

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)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1		5.00	13.246	1500	445375.421	117823.073	2.053
2	0.084	5.00	12.830	1500	445391.479	117881.060	1.757
3			12.890	1500	445395.002	117925.348	1.906
4	0.234	5.00	13.118	1500	445408.902	117953.928	2.198
5			13.462	1500	445448.416	117985.815	2.644
6			13.663	1500	445487.528	117995.955	2.926
7	0.175	5.00	12.683	2100	445545.231	117995.708	2.661
9			13.030	2100	445842.262	117807.533	4.930
10			13.600	2100	445767.139	117857.098	5.700
11	0.237	5.00	12.191	2100	445698.429	117902.072	4.496
12			9.947	2100	445623.955	117952.873	2.700
Pump			10.000	2100	445628.458	117956.484	2.482
14	0.450	5.00	12.795	2100	445917.384	117757.969	4.495
15			11.600	1350	445993.768	117711.796	1.800
16			11.327	1350	446028.978	117701.561	1.600
17			12.488	1350	446097.026	117699.860	2.897
22			11.800	1350	446219.724	117753.634	2.503
20	0.239	5.00	13.425	1350	446149.440	117721.654	3.948
21			12.924	1350	446185.262	117752.575	3.542
23			11.590	1350	446247.177	117721.542	2.397
24			11.570	1500	446294.481	117706.341	3.303
25			11.545	1500	446331.672	117725.455	3.437
26	0.270	5.00	11.490	1500	446353.978	117796.751	3.531
27			11.230	1500	446403.913	117815.897	3.378
28	0.270	5.00	11.495	1500	446431.834	117843.324	3.796
Northern Attenuation Pond			9.600		446491.809	117812.996	2.001
Northern Flow Control Chamber			9.600	1800	446508.431	117795.541	2.043
Outfall 04			8.650		446517.504	117795.585	1.184
Unit 3 Flow Control Chamber			11.275	1500	446294.682	117698.300	2.553
Unit 3 Attenuation Pond	2.000	5.00	10.750		446308.033	117688.867	2.000
Unit 1 Flow Control Chamber			11.800	1350	446310.729	117725.239	1.692
Unit 1 Attenuation Tank	1.000	5.00	11.800		446294.491	117730.179	1.650
Unit 2 Flow Control Chamber			11.500	1500	446396.816	117824.539	1.752
Unit 2 Attenuation Tank	1.300	5.00	11.500		446385.997	117832.227	1.725

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	1	2	60.169	0.600	11.193	11.073	0.120	500.0	600	5.93	50.0
1.001	2	3	44.428	0.600	11.073	10.984	0.089	499.2	600	6.61	48.1
1.002	3	4	31.781	0.600	10.984	10.920	0.064	500.0	600	7.10	46.4
1.003	4	5	50.775	0.600	10.920	10.818	0.102	500.0	600	7.88	44.0
1.004	5	6	40.405	0.600	10.818	10.737	0.081	500.0	600	8.50	42.3
1.005	6	7	57.704	0.600	10.737	10.622	0.115	500.0	600	9.39	40.1
1.006	7	12	89.623	0.600	10.022	7.547	2.475	36.2	1200	9.63	39.6
2.000	14	9	89.999	0.600	8.300	8.100	0.200	450.0	1200	5.85	50.0
2.001	9	10	90.029	0.600	8.100	7.900	0.200	450.1	1200	6.71	47.7
2.002	10	11	82.149	0.600	7.900	7.695	0.205	400.0	1500	7.35	45.6
2.003	11	12	90.151	0.600	7.695	7.247	0.448	201.2	1500	7.85	44.1
1.007	12	Pump	15.000	0.600	7.547	7.518	0.029	524.7	1200	9.79	39.3
1.008	Pump	15	439.686	0.600	7.518	9.800	-2.282	-192.7	200	30.00	20.2
1.013	21	22	34.478	0.600	9.382	9.297	0.085	405.6	450	30.00	20.2
1.009	15	16	36.667	0.600	9.800	9.727	0.073	502.3	450	30.00	20.2
1.010	16	17	68.069	0.600	9.727	9.591	0.136	500.5	450	30.00	20.2
1.011	17	20	56.764	0.600	9.591	9.477	0.114	500.0	450	30.00	20.2
1.012	20	21	47.321	0.600	9.477	9.382	0.095	500.0	450	30.00	20.2
1.014	22	23	42.232	0.600	9.297	9.193	0.104	406.1	450	30.00	20.2
1.015	23	24	49.686	0.600	9.193	9.071	0.122	407.3	450	30.00	20.2
1.016	24	25	41.815	0.600	8.267	8.183	0.084	500.0	525	30.00	20.2
1.017	25	26	74.704	0.600	8.108	7.959	0.149	500.0	600	30.00	20.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.082	305.9	0.0	1.453	1.157	0.000	0.0	0	0.000
1.001	1.083	306.2	10.9	1.157	1.306	0.084	0.0	76	0.521
1.002	1.082	305.9	10.5	1.306	1.598	0.084	0.0	75	0.515
1.003	1.082	305.9	37.9	1.598	2.044	0.318	0.0	142	0.747
1.004	1.082	305.9	36.4	2.044	2.326	0.318	0.0	139	0.738
1.005	1.082	305.9	34.5	2.326	1.461	0.318	0.0	135	0.728
1.006	6.225	7040.8	52.9	1.461	1.200	0.493	0.0	72	1.929
2.000	1.757	1986.8	61.0	3.295	3.730	0.450	0.0	141	0.818
2.001	1.756	1986.5	58.2	3.730	4.500	0.450	0.0	138	0.808
2.002	2.138	3778.4	55.6	4.200	2.996	0.450	0.0	123	0.807
2.003	3.020	5336.4	82.1	2.996	1.200	0.687	0.0	126	1.155
1.007	1.626	1838.9	125.6	1.200	1.282	1.180	0.0	209	0.954
1.008	0.008	0.3	64.7	2.282	1.600	1.180	0.0	200	0.000
1.013	1.003	159.5	77.8	3.092	2.053	1.419	0.0	222	0.997
1.009	0.900	143.2	64.7	1.350	1.150	1.180	0.0	212	0.879
1.010	0.902	143.4	64.7	1.150	2.447	1.180	0.0	211	0.879
1.011	0.902	143.5	64.7	2.447	3.498	1.180	0.0	211	0.879
1.012	0.902	143.5	77.8	3.498	3.092	1.419	0.0	236	0.919
1.014	1.002	159.4	77.8	2.053	1.947	1.419	0.0	222	0.997
1.015	1.001	159.2	77.8	1.947	2.049	1.419	0.0	222	0.995
1.016	0.995	215.3	187.3	2.778	2.837	3.419	0.0	381	1.114
1.017	1.082	305.9	242.1	2.837	2.931	4.419	0.0	405	1.194

Links

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)
26	27	53.480	0.600	7.959	7.852	0.107	500.0	600	30.00
27	28	39.139	0.600	7.852	7.774	0.078	500.0	600	30.00
28	Northern Attenuation Pond	67.207	0.600	7.699	7.599	0.100	672.1	675	30.00
Northern Attenuation Pond	Northern Flow Control Chamber	24.103	0.600	7.599	7.557	0.042	573.9	600	30.00
Northern Flow Control Chamber	Outfall 04	9.073	0.600	7.557	7.466	0.091	100.0	225	30.00
Unit 3 Attenuation Pond	Unit 3 Flow Control Chamber	16.347	0.600	8.750	8.722	0.028	583.8	600	5.27
Unit 3 Flow Control Chamber	24	8.044	0.600	8.722	8.642	0.080	100.5	150	5.41
Unit 1 Attenuation Tank	Unit 1 Flow Control Chamber	16.973	0.600	10.150	10.108	0.042	404.1	450	5.28
Unit 1 Flow Control Chamber	25	20.944	0.600	10.108	9.900	0.208	100.7	150	5.63
Unit 2 Attenuation Tank	Unit 2 Flow Control Chamber	13.272	0.600	9.775	9.748	0.027	491.6	525	5.22
Unit 2 Flow Control Chamber	27	11.183	0.600	9.748	9.637	0.111	100.7	150	5.41

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.018	1.082	305.9	256.9	2.931	2.778	4.689	0.0	423	1.205
1.019	1.082	305.9	328.2	2.778	3.121	5.989	0.0	600	1.092
1.020	1.003	359.0	342.9	3.121	1.326	6.259	0.0	532	1.134
1.021	1.009	285.3	342.9	1.401	1.443	6.259	0.0	600	1.018
1.022	1.307	52.0	342.9	1.818	0.959	6.259	0.0	225	1.331
3.000	1.000	282.8	271.1	1.400	1.953	2.000	0.0	474	1.131
3.001	1.002	17.7	271.1	2.403	2.778	2.000	0.0	150	1.021
4.000	1.005	159.8	135.5	1.200	1.242	1.000	0.0	319	1.122
4.001	1.001	17.7	135.5	1.542	1.495	1.000	0.0	150	1.020
5.000	1.003	217.2	176.2	1.200	1.227	1.300	0.0	361	1.112
5.001	1.001	17.7	176.2	1.602	1.443	1.300	0.0	150	1.020

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	60.169	500.0	600	Circular	13.246	11.193	1.453	12.830	11.073	1.157
1.001	44.428	499.2	600	Circular	12.830	11.073	1.157	12.890	10.984	1.306
1.002	31.781	500.0	600	Circular	12.890	10.984	1.306	13.118	10.920	1.598
1.003	50.775	500.0	600	Circular	13.118	10.920	1.598	13.462	10.818	2.044
1.004	40.405	500.0	600	Circular	13.462	10.818	2.044	13.663	10.737	2.326
1.005	57.704	500.0	600	Circular	13.663	10.737	2.326	12.683	10.622	1.461
1.006	89.623	36.2	1200	Circular	12.683	10.022	1.461	9.947	7.547	1.200
2.000	89.999	450.0	1200	Circular	12.795	8.300	3.295	13.030	8.100	3.730

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1500	Manhole	Adoptable	2	1500	Manhole	Adoptable
1.001	2	1500	Manhole	Adoptable	3	1500	Manhole	Adoptable
1.002	3	1500	Manhole	Adoptable	4	1500	Manhole	Adoptable
1.003	4	1500	Manhole	Adoptable	5	1500	Manhole	Adoptable
1.004	5	1500	Manhole	Adoptable	6	1500	Manhole	Adoptable
1.005	6	1500	Manhole	Adoptable	7	2100	Manhole	Adoptable
1.006	7	2100	Manhole	Adoptable	12	2100	Manhole	Adoptable
2.000	14	2100	Manhole	Adoptable	9	2100	Manhole	Adoptable

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
2.001	90.029	450.1	1200	Circular	13.030	8.100	3.730	13.600	7.900	4.500
2.002	82.149	400.0	1500	Circular	13.600	7.900	4.200	12.191	7.695	2.996
2.003	90.151	201.2	1500	Circular	12.191	7.695	2.996	9.947	7.247	1.200
1.007	15.000	524.7	1200	Circular	9.947	7.547	1.200	10.000	7.518	1.282
1.008	439.686	-192.7	200	Circular	10.000	7.518	2.282	11.600	9.800	1.600
1.013	34.478	405.6	450	Circular	12.924	9.382	3.092	11.800	9.297	2.053
1.009	36.667	502.3	450	Circular	11.600	9.800	1.350	11.327	9.727	1.150
1.010	68.069	500.5	450	Circular	11.327	9.727	1.150	12.488	9.591	2.447
1.011	56.764	500.0	450	Circular	12.488	9.591	2.447	13.425	9.477	3.498
1.012	47.321	500.0	450	Circular	13.425	9.477	3.498	12.924	9.382	3.092
1.014	42.232	406.1	450	Circular	11.800	9.297	2.053	11.590	9.193	1.947
1.015	49.686	407.3	450	Circular	11.590	9.193	1.947	11.570	9.071	2.049
1.016	41.815	500.0	525	Circular	11.570	8.267	2.778	11.545	8.183	2.837
1.017	74.704	500.0	600	Circular	11.545	8.108	2.837	11.490	7.959	2.931
1.018	53.480	500.0	600	Circular	11.490	7.959	2.931	11.230	7.852	2.778
1.019	39.139	500.0	600	Circular	11.230	7.852	2.778	11.495	7.774	3.121
1.020	67.207	672.1	675	Circular	11.495	7.699	3.121	9.600	7.599	1.326
1.021	24.103	573.9	600	Circular	9.600	7.599	1.401	9.600	7.557	1.443
1.022	9.073	100.0	225	Circular	9.600	7.557	1.818	8.650	7.466	0.959
3.000	16.347	583.8	600	Circular	10.750	8.750	1.400	11.275	8.722	1.953
3.001	8.044	100.5	150	Circular	11.275	8.722	2.403	11.570	8.642	2.778
4.000	16.973	404.1	450	Circular	11.800	10.150	1.200	11.800	10.108	1.242

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.001	9	2100	Manhole	Adoptable	10	2100	Manhole	Adoptable
2.002	10	2100	Manhole	Adoptable	11	2100	Manhole	Adoptable
2.003	11	2100	Manhole	Adoptable	12	2100	Manhole	Adoptable
1.007	12	2100	Manhole	Adoptable	Pump	2100	Manhole	Adoptable
1.008	Pump	2100	Manhole	Adoptable	15	1350	Manhole	Adoptable
1.013	21	1350	Manhole	Adoptable	22	1350	Manhole	Adoptable
1.009	15	1350	Manhole	Adoptable	16	1350	Manhole	Adoptable
1.010	16	1350	Manhole	Adoptable	17	1350	Manhole	Adoptable
1.011	17	1350	Manhole	Adoptable	20	1350	Manhole	Adoptable
1.012	20	1350	Manhole	Adoptable	21	1350	Manhole	Adoptable
1.014	22	1350	Manhole	Adoptable	23	1350	Manhole	Adoptable
1.015	23	1350	Manhole	Adoptable	24	1500	Manhole	Adoptable
1.016	24	1500	Manhole	Adoptable	25	1500	Manhole	Adoptable
1.017	25	1500	Manhole	Adoptable	26	1500	Manhole	Adoptable
1.018	26	1500	Manhole	Adoptable	27	1500	Manhole	Adoptable
1.019	27	1500	Manhole	Adoptable	28	1500	Manhole	Adoptable
1.020	28	1500	Manhole	Adoptable	Northern Attenuation Pond		Junction	
1.021	Northern Attenuation Pond		Junction		Northern Flow Control Chamber	1800	Manhole	Adoptable
1.022	Northern Flow Control Chamber	1800	Manhole	Adoptable	Outfall 04		Junction	
3.000	Unit 3 Attenuation Pond		Junction		Unit 3 Flow Control Chamber	1500	Manhole	Adoptable
3.001	Unit 3 Flow Control Chamber	1500	Manhole	Adoptable	24	1500	Manhole	Adoptable
4.000	Unit 1 Attenuation Tank		Junction		Unit 1 Flow Control Chamber	1350	Manhole	Adoptable

Pipeline Schedule

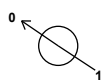
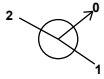
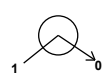
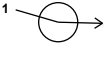
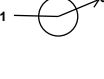
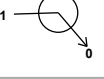
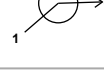
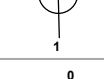
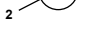
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
4.001	20.944	100.7	150	Circular	11.800	10.108	1.542	11.545	9.900	1.495
5.000	13.272	491.6	525	Circular	11.500	9.775	1.200	11.500	9.748	1.227
5.001	11.183	100.7	150	Circular	11.500	9.748	1.602	11.230	9.637	1.443

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
4.001	Unit 1 Flow Control Chamber	1350	Manhole	Adoptable	25	1500	Manhole	Adoptable
5.000	Unit 2 Attenuation Tank		Junction		Unit 2 Flow Control Chamber	1500	Manhole	Adoptable
5.001	Unit 2 Flow Control Chamber	1500	Manhole	Adoptable	27	1500	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
1	445375.421	117823.073	13.246	2.053	1500				
						0	1.000	11.193	600
2	445391.479	117881.060	12.830	1.757	1500		1	1.000	11.073
						0	1.001	11.073	600
3	445395.002	117925.348	12.890	1.906	1500		1	1.001	10.984
						0	1.002	10.984	600
4	445408.902	117953.928	13.118	2.198	1500		1	1.002	10.920
						0	1.003	10.920	600
5	445448.416	117985.815	13.462	2.644	1500		1	1.003	10.818
						0	1.004	10.818	600
6	445487.528	117995.955	13.663	2.926	1500		1	1.004	10.737
						0	1.005	10.737	600
7	445545.231	117995.708	12.683	2.661	2100		1	1.005	10.622
						0	1.006	10.022	1200
9	445842.262	117807.533	13.030	4.930	2100		1	2.000	8.100
						0	2.001	8.100	1200
10	445767.139	117857.098	13.600	5.700	2100		1	2.001	7.900
						0	2.002	7.900	1500

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
11	445698.429	117902.072	12.191	4.496	2100		1	2.002	7.695	1500
12	445623.955	117952.873	9.947	2.700	2100		0	2.003	7.695	1500
							1	2.003	7.247	1500
							2	1.006	7.547	1200
Pump	445628.458	117956.484	10.000	2.482	2100		0	1.007	7.547	1200
							1	1.007	7.518	1200
14	445917.384	117757.969	12.795	4.495	2100		0	1.008	7.518	200
							0	2.000	8.300	1200
15	445993.768	117711.796	11.600	1.800	1350		1	1.008	9.800	200
16	446028.978	117701.561	11.327	1.600	1350		0	1.009	9.800	450
							1	1.009	9.727	450
17	446097.026	117699.860	12.488	2.897	1350		0	1.010	9.727	450
							1	1.010	9.591	450
22	446219.724	117753.634	11.800	2.503	1350		0	1.011	9.591	450
							1	1.013	9.297	450
20	446149.440	117721.654	13.425	3.948	1350		0	1.014	9.297	450
							1	1.011	9.477	450
21	446185.262	117752.575	12.924	3.542	1350		0	1.012	9.477	450
							1	1.012	9.382	450
23	446247.177	117721.542	11.590	2.397	1350		0	1.013	9.382	450
							1	1.014	9.193	450
24	446294.481	117706.341	11.570	3.303	1500		0	1.015	9.193	450
							1	3.001	8.642	150
							2	1.015	9.071	450
25	446331.672	117725.455	11.545	3.437	1500		0	1.016	8.267	525
							1	4.001	9.900	150
							2	1.016	8.183	525
							0	1.017	8.108	600

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
26	446353.978	117796.751	11.490	3.531	1500		1	1.017	7.959	600
							0	1.018	7.959	600
27	446403.913	117815.897	11.230	3.378	1500		1	5.001	9.637	150
							2	1.018	7.852	600
							0	1.019	7.852	600
28	446431.834	117843.324	11.495	3.796	1500		1	1.019	7.774	600
							0	1.020	7.699	675
Northern Attenuation Pond	446491.809	117812.996	9.600	2.001			1	1.020	7.599	675
							0	1.021	7.599	600
Northern Flow Control Chamber	446508.431	117795.541	9.600	2.043	1800		1	1.021	7.557	600
							0	1.022	7.557	225
Outfall 04	446517.504	117795.585	8.650	1.184			1	1.022	7.466	225
							0	3.000	8.722	600
Unit 3 Flow Control Chamber	446294.682	117698.300	11.275	2.553	1500		1	3.001	8.722	150
							0	3.001	8.722	150
Unit 3 Attenuation Pond	446308.033	117688.867	10.750	2.000			0	3.000	8.750	600
							0	3.000	8.750	600
Unit 1 Flow Control Chamber	446310.729	117725.239	11.800	1.692	1350		1	4.000	10.108	450
							0	4.001	10.108	150
Unit 1 Attenuation Tank	446294.491	117730.179	11.800	1.650			0	4.000	10.150	450
							0	4.000	10.150	450
Unit 2 Flow Control Chamber	446396.816	117824.539	11.500	1.752	1500		1	5.000	9.748	525
							0	5.001	9.748	150
Unit 2 Attenuation Tank	446385.997	117832.227	11.500	1.725			0	5.000	9.775	525
							0	5.000	9.775	525

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
Rainfall Events	Singular	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	Starting Level (m)	
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

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 %)
1	0	0	0
30	0	0	0
30	25	0	0
100	0	0	0
100	25	0	0

Node Pump Online Pump Control

Flap Valve	x	Design Depth (m)	5.000	Switch off depth (m)	0.050
Replaces Downstream Link	✓	Design Flow (l/s)	7.0		
Invert Level (m)	7.518	Switch on depth (m)	0.100		

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	7.000	5.000	7.000

Node Unit 3 Flow Control Chamber Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	8.722	Product Number	CTL-SHE-0138-1000-1500-1000
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	10.0	Min Node Diameter (mm)	1500

Node Unit 1 Flow Control Chamber Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	10.108	Product Number	CTL-SHE-0069-2500-1500-2500
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.5	Min Node Diameter (mm)	1200

Node Unit 2 Flow Control Chamber Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	9.748	Product Number	CTL-SHE-0069-2500-1500-2500
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.5	Min Node Diameter (mm)	1200

Node Northern Flow Control Chamber Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	7.557	Product Number	CTL-SHE-0151-1330-2000-1330
Design Depth (m)	2.000	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	13.3	Min Node Diameter (mm)	1800

Node Northern Attenuation Pond Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	7.599
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	380.0	380.0	2.000	1125.0	1148.4	2.001	0.0	1148.4

Node Unit 3 Attenuation Pond Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	8.750
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	210.0	210.0	2.000	1140.0	1155.6	2.001	0.0	1155.6

Node Unit 1 Attenuation Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	10.150
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	1040.0	1040.0	1.000	1040.0	1154.3	1.001	0.0	1154.3

Node Unit 2 Attenuation Tank Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	9.775
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	1050.0	1050.0	1.000	1050.0	1164.9	1.001	0.0	1164.9

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.20%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	11.193	0.000	0.0	0.0000	0.0000	OK
15 minute winter	2	11	11.149	0.076	11.8	0.1352	0.0000	OK
15 minute winter	3	12	11.078	0.094	11.1	0.1655	0.0000	OK
15 minute winter	4	11	11.070	0.150	41.3	0.2659	0.0000	OK
15 minute winter	5	12	10.967	0.149	40.3	0.2635	0.0000	OK
15 minute winter	6	14	10.880	0.143	39.6	0.2534	0.0000	OK
15 minute winter	7	13	10.093	0.071	50.4	0.2455	0.0000	OK
15 minute winter	9	12	8.242	0.142	62.8	0.4911	0.0000	OK
180 minute winter	10	164	8.098	0.198	15.5	0.6852	0.0000	OK
180 minute winter	11	176	8.099	0.404	23.5	1.3988	0.0000	OK
180 minute winter	12	172	8.099	0.852	33.4	2.9503	0.0000	OK
180 minute winter	Pump	172	8.099	0.581	9.6	2.0120	0.0000	SURCHARGED
15 minute winter	14	10	8.445	0.145	63.3	0.5029	0.0000	OK
15 minute winter	15	13	9.872	0.072	7.0	0.1030	0.0000	OK
60 minute summer	16	35	9.797	0.070	7.3	0.1003	0.0000	OK
15 minute summer	17	24	9.658	0.067	7.2	0.0963	0.0000	OK
15 minute winter	22	12	9.431	0.134	29.8	0.1924	0.0000	OK
15 minute winter	20	11	9.620	0.143	33.6	0.2046	0.0000	OK
15 minute winter	21	11	9.518	0.136	30.4	0.1941	0.0000	OK
15 minute winter	23	13	9.323	0.130	29.5	0.1866	0.0000	OK
15 minute winter	24	14	8.418	0.151	38.0	0.2668	0.0000	OK
960 minute winter	25	990	8.382	0.274	21.1	0.4848	0.0000	OK
960 minute winter	26	990	8.382	0.423	23.9	0.7481	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	0.0	0.000	0.000	0.6074	
15 minute winter	2	1.001	3	11.1	0.476	0.036	1.0795	
15 minute winter	3	1.002	4	12.1	0.355	0.040	1.3189	
15 minute winter	4	1.003	5	40.3	0.761	0.132	2.7432	
15 minute winter	5	1.004	6	39.6	0.785	0.130	2.1091	
15 minute winter	6	1.005	7	37.2	0.811	0.122	2.6576	
15 minute winter	7	1.006	12	50.5	1.763	0.007	14.1904	
15 minute winter	9	2.001	10	59.3	0.935	0.030	5.9434	
15 minute winter	10	2.002	11	54.2	0.830	0.014	8.0448	
15 minute winter	11	2.003	12	69.5	0.400	0.013	41.9515	
15 minute winter	12	1.007	Pump	43.6	0.630	0.024	4.8401	
15 minute summer	Pump	Pump	15	7.0				
15 minute winter	14	2.000	9	62.8	0.860	0.032	6.6969	
15 minute summer	15	1.009	16	7.5	0.734	0.052	0.5578	
180 minute winter	16	1.010	17	7.2	0.607	0.050	1.0022	
15 minute summer	17	1.011	20	7.1	0.474	0.049	1.2662	
15 minute winter	22	1.014	23	29.5	0.834	0.185	1.6209	
15 minute winter	20	1.012	21	30.4	0.734	0.212	1.9745	
15 minute winter	21	1.013	22	29.8	0.763	0.187	1.3718	
15 minute winter	23	1.015	24	28.2	0.812	0.177	1.7289	
15 minute winter	24	1.016	25	37.6	0.830	0.174	1.9034	
15 minute winter	25	1.017	26	38.5	0.684	0.126	4.2764	
30 minute winter	26	1.018	27	54.5	0.806	0.178	3.6273	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.20%

	Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
	960 minute winter	27		990	8.382	0.530	25.8	0.9373	0.0000	OK
	960 minute winter	28		990	8.382	0.683	28.0	1.2076	0.0000	SURCHARGED
	960 minute winter	Northern Attenuation Pond		990	8.382	0.783	27.1	412.0196	0.0000	SURCHARGED
	960 minute winter	Northern Flow Control Chamber		990	8.382	0.825	13.3	2.1004	0.0000	SURCHARGED
	600 minute summer	Outfall 04		630	7.543	0.077	13.3	0.0000	0.0000	OK
	240 minute winter	Unit 3 Flow Control Chamber		220	9.373	0.651	10.6	1.1497	0.0000	SURCHARGED
	240 minute winter	Unit 3 Attenuation Pond		220	9.373	0.623	57.3	220.9261	0.0000	SURCHARGED
	960 minute winter	Unit 1 Flow Control Chamber		780	10.320	0.212	2.0	0.3028	0.0000	SURCHARGED
	960 minute winter	Unit 1 Attenuation Tank		780	10.320	0.170	10.5	167.6035	0.0000	OK
	1440 minute winter	Unit 2 Flow Control Chamber		1140	10.012	0.264	2.0	0.4659	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Attenuation Tank		1140	10.012	0.237	10.1	236.0897	0.0000	OK
	Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Disch Vol (m³)	
	960 minute winter	27	1.019	28	55.4	0.906	0.181	2.4024		
960 minute winter	28	1.020	Northern Attenuation Pond	76.0	1.643	0.212	10.1826			
960 minute winter	Northern Attenuation Pond		1.021	Northern Flow Control Chamber	13.3	0.125	0.047	6.7893		
960 minute summer	Northern Flow Control Chamber		1.022	Outfall 04	13.3	1.077	0.255	0.1117	4	
600 minute winter	Unit 3 Flow Control Chamber		3.001	24	10.0	0.985	0.565	0.0817		
600 minute winter	Unit 3 Attenuation Pond		3.000	Unit 3 Flow Control Chamber	18.3	0.381	0.065	3.3625		
960 minute winter	Unit 1 Flow Control Chamber		4.001	25	2.0	0.658	0.111	0.0625		
960 minute winter	Unit 1 Attenuation Tank		4.000	Unit 1 Flow Control Chamber	3.4	0.312	0.021	0.3679		
1440 minute winter	Unit 2 Flow Control Chamber		5.001	27	2.0	0.658	0.115	0.0345		
1440 minute summer	Unit 2 Attenuation Tank		5.000	Unit 2 Flow Control Chamber	3.3	0.318	0.015	0.3181		

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.33%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	1	11.193	0.000	0.0	0.0000	0.0000	OK
15 minute winter	2	11	11.192	0.119	28.8	0.2107	0.0000	OK
15 minute winter	3	11	11.173	0.189	26.7	0.3334	0.0000	OK
15 minute winter	4	11	11.166	0.246	102.0	0.4344	0.0000	OK
15 minute winter	5	12	11.062	0.244	101.1	0.4306	0.0000	OK
15 minute winter	6	13	10.972	0.235	99.3	0.4149	0.0000	OK
15 minute winter	7	12	10.135	0.113	138.5	0.3908	0.0000	OK
240 minute winter	9	236	8.574	0.474	29.5	1.6429	0.0000	OK
240 minute winter	10	236	8.575	0.675	29.1	2.3395	0.0000	OK
240 minute winter	11	244	8.573	0.878	33.4	3.0417	0.0000	OK
240 minute winter	12	240	8.575	1.328	42.1	4.5997	0.0000	OK
240 minute winter	Pump	240	8.575	1.057	10.3	3.6611	0.0000	SURCHARGED
240 minute winter	14	240	8.576	0.276	29.0	0.9549	0.0000	OK
15 minute summer	15	11	9.874	0.074	7.0	0.1059	0.0000	OK
60 minute winter	16	25	9.797	0.070	7.3	0.1004	0.0000	OK
15 minute winter	17	12	9.725	0.134	12.6	0.1921	0.0000	OK
15 minute winter	22	13	9.510	0.213	68.4	0.3054	0.0000	OK
15 minute winter	20	11	9.704	0.227	82.4	0.3242	0.0000	OK
15 minute winter	21	12	9.599	0.217	68.6	0.3105	0.0000	OK
15 minute winter	23	14	9.402	0.209	68.0	0.2985	0.0000	OK
1440 minute winter	24	1680	9.086	0.819	20.6	1.4464	0.0000	SURCHARGED
1440 minute winter	25	1680	9.085	0.977	22.6	1.7262	0.0000	SURCHARGED
1440 minute winter	26	1680	9.084	1.125	26.4	1.9883	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	0.0	0.000	0.000	1.1451	
15 minute winter	2	1.001	3	26.7	0.512	0.087	2.5640	
15 minute winter	3	1.002	4	30.0	0.407	0.098	2.9306	
15 minute winter	4	1.003	5	101.1	0.951	0.330	5.3981	
15 minute winter	5	1.004	6	99.3	0.979	0.325	4.1916	
15 minute winter	6	1.005	7	96.4	1.054	0.315	5.2818	
15 minute winter	7	1.006	12	137.3	1.851	0.020	32.3608	
15 minute winter	9	2.001	10	148.8	1.154	0.075	15.7113	
15 minute winter	10	2.002	11	147.7	0.954	0.039	37.0248	
15 minute winter	11	2.003	12	166.3	0.496	0.031	81.7467	
15 minute winter	12	1.007	Pump	115.1	0.759	0.063	10.7824	
15 minute summer	Pump	Pump	15	7.0				
15 minute winter	14	2.000	9	153.6	1.087	0.077	12.9097	
15 minute winter	15	1.009	16	7.6	0.775	0.053	0.5466	
60 minute summer	16	1.010	17	7.2	0.648	0.050	1.3226	
15 minute summer	17	1.011	20	15.1	0.471	0.105	3.1548	
15 minute winter	22	1.014	23	68.0	0.956	0.427	3.0767	
15 minute winter	20	1.012	21	68.6	0.891	0.478	3.6728	
15 minute winter	21	1.013	22	68.4	0.920	0.429	2.5728	
15 minute winter	23	1.015	24	67.3	1.031	0.423	3.2457	
15 minute winter	24	1.016	25	76.8	1.012	0.357	3.1845	
15 minute winter	25	1.017	26	78.8	0.802	0.258	8.0350	
15 minute winter	26	1.018	27	131.4	1.007	0.430	6.9807	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.33%

	Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
	1440 minute winter	27		1680	9.084	1.232	27.4	2.1764	0.0000	SURCHARGED
	1440 minute winter	28		1680	9.083	1.384	30.9	2.4459	0.0000	SURCHARGED
	1440 minute winter	Northern Attenuation Pond		1680	9.083	1.484	30.2	973.9344	0.0000	SURCHARGED
	1440 minute winter	Northern Flow Control Chamber		1680	9.083	1.526	13.3	3.8830	0.0000	SURCHARGED
	180 minute winter	Outfall 04		240	7.543	0.077	13.3	0.0000	0.0000	OK
	360 minute winter	Unit 3 Flow Control Chamber		352	10.012	1.290	10.7	2.2798	0.0000	SURCHARGED
	360 minute winter	Unit 3 Attenuation Pond		352	10.012	1.262	94.7	635.5002	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Flow Control Chamber		1380	10.568	0.460	2.1	0.6578	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Attenuation Tank		1380	10.568	0.418	15.9	412.7002	0.0000	OK
	1440 minute winter	Unit 2 Flow Control Chamber		1410	10.356	0.608	2.2	1.0750	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Attenuation Tank		1410	10.356	0.581	20.7	579.9142	0.0000	SURCHARGED
	Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)	
	1440 minute winter	27	1.019	28	133.5	1.159	0.436	4.5153		
1440 minute winter	28	1.020	Northern Attenuation Pond	198.2	2.284	0.552	15.0403			
1440 minute winter	Northern Attenuation Pond		1.021	Northern Flow Control Chamber	16.9	0.421	0.059	5.7824		
1440 minute winter	Northern Flow Control Chamber		1.022	Outfall 04	13.3	1.077	0.255	0.1117	20.0	
1440 minute summer	Unit 3 Flow Control Chamber		3.001	24	10.0	0.985	0.565	0.0817		
1440 minute summer	Unit 3 Attenuation Pond		3.000	Unit 3 Flow Control Chamber	29.7	0.409	0.105	4.6046		
1440 minute winter	Unit 1 Flow Control Chamber		4.001	25	2.1	0.667	0.116	0.0647		
1440 minute winter	Unit 1 Attenuation Tank		4.000	Unit 1 Flow Control Chamber	8.1	0.358	0.050	1.0436		
1440 minute winter	Unit 2 Flow Control Chamber		5.001	27	2.1	0.661	0.116	0.0349		
1440 minute summer	Unit 2 Attenuation Tank		5.000	Unit 2 Flow Control Chamber	7.3	0.339	0.034	0.9822		

Results for 30 year +25% CC Critical Storm Duration. Lowest mass balance: 99.41%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	13	11.221	0.028	2.0	0.0487	0.0000	OK
15 minute winter	2	11	11.215	0.142	36.0	0.2513	0.0000	OK
15 minute winter	3	11	11.203	0.219	29.6	0.3865	0.0000	OK
15 minute winter	4	11	11.196	0.276	124.4	0.4870	0.0000	OK
15 minute winter	5	12	11.091	0.273	123.5	0.4829	0.0000	OK
15 minute winter	6	13	10.999	0.262	120.9	0.4628	0.0000	OK
15 minute winter	7	12	10.148	0.126	174.4	0.4372	0.0000	OK
360 minute winter	9	352	8.810	0.710	26.5	2.4584	0.0000	OK
360 minute winter	10	352	8.809	0.909	21.9	3.1476	0.0000	OK
360 minute winter	11	352	8.808	1.113	28.0	3.8541	0.0000	OK
360 minute winter	12	352	8.810	1.563	33.7	5.4159	0.0000	SURCHARGED
360 minute winter	Pump	352	8.811	1.293	9.5	4.4773	0.0000	SURCHARGED
360 minute winter	14	360	8.809	0.509	26.6	1.7636	0.0000	OK
15 minute winter	15	10	9.874	0.074	7.0	0.1063	0.0000	OK
60 minute summer	16	24	9.797	0.070	7.3	0.1003	0.0000	OK
15 minute winter	17	12	9.762	0.171	17.0	0.2449	0.0000	OK
15 minute winter	22	13	9.545	0.248	86.8	0.3548	0.0000	OK
15 minute winter	20	12	9.741	0.264	103.1	0.3783	0.0000	OK
15 minute winter	21	13	9.634	0.252	87.8	0.3600	0.0000	OK
15 minute winter	23	14	9.433	0.240	86.6	0.3434	0.0000	OK
1440 minute winter	24	1680	9.221	0.954	21.1	1.6859	0.0000	SURCHARGED
1440 minute winter	25	1680	9.220	1.112	23.2	1.9657	0.0000	SURCHARGED
1440 minute winter	26	1680	9.220	1.261	27.5	2.2279	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	-2.0	-0.095	-0.006	1.6292	
15 minute winter	2	1.001	3	29.6	0.507	0.097	3.1950	
15 minute summer	3	1.002	4	36.5	0.461	0.119	3.3595	
15 minute winter	4	1.003	5	123.5	0.999	0.404	6.3218	
15 minute winter	5	1.004	6	120.9	1.028	0.395	4.9040	
15 minute winter	6	1.005	7	118.5	1.120	0.388	6.1120	
15 minute winter	7	1.006	12	174.0	2.005	0.025	36.6521	
15 minute winter	9	2.001	10	187.0	1.221	0.094	24.4327	
15 minute winter	10	2.002	11	190.3	1.000	0.050	48.7566	
15 minute winter	11	2.003	12	-215.8	0.523	-0.040	95.0935	
15 minute winter	12	1.007	Pump	92.7	0.518	0.050	12.3430	
15 minute summer	Pump	Pump	15	7.0				
15 minute winter	14	2.000	9	191.6	1.151	0.096	15.2062	
15 minute summer	15	1.009	16	7.6	0.752	0.053	0.5465	
60 minute winter	16	1.010	17	7.2	0.649	0.050	1.3372	
15 minute summer	17	1.011	20	18.8	0.471	0.131	4.0459	
15 minute winter	22	1.014	23	86.6	0.999	0.543	3.6868	
15 minute winter	20	1.012	21	87.8	0.936	0.612	4.4422	
15 minute winter	21	1.013	22	86.8	0.967	0.544	3.1142	
15 minute winter	23	1.015	24	85.6	1.103	0.538	3.8563	
15 minute winter	24	1.016	25	94.2	1.075	0.437	3.6837	
15 minute winter	25	1.017	26	97.6	0.828	0.319	9.7760	
15 minute winter	26	1.018	27	163.0	1.057	0.533	8.2921	

Results for 30 year +25% CC Critical Storm Duration. Lowest mass balance: 99.41%

	Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
	1440 minute winter	27		1680	9.219	1.367	28.4	2.4161	0.0000	SURCHARGED
	1440 minute winter	28		1680	9.219	1.520	32.9	2.6856	0.0000	SURCHARGED
	1440 minute winter	Northern Attenuation Pond		1680	9.219	1.620	32.4	1103.9300	0.0000	SURCHARGED
	1440 minute winter	Northern Flow Control Chamber		1680	9.218	1.661	13.3	4.2283	0.0000	SURCHARGED
	60 minute winter	Outfall 04		298	7.543	0.077	13.3	0.0000	0.0000	OK
	480 minute winter	Unit 3 Flow Control Chamber		464	10.247	1.525	10.5	2.6939	0.0000	SURCHARGED
	480 minute winter	Unit 3 Attenuation Pond		464	10.247	1.497	94.3	835.0391	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Flow Control Chamber		1410	10.705	0.597	2.1	0.8546	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Attenuation Tank		1410	10.705	0.555	19.9	548.5536	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Flow Control Chamber		1410	10.533	0.785	2.2	1.3864	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Attenuation Tank		1410	10.533	0.758	25.9	755.7380	0.0000	SURCHARGED
	Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)	
	60 minute winter	27	1.019	28	168.4	1.241	0.550	5.3332		
60 minute winter	28	1.020	Northern Attenuation Pond	253.2	2.395	0.705	16.4639			
60 minute winter	Northern Attenuation Pond		1.021	Northern Flow Control Chamber	20.6	0.446	0.072	6.1410		
60 minute winter	Northern Flow Control Chamber		1.022	Outfall 04	13.3	1.077	0.255	0.1117	2.0000	
60 minute summer	Unit 3 Flow Control Chamber	3.001	24	10.0	0.985	0.565	0.0817			
60 minute winter	Unit 3 Attenuation Pond	3.000	Unit 3 Flow Control Chamber	35.0	0.438	0.124	4.6046			
60 minute summer	Unit 1 Flow Control Chamber	4.001	25	2.1	0.667	0.116	0.0647			
60 minute winter	Unit 1 Attenuation Tank	4.000	Unit 1 Flow Control Chamber	10.0	0.371	0.063	1.3440			
60 minute winter	Unit 2 Flow Control Chamber	5.001	27	2.1	0.661	0.116	0.0349			
60 minute winter	Unit 2 Attenuation Tank	5.000	Unit 2 Flow Control Chamber	9.4	0.359	0.043	1.5129			

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.42%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	13	11.227	0.034	2.5	0.0594	0.0000	OK
15 minute winter	2	11	11.220	0.147	37.4	0.2597	0.0000	OK
15 minute winter	3	11	11.208	0.224	30.3	0.3961	0.0000	OK
15 minute winter	4	11	11.201	0.281	128.5	0.4965	0.0000	OK
15 minute winter	5	12	11.097	0.279	127.4	0.4925	0.0000	OK
15 minute winter	6	13	11.004	0.267	124.8	0.4712	0.0000	OK
15 minute winter	7	12	10.151	0.129	181.1	0.4454	0.0000	OK
360 minute winter	9	360	8.861	0.761	27.5	2.6344	0.0000	OK
360 minute winter	10	344	8.859	0.959	25.5	3.3207	0.0000	OK
360 minute winter	11	352	8.858	1.163	26.7	4.0273	0.0000	OK
360 minute winter	12	352	8.860	1.613	37.2	5.5882	0.0000	SURCHARGED
360 minute winter	Pump	352	8.860	1.342	10.0	4.6496	0.0000	SURCHARGED
360 minute winter	14	352	8.861	0.561	27.6	1.9447	0.0000	OK
15 minute winter	15	10	9.874	0.074	7.0	0.1063	0.0000	OK
60 minute winter	16	23	9.797	0.070	7.3	0.1004	0.0000	OK
15 minute winter	17	12	9.769	0.178	17.9	0.2543	0.0000	OK
15 minute winter	22	13	9.551	0.254	90.4	0.3642	0.0000	OK
15 minute winter	20	12	9.749	0.272	106.9	0.3888	0.0000	OK
15 minute winter	21	13	9.640	0.258	91.5	0.3696	0.0000	OK
15 minute winter	23	14	9.439	0.246	90.2	0.3516	0.0000	OK
1440 minute winter	24	1680	9.228	0.961	21.1	1.6982	0.0000	SURCHARGED
1440 minute winter	25	1680	9.227	1.119	23.2	1.9780	0.0000	SURCHARGED
1440 minute winter	26	1680	9.227	1.268	27.4	2.2402	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	-2.5	-0.111	-0.008	1.7466	
15 minute winter	2	1.001	3	30.3	0.509	0.099	3.3182	
15 minute summer	3	1.002	4	37.8	0.464	0.124	3.4570	
15 minute winter	4	1.003	5	127.4	1.008	0.417	6.4835	
15 minute winter	5	1.004	6	124.8	1.035	0.408	5.0302	
15 minute winter	6	1.005	7	122.6	1.131	0.401	6.2574	
15 minute winter	7	1.006	12	180.8	2.034	0.026	37.9006	
15 minute winter	9	2.001	10	194.4	1.238	0.098	25.9908	
15 minute winter	10	2.002	11	196.8	0.998	0.052	50.7732	
30 minute winter	11	2.003	12	-236.9	0.456	-0.044	114.0054	
15 minute summer	12	1.007	Pump	112.5	0.702	0.061	11.9302	
15 minute summer	Pump	Pump	15	7.0				
15 minute winter	14	2.000	9	198.9	1.162	0.100	15.6308	
15 minute summer	15	1.009	16	7.6	0.736	0.053	0.5465	
60 minute winter	16	1.010	17	7.2	0.648	0.050	1.4029	
15 minute summer	17	1.011	20	19.5	0.471	0.136	4.2141	
15 minute winter	22	1.014	23	90.2	1.007	0.566	3.8022	
15 minute winter	20	1.012	21	91.5	0.945	0.638	4.5892	
15 minute winter	21	1.013	22	90.4	0.976	0.566	3.2157	
15 minute winter	23	1.015	24	89.1	1.116	0.560	3.9675	
15 minute winter	24	1.016	25	97.5	1.085	0.453	3.7791	
15 minute winter	25	1.017	26	101.3	0.832	0.331	10.1123	
15 minute winter	26	1.018	27	169.1	1.066	0.553	8.5341	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.42%

	Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
	1440 minute winter	27		1680	9.226	1.374	28.4	2.4284	0.0000	SURCHARGED
	1440 minute winter	28		1680	9.226	1.527	33.0	2.6979	0.0000	SURCHARGED
	1440 minute winter	Northern Attenuation Pond		1680	9.225	1.626	32.7	1110.7810	0.0000	SURCHARGED
	1440 minute winter	Northern Flow Control Chamber		1680	9.225	1.668	13.3	4.2461	0.0000	SURCHARGED
	180 minute summer	Outfall 04		160	7.543	0.077	13.3	0.0000	0.0000	OK
	480 minute winter	Unit 3 Flow Control Chamber		464	10.284	1.561	10.5	2.7592	0.0000	SURCHARGED
	480 minute winter	Unit 3 Attenuation Pond		464	10.284	1.534	97.4	868.8313	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Flow Control Chamber		1410	10.716	0.608	2.1	0.8696	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Attenuation Tank		1410	10.716	0.566	20.2	558.9036	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Flow Control Chamber		1410	10.547	0.799	2.2	1.4111	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Attenuation Tank		1410	10.547	0.772	26.3	769.6573	0.0000	SURCHARGED
	Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Disch Vol (m³)	
	1440 minute winter	27	1.019	28	174.8	1.255	0.571	5.5001		
1440 minute winter	28	1.020	Northern Attenuation Pond		263.7	2.412	0.735	16.6910		
1440 minute winter	Northern Attenuation Pond		1.021	Northern Flow Control Chamber		21.4	0.450	0.075	6.1963	
180 minute summer	Northern Flow Control Chamber		1.022	Outfall 04		13.3	1.077	0.255	0.1117	2
180 minute summer	Unit 3 Flow Control Chamber		3.001	24		10.0	0.985	0.565	0.1416	
180 minute winter	Unit 3 Attenuation Pond		3.000	Unit 3 Flow Control Chamber		30.6	0.440	0.108	4.6046	
1440 minute summer	Unit 1 Flow Control Chamber		4.001	25		2.1	0.667	0.116	0.0647	
1440 minute winter	Unit 1 Attenuation Tank		4.000	Unit 1 Flow Control Chamber		9.6	0.371	0.060	1.4075	
1440 minute winter	Unit 2 Flow Control Chamber		5.001	27		2.1	0.661	0.116	0.0349	
1440 minute winter	Unit 2 Attenuation Tank		5.000	Unit 2 Flow Control Chamber		10.0	0.358	0.046	1.5748	

Results for 100 year +25% CC Critical Storm Duration. Lowest mass balance: 99.53%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	1	13	11.266	0.073	6.8	0.1286	0.0000	OK
15 minute winter	2	11	11.253	0.180	46.7	0.3181	0.0000	OK
15 minute winter	3	11	11.243	0.259	37.6	0.4571	0.0000	OK
15 minute winter	4	11	11.237	0.317	156.5	0.5598	0.0000	OK
15 minute winter	5	12	11.132	0.314	154.4	0.5543	0.0000	OK
15 minute winter	6	12	11.036	0.299	151.6	0.5277	0.0000	OK
15 minute winter	7	12	10.164	0.142	224.1	0.4932	0.0000	OK
480 minute winter	9	472	9.718	1.618	25.4	5.6056	0.0000	SURCHARGED
480 minute winter	10	472	9.719	1.819	20.9	6.3021	0.0000	SURCHARGED
480 minute winter	11	472	9.720	2.025	30.5	7.0148	0.0000	SURCHARGED
480 minute winter	12	472	9.721	2.474	30.0	8.5697	0.0000	FLOOD RISK
480 minute winter	Pump	472	9.721	2.203	9.0	7.6310	0.0000	FLOOD RISK
480 minute winter	14	472	9.718	1.418	27.4	4.9107	0.0000	SURCHARGED
15 minute summer	15	10	9.874	0.074	7.0	0.1061	0.0000	OK
15 minute winter	16	13	9.829	0.102	11.2	0.1460	0.0000	OK
15 minute winter	17	12	9.801	0.210	23.5	0.2999	0.0000	OK
15 minute winter	22	13	9.586	0.289	112.0	0.4137	0.0000	OK
15 minute winter	20	12	9.788	0.311	133.8	0.4453	0.0000	OK
15 minute winter	21	12	9.681	0.299	112.2	0.4276	0.0000	OK
15 minute winter	23	13	9.472	0.279	110.0	0.3989	0.0000	OK
1440 minute winter	24	1680	9.390	1.123	22.0	1.9836	0.0000	SURCHARGED
1440 minute winter	25	1680	9.389	1.281	23.6	2.2636	0.0000	SURCHARGED
1440 minute winter	26	1680	9.388	1.429	29.3	2.5259	0.0000	SURCHARGED
Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	1	1.000	2	-6.8	-0.186	-0.022	2.7035	
15 minute winter	2	1.001	3	37.6	0.523	0.123	4.1591	
15 minute winter	3	1.002	4	47.9	0.487	0.157	4.2450	
15 minute winter	4	1.003	5	154.4	1.052	0.505	7.5406	
15 minute winter	5	1.004	6	151.6	1.085	0.496	5.8408	
15 minute winter	6	1.005	7	149.3	1.197	0.488	7.1993	
15 minute winter	7	1.006	12	224.9	1.911	0.032	43.4150	
15 minute winter	9	2.001	10	244.4	1.320	0.123	38.1327	
15 minute winter	10	2.002	11	-252.0	0.994	-0.067	64.4155	
15 minute winter	11	2.003	12	-302.3	0.539	-0.057	111.5071	
15 minute winter	12	1.007	Pump	121.4	0.747	0.066	14.4349	
15 minute summer	Pump	Pump	15	7.0				
15 minute winter	14	2.000	9	248.2	1.229	0.125	18.4820	
15 minute winter	15	1.009	16	7.7	0.745	0.054	0.7606	
15 minute winter	16	1.010	17	11.8	0.476	0.082	3.2975	
15 minute summer	17	1.011	20	27.8	0.471	0.194	5.1271	
15 minute winter	22	1.014	23	110.0	1.060	0.690	4.4497	
15 minute winter	20	1.012	21	112.2	0.995	0.782	5.4110	
15 minute winter	21	1.013	22	112.0	1.023	0.702	3.7774	
15 minute winter	23	1.015	24	108.2	1.182	0.680	4.5764	
15 minute winter	24	1.016	25	117.2	1.143	0.544	4.2897	
15 minute winter	25	1.017	26	124.0	0.854	0.405	12.4163	
15 minute winter	26	1.018	27	211.2	1.122	0.690	10.1009	

Results for 100 year +25% CC Critical Storm Duration. Lowest mass balance: 99.53%

	Node Event		US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
	1440 minute winter	27		1680	9.388	1.536	30.9	2.7143	0.0000	SURCHARGED
	1440 minute winter	28		1680	9.388	1.689	37.4	2.9839	0.0000	SURCHARGED
	1440 minute winter	Northern Attenuation Pond		1680	9.387	1.788	37.4	1275.2550	0.0000	FLOOD RISK
	1440 minute winter	Northern Flow Control Chamber		1680	9.387	1.830	13.3	4.6580	0.0000	FLOOD RISK
	30 minute winter	Outfall 04		263	7.543	0.077	13.3	0.0000	0.0000	OK
	600 minute winter	Unit 3 Flow Control Chamber		585	10.553	1.831	10.7	3.2345	0.0000	SURCHARGED
	600 minute winter	Unit 3 Attenuation Pond		585	10.553	1.803	101.4	1134.0030	0.0000	FLOOD RISK
	1440 minute winter	Unit 1 Flow Control Chamber		1410	10.891	0.783	2.2	1.1200	0.0000	SURCHARGED
	1440 minute winter	Unit 1 Attenuation Tank		1410	10.891	0.741	25.3	731.7863	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Flow Control Chamber		1440	10.761	1.013	2.2	1.7907	0.0000	SURCHARGED
	1440 minute winter	Unit 2 Attenuation Tank		1440	10.761	0.986	32.9	983.9757	0.0000	SURCHARGED
	Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Disch Vol (m³)	
	1440 minute winter	27	1.019	28	217.0	1.335	0.709	6.5436		
1440 minute winter	28	1.020	Northern Attenuation Pond	331.0	2.512	0.922	18.1269			
1440 minute winter	Northern Attenuation Pond		1.021	Northern Flow Control Chamber	25.6	0.447	0.090	6.5052		
1440 minute winter	Northern Flow Control Chamber		1.022	Outfall 04	13.3	1.077	0.255	0.1117	2	
600 minute winter	Unit 3 Flow Control Chamber		3.001	24	10.7	1.000	0.605	0.1416		
600 minute winter	Unit 3 Attenuation Pond		3.000	Unit 3 Flow Control Chamber	36.7	0.479	0.130	4.6046		
1440 minute summer	Unit 1 Flow Control Chamber		4.001	25	2.1	0.667	0.116	0.0647		
1440 minute summer	Unit 1 Attenuation Tank		4.000	Unit 1 Flow Control Chamber	12.0	0.376	0.075	1.5774		
30 minute winter	Unit 2 Flow Control Chamber		5.001	27	2.1	0.661	0.116	0.0349		
30 minute winter	Unit 2 Attenuation Tank		5.000	Unit 2 Flow Control Chamber	13.6	0.359	0.062	2.0363		