

DATE 09 October 2015**PROJECT NO.** 10514100075.525**TO** David Holmes
Shanly Homes**CC** Matt Goode**FROM** Darren Healy**EMAIL** dahealy@golder.com**DRAINAGE STATEMENT – 10 JACKETS LANE, NORTHWOOD**

1.0 INTRODUCTION

Golder Associates (UK) Ltd (Golder) has been commissioned by Shanly Homes to prepare a drainage statement for the proposed development at 10 Jackets Lane, Northwood (the site). The proposed development will consist of the redevelopment of an existing site to provide four detached residential dwellings. The existing site consists of one existing residential building. A plan outlining the site overlay is provided as Attachment A.

The objective of this drainage statement is to establish constraints associated with providing drainage infrastructure to the development, and to present a recommended way forward to progress the drainage strategy for the site. It is intended that the drainage strategy will be used to support the planning application for the proposed development at the site.

2.0 DRAINAGE STRATEGY**2.1 Potable Water****Existing Potable Water**

Golder understands that the site is served by a mains water supply, provided by Affinity Water. The site is understood to be located within an area with extensive existing residential and commercial development. It is therefore likely that Affinity Water has an established mains distribution network within the vicinity of the site.

Potable Water Constraints

Golder considers it unlikely that the capacity of the existing potable water network is a constraint. The proposed development (and likely increase in potable water demand) is relatively small and therefore the existing network is likely to have sufficient capacity to supply the proposed development. It is anticipated that connecting the proposed development to the mains network will be straightforward due to the close proximity of the site to the existing distribution network.

Proposed Potable Water Strategy

Golder considers that it would be appropriate for the proposed development to be served by the existing Affinity Water mains supply which already serves the site. It is likely that any new network connections that will be required can be made from the existing network supplying the site.

2.2 Foul Water**Existing Foul Water**

A Thames Water Asset Location search for the site shows a public foul sewer main located within the vicinity of the site (Attachment B). Golder understands that the existing site is served by a public foul sewer which currently serves multiple properties, however, the details for the sewer system serving individual properties along jackets Lane is not provided on this plan.



Foul Water Constraints

The Environment Agency (EA) is likely to object to private disposal methods such as septic tanks and cesspits, unless it is economically unviable to discharge foul waste to a public sewer. Given the site is currently served by a public foul sewer, this is unlikely to be the case and a connection for the developed site to the existing network is likely to be relatively straightforward.

Golder considers it unlikely that the capacity of the existing foul water network is a constraint. The proposed development is relatively small and therefore the existing network is likely to have sufficient capacity to supply the proposed development. Attachment B provides a plan outlining the public foul sewer mains located within the vicinity of the site.

Proposed Foul Water Strategy

Golder understands that the foul water infrastructure for the proposed development will be connected to the existing public foul sewer which serves the site currently.

2.3 Surface Water

Existing Surface Water

Attachment B provides a plan outlining the public surface water sewer located within the vicinity of the site.

Surface Water Constraints

It is now common practise for Sustainable Urban Drainage System (SUDS) to be incorporated in surface water management schemes for developments and typically regulators will expect to see a system which discharges to one of the following, in order of priority:

- 1) An adequate soakaway or similar infiltration system;
- 2) A watercourse; or
- 3) A Sewer.

It is likely that the EA's preference would be for the use of a soakaway where possible, and if not a SUDS system that replicates the existing runoff characteristics of the site.

For the proposed development Golder understands that the site is underlain by Clay, prohibiting the effective use of a soakaway. Given the close proximity of the existing public surface water sewer network to the site (see Attachment B), a connection to this network will be the most appropriate means of managing surface water discharge from the site.

Proposed Surface Water Strategy

Golder understands that Shanly Homes intend to utilise surface water drains to collect surface water generated from the site. It is intended that the surface water drains would connect/discharge to the existing public surface water sewer system within the vicinity of the site.

3.0 CLOSURE

The above statement presents the constraints associated with providing drainage infrastructure to the development, and a recommended approach to progress the drainage strategy for the site.



Darren Healy
Civil Engineer

DH/MG/jrh



Matt Goode
Senior Hydrologist

Attachment A – Proposed Site Overlay
Attachment B – Thames Water Asset Location Search

Attachment A – Proposed Site Overlay



TREE SCHEDULE			
TREE	QTY	HEIGHT	SPECIES
1	1	10.0	ALBANY
2	1	10.0	ALBANY
3	1	10.0	ALBANY
4	1	10.0	ALBANY
5	1	10.0	ALBANY
6	1	10.0	ALBANY
7	1	10.0	ALBANY
8	1	10.0	ALBANY
9	1	10.0	ALBANY
10	1	10.0	ALBANY
11	1	10.0	ALBANY
12	1	10.0	ALBANY
13	1	10.0	ALBANY
14	1	10.0	ALBANY
15	1	10.0	ALBANY
16	1	10.0	ALBANY
17	1	10.0	ALBANY
18	1	10.0	ALBANY
19	1	10.0	ALBANY
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23	1	10.0	ALBANY
24	1	10.0	ALBANY
25	1	10.0	ALBANY
26	1	10.0	ALBANY
27	1	10.0	ALBANY
28	1	10.0	ALBANY
29	1	10.0	ALBANY
30	1	10.0	ALBANY
31	1	10.0	ALBANY
32	1	10.0	ALBANY

Attachment B – Thames Water Asset Location Search

Asset Location Search



Natalie Ramsay
Shanly Homes Ltd
BEACONSFIELD
HP9 1LW

Search address supplied	10 Jackets Lane Northwood Middlesex HA6 2SH
Your reference	N/A
Our reference	ALS/ALS Standard/2015_2956778
Search date	27 January 2015

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: 10, Jackets Lane, Northwood, Middlesex, HA6 2SH

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.

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.

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way
Hatfield

Asset Location Search



AL10 9EZ
Tel: 0845 7823333

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

An invoice is enclosed. Please send remittance to Thames Water Utilities Ltd., PO Box 3189, Slough, SL1 4WW.

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

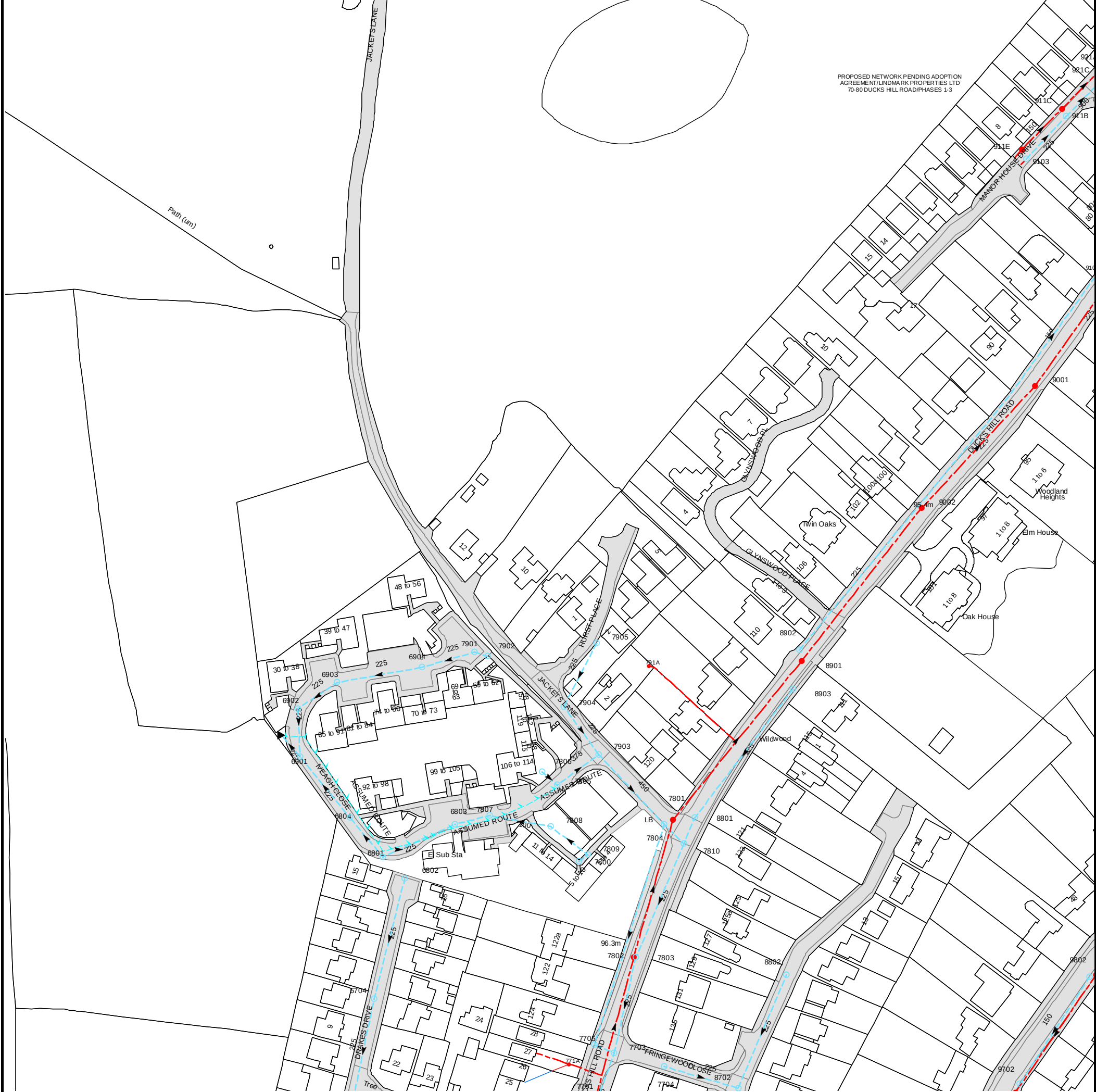
Tel: 0845 850 2777
Email: developer.services@thameswater.co.uk

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 500 m and the centre of the map is located at OS coordinates 507738,190999

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
9802	99.04	93.75
9801	97.13	91.84
8702	n/a	n/a
8802	n/a	n/a
9702	93.38	91.66
8903	n/a	n/a
791A	n/a	n/a
8901	96.89	92.22
8902	96.86	94.88
7905	79.03	n/a
9002	95.52	90.32
9001	90.05	87.72
9103	78.1	76.3
911E	78.2	76.7
911B	76.8	73.6
911C	n/a	n/a
7806	n/a	n/a
7808	n/a	n/a
7805	n/a	n/a
7904	96.9	n/a
771A	n/a	n/a
7800	n/a	n/a
7809	n/a	n/a
7705	95.88	94.52
7903	n/a	n/a
7703	95.38	94.34
7802	96.4	93.2
7803	96.33	94.36
7704	n/a	n/a
7804	96.99	95.68
7801	97.17	92.76
7810	n/a	n/a
8801	96.81	94.92
6902	n/a	n/a
6901	n/a	n/a
6903	n/a	n/a
6804	n/a	n/a
6704	94.46	93.06
6801	n/a	n/a
6802	94.69	93.59
6904	n/a	n/a
6803	n/a	n/a
7901	n/a	n/a
7902	n/a	n/a
7807	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.		



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.

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

Natalie Ramsay

Shanly Homes Ltd
24-26 Sorbon
Aylesbury End
Beaconsfield
HP9 1LW

Thames Water Utilities Ltd.
PO Box 3189
Slough
SL1 4WW

**Customer Reference:** N/A

Invoice No: ADS15376543
Our Ref: ALS/ALS
Standard/2015_2956778

Customer Number: ADS117434
Purchase Order No:

Posting Date: 27-01-2015
Due Date: 10-02-2015

Search Address Supplied: 10, Jackets Lane, Northwood, Middlesex, HA6 2SH

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

OUTSTANDING AMOUNT (Inc. VAT)**£56.88**

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

Your payment terms are within 14 days. Please see previous page for ways to pay.

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

VAT Reg. No GB 537456915

**Trans
cash****Payment slip****bank giro credit**

Girobank plc Bootle Merseyside GIR 0AA

138
208
70

Reference (customer account number)

ADS117434 / ADS15376543

Credit account number

257 1706

Amount due
(40p fee payable at PO counter)

£ 56.88

By transfer from Alliance and Leicester
Giro account number

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Cheque NOT acceptable at Post Office

Cashiers
stamp and initials

Signature

Date

Shanly Homes Ltd
24-26 Sorbon
Aylesbury End
Beaconsfield
HP9 1LW

NatWest
Collection Account
Thames Water
Utilities Ltd

Cash

Cheques

£

57-17-06

Please do not write or mark below this line and do not fold this counterfoil

01001000376543X V7702571706 000056880 74 X



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