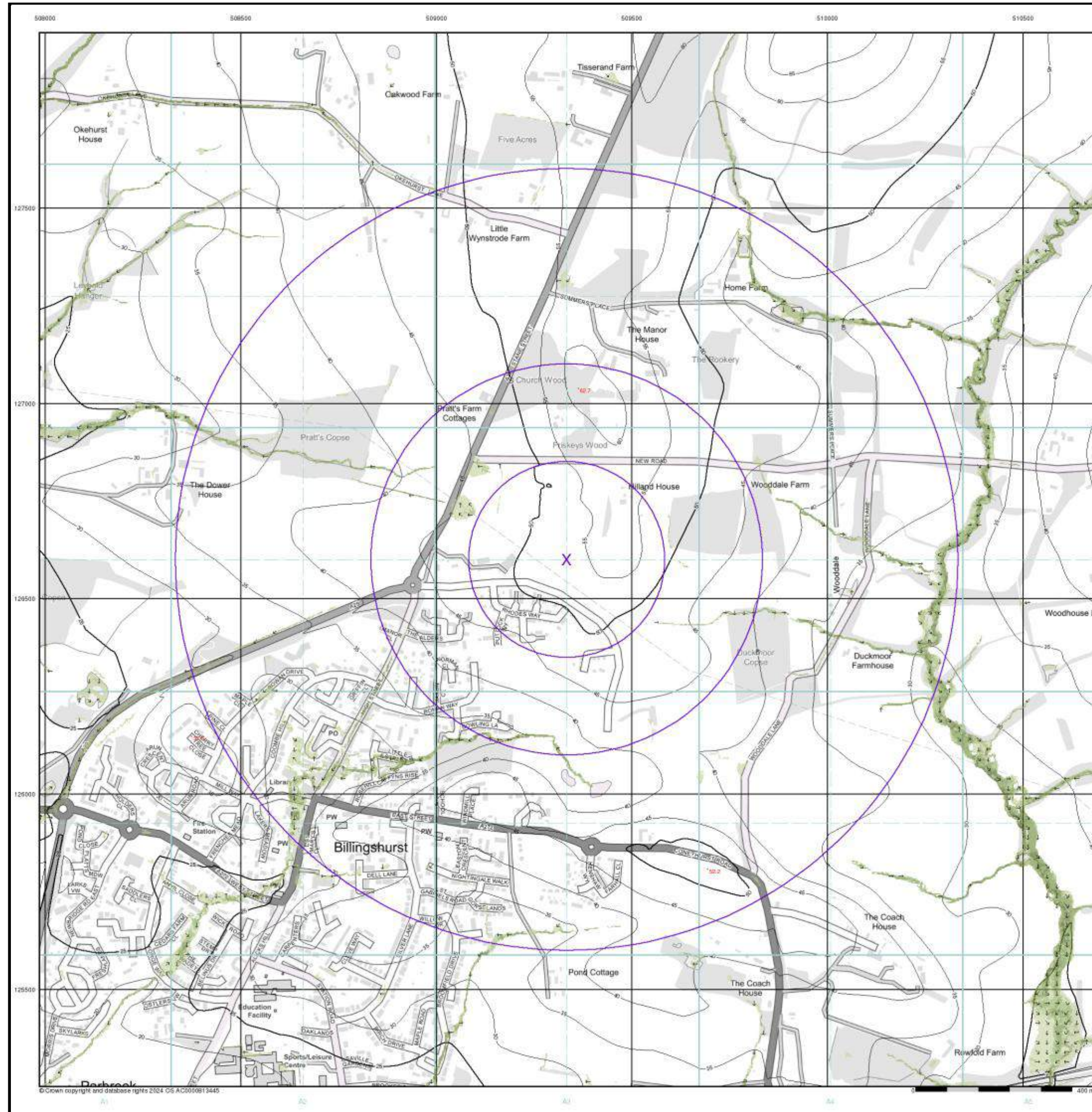
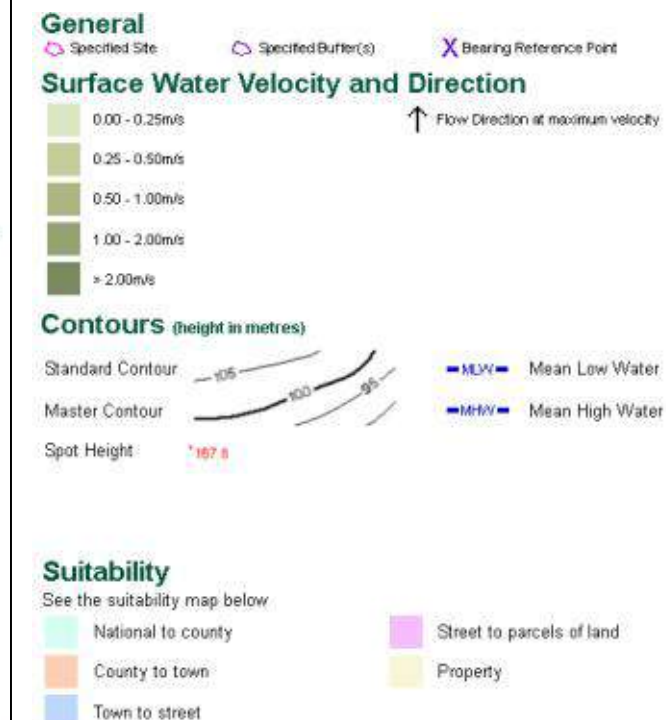


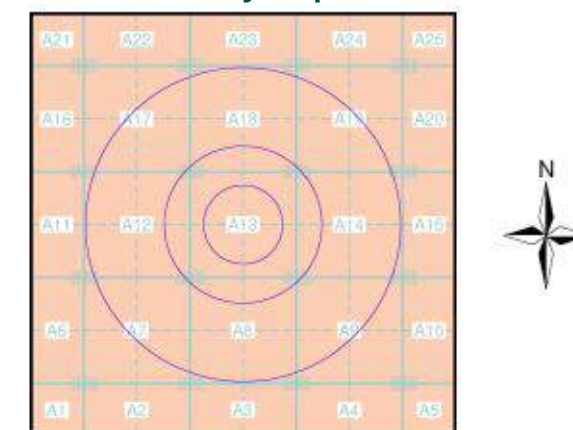


motion

EA/NRW Surface Water 30 Year Return Velocity and Flow Direction Map (1:10,000)



EA/NRW Suitability Map - Slice A



Order Details

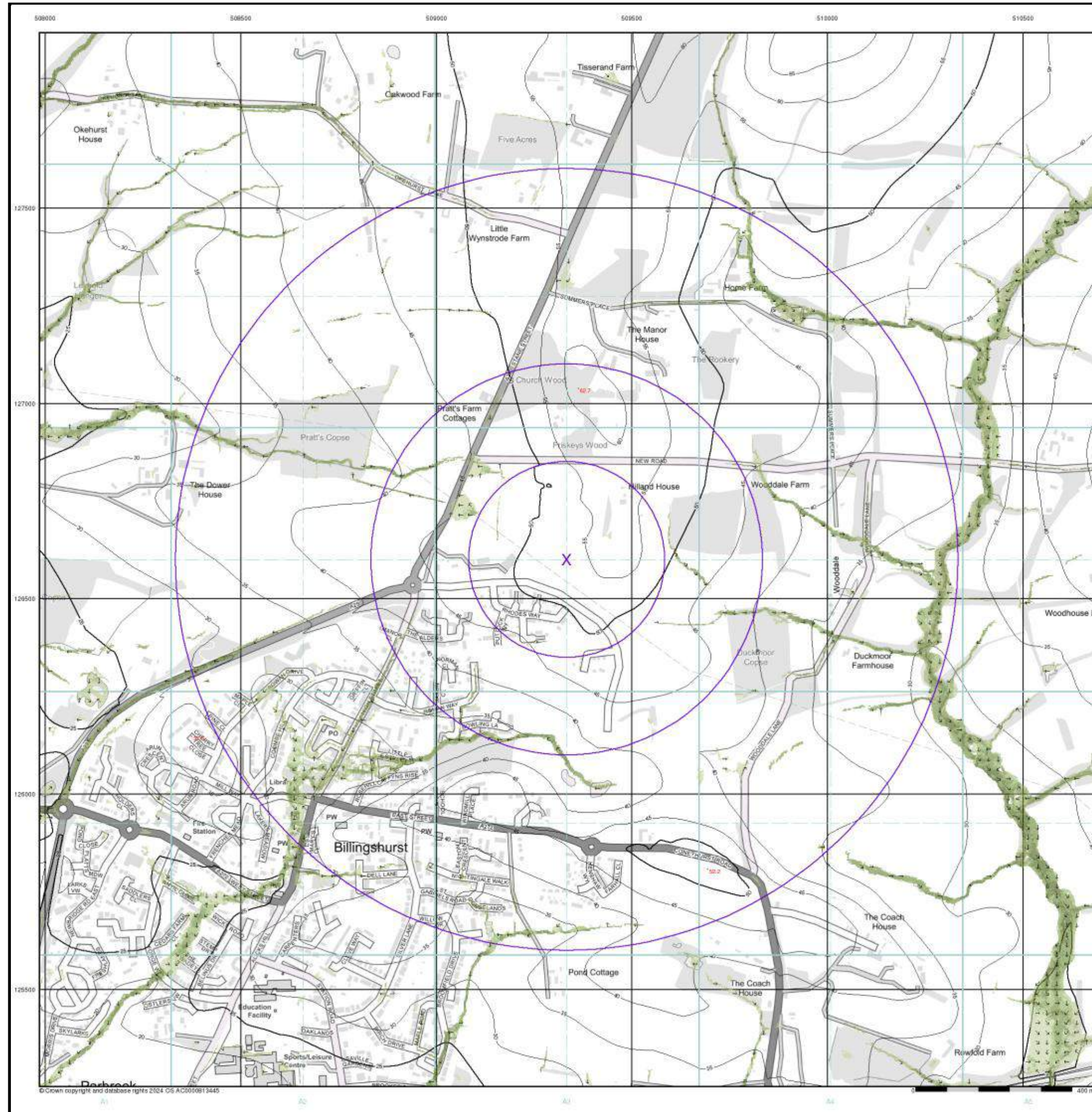
Order Number: 360250553_1_1
Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

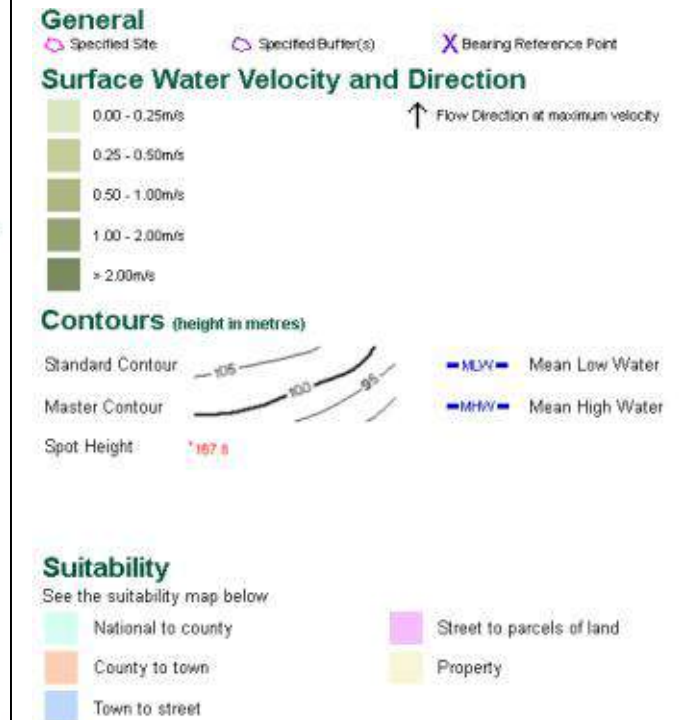
Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

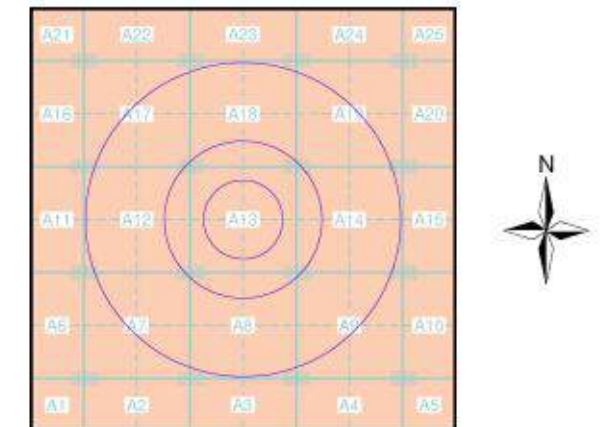


motion

EA/NRW Surface Water 100 Year Return Velocity and Flow Direction Map (1:10,000)



EA/NRW Suitability Map - Slice A



Order Details

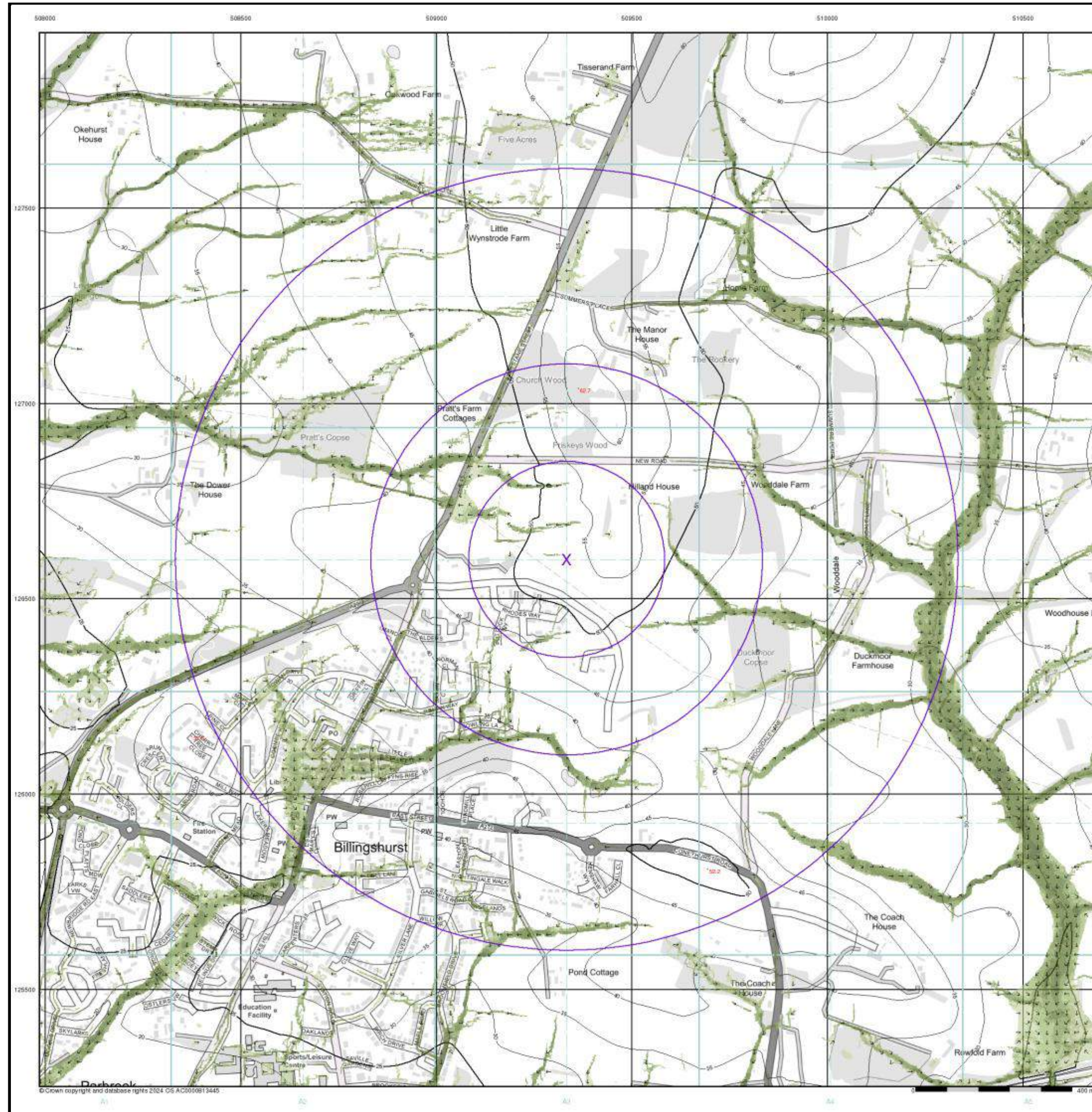
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Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

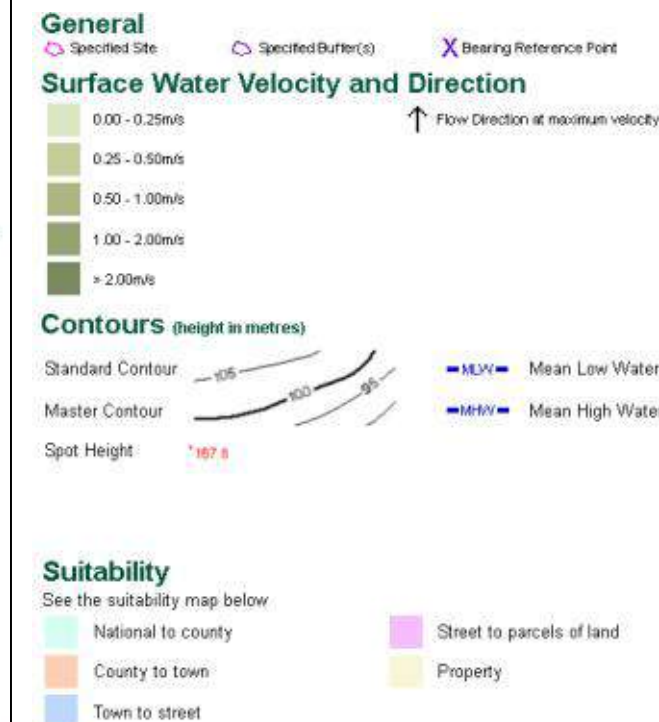
Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

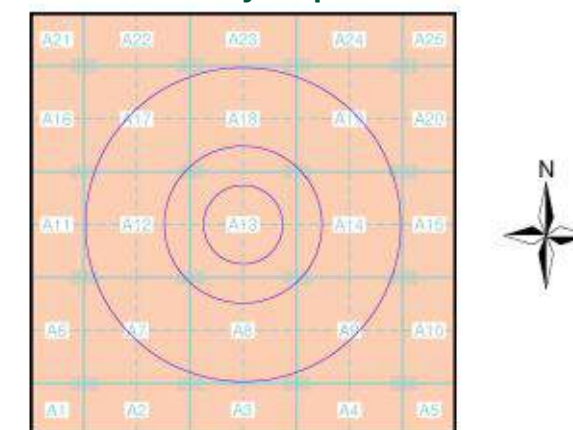


motion

EA/NRW Surface Water 1000 Year Return Velocity and Flow Direction Map (1:10,000)



EA/NRW Suitability Map - Slice A



Order Details

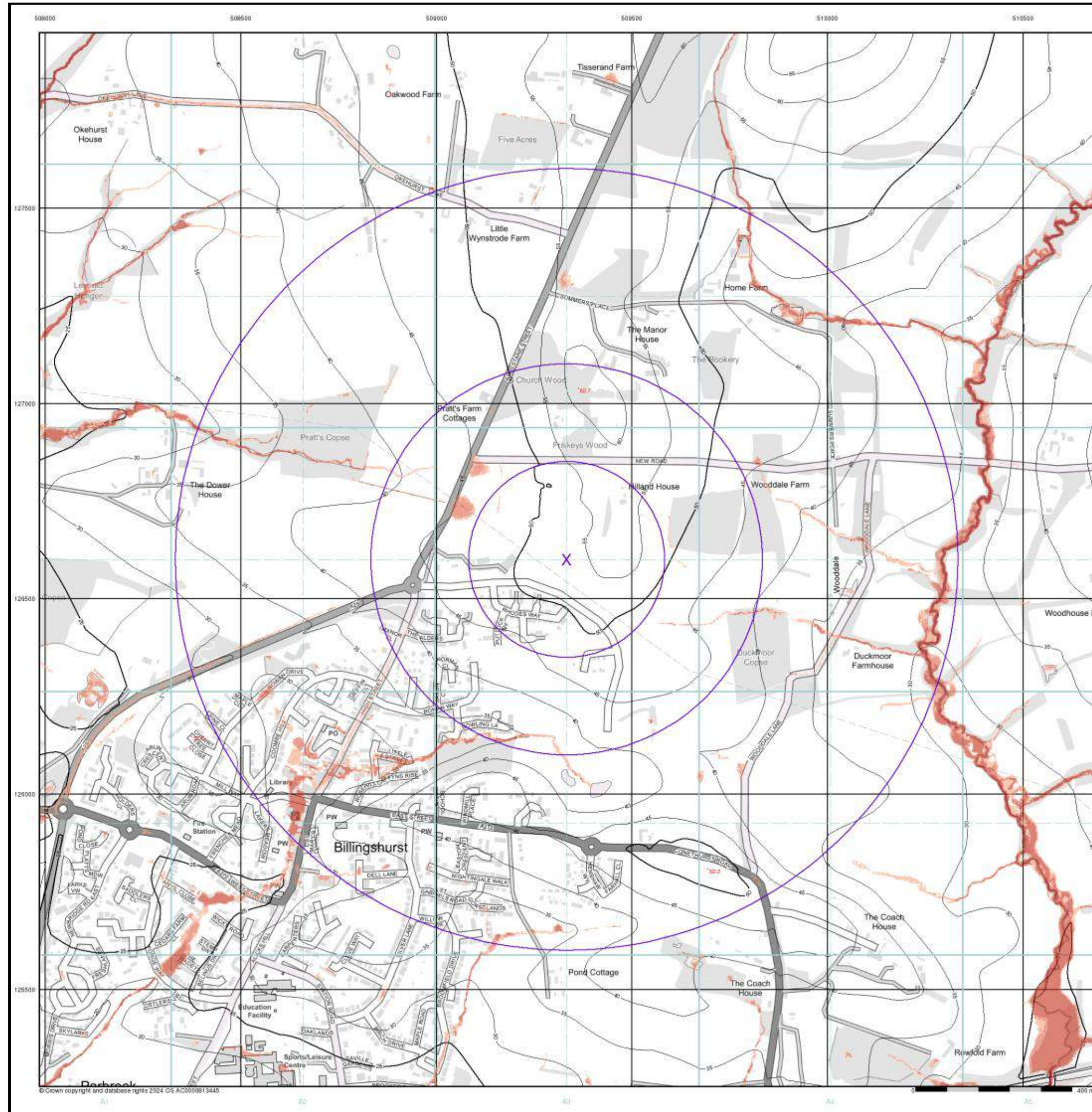
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Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



motion

EA/NRW Surface Water 30 Year Return Hazard Rating Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Surface Water Hazard Rating

- Low (0.5 – 0.75)
- Moderate (0.75 – 1.25)
- Significant (1.25 – 2.0)
- Extreme (>2.0)

Contours (height in metres)

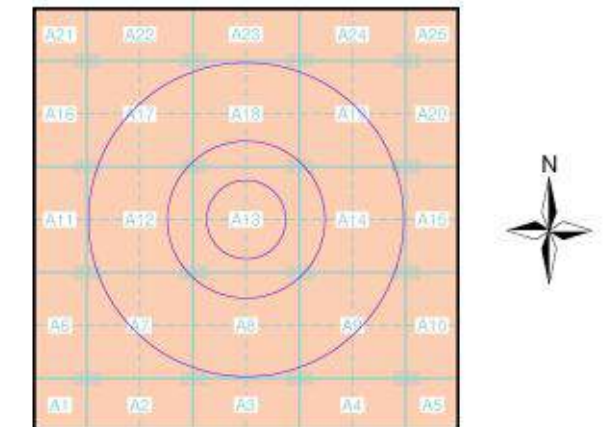
- Standard Contour
- Master Contour
- Spot Height

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A

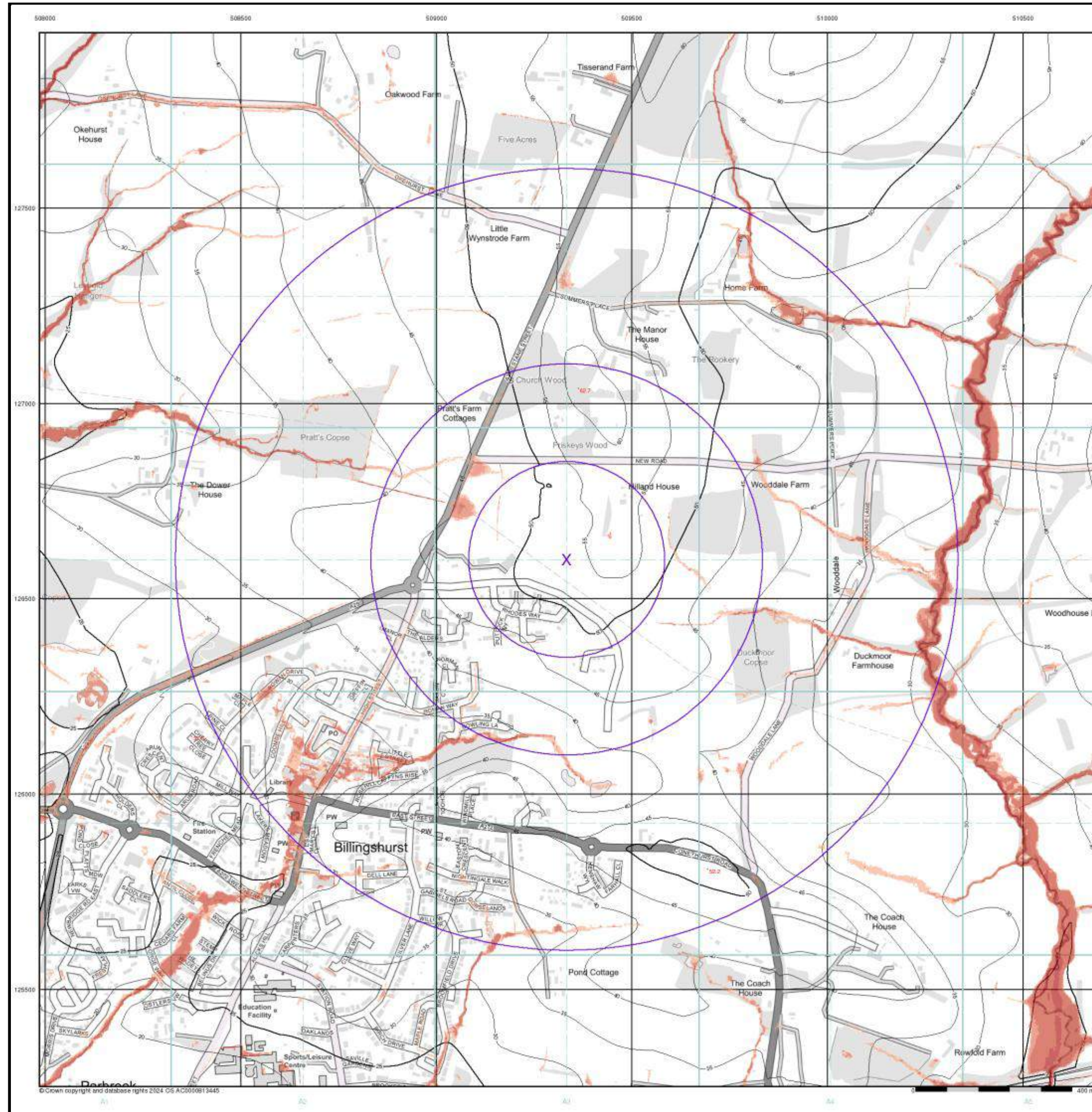


Order Details

Order Number: 360250553_1_1
Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

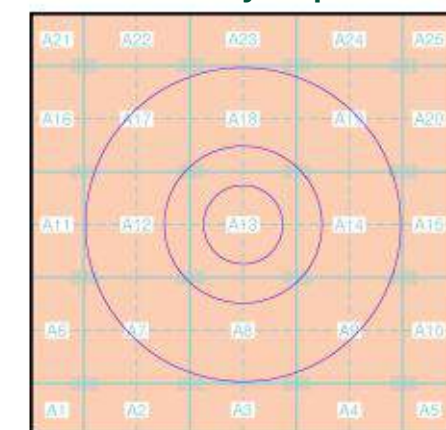


motion

EA/NRW Surface Water 100 Year Return Hazard Rating Map (1:10,000)

- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
- Surface Water Hazard Rating**
- Low (0.5 – 0.75)
 - Moderate (0.75 – 1.25)
 - Significant (1.25 – 2.0)
 - Extreme (>2.0)
- Contours (height in metres)**
- Standard Contour
 - Master Contour
 - Spot Height
- Suitability**
- See the suitability map below
- National to county
 - County to town
 - Town to street
 - Street to parcels of land
 - Property

EA/NRW Suitability Map - Slice A



Order Details

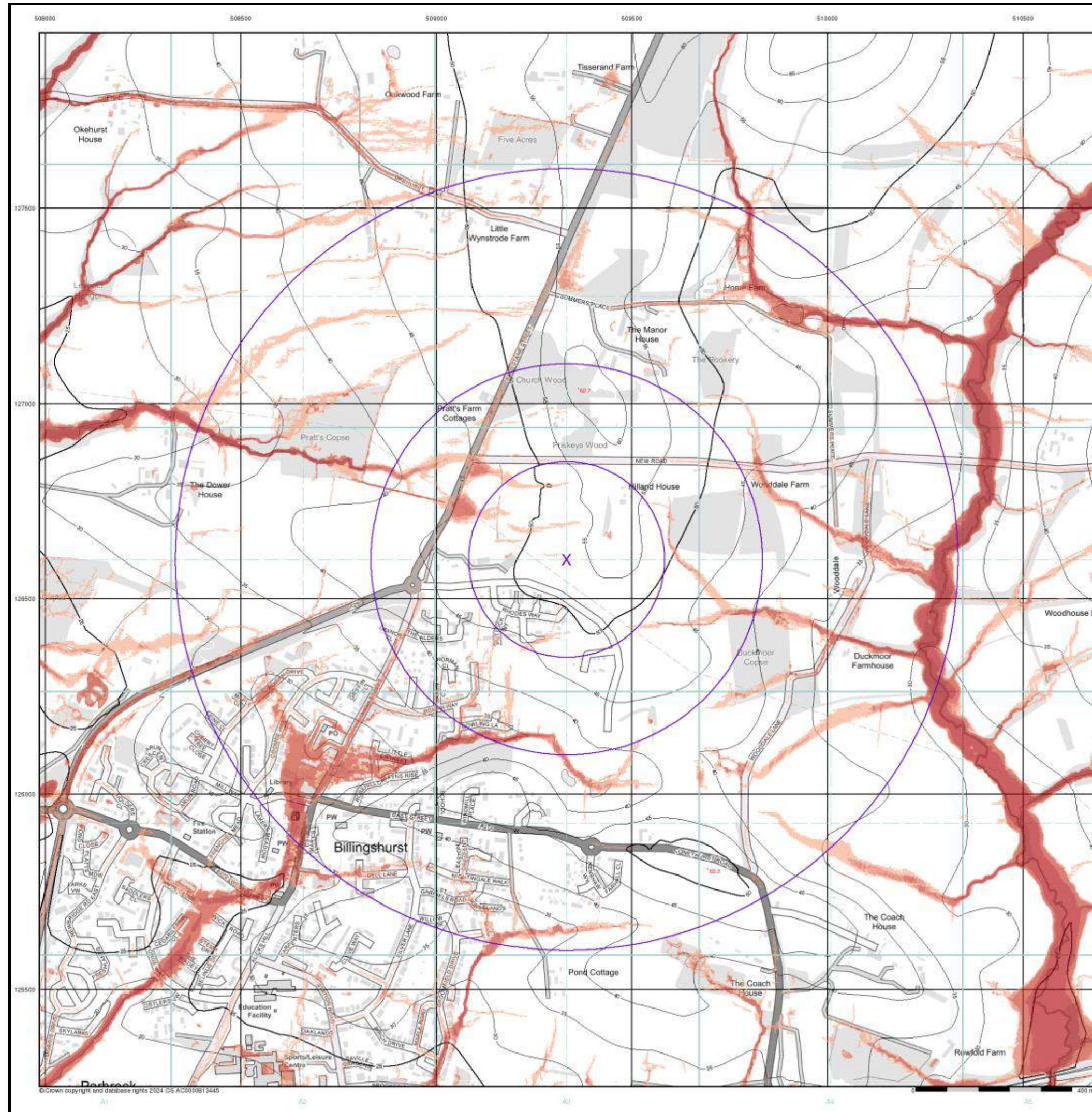
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Customer Ref: 1dubil 1904029
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Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

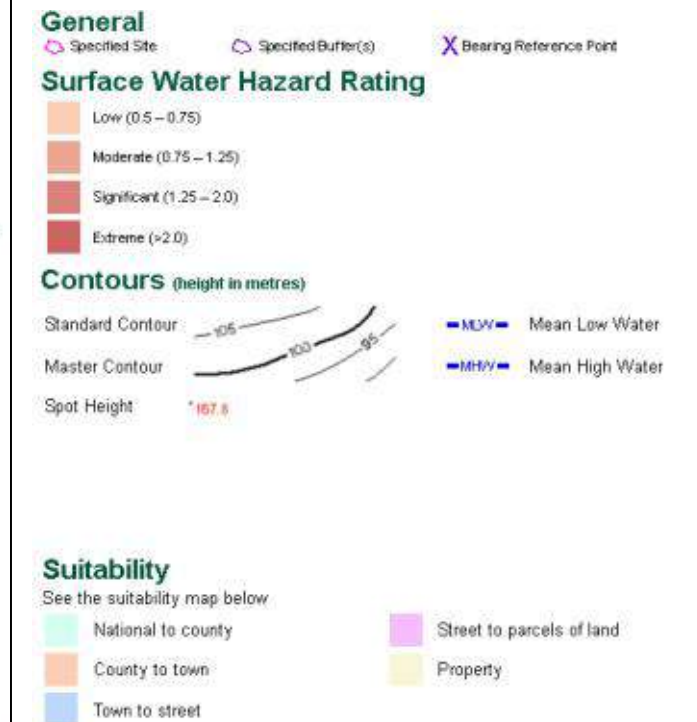
Landmark
INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

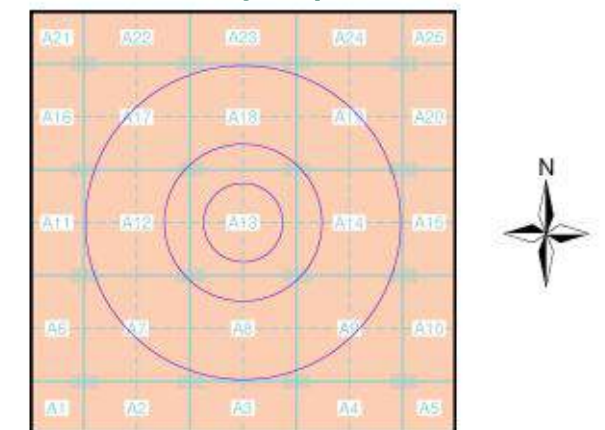


motion

EA/NRW Surface Water 1000 Year Return Hazard Rating Map (1:10,000)



EA/NRW Suitability Map - Slice A



Order Details

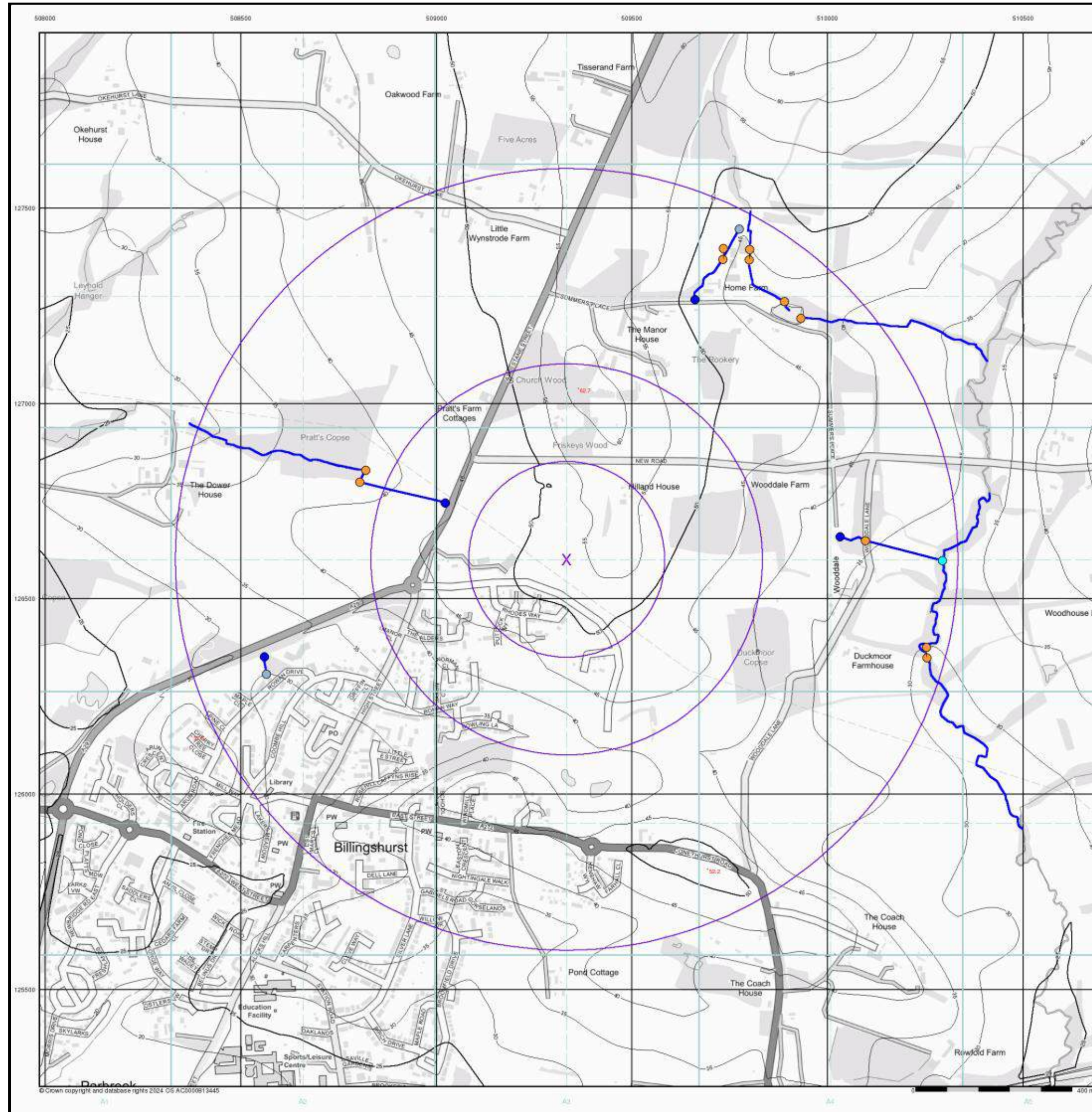
Order Number: 360250553_1_1
Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
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Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

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Web: www.envirocheck.co.uk



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OS Water Network Lines Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

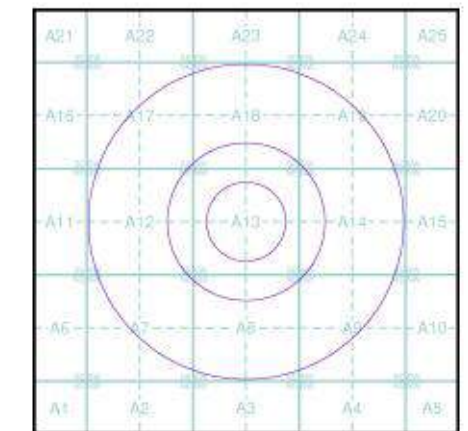
OS Water Network Data

- | | |
|--------------|-------------------------|
| Canal | Drain |
| Reservoir | Other |
| Foreshore | Lake |
| Marsh | Transfer |
| Tidal River | Lock Or Flight Of Locks |
| Inland River | Sea |
| Junction | Source |
| Outlet | Other |
| Pseudo | |

Contours (height in meters)

- Standard Contour 1:5
- Master Contour 1:10
- Spot Height 167.3
- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

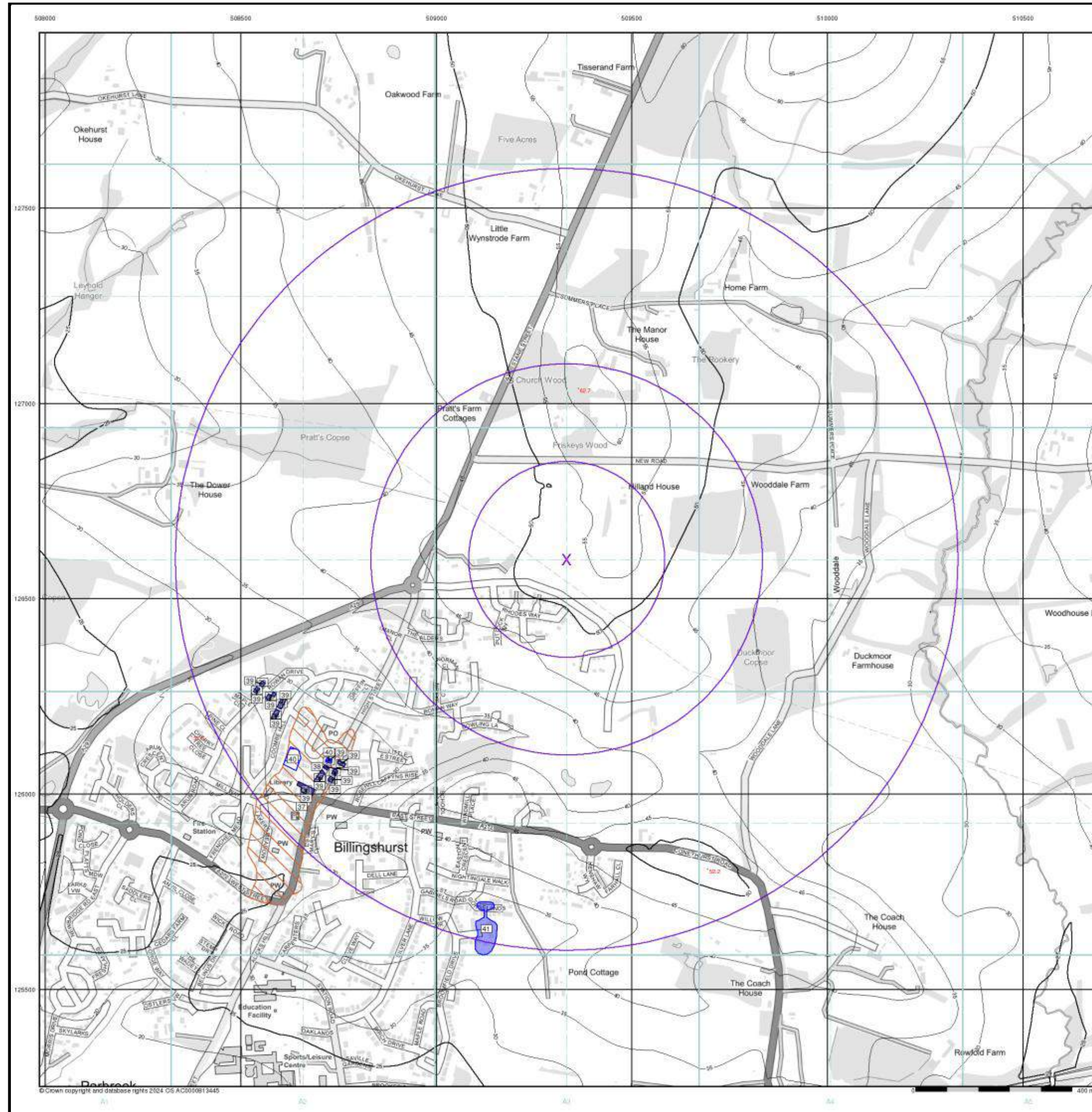
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Customer Ref: 1dubil 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

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Landmark
INFORMATION GROUP

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Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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EANRW Historic Flood Map (1:10,000)

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID

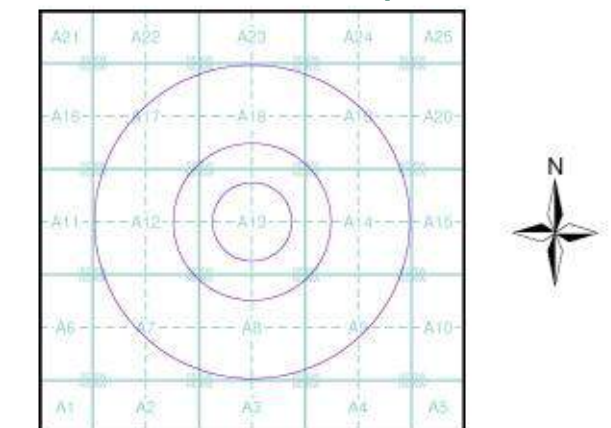
Historic Flood Events Data

- Channel Capacity Exceeded (no raised defences)
- Channel Capacity Exceeded /Surface Water
- Groundwater/High Water Table
- Local Drainage/Surface Water
- Mechanical Failure
- Obstruction/Blockage - Bridge
- Obstruction/Blockage - Channel
- Historical Flood Liabilities
- Obstruction/Blockage - Culvert
- Obstruction/Blockage - Debris Screen
- Operational Failure/ Breach of Defence
- Other
- Overtopping of Defences
- Surface Water
- Unknown

Contours (height in metres)

- Standard Contour
- Master Contour
- Spot Height
- Mean Low Water
- Mean High Water

EANRW Historic Flood Map - Slice A



Order Details

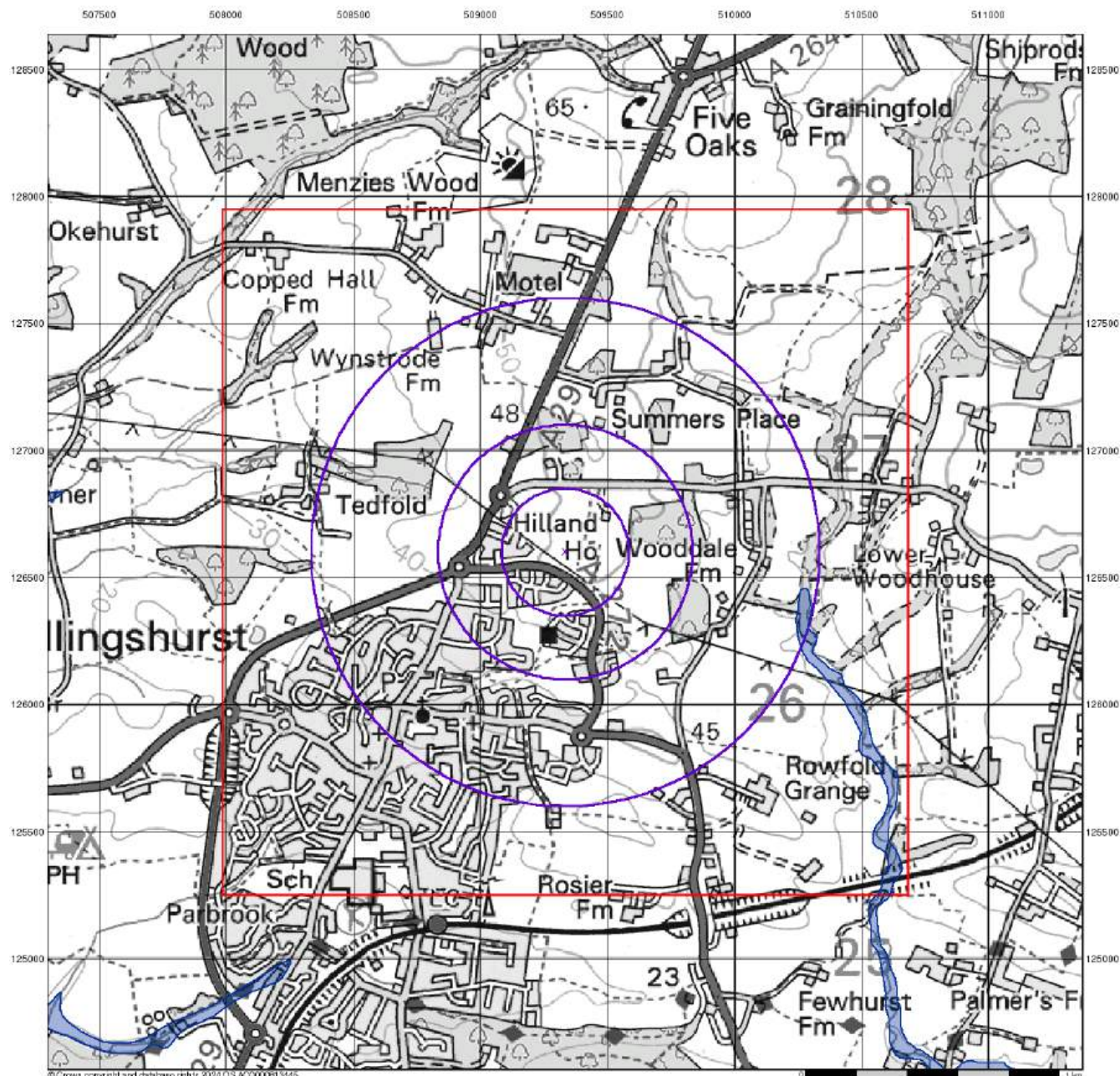
Order Number: 360250553_1_1
 Customer Ref: 1dubil 1904029
 National Grid Reference: 509330, 126600
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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Landmark
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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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motion BGS Flood Data (1:50,000)

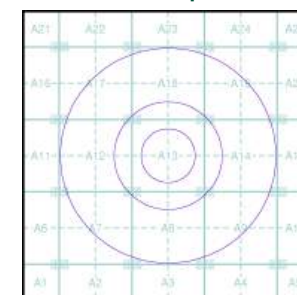
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

BGS Geological Indicators of Flooding

-  Coastal
-  Inland
-  Bodies of Water

BGS Flood Data Map - Slice A



Order Details

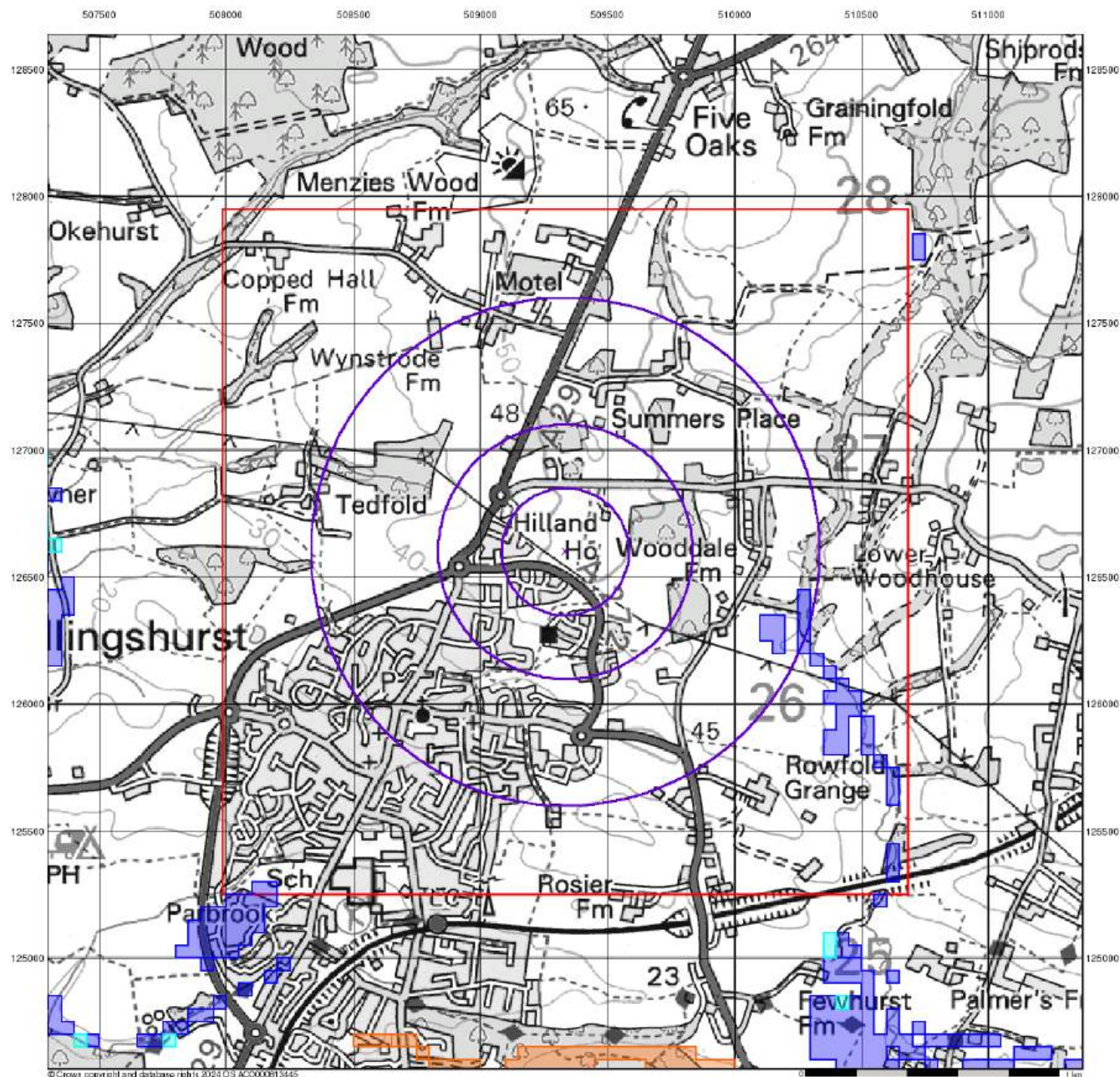
Order Number: 360250553 1 1
 Customer Ref: 1dubil 1904029
 National Grid Reference: 509330, 126600
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



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motion BGS Flood Data (1:50,000)

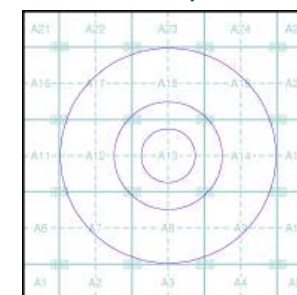
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

BGS Groundwater Flooding Susceptibility

-  Potential for Groundwater Flooding to Occur at Surface
-  Potential for Groundwater Flooding of Property Situated Below Ground Level
-  Limited Potential for Groundwater Flooding to Occur

BGS Flood Data Map - Slice A



Order Details

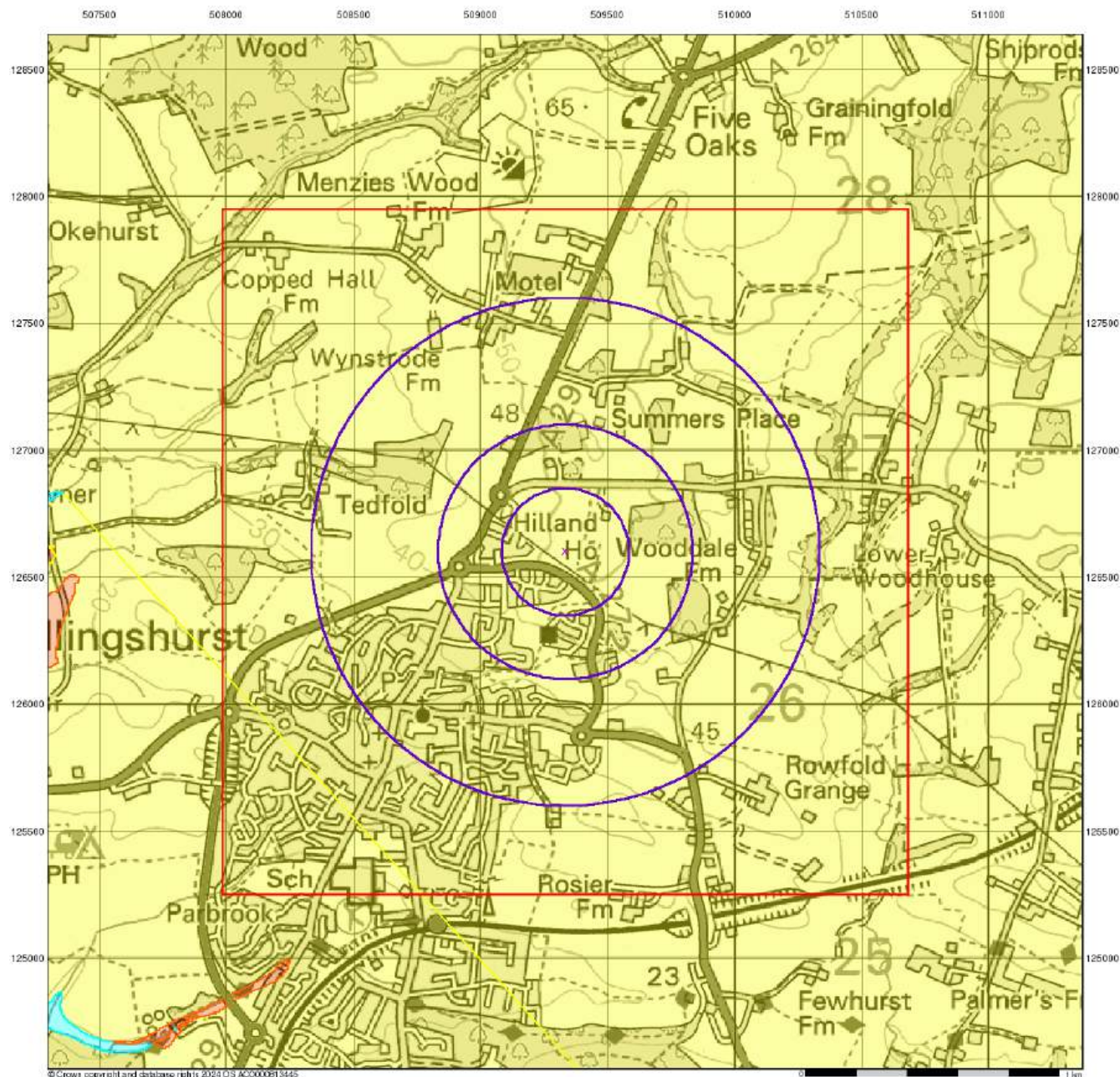
Order Number: 360250553 1 1
 Customer Ref: 1dubil 1904029
 National Grid Reference: 509330, 126600
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

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 INFORMATION GROUP

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 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



GeoSmart Information Groundwater Flood Map (1:50,000)

General

Specified Site Specified Buffer(s) Bearing Reference Point

Slice

GeoSmart Information Groundwater Flooding Risk

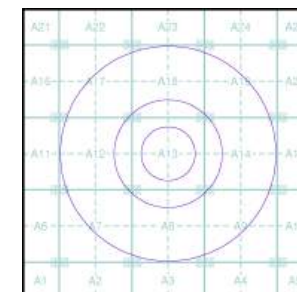
High Risk

Moderate Risk

Low Risk

Negligible Risk

GeoSmart Information Groundwater Flood Map - Slice A



Order Details

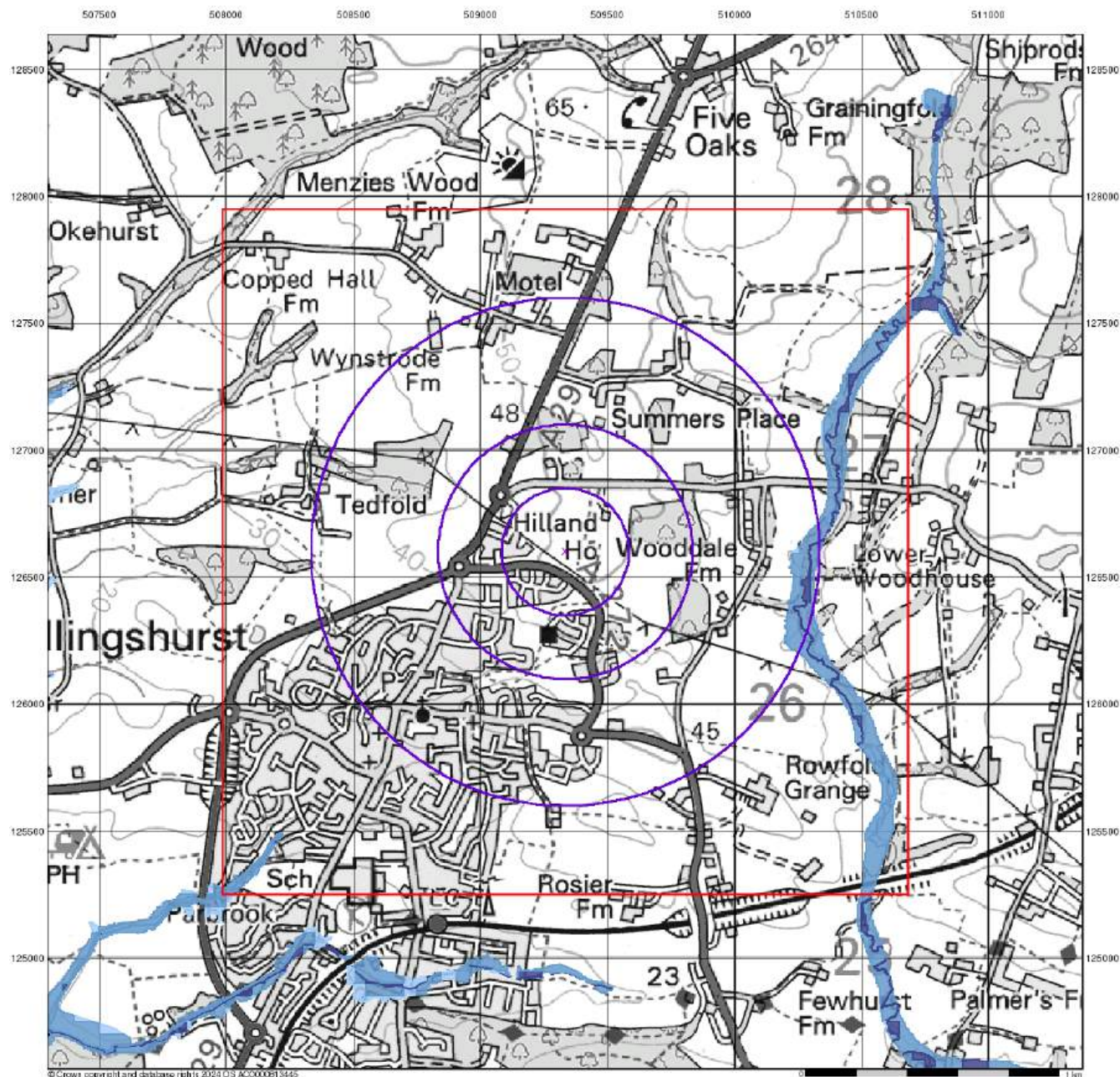
Order Number: 360250553 1 1
Customer Ref: 1dub1 1904029
National Grid Reference: 509330, 126600
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

Landmark
INFORMATION GROUP

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EA/NRW RoFRS Data (1:50,000)

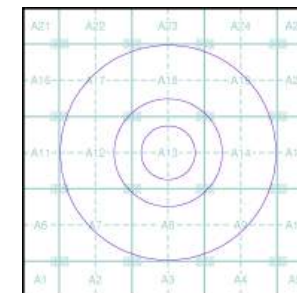
General

-  Specified Site
-  Specified Buffer(s)
-  Bearing Reference Point
-  Slice
-  Map ID

Risk of Flooding from Rivers and Sea (RoFRS)

-  High Risk
-  Medium Risk
-  Low Risk
-  Very Low Risk

EA/NRW RoFRS Data Map - Slice A



Order Details

Order Number: 360250553 1 1
 Customer Ref: 1dubil 1904029
 National Grid Reference: 509330, 126600
 Slice: A
 Site Area (Ha): 0.01
 Search Buffer (m): 1000

Site Details

2 Old Hilland, Hilland Road, BILLINGSHURST, RH14 9HN

Landmark
 INFORMATION GROUP

Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk

Appendix F

Southern Water Asset Records



(c) Crown copyright and database rights 2021 Ordnance Survey 100031673

Date: 25/01/21

Scale: 1:1000

Map Centre: 509230.126590

Data updated: 18/01/21

Our Ref: 487518 - 1

Wastewater Plan A1

The positions of pipes shown on this plan are believed to be correct, but Southern Water Services Ltd accept no responsibility in the event of inaccuracy. The actual positions should be determined on site. This plan is produced by Southern Water Services Ltd (c) Crown copyright and database rights 2020 Ordnance Survey 100031673. This map is to be used for the purposes of viewing the location of Southern Water plant only. Any other uses of the map data or further copies is not permitted.

WARNING: BAC pipes are constructed of Bonded Asbestos Cement.

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

Combined Pumping Station	Foul Manhole
Surface Water Pumping Station	Combined Manhole
Foul Pumping Station	Surface Water Manhole
100% Water Treatment Works	Dark Grey Manhole, Deposition Chamber, Corrosive Material or Surface Water Inlet
Section 104 Area	
Boundary Line Agreement Area	



vhldo@motion.co.uk
Billingshurst

Appendix G

UKSuDS Greenfield Runoff Calculations

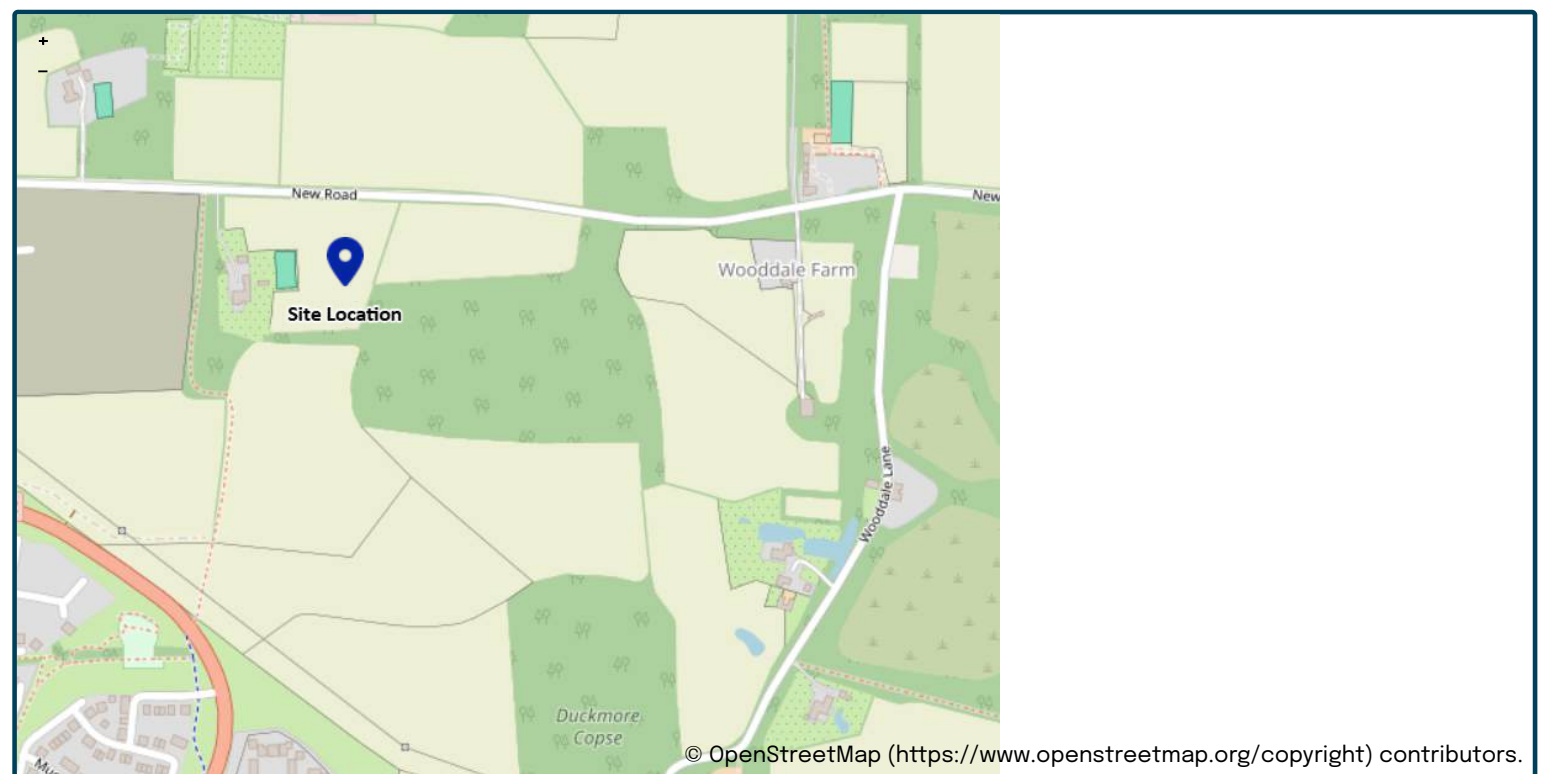
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). 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	03/06/2025
Calculated by	
Reference	
Model version	2.0.1

Location

Site name	Land at Billingshurst Trade Park
Site location	Land at Billingshurst Trade Park



Site easting	509577
Site northing	126740

Site details

Total site area (ha)	1	ha
----------------------	--------------------------------	----

Greenfield runoff

Method

Method	FEH statistical
--------	-----------------

FEH statistical

	<u>My value</u>		<u>Map value</u>
SAAR (mm)	774	mm	774
BFIHOST	0.27		
QMed-QBar conversion	1.136		1.136
QMed (l/s)	6.54	l/s	
QBar (FEH statistical) (l/s)	7.4	l/s	

Growth curve factors

	<u>My value</u>		<u>Map value</u>
Hydrological region	7		7
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	FEH statistical	
Flow rate 1 year (l/s)	6.3	l/s
Flow rate 2 year (l/s)	6.5	l/s
Flow rate 10 years (l/s)	12	l/s
Flow rate 30 years (l/s)	17.1	l/s
Flow rate 100 years (l/s)	23.7	l/s
Flow rate 200 years (l/s)	27.8	l/s

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.0.1) 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.

Appendix H

Environment Agency Flood Product 4 Data Set

Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
509403/126561

Created
8 Oct 2024 13:59

Your selected location is in flood zone 1, an area with a low probability of flooding.

You will need to do a flood risk assessment if your site is **any of the following:**

- bigger than 1 hectare (ha)
- In an area with critical drainage problems as notified by the Environment Agency
- identified as being at increased flood risk in future by the local authority's strategic flood risk assessment
- at risk from other sources of flooding (such as surface water or reservoirs) and its development would increase the vulnerability of its use (such as constructing an office on an undeveloped site or converting a shop to a dwelling)

Notes

The flood map for planning shows river and sea flooding data only. It doesn't include other sources of flooding. It is for use in development planning and flood risk assessments.

This information relates to the selected location and is not specific to any property within it. The map is updated regularly and is correct at the time of printing.

Flood risk data is covered by the Open Government Licence **which** sets out the terms and conditions for using government data. <https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>

Use of the address and mapping data is subject to Ordnance Survey public viewing terms under Crown copyright and database rights 2022 OS 100024198. <https://flood-map-for-planning.service.gov.uk/os-terms>



Flood map for planning

Your reference
<Unspecified>

Location (easting/northing)
509403/126561

Scale
1:2500

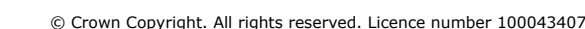
Created
8 Oct 2024 13:59

-  Selected area
-  Flood zone 3
-  Flood zone 2
-  Flood zone 1
-  Flood defence
-  Main river
-  Water storage area

0 20 40 60m

Appendix I

Environment Agency Surface Water Flood Map



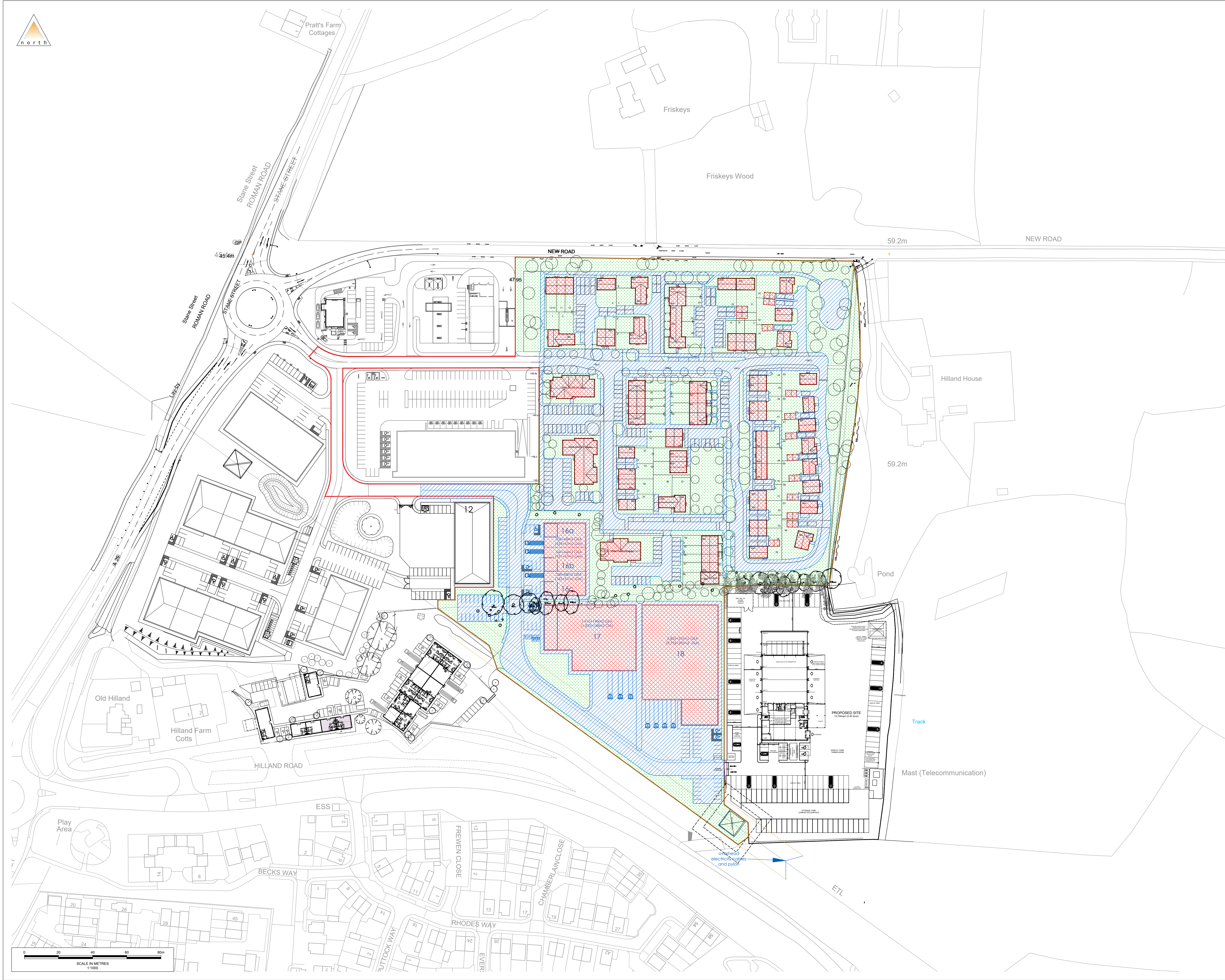
Revision:
P01

Appendix J

Impermeable Area Plan



C:\Users\matthew.mcdon\Documents\1904029-P2R-9001-P01 [Phase 2 Residential - Impermeable Areas] .dwg



Notes

1. All levels and dimensions are to be checked on site before any work commences. All dimensions are in metres unless stated otherwise.
2. This drawing has been based upon OS Mapping Data and Motion cannot guarantee the accuracy of the data provided.
3. Any discrepancies should be reported to the architect and/or engineer immediately, so that clarification can be sought prior to the commencement of works.
4. This drawing should be read in conjunction with all other relevant architect and engineering details, drawings and specification.

Legend

	Planning Site Boundary
	Impermeable Areas - Roofs Total Area - 11,305 m ² [1.13 ha]
	Impermeable Areas - Roads/Paving Total Area - 20,391 m ² [2.04 ha]
	Permeable Areas - Grassed Areas / Gardens Total Area - 19,805 m ² [1.98 ha]

P01	First Issue	MH	VBH	NJ	06/08/2025
Rev.	Description	Drm	Chk	App	Date

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION



Project:
Land at Billingshurst Trade Park
Stane Street, Billingshurst

Title:
Impermeable Areas Plan

Scale: 1:1,000 (@ A1)

Drawing:
1904029-P2R-9001

Revision:
P01

Appendix K

Proposed Drainage Strategy



Notes

1. All levels and dimensions are to be checked on site before any work commences. All dimensions are in metres unless stated otherwise.
2. This drawing has been based upon OS Mapping Data and Motcom cannot guarantee the accuracy of the data provided.
3. Any discrepancies should be reported to the architect and/or engineer immediately, so that clarification can be sought prior to the commencement of works.
4. This drawing should be used in conjunction with all other relevant architectural and engineering details, drawings and specification.

Legend

	Planning Site Boundary
	Permeable Paving Area Total Area: 2334 m² Depth: 0.45 m Void Ratio: 30% Volume: 315 m³
	Cellular Storage Tank Total Area: 2620 m² Depth: 0.4m - 1.0m Void Ratio: 95% Volume: 2306 m³
	Pond / Attenuation Basin Total Area: 181 m² Depth: 1.0 m Slopes: 1:3 Volume: 109 m³
	New SW Gravity Pipe
	New SW Manhole / Inspection Chamber
	New SW Flow Control Chamber

Manhole Name	Pipe Number	Cover Level (m)	Invert Level (m)	Pipe Diameter (mm)
S38	S14.000	52.650	50.800	300
S39	S14.001	51.700	49.725	375
S40	S14.002	50.210	48.875	375
S41	S14.003	49.670	47.754	375
S111	S14.004	48.725	46.650	450
S1.000	S15.000	52.000	51.000	225
S1.001	S15.001	51.750	50.475	300
S2.000	S16.000	56.000	54.600	150
S2.001	S16.001	55.800	54.220	150
S2.002	S16.002	55.500	53.935	225
S2.003	S16.003	55.200	53.710	300
S2.004	S16.004	54.900	53.610	300
S2.005	S16.005	54.750	53.530	300
S2.006	S16.006	54.600	53.450	300
S2.007	S16.007	54.000	53.300	300
S1.002	S15.002	53.000	50.225	300
S1.003	S15.003	52.100	48.589	300
S1.004	S15.004	51.700	46.953	300
S3.000	S17.000	51.650	48.676	300
S3.001	S17.001	52.000	48.576	300
S1.005	S15.005	51.200	45.276	525
S1.006	S15.006	49.750	45.176	525
S46A	S14.005	48.340	46.420	450
S48	S14.006	48.514	45.400	600
S65	EX	47.202	EX	EX
S50	S25.000	52.000	48.125	100
S51	S25.001	52.000	47.775	225
S4.000	S26.000	52.600	51.000	150
S4.001	S26.001	52.400	50.545	225
S4.002	S26.002	52.400	50.245	225
S4.003	S26.003	51.800	50.003	300
S5.000	S27.000	52.400	50.800	150
S4.004	S26.004	51.500	49.903	300
S6.000	S28.000	51.000	49.000	150
S6.001	S28.001	51.000	48.775	225
S4.005	S26.005	49.600	48.350	300
S4.006	S26.006	51.300	47.251	375
S44	S25.002	50.090	47.550	225
S46B	S25.003	48.700	46.710	225
S75	EX	48.100	EX	EX

P01	First Issue	MH	VBH	NJ	06/08/2025
Rev.	Description	Drn	Chk	App	Date

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

motion

Guildford - Reading - London
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Client:

DUNMOORE



Project:
Land at Billingshurst Trade Park
Stane Street, Billingshurst

Title:
Drainage Strategy

Scale: 1:1,000 (@ A1)

Drawing: 1904029-P2R-0501 Revision: P01

Appendix L

MicroDrainage Calculations

Motion

84 North Street
Guildford
Surrey GU1 4AU

Date 06/08/2025 15:57
File 2025TRADEPARKFULL MODEL01.MDX

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Billingshurst
Enterprise Park

Designed by TA
Checked by SLW

Network 2020.1.3

Page 1



STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)

100

M5-60 (mm)

20.000

Ratio R

0.357

Maximum Rainfall (mm/hr)

100

Maximum Time of Concentration (mins)

30

Foul Sewage (l/s/ha)

0.000

Volumetric Runoff Coeff.

0.750

PIMP (%)

100

Add Flow / Climate Change (%)

0

Minimum Backdrop Height (m)

0.200

Maximum Backdrop Height (m)

1.500

Min Design Depth for Optimisation (m)

1.200

Min Vel for Auto Design only (m/s)

1.00

Min Slope for Optimisation (1:X)

500

Designed with Level Soffits

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	23.905	0.170	140.6	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.001	4.878	0.040	121.9	0.022	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.002	30.930	0.180	171.8	0.017	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.003	12.022	0.080	150.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.004	12.700	0.555	22.9	0.012	0.00	0.0	0.600	o	225	Pipe/Conduit	
S2.000	17.393	0.200	87.0	0.018	5.00	0.0	0.600	o	150	Pipe/Conduit	
S2.001	22.843	0.575	39.7	0.009	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.000	4.751	0.710	6.7	0.078	5.00	0.0	0.600	o	150	Pipe/Conduit	
S2.002	44.809	0.090	497.9	0.014	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.003	4.934	0.020	246.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S4.000	34.642	0.125	277.1	0.040	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.005	10.162	0.040	254.1	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.006	16.629	0.075	221.7	0.041	0.00	0.0	0.600	o	300	Pipe/Conduit	
S5.000	54.560	0.150	363.7	0.068	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.007	25.796	0.105	245.7	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	100.00	5.47	45.740	0.012	0.0	0.0	0.0	0.85	14.9	3.4
S1.001	100.00	5.56	45.570	0.034	0.0	0.0	0.0	0.91	16.1	9.2
S1.002	100.00	6.08	45.455	0.052	0.0	0.0	0.0	0.99	39.5	13.9
S1.003	100.00	6.27	45.275	0.052	0.0	0.0	0.0	1.06	42.3	13.9
S1.004	100.00	6.34	45.195	0.063	0.0	0.0	0.0	2.75	109.2	17.2
S2.000	100.00	5.27	45.600	0.018	0.0	0.0	0.0	1.08	19.1	4.9
S2.001	100.00	5.45	45.325	0.027	0.0	0.0	0.0	2.08	82.8	7.3
S3.000	100.00	5.02	45.535	0.078	0.0	0.0	0.0	3.92	69.3	21.2
S2.002	100.00	6.52	44.675	0.119	0.0	0.0	0.0	0.70	49.3	32.3
S2.003	100.00	6.60	44.585	0.119	0.0	0.0	0.0	1.00	70.4	32.3
S4.000	100.00	5.96	45.300	0.040	0.0	0.0	0.0	0.60	10.6«	10.7
S1.005	100.00	6.78	44.565	0.223	0.0	0.0	0.0	0.98	69.4	60.3
S1.006	100.00	7.04	44.525	0.264	0.0	0.0	0.0	1.05	74.3	71.4
S5.000	100.00	6.34	44.775	0.068	0.0	0.0	0.0	0.68	27.0	18.3
S1.007	100.00	7.47	44.450	0.360	0.0	0.0	0.0	1.00	70.6«	97.5

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Motion		Page 4
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 15:57	Designed by TA	
File 2025TRADEPARKFULL MODEL01.MDX	Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S18.001	13.740	0.140	98.1	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.002	22.964	0.230	99.8	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.003	18.394	0.205	89.7	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S19.000	12.387	0.125	99.1	0.009	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S19.001	16.863	0.230	73.3	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.004	20.210	0.045	449.1	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	🟡
S20.000	13.320	0.135	98.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S20.001	14.885	0.515	28.9	0.065	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S21.000	8.664	0.950	9.1	0.047	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S18.005	30.139	0.235	128.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	🔴
S22.000	5.931	1.135	5.2	0.064	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S18.006	6.499	0.065	100.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	🟢
S14.007	15.754	0.074	212.9	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S23.000	54.893	0.545	100.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S23.001	10.000	0.069	144.9	0.639	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S14.008	26.542	0.426	62.3	0.025	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S14.009	10.243	0.045	227.6	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S24.000	11.708	0.810	14.5	0.062	5.00	0.0	0.600	o	100	Pipe/Conduit	🔴
S14.010	4.897	0.420	11.7	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S25.000	31.553	0.225	140.2	0.070	5.00	0.0	0.600	o	100	Pipe/Conduit	🔴
S25.001	11.819	0.100	118.2	0.023	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)
S18.001	100.00	5.77	47.170	0.048	0.0	0.0	0.0	1.01	17.9	12.9
S18.002	100.00	6.15	47.030	0.057	0.0	0.0	0.0	1.01	17.8	15.4
S18.003	100.00	6.44	46.800	0.066	0.0	0.0	0.0	1.06	18.8	17.8
S19.000	100.00	5.20	47.150	0.009	0.0	0.0	0.0	1.01	17.8	2.4
S19.001	100.00	5.44	47.025	0.028	0.0	0.0	0.0	1.18	20.8	7.7
S18.004	100.00	6.89	45.645	0.114	0.0	0.0	0.0	0.74	52.0	30.8
S20.000	100.00	5.22	46.400	0.000	0.0	0.0	0.0	1.01	17.9	0.0
S20.001	100.00	5.35	46.265	0.065	0.0	0.0	0.0	1.88	33.2	17.7
S21.000	100.00	5.04	46.900	0.047	0.0	0.0	0.0	3.36	59.3	12.8
S18.005	100.00	7.26	45.600	0.226	0.0	0.0	0.0	1.39	98.0	61.2
S22.000	100.00	5.02	46.650	0.064	0.0	0.0	0.0	4.44	78.4	17.4
S18.006	100.00	7.33	45.365	0.290	0.0	0.0	0.0	1.57	111.1	78.6
S14.007	100.00	9.20	45.000	2.647	0.0	0.0	0.0	1.67	470.8	717.0
S23.000	100.00	5.91	46.000	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S23.001	100.00	6.11	45.445	0.639	0.0	0.0	0.0	0.83	14.7	173.0
S14.008	100.00	9.35	44.926	3.311	0.0	0.0	0.0	3.09	873.3	896.7
S14.009	100.00	9.45	44.500	3.311	0.0	0.0	0.0	1.61	455.2	896.7
S24.000	100.00	5.10	45.600	0.062	0.0	0.0	0.0	2.04	16.0	16.7
S14.010	100.00	9.46	44.455	3.373	0.0	0.0	0.0	7.16	2023.7	913.4
S25.000	100.00	5.81	48.125	0.070	0.0	0.0	0.0	0.65	5.1	18.9
S25.001	100.00	5.98	47.775	0.092	0.0	0.0	0.0	1.20	47.8	25.0

Motion		Page 5
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 15:57 File 2025TRADEPARKFULL MODEL01.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S26.000	22.140	0.380	58.3	0.038	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S26.001	19.077	0.300	63.6	0.066	0.00	0.0	0.600	o	225	Pipe/Conduit	🟢
S26.002	20.660	0.167	123.7	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	🟢
S26.003	33.823	0.100	338.2	0.012	0.00	0.0	0.600	o	300	Pipe/Conduit	🟢
S27.000	31.848	0.747	42.6	0.069	5.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S26.004	31.964	1.553	20.6	0.028	0.00	0.0	0.600	o	300	Pipe/Conduit	🟢
S28.000	19.130	0.150	127.5	0.033	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S28.001	30.290	0.350	86.5	0.049	0.00	0.0	0.600	o	225	Pipe/Conduit	🟢
S26.005	13.208	1.024	12.9	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	🟢
S26.006	25.449	0.084	304.1	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	🟢
S25.002	28.545	0.840	34.0	0.035	0.00	0.0	0.600	o	225	Pipe/Conduit	🔴
S25.003	21.761	0.210	103.6	0.031	0.00	0.0	0.600	o	225	Pipe/Conduit	🔴
S25.004	24.416	0.465	52.5	0.030	0.00	0.0	0.600	o	225	Pipe/Conduit	🔴
S29.000	39.735	0.397	100.1	0.000	5.00	0.0	0.600	o	225	Pipe/Conduit	🟡
S29.001	10.000	0.568	17.6	0.231	0.00	0.0	0.600	o	225	Pipe/Conduit	🟡
S25.005	38.805	1.135	34.2	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	🔴
S30.000	43.103	0.875	49.3	0.091	5.00	0.0	0.600	o	300	Pipe/Conduit	🔴
S25.006	31.557	0.315	100.2	0.033	0.00	0.0	0.600	o	400	Pipe/Conduit	🔴
S31.000	10.896	0.465	23.4	0.172	5.00	0.0	0.600	o	300	Pipe/Conduit	🔴
S25.007	69.616	0.200	348.1	0.095	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S25.008	20.042	0.065	308.3	0.053	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)
S26.000	100.00	5.28	51.000	0.038	0.0	0.0	0.0	1.32	23.3	10.2
S26.001	100.00	5.47	50.545	0.104	0.0	0.0	0.0	1.64	65.3	28.1
S26.002	100.00	5.77	50.245	0.135	0.0	0.0	0.0	1.17	46.7	36.6
S26.003	100.00	6.43	50.003	0.148	0.0	0.0	0.0	0.85	60.0	40.0
S27.000	100.00	5.34	50.800	0.069	0.0	0.0	0.0	1.55	27.3	18.7
S26.004	100.00	6.58	49.903	0.244	0.0	0.0	0.0	3.48	246.1	66.1
S28.000	100.00	5.36	49.000	0.033	0.0	0.0	0.0	0.89	15.7	8.9
S28.001	100.00	5.72	48.775	0.082	0.0	0.0	0.0	1.41	55.9	22.2
S26.005	100.00	6.63	48.350	0.355	0.0	0.0	0.0	4.40	311.1	96.2
S26.006	100.00	7.04	47.251	0.355	0.0	0.0	0.0	1.03	114.2	96.2
S25.002	100.00	7.25	47.550	0.483	0.0	0.0	0.0	2.25	89.5	130.7
S25.003	100.00	7.54	46.710	0.514	0.0	0.0	0.0	1.28	51.1	139.1
S25.004	100.00	7.76	46.500	0.544	0.0	0.0	0.0	1.81	71.9	147.3
S29.000	100.00	5.51	47.000	0.000	0.0	0.0	0.0	1.31	52.0	0.0
S29.001	100.00	5.56	46.603	0.231	0.0	0.0	0.0	3.13	124.6	62.6
S25.005	100.00	8.00	45.960	0.810	0.0	0.0	0.0	2.70	190.7	219.2
S30.000	100.00	5.32	45.700	0.091	0.0	0.0	0.0	2.25	158.7	24.7
S25.006	100.00	8.28	44.750	0.934	0.0	0.0	0.0	1.89	237.0	252.9
S31.000	100.00	5.06	45.000	0.172	0.0	0.0	0.0	3.26	230.6	46.5
S25.007	100.00	9.17	44.300	1.201	0.0	0.0	0.0	1.30	367.4	325.2
S25.008	100.00	9.42	44.100	1.254	0.0	0.0	0.0	1.38	390.6	339.5

Motion		Page 6
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 15:57 File 2025TRADEPARKFULL MODEL01.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.009	13.447	0.035	384.2	0.014	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.010	23.247	0.020	1162.3	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.011	11.623	0.015	774.9	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S32.000	32.460	0.400	81.2	0.027	5.00	0.0	0.600	o	150	Pipe/Conduit	
S33.000	21.583	0.450	48.0	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
S32.001	1.888	0.300	6.3	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.012	36.576	0.175	209.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S34.000	11.729	0.300	39.1	0.041	5.00	0.0	0.600	o	225	Pipe/Conduit	
S35.000	38.003	0.300	126.7	0.061	5.00	0.0	0.600	o	225	Pipe/Conduit	
S34.001	8.745	0.085	102.9	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	
S34.002	41.284	0.100	412.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S36.000	24.741	0.200	123.7	0.034	5.00	0.0	0.600	o	225	Pipe/Conduit	
S36.001	8.206	0.110	74.6	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
S34.003	34.182	0.075	455.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.013	23.603	0.110	214.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.014	6.569	0.025	262.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.015	9.941	0.045	220.9	0.000	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)
S1.009	100.00	9.64	44.035	5.443	0.0	0.0	0.0	1.24	349.6	1474.2
S1.010	100.00	10.19	44.000	5.443	0.0	0.0	0.0	0.71	199.5	1474.2
S1.011	100.00	10.42	43.980	5.443	0.0	0.0	0.0	0.87	245.1	1474.2
S32.000	100.00	5.48	44.800	0.027	0.0	0.0	0.0	1.12	19.7	7.2
S33.000	100.00	5.25	44.850	0.012	0.0	0.0	0.0	1.46	25.7	3.2
S32.001	100.00	5.49	44.400	0.058	0.0	0.0	0.0	4.04	71.4	15.6
S1.012	100.00	10.78	43.965	5.501	0.0	0.0	0.0	1.68	475.2	1489.8
S34.000	100.00	5.09	44.575	0.041	0.0	0.0	0.0	2.10	83.4	11.0
S35.000	100.00	5.55	44.575	0.061	0.0	0.0	0.0	1.16	46.1	16.6
S34.001	100.00	5.64	44.200	0.121	0.0	0.0	0.0	1.55	109.6	32.8
S34.002	100.00	6.33	44.965	0.121	0.0	0.0	0.0	0.99	158.1	32.8
S36.000	100.00	5.35	44.400	0.034	0.0	0.0	0.0	1.17	46.7	9.1
S36.001	100.00	5.44	44.200	0.047	0.0	0.0	0.0	1.52	60.3	12.8
S34.003	100.00	6.93	43.865	0.168	0.0	0.0	0.0	0.95	150.4	45.6
S1.013	100.00	11.15	43.790	5.669	0.0	0.0	0.0	1.07	75.6	1535.4
S1.014	100.00	11.26	43.680	5.669	0.0	0.0	0.0	0.97	68.2	1535.4
S1.015	100.00	11.42	43.655	5.669	0.0	0.0	0.0	1.05	74.5	1535.4

Motion

84 North Street
Guildford
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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)	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	46.375	0.635	Open Manhole	450	S1.000	45.740	150			
S2	46.375	0.805	Open Manhole	450	S1.001	45.570	150	S1.000	45.570	150
S3	46.375	0.920	Open Manhole	600	S1.002	45.455	225	S1.001	45.530	150
S5	46.380	1.105	Open Manhole	600	S1.003	45.275	225	S1.002	45.275	225
S6	46.375	1.180	Open Manhole	600	S1.004	45.195	225	S1.003	45.195	225
S7	46.381	0.781	Open Manhole	450	S2.000	45.600	150			
S8	46.287	0.962	Open Manhole	600	S2.001	45.325	225	S2.000	45.400	150
S9	46.135	0.600	Open Manhole	200	S3.000	45.535	150			
S9	46.282	1.607	Open Manhole	1200	S2.002	44.675	300	S2.001	44.750	225
								S3.000	44.825	150
S10	46.309	1.724	Open Manhole	1200	S2.003	44.585	300	S2.002	44.585	300
S11	46.373	1.073	Open Manhole	450	S4.000	45.300	150			
S7	46.355	1.790	Open Manhole	1200	S1.005	44.565	300	S1.004	44.640	225
								S2.003	44.565	300
								S4.000	45.175	150
S8	46.353	1.828	Open Manhole	1200	S1.006	44.525	300	S1.005	44.525	300
S16	45.984	1.209	Open Manhole	1200	S5.000	44.775	225			
S9	46.350	1.900	Open Manhole	1200	S1.007	44.450	300	S1.006	44.450	300
								S5.000	44.625	225
S19	46.196	0.621	Open Manhole	450	S6.000	45.575	150			
S20	46.197	0.797	Open Manhole	450	S6.001	45.400	150	S6.000	45.400	150
S21	46.196	0.931	Open Manhole	600	S6.002	45.265	225	S6.001	45.340	150
S22	46.185	1.135	Open Manhole	600	S6.003	45.050	225	S6.002	45.050	225
S26	46.198	1.348	Open Manhole	600	S7.000	44.850	150			
S23	46.200	0.650	Open Manhole	450	S8.000	45.550	150			
S24	46.176	1.001	Open Manhole	450	S8.001	45.175	150	S8.000	45.175	150
S27	45.960	0.600	Open Manhole	200	S9.000	45.360	150			
S27	46.084	1.529	Open Manhole	1200	S8.002	44.555	300	S8.001	44.705	150
								S9.000	44.705	150
S28	46.182	1.717	Open Manhole	1200	S8.003	44.465	300	S8.002	44.465	300
S27	46.209	1.769	Open Manhole	600	S7.001	44.440	300	S7.000	44.590	150
								S8.003	44.440	300
S23	46.201	1.821	Open Manhole	1200	S6.004	44.380	300	S6.003	44.475	225
								S7.001	44.380	300
S31	46.745	0.745	Open Manhole	450	S10.000	46.000	225			
S32	46.746	1.046	Open Manhole	600	S10.001	45.700	225	S10.000	45.700	225
S33	46.752	0.752	Open Manhole	450	S11.000	46.000	150			
S34	46.715	1.165	Open Manhole	600	S11.001	45.550	225	S11.000	45.625	150
S36	46.495	0.600	Open Manhole	200	S12.000	45.895	150			
S35	46.742	1.392	Open Manhole	600	S11.002	45.350	225	S11.001	45.350	225
								S12.000	45.425	150
S36	46.671	1.571	Open Manhole	1200	S13.000	45.100	300			
S37	46.464	1.414	Open Manhole	1200	S13.001	45.050	300	S13.000	45.050	300
S33	46.554	1.534	Open Manhole	1200	S10.002	45.020	300	S10.001	45.095	225
								S11.002	45.095	225
								S13.001	45.020	300
S10	46.300	2.045	Open Manhole	1350	S1.008	44.255	400	S1.007	44.345	300
								S6.004	44.345	300
								S10.002	44.345	300
S38	52.650	1.850	Open Manhole	1200	S14.000	50.800	300			
S39	51.700	1.975	Open Manhole	1350	S14.001	49.725	375	S14.000	49.800	300

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Manhole Schedules for Storm

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., I*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S40	50.210	1.335	Open Manhole	1350	S14.002	48.875	375	S14.001	48.875	375	
S41	49.670	1.916	Open Manhole	1350	S14.003	47.754	375	S14.002	47.754	375	
S111	48.725	2.075	Open Manhole	1350	S14.004	46.650	450	S14.003	46.725	375	
S1.000	52.000	1.000	Open Manhole	1200	S15.000	51.000	225				
S1.001	51.750	1.275	Open Manhole	1200	S15.001	50.475	300	S15.000	50.550	225	
S2.000	56.000	1.400	Open Manhole	1200	S16.000	54.600	150				
S2.001	55.800	1.580	Open Manhole	1200	S16.001	54.220	150	S16.000	54.220	150	
S2.002	55.500	1.565	Open Manhole	1200	S16.002	53.935	225	S16.001	54.010	150	
S2.003	55.200	1.490	Open Manhole	1200	S16.003	53.710	300	S16.002	53.785	225	
S2.004	54.900	1.290	Open Manhole	1200	S16.004	53.610	300	S16.003	53.610	300	
S2.005	54.750	1.220	Open Manhole	1200	S16.005	53.530	300	S16.004	53.530	300	
S2.006	54.600	1.150	Open Manhole	1200	S16.006	53.450	300	S16.005	53.450	300	
S2.007	54.000	0.700	Open Manhole	1200	S16.007	53.300	300	S16.006	53.300	300	
S1.002	53.000	2.775	Open Manhole	1200	S15.002	50.225	300	S15.001	50.225	300	
								S16.007	50.225	300	
S1.003	52.100	3.511	Open Manhole	1200	S15.003	48.589	300	S15.002	48.589	300	
S1.004	51.700	4.747	Open Manhole	1200	S15.004	46.953	300	S15.003	46.953	300	
S3.000	51.650	2.974	Open Manhole	1200	S17.000	48.676	300				
S3.001	52.000	3.424	Open Manhole	1200	S17.001	48.576	300	S17.000	48.576	300	
S1.005	51.200	5.924	Open Manhole	1500	S15.005	45.276	525	S15.004	45.501	300	
								S17.001	45.501	300	
S1.006	49.750	4.574	Open Manhole	1500	S15.006	45.176	525	S15.005	45.176	525	
S46	48.340	3.264	Open Manhole	1500	S14.005	46.420	450	S14.004	46.200	450	
								S15.006	45.076	525	
S48	48.514	3.114	Open Manhole	1500	S14.006	45.400	600	S14.005	45.550	450	
S90	48.191	0.691	Open Manhole	450	S18.000	47.500	150				
S91	48.255	1.085	Open Manhole	450	S18.001	47.170	150	S18.000	47.170	150	
S92	48.255	1.225	Open Manhole	450	S18.002	47.030	150	S18.001	47.030	150	
S93	48.243	1.443	Open Manhole	1200	S18.003	46.800	150	S18.002	46.800	150	
S94	48.210	1.060	Open Manhole	450	S19.000	47.150	150				
S95	48.265	1.240	Open Manhole	450	S19.001	47.025	150	S19.000	47.025	150	
S94	48.218	2.573	Open Manhole	1200	S18.004	45.645	300	S18.003	46.595	150	800
								S19.001	46.795	150	1000
S97	47.000	0.600	Open Manhole	450	S20.000	46.400	150				
S97	47.451	1.186	Open Manhole	450	S20.001	46.265	150	S20.000	46.265	150	
S98	47.500	0.600	Open Manhole	100	S21.000	46.900	150				
S95	47.715	2.115	Open Manhole	1200	S18.005	45.600	300	S18.004	45.600	300	
								S20.001	45.750	150	
								S21.000	45.950	150	200
S100	47.250	0.600	Open Manhole	100	S22.000	46.650	150				
S96	47.377	2.012	Open Manhole	1200	S18.006	45.365	300	S18.005	45.365	300	
								S22.000	45.515	150	
S65	47.202	2.202	Open Manhole	1500	S14.007	45.000	600	S14.006	45.000	600	
								S18.006	45.300	300	
S68	47.000	1.000	Open Manhole	1200	S23.000	46.000	150				
S69	46.817	1.372	Open Manhole	1200	S23.001	45.445	150	S23.000	45.455	150	10
S50	46.562	1.636	Open Manhole	1500	S14.008	44.926	600	S14.007	44.926	600	
								S23.001	45.376	150	
S51	45.820	1.320	Open Manhole	1500	S14.009	44.500	600	S14.008	44.500	600	
S74	46.250	0.650	Open Manhole	450	S24.000	45.600	100				
S52	45.826	1.371	Open Manhole	1500	S14.010	44.455	600	S14.009	44.455	600	

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S50	52.000	3.875	Open Manhole	1200	S25.000	48.125	100	S24.000	44.790	100	
S51	52.000	4.225	Open Manhole	1200	S25.001	47.775	225	S25.000	47.900	100	
S4.000	52.600	1.600	Open Manhole	1200	S26.000	51.000	150				
S4.001	52.400	1.855	Open Manhole	1200	S26.001	50.545	225	S26.000	50.620	150	
S4.002	52.400	2.155	Open Manhole	1200	S26.002	50.245	225	S26.001	50.245	225	
S4.003	51.800	1.797	Open Manhole	1200	S26.003	50.003	300	S26.002	50.078	225	
S5.000	52.400	1.600	Open Manhole	1200	S27.000	50.800	150				
S4.004	51.500	1.597	Open Manhole	1200	S26.004	49.903	300	S26.003	49.903	300	
								S27.000	50.053	150	
S6.000	51.000	2.000	Open Manhole	1200	S28.000	49.000	150				
S6.001	51.000	2.225	Open Manhole	1200	S28.001	48.775	225	S28.000	48.850	150	
S4.005	49.600	1.250	Open Manhole	1200	S26.005	48.350	300	S26.004	48.350	300	
								S28.001	48.425	225	
S4.006	51.300	4.049	Open Manhole	1350	S26.006	47.251	375	S26.005	47.326	300	
S44	50.090	2.923	Open Manhole	1350	S25.002	47.550	225	S25.001	47.675	225	125
								S26.006	47.167	375	
S46	48.700	1.990	Open Manhole	1200	S25.003	46.710	225	S25.002	46.710	225	
S75	48.100	1.600	Open Manhole	1200	S25.004	46.500	225	S25.003	46.500	225	
S76	48.000	1.000	Open Manhole	1200	S29.000	47.000	225				
S77	48.000	1.397	Open Manhole	1200	S29.001	46.603	225	S29.000	46.603	225	
S76	47.736	1.776	Open Manhole	1200	S25.005	45.960	300	S25.004	46.035	225	
								S29.001	46.035	225	
S80	47.000	1.300	Open Manhole	1200	S30.000	45.700	300				
S78	46.961	2.211	Open Manhole	1350	S25.006	44.750	400	S25.005	44.825	300	
								S30.000	44.825	300	
S82	46.000	1.000	Open Manhole	1200	S31.000	45.000	300				
S79	45.675	1.375	Open Manhole	1500	S25.007	44.300	600	S25.006	44.435	400	
								S31.000	44.535	300	
S80	45.925	1.825	Open Manhole	1500	S25.008	44.100	600	S25.007	44.100	600	
S11	45.787	1.752	Open Manhole	1500	S1.009	44.035	600	S1.008	44.185	400	
								S14.010	44.035	600	
								S25.008	44.035	600	
S12	45.000	1.000	Open Manhole	1500	S1.010	44.000	600	S1.009	44.000	600	
S89	45.000	1.020	Open Manhole	1500	S1.011	43.980	600	S1.010	43.980	600	
S153	45.575	0.775	Open Manhole	1200	S32.000	44.800	150				
S152	45.550	0.700	Open Manhole	1200	S33.000	44.850	150				
S154	45.550	1.150	Open Manhole	1200	S32.001	44.400	150	S32.000	44.400	150	
								S33.000	44.400	150	
S13	45.500	1.535	Open Manhole	1800	S1.012	43.965	600	S1.011	43.965	600	
								S32.001	44.100	150	
S156	45.575	1.000	Open Manhole	1200	S34.000	44.575	225				
S157	45.575	1.000	Open Manhole	1200	S35.000	44.575	225				
S157	45.575	1.375	Open Manhole	1200	S34.001	44.200	300	S34.000	44.275	225	
								S35.000	44.275	225	
S158	45.775	1.660	Open Manhole	1350	S34.002	44.965	450	S34.001	44.115	300	
S159	45.575	1.175	Open Manhole	1200	S36.000	44.400	225				
S161	45.590	1.390	Open Manhole	1200	S36.001	44.200	225	S36.000	44.200	225	
S89	45.650	1.785	Open Manhole	1350	S34.003	43.865	450	S34.002	44.865	450	1000
								S36.001	44.090	225	
S14	45.500	1.710	Open Manhole	1800	S1.013	43.790	300	S1.012	43.790	600	

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S15	44.672	0.992	Open Manhole	1200	S1.014	43.680	300	S34.003	43.790	450	
S16	45.238	1.583	Open Manhole	1200	S1.015	43.655	300	S1.013	43.680	300	
S	44.000	0.390	Open Manhole	0		OUTFALL		S1.014	43.655	300	
								S1.015	43.610	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	509030.288	126633.050	509030.288	126633.050	Required	
S2	509052.646	126624.591	509052.646	126624.591	Required	
S3	509054.494	126629.105	509054.494	126629.105	Required	
S5	509083.492	126618.344	509083.492	126618.344	Required	
S6	509088.092	126629.451	509088.092	126629.451	Required	
S7	509025.656	126651.570	509025.656	126651.570	Required	
S8	509031.889	126667.808	509031.889	126667.808	Required	
S9	509055.502	126665.783	509055.502	126665.783	Required	
S9	509053.799	126661.347	509053.799	126661.347	Required	
S10	509095.655	126645.348	509095.655	126645.348	Required	
S11	509061.565	126652.986	509061.565	126652.986	Required	
S7	509093.961	126640.714	509093.961	126640.714	Required	
S8	509103.449	126637.075	509103.449	126637.075	Required	
S16	509058.274	126672.128	509058.274	126672.128	Required	
S9	509109.243	126652.662	509109.243	126652.662	Required	
S19	509062.564	126718.976	509062.564	126718.976	Required	
S20	509086.996	126709.611	509086.996	126709.611	Required	
S21	509086.678	126701.230	509086.678	126701.230	Required	
S22	509114.582	126690.567	509114.582	126690.567	Required	
S26	509074.815	126680.630	509074.815	126680.630	Required	
S23	509048.465	126706.376	509048.465	126706.376	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)
S24	509043.059	126692.239	509043.059	126692.239	Required	
S27	509059.250	126675.604	509059.250	126675.604	Required	
S27	509061.273	126680.855	509061.273	126680.855	Required	
S28	509103.141	126664.858	509103.141	126664.858	Required	
S27	509105.540	126668.915	509105.540	126668.915	Required	
S23	509110.467	126679.845	509110.467	126679.845	Required	
S31	509141.033	126618.584	509141.033	126618.584	Required	
S32	509155.705	126656.865	509155.705	126656.865	Required	
S33	509126.555	126620.185	509126.555	126620.185	Required	
S34	509114.227	126624.936	509114.227	126624.936	Required	
S36	509116.052	126654.214	509116.052	126654.214	Required	
S35	509124.221	126651.094	509124.221	126651.094	Required	
S36	509156.491	126665.355	509156.491	126665.355	Required	
S37	509133.981	126673.961	509133.981	126673.961	Required	
S33	509131.009	126668.893	509131.009	126668.893	Required	
S10	509118.442	126676.762	509118.442	126676.762	Required	
S38	509319.518	126550.336	509319.518	126550.336	Required	
S39	509277.523	126578.983	509277.523	126578.983	Required	
S40	509240.110	126610.603	509240.110	126610.603	Required	
S41	509239.428	126629.227	509239.428	126629.227	Required	
S111	509238.067	126678.446	509238.067	126678.446	Required	
S1.000	509368.080	126776.747	509368.080	126776.747	Required	
S1.001	509368.224	126743.558	509368.224	126743.558	Required	
S2.000	509421.149	126786.607	509421.149	126786.607	Required	
S2.001	509419.856	126757.678	509419.856	126757.678	Required	
S2.002	509420.975	126735.321	509420.975	126735.321	Required	
S2.003	509421.842	126709.468	509421.842	126709.468	Required	

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84 North Street Guildford Surrey GU1 4AU		Billingshurst Enterprise Park																																																																																																																																																																																																					
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Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)	S2.004	509421.457	126686.836	509421.457	126686.836	Required		S2.005	509414.450	126672.561	509414.450	126672.561	Required		S2.006	509400.998	126668.679	509400.998	126668.679	Required		S2.007	509369.818	126668.818	509369.818	126668.818	Required		S1.002	509368.376	126693.752	509368.376	126693.752	Required		S1.003	509332.500	126695.258	509332.500	126695.258	Required		S1.004	509295.851	126692.882	509295.851	126692.882	Required		S3.000	509295.550	126785.363	509295.550	126785.363	Required		S3.001	509295.120	126761.354	509295.120	126761.354	Required		S1.005	509293.388	126705.127	509293.388	126705.127	Required		S1.006	509263.693	126705.835	509263.693	126705.835	Required		S46	509237.343	126711.404	509237.343	126711.404	Required		S48	509186.568	126712.754	509186.568	126712.754	Required		S90	509225.798	126704.482	509225.798	126704.482	Required		S91	509225.804	126671.703	509225.804	126671.703	Required		S92	509225.857	126657.963	509225.857	126657.963	Required		S93	509202.893	126657.947	509202.893	126657.947	Required		S94	509202.743	126705.397	509202.743	126705.397	Required		S95	509202.760	126693.010	509202.760	126693.010	Required		S94	509200.984	126676.241	509200.984	126676.241	Required		S97	509166.416	126658.271	509166.416	126658.271	Required		S97	509179.360	126661.415	509179.360	126661.415	Required		S98	509172.154	126675.371	509172.154	126675.371	Required		S95	509180.775	126676.232	509180.775	126676.232	Required		S100	509172.154	126705.001	509172.154	126705.001	Required		S96	509177.954	126706.239	509177.954	126706.239	Required		S65	509177.973	126712.738	509177.973	126712.738	Required	
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S46	509237.343	126711.404	509237.343	126711.404	Required																																																																																																																																																																																																		
S48	509186.568	126712.754	509186.568	126712.754	Required																																																																																																																																																																																																		
S90	509225.798	126704.482	509225.798	126704.482	Required																																																																																																																																																																																																		
S91	509225.804	126671.703	509225.804	126671.703	Required																																																																																																																																																																																																		
S92	509225.857	126657.963	509225.857	126657.963	Required																																																																																																																																																																																																		
S93	509202.893	126657.947	509202.893	126657.947	Required																																																																																																																																																																																																		
S94	509202.743	126705.397	509202.743	126705.397	Required																																																																																																																																																																																																		
S95	509202.760	126693.010	509202.760	126693.010	Required																																																																																																																																																																																																		
S94	509200.984	126676.241	509200.984	126676.241	Required																																																																																																																																																																																																		
S97	509166.416	126658.271	509166.416	126658.271	Required																																																																																																																																																																																																		
S97	509179.360	126661.415	509179.360	126661.415	Required																																																																																																																																																																																																		
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Innovyze	Network 2020.1.3	

Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S68	509162.219	126777.631	509162.219	126777.631	Required	
S69	509162.219	126722.738	509162.219	126722.738	Required	
S50	509162.219	126712.738	509162.219	126712.738	Required	
S51	509141.391	126696.287	509141.391	126696.287	Required	
S74	509130.805	126684.520	509130.805	126684.520	Required	
S52	509131.148	126696.223	509131.148	126696.223	Required	
S50	509280.615	126831.468	509280.615	126831.468	Required	
S51	509281.869	126799.939	509281.869	126799.939	Required	
S4.000	509406.583	126831.057	509406.583	126831.057	Required	
S4.001	509406.297	126808.919	509406.297	126808.919	Required	
S4.002	509408.459	126789.965	509408.459	126789.965	Required	
S4.003	509387.800	126790.141	509387.800	126790.141	Required	
S5.000	509354.533	126819.301	509354.533	126819.301	Required	
S4.004	509354.084	126787.455	509354.084	126787.455	Required	
S6.000	509322.229	126836.472	509322.229	126836.472	Required	
S6.001	509321.494	126817.357	509321.494	126817.357	Required	
S4.005	509322.122	126787.073	509322.122	126787.073	Required	
S4.006	509308.926	126787.640	509308.926	126787.640	Required	
S44	509283.484	126788.231	509283.484	126788.231	Required	
S46	509254.939	126788.249	509254.939	126788.249	Required	
S75	509233.178	126788.231	509233.178	126788.231	Required	
S76	509208.762	126837.966	509208.762	126837.966	Required	
S77	509208.762	126798.231	509208.762	126798.231	Required	
S76	509208.762	126788.231	509208.762	126788.231	Required	
S80	509174.173	126831.127	509174.173	126831.127	Required	
S78	509169.957	126788.231	509169.957	126788.231	Required	
S82	509138.923	126797.063	509138.923	126797.063	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)
S79	509138.467	126786.177	509138.467	126786.177	Required	
S80	509133.718	126716.723	509133.718	126716.723	Required	
S11	509126.583	126697.995	509126.583	126697.995	Required	
S12	509113.990	126702.712	509113.990	126702.712	Required	
S89	509097.486	126719.083	509097.486	126719.083	Required	
S153	509072.233	126751.210	509072.233	126751.210	Required	
S152	509116.072	126719.608	509116.072	126719.608	Required	
S154	509098.563	126732.227	509098.563	126732.227	Required	
S13	509097.444	126730.706	509097.444	126730.706	Required	
S156	509125.917	126741.965	509125.917	126741.965	Required	
S157	509085.575	126771.048	509085.575	126771.048	Required	
S157	509116.416	126748.844	509116.416	126748.844	Required	
S158	509121.496	126755.962	509121.496	126755.962	Required	
S159	509112.872	126772.312	509112.872	126772.312	Required	
S161	509092.811	126786.791	509092.811	126786.791	Required	
S89	509088.023	126780.127	509088.023	126780.127	Required	
S14	509068.009	126752.418	509068.009	126752.418	Required	
S15	509049.664	126737.566	509049.664	126737.566	Required	
S16	509043.544	126739.954	509043.544	126739.954	Required	
S	509034.276	126743.548			No Entry	

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.015	S	44.000	43.610	0.000	0	0

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Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	0.800																																																															
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Online Controls for Storm

Hydro-Brake® Optimum Manhole: S7, DS/PN: S1.005, Volume (m³): 3.4

Unit Reference	MD-SHE-0056-1200-0670-1200	Sump Available	Yes
Design Head (m)	0.670	Diameter (mm)	56
Design Flow (l/s)	1.2	Invert Level (m)	44.565
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.670	1.2	Kick-Flo®	0.430	1.0
Flush-Flo™	0.205	1.2	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)	Depth (m)	Flow (l/s)
0.100	1.1	0.600	1.1	1.600	1.8	2.600	2.2	5.000	3.0	7.500	3.6
0.200	1.2	0.800	1.3	1.800	1.9	3.000	2.4	5.500	3.1	8.000	3.8
0.300	1.2	1.000	1.4	2.000	2.0	3.500	2.5	6.000	3.3	8.500	3.9
0.400	1.1	1.200	1.6	2.200	2.1	4.000	2.7	6.500	3.4	9.000	4.0
0.500	1.1	1.400	1.7	2.400	2.1	4.500	2.9	7.000	3.5	9.500	4.1

Hydro-Brake® Optimum Manhole: S23, DS/PN: S6.004, Volume (m³): 3.3

Unit Reference	MD-SHE-0055-1200-0740-1200	Sump Available	Yes
Design Head (m)	0.740	Diameter (mm)	55
Design Flow (l/s)	1.2	Invert Level (m)	44.380
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.740	1.2	Kick-Flo®	0.473	1.0
Flush-Flo™	0.232	1.2	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)	Depth (m)	Flow (l/s)
0.100	1.1	0.600	1.1	1.600	1.7	2.600	2.1	5.000	2.9	7.500	3.5
0.200	1.2	0.800	1.2	1.800	1.8	3.000	2.3	5.500	3.0	8.000	3.6
0.300	1.2	1.000	1.4	2.000	1.9	3.500	2.4	6.000	3.1	8.500	3.7
0.400	1.1	1.200	1.5	2.200	2.0	4.000	2.6	6.500	3.2	9.000	3.8
0.500	1.0	1.400	1.6	2.400	2.0	4.500	2.7	7.000	3.4	9.500	3.9

Hydro-Brake® Optimum Manhole: S33, DS/PN: S10.002, Volume (m³): 3.8

Unit Reference	MD-SHE-0045-8000-0680-8000	Sump Available	Yes
Design Head (m)	0.680	Diameter (mm)	45
Design Flow (l/s)	0.8	Invert Level (m)	45.020
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.680	0.8	Kick-Flo®	0.404	0.6
Flush-Flo™	0.201	0.8	Mean Flow over Head Range	-	0.7

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)	Depth (m)	Flow (l/s)
0.100	0.7	0.300	0.7	0.500	0.7	0.800	0.9	1.200	1.0	1.600	1.2
0.200	0.8	0.400	0.6	0.600	0.8	1.000	0.9	1.400	1.1	1.800	1.2

Motion

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Hydro-Brake® Optimum Manhole: S33, DS/PN: S10.002, Volume (m³): 3.8

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)	Depth (m)	Flow (l/s)
2.000	1.3	2.600	1.5	4.000	1.8	5.500	2.0	7.000	2.3	8.500	2.5
2.200	1.3	3.000	1.6	4.500	1.9	6.000	2.1	7.500	2.4	9.000	2.6
2.400	1.4	3.500	1.7	5.000	2.0	6.500	2.2	8.000	2.4	9.500	2.7

Hydro-Brake® Optimum Manhole: S39, DS/PN: S14.001, Volume (m³): 6.3

Unit Reference	MD-SHE-0092-5000-2000-5000	Sump Available	Yes
Design Head (m)	2.000	Diameter (mm)	92
Design Flow (l/s)	5.0	Invert Level (m)	49.725
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	5.0	Kick-Flo®	0.816	3.3
Flush-Flo™	0.398	4.1	Mean Flow over Head Range	-	3.9

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)	Depth (m)	Flow (l/s)
0.100	2.9	0.600	4.0	1.600	4.5	2.600	5.6	5.000	7.7	7.500	9.3
0.200	3.8	0.800	3.4	1.800	4.8	3.000	6.0	5.500	8.0	8.000	9.6
0.300	4.1	1.000	3.6	2.000	5.0	3.500	6.5	6.000	8.4	8.500	9.9
0.400	4.1	1.200	3.9	2.200	5.2	4.000	6.9	6.500	8.7	9.000	10.2
0.500	4.1	1.400	4.2	2.400	5.4	4.500	7.3	7.000	9.0	9.500	10.4

Hydro-Brake® Optimum Manhole: S40, DS/PN: S14.002, Volume (m³): 7.2

Unit Reference	MD-SHE-0087-4000-1500-4000	Sump Available	Yes
Design Head (m)	1.500	Diameter (mm)	87
Design Flow (l/s)	4.0	Invert Level (m)	48.875
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	4.0	Kick-Flo®	0.780	3.0
Flush-Flo™	0.384	3.7	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)	Depth (m)	Flow (l/s)
0.100	2.7	0.600	3.5	1.600	4.1	2.600	5.2	5.000	7.0	7.500	8.5
0.200	3.4	0.800	3.0	1.800	4.4	3.000	5.5	5.500	7.3	8.000	8.8
0.300	3.6	1.000	3.3	2.000	4.6	3.500	5.9	6.000	7.7	8.500	9.0
0.400	3.7	1.200	3.6	2.200	4.8	4.000	6.3	6.500	8.0	9.000	9.3
0.500	3.6	1.400	3.9	2.400	5.0	4.500	6.7	7.000	8.2	9.500	9.5

Hydro-Brake® Optimum Manhole: S41, DS/PN: S14.003, Volume (m³): 4.7

Unit Reference	MD-SHE-0087-5000-2500-5000	Sump Available	Yes
Design Head (m)	2.500	Diameter (mm)	87
Design Flow (l/s)	5.0	Invert Level (m)	47.754
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.500	5.0	Kick-Flo®	0.777	2.9
Flush-Flo™	0.379	3.6	Mean Flow over Head Range	-	3.8

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

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Hydro-Brake® Optimum Manhole: S69, DS/PN: S23.001, Volume (m³): 2.5

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)	Depth (m)	Flow (l/s)
0.100	2.7	0.600	2.8	1.600	4.4	2.600	5.5	5.000	7.5	7.500	9.1
0.200	3.3	0.800	3.2	1.800	4.6	3.000	5.9	5.500	7.8	8.000	9.3
0.300	3.4	1.000	3.5	2.000	4.9	3.500	6.3	6.000	8.1	8.500	9.6
0.400	3.3	1.200	3.8	2.200	5.1	4.000	6.7	6.500	8.5	9.000	9.9
0.500	3.1	1.400	4.1	2.400	5.3	4.500	7.1	7.000	8.8	9.500	10.1

Hydro-Brake® Optimum Manhole: S52, DS/PN: S14.010, Volume (m³): 5.0

Unit Reference	MD-SHE-0208-2280-1150-2280	Sump Available	Yes
Design Head (m)	1.150	Diameter (mm)	208
Design Flow (l/s)	22.8	Invert Level (m)	44.455
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	225
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1500
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.150	22.8	Kick-Flo®	0.812	19.3
Flush-Flo™	0.377	22.7	Mean Flow over Head Range	-	19.3

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)	Depth (m)	Flow (l/s)
0.100	7.1	0.600	22.0	1.600	26.6	2.600	33.6	5.000	46.1	7.500	56.1
0.200	20.1	0.800	19.6	1.800	28.2	3.000	36.0	5.500	48.3	8.000	57.9
0.300	22.5	1.000	21.3	2.000	29.6	3.500	38.8	6.000	50.4	8.500	59.6
0.400	22.7	1.200	23.2	2.200	31.0	4.000	41.4	6.500	52.4	9.000	61.3
0.500	22.5	1.400	25.0	2.400	32.4	4.500	43.8	7.000	54.3	9.500	63.0

Hydro-Brake® Optimum Manhole: S4.001, DS/PN: S26.001, Volume (m³): 2.5

Unit Reference	MD-SHE-0057-2000-2000-2000	Sump Available	Yes
Design Head (m)	2.000	Diameter (mm)	57
Design Flow (l/s)	2.0	Invert Level (m)	50.545
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	2.0	Kick-Flo®	0.506	1.1
Flush-Flo™	0.247	1.3	Mean Flow over Head Range	-	1.5

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)	Depth (m)	Flow (l/s)
0.100	1.2	0.600	1.2	1.600	1.8	2.600	2.3	5.000	3.0	7.500	3.7
0.200	1.3	0.800	1.3	1.800	1.9	3.000	2.4	5.500	3.2	8.000	3.8
0.300	1.3	1.000	1.5	2.000	2.0	3.500	2.6	6.000	3.3	8.500	3.9
0.400	1.3	1.200	1.6	2.200	2.1	4.000	2.7	6.500	3.4	9.000	4.0
0.500	1.1	1.400	1.7	2.400	2.2	4.500	2.9	7.000	3.6	9.500	4.1

Hydro-Brake® Optimum Manhole: S6.001, DS/PN: S28.001, Volume (m³): 2.8

Unit Reference	MD-SHE-0079-3000-1200-3000	Sump Available	Yes
Design Head (m)	1.200	Diameter (mm)	79
Design Flow (l/s)	3.0	Invert Level (m)	48.775
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	3.0	Flush-Flo™	0.348	2.9

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Hydro-Brake® Optimum Manhole: S6.001, DS/PN: S28.001, Volume (m³): 2.8

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Kick-Flo®	0.707	2.4	Mean Flow over Head Range	-	2.6

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)	Depth (m)	Flow (l/s)
0.100	2.3	0.600	2.7	1.600	3.4	2.600	4.3	5.000	5.8	7.500	7.0
0.200	2.8	0.800	2.5	1.800	3.6	3.000	4.6	5.500	6.1	8.000	7.3
0.300	2.9	1.000	2.8	2.000	3.8	3.500	4.9	6.000	6.3	8.500	7.5
0.400	2.9	1.200	3.0	2.200	4.0	4.000	5.2	6.500	6.6	9.000	7.7
0.500	2.8	1.400	3.2	2.400	4.1	4.500	5.5	7.000	6.8	9.500	7.9

Hydro-Brake® Optimum Manhole: S14, DS/PN: S1.013, Volume (m³): 19.4

Unit Reference	MD-SHE-0275-4260-0960-4260	Sump Available	Yes
Design Head (m)	0.960	Diameter (mm)	275
Design Flow (l/s)	42.6	Invert Level (m)	43.790
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	300
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1800
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.960	42.6	Kick-Flo®	0.746	37.7
Flush-Flo™	0.417	42.6	Mean Flow over Head Range	-	34.3

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)	Depth (m)	Flow (l/s)
0.100	8.7	0.600	41.2	1.600	54.5	2.600	68.9	5.000	94.7	7.500	115.5
0.200	28.3	0.800	39.0	1.800	57.7	3.000	73.9	5.500	99.2	8.000	119.2
0.300	41.7	1.000	43.4	2.000	60.7	3.500	79.6	6.000	103.5	8.500	122.7
0.400	42.6	1.200	47.4	2.200	63.6	4.000	85.0	6.500	107.7	9.000	126.2
0.500	42.3	1.400	51.1	2.400	66.3	4.500	90.0	7.000	111.6	9.500	129.6

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Storage Structures for Storm

Cellular Storage Manhole: S10, DS/PN: S2.003

Invert Level (m)		44.735	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	320.0	0.0	0.500	320.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: S28, DS/PN: S8.003

Invert Level (m)		44.615	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	328.0	0.0	0.500	328.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: S37, DS/PN: S13.001

Invert Level (m)		45.050	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	220.0	0.0	0.500	220.0	0.0	0.501	0.0	0.0

Tank or Pond Manhole: S38, DS/PN: S14.000

Invert Level (m)		50.800						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	320.0	0.400	320.0	0.410	0.0			

Tank or Pond Manhole: S39, DS/PN: S14.001

Invert Level (m)		49.725						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	400.0	1.000	400.0	1.010	0.0			

Tank or Pond Manhole: S40, DS/PN: S14.002

Invert Level (m)		48.875						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	450.0	1.000	450.0	1.010	0.0			

Tank or Pond Manhole: S41, DS/PN: S14.003

Invert Level (m)		47.754						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	100.0	1.000	100.0	1.010	0.0			

Motion

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Tank or Pond Manhole: S111, DS/PN: S14.004

Invert Level (m) 46.650

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	250.0	1.000	250.0	1.010	0.0

Porous Car Park Manhole: S1.000, DS/PN: S15.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	52.500	Depression Storage (mm)	5
Max Percolation (l/s)	27.8	Width (m)	5.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	20.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S1.001, DS/PN: S15.001

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	51.975	Depression Storage (mm)	5
Max Percolation (l/s)	111.1	Width (m)	5.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	80.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S2.000, DS/PN: S16.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	55.200	Depression Storage (mm)	5
Max Percolation (l/s)	20.0	Width (m)	4.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	18.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S2.001, DS/PN: S16.001

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.800	Depression Storage (mm)	5
Max Percolation (l/s)	16.7	Width (m)	4.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	15.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S2.002, DS/PN: S16.002

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.500	Depression Storage (mm)	5
Max Percolation (l/s)	42.2	Width (m)	4.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	38.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S2.003, DS/PN: S16.003

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.200	Depression Storage (mm)	5
Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S2.004, DS/PN: S16.004

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.000	Depression Storage (mm)	5
Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S1.003, DS/PN: S15.003

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	51.200	Depression Storage (mm)	5
Max Percolation (l/s)	180.6	Width (m)	5.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	130.0	Membrane Depth (mm)	180

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Motion

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Tank or Pond Manhole: S3.001, DS/PN: S17.001

Invert Level (m) 48.576

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	450.0	1.000	450.0	1.010	0.0

Tank or Pond Manhole: S1.006, DS/PN: S15.006

Invert Level (m) 45.176

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	400.0	1.000	400.0	1.010	0.0

Cellular Storage Manhole: S95, DS/PN: S18.005

Invert Level (m) 45.600

Infiltration Coefficient Base (m/hr) 0.00000

Infiltration Coefficient Side (m/hr) 0.00000

Porosity 0.95

Safety Factor 2.0

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	180.0	0.0	1.000	180.0	0.0	1.001	0.0	0.0

Cellular Storage Manhole: S69, DS/PN: S23.001

Invert Level (m) 45.570

Infiltration Coefficient Base (m/hr) 0.00000

Infiltration Coefficient Side (m/hr) 0.00000

Porosity 0.95

Safety Factor 2.0

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	600.0	0.0	0.800	600.0	0.0	0.801	0.0	0.0

Tank or Pond Manhole: S51, DS/PN: S14.009

Invert Level (m) 44.500

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	263.5	1.300	574.0

Porous Car Park Manhole: S74, DS/PN: S24.000

Infiltration Coefficient Base (m/hr) 0.00000

Membrane Percolation (mm/hr) 1000

Max Percolation (1/s) 169.0

Safety Factor 2.0

Porosity 0.30

Invert Level (m) 45.750

Width (m) 15.8

Length (m) 38.5

Slope (1:X) 150.0

Depression Storage (mm) 5

Evaporation (mm/day) 3

Membrane Depth (mm) 0

Tank or Pond Manhole: S50, DS/PN: S25.000

Invert Level (m) 48.125

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	300.0	1.000	300.0	1.010	0.0

Tank or Pond Manhole: S4.001, DS/PN: S26.001

Invert Level (m) 50.545

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	150.0	1.000	150.0	1.010	0.0

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Porous Car Park Manhole: S5.000, DS/PN: S27.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	50.800	Depression Storage (mm)	5
Max Percolation (l/s)	166.7	Width (m)	5.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	120.0	Membrane Depth (mm)	180

Porous Car Park Manhole: S6.001, DS/PN: S28.001

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0
Membrane Percolation (mm/hr)	1000	Invert Level (m)	48.775	Depression Storage (mm)	5
Max Percolation (l/s)	69.4	Width (m)	5.0	Evaporation (mm/day)	3
Safety Factor	2.0	Length (m)	50.0	Membrane Depth (mm)	180

Tank or Pond Manhole: S89, DS/PN: S1.011

Invert Level (m) 43.980

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	250.4	0.200	305.0	0.400	355.0	0.600	398.0	0.800	442.0	1.000	477.6

Cellular Storage Manhole: S89, DS/PN: S34.003

Invert Level (m)	43.875	Infiltration Coefficient Side (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	532.0	0.0	0.875	532.0	0.0	0.876	0.0	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

Manhole Headloss Coeff (Global) 0.500

MADD Factor * 10m³/ha Storage 2.000

Hot Start (mins) 0

Foul Sewage per hectare (l/s) 0.000

Inlet Coefficient 0.800

Hot Start Level (mm) 0

Additional Flow - % of Total Flow 0.000

Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0

Number of Offline Controls 0

Number of Time/Area Diagrams 0

Number of Online Controls 13

Number of Storage Structures 28

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 20.000

Cv (Summer) 0.750

Region England and Wales

Ratio R 0.354

Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

DVD Status ON

Analysis Timestep 2.5 Second Increment (Extended)

Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160

Return Period(s) (years) 2, 30, 100

Climate Change (%) 0, 40, 40

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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	2	+0%					45.779	-0.111	0.000	0.15	
S1.001	S2	15 Winter	2	+0%	30/15 Summer				45.638	-0.082	0.000	0.42	
S1.002	S3	15 Winter	2	+0%					45.525	-0.155	0.000	0.21	
S1.003	S5	15 Winter	2	+0%					45.345	-0.155	0.000	0.21	
S1.004	S6	15 Winter	2	+0%					45.243	-0.177	0.000	0.10	
S2.000	S7	15 Winter	2	+0%					45.642	-0.108	0.000	0.17	
S2.001	S8	15 Winter	2	+0%					45.360	-0.190	0.000	0.06	
S3.000	S9	15 Winter	2	+0%					45.587	-0.098	0.000	0.26	
S2.002	S9	360 Winter	2	+0%	30/15 Summer				44.826	-0.149	0.000	0.07	
S2.003	S10	360 Winter	2	+0%	30/30 Summer				44.825	-0.060	0.000	0.03	
S4.000	S11	15 Winter	2	+0%	30/15 Summer				45.391	-0.059	0.000	0.67	
S1.005	S7	15 Winter	2	+0%	30/15 Summer				44.858	-0.007	0.000	0.02	
S1.006	S8	15 Winter	2	+0%	30/15 Summer				44.603	-0.222	0.000	0.11	
S5.000	S16	15 Winter	2	+0%	30/15 Summer				44.881	-0.119	0.000	0.44	
S1.007	S9	30 Winter	2	+0%	30/15 Summer				44.576	-0.174	0.000	0.30	
S6.000	S19	15 Winter	2	+0%	100/15 Summer				45.623	-0.102	0.000	0.22	
S6.001	S20	15 Winter	2	+0%	30/15 Summer				45.470	-0.080	0.000	0.44	
S6.002	S21	15 Winter	2	+0%					45.333	-0.157	0.000	0.20	
S6.003	S22	15 Winter	2	+0%					45.097	-0.178	0.000	0.10	
S7.000	S26	15 Winter	2	+0%	30/15 Winter				44.910	-0.090	0.000	0.33	
S8.000	S23	15 Winter	2	+0%					45.587	-0.113	0.000	0.14	
S8.001	S24	15 Winter	2	+0%					45.221	-0.104	0.000	0.20	
S9.000	S27	15 Winter	2	+0%					45.412	-0.098	0.000	0.26	
S8.002	S27	360 Winter	2	+0%	30/15 Summer				44.708	-0.147	0.000	0.08	
S8.003	S28	360 Winter	2	+0%	30/30 Summer				44.707	-0.058	0.000	0.03	
S7.001	S27	15 Winter	2	+0%	30/15 Summer				44.738	-0.002	0.000	0.04	
S6.004	S23	15 Winter	2	+0%	2/15 Summer				44.754	0.074	0.000	0.02	
S10.000	S31	15 Winter	2	+0%					46.041	-0.184	0.000	0.07	
S10.001	S32	15 Winter	2	+0%					45.749	-0.176	0.000	0.10	
S11.000	S33	15 Winter	2	+0%					46.030	-0.120	0.000	0.09	
S11.001	S34	15 Winter	2	+0%					45.603	-0.172	0.000	0.12	
S12.000	S36	15 Winter	2	+0%					45.945	-0.100	0.000	0.25	
S11.002	S35	15 Winter	2	+0%	100/15 Summer				45.432	-0.143	0.000	0.28	
S13.000	S36	360 Winter	2	+0%	100/120 Winter				45.148	-0.252	0.000	0.00	
S13.001	S37	360 Winter	2	+0%	30/360 Winter				45.148	-0.202	0.000	0.01	
S10.002	S33	15 Summer	2	+0%	2/15 Summer				45.360	0.040	0.000	0.00	
S1.008	S10	30 Winter	2	+0%	30/15 Summer				44.559	-0.096	0.000	0.22	
S14.000	S38	30 Winter	2	+0%					50.902	-0.198	0.000	0.25	
S14.001	S39	480 Winter	2	+0%	30/30 Winter				49.992	-0.108	0.000	0.02	
S14.002	S40	1440 Winter	2	+0%	30/480 Winter				49.112	-0.138	0.000	0.01	
S14.003	S41	2160 Winter	2	+0%	30/360 Summer				48.050	-0.079	0.000	0.01	
S14.004	S111	2160 Winter	2	+0%	2/1440 Winter				47.163	0.063	0.000	0.01	
S15.000	S1.000	15 Winter	2	+0%	100/15 Summer				51.081	-0.144	0.000	0.27	
S15.001	S1.001	15 Winter	2	+0%	30/15 Summer				50.612	-0.163	0.000	0.41	
S16.000	S2.000	15 Winter	2	+0%	100/15 Summer				54.645	-0.105	0.000	0.19	
S16.001	S2.001	15 Winter	2	+0%	30/15 Summer				54.300	-0.070	0.000	0.55	
S16.002	S2.002	15 Winter	2	+0%	100/15 Summer				54.029	-0.131	0.000	0.36	
S16.003	S2.003	15 Winter	2	+0%	100/15 Summer				53.826	-0.184	0.000	0.31	
S16.004	S2.004	15 Winter	2	+0%	100/15 Summer				53.735	-0.175	0.000	0.36	
S16.005	S2.005	15 Winter	2	+0%	100/15 Summer				53.654	-0.176	0.000	0.35	
S16.006	S2.006	15 Winter	2	+0%	100/15 Summer				53.576	-0.174	0.000	0.37	
S16.007	S2.007	15 Winter	2	+0%					53.356	-0.244	0.000	0.08	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		2.1	OK	
S1.001	S2		5.3	OK	
S1.002	S3		7.8	OK	
S1.003	S5		7.7	OK	
S1.004	S6		9.4	OK	
S2.000	S7		3.1	OK	
S2.001	S8		4.4	OK	
S3.000	S9		13.5	OK	
S2.002	S9		3.3	OK	
S2.003	S10	268	1.3	OK	
S4.000	S11		6.9	OK	
S1.005	S7		1.2	OK	
S1.006	S8		7.1	OK	
S5.000	S16		11.5	OK	
S1.007	S9		19.0	OK	
S6.000	S19		3.0	OK	
S6.001	S20		5.7	OK	
S6.002	S21		8.1	OK	
S6.003	S22		9.7	OK	
S7.000	S26		5.0	OK	
S8.000	S23		3.6	OK	
S8.001	S24		5.1	OK	
S9.000	S27		13.3	OK	
S8.002	S27		3.5	OK	
S8.003	S28	276	1.4	OK	
S7.001	S27		2.4	OK	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		3.1	OK	
S10.001	S32		7.5	OK	
S11.000	S33		2.4	OK	
S11.001	S34		5.1	OK	
S12.000	S36		8.9	OK	
S11.002	S35		15.2	OK	
S13.000	S36		0.0	OK	
S13.001	S37	302	0.7	OK	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		24.3	OK	
S14.000	S38		37.5	OK	
S14.001	S39		3.7	OK	
S14.002	S40		3.5	OK	
S14.003	S41		3.4	OK	
S14.004	S111		3.1	SURCHARGED	
S15.000	S1.000	6	15.4	OK	
S15.001	S1.001	7	30.3	OK	
S16.000	S2.000	6	3.7	OK	
S16.001	S2.001	7	8.9	OK	
S16.002	S2.002	8	13.2	OK	
S16.003	S2.003	7	20.4	OK	
S16.004	S2.004	7	24.1	OK	
S16.005	S2.005		24.5	OK	
S16.006	S2.006		25.6	OK	
S16.007	S2.007		27.5	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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S15.002	S1.002	15 Winter	2	+0%	100/15 Summer				50.338	-0.187	0.000	0.30	
S15.003	S1.003	15 Winter	2	+0%	30/15 Summer				48.718	-0.171	0.000	0.38	
S15.004	S1.004	15 Winter	2	+0%	100/15 Summer				47.066	-0.187	0.000	0.30	
S17.000	S3.000	15 Winter	2	+0%					48.760	-0.216	0.000	0.17	
S17.001	S3.001	60 Winter	2	+0%					48.611	-0.265	0.000	0.03	
S15.005	S1.005	2160 Winter	2	+0%	2/360 Summer				46.469	0.668	0.000	0.03	
S15.006	S1.006	2160 Winter	2	+0%	2/360 Summer				46.467	0.766	0.000	0.02	
S14.005	S46	2160 Winter	2	+0%					46.466	-0.404	0.000	0.02	
S14.006	S48	2160 Winter	2	+0%					45.439	-0.561	0.000	0.01	
S18.000	S90	15 Winter	2	+0%	30/15 Summer				47.555	-0.095	0.000	0.28	
S18.001	S91	15 Winter	2	+0%	30/15 Summer				47.242	-0.078	0.000	0.47	
S18.002	S92	15 Winter	2	+0%	30/15 Summer				47.108	-0.072	0.000	0.53	
S18.003	S93	15 Winter	2	+0%	30/15 Summer				46.882	-0.068	0.000	0.58	
S19.000	S94	15 Winter	2	+0%					47.181	-0.119	0.000	0.10	
S19.001	S95	15 Winter	2	+0%					47.074	-0.101	0.000	0.23	
S18.004	S94	120 Winter	2	+0%	30/30 Summer				45.784	-0.161	0.000	0.15	
S20.000	S97	15 Summer	2	+0%	100/15 Summer				46.400	-0.150	0.000	0.00	
S20.001	S97	15 Winter	2	+0%	30/15 Summer				46.323	-0.092	0.000	0.31	
S21.000	S98	15 Winter	2	+0%					46.940	-0.110	0.000	0.16	
S18.005	S95	120 Winter	2	+0%	30/15 Winter				45.783	-0.117	0.000	0.03	
S22.000	S100	15 Winter	2	+0%					46.692	-0.108	0.000	0.17	
S18.006	S96	120 Winter	2	+0%	2/15 Summer				45.780	0.115	0.000	0.04	
S14.007	S65	2160 Winter	2	+0%					45.068	-0.532	0.000	0.03	
S23.000	S68	15 Summer	2	+0%	100/120 Winter				46.000	-0.150	0.000	0.00	
S23.001	S69	360 Winter	2	+0%	2/15 Summer				45.718	0.123	0.000	0.26	
S14.008	S50	2160 Winter	2	+0%					44.985	-0.541	0.000	0.02	
S14.009	S51	2160 Winter	2	+0%	100/120 Winter				44.606	-0.494	0.000	0.04	
S24.000	S74	15 Winter	2	+0%	30/15 Summer				45.665	-0.035	0.000	0.60	
S14.010	S52	2160 Winter	2	+0%	100/120 Winter				44.594	-0.461	0.000	0.02	
S25.000	S50	360 Winter	2	+0%					48.155	-0.070	0.000	0.20	
S25.001	S51	15 Winter	2	+0%	30/15 Summer				47.819	-0.181	0.000	0.08	
S26.000	S4.000	15 Winter	2	+0%					51.056	-0.094	0.000	0.29	
S26.001	S4.001	360 Winter	2	+0%	30/60 Winter				50.637	-0.133	0.000	0.02	
S26.002	S4.002	15 Winter	2	+0%					50.296	-0.174	0.000	0.11	
S26.003	S4.003	15 Winter	2	+0%					50.072	-0.231	0.000	0.12	
S27.000	S5.000	15 Winter	2	+0%	100/15 Summer				50.862	-0.088	0.000	0.35	
S26.004	S4.004	15 Winter	2	+0%					49.962	-0.241	0.000	0.08	
S28.000	S6.000	15 Winter	2	+0%	30/15 Summer				49.065	-0.085	0.000	0.38	
S28.001	S6.001	60 Winter	2	+0%	2/30 Winter				49.003	0.003	0.000	0.05	
S26.005	S4.005	15 Winter	2	+0%	30/15 Winter				48.414	-0.236	0.000	0.10	
S26.006	S4.006	15 Winter	2	+0%	2/15 Summer				47.681	0.055	0.000	0.25	
S25.002	S44	15 Winter	2	+0%	30/15 Summer				47.646	-0.129	0.000	0.37	
S25.003	S46	30 Winter	2	+0%	30/15 Summer				46.856	-0.079	0.000	0.74	
S25.004	S75	30 Winter	2	+0%	30/15 Summer				46.623	-0.102	0.000	0.58	
S29.000	S76	15 Summer	2	+0%	100/15 Summer				47.000	-0.225	0.000	0.00	
S29.001	S77	15 Winter	2	+0%	30/15 Summer				46.692	-0.136	0.000	0.33	
S25.005	S76	15 Winter	2	+0%	30/15 Summer				46.091	-0.169	0.000	0.39	
S30.000	S80	15 Winter	2	+0%					45.765	-0.235	0.000	0.10	
S25.006	S78	15 Winter	2	+0%	30/15 Summer				44.932	-0.218	0.000	0.42	
S31.000	S82	15 Winter	2	+0%	100/15 Summer				45.084	-0.216	0.000	0.17	
S25.007	S79	30 Winter	2	+0%	30/15 Summer				44.613	-0.287	0.000	0.34	
S25.008	S80	30 Winter	2	+0%	30/15 Summer				44.565	-0.135	0.000	0.34	
S1.009	S11	30 Winter	2	+0%	30/15 Summer				44.528	-0.107	0.000	0.57	
S1.010	S12	30 Winter	2	+0%	30/15 Summer				44.503	-0.097	0.000	1.04	
S1.011	S89	60 Winter	2	+0%	30/360 Winter				44.278	-0.302	0.000	0.49	
S32.000	S153	15 Winter	2	+0%					44.850	-0.100	0.000	0.24	
S33.000	S152	15 Winter	2	+0%					44.879	-0.121	0.000	0.08	
S32.001	S154	15 Winter	2	+0%	30/360 Winter				44.454	-0.096	0.000	0.27	
S1.012	S13	120 Winter	2	+0%	30/360 Winter				44.168	-0.397	0.000	0.16	
S34.000	S156	30 Winter	2	+0%	2/15 Summer				45.072	0.272	0.000	0.06	
S35.000	S157	30 Winter	2	+0%	2/15 Summer				45.084	0.284	0.000	0.15	
S34.001	S157	30 Winter	2	+0%	2/15 Summer				45.065	0.565	0.000	0.18	
S34.002	S158	30 Winter	2	+0%					45.057	-0.358	0.000	0.09	
S36.000	S159	15 Winter	2	+0%	100/120 Winter				44.455	-0.170	0.000	0.13	
S36.001	S161	15 Winter	2	+0%	30/360 Winter				44.262	-0.163	0.000	0.17	
S34.003	S89	360 Winter	2	+0%	30/60 Winter				44.091	-0.224	0.000	0.06	
S1.013	S14	120 Winter	2	+0%	2/60 Winter				44.120	0.030	0.000	0.50	
S1.014	S15	120 Winter	2	+0%					43.863	-0.117	0.000	0.69	
S1.015	S16	120 Winter	2	+0%					43.818	-0.137	0.000	0.57	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.002	S1.002		66.1	OK	
S15.003	S1.003	7	82.8	OK	
S15.004	S1.004		90.6	OK	
S17.000	S3.000		10.9	OK	
S17.001	S3.001		8.2	OK	
S15.005	S1.005		7.4	SURCHARGED	
S15.006	S1.006		5.1	SURCHARGED	
S14.005	S46		8.5	OK	
S14.006	S48		8.6	OK	
S18.000	S90		4.8	OK	
S18.001	S91		7.6	OK	
S18.002	S92		8.9	OK	
S18.003	S93		10.1	OK	
S19.000	S94		1.6	OK	
S19.001	S95		4.4	OK	
S18.004	S94		6.6	OK	
S20.000	S97		0.0	OK	
S20.001	S97		9.5	OK	
S21.000	S98		8.1	OK	
S18.005	S95	118	2.4	OK	
S22.000	S100		11.1	OK	
S18.006	S96		2.5	SURCHARGED	
S14.007	S65		10.2	OK	
S23.000	S68		0.0	OK	
S23.001	S69	272	3.4	SURCHARGED	
S14.008	S50		13.6	OK	
S14.009	S51		12.1	OK	
S24.000	S74	5	9.1	OK	
S14.010	S52		12.4	OK	
S25.000	S50		1.0	OK	
S25.001	S51		3.4	OK	
S26.000	S4.000		6.4	OK	
S26.001	S4.001		1.1	OK	
S26.002	S4.002		4.8	OK	
S26.003	S4.003		6.5	OK	
S27.000	S5.000	4	9.2	OK	
S26.004	S4.004		18.8	OK	
S28.000	S6.000		5.6	OK	
S28.001	S6.001	24	2.8	SURCHARGED	
S26.005	S4.005		25.1	OK	
S26.006	S4.006		24.3	SURCHARGED	
S25.002	S44		31.2	OK	
S25.003	S46		34.6	OK	
S25.004	S75		38.1	OK	
S29.000	S76		0.0	OK	
S29.001	S77		33.8	OK	
S25.005	S76		68.9	OK	
S30.000	S80		15.5	OK	
S25.006	S78		87.1	OK	
S31.000	S82		29.6	OK	
S25.007	S79		112.2	OK	
S25.008	S80		99.6	OK	
S1.009	S11		119.5	OK	
S1.010	S12		118.8	OK	
S1.011	S89		66.2	OK	
S32.000	S153		4.5	OK	
S33.000	S152		2.0	OK	
S32.001	S154		9.4	OK	
S1.012	S13		64.9	OK	
S34.000	S156		4.4	SURCHARGED	
S35.000	S157		6.5	SURCHARGED	
S34.001	S157		12.9	SURCHARGED	
S34.002	S158		12.7	OK	
S36.000	S159		5.7	OK	
S36.001	S161		7.8	OK	
S34.003	S89	141	8.5	OK	
S1.013	S14		33.3	SURCHARGED	
S1.014	S15		33.3	OK	
S1.015	S16		33.3	OK	

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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	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	13	Number of Storage Structures	28	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR M5-60 (mm)	20.000	Cv (Summer)	0.750	
Region	England and Wales	Ratio R	0.354	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	2.5 Second Increment (Extended)	Inertia Status	OFF
DTS Status			ON

Profile(s)

Duration(s) (mins)	15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160	Summer and Winter	
Return Period(s) (years)		2, 30, 100	
Climate Change (%)		0, 40, 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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	30	+40%					45.807	-0.083	0.000	0.39	
S1.001	S2	15 Winter	30	+40%	30/15 Summer				45.740	0.020	0.000	1.26	
S1.002	S3	15 Winter	30	+40%					45.590	-0.090	0.000	0.64	
S1.003	S5	15 Winter	30	+40%					45.408	-0.092	0.000	0.65	
S1.004	S6	15 Winter	30	+40%					45.280	-0.140	0.000	0.31	
S2.000	S7	15 Winter	30	+40%					45.672	-0.078	0.000	0.46	
S2.001	S8	15 Winter	30	+40%					45.387	-0.163	0.000	0.17	
S3.000	S9	15 Winter	30	+40%					45.627	-0.058	0.000	0.68	
S2.002	S9	600 Winter	30	+40%	30/15 Summer				45.084	0.109	0.000	0.12	
S2.003	S10	600 Winter	30	+40%	30/30 Summer				45.083	0.198	0.000	0.03	
S4.000	S11	15 Winter	30	+40%	30/15 Summer				45.704	0.254	0.000	1.73	
S1.005	S7	480 Winter	30	+40%	30/15 Summer				45.087	0.222	0.000	0.02	
S1.006	S8	15 Winter	30	+40%	30/15 Summer				45.002	0.177	0.000	0.26	
S5.000	S16	15 Winter	30	+40%	30/15 Summer				45.084	0.084	0.000	1.11	
S1.007	S9	15 Winter	30	+40%	30/15 Summer				44.995	0.245	0.000	0.67	
S6.000	S19	15 Winter	30	+40%	100/15 Summer				45.659	-0.066	0.000	0.59	
S6.001	S20	15 Winter	30	+40%	30/15 Summer				45.581	0.031	0.000	1.25	
S6.002	S21	15 Winter	30	+40%					45.391	-0.099	0.000	0.58	
S6.003	S22	15 Winter	30	+40%					45.133	-0.142	0.000	0.29	
S7.000	S26	15 Winter	30	+40%	30/15 Winter				45.012	0.012	0.000	0.87	
S8.000	S23	15 Winter	30	+40%					45.613	-0.087	0.000	0.37	
S8.001	S24	15 Winter	30	+40%					45.258	-0.067	0.000	0.58	
S9.000	S27	15 Winter	30	+40%					45.454	-0.056	0.000	0.70	
S8.002	S27	600 Winter	30	+40%	30/15 Summer				44.975	0.120	0.000	0.13	
S8.003	S28	600 Winter	30	+40%	30/30 Summer				44.974	0.209	0.000	0.05	
S7.001	S27	600 Winter	30	+40%	30/15 Summer				45.002	0.262	0.000	0.03	
S6.004	S23	600 Winter	30	+40%	2/15 Summer				45.024	0.344	0.000	0.02	
S10.000	S31	15 Winter	30	+40%					46.069	-0.156	0.000	0.20	
S10.001	S32	15 Winter	30	+40%					45.788	-0.137	0.000	0.32	
S11.000	S33	15 Winter	30	+40%					46.049	-0.101	0.000	0.23	
S11.001	S34	15 Winter	30	+40%					45.646	-0.129	0.000	0.37	
S12.000	S36	15 Winter	30	+40%					45.984	-0.061	0.000	0.65	
S11.002	S35	15 Winter	30	+40%	100/15 Summer				45.573	-0.002	0.000	0.79	
S13.000	S36	720 Winter	30	+40%	100/120 Winter				45.395	-0.005	0.000	0.00	
S13.001	S37	600 Winter	30	+40%	30/360 Winter				45.396	0.046	0.000	0.01	
S10.002	S33	15 Winter	30	+40%	2/15 Summer				45.413	0.093	0.000	0.00	
S1.008	S10	15 Winter	30	+40%	30/15 Summer				44.909	0.254	0.000	0.55	
S14.000	S38	30 Winter	30	+40%					51.016	-0.084	0.000	0.87	
S14.001	S39	720 Winter	30	+40%	30/30 Winter				50.605	0.505	0.000	0.02	
S14.002	S40	2160 Winter	30	+40%	30/480 Winter				49.494	0.244	0.000	0.01	
S14.003	S41	2160 Summer	30	+40%	30/360 Summer				48.776	0.647	0.000	0.01	
S14.004	S111	2160 Winter	30	+40%	2/1440 Winter				48.304	1.204	0.000	0.01	
S15.000	S1.000	15 Winter	30	+40%	100/15 Summer				51.145	-0.080	0.000	0.72	
S15.001	S1.001	15 Winter	30	+40%	30/15 Summer				50.895	0.120	0.000	1.19	
S16.000	S2.000	15 Winter	30	+40%	100/15 Summer				54.707	-0.043	0.000	0.49	
S16.001	S2.001	15 Winter	30	+40%	30/15 Summer				54.616	0.246	0.000	1.47	
S16.002	S2.002	15 Winter	30	+40%	100/15 Summer				54.142	-0.018	0.000	1.00	
S16.003	S2.003	15 Winter	30	+40%	100/15 Summer				53.975	-0.035	0.000	0.88	
S16.004	S2.004	15 Winter	30	+40%	100/15 Summer				53.899	-0.011	0.000	1.00	
S16.005	S2.005	15 Winter	30	+40%	100/15 Summer				53.804	-0.026	0.000	0.97	
S16.006	S2.006	15 Winter	30	+40%	100/15 Summer				53.728	-0.022	0.000	1.00	
S16.007	S2.007	15 Winter	30	+40%					53.395	-0.205	0.000	0.22	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		5.6	OK	
S1.001	S2		15.8	SURCHARGED	
S1.002	S3		23.7	OK	
S1.003	S5		23.7	OK	
S1.004	S6		28.7	OK	
S2.000	S7		8.2	OK	
S2.001	S8		12.5	OK	
S3.000	S9		35.9	OK	
S2.002	S9		5.6	SURCHARGED	
S2.003	S10		1.3	SURCHARGED	
S4.000	S11		17.7	SURCHARGED	
S1.005	S7		1.2	SURCHARGED	
S1.006	S8		16.8	SURCHARGED	
S5.000	S16		28.8	SURCHARGED	
S1.007	S9		42.1	SURCHARGED	
S6.000	S19		8.1	OK	
S6.001	S20		16.4	SURCHARGED	
S6.002	S21		23.8	OK	
S6.003	S22		28.6	OK	
S7.000	S26		13.2	SURCHARGED	
S8.000	S23		9.5	OK	
S8.001	S24		14.5	OK	
S9.000	S27		35.3	OK	
S8.002	S27		6.0	SURCHARGED	
S8.003	S28		2.5	SURCHARGED	
S7.001	S27		2.1	SURCHARGED	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		8.3	OK	
S10.001	S32		22.6	OK	
S11.000	S33		6.3	OK	
S11.001	S34		15.2	OK	
S12.000	S36		23.7	OK	
S11.002	S35		42.8	OK	
S13.000	S36		0.0	OK	
S13.001	S37		0.7	SURCHARGED	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		61.0	SURCHARGED	
S14.000	S38		127.4	OK	
S14.001	S39		4.0	SURCHARGED	
S14.002	S40		3.6	SURCHARGED	
S14.003	S41		3.5	SURCHARGED	
S14.004	S111		3.7	SURCHARGED	
S15.000	S1.000	6	41.0	OK	
S15.001	S1.001	4	87.8	SURCHARGED	
S16.000	S2.000	4	9.7	OK	
S16.001	S2.001	4	23.9	SURCHARGED	
S16.002	S2.002	4	36.4	OK	
S16.003	S2.003	3	57.1	OK	
S16.004	S2.004	5	66.4	OK	
S16.005	S2.005		67.6	OK	
S16.006	S2.006		70.0	OK	
S16.007	S2.007		76.0	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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S15.002	S1.002	15 Winter	30	+40%	100/15 Summer				50.510	-0.015	0.000	0.88	
S15.003	S1.003	15 Winter	30	+40%	30/15 Summer				49.283	0.394	0.000	1.11	
S15.004	S1.004	15 Winter	30	+40%	100/15 Summer				47.173	-0.080	0.000	0.88	
S17.000	S3.000	15 Winter	30	+40%					48.820	-0.156	0.000	0.45	
S17.001	S3.001	30 Winter	30	+40%					48.651	-0.225	0.000	0.14	
S15.005	S1.005	360 Winter	30	+40%	2/360 Summer				46.662	0.861	0.000	0.28	
S15.006	S1.006	360 Winter	30	+40%	2/360 Summer				46.647	0.946	0.000	0.23	
S14.005	S46	360 Winter	30	+40%					46.541	-0.329	0.000	0.16	
S14.006	S48	360 Winter	30	+40%					45.527	-0.473	0.000	0.10	
S18.000	S90	15 Winter	30	+40%	30/15 Summer				47.781	0.131	0.000	0.67	
S18.001	S91	15 Winter	30	+40%	30/15 Summer				47.646	0.326	0.000	1.08	
S18.002	S92	15 Winter	30	+40%	30/15 Summer				47.476	0.296	0.000	1.25	
S18.003	S93	15 Winter	30	+40%	30/15 Summer				47.108	0.158	0.000	1.34	
S19.000	S94	15 Winter	30	+40%					47.202	-0.098	0.000	0.26	
S19.001	S95	15 Winter	30	+40%					47.119	-0.056	0.000	0.70	
S18.004	S94	360 Winter	30	+40%	30/30 Summer				46.306	0.361	0.000	0.18	
S20.000	S97	15 Summer	30	+40%	100/15 Summer				46.428	-0.122	0.000	0.00	
S20.001	S97	15 Summer	30	+40%	30/15 Summer				46.434	0.019	0.000	1.01	
S21.000	S98	15 Winter	30	+40%					46.968	-0.082	0.000	0.42	
S18.005	S95	360 Winter	30	+40%	30/15 Winter				46.305	0.405	0.000	0.04	
S22.000	S100	15 Winter	30	+40%					46.721	-0.079	0.000	0.45	
S18.006	S96	360 Winter	30	+40%	2/15 Summer				46.390	0.725	0.000	0.04	
S14.007	S65	360 Winter	30	+40%					45.179	-0.421	0.000	0.20	
S23.000	S68	600 Winter	30	+40%	100/120 Winter				46.126	-0.024	0.000	0.00	
S23.001	S69	600 Winter	30	+40%	2/15 Summer				46.126	0.531	0.000	0.26	
S14.008	S50	960 Winter	30	+40%					45.097	-0.429	0.000	0.07	
S14.009	S51	960 Winter	30	+40%	100/120 Winter				45.091	-0.009	0.000	0.08	
S24.000	S74	15 Winter	30	+40%	30/15 Summer				45.832	0.132	0.000	1.08	
S14.010	S52	960 Winter	30	+40%	100/120 Winter				45.037	-0.018	0.000	0.03	
S25.000	S50	120 Winter	30	+40%					48.193	-0.032	0.000	0.79	
S25.001	S51	15 Winter	30	+40%	30/15 Summer				48.501	0.501	0.000	0.27	
S26.000	S4.000	15 Winter	30	+40%					51.101	-0.049	0.000	0.77	
S26.001	S4.001	360 Winter	30	+40%	30/60 Winter				50.833	0.063	0.000	0.02	
S26.002	S4.002	15 Winter	30	+40%					50.342	-0.128	0.000	0.39	
S26.003	S4.003	15 Winter	30	+40%					50.136	-0.167	0.000	0.39	
S27.000	S5.000	15 Winter	30	+40%	100/15 Summer				50.945	-0.005	0.000	1.00	
S26.004	S4.004	15 Winter	30	+40%					50.009	-0.194	0.000	0.27	
S28.000	S6.000	60 Winter	30	+40%	30/15 Summer				49.286	0.136	0.000	0.52	
S28.001	S6.001	60 Winter	30	+40%	2/30 Winter				49.280	0.280	0.000	0.05	
S26.005	S4.005	15 Winter	30	+40%	30/15 Winter				48.725	0.075	0.000	0.29	
S26.006	S4.006	15 Winter	30	+40%	2/15 Summer				48.570	0.944	0.000	0.64	
S25.002	S44	15 Winter	30	+40%	30/15 Summer				48.497	0.722	0.000	0.87	
S25.003	S46	15 Winter	30	+40%	30/15 Summer				47.953	1.018	0.000	1.73	
S25.004	S75	15 Winter	30	+40%	30/15 Summer				47.390	0.665	0.000	1.33	
S29.000	S76	15 Winter	30	+40%	100/15 Summer				47.000	-0.225	0.000	0.00	
S29.001	S77	15 Winter	30	+40%	30/15 Summer				47.003	0.175	0.000	0.97	
S25.005	S76	15 Winter	30	+40%	30/15 Summer				46.601	0.341	0.000	1.01	
S30.000	S80	15 Winter	30	+40%					45.809	-0.191	0.000	0.28	
S25.006	S78	15 Winter	30	+40%	30/15 Summer				45.454	0.304	0.000	1.06	
S31.000	S82	15 Winter	30	+40%	100/15 Summer				45.163	-0.137	0.000	0.46	
S25.007	S79	15 Winter	30	+40%	30/15 Summer				45.096	0.196	0.000	0.94	
S25.008	S80	15 Winter	30	+40%	30/15 Summer				44.921	0.221	0.000	1.11	
S1.009	S11	15 Winter	30	+40%	30/15 Summer				44.840	0.205	0.000	1.78	
S1.010	S12	15 Winter	30	+40%	30/15 Summer				44.695	0.095	0.000	3.30	
S1.011	S89	480 Winter	30	+40%	30/360 Winter				44.608	0.028	0.000	0.66	
S32.000	S153	15 Winter	30	+40%					44.888	-0.062	0.000	0.63	
S33.000	S152	15 Winter	30	+40%					44.898	-0.102	0.000	0.22	
S32.001	S154	480 Winter	30	+40%	30/360 Winter				44.619	0.069	0.000	0.17	
S1.012	S13	480 Winter	30	+40%	30/360 Winter				44.671	0.106	0.000	0.20	
S34.000	S156	15 Winter	30	+40%	2/15 Summer				45.285	0.485	0.000	0.25	
S35.000	S157	15 Winter	30	+40%	2/15 Summer				45.377	0.577	0.000	0.60	
S34.001	S157	15 Winter	30	+40%	2/15 Summer				45.257	0.757	0.000	0.72	
S34.002	S158	15 Winter	30	+40%					45.155	-0.260	0.000	0.37	
S36.000	S159	480 Winter	30	+40%	100/120 Winter				44.542	-0.083	0.000	0.04	
S36.001	S161	480 Winter	30	+40%	30/360 Winter				44.541	0.116	0.000	0.06	
S34.003	S89	480 Winter	30	+40%	30/60 Winter				44.541	0.226	0.000	0.14	
S1.013	S14	480 Winter	30	+40%	2/60 Winter				44.670	0.580	0.000	0.63	
S1.014	S15	720 Winter	30	+40%					43.897	-0.083	0.000	0.87	
S1.015	S16	720 Winter	30	+40%					43.846	-0.109	0.000	0.73	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.002	S1.002		193.5	OK	
S15.003	S1.003	3	240.8	SURCHARGED	
S15.004	S1.004		265.2	OK	
S17.000	S3.000		28.7	OK	
S17.001	S3.001		35.6	OK	
S15.005	S1.005		65.4	SURCHARGED	
S15.006	S1.006		55.7	SURCHARGED	
S14.005	S46		62.7	OK	
S14.006	S48		63.4	OK	
S18.000	S90		11.5	SURCHARGED	
S18.001	S91		17.8	SURCHARGED	
S18.002	S92		21.0	SURCHARGED	
S18.003	S93		23.5	SURCHARGED	
S19.000	S94		4.1	OK	
S19.001	S95		13.6	OK	
S18.004	S94		7.9	SURCHARGED	
S20.000	S97		0.1	OK	
S20.001	S97		31.0	SURCHARGED	
S21.000	S98		21.7	OK	
S18.005	S95		3.3	SURCHARGED	
S22.000	S100		29.4	OK	
S18.006	S96		2.5	SURCHARGED	
S14.007	S65		65.5	OK	
S23.000	S68		0.0	OK	
S23.001	S69		3.4	SURCHARGED	
S14.008	S50		46.0	OK	
S14.009	S51		22.2	OK	
S24.000	S74	4	16.3	SURCHARGED	
S14.010	S52		22.7	OK	
S25.000	S50		3.9	OK	
S25.001	S51		10.9	SURCHARGED	
S26.000	S4.000		17.1	OK	
S26.001	S4.001		1.3	SURCHARGED	
S26.002	S4.002		16.4	OK	
S26.003	S4.003		21.5	OK	
S27.000	S5.000	4	26.3	OK	
S26.004	S4.004		60.0	OK	
S28.000	S6.000		7.7	SURCHARGED	
S28.001	S6.001		2.8	SURCHARGED	
S26.005	S4.005		74.5	SURCHARGED	
S26.006	S4.006		63.2	SURCHARGED	
S25.002	S44		72.5	SURCHARGED	
S25.003	S46		80.5	SURCHARGED	
S25.004	S75		87.7	SURCHARGED	
S29.000	S76		0.0	OK	
S29.001	S77		101.0	SURCHARGED	
S25.005	S76		179.2	SURCHARGED	
S30.000	S80		41.3	OK	
S25.006	S78		221.5	SURCHARGED	
S31.000	S82		78.7	OK	
S25.007	S79		314.4	SURCHARGED	
S25.008	S80		327.1	SURCHARGED	
S1.009	S11		377.4	SURCHARGED	
S1.010	S12		377.3	SURCHARGED	
S1.011	S89		88.8	SURCHARGED	
S32.000	S153		12.0	OK	
S33.000	S152		5.4	OK	
S32.001	S154		5.7	SURCHARGED	
S1.012	S13		81.7	SURCHARGED	
S34.000	S156		18.0	FLOOD RISK	
S35.000	S157		26.4	FLOOD RISK	
S34.001	S157		52.5	SURCHARGED	
S34.002	S158		52.4	OK	
S36.000	S159		1.9	OK	
S36.001	S161		2.7	SURCHARGED	
S34.003	S89	320	17.9	SURCHARGED	
S1.013	S14		42.5	SURCHARGED	
S1.014	S15		42.5	OK	
S1.015	S16		42.5	OK	

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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	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	13	Number of Storage Structures	28	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR M5-60 (mm)	20.000	Cv (Summer)	0.750	
Region	England and Wales	Ratio R	0.354	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	2.5 Second Increment (Extended)	Inertia Status	OFF
DTS Status	ON		

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160
Return Period(s) (years)	2, 30, 100
Climate Change (%)	0, 40, 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) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	100	+40%					45.832	-0.058	0.000	0.52	
S1.001	S2	15 Winter	100	+40%	30/15 Summer				45.785	0.065	0.000	1.63	
S1.002	S3	15 Winter	100	+40%					45.616	-0.064	0.000	0.83	
S1.003	S5	15 Winter	100	+40%					45.435	-0.065	0.000	0.85	
S1.004	S6	15 Winter	100	+40%					45.294	-0.126	0.000	0.40	
S2.000	S7	15 Winter	100	+40%					45.685	-0.065	0.000	0.60	
S2.001	S8	15 Winter	100	+40%					45.396	-0.154	0.000	0.21	
S3.000	S9	15 Winter	100	+40%					45.650	-0.035	0.000	0.88	
S2.002	S9	720 Winter	100	+40%	30/15 Summer				45.218	0.243	0.000	0.14	
S2.003	S10	720 Winter	100	+40%	30/30 Summer				45.217	0.332	0.000	0.03	
S4.000	S11	15 Winter	100	+40%	30/15 Summer				45.945	0.495	0.000	2.21	
S1.005	S7	720 Winter	100	+40%	30/15 Summer				45.217	0.352	0.000	0.02	
S1.006	S8	15 Winter	100	+40%	30/15 Summer				45.154	0.329	0.000	0.33	
S5.000	S16	15 Winter	100	+40%	30/15 Summer				45.387	0.387	0.000	1.28	
S1.007	S9	15 Winter	100	+40%	30/15 Summer				45.139	0.389	0.000	0.99	
S6.000	S19	15 Winter	100	+40%	100/15 Summer				45.745	0.020	0.000	0.76	
S6.001	S20	15 Winter	100	+40%	30/15 Summer				45.643	0.093	0.000	1.59	
S6.002	S21	15 Winter	100	+40%					45.414	-0.076	0.000	0.74	
S6.003	S22	15 Winter	100	+40%					45.146	-0.129	0.000	0.37	
S7.000	S26	15 Winter	100	+40%	30/15 Winter				45.167	0.167	0.000	1.12	
S8.000	S23	15 Winter	100	+40%					45.623	-0.077	0.000	0.48	
S8.001	S24	15 Winter	100	+40%					45.274	-0.051	0.000	0.76	
S9.000	S27	15 Winter	100	+40%					45.506	-0.004	0.000	0.89	
S8.002	S27	720 Winter	100	+40%	30/15 Summer				45.131	0.276	0.000	0.14	
S8.003	S28	720 Winter	100	+40%	30/30 Summer				45.130	0.365	0.000	0.06	
S7.001	S27	720 Winter	100	+40%	30/15 Summer				45.148	0.408	0.000	0.04	
S6.004	S23	720 Winter	100	+40%	2/15 Summer				45.171	0.491	0.000	0.02	
S10.000	S31	15 Winter	100	+40%					46.078	-0.147	0.000	0.26	
S10.001	S32	15 Winter	100	+40%					45.801	-0.124	0.000	0.41	
S11.000	S33	15 Winter	100	+40%					46.056	-0.094	0.000	0.30	
S11.001	S34	15 Winter	100	+40%					45.754	-0.021	0.000	0.46	
S12.000	S36	15 Winter	100	+40%					46.023	-0.022	0.000	0.83	
S11.002	S35	15 Winter	100	+40%	100/15 Summer				45.707	0.132	0.000	1.00	
S13.000	S36	720 Winter	100	+40%	100/120 Winter				45.529	0.129	0.000	0.00	
S13.001	S37	720 Winter	100	+40%	30/360 Winter				45.529	0.179	0.000	0.01	
S10.002	S33	720 Winter	100	+40%	2/15 Summer				45.529	0.209	0.000	0.00	
S1.008	S10	15 Winter	100	+40%	30/15 Summer				45.048	0.393	0.000	0.77	
S14.000	S38	30 Winter	100	+40%					51.079	-0.021	0.000	1.00	
S14.001	S39	720 Winter	100	+40%	30/30 Winter				51.035	0.935	0.000	0.02	
S14.002	S40	2160 Winter	100	+40%	30/480 Winter				49.737	0.487	0.000	0.01	
S14.003	S41	2160 Winter	100	+40%	30/360 Summer				48.829	0.700	0.000	0.01	
S14.004	S111	2160 Winter	100	+40%	2/1440 Winter				48.635	1.535	0.000	0.01	
S15.000	S1.000	15 Winter	100	+40%	100/15 Summer				51.869	0.644	0.000	0.80	
S15.001	S1.001	15 Winter	100	+40%	30/15 Summer				51.642	0.867	0.000	1.28	
S16.000	S2.000	15 Winter	100	+40%	100/15 Summer				55.004	0.254	0.000	0.57	
S16.001	S2.001	15 Winter	100	+40%	30/15 Summer				54.870	0.500	0.000	1.65	
S16.002	S2.002	15 Winter	100	+40%	100/15 Summer				54.342	0.182	0.000	1.12	
S16.003	S2.003	15 Winter	100	+40%	100/15 Summer				54.151	0.141	0.000	1.03	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		7.3	OK	
S1.001	S2		20.4	SURCHARGED	
S1.002	S3		30.7	OK	
S1.003	S5		30.8	OK	
S1.004	S6		37.3	OK	
S2.000	S7		10.6	OK	
S2.001	S8		16.2	OK	
S3.000	S9		46.3	OK	
S2.002	S9		6.3	SURCHARGED	
S2.003	S10		1.4	SURCHARGED	
S4.000	S11		22.6	SURCHARGED	
S1.005	S7		1.2	SURCHARGED	
S1.006	S8		21.1	SURCHARGED	
S5.000	S16		33.3	SURCHARGED	
S1.007	S9		62.6	SURCHARGED	
S6.000	S19		10.4	SURCHARGED	
S6.001	S20		20.9	SURCHARGED	
S6.002	S21		30.6	OK	
S6.003	S22		36.9	OK	
S7.000	S26		17.0	SURCHARGED	
S8.000	S23		12.3	OK	
S8.001	S24		18.8	OK	
S9.000	S27		44.9	OK	
S8.002	S27		6.7	SURCHARGED	
S8.003	S28		3.0	SURCHARGED	
S7.001	S27		2.5	SURCHARGED	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		10.8	OK	
S10.001	S32		29.4	OK	
S11.000	S33		8.2	OK	
S11.001	S34		18.7	OK	
S12.000	S36		30.1	OK	
S11.002	S35		54.2	SURCHARGED	
S13.000	S36		0.0	SURCHARGED	
S13.001	S37		0.7	SURCHARGED	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		85.5	SURCHARGED	
S14.000	S38		147.3	OK	
S14.001	S39		4.1	SURCHARGED	
S14.002	S40		3.6	SURCHARGED	
S14.003	S41		3.6	SURCHARGED	
S14.004	S111		4.0	FLOOD RISK	
S15.000	S1.000	3	45.7	FLOOD RISK	
S15.001	S1.001	5	94.7	FLOOD RISK	
S16.000	S2.000	4	11.2	SURCHARGED	
S16.001	S2.001	4	26.9	SURCHARGED	
S16.002	S2.002	4	40.9	SURCHARGED	
S16.003	S2.003	6	66.8	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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S16.004	S2.004	15 Winter	100	+40%	100/15 Summer				54.040	0.130	0.000	1.19	
S16.005	S2.005	15 Winter	100	+40%	100/15 Summer				53.924	0.094	0.000	1.18	
S16.006	S2.006	15 Winter	100	+40%	100/15 Summer				53.812	0.062	0.000	1.22	
S16.007	S2.007	15 Winter	100	+40%					53.405	-0.195	0.000	0.26	
S15.002	S1.002	15 Winter	100	+40%	100/15 Summer				51.361	0.836	0.000	0.96	
S15.003	S1.003	15 Winter	100	+40%	30/15 Summer				49.846	0.957	0.000	1.24	
S15.004	S1.004	15 Winter	100	+40%	100/15 Summer				47.330	0.077	0.000	0.98	
S17.000	S3.000	15 Winter	100	+40%					48.844	-0.132	0.000	0.58	
S17.001	S3.001	30 Winter	100	+40%					48.669	-0.207	0.000	0.21	
S15.005	S1.005	120 Winter	100	+40%	2/360 Summer				46.761	0.960	0.000	0.79	
S15.006	S1.006	120 Winter	100	+40%	2/360 Summer				46.722	1.021	0.000	0.57	
S14.005	S46	120 Winter	100	+40%					46.615	-0.255	0.000	0.39	
S14.006	S48	120 Winter	100	+40%					45.598	-0.402	0.000	0.24	
S18.000	S90	15 Winter	100	+40%	30/15 Summer				48.190	0.540	0.000	0.85	
S18.001	S91	15 Winter	100	+40%	30/15 Summer				48.084	0.764	0.000	1.29	
S18.002	S92	15 Winter	100	+40%	30/15 Summer				47.855	0.675	0.000	1.51	
S18.003	S93	15 Winter	100	+40%	30/15 Summer				47.317	0.367	0.000	1.67	
S19.000	S94	15 Winter	100	+40%					47.210	-0.090	0.000	0.33	
S19.001	S95	15 Winter	100	+40%					47.138	-0.037	0.000	0.91	
S18.004	S94	360 Winter	100	+40%	30/30 Summer				46.574	0.629	0.000	0.23	
S20.000	S97	15 Winter	100	+40%	100/15 Summer				46.771	0.221	0.000	0.04	
S20.001	S97	15 Winter	100	+40%	30/15 Summer				46.772	0.357	0.000	1.27	
S21.000	S98	15 Winter	100	+40%					46.979	-0.071	0.000	0.54	
S18.005	S95	360 Winter	100	+40%	30/15 Winter				46.572	0.672	0.000	0.04	
S22.000	S100	15 Winter	100	+40%					46.733	-0.067	0.000	0.58	
S18.006	S96	360 Winter	100	+40%	2/15 Summer				46.659	0.994	0.000	0.04	
S14.007	S65	960 Winter	100	+40%					45.539	-0.061	0.000	0.15	
S23.000	S68	720 Winter	100	+40%	100/120 Winter				46.328	0.178	0.000	0.00	
S23.001	S69	720 Winter	100	+40%	2/15 Summer				46.328	0.733	0.000	0.26	
S14.008	S50	960 Winter	100	+40%					45.509	-0.017	0.000	0.09	
S14.009	S51	960 Winter	100	+40%	100/120 Winter				45.464	0.364	0.000	0.08	
S24.000	S74	15 Winter	100	+40%	30/15 Summer				45.869	0.169	0.000	1.10	
S14.010	S52	960 Winter	100	+40%	100/120 Winter				45.470	0.415	0.000	0.03	
S25.000	S50	30 Winter	100	+40%					48.220	-0.005	0.000	1.00	
S25.001	S51	15 Winter	100	+40%	30/15 Summer				49.203	1.203	0.000	0.29	
S26.000	S4.000	15 Winter	100	+40%					51.139	-0.011	0.000	1.00	
S26.001	S4.001	360 Winter	100	+40%	30/60 Winter				50.940	0.170	0.000	0.02	
S26.002	S4.002	15 Winter	100	+40%					50.358	-0.112	0.000	0.50	
S26.003	S4.003	15 Winter	100	+40%					50.158	-0.145	0.000	0.50	
S27.000	S5.000	15 Winter	100	+40%	100/15 Summer				51.017	0.067	0.000	1.05	
S26.004	S4.004	15 Winter	100	+40%					50.020	-0.183	0.000	0.31	
S28.000	S6.000	120 Winter	100	+40%	30/15 Summer				49.415	0.265	0.000	0.44	
S28.001	S6.001	120 Winter	100	+40%	2/30 Winter				49.410	0.410	0.000	0.05	
S26.005	S4.005	15 Winter	100	+40%	30/15 Winter				49.451	0.801	0.000	0.32	
S26.006	S4.006	15 Winter	100	+40%	2/15 Summer				49.294	1.668	0.000	0.68	
S25.002	S44	15 Winter	100	+40%	30/15 Summer				49.214	1.439	0.000	0.90	
S25.003	S46	15 Winter	100	+40%	30/15 Summer				48.645	1.710	0.000	1.79	
S25.004	S75	15 Winter	100	+40%	30/15 Summer				48.060	1.335	0.000	1.41	
S29.000	S76	15 Winter	100	+40%	100/15 Summer				47.817	0.592	0.000	0.12	
S29.001	S77	15 Winter	100	+40%	30/15 Summer				47.838	1.010	0.000	1.02	
S25.005	S76	15 Winter	100	+40%	30/15 Summer				47.279	1.019	0.000	1.13	
S30.000	S80	15 Winter	100	+40%					45.905	-0.095	0.000	0.36	
S25.006	S78	15 Winter	100	+40%	30/15 Summer				45.831	0.681	0.000	1.22	
S31.000	S82	15 Winter	100	+40%	100/15 Summer				45.589	0.289	0.000	0.55	
S25.007	S79	15 Winter	100	+40%	30/15 Summer				45.363	0.463	0.000	1.10	
S25.008	S80	15 Winter	100	+40%	30/15 Summer				45.114	0.414	0.000	1.30	
S1.009	S11	15 Winter	100	+40%	30/15 Summer				44.964	0.329	0.000	2.14	
S1.010	S12	600 Winter	100	+40%	30/15 Summer				44.927	0.327	0.000	0.88	
S1.011	S89	600 Winter	100	+40%	30/360 Winter				44.919	0.339	0.000	1.04	
S32.000	S153	600 Winter	100	+40%					44.913	-0.037	0.000	0.09	
S33.000	S152	600 Winter	100	+40%					44.912	-0.088	0.000	0.03	
S32.001	S154	480 Winter	100	+40%	30/360 Winter				44.914	0.364	0.000	0.35	
S1.012	S13	120 Winter	100	+40%	30/360 Winter				45.013	0.448	0.000	0.57	
S34.000	S156	15 Winter	100	+40%	2/15 Summer				45.326	0.526	0.000	0.33	
S35.000	S157	15 Winter	100	+40%	2/15 Summer				45.492	0.692	0.000	0.80	
S34.001	S157	15 Winter	100	+40%	2/15 Summer				45.289	0.789	0.000	0.94	
S34.002	S158	15 Winter	100	+40%					45.188	-0.227	0.000	0.49	
S36.000	S159	360 Winter	100	+40%	100/120 Winter				44.870	0.245	0.000	0.07	
S36.001	S161	360 Winter	100	+40%	30/360 Winter				44.882	0.457	0.000	0.09	
S34.003	S89	360 Winter	100	+40%	30/60 Winter				44.912	0.597	0.000	0.18	
S1.013	S14	360 Winter	100	+40%	2/60 Winter				45.052	0.962	0.000	0.64	
S1.014	S15	60 Winter	100	+40%					43.900	-0.080	0.000	0.87	
S1.015	S16	480 Winter	100	+40%					43.847	-0.108	0.000	0.74	

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84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 15:57 File 2025TRADEPARKFULL MODEL01.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S16.004	S2.004	6	78.8	SURCHARGED	
S16.005	S2.005		81.8	SURCHARGED	
S16.006	S2.006		85.1	SURCHARGED	
S16.007	S2.007		92.0	OK	
S15.002	S1.002		211.6	SURCHARGED	
S15.003	S1.003	4	268.6	SURCHARGED	
S15.004	S1.004		295.1	SURCHARGED	
S17.000	S3.000		37.1	OK	
S17.001	S3.001		51.5	OK	
S15.005	S1.005		185.4	SURCHARGED	
S15.006	S1.006		138.4	SURCHARGED	
S14.005	S46		150.3	OK	
S14.006	S48		151.7	OK	
S18.000	S90		14.5	FLOOD RISK	
S18.001	S91		21.1	FLOOD RISK	
S18.002	S92		25.3	SURCHARGED	
S18.003	S93		29.4	SURCHARGED	
S19.000	S94		5.4	OK	
S19.001	S95		17.6	OK	
S18.004	S94		10.1	SURCHARGED	
S20.000	S97		0.6	FLOOD RISK	
S20.001	S97		39.0	SURCHARGED	
S21.000	S98		28.1	OK	
S18.005	S95		3.5	SURCHARGED	
S22.000	S100		38.2	OK	
S18.006	S96		2.6	SURCHARGED	
S14.007	S65		51.7	OK	
S23.000	S68		0.0	SURCHARGED	
S23.001	S69		3.4	SURCHARGED	
S14.008	S50		55.7	OK	
S14.009	S51		24.4	SURCHARGED	
S24.000	S74	6	16.6	SURCHARGED	
S14.010	S52		22.7	SURCHARGED	
S25.000	S50		5.0	OK	
S25.001	S51		11.7	SURCHARGED	
S26.000	S4.000		22.0	OK	
S26.001	S4.001		1.3	SURCHARGED	
S26.002	S4.002		21.1	OK	
S26.003	S4.003		27.8	OK	
S27.000	S5.000	5	27.5	SURCHARGED	
S26.004	S4.004		70.7	OK	
S28.000	S6.000		6.4	SURCHARGED	
S28.001	S6.001	102	2.8	SURCHARGED	
S26.005	S4.005		81.0	FLOOD RISK	
S26.006	S4.006		67.6	SURCHARGED	
S25.002	S44		74.8	SURCHARGED	
S25.003	S46		83.2	FLOOD RISK	
S25.004	S75		93.4	FLOOD RISK	
S29.000	S76		5.8	FLOOD RISK	
S29.001	S77		105.5	FLOOD RISK	
S25.005	S76		199.2	SURCHARGED	
S30.000	S80		53.6	OK	
S25.006	S78		254.9	SURCHARGED	
S31.000	S82		93.4	SURCHARGED	
S25.007	S79		365.3	SURCHARGED	
S25.008	S80		383.0	SURCHARGED	
S1.009	S11		452.5	SURCHARGED	
S1.010	S12		100.5	FLOOD RISK	
S1.011	S89		140.1	FLOOD RISK	
S32.000	S153		1.6	OK	
S33.000	S152		0.7	OK	
S32.001	S154		12.2	SURCHARGED	
S1.012	S13		226.7	SURCHARGED	
S34.000	S156		23.6	FLOOD RISK	
S35.000	S157		34.8	FLOOD RISK	
S34.001	S157		69.0	FLOOD RISK	
S34.002	S158		68.6	OK	
S36.000	S159		3.0	SURCHARGED	
S36.001	S161		4.1	SURCHARGED	
S34.003	S89		23.5	SURCHARGED	
S1.013	S14		42.9	SURCHARGED	
S1.014	S15		42.5	OK	
S1.015	S16		42.8	OK	

Motion

84 North Street
Guildford
Surrey GU1 4AU

Date 06/08/2025 16:01
File 2025TRADEPARKFULL MODEL01UC.MDX

Innovyze

Billingshurst
Enterprise Park

Designed by TA
Checked by SLW

Network 2020.1.3

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)100

Foul Sewage (l/s/ha)0.000

Maximum Backdrop Height (m)1.500

M5-60 (mm)20.000

Volumetric Runoff Coeff.0.750

Min Design Depth for Optimisation (m)1.200

Ratio R0.357

PIMP (%)100

Min Vel for Auto Design only (m/s)1.00

Maximum Rainfall (mm/hr)100

Add Flow / Climate Change (%)0

Min Slope for Optimisation (1:X)500

Maximum Time of Concentration (mins)30

Minimum Backdrop Height (m)0.200

Designed with Level Soffits

Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	23.905	0.170	140.6	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.001	4.878	0.040	121.9	0.022	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.002	30.930	0.180	171.8	0.017	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.003	12.022	0.080	150.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.004	12.700	0.555	22.9	0.012	0.00	0.0	0.600	o	225	Pipe/Conduit	
S2.000	17.393	0.200	87.0	0.018	5.00	0.0	0.600	o	150	Pipe/Conduit	
S2.001	22.843	0.575	39.7	0.009	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.000	4.751	0.710	6.7	0.078	5.00	0.0	0.600	o	150	Pipe/Conduit	
S2.002	44.809	0.090	497.9	0.014	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.003	4.934	0.020	246.7	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S4.000	34.642	0.125	277.1	0.040	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.005	10.162	0.040	254.1	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.006	16.629	0.075	221.7	0.041	0.00	0.0	0.600	o	300	Pipe/Conduit	
S5.000	54.560	0.150	363.7	0.068	5.00	0.0	0.600	o	225	Pipe/Conduit	
S1.007	25.796	0.105	245.7	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	100.00	5.47	45.740	0.012	0.0	0.0	0.0	0.85	14.9	3.4
S1.001	100.00	5.56	45.570	0.034	0.0	0.0	0.0	0.91	16.1	9.2
S1.002	100.00	6.08	45.455	0.052	0.0	0.0	0.0	0.99	39.5	13.9
S1.003	100.00	6.27	45.275	0.052	0.0	0.0	0.0	1.06	42.3	13.9
S1.004	100.00	6.34	45.195	0.063	0.0	0.0	0.0	2.75	109.2	17.2
S2.000	100.00	5.27	45.600	0.018	0.0	0.0	0.0	1.08	19.1	4.9
S2.001	100.00	5.45	45.325	0.027	0.0	0.0	0.0	2.08	82.8	7.3
S3.000	100.00	5.02	45.535	0.078	0.0	0.0	0.0	3.92	69.3	21.2
S2.002	100.00	6.52	44.675	0.119	0.0	0.0	0.0	0.70	49.3	32.3
S2.003	100.00	6.60	44.585	0.119	0.0	0.0	0.0	1.00	70.4	32.3
S4.000	100.00	5.96	45.300	0.040	0.0	0.0	0.0	0.60	10.6«	10.7
S1.005	100.00	6.78	44.565	0.223	0.0	0.0	0.0	0.98	69.4	60.3
S1.006	100.00	7.04	44.525	0.264	0.0	0.0	0.0	1.05	74.3	71.4
S5.000	100.00	6.34	44.775	0.068	0.0	0.0	0.0	0.68	27.0	18.3
S1.007	100.00	7.47	44.450	0.360	0.0	0.0	0.0	1.00	70.6«	97.5

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84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01 File 2025TRADEPARKFULL MODEL01UC.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S6.000	26.165	0.175	149.5	0.018	5.00	0.0	0.600	o	150	Pipe/Conduit	
S6.001	8.387	0.060	139.8	0.018	0.00	0.0	0.600	o	150	Pipe/Conduit	
S6.002	29.872	0.215	138.9	0.017	0.00	0.0	0.600	o	225	Pipe/Conduit	
S6.003	11.485	0.575	20.0	0.011	0.00	0.0	0.600	o	225	Pipe/Conduit	
S7.000	32.884	0.260	126.5	0.030	5.00	0.0	0.600	o	150	Pipe/Conduit	
S8.000	15.135	0.375	40.4	0.021	5.00	0.0	0.600	o	150	Pipe/Conduit	
S8.001	21.479	0.470	45.7	0.010	0.00	0.0	0.600	o	150	Pipe/Conduit	
S9.000	5.627	0.655	8.6	0.077	5.00	0.0	0.600	o	150	Pipe/Conduit	
S8.002	44.820	0.090	498.0	0.018	0.00	0.0	0.600	o	300	Pipe/Conduit	
S8.003	4.713	0.025	188.5	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S7.001	11.990	0.060	199.8	0.005	0.00	0.0	0.600	o	300	Pipe/Conduit	
S6.004	8.551	0.035	244.3	0.011	0.00	0.0	0.600	o	300	Pipe/Conduit	
S10.000	40.997	0.300	136.7	0.019	5.00	0.0	0.600	o	225	Pipe/Conduit	
S10.001	27.469	0.605	45.4	0.030	0.00	0.0	0.600	o	225	Pipe/Conduit	
S11.000	13.212	0.375	35.2	0.014	5.00	0.0	0.600	o	150	Pipe/Conduit	
S11.001	28.003	0.200	140.0	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit	
S12.000	8.745	0.470	18.6	0.052	5.00	0.0	0.600	o	150	Pipe/Conduit	
S11.002	19.049	0.255	74.7	0.009	0.00	0.0	0.600	o	225	Pipe/Conduit	
S13.000	24.099	0.050	482.0	0.000	5.00	0.0	0.600	o	300	Pipe/Conduit	
S13.001	5.876	0.030	195.9	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S10.002	14.827	0.675	22.0	0.007	0.00	0.0	0.600	o	300	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S6.000	100.00	5.53	45.575	0.018	0.0	0.0	0.0	0.82	14.5	4.9
S6.001	100.00	5.70	45.400	0.036	0.0	0.0	0.0	0.85	15.0	9.8
S6.002	100.00	6.15	45.265	0.053	0.0	0.0	0.0	1.11	44.0	14.3
S6.003	100.00	6.21	45.050	0.064	0.0	0.0	0.0	2.94	116.9	17.3
S7.000	100.00	5.61	44.850	0.030	0.0	0.0	0.0	0.89	15.8	8.0
S8.000	100.00	5.16	45.550	0.021	0.0	0.0	0.0	1.59	28.1	5.6
S8.001	100.00	5.40	45.175	0.031	0.0	0.0	0.0	1.49	26.4	8.4
S9.000	100.00	5.03	45.360	0.077	0.0	0.0	0.0	3.46	61.1	20.9
S8.002	100.00	6.47	44.555	0.126	0.0	0.0	0.0	0.70	49.3	34.2
S8.003	100.00	6.54	44.465	0.126	0.0	0.0	0.0	1.14	80.7	34.2
S7.001	100.00	6.72	44.440	0.161	0.0	0.0	0.0	1.11	78.4	43.7
S6.004	100.00	6.86	44.380	0.236	0.0	0.0	0.0	1.00	70.8	63.9
S10.000	100.00	5.61	46.000	0.019	0.0	0.0	0.0	1.12	44.4	5.0
S10.001	100.00	5.85	45.700	0.049	0.0	0.0	0.0	1.95	77.4	13.2
S11.000	100.00	5.13	46.000	0.014	0.0	0.0	0.0	1.70	30.1	3.7
S11.001	100.00	5.55	45.550	0.032	0.0	0.0	0.0	1.10	43.9	8.8
S12.000	100.00	5.06	45.895	0.052	0.0	0.0	0.0	2.35	41.5	14.0
S11.002	100.00	5.76	45.350	0.093	0.0	0.0	0.0	1.51	60.2	25.3
S13.000	100.00	5.57	45.100	0.000	0.0	0.0	0.0	0.71	50.2	0.0
S13.001	100.00	5.65	45.050	0.000	0.0	0.0	0.0	1.12	79.2	0.0
S10.002	100.00	5.92	45.020	0.149	0.0	0.0	0.0	3.37	238.2	40.3

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84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01 File 2025TRADEPARKFULL MODEL01UC.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.008	22.740	0.070	324.9	0.058	0.00	0.0	0.600	o	400	Pipe/Conduit	
S14.000	50.835	1.000	50.8	0.540	5.00	0.0	0.600	o	300	Pipe/Conduit	
S14.001	48.985	0.850	57.6	0.143	0.00	0.0	0.600	o	375	Pipe/Conduit	
S14.002	18.636	1.121	16.6	0.257	0.00	0.0	0.600	o	375	Pipe/Conduit	
S14.003	49.238	1.029	47.9	0.052	0.00	0.0	0.600	o	375	Pipe/Conduit	
S14.004	32.966	0.450	73.3	0.267	0.00	0.0	0.600	o	450	Pipe/Conduit	
S15.000	33.189	0.450	73.8	0.099	5.00	0.0	0.600	o	225	Pipe/Conduit	
S15.001	49.807	0.250	199.2	0.110	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.000	28.958	0.380	76.2	0.024	5.00	0.0	0.600	o	150	Pipe/Conduit	
S16.001	22.384	0.210	106.6	0.038	0.00	0.0	0.600	o	150	Pipe/Conduit	
S16.002	25.868	0.150	172.5	0.034	0.00	0.0	0.600	o	225	Pipe/Conduit	
S16.003	22.635	0.100	226.4	0.058	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.004	15.902	0.080	198.8	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.005	14.001	0.080	175.0	0.006	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.006	31.180	0.150	207.9	0.011	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.007	24.975	3.075	8.1	0.018	0.00	0.0	0.600	o	300	Pipe/Conduit	
S15.002	35.908	1.636	21.9	0.099	0.00	0.0	0.600	o	300	Pipe/Conduit	
S15.003	36.726	1.636	22.4	0.143	0.00	0.0	0.600	o	300	Pipe/Conduit	
S15.004	12.490	1.452	8.6	0.066	0.00	0.0	0.600	o	300	Pipe/Conduit	
S17.000	24.012	0.100	240.1	0.070	5.00	0.0	0.600	o	300	Pipe/Conduit	
S17.001	56.254	3.075	18.3	0.140	0.00	0.0	0.600	o	300	Pipe/Conduit	
S15.005	29.703	0.100	297.0	0.090	0.00	0.0	0.600	o	600	Pipe/Conduit	
S15.006	26.932	0.100	269.3	0.056	0.00	0.0	0.600	o	600	Pipe/Conduit	
S14.005	50.793	0.870	58.4	0.070	0.00	0.0	0.600	o	450	Pipe/Conduit	
S14.006	8.595	0.400	21.5	0.014	0.00	0.0	0.600	o	600	Pipe/Conduit	
S18.000	32.779	0.330	99.3	0.028	5.00	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)
S1.008	100.00	7.83	44.255	0.803	0.0	0.0	0.0	1.04	130.9x	217.5
S14.000	100.00	5.38	50.800	0.540	0.0	0.0	0.0	2.21	156.2	146.3
S14.001	100.00	5.72	49.725	0.683	0.0	0.0	0.0	2.39	264.1	185.0
S14.002	100.00	5.79	48.875	0.940	0.0	0.0	0.0	4.46	492.9	254.7
S14.003	100.00	6.11	47.754	0.993	0.0	0.0	0.0	2.63	289.9	268.9
S14.004	100.00	6.34	46.650	1.259	0.0	0.0	0.0	2.38	378.1	341.1
S15.000	100.00	5.36	51.000	0.099	0.0	0.0	0.0	1.52	60.6	26.8
S15.001	100.00	6.11	50.475	0.209	0.0	0.0	0.0	1.11	78.5	56.6
S16.000	100.00	5.42	54.600	0.024	0.0	0.0	0.0	1.15	20.4	6.5
S16.001	100.00	5.80	54.220	0.062	0.0	0.0	0.0	0.97	17.2	16.8
S16.002	100.00	6.24	53.935	0.096	0.0	0.0	0.0	0.99	39.5	26.0
S16.003	100.00	6.60	53.710	0.154	0.0	0.0	0.0	1.04	73.6	41.7
S16.004	100.00	6.84	53.610	0.183	0.0	0.0	0.0	1.11	78.6	49.6
S16.005	100.00	7.03	53.530	0.189	0.0	0.0	0.0	1.19	83.8	51.2
S16.006	100.00	7.51	53.450	0.200	0.0	0.0	0.0	1.09	76.8	54.2
S16.007	100.00	7.59	53.300	0.218	0.0	0.0	0.0	5.55	392.3	59.0
S15.002	100.00	7.76	50.225	0.526	0.0	0.0	0.0	3.37	238.3	142.4
S15.003	100.00	7.95	48.589	0.669	0.0	0.0	0.0	3.33	235.6	181.2
S15.004	100.00	7.99	46.953	0.735	0.0	0.0	0.0	5.39	381.1	199.0
S17.000	100.00	5.40	48.676	0.070	0.0	0.0	0.0	1.01	71.4	19.0
S17.001	100.00	5.65	48.576	0.210	0.0	0.0	0.0	3.69	261.1	56.9
S15.005	100.00	8.34	45.201	1.035	0.0	0.0	0.0	1.41	398.0	280.3
S15.006	100.00	8.64	45.101	1.091	0.0	0.0	0.0	1.48	418.2	295.5
S14.005	100.00	8.96	46.420	2.420	0.0	0.0	0.0	2.66	423.8x	655.4
S14.006	100.00	8.99	45.400	2.434	0.0	0.0	0.0	5.27	1489.7	659.2
S18.000	100.00	5.54	47.500	0.028	0.0	0.0	0.0	1.01	17.8	7.7

Motion		Page 4
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01 File 2025TRADEPARKFULL MODEL01UC.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S18.001	13.740	0.140	98.1	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.002	22.964	0.230	99.8	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.003	18.394	0.205	89.7	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S19.000	12.387	0.125	99.1	0.009	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S19.001	16.863	0.230	73.3	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S18.004	20.210	0.045	449.1	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	🟡
S20.000	13.320	0.135	98.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	🟢
S20.001	14.885	0.515	28.9	0.065	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S21.000	8.664	0.950	9.1	0.047	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S18.005	30.139	0.235	128.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	🔴
S22.000	5.931	1.135	5.2	0.064	5.00	0.0	0.600	o	150	Pipe/Conduit	🟡
S18.006	6.499	0.065	100.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	🟢
S14.007	15.754	0.074	212.9	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S23.000	54.893	0.545	100.7	0.000	5.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S23.001	10.000	0.069	144.9	0.639	0.00	0.0	0.600	o	150	Pipe/Conduit	🔴
S14.008	26.542	0.426	62.3	0.025	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S14.009	10.243	0.045	227.6	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S24.000	11.708	0.810	14.5	0.062	5.00	0.0	0.600	o	100	Pipe/Conduit	🔴
S14.010	4.897	0.420	11.7	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	🔴
S25.000	31.553	0.225	140.2	0.070	5.00	0.0	0.600	o	100	Pipe/Conduit	🔴
S25.001	11.819	0.100	118.2	0.023	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)
S18.001	100.00	5.77	47.170	0.048	0.0	0.0	0.0	1.01	17.9	12.9
S18.002	100.00	6.15	47.030	0.057	0.0	0.0	0.0	1.01	17.8	15.4
S18.003	100.00	6.44	46.800	0.066	0.0	0.0	0.0	1.06	18.8	17.8
S19.000	100.00	5.20	47.150	0.009	0.0	0.0	0.0	1.01	17.8	2.4
S19.001	100.00	5.44	47.025	0.028	0.0	0.0	0.0	1.18	20.8	7.7
S18.004	100.00	6.89	45.645	0.114	0.0	0.0	0.0	0.74	52.0	30.8
S20.000	100.00	5.22	46.400	0.000	0.0	0.0	0.0	1.01	17.9	0.0
S20.001	100.00	5.35	46.265	0.065	0.0	0.0	0.0	1.88	33.2	17.7
S21.000	100.00	5.04	46.900	0.047	0.0	0.0	0.0	3.36	59.3	12.8
S18.005	100.00	7.26	45.600	0.226	0.0	0.0	0.0	1.39	98.0	61.2
S22.000	100.00	5.02	46.650	0.064	0.0	0.0	0.0	4.44	78.4	17.4
S18.006	100.00	7.33	45.365	0.290	0.0	0.0	0.0	1.57	111.1	78.6
S14.007	100.00	9.14	45.000	2.724	0.0	0.0	0.0	1.67	470.8	737.7
S23.000	100.00	5.91	46.000	0.000	0.0	0.0	0.0	1.00	17.7	0.0
S23.001	100.00	6.11	45.445	0.639	0.0	0.0	0.0	0.83	14.7	173.0
S14.008	100.00	9.29	44.926	3.388	0.0	0.0	0.0	3.09	873.3	917.5
S14.009	100.00	9.39	44.500	3.388	0.0	0.0	0.0	1.61	455.2	917.5
S24.000	100.00	5.10	45.600	0.062	0.0	0.0	0.0	2.04	16.0	16.7
S14.010	100.00	9.41	44.455	3.450	0.0	0.0	0.0	7.16	2023.7	934.2
S25.000	100.00	5.81	48.125	0.070	0.0	0.0	0.0	0.65	5.1	18.9
S25.001	100.00	5.98	47.775	0.092	0.0	0.0	0.0	1.20	47.8	25.0

Motion		Page 5
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01 File 2025TRADEPARKFULL MODEL01UC.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S26.000	22.140	0.380	58.3	0.041	5.00	0.0	0.600	o	150	Pipe/Conduit	
S26.001	19.077	0.300	63.6	0.072	0.00	0.0	0.600	o	225	Pipe/Conduit	
S26.002	20.660	0.167	123.7	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	
S26.003	33.823	0.100	338.2	0.015	0.00	0.0	0.600	o	300	Pipe/Conduit	
S27.000	31.848	0.747	42.6	0.076	5.00	0.0	0.600	o	150	Pipe/Conduit	
S26.004	31.964	1.553	20.6	0.030	0.00	0.0	0.600	o	300	Pipe/Conduit	
S28.000	19.130	0.150	127.5	0.036	5.00	0.0	0.600	o	150	Pipe/Conduit	
S28.001	30.290	0.350	86.5	0.053	0.00	0.0	0.600	o	225	Pipe/Conduit	
S26.005	13.208	1.024	12.9	0.031	0.00	0.0	0.600	o	300	Pipe/Conduit	
S26.006	25.449	0.084	304.1	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S25.002	28.545	0.840	34.0	0.035	0.00	0.0	0.600	o	225	Pipe/Conduit	
S25.003	21.761	0.210	103.6	0.031	0.00	0.0	0.600	o	225	Pipe/Conduit	
S25.004	24.416	0.465	52.5	0.030	0.00	0.0	0.600	o	225	Pipe/Conduit	
S29.000	39.735	0.397	100.1	0.000	5.00	0.0	0.600	o	225	Pipe/Conduit	
S29.001	10.000	0.568	17.6	0.231	0.00	0.0	0.600	o	225	Pipe/Conduit	
S25.005	38.805	1.135	34.2	0.035	0.00	0.0	0.600	o	300	Pipe/Conduit	
S30.000	43.103	0.875	49.3	0.091	5.00	0.0	0.600	o	300	Pipe/Conduit	
S25.006	31.557	0.315	100.2	0.033	0.00	0.0	0.600	o	400	Pipe/Conduit	
S31.000	10.896	0.465	23.4	0.172	5.00	0.0	0.600	o	300	Pipe/Conduit	
S25.007	69.616	0.200	348.1	0.095	0.00	0.0	0.600	o	600	Pipe/Conduit	
S25.008	20.042	0.065	308.3	0.053	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)
S26.000	100.00	5.28	51.000	0.041	0.0	0.0	0.0	1.32	23.3	11.1
S26.001	100.00	5.47	50.545	0.113	0.0	0.0	0.0	1.64	65.3	30.6
S26.002	100.00	5.77	50.245	0.145	0.0	0.0	0.0	1.17	46.7	39.1
S26.003	100.00	6.43	50.003	0.160	0.0	0.0	0.0	0.85	60.0	43.2
S27.000	100.00	5.34	50.800	0.076	0.0	0.0	0.0	1.55	27.3	20.6
S26.004	100.00	6.58	49.903	0.266	0.0	0.0	0.0	3.48	246.1	71.9
S28.000	100.00	5.36	49.000	0.036	0.0	0.0	0.0	0.89	15.7	9.7
S28.001	100.00	5.72	48.775	0.089	0.0	0.0	0.0	1.41	55.9	24.1
S26.005	100.00	6.63	48.350	0.386	0.0	0.0	0.0	4.40	311.1	104.4
S26.006	100.00	7.04	47.251	0.386	0.0	0.0	0.0	1.03	114.2	104.4
S25.002	100.00	7.25	47.550	0.513	0.0	0.0	0.0	2.25	89.5	138.9
S25.003	100.00	7.54	46.710	0.544	0.0	0.0	0.0	1.28	51.1	147.4
S25.004	100.00	7.76	46.500	0.574	0.0	0.0	0.0	1.81	71.9	155.5
S29.000	100.00	5.51	47.000	0.000	0.0	0.0	0.0	1.31	52.0	0.0
S29.001	100.00	5.56	46.603	0.231	0.0	0.0	0.0	3.13	124.6	62.6
S25.005	100.00	8.00	45.960	0.840	0.0	0.0	0.0	2.70	190.7	227.5
S30.000	100.00	5.32	45.700	0.091	0.0	0.0	0.0	2.25	158.7	24.7
S25.006	100.00	8.28	44.750	0.964	0.0	0.0	0.0	1.89	237.0	261.1
S31.000	100.00	5.06	45.000	0.172	0.0	0.0	0.0	3.26	230.6	46.5
S25.007	100.00	9.17	44.300	1.231	0.0	0.0	0.0	1.30	367.4	333.4
S25.008	100.00	9.42	44.100	1.284	0.0	0.0	0.0	1.38	390.6	347.7

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84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01	Designed by TA	
File 2025TRADEPARKFULL MODEL01UC.MDX	Checked by SLW	
Innovyze	Network 2020.1.3	

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.009	13.447	0.035	384.2	0.014	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.010	23.247	0.020	1162.3	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.011	11.623	0.015	774.9	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S32.000	32.460	0.400	81.2	0.027	5.00	0.0	0.600	o	150	Pipe/Conduit	
S33.000	21.583	0.450	48.0	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
S32.001	1.888	0.300	6.3	0.019	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.012	36.576	0.175	209.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S34.000	11.729	0.300	39.1	0.041	5.00	0.0	0.600	o	225	Pipe/Conduit	
S35.000	38.003	0.300	126.7	0.061	5.00	0.0	0.600	o	225	Pipe/Conduit	
S34.001	8.745	0.085	102.9	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	
S34.002	41.284	0.100	412.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S36.000	24.741	0.200	123.7	0.034	5.00	0.0	0.600	o	225	Pipe/Conduit	
S36.001	8.206	0.110	74.6	0.014	0.00	0.0	0.600	o	225	Pipe/Conduit	
S34.003	34.182	0.075	455.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.013	23.603	0.110	214.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.014	6.569	0.025	262.8	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.015	9.941	0.045	220.9	0.000	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)
S1.009	100.00	9.60	44.035	5.551	0.0	0.0	0.0	1.24	349.6	1503.2
S1.010	100.00	10.15	44.000	5.551	0.0	0.0	0.0	0.71	199.5	1503.2
S1.011	100.00	10.37	43.980	5.551	0.0	0.0	0.0	0.87	245.1	1503.2
S32.000	100.00	5.48	44.800	0.027	0.0	0.0	0.0	1.12	19.7	7.2
S33.000	100.00	5.25	44.850	0.012	0.0	0.0	0.0	1.46	25.7	3.2
S32.001	100.00	5.49	44.400	0.058	0.0	0.0	0.0	4.04	71.4	15.6
S1.012	100.00	10.73	43.965	5.608	0.0	0.0	0.0	1.68	475.2	1518.8
S34.000	100.00	5.09	44.575	0.041	0.0	0.0	0.0	2.10	83.4	11.0
S35.000	100.00	5.55	44.575	0.061	0.0	0.0	0.0	1.16	46.1	16.6
S34.001	100.00	5.64	44.200	0.121	0.0	0.0	0.0	1.55	109.6	32.8
S34.002	100.00	6.33	44.965	0.121	0.0	0.0	0.0	0.99	158.1	32.8
S36.000	100.00	5.35	44.400	0.034	0.0	0.0	0.0	1.17	46.7	9.1
S36.001	100.00	5.44	44.200	0.047	0.0	0.0	0.0	1.52	60.3	12.8
S34.003	100.00	6.93	43.865	0.168	0.0	0.0	0.0	0.95	150.4	45.6
S1.013	100.00	11.10	43.790	5.777	0.0	0.0	0.0	1.07	75.6	1564.4
S1.014	100.00	11.21	43.680	5.777	0.0	0.0	0.0	0.97	68.2	1564.4
S1.015	100.00	11.37	43.655	5.777	0.0	0.0	0.0	1.05	74.5	1564.4

Motion

84 North Street
Guildford
Surrey GU1 4AU

Date 06/08/2025 16:01
File 2025TRADEPARKFULL MODEL01UC.MDX

Innovyze

Billingshurst
Enterprise Park

Designed by TA
Checked by SLW

Network 2020.1.3

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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)	Diameter (mm)	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S1	46.375	0.635	Open Manhole	450	S1.000	45.740	150			
S2	46.375	0.805	Open Manhole	450	S1.001	45.570	150	S1.000	45.570	150
S3	46.375	0.920	Open Manhole	600	S1.002	45.455	225	S1.001	45.530	150
S5	46.380	1.105	Open Manhole	600	S1.003	45.275	225	S1.002	45.275	225
S6	46.375	1.180	Open Manhole	600	S1.004	45.195	225	S1.003	45.195	225
S7	46.381	0.781	Open Manhole	450	S2.000	45.600	150			
S8	46.287	0.962	Open Manhole	600	S2.001	45.325	225	S2.000	45.400	150
S9	46.135	0.600	Open Manhole	200	S3.000	45.535	150			
S9	46.282	1.607	Open Manhole	1200	S2.002	44.675	300	S2.001	44.750	225
								S3.000	44.825	150
S10	46.309	1.724	Open Manhole	1200	S2.003	44.585	300	S2.002	44.585	300
S11	46.373	1.073	Open Manhole	450	S4.000	45.300	150			
S7	46.355	1.790	Open Manhole	1200	S1.005	44.565	300	S1.004	44.640	225
								S2.003	44.565	300
								S4.000	45.175	150
S8	46.353	1.828	Open Manhole	1200	S1.006	44.525	300	S1.005	44.525	300
S16	45.984	1.209	Open Manhole	1200	S5.000	44.775	225			
S9	46.350	1.900	Open Manhole	1200	S1.007	44.450	300	S1.006	44.450	300
								S5.000	44.625	225
S19	46.196	0.621	Open Manhole	450	S6.000	45.575	150			
S20	46.197	0.797	Open Manhole	450	S6.001	45.400	150	S6.000	45.400	150
S21	46.196	0.931	Open Manhole	600	S6.002	45.265	225	S6.001	45.340	150
S22	46.185	1.135	Open Manhole	600	S6.003	45.050	225	S6.002	45.050	225
S26	46.198	1.348	Open Manhole	600	S7.000	44.850	150			
S23	46.200	0.650	Open Manhole	450	S8.000	45.550	150			
S24	46.176	1.001	Open Manhole	450	S8.001	45.175	150	S8.000	45.175	150
S27	45.960	0.600	Open Manhole	200	S9.000	45.360	150			
S27	46.084	1.529	Open Manhole	1200	S8.002	44.555	300	S8.001	44.705	150
								S9.000	44.705	150
S28	46.182	1.717	Open Manhole	1200	S8.003	44.465	300	S8.002	44.465	300
S27	46.209	1.769	Open Manhole	600	S7.001	44.440	300	S7.000	44.590	150
								S8.003	44.440	300
S23	46.201	1.821	Open Manhole	1200	S6.004	44.380	300	S6.003	44.475	225
								S7.001	44.380	300
S31	46.745	0.745	Open Manhole	450	S10.000	46.000	225			
S32	46.746	1.046	Open Manhole	600	S10.001	45.700	225	S10.000	45.700	225
S33	46.752	0.752	Open Manhole	450	S11.000	46.000	150			
S34	46.715	1.165	Open Manhole	600	S11.001	45.550	225	S11.000	45.625	150
S36	46.495	0.600	Open Manhole	200	S12.000	45.895	150			
S35	46.742	1.392	Open Manhole	600	S11.002	45.350	225	S11.001	45.350	225
								S12.000	45.425	150
S36	46.671	1.571	Open Manhole	1200	S13.000	45.100	300			
S37	46.464	1.414	Open Manhole	1200	S13.001	45.050	300	S13.000	45.050	300
S33	46.554	1.534	Open Manhole	1200	S10.002	45.020	300	S10.001	45.095	225
								S11.002	45.095	225
								S13.001	45.020	300
S10	46.300	2.045	Open Manhole	1350	S1.008	44.255	400	S1.007	44.345	300
								S6.004	44.345	300
								S10.002	44.345	300
S38	52.650	1.850	Open Manhole	1200	S14.000	50.800	300			
S39	51.700	1.975	Open Manhole	1350	S14.001	49.725	375	S14.000	49.800	300

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Motion

84 North Street

Guildford

Surrey GU1 4AU

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S40	50.210	1.335	Open Manhole	1350	S14.002	48.875	375	S14.001	48.875	375	
S41	49.670	1.916	Open Manhole	1350	S14.003	47.754	375	S14.002	47.754	375	
S111	48.725	2.075	Open Manhole	1350	S14.004	46.650	450	S14.003	46.725	375	
S1.000	52.000	1.000	Open Manhole	1200	S15.000	51.000	225				
S1.001	51.750	1.275	Open Manhole	1200	S15.001	50.475	300	S15.000	50.550	225	
S2.000	56.000	1.400	Open Manhole	1200	S16.000	54.600	150				
S2.001	55.800	1.580	Open Manhole	1200	S16.001	54.220	150	S16.000	54.220	150	
S2.002	55.500	1.565	Open Manhole	1200	S16.002	53.935	225	S16.001	54.010	150	
S2.003	55.200	1.490	Open Manhole	1200	S16.003	53.710	300	S16.002	53.785	225	
S2.004	54.900	1.290	Open Manhole	1200	S16.004	53.610	300	S16.003	53.610	300	
S2.005	54.750	1.220	Open Manhole	1200	S16.005	53.530	300	S16.004	53.530	300	
S2.006	54.600	1.150	Open Manhole	1200	S16.006	53.450	300	S16.005	53.450	300	
S2.007	54.000	0.700	Open Manhole	1200	S16.007	53.300	300	S16.006	53.300	300	
S1.002	53.000	2.775	Open Manhole	1200	S15.002	50.225	300	S15.001	50.225	300	
								S16.007	50.225	300	
S1.003	52.100	3.511	Open Manhole	1200	S15.003	48.589	300	S15.002	48.589	300	
S1.004	51.700	4.747	Open Manhole	1200	S15.004	46.953	300	S15.003	46.953	300	
S3.000	51.650	2.974	Open Manhole	1200	S17.000	48.676	300				
S3.001	52.000	3.424	Open Manhole	1200	S17.001	48.576	300	S17.000	48.576	300	
S1.005	51.200	5.999	Open Manhole	1500	S15.005	45.201	600	S15.004	45.501	300	
								S17.001	45.501	300	
S1.006	49.750	4.649	Open Manhole	1500	S15.006	45.101	600	S15.005	45.101	600	
S46	48.340	3.339	Open Manhole	1500	S14.005	46.420	450	S14.004	46.200	450	
								S15.006	45.001	600	
S48	48.514	3.114	Open Manhole	1500	S14.006	45.400	600	S14.005	45.550	450	
S90	48.191	0.691	Open Manhole	450	S18.000	47.500	150				
S91	48.255	1.085	Open Manhole	450	S18.001	47.170	150	S18.000	47.170	150	
S92	48.255	1.225	Open Manhole	450	S18.002	47.030	150	S18.001	47.030	150	
S93	48.243	1.443	Open Manhole	1200	S18.003	46.800	150	S18.002	46.800	150	
S94	48.210	1.060	Open Manhole	450	S19.000	47.150	150				
S95	48.265	1.240	Open Manhole	450	S19.001	47.025	150	S19.000	47.025	150	
S94	48.218	2.573	Open Manhole	1200	S18.004	45.645	300	S18.003	46.595	150	800
								S19.001	46.795	150	1000
S97	47.000	0.600	Open Manhole	450	S20.000	46.400	150				
S97	47.451	1.186	Open Manhole	450	S20.001	46.265	150	S20.000	46.265	150	
S98	47.500	0.600	Open Manhole	100	S21.000	46.900	150				
S95	47.715	2.115	Open Manhole	1200	S18.005	45.600	300	S18.004	45.600	300	
								S20.001	45.750	150	
								S21.000	45.950	150	200
S100	47.250	0.600	Open Manhole	100	S22.000	46.650	150				
S96	47.377	2.012	Open Manhole	1200	S18.006	45.365	300	S18.005	45.365	300	
								S22.000	45.515	150	
S65	47.202	2.202	Open Manhole	1500	S14.007	45.000	600	S14.006	45.000	600	
								S18.006	45.300	300	
S68	47.000	1.000	Open Manhole	1200	S23.000	46.000	150				
S69	46.817	1.372	Open Manhole	1200	S23.001	45.445	150	S23.000	45.455	150	10
S50	46.562	1.636	Open Manhole	1500	S14.008	44.926	600	S14.007	44.926	600	
								S23.001	45.376	150	
S51	45.820	1.320	Open Manhole	1500	S14.009	44.500	600	S14.008	44.500	600	
S74	46.250	0.650	Open Manhole	450	S24.000	45.600	100				
S52	45.826	1.371	Open Manhole	1500	S14.010	44.455	600	S14.009	44.455	600	

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S50	52.000	3.875	Open Manhole	1200	S25.000	48.125	100	S24.000	44.790	100	
S51	52.000	4.225	Open Manhole	1200	S25.001	47.775	225	S25.000	47.900	100	
S4.000	52.600	1.600	Open Manhole	1200	S26.000	51.000	150				
S4.001	52.400	1.855	Open Manhole	1200	S26.001	50.545	225	S26.000	50.620	150	
S4.002	52.400	2.155	Open Manhole	1200	S26.002	50.245	225	S26.001	50.245	225	
S4.003	51.800	1.797	Open Manhole	1200	S26.003	50.003	300	S26.002	50.078	225	
S5.000	52.400	1.600	Open Manhole	1200	S27.000	50.800	150				
S4.004	51.500	1.597	Open Manhole	1200	S26.004	49.903	300	S26.003	49.903	300	
								S27.000	50.053	150	
S6.000	51.000	2.000	Open Manhole	1200	S28.000	49.000	150				
S6.001	51.000	2.225	Open Manhole	1200	S28.001	48.775	225	S28.000	48.850	150	
S4.005	49.600	1.250	Open Manhole	1200	S26.005	48.350	300	S26.004	48.350	300	
								S28.001	48.425	225	
S4.006	51.300	4.049	Open Manhole	1350	S26.006	47.251	375	S26.005	47.326	300	
S44	50.090	2.923	Open Manhole	1350	S25.002	47.550	225	S25.001	47.675	225	125
								S26.006	47.167	375	
S46	48.700	1.990	Open Manhole	1200	S25.003	46.710	225	S25.002	46.710	225	
S75	48.100	1.600	Open Manhole	1200	S25.004	46.500	225	S25.003	46.500	225	
S76	48.000	1.000	Open Manhole	1200	S29.000	47.000	225				
S77	48.000	1.397	Open Manhole	1200	S29.001	46.603	225	S29.000	46.603	225	
S76	47.736	1.776	Open Manhole	1200	S25.005	45.960	300	S25.004	46.035	225	
								S29.001	46.035	225	
S80	47.000	1.300	Open Manhole	1200	S30.000	45.700	300				
S78	46.961	2.211	Open Manhole	1350	S25.006	44.750	400	S25.005	44.825	300	
								S30.000	44.825	300	
S82	46.000	1.000	Open Manhole	1200	S31.000	45.000	300				
S79	45.675	1.375	Open Manhole	1500	S25.007	44.300	600	S25.006	44.435	400	
								S31.000	44.535	300	
S80	45.925	1.825	Open Manhole	1500	S25.008	44.100	600	S25.007	44.100	600	
S11	45.787	1.752	Open Manhole	1500	S1.009	44.035	600	S1.008	44.185	400	
								S14.010	44.035	600	
								S25.008	44.035	600	
S12	45.000	1.000	Open Manhole	1500	S1.010	44.000	600	S1.009	44.000	600	
S89	45.000	1.020	Open Manhole	1500	S1.011	43.980	600	S1.010	43.980	600	
S153	45.575	0.775	Open Manhole	1200	S32.000	44.800	150				
S152	45.550	0.700	Open Manhole	1200	S33.000	44.850	150				
S154	45.550	1.150	Open Manhole	1200	S32.001	44.400	150	S32.000	44.400	150	
								S33.000	44.400	150	
S13	45.500	1.535	Open Manhole	1800	S1.012	43.965	600	S1.011	43.965	600	
								S32.001	44.100	150	
S156	45.575	1.000	Open Manhole	1200	S34.000	44.575	225				
S157	45.575	1.000	Open Manhole	1200	S35.000	44.575	225				
S157	45.575	1.375	Open Manhole	1200	S34.001	44.200	300	S34.000	44.275	225	
								S35.000	44.275	225	
S158	45.775	1.660	Open Manhole	1350	S34.002	44.965	450	S34.001	44.115	300	
S159	45.575	1.175	Open Manhole	1200	S36.000	44.400	225				
S161	45.590	1.390	Open Manhole	1200	S36.001	44.200	225	S36.000	44.200	225	
S89	45.650	1.785	Open Manhole	1350	S34.003	43.865	450	S34.002	44.865	450	1000
								S36.001	44.090	225	
S14	45.500	1.710	Open Manhole	1800	S1.013	43.790	300	S1.012	43.790	600	

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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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
S15	44.672	0.992	Open Manhole	1200	S1.014	43.680	300	S34.003	43.790	450	
S16	45.238	1.583	Open Manhole	1200	S1.015	43.655	300	S1.013	43.680	300	
S	44.000	0.390	Open Manhole	0		OUTFALL		S1.014	43.655	300	
								S1.015	43.610	300	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	509030.288	126633.050	509030.288	126633.050	Required	
S2	509052.646	126624.591	509052.646	126624.591	Required	
S3	509054.494	126629.105	509054.494	126629.105	Required	
S5	509083.492	126618.344	509083.492	126618.344	Required	
S6	509088.092	126629.451	509088.092	126629.451	Required	
S7	509025.656	126651.570	509025.656	126651.570	Required	
S8	509031.889	126667.808	509031.889	126667.808	Required	
S9	509055.502	126665.783	509055.502	126665.783	Required	
S9	509053.799	126661.347	509053.799	126661.347	Required	
S10	509095.655	126645.348	509095.655	126645.348	Required	
S11	509061.565	126652.986	509061.565	126652.986	Required	
S7	509093.961	126640.714	509093.961	126640.714	Required	
S8	509103.449	126637.075	509103.449	126637.075	Required	
S16	509058.274	126672.128	509058.274	126672.128	Required	
S9	509109.243	126652.662	509109.243	126652.662	Required	
S19	509062.564	126718.976	509062.564	126718.976	Required	
S20	509086.996	126709.611	509086.996	126709.611	Required	
S21	509086.678	126701.230	509086.678	126701.230	Required	
S22	509114.582	126690.567	509114.582	126690.567	Required	
S26	509074.815	126680.630	509074.815	126680.630	Required	
S23	509048.465	126706.376	509048.465	126706.376	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)
S24	509043.059	126692.239	509043.059	126692.239	Required	
S27	509059.250	126675.604	509059.250	126675.604	Required	
S27	509061.273	126680.855	509061.273	126680.855	Required	
S28	509103.141	126664.858	509103.141	126664.858	Required	
S27	509105.540	126668.915	509105.540	126668.915	Required	
S23	509110.467	126679.845	509110.467	126679.845	Required	
S31	509141.033	126618.584	509141.033	126618.584	Required	
S32	509155.705	126656.865	509155.705	126656.865	Required	
S33	509126.555	126620.185	509126.555	126620.185	Required	
S34	509114.227	126624.936	509114.227	126624.936	Required	
S36	509116.052	126654.214	509116.052	126654.214	Required	
S35	509124.221	126651.094	509124.221	126651.094	Required	
S36	509156.491	126665.355	509156.491	126665.355	Required	
S37	509133.981	126673.961	509133.981	126673.961	Required	
S33	509131.009	126668.893	509131.009	126668.893	Required	
S10	509118.442	126676.762	509118.442	126676.762	Required	
S38	509319.518	126550.336	509319.518	126550.336	Required	
S39	509277.523	126578.983	509277.523	126578.983	Required	
S40	509240.110	126610.603	509240.110	126610.603	Required	
S41	509239.428	126629.227	509239.428	126629.227	Required	
S111	509238.067	126678.446	509238.067	126678.446	Required	
S1.000	509368.080	126776.747	509368.080	126776.747	Required	
S1.001	509368.224	126743.558	509368.224	126743.558	Required	
S2.000	509421.149	126786.607	509421.149	126786.607	Required	
S2.001	509419.856	126757.678	509419.856	126757.678	Required	
S2.002	509420.975	126735.321	509420.975	126735.321	Required	
S2.003	509421.842	126709.468	509421.842	126709.468	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)
S2.004	509421.457	126686.836	509421.457	126686.836	Required	
S2.005	509414.450	126672.561	509414.450	126672.561	Required	
S2.006	509400.998	126668.679	509400.998	126668.679	Required	
S2.007	509369.818	126668.818	509369.818	126668.818	Required	
S1.002	509368.376	126693.752	509368.376	126693.752	Required	
S1.003	509332.500	126695.258	509332.500	126695.258	Required	
S1.004	509295.851	126692.882	509295.851	126692.882	Required	
S3.000	509295.550	126785.363	509295.550	126785.363	Required	
S3.001	509295.120	126761.354	509295.120	126761.354	Required	
S1.005	509293.388	126705.127	509293.388	126705.127	Required	
S1.006	509263.693	126705.835	509263.693	126705.835	Required	
S46	509237.343	126711.404	509237.343	126711.404	Required	
S48	509186.568	126712.754	509186.568	126712.754	Required	
S90	509225.798	126704.482	509225.798	126704.482	Required	
S91	509225.804	126671.703	509225.804	126671.703	Required	
S92	509225.857	126657.963	509225.857	126657.963	Required	
S93	509202.893	126657.947	509202.893	126657.947	Required	
S94	509202.743	126705.397	509202.743	126705.397	Required	
S95	509202.760	126693.010	509202.760	126693.010	Required	
S94	509200.984	126676.241	509200.984	126676.241	Required	
S97	509166.416	126658.271	509166.416	126658.271	Required	
S97	509179.360	126661.415	509179.360	126661.415	Required	
S98	509172.154	126675.371	509172.154	126675.371	Required	
S95	509180.775	126676.232	509180.775	126676.232	Required	
S100	509172.154	126705.001	509172.154	126705.001	Required	
S96	509177.954	126706.239	509177.954	126706.239	Required	
S65	509177.973	126712.738	509177.973	126712.738	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)
S68	509162.219	126777.631	509162.219	126777.631	Required	
S69	509162.219	126722.738	509162.219	126722.738	Required	
S50	509162.219	126712.738	509162.219	126712.738	Required	
S51	509141.391	126696.287	509141.391	126696.287	Required	
S74	509130.805	126684.520	509130.805	126684.520	Required	
S52	509131.148	126696.223	509131.148	126696.223	Required	
S50	509280.615	126831.468	509280.615	126831.468	Required	
S51	509281.869	126799.939	509281.869	126799.939	Required	
S4.000	509406.583	126831.057	509406.583	126831.057	Required	
S4.001	509406.297	126808.919	509406.297	126808.919	Required	
S4.002	509408.459	126789.965	509408.459	126789.965	Required	
S4.003	509387.800	126790.141	509387.800	126790.141	Required	
S5.000	509354.533	126819.301	509354.533	126819.301	Required	
S4.004	509354.084	126787.455	509354.084	126787.455	Required	
S6.000	509322.229	126836.472	509322.229	126836.472	Required	
S6.001	509321.494	126817.357	509321.494	126817.357	Required	
S4.005	509322.122	126787.073	509322.122	126787.073	Required	
S4.006	509308.926	126787.640	509308.926	126787.640	Required	
S44	509283.484	126788.231	509283.484	126788.231	Required	
S46	509254.939	126788.249	509254.939	126788.249	Required	
S75	509233.178	126788.231	509233.178	126788.231	Required	
S76	509208.762	126837.966	509208.762	126837.966	Required	
S77	509208.762	126798.231	509208.762	126798.231	Required	
S76	509208.762	126788.231	509208.762	126788.231	Required	
S80	509174.173	126831.127	509174.173	126831.127	Required	
S78	509169.957	126788.231	509169.957	126788.231	Required	
S82	509138.923	126797.063	509138.923	126797.063	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)
S79	509138.467	126786.177	509138.467	126786.177	Required	
S80	509133.718	126716.723	509133.718	126716.723	Required	
S11	509126.583	126697.995	509126.583	126697.995	Required	
S12	509113.990	126702.712	509113.990	126702.712	Required	
S89	509097.486	126719.083	509097.486	126719.083	Required	
S153	509072.233	126751.210	509072.233	126751.210	Required	
S152	509116.072	126719.608	509116.072	126719.608	Required	
S154	509098.563	126732.227	509098.563	126732.227	Required	
S13	509097.444	126730.706	509097.444	126730.706	Required	
S156	509125.917	126741.965	509125.917	126741.965	Required	
S157	509085.575	126771.048	509085.575	126771.048	Required	
S157	509116.416	126748.844	509116.416	126748.844	Required	
S158	509121.496	126755.962	509121.496	126755.962	Required	
S159	509112.872	126772.312	509112.872	126772.312	Required	
S161	509092.811	126786.791	509092.811	126786.791	Required	
S89	509088.023	126780.127	509088.023	126780.127	Required	
S14	509068.009	126752.418	509068.009	126752.418	Required	
S15	509049.664	126737.566	509049.664	126737.566	Required	
S16	509043.544	126739.954	509043.544	126739.954	Required	
S	509034.276	126743.548			No Entry	

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.015	S	44.000	43.610	0.000	0	0

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<u>Simulation Criteria for Storm</u> <table> <tr> <td>Volumetric Runoff Coeff</td> <td>0.750</td> <td>Manhole Headloss Coeff (Global)</td> <td>0.500</td> <td>Inlet Coeffiecient</td> <td>0.800</td> </tr> <tr> <td>Areal Reduction Factor</td> <td>1.000</td> <td>Foul Sewage per hectare (l/s)</td> <td>0.000</td> <td>Flow per Person per Day (l/per/day)</td> <td>0.000</td> </tr> <tr> <td>Hot Start (mins)</td> <td>0</td> <td>Additional Flow - % of Total Flow</td> <td>0.000</td> <td>Run Time (mins)</td> <td>60</td> </tr> <tr> <td>Hot Start Level (mm)</td> <td>0</td> <td>MADD Factor * 10m³/ha Storage</td> <td>2.000</td> <td>Output Interval (mins)</td> <td>1</td> </tr> <tr> <td colspan="2">Number of Input Hydrographs</td> <td>0</td> <td colspan="2">Number of Offline Controls</td> <td>0</td> </tr> <tr> <td colspan="2">Number of Online Controls</td> <td>13</td> <td colspan="2">Number of Storage Structures</td> <td>28</td> </tr> <tr> <td colspan="2"></td> <td></td> <td colspan="2">Number of Time/Area Diagrams</td> <td>0</td> </tr> <tr> <td colspan="2"></td> <td></td> <td colspan="2">Number of Real Time Controls</td> <td>0</td> </tr> </table> <u>Synthetic Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FSR</td> <td>M5-60 (mm)</td> <td>20.000</td> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Return Period (years)</td> <td>100</td> <td>Ratio R</td> <td>0.357</td> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>Region</td> <td>England and Wales</td> <td>Profile Type</td> <td>Summer</td> <td>Storm Duration (mins)</td> <td>30</td> </tr> </table>			Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coeffiecient	0.800	Areal Reduction Factor	1.000	Foul Sewage per hectare (l/s)	0.000	Flow per Person per Day (l/per/day)	0.000	Hot Start (mins)	0	Additional Flow - % of Total Flow	0.000	Run Time (mins)	60	Hot Start Level (mm)	0	MADD Factor * 10m³/ha Storage	2.000	Output Interval (mins)	1	Number of Input Hydrographs		0	Number of Offline Controls		0	Number of Online Controls		13	Number of Storage Structures		28				Number of Time/Area Diagrams		0				Number of Real Time Controls		0	Rainfall Model	FSR	M5-60 (mm)	20.000	Cv (Summer)	0.750	Return Period (years)	100	Ratio R	0.357	Cv (Winter)	0.840	Region	England and Wales	Profile Type	Summer	Storm Duration (mins)	30
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Online Controls for Storm

Hydro-Brake® Optimum Manhole: S7, DS/PN: S1.005, Volume (m³): 3.4

Unit Reference	MD-SHE-0056-1200-0670-1200	Sump Available	Yes
Design Head (m)	0.670	Diameter (mm)	56
Design Flow (l/s)	1.2	Invert Level (m)	44.565
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.670	1.2	Kick-Flo®	0.430	1.0
Flush-Flo™	0.205	1.2	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)	Depth (m)	Flow (l/s)
0.100	1.1	0.600	1.1	1.600	1.8	2.600	2.2	5.000	3.0	7.500	3.6
0.200	1.2	0.800	1.3	1.800	1.9	3.000	2.4	5.500	3.1	8.000	3.8
0.300	1.2	1.000	1.4	2.000	2.0	3.500	2.5	6.000	3.3	8.500	3.9
0.400	1.1	1.200	1.6	2.200	2.1	4.000	2.7	6.500	3.4	9.000	4.0
0.500	1.1	1.400	1.7	2.400	2.1	4.500	2.9	7.000	3.5	9.500	4.1

Hydro-Brake® Optimum Manhole: S23, DS/PN: S6.004, Volume (m³): 3.3

Unit Reference	MD-SHE-0055-1200-0740-1200	Sump Available	Yes
Design Head (m)	0.740	Diameter (mm)	55
Design Flow (l/s)	1.2	Invert Level (m)	44.380
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.740	1.2	Kick-Flo®	0.473	1.0
Flush-Flo™	0.232	1.2	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)	Depth (m)	Flow (l/s)
0.100	1.1	0.600	1.1	1.600	1.7	2.600	2.1	5.000	2.9	7.500	3.5
0.200	1.2	0.800	1.2	1.800	1.8	3.000	2.3	5.500	3.0	8.000	3.6
0.300	1.2	1.000	1.4	2.000	1.9	3.500	2.4	6.000	3.1	8.500	3.7
0.400	1.1	1.200	1.5	2.200	2.0	4.000	2.6	6.500	3.2	9.000	3.8
0.500	1.0	1.400	1.6	2.400	2.0	4.500	2.7	7.000	3.4	9.500	3.9

Hydro-Brake® Optimum Manhole: S33, DS/PN: S10.002, Volume (m³): 3.8

Unit Reference	MD-SHE-0045-8000-0680-8000	Sump Available	Yes
Design Head (m)	0.680	Diameter (mm)	45
Design Flow (l/s)	0.8	Invert Level (m)	45.020
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.680	0.8	Kick-Flo®	0.404	0.6
Flush-Flo™	0.201	0.8	Mean Flow over Head Range	-	0.7

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)	Depth (m)	Flow (l/s)
0.100	0.7	0.300	0.7	0.500	0.7	0.800	0.9	1.200	1.0	1.600	1.2
0.200	0.8	0.400	0.6	0.600	0.8	1.000	0.9	1.400	1.1	1.800	1.2

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Hydro-Brake® Optimum Manhole: S33, DS/PN: S10.002, Volume (m³): 3.8

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)	Depth (m)	Flow (l/s)
2.000	1.3	2.600	1.5	4.000	1.8	5.500	2.0	7.000	2.3	8.500	2.5
2.200	1.3	3.000	1.6	4.500	1.9	6.000	2.1	7.500	2.4	9.000	2.6
2.400	1.4	3.500	1.7	5.000	2.0	6.500	2.2	8.000	2.4	9.500	2.7

Hydro-Brake® Optimum Manhole: S39, DS/PN: S14.001, Volume (m³): 6.3

Unit Reference	MD-SHE-0092-5000-2000-5000	Sump Available	Yes
Design Head (m)	2.000	Diameter (mm)	92
Design Flow (l/s)	5.0	Invert Level (m)	49.725
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	150
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	5.0	Kick-Flo®	0.816	3.3
Flush-Flo™	0.398	4.1	Mean Flow over Head Range	-	3.9

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)	Depth (m)	Flow (l/s)
0.100	2.9	0.600	4.0	1.600	4.5	2.600	5.6	5.000	7.7	7.500	9.3
0.200	3.8	0.800	3.4	1.800	4.8	3.000	6.0	5.500	8.0	8.000	9.6
0.300	4.1	1.000	3.6	2.000	5.0	3.500	6.5	6.000	8.4	8.500	9.9
0.400	4.1	1.200	3.9	2.200	5.2	4.000	6.9	6.500	8.7	9.000	10.2
0.500	4.1	1.400	4.2	2.400	5.4	4.500	7.3	7.000	9.0	9.500	10.4

Hydro-Brake® Optimum Manhole: S40, DS/PN: S14.002, Volume (m³): 7.2

Unit Reference	MD-SHE-0087-4000-1500-4000	Sump Available	Yes
Design Head (m)	1.500	Diameter (mm)	87
Design Flow (l/s)	4.0	Invert Level (m)	48.875
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	4.0	Kick-Flo®	0.780	3.0
Flush-Flo™	0.384	3.7	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)	Depth (m)	Flow (l/s)
0.100	2.7	0.600	3.5	1.600	4.1	2.600	5.2	5.000	7.0	7.500	8.5
0.200	3.4	0.800	3.0	1.800	4.4	3.000	5.5	5.500	7.3	8.000	8.8
0.300	3.6	1.000	3.3	2.000	4.6	3.500	5.9	6.000	7.7	8.500	9.0
0.400	3.7	1.200	3.6	2.200	4.8	4.000	6.3	6.500	8.0	9.000	9.3
0.500	3.6	1.400	3.9	2.400	5.0	4.500	6.7	7.000	8.2	9.500	9.5

Hydro-Brake® Optimum Manhole: S41, DS/PN: S14.003, Volume (m³): 4.7

Unit Reference	MD-SHE-0087-5000-2500-5000	Sump Available	Yes
Design Head (m)	2.500	Diameter (mm)	87
Design Flow (l/s)	5.0	Invert Level (m)	47.754
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.500	5.0	Kick-Flo®	0.777	2.9
Flush-Flo™	0.379	3.6	Mean Flow over Head Range	-	3.8

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

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Hydro-Brake® Optimum Manhole: S69, DS/PN: S23.001, Volume (m³): 2.5

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)	Depth (m)	Flow (l/s)
0.100	2.7	0.600	2.8	1.600	4.4	2.600	5.5	5.000	7.5	7.500	9.1
0.200	3.3	0.800	3.2	1.800	4.6	3.000	5.9	5.500	7.8	8.000	9.3
0.300	3.4	1.000	3.5	2.000	4.9	3.500	6.3	6.000	8.1	8.500	9.6
0.400	3.3	1.200	3.8	2.200	5.1	4.000	6.7	6.500	8.5	9.000	9.9
0.500	3.1	1.400	4.1	2.400	5.3	4.500	7.1	7.000	8.8	9.500	10.1

Hydro-Brake® Optimum Manhole: S52, DS/PN: S14.010, Volume (m³): 5.0

Unit Reference	MD-SHE-0208-2280-1150-2280	Sump Available	Yes
Design Head (m)	1.150	Diameter (mm)	208
Design Flow (l/s)	22.8	Invert Level (m)	44.455
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	225
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1500
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.150	22.8	Kick-Flo®	0.812	19.3
Flush-Flo™	0.377	22.7	Mean Flow over Head Range	-	19.3

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)	Depth (m)	Flow (l/s)
0.100	7.1	0.600	22.0	1.600	26.6	2.600	33.6	5.000	46.1	7.500	56.1
0.200	20.1	0.800	19.6	1.800	28.2	3.000	36.0	5.500	48.3	8.000	57.9
0.300	22.5	1.000	21.3	2.000	29.6	3.500	38.8	6.000	50.4	8.500	59.6
0.400	22.7	1.200	23.2	2.200	31.0	4.000	41.4	6.500	52.4	9.000	61.3
0.500	22.5	1.400	25.0	2.400	32.4	4.500	43.8	7.000	54.3	9.500	63.0

Hydro-Brake® Optimum Manhole: S4.001, DS/PN: S26.001, Volume (m³): 2.5

Unit Reference	MD-SHE-0057-2000-2000-2000	Sump Available	Yes
Design Head (m)	2.000	Diameter (mm)	57
Design Flow (l/s)	2.0	Invert Level (m)	50.545
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	75
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.000	2.0	Kick-Flo®	0.506	1.1
Flush-Flo™	0.247	1.3	Mean Flow over Head Range	-	1.5

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)	Depth (m)	Flow (l/s)
0.100	1.2	0.600	1.2	1.600	1.8	2.600	2.3	5.000	3.0	7.500	3.7
0.200	1.3	0.800	1.3	1.800	1.9	3.000	2.4	5.500	3.2	8.000	3.8
0.300	1.3	1.000	1.5	2.000	2.0	3.500	2.6	6.000	3.3	8.500	3.9
0.400	1.3	1.200	1.6	2.200	2.1	4.000	2.7	6.500	3.4	9.000	4.0
0.500	1.1	1.400	1.7	2.400	2.2	4.500	2.9	7.000	3.6	9.500	4.1

Hydro-Brake® Optimum Manhole: S6.001, DS/PN: S28.001, Volume (m³): 2.8

Unit Reference	MD-SHE-0079-3000-1200-3000	Sump Available	Yes
Design Head (m)	1.200	Diameter (mm)	79
Design Flow (l/s)	3.0	Invert Level (m)	48.775
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	100
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1200
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	3.0	Flush-Flo™	0.348	2.9

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Innovyze	Network 2020.1.3	

Hydro-Brake® Optimum Manhole: S6.001, DS/PN: S28.001, Volume (m³): 2.8

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Kick-Flo®	0.707	2.4	Mean Flow over Head Range	-	2.6

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)	Depth (m)	Flow (l/s)
0.100	2.3	0.600	2.7	1.600	3.4	2.600	4.3	5.000	5.8	7.500	7.0
0.200	2.8	0.800	2.5	1.800	3.6	3.000	4.6	5.500	6.1	8.000	7.3
0.300	2.9	1.000	2.8	2.000	3.8	3.500	4.9	6.000	6.3	8.500	7.5
0.400	2.9	1.200	3.0	2.200	4.0	4.000	5.2	6.500	6.6	9.000	7.7
0.500	2.8	1.400	3.2	2.400	4.1	4.500	5.5	7.000	6.8	9.500	7.9

Hydro-Brake® Optimum Manhole: S14, DS/PN: S1.013, Volume (m³): 19.4

Unit Reference	MD-SHE-0275-4260-0960-4260	Sump Available	Yes
Design Head (m)	0.960	Diameter (mm)	275
Design Flow (l/s)	42.6	Invert Level (m)	43.790
Flush-Flo™	Calculated	Minimum Outlet Pipe Diameter (mm)	300
Objective	Minimise upstream storage	Suggested Manhole Diameter (mm)	1800
Application	Surface		

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.960	42.6	Kick-Flo®	0.746	37.7
Flush-Flo™	0.417	42.6	Mean Flow over Head Range	-	34.3

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)	Depth (m)	Flow (l/s)
0.100	8.7	0.600	41.2	1.600	54.5	2.600	68.9	5.000	94.7	7.500	115.5
0.200	28.3	0.800	39.0	1.800	57.7	3.000	73.9	5.500	99.2	8.000	119.2
0.300	41.7	1.000	43.4	2.000	60.7	3.500	79.6	6.000	103.5	8.500	122.7
0.400	42.6	1.200	47.4	2.200	63.6	4.000	85.0	6.500	107.7	9.000	126.2
0.500	42.3	1.400	51.1	2.400	66.3	4.500	90.0	7.000	111.6	9.500	129.6

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Storage Structures for Storm

Cellular Storage Manhole: S10, DS/PN: S2.003

Invert Level (m)		44.735	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	320.0	0.0	0.500	320.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: S28, DS/PN: S8.003

Invert Level (m)		44.615	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	328.0	0.0	0.500	328.0	0.0	0.501	0.0	0.0

Cellular Storage Manhole: S37, DS/PN: S13.001

Invert Level (m)		45.050	Infiltration Coefficient Side (m/hr)		0.00000	Porosity		0.95
Infiltration Coefficient Base (m/hr)		0.00000	Safety Factor		2.0			
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	220.0	0.0	0.500	220.0	0.0	0.501	0.0	0.0

Tank or Pond Manhole: S38, DS/PN: S14.000

Invert Level (m)		50.800						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	320.0	0.400	320.0	0.410	0.0			

Tank or Pond Manhole: S39, DS/PN: S14.001

Invert Level (m)		49.725						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	400.0	1.000	400.0	1.010	0.0			

Tank or Pond Manhole: S40, DS/PN: S14.002

Invert Level (m)		48.875						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	450.0	1.000	450.0	1.010	0.0			

Tank or Pond Manhole: S41, DS/PN: S14.003

Invert Level (m)		47.754						
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)			
0.000	100.0	1.000	100.0	1.010	0.0			

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<u>Tank or Pond Manhole: S111, DS/PN: S14.004</u> Invert Level (m) 46.650 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>250.0</td><td>1.000</td><td>250.0</td><td>1.010</td><td>0.0</td></tr></table> <u>Porous Car Park Manhole: S1.000, DS/PN: S15.000</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>52.500</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>27.8</td><td>Width (m)</td><td>5.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>20.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S1.001, DS/PN: S15.001</u> <table><tr><td>Infiltration Coefficient Base 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(m)</td><td>18.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S2.001, DS/PN: S16.001</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>54.800</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>16.7</td><td>Width (m)</td><td>4.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>15.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S2.002, DS/PN: S16.002</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>54.500</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>42.2</td><td>Width (m)</td><td>4.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>38.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S2.003, DS/PN: S16.003</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>54.200</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>18.9</td><td>Width (m)</td><td>4.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>17.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S2.004, DS/PN: S16.004</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>54.000</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>18.9</td><td>Width (m)</td><td>4.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>17.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table> <u>Porous Car Park Manhole: S1.003, DS/PN: S15.003</u> <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>100.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>51.200</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (l/s)</td><td>180.6</td><td>Width (m)</td><td>5.0</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>130.0</td><td>Membrane Depth (mm)</td><td>180</td></tr></table>			Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	250.0	1.000	250.0	1.010	0.0	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	52.500	Depression Storage (mm)	5	Max Percolation (l/s)	27.8	Width (m)	5.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	20.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	51.975	Depression Storage (mm)	5	Max Percolation (l/s)	111.1	Width (m)	5.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	80.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	55.200	Depression Storage (mm)	5	Max Percolation (l/s)	20.0	Width (m)	4.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	18.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.800	Depression Storage (mm)	5	Max Percolation (l/s)	16.7	Width (m)	4.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	15.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.500	Depression Storage (mm)	5	Max Percolation (l/s)	42.2	Width (m)	4.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	38.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.200	Depression Storage (mm)	5	Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.000	Depression Storage (mm)	5	Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	51.200	Depression Storage (mm)	5	Max Percolation (l/s)	180.6	Width (m)	5.0	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	130.0	Membrane Depth (mm)	180
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																																																																																																																																																																									
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Max Percolation (l/s)	111.1	Width (m)	5.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
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Max Percolation (l/s)	20.0	Width (m)	4.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
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Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.800	Depression Storage (mm)	5																																																																																																																																																																																																									
Max Percolation (l/s)	16.7	Width (m)	4.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
Safety Factor	2.0	Length (m)	15.0	Membrane Depth (mm)	180																																																																																																																																																																																																									
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0																																																																																																																																																																																																									
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.500	Depression Storage (mm)	5																																																																																																																																																																																																									
Max Percolation (l/s)	42.2	Width (m)	4.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
Safety Factor	2.0	Length (m)	38.0	Membrane Depth (mm)	180																																																																																																																																																																																																									
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Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.200	Depression Storage (mm)	5																																																																																																																																																																																																									
Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180																																																																																																																																																																																																									
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0																																																																																																																																																																																																									
Membrane Percolation (mm/hr)	1000	Invert Level (m)	54.000	Depression Storage (mm)	5																																																																																																																																																																																																									
Max Percolation (l/s)	18.9	Width (m)	4.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
Safety Factor	2.0	Length (m)	17.0	Membrane Depth (mm)	180																																																																																																																																																																																																									
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	100.0																																																																																																																																																																																																									
Membrane Percolation (mm/hr)	1000	Invert Level (m)	51.200	Depression Storage (mm)	5																																																																																																																																																																																																									
Max Percolation (l/s)	180.6	Width (m)	5.0	Evaporation (mm/day)	3																																																																																																																																																																																																									
Safety Factor	2.0	Length (m)	130.0	Membrane Depth (mm)	180																																																																																																																																																																																																									
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Billingshurst Enterprise Park		Designed by TA Checked by SLW Network 2020.1.3																																																																																																																																												
Tank or Pond Manhole: S3.001, DS/PN: S17.001 Invert Level (m) 48.576 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>450.0</td><td>1.000</td><td>450.0</td><td>1.010</td><td>0.0</td></tr></table> Tank or Pond Manhole: S1.006, DS/PN: S15.006 Invert Level (m) 45.176 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>400.0</td><td>1.000</td><td>400.0</td><td>1.010</td><td>0.0</td></tr></table> Cellular Storage Manhole: S95, DS/PN: S18.005 <table><tr><td>Invert Level (m)</td><td>45.600</td><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.95</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Safety Factor</td><td>2.0</td><td></td><td></td></tr></table> <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr><tr><td>0.000</td><td>180.0</td><td>0.0</td><td>1.000</td><td>180.0</td><td>0.0</td><td>1.001</td><td>0.0</td><td>0.0</td></tr></table> Cellular Storage Manhole: S69, DS/PN: S23.001 <table><tr><td>Invert Level (m)</td><td>45.570</td><td>Infiltration Coefficient Side (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.95</td></tr><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Safety Factor</td><td>2.0</td><td></td><td></td></tr></table> <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr><tr><td>0.000</td><td>600.0</td><td>0.0</td><td>0.800</td><td>600.0</td><td>0.0</td><td>0.801</td><td>0.0</td><td>0.0</td></tr></table> Tank or Pond Manhole: S51, DS/PN: S14.009 Invert Level (m) 44.500 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>263.5</td><td>1.300</td><td>574.0</td></tr></table> Porous Car Park Manhole: S74, DS/PN: S24.000 <table><tr><td>Infiltration Coefficient Base (m/hr)</td><td>0.00000</td><td>Porosity</td><td>0.30</td><td>Slope (1:X)</td><td>150.0</td></tr><tr><td>Membrane Percolation (mm/hr)</td><td>1000</td><td>Invert Level (m)</td><td>45.750</td><td>Depression Storage (mm)</td><td>5</td></tr><tr><td>Max Percolation (1/s)</td><td>169.0</td><td>Width (m)</td><td>15.8</td><td>Evaporation (mm/day)</td><td>3</td></tr><tr><td>Safety Factor</td><td>2.0</td><td>Length (m)</td><td>38.5</td><td>Membrane Depth (mm)</td><td>0</td></tr></table> Tank or Pond Manhole: S50, DS/PN: S25.000 Invert Level (m) 48.125 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>300.0</td><td>1.000</td><td>300.0</td><td>1.010</td><td>0.0</td></tr></table> Tank or Pond Manhole: S4.001, DS/PN: S26.001 Invert Level (m) 50.545 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>150.0</td><td>1.000</td><td>150.0</td><td>1.010</td><td>0.0</td></tr></table>			Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	450.0	1.000	450.0	1.010	0.0	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	400.0	1.000	400.0	1.010	0.0	Invert Level (m)	45.600	Infiltration Coefficient Side (m/hr)	0.00000	Porosity	0.95	Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	180.0	0.0	1.000	180.0	0.0	1.001	0.0	0.0	Invert Level (m)	45.570	Infiltration Coefficient Side (m/hr)	0.00000	Porosity	0.95	Infiltration Coefficient Base (m/hr)	0.00000	Safety Factor	2.0			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	600.0	0.0	0.800	600.0	0.0	0.801	0.0	0.0	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	263.5	1.300	574.0	Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30	Slope (1:X)	150.0	Membrane Percolation (mm/hr)	1000	Invert Level (m)	45.750	Depression Storage (mm)	5	Max Percolation (1/s)	169.0	Width (m)	15.8	Evaporation (mm/day)	3	Safety Factor	2.0	Length (m)	38.5	Membrane Depth (mm)	0	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	300.0	1.000	300.0	1.010	0.0	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	0.000	150.0	1.000	150.0	1.010	0.0
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																																																																																																									
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0.000	180.0	0.0	1.000	180.0	0.0	1.001	0.0	0.0																																																																																																																																						
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0.000	600.0	0.0	0.800	600.0	0.0	0.801	0.0	0.0																																																																																																																																						
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Safety Factor	2.0	Length (m)	38.5	Membrane Depth (mm)	0																																																																																																																																									
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																																																																																																									
0.000	300.0	1.000	300.0	1.010	0.0																																																																																																																																									
Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)																																																																																																																																									
0.000	150.0	1.000	150.0	1.010	0.0																																																																																																																																									

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84 North Street

Guildford

Surrey GU1 4AU

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Porous Car Park Manhole: S5.000, DS/PN: S27.000

Infiltration Coefficient Base (m/hr)

0.00000

Porosity

0.30

Slope (1:X)

100.0

Membrane Percolation (mm/hr)

1000

Invert Level (m)

50.800

Depression Storage (mm)

5

Max Percolation (l/s)

166.7

Width (m)

5.0

Evaporation (mm/day)

3

Safety Factor

2.0

Length (m)

120.0

Membrane Depth (mm)

180

Porous Car Park Manhole: S6.001, DS/PN: S28.001

Infiltration Coefficient Base (m/hr)

0.00000

Porosity

0.30

Slope (1:X)

100.0

Membrane Percolation (mm/hr)

1000

Invert Level (m)

48.775

Depression Storage (mm)

5

Max Percolation (l/s)

69.4

Width (m)

5.0

Evaporation (mm/day)

3

Safety Factor

2.0

Length (m)

50.0

Membrane Depth (mm)

180

Tank or Pond Manhole: S89, DS/PN: S1.011

Invert Level (m) 43.980

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	250.4	0.200	305.0	0.400	355.0	0.600	398.0	0.800	442.0	1.000	477.6

Cellular Storage Manhole: S89, DS/PN: S34.003

Invert Level (m)

43.875

Infiltration Coefficient Side (m/hr)

0.00000

Porosity

0.95

Infiltration Coefficient Base (m/hr)

0.00000

Safety Factor

2.0

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	532.0	0.0	0.875	532.0	0.0	0.876	0.0	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

Manhole Headloss Coeff (Global) 0.500

MADD Factor * 10m³/ha Storage 2.000

Hot Start (mins) 0

Foul Sewage per hectare (l/s) 0.000

Inlet Coefficient 0.800

Hot Start Level (mm) 0

Additional Flow - % of Total Flow 0.000

Flow per Person per Day (l/per/day) 0.000

Number of Input Hydrographs 0

Number of Offline Controls 0

Number of Time/Area Diagrams 0

Number of Online Controls 13

Number of Storage Structures 28

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 20.000

Cv (Summer) 0.750

Region England and Wales

Ratio R 0.354

Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

DVD Status ON

Analysis Timestep 2.5 Second Increment (Extended)

Inertia Status OFF

DTS Status ON

Profile(s) Summer and Winter

Duration(s) (mins) 15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160

Return Period(s) (years) 2, 30, 100

Climate Change (%) 0, 40, 40

PN	US/MH Name	Stozm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	2	+0%					45.779	-0.111	0.000	0.15	
S1.001	S2	15 Winter	2	+0%	30/15 Summer				45.638	-0.082	0.000	0.42	
S1.002	S3	15 Winter	2	+0%					45.525	-0.155	0.000	0.21	
S1.003	S5	15 Winter	2	+0%					45.345	-0.155	0.000	0.21	
S1.004	S6	15 Winter	2	+0%					45.243	-0.177	0.000	0.10	
S2.000	S7	15 Winter	2	+0%					45.642	-0.108	0.000	0.17	
S2.001	S8	15 Winter	2	+0%					45.360	-0.190	0.000	0.06	
S3.000	S9	15 Winter	2	+0%					45.587	-0.098	0.000	0.26	
S2.002	S9	360 Winter	2	+0%	30/15 Summer				44.826	-0.149	0.000	0.07	
S2.003	S10	360 Winter	2	+0%	30/30 Summer				44.825	-0.060	0.000	0.03	
S4.000	S11	15 Winter	2	+0%	30/15 Summer				45.391	-0.059	0.000	0.67	
S1.005	S7	15 Winter	2	+0%	30/15 Summer				44.858	-0.007	0.000	0.02	
S1.006	S8	15 Winter	2	+0%	30/15 Summer				44.603	-0.222	0.000	0.11	
S5.000	S16	15 Winter	2	+0%	30/15 Summer				44.881	-0.119	0.000	0.44	
S1.007	S9	30 Winter	2	+0%	30/15 Summer				44.580	-0.170	0.000	0.30	
S6.000	S19	15 Winter	2	+0%	100/15 Summer				45.623	-0.102	0.000	0.22	
S6.001	S20	15 Winter	2	+0%	30/15 Summer				45.470	-0.080	0.000	0.44	
S6.002	S21	15 Winter	2	+0%					45.333	-0.157	0.000	0.20	
S6.003	S22	15 Winter	2	+0%					45.097	-0.178	0.000	0.10	
S7.000	S26	15 Winter	2	+0%	30/15 Winter				44.910	-0.090	0.000	0.33	
S8.000	S23	15 Winter	2	+0%					45.587	-0.113	0.000	0.14	
S8.001	S24	15 Winter	2	+0%					45.221	-0.104	0.000	0.20	
S9.000	S27	15 Winter	2	+0%					45.412	-0.098	0.000	0.26	
S8.002	S27	360 Winter	2	+0%	30/15 Summer				44.708	-0.147	0.000	0.08	
S8.003	S28	360 Winter	2	+0%	30/30 Summer				44.707	-0.058	0.000	0.03	
S7.001	S27	15 Winter	2	+0%	30/15 Summer				44.738	-0.002	0.000	0.04	
S6.004	S23	15 Winter	2	+0%	2/15 Summer				44.754	0.074	0.000	0.02	
S10.000	S31	15 Winter	2	+0%					46.041	-0.184	0.000	0.07	
S10.001	S32	15 Winter	2	+0%					45.749	-0.176	0.000	0.10	
S11.000	S33	15 Winter	2	+0%					46.030	-0.120	0.000	0.09	
S11.001	S34	15 Winter	2	+0%					45.603	-0.172	0.000	0.12	
S12.000	S36	15 Winter	2	+0%					45.945	-0.100	0.000	0.25	
S11.002	S35	15 Winter	2	+0%	100/15 Summer				45.432	-0.143	0.000	0.28	
S13.000	S36	360 Winter	2	+0%	100/120 Winter				45.148	-0.252	0.000	0.00	
S13.001	S37	360 Winter	2	+0%	30/360 Winter				45.148	-0.202	0.000	0.01	
S10.002	S33	15 Summer	2	+0%	2/15 Summer				45.360	0.040	0.000	0.00	
S1.008	S10	30 Winter	2	+0%	30/15 Summer				44.565	-0.090	0.000	0.22	
S14.000	S38	30 Winter	2	+0%					50.902	-0.198	0.000	0.25	
S14.001	S39	480 Winter	2	+0%	30/30 Winter				49.992	-0.108	0.000	0.02	
S14.002	S40	1440 Winter	2	+0%	30/480 Winter				49.112	-0.138	0.000	0.01	
S14.003	S41	2160 Winter	2	+0%	30/360 Summer				48.049	-0.080	0.000	0.01	
S14.004	S111	2160 Winter	2	+0%	2/2160 Winter				47.159	0.059	0.000	0.01	
S15.000	S1.000	15 Winter	2	+0%	100/15 Summer	100/15 Winter			51.085	-0.140	0.000	0.29	
S15.001	S1.001	15 Winter	2	+0%	30/15 Summer	100/15 Winter			50.616	-0.159	0.000	0.43	
S16.000	S2.000	15 Winter	2	+0%	30/15 Summer				54.647	-0.103	0.000	0.21	
S16.001	S2.001	15 Winter	2	+0%	30/15 Summer				54.304	-0.066	0.000	0.59	
S16.002	S2.002	15 Winter	2	+0%	30/15 Summer				54.034	-0.126	0.000	0.39	
S16.003	S2.003	15 Winter	2	+0%	30/15 Winter				53.832	-0.178	0.000	0.34	
S16.004	S2.004	15 Winter	2	+0%	30/15 Summer				53.741	-0.169	0.000	0.40	
S16.005	S2.005	15 Winter	2	+0%	30/15 Summer				53.660	-0.170	0.000	0.39	
S16.006	S2.006	15 Winter	2	+0%	30/15 Winter				53.583	-0.167	0.000	0.40	
S16.007	S2.007	15 Winter	2	+0%					53.359	-0.241	0.000	0.09	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		2.1	OK	
S1.001	S2		5.3	OK	
S1.002	S3		7.8	OK	
S1.003	S5		7.7	OK	
S1.004	S6		9.4	OK	
S2.000	S7		3.1	OK	
S2.001	S8		4.4	OK	
S3.000	S9		13.5	OK	
S2.002	S9		3.3	OK	
S2.003	S10	267	1.3	OK	
S4.000	S11		6.9	OK	
S1.005	S7		1.2	OK	
S1.006	S8		7.1	OK	
S5.000	S16		11.5	OK	
S1.007	S9		19.0	OK	
S6.000	S19		3.0	OK	
S6.001	S20		5.7	OK	
S6.002	S21		8.1	OK	
S6.003	S22		9.7	OK	
S7.000	S26		5.0	OK	
S8.000	S23		3.6	OK	
S8.001	S24		5.1	OK	
S9.000	S27		13.3	OK	
S8.002	S27		3.5	OK	
S8.003	S28	279	1.4	OK	
S7.001	S27		2.4	OK	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		3.1	OK	
S10.001	S32		7.5	OK	
S11.000	S33		2.4	OK	
S11.001	S34		5.1	OK	
S12.000	S36		8.9	OK	
S11.002	S35		15.2	OK	
S13.000	S36		0.0	OK	
S13.001	S37	302	0.7	OK	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		24.2	OK	
S14.000	S38		37.5	OK	
S14.001	S39		3.7	OK	
S14.002	S40		3.5	OK	
S14.003	S41		3.4	OK	
S14.004	S111		3.1	SURCHARGED	
S15.000	S1.000	6	16.8	OK	1
S15.001	S1.001	7	31.9	OK	1
S16.000	S2.000	6	4.1	OK	
S16.001	S2.001	7	9.6	OK	
S16.002	S2.002	8	14.4	OK	
S16.003	S2.003	6	22.3	OK	
S16.004	S2.004	7	26.3	OK	
S16.005	S2.005		26.8	OK	
S16.006	S2.006		28.0	OK	
S16.007	S2.007		30.0	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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S15.002	S1.002	15 Winter	2	+0%	30/15 Summer				50.344	-0.181	0.000	0.32	
S15.003	S1.003	15 Winter	2	+0%	30/15 Summer				48.724	-0.165	0.000	0.41	
S15.004	S1.004	15 Winter	2	+0%	100/15 Summer				47.071	-0.182	0.000	0.32	
S17.000	S3.000	15 Winter	2	+0%					48.765	-0.211	0.000	0.19	
S17.001	S3.001	60 Winter	2	+0%					48.613	-0.263	0.000	0.04	
S15.005	S1.005	2160 Winter	2	+0%	2/360 Summer				46.470	0.669	0.000	0.02	
S15.006	S1.006	2160 Winter	2	+0%	2/360 Summer				46.469	0.768	0.000	0.02	
S14.005	S46	2160 Winter	2	+0%					46.467	-0.403	0.000	0.02	
S14.006	S48	2160 Winter	2	+0%					45.443	-0.557	0.000	0.02	
S18.000	S90	15 Winter	2	+0%	30/15 Summer				47.555	-0.095	0.000	0.28	
S18.001	S91	15 Winter	2	+0%	30/15 Summer				47.242	-0.078	0.000	0.47	
S18.002	S92	15 Winter	2	+0%	30/15 Summer				47.108	-0.072	0.000	0.53	
S18.003	S93	15 Winter	2	+0%	30/15 Summer				46.882	-0.068	0.000	0.58	
S19.000	S94	15 Winter	2	+0%					47.181	-0.119	0.000	0.10	
S19.001	S95	15 Winter	2	+0%					47.074	-0.101	0.000	0.23	
S18.004	S94	120 Winter	2	+0%	30/30 Summer				45.784	-0.161	0.000	0.15	
S20.000	S97	15 Summer	2	+0%	100/15 Summer				46.400	-0.150	0.000	0.00	
S20.001	S97	15 Winter	2	+0%	30/15 Summer				46.323	-0.092	0.000	0.31	
S21.000	S98	15 Winter	2	+0%					46.940	-0.110	0.000	0.16	
S18.005	S95	120 Winter	2	+0%	30/15 Winter				45.783	-0.117	0.000	0.03	
S22.000	S100	15 Winter	2	+0%					46.692	-0.108	0.000	0.17	
S18.006	S96	120 Winter	2	+0%	2/15 Summer				45.780	0.115	0.000	0.04	
S14.007	S65	2160 Winter	2	+0%	100/480 Winter				45.071	-0.529	0.000	0.03	
S23.000	S68	15 Summer	2	+0%	100/120 Winter				46.000	-0.150	0.000	0.00	
S23.001	S69	360 Winter	2	+0%	2/15 Summer				45.718	0.123	0.000	0.26	
S14.008	S50	2160 Winter	2	+0%	100/360 Winter				44.987	-0.539	0.000	0.02	
S14.009	S51	2160 Winter	2	+0%	30/480 Winter				44.613	-0.487	0.000	0.05	
S24.000	S74	15 Winter	2	+0%	30/15 Summer				45.665	-0.035	0.000	0.60	
S14.010	S52	2160 Winter	2	+0%	30/480 Winter				44.602	-0.453	0.000	0.02	
S25.000	S50	360 Winter	2	+0%					48.155	-0.070	0.000	0.20	
S25.001	S51	15 Winter	2	+0%	30/15 Summer				47.819	-0.181	0.000	0.08	
S26.000	S4.000	15 Winter	2	+0%	100/15 Summer				51.059	-0.091	0.000	0.32	
S26.001	S4.001	360 Winter	2	+0%	30/60 Winter				50.647	-0.123	0.000	0.02	
S26.002	S4.002	15 Winter	2	+0%					50.296	-0.174	0.000	0.11	
S26.003	S4.003	15 Winter	2	+0%					50.074	-0.229	0.000	0.12	
S27.000	S5.000	15 Winter	2	+0%	30/15 Summer				50.869	-0.081	0.000	0.42	
S26.004	S4.004	15 Winter	2	+0%					49.966	-0.237	0.000	0.10	
S28.000	S6.000	15 Winter	2	+0%	30/15 Summer				49.068	-0.082	0.000	0.42	
S28.001	S6.001	60 Winter	2	+0%	2/30 Winter				49.020	0.020	0.000	0.05	
S26.005	S4.005	15 Winter	2	+0%	30/15 Summer				48.417	-0.233	0.000	0.11	
S26.006	S4.006	15 Winter	2	+0%	2/15 Summer				47.733	0.107	0.000	0.27	
S25.002	S44	15 Winter	2	+0%	30/15 Summer				47.649	-0.126	0.000	0.40	
S25.003	S46	15 Winter	2	+0%	30/15 Summer	100/15 Winter			46.863	-0.072	0.000	0.79	
S25.004	S75	15 Winter	2	+0%	30/15 Summer	100/15 Winter			46.627	-0.098	0.000	0.60	
S29.000	S76	15 Summer	2	+0%	100/15 Summer				47.000	-0.225	0.000	0.00	
S29.001	S77	15 Winter	2	+0%	30/15 Summer				46.692	-0.136	0.000	0.33	
S25.005	S76	15 Winter	2	+0%	30/15 Summer				46.094	-0.166	0.000	0.40	
S30.000	S80	15 Winter	2	+0%					45.765	-0.235	0.000	0.10	
S25.006	S78	15 Winter	2	+0%	30/15 Summer				44.934	-0.216	0.000	0.43	
S31.000	S82	15 Winter	2	+0%	100/15 Summer				45.084	-0.216	0.000	0.17	
S25.007	S79	30 Winter	2	+0%	30/15 Summer				44.620	-0.280	0.000	0.35	
S25.008	S80	30 Winter	2	+0%	30/15 Summer				44.571	-0.129	0.000	0.34	
S1.009	S11	30 Winter	2	+0%	30/15 Summer				44.533	-0.102	0.000	0.57	
S1.010	S12	30 Winter	2	+0%	30/15 Summer				44.507	-0.093	0.000	1.04	
S1.011	S89	60 Winter	2	+0%	30/360 Winter				44.280	-0.300	0.000	0.50	
S32.000	S153	15 Winter	2	+0%					44.850	-0.100	0.000	0.24	
S33.000	S152	15 Winter	2	+0%					44.879	-0.121	0.000	0.08	
S32.001	S154	15 Winter	2	+0%	30/360 Winter				44.454	-0.096	0.000	0.27	
S1.012	S13	120 Winter	2	+0%	30/360 Winter				44.171	-0.394	0.000	0.16	
S34.000	S156	30 Winter	2	+0%	2/15 Summer				45.072	0.272	0.000	0.06	
S35.000	S157	30 Winter	2	+0%	2/15 Summer				45.084	0.284	0.000	0.15	
S34.001	S157	30 Winter	2	+0%	2/15 Summer				45.065	0.565	0.000	0.18	
S34.002	S158	30 Winter	2	+0%					45.057	-0.358	0.000	0.09	
S36.000	S159	15 Winter	2	+0%	100/120 Winter				44.455	-0.170	0.000	0.13	
S36.001	S161	15 Winter	2	+0%	30/360 Winter				44.262	-0.163	0.000	0.17	
S34.003	S89	360 Winter	2	+0%	30/60 Winter				44.095	-0.220	0.000	0.07	
S1.013	S14	120 Winter	2	+0%	2/60 Winter				44.125	0.035	0.000	0.50	
S1.014	S15	120 Winter	2	+0%					43.864	-0.116	0.000	0.69	
S1.015	S16	120 Winter	2	+0%					43.819	-0.136	0.000	0.58	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.002	S1.002		71.3	OK	
S15.003	S1.003	7	89.7	OK	
S15.004	S1.004		98.1	OK	
S17.000	S3.000		11.9	OK	
S17.001	S3.001		9.0	OK	
S15.005	S1.005		7.9	SURCHARGED	
S15.006	S1.006		6.1	SURCHARGED	
S14.005	S46		9.6	OK	
S14.006	S48		9.7	OK	
S18.000	S90		4.8	OK	
S18.001	S91		7.6	OK	
S18.002	S92		8.9	OK	
S18.003	S93		10.1	OK	
S19.000	S94		1.6	OK	
S19.001	S95		4.4	OK	
S18.004	S94		6.6	OK	
S20.000	S97		0.0	OK	
S20.001	S97		9.5	OK	
S21.000	S98		8.1	OK	
S18.005	S95	118	2.4	OK	
S22.000	S100		11.1	OK	
S18.006	S96		2.5	SURCHARGED	
S14.007	S65		11.4	OK	
S23.000	S68		0.0	OK	
S23.001	S69	272	3.4	SURCHARGED	
S14.008	S50		14.8	OK	
S14.009	S51		13.2	OK	
S24.000	S74	5	9.1	OK	
S14.010	S52		13.4	OK	
S25.000	S50		1.0	OK	
S25.001	S51		3.4	OK	
S26.000	S4.000		7.0	OK	
S26.001	S4.001		1.2	OK	
S26.002	S4.002		4.9	OK	
S26.003	S4.003		6.9	OK	
S27.000	S5.000	5	11.0	OK	
S26.004	S4.004		21.7	OK	
S28.000	S6.000		6.1	OK	
S28.001	S6.001	26	2.8	SURCHARGED	
S26.005	S4.005		28.2	OK	
S26.006	S4.006		26.7	SURCHARGED	
S25.002	S44		33.5	OK	1
S25.003	S46		36.6	OK	1
S25.004	S75		40.0	OK	
S29.000	S76		0.0	OK	
S29.001	S77		33.8	OK	
S25.005	S76		71.2	OK	
S30.000	S80		15.5	OK	
S25.006	S78		88.9	OK	
S31.000	S82		29.6	OK	
S25.007	S79		114.9	OK	
S25.008	S80		101.3	OK	
S1.009	S11		120.0	OK	
S1.010	S12		119.3	OK	
S1.011	S89		67.1	OK	
S32.000	S153		4.5	OK	
S33.000	S152		2.0	OK	
S32.001	S154		9.4	OK	
S1.012	S13		65.7	OK	
S34.000	S156		4.4	SURCHARGED	
S35.000	S157		6.5	SURCHARGED	
S34.001	S157		12.9	SURCHARGED	
S34.002	S158		12.7	OK	
S36.000	S159		5.7	OK	
S36.001	S161		7.8	OK	
S34.003	S89	140	8.6	OK	
S1.013	S14		33.7	SURCHARGED	
S1.014	S15		33.7	OK	
S1.015	S16		33.7	OK	

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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	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m ³ /ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	13	Number of Storage Structures	28	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR M5-60 (mm)	20.000	Cv (Summer)	0.750	
Region	England and Wales	Ratio R	0.354	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	2.5 Second Increment (Extended)	Inertia Status	OFF
DTS Status	ON		

Profile(s)

Duration(s) (mins)	15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160	Summer and Winter	
Return Period(s) (years)	2, 30, 100		
Climate Change (%)	0, 40, 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)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	30	+40%					45.807	-0.083	0.000	0.39	
S1.001	S2	15 Winter	30	+40%	30/15 Summer				45.740	0.020	0.000	1.26	
S1.002	S3	15 Winter	30	+40%					45.590	-0.090	0.000	0.64	
S1.003	S5	15 Winter	30	+40%					45.408	-0.092	0.000	0.65	
S1.004	S6	15 Winter	30	+40%					45.280	-0.140	0.000	0.31	
S2.000	S7	15 Winter	30	+40%					45.672	-0.078	0.000	0.46	
S2.001	S8	15 Winter	30	+40%					45.387	-0.163	0.000	0.17	
S3.000	S9	15 Winter	30	+40%					45.627	-0.058	0.000	0.68	
S2.002	S9	600 Winter	30	+40%	30/15 Summer				45.083	0.108	0.000	0.12	
S2.003	S10	600 Winter	30	+40%	30/30 Summer				45.082	0.197	0.000	0.03	
S4.000	S11	15 Winter	30	+40%	30/15 Summer				45.704	0.254	0.000	1.73	
S1.005	S7	480 Winter	30	+40%	30/15 Summer				45.087	0.222	0.000	0.02	
S1.006	S8	15 Winter	30	+40%	30/15 Summer				45.003	0.178	0.000	0.26	
S5.000	S16	15 Winter	30	+40%	30/15 Summer				45.085	0.085	0.000	1.11	
S1.007	S9	15 Winter	30	+40%	30/15 Summer				44.996	0.246	0.000	0.66	
S6.000	S19	15 Winter	30	+40%	100/15 Summer				45.659	-0.066	0.000	0.59	
S6.001	S20	15 Winter	30	+40%	30/15 Summer				45.581	0.031	0.000	1.25	
S6.002	S21	15 Winter	30	+40%					45.391	-0.099	0.000	0.58	
S6.003	S22	15 Winter	30	+40%					45.133	-0.142	0.000	0.29	
S7.000	S26	15 Winter	30	+40%	30/15 Winter				45.012	0.012	0.000	0.87	
S8.000	S23	15 Winter	30	+40%					45.613	-0.087	0.000	0.37	
S8.001	S24	15 Winter	30	+40%					45.258	-0.067	0.000	0.58	
S9.000	S27	15 Winter	30	+40%					45.454	-0.056	0.000	0.70	
S8.002	S27	600 Winter	30	+40%	30/15 Summer				44.975	0.120	0.000	0.13	
S8.003	S28	600 Winter	30	+40%	30/30 Summer				44.974	0.209	0.000	0.05	
S7.001	S27	600 Winter	30	+40%	30/15 Summer				45.002	0.262	0.000	0.03	
S6.004	S23	600 Winter	30	+40%	2/15 Summer				45.024	0.344	0.000	0.02	
S10.000	S31	15 Winter	30	+40%					46.069	-0.156	0.000	0.20	
S10.001	S32	15 Winter	30	+40%					45.788	-0.137	0.000	0.32	
S11.000	S33	15 Winter	30	+40%					46.049	-0.101	0.000	0.23	
S11.001	S34	15 Winter	30	+40%					45.646	-0.129	0.000	0.37	
S12.000	S36	15 Winter	30	+40%					45.984	-0.061	0.000	0.65	
S11.002	S35	15 Winter	30	+40%	100/15 Summer				45.573	-0.002	0.000	0.79	
S13.000	S36	720 Winter	30	+40%	100/120 Winter				45.395	-0.005	0.000	0.00	
S13.001	S37	720 Winter	30	+40%	30/360 Winter				45.396	0.046	0.000	0.01	
S10.002	S33	15 Winter	30	+40%	2/15 Summer				45.413	0.093	0.000	0.00	
S1.008	S10	15 Winter	30	+40%	30/15 Summer				44.910	0.255	0.000	0.55	
S14.000	S38	30 Winter	30	+40%					51.016	-0.084	0.000	0.87	
S14.001	S39	720 Winter	30	+40%	30/30 Winter				50.605	0.505	0.000	0.02	
S14.002	S40	2160 Winter	30	+40%	30/480 Winter				49.494	0.244	0.000	0.01	
S14.003	S41	2160 Summer	30	+40%	30/360 Summer				48.773	0.644	0.000	0.01	
S14.004	S111	2160 Winter	30	+40%	2/2160 Winter				48.304	1.204	0.000	0.01	
S15.000	S1.000	15 Winter	30	+40%	100/15 Summer	100/15 Winter			51.185	-0.040	0.000	0.77	
S15.001	S1.001	15 Winter	30	+40%	30/15 Summer	100/15 Winter			50.936	0.161	0.000	1.21	
S16.000	S2.000	15 Winter	30	+40%	30/15 Summer				54.786	0.036	0.000	0.52	
S16.001	S2.001	15 Winter	30	+40%	30/15 Summer				54.685	0.315	0.000	1.53	
S16.002	S2.002	15 Winter	30	+40%	30/15 Summer				54.183	0.023	0.000	1.06	
S16.003	S2.003	15 Winter	30	+40%	30/15 Winter				54.024	0.014	0.000	0.93	
S16.004	S2.004	15 Winter	30	+40%	30/15 Summer				53.937	0.027	0.000	1.07	
S16.005	S2.005	15 Winter	30	+40%	30/15 Summer				53.849	0.019	0.000	1.01	
S16.006	S2.006	15 Winter	30	+40%	30/15 Winter				53.752	0.002	0.000	1.04	
S16.007	S2.007	15 Winter	30	+40%					53.396	-0.204	0.000	0.22	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		5.6	OK	
S1.001	S2		15.8	SURCHARGED	
S1.002	S3		23.7	OK	
S1.003	S5		23.7	OK	
S1.004	S6		28.7	OK	
S2.000	S7		8.2	OK	
S2.001	S8		12.5	OK	
S3.000	S9		35.9	OK	
S2.002	S9		5.6	SURCHARGED	
S2.003	S10		1.3	SURCHARGED	
S4.000	S11		17.7	SURCHARGED	
S1.005	S7		1.2	SURCHARGED	
S1.006	S8		16.7	SURCHARGED	
S5.000	S16		28.8	SURCHARGED	
S1.007	S9		42.0	SURCHARGED	
S6.000	S19		8.1	OK	
S6.001	S20		16.4	SURCHARGED	
S6.002	S21		23.8	OK	
S6.003	S22		28.6	OK	
S7.000	S26		13.2	SURCHARGED	
S8.000	S23		9.5	OK	
S8.001	S24		14.5	OK	
S9.000	S27		35.3	OK	
S8.002	S27		6.0	SURCHARGED	
S8.003	S28		2.5	SURCHARGED	
S7.001	S27		2.1	SURCHARGED	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		8.3	OK	
S10.001	S32		22.6	OK	
S11.000	S33		6.3	OK	
S11.001	S34		15.2	OK	
S12.000	S36		23.7	OK	
S11.002	S35		42.8	OK	
S13.000	S36		0.0	OK	
S13.001	S37		0.7	SURCHARGED	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		60.9	SURCHARGED	
S14.000	S38		127.4	OK	
S14.001	S39		4.0	SURCHARGED	
S14.002	S40		3.6	SURCHARGED	
S14.003	S41		3.5	SURCHARGED	
S14.004	S111		3.7	SURCHARGED	
S15.000	S1.000	5	43.6	OK	1
S15.001	S1.001	3	89.5	SURCHARGED	1
S16.000	S2.000	3	10.2	SURCHARGED	
S16.001	S2.001	4	24.9	SURCHARGED	
S16.002	S2.002	4	38.7	SURCHARGED	
S16.003	S2.003	4	60.8	SURCHARGED	
S16.004	S2.004	5	70.9	SURCHARGED	
S16.005	S2.005		70.0	SURCHARGED	
S16.006	S2.006		72.7	SURCHARGED	
S16.007	S2.007		78.1	OK	

Motion

84 North Street
Guildford
Surrey GU1 4AU

Date 06/08/2025 16:01
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Billingshurst
Enterprise Park

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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)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S15.002	S1.002	15 Winter	30	+40%	30/15 Summer				50.611	0.086	0.000	0.91	
S15.003	S1.003	15 Winter	30	+40%	30/15 Summer				49.376	0.487	0.000	1.14	
S15.004	S1.004	15 Winter	30	+40%	100/15 Summer				47.180	-0.073	0.000	0.91	
S17.000	S3.000	15 Winter	30	+40%					48.828	-0.148	0.000	0.50	
S17.001	S3.001	30 Winter	30	+40%					48.654	-0.222	0.000	0.15	
S15.005	S1.005	360 Winter	30	+40%	2/360 Summer				46.580	0.779	0.000	0.22	
S15.006	S1.006	360 Winter	30	+40%	2/360 Summer				46.566	0.865	0.000	0.20	
S14.005	S46	360 Winter	30	+40%					46.552	-0.318	0.000	0.19	
S14.006	S48	360 Winter	30	+40%					45.536	-0.464	0.000	0.12	
S18.000	S90	15 Winter	30	+40%	30/15 Summer				47.781	0.131	0.000	0.67	
S18.001	S91	15 Winter	30	+40%	30/15 Summer				47.646	0.326	0.000	1.08	
S18.002	S92	15 Winter	30	+40%	30/15 Summer				47.476	0.296	0.000	1.25	
S18.003	S93	15 Winter	30	+40%	30/15 Summer				47.108	0.158	0.000	1.34	
S19.000	S94	15 Winter	30	+40%					47.202	-0.098	0.000	0.26	
S19.001	S95	15 Winter	30	+40%					47.119	-0.056	0.000	0.70	
S18.004	S94	360 Winter	30	+40%	30/30 Summer				46.306	0.361	0.000	0.18	
S20.000	S97	15 Summer	30	+40%	100/15 Summer				46.428	-0.122	0.000	0.00	
S20.001	S97	15 Summer	30	+40%	30/15 Summer				46.434	0.019	0.000	1.01	
S21.000	S98	15 Winter	30	+40%					46.968	-0.082	0.000	0.42	
S18.005	S95	360 Winter	30	+40%	30/15 Winter				46.305	0.405	0.000	0.04	
S22.000	S100	15 Winter	30	+40%					46.721	-0.079	0.000	0.45	
S18.006	S96	360 Winter	30	+40%	2/15 Summer				46.389	0.724	0.000	0.04	
S14.007	S65	360 Winter	30	+40%	100/480 Winter				45.193	-0.407	0.000	0.23	
S23.000	S68	600 Winter	30	+40%	100/120 Winter				46.126	-0.024	0.000	0.00	
S23.001	S69	600 Winter	30	+40%	2/15 Summer				46.126	0.531	0.000	0.26	
S14.008	S50	960 Winter	30	+40%	100/360 Winter				45.177	-0.349	0.000	0.07	
S14.009	S51	960 Winter	30	+40%	30/480 Winter				45.169	0.069	0.000	0.09	
S24.000	S74	15 Winter	30	+40%	30/15 Summer				45.832	0.132	0.000	1.08	
S14.010	S52	960 Winter	30	+40%	30/480 Winter				45.173	0.118	0.000	0.03	
S25.000	S50	120 Winter	30	+40%					48.193	-0.032	0.000	0.79	
S25.001	S51	15 Winter	30	+40%	30/15 Summer				48.564	0.564	0.000	0.25	
S26.000	S4.000	15 Winter	30	+40%	100/15 Summer				51.108	-0.042	0.000	0.84	
S26.001	S4.001	360 Winter	30	+40%	30/60 Winter				50.865	0.095	0.000	0.02	
S26.002	S4.002	15 Winter	30	+40%					50.342	-0.128	0.000	0.39	
S26.003	S4.003	15 Winter	30	+40%					50.141	-0.162	0.000	0.41	
S27.000	S5.000	15 Winter	30	+40%	30/15 Summer				50.969	0.019	0.000	1.02	
S26.004	S4.004	15 Winter	30	+40%					50.012	-0.191	0.000	0.28	
S28.000	S6.000	120 Winter	30	+40%	30/15 Summer				49.317	0.167	0.000	0.36	
S28.001	S6.001	120 Winter	30	+40%	2/30 Winter				49.312	0.312	0.000	0.05	
S26.005	S4.005	15 Winter	30	+40%	30/15 Summer				48.798	0.148	0.000	0.31	
S26.006	S4.006	15 Winter	30	+40%	2/15 Summer				48.629	1.003	0.000	0.68	
S25.002	S44	15 Winter	30	+40%	30/15 Summer				48.559	0.784	0.000	0.89	
S25.003	S46	15 Winter	30	+40%	30/15 Summer	100/15 Winter			47.989	1.054	0.000	1.75	
S25.004	S75	15 Winter	30	+40%	30/15 Summer	100/15 Winter			47.419	0.694	0.000	1.34	
S29.000	S76	15 Winter	30	+40%	100/15 Summer				47.000	-0.225	0.000	0.00	
S29.001	S77	15 Winter	30	+40%	30/15 Summer				47.014	0.186	0.000	0.97	
S25.005	S76	15 Winter	30	+40%	30/15 Summer				46.620	0.360	0.000	1.02	
S30.000	S80	15 Winter	30	+40%					45.809	-0.191	0.000	0.28	
S25.006	S78	15 Winter	30	+40%	30/15 Summer				45.459	0.309	0.000	1.07	
S31.000	S82	15 Winter	30	+40%	100/15 Summer				45.170	-0.130	0.000	0.46	
S25.007	S79	15 Winter	30	+40%	30/15 Summer				45.098	0.198	0.000	0.95	
S25.008	S80	15 Winter	30	+40%	30/15 Summer				44.922	0.222	0.000	1.11	
S1.009	S11	15 Winter	30	+40%	30/15 Summer				44.841	0.206	0.000	1.79	
S1.010	S12	15 Winter	30	+40%	30/15 Summer				44.695	0.095	0.000	3.30	
S1.011	S89	480 Winter	30	+40%	30/360 Winter				44.629	0.049	0.000	0.71	
S32.000	S153	15 Winter	30	+40%					44.888	-0.062	0.000	0.63	
S33.000	S152	15 Winter	30	+40%					44.898	-0.102	0.000	0.22	
S32.001	S154	480 Winter	30	+40%	30/360 Winter				44.633	0.083	0.000	0.18	
S1.012	S13	480 Winter	30	+40%	30/360 Winter				44.698	0.133	0.000	0.21	
S34.000	S156	15 Winter	30	+40%	2/15 Summer				45.285	0.485	0.000	0.25	
S35.000	S157	15 Winter	30	+40%	2/15 Summer				45.377	0.577	0.000	0.60	
S34.001	S157	15 Winter	30	+40%	2/15 Summer				45.257	0.757	0.000	0.72	
S34.002	S158	15 Winter	30	+40%					45.155	-0.260	0.000	0.37	
S36.000	S159	480 Winter	30	+40%	100/120 Winter				44.558	-0.067	0.000	0.04	
S36.001	S161	480 Winter	30	+40%	30/360 Winter				44.558	0.133	0.000	0.06	
S34.003	S89	480 Winter	30	+40%	30/60 Winter				44.558	0.243	0.000	0.13	
S1.013	S14	480 Winter	30	+40%	2/60 Winter				44.698	0.608	0.000	0.63	
S1.014	S15	600 Winter	30	+40%					43.897	-0.083	0.000	0.87	
S1.015	S16	600 Winter	30	+40%					43.846	-0.109	0.000	0.73	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S15.002	S1.002		199.8	SURCHARGED	
S15.003	S1.003	5	247.3	SURCHARGED	
S15.004	S1.004		275.3	OK	
S17.000	S3.000		31.4	OK	
S17.001	S3.001		38.0	OK	
S15.005	S1.005		70.4	SURCHARGED	
S15.006	S1.006		66.0	SURCHARGED	
S14.005	S46		73.1	OK	
S14.006	S48		73.9	OK	
S18.000	S90		11.5	SURCHARGED	
S18.001	S91		17.8	SURCHARGED	
S18.002	S92		21.0	SURCHARGED	
S18.003	S93		23.5	SURCHARGED	
S19.000	S94		4.1	OK	
S19.001	S95		13.6	OK	
S18.004	S94		7.9	SURCHARGED	
S20.000	S97		0.1	OK	
S20.001	S97		31.0	SURCHARGED	
S21.000	S98		21.7	OK	
S18.005	S95		3.3	SURCHARGED	
S22.000	S100		29.4	OK	
S18.006	S96		2.5	SURCHARGED	
S14.007	S65		76.1	OK	
S23.000	S68		0.0	OK	
S23.001	S69		3.4	SURCHARGED	
S14.008	S50		48.7	OK	
S14.009	S51		25.0	SURCHARGED	
S24.000	S74	4	16.3	SURCHARGED	
S14.010	S52		22.7	SURCHARGED	
S25.000	S50		3.9	OK	
S25.001	S51		10.0	SURCHARGED	
S26.000	S4.000		18.6	OK	
S26.001	S4.001		1.3	SURCHARGED	
S26.002	S4.002		16.4	OK	
S26.003	S4.003		22.9	OK	
S27.000	S5.000	4	26.7	SURCHARGED	
S26.004	S4.004		62.5	OK	
S28.000	S6.000		5.3	SURCHARGED	
S28.001	S6.001	95	2.8	SURCHARGED	
S26.005	S4.005		79.6	SURCHARGED	
S26.006	S4.006		67.5	SURCHARGED	
S25.002	S44		74.0	SURCHARGED	
S25.003	S46		81.5	SURCHARGED	1
S25.004	S75		88.7	SURCHARGED	1
S29.000	S76		0.0	OK	
S29.001	S77		100.8	SURCHARGED	
S25.005	S76		179.9	SURCHARGED	
S30.000	S80		41.3	OK	
S25.006	S78		222.4	SURCHARGED	
S31.000	S82		78.7	OK	
S25.007	S79		314.8	SURCHARGED	
S25.008	S80		327.6	SURCHARGED	
S1.009	S11		378.0	SURCHARGED	
S1.010	S12		377.8	SURCHARGED	
S1.011	S89		95.3	SURCHARGED	
S32.000	S153		12.0	OK	
S33.000	S152		5.4	OK	
S32.001	S154		6.1	SURCHARGED	
S1.012	S13		84.3	SURCHARGED	
S34.000	S156		18.0	FLOOD RISK	
S35.000	S157		26.4	FLOOD RISK	
S34.001	S157		52.5	SURCHARGED	
S34.002	S158		52.4	OK	
S36.000	S159		1.9	OK	
S36.001	S161		2.7	SURCHARGED	
S34.003	S89	333	17.7	SURCHARGED	
S1.013	S14		42.5	SURCHARGED	
S1.014	S15		42.5	OK	
S1.015	S16		42.5	OK	

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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	Manhole Headloss Coeff (Global)	0.500	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Foul Sewage per hectare (l/s)	0.000	Inlet Coefficient	0.800
Hot Start Level (mm)	0	Additional Flow - % of Total Flow	0.000	Flow per Person per Day (l/per/day)	0.000

Number of Input Hydrographs	0	Number of Offline Controls	0	Number of Time/Area Diagrams	0
Number of Online Controls	13	Number of Storage Structures	28	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR M5-60 (mm)	20.000	Cv (Summer)	0.750	
Region	England and Wales	Ratio R	0.354	Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	300.0	DVD Status	ON
Analysis Timestep	2.5 Second Increment (Extended)	Inertia Status	OFF
DTS Status			ON

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 360, 480, 600, 720, 960, 1440, 2160
Return Period(s) (years)	2, 30, 100
Climate Change (%)	0, 40, 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) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)
S1.000	S1	15 Winter	100	+40%					45.832	-0.058	0.000	0.52	
S1.001	S2	15 Winter	100	+40%	30/15 Summer				45.785	0.065	0.000	1.63	
S1.002	S3	15 Winter	100	+40%					45.616	-0.064	0.000	0.83	
S1.003	S5	15 Winter	100	+40%					45.435	-0.065	0.000	0.85	
S1.004	S6	15 Winter	100	+40%					45.294	-0.126	0.000	0.40	
S2.000	S7	15 Winter	100	+40%					45.685	-0.065	0.000	0.60	
S2.001	S8	15 Winter	100	+40%					45.396	-0.154	0.000	0.21	
S3.000	S9	15 Winter	100	+40%					45.650	-0.035	0.000	0.88	
S2.002	S9	720 Winter	100	+40%	30/15 Summer				45.218	0.243	0.000	0.14	
S2.003	S10	720 Winter	100	+40%	30/30 Summer				45.217	0.332	0.000	0.03	
S4.000	S11	15 Winter	100	+40%	30/15 Summer				45.945	0.495	0.000	2.21	
S1.005	S7	720 Winter	100	+40%	30/15 Summer				45.216	0.351	0.000	0.02	
S1.006	S8	15 Winter	100	+40%	30/15 Summer				45.155	0.330	0.000	0.33	
S5.000	S16	15 Winter	100	+40%	30/15 Summer				45.388	0.388	0.000	1.28	
S1.007	S9	15 Winter	100	+40%	30/15 Summer				45.140	0.390	0.000	0.99	
S6.000	S19	15 Winter	100	+40%	100/15 Summer				45.745	0.020	0.000	0.76	
S6.001	S20	15 Winter	100	+40%	30/15 Summer				45.643	0.093	0.000	1.59	
S6.002	S21	15 Winter	100	+40%					45.414	-0.076	0.000	0.74	
S6.003	S22	720 Winter	100	+40%					45.197	-0.078	0.000	0.03	
S7.000	S26	720 Winter	100	+40%	30/15 Winter				45.198	0.198	0.000	0.10	
S8.000	S23	15 Winter	100	+40%					45.623	-0.077	0.000	0.48	
S8.001	S24	15 Winter	100	+40%					45.274	-0.051	0.000	0.76	
S9.000	S27	15 Winter	100	+40%					45.506	-0.004	0.000	0.89	
S8.002	S27	720 Winter	100	+40%	30/15 Summer				45.199	0.344	0.000	0.14	
S8.003	S28	720 Winter	100	+40%	30/30 Summer				45.198	0.433	0.000	0.06	
S7.001	S27	720 Winter	100	+40%	30/15 Summer				45.197	0.457	0.000	0.04	
S6.004	S23	720 Winter	100	+40%	2/15 Summer				45.197	0.517	0.000	0.02	
S10.000	S31	15 Winter	100	+40%					46.078	-0.147	0.000	0.26	
S10.001	S32	15 Winter	100	+40%					45.801	-0.124	0.000	0.41	
S11.000	S33	15 Winter	100	+40%					46.056	-0.094	0.000	0.30	
S11.001	S34	15 Winter	100	+40%					45.754	-0.021	0.000	0.46	
S12.000	S36	15 Winter	100	+40%					46.023	-0.022	0.000	0.83	
S11.002	S35	15 Winter	100	+40%	100/15 Summer				45.707	0.132	0.000	1.00	
S13.000	S36	720 Winter	100	+40%	100/120 Winter				45.529	0.129	0.000	0.00	
S13.001	S37	720 Winter	100	+40%	30/360 Winter				45.529	0.179	0.000	0.01	
S10.002	S33	720 Winter	100	+40%	2/15 Summer				45.529	0.209	0.000	0.00	
S1.008	S10	15 Winter	100	+40%	30/15 Summer				45.049	0.394	0.000	0.77	
S14.000	S38	30 Winter	100	+40%					51.079	-0.021	0.000	1.00	
S14.001	S39	720 Winter	100	+40%	30/30 Winter				51.035	0.935	0.000	0.02	
S14.002	S40	2160 Winter	100	+40%	30/480 Winter				49.737	0.487	0.000	0.01	
S14.003	S41	2160 Winter	100	+40%	30/360 Summer				48.823	0.694	0.000	0.01	
S14.004	S111	2160 Winter	100	+40%	2/2160 Winter				48.629	1.529	0.000	0.01	
S15.000	S1.000	15 Winter	100	+40%	100/15 Summer	100/15 Winter			52.000	0.775	0.453	0.82	
S15.001	S1.001	15 Winter	100	+40%	30/15 Summer	100/15 Winter			51.752	0.977	2.023	1.32	
S16.000	S2.000	15 Winter	100	+40%	30/15 Summer				55.074	0.324	0.000	0.62	
S16.001	S2.001	15 Winter	100	+40%	30/15 Summer				54.920	0.550	0.000	1.71	
S16.002	S2.002	15 Winter	100	+40%	30/15 Summer				54.418	0.258	0.000	1.17	
S16.003	S2.003	15 Winter	100	+40%	30/15 Winter				54.212	0.202	0.000	1.12	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1		7.3	OK	
S1.001	S2		20.4	SURCHARGED	
S1.002	S3		30.7	OK	
S1.003	S5		30.8	OK	
S1.004	S6		37.3	OK	
S2.000	S7		10.6	OK	
S2.001	S8		16.2	OK	
S3.000	S9		46.3	OK	
S2.002	S9		6.3	SURCHARGED	
S2.003	S10		1.4	SURCHARGED	
S4.000	S11		22.6	SURCHARGED	
S1.005	S7		1.2	SURCHARGED	
S1.006	S8		21.1	SURCHARGED	
S5.000	S16		33.3	SURCHARGED	
S1.007	S9		62.6	SURCHARGED	
S6.000	S19		10.4	SURCHARGED	
S6.001	S20		20.9	SURCHARGED	
S6.002	S21		30.6	OK	
S6.003	S22		3.4	OK	
S7.000	S26		1.6	SURCHARGED	
S8.000	S23		12.3	OK	
S8.001	S24		18.8	OK	
S9.000	S27		44.9	OK	
S8.002	S27		6.7	SURCHARGED	
S8.003	S28		2.9	SURCHARGED	
S7.001	S27		2.5	SURCHARGED	
S6.004	S23		1.2	SURCHARGED	
S10.000	S31		10.8	OK	
S10.001	S32		29.4	OK	
S11.000	S33		8.2	OK	
S11.001	S34		18.7	OK	
S12.000	S36		30.1	OK	
S11.002	S35		54.2	SURCHARGED	
S13.000	S36		0.0	SURCHARGED	
S13.001	S37		0.7	SURCHARGED	
S10.002	S33		0.8	SURCHARGED	
S1.008	S10		85.5	SURCHARGED	
S14.000	S38		147.3	OK	
S14.001	S39		4.1	SURCHARGED	
S14.002	S40		3.6	SURCHARGED	
S14.003	S41		3.6	SURCHARGED	
S14.004	S111		4.0	FLOOD RISK	
S15.000	S1.000	3	46.9	FLOOD	1
S15.001	S1.001	3	97.3	FLOOD	1
S16.000	S2.000	5	12.2	SURCHARGED	
S16.001	S2.001	4	27.8	SURCHARGED	
S16.002	S2.002	5	42.8	SURCHARGED	
S16.003	S2.003	6	73.0	SURCHARGED	

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Motion		Page 36
84 North Street Guildford Surrey GU1 4AU	Billingshurst Enterprise Park	
Date 06/08/2025 16:01 File 2025TRADEPARKFULL MODEL01UC.MDX	Designed by TA Checked by SLW	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S16.004	S2.004	6	83.4	SURCHARGED	
S16.005	S2.005		86.0	SURCHARGED	
S16.006	S2.006		89.8	SURCHARGED	
S16.007	S2.007		97.1	OK	
S15.002	S1.002		216.5	SURCHARGED	
S15.003	S1.003	5	278.7	SURCHARGED	
S15.004	S1.004		308.5	SURCHARGED	
S17.000	S3.000		40.7	OK	
S17.001	S3.001		55.3	OK	
S15.005	S1.005		200.0	SURCHARGED	
S15.006	S1.006		168.9	SURCHARGED	
S14.005	S46		181.4	OK	
S14.006	S48		132.5	OK	
S18.000	S90		14.5	FLOOD RISK	
S18.001	S91		21.1	FLOOD RISK	
S18.002	S92		25.3	SURCHARGED	
S18.003	S93		29.4	SURCHARGED	
S19.000	S94		5.4	OK	
S19.001	S95		17.6	OK	
S18.004	S94		8.1	SURCHARGED	
S20.000	S97		0.6	FLOOD RISK	
S20.001	S97		39.0	SURCHARGED	
S21.000	S98		28.1	OK	
S18.005	S95		3.4	SURCHARGED	
S22.000	S100		38.2	OK	
S18.006	S96		2.6	SURCHARGED	
S14.007	S65		89.6	SURCHARGED	
S23.000	S68		0.0	SURCHARGED	
S23.001	S69		3.4	SURCHARGED	
S14.008	S50		59.0	SURCHARGED	
S14.009	S51		25.2	FLOOD RISK	
S24.000	S74	6	16.6	SURCHARGED	
S14.010	S52		22.7	FLOOD RISK	
S25.000	S50		5.0	OK	
S25.001	S51		11.5	SURCHARGED	
S26.000	S4.000		23.6	SURCHARGED	
S26.001	S4.001		1.3	SURCHARGED	
S26.002	S4.002		21.2	OK	
S26.003	S4.003		29.5	OK	
S27.000	S5.000	5	28.0	SURCHARGED	
S26.004	S4.004		74.2	OK	
S28.000	S6.000		7.0	SURCHARGED	
S28.001	S6.001	114	2.8	SURCHARGED	
S26.005	S4.005		86.1	FLOOD RISK	
S26.006	S4.006		67.9	SURCHARGED	
S25.002	S44		75.5	SURCHARGED	
S25.003	S46		84.6	FLOOD	1
S25.004	S75		95.3	FLOOD	1
S29.000	S76		5.7	FLOOD RISK	
S29.001	S77		105.0	FLOOD RISK	
S25.005	S76		200.1	SURCHARGED	
S30.000	S80		53.6	OK	
S25.006	S78		255.9	SURCHARGED	
S31.000	S82		93.4	SURCHARGED	
S25.007	S79		366.1	SURCHARGED	
S25.008	S80		383.8	SURCHARGED	
S1.009	S11		116.5	SURCHARGED	
S1.010	S12		116.2	FLOOD RISK	
S1.011	S89		151.6	FLOOD RISK	
S32.000	S153		1.9	OK	
S33.000	S152		0.9	OK	
S32.001	S154		12.6	SURCHARGED	
S1.012	S13		131.8	SURCHARGED	
S34.000	S156		23.6	FLOOD RISK	
S35.000	S157		34.8	FLOOD RISK	
S34.001	S157		69.0	FLOOD RISK	
S34.002	S158		68.6	OK	
S36.000	S159		2.7	SURCHARGED	
S36.001	S161		4.3	SURCHARGED	
S34.003	S89		20.4	SURCHARGED	
S1.013	S14		43.2	SURCHARGED	
S1.014	S15		42.5	OK	
S1.015	S16		42.8	OK	

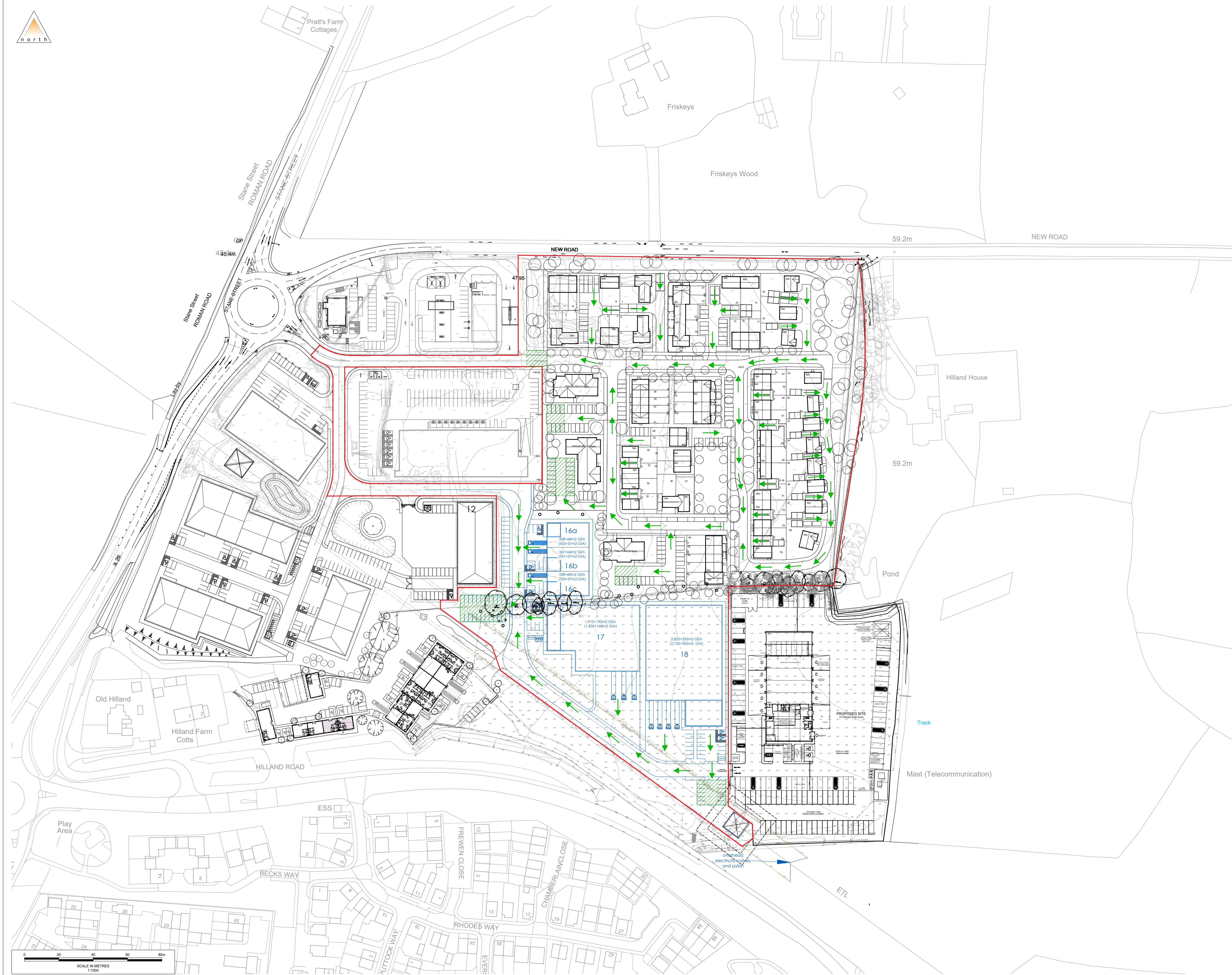
Appendix M

Exceedance Plan



C:\Users\matthew.morton\Documents\1904029-P2R-0505-P01 [Phase 2 Residential - Exceedance Plan].dwg

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Notes

- All levels and dimensions are to be checked on site before any work commences. All dimensions are in metres unless stated otherwise.
- This drawing has been based upon OS Mapping Data and Motion cannot guarantee the accuracy of the data provided.
- Any discrepancies should be reported to the architect and/or engineer immediately, so that clarification can be sought prior to the commencement of works.
- This drawing should be read in conjunction with all other relevant architect and engineering details, drawings and specification.

Legend

- Planning Site Boundary
- Exceedance Flow Direction Arrow
- Exceedance Flow Storage Area

P01	First Issue	MH	VBH	NJ	06/08/2025
Rev.	Description	Drm	Chk	App	Date

Drawing Status:

FOR PLANNING
NOT FOR CONSTRUCTION

Client:

DUNMOORE

Project:

Land at Billingshurst Trade Park
Stane Street, Billingshurst

Title:

Exceedance Flow Routes

Scale: 1:1,000 (@ A1)

Drawing:

1904029-P2R-0505

Revision:

P01

Appendix N

Southern Water Foul Flow

Development Size (Number of Units)	N	102	
Site Area (Ha)	A	5.3	
Development Density per 4ha	D	76.98	
Per Capita Flow -Litres/ head / day	G	125	
Infiltration – Percentage	I	10	
Occupancy – Persons/Dwelling	O	2.4	
Dry Weather Flow multiplier (PF - Peaking Factor) (SD –Storm Duration– minutes)		SD	PF
		30 - 240	2.5
		240 - 480	2
		>480	1.4
Allowance for misconnected surface water			
Population – Number of people	P	244.8	
Misconnected surface water allowance m ² /property	M	2.1	

Assume storm duration of 360 minutes, thus a default value of '2'

Refer to Row 4 and compare to the integers in Columns B20 to B24 and enter the corresponding value from Columns C20 to C24

Design Flow (litres/day) 64,474.20
Design Flow (litres/sec) 0.75

Development Density (Properties / 4Ha)	Misconnected surface water allowance m2/property
<=100	2.10
120	1.60
140	1.10
180	0.60
>=200	0.30