

Key Legend:

- Application Boundary
- Land Outside the redline that is within the applicants ownership

<p>Notes</p> <ul style="list-style-type: none"> - Copyright in this drawing remains the property of BM3 Architecture Limited. - Contractors and consultants are to advise BM3 Architecture Limited of any discrepancies. 	<p>Revision</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Revision</th> <th>Date</th> <th>By</th> <th>Chkd</th> <th>CDM Notes</th> </tr> <tr> <td>A - Application Boundary updated. Minor updates to residential site.</td> <td>21.08.25</td> <td>MBT</td> <td>JB</td> <td></td> </tr> <tr> <td>B - Minor updates to residential site.</td> <td>04.09.25</td> <td>MBT</td> <td>JB</td> <td></td> </tr> <tr> <td>C - Minor updates to College Site.</td> <td>10.09.25</td> <td>MBT</td> <td>JB</td> <td></td> </tr> <tr> <td>D - Minor updates to Residential Site (B4, Oaklands Blossom).</td> <td>01.10.25</td> <td>MBT</td> <td>JB</td> <td></td> </tr> </table>	Revision	Date	By	Chkd	CDM Notes	A - Application Boundary updated. Minor updates to residential site.	21.08.25	MBT	JB		B - Minor updates to residential site.	04.09.25	MBT	JB		C - Minor updates to College Site.	10.09.25	MBT	JB		D - Minor updates to Residential Site (B4, Oaklands Blossom).	01.10.25	MBT	JB		<p>Scale: 1:2500@A1</p> <p>1:2500 Scale Bar</p>	<p style="text-align: center;">N</p>	<p>Project OAKLANDS COLLEGE & OAKLANDS BLOSSOM ST. ALBANS</p>	<p>Drawing ILLUSTRATIVE MASTERPLAN</p>	<p>Client Taylor Wimpey</p>	<p>Scale 1:2500@A1</p> <p>Dated 09-25</p> <p>Job No. 72223</p> <p>Drawing No. D-150</p> <p>Drawn by MBT</p> <p>Checked JB</p> <p>CIS/8 Element PLANNING</p> <p>Revision D</p>	
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Y:\049107223 - Sandpit Lane, St Albans\07\WP\GIS CAD\10 DETAILED PLANNING\Proposed Site Layout_Outline area_Rev K.dwg plotted on 30.09.2025 by Monica Tanaka

APPENDIX C FLOOD RISK INFORMATION



SearchFlow Limited
42
Kings Hill Avenue
Kings Hill
West Malling
ME19 4AJKent

Search address supplied	Land off, Sandpit Lane, Oaklands, ST. ALBANS
Your reference	SS/054596.00050
Our reference	CDWS/CDWS Standard/2024_5017256
Received date	8 July 2024
Search date	17 July 2024

Keeping you up-to-date

Notification of Price Changes

From 1st April 2024 Thames Water Property Searches will be increasing the price of its CON29DW Residential and Commercial searches, along with the Asset Location Search.

Costs will rise in line with RPI as per previous years, which is set at 6%. Customers will have been emailed with the new prices by February 28th 2024. Any orders received with higher payments prior to 1st April 2024 will be non-refundable. For further details on the price increase please visit our website at www.thameswater-propertysearches.co.uk.



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



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



0800 009 4540



Question

Summary Answer

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?	See Details
2.2	Does surface water from the property drain to a public sewer?	See Details
2.3	Is a surface water drainage charge payable?	See Details
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 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?	See Details
2.5.1	Does the public sewer map indicate any public pumping station or any other ancillary apparatus within the 50metres (164.04 feet) 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 a 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?	Not At Risk
2.9	Please state the distance from the property to the nearest boundary of the nearest sewage treatment works.	6.695 Kilometres

Water

3.1	Is the property connected to mains water supply?	See Details
3.2	Are there any water mains, resource mains or discharge pipes within the boundaries of the property?	No
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?	See Details
3.5	What is the classification of the water supply for the property?	See Details
3.6	Is there a meter installed at this property?	No
3.7	Please include details of the location of any water meter serving the property.	See Details

Question

Summary Answer

Charging

4.1.1 Who is responsible for providing the sewerage services for the property? Thames Water

4.1.2 Who is responsible for providing the water services for the property? Affinity Water

4.2 Who bills the property for sewerage services? See Details

4.3 Who bills the property for water services? See Details

Trade Effluent

5.1 Is there consent, on this property, to discharge Trade Effluent under S118 of the Water Industry Act (1991) into the public sewerage system? No

Wayleaves, Easements, Manhole Cover and Invert levels

6.1 Is there a wayleave/easement agreement giving the Water and/or Sewerage Undertaker the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets? No

6.2 On the copy extract from the public sewer map, please show manhole cover, depth and invert levels where the information is available. See Details

Search address supplied: Land off, Sandpit Lane, Oaklands, ST. ALBANS

Any new owner or occupier will need to contact Thames Water on 0800 316 9800 or log onto our website www.thameswater.co.uk and complete our online form to change the water and drainage services bills to their name.

The following records were searched in compiling this report: - the map of public sewers, the map of waterworks, water and sewer billing records, adoption of public sewer records, building over public sewer records, the register of properties subject to internal foul flooding, the register of properties subject to poor water pressure and the drinking water register.

Thames Water Utilities Ltd (TWUL) holds all of these.

TWUL, trading as Property Searches, are responsible in respect of the following:-

- (i) any negligent or incorrect entry in the records searched
- (ii) any negligent or incorrect interpretation of the records searched
- (iii) any negligent or incorrect recording of that interpretation in the search report
- (iv) and compensation payments

Maps

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

A copy of an extract of the public sewer map is included, showing the public sewers, disposal mains and lateral drains in the vicinity of the property.

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

A copy of an extract from the map of waterworks is included in which the location of the property is identified.

Drainage

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

The enquiry appears to relate to a plot of land or a recently built property. It is recommended that drainage proposals are checked with the developer.

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

Records indicate that this enquiry relates to a plot of land or a recently built property. It is recommended that the drainage proposals are checked with the developer. If the property was constructed after 6th April 2015 the Surface Water drainage may be served by a Sustainable Drainage System (SuDS). Further information may be available from the Developer.

2.3 Is a surface water drainage charge payable?

This enquiry appears to relate to a plot of land or a recently built property. It is recommended that charging proposals are checked with the developer. If the property was constructed after 6th April 2015 the Surface Water drainage may be served by a Sustainable Drainage System (SuDS). Further information may be available from the Developer.

2.4 Does the public sewer map indicate any public sewer, disposal main or lateral drain within the boundary of the property?

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 the 1st 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.

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

The public sewer map included indicates that there is no public pumping station within the boundaries of the property.

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

The public sewer map indicates that there are no public sewers within 30.48 metres (100 feet) of any buildings within the property.

However, from the 1st October 2011 many private sewers were transferred into public ownership and may not be recorded on the public sewer map and it is our professional opinion that if the property is connected to a foul sewer it is likely that there will be a public sewer within 30.48 metres (100 feet) of any buildings within the property.

2.5.1 Does the public sewer map indicate any public pumping station or any other ancillary apparatus within 50 metres (164.04 feet) of any buildings within the property?

The public sewer map included indicates that there is no public pumping station within 50 metres of any buildings within the property.

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?

Records confirm that Foul sewers serving the development, of which the property forms part are not the subject of an existing adoption agreement or an application for such an agreement.

The Surface Water sewer(s) and/or Surface Water lateral drain(s) are not the subject of an adoption agreement.

2.7 Has a 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?

There are no records in relation to any approval or consultation about 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.

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

The property is not recorded as being at risk of internal flooding due to overloaded public sewers.

From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership. It is therefore possible that a property 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.

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

The nearest sewage treatment works is Mill Green STW which is 6.695 kilometres to the east of the property.

Water

3.1 Is the property connected to mains water supply?

The enquiry appears to relate to a plot of land or a recently built property. It is recommended that the water proposals are checked with the developer.

3.2 Are there any water mains, resource mains or discharge pipes within the boundary of the property?

The map of waterworks does not indicate any water mains, resource mains or discharge pipes within the boundaries of the property.

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?

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.

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

Records confirm that the property is not recorded on a register kept by the water undertaker as being at risk of receiving low water pressure or flow.

3.5 What is the classification of the water supply for the property?

The water supplied to the property has an average water hardness of 133mg/l calcium which is defined as Very Hard by Affinity Water.

3.6 Is there a meter installed at this property?

Records indicate that there is no meter installed at this property.

3.7 Please include details of the location of any water meter serving the property.

This enquiry appears to relate to a plot of land or a recently built property. It is recommended that drainage proposals are checked with the developer.

Charging

4.1.1 – Who is responsible for providing the sewerage services for the property?

Thames Water Utilities Limited, Clearwater Court, Reading, RG1 8DB is the sewerage undertaker for the area.

4.1.2 – Who is responsible for providing the water services for the property?

Affinity Water Ltd, Tamblin Way, Hatfield, AL10 9EZ, is the water undertaker for the area.

4.2 Who bills the property for sewerage services?

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

4.3 Who bills the property for water services?

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

Trade Effluent

5.1 Is there consent, on this property, to discharge Trade Effluent under S118 of the water Industry act (1991) into the public sewerage systems?

No.

Wayleaves, Easements, Manhole Cover and Invert levels

6.1 Is there a wayleave/easement agreement giving the Water and/or Sewerage Undertaker the right to lay or maintain assets or right of access to pass through private land in order to reach the Company's assets?

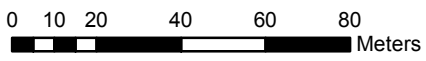
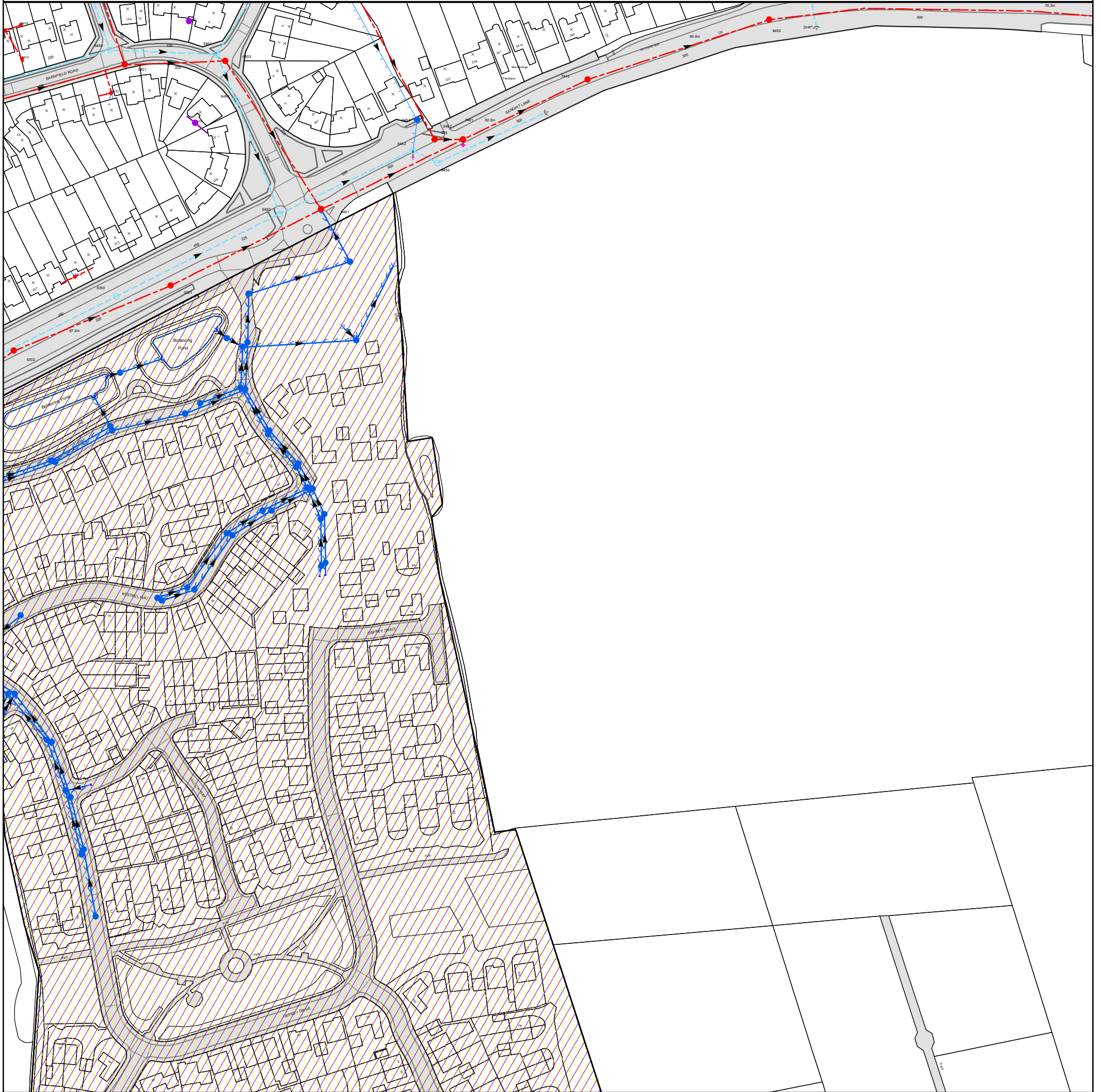
No.

6.2 On the copy extract from the public sewer map, please show manhole cover, depth, and invert levels where the information is available.

Details of any manhole cover and invert levels applicable to this site are enclosed.

Payment for this Search

A charge of £155.16 will be added to your account.



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

Scale: 1:1789
Width: 500m
Printed By: Krishna1
Print Date: 18/07/2024
Map Centre: 517750,208250
Grid Reference: TL1708SE

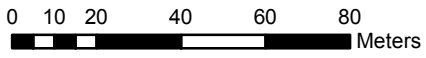
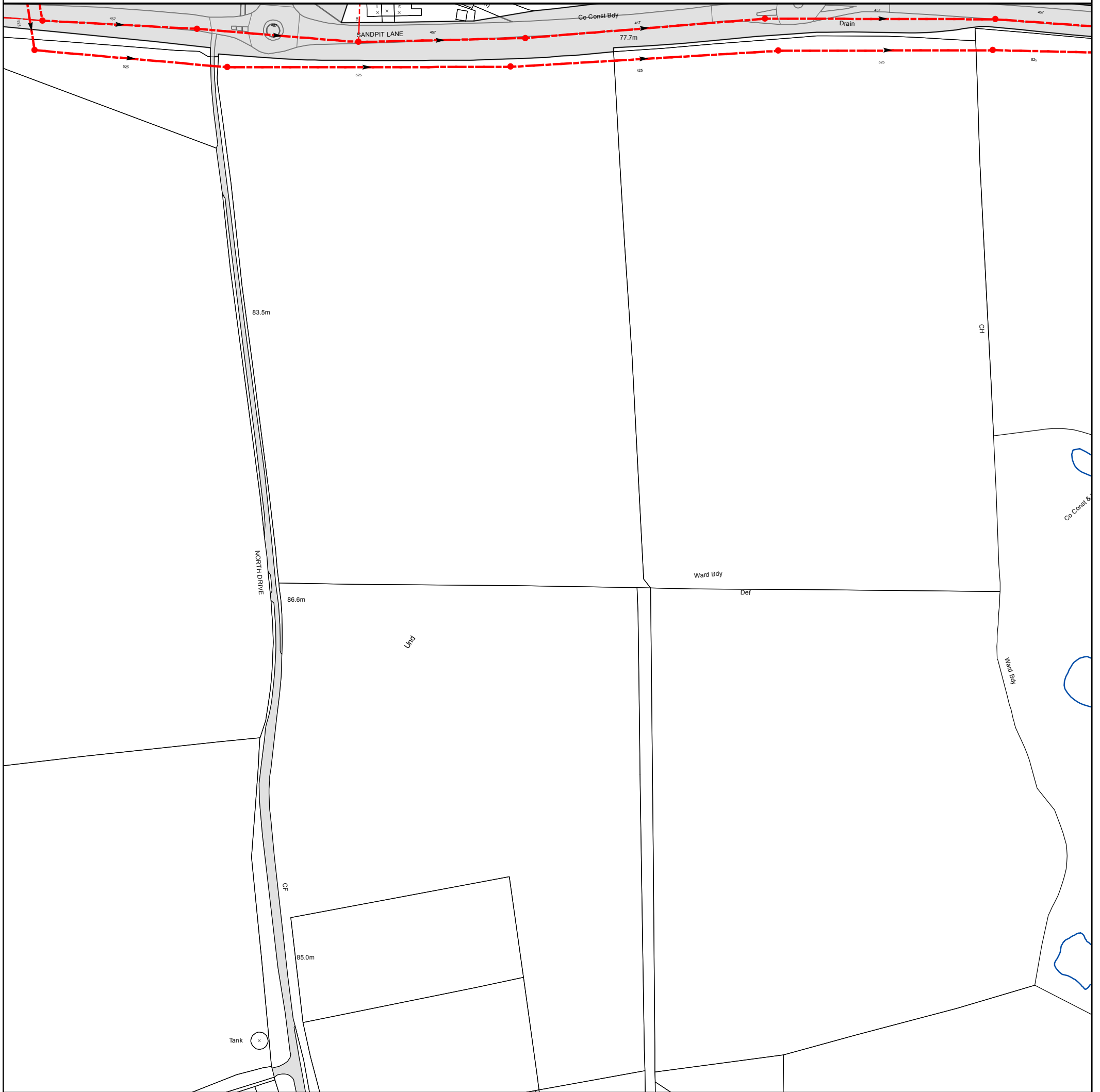
Comments:

CDWS/CDWS Standard/2024_5017256

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
5302		
6453	85.52	83.18
6402		
6451		
7401	80.83	79.17
6450	82.76	81.54
5401	89.46	86.87
5450	89.61	87.79
6456		
541B		
541D		
531A		

REFERENCE	COVER LEVEL	INVERT LEVEL
6403	86.79	84.33
5451	87.02	
6452		
7410		
8452		
5350	84.96	83.73
6401	82.27	80.43
5301	84.01	82.47
541A		
541C		
541E		
541F		



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Scale: 1:1789
Width: 500m
Printed By: Krishna1
Print Date: 18/07/2024
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Grid Reference: TL1808SW

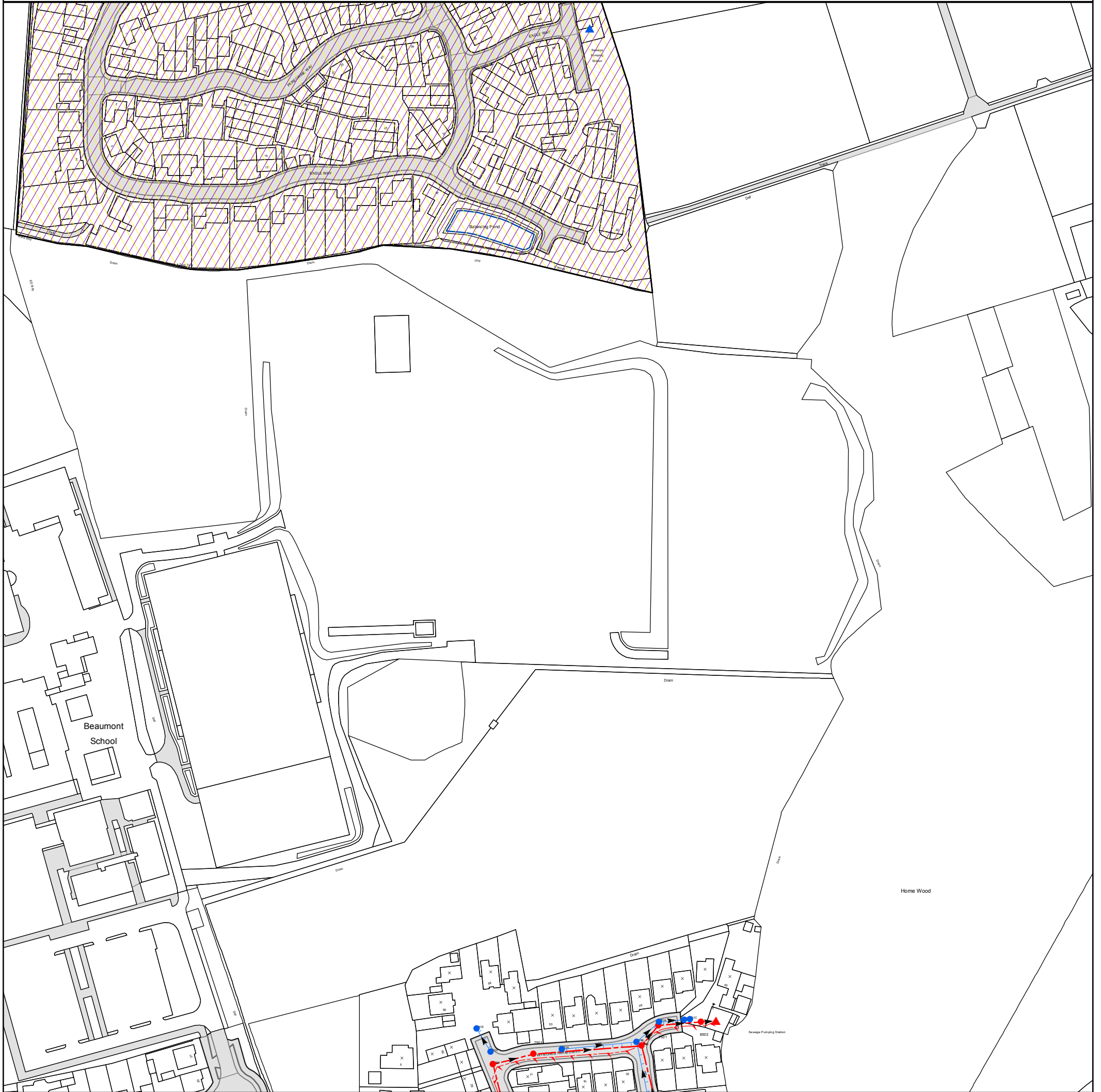
Comments:

CDWS/CDWS Standard/2024_5017256

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
L35		
LL30	77.65	73.9
LL32	78	74.3
L34	78.57	74.55
L33	78.5	74.4
LL34	80.03	74.69

REFERENCE	COVER LEVEL	INVERT LEVEL
L31	77.57	74.03
L30	77.17	73.87
L32	77.73	74.25
LL31	77.83	74.09
LL33	78.19	74.52



0 10 20 40 60 80
Meters

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Scale: 1:1789
Width: 500m
Printed By: Krishna1
Print Date: 18/07/2024
Map Centre: 517750,207750
Grid Reference: TL1707NE

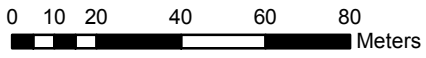
Comments:

CDWS/CDWS Standard/2024_5017256

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
7503	89.68	87.91
7502	88.62	86.66
8502	88.27	86.22
751B	88.72	87.05
851C	88.44	86.63
751D	90.09	88.45

REFERENCE	COVER LEVEL	INVERT LEVEL
7504	90.05	88.38
7501	88.48	86.51
751A	89.4	87.99
851B	88.48	86.64
851A	88.43	86.88
751E	90.49	88.38



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Print Date: 18/07/2024
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Grid Reference: TL1807NW

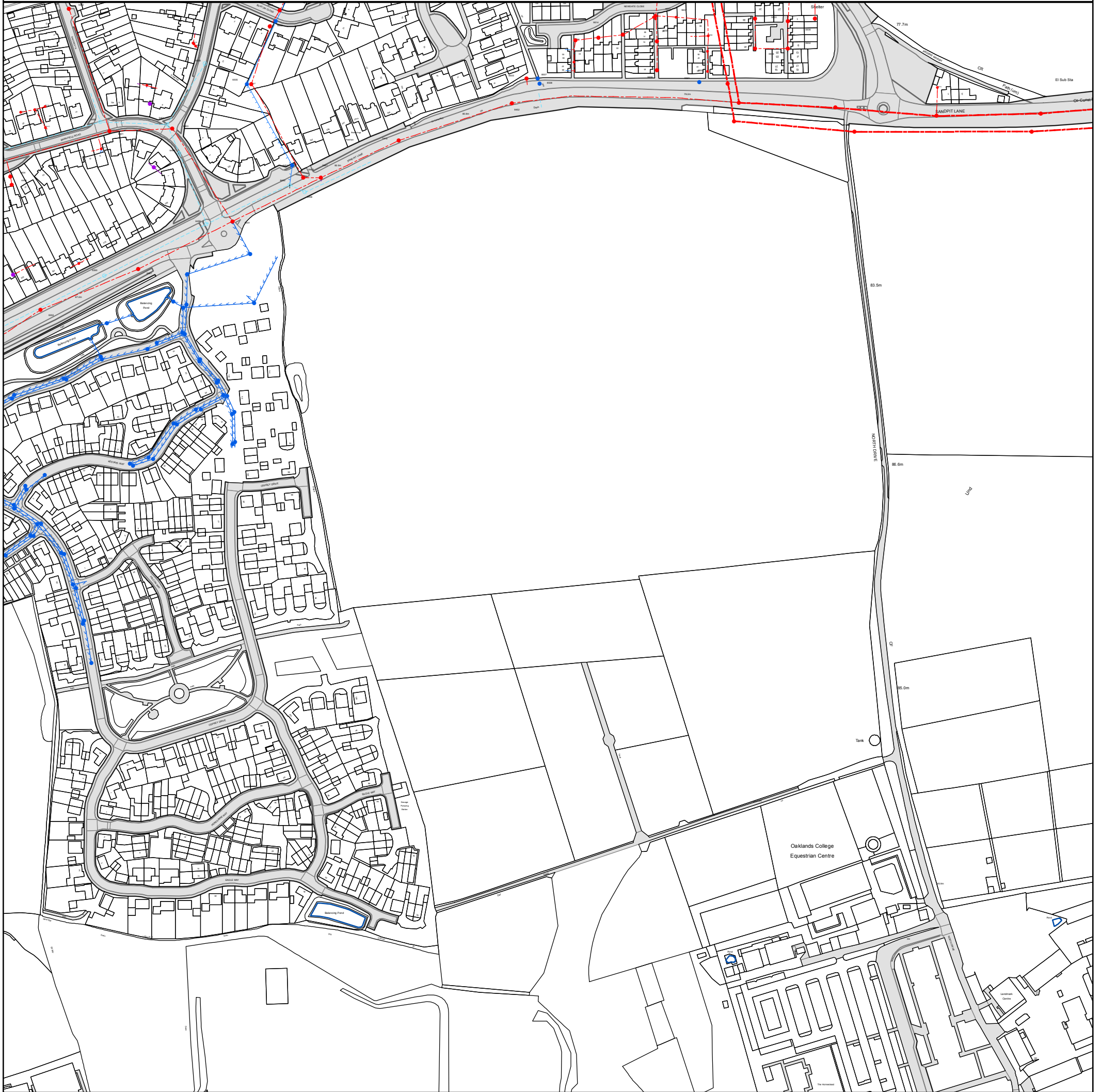
Comments:

CDWS/CDWS Standard/2024_5017256

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
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REFERENCE	COVER LEVEL	INVERT LEVEL
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0 15 30 60 90 120
Meters

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Scale: 1:2866
Width: 800m
Printed By: Krishna1
Print Date: 18/07/2024
Map Centre: 517878,208166
Grid Reference: TL1708SE

Comments:

CDWS/CDWS Standard/2024_5017256

NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.
















REFERENCE	COVER LEVEL	INVERT LEVEL
L35		
6403	86.79	84.33
5451	87.02	
L32	77.73	74.25
6452		
7410		
8452		
6450	82.76	81.54
5401	89.46	86.87
L34	78.57	74.55
6401	82.27	80.43
4404	93.97	92.22
L33	78.5	74.4
6505		
6507		
6456		
6506		
9506	79.76	78.7
9507	79.24	77.2
9513	80.44	79.04
0503	78.22	77.01
0501	77.98	76.15
9501	79.05	77.9
9503	79.45	76.98
541A		
541C		
8507		
9521		
8504	81.1	79.65
0508		
431A		
541E		
541F		
651A		

REFERENCE	COVER LEVEL	INVERT LEVEL
5302		
6453	85.52	83.18
LL32	78	74.3
6402		
6451		
7401	80.83	79.17
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5350	84.96	83.73
6503		
5500	94.57	92.43
5450	89.61	87.79
4405	93.38	92.34
LL35		
5301	84.01	82.47
6504		
LL33	78.19	74.52
8505		
9505	79.74	78.37
9514	80.64	79.33
0504	78.3	76.57
0502	77.12	75.01
9502	79.05	78.15
9500	78.67	77.74
441A		
541B		
LL34	80.03	74.69
8508		
151A		
851A		
541D		
551A		
531A		
651B		









Con29DW Commercial Drainage and Water Search - Sewer Key

Public Sewer Types (Operated and maintained by Thames Water)

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

Other Sewer Types (Not operated and maintained by Thames Water)

-  Sewer
-  Culverted Watercourse
-  Proposed
-  Decommissioned Sewer
-  Content of this drainage network is currently unknown
-  Ownership of this drainage network is currently unknown

Notes:

- 1) All levels associated with the plans are to Ordnance Datum Newlyn.
- 2) All measurements on the plan are metric.
- 3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate the direction of flow.
- 4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.

Sewer Fittings

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

-  Air Valve
-  Meter
-  Dam Chase
-  Vent
-  Fitting

Operational Controls

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

-  Ancillary
-  Drop Pipe
-  Control Valve
-  Weir





End Items

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

-  Inlet
-  Outfall
-  Undefined End




Other Symbols

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





-  Change of Characteristic Indicator
-  Public / Private Pumping Station
-  Invert Level
-  Summit

Areas

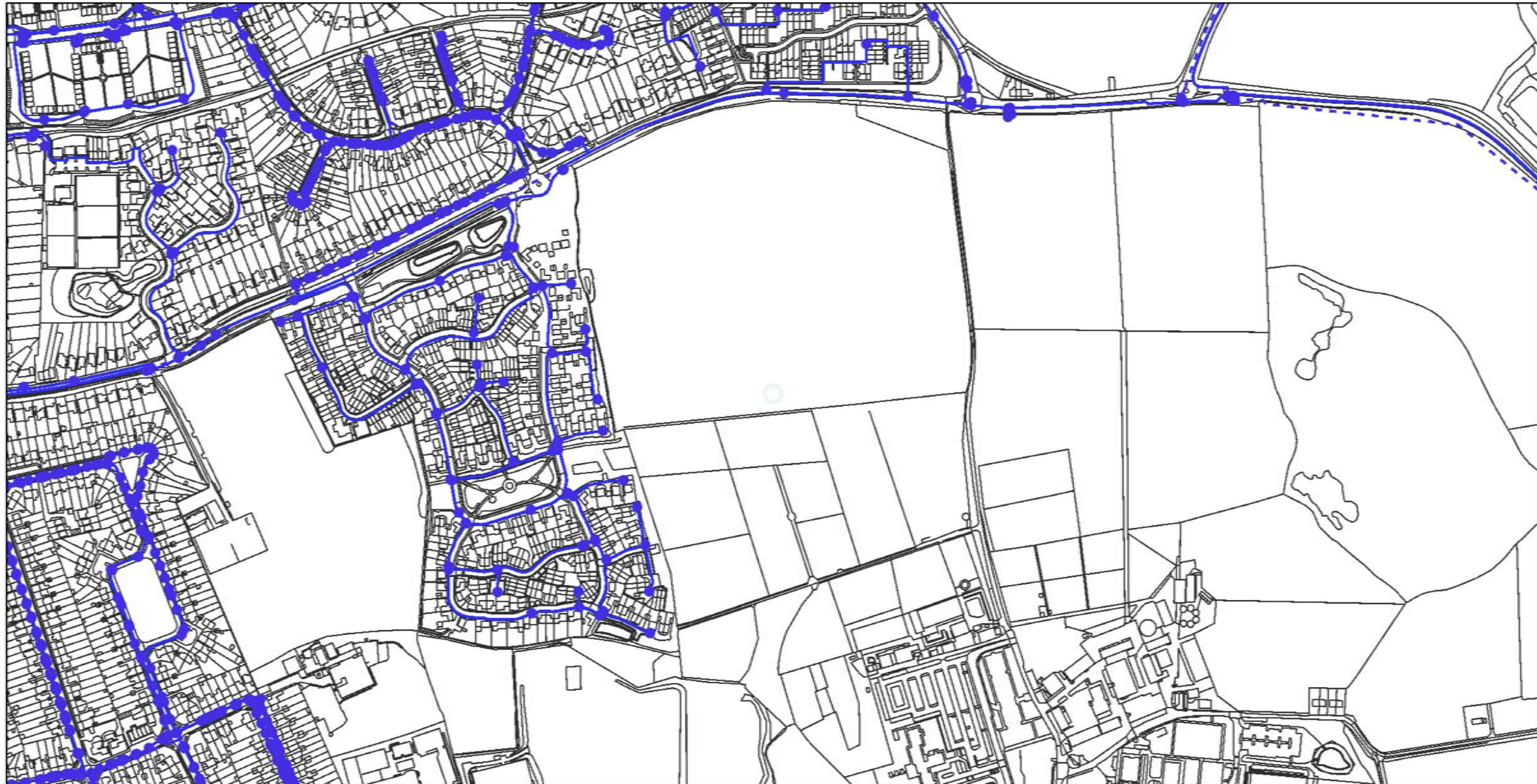
Lines denoting areas of underground surveys, etc.

-  Agreement
-  Chamber
-  Operational Site

Ducts or Crossings

-  Casement
 -  Conduit Bridge
 -  Subway
 -  Tunnel
- Ducts may contain high voltage cables. Please check with Thames Water.

- 5) 'na' or '0' on a manhole indicates that data is unavailable.
- 6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in millimeters. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology, please contact Property Searches on 0800 009 4540.







Copyright Affinity Water Ltd.
 © Crown Copyright and database rights 2023 Ordnance Survey 100025261.
 It shows water mains and associated apparatus but should not be relied upon as evidence of ownership or evidence of responsibility for maintenance. Privately owned service pipes (which may serve one or more properties) are unlikely to be shown.

The position of Company apparatus shown on this plan is provided for guidance only and the Company accepts no responsibility in the event of inaccuracy

For further information about the contents of this plan, please contact Affinity Water at the address below

Affinity Water, Tamblin Way, Hatfield, Hertfordshire, AL10 9EZ. www.affinitywater.co.uk/central
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This map is centred upon Ordnance Survey grid reference 517,902,208,161

 Water Main	 Hydrants, Valves, etc
 Abandoned Water Main	 Borehole, Pumping Facility, etc



1:4,500

7/9/2024

For your guidance:

- **Thames Water Property Searches Complaints Procedure:**

- Thames Water Property Searches offers a robust complaints procedure. Complaints can be made by telephone, in writing, by email (onlinecustomers@thameswater.co.uk) or through our website (www.thameswater-propertysearches.co.uk)
- A complaint should be acknowledged within 5 working days from receipt.

As a minimum standard Thames Water Property Searches will:

- endeavour to resolve any contact or complaint at the time of receipt. If this isn't possible, we will advise of timescales;
- investigate and research the matter in detail to identify the issue raised (in some cases third party consultation will be required);
- provide a response to the customer within 10 working days of receipt of the complaint;
- provide compensation if no response or acknowledgment that we are investigating the case is given within 10 working days of receipt of the complaint;
- keep you informed of the progress and, depending on the scale of investigation required, update with new timescales as necessary;
- provide an amended search, free of charge, if required;
- provide a refund if we find your complaint to be justified; take the necessary action within our power to put things right.

If you want us to liaise with a third party on your behalf, just let us know.

If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager, for resolution, who will respond again within 5 working days.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

Question 1.1

For your guidance:

- The Water Industry Act 1991 defines Public Sewers as those which Thames Water have responsibility for. Other assets and rivers, watercourses, ponds, culverts, or highway drains may be shown for information purposes only.
- The company is not generally responsible for SuDS (sustainable urban drainage system), rivers, watercourses, ponds, culverts, or highway drains. If any of these are shown on the copy extract, they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an 'as constructed' record. It is recommended these details be checked with the housing developer.
- Assets other than public sewers may be shown on the copy extract, for information.

Question 1.2

For your guidance:

- The "water mains" in this context are those, which are vested in and maintainable by the water company under statute.
- Assets other than public water mains may be shown on the plan, for information only.
- Water companies are not responsible for private supply pipes connecting the property to the public water main and do 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 length and route of any private water supply pipe connecting the property to the public water network.

Question 2.1

For your guidance:

- Water companies are not responsible for any private drains that connect the property to the public sewerage system and do not hold details of these. The property owner will normally have sole responsibility for private drains serving the property. These may pass through land outside 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.
- 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.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property, and it should be possible to estimate the length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.2

For your guidance:

- Sewerage Undertakers are not responsible for any private drains that connect the property to the public sewerage system, and do not hold details of these.
- The property owner will normally have sole responsibility for private drains serving the property. These private drains 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.
- In some cases, 'Sewerage Undertakers' records do not distinguish between foul and surface water connections to the public sewerage system.
- At the time of privatisation in 1989, Sewerage Undertakers were sold with poorly kept records of sewerage infrastructure. The records did not always show which properties were connected for surface water drainage purposes. Accordingly, billing records have been used to provide an answer for this element of the drainage and water search.
- Due to the potential inadequacy of 'Sewerage Undertakers' infrastructure records with respect to surface water drainage, it is the customer's responsibility to inform the Sewerage Undertaker that they do not receive the surface water drainage service. If on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. 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.
- If surface water from the property does not drain to the public sewerage system, the property may have private facilities in the form of a soakaway, private connection to a watercourse or there may be a sustainable urban drainage system (SuDS). Sustainable drainage systems are a collection of water management practices that aim to align modern drainage systems with natural water processes and are part of a larger green infrastructure strategy.
- An extract from the public sewer map is enclosed. This will show known public sewers in the vicinity of the property, and it should be possible to estimate the length and route of any private drains and/or sewers connecting the property to the public sewerage system.

Question 2.3

For your guidance:

- If surface water from the property drains to a public sewer, then a surface water drainage charge is payable.
- Where a surface water drainage charge is currently included in the property's water and sewerage bill but, on inspection, the buyer finds that surface water from the property does not drain to a public sewer, then the property may be eligible for a rebate of the surface water drainage charge. 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.

Question 2.4

For your guidance:

- Thames Water has a statutory right of access to carry out work on its assets. Employees of Thames Water or its contractors may, therefore, need to enter the property to carry out work.
- Please note if the property was constructed after 1st July 2011 any sewers and/or lateral drain within the boundary of the property are the responsibility of the householder.
- 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 running within the boundary of the property may restrict further development. The Company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.
- 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 housing developer.

Question 2.4.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- 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 pumping station within the boundary of the property may restrict further development. The company has a statutory right of access to carry out work on its assets, subject to notice. This may result in employees of the company, or its contractors, needing to enter the property to carry out work.
- 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 housing developer.

Question 2.5

For your guidance:

- This is because there are no buildings from which to measure the distance to any public sewers.
- The presence of a public foul sewer within 30.48 metres (100 feet) of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public foul sewer.
- 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 housing developer.

Question 2.5.1

For your guidance:

- Private pumping stations installed before 1st July 2011 will be transferred into the ownership of the sewerage undertaker.
- From the 1st October 2016 private pumping stations which serve more than one property have been transferred into public ownership but may not be recorded on the public sewer map.
- The presence of a public pumping station within 50 metres of the building(s) within the property can result in the local authority requiring a property to be connected to the public sewer.
- The measurement is estimated from the Ordnance Survey record, between the building(s) within the boundary of the property and the nearest public sewer.
- 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 housing developer.

Question 2.6

For your guidance:

- 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.
- This enquiry is of interest to purchasers 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 and meeting the requirements of 'Sewers for Adoption' 7th Edition.
- For further information on any buildover and/or adoption agreements please contact our developer services team by sending an email to developer.services@thameswater.co.uk or 0800 009 3921.

Question 2.7

For your guidance:

- From the 1st October 2011 most private sewers, disposal mains and lateral drains were transferred into public ownership and the sewerage undertaker may not have been approved or consulted about any plans to erect a building or extension on the property over or in the vicinity of these.
- Buildings or extensions erected over a sewer in contravention of building controls may have to be removed or altered.
- For further information on any buildover and/or adoption agreements please contact our developer services team by sending an email to developer.services@thameswater.co.uk or 0800 009 3921.

Question 2.8

For your guidance:

- For reporting purposes buildings are restricted to those normally occupied and used for residential, public, commercial, business, or industrial purposes.
- 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 because of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- “Internal flooding” from 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 those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from 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 Company’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 on the At-Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company 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 Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water Utilities Ltd on Tel: 0800 316 9800 or website www.thameswater.co.uk

Question 2.9

For your guidance:

- 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 has not been identified.
- As a responsible utility operator, Thames Water Utilities Ltd seeks to manage the impact of odour from operational sewage works on the surrounding area. This is done in accordance with the Code of Practice on Odour Nuisance from Sewage Treatment Works issued via the Department of Environment, Food and Rural Affairs (DEFRA). This Code recognises that odour from sewage treatment works can have a detrimental impact on the quality of the local environment for those living close to works. However, DEFRA also recognises that sewage treatment works provide important services to communities and are essential for maintaining standards in water quality and protecting aquatic-based environments. For more information visit www.thameswater.co.uk

Question 3.1

For your guidance:

- The Company does not keep details of private supplies. The situation should be checked with the current owner of the property.

Question 3.2

For your guidance:

- The boundary of the property has been determined by reference to the plan supplied. Where a plan was not supplied, the Ordnance Survey Record was used. If the Water undertaker mentioned in Question 4.1.2 is not Thames Water Utilities Ltd the boundary of the property has been determined by Ordnance Survey data.
- The presence of a public water main within the boundary of the property may restrict further development within it. Water companies have a statutory right of access to carry out work on their assets, subject to notice. This may result in employees of the Company, or its contractors, needing to enter the property to carry out work.

Question 3.3

For your guidance:

- This enquiry is of interest to purchasers who will want to know whether the property will be linked to the mains water supply.

Question 3.4

For your guidance:

- “Low water pressure” means water pressure below the regulatory reference level, which is the minimum pressure when demand on the system is not abnormal.
- Water Companies are required to include in the Regulatory Register that is presented annually to Ofwat, 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) and a solution has not yet been implemented.
- The reference level of service is a flow of 9 litres/minute at a pressure of 10metres / head on the customer's side of the outside stop valve (osv). 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 (shared supply), 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 13.5 litres/min at a pressure of 10m head on the customers' side of the OSV is appropriate.
 - For three or more properties the appropriate flow should be calculated from the standard loadings provided in Service Pipe Manual 1993.
- **Allowable exclusions** The Company is required to include in the Regulatory Register properties receiving pressure below the reference level, provided that allowable exclusions listed below do not apply.
- **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 should exclude from the reported figures properties which are affected by low pressure only on those days with the highest peak demands. During the report year companies may exclude, for each property, up to five days of low pressure caused by peak demand.
- **Planned maintenance:** Companies should not report 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 pressure reducing valves 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 pressure, which only occur for a short period, and for which there is evidence that incidents of a longer duration would not occur during the year, may be excluded from the reported figures.
- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water pressure.

Question 3.5

For your guidance:

- Water hardness can be expressed in various indices for example the hardness settings for dishwashers are commonly expressed in Clark's degrees however, check with the manufacturer as there are also other units. The following table shows the normal ranges of hardness.

Hardness Category	Calcium (mg/l)	Calcium Carbonate (mg/l)	English Clarke degrees	French degrees	General/ German degrees
Soft	0 to 20	0 to 50	0 to 3.5	0 to 5	0 to 2.8
Moderately Soft	21 to 40	51 to 100	3.6 to 7	6 to 10	2.9 to 5.6
Slightly hard	41 to 60	101 to 150	8 to 10.5	11 to 15	5.7 to 8.4
Moderately hard	61 to 80	151 to 200	10.6 to 14	16 to 20	8.5 to 11.2
Hard	81 to 120	201 to 300	15 to 21	21 to 30	11.3 to 16.8
Very hard	Over 120	Over 300	Over 21	Over 30	Over 16.8

- Please contact your water undertaker mentioned in Question 4.1.2 if you require further information on water hardness.

Question 3.6

For your guidance:

- The Water Industry Act 1991 Section 150, The Water Resale Order 2001 provides protection for people who buy their water or sewerage services from a person or company instead of directly from a water or sewerage company. Details are available from the Office of Water Services (OFWAT) website is www.ofwat.gov.uk.
- The Company may install a meter at the premises where a buyer makes a change of use of the property or where the buyer uses water for:
 - Watering the garden other than by hand (this includes the use of sprinklers).
 - Automatically replenishing a pond or swimming pool with a capacity greater than 10,000 litres.
 - A bath with a capacity more than 230 litres.
 - A reverse osmosis unit Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the sewerage and water services for this property. For a list of all potential retailers of sewerage and water services for the property please visit www.open-water.org.uk.

Question 3.7

For your guidance:

- Where a meter does not serve the property and the customer wishes to consider this method of charging, they should contact the current owner if they wish to know who bills the water services for this property. For a list of all potential retailers of water services for the property please visit www.open-water.org.uk.

Question 5.1

For your guidance:

- If a Trade effluent consent applies to the premises which are the subject of this search, it is for the applicant to satisfy itself as to the suitability of the consent for its client's requirements. The occupier of any trade premises in the area of a sewerage undertaker may discharge any trade effluent proceeding from those premises into the undertaker's public sewers if he does so with the undertaker's consent. If, in the case of any trade premises, any trade effluent is discharged without such consent or other authorisation, the occupier of the premises shall be guilty of an offence.
- 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.
- For further information regarding Trade Effluent consents please contact: Trade Effluent Control, Crossness STW, Belvedere Road, Abbey Wood London SE2 9AQ.

Question 6.1

For your guidance:

- This question relates only to private agreements between the water company acting in a private capacity and a landowner. Such contracts may often be part of a conveyance or land transfer, or a deed of grant of easement.
- If there is no formal easement, then a sewer or water main may have been constructed following the service of notice under the provisions of the Public Health Act 1936, Water Act 1945, Water Act 1989 or Water Industry Act 1991 as applicable. The company does not hold copies of these notices. However, in the absence of evidence to the contrary there is a legal presumption that all matters were properly dealt with. All rights and obligations relating to sewers and water mains are now covered by the Water Industry Act 1991. Where rights exist at the boundary of the property, but we are not sure of the exact correlation, we will answer "Yes" to this question. A documentary right can exist even if the physical asset itself has not yet been laid, or has been moved, or removed. Likewise, the position of the right and of the asset may differ.
- You may also find that an asset is protected both with contractual rights and statutory rights. Please consult your solicitor as to why this may happen, and its effects.
- We refer to "defined" assets for the following reasons: Often a contract may give the water company an expressed right to install and maintain assets within an area but without stating the exact position or route of such assets. Also, the law may imply rights where none have been mentioned specifically in a related contract, such as a conveyance. Finally, rights may come into being through long use. In any of these cases the rights are undefined, and although the water company may need to rely on them from time to time, as we cannot map the rights accurately, we will answer "no" to this question.
- Information obtainable from physical inspection (including Trial Bore Holes) overrides information contained in the report.
- Any error in answering this question is not to be regarded as a waiver of the water company's rights or title, or an agreement or representation that the water company is prepared to vary or discharge any of its rights or title.

The Customer and the Client are asked to note these terms and conditions, which govern the basis on which the CON29DW Commercial Drainage & Water Enquiry is supplied.

Definitions

"Apparatus" means the public assets shown on the Company's map keys relevant to the Report.

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

"Company" means the company who produces the Report, being Thames Water Utilities Limited, a company registered in England and Wales with company number 02366661 and whose registered office is at Clearwater Court, Vastern Road, Reading, Berkshire, RG1 8DB.

"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.

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

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

"Report" means the drainage and/or water report prepared by the Company in respect of the Property, including any maps provided as part of such reports.

1. Agreement

1.1 The Company agrees to supply the Report to the Customer and the Client subject to these terms and conditions in this Agreement. The scope and limitations of the Report are described in clause 2 of this Agreement. Where the Customer is acting as an agent for the Client then the Customer shall be responsible for bringing these terms and conditions to the attention of the Client.

1.2 The Customer and the Client agree that the placing of an Order for a Report and the subsequent provision of a copy of the Report to the Client indicates their acceptance of these terms and conditions.

2. The Report

Whilst the Company will use reasonable care and skill in producing the Report, it is provided to the Customer and 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 the Company cannot be responsible to the Customer or the Client for any change in the information contained in the Report after the date on which the Report was produced.

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 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, completeness and legibility of the address and other information supplied by the Customer or Client when placing the Order.

2.4 The Report provides information as to the indicative location and connection of existing services and other information in relation to drainage and water enquiries and should not be relied on for any other purpose.

2.5 The Report is produced only for use in relation to transactions which require the provision of drainage and water information.

2.6 The Customer shall only use the Report for the purpose set out above in clause 2.5, for which it is supplied in accordance with these terms and conditions.

2.7 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 and the maps must not be relied on in the event of excavation or other works made in the vicinity of Apparatus shown on any maps.

3. Disclaimers

3.1 Without prejudice to any other terms and conditions set out herein, the Company accepts responsibility for any inaccuracy in the location of Apparatus, or missing Apparatus contained in the maps within the Report only where such inaccuracies or errors arise as a direct result of the negligence of the Company and the existence of which the Company should reasonably have been aware.

4. Liability

4.1 The Company shall not be liable to the Customer or Client in contract, tort, negligence, breach of statutory duty, misrepresentation or otherwise for any inaccuracies, mistakes or omissions in the Report unless any such liability arises as a direct consequence of the Company's negligence and the existence of which the Company should reasonably have been aware.

4.2 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) the Company 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 and the Customer shall indemnify the Company in respect of any claim by the Client.

4.3 Notwithstanding clause 4.1 above, the Company does not exclude liability for (a) death or personal injury arising from its negligence, (b) fraud or fraudulent misrepresentation, and (c) any other liability which cannot be excluded or limited by law.

4.4 Subject to clause 4.3 above, the Company's total liability to the Customer or Client, whether for breach of contract, tort, negligence, breach of statutory duty, misrepresentation or otherwise, arising under or in connection with these terms and conditions and/or the provision of a Report shall be limited to £10 million in aggregate.

5. Copyright and Confidentiality

5.1 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 the Company and/or its licensors. No intellectual or other property rights are transferred or licensed to the Customer or the Client except to the extent expressly provided in these terms and conditions.

5.2 The Customer or Client is entitled to make copies of the Report for their own internal purposes but may only copy Ordnance Survey mapping or data contained in or attached to the Report if they have an appropriate licence from the originating source of that mapping or data.

5.3 The Customer and the 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.

5.4 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.

5.5 The enquiries in the Report are protected by copyright by the Law Society of 113 Chancery Lane, London WC2A 1PL and must not be used for any purpose outside the context of the Report.

5.6 The Customer and the Client agree to indemnify the Company against any losses, costs, claims, and damage suffered by the Company as a result of any breach by either of them of clauses 5.1 to 5.5 inclusive.

6. Payment

6.1 Unless otherwise stated all prices are inclusive of VAT. The Customer shall pay for the price of the Report specified by the Company, without any set off, deduction or counterclaim. Unless otherwise agreed in writing between the parties, the Company must receive full payment for the Report in advance of the Report being produced. Where the parties agree that payment is not required in advance, the Customer must pay for the Report in full within 14 days of the date of the invoice, unless otherwise agreed in writing between the parties.

7. Cancellations or Alterations

As a consumer

7.1 Where the Customer is an individual consumer (and not acting for purposes wholly or mainly relating to his or her trade, business, craft or profession), the Customer has specific legal rights relating to cancellation of any Order the Customer may place. The Customer may cancel his or her Order at any time within 14 days after the day on which the Order is entered into ("**Cancellation Period**").

7.2 To exercise the right to cancel, the Customer must inform the Company in writing of his or her decision to cancel the Order.

7.3 Where the Customer is ordering a Report as a consumer, due to the Customer's cancellation rights, the Company will not process the Order or provide the Report to the Customer before the end of the Cancellation Period unless the Customer provides his or her express consent and acknowledges that he or she will lose the right to cancel the contract under regulation 29(1) of the Consumer Contracts (Information, Cancellation, and Additional Charges) Regulations 2013.

CON29DW Commercial Drainage & Water Enquiry Terms and Conditions (2)

7.4 Notwithstanding above clauses 7.1 to 7.3 (cancellation rights), should the Customer wish to cancel the Order beyond the Cancellation Period and/ or despite its consent to waiver the Cancellation Period, the Company may still consider a Customer's cancellation request of any Order and any such cancellation shall be in accordance with its cancellation policy, which can be found on the Company's [website](#).

As a business

7.5 The Cancellation Period does not apply to the Customer's Order if the Customer is placing the Order wholly or mainly for purposes relating to their trade, business, craft or profession.

7.6 If the Customer cancels the Order other than in accordance with this clause the Customer may be liable for fees as detailed in the Company's cancellation policy which can be found on the Company's [website](#).

8. Complaints

8.1 The Company's complaints procedure is available on the Company's website.

8.2 The Company should acknowledge a complaint within 5 working days from receipt.

8.3 If the Customer follows the Company's complaints procedure but is dissatisfied with the response, the Customer may refer the complaint for consideration under The Property Ombudsman Scheme (TPOs) who can award compensation up to £25,000. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

8.4 In addition to TPO redress scheme covering consumers, TPO will also provide redress to small businesses (including Charities and Trusts) that meet the following criteria:

- A small business (or group of companies) with an annual turnover of less than £3 million;
- A charity with an annual income of less than £3 million;
- A trust with a net asset value of less than £3 million.

9. General

9.1 We are a member of the Drainage and Water Searches Network (DWSN), a membership organisation for companies who are responsible for compiling full and complete responses to the Law Society's CON29DW Residential and CON29DW Commercial products. For more information please visit www.con29dw.co.uk. The DWSN Standards are: -

- Promotion of best practice and quality.
- Maintain adequate insurance.
- Display the appropriate logos to signify high standards.
- Respond to complaints in a timely fashion and provide an appropriate escalation procedure.
- Comply with all applicable UK legislation, regulations and industry standards.
- Act in a professional and honest manner and provide a service with due care and skill.

9.2 These terms and conditions are the only terms and conditions that shall apply to any Order and the provision of a Report by the Company to the Customer and shall constitute the entire agreement between the Customer and the Company and supersede, replace and extinguish any previous arrangement, understanding or agreement between the parties relating to such Report.

9.3 In the event of any conflict of inconsistency between any information on the Company's website describing the features of the Report and these terms and conditions, then these terms and conditions shall prevail.

9.4 Where the Customer is acting wholly or mainly in the normal course of his or her trade, business, craft or profession, the Client is entitled to the benefit of these terms and conditions. Save as provided in this clause 9.4, it is not intended that any other person who is not a party to these terms and conditions has any right to enforce any term or these terms and conditions under the Contracts (Rights of Third Parties) Act 1999.

9.5 If any provision of these terms and conditions is or becomes invalid or unenforceable, it will be taken to be removed from the rest of these terms and conditions to the extent that it is invalid or unenforceable. No other provision of these terms and conditions shall be affected.

9.6 These terms and conditions shall be governed by English law and all parties submit to the exclusive jurisdiction of the English courts.

9.7 Nothing in these terms and conditions shall in any way restrict the Customer or Client's statutory or any other rights of access to the information contained in the Report.

These Terms & Conditions are available in larger print for those with impaired vision.

Payment Terms and Conditions

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

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment within 14 days of the date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service or will be held to be invalid.
4. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
5. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
6. A charge may be made at the discretion of the company for increased administration costs.

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

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 980 8800.

If you are unhappy with our service, you can speak to your original goods or customer service provider. If you are still not satisfied with the outcome provided, we will refer the matter to a Senior Manager for resolution who will provide you with a response.

If you are still dissatisfied with our final response, and in certain circumstances such as you are buying a residential property or commercial property within certain parameters, The Property Ombudsman will investigate your case and give an independent view. The Ombudsman can award compensation of up to £25,000 to you if he finds that you have suffered actual financial loss and/or aggravation, distress, or inconvenience because of your search not keeping to the Code. Further information can be obtained by visiting www.tpos.co.uk or by sending an email to admin@tpos.co.uk.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0300 034 2222 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	BACS Payment	Telephone Banking
Please call 0800 009 4540 quoting your invoice number starting CBA or ADS	Account Number 90478703 Sort code 60-00-01 A remittance advice must be sent to Thames Water Utilities Ltd. PO Box 3189 Slough SL1 4WW or email ps.billing@thameswater.co.uk	By calling your bank and quoting Account number 90478703 Sort code 60-00-01 and your invoice number

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

APPENDIX D DRAINAGE STRATEGY

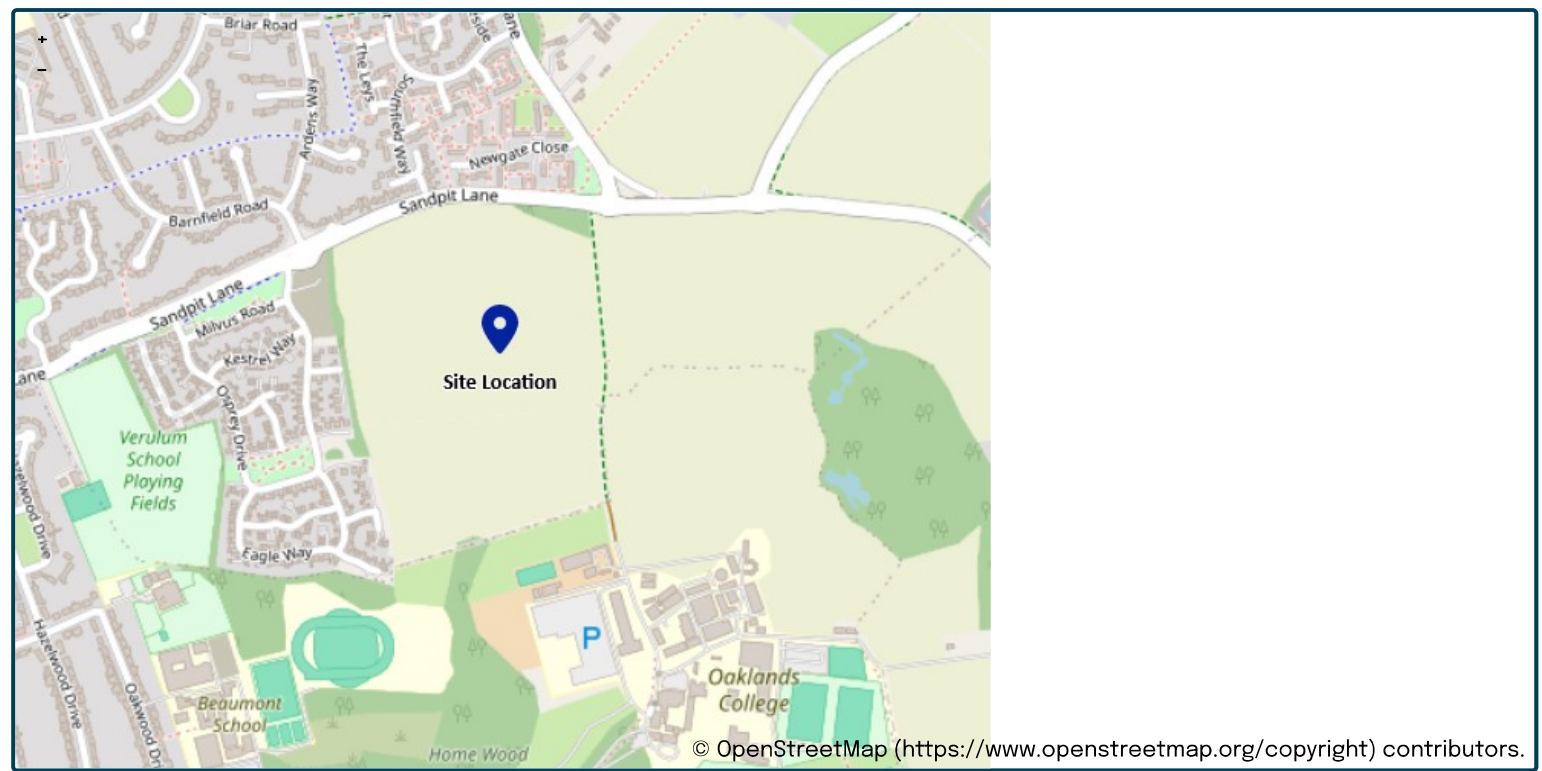
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	<input type="text" value="01/09/2025"/>
Calculated by	<input type="text" value="SH"/>
Reference	<input type="text"/>
Model version	<input type="text" value="2.1.2"/>

Location

Site name	<input type="text"/>
Site location	<input type="text"/>



Site easting (British National Grid)	<input type="text" value="517959"/>
Site northing (British National Grid)	<input type="text" value="208212"/>

Site details

Total site area (ha)	<input type="text" value="1"/>	ha
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MORE INFO

Greenfield runoff

Method

Method

FEH statistical

	My value		Map value
SAAR (mm)	<input type="text" value="668"/>	mm	<input type="text" value="668"/>
BFIHOST	<input type="text" value="0.52"/>		
QMed-QBar conversion	<input type="text" value="1.136"/>		<input type="text" value="1.136"/>
QMed (l/s)	<input type="text" value="2.42"/>	l/s	
QBar (FEH statistical) (l/s)	<input type="text" value="2.75"/>	l/s	

Growth curve factors

	My value		Map value
Hydrological region	<input type="text" value="6"/>		<input type="text" value="6"/>
1 year growth factor	<input type="text" value="0.85"/>		
2 year growth factor	<input type="text" value="0.88"/>		
10 year growth factor	<input type="text" value="1.62"/>		
30 year growth factor	<input type="text" value="2.3"/>		
100 year growth factor	<input type="text" value="3.19"/>		
200 year growth factor	<input type="text" value="3.74"/>		

Results

Method	<input type="text" value="FEH statistical"/>	
Flow rate 1 year (l/s)	<input type="text" value="2.3"/>	l/s
Flow rate 2 year (l/s)	<input type="text" value="2.4"/>	l/s
Flow rate 10 years (l/s)	<input type="text" value="4.5"/>	l/s
Flow rate 30 years (l/s)	<input type="text" value="6.3"/>	l/s
Flow rate 100 years (l/s)	<input type="text" value="8.8"/>	l/s
Flow rate 200 years (l/s)	<input type="text" value="10.3"/>	l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.1.2) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at [uksuds.com/terms-conditions](https://www.uksuds.com/terms-conditions) (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	5.891	0.053	111.2	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S1.001	3.232	0.502	6.4	0.042	0.00	0.0	0.600		o	100	Pipe/Conduit	
S1.002	36.336	0.415	87.6	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.003	27.101	0.922	29.4	0.029	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.004	38.281	1.757	21.8	0.064	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.005	20.154	0.859	23.5	0.086	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.006	11.855	0.264	44.9	0.019	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.007	40.975	0.579	70.8	0.032	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.008	25.447	0.384	66.3	0.083	0.00	0.0	0.600		o	300	Pipe/Conduit	
S2.000	32.823	0.737	44.5	0.016	5.00	0.0	0.600		o	150	Pipe/Conduit	
S2.001	9.099	0.214	42.5	0.032	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.002	32.737	0.739	44.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S2.003	48.769	1.487	32.8	0.040	0.00	0.0	0.600		o	300	Pipe/Conduit	
S3.000	30.024	0.531	56.5	0.017	5.00	0.0	0.600		o	150	Pipe/Conduit	
S3.001	25.726	1.060	24.3	0.013	0.00	0.0	0.600		o	225	Pipe/Conduit	
S3.002	12.960	0.388	33.4	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S3.003	29.547	0.487	60.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S3.004	26.327	0.394	66.8	0.024	0.00	0.0	0.600		o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	75.00	5.13	93.917	0.000	0.0	0.0	0.0	0.73	5.7	0.0
S1.001	75.00	5.15	93.864	0.042	0.0	0.0	0.0	3.07	24.1	11.4
S1.002	75.00	5.59	93.237	0.076	0.0	0.0	0.0	1.40	55.6	20.6
S1.003	75.00	5.77	92.822	0.105	0.0	0.0	0.0	2.42	96.3	28.4
S1.004	75.00	6.00	91.900	0.169	0.0	0.0	0.0	2.82	111.9	45.8
S1.005	75.00	6.12	90.143	0.255	0.0	0.0	0.0	2.71	107.9	69.1
S1.006	75.00	6.21	89.209	0.274	0.0	0.0	0.0	2.35	166.3	74.2
S1.007	75.00	6.57	88.945	0.306	0.0	0.0	0.0	1.87	132.3	82.9
S1.008	75.00	6.79	88.366	0.389	0.0	0.0	0.0	1.93	136.7	105.4
S2.000	75.00	5.36	90.927	0.016	0.0	0.0	0.0	1.51	26.7	4.3
S2.001	75.00	5.44	90.115	0.048	0.0	0.0	0.0	2.01	80.0	13.0
S2.002	75.00	5.71	89.901	0.048	0.0	0.0	0.0	1.97	78.4	13.0
S2.003	75.00	6.01	89.087	0.088	0.0	0.0	0.0	2.75	194.7	23.8
S3.000	75.00	5.37	91.110	0.017	0.0	0.0	0.0	1.34	23.7	4.6
S3.001	75.00	5.53	90.504	0.030	0.0	0.0	0.0	2.67	106.0	8.1
S3.002	75.00	5.63	89.444	0.030	0.0	0.0	0.0	2.27	90.3	8.1
S3.003	75.00	5.87	88.981	0.030	0.0	0.0	0.0	2.02	142.9	8.1
S3.004	75.00	6.10	88.494	0.054	0.0	0.0	0.0	1.93	136.2	14.6

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S4.000	9.665	0.151	64.0	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S4.001	7.593	0.200	38.0	0.111	0.00	0.0	0.600		o	100	Pipe/Conduit	
S5.000	8.336	0.139	60.0	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S5.001	5.601	0.200	28.0	0.100	0.00	0.0	0.600		o	100	Pipe/Conduit	
S2.004	24.088	0.074	325.5	0.048	0.00	0.0	0.600		o	525	Pipe/Conduit	
S1.009	15.723	0.380	41.4	0.061	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.010	33.110	0.524	63.2	0.035	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.011	30.671	0.327	93.8	0.071	0.00	0.0	0.600		o	600	Pipe/Conduit	
S6.000	11.935	0.024	497.3	0.804	10.00	0.0	0.600		o	600	Pipe/Conduit	
S1.012	46.422	0.093	499.2	0.093	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S1.013	6.103	0.012	508.6	0.000	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S1.014	9.630	0.019	506.8	0.000	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S1.015	49.178	0.098	501.8	0.000	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S1.016	16.735	0.133	125.8	0.000	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S1.017	20.100	0.063	319.0	0.020	0.00	0.0	0.600		oo	45	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S4.000	75.00	5.17	89.051	0.000	0.0	0.0	0.0	0.96	7.6	0.0
S4.001	75.00	5.10	88.900	0.000	5.0	0.0	0.0	1.26	9.9	5.0
S5.000	75.00	5.14	89.000	0.000	0.0	0.0	0.0	1.00	7.8	0.0
S5.001	75.00	5.06	88.861	0.000	5.0	0.0	0.0	1.46	11.5	5.0
S2.004	75.00	6.43	87.375	0.190	10.0	0.0	0.0	1.24	267.6	61.5
S1.009	75.00	6.86	87.226	0.640	10.0	0.0	0.0	3.79	1072.5	183.3
S1.010	75.00	7.04	86.846	0.675	10.0	0.0	0.0	3.07	867.2	192.8
S1.011	75.00	7.24	86.322	0.746	10.0	0.0	0.0	2.52	711.1	212.0
S6.000	75.00	10.18	85.822	0.804	0.0	0.0	0.0	1.09	306.8	217.7
S1.012	75.00	10.90	85.798	1.643	10.0	0.0	0.0	1.08	611.6	455.0
S1.013	75.00	10.99	85.705	1.643	10.0	0.0	0.0	1.07	605.9	455.0
S1.014	75.00	5.15	85.693	0.000	5.0	0.0	0.0	1.07	606.9	5.0
S1.015	75.00	5.91	85.674	0.000	5.0	0.0	0.0	1.08	610.0	5.0
S1.016	75.00	6.04	85.576	0.000	5.0	0.0	0.0	2.17	1225.2	5.0
S1.017	75.00	6.28	85.443	0.020	5.0	0.0	0.0	1.36	766.8	10.4

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S7.000	63.522	1.779	35.7	0.103	5.00	0.0	0.600		o	225	Pipe/Conduit	
S7.001	26.308	0.268	98.2	0.181	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.018	60.964	0.122	499.7	0.083	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.019	54.249	0.108	502.3	0.117	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.020	12.668	0.025	506.7	0.095	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.021	41.933	0.084	499.2	0.010	0.00	0.0	0.600		o	600	Pipe/Conduit	
S8.000	77.031	2.022	38.1	0.008	5.00	0.0	0.600		o	100	Pipe/Conduit	
S8.001	29.052	0.173	167.9	0.137	0.00	0.0	0.600		o	375	Pipe/Conduit	
S9.000	8.150	0.027	301.9	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S9.001	4.534	0.200	22.7	0.236	0.00	0.0	0.600		o	100	Pipe/Conduit	
S1.022	59.506	0.119	500.1	0.084	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.023	33.439	0.067	499.1	0.129	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.024	14.922	0.030	500.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.025	21.529	0.043	500.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.026	47.475	0.095	500.0	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.027	18.357	0.122	150.0	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
S1.028	39.319	0.128	307.2	0.000	0.00	0.0	0.0	0.045	3	\=/ 1000	1:3 Swale	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S7.000	75.00	5.48	87.802	0.103	0.0	0.0	0.0	2.20	87.3	27.9
S7.001	75.00	5.76	85.948	0.284	0.0	0.0	0.0	1.59	112.2	76.9
S1.018	75.00	5.94	85.380	0.000	5.0	0.0	0.0	1.08	306.1	5.0
S1.019	75.00	6.78	85.258	0.117	5.0	0.0	0.0	1.08	305.3	36.7
S1.020	75.00	6.97	85.150	0.212	5.0	0.0	0.0	1.07	303.9	62.4
S1.021	75.00	7.62	85.125	0.222	5.0	0.0	0.0	1.08	306.2	65.1
S8.000	75.00	6.02	87.501	0.008	0.0	0.0	0.0	1.25	9.8	2.2
S8.001	75.00	6.37	85.204	0.145	0.0	0.0	0.0	1.40	154.1	39.3
S9.000	75.00	5.31	85.873	0.000	0.0	0.0	0.0	0.44	3.4	0.0
S9.001	75.00	5.05	85.846	0.000	5.0	0.0	0.0	1.63	12.8	5.0
S1.022	75.00	8.53	84.806	0.451	10.0	0.0	0.0	1.08	306.0	132.1
S1.023	75.00	9.05	84.687	0.580	10.0	0.0	0.0	1.08	306.3	167.1
S1.024	75.00	9.28	84.620	0.580	10.0	0.0	0.0	1.08	306.0	167.1
S1.025	75.00	9.61	84.590	0.580	10.0	0.0	0.0	1.08	306.0	167.1
S1.026	75.00	10.34	84.547	0.580	10.0	0.0	0.0	1.08	306.0	167.1
S1.027	75.00	5.37	84.452	0.000	5.0	0.0	0.0	0.82	14.5	5.0
S1.028	75.00	6.53	84.330	0.000	5.0	0.0	0.0	0.57	710.8	5.0

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.029	82.022	3.290	24.9	0.000	0.00	0.0		0.045	3 \=/	1000	1:3 Swale	
S1.030	26.196	2.012	13.0	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S1.031	35.202	0.070	502.9	0.000	0.00	0.0	0.600		o	450	Pipe/Conduit	
S10.000	18.741	0.374	50.1	0.006	5.00	0.0	0.600		o	150	Pipe/Conduit	
S10.001	19.040	0.377	50.5	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S10.002	46.589	0.944	49.4	0.023	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.000	48.539	1.198	40.5	0.004	5.00	0.0	0.600		o	150	Pipe/Conduit	
S12.000	30.471	0.179	170.2	0.007	5.00	0.0	0.600		o	225	Pipe/Conduit	
S13.000	6.479	0.023	281.7	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S13.001	5.972	0.200	29.9	0.038	0.00	0.0	0.600		o	100	Pipe/Conduit	
S11.001	17.315	0.072	240.5	0.110	0.00	0.0	0.600		o	300	Pipe/Conduit	
S11.002	6.619	0.032	206.8	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
S11.003	10.688	0.033	323.9	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
S10.003	29.979	0.093	322.4	0.052	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.029	75.00	7.21	84.202	0.000	5.0	0.0	0.0	2.00	2494.9	5.0
S1.030	75.00	7.29	80.912	0.000	5.0	0.0	0.0	5.66	899.8	5.0
S1.031	75.00	7.94	78.900	0.000	5.0	0.0	0.0	0.90	143.1	5.0
S10.000	75.00	5.22	89.492	0.006	0.0	0.0	0.0	1.42	25.2	1.6
S10.001	75.00	5.39	89.043	0.029	0.0	0.0	0.0	1.84	73.4	7.9
S10.002	75.00	5.81	88.666	0.052	0.0	0.0	0.0	1.87	74.2	14.1
S11.000	75.00	5.51	89.132	0.004	0.0	0.0	0.0	1.59	28.0	1.1
S12.000	75.00	5.51	88.038	0.007	0.0	0.0	0.0	1.00	39.7	1.9
S13.000	75.00	5.24	88.608	0.000	0.0	0.0	0.0	0.45	3.6	0.0
S13.001	75.00	5.07	88.585	0.000	5.0	0.0	0.0	1.42	11.1	5.0
S11.001	75.00	5.80	87.784	0.121	5.0	0.0	0.0	1.01	71.4	37.8
S11.002	75.00	5.88	87.637	0.121	5.0	0.0	0.0	1.26	138.7	37.8
S11.003	75.00	6.06	87.605	0.121	5.0	0.0	0.0	1.00	110.6	37.8
S10.003	75.00	5.50	87.572	0.000	5.0	0.0	0.0	1.00	110.9	5.0

JNP Group		Page 5
No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S14.000	22.374	0.204	109.7	0.008	5.00	0.0	0.600		o	225	Pipe/Conduit	
S10.004	45.246	0.755	59.9	0.065	0.00	0.0	0.600		o	375	Pipe/Conduit	
S10.005	12.544	0.464	27.0	0.076	0.00	0.0	0.600		o	375	Pipe/Conduit	
S10.006	13.690	0.377	36.3	0.042	0.00	0.0	0.600		o	375	Pipe/Conduit	
S15.000	5.989	0.040	149.7	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S15.001	2.089	0.200	10.4	0.042	0.00	0.0	0.600		o	100	Pipe/Conduit	
S15.002	17.611	0.117	150.5	0.039	0.00	0.0	0.600		o	225	Pipe/Conduit	
S10.007	21.405	0.067	319.5	0.014	0.00	0.0	0.600		o	375	Pipe/Conduit	
S16.000	42.719	0.659	64.8	0.008	5.00	0.0	0.600		o	225	Pipe/Conduit	
S16.001	27.608	0.425	65.0	0.074	0.00	0.0	0.600		o	225	Pipe/Conduit	
S16.002	25.505	0.584	43.7	0.054	0.00	0.0	0.600		o	225	Pipe/Conduit	
S10.008	30.922	0.077	401.6	0.019	0.00	0.0	0.600		o	450	Pipe/Conduit	
S10.009	40.217	0.120	335.1	0.119	0.00	0.0	0.600		o	450	Pipe/Conduit	
S10.010	56.373	1.379	40.9	0.145	0.00	0.0	0.600		o	450	Pipe/Conduit	
S10.011	19.016	0.797	23.9	0.251	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S14.000	75.00	5.30	87.833	0.008	0.0	0.0	0.0	1.25	49.6	2.2
S10.004	75.00	5.82	87.479	0.073	5.0	0.0	0.0	2.34	258.9	24.8
S10.005	75.00	5.88	86.724	0.149	5.0	0.0	0.0	3.50	386.2	45.4
S10.006	75.00	5.95	86.260	0.191	5.0	0.0	0.0	3.02	333.0	56.7
S15.000	75.00	5.16	86.740	0.000	0.0	0.0	0.0	0.63	4.9	0.0
S15.001	75.00	5.17	86.700	0.042	0.0	0.0	0.0	2.41	18.9	11.4
S15.002	75.00	5.45	86.375	0.081	0.0	0.0	0.0	1.06	42.3	21.9
S10.007	75.00	6.31	85.883	0.286	5.0	0.0	0.0	1.01	111.4	82.5
S16.000	75.00	5.44	87.634	0.008	0.0	0.0	0.0	1.63	64.7	2.2
S16.001	75.00	5.72	86.975	0.082	0.0	0.0	0.0	1.63	64.6	22.2
S16.002	75.00	5.93	86.550	0.136	0.0	0.0	0.0	1.98	78.9	36.8
S10.008	75.00	6.82	85.741	0.441	5.0	0.0	0.0	1.01	160.4	124.4
S10.009	75.00	7.43	85.664	0.560	5.0	0.0	0.0	1.10	175.7	156.7
S10.010	75.00	7.72	85.544	0.705	5.0	0.0	0.0	3.19	506.9	195.9
S10.011	75.00	7.80	84.165	0.956	5.0	0.0	0.0	4.18	664.1	263.9

JNP Group		Page 6
No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S17.000	33.564	1.645	20.4	0.004	5.00	0.0	0.600		o	225	Pipe/Conduit	
S17.001	13.988	0.600	23.3	0.040	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.000	14.913	0.318	46.9	0.037	5.00	0.0	0.600		o	150	Pipe/Conduit	
S18.001	32.833	1.548	21.2	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
S18.002	11.937	0.400	29.8	0.080	0.00	0.0	0.600		o	150	Pipe/Conduit	
S19.000	7.440	0.365	20.4	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S19.001	8.424	0.200	42.1	0.104	0.00	0.0	0.600		o	100	Pipe/Conduit	
S17.002	53.668	0.850	63.1	0.028	0.00	0.0	0.600		o	300	Pipe/Conduit	
S20.000	24.564	0.422	58.2	0.039	5.00	0.0	0.600		o	150	Pipe/Conduit	
S20.001	34.818	1.043	33.4	0.051	0.00	0.0	0.600		o	300	Pipe/Conduit	
S20.002	20.073	0.750	26.8	0.048	0.00	0.0	0.600		o	300	Pipe/Conduit	
S21.000	4.753	0.212	22.4	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S21.001	6.080	0.200	30.4	0.194	0.00	0.0	0.600		o	100	Pipe/Conduit	
S17.003	44.206	0.617	71.6	0.067	0.00	0.0	0.600		o	375	Pipe/Conduit	
S17.004	20.829	0.316	65.9	0.110	0.00	0.0	0.600		o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S17.000	75.00	5.19	87.620	0.004	0.0	0.0	0.0	2.91	115.7	1.1
S17.001	75.00	5.28	85.975	0.044	0.0	0.0	0.0	2.72	108.2	11.9
S18.000	75.00	5.17	87.716	0.037	0.0	0.0	0.0	1.47	26.0	10.0
S18.001	75.00	5.42	87.398	0.037	0.0	0.0	0.0	2.20	38.8	10.0
S18.002	75.00	5.53	85.850	0.117	0.0	0.0	0.0	1.85	32.7	31.7
S19.000	75.00	5.07	86.571	0.000	0.0	0.0	0.0	1.72	13.5	0.0
S19.001	75.00	5.12	86.206	0.000	5.0	0.0	0.0	1.19	9.4	5.0
S17.002	75.00	5.98	85.300	0.189	5.0	0.0	0.0	1.98	140.1	56.2
S20.000	75.00	5.31	86.815	0.039	0.0	0.0	0.0	1.32	23.3	10.6
S20.001	75.00	5.52	86.243	0.090	0.0	0.0	0.0	2.73	193.0	24.4
S20.002	75.00	5.63	85.200	0.138	0.0	0.0	0.0	3.05	215.7	37.4
S21.000	75.00	5.05	85.500	0.000	0.0	0.0	0.0	1.64	12.9	0.0
S21.001	75.00	5.07	85.288	0.000	5.0	0.0	0.0	1.40	11.0	5.0
S17.003	75.00	6.32	84.375	0.394	10.0	0.0	0.0	2.14	236.7	116.7
S17.004	75.00	6.46	83.683	0.504	10.0	0.0	0.0	2.51	398.8	146.5

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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S10.012	57.699	2.527	22.8	0.054	0.00	0.0	0.600		o	600	Pipe/Conduit	
S22.000	6.588	0.113	58.3	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S22.001	6.550	0.133	49.2	0.047	0.00	0.0	0.600		o	150	Pipe/Conduit	
S10.013	32.648	0.734	44.5	0.168	0.00	0.0	0.600		o	600	Pipe/Conduit	
S10.014	34.283	0.345	99.4	0.120	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S23.000	3.169	0.070	45.3	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S23.001	2.800	0.048	58.3	0.063	0.00	0.0	0.600		o	150	Pipe/Conduit	
S23.002	14.547	1.020	14.3	0.065	0.00	0.0	0.600		o	300	Pipe/Conduit	
S24.000	4.828	0.048	100.6	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S24.001	11.366	1.706	6.7	0.058	0.00	0.0	0.600		o	100	Pipe/Conduit	
S23.003	28.627	2.100	13.6	0.148	0.00	0.0	0.600		o	300	Pipe/Conduit	
S23.004	17.148	0.057	300.8	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S25.000	27.783	0.797	34.9	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S10.012	75.00	7.99	83.217	1.514	15.0	0.0	0.0	5.11	1445.1	425.0
S22.000	75.00	5.11	81.936	0.000	0.0	0.0	0.0	1.01	7.9	0.0
S22.001	75.00	5.18	81.773	0.047	0.0	0.0	0.0	1.44	25.4	12.7
S10.013	75.00	8.13	80.690	1.729	15.0	0.0	0.0	3.66	1034.3	483.3
S10.014	75.00	8.37	79.956	1.849	15.0	0.0	0.0	2.44	1379.6	515.8
S23.000	75.00	5.05	84.820	0.000	0.0	0.0	0.0	1.15	9.0	0.0
S23.001	75.00	5.08	84.700	0.063	0.0	0.0	0.0	1.32	23.3	17.1
S23.002	75.00	5.14	84.020	0.128	0.0	0.0	0.0	4.18	295.8	34.7
S24.000	75.00	5.10	85.148	0.000	0.0	0.0	0.0	0.77	6.0	0.0
S24.001	75.00	5.17	85.100	0.058	0.0	0.0	0.0	3.01	23.7	15.7
S23.003	75.00	5.28	83.000	0.334	0.0	0.0	0.0	4.28	302.6	90.5
S23.004	75.00	5.48	80.600	0.334	0.0	0.0	0.0	1.40	395.5	90.5
S25.000	75.00	5.35	82.803	0.000	0.0	0.0	0.0	1.31	10.3	0.0

No. 1 Meadowhall Riverside
Meadowhall Road
Sheffield S9 1BW

Sandpit Lane
BR31287



Date 02/10/2025
File BR31287-JNP-92-XX-CA-C-1001

Designed by SH
Checked by LC

Innovyze

Network 2020.1.3

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S26.000	4.983	0.050	99.7	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S26.001	3.816	0.065	58.7	0.049	0.00	0.0	0.600		o	150	Pipe/Conduit	
S27.000	5.192	0.052	99.9	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S27.001	5.218	0.522	10.0	0.072	0.00	0.0	0.600		o	150	Pipe/Conduit	
S23.005	32.831	0.134	245.0	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S28.000	38.277	2.391	16.0	0.044	5.00	0.0	0.600		o	150	Pipe/Conduit	
S29.000	6.388	0.200	31.9	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S29.001	8.787	0.150	58.6	0.016	0.00	0.0	0.600		o	100	Pipe/Conduit	
S23.006	27.789	0.231	120.3	0.094	0.00	0.0	0.600		o	300	Pipe/Conduit	
S30.000	24.287	0.277	87.7	0.022	5.00	0.0	0.600		o	150	Pipe/Conduit	
S31.000	3.427	0.034	100.8	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S31.001	2.440	0.042	58.1	0.070	0.00	0.0	0.600		o	150	Pipe/Conduit	
S30.001	7.021	0.042	167.2	0.043	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S26.000	75.00	5.11	82.850	0.000	0.0	0.0	0.0	0.77	6.0	0.0
S26.001	75.00	5.16	82.750	0.049	0.0	0.0	0.0	1.32	23.2	13.3
S27.000	75.00	5.11	82.652	0.000	0.0	0.0	0.0	0.77	6.0	0.0
S27.001	75.00	5.14	82.550	0.072	0.0	0.0	0.0	3.21	56.6	19.5
S23.005	75.00	5.55	80.543	0.000	5.0	0.0	0.0	1.00	70.7	5.0
S28.000	75.00	5.25	82.950	0.044	0.0	0.0	0.0	2.53	44.7	11.9
S29.000	75.00	5.08	82.000	0.000	0.0	0.0	0.0	1.37	10.8	0.0
S29.001	75.00	5.22	81.800	0.016	0.0	0.0	0.0	1.01	7.9	4.3
S23.006	75.00	5.87	80.409	0.154	5.0	0.0	0.0	1.43	101.2	46.7
S30.000	75.00	5.38	81.650	0.022	0.0	0.0	0.0	1.07	19.0	6.0
S31.000	75.00	5.07	82.634	0.000	0.0	0.0	0.0	0.77	6.0	0.0
S31.001	75.00	5.11	82.550	0.070	0.0	0.0	0.0	1.32	23.4	19.0
S30.001	75.00	5.49	81.298	0.135	0.0	0.0	0.0	1.01	40.1	36.6

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STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S30.002	41.282	0.681	60.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S32.000	5.092	0.051	99.8	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S32.001	4.552	0.078	58.4	0.054	0.00	0.0	0.600		o	150	Pipe/Conduit	
S30.003	11.439	0.023	497.3	0.050	0.00	0.0	0.600		o	600	Pipe/Conduit	
S23.007	31.105	0.127	244.9	0.048	0.00	0.0	0.600		o	300	Pipe/Conduit	
S23.008	17.763	0.139	127.8	0.082	0.00	0.0	0.600		o	300	Pipe/Conduit	
S10.015	11.780	0.172	68.5	0.102	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S10.016	26.468	0.363	72.9	0.017	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S10.017	75.581	0.151	500.5	0.000	0.00	0.0	0.600		oo	45	Pipe/Conduit	
S33.000	18.418	0.210	87.7	0.010	5.00	0.0	0.600		o	150	Pipe/Conduit	
S33.001	15.207	0.278	54.7	0.034	0.00	0.0	0.600		o	225	Pipe/Conduit	
S33.002	47.936	1.604	29.9	0.017	0.00	0.0	0.600		o	225	Pipe/Conduit	
S33.003	48.112	1.735	27.7	0.113	0.00	0.0	0.600		o	225	Pipe/Conduit	
S33.004	60.269	1.188	50.7	0.086	0.00	0.0	0.600		o	300	Pipe/Conduit	
S34.000	44.697	1.658	27.0	0.000	5.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S30.002	75.00	5.90	81.256	0.135	0.0	0.0	0.0	1.68	66.9	36.6
S32.000	75.00	5.11	81.951	0.000	0.0	0.0	0.0	0.77	6.0	0.0
S32.001	75.00	5.17	81.850	0.054	0.0	0.0	0.0	1.32	23.3	14.6
S30.003	75.00	6.08	80.200	0.239	0.0	0.0	0.0	1.09	306.8	64.7
S23.007	75.00	5.52	80.177	0.000	7.5	0.0	0.0	1.00	70.7	7.5
S23.008	75.00	5.73	80.050	0.082	7.5	0.0	0.0	1.39	98.2	29.7
S10.015	75.00	8.43	79.611	2.033	22.5	0.0	0.0	2.94	1663.3	573.1
S10.016	75.00	8.59	79.439	2.050	22.5	0.0	0.0	2.85	1611.8	577.7
S10.017	75.00	9.75	79.076	2.050	22.5	0.0	0.0	1.08	610.8	577.7
S33.000	75.00	5.29	93.505	0.010	0.0	0.0	0.0	1.07	19.0	2.7
S33.001	75.00	5.43	93.220	0.044	0.0	0.0	0.0	1.77	70.5	11.9
S33.002	75.00	5.76	92.942	0.061	0.0	0.0	0.0	2.40	95.5	16.5
S33.003	75.00	6.08	91.338	0.174	0.0	0.0	0.0	2.49	99.2	47.1
S33.004	75.00	6.54	89.528	0.260	0.0	0.0	0.0	2.21	156.4	70.4
S34.000	75.00	5.29	92.804	0.000	0.0	0.0	0.0	2.53	100.6	0.0

No. 1 Meadowhall Riverside
 Meadowhall Road
 Sheffield S9 1BW

Sandpit Lane
 BR31287



Date 02/10/2025
 File BR31287-JNP-92-XX-CA-C-1001

Designed by SH
 Checked by LC

Innovyze

Network 2020.1.3

STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S34.001	31.169	1.403	22.2	0.096	0.00	0.0	0.600		o	225	Pipe/Conduit	
S34.002	30.516	1.328	23.0	0.065	0.00	0.0	0.600		o	300	Pipe/Conduit	
S35.000	8.884	0.400	22.2	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S35.001	6.792	0.200	34.0	0.133	0.00	0.0	0.600		o	100	Pipe/Conduit	
S33.005	49.550	0.725	68.3	0.187	0.00	0.0	0.600		o	450	Pipe/Conduit	
S36.000	39.555	1.461	27.1	0.010	5.00	0.0	0.600		o	225	Pipe/Conduit	
S36.001	49.110	2.084	23.6	0.075	0.00	0.0	0.600		o	225	Pipe/Conduit	
S36.002	26.184	0.262	99.9	0.100	0.00	0.0	0.600		o	300	Pipe/Conduit	
S33.006	45.924	1.841	24.9	0.156	0.00	0.0	0.600		o	450	Pipe/Conduit	
S37.000	7.371	0.074	99.6	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S37.001	4.019	0.300	13.4	0.049	0.00	0.0	0.600		o	100	Pipe/Conduit	
S37.002	16.375	0.067	244.4	0.098	0.00	0.0	0.600		o	300	Pipe/Conduit	
S37.003	10.027	0.041	244.6	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S33.007	37.278	0.722	51.6	0.065	0.00	0.0	0.600		o	600	Pipe/Conduit	
S33.008	17.553	0.799	22.0	0.058	0.00	0.0	0.600		o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S34.001	75.00	5.48	91.146	0.096	0.0	0.0	0.0	2.79	110.9	26.0
S34.002	75.00	5.64	89.668	0.161	0.0	0.0	0.0	3.29	232.8	43.6
S35.000	75.00	5.09	89.700	0.000	0.0	0.0	0.0	1.65	12.9	0.0
S35.001	75.00	5.09	89.300	0.000	5.0	0.0	0.0	1.33	10.4	5.0
S33.005	75.00	6.87	88.190	0.608	5.0	0.0	0.0	2.46	391.6	169.7
S36.000	75.00	5.26	91.327	0.010	0.0	0.0	0.0	2.52	100.4	2.7
S36.001	75.00	5.56	89.866	0.085	0.0	0.0	0.0	2.71	107.6	23.0
S36.002	75.00	5.84	87.707	0.185	0.0	0.0	0.0	1.57	111.2	50.1
S33.006	75.00	7.06	87.295	0.949	5.0	0.0	0.0	4.08	649.5	262.0
S37.000	75.00	5.16	85.274	0.000	0.0	0.0	0.0	0.77	6.1	0.0
S37.001	75.00	5.19	85.200	0.049	0.0	0.0	0.0	2.12	16.7	13.3
S37.002	75.00	5.46	84.700	0.147	0.0	0.0	0.0	1.00	70.8	39.8
S37.003	75.00	5.17	84.633	0.000	5.0	0.0	0.0	1.00	70.8	5.0
S33.007	75.00	7.24	84.292	1.014	10.0	0.0	0.0	3.39	959.7	284.6
S33.008	75.00	7.30	83.570	1.072	10.0	0.0	0.0	5.21	1473.3	300.3

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S38.000	14.922	0.140	106.6	0.045	5.00	0.0	0.600		o	150	Pipe/Conduit	
S38.001	18.699	0.418	44.7	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S33.009	95.648	3.696	25.9	0.034	0.00	0.0	0.600		o	600	Pipe/Conduit	
S39.000	22.564	1.573	14.3	0.030	5.00	0.0	0.600		o	150	Pipe/Conduit	
S40.000	4.661	0.330	14.1	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S40.001	2.425	0.626	3.9	0.047	0.00	0.0	0.600		o	100	Pipe/Conduit	
S39.001	34.181	1.594	21.4	0.042	0.00	0.0	0.600		o	225	Pipe/Conduit	
S41.000	39.597	2.693	14.7	0.045	5.00	0.0	0.600		o	150	Pipe/Conduit	
S39.002	36.392	2.253	16.2	0.124	0.00	0.0	0.600		o	300	Pipe/Conduit	
S39.003	23.946	2.504	9.6	0.102	0.00	0.0	0.600		o	300	Pipe/Conduit	
S39.004	62.185	0.850	73.2	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S42.000	11.864	0.600	19.8	0.005	5.00	0.0	0.600		o	150	Pipe/Conduit	
S42.001	46.853	2.343	20.0	0.015	0.00	0.0	0.600		o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S38.000	75.00	5.26	83.779	0.045	0.0	0.0	0.0	0.97	17.2	12.2
S38.001	75.00	5.41	83.564	0.045	0.0	0.0	0.0	1.96	78.0	12.2
S33.009	75.00	7.63	82.771	1.151	10.0	0.0	0.0	4.80	1357.1	321.7
S39.000	75.00	5.14	89.524	0.030	0.0	0.0	0.0	2.67	47.2	8.1
S40.000	75.00	5.04	88.957	0.000	0.0	0.0	0.0	2.07	16.2	0.0
S40.001	75.00	5.05	88.627	0.047	0.0	0.0	0.0	3.96	31.1	12.7
S39.001	75.00	5.34	87.876	0.119	0.0	0.0	0.0	2.84	112.8	32.2
S41.000	75.00	5.25	89.050	0.045	0.0	0.0	0.0	2.64	46.7	12.2
S39.002	75.00	5.50	86.207	0.288	0.0	0.0	0.0	3.93	277.9	78.0
S39.003	75.00	5.57	83.954	0.390	0.0	0.0	0.0	5.11	361.4	105.6
S39.004	75.00	6.14	81.450	0.390	0.0	0.0	0.0	1.84	130.1	105.6
S42.000	75.00	5.09	86.250	0.005	0.0	0.0	0.0	2.28	40.2	1.4
S42.001	75.00	5.43	85.650	0.020	0.0	0.0	0.0	2.26	40.0	5.4

JNP Group		Page 12
No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S43.000	5.355	0.268	20.0	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S43.001	3.572	0.200	17.9	0.043	0.00	0.0	0.600		o	100	Pipe/Conduit	
S42.002	26.300	1.857	14.2	0.094	0.00	0.0	0.600		o	225	Pipe/Conduit	
S42.003	23.816	0.700	34.0	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S39.005	4.128	0.008	516.0	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S44.000	23.730	0.237	100.1	0.040	5.00	0.0	0.600		o	225	Pipe/Conduit	
S44.001	45.947	1.161	39.6	0.033	0.00	0.0	0.600		o	225	Pipe/Conduit	
S44.002	18.809	0.421	44.7	0.110	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.003	21.782	0.363	60.0	0.026	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.004	28.129	1.533	18.3	0.067	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.005	26.657	1.800	14.8	0.054	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.006	11.439	0.800	14.3	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.007	48.418	3.300	14.7	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S44.008	10.411	0.700	14.9	0.061	0.00	0.0	0.600		o	375	Pipe/Conduit	
S44.009	18.794	0.800	23.5	0.000	0.00	0.0	0.600		o	375	Pipe/Conduit	
S44.010	20.012	0.600	33.4	0.026	0.00	0.0	0.600		o	375	Pipe/Conduit	
S44.011	34.133	0.788	43.3	0.026	0.00	0.0	0.600		o	375	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S43.000	75.00	5.05	84.300	0.000	0.0	0.0	0.0	1.74	13.6	0.0
S43.001	75.00	5.03	84.032	0.000	5.0	0.0	0.0	1.84	14.4	5.0
S42.002	75.00	5.56	83.232	0.114	5.0	0.0	0.0	3.50	139.0	35.9
S42.003	75.00	5.73	81.375	0.114	5.0	0.0	0.0	2.25	89.5	35.9
S39.005	75.00	6.19	80.000	0.504	5.0	0.0	0.0	1.37	873.1	141.5
S44.000	75.00	5.30	93.490	0.040	0.0	0.0	0.0	1.31	52.0	10.8
S44.001	75.00	5.67	93.253	0.073	0.0	0.0	0.0	2.09	82.9	19.8
S44.002	75.00	5.80	92.017	0.183	0.0	0.0	0.0	2.36	166.7	49.6
S44.003	75.00	5.98	91.596	0.209	0.0	0.0	0.0	2.03	143.7	56.6
S44.004	75.00	6.11	91.233	0.276	0.0	0.0	0.0	3.69	260.7	74.7
S44.005	75.00	6.22	89.700	0.330	0.0	0.0	0.0	4.11	290.3	89.4
S44.006	75.00	6.26	87.900	0.330	0.0	0.0	0.0	4.18	295.4	89.4
S44.007	75.00	6.46	87.100	0.330	0.0	0.0	0.0	4.13	291.6	89.4
S44.008	75.00	6.49	83.725	0.391	0.0	0.0	0.0	4.72	521.2	105.9
S44.009	75.00	6.58	83.025	0.391	0.0	0.0	0.0	3.75	414.4	105.9
S44.010	75.00	6.68	82.225	0.417	0.0	0.0	0.0	3.15	347.6	112.9
S44.011	75.00	6.89	81.625	0.443	0.0	0.0	0.0	2.76	304.8	120.0

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S45.000	6.154	0.045	136.8	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S45.001	3.060	0.200	15.3	0.227	0.00	0.0	0.600		o	100	Pipe/Conduit	
S44.012	15.091	0.320	47.2	0.045	0.00	0.0	0.600		o	525	Pipe/Conduit	
S46.000	8.974	0.063	142.4	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S46.001	8.971	0.397	22.6	0.154	0.00	0.0	0.600		o	150	Pipe/Conduit	
S39.006	10.060	0.200	50.3	0.194	0.00	0.0	0.600		o	300	Pipe/Conduit	
S39.007	27.512	0.129	213.3	0.012	0.00	0.0	0.600		o	300	Pipe/Conduit	
S47.000	5.084	0.109	46.6	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S47.001	2.610	0.045	58.0	0.045	0.00	0.0	0.600		o	150	Pipe/Conduit	
S39.008	10.434	0.288	36.2	0.000	0.00	0.0	0.600		o	300	Pipe/Conduit	
S33.010	19.258	0.039	493.8	0.105	0.00	0.0	0.600		o	675	Pipe/Conduit	
S33.011	56.172	0.061	920.9	0.000	0.00	0.0	0.600		oo	-1	Pipe/Conduit	
S48.000	5.968	0.166	36.0	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S45.000	75.00	5.16	81.666	0.000	0.0	0.0	0.0	0.66	5.1	0.0
S45.001	75.00	5.03	81.621	0.000	5.0	0.0	0.0	1.99	15.6	5.0
S44.012	75.00	6.97	80.687	0.488	5.0	0.0	0.0	3.27	707.4	137.2
S46.000	75.00	5.23	81.618	0.000	0.0	0.0	0.0	0.64	5.0	0.0
S46.001	75.00	5.07	81.505	0.000	5.0	0.0	0.0	2.13	37.6	5.0
S39.006	75.00	5.08	79.992	0.000	10.0	0.0	0.0	2.22	157.1	10.0
S39.007	75.00	5.50	79.792	0.012	10.0	0.0	0.0	1.07	75.8	13.2
S47.000	75.00	5.07	81.191	0.000	0.0	0.0	0.0	1.13	8.9	0.0
S47.001	75.00	5.11	81.032	0.045	0.0	0.0	0.0	1.32	23.4	12.2
S39.008	75.00	5.57	79.663	0.057	10.0	0.0	0.0	2.62	185.2	25.4
S33.010	75.00	5.27	79.000	0.000	10.0	0.0	0.0	1.17	419.6	10.0
S33.011	75.00	6.30	78.961	0.000	10.0	0.0	0.0	0.91	807.6	10.0
S48.000	75.00	5.08	80.642	0.000	0.0	0.0	0.0	1.29	10.1	0.0

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S48.001	3.643	0.364	10.0	0.087	0.00	0.0	0.600		o	150	Pipe/Conduit	
S48.002	36.924	0.074	499.0	0.000	0.00	0.0	0.600		o	675	Pipe/Conduit	
S48.003	10.377	0.021	494.1	0.232	0.00	0.0	0.600		o	675	Pipe/Conduit	
S33.012	38.696	0.077	502.5	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
S33.013	36.933	0.074	499.1	0.038	0.00	0.0	0.600		o	750	Pipe/Conduit	
S49.000	6.907	0.141	49.0	0.026	5.00	0.0	0.600		o	100	Pipe/Conduit	
S49.001	4.925	0.200	24.6	0.020	0.00	0.0	0.600		o	100	Pipe/Conduit	
S33.014	24.135	0.048	502.8	0.059	0.00	0.0	0.600		o	750	Pipe/Conduit	
S33.015	73.738	0.074	996.5	0.000	0.00	0.0	0.600		o	750	Pipe/Conduit	
S50.000	56.288	0.643	87.5	0.093	5.00	0.0	0.600		o	225	Pipe/Conduit	
S50.001	25.227	0.150	168.2	0.134	0.00	0.0	0.600		o	300	Pipe/Conduit	
S50.002	30.361	0.834	36.4	0.057	0.00	0.0	0.600		o	300	Pipe/Conduit	
S51.000	17.810	0.203	87.7	0.039	5.00	0.0	0.600		o	150	Pipe/Conduit	
S51.001	28.624	0.171	167.4	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S52.000	7.138	0.024	297.4	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S48.001	75.00	5.10	80.426	0.087	0.0	0.0	0.0	3.20	56.6	23.6
S48.002	75.00	5.62	79.000	0.087	0.0	0.0	0.0	1.17	417.4	23.6
S48.003	75.00	5.77	78.926	0.319	0.0	0.0	0.0	1.17	419.5	86.4
S33.012	75.00	5.52	78.900	0.000	15.0	0.0	0.0	1.24	548.5	15.0
S33.013	75.00	6.01	78.823	0.038	15.0	0.0	0.0	1.25	550.4	25.3
S49.000	75.00	5.10	79.941	0.026	0.0	0.0	0.0	1.10	8.7	7.0
S49.001	75.00	5.05	79.800	0.000	5.0	0.0	0.0	1.56	12.3	5.0
S33.014	75.00	6.34	78.749	0.097	20.0	0.0	0.0	1.24	548.3	46.3
S33.015	75.00	7.74	78.701	0.097	20.0	0.0	0.0	0.88	387.9	46.3
S50.000	75.00	5.67	84.850	0.093	0.0	0.0	0.0	1.40	55.6	25.2
S50.001	75.00	6.02	84.132	0.227	0.0	0.0	0.0	1.21	85.5	61.5
S50.002	75.00	6.21	83.982	0.284	0.0	0.0	0.0	2.61	184.8	76.9
S51.000	75.00	5.28	83.597	0.039	0.0	0.0	0.0	1.07	19.0	10.6
S51.001	75.00	5.75	83.319	0.039	0.0	0.0	0.0	1.01	40.1	10.6
S52.000	75.00	5.27	84.109	0.000	0.0	0.0	0.0	0.44	3.5	0.0

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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
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Innovyze		Network 2020.1.3



STORM SEWER DESIGN by the Modified Rational Method

Network Design Table for Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S52.001	4.737	0.200	23.7	0.070	0.00	0.0	0.600		o	100	Pipe/Conduit	
S50.003	59.553	2.455	24.3	0.103	0.00	0.0	0.600		o	300	Pipe/Conduit	
S53.000	32.957	0.376	87.7	0.073	5.00	0.0	0.600		o	225	Pipe/Conduit	
S53.001	8.261	0.049	168.6	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	
S54.000	6.966	0.023	302.8	0.000	5.00	0.0	0.600		o	100	Pipe/Conduit	
S54.001	5.626	0.200	28.1	0.069	0.00	0.0	0.600		o	100	Pipe/Conduit	
S50.004	16.112	0.318	50.7	0.090	0.00	0.0	0.600		o	375	Pipe/Conduit	
S50.005	12.118	0.434	27.9	0.028	0.00	0.0	0.600		o	450	Pipe/Conduit	
S50.006	55.213	0.719	76.8	0.010	0.00	0.0	0.600		o	450	Pipe/Conduit	
S55.000	39.565	0.325	121.7	0.000	5.00	0.0	0.600		o	225	Pipe/Conduit	
S50.007	13.340	0.048	277.9	0.156	0.00	0.0	0.600		o	525	Pipe/Conduit	
S50.008	39.603	0.079	501.3	0.000	0.00	0.0	0.600		o	600	Pipe/Conduit	
S1.032	6.748	0.013	519.1	0.000	0.00	0.0	0.600		o	900	Pipe/Conduit	
S1.033	27.595	0.162	170.3	0.000	0.00	0.0	0.600		o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S52.001	75.00	5.05	84.085	0.000	5.0	0.0	0.0	1.59	12.5	5.0
S50.003	75.00	6.52	83.073	0.426	5.0	0.0	0.0	3.21	226.6	120.4
S53.000	75.00	5.39	81.193	0.073	0.0	0.0	0.0	1.40	55.6	19.8
S53.001	75.00	5.53	80.817	0.073	0.0	0.0	0.0	1.00	39.9	19.8
S54.000	75.00	5.27	81.748	0.000	0.0	0.0	0.0	0.44	3.4	0.0
S54.001	75.00	5.06	81.725	0.000	5.0	0.0	0.0	1.46	11.5	5.0
S50.004	75.00	6.63	80.543	0.589	10.0	0.0	0.0	2.55	281.7	169.5
S50.005	75.00	6.68	80.150	0.617	10.0	0.0	0.0	3.86	613.8	177.1
S50.006	75.00	7.08	79.716	0.627	10.0	0.0	0.0	2.32	369.3	179.8
S55.000	75.00	5.56	79.547	0.000	0.0	0.0	0.0	1.18	47.1	0.0
S50.007	75.00	7.24	78.922	0.783	10.0	0.0	0.0	1.34	289.8	222.1
S50.008	75.00	7.85	78.874	0.783	10.0	0.0	0.0	1.08	305.6	222.1
S1.032	75.00	9.84	78.627	2.930	57.5	0.0	0.0	1.37	870.5	851.0
S1.033	75.00	5.46	77.962	0.000	22.0	0.0	0.0	1.00	39.7	22.0

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 Checked by LC

Innovyze

Network 2020.1.3

Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	94.717	0.800	Open Manhole	1200	S1.000	93.917	100				
S2	94.664	0.800	Open Manhole	1200	S1.001	93.864	100	S1.000	93.864	100	
S3	94.662	1.425	Open Manhole	1200	S1.002	93.237	225	S1.001	93.362	100	
S4	94.319	1.497	Open Manhole	1200	S1.003	92.822	225	S1.002	92.822	225	
S5	93.326	1.426	Open Manhole	1200	S1.004	91.900	225	S1.003	91.900	225	
S6	91.568	1.425	Open Manhole	1200	S1.005	90.143	225	S1.004	90.143	225	
S7	90.709	1.500	Open Manhole	1200	S1.006	89.209	300	S1.005	89.284	225	
S8	90.445	1.500	Open Manhole	1200	S1.007	88.945	300	S1.006	88.945	300	
S9	89.866	1.500	Open Manhole	1200	S1.008	88.366	300	S1.007	88.366	300	
S10	92.277	1.350	Open Manhole	1200	S2.000	90.927	150				
S11	91.540	1.425	Open Manhole	1200	S2.001	90.115	225	S2.000	90.190	150	
S12	91.326	1.425	Open Manhole	1200	S2.002	89.901	225	S2.001	89.901	225	
S13	90.588	1.501	Open Manhole	1200	S2.003	89.087	300	S2.002	89.162	225	
S14	92.460	1.350	Open Manhole	1200	S3.000	91.110	150				
S15	91.929	1.425	Open Manhole	1200	S3.001	90.504	225	S3.000	90.579	150	
S16	90.869	1.425	Open Manhole	1200	S3.002	89.444	225	S3.001	89.444	225	
S17	90.482	1.501	Open Manhole	1200	S3.003	88.981	300	S3.002	89.056	225	
S18	89.995	1.501	Open Manhole	1200	S3.004	88.494	300	S3.003	88.494	300	
S19	89.851	0.800	Open Manhole	1200	S4.000	89.051	100				
S20	89.700	0.800	Open Manhole	1200	S4.001	88.900	100	S4.000	88.900	100	
S21	89.800	0.800	Open Manhole	1200	S5.000	89.000	100				
S22	89.661	0.800	Open Manhole	1200	S5.001	88.861	100	S5.000	88.861	100	
S23	89.601	2.226	Open Manhole	1500	S2.004	87.375	525	S2.003	87.600	300	
								S3.004	88.100	300	500
								S4.001	88.700	100	900
								S5.001	88.661	100	861
S24	89.482	2.256	Open Manhole	1500	S1.009	87.226	600	S1.008	87.982	300	456
								S2.004	87.301	525	
S25	89.102	2.256	Open Manhole	1500	S1.010	86.846	600	S1.009	86.846	600	
S26	88.225	1.903	Open Manhole	1500	S1.011	86.322	600	S1.010	86.322	600	
S27	87.321	1.499	Open Manhole	1500	S6.000	85.822	600				
S28	87.449	1.651	Open Manhole	3000	S1.012	85.798	45	S1.011	85.995	600	197
								S6.000	85.798	600	
S29	87.500	1.795	Open Manhole	3000	S1.013	85.705	45	S1.012	85.705	45	
S30	87.500	1.807	Open Manhole	3000	S1.014	85.693	45	S1.013	85.693	45	
S31	87.500	1.826	Open Manhole	3000	S1.015	85.674	45	S1.014	85.674	45	
S32	87.292	1.716	Open Manhole	3000	S1.016	85.576	45	S1.015	85.576	45	
S33	87.240	1.797	Open Manhole	3000	S1.017	85.443	45	S1.016	85.443	45	

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S34	89.227	1.425	Open Manhole	1200	S7.000	87.802	225				
S35	87.448	1.500	Open Manhole	1200	S7.001	85.948	300	S7.000	86.023	225	
S36	87.200	1.820	Open Manhole	3000	S1.018	85.380	600	S1.017	85.380	45	
								S7.001	85.680	300	
S37	86.987	1.729	Open Manhole	1500	S1.019	85.258	600	S1.018	85.258	600	
S38	86.817	1.667	Open Manhole	1500	S1.020	85.150	600	S1.019	85.150	600	
S39	86.776	1.651	Open Manhole	1500	S1.021	85.125	600	S1.020	85.125	600	
S40	88.000	0.499	Open Manhole	1200	S8.000	87.501	100				
S41	86.616	1.412	Open Manhole	1350	S8.001	85.204	375	S8.000	85.479	100	
S42	86.636	0.763	Open Manhole	1200	S9.000	85.873	100				
S43	86.646	0.800	Open Manhole	1200	S9.001	85.846	100	S9.000	85.846	100	
S44	86.645	1.839	Open Manhole	1500	S1.022	84.806	600	S1.021	85.041	600	235
								S8.001	85.031	375	
								S9.001	85.646	100	340
S45	86.459	1.772	Open Manhole	1500	S1.023	84.687	600	S1.022	84.687	600	
S46	86.000	1.380	Open Manhole	1500	S1.024	84.620	600	S1.023	84.620	600	
S47	86.000	1.410	Open Manhole	1500	S1.025	84.590	600	S1.024	84.590	600	
S48	86.000	1.453	Open Manhole	1500	S1.026	84.547	600	S1.025	84.547	600	
S49	86.000	1.548	Open Manhole	1500	S1.027	84.452	150	S1.026	84.452	600	
S50	84.830	0.500	Open Manhole	1200	S1.028	84.330	1000	S1.027	84.330	150	
S51	84.702	0.500	Open Manhole	1200	S1.029	84.202	1000	S1.028	84.202	1000	
S52	81.412	0.500	Open Manhole	1200	S1.030	80.912	450	S1.029	80.912	1000	
S53	80.500	1.600	Open Manhole	1350	S1.031	78.900	450	S1.030	78.900	450	
S54	90.842	1.350	Open Manhole	1200	S10.000	89.492	150				
S55	90.468	1.425	Open Manhole	1200	S10.001	89.043	225	S10.000	89.118	150	
S56	90.091	1.425	Open Manhole	1200	S10.002	88.666	225	S10.001	88.666	225	
S57	90.482	1.350	Open Manhole	1200	S11.000	89.132	150				
S58	89.263	1.225	Open Manhole	1200	S12.000	88.038	225				
S59	89.376	0.768	Open Manhole	1200	S13.000	88.608	100				
S60	89.385	0.800	Open Manhole	1200	S13.001	88.585	100	S13.000	88.585	100	
S61	89.398	1.614	Open Manhole	1200	S11.001	87.784	300	S11.000	87.934	150	
								S12.000	87.859	225	
								S13.001	88.385	100	401
S62	89.000	1.363	Open Manhole	1350	S11.002	87.637	375	S11.001	87.712	300	
S63	89.000	1.395	Open Manhole	1350	S11.003	87.605	375	S11.002	87.605	375	
S64	89.546	1.974	Open Manhole	1350	S10.003	87.572	375	S10.002	87.722	225	
								S11.003	87.572	375	
S65	89.258	1.425	Open Manhole	1200	S14.000	87.833	225				

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S66	89.271	1.792	Open Manhole	1350	S10.004	87.479	375	S10.003	87.479	375	
								S14.000	87.629	225	
S67	88.299	1.575	Open Manhole	1350	S10.005	86.724	375	S10.004	86.724	375	
S68	87.835	1.575	Open Manhole	1350	S10.006	86.260	375	S10.005	86.260	375	
S69	87.500	0.760	Open Manhole	1200	S15.000	86.740	100				
S70	87.500	0.800	Open Manhole	1200	S15.001	86.700	100	S15.000	86.700	100	
S71	87.500	1.125	Open Manhole	1200	S15.002	86.375	225	S15.001	86.500	100	
S72	87.680	1.797	Open Manhole	1350	S10.007	85.883	375	S10.006	85.883	375	
								S15.002	86.258	225	225
S73	89.059	1.425	Open Manhole	1200	S16.000	87.634	225				
S74	88.400	1.425	Open Manhole	1200	S16.001	86.975	225	S16.000	86.975	225	
S75	87.975	1.425	Open Manhole	1200	S16.002	86.550	225	S16.001	86.550	225	
S76	87.614	1.873	Open Manhole	1350	S10.008	85.741	450	S10.007	85.816	375	
								S16.002	85.966	225	
S77	87.522	1.858	Open Manhole	1350	S10.009	85.664	450	S10.008	85.664	450	
S78	87.220	1.676	Open Manhole	1350	S10.010	85.544	450	S10.009	85.544	450	
S79	85.815	1.650	Open Manhole	1350	S10.011	84.165	450	S10.010	84.165	450	
S80	89.045	1.425	Open Manhole	1200	S17.000	87.620	225				
S81	87.400	1.425	Open Manhole	1200	S17.001	85.975	225	S17.000	85.975	225	
S82	89.066	1.350	Open Manhole	1200	S18.000	87.716	150				
S83	88.748	1.350	Open Manhole	1200	S18.001	87.398	150	S18.000	87.398	150	
S84	87.200	1.350	Open Manhole	1200	S18.002	85.850	150	S18.001	85.850	150	
S85	87.371	0.800	Open Manhole	1200	S19.000	86.571	100				
S86	87.006	0.800	Open Manhole	1200	S19.001	86.206	100	S19.000	86.206	100	
S87	86.800	1.500	Open Manhole	1200	S17.002	85.300	300	S17.001	85.375	225	
								S18.002	85.450	150	
								S19.001	86.006	100	506
S88	88.165	1.350	Open Manhole	1200	S20.000	86.815	150				
S89	87.743	1.500	Open Manhole	1200	S20.001	86.243	300	S20.000	86.393	150	
S90	86.700	1.500	Open Manhole	1200	S20.002	85.200	300	S20.001	85.200	300	
S91	86.300	0.800	Open Manhole	1200	S21.000	85.500	100				
S92	86.088	0.800	Open Manhole	1200	S21.001	85.288	100	S21.000	85.288	100	
S93	85.950	1.575	Open Manhole	1350	S17.003	84.375	375	S17.002	84.450	300	
								S20.002	84.450	300	
								S21.001	85.088	100	438
S94	85.334	1.651	Open Manhole	1350	S17.004	83.683	450	S17.003	83.758	375	
S95	85.018	1.801	Open Manhole	1500	S10.012	83.217	600	S10.011	83.368	450	1
								S17.004	83.367	450	

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S96	82.736	0.800	Open Manhole	1200	S22.000	81.936	100				
S97	82.623	0.850	Open Manhole	1200	S22.001	81.773	150	S22.000	81.823	100	
S98	82.490	1.800	Open Manhole	1500	S10.013	80.690	600	S10.012	80.690	600	500
								S22.001	81.640	150	
S99	81.757	1.801	Open Manhole	3000	S10.014	79.956	45	S10.013	79.956	600	
S100	85.620	0.800	Open Manhole	1200	S23.000	84.820	100				
S101	85.550	0.850	Open Manhole	1200	S23.001	84.700	150	S23.000	84.750	100	
S102	85.520	1.500	Open Manhole	1200	S23.002	84.020	300	S23.001	84.652	150	482
S103	85.900	0.752	Open Manhole	1200	S24.000	85.148	100				
S104	85.900	0.800	Open Manhole	1200	S24.001	85.100	100	S24.000	85.100	100	
S105	84.500	1.500	Open Manhole	1200	S23.003	83.000	300	S23.002	83.000	300	194
								S24.001	83.394	100	
S106	83.400	2.800	Open Manhole	1500	S23.004	80.600	600	S23.003	80.900	300	
S107	84.153	1.350	Open Manhole	1200	S25.000	82.803	100				
S108	83.600	0.750	Open Manhole	1200	S26.000	82.850	100				
S109	83.600	0.850	Open Manhole	1200	S26.001	82.750	150	S26.000	82.800	100	
S110	83.400	0.748	Open Manhole	1200	S27.000	82.652	100				
S111	83.400	0.850	Open Manhole	1200	S27.001	82.550	150	S27.000	82.600	100	
S112	83.356	2.813	Open Manhole	1500	S23.005	80.543	300	S23.004	80.543	600	1263
								S25.000	82.006	100	1992
								S26.001	82.685	150	1335
								S27.001	82.028	150	
S113	84.300	1.350	Open Manhole	1200	S28.000	82.950	150				
S114	82.800	0.800	Open Manhole	1200	S29.000	82.000	100				
S115	82.600	0.800	Open Manhole	1200	S29.001	81.800	100	S29.000	81.800	100	
S116	82.500	2.091	Open Manhole	1200	S23.006	80.409	300	S23.005	80.409	300	1041
								S28.000	80.559	150	
								S29.001	81.650	100	
S117	83.000	1.350	Open Manhole	1200	S30.000	81.650	150				
S118	83.329	0.695	Open Manhole	1200	S31.000	82.634	100				
S119	83.400	0.850	Open Manhole	1200	S31.001	82.550	150	S31.000	82.600	100	
S120	83.446	2.148	Open Manhole	1200	S30.001	81.298	225	S30.000	81.373	150	1135
								S31.001	82.508	150	
S121	83.600	2.344	Open Manhole	1200	S30.002	81.256	225	S30.001	81.256	225	
S122	82.700	0.749	Open Manhole	1200	S32.000	81.951	100				
S123	82.700	0.850	Open Manhole	1200	S32.001	81.850	150	S32.000	81.900	100	
S124	82.600	2.400	Open Manhole	1500	S30.003	80.200	600	S30.002	80.575	225	1122
								S32.001	81.772	150	

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S125	82.054	1.877	Open Manhole	1500	S23.007	80.177	300	S23.006	80.178	300	1
								S30.003	80.177	600	
S126	81.600	1.550	Open Manhole	1200	S23.008	80.050	300	S23.007	80.050	300	
S127	81.336	1.725	Open Manhole	3000	S10.015	79.611	45	S10.014	79.611	45	
								S23.008	79.911	300	
S128	81.165	1.726	Open Manhole	3000	S10.016	79.439	45	S10.015	79.439	45	
S129	80.500	1.424	Open Manhole	3000	S10.017	79.076	45	S10.016	79.076	45	
S130	94.855	1.350	Open Manhole	1200	S33.000	93.505	150				
S131	94.682	1.462	Open Manhole	1200	S33.001	93.220	225	S33.000	93.295	150	
S132	94.367	1.425	Open Manhole	1200	S33.002	92.942	225	S33.001	92.942	225	
S133	92.763	1.425	Open Manhole	1200	S33.003	91.338	225	S33.002	91.338	225	
S134	91.028	1.500	Open Manhole	1200	S33.004	89.528	300	S33.003	89.603	225	
S135	94.229	1.425	Open Manhole	1200	S34.000	92.804	225				
S136	92.571	1.425	Open Manhole	1200	S34.001	91.146	225	S34.000	91.146	225	
S137	91.168	1.500	Open Manhole	1200	S34.002	89.668	300	S34.001	89.743	225	
S138	90.500	0.800	Open Manhole	1200	S35.000	89.700	100				
S139	90.100	0.800	Open Manhole	1200	S35.001	89.300	100	S35.000	89.300	100	
S140	89.840	1.650	Open Manhole	1350	S33.005	88.190	450	S33.004	88.340	300	
								S34.002	88.340	300	
								S35.001	89.100	100	560
S141	92.752	1.425	Open Manhole	1200	S36.000	91.327	225				
S142	91.291	1.425	Open Manhole	1200	S36.001	89.866	225	S36.000	89.866	225	
S143	89.207	1.500	Open Manhole	1200	S36.002	87.707	300	S36.001	87.782	225	
S144	89.225	1.930	Open Manhole	1350	S33.006	87.295	450	S33.005	87.465	450	170
								S36.002	87.445	300	
S145	86.000	0.726	Open Manhole	1200	S37.000	85.274	100				
S146	86.000	0.800	Open Manhole	1200	S37.001	85.200	100	S37.000	85.200	100	
S147	86.200	1.500	Open Manhole	1200	S37.002	84.700	300	S37.001	84.900	100	
S148	87.300	2.667	Open Manhole	1200	S37.003	84.633	300	S37.002	84.633	300	
S149	87.104	2.812	Open Manhole	1500	S33.007	84.292	600	S33.006	85.454	450	1012
								S37.003	84.592	300	
S150	85.370	1.800	Open Manhole	1500	S33.008	83.570	600	S33.007	83.570	600	
S151	85.129	1.350	Open Manhole	1200	S38.000	83.779	150				
S152	84.989	1.425	Open Manhole	1200	S38.001	83.564	225	S38.000	83.639	150	
S153	84.571	1.800	Open Manhole	1500	S33.009	82.771	600	S33.008	82.771	600	
								S38.001	83.146	225	
S154	90.874	1.350	Open Manhole	1200	S39.000	89.524	150				
S155	89.757	0.800	Open Manhole	1200	S40.000	88.957	100				

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Manhole Schedules for Storm

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S156	89.427	0.800	Open Manhole	1200	S40.001	88.627	100	S40.000	88.627	100	
S157	89.301	1.425	Open Manhole	1200	S39.001	87.876	225	S39.000	87.951	150	
								S40.001	88.001	100	
S158	90.400	1.350	Open Manhole	1200	S41.000	89.050	150				
S159	87.707	1.500	Open Manhole	1200	S39.002	86.207	300	S39.001	86.282	225	
								S41.000	86.357	150	
S160	85.454	1.500	Open Manhole	1200	S39.003	83.954	300	S39.002	83.954	300	
S161	84.690	3.240	Open Manhole	1200	S39.004	81.450	300	S39.003	81.450	300	
S162	87.600	1.350	Open Manhole	1200	S42.000	86.250	150				
S163	87.000	1.350	Open Manhole	1200	S42.001	85.650	150	S42.000	85.650	150	
S164	85.100	0.800	Open Manhole	1200	S43.000	84.300	100				
S165	84.832	0.800	Open Manhole	1200	S43.001	84.032	100	S43.000	84.032	100	
S166	84.657	1.425	Open Manhole	1200	S42.002	83.232	225	S42.001	83.307	150	
								S43.001	83.832	100	475
S167	82.800	1.425	Open Manhole	1200	S42.003	81.375	225	S42.002	81.375	225	
S168	82.433	2.433	Open Manhole	1800	S39.005	80.000	900	S39.004	80.600	300	
								S42.003	80.675	225	
S169	94.915	1.425	Open Manhole	1200	S44.000	93.490	225				
S170	94.930	1.677	Open Manhole	1200	S44.001	93.253	225	S44.000	93.253	225	
S171	93.517	1.500	Open Manhole	1200	S44.002	92.017	300	S44.001	92.092	225	
S172	93.096	1.500	Open Manhole	1200	S44.003	91.596	300	S44.002	91.596	300	
S173	92.733	1.500	Open Manhole	1200	S44.004	91.233	300	S44.003	91.233	300	
S174	91.200	1.500	Open Manhole	1200	S44.005	89.700	300	S44.004	89.700	300	
S175	89.400	1.500	Open Manhole	1200	S44.006	87.900	300	S44.005	87.900	300	
S176	88.600	1.500	Open Manhole	1200	S44.007	87.100	300	S44.006	87.100	300	
S177	85.300	1.575	Open Manhole	1350	S44.008	83.725	375	S44.007	83.800	300	
S178	84.600	1.575	Open Manhole	1350	S44.009	83.025	375	S44.008	83.025	375	
S179	83.800	1.575	Open Manhole	1350	S44.010	82.225	375	S44.009	82.225	375	
S180	83.200	1.575	Open Manhole	1350	S44.011	81.625	375	S44.010	81.625	375	
S181	82.441	0.775	Open Manhole	1200	S45.000	81.666	100				
S182	82.421	0.800	Open Manhole	1200	S45.001	81.621	100	S45.000	81.621	100	
S183	82.411	1.724	Open Manhole	1500	S44.012	80.687	525	S44.011	80.837	375	
								S45.001	81.421	100	309
S184	82.418	0.800	Open Manhole	1200	S46.000	81.618	100				
S185	82.355	0.850	Open Manhole	1200	S46.001	81.505	150	S46.000	81.555	100	
S186	82.300	2.308	Open Manhole	1800	S39.006	79.992	300	S39.005	79.992	900	600
								S44.012	80.367	525	966
								S46.001	81.108	150	

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S187	82.400	2.608	Open Manhole	1200	S39.007	79.792	300	S39.006	79.792	300	
S188	81.991	0.800	Open Manhole	1200	S47.000	81.191	100				
S189	81.882	0.850	Open Manhole	1200	S47.001	81.032	150	S47.000	81.082	100	
S190	81.847	2.184	Open Manhole	1200	S39.008	79.663	300	S39.007	79.663	300	
								S47.001	80.987	150	1174
S191	81.700	2.700	Open Manhole	1500	S33.010	79.000	675	S33.009	79.075	600	
								S39.008	79.375	300	
S192	80.500	1.539	Open Manhole	3000	S33.011	78.961	-1	S33.010	78.961	675	
S193	81.442	0.800	Open Manhole	1200	S48.000	80.642	100				
S194	81.276	0.850	Open Manhole	1200	S48.001	80.426	150	S48.000	80.476	100	
S195	81.200	2.200	Open Manhole	1500	S48.002	79.000	675	S48.001	80.062	150	537
S196	80.500	1.574	Open Manhole	1500	S48.003	78.926	675	S48.002	78.926	675	
S197	80.500	1.600	Open Manhole	3000	S33.012	78.900	750	S33.011	78.900	-1	
								S48.003	78.905	675	
S198	80.500	1.677	Open Manhole	1800	S33.013	78.823	750	S33.012	78.823	750	
S199	80.741	0.800	Open Manhole	1200	S49.000	79.941	100				
S200	80.600	0.800	Open Manhole	1200	S49.001	79.800	100	S49.000	79.800	100	
S201	80.455	1.706	Open Manhole	1800	S33.014	78.749	750	S33.013	78.749	750	
								S49.001	79.600	100	201
S202	80.500	1.799	Open Manhole	1800	S33.015	78.701	750	S33.014	78.701	750	
S203	86.200	1.350	Open Manhole	1200	S50.000	84.850	225				
S204	85.761	1.629	Open Manhole	1200	S50.001	84.132	300	S50.000	84.207	225	
S205	85.640	1.658	Open Manhole	1200	S50.002	83.982	300	S50.001	83.982	300	
S206	84.947	1.350	Open Manhole	1200	S51.000	83.597	150				
S207	84.921	1.602	Open Manhole	1200	S51.001	83.319	225	S51.000	83.394	150	
S208	84.896	0.787	Open Manhole	1200	S52.000	84.109	100				
S209	84.885	0.800	Open Manhole	1200	S52.001	84.085	100	S52.000	84.085	100	
S210	84.846	1.773	Open Manhole	1200	S50.003	83.073	300	S50.002	83.148	300	75
								S51.001	83.148	225	
								S52.001	83.885	100	612
S211	82.543	1.350	Open Manhole	1200	S53.000	81.193	225				
S212	82.527	1.710	Open Manhole	1200	S53.001	80.817	225	S53.000	80.817	225	
S213	82.529	0.781	Open Manhole	1200	S54.000	81.748	100				
S214	82.525	0.800	Open Manhole	1200	S54.001	81.725	100	S54.000	81.725	100	
S215	82.400	1.857	Open Manhole	1350	S50.004	80.543	375	S50.003	80.618	300	
								S53.001	80.768	225	75
								S54.001	81.525	100	707
S216	81.800	1.650	Open Manhole	1350	S50.005	80.150	450	S50.004	80.225	375	

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S217	81.366	1.650	Open Manhole	1350	S50.006	79.716	450	S50.005	79.716	450	
S218	80.972	1.425	Open Manhole	1200	S55.000	79.547	225				
S219	80.647	1.725	Open Manhole	1500	S50.007	78.922	525	S50.006	78.997	450	
								S55.000	79.222	225	
S220	80.500	1.626	Open Manhole	1500	S50.008	78.874	600	S50.007	78.874	525	
S221	80.500	1.873	Open Manhole	3000	S1.032	78.627	900	S1.031	78.830	450	
								S10.017	78.925	45	
								S33.015	78.627	750	
								S50.008	78.795	600	
S222	80.500	2.538	Open Manhole	1800	S1.033	77.962	225	S1.032	78.614	900	1327
S223	78.500	0.700	Open Manhole	1200		OUTFALL		S1.033	77.800	225	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	517759.827	208099.316	517759.827	208099.316	Required	
S2	517761.450	208093.654	517761.450	208093.654	Required	
S3	517764.640	208094.174	517764.640	208094.174	Required	
S4	517772.072	208058.607	517772.072	208058.607	Required	
S5	517781.556	208033.219	517781.556	208033.219	Required	
S6	517789.954	207995.870	517789.954	207995.870	Required	
S7	517796.299	207976.741	517796.299	207976.741	Required	
S8	517806.653	207970.967	517806.653	207970.967	Required	
S9	517847.610	207969.752	517847.610	207969.752	Required	

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MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S10	517824.371	207859.902	517824.371	207859.902	Required	
S11	517856.905	207855.556	517856.905	207855.556	Required	
S12	517864.647	207860.337	517864.647	207860.337	Required	
S13	517873.875	207891.747	517873.875	207891.747	Required	
S14	517809.534	207881.625	517809.534	207881.625	Required	
S15	517807.901	207911.605	517807.901	207911.605	Required	
S16	517804.699	207937.131	517804.699	207937.131	Required	
S17	517813.922	207946.235	517813.922	207946.235	Required	
S18	517842.941	207940.672	517842.941	207940.672	Required	
S19	517852.059	207941.325	517852.059	207941.325	Required	
S20	517861.723	207941.178	517861.723	207941.178	Required	
S21	517869.745	207926.407	517869.745	207926.407	Required	
S22	517868.954	207934.705	517868.954	207934.705	Required	
S23	517869.265	207940.297	517869.265	207940.297	Required	
S24	517872.438	207964.175	517872.438	207964.175	Required	

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MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S25	517887.732	207960.525	517887.732	207960.525	Required	
S26	517920.810	207959.074	517920.810	207959.074	Required	
S27	517960.869	207973.026	517960.869	207973.026	Required	
S28	517950.312	207967.458	517950.312	207967.458	Required	
S29	517961.481	207922.400	517961.481	207922.400	Required	
S30	517967.234	207920.362	517967.234	207920.362	Required	
S31	517968.548	207929.902	517968.548	207929.902	Required	
S32	517967.454	207979.068	517967.454	207979.068	Required	
S33	517981.193	207988.624	517981.193	207988.624	Required	
S34	517975.207	208082.172	517975.207	208082.172	Required	
S35	517991.565	208020.793	517991.565	208020.793	Required	
S36	517999.947	207995.857	517999.947	207995.857	Required	
S37	518058.917	208011.318	518058.917	208011.318	Required	
S38	518109.531	208030.842	518109.531	208030.842	Required	
S39	518117.418	208040.755	518117.418	208040.755	Required	

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S40	518007.837	208065.061	518007.837	208065.061	Required	
S41	518083.861	208077.475	518083.861	208077.475	Required	
S42	518099.908	208081.102	518099.908	208081.102	Required	
S43	518107.959	208082.369	518107.959	208082.369	Required	
S44	518112.493	208082.397	518112.493	208082.397	Required	
S45	518105.356	208141.474	518105.356	208141.474	Required	
S46	518112.225	208174.200	518112.225	208174.200	Required	
S47	518114.577	208188.936	518114.577	208188.936	Required	
S48	518116.692	208210.360	518116.692	208210.360	Required	
S49	518113.179	208257.705	518113.179	208257.705	Required	
S50	518110.304	208275.836	518110.304	208275.836	Required	
S51	518105.295	208314.834	518105.295	208314.834	Required	
S52	518095.285	208396.243	518095.285	208396.243	Required	
S53	518085.828	208420.673	518085.828	208420.673	Required	
S54	517865.580	208130.841	517865.580	208130.841	Required	

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S55	517875.300	208114.818	517875.300	208114.818	Required	
S56	517893.633	208109.675	517893.633	208109.675	Required	
S57	517879.174	208145.970	517879.174	208145.970	Required	
S58	517924.208	208180.606	517924.208	208180.606	Required	
S59	517924.763	208162.374	517924.763	208162.374	Required	
S60	517925.509	208155.939	517925.509	208155.939	Required	
S61	517927.518	208150.315	517927.518	208150.315	Required	
S62	517931.452	208133.453	517931.452	208133.453	Required	
S63	517934.247	208127.453	517934.247	208127.453	Required	
S64	517939.450	208118.117	517939.450	208118.117	Required	
S65	517970.342	208102.141	517970.342	208102.141	Required	
S66	517968.751	208124.458	517968.751	208124.458	Required	
S67	518013.892	208127.521	518013.892	208127.521	Required	
S68	518025.632	208131.939	518025.632	208131.939	Required	
S69	518059.734	208139.596	518059.734	208139.596	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S70	518053.824	208138.625	518053.824	208138.625	Required	
S71	518052.900	208136.752	518052.900	208136.752	Required	
S72	518035.828	208141.075	518035.828	208141.075	Required	
S73	517946.295	208155.127	517946.295	208155.127	Required	
S74	517988.947	208157.520	517988.947	208157.520	Required	
S75	518016.169	208162.117	518016.169	208162.117	Required	
S76	518041.671	208161.668	518041.671	208161.668	Required	
S77	518040.971	208192.582	518040.971	208192.582	Required	
S78	518037.566	208232.654	518037.566	208232.654	Required	
S79	518026.227	208287.875	518026.227	208287.875	Required	
S80	517871.576	208232.355	517871.576	208232.355	Required	
S81	517901.377	208247.798	517901.377	208247.798	Required	
S82	517922.195	208194.954	517922.195	208194.954	Required	
S83	517919.149	208209.553	517919.149	208209.553	Required	
S84	517916.943	208242.311	517916.943	208242.311	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S85	517918.431	208238.920	517918.431	208238.920	Required	
S86	517917.719	208246.326	517917.719	208246.326	Required	
S87	517913.976	208253.873	517913.976	208253.873	Required	
S88	517987.507	208199.817	517987.507	208199.817	Required	
S89	517980.324	208223.307	517980.324	208223.307	Required	
S90	517971.090	208256.878	517971.090	208256.878	Required	
S91	517968.155	208265.714	517968.155	208265.714	Required	
S92	517966.143	208270.019	517966.143	208270.019	Required	
S93	517963.171	208275.323	517963.171	208275.323	Required	
S94	518003.501	208293.423	518003.501	208293.423	Required	
S95	518020.177	208305.904	518020.177	208305.904	Required	
S96	517984.089	208352.780	517984.089	208352.780	Required	
S97	517990.029	208355.629	517990.029	208355.629	Required	
S98	517996.011	208358.298	517996.011	208358.298	Required	
S99	517980.151	208386.835	517980.151	208386.835	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S100	517885.099	208303.759	517885.099	208303.759	Required	
S101	517884.820	208306.915	517884.820	208306.915	Required	
S102	517886.303	208309.291	517886.303	208309.291	Required	
S103	517889.476	208327.040	517889.476	208327.040	Required	
S104	517891.459	208322.637	517891.459	208322.637	Required	
S105	517899.743	208314.855	517899.743	208314.855	Required	
S106	517897.151	208343.364	517897.151	208343.364	Required	
S107	517925.230	208325.456	517925.230	208325.456	Required	
S108	517918.394	208344.270	517918.394	208344.270	Required	
S109	517916.329	208348.805	517916.329	208348.805	Required	
S110	517902.874	208347.644	517902.874	208347.644	Required	
S111	517907.645	208349.691	517907.645	208349.691	Required	
S112	517912.826	208350.316	517912.826	208350.316	Required	
S113	517864.922	208364.533	517864.922	208364.533	Required	
S114	517904.853	208366.197	517904.853	208366.197	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S115	517902.110	208371.966	517902.110	208371.966	Required	
S116	517899.742	208380.428	517899.742	208380.428	Required	
S117	517970.430	208345.846	517970.430	208345.846	Required	
S118	517952.711	208339.451	517952.711	208339.451	Required	
S119	517949.645	208337.921	517949.645	208337.921	Required	
S120	517948.271	208335.904	517948.271	208335.904	Required	
S121	517945.531	208342.368	517945.531	208342.368	Required	
S122	517930.433	208371.943	517930.433	208371.943	Required	
S123	517928.139	208376.489	517928.139	208376.489	Required	
S124	517930.030	208380.629	517930.030	208380.629	Required	
S125	517925.404	208391.091	517925.404	208391.091	Required	
S126	517953.660	208404.095	517953.660	208404.095	Required	
S127	517965.135	208417.655	517965.135	208417.655	Required	
S128	517967.884	208429.110	517967.884	208429.110	Required	
S129	517989.299	208444.664	517989.299	208444.664	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S130	517743.041	208156.648	517743.041	208156.648	Required	
S131	517753.965	208141.820	517753.965	208141.820	Required	
S132	517768.301	208136.748	517768.301	208136.748	Required	
S133	517815.804	208143.175	517815.804	208143.175	Required	
S134	517863.853	208145.631	517863.853	208145.631	Required	
S135	517751.894	208200.286	517751.894	208200.286	Required	
S136	517796.589	208200.669	517796.589	208200.669	Required	
S137	517827.702	208202.550	517827.702	208202.550	Required	
S138	517842.412	208204.783	517842.412	208204.783	Required	
S139	517851.274	208205.399	517851.274	208205.399	Required	
S140	517858.062	208205.621	517858.062	208205.621	Required	
S141	517739.826	208250.137	517739.826	208250.137	Required	
S142	517779.094	208254.889	517779.094	208254.889	Required	
S143	517828.182	208253.405	517828.182	208253.405	Required	
S144	517854.316	208255.028	517854.316	208255.028	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S145	517819.246	208307.306	517819.246	208307.306	Required	
S146	517819.992	208299.973	517819.992	208299.973	Required	
S147	517823.425	208297.881	517823.425	208297.881	Required	
S148	517839.731	208299.381	517839.731	208299.381	Required	
S149	517849.668	208300.717	517849.668	208300.717	Required	
S150	517846.314	208337.843	517846.314	208337.843	Required	
S151	517824.434	208336.073	517824.434	208336.073	Required	
S152	517837.995	208342.297	517837.995	208342.297	Required	
S153	517852.294	208354.347	517852.294	208354.347	Required	
S154	517778.959	208271.872	517778.959	208271.872	Required	
S155	517775.740	208287.767	517775.740	208287.767	Required	
S156	517775.462	208292.420	517775.462	208292.420	Required	
S157	517776.936	208294.345	517776.936	208294.345	Required	
S158	517730.495	208315.573	517730.495	208315.573	Required	
S159	517768.281	208327.412	517768.281	208327.412	Required	

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S160	517804.186	208333.344	517804.186	208333.344	Required	
S161	517801.762	208357.167	517801.762	208357.167	Required	
S162	517762.318	208335.781	517762.318	208335.781	Required	
S163	517759.046	208347.185	517759.046	208347.185	Required	
S164	517756.705	208385.126	517756.705	208385.126	Required	
S165	517756.299	208390.466	517756.299	208390.466	Required	
S166	517755.262	208393.885	517755.262	208393.885	Required	
S167	517781.472	208396.069	517781.472	208396.069	Required	
S168	517790.132	208418.254	517790.132	208418.254	Required	
S169	517732.784	208174.231	517732.784	208174.231	Required	
S170	517730.450	208197.846	517730.450	208197.846	Required	
S171	517719.942	208242.575	517719.942	208242.575	Required	
S172	517715.843	208260.933	517715.843	208260.933	Required	
S173	517713.784	208282.617	517713.784	208282.617	Required	
S174	517713.317	208310.742	517713.317	208310.742	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S175	517706.055	208336.390	517706.055	208336.390	Required	
S176	517704.429	208347.714	517704.429	208347.714	Required	
S177	517701.079	208396.015	517701.079	208396.015	Required	
S178	517705.423	208405.477	517705.423	208405.477	Required	
S179	517722.064	208414.211	517722.064	208414.211	Required	
S180	517741.071	208420.472	517741.071	208420.472	Required	
S181	517766.031	208422.287	517766.031	208422.287	Required	
S182	517772.173	208422.681	517772.173	208422.681	Required	
S183	517775.049	208423.728	517775.049	208423.728	Required	
S184	517797.806	208407.255	517797.806	208407.255	Required	
S185	517796.518	208416.136	517796.518	208416.136	Required	
S186	517790.079	208422.382	517790.079	208422.382	Required	
S187	517787.437	208432.090	517787.437	208432.090	Required	
S188	517807.707	208436.997	517807.707	208436.997	Required	
S189	517812.520	208438.638	517812.520	208438.638	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S190	517813.440	208441.080	517813.440	208441.080	Required	
S191	517822.946	208445.381	517822.946	208445.381	Required	
S192	517841.283	208451.266	517841.283	208451.266	Required	
S193	517900.474	208415.319	517900.474	208415.319	Required	
S194	517898.518	208420.958	517898.518	208420.958	Required	
S195	517900.030	208424.273	517900.030	208424.273	Required	
S196	517888.508	208459.352	517888.508	208459.352	Required	
S197	517895.098	208467.368	517895.098	208467.368	Required	
S198	517933.418	208472.751	517933.418	208472.751	Required	
S199	517971.117	208458.234	517971.117	208458.234	Required	
S200	517971.245	208465.140	517971.245	208465.140	Required	
S201	517970.245	208469.962	517970.245	208469.962	Required	
S202	517991.714	208458.934	517991.714	208458.934	Required	
S203	518105.731	208215.469	518105.731	208215.469	Required	
S204	518098.872	208271.337	518098.872	208271.337	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S205	518096.483	208296.451	518096.483	208296.451	Required	
S206	518047.980	208317.696	518047.980	208317.696	Required	
S207	518064.786	208323.589	518064.786	208323.589	Required	
S208	518081.443	208326.040	518081.443	208326.040	Required	
S209	518088.521	208326.960	518088.521	208326.960	Required	
S210	518093.247	208326.639	518093.247	208326.639	Required	
S211	518046.044	208379.915	518046.044	208379.915	Required	
S212	518078.652	208384.696	518078.652	208384.696	Required	
S213	518074.293	208385.437	518074.293	208385.437	Required	
S214	518081.217	208386.195	518081.217	208386.195	Required	
S215	518086.832	208385.846	518086.832	208385.846	Required	
S216	518085.821	208401.926	518085.821	208401.926	Required	
S217	518076.058	208409.103	518076.058	208409.103	Required	
S218	517983.806	208428.848	517983.806	208428.848	Required	
S219	518023.183	208424.998	518023.183	208424.998	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S220	518026.724	208437.859	518026.724	208437.859	Required	
S221	518064.763	208448.876	518064.763	208448.876	Required	
S222	518067.816	208454.894	518067.816	208454.894	Required	
S223	518079.941	208479.683			No Entry	

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	100	S1	94.717	93.917	0.700	Open Manhole	1200
S1.001	o	100	S2	94.664	93.864	0.700	Open Manhole	1200
S1.002	o	225	S3	94.662	93.237	1.200	Open Manhole	1200
S1.003	o	225	S4	94.319	92.822	1.272	Open Manhole	1200
S1.004	o	225	S5	93.326	91.900	1.201	Open Manhole	1200
S1.005	o	225	S6	91.568	90.143	1.200	Open Manhole	1200
S1.006	o	300	S7	90.709	89.209	1.200	Open Manhole	1200
S1.007	o	300	S8	90.445	88.945	1.200	Open Manhole	1200
S1.008	o	300	S9	89.866	88.366	1.200	Open Manhole	1200
S2.000	o	150	S10	92.277	90.927	1.200	Open Manhole	1200
S2.001	o	225	S11	91.540	90.115	1.200	Open Manhole	1200
S2.002	o	225	S12	91.326	89.901	1.200	Open Manhole	1200
S2.003	o	300	S13	90.588	89.087	1.201	Open Manhole	1200
S3.000	o	150	S14	92.460	91.110	1.200	Open Manhole	1200
S3.001	o	225	S15	91.929	90.504	1.200	Open Manhole	1200
S3.002	o	225	S16	90.869	89.444	1.200	Open Manhole	1200
S3.003	o	300	S17	90.482	88.981	1.201	Open Manhole	1200
S3.004	o	300	S18	89.995	88.494	1.201	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	5.891	111.2	S2	94.664	93.864	0.700	Open Manhole	1200
S1.001	3.232	6.4	S3	94.662	93.362	1.200	Open Manhole	1200
S1.002	36.336	87.6	S4	94.319	92.822	1.272	Open Manhole	1200
S1.003	27.101	29.4	S5	93.326	91.900	1.201	Open Manhole	1200
S1.004	38.281	21.8	S6	91.568	90.143	1.200	Open Manhole	1200
S1.005	20.154	23.5	S7	90.709	89.284	1.200	Open Manhole	1200
S1.006	11.855	44.9	S8	90.445	88.945	1.200	Open Manhole	1200
S1.007	40.975	70.8	S9	89.866	88.366	1.200	Open Manhole	1200
S1.008	25.447	66.3	S24	89.482	87.982	1.200	Open Manhole	1500
S2.000	32.823	44.5	S11	91.540	90.190	1.200	Open Manhole	1200
S2.001	9.099	42.5	S12	91.326	89.901	1.200	Open Manhole	1200
S2.002	32.737	44.3	S13	90.588	89.162	1.201	Open Manhole	1200
S2.003	48.769	32.8	S23	89.601	87.600	1.701	Open Manhole	1500
S3.000	30.024	56.5	S15	91.929	90.579	1.200	Open Manhole	1200
S3.001	25.726	24.3	S16	90.869	89.444	1.200	Open Manhole	1200
S3.002	12.960	33.4	S17	90.482	89.056	1.201	Open Manhole	1200
S3.003	29.547	60.7	S18	89.995	88.494	1.201	Open Manhole	1200
S3.004	26.327	66.8	S23	89.601	88.100	1.201	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S4.000	o	100	S19	89.851	89.051	0.700	Open Manhole	1200
S4.001	o	100	S20	89.700	88.900	0.700	Open Manhole	1200
S5.000	o	100	S21	89.800	89.000	0.700	Open Manhole	1200
S5.001	o	100	S22	89.661	88.861	0.700	Open Manhole	1200
S2.004	o	525	S23	89.601	87.375	1.701	Open Manhole	1500
S1.009	o	600	S24	89.482	87.226	1.656	Open Manhole	1500
S1.010	o	600	S25	89.102	86.846	1.656	Open Manhole	1500
S1.011	o	600	S26	88.225	86.322	1.303	Open Manhole	1500
S6.000	o	600	S27	87.321	85.822	0.899	Open Manhole	1500
S1.012	oo	45	S28	87.449	85.798	1.051	Open Manhole	3000
S1.013	oo	45	S29	87.500	85.705	1.195	Open Manhole	3000
S1.014	oo	45	S30	87.500	85.693	1.207	Open Manhole	3000
S1.015	oo	45	S31	87.500	85.674	1.226	Open Manhole	3000
S1.016	oo	45	S32	87.292	85.576	1.116	Open Manhole	3000
S1.017	oo	45	S33	87.240	85.443	1.197	Open Manhole	3000

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S4.000	9.665	64.0	S20	89.700	88.900	0.700	Open Manhole	1200
S4.001	7.593	38.0	S23	89.601	88.700	0.801	Open Manhole	1500
S5.000	8.336	60.0	S22	89.661	88.861	0.700	Open Manhole	1200
S5.001	5.601	28.0	S23	89.601	88.661	0.840	Open Manhole	1500
S2.004	24.088	325.5	S24	89.482	87.301	1.656	Open Manhole	1500
S1.009	15.723	41.4	S25	89.102	86.846	1.656	Open Manhole	1500
S1.010	33.110	63.2	S26	88.225	86.322	1.303	Open Manhole	1500
S1.011	30.671	93.8	S28	87.449	85.995	0.854	Open Manhole	3000
S6.000	11.935	497.3	S28	87.449	85.798	1.051	Open Manhole	3000
S1.012	46.422	499.2	S29	87.500	85.705	1.195	Open Manhole	3000
S1.013	6.103	508.6	S30	87.500	85.693	1.207	Open Manhole	3000
S1.014	9.630	506.8	S31	87.500	85.674	1.226	Open Manhole	3000
S1.015	49.178	501.8	S32	87.292	85.576	1.116	Open Manhole	3000
S1.016	16.735	125.8	S33	87.240	85.443	1.197	Open Manhole	3000
S1.017	20.100	319.0	S36	87.200	85.380	1.220	Open Manhole	3000

No. 1 Meadowhall Riverside
Meadowhall Road
Sheffield S9 1BW

Sandpit Lane
BR31287



Date 02/10/2025
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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S7.000	o	225	S34	89.227	87.802	1.200	Open Manhole	1200
S7.001	o	300	S35	87.448	85.948	1.200	Open Manhole	1200
S1.018	o	600	S36	87.200	85.380	1.220	Open Manhole	3000
S1.019	o	600	S37	86.987	85.258	1.129	Open Manhole	1500
S1.020	o	600	S38	86.817	85.150	1.067	Open Manhole	1500
S1.021	o	600	S39	86.776	85.125	1.051	Open Manhole	1500
S8.000	o	100	S40	88.000	87.501	0.399	Open Manhole	1200
S8.001	o	375	S41	86.616	85.204	1.037	Open Manhole	1350
S9.000	o	100	S42	86.636	85.873	0.663	Open Manhole	1200
S9.001	o	100	S43	86.646	85.846	0.700	Open Manhole	1200
S1.022	o	600	S44	86.645	84.806	1.239	Open Manhole	1500
S1.023	o	600	S45	86.459	84.687	1.172	Open Manhole	1500
S1.024	o	600	S46	86.000	84.620	0.780	Open Manhole	1500
S1.025	o	600	S47	86.000	84.590	0.810	Open Manhole	1500
S1.026	o	600	S48	86.000	84.547	0.853	Open Manhole	1500
S1.027	o	150	S49	86.000	84.452	1.398	Open Manhole	1500
S1.028	3 \=/	1000	S50	84.830	84.330	0.000	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S7.000	63.522	35.7	S35	87.448	86.023	1.200	Open Manhole	1200
S7.001	26.308	98.2	S36	87.200	85.680	1.220	Open Manhole	3000
S1.018	60.964	499.7	S37	86.987	85.258	1.129	Open Manhole	1500
S1.019	54.249	502.3	S38	86.817	85.150	1.067	Open Manhole	1500
S1.020	12.668	506.7	S39	86.776	85.125	1.051	Open Manhole	1500
S1.021	41.933	499.2	S44	86.645	85.041	1.004	Open Manhole	1500
S8.000	77.031	38.1	S41	86.616	85.479	1.037	Open Manhole	1350
S8.001	29.052	167.9	S44	86.645	85.031	1.239	Open Manhole	1500
S9.000	8.150	301.9	S43	86.646	85.846	0.700	Open Manhole	1200
S9.001	4.534	22.7	S44	86.645	85.646	0.899	Open Manhole	1500
S1.022	59.506	500.1	S45	86.459	84.687	1.172	Open Manhole	1500
S1.023	33.439	499.1	S46	86.000	84.620	0.780	Open Manhole	1500
S1.024	14.922	500.0	S47	86.000	84.590	0.810	Open Manhole	1500
S1.025	21.529	500.0	S48	86.000	84.547	0.853	Open Manhole	1500
S1.026	47.475	500.0	S49	86.000	84.452	0.948	Open Manhole	1500
S1.027	18.357	150.0	S50	84.830	84.330	0.350	Open Manhole	1200
S1.028	39.319	307.2	S51	84.702	84.202	0.000	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.029	3 \=/	1000	S51	84.702	84.202	0.000	Open Manhole	1200
S1.030	o	450	S52	81.412	80.912	0.050	Open Manhole	1200
S1.031	o	450	S53	80.500	78.900	1.150	Open Manhole	1350
S10.000	o	150	S54	90.842	89.492	1.200	Open Manhole	1200
S10.001	o	225	S55	90.468	89.043	1.200	Open Manhole	1200
S10.002	o	225	S56	90.091	88.666	1.200	Open Manhole	1200
S11.000	o	150	S57	90.482	89.132	1.200	Open Manhole	1200
S12.000	o	225	S58	89.263	88.038	1.000	Open Manhole	1200
S13.000	o	100	S59	89.376	88.608	0.668	Open Manhole	1200
S13.001	o	100	S60	89.385	88.585	0.700	Open Manhole	1200
S11.001	o	300	S61	89.398	87.784	1.314	Open Manhole	1200
S11.002	o	375	S62	89.000	87.637	0.988	Open Manhole	1350
S11.003	o	375	S63	89.000	87.605	1.020	Open Manhole	1350
S10.003	o	375	S64	89.546	87.572	1.599	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.029	82.022	24.9	S52	81.412	80.912	0.000	Open Manhole	1200
S1.030	26.196	13.0	S53	80.500	78.900	1.150	Open Manhole	1350
S1.031	35.202	502.9	S221	80.500	78.830	1.220	Open Manhole	3000
S10.000	18.741	50.1	S55	90.468	89.118	1.200	Open Manhole	1200
S10.001	19.040	50.5	S56	90.091	88.666	1.200	Open Manhole	1200
S10.002	46.589	49.4	S64	89.546	87.722	1.599	Open Manhole	1350
S11.000	48.539	40.5	S61	89.398	87.934	1.314	Open Manhole	1200
S12.000	30.471	170.2	S61	89.398	87.859	1.314	Open Manhole	1200
S13.000	6.479	281.7	S60	89.385	88.585	0.700	Open Manhole	1200
S13.001	5.972	29.9	S61	89.398	88.385	0.913	Open Manhole	1200
S11.001	17.315	240.5	S62	89.000	87.712	0.988	Open Manhole	1350
S11.002	6.619	206.8	S63	89.000	87.605	1.020	Open Manhole	1350
S11.003	10.688	323.9	S64	89.546	87.572	1.599	Open Manhole	1350
S10.003	29.979	322.4	S66	89.271	87.479	1.417	Open Manhole	1350

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S14.000	o	225	S65	89.258	87.833	1.200	Open Manhole	1200
S10.004	o	375	S66	89.271	87.479	1.417	Open Manhole	1350
S10.005	o	375	S67	88.299	86.724	1.200	Open Manhole	1350
S10.006	o	375	S68	87.835	86.260	1.200	Open Manhole	1350
S15.000	o	100	S69	87.500	86.740	0.660	Open Manhole	1200
S15.001	o	100	S70	87.500	86.700	0.700	Open Manhole	1200
S15.002	o	225	S71	87.500	86.375	0.900	Open Manhole	1200
S10.007	o	375	S72	87.680	85.883	1.422	Open Manhole	1350
S16.000	o	225	S73	89.059	87.634	1.200	Open Manhole	1200
S16.001	o	225	S74	88.400	86.975	1.200	Open Manhole	1200
S16.002	o	225	S75	87.975	86.550	1.200	Open Manhole	1200
S10.008	o	450	S76	87.614	85.741	1.423	Open Manhole	1350
S10.009	o	450	S77	87.522	85.664	1.408	Open Manhole	1350
S10.010	o	450	S78	87.220	85.544	1.226	Open Manhole	1350
S10.011	o	450	S79	85.815	84.165	1.200	Open Manhole	1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S14.000	22.374	109.7	S66	89.271	87.629	1.417	Open Manhole	1350
S10.004	45.246	59.9	S67	88.299	86.724	1.200	Open Manhole	1350
S10.005	12.544	27.0	S68	87.835	86.260	1.200	Open Manhole	1350
S10.006	13.690	36.3	S72	87.680	85.883	1.422	Open Manhole	1350
S15.000	5.989	149.7	S70	87.500	86.700	0.700	Open Manhole	1200
S15.001	2.089	10.4	S71	87.500	86.500	0.900	Open Manhole	1200
S15.002	17.611	150.5	S72	87.680	86.258	1.197	Open Manhole	1350
S10.007	21.405	319.5	S76	87.614	85.816	1.423	Open Manhole	1350
S16.000	42.719	64.8	S74	88.400	86.975	1.200	Open Manhole	1200
S16.001	27.608	65.0	S75	87.975	86.550	1.200	Open Manhole	1200
S16.002	25.505	43.7	S76	87.614	85.966	1.423	Open Manhole	1350
S10.008	30.922	401.6	S77	87.522	85.664	1.408	Open Manhole	1350
S10.009	40.217	335.1	S78	87.220	85.544	1.226	Open Manhole	1350
S10.010	56.373	40.9	S79	85.815	84.165	1.200	Open Manhole	1350
S10.011	19.016	23.9	S95	85.018	83.368	1.200	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S17.000	o	225	S80	89.045	87.620	1.200	Open Manhole		1200
S17.001	o	225	S81	87.400	85.975	1.200	Open Manhole		1200
S18.000	o	150	S82	89.066	87.716	1.200	Open Manhole		1200
S18.001	o	150	S83	88.748	87.398	1.200	Open Manhole		1200
S18.002	o	150	S84	87.200	85.850	1.200	Open Manhole		1200
S19.000	o	100	S85	87.371	86.571	0.700	Open Manhole		1200
S19.001	o	100	S86	87.006	86.206	0.700	Open Manhole		1200
S17.002	o	300	S87	86.800	85.300	1.200	Open Manhole		1200
S20.000	o	150	S88	88.165	86.815	1.200	Open Manhole		1200
S20.001	o	300	S89	87.743	86.243	1.200	Open Manhole		1200
S20.002	o	300	S90	86.700	85.200	1.200	Open Manhole		1200
S21.000	o	100	S91	86.300	85.500	0.700	Open Manhole		1200
S21.001	o	100	S92	86.088	85.288	0.700	Open Manhole		1200
S17.003	o	375	S93	85.950	84.375	1.200	Open Manhole		1350
S17.004	o	450	S94	85.334	83.683	1.201	Open Manhole		1350

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S17.000	33.564	20.4	S81	87.400	85.975	1.200	Open Manhole		1200
S17.001	13.988	23.3	S87	86.800	85.375	1.200	Open Manhole		1200
S18.000	14.913	46.9	S83	88.748	87.398	1.200	Open Manhole		1200
S18.001	32.833	21.2	S84	87.200	85.850	1.200	Open Manhole		1200
S18.002	11.937	29.8	S87	86.800	85.450	1.200	Open Manhole		1200
S19.000	7.440	20.4	S86	87.006	86.206	0.700	Open Manhole		1200
S19.001	8.424	42.1	S87	86.800	86.006	0.694	Open Manhole		1200
S17.002	53.668	63.1	S93	85.950	84.450	1.200	Open Manhole		1350
S20.000	24.564	58.2	S89	87.743	86.393	1.200	Open Manhole		1200
S20.001	34.818	33.4	S90	86.700	85.200	1.200	Open Manhole		1200
S20.002	20.073	26.8	S93	85.950	84.450	1.200	Open Manhole		1350
S21.000	4.753	22.4	S92	86.088	85.288	0.700	Open Manhole		1200
S21.001	6.080	30.4	S93	85.950	85.088	0.762	Open Manhole		1350
S17.003	44.206	71.6	S94	85.334	83.758	1.201	Open Manhole		1350
S17.004	20.829	65.9	S95	85.018	83.367	1.201	Open Manhole		1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S10.012	o	600	S95	85.018	83.217	1.201	Open Manhole	1500
S22.000	o	100	S96	82.736	81.936	0.700	Open Manhole	1200
S22.001	o	150	S97	82.623	81.773	0.700	Open Manhole	1200
S10.013	o	600	S98	82.490	80.690	1.200	Open Manhole	1500
S10.014	oo	45	S99	81.757	79.956	1.201	Open Manhole	3000
S23.000	o	100	S100	85.620	84.820	0.700	Open Manhole	1200
S23.001	o	150	S101	85.550	84.700	0.700	Open Manhole	1200
S23.002	o	300	S102	85.520	84.020	1.200	Open Manhole	1200
S24.000	o	100	S103	85.900	85.148	0.652	Open Manhole	1200
S24.001	o	100	S104	85.900	85.100	0.700	Open Manhole	1200
S23.003	o	300	S105	84.500	83.000	1.200	Open Manhole	1200
S23.004	o	600	S106	83.400	80.600	2.200	Open Manhole	1500
S25.000	o	100	S107	84.153	82.803	1.250	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S10.012	57.699	22.8	S98	82.490	80.690	1.200	Open Manhole	1500
S22.000	6.588	58.3	S97	82.623	81.823	0.700	Open Manhole	1200
S22.001	6.550	49.2	S98	82.490	81.640	0.700	Open Manhole	1500
S10.013	32.648	44.5	S99	81.757	79.956	1.201	Open Manhole	3000
S10.014	34.283	99.4	S127	81.336	79.611	1.125	Open Manhole	3000
S23.000	3.169	45.3	S101	85.550	84.750	0.700	Open Manhole	1200
S23.001	2.800	58.3	S102	85.520	84.652	0.718	Open Manhole	1200
S23.002	14.547	14.3	S105	84.500	83.000	1.200	Open Manhole	1200
S24.000	4.828	100.6	S104	85.900	85.100	0.700	Open Manhole	1200
S24.001	11.366	6.7	S105	84.500	83.394	1.006	Open Manhole	1200
S23.003	28.627	13.6	S106	83.400	80.900	2.200	Open Manhole	1500
S23.004	17.148	300.8	S112	83.356	80.543	2.213	Open Manhole	1500
S25.000	27.783	34.9	S112	83.356	82.006	1.250	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S26.000	o	100	S108	83.600	82.850	0.650	Open Manhole	1200
S26.001	o	150	S109	83.600	82.750	0.700	Open Manhole	1200
S27.000	o	100	S110	83.400	82.652	0.648	Open Manhole	1200
S27.001	o	150	S111	83.400	82.550	0.700	Open Manhole	1200
S23.005	o	300	S112	83.356	80.543	2.513	Open Manhole	1500
S28.000	o	150	S113	84.300	82.950	1.200	Open Manhole	1200
S29.000	o	100	S114	82.800	82.000	0.700	Open Manhole	1200
S29.001	o	100	S115	82.600	81.800	0.700	Open Manhole	1200
S23.006	o	300	S116	82.500	80.409	1.791	Open Manhole	1200
S30.000	o	150	S117	83.000	81.650	1.200	Open Manhole	1200
S31.000	o	100	S118	83.329	82.634	0.595	Open Manhole	1200
S31.001	o	150	S119	83.400	82.550	0.700	Open Manhole	1200
S30.001	o	225	S120	83.446	81.298	1.923	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S26.000	4.983	99.7	S109	83.600	82.800	0.700	Open Manhole	1200
S26.001	3.816	58.7	S112	83.356	82.685	0.521	Open Manhole	1500
S27.000	5.192	99.9	S111	83.400	82.600	0.700	Open Manhole	1200
S27.001	5.218	10.0	S112	83.356	82.028	1.178	Open Manhole	1500
S23.005	32.831	245.0	S116	82.500	80.409	1.791	Open Manhole	1200
S28.000	38.277	16.0	S116	82.500	80.559	1.791	Open Manhole	1200
S29.000	6.388	31.9	S115	82.600	81.800	0.700	Open Manhole	1200
S29.001	8.787	58.6	S116	82.500	81.650	0.750	Open Manhole	1200
S23.006	27.789	120.3	S125	82.054	80.178	1.576	Open Manhole	1500
S30.000	24.287	87.7	S120	83.446	81.373	1.923	Open Manhole	1200
S31.000	3.427	100.8	S119	83.400	82.600	0.700	Open Manhole	1200
S31.001	2.440	58.1	S120	83.446	82.508	0.788	Open Manhole	1200
S30.001	7.021	167.2	S121	83.600	81.256	2.119	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S30.002	o	225	S121	83.600	81.256	2.119	Open Manhole	1200	
S32.000	o	100	S122	82.700	81.951	0.649	Open Manhole	1200	
S32.001	o	150	S123	82.700	81.850	0.700	Open Manhole	1200	
S30.003	o	600	S124	82.600	80.200	1.800	Open Manhole	1500	
S23.007	o	300	S125	82.054	80.177	1.577	Open Manhole	1500	
S23.008	o	300	S126	81.600	80.050	1.250	Open Manhole	1200	
S10.015	oo	45	S127	81.336	79.611	1.125	Open Manhole	3000	
S10.016	oo	45	S128	81.165	79.439	1.126	Open Manhole	3000	
S10.017	oo	45	S129	80.500	79.076	0.824	Open Manhole	3000	
S33.000	o	150	S130	94.855	93.505	1.200	Open Manhole	1200	
S33.001	o	225	S131	94.682	93.220	1.237	Open Manhole	1200	
S33.002	o	225	S132	94.367	92.942	1.200	Open Manhole	1200	
S33.003	o	225	S133	92.763	91.338	1.200	Open Manhole	1200	
S33.004	o	300	S134	91.028	89.528	1.200	Open Manhole	1200	
S34.000	o	225	S135	94.229	92.804	1.200	Open Manhole	1200	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S30.002	41.282	60.6	S124	82.600	80.575	1.800	Open Manhole	1500	
S32.000	5.092	99.8	S123	82.700	81.900	0.700	Open Manhole	1200	
S32.001	4.552	58.4	S124	82.600	81.772	0.678	Open Manhole	1500	
S30.003	11.439	497.3	S125	82.054	80.177	1.277	Open Manhole	1500	
S23.007	31.105	244.9	S126	81.600	80.050	1.250	Open Manhole	1200	
S23.008	17.763	127.8	S127	81.336	79.911	1.125	Open Manhole	3000	
S10.015	11.780	68.5	S128	81.165	79.439	1.126	Open Manhole	3000	
S10.016	26.468	72.9	S129	80.500	79.076	0.824	Open Manhole	3000	
S10.017	75.581	500.5	S221	80.500	78.925	0.975	Open Manhole	3000	
S33.000	18.418	87.7	S131	94.682	93.295	1.237	Open Manhole	1200	
S33.001	15.207	54.7	S132	94.367	92.942	1.200	Open Manhole	1200	
S33.002	47.936	29.9	S133	92.763	91.338	1.200	Open Manhole	1200	
S33.003	48.112	27.7	S134	91.028	89.603	1.200	Open Manhole	1200	
S33.004	60.269	50.7	S140	89.840	88.340	1.200	Open Manhole	1350	
S34.000	44.697	27.0	S136	92.571	91.146	1.200	Open Manhole	1200	

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Innovyze		Network 2020.1.3



PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S34.001	o	225	S136	92.571	91.146	1.200	Open Manhole		1200
S34.002	o	300	S137	91.168	89.668	1.200	Open Manhole		1200
S35.000	o	100	S138	90.500	89.700	0.700	Open Manhole		1200
S35.001	o	100	S139	90.100	89.300	0.700	Open Manhole		1200
S33.005	o	450	S140	89.840	88.190	1.200	Open Manhole		1350
S36.000	o	225	S141	92.752	91.327	1.200	Open Manhole		1200
S36.001	o	225	S142	91.291	89.866	1.200	Open Manhole		1200
S36.002	o	300	S143	89.207	87.707	1.200	Open Manhole		1200
S33.006	o	450	S144	89.225	87.295	1.480	Open Manhole		1350
S37.000	o	100	S145	86.000	85.274	0.626	Open Manhole		1200
S37.001	o	100	S146	86.000	85.200	0.700	Open Manhole		1200
S37.002	o	300	S147	86.200	84.700	1.200	Open Manhole		1200
S37.003	o	300	S148	87.300	84.633	2.367	Open Manhole		1200
S33.007	o	600	S149	87.104	84.292	2.212	Open Manhole		1500
S33.008	o	600	S150	85.370	83.570	1.200	Open Manhole		1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S34.001	31.169	22.2	S137	91.168	89.743	1.200	Open Manhole		1200
S34.002	30.516	23.0	S140	89.840	88.340	1.200	Open Manhole		1350
S35.000	8.884	22.2	S139	90.100	89.300	0.700	Open Manhole		1200
S35.001	6.792	34.0	S140	89.840	89.100	0.640	Open Manhole		1350
S33.005	49.550	68.3	S144	89.225	87.465	1.310	Open Manhole		1350
S36.000	39.555	27.1	S142	91.291	89.866	1.200	Open Manhole		1200
S36.001	49.110	23.6	S143	89.207	87.782	1.200	Open Manhole		1200
S36.002	26.184	99.9	S144	89.225	87.445	1.480	Open Manhole		1350
S33.006	45.924	24.9	S149	87.104	85.454	1.200	Open Manhole		1500
S37.000	7.371	99.6	S146	86.000	85.200	0.700	Open Manhole		1200
S37.001	4.019	13.4	S147	86.200	84.900	1.200	Open Manhole		1200
S37.002	16.375	244.4	S148	87.300	84.633	2.367	Open Manhole		1200
S37.003	10.027	244.6	S149	87.104	84.592	2.212	Open Manhole		1500
S33.007	37.278	51.6	S150	85.370	83.570	1.200	Open Manhole		1500
S33.008	17.553	22.0	S153	84.571	82.771	1.200	Open Manhole		1500

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Meadowhall Road
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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S38.000	o	150	S151	85.129	83.779	1.200	Open Manhole	1200
S38.001	o	225	S152	84.989	83.564	1.200	Open Manhole	1200
S33.009	o	600	S153	84.571	82.771	1.200	Open Manhole	1500
S39.000	o	150	S154	90.874	89.524	1.200	Open Manhole	1200
S40.000	o	100	S155	89.757	88.957	0.700	Open Manhole	1200
S40.001	o	100	S156	89.427	88.627	0.700	Open Manhole	1200
S39.001	o	225	S157	89.301	87.876	1.200	Open Manhole	1200
S41.000	o	150	S158	90.400	89.050	1.200	Open Manhole	1200
S39.002	o	300	S159	87.707	86.207	1.200	Open Manhole	1200
S39.003	o	300	S160	85.454	83.954	1.200	Open Manhole	1200
S39.004	o	300	S161	84.690	81.450	2.940	Open Manhole	1200
S42.000	o	150	S162	87.600	86.250	1.200	Open Manhole	1200
S42.001	o	150	S163	87.000	85.650	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S38.000	14.922	106.6	S152	84.989	83.639	1.200	Open Manhole	1200
S38.001	18.699	44.7	S153	84.571	83.146	1.200	Open Manhole	1500
S33.009	95.648	25.9	S191	81.700	79.075	2.025	Open Manhole	1500
S39.000	22.564	14.3	S157	89.301	87.951	1.200	Open Manhole	1200
S40.000	4.661	14.1	S156	89.427	88.627	0.700	Open Manhole	1200
S40.001	2.425	3.9	S157	89.301	88.001	1.200	Open Manhole	1200
S39.001	34.181	21.4	S159	87.707	86.282	1.200	Open Manhole	1200
S41.000	39.597	14.7	S159	87.707	86.357	1.200	Open Manhole	1200
S39.002	36.392	16.2	S160	85.454	83.954	1.200	Open Manhole	1200
S39.003	23.946	9.6	S161	84.690	81.450	2.940	Open Manhole	1200
S39.004	62.185	73.2	S168	82.433	80.600	1.533	Open Manhole	1800
S42.000	11.864	19.8	S163	87.000	85.650	1.200	Open Manhole	1200
S42.001	46.853	20.0	S166	84.657	83.307	1.200	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S43.000	o	100	S164	85.100	84.300	0.700	Open Manhole	1200	
S43.001	o	100	S165	84.832	84.032	0.700	Open Manhole	1200	
S42.002	o	225	S166	84.657	83.232	1.200	Open Manhole	1200	
S42.003	o	225	S167	82.800	81.375	1.200	Open Manhole	1200	
S39.005	o	900	S168	82.433	80.000	1.533	Open Manhole	1800	
S44.000	o	225	S169	94.915	93.490	1.200	Open Manhole	1200	
S44.001	o	225	S170	94.930	93.253	1.452	Open Manhole	1200	
S44.002	o	300	S171	93.517	92.017	1.200	Open Manhole	1200	
S44.003	o	300	S172	93.096	91.596	1.200	Open Manhole	1200	
S44.004	o	300	S173	92.733	91.233	1.200	Open Manhole	1200	
S44.005	o	300	S174	91.200	89.700	1.200	Open Manhole	1200	
S44.006	o	300	S175	89.400	87.900	1.200	Open Manhole	1200	
S44.007	o	300	S176	88.600	87.100	1.200	Open Manhole	1200	
S44.008	o	375	S177	85.300	83.725	1.200	Open Manhole	1350	
S44.009	o	375	S178	84.600	83.025	1.200	Open Manhole	1350	
S44.010	o	375	S179	83.800	82.225	1.200	Open Manhole	1350	
S44.011	o	375	S180	83.200	81.625	1.200	Open Manhole	1350	

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
S43.000	5.355	20.0	S165	84.832	84.032	0.700	Open Manhole	1200	
S43.001	3.572	17.9	S166	84.657	83.832	0.725	Open Manhole	1200	
S42.002	26.300	14.2	S167	82.800	81.375	1.200	Open Manhole	1200	
S42.003	23.816	34.0	S168	82.433	80.675	1.533	Open Manhole	1800	
S39.005	4.128	516.0	S186	82.300	79.992	1.408	Open Manhole	1800	
S44.000	23.730	100.1	S170	94.930	93.253	1.452	Open Manhole	1200	
S44.001	45.947	39.6	S171	93.517	92.092	1.200	Open Manhole	1200	
S44.002	18.809	44.7	S172	93.096	91.596	1.200	Open Manhole	1200	
S44.003	21.782	60.0	S173	92.733	91.233	1.200	Open Manhole	1200	
S44.004	28.129	18.3	S174	91.200	89.700	1.200	Open Manhole	1200	
S44.005	26.657	14.8	S175	89.400	87.900	1.200	Open Manhole	1200	
S44.006	11.439	14.3	S176	88.600	87.100	1.200	Open Manhole	1200	
S44.007	48.418	14.7	S177	85.300	83.800	1.200	Open Manhole	1350	
S44.008	10.411	14.9	S178	84.600	83.025	1.200	Open Manhole	1350	
S44.009	18.794	23.5	S179	83.800	82.225	1.200	Open Manhole	1350	
S44.010	20.012	33.4	S180	83.200	81.625	1.200	Open Manhole	1350	
S44.011	34.133	43.3	S183	82.411	80.837	1.199	Open Manhole	1500	

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S45.000	o	100	S181	82.441	81.666	0.675	Open Manhole	1200
S45.001	o	100	S182	82.421	81.621	0.700	Open Manhole	1200
S44.012	o	525	S183	82.411	80.687	1.199	Open Manhole	1500
S46.000	o	100	S184	82.418	81.618	0.700	Open Manhole	1200
S46.001	o	150	S185	82.355	81.505	0.700	Open Manhole	1200
S39.006	o	300	S186	82.300	79.992	2.008	Open Manhole	1800
S39.007	o	300	S187	82.400	79.792	2.308	Open Manhole	1200
S47.000	o	100	S188	81.991	81.191	0.700	Open Manhole	1200
S47.001	o	150	S189	81.882	81.032	0.700	Open Manhole	1200
S39.008	o	300	S190	81.847	79.663	1.884	Open Manhole	1200
S33.010	o	675	S191	81.700	79.000	2.025	Open Manhole	1500
S33.011	oo	-1	S192	80.500	78.961	0.789	Open Manhole	3000
S48.000	o	100	S193	81.442	80.642	0.700	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S45.000	6.154	136.8	S182	82.421	81.621	0.700	Open Manhole	1200
S45.001	3.060	15.3	S183	82.411	81.421	0.890	Open Manhole	1500
S44.012	15.091	47.2	S186	82.300	80.367	1.408	Open Manhole	1800
S46.000	8.974	142.4	S185	82.355	81.555	0.700	Open Manhole	1200
S46.001	8.971	22.6	S186	82.300	81.108	1.042	Open Manhole	1800
S39.006	10.060	50.3	S187	82.400	79.792	2.308	Open Manhole	1200
S39.007	27.512	213.3	S190	81.847	79.663	1.884	Open Manhole	1200
S47.000	5.084	46.6	S189	81.882	81.082	0.700	Open Manhole	1200
S47.001	2.610	58.0	S190	81.847	80.987	0.710	Open Manhole	1200
S39.008	10.434	36.2	S191	81.700	79.375	2.025	Open Manhole	1500
S33.010	19.258	493.8	S192	80.500	78.961	0.864	Open Manhole	3000
S33.011	56.172	920.9	S197	80.500	78.900	0.850	Open Manhole	3000
S48.000	5.968	36.0	S194	81.276	80.476	0.700	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S48.001	o	150	S194	81.276	80.426	0.700	Open Manhole	1200
S48.002	o	675	S195	81.200	79.000	1.525	Open Manhole	1500
S48.003	o	675	S196	80.500	78.926	0.899	Open Manhole	1500
S33.012	o	750	S197	80.500	78.900	0.850	Open Manhole	3000
S33.013	o	750	S198	80.500	78.823	0.927	Open Manhole	1800
S49.000	o	100	S199	80.741	79.941	0.700	Open Manhole	1200
S49.001	o	100	S200	80.600	79.800	0.700	Open Manhole	1200
S33.014	o	750	S201	80.455	78.749	0.956	Open Manhole	1800
S33.015	o	750	S202	80.500	78.701	1.049	Open Manhole	1800
S50.000	o	225	S203	86.200	84.850	1.125	Open Manhole	1200
S50.001	o	300	S204	85.761	84.132	1.329	Open Manhole	1200
S50.002	o	300	S205	85.640	83.982	1.358	Open Manhole	1200
S51.000	o	150	S206	84.947	83.597	1.200	Open Manhole	1200
S51.001	o	225	S207	84.921	83.319	1.377	Open Manhole	1200
S52.000	o	100	S208	84.896	84.109	0.687	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S48.001	3.643	10.0	S195	81.200	80.062	0.988	Open Manhole	1500
S48.002	36.924	499.0	S196	80.500	78.926	0.899	Open Manhole	1500
S48.003	10.377	494.1	S197	80.500	78.905	0.920	Open Manhole	3000
S33.012	38.696	502.5	S198	80.500	78.823	0.927	Open Manhole	1800
S33.013	36.933	499.1	S201	80.455	78.749	0.956	Open Manhole	1800
S49.000	6.907	49.0	S200	80.600	79.800	0.700	Open Manhole	1200
S49.001	4.925	24.6	S201	80.455	79.600	0.755	Open Manhole	1800
S33.014	24.135	502.8	S202	80.500	78.701	1.049	Open Manhole	1800
S33.015	73.738	996.5	S221	80.500	78.627	1.123	Open Manhole	3000
S50.000	56.288	87.5	S204	85.761	84.207	1.329	Open Manhole	1200
S50.001	25.227	168.2	S205	85.640	83.982	1.358	Open Manhole	1200
S50.002	30.361	36.4	S210	84.846	83.148	1.398	Open Manhole	1200
S51.000	17.810	87.7	S207	84.921	83.394	1.377	Open Manhole	1200
S51.001	28.624	167.4	S210	84.846	83.148	1.473	Open Manhole	1200
S52.000	7.138	297.4	S209	84.885	84.085	0.700	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S52.001	o	100	S209	84.885	84.085	0.700	Open Manhole	1200
S50.003	o	300	S210	84.846	83.073	1.473	Open Manhole	1200
S53.000	o	225	S211	82.543	81.193	1.125	Open Manhole	1200
S53.001	o	225	S212	82.527	80.817	1.485	Open Manhole	1200
S54.000	o	100	S213	82.529	81.748	0.681	Open Manhole	1200
S54.001	o	100	S214	82.525	81.725	0.700	Open Manhole	1200
S50.004	o	375	S215	82.400	80.543	1.482	Open Manhole	1350
S50.005	o	450	S216	81.800	80.150	1.200	Open Manhole	1350
S50.006	o	450	S217	81.366	79.716	1.200	Open Manhole	1350
S55.000	o	225	S218	80.972	79.547	1.200	Open Manhole	1200
S50.007	o	525	S219	80.647	78.922	1.200	Open Manhole	1500
S50.008	o	600	S220	80.500	78.874	1.026	Open Manhole	1500
S1.032	o	900	S221	80.500	78.627	0.973	Open Manhole	3000
S1.033	o	225	S222	80.500	77.962	2.313	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S52.001	4.737	23.7	S210	84.846	83.885	0.861	Open Manhole	1200
S50.003	59.553	24.3	S215	82.400	80.618	1.482	Open Manhole	1350
S53.000	32.957	87.7	S212	82.527	80.817	1.485	Open Manhole	1200
S53.001	8.261	168.6	S215	82.400	80.768	1.407	Open Manhole	1350
S54.000	6.966	302.8	S214	82.525	81.725	0.700	Open Manhole	1200
S54.001	5.626	28.1	S215	82.400	81.525	0.775	Open Manhole	1350
S50.004	16.112	50.7	S216	81.800	80.225	1.200	Open Manhole	1350
S50.005	12.118	27.9	S217	81.366	79.716	1.200	Open Manhole	1350
S50.006	55.213	76.8	S219	80.647	78.997	1.200	Open Manhole	1500
S55.000	39.565	121.7	S219	80.647	79.222	1.200	Open Manhole	1500
S50.007	13.340	277.9	S220	80.500	78.874	1.101	Open Manhole	1500
S50.008	39.603	501.3	S221	80.500	78.795	1.105	Open Manhole	3000
S1.032	6.748	519.1	S222	80.500	78.614	0.986	Open Manhole	1800
S1.033	27.595	170.3	S223	78.500	77.800	0.475	Open Manhole	1200

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Online Controls for Storm

Orifice Manhole: S2, DS/PN: S1.001, Volume (m³): 0.9

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 93.864

Orifice Manhole: S20, DS/PN: S4.001, Volume (m³): 1.0

Diameter (m) 0.028 Discharge Coefficient 0.600 Invert Level (m) 88.900

Orifice Manhole: S22, DS/PN: S5.001, Volume (m³): 1.0

Diameter (m) 0.032 Discharge Coefficient 0.600 Invert Level (m) 88.861

Hydro-Brake® Optimum Manhole: S36, DS/PN: S1.018, Volume (m³): 24.2

Unit Reference	MD-SHE-0087-4000-1530-4000
Design Head (m)	1.530
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	87
Invert Level (m)	85.380
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.530	4.0	Kick-Flo®	0.775	2.9
Flush-Flo™	0.380	3.6	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)	Depth (m)	Flow (l/s)
0.100	2.6	0.800	3.0	2.000	4.5	4.000	6.3	7.000	8.1
0.200	3.4	1.000	3.3	2.200	4.7	4.500	6.6	7.500	8.4
0.300	3.6	1.200	3.6	2.400	4.9	5.000	6.9	8.000	8.7
0.400	3.6	1.400	3.8	2.600	5.1	5.500	7.3	8.500	8.9
0.500	3.6	1.600	4.1	3.000	5.5	6.000	7.6	9.000	9.2
0.600	3.5	1.800	4.3	3.500	5.9	6.500	7.9	9.500	9.4

Orifice Manhole: S43, DS/PN: S9.001, Volume (m³): 1.0

Diameter (m) 0.054 Discharge Coefficient 0.600 Invert Level (m) 85.846

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Orifice Manhole: S60, DS/PN: S13.001, Volume (m³): 0.9

Diameter (m) 0.023 Discharge Coefficient 0.600 Invert Level (m) 88.585

Hydro-Brake® Optimum Manhole: S66, DS/PN: S10.004, Volume (m³): 6.6

Unit Reference MD-SHE-0055-1500-1221-1500
 Design Head (m) 1.221
 Design Flow (l/s) 1.5
 Flush-Flo™ Calculated
 Objective Minimise upstream storage
 Application Surface
 Sump Available Yes
 Diameter (mm) 55
 Invert Level (m) 87.479
 Minimum Outlet Pipe Diameter (mm) 75
 Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.221	1.5	Kick-Flo®	0.491	1.0
Flush-Flo™	0.241	1.2	Mean Flow over Head Range	-	1.2

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)	Depth (m)	Flow (l/s)
0.100	1.1	0.800	1.2	2.000	1.9	4.000	2.6	7.000	3.3
0.200	1.2	1.000	1.4	2.200	2.0	4.500	2.7	7.500	3.5
0.300	1.2	1.200	1.5	2.400	2.0	5.000	2.9	8.000	3.6
0.400	1.2	1.400	1.6	2.600	2.1	5.500	3.0	8.500	3.7
0.500	1.0	1.600	1.7	3.000	2.3	6.000	3.1	9.000	3.8
0.600	1.1	1.800	1.8	3.500	2.4	6.500	3.2	9.500	3.9

Orifice Manhole: S70, DS/PN: S15.001, Volume (m³): 0.9

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 86.700

Orifice Manhole: S86, DS/PN: S19.001, Volume (m³): 1.0

Diameter (m) 0.033 Discharge Coefficient 0.600 Invert Level (m) 86.206

Orifice Manhole: S92, DS/PN: S21.001, Volume (m³): 0.9

Diameter (m) 0.055 Discharge Coefficient 0.600 Invert Level (m) 85.288

Orifice Manhole: S97, DS/PN: S22.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 81.823

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Orifice Manhole: S101, DS/PN: S23.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 84.750

Orifice Manhole: S104, DS/PN: S24.001, Volume (m³): 0.9

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 85.100

Orifice Manhole: S109, DS/PN: S26.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 82.800

Orifice Manhole: S111, DS/PN: S27.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 82.600

Hydro-Brake® Optimum Manhole: S112, DS/PN: S23.005, Volume (m³): 9.7

Unit Reference	MD-SHE-0051-1500-1650-1500
Design Head (m)	1.650
Design Flow (l/s)	1.5
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	51
Invert Level (m)	80.543
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.650	1.5	Kick-Flo®	0.457	0.8
Flush-Flo™	0.225	1.0	Mean Flow over Head Range	-	1.1

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)	Depth (m)	Flow (l/s)
0.100	0.9	0.800	1.1	2.000	1.6	4.000	2.2	7.000	2.9
0.200	1.0	1.000	1.2	2.200	1.7	4.500	2.4	7.500	3.0
0.300	1.0	1.200	1.3	2.400	1.8	5.000	2.5	8.000	3.1
0.400	0.9	1.400	1.4	2.600	1.8	5.500	2.6	8.500	3.2
0.500	0.9	1.600	1.5	3.000	2.0	6.000	2.7	9.000	3.3
0.600	1.0	1.800	1.6	3.500	2.1	6.500	2.8	9.500	3.4

Orifice Manhole: S115, DS/PN: S29.001, Volume (m³): 0.9

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 81.800

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Orifice Manhole: S119, DS/PN: S31.001, Volume (m³): 1.0

Diameter (m) 0.065 Discharge Coefficient 0.600 Invert Level (m) 82.600

Orifice Manhole: S123, DS/PN: S32.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 81.900

Hydro-Brake® Optimum Manhole: S125, DS/PN: S23.007, Volume (m³): 8.0

Unit Reference	MD-SHE-0064-2000-1200-2000
Design Head (m)	1.200
Design Flow (l/s)	2.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	64
Invert Level (m)	80.177
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	2.0	Kick-Flo®	0.573	1.4
Flush-Flo™	0.282	1.8	Mean Flow over Head Range	-	1.6

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)	Depth (m)	Flow (l/s)
0.100	1.5	0.800	1.7	2.000	2.5	4.000	3.5	7.000	4.5
0.200	1.7	1.000	1.8	2.200	2.6	4.500	3.7	7.500	4.7
0.300	1.8	1.200	2.0	2.400	2.7	5.000	3.9	8.000	4.8
0.400	1.7	1.400	2.1	2.600	2.8	5.500	4.0	8.500	5.0
0.500	1.6	1.600	2.3	3.000	3.0	6.000	4.2	9.000	5.1
0.600	1.5	1.800	2.4	3.500	3.3	6.500	4.4	9.500	5.2

Orifice Manhole: S139, DS/PN: S35.001, Volume (m³): 1.0

Diameter (m) 0.040 Discharge Coefficient 0.600 Invert Level (m) 89.300

Orifice Manhole: S146, DS/PN: S37.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 85.200

Orifice Manhole: S156, DS/PN: S40.001, Volume (m³): 0.9

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 88.627

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Orifice Manhole: S165, DS/PN: S43.001, Volume (m³): 0.9

Diameter (m) 0.028 Discharge Coefficient 0.600 Invert Level (m) 84.032

Orifice Manhole: S182, DS/PN: S45.001, Volume (m³): 0.9

Diameter (m) 0.085 Discharge Coefficient 0.600 Invert Level (m) 81.621

Orifice Manhole: S185, DS/PN: S46.001, Volume (m³): 1.0

Diameter (m) 0.040 Discharge Coefficient 0.600 Invert Level (m) 81.555

Hydro-Brake® Optimum Manhole: S186, DS/PN: S39.006, Volume (m³): 10.4

Unit Reference MD-SHE-0074-3000-1600-3000
 Design Head (m) 1.600
 Design Flow (l/s) 3.0
 Flush-Flo™ Calculated
 Objective Minimise upstream storage
 Application Surface
 Sump Available Yes
 Diameter (mm) 74
 Invert Level (m) 79.992
 Minimum Outlet Pipe Diameter (mm) 100
 Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.600	3.0	Kick-Flo®	0.661	2.0
Flush-Flo™	0.323	2.5	Mean Flow over Head Range	-	2.4

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)	Depth (m)	Flow (l/s)
0.100	2.0	0.800	2.2	2.000	3.3	4.000	4.6	7.000	6.0
0.200	2.4	1.000	2.4	2.200	3.5	4.500	4.9	7.500	6.2
0.300	2.5	1.200	2.6	2.400	3.6	5.000	5.1	8.000	6.4
0.400	2.5	1.400	2.8	2.600	3.8	5.500	5.3	8.500	6.5
0.500	2.4	1.600	3.0	3.000	4.0	6.000	5.6	9.000	6.7
0.600	2.2	1.800	3.2	3.500	4.3	6.500	5.8	9.500	6.9

Orifice Manhole: S189, DS/PN: S47.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 81.082

Orifice Manhole: S194, DS/PN: S48.001, Volume (m³): 1.0

Diameter (m) 0.030 Discharge Coefficient 0.600 Invert Level (m) 80.476

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Orifice Manhole: S209, DS/PN: S52.001, Volume (m³): 1.0

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 84.085

Orifice Manhole: S214, DS/PN: S54.001, Volume (m³): 1.0

Diameter (m) 0.028 Discharge Coefficient 0.600 Invert Level (m) 81.725

Hydro-Brake® Optimum Manhole: S222, DS/PN: S1.033, Volume (m³): 9.2

Unit Reference	MD-SHE-0185-2110-2238-2110
Design Head (m)	2.238
Design Flow (l/s)	21.1
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	185
Invert Level (m)	77.962
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1800

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.238	21.1	Kick-Flo®	1.357	16.6
Flush-Flo™	0.645	21.1	Mean Flow over Head Range	-	18.4

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)	Depth (m)	Flow (l/s)
0.100	6.5	0.800	20.9	2.000	20.0	4.000	27.9	7.000	36.5
0.200	16.8	1.000	20.2	2.200	20.9	4.500	29.5	7.500	37.7
0.300	19.1	1.200	18.8	2.400	21.8	5.000	31.0	8.000	38.9
0.400	20.2	1.400	16.9	2.600	22.7	5.500	32.5	8.500	40.1
0.500	20.8	1.600	18.0	3.000	24.3	6.000	33.9	9.000	41.2
0.600	21.0	1.800	19.0	3.500	26.1	6.500	35.2	9.500	42.3

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Storage Structures for Storm

Porous Car Park Manhole: S2, DS/PN: S1.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	21.9
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	97.3	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	93.864	Membrane Depth (mm)	200

Porous Car Park Manhole: S20, DS/PN: S4.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	43.1
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	191.6	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	88.900	Membrane Depth (mm)	200

Porous Car Park Manhole: S22, DS/PN: S5.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	45.7
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	203.1	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	88.861	Membrane Depth (mm)	200

Tank or Pond Manhole: S36, DS/PN: S1.018

Invert Level (m) 85.700

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	1351.9	1.500	1351.9	1.501	0.0

Porous Car Park Manhole: S43, DS/PN: S9.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	81.1
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	360.4	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	85.846	Membrane Depth (mm)	200

Tank or Pond Manhole: S49, DS/PN: S1.027

Invert Level (m) 84.700

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Tank or Pond Manhole: S49, DS/PN: S1.027

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	273.0	1.000	273.0	1.010	0.0

Porous Car Park Manhole: S60, DS/PN: S13.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	11.1
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	49.3	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	88.585	Membrane Depth (mm)	200

Tank or Pond Manhole: S66, DS/PN: S10.004

Invert Level (m) 87.600

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	409.1	1.100	409.1	1.101	0.0

Porous Car Park Manhole: S70, DS/PN: S15.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	26.2
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	116.4	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	86.700	Membrane Depth (mm)	200

Porous Car Park Manhole: S86, DS/PN: S19.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	36.4
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	161.8	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	86.206	Membrane Depth (mm)	200

Porous Car Park Manhole: S92, DS/PN: S21.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	61.0
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	271.1	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	85.288	Membrane Depth (mm)	200

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Porous Car Park Manhole: S97, DS/PN: S22.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.9
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	61.8	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	81.823	Membrane Depth (mm)	200

Porous Car Park Manhole: S101, DS/PN: S23.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	39.3
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	174.7	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	84.750	Membrane Depth (mm)	200

Porous Car Park Manhole: S104, DS/PN: S24.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	36.2
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	160.9	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	85.100	Membrane Depth (mm)	200

Porous Car Park Manhole: S109, DS/PN: S26.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.9
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	92.9	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	82.800	Membrane Depth (mm)	200

Porous Car Park Manhole: S111, DS/PN: S27.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	36.2
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	160.9	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	82.600	Membrane Depth (mm)	200

Cellular Storage Manhole: S112, DS/PN: S23.005

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

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Cellular Storage Manhole: S112, DS/PN: S23.005

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	337.0	0.0	1.200	337.0	0.0	1.201	0.0	0.0

Porous Car Park Manhole: S115, DS/PN: S29.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.4
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	37.3	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	81.800	Membrane Depth (mm)	200

Porous Car Park Manhole: S119, DS/PN: S31.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	18.2
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	80.9	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	82.600	Membrane Depth (mm)	200

Porous Car Park Manhole: S123, DS/PN: S32.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	33.2
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	147.6	Slope (1:X)	20.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	81.900	Membrane Depth (mm)	200

Cellular Storage Manhole: S125, DS/PN: S23.007

Invert Level (m)	80.200	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
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)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	370.0	0.0	1.200	370.0	0.0	1.201	0.0	0.0

Complex Manhole: S139, DS/PN: S35.001

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30
Membrane Percolation (mm/hr)	1000	Invert Level (m)	89.300
Max Percolation (l/s)	180.4	Width (m)	40.6
Safety Factor	2.0	Length (m)	16.0

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Porous Car Park

Slope (1:X) 20.0 Evaporation (mm/day) 3
 Depression Storage (mm) 5 Membrane Depth (mm) 200

Porous Car Park

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 60.7
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 269.8 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 89.300 Membrane Depth (mm) 200

Porous Car Park Manhole: S146, DS/PN: S37.001

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 28.8
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 128.0 Slope (1:X) 200.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 85.200 Membrane Depth (mm) 200

Porous Car Park Manhole: S156, DS/PN: S40.001

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 24.3
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 108.0 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 88.627 Membrane Depth (mm) 200

Porous Car Park Manhole: S165, DS/PN: S43.001

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 18.4
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 81.8 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 84.032 Membrane Depth (mm) 200

Porous Car Park Manhole: S182, DS/PN: S45.001

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 53.1
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 236.0 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 81.621 Membrane Depth (mm) 200

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Porous Car Park

Porosity 0.30 Slope (1:X) 0.0
 Invert Level (m) 84.085 Depression Storage (mm) 5
 Width (m) 16.0 Evaporation (mm/day) 3
 Length (m) 28.5 Membrane Depth (mm) 200

Complex Manhole: S214, DS/PN: S54.001

Porous Car Park

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 28.5
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 126.7 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 81.725 Membrane Depth (mm) 200

Porous Car Park

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 26.5
 Membrane Percolation (mm/hr) 1000 Length (m) 16.0
 Max Percolation (l/s) 117.8 Slope (1:X) 20.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 81.725 Membrane Depth (mm) 200

Tank or Pond Manhole: S222, DS/PN: S1.033

Invert Level (m) 78.700

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	2239.0	1.500	2239.0	1.501	0.0

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 32 Number of Storage Structures 34 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
FEH Rainfall Version 2013 Cv (Summer) 1.000
Site Location GB 518095 208017 TL 18095 08017 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
1440, 2160, 2880, 4320
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 35, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S1.000	S1	360 Summer	2	+0%	2/30 Summer				94.138	0.121
S1.001	S2	360 Summer	2	+0%	2/15 Summer				94.138	0.174
S1.002	S3	15 Summer	2	+0%					93.287	-0.175
S1.003	S4	15 Summer	2	+0%	100/15 Summer				92.874	-0.173
S1.004	S5	15 Summer	2	+0%	30/15 Summer				91.970	-0.155
S1.005	S6	15 Summer	2	+0%	30/15 Summer	30/15 Summer			90.239	-0.129
S1.006	S7	15 Summer	2	+0%	30/15 Summer				89.325	-0.184
S1.007	S8	15 Summer	2	+0%	30/15 Summer				89.072	-0.173
S1.008	S9	15 Summer	2	+0%	30/15 Summer				88.514	-0.152
S2.000	S10	15 Summer	2	+0%					90.963	-0.114
S2.001	S11	15 Summer	2	+0%					90.170	-0.170
S2.002	S12	15 Summer	2	+0%					89.953	-0.173
S2.003	S13	15 Summer	2	+0%					89.146	-0.241
S3.000	S14	15 Summer	2	+0%					91.149	-0.111
S3.001	S15	15 Summer	2	+0%					90.539	-0.190
S3.002	S16	15 Summer	2	+0%					89.484	-0.185
S3.003	S17	15 Summer	2	+0%					89.021	-0.260
S3.004	S18	15 Summer	2	+0%					88.551	-0.243
S4.000	S19	360 Summer	2	+0%	2/60 Summer				89.246	0.095
S4.001	S20	360 Summer	2	+0%	2/15 Summer	100/240 Summer			89.246	0.246
S5.000	S21	360 Summer	2	+0%	2/120 Summer				89.158	0.058
S5.001	S22	360 Summer	2	+0%	2/15 Summer				89.158	0.197

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap.					
S1.000	S1	0.000	0.00			0.0	SURCHARGED	
S1.001	S2	0.000	0.02		198	0.4	SURCHARGED	
S1.002	S3	0.000	0.11			5.8	OK	
S1.003	S4	0.000	0.12			10.8	OK	
S1.004	S5	0.000	0.21			21.9	OK	
S1.005	S6	0.000	0.38			36.7	OK	4
S1.006	S7	0.000	0.31			39.8	OK	
S1.007	S8	0.000	0.37			45.5	OK	
S1.008	S9	0.000	0.49			59.4	OK	
S2.000	S10	0.000	0.13			3.3	OK	
S2.001	S11	0.000	0.14			8.8	OK	
S2.002	S12	0.000	0.12			8.8	OK	
S2.003	S13	0.000	0.09			15.7	OK	
S3.000	S14	0.000	0.15			3.5	OK	
S3.001	S15	0.000	0.06			5.7	OK	
S3.002	S16	0.000	0.07			5.7	OK	
S3.003	S17	0.000	0.04			5.8	OK	
S3.004	S18	0.000	0.08			9.8	OK	
S4.000	S19	0.000	0.00			0.0	SURCHARGED	
S4.001	S20	0.000	0.10		246	0.9	SURCHARGED	5
S5.000	S21	0.000	0.00			0.0	SURCHARGED	
S5.001	S22	0.000	0.11		180	1.1	SURCHARGED	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S2.004	S23	15 Summer	2	+0%					87.515	-0.385
S1.009	S24	15 Summer	2	+0%					87.390	-0.436
S1.010	S25	15 Summer	2	+0%					87.002	-0.444
S1.011	S26	15 Summer	2	+0%	100/15 Summer				86.508	-0.414
S6.000	S27	15 Winter	2	+0%	30/15 Summer				86.183	-0.239
S1.012	S28	15 Summer	2	+0%	30/15 Summer				86.120	-0.278
S1.013	S29	720 Winter	2	+0%	30/15 Summer				86.057	-0.248
S1.014	S30	720 Winter	2	+0%	30/15 Summer				86.056	-0.237
S1.015	S31	720 Winter	2	+0%	30/15 Summer				86.056	-0.218
S1.016	S32	720 Winter	2	+0%	30/60 Summer				86.056	-0.120
S1.017	S33	960 Winter	2	+0%	2/600 Summer				86.056	0.013
S7.000	S34	15 Summer	2	+0%	100/15 Summer				87.879	-0.148
S7.001	S35	15 Summer	2	+0%	30/15 Summer				86.103	-0.145
S1.018	S36	960 Winter	2	+0%	2/240 Summer				86.056	0.076
S1.019	S37	15 Summer	2	+0%					85.394	-0.464
S1.020	S38	15 Summer	2	+0%					85.337	-0.413
S1.021	S39	15 Summer	2	+0%					85.269	-0.456
S8.000	S40	15 Summer	2	+0%					87.529	-0.072
S8.001	S41	15 Summer	2	+0%	100/15 Summer				85.314	-0.265
S9.000	S42	240 Summer	2	+0%	2/15 Summer				86.180	0.207
S9.001	S43	240 Summer	2	+0%	2/15 Summer				86.180	0.234
S1.022	S44	15 Summer	2	+0%	100/15 Summer				85.036	-0.370
S1.023	S45	15 Summer	2	+0%	30/15 Summer				84.960	-0.327
S1.024	S46	30 Summer	2	+0%	30/15 Summer				84.905	-0.315
S1.025	S47	30 Summer	2	+0%	30/60 Summer				84.855	-0.335
S1.026	S48	120 Summer	2	+0%	30/30 Summer				84.828	-0.319
S1.027	S49	120 Summer	2	+0%	2/15 Summer				84.822	0.220
S1.028	S50	120 Summer	2	+0%					84.414	-0.416
S1.029	S51	120 Summer	2	+0%					84.243	-0.459
S1.030	S52	120 Summer	2	+0%					80.963	-0.399
S1.031	S53	15 Summer	2	+0%	30/15 Summer				79.186	-0.164
S10.000	S54	15 Summer	2	+0%					89.514	-0.128
S10.001	S55	15 Summer	2	+0%					89.085	-0.183
S10.002	S56	15 Summer	2	+0%					88.720	-0.171
S11.000	S57	15 Summer	2	+0%					89.149	-0.133
S12.000	S58	15 Summer	2	+0%	100/15 Summer				88.067	-0.196
S13.000	S59	240 Summer	2	+0%	2/15 Summer				88.909	0.201
S13.001	S60	240 Summer	2	+0%	2/15 Summer				88.909	0.224
S11.001	S61	15 Summer	2	+0%	30/15 Summer				87.908	-0.176
S11.002	S62	15 Summer	2	+0%	30/15 Summer				87.772	-0.240
S11.003	S63	15 Summer	2	+0%	30/15 Summer				87.757	-0.223
S10.003	S64	360 Winter	2	+0%	30/15 Summer				87.755	-0.192
S14.000	S65	15 Summer	2	+0%	30/360 Summer				87.861	-0.197
S10.004	S66	360 Winter	2	+0%	30/60 Summer				87.754	-0.100
S10.005	S67	15 Summer	2	+0%					86.780	-0.319
S10.006	S68	15 Summer	2	+0%	100/15 Summer				86.336	-0.299
S15.000	S69	360 Summer	2	+0%	2/30 Summer				86.950	0.110
S15.001	S70	360 Summer	2	+0%	2/15 Summer				86.950	0.150
S15.002	S71	15 Summer	2	+0%	30/15 Summer				86.439	-0.161

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Half Drain Pipe		Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
S2.004	S23	0.000	0.16		34.2	OK	
S1.009	S24	0.000	0.17		103.5	OK	
S1.010	S25	0.000	0.15		108.7	OK	
S1.011	S26	0.000	0.21		119.5	OK	
S6.000	S27	0.000	0.67		106.3	OK	
S1.012	S28	0.000	0.43		229.4	OK	
S1.013	S29	0.000	0.08		31.3	OK	
S1.014	S30	0.000	0.10		31.1	OK	
S1.015	S31	0.000	0.06		30.9	OK	
S1.016	S32	0.000	0.04		29.5	OK	
S1.017	S33	0.000	0.04		23.5	SURCHARGED	
S7.000	S34	0.000	0.25		20.9	OK	
S7.001	S35	0.000	0.51		51.8	OK	
S1.018	S36	0.000	0.01		3.6	SURCHARGED	
S1.019	S37	0.000	0.08		20.5	OK	
S1.020	S38	0.000	0.21		33.2	OK	
S1.021	S39	0.000	0.13		34.4	OK	
S8.000	S40	0.000	0.17		1.6	OK	
S8.001	S41	0.000	0.18		25.0	OK	
S9.000	S42	0.000	0.01		0.0	SURCHARGED	
S9.001	S43	0.000	0.31	132	3.4	SURCHARGED	
S1.022	S44	0.000	0.24		66.4	OK	
S1.023	S45	0.000	0.30		77.0	OK	
S1.024	S46	0.000	0.46		76.2	OK	
S1.025	S47	0.000	0.35		75.3	OK	
S1.026	S48	0.000	0.20		54.4	OK	
S1.027	S49	0.000	1.69		22.9	SURCHARGED	
S1.028	S50	0.000	0.03		22.9	OK	
S1.029	S51	0.000	0.01		22.9	OK	
S1.030	S52	0.000	0.03		22.9	OK	
S1.031	S53	0.000	0.17		21.6	OK	
S10.000	S54	0.000	0.05		1.2	OK	
S10.001	S55	0.000	0.08		5.2	OK	
S10.002	S56	0.000	0.13		9.2	OK	
S11.000	S57	0.000	0.03		0.8	OK	
S12.000	S58	0.000	0.04		1.4	OK	
S13.000	S59	0.000	0.01		0.0	SURCHARGED	
S13.001	S60	0.000	0.06	112	0.6	SURCHARGED	
S11.001	S61	0.000	0.35		21.4	OK	
S11.002	S62	0.000	0.23		21.4	OK	
S11.003	S63	0.000	0.27		21.2	OK	
S10.003	S64	0.000	0.08		7.8	OK	
S14.000	S65	0.000	0.04		1.6	OK	
S10.004	S66	0.000	0.01		1.2	OK	
S10.005	S67	0.000	0.05		14.4	OK	
S10.006	S68	0.000	0.09		21.7	OK	
S15.000	S69	0.000	0.00		0.0	SURCHARGED	
S15.001	S70	0.000	0.03	204	0.4	SURCHARGED	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.002	S71	0.000	0.18		6.8	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S10.007	S72	15	Summer	2	+0%	30/15	Summer		86.031	-0.227
S16.000	S73	15	Summer	2	+0%	100/15	Summer		87.658	-0.201
S16.001	S74	15	Summer	2	+0%	30/15	Summer		87.050	-0.150
S16.002	S75	15	Summer	2	+0%	30/15	Summer		86.639	-0.136
S10.008	S76	15	Summer	2	+0%	30/15	Summer		85.956	-0.235
S10.009	S77	15	Summer	2	+0%	30/15	Summer		85.884	-0.230
S10.010	S78	15	Summer	2	+0%	100/15	Summer		85.681	-0.313
S10.011	S79	15	Summer	2	+0%	100/15	Summer		84.322	-0.293
S17.000	S80	15	Summer	2	+0%				87.628	-0.217
S17.001	S81	15	Summer	2	+0%				86.018	-0.182
S18.000	S82	15	Summer	2	+0%	30/15	Summer		87.774	-0.092
S18.001	S83	15	Summer	2	+0%	30/15	Summer		87.444	-0.104
S18.002	S84	15	Summer	2	+0%	30/15	Summer	30/15 Summer	85.946	-0.054
S19.000	S85	15	Summer	2	+0%	30/30	Summer		86.571	-0.100
S19.001	S86	240	Summer	2	+0%	2/15	Summer	100/180 Summer	86.545	0.239
S17.002	S87	15	Summer	2	+0%	100/15	Summer		85.405	-0.195
S20.000	S88	15	Summer	2	+0%	30/15	Summer		86.878	-0.087
S20.001	S89	15	Summer	2	+0%				86.305	-0.238
S20.002	S90	15	Summer	2	+0%	100/15	Summer		85.273	-0.227
S21.000	S91	180	Summer	2	+0%	2/120	Summer		85.618	0.018
S21.001	S92	180	Summer	2	+0%	2/15	Summer	100/180 Summer	85.618	0.230
S17.003	S93	15	Summer	2	+0%	30/15	Summer		84.525	-0.225
S17.004	S94	15	Summer	2	+0%	100/15	Summer		83.847	-0.286
S10.012	S95	15	Summer	2	+0%	100/15	Summer		83.388	-0.429
S22.000	S96	240	Summer	2	+0%	2/15	Summer		82.188	0.152
S22.001	S97	240	Summer	2	+0%	2/15	Summer	100/120 Summer	82.188	0.265
S10.013	S98	15	Summer	2	+0%	30/15	Summer	100/15 Summer	80.915	-0.375
S10.014	S99	15	Summer	2	+0%	30/15	Summer		80.148	-0.408
S23.000	S100	480	Summer	2	+0%	2/60	Summer		85.022	0.102
S23.001	S101	480	Summer	2	+0%	2/15	Summer		85.022	0.172
S23.002	S102	15	Summer	2	+0%				84.061	-0.259
S24.000	S103	480	Summer	2	+0%	2/30	Summer		85.368	0.120
S24.001	S104	360	Summer	2	+0%	2/15	Summer		85.368	0.168
S23.003	S105	15	Summer	2	+0%				83.073	-0.227
S23.004	S106	1440	Summer	2	+0%	30/480	Summer		80.852	-0.348
S25.000	S107	15	Summer	2	+0%				82.803	-0.100
S26.000	S108	360	Summer	2	+0%	2/15	Summer		83.112	0.162
S26.001	S109	360	Summer	2	+0%	2/15	Summer		83.112	0.212
S27.000	S110	480	Summer	2	+0%	2/15	Summer		82.912	0.160
S27.001	S111	480	Summer	2	+0%	2/15	Summer		82.912	0.212
S23.005	S112	1440	Summer	2	+0%	2/960	Summer		80.852	0.009
S28.000	S113	15	Summer	2	+0%				82.997	-0.103
S29.000	S114	180	Summer	2	+0%	30/15	Summer		82.007	-0.093
S29.001	S115	180	Summer	2	+0%	2/15	Summer		82.011	0.111
S23.006	S116	15	Summer	2	+0%	30/120	Summer		80.519	-0.190
S30.000	S117	15	Summer	2	+0%	100/15	Summer		81.701	-0.099
S31.000	S118	240	Summer	2	+0%	30/15	Summer		82.689	-0.045
S31.001	S119	240	Summer	2	+0%	30/15	Summer		82.689	-0.011
S30.001	S120	15	Summer	2	+0%	30/15	Summer		81.398	-0.125

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Half Drain Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
S10.007	S72	0.000	0.33		30.7	OK	
S16.000	S73	0.000	0.03		1.6	OK	
S16.001	S74	0.000	0.24		14.4	OK	
S16.002	S75	0.000	0.32		23.6	OK	
S10.008	S76	0.000	0.40		55.7	OK	
S10.009	S77	0.000	0.47		73.1	OK	
S10.010	S78	0.000	0.20		93.3	OK	
S10.011	S79	0.000	0.26		129.5	OK	
S17.000	S80	0.000	0.01		0.8	OK	
S17.001	S81	0.000	0.08		7.8	OK	
S18.000	S82	0.000	0.32		7.6	OK	
S18.001	S83	0.000	0.20		7.6	OK	
S18.002	S84	0.000	0.72		21.4	OK	8
S19.000	S85	0.000	0.00		0.0	OK	
S19.001	S86	0.000	0.15	148	1.3	SURCHARGED	5
S17.002	S87	0.000	0.26		34.4	OK	
S20.000	S88	0.000	0.36		8.0	OK	
S20.001	S89	0.000	0.09		16.8	OK	
S20.002	S90	0.000	0.13		25.1	OK	
S21.000	S91	0.000	0.00		0.0	SURCHARGED	
S21.001	S92	0.000	0.35	93	3.5	SURCHARGED	4
S17.003	S93	0.000	0.33		72.4	OK	
S17.004	S94	0.000	0.29		90.6	OK	
S10.012	S95	0.000	0.18		225.3	OK	
S22.000	S96	0.000	0.00		0.0	SURCHARGED	
S22.001	S97	0.000	0.02	176	0.5	SURCHARGED	14
S10.013	S98	0.000	0.29		251.6	OK	1
S10.014	S99	0.000	0.24		270.8	OK	
S23.000	S100	0.000	0.00		0.0	SURCHARGED	
S23.001	S101	0.000	0.03	312	0.4	SURCHARGED	
S23.002	S102	0.000	0.05		11.4	OK	
S24.000	S103	0.000	0.00		0.0	SURCHARGED	
S24.001	S104	0.000	0.02	264	0.4	SURCHARGED	
S23.003	S105	0.000	0.14		37.2	OK	
S23.004	S106	0.000	0.01		4.1	OK	
S25.000	S107	0.000	0.00		0.0	OK	
S26.000	S108	0.000	0.00		0.0	SURCHARGED	
S26.001	S109	0.000	0.03	222	0.5	SURCHARGED	
S27.000	S110	0.000	0.00		0.0	SURCHARGED	
S27.001	S111	0.000	0.01	336	0.5	SURCHARGED	
S23.005	S112	0.000	0.02	792	1.0	SURCHARGED	
S28.000	S113	0.000	0.21		9.1	OK	
S29.000	S114	0.000	0.00		0.0	OK	
S29.001	S115	0.000	0.05	72	0.4	SURCHARGED	
S23.006	S116	0.000	0.28		25.9	OK	
S30.000	S117	0.000	0.25		4.5	OK	
S31.000	S118	0.000	0.00		0.0	OK	
S31.001	S119	0.000	0.16	112	2.1	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S30.001	S120	0.000	0.40		11.9	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S30.002	S121	15 Summer	2	+0%					81.322	-0.159
S32.000	S122	360 Summer	2	+0%	2/30 Summer				82.165	0.114
S32.001	S123	360 Summer	2	+0%	2/15 Summer				82.165	0.165
S30.003	S124	960 Winter	2	+0%	30/180 Summer				80.511	-0.289
S23.007	S125	960 Winter	2	+0%	2/480 Summer				80.511	0.034
S23.008	S126	15 Summer	2	+0%	30/15 Summer				80.136	-0.214
S10.015	S127	15 Summer	2	+0%	30/15 Summer				79.814	-0.397
S10.016	S128	15 Summer	2	+0%	30/15 Summer				79.629	-0.410
S10.017	S129	15 Summer	2	+0%	30/15 Summer	100/15 Summer			79.392	-0.284
S33.000	S130	15 Summer	2	+0%					93.539	-0.116
S33.001	S131	15 Summer	2	+0%					93.274	-0.171
S33.002	S132	15 Summer	2	+0%	100/15 Summer				92.994	-0.173
S33.003	S133	15 Summer	2	+0%	30/15 Summer	100/15 Summer			91.426	-0.137
S33.004	S134	15 Summer	2	+0%	30/15 Summer				89.642	-0.186
S34.000	S135	15 Summer	2	+0%					92.804	-0.225
S34.001	S136	15 Summer	2	+0%					91.206	-0.165
S34.002	S137	15 Summer	2	+0%	100/15 Summer				89.741	-0.227
S35.000	S138	15 Summer	2	+0%	100/120 Summer				89.700	-0.100
S35.001	S139	360 Summer	2	+0%	2/30 Summer				89.523	0.123
S33.005	S140	15 Summer	2	+0%	30/15 Summer				88.358	-0.282
S36.000	S141	15 Summer	2	+0%					91.350	-0.202
S36.001	S142	15 Summer	2	+0%					89.923	-0.168
S36.002	S143	15 Summer	2	+0%	30/15 Summer				87.825	-0.182
S33.006	S144	15 Summer	2	+0%	30/15 Summer				87.458	-0.287
S37.000	S145	480 Summer	2	+0%	30/120 Summer				85.300	-0.074
S37.001	S146	480 Summer	2	+0%	30/15 Summer				85.300	0.000
S37.002	S147	15 Summer	2	+0%	30/15 Summer				84.809	-0.191
S37.003	S148	15 Summer	2	+0%	30/15 Summer				84.747	-0.186
S33.007	S149	15 Summer	2	+0%	100/15 Summer				84.490	-0.402
S33.008	S150	15 Summer	2	+0%					83.762	-0.408
S38.000	S151	15 Summer	2	+0%	30/15 Summer				83.862	-0.067
S38.001	S152	15 Summer	2	+0%					83.618	-0.171
S33.009	S153	15 Summer	2	+0%					82.937	-0.434
S39.000	S154	15 Summer	2	+0%					89.561	-0.113
S40.000	S155	15 Summer	2	+0%	30/60 Summer				88.957	-0.100
S40.001	S156	360 Summer	2	+0%	2/15 Summer				88.915	0.188
S39.001	S157	15 Summer	2	+0%					87.929	-0.172
S41.000	S158	15 Summer	2	+0%					89.096	-0.104
S39.002	S159	15 Summer	2	+0%	100/15 Summer				86.291	-0.216
S39.003	S160	15 Summer	2	+0%	30/15 Summer	100/15 Summer			84.044	-0.210
S39.004	S161	15 Summer	2	+0%	30/15 Summer				81.601	-0.149
S42.000	S162	15 Summer	2	+0%					86.267	-0.133
S42.001	S163	15 Summer	2	+0%					85.681	-0.119
S43.000	S164	15 Summer	2	+0%	30/15 Summer				84.300	-0.100
S43.001	S165	180 Summer	2	+0%	2/15 Summer				84.299	0.167
S42.002	S166	15 Summer	2	+0%					83.292	-0.165
S42.003	S167	15 Summer	2	+0%	100/15 Summer				81.451	-0.149
S39.005	S168	960 Summer	2	+0%	30/360 Summer				80.418	-0.482
S44.000	S169	15 Summer	2	+0%					93.553	-0.162

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Half Drain Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
S30.002	S121	0.000	0.19		12.0	OK	
S32.000	S122	0.000	0.00		0.0	SURCHARGED	
S32.001	S123	0.000	0.02	252	0.4	SURCHARGED	
S30.003	S124	0.000	0.02		2.9	OK	
S23.007	S125	0.000	0.03		1.8	SURCHARGED	
S23.008	S126	0.000	0.18		14.9	OK	
S10.015	S127	0.000	0.36		301.0	OK	
S10.016	S128	0.000	0.25		304.0	OK	
S10.017	S129	0.000	0.52		287.9	OK	
S33.000	S130	0.000	0.11		2.0	OK	
S33.001	S131	0.000	0.13		8.0	OK	
S33.002	S132	0.000	0.12		10.8	OK	
S33.003	S133	0.000	0.32		30.1	OK	3
S33.004	S134	0.000	0.30		45.1	OK	
S34.000	S135	0.000	0.00		0.0	OK	
S34.001	S136	0.000	0.16		16.8	OK	
S34.002	S137	0.000	0.13		28.0	OK	
S35.000	S138	0.000	0.00		0.0	OK	
S35.001	S139	0.000	0.16	174	1.5	SURCHARGED	
S33.005	S140	0.000	0.30		104.9	OK	
S36.000	S141	0.000	0.02		2.0	OK	
S36.001	S142	0.000	0.15		15.0	OK	
S36.002	S143	0.000	0.32		32.1	OK	
S33.006	S144	0.000	0.28		163.5	OK	
S37.000	S145	0.000	0.00		0.0	OK	
S37.001	S146	0.000	0.02	408	0.3	OK	
S37.002	S147	0.000	0.28		17.0	OK	
S37.003	S148	0.000	0.31		17.0	OK	
S33.007	S149	0.000	0.24		191.7	OK	
S33.008	S150	0.000	0.22		201.4	OK	
S38.000	S151	0.000	0.58		9.2	OK	
S38.001	S152	0.000	0.13		9.2	OK	
S33.009	S153	0.000	0.17		213.9	OK	
S39.000	S154	0.000	0.14		6.2	OK	
S40.000	S155	0.000	0.00		0.0	OK	
S40.001	S156	0.000	0.02	216	0.4	SURCHARGED	
S39.001	S157	0.000	0.13		13.5	OK	
S41.000	S158	0.000	0.21		9.3	OK	
S39.002	S159	0.000	0.17		44.3	OK	
S39.003	S160	0.000	0.19		61.8	OK	3
S39.004	S161	0.000	0.50		62.3	OK	
S42.000	S162	0.000	0.03		1.0	OK	
S42.001	S163	0.000	0.09		3.6	OK	
S43.000	S164	0.000	0.00		0.0	OK	
S43.001	S165	0.000	0.07	87	0.8	SURCHARGED	
S42.002	S166	0.000	0.16		20.1	OK	
S42.003	S167	0.000	0.24		19.9	OK	
S39.005	S168	0.000	0.02		11.2	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S44.000	S169	0.000	0.17		8.1	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S44.001	S170	15 Summer	2	+0%					93.317	-0.161
S44.002	S171	15 Summer	2	+0%	100/15 Summer				92.115	-0.202
S44.003	S172	15 Summer	2	+0%	30/15 Summer				91.708	-0.188
S44.004	S173	15 Summer	2	+0%	100/15 Summer				91.326	-0.207
S44.005	S174	15 Summer	2	+0%	100/15 Summer				89.796	-0.204
S44.006	S175	15 Summer	2	+0%	100/15 Summer				88.004	-0.196
S44.007	S176	15 Summer	2	+0%					87.193	-0.207
S44.008	S177	15 Summer	2	+0%	100/15 Summer				83.841	-0.259
S44.009	S178	15 Summer	2	+0%	100/15 Summer				83.138	-0.262
S44.010	S179	15 Summer	2	+0%	30/15 Summer				82.351	-0.249
S44.011	S180	15 Summer	2	+0%	30/15 Summer				81.760	-0.240
S45.000	S181	120 Summer	2	+0%	2/15 Summer				81.932	0.166
S45.001	S182	120 Summer	2	+0%	2/15 Summer	100/120 Summer			81.932	0.211
S44.012	S183	15 Summer	2	+0%	100/360 Summer				80.848	-0.364
S46.000	S184	360 Summer	2	+0%	2/30 Summer				81.831	0.113
S46.001	S185	360 Summer	2	+0%	2/15 Summer				81.831	0.176
S39.006	S186	960 Summer	2	+0%	2/180 Summer				80.418	0.126
S39.007	S187	120 Summer	2	+0%	30/15 Summer				79.834	-0.258
S47.000	S188	360 Summer	2	+0%	2/120 Summer				81.343	0.052
S47.001	S189	360 Summer	2	+0%	2/15 Summer				81.343	0.161
S39.008	S190	120 Summer	2	+0%	30/15 Summer				79.696	-0.267
S33.010	S191	15 Summer	2	+0%	30/15 Summer				79.491	-0.184
S33.011	S192	15 Summer	2	+0%	30/720 Summer				79.251	-0.460
S48.000	S193	360 Summer	2	+0%	30/15 Summer				80.739	-0.003
S48.001	S194	360 Summer	2	+0%	2/15 Summer				80.739	0.163
S48.002	S195	15 Summer	2	+0%	30/480 Summer				79.126	-0.549
S48.003	S196	15 Summer	2	+0%	30/360 Summer				79.126	-0.475
S33.012	S197	720 Winter	2	+0%	30/480 Summer				79.119	-0.531
S33.013	S198	720 Winter	2	+0%	30/240 Winter				79.118	-0.455
S49.000	S199	15 Summer	2	+0%	30/15 Summer	30/15 Summer			80.002	-0.039
S49.001	S200	15 Summer	2	+0%	30/15 Summer	100/15 Summer			79.870	-0.030
S33.014	S201	15 Summer	2	+0%	30/15 Summer				79.148	-0.351
S33.015	S202	15 Summer	2	+0%	30/15 Summer				79.165	-0.286
S50.000	S203	15 Summer	2	+0%	30/15 Summer	100/15 Summer			84.943	-0.132
S50.001	S204	15 Summer	2	+0%	30/15 Summer	100/15 Summer			84.291	-0.141
S50.002	S205	15 Summer	2	+0%	30/15 Summer				84.096	-0.186
S51.000	S206	15 Summer	2	+0%	30/15 Summer	100/15 Summer			83.668	-0.079
S51.001	S207	15 Summer	2	+0%	30/15 Summer				83.390	-0.154
S52.000	S208	720 Summer	2	+0%	30/30 Summer				84.191	-0.018
S52.001	S209	720 Summer	2	+0%	2/360 Summer				84.191	0.006
S50.003	S210	15 Summer	2	+0%	30/15 Summer	100/15 Summer			83.196	-0.177
S53.000	S211	15 Summer	2	+0%	30/15 Summer	100/15 Summer			81.276	-0.142
S53.001	S212	15 Summer	2	+0%	30/15 Summer				80.927	-0.115
S54.000	S213	360 Summer	2	+0%	2/60 Summer				81.940	0.092
S54.001	S214	360 Summer	2	+0%	2/30 Summer				81.940	0.115
S50.004	S215	15 Summer	2	+0%	30/15 Summer				80.727	-0.191
S50.005	S216	15 Summer	2	+0%	30/15 Summer				80.317	-0.283
S50.006	S217	15 Summer	2	+0%	30/15 Summer				79.894	-0.272
S55.000	S218	15 Summer	2	+0%	30/15 Summer				79.547	-0.225

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Half Drain Pipe		Status	Level Exceeded
		Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
S44.001	S170	0.000	0.18		13.9	OK	
S44.002	S171	0.000	0.23		32.6	OK	
S44.003	S172	0.000	0.29		37.1	OK	
S44.004	S173	0.000	0.21		48.6	OK	
S44.005	S174	0.000	0.22		57.8	OK	
S44.006	S175	0.000	0.26		58.0	OK	
S44.007	S176	0.000	0.21		58.1	OK	
S44.008	S177	0.000	0.21		68.2	OK	
S44.009	S178	0.000	0.20		68.0	OK	
S44.010	S179	0.000	0.25		71.9	OK	
S44.011	S180	0.000	0.28		75.6	OK	
S45.000	S181	0.000	0.02		0.1	SURCHARGED	
S45.001	S182	0.000	0.63	44	7.8	SURCHARGED	4
S44.012	S183	0.000	0.20		88.2	OK	
S46.000	S184	0.000	0.00		0.0	SURCHARGED	
S46.001	S185	0.000	0.05	186	1.7	SURCHARGED	
S39.006	S186	0.000	0.02		2.5	SURCHARGED	
S39.007	S187	0.000	0.05		3.2	OK	
S47.000	S188	0.000	0.00		0.0	SURCHARGED	
S47.001	S189	0.000	0.03	216	0.4	SURCHARGED	
S39.008	S190	0.000	0.03		3.5	OK	
S33.010	S191	0.000	0.87		232.5	OK	
S33.011	S192	0.000	0.33		231.1	OK	
S48.000	S193	0.000	0.00		0.0	OK	
S48.001	S194	0.000	0.02	192	0.9	SURCHARGED	
S48.002	S195	0.000	0.00		1.1	OK	
S48.003	S196	0.000	0.19		38.0	OK	
S33.012	S197	0.000	0.04		19.1	OK	
S33.013	S198	0.000	0.04		19.4	OK	
S49.000	S199	0.000	0.68		5.3	OK	7
S49.001	S200	0.000	0.82		8.7	OK	3
S33.014	S201	0.000	0.04		15.0	OK	
S33.015	S202	0.000	0.06		19.7	OK	
S50.000	S203	0.000	0.35		18.8	OK	3
S50.001	S204	0.000	0.54		41.5	OK	3
S50.002	S205	0.000	0.30		51.1	OK	
S51.000	S206	0.000	0.45		8.0	OK	3
S51.001	S207	0.000	0.21		8.0	OK	
S52.000	S208	0.000	0.00		0.0	OK	
S52.001	S209	0.000	0.02	720	0.3	SURCHARGED	
S50.003	S210	0.000	0.35		76.1	OK	1
S53.000	S211	0.000	0.28		14.8	OK	1
S53.001	S212	0.000	0.48		15.0	OK	
S54.000	S213	0.000	0.01		0.0	SURCHARGED	
S54.001	S214	0.000	0.07	180	0.7	SURCHARGED	
S50.004	S215	0.000	0.48		105.9	OK	
S50.005	S216	0.000	0.30		110.2	OK	
S50.006	S217	0.000	0.33		110.7	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S55.000	S218	0.000	0.00		0.0	OK	

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S50.007	S219	15 Summer	2	+0%	30/15 Summer				79.244	-0.203
S50.008	S220	15 Summer	2	+0%	30/15 Summer				79.219	-0.255
S1.032	S221	15 Summer	2	+0%	30/15 Summer				79.178	-0.349
S1.033	S222	720 Winter	2	+0%	2/15 Summer				79.117	0.930

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S50.007	S219	0.000	0.64			132.9	OK	
S50.008	S220	0.000	0.49			128.1	OK	
S1.032	S221	0.000	0.73			341.3	OK	
S1.033	S222	0.000	0.57			21.0	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 32 Number of Storage Structures 34 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
FEH Rainfall Version 2013 Cv (Summer) 1.000
Site Location GB 518095 208017 TL 18095 08017 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
1440, 2160, 2880, 4320
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 35, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S1.000	S1	240 Winter	30	+35%	2/30 Summer				94.399	0.382
S1.001	S2	240 Winter	30	+35%	2/15 Summer				94.399	0.435
S1.002	S3	15 Summer	30	+35%					93.346	-0.116
S1.003	S4	15 Summer	30	+35%	100/15 Summer				92.936	-0.111
S1.004	S5	15 Summer	30	+35%	30/15 Summer				92.434	0.309
S1.005	S6	15 Summer	30	+35%	30/15 Summer	30/15 Summer			91.568	1.200
S1.006	S7	15 Summer	30	+35%	30/15 Summer				90.268	0.759
S1.007	S8	15 Summer	30	+35%	30/15 Summer				90.003	0.758
S1.008	S9	15 Summer	30	+35%	30/15 Summer				89.199	0.533
S2.000	S10	15 Summer	30	+35%					90.993	-0.084
S2.001	S11	15 Summer	30	+35%					90.229	-0.111
S2.002	S12	15 Summer	30	+35%					90.007	-0.119
S2.003	S13	15 Summer	30	+35%					89.207	-0.180
S3.000	S14	15 Summer	30	+35%					91.184	-0.076
S3.001	S15	15 Summer	30	+35%					90.573	-0.156
S3.002	S16	15 Summer	30	+35%					89.522	-0.147
S3.003	S17	15 Summer	30	+35%					89.060	-0.221
S3.004	S18	15 Summer	30	+35%					88.607	-0.187
S4.000	S19	240 Winter	30	+35%	2/60 Summer				89.552	0.401

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PN	US/MH Name	Flooded		Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap.					
S1.000	S1	0.000	0.00			0.0	SURCHARGED	
S1.001	S2	0.000	0.03			0.6	FLOOD RISK	
S1.002	S3	0.000	0.47			24.7	OK	
S1.003	S4	0.000	0.51			45.5	OK	
S1.004	S5	0.000	0.78			82.6	SURCHARGED	
S1.005	S6	0.009	1.23			120.5	FLOOD	4
S1.006	S7	0.000	1.01			130.3	SURCHARGED	
S1.007	S8	0.000	1.18			145.1	SURCHARGED	
S1.008	S9	0.000	1.52			185.5	SURCHARGED	
S2.000	S10	0.000	0.39			10.1	OK	
S2.001	S11	0.000	0.51			33.1	OK	
S2.002	S12	0.000	0.45			32.8	OK	
S2.003	S13	0.000	0.33			60.9	OK	
S3.000	S14	0.000	0.48			10.8	OK	
S3.001	S15	0.000	0.21			20.1	OK	
S3.002	S16	0.000	0.26			20.0	OK	
S3.003	S17	0.000	0.15			19.8	OK	
S3.004	S18	0.000	0.30			36.7	OK	
S4.000	S19	0.000	0.00			0.0	FLOOD RISK	

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PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S4.001	S20	240 Winter	30	+35%	2/15 Summer	100/240 Summer			89.552	0.552
S5.000	S21	240 Winter	30	+35%	2/120 Summer				89.435	0.335
S5.001	S22	240 Winter	30	+35%	2/15 Summer				89.435	0.474
S2.004	S23	15 Summer	30	+35%					87.677	-0.223
S1.009	S24	15 Summer	30	+35%					87.554	-0.272
S1.010	S25	15 Summer	30	+35%					87.155	-0.291
S1.011	S26	15 Summer	30	+35%	100/15 Summer				86.803	-0.119
S6.000	S27	1440 Winter	30	+35%	30/15 Summer				86.779	0.357
S1.012	S28	1440 Winter	30	+35%	30/15 Summer				86.779	0.381
S1.013	S29	1440 Winter	30	+35%	30/15 Summer				86.779	0.474
S1.014	S30	1440 Winter	30	+35%	30/15 Summer				86.779	0.486
S1.015	S31	2160 Winter	30	+35%	30/15 Summer				86.779	0.505
S1.016	S32	2160 Winter	30	+35%	30/60 Summer				86.779	0.603
S1.017	S33	2160 Winter	30	+35%	2/600 Summer				86.778	0.735
S7.000	S34	15 Summer	30	+35%	100/15 Summer				87.966	-0.061
S7.001	S35	15 Summer	30	+35%	30/15 Summer				86.908	0.660
S1.018	S36	2160 Winter	30	+35%	2/240 Summer				86.778	0.798
S1.019	S37	15 Summer	30	+35%					85.570	-0.288
S1.020	S38	15 Summer	30	+35%					85.540	-0.210
S1.021	S39	15 Summer	30	+35%					85.463	-0.262
S8.000	S40	15 Summer	30	+35%					87.553	-0.048
S8.001	S41	15 Summer	30	+35%	100/15 Summer				85.457	-0.122
S9.000	S42	180 Winter	30	+35%	2/15 Summer				86.491	0.518
S9.001	S43	180 Winter	30	+35%	2/15 Summer				86.491	0.545
S1.022	S44	15 Summer	30	+35%	100/15 Summer				85.391	-0.015
S1.023	S45	15 Summer	30	+35%	30/15 Summer				85.303	0.016
S1.024	S46	120 Summer	30	+35%	30/15 Summer				85.245	0.025
S1.025	S47	120 Summer	30	+35%	30/60 Summer				85.239	0.049
S1.026	S48	120 Summer	30	+35%	30/30 Summer				85.232	0.085
S1.027	S49	120 Summer	30	+35%	2/15 Summer				85.224	0.622
S1.028	S50	120 Summer	30	+35%					84.435	-0.395
S1.029	S51	120 Summer	30	+35%					84.253	-0.449
S1.030	S52	120 Summer	30	+35%					80.972	-0.390
S1.031	S53	1440 Winter	30	+35%	30/15 Summer				79.768	0.418
S10.000	S54	15 Summer	30	+35%					89.533	-0.109
S10.001	S55	15 Summer	30	+35%					89.129	-0.139
S10.002	S56	15 Summer	30	+35%					88.782	-0.109
S11.000	S57	15 Summer	30	+35%					89.163	-0.119
S12.000	S58	15 Summer	30	+35%	100/15 Summer				88.239	-0.024
S13.000	S59	180 Winter	30	+35%	2/15 Summer				89.241	0.533
S13.001	S60	180 Winter	30	+35%	2/15 Summer				89.241	0.556
S11.001	S61	15 Summer	30	+35%	30/15 Summer				88.230	0.146
S11.002	S62	15 Summer	30	+35%	30/15 Summer				88.100	0.088
S11.003	S63	720 Winter	30	+35%	30/15 Summer				88.097	0.117
S10.003	S64	720 Winter	30	+35%	30/15 Summer				88.096	0.149
S14.000	S65	720 Winter	30	+35%	30/360 Summer				88.095	0.037
S10.004	S66	720 Winter	30	+35%	30/60 Summer				88.095	0.241
S10.005	S67	15 Summer	30	+35%					86.840	-0.259
S10.006	S68	15 Summer	30	+35%	100/15 Summer				86.596	-0.039

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PN	US/MH Name	Flooded		Flow / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap.					
S4.001	S20	0.000	0.15			1.3	FLOOD RISK	5
S5.000	S21	0.000	0.00			0.0	SURCHARGED	
S5.001	S22	0.000	0.16			1.6	FLOOD RISK	
S2.004	S23	0.000	0.60			129.8	OK	
S1.009	S24	0.000	0.57			352.6	OK	
S1.010	S25	0.000	0.52			373.8	OK	
S1.011	S26	0.000	0.70			402.6	OK	
S6.000	S27	0.000	0.13			20.2	SURCHARGED	
S1.012	S28	0.000	0.08			42.5	SURCHARGED	
S1.013	S29	0.000	0.10			40.9	SURCHARGED	
S1.014	S30	0.000	0.13			40.6	SURCHARGED	
S1.015	S31	0.000	0.05			29.3	SURCHARGED	
S1.016	S32	0.000	0.04			28.8	SURCHARGED	
S1.017	S33	0.000	0.05			29.0	SURCHARGED	
S7.000	S34	0.000	0.77			65.2	OK	
S7.001	S35	0.000	1.83			184.6	SURCHARGED	
S1.018	S36	0.000	0.01			3.8	SURCHARGED	
S1.019	S37	0.000	0.25			66.3	OK	
S1.020	S38	0.000	0.73			115.2	OK	
S1.021	S39	0.000	0.44			115.0	OK	
S8.000	S40	0.000	0.53			5.1	OK	
S8.001	S41	0.000	0.76			102.8	OK	
S9.000	S42	0.000	0.01			0.0	FLOOD RISK	
S9.001	S43	0.000	0.43			4.8	FLOOD RISK	
S1.022	S44	0.000	0.77			209.9	OK	
S1.023	S45	0.000	0.99			252.0	SURCHARGED	
S1.024	S46	0.000	0.86			143.0	SURCHARGED	
S1.025	S47	0.000	0.64			139.3	SURCHARGED	
S1.026	S48	0.000	0.52			138.0	SURCHARGED	
S1.027	S49	0.000	2.48			33.5	SURCHARGED	
S1.028	S50	0.000	0.05			33.5	OK	
S1.029	S51	0.000	0.01			33.5	OK	
S1.030	S52	0.000	0.04			33.5	OK	
S1.031	S53	0.000	0.16			20.0	SURCHARGED	
S10.000	S54	0.000	0.16			3.8	OK	
S10.001	S55	0.000	0.31			20.4	OK	
S10.002	S56	0.000	0.52			36.6	OK	
S11.000	S57	0.000	0.09			2.5	OK	
S12.000	S58	0.000	0.15			5.6	OK	
S13.000	S59	0.000	0.01			0.0	FLOOD RISK	
S13.001	S60	0.000	0.09		174	0.9	FLOOD RISK	
S11.001	S61	0.000	1.26			77.2	SURCHARGED	
S11.002	S62	0.000	0.85			77.9	SURCHARGED	
S11.003	S63	0.000	0.08			6.1	SURCHARGED	
S10.003	S64	0.000	0.11			10.7	SURCHARGED	
S14.000	S65	0.000	0.01			0.4	SURCHARGED	
S10.004	S66	0.000	0.01			1.2	SURCHARGED	
S10.005	S67	0.000	0.21			56.0	OK	

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PN	US/MH Name	Flooded		Flow / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Cap.					
S10.006	S68	0.000	0.33			78.5	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S15.000	S69	240 Winter	30	+35%	2/30 Summer				87.191	0.351
S15.001	S70	240 Winter	30	+35%	2/15 Summer				87.191	0.391
S15.002	S71	15 Summer	30	+35%	30/15 Summer				86.609	0.009
S10.007	S72	15 Summer	30	+35%	30/15 Summer				86.556	0.298
S16.000	S73	15 Summer	30	+35%	100/15 Summer				87.678	-0.181
S16.001	S74	15 Summer	30	+35%	30/15 Summer				87.410	0.210
S16.002	S75	15 Summer	30	+35%	30/15 Summer				87.146	0.371
S10.008	S76	15 Summer	30	+35%	30/15 Summer				86.472	0.281
S10.009	S77	15 Summer	30	+35%	30/15 Summer				86.318	0.204
S10.010	S78	15 Summer	30	+35%	100/15 Summer				85.832	-0.162
S10.011	S79	15 Summer	30	+35%	100/15 Summer				84.527	-0.088
S17.000	S80	15 Summer	30	+35%					87.643	-0.202
S17.001	S81	15 Summer	30	+35%					86.064	-0.136
S18.000	S82	15 Summer	30	+35%	30/15 Summer				87.935	0.069
S18.001	S83	15 Summer	30	+35%	30/15 Summer				87.676	0.128
S18.002	S84	15 Summer	30	+35%	30/15 Summer	30/15 Summer			87.201	1.201
S19.000	S85	240 Winter	30	+35%	30/30 Summer				86.857	0.186
S19.001	S86	240 Winter	30	+35%	2/15 Summer	100/180 Summer			86.857	0.551
S17.002	S87	15 Summer	30	+35%	100/15 Summer				85.512	-0.088
S20.000	S88	15 Summer	30	+35%	30/15 Summer				87.039	0.074
S20.001	S89	15 Summer	30	+35%					86.364	-0.179
S20.002	S90	15 Summer	30	+35%	100/15 Summer				85.351	-0.149
S21.000	S91	180 Summer	30	+35%	2/120 Summer				85.934	0.334
S21.001	S92	180 Summer	30	+35%	2/15 Summer	100/180 Summer			85.934	0.546
S17.003	S93	15 Summer	30	+35%	30/15 Summer				84.897	0.147
S17.004	S94	15 Summer	30	+35%	100/15 Summer				84.043	-0.090
S10.012	S95	15 Summer	30	+35%	100/15 Summer				83.573	-0.244
S22.000	S96	240 Winter	30	+35%	2/15 Summer				82.541	0.505
S22.001	S97	240 Winter	30	+35%	2/15 Summer	100/120 Summer			82.541	0.618
S10.013	S98	15 Summer	30	+35%	30/15 Summer	100/15 Summer			81.494	0.204
S10.014	S99	15 Summer	30	+35%	30/15 Summer				80.767	0.211
S23.000	S100	360 Winter	30	+35%	2/60 Summer				85.271	0.351
S23.001	S101	360 Winter	30	+35%	2/15 Summer				85.271	0.421
S23.002	S102	15 Summer	30	+35%					84.109	-0.211
S24.000	S103	360 Winter	30	+35%	2/30 Summer				85.615	0.367
S24.001	S104	360 Winter	30	+35%	2/15 Summer				85.615	0.415
S23.003	S105	15 Summer	30	+35%					83.161	-0.139
S23.004	S106	2880 Winter	30	+35%	30/480 Summer				81.410	0.210
S25.000	S107	15 Summer	30	+35%					82.803	-0.100
S26.000	S108	240 Winter	30	+35%	2/15 Summer				83.402	0.452
S26.001	S109	240 Winter	30	+35%	2/15 Summer				83.402	0.502
S27.000	S110	360 Winter	30	+35%	2/15 Summer				83.188	0.436
S27.001	S111	360 Winter	30	+35%	2/15 Summer				83.188	0.488
S23.005	S112	2880 Winter	30	+35%	2/960 Summer				81.410	0.567
S28.000	S113	15 Summer	30	+35%					83.039	-0.061
S29.000	S114	180 Summer	30	+35%	30/15 Summer				82.241	0.141
S29.001	S115	180 Summer	30	+35%	2/15 Summer				82.241	0.341
S23.006	S116	2880 Winter	30	+35%	30/120 Summer				81.099	0.390
S30.000	S117	15 Summer	30	+35%	100/15 Summer				81.754	-0.046

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Half Drain Pipe		Status	Level Exceeded
		Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
S15.000	S69	0.000	0.00		0.0	SURCHARGED	
S15.001	S70	0.000	0.05		0.6	SURCHARGED	
S15.002	S71	0.000	0.70		26.5	SURCHARGED	
S10.007	S72	0.000	1.16		109.1	SURCHARGED	
S16.000	S73	0.000	0.08		5.1	OK	
S16.001	S74	0.000	0.83		49.7	SURCHARGED	
S16.002	S75	0.000	1.07		77.9	SURCHARGED	
S10.008	S76	0.000	1.42		196.0	SURCHARGED	
S10.009	S77	0.000	1.62		252.6	SURCHARGED	
S10.010	S78	0.000	0.72		334.3	OK	
S10.011	S79	0.000	0.97		487.0	OK	
S17.000	S80	0.000	0.02		2.6	OK	
S17.001	S81	0.000	0.33		31.4	OK	
S18.000	S82	0.000	0.94		22.5	SURCHARGED	
S18.001	S83	0.000	0.56		20.7	SURCHARGED	
S18.002	S84	1.337	2.01		59.4	FLOOD	8
S19.000	S85	0.000	0.00		0.0	SURCHARGED	
S19.001	S86	0.000	0.21	256	1.8	FLOOD RISK	5
S17.002	S87	0.000	0.81		107.9	OK	
S20.000	S88	0.000	1.09		24.2	SURCHARGED	
S20.001	S89	0.000	0.34		59.8	OK	
S20.002	S90	0.000	0.50		94.1	OK	
S21.000	S91	0.000	0.00		0.0	SURCHARGED	
S21.001	S92	0.000	0.50	177	5.0	FLOOD RISK	4
S17.003	S93	0.000	1.12		242.2	SURCHARGED	
S17.004	S94	0.000	0.98		309.5	OK	
S10.012	S95	0.000	0.65		830.6	OK	
S22.000	S96	0.000	0.00		0.0	FLOOD RISK	
S22.001	S97	0.000	0.03		0.7	FLOOD RISK	14
S10.013	S98	0.000	1.07		914.4	SURCHARGED	1
S10.014	S99	0.000	0.81		926.2	SURCHARGED	
S23.000	S100	0.000	0.00		0.0	SURCHARGED	
S23.001	S101	0.000	0.04		0.6	FLOOD RISK	
S23.002	S102	0.000	0.19		47.3	OK	
S24.000	S103	0.000	0.00		0.0	FLOOD RISK	
S24.001	S104	0.000	0.03		0.6	FLOOD RISK	
S23.003	S105	0.000	0.56		154.4	OK	
S23.004	S106	0.000	0.01		3.9	SURCHARGED	
S25.000	S107	0.000	0.00		0.0	OK	
S26.000	S108	0.000	0.00		0.0	FLOOD RISK	
S26.001	S109	0.000	0.04		0.6	FLOOD RISK	
S27.000	S110	0.000	0.00		0.0	FLOOD RISK	
S27.001	S111	0.000	0.01		0.6	FLOOD RISK	
S23.005	S112	0.000	0.02	2424	1.0	SURCHARGED	
S28.000	S113	0.000	0.65		28.3	OK	
S29.000	S114	0.000	0.00		0.0	SURCHARGED	
S29.001	S115	0.000	0.08	135	0.5	SURCHARGED	
S23.006	S116	0.000	0.03		3.1	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S30.000	S117	0.000	0.77		13.9	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S31.000	S118	120 Summer	30	+35%	30/15 Summer				82.864	0.130
S31.001	S119	120 Summer	30	+35%	30/15 Summer				82.864	0.164
S30.001	S120	15 Summer	30	+35%	30/15 Summer				81.583	0.060
S30.002	S121	15 Summer	30	+35%					81.401	-0.080
S32.000	S122	360 Winter	30	+35%	2/30 Summer				82.413	0.362
S32.001	S123	360 Winter	30	+35%	2/15 Summer				82.413	0.413
S30.003	S124	2880 Winter	30	+35%	30/180 Summer				81.098	0.298
S23.007	S125	2880 Winter	30	+35%	2/480 Summer				81.098	0.621
S23.008	S126	15 Summer	30	+35%	30/15 Summer				80.604	0.254
S10.015	S127	15 Summer	30	+35%	30/15 Summer				80.576	0.365
S10.016	S128	15 Summer	30	+35%	30/15 Summer				80.359	0.320
S10.017	S129	15 Summer	30	+35%	30/15 Summer	100/15 Summer			80.138	0.462
S33.000	S130	15 Summer	30	+35%					93.568	-0.087
S33.001	S131	15 Summer	30	+35%					93.333	-0.112
S33.002	S132	15 Summer	30	+35%	100/15 Summer				93.051	-0.116
S33.003	S133	15 Summer	30	+35%	30/15 Summer	100/15 Summer			92.205	0.642
S33.004	S134	15 Summer	30	+35%	30/15 Summer				90.092	0.264
S34.000	S135	15 Summer	30	+35%					92.804	-0.225
S34.001	S136	15 Summer	30	+35%					91.281	-0.090
S34.002	S137	15 Summer	30	+35%	100/15 Summer				89.827	-0.141
S35.000	S138	240 Winter	30	+35%	100/120 Summer				89.741	-0.059
S35.001	S139	240 Winter	30	+35%	2/30 Summer				89.742	0.342
S33.005	S140	15 Summer	30	+35%	30/15 Summer				88.799	0.159
S36.000	S141	15 Summer	30	+35%					91.365	-0.187
S36.001	S142	15 Summer	30	+35%					89.990	-0.101
S36.002	S143	15 Summer	30	+35%	30/15 Summer				88.217	0.210
S33.006	S144	15 Summer	30	+35%	30/15 Summer				87.820	0.075
S37.000	S145	360 Winter	30	+35%	30/120 Summer				85.436	0.062
S37.001	S146	360 Winter	30	+35%	30/15 Summer				85.436	0.136
S37.002	S147	15 Summer	30	+35%	30/15 Summer				85.050	0.050
S37.003	S148	15 Summer	30	+35%	30/15 Summer				84.957	0.024
S33.007	S149	15 Summer	30	+35%	100/15 Summer				84.728	-0.164
S33.008	S150	15 Summer	30	+35%					83.990	-0.180
S38.000	S151	15 Summer	30	+35%	30/15 Summer				84.216	0.287
S38.001	S152	15 Summer	30	+35%					83.662	-0.127
S33.009	S153	15 Summer	30	+35%					83.117	-0.254
S39.000	S154	15 Summer	30	+35%					89.593	-0.081
S40.000	S155	240 Winter	30	+35%	30/60 Summer				89.177	0.120
S40.001	S156	240 Winter	30	+35%	2/15 Summer				89.177	0.450
S39.001	S157	15 Summer	30	+35%					87.985	-0.116
S41.000	S158	15 Summer	30	+35%					89.138	-0.062
S39.002	S159	15 Summer	30	+35%	100/15 Summer				86.385	-0.122
S39.003	S160	15 Summer	30	+35%	30/15 Summer	100/15 Summer			84.696	0.442
S39.004	S161	15 Summer	30	+35%	30/15 Summer				83.513	1.763
S42.000	S162	15 Summer	30	+35%					86.280	-0.120
S42.001	S163	15 Summer	30	+35%					85.712	-0.088
S43.000	S164	180 Summer	30	+35%	30/15 Summer				84.565	0.165
S43.001	S165	180 Summer	30	+35%	2/15 Summer				84.565	0.433
S42.002	S166	15 Summer	30	+35%					83.363	-0.094

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Flow / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap.					
S31.000	S118	0.000	0.01			0.0	SURCHARGED	
S31.001	S119	0.000	0.33		88	4.2	SURCHARGED	
S30.001	S120	0.000	1.55			46.4	SURCHARGED	
S30.002	S121	0.000	0.73			46.3	OK	
S32.000	S122	0.000	0.00			0.0	FLOOD RISK	
S32.001	S123	0.000	0.03			0.6	FLOOD RISK	
S30.003	S124	0.000	0.02			3.0	SURCHARGED	
S23.007	S125	0.000	0.03			1.8	SURCHARGED	
S23.008	S126	0.000	0.65			54.7	SURCHARGED	
S10.015	S127	0.000	1.13			942.0	SURCHARGED	
S10.016	S128	0.000	0.77			927.6	SURCHARGED	
S10.017	S129	0.000	1.60			889.9	SURCHARGED	
S33.000	S130	0.000	0.36			6.4	OK	
S33.001	S131	0.000	0.50			30.8	OK	
S33.002	S132	0.000	0.47			42.8	OK	
S33.003	S133	0.000	1.10			104.8	SURCHARGED	3
S33.004	S134	0.000	1.05			156.4	SURCHARGED	
S34.000	S135	0.000	0.00			0.0	OK	
S34.001	S136	0.000	0.67			69.2	OK	
S34.002	S137	0.000	0.55			116.2	OK	
S35.000	S138	0.000	0.00			0.0	OK	
S35.001	S139	0.000	0.23			2.2	SURCHARGED	
S33.005	S140	0.000	1.10			390.0	SURCHARGED	
S36.000	S141	0.000	0.07			6.4	OK	
S36.001	S142	0.000	0.58			60.3	OK	
S36.002	S143	0.000	1.28			127.9	SURCHARGED	
S33.006	S144	0.000	1.02			598.3	SURCHARGED	
S37.000	S145	0.000	0.00			0.0	SURCHARGED	
S37.001	S146	0.000	0.03			0.4	SURCHARGED	
S37.002	S147	0.000	1.16			69.6	SURCHARGED	
S37.003	S148	0.000	1.24			68.7	SURCHARGED	
S33.007	S149	0.000	0.87			704.8	OK	
S33.008	S150	0.000	0.83			741.1	OK	
S38.000	S151	0.000	1.75			27.8	SURCHARGED	
S38.001	S152	0.000	0.40			27.7	OK	
S33.009	S153	0.000	0.63			789.2	OK	
S39.000	S154	0.000	0.43			19.3	OK	
S40.000	S155	0.000	0.00			0.0	SURCHARGED	
S40.001	S156	0.000	0.03			0.6	FLOOD RISK	
S39.001	S157	0.000	0.47			49.8	OK	
S41.000	S158	0.000	0.64			28.9	OK	
S39.002	S159	0.000	0.65			167.8	OK	
S39.003	S160	0.000	0.68			219.4	SURCHARGED	3
S39.004	S161	0.000	1.76			217.8	SURCHARGED	
S42.000	S162	0.000	0.09			3.2	OK	
S42.001	S163	0.000	0.36			13.9	OK	
S43.000	S164	0.000	0.00			0.0	SURCHARGED	
S43.001	S165	0.000	0.10		168	1.2	FLOOD RISK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S42.002	S166	0.000	0.64		82.5	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S42.003	S167	15 Summer	30	+35%	100/15 Summer				81.587
S39.005	S168	2160 Winter	30	+35%	30/360 Summer				81.166
S44.000	S169	15 Summer	30	+35%					93.608
S44.001	S170	15 Summer	30	+35%					93.382
S44.002	S171	15 Summer	30	+35%	100/15 Summer				92.301
S44.003	S172	15 Summer	30	+35%	30/15 Summer				91.978
S44.004	S173	15 Summer	30	+35%	100/15 Summer				91.438
S44.005	S174	15 Summer	30	+35%	100/15 Summer				89.917
S44.006	S175	15 Summer	30	+35%	100/15 Summer				88.162
S44.007	S176	15 Summer	30	+35%					87.307
S44.008	S177	15 Summer	30	+35%	100/15 Summer				83.984
S44.009	S178	15 Summer	30	+35%	100/15 Summer				83.273
S44.010	S179	15 Summer	30	+35%	30/15 Summer				82.606
S44.011	S180	15 Summer	30	+35%	30/15 Summer				82.077
S45.000	S181	120 Summer	30	+35%	2/15 Summer				82.274
S45.001	S182	120 Summer	30	+35%	2/15 Summer	100/120 Summer			82.274
S44.012	S183	2160 Winter	30	+35%	100/360 Summer				81.167
S46.000	S184	240 Winter	30	+35%	2/30 Summer				82.088
S46.001	S185	240 Winter	30	+35%	2/15 Summer				82.088
S39.006	S186	2160 Winter	30	+35%	2/180 Summer				81.167
S39.007	S187	15 Summer	30	+35%	30/15 Summer				80.177
S47.000	S188	240 Winter	30	+35%	2/120 Summer				81.590
S47.001	S189	240 Winter	30	+35%	2/15 Summer				81.590
S39.008	S190	15 Summer	30	+35%	30/15 Summer				80.169
S33.010	S191	15 Summer	30	+35%	30/15 Summer				80.164
S33.011	S192	1440 Winter	30	+35%	30/720 Summer				79.767
S48.000	S193	240 Winter	30	+35%	30/15 Summer				80.988
S48.001	S194	240 Winter	30	+35%	2/15 Summer				80.988
S48.002	S195	1440 Winter	30	+35%	30/480 Summer				79.767
S48.003	S196	1440 Winter	30	+35%	30/360 Summer				79.767
S33.012	S197	1440 Winter	30	+35%	30/480 Summer				79.767
S33.013	S198	1440 Winter	30	+35%	30/240 Winter				79.767
S49.000	S199	15 Summer	30	+35%	30/15 Summer	30/15 Summer			80.741
S49.001	S200	15 Summer	30	+35%	30/15 Summer	100/15 Summer			80.500
S33.014	S201	1440 Winter	30	+35%	30/15 Summer				79.766
S33.015	S202	1440 Winter	30	+35%	30/15 Summer				79.765
S50.000	S203	15 Summer	30	+35%	30/15 Summer	100/15 Summer			85.567
S50.001	S204	15 Summer	30	+35%	30/15 Summer	100/15 Summer			84.960
S50.002	S205	15 Summer	30	+35%	30/15 Summer				84.583
S51.000	S206	15 Summer	30	+35%	30/15 Summer	100/15 Summer			84.201
S51.001	S207	15 Summer	30	+35%	30/15 Summer				83.956
S52.000	S208	480 Winter	30	+35%	30/30 Summer				84.392
S52.001	S209	480 Winter	30	+35%	2/360 Summer				84.392
S50.003	S210	15 Summer	30	+35%	30/15 Summer	100/15 Summer			83.915
S53.000	S211	15 Summer	30	+35%	30/15 Summer	100/15 Summer			81.692
S53.001	S212	15 Summer	30	+35%	30/15 Summer				81.500
S54.000	S213	240 Winter	30	+35%	2/60 Summer				82.155
S54.001	S214	240 Winter	30	+35%	2/30 Summer				82.155
S50.004	S215	15 Summer	30	+35%	30/15 Summer				81.429

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PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
S42.003	S167	-0.013	0.000	1.00		82.1	OK	
S39.005	S168	0.266	0.000	0.02		9.4	SURCHARGED	
S44.000	S169	-0.107	0.000	0.53		25.4	OK	
S44.001	S170	-0.096	0.000	0.61		48.2	OK	
S44.002	S171	-0.016	0.000	0.85		123.0	OK	
S44.003	S172	0.082	0.000	1.11		140.5	SURCHARGED	
S44.004	S173	-0.095	0.000	0.78		184.3	OK	
S44.005	S174	-0.083	0.000	0.85		220.8	OK	
S44.006	S175	-0.038	0.000	0.98		220.3	OK	
S44.007	S176	-0.093	0.000	0.81		221.8	OK	
S44.008	S177	-0.116	0.000	0.80		260.4	OK	
S44.009	S178	-0.127	0.000	0.76		261.4	OK	
S44.010	S179	0.006	0.000	0.94		273.0	SURCHARGED	
S44.011	S180	0.077	0.000	1.04		285.1	SURCHARGED	
S45.000	S181	0.508	0.000	0.02		0.1	FLOOD RISK	
S45.001	S182	0.553	0.000	0.95	84	11.8	FLOOD RISK	4
S44.012	S183	-0.045	0.000	0.03		13.0	OK	
S46.000	S184	0.370	0.000	0.00		0.0	SURCHARGED	
S46.001	S185	0.433	0.000	0.07		2.4	FLOOD RISK	
S39.006	S186	0.875	0.000	0.02		2.6	SURCHARGED	
S39.007	S187	0.085	0.000	0.18		12.4	SURCHARGED	
S47.000	S188	0.299	0.000	0.00		0.0	SURCHARGED	
S47.001	S189	0.408	0.000	0.04		0.6	FLOOD RISK	
S39.008	S190	0.206	0.000	0.32		43.0	SURCHARGED	
S33.010	S191	0.489	0.000	3.12		836.3	SURCHARGED	
S33.011	S192	0.056	0.000	0.06		39.2	SURCHARGED	
S48.000	S193	0.246	0.000	0.00		0.0	SURCHARGED	
S48.001	S194	0.412	0.000	0.04		1.3	FLOOD RISK	
S48.002	S195	0.092	0.000	0.00		1.1	SURCHARGED	
S48.003	S196	0.166	0.000	0.03		6.2	SURCHARGED	
S33.012	S197	0.117	0.000	0.04		17.5	SURCHARGED	
S33.013	S198	0.194	0.000	0.04		17.9	SURCHARGED	
S49.000	S199	0.700	0.388	1.68		13.2	FLOOD	7
S49.001	S200	0.600	0.000	1.96		21.0	FLOOD RISK	3
S33.014	S201	0.267	0.000	0.05		19.2	SURCHARGED	
S33.015	S202	0.314	0.000	0.05		18.8	SURCHARGED	
S50.000	S203	0.492	0.000	0.98		52.6	SURCHARGED	3
S50.001	S204	0.528	0.000	1.72		131.2	SURCHARGED	3
S50.002	S205	0.301	0.000	0.91		152.8	SURCHARGED	
S51.000	S206	0.454	0.000	1.18		20.9	SURCHARGED	3
S51.001	S207	0.412	0.000	0.71		26.5	SURCHARGED	
S52.000	S208	0.183	0.000	0.00		0.0	SURCHARGED	
S52.001	S209	0.207	0.000	0.04		0.5	SURCHARGED	
S50.003	S210	0.542	0.000	1.01		217.4	SURCHARGED	1
S53.000	S211	0.274	0.000	0.79		41.1	SURCHARGED	1
S53.001	S212	0.458	0.000	1.22		38.2	SURCHARGED	
S54.000	S213	0.307	0.000	0.00		0.0	SURCHARGED	
S54.001	S214	0.330	0.000	0.10		1.1	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
S50.004	S215	0.511	0.000	1.37		302.2	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S50.005	S216	15 Summer	30	+35%	30/15 Summer				80.901	0.301
S50.006	S217	15 Summer	30	+35%	30/15 Summer				80.627	0.461
S55.000	S218	15 Summer	30	+35%	30/15 Summer				80.064	0.292
S50.007	S219	15 Summer	30	+35%	30/15 Summer				80.066	0.619
S50.008	S220	15 Summer	30	+35%	30/15 Summer				79.856	0.382
S1.032	S221	1440 Winter	30	+35%	30/15 Summer				79.765	0.238
S1.033	S222	1440 Winter	30	+35%	2/15 Summer				79.764	1.577

PN	US/MH Name	Flooded		Half Drain Pipe			Status	Level Exceeded
		Volume (m³)	Flow / Cap. (l/s)	Time (mins)	Pipe Flow (l/s)			
S50.005	S216	0.000	0.82		306.1	SURCHARGED		
S50.006	S217	0.000	0.89		301.5	SURCHARGED		
S55.000	S218	0.000	0.09		3.8	SURCHARGED		
S50.007	S219	0.000	1.72		354.9	SURCHARGED		
S50.008	S220	0.000	1.33		345.0	SURCHARGED		
S1.032	S221	0.000	0.19		90.8	SURCHARGED		
S1.033	S222	0.000	0.57		21.0	SURCHARGED		

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

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 Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 32 Number of Storage Structures 34 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH Data Type Point
FEH Rainfall Version 2013 Cv (Summer) 1.000
Site Location GB 518095 208017 TL 18095 08017 Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
1440, 2160, 2880, 4320
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 35, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH		Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Surcharged	
	Name	Storm							Level (m)	Depth (m)
S1.000	S1	360 Winter	100	+40%	2/30 Summer				94.513	0.496
S1.001	S2	360 Winter	100	+40%	2/15 Summer				94.513	0.549
S1.002	S3	15 Summer	100	+40%					93.419	-0.043
S1.003	S4	15 Summer	100	+40%	100/15 Summer				93.311	0.264
S1.004	S5	15 Summer	100	+40%	30/15 Summer				93.049	0.924
S1.005	S6	15 Summer	100	+40%	30/15 Summer	30/15 Summer			91.578	1.210
S1.006	S7	15 Summer	100	+40%	30/15 Summer				90.624	1.115
S1.007	S8	15 Summer	100	+40%	30/15 Summer				90.395	1.150
S1.008	S9	15 Summer	100	+40%	30/15 Summer				89.549	0.883
S2.000	S10	15 Summer	100	+40%					91.006	-0.071
S2.001	S11	15 Summer	100	+40%					90.253	-0.087
S2.002	S12	15 Summer	100	+40%					90.028	-0.098
S2.003	S13	15 Summer	100	+40%					89.229	-0.158
S3.000	S14	15 Summer	100	+40%					91.198	-0.062
S3.001	S15	15 Summer	100	+40%					90.585	-0.144
S3.002	S16	15 Summer	100	+40%					89.536	-0.133
S3.003	S17	15 Summer	100	+40%					89.074	-0.207
S3.004	S18	15 Summer	100	+40%					88.627	-0.167
S4.000	S19	360 Winter	100	+40%	2/60 Summer				89.702	0.551

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Flow / Cap.					
S1.000	S1	0.000	0.00			0.0	FLOOD RISK	
S1.001	S2	0.000	0.03			0.7	FLOOD RISK	
S1.002	S3	0.000	0.63			33.1	OK	
S1.003	S4	0.000	0.61			54.5	SURCHARGED	
S1.004	S5	0.000	0.91			96.0	FLOOD RISK	
S1.005	S6	9.536	1.34			130.7	FLOOD	4
S1.006	S7	0.000	1.06			135.9	FLOOD RISK	
S1.007	S8	0.000	1.22			149.6	FLOOD RISK	
S1.008	S9	0.000	1.79			219.4	SURCHARGED	
S2.000	S10	0.000	0.53			13.6	OK	
S2.001	S11	0.000	0.68			44.5	OK	
S2.002	S12	0.000	0.60			44.0	OK	
S2.003	S13	0.000	0.45			81.8	OK	
S3.000	S14	0.000	0.64			14.5	OK	
S3.001	S15	0.000	0.28			27.0	OK	
S3.002	S16	0.000	0.34			26.9	OK	
S3.003	S17	0.000	0.21			26.6	OK	
S3.004	S18	0.000	0.40			49.4	OK	
S4.000	S19	0.000	0.00			0.0	FLOOD RISK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S4.001	S20	360 Winter	100	+40%	2/15 Summer	100/240 Summer			89.702	0.702
S5.000	S21	240 Winter	100	+40%	2/120 Summer				89.561	0.461
S5.001	S22	240 Winter	100	+40%	2/15 Summer				89.561	0.600
S2.004	S23	15 Summer	100	+40%					87.745	-0.155
S1.009	S24	15 Summer	100	+40%					87.612	-0.214
S1.010	S25	15 Summer	100	+40%					87.431	-0.015
S1.011	S26	15 Summer	100	+40%	100/15 Summer				87.267	0.345
S6.000	S27	30 Summer	100	+40%	30/15 Summer				87.320	0.898
S1.012	S28	2160 Winter	100	+40%	30/15 Summer				87.199	0.801
S1.013	S29	2160 Winter	100	+40%	30/15 Summer				87.199	0.894
S1.014	S30	2160 Winter	100	+40%	30/15 Summer				87.199	0.906
S1.015	S31	2160 Winter	100	+40%	30/15 Summer				87.198	0.924
S1.016	S32	2160 Winter	100	+40%	30/60 Summer				87.198	1.022
S1.017	S33	2160 Winter	100	+40%	2/600 Summer				87.198	1.155
S7.000	S34	15 Summer	100	+40%	100/15 Summer				88.924	0.897
S7.001	S35	15 Summer	100	+40%	30/15 Summer				87.412	1.164
S1.018	S36	2160 Winter	100	+40%	2/240 Summer				87.197	1.217
S1.019	S37	15 Summer	100	+40%					85.652	-0.206
S1.020	S38	15 Summer	100	+40%					85.629	-0.121
S1.021	S39	15 Summer	100	+40%					85.596	-0.129
S8.000	S40	15 Summer	100	+40%					87.564	-0.037
S8.001	S41	15 Summer	100	+40%	100/15 Summer				85.666	0.087
S9.000	S42	240 Winter	100	+40%	2/15 Summer				86.635	0.662
S9.001	S43	240 Winter	100	+40%	2/15 Summer				86.645	0.699
S1.022	S44	15 Summer	100	+40%	100/15 Summer				85.551	0.145
S1.023	S45	120 Winter	100	+40%	30/15 Summer				85.493	0.206
S1.024	S46	120 Winter	100	+40%	30/15 Summer				85.484	0.264
S1.025	S47	120 Winter	100	+40%	30/60 Summer				85.477	0.287
S1.026	S48	120 Winter	100	+40%	30/30 Summer				85.469	0.322
S1.027	S49	120 Winter	100	+40%	2/15 Summer				85.460	0.857
S1.028	S50	120 Winter	100	+40%					84.443	-0.387
S1.029	S51	120 Winter	100	+40%					84.257	-0.445
S1.030	S52	120 Winter	100	+40%					80.977	-0.385
S1.031	S53	1440 Winter	100	+40%	30/15 Summer				80.156	0.806
S10.000	S54	15 Summer	100	+40%					89.540	-0.102
S10.001	S55	15 Summer	100	+40%					89.144	-0.124
S10.002	S56	15 Summer	100	+40%					88.805	-0.086
S11.000	S57	15 Summer	100	+40%					89.167	-0.115
S12.000	S58	15 Summer	100	+40%	100/15 Summer				88.544	0.281
S13.000	S59	240 Winter	100	+40%	2/15 Summer				89.375	0.667
S13.001	S60	240 Winter	100	+40%	2/15 Summer				89.384	0.699
S11.001	S61	15 Summer	100	+40%	30/15 Summer				88.533	0.449
S11.002	S62	15 Summer	100	+40%	30/15 Summer				88.306	0.294
S11.003	S63	960 Winter	100	+40%	30/15 Summer				88.302	0.322
S10.003	S64	960 Winter	100	+40%	30/15 Summer				88.302	0.355
S14.000	S65	960 Winter	100	+40%	30/360 Summer				88.301	0.243
S10.004	S66	960 Winter	100	+40%	30/60 Summer				88.301	0.447
S10.005	S67	15 Summer	100	+40%					87.011	-0.088
S10.006	S68	15 Summer	100	+40%	100/15 Summer				86.987	0.352

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Flow / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m ³)	Flow / Cap.					
S4.001	S20	1.936	0.16			1.5	FLOOD	5
S5.000	S21	0.000	0.00			0.0	FLOOD RISK	
S5.001	S22	0.000	0.17			1.8	FLOOD RISK	
S2.004	S23	0.000	0.80			173.5	OK	
S1.009	S24	0.000	0.72			447.5	OK	
S1.010	S25	0.000	0.62			447.5	OK	
S1.011	S26	0.000	0.81			461.6	SURCHARGED	
S6.000	S27	0.000	2.79			440.5	FLOOD RISK	
S1.012	S28	0.000	0.08			40.0	FLOOD RISK	
S1.013	S29	0.000	0.10			39.5	SURCHARGED	
S1.014	S30	0.000	0.13			39.2	SURCHARGED	
S1.015	S31	0.000	0.07			39.0	SURCHARGED	
S1.016	S32	0.000	0.05			38.7	FLOOD RISK	
S1.017	S33	0.000	0.07			39.0	FLOOD RISK	
S7.000	S34	0.000	0.97			81.9	SURCHARGED	
S7.001	S35	0.000	2.28			230.0	FLOOD RISK	
S1.018	S36	0.000	0.02			4.3	FLOOD RISK	
S1.019	S37	0.000	0.31			84.6	OK	
S1.020	S38	0.000	0.95			149.5	OK	
S1.021	S39	0.000	0.56			146.1	OK	
S8.000	S40	0.000	0.68			6.7	OK	
S8.001	S41	0.000	0.98			133.0	SURCHARGED	
S9.000	S42	0.000	0.62			1.9	FLOOD RISK	
S9.001	S43	0.000	0.48			5.3	FLOOD RISK	
S1.022	S44	0.000	1.02			279.2	SURCHARGED	
S1.023	S45	0.000	0.55			139.2	SURCHARGED	
S1.024	S46	0.000	0.80			133.8	SURCHARGED	
S1.025	S47	0.000	0.60			131.1	SURCHARGED	
S1.026	S48	0.000	0.48			128.2	SURCHARGED	
S1.027	S49	0.000	2.84			38.4	SURCHARGED	
S1.028	S50	0.000	0.06			38.4	OK	
S1.029	S51	0.000	0.02			38.4	OK	
S1.030	S52	0.000	0.05			38.4	OK	
S1.031	S53	0.000	0.19			23.9	SURCHARGED	
S10.000	S54	0.000	0.22			5.2	OK	
S10.001	S55	0.000	0.41			27.4	OK	
S10.002	S56	0.000	0.69			49.2	OK	
S11.000	S57	0.000	0.12			3.4	OK	
S12.000	S58	0.000	0.23			8.7	SURCHARGED	
S13.000	S59	0.000	0.25			0.8	FLOOD RISK	
S13.001	S60	0.000	0.10		288	1.0	FLOOD RISK	
S11.001	S61	0.000	1.69			103.2	SURCHARGED	
S11.002	S62	0.000	1.13			104.2	SURCHARGED	
S11.003	S63	0.000	0.08			6.3	SURCHARGED	
S10.003	S64	0.000	0.11			11.2	SURCHARGED	
S14.000	S65	0.000	0.01			0.4	SURCHARGED	
S10.004	S66	0.000	0.01			1.3	SURCHARGED	
S10.005	S67	0.000	0.27			71.9	OK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded		Flow / Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Volume (m³)	Cap.					
S10.006	S68	0.000	0.40			96.2	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) SurchARGE	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S15.000	S69	360 Winter	100	+40%	2/30 Summer				87.296	0.456
S15.001	S70	360 Winter	100	+40%	2/15 Summer				87.296	0.496
S15.002	S71	15 Summer	100	+40%	30/15 Summer				87.012	0.412
S10.007	S72	15 Summer	100	+40%	30/15 Summer				86.946	0.688
S16.000	S73	15 Summer	100	+40%	100/15 Summer				88.227	0.368
S16.001	S74	15 Summer	100	+40%	30/15 Summer				88.216	1.016
S16.002	S75	15 Summer	100	+40%	30/15 Summer				87.832	1.057
S10.008	S76	15 Summer	100	+40%	30/15 Summer				86.834	0.643
S10.009	S77	15 Summer	100	+40%	30/15 Summer				86.612	0.498
S10.010	S78	15 Summer	100	+40%	100/15 Summer				86.096	0.102
S10.011	S79	15 Summer	100	+40%	100/15 Summer				84.983	0.368
S17.000	S80	15 Summer	100	+40%					87.646	-0.199
S17.001	S81	15 Summer	100	+40%					86.080	-0.120
S18.000	S82	15 Summer	100	+40%	30/15 Summer				88.370	0.504
S18.001	S83	15 Summer	100	+40%	30/15 Summer				87.972	0.424
S18.002	S84	15 Summer	100	+40%	30/15 Summer	30/15 Summer			87.207	1.207
S19.000	S85	240 Winter	100	+40%	30/30 Summer				87.008	0.337
S19.001	S86	240 Winter	100	+40%	2/15 Summer	100/180 Summer			87.008	0.702
S17.002	S87	15 Summer	100	+40%	100/15 Summer				85.942	0.342
S20.000	S88	15 Summer	100	+40%	30/15 Summer				87.395	0.430
S20.001	S89	15 Summer	100	+40%					86.384	-0.159
S20.002	S90	15 Summer	100	+40%	100/15 Summer				85.550	0.050
S21.000	S91	180 Winter	100	+40%	2/120 Summer				86.090	0.490
S21.001	S92	180 Winter	100	+40%	2/15 Summer	100/180 Summer			86.090	0.702
S17.003	S93	15 Summer	100	+40%	30/15 Summer				85.292	0.542
S17.004	S94	15 Summer	100	+40%	100/15 Summer				84.252	0.119
S10.012	S95	15 Summer	100	+40%	100/15 Summer				83.883	0.066
S22.000	S96	240 Winter	100	+40%	2/15 Summer				82.629	0.593
S22.001	S97	240 Winter	100	+40%	2/15 Summer	100/120 Summer			82.629	0.706
S10.013	S98	15 Summer	100	+40%	30/15 Summer	100/15 Summer			82.491	1.201
S10.014	S99	15 Summer	100	+40%	30/15 Summer				81.461	0.905
S23.000	S100	360 Winter	100	+40%	2/60 Summer				85.379	0.459
S23.001	S101	360 Winter	100	+40%	2/15 Summer				85.379	0.529
S23.002	S102	15 Summer	100	+40%					84.123	-0.197
S24.000	S103	360 Winter	100	+40%	2/30 Summer				85.723	0.475
S24.001	S104	360 Winter	100	+40%	2/15 Summer				85.723	0.523
S23.003	S105	15 Summer	100	+40%					83.196	-0.104
S23.004	S106	2160 Winter	100	+40%	30/480 Summer				81.737	0.537
S25.000	S107	15 Summer	100	+40%					82.803	-0.100
S26.000	S108	360 Winter	100	+40%	2/15 Summer				83.541	0.591
S26.001	S109	360 Winter	100	+40%	2/15 Summer				83.541	0.641
S27.000	S110	480 Winter	100	+40%	2/15 Summer				83.317	0.565
S27.001	S111	480 Winter	100	+40%	2/15 Summer				83.317	0.617
S23.005	S112	2160 Winter	100	+40%	2/960 Summer				81.737	0.894
S28.000	S113	15 Summer	100	+40%					83.060	-0.040
S29.000	S114	180 Summer	100	+40%	30/15 Summer				82.341	0.241
S29.001	S115	180 Summer	100	+40%	2/15 Summer				82.341	0.441
S23.006	S116	2160 Winter	100	+40%	30/120 Summer				81.388	0.679
S30.000	S117	15 Summer	100	+40%	100/15 Summer				81.946	0.146

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.000	S69	0.000	0.00		0.0	FLOOD RISK	
S15.001	S70	0.000	0.05		0.6	FLOOD RISK	
S15.002	S71	0.000	0.83		31.4	SURCHARGED	
S10.007	S72	0.000	1.43		134.5	SURCHARGED	
S16.000	S73	0.000	0.18		10.8	SURCHARGED	
S16.001	S74	0.000	0.95		57.0	FLOOD RISK	
S16.002	S75	0.000	1.30		94.7	FLOOD RISK	
S10.008	S76	0.000	1.73		240.0	SURCHARGED	
S10.009	S77	0.000	2.03		318.1	SURCHARGED	
S10.010	S78	0.000	0.90		418.5	SURCHARGED	
S10.011	S79	0.000	1.20		605.5	SURCHARGED	
S17.000	S80	0.000	0.03		3.5	OK	
S17.001	S81	0.000	0.45		42.2	OK	
S18.000	S82	0.000	1.13		27.1	SURCHARGED	
S18.001	S83	0.000	0.70		26.1	SURCHARGED	
S18.002	S84	7.310	2.01		59.4	FLOOD	8
S19.000	S85	0.000	0.00		0.0	SURCHARGED	
S19.001	S86	1.634	0.23		2.0	FLOOD	5
S17.002	S87	0.000	0.88		116.2	SURCHARGED	
S20.000	S88	0.000	1.40		31.1	SURCHARGED	
S20.001	S89	0.000	0.44		77.8	OK	
S20.002	S90	0.000	0.61		115.0	SURCHARGED	
S21.000	S91	0.000	0.00		0.0	FLOOD RISK	
S21.001	S92	1.798	0.56		5.6	FLOOD	4
S17.003	S93	0.000	1.30		280.9	SURCHARGED	
S17.004	S94	0.000	1.17		369.5	SURCHARGED	
S10.012	S95	0.000	0.76		973.0	SURCHARGED	
S22.000	S96	0.000	0.00		0.0	FLOOD RISK	
S22.001	S97	5.801	0.03		0.7	FLOOD	14
S10.013	S98	0.955	1.22		1044.6	FLOOD	1
S10.014	S99	0.000	0.94		1080.9	FLOOD RISK	
S23.000	S100	0.000	0.00		0.0	FLOOD RISK	
S23.001	S101	0.000	0.05		0.7	FLOOD RISK	
S23.002	S102	0.000	0.26		63.4	OK	
S24.000	S103	0.000	0.00		0.0	FLOOD RISK	
S24.001	S104	0.000	0.03		0.7	FLOOD RISK	
S23.003	S105	0.000	0.76		207.2	OK	
S23.004	S106	0.000	0.02		6.1	SURCHARGED	
S25.000	S107	0.000	0.00		0.0	OK	
S26.000	S108	0.000	0.00		0.0	FLOOD RISK	
S26.001	S109	0.000	0.04		0.7	FLOOD RISK	
S27.000	S110	0.000	0.00		0.0	FLOOD RISK	
S27.001	S111	0.000	0.02		0.7	FLOOD RISK	
S23.005	S112	0.000	0.02		1.0	SURCHARGED	
S28.000	S113	0.000	0.88		38.0	OK	
S29.000	S114	0.000	0.00		0.0	SURCHARGED	
S29.001	S115	0.000	0.08	165	0.6	FLOOD RISK	
S23.006	S116	0.000	0.05		4.5	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S30.000	S117	0.000	1.03		18.6	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S31.000	S118	120 Summer	100	+40%	30/15 Summer				82.968	0.234
S31.001	S119	120 Summer	100	+40%	30/15 Summer				82.968	0.268
S30.001	S120	15 Summer	100	+40%	30/15 Summer				81.663	0.140
S30.002	S121	15 Summer	100	+40%					81.431	-0.050
S32.000	S122	360 Winter	100	+40%	2/30 Summer				82.522	0.471
S32.001	S123	360 Winter	100	+40%	2/15 Summer				82.522	0.522
S30.003	S124	2160 Winter	100	+40%	30/180 Summer				81.386	0.586
S23.007	S125	2160 Winter	100	+40%	2/480 Summer				81.386	0.909
S23.008	S126	15 Summer	100	+40%	30/15 Summer				81.199	0.849
S10.015	S127	15 Summer	100	+40%	30/15 Summer				81.163	0.952
S10.016	S128	15 Summer	100	+40%	30/15 Summer				80.830	0.791
S10.017	S129	15 Summer	100	+40%	30/15 Summer	100/15 Summer			80.495	0.819
S33.000	S130	15 Summer	100	+40%					93.579	-0.076
S33.001	S131	15 Summer	100	+40%					93.381	-0.064
S33.002	S132	15 Summer	100	+40%	100/15 Summer				93.280	0.113
S33.003	S133	15 Summer	100	+40%	30/15 Summer	100/15 Summer			92.769	1.206
S33.004	S134	15 Summer	100	+40%	30/15 Summer				90.996	1.168
S34.000	S135	15 Summer	100	+40%					92.804	-0.225
S34.001	S136	15 Summer	100	+40%					91.312	-0.059
S34.002	S137	15 Summer	100	+40%	100/15 Summer				90.055	0.087
S35.000	S138	240 Winter	100	+40%	100/120 Summer				89.835	0.035
S35.001	S139	240 Winter	100	+40%	2/30 Summer				89.835	0.435
S33.005	S140	15 Summer	100	+40%	30/15 Summer				89.589	0.949
S36.000	S141	15 Summer	100	+40%					91.373	-0.179
S36.001	S142	15 Summer	100	+40%					90.079	-0.012
S36.002	S143	15 Summer	100	+40%	30/15 Summer				89.090	1.083
S33.006	S144	15 Summer	100	+40%	30/15 Summer				88.521	0.776
S37.000	S145	480 Winter	100	+40%	30/120 Summer				85.519	0.145
S37.001	S146	480 Winter	100	+40%	30/15 Summer				85.519	0.219
S37.002	S147	15 Summer	100	+40%	30/15 Summer				85.189	0.189
S37.003	S148	15 Summer	100	+40%	30/15 Summer				85.021	0.088
S33.007	S149	15 Summer	100	+40%	100/15 Summer				84.903	0.011
S33.008	S150	15 Summer	100	+40%					84.044	-0.126
S38.000	S151	15 Summer	100	+40%	30/15 Summer				84.542	0.613
S38.001	S152	15 Summer	100	+40%					83.680	-0.109
S33.009	S153	15 Summer	100	+40%					83.159	-0.212
S39.000	S154	15 Summer	100	+40%					89.606	-0.068
S40.000	S155	360 Winter	100	+40%	30/60 Summer				89.295	0.238
S40.001	S156	360 Winter	100	+40%	2/15 Summer				89.295	0.568
S39.001	S157	15 Summer	100	+40%					88.006	-0.095
S41.000	S158	15 Summer	100	+40%					89.158	-0.042
S39.002	S159	15 Summer	100	+40%	100/15 Summer				86.992	0.485
S39.003	S160	15 Summer	100	+40%	30/15 Summer	100/15 Summer			85.460	1.206
S39.004	S161	15 Summer	100	+40%	30/15 Summer				84.074	2.324
S42.000	S162	15 Summer	100	+40%					86.284	-0.116
S42.001	S163	15 Summer	100	+40%					85.724	-0.076
S43.000	S164	180 Winter	100	+40%	30/15 Summer				84.683	0.283
S43.001	S165	180 Winter	100	+40%	2/15 Summer				84.683	0.551
S42.002	S166	15 Summer	100	+40%					83.437	-0.020



100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S31.000	S118	0.000	0.01		0.1	SURCHARGED	
S31.001	S119	0.000	0.40	96	5.1	SURCHARGED	
S30.001	S120	0.000	2.01		60.1	SURCHARGED	
S30.002	S121	0.000	0.95		60.5	OK	
S32.000	S122	0.000	0.00		0.0	FLOOD RISK	
S32.001	S123	0.000	0.04		0.7	FLOOD RISK	
S30.003	S124	0.000	0.03		4.8	SURCHARGED	
S23.007	S125	0.000	0.03		2.0	SURCHARGED	
S23.008	S126	0.000	0.75		63.3	SURCHARGED	
S10.015	S127	0.000	1.40		1165.0	FLOOD RISK	
S10.016	S128	0.000	0.96		1162.4	SURCHARGED	
S10.017	S129	0.022	2.01		1118.1	FLOOD	
S33.000	S130	0.000	0.48		8.6	OK	
S33.001	S131	0.000	0.66		40.8	OK	
S33.002	S132	0.000	0.56		51.1	SURCHARGED	
S33.003	S133	5.978	1.25		118.8	FLOOD	3
S33.004	S134	0.000	1.11		164.7	FLOOD RISK	
S34.000	S135	0.000	0.00		0.0	OK	
S34.001	S136	0.000	0.90		93.0	OK	
S34.002	S137	0.000	0.70		148.6	SURCHARGED	
S35.000	S138	0.000	0.00		0.0	SURCHARGED	
S35.001	S139	0.000	0.25		2.4	FLOOD RISK	
S33.005	S140	0.000	1.22		432.2	FLOOD RISK	
S36.000	S141	0.000	0.09		8.6	OK	
S36.001	S142	0.000	0.77		79.2	OK	
S36.002	S143	0.000	1.51		150.8	FLOOD RISK	
S33.006	S144	0.000	1.18		689.6	SURCHARGED	
S37.000	S145	0.000	0.00		0.0	SURCHARGED	
S37.001	S146	0.000	0.03		0.5	SURCHARGED	
S37.002	S147	0.000	1.57		94.1	SURCHARGED	
S37.003	S148	0.000	1.69		93.4	SURCHARGED	
S33.007	S149	0.000	1.02		822.9	SURCHARGED	
S33.008	S150	0.000	0.97		865.4	OK	
S38.000	S151	0.000	2.30		36.5	SURCHARGED	
S38.001	S152	0.000	0.52		36.3	OK	
S33.009	S153	0.000	0.73		921.4	OK	
S39.000	S154	0.000	0.58		25.9	OK	
S40.000	S155	0.000	0.00		0.0	SURCHARGED	
S40.001	S156	0.000	0.03		0.7	FLOOD RISK	
S39.001	S157	0.000	0.63		66.8	OK	
S41.000	S158	0.000	0.86		38.8	OK	
S39.002	S159	0.000	0.81		208.0	SURCHARGED	
S39.003	S160	6.212	0.76		244.7	FLOOD	3
S39.004	S161	0.000	1.94		240.0	SURCHARGED	
S42.000	S162	0.000	0.12		4.3	OK	
S42.001	S163	0.000	0.48		18.7	OK	
S43.000	S164	0.000	0.00		0.0	SURCHARGED	
S43.001	S165	0.000	0.11	186	1.3	FLOOD RISK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S42.002	S166	0.000	0.85		108.8	OK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S42.003	S167	15 Summer	100	+40%	100/15 Summer				82.107
S39.005	S168	2160 Winter	100	+40%	30/360 Summer				81.576
S44.000	S169	15 Summer	100	+40%					93.633
S44.001	S170	15 Summer	100	+40%					93.463
S44.002	S171	15 Summer	100	+40%	100/15 Summer				92.804
S44.003	S172	15 Summer	100	+40%	30/15 Summer				92.337
S44.004	S173	15 Summer	100	+40%	100/15 Summer				91.688
S44.005	S174	15 Summer	100	+40%	100/15 Summer				90.324
S44.006	S175	15 Summer	100	+40%	100/15 Summer				88.485
S44.007	S176	15 Summer	100	+40%					87.332
S44.008	S177	15 Summer	100	+40%	100/15 Summer				84.254
S44.009	S178	15 Summer	100	+40%	100/15 Summer				83.647
S44.010	S179	15 Summer	100	+40%	30/15 Summer				83.041
S44.011	S180	15 Summer	100	+40%	30/15 Summer				82.346
S45.000	S181	120 Summer	100	+40%	2/15 Summer				82.425
S45.001	S182	120 Summer	100	+40%	2/15 Summer	100/120 Summer			82.425
S44.012	S183	2160 Winter	100	+40%	100/360 Summer				81.576
S46.000	S184	240 Winter	100	+40%	2/30 Summer				82.200
S46.001	S185	240 Winter	100	+40%	2/15 Summer				82.200
S39.006	S186	2160 Winter	100	+40%	2/180 Summer				81.576
S39.007	S187	15 Summer	100	+40%	30/15 Summer				80.393
S47.000	S188	360 Winter	100	+40%	2/120 Summer				81.698
S47.001	S189	360 Winter	100	+40%	2/15 Summer				81.698
S39.008	S190	15 Summer	100	+40%	30/15 Summer				80.386
S33.010	S191	15 Summer	100	+40%	30/15 Summer				80.381
S33.011	S192	2160 Winter	100	+40%	30/720 Summer				80.156
S48.000	S193	240 Winter	100	+40%	30/15 Summer				81.094
S48.001	S194	240 Winter	100	+40%	2/15 Summer				81.094
S48.002	S195	2160 Winter	100	+40%	30/480 Summer				80.156
S48.003	S196	2160 Winter	100	+40%	30/360 Summer				80.156
S33.012	S197	2160 Winter	100	+40%	30/480 Summer				80.156
S33.013	S198	2160 Winter	100	+40%	30/240 Winter				80.155
S49.000	S199	15 Summer	100	+40%	30/15 Summer	30/15 Summer			80.744
S49.001	S200	15 Summer	100	+40%	30/15 Summer	100/15 Summer			80.600
S33.014	S201	2160 Winter	100	+40%	30/15 Summer				80.154
S33.015	S202	2160 Winter	100	+40%	30/15 Summer				80.153
S50.000	S203	15 Summer	100	+40%	30/15 Summer	100/15 Summer			86.204
S50.001	S204	15 Summer	100	+40%	30/15 Summer	100/15 Summer			85.766
S50.002	S205	15 Summer	100	+40%	30/15 Summer				85.575
S51.000	S206	15 Summer	100	+40%	30/15 Summer	100/15 Summer			84.949
S51.001	S207	15 Summer	100	+40%	30/15 Summer				84.873
S52.000	S208	600 Winter	100	+40%	30/30 Summer				84.515
S52.001	S209	600 Winter	100	+40%	2/360 Summer				84.515
S50.003	S210	15 Summer	100	+40%	30/15 Summer	100/15 Summer			84.847
S53.000	S211	15 Summer	100	+40%	30/15 Summer	100/15 Summer			82.543
S53.001	S212	15 Summer	100	+40%	30/15 Summer				82.265
S54.000	S213	240 Winter	100	+40%	2/60 Summer				82.246
S54.001	S214	240 Winter	100	+40%	2/30 Summer				82.246
S50.004	S215	15 Summer	100	+40%	30/15 Summer				82.174



100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)						
S42.003	S167	0.507	0.000	1.30			106.5	SURCHARGED	
S39.005	S168	0.676	0.000	0.02			12.1	SURCHARGED	
S44.000	S169	-0.082	0.000	0.72			34.2	OK	
S44.001	S170	-0.015	0.000	0.79			62.8	OK	
S44.002	S171	0.487	0.000	1.07			153.5	SURCHARGED	
S44.003	S172	0.441	0.000	1.36			172.5	SURCHARGED	
S44.004	S173	0.155	0.000	0.94			221.8	SURCHARGED	
S44.005	S174	0.324	0.000	1.01			262.5	SURCHARGED	
S44.006	S175	0.285	0.000	1.17			261.7	SURCHARGED	
S44.007	S176	-0.068	0.000	0.96			262.1	OK	
S44.008	S177	0.154	0.000	0.92			302.1	SURCHARGED	
S44.009	S178	0.247	0.000	0.87			299.8	SURCHARGED	
S44.010	S179	0.441	0.000	1.08			314.1	SURCHARGED	
S44.011	S180	0.346	0.000	1.20			328.3	SURCHARGED	
S45.000	S181	0.659	0.000	0.02			0.1	FLOOD RISK	
S45.001	S182	0.704	4.330	1.06		104	13.2	FLOOD	4
S44.012	S183	0.364	0.000	0.04			16.9	SURCHARGED	
S46.000	S184	0.482	0.000	0.00			0.0	FLOOD RISK	
S46.001	S185	0.545	0.000	0.08			2.6	FLOOD RISK	
S39.006	S186	1.284	0.000	0.03			2.8	SURCHARGED	
S39.007	S187	0.301	0.000	0.20			13.4	SURCHARGED	
S47.000	S188	0.407	0.000	0.00			0.0	FLOOD RISK	
S47.001	S189	0.516	0.000	0.05			0.6	FLOOD RISK	
S39.008	S190	0.423	0.000	0.27			36.3	SURCHARGED	
S33.010	S191	0.706	0.000	3.73			998.7	SURCHARGED	
S33.011	S192	0.445	0.000	0.05			36.7	SURCHARGED	
S48.000	S193	0.352	0.000	0.00			0.0	SURCHARGED	
S48.001	S194	0.518	0.000	0.04			1.5	FLOOD RISK	
S48.002	S195	0.481	0.000	0.00			1.2	SURCHARGED	
S48.003	S196	0.555	0.000	0.03			5.8	SURCHARGED	
S33.012	S197	0.506	0.000	0.03			14.9	SURCHARGED	
S33.013	S198	0.582	0.000	0.03			15.2	SURCHARGED	
S49.000	S199	0.703	2.551	1.91			15.0	FLOOD	7
S49.001	S200	0.700	0.317	2.13			22.8	FLOOD	3
S33.014	S201	0.655	0.000	0.04			16.1	SURCHARGED	
S33.015	S202	0.702	0.000	0.05			15.8	SURCHARGED	
S50.000	S203	1.129	4.231	1.21			64.8	FLOOD	3
S50.001	S204	1.334	4.975	1.78			135.8	FLOOD	3
S50.002	S205	1.293	0.000	0.97			163.6	FLOOD RISK	
S51.000	S206	1.202	2.011	1.72			30.4	FLOOD	3
S51.001	S207	1.329	0.000	0.92			34.1	FLOOD RISK	
S52.000	S208	0.306	0.000	0.00			0.0	SURCHARGED	
S52.001	S209	0.330	0.000	0.05			0.5	SURCHARGED	
S50.003	S210	1.474	0.599	1.08			231.9	FLOOD	1
S53.000	S211	1.125	0.284	0.94			48.9	FLOOD	1
S53.001	S212	1.223	0.000	1.68			52.3	FLOOD RISK	
S54.000	S213	0.398	0.000	0.00			0.0	FLOOD RISK	
S54.001	S214	0.421	0.000	0.11			1.2	FLOOD RISK	

No. 1 Meadowhall Riverside
 Meadowhall Road
 Sheffield S9 1BW

Sandpit Lane
 BR31287



Date 02/10/2025
 File BR31287-JNP-92-XX-CA-C-1001

Designed by SH
 Checked by LC

Innovyze

Network 2020.1.3

100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
S50.004	S215	1.256	0.000	1.47		323.4	FLOOD RISK	

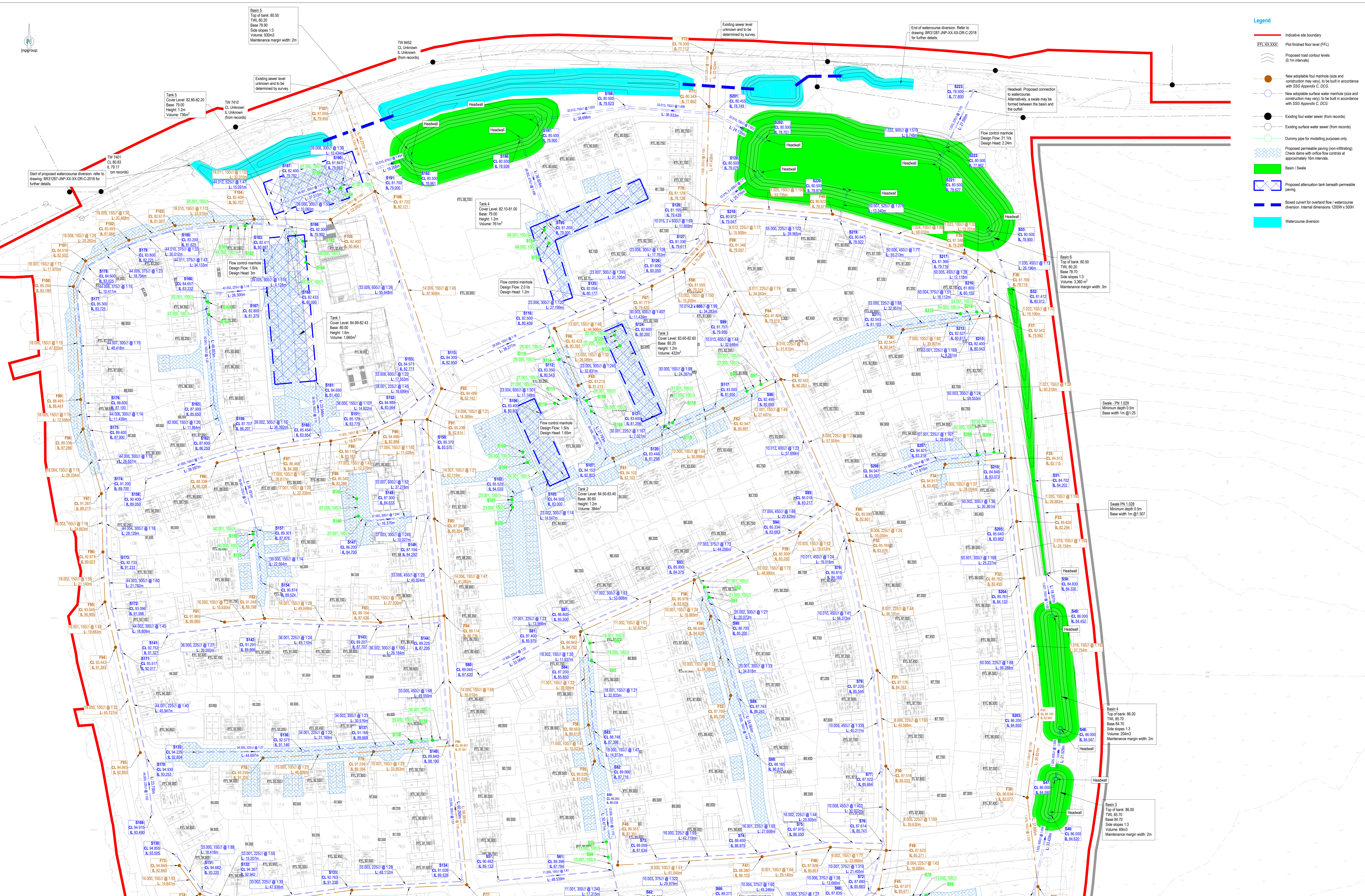
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No. 1 Meadowhall Riverside Meadowhall Road Sheffield S9 1BW		Sandpit Lane BR31287
Date 02/10/2025 File BR31287-JNP-92-XX-CA-C-1001		Designed by SH Checked by LC
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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)
S50.005	S216	15 Summer	100	+40%	30/15 Summer				81.477	0.877
S50.006	S217	15 Summer	100	+40%	30/15 Summer				81.108	0.942
S55.000	S218	15 Summer	100	+40%	30/15 Summer				80.356	0.584
S50.007	S219	15 Summer	100	+40%	30/15 Summer				80.368	0.921
S50.008	S220	2160 Winter	100	+40%	30/15 Summer				80.153	0.679
S1.032	S221	2160 Winter	100	+40%	30/15 Summer				80.153	0.626
S1.033	S222	2160 Winter	100	+40%	2/15 Summer				80.152	1.965

PN	US/MH Name	Flooded		Half Drain Pipe			Status	Level Exceeded
		Volume (m³)	Flow / Cap. (l/s)	Time (mins)	Pipe Flow (l/s)			
S50.005	S216	0.000	0.91		339.7	SURCHARGED		
S50.006	S217	0.000	1.02		343.5	FLOOD RISK		
S55.000	S218	0.000	0.08		3.5	SURCHARGED		
S50.007	S219	0.000	2.09		431.6	FLOOD RISK		
S50.008	S220	0.000	0.07		19.2	SURCHARGED		
S1.032	S221	0.000	0.17		80.0	SURCHARGED		
S1.033	S222	0.000	0.57		21.0	SURCHARGED		



- Legend**
- Indicative site boundary
 - Plot finished floor level (FFL)
 - Proposed road contour levels (0.1m intervals)
 - New adoptable foul manhole (size and construction may vary), to be built in accordance with SSG Appendix C, DCG
 - New adoptable surface water manhole (size and construction may vary), to be built in accordance with SSG Appendix C, DCG
 - Existing foul water sewer (from records)
 - Existing surface water sewer (from records)
 - Dummy pipe for modeling purposes only
 - Proposed permeable paving (non-infiltrating). Check dams with orifice flow controls at approximately 10m intervals.
 - Basin / Swale
 - Proposed attenuation tank beneath permeable paving
 - Boxed culvert for overland flow / watercourse diversion. Internal dimensions 1200W x 500H
 - Watercourse diversion

General Notes

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Taylor Wimpey North Thames		<p>JNP GROUP CONSULTING ENGINEERS</p> <p>Amersham • Belfast • Bingham • Bristol Harrogate • Sheffield • Warrick</p> <p>www.jnpgroup.co.uk</p>
Land of Sandpit Lane, St Albans		
Drainage Strategy Layout Sheet 1 of 2		<p>PO3 01/10/2025 Updated Site Layout and Change JMSH</p> <p>PO2 09/09/2025 Updated Site Layout JMSH/CLC</p> <p>PO1 21/05/2025 First Issue JMSH/CLC</p>
Scale:	FL 60_20	<p>BR31287-JNP-XX-DR-C-2015</p> <p>PO3</p>

S2 - Suitable for Information