



APPENDIX G

SOUTHERN WATER SEWER RECORDS

Order received: 14 February 2018
Order completed: 16 February 2018

Drainage and water enquiry

Commercial

Order reference: LS/U1342188

Your reference: SF26089042000 DKM/100870.0002

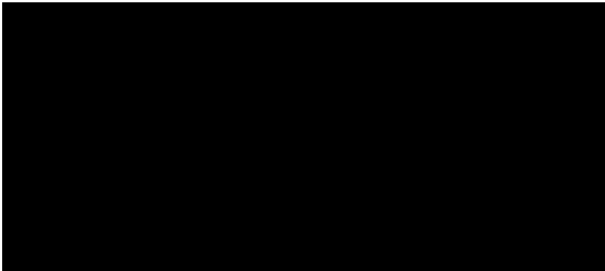
Search address:

**Land on East Side Ford Road
Arundel
West Sussex
BN18**

Ordered by:

**Searchflow
42 Kings Hill Avenue
West Malling
Kent
ME19 4AJ**

For enquiries regarding the information provided in this report, please contact the LandSearch team:



LandSearch
Southern Water Services
Southern House
Capstone Road
Chatham
Kent
ME5 7QA

What you need to know about...

Private sewer transfer

On 1 October 2011, ownership of private sewers and lateral drains changed in accordance with The Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The contents of this search may not reflect these changes.

For further information please visit our website: www.southernwater.co.uk/sewer-ownership-changes.

Records searched

The following records were searched in compiling this report: the Map of Public Sewers, the Map of Waterworks, water and sewerage records, the Register of Properties subject to Internal Foul Flooding, the Register of Properties subject to Poor Water Pressure and the Drinking Water Register. Should the property not fall entirely within Southern Water's region, a copy of the records held by the relevant water company was searched.

Competition in the non-household retail market

From April 2017 non-household customers in England can choose their retailer. 'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

The 'wholesale' part of the water industry was not opened for competition in April 2017. This means Southern Water continues to look after the pipes and infrastructure for all its customers across Kent, Sussex, Hampshire and the Isle of Wight.

Moving

There can be a lot to do and remember when you're moving. Whether you are moving within our area, moving into our area or moving out of the area please let your retailer know.

Your order summary

Maps		
1.1	Where relevant, please include a copy of an extract from the public sewer map.	Map provided
1.2	Where relevant, please include a copy of an extract from the map of waterworks.	Map provided
Drainage		
2.1	Does foul water from the property drain to a public sewer?	No
2.2	Does surface water from the property drain to a public sewer?	No
2.3	Is a surface water drainage charge payable?	See answer
2.4	Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?	Yes
2.4.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?	No
2.5	Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?	No
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?	No
2.6	Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
2.7	Has any sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?	No
2.8	Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?	No
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	See answer
Water		
3.1	Is the property connected to mains water supply?	No
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	Yes
3.3	Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?	No
3.4	Is the property at risk of receiving low water pressure or flow?	No
3.5	What is the classification of the water supply for the property?	See answer
3.6	Is there a meter installed at this property?	See answer
Charging		
4.1.1	Who is responsible for providing the sewerage services for the property?	Southern Water
4.1.2	Who is responsible for providing the water services for the property?	Southern Water
4.2	Who bills the property for sewerage services?	See answer
4.3	Who bills the property for water services?	See answer
Trade effluent information		
4.4	Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?	No

Maps

Public sewer map

Q. 1.1: Where relevant, please include a copy of an extract from the public sewer map.

A.: A copy of an extract from the public sewer map is provided.

Guidance Notes:

The Water Industry Act 1991 defines public sewers as those which the Company has responsibility for. Other assets and rivers, watercourses, ponds, culverts or highway drains may be shown for information purpose 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.

Map of waterworks

Q. 1.2: Where relevant, please include a copy of an extract from the map of waterworks.

A.: A copy of an extract of the map of waterworks is provided.

Guidance Notes:

Assets other than vested water mains may be shown on the plan for information only.

The Company is not responsible for private supply pipes connecting the property to the public water main and does not hold details of these. These may pass through land outside of the control of the seller, or may be shared with adjacent properties. The buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

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.

Drainage

Foul water

Q. 2.1: Does foul water from the property drain to a public sewer?

A.: The Company's records indicate that foul water from the property does not drain to the public sewerage system.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

If foul water does not drain to the public sewerage system the property may have private facilities in the form of a cesspit, septic tank or other type of treatment plant.

Surface water

Q. 2.2: Does surface water from the property drain to a public sewer?

A.: The Company's records indicate that surface water from the property does not drain to the public sewerage system. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

The Company is not responsible for private drains and sewers that connect the property to the public sewerage system and does not hold details of these.

The property owner will normally have sole responsibility for private drains serving the property and may have shared responsibility, with other users, if the property is served by a private sewer which also serves other properties. These may pass through land outside of the control of the seller and the buyer may wish to investigate whether separate rights or easements are needed for their inspection, repair or renewal.

The copy extract will show known public sewers in the vicinity of the property. It should be possible to estimate the likely length and route of any private drains and/or sewers connecting the property to the public sewerage system.

In some cases company records do not distinguish between foul and surface water connections to the public sewerage system. If on inspection the buyer finds that the property is not connected for surface water drainage, the property may be eligible for a rebate of the surface water drainage charge. Details can be obtained from the Company.

If surface water does not drain to the public sewerage system the property may have private facilities in the form of a soakaway or private connection to a watercourse.

Surface water drainage charge

Q. 2.3: Is a surface water drainage charge payable?

A.: Records confirm that a surface water drainage charge is not applicable at this property. If the property was constructed after 6 April 2015 the surface water drainage may be served by a Sustainable Drainage System. Further information may be available from the developer.

Guidance Notes:

Where surface water from a property does not drain to the public sewerage system no surface water drainage charges are applicable.

If on inspection the buyer finds that the property is not connected for surface water drainage, the buyer should contact their retailer.

Public sewers within the boundary of the property

Q. 2.4: Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundaries of the property?

A.: The public sewer map included indicates that there is a public sewer, disposal main or lateral drain within the boundaries of the property. However, from 1 October 2011 there may be additional public sewers, disposal mains or lateral drains which are not recorded on the public sewer map but which may further prevent or restrict development of the property.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public sewer within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

Please note if the property was constructed after 1 July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.

Public pumping station within the boundary of the property

Q. 2.4.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the boundaries of the property?

A.: The public sewer map included indicates that there is no public pumping station within the boundaries of the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The approximate boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a pumping station within the boundary of the property may restrict further development within it.

Southern Water Services has a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of Southern Water Services or its contractors needing to enter the property to carry out work.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public sewers near to the property

Q. 2.5: Does the public sewer map indicate any public sewer within 30.48 metres (100 feet) of any buildings within the property?

A.: The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of a building within the property.

Guidance Notes:

From 1 October 2011 there may be additional lateral drains and/or public sewers which are not recorded on the public sewer map but are also within 30.48 metres (100 feet) of a building within the property.

The presence of a public sewer within 30.48 metres (100 feet) of a building within the property can result in the local authority requiring a property to be connected to the public sewer.

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest public sewer.

Public pumping station near to the property

Q. 2.5.1: Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres of any buildings within the property?

A.: The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property. Any other ancillary apparatus is shown on the public sewer map and referenced on the legend.

Guidance Notes:

The measure is estimated from the Ordnance Survey record, between a building within the boundary of the property and the nearest pumping station.

It should be noted that only private pumping stations installed before 1 July 2011 will be transferred into the ownership of Southern Water Services.

Public adoption of sewers and lateral drains

Q. 2.6: Are any sewers or lateral drains serving, or which are proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records indicate that the sewers serving the development, of which this property forms part, are not the subject of an application for adoption under Section 104 of the Water Industry Act 1991. Where the property is part of an established development it would not normally be subject to an adoption agreement under Section 104 of the Water Industry Act 1991.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to a public sewer.

Where the property is part of a very recent or ongoing development and the sewers are not the subject of an adoption application, buyers should consult with the developer to ascertain the extent of private drains and sewers for which they will hold maintenance and renewal liabilities.

Final adoption is subject to the developer complying with the terms of the adoption agreement under Section 104 of the Water Industry Act 1991.

Any sewers and/or lateral drains within the boundary of the property are not the subject of an adoption agreement and remain the responsibility of the householder. Adoptable sewers are normally those situated in the public highway.

Building over a public sewer, disposal main or drain

Q. 2.7: Has the sewerage undertaker approved or been consulted about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain?

A.: There are no records in relation to any approval or consultation about any plans to erect a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain. However, the sewerage undertaker might not be aware of a building or extension on the property over or in the vicinity of a public sewer, disposal main or drain.

Guidance Notes:

Buildings or extensions erected over a sewer in contravention of Building Control may have to be removed or altered.

From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have approved or been consulted about any plans to erect a building or extension on the property or in the vicinity of these.

Risk of flooding due to overloading public sewers

Q. 2.8: Is the building which is or forms part of the property at risk of internal flooding due to overloaded public sewers?

A.: The building is not recorded as being at risk of internal flooding due to overloaded public sewers. From 1 October 2011 private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a building may be at risk of internal flooding due to an overloaded public sewer which the sewerage undertaker is not aware of. For further information it is recommended that enquiries are made of the vendor.

Guidance Notes:

A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.

"Internal flooding" from the public sewers is defined as flooding, which enters a building or passes below a suspended floor.

For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.

"At Risk" properties are defined as properties that have suffered or are likely to suffer internal flooding from the public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the sewerage undertaker's reporting procedure.

Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included.

Buildings may be at risk of flooding but not identified where flooding incidents have not been reported to the sewerage undertaker.

Public sewers are defined as those for which the sewerage undertaker holds statutory responsibility under the Water Industry Act 1991.

It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the sewerage undertaker. This report excludes flooding from the private sewers and drains and the sewerage undertaker makes no comment upon this matter.

Sewage treatment works

Q. 2.9: Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.

A.: The nearest sewage treatment works is 3.3 kilometres North East of the property. The name of the sewage treatment works is BURPHAM WTW, which is the responsibility of Southern Water Services, Southern House, Yeoman Road, Worthing, West Sussex, BN13 3NX.

Guidance Notes:

The nearest sewage treatment works will not always be the sewage treatment works serving the catchment within which the property is situated.

The sewerage undertaker's records were inspected to determine the nearest sewage treatment works.

It should be noted that there may be a private sewage treatment works closer than the one detailed above that have not been identified.

Water

Connection to mains water supply

Q. 3.1: Is the property connected to mains water supply?

A.: Records indicate that the property is not connected to mains water supply and water is therefore likely to be provided by virtue of a private supply.

Guidance Notes:

The situation should be checked with the current owner of the property.

Details of private supplies are not kept by the water undertaker.

Water mains, resource mains or discharge pipes

Q. 3.2: Are there any water mains, resource mains or discharge pipes within the boundaries of the property?

A.: The map of waterworks indicates that there are water mains, resource mains or discharge pipes within the boundaries of the property.

Guidance Notes:

The boundary of the property has been determined by reference to the Ordnance Survey record or the map supplied.

The presence of a public water main within the boundary of the property may restrict further development within it.

Water undertakers have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the water undertaker or its contractors needing to enter the property to carry out work.

Adoption of water mains and services pipes

Q. 3.3: Is any water main or service pipe serving, or which is proposed to serve the property, the subject of an existing adoption agreement or an application for such an agreement?

A.: Records confirm that water mains or service pipes serving the property are not the subject of an existing adoption agreement or an application for such an agreement.

Guidance Notes:

This enquiry is of interest to purchasers of new homes who will want to know whether or not the property will be linked to the mains water supply.

Risk of low water pressure or flow

Q. 3.4: Is the property at risk of receiving low water pressure or flow?

A.: Records confirm that the property is not recorded by the water undertaker as being at risk of receiving low water pressure or flow.

Guidance Notes:

"Low water pressure" means water pressure below the regulatory reference level which is the minimum pressure when demand on the system is not abnormal.

The reference level of service is a flow of 9 litres/minute at a pressure of 10 metres head on the customer's side of the main stop tap (mst). The reference level of service must be applied on the customer's side of a meter or any other company fittings that are on the customer's side of the main stop tap.

The reference level applies to a single property. Where more than one property is served by a common service pipe, the flow assumed in the reference level must be appropriately increased to take account of the total number of properties served.

For two properties, a flow of 18 litres/minute at a pressure of 10 metres head on the customer's side of the mst is appropriate. For three or more properties the appropriate flow should be calculated from the standard loadings provided in BS6700 or Institute of Plumbing handbook.

Water companies include properties receiving pressure below the reference level, provided that allowable exclusions do not apply (i.e. events which can cause pressure to temporarily fall below the reference level). Refer to list below:

Abnormal demand: This exclusion is intended to cover abnormal peaks in demand and not the daily, weekly or monthly peaks in demand which are normally expected. Companies exclude properties which are affected by low pressure only on those days with the highest peak demands. During the year companies may exclude, for each property, up to five days of low pressure caused by peak demand.

Planned maintenance: Companies exclude low pressures caused by planned maintenance. It is not intended that companies identify the number of properties affected in each instance. However, companies must maintain sufficiently accurate records to verify that low pressure incidents that are excluded because of planned maintenance are actually caused by maintenance.

One-off incidents: This exclusion covers a number of causes of low pressure; mains bursts; failures of company equipment (such as PRVs or booster pumps); firefighting; and action by a third party. However, if problems of this type affect a property frequently, they cannot be classed as one-off events and further investigation will be required before they can be excluded.

Low pressure incidents of short duration: Properties affected by low pressures which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the course of the year, may be excluded.

Water hardness

Q. 3.5: What is the classification of the water supply for the property?

A.: The water supplied to the property has an average water hardness of 259 mg/l calcium carbonate which is defined as "Hard" by Southern Water.

Guidance Notes:

The hardness of water depends on the amount of calcium in it – the more it contains, the harder the water is.

There is no UK or European standard set for the hardness of drinking water. More information on water hardness can be found on the Drinking Water Inspectorates' website: <http://www.dwi.gov.uk/>

Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees, but check with the manufacturer as there are also other units. The following table explains how to convert mg/l calcium and mg/l calcium carbonate classifications.

To Convert from:	To Clark degrees	To French degrees	To German degrees
mg/l calcium	multiply by 0.18	multiply by 0.25	multiply by 0.14
mg/l calcium carbonate	multiply by 0.07	multiply by 0.10	multiply by 0.056

Water meters

Q. 3.6: Is there a meter installed at this property?

A.: Records indicate that the property is not served by a water meter.

Guidance Notes:

Where the property is not served by a water meter and the customer wishes to consider this method of charging they should contact their water retailer.

If a property is measured (metered) upon change of occupation this property will retain the meter.

Charging

Sewerage undertaker

Q. 4.1.1: Who is responsible for providing the sewerage services for the property?

A.: Southern Water is responsible for providing the sewerage services for the property.

Guidance Notes:

The 'wholesale' part of the water industry did not open for competition in April 2017. This means that Southern Water continues to operate the network of pipes, mains and treatment works.

As a wholesaler, Southern Water sells sewerage services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact Southern Water to report internal sewer flooding.

Water undertakers

Q. 4.1.2: Who is responsible for providing the water services for the property?

A.: Southern Water is responsible for providing the water services for the property.

Guidance Notes:

The 'wholesale' part of the water industry did not open for competition in April 2017. This means that water undertakers continue to operate the network of pipes, mains and treatment works.

As a wholesaler, water undertakers sell water services to the companies who enter the retail market. In some instances, wholesalers will still need to interact directly with customers. For example, customers will still contact water undertakers to report leaks.

Sewerage bills

Q. 4.2: Who bills the property for sewerage services?

A.: If you wish to know who bills the sewerage services for this property then you will need to contact the current owner. For a list of all potential retailers of sewerage services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Water bills

Q. 4.3: Who bills the property for water services?

A.: If you wish to know who bills the water services for this property then you will need to contact the current owner. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Guidance Notes:

From April 2017 non-household customers in England can choose their retailer.

'Retail' refers to the way in which customers are billed for their water and sewerage as well as customer services including meter reading.

Trade effluent information

Q. 4.4: Is there a consent on this property to discharge trade effluent under Section 118 of the Water Industry Act (1991) into the public sewerage system?

A.: The trader operating at this commercial property does not hold either a Trade Effluent Consent, or an acknowledgement of a trade effluent discharge, as issued by Southern Water.

Guidance Notes:

Please note, any existing consent is dependent on the business being carried out at the property and will not transfer automatically upon change of ownership.

Any change of ownership from the current incumbent of a property will require the negotiation of a new trade effluent consent or a new acknowledgement between the new incumbent and Southern Water.

Where consent or acknowledgement details have been provided, this does not represent a direct copy of the original.

Other Information

Additional meter information

No further information.

DISCLAIMER: These replies and information, including that shown on the enclosed plan(s), are given on the distinct understanding that neither the Company nor any of its representatives is legally liable for its accuracy or for any action or omission to act whatsoever by anyone on the strength of that information, save as to obvious error. In particular, any person proposing to construct or excavate on land on the basis of information hereby provided should carry out all necessary on-site investigations.

Appendix one: Terms and expressions

"the 1991 Act" means the Water Industry Act 1991(i);
"the 2000 Regulations" means the Water Supply (Water Quality) Regulations 2000(ii);
"the 2001 Regulations" means the Water Supply (Water Quality) Regulations 2001(iii);
"adoption agreement" means an agreement made or to be made under Section 51A(1) or 104(1) of the 1991 Act(iv);
"bond" means a surety granted by a developer who is a party to an adoption agreement;
"bond waiver" means an agreement with a developer for the provision of a form of financial security as a substitute for a bond;
"calendar year" means the twelve months ending with 31 December;
"discharge pipe" means a pipe from which discharges are made or are to be made under Section 165(1) of the 1991 Act;
"disposal main" means (subject to Section 219(2) of the 1991 Act) any outfall pipe or other pipe which:
(a) is a pipe for the conveyance of effluent to or from any sewage disposal works, whether of a sewerage undertaker or of any other person; and
(b) is not a publicsewer;
"drain" means (subject to Section 219(2) of the 1991 Act) a drain used for the drainage of one building or any buildings or yards appurtenant to buildings within the same curtilage;
"effluent" means any liquid, including particles of matter and other substances in suspension in the liquid;
"financial year" means the twelve months ending with 31 March;
"lateral drain" means:
(a) that part of a drain which runs from the curtilage of a building (or buildings or yards within the same curtilage) to the sewer with which the drain communicates or is to communicate; or
(b) (if different and the context so requires) the part of a drain identified in a declaration of vesting made under Section 102 of the 1991 Act or in an agreement made under Section 104 of that Act(v);
"licensed water supplier" means a company which is the holder for the time being of a water supply licence under Section 17A(1) of the 1991 Act(vi);
"maintenance period" means the period so specified in an adoption agreement as a period of time:
(a) from the date of issue of a certificate by a sewerage undertaker to the effect that a developer has built (or substantially built) a private sewer or lateral drain to that undertaker's satisfaction; and
(b) until the date that private sewer or lateral drain is vested in the sewerage undertaker;
"map of waterworks" means the map made available under section 198(3) of the 1991 Act(vii) in relation to the information specified in subsection (1A);
"private sewer" means a pipe or pipes which drain foul or surface water, or both, from premises, and are not vested in a sewerage undertaker;
"public sewer" means, subject to Section 106(1A) of the 1991 Act(viii), a sewer for the time being vested in a sewerage undertaker in its capacity as such, whether vested in that undertaker:
(a) by virtue of a scheme under Schedule 2 to the Water Act 1989(ix);
(b) by virtue of a scheme under Schedule 2 to the 1991 Act(x);
(c) under Section 179 of the 1991 Act(xi); or
(d) otherwise;
"public sewer map" means the map made available under Section 199(5) of the 1991 Act(xii);
"resource main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a trunk main, which is or is to be used for the purpose of:
(a) conveying water from one source of supply to another, from a source of supply to a regulating reservoir or from a regulating reservoir to a source of supply; or
(b) giving or taking a supply of water inbulk;
"sewerage services" includes the collection and disposal of foul and surface water and any other services which are required to be provided by a sewerage undertaker for the purpose of carrying out its functions;
"sewerage undertaker" means the company appointed to be the sewerage undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated;
"surface water" includes water from roofs and other impermeable surfaces within the curtilage of the property;
"water main" means (subject to Section 219(2) of the 1991 Act) any pipe, not being a pipe for the time being vested in a person other than the water undertaker, which is used or to be used by a water undertaker or licensed water supplier for the purpose of making a general supply of water available to customers or potential customers of the undertaker or supplier, as distinct from for the purpose of providing a supply to particular customers;
"water meter" means any apparatus for measuring or showing the volume of water supplied to, or of effluent discharged from any premises;
"water supplier" means the company supplying water in the water supply zone, whether a water undertaker or licensed water supplier;
"water supply zone" means the names and areas designated by a water undertaker within its area of supply that are to be its water supply zones for that year; and
"water undertaker" means the company appointed to be the water undertaker under Section 6(1) of the 1991 Act for the area in which the property is or will be situated.

In this report, references to a pipe, including references to a main, a drain or a sewer, shall include references to a tunnel or conduit which serves or is to serve as the pipe in question and to any accessories for the pipe.

- (i) 1991 c.56.
- (ii) S.I. 2000/3184. These Regulations apply in relation to England.
- (iii) S.I. 2001/3911. These Regulations apply in relation to Wales.
- (iv) Section 51A was inserted by Section 92(2) of the Water Act 2003 (c. 37). Section 104(1) was amended by Section 96(4) of that Act.
- (v) Various amendments have been made to Sections 102 and 104 by section 96 of the Water Act 2003.
- (vi) Inserted by Section 56 of and Schedule 4 to the Water Act 2003.
- (vii) Subsection (1A) was inserted by Section 92(5) of the Water Act 2003.
- (viii) Section 106(1A) was inserted by Section 99 of the Water Act 2003.
- (ix) 1989 c.15.
- (x) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
- (xi) To which there are various amendments made by Section 101(1) of and Schedule 8 to the Water Act 2003.
- (xii) Section 199 was amended by Section 97(1) and (8) of the Water Act 2003.

Appendix two: A guide to new development

The information contained below is for general guidance only. It is recommended that Southern Water's Developer Services department be contacted for further details concerning new infrastructure development.

Wastewater information

Sewer requisitions

It may be necessary for a developer to request that Southern Water provides a public sewer to connect a development site to the existing public system. The developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development served by the new sewer.

Sewer diversions

If a public sewer crosses private land, it may be possible for the landowner/developer to request the sewer be diverted. In the majority of cases Southern Water will allow the developer to undertake this work under close supervision. Whether Southern Water or the developer undertakes the diversionary works the costs are the responsibility of the developer.

Building-over sewers

Public sewers are afforded statutory protection and consequently there is no right to build over or in close proximity to a public sewer. If an existing public sewer either crosses a development site or is located in close proximity to a development site it is essential that a developer contact Southern Water.

Sewer connections

A developer can serve notice on Southern Water that it wishes to make a connection to the public sewerage system. The developer must provide 21 days' notice and the work will be supervised by Southern Water.

Water information

Water requisitions

It may be necessary for a developer to request that Southern Water provides both:

- (a) a public water main to connect a development site to the existing public system and,
- (b) on-site public water mains to serve the individual properties.

In both cases the developer is responsible for the cost of the work, although a discount will be applied based on the future predicted income from the development.

It is possible for the developer to lay the on-site mains themselves under a Self-Lay Agreement. Further details are available from Southern Water.

Water main diversions

The building over or in close proximity to public water mains is not permitted. A developer must request that Southern Water undertakes a diversion of a water main that is affected by a development.

Water connections

A developer can request a new connection to a public water main. This work will be undertaken by Southern Water.

Contact us

For specific information on Southern Water's Developer Services service, including details on how to contact the right person, please visit our website: www.southernwater.co.uk/developers-and-builders-overview.

Appendix three: Terms and conditions

The Customer the Client and the Purchaser are asked to note these terms, which govern the basis on which this drainage and water report is supplied.

Definitions

"The Company" means the water service company operating within the Southern Water drainage area that provides information to Southern Water for this commercial search Report.

"Order" means any request completed by the Customer requesting the Report.

"Report" means the drainage and/or water report prepared by The Company in respect of the Property.

"Property" means the address or location supplied by the Customer in the Order.

"Customer" means the person, company, firm or other legal body placing the Order, either on their own behalf as Client, or, as an agent for a Client.

"Client" means the person, company or body who is the intended recipient of the Report with an actual or potential interest in the Property.

"Purchaser" means the actual or potential purchaser of the Property including their mortgage lender.

1.0 Agreement

- 1.1 Southern Water agrees to supply the Report subject to these terms. The scope and limitations of the Report are described in paragraph 2 of these terms. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms to the attention of the Client.
- 1.2 The Customer and Client agree that the placing of an Order for a Report indicates their acceptance of these terms.

2.0 The Report

Whilst Southern Water will use reasonable care and skill in producing the Report, it is provided to the Client on the basis that they acknowledge and agree to the following:

- 2.1 The information contained in the Report can change on a regular basis so Southern Water cannot be responsible to the Client for any change in the information contained in the Report after the date on which the Report was produced and sent to the Client.
- 2.2 The Report does not give details about the actual state or condition of the Property nor should it be used or taken to indicate or exclude actual suitability or unsuitability of the Property for any particular purpose, or relied upon for determining saleability or value, or used as a substitute for any physical investigation or inspection. Further advice and information from appropriate experts and professionals should always be obtained.
- 2.3 The information contained in the Report is based upon the accuracy of the address supplied by the Customer or Client.
- 2.4 The Report provides information as to the location and connection of existing services, and details of trade effluent consents. It should not be relied upon for any other purpose. The Report may contain opinions or general advice to the Customer and the Client and Southern Water cannot ensure that any such opinion or general advice is accurate, complete or valid and accepts no liability therefore.
- 2.5 The position and depth of apparatus shown on any maps attached to the Report are approximate, and are furnished as a general guide only, and no warranty as to its correctness is given or implied. The exact positions and depths should be obtained by excavation trial holes.

3.0 Liability

- 3.1 Southern Water shall not be liable to the Client for any failure defect or non-performance of its obligations arising from any failure of or defect in any machine, processing system or transmission link or anything beyond Southern Water's reasonable control or the acts or omissions of any party for whom Southern Water is not responsible.
- 3.2 Where a Report is requested for an address falling within a geographical area where Southern Water and another Company separately provide water and sewerage services, then it shall be deemed that liability for the information given by Southern Water or the Company as the case may be will remain with Southern Water or the Company as the case may be in respect of the accuracy of the information supplied. Where Southern Water is supplying information which has been provided to it by another Company for the purposes outlined in this agreement, Southern Water will therefore not be liable in any way for the accuracy of that information.
- 3.3 Where the Customer sells this Report to a Client (other than in the case of a bona fide legal adviser recharging the cost of the Report as a disbursement) Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss or damage whatsoever (save to the extent provided by clause 3.4) and the Customer shall indemnify Southern Water in respect of any claim (other than a claim covered by clause 3.4) by the Client.
- 3.4 Southern Water shall accept liability for death or personal injury arising from its negligence.
- 3.5 The entire liability of Southern Water or the Company as the case may be in respect of all causes of action arising under or in connection with the Report (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) shall not exceed £2,000,000 (two million pounds); and Southern Water or the Company as the case may be shall not in any circumstances (whether for breach of contract, negligence or any other tort, under statute or statutory duty or otherwise at all) be liable for any loss of profit, loss of goodwill, loss of reputation, loss of business or any indirect, special or consequential loss, damage or other claims, costs or expenses.

4.0 Copyright and confidentiality

- 4.1 The Customer and the Client acknowledge that the Report is confidential and is intended for the personal use of the Client. The copyright and any other intellectual property rights in the Report shall remain the property of Southern Water. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided.
- 4.2 The Customer or Client is entitled to make copies of the Report (other than any maps contained in the, or attached to the Report, where no copying is permitted).
- 4.3 The Customer and Client agree (in respect of both the original and any copies made) to respect and not to alter any trademark, copyright notice or other property marking which appears on the Report.
- 4.4 The maps contained in the Report are protected by Crown Copyright and must not be used for any purpose outside the context of the Report.
- 4.5 The Customer and the Client agree to indemnify Southern Water or the Company as the case may be against any losses, costs, claims and damage suffered by Southern Water or the Company as the case may be, as a result of any breach by either of them of the terms of paragraphs 4.1 to 4.4 inclusive.

5.0 Payment

- 5.1 Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by Southern Water, without any set off, deduction or counterclaim. Unless the Customer or Client has an account with Southern Water for payment for Reports, payments for Reports must be received in full by Southern Water before the Report is produced. For Customers or Clients with accounts, payment terms will be as agreed with Southern Water.

6.0 General

- 6.1 If any provision of these terms is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms to the extent that it is invalid or unenforceable. No other provision of these terms shall be affected.
- 6.2 These terms shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.
- 6.3 Nothing in this notice shall in any way restrict your statutory or any other rights of access to the information contained in the Report.

These Terms and conditions are available in larger print for those with impaired vision.

Appendix four: Complaints procedure

When we get it wrong

You deserve the highest standard of service from us, but sometimes we make mistakes. If we do, please let us know and we will investigate and review your concerns.

Whilst we always try to resolve all complaints straight away, if this is not possible and you are not happy with the course of action taken by us, you can ask us to escalate the issue internally or take your complaint to an independent third party.

How you contact us

Firstly please call us and we will try to sort out your problem straight away.

You can call us between 8am and 5pm, Monday to Friday on 0845 270 0212 or 0330 303 0276 (individual consumers);

Email us at searches@southernwater.co.uk; or

Write to us at LandSearch, Southern Water Services, Southern House, Capstone Road, Chatham, Kent, ME5 7QA.

What you can expect

You will receive a full, fair and courteous response from someone who can effectively deal with your problem.

If we can remedy the problem straight away we will do it but if we cannot immediately resolve your problem we will keep you informed of actions being taken.

The process

We will try to resolve any telephone contact or complaint at the time of the call, however, if that isn't possible, we will take the details of your complaint and we will investigate and get back to you within 10 working days.

We will respond to written complaints within 10 working days of the date received, but we will always aim to respond more quickly. Depending on the scale of investigation required, we will keep you informed of the progress and update you with new timescales if necessary.

If you are still not satisfied with our response or action we will refer the matter to a Senior Manager for resolution. At your request we will liaise with a third party representative acting on your behalf.

Our commitment to you

If we do not respond to your complaint within 10 working days of receipt of your contact, we will compensate you in line with Southern Water's Customer services — Guaranteed standards of service for business customers.

If we find your complaint to be justified, or we have made any errors that substantially change the outcome in your search result, we will refund the search fee. We will also provide you with a revised search and undertake the necessary action to put things right as soon as practically possible. You will be kept informed of the progress of any action required.

If you remain dissatisfied

While we aim to resolve your complaint first time, in the event that we are unable to resolve the issue to your satisfaction, ultimately you can contact a third party. Please make sure that you have followed the process above first, if not, your complaint will be passed back to us.



TQ0106NW



Southern
Water

ARUN DISTRICT COUNCIL AB/88/19/PL
E01E31

SEWER RECORDS PAGE 2 OF 2

Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape	Node	Cover	Invert	Size	Material	Shape
0605X	7.7	7.09	150	VC	CIRC	4602X	2.61		150	VC	CIRC												
0607X	6.61	5.72	150	VC	CIRC	4603X	2.61		150	VC	CIRC												
0608X	6.25	6.24	150	VC	CIRC	4604X	2.37		150	VC	CIRC												
0702X	11.66	10.58	225	VC	CIRC	4605X	2.23		150	VC	CIRC												
070DX			UNK	UNK	UNK	4606X			UNK	UNK	CIRC												
0801X	10.35	8.77	225	VC	CIRC	4607X			UNK	UNK	CIRC												
1501X	4.48	-0.25	600	CP	CIRC	4608X			UNK	UNK	CIRC												
1550X	4.05	3.29	225	VC	CIRC	4703X			150	VC	CIRC												
1602X	7.45	6.84	100	VC	CIRC	4704X			100	VC	CIRC												
1603X	5.69	0.02	600	CP	CIRC	4705X			150	VC	CIRC												
1604X	5.51	5.5	150	VC	CIRC	4801X	3.33		225	VC	CIRC	*											
1605X	6.36	5.57	150	VC	CIRC	4801Y	3.33		200	VC	CIRC	*											
1606X	5.33	4.74	150	VC	CIRC	4802X	3.26	1.65	225	VC	CIRC												
1607X	4.72	-0.17	600	CP	CIRC	4803X	3.33		225	VC	CIRC												
1608X	5.14	3.89	150	VC	CIRC	4850X			UNK	UNK	CIRC												
160DX	6.5	5.42	225	VC	CIRC	5702Y	2.43		100	VC	CIRC	*											
1610X	5.61	-0.05	600	CP	CIRC	5702X	2.43	1.27	150	VC	CIRC	*											
1611X	5.49	-0.15	600	CP	CIRC	5704X			100	VC	CIRC												
1612X	5.82	3.82	225	VC	CIRC	5807X			UNK	VC	CIRC												
1613X	4.67	3.7	150	VC	CIRC																		
1614X	5.1	4.37	150	VC	CIRC																		
1615X	4.07	1.35	150	VC	CIRC																		
1616X	4.44	1.92	150	VC	CIRC																		
1617X	4.52	2.18	150	VC	CIRC																		
161DX			225	VC	CIRC																		
162DX			225	VC	CIRC																		
163DX			UNK	UNK	UNK																		
164DX			UNK	UNK	CIRC																		
1650X	7.26	6.2	225	VC	CIRC																		
16ADX			225	VC	CIRC																		
1701X	9.2	8.04	225	VC	CIRC																		
170DX			UNK	UNK	UNK																		
171DX			UNK	UNK	UNK																		
172DX			225	VC	CIRC																		
173DX			UNK	UNK	UNK																		
174DX			UNK	UNK	UNK																		
1750X	8.95	8.94	225	VC	CIRC																		
1802X	6.96	4.48	225	VC	CIRC																		
181DX			225	VC	CIRC																		
1850X	6.65	5.26	375	CP	CIRC																		
2550X	2.96		225	CP	CIRC																		
2601X	4.93	3.96	100	VC	CIRC																		
2602X	4.5	3.29	100	VC	CIRC																		
2604X	4.55		100	VC	CIRC																		
2650X	5.75		225	VC	CIRC																		
2651X	5.74	4.36	225	CP	CIRC																		
2701X	4.14	0.47	600	CP	CIRC																		
2702X	5.72	0.31	600	CP	CIRC																		
2703X	4.85		150	VC	CIRC																		
2704X	3.98	1.99	150	VC	CIRC																		
2706X	4.77	3.96	100	VC	CIRC																		
2707X			UNK	UNK	UNK																		
2802X	4.8	1.15	375	VC	CIRC																		
2852Y	10.98	9.45	375	CP	CIRC																		
2853X	10.62	9.097	375	CP	CIRC																		
2854X	10.27	8.94	375	CP	CIRC																		
285IX	3.5	2.75	450	CP	CIRC																		
286IX	2.89	2.88	450	CP	CIRC																		
3501Y	2.04		150	VC	CIRC	*																	
3501X	2.04	0.09	150	VC	CIRC	*																	
3511X			150	VC	CIRC																		
3802X	4.46	0.78	600	CP	CIRC																		
3803X	4.54		900	CP	CIRC																		
3804X	4.72	0.7	600	CP	CIRC																		
4601X			UNK	UNK	CIRC																		

22/23

LINE STYLES / COLOURS

Brown	----- Foul
	----- Foul Siphon Sewer
	----- Foul Vacuum Main
Red	----- Foul Rising Main
	----- Combined
	----- Combined Siphon Sewer
	----- Combined Rising Main
Orange	----- Lateral Drain
	----- Building Over Agreement Area
Dark Blue	----- Treated Effluent
Purple	----- Sludge
	----- Sewer Catchment
	----- Section 104 Area
Light Blue	----- Surface Water
	----- Surface Water Rising Main
Yellow	----- Private
Green	----- Access Shaft
	----- Decommissioned

MATERIALS

AK	Alkaline
BAC	Bonded Asbestos Cement
BRD	Brick (Common)
BRE	Brick (Engineering)
CC	Concrete Box Culvert
CI	Cast Iron
CO	Concrete (In-Situ)
CP	Concrete (Pre-Cast)
CSB	Concrete Segments (bolted)
CSU	Concrete Segments (unbolted)
DI	Ductile Iron
GRG	Glass Reinforced Concrete
GRP	Glass Reinforced Plastic
MAC	Masonry In regular Courses
MAR	Masonry In random Courses
PE	Polyethylene
PF	Pitch Fibre
PP	Polypropylene
PVC	Polyvinyl Chloride
RFW	Reinforced Plastic Matrix
SI	Spun Iron
ST	Steel
VC	Vertifluid Clay
XXX	Other
ZZZ	Unknown

Manhole (SW)
Manhole (F&C)
Lamp hole (SW)
Lamp hole (F&C)
Pumping Station (SW)
Pumping Station (F&C)
Side entry manhole (SW)
Side entry manhole (F&C)
Blind shaft (SW)
Blind shaft (F&C)
Ejector station (SW)
Ejector station (F&C)
Watertight door (SW)
Watertight door (F&C)
Flushing ch. Min-e (SW)
Flushing ch. Min-e (F&C)
Flushing ch. No-e (SW)
Flushing ch. No-e (F&C)
Demonstration Chamber

LEGEND - SEWERS

Washout (SW)
Washout (F&C)
Rodding Eye (SW)
Rodding Eye (F&C)
Gauging point (SW)
Gauging point (F&C)
Intercept chamber (SW)
Intercept chamber (F&C)
Storm Tank (SW)
Storm Tank (F&C)
Vortex chamber (SW)
Vortex chamber (F&C)
Label ellipse
Dummy/S24 manhole
Outfall
Penstock chamber
Demiboards
Storm Overflow
Backdrop manhole

Other (s)
Other
Change In sewer (s)
Change In sewer
Rafflux valve
Flap valve
Cascade
Anode
Valve
Closed Valve
Air Valve
Hatch box (SW)
Hatch box (F&C)
Direction arrow
Emptying valve
Catchpit
Solekway
Inlet
Balancing Pond

Wastewater treatment works
Marine treatment works
Outfall headworks
Vent
Vent column
Tidal storage tank
Blank end
Head of Public Sewer
Micro Pumping Station
SHAPES (S)
A Arched
B Barrel
C Circular
E Egg
H Horseshoe
R Rectangular
S Square
T Trapezoidal
U U Shape
X Other
NODE REFERENCING SYSTEM
1st digit: hundred metre easting identifier
2nd digit: hundred metre northing identifier
sewer type identifier
0-4 = Foul/Combined
5-9 = Surface Water
4th digit: next sequential node

Drawn by:	chowdha	
Title:	Land on East Side Ford Road	
Date:	16/02/2018	

106861



106619

501057

501539

LEGEND - MAINS				MATERIALS		
	Distribution Main / Communication pipe		Clockwise closing valve		Dialysis machine	Alkathene
	Trunk Main		Fire Hydrant		Break pressure tank	Cast iron
	Raw water main		Washout		Change node	Spun (grey) iron
	Non potable		Washout hydrant		Pumping station	Concrete
	Abandoned main		Meter		Booster station	Ductile iron
	Proposed Main		Capped end		Insertion Flow Meter Point	Bonded Asbestos Cement
	Fire main		Emptying plug		Water tower	Glass reinforced plastic
	Non SWS		Stopcock		Service reservoir	Glass reinforced epoxy
	Sluice valve		Leak Noise Correlator Survey Point		Water Supply Works	(Unplasticised) Polyvinyl chloride
	Air valve		Anode		Bore hole / Well	Polyethylene
	Butterfly valve		Access point / hatchbox		Intake	Steel
	Pressure reducing valve				Customer site	Concrete segments bolted
	Reflux valve				Swab insertion point	Concrete segments unbolted
	Motorised valve					Galvanised iron
						Ductile sleeve
						Concrete pre-stressed
						High performance polyethelene
						Unknown

WARNING: SAC pipes are constructed of Bonded Asbestos Cement

WARNING: Unknown (UNK) materials may include Bonded Asbestos Cement

Drawn by:	chowdha	O.S.Ref: TQ0106NW	
Scale:	1:1250		
Date:	16/02/2018	TITLE: Land on East Side Ford Road	
The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd. accept no responsibility in the event of inaccuracy. The actual positions of pipes should be determined on site.			
Based upon Ordnance Survey Digital Data with the permission of the controller of H.M.S.O. Crown Copyright Reserved Licence No. WU 298530.			



APPENDIX H

CCTV DRAINAGE SURVEY



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS

Project-information

Project name :
11260A FORD ROAD

Project Number :

Contact :

Date :
21/01/2019

Client: **OAKFORD HOMES**
Contact Name: **PETER HAWKEY**
Department: **THE COACH HOUSE**
Road: **ORANGE COURT LANE**
Town: **DOWNE, ORPINGTON**
County: **KENT BR6 7JD**
Telephone:
Fax:
Mobile: **07768 718 549**
E-mail: **peterihawkey@yahoo.co.uk**

Site:
Contact Name:
Department:
Road: **FORD ROAD**
Town: **ARUNDEL**
County:
Telephone:
Fax:
Mobile:
E-mail:

Contractor **CLEARVIEW SURVEYS LIMITED**
Contact Name: **ANDY GUARE**
Department: **UNIT 301 WOOLSBRIDGE IND ESTATE**
Road: **OLD BARN FARM ROAD**
Town: **THREE LEGGED CROSS**
County: **DORSET**
Telephone: **01202 828281**
Fax:
Mobile: **07884 311690**
E-mail: **andyg@clearviewsurveys.co.uk**

11260A FORD ROAD



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS

Email: enquiries@clearview.co.uk

Table of contents

Project Name:
11260A FORD ROAD

Project number:

Date:
21/01/2019

Contact:

Profile Report	1
Inspection: 1	
Section: 1, MH.2 --- MH.1	2
Section: 2, MH.1 --- OUTFALL.1	4
Section: 3, BRANCH.1 --- MH.1	6
Section: 4, MH.2 --- MH.1	11
Section: 5, MH.1 --- OUTFALL.1	13
Section: 6, MH.2 --- MH.1	15
Section: 7, MH.3 --- MH.2	17
Section: 8, MH.2 --- MH.1	19
Section: 9, MH.1 --- OUTFALL.1	21

Place :



CLEARVIEW SURVEYS LIMITED
 OLD BARN FARM ROAD
 THREE LEGGED CROSS

ΣØ / Main sections

Project name :
11260A FORD ROAD

Project number :

Contact :

Date :
21/01/2019

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
3	BRANCH.1	MH.1	21/01/2019	FORD ROAD		Vitrified clay	21.90	21.90
7	MH.3	MH.2	21/01/2019	FORD ROAD		Vitrified clay	9.20	9.20

Pipe size: CIRCULAR 150 = 31.1 m (31.1 m)

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
1	MH.2	MH.1	21/01/2019	FORD ROAD		Vitrified clay	33.00	0.90
2	MH.1	OUTFALL.1	21/01/2019	FORD ROAD		Vitrified clay	17.00	0.90
4	MH.2	MH.1	21/01/2019	FORD ROAD		Vitrified clay	33.00	21.40
5	MH.1	OUTFALL.1	21/01/2019	FORD ROAD		Vitrified clay	17.00	1.80
6	MH.2	MH.1	21/01/2019	FORD ROAD		Vitrified clay	33.00	0.90
8	MH.2	MH.1	21/01/2019	FORD ROAD		Vitrified clay	33.00	9.10

Pipe size: CIRCULAR 225 = 166 m (35 m)

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
9	MH.1	OUTFALL.1	21/01/2019	FORD ROAD		Brick	17.00	8.20

Pipe size: CIRCULAR 900/900 = 17 m (8.2 m)

All sections = 214.1 m (74.3 m)

11260A FORD ROAD



CLEARVIEW SURVEYS LIMITED
 OLD BARN FARM ROAD
 Street : THREE LEGGED CROSS



Inspection report

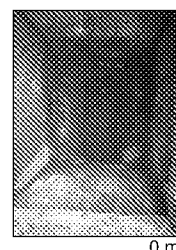
Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 1	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : PAN AND TILT	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : ARUNDEL	Location details:	U/S MH : MH.2
Road : FORD ROAD	Catchment:	U/S Depth : 1.08
Location Difficult access	Pipe Shape : Circular	D/S MH : MH.1
Inspection MH.1 (U/S) MH.2	Pipe Length	D/S Depth : 1.28

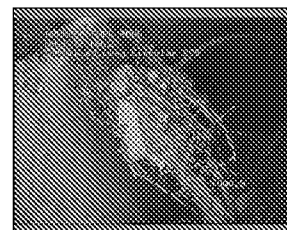
Use: Surface water	Pipe Width :
Year laid : Z	Pipe Diameter : 225 mm
Purpose : Sample survey to determine asset condition	Pipe material : Vitrified clay
Total length : 33.00 m	Lining :

Comment : HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED

1:50 Depth: 1.28	Position	Code	Observation	Grade
		MH	Manhole type: manhole, reference number: 11260A	(Cover) 0
		WL	Water level, 5% of the vertical dimension	(Serv) 0
		DES	Settled deposits, fine, 30% cross-sectional area loss	(Serv) 4
		INC	Incomplete, at 12 o'clock, diameter 150mm	(Cover) 0
		RM	Roots, mass, 10% cross-sectional area loss	(Serv) 3
		SA	Survey abandoned Remarks: DUE TO DEBRIS	(Misc) 0



0 m



0.9 m

Structural Defects					Construction Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	2	9	0.27	9	4

11260A FORD ROAD



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
21/01/2019

 Section number :
1

 PLR Suffix :
X


Photo: MH.1.JPG
 0m, Start node type, manhole, reference number : MH.1

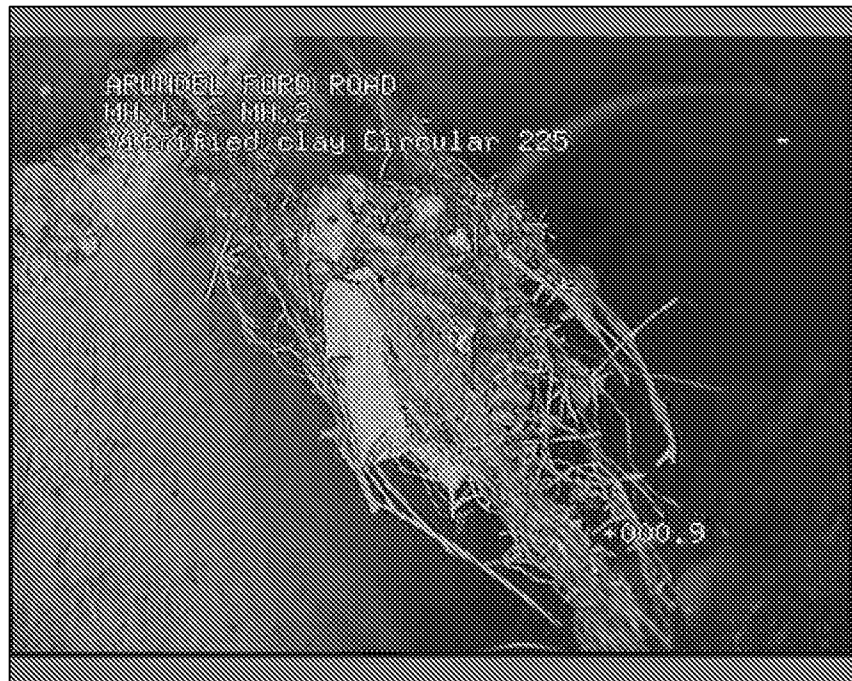


Photo: 1_1_6_A.JPG
 0.9m, Roots, mass, 10% cross-sectional area loss



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
Street : THREE LEGGED CROSS

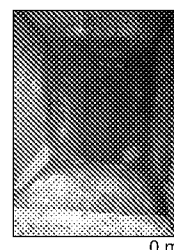
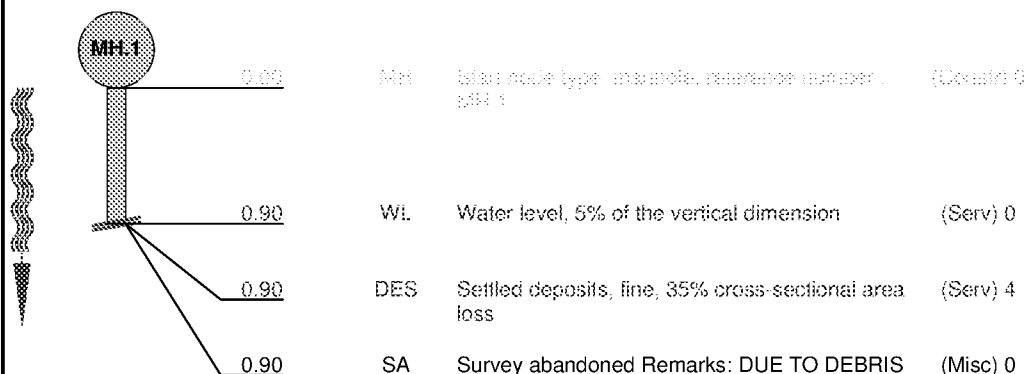
Inspection report

Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 2	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : PAN AND TILT	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH.1 (D/S) OUTFALL.1	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH.1 1.28 OUTFALL.1 0
Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 17.00 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	225 mm Vitrified clay		

Comment : **HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED**

1:50 Position Code Observation Grade
Depth: 1.28



Structural Defects

Service Defects

Obstructions/Features

Miscellaneous Features

STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	1	5	5.56	5	5

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
2

PLR Suffix :
X



Photo: MH.1.JPG
0m, Start node type, manhole, reference number : MH.1

11260A FORD ROAD



Inspection report

Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 3	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH.1 (U/S) BRANCH.1	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	BRANCH.1 0 MH.1 1.28
---	---	--	-----------------	--	---

Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 21.90 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	150 mm Vitrified clay
--	---	--	----------------------------------

Comment :	NO FURTHER ACTION REQUIRED
-----------	-----------------------------------

1:126 Position Depth: 1.28	Code	Observation	Grade	
	MH	Shy name type, manifold, reference number : S01 1	(Cover) 0	
	WI	Water level, 5% of the vertical dimension	(Serv) 0	
	REM	General remark Remarks: STAINING ALONG PIPE	(Misc) 0	
	S01 RM	Roots, mass, 10% cross-sectional area loss, Start	(Serv) 3	
	LU	Line deviates up Remarks: SLIGHT	(Serv) 0	
	CX	Corrosion intruding, at 2 o'clock, diameter 100mm, intrusion 50%	(Cover) 4	
	CX	Corrosion intruding, at 2 o'clock, diameter 100mm, intrusion 50%	(Cover) 4	
	DER	Settled deposits, coarse, 5% cross-sectional area loss	(Serv) 3	
	DER	Settled deposits, coarse, 10% cross-sectional area loss	(Serv) 3	
	CX	Corrosion intruding, at 2 o'clock, diameter 100mm, intrusion 50%	(Cover) 4	
	RTJ	Roots, tap at joint	(Serv) 4	
	S02 DER	Settled deposits, coarse, 20% cross-sectional area loss, Start	(Serv) 4	
	CX	Corrosion intruding, at 9 o'clock, diameter 100mm, intrusion 20%	(Cover) 4	
	H	Hole in drain/sewer, from 11 to 1 o'clock	(Struct) 4	
	CX	Corrosion intruding, at 5 o'clock, diameter 100mm, intrusion 50%	(Cover) 3	

11260A FORD ROAD



Inspection Report

Date : 21/01/2019	Job number : 11260A	Weather : no rain or snow	Operator : DL07	Section number : 3	PLR : X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Grade:

1:126

Position

Code

Observation

Grade

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
3

PLR Suffix :
X



Photo: MH.1.JPG
0m, Start node type, manhole, reference number : MH.1



Photo: 4_4_17_A.JPG
1.5m, Connection intruding, at 2 o'clock, diameter 100mm, intrusion 40%

11260A FORD ROAD



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
3

PLR Suffix :
X



Photo: 4_4_18_A.JPG
6m, Connection intruding, at 9 o'clock, diameter 100mm, intrusion 25%



Photo: 4_4_21_A.JPG
10.6m, Connection intruding, at 3 o'clock, diameter 150mm, intrusion 30%



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
3

PLR Suffix :
X



Photo: 4_4_24_A.JPG

12.9m, Connection intruding, at 9 o'clock, diameter 150mm, intrusion 25%



Photo: 4_4_25_A.JPG

12.9m, Hole in drain/sewer, from 11 to 1 o'clock



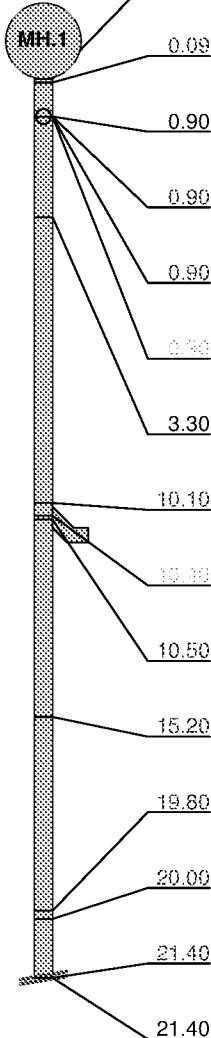
Inspection report

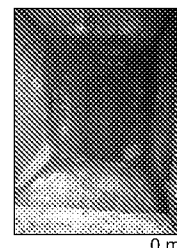
Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 4	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : ARUNDEL	Location details:	U/S MH : MH.2
Road : FORD ROAD	Catchment:	U/S Depth : 1.08
Location Difficult access	Pipe Shape : Circular	D/S MH : MH.1
Inspection MH.1 (U/S) MH.2	Pipe Length	D/S Depth : 1.28

Use: Surface water	Pipe Width :
Year laid : Z	Pipe Diameter : 225 mm
Purpose : Sample survey to determine asset condition	Pipe material : Vitrified clay
Total length : 33.00 m	Lining :

Comment : HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED

1:180 Position Depth: 1.28	Code	Observation	Grade
	MH	Shallow type, manhole, reference number : gtr 1	(Contig) 0
0.00	WL	Water level, 5% of the vertical dimension	(Serv) 0
0.90	REM	General remark Remarks: STAINING ALONG PIPE	(Misc) 0
0.90	S01	DES Settled deposits, fine, 35% cross-sectional area loss, Start	(Serv) 4
0.90	RM	Roots, mass, 10% cross-sectional area loss	(Serv) 3
0.90	JNC	Junction closed at 12 o'clock, diameter 150mm	(Contig) 0
3.30	REM	General remark Remarks: FLEXI ROD RIDING ON ONE SIDE OF PIPE / POOR VISION	(Misc) 0
10.10	RM	Roots, mass, 20% cross-sectional area loss	(Serv) 5
10.10	JN	Junction, at 11 o'clock, diameter 100mm	(Contig) 0
10.50	DESJ	Settled deposits, fine at joint, 60% cross-sectional area loss	(Serv) 4
15.20	S02	RM Roots, mass, 10% cross-sectional area loss, Start	(Serv) 3
19.80	F02	RM Roots, mass, 10% cross-sectional area loss, End	(Serv) 3
20.00	RM	Roots, mass, 25% cross-sectional area loss	(Serv) 5
21.40	F01	DES Settled deposits, fine, 35% cross-sectional area loss, End	(Serv) 4
21.40	SA	Survey abandoned Remarks: DUE TO MASS ROOTS AND DEBRIS	(Misc) 0



Structural Defects					Service Defects				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	5	19	4.39	144.9	5

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE [REDACTED]
Tel: [REDACTED]

Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
4

PLR Suffix :
X



Photo: MH.1.JPG
0m, Start node type, manhole, reference number : MH.1

11260A FORD ROAD



Inspection report

Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 5	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH.1 (D/S) OUTFALL.1	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH.1 1.28 OUTFALL.1 0
---	--	--	-----------------	--	--

Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 17.00 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	225 mm Vitrified clay
--	---	--	----------------------------------

Comment :	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED
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1:50 Depth: 1.28	Position	Code	Observation	Grade	
		MH	Start code type manhole, reference number 1	(Clean) 0	
	0.90	WL	Water level, 5% of the vertical dimension	(Serv) 0	
	0.90	REM	General remark Remarks: STAINING ALONG PIPE	(Misc) 0	
	0.90	DES	Settled deposits, fine, 35% cross-sectional area loss	(Serv) 4	
	1.50	RTJ	Roots, tap at joint	(Serv) 4	
	1.50	RMJ	Roots, mass at joint, 35% cross-sectional area loss	(Serv) 5	
	1.80	SA	Survey abandoned Remarks: DUE TO DEBRIS AND MASS ROOTS	(Misc) 0	

Structural Defects					Construction Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	1	5	0.29	5	4

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
5

PLR Suffix :
X



Photo: MH.1.JPG
0m, Start node type, manhole, reference number : MH.1



Photo: 6_6_54_A.JPG
1.5m, Roots, tap at joint

11260A FORD ROAD



CLEARVIEW SURVEYS LIMITED
 OLD BARN FARM ROAD
 Street : THREE LEGGED CROSS

Inspection report

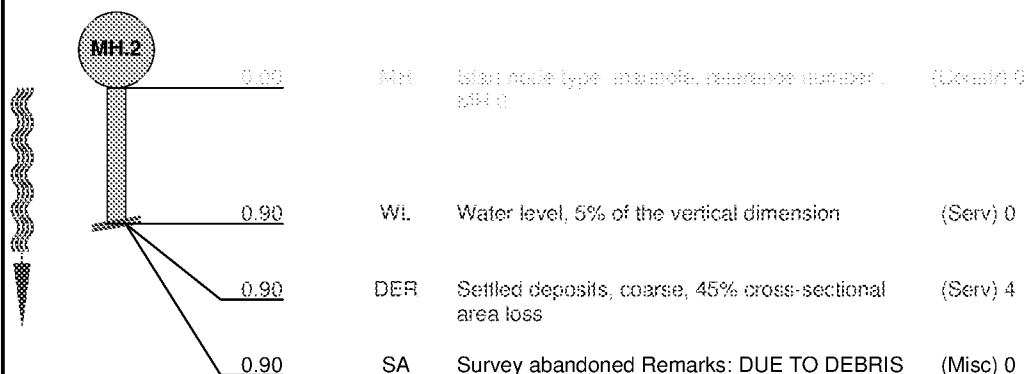
Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 6	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : PAN AND TILT	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : ARUNDEL	Location details:	U/S MH : MH.2
Road : FORD ROAD	Catchment:	U/S Depth : 1.08
Location Difficult access	Pipe Shape : Circular	D/S MH : MH.1
Inspection MH.2 (D/S) MH.1	Pipe Length	D/S Depth : 1.28

Use: Surface water	Pipe Width :
Year laid : Z	Pipe Diameter : 225 mm
Purpose : Sample survey to determine asset condition	Pipe material : Vitrified clay
Total length : 33.00 m	Lining :

Comment : HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED

1:50 Position Code Observation Grade
Depth: 1.08



Structural Defects					Construction Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	1	5	5.56	5	5

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

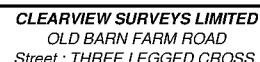
Section number :
6

PLR Suffix :
X



Photo: MH.2.JPG
0m, Start node type, manhole, reference number : MH.2

11260A FORD ROAD



Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 7	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place :	ARUNDEL	Location details:	U/S MH :	MH.3
Road :	FORD ROAD	Catchment:	U/S Depth :	0
Location	Difficult access	Pipe Shape :	D/S MH :	MH.2
Inspection	MH.2 (U/S) MH.3	Pipe Length	D/S Depth :	1.08

Use:	Surface water	Pipe Width :	
Year laid :	Z	Pipe Diameter :	150 mm
Purpose :	Sample survey to determine asset condition	Pipe material :	Vitrified clay
Total length :	9.20 m	Lining :	

Comment : **HIGH PRESSURE JETTING REQUIRED**

1:75	Position	Code	Observation	Grade	
Depth: 1.08					
	0.00	MH	Start node type: manhole, reference number: MH.2	(Covulit) 0	
	0.60	WL	Water level, 35% of the vertical dimension	(Serv) 0	
					0 m
					8.1 m
	7.60	WL	Water level, 20.0% of the vertical dimension	(Serv) 0	
	8.10	RMJ	Roots, mass at joint, 10% cross-sectional area loss	(Serv) 3	
	9.20	MHP	Finish node type: manhole, reference number: MH.3	(Covulit) 0	
Depth: 0					

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS

Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
7

PLR Suffix :
X



Photo: MH.2.JPG
0m, Start node type, manhole, reference number : MH.2

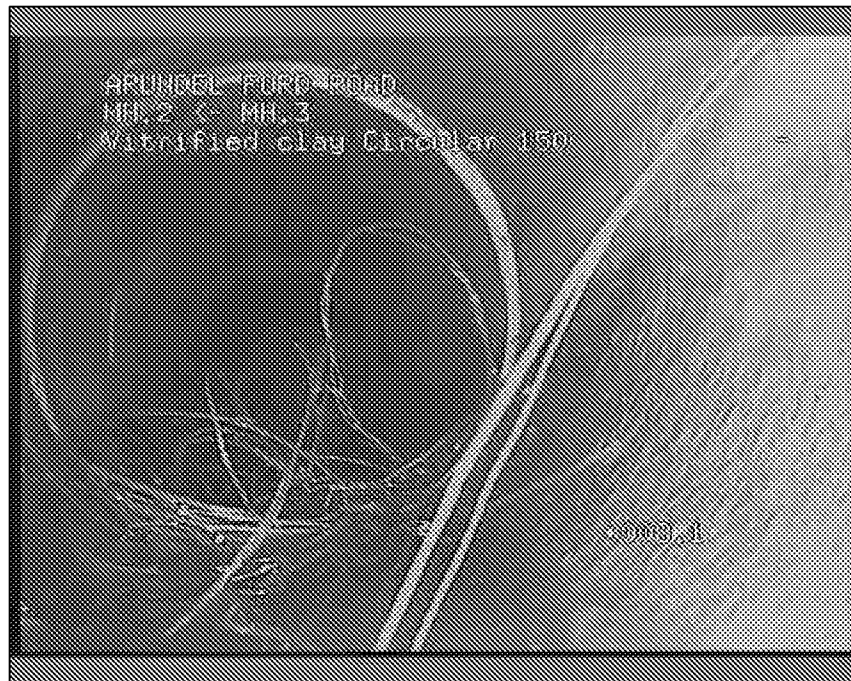


Photo: 8_8_70_A.JPG
8.1m, Roots, mass at joint, 10% cross-sectional area loss

11260A FORD ROAD



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
Street : THREE LEGGED CROSS

Inspection report

Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 8	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH.2 (D/S) MH.1	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH.2 1.08 MH.1 1.28
---	---	--	-----------------	--	--

Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 33.00 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	225 mm Vitrified clay
--	---	--	----------------------------------

Comment : **HIGH PRESSURE JETTING AND RE SURVEYING REQUIRED**

1:75	Position	Code	Observation	Grade
Depth: 1.08				
	MH.2			
	0.00	RM	Start code type, manhole, reference number (U/S)	
	0.90	WL	Water level, 5% of the vertical dimension	(Serv) 0
	0.90	REM	General remark Remarks: STAINING ALONG PIPE	(Misc) 0
	0.90	S01 DES	Settled deposits, fine, 40% cross-sectional area loss, Start	(Serv) 4
	3.10	WL	Water level, 20% of the vertical dimension	(Serv) 0
	3.20	RMJ	Roots, mass at joint, 10% cross-sectional area loss	(Serv) 3
	8.20	RMJ	Roots, mass at joint, 20% cross-sectional area loss	(Serv) 3
	9.10	F01 DES	Settled deposits, fine, 40% cross-sectional area loss, End	(Serv) 4
	9.10	SA	Survey abandoned Remarks: DUE TO DEBRIS AND MASS ROOTS	(Misc) 0



Structural Defects					Construction Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
0	0	0	0	1	1	5	1.24	41	4

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD



uk

Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
8

PLR Suffix :
X



Photo: MH.2.JPG
0m, Start node type, manhole, reference number : MH.2

11260A FORD ROAD



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
Street : THREE LEGGED CROSS
T. [REDACTED]

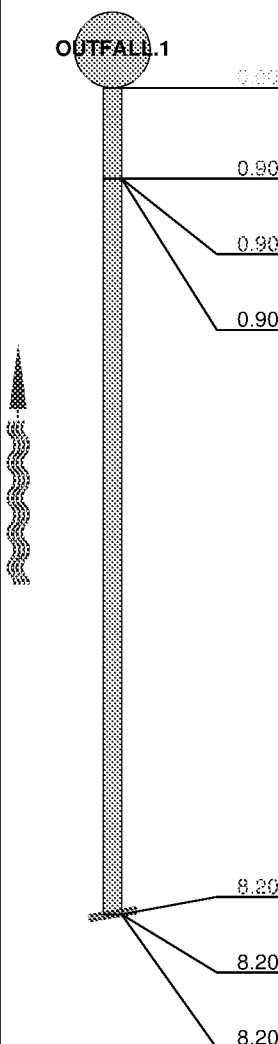
Inspection report

Date : 21/01/2019	Job number : 11260A	Section Type :	Operator : DL07	Section number : 9	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P40 CVS	Camera : FLEXI ROD	Preset :	Cleaned : no	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Road OUTFALL.1 (U/S) MH.1	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH.1 0 OUTFALL.1 0
---	--	--	-----------------	--	---------------------------------------

Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 17.00 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	900 mm 900 mm Brick
--	---	--	------------------------------------

Comment : **HIGH PRESSURE JETTING REQUIRED**

1:75	Position	Code	Observation	Grade																														
Depth: 0																																		
																																		
	0.00	OF	Start code type outlet reference number: OUTFALL.1	(Down) 0																														
	0.90	WL	Water level, 5% of the vertical dimension	(Serv) 0																														
	0.90	S01	DES Settled deposits, fine, 25% cross-sectional area loss, Start	(Serv) 4																														
	0.90	REM	General remark Remarks: STAINING ALONG PIPE	(Misc) 0																														
	8.20	F01	DES Settled deposits, fine, 25% cross-sectional area loss, End	(Serv) 4																														
	8.20	SC	Dimension changes, 225mm high	0																														
	8.20	SA	Survey abandoned Remarks: UNABLE TO PASS CHANGE IN PIPE SIZE	(Misc) 0																														
<table><tr><th colspan="5">Structural Defects</th><th colspan="5">Service Defects</th></tr><tr><th>STR no def</th><th>STR peak</th><th>STR mean</th><th>STR total</th><th>STR grade</th><th>SER no def</th><th>SER peak</th><th>SER mean</th><th>SER total</th><th>SER grade</th></tr><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>5</td><td>4.45</td><td>36.5</td><td>4</td></tr></table>					Structural Defects					Service Defects					STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade	0	0	0	0	1	1	5	4.45	36.5	4
Structural Defects					Service Defects																													
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade																									
0	0	0	0	1	1	5	4.45	36.5	4																									

11260A FORD ROAD

Place :



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGERS CROSS

E

Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
21/01/2019

Section number :
9

PLR Suffix :
X



Photo: UPSTREAM FROM OUTFALL.1.JPG
0m, Start node type, outfall, reference number : OUTFALL.1

11260A FORD ROAD



SITE PHOTOGRAPHS



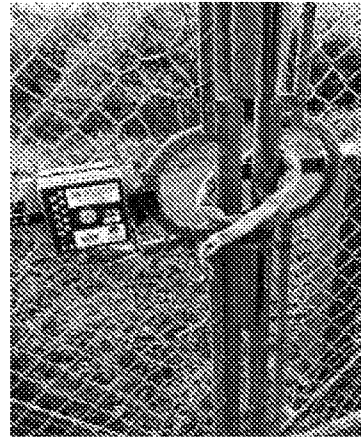
CLEARANCE TO MANHOLES



PORTABLE FROM VAN



ROUGH LOCATION OF MH.3
BEYOND FENCE LINE AND WITHIN VEGITATION



SITE GATE



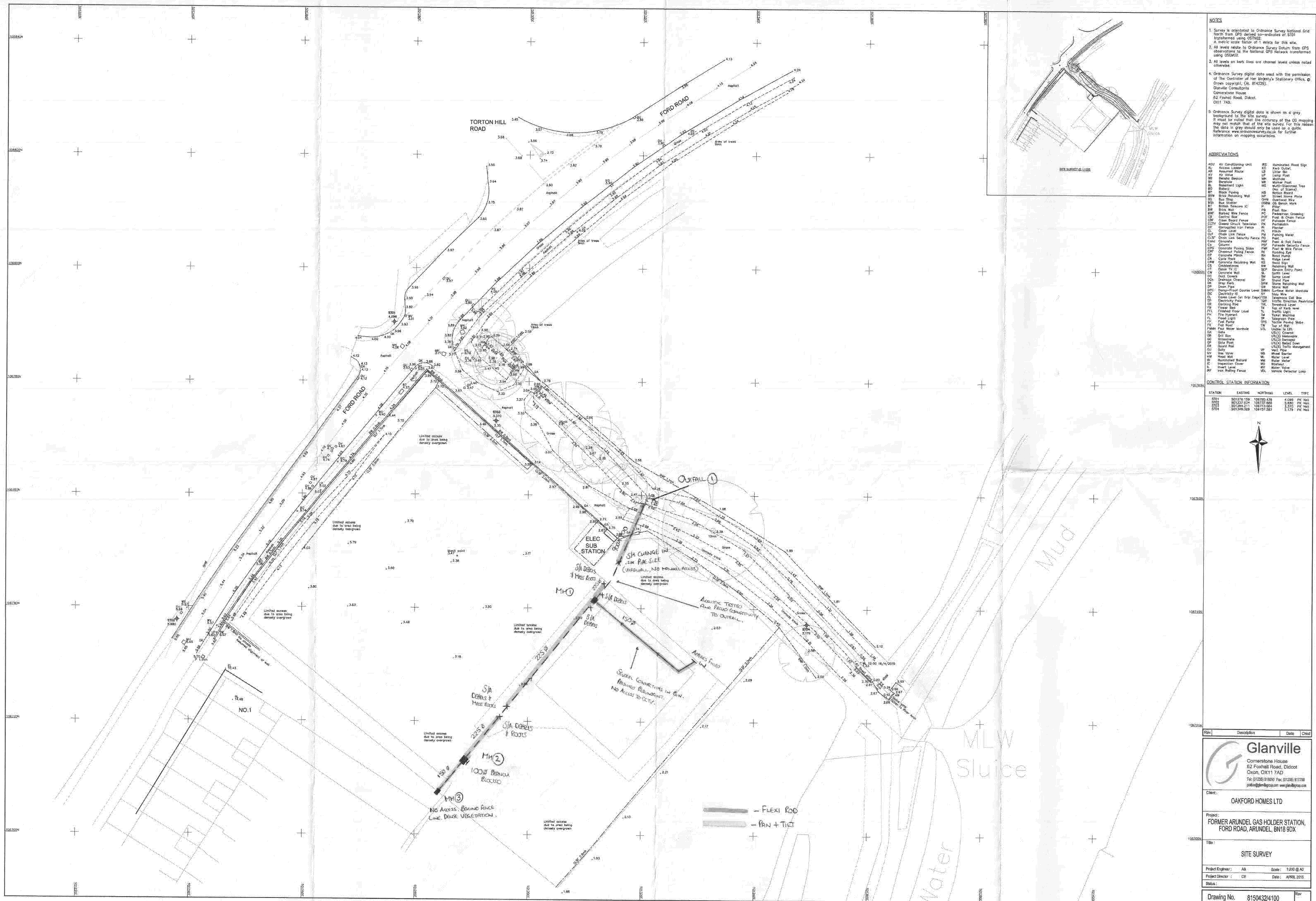
RECOMMENDATIONS

IF YOU REQUIRE A QUOTATION FOR THE
REMEDIAL REPAIRS RECOMMENDED IN THIS
REPORT INCLUDING
DRAIN LINING, PATCH REPAIRS AND
EXCAVATIONS PLEASE CALL 01202 828281

	<i>Upstream MH</i>	<i>Downstream MH</i>	<i>Remarks regarding the inspection</i>	<i>No.</i>
1	MH.2	MH.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	1
2	MH.1	OUTFALL.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	2
3	BRANCH.1	MH.1	NO FURTHER ACTION REQUIRED	3
4	MH.2	MH.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	4
5	MH.1	OUTFALL.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	5
6	MH.2	MH.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	6
7	MH.3	MH.2	HIGH PRESSURE JETTING REQUIRED	7
8	MH.2	MH.1	HIGH PRESSURE JETTING AND RE SURVEYING REQUIRE	8
9	MH.1	OUTFALL.1	HIGH PRESSURE JETTING REQUIRED	9



DRAINAGE LAYOUT DRAWINGS





CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS

Email: andy@clearview.co.uk

Project-information

Project name :
11623 - FORD ROAD

Project Number :

Contact :

Date :
15/04/2019

Client: **OAKFORD HOMES**
Contact Name: **PETER HAWKEY**
Department: **THE COACH HOUSE**
Road: **ORANGE COURT LANE**
Town: **DOWNE, ORPINGTON**
County: **KENT BR6 7JD**
Telephone:
Fax:
Mobile:
E-mail:

Site:
Contact Name:
Department:
Road: **FORD ROAD**
Town: **ARUNDEL**
County: **BN18 9DX**
Telephone:
Fax:
Mobile:
E-mail:

Contractor **CLEARVIEW SURVEYS LIMITED**
Contact Name: **ANDY GUARE**
Department: **UNIT 301 WOOLSBRIDGE IND ESTATE**
Road: **OLD BARN FARM ROAD**
Town: **THREE LEGGED CROSS**
County: **DORSET**
Telephone:
Fax:
Mobile:
E-mail:



CLEARVIEW SURVEYS LIMITED
OLD BARN FARM ROAD
THREE LEGGED CROSS



Table of contents

Project Name: 11623 - FORD ROAD	Project number:	Date: 15/04/2019	Contact:	
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Profile Report	1
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Section: 1, MH3 --- MH2	2
Section: 2, MAIN RUN --- MH3	6

Place :



CLEARVIEW SURVEYS LIMITED
 OLD BARN FARM ROAD
 FURZE, LONDON, E20 2JG



$\Sigma \emptyset$ / Main sections

Project name :
11623 - FORD ROAD

Project number :

Contact :

Date :
15/04/2019

Nr.	US MH	DS MH	Date	Road	Tape No.	Material	m	(m)
1	MH3	MH2	15/04/2019	FORD ROAD		Vitrified clay	7.50	7.50
2	MAIN RUN	MH3	15/04/2019	FORD ROAD		Vitrified clay	53.00	51.40

Pipe size: CIRCULAR 150 = 60.5 m (58.9 m)

All sections = 60.5 m (58.9 m)

11623 - FORD ROAD



Inspection report

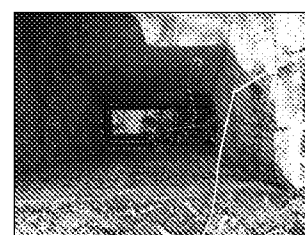
Date : 15/04/2019	Job number : 11623	Section Type :	Operator : SH09	Section number : 1	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH2 (U/S) MH3	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH3 0 MH2 1.06
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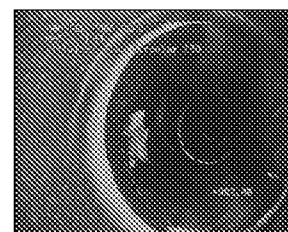
Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 7.50 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	150 mm Vitrified clay
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Comment :	RE-LINE RUN
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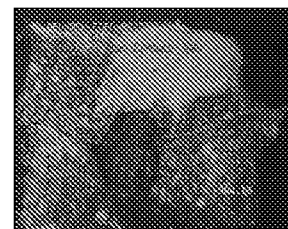
1:54 Depth: 1.06	Position	Code	Observation	Grade
	MH2	MH	Shallow type, manifold, reference number 1042	(Coming 0
0.00		WL	Water level, 5% of the vertical dimension	(Serv) 0
0.60		FCJ	Fracture, circumferential at joint, from 9 to 3 o'clock	(Struct) 3
0.60		FLJ	Fracture, longitudinal at joint, at 12 o'clock	(Struct) 3
0.60		DER	Settled deposits, coarse, 5% cross-sectional area loss	(Serv) 3
1.90		FCJ	Fracture, circumferential at joint, from 7 to 5 o'clock	(Struct) 3
1.90		FLJ	Fracture, longitudinal at joint, at 10 o'clock	(Struct) 3
1.90		FLJ	Fracture, longitudinal at joint, at 4 o'clock	(Struct) 3
3.27		FCJ	Fracture, circumferential at joint, from 8 to 10 o'clock	(Struct) 3
3.86		RF	Roots, fine Remarks: COMING FROM DEFECT	(Serv) 2
3.86		FMJ	Fracture, multiple at joint, from 7 to 5 o'clock	(Struct) 4
4.15		H	Hole in drain/sewer, at 12 o'clock	(Struct) 4
4.15		SS	Surface damage, spalling, from 11 to 1 o'clock	(Struct) 2
5.23		FCJ	Fracture, circumferential at joint, from 8 to 11 o'clock	(Struct) 3
5.63		FCJ	Fracture, circumferential at joint, from 3 to 5 o'clock	(Struct) 3



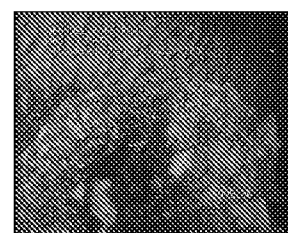
0 m



3.86 m



4.15 m



5.95 m



Inspection Report

Date : 15/04/2019	Job number : 11623	Weather : no rain or snow	Operator : SH09	Section number : 1	PLR : X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Grade:

1:54	Position	Code	Observation	Grade
	5.67	FLJ	Fracture, longitudinal at joint, at 9 o'clock	(Struct) 3
	5.95	H	Hole in drain/sewer, at 9 o'clock	(Struct) 4
	5.96	SS	Surface damage, spalling, from 9 to 10 o'clock	(Struct) 2
	6.11	FCJ	Fracture, circumferential at joint, from 2 to 6 o'clock	(Struct) 3
	6.66	FLJ	Fracture, longitudinal at joint, at 7 o'clock	(Struct) 3
	7.22	RF	Roots, fine	(Serv) 2
	7.50	NonP	Finish node type, multiple reference number, MH3	(Const) 0
Depth: 0				
Structural Defects Service Defects STR no def STR peak STR mean STR total STR grade SER no def SER peak SER mean SER total SER grade				
4 100 26.67 200 4 3 2 0.53 4 3				

11623 - FORD ROAD



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
1

PLR Suffix :
X



Photo: MH2.JPG
 0m, Start node type, manhole, reference number : MH2



Photo: 1_1_13_A.JPG
 3.86m, Fracture, multiple at joint, from 7 to 5 o'clock



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
1

 PLR Suffix :
X


Photo: 1_1_14_A.JPG
 4.15m, Hole in drain/ sewer, at 12 o'clock



Photo: 1_1_19_A.JPG
 5.95m, Hole in drain/ sewer, at 9 o'clock

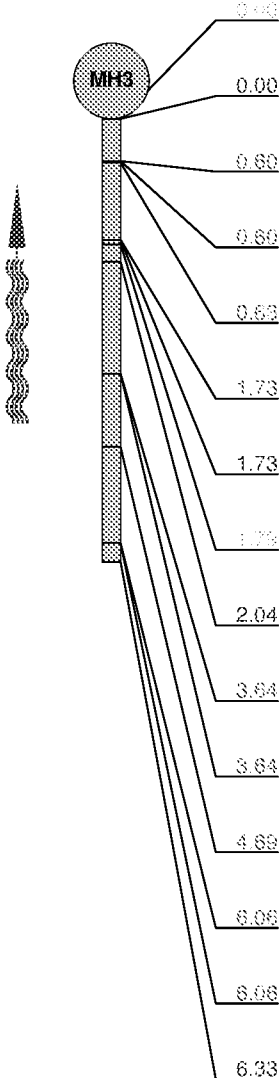


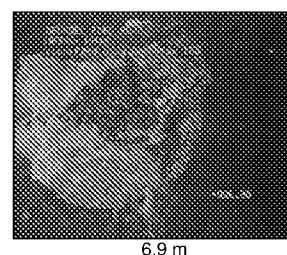
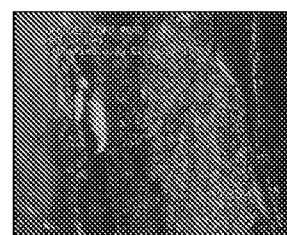
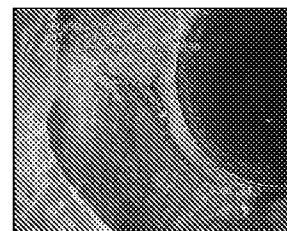
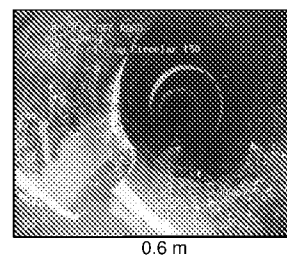
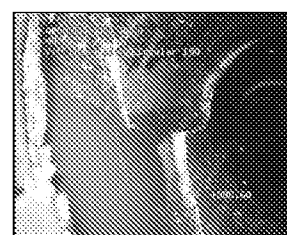
Inspection report

Date : 15/04/2019	Job number : 11623	Section Type :	Operator : SH09	Section number : 2	PLR SUFFIX: X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Type of Drain : Gravity drain/sewer

Place : Road : Location Inspection	ARUNDEL FORD ROAD Difficult access MH3 (U/S) MAIN RUN	Location details: Catchment: Pipe Shape : Pipe Length	Circular	U/S MH : U/S Depth : D/S MH : D/S Depth :	MAIN RUN 0 MH3 0
Use: Year laid : Purpose : Total length :	Surface water Z Sample survey to determine asset condition 53.00 m	Pipe Width : Pipe Diameter : Pipe material : Lining :	150 mm Vitrified clay		

Comment : **EXCAVATION REQUIRED**

1:108 Position Depth: 0	Code	Observation	Grade
	MH	Shallow type, manhole, reference number : MH3	(Cover) 0
0.00	WL	Water level, 5% of the vertical dimension	(Serv) 0
0.60	H	Hole in drain/sewer, from 5 to 7 o'clock	(Struct) 4
0.60	B	Broken pipe, from 5 to 7 o'clock	(Struct) 4
0.63	FL	Fracture, longitudinal, at 1 o'clock	(Struct) 3
1.73	HJ	Hole in drain/sewer at joint, from 7 to 12 o'clock	(Struct) 5
1.73	RFJ	Roots, fine at joint	(Serv) 2
1.73	SV	Self visible beyond detail	(Cover) 0
2.04	WL	Water level, 10% of the vertical dimension	(Serv) 0
3.64	FCJ	Fracture, circumferential at joint, from 5 to 11 o'clock	(Struct) 3
3.64	OJM	Open joint, medium	(Struct) 1
4.69	FCJ	Fracture, circumferential at joint, from 4 to 7 o'clock	(Struct) 3
6.06	FCJ	Fracture, circumferential at joint, from 5 to 3 o'clock	(Struct) 3
6.06	FLJ	Fracture, longitudinal at joint, at 12 o'clock	(Struct) 3
6.33	WL	Water level, 5% of the vertical dimension	(Serv) 0





Inspection Report

Date : 15/04/2019	Job number : 11623	Weather : no rain or snow	Operator : SH09	Section number : 2	PLR : X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Grade:

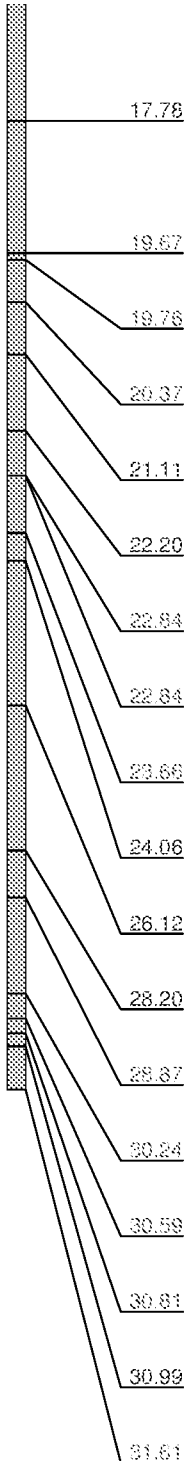
1:108	Position	Code	Observation	Grade
	6.90	H	Hole in drain/sewer, at 12 o'clock	(Struct) 4
	6.91	SS	Surface damage, spalling, from 11 to 1 o'clock	(Struct) 2
	7.67	HJ	Hole in drain/sewer at joint, at 6 o'clock	(Struct) 4
	7.68	FMJ	Fracture, multiple at joint, from 6 to 6 o'clock	(Struct) 4
	7.76	HJ	Hole in drain/sewer at joint, at 12 o'clock	(Struct) 4
	7.78	SV	See visible beyond defect	(Const) 0
	10.49	JDM	Joint displaced, medium	(Struct) 1
	10.87	RFJ	Roots, fine at joint	(Serv) 2
	12.74	FCJ	Fracture, circumferential at joint, from 4 to 6 o'clock	(Struct) 3
	13.52	HJ	Hole in drain/sewer at joint, from 11 to 12 o'clock	(Struct) 4
	13.52	FCJ	Fracture, circumferential at joint, from 11 to 2 o'clock	(Struct) 3
	13.52	FLJ	Fracture, longitudinal at joint, at 1 o'clock	(Struct) 3
	14.16	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	14.16	FCJ	Fracture, circumferential at joint, from 5 to 9 o'clock	(Struct) 3
	15.63	FC	Fracture, circumferential, from 6 to 6 o'clock	(Struct) 3
	15.67	LU	Line deviates up	(Serv) 0
	15.67	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	18.09	QJM	Open joint, medium	(Struct) 1

11623 - FORD ROAD



Inspection Report

Date : 15/04/2019	Job number : 11623	Weather : no rain or snow	Operator : SH09	Section number : 2	PLR : X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Grade:

1:108	Position	Code	Observation	Grade
				
	17.78	DEZJ	Attached deposits, other at joint, from 4 to 7 o'clock, 10% cross-sectional area loss Remarks: SCALE	(Serv) 3
	19.67	JDM	Joint displaced, medium	(Struct) 1
	19.76	OJM	Open joint, medium	(Struct) 1
	20.37	FCJ	Fracture, circumferential at joint, from 3 to 8 o'clock	(Struct) 3
	21.11	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	22.20	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	22.84	FLJ	Fracture, longitudinal at joint, at 8 o'clock	(Struct) 3
	22.84	FCJ	Fracture, circumferential at joint, from 6 to 8 o'clock	(Struct) 3
	23.66	OJM	Open joint, medium	(Struct) 1
	24.06	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	26.12	WL	Water level, 10% of the vertical dimension	(Serv) 0
	28.20	WL	Water level, 5% of the vertical dimension	(Serv) 0
	28.87	FS	Fracture spiral, from 9 to 10 o'clock	(Struct) 4
	30.24	FCJ	Fracture, circumferential at joint, from 6 to 9 o'clock	(Struct) 3
	30.59	H	Hole in drain/sewer, at 6 o'clock	(Struct) 4
	30.81	H	Hole in drain/sewer, at 12 o'clock	(Struct) 4
	30.99	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	31.61	FCJ	Fracture, circumferential at joint, from 5 to 7 o'clock	(Struct) 3

11623 - FORD ROAD



Inspection Report

Date : 15/04/2019	Job number : 11623	Weather : no rain or snow	Operator : SH09	Section number : 2	PLR : X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Grade:

1:108	Position	Code	Observation	Grade
	32.71	FCJ	Fracture, circumferential at joint, from 4 to 6 o'clock	(Struct) 3
	33.94	FCJ	Fracture, circumferential at joint, from 5 to 7 o'clock	(Struct) 3
	34.89	FCJ	Fracture, circumferential at joint, from 4 to 6 o'clock	(Struct) 3
	36.21	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	36.48	H	Hole in drain/sewer, at 11 o'clock	(Struct) 4
	36.48	SS	Surface damage, spalling, from 10 to 12 o'clock	(Struct) 2
	37.59	FLJ	Fracture, longitudinal at joint, at 7 o'clock	(Struct) 3
	37.61	FLJ	Fracture, longitudinal at joint, at 4 o'clock	(Struct) 3
	39.34	FMJ	Fracture, multiple at joint, from 7 to 5 o'clock	(Struct) 4
	39.67	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	40.55	RFJ	Roots, fine at joint	(Serv) 2
	41.21	FCJ	Fracture, circumferential at joint, from 4 to 8 o'clock	(Struct) 3
	41.42	RF	Roots, fine	(Serv) 2
	41.54	H	Hole in drain/sewer, from 11 to 12 o'clock	(Struct) 4
	42.95	RFJ	Roots, fine at joint	(Serv) 2
	44.53	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	45.41	FMJ	Fracture, multiple at joint, from 7 to 5 o'clock	(Struct) 4
	45.69	H	Hole in drain/sewer, from 11 to 12 o'clock	(Struct) 4

11623 - FORD ROAD



Inspection Report

Date : 15/04/2019	Job number : 11623	Weather : no rain or snow	Operator : SH09	Section number : 2	PLR : X
Weather no rain or snow	Vehicle : P50 CVS	Camera : PAN AND TILT	Preset :	Cleaned : yes	Grade:

1:108	Position	Code	Observation	Grade
	46.14	RFJ	Roots, fine at joint	(Serv) 2
	46.75	WL	Water level, 10% of the vertical dimension	(Serv) 0
	46.89	FCJ	Fracture, circumferential at joint, from 9 to 3 o'clock	(Struct) 3
	46.89	RFJ	Roots, fine at joint	(Serv) 2
	47.38	WL	Water level, 5% of the vertical dimension	(Serv) 0
	47.80	RFJ	Roots, fine at joint	(Serv) 2
	48.10	FCJ	Fracture, circumferential at joint, from 6 to 6 o'clock	(Struct) 3
	48.62	DES	Settled deposits, fine, 5% cross-sectional area loss	(Serv) 2
	49.66	FLJ	Fracture, longitudinal at joint, at 10 o'clock	(Struct) 3
	51.08	FL	Fracture, longitudinal, at 3 o'clock	(Struct) 3
	51.09	FLJ	Fracture, longitudinal at joint, at 6 o'clock	(Struct) 3
	51.37	H	Hole in drain/sewer, from 3 to 9 o'clock	(Struct) 5
	51.37	FM	Fracture, multiple, from 6 to 6 o'clock	(Struct) 4
	51.39	VV	Void - waste beyond defect	(Domain) 0
	51.39	SV	Soil - water beyond defect	(Domain) 0
	51.40	RF	Roots, fine Remarks: COMING FROM DEFECT	(Serv) 2
	51.40	REM	General remark Remarks: PIPE APPEARS TO BE CAPPED, JUST PAST HOLE	(Misc) 0
	51.40	SA	Survey abandoned Remarks: DUE TO HOLE IN PIPE, UNABLE TO PASS	(Misc) 0
Structural Defects				
Service Defects				
Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade
20	285	21.96	1129	5
SER no def	SER peak	SER mean	SER total	SER grade
12	1	0.23	12	2

11623 - FORD ROAD



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
2

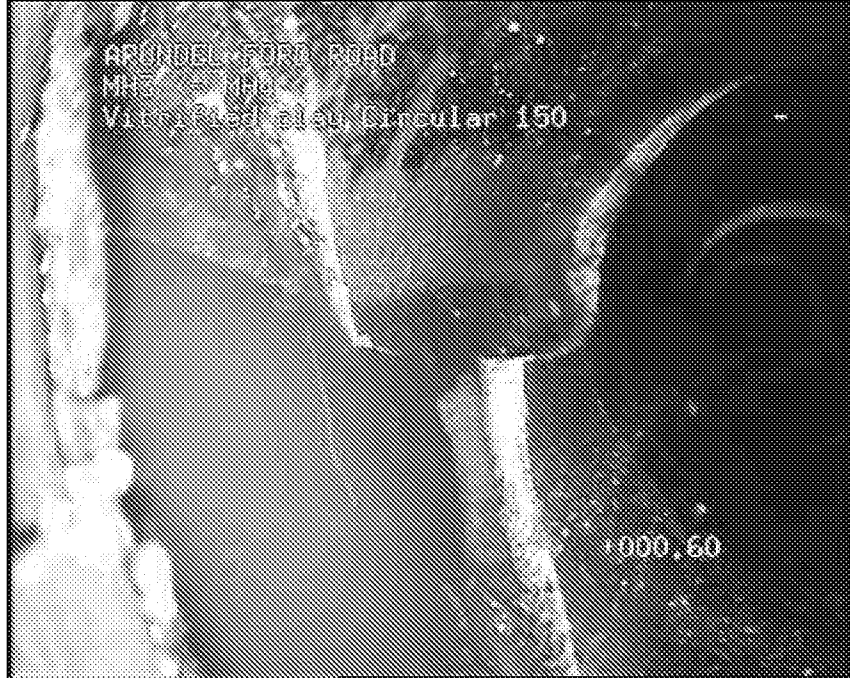
 PLR Suffix :
X


Photo: 3_3_26_A.JPG
 0.6m, Hole in drain/ sewer, from 5 to 7 o'clock



Photo: 3_3_27_A.JPG
 0.6m, Broken pipe, from 5 to 7 o'clock



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
2

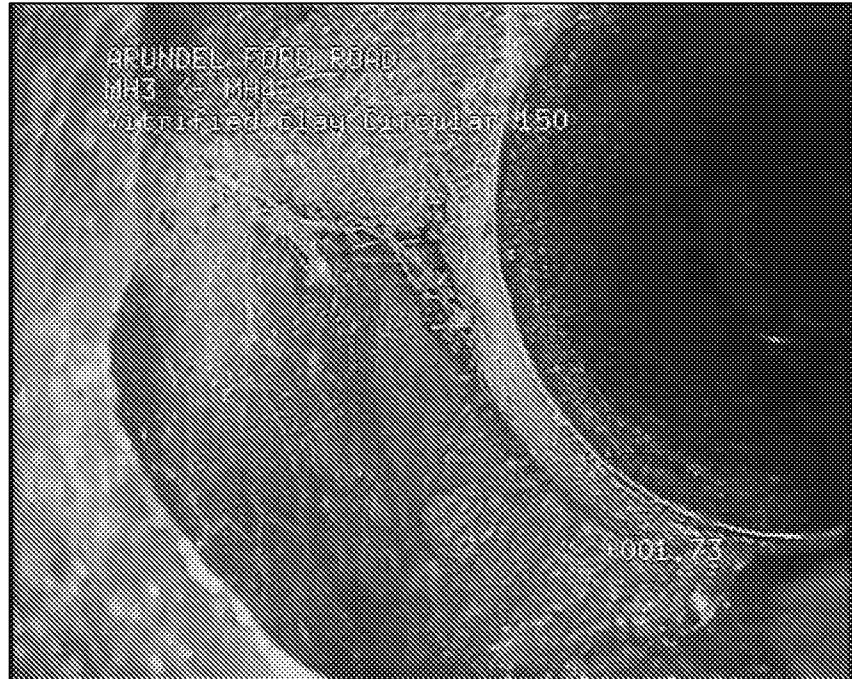
 PLR Suffix :
X


Photo: 3_3_30_A.JPG
 1.73m, Hole in drain/ sewer at joint, from 7 to 12 o'clock



Photo: 3_3_35_A.JPG
 3.64m, Open joint, medium



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
2

 PLR Suffix :
X


Photo: 3_3_40_A.JPG
 6.9m, Hole in drain/ sewer, at 12 o'clock



Photo: 3_3_42_A.JPG
 7.67m, Hole in drain/ sewer at joint, at 6 o'clock



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
2

 PLR Suffix :
X


Photo: 3_3_43_A.JPG
 7.68m, Fracture, multiple at joint, from 6 to 6 o'clock



Photo: 3_3_44_A.JPG
 7.76m, Hole in drain/sewer at joint, at 12 o'clock



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X



Photo: 3_3_46_A.JPG
10.49m, Joint displaced, medium



Photo: 3_3_49_A.JPG
13.52m, Hole in drain/sewer at joint, from 11 to 12 o'clock



Inspection pictures

Place : ARUNDEL	Road : FORD ROAD	Date : 15/04/2019	Section number : 2	PLR Suffix : X
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Photo: 3_3_57_A.JPG
16.09m, Open joint, medium



Photo: 3_3_59_A.JPG
19.67m, Joint displaced, medium



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X



Photo: 3_3_60_A.JPG
 19.76m, Open joint, medium

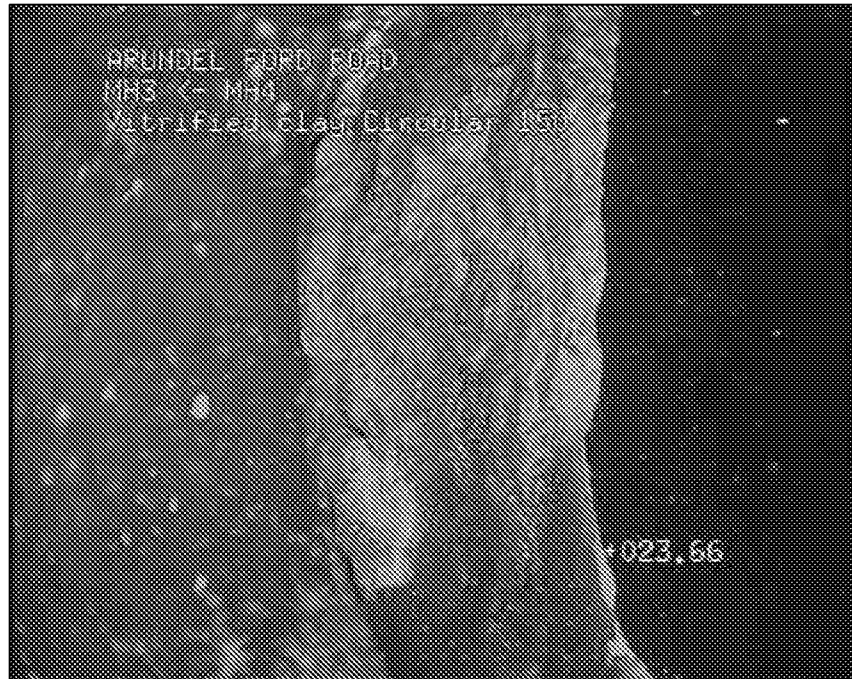


Photo: 3_3_66_A.JPG
 23.66m, Open joint, medium



Inspection pictures

 Place :
ARUNDEL

 Road :
FORD ROAD

 Date :
15/04/2019

 Section number :
2

 PLR Suffix :
X


Photo: 3_3_72_A.JPG
 30.59m, Hole in drain/sewer, at 6 o'clock



Photo: 3_3_73_A.JPG
 30.81m, Hole in drain/sewer, at 12 o'clock



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X

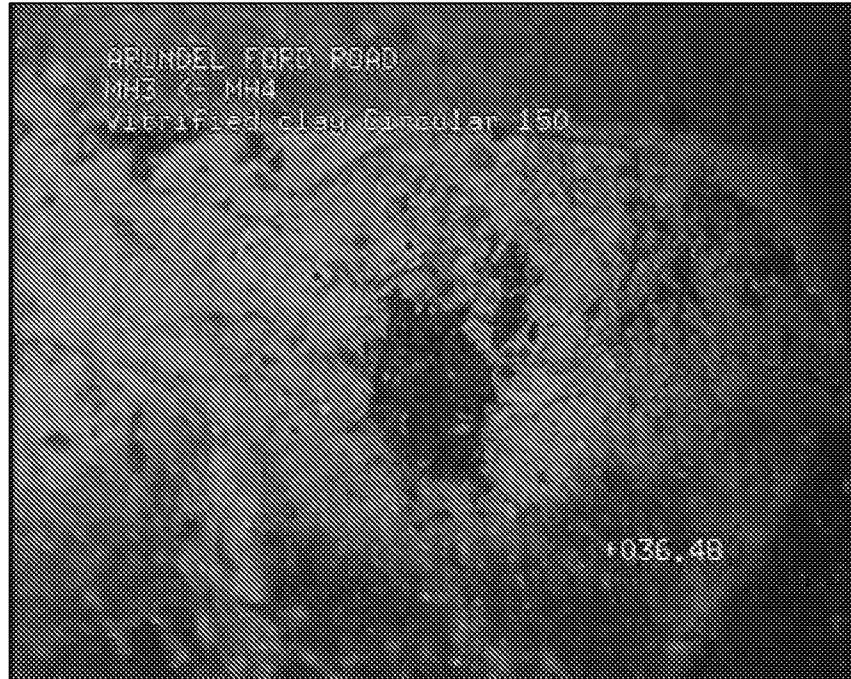


Photo: 3_3_80_A.JPG
 36.48m, Hole in drain/sewer, at 11 o'clock



Photo: 3_3_85_A.JPG
 39.34m, Fracture, multiple at joint, from 7 to 5 o'clock



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X



Photo: 3_3_90_A.JPG
 41.54m, Hole in drain/sewer, from 11 to 12 o'clock

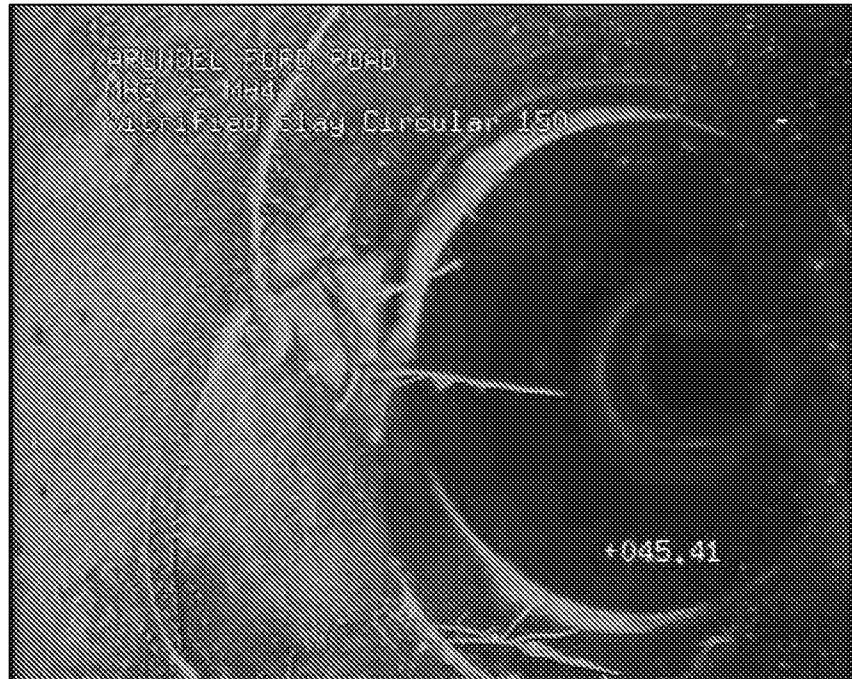


Photo: 3_3_93_A.JPG
 45.41m, Fracture, multiple at joint, from 7 to 5 o'clock



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X



Photo: 3_3_94_A.JPG
45.69m, Hole in drain/sewer, from 11 to 12 o'clock



Photo: 3_3_107_A.JPG
51.37m, Hole in drain/sewer, from 3 to 9 o'clock



Inspection pictures

Place :
ARUNDEL

Road :
FORD ROAD

Date :
15/04/2019

Section number :
2

PLR Suffix :
X



Photo: 3_3_108_A.JPG
51.37m, Fracture, multiple, from 6 to 6 o'clock



Photo: 3_3_113_A.JPG
51.4m, General remark



RECOMMENDATIONS

IF YOU REQUIRE A QUOTATION FOR THE
REMEDIAL REPAIRS RECOMMENDED IN THIS
REPORT INCLUDING
DRAIN LINING, PATCH REPAIRS AND
EXCAVATIONS PLEASE CALL 01202 828281

	<i>Upstream MH</i>	<i>Downstream MH</i>	<i>Remarks regarding the inspection</i>	<i>No.</i>
1	MH3	MH2	RE-LINE RUN	1
2	MAIN RUN	MH3	EXCAVATION REQUIRED	2



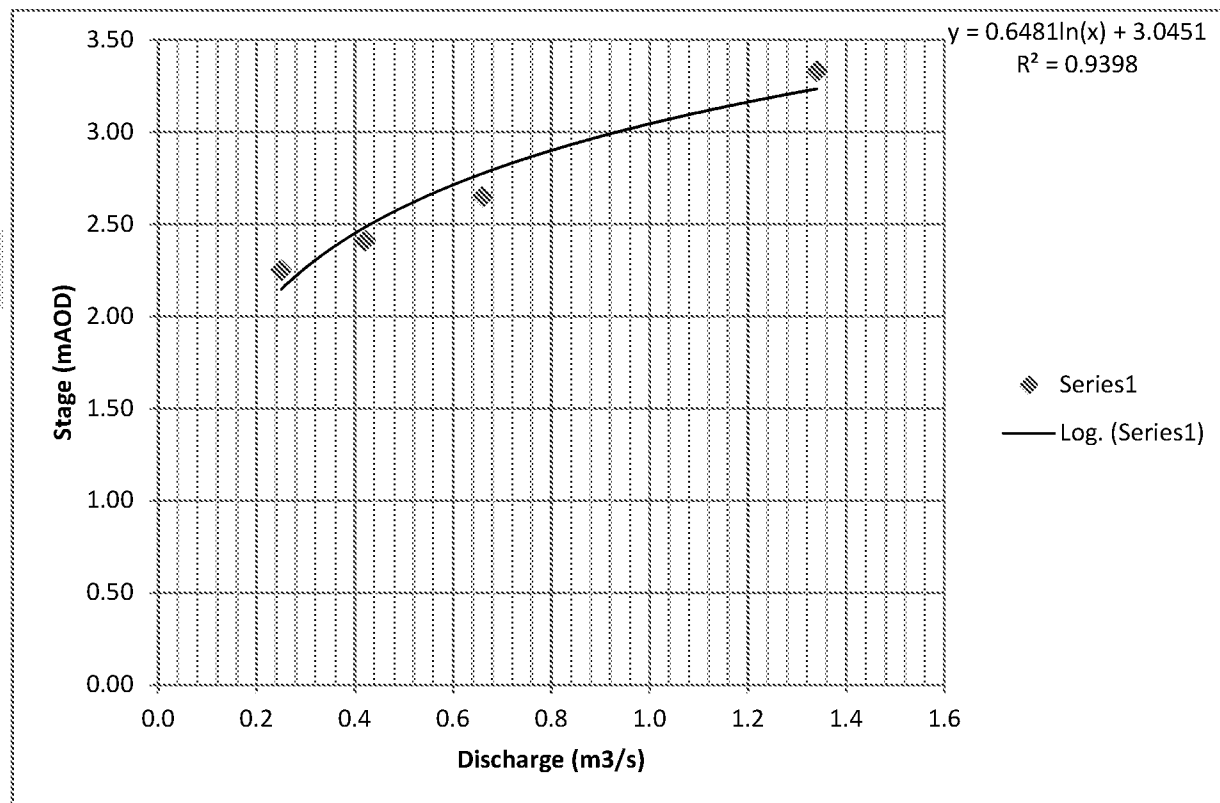
DRAINAGE LAYOUT DRAWINGS

APPENDIX I

CLIMATE CHANGE CALCULATIONS

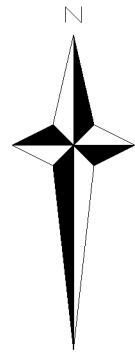
Node: 1

Return Period	Flow (m3/s)	Water Level (mAOD)
20	0.3	2.25
100	0.42	2.41
1000	0.66	2.65
100 + 20%	1.34	3.33
100 + 45%	2.49	3.64
100 + 105%	5.25	4.12



APPENDIX J

FLUVIAL & TIDAL FLOOD EXTENTS



LEGEND:

- SITE BOUNDARY
- INDICATIVE BUILDING OUTLINES
- EA FLOOD NODE LOCATION
- TIDAL FLOODPLAIN EXTENT 1 IN 20 YEAR (2.67mAOD)
- FLUVIAL FLOODPLAIN EXTENT 1 IN 100 YEAR + 45% CLIMATE CHANGE (3.64mAOD)
- TIDAL FLOODPLAIN EXTENT 1 IN 200 YEAR (4.02mAOD)
- FLUVIAL FLOODPLAIN EXTENT 1 IN 100 YEAR + 105% CLIMATE CHANGE (4.12mAOD)

NOTES:

- Topographic Survey provided by Glanville, Site Survey drawing no. 8180873/4100—A, dated Sept 2018.
- Indicative proposed building locations taken from Pope Prestley Architects (drawing no. PP1249/101-04 P4) issued April 2019.
- Drawing based on Environment Agency Flood Level data (received June 2018).
- Note: Floodplains represent existing site levels only, outlines have not been amended to represent proposed changes to ground levels.

P2	29.05.19	Final Draft	JML	MEC	MEC
P1	15.10.18	Draft	ER	JL	JL
Rev.	Date	Amendment	Drawn	Chkd.	Appd.



LAND & DEVELOPMENT ENGINEERING LTD

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HP8 9RT
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Fax: +44 (0) 1442 457500
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client	Oakford Homes Ltd
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Project Title	Ford Road, Arundel
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Status	Final Draft
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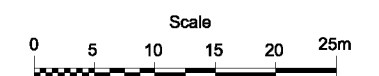
Drawing Title	Existing Fluvial & Tidal Floodplains
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Drawn	Date	Checked	Date	Approved	Date
ER	27.09.18	JL	27.09.18	JL	27.09.18

Scale	Orig Size	Dimensions
1:500	A3	m

Project No.	Drawing File
133309	

Drawing No.	Rev.
Appendix J	P2



EA Flood Node 1



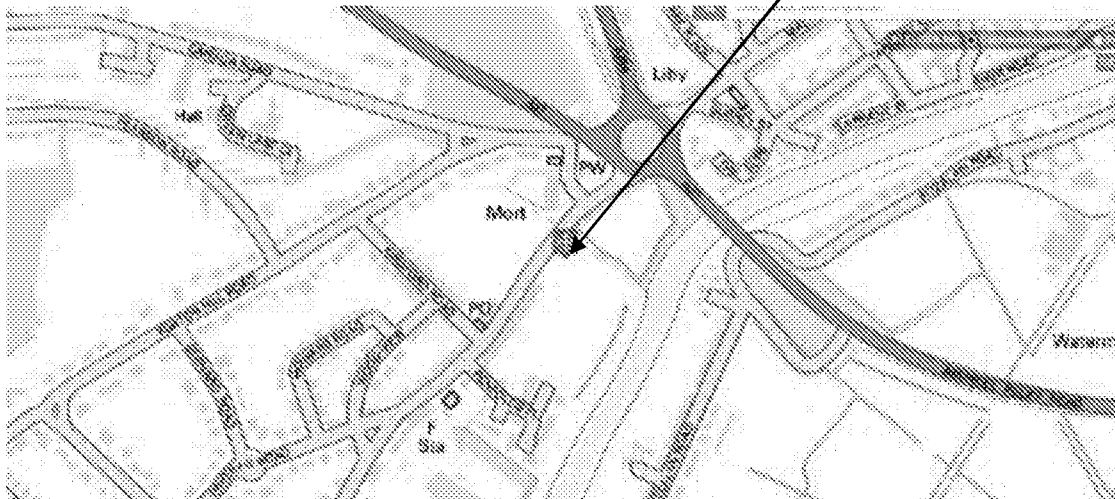
APPENDIX K

SURFACE WATER DRAINAGE CALCULATIONS

RSK LDE		Page 1																								
18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT																										
Date 10/05/2019 11:20 File	Designed By JLooney Checked By																									
XP Solutions	Source Control W.12.5																									
<u>ICP SUDS Mean Annual Flood</u> Input <table> <tr> <td>Return Period (years)</td> <td>1</td> <td>Soil</td> <td>0.300</td> </tr> <tr> <td>Area (ha)</td> <td>0.442</td> <td>Urban</td> <td>0.000</td> </tr> <tr> <td>SAAR (mm)</td> <td>775</td> <td>Region Number</td> <td>Region 7</td> </tr> </table> Results l/s <table> <tr> <td>QBAR Rural</td> <td>0.9</td> </tr> <tr> <td>QBAR Urban</td> <td>0.9</td> </tr> <tr> <td>Q1 year</td> <td>0.8</td> </tr> <tr> <td>Q1 year</td> <td>0.8</td> </tr> <tr> <td>Q30 years</td> <td>2.1</td> </tr> <tr> <td>Q100 years</td> <td>2.9</td> </tr> </table>			Return Period (years)	1	Soil	0.300	Area (ha)	0.442	Urban	0.000	SAAR (mm)	775	Region Number	Region 7	QBAR Rural	0.9	QBAR Urban	0.9	Q1 year	0.8	Q1 year	0.8	Q30 years	2.1	Q100 years	2.9
Return Period (years)	1	Soil	0.300																							
Area (ha)	0.442	Urban	0.000																							
SAAR (mm)	775	Region Number	Region 7																							
QBAR Rural	0.9																									
QBAR Urban	0.9																									
Q1 year	0.8																									
Q1 year	0.8																									
Q30 years	2.1																									
Q100 years	2.9																									
©1982-2010 Micro Drainage Ltd																										

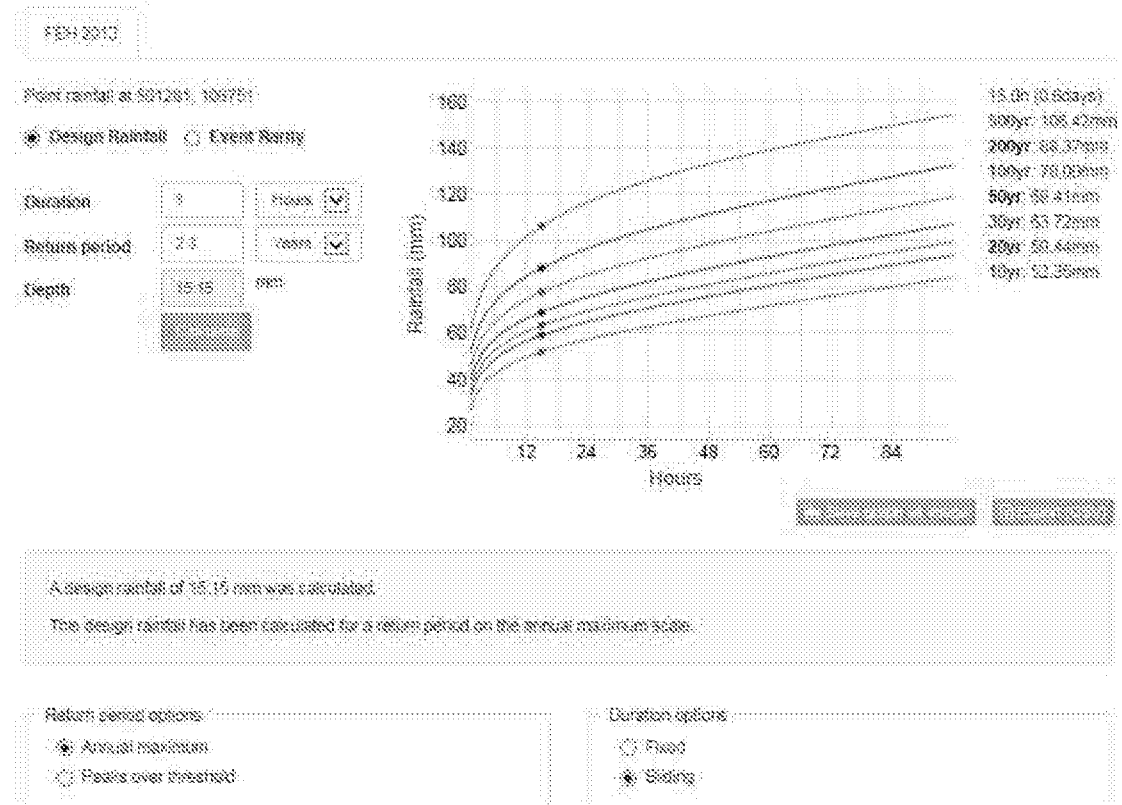
Point data – 133309 – Gas Works Site, Arundel

Site



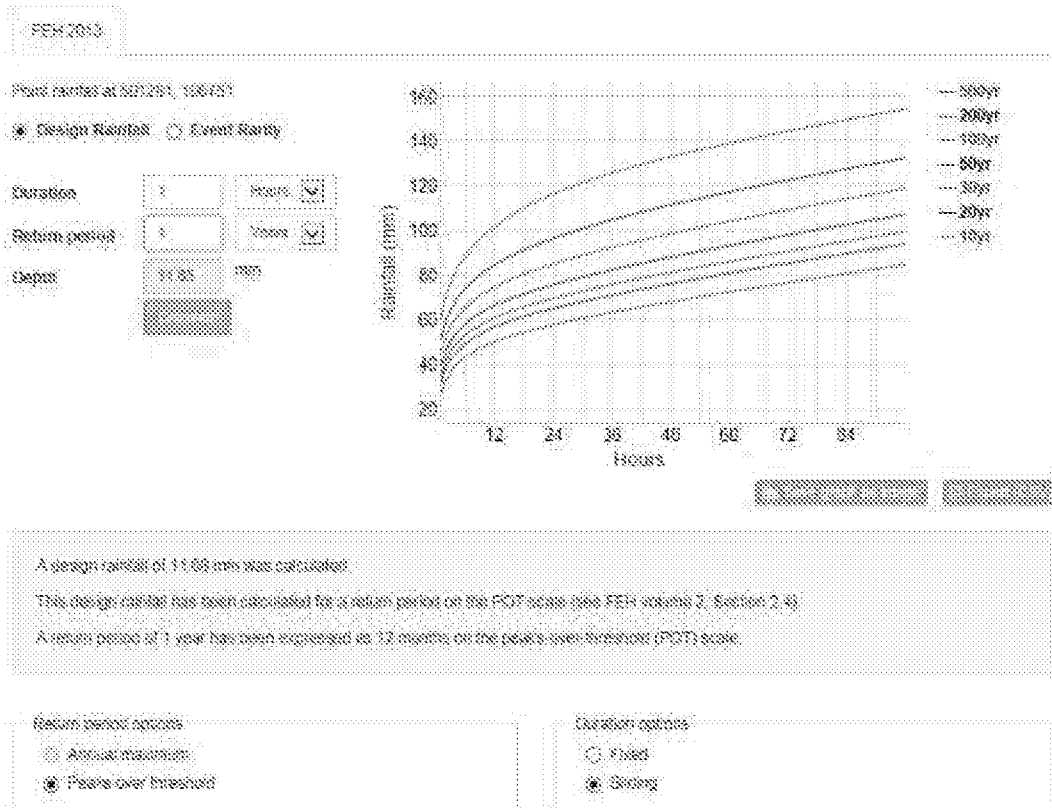
Qbar rainfall depth

RAINFALL MODELLING FOR POINT DATA AT 501281,106751



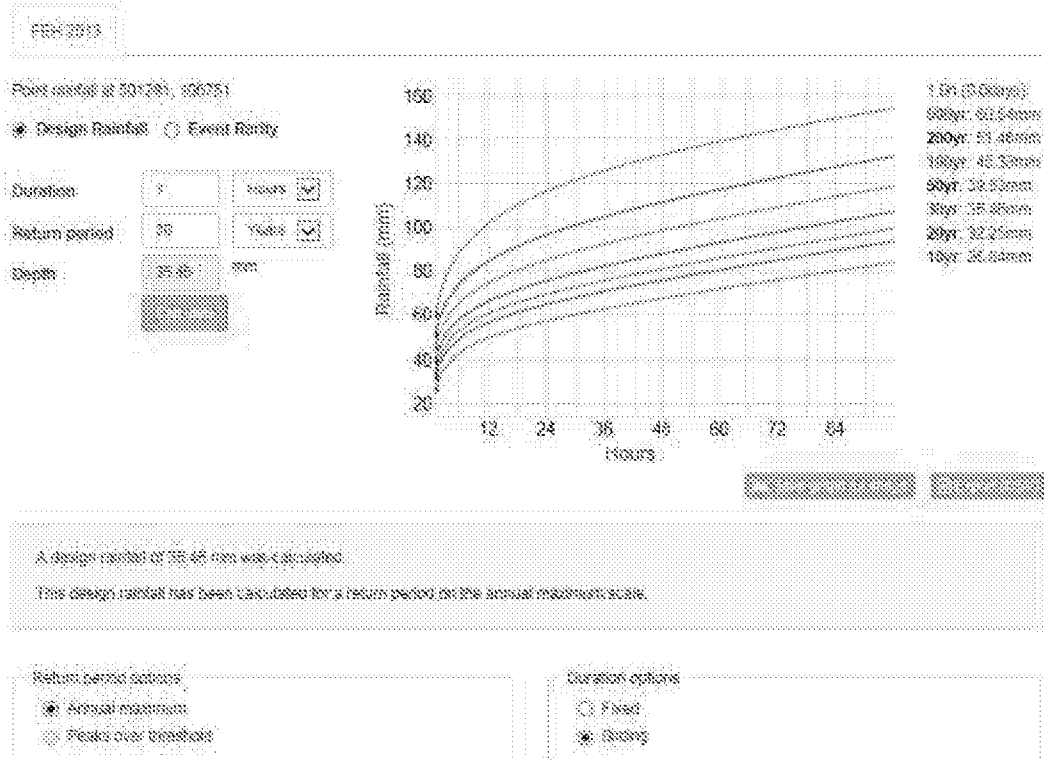
1 in 1 year rainfall depth

RAINFALL MODELLING FOR POINT DATA AT 501281,106751



1 in 30 year rainfall depth

RAINFALL MODELLING FOR POINT DATA AT 501281,106751



1 in 100 year rainfall depth

RAINFALL MODELLING FOR POINT DATA AT 501281,106751

FEH 2013

Point rainfall at 501281, 106751

☒ Design Rainfall

☐ Event Rainfall

Duration

1

Hours

Return period

100

Years

Depth

45.33

mm

Duration (Hours)	10yr	20yr	30yr	50yr	100yr	150yr	200yr	500yr
1	35	40	43	45	45.33	46	47	50
24	55	65	70	75	80	85	90	100
48	60	70	75	80	85	90	95	105
72	62	72	77	82	87	92	97	107
96	63	73	78	83	88	93	98	108

A design rainfall of 45.33 mm was calculated.

This design rainfall has been calculated for a return period on the annual maximum scale.

Return period options

☒ Annual maximum

☐ Peaks over threshold

Duration options

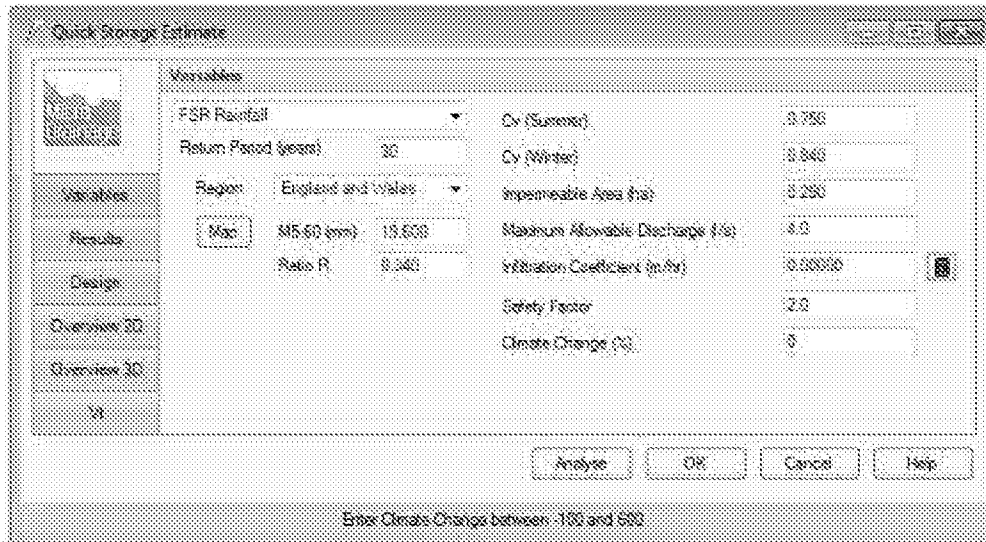
☐ Fixed

☒ Sliding

ARUN DISTRICT COUNCIL AB/88/19/PL

WinDes Quick Storage Estimates 4l/s

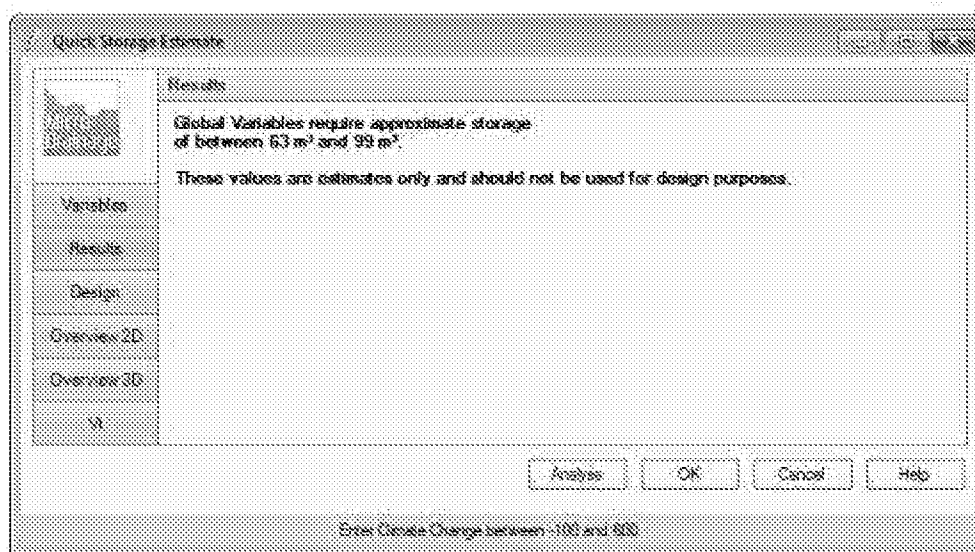
1 in 30 year rainfall event



The 'Variables' screen of the WinDes Quick Storage Estimate software. It features a sidebar with buttons for Variables, Results, Design, Overview 2D, Overview 3D, and V1. The main area contains input fields for various parameters:

Parameter	Value
FSR Rainfall	3.750
Return Period (years)	30
Cv (Summer)	0.540
Cv (Winter)	0.540
Region	England and Wales
Impervious Area (ha)	0.250
Maximum Allowable Discharge (l/s)	4.0
Infiltration Coefficient (m/hr)	0.00000
Safety Factor	2.0
Climate Change (%)	0

Buttons at the bottom: Analyse, OK, Cancel, Help. A note at the bottom states: 'Enter Climate Change between -100 and 500'.



The 'Results' screen of the WinDes Quick Storage Estimate software. It features the same sidebar as the Variables screen. The main area displays the following text:

Global Variables require approximate storage of between 63 m³ and 99 m³.

These values are estimates only and should not be used for design purposes.

Buttons at the bottom: Analyse, OK, Cancel, Help. A note at the bottom states: 'Enter Climate Change between -100 and 500'.

1 in 100 year rainfall event



Variables

Results

Design

Overview 2D

Overview 3D

VR

PSR Rainfall

Return Period (years)

Region

Map

MS-60 (mm)

Ratio R

Cv (Summer)

Cv (Winter)

Impermeable Area (%)

Maximum Allowable Discharge (l/s)

Infiltration Coefficient (m/hr)

Safety Factor

Climate Change (%)

8.750

8.840

8.280

4.0

0.00000

2.0

8

Analyse

OK

Cancel

Help

Enter Return Period between 1 and 1000



Results

Variables

Results

Design

Overview 2D

Overview 3D

VR

Global Variables require approximate storage of between 92 m³ and 138 m³.
These values are estimates only and should not be used for design purposes.

Analyse

OK

Cancel

Help

Enter Return Period between 1 and 1000

1 in 100 year plus 40% climate change rainfall event

Quick Storage Estimate

Variables

FSR Rainfall: Return Period (years)

Region: M5-60 (mm) 19.600 Ratio R: 0.340

Cv (Summer): 0.750 Cv (Winter): 0.840 Impermeable Area (ha): 0.280 Maximum Allowable Discharge (l/s): 4.0 Infiltration Coefficient (m/hr): 0.00000 Safety Factor: 2.0 Climate Change (%): 40

Analyse OK Cancel Help

Enter Climate Change between -100 and 500

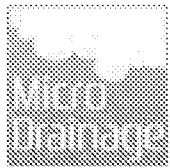
Quick Storage Estimate

Results

Global Variables require approximate storage of between 145 m³ and 214 m³.
These values are estimates only and should not be used for design purposes.

Analyse OK Cancel Help

Enter Climate Change between -100 and 500

RSK LDE	Page 1
18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT	
Date 29/05/2019 15:33 File ARUNDEL.MDX	
XP Solutions	
Designed by ABurnley Checked by	Network 2018.1.1

Existing Network Details for Existing

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type
1.000	16.000	0.105	152.4	0.290	5.00	0.0	0.600	o	225	Pipe/Conduit
1.001	16.000	0.105	152.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit

Network Results Table

PN	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Vel (m/s)	Cap (l/s)
1.000	2.260	0.290	0.0	1.06	42.0
1.001	2.155	0.290	0.0	1.06	42.0

Surcharged Outfall Details for Existing

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.001	0	2.800	2.050	2.050	225	0
Datum (m) 0.000 Offset (mins) 0						

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	2.161	300	1.342	540	0.523	780	0.113	1020	0.932	1260	1.752
120	1.956	360	1.137	600	0.318	840	0.318	1080	1.137	1320	1.956
180	1.752	420	0.932	660	0.113	900	0.523	1140	1.342	1380	2.161
240	1.547	480	0.727	720	-0.092	960	0.727	1200	1.547	1440	2.366

RSK LDE		Page 2
18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		
Date 29/05/2019 15:33 File ARUNDEL.MDX	Designed by ABurnley Checked by	
XP Solutions	Network 2018.1.1	

Online Controls for Existing

Hydro-Brake® Optimum Manhole: 2, DS/PN: 1.001, Volume (m³): 1.3

Unit Reference	MD-SHE-0102-4000-0500-4000
Design Head (m)	0.500
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	102
Invert Level (m)	2.155
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.500	4.0
Flush-Flo™	0.166	4.0
Kick-Flo®	0.363	3.5
Mean Flow over Head Range	-	3.3

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.4	1.200	6.0	3.000	9.2	7.000	13.9
0.200	4.0	1.400	6.5	3.500	9.9	7.500	14.4
0.300	3.8	1.600	6.9	4.000	10.6	8.000	14.9
0.400	3.6	1.800	7.3	4.500	11.2	8.500	15.3
0.500	4.0	2.000	7.6	5.000	11.8	9.000	15.8
0.600	4.4	2.200	8.0	5.500	12.3	9.500	16.2
0.800	5.0	2.400	8.3	6.000	12.9		
1.000	5.5	2.600	8.6	6.500	13.4		

RSK LDE		Page 3
18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT		
Date 29/05/2019 15:33 File ARUNDEL.MDX	Designed by ABurnley Checked by	
XP Solutions Network 2018.1.1		

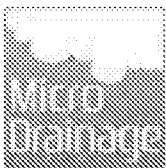
Storage Structures for Existing

Cellular Storage Manhole: 1, DS/PN: 1.000

Invert Level (m) 2.260 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.92
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	425.0	425.0	0.386	0.0	456.8
0.385	425.0	456.7			

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RSK LDE		Page 4																																																			
18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT																																																					
Date 29/05/2019 15:33																																																					
File ARUNDEL.MDX																																																					
XP Solutions		Designed by ABurnley Checked by Network 2018.1.1																																																			
<u>Summary of Critical Results by Maximum Level (Rank 1) for Existing</u>																																																					
<u>Simulation Criteria</u>																																																					
Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000																																																					
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000																																																					
Hot Start Level (mm) 0 Inlet Coefficient 0.800																																																					
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000																																																					
Foul Sewage per hectare (l/s) 0.000																																																					
Number of Input Hydrographs 0 Number of Storage Structures 1																																																					
Number of Online Controls 1 Number of Time/Area Diagrams 0																																																					
Number of Offline Controls 0 Number of Real Time Controls 0																																																					
<u>Synthetic Rainfall Details</u>																																																					
Rainfall Model FSR Ratio R 0.340																																																					
Region England and Wales Cv (Summer) 0.750																																																					
M5-60 (mm) 19.600 Cv (Winter) 0.840																																																					
Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF																																																					
Analysis Timestep Fine Inertia Status OFF																																																					
DTS Status ON																																																					
Profile(s) Summer and Winter																																																					
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440																																																					
Return Period(s) (years) 1, 30, 100																																																					
Climate Change (%) 0, 0, 40																																																					
<table><tr><th colspan="2">US/MH</th><th colspan="2">Return Climate</th><th>First (X)</th><th>First (Y)</th><th>First (Z)</th><th>Overflow</th><th>Water</th></tr><tr><th>PN</th><th>Name</th><th>Storm</th><th>Period</th><th>Change</th><th>Surcharge</th><th>Flood</th><th>Overflow</th><th>Level</th></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Act.</td><td>(m)</td></tr><tr><td>1.000</td><td>1</td><td>240 Winter</td><td>100</td><td>+40%</td><td>100/30 Winter</td><td></td><td></td><td>2.642</td></tr><tr><td>1.001</td><td>2</td><td>1440 Winter</td><td>100</td><td>+40%</td><td>30/30 Winter</td><td></td><td></td><td>2.796</td></tr></table>									US/MH		Return Climate		First (X)	First (Y)	First (Z)	Overflow	Water	PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Level								Act.	(m)	1.000	1	240 Winter	100	+40%	100/30 Winter			2.642	1.001	2	1440 Winter	100	+40%	30/30 Winter			2.796
US/MH		Return Climate		First (X)	First (Y)	First (Z)	Overflow	Water																																													
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Level																																													
							Act.	(m)																																													
1.000	1	240 Winter	100	+40%	100/30 Winter			2.642																																													
1.001	2	1440 Winter	100	+40%	30/30 Winter			2.796																																													
<table><tr><th colspan="2">US/MH</th><th>Surcharged</th><th>Flooded</th><th colspan="2">Pipe</th><th colspan="2">Level</th></tr><tr><th>PN</th><th>Name</th><th>Depth (m)</th><th>Volume (m³)</th><th>Flow / Cap.</th><th>Overflow (l/s)</th><th>Flow (l/s)</th><th>Status Exceeded</th></tr><tr><td>1.000</td><td>1</td><td>0.157</td><td>0.000</td><td>0.14</td><td></td><td>5.1</td><td>FLOOD RISK</td></tr><tr><td>1.001</td><td>2</td><td>0.416</td><td>0.000</td><td>0.11</td><td></td><td>4.0</td><td>FLOOD RISK</td></tr></table>									US/MH		Surcharged	Flooded	Pipe		Level		PN	Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status Exceeded	1.000	1	0.157	0.000	0.14		5.1	FLOOD RISK	1.001	2	0.416	0.000	0.11		4.0	FLOOD RISK													
US/MH		Surcharged	Flooded	Pipe		Level																																															
PN	Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Flow (l/s)	Status Exceeded																																														
1.000	1	0.157	0.000	0.14		5.1	FLOOD RISK																																														
1.001	2	0.416	0.000	0.11		4.0	FLOOD RISK																																														
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APPENDIX L

SURFACE WATER DRAINAGE STRATEGY



Foul water to discharge existing
Thames Water MH 2701

KEY:

- SITE BOUNDARY
- EXISTING WATERCOURSE
- ▭ PROPOSED BUILDING
- --- INDICATIVE SURFACE WATER DRAINAGE NETWORK
- --- INDICATIVE FOUL WATER DRAINAGE NETWORK
- ➡ INDICATIVE OVERLAND SURFACE WATER FLOW ROUTE
- × 2 000 PROPOSED LEVEL

Notes:

- Proposed site layout taken from Pope Prestley Architects (drawing no. PP1249/101-04 P4) issued April 2019.
- Existing topography information taken from Glanville drawing no. 8180873/4100.
- Petrol interceptors to be incorporated into the network. The location(s) are to be decided at the next stage of the design.
- Indicative drainage strategy only for the purpose of planning. To be read in conjunction with Flood Risk Assessment 133309-R1(1)-FRA, dated June 2019.

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P02	29.05.19	Layout updated	ASB	CA	CA
P01	27.09.18	Draft issue	ER	JML	JML



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Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client	OAKFORD HOMES LTD
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Project Title	FORD ROAD ARUNDEL
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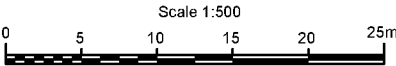
Status	PRELIMINARY
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Drawing Title	INDICATIVE DRAINAGE STRATEGY
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Drawn	Date	Checked	Date	Approved	Date
ER	09.18	JML	09.18	JML	09.18
Scale	Orig Size	Dimensions	Revision		
1:500	A3	m	P01		

Drawing File	SWDS (P2).DWG
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Project No.	Originator	Unit	Site Area	Series	Number	Sheet
133309	RSK	C	ALL	05	01	01



SUDS Components

Source Control



**Modular
Storage**

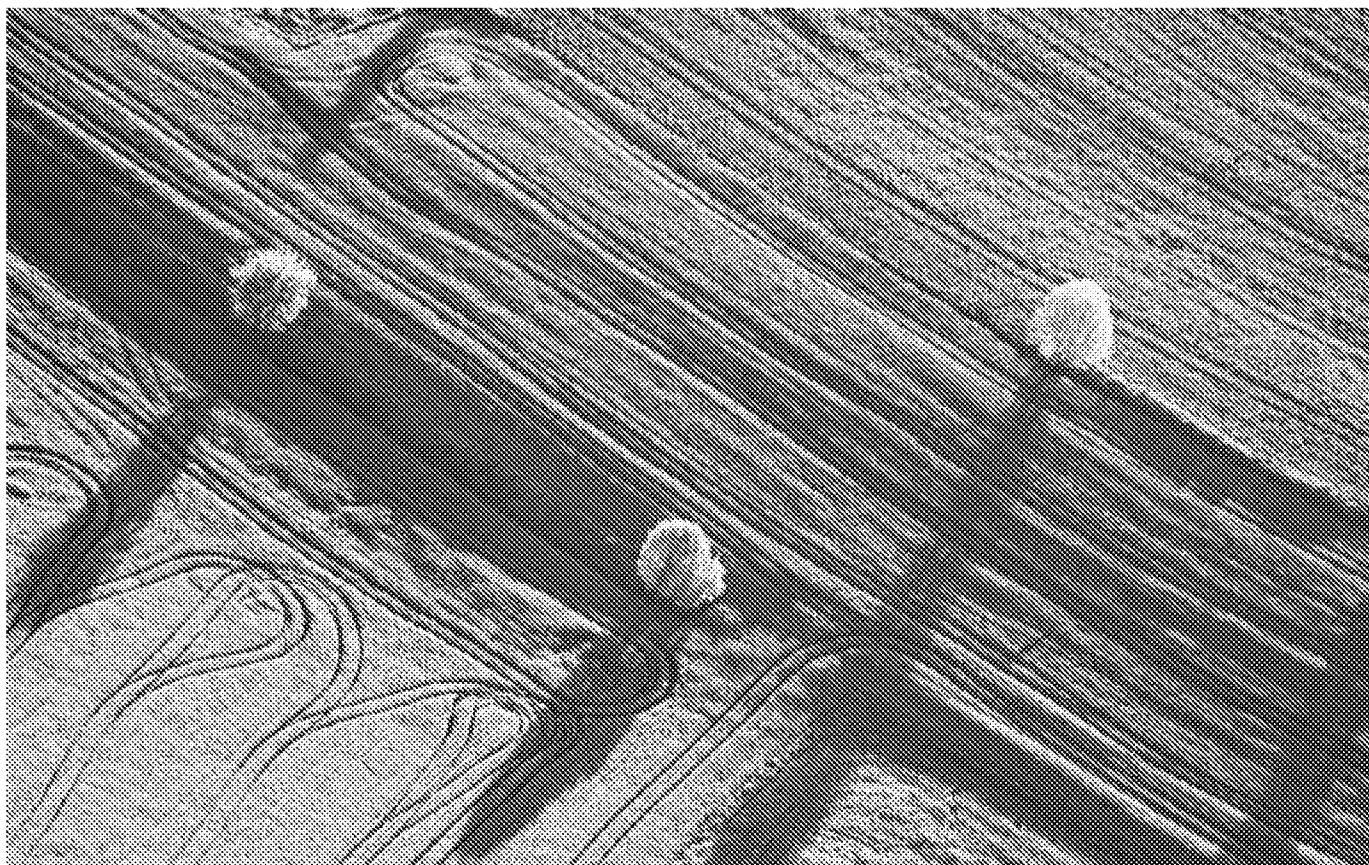
Modular plastic geocellular systems with a high void ratio that can be used to create a below ground storage structure.





APPENDIX M

SUDS MANAGEMENT STRATEGY



Oakford Homes Ltd

Ford Road, Arundel

Sustainable Drainage System (SuDS) Management Strategy

133309-R1(0)-FRA-Appendix M



MAY 2019



RSK GENERAL NOTES

Project No.: 133309-R1(0)-FRA-Appendix M

Title: Sustainable Drainage System (SuDS) Management Strategy

Client: Oakford Homes Ltd

Date: 29th May 2019

Office: RSK Land and Development Ltd, 18 Frogmore Road, Hemel Hempstead, Herts, HP3 9RT.

Status: Draft

Author	<u>Jemma Looney</u>	Technical reviewer	<u>Matthew Cheeseman</u>
---------------	---------------------	---------------------------	--------------------------

Date:	<u>29th May 2019</u>	Date:	<u>29th May 2019</u>
--------------	---------------------------------	--------------	---------------------------------

Project manager Jemma Looney

Date: 29th May 2019

RSK LDE Ltd (RSK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and RSK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by RSK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of RSK and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK LDE Ltd.

Oakford Homes Ltd
Ford Road, Arundel
Sustainable Drainage System (SuDS) Management Strategy
133309-R1(0)-FRA-Appendix M

CONTENTS

1	INTRODUCTION	3
2	MAINTENANCE RESPONSIBILITIES.....	4
3	MAINTENANCE REGIME.....	5
3.1	Storage Tanks	5
APPENDIX A INSPECTION CHECKLIST		6

1 INTRODUCTION

This management strategy has been prepared by RSK Land and Development Engineering Ltd on behalf of Oakford Homes Ltd, to satisfy planning conditions related to Ford Road, Arundel (The Development).

The SUDS considered for the purposes of this statement, include drainage features that will be employed to reduce and manage surface water runoff from the development to a design return period of One hundred years plus climate change. This is required so that The Development will not increase the risk of flooding to the site and its environs. All drainage on site is taken to the underlying strata via infiltration features. Such features include the following:

- Storage Tanks.

This document outlines the long term maintenance of the proposed surface water system and will make reference to the following documents, some of which provide further detail on the maintenance operations required:

- CIRIA Report C753, *'The SUDS Manual'*, 2015; and
- CIRIA Report C625, *'Model Agreements for Sustainable Water Management Systems'*, 2004.

2 MAINTENANCE RESPONSIBILITIES

Responsibility for drainage within England and Wales rests with various bodies. For The Development, the drainage responsibilities will be divided between the following:

- **Private Landowner** – each Householder will be responsible for the maintenance of drainage features within individual property curtilages.
- **Communal Areas** - A Management company will be set up for the Development to maintain all permeable paving, stormwater attenuation tanks, detention basins, outfalls and any associated flow controls within communal areas. However, it should be noted that if, the Flood and Water Management Act 2010 is ever fully implemented this allows a surface water drainage system to be vested to the SUDS approving body (SAB) in this case West Sussex County Council. This would be reviewed at the time of any implementation of the act.

3 MAINTENANCE REGIME

As the maintenance of the communal SUDS features will be carried out via a Management Company, the form of agreement should include the required maintenance listed below. Should the maintenance be transferred at a later date to a public body, then the model agreement SUDS MA1 should be used, details of which can be found in the CIRIA guidance C625.

The following section describes the required maintenance for each feature in turn. The SUDS maintenance requirements listed below should be reviewed after the first 5 years, with a view to agreeing a new regime for the ongoing maintenance.

Notwithstanding the routine inspections and maintenance requirements, after severe storm events all features shall be inspected to clear debris and repair damaged structures or features. Records of the maintenance carried out shall be prepared by the Management Company.

3.1 Storage Tanks

Maintenance schedule	Required action	Typical frequency
Regular maintenance	Inspect and identify any areas that are not operating correctly. If required, take remedial action	Monthly for 3 months, then annually
	Remove debris from the catchment surface (where it may cause risks to performance)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures and/or internal forebays	Annually, or as required
Remedial actions	Repair/rehabilitate inlets, outlet, overflows and vents	As required
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually
	Survey inside of tank for sediment build-up and remove if necessary	Every 5 years or as required

APPENDIX A

INSPECTION CHECKLIST

General information			
Site ID			
Site location and co-ordinates (GIS if appropriate)			
Elements forming the SuDS scheme		Approved drawing reference	
Inspection frequency		Approved specification reference	
Type of development		Specific purpose of any parts of the scheme (eg biodiversity, wildlife and visual aspects)	

Inspection Date	Details	Y/ N	Action required	Date completed	Details	Y/ N	Action required	Date completed
	Is there evidence of litter accumulation in the system? If yes, is this a blockage risk?							
	Is there any evidence of any other clogging or blockage of outlets or drainage paths?							
	Is the vegetation condition satisfactory (density, weed growth, coverage etc)? (check against approved planting regime)							
	Does any part of the system require weeding, pruning or mowing? (check against maintenance frequency state in approved design).							
	Is there any evidence of invasive species becoming established? If yes, state action required							
	Are any check dams or weirs in good condition?							
	Is there any evidence of any accidental damage to the system (eg wheel ruts?)							
	Is there any evidence of cross connections or other unauthorised inflows?							
	Is there any evidence of tampering with the flow control?							
	Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects?							

Inspection Date	Details	Y/ N	Action required	Date completed	Details	Y/ N	Action required	Date completed
Other observations								
Information appended (eg photos)								
Continue as current Increase maintenance Decrease maintenance								
Proposed date for next inspection								



APPENDIX N

FLOODPLAIN COMPENSATION ANALYSIS



Table 1 Development area within the flood plain (Flood level to Topographical level)

Zone	Area	Total Volume	Volume by depth bands				
			3.64 - 3.44m AOD	3.44 - 3.24m AOD	3.24 - 3.04m AOD	3.04 - 2.84m AOD	2.84 - existing AOD
A	33m ²	2.3m ³	2.3m ³	0m ³	0m ³	0m ³	0m ³
B	54m ²	36m ³	10.8m ³	10.8m ³	10.8m ³	3.6m ³	0m ³
C (walls)	78.6m ²	31.2m ³	11.9m ³	9.1m ³	7.7m ³	2.4m ³	0.1m ³
Total	165.8m ²	69.5m ³	25m ³	19.9m ³	18.5m ³	6.0m ³	0.1m ³

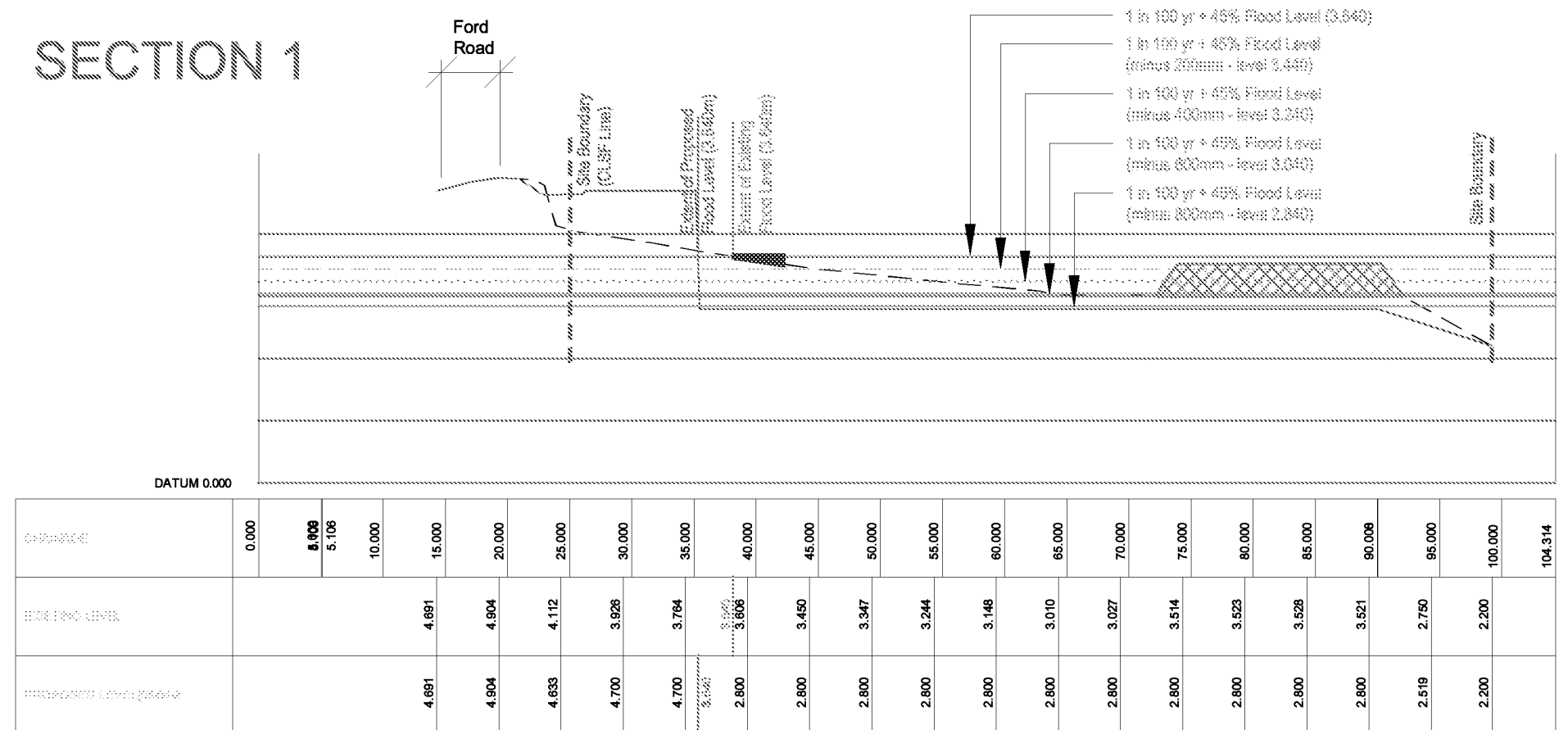
Table 2 Recoverable volume for compensation within the Flood area for Areas X, Y & Z (i.e Volume between existing top of structures and assumed lowered levels at base of structures X, Y and Z, (Base of Sub station Slab 2.85m X, 3.01m for stock pile Y and 3.0m under platform Z)

Zone	Area	Total Volume	Volume by depth bands			
			Existing Top of structure - 3.64m AOD	3.44 - 3.24m AOD	3.24 - 3.04m AOD	3.04 - Existing Base of structure (see assumptions)
X	13m ²	2m ³	0m ³	0m ³	0m ³	2m ³
Y	161m ²	58m ³	0m ³	22m ³	23m ³	5m ³
Z	412m ²	164m ³	13m ³	61m ³	73m ³	17m ³
Total	586m ²	222m ³	13m ³	83m ³	102m ³	24m ³

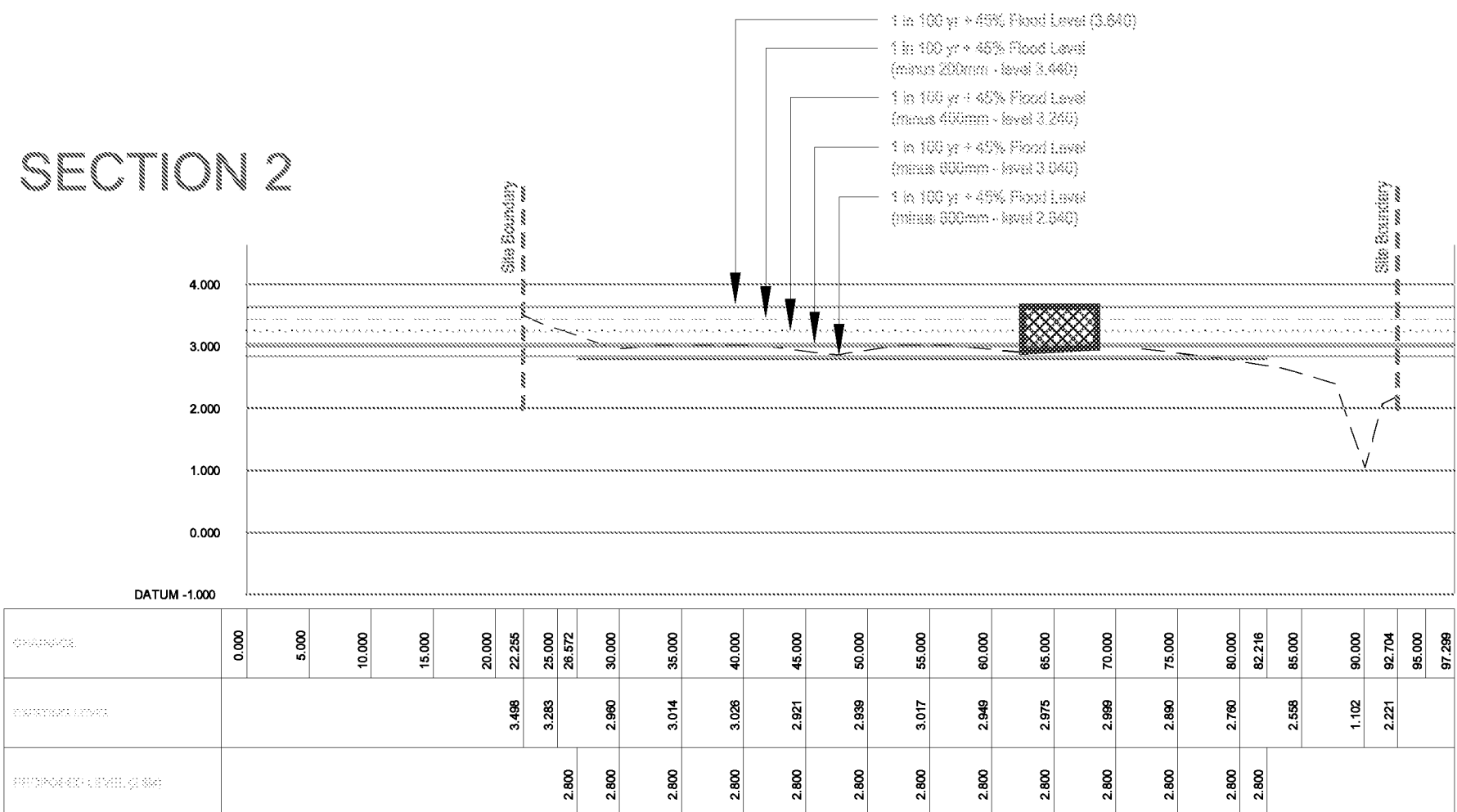
Table 3 Flood plain compensatory storage (Flood Level to Finished Ground Level)

Zone	Area	Total Volume	Volume by depth bands				
			3.64 - 3.44m AOD	3.44 - 3.24m AOD	3.24 - 3.04m AOD	3.04 - 2.84m AOD	2.84 - FGL
U	50.1m ²	42.0m ³	10m ³	10m ³	10m ³	10m ³	2m ³
V (amenity)	120m ²	18.7m ³	8.2m ³	3.3m ³	3.3m ³	3.3m ³	0.6m ³
W (c-park)	34.7m ²	29.0m ³	7m ³	7m ³	7m ³	7m ³	1m ³
Total	204.8m ²	89.7m ³	25.2m ³	20.3m ³	20.3m ³	20.3m ³	3.6m ³

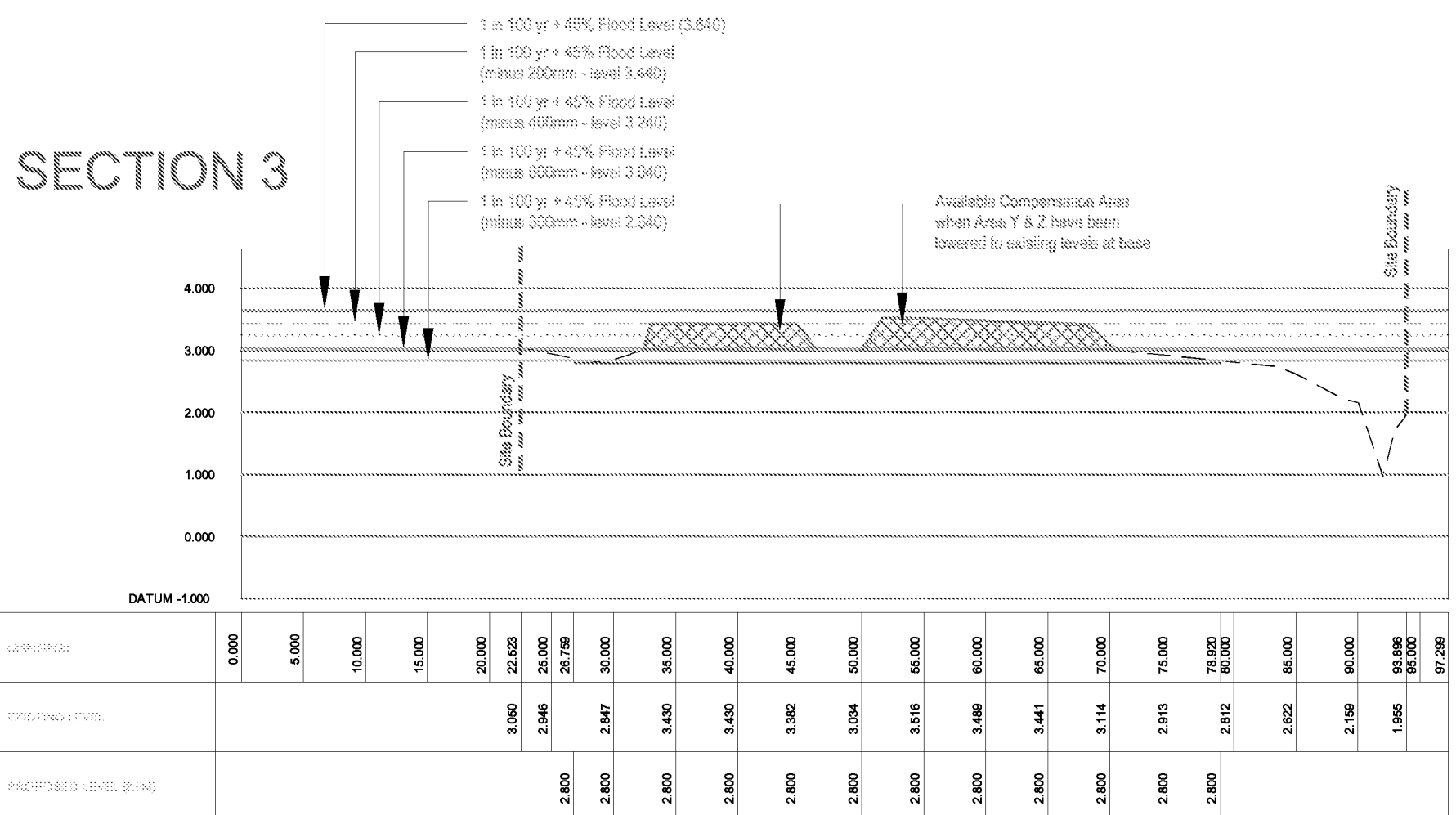
SECTION 1



SECTION 2



SECTION 3



CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing. Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

NOTES

- Topographic survey taken by Glanville 'Site Survey', drawing ref. 8180873/4100-A, dated Sept 2018
- Proposed site layout taken from Pope Priestley Architects 'Site plan showing lower ground floor plan', drawing ref. PP1249/110-01 P3, dated Feb 2019
- Flood compensation provided as a level for level basis for areas removed from the flood plain for development purposes.

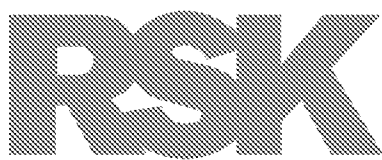
LEGEND

- Site boundary
- Proposed 1 in 100 year + 45% Climate change flood contour (3.640m)
- Existing 1 in 100 year + 45% Climate change flood contour (3.640m)
- Development area within the floodplain to be protected (floodwater excluded)
- Flood compensatory storage area (regained within flood zone)
- New Flood compensatory storage area (within development)
- Proposed Finished ground level
- Existing Site Level

ASSUMPTIONS / CRITERIA

- Existing levels on the western boundary have been assumed by using the nearest adjacent level available from the topographical survey.
- In the Existing structure areas Y and Z, it has been assumed that the sides of these structures have been sloped back to existing levels at the bases, and are not vertical faces. The extent of the boundary is inclusive of these sloped sides.
- The level at the base of Structure Y has been assumed to be flat at a level of 3.01m AOD.
- The level at the base of Structure Z has been assumed to be flat at a level of 3.0m AOD.
- The existing sub-station (Structure X) top of concrete slab level have been assumed at 3.0m, with a thickness of 150mm.

P4	28.05.2019	Minor amendments to layout	JON	JL	MC
P3	09.04.2019	Compensation areas amended, where clouded, table 3 updated	JON	JL	MC
P2	06.04.2019	Revised to suit new layout, Proposed levels revised, and further compensation areas added. Issued for information only.	JON	JL	MC
P1	20.03.2019	Issued for information only.	JON	JL	MC
Rev.	Date	Amendment	Drawn	Chkd.	Appd.



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Client

OAKFORD HOMES LTD

Project Title

GAS WORKS SITE
FORD ROAD
ARUNDEL

Status

INFORMATION

Drawing Title

FLOOD COMPENSATION
SITE SECTIONS

Drawn	Date	Checked	Date	Approved	Date
JON	Mar'19	JL	Mar'19	MEC	Mar'19

Scale	Orig Size	Dimensions
1:200 & 1:500	A1	m

Project No.	Drawing File
133309	10-12.dwg

Drawing No.	Rev.
10-12	P4

