



now part of



Pump Farm and Bloors Farm, Lower Rainham

Utilities Assessment

On behalf of **AC Gotham**

Project Ref: 44538/2004 | Rev: - | Date: November 2018

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Report Title: Utilities Assessment

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	Name	Position	Signature	Date
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Approved by:	Chris Downs	Director of Water		01/11/18
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
A	11/18	Results of water capacity check included.	MH	CD	
B	01/19	Amendments to report to reflect comments from Rapleys	MH	CD	
C	01/19	Further amendments to reflect comments from Rapleys	MH	CD	
D	03/19	Update Section 3.4.3	MH	CD	

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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1 Introduction

1.1 Foreword

Peter Brett Associates (now part of Stantec) (PBA) has been commissioned by AC Goatham to undertake a Utilities Assessment for land at Pump Farm and Bloors Farm at Lower Rainham in Kent. The site covers a total area of approximately 51 hectares, and at the time of preparing this report was proposed for a mixed use development comprising 1,250 residential dwellings, a care home (up to 80 bed), a 2-3 form entry primary school, and a small commercial area to include such uses as a doctor / dentist surgery, small retail units and a pub.

The site is currently undeveloped agricultural land and is located in Lower Rainham to the north-east of Gillingham in Kent, at approximate OS Grid Reference TQ 809 674.

An illustration of the site's location along with an indicative site boundary is provided in **Figure 1**.

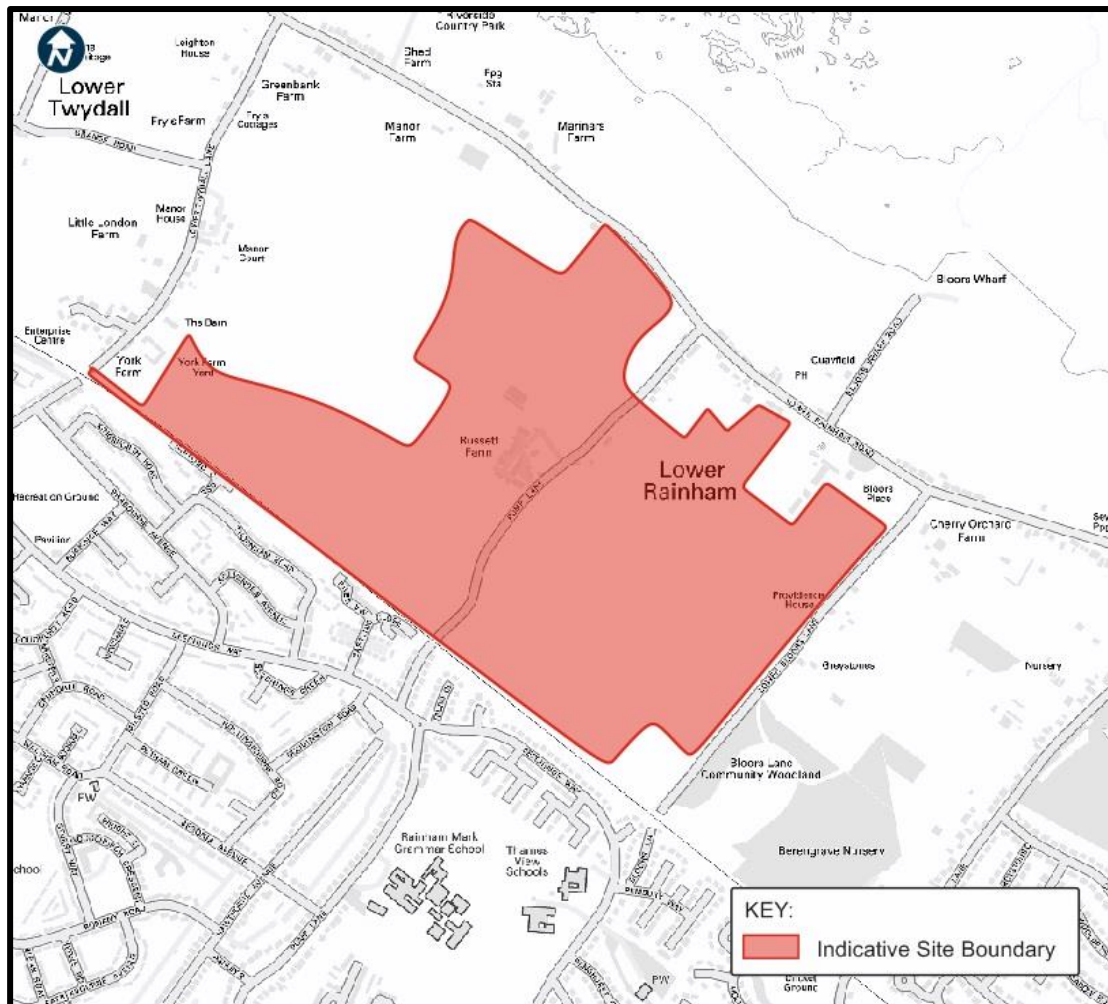


Figure 1: Site Location (Contains OS data © Crown Copyright and database right 2018)

Existing utility infrastructure within and adjacent to the proposed development is presented on PBA's drawing number 44538/2004/001 within **Appendix A**. This information has been taken from existing asset records provided to us by the statutory undertakers operating in this area.

1.2 Scope of Works

This assessment aims to achieve the following: -

- Liaise with all utility suppliers providing services within the proposed development zone.
- Establish the nature, extent and location of any existing utility company distribution infrastructure relating to electricity, gas, water supply and telecommunication.
- Confirm with the utility suppliers the capacity of the existing infrastructure and the requirements for such infrastructure to be diverted, extended, adapted or renewed to cater for the proposed development, and the broad cost estimates.
- Advise the client of the need for any specialist surveys (e.g. network modelling requirements).

1.3 Basis of Report

This report has been compiled from correspondence received from the incumbent utility providers (electricity, gas, potable water, foul drainage & telecommunications) with regard to existing and new utility supplies.

A high level desk top study and review of existing utility services information has been completed, to identify constraints to the proposed development, and to establish the need for any diversions and protections to the incumbent utility services.

1.4 Requested Loads

Capacity checks were requested from the incumbent distribution network operators in September 2018.

Anticipated loads for this high level assessment were calculated based upon an initial representative development quantum provided in September 2018, which included 1,250 residential units, a retirement village, a primary school and a small commercial area, as tabled below: -

Table 1: Calculated Utility Loads

Utility	Energy Demand
Electricity	3,384 kVA
Gas	9,814 kWh peak (15,656 MWh annual)
Potable water	14.69 l/s peak flow
Foul drainage	68.1 l/s peak flow

2 Contacts Directory

Table 2: Statutory Undertakers Contacts Directory

Title	Address	Contact Details
Electricity	UK Power Networks Bircholt Road Park Wood Maidstone Kent ME15 9XH	Tel: 01622 352160
Gas	Southern Gas Networks St Lawrence House Station Approach Horley Surrey RH6 9HJ	Tel: 01293 818143
Potable Water	Southern Water Southern House Sparrowgrove House Sparrowgrove Otterbourne Hampshire SO21 2SW	Tel: 0330 303 0119
Drainage	Southern Water Southern House Sparrowgrove House Sparrowgrove Otterbourne Hampshire SO21 2SW	Tel: 0330 303 0119
Telecommunications	Openreach – Network Alterations 2nd Floor, Telephone Exchange Green Street Gillingham Kent ME7 5TH	Tel: 01634 287231

3 Utility Infrastructure

3.1 Electricity

The incumbent electricity provider is UK Power Networks (UKPN).

A summary of the infrastructure likely to be affected by the proposed development is outlined below.

3.1.1 Existing Infrastructure

UKPN records show existing high voltage (HV) and low voltage (LV) underground lines running within the far side footway of Lower Rainham Road to the north of the site.

An overhead LV line is shown running along Pump Lane from Lower Rainham Road within the Pump Farm site boundary, this serves the Russett Farm development. An underground HV cable runs within the carriageway of Pump Lane, from Pump Lane substation at the edge of Russett Farm, to Lower Rainham Road.

There is an overhead LV line shown running within the western verge of Lower Bloors Lane to the east of the site. This has connections to properties on the eastern side of the road.

An overhead LV line runs within the eastern verge of Lower Twydall Lane to the west of the site, which appears to cross within the site boundary at the south-west corner of the site.

3.1.2 Network Modifications

UKPN has advised that no diversionary works are required.

3.1.3 Network Capacity

UKPN has advised that a sum of £400,000 may be chargeable for reinforcement works in order to provide the current estimated demands. However, if the load can be reduced from 3,384 kVA to circa 2,300kVA (2.3MVA) these costs could dramatically reduce to in the region of £35,000.

3.1.4 New Infrastructure

UKPN has provided a budget estimate of £1,700,000 exc. VAT to provide a point of connection to their existing HV network in Lower Rainham Road. They propose that 3 new on-site substations would need to be established to serve the development, with LV cables routed around the site to provide connections to the individual units (as shown within **Appendix B**). The estimate is based on the developer's ground works contractor carrying out all on-site excavation and reinstatement works.

3.1.5 Legal Tenure (Wayleaves / Easements)

Where electricity lines are to be installed in private land UKPN will require an easement in perpetuity for its electric lines, and in the case of electrical plant the freehold interest in the substation site, on UK Power Network terms, without charge and before any work commences.

Where a GRP substation is required a footprint area of 4m x 4m (5m x 5m for a brick built enclosure), will be required which will need provision for 24-hour access directly from the public highway.

3.1.6 Financial Considerations

Procurement Options

The estimated electricity demand proposed for this development is likely to be of sufficient scale to encourage an “out of area” licensed Independent Distribution Network Operator (IDNO) to offer an alternative proposal to establish an embedded system within the incumbent’s licensed area.

Contestable / Non Contestable Work

All new electricity infrastructure from the point of connection to the existing network to the point of metered supply will generally fall under the “contestable” heading allowing “self-lay” as an optional procurement route.

All modifications and diversions of existing apparatus generally fall under a “non-contestable” banner, which must remain under the direct control of the incumbent provider.

Generally, building and civils work associated with the installation is considered to be a contestable element in terms of both new and diversionary work.

A detailed review of the electricity scope of work offered by UK Power Networks should be undertaken once a formal connection offer and quotation has been received.

3.2 Gas Infrastructure

The incumbent gas provider is Southern Gas Networks (SGN).

A summary of the infrastructure likely to be affected by the proposed development is outlined below.

3.2.1 Existing Infrastructure

SGN records show an existing 12” steel (ST) medium pressure (MP) main running within the nearside carriageway / footway in lower Rainham Road to the north of the site. There is also an 18” cast iron (CI) low pressure (LP) main on the far side of the road.

A 14” CI MP main is shown running within the eastern side of the carriageway of Pump Lane from Lower Rainham Road, and there is a 63mm polyethylene (PE) LP main running adjacent to this to the west.

A 4” CI LP main is shown running within the carriageway of Lower Bloors Lane from Lower Rainham Road.

A high pressure (HP) gas network is shown in the vicinity of the site, running adjacent to Lower Rainham Road approximately 100-150m to the north.

3.2.2 Network Modifications

SGN has provided a budget estimate of £59,000 exc. VAT to lower / divert the existing 12” MP main in Lower Rainham Road in order to accommodate the proposed site access to the north of the site, as shown in **Figure 2** below.

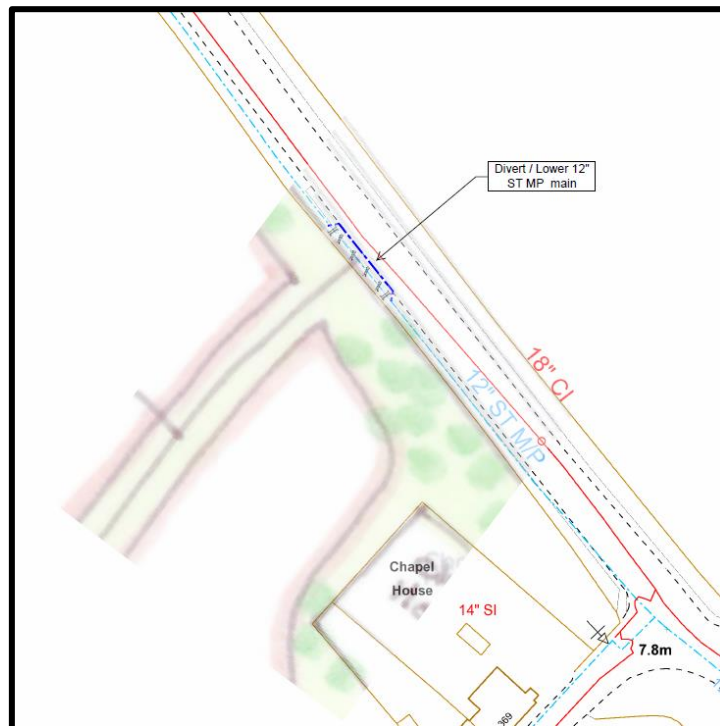


Figure 2: SGN C3 to show proposed lowering of 12" MP gas main

3.2.3 Network Capacity

SGN has advised that a contribution may be required towards the cost of any network reinforcement works that may be required. This will be determined when a request is submitted for a firm quotation, once a detailed site layout and build schedule are available.

3.2.4 New Infrastructure

SGN has provided a budget estimate of £892,600 inc. VAT to install appropriately sized gas infrastructure to serve the proposed development. This estimate is based on the developer's ground works contractor carrying out all on-site excavation and reinstatement works.

3.2.5 Financial Considerations

Procurement Options

The estimated gas demand proposed for this development is likely to be of sufficient scale to encourage an "out of area" licensed Independent Distribution Network Operator (IDNO) to offer an alternative proposal to establish an embedded system within the incumbent's licensed area.

Contestable / Non Contestable Work

All new gas infrastructure from the pressure reducing station (PRS) (if applicable) or connection point to the metered supply will generally fall under the "contestable" heading allowing self-lay as an optional procurement route.

All modifications and diversions of existing apparatus generally fall under a "non-contestable" banner, which must remain under the direct control of the incumbent provider.

Generally, building and civils work associated with the installation is considered to be a contestable element in terms of both new and diversionary work.

3.3 Potable Water

The incumbent water provider is Southern Water (SW).

A summary of the infrastructure likely to be affected by the proposed development is outlined below.

3.3.1 Existing Infrastructure

SW records show existing 3" CI water mains located within the nearside of Lower Twydall Lane to the east of the site and within the footway / carriageway of Lower Rainham Road to the north-west of the site.

There is a 2" CI main shown running within the carriageway of Pump Lane from another network in Lower Rainham Road, and a further 1.25" CI main connected to the network running within the carriageway of Lower Bloors Lane to the east of the site.

3.3.2 Network Modifications

No diversionary works are anticipated at this stage.

3.3.3 Network Capacity

SW has carried out a Level 2 Capacity Check based on their anticipated peak demand for the development of 14.69l/s, and this has identified significant pressure issues and insufficient capacity within the existing network to accommodate the development.

They advise that the site may only connect to the proposed point of connection in Lower Rainham Road following the installation of the network reinforcement works shown in **Figure 3** and **Figure 4** below, which are detailed further within the Southern Water Capacity Check report included within **Appendix B** or this report.

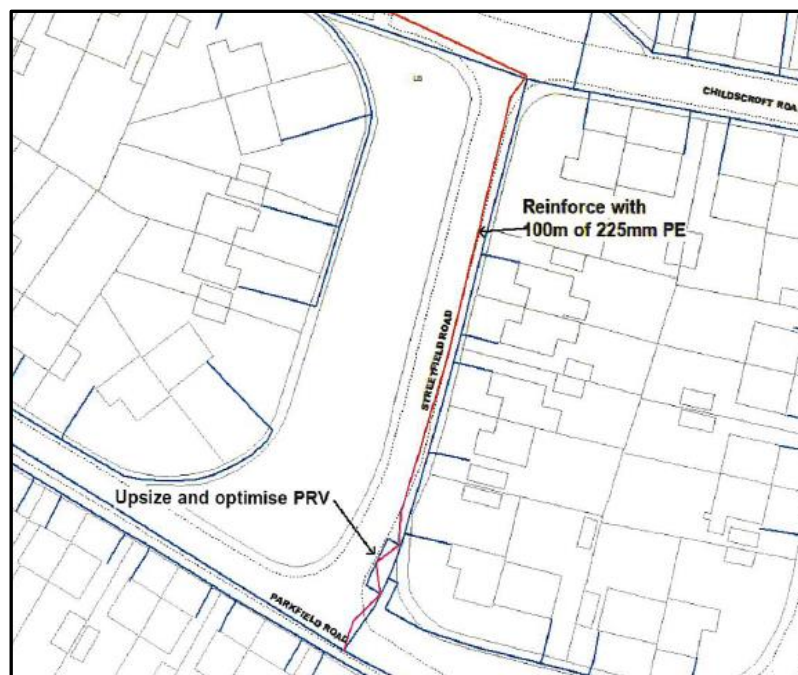


Figure 3. Proposed Reinforcement

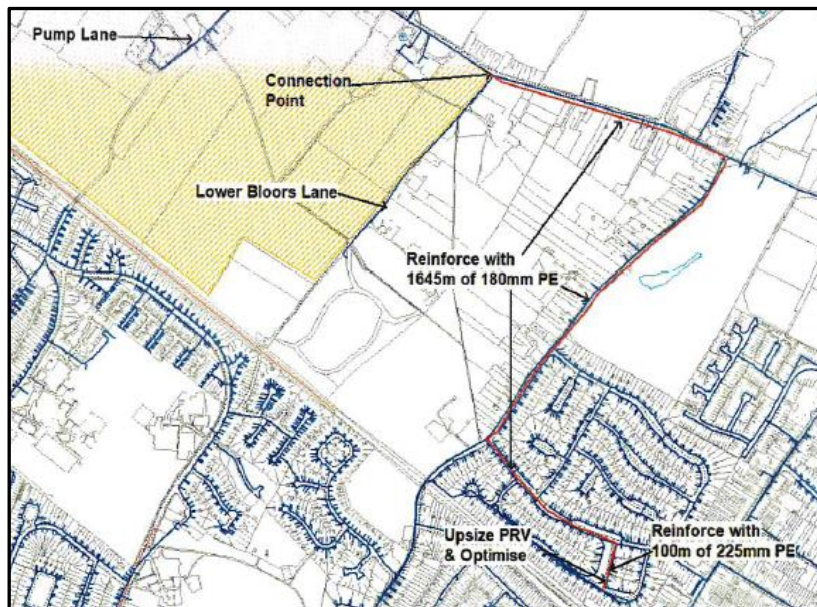


Figure 4. Proposed Reinforcement

The Network reinforcement works would likely cause some disruption to the highway networks affected whilst the work is carried out, with potential traffic management and works normally associated with work on the water network. Network Reinforcement costs are paid for through new infrastructure charges; every new property connected to the network is subject to the charge (as detailed in the cost table below).

3.3.4 New Infrastructure

The following figures have been taken from Southern Water’s ‘New Connections Services Charging Arrangements 2018-19’ in order to establish estimated costs for on-site works to serve the proposed development, and are based on the developer’s ground works contractor undertaking all on-site excavation and reinstatement works: -

On-site mains (63mm – 180mm main)	£55.00 - 70.00 per metre
Standard service connection charge (up to 3m long)	£225.00 per connection
Standard service connection charge (3m - 8m long)	£258.00 per connection
Infrastructure charges	£200.00 - £379.62 per connection *

* £200 applies to all new connections made to water mains laid before 1991 or after April 2018. £379.62 applies if the connection is made to a water main requisitioned between 1991 and April 2018.

For new homes built with water efficient fixtures and fittings that achieve water use of 110 litres per person per day, the water infrastructure charge will be waived (£0 per property).

3.3.5 Financial Considerations

Procurement Options

The client (developer) will be required to submit a formal requisition to Southern Water for potable water supplies, under the terms of Section 41 of the Water Industry Act.

Contestable / Non Contestable Work

All modifications and diversion of existing apparatus generally fall under a “non-contestable” banner, which must remain under the direct control of the incumbent provider.

Generally, building and civils work associated with the installation is considered to be a contestable element in terms of both new and diversionary work.

Provision of the offsite works is contestable as a self-lay option.

3.4 Drainage

The incumbent sewer company is Southern Water (SW).

A summary of the infrastructure likely to be affected by the proposed development is outlined below.

3.4.1 Existing Infrastructure

There is an 1800mm precast concrete (CP) foul sewer crossing the site from west to east, which lies within the footprint of the school site, the village centre and the residential area in the north west corner of the site, as shown on the latest proposed Masterplan.

There are foul and combined rising mains running within the carriageway of Lower Rainham Road to the north of the site.

A combined sewer runs within the Pump Lane site boundary from the south of the site to Russett Farm, where it then connects to the foul sewer at the rear of 326 Pump Lane. There are also foul and combined sewers shown running within the carriageway of Pump Lane.

3.4.2 Network Modifications

The current indicative Masterplan appears to allow for the foul sewer to remain in-situ, with the development layout accommodating the route of the sewer to avoid building within the easement zone. From an initial assessment of the easement based on Southern Water guidance, making an assumption about the depth, we anticipate a total easement width of 13.5m, centred about the middle of the sewer. However, this will be confirmed at detailed design stage following the establishment of actual depths.

It should be noted that no permanent structures can be constructed within the easement zone; however, roads (as long as the road is designed to spread the load off the sewer), pathways, fences, small shrubs, etc. are permissible.

No diversionary works are anticipated at this stage.

3.4.3 Network Capacity and New Infrastructure

Level 2 capacity checks are no longer provided by SW, and as such a Feasibility Study was requested in order to identify potential capacity availability and constraints, and to identify possible solutions and points of connection for both foul and surface water.

SW advised that a Feasibility Study would not be necessary in this instance as there is no third-party land and therefore no requirement for SW to requisition a sewer, installing under their statutory powers. The connection should be provided by the developer, and SW has advised that the nearest point of connection permissible is a connection into a pipe of the same size or greater than (we had initially proposed to connect to Manhole 1602 serviced by a 225mm vitrified clay pipe, as shown on our drainage plan 44538/2004/002 in Appendix C).

They advise that the site has not been previously identified as an area for potential development, but given the proximity to the works (which we assume refers to their treatment works), there is potential that capacity would be available.

It is the responsibility of SW to ensure that the network has capacity to take the proposed flow, carrying out off-site reinforcement where necessary. Costs for any reinforcement that may be required are borne by SW, as they are covered by the infrastructure charges paid by developers for each new connection to the network. However, in order to provide and programme in network reinforcement, suitable notice is required.

3.5 Telecommunications Infrastructure

A summary of the Openreach infrastructure likely to be affected by the proposed development is outlined below.

3.5.1 Existing Infrastructure

Openreach records show existing underground apparatus running within the far side of Lower Rainham Road until Pump Lane, where the network transfers to overhead lines.

Overhead lines are also shown running within the site boundary to the west of Pump Lane and to the west of Lower Bloors Lane.

3.5.2 Network Modifications

The existing overhead lines that lie within the site boundaries appear to be unaffected by the proposed site layout, and therefore no diversions are anticipated.

3.5.3 Network Capacity

There are no issues with capacity; Openreach has an obligation to serve new developments with both telecoms and broadband services.

3.5.4 New Infrastructure

Openreach do not provide design proposals prior to planning; an application can be registered following outline planning consent and once the detailed technical drawings are prepared.

It is normal practise for Openreach to free issue materials for the developer to install, and a rebate of approximately £140 per house and £50 per flat for each plot connected may apply.

3.6 Cable

3.6.1 Existing Infrastructure

PBA has also consulted with the following telecommunication companies who have confirmed in writing that they have no existing infrastructure within the area likely to be affected by the proposed development:

- Colt
- euNetworks
- Instalcom
- Interoute
- KPN International

- Linesearch
- SOTA
- Sky
- Telentelia
- Trafficmaster
- Verizon (MCI Worldcom)
- Virgin Media
- Vodafone

3.6.2 Network Modifications

There are no network modifications envisaged.

3.7 Summary of Budget Estimates

The following utility allowances have been determined via a desk top study based on early and limited information and are offered on the basis that they are broad in nature and for “guidance purposes” only. Should the site progress, PBA would be pleased to procure firm prices and provide a best value utility strategy for the development in which various market discounts may apply from competitive utility infrastructure providers.

Table 3: Summary of Budget Estimates

Electricity (UK Power Networks)	Diversions	£ -
	New infrastructure (gas heated)	£1,700,000
Gas (Southern Gas Networks)	Diversions	£ 59,000
	New infrastructure (gas heated)	£ 892,600.00
Water (Southern Water)	New on-site mains	£ 55.00 – 70.00 per metre
	New service connections (<3m)	£ 225.00 per connection
	New service connections (3-8m)	£ 258.00 per connection
	Infrastructure charges (standard charge)	£ 200.00 - £379.62 per connection
Drainage (Southern Water)	Diversions	£ TBC
	Infrastructure charges (standard charge)	£ 765.00 per connection
Telecoms (Openreach)	Diversions	£ -
	New infrastructure	£ -

Note: All prices exclude professional/local authority fees

4 Programme

The programme timescales below are provided for guidance only.

A defined Masterplan will be required to allow detailed estimates to be prepared.

Table 4: Programme Timescales

Electricity	Produce firm price	6 weeks
	Lead in for planning / allocation of materials and labour	8 weeks
Gas	Produce firm price	4 weeks
	Lead in for planning / allocation of materials and labour	6 weeks
Water	Produce firm price	6 weeks
	Lead in for planning / allocation of materials and labour	8 weeks
Telecom	Produce firm price	4 weeks
	Lead in for planning / allocation of materials and labour	4 weeks

5 Conclusion

This report shows that, based on the currently proposed development, there is existing electricity, gas and telecom infrastructure within the vicinity of the site, which currently has sufficient capacity within the existing networks to provide new supplies to the development without the need for off-site reinforcement.

Southern Water has identified insufficient capacity within their existing potable water network to accommodate the proposed development, with off-site reinforcement works required at five locations. Costs for the reinforcement works would be paid by Southern Water, but consideration should be given to timescales and the probable impact of this on the program of works.

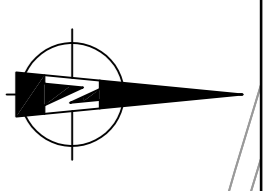
SGN has indicated that their existing 12" MP main in Lower Rainham Road may need to be diverted in order to accommodate the proposed access to the north of the site.

The enquiries to the incumbent utility providers to date have been based on direct connection to each unit and will be subject to formal application following planning consent.

New supplies within the site will generally be routed along proposed road corridors. The requirements for easement agreements for supplies located outside of the proposed highway will need to be agreed with the relevant statutory undertaker as part of the design process.

PBA can design and procure firm prices for new utility infrastructure in which various market discounts may apply. We manage this within the context of the wider infrastructure layout to provide a coherent, coordinated and programme sensitive approach.

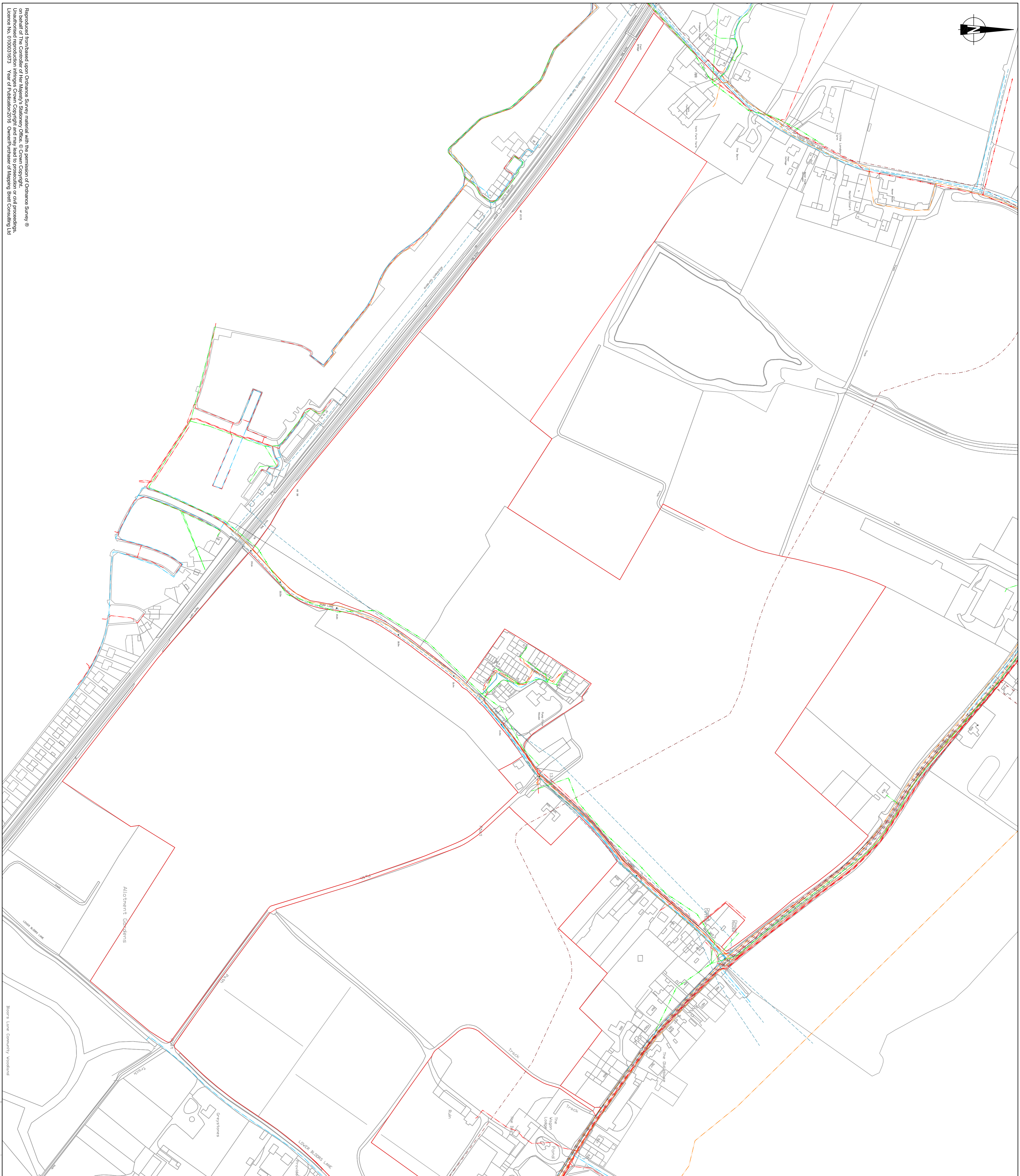
Appendix A Existing Services Layout



GENERAL NOTES:
1. DO NOT SCALE FROM THIS DRAWING.

LEGEND:

- SITE BOUNDARY
- EXISTING ELECTRICITY (LV)
- EXISTING ELECTRICITY (HV)
- EXISTING ELECTRICITY (LV OVERHEAD)
- EXISTING ELECTRICITY (HV OVERHEAD)
- EXISTING GAS (LP)
- EXISTING GAS (MP)
- EXISTING GAS (LHP)
- EXISTING WATER
- EXISTING BT
- EXISTING BT OVERHEAD
- EXISTING FOUL WATER SEWER
- EXISTING SURFACE WATER SEWER



SCALING NOTE: Do not scale from this drawing. If in doubt, ask.
UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is for information only. The Contractor is therefore advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect the operations.

Drawing Issue Status

CONCEPT
PUMP AND BLOORS FARM
LOWER RAINHAM
EXISTING SERVICES LAYOUT

Client
A.C. GOATHAM & SON

Date of 1st Issue	Designed	Drawn
02.11.2018	AP	AP
AT Scale	Checked	Approved
1:2000	CD	CD
Drawing Number	Revision	
44538/2004/001	-	

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Appendix B Correspondence

**PUMP FARM AND BLOORS FARM
RAINHAM**

Statutory Undertaker Enquiries

Utility	Company	Enquiry Type	Quotation Requested	Quotation Received	Reference	Contact	Comments
Electricity	UK Power Networks	Capacity Check & Budget Costs	06/09/18	03/10/18	8500098357	Rob Burke rob.burke@ukpowernetworks.co.uk T: 01622 352396	10.09.18 – Acknowledgement received. 03.10.18 – Budget estimate received for £1,700,000 exc. VAT to connect to HV network along Rainham Road. 3 No. new on-site substations required. An additional sum of £400,000 may be chargeable should network reinforcement be required. If the proposed site demand can be reduced to 2.3MVA (from 3.046MVA) the reinforcement contribution would drop to circa £35,000. No diversions anticipated.
Gas	SGN	Capacity Check & Budget Costs	06/09/18	10/10/18	1692413	Vaishali Puri Vaishali Puri, Vaishali vaishali.puri@sgn.co.uk T: 0800 912 1700	10.10.18 – Budget estimate received for £892,600 inc. VAT, not including meter / meter housing works. Developer to excavate and reinstate.
		Diversion Budget Costs	06/09/18	17/10/18	D1001	Nick Saville nick.saville@sgn.co.uk T: 01689 881 547	17.10.18 – Budget estimate of £59,000 exc. VAT to divert / lower the existing 12” main in Lower Rainham Road to accommodate the proposed site access north of Areas A and B.
Water	Southern Water	Level 2 Water Capacity Check	07/09/18	15/11/18	CC-KENT-00561	Geoff Hall developerservices@southernwater.co.uk	01.11.18 – Email to chase results. 08.11.18 – No response; further email sent to chase results. 15.11.18 – Results received confirming significant pressure issues and insufficient capacity to accommodate the proposed demand without network reinforcement.
Drainage	Southern Water	Feasibility Study	17/10/18		DS_CC_FS-105142 FEAS 00059	Kev Fausset Kev.Fausset@southernwater.co.uk	22.10.18 – Request from SW for a Drainage Plan. Request forwarded to CD for a plan to be created. 08.11.18 – Drainage plan completed and issued to SW.
Telecom	BT	Diversion Budget Costs	18/10/18	07/11/18	D18/808189/ SW	Stuart Wilson stuart.r.wilson@openreach.co.uk	07.11.18 – Overheads in Pump Lane could be affected by proposed vehicular access points. Request received for survey and design fee of £2,553.00.

Your ref:

Our ref: 44538/2002/ASH/TW/CD/MW



6 September 2018

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Connections
Projects Gateway
UK Power Networks
Metropolitan House
Darkes Lane
Potters Bar EN6 1AG

Sent by email to connections.gateway@ukpowernetworks.co.uk

Dear Sirs,

RE: PUMP FARM AND BLOORS FARM, PUMP LANE, RAINHAM, KENT ME8

Further to your budget estimate produced in July 2016 to provide new connections to serve a mixed used development at Pump Farm in Rainham (your ref. 8500037090), please find enclosed a site location and a revised indicative Masterplan for a larger mixed use scheme on land at Pump Farm and the adjacent Bloors Farm. The revised proposed build schedule comprises approximately 1,250 residential units, a retirement village (3.44ha), a 2/3 form entry primary school (3ha) and a village centre of approximately 0.7ha comprising 3 or 4 retail and commercial units.

We anticipate the total ADMD electricity demand for the site as follows: -

Building Type	No. of Units / Approximate Area	Electricity Demand (kVA)
Residential	1,250 units	1,875
Retirement Village	30,352m ²	633
Primary School	34,898m ²	150
Commercial (retail/surgery/pub)	7,484m ²	388
	TOTAL	3,046

Based on the information provided could you please advise whether there is sufficient capacity within your existing network to serve the proposed development, and if not, the capacity that is available before off-site reinforcement may be required.

Could you please also provide us with a budget estimate to serve this development with electricity, including costs for any anticipated diversionary works that may be required and any potential off-site reinforcement.

We look forward to receiving your estimate at your earliest opportunity; however, should you require any further information please do not hesitate to contact me.

Yours faithfully,

Michelle Willson
Senior Technician
EngTech MICE
For and on behalf of **PETER BRETT ASSOCIATES LLP**

J:\44538 - CD - Pump & Bloors Farm\BRIEF 2002 - Util - incld Fou\CORRESPONDENCE\UKPN Budget Estimate Request.docx

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Registered number: 07765026.

Ms. Michelle Willson
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Kent
TN23 1DQ

Date: 03 October 2018

Our Ref: 8500098357 / QID 3000015519

Dear Ms. Willson

Site Address: Pump Lane / Kent ME8

Thank you for your recent enquiry regarding the above premises. I am writing to you on behalf of South Eastern Power Networks plc the licensed distributor of electricity for the above address trading as UK Power Networks.

I am pleased to be able to provide you with a budget estimate for the work.

It is important to note that this budget estimate is intended as a guide only. It may have been prepared without carrying out a site visit or system studies. No enquiry has been made as to the availability of consents or the existence of any ground conditions that may affect the ground works. It is not an offer to provide the connection and nor does it reserve any capacity on UK Power Networks electricity distribution system.

Budget estimate:

The budget estimation for this work is:

Description

Budget estimate for the connection of 1250 new domestic Dwelling, a retirement village, commercial units and a new Primary school with a total load requirement of 3046kVA

High Voltage Point Of Connection

£1,700,000 (exclusive of VAT) if the Point Of Connection (POC) is to our High Voltage network along Rainham Road

An additional sum of £400,000 may be chargeable for re-enforcement works on the network become necessary.

By reducing the load to 2.3MVA will decrease the reinforcement works dramatically to in the region of £35,000.

UK Power Networks does not appear to have any onsite apparatus that will require diverting.

It will be necessary to establish 3 new totally enclosed substation on the development site, in situations where a standard GRP substation enclosure can be used, an area of land of at least 4m x 4m will be required. If, however, you prefer to construct a brick substation then an area of land of at least 5m x 5m will be required. Planning Permission,

although not required for a GRP substation, will be required for a brick built enclosure, and it will be your responsibility to obtain this.

The substation must be located such as to minimise the need for the manual handling of heavy plant. The Manual Handling Operations Regulations 1992 require the use of mechanical handling whenever this reasonably practicable. To meet these regulations we use a lorry mounted crane to deliver substation plant. The project must therefore be planned to ensure that it is suitable for the delivery of plant from a large vehicle. The Construction (Design and Management) Regulations 2007 also require that consideration be given to the safe installation, maintenance and eventual removal of equipment. To comply with this legislation we need to be able to gain access with a suitable vehicle throughout the life of the project.

The indicative price does not include the cost of obtaining any necessary consents for which you would be responsible. Whether you will have to pay all or any of the costs depends among other things upon UK Power Networks entitlement to keep the apparatus in its present position.

This budget estimate is based on the following assumptions:

- The most appropriate Point of Connection (POC) is as described above.
- A viable cable or overhead line route exists along the route we have assumed between the Point of Connection (POC) and your site.
- In cases where the Point of Connection (POC) is to be at High Voltage, that a substation can be located on your premises at or close to the position we have assumed.
- Where electric lines are to be installed in private land UK Power Networks will require an easement in perpetuity for its electric lines and in the case of electrical plant the freehold interest in the substation site, on UK Power Networks terms, without charge and before any work commences.
- You will carry out, at no charge to UK Power Networks, all the civil works within the site boundary, including substation bases, substation buildings where applicable and the excavation/reinstatement of cable trenches.
- Unless stated in your application, all loads are assumed to be of a resistive nature. Should you intend to install equipment that may cause disturbances on UK Power Networks' electricity distribution system (e.g. motors; welders; etc.) this may affect the estimate considerably.
- All UK Power Networks' work is to be carried out as a continuous programme of work that can be completed substantially within 12 months from the acceptance of the formal offer.

Please note that if any of the assumptions prove to be incorrect, this may have a significant impact on the price in any subsequent quotation. You should note also that UK Power Networks' formal connection offer may vary considerably from the budget estimate. If you place reliance upon the budget estimate for budgeting or other planning purposes, you do so at your own risk.

If you would like to proceed to a formal offer of connection then you should apply for a quotation. Please refer to our website [click here](#) for 'The connection process' which details our application process.

To help us progress any future enquiry as quickly as possible please quote the UK Power Networks Reference Number from this letter on all correspondence.

If you have any questions about your budget estimate or need more information, please do not hesitate to contact me. The best time to call is between the hours of 9am and 4pm, Monday to Friday. If the person you need to speak to is unavailable or engaged on another call when you ring, you may like to leave a message or call back later.

Yours sincerely

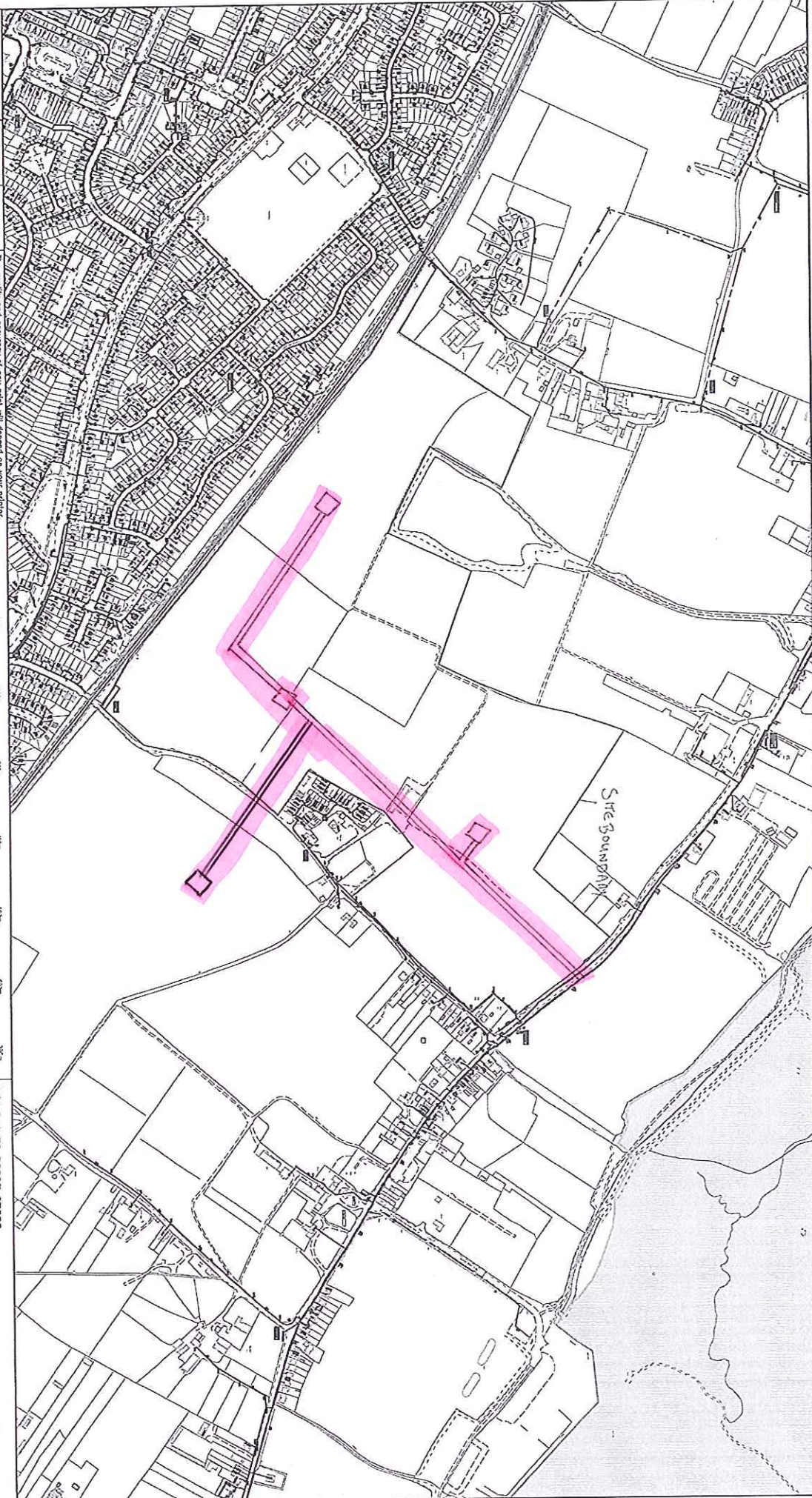


Mr. Robert Burke
PARKWOOD INDUSTRIAL ESTATE
Kent, MAIDSTONE
ME15 9XH
01622 352 396
rob.burke@ukpowernetworks.co.uk

Title:

JOB NO:

PROPOSAL PLOT



Description	Existing	Proposed
LV Cable or Line		
HV Cable or Line		
APV Cable or Line		
Appox. position		
Ductline		
Pole & Street Furniture		
Substation & Link		

The quality and accuracy of any print will depend on your printer, your computer and its print settings. Measurements scaled from this plan may not match on the ground.

1. The position of the apparatus shown on this drawing is believed to be correct but the original landmarks may have been altered since the apparatus was installed.
 2. The exact position of the apparatus should be verified - use approved cable evidence
 3. It is essential that final notes are carefully made including the use of mechanical tools or picks until the exact location of all cables have been determined.
 4. The position of the apparatus should be marked with a 'V' or 'X' and a 'V' or 'X' should be placed within the exact location of all cables have been determined.
 5. All cables must be marked on being laid unless proved otherwise by UK Power Networks supply. Service cables shown only where known.
 6. All cables must be marked on being laid unless proved otherwise by UK Power Networks supply. Service cables shown only where known.
 7. All cables must be marked on being laid unless proved otherwise by UK Power Networks supply. Service cables shown only where known.
 8. All cables must be marked on being laid unless proved otherwise by UK Power Networks supply. Service cables shown only where known.
 9. Please be aware that double-cable/fuse behaviour in other areas of licensed electricity distribution systems may be present and it is your responsibility to identify their location.

1. UK Power Networks does not warrant that the information provided to you is correct. You rely upon it at your own risk.
 2. UK Power Networks does not exclude or limit its liability if it causes the death of any person or causes personal injury to a person whose death or personal injury is caused by negligence (including negligence) for breach of statutory duty or otherwise for any loss, damage, cost, claim, demands or expenses that you or any third party may suffer or incur as a result of using the information provided to you.
 3. You are responsible for ensuring that you have the necessary permissions to carry out the work contemplated by this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and you must provide it to the sender of the letter.
 4. You are responsible for ensuring that you have the necessary permissions to carry out the work contemplated by this plan. If you do not accept and/or do not understand the terms of use set out in the covering letter you must not use the plan and you must provide it to the sender of the letter.
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Contract UK Power Networks on 0800 058 5885 for details of HV cable routes before commencing work.

Grid Ref: TO 80823 67822
 Scale: 1:5000
 (When Plotted at A3)
 Plotted on: 19/07/2016
 Plotted by: Burke, Robert

Plan Provision
 CHECK IT OUT BEFORE YOU GO IN OR OUT
 CALL 0800 058 5885
 EMERGENCY - If you struggle a cable or the
 Phone 0800 058 5100 (24hrs) URGENT!

UK Power Networks
 ALWAYS LOOK UP BEFORE YOU
 3M+ To Help Outdoors with 058

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Your ref:

Our ref: 44538/2002/ASH/TW/CD/MW



6 September 2018

Southern Gas Networks
St. Lawrence House
Station Approach
Horley
Surrey
RH6 9HJ

Peter Brett Associates LLP
Calgarth House
39-41 Bank Street
Ashford TN23 1DQ
T: +44 (0)123 365 1740
E: mwillson@peterbrett.com

Sent by email to ndsouth@sgn.co.uk

Dear Sirs,

RE: PUMP FARM AND BLOORS FARM, PUMP LANE, RAINHAM, KENT ME8

Further to your budget estimate produced in July 2016 to provide new connections to serve a mixed used development at Pump Farm in Rainham (your ref. 1185125), please find enclosed a site location and a revised indicative Masterplan for a larger mixed use scheme on land at Pump Farm and the adjacent Bloors Farm. The revised proposed build schedule comprises approximately 1,250 residential units, a retirement village (3.44ha), a 2/3 form entry primary school (3ha) and a village centre of approximately 0.7ha comprising 3 or 4 retail and commercial units.

We anticipate the total ADMD electricity demand for the site as follows: -

Building Type	No. of Units / Approximate Area	Peak Gas Demand (kW)	Diversified Annual Demand (kWh)
Residential	1,250 units	8,303.6	13,243,750
Retirement Village	30,352m ²	728.4	1,329,418
Primary School	34,898m ²	476.0	525,000
Commercial (retail/surgery/pub)	7,484m ²	306.0	557,888
	TOTAL	9,814.0	15,656,056

Based on the information provided could you please advise whether there is sufficient capacity within your existing network to serve the proposed development, and if not, the capacity that is available before off-site reinforcement may be required.

Could you please also provide us with a budget estimate to serve this development with gas, including costs for any anticipated diversionary works that may be required and any potential off-site reinforcement.

We look forward to receiving your estimate at your earliest opportunity; however, should you require any further information please do not hesitate to contact me.

Yours faithfully,

Michelle Willson
Senior Technician
EngTech MICE

For and on behalf of **PETER BRETT ASSOCIATES LLP**

CC: Network Alterations (by email to diversionssouth@sgn.co.uk) Previous C3 SGN reference: D986

J:\44538 - CD - Pump & Bloors Farm\BRIEF 2002 - Util - incld Fou\CORRESPONDENCE\SGN Budget Estimate Request.docx

Registered Office: Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN. UK. T: +44 (0)118 950 0761 F: +44 (0)118 959 7498
Peter Brett Associates LLP is a limited liability partnership and is registered in England and Wales with registered number OC334398.
A list of members' names is open to inspection at our registered office. Brett Consulting Limited is wholly owned by Peter Brett Associates LLP.
Registered number: 07765026.

Your Ref:
Our Ref: D1001
Date: 17/10/2018
Direct line: 01689 881547
E-mail: nick.saville@sgn.co.uk



SGN

Your gas. Our network.

2 Leasons Hill
Orpington
Kent
BR5 2TN

Telephone: 01689 881300

PBA

Dear Michelle

Re: Pump Farm, Pump Lane, Rainham, Kent, ME8

Further to your recent enquiry, I am pleased to advise you that the outline estimated C3 budget cost to replace the gas mains in question would be in the order of £59,000

The indicative cost is exclusive of VAT and any allowances that may be applicable I attach a plan showing the outline design of the scheme. The estimate is provided as a guide only and the work will be charged on an "actual cost" basis. The actual cost, therefore, may be greater, or less, than the estimate.

While the costs included are a reasonable indication, given the information supplied at this time, they may be liable for change when more detailed engineering information becomes available.

Please note, costs for traffic diversions have not been included. No allowances have been made for the procurement of Wayleaves/Easements or for Stopping Up Orders.

Site visits have not been carried out in support of this design, which has been carried out solely as a desktop exercise. If you are aware of any specific site conditions that may materially affect the cost of the scheme then I would be grateful if you would let me know by return.

Should you decide to take out trial holes to determine the line and depth of the gas mains may I ask you to contact our Plant Protection Office on 0800 912 1722 who can send a Plant Protection Officer to site to give you guidance and assistance.

I enclose for your use our leaflets "Dig Safely & Know what's below" giving guidance to your staff when working in the vicinity of gas apparatus.

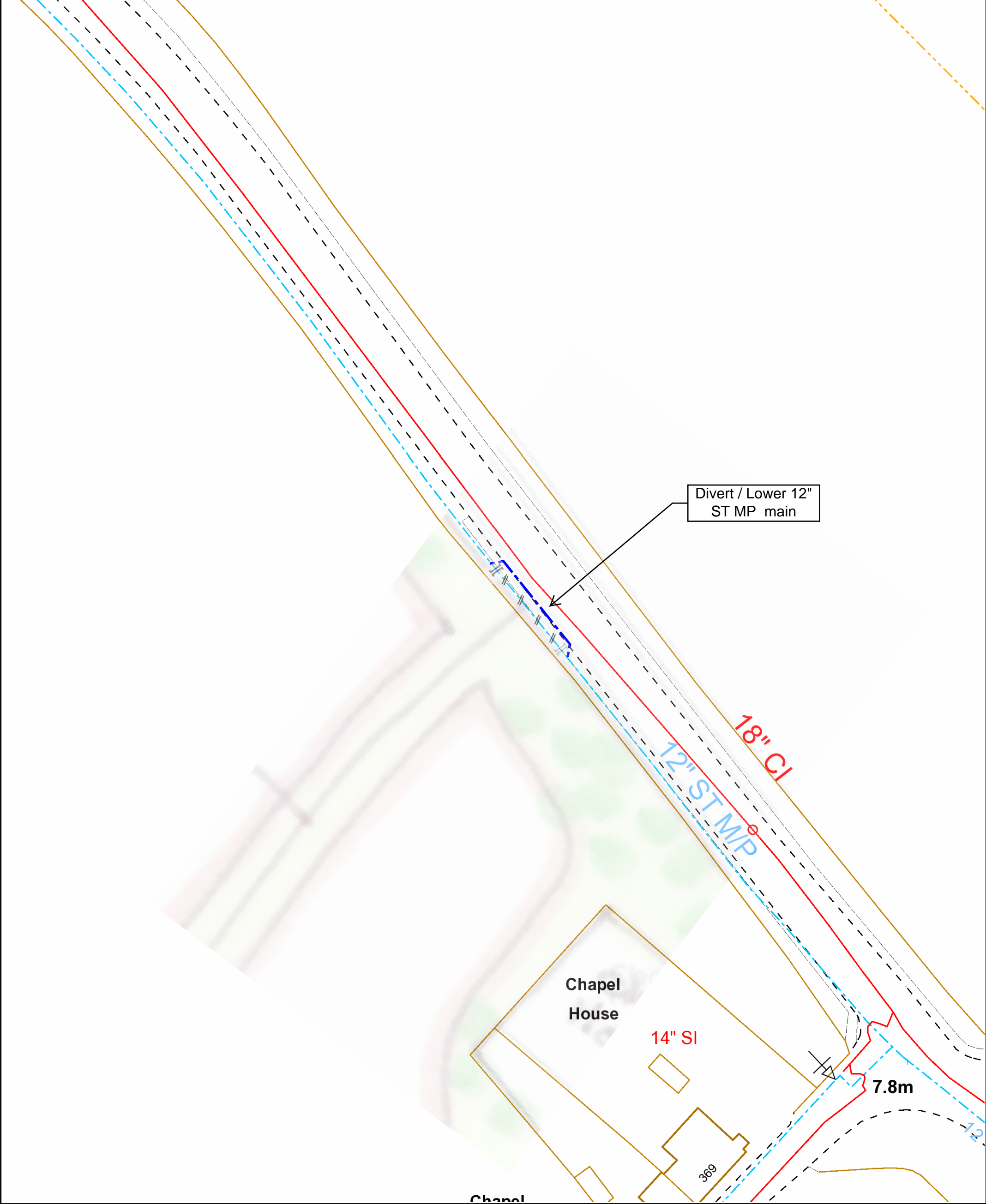
I trust this is sufficient for your immediate requirements. Should you require any further information or a detailed C4 Estimate, please do not hesitate to contact this office.

Finally, I would ask that you notify me in due course if you decide not to proceed with the scheme, or you carry out a redesign such that SGN's mains are no longer likely to be affected.

Yours sincerely,

Network Planning
SGN

WARNING! This area contains Gas Mains operating at High Pressure in excess of 7 bar. Before excavating in the area contact the local network office. There are Area of Interest layers switched off. There may be Area of Interest polygons in this view which you cannot see.



SCALE : 1 : 500
 USER ID : NS67639
 DATE : 02/10/2018
 INTERNAL USE ONLY
 GRID REFERENCE :
 E581161,N167800,TQ 81 67


LP MAINS	
MP MAINS	
IP MAINS	
LHP MAINS	
HISTORY DATA	
LAs	
GTs	
SSSIs	

Some examples of Plant Items

Valve		Syphon		Depth of Cover		Diameter Change		Material Change	
-------	--	--------	--	----------------	--	-----------------	--	-----------------	--

This plan shows the location of those pipes owned by Scotia Gas Networks (SGN) by virtue of being a licensed Gas Transporter (GT). Gas pipes owned by other GTs or third parties may also be present in this area but are not shown on this plan. Information with regard to such pipes should be obtained from the relevant owners. No warranties are given with regard to the accuracy of the information shown on this plan. Service pipes, valves, siphons, sub-connections etc are not shown but their presence should be anticipated. You should be aware that a small percentage of our pipes/assets may be undergoing review and will temporarily be highlighted in yellow. If your proposed works are close to one of these pipes, you should contact the SGN Plant Protection Team on 08450703497 for advice. No liability of any kind whatsoever is accepted by SGN or its agents, servants or sub-contractors for any error or omission contained herein. Safe digging practices, in accordance with HS (G)47, must be used to verify and establish the actual position of mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that plant location information is provided to all persons

Intranet WebGIS 2.1
 Medway Area
 This plan is reproduced from or based on the OS map by Scotia Gas Networks plc, with the sanction of the controller of HM Stationery Office. Crown Copyright Reserved.



10 October 2018

Our Ref: 1692413

Your Ref: 44538/2002/ASH/TW/CD/MW

SGN Connections
St Lawrence House
Station Approach
Horley
Surrey
RH6 9HJ

Customer Service **0800 912 1700***

Michelle Willson
Calgarth House
39-41
Bank Street
Ashford
Kent
TN23 1DQ

Dear Michelle Willson

New connection at Development at Pump Farm and Bloors Farm, Pump Lane, Rainham, Gillingham, Kent, ME8 7TJ

Thank you for choosing us to give you a budget indication for a new connection at the above site, and please find our estimate below.

Work to be carried out

SGN Connections to install appropriately sized gas infrastructure to a suitable location(s). SGN Connections to carry out all the necessary excavation and reinstatement work in public. Customer to carry out all the necessary excavation and reinstatement work in private. No meter/meter housing work is included.

Your budget indication is £ 892600.00(inc VAT)

Please note that this figure is a budget indication only, it is based upon an hourly load of 84,085.70 kW and an annual quantity of 28,162,306.00 kWh along with any other information you've given us, and doesn't represent an offer to carry out the work.

We may need you to make a contribution towards the cost of any necessary reinforcement work. Once you've asked us for a firm quote, we'll work out what we'll need to do and let you know how much it will cost.

Please note that this budget indication doesn't allow for any diversion of our existing infrastructure if we find it's necessary. You can get further detail on this by calling our customer service line on the number at the top of this page and asking to speak with the Mains Diversions and Isolations team.

If you have any further questions, please feel free to contact me by calling our customer service team on the number at the top of this letter and asking to speak with the undersigned.

Yours sincerely



SGN
Connections

Design Assistant

* All calls are recorded and may be monitored



Our Ref: 13668013 Your Ref: 44538/2002

Thursday, 06 September 2018

Michelle Willson
Calgarth House 39-41 Bank Street
Ashford
Kent
TN23 1DQ

Dear Michelle Willson

Thank you for your enquiry dated Thursday, 06 September 2018

Please find an extract from our mains records for your proposed work area, any SGN assets are described in the map legend.

There are high pressure pipelines in the vicinity of your proposed works. We have sent a copy of your correspondence to our local engineer who will be in contact within the next ten working days. For your safety, it is essential that no work or crossing of this high pressure pipeline is carried out until a detailed consultation has taken place.

This mains record only shows the pipes owned by SGN in our role as a Licensed Gas Transporter (GT). Please note that privately owned gas pipes or ones owned by other GTs may be present in this area and information regarding those pipes needs to be requested from the owners. If we know of any other pipes in the area we will note them on the plans as a shaded area and/or a series of x's.

The information shown on this plan is given without obligation or warranty and the accuracy cannot be guaranteed. Service pipes, valves, siphons, stub connections etc. are not shown but their presence should be anticipated. Your attention is drawn to the information and disclaimer on these plans. The information included on the plan is only valid for 28 days.

Please note there may be additional gas pipes (low pressure, medium pressure, etc.) shown on the mains record. There should be no mechanical excavations taking place above or near the gas main. You should confirm the exact position of the main using hand dug trial holes.

A colour copy of these plans and the gas safety advice booklet enclosed should be passed to the senior person on site in order to prevent damage to our plant and potential direct or consequential costs to your organisation.

Safe digging practices in accordance with HSE publication HSG47 "Avoiding Danger from Underground Services" must be used to verify and establish the actual position of the mains, pipes, services and other apparatus on site before any mechanical plant is used. It is your responsibility to ensure that this information is provided to all relevant people (direct labour or contractors) working for you on or near gas pipes.

It must be stressed that both direct and consequential damage to gas plant can be dangerous for your employees and the general public and repairs to any such damage will incur a charge. Your works should be carried out in such a manner that we are able to gain access to our apparatus throughout the duration of your operations.



For Planning applications – There are high pressure pipelines in the vicinity of your proposed work area. SGN formally object to this planning application until such time as a detail consultation has taken place.

If you require any further information please do not hesitate to contact us.

Yours sincerely,

The Safety Admin Team

For more information, visit our Dig Safely pages on sgn.co.uk

Tel: 0800 912 1722



Application for Fresh Water (Water Mains) Capacity Check

325050 A-DEVSRV-
WWCP



SUCCESSFULLY SUBMITTED YOUR FORM

Your Fresh Water Capacity Check application

DS_CC_FW-104278

has been successfully submitted on 07/09/2018 01:58 PM.

You can track your application status through 'My Dashboard'

A

Guidance Notes:

Water Mains Application for Capacity Check

Southern Water provides an optional Capacity Check service to assist developers in identifying possible constraints that may be associated with servicing a development site. The Capacity Check can assist developers in understanding the potential costs and timescales involved in servicing a site prior to land acquisition or the submission of a planning application. The results of the Capacity Checks are for information only and should not be regarded as an approval or rejection of your proposals, nor should the results be used as a basis for design.

Please also note that Southern Water is currently consulting on the **New connections charging** as directed by Ofwat. Please read through these documents as they may affect your development site in the future.

Level 1 – Preliminary Fresh Water Capacity Check

This is a simple check that will identify whether the required capacity is available adjacent to or close to the proposed development. Should capacity not be available, you will be provided with an indication of the nearest point at which capacity is available. It should be noted that a charge will be made for any repeat enquiries.

Should lack of capacity be identified a Level 2 Indicative Hydraulic Assessment can be considered.

We will endeavour to provide you with a written reply within 15 working days of receipt of a complete application. If we are unable to do this you will be contacted and given the reason why.

Important Note: *The results of the Level 1 Preliminary Capacity Check do not necessarily provide an identified solution for servicing the proposed development site. The Level 1 Check is aimed at simply providing an indication of whether capacity is available. Please refer to the application form for the fee required. This service is only available for developments which are less than 500 units. The impact of a development greater than 500 units is substantial and the more extensive Level 2 Indicative Hydraulic Assessment (see next section) is required. Should you wish to take advantage of this service, please complete the Capacity Check Application Form and submit together with the appropriate fees and drawings.*

Level 2 – Indicative Hydraulic Assessment

This is a more in-depth service. In addition to identifying the nearest point of capacity, (as per the Level 1 Preliminary Capacity Check) this service will identify an indicative hydraulic assessment for servicing the site.

We will endeavour to provide you with a detailed report within 25 working days of receipt of a complete application. If we are unable to do this you will be contacted and given the reason why.

Please refer to the application form for the fee required. Should you wish to take advantage of this service, please complete the Capacity Check Application Form and submit together with the appropriate fees and drawings. *(If you have previously completed a Level 1 Fresh Water Capacity Check, a new application form is not required for this site).*

Important Note: *Level 1 and Level 2 Capacity Checks do not provide indicative costs of the works required to service the site, nor of the construction works required.*

The contents of the report are for direct use only by the applicant and are to be kept private and confidential. They may only be disclosed to third parties with the written approval of Southern Water. Such third parties to have no subsequent implied or other right to disclose the contents and information to any other parties.

BType of capacity check required:

Please indicate the type of capacity check required (refer to guidance notes for explanations) *

Level 1

Preliminary Capacity Check

Level 2

Indicative Hydraulic Assessment

CApplicant Details: **Name:(Company name if appropriate) *****Contact name:(if different)****Address: *****Postcode: *** **Contact details:****Daytime phone number: *****Alternate Contact Number:****Fax no:****Email: ***

Please [click here](#) to read our privacy statement.

D

Site Details: 

Site/Project name: *

Pump Farm and Bloors Farm

Postcode: * 

ME8 7AT

Your water is supplied by **Southern Water**.Please check your site is in the Southern Water supply area: <https://www.southernwater.co.uk/your-area>

Site address: *

Lower Rainham Road
Rainham
Kent

Please indicate type of development: *



Residential



Commercial



Industrial

Has planning permission been applied for? *



Yes



No

Please [click here](#) to read our privacy statement.

E

Development Details: 

Building Area: *

158480.000

m²Top of building level (mAOD): * 

20.000

metres

Datum at Lowest point on site (mAOD): * 

10

metres

Anticipated peak flow rate: * 

35.70

l/s

Anticipated continuous flow rate: *

7.5

l/s

Details of preferred point of connection: *

Please advise on most appropriate point(s) of connection

If needing a non-standard connection (eg school, hotel, nursing home) please provide information on proposed fitting:

Retirement village - 1 x 63mm connection

2/3 form entry primary school 1 x 90mm connection

Do you require a fire supply? *




Yes



No

F

Existing Land Use: 

Does the site have an existing connection to the water mains? *



Yes



No

Please provide brief description of existing land use: *

Greenfield agricultural


G

Proposed Land Use: 

Please provide brief description of proposed land use: *

1250 residential units over an area of 323,969m², a 2/3 form entry primary school (30,351m²), a retirement village (34,398m²), and 3 or 4 small commercial units (i.e. surgery, shop, pub) over an area of 7484m².

H

Required Documents: 

- **Area Map (National Grid reference of site)**
- **Detailed Site Layout (National Grid reference of site)**

Checklist:

- Site boundary clearly shown
- Roads clearly shown
- Adjacent buildings clearly shown
- Private pipe run to Southern Water network clearly shown

Please Note:

- Maximum file limit is 50MB
- Allowed file types are DOCX, DOC, PDF, XLS, XLSX, JPG, JPEG, BMP, PNG, DWG (auto cad), DXF (auto cad), DGN (microstation), PRP (microstation), PRW (microstation)

Documents already uploaded:



180905-11047.FE.SK002 Rev A - Masterplan draft 2.pdf



Land Ownership Plan.pdf



Pump Farm and Bloors Farm Location Plan.pdf

I

Payments & Charges: 

Level two indicative hydraulic assessment *

Water Supply

No of units Cost (£) including 20% VAT



0 to 50

256.00

<input type="radio"/>	51 to 250	766.00
<input type="radio"/>	251 to 500	1020.00
<input checked="" type="radio"/>	>500	1276.00

Terms and Conditions

Failure to include any of the requested information will be deemed as an incomplete application and may result in this application being delayed/returned. This application DOES NOT mean approval has been granted. No work should commence until written approval has been given by Southern Water.

The contents of the report are for direct use only by the applicant and are to be kept private and confidential. They may only be disclosed to third parties with the written approval of Southern Water. Such third parties to have no subsequent implied or other right to disclose the contents and information to any other parties.

Amount to pay	
Water Supply	£ 1063.33
VAT (20%)	£ 212.67
Total Fee	£ 1276.00

Do you require a VAT receipt? * Yes No

Preferred payment method: * **Credit/Debit Card**

Credit/Debit Card	BACS	Cheque	
Application number: DS_CC_FW-104278			Payment Accepted
Amount to pay: £ 1276.00			

J Checklists And Declaration:

Please provide the following where applicable and tick the box if enclosed:

Drawings

I confirm that to the best of my knowledge the information I have supplied is complete and correct.

Signature: mwillson@peterbrett.com

Full Name: Peter Brett Associates

Date: 07/09/2018 13:58:22

Position: * Senior Technician



Ms Michelle Willson
Peter Brett Associates
Calgarth House
39-41 Bank Street
Ashford
Kent
TN23 1DQ

Developer Services
Southern Water
Sparrowgrove House
Sparrowgrove
Otterbourne
Hampshire
SO21 2SW

Tel: **0330 303 0119**

Email: developerservices@southernwater.co.uk

Our Ref:

CC-KENT-00561

Date:

15th November 2018

Site: Pump Farm & Bloors Farm, Lower Rainham Road, Rainham, ME8 7AT

Dear Ms Willson,

Further to your recent application for a level 2 water capacity check enquiry regarding the above development site.

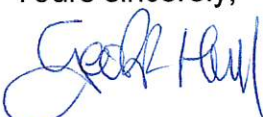
Please find enclosed the report which details the extent of works required in order for your proposed development site to be accommodated within the local water infrastructure. It should be noted that the report is only a hydraulic solution to provide capacity for the proposed development site. A formal connection application is required to be completed and approved by Southern Water Services.

Further details regarding Water connection and requisition forms, can be found on Southern Water's website:

<https://developerservices.southernwater.co.uk/>

Should you require any further information, please contact us at the above mentioned phone number or address.

Yours sincerely,



Geoff Hall

Developer services

Please note: -

The information provided above does not grant approval for any designs/drawings submitted for the capacity analysis. The results quoted above are only valid for 12 months from the date of issue of this letter.



STUDY INTO THE OPTIONS FOR
WATER SUPPLY PROVISION AT

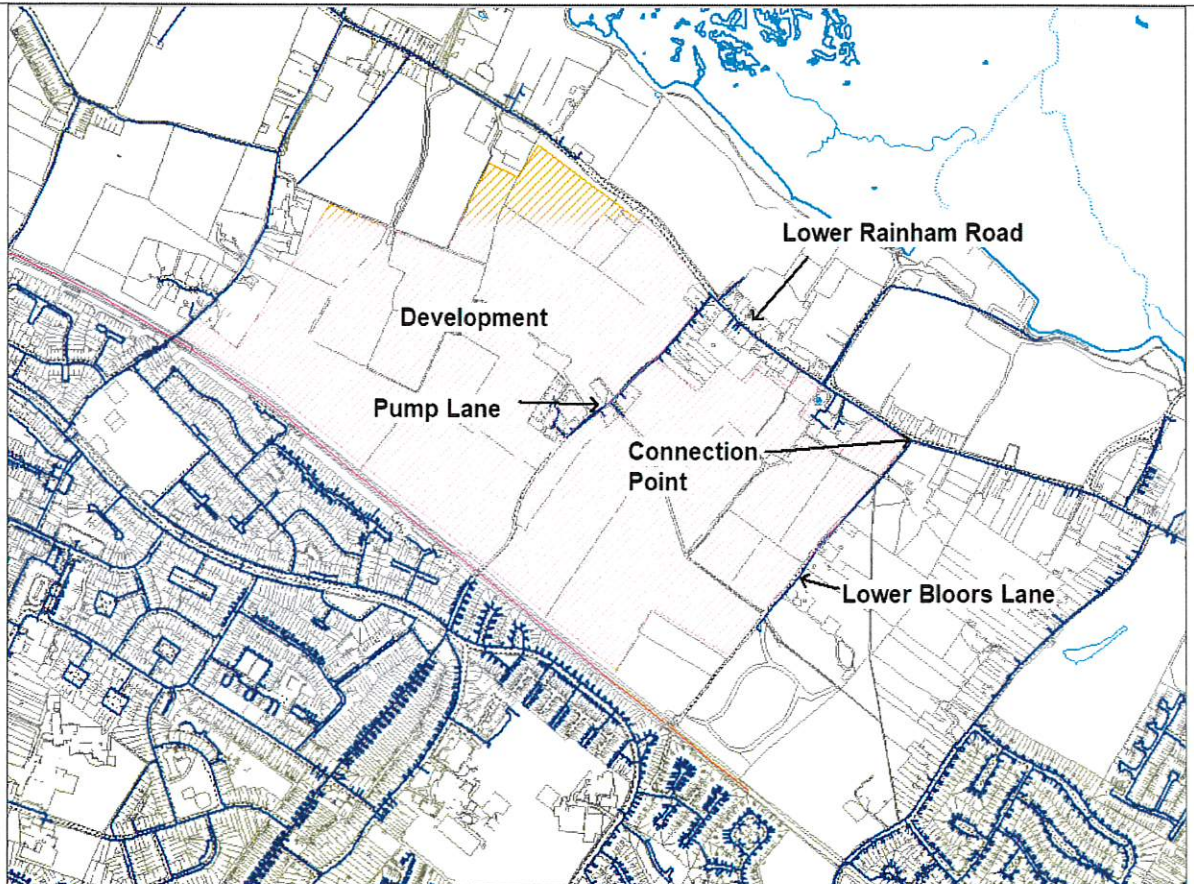
Pump Farm & Bloors Farm, Lower Rainham Road,
Rainham, ME8 7AT

15th November 2018

REQUESTED:
Michelle Willson
Peter Brett Associates

1. GENERAL DETAILS

DETS Ref	CC-KENT-00561
Location	Pump Farm & Bloors Farm, Lower Rainham Road, Rainham, ME8 7AT
Description	Residential Properties (1205) Retirement Village (100 residents assumed) Primary School (250 pupils assumed) Commercial Units (7483m ²)
Demand Modelled	Water supply demand (Requested) – 14.69 l/s Fire Demand tested – 20 l/s



2. RESULTS/ CONCLUSIONS/RECOMMENDATIONS

Having modelled this development in isolation using an estimated peak demand of 14.69 l/s, the simulations indicate that there are significant pressure issues within the network. This indicates that the system does not have sufficient spare capacity to supply the proposed development without network reinforcement

Application of the recommended firefighting flow of 20l/s causes significant pressure issues across the network, both before and after the application of the new development demand, indicating that the network does not have sufficient capacity to deliver such flows.

Therefore, subject to approval from Operations, it is concluded that this development may only proceed using a connection to the identified point of connection in Lower Rainham Road, following the installation of the recommended reinforcement, as detailed in Section 3.

3. RECOMMENDATIONS

The table below shows the results from the modelling that was carried out. The results show that the system does not have sufficient capacity to support the new demand of 14.69 l/s without network reinforcement.

DMA	Demand Scenario	Min. pressure Available at Connection Point 4" CI main in Lower Rainham Road (Pipe Asset ID 43328559, Grid Ref. X: 581616.3, Y: 167446.24, Elevation 9m AOD)
RM12	Before Additional Demand	36.8
	Before Additional Demand with Fire Demand (20 l/s)	-141.6
	After Additional Demand (14.69 l/s)	-60.7
	After Additional Demand with Fire Demand (14.69 l/s + 20 l/s)	-477.4

Table 1 - Modelling results at Point of Connection

The modelled minimum pressure drops from 36.8m to -60.7m after the development demand of 14.69 l/s has been applied at the connection point. The pressure drop at this point not within the acceptable limits.

Elsewhere in the network the models results indicate significant pressure issues. This indicates that the system does not have sufficient capacity to support the new demand of 14.69 l/s without network enhancement.

Application of the recommended firefighting flow of 20 l/s causes significant pressure issues across the network, both before and after the application of the new development demand, indicating that the network does not have sufficient capacity to deliver such flows.

To resolve the network capacity issues and allow the development demand to have no impact on pressures the following reinforcements are recommended and are shown in Figures 2 and 3:

- Reinforce the existing 6" CI main and meter and PRV bypass in Streetfield Road with 100m length of 225mm diameter PE, from X: 581845.55, Y: 166386.52 to X: 581876.11, Y: 166480.95.
- Upsize the inlet PRV (Asset Ref: 5284022) in Streetfield Road from 80mm to 150mm and optimise the outlet pressure setting.
- Reinforce the 6" CI main in Childscroft Road with 358m length of 180mm diameter PE, from X: 581876.11, Y: 166480.95 to X: 581600.72, Y: 166695.52.
- Reinforce the 3" and 4" CI main in Berengrave Lane with 775m length of 180mm diameter PE, from X: 581600.72, Y: 166695.52 to X: 582098.79, Y: 167281.34.

- Reinforce the 4" CI main in Lower Rainham Road with 512m length of 180mm diameter PE, from X: 582098.79, Y: 167281.34 to X: 581616.3, Y: 167446.24.

The results of the reinforcement are shown in Table 2. Application of the recommended firefighting flow of 20 l/s would no longer cause significant pressure issues.

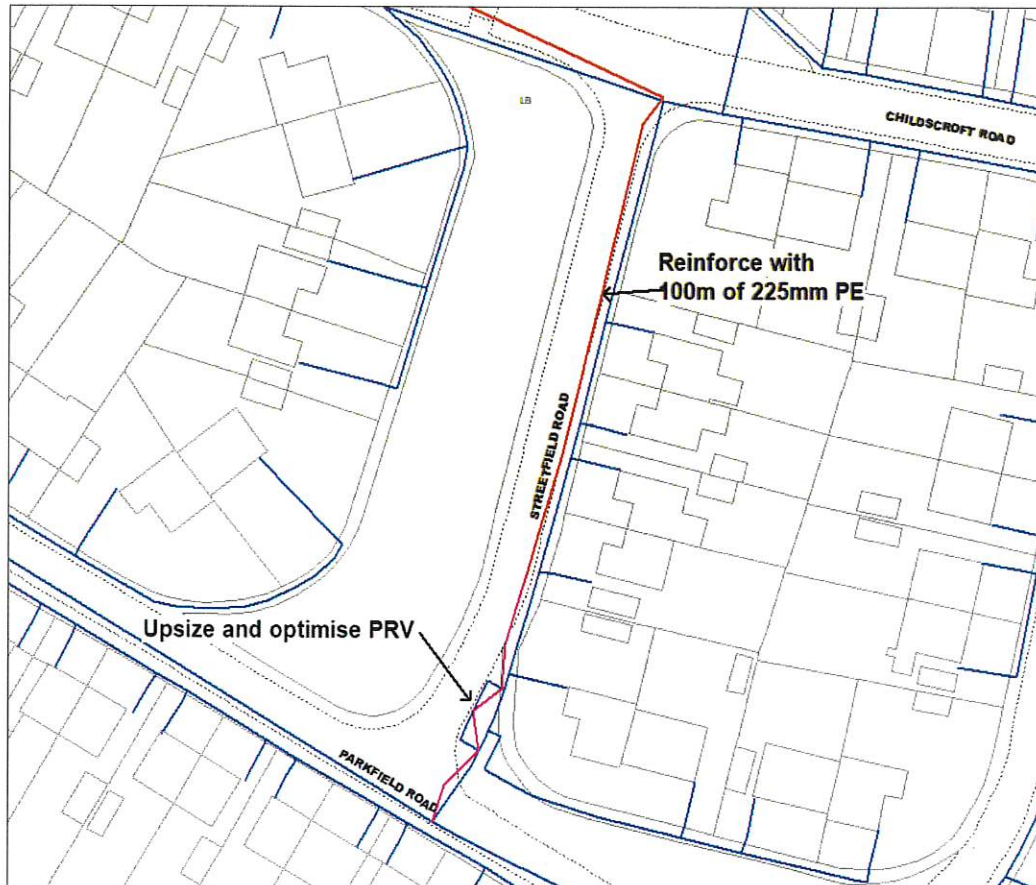


Figure 2 – Proposed Reinforcement

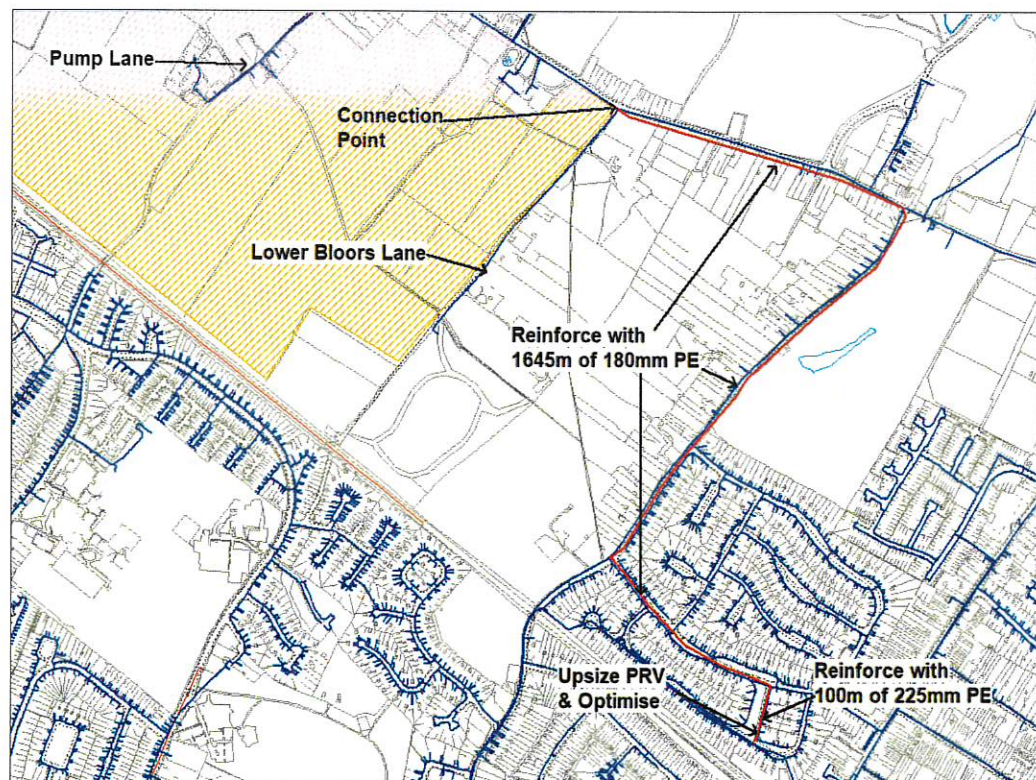


Figure 3 – Proposed Reinforcement

DMA	Demand Scenario	Min. pressure Available at Connection Point 4" CI main in Lower Rainham Road (Pipe Asset ID 43328559, Grid Ref. X: 581616.3, Y: 167446.24, Elevation 9m AOD)	
		No Action	With Reinforcement
RM12	Before Additional Demand	36.8	50
	After Additional Demand (14.69 l/s)	-60.7	36.9
	With Fire Demand (14.69 l/s + 20 l/s)	-477.4	24.2

Table 2 - Modelling results at Point of Connection before and after Reinforcement



SUCCESSFULLY SUBMITTED YOUR FORM

Your Feasibility Study application

DS_CC_FS-105142

has been successfully submitted on 17/10/2018 11:17 AM.

You can track your application status through 'My Dashboard'

A

Guidance Notes:

1. Scope of Feasibility Study

A Feasibility Study can be carried out independently to provide more detailed analysis than a Pre-development enquiry.

The process is similar to Stage 1 (the SL1 Stage) of the S98 Application and as such it may be possible to utilise the results as part of the S98 Process, should the Applicant choose to progress to this stage.

In this case a reduction in fees and timescales for the S98 may be achieved.

The Feasibility study does not however provide a preliminary budget estimate nor a Desktop Environmental 3rd Party Appraisal.

Please also note that Southern Water is currently consulting on the [New connections charging](#) as directed by Ofwat. Please read through these documents as they may affect your development site in the future.

2. Process and cost

We will undertake the initial feasibility study for a non-returnable fee as per the application form.

Complete the application in order to provide the necessary information upon which the study will be based.

Any subsequent requests for additional or alternative routes will be subject to further charges, as will:

- Site investigation including environmental constraints.
- Flow Surveys and model verification if necessary.

The study will be prepared and forwarded to you within 12 weeks of receipt of your payment and complete application form and relevant documentation.

Where the study is of development to serve offices or industrial premises etc, details must be provided of the likely daily flows or the estimated number of staff occupying the premises.

In some cases, it can be a complex technical issue to identify the best means of draining a site. In these circumstances, we may wish to employ consulting engineers in order to carry out the feasibility study and provide a reasonably accurate study assessment. If this situation arises, you will be provided with an estimate of the necessary fees and will be asked to provide an undertaking to meet these costs.

Southern Water will initially select the routing and outfall arrangements etc. for the provisional new network. Up to 3 options can then be considered in consultation with the applicant and/or their authorised Agent/Consultant.

If existing downstream public sewers need to be improved in order for them to accept the proposed flows from your site, then the necessary improvements to those existing public sewers will also form part of the feasibility study.

Important notes to bear in mind

The request for a feasibility study does not commit the applicants to requisition works under the S98 process.

B

Applicant Details:

Name:(Company name if appropriate) *

AC Goatham & Son

Contact name:(if different)

Michelle Hawkett

Address: *

c/o Peter Brett Associates
Unit 10
Connect 38
1 Dover Place
Ashford

Postcode: * 

TN23 1FB

Contact details:

Daytime phone number: *

01233 527250

Alternate Contact Number:

Fax no:

Email: *

mwillson@peterbrett.com

Please [click here](#) to read our privacy statement.

C

Site Details:

Is the applicant the present owner of the site? *

Yes No

Site/Project name: *

Pump Farm and Bloors Farm

Local authority: *

Medway

Postcode: * 

ME8 7AT

Southern Water provides sewerage services where you are connected to the sewer.

Please check your site is in the Southern Water catchment area: <https://www.southernwater.co.uk/your-area>

Site address: *

Pump Farm and Bloors Farm
Lower Rainham Road
Rainham
Kent

Please provide planning application details:

Ref. No:




Date: *

03/12/2018

Please indicate type of premises: *

Domestic Commercial Industrial

Please provide details of the building programme if available: *

Phase	Type of unit	No.	First occupation Date	Rate of completion	
1	Residential	1250	2020/01/01	TBC	
1	School	1	2020/01/01	TBC	
1	Care Home	80	2020/01/01	TBC	
1	Commercial	4	2020/01/01	TBC	

Do you wish to discharge any non-domestic effluent?

Yes No

If a surface water sewer is required, give details of the impermeable areas to be drained (ha): *

24


Domestic (roofs, yards and driveways)

Highways and car parks

Other (Please Specify):

Please [click here](#) to read our privacy statement.

D

Required Documents: 

- Drawings and discharge calculations for the proposed on-site drainage.
- A copy of the location plan with the development to be drained outlined in green (1:1250 scale preferred)
- A copy of any conditions attached to the Planning Approval which affect the drainage of the site


Checklist:


- Site boundary clearly shown
- Roads clearly shown
- Adjacent buildings clearly shown
- Private pipe run to Southern Water network clearly shown


Please Note:


- Maximum file limit is 50MB
- Allowed file types are DOCX, DOC, PDF, XLS, XLSX, JPG, JPEG, BMP, PNG, DWG (auto cad), DXF (auto cad), DGN (microstation), PRP (microstation), PRW (microstation)

Documents already uploaded:

 **11047.FE.SK003 - Masterplan draft 3.pdf**

 **Foul Flow Drainage Calculations.pdf**

 **Site Location.pdf**

E **Payments & Charges:** 

Terms and Conditions

Failure to include any of the requested information will be deemed as an incomplete application and may result in this application being delayed/returned. This application DOES NOT mean approval has been granted. No work should commence until written approval has been given by Southern Water.

The contents of the report are for direct use only by the applicant and are to be kept private and confidential. They may only be disclosed to third parties with the written approval of Southern Water. Such third parties to have no subsequent implied or other right to disclose the contents and information to any other parties.

Amount to pay	
Feasibility Study	£3600.00
VAT (20%)	£720.00
Total Fee	£ 4320.00

Do you require a VAT receipt?

Yes No

Preferred payment method:

Credit/Debit Card	BACS	Cheque
--------------------------	-------------	---------------

Please make cheques payable to **Southern Water Services Ltd.**
Your printed slip and cheque should then be sent to:

Miscellaneous Income
Southern Water
PO Box 4056
Worthing
BN13 3XX

Application Number: DS_CC_FS-105142 **Submitted By:** Peter Brett Associates

Site Details:

Postcode:	Address:
ME8 7AT	Pump Farm and Bloors Farm Lower Rainham Road Rainham Kent

Cheque Number: *

Please click on 'Print Preview' and confirm your cheque number is on the preview slip.
Please print the slip and attach the cheque after writing the application number on the back in case they are separated.

Please provide the following where applicable and tick the box if enclosed:

- A copy of the location plan with the development to be drained outlined in green (1:1250 scale preferred)
- A copy of any conditions attached to the Planning Approval which affect the drainage of the site
- Details of future development phases
- Drawings and discharge calculations for the proposed on-site drainage. *Where on-site drainage has not yet been designed, please indicate on a plan the proposed location, invert level and pipe diameter of the point of outfall*

I/we undertake to provide such additional information as may be required by Southern Water Services Limited or its agents to enable this to be prepared.

I/we understand that the submission of this form is to be treated as a preliminary inquiry and does not commit me/us/the agent or Southern Water Services Limited in any way.

I/we confirm that the land as shown outlined in green on the attached plan is/will be in my/our/the applicant's ownership and that the sewers/drains to which the sewers should be connected are/will be owned or constructed by me/us/the applicant.

Signature: mwillson@peterbrett.com

Full Name: Peter Brett Associates

Date: 17/10/2018 11:17:42

Position: * Senior Technician

Your ref:

Our ref: 44538/2004/ASH/CD/MW

18 October 2018

Openreach – Network Alterations
2nd Floor, Telephone Exchange
Green Street
Gillingham
Kent
ME7 5TH

Sent by email to networkalterationsuk@openreach.co.uk

Dear Sirs,

RE: PUMP FARM AND BLOORS FARM, PUMP LANE, RAINHAM, KENT ME8

Please find enclosed a site location and an indicative Masterplan for a mixed use scheme on land at Pump Farm and the adjacent Bloors Farm in Lower Rainham, Kent. The proposed build schedule comprises approximately 1,250 residential units, a care home (up to 80 beds), a 2/3 form entry primary school (3ha) and a village centre of approximately 0.7ha comprising 3 or 4 retail and commercial units.

Based on the information and plans provided could you please provide us with a budget estimate for any potential diversionary works that may be required to accommodate the proposed development.

We look forward to receiving your estimate at your earliest opportunity; however, should you require any further information please do not hesitate to contact me.

Yours faithfully,



Michelle Hawkett *EngTech MICE*
Senior Technician
For and on behalf of
PETER BRETT ASSOCIATES LLP

Enc.



PETER BRETT ASSOCIATES

Unit 10

Connect 38

1 Dover Place

Ashford

TN23 1FB

Our Ref: D18/808189/SW

Your Ref:

7th November 2018

FAO: Ms Michelle Hawkett

Dear Sir/Madam

PUMP FARM AND BLOORS FARM, LOWER RAINHAM , KENT

Thank you for your enquiry forwarded from our Openreach Newsites office.

An initial investigation of the above site proposals has been completed, and a detailed survey is now required to confirm that anticipated alterations to Openreach apparatus are the most cost effective means of protecting our network. Your proposals have been registered as works applicable to The Electronic Communications Code ("the 2017 Code"), Schedule 3A of the Communications Act 2003 and in line with Paragraph 16, Schedule 2, Transitional Provisions of the Digital Economy Act 2017

The estimated cost to provide a detailed estimate and specification for this work is **£2553.00** (inclusive of VAT), which we will require in advance although the actual costs will be charged, whether more or less than this.

Because we consider a detailed investigation is essential to ensure our network is protected, we will contact you within 30 working days if payment has not been received unless you inform us that your proposals or circumstances have changed.

After receipt of payment, we will contact you where necessary and if there is no alternative to the alterations work, we will provide a single detailed estimate of the costs and a specification. However, if your proposals are not suitably detailed, then we may agree to provide a budget costing in advance of this. We would normally expect to complete this within 25 working days when we will also inform you of the next steps. If our expense is likely to exceed the advance payment you have made, particularly if additional or alternative costings are required, then further payments will be requested from you.

After provision of the final detailed estimate and your agreement to the associated specification, we will review our expenditure and provide a final invoice to settle the costs for this work before moving on to the next stage of the project.

If you have not already done so, please ensure you include preferred contact details, detailed plans and any supporting information for your proposals along with the advance payment.

See over for payment details.

Please note that we offer a site visit service to locate and mark the position of Openreach apparatus within your work area. To arrange a site visit from a Plant Protection Officer email cbyd@openreach.co.uk

Openreach provides a "Maps-by-Email" service to enable you to receive a copy of our plant records. If you haven't used this service before and would like to, please go to the following URL: <http://www.ournetwork.openreach.co.uk/locating-our-network/maps-by-email.aspx>

Yours faithfully

Stuart Wilson
Repayments Project Engineer

Repayments (Alterations)
PP1
Crayford TE
Southwold Road
Bexley
DA5 1LZ

email: stuart.r.wilson@openreach.co.uk
tele: 01322520616
mob: 07710 083949

Openreach Limited
Registered Office: Kelvin House
123 Judd Street, London WC1H 9NP
Registered in England and Wales no. 10690039

Payment Details

There are three ways to pay the standard charge (£2553.00 including VAT).

1. By Cheque

- This is our preferred method of payment
- Please make cheques payable to **British Telecommunications Plc**
- Send your cheque with your order / letter of authorisation to proceed with the works to the Project Engineer shown below (order not to contain contractual conditions)
- If an invoice is required to make payment, then contact the project engineer shown below, otherwise a retrospective invoice will be dispatched to you.
- Write your cheque number here: _____
- Write the cheque amount here: £_____

2. Using Bank Automated Clearing Services (BACS)

When your order / letter of authorisation to proceed with the works has been received an invoice for payment will be returned with the necessary BACS payment details.

3. Telephone Credit Card Payments, to pay by credit card simply call our dedicated card payment team on Freephone 0808 100 0834, the opening hours are 9am to 4.30pm Monday to Friday.

Please quote the Openreach reference number / invoice number for all methods of payment otherwise payment may not be allocated to your job.

N.B. For either method of payment please complete this form and return with your order / letter of authorisation to the Project Engineer, address below. Please remember, however you pay, the works will not commence until this form and your payment have been received.

Title/Location of Work	PUMP FARM AND BLOORS FARM, LOWER RAINHAM , KENT
Project Engineer Name	Stuart Wilson
Postal Address	Crayford TE, Southwold Road, Crayford, Bexley, KENT DA5 1LZ
Openreach Reference	D18/808189/SW
Client's Company Name	PETER BRETT ASSOCIATES
Client Billing Address	
Client Contact	
Client Tel	

For advice or assistance in completing this form please call Jane Goodison 0131 345 0016 for all other queries contact the Project Engineer named above.

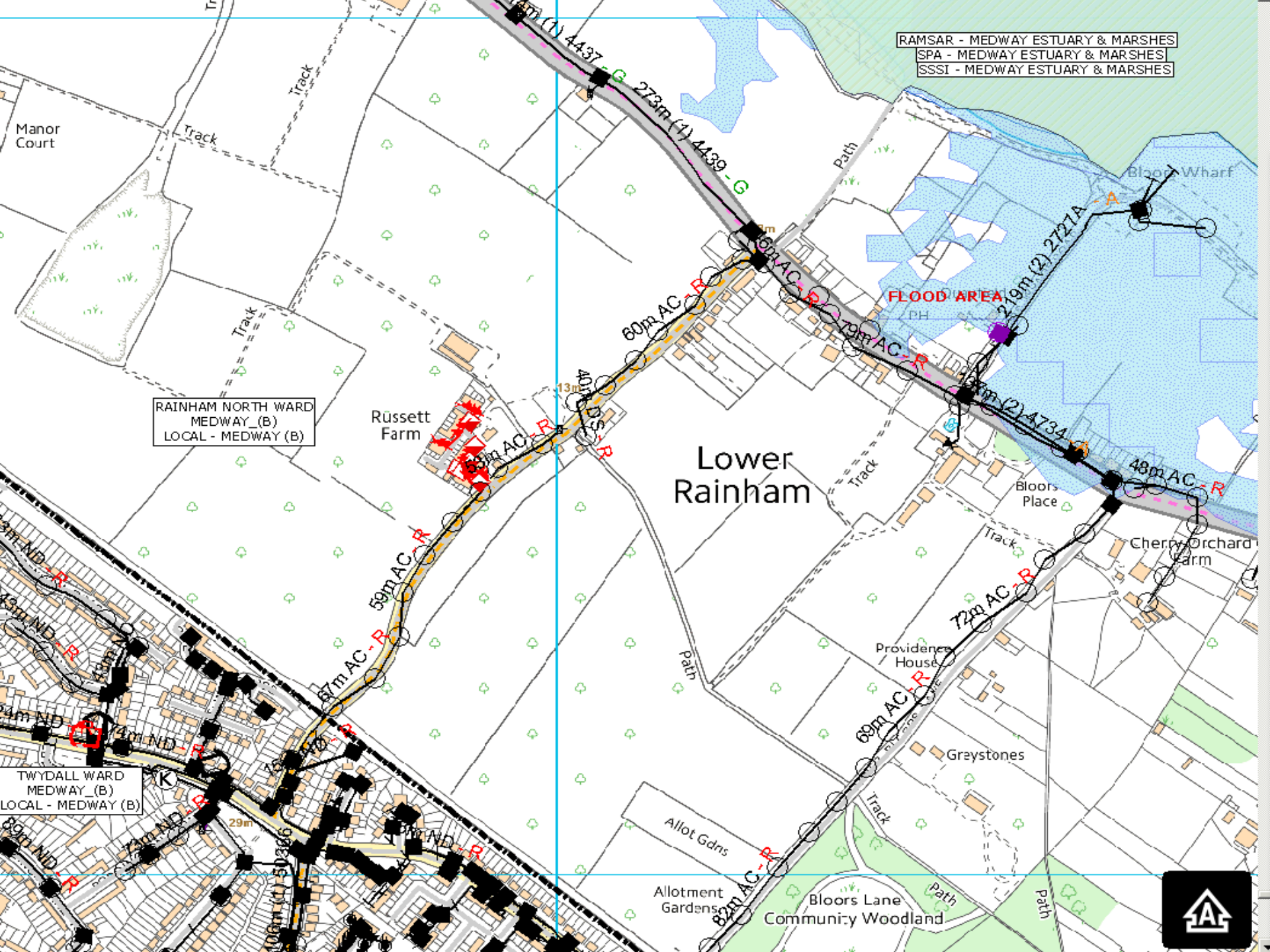
Our VAT number is **245719348**

RAMSAR - MEDWAY ESTUARY & MARSHES
SPA - MEDWAY ESTUARY & MARSHES
SSSI - MEDWAY ESTUARY & MARSHES

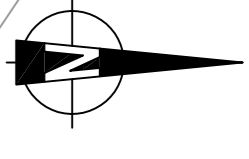
RAINHAM NORTH WARD
MEDWAY_(B)
LOCAL - MEDWAY (B)

Lower Rainham

TWYDALL WARD
MEDWAY_(B)
LOCAL - MEDWAY (B)



Appendix C Drainage Plan

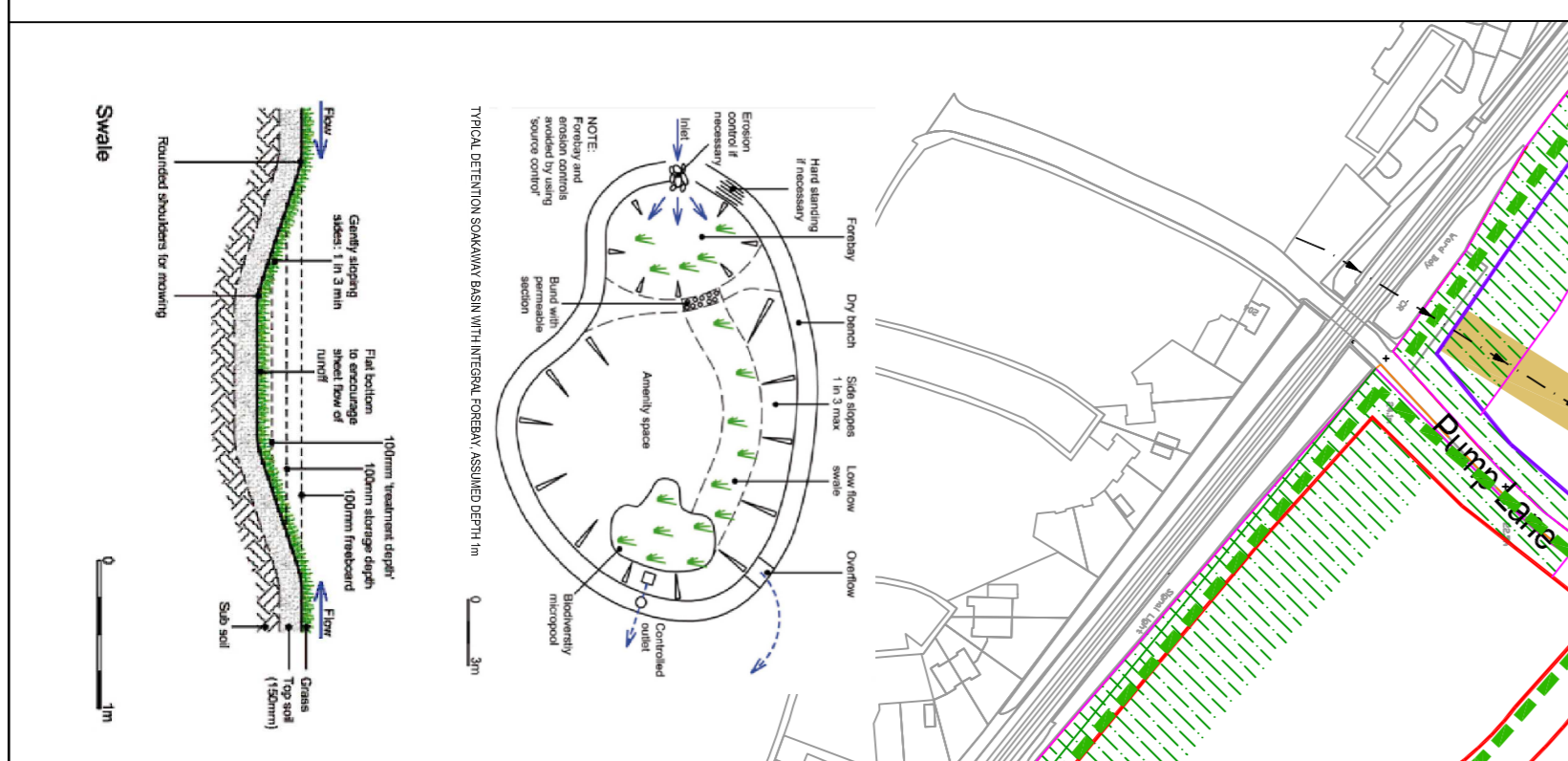
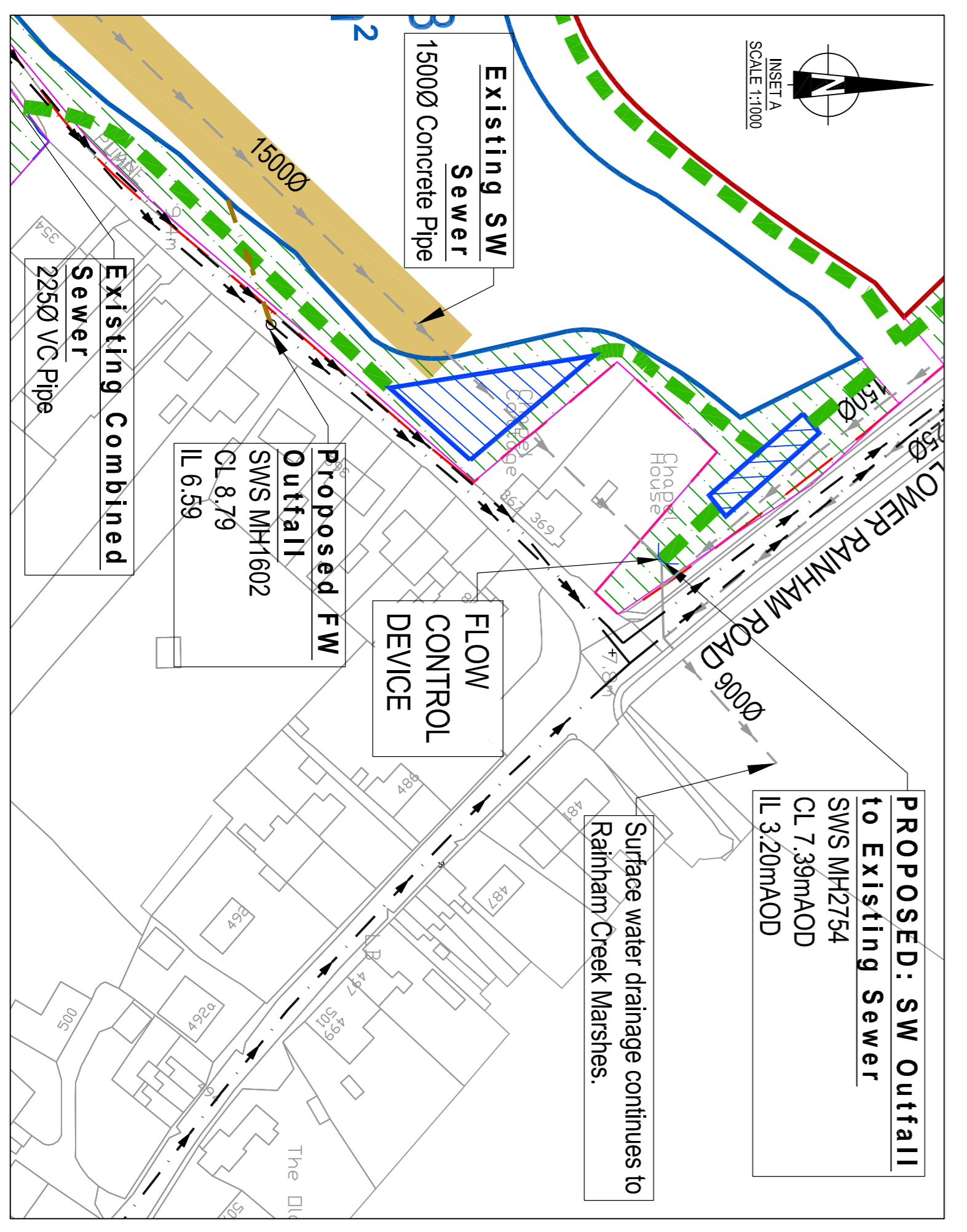
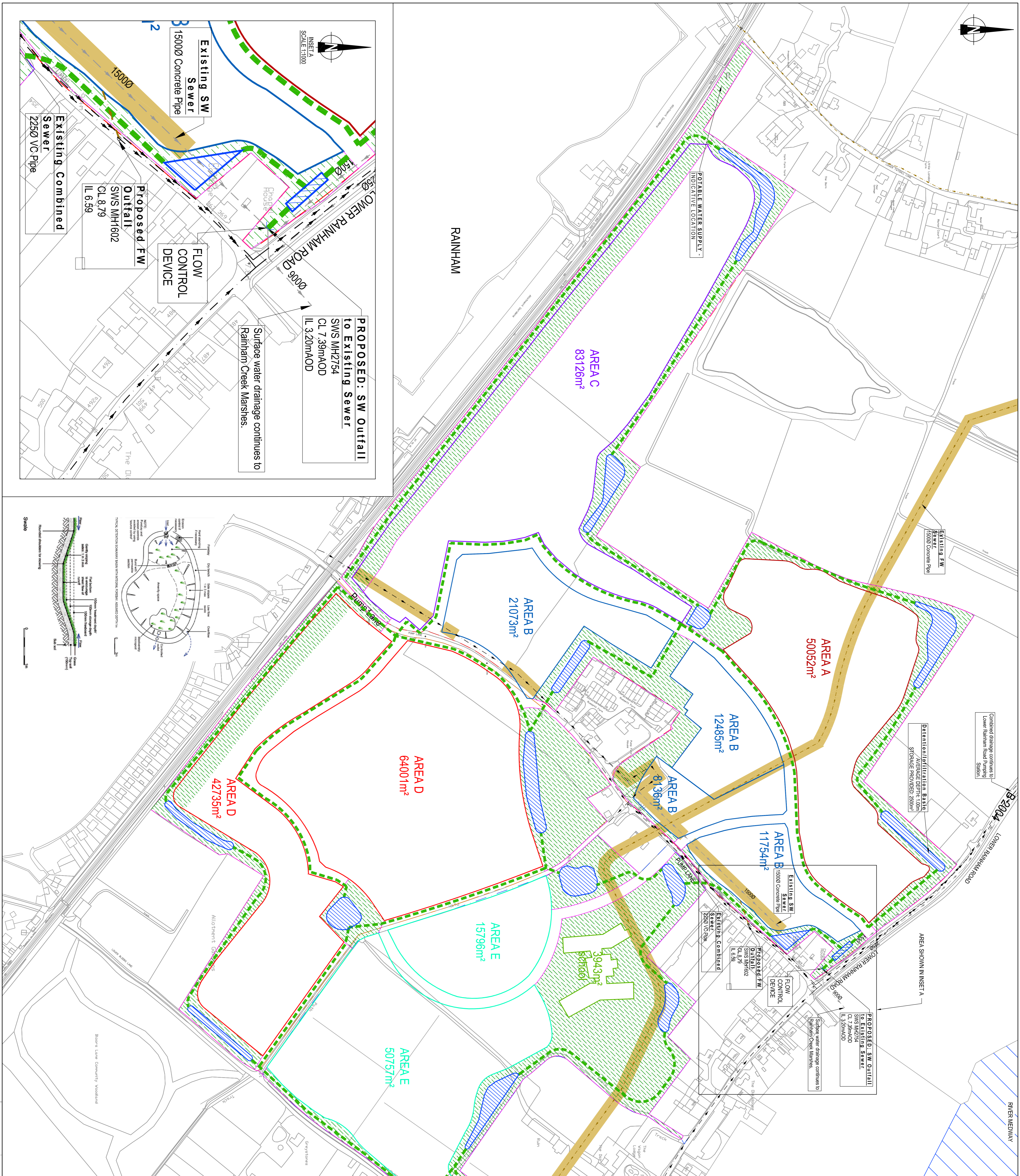


GENERAL NOTES:

- DO NOT SCALE FROM THIS DRAWING.
- PROPOSED DRAINAGE LAYOUT SUBJECT TO MASTERPLAN AND DETAILED DRAINAGE DESIGN.

LEGEND:

- SURFACE WATER SOAKAWAY BASIN
- PROPOSED SURFACE WATER SEWER
- PROPOSED FOUL WATER SEWER
- STRATEGIC LANDSCAPING AREA
- EASEMENT 13.5m
- PROPOSED SWALE
- EXISTING SURFACE WATER SEWER
- EXISTING FOUL WATER SEWER
- EXISTING FOLL WATER SEWER
- DEVELOPMENT A
- DEVELOPMENT B
- DEVELOPMENT C
- DEVELOPMENT D
- DEVELOPMENT E
- DEVELOPMENT AREAS
- DEVELOPMENT AREA 23.1ha
- DEVELOPMENT AREA 14.0 ha
- DEVELOPMENT AREA 11.1ha



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Mark	Revision	Date	Drawn	Chkd	Appd

CONCEPT

PUMP AND BLOORS FARM LOWER RAINHAM DRAINAGE PLAN

Client: **A.C. GOATHAM & SON**

Date of 1st Issue: 06.11.2018	Designed: AP	Drawn: AP
AT Scale: 1:2000	Checked: CD	Approved: CD
Drawing Number: 44538/2004/002		

peterbrett
 Offices throughout the UK and Europe
 www.peterbrett.com
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 ASPIROD
 Tel: 01233 851740