



Flood Risk Assessment

**Proposed Residential Development
Land off Oxford Road
Kidlington
Oxfordshire**

**Revision D: March 2022
Report Reference: 122-FRA-01-D**

Report Originator(s)

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Revision Record

Revision	Date	Description	Written	Approved
0	20/01/19	Initial Issue	MJA	MJA
A	27/01/19	Care home removed	MJA	MJA
B	11/02/19	Masterplan updated	MJA	MJA
C	06/02/22	Planning Issue	MJA/LT	MJA
D	14/03/22	Planning Issue	MJA	MJA

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1.0 Introduction

1.1 Instructions

- 1.1.1 This Flood Risk Assessment has been prepared from instructions received from Manor Oak Homes.
- 1.1.2 The report has been prepared to support the submission of an outline application.
- 1.1.3 The benefit of this report is to our instructing Client.

1.2 Site Location

- 1.2.1 The proposed residential development is located at Oxford Road, Kidlington, as shown in **Inset 1.1** below and enclosed in **Appendix A**. The approximate National Grid Reference for the site is E449737 N212406.

Inset 1.1: Site Location Plan



1.3 Current Use and Description

- 1.3.1 The site currently comprises agricultural land and with a disused farmhouse and outbuildings. The existing site is shown on the topographical survey enclosed in **Appendix B**.
- 1.3.2 There is a watercourse located within the site running from north to south, the watercourse is shown on the topographical survey, the water course follows the southern boundary before connecting with a further watercourse located adjacent to the western boundary. Beyond the western watercourse there is also a canal.

1.4 Proposed Development

- 1.4.1 The proposed development site will comprise 118 dwellings as part of an outline application on the wider site and up to a further 5 dwellings comprising a redevelopment of the existing buildings which will comprise part of a full planning application.
- 1.4.2 The proposed development layout is shown on the plan enclosed in **Appendix C**.
- 1.4.3 In line with paragraph 26 of the Planning Practice Guidance for 'Flood risk and climate change' the lifetime of a residential development is considered to be at least 100 years.
- 1.4.4 The 'Flood Risk Vulnerability Classification' of various development types is defined within Table 2 of the Planning Practice Guidance for Flood Risk and Costal Change (PPG). A residential development is classified as More Vulnerable development. The relevant extract from Table 2 of the PPG is set out below.

More vulnerable

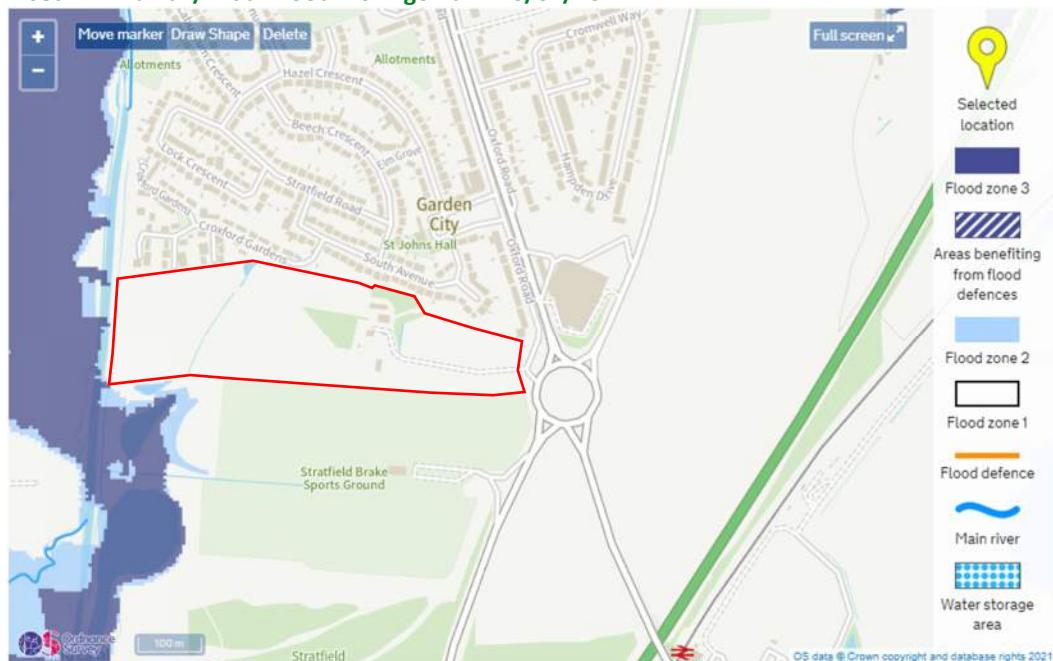
- Hospitals
- Residential institutions such as residential care homes, children's homes, social services homes, prisons and hostels.
- Buildings used for **dwelling houses**, student halls of residence, drinking establishments, nightclubs and hotels.
- Non-residential uses for health services, nurseries and educational establishments.
- Landfill* and sites used for waste management facilities for hazardous waste.
- Sites used for holiday or short-let caravans and camping, subject to a specific warning and evacuation plan.

2.0 Site Specific Flood Risk

2.1 Risk of Fluvial / Tidal Flooding

- 2.1.1 The likelihood of fluvial and tidal flooding is defined on the Environment Agency's map 'Flood Map for Planning'. This flood map is published on the gov.uk website.
- 2.1.2 An extract of this flood map is provided below in **Inset 2.1**. The approximate site boundary is shown in red.

Inset 2.1: Fluvial / Tidal Flood Risk - gov.uk - 20/01/2022



- 2.1.3 The Environment Agency's flood map shows that the proposed development site is located within Flood Zone 1 (Low Probability) and as such, the development is at a low (less than 1 in 1000 years) of flooding from rivers or the sea.

2.2 Risk of Surface Water Flooding

- 2.2.1 The likelihood of surface water flooding is defined on the Environment Agency's map 'Flood risk from surface water'. This flood map is published on the gov.uk website.
- 2.2.2 An extract of this flood map is provided below in **Inset 2.2**. The approximate site boundary is shown in red.
- 2.2.3 Regarding the accuracy of this map the EA state that:

"Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding. Because of this, we report the highest risk within 20m of a specific location, such as an individual property. This means reports for neighbouring properties may show different levels of risk."

Inset 2.2: Surface Water Flooding - gov uk - 20/01/2022



- 2.2.4 Most of the development site comprises a very low risk of surface water flooding. All other areas of raised (low, medium or high) surface water flooding except for the watercourse originate on site. Therefore, these are isolated areas which are associated entirely with the site and associated with low spots within the Lidar data.
- 2.2.5 As none of the surface water flooding originates offsite the overall risk of surface water flooding is considered to be low and therefore acceptable.

2.3 Risk of Reservoirs, Canals and Other Artificial Sources Flooding

- 2.3.1 The likelihood of reservoir water flooding is defined on the Environment Agency's map 'Flood risk from surface water'. This flood map is published on the gov.uk website.
- 2.3.2 An extract of this flood map is provided below in **Inset 2.3**. The approximate site boundary is shown in red.

Inset 2.3: Reservoir Flooding - gov.uk - 20/01/2022



- 2.3.3 An area of the site is shown as being at risk of reservoir flooding, however, this area of the site is to comprise public open space. Therefore, the risk of reservoir flooding to dwellings is low.
- 2.3.4 The canal adjacent to the site's western boundary is lower than the development site so does not pose a flood risk.

2.4 Risk of Ground Water Flooding

- 2.4.1 We do not have any records of sewer flooding within the vicinity of the site. We therefore consider the risk of sewer flooding to be low.

2.5 Risk of Sewer Flooding

- 2.5.1 We do not have any records of sewer flooding within the vicinity of the site. We therefore consider the risk of sewer flooding to be low.

2.6 Previous Flood Events

- 2.6.1 The Environment Agency's Historic Flood Map does not show any flooding within the boundary of the site. The Environment Agency's "Historic Flood Map" is a GIS layer showing the maximum extent of all individual Recorded Flood Outlines from river, the sea and groundwater springs and shows areas of land that have previously been subject to flooding in England. Records began in 1946 when predecessor bodies to the Environment Agency started collecting detailed information about flooding incidents".

2.7 Summary of Flood Risk

- 2.7.1 The proposed development site is location within Flood Zone 1 and is at a low risk of flooding from all other sources.

2.8 Flood Risk Vulnerability and Flood Zone 'Compatibility'

- 2.8.1 The suitability of different development types to be built and occupied within a particular Flood Zone is defined within Table 3 of the Planning Practice Guidance for 'Flood Risk and Coastal Change' to the National Planning Policy Framework. Table 3 is replicated below in **Table 2.1** below. This table maps vulnerability classes against the flood zones to indicate where development is 'appropriate' and where it should not be permitted.
- 2.8.2 The proposed residential development is located within Flood Zone 1 and is classified as More Vulnerable development. Based on this categorisation of the development it is considered 'appropriate'.

Table 2.1: Flood risk vulnerability and flood zone 'compatibility'

Flood Zone	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a †	Exception Test required †	✗	Exception Test required	✓	
Zone 3b *	Exception Test required *	✗	✗	✗	✗

✓ Development is appropriate

✗ Development should not be permitted.

† In Flood Zone 3a essential infrastructure should be designed and constructed to remain operational and safe in times of flood.

” * ” In Flood Zone 3b (functional floodplain) essential infrastructure that has to be there and has passed the Exception Test, and water-compatible uses, should be designed and constructed to:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

3.0 Surface Water Management

3.1 Existing Drainage

- 3.1.1 The site is currently undeveloped with no positive drainage.

3.2 Existing Discharge Rate

- 3.2.1 The existing discharge rate for the site has been calculated using the IH124 method. Full calculations are enclosed in **Appendix F** whilst the input parameters and results are summarised in **Table 3.1** below.

Table 3.1: Existing Runoff Rate Calculation Parameters and Results

Parameter	Value
Proposed Drained Area (ha)	2.469 see Appendix E
SAAR (mm)	617
Soil Index / SPR	4 / 0.47
Region	6
Results	Value
$Q_{\bar{B}}$ (l/s)	10.3
Q_1 (l/s)	8.7
Q_{30} (l/s)	20.1
Q_{100} (l/s)	25.5

- 3.2.2 The allowable discharge rate for the site is the $Q_{\bar{B}}$ rate of 10.3 l/s. Surface water from the site post development will be restricted to a discharge rate of 10.3 l/s via a hydrobrake which represents a reasonable balance between flow control and risk of blockage.

- 3.2.3

3.3 Proposed Method of Discharge

3.3.1 Paragraph 80 of the Planning Practice Guidance for 'Flood Risk and Coastal Change' defines the hierarchy of drainage options. Where reasonably practicable the aim should be to discharge surface water runoff as high up the following hierarchy of drainage options as reasonably practicable:

1. into the ground (infiltration)
2. to a surface water body
3. to a surface water sewer, highway drain, or another drainage system; and
4. to a combined sewer.

3.3.2 Each of these is considered separately below:

Into the ground

3.3.3 Inspection of the British Geological Survey's maps show that the bedrock geology which underlies the site is Oxford Clay Formation and West Walton Formation - Mudstone

3.3.4 Based on the above geology description we would anticipate that infiltration techniques across the site would be unviable. Infiltration testing will be undertaken at detailed design stage to confirm this assumption. Should infiltration be found to be viable the drainage strategy proposed for the development will be altered to take this into account.

To a Surface Water Body

3.3.5 A watercourse is located within the site this will be used as the outfall for the proposed development site.

3.3.6 As a surface water body is viable the use of alternative drainage methods will not be considered further in this report.

3.4 Proposed Drainage Strategy

3.4.1 Surface water discharge from the proposed development outfall to the watercourse located within the development site. The surface water discharge rate from the site will be restricted to greenfield equivalent runoff rates to ensure that the rate of surface water runoff from the site does not increase as a result of the proposed development.

3.4.2 The proposed drainage strategy will comprise a:

- A piped network
- Hydrobrake flow control
- Detention Basin – online
- Swales through public open space where appropriate
- Rain gardens where feasible
- Permeable paving to private drives – tanked

3.4.3 The proposed surface water drainage strategy is shown on the drawing enclosed in **Appendix D**.

Design Parameters

3.4.4 Surface water drainage will be designed using the rainfall parameters from the Flood Estimation Handbook (FEH).

3.4.5 Climate change allowances are defined by the Environment Agency in their document 'Flood risk assessments: climate change allowances' first published in February 2016. Table 2 of this document shows anticipated changes in extreme rainfall intensity in small and urban catchments. The Environment Agency advise that flood risk assessments and strategic flood risk assessments, assess both the central and upper end allowances to understand the range of impact. Table 2 of the Environment Agency's guidance is replicated below in **Table 3.2**.

Table 3.2: Table 2 Peak rainfall intensity allowance in small and urban catchments

Applies across all of England	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper end	10%	20%	40%
Central	5%	10%	20%

3.4.6 To ensure a worst-case assessment is undertaken a 40% climate change allowance will be used throughout.

3.5 Attenuation Design

- 3.5.1 Surface water attenuation is required to store excess water during an extreme event whilst maintaining a greenfield discharge rate of 10.3 l/s. Surface water will be attenuated within a detention basin. Full calculations are enclosed in **Appendix F** whilst design parameters are set out below.

Table 3.3: Attenuation Calculation Parameters and Results

Parameter	Value
Return Period (years)	100 + 40% Climate Change
Rainfall Parameters	FEH13
Drained Area (ha)	2.716, see Appendix E include 10% urban creep
Discharge Rate (l/s)	10.3
Results	Value
Storage Requirement (m ³)	2055

3.6 Overland Flows

- 3.6.1 Surface water drainage will be designed to accommodate a 1 in 100 year plus 40% climate change event. However, during extreme events it is possible that the drainage network could become overloaded. Should an extreme event occur surface water will be directed towards the watercourse as per the existing arrangement on the site. This will ensure that dwellings are not flooded during an extreme event.

3.7 Maintenance Requirements

- 3.7.1 The drainage will be designed in line with Building Regulations, Design and Construction Guidance for foul and surface water sewers offered for adoption under the Code for adoption agreements for water and sewerage companies operating wholly or mainly in England ("the Code"); as well as local SUDS guidance to ensure compliance with best practice guidance, thus minimising the maintenance requirements. A full maintenance plan for the site will be developed at the detailed design stage.
- 3.7.2 The person / authority responsible for maintenance of the drainage will depend on ownership which will vary across the site as detailed design and adoption progresses the exact body responsible for adoption of the various surface water aspects will become clear. Typical responsibilities are set out below in **Table 3.4**.

Table 3.4: Surface Water Maintenance

Drainage	Maintainer
Drains	Home owner
Private Sewers	Home owner / management company
Household SUDS	Home owner
Communal SUDS - private	Management company / home owner.
Adopted SUDS	SUDS Body: Local Authority / water company / other SUDS adopting body.
Adopted sewers	Water company

4.0 Foul Water Management

4.1 Existing Drainage

- 4.1.1 The site is currently a field, therefore does not have any existing foul water infrastructure.
- 4.1.2 Existing adopted sewers within the vicinity of the site are shown on the asset plan enclosed in **Appendix I**.

4.2 Proposed Drainage Strategy

- 4.2.1 Foul water will discharge to Thames Water's sewer located within Oxford Road or Croxford Gardens. A foul water pumping station may be required for some or all of the development.

4.3 Maintenance Requirements

- 4.3.1 The drainage will be designed in line with Building Regulations, Sewers for Adoption to ensure compliance with best practice guidance thus minimising the maintenance requirements. A full maintenance plan for the site will be developed at detailed design stage.
- 4.3.2 The person / authority responsible for maintenance of the drainage will depend on ownership which will vary across the site as detailed design and adoption progresses the exact body responsible for adoption of the various surface water aspects will become clear. Typical responsibilities are set out below in **Table 4.1**.

Table 4.1: Foul Water Maintenance

Drainage	Maintainer
Drains	Home owner
Private Sewers	Home owner / management company
Adopted sewers	Water company

5.0 Conclusions

5.1 Site location and proposed development

- 5.1.1 The proposed development site is located at land off Oxford Road, Kidlington. The site is currently agricultural land with a disused farmhouse and associated outbuildings.
- 5.1.2 The proposed development site will comprise 118 dwellings as part of an outline application on the wider site and up to a further 5 dwellings comprising a redevelopment of the existing buildings which will comprise part of a full planning application.

5.2 Flood Risk

- 5.2.1 The proposed development site is location within Flood Zone 1 and is at a low risk of flooding from all other sources.
- 5.2.2 The proposed development's vulnerability classification is compatible with the Flood Zone therefore the development is appropriate.

5.3 Surface Water Management

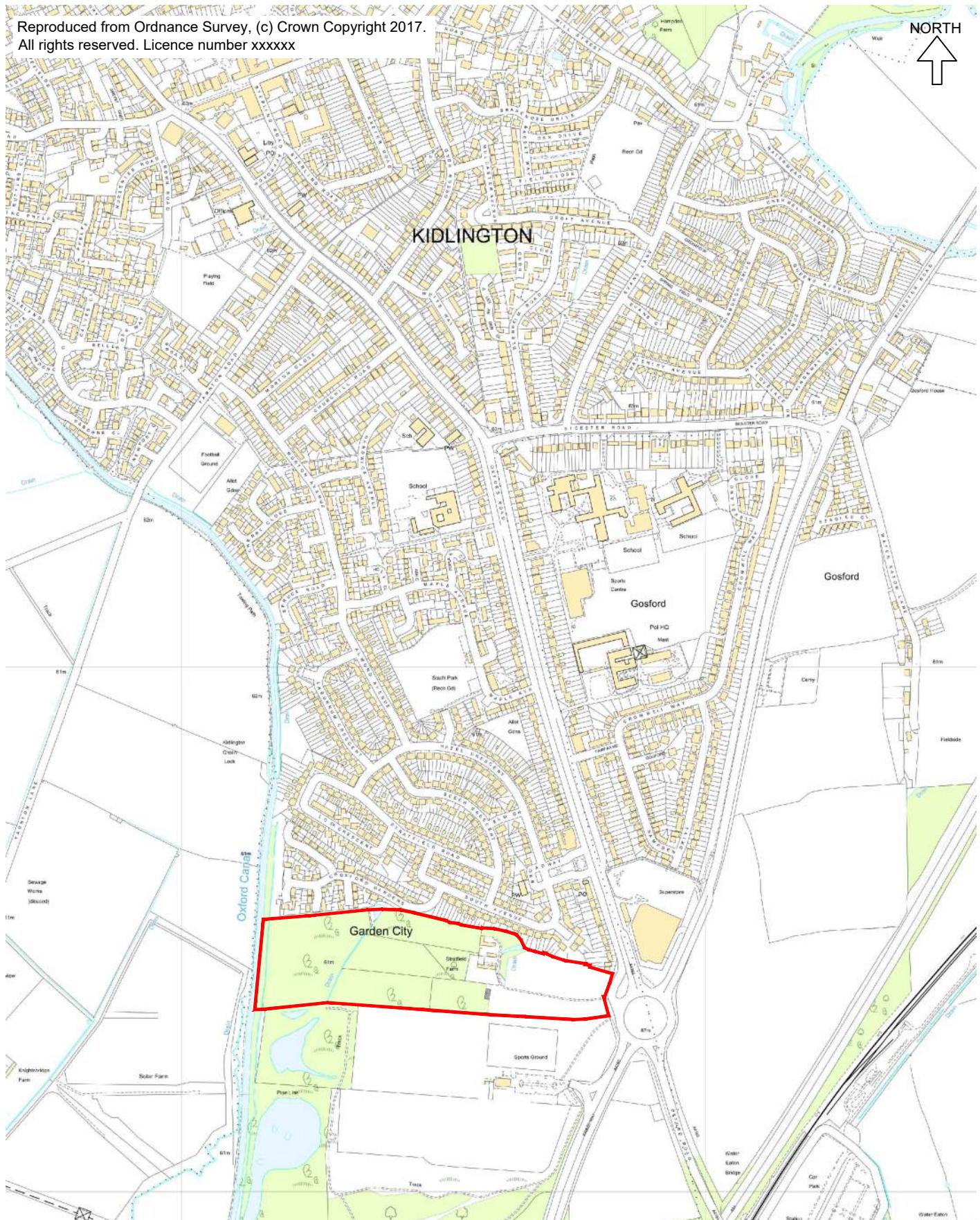
- 5.3.1 The key proposed surface water parameters are:
- Discharge rate: 10.3 l/s
 - Outfall: watercourse
 - Attenuation requirement: 2055m³
 - SUDS features:
 - A piped network
 - Hydrobrake flow control
 - Detention Basin – online
 - Swales through public open space where appropriate
 - Rain gardens where feasible
 - Permeable paving to private drives – tanked

5.4 Foul Water Management

- 5.4.1 Foul water will discharge to the adopted sewer located in Oxford Road

Appendix A
Location Plan
MAC drawing no. 122-FRA01

NORTH



T: 01604 340544 Northampton Office
E: info@mac-ltd.co.uk W: mac-ltd.co.uk
Martin Andrews Consulting Ltd

Client: Manor Oak Homes

Project: Land off Oxford Road,
Kidlington

Date: 20.01.22

Title: Site Location Plan

Drw: MJA

Chk: MJA

Scale: 1:10,000

Size: A4

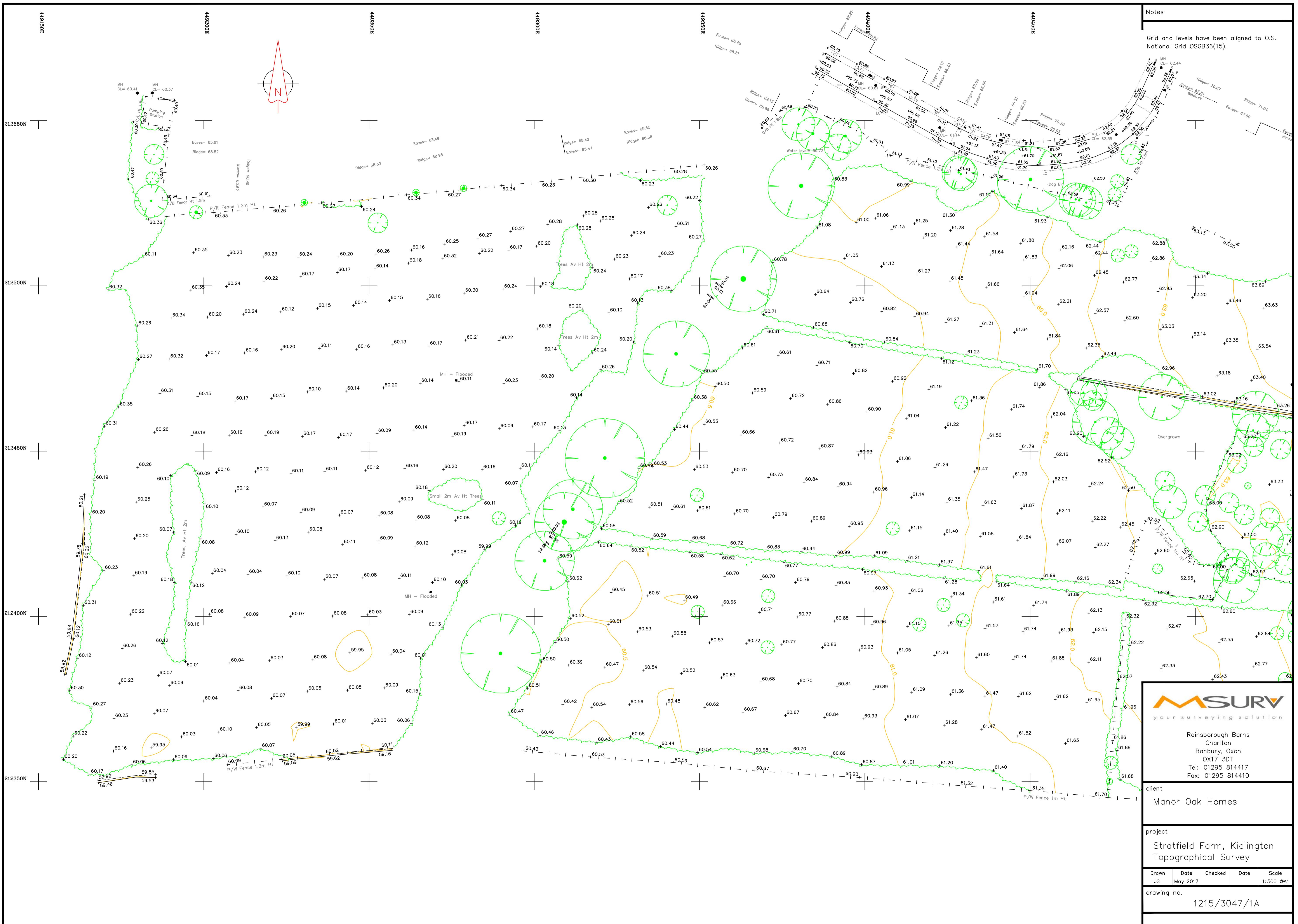
Drawing No. 122-TA01

Revision

- Transport Assessments
- Flood Risk Assessments
- Highway Advice
- Drainage Strategies

Appendix B

Topographical Survey
MSurv drawing no. 1215/3047/1A
MSurv drawing no. 1215/3047/2A



client

Manor Oak Homes

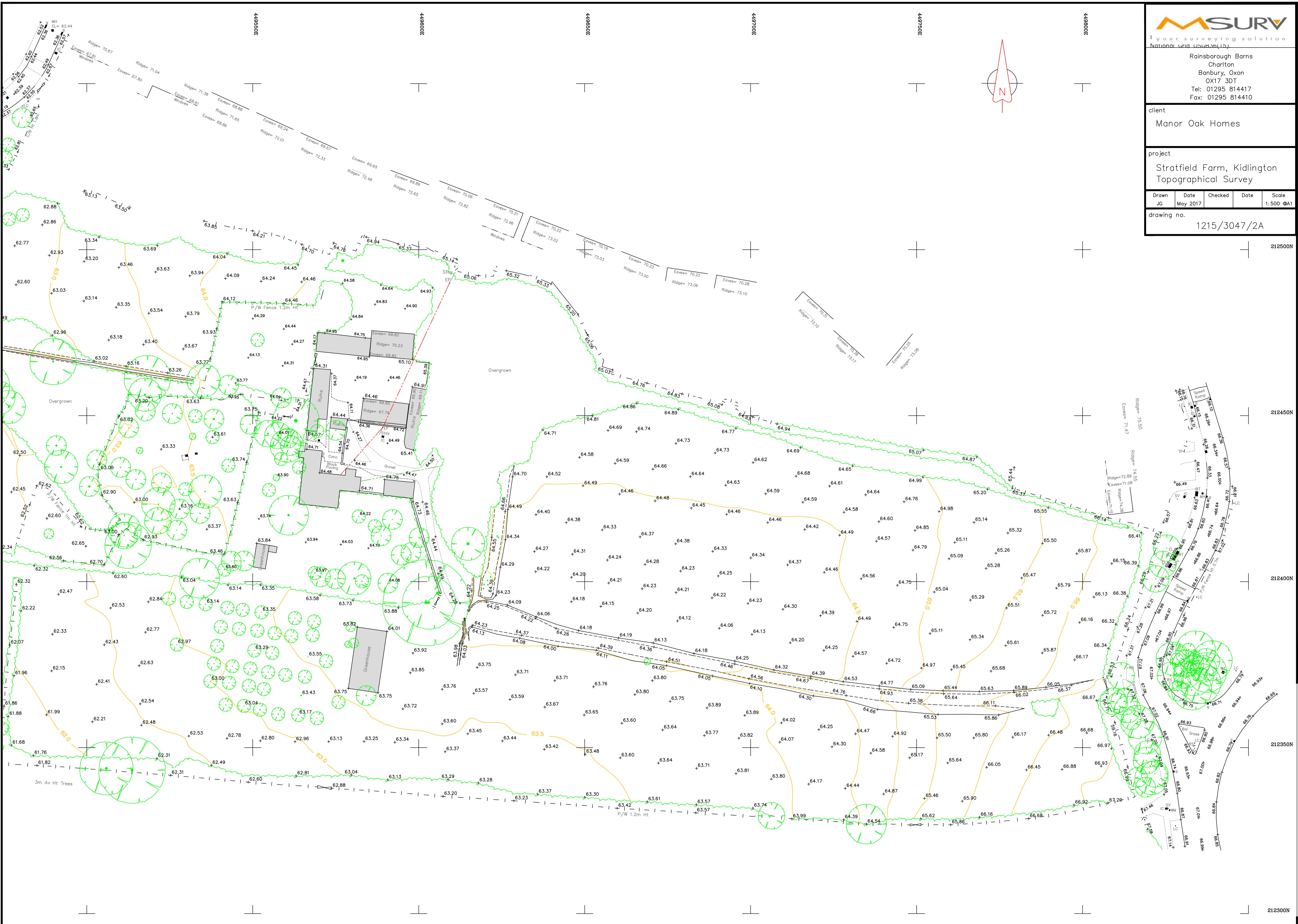
project

Stratfield Farm, Kidlington
Topographical Survey

Draw JG Date May 2017 Checked Date Scale 1:500 @A1

drawing no.

1215/3047/2A





rg+p

Project: A development at Oxford Road, Kidlington

Status: Planning

Client: Manor Oak Homes

Sheet title: Illustrative Masterplan

Scale: 1:2,000@A3

Date: February 2022

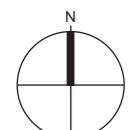
Drawn: AIG / DNW

Checked: DNW

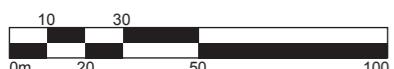
Ref: 40975/012

London | Birmingham | Leicester
0203 327 0381 | 0121 309 0071 | 0116 204 5800
rg+p.co.uk · design@rg+p.co.uk

All dimensions to be checked on site. Do not scale off this drawing for construction purposes. This drawing is the copyright of the Architect, and not to be reproduced without their permission. Ordnance Survey map information reproduced with permission of HMSO Crown Copyright reserved. rg+p Ltd. Trading as rg+p.



SCALE 1:2,000



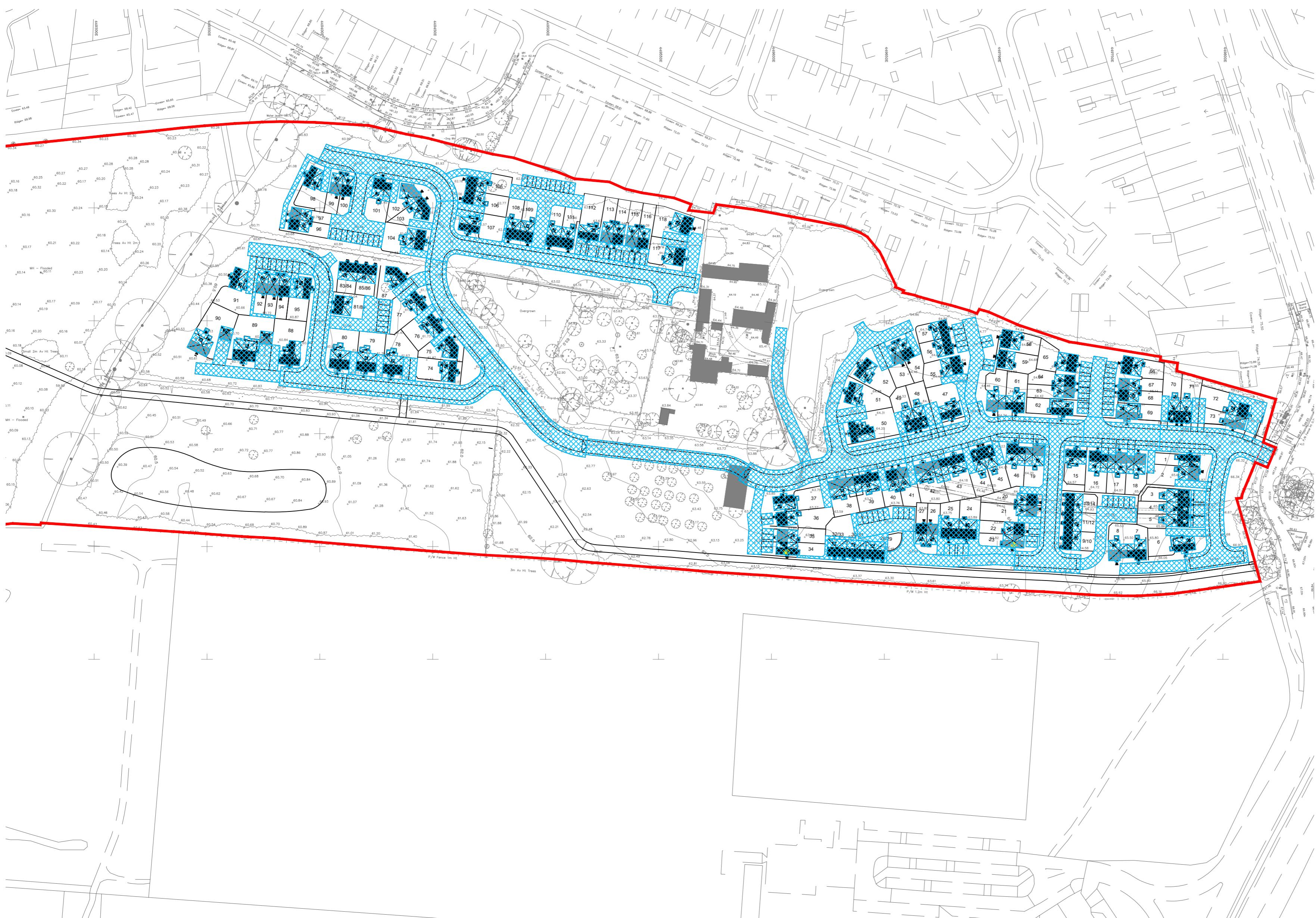
Appendix D
Proposed Drainage Strategy
MAC drawing no.122-FRA13



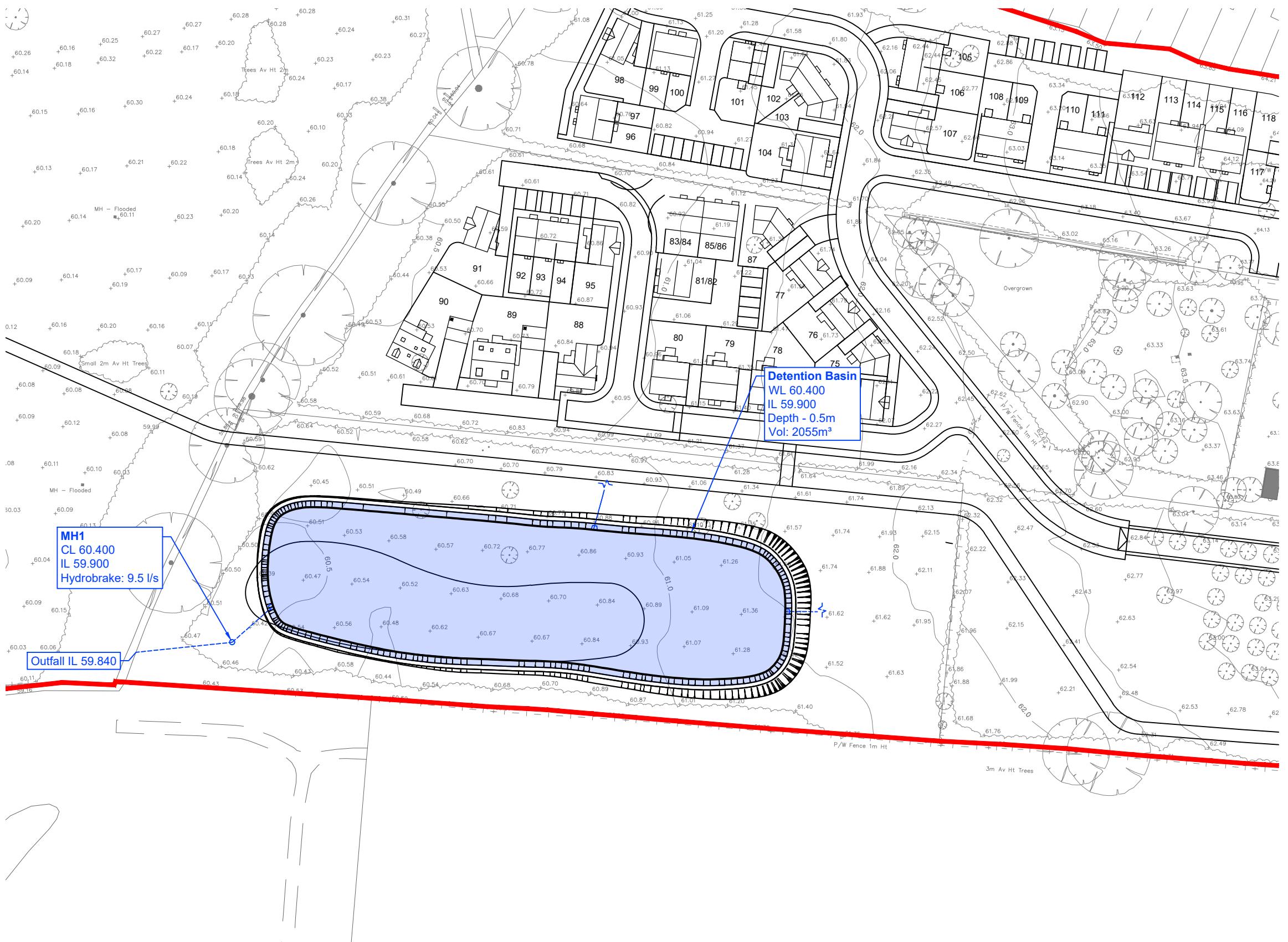
- Notes:
- Based on Topographical Survey by MSURV, drawing number 1215/3047/1A and 2A dated May 2017.
 - Based on Proving Layout 118 Units by rgp, reference number 40975/010C dated 12.01.2022.

Key:

- Site Boundary = 104,226m²
- Proposed Impermeable Area = 24,692m²



Appendix E
Proposed Impermeable Area
MAC drawing no.122-FRA12



Appendix F
Drainage Design Calculations

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	2.716	5.00	100.000	1200	100.000	100.000	2.000

Simulation Settings

Rainfall Methodology	FEH-13	Skip Steady State	x	1 year (l/s)	8.7
Summer CV	0.750	Drain Down Time (mins)	240	30 year (l/s)	20.1
Winter CV	0.840	Additional Storage (m³/ha)	20.0	100 year (l/s)	25.5
Analysis Speed	Normal	Check Discharge Rate(s)	✓	Check Discharge Volume	x

Storm Durations

60	180	360	600	960	2160	4320	7200	10080
120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
100	40	0	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Growth Factor 30 year	1.95
Greenfield Method	IH124	Growth Factor 100 year	2.48
Positively Drained Area (ha)	2.469	Betterment (%)	0
SAAR (mm)	617	QBar	10.3
Soil Index	4	Q 1 year (l/s)	8.7
SPR	0.47	Q 30 year (l/s)	20.1
Region	6	Q 100 year (l/s)	25.5
Growth Factor 1 year	0.85		

Node 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	98.000	Product Number	CTL-SHE-0149-9500-0500-9500
Design Depth (m)	0.500	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	9.5	Min Node Diameter (mm)	1200

Node 1 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	98.000
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	



Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	2055.0	0.0	1.000	2055.0	0.0	1.001	0.0	0.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.99%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
720 minute winter	1	705	98.997	0.997	142.6	2077.4430	0.0000	OK
<hr/>								
<hr/>								
Link Event (Upstream Depth)	US Node	Link	Outflow (l/s)	Discharge Vol (m³)				
720 minute winter	1	Hydro-Brake®	13.1	563.6				

Appendix G
Water Company Asset Plans

Asset location search



Property Searches

Martin Andrews Consulting Ltd
8, Corn Kiln Close 8, Corn Kiln Close

COGENHOE
NN7 1NX

Search address supplied 368
Oxford Road
Kidlington
OX5 1DA

Your reference 122 Kidlington

Our reference ALS/ALS Standard/2019_3939031

Search date 18 January 2019

Keeping you up-to-date

Notification of Price Changes

From 1 September 2018 Thames Water Property Searches will be increasing the price of its Asset Location Search in line with RPI at 3.23%.

For further details on the price increase please visit our website: www.thameswater-propertysearches.co.uk
Please note that any orders received with a higher payment prior to the 1 September 2018 will be non-refundable.



Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13



searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk



0845 070 9148



Asset location search



Property Searches

Search address supplied: 368, Oxford Road, Kidlington, OX5 1DA

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This search provides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk

Web: www.thameswater-propertysearches.co.uk

Asset location search



Property Searches

Waste Water Services

Please provide a copy extract from the public sewer map.

The following quartiles have been printed as they fall within Thames' sewerage area:

SP4912NE

SP4912SE

SP4912NW

SP4912SW

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

The following quartiles have been printed as they fall within Thames' water area:

SP4912NE

SP4912SE

Asset location search



Property Searches

SP4912NW

Enclosed is a map showing the approximate positions of our water mains and associated apparatus. Please note that records are not kept of the positions of individual domestic supplies.

For your information, there will be a pressure of at least 10m head at the outside stop valve. If you would like to know the static pressure, please contact our Customer Centre on 0800 316 9800. The Customer Centre can also arrange for a full flow and pressure test to be carried out for a fee.

The following quartiles have not been printed as they contain no assets:

SP4912SW

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Asset location search



Property Searches

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the Sanction of the controller of H.M. Stationery Office, License no. 100019345 Crown Copyright Reserved.

NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

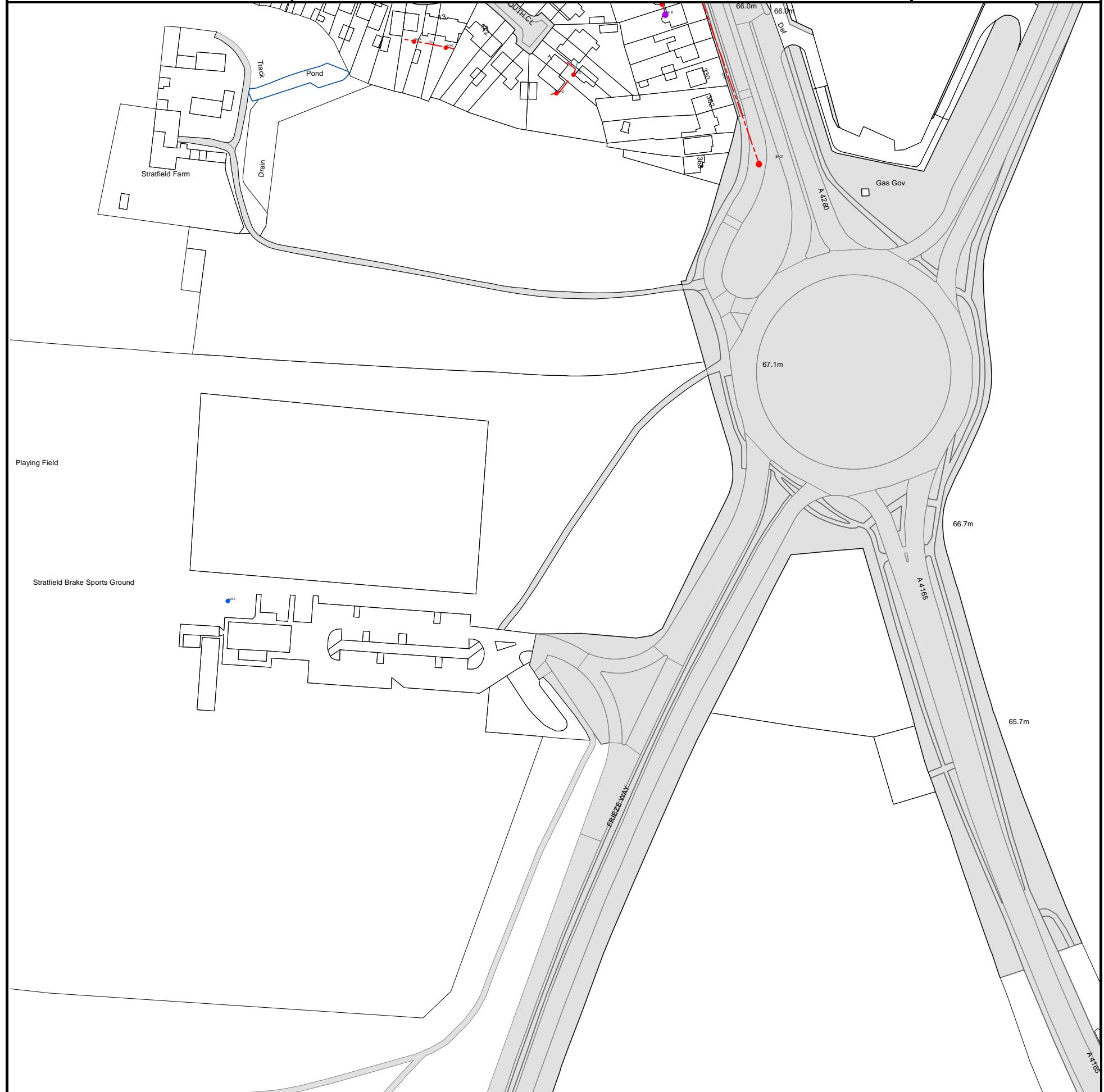
Manhole Reference	Manhole Cover Level	Manhole Invert Level
7803	65.54	63.61
7804	66.43	63.76
891A	n/a	n/a
8901	n/a	n/a
981D	n/a	n/a
981A	n/a	n/a
981C	n/a	n/a
9803	66.16	65.41
9903	n/a	n/a
9804	65.98	65.56
9901	66.7	65.83
9902	66.88	65.79
981B	n/a	n/a
6805	64.34	62.36
5802	61.31	58.44
6804	64.35	62.64
5801	61.12	58.79
6803	64.28	62.78
681A	n/a	n/a
6802	64.38	62.9
581A	n/a	n/a
591C	n/a	n/a
6903	64.38	63.02
591B	n/a	n/a
5901	60.85	59.04
591A	n/a	n/a
6902	64.64	63.24
6907	n/a	n/a
6905	n/a	n/a
5903	n/a	n/a
5902	n/a	n/a
6904	n/a	n/a
6906	n/a	n/a
791C	n/a	n/a
791B	n/a	n/a
8602	n/a	n/a
8601	64.41	65.78
8803	66.59	64.73
8701	66.59	64.79
871A	n/a	n/a
871B	n/a	n/a
871D	n/a	n/a
871E	n/a	n/a
871C	n/a	n/a
9609	n/a	n/a
971A	n/a	n/a
9608	n/a	n/a
971B	n/a	n/a
9601	64.1	63.43
9606	64	63.27
9602	63.98	63.36
9603	63.71	63.15
9604	64	63.3
9702	n/a	n/a
9703	64.38	63.63
9801	66.19	65.1
9802	65.96	65.23
9605	63.82	63.2
9607	63.31	62.9
9701	63.55	n/a
751A	n/a	n/a
851A	n/a	n/a
8501	65.76	n/a
551A	n/a	n/a
551B	n/a	n/a
551C	n/a	n/a
551D	n/a	n/a
551E	n/a	n/a
551F	n/a	n/a
7604	66.27	63.68
6602	66.46	64.31
7603	65.87	63.32
661F	n/a	n/a
7601	66.46	64.19
661D	n/a	n/a
661E	n/a	n/a
661C	n/a	n/a
6601	66.12	63.95
761B	n/a	n/a
7602	65.71	62.99
861G	n/a	n/a
661A	n/a	n/a
861E	n/a	n/a
761A	n/a	n/a
861D	n/a	n/a
861C	n/a	n/a
861A	n/a	n/a
661B	n/a	n/a
861F	n/a	n/a
6702	64.47	62.22
7701	65.33	62.54

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6701	63.2	n/a
8802	66.59	64.59
6801	63.69	61.49
8804	n/a	n/a
7805	66.1	64.34
6806	n/a	n/a
8801	66.54	64.44
7801	64.99	62.07
5803	61.97	n/a
7802	65.72	63.61
781A	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2019_3939031

SP4912SE



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 449750,212250

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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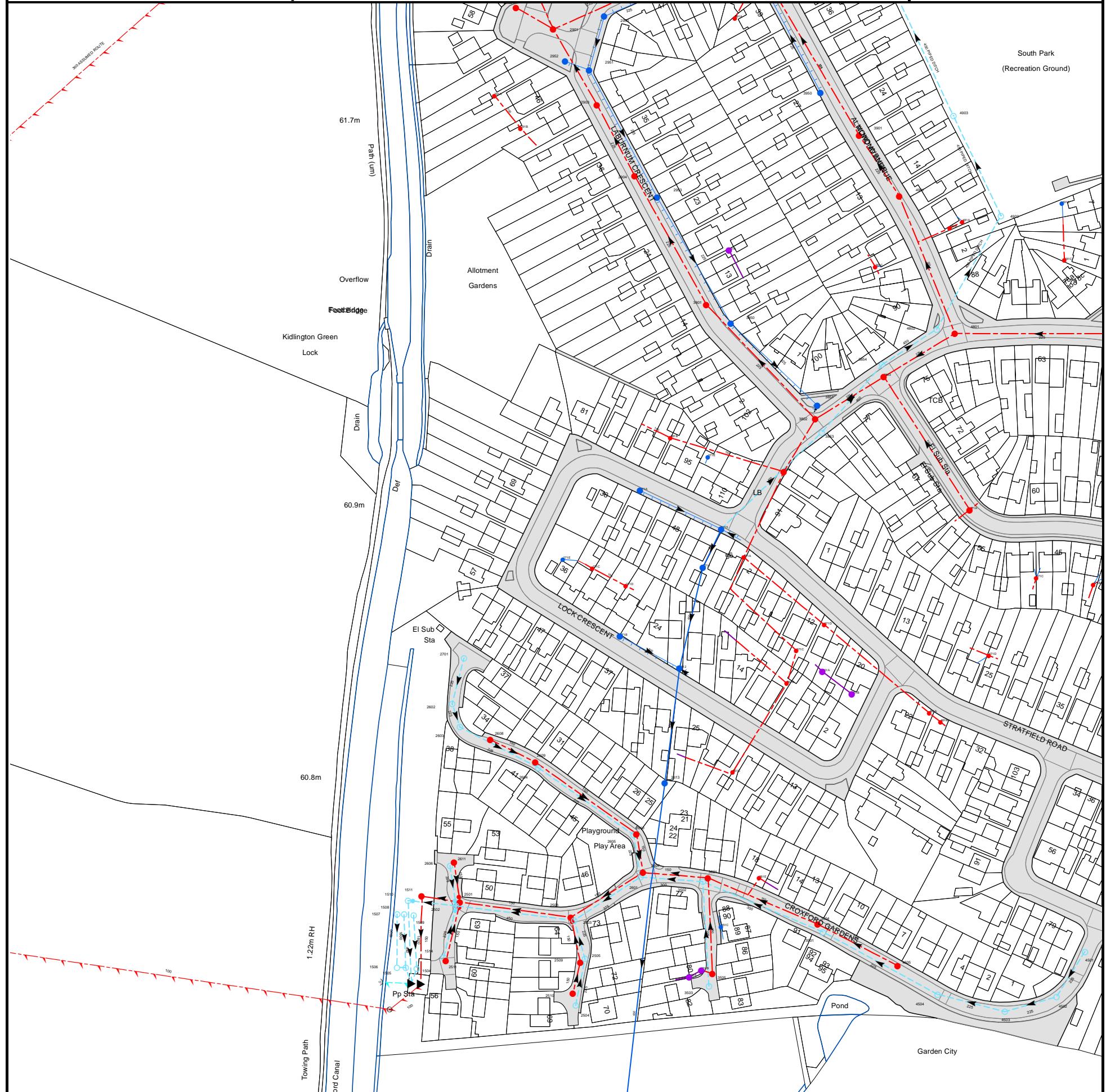
NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
521A	n/a	n/a
8401	66.53	64.46
741D	n/a	n/a
741C	n/a	n/a
641B	n/a	n/a
641A	n/a	n/a
741B	n/a	n/a
741A	n/a	n/a

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Asset Location Search Sewer Map - ALS/ALS Standard/2019_3939031

SP4912NW



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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
351C	n/a	n/a
4801	60.89	57.95
4802	n/a	n/a
3850	60.9	59.56
3801	60.86	57.32
381C	n/a	n/a
381A	n/a	n/a
481B	n/a	n/a
481A	n/a	n/a
4902	n/a	n/a
4901	61.13	57.64
3901	61.17	57.48
4903	n/a	n/a
3950	61.19	59.83
391A	n/a	n/a
291A	n/a	n/a
2902	61.14	59.84
291B	n/a	n/a
2901	61.18	n/a
2952	61.25	60.58
2951	61.17	59.68
2903	61.06	n/a
2950	61.16	59.77
2904	60.92	57.21
2953	60.94	59.65
1509	60.41	54.96
1504	60.41	54.84
1511	60.49	55.44
1514	60.57	59.12
2511	60.6	58.75
2606	60.58	59.18
2602	60.6	59.13
2611	60.64	58.84
2502	60.42	57.71
2603	60.52	59.04
2501	60.46	57.23
2701	60.74	59.29
4502	62.31	60.81
4501	62.4	60.9
471B	n/a	n/a
471C	n/a	n/a
4503	61.74	60.35
2504	60.65	58.94
4504	61.13	59.59
2510	60.71	59.35
3503	60.45	59.02
351A	n/a	n/a
3505	60.49	59.12
351B	n/a	n/a
4505	60.8	58.99
2509	60.74	59.06
2505	60.74	58.54
3501	60.43	58.83
3504	60.4	58.59
2503	60.58	57.91
2508	60.63	57.56
3502	60.51	58.39
361E	n/a	n/a
3601	60.48	58.08
2601	60.23	58.1
2607	60.23	57.8
2605	60.25	58.38
2610	60.28	57.92
2613	60.59	n/a
361C	n/a	n/a
2604	60.47	58.76
2609	60.33	58.3
2608	60.31	58.62
461B	n/a	n/a
461A	n/a	n/a
361B	n/a	n/a
361D	n/a	n/a
361A	n/a	n/a
2612	60.67	59.39
471D	n/a	n/a
371C	n/a	n/a
271B	n/a	n/a
371D	n/a	n/a
271D	n/a	n/a
271C	n/a	n/a
3714	n/a	n/a
271E	n/a	n/a
371A	n/a	n/a
3715	n/a	n/a
471A	n/a	n/a
271A	n/a	n/a
371B	n/a	n/a
371E	n/a	n/a
381B	n/a	n/a
3853	n/a	n/a

Manhole Reference	Manhole Cover Level	Manhole Invert Level
3802	61.12	57.47
3851	61.18	59.4
3803	60.96	57.75
3854	n/a	n/a
1506	60.44	54.94
1507	60.39	54.99
1508	60.41	54.96
1505	60.44	54.9
1510	60.51	57.36

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NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
2401	n/a	n/a

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ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

	Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.
	Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.
	Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.
	Trunk Surface Water
	Trunk Foul
	Storm Relief
	Trunk Combined
	Vent Pipe
	Bio-solids (Sludge)
	Proposed Thames Surface Water Sewer
	Proposed Thames Water Foul Sewer
	Gallery
	Foul Rising Main
	Surface Water Rising Main
	Combined Rising Main
	Sludge Rising Main
	Vacuum

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plans are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
- 5) 'na' or '0' on a manhole level indicates that data is unavailable.

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

	Air Valve
	Dam Chase
	Fitting
	Meter
	Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

	Control Valve
	Drop Pipe
	Ancillary
	Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol. Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

	Outfall
	Undefined End
	Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

	▲/▲ Public/Private Pumping Station
	* Change of characteristic indicator (C.O.C.I.)
	☒ Invert Level
	<1 Summit

Areas

Lines denoting areas of underground surveys, etc.

	Agreement
	Operational Site
	Chamber
	Tunnel
	Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

	Foul Sewer		Surface Water Sewer
	Combined Sewer		Gully
	Culverted Watercourse		Proposed
	Abandoned Sewer		



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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 449750,212250

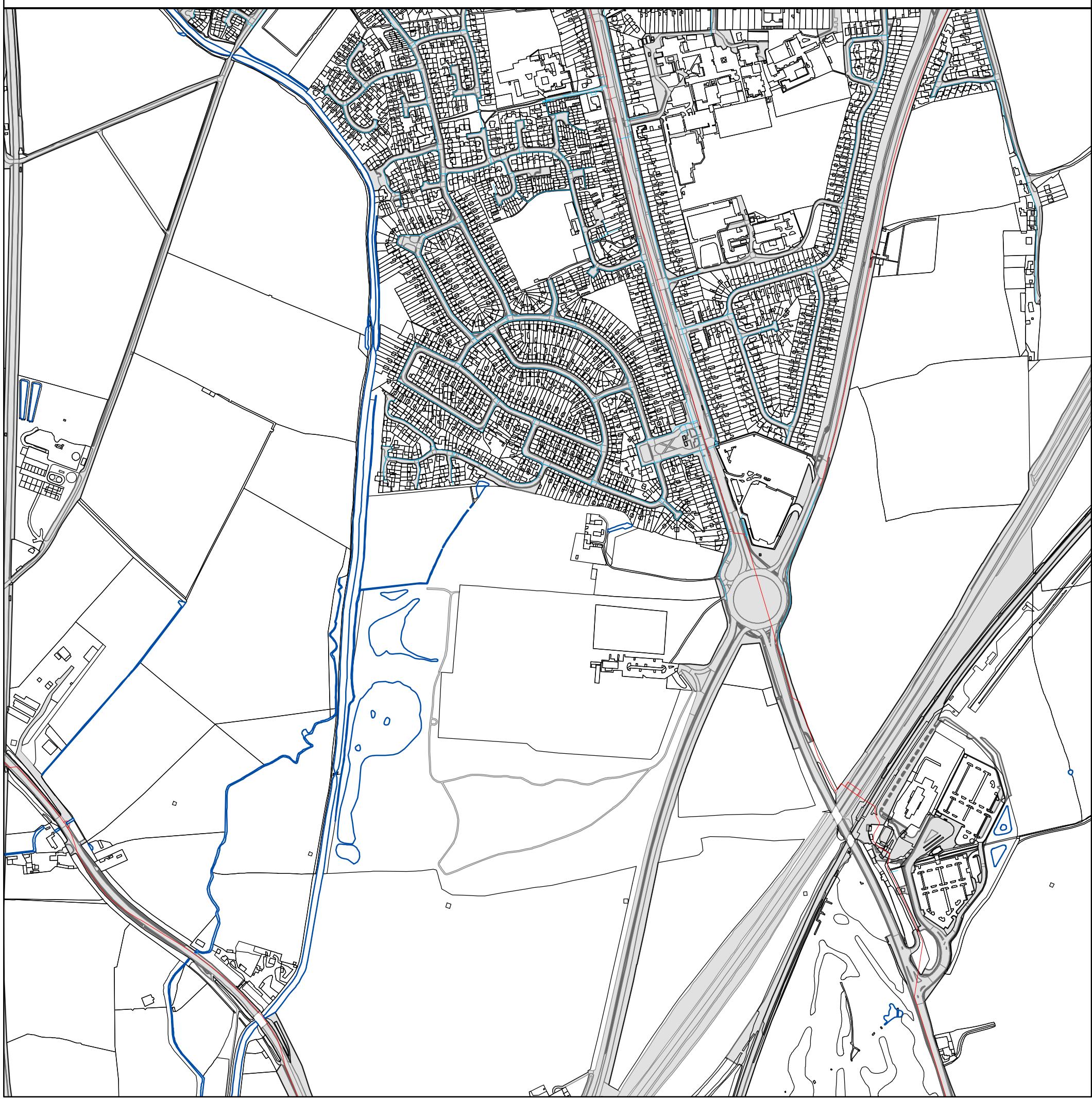
The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

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0 45 90 180 270 360
Meters

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Scale: 1:7161	Comments:
Width: 2000m	
Printed By: SAsirvat	
Print Date: 18/01/2019	
Map Centre: 449499,212416	
Grid Reference: SP4912SW	



ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

Distribution Main: The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.

Trunk Main: A main carrying water from a source of supply to a treatment plant or reservoir, or from one treatment plant or reservoir to another. Also a main transferring water in bulk to smaller water mains used for supplying individual customers.

Supply Main: A supply main indicates that the water main is used as a supply for a single property or group of properties.

Fire Main: Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.

Metered Pipe: A metered main indicates that the pipe in question supplies water for a single property or group of properties and that quantity of water passing through the pipe is metered even though there may be no meter symbol shown.

Transmission Tunnel: A very large diameter water pipe. Most tunnels are buried very deep underground. These pipes are not expected to affect the structural integrity of buildings shown on the map provided.

Proposed Main: A main that is still in the planning stages or in the process of being laid. More details of the proposed main and its reference number are generally included near the main.

PIPE DIAMETER	DEPTH BELOW GROUND
Up to 300mm (12")	900mm (3')
300mm - 600mm (12" - 24")	1100mm (3' 8")
600mm and bigger (24" plus)	1200mm (4')

Valves

- |— General Purpose Valve
- ◆— Air Valve
- ▲— Pressure Control Valve
- X— Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

Symbol indicating what happens at the end of a water main.

- |— Blank Flange
- T— Capped End
- Emptying Pit
- ◎— Undefined End
- F— Manifold
- Customer Supply
- L— Fire Supply

Operational Sites

- ⊕— Booster Station
- Other
- Other (Proposed)
- ▲— Pumping Station
- ▲— Service Reservoir
- ⊕— Shaft Inspection
- Treatment Works
- Unknown
- R— Water Tower

Other Symbols

- Data Logger

Other Water Pipes (Not Operated or Maintained by Thames Water)

Other Water Company Main: Occasionally other water company water pipes may overlap the border of our clean water coverage area. These mains are denoted in purple and in most cases have the owner of the pipe displayed along them.

Private Main: Indicates that the water main in question is not owned by Thames Water. These mains normally have text associated with them indicating the diameter and owner of the pipe.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL's terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking	Cheque
Call 0845 070 9148 quoting your invoice number starting CBA or ADS / OSS	Account number 90478703 Sort code 60-00-01 A remittance advice must be sent to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW. or email ps.billing@thameswater.co.uk	By calling your bank and quoting: Account number 90478703 Sort code 60-00-01 and your invoice number	Made payable to ' Thames Water Utilities Ltd' Write your Thames Water account number on the back. Send to: Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW or by DX to 151280 Slough 13

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.

Terms and Conditions

Search Code



IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if the Ombudsman finds that you have suffered actual loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Web site: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE