STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm Network

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - Scotland and Ireland

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	17.000	Add Flow / Climate Change (%)	0
Ratio R	0.238	Minimum Backdrop Height (m)	0.650
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.600
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm Network at outfall SO/F 1 (pipe S1.019)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.477	4-8	1.807	8-12	0.001

Total Area Contributing (ha) = 3.285

Total Pipe Volume (m³) = 102.798

Time Area Diagram at outfall S76 (pipe S12.014)

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.522	4-8	1.329

Total Area Contributing (ha) = 2.851

Total Pipe Volume (m³) = 93.742

Time Area Diagram at outfall S94 (pipe S20.024)

Time (mins)	Area (ha)	Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	1.176	4-8	3.446	8-12	0.345

Total Area Contributing (ha) = 4.968

Total Pipe Volume (m³) = 246.984

Network Design Table for Storm Network

« - Indicates pipe capacity < flow

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	23.884	0.550	43.4	0.061	4.00	0.0	0.600	o	225	Pipe/Conduit	
S1.001	74.475	1.518	49.1	0.265	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	67.079	1.119	59.9	0.191	0.00	0.0	0.600	o	300	Pipe/Conduit	
S2.000	59.486	1.114	53.4	0.208	4.00	0.0	0.600	o	225	Pipe/Conduit	
S1.003	28.096	0.511	55.0	0.050	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.004	17.367	0.316	55.0	0.036	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.005	12.706	0.231	55.0	0.026	0.00	0.0	0.600	o	300	Pipe/Conduit	
S3.000	39.199	0.600	65.3	0.153	4.00	0.0	0.600	o	225	Pipe/Conduit	
S3.001	45.461	1.085	41.9	0.081	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.002	7.016	0.198	35.4	0.032	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.003	16.389	0.268	61.2	0.052	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.004	35.841	0.211	169.9	0.075	0.00	0.0	0.600	o	375	Pipe/Conduit	
S1.006	58.196	0.707	82.3	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S4.000	50.706	1.525	33.2	0.203	4.00	0.0	0.600	o	225	Pipe/Conduit	
S5.000	36.505	0.243	150.2	0.131	4.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	50.00	4.20	124.877	0.061	0.0	0.0	0.0	1.99	79.1	8.3
S1.001	47.90	4.86	124.327	0.326	0.0	0.0	0.0	1.87	74.4	42.3
S1.002	46.13	5.41	122.734	0.517	0.0	0.0	0.0	2.03	143.8	64.6
S2.000	48.97	4.55	122.804	0.208	0.0	0.0	0.0	1.79	71.3	27.6
S1.003	45.47	5.63	120.947	0.775	0.0	0.0	0.0	2.12	150.2	95.4
S1.004	45.07	5.77	120.436	0.811	0.0	0.0	0.0	2.13	150.2	99.1
S1.005	44.79	5.87	119.470	0.837	0.0	0.0	0.0	2.12	150.2	101.6
S3.000	49.52	4.40	121.676	0.153	0.0	0.0	0.0	1.62	64.4	20.5
S3.001	48.19	4.78	121.076	0.234	0.0	0.0	0.0	2.03	80.6	30.5
S3.002	48.01	4.83	119.991	0.266	0.0	0.0	0.0	2.21	87.7	34.6
S3.003	47.46	4.99	119.793	0.318	0.0	0.0	0.0	1.68	66.6	40.9
S3.004	46.10	5.42	119.375	0.393	0.0	0.0	0.0	1.39	153.2	49.1
S1.006	43.47	6.35	119.164	1.230	0.0	0.0	0.0	2.00	220.7	144.8
S4.000	49.63	4.37	120.132	0.203	0.0	0.0	0.0	2.28	90.5	27.3
S5.000	48.91	4.57	118.850	0.131	0.0	0.0	0.0	1.06	42.3	17.3

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.007	40.509	0.455	89.0	0.202	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.008	14.168	0.182	77.8	0.058	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.009	17.588	0.229	76.7	0.030	0.00	0.0	0.600	o	450	Pipe/Conduit	
S6.000	44.490	1.539	28.9	0.158	4.00	0.0	0.600	o	225	Pipe/Conduit	
S1.010	29.295	0.382	76.7	0.070	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.011	29.518	0.590	50.0	0.133	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.012	8.712	0.170	51.2	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S7.000	27.980	0.210	133.2	0.037	4.00	0.0	0.600	o	225	Pipe/Conduit	
S1.013	10.081	0.100	100.8	0.048	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.014	12.954	0.537	24.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S8.000	49.948	0.938	53.2	0.158	4.00	0.0	0.600	o	225	Pipe/Conduit	
S8.001	20.609	0.488	42.2	0.051	0.00	0.0	0.600	o	300	Pipe/Conduit	
S9.000	29.946	1.050	28.5	0.119	4.00	0.0	0.600	o	225	Pipe/Conduit	
S9.001	18.889	0.805	23.5	0.061	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.007	42.66	6.67	118.382	1.767	0.0	0.0	0.0	2.16	342.8	204.1
S1.008	42.41	6.77	117.927	1.824	0.0	0.0	0.0	2.31	366.8	209.6
S1.009	42.10	6.90	116.592	1.855	0.0	0.0	0.0	2.32	369.5	211.5
S6.000	49.89	4.30	119.202	0.158	0.0	0.0	0.0	2.44	97.1	21.4
S1.010	41.60	7.11	116.363	2.083	0.0	0.0	0.0	2.32	369.5	234.7
S1.011	41.21	7.28	114.381	2.216	0.0	0.0	0.0	2.88	458.1	247.3
S1.012	41.09	7.33	113.360	2.216	0.0	0.0	0.0	2.85	452.5	247.3
S7.000	49.48	4.41	113.400	0.037	0.0	0.0	0.0	1.13	45.0	5.0
S1.013	40.91	7.41	113.190	2.301	0.0	0.0	0.0	2.02	322.0	254.9
S1.014	40.79	7.46	113.090	2.301	0.0	0.0	0.0	4.15	660.5	254.9
S8.000	49.30	4.46	117.213	0.158	0.0	0.0	0.0	1.80	71.4	21.1
S8.001	48.79	4.60	116.200	0.209	0.0	0.0	0.0	2.43	171.5	27.6
S9.000	50.00	4.20	117.565	0.119	0.0	0.0	0.0	2.46	97.8	16.1
S9.001	49.83	4.32	116.515	0.180	0.0	0.0	0.0	2.71	107.9	24.4

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S8.002	13.041	0.380	34.3	0.018	0.00	0.0	0.600	o	300	Pipe/Conduit	
S8.003	18.156	0.296	61.3	0.027	0.00	0.0	0.600	o	300	Pipe/Conduit	
S10.000	76.088	1.522	50.0	0.212	4.00	0.0	0.600	o	225	Pipe/Conduit	
S8.004	15.114	0.297	50.9	0.019	0.00	0.0	0.600	o	300	Pipe/Conduit	
S8.005	27.110	0.559	48.5	0.105	0.00	0.0	0.600	o	375	Pipe/Conduit	
S8.006	23.807	0.749	31.8	0.081	0.00	0.0	0.600	o	375	Pipe/Conduit	
S8.007	15.771	0.326	48.4	0.021	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.015	30.842	1.350	22.8	0.045	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.016	41.923	2.313	18.1	0.068	0.00	0.0	0.600	o	450	Pipe/Conduit	
S11.000	23.841	0.100	238.4	0.000	4.00	0.0	0.600	o	450	Pipe/Conduit	
S1.017	12.421	0.443	28.0	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.018	35.114	1.341	26.2	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.019	15.617	0.306	51.0	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S12.000	31.941	0.198	161.3	0.092	4.00	0.0	0.600	o	225	Pipe/Conduit	
S13.000	18.826	0.208	90.5	0.096	4.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S8.002	48.50	4.69	115.710	0.407	0.0	0.0	0.0	2.69	190.3	53.5
S8.003	47.99	4.84	115.330	0.434	0.0	0.0	0.0	2.01	142.2	56.4
S10.000	48.51	4.68	116.556	0.212	0.0	0.0	0.0	1.85	73.7	27.9
S8.004	47.60	4.95	115.034	0.665	0.0	0.0	0.0	2.21	156.2	85.7
S8.005	47.04	5.12	114.737	0.770	0.0	0.0	0.0	2.61	288.0	98.1
S8.006	46.65	5.25	114.178	0.851	0.0	0.0	0.0	3.22	356.1	107.5
S8.007	46.37	5.34	113.029	0.871	0.0	0.0	0.0	2.93	465.8	109.4
S1.015	40.53	7.58	112.553	3.217	0.0	0.0	0.0	4.27	678.8	353.1
S1.016	40.21	7.73	111.203	3.285	0.0	0.0	0.0	4.79	762.3	357.7
S11.000	49.89	4.30	108.600	0.000	0.0	0.0	0.0	1.31	208.7	0.0
S1.017	40.10	7.78	108.500	3.285	0.0	0.0	0.0	3.85	612.5	357.7
S1.018	39.70	7.97	108.057	3.285	0.0	0.0	0.0	3.08	218.1«	357.7
S1.019	39.46	8.09	106.641	3.285	0.0	0.0	0.0	2.21	155.9«	357.7
S12.000	49.10	4.52	125.172	0.092	0.0	0.0	0.0	1.03	40.8	12.2
S13.000	50.00	4.23	127.163	0.096	0.0	0.0	0.0	1.37	54.7	13.0

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S13.001	8.764	0.150	58.5	0.053	0.00	0.0	0.600	o	225	Pipe/Conduit	
S13.002	50.896	1.003	50.7	0.161	0.00	0.0	0.600	o	225	Pipe/Conduit	
S12.001	52.448	0.450	116.6	0.147	0.00	0.0	0.600	o	300	Pipe/Conduit	
S12.002	12.408	0.393	31.6	0.030	0.00	0.0	0.600	o	300	Pipe/Conduit	
S14.000	41.936	0.250	167.7	0.112	4.00	0.0	0.600	o	225	Pipe/Conduit	
S12.003	14.715	0.312	47.2	0.017	0.00	0.0	0.600	o	300	Pipe/Conduit	
S15.000	33.188	1.328	25.0	0.199	4.00	0.0	0.600	o	225	Pipe/Conduit	
S12.004	26.052	0.647	40.3	0.029	0.00	0.0	0.600	o	375	Pipe/Conduit	
S16.000	30.942	0.463	66.8	0.068	4.00	0.0	0.600	o	225	Pipe/Conduit	
S16.001	41.399	0.663	62.4	0.080	0.00	0.0	0.600	o	300	Pipe/Conduit	
S16.002	10.338	0.062	166.7	0.011	0.00	0.0	0.600	o	375	Pipe/Conduit	
S12.005	7.457	0.160	46.6	0.010	0.00	0.0	0.600	o	450	Pipe/Conduit	
S12.006	14.674	0.480	30.6	0.066	0.00	0.0	0.600	o	450	Pipe/Conduit	
S12.007	7.745	0.080	97.2	0.160	0.00	0.0	0.600	o	525	Pipe/Conduit	
S12.008	38.023	0.428	88.8	0.081	0.00	0.0	0.600	o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S13.001	49.85	4.31	126.955	0.149	0.0	0.0	0.0	1.71	68.1	20.1
S13.002	48.20	4.77	126.805	0.310	0.0	0.0	0.0	1.84	73.2	40.5
S12.001	46.25	5.37	124.899	0.549	0.0	0.0	0.0	1.46	102.9	68.8
S12.002	46.02	5.45	124.449	0.579	0.0	0.0	0.0	2.81	198.5	72.2
S14.000	48.47	4.69	123.403	0.112	0.0	0.0	0.0	1.01	40.0	14.7
S12.003	45.70	5.56	123.078	0.708	0.0	0.0	0.0	2.30	162.2	87.6
S15.000	50.00	4.21	124.024	0.199	0.0	0.0	0.0	2.63	104.5	26.9
S12.004	45.25	5.71	122.691	0.936	0.0	0.0	0.0	2.86	316.2	114.7
S16.000	49.82	4.32	122.979	0.068	0.0	0.0	0.0	1.60	63.7	9.2
S16.001	48.57	4.67	122.441	0.148	0.0	0.0	0.0	1.99	140.9	19.5
S16.002	48.14	4.79	121.703	0.159	0.0	0.0	0.0	1.40	154.7	20.7
S12.005	45.13	5.75	121.566	1.105	0.0	0.0	0.0	2.98	474.6	135.1
S12.006	44.94	5.82	121.406	1.171	0.0	0.0	0.0	3.69	586.5	142.5
S12.007	44.78	5.87	120.851	1.331	0.0	0.0	0.0	2.27	491.9	161.4
S12.008	44.04	6.14	120.771	1.412	0.0	0.0	0.0	2.38	514.6	168.5

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S12.009	14.827	0.059	250.0	0.043	0.00	0.0	0.600	o	600	Pipe/Conduit	
S17.000	33.739	1.411	23.9	0.097	4.00	0.0	0.600	o	225	Pipe/Conduit	
S17.001	9.349	0.447	20.9	0.062	0.00	0.0	0.600	o	225	Pipe/Conduit	
S18.000	46.285	1.851	25.0	0.000	4.00	0.0	0.600	o	225	Pipe/Conduit	
S18.001	14.892	0.099	150.4	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S18.002	24.049	0.536	44.9	0.038	0.00	0.0	0.600	o	225	Pipe/Conduit	
S17.002	11.170	0.062	180.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S17.003	37.006	0.370	100.0	0.058	0.00	0.0	0.600	o	225	Pipe/Conduit	
S17.004	55.145	0.551	100.1	0.194	0.00	0.0	0.600	o	225	Pipe/Conduit	
S12.010	58.107	0.232	250.0	0.166	0.00	0.0	0.600	o	600	Pipe/Conduit	
S12.011	19.056	0.112	170.1	0.233	0.00	0.0	0.600	o	600	Pipe/Conduit	
S19.000	46.778	2.425	19.3	0.250	4.00	0.0	0.600	o	225	Pipe/Conduit	
S19.001	9.390	0.417	22.5	0.003	0.00	0.0	0.600	o	225	Pipe/Conduit	
S12.012	21.299	0.261	81.6	0.172	0.00	0.0	0.600	o	600	Pipe/Conduit	
S12.013	36.323	1.044	34.8	0.097	0.00	0.0	0.600	o	600	Pipe/Conduit	
S12.014	19.068	0.150	127.1	0.026	0.00	0.0	0.600	o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S12.009	43.61	6.30	119.593	1.455	0.0	0.0	0.0	1.54	434.2	171.9
S17.000	50.00	4.21	127.173	0.097	0.0	0.0	0.0	2.69	106.8	13.1
S17.001	50.00	4.26	125.762	0.159	0.0	0.0	0.0	2.88	114.3	21.5
S18.000	49.92	4.29	126.330	0.000	0.0	0.0	0.0	2.63	104.5	0.0
S18.001	49.07	4.53	124.479	0.000	0.0	0.0	0.0	1.06	42.3	0.0
S18.002	48.35	4.73	124.380	0.038	0.0	0.0	0.0	1.96	77.9	5.0
S17.002	47.69	4.92	123.844	0.197	0.0	0.0	0.0	0.97	38.6	25.4
S17.003	46.18	5.40	123.782	0.255	0.0	0.0	0.0	1.31	52.0	31.8
S17.004	44.15	6.10	121.612	0.449	0.0	0.0	0.0	1.31	52.0«	53.6
S12.010	42.02	6.93	119.534	2.070	0.0	0.0	0.0	1.54	434.2	235.6
S12.011	41.62	7.10	119.302	2.303	0.0	0.0	0.0	1.86	527.1	259.6
S19.000	50.00	4.26	122.017	0.250	0.0	0.0	0.0	2.99	119.0	33.9
S19.001	49.84	4.32	119.592	0.253	0.0	0.0	0.0	2.77	110.1	34.1
S12.012	41.31	7.23	118.830	2.728	0.0	0.0	0.0	2.70	762.6	305.2
S12.013	40.98	7.38	118.569	2.825	0.0	0.0	0.0	4.14	1169.9	313.5
S12.014	40.65	7.53	117.525	2.851	0.0	0.0	0.0	2.16	610.3	313.9

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S20.000	61.337	1.566	39.2	0.184	4.00	0.0	0.600	o	225	Pipe/Conduit	
S20.001	91.057	2.271	40.1	0.259	0.00	0.0	0.600	o	300	Pipe/Conduit	
S20.002	52.867	1.199	44.1	0.140	0.00	0.0	0.600	o	375	Pipe/Conduit	
S20.003	8.722	0.025	348.8	0.006	0.00	0.0	0.600	o	450	Pipe/Conduit	
S21.000	47.840	1.186	40.3	0.136	4.00	0.0	0.600	o	225	Pipe/Conduit	
S21.001	12.568	0.387	32.5	0.023	0.00	0.0	0.600	o	300	Pipe/Conduit	
S21.002	34.100	0.946	36.0	0.070	0.00	0.0	0.600	o	300	Pipe/Conduit	
S20.004	46.224	0.912	50.7	0.171	0.00	0.0	0.600	o	450	Pipe/Conduit	
S20.005	11.936	0.250	47.7	0.012	0.00	0.0	0.600	o	450	Pipe/Conduit	
S22.000	84.437	1.890	44.7	0.256	4.00	0.0	0.600	o	225	Pipe/Conduit	
S20.006	50.986	1.060	48.1	0.077	0.00	0.0	0.600	o	450	Pipe/Conduit	
S23.000	20.535	0.122	168.3	0.158	4.00	0.0	0.600	o	225	Pipe/Conduit	
S23.001	44.352	0.385	115.2	0.131	0.00	0.0	0.600	o	375	Pipe/Conduit	
S20.007	32.214	0.250	128.9	0.088	0.00	0.0	0.600	o	525	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S20.000	49.21	4.49	138.158	0.184	0.0	0.0	0.0	2.10	83.4	24.5
S20.001	47.12	5.10	136.517	0.443	0.0	0.0	0.0	2.49	176.0	56.5
S20.002	46.11	5.42	134.171	0.583	0.0	0.0	0.0	2.73	302.1	72.8
S20.003	45.71	5.55	132.897	0.589	0.0	0.0	0.0	1.08	172.2	72.9
S21.000	49.58	4.39	135.538	0.136	0.0	0.0	0.0	2.07	82.1	18.3
S21.001	49.30	4.46	134.277	0.159	0.0	0.0	0.0	2.77	195.6	21.2
S21.002	48.53	4.68	133.890	0.229	0.0	0.0	0.0	2.63	185.7	30.1
S20.004	44.92	5.82	132.722	0.989	0.0	0.0	0.0	2.86	455.0	120.3
S20.005	44.73	5.89	131.810	1.001	0.0	0.0	0.0	2.95	468.9	121.3
S22.000	48.40	4.72	133.813	0.256	0.0	0.0	0.0	1.96	78.0	33.6
S20.006	43.93	6.18	131.060	1.334	0.0	0.0	0.0	2.94	467.1	158.7
S23.000	49.75	4.34	129.994	0.158	0.0	0.0	0.0	1.00	40.0	21.3
S23.001	48.18	4.78	129.722	0.289	0.0	0.0	0.0	1.69	186.4	37.7
S20.007	43.21	6.45	129.337	1.711	0.0	0.0	0.0	1.97	426.9	200.2

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S24.000	33.248	0.619	53.7	0.202	4.00	0.0	0.600	o	225	Pipe/Conduit	
S24.001	43.475	1.200	36.2	0.191	0.00	0.0	0.600	o	300	Pipe/Conduit	
S20.008	71.739	1.275	56.3	0.219	0.00	0.0	0.600	o	525	Pipe/Conduit	
S20.009	24.392	0.163	149.6	0.037	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.010	10.270	0.199	51.6	0.030	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.011	7.483	0.187	40.0	0.009	0.00	0.0	0.600	o	675	Pipe/Conduit	
S25.000	52.692	2.104	25.0	0.203	4.00	0.0	0.600	o	225	Pipe/Conduit	
S20.012	7.362	0.184	40.0	0.008	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.013	10.682	0.267	40.0	0.035	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.014	28.570	0.888	32.2	0.048	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.015	55.169	0.110	501.5	0.195	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.016	16.425	0.060	273.7	0.035	0.00	0.0	0.600	o	675	Pipe/Conduit	
S26.000	26.407	0.550	48.0	0.120	4.00	0.0	0.600	o	225	Pipe/Conduit	
S26.001	31.418	0.500	62.8	0.129	0.00	0.0	0.600	o	225	Pipe/Conduit	
S26.002	58.823	1.421	41.4	0.250	0.00	0.0	0.600	o	225	Pipe/Conduit	
S26.003	40.231	0.940	42.8	0.173	0.00	0.0	0.600	o	450	Pipe/Conduit	
S26.004	30.573	0.650	47.0	0.085	0.00	0.0	0.600	o	450	Pipe/Conduit	
S26.005	20.428	0.390	52.4	0.076	0.00	0.0	0.600	o	450	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S24.000	49.86	4.31	132.896	0.202	0.0	0.0	0.0	1.79	71.1	27.3
S24.001	48.85	4.59	132.202	0.393	0.0	0.0	0.0	2.62	185.2	52.0
S20.008	42.21	6.85	128.429	2.323	0.0	0.0	0.0	2.99	647.4	265.6
S20.009	41.76	7.04	127.004	2.360	0.0	0.0	0.0	2.14	765.9	266.9
S20.010	41.65	7.09	126.841	2.390	0.0	0.0	0.0	3.65	1307.5	269.6
S20.011	41.58	7.12	126.642	2.399	0.0	0.0	0.0	4.15	1485.7	270.1
S25.000	49.77	4.33	129.304	0.203	0.0	0.0	0.0	2.63	104.4	27.4
S20.012	41.51	7.15	126.455	2.610	0.0	0.0	0.0	4.15	1485.7	293.4
S20.013	41.41	7.19	125.870	2.645	0.0	0.0	0.0	4.15	1485.7	296.6
S20.014	41.17	7.29	124.578	2.693	0.0	0.0	0.0	4.63	1657.2	300.3
S20.015	39.47	8.08	123.690	2.888	0.0	0.0	0.0	1.16	416.3	308.7
S20.016	39.12	8.26	123.580	2.923	0.0	0.0	0.0	1.58	565.1	309.6
S26.000	50.00	4.23	136.550	0.120	0.0	0.0	0.0	1.89	75.2	16.2
S26.001	48.99	4.55	136.000	0.249	0.0	0.0	0.0	1.65	65.7	33.0
S26.002	47.34	5.03	135.500	0.499	0.0	0.0	0.0	2.04	81.1	64.0
S26.003	46.65	5.25	133.854	0.672	0.0	0.0	0.0	3.11	495.4	84.9
S26.004	46.12	5.42	131.470	0.757	0.0	0.0	0.0	2.97	472.4	94.5
S26.005	45.75	5.54	129.735	0.833	0.0	0.0	0.0	2.81	447.6	103.2

Network Design Table for Storm Network

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
S27.000	35.423	0.784	45.2	0.133	4.00	0.0	0.600	o	225	Pipe/Conduit	
S26.006	34.302	0.737	46.5	0.142	0.00	0.0	0.600	o	450	Pipe/Conduit	
S26.007	40.260	0.869	46.3	0.152	0.00	0.0	0.600	o	450	Pipe/Conduit	
S20.017	56.747	0.986	57.6	0.251	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.018	17.822	0.150	118.8	0.000	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.019	14.316	0.650	22.0	0.037	0.00	0.0	0.600	o	675	Pipe/Conduit	
S28.000	43.434	0.250	173.7	0.100	4.00	0.0	0.600	o	225	Pipe/Conduit	
S28.001	22.809	1.940	11.8	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S28.002	20.992	0.112	187.4	0.097	0.00	0.0	0.600	o	225	Pipe/Conduit	
S20.020	4.197	0.095	44.2	0.000	0.00	0.0	0.600	o	675	Pipe/Conduit	
S20.021	59.629	0.150	397.5	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S20.022	11.534	0.636	18.1	0.006	0.00	0.0	0.600	o	600	Pipe/Conduit	
S29.000	55.345	1.161	47.7	0.165	4.00	0.0	0.600	o	225	Pipe/Conduit	
S20.023	72.205	1.420	50.8	0.130	0.00	0.0	0.600	o	450	Pipe/Conduit	
S20.024	1.395	0.003	498.4	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S27.000	49.89	4.30	130.199	0.133	0.0	0.0	0.0	1.95	77.6	17.9
S26.006	45.19	5.73	127.643	1.108	0.0	0.0	0.0	2.99	474.9	135.5
S26.007	44.55	5.95	124.759	1.259	0.0	0.0	0.0	2.99	476.0	151.9
S20.017	38.58	8.53	122.816	4.433	0.0	0.0	0.0	3.46	1237.9	463.2
S20.018	38.35	8.65	121.750	4.433	0.0	0.0	0.0	2.40	860.1	463.2
S20.019	38.27	8.70	121.600	4.470	0.0	0.0	0.0	5.60	2003.9	463.2
S28.000	48.34	4.73	124.500	0.100	0.0	0.0	0.0	0.99	39.3	13.1
S28.001	48.00	4.83	124.250	0.100	0.0	0.0	0.0	3.84	152.6	13.1
S28.002	46.80	5.20	122.310	0.197	0.0	0.0	0.0	0.95	37.8	25.0
S20.020	38.23	8.71	120.950	4.667	0.0	0.0	0.0	3.95	1413.4	483.2
S20.021	36.96	9.43	120.850	4.667	0.0	0.0	0.0	1.40	617.3	483.2
S20.022	36.90	9.46	120.700	4.673	0.0	0.0	0.0	5.74	1621.9	483.2
S29.000	49.22	4.49	121.181	0.165	0.0	0.0	0.0	1.90	75.5	22.0
S20.023	36.20	9.88	120.020	4.968	0.0	0.0	0.0	2.86	454.3«	487.0
S20.024	36.16	9.90	116.220	4.968	0.0	0.0	0.0	1.08	306.5«	487.0

Manhole Schedules for Storm Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	126.377	1.500	Open Manhole	1050	S1.000	124.877	225				
S2	125.865	1.538	Open Manhole	1050	S1.001	124.327	225	S1.000	124.327	225	
S3	124.175	1.441	Open Manhole	1050	S1.002	122.734	300	S1.001	122.809	225	
S4	124.304	1.500	Open Manhole	1050	S2.000	122.804	225				
S5	123.146	2.199	Open Manhole	1200	S1.003	120.947	300	S1.002	121.615	300	668
								S2.000	121.690	225	668
S6	122.344	1.908	Open Manhole	1200	S1.004	120.436	300	S1.003	120.436	300	
S7	121.817	2.347	Open Manhole	1200	S1.005	119.470	300	S1.004	120.120	300	650
S9	123.176	1.500	Open Manhole	1050	S3.000	121.676	225				
S9	123.651	2.575	Open Manhole	1050	S3.001	121.076	225	S3.000	121.076	225	
S10	121.416	1.425	Open Manhole	1050	S3.002	119.991	225	S3.001	119.991	225	
S11	121.218	1.425	Open Manhole	1050	S3.003	119.793	225	S3.002	119.793	225	
S12	120.950	1.575	Open Manhole	1350	S3.004	119.375	375	S3.003	119.525	225	
S13	121.436	2.272	Open Manhole	1350	S1.006	119.164	375	S1.005	119.239	300	
								S3.004	119.164	375	
S14	123.018	2.886	Open Manhole	1200	S4.000	120.132	225				
S15A	120.275	1.425	Open Manhole	1200	S5.000	118.850	225				
S15	120.038	1.656	Open Manhole	1350	S1.007	118.382	450	S1.006	118.457	375	
								S4.000	118.607	225	
								S5.000	118.607	225	
S16	119.517	1.590	Open Manhole	1350	S1.008	117.927	450	S1.007	117.927	450	
S17	119.395	2.803	Open Manhole	1350	S1.009	116.592	450	S1.008	117.745	450	1153
S18	121.948	2.746	Open Manhole	1200	S6.000	119.202	225				
S19	119.311	2.949	Open Manhole	1350	S1.010	116.363	450	S1.009	116.363	450	
								S6.000	117.663	225	1075
S20	117.776	3.395	Open Manhole	1350	S1.011	114.381	450	S1.010	115.981	450	1600
S21A	115.881	2.521	Open Manhole	1350	S1.012	113.360	450	S1.011	113.791	450	431
S21B	114.900	1.500	Open Manhole	1200	S7.000	113.400	225				
S21	115.398	2.208	Open Manhole	1350	S1.013	113.190	450	S1.012	113.190	450	
								S7.000	113.190	225	
S21C	114.846	1.756	Open Manhole	1350	S1.014	113.090	450	S1.013	113.090	450	
S22	119.471	2.258	Open Manhole	1200	S8.000	117.213	225				
S23	117.484	1.284	Open Manhole	1200	S8.001	116.200	300	S8.000	116.275	225	
S24	119.791	2.226	Open Manhole	1200	S9.000	117.565	225				
S25	117.922	1.407	Open Manhole	1050	S9.001	116.515	225	S9.000	116.515	225	
S26	117.056	1.346	Open Manhole	1050	S8.002	115.710	300	S8.001	115.712	300	2
								S9.001	115.710	225	
S27	116.755	1.425	Open Manhole	1050	S8.003	115.330	300	S8.002	115.330	300	

Manhole Schedules for Storm Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Ba
S28	118.056	1.500	Open Manhole	1050	S10.000	116.556	225				
S29	116.641	1.607	Open Manhole	1050	S8.004	115.034	300	S8.003	115.034	300	
								S10.000	115.034	225	
S30	116.237	1.500	Open Manhole	1050	S8.005	114.737	375	S8.004	114.737	300	
S31	115.678	1.500	Open Manhole	1050	S8.006	114.178	375	S8.005	114.178	375	
S32	114.929	1.900	Open Manhole	1050	S8.007	113.029	450	S8.006	113.429	375	
S33	114.353	1.800	Open Manhole	1500	S1.015	112.553	450	S1.014	112.553	450	
								S8.007	112.703	450	
S34	113.050	1.847	Open Manhole	1500	S1.016	111.203	450	S1.015	111.203	450	
SAHPR TANK	112.080	3.480	Open Manhole	1350	S11.000	108.600	450				
S34A	110.780	2.280	Open Manhole	1350	S1.017	108.500	450	S1.016	108.890	450	
								S11.000	108.500	450	
S35	109.957	1.900	Open Manhole	1500	S1.018	108.057	300	S1.017	108.057	450	
S36	107.980	1.339	Open Manhole	1500	S1.019	106.641	300	S1.018	106.716	300	
SO/F 1	106.935	0.600	Open Manhole	1200		OUTFALL		S1.019	106.335	300	
S49	126.597	1.425	Open Manhole	1200	S12.000	125.172	225				
S46	128.947	1.784	Open Manhole	1500	S13.000	127.163	225				
S47	128.530	1.575	Open Manhole	1500	S13.001	126.955	225	S13.000	126.955	225	
S48	128.337	1.532	Open Manhole	1500	S13.002	126.805	225	S13.001	126.805	225	
S50	127.239	2.340	Open Manhole	1500	S12.001	124.899	300	S12.000	124.974	225	
								S13.002	125.802	225	
S51	126.079	1.630	Open Manhole	1500	S12.002	124.449	300	S12.001	124.449	300	
S52	124.828	1.425	Open Manhole	1500	S14.000	123.403	225				
S53	125.488	2.410	Open Manhole	1500	S12.003	123.078	300	S12.002	124.056	300	
								S14.000	123.153	225	
S54	125.500	1.476	Open Manhole	1500	S15.000	124.024	225				
S55	124.780	2.089	Open Manhole	1500	S12.004	122.691	375	S12.003	122.766	300	
								S15.000	122.696	225	
S56	124.404	1.425	Open Manhole	1500	S16.000	122.979	225				
S57	123.944	1.503	Open Manhole	1500	S16.001	122.441	300	S16.000	122.516	225	
S58	123.469	1.766	Open Manhole	1500	S16.002	121.703	375	S16.001	121.778	300	
S59	123.581	2.015	Open Manhole	1500	S12.005	121.566	450	S12.004	122.044	375	
								S16.002	121.641	375	
S60	123.340	1.934	Open Manhole	1500	S12.006	121.406	450	S12.005	121.406	450	
S61	122.997	2.146	Open Manhole	1500	S12.007	120.851	525	S12.006	120.926	450	
S61	122.839	2.068	Open Manhole	1500	S12.008	120.771	525	S12.007	120.771	525	
S62	122.124	2.531	Open Manhole	1500	S12.009	119.593	600	S12.008	120.343	525	

Manhole Schedules for Storm Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S63	129.214	2.041	Open Manhole	1500	S17.000	127.173	225				
S64	127.140	1.378	Open Manhole	1500	S17.001	125.762	225	S17.000	125.762	225	
S54B	128.020	1.690	Open Manhole	1200	S18.000	126.330	225				
S59	126.160	1.681	Open Manhole	1200	S18.001	124.479	225	S18.000	124.479	225	
S60	125.814	1.434	Open Manhole	1200	S18.002	124.380	225	S18.001	124.380	225	
S58	126.639	2.795	Open Manhole	1200	S17.002	123.844	225	S17.001	125.315	225	1471
								S18.002	123.844	225	
S65	126.072	2.290	Open Manhole	1200	S17.003	123.782	225	S17.002	123.782	225	
S66	125.593	3.981	Open Manhole	1200	S17.004	121.612	225	S17.003	123.412	225	1800
S68	122.637	3.103	Open Manhole	1500	S12.010	119.534	600	S12.009	119.534	600	
								S17.004	121.061	225	1152
S67	120.691	1.390	Open Manhole	1500	S12.011	119.302	600	S12.010	119.302	600	
S68	124.490	2.473	Open Manhole	1500	S19.000	122.017	225				
S69	121.020	1.428	Open Manhole	1500	S19.001	119.592	225	S19.000	119.592	225	
S71	120.650	1.820	Open Manhole	1500	S12.012	118.830	600	S12.011	119.190	600	360
								S19.001	119.175	225	
S72	120.371	1.802	Open Manhole	1500	S12.013	118.569	600	S12.012	118.569	600	
S72A	120.256	2.731	Open Manhole	1500	S12.014	117.525	600	S12.013	117.525	600	
S76	120.152	2.777	Open Manhole	0		OUTFALL		S12.014	117.375	600	
S2	140.458	2.300	Open Manhole	1500	S20.000	138.158	225				
S3	138.044	1.527	Open Manhole	1200	S20.001	136.517	300	S20.000	136.592	225	
S4	135.897	1.726	Open Manhole	1350	S20.002	134.171	375	S20.001	134.246	300	
S5	134.751	1.854	Open Manhole	1350	S20.003	132.897	450	S20.002	132.972	375	
S6	136.963	1.425	Open Manhole	1500	S21.000	135.538	225				
S7	135.961	1.684	Open Manhole	1500	S21.001	134.277	300	S21.000	134.352	225	
S8	135.497	1.607	Open Manhole	1500	S21.002	133.890	300	S21.001	133.890	300	
S9	134.519	1.797	Open Manhole	1500	S20.004	132.722	450	S20.003	132.872	450	150
								S21.002	132.944	300	72
S10	133.607	1.797	Open Manhole	1500	S20.005	131.810	450	S20.004	131.810	450	
S1	135.238	1.425	Open Manhole	1500	S22.000	133.813	225				
S11	133.348	2.288	Open Manhole	1500	S20.006	131.060	450	S20.005	131.560	450	500
								S22.000	131.923	225	638
S12	131.476	1.482	Open Manhole	1500	S23.000	129.994	225				
S13	131.401	1.679	Open Manhole	1500	S23.001	129.722	375	S23.000	129.872	225	
S14	131.591	2.254	Open Manhole	1500	S20.007	129.337	525	S20.006	130.000	450	588
								S23.001	129.337	375	
S15	134.306	1.410	Open Manhole	1500	S24.000	132.896	225				

Manhole Schedules for Storm Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S16	133.620	1.418	Open Manhole	1500	S24.001	132.202	300	S24.000	132.277	225	
S17	132.468	4.039	Open Manhole	1500	S20.008	128.429	525	S20.007	129.087	525	658
								S24.001	131.002	300	2348
S19	129.480	2.476	Open Manhole	1500	S20.009	127.004	675	S20.008	127.154	525	
S20	129.480	2.639	Open Manhole	1500	S20.010	126.841	675	S20.009	126.841	675	
S21	129.082	2.440	Open Manhole	1500	S20.011	126.642	675	S20.010	126.642	675	
S22	131.538	2.234	Open Manhole	1500	S25.000	129.304	225				
S23	128.626	2.171	Open Manhole	1500	S20.012	126.455	675	S20.011	126.455	675	
								S25.000	127.200	225	295
S24	128.148	2.278	Open Manhole	1500	S20.013	125.870	675	S20.012	126.271	675	401
S25	127.473	2.895	Open Manhole	1500	S20.014	124.578	675	S20.013	125.603	675	1025
S26	126.080	2.390	Open Manhole	1500	S20.015	123.690	675	S20.014	123.690	675	
S27	125.608	2.028	Open Manhole	1500	S20.016	123.580	675	S20.015	123.580	675	
S29	138.207	1.657	Open Manhole	1500	S26.000	136.550	225				
S30	137.950	1.950	Open Manhole	1500	S26.001	136.000	225	S26.000	136.000	225	
S31	137.600	2.100	Open Manhole	1500	S26.002	135.500	225	S26.001	135.500	225	
S32	135.980	2.126	Open Manhole	1500	S26.003	133.854	450	S26.002	134.079	225	
S33	134.487	3.017	Open Manhole	1500	S26.004	131.470	450	S26.003	132.914	450	1444
S34	132.472	2.737	Open Manhole	1500	S26.005	129.735	450	S26.004	130.820	450	1085
S35	131.624	1.425	Open Manhole	1500	S27.000	130.199	225				
S36	130.995	3.352	Open Manhole	1500	S26.006	127.643	450	S26.005	129.345	450	1702
								S27.000	129.415	225	1547
S37	128.556	3.797	Open Manhole	1500	S26.007	124.759	450	S26.006	126.906	450	2147
S37	125.540	2.724	Open Manhole	1500	S20.017	122.816	675	S20.016	123.520	675	704
								S26.007	123.890	450	849
S37A	124.150	2.400	Open Manhole	1500	S20.018	121.750	675	S20.017	121.830	675	80
S41	123.600	2.000	Open Manhole	1500	S20.019	121.600	675	S20.018	121.600	675	
S40	126.250	1.750	Open Manhole	1500	S28.000	124.500	225				
S40A	126.000	1.750	Open Manhole	1500	S28.001	124.250	225	S28.000	124.250	225	
S41	124.570	2.260	Open Manhole	1500	S28.002	122.310	225	S28.001	122.310	225	
S42A	123.398	2.448	Open Manhole	1500	S20.020	120.950	675	S20.019	120.950	675	
								S28.002	122.198	225	798
S42	123.445	2.595	Open Manhole	1500	S20.021	120.850	750	S20.020	120.855	675	
S43	123.140	2.440	Open Manhole	1500	S20.022	120.700	600	S20.021	120.700	750	
S44	122.722	1.541	Open Manhole	1500	S29.000	121.181	225				
S45	122.170	2.150	Open Manhole	1500	S20.023	120.020	450	S20.022	120.064	600	194
								S29.000	120.020	225	
S79	120.141	3.922	Open Manhole	1800	S20.024	116.220	600	S20.023	118.600	450	2231

Manhole Schedules for Storm Network

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S94	117.117	0.900	Open Manhole	1500	OUTFALL			S20.024	116.217	600	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	165724.611	73075.276	165724.611	73075.276	Required	
S2	165747.098	73083.325	165747.098	73083.325	Required	
S3	165821.563	73082.101	165821.563	73082.101	Required	
S4	165761.148	73016.082	165761.148	73016.082	Required	
S5	165820.625	73015.029	165820.625	73015.029	Required	
S6	165820.233	72986.936	165820.233	72986.936	Required	
S7	165817.723	72969.752	165817.723	72969.752	Required	
S9	165868.962	73058.341	165868.962	73058.341	Required	
S9	165838.044	73034.245	165838.044	73034.245	Required	
S10	165866.534	72998.819	165866.534	72998.819	Required	
S11	165865.348	72991.904	165865.348	72991.904	Required	
S12	165852.818	72981.340	165852.818	72981.340	Required	
S13	165824.690	72959.127	165824.690	72959.127	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S14	165747.574	72962.305	165747.574	72962.305	Required	
S15A	165801.189	72893.535	165801.189	72893.535	Required	
S15	165779.278	72922.733	165779.278	72922.733	Required	
S16	165747.303	72897.863	165747.303	72897.863	Required	
S17	165736.331	72888.899	165736.331	72888.899	Required	
S18	165689.077	72896.367	165689.077	72896.367	Required	
S19	165727.391	72873.753	165727.391	72873.753	Required	
S20	165752.619	72858.863	165752.619	72858.863	Required	
S21A	165771.010	72835.774	165771.010	72835.774	Required	
S21B	165804.493	72830.116	165804.493	72830.116	Required	
S21	165776.534	72829.037	165776.534	72829.037	Required	
S21C	165776.890	72818.962	165776.890	72818.962	Required	
S22	165724.353	72868.381	165724.353	72868.381	Required	
S23	165699.765	72824.904	165699.765	72824.904	Required	
S24	165644.069	72839.729	165644.069	72839.729	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S25	165670.133	72824.984	165670.133	72824.984	Required	
S26	165683.768	72811.911	165683.768	72811.911	Required	
S27	165691.431	72801.358	165691.431	72801.358	Required	
S28	165629.496	72753.898	165629.496	72753.898	Required	
S29	165699.001	72784.856	165699.001	72784.856	Required	
S30	165712.823	72790.970	165712.823	72790.970	Required	
S31	165738.390	72799.983	165738.390	72799.983	Required	
S32	165761.740	72804.624	165761.740	72804.624	Required	
S33	165777.449	72806.020	165777.449	72806.020	Required	
S34	165808.291	72806.128	165808.291	72806.128	Required	
SAHPR TANK	165830.768	72815.511	165830.768	72815.511	Required	
S34A	165849.940	72801.339	165849.940	72801.339	Required	
S35	165862.275	72799.873	165862.275	72799.873	Required	
S36	165896.929	72794.209	165896.929	72794.209	Required	
SO/F 1	165905.608	72781.226			No Entry	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S49	165714.793	73073.147	165714.793	73073.147	Required	
S46	165619.060	73021.725	165619.060	73021.725	Required	
S47	165631.559	73035.803	165631.559	73035.803	Required	
S48	165638.258	73041.455	165638.258	73041.455	Required	
S50	165685.302	73060.879	165685.302	73060.879	Required	
S51	165704.692	73012.147	165704.692	73012.147	Required	
S52	165745.715	73014.676	165745.715	73014.676	Required	
S53	165706.480	72999.869	165706.480	72999.869	Required	
S54	165675.468	72980.403	165675.468	72980.403	Required	
S55	165708.298	72985.266	165708.298	72985.266	Required	
S56	165755.910	73018.090	165755.910	73018.090	Required	
S57	165754.909	72987.165	165754.909	72987.165	Required	
S58	165722.526	72961.374	165722.526	72961.374	Required	
S59	165712.353	72959.531	165712.353	72959.531	Required	
S60	165713.427	72952.152	165713.427	72952.152	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S61	165706.497	72939.217	165706.497	72939.217	Required	
S61	165702.749	72932.440	165702.749	72932.440	Required	
S62	165684.097	72899.306	165684.097	72899.306	Required	
S63	165613.083	73008.849	165613.083	73008.849	Required	
S64	165637.854	72985.943	165637.854	72985.943	Required	
S54B	165656.627	73034.294	165656.627	73034.294	Required	
S59	165673.537	72991.209	165673.537	72991.209	Required	
S60	165663.265	72980.427	165663.265	72980.427	Required	
S58	165639.500	72976.740	165639.500	72976.740	Required	
S65	165641.633	72965.776	165641.633	72965.776	Required	
S66	165623.166	72933.707	165623.166	72933.707	Required	
S68	165671.186	72906.595	165671.186	72906.595	Required	
S67	165642.573	72856.022	165642.573	72856.022	Required	
S68	165588.677	72871.028	165588.677	72871.028	Required	
S69	165629.400	72848.009	165629.400	72848.009	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S71	165633.208	72839.425	165633.208	72839.425	Required	
S72	165622.653	72820.926	165622.653	72820.926	Required	
S72A	165604.651	72789.377	165604.651	72789.377	Required	
S76	165587.518	72781.009			No Entry	
S2	165305.704	72985.993	165305.704	72985.993	Required	
S3	165364.014	73005.025	165364.014	73005.025	Required	
S4	165448.216	73039.687	165448.216	73039.687	Required	
S5	165479.492	73082.310	165479.492	73082.310	Required	
S6	165408.023	73128.643	165408.023	73128.643	Required	
S7	165442.993	73095.996	165442.993	73095.996	Required	
S8	165445.811	73083.748	165445.811	73083.748	Required	
S9	165479.125	73091.024	165479.125	73091.024	Required	
S10	165524.285	73100.887	165524.285	73100.887	Required	
S1	165470.128	73166.388	165470.128	73166.388	Required	
S11	165532.536	73109.512	165532.536	73109.512	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S12	165616.487	73120.361	165616.487	73120.361	Required	
S13	165600.198	73107.857	165600.198	73107.857	Required	
S14	165570.221	73075.169	165570.221	73075.169	Required	
S15	165506.616	72988.243	165506.616	72988.243	Required	
S16	165519.704	73018.806	165519.704	73018.806	Required	
S17	165548.569	73051.317	165548.569	73051.317	Required	
S19	165601.945	73003.383	165601.945	73003.383	Required	
S20	165585.557	72985.317	165585.557	72985.317	Required	
S21	165579.635	72976.927	165579.635	72976.927	Required	
S22	165526.091	72970.157	165526.091	72970.157	Required	
S23	165578.779	72969.493	165578.779	72969.493	Required	
S24	165579.960	72962.227	165579.960	72962.227	Required	
S25	165586.464	72953.753	165586.464	72953.753	Required	
S26	165611.165	72939.396	165611.165	72939.396	Required	
S27	165584.125	72891.308	165584.125	72891.308	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S29	165357.068	72927.833	165357.068	72927.833	Required	
S30	165380.690	72939.636	165380.690	72939.636	Required	
S31	165410.110	72950.661	165410.110	72950.661	Required	
S32	165464.926	72972.001	165464.926	72972.001	Required	
S33	165505.157	72971.752	165505.157	72971.752	Required	
S34	165510.693	72941.684	165510.693	72941.684	Required	
S35	165486.527	72905.959	165486.527	72905.959	Required	
S36	165517.829	72922.542	165517.829	72922.542	Required	
S37	165541.503	72897.720	165541.503	72897.720	Required	
S37	165576.032	72877.016	165576.032	72877.016	Required	
S37A	165548.486	72827.403	165548.486	72827.403	Required	
S41	165539.835	72811.822	165539.835	72811.822	Required	
S40	165457.251	72817.364	165457.251	72817.364	Required	
S40A	165497.033	72834.797	165497.033	72834.797	Required	
S41	165517.104	72823.962	165517.104	72823.962	Required	

Manhole Schedules for Storm Network

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S42A	165527.012	72805.455	165527.012	72805.455	Required	
S42	165523.252	72803.589	165523.252	72803.589	Required	
S43	165468.946	72778.965	165468.946	72778.965	Required	
S44	165524.405	72790.753	165524.405	72790.753	Required	
S45	165473.742	72768.475	165473.742	72768.475	Required	
S79	165503.668	72702.763	165503.668	72702.763	Required	
S94	165502.358	72702.281			No Entry	

Area Summary for Storm Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.061	0.061	0.061
1.001	-	-	100	0.265	0.265	0.265
1.002	-	-	100	0.191	0.191	0.191
2.000	-	-	100	0.208	0.208	0.208
1.003	As Zoned	Default	100	0.050	0.050	0.050
		Grass	0	0.006	0.000	0.050
1.004	As Zoned	Default	100	0.036	0.036	0.036
		Grass	0	0.017	0.000	0.036
1.005	As Zoned	Default	100	0.026	0.026	0.026
		Grass	0	0.023	0.000	0.026
3.000	-	-	100	0.153	0.153	0.153
3.001	-	-	100	0.081	0.081	0.081
3.002	-	-	100	0.032	0.032	0.032
3.003	-	-	100	0.052	0.052	0.052
3.004	As Zoned	Default	100	0.074	0.074	0.074
		Grass	0	0.043	0.000	0.075
1.006	-	-	100	0.000	0.000	0.000
4.000	As Zoned	Default	100	0.204	0.204	0.204
		Grass	0	0.075	0.000	0.203
5.000	As Zoned	Default	100	0.130	0.130	0.130
		Grass	0	0.104	0.000	0.131
1.007	As Zoned	Default	100	0.049	0.049	0.049
	As Zoned	Default	100	0.153	0.153	0.202
		Grass	0	0.057	0.000	0.202
1.008	As Zoned	Default	100	0.058	0.058	0.058
		Grass	0	0.026	0.000	0.058
1.009	As Zoned	Default	100	0.030	0.030	0.030
6.000	As Zoned	Default	100	0.159	0.159	0.159
		Grass	0	0.055	0.000	0.158
1.010	As Zoned	Default	100	0.070	0.070	0.070
		Grass	0	0.026	0.000	0.070
1.011	As Zoned	Default	100	0.134	0.134	0.134
		Grass	0	0.046	0.000	0.133
1.012	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.037	0.037	0.037
1.013	-	-	100	0.048	0.048	0.048
1.014	-	-	100	0.000	0.000	0.000
8.000	-	-	100	0.158	0.158	0.158
8.001	-	-	100	0.051	0.051	0.051
9.000	-	-	100	0.119	0.119	0.119
9.001	-	-	100	0.061	0.061	0.061
8.002	-	-	100	0.018	0.018	0.018
8.003	-	-	100	0.027	0.027	0.027
10.000	-	-	100	0.212	0.212	0.212
8.004	-	-	100	0.019	0.019	0.019
8.005	-	-	100	0.105	0.105	0.105
8.006	-	-	100	0.081	0.081	0.081
8.007	-	-	100	0.021	0.021	0.021
1.015	-	-	100	0.045	0.045	0.045
1.016	-	-	100	0.068	0.068	0.068
11.000	-	-	100	0.000	0.000	0.000

Area Summary for Storm Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.017	-	-	100	0.000	0.000	0.000
1.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
12.000	-	-	100	0.092	0.092	0.092
13.000	-	-	100	0.096	0.096	0.096
13.001	-	-	100	0.053	0.053	0.053
13.002	-	-	100	0.161	0.161	0.161
12.001	-	-	100	0.147	0.147	0.147
12.002	-	-	100	0.030	0.030	0.030
14.000	-	-	100	0.112	0.112	0.112
12.003	-	-	100	0.017	0.017	0.017
15.000	-	-	100	0.199	0.199	0.199
12.004	-	-	100	0.029	0.029	0.029
16.000	-	-	100	0.068	0.068	0.068
16.001	-	-	100	0.080	0.080	0.080
16.002	-	-	100	0.011	0.011	0.011
12.005	-	-	100	0.010	0.010	0.010
12.006	-	-	100	0.066	0.066	0.066
12.007	-	-	100	0.160	0.160	0.160
12.008	As Zoned	Default	100	0.082	0.082	0.082
		Grass	0	0.032	0.000	0.081
12.009	As Zoned	Default	100	0.043	0.043	0.043
		Grass	0	0.007	0.000	0.043
17.000	-	-	100	0.097	0.097	0.097
17.001	-	-	100	0.062	0.062	0.062
18.000	-	-	100	0.000	0.000	0.000
18.001	-	-	100	0.000	0.000	0.000
18.002	-	-	100	0.038	0.038	0.038
17.002	-	-	100	0.000	0.000	0.000
17.003	As Zoned	Default	100	0.058	0.058	0.058
		Grass	0	0.018	0.000	0.058
17.004	As Zoned	Default	100	0.195	0.195	0.195
		Grass	0	0.064	0.000	0.194
12.010	As Zoned	Default	100	0.165	0.165	0.165
		Grass	0	0.045	0.000	0.166
12.011	-	-	100	0.233	0.233	0.233
19.000	-	-	100	0.250	0.250	0.250
19.001	-	-	100	0.003	0.003	0.003
12.012	-	-	100	0.172	0.172	0.172
12.013	-	-	100	0.097	0.097	0.097
12.014	-	-	100	0.026	0.026	0.026
20.000	-	-	100	0.184	0.184	0.184
20.001	-	-	100	0.259	0.259	0.259
20.002	-	-	100	0.140	0.140	0.140
20.003	-	-	100	0.006	0.006	0.006
21.000	-	-	100	0.136	0.136	0.136
21.001	-	-	100	0.023	0.023	0.023
21.002	-	-	100	0.070	0.070	0.070
20.004	-	-	100	0.171	0.171	0.171
20.005	-	-	100	0.012	0.012	0.012
22.000	-	-	100	0.256	0.256	0.256

Area Summary for Storm Network

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
20.006	-	-	100	0.077	0.077	0.077
23.000	-	-	100	0.158	0.158	0.158
23.001	-	-	100	0.131	0.131	0.131
20.007	-	-	100	0.088	0.088	0.088
24.000	-	-	100	0.202	0.202	0.202
24.001	-	-	100	0.191	0.191	0.191
20.008	-	-	100	0.219	0.219	0.219
20.009	-	-	100	0.037	0.037	0.037
20.010	-	-	100	0.030	0.030	0.030
20.011	-	-	100	0.009	0.009	0.009
25.000	-	-	100	0.203	0.203	0.203
20.012	-	-	100	0.008	0.008	0.008
20.013	-	-	100	0.035	0.035	0.035
20.014	-	-	100	0.048	0.048	0.048
20.015	As Zoned	Default	100	0.193	0.193	0.193
		Grass	0	0.056	0.000	0.195
20.016	-	-	100	0.035	0.035	0.035
26.000	-	-	100	0.120	0.120	0.120
26.001	-	-	100	0.129	0.129	0.129
26.002	-	-	100	0.250	0.250	0.250
26.003	-	-	100	0.173	0.173	0.173
26.004	-	-	100	0.085	0.085	0.085
26.005	-	-	100	0.076	0.076	0.076
27.000	-	-	100	0.133	0.133	0.133
26.006	-	-	100	0.142	0.142	0.142
26.007	-	-	100	0.152	0.152	0.152
20.017	-	-	100	0.251	0.251	0.251
20.018	-	-	100	0.000	0.000	0.000
20.019	-	-	100	0.037	0.037	0.037
28.000	-	-	100	0.100	0.100	0.100
28.001	-	-	100	0.000	0.000	0.000
28.002	-	-	100	0.097	0.097	0.097
20.020	-	-	100	0.000	0.000	0.000
20.021	-	-	100	0.000	0.000	0.000
20.022	-	-	100	0.006	0.006	0.006
29.000	-	-	100	0.165	0.165	0.165
20.023	-	-	100	0.130	0.130	0.130
20.024	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				11.800	11.104	11.104

Network Classifications for Storm Network

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S1.000	S1	225	1.275	1.378	Unclassified	1050	0	1.275	Unclassified
S1.001	S2	225	1.141	1.345	Unclassified	1050	0	1.313	Unclassified
S1.002	S3	300	1.141	1.251	Unclassified	1050	0	1.141	Unclassified
S2.000	S4	225	1.231	1.658	Unclassified	1050	0	1.275	Unclassified
S1.003	S5	300	1.608	1.899	Unclassified	1200	0	1.899	Unclassified
S1.004	S6	300	1.397	1.608	Unclassified	1200	0	1.608	Unclassified
S1.005	S7	300	1.897	2.177	Unclassified	1200	0	2.047	Unclassified
S3.000	S9	225	0.412	2.350	Unclassified	1050	0	1.275	Unclassified
S3.001	S9	225	0.461	2.350	Unclassified	1050	0	2.350	Unclassified
S3.002	S10	225	1.200	1.200	Unclassified	1050	0	1.200	Unclassified
S3.003	S11	225	1.200	1.200	Unclassified	1050	0	1.200	Unclassified
S3.004	S12	375	0.328	1.897	Unclassified	1350	0	1.200	Unclassified
S1.006	S13	375	1.206	1.897	Unclassified	1350	0	1.897	Unclassified
S4.000	S14	225	1.206	2.661	Unclassified	1200	0	2.661	Unclassified
S5.000	S15A	225	0.428	1.206	Unclassified	1200	0	1.200	Unclassified
S1.007	S15	450	1.124	1.206	Unclassified	1350	0	1.206	Unclassified
S1.008	S16	450	1.140	1.200	Unclassified	1350	0	1.140	Unclassified
S1.009	S17	450	2.338	2.499	Unclassified	1350	0	2.353	Unclassified
S6.000	S18	225	1.424	2.521	Unclassified	1200	0	2.521	Unclassified
S1.010	S19	450	1.345	2.498	Unclassified	1350	0	2.498	Unclassified
S1.011	S20	450	1.640	2.945	Unclassified	1350	0	2.945	Unclassified
S1.012	S21A	450	1.758	2.071	Unclassified	1350	0	2.071	Unclassified
S7.000	S21B	225	1.259	2.061	Unclassified	1200	0	1.275	Unclassified
S1.013	S21	450	1.306	1.758	Unclassified	1350	0	1.758	Unclassified
S1.014	S21C	450	1.283	1.350	Unclassified	1350	0	1.306	Unclassified
S8.000	S22	225	0.984	2.033	Unclassified	1200	0	2.033	Unclassified
S8.001	S23	300	0.956	1.044	Unclassified	1200	0	0.984	Unclassified
S9.000	S24	225	1.182	2.001	Unclassified	1200	0	2.001	Unclassified
S9.001	S25	225	1.095	1.182	Unclassified	1050	0	1.182	Unclassified
S8.002	S26	300	1.046	1.306	Unclassified	1050	0	1.046	Unclassified
S8.003	S27	300	1.018	1.307	Unclassified	1050	0	1.125	Unclassified
S10.000	S28	225	1.275	1.382	Unclassified	1050	0	1.275	Unclassified
S8.004	S29	300	1.200	1.307	Unclassified	1050	0	1.307	Unclassified
S8.005	S30	375	1.091	1.147	Unclassified	1050	0	1.125	Unclassified
S8.006	S31	375	1.002	1.125	Unclassified	1050	0	1.125	Unclassified
S8.007	S32	450	1.150	1.450	Unclassified	1050	0	1.450	Unclassified
S1.015	S33	450	1.350	1.397	Unclassified	1500	0	1.350	Unclassified
S1.016	S34	450	1.397	1.440	Unclassified	1500	0	1.397	Unclassified
S11.000	SAHPR TANK	450	1.830	3.030	Unclassified	1350	0	3.030	Unclassified
S1.017	S34A	450	1.450	1.830	Unclassified	1350	0	1.830	Unclassified
S1.018	S35	300	0.964	1.600	Unclassified	1500	0	1.600	Unclassified
S1.019	S36	300	0.300	1.039	Unclassified	1500	0	1.039	Unclassified
S12.000	S49	225	1.200	2.040	Unclassified	1200	0	1.200	Unclassified
S13.000	S46	225	1.350	1.559	Unclassified	1500	0	1.559	Unclassified
S13.001	S47	225	1.307	1.350	Unclassified	1500	0	1.350	Unclassified
S13.002	S48	225	1.212	1.307	Unclassified	1500	0	1.307	Unclassified
S12.001	S50	300	1.330	2.040	Unclassified	1500	0	2.040	Unclassified
S12.002	S51	300	1.132	1.330	Unclassified	1500	0	1.330	Unclassified
S14.000	S52	225	1.200	2.230	Unclassified	1500	0	1.200	Unclassified

Network Classifications for Storm Network

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S12.003	S53	300	1.714	2.110	Unclassified	1500	0	2.110	Unclassified
S15.000	S54	225	1.251	1.859	Unclassified	1500	0	1.251	Unclassified
S12.004	S55	375	1.162	1.714	Unclassified	1500	0	1.714	Unclassified
S16.000	S56	225	1.200	1.730	Unclassified	1500	0	1.200	Unclassified
S16.001	S57	300	1.203	1.483	Unclassified	1500	0	1.203	Unclassified
S16.002	S58	375	1.391	1.736	Unclassified	1500	0	1.391	Unclassified
S12.005	S59	450	1.484	1.565	Unclassified	1500	0	1.565	Unclassified
S12.006	S60	450	1.484	1.621	Unclassified	1500	0	1.484	Unclassified
S12.007	S61	525	1.543	1.621	Unclassified	1500	0	1.621	Unclassified
S12.008	S61	525	1.256	1.543	Unclassified	1500	0	1.543	Unclassified
S12.009	S62	600	1.931	2.503	Unclassified	1500	0	1.931	Unclassified
S17.000	S63	225	1.153	1.816	Unclassified	1500	0	1.816	Unclassified
S17.001	S64	225	1.099	1.602	Unclassified	1500	0	1.153	Unclassified
S18.000	S54B	225	1.456	1.959	Unclassified	1200	0	1.465	Unclassified
S18.001	S59	225	1.209	1.970	Unclassified	1200	0	1.456	Unclassified
S18.002	S60	225	1.209	3.038	Unclassified	1200	0	1.209	Unclassified
S17.002	S58	225	2.065	2.887	Unclassified	1200	0	2.570	Unclassified
S17.003	S65	225	1.930	2.144	Unclassified	1200	0	2.065	Unclassified
S17.004	S66	225	1.351	3.756	Unclassified	1200	0	3.756	Unclassified
S12.010	S68	600	0.790	2.503	Unclassified	1500	0	2.503	Unclassified
S12.011	S67	600	0.686	0.860	Unclassified	1500	0	0.789	Unclassified
S19.000	S68	225	1.203	2.248	Unclassified	1500	0	2.248	Unclassified
S19.001	S69	225	1.077	1.250	Unclassified	1500	0	1.203	Unclassified
S12.012	S71	600	1.202	1.500	Unclassified	1500	0	1.220	Unclassified
S12.013	S72	600	1.202	2.131	Unclassified	1500	0	1.202	Unclassified
S12.014	S72A	600	2.131	2.177	Unclassified	1500	0	2.131	Unclassified
S20.000	S2	225	1.227	2.075	Unclassified	1500	0	2.075	Unclassified
S20.001	S3	300	1.227	1.351	Unclassified	1200	0	1.227	Unclassified
S20.002	S4	375	1.351	1.404	Unclassified	1350	0	1.351	Unclassified
S20.003	S5	450	1.197	1.404	Unclassified	1350	0	1.404	Unclassified
S21.000	S6	225	1.200	1.384	Unclassified	1500	0	1.200	Unclassified
S21.001	S7	300	1.307	1.384	Unclassified	1500	0	1.384	Unclassified
S21.002	S8	300	1.275	1.307	Unclassified	1500	0	1.307	Unclassified
S20.004	S9	450	1.347	1.347	Unclassified	1500	0	1.347	Unclassified
S20.005	S10	450	1.338	1.347	Unclassified	1500	0	1.347	Unclassified
S22.000	S1	225	1.200	1.200	Unclassified	1500	0	1.200	Unclassified
S20.006	S11	450	1.141	1.838	Unclassified	1500	0	1.838	Unclassified
S23.000	S12	225	1.257	1.361	Unclassified	1500	0	1.257	Unclassified
S23.001	S13	375	1.237	1.879	Unclassified	1500	0	1.304	Unclassified
S20.007	S14	525	1.729	2.856	Unclassified	1500	0	1.729	Unclassified
S24.000	S15	225	1.118	1.248	Unclassified	1500	0	1.185	Unclassified
S24.001	S16	300	1.118	1.166	Unclassified	1500	0	1.118	Unclassified
S20.008	S17	525	1.801	3.514	Unclassified	1500	0	3.514	Unclassified
S20.009	S19	675	1.801	2.047	Unclassified	1500	0	1.801	Unclassified
S20.010	S20	675	1.765	2.039	Unclassified	1500	0	1.964	Unclassified
S20.011	S21	675	1.496	1.856	Unclassified	1500	0	1.765	Unclassified
S25.000	S22	225	1.201	2.998	Unclassified	1500	0	2.009	Unclassified
S20.012	S23	675	1.202	1.581	Unclassified	1500	0	1.496	Unclassified
S20.013	S24	675	1.195	1.636	Unclassified	1500	0	1.603	Unclassified

Network Classifications for Storm Network

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
S20.014	S25	675	1.715	2.220	Unclassified	1500	0	2.220	Unclassified
S20.015	S26	675	1.353	1.715	Unclassified	1500	0	1.715	Unclassified
S20.016	S27	675	1.301	1.428	Unclassified	1500	0	1.353	Unclassified
S26.000	S29	225	1.432	1.725	Unclassified	1500	0	1.432	Unclassified
S26.001	S30	225	1.725	1.875	Unclassified	1500	0	1.725	Unclassified
S26.002	S31	225	1.676	1.875	Unclassified	1500	0	1.875	Unclassified
S26.003	S32	450	1.123	1.676	Unclassified	1500	0	1.676	Unclassified
S26.004	S33	450	1.202	2.567	Unclassified	1500	0	2.567	Unclassified
S26.005	S34	450	1.200	2.287	Unclassified	1500	0	2.287	Unclassified
S27.000	S35	225	1.200	1.355	Unclassified	1500	0	1.200	Unclassified
S26.006	S36	450	1.200	2.902	Unclassified	1500	0	2.902	Unclassified
S26.007	S37	450	1.200	3.347	Unclassified	1500	0	3.347	Unclassified
S20.017	S37	675	1.645	2.049	Unclassified	1500	0	2.049	Unclassified
S20.018	S37A	675	1.325	1.725	Unclassified	1500	0	1.725	Unclassified
S20.019	S41	675	1.325	1.773	Unclassified	1500	0	1.325	Unclassified
S28.000	S40	225	1.525	1.525	Unclassified	1500	0	1.525	Unclassified
S28.001	S40A	225	1.525	2.035	Unclassified	1500	0	1.525	Unclassified
S28.002	S41	225	0.975	2.035	Unclassified	1500	0	2.035	Unclassified
S20.020	S42A	675	1.773	1.915	Unclassified	1500	0	1.773	Unclassified
S20.021	S42	750	1.690	1.845	Unclassified	1500	0	1.845	Unclassified
S20.022	S43	600	1.506	1.840	Unclassified	1500	0	1.840	Unclassified
S29.000	S44	225	1.316	1.925	Unclassified	1500	0	1.316	Unclassified
S20.023	S45	450	1.091	1.700	Unclassified	1500	0	1.700	Unclassified
S20.024	S79	600	0.300	3.322	Unclassified	1800	0	3.322	Unclassified

Free Flowing Outfall Details for Storm Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.019	SO/F 1	106.935	106.335	0.000	1200	0

Free Flowing Outfall Details for Storm Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S12.014	S76	120.152	117.375	0.000	0	0

Free Flowing Outfall Details for Storm Network

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S20.024	S94	117.117	116.217	0.000	1500	0

Simulation Criteria for Storm Network

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	4.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Flow per Person per Day (l/per/day)	0.000
Manhole Headloss Coeff (Global)	0.500	Run Time (mins)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	5	Cv (Summer)	0.750
Region	Scotland and Ireland	Cv (Winter)	0.840
M5-60 (mm)	18.700	Storm Duration (mins)	15
Ratio R	0.264		

Online Controls for Storm Network

Hydro-Brake® Optimum Manhole: S13, DS/PN: S1.006, Volume (m³): 7.9

Unit Reference	MD-CHE-0241-3500-1000-3500
Design Head (m)	1.000
Design Flow (l/s)	35.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	No
Diameter (mm)	241
Invert Level (m)	119.164
Minimum Outlet Pipe Diameter (mm)	300
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.000	35.0
Flush-Flo™	0.395	34.9
Kick-Flo®	0.515	25.7
Mean Flow over Head Range	-	25.6

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	6.5	1.200	38.3	3.000	60.0	7.000	91.0
0.200	19.9	1.400	41.3	3.500	64.7	7.500	94.1
0.300	29.9	1.600	44.1	4.000	69.1	8.000	97.2
0.400	34.9	1.800	46.7	4.500	73.2	8.500	100.1
0.500	25.8	2.000	49.2	5.000	77.1	9.000	103.0
0.600	27.2	2.200	51.5	5.500	80.8	9.500	105.7
0.800	31.4	2.400	53.8	6.000	84.4		
1.000	35.0	2.600	55.9	6.500	87.8		

Hydro-Brake® Manhole: S34A, DS/PN: S1.017, Volume (m³): 13.3

Design Head (m) 1.850 Hydro-Brake® Type Md14 Invert Level (m) 108.500
Design Flow (l/s) 250.0 Diameter (mm) 368

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	8.2	1.000	183.9	2.400	284.6	5.500	430.9
0.200	31.1	1.200	201.3	2.600	296.3	6.000	450.1
0.300	62.8	1.400	217.4	3.000	318.2	6.500	468.4
0.400	96.7	1.600	232.4	3.500	343.7	7.000	486.1
0.500	126.6	1.800	246.5	4.000	367.5	7.500	503.2
0.600	147.2	2.000	259.8	4.500	389.8	8.000	519.7
0.800	166.6	2.200	272.5	5.000	410.9	8.500	535.7

Hydro-Brake® Manhole: S34A, DS/PN: S1.017, Volume (m³): 13.3

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
9.000	551.2	9.500	566.3				

Hydro-Brake® Manhole: S72A, DS/PN: S12.014, Volume (m³): 14.7

Design Head (m) 1.500 Hydro-Brake® Type Md5 SW Only Invert Level (m) 117.525
Design Flow (l/s) 300.0 Diameter (mm) 566

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	20.0	1.200	302.6	3.000	338.7	7.000	510.1
0.200	57.8	1.400	300.9	3.500	362.6	7.500	528.0
0.300	103.2	1.600	298.6	4.000	386.3	8.000	545.3
0.400	150.0	1.800	298.5	4.500	409.3	8.500	562.1
0.500	193.9	2.000	301.1	5.000	431.2	9.000	578.4
0.600	231.4	2.200	306.1	5.500	452.2	9.500	594.3
0.800	277.3	2.400	312.8	6.000	472.3		
1.000	297.5	2.600	320.7	6.500	491.6		

Pre-initialised control selected, excessive flows may result.

Depth/Flow Relationship Manhole: S43, DS/PN: S20.022, Volume (m³): 30.0

Invert Level (m) 120.700

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	160.3600	0.900	481.0700	1.700	661.1700	2.500	801.7800
0.200	226.7800	1.000	507.0900	1.800	680.3400	2.600	817.6600
0.300	277.7500	1.100	531.8400	1.900	698.9800	2.700	833.2400
0.400	320.7100	1.200	555.4900	2.000	717.1400	2.800	848.5300
0.500	358.5700	1.300	578.1700	2.100	34.8500	2.900	863.5500
0.600	392.7900	1.400	6000.0000	2.200	752.1400	3.000	878.3100
0.700	424.2600	1.500	621.0600	2.300	769.0400		
0.800	453.5600	1.600	641.4300	2.400	785.5800		

Storage Structures for Storm Network

Tank or Pond Manhole: S13, DS/PN: S1.006

Invert Level (m) 119.164

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	600.0	0.300	600.0	0.600	600.0	0.900	600.0
0.100	600.0	0.400	600.0	0.700	600.0	1.000	600.0
0.200	600.0	0.500	600.0	0.800	600.0	1.001	0.0

Tank or Pond Manhole: SAHPR TANK, DS/PN: S11.000

Invert Level (m) 108.600

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	162.8	2.300	162.8	2.301	0.0

Tank or Pond Manhole: S72A, DS/PN: S12.014

Invert Level (m) 117.525

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	410.0	0.300	410.0	0.600	410.0	0.900	410.0
0.100	410.0	0.400	410.0	0.700	410.0	1.000	410.0
0.200	410.0	0.500	410.0	0.800	410.0	1.100	0.0

Tank or Pond Manhole: S43, DS/PN: S20.022

Invert Level (m) 120.700

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	800.0	0.300	800.0	0.600	800.0	0.900	800.0
0.100	800.0	0.400	800.0	0.700	800.0	1.000	800.0
0.200	800.0	0.500	800.0	0.800	800.0	1.100	0.0

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

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	4.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.264
Region	Scotland and Ireland	Cv (Summer)	0.750
M5-60 (mm)	18.700	Cv (Winter)	0.840

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880
Return Period(s) (years)	5, 30, 100
Climate Change (%)	10, 10, 10

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	5	+10%	100/15 Summer				124.943
S1.001	S2	15 Winter	5	+10%	30/15 Summer				124.486
S1.002	S3	15 Winter	5	+10%	30/15 Summer				122.915
S2.000	S4	15 Winter	5	+10%	30/15 Summer				122.940
S1.003	S5	15 Winter	5	+10%	5/15 Summer				121.492
S1.004	S6	15 Winter	5	+10%	5/15 Summer				120.835
S1.005	S7	15 Winter	5	+10%	5/15 Summer				119.899
S3.000	S9	15 Winter	5	+10%	100/15 Summer				121.796
S3.001	S9	15 Winter	5	+10%	30/15 Summer				121.206
S3.002	S10	15 Winter	5	+10%	30/15 Summer				120.167
S3.003	S11	15 Winter	5	+10%	5/15 Winter				120.030
S3.004	S12	15 Winter	5	+10%	100/60 Winter				119.571
S1.006	S13	180 Winter	5	+10%	30/60 Winter				119.478
S4.000	S14	15 Winter	5	+10%					120.248
S5.000	S15A	15 Winter	5	+10%	30/15 Summer				118.993
S1.007	S15	15 Winter	5	+10%					118.585
S1.008	S16	15 Winter	5	+10%					118.153
S1.009	S17	15 Winter	5	+10%	100/15 Summer				116.808

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

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	-0.159	0.000	0.19			13.7	OK	
S1.001	S2	-0.066	0.000	0.82			59.5	OK	
S1.002	S3	-0.119	0.000	0.67			92.0	OK	
S2.000	S4	-0.089	0.000	0.67			46.3	OK	
S1.003	S5	0.245	0.000	1.12			141.8	SURCHARGED	
S1.004	S6	0.099	0.000	1.16			148.7	SURCHARGED	
S1.005	S7	0.129	0.000	1.26			151.9	SURCHARGED	
S3.000	S9	-0.105	0.000	0.56			34.0	OK	
S3.001	S9	-0.095	0.000	0.62			47.5	OK	
S3.002	S10	-0.049	0.000	0.84			52.7	OK	
S3.003	S11	0.012	0.000	1.03			60.8	SURCHARGED	
S3.004	S12	-0.179	0.000	0.53			73.2	OK	
S1.006	S13	-0.061	0.000	0.16			31.0	OK	
S4.000	S14	-0.109	0.000	0.52			45.5	OK	
S5.000	S15A	-0.082	0.000	0.72			28.9	OK	
S1.007	S15	-0.247	0.000	0.41			111.2	OK	
S1.008	S16	-0.224	0.000	0.51			121.5	OK	
S1.009	S17	-0.234	0.000	0.47			126.2	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S6.000	S18	15 Winter	5	+10%				
S1.010	S19	15 Winter	5	+10%	100/15 Summer			
S1.011	S20	15 Winter	5	+10%	100/15 Summer			
S1.012	S21A	15 Winter	5	+10%	30/15 Summer			
S7.000	S21B	15 Winter	5	+10%	5/15 Summer			
S1.013	S21	15 Winter	5	+10%	5/15 Summer			
S1.014	S21C	15 Winter	5	+10%	100/15 Summer			
S8.000	S22	15 Winter	5	+10%	100/15 Winter			
S8.001	S23	15 Winter	5	+10%	100/15 Summer			
S9.000	S24	15 Winter	5	+10%				
S9.001	S25	15 Winter	5	+10%	100/15 Summer			
S8.002	S26	15 Winter	5	+10%	30/15 Summer			
S8.003	S27	15 Winter	5	+10%	30/15 Summer			
S10.000	S28	15 Winter	5	+10%	30/15 Summer			
S8.004	S29	15 Winter	5	+10%	5/15 Winter			
S8.005	S30	15 Winter	5	+10%				
S8.006	S31	15 Winter	5	+10%				
S8.007	S32	15 Winter	5	+10%	100/15 Summer			
S1.015	S33	15 Winter	5	+10%	100/15 Summer			
S1.016	S34	15 Winter	5	+10%	100/15 Summer			
S11.000	SAHPR TANK	30 Winter	5	+10%	5/15 Winter			
S1.017	S34A	30 Winter	5	+10%	5/15 Summer			
S1.018	S35	30 Winter	5	+10%	30/15 Summer			
S1.019	S36	15 Summer	5	+10%	5/15 Summer			
S12.000	S49	15 Winter	5	+10%	30/15 Summer			
S13.000	S46	15 Summer	5	+10%	30/15 Summer			
S13.001	S47	15 Winter	5	+10%	30/15 Summer			
S13.002	S48	15 Winter	5	+10%	30/15 Summer			
S12.001	S50	15 Winter	5	+10%	5/15 Winter			
S12.002	S51	15 Winter	5	+10%	100/15 Summer			
S14.000	S52	15 Winter	5	+10%	30/15 Summer			
S12.003	S53	15 Winter	5	+10%	30/15 Summer			
S15.000	S54	15 Summer	5	+10%				
S12.004	S55	15 Winter	5	+10%	100/15 Winter			
S16.000	S56	15 Winter	5	+10%				
S16.001	S57	15 Winter	5	+10%				
S16.002	S58	15 Winter	5	+10%	30/15 Summer			
S12.005	S59	15 Winter	5	+10%	30/15 Summer			
S12.006	S60	15 Winter	5	+10%	100/15 Summer			
S12.007	S61	15 Winter	5	+10%	30/15 Summer			
S12.008	S61	15 Winter	5	+10%	100/15 Winter			
S12.009	S62	15 Winter	5	+10%	30/15 Summer			
S17.000	S63	15 Winter	5	+10%				
S17.001	S64	15 Winter	5	+10%				
S18.000	S54B	15 Summer	5	+10%				
S18.001	S59	15 Summer	5	+10%	100/15 Summer			
S18.002	S60	15 Winter	5	+10%	30/15 Winter			
S17.002	S58	15 Winter	5	+10%	5/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S6.000	S18	119.298	-0.129	0.000	0.38			35.4	OK
S1.010	S19	116.599	-0.214	0.000	0.54			170.8	OK
S1.011	S20	114.603	-0.228	0.000	0.49			193.4	OK
S1.012	S21A	113.777	-0.033	0.000	0.82			191.1	OK
S7.000	S21B	113.677	0.052	0.000	0.16			6.6	SURCHARGED
S1.013	S21	113.659	0.019	0.000	1.16			207.3	SURCHARGED
S1.014	S21C	113.318	-0.222	0.000	0.50			208.4	OK
S8.000	S22	117.328	-0.110	0.000	0.51			35.0	OK
S8.001	S23	116.311	-0.189	0.000	0.29			43.8	OK
S9.000	S24	117.648	-0.142	0.000	0.29			26.6	OK
S9.001	S25	116.612	-0.128	0.000	0.39			37.6	OK
S8.002	S26	115.869	-0.141	0.000	0.54			84.0	OK
S8.003	S27	115.522	-0.108	0.000	0.73			88.8	OK
S10.000	S28	116.690	-0.091	0.000	0.64			45.7	OK
S8.004	S29	115.345	0.011	0.000	1.03			134.6	SURCHARGED
S8.005	S30	114.951	-0.161	0.000	0.60			151.5	OK
S8.006	S31	114.377	-0.176	0.000	0.54			165.8	OK
S8.007	S32	113.263	-0.216	0.000	0.53			169.7	OK
S1.015	S33	112.820	-0.183	0.000	0.66			385.6	OK
S1.016	S34	111.449	-0.204	0.000	0.58			395.0	OK
S11.000	SAHPR TANK	109.166	0.116	0.000	0.25			43.6	SURCHARGED
S1.017	S34A	109.311	0.361	0.000	0.42			157.2	SURCHARGED
S1.018	S35	108.265	-0.092	0.000	0.78			156.5	OK
S1.019	S36	107.081	0.140	0.000	1.20			158.2	SURCHARGED
S12.000	S49	125.289	-0.108	0.000	0.53			20.2	OK
S13.000	S46	127.267	-0.121	0.000	0.44			21.5	OK
S13.001	S47	127.077	-0.103	0.000	0.56			30.8	OK
S13.002	S48	126.965	-0.065	0.000	0.85			59.4	OK
S12.001	S50	125.213	0.014	0.000	1.02			98.8	SURCHARGED
S12.002	S51	124.627	-0.122	0.000	0.66			103.1	OK
S14.000	S52	123.536	-0.092	0.000	0.63			23.8	OK
S12.003	S53	123.307	-0.071	0.000	0.94			127.1	OK
S15.000	S54	124.130	-0.119	0.000	0.45			44.6	OK
S12.004	S55	122.906	-0.160	0.000	0.62			171.2	OK
S16.000	S56	123.056	-0.148	0.000	0.26			15.2	OK
S16.001	S57	122.537	-0.204	0.000	0.22			28.9	OK
S16.002	S58	121.917	-0.161	0.000	0.28			30.4	OK
S12.005	S59	121.899	-0.117	0.000	0.90			202.0	OK
S12.006	S60	121.645	-0.211	0.000	0.54			212.3	OK
S12.007	S61	121.265	-0.111	0.000	0.97			240.3	OK
S12.008	S61	121.056	-0.240	0.000	0.57			254.1	OK
S12.009	S62	120.076	-0.117	0.000	0.85			259.6	OK
S17.000	S63	127.244	-0.154	0.000	0.22			21.7	OK
S17.001	S64	125.853	-0.134	0.000	0.35			32.7	OK
S18.000	S54B	126.330	-0.225	0.000	0.00			0.0	OK
S18.001	S59	124.479	-0.225	0.000	0.00			0.0	OK
S18.002	S60	124.426	-0.179	0.000	0.09			6.7	OK

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.002	S58	124.090	0.021	0.000	1.20			39.2	SURCHARGED

PN	US/MH Name	Level Exceeded
S6.000	S18	
S1.010	S19	
S1.011	S20	
S1.012	S21A	
S7.000	S21B	
S1.013	S21	
S1.014	S21C	
S8.000	S22	
S8.001	S23	
S9.000	S24	
S9.001	S25	
S8.002	S26	
S8.003	S27	
S10.000	S28	
S8.004	S29	
S8.005	S30	
S8.006	S31	
S8.007	S32	
S1.015	S33	
S1.016	S34	
S11.000	SAHPR TANK	
S1.017	S34A	
S1.018	S35	
S1.019	S36	
S12.000	S49	
S13.000	S46	
S13.001	S47	
S13.002	S48	
S12.001	S50	
S12.002	S51	
S14.000	S52	
S12.003	S53	
S15.000	S54	
S12.004	S55	
S16.000	S56	
S16.001	S57	
S16.002	S58	
S12.005	S59	
S12.006	S60	
S12.007	S61	
S12.008	S61	

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

PN	US/MH Name	Level Exceeded
S12.009	S62	
S17.000	S63	
S17.001	S64	
S18.000	S54B	
S18.001	S59	
S18.002	S60	
S17.002	S58	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S17.003	S65	15 Winter	5	+10%	30/15 Summer			
S17.004	S66	15 Winter	5	+10%	5/15 Summer			
S12.010	S68	15 Winter	5	+10%	30/15 Summer			
S12.011	S67	15 Winter	5	+10%	30/15 Summer			
S19.000	S68	15 Winter	5	+10%				
S19.001	S69	15 Winter	5	+10%	100/15 Summer			
S12.012	S71	15 Winter	5	+10%	30/15 Summer			
S12.013	S72	15 Winter	5	+10%	100/60 Winter			
S12.014	S72A	60 Winter	5	+10%	30/15 Winter			
S20.000	S2	15 Winter	5	+10%				
S20.001	S3	15 Winter	5	+10%	100/15 Summer			
S20.002	S4	15 Winter	5	+10%				
S20.003	S5	15 Winter	5	+10%	30/15 Summer			
S21.000	S6	15 Winter	5	+10%				
S21.001	S7	15 Winter	5	+10%				
S21.002	S8	15 Winter	5	+10%				
S20.004	S9	15 Winter	5	+10%	100/15 Summer			
S20.005	S10	15 Winter	5	+10%	30/15 Summer			
S22.000	S1	15 Winter	5	+10%	30/15 Summer			
S20.006	S11	15 Winter	5	+10%	100/15 Summer			
S23.000	S12	15 Winter	5	+10%	30/15 Summer			
S23.001	S13	15 Winter	5	+10%	30/15 Summer			
S20.007	S14	15 Winter	5	+10%	30/15 Summer			
S24.000	S15	15 Winter	5	+10%	100/15 Summer			
S24.001	S16	15 Winter	5	+10%				
S20.008	S17	15 Winter	5	+10%	30/15 Summer			
S20.009	S19	15 Winter	5	+10%	30/15 Summer			
S20.010	S20	15 Winter	5	+10%	30/15 Summer			
S20.011	S21	15 Winter	5	+10%	30/15 Summer			
S25.000	S22	15 Winter	5	+10%				
S20.012	S23	15 Winter	5	+10%	30/15 Summer			
S20.013	S24	15 Winter	5	+10%	100/15 Summer			
S20.014	S25	15 Winter	5	+10%	100/15 Summer			
S20.015	S26	15 Winter	5	+10%	5/15 Summer			
S20.016	S27	15 Winter	5	+10%	5/15 Summer			
S26.000	S29	15 Summer	5	+10%	30/15 Summer			
S26.001	S30	15 Winter	5	+10%	30/15 Summer			
S26.002	S31	15 Winter	5	+10%	5/15 Summer			
S26.003	S32	15 Winter	5	+10%				
S26.004	S33	15 Winter	5	+10%				
S26.005	S34	15 Winter	5	+10%				
S27.000	S35	15 Winter	5	+10%				
S26.006	S36	15 Winter	5	+10%				
S26.007	S37	15 Winter	5	+10%	100/15 Winter			
S20.017	S37	15 Winter	5	+10%	30/15 Summer			
S20.018	S37A	15 Winter	5	+10%	5/15 Summer	100/30 Winter		
S20.019	S41	15 Winter	5	+10%	30/15 Summer			
S28.000	S40	15 Winter	5	+10%	100/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.003	S65	123.970	-0.037	0.000	1.00			49.1	OK
S17.004	S66	122.575	0.738	0.000	1.53			76.6	SURCHARGED
S12.010	S68	120.037	-0.097	0.000	0.90			348.5	OK
S12.011	S67	119.888	-0.014	0.000	1.00			347.1	OK
S19.000	S68	122.128	-0.114	0.000	0.49			55.9	OK
S19.001	S69	119.721	-0.096	0.000	0.62			56.3	OK
S12.012	S71	119.240	-0.190	0.000	0.79			405.6	OK
S12.013	S72	118.845	-0.324	0.000	0.43			421.7	OK
S12.014	S72A	118.052	-0.073	0.000	0.53			204.6	OK
S20.000	S2	138.272	-0.111	0.000	0.51			40.7	OK
S20.001	S3	136.669	-0.148	0.000	0.50			85.2	OK
S20.002	S4	134.334	-0.213	0.000	0.39			109.0	OK
S20.003	S5	133.291	-0.056	0.000	1.00			107.2	OK
S21.000	S6	135.635	-0.128	0.000	0.39			30.4	OK
S21.001	S7	134.373	-0.204	0.000	0.22			34.5	OK
S21.002	S8	133.997	-0.193	0.000	0.27			46.5	OK
S20.004	S9	132.931	-0.241	0.000	0.44			181.2	OK
S20.005	S10	132.076	-0.184	0.000	0.65			182.0	OK
S22.000	S1	133.959	-0.079	0.000	0.74			56.5	OK
S20.006	S11	131.309	-0.201	0.000	0.58			247.8	OK
S23.000	S12	130.170	-0.049	0.000	0.96			34.9	OK
S23.001	S13	129.873	-0.224	0.000	0.34			57.7	OK
S20.007	S14	129.725	-0.137	0.000	0.89			321.6	OK
S24.000	S15	133.032	-0.089	0.000	0.67			44.9	OK
S24.001	S16	132.344	-0.158	0.000	0.45			77.8	OK
S20.008	S17	128.762	-0.192	0.000	0.72			427.5	OK
S20.009	S19	127.480	-0.199	0.000	0.84			429.4	OK
S20.010	S20	127.290	-0.226	0.000	0.77			434.2	OK
S20.011	S21	127.101	-0.216	0.000	0.80			437.4	OK
S25.000	S22	129.410	-0.119	0.000	0.45			45.4	OK
S20.012	S23	126.936	-0.194	0.000	0.85			463.5	OK
S20.013	S24	126.292	-0.253	0.000	0.71			468.2	OK
S20.014	S25	124.872	-0.381	0.000	0.40			473.7	OK
S20.015	S26	124.500	0.135	0.000	1.30			471.9	SURCHARGED
S20.016	S27	124.304	0.049	0.000	1.22			479.0	SURCHARGED
S26.000	S29	136.647	-0.128	0.000	0.39			26.9	OK
S26.001	S30	136.155	-0.070	0.000	0.80			48.9	OK
S26.002	S31	135.877	0.152	0.000	1.05			82.4	SURCHARGED
S26.003	S32	134.007	-0.297	0.000	0.25			110.5	OK
S26.004	S33	131.641	-0.279	0.000	0.31			125.1	OK
S26.005	S34	129.931	-0.254	0.000	0.39			138.2	OK
S27.000	S35	130.298	-0.126	0.000	0.41			29.7	OK
S26.006	S36	127.859	-0.234	0.000	0.46			191.3	OK
S26.007	S37	124.990	-0.219	0.000	0.52			218.6	OK
S20.017	S37	123.205	-0.286	0.000	0.62			668.2	OK
S20.018	S37A	122.520	0.095	0.000	1.36			665.9	SURCHARGED
S20.019	S41	122.229	-0.046	0.000	0.65			664.6	OK

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S28.000	S40	124.625	-0.100	0.000	0.57			21.4	OK

PN	US/MH Name	Level Exceeded
S17.003	S65	
S17.004	S66	
S12.010	S68	
S12.011	S67	
S19.000	S68	
S19.001	S69	
S12.012	S71	
S12.013	S72	
S12.014	S72A	
S20.000	S2	
S20.001	S3	
S20.002	S4	
S20.003	S5	
S21.000	S6	
S21.001	S7	
S21.002	S8	
S20.004	S9	
S20.005	S10	
S22.000	S1	
S20.006	S11	
S23.000	S12	
S23.001	S13	
S20.007	S14	
S24.000	S15	
S24.001	S16	
S20.008	S17	
S20.009	S19	
S20.010	S20	
S20.011	S21	
S25.000	S22	
S20.012	S23	
S20.013	S24	
S20.014	S25	
S20.015	S26	
S20.016	S27	
S26.000	S29	
S26.001	S30	
S26.002	S31	
S26.003	S32	
S26.004	S33	
S26.005	S34	

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

PN	US/MH Name	Level Exceeded
S27.000	S35	
S26.006	S36	
S26.007	S37	
S20.017	S37	
S20.018	S37A	1
S20.019	S41	6
S28.000	S40	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S28.001	S40A	15 Winter	5	+10%					124.309
S28.002	S41	15 Winter	5	+10%	5/15 Summer				122.549
S20.020	S42A	15 Winter	5	+10%	5/15 Summer				121.947
S20.021	S42	15 Winter	5	+10%	5/15 Summer				121.654
S20.022	S43	30 Winter	5	+10%	30/30 Winter				121.070
S29.000	S44	15 Winter	5	+10%					121.295
S20.023	S45	30 Winter	5	+10%	100/30 Summer				120.311
S20.024	S79	30 Winter	5	+10%	5/30 Winter				116.822

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S28.001	S40A	-0.166	0.000	0.15			21.5	OK	
S28.002	S41	0.014	0.000	1.08			37.3	SURCHARGED	
S20.020	S42A	0.322	0.000	1.46			681.6	SURCHARGED	
S20.021	S42	0.054	0.000	1.25			670.1	SURCHARGED	
S20.022	S43	-0.230	0.000	0.39			307.9	OK	
S29.000	S44	-0.111	0.000	0.50			36.4	OK	
S20.023	S45	-0.159	0.000	0.74			315.5	OK	
S20.024	S79	0.003	0.000	1.33			315.6	SURCHARGED	

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

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	4.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.264
Region	Scotland and Ireland	Cv (Summer)	0.750
M5-60 (mm)	18.700	Cv (Winter)	0.840

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880
Return Period(s) (years)	5, 30, 100
Climate Change (%)	10, 10, 10

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	30	+10%	100/15 Summer				125.047
S1.001	S2	15 Winter	30	+10%	30/15 Summer				125.012
S1.002	S3	15 Winter	30	+10%	30/15 Summer				123.176
S2.000	S4	15 Winter	30	+10%	30/15 Summer				123.056
S1.003	S5	15 Winter	30	+10%	5/15 Summer				122.290
S1.004	S6	15 Winter	30	+10%	5/15 Summer				121.154
S1.005	S7	15 Winter	30	+10%	5/15 Summer				120.181
S3.000	S9	15 Winter	30	+10%	100/15 Summer				121.833
S3.001	S9	15 Winter	30	+10%	30/15 Summer				121.459
S3.002	S10	15 Winter	30	+10%	30/15 Summer				120.633
S3.003	S11	15 Winter	30	+10%	5/15 Winter				120.348
S3.004	S12	180 Winter	30	+10%	100/60 Winter				119.649
S1.006	S13	180 Winter	30	+10%	30/60 Winter				119.642
S4.000	S14	15 Winter	30	+10%					120.281
S5.000	S15A	15 Winter	30	+10%	30/15 Summer				119.087
S1.007	S15	15 Winter	30	+10%					118.651
S1.008	S16	15 Winter	30	+10%					118.236
S1.009	S17	15 Winter	30	+10%	100/15 Summer				116.886

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

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	-0.055	0.000	0.27			19.9	OK	
S1.001	S2	0.460	0.000	1.10			79.4	SURCHARGED	
S1.002	S3	0.142	0.000	0.93			127.1	SURCHARGED	
S2.000	S4	0.027	0.000	0.92			63.5	SURCHARGED	
S1.003	S5	1.043	0.000	1.49			189.0	SURCHARGED	
S1.004	S6	0.418	0.000	1.53			196.7	SURCHARGED	
S1.005	S7	0.411	0.000	1.68			202.3	SURCHARGED	
S3.000	S9	-0.068	0.000	0.82			50.2	OK	
S3.001	S9	0.158	0.000	0.87			67.1	SURCHARGED	
S3.002	S10	0.417	0.000	1.21			75.6	SURCHARGED	
S3.003	S11	0.330	0.000	1.49			88.1	SURCHARGED	
S3.004	S12	-0.101	0.000	0.25			34.8	OK	
S1.006	S13	0.103	0.000	0.18			34.9	SURCHARGED	
S4.000	S14	-0.076	0.000	0.77			67.1	OK	
S5.000	S15A	0.012	0.000	1.02			40.7	SURCHARGED	
S1.007	S15	-0.181	0.000	0.65			173.5	OK	
S1.008	S16	-0.141	0.000	0.80			193.1	OK	
S1.009	S17	-0.156	0.000	0.75			202.3	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S6.000	S18	15 Winter	30	+10%				
S1.010	S19	15 Winter	30	+10%	100/15 Summer			
S1.011	S20	15 Winter	30	+10%	100/15 Summer			
S1.012	S21A	15 Winter	30	+10%	30/15 Summer			
S7.000	S21B	15 Winter	30	+10%	5/15 Summer			
S1.013	S21	15 Winter	30	+10%	5/15 Summer			
S1.014	S21C	15 Winter	30	+10%	100/15 Summer			
S8.000	S22	15 Winter	30	+10%	100/15 Winter			
S8.001	S23	15 Winter	30	+10%	100/15 Summer			
S9.000	S24	15 Winter	30	+10%				
S9.001	S25	15 Summer	30	+10%	100/15 Summer			
S8.002	S26	15 Winter	30	+10%	30/15 Summer			
S8.003	S27	15 Winter	30	+10%	30/15 Summer			
S10.000	S28	15 Winter	30	+10%	30/15 Summer			
S8.004	S29	15 Winter	30	+10%	5/15 Winter			
S8.005	S30	15 Winter	30	+10%				
S8.006	S31	15 Winter	30	+10%				
S8.007	S32	15 Winter	30	+10%	100/15 Summer			
S1.015	S33	15 Winter	30	+10%	100/15 Summer			
S1.016	S34	15 Winter	30	+10%	100/15 Summer			
S11.000	SAHPR TANK	30 Winter	30	+10%	5/15 Winter			
S1.017	S34A	60 Winter	30	+10%	5/15 Summer			
S1.018	S35	30 Winter	30	+10%	30/15 Summer			
S1.019	S36	30 Winter	30	+10%	5/15 Summer			
S12.000	S49	15 Winter	30	+10%	30/15 Summer			
S13.000	S46	15 Winter	30	+10%	30/15 Summer			
S13.001	S47	15 Winter	30	+10%	30/15 Summer			
S13.002	S48	15 Winter	30	+10%	30/15 Summer			
S12.001	S50	15 Winter	30	+10%	5/15 Winter			
S12.002	S51	15 Winter	30	+10%	100/15 Summer			
S14.000	S52	15 Winter	30	+10%	30/15 Summer			
S12.003	S53	15 Winter	30	+10%	30/15 Summer			
S15.000	S54	15 Summer	30	+10%				
S12.004	S55	15 Winter	30	+10%	100/15 Winter			
S16.000	S56	15 Winter	30	+10%				
S16.001	S57	15 Winter	30	+10%				
S16.002	S58	15 Winter	30	+10%	30/15 Summer			
S12.005	S59	15 Winter	30	+10%	30/15 Summer			
S12.006	S60	15 Winter	30	+10%	100/15 Summer			
S12.007	S61	15 Winter	30	+10%	30/15 Summer			
S12.008	S61	15 Winter	30	+10%	100/15 Winter			
S12.009	S62	15 Winter	30	+10%	30/15 Summer			
S17.000	S63	15 Winter	30	+10%				
S17.001	S64	15 Summer	30	+10%				
S18.000	S54B	15 Summer	30	+10%				
S18.001	S59	15 Winter	30	+10%	100/15 Summer			
S18.002	S60	15 Winter	30	+10%	30/15 Winter			
S17.002	S58	15 Winter	30	+10%	5/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S6.000	S18	119.323	-0.104	0.000	0.56			52.3	OK
S1.010	S19	116.690	-0.123	0.000	0.86			272.9	OK
S1.011	S20	114.690	-0.141	0.000	0.80			312.4	OK
S1.012	S21A	114.176	0.366	0.000	1.32			307.3	SURCHARGED
S7.000	S21B	113.898	0.273	0.000	0.24			10.0	SURCHARGED
S1.013	S21	113.873	0.233	0.000	1.85			328.9	SURCHARGED
S1.014	S21C	113.399	-0.141	0.000	0.80			331.4	OK
S8.000	S22	117.361	-0.077	0.000	0.75			51.7	OK
S8.001	S23	116.343	-0.157	0.000	0.46			68.2	OK
S9.000	S24	117.668	-0.122	0.000	0.43			39.4	OK
S9.001	S25	116.643	-0.097	0.000	0.62			59.8	OK
S8.002	S26	116.249	0.239	0.000	0.79			122.4	SURCHARGED
S8.003	S27	116.026	0.396	0.000	1.04			127.7	SURCHARGED
S10.000	S28	116.817	0.036	0.000	0.87			62.6	SURCHARGED
S8.004	S29	115.699	0.365	0.000	1.49			195.2	SURCHARGED
S8.005	S30	115.014	-0.098	0.000	0.87			219.8	OK
S8.006	S31	114.434	-0.119	0.000	0.79			242.0	OK
S8.007	S32	113.329	-0.150	0.000	0.77			247.2	OK
S1.015	S33	112.935	-0.068	0.000	1.00			585.0	OK
S1.016	S34	111.533	-0.120	0.000	0.88			599.8	OK
S11.000	SAHPR TANK	109.681	0.631	0.000	0.38			66.7	SURCHARGED
S1.017	S34A	109.755	0.805	0.000	0.52			194.8	SURCHARGED
S1.018	S35	108.560	0.203	0.000	0.97			194.8	SURCHARGED
S1.019	S36	107.293	0.352	0.000	1.48			194.9	SURCHARGED
S12.000	S49	125.749	0.352	0.000	0.61			23.5	SURCHARGED
S13.000	S46	127.484	0.096	0.000	0.61			30.0	SURCHARGED
S13.001	S47	127.412	0.232	0.000	0.72			39.5	SURCHARGED
S13.002	S48	127.279	0.249	0.000	1.12			78.4	SURCHARGED
S12.001	S50	125.674	0.475	0.000	1.42			138.0	SURCHARGED
S12.002	S51	124.676	-0.073	0.000	0.92			144.7	OK
S14.000	S52	123.716	0.088	0.000	0.84			31.8	SURCHARGED
S12.003	S53	123.580	0.202	0.000	1.30			176.0	SURCHARGED
S15.000	S54	124.159	-0.090	0.000	0.67			65.9	OK
S12.004	S55	122.961	-0.105	0.000	0.86			235.8	OK
S16.000	S56	123.074	-0.130	0.000	0.38			22.4	OK
S16.001	S57	122.568	-0.173	0.000	0.37			48.3	OK
S16.002	S58	122.188	0.110	0.000	0.45			48.1	SURCHARGED
S12.005	S59	122.093	0.077	0.000	1.26			285.0	SURCHARGED
S12.006	S60	121.778	-0.078	0.000	0.78			303.7	OK
S12.007	S61	121.480	0.104	0.000	1.38			342.1	SURCHARGED
S12.008	S61	121.136	-0.160	0.000	0.81			361.7	OK
S12.009	S62	120.590	0.397	0.000	1.20			366.4	SURCHARGED
S17.000	S63	127.260	-0.138	0.000	0.32			32.1	OK
S17.001	S64	125.883	-0.104	0.000	0.56			52.7	OK
S18.000	S54B	126.330	-0.225	0.000	0.00			0.0	OK
S18.001	S59	124.600	-0.104	0.000	0.05			1.8	OK
S18.002	S60	124.616	0.011	0.000	0.24			17.0	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.002	S58	124.604	0.535	0.000	1.64			53.7	SURCHARGED

PN	US/MH Name	Level Exceeded
S6.000	S18	
S1.010	S19	
S1.011	S20	
S1.012	S21A	
S7.000	S21B	
S1.013	S21	
S1.014	S21C	
S8.000	S22	
S8.001	S23	
S9.000	S24	
S9.001	S25	
S8.002	S26	
S8.003	S27	
S10.000	S28	
S8.004	S29	
S8.005	S30	
S8.006	S31	
S8.007	S32	
S1.015	S33	
S1.016	S34	
S11.000	SAHPR TANK	
S1.017	S34A	
S1.018	S35	
S1.019	S36	
S12.000	S49	
S13.000	S46	
S13.001	S47	
S13.002	S48	
S12.001	S50	
S12.002	S51	
S14.000	S52	
S12.003	S53	
S15.000	S54	
S12.004	S55	
S16.000	S56	
S16.001	S57	
S16.002	S58	
S12.005	S59	
S12.006	S60	
S12.007	S61	
S12.008	S61	

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

PN	US/MH Name	Level Exceeded
S12.009	S62	
S17.000	S63	
S17.001	S64	
S18.000	S54B	
S18.001	S59	
S18.002	S60	
S17.002	S58	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S17.003	S65	15 Winter	30	+10%	30/15 Summer			
S17.004	S66	15 Winter	30	+10%	5/15 Summer			
S12.010	S68	15 Winter	30	+10%	30/15 Summer			
S12.011	S67	15 Winter	30	+10%	30/15 Summer			
S19.000	S68	15 Winter	30	+10%				
S19.001	S69	15 Summer	30	+10%	100/15 Summer			
S12.012	S71	15 Winter	30	+10%	30/15 Summer			
S12.013	S72	15 Winter	30	+10%	100/60 Winter			
S12.014	S72A	60 Winter	30	+10%	30/15 Winter			
S20.000	S2	15 Winter	30	+10%				
S20.001	S3	15 Winter	30	+10%	100/15 Summer			
S20.002	S4	15 Winter	30	+10%				
S20.003	S5	15 Winter	30	+10%	30/15 Summer			
S21.000	S6	15 Winter	30	+10%				
S21.001	S7	15 Winter	30	+10%				
S21.002	S8	15 Winter	30	+10%				
S20.004	S9	15 Winter	30	+10%	100/15 Summer			
S20.005	S10	15 Winter	30	+10%	30/15 Summer			
S22.000	S1	15 Winter	30	+10%	30/15 Summer			
S20.006	S11	15 Winter	30	+10%	100/15 Summer			
S23.000	S12	15 Winter	30	+10%	30/15 Summer			
S23.001	S13	15 Winter	30	+10%	30/15 Summer			
S20.007	S14	15 Winter	30	+10%	30/15 Summer			
S24.000	S15	15 Winter	30	+10%	100/15 Summer			
S24.001	S16	15 Winter	30	+10%				
S20.008	S17	15 Winter	30	+10%	30/15 Summer			
S20.009	S19	15 Winter	30	+10%	30/15 Summer			
S20.010	S20	15 Winter	30	+10%	30/15 Summer			
S20.011	S21	15 Winter	30	+10%	30/15 Summer			
S25.000	S22	15 Winter	30	+10%				
S20.012	S23	15 Winter	30	+10%	30/15 Summer			
S20.013	S24	15 Winter	30	+10%	100/15 Summer			
S20.014	S25	15 Winter	30	+10%	100/15 Summer			
S20.015	S26	15 Winter	30	+10%	5/15 Summer			
S20.016	S27	15 Winter	30	+10%	5/15 Summer			
S26.000	S29	15 Winter	30	+10%	30/15 Summer			
S26.001	S30	15 Winter	30	+10%	30/15 Summer			
S26.002	S31	15 Winter	30	+10%	5/15 Summer			
S26.003	S32	15 Winter	30	+10%				
S26.004	S33	15 Winter	30	+10%				
S26.005	S34	15 Winter	30	+10%				
S27.000	S35	15 Winter	30	+10%				
S26.006	S36	15 Winter	30	+10%				
S26.007	S37	15 Winter	30	+10%	100/15 Winter			
S20.017	S37	30 Winter	30	+10%	30/15 Summer			
S20.018	S37A	30 Winter	30	+10%	5/15 Summer	100/30 Winter		
S20.019	S41	30 Winter	30	+10%	30/15 Summer			
S28.000	S40	15 Winter	30	+10%	100/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.003	S65	124.456	0.449	0.000	1.39			68.4	SURCHARGED
S17.004	S66	123.802	1.965	0.000	2.14			106.9	SURCHARGED
S12.010	S68	120.458	0.324	0.000	1.30			501.4	SURCHARGED
S12.011	S67	120.057	0.155	0.000	1.55			539.7	SURCHARGED
S19.000	S68	122.160	-0.082	0.000	0.73			82.6	OK
S19.001	S69	119.762	-0.055	0.000	0.92			83.5	OK
S12.012	S71	119.550	0.120	0.000	1.23			629.4	SURCHARGED
S12.013	S72	118.932	-0.237	0.000	0.66			650.9	OK
S12.014	S72A	118.310	0.185	0.000	0.71			275.1	SURCHARGED
S20.000	S2	138.305	-0.078	0.000	0.75			60.2	OK
S20.001	S3	136.732	-0.085	0.000	0.82			139.6	OK
S20.002	S4	134.397	-0.149	0.000	0.65			183.6	OK
S20.003	S5	133.416	0.069	0.000	1.75			187.4	SURCHARGED
S21.000	S6	135.660	-0.103	0.000	0.57			44.7	OK
S21.001	S7	134.397	-0.180	0.000	0.33			52.1	OK
S21.002	S8	134.030	-0.160	0.000	0.44			74.8	OK
S20.004	S9	133.019	-0.153	0.000	0.76			309.8	OK
S20.005	S10	132.300	0.040	0.000	1.08			305.7	SURCHARGED
S22.000	S1	134.087	0.049	0.000	1.01			77.0	SURCHARGED
S20.006	S11	131.413	-0.097	0.000	0.95			405.6	OK
S23.000	S12	130.359	0.140	0.000	1.32			47.8	SURCHARGED
S23.001	S13	130.214	0.117	0.000	0.44			75.6	SURCHARGED
S20.007	S14	130.084	0.222	0.000	1.38			499.7	SURCHARGED
S24.000	S15	133.076	-0.045	0.000	0.99			66.4	OK
S24.001	S16	132.397	-0.105	0.000	0.74			128.4	OK
S20.008	S17	129.374	0.420	0.000	1.06			634.6	SURCHARGED
S20.009	S19	127.948	0.269	0.000	1.24			633.0	SURCHARGED
S20.010	S20	127.701	0.185	0.000	1.13			636.6	SURCHARGED
S20.011	S21	127.447	0.130	0.000	1.16			636.5	SURCHARGED
S25.000	S22	129.439	-0.090	0.000	0.67			67.1	OK
S20.012	S23	127.195	0.065	0.000	1.24			672.2	SURCHARGED
S20.013	S24	126.545	0.000	0.000	1.03			673.5	OK
S20.014	S25	125.154	-0.099	0.000	0.57			677.0	OK
S20.015	S26	124.871	0.506	0.000	1.90			688.5	SURCHARGED
S20.016	S27	124.462	0.207	0.000	1.76			692.2	SURCHARGED
S26.000	S29	137.078	0.303	0.000	0.54			37.4	SURCHARGED
S26.001	S30	137.009	0.784	0.000	0.85			52.2	SURCHARGED
S26.002	S31	136.712	0.987	0.000	1.30			101.7	SURCHARGED
S26.003	S32	134.037	-0.267	0.000	0.34			148.7	OK
S26.004	S33	131.680	-0.240	0.000	0.43			175.5	OK
S26.005	S34	129.982	-0.203	0.000	0.57			199.3	OK
S27.000	S35	130.325	-0.099	0.000	0.60			43.9	OK
S26.006	S36	127.924	-0.169	0.000	0.70			288.8	OK
S26.007	S37	125.067	-0.142	0.000	0.80			337.1	OK
S20.017	S37	124.070	0.579	0.000	0.83			892.2	SURCHARGED
S20.018	S37A	123.400	0.975	0.000	1.81			890.5	SURCHARGED
S20.019	S41	122.904	0.629	0.000	0.88			895.9	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S28.000	S40	124.664	-0.061	0.000	0.84			31.6	OK

PN	US/MH Name	Level Exceeded
S17.003	S65	
S17.004	S66	
S12.010	S68	
S12.011	S67	
S19.000	S68	
S19.001	S69	
S12.012	S71	
S12.013	S72	
S12.014	S72A	
S20.000	S2	
S20.001	S3	
S20.002	S4	
S20.003	S5	
S21.000	S6	
S21.001	S7	
S21.002	S8	
S20.004	S9	
S20.005	S10	
S22.000	S1	
S20.006	S11	
S23.000	S12	
S23.001	S13	
S20.007	S14	
S24.000	S15	
S24.001	S16	
S20.008	S17	
S20.009	S19	
S20.010	S20	
S20.011	S21	
S25.000	S22	
S20.012	S23	
S20.013	S24	
S20.014	S25	
S20.015	S26	
S20.016	S27	
S26.000	S29	
S26.001	S30	
S26.002	S31	
S26.003	S32	
S26.004	S33	
S26.005	S34	

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

PN	US/MH Name	Level Exceeded
S27.000	S35	
S26.006	S36	
S26.007	S37	
S20.017	S37	
S20.018	S37A	1
S20.019	S41	6
S28.000	S40	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S28.001	S40A	15 Winter	30	+10%					124.323
S28.002	S41	15 Winter	30	+10%	5/15 Summer				122.771
S20.020	S42A	30 Winter	30	+10%	5/15 Summer				122.403
S20.021	S42	30 Winter	30	+10%	5/15 Summer				121.866
S20.022	S43	30 Winter	30	+10%	30/30 Winter				121.312
S29.000	S44	15 Winter	30	+10%					121.327
S20.023	S45	60 Winter	30	+10%	100/30 Summer				120.370
S20.024	S79	60 Winter	30	+10%	5/30 Winter				116.953

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S28.001	S40A	-0.152	0.000	0.23			31.8	OK	
S28.002	S41	0.236	0.000	1.77			61.0	SURCHARGED	
S20.020	S42A	0.778	0.000	1.99			927.3	SURCHARGED	
S20.021	S42	0.266	0.000	1.72			921.5	SURCHARGED	
S20.022	S43	0.012	0.000	0.50			396.5	SURCHARGED	
S29.000	S44	-0.079	0.000	0.74			53.8	OK	
S20.023	S45	-0.100	0.000	0.96			408.1	OK	
S20.024	S79	0.133	0.000	1.72			408.1	SURCHARGED	

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

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	4.000
Hot Start Level (mm)	0	Inlet Coeffiecient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs	0	Number of Storage Structures	4
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model		FSR	Ratio R 0.264
Region	Scotland and Ireland	Cv (Summer)	0.750
M5-60 (mm)	18.700	Cv (Winter)	0.840

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

Profile(s)	Summer and Winter
Duration(s) (mins)	15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880
Return Period(s) (years)	5, 30, 100
Climate Change (%)	10, 10, 10

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	100	+10%	100/15 Summer				125.692
S1.001	S2	15 Winter	100	+10%	30/15 Summer				125.659
S1.002	S3	15 Winter	100	+10%	30/15 Summer				123.620
S2.000	S4	15 Winter	100	+10%	30/15 Summer				123.541
S1.003	S5	15 Winter	100	+10%	5/15 Summer				122.603
S1.004	S6	15 Winter	100	+10%	5/15 Summer				121.274
S1.005	S7	15 Winter	100	+10%	5/15 Summer				120.285
S3.000	S9	15 Winter	100	+10%	100/15 Summer				122.240
S3.001	S9	15 Winter	100	+10%	30/15 Summer				121.867
S3.002	S10	15 Winter	100	+10%	30/15 Summer				120.857
S3.003	S11	15 Winter	100	+10%	5/15 Winter				120.511
S3.004	S12	120 Winter	100	+10%	100/60 Winter				119.845
S1.006	S13	240 Winter	100	+10%	30/60 Winter				119.825
S4.000	S14	15 Winter	100	+10%					120.329
S5.000	S15A	15 Winter	100	+10%	30/15 Summer				119.254
S1.007	S15	15 Winter	100	+10%					118.703
S1.008	S16	15 Winter	100	+10%					118.329
S1.009	S17	15 Winter	100	+10%	100/15 Summer				117.064

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

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	0.590	0.000	0.29			20.9	SURCHARGED	
S1.001	S2	1.107	0.000	1.16			83.6	FLOOD RISK	
S1.002	S3	0.586	0.000	0.96			131.6	SURCHARGED	
S2.000	S4	0.512	0.000	0.96			65.9	SURCHARGED	
S1.003	S5	1.356	0.000	1.61			204.3	SURCHARGED	
S1.004	S6	0.538	0.000	1.65			211.7	SURCHARGED	
S1.005	S7	0.515	0.000	1.81			217.8	SURCHARGED	
S3.000	S9	0.339	0.000	0.88			54.0	SURCHARGED	
S3.001	S9	0.566	0.000	0.96			73.6	SURCHARGED	
S3.002	S10	0.641	0.000	1.34			83.7	SURCHARGED	
S3.003	S11	0.493	0.000	1.68			99.3	SURCHARGED	
S3.004	S12	0.095	0.000	0.42			57.8	SURCHARGED	
S1.006	S13	0.286	0.000	0.18			34.9	SURCHARGED	
S4.000	S14	-0.028	0.000	1.00			86.6	OK	
S5.000	S15A	0.179	0.000	1.30			51.8	SURCHARGED	
S1.007	S15	-0.129	0.000	0.84			224.6	OK	
S1.008	S16	-0.048	0.000	1.00			240.3	OK	
S1.009	S17	0.022	0.000	0.93			251.5	SURCHARGED	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S6.000	S18	15 Winter	100	+10%				
S1.010	S19	15 Winter	100	+10%	100/15 Summer			
S1.011	S20	15 Winter	100	+10%	100/15 Summer			
S1.012	S21A	15 Winter	100	+10%	30/15 Summer			
S7.000	S21B	15 Winter	100	+10%	5/15 Summer			
S1.013	S21	15 Winter	100	+10%	5/15 Summer			
S1.014	S21C	15 Winter	100	+10%	100/15 Summer			
S8.000	S22	15 Winter	100	+10%	100/15 Winter			
S8.001	S23	15 Winter	100	+10%	100/15 Summer			
S9.000	S24	15 Winter	100	+10%				
S9.001	S25	15 Winter	100	+10%	100/15 Summer			
S8.002	S26	15 Winter	100	+10%	30/15 Summer			
S8.003	S27	15 Winter	100	+10%	30/15 Summer			
S10.000	S28	15 Winter	100	+10%	30/15 Summer			
S8.004	S29	15 Winter	100	+10%	5/15 Winter			
S8.005	S30	15 Winter	100	+10%				
S8.006	S31	15 Winter	100	+10%				
S8.007	S32	15 Winter	100	+10%	100/15 Summer			
S1.015	S33	15 Winter	100	+10%	100/15 Summer			
S1.016	S34	15 Winter	100	+10%	100/15 Summer			
S11.000	SAHPR TANK	60 Winter	100	+10%	5/15 Winter			
S1.017	S34A	30 Winter	100	+10%	5/15 Summer			
S1.018	S35	30 Winter	100	+10%	30/15 Summer			
S1.019	S36	30 Winter	100	+10%	5/15 Summer			
S12.000	S49	15 Winter	100	+10%	30/15 Summer			
S13.000	S46	15 Winter	100	+10%	30/15 Summer			
S13.001	S47	15 Winter	100	+10%	30/15 Summer			
S13.002	S48	15 Winter	100	+10%	30/15 Summer			
S12.001	S50	15 Winter	100	+10%	5/15 Winter			
S12.002	S51	15 Winter	100	+10%	100/15 Summer			
S14.000	S52	15 Winter	100	+10%	30/15 Summer			
S12.003	S53	15 Winter	100	+10%	30/15 Summer			
S15.000	S54	15 Summer	100	+10%				
S12.004	S55	15 Winter	100	+10%	100/15 Winter			
S16.000	S56	15 Winter	100	+10%				
S16.001	S57	15 Winter	100	+10%				
S16.002	S58	15 Winter	100	+10%	30/15 Summer			
S12.005	S59	15 Winter	100	+10%	30/15 Summer			
S12.006	S60	15 Winter	100	+10%	100/15 Summer			
S12.007	S61	15 Winter	100	+10%	30/15 Summer			
S12.008	S61	15 Winter	100	+10%	100/15 Winter			
S12.009	S62	15 Winter	100	+10%	30/15 Summer			
S17.000	S63	15 Winter	100	+10%				
S17.001	S64	15 Summer	100	+10%				
S18.000	S54B	15 Summer	100	+10%				
S18.001	S59	15 Winter	100	+10%	100/15 Summer			
S18.002	S60	15 Winter	100	+10%	30/15 Winter			
S17.002	S58	15 Winter	100	+10%	5/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S6.000	S18	119.346	-0.081	0.000	0.73			68.0	OK
S1.010	S19	116.862	0.049	0.000	1.07			339.9	SURCHARGED
S1.011	S20	115.238	0.407	0.000	0.96			375.6	SURCHARGED
S1.012	S21A	114.789	0.979	0.000	1.54			357.4	SURCHARGED
S7.000	S21B	114.423	0.798	0.000	0.43			17.9	SURCHARGED
S1.013	S21	114.400	0.760	0.000	2.07			368.2	SURCHARGED
S1.014	S21C	114.008	0.468	0.000	0.88			362.2	SURCHARGED
S8.000	S22	117.460	0.022	0.000	0.95			65.0	SURCHARGED
S8.001	S23	116.832	0.332	0.000	0.50			75.2	SURCHARGED
S9.000	S24	117.686	-0.104	0.000	0.56			51.2	OK
S9.001	S25	116.983	0.243	0.000	0.72			69.7	SURCHARGED
S8.002	S26	116.646	0.636	0.000	0.90			138.6	SURCHARGED
S8.003	S27	116.337	0.707	0.000	1.20			146.8	SURCHARGED
S10.000	S28	117.298	0.517	0.000	0.95			68.0	SURCHARGED
S8.004	S29	115.904	0.570	0.000	1.68			220.5	SURCHARGED
S8.005	S30	115.067	-0.045	0.000	1.00			251.4	OK
S8.006	S31	114.464	-0.089	0.000	0.92			281.8	OK
S8.007	S32	113.815	0.336	0.000	0.88			283.1	SURCHARGED
S1.015	S33	113.610	0.607	0.000	1.09			635.9	SURCHARGED
S1.016	S34	112.089	0.436	0.000	0.93			635.0	SURCHARGED
S11.000	SAHPR TANK	110.255	1.205	0.000	0.47			81.5	SURCHARGED
S1.017	S34A	110.432	1.482	0.000	0.58			216.8	SURCHARGED
S1.018	S35	109.009	0.652	0.000	1.07			215.4	SURCHARGED
S1.019	S36	107.446	0.505	0.000	1.64			215.6	SURCHARGED
S12.000	S49	126.136	0.739	0.000	0.74			28.2	SURCHARGED
S13.000	S46	127.897	0.509	0.000	0.64			31.5	SURCHARGED
S13.001	S47	127.808	0.628	0.000	0.78			42.8	SURCHARGED
S13.002	S48	127.692	0.662	0.000	1.28			89.9	SURCHARGED
S12.001	S50	126.026	0.827	0.000	1.65			160.7	SURCHARGED
S12.002	S51	124.788	0.039	0.000	1.06			166.6	SURCHARGED
S14.000	S52	123.999	0.371	0.000	0.92			35.2	SURCHARGED
S12.003	S53	123.770	0.392	0.000	1.51			204.1	SURCHARGED
S15.000	S54	124.187	-0.062	0.000	0.87			85.7	OK
S12.004	S55	123.085	0.019	0.000	1.02			280.2	SURCHARGED
S16.000	S56	123.090	-0.114	0.000	0.49			29.2	OK
S16.001	S57	122.588	-0.153	0.000	0.48			62.9	OK
S16.002	S58	122.421	0.343	0.000	0.53			56.3	SURCHARGED
S12.005	S59	122.350	0.334	0.000	1.51			339.4	SURCHARGED
S12.006	S60	121.989	0.133	0.000	0.92			359.5	SURCHARGED
S12.007	S61	121.577	0.201	0.000	1.65			410.7	SURCHARGED
S12.008	S61	121.301	0.005	0.000	0.96			428.6	SURCHARGED
S12.009	S62	120.917	0.724	0.000	1.44			437.7	SURCHARGED
S17.000	S63	127.274	-0.124	0.000	0.42			41.7	OK
S17.001	S64	125.906	-0.081	0.000	0.73			68.5	OK
S18.000	S54B	126.330	-0.225	0.000	0.00			0.0	OK
S18.001	S59	125.397	0.693	0.000	0.31			11.4	SURCHARGED
S18.002	S60	125.394	0.789	0.000	0.39			28.0	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.002	S58	125.358	1.289	0.000	1.74			56.8	SURCHARGED

PN	US/MH Name	Level Exceeded
S6.000	S18	
S1.010	S19	
S1.011	S20	
S1.012	S21A	
S7.000	S21B	
S1.013	S21	
S1.014	S21C	
S8.000	S22	
S8.001	S23	
S9.000	S24	
S9.001	S25	
S8.002	S26	
S8.003	S27	
S10.000	S28	
S8.004	S29	
S8.005	S30	
S8.006	S31	
S8.007	S32	
S1.015	S33	
S1.016	S34	
S11.000	SAHPR TANK	
S1.017	S34A	
S1.018	S35	
S1.019	S36	
S12.000	S49	
S13.000	S46	
S13.001	S47	
S13.002	S48	
S12.001	S50	
S12.002	S51	
S14.000	S52	
S12.003	S53	
S15.000	S54	
S12.004	S55	
S16.000	S56	
S16.001	S57	
S16.002	S58	
S12.005	S59	
S12.006	S60	
S12.007	S61	
S12.008	S61	

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

PN	US/MH Name	Level Exceeded
S12.009	S62	
S17.000	S63	
S17.001	S64	
S18.000	S54B	
S18.001	S59	
S18.002	S60	
S17.002	S58	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S17.003	S65	15 Winter	100	+10%	30/15 Summer			
S17.004	S66	15 Winter	100	+10%	5/15 Summer			
S12.010	S68	15 Winter	100	+10%	30/15 Summer			
S12.011	S67	15 Winter	100	+10%	30/15 Summer			
S19.000	S68	15 Winter	100	+10%				
S19.001	S69	15 Winter	100	+10%	100/15 Summer			
S12.012	S71	15 Winter	100	+10%	30/15 Summer			
S12.013	S72	60 Winter	100	+10%	100/60 Winter			
S12.014	S72A	60 Winter	100	+10%	30/15 Winter			
S20.000	S2	15 Winter	100	+10%				
S20.001	S3	15 Winter	100	+10%	100/15 Summer			
S20.002	S4	15 Winter	100	+10%				
S20.003	S5	15 Winter	100	+10%	30/15 Summer			
S21.000	S6	15 Winter	100	+10%				
S21.001	S7	15 Winter	100	+10%				
S21.002	S8	15 Winter	100	+10%				
S20.004	S9	15 Winter	100	+10%	100/15 Summer			
S20.005	S10	15 Winter	100	+10%	30/15 Summer			
S22.000	S1	15 Winter	100	+10%	30/15 Summer			
S20.006	S11	15 Winter	100	+10%	100/15 Summer			
S23.000	S12	15 Winter	100	+10%	30/15 Summer			
S23.001	S13	15 Winter	100	+10%	30/15 Summer			
S20.007	S14	15 Winter	100	+10%	30/15 Summer			
S24.000	S15	15 Winter	100	+10%	100/15 Summer			
S24.001	S16	15 Winter	100	+10%				
S20.008	S17	15 Winter	100	+10%	30/15 Summer			
S20.009	S19	15 Winter	100	+10%	30/15 Summer			
S20.010	S20	15 Winter	100	+10%	30/15 Summer			
S20.011	S21	15 Winter	100	+10%	30/15 Summer			
S25.000	S22	15 Winter	100	+10%				
S20.012	S23	15 Winter	100	+10%	30/15 Summer			
S20.013	S24	30 Winter	100	+10%	100/15 Summer			
S20.014	S25	30 Winter	100	+10%	100/15 Summer			
S20.015	S26	30 Winter	100	+10%	5/15 Summer			
S20.016	S27	30 Winter	100	+10%	5/15 Summer			
S26.000	S29	15 Winter	100	+10%	30/15 Summer			
S26.001	S30	15 Winter	100	+10%	30/15 Summer			
S26.002	S31	15 Winter	100	+10%	5/15 Summer			
S26.003	S32	15 Winter	100	+10%				
S26.004	S33	15 Winter	100	+10%				
S26.005	S34	15 Winter	100	+10%				
S27.000	S35	15 Winter	100	+10%				
S26.006	S36	15 Winter	100	+10%				
S26.007	S37	30 Winter	100	+10%	100/15 Winter			
S20.017	S37	30 Winter	100	+10%	30/15 Summer			
S20.018	S37A	30 Winter	100	+10%	5/15 Summer	100/30 Winter		
S20.019	S41	30 Winter	100	+10%	30/15 Summer			
S28.000	S40	15 Winter	100	+10%	100/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S17.003	S65	125.213	1.206	0.000	1.45			71.1	SURCHARGED
S17.004	S66	124.629	2.792	0.000	2.45			122.3	SURCHARGED
S12.010	S68	120.732	0.598	0.000	1.53			590.5	SURCHARGED
S12.011	S67	120.178	0.276	0.000	1.84			637.8	SURCHARGED
S19.000	S68	122.196	-0.046	0.000	0.94			107.1	OK
S19.001	S69	120.203	0.386	0.000	1.11			100.4	SURCHARGED
S12.012	S71	119.752	0.322	0.000	1.51			774.9	SURCHARGED
S12.013	S72	119.372	0.203	0.000	0.61			600.4	SURCHARGED
S12.014	S72A	119.047	0.922	0.000	0.78			301.6	SURCHARGED
S20.000	S2	138.348	-0.035	0.000	0.97			77.7	OK
S20.001	S3	136.920	0.103	0.000	1.02			173.1	SURCHARGED
S20.002	S4	134.432	-0.115	0.000	0.81			226.5	OK
S20.003	S5	133.469	0.122	0.000	2.15			230.0	SURCHARGED
S21.000	S6	135.683	-0.080	0.000	0.74			58.1	OK
S21.001	S7	134.416	-0.161	0.000	0.43			67.7	OK
S21.002	S8	134.054	-0.136	0.000	0.57			97.2	OK
S20.004	S9	133.240	0.068	0.000	0.92			378.8	SURCHARGED
S20.005	S10	132.457	0.197	0.000	1.36			382.8	SURCHARGED
S22.000	S1	134.502	0.464	0.000	1.11			84.6	SURCHARGED
S20.006	S11	132.004	0.494	0.000	1.12			474.9	SURCHARGED
S23.000	S12	130.894	0.675	0.000	1.43			51.7	SURCHARGED
S23.001	S13	130.804	0.707	0.000	0.59			101.0	SURCHARGED
S20.007	S14	130.673	0.811	0.000	1.56			562.9	SURCHARGED
S24.000	S15	133.320	0.199	0.000	1.15			76.8	SURCHARGED
S24.001	S16	132.426	-0.076	0.000	0.89			153.8	OK
S20.008	S17	130.108	1.154	0.000	1.21			723.2	SURCHARGED
S20.009	S19	128.256	0.577	0.000	1.40			719.2	SURCHARGED
S20.010	S20	127.936	0.420	0.000	1.28			723.2	SURCHARGED
S20.011	S21	127.609	0.292	0.000	1.32			726.1	SURCHARGED
S25.000	S22	129.467	-0.062	0.000	0.87			87.3	OK
S20.012	S23	127.285	0.155	0.000	1.41			769.0	SURCHARGED
S20.013	S24	126.681	0.136	0.000	1.13			743.1	SURCHARGED
S20.014	S25	126.346	1.093	0.000	0.62			746.8	SURCHARGED
S20.015	S26	126.000	1.635	0.000	2.13			772.2	FLOOD RISK
S20.016	S27	125.490	1.235	0.000	1.99			779.8	FLOOD RISK
S26.000	S29	137.829	1.054	0.000	0.57			39.6	SURCHARGED
S26.001	S30	137.749	1.524	0.000	0.95			58.4	FLOOD RISK
S26.002	S31	137.368	1.643	0.000	1.47			114.7	FLOOD RISK
S26.003	S32	134.055	-0.249	0.000	0.40			175.7	OK
S26.004	S33	131.704	-0.216	0.000	0.52			210.5	OK
S26.005	S34	130.015	-0.170	0.000	0.69			241.4	OK
S27.000	S35	130.349	-0.075	0.000	0.78			57.1	OK
S26.006	S36	127.970	-0.123	0.000	0.86			357.6	OK
S26.007	S37	125.480	0.271	0.000	0.84			355.7	SURCHARGED
S20.017	S37	125.126	1.635	0.000	0.99			1070.1	SURCHARGED
S20.018	S37A	124.153	1.728	2.805	2.14			1052.2	FLOOD
S20.019	S41	123.478	1.203	0.000	1.03			1055.9	FLOOD RISK

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S28.000	S40	124.775	0.050	0.000	1.08			40.3	SURCHARGED

PN	US/MH Name	Level Exceeded
S17.003	S65	
S17.004	S66	
S12.010	S68	
S12.011	S67	
S19.000	S68	
S19.001	S69	
S12.012	S71	
S12.013	S72	
S12.014	S72A	
S20.000	S2	
S20.001	S3	
S20.002	S4	
S20.003	S5	
S21.000	S6	
S21.001	S7	
S21.002	S8	
S20.004	S9	
S20.005	S10	
S22.000	S1	
S20.006	S11	
S23.000	S12	
S23.001	S13	
S20.007	S14	
S24.000	S15	
S24.001	S16	
S20.008	S17	
S20.009	S19	
S20.010	S20	
S20.011	S21	
S25.000	S22	
S20.012	S23	
S20.013	S24	
S20.014	S25	
S20.015	S26	
S20.016	S27	
S26.000	S29	
S26.001	S30	
S26.002	S31	
S26.003	S32	
S26.004	S33	
S26.005	S34	

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

PN	US/MH Name	Level Exceeded
S27.000	S35	
S26.006	S36	
S26.007	S37	
S20.017	S37	
S20.018	S37A	1
S20.019	S41	6
S28.000	S40	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S28.001	S40A	15 Winter	100	+10%					124.332
S28.002	S41	15 Winter	100	+10%	5/15 Summer				123.003
S20.020	S42A	30 Winter	100	+10%	5/15 Summer				122.793
S20.021	S42	30 Winter	100	+10%	5/15 Summer				122.044
S20.022	S43	60 Winter	100	+10%	30/30 Winter				121.561
S29.000	S44	15 Winter	100	+10%					121.363
S20.023	S45	60 Winter	100	+10%	100/30 Summer				120.727
S20.024	S79	60 Winter	100	+10%	5/30 Winter				117.001

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m^3)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S28.001	S40A	-0.143	0.000	0.29			40.3	OK	
S28.002	S41	0.468	0.000	2.21			76.1	SURCHARGED	
S20.020	S42A	1.168	0.000	2.35			1094.8	SURCHARGED	
S20.021	S42	0.444	0.000	2.04			1090.3	SURCHARGED	
S20.022	S43	0.261	0.000	0.56			449.9	SURCHARGED	
S29.000	S44	-0.043	0.000	0.96			69.7	OK	
S20.023	S45	0.257	0.000	1.09			464.0	SURCHARGED	
S20.024	S79	0.182	0.000	1.96			464.0	SURCHARGED	