

400 Longwater Avenue, Green Park

Preliminary Utilities Appraisal

On behalf of **Green Park Reading No.1 LLP**

Project Ref: 27159/2008 | Rev: 1 | Date: March 2016



Document Control Sheet

Project Name: 400 Longwater Avenue, Green Park

Project Ref: 27159/2008

Report Title: Preliminary Utilities Appraisal

Doc Ref: -

Date: March 2016

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For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
1	23/03/2016	FINAL	SET	DH	DH

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Glossary

Undertaker	Various companies that have the legal right to carry out certain utility connection and diversion activities for development and highway works.
Incumbent	Commonly referred to as the 'host', this undertaker is the local distribution network operator for the region.
Budget Estimate	Documentation produced by an undertaker providing a desk top cost summary, stating a point of connection to their infrastructure network.
Pre-development enquiry	The equivalent of a budget estimate for waste water operators.
Land Enquiry	Report provided by an undertaker identifying a suitable point of connection for a set load onto their network.
Asset Record	A plan for a set region identifying the location of an undertakers infrastructure.
Substation	Electricity plant room that transforms high voltage electricity to low voltage for residential and commercial supply.
Asset Value	Infrastructure paid for by the client, then adopted by the incumbent undertaker will produce transportation income for the undertaker. A proportion of this can be paid to the developer in the form of a one off net present value (NPV) payment.
Low Voltage (LV)	Electricity supply to residential and commercial properties typically with a voltage of 230V-400V.
High Voltage (HV)	Electricity supply for transportation purposes, with a voltage of over 1000V.

1 Introduction

1.1 Report Scope

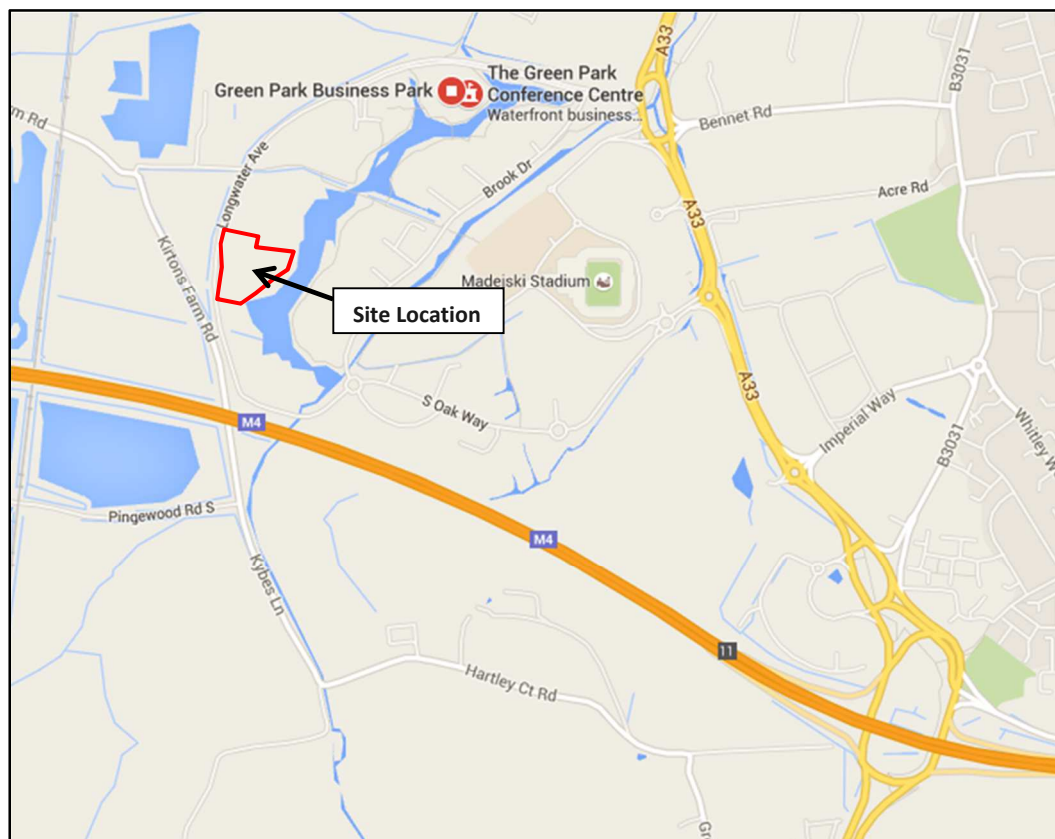
- 1.1.1 This report has been prepared by Peter Brett Associates (PBA) LLP on behalf of Green Park Reading No.1 LLP to support the planning application for the proposed development known as 400 Longwater Avenue in Green Park, Reading. The report details the strategy and implications associated with procuring new potable water, foul water, gas, electricity and telecommunications services for the development. It will also demonstrate compliance with local and national planning policies.

1.2 Site Information

Site Location and Existing Land Use

- 1.2.1 The proposed development site is situated within Green Park Business Park which is located on the outskirts of Reading to the north of Junction 11 of the M4 as shown in Figure 1 below. The site is known as Plot 400 and is located off the south eastern end of Longwater Avenue.

Figure 1: Site Location Plan

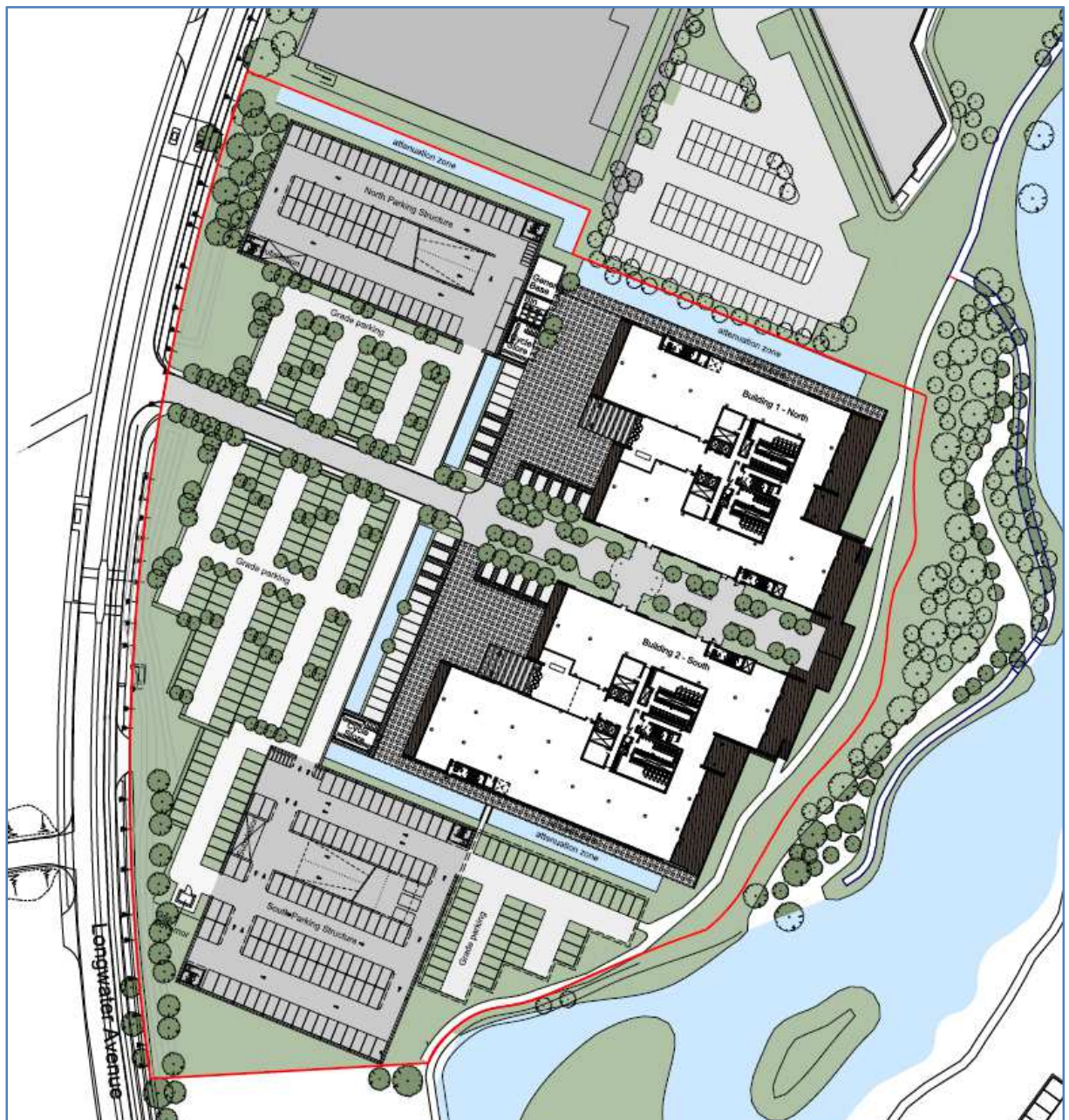


- 1.2.2 The site is currently undeveloped but benefits from an existing Reserved Matters consent (08/00261/Rem) pursuant to Outline consent (84/TP/690). This consent is for the development of 14,080m² of open B1 (Office) use, including access, 440 car parking spaces, servicing, landscaping and related works.

Proposed Development

- 1.2.3 Green Park Reading No.1 LLP are looking to submit a new planning application that will re-visit and modify the consented scheme for this plot, which will increase the area of B1 (office) use from the permitted level of 14,080m² up to 27,207m².
- 1.2.4 The development proposals comprise two office buildings over five storeys with associated decked parking as shown in the layout below. A copy of the Masterplan can be found in Appendix A of this report.

Figure 2: Masterplan



1.3 Planning Policy

National Policy

- 1.3.1 The National Planning Policy Framework (NPPF) (March 2012) confirms that there should be a presumption in favour of development where it can be demonstrated that the proposals are sustainable. When making plans for development NPPF states:

[para 163] 'Local planning authorities should work with other authorities and providers to: Assess the quality and capacity of infrastructure for transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, waste, health, social care, education, flood risk and coastal change management, and its ability to meet forecast demands; and

Take account of the need for strategic infrastructure including nationally significant infrastructure within their areas.'

Local Policy

- 1.3.2 The development is covered by the Reading Borough Council Core Strategy Adopted January 2008 with Alteration Adopted 27th January 2015. In terms of utilities the following two policies apply:

- 1.3.3 Policy CS9: Infrastructure, Services, Resources and Amenities states that:

"Proposals for development will not be permitted unless the local planning authority is satisfied that infrastructure, services, resources, amenities or other assets lost or impacted upon as a result of the development or made necessary by the development will be provided or re-provided at the appropriate time, in order to ensure that the development is both sustainable and contributes to the proper planning of an area in accordance with relevant planning policies. Such contributions may be pooled, in order to allow necessary infrastructure to be secured in a fair and equitable way. The local planning authority will require planning obligations entered into by agreement or other means to secure the replacement and enhancement of additional physical and social infrastructure, services, resources, amenities or other assets".

- 1.3.4 Policy CS34: Pollution and Water Resources states that:

"Development will only be permitted where it would not be damaging to the environment through air, land, noise or light pollution; where it would preserve or ideally enhance ground and surface water quality; and where existing water resources, sewerage and wastewater treatment infrastructure are adequate to support the proposed development".

1.4 Methodology

- 1.4.1 The report is divided into each of the following primary service disciplines; electricity, gas, telecommunications, water and waste water. Each of these disciplines will be described in terms of existing infrastructure, new connections activities and diversion / alteration activities. Cable television (CATV) and alternative fibre infrastructure providers, other than BT Openreach are not included except where existing services require alterations. In each of these sections the existing utility network constraints are described and where relevant one or more solutions are proposed.
- 1.4.2 A summary of new connections / diversion strategies and compliance with planning policy is included in Section 8 of this report.

1.5 Utility Undertaker Communications

- 1.5.1 PBA have for the purpose of this report, made capacity enquiries to the incumbent undertakers to ascertain points of connection and to determine if there is a need to reinforce any of the offsite utility networks.
- 1.5.2 The water supply and foul water undertaker for the region is Thames Water; the public gas transporter is Sothorn Gas Networks (SGN) and Scottish and Southern Energy (SSE) is the host electricity Distribution Network Operator (DNO). BT Openreach is the licenced open access telecommunications network provider.
- 1.5.3 The report makes reference to the copies of the utility asset record plans obtained from each utility undertaker. These records were obtained in January 2016 and are contained within Appendices B to E. These records identify only adopted utility assets, not privately operated networks and generally do not include individual service connections.
- 1.5.4 The enquiries made by PBA are summarised below.
- 1.5.5 It should be noted that although SGN are the incumbent gas transporter, Gas Transportation Company (GTC) own an independently adopted network in Green Park. Therefore all capacity discussions regarding gas have been made with GTC.

Table 1: Undertaker Enquiries

Undertaker	Utility	Enquiry	Response received?
SSE	Electricity	Budget Estimate	Yes (refer to Appendix B)
		Formal Quotation	No
GTC	Gas	Budget Estimate	No
Thames Water	Potable Water	Pre-development Enquiry	Yes (Refer to Appendix E)
		Flow and Pressure Test	Yes (Refer to Appendix E)
Thames Water	Waste Water	Pre-development Enquiry	Yes
		Impact Study	No

- 1.5.6 It should be noted that all asset records and capacity investigations were completed at a specific point in time therefore the results of these enquiries may be subject to future refinement or change by the network operators.

2 Utility Demand Schedule

2.1 Schedule

- 2.1.1 An initial loading schedule has been developed by Hoare Lea, the M&E consultants. However, PBA have estimated the potable water and waste water loadings. The schedule has been issued to each statutory utility provider as the basis for their capacity assessment and to identify the scope of any offsite activities necessary to bring utilities to the boundary of the site.

Table 2: Utility Demand Schedule

Utility	North Block	South Block	Total
Electricity (kVA)	1180	1432	2612kVA
Gas (kW peak)	1852	2204	4056kW peak
Potable Water (l/s)	4.54	5.32	9.86l/s
Waste Water (l/s)	4.31	5.07	9.38l/s

3 Electricity

3.1 Existing Infrastructure

- 3.1.1 The existing SSE electricity apparatus layout drawing is contained within Appendix B.
- 3.1.2 SSE own and operate the public electricity network in Reading. To the north-west of the development is the Green Park primary substation (transforming 33kV to 11kV), this substation feeds the HV network within Green Park. Adjacent to the site there are two 11kV feeds in the western verge of Longwater Avenue. Within this verge there are also three 33kV cables, each with a pilot cable. There are also two 11kV cables in the eastern verge. The closest secondary substation (transforming 11kV to low voltage) is located to the east of the development site on Brook Drive.

3.2 Proposed New Connection Activities

- 3.2.1 SSE has provided a budget quotation for serving the development with electricity (refer to Appendix B). This connection will be made at high voltage to the cables laid in the eastern verge of Longwater Avenue adjacent to the development. The SSE estimate assumes that no off site reinforcement is required. A formal quotation has been requested to confirm this.
- 3.2.2 Two substations will need to be constructed within the development boundary and an area of 4m by 4m should be allowed for each substation within the masterplan.
- 3.2.3 SSE have advised that the substations need to be within a 100m of the low voltage intake rooms, ideally as close to each other as possible as the cabling between the two is expensive. SSE have also advised against having the low voltage intake rooms in the centre of the building as the cables can cause interference to computers if they pass across the office space.

3.3 Proposed Diversions

- 3.3.1 It is anticipated that the two 11kV cables in Longwater Avenue will require a diversion to accommodate the new site access.

4 Gas

4.1 Existing Infrastructure

- 4.1.1 The existing gas apparatus layout drawing is contained within Appendix C.
- 4.1.2 SGN is the incumbent gas transporter for this region of the UK. However, Gas Transportation Company (GTC) laid a gas network as an independent gas transporter during the initial stages of the Green Park construction, and hence has a medium and low pressure network within Longwater Avenue.
- 4.1.3 In proximity to the development a GTC owned 180mm diameter medium pressure gas main is located in the eastern footpath of Longwater Avenue. There are no gas mains recorded within the site boundary.

4.2 Proposed New Connection Activities

- 4.2.1 GTC is in the process of providing a budget estimate for serving the development with gas. However, GTC's previous investigations (December 2013) into feeding this site confirmed that the point of connection will be made on to the existing medium pressure gas main situated on the eastern boundary of the plot. The existing main will be extended to the western boundary within Longwater Avenue where a medium pressure connection will be made to a pressure reducing station. From this point on the service main to the building meter rooms will be at low pressure. This will be confirmed on receipt of the revised budget estimate.
- 4.2.2 An area of 2m x 3m in a glass reinforced enclosure should be accommodated within the masterplan for a pressure reducing station. This will require a 3m easement around it.

4.3 Proposed Diversions

- 4.3.1 It is anticipated that a diversion to the 180mm diameter medium pressure gas main in Longwater Avenue will be required to accommodate the new site access.

5 Telecommunications

5.1 Existing Infrastructure

- 5.1.1 The existing telecommunications apparatus layout drawings are contained within Appendix D.
- 5.1.2 There are three telecommunication infrastructure providers present on the Green Park development; these are BT Openreach, Vodafone and Virgin Media. These three providers have a total eight ducts in one set (two rows of four) located in the western verge of Longwater Avenue. It should be noted that from prior correspondence regarding the adjacent plot, PBA understand that the BT and Vodafone ducts do not contain any copper or fibre cables in proximity to the development.
- 5.1.3 Duct crossings have been provided across Longwater Avenue to allow new telecommunication cables to be pulled across when required.

5.2 Proposed New Connection Activities

- 5.2.1 Although the ducts may not contain cables at this point on time, each of the telecommunication providers will likely arrange for a supply to the development at nil cost to the developer. This should be confirmed via correspondence with the telecommunications providers at the detailed design stage, post planning.
- 5.2.2 PBA know from the Green Park residential development that a fibre connection to the site will be readily available.

5.3 Proposed Diversions

- 5.3.1 It is anticipated that a diversion to BT apparatus in Longwater Avenue will be required to accommodate the new site access.

6 Water

6.1 Existing Infrastructure

- 6.1.1 The water asset record plans are contained within Appendix E.
- 6.1.2 Thames Water is the incumbent water transporter responsible for this region. Potable water asset records supplied by Thames Water indicate that a 300mm diameter trunk water main is located within the site boundary.

6.2 Proposed New Connection Activities

- 6.2.1 Thames Water carried out a flow and pressure investigation on 7/3/2016 to determine if sufficient capacity is available within the network (refer to Appendix E). The pressure was logged at four locations and it has been determined that sufficient spare capacity is available to supply the proposed development and that no off site mains reinforcement is required.

6.3 Proposed Diversions

- 6.3.1 The 300mm diameter trunk water main should be diverted into Longwater Avenue as it is not feasible to accommodate it within the development proposals. Thames Water has provided a C3 Budget Estimate for these works which can also be found in Appendix E. Their estimate to divert the mains into Longwater Avenue is £172,836.

7 Foul Wastewater

7.1 Existing Infrastructure

- 7.1.1 The waste water asset record plans are contained within Appendix E.
- 7.1.2 A 300mm diameter foul sewer is present to the south west of the site along Longwater Avenue. The nearest foul water manhole is located at the commencement of the foul sewer run.

7.2 Proposed New Connection Activities

- 7.2.1 A pre-development application has been submitted to Thames Water to determine if the existing foul network has capacity to accommodate the additional foul flows from the development.
- 7.2.2 Thames Water has requested that an impact study is undertaken to determine if there is capacity within the network. It is unlikely that the results of this study will be available prior to the planning application being determined and it is suggested that this is dealt with by a condition attached to any planning permission granted.
- 7.2.3 Thames Water have previously confirmed (November 2013) that the foul flows generated by the development can be accommodated within the existing public sewerage network. This will be confirmed upon receipt of the Thames Water' Impact study report.
- 7.2.4 The proposed connection to the existing foul sewer will run south-westerly across the site to connect to the nearest existing manhole in Longwater Avenue.

7.3 Proposed Diversions

- 7.3.1 Diversionary works are not required.
- 7.3.2 This will cover modelling to determine if there is capacity, and if there isn't capacity further modelling is required to arrive at a solution where the development has no detrimental effect on the existing foul network.

8 Summary of Connections and Diversions

8.1 Planning Policy

- 8.1.1 In terms of utilities, it is considered that the proposed development accords with national and local planning policy.

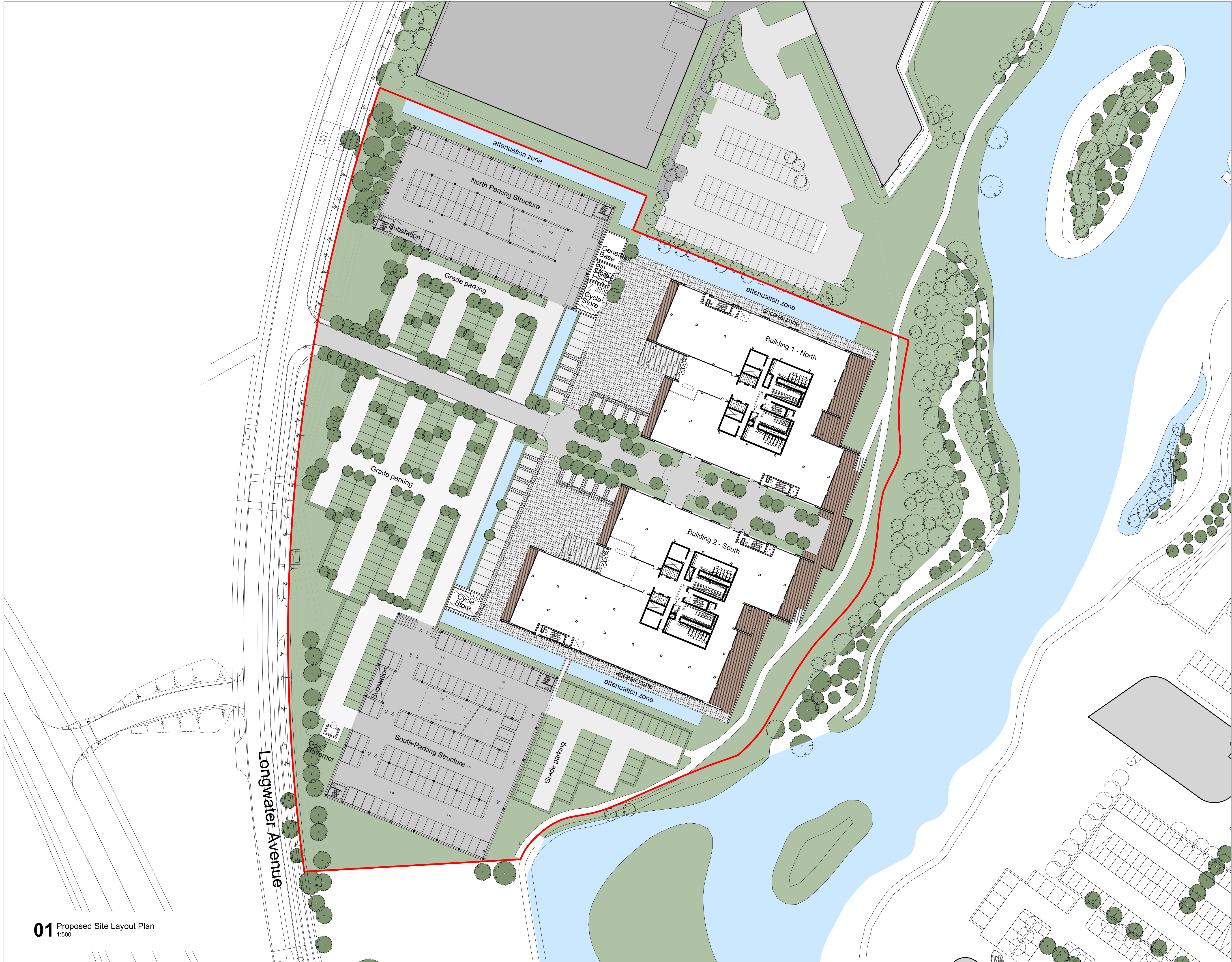
8.2 New Connection Works

- 8.2.1 SSE has advised that the masterplan needs to accommodate two substations (each with an area of 4m x 4m) within 100m of the low voltage intake rooms. SSE has also advised against having the low voltage intake room in the centre of the buildings due to interference with computer technology. PBA are currently waiting for confirmation from SSE that offsite reinforcement will not be required.
- 8.2.2 An area of 2m x 3m with a surrounding 3m easement should be accommodated within the masterplan for a pressure reducing station. PBA are waiting for confirmation from GTC that adequate capacity is available within their network to accommodate the proposed development however previous correspondence indicates that sufficient capacity is available.
- 8.2.3 It is assumed that connection can be made to the BT Openreach, Vodafone or Virgin Media network located in Green Park. This should be confirmed with the telecommunications providers at detailed design stage.
- 8.2.4 Thames Water has undertaken a flow and pressure test to determine if sufficient capacity is available to accommodate the development within their network. This further investigation has confirmed that sufficient capacity is available.
- 8.2.5 PBA are awaiting confirmation from Thames Water that adequate capacity is available in the foul sewer network. However, in November 2013 Thames Water confirmed that sufficient capacity was available at the time. It is suggested that a planning condition is attached to any permission granted to deal with this matter.

8.3 Diversionary Works

- 8.3.1 The 300mm diameter trunk water main should be diverted into Longwater Avenue as it is not feasible to accommodate it within the development proposals. Thames Water have estimated this cost to be £172,836.
- 8.3.2 Due to the revised site access, it is anticipated that two 11kV electricity cables, the medium pressure gas main and the BT ducts in the eastern verge of Longwater Avenue will require diverting.

Appendix A Masterplan



01 Proposed Site Layout Plan
1:500

Disclaimer
Do not scale from this drawing.
Check all dimensions on site before fabrication or setting out.
This document is copyright and may not be reproduced without permission of the owner.

Notes

Key
Site area

01	Planning Application	16.03.16	RPP	RPP
00	For Information	08.03.16	RPP	RPP
Rev	Notes	Date	Dwn	Iss

Consultants

Landscape Architect:
Planning Consultant:
Quantity Surveyors:
Structure:
Building Services:
Transport Consultant:
Environmental Planning:
Civil Engineer:
Ecology:
Archaeology:

Place Design + Planning
Deloitte LLP
Gardiner & Theobald LLP
Ramboll
Hoare Lee
Peter Brett Associates
Peter Brett Associates
Peter Brett Associates
Peter Brett Associates
Oxford Archaeology

Key / Location

Robin Partington & Partners

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85 New Oxford Street
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WC1A 1DG
+44 20 7419 3500
mail@rpplondon.com
www.rpplondon.com

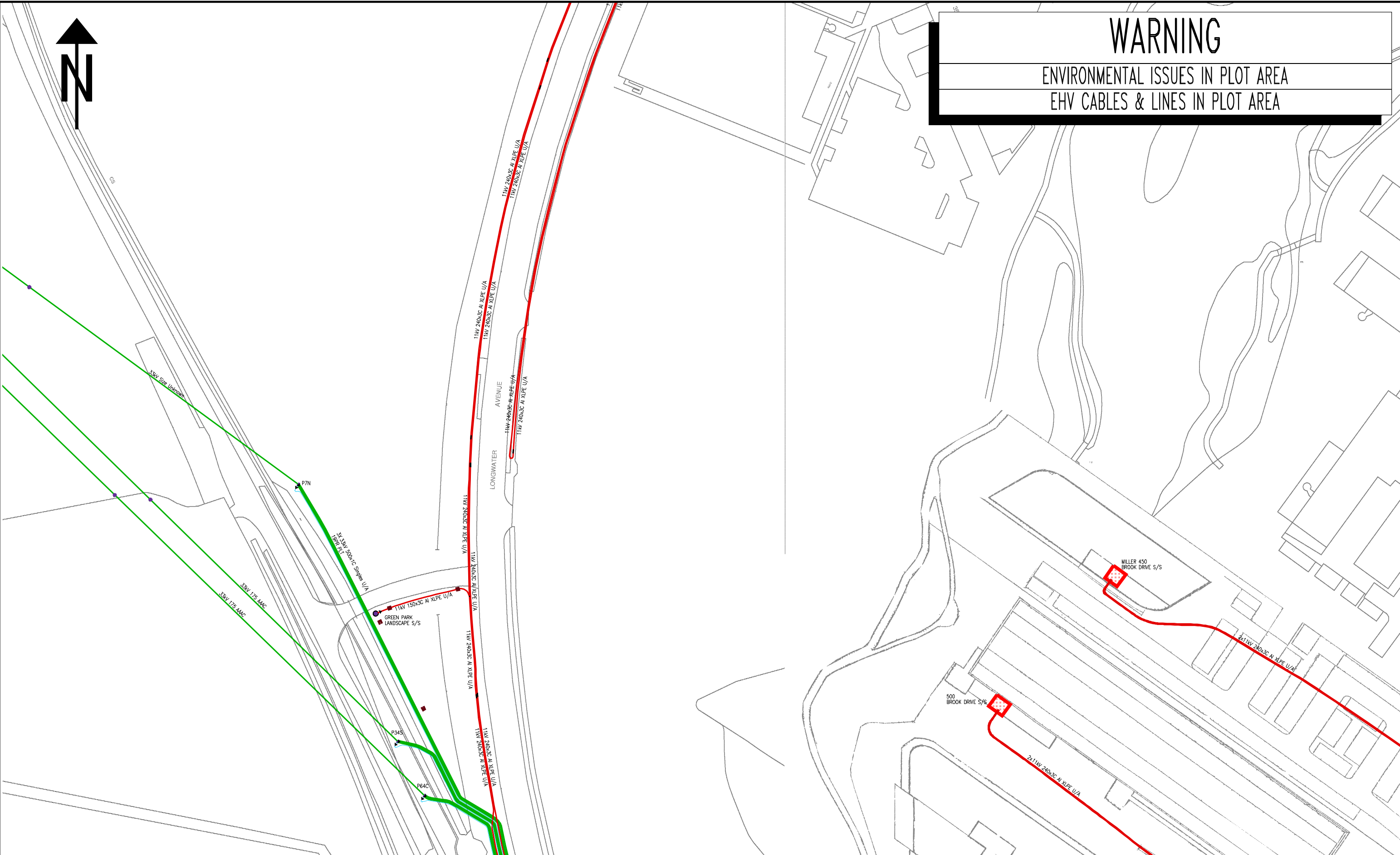
Client
Green Park Reading No.1 LLP

Project 400 Longwater Avenue, Green Park	
Drawing Title Site Plan Proposed Layout	
Scale 1:500 @ A1	Drawn By 1:1000 @ A3 RPP
Issued By RPP	
Stage 2	
Project No. 15011	Drawing No. A_PL_003
Revision 01	

Date Last Saved: Tuesday, March 08, 2016

Appendix B Electricity

Scottish and Southern Energy Power Distribution (SSE PD)
Asset Record Plans and Budget Estimate



WARNING

ENVIRONMENTAL ISSUES IN PLOT AREA

EHV CABLES & LINES IN PLOT AREA

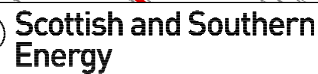
EHV CABLES & LINES IN PLOT AREA

	services	l.v.	h.v.	e.h.v.
FOOTPATH	0.40m	0.45m	0.60m	0.75m
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m
l.v./services	– up to 1000V.			
h.v.	– over 1000V. to 11,000V.			
e.h.v.	– 22,000V. to 132,000V.			

WARNING

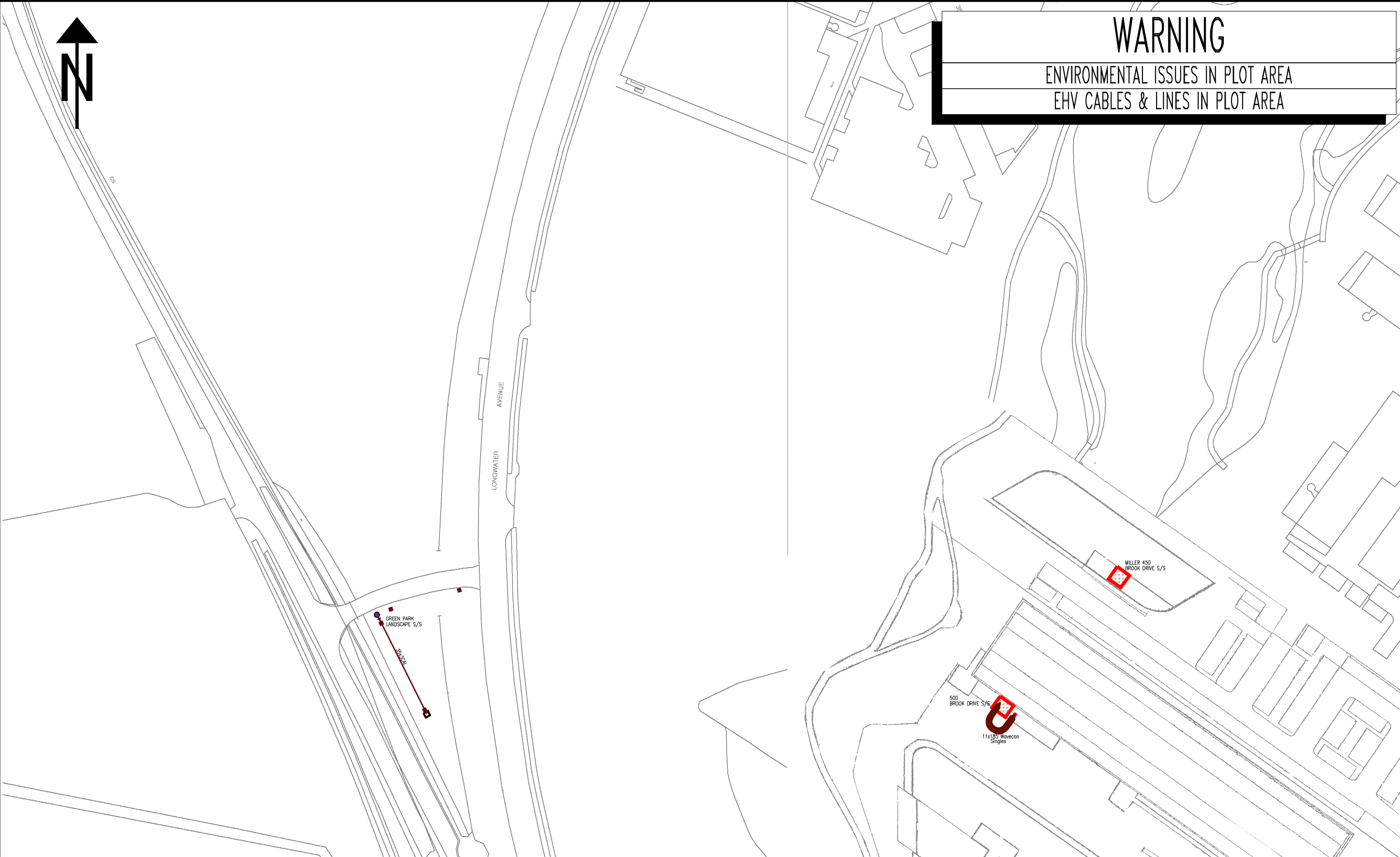
Template: SIAS NRSWA COL A3 plot

Subject to Revision Master held at



READING
01189-126500

Date: 11/02/2016



NORMAL DEPTH TO THE TOP OF THE CABLE WHEN LAID					WARNING There may have been subsequent alterations to the surface levels. Trial holes must be taken to determine positions and depth of cables. HS (G) 47 Booklet from the Health and Safety Executive – Avoiding Danger from Buried Cables – should be consulted before commencing excavation work. (available from HMSO) WHEN WORKING IN THE VICINITY OF OVERHEAD LINES THE HEALTH AND SAFETY GUIDANCE NOTE G36 SHOULD BE CONSULTED. (AVAILABLE FROM HMSO)	BASED UPON THE ORDNANCE SURVEY MAP WITH THE SANCTION OF THE CONTROLLER OF H.M. STATIONERY OFFICE. CROWN COPYRIGHT RESERVED.			
services	l.v.	h.v.	e.h.v.			This copy has been made by or with the authority of SOUTHERN ELECTRIC p.l.c. pursuant to section 47 of the Copyright, Designs and Patents Act 1988 ('the Act'). Unless the Act provides a relevant exception to copyright, the copy must not be copied without the prior permission of the copyright owner. Template: SIAS HPSWA COL A3 plot		L.V. MAINS & Services	Grid Ref: SU69966979
FOOTPATH	0.40m	0.45m	0.60m	0.75m		Scottish and Southern Energy plc. Registered in Scotland No 117119. Registered Office: Inverlmond House 200 Dunkeld Road, Perth, PH1 3AQ.	UNCONTROLLED COPY Subject to Revision Master held at	READING 01189-126500	Scale: 1:1250
ROAD CROSSING	0.60m	0.60m	0.75m	0.90m					Date: 11/02/2016
l.v./services	– up to 1000V.								
h.v.	– over 1000V. to 11,000V.								
e.h.v.	– 22,000V. to 132,000V.								

Our reference: EFK668
Your reference:



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SL1 2UD

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 www.ssepd.co.uk

22 February 2016

Dear Matthew,

Budget Quotation for New Development at 400 Longwater Avenue, Green Park

Thank you for your recent enquiry. I am pleased to provide you with my budget estimate for the new electricity connections at the above development. My initial proposals will be subject to our obtaining all necessary legal consents to carry out the work as indicated, including any consents required from third parties.

 **151,000**

This budget estimate has been calculated exclusive of VAT and does not constitute an offer of terms

You should be aware that this estimate reflects the current situation and cannot be guaranteed into the future. Before making any financial commitments based on the indicative price above, please contact me to request a firm quotation.



The budget estimate has been calculated based on a high level assessment, my local knowledge and experience, the information you have provided and the assumptions listed overleaf. It is my best estimate of the costs you would incur for this proposal and is intended for budgetary proposes only.

I trust the information I have provided is of assistance and if I can help further please do not hesitate to contact me. Alternatively, you may find answers to any questions you may have on our web site www.ssepd.co.uk.

Yours sincerely,

Jennifer Slack
Connections Designer

New Development at 400 Longwater Avenue, Green Park

Additional assumptions and charges

- The above price is based on installing new supplies to two commercial units with maximum demands of 1,180kVA and 1,432kVA. The works included in this quote are to install HV cable on site to loop in two 1,500kVA unit substations each with a 2,500A ACB and 11 x 300mm bunched LV singles cables to an intake position approx 15-20m away from each substation.
- I have assumed that there is no need for reinforcement works to accommodate your new connections. This may not be the case. I can include these costs (or confirm that none apply) if you pay for a feasibility study or request a firm quotation.
- All on site excavation and reinstatement will be provided by the developer.
- All internal containment for rising mains cables (flats) will be provided by the developer.
- We will need to install two new substations each on a 4m x 4m plot. The land for this is to be provided by the developer at no cost to us.
- Some Highway Authorities are proposing to introduce "Lane Rental Charges" where Utility Companies carry out excavations in the Public Highway. These costs will be passed through to you, together with a small administration cost, should this affect your connection. This charge has not been included in this estimate.

Important notice: Traffic Management Act - Street Works Permit schemes

Local Authorities in England and Wales are likely to introduce a new Permit Scheme for street works that will include charges for providing the permits. It is not clear at this time which Local Authorities will introduce this scheme, when the scheme will be introduced, which streets will be affected or what the level of charges will be. These charges are not within Southern Electric Power Distribution plc's control, and cannot be absorbed by us.

This quotation excludes any charges that may be levied by the Local Authority in respect of these charges. It is important to note that any such charges which are relevant to this project will be subsequently passed on to you through a separate invoice. In addition to the actual charges from the Local Authority, we will charge £25.00 + VAT to cover our administrative charges. Acceptance of this quotation means that you also accept these additional charges.

You may wish to seek clarification on how these charges may affect you from the relevant Local Authority.

Safety

We ask you to take note of the following:-

In accordance with the Health & Safety Guidance Note GS6, you are required to take every precaution to ensure that cranes, tipper lorries, scaffolding, ladders and other plant employed on your works are kept at a safe distance from overhead electric lines and their supports and that such supports are not disturbed by excavations. Goal posts with height restriction will need to be placed at appropriate locations for vehicles passing underneath Scottish and Southern Energy Power Distribution's overhead lines.

In accordance with Health & Safety Executive Guidance Note HS (G) 47 care will also be necessary when digging in proximity to underground cables, particular if mechanical excavators are used.

Overhead lines, underground cables and other electrical plant must be regarded as being "live". Before commencing work in proximity to such plant written notification must be given to Scottish and Southern Energy Power Distribution.

If during the course of your works, any cable should be damaged by you/or your contractors, then this fact must be reported to our Emergency Service Centre on 08000 72 72 82 (Southern Electric Power Distribution plc) immediately. The cost of any repairs will be fully rechargeable.

Locating cables on site

To obtain the latest copies of our cable records please send a plan of the area in question together with your contact details to:

Mapping Services
Scottish and Southern Energy Power Distribution
P O Box 6206
BASINGSTOKE
RG24 8BW

Tel: 01256 337294
Fax: 01256 337295

requesting details of any Scottish and Southern Energy Power Distribution plant and cables in the area. You must excavate hand-dug trial holes to establish the actual positions of all cables before any mechanical excavation works commence.

Appendix C Gas

Gas Transportation Company (GTC)
Asset Record Plans

[illegible]

O.D. (mm)	Nominal Peg or web	Minimum Probability (50 P) results - PN M18			Nominal Peg or web			Minimum Probability (50 P)			Nominal Peg or web			Minimum Probability (50 P)		
		< 75 rdsr ≤ 2 bar	< 75 rdsr ≤ 2 bar	> 75 rdsr ≤ 4 bar	< 75 rdsr ≤ 2 bar	< 75 rdsr ≤ 2 bar	> 75 rdsr ≤ 4 bar	< 75 rdsr ≤ 2 bar	< 75 rdsr ≤ 2 bar	> 75 rdsr ≤ 4 bar	< 75 rdsr ≤ 2 bar	< 75 rdsr ≤ 2 bar	> 75 rdsr ≤ 4 bar			
1.40	PA 80 524 1.6	0.25	3		PA 80 524 1.6	0.25	3		PA 80 524 1.6	0.25	3		PA 80 524 1.6	0.25	3	
	PA 80 524 1.75	0.25	3		PA 80 524 1.75	0.25	3		PA 80 524 1.75	0.25	3		PA 80 524 1.75	0.25	3	
	PA 80 524 2.0	0.25	3		PA 80 524 2.0	0.25	3		PA 80 524 2.0	0.25	3		PA 80 524 2.0	0.25	3	
1.50 to 2.00	PA 80 524 1.6	1	3		PA 80 524 1.6	1	3		PA 80 524 1.6	1	3		PA 80 524 1.6	1	3	
	PA 80 524 1.75	1	3		PA 80 524 1.75	1	3		PA 80 524 1.75	1	3		PA 80 524 1.75	1	3	
	PA 80 524 2.0	1	3		PA 80 524 2.0	1	3		PA 80 524 2.0	1	3		PA 80 524 2.0	1	3	
2.0 to 2.5	PA 80 524 1.6	1	2		PA 80 524 1.6	1	2		PA 80 524 1.6	1	2		PA 80 524 1.6	1	2	

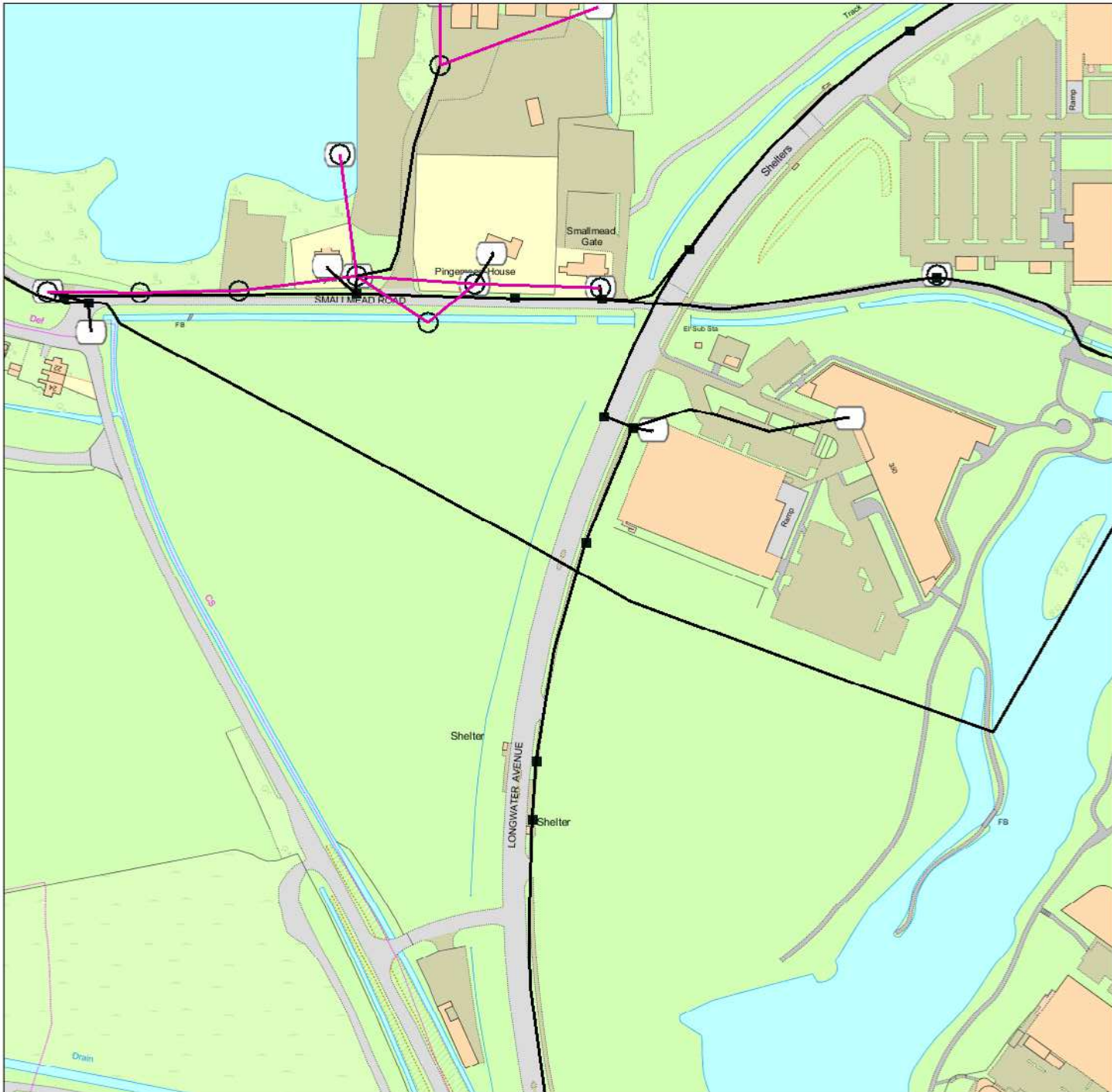
[illegible]

Drawing Scale :	1:2500	 11/01/2019 10:53 AM
O.S. REF :	SU/070	
Network Number :	N0007536-1	
Linked Networks :	N0011130-1, N0011138-1 & N0011196-1	
Drawing Number :	N0007536-1_R2-0_1_3	
Date :	31/07/08	
Developer :	Kelly Taylor / Miller Construction	
Location :	READING BUSINESS PARK Green Park, READING, Berks, RG2 0L	
Designed By :	SD	
Drawn By :	JC	Checked By :

Appendix D Telecommunications

Asset Record Plans

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

DIAL BEFORE YOU DIG

FOR PROFESSIONAL ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS

ADVANCE NOTICE REQUIRED
(Office hours: Monday-Friday 08.00 to 17.00)

Tel: 0800 9173993
E-mail: dbyd@openreach.co.uk
Website: www.dialbeforeyoudig.com

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(C) Crown Copyright British Telecommunications plc 100028040

KEY TO BT SYMBOLS

	UNDERGROUND PLANT		POLE
	OVERHEAD PLANT		CABINET
	JOINT BOX		BURIED JOINT
	DISTRIBUTION POINT		JOINTING POST
	MANHOLE		PROPOSED U/G
	DP BOUNDARY		PROPOSED O/H
	OTHER BT BOUNDARY		PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

openreach
a BT Group business

BT Ref : PMF02572H

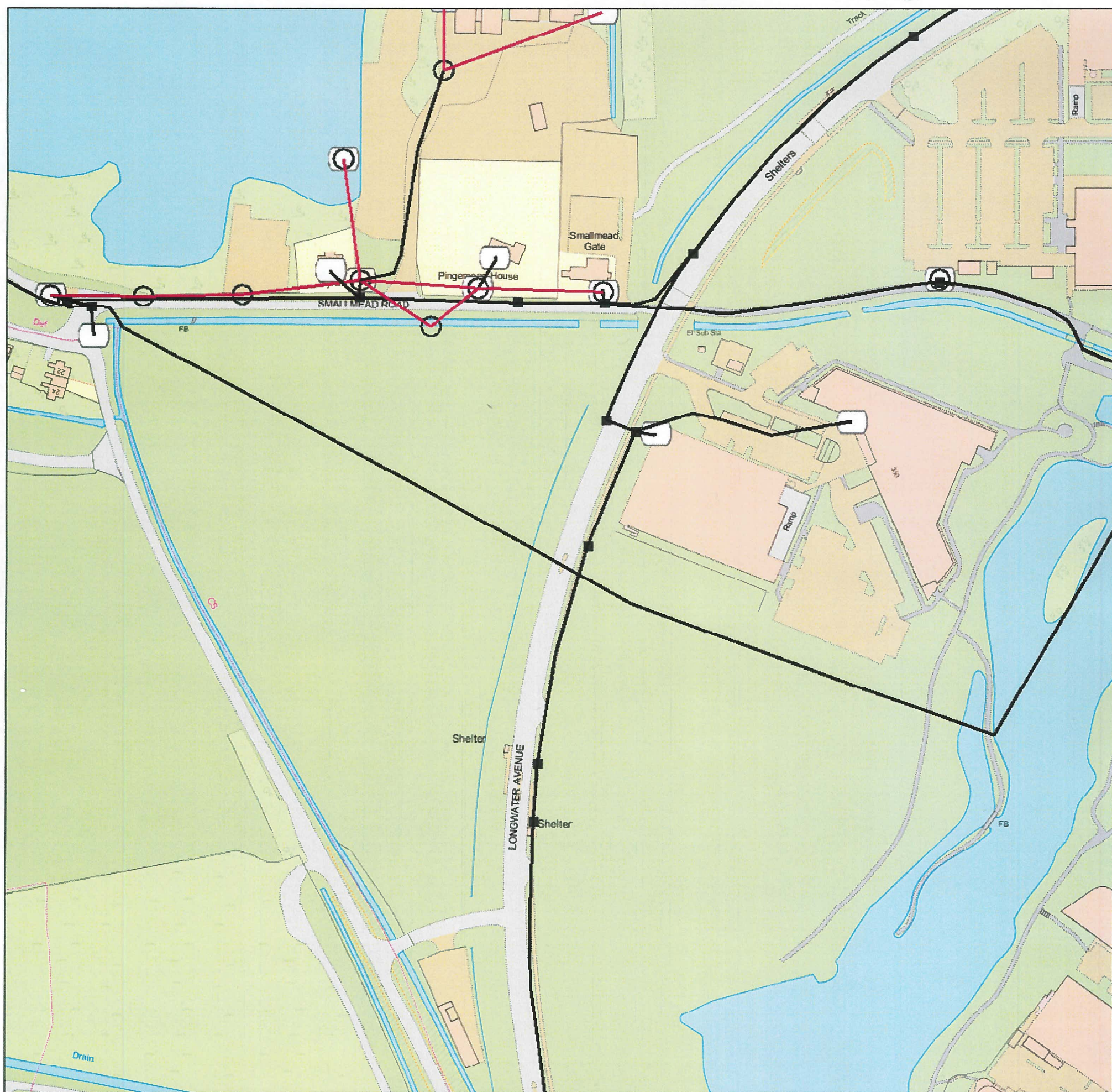
Map Reference : (centre) SU6991369908

Easting/Northing : (centre) 469913,169908

Issued : 17/02/2016 14:57:36

FOOTNOTE: WARNING IT IS ESSENTIAL THAT YOU CONTACT NATIONAL NETWORK HANDLING CENTRE BY EMAIL nnhc@openreach.co.uk BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA

Maps by email Plant Information Reply



IMPORTANT WARNING

Information regarding the location of BT apparatus is given for your assistance and is intended for general guidance only. No guarantee is given of its accuracy.

It should not be relied upon in the event of excavations or other works being made near to BT apparatus which may exist at various depths and may deviate from the marked route.

DIAL BEFORE YOU DIG

FOR PROFESSIONAL ON SITE ASSISTANCE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS

ADVANCE NOTICE REQUIRED
(Office hours: Monday-Friday 08.00 to 17.00)

Tel: 0800 9173993
E-mail: dbyd@openreach.co.uk
Website: www.dialbeforeyoudig.com

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KEY TO BT SYMBOLS

— UNDERGROUND PLANT

A/C, D/W or W — OVERHEAD PLANT

■ JOINT BOX

456 OR 456 DISTRIBUTION POINT

72 OR 72 MANHOLE

- - - DP BOUNDARY

OR OTHER BT BOUNDARY

○ POLE

⊗ CABINET

□ BURIED JOINT

J □ JOINTING POST

--- PROPOSED U/G

A/C, D/W or W --- PROPOSED O/H

PROPOSED BOX

Other proposed plant is shown using dashed lines. BT symbols not listed above may be disregarded. Existing BT plant may not be recorded. Information valid at the time of preparation.

openreach
a BT Group business



BT Ref : PMF02572H

Map Reference : (centre) SU6991369908

Easting/Northing : (centre) 469913,16990

Issued : 17/02/2016 14:57:36

FOOTNOTE: WARNING IT IS ESSENTIAL THAT YOU CONTACT NATIONAL NETWORK HANDLING CENTRE BY EMAIL nnhc@openreach.co.uk BEFORE PROCEEDING WITH ANY WORK IN THE HATCHED AREA



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Date: 02/02/16

Scale: 1:4752

Map Centre: 469928,169787

Data updated: 13/01/16

Telecoms Plan A4

Important Information - please read The purpose of this plan is to identify Virgin Media apparatus. We have tried to make it as accurate as possible but we cannot warrant its accuracy. In addition, we caution that within Virgin Media apparatus there may be instances where mains voltage power cables have been placed inside green, rather than black ducting. Further details can be found using the 'Affected Postcodes.pdf', which can be downloaded from this website. Therefore, you must not rely solely on this plan if you are carrying out any excavation or other works in the vicinity of Virgin Media apparatus. The actual position of any underground service must be verified by cable detection equipment, etc. and established on site before any mechanical plant is used. Accordingly, unless it is due to the negligence of Virgin Media, its employees or agents, Virgin Media will not have any liability for any omissions or inaccuracies in the plan or for any loss or damage caused or arising from the use of and/or any reliance on this plan. This plan is produced by Virgin Media Limited (c) Crown copyright and database rights 2016 Ordnance Survey 100019209.

Duct, Trench



Chamber



Cabinet



sultan.mohammed@virginmedia.co.uk

VM.138688



Appendix E Water & Waste Water

Thames Water Asset Record Plans and Pre-development Enquiries

Asset Location Search



Claudia Hawkins
Peter Brett Associates LLP
Caversham Bridge House
Waterman Place
READING
RG1 8DN

Search address supplied 469913 169908
400
Longwater Avenue
Green Park
Reading

Your reference N/A

Our reference ALS/ALS Standard/2016_3241757

Search date 8 February 2016

You are now able to order your Asset Location Search requests online by visiting
www.thameswater-propertysearches.co.uk



Asset Location Search



Search address supplied: 469913 169908, 400, Longwater Avenue, Green Park, Reading,

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



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:

SU6969NE
SU7069NW
SU7070SW
SU6970SE

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:

Asset Location Search



SU6969NE
SU7069NW
SU7070SW
SU6970SE

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.

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

Thank you for your payment covering the cost of this enquiry. We have enclosed a VAT Receipt for your records.

Asset Location Search



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

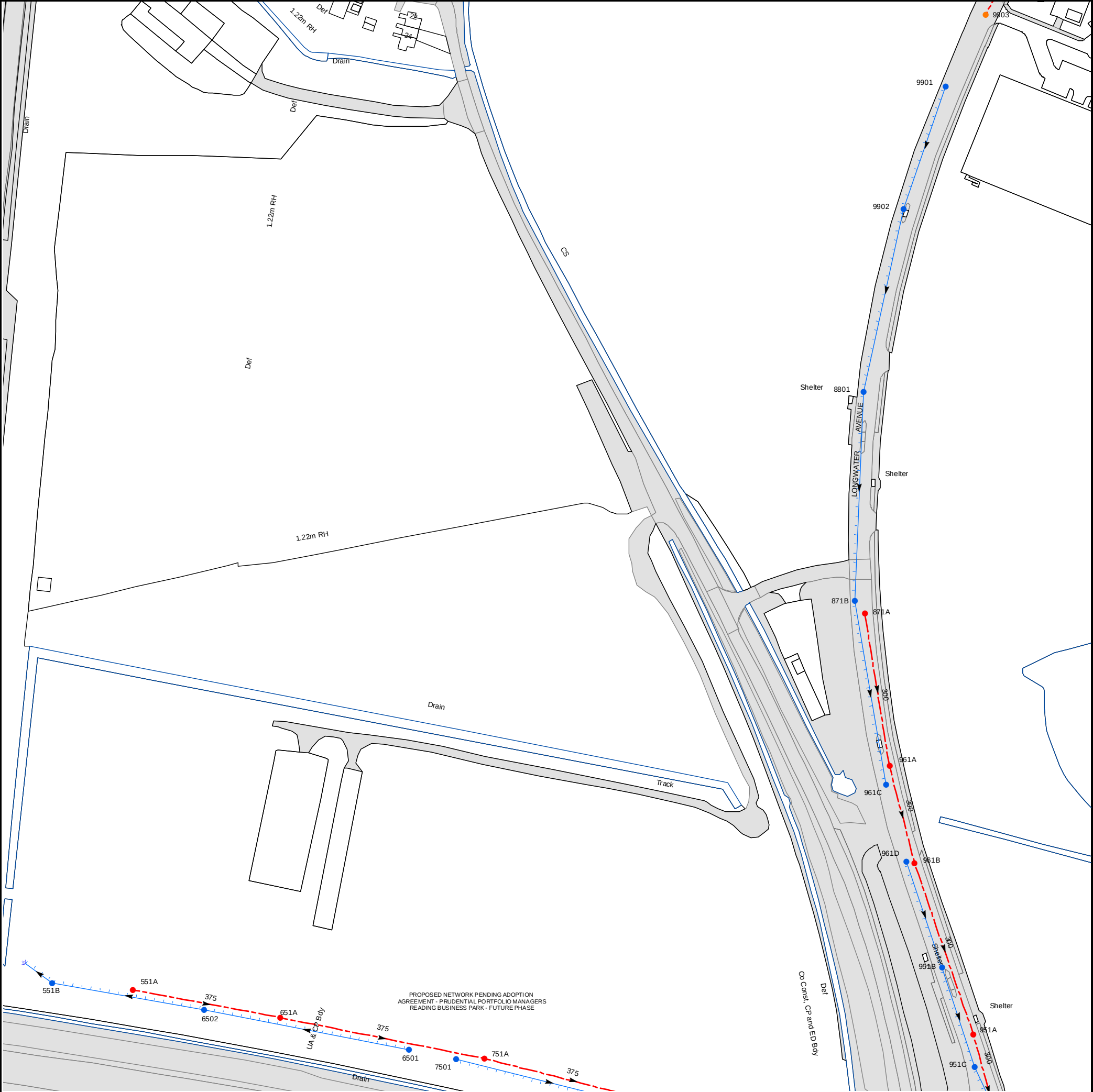
Tel: 0845 850 2777
Email: developer.services@thameswater.co.uk

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: 0845 850 2777
Email: developer.services@thameswater.co.uk



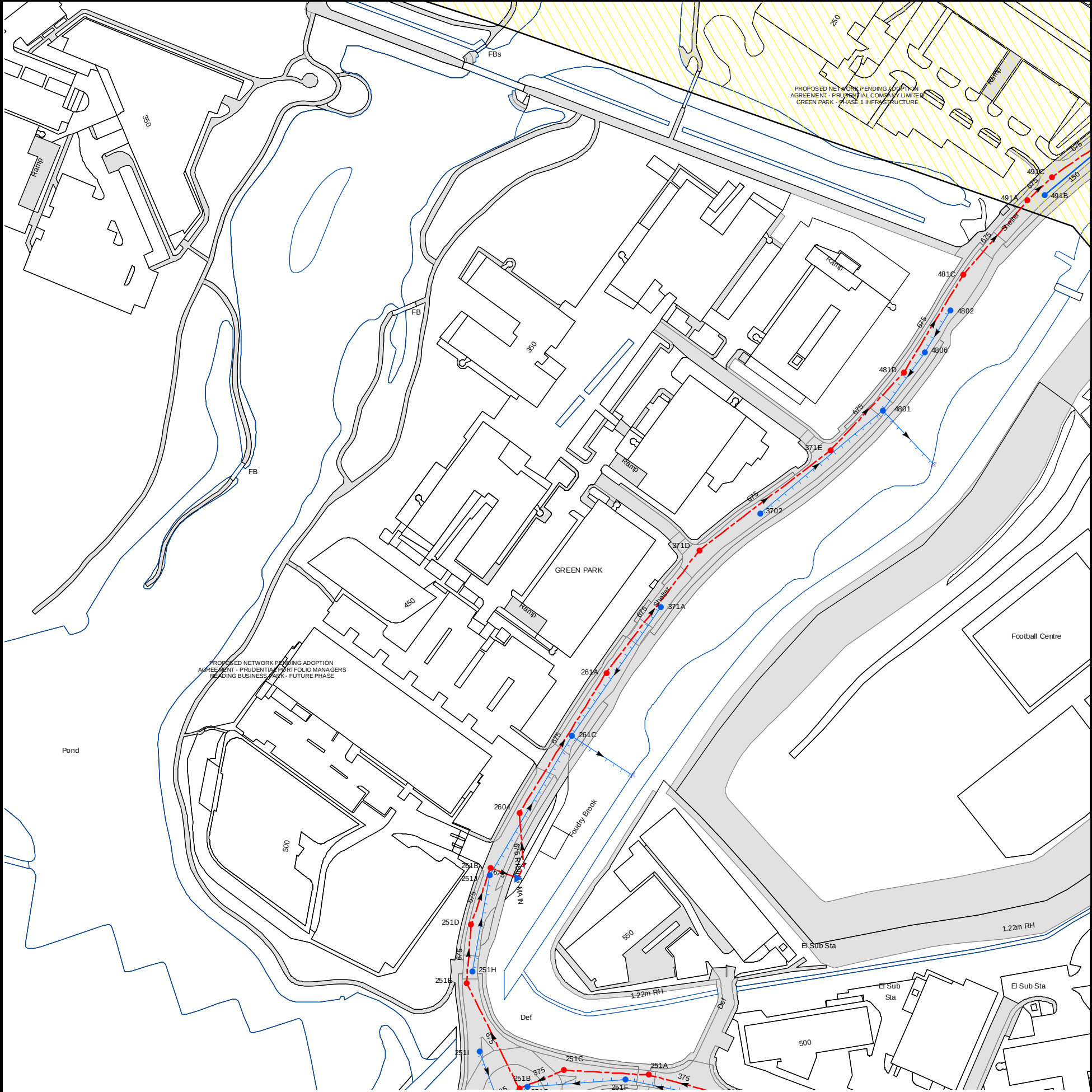
The width of the displayed area is 500m and the centre of the map is located at OS coordinates 469750,169750

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

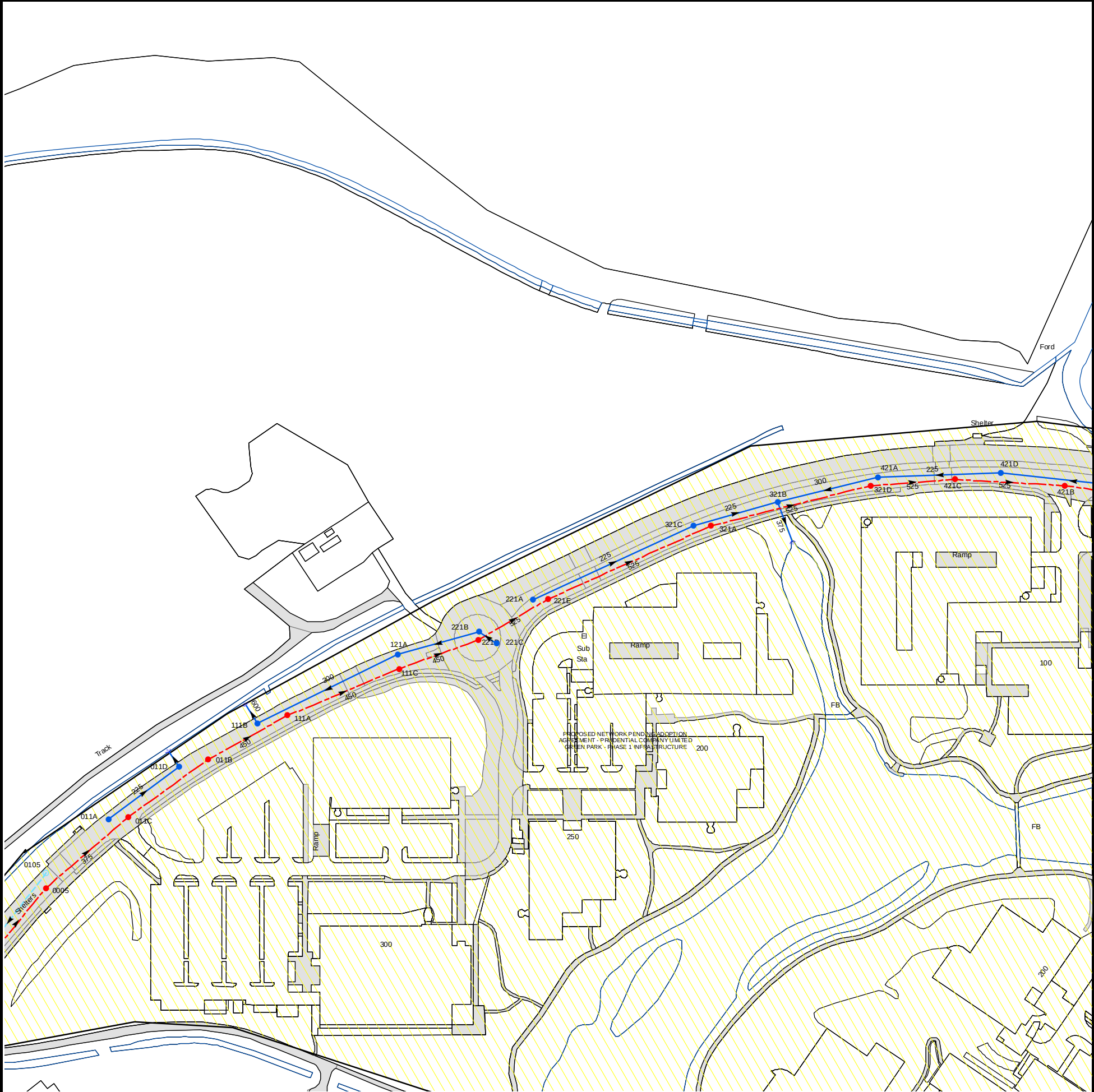
Manhole Reference	Manhole Cover Level	Manhole Invert Level
951C	n/a	n/a
951A	n/a	n/a
951B	n/a	n/a
961B	n/a	n/a
961D	n/a	n/a
961C	n/a	n/a
961A	n/a	n/a
871A	n/a	n/a
871B	n/a	n/a
8801	n/a	n/a
9902	n/a	n/a
9901	n/a	n/a
9903	n/a	35.43
551B	n/a	n/a
551A	n/a	35.64
6502	n/a	n/a
651A	n/a	35.43
6501	n/a	n/a
7501	n/a	n/a
751A	n/a	35.15
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.		



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
251I	n/a	n/a
251E	n/a	32.42
251H	n/a	n/a
251D	n/a	n/a
251J	n/a	n/a
261B	n/a	n/a
2604	n/a	n/a
261C	n/a	n/a
261A	n/a	n/a
251B	n/a	32.51
251G	n/a	n/a
251F	n/a	n/a
251A	n/a	n/a
251C	n/a	n/a
371A	n/a	n/a
371D	n/a	n/a
3702	n/a	n/a
371E	n/a	n/a
4801	n/a	n/a
481D	n/a	n/a
4806	n/a	n/a
4802	n/a	n/a
481C	n/a	n/a
491A	n/a	n/a
491B	40.8	38.73
491C	n/a	n/a

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.



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 470250,170250

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
011A	40.61	39.18
011C	n/a	34.86
011D	39.81	38.31
011B	39.88	34.61
111B	39.64	37.59
111A	39.63	34.52
121A	n/a	n/a
111C	40.1	34.38
221D	40.5	34.21
221B	40.46	38.4
221C	40.46	38.58
221A	40.5	39.26
221E	40.43	34.12
321C	39.85	38.43
321A	39.76	33.96
321B	39.6	37.83
321D	39.58	33.83
421A	39.65	38.15
421C	40.05	33.71
421D	40.13	38.64
421B	40.35	33.63
0005	40.61	34.04
0105	n/a	n/a
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.		



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 469750,170250

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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
9001	n/a	n/a
9003	41.09	39.66
901A	41.15	35.25
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.		



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
	Proposed Thames Water 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
	Summit

Areas

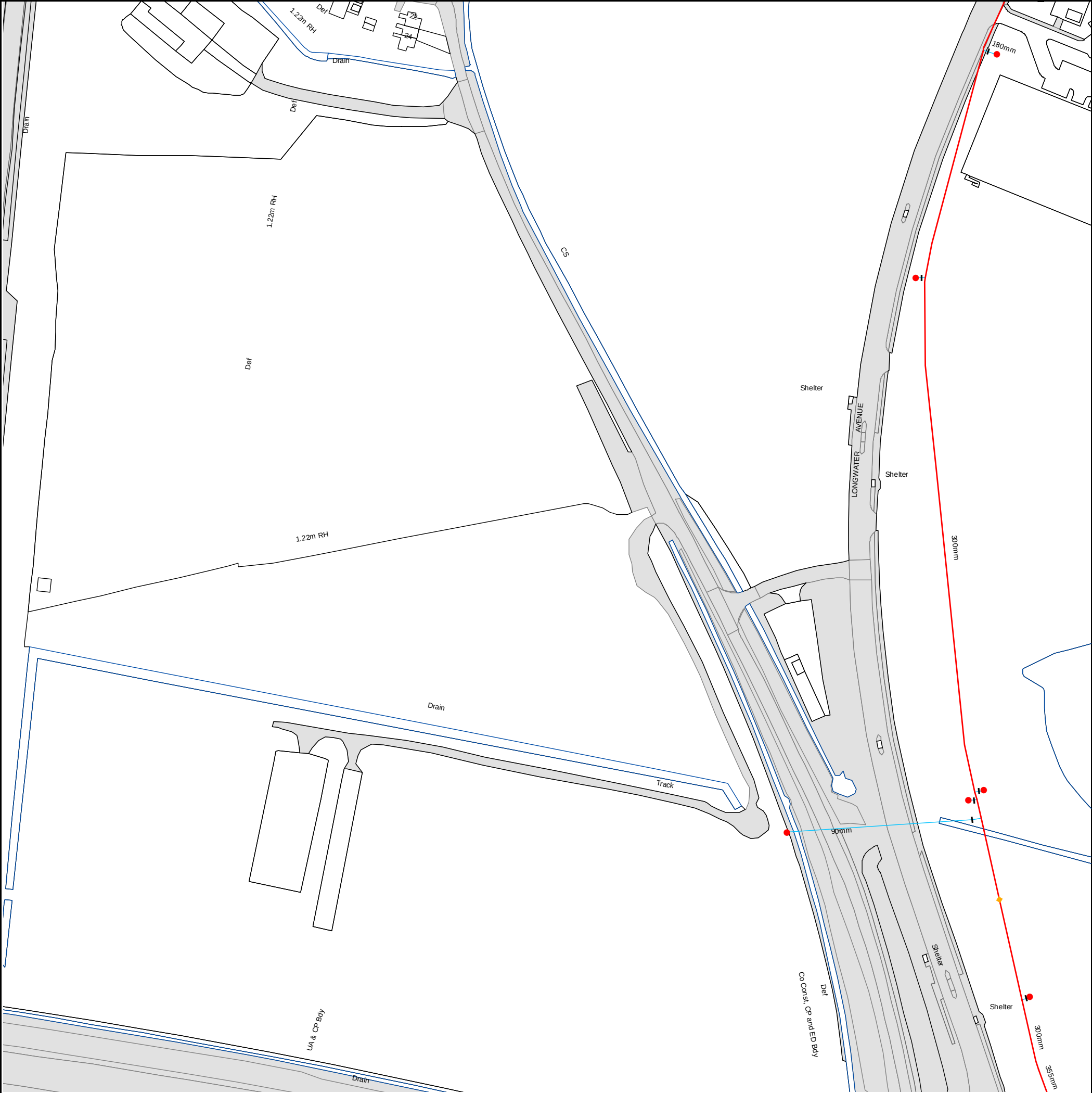
Lines denoting areas of underground surveys, etc.

	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

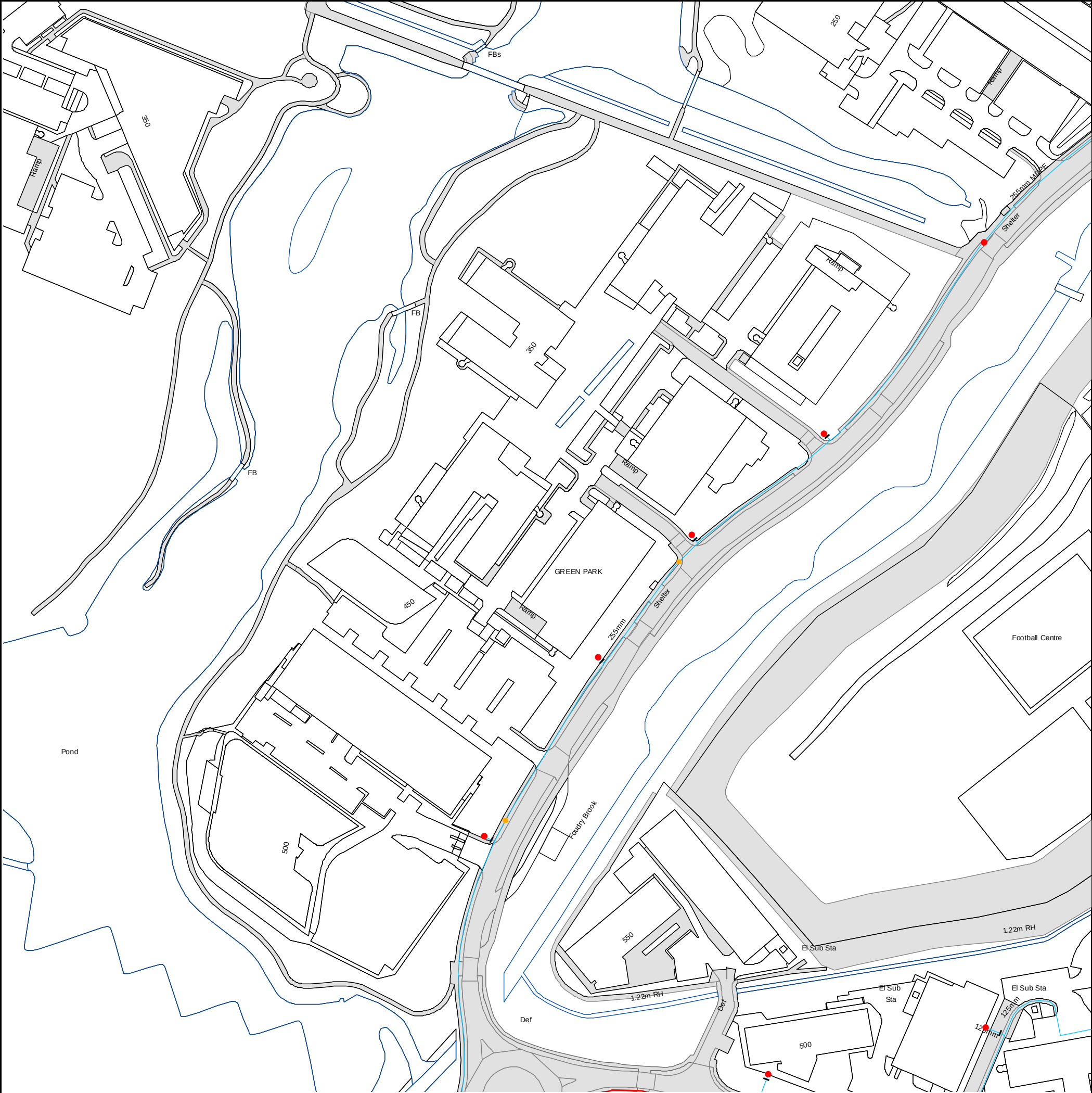
- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.



The width of the displayed area is 500m and the centre of the map is located at OS coordinates 469750,169750

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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The width of the displayed area is 500m and the centre of the map is located at OS coordinates 470250,169750

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ALS Water Map Key

Water Pipes (Operated & Maintained by Thames Water)

- 4"** **Distribution Main:** The most common pipe shown on water maps. With few exceptions, domestic connections are only made to distribution mains.
- 16"** **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.
- 3" SUPPLY** **Supply Main:** A supply main indicates that the water main is used as a supply for a single property or group of properties.
- 3" FIRE** **Fire Main:** Where a pipe is used as a fire supply, the word FIRE will be displayed along the pipe.
- 3" METERED** **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
- Customer Valve

Hydrants

- Single Hydrant

Meters

- Meter

End Items

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

- Blank Flange
- Capped End
- Emptying Pit
- Undefined End
- Manifold
- Customer Supply
- Fire Supply

Operational Sites

- Booster Station
- Other
- Other (Proposed)
- Pumping Station
- Service Reservoir
- Shaft Inspection
- Treatment Works
- Unknown
- 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 him 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.	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.

Invoice

Claudia Hawkins

Peter Brett Associates LLP

Waterman Place

Reading

RG1 8DN

Thames Water Utilities Ltd.

PO Box 3189

Slough

SL1 4WW



Customer Reference: N/A

Invoice No: ADS16388663

Our Ref: ALS/ALS
Standard/2016_3241757

Customer Number: ADS129517

Posting Date: 08-02-2016

Purchase Order No:

Due Date: 22-02-2016

Search Address Supplied: 469913 169908, 400, Longwater Avenue, Green Park, Reading,

Description of Charges	Qty	Unit Price	VAT (20%)	Amount (Inc VAT)
Asset Location Search	1	£47.40	£9.48	£56.88

Thank you for your payment of 111111	£56.88
---	--------

OUTSTANDING AMOUNT (Inc. VAT) £0.00

Please send any outstanding amount to Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.

For queries please contact the Property Searches Customer Support Team on Tel: 0845 070 9148.

VAT Reg. No GB 537456915





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 he finds that you have suffered actual loss 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
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

Thames Water Utilities Ltd

Developer Services

Asset Development

3rd Floor West, Clearwater Court, Vastern Road, Reading RG1 8DB



Potable Water Capacity Flow & Pressure Investigation

**Location: 400 Longwater Avenue, Reading,
Berkshire, RG30 3UR.**

DATE	ISSUE	AUTHOR	APPROVED
11/3/2016	50091230	K Tuchscherer	M Cieslak

Prepared by Thames Water Utilities Ltd

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1. INTRODUCTION

As per your request received 29th February 2015, this report is to evaluate the results of the flow and pressure test and to ascertain the availability of capacity within the existing local mains network and its ability to supply the proposed new Commercial Office Development demand profile at 400 Longwater Avenue, Reading, Berkshire, RG30 3UR.

The investigation will also determine whether any enhancement to the existing network is necessary to supply your requirement, while maintaining existing flows and pressures to our present customers.

Should your development proposal change, this report would become invalid and a further test would be required. If other developments are completed within the Water Pressure Zone before your development and depending on their size and location, this may also necessitate the test to be retaken.

2. EXISTING NETWORK

The local mains network is hydraulically dominated by the Earley Water Pressure Zone.

3. EXISTING DEMAND TYPE

The local demand type is predominately residential and residential amenities, which have an overall peak morning water demand profile from the distribution mains network.

4. DOMESTIC DEMAND

The redevelopment of the site consists of 2 Commercial Office Complexes with a combined floor space of 26,800 mts²

The maximum water demand to the development will occur during the lunchtime period. Based on empirical and historical data for residential use, maximum daily consumption for the site will be 61,610 litres. By applying diversity factors to the commercial demand, this equates to a lunch time peak demand profile of 9.86 l/s.

5. TEST LOCATION

It was essential to select a suitable washout to induce your flow requirements on our existing network. The following three criteria have determined the location of this washout:

- a) must be located on the main proposed to supply your domestic demand;
- b) must be closest to the point of entry of your connection; and
- c) located in such a manner that when the calibrated flow gauge is operated to induce the required flow rates, the discharged water will not cause flooding of existing properties.

The washout selected was off of the 300mm diameter main in Longwater Avenue.

Please refer to appendix for plan of the test location.

6. PRESSURE LOGGER LOCATIONS

Pressure Logger locations have been selected to comprehensively monitor the impact of the morning domestic peak demand profile on the existing mains network. Please refer to appendix for pressure logger location plans.

LOGGER 1 ON 300MM DIAMETER MAIN IN LONGWATER AVENUE, READING, RG2 6GF
LOGGER 2 ON 200MM DIAMETER MAIN IN MADEJSKI STADIUM, READING, RG2 0FN
LOGGER 3 ON 600MM DIAMETER MAIN IN A33 READING ROAD, READING, RG2 0FN
LOGGER 4 ON 700MM DIAMETER MAIN IN ACRE BUSINESS PARK, ACRE ROAD, READING, RG2 0SA

See Appendix for the location of the site, test and pressure loggers.

7. INDUCED FLOWS

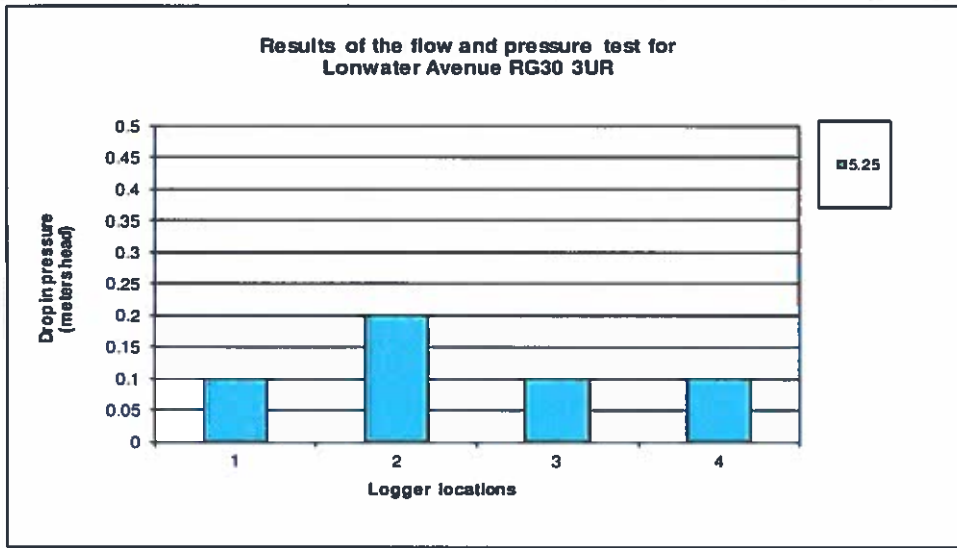
For the demand, flow rates of 9.86 l/s was induced for 3 minute periods to represent the phasing of the development.

The flow rate was induced during the weekday peak morning demand period, Monday to Friday 7:00 - 8:00 inclusive. The pressure loggers monitoring the investigation will show a significant drop in pressure, if the network has insufficient spare capacity to supply the new peak demand.

8. INVESTIGATION RESULTS

The investigation was undertaken on the 7/3/2016. All four pressure loggers provided the field data for the duration of the investigation. The drops in pressure recorded during the test are represented in the table and graph below.

Flow rates	5.25
Logger location 1	0.1
Logger location 2	0.2
Logger location 3	0.1
Logger location 4	0.1

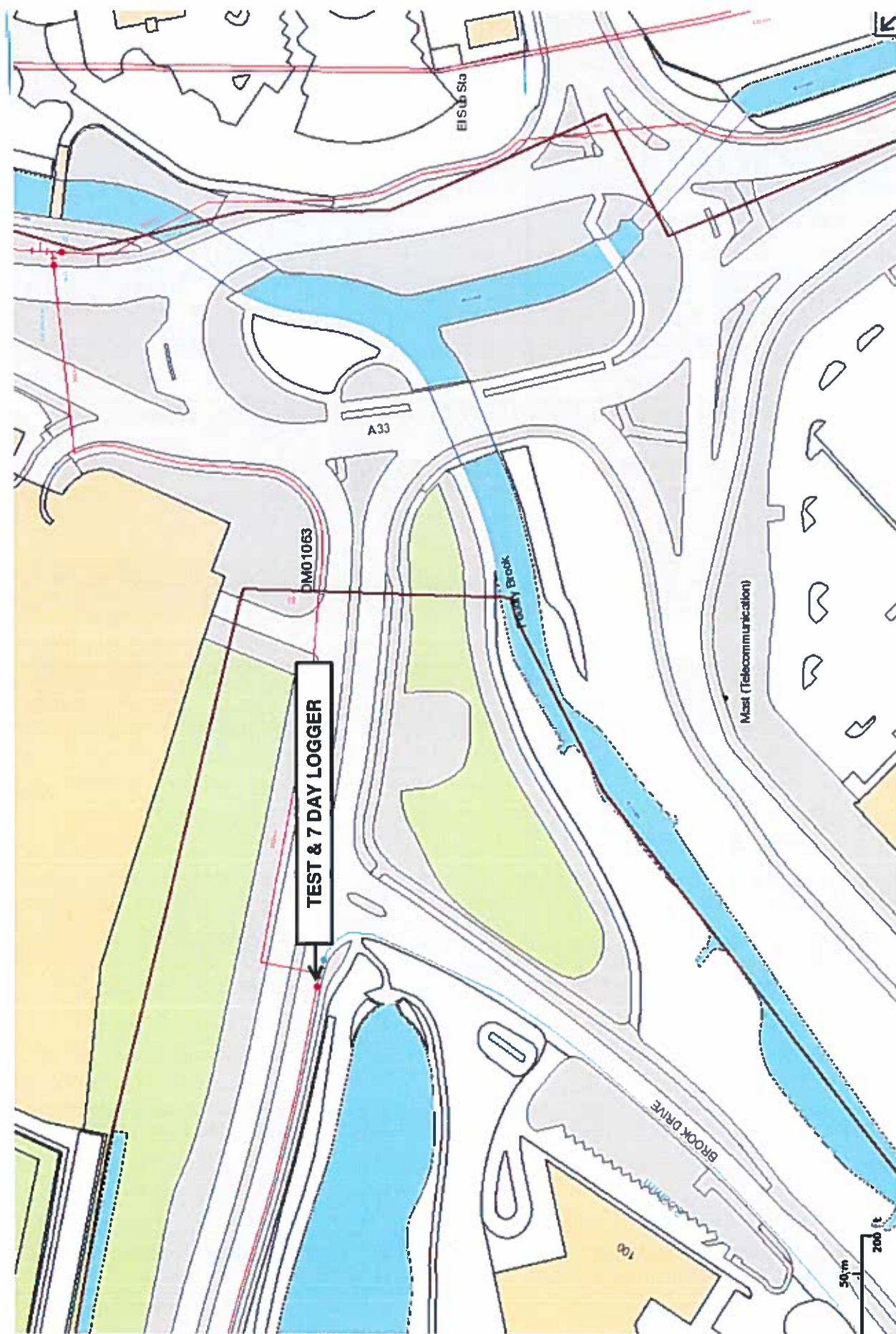


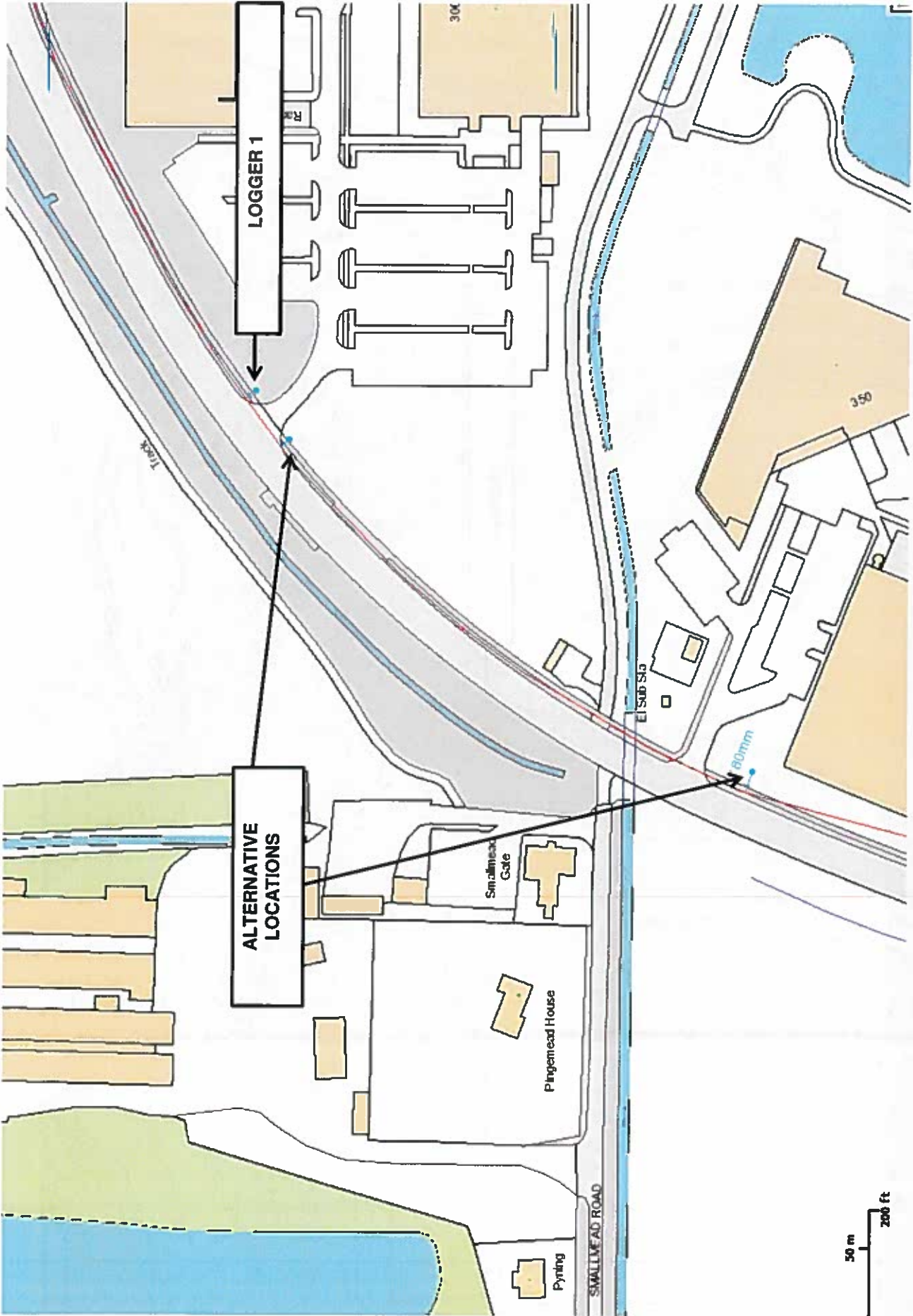
Please note that irrespective of the pressure which currently exists within the local mains network, Thames Water's minimum level of service is 10 metres head of pressure at the boundary stop valve.

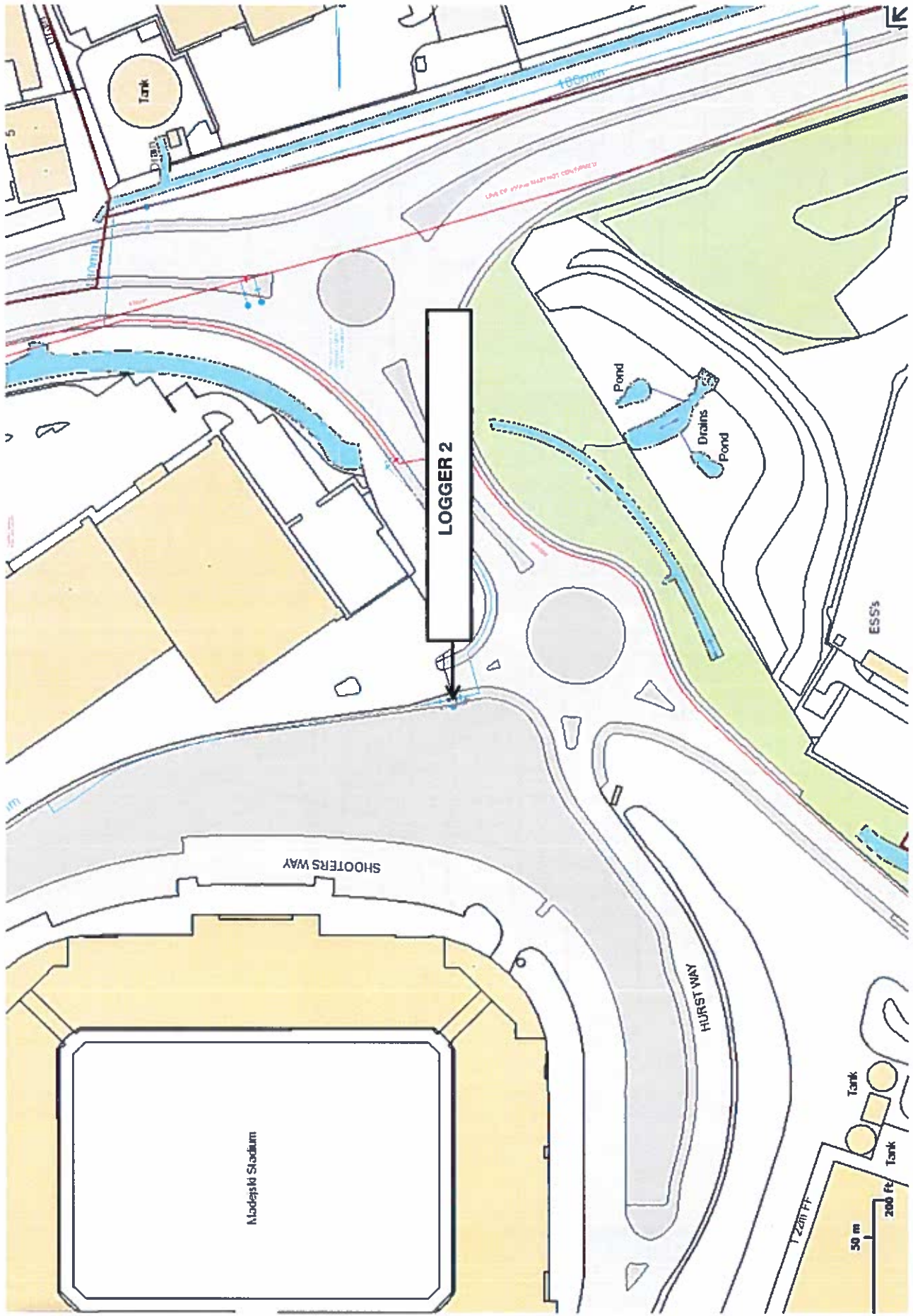
9. CONCLUSION

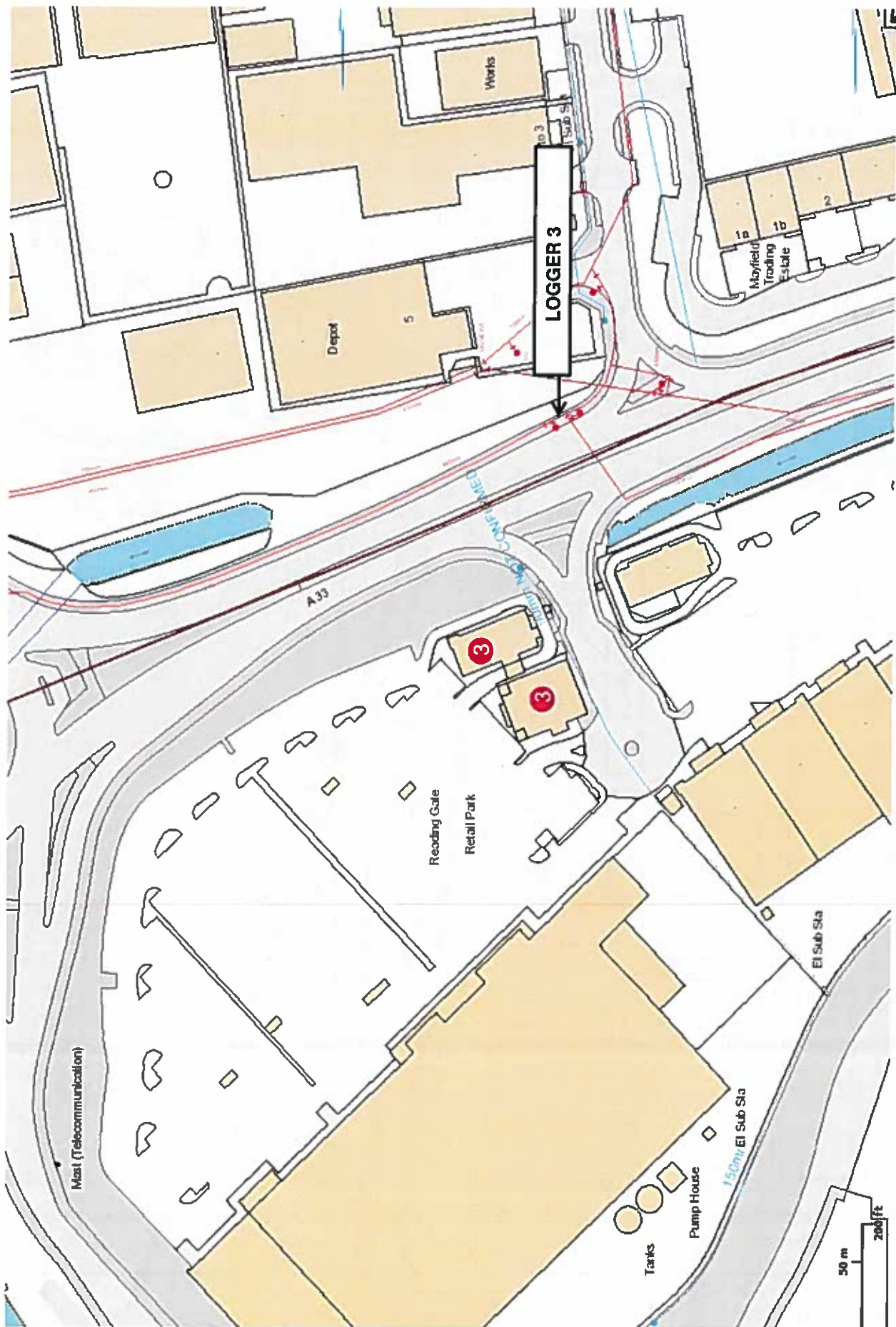
The result of the investigation has established the following: The network has sufficient spare capacity in the mains network within the vicinity of the site to serve your proposed Commercial Office development and no offsite mains reinforcement is required, it also appears that no diversionary works are required to the clean water network, please be aware of a 300mm diameter main that is located to the South West of the site.

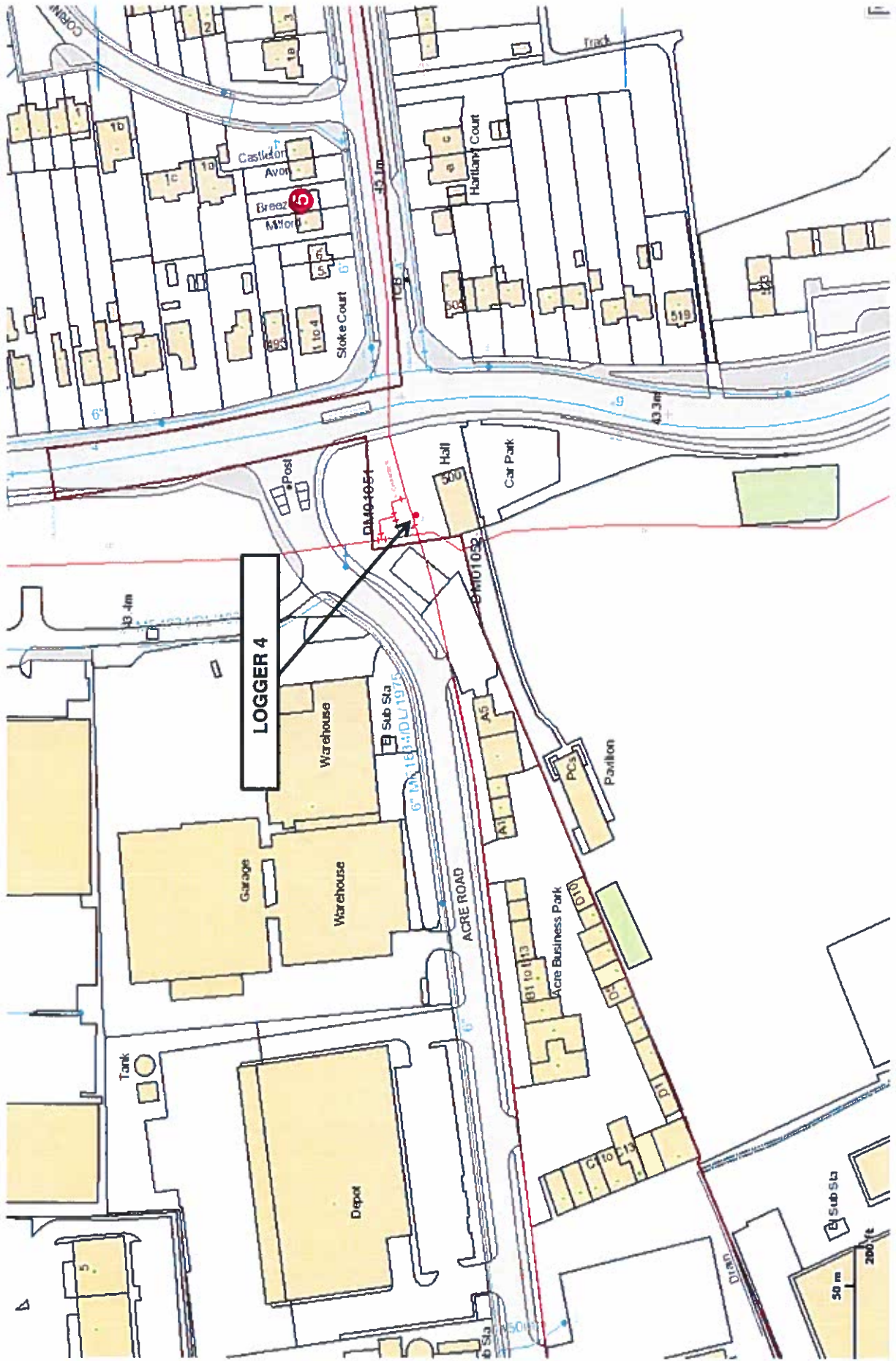
APPENDIX



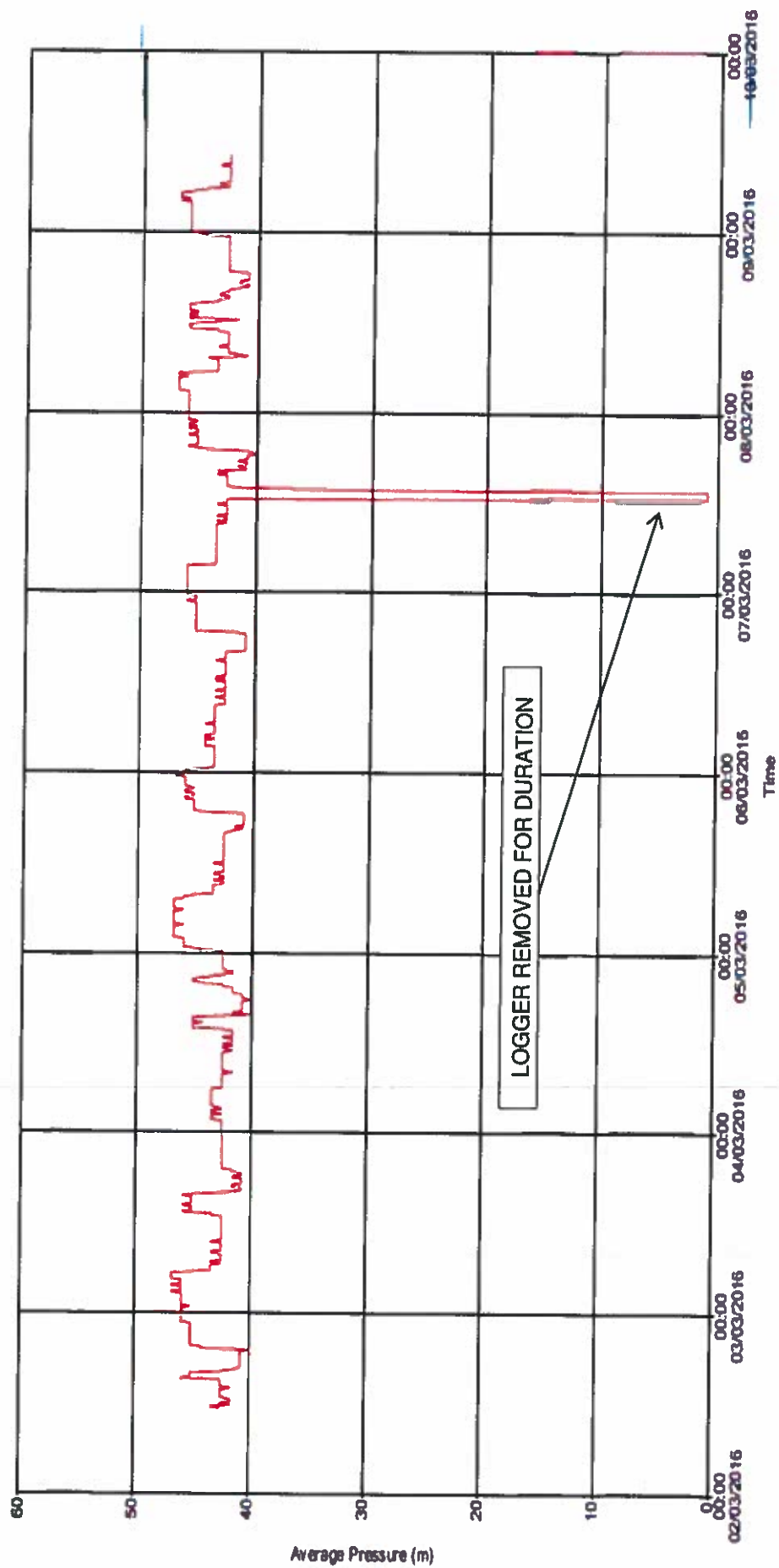








**7 DAY PRESSURE LOGGER 400 LONGWATER AVENUE, READING, BERKSHIRE, RG30 3UR.
 MAXIMUM PRESSURE 46.90 METRES HEAD MINIMUM PRESSURE 40.00 METRES HEAD**



PLEASE NOTE THAMES WATER'S MINIMUM LEVEL OF SERVICE IS 10 METRES HEAD AT THE PROPERTY BOUNDARY VALVE



Mr Matthew Gray

PETER BRETT ASSOCIATES LLP
CAVERSHAM BRIDGE HOUSE
WATERMAN PLACE
READING
BERKSHIRE
RG1 8DN

**Thames Water Utilities Ltd.
Developer Services**

Our ref 3010176905
Name Karl Tuchscherer
Phone 0800 009 3921
E-Mail developer.services@thameswater.co.uk

18th March 2016

Dear Matthew

Clean Water Budget Estimate Longwater Avenue, Reading, Berkshire, RG30 4UR.

Thank you for your correspondence dated 17th March 2016 regarding the above development.

Please be aware that this assessment is based upon the details and drawings provided. Should there be any subsequent changes to the details and information on your drawing, the contents of this report would become invalid and would necessitate a new assessment.

Diversiory Works:

According to our records, it is anticipated that a clean water assets diversory works are required to accommodate your development proposals.

Please note that any diversion is charged at full cost, payable in advance.

Divert the existing 300mm diameter Ductile Iron water main from its current location within the soft landscaped Area to within the footway of Longwater Avenue, the approximate length being 400metres to accommodate the future Office Development.

Budget Full Costs £172,836.00 subject to site survey and feasibility study.

Thames Water Utilities Ltd
Developer Services
First Floor West
Clear Water Court
Vastern Road
Reading
Berkshire
RG1 8DB
T 0800 009 3921
I www.thameswater.co.uk

Registered in England and Wales
No. 2366661, Registered office
Clearwater Court, Vastern Road,
Reading, Berks. RG1 8DB

All information enclosed in this letter is for budgetary purposes only and should by no means be taken as the actual cost for serving this development site.

If you would like to proceed with the work, please use the link below to apply for a formal quotation.

<http://www.thameswater.co.uk/developers/1328.htm>

I trust this information will be of assistance in your proposals, however should you require any further information, please do not hesitate to contact me.

Yours sincerely

Karl Tuchscherer
Thames Water
Developer Services
0800 009 3921



RECEIVED

- 2 MAR 2016

M.Gray

Developer Services

Peter Brett Associates
Caversham Bridge House
Waterman Place
Reading
RG1 8DN

Peter Brett Associates LLP

Your ref
Our ref 50089341 /1013643719
Name Siva Sivarajan
Phone 0800 009 3921
E-Mail developer.services@thameswater.co.uk

01 March 2016

Re: 400 Longwater Avenue Reading Berks RG30 3UR

Dear Mr Gray

I write in relation to the above site and further to your Pre-Development Enquiry application and supporting documentation.

Further to receiving your application we have consulted with our Asset Planners for the area and they have responded with their comments regarding the capacity of the public foul sewer network adjacent to the proposed site to accommodate foul flows from the development as detailed in your application.

They have concerns regarding the sewerage network capacity in this area and its ability to support the foul discharge demand anticipated from this development. It will therefore be necessary for us to undertake a detailed investigation into the impact of the development by **means of a developer funded impact study**. This will determine whether capacity does exist in the sewerage network or what upgrades to the existing foul sewer network are required before the site can be connected to it.

If you wish to proceed with an impact study to determine available capacity & what upgrades to the existing network are required before the site can be connected to it., firstly we would require a cheque made payable to Thames Water Utilities Ltd for £400 + VAT which our Modelling Group need **in order to scope what is required as part of the impact study. This will enable them to create a quote for the impact study itself which I will then forward to you. Send the cheque with a covering letter quoting the reference numbers given on this letter. I have also enclosed a form that requests 'Information required for the 'Scoping & Costing ' exercise and for the Impact study. If you are progressing with the Scoping and then the Impact study please fill in as much relevant information as possible on this form and return to me, when you send the payment.**

Surface water discharges should ideally go to soakaways / infiltration basins / watercourses (if any present in area). If it can be illustrated that none of the above are feasible then surface water discharges should be stored on site and attenuated, to the satisfaction of the local authority stipulation. To this end you

Thames Water Utilities Ltd,
Clearwater Court, Vastern
Road, Reading RG1 8BD

T 0118 3 738744
I www.thames-water.com

Registered in England and Wales
No. 2366661, Registered office
Clearwater Court, Vastern Road
Reading, Berks. RG1 8BD

Page 2

have to liaise with the local authority and discuss their criteria regarding surface water discharges in that area.

At no account should the surface water flows be discharged to the TW foul sewer network.

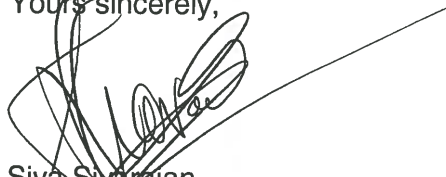
Please note that the views expressed by Thames Water in this letter are in response to this pre development enquiry at this time and do not represent our final views on any future planning applications made in relation to this site.

We reserve the right to change our position in relation to any such planning applications.

If you have any further queries then please do not hesitate to contact me.

Siva.sivarajan@thameswater.co.uk

Yours sincerely,

A handwritten signature in black ink, appearing to read "Siva Sivarajan", written over a horizontal line.

Siva Sivarajan
Senior Adoptions Engineer (TW)

Developer Services-Adoptions Team
Thames Water Utilities Ltd
Clearwater Court
Vastern Road
Reading, RG1 8DB

Information required from developer for 'Scoping & Costing' of a Pre Development enquiry (provide as much relevant info as possible)

Connection Points:

- Preferred connection points (MH ID'S) to be confirmed by Developer
- If there are multiple connection points then, a breakdown of development areas for each connection point to be provided

Phasing:

- Number of phases and the details of units for each phase and the programme

Existing site:

- Existing flows (for each connection points , if multiple)
- Details of existing site (brownfield or other)
 - Land Use?;
 - Occupied area
 - Population figure, if known
 - Multi storey buildings : number of floors/ total area

Proposed site (Domestic):

- Proposed flows
- For new housing estate, occupancy rates (based on the new housing type)
- Number of properties number bedrooms/house type

Proposed (Commercial)

- Proposed flows
- Commercial/ Industrial areas with details of catogaries (shopping/ offices etc)

Connection

- Gravity or pumped connection and their details
- Soffit levels required, if available

Pumped Connection:

- Number of Pumps
- Pump arrangement (Duty/Assist/ Standby)
- Pump discharge rates
- On Off Levels
- Wet Well size
- Location of pumping station
- Location of rising main discharge point
- Pump curves
- Pumping station emergency storage
- Pumping station Operational storage
- Provide information about any pumping station within the new development

Surface Water Drainage

- Drainage strategy plans
- For developments outside London: provide Planning conditions or drainage criteria as stipulated by the planning Authority
- For Development in London: provide sufficient info as to whether adherence to London Plan Hierarchy has been reviewed and looked into;

Surface Water drainage to discharge to Surface water OR Combined system:

- Actual area to be drained / based on plans to be provided (to confirm proposed impermeable area)
- Brownfield sites: evidence of previous extent of connectivity (IAS/private drainage surveys)
- Brownfield sites: if there is existing connection, confirmation as to whether this will be retained or removed
- Mode of drainage: traditional piped network or SUDS OR attenuation tanks or ponds etc
- Details of flow control devices