposal to confirm its classification and appropriate disposal methods.
- 3.4.7 Many of the specific maintenance activities for pervious pavements can be undertaken as part of a general site cleaning contract and therefore, if litter management is already required at site, this should have marginal cost implications.
- 3.4.8 Generally, pervious pavements require less frequent gritting in winter to prevent ice formation. There is also less risk of ice formation after snow melt, as the melt water drains directly into the underlying sub-base and does not have chance to refreeze. A slight frost may occur more frequently on the surface of pervious pavements compared to adjacent impermeable surfaces, but this is only likely to last for a few hours. It does not happen in all installations and, if necessary, this can be dealt with by application of salt. It is not likely to pose a hazard to vehicle movements.

3.4.9 Table 3.3 provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive, and some actions may not always be required.

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

Table 3.3: Maintenance Requirements for Porous Pavements

3.5 Catchpits

3.5.1 Regular inspection and maintenance are required to ensure the effective long-term operation of below-ground storage systems, of which catchpits play a key part providing pre-treatment to the surface water before it reaches attenuation storage features. The table below provides guidance on the type of operational and maintenance requirements that may be appropriate. The list of actions is not exhaustive, and some actions may not always be required.

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove sediment from catchpits (and certainly if catchpit is greater than 50% full).	Annually, or as required
	Remove debris from the catchment surface (where it may cause risks to performance).	Monthly
Remedial actions	Repair/rehabilitate inlets, outlet, overflow, 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, and silt accumulation is not excessive.	Annually

Table 3.4: Maintenance Requirements for Catchpits

4 Summary

- 4.1.1 This report has been prepared by Stantec to support the planning application for a site north-west of Clifton Hampden village, straddling Abingdon Road.
- 4.1.2 This document is based on CIRIA publication C753 (The SuDS Manual) 2015.
- 4.1.3 This maintenance plan has been produced in order to ensure that surface water drainage systems incorporated at the site remain functional for the lifetime of the development. This will ensure a continued reduction in local surface water flood risk through attenuation and infiltration.
- 4.1.4 This report should be read in conjunction with the drainage strategy drawings 332110526-2001-001 and 002 and schedules on 003(Appendix B), and the Surface Water Drainage Strategy report 332110526-2001-R001.

Appendix A Site Location Plan



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Thomas Homes Ltd.
SITES at CLIFTON HAMPDEN

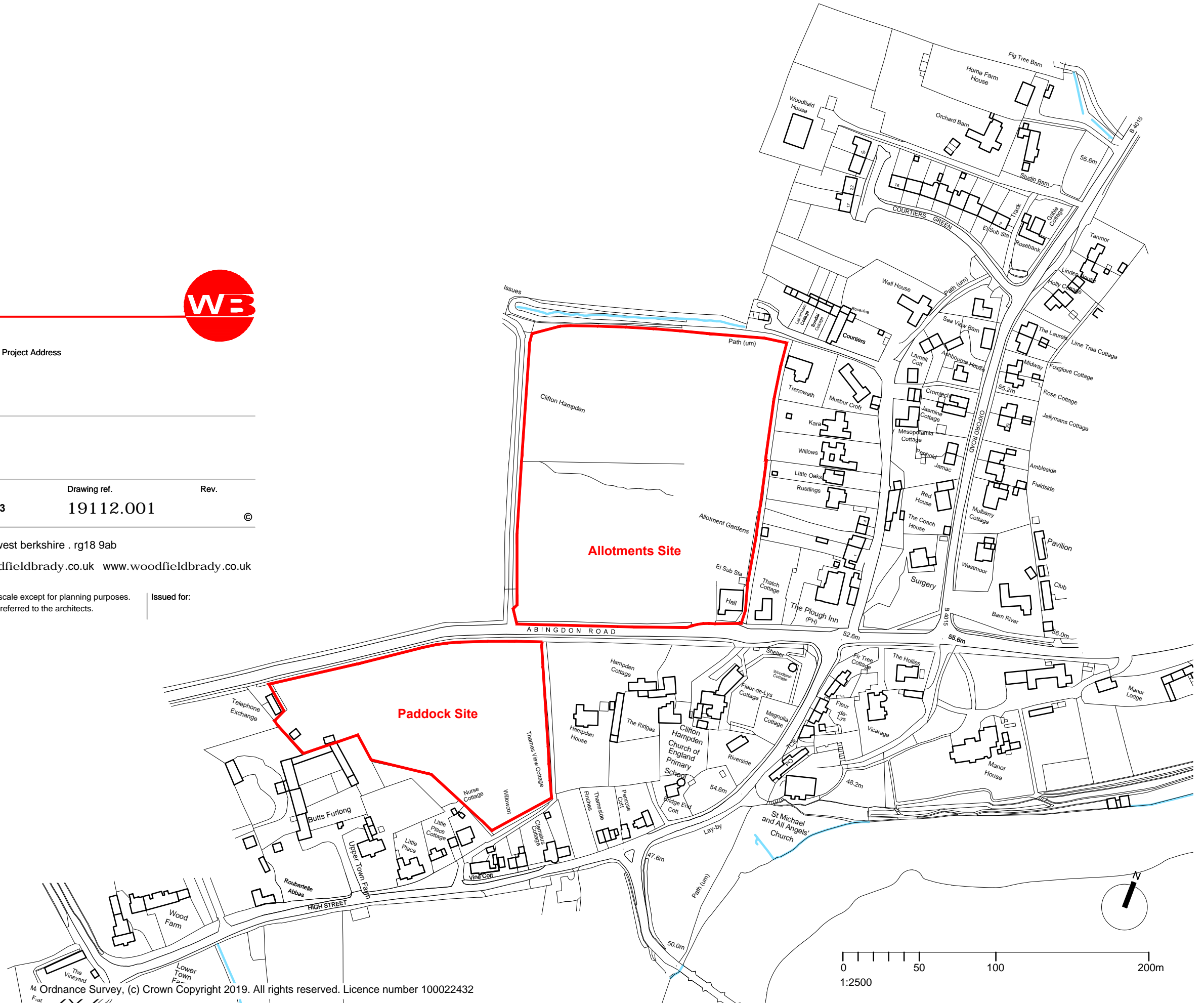
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Drawing Title
LOCATION PLAN

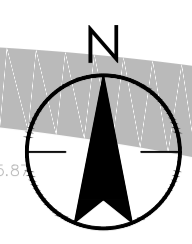
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All dimensions to be checked on site prior to construction. Do not scale except for planning purposes. Issued for:
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Appendix B Proposed Drainage Layout



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- CONCEPT DRAINAGE LAYOUT BASED ON THE ASSUMPTION THAT FINISHED ROAD LEVELS WILL BE SET APPROXIMATELY 250mm ABOVE EXISTING GROUND LEVELS
- FLOWS DISCHARGING TO EXISTING WATERCOURSE OR DRAINAGE NETWORK, SURFACE WATER RUN-OFF WILL BE ATTENUATED UP TO AND INCLUDING THE 1 IN 100 YEAR PLUS 40% CLIMATE CHANGE RAINFALL EVENT
- SURFACE WATER RUN-OFF WILL BE LIMITED TO THE GREENFIELD RATE = 2 l/s
- EXISTING VILLAGE HALL TO BE RETAINED IN THE SE CORNER OF THE NORTHERN SITE
- DETAILED LEVELS DESIGN AND DRAINAGE LAYOUT SUBJECT TO ARCHITECTS CONFIRMATION OF DRAINAGE CONNECTION POINTS
- CONNECTION TO EXISTING FOUL AND SURFACE WATER DRAINAGE NETWORKS SUBJECT TO CCTV SURVEY

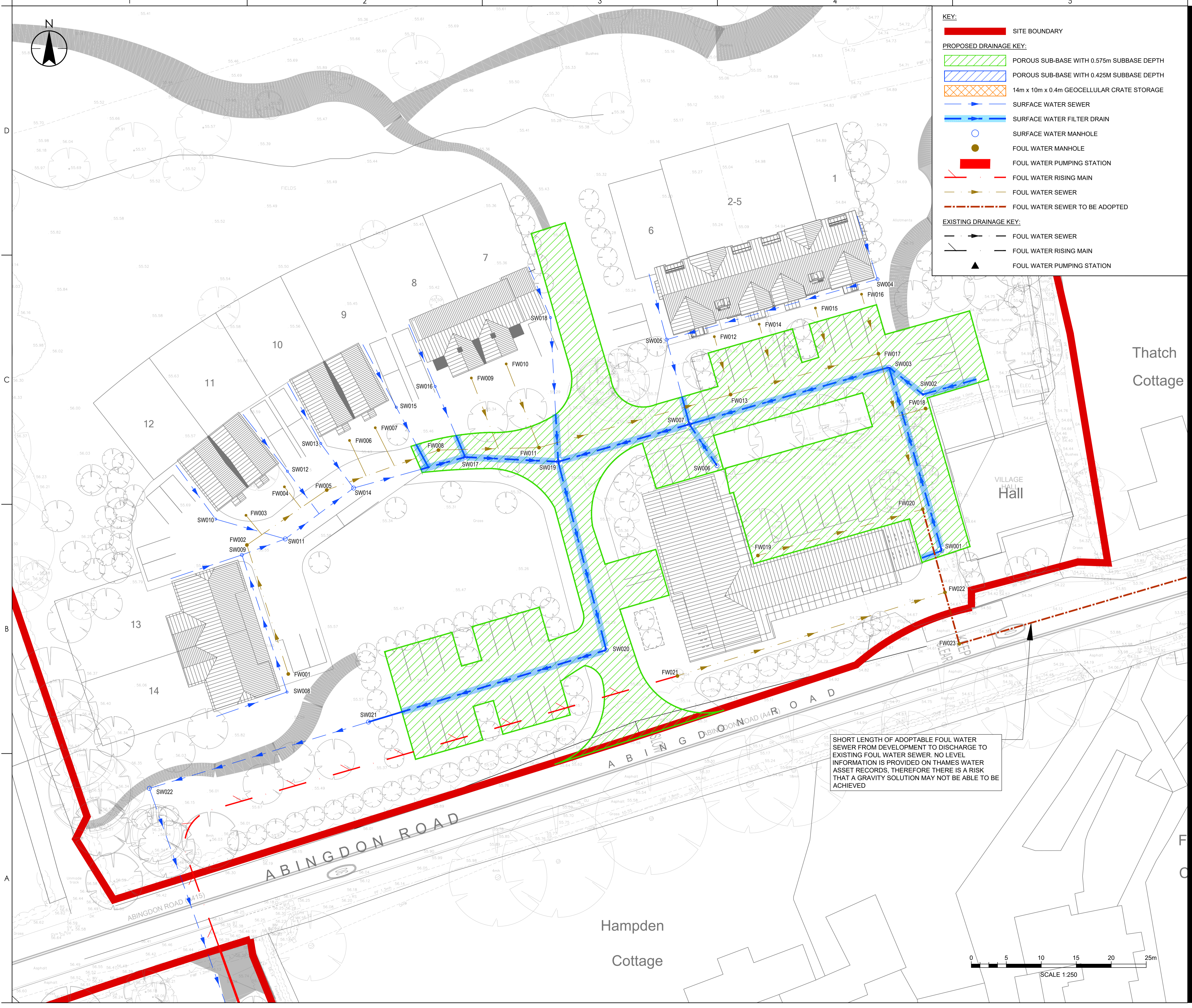
KEY:

PROPOSED DRAINAGE KEY:

- POROUS SUB-BASE WITH 0.575m SUBBASE DEPTH
- POROUS SUB-BASE WITH 0.425M SUBBASE DEPTH
- 14m x 10m x 0.4m GEOCELLULAR CRATE STORAGE
- SURFACE WATER SEWER
- SURFACE WATER FILTER DRAIN
- SURFACE WATER MANHOLE
- FOUL WATER MANHOLE
- FOUL WATER PUMPING STATION
- FOUL WATER RISING MAIN
- FOUL WATER SEWER
- FOUL WATER SEWER TO BE ADOPTED

EXISTING DRAINAGE KEY:

- FOUL WATER SEWER
- FOUL WATER RISING MAIN
- FOUL WATER PUMPING STATION



SHORT LENGTH OF ADOPTABLE FOUL WATER SEWER FROM DEVELOPMENT TO DISCHARGE TO EXISTING FOUL WATER SEWER. NO LEVEL INFORMATION IS PROVIDED ON THAMES WATER ASSET RECORDS, THEREFORE THERE IS A RISK THAT A GRAVITY SOLUTION MAY NOT BE ABLE TO BE ACHIEVED

P03 GREENFIELD RATE UPDATED	VT	SH	2023.11.02
P02 FOR PLANNING	VT	SH	2022.07.07
P01 FIRST ISSUE	VT	SH	2021.08.18
Issue/Revision	By	Appd	YYYY.MM.DD
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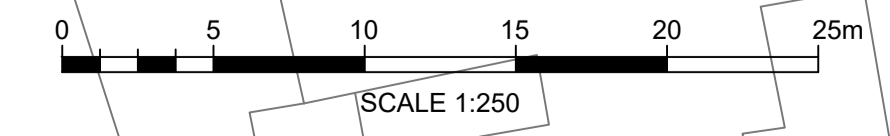
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CLIFTON HAMPDEN

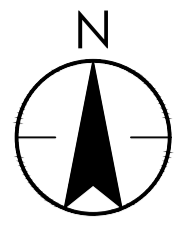
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PROPOSED DRAINAGE LAYOUT

SHEET 1 OF 2

Project No. 332110526	Scale 1:250 @ A1
Revision P03	Drawing No. 332110526-2001-001



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- CONNECTION TO EXISTING FOUL AND SURFACE WATER DRAINAGE NETWORKS SUBJECT TO CCTV SURVEY

KEY:

- SITE BOUNDARY

PROPOSED DRAINAGE KEY:

- POROUS SUB-BASE WITH 0.575m SUBBASE DEPTH
- POROUS SUB-BASE WITH 0.425M SUBBASE DEPTH
- 14m x 10m x 0.4m GEOCELLULAR CRATE STORAGE
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- FOUL WATER PUMPING STATION
- FOUL WATER RISING MAIN
- FOUL WATER SEWER
- FOUL WATER SEWER TO BE ADOPTED

EXISTING DRAINAGE KEY:

- FOUL WATER SEWER
- FOUL WATER RISING MAIN
- ▲ FOUL WATER PUMPING STATION

LOCATION OF FOUL WATER RISING MAIN TAKEN FROM THAMES WATER LTD ASSET RECORDS DATED 22 MARCH 2021. LOCATION PROVIDED IS INDICATIVE, AND FURTHER INVESTIGATION REQUIRED TO CONFIRM ACTUAL POSITION ON SITE BECAUSE THIS PROVIDES A MAJOR CONSTRAINT TO DEVELOPMENT OF THE SITE

FLOW CONTROL CHAMBER TO RESTRICT OUTFLOW TO 2.0 ls (GREENFIELD RATE) BY USE OF A VORTEX FLOW CONTROL

SURFACE WATER DRAINAGE TO DISCHARGE INTO CULVERTED DITCH CROSSING

EXISTING MANHOLE IDENTIFIED ON TOPOGRAPHICAL SURVEY - FURTHER INVESTIGATION REQUIRED TO DETERMINE WHETHER THIS IS FOR FOUL OR SURFACE WATER DRAINAGE, AS WELL AS CONFIRMING LEVELS AND PIPE SIZES.

P03 GREENFIELD RATE UPDATED	VT	SH	2023.11.02
P02 FOR PLANNING	VT	SH	2022.07.07
P01 FIRST ISSUE	VT	SH	2021.08.18
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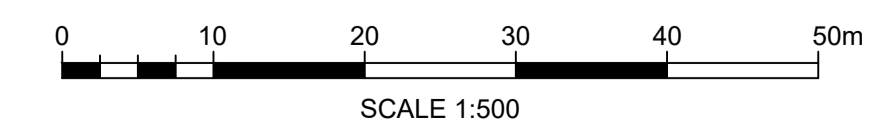
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Title
PROPOSED DRAINAGE STRATEGY

SHEET 2 OF 2

Project No. 332110526	Scale 1:500 @ A1
Revision P03	Drawing No. 332110526-2001-002



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Title
 DRAINAGE MANHOLE SCHEDULES

Project No. 332110526 Scale A2
 Revision P02 Drawing No. 332110526-2001-003

SURFACE WATER MANHOLE SCHEDULE								FOUL WATER MANHOLE SCHEDULE							
MH NO.	CL	IL	DEPTH	PIPEØ OUT	COVER TYPE	MANHOLE SIZE	MANHOLE TYPE	MH NO.	CL	IL	DEPTH	PIPEØ OUT	COVER TYPE	MANHOLE SIZE	MANHOLE TYPE
SW001	54.65	54.05	0.60m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW001	55.60	55.00	0.60m	150Ø	D400	450Ø	PLASTIC IC
SW002	54.80	53.93	0.87m	100Ø	D400	315Ø	PLASTIC CATCHPIT	FW002	55.60	54.75	0.85m	150Ø	D400	450Ø	PLASTIC IC
SW003	54.70	53.87	0.83m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW003	55.55	54.77	0.78m	100Ø	B125	315Ø	PLASTIC IC
SW004	55.20	54.11	1.09m	100Ø	B125	450Ø	PLASTIC CATCHPIT	FW004	55.55	54.73	0.82m	100Ø	B125	315Ø	PLASTIC IC
SW005	55.20	53.80	1.40m	150Ø	B125	450Ø	PLASTIC CATCHPIT	FW005	55.50	54.65	0.85m	150Ø	D400	450Ø	PLASTIC IC
SW006	70.70	69.30	1.40m	150Ø	D400	450Ø	PLASTIC CATCHPIT	FW006	55.43	54.68	0.75m	100Ø	B125	315Ø	PLASTIC IC
SW007	55.28	53.67	1.61m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW007	55.44	54.65	0.79m	100Ø	B125	315Ø	PLASTIC IC
SW008	55.60	54.09	1.51m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW008	55.40	54.53	0.87m	150Ø	D400	450Ø	PLASTIC IC
SW009	55.60	53.87	1.73m	150Ø	D400	450Ø	PLASTIC CATCHPIT	FW009	55.45	54.61	0.84m	100Ø	B125	315Ø	PLASTIC IC
SW010	55.55	53.92	1.63m	100Ø	D400	315Ø	PLASTIC CATCHPIT	FW010	55.45	54.59	0.86m	100Ø	B125	315Ø	PLASTIC IC
SW011	55.55	53.82	1.73m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW011	55.30	54.43	0.87m	150Ø	D400	450Ø	PLASTIC IC
SW012	55.55	53.87	1.68m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW012	55.20	54.34	0.86m	100Ø	B125	315Ø	PLASTIC IC
SW013	55.55	53.82	1.73m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW013	55.03	54.24	0.79m	150Ø	D400	450Ø	PLASTIC IC
SW014	55.50	53.74	1.76m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW014	55.20	54.30	0.90m	100Ø	B125	315Ø	PLASTIC IC
SW015	55.55	53.76	1.79m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW015	55.20	54.24	0.96m	100Ø	B125	315Ø	PLASTIC IC
SW016	55.45	53.74	1.71m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW016	55.20	54.20	1.00m	100Ø	B125	315Ø	PLASTIC IC
SW017	55.40	53.63	1.77m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW017	54.70	54.09	0.61m	150Ø	D400	450Ø	PLASTIC IC
SW018	55.45	53.75	1.70m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW018	54.80	54.07	0.73m	150Ø	D400	450Ø	PLASTIC IC
SW019	55.30	53.54	1.76m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW019	55.00	54.09	0.91m	150Ø	D400	450Ø	PLASTIC IC
SW020	55.50	53.35	2.15m	225Ø	D400	600Ø	PLASTIC CATCHPIT	FW020	54.70	53.93	0.77m	150Ø	D400	450Ø	PLASTIC IC
SW021	55.50	53.11	2.39m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW021	55.10	54.11	0.99m	150Ø	B125	450Ø	PLASTIC IC
SW022	56.45	52.89	3.56m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW022	54.65	53.84	0.81m	150Ø	B125	450Ø	PLASTIC IC
SW023	55.80	52.66	3.14m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW023	54.50	53.78	0.72m	150Ø	D400	450Ø	PLASTIC IC
SW024	55.73	52.46	3.27m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW101	55.25	54.65	0.60m	100Ø	B125	315Ø	PLASTIC IC
SW025	55.25	52.82	2.43m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW102	55.25	54.40	0.85m	100Ø	B125	315Ø	PLASTIC IC
SW026	55.88	52.67	3.21m	150Ø	D400	450Ø	PLASTIC CATCHPIT	FW103	55.65	54.32	1.33m	150Ø	D400	450Ø	PLASTIC IC
SW027	55.20	52.62	2.58m	100Ø	B125	315Ø	PLASTIC CATCHPIT	FW104	55.20	54.25	0.95m	100Ø	D400	315Ø	PLASTIC IC
SW028	55.20	52.61	2.59m	225Ø	B125	600Ø	PLASTIC CATCHPIT	FW105	55.20	54.18	1.02m	150Ø	D400	450Ø	PLASTIC IC
SW029	55.25	52.56	2.69m	225Ø	B125	600Ø	PLASTIC CATCHPIT								
SW030	55.65	52.46	3.19m	150Ø	B125	450Ø	PLASTIC CATCHPIT								
SW031	55.95	52.14	3.81m	225Ø	D400	600Ø	PLASTIC CATCHPIT								
SW032	56.10	51.92	4.18m	225Ø	B125	1200Ø	PCC CHAMBER								
SW033	54.95	51.62	3.33m	225Ø	D400	600Ø	PLASTIC CATCHPIT								
SW034	54.54	51.35	3.19m	225Ø	D400	600Ø	PLASTIC CATCHPIT								
SW035	52.60	51.05	1.55m	225Ø	D400	600Ø	PLASTIC CATCHPIT								
SW036	50.80	50.15	0.65m	225Ø	D400	600Ø	PLASTIC CATCHPIT								

COVER LEVELS AND INVERT LEVELS ARE INDICATIVE ONLY. DETAILED LEVELS DESIGN AND DRAINAGE LAYOUT SUBJECT TO ARCHITECTS CONFIRMATION OF DRAINAGE CONNECTION POINTS

Plotted: 08.07.2022 07:08:11:10 PM By: Burn, Peter
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