



11

Indicative Site Ownership Boundary

L S R Part M Access (Level / Stepped / Ramp)

PLOT Proposed Finished Floor Level

FPL 59.200	
+59.050	Proposed level

 Fall Arrow

 Raised Secondary DPC to same height as FFL (final extent to be determined by Contractor on site)

Add Bwk  Exposed brickwork below DPC (final extent to be determined by Contractor on site)

Tanking  Tanked Brickwork (height shown is above FFL, final extent to be determined by Contractor on site)

RET Retaining structure
(Max. retaining height shown)

— 20mph Visibility Splays (25m x 2.4m)

 Earthworks Banking (shown where banks are steeper than 1:5)

Noise Bund
Noise bund to be created to the southern boundary adjacent proposed plots. Maximum slope to be 1:3

2 Overhead Power Lines
Care to be taken within extent of overhead power lines

General Note

1. DO NOT SCALE.
2. This drawing is to be read in conjunction with all other relevant drawings and details.
3. Should there be any conflict between the details indicated on this drawing and those on other drawings the Engineer should be informed **PRIOR** to construction on site.
4. Until technical approval has been obtained from the relevant Authority, it should be understood that all drawings issued are Preliminary and NOT for construction. Should the Contractor commence site work prior to such approval being given it is entirely at their own risk.
5. Sketch proposals are for illustrative purposes only and as such are subject to detailed site investigation including ground conditions / contaminants, drainage, design and planning / density negotiations.
6. All dimensions are in millimetres unless otherwise stated.
7. The Farrow Wallis Consulting Designers Risk Assessments for this project must be reviewed **PRIOR** to the commencement of any works on site.

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4. Do not scale this drawing. All dimensions are in millimetres unless noted otherwise. Any discrepancies are to be recorded and reported to the Engineers immediately.
5. All work is to be to the satisfaction of the Engineer.
6. The Contractor is responsible for and must take all necessary precautions to ensure the stability of the works at all times during construction.
7. All workmanship and materials are to be to current British Standards.
8. All services are to be located and protected as necessary by the Contractor prior to commencement of the works.
9. Any existing details which are shown on this drawing are for guidance only and are to be checked on site by the Contractor. Any variations are to be recorded and reported to the Engineer immediately.

General Road Notes

This drawing is to be read in conjunction with the local Highway Authority design guide and the general specification for roadworks current at the time of construction.

All works shall be in accordance with the local Highway Authority's approved documents and satisfaction. Any reference to the specification shall mean the general specification for roadworks.

1. Prior to any works being carried out under or immediately adjacent to the public highway, a scheme for the safe control of traffic and pedestrians is to be agreed with the highway authority and implemented.
2. Working areas within the vicinity of existing trees are to be agreed with the engineer and chestnut fencing erected as directed.
3. Special care is to be taken when excavating in the vicinity of existing trees, it is not intended that any tree roots should be severed or damaged and specialist advice should be sought if any major roots present a problem. Care is to be taken to avoid damage to branches and foliage.
4. It is the Contractor's responsibility to trace and indicate the precise location and nature of all services.
5. The Contractor is to provide a CCTV survey of any highway sewers on completion of the 12-month maintenance period. This is to be provided in accordance with the requirements of the local water and highways authorities.
6. Safe passage for pedestrians across the site is to be ensured at all times by means of approved fencing to both sides of any footpath route.
7. The Health and Safety at Work Act 1981 is to be complied with at all times. Attention is drawn to the wearing of hard hats, reflectorised clothing, and the use of any other required safety equipment.
8. The Contractor is to take account of the soils report.
9. No completion works will be authorised until a formal certificate of conformance to relevant specification is received from the relevant water authority.
10. Compaction control shall be achieved by air void testing for both roadbase and basecourse (maximum air void ratio 8%).
11. Any recycled material to be used for highway construction purposes will be allowed subject to it satisfying relevant tests as instructed by this authority.
12. The Contractor is to take CBR tests at road formation level, capping layer level, and sub-base level and the highway engineer informed before any construction works carried out on that level.
13. All levels and dimensions are to be checked on site before any work commences.
14. All private drives which fall towards a public highway and exceed two parking bays in area are to be provided with a suitable gully or drainage channel to prevent water discharging onto the highway.
15. Where a driveway falls towards a dwelling it shall be provided with a suitable gully or drainage channel to prevent water damaging the building.

All FFLs and external levels are indicative only and subject to detailed design

All vertical speed calming features to be provided in accordance with Leicestershire Highways design guide

A3	Plan has been updated to suit the latest development layout.	JR	EC	DM	10.11.23
A2	Levels added to shared drives, dimensions added to retaining walls and underbuild added to plots 79, 81, 150, 320 and 343	JR	JD	JD	22.05.23
A1	Issued for Approval.	JR	OP	JD	15.03.23
Rev	Description of updates	Design	Struct	MEP	Date

Revision Schedule Drawn _____ Checked _____ Approved _____



FOR APPROVAL

Client:
Redrow Homes Limited

Project:
Burbage Field Farm,
Bullfurlong Lane, Hinckley

Title:
Engineering Layout
Sheet 3 of 6

Drawn: JR	Checked: OP	Approved: JD	Date: March 2023
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Drawing No.
EW2285-E-500-03

Revision

A3

SAFETY, HEALTH AND ENVIRONMENTAL HAZARD INFORMATION BOX

THE HAZARDS NOTED BELOW ARE IN ADDITION TO THE NORMAL HAZARDS AND RISKS FACED BY A COMPETENT CONTRACTOR WHEN DEALING WITH THE TYPES OF WORKS DETAILED ON THIS DRAWING.

CONSTRUCTION RISKS

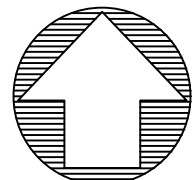
EXISTING UNNAMED WATERCOURSE
EXISTING HIGHWAY
EXISTING SERVICES

MAINTENANCE / CLEANING RISKS

NONE RELEVANT TO THIS DRAWING.

DEMOLITION RISKS

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Revision Schedule					



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FOR APPROVAL

Client:
Redrow Homes Limited

Project:
**Burbage Field Farm,
Bullfurlong Lane, Hinckley**

Title:
**Engineering Layout
Sheet 4 of 6**

Drawn: JR
Checked: OP
Approved: JD
Date: March 2023

Scale:
1:500 @ A1

Drawing No:
FW2285-E-500-04

Revision:

A3

LEGEND

- Indicative Site Ownership Boundary
- Part M Access (Level / Stepped / Ramp)
- PLOT FFL 59.200
- Proposed Finished Floor Level
- +59.050
- Proposed level
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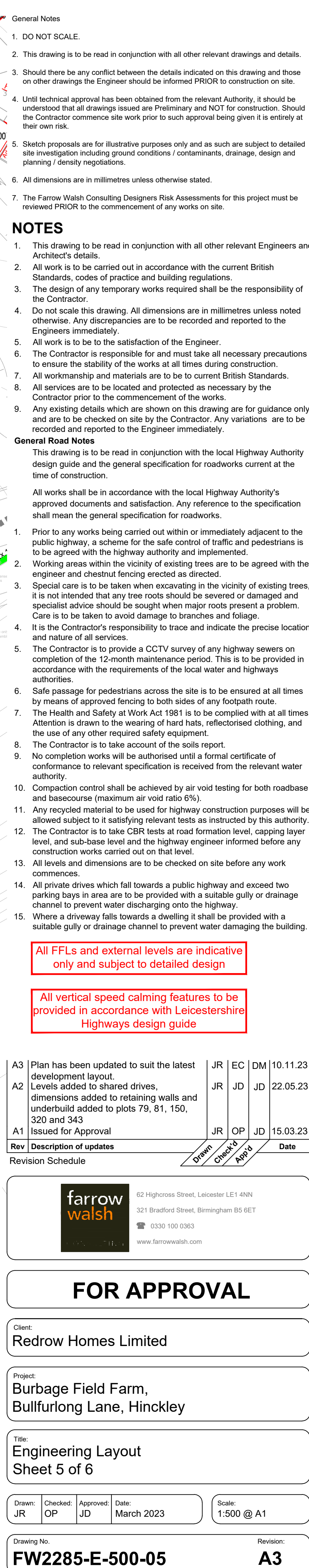
MAINTENANCE / CLEANING RISKS

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DEMOLITION RISKS

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APPENDIX K – SURFACE WATER DRAINAGE CALCULATIONS

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.132	5.00	126.691	Manhole	1200	443780.904	292095.645	1.425
S2	0.056	5.00	125.148	Manhole	1200	443815.090	292030.568	2.567
S3	0.081	5.00	124.103	Manhole	1200	443847.416	292015.545	2.235
S4L	0.089	5.00	122.880	Manhole	1200	443855.169	291966.354	1.313
S4	0.070	5.00	122.667	Manhole	1200	443864.955	291968.608	1.425
S5L	0.075	5.00	121.330	Manhole	1200	443866.640	291923.297	1.432
S5	0.051	5.00	121.160	Manhole	1200	443875.005	291926.155	1.575
S6	0.054	5.00	120.009	Manhole	1200	443889.076	291897.617	2.992
S7L	0.086	5.00	119.002	Manhole	1200	443890.159	291863.144	1.461
S7	0.051	5.00	118.789	Manhole	1200	443900.131	291865.333	2.454
S8L	0.051	5.00	117.863	Manhole	1200	443897.260	291833.375	1.388
S8	0.037	5.00	117.728	Manhole	1200	443906.657	291835.975	2.070
S9	0.081	5.00	116.862	Manhole	1200	443913.152	291813.172	2.901
S11	0.096	5.00	114.742	Manhole	1200	443938.369	291741.271	1.404
S12L	0.118	5.00	115.030	Manhole	1200	443926.223	291757.975	1.643
S12	0.011	5.00	114.797	Manhole	1200	443937.093	291761.530	2.125
S13	0.043	5.00	114.526	Manhole	1200	443961.060	291770.273	2.364
S14L	0.062	5.00	115.226	Manhole	1200	444009.992	291792.054	3.092
S14	0.040	5.00	115.228	Manhole	1200	444011.241	291798.692	4.219
S14AL	0.123	5.00	114.800	Manhole	1200	444062.710	291810.324	2.697
S14A			113.804	Manhole	1200	444061.337	291793.878	3.802
S15L	0.099	5.00	112.519	Manhole	1200	444098.935	291788.163	2.348
S15			112.406	Manhole	1200	444104.606	291789.708	3.273
HW1			111.000	Manhole		444110.468	291768.192	2.146
S16	0.036	5.00	113.645	Manhole	1200	444044.465	291775.704	1.425
S17L	0.121	5.00	112.450	Manhole	1200	444021.361	291738.907	1.868
S17	0.036	5.00	111.732	Manhole	1200	444041.018	291734.999	1.425
S18L	0.085	5.00	111.000	Manhole	1200	444080.688	291732.672	1.175
S18			111.000	Manhole	1200	444080.507	291730.206	1.425
HW2			110.200	Manhole		444101.211	291735.442	1.296
HW3		5.00	110.200	Manhole		444130.785	291715.646	1.346
S19			110.200	Manhole	2700	444136.861	291709.120	1.368
HW4			109.400	Manhole		444140.891	291690.812	0.700

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S1	S2	73.509	0.600	125.266	122.656	2.610	28.2	225	5.50	50.0
1.001	S2	S3	35.647	0.600	122.581	121.868	0.713	50.0	300	5.76	50.0
1.002	S3	S4	50.107	0.600	121.868	121.317	0.551	90.9	300	6.27	49.3
2.000	S4L	S4	10.043	0.600	121.567	121.467	0.100	100.4	150	5.17	50.0
1.003	S4	S5	43.626	0.600	121.242	119.585	1.657	26.3	375	6.47	48.6
3.000	S5L	S5	8.841	0.600	119.898	119.810	0.088	100.5	150	5.15	50.0
1.004	S5	S6	31.818	0.600	119.585	117.017	2.568	12.4	300	6.59	48.1
1.005	S6	S7	34.125	0.600	117.017	116.335	0.682	50.0	375	6.81	47.4
4.000	S7L	S7	10.210	0.600	117.541	116.560	0.981	10.4	150	5.05	50.0
1.006	S7	S8	30.074	0.600	116.335	115.733	0.602	50.0	375	7.01	46.7
5.000	S8L	S8	9.749	0.600	116.475	115.958	0.517	18.9	150	5.07	50.0
1.007	S8	S9	23.710	0.600	115.658	113.961	1.697	14.0	450	7.08	46.5
1.008	S9	S12	56.921	0.600	113.961	112.822	1.139	50.0	450	7.41	45.4
6.000	S11	S12	20.299	0.600	113.338	112.822	0.516	39.3	450	5.10	50.0
7.000	S12L	S12	11.437	0.600	113.387	113.047	0.340	33.6	225	5.08	50.0
1.009	S12	S13	25.511	0.600	112.672	112.162	0.510	50.0	600	7.53	45.0
1.010	S13	S14	57.670	0.600	112.162	111.009	1.153	50.0	600	7.81	44.2
8.000	S14L	S14	6.755	0.600	112.134	111.459	0.675	10.0	150	5.04	50.0
1.011	S14	S14A	50.327	0.600	111.009	110.002	1.007	50.0	600	8.06	43.5
44.000	S14AL	S14A	16.503	0.600	112.103	110.452	1.651	10.0	150	5.09	50.0
1.012	S14A	S15	43.469	0.600	110.002	109.133	0.869	50.0	600	8.27	42.9
9.000	S15L	S15	5.878	0.600	110.171	109.583	0.588	10.0	150	5.03	50.0
1.013	S15	HW1	22.300	0.600	109.133	108.854	0.279	79.9	600	8.40	42.5
10.000	S16	S17	40.850	0.600	112.220	110.457	1.763	23.2	225	5.25	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S1	S2	2.474	98.4	17.9	1.200	2.267	1.200	2.267	0.132	0.0
1.001	S2	S3	2.228	157.5	25.5	2.267	1.935	1.935	2.267	0.188	0.0
1.002	S3	S4	1.649	116.6	36.0	1.935	1.050	1.050	1.935	0.269	0.0
2.000	S4L	S4	1.002	17.7	12.1	1.163	1.050	1.050	1.163	0.089	0.0
1.003	S4	S5	3.543	391.3	56.3	1.050	1.200	1.050	1.200	0.428	0.0
3.000	S5L	S5	1.002	17.7	10.2	1.282	1.200	1.200	1.282	0.075	0.0
1.004	S5	S6	4.490	317.4	72.3	1.275	2.692	1.275	2.692	0.554	0.0
1.005	S6	S7	2.566	283.4	78.1	2.617	2.079	2.079	2.617	0.608	0.0
4.000	S7L	S7	3.141	55.5	11.7	1.311	2.079	1.311	2.079	0.086	0.0
1.006	S7	S8	2.568	283.7	94.3	2.079	1.620	1.620	2.079	0.745	0.0
5.000	S8L	S8	2.330	41.2	6.9	1.238	1.620	1.238	1.620	0.051	0.0
1.007	S8	S9	5.460	868.4	104.9	1.620	2.451	1.620	2.451	0.833	0.0
1.008	S9	S12	2.881	458.2	112.5	2.451	1.525	1.525	2.451	0.914	0.0
6.000	S11	S12	3.249	516.7	13.0	0.954	1.525	0.954	1.525	0.096	0.0
7.000	S12L	S12	2.263	90.0	16.0	1.418	1.525	1.418	1.525	0.118	0.0
1.009	S12	S13	3.448	974.9	139.0	1.525	1.764	1.525	1.764	1.139	0.0
1.010	S13	S14	3.448	975.0	141.6	1.764	3.619	1.764	3.619	1.182	0.0
8.000	S14L	S14	3.203	56.6	8.4	2.942	3.619	2.942	3.619	0.062	0.0
1.011	S14	S14A	3.450	975.4	151.4	3.619	3.202	3.202	3.619	1.284	0.0
44.000	S14AL	S14A	3.205	56.6	16.7	2.547	3.202	2.547	3.202	0.123	0.0
1.012	S14A	S15	3.448	974.9	163.7	3.202	2.673	2.673	3.202	1.407	0.0
9.000	S15L	S15	3.205	56.6	13.4	2.198	2.673	2.198	2.673	0.099	0.0
1.013	S15	HW1	2.725	770.5	173.7	2.673	1.546	1.546	2.673	1.506	0.0
10.000	S16	S17	2.729	108.5	4.9	1.200	1.050	1.050	1.200	0.036	0.0

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11.000	S17L	S17	20.041	0.600	110.582	110.457	0.125	160.3	225	5.32	50.0
10.001	S17	S18	39.780	0.600	110.307	109.575	0.732	54.3	375	5.59	50.0
12.000	S18L	S18	2.473	0.600	109.825	109.800	0.025	98.9	150	5.04	50.0
10.002	S18	HW2	21.355	0.600	109.575	109.459	0.116	184.1	375	5.86	50.0
1.014	HW3	S19	8.916	0.600	108.854	108.832	0.022	405.3	600	5.12	50.0
1.015	S19	HW4	18.747	0.600	108.832	108.700	0.132	142.0	225	5.41	50.0

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11.000	S17L	S17	1.030	40.9	16.4	1.643	1.050	1.050	1.643	0.121	0.0
10.001	S17	S18	2.462	271.9	26.2	1.050	1.050	1.050	1.050	0.193	0.0
12.000	S18L	S18	1.010	17.9	11.5	1.025	1.050	1.025	1.050	0.085	0.0
10.002	S18	HW2	1.332	147.1	37.7	1.050	0.366	0.366	1.050	0.278	0.0
1.014	HW3	S19	1.203	340.2	0.0	0.746	0.768	0.746	0.768	0.000	0.0
1.015	S19	HW4	1.095	43.5	0.0	1.143	0.475	0.475	1.143	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	73.509	28.2	225	126.691	125.266	1.200	125.148	122.656	2.267
1.001	35.647	50.0	300	125.148	122.581	2.267	124.103	121.868	1.935
1.002	50.107	90.9	300	124.103	121.868	1.935	122.667	121.317	1.050
2.000	10.043	100.4	150	122.880	121.567	1.163	122.667	121.467	1.050
1.003	43.626	26.3	375	122.667	121.242	1.050	121.160	119.585	1.200
3.000	8.841	100.5	150	121.330	119.898	1.282	121.160	119.810	1.200
1.004	31.818	12.4	300	121.160	119.585	1.275	120.009	117.017	2.692
1.005	34.125	50.0	375	120.009	117.017	2.617	118.789	116.335	2.079
4.000	10.210	10.4	150	119.002	117.541	1.311	118.789	116.560	2.079
1.006	30.074	50.0	375	118.789	116.335	2.079	117.728	115.733	1.620
5.000	9.749	18.9	150	117.863	116.475	1.238	117.728	115.958	1.620
1.007	23.710	14.0	450	117.728	115.658	1.620	116.862	113.961	2.451
1.008	56.921	50.0	450	116.862	113.961	2.451	114.797	112.822	1.525
6.000	20.299	39.3	450	114.742	113.338	0.954	114.797	112.822	1.525

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S1	1200	Manhole	S2	1200	1
1.001	S2	1200	Manhole	S3	1200	1
1.002	S3	1200	Manhole	S4	1200	1
2.000	S4L	1200	Manhole	S4	1200	1
1.003	S4	1200	Manhole	S5	1200	1
3.000	S5L	1200	Manhole	S5	1200	1
1.004	S5	1200	Manhole	S6	1200	1
1.005	S6	1200	Manhole	S7	1200	1
4.000	S7L	1200	Manhole	S7	1200	1
1.006	S7	1200	Manhole	S8	1200	1
5.000	S8L	1200	Manhole	S8	1200	1
1.007	S8	1200	Manhole	S9	1200	1
1.008	S9	1200	Manhole	S12	1200	1
6.000	S11	1200	Manhole	S12	1200	1

Pipeline Schedule

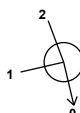
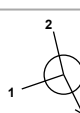
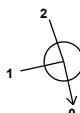
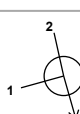
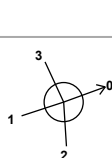
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
7.000	11.437	33.6	225	115.030	113.387	1.418	114.797	113.047	1.525
1.009	25.511	50.0	600	114.797	112.672	1.525	114.526	112.162	1.764
1.010	57.670	50.0	600	114.526	112.162	1.764	115.228	111.009	3.619
8.000	6.755	10.0	150	115.226	112.134	2.942	115.228	111.459	3.619
1.011	50.327	50.0	600	115.228	111.009	3.619	113.804	110.002	3.202
44.000	16.503	10.0	150	114.800	112.103	2.547	113.804	110.452	3.202
1.012	43.469	50.0	600	113.804	110.002	3.202	112.406	109.133	2.673
9.000	5.878	10.0	150	112.519	110.171	2.198	112.406	109.583	2.673
1.013	22.300	79.9	600	112.406	109.133	2.673	111.000	108.854	1.546
10.000	40.850	23.2	225	113.645	112.220	1.200	111.732	110.457	1.050
11.000	20.041	160.3	225	112.450	110.582	1.643	111.732	110.457	1.050
10.001	39.780	54.3	375	111.732	110.307	1.050	111.000	109.575	1.050
12.000	2.473	98.9	150	111.000	109.825	1.025	111.000	109.800	1.050
10.002	21.355	184.1	375	111.000	109.575	1.050	110.200	109.459	0.366
1.014	8.916	405.3	600	110.200	108.854	0.746	110.200	108.832	0.768
1.015	18.747	142.0	225	110.200	108.832	1.143	109.400	108.700	0.475

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
7.000	S12L	1200	Manhole	S12	1200	1
1.009	S12	1200	Manhole	S13	1200	1
1.010	S13	1200	Manhole	S14	1200	1
8.000	S14L	1200	Manhole	S14	1200	1
1.011	S14	1200	Manhole	S14A	1200	1
44.000	S14AL	1200	Manhole	S14A	1200	1
1.012	S14A	1200	Manhole	S15	1200	1
9.000	S15L	1200	Manhole	S15	1200	1
1.013	S15	1200	Manhole	HW1		1
10.000	S16	1200	Manhole	S17	1200	1
11.000	S17L	1200	Manhole	S17	1200	1
10.001	S17	1200	Manhole	S18	1200	1
12.000	S18L	1200	Manhole	S18	1200	1
10.002	S18	1200	Manhole	HW2		1
1.014	HW3		Manhole	S19	2700	1
1.015	S19	2700	Manhole	HW4		1

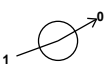
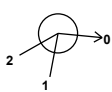
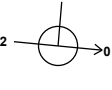
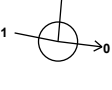
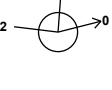
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S1	443780.904	292095.645	126.691	1.425	1200	Manhole		0	1.000	125.266	225
S2	443815.090	292030.568	125.148	2.567	1200	Manhole		1	1.000	122.656	225
S3	443847.416	292015.545	124.103	2.235	1200	Manhole		0	1.001	122.581	300
								1	1.001	121.868	300
								0	1.002	121.868	300

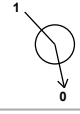
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S4L	443855.169	291966.354	122.880	1.313	1200	Manhole		0	2.000	121.567	150
S4	443864.955	291968.608	122.667	1.425	1200	Manhole		1 2 0	2.000 1.002 1.003	121.467 121.317 121.242	150 300 375
S5L	443866.640	291923.297	121.330	1.432	1200	Manhole		0	3.000	119.898	150
S5	443875.005	291926.155	121.160	1.575	1200	Manhole		1 2 0	3.000 1.003 1.004	119.810 119.585 119.585	150 375 300
S6	443889.076	291897.617	120.009	2.992	1200	Manhole		1 0	1.004 1.005	117.017 117.017	300 375
S7L	443890.159	291863.144	119.002	1.461	1200	Manhole		0	4.000	117.541	150
S7	443900.131	291865.333	118.789	2.454	1200	Manhole		1 2 0	4.000 1.005 1.006	116.560 116.335 116.335	150 375 375
S8L	443897.260	291833.375	117.863	1.388	1200	Manhole		0	5.000	116.475	150
S8	443906.657	291835.975	117.728	2.070	1200	Manhole		1 2 0	5.000 1.006 1.007	115.958 115.733 115.658	150 375 450
S9	443913.152	291813.172	116.862	2.901	1200	Manhole		1 0	1.007 1.008	113.961 113.961	450 450
S11	443938.369	291741.271	114.742	1.404	1200	Manhole		0	6.000	113.338	450
S12L	443926.223	291757.975	115.030	1.643	1200	Manhole		0	7.000	113.387	225
S12	443937.093	291761.530	114.797	2.125	1200	Manhole		1 2 3 0	7.000 6.000 1.008 1.009	113.047 112.822 112.822 112.672	225 450 450 600

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S13	443961.060	291770.273	114.526	2.364	1200	Manhole		1 1.009	112.162	600
							0	1.010	112.162	600
S14L	444009.992	291792.054	115.226	3.092	1200	Manhole		0	8.000	112.134
									112.134	150
S14	444011.241	291798.692	115.228	4.219	1200	Manhole		1 8.000	111.459	150
							2	1.010	111.009	600
							0	1.011	111.009	600
S14AL	444062.710	291810.324	114.800	2.697	1200	Manhole		0	44.000	112.103
									112.103	150
S14A	444061.337	291793.878	113.804	3.802	1200	Manhole		1 44.000	110.452	150
							2	1.011	110.002	600
							0	1.012	110.002	600
S15L	444098.935	291788.163	112.519	2.348	1200	Manhole		0	9.000	110.171
									110.171	150
S15	444104.606	291789.708	112.406	3.273	1200	Manhole		1 9.000	109.583	150
							2	1.012	109.133	600
							0	1.013	109.133	600
HW1	444110.468	291768.192	111.000	2.146		Manhole		1 1.013	108.854	600
S16	444044.465	291775.704	113.645	1.425	1200	Manhole		0	10.000	112.220
									112.220	225
S17L	444021.361	291738.907	112.450	1.868	1200	Manhole		0	11.000	110.582
									110.582	225
S17	444041.018	291734.999	111.732	1.425	1200	Manhole		1 11.000	110.457	225
							2	10.000	110.457	225
							0	10.001	110.307	375
S18L	444080.688	291732.672	111.000	1.175	1200	Manhole		0	12.000	109.825
									109.825	150
S18	444080.507	291730.206	111.000	1.425	1200	Manhole		1 12.000	109.800	150
							2	10.001	109.575	375
							0	10.002	109.575	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
HW2	444101.211	291735.442	110.200	1.296		Manhole	 1	10.002	109.459	375
HW3	444130.785	291715.646	110.200	1.346		Manhole	 0	1.014	108.854	600
S19	444136.861	291709.120	110.200	1.368	2700	Manhole	 1 0	1.014	108.832	600
HW4	444140.891	291690.812	109.400	0.700		Manhole	 1	1.015	108.832	225
							 1	1.015	108.700	225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0
100	40	10	0

Node S19 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	108.832	Product Number	CTL-SHE-0123-7000-1062-7000
Design Depth (m)	1.062	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.0	Min Node Diameter (mm)	1200

Node HW3 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	108.854	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW1 | HW2

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	827.0	0.0	1.191	1315.0	0.0	1.192	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058
2 year 30 minute summer	91.753	25.963
2 year 60 minute summer	61.301	16.200
2 year 120 minute summer	37.449	9.897
2 year 180 minute summer	28.672	7.378
2 year 240 minute summer	22.636	5.982
2 year 360 minute summer	17.235	4.435
2 year 480 minute summer	13.550	3.581
2 year 600 minute summer	11.088	3.033
2 year 720 minute summer	9.878	2.647
2 year 960 minute summer	8.113	2.136
2 year 1440 minute summer	5.891	1.579
30 year 15 minute summer	268.706	76.035
30 year 30 minute summer	174.929	49.499
30 year 60 minute summer	116.589	30.811
30 year 120 minute summer	70.438	18.615
30 year 180 minute summer	53.298	13.715
30 year 240 minute summer	41.604	10.995
30 year 360 minute summer	31.221	8.034
30 year 480 minute summer	24.324	6.428
30 year 600 minute summer	19.756	5.404
30 year 720 minute summer	17.490	4.687
30 year 960 minute summer	14.215	3.743
30 year 1440 minute summer	10.161	2.723
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC +10% A 15 minute summer	488.233	138.153
100 year +40% CC +10% A 30 minute summer	320.551	90.705
100 year +40% CC +10% A 60 minute summer	214.603	56.713
100 year +40% CC +10% A 120 minute summer	129.587	34.246
100 year +40% CC +10% A 180 minute summer	97.729	25.149
100 year +40% CC +10% A 240 minute summer	75.977	20.078
100 year +40% CC +10% A 360 minute summer	56.677	14.585

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC +10% A 480 minute summer	43.979	11.622
100 year +40% CC +10% A 600 minute summer	35.604	9.738
100 year +40% CC +10% A 720 minute summer	31.433	8.424
100 year +40% CC +10% A 960 minute summer	25.432	6.697
100 year +40% CC +10% A 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.339	0.073	22.9	0.0821	0.0000	OK
15 minute summer	S2	11	122.672	0.090	31.9	0.1024	0.0000	OK
15 minute summer	S3	11	121.997	0.129	45.6	0.1455	0.0000	OK
15 minute summer	S4L	10	121.674	0.107	15.4	0.1211	0.0000	OK
15 minute summer	S4	11	121.350	0.108	71.9	0.1218	0.0000	OK
15 minute summer	S5L	10	119.993	0.095	13.0	0.1072	0.0000	OK
15 minute summer	S5	11	119.695	0.110	92.9	0.1249	0.0000	OK
15 minute summer	S6	11	117.171	0.153	102.0	0.1736	0.0000	OK
15 minute summer	S7L	10	117.594	0.053	14.9	0.0601	0.0000	OK
15 minute summer	S7	11	116.507	0.172	124.8	0.1943	0.0000	OK
15 minute summer	S8L	10	116.522	0.047	8.8	0.0533	0.0000	OK
15 minute summer	S8	11	115.778	0.120	139.7	0.1361	0.0000	OK
15 minute summer	S9	11	114.137	0.176	153.1	0.1993	0.0000	OK
15 minute summer	S11	10	113.393	0.055	16.6	0.0617	0.0000	OK
15 minute summer	S12L	10	113.460	0.073	20.5	0.0821	0.0000	OK
15 minute summer	S12	11	112.848	0.176	190.1	0.1988	0.0000	OK
15 minute summer	S13	11	112.341	0.179	197.1	0.2022	0.0000	OK
15 minute summer	S14L	10	112.179	0.044	10.8	0.0503	0.0000	OK
15 minute summer	S14	11	111.195	0.186	213.2	0.2101	0.0000	OK
15 minute summer	S14AL	10	112.167	0.064	21.3	0.0721	0.0000	OK
15 minute summer	S14A	11	110.196	0.194	231.9	0.2194	0.0000	OK
15 minute summer	S15L	10	110.228	0.057	17.2	0.0642	0.0000	OK
15 minute summer	S15	11	109.362	0.229	246.2	0.2592	0.0000	OK
360 minute summer	HW1	304	109.156	0.302	51.7	0.0000	0.0000	OK
15 minute summer	S16	10	112.256	0.036	6.2	0.0409	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	22.2	2.019	0.226	0.8114	
15 minute summer	S2	1.001	S3	31.7	1.380	0.201	0.8330	
15 minute summer	S3	1.002	S4	45.5	1.575	0.390	1.4459	
15 minute summer	S4L	2.000	S4	15.2	1.135	0.860	0.1349	
15 minute summer	S4	1.003	S5	72.0	2.711	0.184	1.1591	
15 minute summer	S5L	3.000	S5	12.9	1.100	0.727	0.1035	
15 minute summer	S5	1.004	S6	93.1	3.123	0.293	0.9507	
15 minute summer	S6	1.005	S7	102.2	2.231	0.360	1.5629	
15 minute summer	S7L	4.000	S7	14.8	2.665	0.267	0.0569	
15 minute summer	S7	1.006	S8	125.1	2.544	0.441	1.4794	
15 minute summer	S8L	5.000	S8	8.8	1.855	0.213	0.0460	
15 minute summer	S8	1.007	S9	139.7	3.073	0.161	1.0845	
15 minute summer	S9	1.008	S12	152.7	2.658	0.333	3.2692	
15 minute summer	S11	6.000	S12	16.5	1.514	0.032	0.2209	
15 minute summer	S12L	7.000	S12	20.4	1.845	0.227	0.1264	
15 minute summer	S12	1.009	S13	190.0	2.734	0.195	1.7729	
15 minute summer	S13	1.010	S14	196.3	2.718	0.201	4.1658	
15 minute summer	S14L	8.000	S14	10.8	2.470	0.190	0.0294	
15 minute summer	S14	1.011	S14A	211.5	2.766	0.217	3.8482	
15 minute summer	S14AL	44.000	S14A	21.2	2.979	0.374	0.1175	
15 minute summer	S14A	1.012	S15	229.8	2.590	0.236	3.8617	
15 minute summer	S15L	9.000	S15	17.2	2.814	0.303	0.0358	
15 minute summer	S15	1.013	HW1	244.7	3.361	0.318	1.6482	
360 minute summer	HW1	Flow through pond	HW3	34.4	0.054	0.001	244.8540	
15 minute summer	S16	10.000	S17	6.1	1.485	0.056	0.1679	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	110.695	0.113	21.0	0.1273	0.0000	OK
15 minute summer	S17	10	110.394	0.087	33.0	0.0983	0.0000	OK
15 minute summer	S18L	10	109.928	0.103	14.7	0.1164	0.0000	OK
15 minute summer	S18	11	109.719	0.144	47.4	0.1627	0.0000	OK
360 minute summer	HW2	304	109.160	0.255	9.8	0.0000	0.0000	OK
360 minute summer	HW3	304	109.156	0.302	34.4	0.0000	0.0000	OK
360 minute summer	S19	368	109.173	0.341	30.7	1.9543	0.0000	SURCHARGED
15 minute summer	HW4	1	108.700	0.000	6.8	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	20.7	1.046	0.506	0.3970	
15 minute summer	S17	10.001	S18	32.8	1.146	0.120	1.1556	
15 minute summer	S18L	12.000	S18	14.6	1.136	0.819	0.0318	
15 minute summer	S18	10.002	HW2	47.4	1.219	0.323	0.8312	
360 minute summer	HW2	Flow through pond	HW3	34.4	0.054	0.001	244.8540	
360 minute summer	HW3	1.014	S19	30.7	0.256	0.090	1.3622	
360 minute summer	S19	Hydro-Brake®	HW4	7.0				204.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.369	0.103	43.4	0.1165	0.0000	OK
15 minute summer	S2	10	122.709	0.128	60.9	0.1445	0.0000	OK
15 minute summer	S3	11	122.058	0.190	87.2	0.2146	0.0000	OK
15 minute summer	S4L	10	121.882	0.315	29.3	0.3562	0.0000	SURCHARGED
15 minute summer	S4	11	121.393	0.151	137.0	0.1711	0.0000	OK
15 minute summer	S5L	10	120.120	0.221	24.7	0.2505	0.0000	SURCHARGED
15 minute summer	S5	11	119.744	0.159	177.2	0.1797	0.0000	OK
15 minute summer	S6	11	117.242	0.225	194.7	0.2541	0.0000	OK
15 minute summer	S7L	10	117.617	0.076	28.3	0.0859	0.0000	OK
15 minute summer	S7	11	116.593	0.258	238.2	0.2922	0.0000	OK
15 minute summer	S8L	10	116.542	0.067	16.8	0.0754	0.0000	OK
15 minute summer	S8	11	115.826	0.168	266.8	0.1905	0.0000	OK
15 minute summer	S9	11	114.217	0.256	292.3	0.2900	0.0000	OK
15 minute summer	S11	10	113.412	0.074	31.6	0.0841	0.0000	OK
15 minute summer	S12L	10	113.490	0.103	38.8	0.1161	0.0000	OK
15 minute summer	S12	11	112.920	0.248	363.7	0.2804	0.0000	OK
15 minute summer	S13	11	112.415	0.253	377.2	0.2859	0.0000	OK
15 minute summer	S14L	10	112.196	0.062	20.4	0.0705	0.0000	OK
15 minute summer	S14	11	111.273	0.264	408.9	0.2987	0.0000	OK
15 minute summer	S14AL	10	112.197	0.094	40.5	0.1062	0.0000	OK
15 minute summer	S14A	11	110.280	0.277	446.5	0.3138	0.0000	OK
15 minute summer	S15L	10	110.253	0.082	32.6	0.0925	0.0000	OK
15 minute summer	S15	11	109.464	0.331	475.9	0.3742	0.0000	OK
480 minute summer	HW1	480	109.427	0.573	98.0	0.0000	0.0000	OK
15 minute summer	S16	10	112.270	0.050	11.8	0.0562	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	42.5	2.405	0.432	1.2995	
15 minute summer	S2	1.001	S3	60.5	1.613	0.384	1.3435	
15 minute summer	S3	1.002	S4	86.7	1.844	0.744	2.3557	
15 minute summer	S4L	2.000	S4	28.8	1.634	1.624	0.1750	
15 minute summer	S4	1.003	S5	137.3	3.193	0.351	1.8764	
15 minute summer	S5L	3.000	S5	24.3	1.378	1.369	0.1527	
15 minute summer	S5	1.004	S6	177.7	3.737	0.560	1.5031	
15 minute summer	S6	1.005	S7	195.1	2.601	0.688	2.5572	
15 minute summer	S7L	4.000	S7	28.2	3.159	0.508	0.0912	
15 minute summer	S7	1.006	S8	239.1	2.952	0.843	2.4360	
15 minute summer	S8L	5.000	S8	16.7	2.214	0.406	0.0737	
15 minute summer	S8	1.007	S9	266.9	3.627	0.307	1.7474	
15 minute summer	S9	1.008	S12	292.8	3.140	0.639	5.3071	
15 minute summer	S11	6.000	S12	31.5	1.792	0.061	0.4262	
15 minute summer	S12L	7.000	S12	38.6	2.196	0.429	0.2012	
15 minute summer	S12	1.009	S13	363.7	3.269	0.373	2.8391	
15 minute summer	S13	1.010	S14	376.8	3.246	0.386	6.6942	
15 minute summer	S14L	8.000	S14	20.3	2.945	0.359	0.0467	
15 minute summer	S14	1.011	S14A	407.7	3.304	0.418	6.2109	
15 minute summer	S14AL	44.000	S14A	40.3	3.485	0.712	0.1910	
15 minute summer	S14A	1.012	S15	444.7	3.103	0.456	6.2309	
15 minute summer	S15L	9.000	S15	32.5	3.320	0.574	0.0576	
15 minute summer	S15	1.013	HW1	473.4	4.062	0.614	2.7967	
480 minute summer	HW1	Flow through pond	HW3	99.5	0.054	0.004	514.5037	
15 minute summer	S16	10.000	S17	11.6	1.797	0.107	0.2645	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	110.755	0.173	39.8	0.1953	0.0000	OK
15 minute summer	S17	10	110.428	0.121	62.7	0.1364	0.0000	OK
15 minute summer	S18L	10	110.009	0.184	28.0	0.2080	0.0000	SURCHARGED
15 minute summer	S18	11	109.782	0.207	90.2	0.2343	0.0000	OK
480 minute summer	HW2	480	109.432	0.528	14.0	0.0000	0.0000	OK
480 minute summer	HW3	480	109.426	0.572	99.5	0.0000	0.0000	OK
600 minute summer	S19	585	109.439	0.607	30.4	3.4752	0.0000	SURCHARGED
15 minute summer	HW4	1	108.700	0.000	7.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	39.3	1.225	0.960	0.6430	
15 minute summer	S17	10.001	S18	62.4	1.349	0.229	1.8492	
15 minute summer	S18L	12.000	S18	27.9	1.584	1.562	0.0431	
15 minute summer	S18	10.002	HW2	90.0	1.438	0.612	1.3358	
480 minute summer	HW2	Flow through pond	HW3	99.5	0.054	0.004	514.5037	
480 minute summer	HW3	1.014	S19	31.0	0.283	0.091	2.4909	
600 minute summer	S19	Hydro-Brake®	HW4	7.0				284.1

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.416	0.150	78.9	0.1693	0.0000	OK
15 minute summer	S2	11	122.809	0.228	110.9	0.2575	0.0000	OK
15 minute summer	S3	11	122.544	0.676	154.4	0.7641	0.0000	SURCHARGED
15 minute summer	S4L	11	122.483	0.915	53.2	1.0354	0.0000	SURCHARGED
15 minute summer	S4	11	121.454	0.212	244.8	0.2393	0.0000	OK
15 minute summer	S5L	12	120.790	0.892	44.9	1.0091	0.0000	SURCHARGED
15 minute summer	S5	12	120.402	0.817	310.7	0.9240	0.0000	SURCHARGED
15 minute summer	S6	12	118.093	1.076	323.2	1.2170	0.0000	SURCHARGED
15 minute summer	S7L	11	118.021	0.480	51.4	0.5432	0.0000	SURCHARGED
15 minute summer	S7	12	117.203	0.868	388.7	0.9819	0.0000	SURCHARGED
15 minute summer	S8L	10	116.571	0.096	30.5	0.1086	0.0000	OK
15 minute summer	S8	11	115.880	0.222	437.4	0.2509	0.0000	OK
15 minute summer	S9	11	114.338	0.377	483.1	0.4265	0.0000	OK
15 minute summer	S11	10	113.438	0.100	57.4	0.1128	0.0000	OK
15 minute summer	S12L	10	113.536	0.149	70.6	0.1683	0.0000	OK
15 minute summer	S12	11	113.008	0.336	613.5	0.3804	0.0000	OK
15 minute summer	S13	11	112.507	0.345	639.2	0.3907	0.0000	OK
15 minute summer	S14L	10	112.223	0.089	37.1	0.1003	0.0000	OK
15 minute summer	S14	11	111.375	0.366	699.8	0.4143	0.0000	OK
15 minute summer	S14AL	11	113.154	1.051	73.6	1.1890	0.0000	SURCHARGED
15 minute summer	S14A	11	110.395	0.393	771.8	0.4443	0.0000	OK
15 minute summer	S15L	10	110.299	0.128	59.2	0.1448	0.0000	OK
720 minute summer	S15	735	109.899	0.766	98.4	0.8666	0.0000	SURCHARGED
720 minute summer	HW1	735	109.903	1.049	212.1	0.0000	0.0000	OK
15 minute summer	S16	10	112.287	0.067	21.5	0.0761	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	77.4	2.766	0.787	2.0659	
15 minute summer	S2	1.001	S3	107.0	1.762	0.679	2.2775	
15 minute summer	S3	1.002	S4	153.3	2.177	1.315	3.4858	
15 minute summer	S4L	2.000	S4	51.6	2.934	2.915	0.1750	
15 minute summer	S4	1.003	S5	244.9	3.463	0.626	3.8034	
15 minute summer	S5L	3.000	S5	43.7	2.484	2.469	0.1556	
15 minute summer	S5	1.004	S6	292.9	4.160	0.923	2.2406	
15 minute summer	S6	1.005	S7	319.5	2.897	1.127	3.7639	
15 minute summer	S7L	4.000	S7	48.6	3.392	0.875	0.1797	
15 minute summer	S7	1.006	S8	389.3	3.530	1.372	3.2835	
15 minute summer	S8L	5.000	S8	30.4	2.553	0.738	0.1160	
15 minute summer	S8	1.007	S9	437.0	3.932	0.503	2.6043	
15 minute summer	S9	1.008	S12	484.7	3.423	1.058	8.5424	
15 minute summer	S11	6.000	S12	57.2	1.742	0.111	0.8858	
15 minute summer	S12L	7.000	S12	70.3	2.528	0.781	0.3182	
15 minute summer	S12	1.009	S13	614.7	3.721	0.631	4.2151	
15 minute summer	S13	1.010	S14	641.5	3.685	0.658	10.0386	
15 minute summer	S14L	8.000	S14	37.0	3.420	0.654	0.0731	
15 minute summer	S14	1.011	S14A	702.6	3.740	0.720	9.4538	
15 minute summer	S14AL	44.000	S14A	69.2	3.930	1.221	0.2903	
15 minute summer	S14A	1.012	S15	777.3	3.436	0.797	9.7535	
15 minute summer	S15L	9.000	S15	58.9	3.603	1.040	0.0987	
720 minute summer	S15	1.013	HW1	212.1	1.077	0.275	6.2814	
720 minute summer	HW1	Flow through pond	HW3	191.3	0.062	0.008	1055.0103	
15 minute summer	S16	10.000	S17	21.2	2.135	0.196	0.4063	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	111.053	0.471	72.4	0.5325	0.0000	SURCHARGED
15 minute summer	S17	10	110.474	0.167	114.4	0.1886	0.0000	OK
15 minute summer	S18L	10	110.161	0.336	50.8	0.3797	0.0000	SURCHARGED
720 minute summer	S18	720	109.899	0.324	18.3	0.3662	0.0000	OK
720 minute summer	HW2	720	109.900	0.996	18.3	0.0000	0.0000	OK
720 minute summer	HW3	735	109.898	1.044	191.3	0.0000	0.0000	SURCHARGED
720 minute summer	S19	735	109.898	1.066	14.5	6.1017	0.0000	SURCHARGED
15 minute summer	HW4	1	108.700	0.000	7.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	71.7	1.803	1.751	0.7854	
15 minute summer	S17	10.001	S18	113.8	1.522	0.419	2.9082	
15 minute summer	S18L	12.000	S18	50.4	2.865	2.825	0.0431	
720 minute summer	S18	10.002	HW2	18.3	0.930	0.124	2.2581	
720 minute summer	HW2	Flow through pond	HW3	191.3	0.062	0.008	1055.0103	
720 minute summer	HW3	1.014	S19	14.5	0.223	0.043	2.5114	
720 minute summer	S19	Hydro-Brake®	HW4	7.0				353.3

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.427	0.161	86.8	0.1825	0.0000	OK
15 minute summer	S2	11	123.057	0.476	122.7	0.5378	0.0000	SURCHARGED
15 minute summer	S3	11	122.667	0.799	163.5	0.9036	0.0000	SURCHARGED
15 minute summer	S4L	11	122.662	1.094	58.5	1.2379	0.0000	FLOOD RISK
15 minute summer	S4	12	121.534	0.292	262.9	0.3302	0.0000	OK
15 minute summer	S5L	12	121.330	1.432	49.3	1.6196	0.2238	FLOOD
15 minute summer	S5	12	120.962	1.377	332.0	1.5570	0.0000	FLOOD RISK
15 minute summer	S6	12	118.366	1.349	338.3	1.5256	0.0000	SURCHARGED
15 minute summer	S7L	11	118.311	0.770	56.6	0.8703	0.0000	SURCHARGED
15 minute summer	S7	12	117.361	1.026	414.7	1.1606	0.0000	SURCHARGED
15 minute summer	S8L	10	116.578	0.103	33.5	0.1161	0.0000	OK
15 minute summer	S8	11	115.889	0.231	467.6	0.2611	0.0000	OK
15 minute summer	S9	12	114.612	0.651	518.1	0.7362	0.0000	SURCHARGED
15 minute summer	S11	10	113.443	0.105	63.2	0.1183	0.0000	OK
15 minute summer	S12L	10	113.547	0.160	77.6	0.1805	0.0000	OK
15 minute summer	S12	11	113.021	0.349	649.1	0.3943	0.0000	OK
15 minute summer	S13	11	112.519	0.357	676.6	0.4041	0.0000	OK
15 minute summer	S14L	10	112.229	0.094	40.8	0.1069	0.0000	OK
15 minute summer	S14	11	111.389	0.379	740.2	0.4292	0.0000	OK
15 minute summer	S14AL	11	113.633	1.530	80.9	1.7299	0.0000	SURCHARGED
15 minute summer	S14A	11	110.411	0.408	815.8	0.4620	0.0000	OK
15 minute summer	S15L	11	110.500	0.329	65.1	0.3716	0.0000	SURCHARGED
720 minute summer	S15	735	109.999	0.866	108.5	0.9797	0.0000	SURCHARGED
960 minute summer	HW1	975	110.005	1.151	147.2	0.0000	0.0000	OK
15 minute summer	S16	10	112.291	0.071	23.7	0.0801	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	85.9	2.749	0.873	2.5545	
15 minute summer	S2	1.001	S3	113.8	1.796	0.723	2.5102	
15 minute summer	S3	1.002	S4	162.4	2.306	1.393	3.4928	
15 minute summer	S4L	2.000	S4	56.7	3.220	3.200	0.1750	
15 minute summer	S4	1.003	S5	257.4	3.454	0.658	4.4146	
15 minute summer	S5L	3.000	S5	43.3	2.462	2.446	0.1556	
15 minute summer	S5	1.004	S6	310.5	4.410	0.978	2.2406	
15 minute summer	S6	1.005	S7	339.3	3.077	1.197	3.7639	
15 minute summer	S7L	4.000	S7	52.5	3.457	0.946	0.1797	
15 minute summer	S7	1.006	S8	415.8	3.770	1.466	3.2835	
15 minute summer	S8L	5.000	S8	33.4	2.600	0.810	0.1251	
15 minute summer	S8	1.007	S9	467.3	3.939	0.538	2.8403	
15 minute summer	S9	1.008	S12	507.4	3.398	1.108	8.9961	
15 minute summer	S11	6.000	S12	63.0	1.774	0.122	0.9669	
15 minute summer	S12L	7.000	S12	77.3	2.570	0.859	0.3439	
15 minute summer	S12	1.009	S13	649.6	3.769	0.666	4.3973	
15 minute summer	S13	1.010	S14	676.1	3.727	0.693	10.4610	
15 minute summer	S14L	8.000	S14	40.7	3.490	0.719	0.0788	
15 minute summer	S14	1.011	S14A	740.4	3.775	0.759	9.8694	
15 minute summer	S14AL	44.000	S14A	75.4	4.281	1.330	0.2881	
15 minute summer	S14A	1.012	S15	817.8	3.420	0.839	10.4545	
15 minute summer	S15L	9.000	S15	63.1	3.601	1.115	0.1029	
720 minute summer	S15	1.013	HW1	109.0	0.830	0.141	6.2814	
960 minute summer	HW1	Flow through pond	HW3	116.9	0.056	0.005	1180.7327	
15 minute summer	S16	10.000	S17	23.4	2.195	0.216	0.4359	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	111.135	0.553	79.6	0.6252	0.0000	SURCHARGED
15 minute summer	S17	10	110.483	0.176	125.9	0.1992	0.0000	OK
15 minute summer	S18L	10	110.206	0.381	55.9	0.4312	0.0000	SURCHARGED
720 minute summer	S18	735	109.997	0.422	20.0	0.4776	0.0000	SURCHARGED
960 minute summer	HW2	975	110.002	1.098	16.3	0.0000	0.0000	OK
960 minute summer	HW3	960	109.997	1.143	126.0	0.0000	0.0000	FLOOD RISK
960 minute summer	S19	960	109.997	1.165	32.2	6.6713	0.0000	FLOOD RISK
15 minute summer	HW4	1	108.700	0.000	7.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	78.8	1.981	1.924	0.7890	
15 minute summer	S17	10.001	S18	125.3	1.544	0.461	3.1200	
15 minute summer	S18L	12.000	S18	55.4	3.149	3.106	0.0431	
720 minute summer	S18	10.002	HW2	20.0	0.954	0.136	2.3554	
960 minute summer	HW2	Flow through pond	HW3	116.9	0.056	0.005	1180.7327	
960 minute summer	HW3	1.014	S19	32.2	0.227	0.095	2.5114	
960 minute summer	S19	Hydro-Brake®	HW4	7.3				456.3

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S1	0.132	5.00	126.691	Manhole	1200	443780.904	292095.645	1.425
S2	0.056	5.00	125.148	Manhole	1200	443815.090	292030.568	2.567
S3	0.081	5.00	124.103	Manhole	1200	443847.416	292015.545	2.235
S4L	0.089	5.00	122.880	Manhole	1200	443855.169	291966.354	1.313
S4	0.070	5.00	122.667	Manhole	1200	443864.955	291968.608	1.425
S5L	0.075	5.00	121.330	Manhole	1200	443866.640	291923.297	1.432
S5	0.051	5.00	121.160	Manhole	1200	443875.005	291926.155	1.575
S6	0.054	5.00	120.009	Manhole	1200	443889.076	291897.617	2.992
S7L	0.086	5.00	119.002	Manhole	1200	443890.159	291863.144	1.461
S7	0.051	5.00	118.789	Manhole	1200	443900.131	291865.333	2.454
S8L	0.051	5.00	117.863	Manhole	1200	443897.260	291833.375	1.388
S8	0.037	5.00	117.728	Manhole	1200	443906.657	291835.975	2.070
S9	0.081	5.00	116.862	Manhole	1200	443913.152	291813.172	2.901
S11	0.096	5.00	114.742	Manhole	1200	443938.369	291741.271	1.404
S12L	0.118	5.00	115.030	Manhole	1200	443926.223	291757.975	1.643
S12	0.011	5.00	114.797	Manhole	1200	443937.093	291761.530	2.125
S13	0.043	5.00	114.526	Manhole	1200	443961.060	291770.273	2.364
S14L	0.062	5.00	115.226	Manhole	1200	444009.992	291792.054	3.092
S14	0.040	5.00	115.228	Manhole	1200	444011.241	291798.692	4.219
S14AL	0.123	5.00	114.800	Manhole	1200	444062.710	291810.324	2.697
S14A			113.804	Manhole	1200	444061.337	291793.878	3.802
S15L	0.099	5.00	112.519	Manhole	1200	444098.935	291788.163	2.348
S15			112.406	Manhole	1200	444104.606	291789.708	3.273
HW1			111.000	Manhole		444110.468	291768.192	2.146
S16	0.036	5.00	113.645	Manhole	1200	444044.465	291775.704	1.425
S17L	0.121	5.00	112.450	Manhole	1200	444021.361	291738.907	1.868
S17	0.036	5.00	111.732	Manhole	1200	444041.018	291734.999	1.425
S18L	0.085	5.00	111.000	Manhole	1200	444080.688	291732.672	1.175
S18			111.000	Manhole	1200	444080.507	291730.206	1.425
HW2			110.200	Manhole		444101.211	291735.442	1.296
HW3		5.00	110.200	Manhole		444130.785	291715.646	1.346
S19			110.200	Manhole	2700	444136.861	291709.120	1.368
HW4			109.400	Manhole		444140.891	291690.812	0.700

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S1	S2	73.509	0.600	125.266	122.656	2.610	28.2	225	5.50	50.0
1.001	S2	S3	35.647	0.600	122.581	121.868	0.713	50.0	300	5.76	50.0
1.002	S3	S4	50.107	0.600	121.868	121.317	0.551	90.9	300	6.27	49.3
2.000	S4L	S4	10.043	0.600	121.567	121.467	0.100	100.4	150	5.17	50.0
1.003	S4	S5	43.626	0.600	121.242	119.585	1.657	26.3	375	6.47	48.6
3.000	S5L	S5	8.841	0.600	119.898	119.810	0.088	100.5	150	5.15	50.0
1.004	S5	S6	31.818	0.600	119.585	117.017	2.568	12.4	300	6.59	48.1
1.005	S6	S7	34.125	0.600	117.017	116.335	0.682	50.0	375	6.81	47.4
4.000	S7L	S7	10.210	0.600	117.541	116.560	0.981	10.4	150	5.05	50.0
1.006	S7	S8	30.074	0.600	116.335	115.733	0.602	50.0	375	7.01	46.7
5.000	S8L	S8	9.749	0.600	116.475	115.958	0.517	18.9	150	5.07	50.0
1.007	S8	S9	23.710	0.600	115.658	113.961	1.697	14.0	450	7.08	46.5
1.008	S9	S12	56.921	0.600	113.961	112.822	1.139	50.0	450	7.41	45.4
6.000	S11	S12	20.299	0.600	113.338	112.822	0.516	39.3	450	5.10	50.0
7.000	S12L	S12	11.437	0.600	113.387	113.047	0.340	33.6	225	5.08	50.0
1.009	S12	S13	25.511	0.600	112.672	112.162	0.510	50.0	600	7.53	45.0
1.010	S13	S14	57.670	0.600	112.162	111.009	1.153	50.0	600	7.81	44.2
8.000	S14L	S14	6.755	0.600	112.134	111.459	0.675	10.0	150	5.04	50.0
1.011	S14	S14A	50.327	0.600	111.009	110.002	1.007	50.0	600	8.06	43.5
44.000	S14AL	S14A	16.503	0.600	112.103	110.452	1.651	10.0	150	5.09	50.0
1.012	S14A	S15	43.469	0.600	110.002	109.133	0.869	50.0	600	8.27	42.9
9.000	S15L	S15	5.878	0.600	110.171	109.583	0.588	10.0	150	5.03	50.0
1.013	S15	HW1	22.300	0.600	109.133	108.854	0.279	79.9	600	8.40	42.5
10.000	S16	S17	40.850	0.600	112.220	110.457	1.763	23.2	225	5.25	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S1	S2	2.474	98.4	17.9	1.200	2.267	1.200	2.267	0.132	0.0
1.001	S2	S3	2.228	157.5	25.5	2.267	1.935	1.935	2.267	0.188	0.0
1.002	S3	S4	1.649	116.6	36.0	1.935	1.050	1.050	1.935	0.269	0.0
2.000	S4L	S4	1.002	17.7	12.1	1.163	1.050	1.050	1.163	0.089	0.0
1.003	S4	S5	3.543	391.3	56.3	1.050	1.200	1.050	1.200	0.428	0.0
3.000	S5L	S5	1.002	17.7	10.2	1.282	1.200	1.200	1.282	0.075	0.0
1.004	S5	S6	4.490	317.4	72.3	1.275	2.692	1.275	2.692	0.554	0.0
1.005	S6	S7	2.566	283.4	78.1	2.617	2.079	2.079	2.617	0.608	0.0
4.000	S7L	S7	3.141	55.5	11.7	1.311	2.079	1.311	2.079	0.086	0.0
1.006	S7	S8	2.568	283.7	94.3	2.079	1.620	1.620	2.079	0.745	0.0
5.000	S8L	S8	2.330	41.2	6.9	1.238	1.620	1.238	1.620	0.051	0.0
1.007	S8	S9	5.460	868.4	104.9	1.620	2.451	1.620	2.451	0.833	0.0
1.008	S9	S12	2.881	458.2	112.5	2.451	1.525	1.525	2.451	0.914	0.0
6.000	S11	S12	3.249	516.7	13.0	0.954	1.525	0.954	1.525	0.096	0.0
7.000	S12L	S12	2.263	90.0	16.0	1.418	1.525	1.418	1.525	0.118	0.0
1.009	S12	S13	3.448	974.9	139.0	1.525	1.764	1.525	1.764	1.139	0.0
1.010	S13	S14	3.448	975.0	141.6	1.764	3.619	1.764	3.619	1.182	0.0
8.000	S14L	S14	3.203	56.6	8.4	2.942	3.619	2.942	3.619	0.062	0.0
1.011	S14	S14A	3.450	975.4	151.4	3.619	3.202	3.202	3.619	1.284	0.0
44.000	S14AL	S14A	3.205	56.6	16.7	2.547	3.202	2.547	3.202	0.123	0.0
1.012	S14A	S15	3.448	974.9	163.7	3.202	2.673	2.673	3.202	1.407	0.0
9.000	S15L	S15	3.205	56.6	13.4	2.198	2.673	2.198	2.673	0.099	0.0
1.013	S15	HW1	2.725	770.5	173.7	2.673	1.546	1.546	2.673	1.506	0.0
10.000	S16	S17	2.729	108.5	4.9	1.200	1.050	1.050	1.200	0.036	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.000	S17L	S17	20.041	0.600	110.582	110.457	0.125	160.3	225	5.32	50.0
10.001	S17	S18	39.780	0.600	110.307	109.575	0.732	54.3	375	5.59	50.0
12.000	S18L	S18	2.473	0.600	109.825	109.800	0.025	98.9	150	5.04	50.0
10.002	S18	HW2	21.355	0.600	109.575	109.459	0.116	184.1	375	5.86	50.0
1.014	HW3	S19	8.916	0.600	108.854	108.832	0.022	405.3	600	5.12	50.0
1.015	S19	HW4	18.747	0.600	108.832	108.700	0.132	142.0	225	5.41	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
11.000	S17L	S17	1.030	40.9	16.4	1.643	1.050	1.050	1.643	0.121	0.0
10.001	S17	S18	2.462	271.9	26.2	1.050	1.050	1.050	1.050	0.193	0.0
12.000	S18L	S18	1.010	17.9	11.5	1.025	1.050	1.025	1.050	0.085	0.0
10.002	S18	HW2	1.332	147.1	37.7	1.050	0.366	0.366	1.050	0.278	0.0
1.014	HW3	S19	1.203	340.2	0.0	0.746	0.768	0.746	0.768	0.000	0.0
1.015	S19	HW4	1.095	43.5	0.0	1.143	0.475	0.475	1.143	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	73.509	28.2	225	126.691	125.266	1.200	125.148	122.656	2.267
1.001	35.647	50.0	300	125.148	122.581	2.267	124.103	121.868	1.935
1.002	50.107	90.9	300	124.103	121.868	1.935	122.667	121.317	1.050
2.000	10.043	100.4	150	122.880	121.567	1.163	122.667	121.467	1.050
1.003	43.626	26.3	375	122.667	121.242	1.050	121.160	119.585	1.200
3.000	8.841	100.5	150	121.330	119.898	1.282	121.160	119.810	1.200
1.004	31.818	12.4	300	121.160	119.585	1.275	120.009	117.017	2.692
1.005	34.125	50.0	375	120.009	117.017	2.617	118.789	116.335	2.079
4.000	10.210	10.4	150	119.002	117.541	1.311	118.789	116.560	2.079
1.006	30.074	50.0	375	118.789	116.335	2.079	117.728	115.733	1.620
5.000	9.749	18.9	150	117.863	116.475	1.238	117.728	115.958	1.620
1.007	23.710	14.0	450	117.728	115.658	1.620	116.862	113.961	2.451
1.008	56.921	50.0	450	116.862	113.961	2.451	114.797	112.822	1.525
6.000	20.299	39.3	450	114.742	113.338	0.954	114.797	112.822	1.525

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S1	1200	Manhole	S2	1200	1
1.001	S2	1200	Manhole	S3	1200	1
1.002	S3	1200	Manhole	S4	1200	1
2.000	S4L	1200	Manhole	S4	1200	1
1.003	S4	1200	Manhole	S5	1200	1
3.000	S5L	1200	Manhole	S5	1200	1
1.004	S5	1200	Manhole	S6	1200	1
1.005	S6	1200	Manhole	S7	1200	1
4.000	S7L	1200	Manhole	S7	1200	1
1.006	S7	1200	Manhole	S8	1200	1
5.000	S8L	1200	Manhole	S8	1200	1
1.007	S8	1200	Manhole	S9	1200	1
1.008	S9	1200	Manhole	S12	1200	1
6.000	S11	1200	Manhole	S12	1200	1

Pipeline Schedule

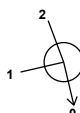
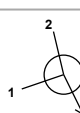
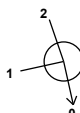
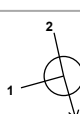
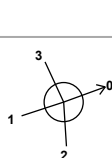
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
7.000	11.437	33.6	225	115.030	113.387	1.418	114.797	113.047	1.525
1.009	25.511	50.0	600	114.797	112.672	1.525	114.526	112.162	1.764
1.010	57.670	50.0	600	114.526	112.162	1.764	115.228	111.009	3.619
8.000	6.755	10.0	150	115.226	112.134	2.942	115.228	111.459	3.619
1.011	50.327	50.0	600	115.228	111.009	3.619	113.804	110.002	3.202
44.000	16.503	10.0	150	114.800	112.103	2.547	113.804	110.452	3.202
1.012	43.469	50.0	600	113.804	110.002	3.202	112.406	109.133	2.673
9.000	5.878	10.0	150	112.519	110.171	2.198	112.406	109.583	2.673
1.013	22.300	79.9	600	112.406	109.133	2.673	111.000	108.854	1.546
10.000	40.850	23.2	225	113.645	112.220	1.200	111.732	110.457	1.050
11.000	20.041	160.3	225	112.450	110.582	1.643	111.732	110.457	1.050
10.001	39.780	54.3	375	111.732	110.307	1.050	111.000	109.575	1.050
12.000	2.473	98.9	150	111.000	109.825	1.025	111.000	109.800	1.050
10.002	21.355	184.1	375	111.000	109.575	1.050	110.200	109.459	0.366
1.014	8.916	405.3	600	110.200	108.854	0.746	110.200	108.832	0.768
1.015	18.747	142.0	225	110.200	108.832	1.143	109.400	108.700	0.475

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
7.000	S12L	1200	Manhole	S12	1200	1
1.009	S12	1200	Manhole	S13	1200	1
1.010	S13	1200	Manhole	S14	1200	1
8.000	S14L	1200	Manhole	S14	1200	1
1.011	S14	1200	Manhole	S14A	1200	1
44.000	S14AL	1200	Manhole	S14A	1200	1
1.012	S14A	1200	Manhole	S15	1200	1
9.000	S15L	1200	Manhole	S15	1200	1
1.013	S15	1200	Manhole	HW1		1
10.000	S16	1200	Manhole	S17	1200	1
11.000	S17L	1200	Manhole	S17	1200	1
10.001	S17	1200	Manhole	S18	1200	1
12.000	S18L	1200	Manhole	S18	1200	1
10.002	S18	1200	Manhole	HW2		1
1.014	HW3		Manhole	S19	2700	1
1.015	S19	2700	Manhole	HW4		1

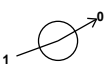
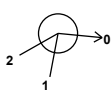
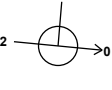
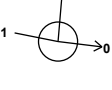
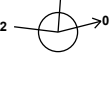
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S1	443780.904	292095.645	126.691	1.425	1200	Manhole		0	1.000	125.266	225
S2	443815.090	292030.568	125.148	2.567	1200	Manhole		1	1.000	122.656	225
S3	443847.416	292015.545	124.103	2.235	1200	Manhole		0	1.001	122.581	300
								1	1.001	121.868	300
								0	1.002	121.868	300

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S4L	443855.169	291966.354	122.880	1.313	1200	Manhole		0	2.000	121.567	150
S4	443864.955	291968.608	122.667	1.425	1200	Manhole		1 2 0	2.000 1.002 1.003	121.467 121.317 121.242	150 300 375
S5L	443866.640	291923.297	121.330	1.432	1200	Manhole		0	3.000	119.898	150
S5	443875.005	291926.155	121.160	1.575	1200	Manhole		1 2 0	3.000 1.003 1.004	119.810 119.585 119.585	150 375 300
S6	443889.076	291897.617	120.009	2.992	1200	Manhole		1 0	1.004 1.005	117.017 117.017	300 375
S7L	443890.159	291863.144	119.002	1.461	1200	Manhole		0	4.000	117.541	150
S7	443900.131	291865.333	118.789	2.454	1200	Manhole		1 2 0	4.000 1.005 1.006	116.560 116.335 116.335	150 375 375
S8L	443897.260	291833.375	117.863	1.388	1200	Manhole		0	5.000	116.475	150
S8	443906.657	291835.975	117.728	2.070	1200	Manhole		1 2 0	5.000 1.006 1.007	115.958 115.733 115.658	150 375 450
S9	443913.152	291813.172	116.862	2.901	1200	Manhole		1 0	1.007 1.008	113.961 113.961	450 450
S11	443938.369	291741.271	114.742	1.404	1200	Manhole		0	6.000	113.338	450
S12L	443926.223	291757.975	115.030	1.643	1200	Manhole		0	7.000	113.387	225
S12	443937.093	291761.530	114.797	2.125	1200	Manhole		1 2 3 0	7.000 6.000 1.008 1.009	113.047 112.822 112.822 112.672	225 450 450 600

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S13	443961.060	291770.273	114.526	2.364	1200	Manhole		1 1.009	112.162	600
							0	1.010	112.162	600
S14L	444009.992	291792.054	115.226	3.092	1200	Manhole		0	8.000	112.134
									112.134	150
S14	444011.241	291798.692	115.228	4.219	1200	Manhole		1 8.000	111.459	150
							2	1.010	111.009	600
							0	1.011	111.009	600
S14AL	444062.710	291810.324	114.800	2.697	1200	Manhole		0	44.000	112.103
									112.103	150
S14A	444061.337	291793.878	113.804	3.802	1200	Manhole		1 44.000	110.452	150
							2	1.011	110.002	600
							0	1.012	110.002	600
S15L	444098.935	291788.163	112.519	2.348	1200	Manhole		0	9.000	110.171
									110.171	150
S15	444104.606	291789.708	112.406	3.273	1200	Manhole		1 9.000	109.583	150
							2	1.012	109.133	600
							0	1.013	109.133	600
HW1	444110.468	291768.192	111.000	2.146		Manhole		1 1.013	108.854	600
S16	444044.465	291775.704	113.645	1.425	1200	Manhole		0	10.000	112.220
									112.220	225
S17L	444021.361	291738.907	112.450	1.868	1200	Manhole		0	11.000	110.582
									110.582	225
S17	444041.018	291734.999	111.732	1.425	1200	Manhole		1 11.000	110.457	225
							2	10.000	110.457	225
							0	10.001	110.307	375
S18L	444080.688	291732.672	111.000	1.175	1200	Manhole		0	12.000	109.825
									109.825	150
S18	444080.507	291730.206	111.000	1.425	1200	Manhole		1 12.000	109.800	150
							2	10.001	109.575	375
							0	10.002	109.575	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
HW2	444101.211	291735.442	110.200	1.296		Manhole		1	10.002	109.459	375
HW3	444130.785	291715.646	110.200	1.346		Manhole		0	1.014	108.854	600
S19	444136.861	291709.120	110.200	1.368	2700	Manhole		1	1.014	108.832	600
								0	1.015	108.832	225
HW4	444140.891	291690.812	109.400	0.700		Manhole		1	1.015	108.700	225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node HW4 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to All storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.700	135	0.700	270	0.700	405	0.700	540	0.700	675	0.700
15	0.700	150	0.700	285	0.700	420	0.700	555	0.700	690	0.700
30	0.700	165	0.700	300	0.700	435	0.700	570	0.700	705	0.700
45	0.700	180	0.700	315	0.700	450	0.700	585	0.700	720	0.700
60	0.700	195	0.700	330	0.700	465	0.700	600	0.700	735	0.700
75	0.700	210	0.700	345	0.700	480	0.700	615	0.700	750	0.700
90	0.700	225	0.700	360	0.700	495	0.700	630	0.700	765	0.700
105	0.700	240	0.700	375	0.700	510	0.700	645	0.700	780	0.700
120	0.700	255	0.700	390	0.700	525	0.700	660	0.700	795	0.700

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
810	0.700	930	0.700	1050	0.700	1170	0.700	1290	0.700	1410	0.700
825	0.700	945	0.700	1065	0.700	1185	0.700	1305	0.700	1425	0.700
840	0.700	960	0.700	1080	0.700	1200	0.700	1320	0.700	1440	0.700
855	0.700	975	0.700	1095	0.700	1215	0.700	1335	0.700		
870	0.700	990	0.700	1110	0.700	1230	0.700	1350	0.700		
885	0.700	1005	0.700	1125	0.700	1245	0.700	1365	0.700		
900	0.700	1020	0.700	1140	0.700	1260	0.700	1380	0.700		
915	0.700	1035	0.700	1155	0.700	1275	0.700	1395	0.700		

Node S19 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	108.832	Product Number	CTL-SHE-0123-7000-1062-7000
Design Depth (m)	1.062	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	7.0	Min Node Diameter (mm)	1200

Node HW3 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	108.854	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW1 | HW2

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	827.0	0.0	1.191	1315.0	0.0	1.192	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058	30 year 120 minute summer	70.438	18.615
2 year 30 minute summer	91.753	25.963	30 year 180 minute summer	53.298	13.715
2 year 60 minute summer	61.301	16.200	30 year 240 minute summer	41.604	10.995
2 year 120 minute summer	37.449	9.897	30 year 360 minute summer	31.221	8.034
2 year 180 minute summer	28.672	7.378	30 year 480 minute summer	24.324	6.428
2 year 240 minute summer	22.636	5.982	30 year 600 minute summer	19.756	5.404
2 year 360 minute summer	17.235	4.435	30 year 720 minute summer	17.490	4.687
2 year 480 minute summer	13.550	3.581	30 year 960 minute summer	14.215	3.743
2 year 600 minute summer	11.088	3.033	30 year 1440 minute summer	10.161	2.723
2 year 720 minute summer	9.878	2.647	100 year +40% CC 15 minute summer	488.233	138.153
2 year 960 minute summer	8.113	2.136	100 year +40% CC 30 minute summer	320.551	90.705
2 year 1440 minute summer	5.891	1.579	100 year +40% CC 60 minute summer	214.603	56.713
30 year 15 minute summer	268.706	76.035	100 year +40% CC 120 minute summer	129.587	34.246
30 year 30 minute summer	174.929	49.499	100 year +40% CC 180 minute summer	97.729	25.149
30 year 60 minute summer	116.589	30.811	100 year +40% CC 240 minute summer	75.977	20.078

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 360 minute summer	56.677	14.585	100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 480 minute summer	43.979	11.622	100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 600 minute summer	35.604	9.738	100 year +40% CC 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.339	0.073	22.9	0.0821	0.0000	OK
15 minute summer	S2	11	122.672	0.090	31.9	0.1024	0.0000	OK
15 minute summer	S3	11	121.997	0.129	45.6	0.1455	0.0000	OK
15 minute summer	S4L	10	121.674	0.107	15.4	0.1211	0.0000	OK
15 minute summer	S4	11	121.350	0.108	71.9	0.1218	0.0000	OK
15 minute summer	S5L	10	119.993	0.095	13.0	0.1072	0.0000	OK
15 minute summer	S5	11	119.695	0.110	92.9	0.1249	0.0000	OK
15 minute summer	S6	11	117.171	0.153	102.0	0.1736	0.0000	OK
15 minute summer	S7L	10	117.594	0.053	14.9	0.0601	0.0000	OK
15 minute summer	S7	11	116.507	0.172	124.8	0.1943	0.0000	OK
15 minute summer	S8L	10	116.522	0.047	8.8	0.0533	0.0000	OK
15 minute summer	S8	11	115.778	0.120	139.7	0.1361	0.0000	OK
15 minute summer	S9	11	114.137	0.176	153.1	0.1993	0.0000	OK
15 minute summer	S11	10	113.393	0.055	16.6	0.0617	0.0000	OK
15 minute summer	S12L	10	113.460	0.073	20.5	0.0821	0.0000	OK
15 minute summer	S12	11	112.848	0.176	190.1	0.1988	0.0000	OK
15 minute summer	S13	11	112.341	0.179	197.1	0.2022	0.0000	OK
15 minute summer	S14L	10	112.179	0.044	10.8	0.0503	0.0000	OK
15 minute summer	S14	11	111.195	0.186	213.2	0.2101	0.0000	OK
15 minute summer	S14AL	10	112.167	0.064	21.3	0.0721	0.0000	OK
15 minute summer	S14A	11	110.196	0.194	231.9	0.2194	0.0000	OK
15 minute summer	S15L	10	110.228	0.057	17.2	0.0642	0.0000	OK
1440 minute summer	S15	1500	109.408	0.275	18.5	0.3112	0.0000	OK
1440 minute summer	HW1	1500	109.408	0.554	33.6	0.0000	0.0000	OK
15 minute summer	S16	10	112.256	0.036	6.2	0.0409	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	22.2	2.019	0.226	0.8114	
15 minute summer	S2	1.001	S3	31.7	1.380	0.201	0.8330	
15 minute summer	S3	1.002	S4	45.5	1.575	0.390	1.4459	
15 minute summer	S4L	2.000	S4	15.2	1.135	0.860	0.1349	
15 minute summer	S4	1.003	S5	72.0	2.711	0.184	1.1591	
15 minute summer	S5L	3.000	S5	12.9	1.100	0.727	0.1035	
15 minute summer	S5	1.004	S6	93.1	3.123	0.293	0.9507	
15 minute summer	S6	1.005	S7	102.2	2.231	0.360	1.5629	
15 minute summer	S7L	4.000	S7	14.8	2.665	0.267	0.0569	
15 minute summer	S7	1.006	S8	125.1	2.544	0.441	1.4794	
15 minute summer	S8L	5.000	S8	8.8	1.855	0.213	0.0460	
15 minute summer	S8	1.007	S9	139.7	3.073	0.161	1.0845	
15 minute summer	S9	1.008	S12	152.7	2.658	0.333	3.2692	
15 minute summer	S11	6.000	S12	16.5	1.514	0.032	0.2209	
15 minute summer	S12L	7.000	S12	20.4	1.845	0.227	0.1264	
15 minute summer	S12	1.009	S13	190.0	2.734	0.195	1.7729	
15 minute summer	S13	1.010	S14	196.3	2.718	0.201	4.1658	
15 minute summer	S14L	8.000	S14	10.8	2.470	0.190	0.0294	
15 minute summer	S14	1.011	S14A	211.5	2.766	0.217	3.8482	
15 minute summer	S14AL	44.000	S14A	21.2	2.979	0.374	0.1175	
15 minute summer	S14A	1.012	S15	229.8	2.590	0.236	3.8617	
15 minute summer	S15L	9.000	S15	17.2	2.814	0.303	0.0358	
1440 minute summer	S15	1.013	HW1	33.6	0.325	0.044	4.4372	
1440 minute summer	HW1	Flow through pond	HW3	33.9	0.017	0.001	495.1757	
15 minute summer	S16	10.000	S17	6.1	1.485	0.056	0.1679	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	110.695	0.113	21.0	0.1273	0.0000	OK
15 minute summer	S17	10	110.394	0.087	33.0	0.0983	0.0000	OK
15 minute summer	S18L	10	109.928	0.103	14.7	0.1164	0.0000	OK
15 minute summer	S18	11	109.719	0.144	47.4	0.1627	0.0000	OK
1440 minute summer	HW2	1500	109.411	0.507	8.1	0.0000	0.0000	OK
1440 minute summer	HW3	1500	109.408	0.554	33.9	0.0000	0.0000	OK
1440 minute summer	S19	1500	109.408	0.576	0.6	3.2989	0.0000	SURCHARGED
15 minute summer	HW4	1	109.400	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	20.7	1.046	0.506	0.3970	
15 minute summer	S17	10.001	S18	32.8	1.146	0.120	1.1556	
15 minute summer	S18L	12.000	S18	14.6	1.136	0.819	0.0318	
15 minute summer	S18	10.002	HW2	47.4	1.219	0.323	0.8312	
1440 minute summer	HW2	Flow through pond	HW3	33.9	0.017	0.001	495.1757	
1440 minute summer	HW3	1.014	S19	0.6	0.136	0.002	2.4517	
1440 minute summer	S19	Hydro-Brake®	HW4	0.1				0.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.369	0.103	43.4	0.1165	0.0000	OK
15 minute summer	S2	10	122.709	0.128	60.9	0.1445	0.0000	OK
15 minute summer	S3	11	122.058	0.190	87.2	0.2146	0.0000	OK
15 minute summer	S4L	10	121.882	0.315	29.3	0.3562	0.0000	SURCHARGED
15 minute summer	S4	11	121.393	0.151	137.0	0.1711	0.0000	OK
15 minute summer	S5L	10	120.120	0.221	24.7	0.2505	0.0000	SURCHARGED
15 minute summer	S5	11	119.744	0.159	177.2	0.1797	0.0000	OK
15 minute summer	S6	11	117.242	0.225	194.7	0.2541	0.0000	OK
15 minute summer	S7L	10	117.617	0.076	28.3	0.0859	0.0000	OK
15 minute summer	S7	11	116.593	0.258	238.2	0.2922	0.0000	OK
15 minute summer	S8L	10	116.542	0.067	16.8	0.0754	0.0000	OK
15 minute summer	S8	11	115.826	0.168	266.8	0.1905	0.0000	OK
15 minute summer	S9	11	114.217	0.256	292.3	0.2900	0.0000	OK
15 minute summer	S11	10	113.412	0.074	31.6	0.0841	0.0000	OK
15 minute summer	S12L	10	113.490	0.103	38.8	0.1161	0.0000	OK
15 minute summer	S12	11	112.920	0.248	363.7	0.2804	0.0000	OK
15 minute summer	S13	11	112.415	0.253	377.2	0.2859	0.0000	OK
15 minute summer	S14L	10	112.196	0.062	20.4	0.0705	0.0000	OK
15 minute summer	S14	11	111.273	0.264	408.9	0.2987	0.0000	OK
15 minute summer	S14AL	10	112.197	0.094	40.5	0.1062	0.0000	OK
15 minute summer	S14A	11	110.280	0.277	446.5	0.3138	0.0000	OK
15 minute summer	S15L	10	110.253	0.082	32.6	0.0925	0.0000	OK
1440 minute summer	S15	1020	109.561	0.428	31.8	0.4841	0.0000	OK
1440 minute summer	HW1	1020	109.561	0.707	58.8	0.0000	0.0000	OK
15 minute summer	S16	10	112.270	0.050	11.8	0.0562	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	42.5	2.405	0.432	1.2995	
15 minute summer	S2	1.001	S3	60.5	1.613	0.384	1.3435	
15 minute summer	S3	1.002	S4	86.7	1.844	0.744	2.3557	
15 minute summer	S4L	2.000	S4	28.8	1.634	1.624	0.1750	
15 minute summer	S4	1.003	S5	137.3	3.193	0.351	1.8764	
15 minute summer	S5L	3.000	S5	24.3	1.378	1.369	0.1527	
15 minute summer	S5	1.004	S6	177.7	3.737	0.560	1.5031	
15 minute summer	S6	1.005	S7	195.1	2.601	0.688	2.5572	
15 minute summer	S7L	4.000	S7	28.2	3.159	0.508	0.0912	
15 minute summer	S7	1.006	S8	239.1	2.952	0.843	2.4360	
15 minute summer	S8L	5.000	S8	16.7	2.214	0.406	0.0737	
15 minute summer	S8	1.007	S9	266.9	3.627	0.307	1.7474	
15 minute summer	S9	1.008	S12	292.8	3.140	0.639	5.3071	
15 minute summer	S11	6.000	S12	31.5	1.792	0.061	0.4262	
15 minute summer	S12L	7.000	S12	38.6	2.196	0.429	0.2012	
15 minute summer	S12	1.009	S13	363.7	3.269	0.373	2.8391	
15 minute summer	S13	1.010	S14	376.8	3.246	0.386	6.6942	
15 minute summer	S14L	8.000	S14	20.3	2.945	0.359	0.0467	
15 minute summer	S14	1.011	S14A	407.7	3.304	0.418	6.2109	
15 minute summer	S14AL	44.000	S14A	40.3	3.485	0.712	0.1910	
15 minute summer	S14A	1.012	S15	444.7	3.103	0.456	6.2309	
15 minute summer	S15L	9.000	S15	32.5	3.320	0.574	0.0576	
1440 minute summer	S15	1.013	HW1	58.8	0.379	0.076	5.5389	
1440 minute summer	HW1	Flow through pond	HW3	51.4	0.047	0.002	659.0626	
15 minute summer	S16	10.000	S17	11.6	1.797	0.107	0.2645	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	110.755	0.173	39.8	0.1953	0.0000	OK
15 minute summer	S17	10	110.428	0.121	62.7	0.1364	0.0000	OK
15 minute summer	S18L	10	110.009	0.184	28.0	0.2080	0.0000	SURCHARGED
15 minute summer	S18	11	109.782	0.207	90.2	0.2343	0.0000	OK
1440 minute summer	HW2	1020	109.561	0.657	6.0	0.0000	0.0000	OK
1440 minute summer	HW3	1020	109.561	0.707	51.4	0.0000	0.0000	SURCHARGED
1440 minute summer	S19	1020	109.561	0.729	6.5	4.1715	0.0000	SURCHARGED
15 minute summer	HW4	1	109.400	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	39.3	1.225	0.960	0.6430	
15 minute summer	S17	10.001	S18	62.4	1.349	0.229	1.8492	
15 minute summer	S18L	12.000	S18	27.9	1.584	1.562	0.0431	
15 minute summer	S18	10.002	HW2	90.0	1.438	0.612	1.3358	
1440 minute summer	HW2	Flow through pond	HW3	51.4	0.047	0.002	659.0626	
1440 minute summer	HW3	1.014	S19	6.5	0.076	0.019	2.5114	
1440 minute summer	S19	Hydro-Brake®	HW4	6.5				289.7

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S1	10	125.416	0.150	78.9	0.1693	0.0000	OK
15 minute summer	S2	11	122.809	0.228	110.9	0.2575	0.0000	OK
15 minute summer	S3	11	122.544	0.676	154.4	0.7641	0.0000	SURCHARGED
15 minute summer	S4L	11	122.483	0.915	53.2	1.0354	0.0000	SURCHARGED
15 minute summer	S4	11	121.454	0.212	244.8	0.2393	0.0000	OK
15 minute summer	S5L	12	120.790	0.892	44.9	1.0091	0.0000	SURCHARGED
15 minute summer	S5	12	120.402	0.817	310.7	0.9240	0.0000	SURCHARGED
15 minute summer	S6	12	118.093	1.076	323.2	1.2170	0.0000	SURCHARGED
15 minute summer	S7L	11	118.021	0.480	51.4	0.5432	0.0000	SURCHARGED
15 minute summer	S7	12	117.203	0.868	388.7	0.9819	0.0000	SURCHARGED
15 minute summer	S8L	10	116.571	0.096	30.5	0.1086	0.0000	OK
15 minute summer	S8	11	115.880	0.222	437.4	0.2509	0.0000	OK
15 minute summer	S9	11	114.338	0.377	483.1	0.4265	0.0000	OK
15 minute summer	S11	10	113.438	0.100	57.4	0.1128	0.0000	OK
15 minute summer	S12L	10	113.536	0.149	70.6	0.1683	0.0000	OK
15 minute summer	S12	11	113.008	0.336	613.5	0.3804	0.0000	OK
15 minute summer	S13	11	112.507	0.345	639.2	0.3907	0.0000	OK
15 minute summer	S14L	10	112.223	0.089	37.1	0.1003	0.0000	OK
15 minute summer	S14	11	111.375	0.366	699.8	0.4143	0.0000	OK
15 minute summer	S14AL	11	113.154	1.051	73.6	1.1890	0.0000	SURCHARGED
15 minute summer	S14A	11	110.395	0.393	771.8	0.4443	0.0000	OK
15 minute summer	S15L	10	110.299	0.128	59.2	0.1448	0.0000	OK
1440 minute summer	S15	1440	110.024	0.891	56.2	1.0072	0.0000	SURCHARGED
1440 minute summer	HW1	1410	110.030	1.176	101.2	0.0000	0.0000	OK
15 minute summer	S16	10	112.287	0.067	21.5	0.0761	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S1	1.000	S2	77.4	2.766	0.787	2.0659	
15 minute summer	S2	1.001	S3	107.0	1.762	0.679	2.2775	
15 minute summer	S3	1.002	S4	153.3	2.177	1.315	3.4858	
15 minute summer	S4L	2.000	S4	51.6	2.934	2.915	0.1750	
15 minute summer	S4	1.003	S5	244.9	3.463	0.626	3.8034	
15 minute summer	S5L	3.000	S5	43.7	2.484	2.469	0.1556	
15 minute summer	S5	1.004	S6	292.9	4.160	0.923	2.2406	
15 minute summer	S6	1.005	S7	319.5	2.897	1.127	3.7639	
15 minute summer	S7L	4.000	S7	48.6	3.392	0.875	0.1797	
15 minute summer	S7	1.006	S8	389.3	3.530	1.372	3.2835	
15 minute summer	S8L	5.000	S8	30.4	2.553	0.738	0.1160	
15 minute summer	S8	1.007	S9	437.0	3.932	0.503	2.6043	
15 minute summer	S9	1.008	S12	484.7	3.423	1.058	8.5424	
15 minute summer	S11	6.000	S12	57.2	1.742	0.111	0.8858	
15 minute summer	S12L	7.000	S12	70.3	2.528	0.781	0.3182	
15 minute summer	S12	1.009	S13	614.7	3.721	0.631	4.2151	
15 minute summer	S13	1.010	S14	641.5	3.685	0.658	10.0386	
15 minute summer	S14L	8.000	S14	37.0	3.420	0.654	0.0731	
15 minute summer	S14	1.011	S14A	702.6	3.740	0.720	9.4538	
15 minute summer	S14AL	44.000	S14A	69.2	3.930	1.221	0.2903	
15 minute summer	S14A	1.012	S15	777.3	3.436	0.797	9.7535	
15 minute summer	S15L	9.000	S15	58.9	3.603	1.040	0.0987	
1440 minute summer	S15	1.013	HW1	101.2	0.599	0.131	6.2814	
1440 minute summer	HW1	Flow through pond	HW3	100.5	0.036	0.004	1211.7701	
15 minute summer	S16	10.000	S17	21.2	2.135	0.196	0.4063	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.62%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S17L	10	111.053	0.471	72.4	0.5325	0.0000	SURCHARGED
15 minute summer	S17	10	110.474	0.167	114.4	0.1886	0.0000	OK
15 minute summer	S18L	10	110.161	0.336	50.8	0.3797	0.0000	SURCHARGED
1440 minute summer	S18	1410	110.023	0.448	10.6	0.5069	0.0000	SURCHARGED
1440 minute summer	HW2	1260	110.026	1.122	10.9	0.0000	0.0000	OK
1440 minute summer	HW3	1350	110.021	1.167	100.5	0.0000	0.0000	FLOOD RISK
1440 minute summer	S19	1350	110.021	1.189	7.2	6.8088	0.0000	FLOOD RISK
15 minute summer	HW4	1	109.400	0.700	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S17L	11.000	S17	71.7	1.803	1.751	0.7854	
15 minute summer	S17	10.001	S18	113.8	1.522	0.419	2.9082	
15 minute summer	S18L	12.000	S18	50.4	2.865	2.825	0.0431	
1440 minute summer	S18	10.002	HW2	10.5	0.745	0.072	2.3554	
1440 minute summer	HW2	Flow through pond	HW3	100.5	0.036	0.004	1211.7701	
1440 minute summer	HW3	1.014	S19	7.2	0.206	0.021	2.5114	
1440 minute summer	S19	Hydro-Brake®	HW4	7.0				384.0

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S20L	0.126	5.00	118.050	Manhole	1200	443726.598	291580.939	1.942
S20	0.097	5.00	117.871	Manhole	1500	443724.514	291563.783	2.627
S21La	0.065	5.00	117.280	Manhole	1200	443770.314	291520.942	1.644
S21Lb	0.051	5.00	117.262	Manhole	1200	443779.109	291519.517	1.646
S21	0.033	5.00	117.286	Manhole	1500	443775.700	291520.069	2.005
S22Lb	0.049	5.00	117.400	Manhole	1200	443772.393	291550.929	2.070
S22La	0.091	5.00	117.490	Manhole	1200	443782.530	291561.498	2.185
S22	0.020	5.00	117.331	Manhole	1500	443781.376	291554.374	2.398
S23L	0.124	5.00	117.642	Manhole	1200	443816.813	291610.966	1.659
S23	0.043	5.00	117.763	Manhole	1200	443824.030	291605.549	2.306
S24L	0.046	5.00	117.800	Manhole	1200	443820.618	291580.704	2.317
S24	0.023	5.00	117.836	Manhole	1200	443816.344	291579.478	2.726
S25	0.025	5.00	117.627	Manhole	1500	443812.026	291549.404	2.895
S26L	0.052	5.00	117.490	Manhole	1200	443835.771	291540.759	2.373
S26	0.031	5.00	117.358	Manhole	1500	443837.046	291545.359	2.943
S27L	0.066	5.00	117.100	Manhole	1200	443865.956	291545.642	1.828
S27	0.053	5.00	116.932	Manhole	1500	443870.449	291536.970	2.862
S28L	0.048	5.00	116.896	Manhole	1200	443866.251	291511.974	2.206
S28	0.021	5.00	116.646	Manhole	1500	443873.473	291514.657	2.951
S29L	0.036	5.00	116.950	Manhole	1200	443778.867	291486.594	1.774
S29	0.030	5.00	116.911	Manhole	1200	443784.225	291488.769	1.868
S30La	0.194	5.00	117.200	Manhole	1200	443775.409	291470.169	1.457
S30Lb	0.107	5.00	116.880	Manhole	1200	443804.951	291482.717	1.064
S30	0.027	5.00	117.074	Manhole	1500	443789.713	291475.676	2.248
S31	0.028	5.00	117.088	Manhole	1500	443796.831	291460.570	2.429
S32L	0.110	5.00	117.485	Manhole	1200	443836.785	291473.804	2.702
S32	0.018	5.00	117.368	Manhole	1500	443835.019	291478.489	3.311
S33	0.025	5.00	117.038	Manhole	1500	443851.486	291484.829	3.202
S34	0.037	5.00	116.415	Manhole	1800	443880.545	291501.065	2.986
S35	0.041	5.00	116.157	Manhole	1500	443896.046	291490.017	2.966
S36L	0.126	5.00	116.035	Manhole	1200	443920.666	291479.743	2.345
S36	0.021	5.00	115.816	Manhole	1500	443919.537	291486.928	3.490
S37L	0.126	5.00	116.270	Manhole	1200	443942.586	291411.897	2.281
S37	0.032	5.00	116.002	Manhole	1500	443956.457	291414.527	2.229
S38L	0.060	5.00	116.000	Manhole	1200	443975.427	291420.600	2.046
S38	0.014	5.00	115.939	Manhole	1500	443962.456	291416.547	2.305
S39La	0.035	5.00	116.060	Manhole	1200	443943.622	291454.130	2.144
S39Lb	0.032	5.00	116.085	Manhole	1200	443952.661	291457.010	2.317
S39	0.032	5.00	116.079	Manhole	1500	443948.799	291455.955	2.862
S40	0.076	5.00	115.528	Manhole	1800	443936.967	291492.313	3.885
S41La	0.112	5.00	115.040	Manhole	1200	443968.311	291516.294	2.372

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S41lb	0.057	5.00	115.044	Manhole	1200	443975.273	291499.962	2.524
S41	0.067	5.00	114.833	Manhole	1800	443972.824	291507.759	3.731
S42La	0.211	5.00	114.136	Manhole	1200	444016.029	291530.797	1.956
S42Lb	0.103	5.00	114.155	Manhole	1200	444020.020	291513.499	2.109
S42	0.042	5.00	113.942	Manhole	1800	444018.565	291521.581	3.318
S43	0.021	5.00	114.031	Manhole	1200	444053.518	291503.522	2.862
S44L	0.194	5.00	113.620	Manhole	1800	444042.718	291537.421	2.753
S44	0.031	5.00	113.380	Manhole	1800	444046.213	291526.845	3.225
S45	0.029	5.00	113.033	Manhole	1800	444065.128	291532.942	3.077
S46L	0.124	5.00	112.900	Manhole	1200	444086.341	291539.566	2.381
S46	0.030	5.00	112.686	Manhole	1800	444080.870	291544.415	2.973
S47L	0.085	5.00	117.070	Manhole	1200	443884.230	291600.704	2.611
S47	0.074	5.00	116.846	Manhole	1800	443894.371	291597.505	2.568
S48L	0.117	5.00	116.240	Manhole	1200	443895.036	291634.825	1.720
S48	0.025	5.00	115.969	Manhole	1200	443905.812	291633.399	2.068
S49L	0.074	5.00	115.795	Manhole	1200	443908.595	291654.145	1.889
S49	0.013	5.00	115.553	Manhole	1200	443916.433	291647.285	1.827
S50	0.068	5.00	115.179	Manhole	1500	443924.387	291692.392	1.292
S51	0.045	5.00	115.200	Manhole	1500	443925.446	291676.490	1.472
S52	0.018	5.00	115.288	Manhole	1500	443929.752	291659.028	1.816
S53	0.027	5.00	115.655	Manhole	1500	443950.409	291640.307	2.462
S54L	0.100	5.00	115.742	Manhole	1200	443967.124	291639.883	2.083
S54	0.080	5.00	115.655	Manhole	1500	443966.632	291634.596	2.634
S54AL	0.079	5.00	113.962	Manhole	1200	443987.797	291682.193	1.355
S54A	0.069	5.00	113.831	Manhole	1500	443993.191	291681.835	1.714
S54B	0.020	5.00	114.791	Manhole	1500	443991.065	291632.693	3.145
S55La	0.077	5.00	114.400	Manhole	1200	444015.384	291638.573	2.896
S55Lb	0.082	5.00	114.400	Manhole	1200	444014.478	291620.844	2.722
S55	0.070	5.00	114.066	Manhole	1500	444019.822	291630.453	3.862
S56L	0.088	5.00	113.400	Manhole	1200	444057.898	291635.750	2.347
S56	0.035	5.00	112.973	Manhole	1500	444062.200	291627.854	3.194
S57L	0.097	5.00	112.800	Manhole	1200	444083.653	291622.557	2.781
S57	0.035	5.00	112.566	Manhole	1500	444076.774	291619.291	3.073
S58L	0.080	5.00	112.110	Manhole	1200	444081.447	291584.691	2.326
S58	0.035	5.00	111.935	Manhole	1500	444091.916	291584.485	2.917
S59L	0.088	5.00	112.400	Manhole	1200	444099.362	291565.725	3.072
S59			112.248	Manhole	1500	444091.570	291566.932	3.449
S60L	0.049	5.00	112.600	Manhole	1200	444078.895	291560.325	2.433
S60	0.034	5.00	112.440	Manhole	1800	444088.501	291555.769	4.086
S61	0.021	5.00	111.587	Manhole	1800	444119.267	291543.174	3.898
S62	0.016	5.00	111.074	Manhole	1800	444140.948	291540.513	3.658
S63La	0.069	5.00	110.756	Manhole	1200	444153.628	291549.997	2.721
S63Lb	0.118	5.00	110.670	Manhole	1200	444158.283	291539.860	2.670
S63	0.027	5.00	110.556	Manhole	1800	444157.041	291543.522	3.345
S64L	0.187	5.00	109.400	Manhole	1200	444183.206	291567.153	1.713
S64	0.014	5.00	109.193	Manhole	1800	444189.306	291560.527	2.346
S65L	0.098	5.00	108.900	Manhole	1200	444198.591	291557.594	0.648
S65	0.041	5.00	108.753	Manhole	1800	444199.987	291564.120	1.919
HW11			108.259	Manhole		444200.122	291579.769	1.442
HW12		5.00	108.259	Manhole		444214.527	291601.442	1.442
S66			108.300	Manhole	2700	444222.278	291604.489	1.492
hw13			107.769	Manhole		444234.306	291611.790	1.044

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S20L	S20	17.282	0.600	116.108	115.469	0.639	27.0	225	5.11	50.0
1.001	S20	S22	57.384	0.600	115.244	114.933	0.311	184.5	450	5.75	50.0
2.000	S21La	S21	5.244	0.600	115.636	115.581	0.055	95.3	150	5.08	50.0
3.000	S21Lb	S21	3.665	0.600	115.616	115.581	0.035	104.7	150	5.06	50.0
2.001	S21	S22	34.771	0.600	115.281	114.933	0.348	99.9	450	5.37	50.0
4.000	S22Lb	S22	9.405	0.600	115.330	115.233	0.097	97.0	150	5.15	50.0
5.000	S22La	S22	7.221	0.600	115.305	115.233	0.072	100.3	150	5.12	50.0
1.002	S22	S25	30.661	0.600	114.933	114.732	0.201	152.5	450	6.07	50.0
6.000	S23L	S23	9.024	0.600	115.983	115.532	0.451	20.0	225	5.05	50.0
6.001	S23	S24	31.671	0.600	115.457	115.185	0.272	116.4	300	5.41	50.0
7.000	S24L	S24	7.833	0.600	115.483	115.335	0.148	52.9	150	5.09	50.0
6.002	S24	S25	25.853	0.600	115.110	114.806	0.304	85.0	375	5.63	50.0
1.003	S25	S26	25.986	0.600	114.732	114.415	0.317	82.0	450	6.26	49.4
8.000	S26L	S26	4.774	0.600	115.117	114.715	0.402	11.9	150	5.03	50.0
1.004	S26	S27	34.440	0.600	114.415	114.071	0.344	100.1	450	6.54	48.3
9.000	S27L	S27	9.766	0.600	115.272	114.370	0.902	10.8	150	5.05	50.0
1.005	S27	S28	22.518	0.600	114.070	113.695	0.375	60.0	450	6.68	47.8
10.000	S28L	S28	7.704	0.600	114.690	113.995	0.695	11.1	150	5.04	50.0
1.006	S28	S34	15.321	0.600	113.695	113.503	0.192	79.8	450	6.80	47.4
11.000	S29L	S29	5.783	0.600	115.176	115.118	0.058	99.7	150	5.10	50.0
11.001	S29	S30	14.197	0.600	115.043	114.976	0.067	211.9	225	5.36	50.0
12.000	S30La	S30	15.328	0.600	115.743	114.977	0.766	20.0	225	5.09	50.0
13.000	S30Lb	S30	16.786	0.600	115.816	114.977	0.839	20.0	225	5.10	50.0
11.002	S30	S31	16.699	0.600	114.826	114.659	0.167	100.0	375	5.51	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S20L	S20	2.525	100.4	17.1	1.717	2.177	1.717	2.177	0.126	0.0
1.001	S20	S22	1.493	237.5	30.2	2.177	1.948	1.948	2.177	0.223	0.0
2.000	S21La	S21	1.029	18.2	8.8	1.494	1.555	1.494	1.555	0.065	0.0
3.000	S21Lb	S21	0.981	17.3	6.9	1.496	1.555	1.496	1.555	0.051	0.0
2.001	S21	S22	2.034	323.4	20.2	1.555	1.948	1.555	1.948	0.149	0.0
4.000	S22Lb	S22	1.020	18.0	6.6	1.920	1.948	1.920	1.948	0.049	0.0
5.000	S22La	S22	1.003	17.7	12.3	2.035	1.948	1.948	2.035	0.091	0.0
1.002	S22	S25	1.643	261.4	72.1	1.948	2.445	1.948	2.445	0.532	0.0
6.000	S23L	S23	2.938	116.8	16.8	1.434	2.006	1.434	2.006	0.124	0.0
6.001	S23	S24	1.456	102.9	22.6	2.006	2.351	2.006	2.351	0.167	0.0
7.000	S24L	S24	1.386	24.5	6.2	2.167	2.351	2.167	2.351	0.046	0.0
6.002	S24	S25	1.965	217.1	32.0	2.351	2.446	2.351	2.446	0.236	0.0
1.003	S25	S26	2.246	357.3	106.1	2.445	2.493	2.445	2.493	0.793	0.0
8.000	S26L	S26	2.939	51.9	7.0	2.223	2.493	2.223	2.493	0.052	0.0
1.004	S26	S27	2.032	323.1	114.7	2.493	2.411	2.411	2.493	0.876	0.0
9.000	S27L	S27	3.079	54.4	8.9	1.678	2.412	1.678	2.412	0.066	0.0
1.005	S27	S28	2.627	417.8	129.0	2.412	2.501	2.412	2.501	0.995	0.0
10.000	S28L	S28	3.043	53.8	6.5	2.056	2.501	2.056	2.501	0.048	0.0
1.006	S28	S34	2.277	362.2	136.8	2.501	2.462	2.462	2.501	1.064	0.0
11.000	S29L	S29	1.006	17.8	4.9	1.624	1.643	1.624	1.643	0.036	0.0
11.001	S29	S30	0.894	35.6	8.9	1.643	1.873	1.643	1.873	0.066	0.0
12.000	S30La	S30	2.938	116.8	26.3	1.232	1.872	1.232	1.872	0.194	0.0
13.000	S30Lb	S30	2.938	116.8	14.5	0.839	1.872	0.839	1.872	0.107	0.0
11.002	S30	S31	1.812	200.1	53.4	1.873	2.054	1.873	2.054	0.394	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.003	S31	S32	42.183	0.600	114.659	114.057	0.602	70.1	375	5.84	50.0
14.000	S32L	S32	5.007	0.600	114.783	114.282	0.501	10.0	150	5.03	50.0
11.004	S32	S33	17.646	0.600	114.057	113.836	0.221	79.8	375	5.98	50.0
11.005	S33	S34	33.286	0.600	113.836	113.503	0.333	100.0	375	6.29	49.2
1.007	S34	S35	19.035	0.600	113.429	113.191	0.238	80.0	525	6.92	47.0
1.008	S35	S36	23.693	0.600	113.191	112.326	0.865	27.4	525	7.01	46.7
15.000	S36L	S36	7.274	0.600	113.690	112.701	0.989	7.4	150	5.03	50.0
1.009	S36	S40	18.243	0.600	112.326	111.718	0.608	30.0	525	7.09	46.4
16.000	S37L	S37	14.118	0.600	113.989	113.773	0.216	65.4	225	5.15	50.0
16.001	S37	S38	6.329	0.600	113.773	113.710	0.063	100.5	225	5.23	50.0
17.000	S38L	S38	13.590	0.600	113.954	113.784	0.170	79.9	150	5.20	50.0
16.002	S38	S39	41.708	0.600	113.634	113.217	0.417	100.0	300	5.67	50.0
18.000	S39La	S39	5.490	0.600	113.916	113.367	0.549	10.0	150	5.03	50.0
19.000	S39Lb	S39	4.003	0.600	113.768	113.368	0.400	10.0	150	5.02	50.0
16.003	S39	S40	38.235	0.600	113.217	111.942	1.275	30.0	300	5.89	50.0
1.010	S40	S41	42.418	0.600	111.643	111.253	0.390	108.8	600	7.39	45.5
20.000	S41La	S41	10.478	0.600	112.668	111.702	0.966	10.8	150	5.06	50.0
21.000	S41Lb	S41	9.155	0.600	112.520	111.703	0.817	11.2	150	5.05	50.0
1.011	S41	S42	44.432	0.600	111.102	110.624	0.478	93.0	750	7.65	44.7
22.000	S42La	S42	9.559	0.600	112.180	111.149	1.031	9.3	225	5.04	50.0
23.000	S42Lb	S42	8.212	0.600	112.046	111.149	0.897	9.2	225	5.03	50.0
1.012	S42	S44	28.044	0.600	110.624	110.155	0.469	59.8	750	7.78	44.3
24.000	S43	S44	24.836	0.600	111.169	110.680	0.489	50.8	225	5.23	50.0
25.000	S44L	S44	10.741	0.600	110.867	110.680	0.187	57.4	225	5.10	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
11.003	S31	S32	2.167	239.3	57.2	2.054	2.936	2.054	2.936	0.422	0.0
14.000	S32L	S32	3.205	56.6	14.9	2.552	2.936	2.552	2.936	0.110	0.0
11.004	S32	S33	2.029	224.1	74.5	2.936	2.827	2.827	2.936	0.550	0.0
11.005	S33	S34	1.812	200.1	76.8	2.827	2.537	2.537	2.827	0.575	0.0
1.007	S34	S35	2.506	542.4	213.5	2.461	2.441	2.441	2.461	1.676	0.0
1.008	S35	S36	4.291	928.9	217.3	2.441	2.965	2.441	2.965	1.717	0.0
15.000	S36L	S36	3.739	66.1	17.1	2.195	2.965	2.195	2.965	0.126	0.0
1.009	S36	S40	4.099	887.4	234.6	2.965	3.285	2.965	3.285	1.864	0.0
16.000	S37L	S37	1.620	64.4	17.1	2.056	2.004	2.004	2.056	0.126	0.0
16.001	S37	S38	1.304	51.9	21.4	2.004	2.004	2.004	2.004	0.158	0.0
17.000	S38L	S38	1.125	19.9	8.1	1.896	2.005	1.896	2.005	0.060	0.0
16.002	S38	S39	1.572	111.1	31.4	2.005	2.562	2.005	2.562	0.232	0.0
18.000	S39La	S39	3.204	56.6	4.7	1.994	2.562	1.994	2.562	0.035	0.0
19.000	S39Lb	S39	3.203	56.6	4.3	2.167	2.561	2.167	2.561	0.032	0.0
16.003	S39	S40	2.881	203.7	44.9	2.562	3.286	2.562	3.286	0.331	0.0
1.010	S40	S41	2.334	660.0	279.9	3.285	2.980	2.980	3.285	2.271	0.0
20.000	S41La	S41	3.076	54.4	15.2	2.222	2.981	2.222	2.981	0.112	0.0
21.000	S41Lb	S41	3.026	53.5	7.7	2.374	2.980	2.374	2.980	0.057	0.0
1.011	S41	S42	2.903	1282.4	303.7	2.981	2.568	2.568	2.981	2.507	0.0
22.000	S42La	S42	4.322	171.9	28.6	1.731	2.568	1.731	2.568	0.211	0.0
23.000	S42Lb	S42	4.350	173.0	14.0	1.884	2.568	1.884	2.568	0.103	0.0
1.012	S42	S44	3.622	1600.3	343.8	2.568	2.475	2.475	2.568	2.863	0.0
24.000	S43	S44	1.839	73.1	2.8	2.637	2.475	2.475	2.637	0.021	0.0
25.000	S44L	S44	1.729	68.7	26.3	2.528	2.475	2.475	2.528	0.194	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.013	S44	S45	19.933	0.600	110.155	109.956	0.199	100.2	750	7.89	44.0
1.014	S45	S46	19.479	0.600	109.957	109.713	0.244	79.8	750	8.00	43.7
26.000	S46L	S46	7.311	0.600	110.519	109.788	0.731	10.0	150	5.04	50.0
1.015	S46	S60	13.680	0.600	109.713	108.504	1.209	11.3	750	8.03	43.6
27.000	S47L	S47	10.634	0.600	114.459	114.353	0.106	100.3	225	5.14	50.0
27.001	S47	S48	37.674	0.600	114.278	113.976	0.302	124.7	300	5.58	50.0
28.000	S48L	S48	10.870	0.600	114.520	114.051	0.469	23.2	225	5.07	50.0
27.002	S48	S49	17.482	0.600	113.901	113.726	0.175	99.9	375	5.74	50.0
29.000	S49L	S49	10.416	0.600	113.906	113.876	0.030	347.2	225	5.25	50.0
27.003	S49	S52	17.756	0.600	113.726	113.547	0.179	99.2	375	5.91	50.0
30.000	S50	S51	15.937	0.600	113.887	113.728	0.159	100.2	450	5.13	50.0
30.001	S51	S52	17.986	0.600	113.728	113.472	0.256	70.3	450	5.25	50.0
27.004	S52	S53	27.878	0.600	113.472	113.193	0.279	99.9	450	6.13	49.8
27.005	S53	S54	17.199	0.600	113.268	113.021	0.247	69.6	450	6.25	49.4
31.000	S54L	S54	5.310	0.600	113.659	113.321	0.338	15.7	150	5.03	50.0
27.006	S54	S54B	24.507	0.600	113.021	111.796	1.225	20.0	450	6.34	49.1
43.000	S54AL	S54A	5.406	0.600	112.607	112.417	0.190	28.5	150	5.05	50.0
43.001	S54A	S54B	49.188	0.600	112.117	111.796	0.321	153.2	450	5.55	50.0
27.007	S54B	S55	28.844	0.600	111.646	110.204	1.442	20.0	600	6.43	48.7
32.000	S55La	S55	9.253	0.600	111.504	110.654	0.850	10.9	150	5.05	50.0
33.000	S55Lb	S55	10.996	0.600	111.678	110.654	1.024	10.7	150	5.06	50.0
27.008	S55	S56	42.458	0.600	110.204	109.779	0.425	99.9	600	6.72	47.7
34.000	S56L	S56	8.992	0.600	111.053	110.154	0.899	10.0	225	5.04	50.0
27.009	S56	S57	16.903	0.600	109.779	109.493	0.286	59.1	600	6.81	47.4

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.013	S44	S45	2.796	1235.2	370.4	2.475	2.327	2.327	2.475	3.109	0.0
1.014	S45	S46	3.133	1384.2	371.4	2.326	2.223	2.223	2.326	3.138	0.0
26.000	S46L	S46	3.204	56.6	16.8	2.231	2.748	2.231	2.748	0.124	0.0
1.015	S46	S60	8.344	3686.5	388.9	2.223	3.186	2.223	3.186	3.292	0.0
27.000	S47L	S47	1.305	51.9	11.5	2.386	2.268	2.268	2.386	0.085	0.0
27.001	S47	S48	1.406	99.4	21.5	2.268	1.693	1.693	2.268	0.159	0.0
28.000	S48L	S48	2.729	108.5	15.9	1.495	1.693	1.495	1.693	0.117	0.0
27.002	S48	S49	1.812	200.2	40.8	1.693	1.452	1.452	1.693	0.301	0.0
29.000	S49L	S49	0.696	27.7	10.0	1.664	1.452	1.452	1.664	0.074	0.0
27.003	S49	S52	1.819	200.9	52.6	1.452	1.366	1.366	1.452	0.388	0.0
30.000	S50	S51	2.030	322.9	9.2	0.842	1.022	0.842	1.022	0.068	0.0
30.001	S51	S52	2.428	386.1	15.3	1.022	1.366	1.022	1.366	0.113	0.0
27.004	S52	S53	2.034	323.4	70.1	1.366	2.012	1.366	2.012	0.519	0.0
27.005	S53	S54	2.439	387.8	73.1	1.937	2.184	1.937	2.184	0.546	0.0
31.000	S54L	S54	2.554	45.1	13.6	1.933	2.184	1.933	2.184	0.100	0.0
27.006	S54	S54B	4.561	725.4	96.5	2.184	2.545	2.184	2.545	0.726	0.0
43.000	S54AL	S54A	1.894	33.5	10.7	1.205	1.264	1.205	1.264	0.079	0.0
43.001	S54A	S54B	1.640	260.8	20.1	1.264	2.545	1.264	2.545	0.148	0.0
27.007	S54B	S55	5.460	1543.9	118.1	2.545	3.262	2.545	3.262	0.894	0.0
32.000	S55La	S55	3.071	54.3	10.4	2.746	3.262	2.746	3.262	0.077	0.0
33.000	S55Lb	S55	3.092	54.6	11.1	2.572	3.262	2.572	3.262	0.082	0.0
27.008	S55	S56	2.436	688.8	145.2	3.262	2.594	2.594	3.262	1.123	0.0
34.000	S56L	S56	4.161	165.4	11.9	2.122	2.594	2.122	2.594	0.088	0.0
27.009	S56	S57	3.171	896.6	160.0	2.594	2.473	2.473	2.594	1.246	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
35.000	S57L	S57	7.615	0.600	110.019	109.868	0.151	50.4	225	5.07	50.0
27.010	S57	S58	37.958	0.600	109.493	109.018	0.475	79.9	600	7.04	46.6
36.000	S58L	S58	10.471	0.600	109.784	109.468	0.316	33.1	150	5.10	50.0
27.011	S58	S59	17.556	0.600	109.018	108.799	0.219	80.2	600	7.15	46.2
37.000	S59L	S59	7.885	0.600	109.328	109.249	0.079	99.8	150	5.13	50.0
27.012	S59	S60	11.577	0.600	108.799	108.654	0.145	79.8	600	7.22	46.0
38.000	S60L	S60	10.632	0.600	110.167	109.104	1.063	10.0	150	5.06	50.0
1.016	S60	S61	33.244	0.600	108.354	107.689	0.665	50.0	900	8.15	43.2
1.017	S61	S62	21.844	0.600	107.689	107.416	0.273	80.0	900	8.25	42.9
1.018	S62	S63	16.372	0.600	107.416	107.211	0.205	79.9	900	8.33	42.7
39.000	S63La	S63	7.319	0.600	108.035	107.962	0.073	100.3	150	5.12	50.0
40.000	S63Lb	S63	3.867	0.600	108.000	107.961	0.039	99.2	150	5.06	50.0
1.019	S63	S64	36.472	0.600	107.212	106.847	0.365	99.9	900	8.53	42.2
41.000	S64L	S64	9.006	0.600	107.687	107.522	0.165	54.6	225	5.08	50.0
1.020	S64	S65	11.270	0.600	106.847	106.834	0.013	866.9	900	8.70	41.7
42.000	S65L	S65	6.674	0.600	108.252	107.585	0.667	10.0	150	5.03	50.0
1.021	S65	HW11	15.649	0.600	106.834	106.817	0.017	920.5	900	8.96	41.1
1.022	HW12	S66	8.328	0.600	106.817	106.808	0.009	925.3	900	5.14	50.0
1.023	S66	hw13	14.071	0.600	106.808	106.725	0.083	169.5	900	5.23	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
35.000	S57L	S57	1.846	73.4	13.1	2.556	2.473	2.473	2.556	0.097	0.0
27.010	S57	S58	2.725	770.6	174.1	2.473	2.317	2.317	2.473	1.378	0.0
36.000	S58L	S58	1.754	31.0	10.8	2.176	2.317	2.176	2.317	0.080	0.0
27.011	S58	S59	2.721	769.4	187.2	2.317	2.849	2.317	2.849	1.493	0.0
37.000	S59L	S59	1.006	17.8	11.9	2.922	2.849	2.849	2.922	0.088	0.0
27.012	S59	S60	2.727	770.9	197.2	2.849	3.186	2.849	3.186	1.581	0.0
38.000	S60L	S60	3.204	56.6	6.6	2.283	3.186	2.283	3.186	0.049	0.0
1.016	S60	S61	4.437	2822.4	580.7	3.186	2.998	2.998	3.186	4.956	0.0
1.017	S61	S62	3.504	2229.2	579.3	2.998	2.758	2.758	2.998	4.977	0.0
1.018	S62	S63	3.507	2231.3	578.3	2.758	2.445	2.445	2.758	4.993	0.0
39.000	S63La	S63	1.003	17.7	9.4	2.571	2.444	2.444	2.571	0.069	0.0
40.000	S63Lb	S63	1.009	17.8	16.0	2.520	2.445	2.445	2.520	0.118	0.0
1.019	S63	S64	3.134	1993.9	595.8	2.444	1.446	1.446	2.444	5.207	0.0
41.000	S64L	S64	1.774	70.5	25.3	1.488	1.446	1.446	1.488	0.187	0.0
1.020	S64	S65	1.056	671.6	612.0	1.446	1.019	1.019	1.446	5.408	0.0
42.000	S65L	S65	3.203	56.6	13.3	0.498	1.018	0.498	1.018	0.098	0.0
1.021	S65	HW11	1.024	651.6	618.3	1.019	0.542	0.542	1.019	5.547	0.0
1.022	HW12	S66	1.022	649.9	0.0	0.542	0.592	0.542	0.592	0.000	0.0
1.023	S66	hw13	2.403	1528.9	0.0	0.592	0.144	0.144	0.592	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	17.282	27.0	225	118.050	116.108	1.717	117.871	115.469	2.177
1.001	57.384	184.5	450	117.871	115.244	2.177	117.331	114.933	1.948
2.000	5.244	95.3	150	117.280	115.636	1.494	117.286	115.581	1.555
3.000	3.665	104.7	150	117.262	115.616	1.496	117.286	115.581	1.555
2.001	34.771	99.9	450	117.286	115.281	1.555	117.331	114.933	1.948
4.000	9.405	97.0	150	117.400	115.330	1.920	117.331	115.233	1.948
5.000	7.221	100.3	150	117.490	115.305	2.035	117.331	115.233	1.948
1.002	30.661	152.5	450	117.331	114.933	1.948	117.627	114.732	2.445
6.000	9.024	20.0	225	117.642	115.983	1.434	117.763	115.532	2.006
6.001	31.671	116.4	300	117.763	115.457	2.006	117.836	115.185	2.351
7.000	7.833	52.9	150	117.800	115.483	2.167	117.836	115.335	2.351
6.002	25.853	85.0	375	117.836	115.110	2.351	117.627	114.806	2.446
1.003	25.986	82.0	450	117.627	114.732	2.445	117.358	114.415	2.493
8.000	4.774	11.9	150	117.490	115.117	2.223	117.358	114.715	2.493
1.004	34.440	100.1	450	117.358	114.415	2.493	116.932	114.071	2.411
9.000	9.766	10.8	150	117.100	115.272	1.678	116.932	114.370	2.412
1.005	22.518	60.0	450	116.932	114.070	2.412	116.646	113.695	2.501
10.000	7.704	11.1	150	116.896	114.690	2.056	116.646	113.995	2.501
1.006	15.321	79.8	450	116.646	113.695	2.501	116.415	113.503	2.462
11.000	5.783	99.7	150	116.950	115.176	1.624	116.911	115.118	1.643
11.001	14.197	211.9	225	116.911	115.043	1.643	117.074	114.976	1.873
12.000	15.328	20.0	225	117.200	115.743	1.232	117.074	114.977	1.872
13.000	16.786	20.0	225	116.880	115.816	0.839	117.074	114.977	1.872
11.002	16.699	100.0	375	117.074	114.826	1.873	117.088	114.659	2.054
11.003	42.183	70.1	375	117.088	114.659	2.054	117.368	114.057	2.936

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S20L	1200	Manhole	S20	1500	1
1.001	S20	1500	Manhole	S22	1500	1
2.000	S21La	1200	Manhole	S21	1500	1
3.000	S21Lb	1200	Manhole	S21	1500	1
2.001	S21	1500	Manhole	S22	1500	1
4.000	S22Lb	1200	Manhole	S22	1500	1
5.000	S22La	1200	Manhole	S22	1500	1
1.002	S22	1500	Manhole	S25	1500	1
6.000	S23L	1200	Manhole	S23	1200	1
6.001	S23	1200	Manhole	S24	1200	1
7.000	S24L	1200	Manhole	S24	1200	1
6.002	S24	1200	Manhole	S25	1500	1
1.003	S25	1500	Manhole	S26	1500	1
8.000	S26L	1200	Manhole	S26	1500	1
1.004	S26	1500	Manhole	S27	1500	1
9.000	S27L	1200	Manhole	S27	1500	1
1.005	S27	1500	Manhole	S28	1500	1
10.000	S28L	1200	Manhole	S28	1500	1
1.006	S28	1500	Manhole	S34	1800	1
11.000	S29L	1200	Manhole	S29	1200	1
11.001	S29	1200	Manhole	S30	1500	1
12.000	S30La	1200	Manhole	S30	1500	1
13.000	S30Lb	1200	Manhole	S30	1500	1
11.002	S30	1500	Manhole	S31	1500	1
11.003	S31	1500	Manhole	S32	1500	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
14.000	5.007	10.0	150	117.485	114.783	2.552	117.368	114.282	2.936
11.004	17.646	79.8	375	117.368	114.057	2.936	117.038	113.836	2.827
11.005	33.286	100.0	375	117.038	113.836	2.827	116.415	113.503	2.537
1.007	19.035	80.0	525	116.415	113.429	2.461	116.157	113.191	2.441
1.008	23.693	27.4	525	116.157	113.191	2.441	115.816	112.326	2.965
15.000	7.274	7.4	150	116.035	113.690	2.195	115.816	112.701	2.965
1.009	18.243	30.0	525	115.816	112.326	2.965	115.528	111.718	3.285
16.000	14.118	65.4	225	116.270	113.989	2.056	116.002	113.773	2.004
16.001	6.329	100.5	225	116.002	113.773	2.004	115.939	113.710	2.004
17.000	13.590	79.9	150	116.000	113.954	1.896	115.939	113.784	2.005
16.002	41.708	100.0	300	115.939	113.634	2.005	116.079	113.217	2.562
18.000	5.490	10.0	150	116.060	113.916	1.994	116.079	113.367	2.562
19.000	4.003	10.0	150	116.085	113.768	2.167	116.079	113.368	2.561
16.003	38.235	30.0	300	116.079	113.217	2.562	115.528	111.942	3.286
1.010	42.418	108.8	600	115.528	111.643	3.285	114.833	111.253	2.980
20.000	10.478	10.8	150	115.040	112.668	2.222	114.833	111.702	2.981
21.000	9.155	11.2	150	115.044	112.520	2.374	114.833	111.703	2.980
1.011	44.432	93.0	750	114.833	111.102	2.981	113.942	110.624	2.568
22.000	9.559	9.3	225	114.136	112.180	1.731	113.942	111.149	2.568
23.000	8.212	9.2	225	114.155	112.046	1.884	113.942	111.149	2.568
1.012	28.044	59.8	750	113.942	110.624	2.568	113.380	110.155	2.475
24.000	24.836	50.8	225	114.031	111.169	2.637	113.380	110.680	2.475
25.000	10.741	57.4	225	113.620	110.867	2.528	113.380	110.680	2.475
1.013	19.933	100.2	750	113.380	110.155	2.475	113.033	109.956	2.327
1.014	19.479	79.8	750	113.033	109.957	2.326	112.686	109.713	2.223

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
14.000	S32L	1200	Manhole	S32	1500	1
11.004	S32	1500	Manhole	S33	1500	1
11.005	S33	1500	Manhole	S34	1800	1
1.007	S34	1800	Manhole	S35	1500	1
1.008	S35	1500	Manhole	S36	1500	1
15.000	S36L	1200	Manhole	S36	1500	1
1.009	S36	1500	Manhole	S40	1800	1
16.000	S37L	1200	Manhole	S37	1500	1
16.001	S37	1500	Manhole	S38	1500	1
17.000	S38L	1200	Manhole	S38	1500	1
16.002	S38	1500	Manhole	S39	1500	1
18.000	S39La	1200	Manhole	S39	1500	1
19.000	S39Lb	1200	Manhole	S39	1500	1
16.003	S39	1500	Manhole	S40	1800	1
1.010	S40	1800	Manhole	S41	1800	1
20.000	S41La	1200	Manhole	S41	1800	1
21.000	S41Lb	1200	Manhole	S41	1800	1
1.011	S41	1800	Manhole	S42	1800	1
22.000	S42La	1200	Manhole	S42	1800	1
23.000	S42Lb	1200	Manhole	S42	1800	1
1.012	S42	1800	Manhole	S44	1800	1
24.000	S43	1200	Manhole	S44	1800	1
25.000	S44L	1800	Manhole	S44	1800	1
1.013	S44	1800	Manhole	S45	1800	1
1.014	S45	1800	Manhole	S46	1800	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
26.000	7.311	10.0	150	112.900	110.519	2.231	112.686	109.788	2.748
1.015	13.680	11.3	750	112.686	109.713	2.223	112.440	108.504	3.186
27.000	10.634	100.3	225	117.070	114.459	2.386	116.846	114.353	2.268
27.001	37.674	124.7	300	116.846	114.278	2.268	115.969	113.976	1.693
28.000	10.870	23.2	225	116.240	114.520	1.495	115.969	114.051	1.693
27.002	17.482	99.9	375	115.969	113.901	1.693	115.553	113.726	1.452
29.000	10.416	347.2	225	115.795	113.906	1.664	115.553	113.876	1.452
27.003	17.756	99.2	375	115.553	113.726	1.452	115.288	113.547	1.366
30.000	15.937	100.2	450	115.179	113.887	0.842	115.200	113.728	1.022
30.001	17.986	70.3	450	115.200	113.728	1.022	115.288	113.472	1.366
27.004	27.878	99.9	450	115.288	113.472	1.366	115.655	113.193	2.012
27.005	17.199	69.6	450	115.655	113.268	1.937	115.655	113.021	2.184
31.000	5.310	15.7	150	115.742	113.659	1.933	115.655	113.321	2.184
27.006	24.507	20.0	450	115.655	113.021	2.184	114.791	111.796	2.545
43.000	5.406	28.5	150	113.962	112.607	1.205	113.831	112.417	1.264
43.001	49.188	153.2	450	113.831	112.117	1.264	114.791	111.796	2.545
27.007	28.844	20.0	600	114.791	111.646	2.545	114.066	110.204	3.262
32.000	9.253	10.9	150	114.400	111.504	2.746	114.066	110.654	3.262
33.000	10.996	10.7	150	114.400	111.678	2.572	114.066	110.654	3.262
27.008	42.458	99.9	600	114.066	110.204	3.262	112.973	109.779	2.594
34.000	8.992	10.0	225	113.400	111.053	2.122	112.973	110.154	2.594
27.009	16.903	59.1	600	112.973	109.779	2.594	112.566	109.493	2.473
35.000	7.615	50.4	225	112.800	110.019	2.556	112.566	109.868	2.473
27.010	37.958	79.9	600	112.566	109.493	2.473	111.935	109.018	2.317
36.000	10.471	33.1	150	112.110	109.784	2.176	111.935	109.468	2.317

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
26.000	S46L	1200	Manhole	S46	1800	1
1.015	S46	1800	Manhole	S60	1800	1
27.000	S47L	1200	Manhole	S47	1800	1
27.001	S47	1800	Manhole	S48	1200	1
28.000	S48L	1200	Manhole	S48	1200	1
27.002	S48	1200	Manhole	S49	1200	1
29.000	S49L	1200	Manhole	S49	1200	1
27.003	S49	1200	Manhole	S52	1500	1
30.000	S50	1500	Manhole	S51	1500	1
30.001	S51	1500	Manhole	S52	1500	1
27.004	S52	1500	Manhole	S53	1500	1
27.005	S53	1500	Manhole	S54	1500	1
31.000	S54L	1200	Manhole	S54	1500	1
27.006	S54	1500	Manhole	S54B	1500	1
43.000	S54AL	1200	Manhole	S54A	1500	1
43.001	S54A	1500	Manhole	S54B	1500	1
27.007	S54B	1500	Manhole	S55	1500	1
32.000	S55La	1200	Manhole	S55	1500	1
33.000	S55Lb	1200	Manhole	S55	1500	1
27.008	S55	1500	Manhole	S56	1500	1
34.000	S56L	1200	Manhole	S56	1500	1
27.009	S56	1500	Manhole	S57	1500	1
35.000	S57L	1200	Manhole	S57	1500	1
27.010	S57	1500	Manhole	S58	1500	1
36.000	S58L	1200	Manhole	S58	1500	1

Pipeline Schedule

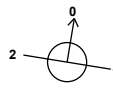
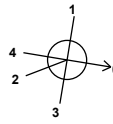
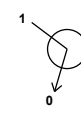
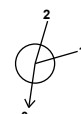
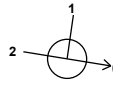
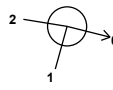
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
27.011	17.556	80.2	600	111.935	109.018	2.317	112.248	108.799	2.849
37.000	7.885	99.8	150	112.400	109.328	2.922	112.248	109.249	2.849
27.012	11.577	79.8	600	112.248	108.799	2.849	112.440	108.654	3.186
38.000	10.632	10.0	150	112.600	110.167	2.283	112.440	109.104	3.186
1.016	33.244	50.0	900	112.440	108.354	3.186	111.587	107.689	2.998
1.017	21.844	80.0	900	111.587	107.689	2.998	111.074	107.416	2.758
1.018	16.372	79.9	900	111.074	107.416	2.758	110.556	107.211	2.445
39.000	7.319	100.3	150	110.756	108.035	2.571	110.556	107.962	2.444
40.000	3.867	99.2	150	110.670	108.000	2.520	110.556	107.961	2.445
1.019	36.472	99.9	900	110.556	107.212	2.444	109.193	106.847	1.446
41.000	9.006	54.6	225	109.400	107.687	1.488	109.193	107.522	1.446
1.020	11.270	866.9	900	109.193	106.847	1.446	108.753	106.834	1.019
42.000	6.674	10.0	150	108.900	108.252	0.498	108.753	107.585	1.018
1.021	15.649	920.5	900	108.753	106.834	1.019	108.259	106.817	0.542
1.022	8.328	925.3	900	108.259	106.817	0.542	108.300	106.808	0.592
1.023	14.071	169.5	900	108.300	106.808	0.592	107.769	106.725	0.144

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
27.011	S58	1500	Manhole	S59	1500	1
37.000	S59L	1200	Manhole	S59	1500	1
27.012	S59	1500	Manhole	S60	1800	1
38.000	S60L	1200	Manhole	S60	1800	1
1.016	S60	1800	Manhole	S61	1800	1
1.017	S61	1800	Manhole	S62	1800	1
1.018	S62	1800	Manhole	S63	1800	1
39.000	S63La	1200	Manhole	S63	1800	1
40.000	S63Lb	1200	Manhole	S63	1800	1
1.019	S63	1800	Manhole	S64	1800	1
41.000	S64L	1200	Manhole	S64	1800	1
1.020	S64	1800	Manhole	S65	1800	1
42.000	S65L	1200	Manhole	S65	1800	1
1.021	S65	1800	Manhole	HW11		1
1.022	HW12		Manhole	S66	2700	1
1.023	S66	2700	Manhole	hw13		1

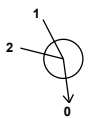
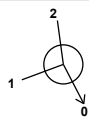
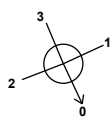
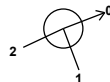
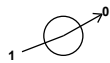
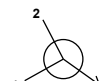
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S20L	443726.598	291580.939	118.050	1.942	1200	Manhole		0	1.000	116.108	225
S20	443724.514	291563.783	117.871	2.627	1500	Manhole		1	1.000	115.469	225
								0	1.001	115.244	450
S21La	443770.314	291520.942	117.280	1.644	1200	Manhole		0	2.000	115.636	150

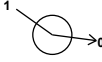
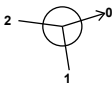
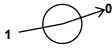
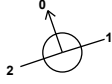
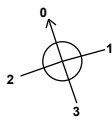
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S21Lb	443779.109	291519.517	117.262	1.646	1200	Manhole		0	3.000	115.616	150
S21	443775.700	291520.069	117.286	2.005	1500	Manhole		1 2 0	3.000 2.000 2.001	115.581 115.581 115.281	150 150 450
S22Lb	443772.393	291550.929	117.400	2.070	1200	Manhole		0	4.000	115.330	150
S22La	443782.530	291561.498	117.490	2.185	1200	Manhole		0	5.000	115.305	150
S22	443781.376	291554.374	117.331	2.398	1500	Manhole		1 2 3 4 0	5.000 4.000 2.001 1.001 1.002	115.233 115.233 114.933 114.933 114.933	150 150 450 450 450
S23L	443816.813	291610.966	117.642	1.659	1200	Manhole		0	6.000	115.983	225
S23	443824.030	291605.549	117.763	2.306	1200	Manhole		1 0	6.000 6.001	115.532 115.457	225 300
S24L	443820.618	291580.704	117.800	2.317	1200	Manhole		0	7.000	115.483	150
S24	443816.344	291579.478	117.836	2.726	1200	Manhole		1 2 0	7.000 6.001 6.002	115.335 115.185 115.110	150 300 375
S25	443812.026	291549.404	117.627	2.895	1500	Manhole		1 2 0	6.002 1.002 1.003	114.806 114.732 114.732	375 450 450
S26L	443835.771	291540.759	117.490	2.373	1200	Manhole		0	8.000	115.117	150
S26	443837.046	291545.359	117.358	2.943	1500	Manhole		1 2 0	8.000 1.003 1.004	114.715 114.415 114.415	150 450 450
S27L	443865.956	291545.642	117.100	1.828	1200	Manhole		0	9.000	115.272	150

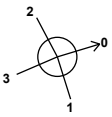
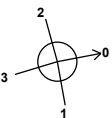
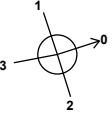
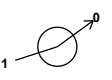
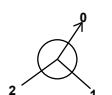
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S27	443870.449	291536.970	116.932	2.862	1500	Manhole		1 2 0	9.000 1.004 1.005	114.370 114.071 114.070	150 450 450
S28L	443866.251	291511.974	116.896	2.206	1200	Manhole		0	10.000	114.690	150
S28	443873.473	291514.657	116.646	2.951	1500	Manhole		1 2 0	10.000 1.005 1.006	113.995 113.695 113.695	150 450 450
S29L	443778.867	291486.594	116.950	1.774	1200	Manhole		0	11.000	115.176	150
S29	443784.225	291488.769	116.911	1.868	1200	Manhole		1 0	11.000 11.001	115.118 115.043	150 225
S30La	443775.409	291470.169	117.200	1.457	1200	Manhole		0	12.000	115.743	225
S30Lb	443804.951	291482.717	116.880	1.064	1200	Manhole		0	13.000	115.816	225
S30	443789.713	291475.676	117.074	2.248	1500	Manhole		1 2 3 0	13.000 12.000 11.001 11.002	114.977 114.977 114.976 114.826	225 225 225 375
S31	443796.831	291460.570	117.088	2.429	1500	Manhole		1 0	11.002 11.003	114.659 114.659	375 375
S32L	443836.785	291473.804	117.485	2.702	1200	Manhole		0	14.000	114.783	150
S32	443835.019	291478.489	117.368	3.311	1500	Manhole		1 2 0	14.000 11.003 11.004	114.282 114.057 114.057	150 375 375
S33	443851.486	291484.829	117.038	3.202	1500	Manhole		1 0	11.004 11.005	113.836 113.836	375 375
S34	443880.545	291501.065	116.415	2.986	1800	Manhole		1 2 0	11.005 1.006 1.007	113.503 113.503 113.429	375 450 525

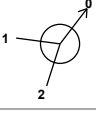
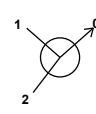
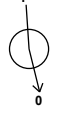
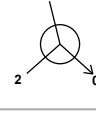
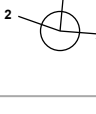
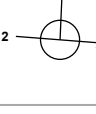
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S35	443896.046	291490.017	116.157	2.966	1500	Manhole		1 1.007	113.191	525
							0	1.008	113.191	525
S36L	443920.666	291479.743	116.035	2.345	1200	Manhole		0 15.000	113.690	150
S36	443919.537	291486.928	115.816	3.490	1500	Manhole		1 15.000	112.701	150
							2 1.008	112.326	525	
							0 1.009	112.326	525	
S37L	443942.586	291411.897	116.270	2.281	1200	Manhole		0 16.000	113.989	225
S37	443956.457	291414.527	116.002	2.229	1500	Manhole		1 16.000	113.773	225
							0 16.001	113.773	225	
S38L	443975.427	291420.600	116.000	2.046	1200	Manhole		0 17.000	113.954	150
S38	443962.456	291416.547	115.939	2.305	1500	Manhole		1 17.000	113.784	150
							2 16.001	113.710	225	
							0 16.002	113.634	300	
S39La	443943.622	291454.130	116.060	2.144	1200	Manhole		0 18.000	113.916	150
S39Lb	443952.661	291457.010	116.085	2.317	1200	Manhole		0 19.000	113.768	150
S39	443948.799	291455.955	116.079	2.862	1500	Manhole		1 19.000	113.368	150
							2 18.000	113.367	150	
							3 16.002	113.217	300	
							0 16.003	113.217	300	
S40	443936.967	291492.313	115.528	3.885	1800	Manhole		1 16.003	111.942	300
							2 1.009	111.718	525	
							0 1.010	111.643	600	
S41La	443968.311	291516.294	115.040	2.372	1200	Manhole		0 20.000	112.668	150
S41Lb	443975.273	291499.962	115.044	2.524	1200	Manhole		0 21.000	112.520	150

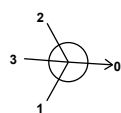
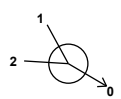
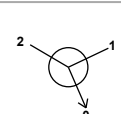
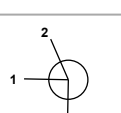
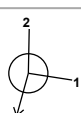
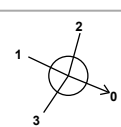
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S41	443972.824	291507.759	114.833	3.731	1800	Manhole		1 21.000 2 20.000 3 1.010 0 1.011	111.703 111.702 111.253 111.102	150 150 600 750
S42La	444016.029	291530.797	114.136	1.956	1200	Manhole		0 22.000	112.180	225
S42Lb	444020.020	291513.499	114.155	2.109	1200	Manhole		0 23.000	112.046	225
S42	444018.565	291521.581	113.942	3.318	1800	Manhole		1 23.000 2 22.000 3 1.011 0 1.012	111.149 111.149 110.624 110.624	225 225 750 750
S43	444053.518	291503.522	114.031	2.862	1200	Manhole		0 24.000	111.169	225
S44L	444042.718	291537.421	113.620	2.753	1800	Manhole		0 25.000	110.867	225
S44	444046.213	291526.845	113.380	3.225	1800	Manhole		1 25.000 2 24.000 3 1.012 0 1.013	110.680 110.680 110.155 110.155	225 225 750 750
S45	444065.128	291532.942	113.033	3.077	1800	Manhole		1 1.013	109.956	750
S46L	444086.341	291539.566	112.900	2.381	1200	Manhole		0 1.014	109.957	750
S46	444080.870	291544.415	112.686	2.973	1800	Manhole		1 26.000 2 1.014 0 1.015	109.788 109.713 109.713	150 750 750
S47L	443884.230	291600.704	117.070	2.611	1200	Manhole		0 27.000	114.459	225
S47	443894.371	291597.505	116.846	2.568	1800	Manhole		1 27.000	114.353	225
S48L	443895.036	291634.825	116.240	1.720	1200	Manhole		0 27.001	114.278	300
								0 28.000	114.520	225

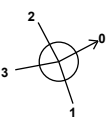
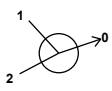
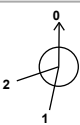
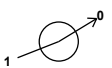
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S48	443905.812	291633.399	115.969	2.068	1200	Manhole		128.000114.051225 227.001113.976300 027.002113.901375		
S49L	443908.595	291654.145	115.795	1.889	1200	Manhole		029.000113.906225		
S49	443916.433	291647.285	115.553	1.827	1200	Manhole		129.000113.876225 227.002113.726375 027.003113.726375		
S50	443924.387	291692.392	115.179	1.292	1500	Manhole		030.000113.887450		
S51	443925.446	291676.490	115.200	1.472	1500	Manhole		130.000113.728450 030.001113.728450		
S52	443929.752	291659.028	115.288	1.816	1500	Manhole		130.001113.472450 227.003113.547375 027.004113.472450		
S53	443950.409	291640.307	115.655	2.462	1500	Manhole		127.004113.193450 027.005113.268450		
S54L	443967.124	291639.883	115.742	2.083	1200	Manhole		031.000113.659150		
S54	443966.632	291634.596	115.655	2.634	1500	Manhole		131.000113.321150 227.005113.021450 027.006113.021450		
S54AL	443987.797	291682.193	113.962	1.355	1200	Manhole		043.000112.607150		
S54A	443993.191	291681.835	113.831	1.714	1500	Manhole		143.000112.417150 043.001112.117450		
S54B	443991.065	291632.693	114.791	3.145	1500	Manhole		143.001111.796450 227.006111.796450 027.007111.646600		
S55La	444015.384	291638.573	114.400	2.896	1200	Manhole		032.000111.504150		

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S55Lb	444014.478	291620.844	114.400	2.722	1200	Manhole		0	33.000	111.678	150
S55	444019.822	291630.453	114.066	3.862	1500	Manhole		1 2 3 0	33.000 32.000 27.007 27.008	110.654 110.654 110.204 110.204	150 150 600 600
S56L	444057.898	291635.750	113.400	2.347	1200	Manhole		0	34.000	111.053	225
S56	444062.200	291627.854	112.973	3.194	1500	Manhole		1 2 0	34.000 27.008 27.009	110.154 109.779 109.779	225 600 600
S57L	444083.653	291622.557	112.800	2.781	1200	Manhole		0	35.000	110.019	225
S57	444076.774	291619.291	112.566	3.073	1500	Manhole		1 2 0	35.000 27.009 27.010	109.868 109.493 109.493	225 600 600
S58L	444081.447	291584.691	112.110	2.326	1200	Manhole		0	36.000	109.784	150
S58	444091.916	291584.485	111.935	2.917	1500	Manhole		1 2 0	36.000 27.010 27.011	109.468 109.018 109.018	150 600 600
S59L	444099.362	291565.725	112.400	3.072	1200	Manhole		0	37.000	109.328	150
S59	444091.570	291566.932	112.248	3.449	1500	Manhole		1 2 0	37.000 27.011 27.012	109.249 108.799 108.799	150 600 600
S60L	444078.895	291560.325	112.600	2.433	1200	Manhole		0	38.000	110.167	150
S60	444088.501	291555.769	112.440	4.086	1800	Manhole		1 2 3 0	38.000 27.012 1.015 1.016	109.104 108.654 108.504 108.354	150 600 750 900
S61	444119.267	291543.174	111.587	3.898	1800	Manhole		1 0	1.016 1.017	107.689 107.689	900 900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S62	444140.948	291540.513	111.074	3.658	1800	Manhole	 1	1.017	107.416	900
							0	1.018	107.416	900
S63La	444153.628	291549.997	110.756	2.721	1200	Manhole	 0	39.000	108.035	150
S63Lb	444158.283	291539.860	110.670	2.670	1200	Manhole	 0	40.000	108.000	150
S63	444157.041	291543.522	110.556	3.345	1800	Manhole	 1 2 3 0	40.000 39.000 1.018 1.019	107.961 107.962 107.211 107.212	150 150 900 900
S64L	444183.206	291567.153	109.400	1.713	1200	Manhole	 0	41.000	107.687	225
S64	444189.306	291560.527	109.193	2.346	1800	Manhole	 1 2 0	41.000 1.019 1.020	107.522 106.847 106.847	225 900 900
S65L	444198.591	291557.594	108.900	0.648	1200	Manhole	 0	42.000	108.252	150
S65	444199.987	291564.120	108.753	1.919	1800	Manhole	 0 2 1	42.000 1.020 1.021	107.585 106.834 106.834	150 900 900
HW11	444200.122	291579.769	108.259	1.442		Manhole	 1	1.021	106.817	900
HW12	444214.527	291601.442	108.259	1.442		Manhole	 0	1.022	106.817	900
S66	444222.278	291604.489	108.300	1.492	2700	Manhole	 1	1.022	106.808	900
hw13	444234.306	291611.790	107.769	1.044		Manhole	 1	1.023	106.808 106.725	900 900

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m ³ /ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0
100	40	10	0

Node S66 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	106.808	Product Number	CTL-SHE-0205-2330-1500-2330
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	23.3	Min Node Diameter (mm)	1800

Node HW12 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	106.817	Main Channel Slope (1:X)	100000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW11

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	2225.0	0.0	1.666	3580.3	0.0	1.667	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058
2 year 30 minute summer	91.753	25.963
2 year 60 minute summer	61.301	16.200
2 year 120 minute summer	37.449	9.897
2 year 180 minute summer	28.672	7.378
2 year 240 minute summer	22.636	5.982
2 year 360 minute summer	17.235	4.435

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 480 minute summer	13.550	3.581
2 year 600 minute summer	11.088	3.033
2 year 720 minute summer	9.878	2.647
2 year 960 minute summer	8.113	2.136
2 year 1440 minute summer	5.891	1.579
30 year 15 minute summer	268.706	76.035
30 year 30 minute summer	174.929	49.499
30 year 60 minute summer	116.589	30.811
30 year 120 minute summer	70.438	18.615
30 year 180 minute summer	53.298	13.715
30 year 240 minute summer	41.604	10.995
30 year 360 minute summer	31.221	8.034
30 year 480 minute summer	24.324	6.428
30 year 600 minute summer	19.756	5.404
30 year 720 minute summer	17.490	4.687
30 year 960 minute summer	14.215	3.743
30 year 1440 minute summer	10.161	2.723
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC +10% A 15 minute summer	488.233	138.153
100 year +40% CC +10% A 30 minute summer	320.551	90.705
100 year +40% CC +10% A 60 minute summer	214.603	56.713
100 year +40% CC +10% A 120 minute summer	129.587	34.246
100 year +40% CC +10% A 180 minute summer	97.729	25.149
100 year +40% CC +10% A 240 minute summer	75.977	20.078
100 year +40% CC +10% A 360 minute summer	56.677	14.585
100 year +40% CC +10% A 480 minute summer	43.979	11.622
100 year +40% CC +10% A 600 minute summer	35.604	9.738
100 year +40% CC +10% A 720 minute summer	31.433	8.424
100 year +40% CC +10% A 960 minute summer	25.432	6.697
100 year +40% CC +10% A 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	10	116.179	0.071	21.8	0.0801	0.0000	OK
15 minute summer	S20	10	115.363	0.119	38.5	0.2106	0.0000	OK
15 minute summer	S21La	10	115.721	0.085	11.3	0.0963	0.0000	OK
15 minute summer	S21Lb	10	115.691	0.075	8.8	0.0851	0.0000	OK
15 minute summer	S21	10	115.365	0.084	25.7	0.1486	0.0000	OK
15 minute summer	S22Lb	10	115.402	0.072	8.5	0.0814	0.0000	OK
15 minute summer	S22La	10	115.414	0.109	15.8	0.1236	0.0000	OK
15 minute summer	S22	11	115.113	0.180	90.7	0.3178	0.0000	OK
15 minute summer	S23L	10	116.048	0.065	21.5	0.0736	0.0000	OK
15 minute summer	S23	10	115.564	0.107	28.9	0.1212	0.0000	OK
15 minute summer	S24L	10	115.542	0.059	8.0	0.0665	0.0000	OK
15 minute summer	S24	10	115.218	0.108	40.4	0.1223	0.0000	OK
15 minute summer	S25	11	114.921	0.189	134.7	0.3331	0.0000	OK
15 minute summer	S26L	10	115.159	0.042	9.0	0.0479	0.0000	OK
15 minute summer	S26	11	114.626	0.211	149.0	0.3731	0.0000	OK
15 minute summer	S27L	10	115.319	0.047	11.4	0.0528	0.0000	OK
15 minute summer	S27	11	114.266	0.196	169.0	0.3456	0.0000	OK
15 minute summer	S28L	10	114.730	0.040	8.3	0.0451	0.0000	OK
15 minute summer	S28	11	113.915	0.220	180.2	0.3893	0.0000	OK
15 minute summer	S29L	10	115.237	0.061	6.2	0.0688	0.0000	OK
15 minute summer	S29	10	115.129	0.086	11.4	0.0977	0.0000	OK
15 minute summer	S30La	10	115.825	0.082	33.6	0.0929	0.0000	OK
15 minute summer	S30Lb	10	115.876	0.060	18.6	0.0683	0.0000	OK
15 minute summer	S30	10	114.974	0.148	67.9	0.2616	0.0000	OK
15 minute summer	S31	10	114.798	0.139	72.5	0.2453	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	21.7	2.031	0.216	0.1844	
15 minute summer	S20	1.001	S22	37.7	0.825	0.159	2.6543	
15 minute summer	S21La	2.000	S21	11.2	1.090	0.617	0.0540	
15 minute summer	S21Lb	3.000	S21	8.7	0.990	0.504	0.0324	
15 minute summer	S21	2.001	S22	25.4	0.668	0.079	1.3793	
15 minute summer	S22Lb	4.000	S22	8.4	1.009	0.467	0.0784	
15 minute summer	S22La	5.000	S22	15.7	1.141	0.884	0.0992	
15 minute summer	S22	1.002	S25	90.8	1.488	0.347	1.8709	
15 minute summer	S23L	6.000	S23	21.4	2.257	0.183	0.0857	
15 minute summer	S23	6.001	S24	28.5	1.268	0.277	0.7131	
15 minute summer	S24L	7.000	S24	7.9	1.242	0.324	0.0501	
15 minute summer	S24	6.002	S25	40.3	1.507	0.186	0.7040	
15 minute summer	S25	1.003	S26	135.3	1.990	0.379	1.7664	
15 minute summer	S26L	8.000	S26	9.0	2.206	0.173	0.0194	
15 minute summer	S26	1.004	S27	149.3	2.047	0.462	2.5120	
15 minute summer	S27L	9.000	S27	11.4	2.437	0.209	0.0455	
15 minute summer	S27	1.005	S28	168.8	2.358	0.404	1.6123	
15 minute summer	S28L	10.000	S28	8.3	2.208	0.154	0.0288	
15 minute summer	S28	1.006	S34	179.8	2.335	0.497	1.1802	
15 minute summer	S29L	11.000	S29	6.2	0.921	0.347	0.0387	
15 minute summer	S29	11.001	S30	11.3	0.805	0.317	0.1987	
15 minute summer	S30La	12.000	S30	33.5	2.556	0.286	0.2006	
15 minute summer	S30Lb	13.000	S30	18.5	2.163	0.158	0.1435	
15 minute summer	S30	11.002	S31	67.6	1.746	0.338	0.6469	
15 minute summer	S31	11.003	S32	71.7	1.700	0.300	1.7823	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	10	114.843	0.060	19.1	0.0680	0.0000	OK
15 minute summer	S32	10	114.224	0.167	93.9	0.2952	0.0000	OK
15 minute summer	S33	11	114.018	0.182	97.6	0.3223	0.0000	OK
15 minute summer	S34	11	113.692	0.263	284.1	0.6704	0.0000	OK
15 minute summer	S35	11	113.389	0.198	290.5	0.3490	0.0000	OK
15 minute summer	S36L	10	113.749	0.059	21.8	0.0672	0.0000	OK
15 minute summer	S36	11	112.537	0.211	314.5	0.3735	0.0000	OK
15 minute summer	S37L	10	114.078	0.089	21.8	0.1011	0.0000	OK
15 minute summer	S37	10	113.887	0.114	27.2	0.2021	0.0000	OK
15 minute summer	S38L	10	114.031	0.077	10.4	0.0865	0.0000	OK
15 minute summer	S38	10	113.758	0.124	39.6	0.2196	0.0000	OK
15 minute summer	S39La	10	113.949	0.033	6.1	0.0377	0.0000	OK
15 minute summer	S39Lb	10	113.800	0.032	5.5	0.0358	0.0000	OK
15 minute summer	S39	11	113.324	0.107	56.4	0.1887	0.0000	OK
15 minute summer	S40	11	111.963	0.320	382.8	0.8142	0.0000	OK
15 minute summer	S41La	10	112.730	0.062	19.4	0.0701	0.0000	OK
15 minute summer	S41Lb	10	112.564	0.044	9.9	0.0495	0.0000	OK
15 minute summer	S41	11	111.390	0.288	420.1	0.7332	0.0000	OK
15 minute summer	S42La	10	112.250	0.070	36.6	0.0795	0.0000	OK
15 minute summer	S42Lb	10	112.095	0.049	17.9	0.0551	0.0000	OK
15 minute summer	S42	11	110.897	0.273	477.9	0.6957	0.0000	OK
15 minute summer	S43	10	111.203	0.034	3.6	0.0381	0.0000	OK
15 minute summer	S44L	10	110.977	0.110	33.6	0.2800	0.0000	OK
15 minute summer	S44	11	110.483	0.328	518.0	0.8347	0.0000	OK
15 minute summer	S45	11	110.266	0.310	520.8	0.7886	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	19.1	2.895	0.336	0.0329	
15 minute summer	S32	11.004	S33	93.5	1.863	0.417	0.8854	
15 minute summer	S33	11.005	S34	98.2	1.821	0.491	1.8133	
15 minute summer	S34	1.007	S35	283.7	3.112	0.523	1.7380	
15 minute summer	S35	1.008	S36	290.1	3.732	0.312	1.8422	
15 minute summer	S36L	15.000	S36	21.7	3.359	0.329	0.0471	
15 minute summer	S36	1.009	S40	314.0	3.490	0.354	1.6418	
15 minute summer	S37L	16.000	S37	21.7	1.243	0.337	0.2467	
15 minute summer	S37	16.001	S38	27.0	1.333	0.520	0.1281	
15 minute summer	S38L	17.000	S38	10.3	1.141	0.517	0.1225	
15 minute summer	S38	16.002	S39	39.3	1.580	0.354	1.0404	
15 minute summer	S39La	18.000	S39	6.1	2.097	0.107	0.0159	
15 minute summer	S39Lb	19.000	S39	5.5	2.034	0.097	0.0108	
15 minute summer	S39	16.003	S40	56.3	2.503	0.276	0.8599	
15 minute summer	S40	1.010	S41	381.0	2.516	0.577	6.4591	
15 minute summer	S41La	20.000	S41	19.3	2.820	0.356	0.0718	
15 minute summer	S41Lb	21.000	S41	9.9	2.313	0.184	0.0390	
15 minute summer	S41	1.011	S42	419.0	2.791	0.327	6.6801	
15 minute summer	S42La	22.000	S42	36.5	3.460	0.212	0.1009	
15 minute summer	S42Lb	23.000	S42	17.8	2.831	0.103	0.0518	
15 minute summer	S42	1.012	S44	477.1	2.894	0.298	4.6277	
15 minute summer	S43	24.000	S44	3.5	0.959	0.049	0.0919	
15 minute summer	S44L	25.000	S44	33.4	1.733	0.485	0.2068	
15 minute summer	S44	1.013	S45	516.0	2.894	0.418	3.5545	
15 minute summer	S45	1.014	S46	518.7	4.052	0.375	2.5181	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	10	110.583	0.064	21.5	0.0724	0.0000	OK
15 minute summer	S46	11	109.903	0.190	544.2	0.4840	0.0000	OK
15 minute summer	S47L	10	114.540	0.081	14.7	0.0919	0.0000	OK
15 minute summer	S47	10	114.384	0.106	27.4	0.2691	0.0000	OK
15 minute summer	S48L	10	114.586	0.066	20.3	0.0742	0.0000	OK
15 minute summer	S48	10	114.029	0.128	51.3	0.1453	0.0000	OK
15 minute summer	S49L	10	114.007	0.101	12.8	0.1146	0.0000	OK
15 minute summer	S49	10	113.872	0.146	66.0	0.1646	0.0000	OK
15 minute summer	S50	10	113.945	0.058	11.8	0.1023	0.0000	OK
15 minute summer	S51	10	113.796	0.068	19.5	0.1193	0.0000	OK
15 minute summer	S52	10	113.630	0.158	87.8	0.2798	0.0000	OK
15 minute summer	S53	11	113.417	0.224	93.2	0.3958	0.0000	OK
15 minute summer	S54L	10	113.724	0.064	17.3	0.0729	0.0000	OK
15 minute summer	S54	11	113.145	0.124	123.4	0.2189	0.0000	OK
15 minute summer	S54AL	10	112.674	0.067	13.7	0.0755	0.0000	OK
15 minute summer	S54A	11	112.210	0.093	25.6	0.1637	0.0000	OK
15 minute summer	S54B	11	111.771	0.125	152.1	0.2205	0.0000	OK
15 minute summer	S55La	10	111.555	0.051	13.4	0.0575	0.0000	OK
15 minute summer	S55Lb	10	111.730	0.052	14.2	0.0591	0.0000	OK
15 minute summer	S55	11	110.416	0.212	190.2	0.3743	0.0000	OK
15 minute summer	S56L	10	111.099	0.046	15.3	0.0521	0.0000	OK
15 minute summer	S56	11	109.974	0.195	211.6	0.3440	0.0000	OK
15 minute summer	S57L	10	110.092	0.073	16.8	0.0823	0.0000	OK
15 minute summer	S57	11	109.715	0.222	234.3	0.3918	0.0000	OK
15 minute summer	S58L	10	109.854	0.070	13.9	0.0794	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	21.5	2.768	0.379	0.0784	
15 minute summer	S46	1.015	S60	543.0	6.209	0.147	1.1965	
15 minute summer	S47L	27.000	S47	14.6	1.134	0.281	0.1369	
15 minute summer	S47	27.001	S48	26.9	1.220	0.271	0.8324	
15 minute summer	S48L	28.000	S48	20.2	2.106	0.186	0.1044	
15 minute summer	S48	27.002	S49	51.1	1.406	0.255	0.6366	
15 minute summer	S49L	29.000	S49	12.7	0.776	0.458	0.1701	
15 minute summer	S49	27.003	S52	65.9	1.671	0.328	0.7004	
15 minute summer	S50	30.000	S51	11.7	0.877	0.036	0.2129	
15 minute summer	S51	30.001	S52	19.3	0.620	0.050	0.5811	
15 minute summer	S52	27.004	S53	88.7	1.383	0.274	1.7917	
15 minute summer	S53	27.005	S54	93.6	2.310	0.241	0.6983	
15 minute summer	S54L	31.000	S54	17.2	2.387	0.382	0.0384	
15 minute summer	S54	27.006	S54B	123.7	3.491	0.171	0.8684	
15 minute summer	S54AL	43.000	S54A	13.6	1.803	0.408	0.0409	
15 minute summer	S54A	43.001	S54B	25.1	1.069	0.096	1.1560	
15 minute summer	S54B	27.007	S55	152.2	2.355	0.099	1.8920	
15 minute summer	S55La	32.000	S55	13.3	2.544	0.246	0.0485	
15 minute summer	S55Lb	33.000	S55	14.1	2.600	0.259	0.0598	
15 minute summer	S55	27.008	S56	191.2	2.277	0.278	3.5666	
15 minute summer	S56L	34.000	S56	15.3	2.620	0.092	0.0524	
15 minute summer	S56	27.009	S57	212.4	2.447	0.237	1.4680	
15 minute summer	S57L	35.000	S57	16.7	1.509	0.228	0.0844	
15 minute summer	S57	27.010	S58	234.3	2.400	0.304	3.7064	
15 minute summer	S58L	36.000	S58	13.8	1.709	0.445	0.0846	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	11	109.250	0.232	253.4	0.4106	0.0000	OK
15 minute summer	S59L	10	109.434	0.106	15.3	0.1203	0.0000	OK
15 minute summer	S59	11	109.038	0.239	268.4	0.4216	0.0000	OK
15 minute summer	S60L	10	110.206	0.039	8.5	0.0445	0.0000	OK
15 minute summer	S60	11	108.676	0.322	825.2	0.8204	0.0000	OK
15 minute summer	S61	11	108.063	0.374	827.1	0.9529	0.0000	OK
15 minute summer	S62	11	107.815	0.399	831.6	1.0157	0.0000	OK
15 minute summer	S63La	10	108.125	0.090	12.0	0.1016	0.0000	OK
15 minute summer	S63Lb	10	108.137	0.137	20.5	0.1546	0.0000	OK
15 minute summer	S63	11	107.670	0.459	866.4	1.1680	0.0000	OK
15 minute summer	S64L	10	107.793	0.106	32.4	0.1202	0.0000	OK
15 minute summer	S64	12	107.549	0.702	892.1	1.7876	0.0000	OK
15 minute summer	S65L	10	108.308	0.056	17.0	0.0638	0.0000	OK
15 minute summer	S65	12	107.524	0.690	917.2	1.7558	0.0000	OK
600 minute summer	HW11	435	107.165	0.348	127.0	0.0000	0.0000	OK
600 minute summer	HW12	435	107.165	0.348	74.6	0.0000	0.0000	OK
600 minute summer	S66	465	107.226	0.418	117.1	2.3909	0.0000	OK
15 minute summer	hw13	1	106.725	0.000	17.6	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	253.6	2.473	0.330	1.8005	
15 minute summer	S59L	37.000	S59	15.2	1.137	0.853	0.1051	
15 minute summer	S59	27.012	S60	268.5	2.572	0.348	1.2084	
15 minute summer	S60L	38.000	S60	8.5	2.306	0.149	0.0390	
15 minute summer	S60	1.016	S61	823.6	3.644	0.292	7.5358	
15 minute summer	S61	1.017	S62	829.0	3.243	0.372	5.6878	
15 minute summer	S62	1.018	S63	830.8	2.852	0.372	4.8813	
15 minute summer	S63La	39.000	S63	11.9	1.083	0.671	0.0804	
15 minute summer	S63Lb	40.000	S63	20.3	1.229	1.141	0.0639	
15 minute summer	S63	1.019	S64	864.0	2.027	0.433	15.4513	
15 minute summer	S64L	41.000	S64	32.3	1.751	0.457	0.1659	
15 minute summer	S64	1.020	S65	898.1	1.707	1.337	5.9308	
15 minute summer	S65L	42.000	S65	17.0	2.804	0.299	0.0403	
15 minute summer	S65	1.021	HW11	739.4	2.934	1.135	4.3527	
600 minute summer	HW11	Flow through pond	HW12	74.6	0.023	0.005	822.9943	
600 minute summer	HW12	1.022	S66	117.1	0.500	0.180	2.1331	
600 minute summer	S66	Hydro-Brake®	hw13	23.3				807.3

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	10	116.208	0.100	41.5	0.1133	0.0000	OK
15 minute summer	S20	10	115.411	0.167	73.2	0.2950	0.0000	OK
15 minute summer	S21La	10	115.781	0.145	21.4	0.1640	0.0000	OK
15 minute summer	S21Lb	10	115.734	0.118	16.8	0.1329	0.0000	OK
15 minute summer	S21	10	115.397	0.116	48.6	0.2044	0.0000	OK
15 minute summer	S22Lb	10	115.439	0.109	16.1	0.1238	0.0000	OK
15 minute summer	S22La	10	115.585	0.280	30.0	0.3163	0.0000	SURCHARGED
15 minute summer	S22	11	115.198	0.265	172.5	0.4674	0.0000	OK
15 minute summer	S23L	10	116.074	0.091	40.8	0.1033	0.0000	OK
15 minute summer	S23	10	115.610	0.153	54.9	0.1735	0.0000	OK
15 minute summer	S24L	10	115.568	0.085	15.1	0.0960	0.0000	OK
15 minute summer	S24	10	115.261	0.151	76.8	0.1713	0.0000	OK
15 minute summer	S25	11	115.013	0.281	256.0	0.4971	0.0000	OK
15 minute summer	S26L	10	115.176	0.059	17.1	0.0671	0.0000	OK
15 minute summer	S26	11	114.734	0.319	283.8	0.5641	0.0000	OK
15 minute summer	S27L	10	115.338	0.066	21.7	0.0746	0.0000	OK
15 minute summer	S27	11	114.364	0.294	321.4	0.5201	0.0000	OK
15 minute summer	S28L	10	114.746	0.056	15.8	0.0631	0.0000	OK
15 minute summer	S28	11	114.034	0.339	343.2	0.5992	0.0000	OK
15 minute summer	S29L	10	115.265	0.089	11.8	0.1004	0.0000	OK
15 minute summer	S29	10	115.167	0.124	21.6	0.1403	0.0000	OK
15 minute summer	S30La	10	115.861	0.118	63.9	0.1334	0.0000	OK
15 minute summer	S30Lb	10	115.900	0.084	35.2	0.0953	0.0000	OK
15 minute summer	S30	10	115.041	0.215	129.0	0.3793	0.0000	OK
15 minute summer	S31	10	114.859	0.200	137.7	0.3527	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	41.3	2.423	0.411	0.2945	
15 minute summer	S20	1.001	S22	72.1	0.964	0.304	4.2996	
15 minute summer	S21La	2.000	S21	21.1	1.241	1.159	0.0888	
15 minute summer	S21Lb	3.000	S21	16.7	1.127	0.961	0.0542	
15 minute summer	S21	2.001	S22	48.3	0.771	0.149	2.2384	
15 minute summer	S22Lb	4.000	S22	15.9	1.160	0.884	0.1293	
15 minute summer	S22La	5.000	S22	29.6	1.683	1.671	0.1258	
15 minute summer	S22	1.002	S25	172.7	1.717	0.661	3.0833	
15 minute summer	S23L	6.000	S23	40.7	2.696	0.348	0.1362	
15 minute summer	S23	6.001	S24	54.2	1.502	0.527	1.1447	
15 minute summer	S24L	7.000	S24	15.0	1.462	0.613	0.0804	
15 minute summer	S24	6.002	S25	76.4	1.563	0.352	1.3408	
15 minute summer	S25	1.003	S26	257.7	2.294	0.721	2.9171	
15 minute summer	S26L	8.000	S26	17.1	2.638	0.328	0.0309	
15 minute summer	S26	1.004	S27	284.1	2.368	0.879	4.1386	
15 minute summer	S27L	9.000	S27	21.6	2.908	0.397	0.0726	
15 minute summer	S27	1.005	S28	321.5	2.701	0.769	2.6798	
15 minute summer	S28L	10.000	S28	15.8	2.648	0.293	0.0458	
15 minute summer	S28	1.006	S34	342.7	2.677	0.946	1.9621	
15 minute summer	S29L	11.000	S29	11.7	1.082	0.659	0.0627	
15 minute summer	S29	11.001	S30	21.4	0.967	0.602	0.3143	
15 minute summer	S30La	12.000	S30	63.6	3.026	0.545	0.3224	
15 minute summer	S30Lb	13.000	S30	35.0	2.590	0.300	0.2271	
15 minute summer	S30	11.002	S31	128.5	2.059	0.642	1.0420	
15 minute summer	S31	11.003	S32	136.4	1.958	0.570	2.9335	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	10	114.870	0.087	36.2	0.0987	0.0000	OK
15 minute summer	S32	10	114.311	0.254	178.5	0.4490	0.0000	OK
15 minute summer	S33	11	114.124	0.288	184.8	0.5089	0.0000	OK
15 minute summer	S34	11	113.840	0.411	540.4	1.0462	0.0000	OK
15 minute summer	S35	11	113.476	0.285	552.7	0.5032	0.0000	OK
15 minute summer	S36L	10	113.776	0.086	41.5	0.0977	0.0000	OK
15 minute summer	S36	11	112.639	0.313	598.5	0.5527	0.0000	OK
15 minute summer	S37L	10	114.122	0.133	41.5	0.1501	0.0000	OK
15 minute summer	S37	10	113.954	0.181	51.8	0.3192	0.0000	OK
15 minute summer	S38L	10	114.075	0.121	19.7	0.1365	0.0000	OK
15 minute summer	S38	10	113.814	0.180	74.6	0.3173	0.0000	OK
15 minute summer	S39La	10	113.962	0.046	11.5	0.0520	0.0000	OK
15 minute summer	S39Lb	10	113.812	0.044	10.5	0.0496	0.0000	OK
15 minute summer	S39	11	113.369	0.152	106.9	0.2693	0.0000	OK
15 minute summer	S40	11	112.183	0.540	728.6	1.3749	0.0000	OK
15 minute summer	S41La	10	112.759	0.091	36.9	0.1026	0.0000	OK
15 minute summer	S41Lb	10	112.582	0.061	18.8	0.0695	0.0000	OK
15 minute summer	S41	11	111.521	0.419	801.5	1.0661	0.0000	OK
15 minute summer	S42La	10	112.279	0.099	69.4	0.1121	0.0000	OK
15 minute summer	S42Lb	10	112.113	0.067	33.9	0.0762	0.0000	OK
15 minute summer	S42	11	111.027	0.403	912.7	1.0256	0.0000	OK
15 minute summer	S43	10	111.215	0.046	6.9	0.0523	0.0000	OK
15 minute summer	S44L	10	111.036	0.169	63.9	0.4299	0.0000	OK
15 minute summer	S44	11	110.636	0.481	976.1	1.2253	0.0000	OK
15 minute summer	S45	11	110.405	0.449	977.6	1.1416	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	36.1	3.403	0.638	0.0532	
15 minute summer	S32	11.004	S33	177.0	2.089	0.790	1.5018	
15 minute summer	S33	11.005	S34	186.2	2.000	0.930	3.2498	
15 minute summer	S34	1.007	S35	539.8	3.555	0.995	2.8646	
15 minute summer	S35	1.008	S36	552.2	4.368	0.594	3.0052	
15 minute summer	S36L	15.000	S36	41.4	3.955	0.627	0.0762	
15 minute summer	S36	1.009	S40	598.3	3.612	0.674	3.0693	
15 minute summer	S37L	16.000	S37	41.3	1.407	0.641	0.4132	
15 minute summer	S37	16.001	S38	50.8	1.502	0.980	0.2200	
15 minute summer	S38L	17.000	S38	19.4	1.292	0.974	0.2116	
15 minute summer	S38	16.002	S39	74.7	1.872	0.672	1.6659	
15 minute summer	S39La	18.000	S39	11.5	2.515	0.203	0.0250	
15 minute summer	S39Lb	19.000	S39	10.5	2.451	0.185	0.0171	
15 minute summer	S39	16.003	S40	106.3	2.837	0.522	1.8474	
15 minute summer	S40	1.010	S41	727.2	2.839	1.102	11.3354	
15 minute summer	S41La	20.000	S41	36.8	3.309	0.677	0.1165	
15 minute summer	S41Lb	21.000	S41	18.7	2.763	0.350	0.0621	
15 minute summer	S41	1.011	S42	800.8	3.277	0.624	10.9713	
15 minute summer	S42La	22.000	S42	69.3	4.123	0.403	0.1606	
15 minute summer	S42Lb	23.000	S42	33.8	3.402	0.196	0.0817	
15 minute summer	S42	1.012	S44	898.3	3.349	0.561	7.5664	
15 minute summer	S43	24.000	S44	6.8	1.163	0.093	0.1453	
15 minute summer	S44L	25.000	S44	63.4	1.986	0.922	0.3429	
15 minute summer	S44	1.013	S45	968.5	3.378	0.784	5.7145	
15 minute summer	S45	1.014	S46	973.1	4.752	0.703	4.0045	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	10	110.613	0.094	40.8	0.1066	0.0000	OK
15 minute summer	S46	11	109.975	0.262	1021.5	0.6677	0.0000	OK
15 minute summer	S47L	10	114.576	0.117	28.0	0.1318	0.0000	OK
15 minute summer	S47	10	114.430	0.152	52.2	0.3860	0.0000	OK
15 minute summer	S48L	10	114.612	0.092	38.5	0.1042	0.0000	OK
15 minute summer	S48	10	114.088	0.186	97.9	0.2109	0.0000	OK
15 minute summer	S49L	10	114.051	0.145	24.4	0.1642	0.0000	OK
15 minute summer	S49	10	113.937	0.211	126.0	0.2389	0.0000	OK
15 minute summer	S50	10	113.966	0.079	22.4	0.1395	0.0000	OK
15 minute summer	S51	10	113.820	0.092	37.1	0.1633	0.0000	OK
15 minute summer	S52	10	113.703	0.231	167.4	0.4082	0.0000	OK
15 minute summer	S53	11	113.478	0.285	176.7	0.5031	0.0000	OK
15 minute summer	S54L	10	113.754	0.095	32.9	0.1076	0.0000	OK
15 minute summer	S54	11	113.194	0.173	234.1	0.3060	0.0000	OK
15 minute summer	S54AL	10	112.706	0.099	26.0	0.1122	0.0000	OK
15 minute summer	S54A	10	112.246	0.129	48.6	0.2271	0.0000	OK
15 minute summer	S54B	11	111.818	0.172	288.9	0.3045	0.0000	OK
15 minute summer	S55La	10	111.576	0.072	25.3	0.0815	0.0000	OK
15 minute summer	S55Lb	10	111.753	0.075	27.0	0.0843	0.0000	OK
15 minute summer	S55	11	110.505	0.301	361.4	0.5323	0.0000	OK
15 minute summer	S56L	10	111.117	0.064	29.0	0.0719	0.0000	OK
15 minute summer	S56	11	110.058	0.279	401.4	0.4933	0.0000	OK
15 minute summer	S57L	10	110.122	0.103	31.9	0.1165	0.0000	OK
15 minute summer	S57	11	109.812	0.319	444.7	0.5642	0.0000	OK
15 minute summer	S58L	10	109.890	0.106	26.3	0.1196	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	40.7	2.835	0.719	0.1069	
15 minute summer	S46	1.015	S60	1020.0	6.700	0.277	2.1555	
15 minute summer	S47L	27.000	S47	27.8	1.343	0.536	0.2202	
15 minute summer	S47	27.001	S48	51.3	1.448	0.516	1.3415	
15 minute summer	S48L	28.000	S48	38.4	2.515	0.354	0.1658	
15 minute summer	S48	27.002	S49	97.5	1.648	0.487	1.0367	
15 minute summer	S49L	29.000	S49	24.2	0.952	0.873	0.2641	
15 minute summer	S49	27.003	S52	125.0	1.970	0.622	1.1317	
15 minute summer	S50	30.000	S51	22.3	1.061	0.069	0.3348	
15 minute summer	S51	30.001	S52	36.7	0.718	0.095	0.9471	
15 minute summer	S52	27.004	S53	168.2	1.796	0.520	2.6080	
15 minute summer	S53	27.005	S54	177.5	2.763	0.458	1.1057	
15 minute summer	S54L	31.000	S54	32.8	2.790	0.727	0.0625	
15 minute summer	S54	27.006	S54B	235.0	4.180	0.324	1.3778	
15 minute summer	S54AL	43.000	S54A	25.9	2.098	0.774	0.0668	
15 minute summer	S54A	43.001	S54B	47.7	1.288	0.183	1.8272	
15 minute summer	S54B	27.007	S55	289.3	2.800	0.187	3.0058	
15 minute summer	S55La	32.000	S55	25.2	3.020	0.465	0.0773	
15 minute summer	S55Lb	33.000	S55	26.9	3.085	0.492	0.0959	
15 minute summer	S55	27.008	S56	362.7	2.687	0.527	5.7324	
15 minute summer	S56L	34.000	S56	28.9	3.152	0.175	0.0825	
15 minute summer	S56	27.009	S57	403.0	2.871	0.450	2.3734	
15 minute summer	S57L	35.000	S57	31.8	1.797	0.433	0.1347	
15 minute summer	S57	27.010	S58	447.1	2.825	0.580	6.0080	
15 minute summer	S58L	36.000	S58	26.1	1.972	0.843	0.1388	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	11	109.357	0.339	483.3	0.5991	0.0000	OK
15 minute summer	S59L	10	109.604	0.276	29.0	0.3121	0.0000	SURCHARGED
15 minute summer	S59	11	109.147	0.348	513.3	0.6152	0.0000	OK
15 minute summer	S60L	10	110.222	0.055	16.1	0.0620	0.0000	OK
15 minute summer	S60	11	108.823	0.468	1559.2	1.1923	0.0000	OK
15 minute summer	S61	11	108.283	0.594	1563.6	1.5123	0.0000	OK
15 minute summer	S62	11	108.114	0.698	1577.4	1.7753	0.0000	OK
15 minute summer	S63La	10	108.216	0.181	22.7	0.2051	0.0000	SURCHARGED
15 minute summer	S63Lb	10	108.297	0.297	38.8	0.3354	0.0000	SURCHARGED
15 minute summer	S63	11	108.027	0.815	1647.1	2.0754	0.0000	OK
15 minute summer	S64L	11	107.939	0.252	61.5	0.2853	0.0000	SURCHARGED
15 minute summer	S64	10	107.894	1.047	1738.5	2.6656	0.0000	SURCHARGED
15 minute summer	S65L	10	108.333	0.081	32.3	0.0919	0.0000	OK
30 minute summer	S65	19	107.826	0.992	1829.9	2.5235	0.0000	SURCHARGED
480 minute summer	HW11	480	107.474	0.657	315.2	0.0000	0.0000	OK
480 minute summer	HW12	464	107.474	0.657	243.4	0.0000	0.0000	OK
600 minute summer	S66	495	107.551	0.743	202.3	4.2522	0.0000	OK
15 minute summer	hw13	1	106.725	0.000	23.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	485.3	2.909	0.631	2.9292	
15 minute summer	S59L	37.000	S59	28.6	1.625	1.610	0.1374	
15 minute summer	S59	27.012	S60	513.0	3.028	0.665	1.9616	
15 minute summer	S60L	38.000	S60	16.0	2.762	0.283	0.0618	
15 minute summer	S60	1.016	S61	1557.0	4.154	0.552	12.9262	
15 minute summer	S61	1.017	S62	1573.3	3.607	0.706	10.6106	
15 minute summer	S62	1.018	S63	1589.2	3.180	0.712	9.2612	
15 minute summer	S63La	39.000	S63	22.4	1.274	1.264	0.1253	
15 minute summer	S63Lb	40.000	S63	38.5	2.185	2.157	0.0674	
15 minute summer	S63	1.019	S64	1682.8	2.797	0.844	22.5340	
15 minute summer	S64L	41.000	S64	74.7	1.991	1.060	0.3545	
15 minute summer	S64	1.020	S65	1720.2	2.763	2.561	7.0561	
15 minute summer	S65L	42.000	S65	32.2	3.310	0.568	0.0648	
30 minute summer	S65	1.021	HW11	1907.8	4.654	2.928	5.8424	
480 minute summer	HW11	Flow through pond	HW12	150.9	0.036	0.009	1635.7102	
480 minute summer	HW12	1.022	S66	203.6	0.433	0.313	4.3791	
600 minute summer	S66	Hydro-Brake®	hw13	23.3				884.2

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	12	116.525	0.417	75.4	0.4714	0.0000	SURCHARGED
15 minute summer	S20	12	116.294	1.050	133.0	1.8550	0.0000	SURCHARGED
15 minute summer	S21La	12	116.406	0.770	38.9	0.8710	0.0000	SURCHARGED
15 minute summer	S21Lb	12	116.318	0.702	30.5	0.7937	0.0000	SURCHARGED
15 minute summer	S21	12	116.257	0.976	88.4	1.7237	0.0000	SURCHARGED
15 minute summer	S22Lb	12	116.388	1.058	29.3	1.1961	0.0000	SURCHARGED
15 minute summer	S22La	12	116.683	1.378	54.4	1.5580	0.0000	SURCHARGED
15 minute summer	S22	12	116.241	1.308	286.0	2.3104	0.0000	SURCHARGED
15 minute summer	S23L	12	116.416	0.433	74.2	0.4894	0.0000	SURCHARGED
15 minute summer	S23	12	116.301	0.844	99.8	0.9548	0.0000	SURCHARGED
15 minute summer	S24L	12	116.254	0.771	27.5	0.8720	0.0000	SURCHARGED
15 minute summer	S24	12	116.146	1.036	127.8	1.1720	0.0000	SURCHARGED
15 minute summer	S25	12	116.072	1.340	394.9	2.3674	0.0000	SURCHARGED
15 minute summer	S26L	12	115.840	0.723	31.1	0.8178	0.0000	SURCHARGED
15 minute summer	S26	12	115.754	1.339	403.2	2.3659	0.0000	SURCHARGED
15 minute summer	S27L	12	115.553	0.281	39.5	0.3178	0.0000	SURCHARGED
15 minute summer	S27	12	115.244	1.174	444.4	2.0738	0.0000	SURCHARGED
15 minute summer	S28L	12	114.937	0.247	28.7	0.2794	0.0000	SURCHARGED
15 minute summer	S28	12	114.812	1.117	474.5	1.9740	0.0000	SURCHARGED
15 minute summer	S29L	12	116.161	0.985	21.5	1.1137	0.0000	SURCHARGED
15 minute summer	S29	12	116.103	1.060	36.9	1.1985	0.0000	SURCHARGED
15 minute summer	S30La	11	116.596	0.853	116.0	0.9644	0.0000	SURCHARGED
15 minute summer	S30Lb	12	116.213	0.397	64.0	0.4489	0.0000	SURCHARGED
15 minute summer	S30	12	116.045	1.219	220.2	2.1545	0.0000	SURCHARGED
15 minute summer	S31	12	115.893	1.234	226.1	2.1799	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	75.0	2.795	0.747	0.6873	
15 minute summer	S20	1.001	S22	121.4	1.076	0.511	9.0921	
15 minute summer	S21La	2.000	S21	38.4	2.184	2.114	0.0923	
15 minute summer	S21Lb	3.000	S21	30.3	1.721	1.747	0.0645	
15 minute summer	S21	2.001	S22	84.6	0.854	0.262	5.5092	
15 minute summer	S22Lb	4.000	S22	26.3	1.493	1.457	0.1656	
15 minute summer	S22La	5.000	S22	49.8	2.829	2.809	0.1271	
15 minute summer	S22	1.002	S25	265.3	1.817	1.015	4.8580	
15 minute summer	S23L	6.000	S23	74.1	2.919	0.634	0.3589	
15 minute summer	S23	6.001	S24	91.1	1.655	0.885	2.2303	
15 minute summer	S24L	7.000	S24	25.3	1.542	1.031	0.1379	
15 minute summer	S24	6.002	S25	126.7	1.606	0.583	2.8515	
15 minute summer	S25	1.003	S26	356.0	2.267	0.997	4.1173	
15 minute summer	S26L	8.000	S26	29.4	2.870	0.567	0.0840	
15 minute summer	S26	1.004	S27	389.0	2.513	1.204	5.4568	
15 minute summer	S27L	9.000	S27	38.6	3.146	0.709	0.1719	
15 minute summer	S27	1.005	S28	442.8	2.795	1.060	3.5678	
15 minute summer	S28L	10.000	S28	28.1	2.880	0.523	0.1356	
15 minute summer	S28	1.006	S34	476.1	3.005	1.315	2.4275	
15 minute summer	S29L	11.000	S29	21.1	1.236	1.185	0.1018	
15 minute summer	S29	11.001	S30	40.4	1.109	1.136	0.5646	
15 minute summer	S30La	12.000	S30	108.9	3.342	0.933	0.6096	
15 minute summer	S30Lb	13.000	S30	61.1	2.672	0.523	0.6676	
15 minute summer	S30	11.002	S31	210.1	2.163	1.050	1.8419	
15 minute summer	S31	11.003	S32	204.1	2.000	0.853	4.6527	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	12	115.933	1.150	65.8	1.3001	0.0000	SURCHARGED
15 minute summer	S32	12	115.446	1.389	272.2	2.4539	0.0000	SURCHARGED
15 minute summer	S33	12	115.128	1.292	279.4	2.2836	0.0000	SURCHARGED
15 minute summer	S34	12	114.476	1.047	767.5	2.6657	0.0000	SURCHARGED
15 minute summer	S35	12	113.999	0.808	785.4	1.4273	0.0000	SURCHARGED
15 minute summer	S36L	11	114.565	0.875	75.4	0.9898	0.0000	SURCHARGED
15 minute summer	S36	12	113.375	1.049	859.5	1.8530	0.0000	SURCHARGED
15 minute summer	S37L	11	114.659	0.670	75.4	0.7579	0.0000	SURCHARGED
15 minute summer	S37	12	114.409	0.636	91.3	1.1241	0.0000	SURCHARGED
15 minute summer	S38L	12	114.684	0.730	35.9	0.8255	0.0000	SURCHARGED
15 minute summer	S38	12	114.251	0.617	126.9	1.0895	0.0000	SURCHARGED
15 minute summer	S39La	10	113.979	0.063	20.9	0.0713	0.0000	OK
15 minute summer	S39Lb	11	113.838	0.070	19.1	0.0788	0.0000	OK
15 minute summer	S39	12	113.737	0.520	179.3	0.9195	0.0000	SURCHARGED
15 minute summer	S40	12	112.800	1.157	1066.0	2.9440	0.0000	SURCHARGED
15 minute summer	S41La	11	113.270	0.602	67.0	0.6804	0.0000	SURCHARGED
15 minute summer	S41Lb	10	112.607	0.087	34.1	0.0985	0.0000	OK
15 minute summer	S41	11	111.655	0.553	1184.3	1.4073	0.0000	OK
15 minute summer	S42La	10	112.323	0.143	126.2	0.1612	0.0000	OK
15 minute summer	S42Lb	10	112.138	0.092	61.6	0.1045	0.0000	OK
15 minute summer	S42	11	111.199	0.575	1385.4	1.4643	0.0000	OK
15 minute summer	S43	10	111.232	0.063	12.6	0.0709	0.0000	OK
15 minute summer	S44L	10	111.420	0.552	116.0	1.4061	0.0000	SURCHARGED
15 minute summer	S44	11	110.867	0.712	1518.9	1.8125	0.0000	OK
15 minute summer	S45	11	110.615	0.659	1528.5	1.6782	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	58.8	3.607	1.039	0.0881	
15 minute summer	S32	11.004	S33	265.9	2.411	1.187	1.9463	
15 minute summer	S33	11.005	S34	277.0	2.512	1.384	3.6713	
15 minute summer	S34	1.007	S35	767.1	3.668	1.414	4.1122	
15 minute summer	S35	1.008	S36	785.6	4.514	0.846	5.1185	
15 minute summer	S36L	15.000	S36	70.7	4.200	1.071	0.1281	
15 minute summer	S36	1.009	S40	859.6	3.980	0.969	3.9411	
15 minute summer	S37L	16.000	S37	72.2	1.816	1.121	0.5615	
15 minute summer	S37	16.001	S38	86.0	2.163	1.659	0.2517	
15 minute summer	S38L	17.000	S38	32.5	1.848	1.636	0.2392	
15 minute summer	S38	16.002	S39	120.8	1.965	1.087	2.9370	
15 minute summer	S39La	18.000	S39	20.9	2.920	0.368	0.0676	
15 minute summer	S39Lb	19.000	S39	19.1	2.851	0.337	0.0513	
15 minute summer	S39	16.003	S40	171.1	2.898	0.840	2.6925	
15 minute summer	S40	1.010	S41	1066.5	3.787	1.616	11.8273	
15 minute summer	S41La	20.000	S41	64.6	3.669	1.188	0.1844	
15 minute summer	S41Lb	21.000	S41	34.0	3.210	0.636	0.0969	
15 minute summer	S41	1.011	S42	1188.4	3.507	0.927	15.7854	
15 minute summer	S42La	22.000	S42	126.0	4.762	0.733	0.2529	
15 minute summer	S42Lb	23.000	S42	61.5	4.013	0.356	0.1258	
15 minute summer	S42	1.012	S44	1376.6	3.519	0.860	11.1371	
15 minute summer	S43	24.000	S44	12.5	1.345	0.171	0.5493	
15 minute summer	S44L	25.000	S44	113.8	2.861	1.655	0.4229	
15 minute summer	S44	1.013	S45	1514.9	3.614	1.226	8.3945	
15 minute summer	S45	1.014	S46	1540.6	5.039	1.113	6.2206	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	11	111.361	0.842	74.2	0.9522	0.0000	SURCHARGED
15 minute summer	S46	12	110.109	0.395	1628.9	1.0064	0.0000	OK
15 minute summer	S47L	10	114.636	0.177	50.8	0.1999	0.0000	OK
15 minute summer	S47	10	114.505	0.227	94.7	0.5785	0.0000	OK
15 minute summer	S48L	10	114.651	0.130	70.0	0.1476	0.0000	OK
15 minute summer	S48	10	114.196	0.295	177.8	0.3332	0.0000	OK
15 minute summer	S49L	10	114.147	0.241	44.3	0.2730	0.0000	SURCHARGED
15 minute summer	S49	10	114.076	0.350	228.5	0.3959	0.0000	OK
15 minute summer	S50	10	113.994	0.107	40.7	0.1882	0.0000	OK
15 minute summer	S51	10	113.853	0.125	67.4	0.2207	0.0000	OK
15 minute summer	S52	10	113.821	0.349	303.8	0.6163	0.0000	OK
15 minute summer	S53	11	113.573	0.380	320.3	0.6711	0.0000	OK
15 minute summer	S54L	10	114.071	0.412	59.8	0.4656	0.0000	SURCHARGED
15 minute summer	S54	11	113.264	0.243	424.7	0.4295	0.0000	OK
15 minute summer	S54AL	10	112.949	0.342	47.2	0.3866	0.0000	SURCHARGED
15 minute summer	S54A	10	112.293	0.176	87.8	0.3110	0.0000	OK
15 minute summer	S54B	11	111.882	0.236	524.1	0.4164	0.0000	OK
15 minute summer	S55La	10	111.610	0.106	46.0	0.1200	0.0000	OK
15 minute summer	S55Lb	10	111.789	0.111	49.0	0.1256	0.0000	OK
15 minute summer	S55	12	111.038	0.833	655.4	1.4727	0.0000	SURCHARGED
15 minute summer	S56L	10	111.140	0.087	52.6	0.0982	0.0000	OK
15 minute summer	S56	12	110.726	0.947	711.9	1.6727	0.0000	SURCHARGED
15 minute summer	S57L	12	110.620	0.601	58.0	0.6802	0.0000	SURCHARGED
15 minute summer	S57	12	110.553	1.060	771.6	1.8727	0.0000	SURCHARGED
15 minute summer	S58L	12	110.688	0.904	47.8	1.0226	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	71.2	4.046	1.258	0.1287	
15 minute summer	S46	1.015	S60	1622.0	7.176	0.440	4.6204	
15 minute summer	S47L	27.000	S47	50.4	1.511	0.971	0.3553	
15 minute summer	S47	27.001	S48	93.0	1.640	0.936	2.1502	
15 minute summer	S48L	28.000	S48	69.8	2.875	0.644	0.2762	
15 minute summer	S48	27.002	S49	176.9	1.771	0.883	1.7481	
15 minute summer	S49L	29.000	S49	43.8	1.140	1.583	0.4015	
15 minute summer	S49	27.003	S52	227.8	2.152	1.134	1.8805	
15 minute summer	S50	30.000	S51	40.5	1.259	0.125	0.5135	
15 minute summer	S51	30.001	S52	66.9	0.807	0.173	1.5078	
15 minute summer	S52	27.004	S53	304.9	2.221	0.943	3.8219	
15 minute summer	S53	27.005	S54	321.2	3.180	0.828	1.7338	
15 minute summer	S54L	31.000	S54	58.6	3.328	1.298	0.0925	
15 minute summer	S54	27.006	S54B	425.9	4.874	0.587	2.1414	
15 minute summer	S54AL	43.000	S54A	46.5	2.642	1.389	0.0942	
15 minute summer	S54A	43.001	S54B	86.8	1.522	0.333	2.8109	
15 minute summer	S54B	27.007	S55	524.6	3.142	0.340	5.5427	
15 minute summer	S55La	32.000	S55	45.8	3.448	0.845	0.1408	
15 minute summer	S55Lb	33.000	S55	48.8	3.500	0.894	0.1708	
15 minute summer	S55	27.008	S56	638.5	2.924	0.927	11.9595	
15 minute summer	S56L	34.000	S56	52.5	3.723	0.317	0.2401	
15 minute summer	S56	27.009	S57	693.1	2.964	0.773	4.7612	
15 minute summer	S57L	35.000	S57	66.5	2.034	0.906	0.3029	
15 minute summer	S57	27.010	S58	748.9	2.935	0.972	10.6919	
15 minute summer	S58L	36.000	S58	42.4	2.406	1.366	0.1843	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	12	110.076	1.058	806.4	1.8691	0.0000	SURCHARGED
15 minute summer	S59L	11	110.433	1.105	52.6	1.2494	0.0000	SURCHARGED
15 minute summer	S59	12	109.868	1.069	850.5	1.8888	0.0000	SURCHARGED
15 minute summer	S60L	10	110.244	0.076	29.3	0.0865	0.0000	OK
15 minute summer	S60	12	109.699	1.345	2509.9	3.4239	0.0000	SURCHARGED
15 minute summer	S61	12	109.163	1.474	2549.5	3.7512	0.0000	SURCHARGED
15 minute summer	S62	12	108.839	1.423	2546.9	3.6206	0.0000	SURCHARGED
15 minute summer	S63La	11	108.941	0.906	41.3	1.0243	0.0000	SURCHARGED
15 minute summer	S63Lb	11	109.157	1.157	70.6	1.3091	0.0000	SURCHARGED
15 minute summer	S63	12	108.652	1.441	2646.0	3.6678	0.0000	SURCHARGED
15 minute summer	S64L	10	108.402	0.715	111.8	0.8083	0.0000	SURCHARGED
30 minute summer	S64	16	108.210	1.363	2625.9	3.4696	0.0000	SURCHARGED
15 minute summer	S65L	11	108.468	0.216	58.6	0.2443	0.0000	SURCHARGED
960 minute summer	S65	930	108.068	1.234	287.3	3.1394	0.0000	SURCHARGED
960 minute summer	HW11	960	108.064	1.247	758.9	0.0000	0.0000	OK
960 minute summer	HW12	960	108.064	1.247	504.7	0.0000	0.0000	FLOOD RISK
960 minute summer	S66	960	108.064	1.256	136.9	7.1926	0.0000	FLOOD RISK
15 minute summer	hw13	1	106.725	0.000	23.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	805.8	3.030	1.047	4.9451	
15 minute summer	S59L	37.000	S59	48.4	2.748	2.722	0.1388	
15 minute summer	S59	27.012	S60	848.7	3.465	1.101	3.2610	
15 minute summer	S60L	38.000	S60	29.2	3.185	0.516	0.1416	
15 minute summer	S60	1.016	S61	2539.7	4.104	0.900	21.0692	
15 minute summer	S61	1.017	S62	2539.4	4.007	1.139	13.8442	
15 minute summer	S62	1.018	S63	2541.3	4.010	1.139	10.3761	
15 minute summer	S63La	39.000	S63	39.1	2.222	2.206	0.1288	
15 minute summer	S63Lb	40.000	S63	67.3	3.825	3.777	0.0681	
15 minute summer	S63	1.019	S64	2619.2	4.133	1.314	23.1150	
15 minute summer	S64L	41.000	S64	106.1	2.668	1.504	0.3582	
30 minute summer	S64	1.020	S65	2650.0	4.182	3.946	7.1426	
15 minute summer	S65L	42.000	S65	56.2	3.540	0.992	0.1175	
960 minute summer	S65	1.021	HW11	285.4	1.735	0.438	9.9179	
960 minute summer	HW11	Flow through pond	HW12	-518.2	0.035	-0.031	3404.8943	
960 minute summer	HW12	1.022	S66	-153.4	-0.304	-0.236	5.2781	
960 minute summer	S66	Hydro-Brake®	hw13	23.3				1277.3

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	12	117.084	0.976	82.9	1.1043	0.0000	SURCHARGED
15 minute summer	S20	12	116.818	1.574	139.1	2.7820	0.0000	SURCHARGED
15 minute summer	S21La	12	116.946	1.310	42.8	1.4820	0.0000	SURCHARGED
15 minute summer	S21Lb	12	116.844	1.228	33.5	1.3893	0.0000	SURCHARGED
15 minute summer	S21	12	116.774	1.493	90.9	2.6386	0.0000	SURCHARGED
15 minute summer	S22Lb	12	116.919	1.589	32.2	1.7967	0.0000	SURCHARGED
15 minute summer	S22La	12	117.270	1.965	59.9	2.2220	0.0000	FLOOD RISK
15 minute summer	S22	12	116.757	1.824	314.6	3.2223	0.0000	SURCHARGED
15 minute summer	S23L	12	116.963	0.980	81.6	1.1080	0.0000	SURCHARGED
15 minute summer	S23	12	116.829	1.372	107.0	1.5514	0.0000	SURCHARGED
15 minute summer	S24L	12	116.769	1.286	30.3	1.4540	0.0000	SURCHARGED
15 minute summer	S24	12	116.650	1.540	138.7	1.7422	0.0000	SURCHARGED
15 minute summer	S25	12	116.567	1.835	378.1	3.2419	0.0000	SURCHARGED
15 minute summer	S26L	12	116.308	1.191	34.2	1.3470	0.0000	SURCHARGED
15 minute summer	S26	12	116.212	1.797	414.3	3.1747	0.0000	SURCHARGED
15 minute summer	S27L	12	116.002	0.730	43.4	0.8259	0.0000	SURCHARGED
15 minute summer	S27	12	115.643	1.573	470.7	2.7799	0.0000	SURCHARGED
15 minute summer	S28L	12	115.303	0.613	31.6	0.6935	0.0000	SURCHARGED
15 minute summer	S28	12	115.162	1.467	501.6	2.5919	0.0000	SURCHARGED
15 minute summer	S29L	12	116.667	1.491	23.7	1.6864	0.0000	FLOOD RISK
15 minute summer	S29	12	116.606	1.563	35.7	1.7680	0.0000	SURCHARGED
15 minute summer	S30La	12	117.166	1.423	127.6	1.6099	0.0000	FLOOD RISK
15 minute summer	S30Lb	12	116.741	0.925	70.4	1.0466	0.0000	FLOOD RISK
15 minute summer	S30	12	116.547	1.721	218.9	3.0406	0.0000	SURCHARGED
15 minute summer	S31	12	116.373	1.714	225.3	3.0288	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	77.6	2.802	0.773	0.6873	
15 minute summer	S20	1.001	S22	132.1	1.091	0.556	9.0921	
15 minute summer	S21La	2.000	S21	39.0	2.216	2.145	0.0923	
15 minute summer	S21Lb	3.000	S21	31.2	1.772	1.798	0.0645	
15 minute summer	S21	2.001	S22	88.5	0.868	0.274	5.5092	
15 minute summer	S22Lb	4.000	S22	28.9	1.640	1.601	0.1656	
15 minute summer	S22La	5.000	S22	52.5	2.985	2.964	0.1271	
15 minute summer	S22	1.002	S25	252.0	1.820	0.964	4.8580	
15 minute summer	S23L	6.000	S23	78.7	2.944	0.674	0.3589	
15 minute summer	S23	6.001	S24	98.5	1.675	0.957	2.2303	
15 minute summer	S24L	7.000	S24	26.1	1.562	1.067	0.1379	
15 minute summer	S24	6.002	S25	123.0	1.597	0.566	2.8515	
15 minute summer	S25	1.003	S26	374.0	2.360	1.047	4.1173	
15 minute summer	S26L	8.000	S26	29.5	2.939	0.567	0.0840	
15 minute summer	S26	1.004	S27	412.9	2.606	1.278	5.4568	
15 minute summer	S27L	9.000	S27	41.1	3.218	0.755	0.1719	
15 minute summer	S27	1.005	S28	467.6	2.951	1.119	3.5678	
15 minute summer	S28L	10.000	S28	29.9	2.951	0.556	0.1356	
15 minute summer	S28	1.006	S34	502.5	3.172	1.388	2.4275	
15 minute summer	S29L	11.000	S29	20.2	1.148	1.136	0.1018	
15 minute summer	S29	11.001	S30	38.8	1.205	1.092	0.5646	
15 minute summer	S30La	12.000	S30	115.8	3.282	0.991	0.6096	
15 minute summer	S30Lb	13.000	S30	66.5	2.528	0.569	0.6676	
15 minute summer	S30	11.002	S31	207.7	2.200	1.038	1.8419	
15 minute summer	S31	11.003	S32	216.1	2.008	0.903	4.6527	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	12	116.440	1.657	72.4	1.8745	0.0000	SURCHARGED
15 minute summer	S32	12	115.871	1.814	288.3	3.2060	0.0000	SURCHARGED
15 minute summer	S33	12	115.515	1.679	294.3	2.9669	0.0000	SURCHARGED
15 minute summer	S34	12	114.788	1.359	810.2	3.4596	0.0000	SURCHARGED
15 minute summer	S35	12	114.257	1.066	828.4	1.8842	0.0000	SURCHARGED
15 minute summer	S36L	11	114.949	1.259	82.9	1.4244	0.0000	SURCHARGED
15 minute summer	S36	12	113.564	1.238	908.9	2.1871	0.0000	SURCHARGED
15 minute summer	S37L	11	115.021	1.031	82.9	1.1666	0.0000	SURCHARGED
15 minute summer	S37	12	114.758	0.985	96.1	1.7412	0.0000	SURCHARGED
15 minute summer	S38L	12	115.076	1.122	39.5	1.2692	0.0000	SURCHARGED
15 minute summer	S38	12	114.575	0.941	134.5	1.6619	0.0000	SURCHARGED
15 minute summer	S39La	12	114.032	0.116	23.0	0.1315	0.0000	OK
15 minute summer	S39Lb	12	114.031	0.263	21.1	0.2974	0.0000	SURCHARGED
15 minute summer	S39	12	113.991	0.774	185.6	1.3680	0.0000	SURCHARGED
15 minute summer	S40	12	112.921	1.278	1129.7	3.2532	0.0000	SURCHARGED
15 minute summer	S41La	11	113.561	0.893	73.7	1.0097	0.0000	SURCHARGED
15 minute summer	S41Lb	10	112.613	0.093	37.5	0.1048	0.0000	OK
15 minute summer	S41	11	111.694	0.592	1259.5	1.5069	0.0000	OK
15 minute summer	S42La	10	112.332	0.152	138.8	0.1723	0.0000	OK
15 minute summer	S42Lb	10	112.144	0.097	67.8	0.1103	0.0000	OK
15 minute summer	S42	11	111.267	0.643	1467.7	1.6353	0.0000	OK
15 minute summer	S43	10	111.235	0.066	13.8	0.0743	0.0000	OK
15 minute summer	S44L	11	111.616	0.749	127.6	1.9064	0.0000	SURCHARGED
15 minute summer	S44	11	111.015	0.860	1615.6	2.1888	0.0000	SURCHARGED
15 minute summer	S45	11	110.679	0.723	1626.2	1.8394	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	62.9	3.573	1.110	0.0881	
15 minute summer	S32	11.004	S33	281.4	2.552	1.256	1.9463	
15 minute summer	S33	11.005	S34	292.1	2.649	1.460	3.6713	
15 minute summer	S34	1.007	S35	812.5	3.761	1.498	4.1122	
15 minute summer	S35	1.008	S36	832.1	4.550	0.896	5.1185	
15 minute summer	S36L	15.000	S36	76.9	4.371	1.165	0.1281	
15 minute summer	S36	1.009	S40	908.4	4.205	1.024	3.9411	
15 minute summer	S37L	16.000	S37	75.7	1.903	1.175	0.5615	
15 minute summer	S37	16.001	S38	92.3	2.320	1.779	0.2517	
15 minute summer	S38L	17.000	S38	33.7	1.913	1.694	0.2392	
15 minute summer	S38	16.002	S39	128.9	1.893	1.160	2.9370	
15 minute summer	S39La	18.000	S39	22.3	2.823	0.394	0.0885	
15 minute summer	S39Lb	19.000	S39	20.0	2.758	0.353	0.0705	
15 minute summer	S39	16.003	S40	182.1	2.798	0.894	2.6925	
15 minute summer	S40	1.010	S41	1129.7	4.011	1.712	11.8273	
15 minute summer	S41La	20.000	S41	70.9	4.026	1.304	0.1826	
15 minute summer	S41Lb	21.000	S41	37.4	3.278	0.699	0.1044	
15 minute summer	S41	1.011	S42	1265.1	3.529	0.987	17.2063	
15 minute summer	S42La	22.000	S42	138.5	4.853	0.806	0.2729	
15 minute summer	S42Lb	23.000	S42	67.7	4.117	0.391	0.1513	
15 minute summer	S42	1.012	S44	1463.5	3.519	0.915	11.8027	
15 minute summer	S43	24.000	S44	13.7	1.272	0.187	0.6133	
15 minute summer	S44L	25.000	S44	124.4	3.129	1.810	0.4272	
15 minute summer	S44	1.013	S45	1608.0	3.654	1.302	8.7234	
15 minute summer	S45	1.014	S46	1612.1	5.025	1.165	7.6074	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	11	111.681	1.161	81.6	1.3136	0.0000	SURCHARGED
15 minute summer	S46	12	110.263	0.550	1708.0	1.3995	0.0000	OK
15 minute summer	S47L	11	114.729	0.270	55.9	0.3054	0.0000	SURCHARGED
15 minute summer	S47	11	114.609	0.331	104.2	0.8423	0.0000	SURCHARGED
15 minute summer	S48L	10	114.659	0.139	77.0	0.1570	0.0000	OK
15 minute summer	S48	10	114.306	0.405	196.2	0.4583	0.0000	SURCHARGED
15 minute summer	S49L	11	114.240	0.334	48.7	0.3775	0.0000	SURCHARGED
15 minute summer	S49	11	114.152	0.426	240.7	0.4820	0.0000	SURCHARGED
15 minute summer	S50	10	113.999	0.112	44.7	0.1977	0.0000	OK
15 minute summer	S51	10	113.859	0.131	74.1	0.2317	0.0000	OK
15 minute summer	S52	11	113.840	0.368	323.7	0.6506	0.0000	OK
15 minute summer	S53	11	113.589	0.396	342.1	0.7001	0.0000	OK
15 minute summer	S54L	10	114.196	0.536	65.8	0.6068	0.0000	SURCHARGED
15 minute summer	S54	11	113.276	0.255	458.1	0.4503	0.0000	OK
15 minute summer	S54AL	10	113.030	0.423	52.0	0.4783	0.0000	SURCHARGED
15 minute summer	S54A	10	112.302	0.185	96.5	0.3275	0.0000	OK
15 minute summer	S54B	12	111.937	0.291	568.9	0.5136	0.0000	OK
15 minute summer	S55La	12	112.107	0.603	50.7	0.6816	0.0000	SURCHARGED
15 minute summer	S55Lb	12	112.297	0.619	53.9	0.7002	0.0000	SURCHARGED
15 minute summer	S55	12	111.565	1.361	710.9	2.4043	0.0000	SURCHARGED
15 minute summer	S56L	12	111.229	0.176	57.9	0.1993	0.0000	OK
15 minute summer	S56	12	111.168	1.389	730.3	2.4544	0.0000	SURCHARGED
15 minute summer	S57L	12	111.071	1.052	63.8	1.1893	0.0000	SURCHARGED
15 minute summer	S57	12	110.990	1.497	804.2	2.6448	0.0000	SURCHARGED
15 minute summer	S58L	12	111.154	1.370	52.6	1.5495	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	77.1	4.382	1.362	0.1287	
15 minute summer	S46	1.015	S60	1695.1	7.292	0.460	5.3843	
15 minute summer	S47L	27.000	S47	55.5	1.515	1.069	0.4229	
15 minute summer	S47	27.001	S48	103.0	1.609	1.036	2.6530	
15 minute summer	S48L	28.000	S48	76.8	2.794	0.708	0.3559	
15 minute summer	S48	27.002	S49	188.8	1.751	0.943	1.9282	
15 minute summer	S49L	29.000	S49	48.8	1.227	1.764	0.4143	
15 minute summer	S49	27.003	S52	240.8	2.184	1.199	1.9218	
15 minute summer	S50	30.000	S51	44.5	1.291	0.138	0.5500	
15 minute summer	S51	30.001	S52	73.6	0.828	0.191	1.5891	
15 minute summer	S52	27.004	S53	325.3	2.267	1.006	3.9956	
15 minute summer	S53	27.005	S54	344.1	3.212	0.887	1.8371	
15 minute summer	S54L	31.000	S54	64.3	3.654	1.425	0.0928	
15 minute summer	S54	27.006	S54B	460.8	4.970	0.635	2.2722	
15 minute summer	S54AL	43.000	S54A	51.1	2.904	1.527	0.0950	
15 minute summer	S54A	43.001	S54B	95.5	1.562	0.366	3.0125	
15 minute summer	S54B	27.007	S55	560.8	3.059	0.363	6.0132	
15 minute summer	S55La	32.000	S55	50.5	3.491	0.931	0.1629	
15 minute summer	S55Lb	33.000	S55	53.6	3.505	0.982	0.1936	
15 minute summer	S55	27.008	S56	659.8	2.860	0.958	11.9595	
15 minute summer	S56L	34.000	S56	57.8	3.759	0.349	0.3288	
15 minute summer	S56	27.009	S57	728.2	2.988	0.812	4.7612	
15 minute summer	S57L	35.000	S57	60.5	2.072	0.825	0.3029	
15 minute summer	S57	27.010	S58	796.6	2.965	1.034	10.6919	
15 minute summer	S58L	36.000	S58	45.2	2.565	1.456	0.1843	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 98.94%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	12	110.524	1.506	857.4	2.6608	0.0000	SURCHARGED
15 minute summer	S59L	12	110.831	1.503	57.9	1.7000	0.0000	SURCHARGED
15 minute summer	S59	12	110.246	1.447	894.9	2.5563	0.0000	SURCHARGED
15 minute summer	S60L	12	110.273	0.106	32.2	0.1198	0.0000	OK
15 minute summer	S60	12	110.021	1.667	2633.6	4.2434	0.0000	SURCHARGED
15 minute summer	S61	12	109.371	1.682	2683.6	4.2816	0.0000	SURCHARGED
15 minute summer	S62	12	109.051	1.635	2725.0	4.1612	0.0000	SURCHARGED
15 minute summer	S63La	12	109.124	1.089	45.4	1.2314	0.0000	SURCHARGED
15 minute summer	S63Lb	11	109.378	1.378	77.6	1.5584	0.0000	SURCHARGED
15 minute summer	S63	12	108.737	1.526	2851.5	3.8832	0.0000	SURCHARGED
15 minute summer	S64L	10	108.465	0.778	123.0	0.8802	0.0000	SURCHARGED
480 minute summer	S64	360	108.260	1.413	541.2	3.5952	0.0000	SURCHARGED
15 minute summer	S65L	11	108.641	0.389	64.5	0.4404	0.0000	FLOOD RISK
480 minute summer	S65	360	108.234	1.400	551.2	3.5622	0.0000	SURCHARGED
960 minute summer	HW11	960	108.186	1.369	657.2	0.0000	0.0000	OK
960 minute summer	HW12	960	108.187	1.370	452.1	0.0000	0.0000	FLOOD RISK
960 minute summer	S66	960	108.187	1.379	148.8	7.8952	0.0000	FLOOD RISK
15 minute summer	hw13	1	106.725	0.000	23.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	849.0	3.063	1.103	4.9451	
15 minute summer	S59L	37.000	S59	50.6	2.874	2.847	0.1388	
15 minute summer	S59	27.012	S60	896.4	3.191	1.163	3.2610	
15 minute summer	S60L	38.000	S60	31.4	3.258	0.554	0.1643	
15 minute summer	S60	1.016	S61	2672.8	4.218	0.947	21.0692	
15 minute summer	S61	1.017	S62	2716.8	4.287	1.219	13.8442	
15 minute summer	S62	1.018	S63	2732.6	4.312	1.225	10.3761	
15 minute summer	S63La	39.000	S63	42.4	2.411	2.394	0.1288	
15 minute summer	S63Lb	40.000	S63	73.7	4.188	4.134	0.0681	
15 minute summer	S63	1.019	S64	2856.4	4.507	1.433	23.1150	
15 minute summer	S64L	41.000	S64	122.9	3.090	1.742	0.3582	
480 minute summer	S64	1.020	S65	537.2	1.055	0.800	7.1426	
15 minute summer	S65L	42.000	S65	61.5	3.613	1.087	0.1175	
480 minute summer	S65	1.021	HW11	549.1	2.053	0.843	9.9179	
960 minute summer	HW11	Flow through pond	HW12	-462.2	0.035	-0.028	3807.7458	
960 minute summer	HW12	1.022	S66	148.8	-0.264	0.229	5.2781	
960 minute summer	S66	Hydro-Brake®	hw13	23.3				1332.0

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S20L	0.126	5.00	118.050	Manhole	1200	443726.598	291580.939	1.942
S20	0.097	5.00	117.871	Manhole	1500	443724.514	291563.783	2.627
S21La	0.065	5.00	117.280	Manhole	1200	443770.314	291520.942	1.644
S21Lb	0.051	5.00	117.262	Manhole	1200	443779.109	291519.517	1.646
S21	0.033	5.00	117.286	Manhole	1500	443775.700	291520.069	2.005
S22Lb	0.049	5.00	117.400	Manhole	1200	443772.393	291550.929	2.070
S22La	0.091	5.00	117.490	Manhole	1200	443782.530	291561.498	2.185
S22	0.020	5.00	117.331	Manhole	1500	443781.376	291554.374	2.398
S23L	0.124	5.00	117.642	Manhole	1200	443816.813	291610.966	1.659
S23	0.043	5.00	117.763	Manhole	1200	443824.030	291605.549	2.306
S24L	0.046	5.00	117.800	Manhole	1200	443820.618	291580.704	2.317
S24	0.023	5.00	117.836	Manhole	1200	443816.344	291579.478	2.726
S25	0.025	5.00	117.627	Manhole	1500	443812.026	291549.404	2.895
S26L	0.052	5.00	117.490	Manhole	1200	443835.771	291540.759	2.373
S26	0.031	5.00	117.358	Manhole	1500	443837.046	291545.359	2.943
S27L	0.066	5.00	117.100	Manhole	1200	443865.956	291545.642	1.828
S27	0.053	5.00	116.932	Manhole	1500	443870.449	291536.970	2.862
S28L	0.048	5.00	116.896	Manhole	1200	443866.251	291511.974	2.206
S28	0.021	5.00	116.646	Manhole	1500	443873.473	291514.657	2.951
S29L	0.036	5.00	116.950	Manhole	1200	443778.867	291486.594	1.774
S29	0.030	5.00	116.911	Manhole	1200	443784.225	291488.769	1.868
S30La	0.194	5.00	117.200	Manhole	1200	443775.409	291470.169	1.457
S30Lb	0.107	5.00	116.880	Manhole	1200	443804.951	291482.717	1.064
S30	0.027	5.00	117.074	Manhole	1500	443789.713	291475.676	2.248
S31	0.028	5.00	117.088	Manhole	1500	443796.831	291460.570	2.429
S32L	0.110	5.00	117.485	Manhole	1200	443836.785	291473.804	2.702
S32	0.018	5.00	117.368	Manhole	1500	443835.019	291478.489	3.311
S33	0.025	5.00	117.038	Manhole	1500	443851.486	291484.829	3.202
S34	0.037	5.00	116.415	Manhole	1800	443880.545	291501.065	2.986
S35	0.041	5.00	116.157	Manhole	1500	443896.046	291490.017	2.966
S36L	0.126	5.00	116.035	Manhole	1200	443920.666	291479.743	2.345
S36	0.021	5.00	115.816	Manhole	1500	443919.537	291486.928	3.490
S37L	0.126	5.00	116.270	Manhole	1200	443942.586	291411.897	2.281
S37	0.032	5.00	116.002	Manhole	1500	443956.457	291414.527	2.229
S38L	0.060	5.00	116.000	Manhole	1200	443975.427	291420.600	2.046
S38	0.014	5.00	115.939	Manhole	1500	443962.456	291416.547	2.305
S39La	0.035	5.00	116.060	Manhole	1200	443943.622	291454.130	2.144
S39Lb	0.032	5.00	116.085	Manhole	1200	443952.661	291457.010	2.317
S39	0.032	5.00	116.079	Manhole	1500	443948.799	291455.955	2.862
S40	0.076	5.00	115.528	Manhole	1800	443936.967	291492.313	3.885
S41La	0.112	5.00	115.040	Manhole	1200	443968.311	291516.294	2.372

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S41lb	0.057	5.00	115.044	Manhole	1200	443975.273	291499.962	2.524
S41	0.067	5.00	114.833	Manhole	1800	443972.824	291507.759	3.731
S42La	0.211	5.00	114.136	Manhole	1200	444016.029	291530.797	1.956
S42Lb	0.103	5.00	114.155	Manhole	1200	444020.020	291513.499	2.109
S42	0.042	5.00	113.942	Manhole	1800	444018.565	291521.581	3.318
S43	0.021	5.00	114.031	Manhole	1200	444053.518	291503.522	2.862
S44L	0.194	5.00	113.620	Manhole	1800	444042.718	291537.421	2.753
S44	0.031	5.00	113.380	Manhole	1800	444046.213	291526.845	3.225
S45	0.029	5.00	113.033	Manhole	1800	444065.128	291532.942	3.077
S46L	0.124	5.00	112.900	Manhole	1200	444086.341	291539.566	2.381
S46	0.030	5.00	112.686	Manhole	1800	444080.870	291544.415	2.973
S47L	0.085	5.00	117.070	Manhole	1200	443884.230	291600.704	2.611
S47	0.074	5.00	116.846	Manhole	1800	443894.371	291597.505	2.568
S48L	0.117	5.00	116.240	Manhole	1200	443895.036	291634.825	1.720
S48	0.025	5.00	115.969	Manhole	1200	443905.812	291633.399	2.068
S49L	0.074	5.00	115.795	Manhole	1200	443908.595	291654.145	1.889
S49	0.013	5.00	115.553	Manhole	1200	443916.433	291647.285	1.827
S50	0.068	5.00	115.179	Manhole	1500	443924.387	291692.392	1.292
S51	0.045	5.00	115.200	Manhole	1500	443925.446	291676.490	1.472
S52	0.018	5.00	115.288	Manhole	1500	443929.752	291659.028	1.816
S53	0.027	5.00	115.655	Manhole	1500	443950.409	291640.307	2.462
S54L	0.100	5.00	115.742	Manhole	1200	443967.124	291639.883	2.083
S54	0.080	5.00	115.655	Manhole	1500	443966.632	291634.596	2.634
S54AL	0.079	5.00	113.962	Manhole	1200	443987.797	291682.193	1.355
S54A	0.069	5.00	113.831	Manhole	1500	443993.191	291681.835	1.714
S54B	0.020	5.00	114.791	Manhole	1500	443991.065	291632.693	3.145
S55La	0.077	5.00	114.400	Manhole	1200	444015.384	291638.573	2.896
S55Lb	0.082	5.00	114.400	Manhole	1200	444014.478	291620.844	2.722
S55	0.070	5.00	114.066	Manhole	1500	444019.822	291630.453	3.862
S56L	0.088	5.00	113.400	Manhole	1200	444057.898	291635.750	2.347
S56	0.035	5.00	112.973	Manhole	1500	444062.200	291627.854	3.194
S57L	0.097	5.00	112.800	Manhole	1200	444083.653	291622.557	2.781
S57	0.035	5.00	112.566	Manhole	1500	444076.774	291619.291	3.073
S58L	0.080	5.00	112.110	Manhole	1200	444081.447	291584.691	2.326
S58	0.035	5.00	111.935	Manhole	1500	444091.916	291584.485	2.917
S59L	0.088	5.00	112.400	Manhole	1200	444099.362	291565.725	3.072
S59			112.248	Manhole	1500	444091.570	291566.932	3.449
S60L	0.049	5.00	112.600	Manhole	1200	444078.895	291560.325	2.433
S60	0.034	5.00	112.440	Manhole	1800	444088.501	291555.769	4.086
S61	0.021	5.00	111.587	Manhole	1800	444119.267	291543.174	3.898
S62	0.016	5.00	111.074	Manhole	1800	444140.948	291540.513	3.658
S63La	0.069	5.00	110.756	Manhole	1200	444153.628	291549.997	2.721
S63Lb	0.118	5.00	110.670	Manhole	1200	444158.283	291539.860	2.670
S63	0.027	5.00	110.556	Manhole	1800	444157.041	291543.522	3.345
S64L	0.187	5.00	109.400	Manhole	1200	444183.206	291567.153	1.713
S64	0.014	5.00	109.193	Manhole	1800	444189.306	291560.527	2.346
S65L	0.098	5.00	108.900	Manhole	1200	444198.591	291557.594	0.648
S65	0.041	5.00	108.753	Manhole	1800	444199.987	291564.120	1.919
HW11			108.259	Manhole		444200.122	291579.769	1.442
HW12		5.00	108.259	Manhole		444214.527	291601.442	1.442
S66			108.300	Manhole	2700	444222.278	291604.489	1.492
hw13			107.769	Manhole		444234.306	291611.790	1.044

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S20L	S20	17.282	0.600	116.108	115.469	0.639	27.0	225	5.11	50.0
1.001	S20	S22	57.384	0.600	115.244	114.933	0.311	184.5	450	5.75	50.0
2.000	S21La	S21	5.244	0.600	115.636	115.581	0.055	95.3	150	5.08	50.0
3.000	S21Lb	S21	3.665	0.600	115.616	115.581	0.035	104.7	150	5.06	50.0
2.001	S21	S22	34.771	0.600	115.281	114.933	0.348	99.9	450	5.37	50.0
4.000	S22Lb	S22	9.405	0.600	115.330	115.233	0.097	97.0	150	5.15	50.0
5.000	S22La	S22	7.221	0.600	115.305	115.233	0.072	100.3	150	5.12	50.0
1.002	S22	S25	30.661	0.600	114.933	114.732	0.201	152.5	450	6.07	50.0
6.000	S23L	S23	9.024	0.600	115.983	115.532	0.451	20.0	225	5.05	50.0
6.001	S23	S24	31.671	0.600	115.457	115.185	0.272	116.4	300	5.41	50.0
7.000	S24L	S24	7.833	0.600	115.483	115.335	0.148	52.9	150	5.09	50.0
6.002	S24	S25	25.853	0.600	115.110	114.806	0.304	85.0	375	5.63	50.0
1.003	S25	S26	25.986	0.600	114.732	114.415	0.317	82.0	450	6.26	49.4
8.000	S26L	S26	4.774	0.600	115.117	114.715	0.402	11.9	150	5.03	50.0
1.004	S26	S27	34.440	0.600	114.415	114.071	0.344	100.1	450	6.54	48.3
9.000	S27L	S27	9.766	0.600	115.272	114.370	0.902	10.8	150	5.05	50.0
1.005	S27	S28	22.518	0.600	114.070	113.695	0.375	60.0	450	6.68	47.8
10.000	S28L	S28	7.704	0.600	114.690	113.995	0.695	11.1	150	5.04	50.0
1.006	S28	S34	15.321	0.600	113.695	113.503	0.192	79.8	450	6.80	47.4
11.000	S29L	S29	5.783	0.600	115.176	115.118	0.058	99.7	150	5.10	50.0
11.001	S29	S30	14.197	0.600	115.043	114.976	0.067	211.9	225	5.36	50.0
12.000	S30La	S30	15.328	0.600	115.743	114.977	0.766	20.0	225	5.09	50.0
13.000	S30Lb	S30	16.786	0.600	115.816	114.977	0.839	20.0	225	5.10	50.0
11.002	S30	S31	16.699	0.600	114.826	114.659	0.167	100.0	375	5.51	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S20L	S20	2.525	100.4	17.1	1.717	2.177	1.717	2.177	0.126	0.0
1.001	S20	S22	1.493	237.5	30.2	2.177	1.948	1.948	2.177	0.223	0.0
2.000	S21La	S21	1.029	18.2	8.8	1.494	1.555	1.494	1.555	0.065	0.0
3.000	S21Lb	S21	0.981	17.3	6.9	1.496	1.555	1.496	1.555	0.051	0.0
2.001	S21	S22	2.034	323.4	20.2	1.555	1.948	1.555	1.948	0.149	0.0
4.000	S22Lb	S22	1.020	18.0	6.6	1.920	1.948	1.920	1.948	0.049	0.0
5.000	S22La	S22	1.003	17.7	12.3	2.035	1.948	1.948	2.035	0.091	0.0
1.002	S22	S25	1.643	261.4	72.1	1.948	2.445	1.948	2.445	0.532	0.0
6.000	S23L	S23	2.938	116.8	16.8	1.434	2.006	1.434	2.006	0.124	0.0
6.001	S23	S24	1.456	102.9	22.6	2.006	2.351	2.006	2.351	0.167	0.0
7.000	S24L	S24	1.386	24.5	6.2	2.167	2.351	2.167	2.351	0.046	0.0
6.002	S24	S25	1.965	217.1	32.0	2.351	2.446	2.351	2.446	0.236	0.0
1.003	S25	S26	2.246	357.3	106.1	2.445	2.493	2.445	2.493	0.793	0.0
8.000	S26L	S26	2.939	51.9	7.0	2.223	2.493	2.223	2.493	0.052	0.0
1.004	S26	S27	2.032	323.1	114.7	2.493	2.411	2.411	2.493	0.876	0.0
9.000	S27L	S27	3.079	54.4	8.9	1.678	2.412	1.678	2.412	0.066	0.0
1.005	S27	S28	2.627	417.8	129.0	2.412	2.501	2.412	2.501	0.995	0.0
10.000	S28L	S28	3.043	53.8	6.5	2.056	2.501	2.056	2.501	0.048	0.0
1.006	S28	S34	2.277	362.2	136.8	2.501	2.462	2.462	2.501	1.064	0.0
11.000	S29L	S29	1.006	17.8	4.9	1.624	1.643	1.624	1.643	0.036	0.0
11.001	S29	S30	0.894	35.6	8.9	1.643	1.873	1.643	1.873	0.066	0.0
12.000	S30La	S30	2.938	116.8	26.3	1.232	1.872	1.232	1.872	0.194	0.0
13.000	S30Lb	S30	2.938	116.8	14.5	0.839	1.872	0.839	1.872	0.107	0.0
11.002	S30	S31	1.812	200.1	53.4	1.873	2.054	1.873	2.054	0.394	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.003	S31	S32	42.183	0.600	114.659	114.057	0.602	70.1	375	5.84	50.0
14.000	S32L	S32	5.007	0.600	114.783	114.282	0.501	10.0	150	5.03	50.0
11.004	S32	S33	17.646	0.600	114.057	113.836	0.221	79.8	375	5.98	50.0
11.005	S33	S34	33.286	0.600	113.836	113.503	0.333	100.0	375	6.29	49.2
1.007	S34	S35	19.035	0.600	113.429	113.191	0.238	80.0	525	6.92	47.0
1.008	S35	S36	23.693	0.600	113.191	112.326	0.865	27.4	525	7.01	46.7
15.000	S36L	S36	7.274	0.600	113.690	112.701	0.989	7.4	150	5.03	50.0
1.009	S36	S40	18.243	0.600	112.326	111.718	0.608	30.0	525	7.09	46.4
16.000	S37L	S37	14.118	0.600	113.989	113.773	0.216	65.4	225	5.15	50.0
16.001	S37	S38	6.329	0.600	113.773	113.710	0.063	100.5	225	5.23	50.0
17.000	S38L	S38	13.590	0.600	113.954	113.784	0.170	79.9	150	5.20	50.0
16.002	S38	S39	41.708	0.600	113.634	113.217	0.417	100.0	300	5.67	50.0
18.000	S39La	S39	5.490	0.600	113.916	113.367	0.549	10.0	150	5.03	50.0
19.000	S39Lb	S39	4.003	0.600	113.768	113.368	0.400	10.0	150	5.02	50.0
16.003	S39	S40	38.235	0.600	113.217	111.942	1.275	30.0	300	5.89	50.0
1.010	S40	S41	42.418	0.600	111.643	111.253	0.390	108.8	600	7.39	45.5
20.000	S41La	S41	10.478	0.600	112.668	111.702	0.966	10.8	150	5.06	50.0
21.000	S41Lb	S41	9.155	0.600	112.520	111.703	0.817	11.2	150	5.05	50.0
1.011	S41	S42	44.432	0.600	111.102	110.624	0.478	93.0	750	7.65	44.7
22.000	S42La	S42	9.559	0.600	112.180	111.149	1.031	9.3	225	5.04	50.0
23.000	S42Lb	S42	8.212	0.600	112.046	111.149	0.897	9.2	225	5.03	50.0
1.012	S42	S44	28.044	0.600	110.624	110.155	0.469	59.8	750	7.78	44.3
24.000	S43	S44	24.836	0.600	111.169	110.680	0.489	50.8	225	5.23	50.0
25.000	S44L	S44	10.741	0.600	110.867	110.680	0.187	57.4	225	5.10	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
11.003	S31	S32	2.167	239.3	57.2	2.054	2.936	2.054	2.936	0.422	0.0
14.000	S32L	S32	3.205	56.6	14.9	2.552	2.936	2.552	2.936	0.110	0.0
11.004	S32	S33	2.029	224.1	74.5	2.936	2.827	2.827	2.936	0.550	0.0
11.005	S33	S34	1.812	200.1	76.8	2.827	2.537	2.537	2.827	0.575	0.0
1.007	S34	S35	2.506	542.4	213.5	2.461	2.441	2.441	2.461	1.676	0.0
1.008	S35	S36	4.291	928.9	217.3	2.441	2.965	2.441	2.965	1.717	0.0
15.000	S36L	S36	3.739	66.1	17.1	2.195	2.965	2.195	2.965	0.126	0.0
1.009	S36	S40	4.099	887.4	234.6	2.965	3.285	2.965	3.285	1.864	0.0
16.000	S37L	S37	1.620	64.4	17.1	2.056	2.004	2.004	2.056	0.126	0.0
16.001	S37	S38	1.304	51.9	21.4	2.004	2.004	2.004	2.004	0.158	0.0
17.000	S38L	S38	1.125	19.9	8.1	1.896	2.005	1.896	2.005	0.060	0.0
16.002	S38	S39	1.572	111.1	31.4	2.005	2.562	2.005	2.562	0.232	0.0
18.000	S39La	S39	3.204	56.6	4.7	1.994	2.562	1.994	2.562	0.035	0.0
19.000	S39Lb	S39	3.203	56.6	4.3	2.167	2.561	2.167	2.561	0.032	0.0
16.003	S39	S40	2.881	203.7	44.9	2.562	3.286	2.562	3.286	0.331	0.0
1.010	S40	S41	2.334	660.0	279.9	3.285	2.980	2.980	3.285	2.271	0.0
20.000	S41La	S41	3.076	54.4	15.2	2.222	2.981	2.222	2.981	0.112	0.0
21.000	S41Lb	S41	3.026	53.5	7.7	2.374	2.980	2.374	2.980	0.057	0.0
1.011	S41	S42	2.903	1282.4	303.7	2.981	2.568	2.568	2.981	2.507	0.0
22.000	S42La	S42	4.322	171.9	28.6	1.731	2.568	1.731	2.568	0.211	0.0
23.000	S42Lb	S42	4.350	173.0	14.0	1.884	2.568	1.884	2.568	0.103	0.0
1.012	S42	S44	3.622	1600.3	343.8	2.568	2.475	2.475	2.568	2.863	0.0
24.000	S43	S44	1.839	73.1	2.8	2.637	2.475	2.475	2.637	0.021	0.0
25.000	S44L	S44	1.729	68.7	26.3	2.528	2.475	2.475	2.528	0.194	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.013	S44	S45	19.933	0.600	110.155	109.956	0.199	100.2	750	7.89	44.0
1.014	S45	S46	19.479	0.600	109.957	109.713	0.244	79.8	750	8.00	43.7
26.000	S46L	S46	7.311	0.600	110.519	109.788	0.731	10.0	150	5.04	50.0
1.015	S46	S60	13.680	0.600	109.713	108.504	1.209	11.3	750	8.03	43.6
27.000	S47L	S47	10.634	0.600	114.459	114.353	0.106	100.3	225	5.14	50.0
27.001	S47	S48	37.674	0.600	114.278	113.976	0.302	124.7	300	5.58	50.0
28.000	S48L	S48	10.870	0.600	114.520	114.051	0.469	23.2	225	5.07	50.0
27.002	S48	S49	17.482	0.600	113.901	113.726	0.175	99.9	375	5.74	50.0
29.000	S49L	S49	10.416	0.600	113.906	113.876	0.030	347.2	225	5.25	50.0
27.003	S49	S52	17.756	0.600	113.726	113.547	0.179	99.2	375	5.91	50.0
30.000	S50	S51	15.937	0.600	113.887	113.728	0.159	100.2	450	5.13	50.0
30.001	S51	S52	17.986	0.600	113.728	113.472	0.256	70.3	450	5.25	50.0
27.004	S52	S53	27.878	0.600	113.472	113.193	0.279	99.9	450	6.13	49.8
27.005	S53	S54	17.199	0.600	113.268	113.021	0.247	69.6	450	6.25	49.4
31.000	S54L	S54	5.310	0.600	113.659	113.321	0.338	15.7	150	5.03	50.0
27.006	S54	S54B	24.507	0.600	113.021	111.796	1.225	20.0	450	6.34	49.1
43.000	S54AL	S54A	5.406	0.600	112.607	112.417	0.190	28.5	150	5.05	50.0
43.001	S54A	S54B	49.188	0.600	112.117	111.796	0.321	153.2	450	5.55	50.0
27.007	S54B	S55	28.844	0.600	111.646	110.204	1.442	20.0	600	6.43	48.7
32.000	S55La	S55	9.253	0.600	111.504	110.654	0.850	10.9	150	5.05	50.0
33.000	S55Lb	S55	10.996	0.600	111.678	110.654	1.024	10.7	150	5.06	50.0
27.008	S55	S56	42.458	0.600	110.204	109.779	0.425	99.9	600	6.72	47.7
34.000	S56L	S56	8.992	0.600	111.053	110.154	0.899	10.0	225	5.04	50.0
27.009	S56	S57	16.903	0.600	109.779	109.493	0.286	59.1	600	6.81	47.4

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.013	S44	S45	2.796	1235.2	370.4	2.475	2.327	2.327	2.475	3.109	0.0
1.014	S45	S46	3.133	1384.2	371.4	2.326	2.223	2.223	2.326	3.138	0.0
26.000	S46L	S46	3.204	56.6	16.8	2.231	2.748	2.231	2.748	0.124	0.0
1.015	S46	S60	8.344	3686.5	388.9	2.223	3.186	2.223	3.186	3.292	0.0
27.000	S47L	S47	1.305	51.9	11.5	2.386	2.268	2.268	2.386	0.085	0.0
27.001	S47	S48	1.406	99.4	21.5	2.268	1.693	1.693	2.268	0.159	0.0
28.000	S48L	S48	2.729	108.5	15.9	1.495	1.693	1.495	1.693	0.117	0.0
27.002	S48	S49	1.812	200.2	40.8	1.693	1.452	1.452	1.693	0.301	0.0
29.000	S49L	S49	0.696	27.7	10.0	1.664	1.452	1.452	1.664	0.074	0.0
27.003	S49	S52	1.819	200.9	52.6	1.452	1.366	1.366	1.452	0.388	0.0
30.000	S50	S51	2.030	322.9	9.2	0.842	1.022	0.842	1.022	0.068	0.0
30.001	S51	S52	2.428	386.1	15.3	1.022	1.366	1.022	1.366	0.113	0.0
27.004	S52	S53	2.034	323.4	70.1	1.366	2.012	1.366	2.012	0.519	0.0
27.005	S53	S54	2.439	387.8	73.1	1.937	2.184	1.937	2.184	0.546	0.0
31.000	S54L	S54	2.554	45.1	13.6	1.933	2.184	1.933	2.184	0.100	0.0
27.006	S54	S54B	4.561	725.4	96.5	2.184	2.545	2.184	2.545	0.726	0.0
43.000	S54AL	S54A	1.894	33.5	10.7	1.205	1.264	1.205	1.264	0.079	0.0
43.001	S54A	S54B	1.640	260.8	20.1	1.264	2.545	1.264	2.545	0.148	0.0
27.007	S54B	S55	5.460	1543.9	118.1	2.545	3.262	2.545	3.262	0.894	0.0
32.000	S55La	S55	3.071	54.3	10.4	2.746	3.262	2.746	3.262	0.077	0.0
33.000	S55Lb	S55	3.092	54.6	11.1	2.572	3.262	2.572	3.262	0.082	0.0
27.008	S55	S56	2.436	688.8	145.2	3.262	2.594	2.594	3.262	1.123	0.0
34.000	S56L	S56	4.161	165.4	11.9	2.122	2.594	2.122	2.594	0.088	0.0
27.009	S56	S57	3.171	896.6	160.0	2.594	2.473	2.473	2.594	1.246	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
35.000	S57L	S57	7.615	0.600	110.019	109.868	0.151	50.4	225	5.07	50.0
27.010	S57	S58	37.958	0.600	109.493	109.018	0.475	79.9	600	7.04	46.6
36.000	S58L	S58	10.471	0.600	109.784	109.468	0.316	33.1	150	5.10	50.0
27.011	S58	S59	17.556	0.600	109.018	108.799	0.219	80.2	600	7.15	46.2
37.000	S59L	S59	7.885	0.600	109.328	109.249	0.079	99.8	150	5.13	50.0
27.012	S59	S60	11.577	0.600	108.799	108.654	0.145	79.8	600	7.22	46.0
38.000	S60L	S60	10.632	0.600	110.167	109.104	1.063	10.0	150	5.06	50.0
1.016	S60	S61	33.244	0.600	108.354	107.689	0.665	50.0	900	8.15	43.2
1.017	S61	S62	21.844	0.600	107.689	107.416	0.273	80.0	900	8.25	42.9
1.018	S62	S63	16.372	0.600	107.416	107.211	0.205	79.9	900	8.33	42.7
39.000	S63La	S63	7.319	0.600	108.035	107.962	0.073	100.3	150	5.12	50.0
40.000	S63Lb	S63	3.867	0.600	108.000	107.961	0.039	99.2	150	5.06	50.0
1.019	S63	S64	36.472	0.600	107.212	106.847	0.365	99.9	900	8.53	42.2
41.000	S64L	S64	9.006	0.600	107.687	107.522	0.165	54.6	225	5.08	50.0
1.020	S64	S65	11.270	0.600	106.847	106.834	0.013	866.9	900	8.70	41.7
42.000	S65L	S65	6.674	0.600	108.252	107.585	0.667	10.0	150	5.03	50.0
1.021	S65	HW11	15.649	0.600	106.834	106.817	0.017	920.5	900	8.96	41.1
1.022	HW12	S66	8.328	0.600	106.817	106.808	0.009	925.3	900	5.14	50.0
1.023	S66	hw13	14.071	0.600	106.808	106.725	0.083	169.5	900	5.23	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
35.000	S57L	S57	1.846	73.4	13.1	2.556	2.473	2.473	2.556	0.097	0.0
27.010	S57	S58	2.725	770.6	174.1	2.473	2.317	2.317	2.473	1.378	0.0
36.000	S58L	S58	1.754	31.0	10.8	2.176	2.317	2.176	2.317	0.080	0.0
27.011	S58	S59	2.721	769.4	187.2	2.317	2.849	2.317	2.849	1.493	0.0
37.000	S59L	S59	1.006	17.8	11.9	2.922	2.849	2.849	2.922	0.088	0.0
27.012	S59	S60	2.727	770.9	197.2	2.849	3.186	2.849	3.186	1.581	0.0
38.000	S60L	S60	3.204	56.6	6.6	2.283	3.186	2.283	3.186	0.049	0.0
1.016	S60	S61	4.437	2822.4	580.7	3.186	2.998	2.998	3.186	4.956	0.0
1.017	S61	S62	3.504	2229.2	579.3	2.998	2.758	2.758	2.998	4.977	0.0
1.018	S62	S63	3.507	2231.3	578.3	2.758	2.445	2.445	2.758	4.993	0.0
39.000	S63La	S63	1.003	17.7	9.4	2.571	2.444	2.444	2.571	0.069	0.0
40.000	S63Lb	S63	1.009	17.8	16.0	2.520	2.445	2.445	2.520	0.118	0.0
1.019	S63	S64	3.134	1993.9	595.8	2.444	1.446	1.446	2.444	5.207	0.0
41.000	S64L	S64	1.774	70.5	25.3	1.488	1.446	1.446	1.488	0.187	0.0
1.020	S64	S65	1.056	671.6	612.0	1.446	1.019	1.019	1.446	5.408	0.0
42.000	S65L	S65	3.203	56.6	13.3	0.498	1.018	0.498	1.018	0.098	0.0
1.021	S65	HW11	1.024	651.6	618.3	1.019	0.542	0.542	1.019	5.547	0.0
1.022	HW12	S66	1.022	649.9	0.0	0.542	0.592	0.542	0.592	0.000	0.0
1.023	S66	hw13	2.403	1528.9	0.0	0.592	0.144	0.144	0.592	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	17.282	27.0	225	118.050	116.108	1.717	117.871	115.469	2.177
1.001	57.384	184.5	450	117.871	115.244	2.177	117.331	114.933	1.948
2.000	5.244	95.3	150	117.280	115.636	1.494	117.286	115.581	1.555
3.000	3.665	104.7	150	117.262	115.616	1.496	117.286	115.581	1.555
2.001	34.771	99.9	450	117.286	115.281	1.555	117.331	114.933	1.948
4.000	9.405	97.0	150	117.400	115.330	1.920	117.331	115.233	1.948
5.000	7.221	100.3	150	117.490	115.305	2.035	117.331	115.233	1.948
1.002	30.661	152.5	450	117.331	114.933	1.948	117.627	114.732	2.445
6.000	9.024	20.0	225	117.642	115.983	1.434	117.763	115.532	2.006
6.001	31.671	116.4	300	117.763	115.457	2.006	117.836	115.185	2.351
7.000	7.833	52.9	150	117.800	115.483	2.167	117.836	115.335	2.351
6.002	25.853	85.0	375	117.836	115.110	2.351	117.627	114.806	2.446
1.003	25.986	82.0	450	117.627	114.732	2.445	117.358	114.415	2.493
8.000	4.774	11.9	150	117.490	115.117	2.223	117.358	114.715	2.493
1.004	34.440	100.1	450	117.358	114.415	2.493	116.932	114.071	2.411
9.000	9.766	10.8	150	117.100	115.272	1.678	116.932	114.370	2.412
1.005	22.518	60.0	450	116.932	114.070	2.412	116.646	113.695	2.501
10.000	7.704	11.1	150	116.896	114.690	2.056	116.646	113.995	2.501
1.006	15.321	79.8	450	116.646	113.695	2.501	116.415	113.503	2.462
11.000	5.783	99.7	150	116.950	115.176	1.624	116.911	115.118	1.643
11.001	14.197	211.9	225	116.911	115.043	1.643	117.074	114.976	1.873
12.000	15.328	20.0	225	117.200	115.743	1.232	117.074	114.977	1.872
13.000	16.786	20.0	225	116.880	115.816	0.839	117.074	114.977	1.872
11.002	16.699	100.0	375	117.074	114.826	1.873	117.088	114.659	2.054
11.003	42.183	70.1	375	117.088	114.659	2.054	117.368	114.057	2.936

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S20L	1200	Manhole	S20	1500	1
1.001	S20	1500	Manhole	S22	1500	1
2.000	S21La	1200	Manhole	S21	1500	1
3.000	S21Lb	1200	Manhole	S21	1500	1
2.001	S21	1500	Manhole	S22	1500	1
4.000	S22Lb	1200	Manhole	S22	1500	1
5.000	S22La	1200	Manhole	S22	1500	1
1.002	S22	1500	Manhole	S25	1500	1
6.000	S23L	1200	Manhole	S23	1200	1
6.001	S23	1200	Manhole	S24	1200	1
7.000	S24L	1200	Manhole	S24	1200	1
6.002	S24	1200	Manhole	S25	1500	1
1.003	S25	1500	Manhole	S26	1500	1
8.000	S26L	1200	Manhole	S26	1500	1
1.004	S26	1500	Manhole	S27	1500	1
9.000	S27L	1200	Manhole	S27	1500	1
1.005	S27	1500	Manhole	S28	1500	1
10.000	S28L	1200	Manhole	S28	1500	1
1.006	S28	1500	Manhole	S34	1800	1
11.000	S29L	1200	Manhole	S29	1200	1
11.001	S29	1200	Manhole	S30	1500	1
12.000	S30La	1200	Manhole	S30	1500	1
13.000	S30Lb	1200	Manhole	S30	1500	1
11.002	S30	1500	Manhole	S31	1500	1
11.003	S31	1500	Manhole	S32	1500	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
14.000	5.007	10.0	150	117.485	114.783	2.552	117.368	114.282	2.936
11.004	17.646	79.8	375	117.368	114.057	2.936	117.038	113.836	2.827
11.005	33.286	100.0	375	117.038	113.836	2.827	116.415	113.503	2.537
1.007	19.035	80.0	525	116.415	113.429	2.461	116.157	113.191	2.441
1.008	23.693	27.4	525	116.157	113.191	2.441	115.816	112.326	2.965
15.000	7.274	7.4	150	116.035	113.690	2.195	115.816	112.701	2.965
1.009	18.243	30.0	525	115.816	112.326	2.965	115.528	111.718	3.285
16.000	14.118	65.4	225	116.270	113.989	2.056	116.002	113.773	2.004
16.001	6.329	100.5	225	116.002	113.773	2.004	115.939	113.710	2.004
17.000	13.590	79.9	150	116.000	113.954	1.896	115.939	113.784	2.005
16.002	41.708	100.0	300	115.939	113.634	2.005	116.079	113.217	2.562
18.000	5.490	10.0	150	116.060	113.916	1.994	116.079	113.367	2.562
19.000	4.003	10.0	150	116.085	113.768	2.167	116.079	113.368	2.561
16.003	38.235	30.0	300	116.079	113.217	2.562	115.528	111.942	3.286
1.010	42.418	108.8	600	115.528	111.643	3.285	114.833	111.253	2.980
20.000	10.478	10.8	150	115.040	112.668	2.222	114.833	111.702	2.981
21.000	9.155	11.2	150	115.044	112.520	2.374	114.833	111.703	2.980
1.011	44.432	93.0	750	114.833	111.102	2.981	113.942	110.624	2.568
22.000	9.559	9.3	225	114.136	112.180	1.731	113.942	111.149	2.568
23.000	8.212	9.2	225	114.155	112.046	1.884	113.942	111.149	2.568
1.012	28.044	59.8	750	113.942	110.624	2.568	113.380	110.155	2.475
24.000	24.836	50.8	225	114.031	111.169	2.637	113.380	110.680	2.475
25.000	10.741	57.4	225	113.620	110.867	2.528	113.380	110.680	2.475
1.013	19.933	100.2	750	113.380	110.155	2.475	113.033	109.956	2.327
1.014	19.479	79.8	750	113.033	109.957	2.326	112.686	109.713	2.223

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
14.000	S32L	1200	Manhole	S32	1500	1
11.004	S32	1500	Manhole	S33	1500	1
11.005	S33	1500	Manhole	S34	1800	1
1.007	S34	1800	Manhole	S35	1500	1
1.008	S35	1500	Manhole	S36	1500	1
15.000	S36L	1200	Manhole	S36	1500	1
1.009	S36	1500	Manhole	S40	1800	1
16.000	S37L	1200	Manhole	S37	1500	1
16.001	S37	1500	Manhole	S38	1500	1
17.000	S38L	1200	Manhole	S38	1500	1
16.002	S38	1500	Manhole	S39	1500	1
18.000	S39La	1200	Manhole	S39	1500	1
19.000	S39Lb	1200	Manhole	S39	1500	1
16.003	S39	1500	Manhole	S40	1800	1
1.010	S40	1800	Manhole	S41	1800	1
20.000	S41La	1200	Manhole	S41	1800	1
21.000	S41Lb	1200	Manhole	S41	1800	1
1.011	S41	1800	Manhole	S42	1800	1
22.000	S42La	1200	Manhole	S42	1800	1
23.000	S42Lb	1200	Manhole	S42	1800	1
1.012	S42	1800	Manhole	S44	1800	1
24.000	S43	1200	Manhole	S44	1800	1
25.000	S44L	1800	Manhole	S44	1800	1
1.013	S44	1800	Manhole	S45	1800	1
1.014	S45	1800	Manhole	S46	1800	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
26.000	7.311	10.0	150	112.900	110.519	2.231	112.686	109.788	2.748
1.015	13.680	11.3	750	112.686	109.713	2.223	112.440	108.504	3.186
27.000	10.634	100.3	225	117.070	114.459	2.386	116.846	114.353	2.268
27.001	37.674	124.7	300	116.846	114.278	2.268	115.969	113.976	1.693
28.000	10.870	23.2	225	116.240	114.520	1.495	115.969	114.051	1.693
27.002	17.482	99.9	375	115.969	113.901	1.693	115.553	113.726	1.452
29.000	10.416	347.2	225	115.795	113.906	1.664	115.553	113.876	1.452
27.003	17.756	99.2	375	115.553	113.726	1.452	115.288	113.547	1.366
30.000	15.937	100.2	450	115.179	113.887	0.842	115.200	113.728	1.022
30.001	17.986	70.3	450	115.200	113.728	1.022	115.288	113.472	1.366
27.004	27.878	99.9	450	115.288	113.472	1.366	115.655	113.193	2.012
27.005	17.199	69.6	450	115.655	113.268	1.937	115.655	113.021	2.184
31.000	5.310	15.7	150	115.742	113.659	1.933	115.655	113.321	2.184
27.006	24.507	20.0	450	115.655	113.021	2.184	114.791	111.796	2.545
43.000	5.406	28.5	150	113.962	112.607	1.205	113.831	112.417	1.264
43.001	49.188	153.2	450	113.831	112.117	1.264	114.791	111.796	2.545
27.007	28.844	20.0	600	114.791	111.646	2.545	114.066	110.204	3.262
32.000	9.253	10.9	150	114.400	111.504	2.746	114.066	110.654	3.262
33.000	10.996	10.7	150	114.400	111.678	2.572	114.066	110.654	3.262
27.008	42.458	99.9	600	114.066	110.204	3.262	112.973	109.779	2.594
34.000	8.992	10.0	225	113.400	111.053	2.122	112.973	110.154	2.594
27.009	16.903	59.1	600	112.973	109.779	2.594	112.566	109.493	2.473
35.000	7.615	50.4	225	112.800	110.019	2.556	112.566	109.868	2.473
27.010	37.958	79.9	600	112.566	109.493	2.473	111.935	109.018	2.317
36.000	10.471	33.1	150	112.110	109.784	2.176	111.935	109.468	2.317

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
26.000	S46L	1200	Manhole	S46	1800	1
1.015	S46	1800	Manhole	S60	1800	1
27.000	S47L	1200	Manhole	S47	1800	1
27.001	S47	1800	Manhole	S48	1200	1
28.000	S48L	1200	Manhole	S48	1200	1
27.002	S48	1200	Manhole	S49	1200	1
29.000	S49L	1200	Manhole	S49	1200	1
27.003	S49	1200	Manhole	S52	1500	1
30.000	S50	1500	Manhole	S51	1500	1
30.001	S51	1500	Manhole	S52	1500	1
27.004	S52	1500	Manhole	S53	1500	1
27.005	S53	1500	Manhole	S54	1500	1
31.000	S54L	1200	Manhole	S54	1500	1
27.006	S54	1500	Manhole	S54B	1500	1
43.000	S54AL	1200	Manhole	S54A	1500	1
43.001	S54A	1500	Manhole	S54B	1500	1
27.007	S54B	1500	Manhole	S55	1500	1
32.000	S55La	1200	Manhole	S55	1500	1
33.000	S55Lb	1200	Manhole	S55	1500	1
27.008	S55	1500	Manhole	S56	1500	1
34.000	S56L	1200	Manhole	S56	1500	1
27.009	S56	1500	Manhole	S57	1500	1
35.000	S57L	1200	Manhole	S57	1500	1
27.010	S57	1500	Manhole	S58	1500	1
36.000	S58L	1200	Manhole	S58	1500	1

Pipeline Schedule

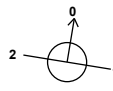
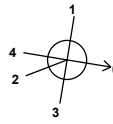
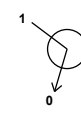
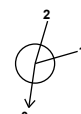
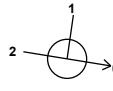
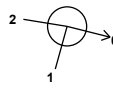
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
27.011	17.556	80.2	600	111.935	109.018	2.317	112.248	108.799	2.849
37.000	7.885	99.8	150	112.400	109.328	2.922	112.248	109.249	2.849
27.012	11.577	79.8	600	112.248	108.799	2.849	112.440	108.654	3.186
38.000	10.632	10.0	150	112.600	110.167	2.283	112.440	109.104	3.186
1.016	33.244	50.0	900	112.440	108.354	3.186	111.587	107.689	2.998
1.017	21.844	80.0	900	111.587	107.689	2.998	111.074	107.416	2.758
1.018	16.372	79.9	900	111.074	107.416	2.758	110.556	107.211	2.445
39.000	7.319	100.3	150	110.756	108.035	2.571	110.556	107.962	2.444
40.000	3.867	99.2	150	110.670	108.000	2.520	110.556	107.961	2.445
1.019	36.472	99.9	900	110.556	107.212	2.444	109.193	106.847	1.446
41.000	9.006	54.6	225	109.400	107.687	1.488	109.193	107.522	1.446
1.020	11.270	866.9	900	109.193	106.847	1.446	108.753	106.834	1.019
42.000	6.674	10.0	150	108.900	108.252	0.498	108.753	107.585	1.018
1.021	15.649	920.5	900	108.753	106.834	1.019	108.259	106.817	0.542
1.022	8.328	925.3	900	108.259	106.817	0.542	108.300	106.808	0.592
1.023	14.071	169.5	900	108.300	106.808	0.592	107.769	106.725	0.144

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
27.011	S58	1500	Manhole	S59	1500	1
37.000	S59L	1200	Manhole	S59	1500	1
27.012	S59	1500	Manhole	S60	1800	1
38.000	S60L	1200	Manhole	S60	1800	1
1.016	S60	1800	Manhole	S61	1800	1
1.017	S61	1800	Manhole	S62	1800	1
1.018	S62	1800	Manhole	S63	1800	1
39.000	S63La	1200	Manhole	S63	1800	1
40.000	S63Lb	1200	Manhole	S63	1800	1
1.019	S63	1800	Manhole	S64	1800	1
41.000	S64L	1200	Manhole	S64	1800	1
1.020	S64	1800	Manhole	S65	1800	1
42.000	S65L	1200	Manhole	S65	1800	1
1.021	S65	1800	Manhole	HW11		1
1.022	HW12		Manhole	S66	2700	1
1.023	S66	2700	Manhole	hw13		1

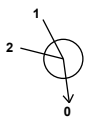
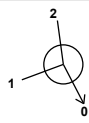
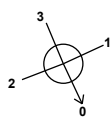
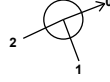
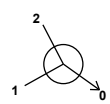
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S20L	443726.598	291580.939	118.050	1.942	1200	Manhole		0	1.000	116.108	225
S20	443724.514	291563.783	117.871	2.627	1500	Manhole		1	1.000	115.469	225
								0	1.001	115.244	450
S21La	443770.314	291520.942	117.280	1.644	1200	Manhole		0	2.000	115.636	150

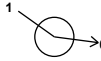
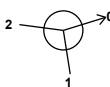
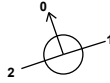
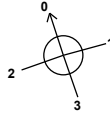
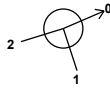
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S21Lb	443779.109	291519.517	117.262	1.646	1200	Manhole		0	3.000	115.616	150
S21	443775.700	291520.069	117.286	2.005	1500	Manhole		1 2 0	3.000 2.000 2.001	115.581 115.581 115.281	150 150 450
S22Lb	443772.393	291550.929	117.400	2.070	1200	Manhole		0	4.000	115.330	150
S22La	443782.530	291561.498	117.490	2.185	1200	Manhole		0	5.000	115.305	150
S22	443781.376	291554.374	117.331	2.398	1500	Manhole		1 2 3 4 0	5.000 4.000 2.001 1.001 1.002	115.233 115.233 114.933 114.933 114.933	150 150 450 450 450
S23L	443816.813	291610.966	117.642	1.659	1200	Manhole		0	6.000	115.983	225
S23	443824.030	291605.549	117.763	2.306	1200	Manhole		1 0	6.000 6.001	115.532 115.457	225 300
S24L	443820.618	291580.704	117.800	2.317	1200	Manhole		0	7.000	115.483	150
S24	443816.344	291579.478	117.836	2.726	1200	Manhole		1 2 0	7.000 6.001 6.002	115.335 115.185 115.110	150 300 375
S25	443812.026	291549.404	117.627	2.895	1500	Manhole		1 2 0	6.002 1.002 1.003	114.806 114.732 114.732	375 450 450
S26L	443835.771	291540.759	117.490	2.373	1200	Manhole		0	8.000	115.117	150
S26	443837.046	291545.359	117.358	2.943	1500	Manhole		1 2 0	8.000 1.003 1.004	114.715 114.415 114.415	150 450 450
S27L	443865.956	291545.642	117.100	1.828	1200	Manhole		0	9.000	115.272	150

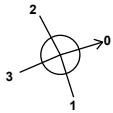
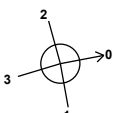
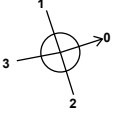
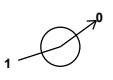
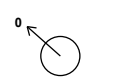
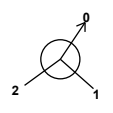
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S27	443870.449	291536.970	116.932	2.862	1500	Manhole		1 2 0	9.000 1.004 1.005	114.370 114.071 114.070	150 450 450
S28L	443866.251	291511.974	116.896	2.206	1200	Manhole		0	10.000	114.690	150
S28	443873.473	291514.657	116.646	2.951	1500	Manhole		1 2 0	10.000 1.005 1.006	113.995 113.695 113.695	150 450 450
S29L	443778.867	291486.594	116.950	1.774	1200	Manhole		0	11.000	115.176	150
S29	443784.225	291488.769	116.911	1.868	1200	Manhole		1 0	11.000 11.001	115.118 115.043	150 225
S30La	443775.409	291470.169	117.200	1.457	1200	Manhole		0	12.000	115.743	225
S30Lb	443804.951	291482.717	116.880	1.064	1200	Manhole		0	13.000	115.816	225
S30	443789.713	291475.676	117.074	2.248	1500	Manhole		1 2 3 0	13.000 12.000 11.001 11.002	114.977 114.977 114.976 114.826	225 225 225 375
S31	443796.831	291460.570	117.088	2.429	1500	Manhole		1 0	11.002 11.003	114.659 114.659	375 375
S32L	443836.785	291473.804	117.485	2.702	1200	Manhole		0	14.000	114.783	150
S32	443835.019	291478.489	117.368	3.311	1500	Manhole		1 2 0	14.000 11.003 11.004	114.282 114.057 114.057	150 375 375
S33	443851.486	291484.829	117.038	3.202	1500	Manhole		1 0	11.004 11.005	113.836 113.836	375 375
S34	443880.545	291501.065	116.415	2.986	1800	Manhole		1 2 0	11.005 1.006 1.007	113.503 113.503 113.429	375 450 525

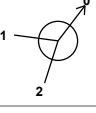
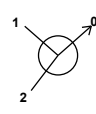
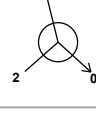
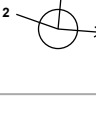
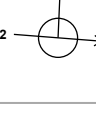
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S35	443896.046	291490.017	116.157	2.966	1500	Manhole		1	1.007	113.191	525
							0	1.008	113.191	525	
S36L	443920.666	291479.743	116.035	2.345	1200	Manhole		0	15.000	113.690	150
S36	443919.537	291486.928	115.816	3.490	1500	Manhole		1	15.000	112.701	150
							2	1.008	112.326	525	
							0	1.009	112.326	525	
S37L	443942.586	291411.897	116.270	2.281	1200	Manhole		0	16.000	113.989	225
S37	443956.457	291414.527	116.002	2.229	1500	Manhole		1	16.000	113.773	225
							0	16.001	113.773	225	
S38L	443975.427	291420.600	116.000	2.046	1200	Manhole		0	17.000	113.954	150
S38	443962.456	291416.547	115.939	2.305	1500	Manhole		1	17.000	113.784	150
							2	16.001	113.710	225	
							0	16.002	113.634	300	
S39La	443943.622	291454.130	116.060	2.144	1200	Manhole		0	18.000	113.916	150
S39Lb	443952.661	291457.010	116.085	2.317	1200	Manhole		0	19.000	113.768	150
S39	443948.799	291455.955	116.079	2.862	1500	Manhole		1	19.000	113.368	150
							2	18.000	113.367	150	
							3	16.002	113.217	300	
							0	16.003	113.217	300	
S40	443936.967	291492.313	115.528	3.885	1800	Manhole		1	16.003	111.942	300
							2	1.009	111.718	525	
							0	1.010	111.643	600	
S41La	443968.311	291516.294	115.040	2.372	1200	Manhole		0	20.000	112.668	150
S41Lb	443975.273	291499.962	115.044	2.524	1200	Manhole		0	21.000	112.520	150

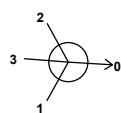
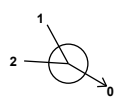
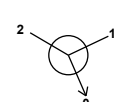
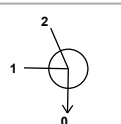
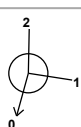
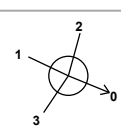
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S41	443972.824	291507.759	114.833	3.731	1800	Manhole		1 21.000 111.703 150 2 20.000 111.702 150 3 1.010 111.253 600 0 1.011 111.102 750		
S42La	444016.029	291530.797	114.136	1.956	1200	Manhole		0 22.000 112.180 225		
S42Lb	444020.020	291513.499	114.155	2.109	1200	Manhole		0 23.000 112.046 225		
S42	444018.565	291521.581	113.942	3.318	1800	Manhole		1 23.000 111.149 225 2 22.000 111.149 225 3 1.011 110.624 750 0 1.012 110.624 750		
S43	444053.518	291503.522	114.031	2.862	1200	Manhole		0 24.000 111.169 225		
S44L	444042.718	291537.421	113.620	2.753	1800	Manhole		0 25.000 110.867 225		
S44	444046.213	291526.845	113.380	3.225	1800	Manhole		1 25.000 110.680 225 2 24.000 110.680 225 3 1.012 110.155 750 0 1.013 110.155 750		
S45	444065.128	291532.942	113.033	3.077	1800	Manhole		1 1.013 109.956 750 0 1.014 109.957 750		
S46L	444086.341	291539.566	112.900	2.381	1200	Manhole		0 26.000 110.519 150		
S46	444080.870	291544.415	112.686	2.973	1800	Manhole		1 26.000 109.788 150 2 1.014 109.713 750 0 1.015 109.713 750		
S47L	443884.230	291600.704	117.070	2.611	1200	Manhole		0 27.000 114.459 225		
S47	443894.371	291597.505	116.846	2.568	1800	Manhole		1 27.000 114.353 225 0 27.001 114.278 300		
S48L	443895.036	291634.825	116.240	1.720	1200	Manhole		0 28.000 114.520 225		

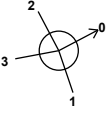
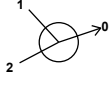
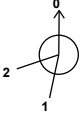
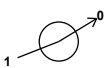
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S48	443905.812	291633.399	115.969	2.068	1200	Manhole	 1 2 0	28.000 27.001 27.002	114.051 113.976 113.901	225 300 375
S49L	443908.595	291654.145	115.795	1.889	1200	Manhole	 0	29.000	113.906	225
S49	443916.433	291647.285	115.553	1.827	1200	Manhole	 1 2 0	29.000 27.002 27.003	113.876 113.726 113.726	225 375 375
S50	443924.387	291692.392	115.179	1.292	1500	Manhole	 0	30.000	113.887	450
S51	443925.446	291676.490	115.200	1.472	1500	Manhole	 1 0	30.000 30.001	113.728 113.728	450 450
S52	443929.752	291659.028	115.288	1.816	1500	Manhole	 1 2 0	30.001 27.003 27.004	113.472 113.547 113.472	450 375 450
S53	443950.409	291640.307	115.655	2.462	1500	Manhole	 1 0	27.004 27.005	113.193 113.268	450 450
S54L	443967.124	291639.883	115.742	2.083	1200	Manhole	 0	31.000	113.659	150
S54	443966.632	291634.596	115.655	2.634	1500	Manhole	 1 2 0	31.000 27.005 27.006	113.321 113.021 113.021	150 450 450
S54AL	443987.797	291682.193	113.962	1.355	1200	Manhole	 0	43.000	112.607	150
S54A	443993.191	291681.835	113.831	1.714	1500	Manhole	 1 0	43.000 43.001	112.417 112.117	150 450
S54B	443991.065	291632.693	114.791	3.145	1500	Manhole	 1 2 0	43.001 27.006 27.007	111.796 111.796 111.646	450 450 600
S55La	444015.384	291638.573	114.400	2.896	1200	Manhole	 0	32.000	111.504	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S55Lb	444014.478	291620.844	114.400	2.722	1200	Manhole		0	33.000	111.678	150
S55	444019.822	291630.453	114.066	3.862	1500	Manhole		1 2 3 0	33.000 32.000 27.007 27.008	110.654 110.654 110.204 110.204	150 150 600 600
S56L	444057.898	291635.750	113.400	2.347	1200	Manhole		0	34.000	111.053	225
S56	444062.200	291627.854	112.973	3.194	1500	Manhole		1 2 0	34.000 27.008 27.009	110.154 109.779 109.779	225 600 600
S57L	444083.653	291622.557	112.800	2.781	1200	Manhole		0	35.000	110.019	225
S57	444076.774	291619.291	112.566	3.073	1500	Manhole		1 2 0	35.000 27.009 27.010	109.868 109.493 109.493	225 600 600
S58L	444081.447	291584.691	112.110	2.326	1200	Manhole		0	36.000	109.784	150
S58	444091.916	291584.485	111.935	2.917	1500	Manhole		1 2 0	36.000 27.010 27.011	109.468 109.018 109.018	150 600 600
S59L	444099.362	291565.725	112.400	3.072	1200	Manhole		0	37.000	109.328	150
S59	444091.570	291566.932	112.248	3.449	1500	Manhole		1 2 0	37.000 27.011 27.012	109.249 108.799 108.799	150 600 600
S60L	444078.895	291560.325	112.600	2.433	1200	Manhole		0	38.000	110.167	150
S60	444088.501	291555.769	112.440	4.086	1800	Manhole		1 2 3 0	38.000 27.012 1.015 1.016	109.104 108.654 108.504 108.354	150 600 750 900
S61	444119.267	291543.174	111.587	3.898	1800	Manhole		1 0	1.016 1.017	107.689 107.689	900 900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S62	444140.948	291540.513	111.074	3.658	1800	Manhole	 1	1.017	107.416	900
							0	1.018	107.416	900
S63La	444153.628	291549.997	110.756	2.721	1200	Manhole	 0	39.000	108.035	150
S63Lb	444158.283	291539.860	110.670	2.670	1200	Manhole	 0	40.000	108.000	150
S63	444157.041	291543.522	110.556	3.345	1800	Manhole	 1 2 3 0	40.000 39.000 1.018 1.019	107.961 107.962 107.211 107.212	150 150 900 900
S64L	444183.206	291567.153	109.400	1.713	1200	Manhole	 0	41.000	107.687	225
S64	444189.306	291560.527	109.193	2.346	1800	Manhole	 1 2 0	41.000 1.019 1.020	107.522 106.847 106.847	225 900 900
S65L	444198.591	291557.594	108.900	0.648	1200	Manhole	 0	42.000	108.252	150
S65	444199.987	291564.120	108.753	1.919	1800	Manhole	 0 2 1	42.000 1.020 1.021	107.585 106.834 106.834	150 900 900
HW11	444200.122	291579.769	108.259	1.442		Manhole	 1	1.021	106.817	900
HW12	444214.527	291601.442	108.259	1.442		Manhole	 0	1.022	106.817	900
S66	444222.278	291604.489	108.300	1.492	2700	Manhole	 1	1.022	106.808	900
hw13	444234.306	291611.790	107.769	1.044		Manhole	 1	1.023	106.808 106.725	900 900

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m ³ /ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node hw13 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m ²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		
Applies to All storms					

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	1.040	255	1.040	510	1.040	765	1.040	1020	1.040	1275	1.040
15	1.040	270	1.040	525	1.040	780	1.040	1035	1.040	1290	1.040
30	1.040	285	1.040	540	1.040	795	1.040	1050	1.040	1305	1.040
45	1.040	300	1.040	555	1.040	810	1.040	1065	1.040	1320	1.040
60	1.040	315	1.040	570	1.040	825	1.040	1080	1.040	1335	1.040
75	1.040	330	1.040	585	1.040	840	1.040	1095	1.040	1350	1.040
90	1.040	345	1.040	600	1.040	855	1.040	1110	1.040	1365	1.040
105	1.040	360	1.040	615	1.040	870	1.040	1125	1.040	1380	1.040
120	1.040	375	1.040	630	1.040	885	1.040	1140	1.040	1395	1.040
135	1.040	390	1.040	645	1.040	900	1.040	1155	1.040	1410	1.040
150	1.040	405	1.040	660	1.040	915	1.040	1170	1.040	1425	1.040
165	1.040	420	1.040	675	1.040	930	1.040	1185	1.040	1440	1.040
180	1.040	435	1.040	690	1.040	945	1.040	1200	1.040		
195	1.040	450	1.040	705	1.040	960	1.040	1215	1.040		
210	1.040	465	1.040	720	1.040	975	1.040	1230	1.040		
225	1.040	480	1.040	735	1.040	990	1.040	1245	1.040		
240	1.040	495	1.040	750	1.040	1005	1.040	1260	1.040		

Node S66 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	106.808	Product Number	CTL-SHE-0205-2330-1500-2330
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	23.3	Min Node Diameter (mm)	1800

Node HW12 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	106.817	Main Channel Slope (1:X)	100000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets
HW11

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	2225.0	0.0	1.666	3580.3	0.0	1.667	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058	30 year 360 minute summer	31.221	8.034
2 year 30 minute summer	91.753	25.963	30 year 480 minute summer	24.324	6.428
2 year 60 minute summer	61.301	16.200	30 year 600 minute summer	19.756	5.404
2 year 120 minute summer	37.449	9.897	30 year 720 minute summer	17.490	4.687
2 year 180 minute summer	28.672	7.378	30 year 960 minute summer	14.215	3.743
2 year 240 minute summer	22.636	5.982	30 year 1440 minute summer	10.161	2.723
2 year 360 minute summer	17.235	4.435	100 year +40% CC 15 minute summer	488.233	138.153
2 year 480 minute summer	13.550	3.581	100 year +40% CC 30 minute summer	320.551	90.705
2 year 600 minute summer	11.088	3.033	100 year +40% CC 60 minute summer	214.603	56.713
2 year 720 minute summer	9.878	2.647	100 year +40% CC 120 minute summer	129.587	34.246
2 year 960 minute summer	8.113	2.136	100 year +40% CC 180 minute summer	97.729	25.149
2 year 1440 minute summer	5.891	1.579	100 year +40% CC 240 minute summer	75.977	20.078
30 year 15 minute summer	268.706	76.035	100 year +40% CC 360 minute summer	56.677	14.585
30 year 30 minute summer	174.929	49.499	100 year +40% CC 480 minute summer	43.979	11.622
30 year 60 minute summer	116.589	30.811	100 year +40% CC 600 minute summer	35.604	9.738
30 year 120 minute summer	70.438	18.615	100 year +40% CC 720 minute summer	31.433	8.424
30 year 180 minute summer	53.298	13.715	100 year +40% CC 960 minute summer	25.432	6.697
30 year 240 minute summer	41.604	10.995	100 year +40% CC 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	10	116.179	0.071	21.8	0.0801	0.0000	OK
15 minute summer	S20	10	115.363	0.119	38.5	0.2106	0.0000	OK
15 minute summer	S21La	10	115.721	0.085	11.3	0.0963	0.0000	OK
15 minute summer	S21Lb	10	115.691	0.075	8.8	0.0851	0.0000	OK
15 minute summer	S21	10	115.365	0.084	25.7	0.1486	0.0000	OK
15 minute summer	S22Lb	10	115.402	0.072	8.5	0.0814	0.0000	OK
15 minute summer	S22La	10	115.414	0.109	15.8	0.1236	0.0000	OK
15 minute summer	S22	11	115.113	0.180	90.7	0.3178	0.0000	OK
15 minute summer	S23L	10	116.048	0.065	21.5	0.0736	0.0000	OK
15 minute summer	S23	10	115.564	0.107	28.9	0.1212	0.0000	OK
15 minute summer	S24L	10	115.542	0.059	8.0	0.0665	0.0000	OK
15 minute summer	S24	10	115.218	0.108	40.4	0.1223	0.0000	OK
15 minute summer	S25	11	114.921	0.189	134.7	0.3331	0.0000	OK
15 minute summer	S26L	10	115.159	0.042	9.0	0.0479	0.0000	OK
15 minute summer	S26	11	114.626	0.211	149.0	0.3731	0.0000	OK
15 minute summer	S27L	10	115.319	0.047	11.4	0.0528	0.0000	OK
15 minute summer	S27	11	114.266	0.196	169.0	0.3456	0.0000	OK
15 minute summer	S28L	10	114.730	0.040	8.3	0.0451	0.0000	OK
15 minute summer	S28	11	113.915	0.220	180.2	0.3893	0.0000	OK
15 minute summer	S29L	10	115.237	0.061	6.2	0.0688	0.0000	OK
15 minute summer	S29	10	115.129	0.086	11.4	0.0977	0.0000	OK
15 minute summer	S30La	10	115.825	0.082	33.6	0.0929	0.0000	OK
15 minute summer	S30Lb	10	115.876	0.060	18.6	0.0683	0.0000	OK
15 minute summer	S30	10	114.974	0.148	67.9	0.2616	0.0000	OK
15 minute summer	S31	10	114.798	0.139	72.5	0.2453	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	21.7	2.031	0.216	0.1844	
15 minute summer	S20	1.001	S22	37.7	0.825	0.159	2.6543	
15 minute summer	S21La	2.000	S21	11.2	1.090	0.617	0.0540	
15 minute summer	S21Lb	3.000	S21	8.7	0.990	0.504	0.0324	
15 minute summer	S21	2.001	S22	25.4	0.668	0.079	1.3793	
15 minute summer	S22Lb	4.000	S22	8.4	1.009	0.467	0.0784	
15 minute summer	S22La	5.000	S22	15.7	1.141	0.884	0.0992	
15 minute summer	S22	1.002	S25	90.8	1.488	0.347	1.8709	
15 minute summer	S23L	6.000	S23	21.4	2.257	0.183	0.0857	
15 minute summer	S23	6.001	S24	28.5	1.268	0.277	0.7131	
15 minute summer	S24L	7.000	S24	7.9	1.242	0.324	0.0501	
15 minute summer	S24	6.002	S25	40.3	1.507	0.186	0.7040	
15 minute summer	S25	1.003	S26	135.3	1.990	0.379	1.7664	
15 minute summer	S26L	8.000	S26	9.0	2.206	0.173	0.0194	
15 minute summer	S26	1.004	S27	149.3	2.047	0.462	2.5120	
15 minute summer	S27L	9.000	S27	11.4	2.437	0.209	0.0455	
15 minute summer	S27	1.005	S28	168.8	2.358	0.404	1.6123	
15 minute summer	S28L	10.000	S28	8.3	2.208	0.154	0.0288	
15 minute summer	S28	1.006	S34	179.8	2.335	0.497	1.1802	
15 minute summer	S29L	11.000	S29	6.2	0.921	0.347	0.0387	
15 minute summer	S29	11.001	S30	11.3	0.805	0.317	0.1987	
15 minute summer	S30La	12.000	S30	33.5	2.556	0.286	0.2006	
15 minute summer	S30Lb	13.000	S30	18.5	2.163	0.158	0.1435	
15 minute summer	S30	11.002	S31	67.6	1.746	0.338	0.6469	
15 minute summer	S31	11.003	S32	71.7	1.700	0.300	1.7823	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	10	114.843	0.060	19.1	0.0680	0.0000	OK
15 minute summer	S32	10	114.224	0.167	93.9	0.2952	0.0000	OK
15 minute summer	S33	11	114.018	0.182	97.6	0.3223	0.0000	OK
15 minute summer	S34	11	113.692	0.263	284.1	0.6704	0.0000	OK
15 minute summer	S35	11	113.389	0.198	290.5	0.3490	0.0000	OK
15 minute summer	S36L	10	113.749	0.059	21.8	0.0672	0.0000	OK
15 minute summer	S36	11	112.537	0.211	314.5	0.3735	0.0000	OK
15 minute summer	S37L	10	114.078	0.089	21.8	0.1011	0.0000	OK
15 minute summer	S37	10	113.887	0.114	27.2	0.2021	0.0000	OK
15 minute summer	S38L	10	114.031	0.077	10.4	0.0865	0.0000	OK
15 minute summer	S38	10	113.758	0.124	39.6	0.2196	0.0000	OK
15 minute summer	S39La	10	113.949	0.033	6.1	0.0377	0.0000	OK
15 minute summer	S39Lb	10	113.800	0.032	5.5	0.0358	0.0000	OK
15 minute summer	S39	11	113.324	0.107	56.4	0.1887	0.0000	OK
15 minute summer	S40	11	111.963	0.320	382.8	0.8142	0.0000	OK
15 minute summer	S41La	10	112.730	0.062	19.4	0.0701	0.0000	OK
15 minute summer	S41Lb	10	112.564	0.044	9.9	0.0495	0.0000	OK
15 minute summer	S41	11	111.390	0.288	420.1	0.7332	0.0000	OK
15 minute summer	S42La	10	112.250	0.070	36.6	0.0795	0.0000	OK
15 minute summer	S42Lb	10	112.095	0.049	17.9	0.0551	0.0000	OK
15 minute summer	S42	11	110.897	0.273	477.9	0.6957	0.0000	OK
15 minute summer	S43	10	111.203	0.034	3.6	0.0381	0.0000	OK
15 minute summer	S44L	10	110.977	0.110	33.6	0.2800	0.0000	OK
15 minute summer	S44	11	110.483	0.328	518.0	0.8347	0.0000	OK
15 minute summer	S45	11	110.266	0.310	520.8	0.7886	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	19.1	2.895	0.336	0.0329	
15 minute summer	S32	11.004	S33	93.5	1.863	0.417	0.8854	
15 minute summer	S33	11.005	S34	98.2	1.821	0.491	1.8133	
15 minute summer	S34	1.007	S35	283.7	3.112	0.523	1.7380	
15 minute summer	S35	1.008	S36	290.1	3.732	0.312	1.8422	
15 minute summer	S36L	15.000	S36	21.7	3.359	0.329	0.0471	
15 minute summer	S36	1.009	S40	314.0	3.490	0.354	1.6418	
15 minute summer	S37L	16.000	S37	21.7	1.243	0.337	0.2467	
15 minute summer	S37	16.001	S38	27.0	1.333	0.520	0.1281	
15 minute summer	S38L	17.000	S38	10.3	1.141	0.517	0.1225	
15 minute summer	S38	16.002	S39	39.3	1.580	0.354	1.0404	
15 minute summer	S39La	18.000	S39	6.1	2.097	0.107	0.0159	
15 minute summer	S39Lb	19.000	S39	5.5	2.034	0.097	0.0108	
15 minute summer	S39	16.003	S40	56.3	2.503	0.276	0.8599	
15 minute summer	S40	1.010	S41	381.0	2.516	0.577	6.4591	
15 minute summer	S41La	20.000	S41	19.3	2.820	0.356	0.0718	
15 minute summer	S41Lb	21.000	S41	9.9	2.313	0.184	0.0390	
15 minute summer	S41	1.011	S42	419.0	2.791	0.327	6.6801	
15 minute summer	S42La	22.000	S42	36.5	3.460	0.212	0.1009	
15 minute summer	S42Lb	23.000	S42	17.8	2.831	0.103	0.0518	
15 minute summer	S42	1.012	S44	477.1	2.894	0.298	4.6277	
15 minute summer	S43	24.000	S44	3.5	0.959	0.049	0.0919	
15 minute summer	S44L	25.000	S44	33.4	1.733	0.485	0.2068	
15 minute summer	S44	1.013	S45	516.0	2.894	0.418	3.5545	
15 minute summer	S45	1.014	S46	518.7	4.052	0.375	2.5181	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	10	110.583	0.064	21.5	0.0724	0.0000	OK
15 minute summer	S46	11	109.903	0.190	544.2	0.4840	0.0000	OK
15 minute summer	S47L	10	114.540	0.081	14.7	0.0919	0.0000	OK
15 minute summer	S47	10	114.384	0.106	27.4	0.2691	0.0000	OK
15 minute summer	S48L	10	114.586	0.066	20.3	0.0742	0.0000	OK
15 minute summer	S48	10	114.029	0.128	51.3	0.1453	0.0000	OK
15 minute summer	S49L	10	114.007	0.101	12.8	0.1146	0.0000	OK
15 minute summer	S49	10	113.872	0.146	66.0	0.1646	0.0000	OK
15 minute summer	S50	10	113.945	0.058	11.8	0.1023	0.0000	OK
15 minute summer	S51	10	113.796	0.068	19.5	0.1193	0.0000	OK
15 minute summer	S52	10	113.630	0.158	87.8	0.2798	0.0000	OK
15 minute summer	S53	11	113.417	0.224	93.2	0.3958	0.0000	OK
15 minute summer	S54L	10	113.724	0.064	17.3	0.0729	0.0000	OK
15 minute summer	S54	11	113.145	0.124	123.4	0.2189	0.0000	OK
15 minute summer	S54AL	10	112.674	0.067	13.7	0.0755	0.0000	OK
15 minute summer	S54A	11	112.210	0.093	25.6	0.1637	0.0000	OK
15 minute summer	S54B	11	111.771	0.125	152.1	0.2205	0.0000	OK
15 minute summer	S55La	10	111.555	0.051	13.4	0.0575	0.0000	OK
15 minute summer	S55Lb	10	111.730	0.052	14.2	0.0591	0.0000	OK
15 minute summer	S55	11	110.416	0.212	190.2	0.3743	0.0000	OK
15 minute summer	S56L	10	111.099	0.046	15.3	0.0521	0.0000	OK
15 minute summer	S56	11	109.974	0.195	211.6	0.3440	0.0000	OK
15 minute summer	S57L	10	110.092	0.073	16.8	0.0823	0.0000	OK
15 minute summer	S57	11	109.715	0.222	234.3	0.3918	0.0000	OK
15 minute summer	S58L	10	109.854	0.070	13.9	0.0794	0.0000	OK
Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	21.5	2.768	0.379	0.0784	
15 minute summer	S46	1.015	S60	543.0	6.209	0.147	1.1965	
15 minute summer	S47L	27.000	S47	14.6	1.134	0.281	0.1369	
15 minute summer	S47	27.001	S48	26.9	1.220	0.271	0.8324	
15 minute summer	S48L	28.000	S48	20.2	2.106	0.186	0.1044	
15 minute summer	S48	27.002	S49	51.1	1.406	0.255	0.6366	
15 minute summer	S49L	29.000	S49	12.7	0.776	0.458	0.1701	
15 minute summer	S49	27.003	S52	65.9	1.671	0.328	0.7004	
15 minute summer	S50	30.000	S51	11.7	0.877	0.036	0.2129	
15 minute summer	S51	30.001	S52	19.3	0.620	0.050	0.5811	
15 minute summer	S52	27.004	S53	88.7	1.383	0.274	1.7917	
15 minute summer	S53	27.005	S54	93.6	2.310	0.241	0.6983	
15 minute summer	S54L	31.000	S54	17.2	2.387	0.382	0.0384	
15 minute summer	S54	27.006	S54B	123.7	3.491	0.171	0.8684	
15 minute summer	S54AL	43.000	S54A	13.6	1.803	0.408	0.0409	
15 minute summer	S54A	43.001	S54B	25.1	1.069	0.096	1.1560	
15 minute summer	S54B	27.007	S55	152.2	2.355	0.099	1.8920	
15 minute summer	S55La	32.000	S55	13.3	2.544	0.246	0.0485	
15 minute summer	S55Lb	33.000	S55	14.1	2.600	0.259	0.0598	
15 minute summer	S55	27.008	S56	191.2	2.277	0.278	3.5666	
15 minute summer	S56L	34.000	S56	15.3	2.620	0.092	0.0524	
15 minute summer	S56	27.009	S57	212.4	2.447	0.237	1.4680	
15 minute summer	S57L	35.000	S57	16.7	1.509	0.228	0.0844	
15 minute summer	S57	27.010	S58	234.3	2.400	0.304	3.7064	
15 minute summer	S58L	36.000	S58	13.8	1.709	0.445	0.0846	

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	11	109.250	0.232	253.4	0.4106	0.0000	OK
15 minute summer	S59L	10	109.434	0.106	15.3	0.1203	0.0000	OK
15 minute summer	S59	11	109.038	0.239	268.4	0.4216	0.0000	OK
15 minute summer	S60L	10	110.206	0.039	8.5	0.0445	0.0000	OK
15 minute summer	S60	11	108.676	0.322	825.2	0.8204	0.0000	OK
15 minute summer	S61	11	108.063	0.374	827.1	0.9529	0.0000	OK
15 minute summer	S62	11	107.815	0.399	831.6	1.0157	0.0000	OK
15 minute summer	S63La	10	108.125	0.090	12.0	0.1016	0.0000	OK
15 minute summer	S63Lb	10	108.137	0.137	20.5	0.1546	0.0000	OK
15 minute summer	S63	11	107.670	0.459	866.4	1.1680	0.0000	OK
15 minute summer	S64L	10	107.793	0.106	32.4	0.1202	0.0000	OK
15 minute summer	S64	12	107.549	0.702	892.1	1.7876	0.0000	OK
15 minute summer	S65L	10	108.308	0.056	17.0	0.0638	0.0000	OK
15 minute summer	S65	12	107.524	0.690	917.2	1.7558	0.0000	OK
1440 minute summer	HW11	1560	107.429	0.612	142.3	0.0000	0.0000	OK
1440 minute summer	HW12	1500	107.429	0.612	168.2	0.0000	0.0000	OK
1440 minute summer	S66	1500	107.429	0.621	1.4	3.5582	0.0000	OK
15 minute summer	hw13	1	107.765	1.040	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	253.6	2.473	0.330	1.8005	
15 minute summer	S59L	37.000	S59	15.2	1.137	0.853	0.1051	
15 minute summer	S59	27.012	S60	268.5	2.572	0.348	1.2084	
15 minute summer	S60L	38.000	S60	8.5	2.306	0.149	0.0390	
15 minute summer	S60	1.016	S61	823.6	3.644	0.292	7.5358	
15 minute summer	S61	1.017	S62	829.0	3.243	0.372	5.6878	
15 minute summer	S62	1.018	S63	830.8	2.852	0.372	4.8813	
15 minute summer	S63La	39.000	S63	11.9	1.083	0.671	0.0804	
15 minute summer	S63Lb	40.000	S63	20.3	1.229	1.141	0.0639	
15 minute summer	S63	1.019	S64	864.0	2.027	0.433	15.4513	
15 minute summer	S64L	41.000	S64	32.3	1.751	0.457	0.1659	
15 minute summer	S64	1.020	S65	898.1	1.707	1.337	5.9308	
15 minute summer	S65L	42.000	S65	17.0	2.804	0.299	0.0403	
15 minute summer	S65	1.021	HW11	739.4	2.932	1.135	4.3527	
1440 minute summer	HW11	Flow through pond	HW12	168.2	0.016	0.010	1511.4182	
1440 minute summer	HW12	1.022	S66	1.4	0.058	0.002	3.8576	
1440 minute summer	S66	Hydro-Brake®	hw13	0.0				0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	10	116.208	0.100	41.5	0.1133	0.0000	OK
15 minute summer	S20	10	115.411	0.167	73.2	0.2950	0.0000	OK
15 minute summer	S21La	10	115.781	0.145	21.4	0.1640	0.0000	OK
15 minute summer	S21Lb	10	115.734	0.118	16.8	0.1329	0.0000	OK
15 minute summer	S21	10	115.397	0.116	48.6	0.2044	0.0000	OK
15 minute summer	S22Lb	10	115.439	0.109	16.1	0.1238	0.0000	OK
15 minute summer	S22La	10	115.585	0.280	30.0	0.3163	0.0000	SURCHARGED
15 minute summer	S22	11	115.198	0.265	172.5	0.4674	0.0000	OK
15 minute summer	S23L	10	116.074	0.091	40.8	0.1033	0.0000	OK
15 minute summer	S23	10	115.610	0.153	54.9	0.1735	0.0000	OK
15 minute summer	S24L	10	115.568	0.085	15.1	0.0960	0.0000	OK
15 minute summer	S24	10	115.261	0.151	76.8	0.1713	0.0000	OK
15 minute summer	S25	11	115.013	0.281	256.0	0.4971	0.0000	OK
15 minute summer	S26L	10	115.176	0.059	17.1	0.0671	0.0000	OK
15 minute summer	S26	11	114.734	0.319	283.8	0.5641	0.0000	OK
15 minute summer	S27L	10	115.338	0.066	21.7	0.0746	0.0000	OK
15 minute summer	S27	11	114.364	0.294	321.4	0.5201	0.0000	OK
15 minute summer	S28L	10	114.746	0.056	15.8	0.0631	0.0000	OK
15 minute summer	S28	11	114.034	0.339	343.2	0.5992	0.0000	OK
15 minute summer	S29L	10	115.265	0.089	11.8	0.1004	0.0000	OK
15 minute summer	S29	10	115.167	0.124	21.6	0.1403	0.0000	OK
15 minute summer	S30La	10	115.861	0.118	63.9	0.1334	0.0000	OK
15 minute summer	S30Lb	10	115.900	0.084	35.2	0.0953	0.0000	OK
15 minute summer	S30	10	115.041	0.215	129.0	0.3793	0.0000	OK
15 minute summer	S31	10	114.859	0.200	137.7	0.3527	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	41.3	2.423	0.411	0.2945	
15 minute summer	S20	1.001	S22	72.1	0.964	0.304	4.2996	
15 minute summer	S21La	2.000	S21	21.1	1.241	1.159	0.0888	
15 minute summer	S21Lb	3.000	S21	16.7	1.127	0.961	0.0542	
15 minute summer	S21	2.001	S22	48.3	0.771	0.149	2.2384	
15 minute summer	S22Lb	4.000	S22	15.9	1.160	0.884	0.1293	
15 minute summer	S22La	5.000	S22	29.6	1.683	1.671	0.1258	
15 minute summer	S22	1.002	S25	172.7	1.717	0.661	3.0833	
15 minute summer	S23L	6.000	S23	40.7	2.696	0.348	0.1362	
15 minute summer	S23	6.001	S24	54.2	1.502	0.527	1.1447	
15 minute summer	S24L	7.000	S24	15.0	1.462	0.613	0.0804	
15 minute summer	S24	6.002	S25	76.4	1.563	0.352	1.3408	
15 minute summer	S25	1.003	S26	257.7	2.294	0.721	2.9171	
15 minute summer	S26L	8.000	S26	17.1	2.638	0.328	0.0309	
15 minute summer	S26	1.004	S27	284.1	2.368	0.879	4.1386	
15 minute summer	S27L	9.000	S27	21.6	2.908	0.397	0.0726	
15 minute summer	S27	1.005	S28	321.5	2.701	0.769	2.6798	
15 minute summer	S28L	10.000	S28	15.8	2.648	0.293	0.0458	
15 minute summer	S28	1.006	S34	342.7	2.677	0.946	1.9621	
15 minute summer	S29L	11.000	S29	11.7	1.082	0.659	0.0627	
15 minute summer	S29	11.001	S30	21.4	0.967	0.602	0.3143	
15 minute summer	S30La	12.000	S30	63.6	3.026	0.545	0.3224	
15 minute summer	S30Lb	13.000	S30	35.0	2.590	0.300	0.2271	
15 minute summer	S30	11.002	S31	128.5	2.059	0.642	1.0420	
15 minute summer	S31	11.003	S32	136.4	1.958	0.570	2.9335	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	10	114.870	0.087	36.2	0.0987	0.0000	OK
15 minute summer	S32	10	114.311	0.254	178.5	0.4490	0.0000	OK
15 minute summer	S33	11	114.124	0.288	184.8	0.5089	0.0000	OK
15 minute summer	S34	11	113.840	0.411	540.4	1.0462	0.0000	OK
15 minute summer	S35	11	113.476	0.285	552.7	0.5032	0.0000	OK
15 minute summer	S36L	10	113.776	0.086	41.5	0.0977	0.0000	OK
15 minute summer	S36	11	112.639	0.313	598.5	0.5527	0.0000	OK
15 minute summer	S37L	10	114.122	0.133	41.5	0.1501	0.0000	OK
15 minute summer	S37	10	113.954	0.181	51.8	0.3192	0.0000	OK
15 minute summer	S38L	10	114.075	0.121	19.7	0.1365	0.0000	OK
15 minute summer	S38	10	113.814	0.180	74.6	0.3173	0.0000	OK
15 minute summer	S39La	10	113.962	0.046	11.5	0.0520	0.0000	OK
15 minute summer	S39Lb	10	113.812	0.044	10.5	0.0496	0.0000	OK
15 minute summer	S39	11	113.369	0.152	106.9	0.2693	0.0000	OK
15 minute summer	S40	11	112.183	0.540	728.6	1.3749	0.0000	OK
15 minute summer	S41La	10	112.759	0.091	36.9	0.1026	0.0000	OK
15 minute summer	S41Lb	10	112.582	0.061	18.8	0.0695	0.0000	OK
15 minute summer	S41	11	111.521	0.419	801.5	1.0661	0.0000	OK
15 minute summer	S42La	10	112.279	0.099	69.4	0.1121	0.0000	OK
15 minute summer	S42Lb	10	112.113	0.067	33.9	0.0762	0.0000	OK
15 minute summer	S42	11	111.027	0.403	912.7	1.0256	0.0000	OK
15 minute summer	S43	10	111.215	0.046	6.9	0.0523	0.0000	OK
15 minute summer	S44L	10	111.036	0.169	63.9	0.4299	0.0000	OK
15 minute summer	S44	11	110.636	0.481	976.1	1.2253	0.0000	OK
15 minute summer	S45	11	110.405	0.449	977.6	1.1416	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	36.1	3.403	0.638	0.0532	
15 minute summer	S32	11.004	S33	177.0	2.089	0.790	1.5018	
15 minute summer	S33	11.005	S34	186.2	2.000	0.930	3.2498	
15 minute summer	S34	1.007	S35	539.8	3.555	0.995	2.8646	
15 minute summer	S35	1.008	S36	552.2	4.368	0.594	3.0052	
15 minute summer	S36L	15.000	S36	41.4	3.955	0.627	0.0762	
15 minute summer	S36	1.009	S40	598.3	3.612	0.674	3.0693	
15 minute summer	S37L	16.000	S37	41.3	1.407	0.641	0.4132	
15 minute summer	S37	16.001	S38	50.8	1.502	0.980	0.2200	
15 minute summer	S38L	17.000	S38	19.4	1.292	0.974	0.2116	
15 minute summer	S38	16.002	S39	74.7	1.872	0.672	1.6659	
15 minute summer	S39La	18.000	S39	11.5	2.515	0.203	0.0250	
15 minute summer	S39Lb	19.000	S39	10.5	2.451	0.185	0.0171	
15 minute summer	S39	16.003	S40	106.3	2.837	0.522	1.8474	
15 minute summer	S40	1.010	S41	727.2	2.839	1.102	11.3354	
15 minute summer	S41La	20.000	S41	36.8	3.309	0.677	0.1165	
15 minute summer	S41Lb	21.000	S41	18.7	2.763	0.350	0.0621	
15 minute summer	S41	1.011	S42	800.8	3.277	0.624	10.9713	
15 minute summer	S42La	22.000	S42	69.3	4.123	0.403	0.1606	
15 minute summer	S42Lb	23.000	S42	33.8	3.402	0.196	0.0817	
15 minute summer	S42	1.012	S44	898.3	3.349	0.561	7.5664	
15 minute summer	S43	24.000	S44	6.8	1.163	0.093	0.1453	
15 minute summer	S44L	25.000	S44	63.4	1.986	0.922	0.3429	
15 minute summer	S44	1.013	S45	968.5	3.378	0.784	5.7145	
15 minute summer	S45	1.014	S46	973.1	4.752	0.703	4.0045	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	10	110.613	0.094	40.8	0.1066	0.0000	OK
15 minute summer	S46	11	109.975	0.262	1021.5	0.6677	0.0000	OK
15 minute summer	S47L	10	114.576	0.117	28.0	0.1318	0.0000	OK
15 minute summer	S47	10	114.430	0.152	52.2	0.3860	0.0000	OK
15 minute summer	S48L	10	114.612	0.092	38.5	0.1042	0.0000	OK
15 minute summer	S48	10	114.088	0.186	97.9	0.2109	0.0000	OK
15 minute summer	S49L	10	114.051	0.145	24.4	0.1642	0.0000	OK
15 minute summer	S49	10	113.937	0.211	126.0	0.2389	0.0000	OK
15 minute summer	S50	10	113.966	0.079	22.4	0.1395	0.0000	OK
15 minute summer	S51	10	113.820	0.092	37.1	0.1633	0.0000	OK
15 minute summer	S52	10	113.703	0.231	167.4	0.4082	0.0000	OK
15 minute summer	S53	11	113.478	0.285	176.7	0.5031	0.0000	OK
15 minute summer	S54L	10	113.754	0.095	32.9	0.1076	0.0000	OK
15 minute summer	S54	11	113.194	0.173	234.1	0.3060	0.0000	OK
15 minute summer	S54AL	10	112.706	0.099	26.0	0.1122	0.0000	OK
15 minute summer	S54A	10	112.246	0.129	48.6	0.2271	0.0000	OK
15 minute summer	S54B	11	111.818	0.172	288.9	0.3045	0.0000	OK
15 minute summer	S55La	10	111.576	0.072	25.3	0.0815	0.0000	OK
15 minute summer	S55Lb	10	111.753	0.075	27.0	0.0843	0.0000	OK
15 minute summer	S55	11	110.505	0.301	361.4	0.5323	0.0000	OK
15 minute summer	S56L	10	111.117	0.064	29.0	0.0719	0.0000	OK
15 minute summer	S56	11	110.058	0.279	401.4	0.4933	0.0000	OK
15 minute summer	S57L	10	110.122	0.103	31.9	0.1165	0.0000	OK
15 minute summer	S57	11	109.812	0.319	444.7	0.5642	0.0000	OK
15 minute summer	S58L	10	109.890	0.106	26.3	0.1196	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	40.7	2.835	0.719	0.1069	
15 minute summer	S46	1.015	S60	1020.0	6.699	0.277	2.1555	
15 minute summer	S47L	27.000	S47	27.8	1.343	0.536	0.2202	
15 minute summer	S47	27.001	S48	51.3	1.448	0.516	1.3415	
15 minute summer	S48L	28.000	S48	38.4	2.515	0.354	0.1658	
15 minute summer	S48	27.002	S49	97.5	1.648	0.487	1.0367	
15 minute summer	S49L	29.000	S49	24.2	0.952	0.873	0.2641	
15 minute summer	S49	27.003	S52	125.0	1.970	0.622	1.1317	
15 minute summer	S50	30.000	S51	22.3	1.061	0.069	0.3348	
15 minute summer	S51	30.001	S52	36.7	0.718	0.095	0.9471	
15 minute summer	S52	27.004	S53	168.2	1.796	0.520	2.6080	
15 minute summer	S53	27.005	S54	177.5	2.763	0.458	1.1057	
15 minute summer	S54L	31.000	S54	32.8	2.790	0.727	0.0625	
15 minute summer	S54	27.006	S54B	235.0	4.180	0.324	1.3778	
15 minute summer	S54AL	43.000	S54A	25.9	2.098	0.774	0.0668	
15 minute summer	S54A	43.001	S54B	47.7	1.288	0.183	1.8272	
15 minute summer	S54B	27.007	S55	289.3	2.800	0.187	3.0058	
15 minute summer	S55La	32.000	S55	25.2	3.020	0.465	0.0773	
15 minute summer	S55Lb	33.000	S55	26.9	3.085	0.492	0.0959	
15 minute summer	S55	27.008	S56	362.7	2.687	0.527	5.7324	
15 minute summer	S56L	34.000	S56	28.9	3.152	0.175	0.0825	
15 minute summer	S56	27.009	S57	403.0	2.871	0.450	2.3734	
15 minute summer	S57L	35.000	S57	31.8	1.797	0.433	0.1347	
15 minute summer	S57	27.010	S58	447.1	2.825	0.580	6.0080	
15 minute summer	S58L	36.000	S58	26.1	1.972	0.843	0.1388	

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	11	109.357	0.339	483.3	0.5991	0.0000	OK
15 minute summer	S59L	10	109.604	0.276	29.0	0.3121	0.0000	SURCHARGED
15 minute summer	S59	11	109.147	0.348	513.3	0.6152	0.0000	OK
15 minute summer	S60L	10	110.222	0.055	16.1	0.0620	0.0000	OK
15 minute summer	S60	11	108.823	0.468	1559.2	1.1923	0.0000	OK
15 minute summer	S61	11	108.283	0.594	1563.6	1.5123	0.0000	OK
15 minute summer	S62	11	108.114	0.698	1577.2	1.7753	0.0000	OK
15 minute summer	S63La	10	108.216	0.181	22.7	0.2051	0.0000	SURCHARGED
15 minute summer	S63Lb	10	108.297	0.297	38.8	0.3354	0.0000	SURCHARGED
15 minute summer	S63	11	108.027	0.815	1652.4	2.0754	0.0000	OK
30 minute summer	S64L	18	107.971	0.284	55.0	0.3211	0.0000	SURCHARGED
30 minute summer	S64	20	107.905	1.058	1598.7	2.6931	0.0000	SURCHARGED
15 minute summer	S65L	10	108.333	0.081	32.3	0.0919	0.0000	OK
1440 minute summer	S65	1500	107.822	0.988	275.0	2.5134	0.0000	SURCHARGED
1440 minute summer	HW11	1470	107.820	1.003	974.4	0.0000	0.0000	OK
1440 minute summer	HW12	1470	107.819	1.002	1843.3	0.0000	0.0000	SURCHARGED
1440 minute summer	S66	1470	107.819	1.011	10.1	5.7912	0.0000	SURCHARGED
15 minute summer	hw13	1	107.765	1.040	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	485.3	2.909	0.631	2.9292	
15 minute summer	S59L	37.000	S59	28.6	1.625	1.610	0.1374	
15 minute summer	S59	27.012	S60	513.0	3.028	0.665	1.9616	
15 minute summer	S60L	38.000	S60	16.0	2.762	0.283	0.0618	
15 minute summer	S60	1.016	S61	1557.0	4.153	0.552	12.9262	
15 minute summer	S61	1.017	S62	1573.1	3.609	0.706	10.6106	
15 minute summer	S62	1.018	S63	1594.5	3.190	0.715	9.2612	
15 minute summer	S63La	39.000	S63	22.4	1.274	1.264	0.1253	
15 minute summer	S63Lb	40.000	S63	38.5	2.185	2.157	0.0674	
15 minute summer	S63	1.019	S64	1636.7	2.636	0.821	22.5340	
30 minute summer	S64L	41.000	S64	54.0	1.926	0.766	0.3582	
30 minute summer	S64	1.020	S65	1760.1	2.780	2.621	7.0694	
15 minute summer	S65L	42.000	S65	32.2	3.310	0.568	0.0648	
1440 minute summer	S65	1.021	HW11	-273.9	1.171	-0.420	9.9179	
1440 minute summer	HW11	Flow through pond	HW12	1843.3	0.042	0.111	2637.3328	
1440 minute summer	HW12	1.022	S66	10.1	0.102	0.015	5.2781	
1440 minute summer	S66	Hydro-Brake®	hw13	2.3				41.5

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S20L	12	116.524	0.416	75.4	0.4709	0.0000	SURCHARGED
15 minute summer	S20	12	116.293	1.049	133.0	1.8542	0.0000	SURCHARGED
15 minute summer	S21La	12	116.406	0.770	38.9	0.8704	0.0000	SURCHARGED
15 minute summer	S21Lb	12	116.317	0.701	30.5	0.7931	0.0000	SURCHARGED
15 minute summer	S21	12	116.256	0.975	88.4	1.7229	0.0000	SURCHARGED
15 minute summer	S22Lb	12	116.387	1.057	29.3	1.1956	0.0000	SURCHARGED
15 minute summer	S22La	12	116.682	1.377	54.4	1.5574	0.0000	SURCHARGED
15 minute summer	S22	12	116.240	1.307	286.0	2.3095	0.0000	SURCHARGED
15 minute summer	S23L	12	116.415	0.432	74.2	0.4888	0.0000	SURCHARGED
15 minute summer	S23	12	116.301	0.844	99.8	0.9543	0.0000	SURCHARGED
15 minute summer	S24L	12	116.254	0.770	27.5	0.8714	0.0000	SURCHARGED
15 minute summer	S24	12	116.146	1.036	127.8	1.1715	0.0000	SURCHARGED
15 minute summer	S25	12	116.071	1.339	394.9	2.3665	0.0000	SURCHARGED
15 minute summer	S26L	12	115.840	0.723	31.1	0.8173	0.0000	SURCHARGED
15 minute summer	S26	12	115.754	1.339	403.2	2.3651	0.0000	SURCHARGED
15 minute summer	S27L	12	115.553	0.281	39.5	0.3173	0.0000	SURCHARGED
15 minute summer	S27	12	115.243	1.173	444.4	2.0732	0.0000	SURCHARGED
15 minute summer	S28L	12	114.937	0.247	28.7	0.2791	0.0000	SURCHARGED
15 minute summer	S28	12	114.812	1.117	474.5	1.9735	0.0000	SURCHARGED
15 minute summer	S29L	12	116.161	0.985	21.5	1.1136	0.0000	SURCHARGED
15 minute summer	S29	12	116.103	1.060	36.9	1.1984	0.0000	SURCHARGED
15 minute summer	S30La	11	116.596	0.853	116.0	0.9644	0.0000	SURCHARGED
15 minute summer	S30Lb	12	116.213	0.397	64.0	0.4488	0.0000	SURCHARGED
15 minute summer	S30	12	116.045	1.219	220.2	2.1543	0.0000	SURCHARGED
15 minute summer	S31	12	115.893	1.234	226.1	2.1797	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S20L	1.000	S20	75.0	2.795	0.747	0.6873	
15 minute summer	S20	1.001	S22	121.5	1.076	0.512	9.0921	
15 minute summer	S21La	2.000	S21	38.4	2.184	2.114	0.0923	
15 minute summer	S21Lb	3.000	S21	30.3	1.721	1.747	0.0645	
15 minute summer	S21	2.001	S22	84.7	0.854	0.262	5.5092	
15 minute summer	S22Lb	4.000	S22	26.3	1.493	1.457	0.1656	
15 minute summer	S22La	5.000	S22	49.8	2.829	2.809	0.1271	
15 minute summer	S22	1.002	S25	265.6	1.820	1.016	4.8580	
15 minute summer	S23L	6.000	S23	74.1	2.919	0.634	0.3589	
15 minute summer	S23	6.001	S24	91.1	1.655	0.885	2.2303	
15 minute summer	S24L	7.000	S24	25.3	1.542	1.031	0.1379	
15 minute summer	S24	6.002	S25	126.7	1.606	0.583	2.8515	
15 minute summer	S25	1.003	S26	356.0	2.266	0.997	4.1173	
15 minute summer	S26L	8.000	S26	29.4	2.870	0.567	0.0840	
15 minute summer	S26	1.004	S27	389.0	2.513	1.204	5.4568	
15 minute summer	S27L	9.000	S27	38.6	3.146	0.709	0.1719	
15 minute summer	S27	1.005	S28	442.8	2.795	1.060	3.5678	
15 minute summer	S28L	10.000	S28	28.1	2.880	0.523	0.1356	
15 minute summer	S28	1.006	S34	476.1	3.005	1.315	2.4275	
15 minute summer	S29L	11.000	S29	21.1	1.236	1.185	0.1018	
15 minute summer	S29	11.001	S30	40.3	1.106	1.134	0.5646	
15 minute summer	S30La	12.000	S30	108.9	3.342	0.933	0.6096	
15 minute summer	S30Lb	13.000	S30	61.1	2.672	0.523	0.6676	
15 minute summer	S30	11.002	S31	210.1	2.163	1.050	1.8419	
15 minute summer	S31	11.003	S32	204.1	2.000	0.853	4.6527	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S32L	12	115.932	1.149	65.8	1.3000	0.0000	SURCHARGED
15 minute summer	S32	12	115.446	1.389	272.2	2.4537	0.0000	SURCHARGED
15 minute summer	S33	12	115.128	1.292	279.4	2.2833	0.0000	SURCHARGED
15 minute summer	S34	12	114.476	1.047	767.5	2.6652	0.0000	SURCHARGED
15 minute summer	S35	12	113.999	0.808	785.4	1.4270	0.0000	SURCHARGED
15 minute summer	S36L	11	114.565	0.875	75.4	0.9898	0.0000	SURCHARGED
15 minute summer	S36	12	113.375	1.049	859.5	1.8528	0.0000	SURCHARGED
15 minute summer	S37L	11	114.659	0.670	75.4	0.7579	0.0000	SURCHARGED
15 minute summer	S37	12	114.409	0.636	91.3	1.1241	0.0000	SURCHARGED
15 minute summer	S38L	12	114.684	0.730	35.9	0.8255	0.0000	SURCHARGED
15 minute summer	S38	12	114.251	0.617	126.9	1.0894	0.0000	SURCHARGED
15 minute summer	S39La	10	113.979	0.063	20.9	0.0713	0.0000	OK
15 minute summer	S39Lb	11	113.838	0.070	19.1	0.0788	0.0000	OK
15 minute summer	S39	12	113.737	0.520	179.3	0.9194	0.0000	SURCHARGED
15 minute summer	S40	12	112.800	1.157	1066.0	2.9439	0.0000	SURCHARGED
15 minute summer	S41La	11	113.270	0.602	67.0	0.6804	0.0000	SURCHARGED
15 minute summer	S41Lb	10	112.607	0.087	34.1	0.0985	0.0000	OK
15 minute summer	S41	11	111.655	0.553	1184.3	1.4072	0.0000	OK
15 minute summer	S42La	10	112.323	0.143	126.2	0.1612	0.0000	OK
15 minute summer	S42Lb	10	112.138	0.092	61.6	0.1045	0.0000	OK
15 minute summer	S42	11	111.199	0.575	1385.4	1.4645	0.0000	OK
15 minute summer	S43	10	111.232	0.063	12.6	0.0709	0.0000	OK
15 minute summer	S44L	10	111.420	0.552	116.0	1.4061	0.0000	SURCHARGED
15 minute summer	S44	11	110.868	0.713	1518.9	1.8135	0.0000	OK
15 minute summer	S45	11	110.615	0.659	1527.7	1.6769	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S32L	14.000	S32	58.8	3.607	1.039	0.0881	
15 minute summer	S32	11.004	S33	265.9	2.411	1.187	1.9463	
15 minute summer	S33	11.005	S34	277.0	2.512	1.384	3.6713	
15 minute summer	S34	1.007	S35	767.0	3.668	1.414	4.1122	
15 minute summer	S35	1.008	S36	785.5	4.520	0.846	5.1185	
15 minute summer	S36L	15.000	S36	70.7	4.200	1.071	0.1281	
15 minute summer	S36	1.009	S40	859.6	3.979	0.969	3.9411	
15 minute summer	S37L	16.000	S37	72.2	1.816	1.121	0.5615	
15 minute summer	S37	16.001	S38	86.0	2.163	1.659	0.2517	
15 minute summer	S38L	17.000	S38	32.5	1.848	1.636	0.2392	
15 minute summer	S38	16.002	S39	120.8	1.965	1.087	2.9370	
15 minute summer	S39La	18.000	S39	20.9	2.920	0.368	0.0676	
15 minute summer	S39Lb	19.000	S39	19.1	2.851	0.337	0.0513	
15 minute summer	S39	16.003	S40	171.1	2.898	0.840	2.6925	
15 minute summer	S40	1.010	S41	1066.5	3.787	1.616	11.8273	
15 minute summer	S41La	20.000	S41	64.6	3.669	1.188	0.1844	
15 minute summer	S41Lb	21.000	S41	34.0	3.210	0.636	0.0969	
15 minute summer	S41	1.011	S42	1188.4	3.507	0.927	15.7862	
15 minute summer	S42La	22.000	S42	126.0	4.762	0.733	0.2529	
15 minute summer	S42Lb	23.000	S42	61.5	4.013	0.356	0.1258	
15 minute summer	S42	1.012	S44	1376.5	3.519	0.860	11.1378	
15 minute summer	S43	24.000	S44	12.5	1.345	0.171	0.5493	
15 minute summer	S44L	25.000	S44	113.8	2.861	1.655	0.4229	
15 minute summer	S44	1.013	S45	1514.1	3.613	1.226	8.3941	
15 minute summer	S45	1.014	S46	1540.4	5.039	1.113	6.2171	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S46L	11	111.358	0.839	74.2	0.9486	0.0000	SURCHARGED
15 minute summer	S46	12	110.103	0.390	1628.7	0.9929	0.0000	OK
15 minute summer	S47L	10	114.636	0.177	50.8	0.1999	0.0000	OK
15 minute summer	S47	10	114.505	0.227	94.7	0.5785	0.0000	OK
15 minute summer	S48L	10	114.651	0.130	70.0	0.1476	0.0000	OK
15 minute summer	S48	10	114.196	0.295	177.8	0.3332	0.0000	OK
15 minute summer	S49L	10	114.147	0.241	44.3	0.2730	0.0000	SURCHARGED
15 minute summer	S49	10	114.076	0.350	228.5	0.3959	0.0000	OK
15 minute summer	S50	10	113.994	0.107	40.7	0.1882	0.0000	OK
15 minute summer	S51	10	113.853	0.125	67.4	0.2207	0.0000	OK
15 minute summer	S52	10	113.821	0.349	303.8	0.6163	0.0000	OK
15 minute summer	S53	11	113.573	0.380	320.3	0.6711	0.0000	OK
15 minute summer	S54L	10	114.071	0.412	59.8	0.4656	0.0000	SURCHARGED
15 minute summer	S54	11	113.264	0.243	424.7	0.4295	0.0000	OK
15 minute summer	S54AL	10	112.949	0.342	47.2	0.3866	0.0000	SURCHARGED
15 minute summer	S54A	10	112.293	0.176	87.8	0.3110	0.0000	OK
15 minute summer	S54B	11	111.882	0.236	524.1	0.4164	0.0000	OK
15 minute summer	S55La	10	111.610	0.106	46.0	0.1200	0.0000	OK
15 minute summer	S55Lb	10	111.789	0.111	49.0	0.1256	0.0000	OK
15 minute summer	S55	12	111.027	0.823	655.4	1.4537	0.0000	SURCHARGED
15 minute summer	S56L	10	111.140	0.087	52.6	0.0982	0.0000	OK
15 minute summer	S56	12	110.691	0.912	711.9	1.6113	0.0000	SURCHARGED
15 minute summer	S57L	12	110.608	0.589	58.0	0.6657	0.0000	SURCHARGED
15 minute summer	S57	12	110.542	1.049	771.6	1.8530	0.0000	SURCHARGED
15 minute summer	S58L	11	110.675	0.891	47.8	1.0081	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S46L	26.000	S46	71.1	4.041	1.256	0.1287	
15 minute summer	S46	1.015	S60	1614.9	7.173	0.438	4.5932	
15 minute summer	S47L	27.000	S47	50.4	1.511	0.971	0.3553	
15 minute summer	S47	27.001	S48	93.0	1.640	0.936	2.1502	
15 minute summer	S48L	28.000	S48	69.8	2.875	0.644	0.2762	
15 minute summer	S48	27.002	S49	176.9	1.771	0.883	1.7481	
15 minute summer	S49L	29.000	S49	43.8	1.140	1.583	0.4015	
15 minute summer	S49	27.003	S52	227.8	2.152	1.134	1.8805	
15 minute summer	S50	30.000	S51	40.5	1.259	0.125	0.5135	
15 minute summer	S51	30.001	S52	66.9	0.807	0.173	1.5078	
15 minute summer	S52	27.004	S53	304.9	2.221	0.943	3.8219	
15 minute summer	S53	27.005	S54	321.2	3.180	0.828	1.7338	
15 minute summer	S54L	31.000	S54	58.6	3.328	1.298	0.0925	
15 minute summer	S54	27.006	S54B	425.9	4.874	0.587	2.1414	
15 minute summer	S54AL	43.000	S54A	46.5	2.642	1.389	0.0942	
15 minute summer	S54A	43.001	S54B	86.8	1.522	0.333	2.8109	
15 minute summer	S54B	27.007	S55	524.6	3.142	0.340	5.5427	
15 minute summer	S55La	32.000	S55	45.8	3.448	0.845	0.1408	
15 minute summer	S55Lb	33.000	S55	48.8	3.500	0.894	0.1708	
15 minute summer	S55	27.008	S56	638.5	2.924	0.927	11.9595	
15 minute summer	S56L	34.000	S56	52.5	3.723	0.317	0.2401	
15 minute summer	S56	27.009	S57	693.1	2.964	0.773	4.7612	
15 minute summer	S57L	35.000	S57	65.3	2.034	0.890	0.3029	
15 minute summer	S57	27.010	S58	744.5	2.935	0.966	10.6919	
15 minute summer	S58L	36.000	S58	42.6	2.418	1.373	0.1843	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S58	12	110.107	1.089	800.8	1.9243	0.0000	SURCHARGED
15 minute summer	S59L	11	110.420	1.092	52.6	1.2348	0.0000	SURCHARGED
15 minute summer	S59	12	109.852	1.053	854.8	1.8606	0.0000	SURCHARGED
15 minute summer	S60L	10	110.244	0.076	29.3	0.0865	0.0000	OK
15 minute summer	S60	12	109.671	1.317	2507.5	3.3517	0.0000	SURCHARGED
15 minute summer	S61	12	109.175	1.486	2530.8	3.7814	0.0000	SURCHARGED
15 minute summer	S62	12	108.843	1.427	2548.0	3.6324	0.0000	SURCHARGED
15 minute summer	S63La	11	108.931	0.896	41.3	1.0129	0.0000	SURCHARGED
15 minute summer	S63Lb	11	109.148	1.148	70.6	1.2980	0.0000	SURCHARGED
15 minute summer	S63	10	108.572	1.361	2669.8	3.4632	0.0000	SURCHARGED
15 minute summer	S64L	10	108.402	0.715	111.8	0.8083	0.0000	SURCHARGED
720 minute summer	S64	495	108.231	1.384	355.5	3.5221	0.0000	SURCHARGED
15 minute summer	S65L	11	108.461	0.209	58.6	0.2360	0.0000	SURCHARGED
1440 minute summer	S65	1200	108.207	1.373	254.7	3.4940	0.0000	SURCHARGED
1440 minute summer	HW11	1230	108.207	1.390	692.1	0.0000	0.0000	OK
1440 minute summer	HW12	1230	108.207	1.390	690.5	0.0000	0.0000	FLOOD RISK
1440 minute summer	S66	1230	108.207	1.399	23.4	8.0096	0.0000	FLOOD RISK
15 minute summer	hw13	1	107.765	1.040	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S58	27.011	S59	810.3	3.040	1.053	4.9451	
15 minute summer	S59L	37.000	S59	48.0	2.729	2.703	0.1388	
15 minute summer	S59	27.012	S60	855.9	3.454	1.110	3.2610	
15 minute summer	S60L	38.000	S60	29.2	3.185	0.516	0.1416	
15 minute summer	S60	1.016	S61	2521.0	4.159	0.893	21.0692	
15 minute summer	S61	1.017	S62	2540.5	4.009	1.140	13.8442	
15 minute summer	S62	1.018	S63	2562.7	4.044	1.149	10.3761	
15 minute summer	S63La	39.000	S63	39.0	2.217	2.201	0.1288	
15 minute summer	S63Lb	40.000	S63	67.2	3.818	3.770	0.0681	
15 minute summer	S63	1.019	S64	2662.6	4.202	1.335	23.1150	
15 minute summer	S64L	41.000	S64	106.9	2.689	1.516	0.3582	
720 minute summer	S64	1.020	S65	350.5	0.739	0.522	7.1426	
15 minute summer	S65L	42.000	S65	56.7	3.540	1.001	0.1175	
1440 minute summer	S65	1.021	HW11	259.2	1.392	0.398	9.9179	
1440 minute summer	HW11	Flow through pond	HW12	690.5	0.032	0.042	3875.7510	
1440 minute summer	HW12	1.022	S66	23.4	0.057	0.036	5.2781	
1440 minute summer	S66	Hydro-Brake®	hw13	23.3				1242.9

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S67L	0.038	5.00	116.640	Manhole	1200	443759.776	291437.274	1.642
S67	0.036	5.00	116.626	Manhole	1200	443754.601	291440.646	1.760
S68	0.043	5.00	116.483	Manhole	1200	443746.454	291428.477	1.779
S69L	0.054	5.00	116.100	Manhole	1200	443761.907	291388.316	1.247
S69			116.000	Manhole	1500	443751.879	291385.041	1.676
S70			116.000	Manhole	1500	443760.577	291359.063	1.743
S71L	0.118	5.00	116.500	Manhole	1200	443813.132	291379.558	2.000
S71			116.000	Manhole	1500	443814.426	291375.457	1.880
S72	0.050	5.00	116.498	Manhole	1500	443796.103	291443.938	1.671
S73La	0.033	5.00	116.320	Manhole	1200	443805.881	291407.158	1.573
S73Lb	0.081	5.00	116.346	Manhole	1200	443816.318	291411.988	1.616
S73	0.016	5.00	116.446	Manhole	1500	443811.848	291409.919	1.990
S74	0.026	5.00	116.569	Manhole	1500	443819.303	291394.976	2.256
S75L	0.135	5.00	116.650	Manhole	1200	443828.243	291381.036	1.881
S75	0.016	5.00	116.499	Manhole	1500	443824.059	291378.789	2.430
S76	0.009	5.00	116.313	Manhole	1500	443830.286	291361.590	2.336
S77	0.010	5.00	116.252	Manhole	1500	443837.366	291353.859	2.334
S78L	0.080	5.00	116.481	Manhole	1200	443851.912	291342.796	2.329
S78	0.028	5.00	116.345	Manhole	1500	443850.095	291349.382	2.562
S79L	0.108	5.00	116.530	Manhole	1200	443897.490	291356.796	2.254
S79	0.025	5.00	116.401	Manhole	1500	443895.594	291362.985	2.828
S80L	0.033	5.00	116.600	Manhole	1200	443927.311	291365.336	1.898
S80	0.059	5.00	116.458	Manhole	1800	443925.227	291372.140	3.060
S81L	0.188	5.00	115.641	Manhole	1500	443881.050	291289.223	2.205
S81	0.054	5.00	115.632	Manhole	1500	443885.480	291280.718	2.644
S82L	0.083	5.00	116.100	Manhole	1200	443924.760	291297.037	2.394
S82	0.032	5.00	116.063	Manhole	1500	443925.865	291293.768	3.178
S83L	0.045	5.00	115.800	Manhole	1200	443960.932	291308.973	2.310
S83	0.009	5.00	115.829	Manhole	1500	443965.988	291306.734	3.047
S84	0.027	5.00	115.717	Manhole	1500	443971.953	291315.549	2.961
S85L	0.081	5.00	115.800	Manhole	1200	443987.286	291333.917	2.286
S85	0.013	5.00	115.754	Manhole	1200	443989.010	291328.289	2.433
S86			115.683	Manhole	1500	443972.588	291323.314	2.946
S87L	0.061	5.00	115.769	Manhole	1200	443964.547	291339.409	2.209
S87	0.025	5.00	115.755	Manhole	1500	443967.391	291340.280	3.061
S88	0.029	5.00	116.258	Manhole	1500	443954.993	291381.389	3.744
S89L	0.241	5.00	115.800	Manhole	1200	444004.820	291392.210	2.516
S89	0.012	5.00	115.739	Manhole	1500	444004.060	291398.006	3.340
S91			115.513	Manhole	1800	444020.925	291402.553	3.397
S92L	0.100	5.00	115.313	Manhole	1200	444009.789	291445.245	1.765
S92	0.013	5.00	115.286	Manhole	1200	444013.272	291446.339	2.178

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S93	0.036	5.00	115.287	Manhole	1800	444017.554	291433.597	3.215
S94L	0.063	5.00	114.788	Manhole	1200	444042.544	291447.402	1.591
S94	0.015	5.00	114.794	Manhole	1800	444044.192	291442.029	2.759
S95La	0.026	5.00	114.300	Manhole	1200	444054.557	291480.418	1.386
S95Lb	0.026	5.00	114.250	Manhole	1200	444063.621	291483.265	1.556
S95	0.026	5.00	114.279	Manhole	1200	444060.181	291482.048	2.100
S96	0.050	5.00	114.304	Manhole	1800	444070.570	291451.147	3.665
S97L	0.077	5.00	113.400	Manhole	1200	444116.288	291471.699	2.579
S97	0.018	5.00	113.420	Manhole	1800	444118.166	291466.495	3.769
S98L	0.062	5.00	112.010	Manhole	1200	444150.009	291482.356	2.491
S98	0.030	5.00	112.082	Manhole	1800	444151.269	291478.489	3.638
S99L	0.065	5.00	110.750	Manhole	1200	444188.412	291495.138	1.416
S99			110.700	Manhole	1800	444189.788	291490.853	2.799
S100			110.700	Manhole	1800	444219.480	291500.384	3.797
HW14			107.500	Manhole	1	444232.144	291519.066	1.230
HW15		5.00	107.500	Manhole	1	444293.606	291529.740	1.230
S101			107.500	Manhole	2700	444300.866	291535.204	1.247
HW16			106.000	Manhole	1	444330.832	291547.472	0.900

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S67L	S67	6.176	0.600	114.998	114.940	0.058	106.5	150	5.11	50.0
1.001	S67	S68	14.645	0.600	114.866	114.780	0.086	170.3	225	5.35	50.0
1.002	S68	S69	43.773	0.600	114.704	114.522	0.182	240.5	300	6.07	50.0
2.000	S69L	S69	10.549	0.600	114.853	114.624	0.229	46.1	150	5.12	50.0
1.003	S69	S70	27.396	0.600	114.324	114.257	0.067	408.9	450	6.53	48.4
1.004	S70	S71	56.289	0.600	114.257	114.120	0.137	410.9	450	7.47	45.2
3.000	S71L	S71	4.300	0.600	114.500	114.345	0.155	27.7	225	5.03	50.0
1.005	S71	S75	10.193	0.600	114.120	114.069	0.051	199.9	450	7.59	44.9
4.000	S72	S73	37.486	0.600	114.827	114.606	0.221	169.6	225	5.62	50.0
5.000	S73La	S73	6.575	0.600	114.747	114.681	0.066	99.6	150	5.11	50.0
6.000	S73Lb	S73	4.926	0.600	114.730	114.681	0.049	100.5	150	5.08	50.0
4.001	S73	S74	16.700	0.600	114.456	114.313	0.143	116.8	375	5.79	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S67L	S67	0.973	17.2	5.1	1.492	1.536	1.492	1.536	0.038	0.0
1.001	S67	S68	0.999	39.7	10.0	1.535	1.478	1.478	1.535	0.074	0.0
1.002	S68	S69	1.009	71.3	15.9	1.479	1.178	1.178	1.479	0.117	0.0
2.000	S69L	S69	1.486	26.3	7.3	1.097	1.226	1.097	1.226	0.054	0.0
1.003	S69	S70	0.999	158.9	22.4	1.226	1.293	1.226	1.293	0.171	0.0
1.004	S70	S71	0.996	158.5	21.0	1.293	1.430	1.293	1.430	0.171	0.0
3.000	S71L	S71	2.493	99.1	16.0	1.775	1.430	1.430	1.775	0.118	0.0
1.005	S71	S75	1.434	228.1	35.1	1.430	1.980	1.430	1.980	0.289	0.0
4.000	S72	S73	1.001	39.8	6.8	1.446	1.615	1.446	1.615	0.050	0.0
5.000	S73La	S73	1.007	17.8	4.5	1.423	1.615	1.423	1.615	0.033	0.0
6.000	S73Lb	S73	1.002	17.7	11.0	1.466	1.615	1.466	1.615	0.081	0.0
4.001	S73	S74	1.675	185.0	24.4	1.615	1.881	1.615	1.881	0.180	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.002	S74	S75	16.871	0.600	114.313	114.144	0.169	99.8	375	5.95	50.0
7.000	S75L	S75	4.749	0.600	114.769	114.294	0.475	10.0	225	5.02	50.0
1.006	S75	S76	18.292	0.600	114.069	113.977	0.092	198.8	450	7.80	44.2
1.007	S76	S77	10.483	0.600	113.978	113.919	0.059	177.7	450	7.92	43.9
1.008	S77	S78	13.494	0.600	113.918	113.783	0.135	100.0	450	8.03	43.6
8.000	S78L	S78	6.832	0.600	114.152	114.083	0.069	99.0	150	5.11	50.0
1.009	S78	S79	47.489	0.600	113.784	113.648	0.136	349.2	450	8.76	41.6
9.000	S79L	S79	6.473	0.600	114.276	113.947	0.329	19.7	150	5.05	50.0
1.010	S79	S80	31.015	0.600	113.573	113.398	0.175	177.2	525	9.07	40.9
10.000	S80L	S80	7.116	0.600	114.702	113.773	0.929	7.7	150	5.03	50.0
1.011	S80	S88	31.170	0.600	113.398	112.514	0.884	35.3	525	9.20	40.6
11.000	S81L	S81	9.590	0.600	113.436	113.138	0.298	32.2	300	5.06	50.0
11.001	S81	S82	42.441	0.600	112.988	112.885	0.103	412.0	450	5.77	50.0
12.000	S82L	S82	3.450	0.600	113.706	113.185	0.521	6.6	150	5.01	50.0
11.002	S82	S83	42.166	0.600	112.885	112.782	0.103	409.4	450	6.47	48.6
13.000	S83L	S83	5.530	0.600	113.490	113.082	0.408	13.6	150	5.03	50.0
11.003	S83	S84	10.644	0.600	112.782	112.756	0.026	409.4	450	6.65	47.9
11.004	S84	S86	7.791	0.600	112.756	112.737	0.019	410.1	450	6.78	47.5
14.000	S85L	S85	5.886	0.600	113.514	113.396	0.118	49.9	150	5.07	50.0
14.001	S85	S86	17.160	0.600	113.321	112.962	0.359	47.8	225	5.22	50.0
11.005	S86	S87	17.744	0.600	112.737	112.694	0.043	412.7	450	7.08	46.5
15.000	S87L	S87	2.974	0.600	113.560	112.994	0.566	5.3	150	5.01	50.0
11.006	S87	S88	42.938	0.600	112.694	112.589	0.105	408.9	450	7.79	44.3
1.012	S88	S89	51.805	0.600	112.514	112.399	0.115	450.5	525	10.03	38.8

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
4.002	S74	S75	1.813	200.3	27.9	1.881	1.980	1.881	1.980	0.206	0.0
7.000	S75L	S75	4.162	165.5	18.3	1.656	1.980	1.656	1.980	0.135	0.0
1.006	S75	S76	1.438	228.7	77.4	1.980	1.886	1.886	1.980	0.646	0.0
1.007	S76	S77	1.522	242.0	77.9	1.885	1.883	1.883	1.885	0.655	0.0
1.008	S77	S78	2.033	323.4	78.5	1.884	2.112	1.884	2.112	0.665	0.0
8.000	S78L	S78	1.010	17.8	10.8	2.179	2.112	2.112	2.179	0.080	0.0
1.009	S78	S79	1.082	172.1	87.2	2.111	2.303	2.111	2.303	0.773	0.0
9.000	S79L	S79	2.281	40.3	14.6	2.104	2.304	2.104	2.304	0.108	0.0
1.010	S79	S80	1.679	363.5	100.4	2.303	2.535	2.303	2.535	0.906	0.0
10.000	S80L	S80	3.663	64.7	4.5	1.748	2.535	1.748	2.535	0.033	0.0
1.011	S80	S88	3.781	818.4	109.7	2.535	3.219	2.535	3.219	0.998	0.0
11.000	S81L	S81	2.781	196.6	25.5	1.905	2.194	1.905	2.194	0.188	0.0
11.001	S81	S82	0.995	158.3	32.8	2.194	2.728	2.194	2.728	0.242	0.0
12.000	S82L	S82	3.941	69.6	11.2	2.244	2.728	2.244	2.728	0.083	0.0
11.002	S82	S83	0.998	158.8	47.0	2.728	2.597	2.597	2.728	0.357	0.0
13.000	S83L	S83	2.751	48.6	6.1	2.160	2.597	2.160	2.597	0.045	0.0
11.003	S83	S84	0.998	158.8	53.4	2.597	2.511	2.511	2.597	0.411	0.0
11.004	S84	S86	0.997	158.6	56.4	2.511	2.496	2.496	2.511	0.438	0.0
14.000	S85L	S85	1.428	25.2	11.0	2.136	2.208	2.136	2.208	0.081	0.0
14.001	S85	S86	1.896	75.4	12.7	2.208	2.496	2.208	2.496	0.094	0.0
11.005	S86	S87	0.994	158.1	67.0	2.496	2.611	2.496	2.611	0.532	0.0
15.000	S87L	S87	4.426	78.2	8.3	2.059	2.611	2.059	2.611	0.061	0.0
11.006	S87	S88	0.999	158.9	74.1	2.611	3.219	2.611	3.219	0.618	0.0
1.012	S88	S89	1.049	227.0	172.9	3.219	2.815	2.815	3.219	1.645	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
16.000	S89L	S89	5.846	0.600	113.284	112.699	0.585	10.0	225	5.02	50.0
1.013	S89	S91	17.467	0.600	112.399	112.341	0.058	301.2	525	10.25	38.3
1.014	S91	S93	31.226	0.600	112.116	112.072	0.044	709.7	750	10.75	37.4
18.000	S92L	S92	3.651	0.600	113.548	113.183	0.365	10.0	150	5.02	50.0
18.001	S92	S93	13.443	0.600	113.108	112.597	0.511	26.3	225	5.11	50.0
1.015	S93	S94	27.940	0.600	112.072	112.035	0.037	755.1	750	11.21	36.5
19.000	S94L	S94	5.620	0.600	113.197	112.635	0.562	10.0	150	5.03	50.0
1.016	S94	S96	27.910	0.600	112.035	110.640	1.395	20.0	750	11.29	36.4
20.000	S95La	S95	5.856	0.600	112.914	112.328	0.586	10.0	150	5.03	50.0
21.000	S95Lb	S95	3.648	0.600	112.694	112.329	0.365	10.0	150	5.02	50.0
20.001	S95	S96	32.600	0.600	112.179	111.089	1.090	29.9	300	5.22	50.0
1.017	S96	S97	50.010	0.600	110.639	109.651	0.988	50.6	750	11.50	36.0
22.000	S97L	S97	5.532	0.600	110.821	110.251	0.570	9.7	150	5.03	50.0
1.018	S97	S98	35.209	0.600	109.651	108.444	1.207	29.2	750	11.61	35.8
23.000	S98L	S98	4.067	0.600	109.519	109.044	0.475	8.6	150	5.02	50.0
1.019	S98	S99	40.454	0.600	108.444	107.901	0.543	74.5	750	11.82	35.5
24.000	S99L	S99	4.500	0.600	109.334	108.501	0.833	5.4	150	5.02	50.0
1.020	S99	S100	31.185	0.600	107.901	106.903	0.998	31.2	750	11.92	35.3
1.021	S100	HW14	22.569	0.600	106.903	106.270	0.633	35.7	750	12.00	35.2
1.022	HW15	S101	9.087	0.600	106.270	106.253	0.017	534.5	750	5.13	50.0
1.023	S101	HW16	32.380	0.600	106.253	105.100	1.153	28.1	225	5.34	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
16.000	S89L	S89	4.163	165.5	32.7	2.291	2.815	2.291	2.815	0.241	0.0
1.013	S89	S91	1.285	278.2	197.2	2.815	2.647	2.647	2.815	1.898	0.0
1.014	S91	S93	1.043	460.6	192.2	2.647	2.465	2.465	2.647	1.898	0.0
18.000	S92L	S92	3.204	56.6	13.6	1.615	1.953	1.615	1.953	0.100	0.0
18.001	S92	S93	2.561	101.8	15.3	1.953	2.465	1.953	2.465	0.113	0.0
1.015	S93	S94	1.010	446.3	202.7	2.465	2.009	2.009	2.465	2.047	0.0
19.000	S94L	S94	3.204	56.6	8.5	1.441	2.009	1.441	2.009	0.063	0.0
1.016	S94	S96	6.272	2770.9	209.6	2.009	2.914	2.009	2.914	2.125	0.0
20.000	S95La	S95	3.205	56.6	3.5	1.236	1.801	1.236	1.801	0.026	0.0
21.000	S95Lb	S95	3.205	56.6	3.5	1.406	1.800	1.406	1.800	0.026	0.0
20.001	S95	S96	2.885	203.9	10.6	1.800	2.915	1.800	2.915	0.078	0.0
1.017	S96	S97	3.938	1739.9	220.0	2.915	3.019	2.915	3.019	2.253	0.0
22.000	S97L	S97	3.253	57.5	10.4	2.429	3.019	2.429	3.019	0.077	0.0
1.018	S97	S98	5.192	2293.8	228.1	3.019	2.888	2.888	3.019	2.348	0.0
23.000	S98L	S98	3.464	61.2	8.4	2.341	2.888	2.341	2.888	0.062	0.0
1.019	S98	S99	3.244	1433.1	234.7	2.888	2.049	2.049	2.888	2.440	0.0
24.000	S99L	S99	4.364	77.1	8.8	1.266	2.049	1.266	2.049	0.065	0.0
1.020	S99	S100	5.016	2216.0	239.8	2.049	3.047	2.049	3.047	2.505	0.0
1.021	S100	HW14	4.695	2074.2	238.9	3.047	0.480	0.480	3.047	2.505	0.0
1.022	HW15	S101	1.203	531.5	0.0	0.480	0.497	0.480	0.497	0.000	0.0
1.023	S101	HW16	2.478	98.5	0.0	1.022	0.675	0.675	1.022	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	6.176	106.5	150	116.640	114.998	1.492	116.626	114.940	1.536
1.001	14.645	170.3	225	116.626	114.866	1.535	116.483	114.780	1.478
1.002	43.773	240.5	300	116.483	114.704	1.479	116.000	114.522	1.178
2.000	10.549	46.1	150	116.100	114.853	1.097	116.000	114.624	1.226
1.003	27.396	408.9	450	116.000	114.324	1.226	116.000	114.257	1.293
1.004	56.289	410.9	450	116.000	114.257	1.293	116.000	114.120	1.430
3.000	4.300	27.7	225	116.500	114.500	1.775	116.000	114.345	1.430
1.005	10.193	199.9	450	116.000	114.120	1.430	116.499	114.069	1.980
4.000	37.486	169.6	225	116.498	114.827	1.446	116.446	114.606	1.615
5.000	6.575	99.6	150	116.320	114.747	1.423	116.446	114.681	1.615
6.000	4.926	100.5	150	116.346	114.730	1.466	116.446	114.681	1.615
4.001	16.700	116.8	375	116.446	114.456	1.615	116.569	114.313	1.881
4.002	16.871	99.8	375	116.569	114.313	1.881	116.499	114.144	1.980
7.000	4.749	10.0	225	116.650	114.769	1.656	116.499	114.294	1.980
1.006	18.292	198.8	450	116.499	114.069	1.980	116.313	113.977	1.886
1.007	10.483	177.7	450	116.313	113.978	1.885	116.252	113.919	1.883
1.008	13.494	100.0	450	116.252	113.918	1.884	116.345	113.783	2.112
8.000	6.832	99.0	150	116.481	114.152	2.179	116.345	114.083	2.112
1.009	47.489	349.2	450	116.345	113.784	2.111	116.401	113.648	2.303
9.000	6.473	19.7	150	116.530	114.276	2.104	116.401	113.947	2.304
1.010	31.015	177.2	525	116.401	113.573	2.303	116.458	113.398	2.535
10.000	7.116	7.7	150	116.600	114.702	1.748	116.458	113.773	2.535
1.011	31.170	35.3	525	116.458	113.398	2.535	116.258	112.514	3.219
11.000	9.590	32.2	300	115.641	113.436	1.905	115.632	113.138	2.194
11.001	42.441	412.0	450	115.632	112.988	2.194	116.063	112.885	2.728

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S67L	1200	Manhole	S67	1200	1
1.001	S67	1200	Manhole	S68	1200	1
1.002	S68	1200	Manhole	S69	1500	1
2.000	S69L	1200	Manhole	S69	1500	1
1.003	S69	1500	Manhole	S70	1500	1
1.004	S70	1500	Manhole	S71	1500	1
3.000	S71L	1200	Manhole	S71	1500	1
1.005	S71	1500	Manhole	S75	1500	1
4.000	S72	1500	Manhole	S73	1500	1
5.000	S73La	1200	Manhole	S73	1500	1
6.000	S73Lb	1200	Manhole	S73	1500	1
4.001	S73	1500	Manhole	S74	1500	1
4.002	S74	1500	Manhole	S75	1500	1
7.000	S75L	1200	Manhole	S75	1500	1
1.006	S75	1500	Manhole	S76	1500	1
1.007	S76	1500	Manhole	S77	1500	1
1.008	S77	1500	Manhole	S78	1500	1
8.000	S78L	1200	Manhole	S78	1500	1
1.009	S78	1500	Manhole	S79	1500	1
9.000	S79L	1200	Manhole	S79	1500	1
1.010	S79	1500	Manhole	S80	1800	1
10.000	S80L	1200	Manhole	S80	1800	1
1.011	S80	1800	Manhole	S88	1500	1
11.000	S81L	1500	Manhole	S81	1500	1
11.001	S81	1500	Manhole	S82	1500	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
12.000	3.450	6.6	150	116.100	113.706	2.244	116.063	113.185	2.728
11.002	42.166	409.4	450	116.063	112.885	2.728	115.829	112.782	2.597
13.000	5.530	13.6	150	115.800	113.490	2.160	115.829	113.082	2.597
11.003	10.644	409.4	450	115.829	112.782	2.597	115.717	112.756	2.511
11.004	7.791	410.1	450	115.717	112.756	2.511	115.683	112.737	2.496
14.000	5.886	49.9	150	115.800	113.514	2.136	115.754	113.396	2.208
14.001	17.160	47.8	225	115.754	113.321	2.208	115.683	112.962	2.496
11.005	17.744	412.7	450	115.683	112.737	2.496	115.755	112.694	2.611
15.000	2.974	5.3	150	115.769	113.560	2.059	115.755	112.994	2.611
11.006	42.938	408.9	450	115.755	112.694	2.611	116.258	112.589	3.219
1.012	51.805	450.5	525	116.258	112.514	3.219	115.739	112.399	2.815
16.000	5.846	10.0	225	115.800	113.284	2.291	115.739	112.699	2.815
1.013	17.467	301.2	525	115.739	112.399	2.815	115.513	112.341	2.647
1.014	31.226	709.7	750	115.513	112.116	2.647	115.287	112.072	2.465
18.000	3.651	10.0	150	115.313	113.548	1.615	115.286	113.183	1.953
18.001	13.443	26.3	225	115.286	113.108	1.953	115.287	112.597	2.465
1.015	27.940	755.1	750	115.287	112.072	2.465	114.794	112.035	2.009
19.000	5.620	10.0	150	114.788	113.197	1.441	114.794	112.635	2.009
1.016	27.910	20.0	750	114.794	112.035	2.009	114.304	110.640	2.914
20.000	5.856	10.0	150	114.300	112.914	1.236	114.279	112.328	1.801
21.000	3.648	10.0	150	114.250	112.694	1.406	114.279	112.329	1.800
20.001	32.600	29.9	300	114.279	112.179	1.800	114.304	111.089	2.915
1.017	50.010	50.6	750	114.304	110.639	2.915	113.420	109.651	3.019
22.000	5.532	9.7	150	113.400	110.821	2.429	113.420	110.251	3.019
1.018	35.209	29.2	750	113.420	109.651	3.019	112.082	108.444	2.888

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
12.000	S82L	1200	Manhole	S82	1500	1
11.002	S82	1500	Manhole	S83	1500	1
13.000	S83L	1200	Manhole	S83	1500	1
11.003	S83	1500	Manhole	S84	1500	1
11.004	S84	1500	Manhole	S86	1500	1
14.000	S85L	1200	Manhole	S85	1200	1
14.001	S85	1200	Manhole	S86	1500	1
11.005	S86	1500	Manhole	S87	1500	1
15.000	S87L	1200	Manhole	S87	1500	1
11.006	S87	1500	Manhole	S88	1500	1
1.012	S88	1500	Manhole	S89	1500	1
16.000	S89L	1200	Manhole	S89	1500	1
1.013	S89	1500	Manhole	S91	1800	1
1.014	S91	1800	Manhole	S93	1800	1
18.000	S92L	1200	Manhole	S92	1200	1
18.001	S92	1200	Manhole	S93	1800	1
1.015	S93	1800	Manhole	S94	1800	1
19.000	S94L	1200	Manhole	S94	1800	1
1.016	S94	1800	Manhole	S96	1800	1
20.000	S95La	1200	Manhole	S95	1200	1
21.000	S95Lb	1200	Manhole	S95	1200	1
20.001	S95	1200	Manhole	S96	1800	1
1.017	S96	1800	Manhole	S97	1800	1
22.000	S97L	1200	Manhole	S97	1800	1
1.018	S97	1800	Manhole	S98	1800	1

Pipeline Schedule

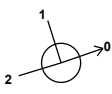
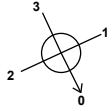
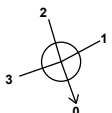
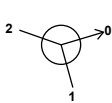
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
23.000	4.067	8.6	150	112.010	109.519	2.341	112.082	109.044	2.888
1.019	40.454	74.5	750	112.082	108.444	2.888	110.700	107.901	2.049
24.000	4.500	5.4	150	110.750	109.334	1.266	110.700	108.501	2.049
1.020	31.185	31.2	750	110.700	107.901	2.049	110.700	106.903	3.047
1.021	22.569	35.7	750	110.700	106.903	3.047	107.500	106.270	0.480
1.022	9.087	534.5	750	107.500	106.270	0.480	107.500	106.253	0.497
1.023	32.380	28.1	225	107.500	106.253	1.022	106.000	105.100	0.675

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
23.000	S98L	1200	Manhole	S98	1800	1
1.019	S98	1800	Manhole	S99	1800	1
24.000	S99L	1200	Manhole	S99	1800	1
1.020	S99	1800	Manhole	S100	1800	1
1.021	S100	1800	Manhole	HW14	1	1
1.022	HW15	1	Manhole	S101	2700	1
1.023	S101	2700	Manhole	HW16	1	1

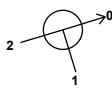
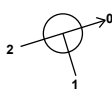
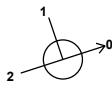
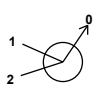
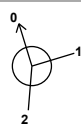
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S67L	443759.776	291437.274	116.640	1.642	1200	Manhole					
							0	1.000	114.998	150	
S67	443754.601	291440.646	116.626	1.760	1200	Manhole		1	1.000	114.940	150
							0	1.001	114.866	225	
S68	443746.454	291428.477	116.483	1.779	1200	Manhole		1	1.001	114.780	225
							0	1.002	114.704	300	
S69L	443761.907	291388.316	116.100	1.247	1200	Manhole					
							0	2.000	114.853	150	
S69	443751.879	291385.041	116.000	1.676	1500	Manhole		1	2.000	114.624	150
							2	1.002	114.522	300	
							0	1.003	114.324	450	
S70	443760.577	291359.063	116.000	1.743	1500	Manhole		1	1.003	114.257	450
							0	1.004	114.257	450	
S71L	443813.132	291379.558	116.500	2.000	1200	Manhole					
							0	3.000	114.500	225	

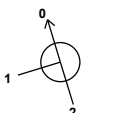
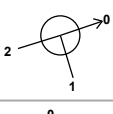
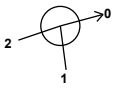
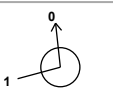
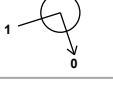
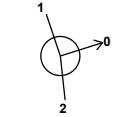
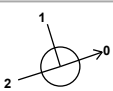
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S71	443814.426	291375.457	116.000	1.880	1500	Manhole		1	3.000	114.345	225
								2	1.004	114.120	450
								0	1.005	114.120	450
S72	443796.103	291443.938	116.498	1.671	1500	Manhole		0	4.000	114.827	225
S73La	443805.881	291407.158	116.320	1.573	1200	Manhole		0	5.000	114.747	150
S73Lb	443816.318	291411.988	116.346	1.616	1200	Manhole		0	6.000	114.730	150
S73	443811.848	291409.919	116.446	1.990	1500	Manhole		1	6.000	114.681	150
								2	5.000	114.681	150
								3	4.000	114.606	225
								0	4.001	114.456	375
								0	4.001	114.313	375
S74	443819.303	291394.976	116.569	2.256	1500	Manhole		1	4.001	114.313	375
								0	4.002	114.313	375
S75L	443828.243	291381.036	116.650	1.881	1200	Manhole		0	7.000	114.769	225
S75	443824.059	291378.789	116.499	2.430	1500	Manhole		1	7.000	114.294	225
								2	4.002	114.144	375
								3	1.005	114.069	450
								0	1.006	114.069	450
								0	1.006	113.977	450
S76	443830.286	291361.590	116.313	2.336	1500	Manhole		1	1.006	113.977	450
								0	1.007	113.978	450
S77	443837.366	291353.859	116.252	2.334	1500	Manhole		1	1.007	113.919	450
								0	1.008	113.918	450
S78L	443851.912	291342.796	116.481	2.329	1200	Manhole		0	8.000	114.152	150
								0	8.000	114.083	150
S78	443850.095	291349.382	116.345	2.562	1500	Manhole		1	1.008	113.783	450
								2	1.008	113.783	450
								0	1.009	113.784	450
S79L	443897.490	291356.796	116.530	2.254	1200	Manhole		0	9.000	114.276	150
								0	9.000	114.276	150

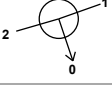
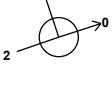
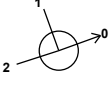
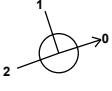
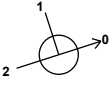
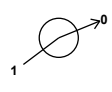
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S79	443895.594	291362.985	116.401	2.828	1500	Manhole		1 9.000 2 1.009 0 1.010	113.947 113.648 113.573	150 450 525
S80L	443927.311	291365.336	116.600	1.898	1200	Manhole		0 10.000	114.702	150
S80	443925.227	291372.140	116.458	3.060	1800	Manhole		1 10.000 2 1.010 0 1.011	113.773 113.398 113.398	150 525 525
S81L	443881.050	291289.223	115.641	2.205	1500	Manhole		0 11.000	113.436	300
S81	443885.480	291280.718	115.632	2.644	1500	Manhole		1 11.000	113.138	300
S82L	443924.760	291297.037	116.100	2.394	1200	Manhole		0 12.000	113.706	150
S82	443925.865	291293.768	116.063	3.178	1500	Manhole		1 12.000 2 11.001 0 11.002	113.185 112.885 112.885	150 450 450
S83L	443960.932	291308.973	115.800	2.310	1200	Manhole		0 13.000	113.490	150
S83	443965.988	291306.734	115.829	3.047	1500	Manhole		1 13.000 2 11.002 0 11.003	113.082 112.782 112.782	150 450 450
S84	443971.953	291315.549	115.717	2.961	1500	Manhole		1 11.003	112.756	450
S85L	443987.286	291333.917	115.800	2.286	1200	Manhole		0 14.000	113.514	150
S85	443989.010	291328.289	115.754	2.433	1200	Manhole		1 14.000	113.396	150
S86	443972.588	291323.314	115.683	2.946	1500	Manhole		1 14.001 2 11.004 0 11.005	112.962 112.737 112.737	225 450 450

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S87L	443964.547	291339.409	115.769	2.209	1200	Manhole	 0	15.000	113.560	150
S87	443967.391	291340.280	115.755	3.061	1500	Manhole	 0 1 2	15.000 11.005	112.994 112.694	150 450
S88	443954.993	291381.389	116.258	3.744	1500	Manhole	 0 2 1	11.006 1.011	112.694 112.514	450 525
S89L	444004.820	291392.210	115.800	2.516	1200	Manhole	 0	1.012	112.514	525
S89	444004.060	291398.006	115.739	3.340	1500	Manhole	 0 2 1	16.000 1.012	113.284 112.399	225 525
S91	444020.925	291402.553	115.513	3.397	1800	Manhole	 0 1	1.013	112.341	525
S92L	444009.789	291445.245	115.313	1.765	1200	Manhole	 0	1.014	112.116	750
S92	444013.272	291446.339	115.286	2.178	1200	Manhole	 0 1	18.000	113.183	150
S93	444017.554	291433.597	115.287	3.215	1800	Manhole	 0 1 2	18.001 1.014	113.108 112.072	225 750
S94L	444042.544	291447.402	114.788	1.591	1200	Manhole	 0	18.001	112.597	225
S94	444044.192	291442.029	114.794	2.759	1800	Manhole	 0 1 2	18.001 1.015	112.597 112.072	225 750
S95La	444054.557	291480.418	114.300	1.386	1200	Manhole	 0	19.000	113.197	150
S95Lb	444063.621	291483.265	114.250	1.556	1200	Manhole	 0	19.000	112.635	150
							 0	1.016	112.035	750
							 0	20.000	112.914	150
							 0	21.000	112.694	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S95	444060.181	291482.048	114.279	2.100	1200	Manhole		1 21.000 2 20.000	112.329 112.328	150 150
S96	444070.570	291451.147	114.304	3.665	1800	Manhole		1 20.001 2 1.016 0 1.017	112.179 111.089 110.640 110.639	300 750 750
S97L	444116.288	291471.699	113.400	2.579	1200	Manhole		0 22.000	110.821	150
S97	444118.166	291466.495	113.420	3.769	1800	Manhole		1 22.000 2 1.017 0 1.018	110.251 109.651 109.651	150 750 750
S98L	444150.009	291482.356	112.010	2.491	1200	Manhole		0 23.000	109.519	150
S98	444151.269	291478.489	112.082	3.638	1800	Manhole		1 23.000 2 1.018 0 1.019	109.044 108.444 108.444	150 750 750
S99L	444188.412	291495.138	110.750	1.416	1200	Manhole		0 24.000	109.334	150
S99	444189.788	291490.853	110.700	2.799	1800	Manhole		1 24.000 2 1.019 0 1.020	108.501 107.901 107.901	150 750 750
S100	444219.480	291500.384	110.700	3.797	1800	Manhole		1 1.020	106.903	750
HW14	444232.144	291519.066	107.500	1.230	1	Manhole		0 1.021 1 1.021	106.903 106.270	750 750
HW15	444293.606	291529.740	107.500	1.230	1	Manhole		0 1.022	106.270	750
S101	444300.866	291535.204	107.500	1.247	2700	Manhole		1 1.022	106.253	750
HW16	444330.832	291547.472	106.000	0.900	1	Manhole		0 1.023 1 1.023	106.253 105.100	225 225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m ³ /ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0
100	40	10	0

Node S101 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	106.253	Product Number	CTL-SHE-0143-1070-1500-1070
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	10.7	Min Node Diameter (mm)	1200

Node HW15 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	100.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	106.270	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW14

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	1306.0	0.0	1.455	2488.0	0.0	1.456	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058
2 year 30 minute summer	91.753	25.963
2 year 60 minute summer	61.301	16.200
2 year 120 minute summer	37.449	9.897
2 year 180 minute summer	28.672	7.378
2 year 240 minute summer	22.636	5.982
2 year 360 minute summer	17.235	4.435

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 480 minute summer	13.550	3.581
2 year 600 minute summer	11.088	3.033
2 year 720 minute summer	9.878	2.647
2 year 960 minute summer	8.113	2.136
2 year 1440 minute summer	5.891	1.579
30 year 15 minute summer	268.706	76.035
30 year 30 minute summer	174.929	49.499
30 year 60 minute summer	116.589	30.811
30 year 120 minute summer	70.438	18.615
30 year 180 minute summer	53.298	13.715
30 year 240 minute summer	41.604	10.995
30 year 360 minute summer	31.221	8.034
30 year 480 minute summer	24.324	6.428
30 year 600 minute summer	19.756	5.404
30 year 720 minute summer	17.490	4.687
30 year 960 minute summer	14.215	3.743
30 year 1440 minute summer	10.161	2.723
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC +10% A 15 minute summer	488.233	138.153
100 year +40% CC +10% A 30 minute summer	320.551	90.705
100 year +40% CC +10% A 60 minute summer	214.603	56.713
100 year +40% CC +10% A 120 minute summer	129.587	34.246
100 year +40% CC +10% A 180 minute summer	97.729	25.149
100 year +40% CC +10% A 240 minute summer	75.977	20.078
100 year +40% CC +10% A 360 minute summer	56.677	14.585
100 year +40% CC +10% A 480 minute summer	43.979	11.622
100 year +40% CC +10% A 600 minute summer	35.604	9.738
100 year +40% CC +10% A 720 minute summer	31.433	8.424
100 year +40% CC +10% A 960 minute summer	25.432	6.697
100 year +40% CC +10% A 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	10	115.062	0.064	6.6	0.0725	0.0000	OK
15 minute summer	S67	10	114.953	0.087	12.7	0.0979	0.0000	OK
15 minute summer	S68	11	114.811	0.107	20.1	0.1209	0.0000	OK
15 minute summer	S69L	10	114.915	0.062	9.4	0.0699	0.0000	OK
15 minute summer	S69	11	114.451	0.127	28.9	0.2245	0.0000	OK
15 minute summer	S70	12	114.382	0.125	29.0	0.2211	0.0000	OK
15 minute summer	S71L	10	114.569	0.069	20.5	0.0782	0.0000	OK
15 minute summer	S71	11	114.281	0.161	46.7	0.2851	0.0000	OK
15 minute summer	S72	11	114.897	0.070	8.7	0.1233	0.0000	OK
15 minute summer	S73La	10	114.805	0.058	5.7	0.0657	0.0000	OK
15 minute summer	S73Lb	10	114.830	0.100	14.0	0.1130	0.0000	OK
15 minute summer	S73	10	114.558	0.102	30.6	0.1799	0.0000	OK
15 minute summer	S74	11	114.417	0.104	34.9	0.1844	0.0000	OK
15 minute summer	S75L	10	114.826	0.057	23.4	0.0645	0.0000	OK
15 minute summer	S75	11	114.279	0.210	105.6	0.3709	0.0000	OK
15 minute summer	S76	11	114.183	0.206	106.6	0.3640	0.0000	OK
15 minute summer	S77	11	114.116	0.198	107.9	0.3497	0.0000	OK
15 minute summer	S78L	10	114.251	0.099	13.9	0.1117	0.0000	OK
15 minute summer	S78	12	114.054	0.271	125.6	0.4787	0.0000	OK
15 minute summer	S79L	10	114.348	0.072	18.7	0.0812	0.0000	OK
15 minute summer	S79	12	113.798	0.225	143.7	0.3971	0.0000	OK
15 minute summer	S80L	10	114.732	0.030	5.7	0.0341	0.0000	OK
15 minute summer	S80	12	113.551	0.153	157.0	0.3904	0.0000	OK
15 minute summer	S81L	10	113.518	0.082	32.6	0.1449	0.0000	OK
15 minute summer	S81	10	113.141	0.153	41.9	0.2708	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	6.5	0.913	0.381	0.0443	
15 minute summer	S67	1.001	S68	12.6	0.900	0.318	0.2057	
15 minute summer	S68	1.002	S69	19.9	0.884	0.279	0.9859	
15 minute summer	S69L	2.000	S69	9.3	1.364	0.355	0.0721	
15 minute summer	S69	1.003	S70	29.0	0.824	0.182	0.9863	
15 minute summer	S70	1.004	S71	27.8	0.663	0.175	2.4308	
15 minute summer	S71L	3.000	S71	20.4	1.980	0.206	0.0444	
15 minute summer	S71	1.005	S75	46.5	0.804	0.204	0.6294	
15 minute summer	S72	4.000	S73	8.5	0.808	0.213	0.3928	
15 minute summer	S73La	5.000	S73	5.7	0.900	0.318	0.0413	
15 minute summer	S73Lb	6.000	S73	13.9	1.118	0.785	0.0613	
15 minute summer	S73	4.001	S74	30.4	1.237	0.164	0.4103	
15 minute summer	S74	4.002	S75	34.8	1.254	0.174	0.5115	
15 minute summer	S75L	7.000	S75	23.4	2.964	0.141	0.0374	
15 minute summer	S75	1.006	S76	105.1	1.469	0.460	1.3094	
15 minute summer	S76	1.007	S77	106.2	1.514	0.439	0.7353	
15 minute summer	S77	1.008	S78	107.7	1.291	0.333	1.1244	
15 minute summer	S78L	8.000	S78	13.8	1.122	0.772	0.0839	
15 minute summer	S78	1.009	S79	125.3	1.329	0.728	4.4776	
15 minute summer	S79L	9.000	S79	18.6	2.241	0.462	0.0538	
15 minute summer	S79	1.010	S80	144.4	2.065	0.397	2.1806	
15 minute summer	S80L	10.000	S80	5.7	2.261	0.088	0.0179	
15 minute summer	S80	1.011	S88	157.8	1.306	0.193	3.7706	
15 minute summer	S81L	11.000	S81	32.5	2.086	0.165	0.1493	
15 minute summer	S81	11.001	S82	41.1	0.750	0.259	2.3453	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	10	113.752	0.046	14.4	0.0525	0.0000	OK
15 minute summer	S82	11	113.074	0.189	60.9	0.3342	0.0000	OK
15 minute summer	S83L	10	113.531	0.041	7.8	0.0460	0.0000	OK
15 minute summer	S83	11	113.005	0.222	69.5	0.3931	0.0000	OK
15 minute summer	S84	12	112.994	0.238	72.7	0.4209	0.0000	OK
15 minute summer	S85L	10	113.594	0.080	14.0	0.0900	0.0000	OK
15 minute summer	S85	10	113.391	0.070	16.2	0.0796	0.0000	OK
15 minute summer	S86	12	112.989	0.252	87.6	0.4446	0.0000	OK
15 minute summer	S87L	10	113.597	0.037	10.6	0.0423	0.0000	OK
15 minute summer	S87	12	112.973	0.279	100.3	0.4932	0.0000	OK
15 minute summer	S88	12	112.945	0.430	255.4	0.7607	0.0000	OK
15 minute summer	S89L	10	113.361	0.077	41.8	0.0869	0.0000	OK
15 minute summer	S89	12	112.784	0.385	290.1	0.6806	0.0000	OK
15 minute summer	S91	12	112.506	0.390	289.3	0.9931	0.0000	OK
15 minute summer	S92L	10	113.605	0.057	17.3	0.0645	0.0000	OK
15 minute summer	S92	10	113.175	0.066	19.6	0.0752	0.0000	OK
15 minute summer	S93	13	112.447	0.375	307.4	0.9535	0.0000	OK
15 minute summer	S94L	10	113.242	0.045	10.9	0.0505	0.0000	OK
15 minute summer	S94	12	112.204	0.169	327.0	0.4295	0.0000	OK
15 minute summer	S95La	10	112.943	0.029	4.5	0.0324	0.0000	OK
15 minute summer	S95Lb	10	112.723	0.029	4.5	0.0324	0.0000	OK
15 minute summer	S95	10	112.231	0.052	13.5	0.0585	0.0000	OK
15 minute summer	S96	12	110.864	0.225	341.4	0.5722	0.0000	OK
15 minute summer	S97L	10	110.870	0.049	13.4	0.0558	0.0000	OK
15 minute summer	S97	13	109.842	0.190	342.4	0.4847	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	14.4	3.111	0.206	0.0159	
15 minute summer	S82	11.002	S83	60.6	0.864	0.382	2.9791	
15 minute summer	S83L	13.000	S83	7.8	2.018	0.160	0.0213	
15 minute summer	S83	11.003	S84	68.2	0.841	0.429	0.8667	
15 minute summer	S84	11.004	S86	71.8	0.831	0.452	0.6868	
15 minute summer	S85L	14.000	S85	13.9	1.469	0.552	0.0558	
15 minute summer	S85	14.001	S86	16.1	1.522	0.214	0.1816	
15 minute summer	S86	11.005	S87	86.1	0.944	0.544	1.7249	
15 minute summer	S87L	15.000	S87	10.6	3.099	0.135	0.0102	
15 minute summer	S87	11.006	S88	94.6	0.893	0.596	5.1010	
15 minute summer	S88	1.012	S89	255.5	1.439	1.126	9.3070	
15 minute summer	S89L	16.000	S89	41.7	3.495	0.252	0.0698	
15 minute summer	S89	1.013	S91	289.3	1.753	1.040	2.8818	
15 minute summer	S91	1.014	S93	286.6	1.299	0.622	6.9428	
15 minute summer	S92L	18.000	S92	17.3	2.818	0.305	0.0224	
15 minute summer	S92	18.001	S93	19.5	1.990	0.191	0.1314	
15 minute summer	S93	1.015	S94	316.3	2.275	0.709	4.0401	
15 minute summer	S94L	19.000	S94	10.9	2.477	0.192	0.0247	
15 minute summer	S94	1.016	S96	323.3	3.605	0.117	2.5694	
15 minute summer	S95La	20.000	S95	4.5	1.917	0.079	0.0137	
15 minute summer	S95Lb	21.000	S95	4.5	1.917	0.079	0.0085	
15 minute summer	S95	20.001	S96	13.3	1.649	0.065	0.2628	
15 minute summer	S96	1.017	S97	329.4	3.396	0.189	4.9338	
15 minute summer	S97L	22.000	S97	13.4	2.653	0.232	0.0279	
15 minute summer	S97	1.018	S98	341.0	3.169	0.149	3.8041	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.562	0.043	10.8	0.0483	0.0000	OK
15 minute summer	S98	13	108.694	0.250	348.9	0.6359	0.0000	OK
15 minute summer	S99L	10	109.373	0.039	11.3	0.0440	0.0000	OK
15 minute summer	S99	13	108.100	0.199	357.0	0.5058	0.0000	OK
15 minute summer	S100	13	107.111	0.208	358.1	0.5296	0.0000	OK
480 minute summer	HW14	368	106.576	0.306	70.5	0.0000	0.0000	OK
480 minute summer	HW15	368	106.576	0.306	40.5	0.0000	0.0000	OK
480 minute summer	S101	464	106.580	0.327	38.8	1.8698	0.0000	SURCHARGED
480 minute summer	HW16	368	105.149	0.049	10.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	10.8	2.614	0.176	0.0168	
15 minute summer	S98	1.019	S99	351.3	3.180	0.245	4.4802	
15 minute summer	S99L	24.000	S99	11.3	3.125	0.146	0.0162	
15 minute summer	S99	1.020	S100	358.1	3.716	0.162	3.0052	
15 minute summer	S100	1.021	HW14	361.1	4.068	0.174	2.0645	
480 minute summer	HW14	Flow through pond	HW15	40.5	0.070	0.001	361.7393	
480 minute summer	HW15	1.022	S101	38.8	0.260	0.073	1.5893	
480 minute summer	S101	1.023	HW16	10.3	1.620	0.104	0.2056	320.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	10	115.092	0.094	12.5	0.1065	0.0000	OK
15 minute summer	S67	10	114.991	0.125	24.2	0.1414	0.0000	OK
15 minute summer	S68	11	114.857	0.153	38.2	0.1727	0.0000	OK
15 minute summer	S69L	10	114.943	0.090	17.8	0.1020	0.0000	OK
15 minute summer	S69	11	114.502	0.178	55.0	0.3146	0.0000	OK
15 minute summer	S70	11	114.433	0.176	55.2	0.3117	0.0000	OK
15 minute summer	S71L	10	114.597	0.097	38.8	0.1100	0.0000	OK
15 minute summer	S71	11	114.389	0.268	90.6	0.4744	0.0000	OK
15 minute summer	S72	10	114.926	0.099	16.5	0.1742	0.0000	OK
15 minute summer	S73La	10	114.831	0.084	10.9	0.0954	0.0000	OK
15 minute summer	S73Lb	10	114.938	0.208	26.7	0.2355	0.0000	SURCHARGED
15 minute summer	S73	10	114.600	0.144	58.5	0.2548	0.0000	OK
15 minute summer	S74	10	114.468	0.155	66.8	0.2745	0.0000	OK
15 minute summer	S75L	10	114.848	0.079	44.4	0.0897	0.0000	OK
15 minute summer	S75	11	114.388	0.319	203.9	0.5644	0.0000	OK
15 minute summer	S76	12	114.297	0.320	204.9	0.5652	0.0000	OK
15 minute summer	S77	12	114.251	0.333	206.4	0.5888	0.0000	OK
15 minute summer	S78L	10	114.377	0.225	26.3	0.2549	0.0000	SURCHARGED
15 minute summer	S78	12	114.239	0.456	237.4	0.8054	0.0000	SURCHARGED
15 minute summer	S79L	10	114.385	0.109	35.5	0.1236	0.0000	OK
15 minute summer	S79	11	113.900	0.327	271.5	0.5781	0.0000	OK
15 minute summer	S80L	10	114.744	0.042	10.9	0.0472	0.0000	OK
15 minute summer	S80	11	113.612	0.214	298.5	0.5450	0.0000	OK
15 minute summer	S81L	12	113.601	0.165	61.9	0.2916	0.0000	OK
15 minute summer	S81	12	113.699	0.711	125.6	1.2562	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	12.4	1.067	0.721	0.0718	
15 minute summer	S67	1.001	S68	24.0	1.060	0.603	0.3311	
15 minute summer	S68	1.002	S69	37.9	1.064	0.531	1.5590	
15 minute summer	S69L	2.000	S69	17.7	1.600	0.673	0.1165	
15 minute summer	S69	1.003	S70	55.2	0.974	0.347	1.5873	
15 minute summer	S70	1.004	S71	53.5	0.719	0.338	4.3963	
15 minute summer	S71L	3.000	S71	38.7	2.360	0.391	0.0705	
15 minute summer	S71	1.005	S75	89.7	0.912	0.393	1.1159	
15 minute summer	S72	4.000	S73	16.1	0.964	0.404	0.6254	
15 minute summer	S73La	5.000	S73	10.8	1.062	0.608	0.0669	
15 minute summer	S73Lb	6.000	S73	26.5	1.504	1.496	0.0856	
15 minute summer	S73	4.001	S74	58.2	1.445	0.314	0.6855	
15 minute summer	S74	4.002	S75	66.7	1.240	0.333	0.9916	
15 minute summer	S75L	7.000	S75	44.3	3.546	0.268	0.0662	
15 minute summer	S75	1.006	S76	202.1	1.691	0.884	2.1989	
15 minute summer	S76	1.007	S77	203.3	1.724	0.840	1.2872	
15 minute summer	S77	1.008	S78	203.5	1.444	0.629	1.9182	
15 minute summer	S78L	8.000	S78	26.0	1.478	1.459	0.1203	
15 minute summer	S78	1.009	S79	233.4	1.589	1.356	6.8191	
15 minute summer	S79L	9.000	S79	35.4	2.577	0.878	0.0888	
15 minute summer	S79	1.010	S80	269.6	2.406	0.742	3.4766	
15 minute summer	S80L	10.000	S80	10.9	2.727	0.168	0.0284	
15 minute summer	S80	1.011	S88	296.6	1.697	0.362	4.6562	
15 minute summer	S81L	11.000	S81	61.7	2.497	0.314	0.5280	
15 minute summer	S81	11.001	S82	77.9	0.857	0.492	6.7245	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	113.776	0.070	27.3	0.0793	0.0000	OK
15 minute summer	S82	12	113.654	0.769	115.5	1.3585	0.0000	SURCHARGED
15 minute summer	S83L	12	113.590	0.100	14.8	0.1128	0.0000	OK
15 minute summer	S83	12	113.600	0.818	128.7	1.4462	0.0000	SURCHARGED
15 minute summer	S84	12	113.585	0.829	120.1	1.4652	0.0000	SURCHARGED
15 minute summer	S85L	10	113.649	0.135	26.7	0.1530	0.0000	OK
15 minute summer	S85	12	113.672	0.350	30.8	0.3964	0.0000	SURCHARGED
15 minute summer	S86	12	113.547	0.810	136.1	1.4304	0.0000	SURCHARGED
15 minute summer	S87L	10	113.612	0.052	20.1	0.0585	0.0000	OK
15 minute summer	S87	12	113.500	0.806	157.3	1.4250	0.0000	SURCHARGED
15 minute summer	S88	12	113.452	0.938	439.7	1.6573	0.0000	SURCHARGED
15 minute summer	S89L	10	113.393	0.109	79.3	0.1233	0.0000	OK
15 minute summer	S89	12	113.010	0.611	499.4	1.0794	0.0000	SURCHARGED
15 minute summer	S91	12	112.658	0.542	492.7	1.3782	0.0000	OK
15 minute summer	S92L	10	113.630	0.082	32.9	0.0930	0.0000	OK
15 minute summer	S92	10	113.202	0.093	37.1	0.1057	0.0000	OK
15 minute summer	S93	13	112.588	0.516	523.7	1.3138	0.0000	OK
15 minute summer	S94L	10	113.260	0.063	20.7	0.0711	0.0000	OK
15 minute summer	S94	12	112.265	0.230	578.3	0.5849	0.0000	OK
15 minute summer	S95La	10	112.954	0.040	8.6	0.0448	0.0000	OK
15 minute summer	S95Lb	10	112.734	0.040	8.6	0.0448	0.0000	OK
15 minute summer	S95	10	112.250	0.071	25.7	0.0806	0.0000	OK
15 minute summer	S96	12	110.933	0.293	621.7	0.7469	0.0000	OK
15 minute summer	S97L	10	110.891	0.070	25.3	0.0789	0.0000	OK
15 minute summer	S97	12	109.906	0.255	596.9	0.6489	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	27.3	3.709	0.391	0.0443	
15 minute summer	S82	11.002	S83	110.9	0.952	0.698	6.6809	
15 minute summer	S83L	13.000	S83	14.8	2.375	0.304	0.0831	
15 minute summer	S83	11.003	S84	113.8	0.897	0.717	1.6865	
15 minute summer	S84	11.004	S86	124.0	0.871	0.782	1.2344	
15 minute summer	S85L	14.000	S85	26.5	1.576	1.049	0.0997	
15 minute summer	S85	14.001	S86	30.6	1.768	0.406	0.6825	
15 minute summer	S86	11.005	S87	138.7	0.997	0.877	2.8114	
15 minute summer	S87L	15.000	S87	20.1	3.660	0.257	0.0342	
15 minute summer	S87	11.006	S88	156.2	1.046	0.983	6.8032	
15 minute summer	S88	1.012	S89	440.1	2.037	1.939	11.1916	
15 minute summer	S89L	16.000	S89	79.2	4.089	0.479	0.1709	
15 minute summer	S89	1.013	S91	492.7	2.284	1.771	3.6529	
15 minute summer	S91	1.014	S93	493.7	1.506	1.072	10.2397	
15 minute summer	S92L	18.000	S92	32.8	3.328	0.580	0.0360	
15 minute summer	S92	18.001	S93	37.0	2.377	0.363	0.2091	
15 minute summer	S93	1.015	S94	558.0	2.727	1.250	5.9699	
15 minute summer	S94L	19.000	S94	20.7	2.958	0.365	0.0392	
15 minute summer	S94	1.016	S96	587.4	4.311	0.212	3.8110	
15 minute summer	S95La	20.000	S95	8.6	2.316	0.151	0.0217	
15 minute summer	S95Lb	21.000	S95	8.6	2.316	0.151	0.0135	
15 minute summer	S95	20.001	S96	25.5	1.997	0.125	0.4161	
15 minute summer	S96	1.017	S97	572.2	3.975	0.329	7.2879	
15 minute summer	S97L	22.000	S97	25.2	3.153	0.439	0.0443	
15 minute summer	S97	1.018	S98	600.9	3.727	0.262	5.7350	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.579	0.060	20.4	0.0676	0.0000	OK
15 minute summer	S98	12	108.784	0.340	624.8	0.8651	0.0000	OK
15 minute summer	S99L	10	109.388	0.054	21.4	0.0613	0.0000	OK
15 minute summer	S99	12	108.171	0.270	649.3	0.6882	0.0000	OK
15 minute summer	S100	12	107.188	0.285	648.9	0.7261	0.0000	OK
480 minute summer	HW14	480	106.806	0.536	126.0	0.0000	0.0000	OK
480 minute summer	HW15	488	106.806	0.536	72.9	0.0000	0.0000	OK
600 minute summer	S101	585	106.833	0.580	68.4	3.3214	0.0000	SURCHARGED
120 minute summer	HW16	126	105.150	0.050	10.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	20.4	3.120	0.333	0.0265	
15 minute summer	S98	1.019	S99	632.3	3.760	0.441	6.8127	
15 minute summer	S99L	24.000	S99	21.4	3.743	0.277	0.0257	
15 minute summer	S99	1.020	S100	648.9	4.377	0.293	4.6244	
15 minute summer	S100	1.021	HW14	648.7	5.049	0.313	2.9792	
480 minute summer	HW14	Flow through pond	HW15	72.9	0.078	0.002	731.1046	
480 minute summer	HW15	1.022	S101	67.6	0.221	0.127	3.1635	
600 minute summer	S101	1.023	HW16	10.7	1.639	0.109	0.2114	418.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	13	115.588	0.590	22.7	0.6670	0.0000	SURCHARGED
15 minute summer	S67	13	115.546	0.680	44.0	0.7690	0.0000	SURCHARGED
15 minute summer	S68	13	115.504	0.800	69.2	0.9044	0.0000	SURCHARGED
15 minute summer	S69L	12	115.579	0.726	32.3	0.8206	0.0000	SURCHARGED
15 minute summer	S69	13	115.431	1.107	98.2	1.9560	0.0000	SURCHARGED
15 minute summer	S70	13	115.422	1.165	81.0	2.0578	0.0000	SURCHARGED
15 minute summer	S71L	12	115.422	0.922	70.6	1.0426	0.0000	SURCHARGED
15 minute summer	S71	13	115.381	1.261	120.4	2.2287	0.0000	SURCHARGED
15 minute summer	S72	12	115.484	0.657	29.9	1.1615	0.0000	SURCHARGED
15 minute summer	S73La	12	115.468	0.721	19.7	0.8159	0.0000	SURCHARGED
15 minute summer	S73Lb	12	115.633	0.903	48.4	1.0215	0.0000	SURCHARGED
15 minute summer	S73	12	115.425	0.969	106.0	1.7121	0.0000	SURCHARGED
15 minute summer	S74	12	115.402	1.089	111.5	1.9234	0.0000	SURCHARGED
15 minute summer	S75L	12	115.432	0.663	80.7	0.7499	0.0000	SURCHARGED
15 minute summer	S75	12	115.369	1.300	273.0	2.2969	0.0000	SURCHARGED
15 minute summer	S76	12	115.260	1.282	249.4	2.2661	0.0000	SURCHARGED
15 minute summer	S77	12	115.197	1.279	261.3	2.2593	0.0000	SURCHARGED
15 minute summer	S78L	12	115.417	1.264	47.8	1.4301	0.0000	SURCHARGED
15 minute summer	S78	12	115.116	1.333	313.3	2.3548	0.0000	SURCHARGED
15 minute summer	S79L	12	115.322	1.046	64.6	1.1830	0.0000	SURCHARGED
15 minute summer	S79	12	114.722	1.149	378.4	2.0306	0.0000	SURCHARGED
15 minute summer	S80L	12	114.763	0.061	19.7	0.0691	0.0000	OK
15 minute summer	S80	12	114.557	1.159	390.5	2.9491	0.0000	SURCHARGED
15 minute summer	S81L	12	115.073	1.637	112.4	2.8920	0.0000	SURCHARGED
15 minute summer	S81	12	115.013	2.025	147.9	3.5783	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	22.5	1.277	1.306	0.1087	
15 minute summer	S67	1.001	S68	43.5	1.261	1.095	0.5824	
15 minute summer	S68	1.002	S69	66.7	1.245	0.935	3.0825	
15 minute summer	S69L	2.000	S69	31.5	1.789	1.199	0.1857	
15 minute summer	S69	1.003	S70	81.0	1.036	0.510	4.3407	
15 minute summer	S70	1.004	S71	109.0	0.825	0.688	8.9186	
15 minute summer	S71L	3.000	S71	66.5	2.553	0.671	0.1710	
15 minute summer	S71	1.005	S75	161.2	1.129	0.707	1.6150	
15 minute summer	S72	4.000	S73	29.2	1.065	0.734	1.4909	
15 minute summer	S73La	5.000	S73	19.5	1.197	1.096	0.1158	
15 minute summer	S73Lb	6.000	S73	47.7	2.712	2.696	0.0867	
15 minute summer	S73	4.001	S74	96.0	1.587	0.519	1.8420	
15 minute summer	S74	4.002	S75	108.3	1.237	0.541	1.8608	
15 minute summer	S75L	7.000	S75	79.4	3.882	0.480	0.1889	
15 minute summer	S75	1.006	S76	247.5	1.686	1.082	2.8982	
15 minute summer	S76	1.007	S77	259.5	1.691	1.072	1.6610	
15 minute summer	S77	1.008	S78	271.6	1.714	0.840	2.1380	
15 minute summer	S78L	8.000	S78	45.4	2.576	2.542	0.1203	
15 minute summer	S78	1.009	S79	308.8	1.949	1.795	7.5243	
15 minute summer	S79L	9.000	S79	62.7	3.564	1.557	0.1140	
15 minute summer	S79	1.010	S80	360.4	2.409	0.992	6.7003	
15 minute summer	S80L	10.000	S80	19.7	3.167	0.304	0.0866	
15 minute summer	S80	1.011	S88	396.4	1.866	0.484	6.7337	
15 minute summer	S81L	11.000	S81	105.4	2.697	0.536	0.6753	
15 minute summer	S81	11.001	S82	117.7	0.919	0.744	6.7245	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	115.144	1.438	49.6	1.6262	0.0000	SURCHARGED
15 minute summer	S82	12	114.966	2.081	177.0	3.6773	0.0000	SURCHARGED
15 minute summer	S83L	12	114.937	1.447	26.9	1.6368	0.0000	SURCHARGED
15 minute summer	S83	12	114.859	2.077	194.9	3.6696	0.0000	SURCHARGED
15 minute summer	S84	12	114.822	2.066	201.8	3.6498	0.0000	SURCHARGED
15 minute summer	S85L	12	115.202	1.688	48.4	1.9094	0.0000	SURCHARGED
15 minute summer	S85	12	114.917	1.595	47.3	1.8045	0.0000	SURCHARGED
15 minute summer	S86	12	114.792	2.055	243.9	3.6305	0.0000	SURCHARGED
15 minute summer	S87L	12	114.768	1.208	36.5	1.3657	0.0000	SURCHARGED
15 minute summer	S87	12	114.689	1.995	282.4	3.5248	0.0000	SURCHARGED
15 minute summer	S88	12	114.358	1.844	681.6	3.2581	0.0000	SURCHARGED
15 minute summer	S89L	11	113.725	0.441	144.1	0.4986	0.0000	SURCHARGED
15 minute summer	S89	12	113.342	0.943	797.7	1.6670	0.0000	SURCHARGED
15 minute summer	S91	12	112.876	0.760	797.0	1.9348	0.0000	SURCHARGED
15 minute summer	S92L	10	113.681	0.133	59.8	0.1501	0.0000	OK
15 minute summer	S92	10	113.241	0.133	67.3	0.1501	0.0000	OK
15 minute summer	S93	12	112.796	0.724	867.0	1.8434	0.0000	OK
15 minute summer	S94L	10	113.287	0.090	37.7	0.1014	0.0000	OK
30 minute summer	S94	18	112.349	0.313	1028.0	0.7978	0.0000	OK
15 minute summer	S95La	10	112.968	0.054	15.5	0.0607	0.0000	OK
15 minute summer	S95Lb	10	112.748	0.054	15.5	0.0608	0.0000	OK
15 minute summer	S95	10	112.275	0.096	46.4	0.1089	0.0000	OK
15 minute summer	S96	11	111.033	0.393	968.0	1.0014	0.0000	OK
15 minute summer	S97L	10	110.923	0.102	46.0	0.1150	0.0000	OK
15 minute summer	S97	11	109.991	0.340	1023.8	0.8654	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	41.0	4.031	0.589	0.0607	
15 minute summer	S82	11.002	S83	169.3	1.069	1.066	6.6809	
15 minute summer	S83L	13.000	S83	20.6	2.629	0.424	0.0974	
15 minute summer	S83	11.003	S84	189.2	1.194	1.192	1.6865	
15 minute summer	S84	11.004	S86	200.7	1.267	1.265	1.2344	
15 minute summer	S85L	14.000	S85	39.9	2.266	1.581	0.1036	
15 minute summer	S85	14.001	S86	43.2	1.752	0.572	0.6825	
15 minute summer	S86	11.005	S87	242.6	1.531	1.534	2.8114	
15 minute summer	S87L	15.000	S87	43.2	3.565	0.552	0.0524	
15 minute summer	S87	11.006	S88	280.8	1.773	1.768	6.8032	
15 minute summer	S88	1.012	S89	685.2	3.172	3.019	11.1916	
15 minute summer	S89L	16.000	S89	140.3	3.983	0.847	0.2325	
15 minute summer	S89	1.013	S91	797.0	3.690	2.865	3.7734	
15 minute summer	S91	1.014	S93	796.0	1.830	1.728	13.6728	
15 minute summer	S92L	18.000	S92	59.5	3.606	1.051	0.0621	
15 minute summer	S92	18.001	S93	67.1	2.759	0.659	0.3885	
15 minute summer	S93	1.015	S94	858.7	2.754	1.924	8.1340	
15 minute summer	S94L	19.000	S94	37.6	3.433	0.664	0.0616	
30 minute summer	S94	1.016	S96	940.1	4.755	0.339	5.5209	
15 minute summer	S95La	20.000	S95	15.5	2.735	0.273	0.0331	
15 minute summer	S95Lb	21.000	S95	15.5	2.735	0.273	0.0206	
15 minute summer	S95	20.001	S96	46.0	2.363	0.226	0.6350	
15 minute summer	S96	1.017	S97	969.5	4.535	0.557	10.7002	
15 minute summer	S97L	22.000	S97	45.9	3.618	0.798	0.0702	
15 minute summer	S97	1.018	S98	1019.8	4.204	0.445	8.5305	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.604	0.084	37.1	0.0955	0.0000	OK
15 minute summer	S98	11	108.914	0.470	1072.4	1.1969	0.0000	OK
15 minute summer	S99L	10	109.410	0.076	38.9	0.0855	0.0000	OK
15 minute summer	S99	11	108.266	0.365	1100.6	0.9291	0.0000	OK
15 minute summer	S100	12	107.289	0.386	1109.3	0.9825	0.0000	OK
720 minute summer	HW14	720	107.230	0.960	195.3	0.0000	0.0000	OK
720 minute summer	HW15	735	107.230	0.960	99.0	0.0000	0.0000	FLOOD RISK
720 minute summer	S101	735	107.256	1.003	60.0	5.7408	0.0000	FLOOD RISK
60 minute summer	HW16	39	105.150	0.050	10.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	37.0	3.634	0.605	0.0415	
15 minute summer	S98	1.019	S99	1066.4	4.278	0.744	10.1790	
15 minute summer	S99L	24.000	S99	38.8	4.385	0.504	0.0399	
15 minute summer	S99	1.020	S100	1109.3	5.042	0.501	6.8619	
15 minute summer	S100	1.021	HW14	1112.6	5.991	0.536	4.2010	
720 minute summer	HW14	Flow through pond	HW15	99.0	0.088	0.002	1525.6292	
720 minute summer	HW15	1.022	S101	60.0	0.136	0.113	3.9994	
720 minute summer	S101	1.023	HW16	10.7	1.639	0.109	0.2113	465.4

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	13	116.007	1.009	25.0	1.1416	0.0000	SURCHARGED
15 minute summer	S67	13	115.958	1.092	48.4	1.2346	0.0000	SURCHARGED
15 minute summer	S68	13	115.909	1.205	72.0	1.3630	0.0000	SURCHARGED
15 minute summer	S69L	12	115.991	1.138	35.5	1.2866	0.0000	FLOOD RISK
15 minute summer	S69	13	115.827	1.503	93.7	2.6557	0.0000	FLOOD RISK
15 minute summer	S70	13	115.819	1.562	88.1	2.7595	0.0000	FLOOD RISK
15 minute summer	S71L	12	115.802	1.302	77.6	1.4729	0.0000	SURCHARGED
15 minute summer	S71	13	115.775	1.655	117.0	2.9237	0.0000	FLOOD RISK
15 minute summer	S72	13	115.877	1.050	32.9	1.8556	0.0000	SURCHARGED
15 minute summer	S73La	13	115.856	1.109	21.7	1.2538	0.0000	SURCHARGED
15 minute summer	S73Lb	12	116.040	1.310	53.3	1.4820	0.0000	SURCHARGED
15 minute summer	S73	13	115.816	1.360	106.3	2.4035	0.0000	SURCHARGED
15 minute summer	S74	13	115.793	1.480	118.4	2.6145	0.0000	SURCHARGED
15 minute summer	S75L	12	115.814	1.045	88.8	1.1816	0.0000	SURCHARGED
15 minute summer	S75	13	115.759	1.690	263.6	2.9861	0.0000	SURCHARGED
15 minute summer	S76	13	115.634	1.657	267.1	2.9287	0.0000	SURCHARGED
15 minute summer	S77	13	115.558	1.640	279.5	2.8983	0.0000	SURCHARGED
15 minute summer	S78L	12	115.816	1.664	52.6	1.8816	0.0000	SURCHARGED
15 minute summer	S78	12	115.456	1.673	320.2	2.9557	0.0000	SURCHARGED
15 minute summer	S79L	12	115.727	1.451	71.0	1.6411	0.0000	SURCHARGED
15 minute summer	S79	12	115.011	1.438	376.6	2.5403	0.0000	SURCHARGED
15 minute summer	S80L	12	114.858	0.156	21.7	0.1763	0.0000	SURCHARGED
15 minute summer	S80	12	114.820	1.422	416.3	3.6192	0.0000	SURCHARGED
15 minute summer	S81L	12	115.431	1.995	123.7	3.5252	0.0000	FLOOD RISK
15 minute summer	S81	12	115.359	2.371	141.7	4.1891	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	24.7	1.403	1.436	0.1087	
15 minute summer	S67	1.001	S68	43.7	1.249	1.100	0.5824	
15 minute summer	S68	1.002	S69	62.8	1.208	0.880	3.0825	
15 minute summer	S69L	2.000	S69	30.9	1.757	1.178	0.1857	
15 minute summer	S69	1.003	S70	88.1	1.061	0.554	4.3407	
15 minute summer	S70	1.004	S71	104.0	0.837	0.656	8.9186	
15 minute summer	S71L	3.000	S71	66.5	2.612	0.671	0.1710	
15 minute summer	S71	1.005	S75	167.2	1.190	0.733	1.6150	
15 minute summer	S72	4.000	S73	31.3	1.088	0.787	1.4909	
15 minute summer	S73La	5.000	S73	19.9	1.200	1.118	0.1158	
15 minute summer	S73Lb	6.000	S73	48.2	2.739	2.723	0.0867	
15 minute summer	S73	4.001	S74	102.1	1.485	0.552	1.8420	
15 minute summer	S74	4.002	S75	106.3	1.238	0.531	1.8608	
15 minute summer	S75L	7.000	S75	85.6	3.641	0.517	0.1889	
15 minute summer	S75	1.006	S76	264.8	1.731	1.158	2.8982	
15 minute summer	S76	1.007	S77	277.5	1.752	1.147	1.6610	
15 minute summer	S77	1.008	S78	290.5	1.833	0.898	2.1380	
15 minute summer	S78L	8.000	S78	43.6	2.475	2.442	0.1203	
15 minute summer	S78	1.009	S79	331.1	2.090	1.924	7.5243	
15 minute summer	S79L	9.000	S79	62.0	3.522	1.538	0.1140	
15 minute summer	S79	1.010	S80	381.8	2.381	1.050	6.7003	
15 minute summer	S80L	10.000	S80	21.4	3.252	0.330	0.1253	
15 minute summer	S80	1.011	S88	424.6	1.965	0.519	6.7337	
15 minute summer	S81L	11.000	S81	107.8	2.763	0.549	0.6753	
15 minute summer	S81	11.001	S82	131.7	0.932	0.832	6.7245	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	115.515	1.809	54.6	2.0461	0.0000	SURCHARGED
15 minute summer	S82	12	115.301	2.416	196.9	4.2699	0.0000	SURCHARGED
15 minute summer	S83L	12	115.263	1.773	29.6	2.0056	0.0000	SURCHARGED
15 minute summer	S83	12	115.173	2.391	213.4	4.2242	0.0000	SURCHARGED
15 minute summer	S84	12	115.130	2.374	219.7	4.1945	0.0000	SURCHARGED
15 minute summer	S85L	12	115.584	2.070	53.3	2.3408	0.0000	FLOOD RISK
15 minute summer	S85	12	115.240	1.919	51.9	2.1705	0.0000	SURCHARGED
15 minute summer	S86	12	115.095	2.358	264.0	4.1658	0.0000	SURCHARGED
15 minute summer	S87L	12	115.067	1.507	40.1	1.7048	0.0000	SURCHARGED
15 minute summer	S87	12	114.976	2.282	304.9	4.0316	0.0000	SURCHARGED
15 minute summer	S88	12	114.589	2.075	731.1	3.6659	0.0000	SURCHARGED
15 minute summer	S89L	11	113.886	0.602	158.5	0.6810	0.0000	SURCHARGED
15 minute summer	S89	12	113.411	1.012	862.0	1.7889	0.0000	SURCHARGED
15 minute summer	S91	12	112.880	0.764	859.0	1.9451	0.0000	SURCHARGED
15 minute summer	S92L	10	113.843	0.295	65.8	0.3338	0.0000	SURCHARGED
15 minute summer	S92	10	113.248	0.140	73.3	0.1587	0.0000	OK
30 minute summer	S93	21	112.742	0.670	917.5	1.7056	0.0000	OK
15 minute summer	S94L	10	113.292	0.095	41.4	0.1079	0.0000	OK
15 minute summer	S94	12	112.340	0.305	1000.4	0.7762	0.0000	OK
15 minute summer	S95La	10	112.971	0.057	17.1	0.0640	0.0000	OK
15 minute summer	S95Lb	10	112.751	0.057	17.1	0.0640	0.0000	OK
15 minute summer	S95	10	112.280	0.101	51.2	0.1147	0.0000	OK
30 minute summer	S96	19	111.058	0.418	999.9	1.0650	0.0000	OK
15 minute summer	S97L	10	110.931	0.110	50.7	0.1240	0.0000	OK
15 minute summer	S97	11	110.020	0.369	1151.9	0.9392	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	45.1	4.123	0.648	0.0607	
15 minute summer	S82	11.002	S83	186.5	1.177	1.175	6.6809	
15 minute summer	S83L	13.000	S83	22.7	2.694	0.466	0.0974	
15 minute summer	S83	11.003	S84	205.8	1.299	1.296	1.6865	
15 minute summer	S84	11.004	S86	217.2	1.371	1.369	1.2344	
15 minute summer	S85L	14.000	S85	43.7	2.483	1.732	0.1036	
15 minute summer	S85	14.001	S86	46.8	1.734	0.621	0.6825	
15 minute summer	S86	11.005	S87	261.9	1.653	1.656	2.8114	
15 minute summer	S87L	15.000	S87	31.9	3.657	0.407	0.0524	
15 minute summer	S87	11.006	S88	302.9	1.912	1.907	6.8032	
15 minute summer	S88	1.012	S89	736.9	3.412	3.247	11.1916	
15 minute summer	S89L	16.000	S89	155.7	4.082	0.941	0.2325	
15 minute summer	S89	1.013	S91	859.0	3.977	3.088	3.7734	
15 minute summer	S91	1.014	S93	859.9	1.995	1.867	13.2295	
15 minute summer	S92L	18.000	S92	64.7	3.675	1.143	0.0638	
15 minute summer	S92	18.001	S93	72.9	2.810	0.716	0.3492	
30 minute summer	S93	1.015	S94	982.7	3.362	2.202	7.9796	
15 minute summer	S94L	19.000	S94	41.3	3.502	0.729	0.0663	
15 minute summer	S94	1.016	S96	1015.3	4.874	0.366	5.8188	
15 minute summer	S95La	20.000	S95	17.1	2.810	0.301	0.0355	
15 minute summer	S95Lb	21.000	S95	17.1	2.810	0.301	0.0221	
15 minute summer	S95	20.001	S96	50.8	2.429	0.249	0.6816	
30 minute summer	S96	1.017	S97	1045.0	4.598	0.601	11.3728	
15 minute summer	S97L	22.000	S97	50.6	3.674	0.880	0.0761	
15 minute summer	S97	1.018	S98	1177.1	4.364	0.513	9.4640	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.65%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.609	0.090	40.8	0.1015	0.0000	OK
15 minute summer	S98	11	108.959	0.514	1234.8	1.3093	0.0000	OK
15 minute summer	S99L	10	109.414	0.080	42.8	0.0906	0.0000	OK
15 minute summer	S99	12	108.282	0.381	1205.0	0.9686	0.0000	OK
720 minute summer	S100	510	107.353	0.450	246.2	1.1446	0.0000	OK
960 minute summer	HW14	975	107.324	1.054	269.3	0.0000	0.0000	OK
960 minute summer	HW15	975	107.324	1.054	103.4	0.0000	0.0000	FLOOD RISK
960 minute summer	S101	975	107.324	1.071	17.1	6.1345	0.0000	FLOOD RISK
1440 minute summer	HW16	690	105.150	0.050	10.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	40.7	3.713	0.665	0.0446	
15 minute summer	S98	1.019	S99	1164.1	4.357	0.812	11.0306	
15 minute summer	S99L	24.000	S99	42.7	4.489	0.554	0.0428	
15 minute summer	S99	1.020	S100	1197.6	5.166	0.540	7.2294	
720 minute summer	S100	1.021	HW14	218.5	0.874	0.105	8.0766	
960 minute summer	HW14	Flow through pond	HW15	103.4	0.075	0.003	1722.6573	
960 minute summer	HW15	1.022	S101	17.1	0.179	0.032	3.9994	
960 minute summer	S101	1.023	HW16	10.7	1.639	0.109	0.2113	576.7

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S67L	0.038	5.00	116.640	Manhole	1200	443759.776	291437.274	1.642
S67	0.036	5.00	116.626	Manhole	1200	443754.601	291440.646	1.760
S68	0.043	5.00	116.483	Manhole	1200	443746.454	291428.477	1.779
S69L	0.054	5.00	116.100	Manhole	1200	443761.907	291388.316	1.247
S69			116.000	Manhole	1500	443751.879	291385.041	1.676
S70			116.000	Manhole	1500	443760.577	291359.063	1.743
S71L	0.118	5.00	116.500	Manhole	1200	443813.132	291379.558	2.000
S71			116.000	Manhole	1500	443814.426	291375.457	1.880
S72	0.050	5.00	116.498	Manhole	1500	443796.103	291443.938	1.671
S73La	0.033	5.00	116.320	Manhole	1200	443805.881	291407.158	1.573
S73Lb	0.081	5.00	116.346	Manhole	1200	443816.318	291411.988	1.616
S73	0.016	5.00	116.446	Manhole	1500	443811.848	291409.919	1.990
S74	0.026	5.00	116.569	Manhole	1500	443819.303	291394.976	2.256
S75L	0.135	5.00	116.650	Manhole	1200	443828.243	291381.036	1.881
S75	0.016	5.00	116.499	Manhole	1500	443824.059	291378.789	2.430
S76	0.009	5.00	116.313	Manhole	1500	443830.286	291361.590	2.336
S77	0.010	5.00	116.252	Manhole	1500	443837.366	291353.859	2.334
S78L	0.080	5.00	116.481	Manhole	1200	443851.912	291342.796	2.329
S78	0.028	5.00	116.345	Manhole	1500	443850.095	291349.382	2.562
S79L	0.108	5.00	116.530	Manhole	1200	443897.490	291356.796	2.254
S79	0.025	5.00	116.401	Manhole	1500	443895.594	291362.985	2.828
S80L	0.033	5.00	116.600	Manhole	1200	443927.311	291365.336	1.898
S80	0.059	5.00	116.458	Manhole	1800	443925.227	291372.140	3.060
S81L	0.188	5.00	115.641	Manhole	1500	443881.050	291289.223	2.205
S81	0.054	5.00	115.632	Manhole	1500	443885.480	291280.718	2.644
S82L	0.083	5.00	116.100	Manhole	1200	443924.760	291297.037	2.394
S82	0.032	5.00	116.063	Manhole	1500	443925.865	291293.768	3.178
S83L	0.045	5.00	115.800	Manhole	1200	443960.932	291308.973	2.310
S83	0.009	5.00	115.829	Manhole	1500	443965.988	291306.734	3.047
S84	0.027	5.00	115.717	Manhole	1500	443971.953	291315.549	2.961
S85L	0.081	5.00	115.800	Manhole	1200	443987.286	291333.917	2.286
S85	0.013	5.00	115.754	Manhole	1200	443989.010	291328.289	2.433
S86			115.683	Manhole	1500	443972.588	291323.314	2.946
S87L	0.061	5.00	115.769	Manhole	1200	443964.547	291339.409	2.209
S87	0.025	5.00	115.755	Manhole	1500	443967.391	291340.280	3.061
S88	0.029	5.00	116.258	Manhole	1500	443954.993	291381.389	3.744
S89L	0.241	5.00	115.800	Manhole	1200	444004.820	291392.210	2.516
S89	0.012	5.00	115.739	Manhole	1500	444004.060	291398.006	3.340
S91			115.513	Manhole	1800	444020.925	291402.553	3.397
S92L	0.100	5.00	115.313	Manhole	1200	444009.789	291445.245	1.765
S92	0.013	5.00	115.286	Manhole	1200	444013.272	291446.339	2.178

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S93	0.036	5.00	115.287	Manhole	1800	444017.554	291433.597	3.215
S94L	0.063	5.00	114.788	Manhole	1200	444042.544	291447.402	1.591
S94	0.015	5.00	114.794	Manhole	1800	444044.192	291442.029	2.759
S95La	0.026	5.00	114.300	Manhole	1200	444054.557	291480.418	1.386
S95Lb	0.026	5.00	114.250	Manhole	1200	444063.621	291483.265	1.556
S95	0.026	5.00	114.279	Manhole	1200	444060.181	291482.048	2.100
S96	0.050	5.00	114.304	Manhole	1800	444070.570	291451.147	3.665
S97L	0.077	5.00	113.400	Manhole	1200	444116.288	291471.699	2.579
S97	0.018	5.00	113.420	Manhole	1800	444118.166	291466.495	3.769
S98L	0.062	5.00	112.010	Manhole	1200	444150.009	291482.356	2.491
S98	0.030	5.00	112.082	Manhole	1800	444151.269	291478.489	3.638
S99L	0.065	5.00	110.750	Manhole	1200	444188.412	291495.138	1.416
S99			110.700	Manhole	1800	444189.788	291490.853	2.799
S100			110.700	Manhole	1800	444219.480	291500.384	3.797
HW14			107.500	Manhole	1	444232.144	291519.066	1.230
HW15		5.00	107.500	Manhole	1	444293.606	291529.740	1.230
S101			107.500	Manhole	2700	444300.866	291535.204	1.247
HW16			106.000	Manhole	1	444330.832	291547.472	0.900

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S67L	S67	6.176	0.600	114.998	114.940	0.058	106.5	150	5.11	50.0
1.001	S67	S68	14.645	0.600	114.866	114.780	0.086	170.3	225	5.35	50.0
1.002	S68	S69	43.773	0.600	114.704	114.522	0.182	240.5	300	6.07	50.0
2.000	S69L	S69	10.549	0.600	114.853	114.624	0.229	46.1	150	5.12	50.0
1.003	S69	S70	27.396	0.600	114.324	114.257	0.067	408.9	450	6.53	48.4
1.004	S70	S71	56.289	0.600	114.257	114.120	0.137	410.9	450	7.47	45.2
3.000	S71L	S71	4.300	0.600	114.500	114.345	0.155	27.7	225	5.03	50.0
1.005	S71	S75	10.193	0.600	114.120	114.069	0.051	199.9	450	7.59	44.9
4.000	S72	S73	37.486	0.600	114.827	114.606	0.221	169.6	225	5.62	50.0
5.000	S73La	S73	6.575	0.600	114.747	114.681	0.066	99.6	150	5.11	50.0
6.000	S73Lb	S73	4.926	0.600	114.730	114.681	0.049	100.5	150	5.08	50.0
4.001	S73	S74	16.700	0.600	114.456	114.313	0.143	116.8	375	5.79	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S67L	S67	0.973	17.2	5.1	1.492	1.536	1.492	1.536	0.038	0.0
1.001	S67	S68	0.999	39.7	10.0	1.535	1.478	1.478	1.535	0.074	0.0
1.002	S68	S69	1.009	71.3	15.9	1.479	1.178	1.178	1.479	0.117	0.0
2.000	S69L	S69	1.486	26.3	7.3	1.097	1.226	1.097	1.226	0.054	0.0
1.003	S69	S70	0.999	158.9	22.4	1.226	1.293	1.226	1.293	0.171	0.0
1.004	S70	S71	0.996	158.5	21.0	1.293	1.430	1.293	1.430	0.171	0.0
3.000	S71L	S71	2.493	99.1	16.0	1.775	1.430	1.430	1.775	0.118	0.0
1.005	S71	S75	1.434	228.1	35.1	1.430	1.980	1.430	1.980	0.289	0.0
4.000	S72	S73	1.001	39.8	6.8	1.446	1.615	1.446	1.615	0.050	0.0
5.000	S73La	S73	1.007	17.8	4.5	1.423	1.615	1.423	1.615	0.033	0.0
6.000	S73Lb	S73	1.002	17.7	11.0	1.466	1.615	1.466	1.615	0.081	0.0
4.001	S73	S74	1.675	185.0	24.4	1.615	1.881	1.615	1.881	0.180	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.002	S74	S75	16.871	0.600	114.313	114.144	0.169	99.8	375	5.95	50.0
7.000	S75L	S75	4.749	0.600	114.769	114.294	0.475	10.0	225	5.02	50.0
1.006	S75	S76	18.292	0.600	114.069	113.977	0.092	198.8	450	7.80	44.2
1.007	S76	S77	10.483	0.600	113.978	113.919	0.059	177.7	450	7.92	43.9
1.008	S77	S78	13.494	0.600	113.918	113.783	0.135	100.0	450	8.03	43.6
8.000	S78L	S78	6.832	0.600	114.152	114.083	0.069	99.0	150	5.11	50.0
1.009	S78	S79	47.489	0.600	113.784	113.648	0.136	349.2	450	8.76	41.6
9.000	S79L	S79	6.473	0.600	114.276	113.947	0.329	19.7	150	5.05	50.0
1.010	S79	S80	31.015	0.600	113.573	113.398	0.175	177.2	525	9.07	40.9
10.000	S80L	S80	7.116	0.600	114.702	113.773	0.929	7.7	150	5.03	50.0
1.011	S80	S88	31.170	0.600	113.398	112.514	0.884	35.3	525	9.20	40.6
11.000	S81L	S81	9.590	0.600	113.436	113.138	0.298	32.2	300	5.06	50.0
11.001	S81	S82	42.441	0.600	112.988	112.885	0.103	412.0	450	5.77	50.0
12.000	S82L	S82	3.450	0.600	113.706	113.185	0.521	6.6	150	5.01	50.0
11.002	S82	S83	42.166	0.600	112.885	112.782	0.103	409.4	450	6.47	48.6
13.000	S83L	S83	5.530	0.600	113.490	113.082	0.408	13.6	150	5.03	50.0
11.003	S83	S84	10.644	0.600	112.782	112.756	0.026	409.4	450	6.65	47.9
11.004	S84	S86	7.791	0.600	112.756	112.737	0.019	410.1	450	6.78	47.5
14.000	S85L	S85	5.886	0.600	113.514	113.396	0.118	49.9	150	5.07	50.0
14.001	S85	S86	17.160	0.600	113.321	112.962	0.359	47.8	225	5.22	50.0
11.005	S86	S87	17.744	0.600	112.737	112.694	0.043	412.7	450	7.08	46.5
15.000	S87L	S87	2.974	0.600	113.560	112.994	0.566	5.3	150	5.01	50.0
11.006	S87	S88	42.938	0.600	112.694	112.589	0.105	408.9	450	7.79	44.3
1.012	S88	S89	51.805	0.600	112.514	112.399	0.115	450.5	525	10.03	38.8

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
4.002	S74	S75	1.813	200.3	27.9	1.881	1.980	1.881	1.980	0.206	0.0
7.000	S75L	S75	4.162	165.5	18.3	1.656	1.980	1.656	1.980	0.135	0.0
1.006	S75	S76	1.438	228.7	77.4	1.980	1.886	1.886	1.980	0.646	0.0
1.007	S76	S77	1.522	242.0	77.9	1.885	1.883	1.883	1.885	0.655	0.0
1.008	S77	S78	2.033	323.4	78.5	1.884	2.112	1.884	2.112	0.665	0.0
8.000	S78L	S78	1.010	17.8	10.8	2.179	2.112	2.112	2.179	0.080	0.0
1.009	S78	S79	1.082	172.1	87.2	2.111	2.303	2.111	2.303	0.773	0.0
9.000	S79L	S79	2.281	40.3	14.6	2.104	2.304	2.104	2.304	0.108	0.0
1.010	S79	S80	1.679	363.5	100.4	2.303	2.535	2.303	2.535	0.906	0.0
10.000	S80L	S80	3.663	64.7	4.5	1.748	2.535	1.748	2.535	0.033	0.0
1.011	S80	S88	3.781	818.4	109.7	2.535	3.219	2.535	3.219	0.998	0.0
11.000	S81L	S81	2.781	196.6	25.5	1.905	2.194	1.905	2.194	0.188	0.0
11.001	S81	S82	0.995	158.3	32.8	2.194	2.728	2.194	2.728	0.242	0.0
12.000	S82L	S82	3.941	69.6	11.2	2.244	2.728	2.244	2.728	0.083	0.0
11.002	S82	S83	0.998	158.8	47.0	2.728	2.597	2.597	2.728	0.357	0.0
13.000	S83L	S83	2.751	48.6	6.1	2.160	2.597	2.160	2.597	0.045	0.0
11.003	S83	S84	0.998	158.8	53.4	2.597	2.511	2.511	2.597	0.411	0.0
11.004	S84	S86	0.997	158.6	56.4	2.511	2.496	2.496	2.511	0.438	0.0
14.000	S85L	S85	1.428	25.2	11.0	2.136	2.208	2.136	2.208	0.081	0.0
14.001	S85	S86	1.896	75.4	12.7	2.208	2.496	2.208	2.496	0.094	0.0
11.005	S86	S87	0.994	158.1	67.0	2.496	2.611	2.496	2.611	0.532	0.0
15.000	S87L	S87	4.426	78.2	8.3	2.059	2.611	2.059	2.611	0.061	0.0
11.006	S87	S88	0.999	158.9	74.1	2.611	3.219	2.611	3.219	0.618	0.0
1.012	S88	S89	1.049	227.0	172.9	3.219	2.815	2.815	3.219	1.645	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
16.000	S89L	S89	5.846	0.600	113.284	112.699	0.585	10.0	225	5.02	50.0
1.013	S89	S91	17.467	0.600	112.399	112.341	0.058	301.2	525	10.25	38.3
1.014	S91	S93	31.226	0.600	112.116	112.072	0.044	709.7	750	10.75	37.4
18.000	S92L	S92	3.651	0.600	113.548	113.183	0.365	10.0	150	5.02	50.0
18.001	S92	S93	13.443	0.600	113.108	112.597	0.511	26.3	225	5.11	50.0
1.015	S93	S94	27.940	0.600	112.072	112.035	0.037	755.1	750	11.21	36.5
19.000	S94L	S94	5.620	0.600	113.197	112.635	0.562	10.0	150	5.03	50.0
1.016	S94	S96	27.910	0.600	112.035	110.640	1.395	20.0	750	11.29	36.4
20.000	S95La	S95	5.856	0.600	112.914	112.328	0.586	10.0	150	5.03	50.0
21.000	S95Lb	S95	3.648	0.600	112.694	112.329	0.365	10.0	150	5.02	50.0
20.001	S95	S96	32.600	0.600	112.179	111.089	1.090	29.9	300	5.22	50.0
1.017	S96	S97	50.010	0.600	110.639	109.651	0.988	50.6	750	11.50	36.0
22.000	S97L	S97	5.532	0.600	110.821	110.251	0.570	9.7	150	5.03	50.0
1.018	S97	S98	35.209	0.600	109.651	108.444	1.207	29.2	750	11.61	35.8
23.000	S98L	S98	4.067	0.600	109.519	109.044	0.475	8.6	150	5.02	50.0
1.019	S98	S99	40.454	0.600	108.444	107.901	0.543	74.5	750	11.82	35.5
24.000	S99L	S99	4.500	0.600	109.334	108.501	0.833	5.4	150	5.02	50.0
1.020	S99	S100	31.185	0.600	107.901	106.903	0.998	31.2	750	11.92	35.3
1.021	S100	HW14	22.569	0.600	106.903	106.270	0.633	35.7	750	12.00	35.2
1.022	HW15	S101	9.087	0.600	106.270	106.253	0.017	534.5	750	5.13	50.0
1.023	S101	HW16	32.380	0.600	106.253	105.100	1.153	28.1	225	5.34	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
16.000	S89L	S89	4.163	165.5	32.7	2.291	2.815	2.291	2.815	0.241	0.0
1.013	S89	S91	1.285	278.2	197.2	2.815	2.647	2.647	2.815	1.898	0.0
1.014	S91	S93	1.043	460.6	192.2	2.647	2.465	2.465	2.647	1.898	0.0
18.000	S92L	S92	3.204	56.6	13.6	1.615	1.953	1.615	1.953	0.100	0.0
18.001	S92	S93	2.561	101.8	15.3	1.953	2.465	1.953	2.465	0.113	0.0
1.015	S93	S94	1.010	446.3	202.7	2.465	2.009	2.009	2.465	2.047	0.0
19.000	S94L	S94	3.204	56.6	8.5	1.441	2.009	1.441	2.009	0.063	0.0
1.016	S94	S96	6.272	2770.9	209.6	2.009	2.914	2.009	2.914	2.125	0.0
20.000	S95La	S95	3.205	56.6	3.5	1.236	1.801	1.236	1.801	0.026	0.0
21.000	S95Lb	S95	3.205	56.6	3.5	1.406	1.800	1.406	1.800	0.026	0.0
20.001	S95	S96	2.885	203.9	10.6	1.800	2.915	1.800	2.915	0.078	0.0
1.017	S96	S97	3.938	1739.9	220.0	2.915	3.019	2.915	3.019	2.253	0.0
22.000	S97L	S97	3.253	57.5	10.4	2.429	3.019	2.429	3.019	0.077	0.0
1.018	S97	S98	5.192	2293.8	228.1	3.019	2.888	2.888	3.019	2.348	0.0
23.000	S98L	S98	3.464	61.2	8.4	2.341	2.888	2.341	2.888	0.062	0.0
1.019	S98	S99	3.244	1433.1	234.7	2.888	2.049	2.049	2.888	2.440	0.0
24.000	S99L	S99	4.364	77.1	8.8	1.266	2.049	1.266	2.049	0.065	0.0
1.020	S99	S100	5.016	2216.0	239.8	2.049	3.047	2.049	3.047	2.505	0.0
1.021	S100	HW14	4.695	2074.2	238.9	3.047	0.480	0.480	3.047	2.505	0.0
1.022	HW15	S101	1.203	531.5	0.0	0.480	0.497	0.480	0.497	0.000	0.0
1.023	S101	HW16	2.478	98.5	0.0	1.022	0.675	0.675	1.022	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	6.176	106.5	150	116.640	114.998	1.492	116.626	114.940	1.536
1.001	14.645	170.3	225	116.626	114.866	1.535	116.483	114.780	1.478
1.002	43.773	240.5	300	116.483	114.704	1.479	116.000	114.522	1.178
2.000	10.549	46.1	150	116.100	114.853	1.097	116.000	114.624	1.226
1.003	27.396	408.9	450	116.000	114.324	1.226	116.000	114.257	1.293
1.004	56.289	410.9	450	116.000	114.257	1.293	116.000	114.120	1.430
3.000	4.300	27.7	225	116.500	114.500	1.775	116.000	114.345	1.430
1.005	10.193	199.9	450	116.000	114.120	1.430	116.499	114.069	1.980
4.000	37.486	169.6	225	116.498	114.827	1.446	116.446	114.606	1.615
5.000	6.575	99.6	150	116.320	114.747	1.423	116.446	114.681	1.615
6.000	4.926	100.5	150	116.346	114.730	1.466	116.446	114.681	1.615
4.001	16.700	116.8	375	116.446	114.456	1.615	116.569	114.313	1.881
4.002	16.871	99.8	375	116.569	114.313	1.881	116.499	114.144	1.980
7.000	4.749	10.0	225	116.650	114.769	1.656	116.499	114.294	1.980
1.006	18.292	198.8	450	116.499	114.069	1.980	116.313	113.977	1.886
1.007	10.483	177.7	450	116.313	113.978	1.885	116.252	113.919	1.883
1.008	13.494	100.0	450	116.252	113.918	1.884	116.345	113.783	2.112
8.000	6.832	99.0	150	116.481	114.152	2.179	116.345	114.083	2.112
1.009	47.489	349.2	450	116.345	113.784	2.111	116.401	113.648	2.303
9.000	6.473	19.7	150	116.530	114.276	2.104	116.401	113.947	2.304
1.010	31.015	177.2	525	116.401	113.573	2.303	116.458	113.398	2.535
10.000	7.116	7.7	150	116.600	114.702	1.748	116.458	113.773	2.535
1.011	31.170	35.3	525	116.458	113.398	2.535	116.258	112.514	3.219
11.000	9.590	32.2	300	115.641	113.436	1.905	115.632	113.138	2.194
11.001	42.441	412.0	450	115.632	112.988	2.194	116.063	112.885	2.728

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S67L	1200	Manhole	S67	1200	1
1.001	S67	1200	Manhole	S68	1200	1
1.002	S68	1200	Manhole	S69	1500	1
2.000	S69L	1200	Manhole	S69	1500	1
1.003	S69	1500	Manhole	S70	1500	1
1.004	S70	1500	Manhole	S71	1500	1
3.000	S71L	1200	Manhole	S71	1500	1
1.005	S71	1500	Manhole	S75	1500	1
4.000	S72	1500	Manhole	S73	1500	1
5.000	S73La	1200	Manhole	S73	1500	1
6.000	S73Lb	1200	Manhole	S73	1500	1
4.001	S73	1500	Manhole	S74	1500	1
4.002	S74	1500	Manhole	S75	1500	1
7.000	S75L	1200	Manhole	S75	1500	1
1.006	S75	1500	Manhole	S76	1500	1
1.007	S76	1500	Manhole	S77	1500	1
1.008	S77	1500	Manhole	S78	1500	1
8.000	S78L	1200	Manhole	S78	1500	1
1.009	S78	1500	Manhole	S79	1500	1
9.000	S79L	1200	Manhole	S79	1500	1
1.010	S79	1500	Manhole	S80	1800	1
10.000	S80L	1200	Manhole	S80	1800	1
1.011	S80	1800	Manhole	S88	1500	1
11.000	S81L	1500	Manhole	S81	1500	1
11.001	S81	1500	Manhole	S82	1500	1

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
12.000	3.450	6.6	150	116.100	113.706	2.244	116.063	113.185	2.728
11.002	42.166	409.4	450	116.063	112.885	2.728	115.829	112.782	2.597
13.000	5.530	13.6	150	115.800	113.490	2.160	115.829	113.082	2.597
11.003	10.644	409.4	450	115.829	112.782	2.597	115.717	112.756	2.511
11.004	7.791	410.1	450	115.717	112.756	2.511	115.683	112.737	2.496
14.000	5.886	49.9	150	115.800	113.514	2.136	115.754	113.396	2.208
14.001	17.160	47.8	225	115.754	113.321	2.208	115.683	112.962	2.496
11.005	17.744	412.7	450	115.683	112.737	2.496	115.755	112.694	2.611
15.000	2.974	5.3	150	115.769	113.560	2.059	115.755	112.994	2.611
11.006	42.938	408.9	450	115.755	112.694	2.611	116.258	112.589	3.219
1.012	51.805	450.5	525	116.258	112.514	3.219	115.739	112.399	2.815
16.000	5.846	10.0	225	115.800	113.284	2.291	115.739	112.699	2.815
1.013	17.467	301.2	525	115.739	112.399	2.815	115.513	112.341	2.647
1.014	31.226	709.7	750	115.513	112.116	2.647	115.287	112.072	2.465
18.000	3.651	10.0	150	115.313	113.548	1.615	115.286	113.183	1.953
18.001	13.443	26.3	225	115.286	113.108	1.953	115.287	112.597	2.465
1.015	27.940	755.1	750	115.287	112.072	2.465	114.794	112.035	2.009
19.000	5.620	10.0	150	114.788	113.197	1.441	114.794	112.635	2.009
1.016	27.910	20.0	750	114.794	112.035	2.009	114.304	110.640	2.914
20.000	5.856	10.0	150	114.300	112.914	1.236	114.279	112.328	1.801
21.000	3.648	10.0	150	114.250	112.694	1.406	114.279	112.329	1.800
20.001	32.600	29.9	300	114.279	112.179	1.800	114.304	111.089	2.915
1.017	50.010	50.6	750	114.304	110.639	2.915	113.420	109.651	3.019
22.000	5.532	9.7	150	113.400	110.821	2.429	113.420	110.251	3.019
1.018	35.209	29.2	750	113.420	109.651	3.019	112.082	108.444	2.888

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
12.000	S82L	1200	Manhole	S82	1500	1
11.002	S82	1500	Manhole	S83	1500	1
13.000	S83L	1200	Manhole	S83	1500	1
11.003	S83	1500	Manhole	S84	1500	1
11.004	S84	1500	Manhole	S86	1500	1
14.000	S85L	1200	Manhole	S85	1200	1
14.001	S85	1200	Manhole	S86	1500	1
11.005	S86	1500	Manhole	S87	1500	1
15.000	S87L	1200	Manhole	S87	1500	1
11.006	S87	1500	Manhole	S88	1500	1
1.012	S88	1500	Manhole	S89	1500	1
16.000	S89L	1200	Manhole	S89	1500	1
1.013	S89	1500	Manhole	S91	1800	1
1.014	S91	1800	Manhole	S93	1800	1
18.000	S92L	1200	Manhole	S92	1200	1
18.001	S92	1200	Manhole	S93	1800	1
1.015	S93	1800	Manhole	S94	1800	1
19.000	S94L	1200	Manhole	S94	1800	1
1.016	S94	1800	Manhole	S96	1800	1
20.000	S95La	1200	Manhole	S95	1200	1
21.000	S95Lb	1200	Manhole	S95	1200	1
20.001	S95	1200	Manhole	S96	1800	1
1.017	S96	1800	Manhole	S97	1800	1
22.000	S97L	1200	Manhole	S97	1800	1
1.018	S97	1800	Manhole	S98	1800	1

Pipeline Schedule

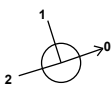
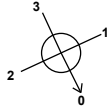
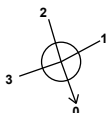
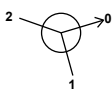
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
23.000	4.067	8.6	150	112.010	109.519	2.341	112.082	109.044	2.888
1.019	40.454	74.5	750	112.082	108.444	2.888	110.700	107.901	2.049
24.000	4.500	5.4	150	110.750	109.334	1.266	110.700	108.501	2.049
1.020	31.185	31.2	750	110.700	107.901	2.049	110.700	106.903	3.047
1.021	22.569	35.7	750	110.700	106.903	3.047	107.500	106.270	0.480
1.022	9.087	534.5	750	107.500	106.270	0.480	107.500	106.253	0.497
1.023	32.380	28.1	225	107.500	106.253	1.022	106.000	105.100	0.675

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
23.000	S98L	1200	Manhole	S98	1800	1
1.019	S98	1800	Manhole	S99	1800	1
24.000	S99L	1200	Manhole	S99	1800	1
1.020	S99	1800	Manhole	S100	1800	1
1.021	S100	1800	Manhole	HW14	1	1
1.022	HW15	1	Manhole	S101	2700	1
1.023	S101	2700	Manhole	HW16	1	1

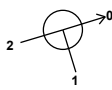
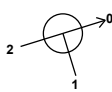
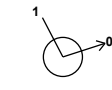
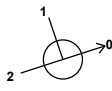
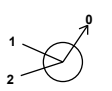
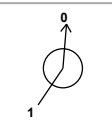
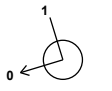
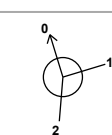
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S67L	443759.776	291437.274	116.640	1.642	1200	Manhole		0	1.000	114.998	150
S67	443754.601	291440.646	116.626	1.760	1200	Manhole		1	1.000	114.940	150
S68	443746.454	291428.477	116.483	1.779	1200	Manhole		0	1.001	114.866	225
S69L	443761.907	291388.316	116.100	1.247	1200	Manhole		1	1.001	114.780	225
S69	443751.879	291385.041	116.000	1.676	1500	Manhole		0	1.002	114.704	300
S70	443760.577	291359.063	116.000	1.743	1500	Manhole		1	2.000	114.853	150
S71L	443813.132	291379.558	116.500	2.000	1200	Manhole		2	2.000	114.624	150
								0	1.002	114.522	300
								0	1.003	114.324	450
								1	1.003	114.257	450
								0	1.004	114.257	450
								0	3.000	114.500	225

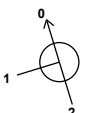
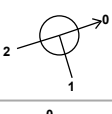
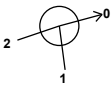
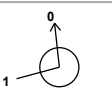
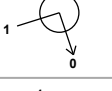
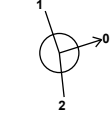
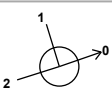
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S71	443814.426	291375.457	116.000	1.880	1500	Manhole		1	3.000	114.345	225
								2	1.004	114.120	450
								0	1.005	114.120	450
S72	443796.103	291443.938	116.498	1.671	1500	Manhole		0	4.000	114.827	225
S73La	443805.881	291407.158	116.320	1.573	1200	Manhole		0	5.000	114.747	150
S73Lb	443816.318	291411.988	116.346	1.616	1200	Manhole		0	6.000	114.730	150
S73	443811.848	291409.919	116.446	1.990	1500	Manhole		1	6.000	114.681	150
								2	5.000	114.681	150
								3	4.000	114.606	225
								0	4.001	114.456	375
								0	4.001	114.313	375
S74	443819.303	291394.976	116.569	2.256	1500	Manhole		1	4.001	114.313	375
								0	4.002	114.313	375
S75L	443828.243	291381.036	116.650	1.881	1200	Manhole		0	7.000	114.769	225
S75	443824.059	291378.789	116.499	2.430	1500	Manhole		1	7.000	114.294	225
								2	4.002	114.144	375
								3	1.005	114.069	450
								0	1.006	114.069	450
								0	1.006	113.977	450
S76	443830.286	291361.590	116.313	2.336	1500	Manhole		1	1.006	113.977	450
								0	1.007	113.978	450
S77	443837.366	291353.859	116.252	2.334	1500	Manhole		1	1.007	113.919	450
								0	1.008	113.918	450
S78L	443851.912	291342.796	116.481	2.329	1200	Manhole		0	8.000	114.152	150
								0	8.000	114.083	150
S78	443850.095	291349.382	116.345	2.562	1500	Manhole		1	1.008	113.783	450
								2	1.009	113.784	450
								0	1.009	113.784	450
S79L	443897.490	291356.796	116.530	2.254	1200	Manhole		0	9.000	114.276	150
								0	9.000	114.276	150

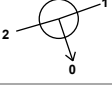
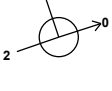
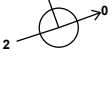
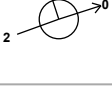
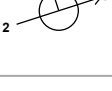
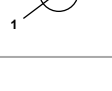
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S79	443895.594	291362.985	116.401	2.828	1500	Manhole		1 9.000 2 1.009 0 1.010	113.947 113.648 113.573	150 450 525
S80L	443927.311	291365.336	116.600	1.898	1200	Manhole		0 10.000	114.702	150
S80	443925.227	291372.140	116.458	3.060	1800	Manhole		1 10.000 2 1.010 0 1.011	113.773 113.398 113.398	150 525 525
S81L	443881.050	291289.223	115.641	2.205	1500	Manhole		0 11.000	113.436	300
S81	443885.480	291280.718	115.632	2.644	1500	Manhole		1 11.000 0 11.001	113.138 112.988	300 450
S82L	443924.760	291297.037	116.100	2.394	1200	Manhole		0 12.000	113.706	150
S82	443925.865	291293.768	116.063	3.178	1500	Manhole		1 12.000 2 11.001 0 11.002	113.185 112.885 112.885	150 450 450
S83L	443960.932	291308.973	115.800	2.310	1200	Manhole		0 13.000	113.490	150
S83	443965.988	291306.734	115.829	3.047	1500	Manhole		1 13.000 2 11.002 0 11.003	113.082 112.782 112.782	150 450 450
S84	443971.953	291315.549	115.717	2.961	1500	Manhole		1 11.003 0 11.004	112.756 112.756	450 450
S85L	443987.286	291333.917	115.800	2.286	1200	Manhole		0 14.000	113.514	150
S85	443989.010	291328.289	115.754	2.433	1200	Manhole		1 14.000 0 14.001	113.396 113.321	150 225
S86	443972.588	291323.314	115.683	2.946	1500	Manhole		1 14.001 2 11.004 0 11.005	112.962 112.737 112.737	225 450 450

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S87L	443964.547	291339.409	115.769	2.209	1200	Manhole		0	15.000	113.560	150
S87	443967.391	291340.280	115.755	3.061	1500	Manhole		1 2 0	15.000 11.005 11.006	112.994 112.694 112.694	150 450 450
S88	443954.993	291381.389	116.258	3.744	1500	Manhole		1 2 0	11.006 1.011 1.012	112.589 112.514 112.514	450 525 525
S89L	444004.820	291392.210	115.800	2.516	1200	Manhole		0	16.000	113.284	225
S89	444004.060	291398.006	115.739	3.340	1500	Manhole		1 2 0	16.000 1.012 1.013	112.699 112.399 112.399	225 525 525
S91	444020.925	291402.553	115.513	3.397	1800	Manhole		1 0	1.013 1.014	112.341 112.116	525 750
S92L	444009.789	291445.245	115.313	1.765	1200	Manhole		0	18.000	113.548	150
S92	444013.272	291446.339	115.286	2.178	1200	Manhole		1 0 0	18.000 18.001 18.001	113.183 113.108 112.597	150 225 225
S93	444017.554	291433.597	115.287	3.215	1800	Manhole		1 2 0	18.001 1.014 1.015	112.597 112.072 112.072	225 750 750
S94L	444042.544	291447.402	114.788	1.591	1200	Manhole		0	19.000	113.197	150
S94	444044.192	291442.029	114.794	2.759	1800	Manhole		1 2 0	19.000 1.015 1.016	112.635 112.035 112.035	150 750 750
S95La	444054.557	291480.418	114.300	1.386	1200	Manhole		0	20.000	112.914	150
S95Lb	444063.621	291483.265	114.250	1.556	1200	Manhole		0	21.000	112.694	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S95	444060.181	291482.048	114.279	2.100	1200	Manhole		1 21.000 2 20.000	112.329 112.328	150 150
S96	444070.570	291451.147	114.304	3.665	1800	Manhole		1 20.001 2 1.016 0 1.017	112.179 111.089 110.640 110.639	300 300 750 750
S97L	444116.288	291471.699	113.400	2.579	1200	Manhole		0 22.000	110.821	150
S97	444118.166	291466.495	113.420	3.769	1800	Manhole		1 22.000 2 1.017 0 1.018	110.251 109.651 109.651	150 750 750
S98L	444150.009	291482.356	112.010	2.491	1200	Manhole		0 23.000	109.519	150
S98	444151.269	291478.489	112.082	3.638	1800	Manhole		1 23.000 2 1.018 0 1.019	109.044 108.444 108.444	150 750 750
S99L	444188.412	291495.138	110.750	1.416	1200	Manhole		0 24.000	109.334	150
S99	444189.788	291490.853	110.700	2.799	1800	Manhole		1 24.000 2 1.019 0 1.020	108.501 107.901 107.901	150 750 750
S100	444219.480	291500.384	110.700	3.797	1800	Manhole		1 1.020	106.903	750
HW14	444232.144	291519.066	107.500	1.230	1	Manhole		0 1.021	106.903	750
HW15	444293.606	291529.740	107.500	1.230	1	Manhole		1 1.021	106.270	750
S101	444300.866	291535.204	107.500	1.247	2700	Manhole		0 1.022	106.270	750
HW16	444330.832	291547.472	106.000	0.900	1	Manhole		1 1.022	106.253	225
								0 1.023	106.253	225
								1 1.023	105.100	225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	0.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Detailed		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0
100	40	10	0

Node HW16 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		
Applies to All storms					

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.900	255	0.900	510	0.900	765	0.900	1020	0.900	1275	0.900
15	0.900	270	0.900	525	0.900	780	0.900	1035	0.900	1290	0.900
30	0.900	285	0.900	540	0.900	795	0.900	1050	0.900	1305	0.900
45	0.900	300	0.900	555	0.900	810	0.900	1065	0.900	1320	0.900
60	0.900	315	0.900	570	0.900	825	0.900	1080	0.900	1335	0.900
75	0.900	330	0.900	585	0.900	840	0.900	1095	0.900	1350	0.900
90	0.900	345	0.900	600	0.900	855	0.900	1110	0.900	1365	0.900
105	0.900	360	0.900	615	0.900	870	0.900	1125	0.900	1380	0.900
120	0.900	375	0.900	630	0.900	885	0.900	1140	0.900	1395	0.900
135	0.900	390	0.900	645	0.900	900	0.900	1155	0.900	1410	0.900
150	0.900	405	0.900	660	0.900	915	0.900	1170	0.900	1425	0.900
165	0.900	420	0.900	675	0.900	930	0.900	1185	0.900	1440	0.900
180	0.900	435	0.900	690	0.900	945	0.900	1200	0.900		
195	0.900	450	0.900	705	0.900	960	0.900	1215	0.900		
210	0.900	465	0.900	720	0.900	975	0.900	1230	0.900		
225	0.900	480	0.900	735	0.900	990	0.900	1245	0.900		
240	0.900	495	0.900	750	0.900	1005	0.900	1260	0.900		

Node S101 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	106.253	Product Number	CTL-SHE-0143-1070-1500-1070
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	10.7	Min Node Diameter (mm)	1200

Node HW15 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	100.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	106.270	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets HW14

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	1306.0	0.0	1.455	2488.0	0.0	1.456	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058
2 year 30 minute summer	91.753	25.963
2 year 60 minute summer	61.301	16.200
2 year 120 minute summer	37.449	9.897
2 year 180 minute summer	28.672	7.378
2 year 240 minute summer	22.636	5.982
2 year 360 minute summer	17.235	4.435
2 year 480 minute summer	13.550	3.581
2 year 600 minute summer	11.088	3.033
2 year 720 minute summer	9.878	2.647
2 year 960 minute summer	8.113	2.136
2 year 1440 minute summer	5.891	1.579
30 year 15 minute summer	268.706	76.035
30 year 30 minute summer	174.929	49.499
30 year 60 minute summer	116.589	30.811
30 year 120 minute summer	70.438	18.615
30 year 180 minute summer	53.298	13.715
30 year 240 minute summer	41.604	10.995
30 year 360 minute summer	31.221	8.034
30 year 480 minute summer	24.324	6.428
30 year 600 minute summer	19.756	5.404
30 year 720 minute summer	17.490	4.687
30 year 960 minute summer	14.215	3.743
30 year 1440 minute summer	10.161	2.723
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 720 minute summer	31.433	8.424

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC +10% A 15 minute summer	488.233	138.153
100 year +40% CC +10% A 30 minute summer	320.551	90.705
100 year +40% CC +10% A 60 minute summer	214.603	56.713
100 year +40% CC +10% A 120 minute summer	129.587	34.246
100 year +40% CC +10% A 180 minute summer	97.729	25.149
100 year +40% CC +10% A 240 minute summer	75.977	20.078
100 year +40% CC +10% A 360 minute summer	56.677	14.585
100 year +40% CC +10% A 480 minute summer	43.979	11.622
100 year +40% CC +10% A 600 minute summer	35.604	9.738
100 year +40% CC +10% A 720 minute summer	31.433	8.424
100 year +40% CC +10% A 960 minute summer	25.432	6.697
100 year +40% CC +10% A 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	10	115.062	0.064	6.6	0.0725	0.0000	OK
15 minute summer	S67	10	114.953	0.087	12.7	0.0979	0.0000	OK
15 minute summer	S68	11	114.811	0.107	20.1	0.1209	0.0000	OK
15 minute summer	S69L	10	114.915	0.062	9.4	0.0699	0.0000	OK
15 minute summer	S69	11	114.451	0.127	28.9	0.2245	0.0000	OK
15 minute summer	S70	12	114.382	0.125	29.0	0.2211	0.0000	OK
15 minute summer	S71L	10	114.569	0.069	20.5	0.0782	0.0000	OK
15 minute summer	S71	11	114.281	0.161	46.7	0.2851	0.0000	OK
15 minute summer	S72	11	114.897	0.070	8.7	0.1233	0.0000	OK
15 minute summer	S73La	10	114.805	0.058	5.7	0.0657	0.0000	OK
15 minute summer	S73Lb	10	114.830	0.100	14.0	0.1130	0.0000	OK
15 minute summer	S73	10	114.558	0.102	30.6	0.1799	0.0000	OK
15 minute summer	S74	11	114.417	0.104	34.9	0.1844	0.0000	OK
15 minute summer	S75L	10	114.826	0.057	23.4	0.0645	0.0000	OK
15 minute summer	S75	11	114.279	0.210	105.6	0.3709	0.0000	OK
15 minute summer	S76	11	114.183	0.206	106.6	0.3640	0.0000	OK
15 minute summer	S77	11	114.116	0.198	107.9	0.3497	0.0000	OK
15 minute summer	S78L	10	114.251	0.099	13.9	0.1117	0.0000	OK
15 minute summer	S78	12	114.054	0.271	125.6	0.4787	0.0000	OK
15 minute summer	S79L	10	114.348	0.072	18.7	0.0812	0.0000	OK
15 minute summer	S79	12	113.798	0.225	143.7	0.3971	0.0000	OK
15 minute summer	S80L	10	114.732	0.030	5.7	0.0341	0.0000	OK
15 minute summer	S80	12	113.551	0.153	157.0	0.3904	0.0000	OK
15 minute summer	S81L	10	113.518	0.082	32.6	0.1449	0.0000	OK
15 minute summer	S81	10	113.141	0.153	41.9	0.2708	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	6.5	0.913	0.381	0.0443	
15 minute summer	S67	1.001	S68	12.6	0.900	0.318	0.2057	
15 minute summer	S68	1.002	S69	19.9	0.884	0.279	0.9859	
15 minute summer	S69L	2.000	S69	9.3	1.364	0.355	0.0721	
15 minute summer	S69	1.003	S70	29.0	0.824	0.182	0.9863	
15 minute summer	S70	1.004	S71	27.8	0.663	0.175	2.4308	
15 minute summer	S71L	3.000	S71	20.4	1.980	0.206	0.0444	
15 minute summer	S71	1.005	S75	46.5	0.804	0.204	0.6294	
15 minute summer	S72	4.000	S73	8.5	0.808	0.213	0.3928	
15 minute summer	S73La	5.000	S73	5.7	0.900	0.318	0.0413	
15 minute summer	S73Lb	6.000	S73	13.9	1.118	0.785	0.0613	
15 minute summer	S73	4.001	S74	30.4	1.237	0.164	0.4103	
15 minute summer	S74	4.002	S75	34.8	1.254	0.174	0.5115	
15 minute summer	S75L	7.000	S75	23.4	2.964	0.141	0.0374	
15 minute summer	S75	1.006	S76	105.1	1.469	0.460	1.3094	
15 minute summer	S76	1.007	S77	106.2	1.514	0.439	0.7353	
15 minute summer	S77	1.008	S78	107.7	1.291	0.333	1.1244	
15 minute summer	S78L	8.000	S78	13.8	1.122	0.772	0.0839	
15 minute summer	S78	1.009	S79	125.3	1.329	0.728	4.4776	
15 minute summer	S79L	9.000	S79	18.6	2.241	0.462	0.0538	
15 minute summer	S79	1.010	S80	144.4	2.065	0.397	2.1806	
15 minute summer	S80L	10.000	S80	5.7	2.261	0.088	0.0179	
15 minute summer	S80	1.011	S88	157.8	1.306	0.193	3.7706	
15 minute summer	S81L	11.000	S81	32.5	2.086	0.165	0.1493	
15 minute summer	S81	11.001	S82	41.1	0.750	0.259	2.3453	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	10	113.752	0.046	14.4	0.0525	0.0000	OK
15 minute summer	S82	11	113.074	0.189	60.9	0.3342	0.0000	OK
15 minute summer	S83L	10	113.531	0.041	7.8	0.0460	0.0000	OK
15 minute summer	S83	11	113.005	0.222	69.5	0.3931	0.0000	OK
15 minute summer	S84	12	112.994	0.238	72.7	0.4209	0.0000	OK
15 minute summer	S85L	10	113.594	0.080	14.0	0.0900	0.0000	OK
15 minute summer	S85	10	113.391	0.070	16.2	0.0796	0.0000	OK
15 minute summer	S86	12	112.989	0.252	87.6	0.4446	0.0000	OK
15 minute summer	S87L	10	113.597	0.037	10.6	0.0423	0.0000	OK
15 minute summer	S87	12	112.973	0.279	100.3	0.4932	0.0000	OK
15 minute summer	S88	12	112.945	0.430	255.4	0.7607	0.0000	OK
15 minute summer	S89L	10	113.361	0.077	41.8	0.0869	0.0000	OK
15 minute summer	S89	12	112.784	0.385	290.1	0.6806	0.0000	OK
15 minute summer	S91	12	112.506	0.390	289.3	0.9931	0.0000	OK
15 minute summer	S92L	10	113.605	0.057	17.3	0.0645	0.0000	OK
15 minute summer	S92	10	113.175	0.066	19.6	0.0752	0.0000	OK
15 minute summer	S93	13	112.447	0.375	307.4	0.9535	0.0000	OK
15 minute summer	S94L	10	113.242	0.045	10.9	0.0505	0.0000	OK
15 minute summer	S94	12	112.204	0.169	327.0	0.4295	0.0000	OK
15 minute summer	S95La	10	112.943	0.029	4.5	0.0324	0.0000	OK
15 minute summer	S95Lb	10	112.723	0.029	4.5	0.0324	0.0000	OK
15 minute summer	S95	10	112.231	0.052	13.5	0.0585	0.0000	OK
15 minute summer	S96	12	110.864	0.225	341.4	0.5722	0.0000	OK
15 minute summer	S97L	10	110.870	0.049	13.4	0.0558	0.0000	OK
15 minute summer	S97	13	109.842	0.190	342.4	0.4847	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	14.4	3.111	0.206	0.0159	
15 minute summer	S82	11.002	S83	60.6	0.864	0.382	2.9791	
15 minute summer	S83L	13.000	S83	7.8	2.018	0.160	0.0213	
15 minute summer	S83	11.003	S84	68.2	0.841	0.429	0.8667	
15 minute summer	S84	11.004	S86	71.8	0.831	0.452	0.6868	
15 minute summer	S85L	14.000	S85	13.9	1.469	0.552	0.0558	
15 minute summer	S85	14.001	S86	16.1	1.522	0.214	0.1816	
15 minute summer	S86	11.005	S87	86.1	0.944	0.544	1.7249	
15 minute summer	S87L	15.000	S87	10.6	3.099	0.135	0.0102	
15 minute summer	S87	11.006	S88	94.6	0.893	0.596	5.1010	
15 minute summer	S88	1.012	S89	255.5	1.439	1.126	9.3070	
15 minute summer	S89L	16.000	S89	41.7	3.495	0.252	0.0698	
15 minute summer	S89	1.013	S91	289.3	1.753	1.040	2.8818	
15 minute summer	S91	1.014	S93	286.6	1.299	0.622	6.9428	
15 minute summer	S92L	18.000	S92	17.3	2.818	0.305	0.0224	
15 minute summer	S92	18.001	S93	19.5	1.990	0.191	0.1314	
15 minute summer	S93	1.015	S94	316.3	2.275	0.709	4.0401	
15 minute summer	S94L	19.000	S94	10.9	2.477	0.192	0.0247	
15 minute summer	S94	1.016	S96	323.3	3.605	0.117	2.5694	
15 minute summer	S95La	20.000	S95	4.5	1.917	0.079	0.0137	
15 minute summer	S95Lb	21.000	S95	4.5	1.917	0.079	0.0085	
15 minute summer	S95	20.001	S96	13.3	1.649	0.065	0.2628	
15 minute summer	S96	1.017	S97	329.4	3.396	0.189	4.9338	
15 minute summer	S97L	22.000	S97	13.4	2.653	0.232	0.0279	
15 minute summer	S97	1.018	S98	341.0	3.169	0.149	3.8041	

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.562	0.043	10.8	0.0483	0.0000	OK
15 minute summer	S98	13	108.694	0.250	348.9	0.6359	0.0000	OK
15 minute summer	S99L	10	109.373	0.039	11.3	0.0440	0.0000	OK
15 minute summer	S99	13	108.100	0.199	357.0	0.5058	0.0000	OK
15 minute summer	S100	13	107.111	0.208	358.1	0.5296	0.0000	OK
480 minute summer	HW14	368	106.576	0.306	70.5	0.0000	0.0000	OK
480 minute summer	HW15	368	106.576	0.306	40.5	0.0000	0.0000	OK
480 minute summer	S101	464	106.580	0.327	38.6	1.8705	0.0000	SURCHARGED
15 minute summer	HW16	1	106.000	0.900	8.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	10.8	2.614	0.176	0.0168	
15 minute summer	S98	1.019	S99	351.3	3.180	0.245	4.4802	
15 minute summer	S99L	24.000	S99	11.3	3.125	0.146	0.0162	
15 minute summer	S99	1.020	S100	358.1	3.716	0.162	3.0052	
15 minute summer	S100	1.021	HW14	361.1	4.068	0.174	2.0645	
480 minute summer	HW14	Flow through pond	HW15	40.5	0.070	0.001	361.7314	
480 minute summer	HW15	1.022	S101	38.6	0.261	0.073	1.5892	
480 minute summer	S101	1.023	HW16	10.3	0.370	0.104	0.7466	320.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	10	115.092	0.094	12.5	0.1065	0.0000	OK
15 minute summer	S67	10	114.991	0.125	24.2	0.1414	0.0000	OK
15 minute summer	S68	11	114.857	0.153	38.2	0.1727	0.0000	OK
15 minute summer	S69L	10	114.943	0.090	17.8	0.1020	0.0000	OK
15 minute summer	S69	11	114.502	0.178	55.0	0.3146	0.0000	OK
15 minute summer	S70	11	114.433	0.176	55.2	0.3117	0.0000	OK
15 minute summer	S71L	10	114.597	0.097	38.8	0.1100	0.0000	OK
15 minute summer	S71	11	114.389	0.268	90.6	0.4744	0.0000	OK
15 minute summer	S72	10	114.926	0.099	16.5	0.1742	0.0000	OK
15 minute summer	S73La	10	114.831	0.084	10.9	0.0954	0.0000	OK
15 minute summer	S73Lb	10	114.938	0.208	26.7	0.2355	0.0000	SURCHARGED
15 minute summer	S73	10	114.600	0.144	58.5	0.2548	0.0000	OK
15 minute summer	S74	10	114.468	0.155	66.8	0.2745	0.0000	OK
15 minute summer	S75L	10	114.848	0.079	44.4	0.0897	0.0000	OK
15 minute summer	S75	11	114.388	0.319	203.9	0.5644	0.0000	OK
15 minute summer	S76	12	114.297	0.320	204.9	0.5652	0.0000	OK
15 minute summer	S77	12	114.251	0.333	206.4	0.5888	0.0000	OK
15 minute summer	S78L	10	114.377	0.225	26.3	0.2549	0.0000	SURCHARGED
15 minute summer	S78	12	114.239	0.456	237.4	0.8054	0.0000	SURCHARGED
15 minute summer	S79L	10	114.385	0.109	35.5	0.1236	0.0000	OK
15 minute summer	S79	11	113.900	0.327	271.5	0.5781	0.0000	OK
15 minute summer	S80L	10	114.744	0.042	10.9	0.0472	0.0000	OK
15 minute summer	S80	11	113.612	0.214	298.5	0.5450	0.0000	OK
15 minute summer	S81L	12	113.601	0.165	61.9	0.2916	0.0000	OK
15 minute summer	S81	12	113.699	0.711	125.6	1.2562	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	12.4	1.067	0.721	0.0718	
15 minute summer	S67	1.001	S68	24.0	1.060	0.603	0.3311	
15 minute summer	S68	1.002	S69	37.9	1.064	0.531	1.5590	
15 minute summer	S69L	2.000	S69	17.7	1.600	0.673	0.1165	
15 minute summer	S69	1.003	S70	55.2	0.974	0.347	1.5873	
15 minute summer	S70	1.004	S71	53.5	0.719	0.338	4.3963	
15 minute summer	S71L	3.000	S71	38.7	2.360	0.391	0.0705	
15 minute summer	S71	1.005	S75	89.7	0.912	0.393	1.1159	
15 minute summer	S72	4.000	S73	16.1	0.964	0.404	0.6254	
15 minute summer	S73La	5.000	S73	10.8	1.062	0.608	0.0669	
15 minute summer	S73Lb	6.000	S73	26.5	1.504	1.496	0.0856	
15 minute summer	S73	4.001	S74	58.2	1.445	0.314	0.6855	
15 minute summer	S74	4.002	S75	66.7	1.240	0.333	0.9916	
15 minute summer	S75L	7.000	S75	44.3	3.546	0.268	0.0662	
15 minute summer	S75	1.006	S76	202.1	1.691	0.884	2.1989	
15 minute summer	S76	1.007	S77	203.3	1.724	0.840	1.2872	
15 minute summer	S77	1.008	S78	203.5	1.444	0.629	1.9182	
15 minute summer	S78L	8.000	S78	26.0	1.478	1.459	0.1203	
15 minute summer	S78	1.009	S79	233.4	1.589	1.356	6.8191	
15 minute summer	S79L	9.000	S79	35.4	2.577	0.878	0.0888	
15 minute summer	S79	1.010	S80	269.6	2.406	0.742	3.4766	
15 minute summer	S80L	10.000	S80	10.9	2.727	0.168	0.0284	
15 minute summer	S80	1.011	S88	296.6	1.697	0.362	4.6562	
15 minute summer	S81L	11.000	S81	61.7	2.497	0.314	0.5280	
15 minute summer	S81	11.001	S82	77.9	0.857	0.492	6.7245	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	113.776	0.070	27.3	0.0793	0.0000	OK
15 minute summer	S82	12	113.654	0.769	115.5	1.3585	0.0000	SURCHARGED
15 minute summer	S83L	12	113.590	0.100	14.8	0.1128	0.0000	OK
15 minute summer	S83	12	113.600	0.818	128.7	1.4462	0.0000	SURCHARGED
15 minute summer	S84	12	113.585	0.829	120.1	1.4652	0.0000	SURCHARGED
15 minute summer	S85L	10	113.649	0.135	26.7	0.1530	0.0000	OK
15 minute summer	S85	12	113.672	0.350	30.8	0.3964	0.0000	SURCHARGED
15 minute summer	S86	12	113.547	0.810	136.1	1.4304	0.0000	SURCHARGED
15 minute summer	S87L	10	113.612	0.052	20.1	0.0585	0.0000	OK
15 minute summer	S87	12	113.500	0.806	157.3	1.4250	0.0000	SURCHARGED
15 minute summer	S88	12	113.452	0.938	439.7	1.6573	0.0000	SURCHARGED
15 minute summer	S89L	10	113.393	0.109	79.3	0.1233	0.0000	OK
15 minute summer	S89	12	113.010	0.611	499.4	1.0794	0.0000	SURCHARGED
15 minute summer	S91	12	112.658	0.542	492.7	1.3782	0.0000	OK
15 minute summer	S92L	10	113.630	0.082	32.9	0.0930	0.0000	OK
15 minute summer	S92	10	113.202	0.093	37.1	0.1057	0.0000	OK
15 minute summer	S93	13	112.588	0.516	523.7	1.3138	0.0000	OK
15 minute summer	S94L	10	113.260	0.063	20.7	0.0711	0.0000	OK
15 minute summer	S94	12	112.265	0.230	578.3	0.5849	0.0000	OK
15 minute summer	S95La	10	112.954	0.040	8.6	0.0448	0.0000	OK
15 minute summer	S95Lb	10	112.734	0.040	8.6	0.0448	0.0000	OK
15 minute summer	S95	10	112.250	0.071	25.7	0.0806	0.0000	OK
15 minute summer	S96	12	110.933	0.293	621.7	0.7469	0.0000	OK
15 minute summer	S97L	10	110.891	0.070	25.3	0.0789	0.0000	OK
15 minute summer	S97	12	109.906	0.255	596.9	0.6489	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	27.3	3.709	0.391	0.0443	
15 minute summer	S82	11.002	S83	110.9	0.952	0.698	6.6809	
15 minute summer	S83L	13.000	S83	14.8	2.375	0.304	0.0831	
15 minute summer	S83	11.003	S84	113.8	0.897	0.717	1.6865	
15 minute summer	S84	11.004	S86	124.0	0.871	0.782	1.2344	
15 minute summer	S85L	14.000	S85	26.5	1.576	1.049	0.0997	
15 minute summer	S85	14.001	S86	30.6	1.768	0.406	0.6825	
15 minute summer	S86	11.005	S87	138.7	0.997	0.877	2.8114	
15 minute summer	S87L	15.000	S87	20.1	3.660	0.257	0.0342	
15 minute summer	S87	11.006	S88	156.2	1.046	0.983	6.8032	
15 minute summer	S88	1.012	S89	440.1	2.037	1.939	11.1916	
15 minute summer	S89L	16.000	S89	79.2	4.089	0.479	0.1709	
15 minute summer	S89	1.013	S91	492.7	2.284	1.771	3.6529	
15 minute summer	S91	1.014	S93	493.7	1.506	1.072	10.2397	
15 minute summer	S92L	18.000	S92	32.8	3.328	0.580	0.0360	
15 minute summer	S92	18.001	S93	37.0	2.377	0.363	0.2091	
15 minute summer	S93	1.015	S94	558.0	2.727	1.250	5.9699	
15 minute summer	S94L	19.000	S94	20.7	2.958	0.365	0.0392	
15 minute summer	S94	1.016	S96	587.4	4.311	0.212	3.8110	
15 minute summer	S95La	20.000	S95	8.6	2.316	0.151	0.0217	
15 minute summer	S95Lb	21.000	S95	8.6	2.316	0.151	0.0135	
15 minute summer	S95	20.001	S96	25.5	1.997	0.125	0.4161	
15 minute summer	S96	1.017	S97	572.2	3.975	0.329	7.2879	
15 minute summer	S97L	22.000	S97	25.2	3.153	0.439	0.0443	
15 minute summer	S97	1.018	S98	600.9	3.727	0.262	5.7350	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.579	0.060	20.4	0.0676	0.0000	OK
15 minute summer	S98	12	108.784	0.340	624.8	0.8651	0.0000	OK
15 minute summer	S99L	10	109.388	0.054	21.4	0.0613	0.0000	OK
15 minute summer	S99	12	108.171	0.270	649.3	0.6882	0.0000	OK
15 minute summer	S100	12	107.188	0.285	648.9	0.7261	0.0000	OK
480 minute summer	HW14	480	106.806	0.536	126.0	0.0000	0.0000	OK
480 minute summer	HW15	488	106.806	0.536	72.9	0.0000	0.0000	OK
600 minute summer	S101	585	106.833	0.580	68.4	3.3207	0.0000	SURCHARGED
15 minute summer	HW16	1	106.000	0.900	10.3	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	20.4	3.120	0.333	0.0265	
15 minute summer	S98	1.019	S99	632.3	3.760	0.441	6.8127	
15 minute summer	S99L	24.000	S99	21.4	3.743	0.277	0.0257	
15 minute summer	S99	1.020	S100	648.9	4.377	0.293	4.6244	
15 minute summer	S100	1.021	HW14	648.7	5.049	0.313	2.9792	
480 minute summer	HW14	Flow through pond	HW15	72.9	0.078	0.002	731.0864	
480 minute summer	HW15	1.022	S101	67.4	0.227	0.127	3.1614	
600 minute summer	S101	1.023	HW16	10.7	0.384	0.109	0.7496	418.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	13	115.588	0.590	22.7	0.6670	0.0000	SURCHARGED
15 minute summer	S67	13	115.546	0.680	44.0	0.7690	0.0000	SURCHARGED
15 minute summer	S68	13	115.504	0.800	69.2	0.9044	0.0000	SURCHARGED
15 minute summer	S69L	12	115.579	0.726	32.3	0.8206	0.0000	SURCHARGED
15 minute summer	S69	13	115.431	1.107	98.2	1.9560	0.0000	SURCHARGED
15 minute summer	S70	13	115.422	1.165	81.0	2.0578	0.0000	SURCHARGED
15 minute summer	S71L	12	115.422	0.922	70.6	1.0426	0.0000	SURCHARGED
15 minute summer	S71	13	115.381	1.261	120.4	2.2287	0.0000	SURCHARGED
15 minute summer	S72	12	115.484	0.657	29.9	1.1615	0.0000	SURCHARGED
15 minute summer	S73La	12	115.468	0.721	19.7	0.8159	0.0000	SURCHARGED
15 minute summer	S73Lb	12	115.633	0.903	48.4	1.0215	0.0000	SURCHARGED
15 minute summer	S73	12	115.425	0.969	106.0	1.7121	0.0000	SURCHARGED
15 minute summer	S74	12	115.402	1.089	111.5	1.9234	0.0000	SURCHARGED
15 minute summer	S75L	12	115.432	0.663	80.7	0.7499	0.0000	SURCHARGED
15 minute summer	S75	12	115.369	1.300	273.0	2.2969	0.0000	SURCHARGED
15 minute summer	S76	12	115.260	1.282	249.4	2.2661	0.0000	SURCHARGED
15 minute summer	S77	12	115.197	1.279	261.3	2.2593	0.0000	SURCHARGED
15 minute summer	S78L	12	115.417	1.264	47.8	1.4301	0.0000	SURCHARGED
15 minute summer	S78	12	115.116	1.333	313.3	2.3548	0.0000	SURCHARGED
15 minute summer	S79L	12	115.322	1.046	64.6	1.1830	0.0000	SURCHARGED
15 minute summer	S79	12	114.722	1.149	378.4	2.0306	0.0000	SURCHARGED
15 minute summer	S80L	12	114.763	0.061	19.7	0.0691	0.0000	OK
15 minute summer	S80	12	114.557	1.159	390.5	2.9491	0.0000	SURCHARGED
15 minute summer	S81L	12	115.073	1.637	112.4	2.8920	0.0000	SURCHARGED
15 minute summer	S81	12	115.013	2.025	147.9	3.5783	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	22.5	1.277	1.306	0.1087	
15 minute summer	S67	1.001	S68	43.5	1.261	1.095	0.5824	
15 minute summer	S68	1.002	S69	66.7	1.245	0.935	3.0825	
15 minute summer	S69L	2.000	S69	31.5	1.789	1.199	0.1857	
15 minute summer	S69	1.003	S70	81.0	1.036	0.510	4.3407	
15 minute summer	S70	1.004	S71	109.0	0.825	0.688	8.9186	
15 minute summer	S71L	3.000	S71	66.5	2.553	0.671	0.1710	
15 minute summer	S71	1.005	S75	161.2	1.129	0.707	1.6150	
15 minute summer	S72	4.000	S73	29.2	1.065	0.734	1.4909	
15 minute summer	S73La	5.000	S73	19.5	1.197	1.096	0.1158	
15 minute summer	S73Lb	6.000	S73	47.7	2.712	2.696	0.0867	
15 minute summer	S73	4.001	S74	96.0	1.587	0.519	1.8420	
15 minute summer	S74	4.002	S75	108.3	1.237	0.541	1.8608	
15 minute summer	S75L	7.000	S75	79.4	3.882	0.480	0.1889	
15 minute summer	S75	1.006	S76	247.5	1.686	1.082	2.8982	
15 minute summer	S76	1.007	S77	259.5	1.691	1.072	1.6610	
15 minute summer	S77	1.008	S78	271.6	1.714	0.840	2.1380	
15 minute summer	S78L	8.000	S78	45.4	2.576	2.542	0.1203	
15 minute summer	S78	1.009	S79	308.8	1.949	1.795	7.5243	
15 minute summer	S79L	9.000	S79	62.7	3.564	1.557	0.1140	
15 minute summer	S79	1.010	S80	360.4	2.409	0.992	6.7003	
15 minute summer	S80L	10.000	S80	19.7	3.167	0.304	0.0866	
15 minute summer	S80	1.011	S88	396.4	1.866	0.484	6.7337	
15 minute summer	S81L	11.000	S81	105.4	2.697	0.536	0.6753	
15 minute summer	S81	11.001	S82	117.7	0.919	0.744	6.7245	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	115.144	1.438	49.6	1.6262	0.0000	SURCHARGED
15 minute summer	S82	12	114.966	2.081	177.0	3.6773	0.0000	SURCHARGED
15 minute summer	S83L	12	114.937	1.447	26.9	1.6368	0.0000	SURCHARGED
15 minute summer	S83	12	114.859	2.077	194.9	3.6696	0.0000	SURCHARGED
15 minute summer	S84	12	114.822	2.066	201.8	3.6498	0.0000	SURCHARGED
15 minute summer	S85L	12	115.202	1.688	48.4	1.9094	0.0000	SURCHARGED
15 minute summer	S85	12	114.917	1.595	47.3	1.8045	0.0000	SURCHARGED
15 minute summer	S86	12	114.792	2.055	243.9	3.6305	0.0000	SURCHARGED
15 minute summer	S87L	12	114.768	1.208	36.5	1.3657	0.0000	SURCHARGED
15 minute summer	S87	12	114.689	1.995	282.4	3.5248	0.0000	SURCHARGED
15 minute summer	S88	12	114.358	1.844	681.6	3.2581	0.0000	SURCHARGED
15 minute summer	S89L	11	113.725	0.441	144.1	0.4986	0.0000	SURCHARGED
15 minute summer	S89	12	113.342	0.943	797.7	1.6670	0.0000	SURCHARGED
15 minute summer	S91	12	112.876	0.760	797.0	1.9348	0.0000	SURCHARGED
15 minute summer	S92L	10	113.681	0.133	59.8	0.1501	0.0000	OK
15 minute summer	S92	10	113.241	0.133	67.3	0.1501	0.0000	OK
15 minute summer	S93	12	112.796	0.724	867.0	1.8434	0.0000	OK
15 minute summer	S94L	10	113.287	0.090	37.7	0.1014	0.0000	OK
30 minute summer	S94	18	112.349	0.313	1028.0	0.7978	0.0000	OK
15 minute summer	S95La	10	112.968	0.054	15.5	0.0607	0.0000	OK
15 minute summer	S95Lb	10	112.748	0.054	15.5	0.0608	0.0000	OK
15 minute summer	S95	10	112.275	0.096	46.4	0.1089	0.0000	OK
15 minute summer	S96	11	111.033	0.393	968.0	1.0014	0.0000	OK
15 minute summer	S97L	10	110.923	0.102	46.0	0.1150	0.0000	OK
15 minute summer	S97	11	109.991	0.340	1023.8	0.8654	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	41.0	4.031	0.589	0.0607	
15 minute summer	S82	11.002	S83	169.3	1.069	1.066	6.6809	
15 minute summer	S83L	13.000	S83	20.6	2.629	0.424	0.0974	
15 minute summer	S83	11.003	S84	189.2	1.194	1.192	1.6865	
15 minute summer	S84	11.004	S86	200.7	1.267	1.265	1.2344	
15 minute summer	S85L	14.000	S85	39.9	2.266	1.581	0.1036	
15 minute summer	S85	14.001	S86	43.2	1.752	0.572	0.6825	
15 minute summer	S86	11.005	S87	242.6	1.531	1.534	2.8114	
15 minute summer	S87L	15.000	S87	43.2	3.565	0.552	0.0524	
15 minute summer	S87	11.006	S88	280.8	1.773	1.768	6.8032	
15 minute summer	S88	1.012	S89	685.2	3.172	3.019	11.1916	
15 minute summer	S89L	16.000	S89	140.3	3.983	0.847	0.2325	
15 minute summer	S89	1.013	S91	797.0	3.690	2.865	3.7734	
15 minute summer	S91	1.014	S93	796.0	1.830	1.728	13.6728	
15 minute summer	S92L	18.000	S92	59.5	3.606	1.051	0.0621	
15 minute summer	S92	18.001	S93	67.1	2.759	0.659	0.3885	
15 minute summer	S93	1.015	S94	858.7	2.754	1.924	8.1340	
15 minute summer	S94L	19.000	S94	37.6	3.433	0.664	0.0616	
30 minute summer	S94	1.016	S96	940.1	4.755	0.339	5.5209	
15 minute summer	S95La	20.000	S95	15.5	2.735	0.273	0.0331	
15 minute summer	S95Lb	21.000	S95	15.5	2.735	0.273	0.0206	
15 minute summer	S95	20.001	S96	46.0	2.363	0.226	0.6350	
15 minute summer	S96	1.017	S97	969.5	4.535	0.557	10.7002	
15 minute summer	S97L	22.000	S97	45.9	3.618	0.798	0.0702	
15 minute summer	S97	1.018	S98	1019.8	4.204	0.445	8.5305	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.604	0.084	37.1	0.0955	0.0000	OK
15 minute summer	S98	11	108.914	0.470	1072.4	1.1969	0.0000	OK
15 minute summer	S99L	10	109.410	0.076	38.9	0.0855	0.0000	OK
15 minute summer	S99	11	108.266	0.365	1100.6	0.9291	0.0000	OK
15 minute summer	S100	12	107.289	0.386	1109.3	0.9825	0.0000	OK
720 minute summer	HW14	720	107.230	0.960	195.1	0.0000	0.0000	OK
720 minute summer	HW15	735	107.230	0.960	99.1	0.0000	0.0000	FLOOD RISK
720 minute summer	S101	735	107.255	1.002	60.7	5.7374	0.0000	FLOOD RISK
15 minute summer	HW16	1	106.000	0.900	10.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	37.0	3.634	0.605	0.0415	
15 minute summer	S98	1.019	S99	1066.4	4.278	0.744	10.1790	
15 minute summer	S99L	24.000	S99	38.8	4.385	0.504	0.0399	
15 minute summer	S99	1.020	S100	1109.3	5.042	0.501	6.8619	
15 minute summer	S100	1.021	HW14	1112.6	5.991	0.536	4.2010	
720 minute summer	HW14	Flow through pond	HW15	99.1	0.088	0.002	1525.6255	
720 minute summer	HW15	1.022	S101	60.7	0.138	0.114	3.9994	
720 minute summer	S101	1.023	HW16	10.7	0.384	0.109	0.7496	465.4

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S67L	13	116.007	1.009	25.0	1.1416	0.0000	SURCHARGED
15 minute summer	S67	13	115.958	1.092	48.4	1.2346	0.0000	SURCHARGED
15 minute summer	S68	13	115.909	1.205	72.0	1.3630	0.0000	SURCHARGED
15 minute summer	S69L	12	115.991	1.138	35.5	1.2866	0.0000	FLOOD RISK
15 minute summer	S69	13	115.827	1.503	93.7	2.6557	0.0000	FLOOD RISK
15 minute summer	S70	13	115.819	1.562	88.1	2.7595	0.0000	FLOOD RISK
15 minute summer	S71L	12	115.802	1.302	77.6	1.4729	0.0000	SURCHARGED
15 minute summer	S71	13	115.775	1.655	117.0	2.9237	0.0000	FLOOD RISK
15 minute summer	S72	13	115.877	1.050	32.9	1.8556	0.0000	SURCHARGED
15 minute summer	S73La	13	115.856	1.109	21.7	1.2538	0.0000	SURCHARGED
15 minute summer	S73Lb	12	116.040	1.310	53.3	1.4820	0.0000	SURCHARGED
15 minute summer	S73	13	115.816	1.360	106.3	2.4035	0.0000	SURCHARGED
15 minute summer	S74	13	115.793	1.480	118.4	2.6145	0.0000	SURCHARGED
15 minute summer	S75L	12	115.814	1.045	88.8	1.1816	0.0000	SURCHARGED
15 minute summer	S75	13	115.759	1.690	263.6	2.9861	0.0000	SURCHARGED
15 minute summer	S76	13	115.634	1.657	267.1	2.9287	0.0000	SURCHARGED
15 minute summer	S77	13	115.558	1.640	279.5	2.8983	0.0000	SURCHARGED
15 minute summer	S78L	12	115.816	1.664	52.6	1.8816	0.0000	SURCHARGED
15 minute summer	S78	12	115.456	1.673	320.2	2.9557	0.0000	SURCHARGED
15 minute summer	S79L	12	115.727	1.451	71.0	1.6411	0.0000	SURCHARGED
15 minute summer	S79	12	115.011	1.438	376.6	2.5403	0.0000	SURCHARGED
15 minute summer	S80L	12	114.858	0.156	21.7	0.1763	0.0000	SURCHARGED
15 minute summer	S80	12	114.820	1.422	416.3	3.6192	0.0000	SURCHARGED
15 minute summer	S81L	12	115.431	1.995	123.7	3.5252	0.0000	FLOOD RISK
15 minute summer	S81	12	115.359	2.371	141.7	4.1891	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S67L	1.000	S67	24.7	1.403	1.436	0.1087	
15 minute summer	S67	1.001	S68	43.7	1.249	1.100	0.5824	
15 minute summer	S68	1.002	S69	62.8	1.208	0.880	3.0825	
15 minute summer	S69L	2.000	S69	30.9	1.757	1.178	0.1857	
15 minute summer	S69	1.003	S70	88.1	1.061	0.554	4.3407	
15 minute summer	S70	1.004	S71	104.0	0.837	0.656	8.9186	
15 minute summer	S71L	3.000	S71	66.5	2.612	0.671	0.1710	
15 minute summer	S71	1.005	S75	167.2	1.190	0.733	1.6150	
15 minute summer	S72	4.000	S73	31.3	1.088	0.787	1.4909	
15 minute summer	S73La	5.000	S73	19.9	1.200	1.118	0.1158	
15 minute summer	S73Lb	6.000	S73	48.2	2.739	2.723	0.0867	
15 minute summer	S73	4.001	S74	102.1	1.485	0.552	1.8420	
15 minute summer	S74	4.002	S75	106.3	1.238	0.531	1.8608	
15 minute summer	S75L	7.000	S75	85.6	3.641	0.517	0.1889	
15 minute summer	S75	1.006	S76	264.8	1.731	1.158	2.8982	
15 minute summer	S76	1.007	S77	277.5	1.752	1.147	1.6610	
15 minute summer	S77	1.008	S78	290.5	1.833	0.898	2.1380	
15 minute summer	S78L	8.000	S78	43.6	2.475	2.442	0.1203	
15 minute summer	S78	1.009	S79	331.1	2.090	1.924	7.5243	
15 minute summer	S79L	9.000	S79	62.0	3.522	1.538	0.1140	
15 minute summer	S79	1.010	S80	381.8	2.381	1.050	6.7003	
15 minute summer	S80L	10.000	S80	21.4	3.252	0.330	0.1253	
15 minute summer	S80	1.011	S88	424.6	1.965	0.519	6.7337	
15 minute summer	S81L	11.000	S81	107.8	2.763	0.549	0.6753	
15 minute summer	S81	11.001	S82	131.7	0.932	0.832	6.7245	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S82L	12	115.515	1.809	54.6	2.0461	0.0000	SURCHARGED
15 minute summer	S82	12	115.301	2.416	196.9	4.2699	0.0000	SURCHARGED
15 minute summer	S83L	12	115.263	1.773	29.6	2.0056	0.0000	SURCHARGED
15 minute summer	S83	12	115.173	2.391	213.4	4.2242	0.0000	SURCHARGED
15 minute summer	S84	12	115.130	2.374	219.7	4.1945	0.0000	SURCHARGED
15 minute summer	S85L	12	115.584	2.070	53.3	2.3408	0.0000	FLOOD RISK
15 minute summer	S85	12	115.240	1.919	51.9	2.1705	0.0000	SURCHARGED
15 minute summer	S86	12	115.095	2.358	264.0	4.1658	0.0000	SURCHARGED
15 minute summer	S87L	12	115.067	1.507	40.1	1.7048	0.0000	SURCHARGED
15 minute summer	S87	12	114.976	2.282	304.9	4.0316	0.0000	SURCHARGED
15 minute summer	S88	12	114.589	2.075	731.1	3.6659	0.0000	SURCHARGED
15 minute summer	S89L	11	113.886	0.602	158.5	0.6810	0.0000	SURCHARGED
15 minute summer	S89	12	113.411	1.012	862.0	1.7889	0.0000	SURCHARGED
15 minute summer	S91	12	112.880	0.764	859.0	1.9451	0.0000	SURCHARGED
15 minute summer	S92L	10	113.843	0.295	65.8	0.3338	0.0000	SURCHARGED
15 minute summer	S92	10	113.248	0.140	73.3	0.1587	0.0000	OK
30 minute summer	S93	21	112.742	0.670	917.5	1.7056	0.0000	OK
15 minute summer	S94L	10	113.292	0.095	41.4	0.1079	0.0000	OK
15 minute summer	S94	12	112.340	0.305	1000.4	0.7762	0.0000	OK
15 minute summer	S95La	10	112.971	0.057	17.1	0.0640	0.0000	OK
15 minute summer	S95Lb	10	112.751	0.057	17.1	0.0640	0.0000	OK
15 minute summer	S95	10	112.280	0.101	51.2	0.1147	0.0000	OK
30 minute summer	S96	19	111.058	0.418	999.9	1.0650	0.0000	OK
15 minute summer	S97L	10	110.931	0.110	50.7	0.1240	0.0000	OK
15 minute summer	S97	11	110.020	0.369	1151.9	0.9392	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S82L	12.000	S82	45.1	4.123	0.648	0.0607	
15 minute summer	S82	11.002	S83	186.5	1.177	1.175	6.6809	
15 minute summer	S83L	13.000	S83	22.7	2.694	0.466	0.0974	
15 minute summer	S83	11.003	S84	205.8	1.299	1.296	1.6865	
15 minute summer	S84	11.004	S86	217.2	1.371	1.369	1.2344	
15 minute summer	S85L	14.000	S85	43.7	2.483	1.732	0.1036	
15 minute summer	S85	14.001	S86	46.8	1.734	0.621	0.6825	
15 minute summer	S86	11.005	S87	261.9	1.653	1.656	2.8114	
15 minute summer	S87L	15.000	S87	31.9	3.657	0.407	0.0524	
15 minute summer	S87	11.006	S88	302.9	1.912	1.907	6.8032	
15 minute summer	S88	1.012	S89	736.9	3.412	3.247	11.1916	
15 minute summer	S89L	16.000	S89	155.7	4.082	0.941	0.2325	
15 minute summer	S89	1.013	S91	859.0	3.977	3.088	3.7734	
15 minute summer	S91	1.014	S93	859.9	1.995	1.867	13.2295	
15 minute summer	S92L	18.000	S92	64.7	3.675	1.143	0.0638	
15 minute summer	S92	18.001	S93	72.9	2.810	0.716	0.3492	
30 minute summer	S93	1.015	S94	982.7	3.362	2.202	7.9796	
15 minute summer	S94L	19.000	S94	41.3	3.502	0.729	0.0663	
15 minute summer	S94	1.016	S96	1015.3	4.874	0.366	5.8188	
15 minute summer	S95La	20.000	S95	17.1	2.810	0.301	0.0355	
15 minute summer	S95Lb	21.000	S95	17.1	2.810	0.301	0.0221	
15 minute summer	S95	20.001	S96	50.8	2.429	0.249	0.6816	
30 minute summer	S96	1.017	S97	1045.0	4.598	0.601	11.3728	
15 minute summer	S97L	22.000	S97	50.6	3.674	0.880	0.0761	
15 minute summer	S97	1.018	S98	1177.1	4.364	0.513	9.4640	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 99.61%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S98L	10	109.609	0.090	40.8	0.1015	0.0000	OK
15 minute summer	S98	11	108.959	0.514	1234.8	1.3093	0.0000	OK
15 minute summer	S99L	10	109.414	0.080	42.8	0.0906	0.0000	OK
15 minute summer	S99	12	108.282	0.381	1205.0	0.9686	0.0000	OK
720 minute summer	S100	510	107.353	0.450	246.2	1.1445	0.0000	OK
960 minute summer	HW14	975	107.324	1.054	269.5	0.0000	0.0000	OK
960 minute summer	HW15	975	107.324	1.054	103.5	0.0000	0.0000	FLOOD RISK
960 minute summer	S101	975	107.324	1.071	16.2	6.1345	0.0000	FLOOD RISK
15 minute summer	HW16	1	106.000	0.900	10.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S98L	23.000	S98	40.7	3.713	0.665	0.0446	
15 minute summer	S98	1.019	S99	1164.1	4.357	0.812	11.0306	
15 minute summer	S99L	24.000	S99	42.7	4.489	0.554	0.0428	
15 minute summer	S99	1.020	S100	1197.6	5.166	0.540	7.2294	
720 minute summer	S100	1.021	HW14	218.6	0.874	0.105	8.0763	
960 minute summer	HW14	Flow through pond	HW15	103.5	0.075	0.003	1722.6510	
960 minute summer	HW15	1.022	S101	16.2	0.181	0.030	3.9994	
960 minute summer	S101	1.023	HW16	10.7	0.384	0.109	0.7496	576.7

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S102	0.047	5.00	113.330	Manhole	1200	444479.431	291754.803	2.265
S103	0.029	5.00	112.628	Manhole	1200	444472.108	291734.898	2.624
S104L	0.068	5.00	112.267	Manhole	1200	444472.650	291718.227	2.264
S104	0.019	5.00	111.735	Manhole	1200	444483.601	291711.432	3.079
S105	0.018	5.00	111.072	Manhole	1200	444481.686	291691.630	3.464
S106	0.020	5.00	110.748	Manhole	1200	444497.965	291672.775	3.389
S107	0.010	5.00	110.593	Manhole	1200	444501.855	291658.744	3.294
S108	0.012	5.00	110.213	Manhole	1200	444499.035	291644.546	2.973
S109L	0.053	5.00	109.640	Manhole	1200	444485.970	291638.442	2.150
S109	0.030	5.00	109.648	Manhole	1200	444490.094	291633.112	2.467
S110L	0.060	5.00	108.250	Manhole	1200	444459.015	291612.253	1.144
S110	0.027	5.00	108.270	Manhole	1200	444462.690	291608.295	1.518
S111L	0.050	5.00	107.600	Manhole	1200	444434.035	291590.102	1.712
S111	0.010	5.00	107.562	Manhole	1200	444435.285	291583.479	2.042
S112	0.033	5.00	107.313	Manhole	1200	444421.127	291579.546	1.940
S113L	0.088	5.00	107.370	Manhole	1200	444399.148	291588.949	1.882
S113			107.389	Manhole	1200	444398.098	291584.164	2.325
HW21			106.300	Manhole		444392.865	291574.374	1.269
S114L	0.053	5.00	110.300	Manhole	1200	444454.757	291676.928	2.878
S114	0.037	5.00	110.153	Manhole	1200	444459.264	291672.153	3.488
S115La	0.129	5.00	108.990	Manhole	1200	444427.447	291651.484	2.439
S115Lb	0.044	5.00	109.000	Manhole	1200	444433.123	291641.030	2.550
S115	0.021	5.00	108.785	Manhole	1200	444430.189	291644.190	2.598
S116	0.056	5.00	108.467	Manhole	1200	444416.379	291637.767	2.344
S117La	0.061	5.00	108.900	Manhole	1200	444384.406	291638.524	2.989
S117Lb	0.061	5.00	109.000	Manhole	1200	444387.944	291649.243	2.725
S117			108.819	Manhole	1200	444385.327	291643.147	3.212
S118	0.022	5.00	108.654	Manhole	1200	444375.733	291648.800	3.117
S119			107.717	Manhole	1200	444349.998	291624.828	2.323
S120L	0.086	5.00	108.000	Manhole	1200	444358.999	291610.511	2.472
S120			107.000	Manhole	1200	444354.732	291606.222	1.758
HW22			106.286	Manhole		444355.507	291596.120	1.205
HW23		5.00	106.286	Manhole		444370.615	291565.689	1.255
S121			106.300	Manhole	2700	444364.822	291560.491	1.289
HW24			105.600	Manhole		444342.087	291539.997	0.895

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S102	S103	21.209	0.600	111.065	110.005	1.060	20.0	225	5.12	50.0
1.001	S103	S104	26.130	0.600	110.004	108.731	1.273	20.5	225	5.27	50.0
2.000	S104L	S104	12.888	0.600	110.003	108.806	1.197	10.8	150	5.07	50.0
1.002	S104	S105	19.894	0.600	108.656	107.608	1.048	19.0	300	5.36	50.0
1.003	S105	S106	24.911	0.600	107.608	107.359	0.249	100.0	300	5.63	50.0
1.004	S106	S107	14.560	0.600	107.359	107.299	0.060	242.7	300	5.87	50.0
1.005	S107	S108	14.475	0.600	107.299	107.240	0.059	245.3	300	6.11	49.9
1.006	S108	S109	14.515	0.600	107.240	107.181	0.059	246.0	300	6.35	49.0
3.000	S109L	S109	6.740	0.600	107.490	107.331	0.159	42.4	150	5.07	50.0
1.007	S109	S110	36.971	0.600	107.181	106.811	0.370	99.9	300	6.74	47.6
4.000	S110L	S110	5.401	0.600	107.106	107.052	0.054	100.0	150	5.09	50.0
1.008	S110	S111	36.971	0.600	106.752	105.520	1.232	30.0	450	6.91	47.0
5.000	S111L	S111	6.740	0.600	105.888	105.821	0.067	100.6	150	5.11	50.0
1.009	S111	S112	14.694	0.600	105.520	105.373	0.147	100.0	450	7.03	46.6
1.010	S112	S113	23.488	0.600	105.373	105.139	0.234	100.4	450	7.22	46.0
6.000	S113L	S113	4.898	0.600	105.488	105.439	0.049	100.0	150	5.08	50.0
1.011	S113	HW21	11.102	0.600	105.064	105.031	0.033	336.4	525	7.37	45.5
7.000	S114L	S114	6.566	0.600	107.422	106.815	0.607	10.8	150	5.04	50.0
7.001	S114	S115	40.340	0.600	106.665	106.262	0.403	100.1	300	5.46	50.0
8.000	S115La	S115	7.793	0.600	106.551	106.337	0.214	36.4	225	5.06	50.0
9.000	S115Lb	S115	4.312	0.600	106.450	106.412	0.038	113.5	150	5.08	50.0
7.002	S115	S116	15.230	0.600	106.187	106.123	0.064	238.0	375	5.68	50.0
7.003	S116	S117	43.003	0.600	106.123	105.607	0.516	83.3	375	6.04	50.0
10.000	S117La	S117	4.714	0.600	105.911	105.832	0.079	59.7	150	5.06	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S102	S103	2.938	116.8	6.4	2.040	2.398	2.040	2.398	0.047	0.0
1.001	S103	S104	2.901	115.3	10.3	2.399	2.779	2.399	2.779	0.076	0.0
2.000	S104L	S104	3.088	54.6	9.2	2.114	2.779	2.114	2.779	0.068	0.0
1.002	S104	S105	3.625	256.2	22.1	2.779	3.164	2.779	3.164	0.163	0.0
1.003	S105	S106	1.572	111.1	24.5	3.164	3.089	3.089	3.164	0.181	0.0
1.004	S106	S107	1.005	71.0	27.2	3.089	2.994	2.994	3.089	0.201	0.0
1.005	S107	S108	0.999	70.6	28.6	2.994	2.673	2.673	2.994	0.211	0.0
1.006	S108	S109	0.998	70.5	29.6	2.673	2.167	2.167	2.673	0.223	0.0
3.000	S109L	S109	1.550	27.4	7.2	2.000	2.167	2.000	2.167	0.053	0.0
1.007	S109	S110	1.573	111.2	39.5	2.167	1.159	1.159	2.167	0.306	0.0
4.000	S110L	S110	1.005	17.8	8.1	0.994	1.068	0.994	1.068	0.060	0.0
1.008	S110	S111	3.721	591.9	50.1	1.068	1.592	1.068	1.592	0.393	0.0
5.000	S111L	S111	1.002	17.7	6.8	1.562	1.591	1.562	1.591	0.050	0.0
1.009	S111	S112	2.033	323.4	57.3	1.592	1.490	1.490	1.592	0.453	0.0
1.010	S112	S113	2.029	322.7	60.6	1.490	1.800	1.490	1.800	0.486	0.0
6.000	S113L	S113	1.005	17.8	11.9	1.732	1.800	1.732	1.800	0.088	0.0
1.011	S113	HW21	1.215	263.1	70.8	1.800	0.744	0.744	1.800	0.574	0.0
7.000	S114L	S114	3.080	54.4	7.2	2.728	3.188	2.728	3.188	0.053	0.0
7.001	S114	S115	1.571	111.1	12.2	3.188	2.223	2.223	3.188	0.090	0.0
8.000	S115La	S115	2.175	86.5	17.5	2.214	2.223	2.214	2.223	0.129	0.0
9.000	S115Lb	S115	0.942	16.7	6.0	2.400	2.223	2.223	2.400	0.044	0.0
7.002	S115	S116	1.170	129.2	38.5	2.223	1.969	1.969	2.223	0.284	0.0
7.003	S116	S117	1.986	219.3	46.1	1.969	2.837	1.969	2.837	0.340	0.0
10.000	S117La	S117	1.304	23.0	8.3	2.839	2.837	2.837	2.839	0.061	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.000	S117Lb	S117	6.634	0.600	106.275	105.832	0.443	15.0	150	5.04	50.0
7.004	S117	S118	11.136	0.600	105.607	105.537	0.070	159.1	375	6.17	49.7
7.005	S118	S119	35.170	0.600	105.537	105.394	0.143	245.9	375	6.68	47.8
7.006	S119	S120	19.199	0.600	105.394	105.242	0.152	126.3	375	6.88	47.1
12.000	S120L	S120	6.050	0.600	105.528	105.467	0.061	99.2	150	5.10	50.0
7.007	S120	HW22	10.132	0.600	105.242	105.181	0.061	166.1	375	7.00	46.7
1.012	HW23	S121	7.783	0.600	105.031	105.011	0.020	389.2	525	5.11	50.0
1.013	S121	HW24	30.609	0.600	105.011	104.705	0.306	100.0	225	5.51	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
11.000	S117Lb	S117	2.616	46.2	8.3	2.575	2.837	2.575	2.837	0.061	0.0
7.004	S117	S118	1.434	158.3	62.2	2.837	2.742	2.742	2.837	0.462	0.0
7.005	S118	S119	1.151	127.1	62.7	2.742	1.948	1.948	2.742	0.484	0.0
7.006	S119	S120	1.610	177.9	61.8	1.948	1.383	1.383	1.948	0.484	0.0
12.000	S120L	S120	1.009	17.8	11.7	2.322	1.383	1.383	2.322	0.086	0.0
7.007	S120	HW22	1.403	154.9	72.2	1.383	0.730	0.730	1.383	0.570	0.0
1.012	HW23	S121	1.129	244.4	0.0	0.730	0.764	0.730	0.764	0.000	0.0
1.013	S121	HW24	1.307	52.0	0.0	1.064	0.670	0.670	1.064	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	21.209	20.0	225	113.330	111.065	2.040	112.628	110.005	2.398
1.001	26.130	20.5	225	112.628	110.004	2.399	111.735	108.731	2.779
2.000	12.888	10.8	150	112.267	110.003	2.114	111.735	108.806	2.779
1.002	19.894	19.0	300	111.735	108.656	2.779	111.072	107.608	3.164
1.003	24.911	100.0	300	111.072	107.608	3.164	110.748	107.359	3.089
1.004	14.560	242.7	300	110.748	107.359	3.089	110.593	107.299	2.994
1.005	14.475	245.3	300	110.593	107.299	2.994	110.213	107.240	2.673
1.006	14.515	246.0	300	110.213	107.240	2.673	109.648	107.181	2.167
3.000	6.740	42.4	150	109.640	107.490	2.000	109.648	107.331	2.167
1.007	36.971	99.9	300	109.648	107.181	2.167	108.270	106.811	1.159
4.000	5.401	100.0	150	108.250	107.106	0.994	108.270	107.052	1.068
1.008	36.971	30.0	450	108.270	106.752	1.068	107.562	105.520	1.592

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
1.000	S102	1200	Manhole	S103	1200	1
1.001	S103	1200	Manhole	S104	1200	1
2.000	S104L	1200	Manhole	S104	1200	1
1.002	S104	1200	Manhole	S105	1200	1
1.003	S105	1200	Manhole	S106	1200	1
1.004	S106	1200	Manhole	S107	1200	1
1.005	S107	1200	Manhole	S108	1200	1
1.006	S108	1200	Manhole	S109	1200	1
3.000	S109L	1200	Manhole	S109	1200	1
1.007	S109	1200	Manhole	S110	1200	1
4.000	S110L	1200	Manhole	S110	1200	1
1.008	S110	1200	Manhole	S111	1200	1

Pipeline Schedule

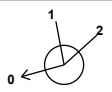
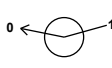
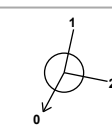
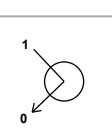
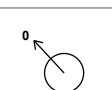
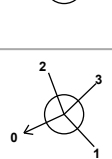
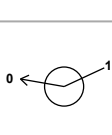
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.000	6.740	100.6	150	107.600	105.888	1.562	107.562	105.821	1.591
1.009	14.694	100.0	450	107.562	105.520	1.592	107.313	105.373	1.490
1.010	23.488	100.4	450	107.313	105.373	1.490	107.389	105.139	1.800
6.000	4.898	100.0	150	107.370	105.488	1.732	107.389	105.439	1.800
1.011	11.102	336.4	525	107.389	105.064	1.800	106.300	105.031	0.744
7.000	6.566	10.8	150	110.300	107.422	2.728	110.153	106.815	3.188
7.001	40.340	100.1	300	110.153	106.665	3.188	108.785	106.262	2.223
8.000	7.793	36.4	225	108.990	106.551	2.214	108.785	106.337	2.223
9.000	4.312	113.5	150	109.000	106.450	2.400	108.785	106.412	2.223
7.002	15.230	238.0	375	108.785	106.187	2.223	108.467	106.123	1.969
7.003	43.003	83.3	375	108.467	106.123	1.969	108.819	105.607	2.837
10.000	4.714	59.7	150	108.900	105.911	2.839	108.819	105.832	2.837
11.000	6.634	15.0	150	109.000	106.275	2.575	108.819	105.832	2.837
7.004	11.136	159.1	375	108.819	105.607	2.837	108.654	105.537	2.742
7.005	35.170	245.9	375	108.654	105.537	2.742	107.717	105.394	1.948
7.006	19.199	126.3	375	107.717	105.394	1.948	107.000	105.242	1.383
12.000	6.050	99.2	150	108.000	105.528	2.322	107.000	105.467	1.383
7.007	10.132	166.1	375	107.000	105.242	1.383	106.286	105.181	0.730
1.012	7.783	389.2	525	106.286	105.031	0.730	106.300	105.011	0.764
1.013	30.609	100.0	225	106.300	105.011	1.064	105.600	104.705	0.670

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
5.000	S111L	1200	Manhole	S111	1200	1
1.009	S111	1200	Manhole	S112	1200	1
1.010	S112	1200	Manhole	S113	1200	1
6.000	S113L	1200	Manhole	S113	1200	1
1.011	S113	1200	Manhole	HW21		1
7.000	S114L	1200	Manhole	S114	1200	1
7.001	S114	1200	Manhole	S115	1200	1
8.000	S115La	1200	Manhole	S115	1200	1
9.000	S115Lb	1200	Manhole	S115	1200	1
7.002	S115	1200	Manhole	S116	1200	1
7.003	S116	1200	Manhole	S117	1200	1
10.000	S117La	1200	Manhole	S117	1200	1
11.000	S117Lb	1200	Manhole	S117	1200	1
7.004	S117	1200	Manhole	S118	1200	1
7.005	S118	1200	Manhole	S119	1200	1
7.006	S119	1200	Manhole	S120	1200	1
12.000	S120L	1200	Manhole	S120	1200	1
7.007	S120	1200	Manhole	HW22		1
1.012	HW23		Manhole	S121	2700	1
1.013	S121	2700	Manhole	HW24		1

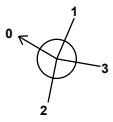
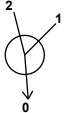
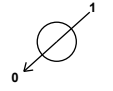
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S102	444479.431	291754.803	113.330	2.265	1200	Manhole		0	1.000	111.065	225
S103	444472.108	291734.898	112.628	2.624	1200	Manhole		1	1.000	110.005	225
								0	1.001	110.004	225
S104L	444472.650	291718.227	112.267	2.264	1200	Manhole		0	2.000	110.003	150
S104	444483.601	291711.432	111.735	3.079	1200	Manhole		1	2.000	108.806	150
								2	1.001	108.731	225
								0	1.002	108.656	300
S105	444481.686	291691.630	111.072	3.464	1200	Manhole		1	1.002	107.608	300
								0	1.003	107.608	300
S106	444497.965	291672.775	110.748	3.389	1200	Manhole		1	1.003	107.359	300
								0	1.004	107.359	300
S107	444501.855	291658.744	110.593	3.294	1200	Manhole		1	1.004	107.299	300
								0	1.005	107.299	300
S108	444499.035	291644.546	110.213	2.973	1200	Manhole		1	1.005	107.240	300
								0	1.006	107.240	300
S109L	444485.970	291638.442	109.640	2.150	1200	Manhole		0	3.000	107.490	150
S109	444490.094	291633.112	109.648	2.467	1200	Manhole		1	3.000	107.331	150
								2	1.006	107.181	300
								0	1.007	107.181	300
S110L	444459.015	291612.253	108.250	1.144	1200	Manhole		0	4.000	107.106	150
S110	444462.690	291608.295	108.270	1.518	1200	Manhole		1	4.000	107.052	150
								2	1.007	106.811	300
								0	1.008	106.752	450
S111L	444434.035	291590.102	107.600	1.712	1200	Manhole		0	5.000	105.888	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)
S111	444435.285	291583.479	107.562	2.042	1200	Manhole		1 5.000 2 1.008 0 1.009	105.821 105.520 105.520	150 450 450
S112	444421.127	291579.546	107.313	1.940	1200	Manhole		1 1.009 0 1.010	105.373 105.373	450 450
S113L	444399.148	291588.949	107.370	1.882	1200	Manhole		0 6.000	105.488	150
S113	444398.098	291584.164	107.389	2.325	1200	Manhole		1 6.000 2 1.010 0 1.011	105.439 105.139 105.064	150 450 525
HW21	444392.865	291574.374	106.300	1.269		Manhole		1 1.011	105.031	525
S114L	444454.757	291676.928	110.300	2.878	1200	Manhole		0 7.000	107.422	150
S114	444459.264	291672.153	110.153	3.488	1200	Manhole		1 7.000 0 7.001	106.815 106.665	150 300
S115La	444427.447	291651.484	108.990	2.439	1200	Manhole		0 8.000	106.551	225
S115Lb	444433.123	291641.030	109.000	2.550	1200	Manhole		0 9.000	106.450	150
S115	444430.189	291644.190	108.785	2.598	1200	Manhole		1 9.000 2 8.000 3 7.001 0 7.002	106.412 106.337 106.262 106.187	150 225 300 375
S116	444416.379	291637.767	108.467	2.344	1200	Manhole		1 7.002 0 7.003	106.123 106.123	375 375
S117La	444384.406	291638.524	108.900	2.989	1200	Manhole		0 10.000	105.911	150
S117Lb	444387.944	291649.243	109.000	2.725	1200	Manhole		0 11.000	106.275	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S117	444385.327	291643.147	108.819	3.212	1200	Manhole		1 2 3 0	11.000 10.000 7.003 7.004	105.832 105.832 105.607 105.607	150 150 375 375
S118	444375.733	291648.800	108.654	3.117	1200	Manhole		1 0	7.004 7.005	105.537 105.537	375 375
S119	444349.998	291624.828	107.717	2.323	1200	Manhole		1 0	7.005 7.006	105.394 105.394	375 375
S120L	444358.999	291610.511	108.000	2.472	1200	Manhole		0	12.000	105.528	150
S120	444354.732	291606.222	107.000	1.758	1200	Manhole		1 2 0	12.000 7.006 7.007	105.467 105.242 105.242	150 375 375
HW22	444355.507	291596.120	106.286	1.205		Manhole		1	7.007	105.181	375
HW23	444370.615	291565.689	106.286	1.255		Manhole		0	1.012	105.031	525
S121	444364.822	291560.491	106.300	1.289	2700	Manhole		1 0	1.012 1.013	105.011 105.011	525 225
HW24	444342.087	291539.997	105.600	0.895		Manhole		1	1.013	104.705	225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Normal		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0
100	40	10	0

Node S121 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	105.011	Product Number	CTL-SHE-0104-4900-1000-4900
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.9	Min Node Diameter (mm)	1200

Node HW23 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	105.031	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW22 | HW21

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	1114.0	0.0	1.500	1842.0	0.0	1.501	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058
2 year 30 minute summer	91.753	25.963
2 year 60 minute summer	61.301	16.200
2 year 120 minute summer	37.449	9.897
2 year 180 minute summer	28.672	7.378
2 year 240 minute summer	22.636	5.982
2 year 360 minute summer	17.235	4.435
2 year 480 minute summer	13.550	3.581
2 year 600 minute summer	11.088	3.033
2 year 720 minute summer	9.878	2.647
2 year 960 minute summer	8.113	2.136
2 year 1440 minute summer	5.891	1.579
30 year 15 minute summer	268.706	76.035
30 year 30 minute summer	174.929	49.499
30 year 60 minute summer	116.589	30.811
30 year 120 minute summer	70.438	18.615
30 year 180 minute summer	53.298	13.715
30 year 240 minute summer	41.604	10.995
30 year 360 minute summer	31.221	8.034

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
30 year 480 minute summer	24.324	6.428
30 year 600 minute summer	19.756	5.404
30 year 720 minute summer	17.490	4.687
30 year 960 minute summer	14.215	3.743
30 year 1440 minute summer	10.161	2.723
100 year +40% CC 15 minute summer	488.233	138.153
100 year +40% CC 30 minute summer	320.551	90.705
100 year +40% CC 60 minute summer	214.603	56.713
100 year +40% CC 120 minute summer	129.587	34.246
100 year +40% CC 180 minute summer	97.729	25.149
100 year +40% CC 240 minute summer	75.977	20.078
100 year +40% CC 360 minute summer	56.677	14.585
100 year +40% CC 480 minute summer	43.979	11.622
100 year +40% CC 600 minute summer	35.604	9.738
100 year +40% CC 720 minute summer	31.433	8.424
100 year +40% CC 960 minute summer	25.432	6.697
100 year +40% CC 1440 minute summer	18.055	4.839
100 year +40% CC +10% A 15 minute summer	488.233	138.153
100 year +40% CC +10% A 30 minute summer	320.551	90.705
100 year +40% CC +10% A 60 minute summer	214.603	56.713
100 year +40% CC +10% A 120 minute summer	129.587	34.246
100 year +40% CC +10% A 180 minute summer	97.729	25.149
100 year +40% CC +10% A 240 minute summer	75.977	20.078
100 year +40% CC +10% A 360 minute summer	56.677	14.585
100 year +40% CC +10% A 480 minute summer	43.979	11.622
100 year +40% CC +10% A 600 minute summer	35.604	9.738
100 year +40% CC +10% A 720 minute summer	31.433	8.424
100 year +40% CC +10% A 960 minute summer	25.432	6.697
100 year +40% CC +10% A 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.105	0.040	8.1	0.0618	0.0000	OK
15 minute summer	S103	10	110.055	0.051	13.1	0.0686	0.0000	OK
15 minute summer	S104L	10	110.050	0.047	11.8	0.0821	0.0000	OK
15 minute summer	S104	10	108.722	0.066	28.0	0.0832	0.0000	OK
15 minute summer	S105	10	107.715	0.106	31.0	0.1315	0.0000	OK
15 minute summer	S106	11	107.505	0.146	34.1	0.1821	0.0000	OK
15 minute summer	S107	11	107.449	0.150	35.9	0.1787	0.0000	OK
15 minute summer	S108	11	107.391	0.151	38.1	0.1826	0.0000	OK
15 minute summer	S109L	10	107.550	0.060	9.2	0.0970	0.0000	OK
15 minute summer	S109	11	107.324	0.142	52.0	0.1958	0.0000	OK
15 minute summer	S110L	10	107.188	0.082	10.4	0.1784	0.0000	OK
15 minute summer	S110	11	106.852	0.100	66.2	0.1489	0.0000	OK
15 minute summer	S111L	10	105.962	0.074	8.7	0.1264	0.0000	OK
15 minute summer	S111	11	105.667	0.147	76.2	0.1804	0.0000	OK
15 minute summer	S112	11	105.525	0.152	81.5	0.2234	0.0000	OK
15 minute summer	S113L	10	105.594	0.106	15.3	0.2193	0.0000	OK
15 minute summer	S113	11	105.306	0.242	96.0	0.2741	0.0000	OK
15 minute summer	HW21	11	105.294	0.263	94.9	0.0000	0.0000	OK
15 minute summer	S114L	10	107.464	0.042	9.2	0.0626	0.0000	OK
15 minute summer	S114	10	106.740	0.075	15.6	0.1004	0.0000	OK
15 minute summer	S115La	10	106.629	0.078	22.4	0.1700	0.0000	OK
15 minute summer	S115Lb	10	106.521	0.071	7.6	0.1043	0.0000	OK
15 minute summer	S115	10	106.343	0.156	48.8	0.2017	0.0000	OK
15 minute summer	S116	11	106.252	0.129	57.9	0.2081	0.0000	OK
15 minute summer	S117La	10	105.982	0.071	10.6	0.1095	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	8.1	1.437	0.069	0.1193	
15 minute summer	S103	1.001	S104	12.9	1.934	0.112	0.1747	
15 minute summer	S104L	2.000	S104	11.7	2.464	0.215	0.0613	
15 minute summer	S104	1.002	S105	27.9	1.661	0.109	0.3376	
15 minute summer	S105	1.003	S106	30.6	1.092	0.275	0.7013	
15 minute summer	S106	1.004	S107	34.2	0.989	0.481	0.5034	
15 minute summer	S107	1.005	S108	36.1	1.022	0.511	0.5110	
15 minute summer	S108	1.006	S109	38.1	1.114	0.540	0.4963	
15 minute summer	S109L	3.000	S109	9.1	1.400	0.334	0.0440	
15 minute summer	S109	1.007	S110	51.7	1.571	0.465	1.2168	
15 minute summer	S110L	4.000	S110	10.3	1.048	0.579	0.0530	
15 minute summer	S110	1.008	S111	66.1	1.875	0.112	1.3134	
15 minute summer	S111L	5.000	S111	8.6	1.001	0.486	0.0580	
15 minute summer	S111	1.009	S112	76.0	1.655	0.235	0.6748	
15 minute summer	S112	1.010	S113	81.3	1.634	0.252	1.1821	
15 minute summer	S113L	6.000	S113	15.1	1.136	0.852	0.0652	
15 minute summer	S113	1.011	HW21	94.9	0.924	0.361	1.1404	
15 minute summer	HW21	Flow through pond	HW23	200.6	0.204	0.003	80.7451	
15 minute summer	S114L	7.000	S114	9.2	2.295	0.168	0.0262	
15 minute summer	S114	7.001	S115	15.4	1.068	0.138	0.5852	
15 minute summer	S115La	8.000	S115	22.3	1.838	0.258	0.0944	
15 minute summer	S115Lb	9.000	S115	7.5	0.926	0.453	0.0351	
15 minute summer	S115	7.002	S116	48.2	1.258	0.373	0.5847	
15 minute summer	S116	7.003	S117	57.6	1.267	0.263	1.9651	
15 minute summer	S117La	10.000	S117	10.5	1.281	0.457	0.0388	

Results for 2 year Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	10	106.324	0.049	10.6	0.0772	0.0000	OK
15 minute summer	S117	11	105.802	0.195	78.1	0.2201	0.0000	OK
15 minute summer	S118	11	105.749	0.212	81.9	0.2692	0.0000	OK
15 minute summer	S119	11	105.576	0.182	80.5	0.2055	0.0000	OK
15 minute summer	S120L	10	105.632	0.104	14.9	0.1896	0.0000	OK
15 minute summer	S120	11	105.452	0.210	96.5	0.2380	0.0000	OK
15 minute summer	HW22	11	105.355	0.274	96.3	0.0000	0.0000	OK
480 minute summer	HW23	360	105.197	0.166	18.4	0.0000	0.0000	OK
480 minute summer	S121	360	105.197	0.186	4.7	1.0664	0.0000	OK
15 minute summer	HW24	1	104.705	0.000	4.2	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	10.5	2.123	0.228	0.0330	
15 minute summer	S117	7.004	S118	78.3	1.286	0.495	0.6782	
15 minute summer	S118	7.005	S119	80.5	1.390	0.633	2.0566	
15 minute summer	S119	7.006	S120	82.1	1.416	0.462	1.1183	
15 minute summer	S120L	12.000	S120	14.7	1.135	0.827	0.0785	
15 minute summer	S120	7.007	HW22	96.3	1.516	0.622	0.6440	
15 minute summer	HW22	Flow through pond	HW23	200.6	0.204	0.003	80.7451	
480 minute summer	HW23	1.012	S121	4.7	0.175	0.019	0.4949	
480 minute summer	S121	Hydro-Brake®	HW24	4.7				152.5

Results for 30 year Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.120	0.055	15.5	0.0851	0.0000	OK
15 minute summer	S103	10	110.075	0.071	24.9	0.0954	0.0000	OK
15 minute summer	S104L	10	110.070	0.067	22.4	0.1160	0.0000	OK
15 minute summer	S104	10	108.748	0.092	53.3	0.1154	0.0000	OK
15 minute summer	S105	10	107.765	0.157	59.0	0.1934	0.0000	OK
15 minute summer	S106	11	107.584	0.225	65.2	0.2815	0.0000	OK
15 minute summer	S107	11	107.530	0.231	68.3	0.2757	0.0000	OK
15 minute summer	S108	11	107.470	0.230	72.4	0.2791	0.0000	OK
15 minute summer	S109L	10	107.577	0.087	17.4	0.1406	0.0000	OK
15 minute summer	S109	11	107.397	0.216	98.6	0.2970	0.0000	OK
15 minute summer	S110L	10	107.239	0.133	19.7	0.2893	0.0000	OK
15 minute summer	S110	11	106.891	0.139	125.8	0.2062	0.0000	OK
15 minute summer	S111L	10	106.001	0.113	16.5	0.1941	0.0000	OK
15 minute summer	S111	11	105.732	0.212	144.7	0.2600	0.0000	OK
15 minute summer	S112	11	105.602	0.229	154.9	0.3363	0.0000	OK
15 minute summer	S113L	10	105.715	0.227	29.0	0.4684	0.0000	SURCHARGED
15 minute summer	S113	11	105.442	0.378	182.6	0.4274	0.0000	OK
15 minute summer	HW21	11	105.430	0.399	181.1	0.0000	0.0000	OK
15 minute summer	S114L	10	107.480	0.058	17.4	0.0875	0.0000	OK
15 minute summer	S114	10	106.769	0.104	29.5	0.1397	0.0000	OK
15 minute summer	S115La	10	106.662	0.111	42.5	0.2421	0.0000	OK
15 minute summer	S115Lb	10	106.557	0.107	14.5	0.1581	0.0000	OK
15 minute summer	S115	10	106.412	0.225	92.8	0.2912	0.0000	OK
15 minute summer	S116	11	106.307	0.184	109.5	0.2963	0.0000	OK
15 minute summer	S117La	10	106.019	0.108	20.1	0.1659	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	15.4	1.726	0.132	0.1901	
15 minute summer	S103	1.001	S104	24.7	2.327	0.214	0.2773	
15 minute summer	S104L	2.000	S104	22.3	2.937	0.408	0.0978	
15 minute summer	S104	1.002	S105	53.1	1.927	0.207	0.5522	
15 minute summer	S105	1.003	S106	58.6	1.251	0.527	1.1597	
15 minute summer	S106	1.004	S107	65.2	1.134	0.918	0.8378	
15 minute summer	S107	1.005	S108	68.6	1.179	0.971	0.8420	
15 minute summer	S108	1.006	S109	72.5	1.292	1.028	0.8156	
15 minute summer	S109L	3.000	S109	17.3	1.645	0.631	0.0708	
15 minute summer	S109	1.007	S110	98.2	1.813	0.884	2.0064	
15 minute summer	S110L	4.000	S110	19.4	1.198	1.095	0.0877	
15 minute summer	S110	1.008	S111	125.7	2.204	0.212	2.1192	
15 minute summer	S111L	5.000	S111	16.3	1.145	0.921	0.0959	
15 minute summer	S111	1.009	S112	144.5	1.882	0.447	1.1319	
15 minute summer	S112	1.010	S113	154.5	1.603	0.479	2.2826	
15 minute summer	S113L	6.000	S113	28.5	1.621	1.607	0.0854	
15 minute summer	S113	1.011	HW21	181.1	1.058	0.688	1.9002	
15 minute summer	HW21	Flow through pond	HW23	362.8	0.257	0.005	155.5647	
15 minute summer	S114L	7.000	S114	17.3	2.742	0.319	0.0415	
15 minute summer	S114	7.001	S115	29.2	1.049	0.263	1.1489	
15 minute summer	S115La	8.000	S115	42.3	2.182	0.489	0.1511	
15 minute summer	S115Lb	9.000	S115	14.4	1.068	0.862	0.0580	
15 minute summer	S115	7.002	S116	91.2	1.490	0.706	0.9349	
15 minute summer	S116	7.003	S117	109.3	1.433	0.498	3.2919	
15 minute summer	S117La	10.000	S117	20.0	1.475	0.866	0.0638	

Results for 30 year Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	10	106.344	0.069	20.1	0.1091	0.0000	OK
15 minute summer	S117	11	105.924	0.317	148.8	0.3581	0.0000	OK
15 minute summer	S118	11	105.879	0.342	155.1	0.4351	0.0000	OK
15 minute summer	S119	11	105.679	0.285	155.0	0.3224	0.0000	OK
15 minute summer	S120L	10	105.765	0.237	28.3	0.4324	0.0000	SURCHARGED
15 minute summer	S120	11	105.573	0.331	181.8	0.3741	0.0000	OK
15 minute summer	HW22	11	105.499	0.418	181.2	0.0000	0.0000	OK
480 minute summer	HW23	480	105.334	0.303	31.5	0.0000	0.0000	OK
480 minute summer	S121	480	105.334	0.323	5.1	1.8508	0.0000	SURCHARGED
15 minute summer	HW24	1	104.705	0.000	4.7	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	20.0	2.484	0.433	0.0629	
15 minute summer	S117	7.004	S118	148.2	1.461	0.936	1.1403	
15 minute summer	S118	7.005	S119	155.0	1.581	1.220	3.4361	
15 minute summer	S119	7.006	S120	154.4	1.607	0.868	1.8510	
15 minute summer	S120L	12.000	S120	27.8	1.580	1.560	0.1054	
15 minute summer	S120	7.007	HW22	181.2	1.789	1.169	1.0260	
15 minute summer	HW22	Flow through pond	HW23	362.8	0.257	0.005	155.5647	
480 minute summer	HW23	1.012	S121	5.1	0.201	0.021	1.0452	
480 minute summer	S121	Hydro-Brake®	HW24	4.9				171.4

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.140	0.075	28.1	0.1155	0.0000	OK
15 minute summer	S103	10	110.101	0.097	45.3	0.1314	0.0000	OK
15 minute summer	S104L	10	110.100	0.097	40.7	0.1673	0.0000	OK
15 minute summer	S104	11	108.803	0.147	96.8	0.1848	0.0000	OK
15 minute summer	S105	12	108.502	0.894	107.2	1.1035	0.0000	SURCHARGED
15 minute summer	S106	12	108.317	0.958	109.0	1.1967	0.0000	SURCHARGED
15 minute summer	S107	12	108.181	0.882	112.0	1.0514	0.0000	SURCHARGED
15 minute summer	S108	12	108.029	0.789	117.6	0.9562	0.0000	SURCHARGED
15 minute summer	S109L	12	108.018	0.528	31.7	0.8574	0.0000	SURCHARGED
15 minute summer	S109	12	107.857	0.676	159.3	0.9285	0.0000	SURCHARGED
15 minute summer	S110L	10	107.415	0.309	35.9	0.6739	0.0000	SURCHARGED
15 minute summer	S110	11	106.933	0.180	207.1	0.2684	0.0000	OK
15 minute summer	S111L	10	106.155	0.267	29.9	0.4585	0.0000	SURCHARGED
15 minute summer	S111	11	105.824	0.304	241.2	0.3731	0.0000	OK
15 minute summer	S112	12	105.713	0.340	257.0	0.4999	0.0000	OK
15 minute summer	S113L	11	106.036	0.548	52.6	1.1318	0.0000	SURCHARGED
15 minute summer	S113	12	105.625	0.561	303.7	0.6341	0.0000	SURCHARGED
600 minute summer	HW21	615	105.639	0.608	46.3	0.0000	0.0000	OK
15 minute summer	S114L	11	107.510	0.087	31.7	0.1311	0.0000	OK
15 minute summer	S114	12	107.242	0.577	53.7	0.7750	0.0000	SURCHARGED
15 minute summer	S115La	12	107.287	0.736	77.1	1.6120	0.0000	SURCHARGED
15 minute summer	S115Lb	12	107.239	0.789	26.3	1.1647	0.0000	SURCHARGED
15 minute summer	S115	12	107.173	0.986	157.4	1.2752	0.0000	SURCHARGED
15 minute summer	S116	12	107.100	0.977	174.1	1.5712	0.0000	SURCHARGED
15 minute summer	S117La	12	106.940	1.029	36.5	1.5829	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	28.0	2.026	0.240	0.2935	
15 minute summer	S103	1.001	S104	44.9	2.742	0.389	0.4281	
15 minute summer	S104L	2.000	S104	40.5	3.386	0.743	0.1542	
15 minute summer	S104	1.002	S105	96.4	2.062	0.376	1.0430	
15 minute summer	S105	1.003	S106	97.6	1.386	0.878	1.7542	
15 minute summer	S106	1.004	S107	106.3	1.510	1.497	1.0253	
15 minute summer	S107	1.005	S108	112.0	1.590	1.585	1.0193	
15 minute summer	S108	1.006	S109	118.6	1.685	1.682	1.0221	
15 minute summer	S109L	3.000	S109	27.5	1.731	1.003	0.1187	
15 minute summer	S109	1.007	S110	160.3	2.277	1.442	2.5771	
15 minute summer	S110L	4.000	S110	35.0	1.989	1.973	0.0941	
15 minute summer	S110	1.008	S111	206.5	2.395	0.349	3.2012	
15 minute summer	S111L	5.000	S111	29.3	1.667	1.658	0.1175	
15 minute summer	S111	1.009	S112	238.3	2.051	0.737	1.7744	
15 minute summer	S112	1.010	S113	256.7	1.693	0.795	3.3692	
15 minute summer	S113L	6.000	S113	50.9	2.889	2.864	0.0862	
15 minute summer	S113	1.011	HW21	303.4	1.404	1.153	2.3984	
600 minute summer	HW21	Flow through pond	HW23	88.1	0.041	0.001	661.1555	
15 minute summer	S114L	7.000	S114	31.6	3.200	0.581	0.0928	
15 minute summer	S114	7.001	S115	52.4	1.098	0.472	2.8407	
15 minute summer	S115La	8.000	S115	72.2	2.449	0.836	0.3099	
15 minute summer	S115Lb	9.000	S115	24.1	1.367	1.445	0.0759	
15 minute summer	S115	7.002	S116	142.2	1.632	1.100	1.6798	
15 minute summer	S116	7.003	S117	164.9	1.501	0.752	4.7431	
15 minute summer	S117La	10.000	S117	31.2	1.772	1.354	0.0830	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	12	106.996	0.721	36.5	1.1387	0.0000	SURCHARGED
15 minute summer	S117	12	106.802	1.195	223.6	1.3513	0.0000	SURCHARGED
15 minute summer	S118	12	106.659	1.122	234.2	1.4275	0.0000	SURCHARGED
15 minute summer	S119	12	106.165	0.771	234.4	0.8722	0.0000	SURCHARGED
15 minute summer	S120L	11	106.331	0.803	51.4	1.4666	0.0000	SURCHARGED
15 minute summer	S120	12	105.895	0.653	278.3	0.7381	0.0000	SURCHARGED
15 minute summer	HW22	12	105.694	0.613	278.5	0.0000	0.0000	OK
720 minute summer	HW23	720	105.591	0.560	51.3	0.0000	0.0000	SURCHARGED
720 minute summer	S121	720	105.591	0.579	5.3	3.3181	0.0000	SURCHARGED
15 minute summer	HW24	1	104.705	0.000	4.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	31.1	2.413	0.672	0.1168	
15 minute summer	S117	7.004	S118	223.9	2.030	1.414	1.2283	
15 minute summer	S118	7.005	S119	234.4	2.126	1.845	3.8791	
15 minute summer	S119	7.006	S120	234.6	2.127	1.319	2.1176	
15 minute summer	S120L	12.000	S120	47.8	2.716	2.682	0.1065	
15 minute summer	S120	7.007	HW22	278.5	2.525	1.797	1.1175	
15 minute summer	HW22	Flow through pond	HW23	496.6	0.286	0.007	284.7273	
720 minute summer	HW23	1.012	S121	5.3	0.258	0.022	1.6814	
720 minute summer	S121	Hydro-Brake®	HW24	4.9				226.5

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.144	0.078	30.9	0.1246	0.0000	OK
15 minute summer	S103	10	110.107	0.103	49.9	0.1410	0.0000	OK
15 minute summer	S104L	10	110.106	0.103	44.7	0.1851	0.0000	OK
15 minute summer	S104	11	108.856	0.200	106.5	0.2530	0.0000	OK
15 minute summer	S105	12	108.754	1.146	114.4	1.4264	0.0000	SURCHARGED
15 minute summer	S106	12	108.531	1.172	117.6	1.4781	0.0000	SURCHARGED
15 minute summer	S107	12	108.370	1.071	121.1	1.2829	0.0000	SURCHARGED
15 minute summer	S108	12	108.191	0.951	127.1	1.1605	0.0000	SURCHARGED
15 minute summer	S109L	12	108.185	0.695	34.9	1.1634	0.0000	SURCHARGED
15 minute summer	S109	12	107.990	0.809	172.8	1.1319	0.0000	SURCHARGED
15 minute summer	S110L	10	107.459	0.353	39.5	0.8068	0.0000	SURCHARGED
15 minute summer	S110	11	106.941	0.189	225.5	0.2878	0.0000	OK
15 minute summer	S111L	10	106.195	0.307	32.9	0.5435	0.0000	SURCHARGED
15 minute summer	S111	12	105.904	0.384	263.0	0.4755	0.0000	OK
15 minute summer	S112	12	105.852	0.479	277.2	0.7213	0.0000	SURCHARGED
15 minute summer	S113L	11	106.163	0.675	57.9	1.4581	0.0000	SURCHARGED
600 minute summer	S113	630	105.694	0.630	46.8	0.7121	0.0000	SURCHARGED
600 minute summer	HW21	705	105.756	0.725	108.5	0.0000	0.0000	OK
15 minute summer	S114L	12	107.709	0.287	34.9	0.4408	0.0000	SURCHARGED
15 minute summer	S114	12	107.542	0.877	59.1	1.1964	0.0000	SURCHARGED
15 minute summer	S115La	12	107.603	1.052	84.9	2.4133	0.0000	SURCHARGED
15 minute summer	S115Lb	12	107.543	1.093	28.9	1.6511	0.0000	SURCHARGED
15 minute summer	S115	12	107.466	1.279	171.9	1.6747	0.0000	SURCHARGED
15 minute summer	S116	12	107.381	1.258	181.0	2.0850	0.0000	SURCHARGED
15 minute summer	S117La	12	107.200	1.289	40.1	2.0365	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	30.8	2.076	0.263	0.3150	
15 minute summer	S103	1.001	S104	49.5	2.813	0.429	0.5195	
15 minute summer	S104L	2.000	S104	44.5	3.447	0.815	0.1664	
15 minute summer	S104	1.002	S105	102.6	2.104	0.401	1.1958	
15 minute summer	S105	1.003	S106	105.0	1.491	0.945	1.7542	
15 minute summer	S106	1.004	S107	114.8	1.631	1.617	1.0253	
15 minute summer	S107	1.005	S108	121.0	1.718	1.713	1.0193	
15 minute summer	S108	1.006	S109	128.0	1.818	1.815	1.0221	
15 minute summer	S109L	3.000	S109	29.9	1.751	1.093	0.1187	
15 minute summer	S109	1.007	S110	173.7	2.467	1.563	2.5771	
15 minute summer	S110L	4.000	S110	38.4	2.180	2.162	0.0941	
15 minute summer	S110	1.008	S111	224.8	2.382	0.380	3.8198	
15 minute summer	S111L	5.000	S111	32.2	1.829	1.819	0.1175	
15 minute summer	S111	1.009	S112	259.1	2.035	0.801	2.2221	
15 minute summer	S112	1.010	S113	275.7	1.740	0.854	3.7215	
15 minute summer	S113L	6.000	S113	55.1	3.129	3.102	0.0862	
600 minute summer	S113	1.011	HW21	46.2	0.417	0.176	2.3984	
600 minute summer	HW21	Flow through pond	HW23	-63.2	0.044	-0.001	752.1755	
15 minute summer	S114L	7.000	S114	34.9	3.224	0.640	0.1156	
15 minute summer	S114	7.001	S115	54.2	1.104	0.488	2.8407	
15 minute summer	S115La	8.000	S115	78.0	2.377	0.902	0.3099	
15 minute summer	S115Lb	9.000	S115	26.6	1.510	1.596	0.0759	
15 minute summer	S115	7.002	S116	147.8	1.678	1.144	1.6798	
15 minute summer	S116	7.003	S117	176.9	1.604	0.807	4.7431	
15 minute summer	S117La	10.000	S117	32.0	1.815	1.387	0.0830	

Results for 100 year +40% CC +10% A Critical Storm Duration. Lowest mass balance: 92.71%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	12	107.267	0.992	40.1	1.6099	0.0000	SURCHARGED
15 minute summer	S117	12	107.038	1.431	240.7	1.6179	0.0000	SURCHARGED
15 minute summer	S118	12	106.873	1.336	252.0	1.7176	0.0000	SURCHARGED
15 minute summer	S119	12	106.301	0.907	252.0	1.0259	0.0000	SURCHARGED
15 minute summer	S120L	11	106.494	0.966	56.6	1.8322	0.0000	SURCHARGED
15 minute summer	S120	12	105.988	0.746	300.0	0.8442	0.0000	SURCHARGED
15 minute summer	HW22	12	105.755	0.674	300.1	0.0000	0.0000	OK
960 minute summer	HW23	960	105.659	0.628	61.4	0.0000	0.0000	SURCHARGED
960 minute summer	S121	960	105.659	0.648	5.3	3.7103	0.0000	SURCHARGED
15 minute summer	HW24	1	104.705	0.000	4.9	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	31.9	2.472	0.690	0.1168	
15 minute summer	S117	7.004	S118	240.7	2.183	1.520	1.2283	
15 minute summer	S118	7.005	S119	252.0	2.285	1.983	3.8791	
15 minute summer	S119	7.006	S120	252.0	2.285	1.417	2.1176	
15 minute summer	S120L	12.000	S120	51.6	2.930	2.893	0.1065	
15 minute summer	S120	7.007	HW22	300.1	2.721	1.937	1.1175	
15 minute summer	HW22	Flow through pond	HW23	514.6	0.272	0.007	313.7360	
960 minute summer	HW23	1.012	S121	5.3	0.186	0.022	1.6814	
960 minute summer	S121	Hydro-Brake®	HW24	4.9				272.0

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Node Type	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S102	0.047	5.00	113.330	Manhole	1200	444479.431	291754.803	2.265
S103	0.029	5.00	112.628	Manhole	1200	444472.108	291734.898	2.624
S104L	0.068	5.00	112.267	Manhole	1200	444472.650	291718.227	2.264
S104	0.019	5.00	111.735	Manhole	1200	444483.601	291711.432	3.079
S105	0.018	5.00	111.072	Manhole	1200	444481.686	291691.630	3.464
S106	0.020	5.00	110.748	Manhole	1200	444497.965	291672.775	3.389
S107	0.010	5.00	110.593	Manhole	1200	444501.855	291658.744	3.294
S108	0.012	5.00	110.213	Manhole	1200	444499.035	291644.546	2.973
S109L	0.053	5.00	109.640	Manhole	1200	444485.970	291638.442	2.150
S109	0.030	5.00	109.648	Manhole	1200	444490.094	291633.112	2.467
S110L	0.060	5.00	108.250	Manhole	1200	444459.015	291612.253	1.144
S110	0.027	5.00	108.270	Manhole	1200	444462.690	291608.295	1.518
S111L	0.050	5.00	107.600	Manhole	1200	444434.035	291590.102	1.712
S111	0.010	5.00	107.562	Manhole	1200	444435.285	291583.479	2.042
S112	0.033	5.00	107.313	Manhole	1200	444421.127	291579.546	1.940
S113L	0.088	5.00	107.370	Manhole	1200	444399.148	291588.949	1.882
S113			107.389	Manhole	1200	444398.098	291584.164	2.325
HW21			106.300	Manhole		444392.865	291574.374	1.269
S114L	0.053	5.00	110.300	Manhole	1200	444454.757	291676.928	2.878
S114	0.037	5.00	110.153	Manhole	1200	444459.264	291672.153	3.488
S115La	0.129	5.00	108.990	Manhole	1200	444427.447	291651.484	2.439
S115Lb	0.044	5.00	109.000	Manhole	1200	444433.123	291641.030	2.550
S115	0.021	5.00	108.785	Manhole	1200	444430.189	291644.190	2.598
S116	0.056	5.00	108.467	Manhole	1200	444416.379	291637.767	2.344
S117La	0.061	5.00	108.900	Manhole	1200	444384.406	291638.524	2.989
S117Lb	0.061	5.00	109.000	Manhole	1200	444387.944	291649.243	2.725
S117			108.819	Manhole	1200	444385.327	291643.147	3.212
S118	0.022	5.00	108.654	Manhole	1200	444375.733	291648.800	3.117
S119			107.717	Manhole	1200	444349.998	291624.828	2.323
S120L	0.086	5.00	108.000	Manhole	1200	444358.999	291610.511	2.472
S120			107.000	Manhole	1200	444354.732	291606.222	1.758
HW22			106.286	Manhole		444355.507	291596.120	1.205
HW23		5.00	106.286	Manhole		444370.615	291565.689	1.255
S121			106.300	Manhole	2700	444364.822	291560.491	1.289
HW24			105.600	Manhole		444342.087	291539.997	0.895

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	S102	S103	21.209	0.600	111.065	110.005	1.060	20.0	225	5.12	50.0
1.001	S103	S104	26.130	0.600	110.004	108.731	1.273	20.5	225	5.27	50.0
2.000	S104L	S104	12.888	0.600	110.003	108.806	1.197	10.8	150	5.07	50.0
1.002	S104	S105	19.894	0.600	108.656	107.608	1.048	19.0	300	5.36	50.0
1.003	S105	S106	24.911	0.600	107.608	107.359	0.249	100.0	300	5.63	50.0
1.004	S106	S107	14.560	0.600	107.359	107.299	0.060	242.7	300	5.87	50.0
1.005	S107	S108	14.475	0.600	107.299	107.240	0.059	245.3	300	6.11	49.9
1.006	S108	S109	14.515	0.600	107.240	107.181	0.059	246.0	300	6.35	49.0
3.000	S109L	S109	6.740	0.600	107.490	107.331	0.159	42.4	150	5.07	50.0
1.007	S109	S110	36.971	0.600	107.181	106.811	0.370	99.9	300	6.74	47.6
4.000	S110L	S110	5.401	0.600	107.106	107.052	0.054	100.0	150	5.09	50.0
1.008	S110	S111	36.971	0.600	106.752	105.520	1.232	30.0	450	6.91	47.0
5.000	S111L	S111	6.740	0.600	105.888	105.821	0.067	100.6	150	5.11	50.0
1.009	S111	S112	14.694	0.600	105.520	105.373	0.147	100.0	450	7.03	46.6
1.010	S112	S113	23.488	0.600	105.373	105.139	0.234	100.4	450	7.22	46.0
6.000	S113L	S113	4.898	0.600	105.488	105.439	0.049	100.0	150	5.08	50.0
1.011	S113	HW21	11.102	0.600	105.064	105.031	0.033	336.4	525	7.37	45.5
7.000	S114L	S114	6.566	0.600	107.422	106.815	0.607	10.8	150	5.04	50.0
7.001	S114	S115	40.340	0.600	106.665	106.262	0.403	100.1	300	5.46	50.0
8.000	S115La	S115	7.793	0.600	106.551	106.337	0.214	36.4	225	5.06	50.0
9.000	S115Lb	S115	4.312	0.600	106.450	106.412	0.038	113.5	150	5.08	50.0
7.002	S115	S116	15.230	0.600	106.187	106.123	0.064	238.0	375	5.68	50.0
7.003	S116	S117	43.003	0.600	106.123	105.607	0.516	83.3	375	6.04	50.0
10.000	S117La	S117	4.714	0.600	105.911	105.832	0.079	59.7	150	5.06	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	S102	S103	2.938	116.8	6.4	2.040	2.398	2.040	2.398	0.047	0.0
1.001	S103	S104	2.901	115.3	10.3	2.399	2.779	2.399	2.779	0.076	0.0
2.000	S104L	S104	3.088	54.6	9.2	2.114	2.779	2.114	2.779	0.068	0.0
1.002	S104	S105	3.625	256.2	22.1	2.779	3.164	2.779	3.164	0.163	0.0
1.003	S105	S106	1.572	111.1	24.5	3.164	3.089	3.089	3.164	0.181	0.0
1.004	S106	S107	1.005	71.0	27.2	3.089	2.994	2.994	3.089	0.201	0.0
1.005	S107	S108	0.999	70.6	28.6	2.994	2.673	2.673	2.994	0.211	0.0
1.006	S108	S109	0.998	70.5	29.6	2.673	2.167	2.167	2.673	0.223	0.0
3.000	S109L	S109	1.550	27.4	7.2	2.000	2.167	2.000	2.167	0.053	0.0
1.007	S109	S110	1.573	111.2	39.5	2.167	1.159	1.159	2.167	0.306	0.0
4.000	S110L	S110	1.005	17.8	8.1	0.994	1.068	0.994	1.068	0.060	0.0
1.008	S110	S111	3.721	591.9	50.1	1.068	1.592	1.068	1.592	0.393	0.0
5.000	S111L	S111	1.002	17.7	6.8	1.562	1.591	1.562	1.591	0.050	0.0
1.009	S111	S112	2.033	323.4	57.3	1.592	1.490	1.490	1.592	0.453	0.0
1.010	S112	S113	2.029	322.7	60.6	1.490	1.800	1.490	1.800	0.486	0.0
6.000	S113L	S113	1.005	17.8	11.9	1.732	1.800	1.732	1.800	0.088	0.0
1.011	S113	HW21	1.215	263.1	70.8	1.800	0.744	0.744	1.800	0.574	0.0
7.000	S114L	S114	3.080	54.4	7.2	2.728	3.188	2.728	3.188	0.053	0.0
7.001	S114	S115	1.571	111.1	12.2	3.188	2.223	2.223	3.188	0.090	0.0
8.000	S115La	S115	2.175	86.5	17.5	2.214	2.223	2.214	2.223	0.129	0.0
9.000	S115Lb	S115	0.942	16.7	6.0	2.400	2.223	2.223	2.400	0.044	0.0
7.002	S115	S116	1.170	129.2	38.5	2.223	1.969	1.969	2.223	0.284	0.0
7.003	S116	S117	1.986	219.3	46.1	1.969	2.837	1.969	2.837	0.340	0.0
10.000	S117La	S117	1.304	23.0	8.3	2.839	2.837	2.837	2.839	0.061	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
11.000	S117Lb	S117	6.634	0.600	106.275	105.832	0.443	15.0	150	5.04	50.0
7.004	S117	S118	11.136	0.600	105.607	105.537	0.070	159.1	375	6.17	49.7
7.005	S118	S119	35.170	0.600	105.537	105.394	0.143	245.9	375	6.68	47.8
7.006	S119	S120	19.199	0.600	105.394	105.242	0.152	126.3	375	6.88	47.1
12.000	S120L	S120	6.050	0.600	105.528	105.467	0.061	99.2	150	5.10	50.0
7.007	S120	HW22	10.132	0.600	105.242	105.181	0.061	166.1	375	7.00	46.7
1.012	HW23	S121	7.783	0.600	105.031	105.011	0.020	389.2	525	5.11	50.0
1.013	S121	HW24	30.609	0.600	105.011	104.705	0.306	100.0	225	5.51	50.0

Name	US Node	DS Node	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Minimum Depth (m)	Maximum Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
11.000	S117Lb	S117	2.616	46.2	8.3	2.575	2.837	2.575	2.837	0.061	0.0
7.004	S117	S118	1.434	158.3	62.2	2.837	2.742	2.742	2.837	0.462	0.0
7.005	S118	S119	1.151	127.1	62.7	2.742	1.948	1.948	2.742	0.484	0.0
7.006	S119	S120	1.610	177.9	61.8	1.948	1.383	1.383	1.948	0.484	0.0
12.000	S120L	S120	1.009	17.8	11.7	2.322	1.383	1.383	2.322	0.086	0.0
7.007	S120	HW22	1.403	154.9	72.2	1.383	0.730	0.730	1.383	0.570	0.0
1.012	HW23	S121	1.129	244.4	0.0	0.730	0.764	0.730	0.764	0.000	0.0
1.013	S121	HW24	1.307	52.0	0.0	1.064	0.670	0.670	1.064	0.000	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	21.209	20.0	225	113.330	111.065	2.040	112.628	110.005	2.398
1.001	26.130	20.5	225	112.628	110.004	2.399	111.735	108.731	2.779
2.000	12.888	10.8	150	112.267	110.003	2.114	111.735	108.806	2.779
1.002	19.894	19.0	300	111.735	108.656	2.779	111.072	107.608	3.164
1.003	24.911	100.0	300	111.072	107.608	3.164	110.748	107.359	3.089
1.004	14.560	242.7	300	110.748	107.359	3.089	110.593	107.299	2.994
1.005	14.475	245.3	300	110.593	107.299	2.994	110.213	107.240	2.673
1.006	14.515	246.0	300	110.213	107.240	2.673	109.648	107.181	2.167
3.000	6.740	42.4	150	109.640	107.490	2.000	109.648	107.331	2.167
1.007	36.971	99.9	300	109.648	107.181	2.167	108.270	106.811	1.159
4.000	5.401	100.0	150	108.250	107.106	0.994	108.270	107.052	1.068
1.008	36.971	30.0	450	108.270	106.752	1.068	107.562	105.520	1.592

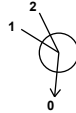
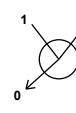
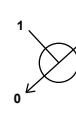
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1.000	S102	1200	Manhole	S103	1200	1
1.001	S103	1200	Manhole	S104	1200	1
2.000	S104L	1200	Manhole	S104	1200	1
1.002	S104	1200	Manhole	S105	1200	1
1.003	S105	1200	Manhole	S106	1200	1
1.004	S106	1200	Manhole	S107	1200	1
1.005	S107	1200	Manhole	S108	1200	1
1.006	S108	1200	Manhole	S109	1200	1
3.000	S109L	1200	Manhole	S109	1200	1
1.007	S109	1200	Manhole	S110	1200	1
4.000	S110L	1200	Manhole	S110	1200	1
1.008	S110	1200	Manhole	S111	1200	1

Pipeline Schedule

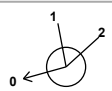
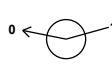
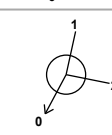
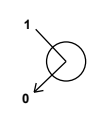
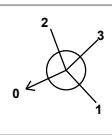
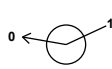
Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
5.000	6.740	100.6	150	107.600	105.888	1.562	107.562	105.821	1.591
1.009	14.694	100.0	450	107.562	105.520	1.592	107.313	105.373	1.490
1.010	23.488	100.4	450	107.313	105.373	1.490	107.389	105.139	1.800
6.000	4.898	100.0	150	107.370	105.488	1.732	107.389	105.439	1.800
1.011	11.102	336.4	525	107.389	105.064	1.800	106.300	105.031	0.744
7.000	6.566	10.8	150	110.300	107.422	2.728	110.153	106.815	3.188
7.001	40.340	100.1	300	110.153	106.665	3.188	108.785	106.262	2.223
8.000	7.793	36.4	225	108.990	106.551	2.214	108.785	106.337	2.223
9.000	4.312	113.5	150	109.000	106.450	2.400	108.785	106.412	2.223
7.002	15.230	238.0	375	108.785	106.187	2.223	108.467	106.123	1.969
7.003	43.003	83.3	375	108.467	106.123	1.969	108.819	105.607	2.837
10.000	4.714	59.7	150	108.900	105.911	2.839	108.819	105.832	2.837
11.000	6.634	15.0	150	109.000	106.275	2.575	108.819	105.832	2.837
7.004	11.136	159.1	375	108.819	105.607	2.837	108.654	105.537	2.742
7.005	35.170	245.9	375	108.654	105.537	2.742	107.717	105.394	1.948
7.006	19.199	126.3	375	107.717	105.394	1.948	107.000	105.242	1.383
12.000	6.050	99.2	150	108.000	105.528	2.322	107.000	105.467	1.383
7.007	10.132	166.1	375	107.000	105.242	1.383	106.286	105.181	0.730
1.012	7.783	389.2	525	106.286	105.031	0.730	106.300	105.011	0.764
1.013	30.609	100.0	225	106.300	105.011	1.064	105.600	104.705	0.670

Link	US Node	Dia (mm)	Node Type	DS Node	Dia (mm)	MH Type
5.000	S111L	1200	Manhole	S111	1200	1
1.009	S111	1200	Manhole	S112	1200	1
1.010	S112	1200	Manhole	S113	1200	1
6.000	S113L	1200	Manhole	S113	1200	1
1.011	S113	1200	Manhole	HW21		1
7.000	S114L	1200	Manhole	S114	1200	1
7.001	S114	1200	Manhole	S115	1200	1
8.000	S115La	1200	Manhole	S115	1200	1
9.000	S115Lb	1200	Manhole	S115	1200	1
7.002	S115	1200	Manhole	S116	1200	1
7.003	S116	1200	Manhole	S117	1200	1
10.000	S117La	1200	Manhole	S117	1200	1
11.000	S117Lb	1200	Manhole	S117	1200	1
7.004	S117	1200	Manhole	S118	1200	1
7.005	S118	1200	Manhole	S119	1200	1
7.006	S119	1200	Manhole	S120	1200	1
12.000	S120L	1200	Manhole	S120	1200	1
7.007	S120	1200	Manhole	HW22		1
1.012	HW23		Manhole	S121	2700	1
1.013	S121	2700	Manhole	HW24		1

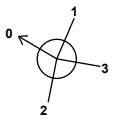
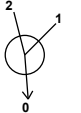
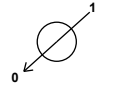
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S102	444479.431	291754.803	113.330	2.265	1200	Manhole		0	1.000	111.065	225
S103	444472.108	291734.898	112.628	2.624	1200	Manhole		1 0	1.000 1.001	110.005 110.004	225 225
S104L	444472.650	291718.227	112.267	2.264	1200	Manhole		0	2.000	110.003	150
S104	444483.601	291711.432	111.735	3.079	1200	Manhole		1 2 0	2.000 1.001 1.002	108.806 108.731 108.656	150 225 300
S105	444481.686	291691.630	111.072	3.464	1200	Manhole		1 0	1.002 1.003	107.608 107.608	300 300
S106	444497.965	291672.775	110.748	3.389	1200	Manhole		1 0	1.003 1.004	107.359 107.359	300 300
S107	444501.855	291658.744	110.593	3.294	1200	Manhole		1 0	1.004 1.005	107.299 107.299	300 300
S108	444499.035	291644.546	110.213	2.973	1200	Manhole		1 0	1.005 1.006	107.240 107.240	300 300
S109L	444485.970	291638.442	109.640	2.150	1200	Manhole		0	3.000	107.490	150
S109	444490.094	291633.112	109.648	2.467	1200	Manhole		1 2 0	3.000 1.006 1.007	107.331 107.181 107.181	150 300 300
S110L	444459.015	291612.253	108.250	1.144	1200	Manhole		0	4.000	107.106	150
S110	444462.690	291608.295	108.270	1.518	1200	Manhole		1 2 0	4.000 1.007 1.008	107.052 106.811 106.752	150 300 450
S111L	444434.035	291590.102	107.600	1.712	1200	Manhole		0	5.000	105.888	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S111	444435.285	291583.479	107.562	2.042	1200	Manhole		1	5.000	105.821	150
								2	1.008	105.520	450
								0	1.009	105.520	450
S112	444421.127	291579.546	107.313	1.940	1200	Manhole		1	1.009	105.373	450
								0	1.010	105.373	450
S113L	444399.148	291588.949	107.370	1.882	1200	Manhole		0	6.000	105.488	150
S113	444398.098	291584.164	107.389	2.325	1200	Manhole		1	6.000	105.439	150
								2	1.010	105.139	450
								0	1.011	105.064	525
HW21	444392.865	291574.374	106.300	1.269		Manhole		1	1.011	105.031	525
S114L	444454.757	291676.928	110.300	2.878	1200	Manhole		0	7.000	107.422	150
S114	444459.264	291672.153	110.153	3.488	1200	Manhole		1	7.000	106.815	150
								0	7.001	106.665	300
S115La	444427.447	291651.484	108.990	2.439	1200	Manhole		0	8.000	106.551	225
S115Lb	444433.123	291641.030	109.000	2.550	1200	Manhole		0	9.000	106.450	150
								1	9.000	106.412	150
S115	444430.189	291644.190	108.785	2.598	1200	Manhole		2	8.000	106.337	225
								3	7.001	106.262	300
								0	7.002	106.187	375
								1	7.002	106.123	375
S116	444416.379	291637.767	108.467	2.344	1200	Manhole		0	7.003	106.123	375
S117La	444384.406	291638.524	108.900	2.989	1200	Manhole		0	10.000	105.911	150
S117Lb	444387.944	291649.243	109.000	2.725	1200	Manhole		0	11.000	106.275	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Node Type	Connections	Link	IL (m)	Dia (mm)	
S117	444385.327	291643.147	108.819	3.212	1200	Manhole		1	11.000	105.832	150
								2	10.000	105.832	150
								3	7.003	105.607	375
								0	7.004	105.607	375
S118	444375.733	291648.800	108.654	3.117	1200	Manhole		1	7.004	105.537	375
								0	7.005	105.537	375
S119	444349.998	291624.828	107.717	2.323	1200	Manhole		1	7.005	105.394	375
								0	7.006	105.394	375
S120L	444358.999	291610.511	108.000	2.472	1200	Manhole					
						0		12.000	105.528	150	
S120	444354.732	291606.222	107.000	1.758	1200	Manhole		1	12.000	105.467	150
								2	7.006	105.242	375
								0	7.007	105.242	375
HW22	444355.507	291596.120	106.286	1.205		Manhole		1	7.007	105.181	375
HW23	444370.615	291565.689	106.286	1.255		Manhole					
								0	1.012	105.031	525
S121	444364.822	291560.491	106.300	1.289	2700	Manhole		1	1.012	105.011	525
								0	1.013	105.011	225
HW24	444342.087	291539.997	105.600	0.895		Manhole		1	1.013	104.705	225

Simulation Settings

Rainfall Methodology	FSR	Skip Steady State	x
FSR Region	England and Wales	Drain Down Time (mins)	240
M5-60 (mm)	20.000	Additional Storage (m³/ha)	20.0
Ratio-R	0.400	Check Discharge Rate(s)	x
Summer CV	0.750	Check Discharge Volume	x
Analysis Speed	Normal		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

Node HW24 Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m ²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		
Applies to All storms					

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	0.895	255	0.895	510	0.895	765	0.895	1020	0.895	1275	0.895
15	0.895	270	0.895	525	0.895	780	0.895	1035	0.895	1290	0.895
30	0.895	285	0.895	540	0.895	795	0.895	1050	0.895	1305	0.895
45	0.895	300	0.895	555	0.895	810	0.895	1065	0.895	1320	0.895
60	0.895	315	0.895	570	0.895	825	0.895	1080	0.895	1335	0.895
75	0.895	330	0.895	585	0.895	840	0.895	1095	0.895	1350	0.895
90	0.895	345	0.895	600	0.895	855	0.895	1110	0.895	1365	0.895
105	0.895	360	0.895	615	0.895	870	0.895	1125	0.895	1380	0.895
120	0.895	375	0.895	630	0.895	885	0.895	1140	0.895	1395	0.895
135	0.895	390	0.895	645	0.895	900	0.895	1155	0.895	1410	0.895
150	0.895	405	0.895	660	0.895	915	0.895	1170	0.895	1425	0.895
165	0.895	420	0.895	675	0.895	930	0.895	1185	0.895	1440	0.895
180	0.895	435	0.895	690	0.895	945	0.895	1200	0.895		
195	0.895	450	0.895	705	0.895	960	0.895	1215	0.895		
210	0.895	465	0.895	720	0.895	975	0.895	1230	0.895		
225	0.895	480	0.895	735	0.895	990	0.895	1245	0.895		
240	0.895	495	0.895	750	0.895	1005	0.895	1260	0.895		

Node S121 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	105.011	Product Number	CTL-SHE-0104-4900-1000-4900
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.9	Min Node Diameter (mm)	1200

Node HW23 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	50.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	105.031	Main Channel Slope (1:X)	1000.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.020

Inlets

HW22 | HW21

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	1114.0	0.0	1.500	1842.0	0.0	1.501	0.0	0.0

Other (defaults)

Entry Loss (manhole)	0.000	Entry Loss (junction)	0.000	Apply Recommended Losses	x
Exit Loss (manhole)	0.000	Exit Loss (junction)	0.000	Flood Risk (m)	0.300

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
2 year 15 minute summer	141.566	40.058	30 year 360 minute summer	31.221	8.034
2 year 30 minute summer	91.753	25.963	30 year 480 minute summer	24.324	6.428
2 year 60 minute summer	61.301	16.200	30 year 600 minute summer	19.756	5.404
2 year 120 minute summer	37.449	9.897	30 year 720 minute summer	17.490	4.687
2 year 180 minute summer	28.672	7.378	30 year 960 minute summer	14.215	3.743
2 year 240 minute summer	22.636	5.982	30 year 1440 minute summer	10.161	2.723
2 year 360 minute summer	17.235	4.435	100 year +40% CC 15 minute summer	488.233	138.153
2 year 480 minute summer	13.550	3.581	100 year +40% CC 30 minute summer	320.551	90.705
2 year 600 minute summer	11.088	3.033	100 year +40% CC 60 minute summer	214.603	56.713
2 year 720 minute summer	9.878	2.647	100 year +40% CC 120 minute summer	129.587	34.246
2 year 960 minute summer	8.113	2.136	100 year +40% CC 180 minute summer	97.729	25.149
2 year 1440 minute summer	5.891	1.579	100 year +40% CC 240 minute summer	75.977	20.078
30 year 15 minute summer	268.706	76.035	100 year +40% CC 360 minute summer	56.677	14.585
30 year 30 minute summer	174.929	49.499	100 year +40% CC 480 minute summer	43.979	11.622
30 year 60 minute summer	116.589	30.811	100 year +40% CC 600 minute summer	35.604	9.738
30 year 120 minute summer	70.438	18.615	100 year +40% CC 720 minute summer	31.433	8.424
30 year 180 minute summer	53.298	13.715	100 year +40% CC 960 minute summer	25.432	6.697
30 year 240 minute summer	41.604	10.995	100 year +40% CC 1440 minute summer	18.055	4.839

Results for 2 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.105	0.040	8.1	0.0618	0.0000	OK
15 minute summer	S103	10	110.055	0.051	13.1	0.0686	0.0000	OK
15 minute summer	S104L	10	110.050	0.047	11.8	0.0821	0.0000	OK
15 minute summer	S104	10	108.722	0.066	28.0	0.0832	0.0000	OK
15 minute summer	S105	10	107.715	0.106	31.0	0.1315	0.0000	OK
15 minute summer	S106	11	107.505	0.146	34.1	0.1821	0.0000	OK
15 minute summer	S107	11	107.449	0.150	35.9	0.1787	0.0000	OK
15 minute summer	S108	11	107.391	0.151	38.1	0.1826	0.0000	OK
15 minute summer	S109L	10	107.550	0.060	9.2	0.0970	0.0000	OK
15 minute summer	S109	11	107.324	0.142	52.0	0.1958	0.0000	OK
15 minute summer	S110L	10	107.188	0.082	10.4	0.1784	0.0000	OK
15 minute summer	S110	11	106.852	0.100	66.2	0.1489	0.0000	OK
15 minute summer	S111L	10	105.962	0.074	8.7	0.1264	0.0000	OK
15 minute summer	S111	11	105.667	0.147	76.2	0.1804	0.0000	OK
15 minute summer	S112	11	105.525	0.152	81.5	0.2234	0.0000	OK
15 minute summer	S113L	10	105.594	0.106	15.3	0.2193	0.0000	OK
1440 minute summer	S113	1440	105.324	0.260	6.9	0.2936	0.0000	OK
1440 minute summer	HW21	1440	105.328	0.297	12.6	0.0000	0.0000	OK
15 minute summer	S114L	10	107.464	0.042	9.2	0.0626	0.0000	OK
15 minute summer	S114	10	106.740	0.075	15.6	0.1004	0.0000	OK
15 minute summer	S115La	10	106.629	0.078	22.4	0.1700	0.0000	OK
15 minute summer	S115Lb	10	106.521	0.071	7.6	0.1043	0.0000	OK
15 minute summer	S115	10	106.343	0.156	48.8	0.2017	0.0000	OK
15 minute summer	S116	11	106.252	0.129	57.9	0.2081	0.0000	OK
15 minute summer	S117La	10	105.982	0.071	10.6	0.1095	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	8.1	1.437	0.069	0.1193	
15 minute summer	S103	1.001	S104	12.9	1.934	0.112	0.1747	
15 minute summer	S104L	2.000	S104	11.7	2.464	0.215	0.0613	
15 minute summer	S104	1.002	S105	27.9	1.661	0.109	0.3376	
15 minute summer	S105	1.003	S106	30.6	1.092	0.275	0.7013	
15 minute summer	S106	1.004	S107	34.2	0.989	0.481	0.5034	
15 minute summer	S107	1.005	S108	36.1	1.022	0.511	0.5110	
15 minute summer	S108	1.006	S109	38.1	1.114	0.540	0.4963	
15 minute summer	S109L	3.000	S109	9.1	1.400	0.334	0.0440	
15 minute summer	S109	1.007	S110	51.7	1.571	0.465	1.2168	
15 minute summer	S110L	4.000	S110	10.3	1.048	0.579	0.0530	
15 minute summer	S110	1.008	S111	66.1	1.875	0.112	1.3134	
15 minute summer	S111L	5.000	S111	8.6	1.001	0.486	0.0580	
15 minute summer	S111	1.009	S112	76.0	1.655	0.235	0.6748	
15 minute summer	S112	1.010	S113	81.3	1.634	0.252	1.1821	
15 minute summer	S113L	6.000	S113	15.1	1.136	0.852	0.0652	
1440 minute summer	S113	1.011	HW21	7.4	0.184	0.028	1.2866	
1440 minute summer	HW21	Flow through pond	HW23	11.5	0.020	0.000	313.3247	
15 minute summer	S114L	7.000	S114	9.2	2.295	0.168	0.0262	
15 minute summer	S114	7.001	S115	15.4	1.068	0.138	0.5852	
15 minute summer	S115La	8.000	S115	22.3	1.838	0.258	0.0944	
15 minute summer	S115Lb	9.000	S115	7.5	0.926	0.453	0.0351	
15 minute summer	S115	7.002	S116	48.2	1.258	0.373	0.5847	
15 minute summer	S116	7.003	S117	57.6	1.267	0.263	1.9651	
15 minute summer	S117La	10.000	S117	10.5	1.281	0.457	0.0388	

Results for 2 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	10	106.324	0.049	10.6	0.0772	0.0000	OK
15 minute summer	S117	11	105.802	0.195	78.1	0.2201	0.0000	OK
15 minute summer	S118	11	105.749	0.212	81.9	0.2692	0.0000	OK
15 minute summer	S119	11	105.576	0.182	80.5	0.2055	0.0000	OK
15 minute summer	S120L	10	105.632	0.104	14.9	0.1896	0.0000	OK
15 minute summer	S120	11	105.452	0.210	96.5	0.2380	0.0000	OK
15 minute summer	HW22	11	105.355	0.274	96.3	0.0000	0.0000	OK
1440 minute summer	HW23	1680	105.322	0.290	11.5	0.0000	0.0000	OK
1440 minute summer	S121	1650	105.322	0.310	0.2	1.7777	0.0000	SURCHARGED
15 minute summer	HW24	1	105.600	0.895	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	10.5	2.123	0.228	0.0330	
15 minute summer	S117	7.004	S118	78.3	1.286	0.495	0.6782	
15 minute summer	S118	7.005	S119	80.5	1.390	0.633	2.0566	
15 minute summer	S119	7.006	S120	82.1	1.416	0.462	1.1183	
15 minute summer	S120L	12.000	S120	14.7	1.135	0.827	0.0785	
15 minute summer	S120	7.007	HW22	96.3	1.516	0.622	0.6440	
15 minute summer	HW22	Flow through pond	HW23	200.6	0.204	0.003	84.2271	
1440 minute summer	HW23	1.012	S121	0.2	0.096	0.001	0.9941	
1440 minute summer	S121	Hydro-Brake®	HW24	0.0				0.0

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.120	0.055	15.5	0.0851	0.0000	OK
15 minute summer	S103	10	110.075	0.071	24.9	0.0954	0.0000	OK
15 minute summer	S104L	10	110.070	0.067	22.4	0.1160	0.0000	OK
15 minute summer	S104	10	108.748	0.092	53.3	0.1154	0.0000	OK
15 minute summer	S105	10	107.765	0.157	59.0	0.1934	0.0000	OK
15 minute summer	S106	11	107.584	0.225	65.2	0.2815	0.0000	OK
15 minute summer	S107	11	107.530	0.231	68.3	0.2757	0.0000	OK
15 minute summer	S108	11	107.470	0.230	72.4	0.2791	0.0000	OK
15 minute summer	S109L	10	107.577	0.087	17.4	0.1406	0.0000	OK
15 minute summer	S109	11	107.397	0.216	98.6	0.2970	0.0000	OK
15 minute summer	S110L	10	107.239	0.133	19.7	0.2893	0.0000	OK
15 minute summer	S110	11	106.891	0.139	125.8	0.2062	0.0000	OK
15 minute summer	S111L	10	106.001	0.113	16.5	0.1941	0.0000	OK
15 minute summer	S111	11	105.732	0.212	144.7	0.2600	0.0000	OK
15 minute summer	S112	11	105.602	0.229	154.9	0.3363	0.0000	OK
15 minute summer	S113L	10	105.715	0.227	29.0	0.4684	0.0000	SURCHARGED
1440 minute summer	S113	1440	105.495	0.431	12.2	0.4877	0.0000	OK
1440 minute summer	HW21	1440	105.511	0.480	40.4	0.0000	0.0000	OK
15 minute summer	S114L	10	107.480	0.058	17.4	0.0875	0.0000	OK
15 minute summer	S114	10	106.769	0.104	29.5	0.1397	0.0000	OK
15 minute summer	S115La	10	106.662	0.111	42.5	0.2421	0.0000	OK
15 minute summer	S115Lb	10	106.557	0.107	14.5	0.1581	0.0000	OK
15 minute summer	S115	10	106.412	0.225	92.8	0.2912	0.0000	OK
15 minute summer	S116	11	106.307	0.184	109.5	0.2963	0.0000	OK
15 minute summer	S117La	10	106.019	0.108	20.1	0.1659	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	15.4	1.726	0.132	0.1901	
15 minute summer	S103	1.001	S104	24.7	2.327	0.214	0.2773	
15 minute summer	S104L	2.000	S104	22.3	2.937	0.408	0.0978	
15 minute summer	S104	1.002	S105	53.1	1.927	0.207	0.5522	
15 minute summer	S105	1.003	S106	58.6	1.251	0.527	1.1597	
15 minute summer	S106	1.004	S107	65.2	1.134	0.918	0.8378	
15 minute summer	S107	1.005	S108	68.6	1.179	0.971	0.8420	
15 minute summer	S108	1.006	S109	72.5	1.292	1.028	0.8156	
15 minute summer	S109L	3.000	S109	17.3	1.645	0.631	0.0708	
15 minute summer	S109	1.007	S110	98.2	1.813	0.884	2.0064	
15 minute summer	S110L	4.000	S110	19.4	1.198	1.095	0.0877	
15 minute summer	S110	1.008	S111	125.7	2.204	0.212	2.1192	
15 minute summer	S111L	5.000	S111	16.3	1.145	0.921	0.0959	
15 minute summer	S111	1.009	S112	144.5	1.882	0.447	1.1319	
15 minute summer	S112	1.010	S113	154.5	1.603	0.479	2.2826	
15 minute summer	S113L	6.000	S113	28.5	1.621	1.607	0.0854	
1440 minute summer	S113	1.011	HW21	12.0	0.172	0.046	2.2013	
1440 minute summer	HW21	Flow through pond	HW23	14.5	0.017	0.000	528.7038	
15 minute summer	S114L	7.000	S114	17.3	2.742	0.319	0.0415	
15 minute summer	S114	7.001	S115	29.2	1.049	0.263	1.1489	
15 minute summer	S115La	8.000	S115	42.3	2.182	0.489	0.1511	
15 minute summer	S115Lb	9.000	S115	14.4	1.068	0.862	0.0580	
15 minute summer	S115	7.002	S116	91.2	1.490	0.706	0.9349	
15 minute summer	S116	7.003	S117	109.3	1.433	0.498	3.2919	
15 minute summer	S117La	10.000	S117	20.0	1.475	0.866	0.0638	

Results for 30 year Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	10	106.344	0.069	20.1	0.1091	0.0000	OK
15 minute summer	S117	11	105.924	0.317	148.8	0.3581	0.0000	OK
15 minute summer	S118	11	105.879	0.342	155.1	0.4351	0.0000	OK
15 minute summer	S119	11	105.679	0.285	155.0	0.3224	0.0000	OK
15 minute summer	S120L	10	105.765	0.237	28.3	0.4324	0.0000	SURCHARGED
15 minute summer	S120	11	105.573	0.331	181.8	0.3741	0.0000	OK
1440 minute summer	HW22	1440	105.510	0.428	21.8	0.0000	0.0000	OK
1440 minute summer	HW23	1470	105.489	0.458	14.5	0.0000	0.0000	OK
1440 minute summer	S121	1470	105.489	0.478	0.2	2.7377	0.0000	SURCHARGED
15 minute summer	HW24	1	105.600	0.895	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	20.0	2.484	0.433	0.0629	
15 minute summer	S117	7.004	S118	148.2	1.461	0.936	1.1403	
15 minute summer	S118	7.005	S119	155.0	1.581	1.220	3.4361	
15 minute summer	S119	7.006	S120	154.4	1.607	0.868	1.8510	
15 minute summer	S120L	12.000	S120	27.8	1.580	1.560	0.1054	
15 minute summer	S120	7.007	HW22	181.2	1.789	1.169	1.0260	
1440 minute summer	HW22	Flow through pond	HW23	14.5	0.017	0.000	528.7038	
1440 minute summer	HW23	1.012	S121	-0.2	0.132	-0.001	1.5816	
1440 minute summer	S121	Hydro-Brake®	HW24	0.0				0.0

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S102	10	111.140	0.075	28.1	0.1155	0.0000	OK
15 minute summer	S103	10	110.101	0.097	45.3	0.1314	0.0000	OK
15 minute summer	S104L	10	110.100	0.097	40.7	0.1673	0.0000	OK
15 minute summer	S104	11	108.803	0.147	96.8	0.1848	0.0000	OK
15 minute summer	S105	12	108.502	0.894	107.2	1.1035	0.0000	SURCHARGED
15 minute summer	S106	12	108.317	0.958	109.0	1.1967	0.0000	SURCHARGED
15 minute summer	S107	12	108.181	0.882	112.0	1.0514	0.0000	SURCHARGED
15 minute summer	S108	12	108.029	0.789	117.6	0.9562	0.0000	SURCHARGED
15 minute summer	S109L	12	108.018	0.528	31.7	0.8574	0.0000	SURCHARGED
15 minute summer	S109	12	107.857	0.676	159.3	0.9285	0.0000	SURCHARGED
15 minute summer	S110L	10	107.415	0.309	35.9	0.6739	0.0000	SURCHARGED
15 minute summer	S110	11	106.933	0.180	207.1	0.2684	0.0000	OK
15 minute summer	S111L	10	106.155	0.267	29.9	0.4585	0.0000	SURCHARGED
15 minute summer	S111	11	105.824	0.304	241.2	0.3731	0.0000	OK
1440 minute summer	S112	1110	105.737	0.364	18.5	0.5349	0.0000	OK
15 minute summer	S113L	11	106.036	0.548	52.6	1.1318	0.0000	SURCHARGED
1440 minute summer	S113	1110	105.737	0.673	45.7	0.7615	0.0000	SURCHARGED
1440 minute summer	HW21	1200	105.782	0.751	138.0	0.0000	0.0000	OK
15 minute summer	S114L	11	107.510	0.087	31.7	0.1311	0.0000	OK
15 minute summer	S114	12	107.242	0.577	53.7	0.7750	0.0000	SURCHARGED
15 minute summer	S115La	12	107.287	0.736	77.1	1.6120	0.0000	SURCHARGED
15 minute summer	S115Lb	12	107.239	0.789	26.3	1.1647	0.0000	SURCHARGED
15 minute summer	S115	12	107.173	0.986	157.4	1.2752	0.0000	SURCHARGED
15 minute summer	S116	12	107.100	0.977	174.1	1.5712	0.0000	SURCHARGED
15 minute summer	S117La	12	106.940	1.029	36.5	1.5829	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S102	1.000	S103	28.0	2.026	0.240	0.2935	
15 minute summer	S103	1.001	S104	44.9	2.742	0.389	0.4281	
15 minute summer	S104L	2.000	S104	40.5	3.386	0.743	0.1542	
15 minute summer	S104	1.002	S105	96.4	2.062	0.376	1.0430	
15 minute summer	S105	1.003	S106	97.6	1.386	0.878	1.7542	
15 minute summer	S106	1.004	S107	106.3	1.510	1.497	1.0253	
15 minute summer	S107	1.005	S108	112.0	1.590	1.585	1.0193	
15 minute summer	S108	1.006	S109	118.6	1.685	1.682	1.0221	
15 minute summer	S109L	3.000	S109	27.5	1.731	1.003	0.1187	
15 minute summer	S109	1.007	S110	160.3	2.277	1.442	2.5771	
15 minute summer	S110L	4.000	S110	35.0	1.989	1.973	0.0941	
15 minute summer	S110	1.008	S111	206.5	2.395	0.349	3.2012	
15 minute summer	S111L	5.000	S111	29.3	1.667	1.658	0.1175	
15 minute summer	S111	1.009	S112	238.3	2.051	0.737	1.7744	
1440 minute summer	S112	1.010	S113	22.6	0.668	0.070	3.4738	
15 minute summer	S113L	6.000	S113	50.9	2.889	2.864	0.0862	
1440 minute summer	S113	1.011	HW21	-35.4	0.242	-0.135	2.3984	
1440 minute summer	HW21	Flow through pond	HW23	44.3	0.045	0.001	827.4185	
15 minute summer	S114L	7.000	S114	31.6	3.200	0.581	0.0928	
15 minute summer	S114	7.001	S115	52.4	1.098	0.472	2.8407	
15 minute summer	S115La	8.000	S115	72.2	2.449	0.836	0.3099	
15 minute summer	S115Lb	9.000	S115	24.1	1.367	1.445	0.0759	
15 minute summer	S115	7.002	S116	142.2	1.632	1.100	1.6798	
15 minute summer	S116	7.003	S117	164.9	1.501	0.752	4.7431	
15 minute summer	S117La	10.000	S117	31.2	1.772	1.354	0.0830	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 95.27%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	S117Lb	12	106.996	0.721	36.5	1.1387	0.0000	SURCHARGED
15 minute summer	S117	12	106.802	1.195	223.6	1.3513	0.0000	SURCHARGED
15 minute summer	S118	12	106.659	1.122	234.2	1.4275	0.0000	SURCHARGED
15 minute summer	S119	12	106.165	0.771	234.4	0.8722	0.0000	SURCHARGED
15 minute summer	S120L	11	106.331	0.803	51.4	1.4666	0.0000	SURCHARGED
15 minute summer	S120	12	105.895	0.653	278.3	0.7381	0.0000	SURCHARGED
1440 minute summer	HW22	1260	105.743	0.662	30.8	0.0000	0.0000	OK
1440 minute summer	HW23	1230	105.706	0.675	44.3	0.0000	0.0000	SURCHARGED
1440 minute summer	S121	1230	105.706	0.695	4.1	3.9819	0.0000	SURCHARGED
15 minute summer	HW24	1	105.600	0.895	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	S117Lb	11.000	S117	31.1	2.413	0.672	0.1168	
15 minute summer	S117	7.004	S118	223.9	2.030	1.414	1.2283	
15 minute summer	S118	7.005	S119	234.4	2.126	1.845	3.8791	
15 minute summer	S119	7.006	S120	234.6	2.127	1.319	2.1176	
15 minute summer	S120L	12.000	S120	47.8	2.716	2.682	0.1065	
15 minute summer	S120	7.007	HW22	278.5	2.525	1.797	1.1175	
1440 minute summer	HW22	Flow through pond	HW23	44.3	0.045	0.001	827.4185	
1440 minute summer	HW23	1.012	S121	4.1	0.031	0.017	1.6814	
1440 minute summer	S121	Hydro-Brake®	HW24	3.8				155.4

APPENDIX L – DRAINAGE MAINTENANCE SCHEDULE

Drainage Maintenance Schedule - Burbage Field Farm

Schedule	Feature	Location	Inspection Type	Inspection Frequency	Required Action	Maintenance Works	Maintenance Intervals	Comments
Regular Maintenance	Foul Water Pump	Southern Boundary	Visual	3 Months	Inspection of outlet and cover grate, remove debris and litter and ensure outlet is clear	Silt / Debris removal	6 Months (or as required)	Maintenance interval subject to specialist maintenance agreement with supplier
	Rain Garden	Southern Parcel	Visual	3 Months	Removal of debris and weeding	Debris removal / Weeding	Monthly (or as required).	Maintenance interval subject to Visual Inspection findings
	Attenuation Basin	South Eastern Boundary	Visual	3 Months	Removal of litter and debris	Litter removal	Monthly (or as required).	Maintenance interval subject to Visual Inspection findings
	Attenuation Basin	South Eastern Boundary	Visual	3 Months	Inspect Outlets, Inlets and Overflows for Blockages and Clear if Required.	Repairs as required	Monthly (or as required).	Maintenance interval subject to Visual Inspection findings
	Attenuation Basin	South Eastern Boundary	Visual	3 Times per year (see comments)	Manage Other Vegetation and Remove Nuisance Plants.	Weed Removal	3 Times per year (see comments)	Maintenance interval subject to Visual Inspection findings
	Flow Control Chamber	S19, S66, S106, S122	Visual	3 Months	Removal of litter and debris	Silt / Debris removal	6 Months (or as required)	Maintenance interval subject to Visual Inspection findings
Occasional Maintenance	Foul & Surface Water Chambers	Entire site	Visual	6 Months	Remove silt and leaf build up from gullies, chambers, gutters etc.	Silt / Debris removal	As required (debris max. 60% of capacity)	Maintenance interval subject to Visual Inspection findings
	Foul Water Pump	Southern Boundary	Visual	6 Months	Mechanical silt removal from sump	Silt / Debris removal	As required (debris max. 60% of capacity)	Maintenance interval subject to Visual Inspection findings
	Flow Control Chamber	S19, S66, S106, S122	Visual	6 Months	Mechanical silt removal from sump	Silt / Debris removal	As required (debris max. 60% of capacity)	Maintenance interval subject to Visual Inspection findings
	Perforated Carrier Drains	Parking bays/area, southern boundary	Visual	6 Months	CCTV / Jetting	Silt / Debris removal	As required (debris max. 60% of capacity)	Maintenance interval subject to Visual Inspection findings
	Attenuation Basin	South Eastern Boundary	Visual	6 Months	Removal from debris	Silt / Debris removal	6 Months (or as required)	Maintenance interval subject to Visual Inspection findings
	Catchpit Chambers	Entire Site	Visual	6 Months	Mechanical silt removal from sump	Silt / Debris removal	As required (debris max. 60% of capacity)	Maintenance interval subject to Visual Inspection findings

Remedial Actions	Foul & Surface Water Drainage	Entire site	Visual	12 Months	Remove and dispose of oils or fuel (diesel & petrol) residues using safe standard practices.	Safe removal or contaminant residues	As required.	As required.
Monitoring	Foul & Surface Water Drainage	Entire site	Visual	12 Months	Walk over inspection for condition (breaks, lifting & missing) of chamber covers and grates.	Replace broken or cracked inspection chamber covers	As required.	Maintenance interval subject to Visual Inspection findings
	Attenuation Basin	South Eastern Boundary	Visual	12 Months	Survey inside of pond for sediment build-up and remove if necessary	Remove sediment as required	5 Years or as required.	Maintenance interval subject to Visual Inspection findings

* If weeds are persitent, weed killer may be used to reduce the requirement for manual weed removal.

** Any block which is to be replaced should be bedded on anew layer of grit / sand.

*** If re-construction is necessary, the following procedure should be followed: 1. Lift surface layer and laying course, 2. Remove and geotextile filter layer, 3. inspect sub-base and wash/replace if required, 4. Renew any geotextile layer as required, 5. Renew laying course, jointing material and block paviours. Note: this is deemed unlikely to occur and thus unlikely to be implemented

Maintenance procedures to be undertaken in accordance with Ciria 753. This schedule should be read in conjunction with all engineering drawings

APPENDIX M – EXISTING DITCH AND CULVERT ASSESSMENT

Burbage Fields Farm, Burbage

Hydraulic Modelling Study

Draft report

October 2020

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Revision History

Revision Ref / Date	Amendments	Issued to
S03-P01 / October 2020	Draft	Nick Fenton (Rodgers Leask)
S03-P02 / October 2020	Draft	Nick Fenton and Lance Hammond (Rodgers Leask)

Contract

JBA was contacted on 25/06/2020 by Nick Fenton (Rodgers Leask) on behalf of Redrow Homes. James Hookham of JBA Consulting carried out this work.

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Purpose

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Executive summary

JBA Consulting (JBA) were commissioned by Rodgers Leask Ltd to undertake a hydraulic modelling study of an unnamed watercourse in relation to a proposed development sites at Burbage Fields Farm, Burbage.

The watercourse was modelled using the Flood Modeller – TUFLOW hydraulic modelling package. LiDAR and topographic survey datum was used to provide ground levels throughout the floodplain. No historical flood risk records associated with the watercourse could be found. As a result, the hydraulic model is uncalibrated.

The baseline model results indicate that:

- Overtopping of the channel will occur within the 20-year, 100 year, 100-year plus 30% climate change, 100-year plus 50% climate change and 1000-year fluvial flood extent.
- The M69 culvert does have sufficient capacity to accommodate the 20-year, 100-year, 100-year plus 30% climate change and the 100-year plus 50% climate change peak flows however, the culvert is surcharged during the 1000-year flood scenario.
- The peak water levels within the site will range:
 - Between 101.38m AOD and 118.5m AOD during the 20-year (5% AEP) fluvial flood event;
 - Between 101.48m AOD and 118.62m AOD during the 100-year (1% AEP) fluvial flood event;
 - Between 101.52m AOD and 118.7m AOD during the 100-year (1% AEP) with 30% climate change fluvial flood event;
 - Between 101.53m AOD and 118.76m AOD during the 100-year (1% AEP) with 50% climate change fluvial flood event;
 - Between 101.56m AOD and 118.79m AOD during the 1,000-year (0.1% AEP) fluvial flood event.

A blockage analysis was carried out at the M69 culvert. Due to the nature of the surrounding environment (i.e. branches hanging over the channel), a 75% blockage was modelled at the culvert inlet. The results from this analysis show an increase in water depth of up to 1.6m for up to 120m upstream of the culvert.

The hydraulic model's sensitivity to changes in flow, downstream boundary and roughness values were also tested to improve confidence in the model results within the development site boundary. Results from the sensitivity analysis indicate that an increase of 20% to both the flow and roughness values increase the peak water level by 80mm and 70mm respectively, this suggests the model is moderately sensitive to changes in flow and roughness. An increase of +250mm at the downstream boundary increase the peak water level by 20mm so this the model results are relatively insensitive to changes at the downstream boundary site.

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Abbreviations

1D	One Dimensional
2D	Two Dimensional
CC	Climate Change
DTM	Digital Terrain Model
EA	Environment Agency
Flood Modeller	Primary 1D engine used by TUFLOW
FEH	Flood Estimation Handbook
FFL	Finished Floor Levels
GCS	Grantham Coates Surveyors
Ha	Hectares
HT	Head-Time
HQ	Head Flow
JBA	Jeremy Benn Associates
LiDAR	Light Detection and Ranging
m AOD	Metres Above Ordnance Datum
QMED	Median annual flow
QT	Flow-Time
ReFH	Revitalised Flood Hydrograph
RoFSW	Risk of Flooding from Surface Water
TUFLOW	2D Hydraulic Modelling Software

1 Introduction

1.1 Terms of reference

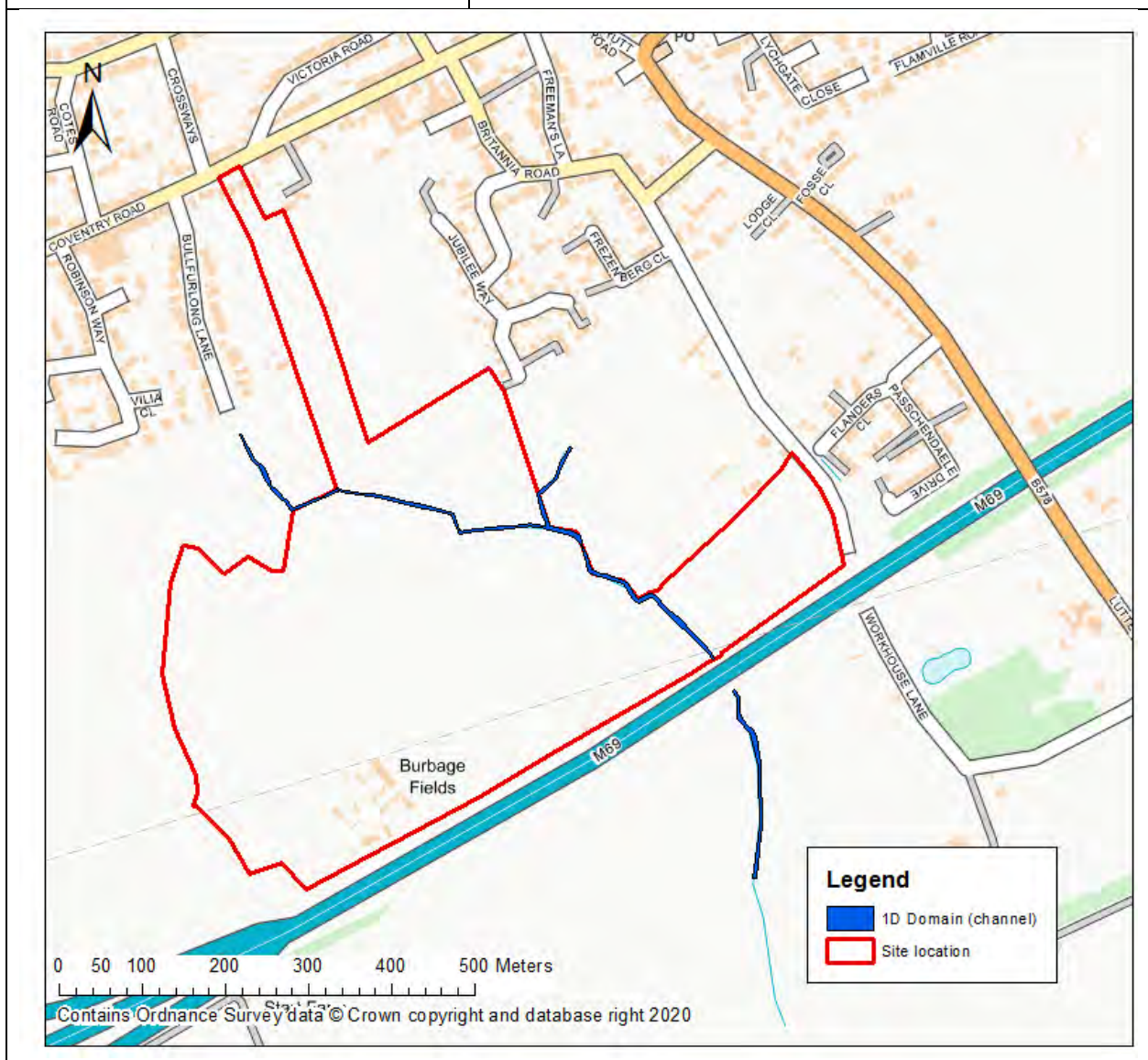
JBA Consulting (JBA) were commissioned by Rodgers Leask to undertake a hydraulic modelling study of an unnamed watercourse in relation to a proposed development sites at Burbage Fields Farm, Burbage.

To support this assessment, a 1D-2D Flood Modeller – TUFLOW hydraulic model was produced to allow accurate representation of the flood levels, extents and hazards within the site boundary.

1.2 Site details

Table 1-1: Site details

Site name	Burbage Fields Farm, Burbage
Existing land-use	Predominantly greenfield
OS NGR	SP 44171 918652
County	Leicestershire
Country	England



1.3 Context

Redrow Homes wish to submit a planning application for a residential development at Burbage Fields Farm, Burbage.

The site is crossed by an unnamed watercourse and its tributary, for which no detailed (fluvial) hydraulic modelling results are available.

The EA's RoFSW maps show surface water ponding along the watercourse immediately upstream of the M69 culvert.

As a way forward, Redrow Homes wishes to refine the flood extents associated with the unnamed watercourse in order to inform their Masterplan, confirm whether the M69 culvert has sufficient capacity and determine the size of the new culverts required to support their development proposal.

1.4 General Approach

New survey of the unnamed watercourse was commissioned in order to accurately represent the watercourse within the vicinity of the sites. A total of 21 cross-sections were surveyed across the channel of the unnamed watercourse.

A hydrological assessment was carried out following the Environment Agency's FEH guidelines to derive fluvial flow estimates and a new 1D-2D linked Flood Modeller-TUFLOW hydraulic model has been developed to allow a more accurate understanding of flood levels, depths and extents within the site boundary. The model extends from the surface water sewer outfall off Bullfurlong Lane down to approximately 300m downstream of the site.

The model has been run for the baseline scenario for the 20-year, 100-year, 100-year with 30% and 50% climate change and 1000-year flood events in order to determine the existing flood risk to the site.

The hydraulic model's sensitivity to changes in flow, downstream boundary and roughness values was also tested to improve confidence in the model results within the development site boundary.

2 Model Approach

2.1 Model Geometry

2.1.1 Data availability

Grantham Coates Survey (GCS) were commissioned to collect channel survey data in August 2020. The survey consisted of 21 cross sections at regular intervals along the unnamed watercourse within the vicinity of the site. Key hydraulic structures along the watercourse are included within the survey. Typically, cross section survey was gathered from the upstream face of any structure (see Appendix B).

2m resolution LiDAR data flown in 2003 and 1m resolution LiDAR data flows in 2019 were obtained from the Open Data website and combined with site-specific topographic survey data (see Appendix A) to represent ground levels within the floodplain.

2.1.2 Model extent and development

The hydraulic model represents the unnamed watercourse with tributary and its corresponding floodplain in the vicinity of the proposed sites. The extent of the hydraulic model developed for this study is shown in Figure 2-1.

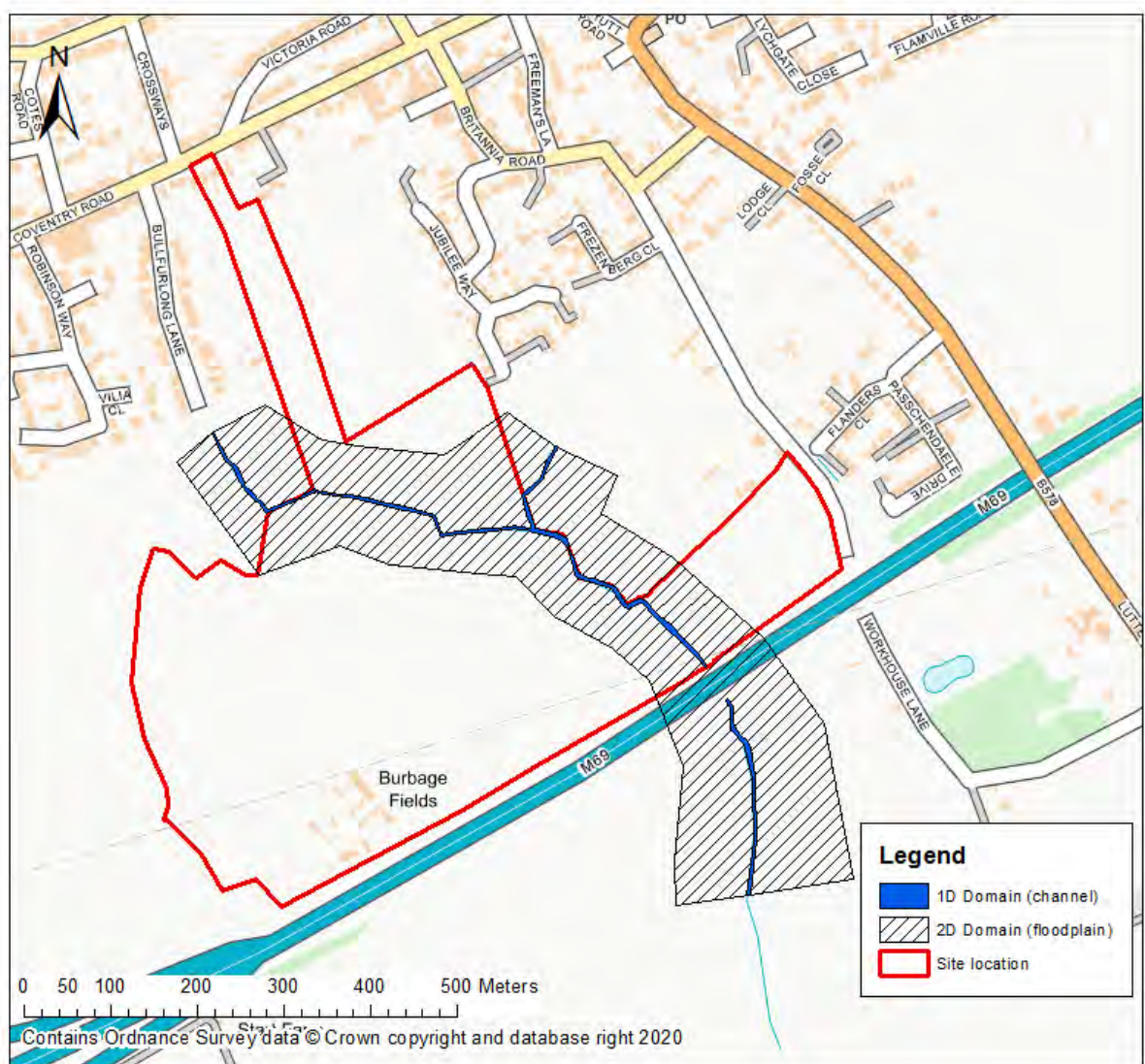


Figure 2-1 Model extent

The channels were represented as 1-dimensional (1D) features using Flood Modeller (version 4.3.0.290). The 1D model begins at the start of the unnamed watercourse and lateral tributary and ends approximately 0.4km downstream of the site. In total, the 1D domain covers approximately 1km of watercourse.

The 2D domain was represented using TUFLOW (2020-01-AA-iDP-W64) with floodplain topography represented using LiDAR data. The 2D domain has an area of 0.14km² and a 1m grid resolution. The orientation of the grid is southwest to northeast, representing the main direction of floodplain flows. The 1D and 2D domains can be seen in Figure 2-1.

2.1.3 Model roughness parameters

Manning's n was used to represent roughness values for the channel and floodplain. The values for channel roughness were based on photographs gathered by Grantham Coates Surveys during the site survey in August 2020. Manning's n values in the floodplain were based on different land uses in the 2D domain. Land uses were defined using OS mapping and satellite imagery. Table 2-1 gives the range of Manning's n values used in the 1D and 2D domains.

Table 2-1: Manning's n range within the hydraulic model	
1D Channel	0.040 (in channel) and between 0.060 and 0.065 (banks)
General Surface	0.060
Woodland	0.065
Roads and tracks	0.015
Buildings	0.300
Water	0.035
Rail	0.045

2.1.4 Model structures

Key hydraulic structures located along the unnamed watercourse were represented in the 1D domain using Flood Modeller 1D network units. Details of how these structures were modelled can be found in Appendix C.

2.2 Bank levels

Bank levels in the model were generated using surveyed bank levels and, where unavailable, LiDAR data.

2.3 Model boundary Conditions

2.3.1 Model inflows

A hydrological assessment was carried out on the unnamed watercourse and the lateral tributary to derive flow estimates at the upstream end and downstream end of the modelled watercourse (UNN_01 and TRB_01, respectively). The full hydrological assessment is documented in Appendix D.

The table below shows the peak flows for each of the inflow points.

Table 2-2: Peak flows

Site code	Flood peak (m ³ /s) for the following events		
	20-year	100-year	1000-year
UNN_01	0.38	0.56	1.03
TRIB1	0.18	0.27	0.50

In line with the guidance on Climate Change issued by the Environment Agency in February 2016¹, the effect of climate change was assessed by increasing peak flows by 30% and 50% (higher central and upper end allowances respectively for more vulnerable developments within the Humber river basin).

2.3.2 Downstream boundary conditions

A normal depth boundary condition based on the average bed slope between the last two channel sections in the model was used to represent the downstream boundary conditions in the channel.

In the 2D domain, two TUFLOW 'HQ lines' (i.e. normal depth downstream boundary conditions based on the average slope in the floodplain at the downstream end of the model) were used to represent the downstream boundary conditions in the floodplain/2D domain.

2.4 Calibration

No specific flood levels or flow data could be found over the modelled extent. As a result, the model is uncalibrated. However, sensitivity testing has been conducted to provide confidence in model parameters.

¹ <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>

2.5 Model Runs

2.5.1 Modelled Scenarios

The following flood scenarios were simulated by the model:

- [Baseline scenario] 20-year (5% AEP) flood event - existing condition scenario;
- [Baseline scenario] 100-year (1% AEP) flood event - existing condition scenario;
- [Baseline scenario] 100-year (1% AEP) plus Climate Change (30%) flood event - existing condition scenario;
- [Baseline scenario] 100-year (1% AEP) plus Climate Change (50%) flood event - existing condition scenario;
- [Baseline scenario] 1000-year (0.1% AEP) flood event - existing condition scenario;
- [Blockage scenario] 100-year (1% AEP) plus Climate Change (30%) flood event – 75% blockage of the M69 Culvert (UNN_591)
- [Sensitivity analysis] 100-year (1% AEP) flood event with +20% increase in peak flows;
- [Sensitivity analysis] 100-year (1% AEP) flood event with +20% increase in roughness value;
- [Sensitivity analysis] 100-year (1% AEP) flood event with +250mm increase in water levels at the downstream model boundary;

The results of the baseline scenarios are discussed in the following section with sensitivity analysis included in Appendix E of this report.

3 Hydraulic Model Results

3.1 Baseline Flood extents

Flood extents for the 20-year, 100-year and 1,000-year fluvial flood events are shown in Figure 3-1.

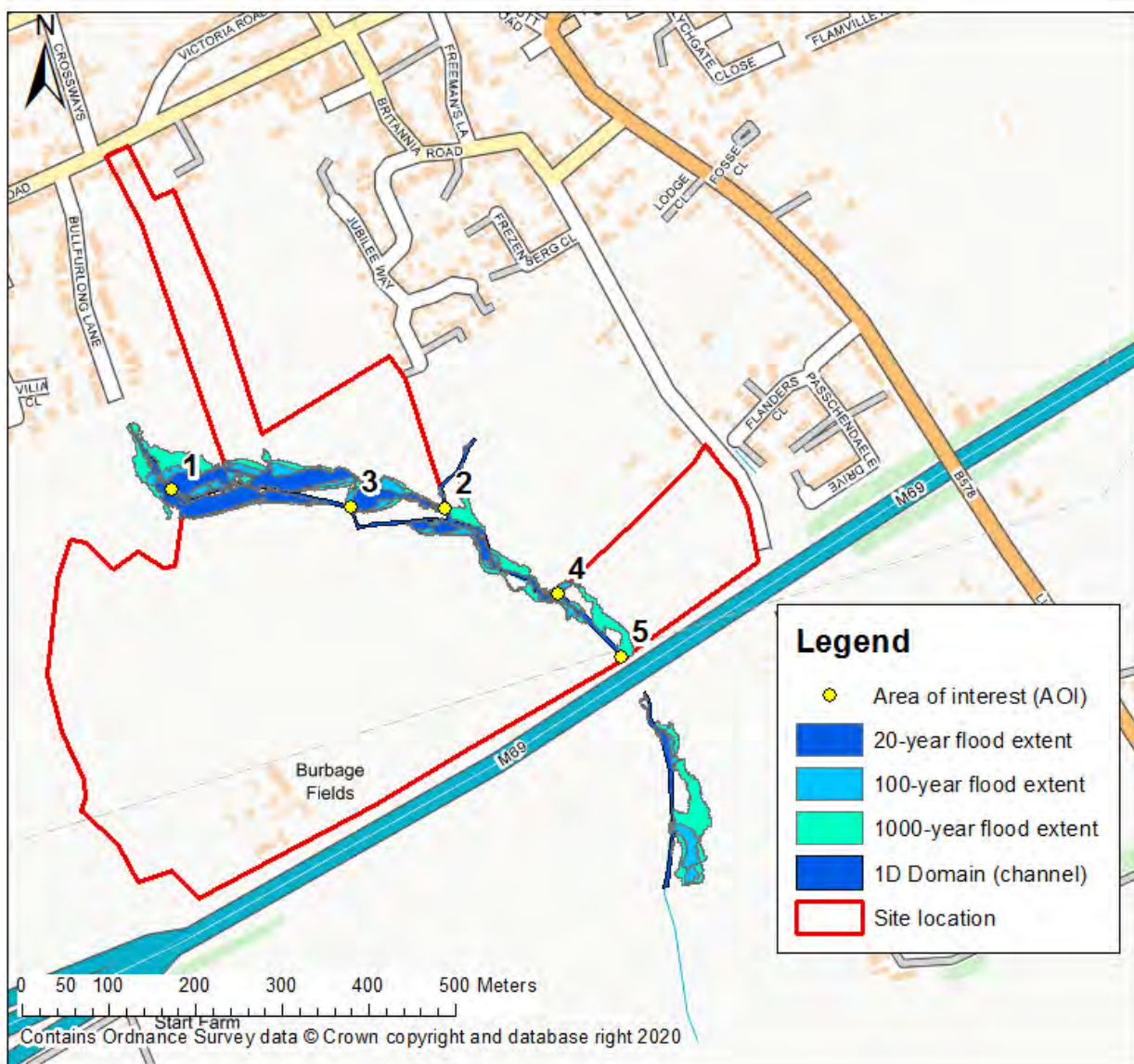


Figure 3-1: Baseline flood extents (20yr, 100yr and 1,000yr)

Figure 3-1: shows that flooding does not generally remained confined to or along the river channel during all modelled fluvial flood event. Overtopping of the channel occurs at Area of Interest (AOI) 1 during each simulation. A site walkover carried on the 23/09/2020 confirmed the bank elevations were relatively low (i.e. less than 0.5m high) at this location.

Following overtopping of the bank, overland flows run eastwards, met exceedance flows from another overtopping location (see AOI 3 in Figure 3-1) before re-turning into the channel at AOI 2.

A similar flood mechanism occurs downstream during the 1,000-year simulation whereby overtopping of the bank occurs at AOI 4 before returning back into the channel at AOI 5 (next to the M69 culvert inlet).

Flood extents for the 100-year with (+30%) climate change and 100-year with (+50%) climate change fluvial flood events are represented in Figure 3-2.

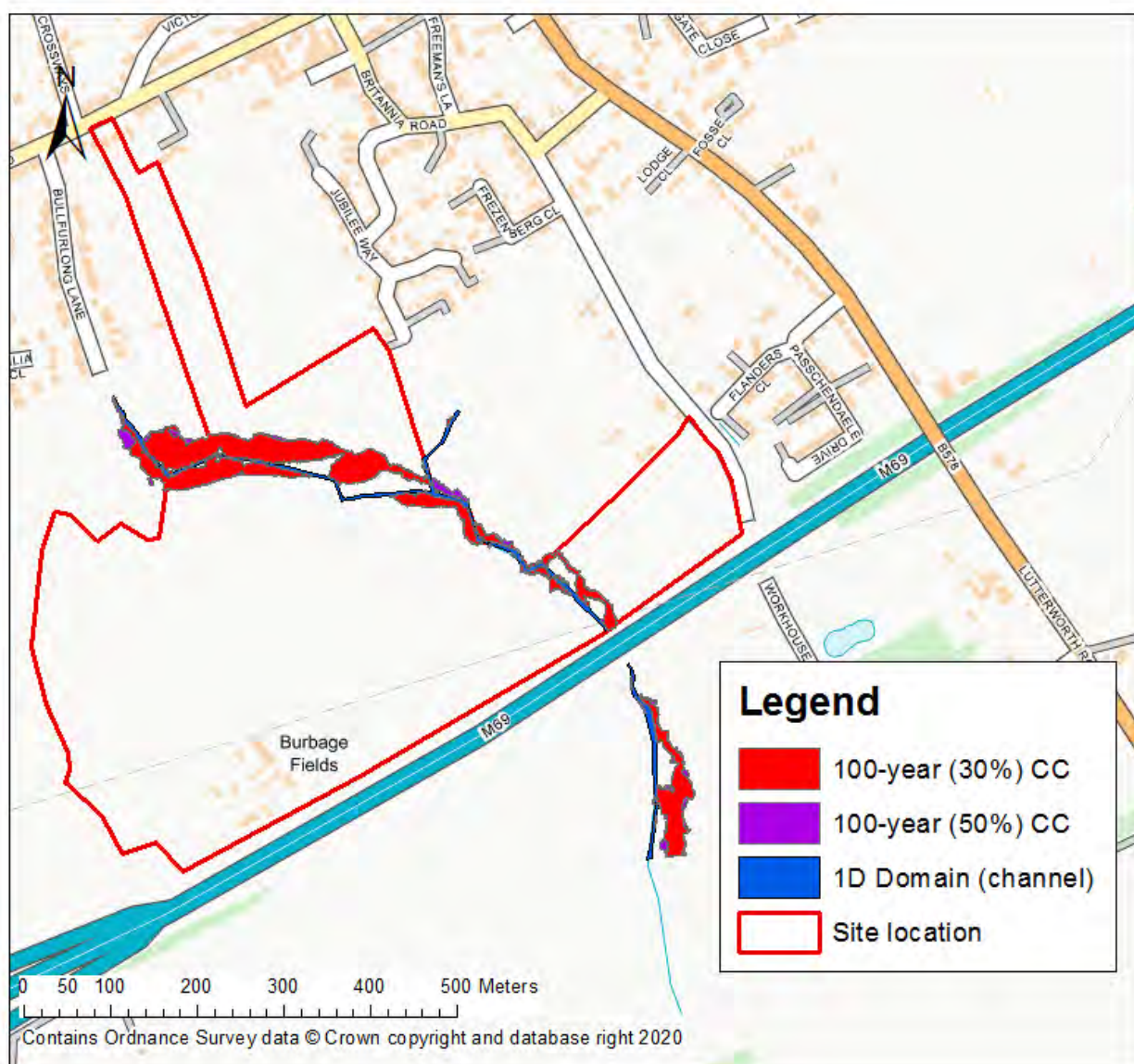


Figure 3-2: Baseline 100-Year flood extents with climate change

Figure 3-2 shows the 100-year with (+30%) climate change and the 100-year with (+50%) climate change similar fluvial flood event generate a similar extent. Their flooding mechanisms are similar to those observed during the 1,000-year flood event (see Figure 3-1).

3.2 Baseline Flood depths

The baseline flood depths during the 100-year with 30% climate change and 100-year with 50% climate change year events are shown in Figure 3-1 and Figure 3-2, respectively.

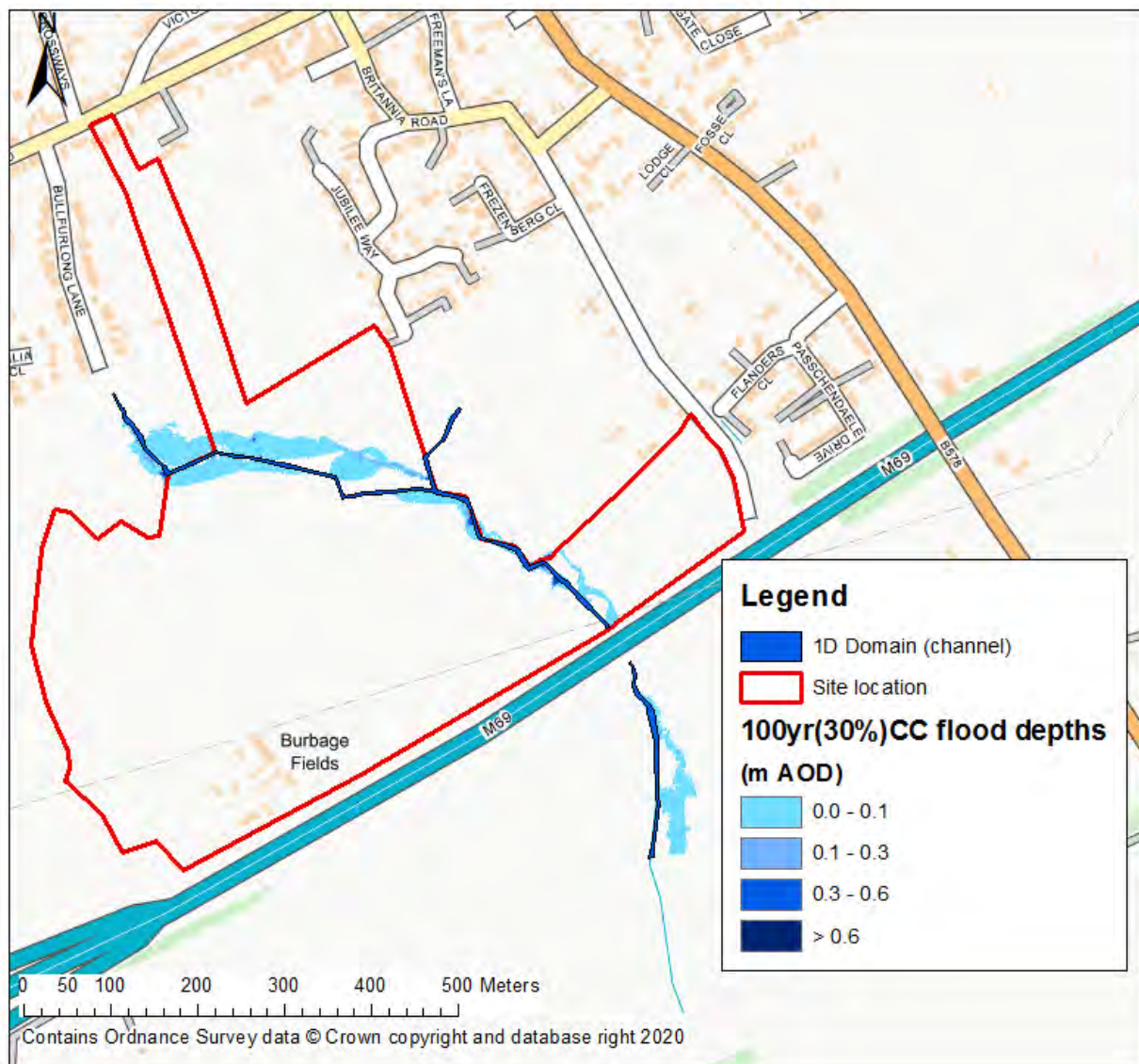


Figure 3-3: Baseline 100-year flood depths with 30 % climate change

Figure 3-3 shows that the maximum flood depth outside of the river channel during the 100-year with 30% climate change event does not exceed 0.1m.

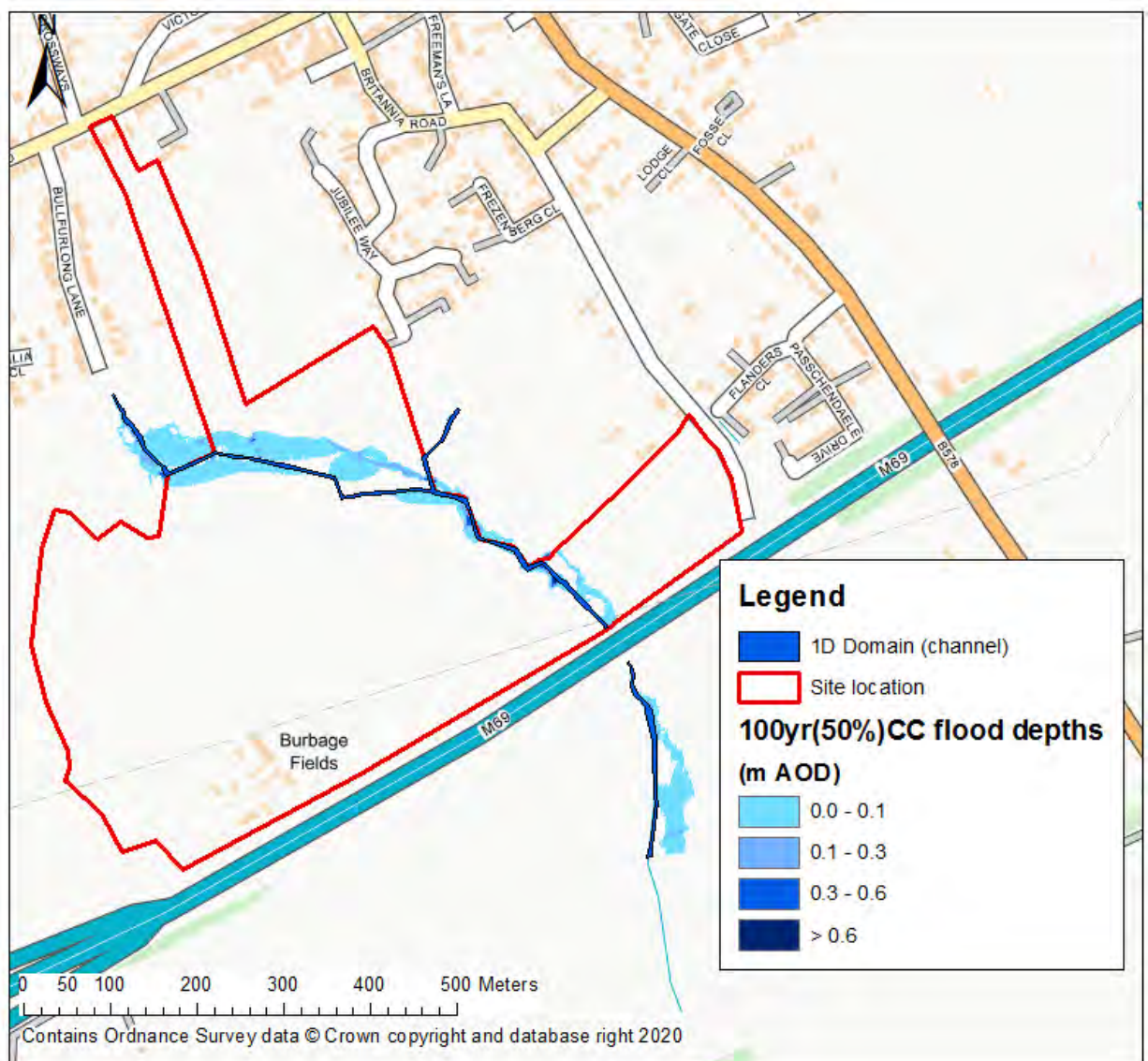


Figure 3-4: Baseline 100-year flood depths with 50 % climate change

Figure 3-4 shows that the maximum flood depth outside of the river channel during the 100-year with 50% climate change event is approximately 0.1m.

Given the relatively shallow flood depths generated within the site boundary during the 100-year with 30% climate change and 100-year with 50% climate change scenarios, flood mitigation options aiming to capture overland flows and to store flood water should be explored in order to maximise the development potential of the site.

3.3 Baseline Flood levels

Flood levels for all baseline scenarios are shown in Appendix E.

Appendix E shows that the peak water level within the site will range:

- Between 101.38m AOD and 118.5m AOD during the 20-year (5% AEP) fluvial flood event;
- Between 101.48m AOD and 118.62m AOD during the 100-year (1% AEP) fluvial flood event;
- Between 101.52m AOD and 118.7m AOD during the 100-year (1% AEP) with 30% climate change fluvial flood event;
- Between 101.53m AOD and 118.76m AOD during the 100-year (1% AEP) with 50% climate change fluvial flood event;
- Between 101.56m AOD and 118.79m AOD during the 1,000-year (0.1% AEP) fluvial flood event.

3.4 Culvert capacity

Figure 3-6 shows a longitudinal section plot of peak water levels at the approach of the M69 culvert during the 100-year with 30% climate change, 100-year with 50% climate change and 1000-year flood events.

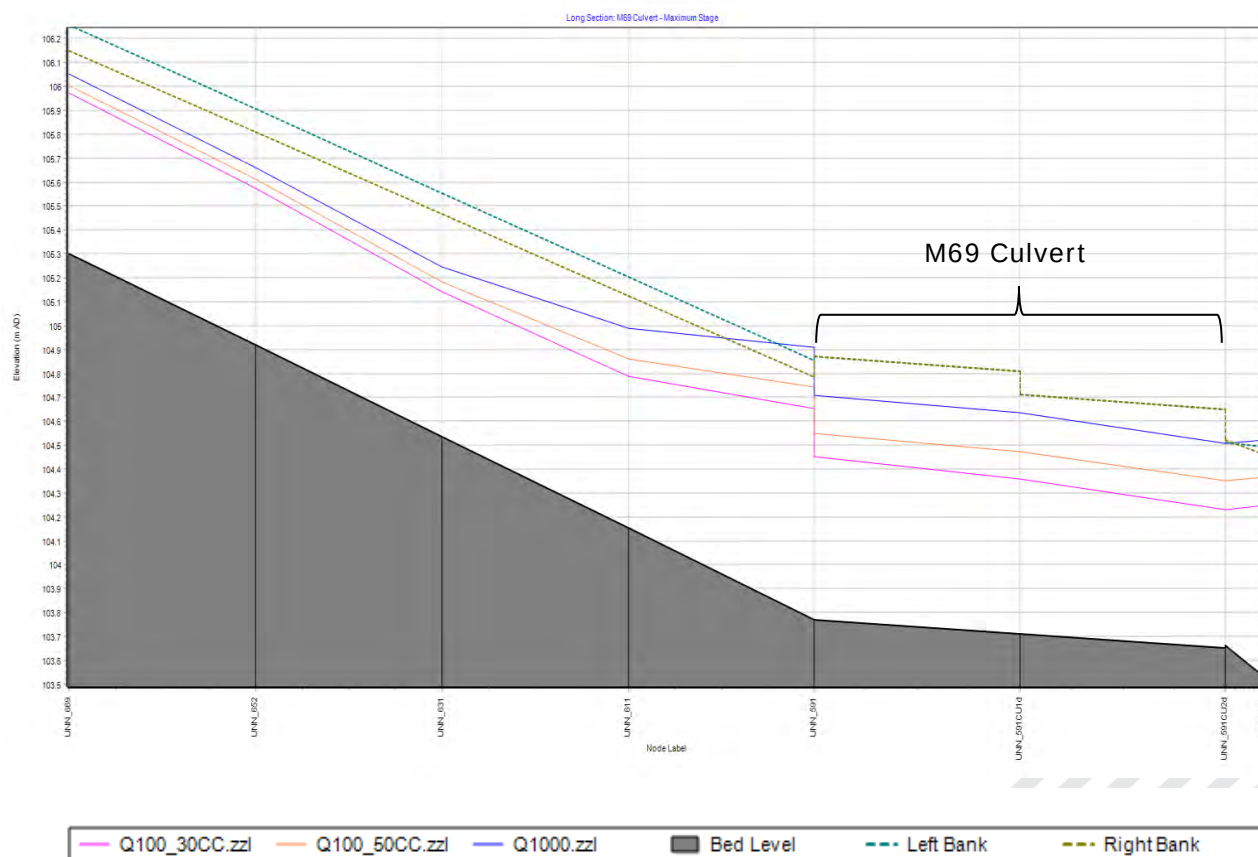


Figure 3-7: M69 Culvert capacity

Figure 3-7 shows that the M69 culvert (UNN_591) has sufficient capacity to convey the 100-year with 30% climate change and 100-year with 50% climate change flows although it will surcharge during the 1000-year flood event.

3.5 Blockage risk analysis

The impact of a 75% blockage at the M69 culvert (UNN_591) was modelled during the 100-year plus 30% climate change baseline scenario. Results indicate an increase in flood depths when compared to the 100-year plus 30% climate change base scenario which back up at this culvert.

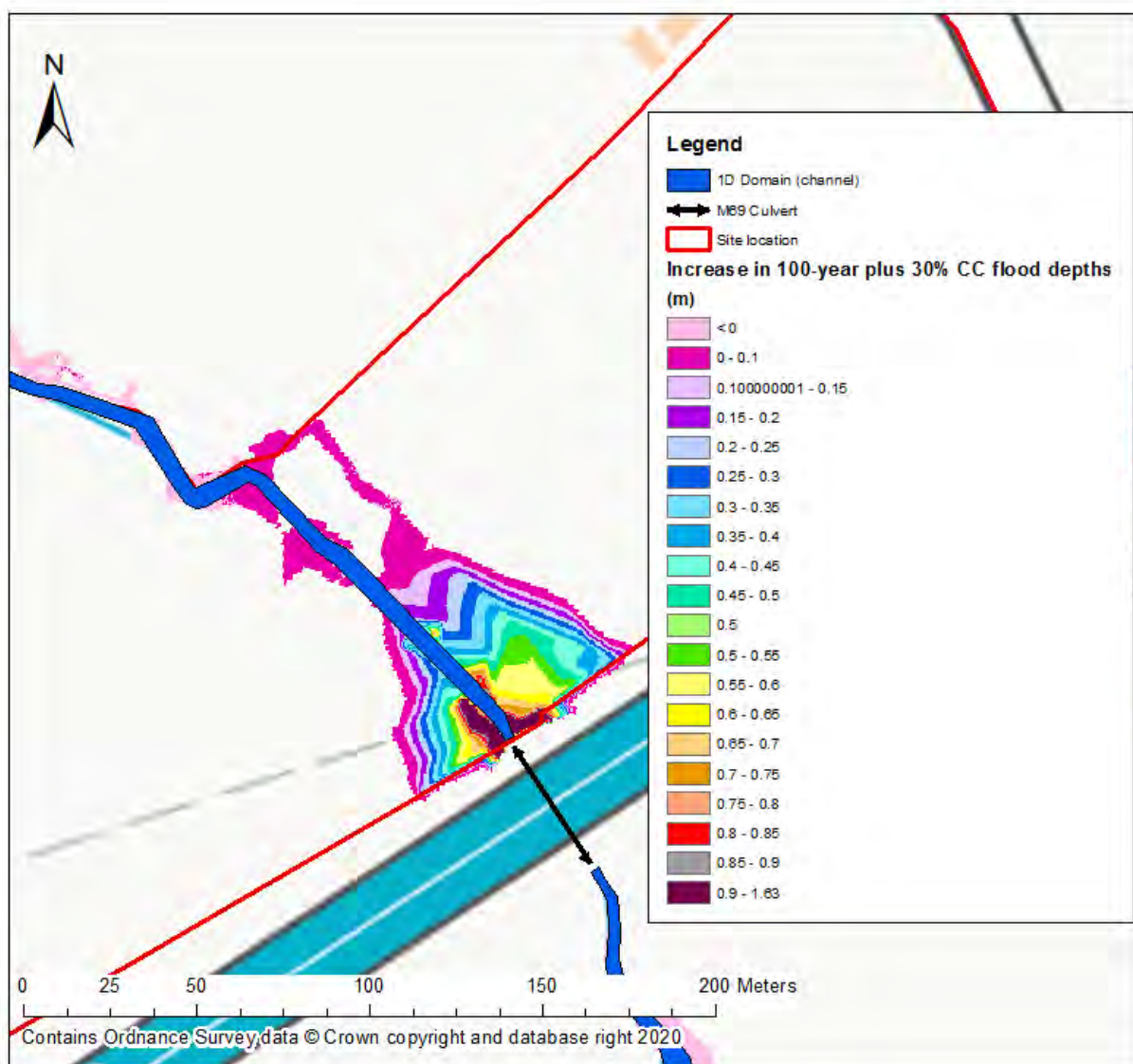


Figure 3-8 Baseline Blockage Analysis (100-year plus 30% climate change)

Due to the nature of the surrounding environment (i.e. branches hanging over the channel) a 75% blockage was put on the culvert running underneath the M69. During this scenario, flood levels at the upstream face of the culvert increase by up to a 1.6m for 120m upstream. 1D model results indicate that the 100-year 30% climate peak water level at the inlet of the blocked culvert reaches 105.95m AOD.

3.6 Sensitivity analysis

The model's sensitivity to changes in flow value, roughness parameters and downstream boundary condition was checked (see Appendix F).

Appendix F shows that, at the proposed development site, the model results are moderately sensitive to changes in flow and roughness values and relatively insensitive to changes in downstream boundary conditions.

4 Conclusions and Recommendations

4.1 Conclusions

- JBA Consulting (JBA) were commissioned by Rodgers Leask Ltd on behalf of Redrow Homes to undertake a hydraulic modelling study of an unnamed watercourse in relation to a proposed development sites at the Land South West of Lutterworth Road in Burbage.
- The model was run for the 20-year, 100-year, 100-year with (+30%) climate change, 100-year with (+50%) climate change and 1,000-year fluvial flood event. The model results' sensitivity to changes in flows, roughness values and downstream boundary conditions was tested.
- The results of the modelling show that:
 - Model results at the site are moderately sensitive to changes in roughness values, flows and downstream boundary conditions.
 - Overtopping occurs in all modelled flood scenarios at AOI 1 which can be seen in Figure 3-1.
 - Overtopping occurs at many locations along the river bank particularly during the 1000-year, 100-year with (+30%) and 100-year (+50%) climate change fluvial flood events. Given the relatively shallow flood depths generated within the site boundary during the 100-year with 30% climate change and 100-year with 50% climate change scenarios, flood mitigation options aiming to capture overland flows and to store flood water should be explored in order to maximise the development potential of the site.
 - The M69 culvert has sufficient capacity to convey the 100-year with 30% climate change and 100-year with 50% climate change flows although it will surcharge during the 1000-year flood event.
 - There are increases of up to 1.6m at the M69 culvert when a 75% blockage is applied at the culvert inlet, however this is within the close proximity to the channel. The water levels return to normal heights 120m upstream of the culvert inlet.
 - The peak water level within the site will range:
 - Between 101.38m AOD and 118.5m AOD during the 20-year (5% AEP) fluvial flood event;
 - Between 101.48m AOD and 118.62m AOD during the 100-year (1% AEP) fluvial flood event;
 - Between 101.52m AOD and 118.7m AOD during the 100-year (1% AEP) with 30% climate change fluvial flood event;
 - Between 101.53m AOD and 118.76m AOD during the 100-year (1% AEP) with 50% climate change fluvial flood event;
 - Between 101.56m AOD and 118.79m AOD during the 1,000-year (0.1% AEP) fluvial flood event.

4.2 Recommendations

- The blockage risk analysis was only carried out on the M69 culvert. It is recommended that remaining undersized culverts on site are replaced to prevent the risk of blockage in the future.
- It is recommended that flood mitigation strategies are explored for this site in order to mitigate flood risk on site while ensuring third-party lands are not affected by the development proposal.

Appendices

A Topographic Survey

A.1 Topographic survey data

[illegible]

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