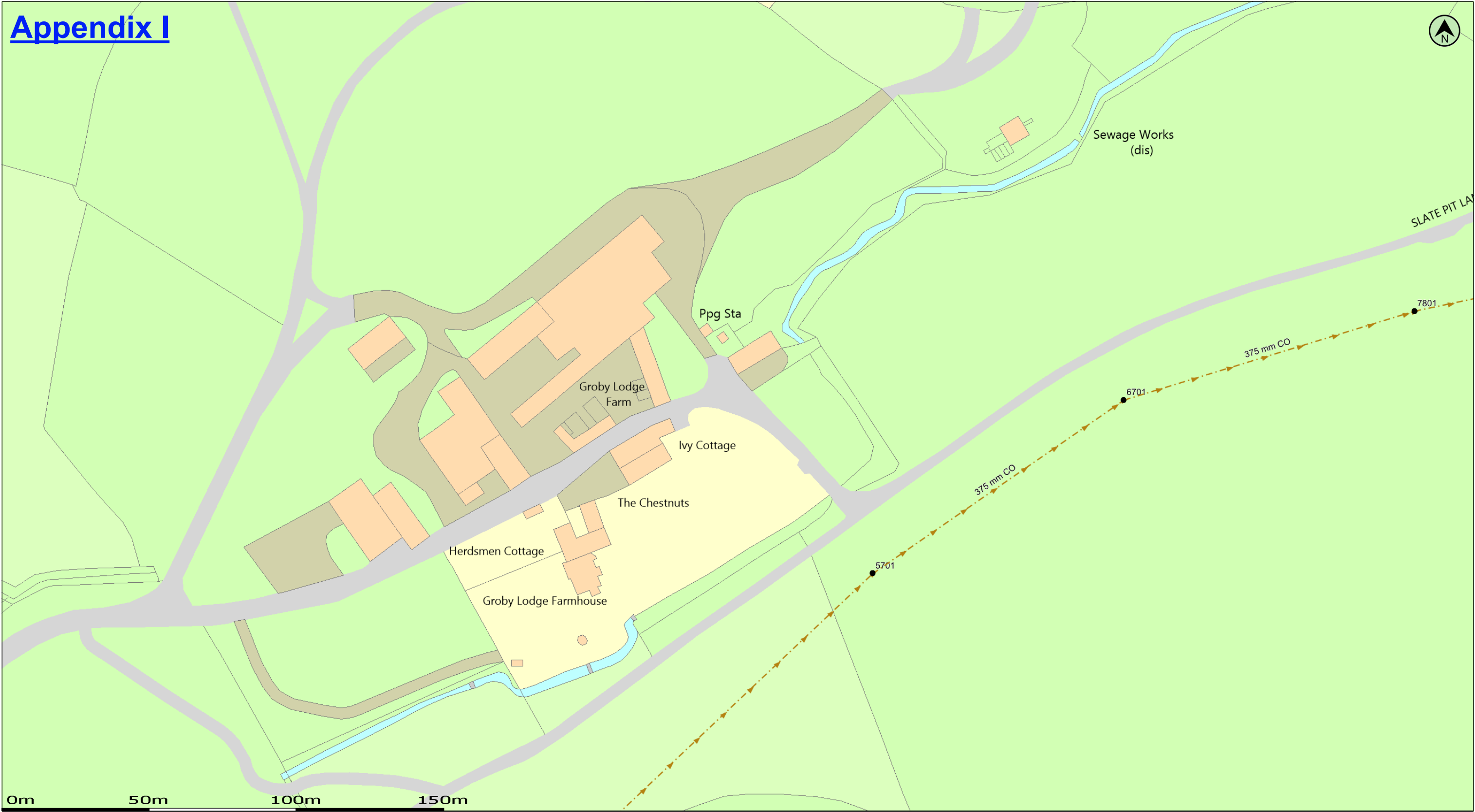


Appendix I



(c) Crown copyright and database rights 2026 Ordnance Survey AC0000808122 Date: 03/03/26 Scale: 1:1250 Map Centre: 450501,307772 Data updated: 14/02/26 Our Ref: 2047243 - 1 Wastewater Plan A3
Powered by digdat

1. Do not scale off this Map. 2. This plan and any information supplied with it is furnished as a general guide, is only valid at the date of issue and no warranty as to its correctness is given or implied. In particular this plan and any information shown on it must not be relied upon in the event of any development or works (including but not limited to excavations) in the vicinity of SEVERN TRENT WATER assets or for the purposes of determining the suitability of a point of connection to the sewerage or distribution systems. 3. On 1 October 2011 most private sewers and private lateral drains in Severn Trent Water's sewerage area, which were connected to a public sewer as at 1 July 2011, transferred to the ownership of Severn Trent Water and became public sewers and public lateral drains. A further transfer takes place on 1 October 2012. Private pumping stations, which form part of these sewers or lateral drains, will transfer to ownership of Severn Trent Water on or before 1 October 2016. Severn Trent Water does not possess complete records of these assets. These assets may not be displayed on the map. 4. Reproduction by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database rights 2026 OS AC0000808122. All rights reserved. 5. Document users other than SEVERN TRENT WATER business users are advised that this document is provided for reference purpose only and is subject to copyright, therefore, no further copies should be made from it.

Public Foul Gravity/Lateral Drain		Highway Drain		Manhole Foul	
Public Combined Gravity/Lateral Drain		Overflow Pipe		Manhole Surface	
Public Surface Water Gravity/Lateral Drain		Disposal Pipe		Abandoned Pipe	
Pressure Foul		Culverted Water Course		Chamber	
Pressure Combined		Pumping Station		Section 104 sewers are shown in green	
Pressure Surface Water		Fitting		Private sewers are shown in magenta	

info@emdrainage.co.uk

Groby Lodge Farm



GENERAL CONDITIONS AND PRECAUTIONS TO BE TAKEN WHEN CARRYING OUT WORK ADJACENT TO SEVERN TRENT WATER'S APPARATUS

Please ensure that a copy of these conditions is passed to your representative and/or your contractor on site. If any damage is caused to Severn Trent Water Limited (STW) apparatus (defined below), the person, contractor or subcontractor responsible must inform STW immediately on:

0800 783 4444 (24 hours)

- a) These general conditions and precautions apply to the public sewerage, water distribution and cables in ducts including (but not limited to) sewers which are the subject of an Agreement under Section 104 of the Water Industry Act 1991(a legal agreement between a developer and STW, where a developer agrees to build sewers to an agreed standard, which STW will then adopt); mains installed in accordance with an agreement for the self-construction of water mains entered into with STW and the assets described at condition b) of these general conditions and precautions. Such apparatus is referred to as “STW Apparatus” in these general conditions and precautions.
- b) Please be aware that due to The Private Sewers Transfer Regulations June 2011, the number of public sewers has increased, but many of these are not shown on the public sewer record. However, some idea of their positions may be obtained from the position of inspection covers and their existence must be anticipated.
- c) On request, STW will issue a copy of the plan showing the approximate locations of STW Apparatus although in certain instances a charge will be made. The position of private drains, private sewers and water service pipes to properties are not normally shown but their presence must be anticipated. This plan and the information supplied with it is furnished as a general guide only and STW does not guarantee its accuracy.
- d) STW does not update these plans on a regular basis. Therefore the position and depth of STW Apparatus may change and this plan is issued subject to any such change. Before any works are carried out, you should confirm whether any changes to the plan have been made since it was issued.
- e) The plan must not be relied upon in the event of excavations or other works in the vicinity of STW Apparatus. It is your responsibility to ascertain the precise location of any STW Apparatus prior to undertaking any development or other works (including but not limited to excavations).
- f) No person or company shall be relieved from liability for loss and/or damage caused to STW Apparatus by reason of the actual position and/or depths of STW Apparatus being different from those shown on the plan.

In order to achieve safe working conditions adjacent to any STW Apparatus the following should be observed:

1. All STW Apparatus should be located by hand digging prior to the use of mechanical excavators.
2. All information set out in any plans received from us, or given by our staff at the site of the works, about the position and depth of the mains, is approximate. Every possible precaution should be taken to avoid damage to STW Apparatus. You or your contractor must ensure the safety of STW Apparatus and will be responsible for the cost of repairing any loss and/or damage caused (including without limitation replacement parts).
3. Water mains are normally laid at a depth of 900mm. No records are kept of customer service pipes which are normally laid at a depth of 750mm; but some idea of their positions may be obtained from the position of stop tap covers and their existence must be anticipated.
4. During construction work, where heavy plant will cross the line of STW Apparatus, specific crossing points must be agreed with STW and suitably reinforced where required. These crossing points should be clearly marked and crossing of the line of STW Apparatus at other locations must be prevented.
5. Where it is proposed to carry out piling or boring within 20 metres of any STW Apparatus, STW should be consulted to enable any affected STW Apparatus to be surveyed prior to the works commencing.
6. Where excavation of trenches adjacent to any STW Apparatus affects its support, the STW Apparatus must be supported to the satisfaction of STW. Water mains and some sewers are pressurised and can fail if excavation removes support to thrust blocks to bends and other fittings.
7. Where a trench is excavated crossing or parallel to the line of any STW Apparatus, the backfill should be adequately compacted to prevent any settlement which could subsequently cause damage to the STW Apparatus. In special cases, it may be necessary to provide permanent support to STW Apparatus which has been exposed over a length of the excavation before backfilling and reinstatement is carried out. There should be no concrete backfill in contact with the STW Apparatus.
8. No other apparatus should be laid along the line of STW Apparatus irrespective of clearance. Above ground apparatus must not be located within a minimum of 3 metres either side of the centre line of STW Apparatus for smaller sized pipes and 6 metres either side for larger sized pipes without prior approval. No manhole or chamber shall be built over or around any STW Apparatus.
9. A minimum radial clearance of 300 millimetres should be allowed between any plant or equipment being installed and existing STW Apparatus. We reserve the right to increase this distance where strategic assets are affected.
10. Where any STW Apparatus coated with a special wrapping is damaged, even to a minor extent, STW must be notified and the trench left open until the damage has been inspected and the necessary repairs have been carried out. In the case of any material damage to any STW Apparatus causing leakage, weakening of the mechanical strength of the pipe or corrosion-protection damage, the necessary remedial work will be recharged to you.
11. It may be necessary to adjust the finished level of any surface boxes which may fall within your proposed construction. Please ensure that these are not damaged, buried or otherwise rendered inaccessible as a result of the works and that all stop taps, valves, hydrants, etc. remain accessible and operable. Minor reduction in existing levels may result in conflict with STW Apparatus such as valve spindles or tops of hydrants housed under the surface boxes. Checks should be made during site investigations to ascertain the level of such STW Apparatus in order to determine any necessary alterations in advance of the works.
12. With regard to any proposed resurfacing works, you are required to contact STW on the number given above to arrange a site inspection to establish the condition of any STW Apparatus in the nature of surface boxes or manhole covers and frames affected by the works. STW will then advise on any measures to be taken, in the event of this a proportionate charge will be made.
13. You are advised that STW will not agree to either the erection of posts, directly over or within 1.0 metre of valves and hydrants,

14. No explosives are to be used in the vicinity of any STW Apparatus without prior consultation with STW.

TREE PLANTING RESTRICTIONS

There are many problems with the location of trees adjacent to sewers, water mains and other STW Apparatus and these can lead to the loss of trees and hence amenity to the area which many people may have become used to. It is best if the problem is not created in the first place. Set out below are the recommendations for tree planting in close proximity to public sewers, water mains and other STW Apparatus.

15. Please ensure that, in relation to STW Apparatus, the mature root systems and canopies of any tree planted do not and will not encroach within the recommended distances specified in the notes below.

16. Both Poplar and Willow trees have extensive root systems and should not be planted within 12 metres of a sewer, water main or other STW Apparatus.

17. The following trees and those of similar size, be they deciduous or evergreen, should not be planted within 6 metres of a sewer, water main or other STW Apparatus. E.g. Ash, Beech, Birch, most Conifers, Elm, Horse Chestnut, Lime, Oak, Sycamore, Apple and Pear. Asset Protection Statements Updated May 2014

18. STW personnel require a clear path to conduct surveys etc. No shrubs or bushes should be planted within 2 metre of the centre line of a sewer, water main or other STW Apparatus.

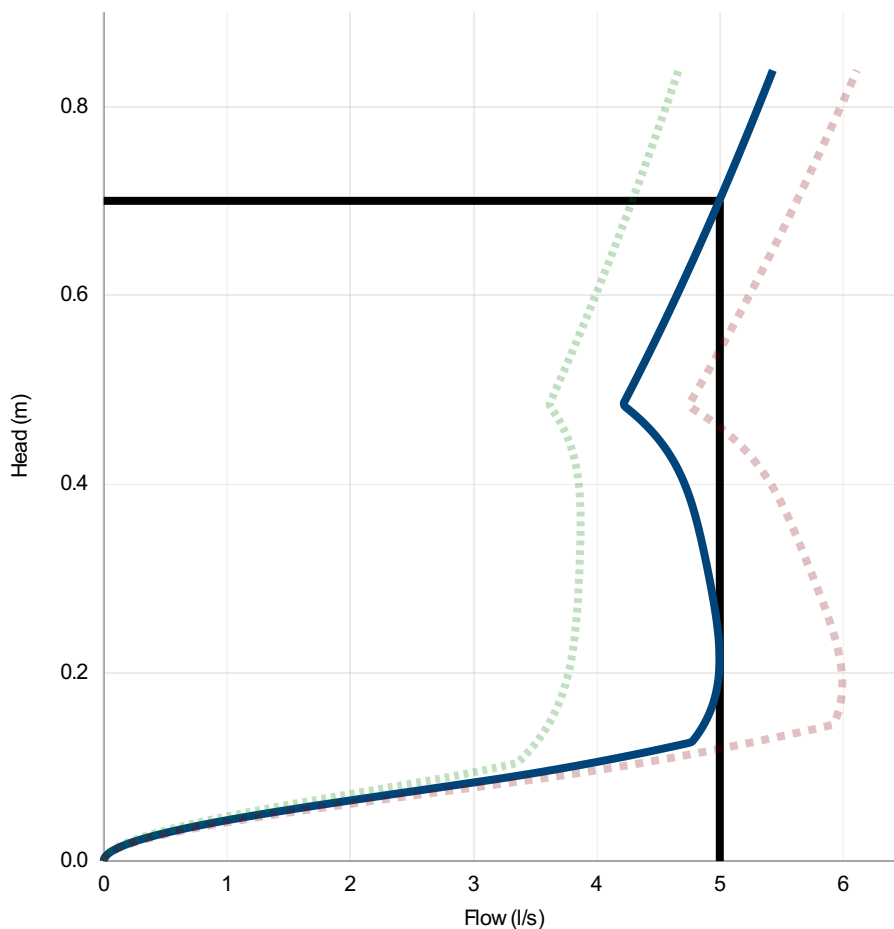
19. In certain circumstances, both STW and landowners may wish to plant shrubs/bushes in close proximity to a sewer, water main or other STW Apparatus for screening purposes. The following are shallow rooting and are suitable for this purpose: Blackthorn, Broom, Cotoneaster, Elder, Hazel, Laurel, Privet, Quickthorn, Snowberry, and most ornamental flowering shrubs.

Technical Specification

	Original Setting		Minimum Setting		Maximum Setting	
Control Point	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)	Head (m)	Flow (l/s)
Primary Design	0.700	5.000	0.700	4.289	0.700	5.625
Flush-Flo™	0.215	4.998	0.358	3.870	0.188	5.994
Kick-Flo®	0.483	4.210	0.483	3.610	0.482	4.740
Mean Flow		4.265		3.475		4.903



hydro-int.com/patents



Head (m)	Flow (l/s)
0.000	0.000
0.024	0.333
0.048	1.216
0.072	2.425
0.097	3.641
0.121	4.589
0.145	4.871
0.169	4.950
0.193	4.988
0.217	4.998
0.241	4.986
0.266	4.962
0.290	4.930
0.314	4.894
0.338	4.854
0.362	4.809
0.386	4.754
0.410	4.679
0.434	4.575
0.459	4.427
0.483	4.225
0.507	4.304
0.531	4.397
0.555	4.488
0.579	4.577
0.603	4.664
0.628	4.749
0.652	4.833
0.676	4.915
0.700	4.995

DESIGN ADVICE



The head/flow characteristics of this SHE-0110-5000-0700-5000 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.

The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

Hydro
International
A CRH COMPANY

DATE	25/04/2026 05:05
Site	Grobby Lodge Farm
DESIGNER	Rasik Limbachia
Ref	RSC/26109/Hydrobrake

SHE-0110-5000-0700-5000
Hydro-Brake® Optimum

Technical Specification

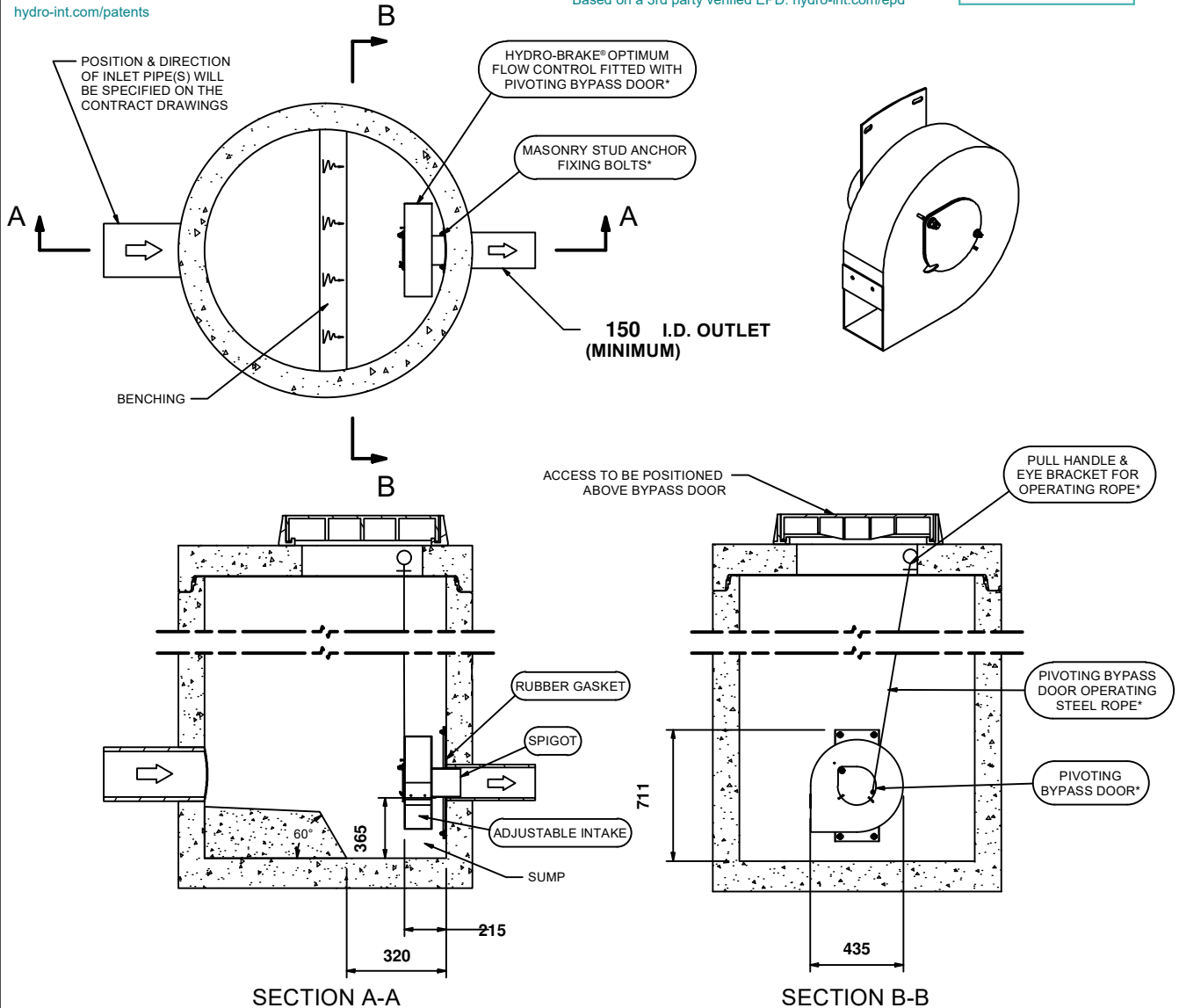
Control Point	Head (m)	Flow (l/s)
Primary Design	0.700	5.000
Flush-Flo™	0.215	4.998
Kick-Flo®	0.483	4.210
Mean Flow		4.265

hydro-int.com/patents

This Hydro-Brake® Optimum includes:

- All in 3 mm Grade 304L stainless steel
- Integral pivoting by-pass door allowing clear line of sight through to outlet, c/w operating rope
- Media blasted for corrosion resistance
- Variable flow rate post installation via adjustable inlet (if necessary)
- Indicative Weight: 20 kg
- Product Carbon Footprint: 71.28 kgCO2e

Based on a 3rd party verified EPD: hydro-int.com/epd



IMPORTANT:

○ LIMIT OF HYDRO INTERNATIONAL SUPPLY
THE DEVICE WILL BE HANDED TO SUIT SITE CONDITIONS
FOR SITE SPECIFIC DETAILS AND MINIMUM CHAMBER SIZE REFER TO HYDRO INTERNATIONAL
ALL CIVIL AND INSTALLATION WORK BY OTHERS
* WHERE SUPPLIED

HYDRO-BRAKE® IS A REGISTERED TRADEMARK FOR FLOW CONTROLS DESIGNED AND MANUFACTURED EXCLUSIVELY BY
HYDRO INTERNATIONAL

THIS DESIGN LAYOUT IS FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.

DESIGN ADVICE



The head/flow characteristics of this SHE-0110-5000-0700-5000 Hydro-Brake® Optimum Flow Control are unique. Dynamic hydraulic modelling evaluates the full head/flow characteristic curve.
The use of any other flow control will invalidate any design based on this data and could constitute a flood risk.

**Hydro
International**
A CRH COMPANY

DATE	25/04/2026 05:05
SITE	Groby Lodge Farm
DESIGNER	Rasik Limbachia
REF	RSC/26109/Hydrobrake

SHE-0110-5000-0700-5000
Hydro-Brake® Optimum

© 2026 Hydro International Ltd • Unit 2, Rivermead Court • Kenn Business Park • Windmill Road • Kenn • Clevedon • BS21 6FT • Tel: 01275 878371 • Website: hydro-int.com • Email: stormwater@hydro-int.com

ras@emdrainage.co.uk

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.

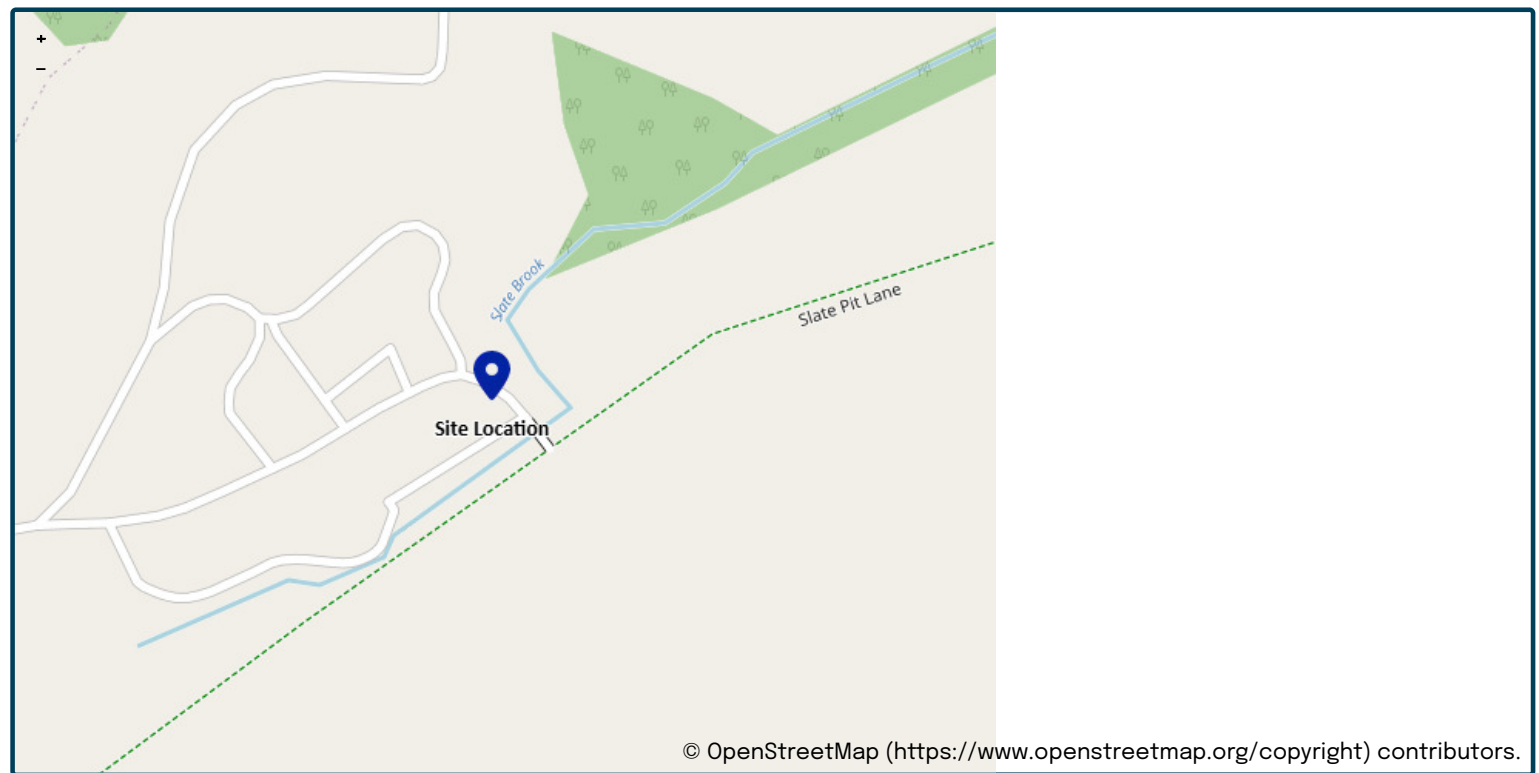
⚠ Problems have been identified with the input values, please review them carefully.

Project details

Date	04/04/2026
Calculated by	Ras Limbachia
Reference	RSC/26109
Model version	2.2.3

Location

Site name	Groby Lodge Farm
Site location	Groby Lodge Farm, Slate Pit Lane, Groby



Site easting (British National Grid)	450510
Site northing (British National Grid)	307754

Site details

Total site area (ha)	1.69	ha
----------------------	-----------------------------------	----

Greenfield runoff

Method

Method	IH124
--------	-------

IH124

SAAR (mm)	My value 673 mm Map value 673
How should SPR be derived?	Please select a value.
SPR	
QBar (IH124) (l/s)	l/s

Growth curve factors

Hydrological region	My value 4 Map value 4
1 year growth factor	0.83
2 year growth factor	0.89
10 year growth factor	1.49
30 year growth factor	2
100 year growth factor	2.57
200 year growth factor	3.04

Results

Method

IH124

⚠ There are problems with this field.

Flow rate 1 year (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

⚠ There are problems with this field.

Flow rate 2 year (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

⚠ There are problems with this field.

Flow rate 10 years (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

⚠ There are problems with this field.

Flow rate 30 years (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

⚠ There are problems with this field.

Flow rate 100 years (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

⚠ There are problems with this field.

Flow rate 200 years (l/s)

–

l/s

Unable to estimate runoff rate with current inputs.

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

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at [uksuds.com](https://www.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.

Calculation 2

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S1	0.083	1200	Type E	109.660	109.185	0.250	10763.709	5202.996
S2	0.029	180	Type E	110.160	108.608	1.327	10721.721	5172.438
S3	0.053	1200	Type A	111.680	108.482	3.048	10688.881	5167.957
S4	0.113	1200	Type A	111.680	108.328	3.202	10698.879	5156.268
S5	0.012	1200	Type B	110.000	108.795	1.055	10782.583	5177.549
S6	0.000	1200	Type B	109.750	108.494	1.106	10758.522	5159.581
S7	0.017	1200	Type B	110.900	107.998	2.752	10718.727	5129.861
S8	0.113	1200	Type B	109.500	108.256	1.019	10761.278	5142.199
S9	0.004	1200	Type B	109.530	107.841	1.464	10728.109	5117.269
S10	0.137	1200	Type A	111.700	108.936	2.539	10616.661	5064.899
S11	0.054	1200	Type A	111.350	108.637	2.563	10655.969	5095.289
S12	0.030	1200	Type B	110.900	108.414	2.336	10667.640	5076.332
S13	0.048	1200	Type B	110.320	107.978	2.117	10709.089	5089.954
S14	0.023	1200	Type B	109.330	107.647	1.383	10739.921	5101.909
S15	0.000	1200	Type E	109.210	107.504	1.331	10752.716	5108.227
S16	0.063	1200	Type E	109.210	107.444	1.391	10749.729	5113.485
S17	0.000	1200	Type E	108.590	107.135	1.080	10777.154	5127.696
S18	0.074	180	Type E	108.840	107.137	1.478	10806.661	5149.962
S19	0.014	1200	Type E	108.280	106.998	1.058	10793.485	5142.116
S20	0.000	1200	Type E	108.300	106.944	1.131	10793.912	5136.802
S21	0.000	1200	Type E	108.300	106.898	1.027	10795.649	5132.502
S22	0.000	1200	Type E	107.320	106.602	0.343	10824.422	5139.284
Outfall1	0.000	---	Type E	107.830	106.443	1.012	10841.421	5143.331

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S1	109.185	S2	108.608	Circ	225	51.931	90	0.600	0.250	1.327
1.001	S2	108.608	S4	108.328	Circ	225	27.986	100	0.600	1.327	3.127
2.000	S3	108.482	S4	108.328	Circ	150	15.381	100	0.600	3.048	3.202
1.002	S4	108.328	S7	107.998	Circ	225	33.035	100	0.600	3.127	2.677
3.000	S5	108.795	S6	108.495	Circ	150	30.030	100	0.600	1.055	1.105
3.001	S6	108.494	S7	107.998	Circ	150	49.668	100	0.600	1.106	2.752
1.003	S7	107.998	S9	107.841	Circ	300	15.703	100	0.600	2.602	1.389
4.000	S8	108.256	S9	107.841	Circ	225	41.493	100	0.600	1.019	1.464
1.004	S9	107.841	S14	107.647	Circ	375	19.376	100	0.600	1.314	1.308
5.000	S10	108.936	S12	108.414	Circ	225	52.246	100	0.600	2.539	2.261
6.000	S11	108.637	S12	108.414	Circ	150	22.262	100	0.600	2.563	2.336
5.001	S12	108.414	S13	107.978	Circ	225	43.630	100	0.600	2.261	2.117
5.002	S13	107.978	S14	107.647	Circ	300	33.069	100	0.600	2.042	1.383
1.005	S14	107.647	S15	107.504	Circ	375	14.270	100	0.600	1.308	1.331
1.006	S15	107.504	S16	107.444	Circ	375	6.047	100	0.600	1.331	1.391
1.007	S16	107.444	S17	107.135	Circ	375	30.888	100	0.600	1.391	1.080
1.008	S17	107.135	S20	106.944	Circ	375	19.072	100	0.600	1.080	0.981
7.000	S18	107.137	S19	106.998	Circ	225	15.335	110	0.600	1.478	1.058
7.001	S19	106.998	S20	106.944	Circ	225	5.332	100	0.600	1.057	1.131
1.009	S20	106.944	S21	106.898	Circ	375	4.637	100	0.600	0.981	1.027
1.010	S21	106.898	S22	106.602	Circ	375	29.562	100	0.600	1.027	0.343
1.011	S22	106.602	Outfall1	106.443	Circ	375	17.473	110	0.600	0.343	1.012

Outfall Details

Outfall Manhole Outfall1 : Free Discharge

Flow Control Details

Controls within Manhole Outfall1

Flap Valve Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.375	0.600

Simulation Settings

FSR: M5-60=20.00, R=0.40, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (1, +0%), (2, +0%), (5, +0%), (10, +0%), (30, +0%), (100, +0%), (100, +40%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	36.405	0.00	0.20	10Yr 360Min Summer	6.339	0.00	0.00
1Yr 15Min Summer	36.405	0.00	0.21	10Yr 360Min Winter	6.339	0.00	0.01
1Yr 30Min Winter	23.138	0.00	0.11	10Yr 480Min Summer	5.090	0.00	0.00
1Yr 30Min Summer	23.138	0.00	0.14	10Yr 480Min Winter	5.090	0.00	0.00
1Yr 60Min Summer	14.222	0.00	0.07	10Yr 600Min Summer	4.291	0.00	0.00
1Yr 60Min Winter	14.222	0.00	0.05	10Yr 600Min Winter	4.291	0.00	0.00
1Yr 120Min Summer	8.605	0.00	0.03	10Yr 720Min Summer	3.732	0.00	0.00
1Yr 120Min Winter	8.605	0.00	0.00	10Yr 720Min Winter	3.732	0.00	0.00
1Yr 180Min Winter	6.400	0.00	0.02	10Yr 960Min Summer	2.993	0.00	0.00
1Yr 180Min Summer	6.400	0.00	0.00	10Yr 960Min Winter	2.993	0.00	0.00
1Yr 240Min Summer	5.190	0.00	0.00	10Yr 1440Min Summer	2.191	0.00	0.00
1Yr 240Min Winter	5.190	0.00	0.00	10Yr 1440Min Winter	2.191	0.00	0.00
1Yr 360Min Winter	3.857	0.00	0.00	30Yr 15Min Summer	76.035	0.00	-0.05
1Yr 360Min Summer	3.857	0.00	0.00	30Yr 15Min Winter	76.035	0.00	-0.11
1Yr 480Min Summer	3.121	0.00	0.00	30Yr 30Min Summer	49.499	0.00	-0.04
1Yr 480Min Winter	3.121	0.00	0.00	30Yr 30Min Winter	49.499	0.00	-0.10
1Yr 600Min Summer	2.648	0.00	0.00	30Yr 60Min Summer	30.811	0.00	-0.04
1Yr 600Min Winter	2.648	0.00	0.00	30Yr 60Min Winter	30.811	0.00	0.04
1Yr 720Min Winter	2.315	0.00	0.00	30Yr 120Min Summer	18.615	0.00	0.02
1Yr 720Min Summer	2.315	0.00	0.00	30Yr 120Min Winter	18.615	0.00	0.02
1Yr 960Min Summer	1.872	0.00	0.00	30Yr 180Min Summer	13.715	0.00	0.02
1Yr 960Min Winter	1.872	0.00	0.00	30Yr 180Min Winter	13.715	0.00	0.00
1Yr 1440Min Winter	1.389	0.00	0.00	30Yr 240Min Summer	10.995	0.00	0.01
1Yr 1440Min Summer	1.389	0.00	0.00	30Yr 240Min Winter	10.995	0.00	0.01
2Yr 15Min Summer	42.301	0.00	0.22	30Yr 360Min Summer	8.034	0.00	0.01
2Yr 15Min Winter	42.301	0.00	0.21	30Yr 360Min Winter	8.034	0.00	0.01
2Yr 30Min Summer	27.017	0.00	0.14	30Yr 480Min Summer	6.428	0.00	0.00
2Yr 30Min Winter	27.017	0.00	0.09	30Yr 480Min Winter	6.428	0.00	0.01
2Yr 60Min Summer	16.649	0.00	0.07	30Yr 600Min Summer	5.404	0.00	0.00
2Yr 60Min Winter	16.649	0.00	0.04	30Yr 600Min Winter	5.404	0.00	0.00
2Yr 120Min Summer	10.070	0.00	0.03	30Yr 720Min Summer	4.687	0.00	0.00
2Yr 120Min Winter	10.070	0.00	0.00	30Yr 720Min Winter	4.687	0.00	0.00
2Yr 180Min Summer	7.475	0.00	0.00	30Yr 960Min Summer	3.743	0.00	0.00
2Yr 180Min Winter	7.475	0.00	0.02	30Yr 960Min Winter	3.743	0.00	0.00
2Yr 240Min Summer	6.048	0.00	0.00	30Yr 1440Min Summer	2.723	0.00	0.00
2Yr 240Min Winter	6.048	0.00	0.02	30Yr 1440Min Winter	2.723	0.00	0.00
2Yr 360Min Summer	4.479	0.00	0.00	100Yr 15Min Summer	98.681	0.00	-0.56
2Yr 360Min Winter	4.479	0.00	0.00	100Yr 15Min Winter	98.681	0.00	-0.76
2Yr 480Min Summer	3.616	0.00	0.00	100Yr 30Min Summer	64.789	0.00	-0.36
2Yr 480Min Winter	3.616	0.00	0.00	100Yr 30Min Winter	64.789	0.00	-0.25
2Yr 600Min Winter	3.062	0.00	0.00	100Yr 60Min Summer	40.510	0.00	-0.04
2Yr 600Min Summer	3.062	0.00	0.00	100Yr 60Min Winter	40.510	0.00	-0.07
2Yr 720Min Summer	2.673	0.00	0.00	100Yr 120Min Summer	24.461	0.00	0.03
2Yr 720Min Winter	2.673	0.00	0.00	100Yr 120Min Winter	24.461	0.00	0.01
2Yr 960Min Summer	2.156	0.00	0.00	100Yr 180Min Summer	17.964	0.00	0.01
2Yr 960Min Winter	2.156	0.00	0.00	100Yr 180Min Winter	17.964	0.00	0.01
2Yr 1440Min Summer	1.593	0.00	0.00	100Yr 240Min Summer	14.342	0.00	0.01
2Yr 1440Min Winter	1.593	0.00	0.00	100Yr 240Min Winter	14.342	0.00	0.00
5Yr 15Min Summer	51.584	0.00	0.00	100Yr 360Min Summer	10.418	0.00	0.01
5Yr 15Min Winter	51.584	0.00	-0.11	100Yr 360Min Winter	10.418	0.00	0.01
5Yr 30Min Summer	33.160	0.00	0.13	100Yr 480Min Summer	8.302	0.00	0.01
5Yr 30Min Winter	33.160	0.00	0.10	100Yr 480Min Winter	8.302	0.00	0.01
5Yr 60Min Summer	20.504	0.00	0.06	100Yr 600Min Summer	6.956	0.00	0.00
5Yr 60Min Winter	20.504	0.00	0.04	100Yr 600Min Winter	6.956	0.00	0.01

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
5Yr 120Min Winter	12.397	0.00	0.00	100Yr 720Min Summer	6.017	0.00	0.00
5Yr 120Min Summer	12.397	0.00	0.03	100Yr 720Min Winter	6.017	0.00	0.01
5Yr 180Min Summer	9.179	0.00	0.00	100Yr 960Min Summer	4.784	0.00	0.01
5Yr 180Min Winter	9.179	0.00	0.00	100Yr 960Min Winter	4.784	0.00	0.00
5Yr 240Min Summer	7.403	0.00	0.00	100Yr 1440Min Summer	3.456	0.00	0.00
5Yr 240Min Winter	7.403	0.00	0.02	100Yr 1440Min Winter	3.456	0.00	0.00
5Yr 360Min Summer	5.458	0.00	0.00	100Yr+40% 15Min Summer	138.153	0.00	-0.74
5Yr 360Min Winter	5.458	0.00	0.00	100Yr+40% 15Min Winter	138.153	0.00	-0.65
5Yr 480Min Summer	4.393	0.00	0.00	100Yr+40% 30Min Summer	90.705	0.00	-0.33
5Yr 480Min Winter	4.393	0.00	0.00	100Yr+40% 30Min Winter	90.705	0.00	-0.26
5Yr 600Min Summer	3.711	0.00	0.00	100Yr+40% 60Min Summer	56.713	0.00	-0.20
5Yr 600Min Winter	3.711	0.00	0.00	100Yr+40% 60Min Winter	56.713	0.00	-0.14
5Yr 720Min Summer	3.232	0.00	0.00	100Yr+40% 120Min Summer	34.246	0.00	-0.03
5Yr 720Min Winter	3.232	0.00	0.00	100Yr+40% 120Min Winter	34.246	0.00	0.00
5Yr 960Min Summer	2.599	0.00	0.00	100Yr+40% 180Min Summer	25.149	0.00	0.00
5Yr 960Min Winter	2.599	0.00	0.00	100Yr+40% 180Min Winter	25.149	0.00	0.01
5Yr 1440Min Summer	1.910	0.00	0.00	100Yr+40% 240Min Summer	20.078	0.00	0.01
5Yr 1440Min Winter	1.910	0.00	0.00	100Yr+40% 240Min Winter	20.078	0.00	0.00
10Yr 15Min Summer	59.937	0.00	-0.34	100Yr+40% 360Min Summer	14.585	0.00	0.01
10Yr 15Min Winter	59.937	0.00	-0.26	100Yr+40% 360Min Winter	14.585	0.00	0.01
10Yr 30Min Summer	38.718	0.00	-0.08	100Yr+40% 480Min Summer	11.622	0.00	0.01
10Yr 30Min Winter	38.718	0.00	0.00	100Yr+40% 480Min Winter	11.622	0.00	0.00
10Yr 60Min Summer	24.003	0.00	0.06	100Yr+40% 600Min Summer	9.738	0.00	0.00
10Yr 60Min Winter	24.003	0.00	0.04	100Yr+40% 600Min Winter	9.738	0.00	0.00
10Yr 120Min Summer	14.508	0.00	0.03	100Yr+40% 720Min Summer	8.424	0.00	0.01
10Yr 120Min Winter	14.508	0.00	0.02	100Yr+40% 720Min Winter	8.424	0.00	0.01
10Yr 180Min Summer	10.722	0.00	0.02	100Yr+40% 960Min Summer	6.697	0.00	0.00
10Yr 180Min Winter	10.722	0.00	0.00	100Yr+40% 960Min Winter	6.697	0.00	0.01
10Yr 240Min Summer	8.627	0.00	0.01	100Yr+40% 1440Min Winter	4.839	0.00	0.00
10Yr 240Min Winter	8.627	0.00	0.01	100Yr+40% 1440Min Summer	4.839	0.00	0.01

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	109.261	0.076	13.966		OK
S2	15 min Winter	9	108.699	0.090	17.960		OK
S3	15 min Winter	8	108.555	0.073	8.936		OK
S4	15 min Winter	9	108.493	0.164	44.677		OK
S5	15 min Winter	9	108.828	0.033	1.911		OK
S6	15 min Winter	9	108.527	0.033	1.955		OK
S7	15 min Winter	9	108.146	0.148	49.966		OK
S8	15 min Winter	8	108.347	0.092	18.997		OK
S9	15 min Winter	9	108.004	0.164	68.885		OK
S10	15 min Winter	8	109.038	0.102	22.988		OK
S11	15 min Winter	8	108.710	0.073	9.021		OK
S12	15 min Winter	9	108.552	0.138	35.313		OK
S13	15 min Winter	9	108.105	0.127	43.340		OK
S14	15 min Winter	9	107.871	0.224	116.067		OK
S15	15 min Winter	9	107.737	0.233	115.575		OK
S16	15 min Winter	9	107.666	0.222	125.337		OK
S17	15 min Winter	9	107.370	0.235	124.838		OK
S18	15 min Winter	8	107.212	0.075	12.485		OK
S19	15 min Winter	10	107.210	0.213	11.971		OK
S20	15 min Winter	10	107.207	0.262	136.436		OK
S21	15 min Winter	10	107.142	0.244	137.229		OK
S22	15 min Winter	10	106.924	0.322	138.148		OK
Outfall1	15 min Winter	10	106.847	0.404	136.098		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.083	1.032	13.670	0.250	OK
1.001	15 min Winter	9	S2	S4	0.127	0.787	18.225	0.351	OK
2.000	15 min Winter	8	S3	S4	0.111	0.629	8.844	0.499	OK
1.002	15 min Winter	9	S4	S7	0.161	1.487	45.349	0.873	OK
3.000	15 min Winter	9	S5	S6	0.033	0.673	1.955	0.110	OK
3.001	15 min Winter	9	S6	S7	0.090	0.176	1.906	0.107	OK
1.003	15 min Winter	9	S7	S9	0.156	1.350	50.102	0.451	OK
4.000	15 min Winter	9	S8	S9	0.127	0.843	18.696	0.360	OK
1.004	15 min Winter	9	S9	S14	0.194	1.200	69.071	0.345	OK
5.000	15 min Winter	9	S10	S12	0.119	1.078	22.554	0.434	OK
6.000	15 min Winter	9	S11	S12	0.105	0.689	8.902	0.502	OK
5.001	15 min Winter	9	S12	S13	0.136	1.422	35.707	0.688	OK
5.002	15 min Winter	9	S13	S14	0.175	1.011	43.343	0.390	OK
1.005	15 min Winter	9	S14	S15	0.228	1.645	115.575	0.578	OK
1.006	15 min Winter	9	S15	S16	0.227	1.656	115.379	0.577	OK
1.007	15 min Winter	9	S16	S17	0.229	1.771	124.838	0.624	OK
1.008	15 min Winter	10	S17	S20	0.248	1.602	124.061	0.620	OK
7.000	15 min Winter	10	S18	S19	0.143	0.830	12.421	0.251	OK
7.001	15 min Winter	10	S19	S20	0.219	0.663	13.359	0.257	OK
1.009	15 min Winter	10	S20	S21	0.253	1.728	137.229	0.686	OK
1.010	15 min Winter	10	S21	S22	0.283	1.637	138.148	0.691	OK
1.011	15 min Winter	10	S22	Outfall1	0.348	1.273	136.098	0.714	OK

Return Period (yrs) + Climate Change (%):

2yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	109.267	0.082	16.229		OK
S2	15 min Winter	9	108.706	0.098	20.861		OK
S3	15 min Winter	9	108.564	0.082	9.762		OK
S4	15 min Winter	9	108.517	0.189	51.954		OK
S5	15 min Winter	9	108.831	0.036	2.220		OK
S6	15 min Winter	9	108.530	0.035	2.274		OK
S7	15 min Winter	9	108.161	0.163	57.849		OK
S8	15 min Winter	8	108.355	0.100	22.073		OK
S9	15 min Winter	9	108.019	0.178	79.733		OK
S10	15 min Winter	8	109.048	0.111	26.712		OK
S11	15 min Winter	8	108.717	0.080	10.482		OK
S12	15 min Winter	9	108.567	0.153	41.011		OK
S13	15 min Winter	9	108.116	0.138	50.408		OK
S14	15 min Winter	9	107.897	0.250	134.583		OK
S15	15 min Winter	9	107.764	0.260	134.157		OK
S16	15 min Winter	9	107.692	0.248	145.573		OK
S17	15 min Winter	9	107.400	0.265	145.142		OK
S18	15 min Winter	10	107.265	0.128	11.380		OK
S19	15 min Winter	10	107.260	0.263	13.554		OK
S20	15 min Winter	10	107.255	0.311	156.483		OK
S21	15 min Winter	10	107.195	0.297	156.065		OK
S22	15 min Winter	10	107.033	0.431	155.196		OK
Outfall1	15 min Winter	10	106.909	0.465	154.081		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.090	1.075	15.901	0.290	OK
1.001	15 min Winter	9	S2	S4	0.144	0.800	21.176	0.408	OK
2.000	15 min Winter	9	S3	S4	0.116	0.691	10.064	0.568	OK
1.002	15 min Winter	9	S4	S7	0.184	1.513	52.467	1.010	OK
3.000	15 min Winter	9	S5	S6	0.036	0.703	2.274	0.128	OK
3.001	15 min Winter	9	S6	S7	0.093	0.195	2.233	0.126	OK
1.003	15 min Winter	9	S7	S9	0.171	1.396	57.920	0.522	OK
4.000	15 min Winter	9	S8	S9	0.138	0.870	21.738	0.419	OK
1.004	15 min Winter	9	S9	S14	0.214	1.225	79.905	0.400	OK
5.000	15 min Winter	9	S10	S12	0.131	1.114	26.230	0.505	OK
6.000	15 min Winter	8	S11	S12	0.114	0.720	10.351	0.584	OK
5.001	15 min Winter	9	S12	S13	0.151	1.467	41.539	0.800	OK
5.002	15 min Winter	9	S13	S14	0.194	1.042	50.433	0.454	OK
1.005	15 min Winter	9	S14	S15	0.255	1.681	134.157	0.671	OK
1.006	15 min Winter	9	S15	S16	0.254	1.692	134.003	0.670	OK
1.007	15 min Winter	9	S16	S17	0.257	1.803	145.142	0.726	OK
1.008	15 min Winter	10	S17	S20	0.288	1.637	144.219	0.721	OK
7.000	15 min Winter	10	S18	S19	0.177	0.823	14.438	0.292	OK
7.001	15 min Winter	9	S19	S20	0.225	0.692	15.615	0.301	OK
1.009	15 min Winter	10	S20	S21	0.304	1.782	158.656	0.793	OK
1.010	15 min Winter	10	S21	S22	0.336	1.635	156.433	0.782	OK
1.011	15 min Winter	10	S22	Outfall1	0.375	1.395	154.081	0.809	Surcharged

Return Period (yrs) + Climate Change (%):

5yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	109.276	0.091	19.791		OK
S2	15 min Winter	9	108.718	0.110	25.431		OK
S3	15 min Winter	9	108.680	0.198	11.909		OK
S4	15 min Winter	9	108.619	0.291	62.400		OK
S5	15 min Winter	9	108.835	0.040	2.708		OK
S6	15 min Winter	9	108.534	0.039	2.776		OK
S7	15 min Winter	9	108.175	0.177	65.760		OK
S8	15 min Winter	8	108.367	0.112	26.920		OK
S9	15 min Winter	9	108.035	0.194	92.004		OK
S10	15 min Winter	8	109.062	0.125	32.577		OK
S11	15 min Winter	8	108.728	0.091	12.784		OK
S12	15 min Winter	9	108.594	0.180	50.003		OK
S13	15 min Winter	9	108.133	0.155	61.270		OK
S14	15 min Winter	9	107.934	0.287	158.205		OK
S15	15 min Winter	10	107.810	0.306	153.392		OK
S16	15 min Winter	10	107.744	0.300	164.968		OK
S17	15 min Winter	11	107.558	0.423	155.006		OK
S18	15 min Winter	11	107.435	0.298	10.208		OK
S19	15 min Winter	11	107.429	0.432	12.645		OK
S20	15 min Winter	11	107.425	0.481	170.811		OK
S21	15 min Winter	11	107.365	0.467	171.500		OK
S22	15 min Winter	11	107.133	0.530	172.071		OK
Outfall1	15 min Winter	11	106.979	0.535	172.147		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.100	1.132	19.418	0.355	OK
1.001	15 min Winter	9	S2	S4	0.168	0.813	25.820	0.497	OK
2.000	15 min Winter	9	S3	S4	0.150	0.707	11.127	0.628	Surcharged
1.002	15 min Winter	10	S4	S7	0.212	1.528	59.322	1.142	OK
3.000	15 min Winter	9	S5	S6	0.040	0.744	2.776	0.157	OK
3.001	15 min Winter	9	S6	S7	0.095	0.234	2.747	0.155	OK
1.003	15 min Winter	10	S7	S9	0.186	1.460	65.722	0.592	OK
4.000	15 min Winter	9	S8	S9	0.152	0.933	26.540	0.511	OK
1.004	15 min Winter	9	S9	S14	0.240	1.235	91.746	0.459	OK
5.000	15 min Winter	9	S10	S12	0.152	1.159	32.018	0.617	OK
6.000	15 min Winter	8	S11	S12	0.121	0.829	12.624	0.712	OK
5.001	15 min Winter	9	S12	S13	0.177	1.508	50.450	0.972	OK
5.002	15 min Winter	9	S13	S14	0.221	1.098	61.281	0.552	OK
1.005	15 min Winter	10	S14	S15	0.295	1.702	157.369	0.787	OK
1.006	15 min Winter	10	S15	S16	0.303	1.699	156.651	0.783	OK
1.007	15 min Winter	10	S16	S17	0.338	1.817	169.511	0.848	OK
1.008	15 min Winter	10	S17	S20	0.375	1.662	161.111	0.806	Surcharged
7.000	15 min Winter	9	S18	S19	0.225	0.826	16.371	0.331	OK
7.001	15 min Winter	13	S19	S20	0.225	0.718	17.876	0.344	OK
1.009	15 min Winter	10	S20	S21	0.375	1.794	173.878	0.870	Surcharged
1.010	15 min Winter	11	S21	S22	0.375	1.658	172.071	0.861	Surcharged
1.011	15 min Winter	11	S22	Outfall1	0.375	1.559	172.147	0.903	Surcharged

Return Period (yrs) + Climate Change (%):

10yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	109.284	0.099	22.989		OK
S2	15 min Winter	10	108.780	0.172	25.581		OK
S3	15 min Winter	9	108.797	0.315	13.857		OK
S4	15 min Winter	10	108.717	0.388	64.000		OK
S5	15 min Winter	9	108.838	0.043	3.151		OK
S6	15 min Winter	9	108.537	0.043	3.228		OK
S7	15 min Winter	10	108.194	0.196	72.465		OK
S8	15 min Winter	8	108.378	0.122	31.269		OK
S9	15 min Winter	11	108.098	0.257	90.194		OK
S10	15 min Winter	8	109.075	0.138	37.840		OK
S11	15 min Winter	9	108.753	0.116	13.988		OK
S12	15 min Winter	9	108.635	0.221	57.926		OK
S13	15 min Winter	10	108.163	0.185	66.083		OK
S14	15 min Winter	11	108.074	0.427	156.533		OK
S15	15 min Winter	11	107.967	0.463	157.859		OK
S16	15 min Winter	11	107.908	0.464	168.310		OK
S17	15 min Winter	11	107.676	0.541	168.541		OK
S18	15 min Winter	11	107.532	0.396	12.067		OK
S19	15 min Winter	11	107.526	0.528	14.479		OK
S20	15 min Winter	11	107.521	0.577	182.689		OK
S21	15 min Winter	11	107.453	0.555	182.534		OK
S22	15 min Winter	11	107.191	0.589	182.289		OK
Outfall1	15 min Winter	11	107.019	0.575	181.843		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	10	S1	S2	0.131	1.163	22.573	0.412	OK
1.001	15 min Winter	11	S2	S4	0.198	0.822	27.221	0.524	OK
2.000	15 min Winter	9	S3	S4	0.150	0.741	13.091	0.738	Surcharged
1.002	15 min Winter	10	S4	S7	0.215	1.676	65.628	1.264	OK
3.000	15 min Winter	9	S5	S6	0.043	0.777	3.228	0.182	OK
3.001	15 min Winter	9	S6	S7	0.096	0.268	3.208	0.181	OK
1.003	15 min Winter	11	S7	S9	0.224	1.446	72.628	0.654	OK
4.000	15 min Winter	10	S8	S9	0.167	1.001	30.848	0.594	OK
1.004	15 min Winter	11	S9	S14	0.316	1.242	103.811	0.519	OK
5.000	15 min Winter	9	S10	S12	0.178	1.186	37.230	0.717	OK
6.000	15 min Winter	9	S11	S12	0.133	0.872	14.175	0.800	OK
5.001	15 min Winter	9	S12	S13	0.208	1.485	55.880	1.076	OK
5.002	15 min Winter	10	S13	S14	0.243	1.161	68.362	0.616	OK
1.005	15 min Winter	10	S14	S15	0.375	1.707	166.937	0.835	Surcharged
1.006	15 min Winter	9	S15	S16	0.375	1.699	164.941	0.825	Surcharged
1.007	15 min Winter	9	S16	S17	0.375	1.819	179.208	0.896	Surcharged
1.008	15 min Winter	11	S17	S20	0.375	1.627	168.236	0.841	Surcharged
7.000	15 min Winter	9	S18	S19	0.225	0.844	17.354	0.351	OK
7.001	15 min Winter	9	S19	S20	0.225	0.730	18.363	0.354	OK
1.009	15 min Winter	10	S20	S21	0.375	1.771	183.088	0.916	Surcharged
1.010	15 min Winter	11	S21	S22	0.375	1.650	182.289	0.912	Surcharged
1.011	15 min Winter	11	S22	Outfall1	0.375	1.646	181.843	0.954	Surcharged

Return Period (yrs) + Climate Change (%):

30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	8	109.299	0.114	29.080		OK
S2	15 min Winter	10	109.095	0.487	32.439		Surcharged
S3	15 min Winter	10	109.101	0.619	14.847		Surcharged
S4	15 min Winter	10	109.005	0.677	74.570		Surcharged
S5	15 min Winter	8	108.843	0.049	4.231		OK
S6	15 min Winter	9	108.543	0.048	4.101		OK
S7	15 min Winter	11	108.415	0.417	76.104		Surcharged
S8	15 min Winter	10	108.414	0.159	31.562		OK
S9	15 min Winter	11	108.335	0.495	100.863		Surcharged
S10	15 min Winter	10	109.134	0.198	38.194		OK
S11	15 min Winter	10	109.040	0.404	14.988		Surcharged
S12	15 min Winter	11	108.903	0.489	52.979		Surcharged
S13	15 min Winter	11	108.398	0.420	66.230		Surcharged
S14	15 min Winter	11	108.281	0.634	169.696		Surcharged
S15	15 min Winter	11	108.159	0.655	168.292		Surcharged
S16	15 min Winter	11	108.092	0.648	180.707		Surcharged
S17	15 min Winter	12	107.827	0.692	178.559		Surcharged
S18	15 min Winter	11	107.671	0.535	15.400		Surcharged
S19	15 min Winter	11	107.660	0.662	18.434		Surcharged
S20	15 min Winter	11	107.653	0.709	196.744		Surcharged
S21	15 min Winter	12	107.574	0.676	194.176		Surcharged
S22	15 min Winter	12	107.276	0.673	194.794		Flood Risk
Outfall1	15 min Winter	12	107.078	0.634	195.133		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S1	S2	0.169	1.176	28.629	0.523	OK
1.001	15 min Winter	11	S2	S4	0.225	0.814	29.304	0.564	OK
2.000	15 min Winter	8	S3	S4	0.150	0.882	15.583	0.879	Surcharged
1.002	15 min Winter	9	S4	S7	0.225	1.840	73.143	1.409	OK
3.000	15 min Winter	9	S5	S6	0.049	0.829	4.101	0.231	OK
3.001	15 min Winter	9	S6	S7	0.099	0.331	4.103	0.231	OK
1.003	15 min Winter	10	S7	S9	0.300	1.391	78.502	0.707	Surcharged
4.000	15 min Winter	10	S8	S9	0.192	1.124	39.073	0.752	OK
1.004	15 min Winter	10	S9	S14	0.375	1.240	103.831	0.519	Surcharged
5.000	15 min Winter	10	S10	S12	0.211	1.233	45.549	0.877	OK
6.000	15 min Winter	8	S11	S12	0.150	0.885	15.347	0.866	Surcharged
5.001	15 min Winter	9	S12	S13	0.225	1.514	59.288	1.142	OK
5.002	15 min Winter	10	S13	S14	0.300	1.190	70.579	0.636	Surcharged
1.005	15 min Winter	8	S14	S15	0.375	1.708	173.434	0.867	Surcharged
1.006	15 min Winter	8	S15	S16	0.375	1.688	169.916	0.850	Surcharged
1.007	15 min Winter	8	S16	S17	0.375	1.851	185.414	0.927	Surcharged
1.008	15 min Winter	12	S17	S20	0.375	1.627	179.748	0.899	Surcharged
7.000	15 min Winter	8	S18	S19	0.225	0.832	23.648	0.478	OK
7.001	15 min Winter	9	S19	S20	0.225	0.737	25.785	0.497	OK
1.009	15 min Winter	11	S20	S21	0.375	1.777	196.215	0.981	Surcharged
1.010	15 min Winter	11	S21	S22	0.375	1.770	195.460	0.978	Surcharged
1.011	15 min Winter	12	S22	Outfall1	0.375	1.767	195.133	1.024	Surcharged

Return Period (yrs) + Climate Change (%):

100yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	11	109.660	0.475	22.356	0.442	Flood
S2	15 min Winter	11	109.579	0.971	28.314		Surcharged
S3	15 min Winter	11	109.605	1.123	14.304		Surcharged
S4	15 min Winter	11	109.482	1.154	76.423		Surcharged
S5	15 min Winter	8	108.851	0.056	5.485		OK
S6	15 min Winter	12	108.779	0.285	2.602		Surcharged
S7	15 min Winter	12	108.734	0.736	79.418		Surcharged
S8	15 min Winter	10	108.798	0.543	40.963		Surcharged
S9	15 min Winter	12	108.641	0.801	105.344		Surcharged
S10	15 min Winter	10	109.709	0.773	49.570		Surcharged
S11	15 min Winter	11	109.523	0.887	14.440		Surcharged
S12	15 min Winter	11	109.367	0.953	65.000		Surcharged
S13	15 min Winter	12	108.724	0.746	70.734		Surcharged
S14	15 min Winter	12	108.578	0.931	184.184		Surcharged
S15	15 min Winter	12	108.429	0.925	185.849		Surcharged
S16	15 min Winter	12	108.346	0.902	198.315		Surcharged
S17	15 min Winter	11	108.022	0.887	198.292		Surcharged
S18	15 min Winter	10	107.850	0.713	26.923		Surcharged
S19	15 min Winter	11	107.822	0.825	24.291		Surcharged
S20	15 min Winter	11	107.809	0.865	221.729		Surcharged
S21	15 min Winter	11	107.708	0.810	221.588		Surcharged
S22	15 min Winter	11	107.320	0.718	221.447	4.253	Flood
Outfall1	30 min Summer	19	107.108	0.665	201.732		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	9	S1	S2	0.225	1.214	33.801	0.617	OK
1.001	15 min Winter	14	S2	S4	0.225	0.853	33.896	0.653	OK
2.000	15 min Winter	9	S3	S4	0.150	1.018	17.989	1.015	Surcharged
1.002	15 min Winter	10	S4	S7	0.225	2.027	80.612	1.552	OK
3.000	15 min Winter	11	S5	S6	0.097	0.887	5.330	0.301	OK
3.001	15 min Winter	15	S6	S7	0.150	0.489	7.843	0.442	Surcharged
1.003	15 min Winter	13	S7	S9	0.300	1.366	82.185	0.740	Surcharged
4.000	15 min Winter	8	S8	S9	0.225	1.233	45.017	0.867	OK
1.004	15 min Winter	8	S9	S14	0.375	1.239	108.882	0.545	Surcharged
5.000	15 min Winter	9	S10	S12	0.225	1.278	49.232	0.948	OK
6.000	15 min Winter	8	S11	S12	0.150	1.029	18.192	1.026	Surcharged
5.001	15 min Winter	11	S12	S13	0.225	1.591	63.269	1.218	OK
5.002	15 min Winter	11	S13	S14	0.300	1.186	73.726	0.664	Surcharged
1.005	15 min Winter	12	S14	S15	0.375	1.704	185.849	0.929	Surcharged
1.006	15 min Winter	13	S15	S16	0.375	1.690	186.670	0.934	Surcharged
1.007	15 min Winter	12	S16	S17	0.375	1.846	199.562	0.998	Surcharged
1.008	15 min Winter	12	S17	S20	0.375	1.818	200.833	1.004	Surcharged
7.000	15 min Winter	8	S18	S19	0.225	0.851	31.196	0.630	OK
7.001	15 min Winter	8	S19	S20	0.225	0.849	33.744	0.650	OK
1.009	15 min Winter	11	S20	S21	0.375	2.006	221.588	1.108	Surcharged
1.010	15 min Winter	11	S21	S22	0.375	2.005	221.447	1.107	Surcharged
1.011	30 min Winter	19	S22	Outfall1	0.375	1.826	201.732	1.059	Surcharged

Return Period (yrs) + Climate Change (%):
100yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S1	15 min Winter	9	109.660	0.475	72.751	16.002	Flood Risk
S2	15 min Winter	9	109.807	1.199	27.026		Surcharged
S3	15 min Winter	10	110.242	1.760	26.977		Surcharged
S4	15 min Winter	9	109.843	1.514	96.429		Surcharged
S5	15 min Winter	12	109.208	0.413	3.136		Surcharged
S6	15 min Winter	13	109.183	0.688	3.238		Surcharged
S7	15 min Winter	12	109.152	1.154	66.607		Surcharged
S8	15 min Winter	10	109.466	1.211	57.347		Flood Risk
S9	15 min Winter	11	109.087	1.246	116.050		Surcharged
S10	15 min Winter	11	110.790	1.854	51.518		Surcharged
S11	15 min Winter	11	110.479	1.842	20.216		Surcharged
S12	15 min Winter	12	110.233	1.819	72.356		Surcharged
S13	15 min Winter	12	109.260	1.283	90.327		Surcharged
S14	15 min Winter	12	109.022	1.375	208.129		Surcharged
S15	15 min Winter	12	108.830	1.326	210.973		Surcharged
S16	15 min Winter	11	108.725	1.282	231.128		Surcharged
S17	15 min Winter	11	108.292	1.157	229.354		Flood Risk
S18	15 min Winter	10	108.114	0.977	37.693		Surcharged
S19	15 min Winter	11	108.035	1.037	34.355		Flood Risk
S20	15 min Winter	11	108.007	1.063	262.861		Flood Risk
S21	15 min Winter	11	107.865	0.967	262.837		Surcharged
S22	30 min Winter	20	107.320	0.718	252.410	24.713	Flood
Outfall1	30 min Winter	15	107.109	0.665	201.723		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	7	S1	S2	0.225	1.234	37.838	0.691	OK
1.001	60 min Summer	40	S2	S4	0.225	0.826	31.624	0.609	OK
2.000	15 min Winter	10	S3	S4	0.150	1.667	29.450	1.661	Surcharged
1.002	15 min Winter	8	S4	S7	0.225	2.237	88.964	1.713	OK
3.000	15 min Winter	11	S5	S6	0.150	0.935	7.675	0.433	Surcharged
3.001	15 min Winter	18	S6	S7	0.150	0.699	12.361	0.697	Surcharged
1.003	15 min Winter	7	S7	S9	0.300	1.348	83.671	0.754	Surcharged
4.000	15 min Winter	9	S8	S9	0.225	1.458	57.990	1.117	OK
1.004	15 min Winter	10	S9	S14	0.375	1.245	115.941	0.580	Surcharged
5.000	15 min Winter	9	S10	S12	0.225	1.585	63.017	1.214	OK
6.000	15 min Winter	9	S11	S12	0.150	1.285	22.702	1.280	Surcharged
5.001	15 min Winter	12	S12	S13	0.225	1.957	77.798	1.498	OK
5.002	15 min Winter	12	S13	S14	0.300	1.314	92.907	0.837	Surcharged
1.005	15 min Winter	12	S14	S15	0.375	1.910	210.973	1.055	Surcharged
1.006	15 min Winter	13	S15	S16	0.375	1.925	212.596	1.063	Surcharged
1.007	15 min Winter	12	S16	S17	0.375	2.088	230.602	1.153	Surcharged
1.008	15 min Winter	12	S17	S20	0.375	2.106	232.611	1.163	Surcharged
7.000	15 min Winter	8	S18	S19	0.225	1.096	43.572	0.881	OK
7.001	15 min Winter	9	S19	S20	0.225	1.240	49.292	0.949	OK
1.009	15 min Winter	11	S20	S21	0.375	2.380	262.837	1.314	Surcharged
1.010	15 min Winter	11	S21	S22	0.375	2.379	262.738	1.314	Surcharged
1.011	30 min Summer	16	S22	Outfall1	0.375	1.827	201.743	1.059	Surcharged

Calculation 3

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
Outfall3	0.000	---	---	107.000	105.998	0.852	10843.254	5175.169
S23	0.000	1800	Type B	109.430	106.215	3.065	10844.501	5162.219
Outlet	0.000	---	---	107.480	106.382	0.798	10848.458	5152.995

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	Outfall3	105.998	S23	106.215	Circ	150	13.009	60	0.600	0.852	3.065
1.001	S23	106.215	Outlet	106.382	Circ	300	10.037	60	0.600	2.915	0.798

Outfall Details

Outfall Manhole Outlet : 5.0l/s

Flow Control Details

Controls within Outfall3

Flap Valve Control

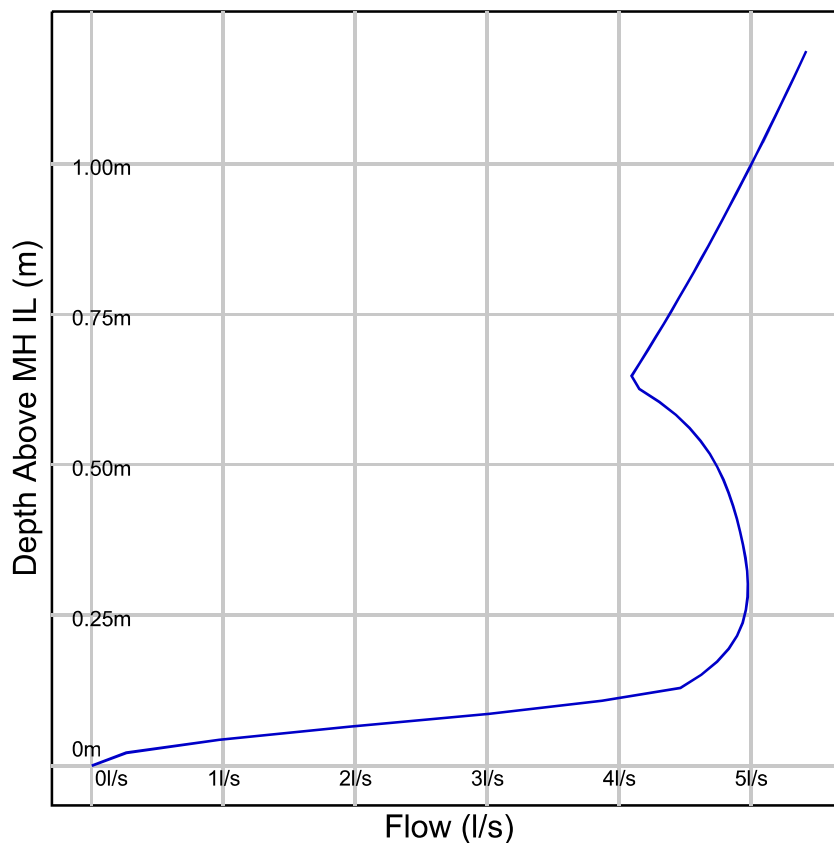
Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.150	0.600

Controls within Manhole S23

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0106-5000-1000-5000	1.000	5.000	0.000	0.296	4.975	0.637	4.060

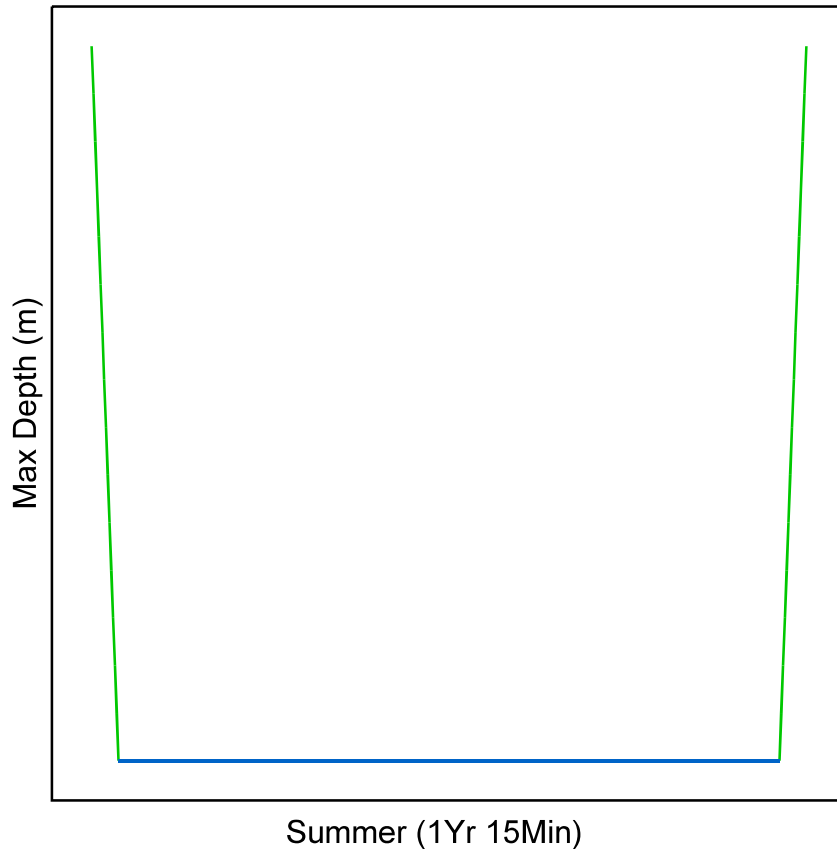
Hydro-Brake® Optimum Control from S23 to Outlet



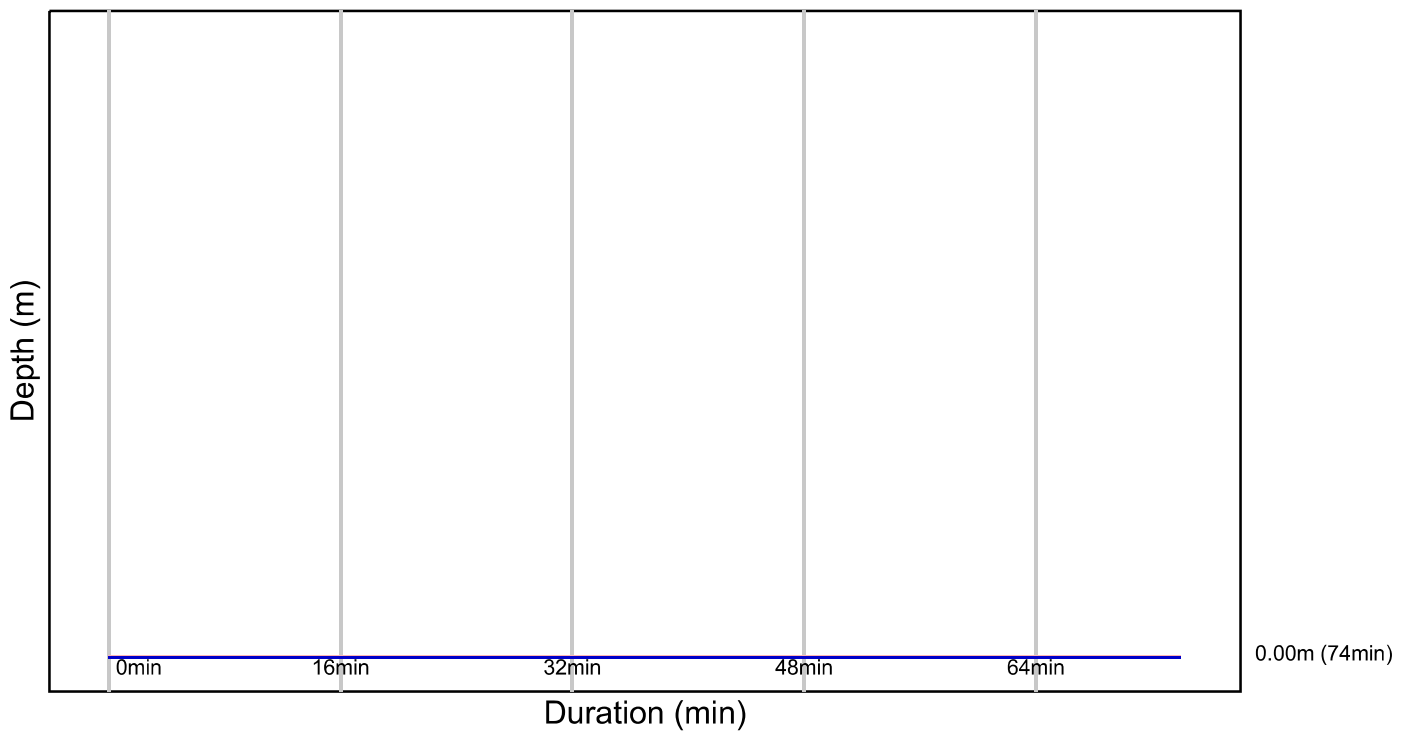
Pond Structure

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
107.914	1.500	685.015	109.114	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at Outlet



Pond at Outfall3 (1Yr 15Min Winter)



Storage Estimate
Site Area: 1.59ha
Discharge Rate: 5.0l/s
Pond Storage: 675m³
Critical Storm Duration 6hr - 24hr

Simulation Settings

FSR: M5-60=20.00, R=0.40, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440

Return Periods (yrs) + Climate Change: (1, +0%), (2, +0%), (5, +0%), (10, +0%), (30, +0%), (100, +0%), (100, +40%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	36.405	0.00	0.00	10Yr 360Min Summer	6.339	0.00	0.00
1Yr 15Min Summer	36.405	0.00	0.00	10Yr 360Min Winter	6.339	0.00	0.00
1Yr 30Min Winter	23.138	0.00	0.00	10Yr 480Min Summer	5.090	0.00	0.00
1Yr 30Min Summer	23.138	0.00	0.00	10Yr 480Min Winter	5.090	0.00	0.00
1Yr 60Min Summer	14.222	0.00	0.00	10Yr 600Min Summer	4.291	0.00	0.00
1Yr 60Min Winter	14.222	0.00	0.00	10Yr 600Min Winter	4.291	0.00	0.00
1Yr 120Min Summer	8.605	0.00	0.00	10Yr 720Min Summer	3.732	0.00	0.00
1Yr 120Min Winter	8.605	0.00	0.00	10Yr 720Min Winter	3.732	0.00	0.00
1Yr 180Min Winter	6.400	0.00	0.00	10Yr 960Min Summer	2.993	0.00	0.00
1Yr 180Min Summer	6.400	0.00	0.00	10Yr 960Min Winter	2.993	0.00	0.00
1Yr 240Min Summer	5.190	0.00	0.00	10Yr 1440Min Summer	2.191	0.00	0.00
1Yr 240Min Winter	5.190	0.00	0.00	10Yr 1440Min Winter	2.191	0.00	0.00
1Yr 360Min Winter	3.857	0.00	0.00	30Yr 15Min Summer	76.035	0.00	0.00
1Yr 360Min Summer	3.857	0.00	0.00	30Yr 15Min Winter	76.035	0.00	0.00
1Yr 480Min Summer	3.121	0.00	0.00	30Yr 30Min Summer	49.499	0.00	0.00
1Yr 480Min Winter	3.121	0.00	0.00	30Yr 30Min Winter	49.499	0.00	0.00
1Yr 600Min Summer	2.648	0.00	0.00	30Yr 60Min Summer	30.811	0.00	0.00
1Yr 600Min Winter	2.648	0.00	0.00	30Yr 60Min Winter	30.811	0.00	0.00
1Yr 720Min Winter	2.315	0.00	0.00	30Yr 120Min Summer	18.615	0.00	0.00
1Yr 720Min Summer	2.315	0.00	0.00	30Yr 120Min Winter	18.615	0.00	0.00
1Yr 960Min Summer	1.872	0.00	0.00	30Yr 180Min Summer	13.715	0.00	0.00
1Yr 960Min Winter	1.872	0.00	0.00	30Yr 180Min Winter	13.715	0.00	0.00
1Yr 1440Min Winter	1.389	0.00	0.00	30Yr 240Min Summer	10.995	0.00	0.00
1Yr 1440Min Summer	1.389	0.00	0.00	30Yr 240Min Winter	10.995	0.00	0.00
2Yr 15Min Summer	42.301	0.00	0.00	30Yr 360Min Summer	8.034	0.00	0.00
2Yr 15Min Winter	42.301	0.00	0.00	30Yr 360Min Winter	8.034	0.00	0.00
2Yr 30Min Summer	27.017	0.00	0.00	30Yr 480Min Summer	6.428	0.00	0.00
2Yr 30Min Winter	27.017	0.00	0.00	30Yr 480Min Winter	6.428	0.00	0.00
2Yr 60Min Summer	16.649	0.00	0.00	30Yr 600Min Summer	5.404	0.00	0.00
2Yr 60Min Winter	16.649	0.00	0.00	30Yr 600Min Winter	5.404	0.00	0.00
2Yr 120Min Summer	10.070	0.00	0.00	30Yr 720Min Summer	4.687	0.00	0.00
2Yr 120Min Winter	10.070	0.00	0.00	30Yr 720Min Winter	4.687	0.00	0.00
2Yr 180Min Summer	7.475	0.00	0.00	30Yr 960Min Summer	3.743	0.00	0.00
2Yr 180Min Winter	7.475	0.00	0.00	30Yr 960Min Winter	3.743	0.00	0.00
2Yr 240Min Summer	6.048	0.00	0.00	30Yr 1440Min Summer	2.723	0.00	0.00
2Yr 240Min Winter	6.048	0.00	0.00	30Yr 1440Min Winter	2.723	0.00	0.00
2Yr 360Min Summer	4.479	0.00	0.00	100Yr 15Min Summer	98.681	0.00	0.00
2Yr 360Min Winter	4.479	0.00	0.00	100Yr 15Min Winter	98.681	0.00	0.00
2Yr 480Min Summer	3.616	0.00	0.00	100Yr 30Min Summer	64.789	0.00	0.00
2Yr 480Min Winter	3.616	0.00	0.00	100Yr 30Min Winter	64.789	0.00	0.00
2Yr 600Min Winter	3.062	0.00	0.00	100Yr 60Min Summer	40.510	0.00	0.00
2Yr 600Min Summer	3.062	0.00	0.00	100Yr 60Min Winter	40.510	0.00	0.00
2Yr 720Min Summer	2.673	0.00	0.00	100Yr 120Min Summer	24.461	0.00	0.00
2Yr 720Min Winter	2.673	0.00	0.00	100Yr 120Min Winter	24.461	0.00	0.00
2Yr 960Min Summer	2.156	0.00	0.00	100Yr 180Min Summer	17.964	0.00	0.00
2Yr 960Min Winter	2.156	0.00	0.00	100Yr 180Min Winter	17.964	0.00	0.00
2Yr 1440Min Summer	1.593	0.00	0.00	100Yr 240Min Summer	14.342	0.00	0.00
2Yr 1440Min Winter	1.593	0.00	0.00	100Yr 240Min Winter	14.342	0.00	0.00
5Yr 15Min Summer	51.584	0.00	0.00	100Yr 360Min Summer	10.418	0.00	0.00
5Yr 15Min Winter	51.584	0.00	0.00	100Yr 360Min Winter	10.418	0.00	0.00
5Yr 30Min Summer	33.160	0.00	0.00	100Yr 480Min Summer	8.302	0.00	0.00
5Yr 30Min Winter	33.160	0.00	0.00	100Yr 480Min Winter	8.302	0.00	0.00
5Yr 60Min Summer	20.504	0.00	0.00	100Yr 600Min Summer	6.956	0.00	0.00
5Yr 60Min Winter	20.504	0.00	0.00	100Yr 600Min Winter	6.956	0.00	0.00

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
5Yr 120Min Winter	12.397	0.00	0.00	100Yr 720Min Summer	6.017	0.00	0.00
5Yr 120Min Summer	12.397	0.00	0.00	100Yr 720Min Winter	6.017	0.00	0.00
5Yr 180Min Summer	9.179	0.00	0.00	100Yr 960Min Summer	4.784	0.00	0.00
5Yr 180Min Winter	9.179	0.00	0.00	100Yr 960Min Winter	4.784	0.00	0.00
5Yr 240Min Summer	7.403	0.00	0.00	100Yr 1440Min Summer	3.456	0.00	0.00
5Yr 240Min Winter	7.403	0.00	0.00	100Yr 1440Min Winter	3.456	0.00	0.00
5Yr 360Min Summer	5.458	0.00	0.00	100Yr+40% 15Min Summer	138.153	0.00	0.00
5Yr 360Min Winter	5.458	0.00	0.00	100Yr+40% 15Min Winter	138.153	0.00	0.00
5Yr 480Min Summer	4.393	0.00	0.00	100Yr+40% 30Min Summer	90.705	0.00	0.00
5Yr 480Min Winter	4.393	0.00	0.00	100Yr+40% 30Min Winter	90.705	0.00	0.00
5Yr 600Min Summer	3.711	0.00	0.00	100Yr+40% 60Min Summer	56.713	0.00	0.00
5Yr 600Min Winter	3.711	0.00	0.00	100Yr+40% 60Min Winter	56.713	0.00	0.00
5Yr 720Min Summer	3.232	0.00	0.00	100Yr+40% 120Min Summer	34.246	0.00	0.00
5Yr 720Min Winter	3.232	0.00	0.00	100Yr+40% 120Min Winter	34.246	0.00	0.00
5Yr 960Min Summer	2.599	0.00	0.00	100Yr+40% 180Min Summer	25.149	0.00	0.00
5Yr 960Min Winter	2.599	0.00	0.00	100Yr+40% 180Min Winter	25.149	0.00	0.00
5Yr 1440Min Summer	1.910	0.00	0.00	100Yr+40% 240Min Summer	20.078	0.00	0.00
5Yr 1440Min Winter	1.910	0.00	0.00	100Yr+40% 240Min Winter	20.078	0.00	0.00
10Yr 15Min Summer	59.937	0.00	0.00	100Yr+40% 360Min Summer	14.585	0.00	0.00
10Yr 15Min Winter	59.937	0.00	0.00	100Yr+40% 360Min Winter	14.585	0.00	0.00
10Yr 30Min Summer	38.718	0.00	0.00	100Yr+40% 480Min Summer	11.622	0.00	0.00
10Yr 30Min Winter	38.718	0.00	0.00	100Yr+40% 480Min Winter	11.622	0.00	0.00
10Yr 60Min Summer	24.003	0.00	0.00	100Yr+40% 600Min Summer	9.738	0.00	0.00
10Yr 60Min Winter	24.003	0.00	0.00	100Yr+40% 600Min Winter	9.738	0.00	0.00
10Yr 120Min Summer	14.508	0.00	0.00	100Yr+40% 720Min Summer	8.424	0.00	0.00
10Yr 120Min Winter	14.508	0.00	0.00	100Yr+40% 720Min Winter	8.424	0.00	0.00
10Yr 180Min Summer	10.722	0.00	0.00	100Yr+40% 960Min Summer	6.697	0.00	0.00
10Yr 180Min Winter	10.722	0.00	0.00	100Yr+40% 960Min Winter	6.697	0.00	0.00
10Yr 240Min Summer	8.627	0.00	0.00	100Yr+40% 1440Min Winter	4.839	0.00	0.00
10Yr 240Min Winter	8.627	0.00	0.00	100Yr+40% 1440Min Summer	4.839	0.00	0.00

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Winter	0	105.998	0.000	0.000		OK
S23	15 min Winter	0	106.215	0.000	0.000		OK
Outlet	15 min Winter	0	107.914	0.000	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Winter	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):

2yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):

5yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):

10yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):
30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):
100yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		Surcharged

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK

Return Period (yrs) + Climate Change (%):

100yr+40%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
Outfall3	15 min Summer	0	105.998	0.000	0.000		OK
S23	15 min Summer	0	106.215	0.000	0.000		OK
Outlet	15 min Summer	0	107.914	0.000	0.000		Surcharged

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	0	Outfall3	S23	0.000	0.000	0.000	0.000	OK
1.001	15 min Summer	0	S23	Outlet	0.000	0.000	0.000	0.000	OK