

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S46	0.007	0.250	250	45.866	45.654	0.062	448233.025	110669.229
S45	0.000	1.350	Type C	45.323	45.060	0.113	448250.082	110665.314
S44	0.014	1.350	Type C	45.667	45.015	0.502	448249.700	110663.131
S43	0.000	1.350	Type C	45.483	44.618	0.715	448272.374	110640.949
S42	0.000	0.000	Unknown	45.612	44.572	0.890	448270.538	110637.723
S41	0.013	0.250	250	45.703	45.044	0.509	448239.820	110654.857
S40	0.000	1.350	Type C	45.625	44.977	0.498	448243.917	110651.406
S39	0.000	1.350	Type C	45.639	44.856	0.632	448249.460	110643.506
S38	0.018	1.350	Type C	45.636	44.707	0.779	448259.624	110637.265
S37	0.017	1.350	Type C	45.884	44.608	1.126	448265.892	110632.457
S36	0.000	0.000	Unknown	45.711	44.572	0.989	448267.427	110634.930
S35	0.000	0.000	Unknown	46.117	43.922	2.095	448279.045	110632.581
S34	0.000	1.200	Type B	45.943	43.320	2.073	448281.706	110637.027
S33	0.000	1.200	Type B	45.155	43.110	1.945	448301.676	110625.739
S12	0.025	0.135	Unknown	45.461	43.750	1.561	448289.886	110619.368
S13	0.000	0.000	Unknown	45.319	43.650	1.519	448290.893	110617.720
S16	0.000	0.000	Unknown	45.072	43.240	1.732	448294.811	110615.320
S17	0.000	0.000	Unknown	44.921	43.160	1.661	448299.944	110618.417
S14	0.017	1.350	Type C	44.674	43.750	0.774	448303.982	110613.960
S15	0.000	0.000	Unknown	44.651	43.650	0.851	448303.307	110615.084
S18	0.000	0.000	Unknown	44.585	42.200	2.285	448305.605	110617.414
S19	0.000	1.200	Type B	44.544	42.130	2.314	448306.447	110617.929
S20	0.000	1.200	Type B	43.936	41.520	1.866	448309.254	110616.850
S21	0.039	1.350	Type C	42.231	40.881	1.250	448314.437	110627.315
S22	0.000	0.000	Unknown	42.142	40.820	1.172	448313.040	110628.161
S23	0.000	0.000	Unknown	42.068	39.400	2.568	448312.373	110630.866
S24	0.000	1.200	Type B	42.019	38.920	2.549	448313.342	110632.595
S47	0.015	0.000	Unknown	41.607	40.550	0.907	448301.470	110645.051
S32	0.000	0.000	Unknown	41.798	39.100	2.598	448320.386	110637.682
S48	0.000	1.200	Type B	41.813	38.636	2.627	448321.318	110637.070
S25	0.138	1.500	Type A	41.564	37.210	3.754	448325.385	110634.660
S26	0.000	1.500	Unknown	38.494	37.055	0.839	448328.204	110639.459
S27	0.058	1.500	Unknown	37.786	36.535	0.651	448360.635	110629.007
S28	0.000	0.000	Unknown	37.010	35.440	-0.030	448372.263	110623.490
S29	0.000	0.000	Unknown	37.010	35.410	1.375	448395.960	110616.328
S30	0.000	1.350	Type C	37.000	34.880	1.445	448398.547	110621.513
S31	0.000	0.000	Type C	35.750	35.125	0.400	448403.502	110628.766

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Diameter (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S46	45.654	S45	45.060	0.150	17.501	29.4	0.600	0.062	0.113
1.001	S45	45.060	S44	45.015	0.150	2.216	49.1	0.600	0.113	0.502
1.002	S44	45.015	S43	44.618	0.150	31.719	80.0	0.600	0.502	0.715
1.003	S43	44.618	S42	44.572	0.150	3.711	80.0	0.600	0.715	0.890
1.004	S42	44.572	S35	43.922	0.150	9.940	15.3	0.600	0.890	2.045
2.000	S41	45.044	S40	44.977	0.150	5.357	80.0	0.600	0.509	0.498
2.001	S40	44.977	S39	44.856	0.150	9.651	80.0	0.600	0.498	0.632
2.002	S39	44.856	S38	44.707	0.150	11.926	80.0	0.600	0.632	0.779
2.003	S38	44.707	S37	44.608	0.150	7.900	80.0	0.600	0.779	1.126
2.004	S37	44.608	S36	44.572	0.150	2.911	80.0	0.600	1.126	0.989
2.005	S36	44.572	S35	43.922	0.150	11.853	18.2	0.600	0.989	2.045
1.005	S35	43.922	S34	43.770	0.100	5.181	34.1	0.600	2.095	2.073
1.006	S34	43.770	S33	43.110	0.100	22.940	34.8	0.600	2.073	1.945
1.007	S33	43.110	S19	42.130	0.150	9.153	9.3	0.600	1.895	2.264
3.000	S12	43.750	S13	43.650	0.150	1.932	19.3	0.600	1.561	1.519
3.001	S13	43.650	S16	43.240	0.150	4.595	11.2	0.600	1.519	1.682
3.002	S16	43.240	S17	43.160	0.100	5.995	74.9	0.600	1.732	1.661
3.003	S17	43.160	S18	42.200	0.150	5.749	6.0	0.600	1.611	2.235
4.000	S14	43.750	S15	43.650	0.150	1.311	13.1	0.600	0.774	0.851
4.001	S15	43.650	S18	42.200	0.150	3.272	2.3	0.600	0.851	2.235

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Diameter (m)	Length (m)	Gradient (1:X)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
3.004	S18	42.200	S19	42.130	0.100	0.988	14.1	0.600	2.285	2.314
1.008	S19	42.130	S20	41.970	0.100	3.007	18.8	0.600	2.314	1.866
1.009	S20	41.970	S21	40.881	0.100	11.678	10.7	0.600	1.866	1.250
1.010	S21	40.881	S22	40.820	0.150	1.633	26.8	0.600	1.200	1.172
1.011	S22	40.820	S23	39.400	0.150	2.786	2.0	0.600	1.172	2.518
1.012	S23	39.400	S24	39.370	0.100	1.982	66.1	0.600	2.568	2.549
1.013	S24	39.370	S25	39.027	0.100	12.219	35.6	0.600	2.549	2.437
5.000	S47	40.550	S32	39.100	0.150	20.300	14.0	0.600	0.907	2.548
5.001	S32	39.100	S48	39.086	0.100	1.114	80.0	0.600	2.598	2.627
5.002	S48	39.086	S25	39.027	0.100	4.727	80.0	0.600	2.627	2.437
1.014	S25	37.660	S26	37.555	0.150	5.565	53.0	0.600	3.754	0.789
1.015	S26	37.055	S27	36.535	0.600	34.074	65.5	0.600	0.839	0.651
1.016	S27	36.535	S28	36.440	0.600	12.870	135.5	0.600	0.651	-0.030
1.017	S28	35.440	S29	35.410	1.600	24.756	825.2	0.600	-0.030	-0.000
1.018	S29	35.410	S30	35.330	0.225	5.794	72.4	0.600	1.375	1.445
1.019	S30	35.330	S31	35.125	0.225	8.783	42.8	0.600	1.445	0.400

Outfall Details

Outfall Manhole S31 : Free Discharge

Flow Control Details

Tank Structure at Manhole S35

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
43.922	0.800	95.00	52.000	49.400	39.520	0.00000000	0.00000000	2.00

Tank Structure at Manhole S16

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
43.240	0.800	95.00	40.500	38.475	30.780	0.00000000	0.00000000	2.00

Tank Structure at Manhole S18

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
42.200	1.600	95.00	40.500	38.475	61.560	0.00000000	0.00000000	2.00

Tank Structure at Manhole S22

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
40.820	1.600	95.00	85.203	80.943	129.509	0.00000000	0.00000000	2.00

Tank Structure at Manhole S32

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
39.100	1.600	95.00	90.000	85.500	136.800	0.00000000	0.00000000	2.00

Tank Structure at Manhole S29

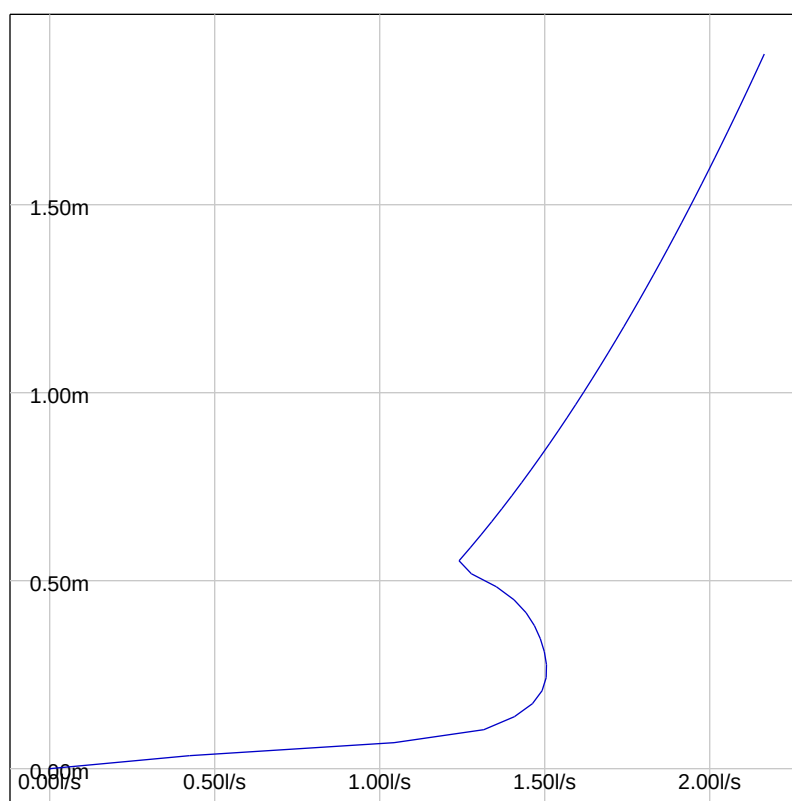
Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
35.410	1.600	95.00	187.591	178.211	285.138	0.00000000	0.00000000	2.00

Controls within Manhole S30

Hydro-Brake® Optimum Control at Manhole S30

Model Ref	Design Depth (m)	Design Flow (l/s)	Depth Above Invert (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0060-2000-1600-2000 ID:613954	1.600	2.000	0.000	0.263	1.506	0.537	1.224

Hydro-Brake® Optimum Control at S30



Simulation Settings

FSR: M5-60=19.40, R=0.35, Locale=England and Wales

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760

Return Periods (yrs) + Climate Change: (1, +0%), (30, +40%), (100, +45%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	33.957	0.00	1.91	30Yr +40% 600Min Summer	7.902	0.00	0.32
1Yr 15Min Summer	33.957	0.00	2.13	30Yr +40% 600Min Winter	7.902	0.00	0.32
1Yr 30Min Winter	21.996	0.00	1.44	30Yr +40% 720Min Summer	6.892	0.00	0.30
1Yr 30Min Summer	21.996	0.00	1.51	30Yr +40% 720Min Winter	6.892	0.00	0.30
1Yr 60Min Winter	13.802	0.00	1.18	30Yr +40% 960Min Summer	5.551	0.00	0.26
1Yr 60Min Summer	13.802	0.00	1.20	30Yr +40% 960Min Winter	5.551	0.00	0.26
1Yr 120Min Summer	8.541	0.00	0.96	30Yr +40% 1440Min Summer	4.087	0.00	0.21
1Yr 120Min Winter	8.541	0.00	0.93	30Yr +40% 1440Min Winter	4.087	0.00	0.21
1Yr 180Min Summer	6.444	0.00	0.85	30Yr +40% 2160Min Summer	3.004	0.00	0.15
1Yr 180Min Winter	6.444	0.00	0.82	30Yr +40% 2160Min Winter	3.004	0.00	0.14
1Yr 240Min Summer	5.283	0.00	0.77	30Yr +40% 2880Min Summer	2.413	0.00	0.15
1Yr 240Min Winter	5.283	0.00	0.75	30Yr +40% 2880Min Winter	2.413	0.00	0.14
1Yr 360Min Summer	3.985	0.00	0.67	30Yr +40% 4320Min Summer	1.770	0.00	0.13
1Yr 360Min Winter	3.985	0.00	0.65	30Yr +40% 4320Min Winter	1.770	0.00	0.13
1Yr 480Min Summer	3.259	0.00	0.61	30Yr +40% 5760Min Summer	1.419	0.00	0.13
1Yr 480Min Winter	3.259	0.00	0.60	30Yr +40% 5760Min Winter	1.419	0.00	0.12
1Yr 600Min Summer	2.789	0.00	0.60	100Yr +45% 15Min Summer	132.071	0.00	0.58
1Yr 600Min Winter	2.789	0.00	0.57	100Yr +45% 15Min Winter	132.071	0.00	0.48
1Yr 720Min Winter	2.455	0.00	0.56	100Yr +45% 30Min Summer	88.761	0.00	0.47
1Yr 720Min Summer	2.455	0.00	0.58	100Yr +45% 30Min Winter	88.761	0.00	0.50
1Yr 960Min Summer	2.008	0.00	0.54	100Yr +45% 60Min Summer	56.919	0.00	0.47
1Yr 960Min Winter	2.008	0.00	0.52	100Yr +45% 60Min Winter	56.919	0.00	0.47
1Yr 1440Min Summer	1.513	0.00	0.47	100Yr +45% 120Min Summer	35.224	0.00	0.42
1Yr 1440Min Winter	1.513	0.00	0.46	100Yr +45% 120Min Winter	35.224	0.00	0.41
1Yr 2160Min Summer	1.141	0.00	0.42	100Yr +45% 180Min Summer	26.199	0.00	0.38
1Yr 2160Min Winter	1.141	0.00	0.41	100Yr +45% 180Min Winter	26.199	0.00	0.36
1Yr 2880Min Summer	0.934	0.00	0.38	100Yr +45% 240Min Summer	21.078	0.00	0.35
1Yr 2880Min Winter	0.934	0.00	0.37	100Yr +45% 240Min Winter	21.078	0.00	0.34
1Yr 4320Min Summer	0.705	0.00	0.34	100Yr +45% 360Min Summer	15.506	0.00	0.32
1Yr 4320Min Winter	0.705	0.00	0.33	100Yr +45% 360Min Winter	15.506	0.00	0.30
1Yr 5760Min Winter	0.578	0.00	0.30	100Yr +45% 480Min Summer	12.458	0.00	0.29
1Yr 5760Min Summer	0.578	0.00	0.31	100Yr +45% 480Min Winter	12.458	0.00	0.28
30Yr +40% 15Min Summer	98.523	0.00	0.86	100Yr +45% 600Min Summer	10.503	0.00	0.28
30Yr +40% 15Min Winter	98.523	0.00	0.81	100Yr +45% 600Min Winter	10.503	0.00	0.27
30Yr +40% 30Min Summer	65.580	0.00	0.67	100Yr +45% 720Min Summer	9.132	0.00	0.27
30Yr +40% 30Min Winter	65.580	0.00	0.65	100Yr +45% 720Min Winter	9.132	0.00	0.26
30Yr +40% 60Min Summer	41.816	0.00	0.56	100Yr +45% 960Min Summer	7.315	0.00	0.24
30Yr +40% 60Min Winter	41.816	0.00	0.55	100Yr +45% 960Min Winter	7.315	0.00	0.24
30Yr +40% 120Min Summer	25.877	0.00	0.49	100Yr +45% 1440Min Summer	5.341	0.00	0.19
30Yr +40% 120Min Winter	25.877	0.00	0.48	100Yr +45% 1440Min Winter	5.341	0.00	0.20
30Yr +40% 180Min Winter	19.319	0.00	0.44	100Yr +45% 2160Min Summer	3.891	0.00	0.14
30Yr +40% 180Min Summer	19.319	0.00	0.45	100Yr +45% 2160Min Winter	3.891	0.00	0.14
30Yr +40% 240Min Summer	15.620	0.00	0.42	100Yr +45% 2880Min Summer	3.104	0.00	0.11
30Yr +40% 240Min Winter	15.620	0.00	0.41	100Yr +45% 2880Min Winter	3.104	0.00	0.10
30Yr +40% 360Min Summer	11.565	0.00	0.38	100Yr +45% 4320Min Summer	2.253	0.00	0.10
30Yr +40% 360Min Winter	11.565	0.00	0.38	100Yr +45% 4320Min Winter	2.253	0.00	0.10
30Yr +40% 480Min Summer	9.336	0.00	0.35	100Yr +45% 5760Min Winter	1.793	0.00	0.10
30Yr +40% 480Min Winter	9.336	0.00	0.34	100Yr +45% 5760Min Summer	1.793	0.00	0.10

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S46	15 min Winter	8	45.674	0.019	1.178		OK
S45	15 min Winter	9	45.082	0.022	1.116		OK
S44	15 min Winter	8	45.058	0.043	3.735		OK
S43	15 min Winter	9	44.662	0.043	3.647		OK
S42	15 min Winter	9	44.601	0.029	3.666		OK
S41	15 min Winter	8	45.078	0.034	2.325		OK
S40	15 min Winter	8	45.011	0.034	2.303		OK
S39	15 min Winter	9	44.890	0.034	2.241		OK
S38	15 min Winter	9	44.760	0.053	5.263		OK
S37	15 min Winter	9	44.675	0.067	8.165		OK
S36	15 min Winter	8	44.619	0.047	8.169		OK
S35	30 min Summer	19	43.984	0.062	7.778		OK
S34	30 min Summer	19	43.838	0.518	7.352		OK
S33	30 min Summer	20	43.146	0.036	7.304		OK
S12	15 min Winter	8	43.784	0.034	4.580		OK
S13	15 min Winter	8	43.681	0.031	4.556		OK
S16	30 min Summer	19	43.280	0.040	2.394		OK
S17	30 min Summer	19	43.178	0.018	2.151		OK
S14	15 min Winter	8	43.776	0.026	3.031		OK
S15	15 min Winter	7	43.667	0.017	2.778		OK
S18	30 min Winter	21	42.231	0.031	3.376		OK
S19	30 min Summer	20	42.195	0.065	10.541		OK
S20	30 min Summer	20	42.024	0.504	10.548		OK
S21	30 min Summer	18	40.947	0.066	14.071		OK
S22	30 min Winter	21	40.851	0.031	13.076		OK
S23	30 min Winter	24	39.650	0.250	11.681		Surcharged
S24	30 min Winter	24	39.576	0.656	11.735		Surcharged
S47	15 min Winter	8	40.578	0.028	2.662		OK
S32	120 min Summer	74	39.118	0.018	0.479		OK
S48	120 min Winter	81	39.104	0.468	0.459		OK
S25	30 min Summer	17	37.796	0.586	25.668		OK
S26	30 min Summer	17	37.126	0.071	26.041		OK
S27	30 min Summer	17	36.632	0.097	34.951		OK
S28	600 min Winter	489	35.715	0.275	1.479		OK
S29	600 min Winter	489	35.715	0.305	1.479		Surcharged
S30	600 min Winter	489	35.715	0.835	1.478		Surcharged
S31	960 min Winter	1026	35.146	0.021	1.505		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S46	S45	0.020	0.810	1.167	0.035	OK
1.001	15 min Winter	9	S45	S44	0.032	0.405	1.137	0.045	OK
1.002	15 min Winter	8	S44	S43	0.043	0.870	3.628	0.183	OK
1.003	15 min Winter	9	S43	S42	0.036	1.123	3.666	0.185	OK
1.004	15 min Winter	9	S42	S35	0.037	1.068	3.667	0.080	OK
2.000	15 min Winter	8	S41	S40	0.034	0.758	2.303	0.116	OK
2.001	15 min Winter	8	S40	S39	0.034	0.759	2.261	0.114	OK
2.002	15 min Winter	9	S39	S38	0.043	0.535	2.267	0.114	OK
2.003	15 min Winter	9	S38	S37	0.060	0.809	5.313	0.268	OK
2.004	15 min Winter	9	S37	S36	0.056	1.368	8.220	0.414	OK
2.005	15 min Winter	8	S36	S35	0.041	2.064	8.163	0.195	OK
1.005	30 min Summer	19	S35	S34	0.065	1.356	7.352	0.707	OK
1.006	30 min Summer	19	S34	S33	0.052	1.768	7.298	0.709	OK
1.007	30 min Summer	20	S33	S19	0.050	1.412	7.321	0.125	OK
3.000	15 min Winter	8	S12	S13	0.032	1.623	4.556	0.112	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
3.001	15 min Winter	8	S13	S16	0.028	2.048	4.559	0.085	OK
3.002	30 min Summer	19	S16	S17	0.029	1.147	2.151	0.308	OK
3.003	30 min Summer	19	S17	S18	0.024	1.183	2.146	0.029	OK
4.000	15 min Winter	8	S14	S15	0.021	1.950	3.007	0.061	OK
4.001	15 min Winter	7	S15	S18	0.014	3.203	2.765	0.023	OK
3.004	30 min Winter	21	S18	S19	0.047	0.901	3.296	0.203	OK
1.008	30 min Summer	20	S19	S20	0.065	1.964	10.548	0.751	OK
1.009	30 min Summer	20	S20	S21	0.059	2.190	10.547	0.566	OK
1.010	30 min Summer	18	S21	S22	0.046	3.090	14.053	0.408	OK
1.011	30 min Winter	21	S22	S23	0.090	1.142	12.704	0.099	OK
1.012	30 min Winter	24	S23	S24	0.100	1.494	11.735	1.577	Surcharged
1.013	30 min Winter	24	S24	S25	0.100	1.487	11.679	1.148	Surcharged
5.000	15 min Winter	8	S47	S32	0.018	2.283	2.654	0.056	OK
5.001	120 min Summer	74	S32	S48	0.018	0.496	0.465	0.069	OK
5.002	120 min Winter	81	S48	S25	0.018	0.494	0.459	0.068	OK
1.014	30 min Summer	17	S25	S26	0.138	1.533	26.041	1.065	OK
1.015	30 min Summer	17	S26	S27	0.084	1.095	26.209	0.031	OK
1.016	30 min Summer	17	S27	S28	0.097	1.192	35.253	0.060	OK
1.017	600 min Winter	489	S28	S29	0.290	0.006	1.479	0.000	OK
1.018	600 min Winter	489	S29	S30	0.225	0.037	1.478	0.024	OK
1.019	600 min Winter	489	S30	S31	0.021	0.786	1.478	0.019	OK

Return Period Yrs: 30.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S46	15 min Winter	8	45.687	0.032	3.420		OK
S45	15 min Winter	8	45.097	0.037	3.400		OK
S44	15 min Winter	8	45.093	0.078	10.895		OK
S43	15 min Winter	9	44.696	0.078	10.538		OK
S42	15 min Winter	9	44.621	0.049	10.667		OK
S41	15 min Winter	8	45.104	0.060	6.746		OK
S40	15 min Winter	8	45.036	0.059	6.706		OK
S39	15 min Winter	9	44.915	0.059	6.452		OK
S38	15 min Winter	8	44.811	0.104	15.777		OK
S37	15 min Winter	8	44.749	0.141	24.322		OK
S36	15 min Winter	8	44.654	0.082	26.016		OK
S35	30 min Winter	23	44.155	0.233	10.772		Surcharged
S34	30 min Winter	24	44.007	0.687	10.263		Surcharged
S33	30 min Winter	24	43.152	0.042	10.258		OK
S12	15 min Winter	8	43.809	0.059	13.286		OK
S13	15 min Winter	8	43.701	0.051	13.247		OK
S16	30 min Summer	18	43.331	0.091	9.384		OK
S17	30 min Summer	19	43.194	0.034	8.175		OK
S14	15 min Winter	8	43.794	0.044	8.796		OK
S15	15 min Winter	8	43.677	0.027	8.761		OK
S18	30 min Winter	25	42.331	0.131	7.058		Surcharged
S19	30 min Winter	25	42.317	0.187	17.467		Surcharged
S20	30 min Winter	25	42.047	0.527	17.471		OK
S21	30 min Summer	16	41.003	0.122	34.457		OK
S22	60 min Winter	44	40.900	0.080	20.793		OK
S23	60 min Winter	44	40.819	1.419	21.029		Surcharged
S24	60 min Winter	44	40.582	1.662	21.034		Surcharged
S47	15 min Winter	8	40.596	0.046	7.724		OK
S32	60 min Summer	37	39.141	0.041	2.506		OK
S48	60 min Summer	37	39.127	0.491	2.413		OK
S25	30 min Summer	17	38.862	1.652	80.727		Surcharged
S26	30 min Summer	17	37.178	0.123	81.907		OK
S27	30 min Summer	17	36.705	0.170	108.046		OK
S28	960 min Winter	912	36.562	1.122	2.121		OK
S29	960 min Winter	910	36.562	1.152	1.755		Surcharged
S30	960 min Winter	910	36.562	1.682	1.762		Surcharged
S31	960 min Winter	910	35.148	0.023	1.762		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S46	S45	0.035	1.106	3.400	0.103	OK
1.001	15 min Winter	8	S45	S44	0.057	0.536	3.343	0.132	OK
1.002	15 min Winter	8	S44	S43	0.078	1.161	10.697	0.539	OK
1.003	15 min Winter	9	S43	S42	0.063	1.499	10.667	0.537	OK
1.004	15 min Winter	9	S42	S35	0.091	0.949	10.686	0.234	OK
2.000	15 min Winter	8	S41	S40	0.060	1.024	6.706	0.338	OK
2.001	15 min Winter	8	S40	S39	0.059	1.023	6.619	0.333	OK
2.002	15 min Winter	9	S39	S38	0.081	0.671	6.541	0.329	OK
2.003	15 min Winter	8	S38	S37	0.122	1.004	15.492	0.780	OK
2.004	15 min Winter	8	S37	S36	0.111	1.853	26.016	1.311	OK
2.005	15 min Winter	8	S36	S35	0.092	2.110	24.084	0.575	OK
1.005	30 min Winter	23	S35	S34	0.100	1.316	10.337	0.994	Surcharged
1.006	30 min Winter	24	S34	S33	0.071	1.716	10.258	0.996	OK
1.007	30 min Winter	24	S33	S19	0.096	0.857	10.258	0.175	OK
3.000	15 min Winter	8	S12	S13	0.055	2.261	13.247	0.326	OK
3.001	15 min Winter	8	S13	S16	0.058	2.114	13.215	0.247	OK
3.002	30 min Summer	18	S16	S17	0.062	1.586	8.164	1.170	OK
3.003	30 min Summer	19	S17	S18	0.070	1.014	8.179	0.112	OK
4.000	15 min Winter	8	S14	S15	0.036	2.734	8.761	0.177	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
4.001	15 min Winter	8	S15	S18	0.037	2.560	8.745	0.073	OK
3.004	30 min Winter	25	S18	S19	0.100	0.918	7.214	0.445	Surcharged
1.008	30 min Winter	25	S19	S20	0.100	2.224	17.471	1.244	Surcharged
1.009	30 min Winter	25	S20	S21	0.080	2.580	17.470	0.938	OK
1.010	30 min Summer	16	S21	S22	0.085	3.308	34.352	0.996	OK
1.011	60 min Winter	44	S22	S23	0.115	1.447	21.029	0.164	OK
1.012	60 min Winter	44	S23	S24	0.100	2.678	21.034	2.827	Surcharged
1.013	60 min Winter	44	S24	S25	0.100	2.677	21.022	2.067	Surcharged
5.000	15 min Winter	8	S47	S32	0.033	2.692	7.718	0.161	OK
5.001	60 min Summer	37	S32	S48	0.041	0.792	2.413	0.357	OK
5.002	60 min Summer	37	S48	S25	0.041	0.792	2.409	0.357	OK
1.014	30 min Summer	17	S25	S26	0.150	4.635	81.907	3.351	Surcharged
1.015	30 min Summer	17	S26	S27	0.146	1.539	81.984	0.096	OK
1.016	30 min Summer	17	S27	S28	0.170	1.655	108.739	0.184	OK
1.017	960 min Winter	912	S28	S29	1.137	0.001	1.840	0.001	OK
1.018	960 min Winter	910	S29	S30	0.225	0.044	1.762	0.029	OK
1.019	960 min Winter	910	S30	S31	0.023	0.830	1.762	0.022	OK

Return Period Yrs: 100.0

Climate Change %: 45

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S46	15 min Winter	8	45.692	0.038	4.585		OK
S45	15 min Winter	8	45.103	0.043	4.561		OK
S44	15 min Winter	8	45.109	0.094	14.558		OK
S43	15 min Winter	9	44.712	0.094	14.141		OK
S42	15 min Winter	9	44.629	0.057	14.294		OK
S41	15 min Winter	8	45.114	0.071	9.043		OK
S40	15 min Winter	8	45.047	0.070	8.993		OK
S39	15 min Winter	9	44.925	0.069	8.637		OK
S38	15 min Winter	9	44.876	0.168	20.408		Surcharged
S37	15 min Winter	9	44.772	0.164	31.640		Surcharged
S36	15 min Winter	9	44.669	0.097	31.708		OK
S35	30 min Winter	24	44.278	0.356	11.572		Surcharged
S34	30 min Winter	25	44.111	0.791	10.926		Surcharged
S33	30 min Winter	25	43.154	0.044	10.910		OK
S12	15 min Winter	8	43.819	0.069	17.811		OK
S13	15 min Winter	8	43.709	0.059	17.763		OK
S16	30 min Summer	19	43.368	0.128	9.379		Surcharged
S17	30 min Summer	19	43.195	0.035	8.770		OK
S14	15 min Winter	8	43.801	0.051	11.792		OK
S15	15 min Winter	8	43.681	0.031	11.750		OK
S18	60 min Winter	43	42.397	0.197	8.871		Surcharged
S19	60 min Winter	43	42.377	0.247	19.466		Surcharged
S20	60 min Winter	44	42.057	0.537	19.452		OK
S21	15 min Winter	8	41.030	0.149	42.201		OK
S22	60 min Winter	50	40.971	0.151	21.624		Surcharged
S23	60 min Winter	50	40.930	1.530	21.707		Surcharged
S24	60 min Winter	50	40.678	1.758	21.707		Surcharged
S47	15 min Winter	8	40.602	0.052	10.354		OK
S32	30 min Summer	19	39.170	0.070	5.400		OK
S48	30 min Summer	17	39.190	0.554	10.089		Surcharged
S25	30 min Summer	16	39.342	2.132	110.634		Surcharged
S26	30 min Summer	16	37.188	0.133	97.356		OK
S27	960 min Winter	927	36.989	0.454	1.851		OK
S28	960 min Winter	891	37.002	1.562	2.268		OK
S29	960 min Winter	926	36.988	1.578	10.657		Flood Risk
S30	960 min Winter	917	36.987	2.107	1.946		Flood Risk
S31	960 min Winter	923	35.149	0.024	2.020		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
1.000	15 min Winter	8	S46	S45	0.040	1.189	4.561	0.139	OK
1.001	15 min Winter	8	S45	S44	0.069	0.562	4.435	0.175	OK
1.002	15 min Winter	8	S44	S43	0.093	1.240	14.310	0.721	OK
1.003	15 min Winter	9	S43	S42	0.076	1.604	14.294	0.720	OK
1.004	15 min Winter	9	S42	S35	0.104	1.098	14.314	0.313	OK
2.000	15 min Winter	8	S41	S40	0.070	1.106	8.993	0.453	OK
2.001	15 min Winter	8	S40	S39	0.070	1.105	8.883	0.447	OK
2.002	15 min Winter	9	S39	S38	0.110	0.632	8.752	0.441	OK
2.003	15 min Winter	9	S38	S37	0.150	1.163	20.545	1.035	Surcharged
2.004	15 min Winter	9	S37	S36	0.124	2.035	31.708	1.597	OK
2.005	15 min Winter	9	S36	S35	0.124	2.035	31.713	0.758	OK
1.005	30 min Winter	24	S35	S34	0.100	1.401	11.004	1.058	Surcharged
1.006	30 min Winter	25	S34	S33	0.072	1.806	10.910	1.059	OK
1.007	30 min Winter	25	S33	S19	0.097	0.904	10.910	0.186	OK
3.000	15 min Winter	8	S12	S13	0.064	2.454	17.763	0.437	OK
3.001	15 min Winter	8	S13	S16	0.071	2.140	17.724	0.331	OK
3.002	30 min Summer	19	S16	S17	0.067	1.556	8.770	1.257	OK
3.003	30 min Summer	19	S17	S18	0.091	0.784	8.769	0.120	OK
4.000	15 min Winter	8	S14	S15	0.041	2.988	11.750	0.238	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Velocity (m/s)	Flow (l/s)	Flow / Capacity	Status
4.001	15 min Winter	8	S15	S18	0.048	2.388	11.732	0.098	OK
3.004	60 min Winter	43	S18	S19	0.100	1.103	8.659	0.534	Surcharged
1.008	60 min Winter	43	S19	S20	0.100	2.477	19.453	1.385	Surcharged
1.009	60 min Winter	44	S20	S21	0.093	2.551	19.454	1.044	OK
1.010	15 min Winter	8	S21	S22	0.099	3.432	42.241	1.225	OK
1.011	60 min Winter	50	S22	S23	0.150	1.228	21.707	0.169	Surcharged
1.012	60 min Winter	50	S23	S24	0.100	2.764	21.707	2.918	Surcharged
1.013	60 min Winter	50	S24	S25	0.100	2.764	21.705	2.134	Surcharged
5.000	15 min Winter	8	S47	S32	0.039	2.786	10.350	0.216	OK
5.001	30 min Summer	19	S32	S48	0.070	0.970	5.684	0.842	OK
5.002	30 min Summer	17	S48	S25	0.100	-1.285	-10.089	-1.495	Surcharged
1.014	30 min Summer	16	S25	S26	0.150	5.509	97.356	3.982	Surcharged
1.015	30 min Summer	16	S26	S27	0.162	1.577	97.105	0.114	OK
1.016	960 min Winter	927	S27	S28	0.495	0.007	1.696	0.003	OK
1.017	960 min Winter	891	S28	S29	1.568	0.002	4.281	0.001	OK
1.018	960 min Winter	926	S29	S30	0.225	0.050	1.970	0.032	OK
1.019	960 min Winter	917	S30	S31	0.024	0.860	2.020	0.025	OK