STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	20.000	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
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.	1.000	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Storm

- Indicates pipe length does not match coordinates
« - Indicates pipe capacity < flow

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	13.053	0.130	100.4	0.017	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.001	14.474	0.225	64.3	0.017	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.002	13.479	0.345	39.1	0.026	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.003	17.183	0.150	114.6	0.028	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.004	26.243	0.160	164.0	0.013	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.005	15.858	0.100	158.6	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.006	15.249	0.100	152.5	0.040	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.007	15.552	0.090	172.8	0.021	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.008	16.353	0.070	233.6	0.024	0.00	0.0	0.600	o	300	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	5.22	109.800	0.017	0.0	0.0	0.0	1.00	17.7	3.1
S1.001	50.00	5.41	109.670	0.034	0.0	0.0	0.0	1.26	22.2	6.1
S1.002	50.00	5.55	109.445	0.060	0.0	0.0	0.0	1.62	28.5	10.8
S1.003	50.00	5.85	109.100	0.088	0.0	0.0	0.0	0.94	16.6	15.9
S1.004	50.00	6.28	108.875	0.101	0.0	0.0	0.0	1.02	40.5	18.2
S1.005	50.00	6.54	108.715	0.101	0.0	0.0	0.0	1.04	41.2	18.2
S1.006	50.00	6.78	108.615	0.141	0.0	0.0	0.0	1.06	42.0	25.5
S1.007	50.00	7.04	108.515	0.162	0.0	0.0	0.0	0.99	39.4	29.2
S1.008	50.00	7.31	108.350	0.186	0.0	0.0	0.0	1.02	72.4	33.6

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Network Design Table for Storm

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
S2.000	29.122	1.025	28.4	0.042	5.00	0.0	0.600	o	150	Pipe/Conduit	
S1.009	15.217	0.065	234.1	0.053	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.010	11.845	0.050	236.9	0.025	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.011	6.592	0.030	219.7	0.029	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.012	11.183	0.050	223.7	0.020	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.013	13.283	0.060	221.4	0.021	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.014	15.080	0.065	232.0	0.040	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.015	24.694	0.670	36.9	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.016	43.802	0.115	380.9	0.091	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.017	18.704	0.050	374.1	0.020	0.00	0.0	0.600	o	450	Pipe/Conduit	
S3.000	19.620	0.120	163.5	0.031	5.00	0.0	0.600	o	225	Pipe/Conduit	
S3.001	16.931	0.105	161.2	0.060	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.002	13.585	0.085	159.8	0.055	0.00	0.0	0.600	o	225	Pipe/Conduit	
S3.003	16.191	0.070	231.3	0.063	0.00	0.0	0.600	o	300	Pipe/Conduit	
S3.004	12.101	0.260	46.5	0.050	0.00	0.0	0.600	o	300	Pipe/Conduit	
S3.005	24.644	1.975	12.5	0.050	0.00	0.0	0.600	o	300	Pipe/Conduit	
S4.000	27.104	0.310	87.4	0.083	5.00	0.0	0.600	o	150	Pipe/Conduit	
S4.001	26.429	0.405	65.3	0.041	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)
S2.000	50.00	5.26	109.455	0.042	0.0	0.0	0.0	1.90	33.5	7.6
S1.009	50.00	7.55	108.280	0.281	0.0	0.0	0.0	1.02	72.3	50.7
S1.010	50.00	7.75	108.215	0.306	0.0	0.0	0.0	1.02	71.9	55.2
S1.011	50.00	7.85	108.165	0.335	0.0	0.0	0.0	1.06	74.7	60.5
S1.012	50.00	8.03	108.135	0.355	0.0	0.0	0.0	1.05	74.0	64.1
S1.013	50.00	8.24	108.085	0.376	0.0	0.0	0.0	1.05	74.4	67.9
S1.014	50.00	8.48	108.025	0.416	0.0	0.0	0.0	1.03	72.7«	75.1
S1.015	50.00	8.61	107.810	0.416	0.0	0.0	0.0	3.36	534.0	75.1
S1.016	50.00	9.31	107.140	0.507	0.0	0.0	0.0	1.04	164.7	91.5
S1.017	50.00	9.61	107.025	0.527	0.0	0.0	0.0	1.05	166.2	95.1
S3.000	50.00	5.32	109.815	0.031	0.0	0.0	0.0	1.02	40.5	5.6
S3.001	50.00	5.60	109.695	0.091	0.0	0.0	0.0	1.03	40.8	16.4
S3.002	50.00	5.81	109.590	0.146	0.0	0.0	0.0	1.03	41.0	26.4
S3.003	50.00	6.08	109.430	0.209	0.0	0.0	0.0	1.03	72.8	37.7
S3.004	50.00	6.16	109.360	0.259	0.0	0.0	0.0	2.31	163.3	46.8
S3.005	50.00	6.26	109.100	0.309	0.0	0.0	0.0	4.47	316.3	55.8
S4.000	50.00	5.42	107.990	0.083	0.0	0.0	0.0	1.08	19.0	15.0
S4.001	50.00	5.69	107.605	0.124	0.0	0.0	0.0	1.62	64.5	22.4

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Network Design Table for Storm

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
S1.018	13.160	0.125	105.3	0.034	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.019	35.784	0.250	143.1	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.020	5.000#	0.250	20.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S5.000	60.882	0.365	166.8	0.075	5.00	0.0	0.600	o	225	Pipe/Conduit	
S6.000	21.832	0.435	50.2	0.032	5.00	0.0	0.600	o	225	Pipe/Conduit	
S5.001	17.930	0.110	163.0	0.010	0.00	0.0	0.600	o	225	Pipe/Conduit	
S5.002	19.389	0.120	161.6	0.075	0.00	0.0	0.600	o	225	Pipe/Conduit	
S5.003	12.475	0.075	166.3	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S7.000	18.869	0.190	99.3	0.046	5.00	0.0	0.600	o	225	Pipe/Conduit	
S7.001	23.156	0.215	107.7	0.037	0.00	0.0	0.600	o	225	Pipe/Conduit	
S5.004	25.555	0.410	62.3	0.045	0.00	0.0	0.600	o	300	Pipe/Conduit	
S5.005	23.679	0.835	28.4	0.049	0.00	0.0	0.600	o	300	Pipe/Conduit	
S8.000	36.074	0.850	42.4	0.132	5.00	0.0	0.600	o	225	Pipe/Conduit	
S8.001	25.046	0.300	83.5	0.055	0.00	0.0	0.600	o	300	Pipe/Conduit	
S9.000	52.449	1.360	38.6	0.071	5.00	0.0	0.600	o	150	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)
S1.018	50.00	9.70	106.825	0.994	0.0	0.0	0.0	2.37	671.0	179.5
S1.019	50.00	10.00	106.700	0.994	0.0	0.0	0.0	2.03	575.0	179.5
S1.020	50.00	10.01	106.450	0.994	0.0	0.0	0.0	5.46	1544.3	179.5
S5.000	50.00	6.01	109.640	0.075	0.0	0.0	0.0	1.01	40.1	13.5
S6.000	50.00	5.20	109.710	0.032	0.0	0.0	0.0	1.85	73.6	5.8
S5.001	50.00	6.30	109.275	0.117	0.0	0.0	0.0	1.02	40.6	21.1
S5.002	50.00	6.61	109.165	0.192	0.0	0.0	0.0	1.03	40.8	34.7
S5.003	50.00	6.82	109.045	0.192	0.0	0.0	0.0	1.01	40.2	34.7
S7.000	50.00	5.24	109.375	0.046	0.0	0.0	0.0	1.31	52.2	8.3
S7.001	50.00	5.55	109.185	0.083	0.0	0.0	0.0	1.26	50.1	15.0
S5.004	50.00	7.03	108.895	0.320	0.0	0.0	0.0	1.99	141.0	57.8
S5.005	50.00	7.17	108.485	0.369	0.0	0.0	0.0	2.96	209.5	66.6
S8.000	50.00	5.30	108.965	0.132	0.0	0.0	0.0	2.01	80.1	23.8
S8.001	50.00	5.54	108.040	0.187	0.0	0.0	0.0	1.72	121.7	33.8
S9.000	50.00	5.54	109.250	0.071	0.0	0.0	0.0	1.63	28.7	12.8

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Network Design Table for Storm

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	9.594	0.090	106.6	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S5.006	7.884	0.300	26.3	0.019	0.00	0.0	0.600	o	375	Pipe/Conduit	
S5.007	30.800	0.620	49.7	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S10.000	19.652	0.540	36.4	0.032	5.00	0.0	0.600	o	150	Pipe/Conduit	
S10.001	12.367	0.330	37.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S5.008	24.710	0.155	159.4	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S5.009	5.000#	0.300	16.7	0.000	0.00	0.0	0.600	o	375	Pipe/Conduit	
S1.021	7.078	0.100	70.8	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.022	95.626	5.150	18.6	0.000	0.00	0.0	0.600	o	150	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	50.00	5.65	107.740	0.258	0.0	0.0	0.0	1.52	107.6	46.6
S5.006	50.00	7.20	107.575	0.646	0.0	0.0	0.0	3.55	391.7	116.6
S5.007	50.00	7.40	107.275	0.646	0.0	0.0	0.0	2.58	284.5	116.6
S10.000	50.00	5.20	107.750	0.032	0.0	0.0	0.0	1.67	29.6	5.8
S10.001	50.00	5.32	107.210	0.032	0.0	0.0	0.0	1.65	29.1	5.8
S5.008	50.00	7.69	106.655	0.678	0.0	0.0	0.0	1.43	158.2	122.4
S5.009	50.00	7.71	106.500	0.678	0.0	0.0	0.0	4.46	492.3	122.4
S1.021	49.99	10.11	106.200	1.672	0.0	0.0	0.0	1.20	21.1«	301.8
S1.022	48.27	10.79	106.100	1.672	0.0	0.0	0.0	2.35	41.5«	301.8

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Manhole Schedules for Storm

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)
SW01	111.150	1.350	Open Manhole	1200	S1.000	109.800	150				
SW02	111.020	1.350	Open Manhole	1200	S1.001	109.670	150	S1.000	109.670	150	
SW03	110.795	1.350	Open Manhole	1200	S1.002	109.445	150	S1.001	109.445	150	
SW04	110.450	1.350	Open Manhole	1200	S1.003	109.100	150	S1.002	109.100	150	
SW05	110.325	1.450	Open Manhole	1200	S1.004	108.875	225	S1.003	108.950	150	
SW06	110.155	1.440	Open Manhole	1200	S1.005	108.715	225	S1.004	108.715	225	
SW07	110.335	1.720	Open Manhole	1200	S1.006	108.615	225	S1.005	108.615	225	
SW08	110.135	1.620	Open Manhole	1200	S1.007	108.515	225	S1.006	108.515	225	
SW09	109.995	1.645	Open Manhole	1200	S1.008	108.350	300	S1.007	108.425	225	
SW10	110.805	1.350	Open Manhole	1200	S2.000	109.455	150				
SW11	110.075	1.795	Open Manhole	1200	S1.009	108.280	300	S1.008	108.280	300	
								S2.000	108.430	150	
SW12	109.950	1.735	Open Manhole	1200	S1.010	108.215	300	S1.009	108.215	300	
SW13	109.885	1.720	Open Manhole	1200	S1.011	108.165	300	S1.010	108.165	300	
SW14	109.825	1.690	Open Manhole	1200	S1.012	108.135	300	S1.011	108.135	300	
SW15	109.730	1.645	Open Manhole	1200	S1.013	108.085	300	S1.012	108.085	300	
SW16	109.585	1.560	Open Manhole	1200	S1.014	108.025	300	S1.013	108.025	300	
SW17	109.235	1.425	Open Manhole	1500	S1.015	107.810	450	S1.014	107.960	300	
SW18	108.490	1.350	Open Manhole	1500	S1.016	107.140	450	S1.015	107.140	450	
SW19	109.515	2.490	Open Manhole	1500	S1.017	107.025	450	S1.016	107.025	450	
SW20	111.240	1.425	Open Manhole	1200	S3.000	109.815	225				
SW21	111.450	1.755	Open Manhole	1200	S3.001	109.695	225	S3.000	109.695	225	
SW22	111.500	1.910	Open Manhole	1200	S3.002	109.590	225	S3.001	109.590	225	
SW23	111.345	1.915	Open Manhole	1200	S3.003	109.430	300	S3.002	109.505	225	
SW24	111.035	1.675	Open Manhole	1200	S3.004	109.360	300	S3.003	109.360	300	
SW25	110.600	1.500	Open Manhole	1200	S3.005	109.100	300	S3.004	109.100	300	
SW26	109.340	1.350	Open Manhole	1200	S4.000	107.990	150				
SW27	109.650	2.045	Open Manhole	1200	S4.001	107.605	225	S4.000	107.680	150	
SW28	109.700	2.875	Open Manhole	1500	S1.018	106.825	600	S1.017	106.975	450	
								S3.005	107.125	300	
								S4.001	107.200	225	
SW29	109.200	2.500	Open Manhole	1500	S1.019	106.700	600	S1.018	106.700	600	
SW30	107.800	1.350	Open Manhole	1500	S1.020	106.450	600	S1.019	106.450	600	
HD31	111.065	1.425	Open Manhole	1200	S5.000	109.640	225				
HD32	111.135	1.425	Open Manhole	1200	S6.000	109.710	225				
HD33	111.050	1.775	Open Manhole	1200	S5.001	109.275	225	S5.000	109.275	225	
								S6.000	109.275	225	
SW34	110.810	1.645	Open Manhole	1200	S5.002	109.165	225	S5.001	109.165	225	

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Manhole Schedules for Storm

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)
SW35	110.610	1.565	Open Manhole	1200	S5.003	109.045	225	S5.002	109.045	225	
SW36	110.800	1.425	Open Manhole	1200	S7.000	109.375	225				
SW37	110.700	1.515	Open Manhole	1200	S7.001	109.185	225	S7.000	109.185	225	
SW38	110.460	1.565	Open Manhole	1200	S5.004	108.895	300	S5.003	108.970	225	
								S7.001	108.970	225	
SW39	109.985	1.500	Open Manhole	1200	S5.005	108.485	300	S5.004	108.485	300	
SW40	110.390	1.425	Open Manhole	1200	S8.000	108.965	225				
SW41	109.550	1.510	Open Manhole	1200	S8.001	108.040	300	S8.000	108.115	225	
SW42	110.450	1.200	Open Manhole	1200	S9.000	109.250	150				
SW43	109.240	1.500	Open Manhole	1200	S8.002	107.740	300	S8.001	107.740	300	
								S9.000	107.890	150	
SW44	109.150	1.575	Open Manhole	1500	S5.006	107.575	375	S5.005	107.650	300	
								S8.002	107.650	300	
SW45	108.980	1.705	Open Manhole	1500	S5.007	107.275	375	S5.006	107.275	375	
SW46	109.100	1.350	Open Manhole	1200	S10.000	107.750	150				
SW47	108.560	1.350	Open Manhole	1200	S10.001	107.210	150	S10.000	107.210	150	
SW48	107.930	1.275	Open Manhole	1500	S5.008	106.655	375	S5.007	106.655	375	
								S10.001	106.880	150	
SW49	107.800	1.300	Open Manhole	1500	S5.009	106.500	375	S5.008	106.500	375	
SW50	107.800	1.600	Open Manhole	1500	S1.021	106.200	150	S1.020	106.200	600	
								S5.009	106.200	375	
SW51	107.800	1.700	Open Manhole	1200	S1.022	106.100	150	S1.021	106.100	150	
	102.500	1.550	Open Manhole	0		OUTFALL		S1.022	100.950	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW01	450529.383	306444.725	450529.383	306444.725	Required	
SW02	450517.257	306449.555	450517.257	306449.555	Required	
SW03	450503.772	306454.813	450503.772	306454.813	Required	
SW04	450491.200	306459.675	450491.200	306459.675	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW05	450475.182	306465.895	450475.182	306465.895	Required	
SW06	450465.787	306441.391	450465.787	306441.391	Required	
SW07	450471.048	306426.432	450471.048	306426.432	Required	
SW08	450465.412	306412.263	450465.412	306412.263	Required	
SW09	450463.938	306396.781	450463.938	306396.781	Required	
SW10	450495.462	306386.928	450495.462	306386.928	Required	
SW11	450467.010	306380.719	450467.010	306380.719	Required	
SW12	450470.286	306365.859	450470.286	306365.859	Required	
SW13	450478.322	306357.156	450478.322	306357.156	Required	
SW14	450482.398	306351.976	450482.398	306351.976	Required	
SW15	450489.536	306343.368	450489.536	306343.368	Required	
SW16	450497.331	306332.613	450497.331	306332.613	Required	
SW17	450499.854	306317.746	450499.854	306317.746	Required	
SW18	450515.601	306298.724	450515.601	306298.724	Required	
SW19	450550.771	306324.834	450550.771	306324.834	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW20	450530.236	306424.537	450530.236	306424.537	Required	
SW21	450522.954	306406.318	450522.954	306406.318	Required	
SW22	450525.938	306389.653	450525.938	306389.653	Required	
SW23	450533.918	306378.658	450533.918	306378.658	Required	
SW24	450543.641	306365.711	450543.641	306365.711	Required	
SW25	450550.945	306356.063	450550.945	306356.063	Required	
SW26	450608.010	306368.898	450608.010	306368.898	Required	
SW27	450586.424	306352.507	450586.424	306352.507	Required	
SW28	450565.591	306336.244	450565.591	306336.244	Required	
SW29	450573.635	306325.829	450573.635	306325.829	Required	
SW30	450609.393	306324.450	450609.393	306324.450	Required	
HD31	450558.632	306511.515	450558.632	306511.515	Required	
HD32	450535.199	306432.676	450535.199	306432.676	Required	
HD33	450545.024	306452.173	450545.024	306452.173	Required	
SW34	450561.391	306444.850	450561.391	306444.850	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW35	450578.970	306436.669	450578.970	306436.669	Required	
SW36	450567.235	306397.512	450567.235	306397.512	Required	
SW37	450581.149	306410.257	450581.149	306410.257	Required	
SW38	450590.330	306431.515	450590.330	306431.515	Required	
SW39	450613.518	306420.774	450613.518	306420.774	Required	
SW40	450633.971	306475.844	450633.971	306475.844	Required	
SW41	450648.979	306443.040	450648.979	306443.040	Required	
SW42	450591.277	306442.097	450591.277	306442.097	Required	
SW43	450638.896	306420.113	450638.896	306420.113	Required	
SW44	450635.201	306411.259	450635.201	306411.259	Required	
SW45	450642.248	306407.723	450642.248	306407.723	Required	
SW46	450648.884	306415.329	450648.884	306415.329	Required	
SW47	450666.611	306406.845	450666.611	306406.845	Required	
SW48	450670.318	306395.047	450670.318	306395.047	Required	
SW49	450670.854	306370.342	450670.854	306370.342	Required	

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Manhole Schedules for Storm

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
SW50	450631.834	306316.740	450631.834	306316.740	Required	
SW51	450634.264	306310.092	450634.264	306310.092	Required	
	450707.730	306248.880			No Entry	

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PIPELINE SCHEDULES for Storm

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	o	150	SW01	111.150	109.800	1.200	Open Manhole	1200
S1.001	o	150	SW02	111.020	109.670	1.200	Open Manhole	1200
S1.002	o	150	SW03	110.795	109.445	1.200	Open Manhole	1200
S1.003	o	150	SW04	110.450	109.100	1.200	Open Manhole	1200
S1.004	o	225	SW05	110.325	108.875	1.225	Open Manhole	1200
S1.005	o	225	SW06	110.155	108.715	1.215	Open Manhole	1200
S1.006	o	225	SW07	110.335	108.615	1.495	Open Manhole	1200
S1.007	o	225	SW08	110.135	108.515	1.395	Open Manhole	1200
S1.008	o	300	SW09	109.995	108.350	1.345	Open Manhole	1200
S2.000	o	150	SW10	110.805	109.455	1.200	Open Manhole	1200
S1.009	o	300	SW11	110.075	108.280	1.495	Open Manhole	1200
S1.010	o	300	SW12	109.950	108.215	1.435	Open Manhole	1200
S1.011	o	300	SW13	109.885	108.165	1.420	Open Manhole	1200
S1.012	o	300	SW14	109.825	108.135	1.390	Open Manhole	1200
S1.013	o	300	SW15	109.730	108.085	1.345	Open Manhole	1200
S1.014	o	300	SW16	109.585	108.025	1.260	Open Manhole	1200
S1.015	o	450	SW17	109.235	107.810	0.975	Open Manhole	1500

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.000	13.053	100.4	SW02	111.020	109.670	1.200	Open Manhole	1200
S1.001	14.474	64.3	SW03	110.795	109.445	1.200	Open Manhole	1200
S1.002	13.479	39.1	SW04	110.450	109.100	1.200	Open Manhole	1200
S1.003	17.183	114.6	SW05	110.325	108.950	1.225	Open Manhole	1200
S1.004	26.243	164.0	SW06	110.155	108.715	1.215	Open Manhole	1200
S1.005	15.858	158.6	SW07	110.335	108.615	1.495	Open Manhole	1200
S1.006	15.249	152.5	SW08	110.135	108.515	1.395	Open Manhole	1200
S1.007	15.552	172.8	SW09	109.995	108.425	1.345	Open Manhole	1200
S1.008	16.353	233.6	SW11	110.075	108.280	1.495	Open Manhole	1200
S2.000	29.122	28.4	SW11	110.075	108.430	1.495	Open Manhole	1200
S1.009	15.217	234.1	SW12	109.950	108.215	1.435	Open Manhole	1200
S1.010	11.845	236.9	SW13	109.885	108.165	1.420	Open Manhole	1200
S1.011	6.592	219.7	SW14	109.825	108.135	1.390	Open Manhole	1200
S1.012	11.183	223.7	SW15	109.730	108.085	1.345	Open Manhole	1200
S1.013	13.283	221.4	SW16	109.585	108.025	1.260	Open Manhole	1200
S1.014	15.080	232.0	SW17	109.235	107.960	0.975	Open Manhole	1500
S1.015	24.694	36.9	SW18	108.490	107.140	0.900	Open Manhole	1500

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	o	450	SW18	108.490	107.140	0.900	Open Manhole	1500
S1.017	o	450	SW19	109.515	107.025	2.040	Open Manhole	1500
S3.000	o	225	SW20	111.240	109.815	1.200	Open Manhole	1200
S3.001	o	225	SW21	111.450	109.695	1.530	Open Manhole	1200
S3.002	o	225	SW22	111.500	109.590	1.685	Open Manhole	1200
S3.003	o	300	SW23	111.345	109.430	1.615	Open Manhole	1200
S3.004	o	300	SW24	111.035	109.360	1.375	Open Manhole	1200
S3.005	o	300	SW25	110.600	109.100	1.200	Open Manhole	1200
S4.000	o	150	SW26	109.340	107.990	1.200	Open Manhole	1200
S4.001	o	225	SW27	109.650	107.605	1.820	Open Manhole	1200
S1.018	o	600	SW28	109.700	106.825	2.275	Open Manhole	1500
S1.019	o	600	SW29	109.200	106.700	1.900	Open Manhole	1500
S1.020	o	600	SW30	107.800	106.450	0.750	Open Manhole	1500
S5.000	o	225	HD31	111.065	109.640	1.200	Open Manhole	1200
S6.000	o	225	HD32	111.135	109.710	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.016	43.802	380.9	SW19	109.515	107.025	2.040	Open Manhole	1500
S1.017	18.704	374.1	SW28	109.700	106.975	2.275	Open Manhole	1500
S3.000	19.620	163.5	SW21	111.450	109.695	1.530	Open Manhole	1200
S3.001	16.931	161.2	SW22	111.500	109.590	1.685	Open Manhole	1200
S3.002	13.585	159.8	SW23	111.345	109.505	1.615	Open Manhole	1200
S3.003	16.191	231.3	SW24	111.035	109.360	1.375	Open Manhole	1200
S3.004	12.101	46.5	SW25	110.600	109.100	1.200	Open Manhole	1200
S3.005	24.644	12.5	SW28	109.700	107.125	2.275	Open Manhole	1500
S4.000	27.104	87.4	SW27	109.650	107.680	1.820	Open Manhole	1200
S4.001	26.429	65.3	SW28	109.700	107.200	2.275	Open Manhole	1500
S1.018	13.160	105.3	SW29	109.200	106.700	1.900	Open Manhole	1500
S1.019	35.784	143.1	SW30	107.800	106.450	0.750	Open Manhole	1500
S1.020	5.000#	20.0	SW50	107.800	106.200	1.000	Open Manhole	1500
S5.000	60.882	166.8	HD33	111.050	109.275	1.550	Open Manhole	1200
S6.000	21.832	50.2	HD33	111.050	109.275	1.550	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S5.001	o	225	HD33	111.050	109.275	1.550	Open Manhole	1200
S5.002	o	225	SW34	110.810	109.165	1.420	Open Manhole	1200
S5.003	o	225	SW35	110.610	109.045	1.340	Open Manhole	1200
S7.000	o	225	SW36	110.800	109.375	1.200	Open Manhole	1200
S7.001	o	225	SW37	110.700	109.185	1.290	Open Manhole	1200
S5.004	o	300	SW38	110.460	108.895	1.265	Open Manhole	1200
S5.005	o	300	SW39	109.985	108.485	1.200	Open Manhole	1200
S8.000	o	225	SW40	110.390	108.965	1.200	Open Manhole	1200
S8.001	o	300	SW41	109.550	108.040	1.210	Open Manhole	1200
S9.000	o	150	SW42	110.450	109.250	1.050	Open Manhole	1200
S8.002	o	300	SW43	109.240	107.740	1.200	Open Manhole	1200
S5.006	o	375	SW44	109.150	107.575	1.200	Open Manhole	1500
S5.007	o	375	SW45	108.980	107.275	1.330	Open Manhole	1500
S10.000	o	150	SW46	109.100	107.750	1.200	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S5.001	17.930	163.0	SW34	110.810	109.165	1.420	Open Manhole	1200
S5.002	19.389	161.6	SW35	110.610	109.045	1.340	Open Manhole	1200
S5.003	12.475	166.3	SW38	110.460	108.970	1.265	Open Manhole	1200
S7.000	18.869	99.3	SW37	110.700	109.185	1.290	Open Manhole	1200
S7.001	23.156	107.7	SW38	110.460	108.970	1.265	Open Manhole	1200
S5.004	25.555	62.3	SW39	109.985	108.485	1.200	Open Manhole	1200
S5.005	23.679	28.4	SW44	109.150	107.650	1.200	Open Manhole	1500
S8.000	36.074	42.4	SW41	109.550	108.115	1.210	Open Manhole	1200
S8.001	25.046	83.5	SW43	109.240	107.740	1.200	Open Manhole	1200
S9.000	52.449	38.6	SW43	109.240	107.890	1.200	Open Manhole	1200
S8.002	9.594	106.6	SW44	109.150	107.650	1.200	Open Manhole	1500
S5.006	7.884	26.3	SW45	108.980	107.275	1.330	Open Manhole	1500
S5.007	30.800	49.7	SW48	107.930	106.655	0.900	Open Manhole	1500
S10.000	19.652	36.4	SW47	108.560	107.210	1.200	Open Manhole	1200

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PIPELINE SCHEDULES for Storm

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S10.001	o	150	SW47	108.560	107.210	1.200	Open Manhole	1200
S5.008	o	375	SW48	107.930	106.655	0.900	Open Manhole	1500
S5.009	o	375	SW49	107.800	106.500	0.925	Open Manhole	1500
S1.021	o	150	SW50	107.800	106.200	1.450	Open Manhole	1500
S1.022	o	150	SW51	107.800	106.100	1.550	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S10.001	12.367	37.5	SW48	107.930	106.880	0.900	Open Manhole	1500
S5.008	24.710	159.4	SW49	107.800	106.500	0.925	Open Manhole	1500
S5.009	5.000#	16.7	SW50	107.800	106.200	1.225	Open Manhole	1500
S1.021	7.078	70.8	SW51	107.800	106.100	1.550	Open Manhole	1200
S1.022	95.626	18.6		102.500	100.950	1.400	Open Manhole	0

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.017	0.017	0.017
1.001	-	-	100	0.017	0.017	0.017
1.002	-	-	100	0.026	0.026	0.026
1.003	-	-	100	0.028	0.028	0.028
1.004	-	-	100	0.013	0.013	0.013
1.005	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.040	0.040	0.040
1.007	-	-	100	0.021	0.021	0.021
1.008	-	-	100	0.024	0.024	0.024
2.000	-	-	100	0.042	0.042	0.042
1.009	-	-	100	0.053	0.053	0.053
1.010	-	-	100	0.025	0.025	0.025
1.011	-	-	100	0.029	0.029	0.029
1.012	-	-	100	0.020	0.020	0.020
1.013	-	-	100	0.021	0.021	0.021
1.014	-	-	100	0.040	0.040	0.040
1.015	-	-	100	0.000	0.000	0.000
1.016	-	-	100	0.091	0.091	0.091
1.017	-	-	100	0.020	0.020	0.020
3.000	-	-	100	0.031	0.031	0.031
3.001	-	-	100	0.060	0.060	0.060
3.002	-	-	100	0.055	0.055	0.055
3.003	-	-	100	0.063	0.063	0.063
3.004	-	-	100	0.050	0.050	0.050
3.005	-	-	100	0.050	0.050	0.050
4.000	-	-	100	0.083	0.083	0.083
4.001	-	-	100	0.041	0.041	0.041
1.018	-	-	100	0.034	0.034	0.034
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.075	0.075	0.075
6.000	-	-	100	0.032	0.032	0.032
5.001	-	-	100	0.010	0.010	0.010
5.002	-	-	100	0.075	0.075	0.075
5.003	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.046	0.046	0.046
7.001	-	-	100	0.037	0.037	0.037
5.004	-	-	100	0.045	0.045	0.045
5.005	-	-	100	0.049	0.049	0.049
8.000	-	-	100	0.132	0.132	0.132
8.001	-	-	100	0.055	0.055	0.055
9.000	-	-	100	0.071	0.071	0.071
8.002	-	-	100	0.000	0.000	0.000
5.006	-	-	100	0.019	0.019	0.019
5.007	-	-	100	0.000	0.000	0.000
10.000	-	-	100	0.032	0.032	0.032
10.001	-	-	100	0.000	0.000	0.000
5.008	-	-	100	0.000	0.000	0.000
5.009	-	-	100	0.000	0.000	0.000
1.021	-	-	100	0.000	0.000	0.000
1.022	-	-	100	0.000	0.000	0.000

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
				Total	Total	Total
				1.672	1.672	1.672

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.022		102.500	100.950	0.000	0	0

Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
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	1
Number of Online Controls	1	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)	1	Cv (Summer)	1.000
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.900	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: SW50, DS/PN: S1.021, Volume (m³): 4.2

Unit Reference	MD-SHE-0142-9900-1200-9900
Design Head (m)	1.200
Design Flow (l/s)	9.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	142
Invert Level (m)	106.200
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.200	9.9
Flush-Flo™	0.354	9.9
Kick-Flo®	0.774	8.1
Mean Flow over Head Range	-	8.6

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	5.1	1.200	9.9	3.000	15.3	7.000	22.9
0.200	9.4	1.400	10.6	3.500	16.4	7.500	23.7
0.300	9.8	1.600	11.3	4.000	17.5	8.000	24.4
0.400	9.9	1.800	12.0	4.500	18.5	8.500	25.2
0.500	9.7	2.000	12.6	5.000	19.5	9.000	25.9
0.600	9.4	2.200	13.2	5.500	20.4	9.500	26.5
0.800	8.2	2.400	13.7	6.000	21.3		
1.000	9.1	2.600	14.3	6.500	22.1		

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Storage Structures for Storm

Tank or Pond Manhole: SW50, DS/PN: S1.021

Invert Level (m) 106.200

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	727.0	1.600	1755.0

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
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 1
Number of Online Controls 1 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 0.400
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 20.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SW01	15 Summer	1	+0%	30/15 Summer			
S1.001	SW02	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S1.002	SW03	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S1.003	SW04	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S1.004	SW05	15 Summer	1	+0%	30/15 Summer			
S1.005	SW06	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S1.006	SW07	15 Summer	1	+0%	30/15 Summer			
S1.007	SW08	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S1.008	SW09	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S2.000	SW10	15 Summer	1	+0%	100/15 Summer			
S1.009	SW11	15 Summer	1	+0%	30/15 Summer			
S1.010	SW12	15 Summer	1	+0%	30/15 Summer			
S1.011	SW13	15 Summer	1	+0%	30/15 Summer			
S1.012	SW14	15 Summer	1	+0%	30/15 Summer			
S1.013	SW15	15 Summer	1	+0%	30/15 Summer			
S1.014	SW16	15 Summer	1	+0%	30/15 Summer			
S1.015	SW17	15 Summer	1	+0%				
S1.016	SW18	15 Summer	1	+0%	100/15 Summer			
S1.017	SW19	15 Summer	1	+0%	100/15 Summer			
S3.000	SW20	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S3.001	SW21	15 Summer	1	+0%	30/15 Summer			

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

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	Level Exceeded
S1.000	SW01	109.844	-0.106	0.000	0.19			3.0	OK	
S1.001	SW02	109.723	-0.097	0.000	0.27			5.5	OK	1
S1.002	SW03	109.508	-0.087	0.000	0.36			9.3	OK	2
S1.003	SW04	109.210	-0.040	0.000	0.87			13.5	OK	5
S1.004	SW05	108.975	-0.125	0.000	0.41			15.2	OK	
S1.005	SW06	108.816	-0.124	0.000	0.41			15.1	OK	4
S1.006	SW07	108.736	-0.104	0.000	0.55			20.4	OK	
S1.007	SW08	108.650	-0.090	0.000	0.66			23.1	OK	1
S1.008	SW09	108.498	-0.152	0.000	0.42			25.7	OK	2
S2.000	SW10	109.504	-0.101	0.000	0.23			7.4	OK	
S1.009	SW11	108.457	-0.123	0.000	0.63			38.3	OK	
S1.010	SW12	108.411	-0.104	0.000	0.70			40.9	OK	
S1.011	SW13	108.376	-0.089	0.000	0.83			44.3	OK	
S1.012	SW14	108.338	-0.097	0.000	0.79			46.7	OK	
S1.013	SW15	108.289	-0.096	0.000	0.80			49.0	OK	
S1.014	SW16	108.242	-0.083	0.000	0.87			52.9	OK	
S1.015	SW17	107.913	-0.347	0.000	0.12			53.0	OK	
S1.016	SW18	107.344	-0.246	0.000	0.42			61.7	OK	
S1.017	SW19	107.243	-0.232	0.000	0.47			62.8	OK	
S3.000	SW20	109.873	-0.167	0.000	0.15			5.4	OK	1
S3.001	SW21	109.794	-0.126	0.000	0.39			14.2	OK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S3.002	SW22	15 Summer	1	+0%	30/15 Summer			
S3.003	SW23	15 Summer	1	+0%	30/15 Summer			
S3.004	SW24	15 Summer	1	+0%	100/15 Summer			
S3.005	SW25	15 Summer	1	+0%				
S4.000	SW26	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S4.001	SW27	15 Summer	1	+0%	100/15 Summer			
S1.018	SW28	15 Summer	1	+0%	100/15 Summer			
S1.019	SW29	30 Summer	1	+0%	100/15 Summer			
S1.020	SW30	30 Summer	1	+0%	100/60 Summer			
S5.000	HD31	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S6.000	HD32	15 Summer	1	+0%	100/15 Summer			
S5.001	HD33	15 Summer	1	+0%	30/15 Summer			
S5.002	SW34	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S5.003	SW35	15 Summer	1	+0%	30/15 Summer			
S7.000	SW36	15 Summer	1	+0%	100/15 Summer			
S7.001	SW37	15 Summer	1	+0%	100/15 Summer			
S5.004	SW38	15 Summer	1	+0%	100/15 Summer			
S5.005	SW39	15 Summer	1	+0%	100/15 Summer			
S8.000	SW40	15 Summer	1	+0%	100/15 Summer	100/15 Summer		
S8.001	SW41	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S9.000	SW42	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S8.002	SW43	15 Summer	1	+0%	30/15 Summer	100/15 Summer		
S5.006	SW44	15 Summer	1	+0%	30/15 Summer			
S5.007	SW45	15 Summer	1	+0%	30/15 Summer			
S10.000	SW46	15 Summer	1	+0%	100/15 Summer			
S10.001	SW47	15 Summer	1	+0%	30/15 Summer			
S5.008	SW48	15 Summer	1	+0%	30/15 Summer			
S5.009	SW49	15 Summer	1	+0%	30/15 Summer			
S1.021	SW50	480 Summer	1	+0%	1/15 Summer			
S1.022	SW51	480 Summer	1	+0%				

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
S3.002	SW22	109.721	-0.094	0.000	0.63			22.4	OK
S3.003	SW23	109.583	-0.147	0.000	0.51			31.5	OK
S3.004	SW24	109.473	-0.187	0.000	0.30			38.6	OK
S3.005	SW25	109.181	-0.219	0.000	0.16			45.6	OK
S4.000	SW26	108.093	-0.047	0.000	0.80			14.5	OK
S4.001	SW27	107.697	-0.133	0.000	0.34			20.6	OK
S1.018	SW28	107.063	-0.362	0.000	0.33			116.9	OK
S1.019	SW29	106.900	-0.400	0.000	0.24			116.9	OK
S1.020	SW30	106.646	-0.404	0.000	0.23			117.2	OK
S5.000	HD31	109.731	-0.134	0.000	0.33			12.7	OK
S6.000	HD32	109.754	-0.181	0.000	0.08			5.7	OK
S5.001	HD33	109.392	-0.108	0.000	0.53			19.2	OK

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

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
S5.002	SW34	109.319	-0.071	0.000	0.79			29.3	OK
S5.003	SW35	109.205	-0.065	0.000	0.85			29.4	OK
S7.000	SW36	109.438	-0.162	0.000	0.17			8.1	OK
S7.001	SW37	109.269	-0.141	0.000	0.29			13.5	OK
S5.004	SW38	109.024	-0.171	0.000	0.38			47.7	OK
S5.005	SW39	108.596	-0.189	0.000	0.29			54.2	OK
S8.000	SW40	109.051	-0.139	0.000	0.31			23.1	OK
S8.001	SW41	108.151	-0.189	0.000	0.29			31.1	OK
S9.000	SW42	109.321	-0.079	0.000	0.45			12.5	OK
S8.002	SW43	107.906	-0.134	0.000	0.59			44.0	OK
S5.006	SW44	107.756	-0.194	0.000	0.47			99.7	OK
S5.007	SW45	107.440	-0.210	0.000	0.40			100.0	OK
S10.000	SW46	107.796	-0.104	0.000	0.20			5.7	OK
S10.001	SW47	107.257	-0.103	0.000	0.21			5.6	OK
S5.008	SW48	106.904	-0.126	0.000	0.77			105.6	OK
S5.009	SW49	106.685	-0.190	0.000	0.49			105.2	OK
S1.021	SW50	106.508	0.158	0.000	0.54			9.8	SURCHARGED
S1.022	SW51	106.150	-0.100	0.000	0.24			9.8	OK

PN	US/MH Name	Level Exceeded
S3.002	SW22	
S3.003	SW23	
S3.004	SW24	
S3.005	SW25	
S4.000	SW26	3
S4.001	SW27	
S1.018	SW28	
S1.019	SW29	
S1.020	SW30	
S5.000	HD31	2
S6.000	HD32	
S5.001	HD33	
S5.002	SW34	2
S5.003	SW35	
S7.000	SW36	
S7.001	SW37	
S5.004	SW38	
S5.005	SW39	
S8.000	SW40	2
S8.001	SW41	1
S9.000	SW42	3
S8.002	SW43	2
S5.006	SW44	
S5.007	SW45	

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

PN	US/MH Name	Level Exceeded
S10.000	SW46	
S10.001	SW47	
S5.008	SW48	
S5.009	SW49	
S1.021	SW50	
S1.022	SW51	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
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 1
Number of Online Controls 1 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 0.400
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 20.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SW01	15 Summer	30	+0%	30/15 Summer			
S1.001	SW02	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S1.002	SW03	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S1.003	SW04	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S1.004	SW05	15 Summer	30	+0%	30/15 Summer			
S1.005	SW06	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S1.006	SW07	15 Summer	30	+0%	30/15 Summer			
S1.007	SW08	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S1.008	SW09	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S2.000	SW10	15 Summer	30	+0%	100/15 Summer			
S1.009	SW11	15 Summer	30	+0%	30/15 Summer			
S1.010	SW12	15 Summer	30	+0%	30/15 Summer			
S1.011	SW13	15 Summer	30	+0%	30/15 Summer			
S1.012	SW14	15 Summer	30	+0%	30/15 Summer			
S1.013	SW15	15 Summer	30	+0%	30/15 Summer			
S1.014	SW16	15 Summer	30	+0%	30/15 Summer			
S1.015	SW17	15 Summer	30	+0%				
S1.016	SW18	15 Summer	30	+0%	100/15 Summer			
S1.017	SW19	15 Summer	30	+0%	100/15 Summer			
S3.000	SW20	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S3.001	SW21	15 Summer	30	+0%	30/15 Summer			

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

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
S1.000	SW01	110.105	0.155	0.000	0.42			6.8	SURCHARGED
S1.001	SW02	110.082	0.262	0.000	0.60			12.2	SURCHARGED
S1.002	SW03	110.038	0.443	0.000	0.70			18.2	SURCHARGED
S1.003	SW04	109.913	0.663	0.000	1.78			27.4	SURCHARGED
S1.004	SW05	109.563	0.463	0.000	0.75			28.2	SURCHARGED
S1.005	SW06	109.487	0.547	0.000	0.90			32.7	SURCHARGED
S1.006	SW07	109.443	0.603	0.000	1.04			38.3	SURCHARGED
S1.007	SW08	109.352	0.612	0.000	1.26			44.0	SURCHARGED
S1.008	SW09	109.235	0.585	0.000	0.81			50.1	SURCHARGED
S2.000	SW10	109.537	-0.068	0.000	0.57			18.2	OK
S1.009	SW11	109.191	0.611	0.000	1.26			76.8	SURCHARGED
S1.010	SW12	109.084	0.569	0.000	1.45			84.2	SURCHARGED
S1.011	SW13	108.970	0.505	0.000	1.74			92.6	SURCHARGED
S1.012	SW14	108.831	0.396	0.000	1.67			98.5	SURCHARGED
S1.013	SW15	108.675	0.290	0.000	1.71			104.6	SURCHARGED
S1.014	SW16	108.496	0.171	0.000	1.91			116.6	SURCHARGED
S1.015	SW17	107.967	-0.293	0.000	0.26			117.2	OK
S1.016	SW18	107.550	-0.040	0.000	0.95			140.9	OK
S1.017	SW19	107.470	-0.005	0.000	1.00			132.8	OK
S3.000	SW20	110.188	0.148	0.000	0.41			14.9	SURCHARGED
S3.001	SW21	110.165	0.245	0.000	1.03			37.7	SURCHARGED

PN	US/MH Name	Level Exceeded
S1.000	SW01	
S1.001	SW02	1
S1.002	SW03	2
S1.003	SW04	5
S1.004	SW05	
S1.005	SW06	4
S1.006	SW07	
S1.007	SW08	1
S1.008	SW09	2
S2.000	SW10	
S1.009	SW11	
S1.010	SW12	
S1.011	SW13	
S1.012	SW14	
S1.013	SW15	
S1.014	SW16	
S1.015	SW17	
S1.016	SW18	
S1.017	SW19	
S3.000	SW20	1

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

PN	US/MH Name	Level Exceeded
S3.001	SW21	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S3.002	SW22	15 Summer	30	+0%	30/15 Summer			
S3.003	SW23	15 Summer	30	+0%	30/15 Summer			
S3.004	SW24	15 Summer	30	+0%	100/15 Summer			
S3.005	SW25	15 Summer	30	+0%				
S4.000	SW26	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S4.001	SW27	15 Summer	30	+0%	100/15 Summer			
S1.018	SW28	15 Summer	30	+0%	100/15 Summer			
S1.019	SW29	15 Summer	30	+0%	100/15 Summer			
S1.020	SW30	480 Summer	30	+0%	100/60 Summer			
S5.000	HD31	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S6.000	HD32	15 Summer	30	+0%	100/15 Summer			
S5.001	HD33	15 Summer	30	+0%	30/15 Summer			
S5.002	SW34	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S5.003	SW35	15 Summer	30	+0%	30/15 Summer			
S7.000	SW36	15 Summer	30	+0%	100/15 Summer			
S7.001	SW37	15 Summer	30	+0%	100/15 Summer			
S5.004	SW38	15 Summer	30	+0%	100/15 Summer			
S5.005	SW39	15 Summer	30	+0%	100/15 Summer			
S8.000	SW40	15 Summer	30	+0%	100/15 Summer	100/15 Summer		
S8.001	SW41	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S9.000	SW42	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S8.002	SW43	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
S5.006	SW44	15 Summer	30	+0%	30/15 Summer			
S5.007	SW45	15 Summer	30	+0%	30/15 Summer			
S10.000	SW46	15 Summer	30	+0%	100/15 Summer			
S10.001	SW47	15 Summer	30	+0%	30/15 Summer			
S5.008	SW48	15 Summer	30	+0%	30/15 Summer			
S5.009	SW49	15 Summer	30	+0%	30/15 Summer			
S1.021	SW50	480 Summer	30	+0%	1/15 Summer			
S1.022	SW51	1440 Summer	30	+0%				

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
S3.002	SW22	110.053	0.238	0.000	1.71			60.9	SURCHARGED
S3.003	SW23	109.796	0.066	0.000	1.42			87.7	SURCHARGED
S3.004	SW24	109.579	-0.081	0.000	0.86			109.4	OK
S3.005	SW25	109.247	-0.153	0.000	0.46			130.8	OK
S4.000	SW26	108.768	0.628	0.000	1.72			31.2	SURCHARGED
S4.001	SW27	107.760	-0.070	0.000	0.79			47.0	OK
S1.018	SW28	107.270	-0.155	0.000	0.87			308.7	OK
S1.019	SW29	107.055	-0.245	0.000	0.65			312.6	OK
S1.020	SW30	106.901	-0.149	0.000	0.13			65.5	OK
S5.000	HD31	110.057	0.192	0.000	0.70			27.0	SURCHARGED
S6.000	HD32	109.900	-0.035	0.000	0.21			13.8	OK
S5.001	HD33	109.878	0.378	0.000	1.16			42.1	SURCHARGED

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

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
S5.002	SW34	109.766	0.376	0.000	1.64			60.3	SURCHARGED
S5.003	SW35	109.416	0.146	0.000	1.75			60.6	SURCHARGED
S7.000	SW36	109.478	-0.122	0.000	0.43			20.0	OK
S7.001	SW37	109.342	-0.068	0.000	0.81			37.3	OK
S5.004	SW38	109.118	-0.077	0.000	0.89			112.8	OK
S5.005	SW39	108.676	-0.109	0.000	0.72			133.1	OK
S8.000	SW40	109.113	-0.077	0.000	0.75			56.7	OK
S8.001	SW41	108.448	0.108	0.000	0.72			78.7	SURCHARGED
S9.000	SW42	109.558	0.158	0.000	0.97			27.2	SURCHARGED
S8.002	SW43	108.315	0.275	0.000	1.30			97.5	SURCHARGED
S5.006	SW44	108.170	0.220	0.000	1.06			227.7	SURCHARGED
S5.007	SW45	107.837	0.187	0.000	0.90			226.3	SURCHARGED
S10.000	SW46	107.825	-0.075	0.000	0.50			13.9	OK
S10.001	SW47	107.409	0.049	0.000	0.49			13.0	SURCHARGED
S5.008	SW48	107.360	0.330	0.000	1.70			231.8	SURCHARGED
S5.009	SW49	106.910	0.035	0.000	1.08			232.3	SURCHARGED
S1.021	SW50	106.900	0.550	0.000	0.55			9.9	SURCHARGED
S1.022	SW51	106.150	-0.100	0.000	0.24			9.9	OK

PN	US/MH Name	Level Exceeded
S3.002	SW22	
S3.003	SW23	
S3.004	SW24	
S3.005	SW25	
S4.000	SW26	3
S4.001	SW27	
S1.018	SW28	
S1.019	SW29	
S1.020	SW30	
S5.000	HD31	2
S6.000	HD32	
S5.001	HD33	
S5.002	SW34	2
S5.003	SW35	
S7.000	SW36	
S7.001	SW37	
S5.004	SW38	
S5.005	SW39	
S8.000	SW40	2
S8.001	SW41	1
S9.000	SW42	3
S8.002	SW43	2
S5.006	SW44	
S5.007	SW45	

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

PN	US/MH Name	Level Exceeded
S10.000	SW46	
S10.001	SW47	
S5.008	SW48	
S5.009	SW49	
S1.021	SW50	
S1.022	SW51	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
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 1
Number of Online Controls 1 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 0.400
Region England and Wales Cv (Summer) 1.000
M5-60 (mm) 20.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF
Analysis Timestep Fine Inertia Status OFF
DTS Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SW01	15 Summer	100	+40%	30/15 Summer			
S1.001	SW02	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S1.002	SW03	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S1.003	SW04	30 Summer	100	+40%	30/15 Summer	100/15 Summer		
S1.004	SW05	15 Summer	100	+40%	30/15 Summer			
S1.005	SW06	30 Summer	100	+40%	30/15 Summer	100/15 Summer		
S1.006	SW07	15 Summer	100	+40%	30/15 Summer			
S1.007	SW08	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S1.008	SW09	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S2.000	SW10	15 Summer	100	+40%	100/15 Summer			
S1.009	SW11	15 Summer	100	+40%	30/15 Summer			
S1.010	SW12	15 Summer	100	+40%	30/15 Summer			
S1.011	SW13	15 Summer	100	+40%	30/15 Summer			
S1.012	SW14	15 Summer	100	+40%	30/15 Summer			
S1.013	SW15	15 Summer	100	+40%	30/15 Summer			
S1.014	SW16	15 Summer	100	+40%	30/15 Summer			
S1.015	SW17	15 Summer	100	+40%				
S1.016	SW18	15 Summer	100	+40%	100/15 Summer			
S1.017	SW19	15 Summer	100	+40%	100/15 Summer			
S3.000	SW20	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S3.001	SW21	15 Summer	100	+40%	30/15 Summer			

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

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
S1.000	SW01	111.096	1.146	0.000	0.70			11.3	FLOOD RISK
S1.001	SW02	111.020	1.200	0.051	0.99			20.2	FLOOD
S1.002	SW03	110.796	1.201	1.071	1.00			26.0	FLOOD
S1.003	SW04	110.457	1.207	7.152	2.46			37.9	FLOOD
S1.004	SW05	110.257	1.157	0.000	1.11			41.5	FLOOD RISK
S1.005	SW06	110.160	1.220	5.294	1.45			53.0	FLOOD
S1.006	SW07	110.185	1.345	0.000	1.62			60.0	FLOOD RISK
S1.007	SW08	110.135	1.395	0.237	1.88			65.3	FLOOD
S1.008	SW09	109.999	1.349	4.457	1.25			77.1	FLOOD
S2.000	SW10	110.719	1.114	0.000	0.86			27.5	FLOOD RISK
S1.009	SW11	110.019	1.439	0.000	1.84			112.0	FLOOD RISK
S1.010	SW12	109.926	1.411	0.000	2.03			117.9	FLOOD RISK
S1.011	SW13	109.740	1.275	0.000	2.34			124.6	FLOOD RISK
S1.012	SW14	109.474	1.039	0.000	2.33			137.9	SURCHARGED
S1.013	SW15	109.192	0.807	0.000	2.48			152.0	SURCHARGED
S1.014	SW16	108.828	0.503	0.000	2.93			178.5	SURCHARGED
S1.015	SW17	108.145	-0.115	0.000	0.40			179.5	OK
S1.016	SW18	108.044	0.454	0.000	1.51			222.5	SURCHARGED
S1.017	SW19	107.771	0.296	0.000	1.75			231.9	SURCHARGED
S3.000	SW20	111.241	1.201	0.727	0.82			30.2	FLOOD
S3.001	SW21	111.233	1.313	0.000	1.75			63.7	FLOOD RISK

PN	US/MH Name	Level Exceeded
S1.000	SW01	
S1.001	SW02	1
S1.002	SW03	2
S1.003	SW04	5
S1.004	SW05	
S1.005	SW06	4
S1.006	SW07	
S1.007	SW08	1
S1.008	SW09	2
S2.000	SW10	
S1.009	SW11	
S1.010	SW12	
S1.011	SW13	
S1.012	SW14	
S1.013	SW15	
S1.014	SW16	
S1.015	SW17	
S1.016	SW18	
S1.017	SW19	
S3.000	SW20	1

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

PN	US/MH Name	Level Exceeded
S3.001	SW21	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S3.002	SW22	15 Summer	100	+40%	30/15 Summer			
S3.003	SW23	15 Summer	100	+40%	30/15 Summer			
S3.004	SW24	15 Summer	100	+40%	100/15 Summer			
S3.005	SW25	15 Summer	100	+40%				
S4.000	SW26	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S4.001	SW27	15 Summer	100	+40%	100/15 Summer			
S1.018	SW28	15 Summer	100	+40%	100/15 Summer			
S1.019	SW29	960 Summer	100	+40%	100/15 Summer			
S1.020	SW30	960 Summer	100	+40%	100/60 Summer			
S5.000	HD31	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S6.000	HD32	15 Summer	100	+40%	100/15 Summer			
S5.001	HD33	15 Summer	100	+40%	30/15 Summer			
S5.002	SW34	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S5.003	SW35	15 Summer	100	+40%	30/15 Summer			
S7.000	SW36	15 Summer	100	+40%	100/15 Summer			
S7.001	SW37	15 Summer	100	+40%	100/15 Summer			
S5.004	SW38	15 Summer	100	+40%	100/15 Summer			
S5.005	SW39	15 Summer	100	+40%	100/15 Summer			
S8.000	SW40	15 Summer	100	+40%	100/15 Summer	100/15 Summer		
S8.001	SW41	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S9.000	SW42	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S8.002	SW43	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
S5.006	SW44	15 Summer	100	+40%	30/15 Summer			
S5.007	SW45	15 Summer	100	+40%	30/15 Summer			
S10.000	SW46	15 Summer	100	+40%	100/15 Summer			
S10.001	SW47	15 Summer	100	+40%	30/15 Summer			
S5.008	SW48	30 Summer	100	+40%	30/15 Summer			
S5.009	SW49	960 Summer	100	+40%	30/15 Summer			
S1.021	SW50	960 Summer	100	+40%	1/15 Summer			
S1.022	SW51	960 Summer	100	+40%				

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
S3.002	SW22	110.970	1.155	0.000	2.74			97.8	SURCHARGED
S3.003	SW23	110.334	0.604	0.000	2.35			145.1	SURCHARGED
S3.004	SW24	109.939	0.279	0.000	1.43			182.9	SURCHARGED
S3.005	SW25	109.306	-0.094	0.000	0.78			220.9	OK
S4.000	SW26	109.344	1.204	4.484	2.21			40.2	FLOOD
S4.001	SW27	108.089	0.259	0.000	1.13			67.4	SURCHARGED
S1.018	SW28	107.603	0.178	0.000	1.46			519.0	SURCHARGED
S1.019	SW29	107.399	0.099	0.000	0.14			69.2	SURCHARGED
S1.020	SW30	107.398	0.348	0.000	0.13			67.3	SURCHARGED
S5.000	HD31	111.071	1.206	5.614	1.15			44.6	FLOOD
S6.000	HD32	111.094	1.159	0.000	0.34			23.0	FLOOD RISK
S5.001	HD33	111.030	1.530	0.000	1.59			57.7	FLOOD RISK

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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
S5.002	SW34	110.813	1.423	3.243	2.17			80.0	FLOOD
S5.003	SW35	110.478	1.208	0.000	2.38			82.2	FLOOD RISK
S7.000	SW36	110.500	0.900	0.000	0.63			29.8	SURCHARGED
S7.001	SW37	110.441	1.031	0.000	1.10			50.3	FLOOD RISK
S5.004	SW38	110.237	1.042	0.000	1.09			137.6	FLOOD RISK
S5.005	SW39	109.767	0.982	0.000	0.87			162.1	FLOOD RISK
S8.000	SW40	110.391	1.201	1.332	1.04			78.3	FLOOD
S8.001	SW41	109.550	1.210	0.199	0.98			106.9	FLOOD
S9.000	SW42	110.454	1.054	3.921	1.12			31.5	FLOOD
S8.002	SW43	109.243	1.203	3.152	1.75			131.7	FLOOD
S5.006	SW44	109.089	1.139	0.000	1.33			284.7	FLOOD RISK
S5.007	SW45	108.579	0.929	0.000	1.10			277.6	SURCHARGED
S10.000	SW46	108.236	0.336	0.000	0.82			22.9	SURCHARGED
S10.001	SW47	107.992	0.632	0.000	0.68			18.0	SURCHARGED
S5.008	SW48	107.841	0.811	0.000	2.13			291.0	FLOOD RISK
S5.009	SW49	107.398	0.523	0.000	0.22			46.7	SURCHARGED
S1.021	SW50	107.397	1.047	0.000	0.55			9.9	SURCHARGED
S1.022	SW51	106.150	-0.100	0.000	0.24			9.9	OK

PN	US/MH Name	Level Exceeded
S3.002	SW22	
S3.003	SW23	
S3.004	SW24	
S3.005	SW25	
S4.000	SW26	3
S4.001	SW27	
S1.018	SW28	
S1.019	SW29	
S1.020	SW30	
S5.000	HD31	2
S6.000	HD32	
S5.001	HD33	
S5.002	SW34	2
S5.003	SW35	
S7.000	SW36	
S7.001	SW37	
S5.004	SW38	
S5.005	SW39	
S8.000	SW40	2
S8.001	SW41	1
S9.000	SW42	3
S8.002	SW43	2
S5.006	SW44	
S5.007	SW45	

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

PN	US/MH Name	Level Exceeded
S10.000	SW46	
S10.001	SW47	
S5.008	SW48	
S5.009	SW49	
S1.021	SW50	
S1.022	SW51	

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