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)	100	PIMP (%)	100
M5-60 (mm)	19.800	Add Flow / Climate Change (%)	0
Ratio R	0.350	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	110	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.000
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 Inverts

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	21.437	0.030	723.0	0.053	5.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.001	10.000	0.014	714.3	0.022	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.002	14.276	0.020	713.8	0.046	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.003	10.001	0.014	714.4	0.022	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.004	10.029	0.014	716.4	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.005	10.023	0.014	715.9	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.006	9.949	0.014	710.6	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.007	10.000	0.014	714.3	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.008	10.000	0.013	769.2	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.009	7.098	0.009	788.7	0.039	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.010	36.002	0.050	720.0	0.028	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S1.011	5.000#	0.001	5000.0	0.134	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S2.000	5.000#	0.015	325.0	0.241	5.00	0.0	0.600	o	375	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	110.00	5.56	1.491	0.053	0.0	0.0	0.0	0.64	61.1	15.9
S1.001	110.00	5.82	1.461	0.075	0.0	0.0	0.0	0.64	61.5	22.4
S1.002	110.00	6.19	1.447	0.121	0.0	0.0	0.0	0.64	61.5	36.1
S1.003	110.00	6.45	1.427	0.143	0.0	0.0	0.0	0.64	61.5	42.6
S1.004	110.00	6.72	1.413	0.182	0.0	0.0	0.0	0.64	61.4	54.2
S1.005	110.00	6.98	1.399	0.221	0.0	0.0	0.0	0.64	61.4«	65.8
S1.006	110.00	7.23	1.385	0.260	0.0	0.0	0.0	0.64	61.6«	77.3
S1.007	110.00	7.49	1.371	0.298	0.0	0.0	0.0	0.64	61.5«	88.9
S1.008	110.00	7.77	1.357	0.337	0.0	0.0	0.0	0.62	59.2«	100.4
S1.009	110.00	7.96	1.344	0.376	0.0	0.0	0.0	0.61	58.4«	112.0
S1.010	110.00	8.90	1.335	0.404	0.0	0.0	0.0	0.64	61.2«	120.5
S1.011	110.00	9.01	1.285	0.538	0.0	0.0	0.0	0.75	3376.9	160.3
S2.000	110.00	5.08	1.475	0.241	0.0	0.0	0.0	1.00	110.4	71.8

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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
S1.012	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S3.000	5.000#	0.015	325.0	0.239	5.00	0.0	0.600	o	375	Pipe/Conduit	
S1.013	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S1.014	12.211	0.031	393.9	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S4.000	5.000#	0.015	325.0	0.289	5.00	0.0	0.600	o	375	Pipe/Conduit	
S1.015	37.801	0.001	37801.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S5.000	5.000#	0.015	325.0	0.312	5.00	0.0	0.600	o	375	Pipe/Conduit	
S1.016	19.677	0.002	9838.5	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S6.000	10.000	0.014	725.0	0.080	5.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.001	10.000	0.014	714.3	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.002	10.000	0.014	714.3	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.003	10.000	0.014	714.3	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.004	10.000	0.014	714.3	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.005	11.657	0.016	728.6	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.006	21.001	0.029	724.2	0.031	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.007	14.964	0.021	712.6	0.056	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.008	14.245	0.020	712.3	0.040	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.009	22.451	0.031	724.2	0.038	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S6.010	10.201	0.035	291.5	0.057	0.00	0.0	0.600	o	350	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)
S1.012	110.00	9.12	1.284	0.779	0.0	0.0	0.0	0.75	3376.9	232.0
S3.000	110.00	5.08	1.475	0.239	0.0	0.0	0.0	1.00	110.4	71.2
S1.013	110.00	9.23	1.283	1.018	0.0	0.0	0.0	0.75	3376.9	303.2
S1.014	110.00	9.43	1.282	1.018	0.0	0.0	0.0	1.02	161.9«	303.2
S4.000	110.00	5.08	1.475	0.289	0.0	0.0	0.0	1.00	110.4	86.1
S1.015	105.39	11.80	1.251	1.307	0.0	0.0	0.0	0.27	1198.7	373.0
S5.000	110.00	5.08	1.475	0.312	0.0	0.0	0.0	1.00	110.4	92.9
S1.016	102.73	12.42	1.250	1.619	0.0	0.0	0.0	0.53	2392.9	450.4
S6.000	110.00	5.26	1.490	0.080	0.0	0.0	0.0	0.64	61.0	23.8
S6.001	110.00	5.52	1.476	0.107	0.0	0.0	0.0	0.64	61.5	31.8
S6.002	110.00	5.78	1.462	0.133	0.0	0.0	0.0	0.64	61.5	39.7
S6.003	110.00	6.04	1.448	0.160	0.0	0.0	0.0	0.64	61.5	47.7
S6.004	110.00	6.30	1.434	0.187	0.0	0.0	0.0	0.64	61.5	55.7
S6.005	110.00	6.61	1.420	0.214	0.0	0.0	0.0	0.63	60.8«	63.7
S6.006	110.00	7.16	1.404	0.245	0.0	0.0	0.0	0.64	61.0«	73.1
S6.007	110.00	7.55	1.375	0.301	0.0	0.0	0.0	0.64	61.5«	89.8
S6.008	110.00	7.92	1.354	0.342	0.0	0.0	0.0	0.64	61.6«	101.8
S6.009	110.00	8.51	1.334	0.380	0.0	0.0	0.0	0.64	61.0«	113.2
S6.010	110.00	8.68	1.303	0.436	0.0	0.0	0.0	1.01	97.2«	130.0

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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
S1.017	19.696	0.047	419.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S7.000	10.000	0.014	725.0	0.134	5.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.001	10.000	0.014	714.3	0.043	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.002	10.000	0.014	714.3	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.003	10.000	0.014	714.3	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.004	10.000	0.014	714.3	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.005	10.000	0.014	714.3	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.006	10.000	0.014	714.3	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.007	10.755	0.015	717.0	0.041	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.008	41.363	0.057	725.7	0.046	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S7.009	12.669	0.120	105.6	0.161	0.00	0.0	0.600	o	450	Pipe/Conduit	
S1.018	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S8.000	10.000	0.013	769.2	0.012	5.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.001	10.000	0.013	769.2	0.029	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.002	10.000	0.013	769.2	0.029	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.003	10.099	0.013	776.8	0.027	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.004	28.302	0.039	725.7	0.020	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.005	6.397	0.009	710.8	0.029	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.006	10.023	0.014	715.9	0.003	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.007	9.999	0.014	714.2	0.028	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.008	10.087	0.014	720.5	0.030	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.009	6.479	0.009	719.9	0.023	0.00	0.0	0.600	Q35	-3	Pipe/Conduit	
S8.010	5.583	0.017	328.4	0.023	0.00	0.0	0.600	o	375	Pipe/Conduit	
S8.011	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	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)
S1.017	101.37	12.75	1.248	2.055	0.0	0.0	0.0	0.99	156.9«	564.2
S7.000	110.00	5.26	1.490	0.134	0.0	0.0	0.0	0.64	61.0	39.8
S7.001	110.00	5.52	1.476	0.176	0.0	0.0	0.0	0.64	61.5	52.5
S7.002	110.00	5.78	1.462	0.217	0.0	0.0	0.0	0.64	61.5«	64.7
S7.003	110.00	6.04	1.448	0.258	0.0	0.0	0.0	0.64	61.5«	76.9
S7.004	110.00	6.30	1.434	0.299	0.0	0.0	0.0	0.64	61.5«	89.1
S7.005	110.00	6.56	1.420	0.340	0.0	0.0	0.0	0.64	61.5«	101.3
S7.006	110.00	6.82	1.406	0.381	0.0	0.0	0.0	0.64	61.5«	113.6
S7.007	110.00	7.10	1.392	0.422	0.0	0.0	0.0	0.64	61.3«	125.8
S7.008	110.00	8.19	1.377	0.468	0.0	0.0	0.0	0.64	61.0«	139.5
S7.009	110.00	8.30	1.320	0.629	0.0	0.0	0.0	1.98	314.6	187.4
S1.018	100.92	12.86	1.201	2.684	0.0	0.0	0.0	0.75	3376.9	733.7
S8.000	110.00	5.27	1.503	0.012	0.0	0.0	0.0	0.62	59.2	3.5
S8.001	110.00	5.54	1.490	0.041	0.0	0.0	0.0	0.62	59.2	12.1
S8.002	110.00	5.81	1.477	0.070	0.0	0.0	0.0	0.62	59.2	20.8
S8.003	110.00	6.09	1.464	0.096	0.0	0.0	0.0	0.61	58.9	28.7
S8.004	110.00	6.83	1.451	0.116	0.0	0.0	0.0	0.64	61.0	34.6
S8.005	110.00	6.99	1.412	0.145	0.0	0.0	0.0	0.64	61.6	43.3
S8.006	110.00	7.26	1.403	0.149	0.0	0.0	0.0	0.64	61.4	44.3
S8.007	110.00	7.52	1.389	0.176	0.0	0.0	0.0	0.64	61.5	52.6
S8.008	110.00	7.78	1.375	0.206	0.0	0.0	0.0	0.64	61.2«	61.4
S8.009	110.00	7.95	1.361	0.229	0.0	0.0	0.0	0.64	61.2«	68.3
S8.010	110.00	8.04	1.352	0.252	0.0	0.0	0.0	0.99	109.8	75.2
S8.011	110.00	8.15	1.335	0.252	0.0	0.0	0.0	0.75	3376.9	75.2

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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
S8.012	20.943	0.052	402.8	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S8.013	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S8.014	22.024	0.054	407.9	0.182	0.00	0.0	0.600	o	450	Pipe/Conduit	
S9.000	5.000#	0.071	70.4	0.206	5.00	0.0	0.600	o	300	Pipe/Conduit	
S10.000	80.000#	0.246	325.2	0.748	5.00	0.0	0.600	o	450	Pipe/Conduit	
S10.001	5.000#	0.013	384.6	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S8.015	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S8.016	10.034	0.024	418.1	0.000	0.00	0.0	0.600	o	450	Pipe/Conduit	
S8.017	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S11.000	5.000#	0.024	208.3	0.206	5.00	0.0	0.600	o	300	Pipe/Conduit	
S8.018	5.000#	0.001	5000.0	0.000	0.00	0.0	0.600	SW1	-75	Pipe/Conduit	
S1.019	6.000	0.012	500.0	0.000	0.00	0.0	0.600	o	600	Pipe/Conduit	
S1.020	11.489	0.042	273.0	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)
S8.012	110.00	8.50	1.334	0.252	0.0	0.0	0.0	1.01	160.1	75.2
S8.013	110.00	8.61	1.282	0.252	0.0	0.0	0.0	0.75	3376.9	75.2
S8.014	110.00	8.98	1.281	0.434	0.0	0.0	0.0	1.00	159.1	129.2
S9.000	110.00	5.04	1.525	0.206	0.0	0.0	0.0	1.88	132.6	61.3
S10.000	110.00	6.19	1.486	0.748	0.0	0.0	0.0	1.12	178.4«	222.7
S10.001	110.00	6.27	1.240	0.748	0.0	0.0	0.0	1.03	163.9«	222.7
S8.015	110.00	9.09	1.227	1.387	0.0	0.0	0.0	0.75	3376.9	413.3
S8.016	110.00	9.26	1.226	1.387	0.0	0.0	0.0	0.99	157.1«	413.3
S8.017	110.00	9.37	1.202	1.387	0.0	0.0	0.0	0.75	3376.9	413.3
S11.000	110.00	5.08	1.475	0.206	0.0	0.0	0.0	1.09	76.7	61.3
S8.018	110.00	9.48	1.201	1.593	0.0	0.0	0.0	0.75	3376.9	474.6
S1.019	100.55	12.95	1.200	4.278	0.0	0.0	0.0	1.08	306.0«	1164.9
S1.020	100.04	13.08	0.472	4.278	0.0	0.0	0.0	1.47	415.3«	1164.9

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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)
S1	2.040	0.549	Open Manhole	350	S1.000	1.491	-3				
S2	2.011	0.550	Open Manhole	350	S1.001	1.461	-3	S1.000	1.461	-3	
S3	1.997	0.550	Open Manhole	350	S1.002	1.447	-3	S1.001	1.447	-3	
S4	1.977	0.550	Open Manhole	350	S1.003	1.427	-3	S1.002	1.427	-3	
S5	1.963	0.550	Open Manhole	350	S1.004	1.413	-3	S1.003	1.413	-3	
S6	1.949	0.550	Open Manhole	350	S1.005	1.399	-3	S1.004	1.399	-3	
S7	1.935	0.550	Open Manhole	350	S1.006	1.385	-3	S1.005	1.385	-3	
S8	1.921	0.550	Open Manhole	350	S1.007	1.371	-3	S1.006	1.371	-3	
S9	1.907	0.550	Open Manhole	350	S1.008	1.357	-3	S1.007	1.357	-3	
S10	1.893	0.549	Open Manhole	350	S1.009	1.344	-3	S1.008	1.344	-3	
S11	1.883	0.548	Open Manhole	350	S1.010	1.335	-3	S1.009	1.335	-3	
S12	2.040	0.755	Open Manhole	900	S1.011	1.285	-75	S1.010	1.285	-3	
S13	2.200	0.725	Open Manhole	1350	S2.000	1.475	375				
S14	2.100	0.816	Junction		S1.012	1.284	-75	S1.011	1.284	-75	
								S2.000	1.460	375	
S15	2.200	0.725	Open Manhole	1350	S3.000	1.475	375				
S16	2.100	0.817	Junction		S1.013	1.283	-75	S1.012	1.283	-75	
								S3.000	1.460	375	
S17	2.100	0.818	Open Manhole	1350	S1.014	1.282	450	S1.013	1.282	-75	
S18	2.200	0.725	Open Manhole	1350	S4.000	1.475	375				
S19	2.100	0.849	Open Manhole	1350	S1.015	1.251	-75	S1.014	1.251	450	
								S4.000	1.460	375	
S20	2.200	0.725	Open Manhole	1350	S5.000	1.475	375				
S21	2.100	0.850	Junction		S1.016	1.250	-75	S1.015	1.250	-75	
								S5.000	1.460	375	
S22	2.040	0.550	Open Manhole	350	S6.000	1.490	-3				
S23	2.026	0.550	Open Manhole	350	S6.001	1.476	-3	S6.000	1.476	-3	
S24	2.012	0.550	Open Manhole	350	S6.002	1.462	-3	S6.001	1.462	-3	
S25	1.998	0.550	Open Manhole	350	S6.003	1.448	-3	S6.002	1.448	-3	
S26	1.984	0.550	Open Manhole	350	S6.004	1.434	-3	S6.003	1.434	-3	
S27	1.970	0.550	Open Manhole	350	S6.005	1.420	-3	S6.004	1.420	-3	
S28	1.954	0.550	Open Manhole	350	S6.006	1.404	-3	S6.005	1.404	-3	
S29	1.925	0.550	Open Manhole	350	S6.007	1.375	-3	S6.006	1.375	-3	
S30	1.904	0.550	Open Manhole	350	S6.008	1.354	-3	S6.007	1.354	-3	
S31	1.884	0.550	Open Manhole	350	S6.009	1.334	-3	S6.008	1.334	-3	
S32	1.853	0.550	Junction		S6.010	1.303	350	S6.009	1.303	-3	
S33	2.100	0.852	Open Manhole	1350	S1.017	1.248	450	S1.016	1.248	-75	
								S6.010	1.268	350	
S34	2.040	0.550	Open Manhole	350	S7.000	1.490	-3				
S35	2.026	0.550	Open Manhole	350	S7.001	1.476	-3	S7.000	1.476	-3	
S36	2.012	0.550	Open Manhole	350	S7.002	1.462	-3	S7.001	1.462	-3	
S37	1.998	0.550	Open Manhole	350	S7.003	1.448	-3	S7.002	1.448	-3	
S38	1.984	0.550	Open Manhole	350	S7.004	1.434	-3	S7.003	1.434	-3	
S39	1.970	0.550	Open Manhole	350	S7.005	1.420	-3	S7.004	1.420	-3	
S40	1.956	0.550	Open Manhole	350	S7.006	1.406	-3	S7.005	1.406	-3	

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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)
S41	1.942	0.550	Open Manhole	350	S7.007	1.392	-3	S7.006	1.392	-3	
S42	1.927	0.550	Open Manhole	350	S7.008	1.377	-3	S7.007	1.377	-3	
S43	2.040	0.720	Open Manhole	1200	S7.009	1.320	450	S7.008	1.320	-3	
S44	2.100	0.900	Open Manhole	1350	S1.018	1.201	-75	S1.017	1.201	450	
								S7.009	1.200	450	
S45	2.053	0.550	Open Manhole	350	S8.000	1.503	-3				
S46	2.040	0.550	Open Manhole	350	S8.001	1.490	-3	S8.000	1.490	-3	
S47	2.027	0.550	Open Manhole	350	S8.002	1.477	-3	S8.001	1.477	-3	
S48	2.014	0.550	Open Manhole	350	S8.003	1.464	-3	S8.002	1.464	-3	
S49	2.001	0.550	Open Manhole	350	S8.004	1.451	-3	S8.003	1.451	-3	
S50	1.962	0.550	Open Manhole	350	S8.005	1.412	-3	S8.004	1.412	-3	
S51	1.953	0.550	Open Manhole	350	S8.006	1.403	-3	S8.005	1.403	-3	
S52	1.939	0.550	Open Manhole	350	S8.007	1.389	-3	S8.006	1.389	-3	
S53	1.925	0.550	Open Manhole	350	S8.008	1.375	-3	S8.007	1.375	-3	
S54	1.911	0.550	Open Manhole	350	S8.009	1.361	-3	S8.008	1.361	-3	
S55	2.040	0.688	Open Manhole	350	S8.010	1.352	375	S8.009	1.352	-3	
S56	2.100	0.765	Open Manhole	1350	S8.011	1.335	-75	S8.010	1.335	375	
S57	2.100	0.766	Open Manhole	1350	S8.012	1.334	450	S8.011	1.334	-75	
S58	2.100	0.818	Open Manhole	1350	S8.013	1.282	-75	S8.012	1.282	450	
S59	2.100	0.819	Junction		S8.014	1.281	450	S8.013	1.281	-75	
S60	2.200	0.675	Open Manhole	1200	S9.000	1.525	300				
S61	2.200	0.714	Open Manhole	1350	S10.000	1.486	450				
S62	2.150	0.910	Open Manhole	1350	S10.001	1.240	450	S10.000	1.240	450	
S63	2.100	0.873	Junction		S8.015	1.227	-75	S8.014	1.227	450	
								S9.000	1.454	300	
								S10.001	1.227	450	
S64	2.100	0.874	Open Manhole	1350	S8.016	1.226	450	S8.015	1.226	-75	
S65	2.100	0.898	Open Manhole	1350	S8.017	1.202	-75	S8.016	1.202	450	
S66	2.200	0.725	Open Manhole	1200	S11.000	1.475	300				
S67	2.100	0.899	Junction		S8.018	1.201	-75	S8.017	1.201	-75	
								S11.000	1.451	300	
S68	2.100	0.900	Junction		S1.019	1.200	600	S1.018	1.200	-75	
								S8.018	1.200	-75	
S69	2.250	1.778	Open Manhole	1500	S1.020	0.472	600	S1.019	1.188	600	716
S	2.250	1.820	Open Manhole	0		OUTFALL		S1.020	0.430	600	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	520738.440	105627.784	520738.440	105627.784	Required	
S2	520756.413	105616.100	520756.413	105616.100	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)
S3	520764.797	105610.649	520764.797	105610.649	Required	
S4	520776.650	105618.605	520776.650	105618.605	Required	
S5	520784.952	105624.182	520784.952	105624.182	Required	
S6	520793.304	105629.734	520793.304	105629.734	Required	
S7	520801.573	105635.400	520801.573	105635.400	Required	
S8	520809.855	105640.912	520809.855	105640.912	Required	
S9	520818.156	105646.489	520818.156	105646.489	Required	
S10	520826.457	105652.066	520826.457	105652.066	Required	
S11	520832.285	105656.119	520832.285	105656.119	Required	
S12	520862.253	105676.071	520862.253	105676.071	Required	
S13	520849.022	105690.106	520849.022	105690.106	Required	
S14	520854.282	105693.552			No Entry	
S15	520831.798	105716.260	520831.798	105716.260	Required	
S16	520838.261	105718.541			No Entry	
S17	520837.571	105720.915	520837.571	105720.915	Required	
S18	520825.871	105721.403	520825.871	105721.403	Required	
S19	520830.851	105731.110	520830.851	105731.110	Required	
S20	520807.147	105749.139	520807.147	105749.139	Required	
S21	520808.005	105761.226			No Entry	

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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)
S22	520685.686	105695.422	520685.686	105695.422	Required	
S23	520694.037	105700.922	520694.037	105700.922	Required	
S24	520702.389	105706.423	520702.389	105706.423	Required	
S25	520710.740	105711.923	520710.740	105711.923	Required	
S26	520719.092	105717.422	520719.092	105717.422	Required	
S27	520727.444	105722.922	520727.444	105722.922	Required	
S28	520737.179	105729.334	520737.179	105729.334	Required	
S29	520754.718	105740.884	520754.718	105740.884	Required	
S30	520767.215	105749.115	520767.215	105749.115	Required	
S31	520779.111	105756.949	520779.111	105756.949	Required	
S32	520797.862	105769.298			No Entry	
S33	520800.107	105779.249	520800.107	105779.249	Required	
S34	520676.800	105735.642	520676.800	105735.642	Required	
S35	520685.151	105741.142	520685.151	105741.142	Required	
S36	520693.503	105746.642	520693.503	105746.642	Required	
S37	520701.855	105752.142	520701.855	105752.142	Required	
S38	520710.206	105757.642	520710.206	105757.642	Required	
S39	520718.558	105763.142	520718.558	105763.142	Required	
S40	520726.910	105768.642	520726.910	105768.642	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)
S41	520735.261	105774.142	520735.261	105774.142	Required	
S42	520744.248	105780.050	520744.248	105780.050	Required	
S43	520778.788	105802.807	520778.788	105802.807	Required	
S44	520789.274	105795.698	520789.274	105795.698	Required	
S45	520615.596	105785.940	520615.596	105785.940	Required	
S46	520610.095	105794.291	520610.095	105794.291	Required	
S47	520604.615	105802.655	520604.615	105802.655	Required	
S48	520599.075	105810.981	520599.075	105810.981	Required	
S49	520593.541	105819.428	520593.541	105819.428	Required	
S50	520595.672	105847.649	520595.672	105847.649	Required	
S51	520600.967	105851.239	520600.967	105851.239	Required	
S52	520609.318	105856.782	520609.318	105856.782	Required	
S53	520617.642	105862.322	520617.642	105862.322	Required	
S54	520626.048	105867.898	520626.048	105867.898	Required	
S55	520631.487	105871.419	520631.487	105871.419	Required	
S56	520636.255	105874.324	520636.255	105874.324	Required	
S57	520659.128	105875.366	520659.128	105875.366	Required	
S58	520680.071	105875.354	520680.071	105875.354	Required	
S59	520727.867	105874.436			No Entry	

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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)
S60	520739.345	105857.073	520739.345	105857.073	Required	
S61	520671.492	105820.299	520671.492	105820.299	Required	
S62	520739.975	105865.378	520739.975	105865.378	Required	
S63	520745.675	105861.477			No Entry	
S64	520760.265	105838.290	520760.265	105838.290	Required	
S65	520765.784	105829.910	520765.784	105829.910	Required	
S66	520764.881	105818.298	520764.881	105818.298	Required	
S67	520770.511	105822.263			No Entry	
S68	520781.745	105807.898			No Entry	
S69	520786.836	105810.801	520786.836	105810.801	Required	
S	520798.263	105809.607			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	Q35	-3	S1	2.040	1.491	0.199	Open Manhole	350
S1.001	Q35	-3	S2	2.011	1.461	0.200	Open Manhole	350
S1.002	Q35	-3	S3	1.997	1.447	0.200	Open Manhole	350
S1.003	Q35	-3	S4	1.977	1.427	0.200	Open Manhole	350
S1.004	Q35	-3	S5	1.963	1.413	0.200	Open Manhole	350
S1.005	Q35	-3	S6	1.949	1.399	0.200	Open Manhole	350
S1.006	Q35	-3	S7	1.935	1.385	0.200	Open Manhole	350
S1.007	Q35	-3	S8	1.921	1.371	0.200	Open Manhole	350
S1.008	Q35	-3	S9	1.907	1.357	0.200	Open Manhole	350
S1.009	Q35	-3	S10	1.893	1.344	0.199	Open Manhole	350
S1.010	Q35	-3	S11	1.883	1.335	0.198	Open Manhole	350
S1.011	SW1	-75	S12	2.040	1.285	0.005	Open Manhole	900
S2.000	o	375	S13	2.200	1.475	0.350	Open Manhole	1350
S1.012	SW1	-75	S14	2.100	1.284	0.066	Junction	
S3.000	o	375	S15	2.200	1.475	0.350	Open Manhole	1350
S1.013	SW1	-75	S16	2.100	1.283	0.067	Junction	
S1.014	o	450	S17	2.100	1.282	0.368	Open Manhole	1350
S4.000	o	375	S18	2.200	1.475	0.350	Open Manhole	1350

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	21.437	723.0	S2	2.011	1.461	0.200	Open Manhole	350
S1.001	10.000	714.3	S3	1.997	1.447	0.200	Open Manhole	350
S1.002	14.276	713.8	S4	1.977	1.427	0.200	Open Manhole	350
S1.003	10.001	714.4	S5	1.963	1.413	0.200	Open Manhole	350
S1.004	10.029	716.4	S6	1.949	1.399	0.200	Open Manhole	350
S1.005	10.023	715.9	S7	1.935	1.385	0.200	Open Manhole	350
S1.006	9.949	710.6	S8	1.921	1.371	0.200	Open Manhole	350
S1.007	10.000	714.3	S9	1.907	1.357	0.200	Open Manhole	350
S1.008	10.000	769.2	S10	1.893	1.344	0.199	Open Manhole	350
S1.009	7.098	788.7	S11	1.883	1.335	0.198	Open Manhole	350
S1.010	36.002	720.0	S12	2.040	1.285	0.405	Open Manhole	900
S1.011	5.000#	5000.0	S14	2.100	1.284	0.066	Junction	
S2.000	5.000#	325.0	S14	2.100	1.460	0.265	Junction	
S1.012	5.000#	5000.0	S16	2.100	1.283	0.067	Junction	
S3.000	5.000#	325.0	S16	2.100	1.460	0.265	Junction	
S1.013	5.000#	5000.0	S17	2.100	1.282	0.068	Open Manhole	1350
S1.014	12.211	393.9	S19	2.100	1.251	0.399	Open Manhole	1350
S4.000	5.000#	325.0	S19	2.100	1.460	0.265	Open Manhole	1350

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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)
S1.015	SW1	-75	S19	2.100	1.251	0.099	Open Manhole	1350
S5.000	o	375	S20	2.200	1.475	0.350	Open Manhole	1350
S1.016	SW1	-75	S21	2.100	1.250	0.100	Junction	
S6.000	Q35	-3	S22	2.040	1.490	0.200	Open Manhole	350
S6.001	Q35	-3	S23	2.026	1.476	0.200	Open Manhole	350
S6.002	Q35	-3	S24	2.012	1.462	0.200	Open Manhole	350
S6.003	Q35	-3	S25	1.998	1.448	0.200	Open Manhole	350
S6.004	Q35	-3	S26	1.984	1.434	0.200	Open Manhole	350
S6.005	Q35	-3	S27	1.970	1.420	0.200	Open Manhole	350
S6.006	Q35	-3	S28	1.954	1.404	0.200	Open Manhole	350
S6.007	Q35	-3	S29	1.925	1.375	0.200	Open Manhole	350
S6.008	Q35	-3	S30	1.904	1.354	0.200	Open Manhole	350
S6.009	Q35	-3	S31	1.884	1.334	0.200	Open Manhole	350
S6.010	o	350	S32	1.853	1.303	0.200	Junction	
S1.017	o	450	S33	2.100	1.248	0.402	Open Manhole	1350
S7.000	Q35	-3	S34	2.040	1.490	0.200	Open Manhole	350
S7.001	Q35	-3	S35	2.026	1.476	0.200	Open Manhole	350
S7.002	Q35	-3	S36	2.012	1.462	0.200	Open Manhole	350
S7.003	Q35	-3	S37	1.998	1.448	0.200	Open Manhole	350
S7.004	Q35	-3	S38	1.984	1.434	0.200	Open Manhole	350
S7.005	Q35	-3	S39	1.970	1.420	0.200	Open Manhole	350

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)
S1.015	37.801	37801.0	S21	2.100	1.250	0.100	Junction	
S5.000	5.000#	325.0	S21	2.100	1.460	0.265	Junction	
S1.016	19.677	9838.5	S33	2.100	1.248	0.102	Open Manhole	1350
S6.000	10.000	725.0	S23	2.026	1.476	0.200	Open Manhole	350
S6.001	10.000	714.3	S24	2.012	1.462	0.200	Open Manhole	350
S6.002	10.000	714.3	S25	1.998	1.448	0.200	Open Manhole	350
S6.003	10.000	714.3	S26	1.984	1.434	0.200	Open Manhole	350
S6.004	10.000	714.3	S27	1.970	1.420	0.200	Open Manhole	350
S6.005	11.657	728.6	S28	1.954	1.404	0.200	Open Manhole	350
S6.006	21.001	724.2	S29	1.925	1.375	0.200	Open Manhole	350
S6.007	14.964	712.6	S30	1.904	1.354	0.200	Open Manhole	350
S6.008	14.245	712.3	S31	1.884	1.334	0.200	Open Manhole	350
S6.009	22.451	724.2	S32	1.853	1.303	0.200	Junction	
S6.010	10.201	291.5	S33	2.100	1.268	0.482	Open Manhole	1350
S1.017	19.696	419.1	S44	2.100	1.201	0.449	Open Manhole	1350
S7.000	10.000	725.0	S35	2.026	1.476	0.200	Open Manhole	350
S7.001	10.000	714.3	S36	2.012	1.462	0.200	Open Manhole	350
S7.002	10.000	714.3	S37	1.998	1.448	0.200	Open Manhole	350
S7.003	10.000	714.3	S38	1.984	1.434	0.200	Open Manhole	350
S7.004	10.000	714.3	S39	1.970	1.420	0.200	Open Manhole	350
S7.005	10.000	714.3	S40	1.956	1.406	0.200	Open Manhole	350

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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)
S7.006	Q35	-3	S40	1.956	1.406	0.200	Open Manhole	350
S7.007	Q35	-3	S41	1.942	1.392	0.200	Open Manhole	350
S7.008	Q35	-3	S42	1.927	1.377	0.200	Open Manhole	350
S7.009	o	450	S43	2.040	1.320	0.270	Open Manhole	1200
S1.018	SW1	-75	S44	2.100	1.201	0.149	Open Manhole	1350
S8.000	Q35	-3	S45	2.053	1.503	0.200	Open Manhole	350
S8.001	Q35	-3	S46	2.040	1.490	0.200	Open Manhole	350
S8.002	Q35	-3	S47	2.027	1.477	0.200	Open Manhole	350
S8.003	Q35	-3	S48	2.014	1.464	0.200	Open Manhole	350
S8.004	Q35	-3	S49	2.001	1.451	0.200	Open Manhole	350
S8.005	Q35	-3	S50	1.962	1.412	0.200	Open Manhole	350
S8.006	Q35	-3	S51	1.953	1.403	0.200	Open Manhole	350
S8.007	Q35	-3	S52	1.939	1.389	0.200	Open Manhole	350
S8.008	Q35	-3	S53	1.925	1.375	0.200	Open Manhole	350
S8.009	Q35	-3	S54	1.911	1.361	0.200	Open Manhole	350
S8.010	o	375	S55	2.040	1.352	0.313	Open Manhole	350
S8.011	SW1	-75	S56	2.100	1.335	0.015	Open Manhole	1350
S8.012	o	450	S57	2.100	1.334	0.316	Open Manhole	1350
S8.013	SW1	-75	S58	2.100	1.282	0.068	Open Manhole	1350
S8.014	o	450	S59	2.100	1.281	0.369	Junction	
S9.000	o	300	S60	2.200	1.525	0.375	Open Manhole	1200
S10.000	o	450	S61	2.200	1.486	0.264	Open Manhole	1350

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)
S7.006	10.000	714.3	S41	1.942	1.392	0.200	Open Manhole	350
S7.007	10.755	717.0	S42	1.927	1.377	0.200	Open Manhole	350
S7.008	41.363	725.7	S43	2.040	1.320	0.370	Open Manhole	1200
S7.009	12.669	105.6	S44	2.100	1.200	0.450	Open Manhole	1350
S1.018	5.000#	5000.0	S68	2.100	1.200	0.150	Junction	
S8.000	10.000	769.2	S46	2.040	1.490	0.200	Open Manhole	350
S8.001	10.000	769.2	S47	2.027	1.477	0.200	Open Manhole	350
S8.002	10.000	769.2	S48	2.014	1.464	0.200	Open Manhole	350
S8.003	10.099	776.8	S49	2.001	1.451	0.200	Open Manhole	350
S8.004	28.302	725.7	S50	1.962	1.412	0.200	Open Manhole	350
S8.005	6.397	710.8	S51	1.953	1.403	0.200	Open Manhole	350
S8.006	10.023	715.9	S52	1.939	1.389	0.200	Open Manhole	350
S8.007	9.999	714.2	S53	1.925	1.375	0.200	Open Manhole	350
S8.008	10.087	720.5	S54	1.911	1.361	0.200	Open Manhole	350
S8.009	6.479	719.9	S55	2.040	1.352	0.338	Open Manhole	350
S8.010	5.583	328.4	S56	2.100	1.335	0.390	Open Manhole	1350
S8.011	5.000#	5000.0	S57	2.100	1.334	0.016	Open Manhole	1350
S8.012	20.943	402.8	S58	2.100	1.282	0.368	Open Manhole	1350
S8.013	5.000#	5000.0	S59	2.100	1.281	0.069	Junction	
S8.014	22.024	407.9	S63	2.100	1.227	0.423	Junction	
S9.000	5.000#	70.4	S63	2.100	1.454	0.346	Junction	
S10.000	80.000#	325.2	S62	2.150	1.240	0.460	Open Manhole	1350

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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	450	S62	2.150	1.240	0.460	Open Manhole	1350
S8.015	SW1	-75	S63	2.100	1.227	0.123	Junction	
S8.016	o	450	S64	2.100	1.226	0.424	Open Manhole	1350
S8.017	SW1	-75	S65	2.100	1.202	0.148	Open Manhole	1350
S11.000	o	300	S66	2.200	1.475	0.425	Open Manhole	1200
S8.018	SW1	-75	S67	2.100	1.201	0.149	Junction	
S1.019	o	600	S68	2.100	1.200	0.300	Junction	
S1.020	o	600	S69	2.250	0.472	1.178	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)
S10.001	5.000#	384.6	S63	2.100	1.227	0.423	Junction	
S8.015	5.000#	5000.0	S64	2.100	1.226	0.124	Open Manhole	1350
S8.016	10.034	418.1	S65	2.100	1.202	0.448	Open Manhole	1350
S8.017	5.000#	5000.0	S67	2.100	1.201	0.149	Junction	
S11.000	5.000#	208.3	S67	2.100	1.451	0.349	Junction	
S8.018	5.000#	5000.0	S68	2.100	1.200	0.150	Junction	
S1.019	6.000	500.0	S69	2.250	1.188	0.462	Open Manhole	1500
S1.020	11.489	273.0	S	2.250	0.430	1.220	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	User	-	100	0.053	0.053	0.053
1.001	User	-	100	0.022	0.022	0.022
1.002	User	-	100	0.046	0.046	0.046
1.003	User	-	100	0.022	0.022	0.022
1.004	User	-	100	0.039	0.039	0.039
1.005	User	-	100	0.039	0.039	0.039
1.006	User	-	100	0.039	0.039	0.039
1.007	User	-	100	0.039	0.039	0.039
1.008	User	-	100	0.039	0.039	0.039
1.009	User	-	100	0.039	0.039	0.039
1.010	User	-	100	0.028	0.028	0.028
1.011	User	-	100	0.134	0.134	0.134
2.000	User	-	100	0.241	0.241	0.241
1.012	-	-	100	0.000	0.000	0.000
3.000	User	-	100	0.239	0.239	0.239
1.013	-	-	100	0.000	0.000	0.000
1.014	-	-	100	0.000	0.000	0.000
4.000	User	-	100	0.289	0.289	0.289
1.015	-	-	100	0.000	0.000	0.000
5.000	User	-	100	0.312	0.312	0.312
1.016	-	-	100	0.000	0.000	0.000
6.000	User	-	100	0.080	0.080	0.080
6.001	User	-	100	0.027	0.027	0.027
6.002	User	-	100	0.027	0.027	0.027
6.003	User	-	100	0.027	0.027	0.027
6.004	User	-	100	0.027	0.027	0.027
6.005	User	-	100	0.027	0.027	0.027
6.006	User	-	100	0.031	0.031	0.031
6.007	User	-	100	0.056	0.056	0.056
6.008	User	-	100	0.040	0.040	0.040
6.009	User	-	100	0.038	0.038	0.038
6.010	User	-	100	0.057	0.057	0.057
1.017	-	-	100	0.000	0.000	0.000
7.000	User	-	100	0.122	0.122	0.122
	User	-	100	0.012	0.012	0.134
7.001	User	-	100	0.043	0.043	0.043
7.002	User	-	100	0.041	0.041	0.041
7.003	User	-	100	0.041	0.041	0.041
7.004	User	-	100	0.041	0.041	0.041
7.005	User	-	100	0.041	0.041	0.041
7.006	User	-	100	0.041	0.041	0.041
7.007	User	-	100	0.041	0.041	0.041
7.008	User	-	100	0.046	0.046	0.046
7.009	User	-	100	0.161	0.161	0.161
1.018	-	-	100	0.000	0.000	0.000
8.000	User	-	100	0.012	0.012	0.012
8.001	User	-	100	0.029	0.029	0.029
8.002	User	-	100	0.029	0.029	0.029
8.003	User	-	100	0.027	0.027	0.027
8.004	User	-	100	0.020	0.020	0.020
8.005	User	-	100	0.029	0.029	0.029
8.006	User	-	100	0.003	0.003	0.003
8.007	User	-	100	0.028	0.028	0.028
8.008	User	-	100	0.030	0.030	0.030
8.009	User	-	100	0.023	0.023	0.023
8.010	User	-	100	0.023	0.023	0.023
8.011	-	-	100	0.000	0.000	0.000
8.012	-	-	100	0.000	0.000	0.000
8.013	-	-	100	0.000	0.000	0.000
8.014	User	-	100	0.182	0.182	0.182
9.000	User	-	100	0.206	0.206	0.206

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
10.000	User	-	100	0.224	0.224	0.224
	User	-	100	0.300	0.300	0.524
	User	-	100	0.224	0.224	0.748
10.001	-	-	100	0.000	0.000	0.000
8.015	-	-	100	0.000	0.000	0.000
8.016	-	-	100	0.000	0.000	0.000
8.017	-	-	100	0.000	0.000	0.000
11.000	User	-	100	0.206	0.206	0.206
8.018	-	-	100	0.000	0.000	0.000
1.019	-	-	100	0.000	0.000	0.000
1.020	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				4.278	4.278	4.278

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.020	S	2.250	0.430	0.500	0	0

Datum (m) 0.000 Offset (mins) -180

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
60	0.950	1620	0.950	3180	0.950	4740	0.950	6300	0.950	7860	0.950	9420	0.950
120	0.950	1680	0.950	3240	0.950	4800	0.950	6360	0.950	7920	0.950	9480	0.950
180	0.950	1740	0.950	3300	0.950	4860	0.950	6420	0.950	7980	0.950	9540	0.950
240	0.950	1800	0.950	3360	0.950	4920	0.950	6480	0.950	8040	0.950	9600	0.950
300	0.950	1860	0.950	3420	0.950	4980	0.950	6540	0.950	8100	0.950	9660	0.950
360	0.950	1920	0.950	3480	0.950	5040	0.950	6600	0.950	8160	0.950	9720	0.950
420	0.950	1980	0.950	3540	0.950	5100	0.950	6660	0.950	8220	0.950	9780	0.950
480	0.950	2040	0.950	3600	0.950	5160	0.950	6720	0.950	8280	0.950	9840	0.950
540	0.950	2100	0.950	3660	0.950	5220	0.950	6780	0.950	8340	0.950	9900	0.950
600	0.950	2160	0.950	3720	0.950	5280	0.950	6840	0.950	8400	0.950	9960	0.950
660	0.950	2220	0.950	3780	0.950	5340	0.950	6900	0.950	8460	0.950	10020	0.950
720	0.950	2280	0.950	3840	0.950	5400	0.950	6960	0.950	8520	0.950	10080	0.950
780	0.950	2340	0.950	3900	0.950	5460	0.950	7020	0.950	8580	0.950	10140	0.950
840	0.950	2400	0.950	3960	0.950	5520	0.950	7080	0.950	8640	0.950	10200	0.950
900	0.950	2460	0.950	4020	0.950	5580	0.950	7140	0.950	8700	0.950	10260	0.950
960	0.950	2520	0.950	4080	0.950	5640	0.950	7200	0.950	8760	0.950	10320	0.950
1020	0.950	2580	0.950	4140	0.950	5700	0.950	7260	0.950	8820	0.950	10380	0.950
1080	0.950	2640	0.950	4200	0.950	5760	0.950	7320	0.950	8880	0.950	10440	0.950
1140	0.950	2700	0.950	4260	0.950	5820	0.950	7380	0.950	8940	0.950	10500	0.950
1200	0.950	2760	0.950	4320	0.950	5880	0.950	7440	0.950	9000	0.950	10560	0.950
1260	0.950	2820	0.950	4380	0.950	5940	0.950	7500	0.950	9060	0.950	10620	0.950
1320	0.950	2880	0.950	4440	0.950	6000	0.950	7560	0.950	9120	0.950	10680	0.950
1380	0.950	2940	0.950	4500	0.950	6060	0.950	7620	0.950	9180	0.950	10740	0.950
1440	0.950	3000	0.950	4560	0.950	6120	0.950	7680	0.950	9240	0.950	10800	0.950
1500	0.950	3060	0.950	4620	0.950	6180	0.950	7740	0.950	9300	0.950		
1560	0.950	3120	0.950	4680	0.950	6240	0.950	7800	0.950	9360	0.950		

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Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	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 Offline Controls	0	Number of Time/Area Diagrams	11
Number of Online Controls	0	Number of Storage Structures	30	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.800	Storm Duration (mins)	30
Ratio R	0.350		

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Storage Structures for Storm

Porous Car Park Manhole: S1, DS/PN: S1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	30.0
Membrane Percolation (mm/hr)	1000	Length (m)	22.5
Max Percolation (l/s)	187.5	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.491	Cap Volume Depth (m)	0.350

Porous Car Park Manhole: S3, DS/PN: S1.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.647	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S5, DS/PN: S1.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.613	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S7, DS/PN: S1.006

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.585	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S9, DS/PN: S1.008

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.557	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S11, DS/PN: S1.010

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.535	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S12, DS/PN: S1.011

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30
Membrane Percolation (mm/hr)	1000	Invert Level (m)	1.285
Max Percolation (l/s)	311.7	Width (m)	33.5
Safety Factor	2.0	Length (m)	33.5

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Porous Car Park Manhole: S12, DS/PN: S1.011

Slope (1:X)	0.0	Evaporation (mm/day)	3
Depression Storage (mm)	5	Cap Volume Depth (m)	0.350

Swale Manhole: S17, DS/PN: S1.014

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	58.6
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.603
Invert Level (m)	1.282	Cap Infiltration Depth (m)	0.000
Base Width (m)	4.5	Include Swale Volume	Yes

Porous Car Park Manhole: S22, DS/PN: S6.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	25.0
Max Percolation (l/s)	138.9	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.490	Cap Volume Depth (m)	0.350

Porous Car Park Manhole: S24, DS/PN: S6.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.662	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S26, DS/PN: S6.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.634	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S28, DS/PN: S6.006

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	23.3
Max Percolation (l/s)	129.4	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.404	Cap Volume Depth (m)	0.350

Porous Car Park Manhole: S30, DS/PN: S6.008

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.554	Cap Volume Depth (m)	0.150

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Porous Car Park Manhole: S31, DS/PN: S6.009

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	23.3
Max Percolation (l/s)	129.4	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.334	Cap Volume Depth (m)	0.350

Swale Manhole: S33, DS/PN: S1.017

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	69.4
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.605
Invert Level (m)	1.248	Cap Infiltration Depth (m)	0.000
Base Width (m)	4.5	Include Swale Volume	Yes

Porous Car Park Manhole: S34, DS/PN: S7.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	32.0
Membrane Percolation (mm/hr)	1000	Length (m)	32.0
Max Percolation (l/s)	284.4	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.490	Cap Volume Depth (m)	0.350

Porous Car Park Manhole: S36, DS/PN: S7.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.662	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S38, DS/PN: S7.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.634	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S40, DS/PN: S7.006

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.606	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S42, DS/PN: S7.008

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30
Membrane Percolation (mm/hr)	1000	Invert Level (m)	1.377
Max Percolation (l/s)	241.7	Width (m)	30.0
Safety Factor	2.0	Length (m)	29.0

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Porous Car Park Manhole: S42, DS/PN: S7.008

Slope (1:X)	0.0	Evaporation (mm/day)	3
Depression Storage (mm)	5	Cap Volume Depth (m)	0.350

Porous Car Park Manhole: S45, DS/PN: S8.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.703	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S47, DS/PN: S8.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.677	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S49, DS/PN: S8.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.651	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S53, DS/PN: S8.008

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	22.2	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.575	Cap Volume Depth (m)	0.150

Porous Car Park Manhole: S55, DS/PN: S8.010

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	4.0
Membrane Percolation (mm/hr)	1000	Length (m)	16.0
Max Percolation (l/s)	17.8	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.552	Cap Volume Depth (m)	0.150

Swale Manhole: S57, DS/PN: S8.012

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	22.9
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.577
Invert Level (m)	1.334	Cap Infiltration Depth (m)	0.000
Base Width (m)	0.8	Include Swale Volume	Yes

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Swale Manhole: S59, DS/PN: S8.014

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	47.8
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.630
Invert Level (m)	1.281	Cap Infiltration Depth (m)	0.000
Base Width (m)	1.9	Include Swale Volume	Yes

Porous Car Park Manhole: S61, DS/PN: S10.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	40.0
Membrane Percolation (mm/hr)	1000	Length (m)	41.5
Max Percolation (l/s)	461.1	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	1.600	Cap Volume Depth (m)	0.350

Swale Manhole: S64, DS/PN: S8.016

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	40.0
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.685
Invert Level (m)	1.226	Cap Infiltration Depth (m)	0.000
Base Width (m)	3.4	Include Swale Volume	Yes

Swale Manhole: S68, DS/PN: S1.019

Warning:- Volume should always be included unless the upstream pipe is being used for storage and/or as a carrier

Infiltration Coefficient Base (m/hr)	0.00000	Length (m)	41.6
Infiltration Coefficient Side (m/hr)	0.00000	Side Slope (1:X)	3.0
Safety Factor	2.0	Slope (1:X)	0.0
Porosity	1.00	Cap Volume Depth (m)	0.711
Invert Level (m)	1.314	Cap Infiltration Depth (m)	0.000
Base Width (m)	3.4	Include Swale Volume	Yes

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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 Offline Controls 0 Number of Time/Area Diagrams 11
Number of Online Controls 0 Number of Storage Structures 30 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	19.800
Region	England and Wales	Ratio R	0.350
Cv (Summer)	1.000		
Cv (Winter)	1.000		

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, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 30, 100
Climate Change (%)	0, 40, 40

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	240 Summer	1	+0%	100/120 Summer				1.526
S1.001	S2	30 Summer	1	+0%	100/15 Summer				1.585
S1.002	S3	30 Summer	1	+0%	100/15 Summer				1.594
S1.003	S4	30 Summer	1	+0%	30/30 Summer				1.593
S1.004	S5	30 Summer	1	+0%	30/15 Summer				1.591
S1.005	S6	30 Summer	1	+0%	30/15 Summer	100/30 Summer			1.588
S1.006	S7	30 Summer	1	+0%	30/15 Summer	100/30 Summer			1.582
S1.007	S8	30 Summer	1	+0%	30/15 Summer	100/30 Summer			1.573
S1.008	S9	30 Summer	1	+0%	30/15 Summer				1.560
S1.009	S10	30 Summer	1	+0%	30/15 Summer				1.540
S1.010	S11	30 Summer	1	+0%	30/30 Summer				1.509
S1.011	S12	360 Summer	1	+0%					1.452
S2.000	S13	15 Summer	1	+0%	30/15 Summer				1.669
S1.012	S14	360 Summer	1	+0%					1.452
S3.000	S15	15 Summer	1	+0%	30/15 Summer				1.668
S1.013	S16	360 Summer	1	+0%					1.452
S1.014	S17	360 Summer	1	+0%	100/60 Summer				1.452
S4.000	S18	15 Summer	1	+0%	30/15 Summer				1.692
S1.015	S19	240 Summer	1	+0%					1.442
S5.000	S20	15 Summer	1	+0%	30/15 Summer				1.703
S1.016	S21	240 Summer	1	+0%					1.436
S6.000	S22	240 Summer	1	+0%	100/120 Summer				1.552
S6.001	S23	15 Summer	1	+0%	100/60 Summer				1.572
S6.002	S24	15 Summer	1	+0%	100/60 Summer				1.573
S6.003	S25	15 Summer	1	+0%	100/60 Summer				1.570
S6.004	S26	15 Summer	1	+0%	100/60 Summer				1.562
S6.005	S27	15 Summer	1	+0%	100/60 Summer				1.545
S6.006	S28	240 Summer	1	+0%	100/60 Summer				1.502
S6.007	S29	240 Summer	1	+0%	100/60 Summer				1.483
S6.008	S30	240 Summer	1	+0%	100/60 Summer				1.466
S6.009	S31	240 Summer	1	+0%	100/60 Summer				1.451

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

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
S1.000	S1	-0.315	0.000	0.02		151	0.7	OK	
S1.001	S2	-0.226	0.000	0.02			0.7	OK	
S1.002	S3	-0.203	0.000	0.09		7	3.0	OK	
S1.003	S4	-0.184	0.000	0.08			3.6	OK	
S1.004	S5	-0.172	0.000	0.17		8	7.1	OK	
S1.005	S6	-0.161	0.000	0.25			10.8	OK	
S1.006	S7	-0.153	0.000	0.33		9	14.4	OK	2
S1.007	S8	-0.148	0.000	0.42			18.1	OK	2
S1.008	S9	-0.147	0.000	0.50		8	21.5	OK	
S1.009	S10	-0.154	0.000	0.45			25.0	OK	
S1.010	S11	-0.176	0.000	0.50		10	27.5	OK	
S1.011	S12	-0.583	0.000	0.00		166	9.0	OK	
S2.000	S13	-0.181	0.000	0.52			39.9	OK	
S1.012	S14	-0.582	0.000	0.00			14.2	OK	
S3.000	S15	-0.182	0.000	0.52			39.6	OK	
S1.013	S16	-0.581	0.000	0.00			22.4	OK	
S1.014	S17	-0.280	0.000	0.16		160	16.2	OK	
S4.000	S18	-0.158	0.000	0.62			47.9	OK	
S1.015	S19	-0.559	0.000	0.01			22.9	OK	
S5.000	S20	-0.147	0.000	0.67			51.6	OK	
S1.016	S21	-0.564	0.000	0.01			30.9	OK	
S6.000	S22	-0.288	0.000	0.04		112	1.9	OK	
S6.001	S23	-0.254	0.000	0.04			1.6	OK	
S6.002	S24	-0.239	0.000	0.08		8	3.3	OK	
S6.003	S25	-0.228	0.000	0.15			6.6	OK	
S6.004	S26	-0.222	0.000	0.24		7	10.1	OK	
S6.005	S27	-0.225	0.000	0.35			13.5	OK	
S6.006	S28	-0.252	0.000	0.13		113	5.2	OK	
S6.007	S29	-0.242	0.000	0.20			6.5	OK	
S6.008	S30	-0.238	0.000	0.24		102	7.7	OK	
S6.009	S31	-0.233	0.000	0.17		123	6.9	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.	Water Level (m)
S6.010	S32	240 Summer	1	+0%	100/60 Summer				1.433
S1.017	S33	240 Summer	1	+0%	100/60 Summer				1.430
S7.000	S34	360 Summer	1	+0%	100/120 Summer				1.554
S7.001	S35	30 Summer	1	+0%	30/15 Summer				1.613
S7.002	S36	30 Summer	1	+0%	30/15 Summer				1.623
S7.003	S37	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.623
S7.004	S38	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.620
S7.005	S39	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.613
S7.006	S40	30 Summer	1	+0%	30/15 Summer				1.601
S7.007	S41	30 Summer	1	+0%	30/15 Summer				1.581
S7.008	S42	240 Summer	1	+0%	100/120 Summer				1.474
S7.009	S43	15 Summer	1	+0%	100/120 Summer				1.421
S1.018	S44	180 Summer	1	+0%					1.399
S8.000	S45	30 Summer	1	+0%	30/30 Summer	100/15 Summer			1.635
S8.001	S46	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.634
S8.002	S47	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.632
S8.003	S48	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.627
S8.004	S49	30 Summer	1	+0%	30/15 Summer	100/15 Winter			1.618
S8.005	S50	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.602
S8.006	S51	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.593
S8.007	S52	30 Summer	1	+0%	30/15 Summer	100/15 Summer			1.582
S8.008	S53	30 Summer	1	+0%	30/15 Summer				1.567
S8.009	S54	30 Summer	1	+0%	30/15 Summer				1.546
S8.010	S55	30 Summer	1	+0%	100/15 Summer				1.501
S8.011	S56	60 Summer	1	+0%					1.470
S8.012	S57	60 Summer	1	+0%	100/60 Summer				1.470
S8.013	S58	120 Summer	1	+0%					1.457
S8.014	S59	120 Summer	1	+0%	100/60 Summer				1.457
S9.000	S60	15 Summer	1	+0%	30/15 Summer				1.679
S10.000	S61	30 Summer	1	+0%					1.618
S10.001	S62	120 Summer	1	+0%	100/30 Summer				1.455
S8.015	S63	120 Summer	1	+0%					1.450
S8.016	S64	120 Summer	1	+0%	100/30 Summer				1.449
S8.017	S65	180 Summer	1	+0%					1.401
S11.000	S66	15 Summer	1	+0%	30/15 Summer				1.657
S8.018	S67	180 Summer	1	+0%					1.400
S1.019	S68	180 Summer	1	+0%					1.398
S1.020	S69	15 Summer	1	+0%	100/60 Summer				0.981

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
S6.010	S32	-0.220	0.000	0.08			7.6	OK*	
S1.017	S33	-0.268	0.000	0.27		143	33.4	OK	
S7.000	S34	-0.286	0.000	0.05		189	2.2	OK	
S7.001	S35	-0.213	0.000	0.03			1.2	OK	
S7.002	S36	-0.189	0.000	0.06		7	2.6	OK	
S7.003	S37	-0.175	0.000	0.15			6.3	OK	2
S7.004	S38	-0.164	0.000	0.26		8	11.2	OK	3
S7.005	S39	-0.157	0.000	0.38			16.1	OK	3
S7.006	S40	-0.155	0.000	0.49		8	21.1	OK	
S7.007	S41	-0.161	0.000	0.64			26.1	OK	
S7.008	S42	-0.253	0.000	0.15		125	8.6	OK	
S7.009	S43	-0.349	0.000	0.11			21.9	OK	
S1.018	S44	-0.552	0.000	0.01			41.4	OK	
S8.000	S45	-0.218	0.000	0.04		9	1.7	OK	2
S8.001	S46	-0.206	0.000	0.11			4.8	OK	4

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

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
S8.002	S47	-0.195	0.000	0.19		8	8.0	OK	5
S8.003	S48	-0.187	0.000	0.25			10.7	OK	5
S8.004	S49	-0.183	0.000	0.26		7	12.5	OK	3
S8.005	S50	-0.160	0.000	0.25			14.9	OK	5
S8.006	S51	-0.160	0.000	0.36			15.2	OK	3
S8.007	S52	-0.157	0.000	0.42			17.8	OK	2
S8.008	S53	-0.158	0.000	0.48		9	20.6	OK	
S8.009	S54	-0.165	0.000	0.38			22.8	OK	
S8.010	S55	-0.226	0.000	0.33		12	24.9	OK	
S8.011	S56	-0.615	0.000	0.01			22.7	OK	
S8.012	S57	-0.314	0.000	0.15		31	19.3	OK	
S8.013	S58	-0.575	0.000	0.00			14.8	OK	
S8.014	S59	-0.274	0.000	0.10		47	15.7	OK*	
S9.000	S60	-0.146	0.000	0.51			34.1	OK	
S10.000	S61	-0.318	0.000	0.19		7	31.8	OK	
S10.001	S62	-0.235	0.000	0.25			28.6	OK	
S8.015	S63	-0.527	0.000	0.00			52.1	OK	
S8.016	S64	-0.227	0.000	0.49		63	45.6	OK	
S8.017	S65	-0.551	0.000	0.01			44.5	OK	
S11.000	S66	-0.118	0.000	0.67			34.1	OK	
S8.018	S67	-0.551	0.000	0.00			50.0	OK	
S1.019	S68	-0.402	0.000	0.24		58	83.2	OK*	
S1.020	S69	-0.091	0.000	0.15			40.2	OK	

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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 Offline Controls 0 Number of Time/Area Diagrams 11
Number of Online Controls 0 Number of Storage Structures 30 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	19.800
Region	England and Wales	Ratio R	0.350
Cv (Summer)	1.000		
Cv (Winter)	1.000		

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, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 40, 40

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	180 Summer	30	+40%	100/120 Summer				1.759
S1.001	S2	180 Summer	30	+40%	100/15 Summer				1.758
S1.002	S3	30 Summer	30	+40%	100/15 Summer				1.778
S1.003	S4	30 Summer	30	+40%	30/30 Summer				1.800
S1.004	S5	30 Summer	30	+40%	30/15 Summer				1.806
S1.005	S6	30 Summer	30	+40%	30/15 Summer	100/30 Summer			1.801
S1.006	S7	30 Summer	30	+40%	30/15 Summer	100/30 Summer			1.792
S1.007	S8	30 Summer	30	+40%	30/15 Summer	100/30 Summer			1.778
S1.008	S9	30 Summer	30	+40%	30/15 Summer				1.758
S1.009	S10	180 Summer	30	+40%	30/15 Summer				1.741
S1.010	S11	180 Summer	30	+40%	30/30 Summer				1.735
S1.011	S12	180 Summer	30	+40%					1.721
S2.000	S13	15 Summer	30	+40%	30/15 Summer				1.945
S1.012	S14	180 Summer	30	+40%					1.720
S3.000	S15	15 Summer	30	+40%	30/15 Summer				1.942
S1.013	S16	180 Summer	30	+40%					1.719
S1.014	S17	180 Summer	30	+40%	100/60 Summer				1.718
S4.000	S18	15 Summer	30	+40%	30/15 Summer				2.001
S1.015	S19	180 Summer	30	+40%					1.678
S5.000	S20	15 Summer	30	+40%	30/15 Summer				2.031
S1.016	S21	180 Summer	30	+40%					1.649
S6.000	S22	180 Summer	30	+40%	100/120 Summer				1.734
S6.001	S23	180 Summer	30	+40%	100/60 Summer				1.733
S6.002	S24	180 Summer	30	+40%	100/60 Summer				1.731
S6.003	S25	180 Summer	30	+40%	100/60 Summer				1.729
S6.004	S26	180 Summer	30	+40%	100/60 Summer				1.727
S6.005	S27	180 Summer	30	+40%	100/60 Summer				1.724
S6.006	S28	180 Summer	30	+40%	100/60 Summer				1.720
S6.007	S29	180 Summer	30	+40%	100/60 Summer				1.712
S6.008	S30	180 Summer	30	+40%	100/60 Summer				1.700
S6.009	S31	180 Summer	30	+40%	100/60 Summer				1.683

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

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	-0.082	0.000	0.25		89	9.9	FLOOD RISK	
S1.001	S2	-0.053	0.000	0.24			10.3	FLOOD RISK	
S1.002	S3	-0.019	0.000	0.26		12	8.3	FLOOD RISK	
S1.003	S4	0.023	0.000	0.20			8.5	FLOOD RISK	
S1.004	S5	0.043	0.000	0.22		17	9.5	FLOOD RISK	
S1.005	S6	0.052	0.000	0.48			20.4	FLOOD RISK	
S1.006	S7	0.057	0.000	0.73		22	31.5	FLOOD RISK	2
S1.007	S8	0.057	0.000	1.00			42.7	FLOOD RISK	2
S1.008	S9	0.051	0.000	1.26		32	53.9	FLOOD RISK	
S1.009	S10	0.047	0.000	0.60			33.4	FLOOD RISK	
S1.010	S11	0.050	0.000	0.67		95	37.1	FLOOD RISK	
S1.011	S12	-0.314	0.000	0.01		157	53.9	OK	
S2.000	S13	0.095	0.000	1.80			138.1	FLOOD RISK	
S1.012	S14	-0.314	0.000	0.01			83.2	OK	
S3.000	S15	0.092	0.000	1.78			137.0	FLOOD RISK	
S1.013	S16	-0.314	0.000	0.01			112.6	OK	
S1.014	S17	-0.014	0.000	0.66		117	67.9	OK	
S4.000	S18	0.151	0.000	2.15			164.7	FLOOD RISK	
S1.015	S19	-0.323	0.000	0.03			102.2	OK	
S5.000	S20	0.181	0.000	2.32			177.8	FLOOD RISK	
S1.016	S21	-0.351	0.000	0.03			124.4	OK	
S6.000	S22	-0.106	0.000	0.18		74	7.8	OK	
S6.001	S23	-0.093	0.000	0.19			8.0	FLOOD RISK	
S6.002	S24	-0.081	0.000	0.24		40	10.3	FLOOD RISK	
S6.003	S25	-0.069	0.000	0.34			14.5	FLOOD RISK	
S6.004	S26	-0.057	0.000	0.40		45	17.3	FLOOD RISK	
S6.005	S27	-0.046	0.000	0.59			22.6	FLOOD RISK	
S6.006	S28	-0.034	0.000	0.42		87	16.9	FLOOD RISK	
S6.007	S29	-0.013	0.000	0.67			21.8	FLOOD RISK	
S6.008	S30	-0.004	0.000	0.80		59	25.8	FLOOD RISK	
S6.009	S31	-0.001	0.000	0.59		104	24.7	FLOOD RISK	

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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.	Water Level (m)
S6.010	S32	120 Summer	30	+40%	100/60 Summer				1.653
S1.017	S33	180 Summer	30	+40%	100/60 Summer				1.631
S7.000	S34	120 Summer	30	+40%	100/120 Summer				1.726
S7.001	S35	15 Summer	30	+40%	30/15 Summer				1.907
S7.002	S36	15 Summer	30	+40%	30/15 Summer				1.942
S7.003	S37	15 Summer	30	+40%	30/15 Summer	100/15 Summer			1.945
S7.004	S38	15 Summer	30	+40%	30/15 Summer	100/15 Summer			1.931
S7.005	S39	15 Summer	30	+40%	30/15 Summer	100/15 Summer			1.880
S7.006	S40	15 Summer	30	+40%	30/15 Summer				1.855
S7.007	S41	15 Summer	30	+40%	30/15 Summer				1.815
S7.008	S42	180 Summer	30	+40%	100/120 Summer				1.642
S7.009	S43	180 Summer	30	+40%	100/120 Summer				1.609
S1.018	S44	180 Summer	30	+40%					1.583
S8.000	S45	30 Summer	30	+40%	30/30 Summer	100/15 Summer			1.868
S8.001	S46	30 Summer	30	+40%	30/15 Summer	100/15 Summer			1.865
S8.002	S47	30 Summer	30	+40%	30/15 Summer	100/15 Summer			1.859
S8.003	S48	30 Summer	30	+40%	30/15 Summer	100/15 Summer			1.848
S8.004	S49	30 Summer	30	+40%	30/15 Summer	100/15 Winter			1.835
S8.005	S50	30 Summer	30	+40%	30/15 Summer	100/15 Summer			1.809
S8.006	S51	15 Summer	30	+40%	30/15 Summer	100/15 Summer			1.786
S8.007	S52	15 Summer	30	+40%	30/15 Summer	100/15 Summer			1.771
S8.008	S53	15 Summer	30	+40%	30/15 Summer				1.752
S8.009	S54	120 Summer	30	+40%	30/15 Summer				1.735
S8.010	S55	60 Summer	30	+40%	100/15 Summer				1.727
S8.011	S56	120 Summer	30	+40%					1.720
S8.012	S57	120 Summer	30	+40%	100/60 Summer				1.719
S8.013	S58	120 Summer	30	+40%					1.693
S8.014	S59	120 Summer	30	+40%	100/60 Summer				1.693
S9.000	S60	15 Summer	30	+40%	30/15 Summer				1.967
S10.000	S61	60 Summer	30	+40%					1.754
S10.001	S62	180 Summer	30	+40%	100/30 Summer				1.690
S8.015	S63	60 Summer	30	+40%					1.652
S8.016	S64	60 Summer	30	+40%	100/30 Summer				1.648
S8.017	S65	180 Summer	30	+40%					1.586
S11.000	S66	15 Summer	30	+40%	30/15 Summer				1.964
S8.018	S67	180 Summer	30	+40%					1.585
S1.019	S68	180 Summer	30	+40%					1.582
S1.020	S69	180 Summer	30	+40%	100/60 Summer				0.987

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
S6.010	S32	0.000	0.000	0.29			25.9	FLOOD RISK*	
S1.017	S33	-0.067	0.000	0.87		135	106.9	OK	
S7.000	S34	-0.114	0.000	0.29		76	12.6	OK	
S7.001	S35	0.081	0.000	0.28			11.9	FLOOD RISK	
S7.002	S36	0.130	0.000	0.28		7	12.1	FLOOD RISK	
S7.003	S37	0.147	0.000	0.36			15.3	FLOOD RISK	2
S7.004	S38	0.147	0.000	0.81		8	34.8	FLOOD RISK	3
S7.005	S39	0.110	0.000	1.30			55.8	FLOOD RISK	3
S7.006	S40	0.099	0.000	1.78		8	76.6	FLOOD RISK	
S7.007	S41	0.073	0.000	2.40			97.3	FLOOD RISK	
S7.008	S42	-0.085	0.000	0.58		88	32.3	FLOOD RISK	
S7.009	S43	-0.161	0.000	0.26			50.0	OK	
S1.018	S44	-0.368	0.000	0.04			146.0	OK	
S8.000	S45	0.015	0.000	0.14		13	6.1	FLOOD RISK	2
S8.001	S46	0.025	0.000	0.30			13.0	FLOOD RISK	4

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

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
S8.002	S47	0.032	0.000	0.50		16	21.4	FLOOD RISK	5
S8.003	S48	0.034	0.000	0.68			29.2	FLOOD RISK	5
S8.004	S49	0.034	0.000	0.70		20	33.5	FLOOD RISK	3
S8.005	S50	0.047	0.000	0.68			41.2	FLOOD RISK	5
S8.006	S51	0.033	0.000	0.82			35.1	FLOOD RISK	3
S8.007	S52	0.032	0.000	0.96			41.2	FLOOD RISK	2
S8.008	S53	0.027	0.000	1.19		9	50.8	FLOOD RISK	
S8.009	S54	0.024	0.000	0.74			44.2	FLOOD RISK	
S8.010	S55	0.000	0.000	0.79		26	59.2	OK	
S8.011	S56	-0.365	0.000	0.01			44.8	OK	
S8.012	S57	-0.065	0.000	0.23		52	29.5	OK	
S8.013	S58	-0.339	0.000	0.01			27.8	OK	
S8.014	S59	-0.038	0.000	0.23		62	36.3	OK*	
S9.000	S60	0.142	0.000	1.76			117.4	FLOOD RISK	
S10.000	S61	-0.182	0.000	0.47		30	79.4	OK	
S10.001	S62	0.000	0.000	0.54			61.7	OK	
S8.015	S63	-0.325	0.000	0.01			155.6	OK	
S8.016	S64	-0.028	0.000	1.00		64	92.8	OK	
S8.017	S65	-0.366	0.000	0.02			92.8	OK	
S11.000	S66	0.189	0.000	2.31			117.4	FLOOD RISK	
S8.018	S67	-0.366	0.000	0.01			126.2	OK	
S1.019	S68	-0.218	0.000	0.73		92	253.3	OK*	
S1.020	S69	-0.085	0.000	0.93			253.3	OK	

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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 Offline Controls 0 Number of Time/Area Diagrams 11
Number of Online Controls 0 Number of Storage Structures 30 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	19.800
Region	England and Wales	Ratio R	0.350
Cv (Summer)	1.000		
Cv (Winter)	1.000		

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, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 40, 40

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	180 Summer	100	+40%	100/120 Summer				1.948
S1.001	S2	180 Summer	100	+40%	100/15 Summer				1.945
S1.002	S3	180 Summer	100	+40%	100/15 Summer				1.942
S1.003	S4	60 Summer	100	+40%	30/30 Summer				1.949
S1.004	S5	60 Summer	100	+40%	30/15 Summer				1.955
S1.005	S6	60 Summer	100	+40%	30/15 Summer	100/30 Summer			1.949
S1.006	S7	60 Summer	100	+40%	30/15 Summer	100/30 Summer			1.936
S1.007	S8	60 Summer	100	+40%	30/15 Summer	100/30 Summer			1.922
S1.008	S9	60 Summer	100	+40%	30/15 Summer				1.904
S1.009	S10	60 Summer	100	+40%	30/15 Summer				1.880
S1.010	S11	180 Summer	100	+40%	30/30 Summer				1.866
S1.011	S12	180 Summer	100	+40%					1.835
S2.000	S13	15 Summer	100	+40%	30/15 Summer				2.032
S1.012	S14	180 Summer	100	+40%					1.833
S3.000	S15	15 Summer	100	+40%	30/15 Summer				2.028
S1.013	S16	180 Summer	100	+40%					1.828
S1.014	S17	180 Summer	100	+40%	100/60 Summer				1.823
S4.000	S18	15 Summer	100	+40%	30/15 Summer				2.124
S1.015	S19	120 Summer	100	+40%					1.802
S5.000	S20	15 Summer	100	+40%	30/15 Summer				2.173
S1.016	S21	120 Summer	100	+40%					1.759
S6.000	S22	180 Summer	100	+40%	100/120 Summer				1.957
S6.001	S23	180 Summer	100	+40%	100/60 Summer				1.953
S6.002	S24	180 Summer	100	+40%	100/60 Summer				1.947
S6.003	S25	180 Summer	100	+40%	100/60 Summer				1.941
S6.004	S26	180 Summer	100	+40%	100/60 Summer				1.933
S6.005	S27	180 Summer	100	+40%	100/60 Summer				1.924
S6.006	S28	180 Summer	100	+40%	100/60 Summer				1.913
S6.007	S29	180 Summer	100	+40%	100/60 Summer				1.896
S6.008	S30	180 Summer	100	+40%	100/60 Summer				1.876
S6.009	S31	180 Summer	100	+40%	100/60 Summer				1.856

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

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
S1.000	S1	0.107	0.000	0.26		138	10.7	FLOOD RISK	
S1.001	S2	0.134	0.000	0.26			11.2	FLOOD RISK	
S1.002	S3	0.145	0.000	0.40		117	12.9	FLOOD RISK	
S1.003	S4	0.172	0.000	0.19			8.3	FLOOD RISK	
S1.004	S5	0.192	0.000	0.22			9.4	FLOOD RISK	
S1.005	S6	0.200	0.000	0.57			24.4	FLOOD RISK	
S1.006	S7	0.201	0.741	0.84			36.0	FLOOD	2
S1.007	S8	0.201	0.619	1.17			50.3	FLOOD	2
S1.008	S9	0.197	0.000	1.50			64.4	FLOOD RISK	
S1.009	S10	0.186	0.000	1.43			79.7	FLOOD RISK	
S1.010	S11	0.181	0.000	0.95		133	53.0	FLOOD RISK	
S1.011	S12	-0.200	0.000	0.02		197	81.9	FLOOD RISK	
S2.000	S13	0.182	0.000	2.31			177.6	FLOOD RISK	
S1.012	S14	-0.201	0.000	0.01			135.2	FLOOD RISK*	
S3.000	S15	0.178	0.000	2.29			176.1	FLOOD RISK	
S1.013	S16	-0.205	0.000	0.02			188.9	FLOOD RISK*	
S1.014	S17	0.091	0.000	0.89		125	91.7	FLOOD RISK	
S4.000	S18	0.274	0.000	2.78			213.5	FLOOD RISK	
S1.015	S19	-0.199	0.000	0.05			186.4	FLOOD RISK	
S5.000	S20	0.323	0.000	3.00			230.1	FLOOD RISK	
S1.016	S21	-0.241	0.000	0.04			213.1	OK	
S6.000	S22	0.117	0.000	0.22		112	9.3	FLOOD RISK	
S6.001	S23	0.127	0.000	0.26			11.0	FLOOD RISK	
S6.002	S24	0.135	0.000	0.32		88	13.7	FLOOD RISK	
S6.003	S25	0.143	0.000	0.38			16.4	FLOOD RISK	
S6.004	S26	0.149	0.000	0.45		96	19.1	FLOOD RISK	
S6.005	S27	0.154	0.000	0.67			25.4	FLOOD RISK	
S6.006	S28	0.159	0.000	0.62		132	24.7	FLOOD RISK	
S6.007	S29	0.171	0.000	0.93			30.1	FLOOD RISK	
S6.008	S30	0.172	0.000	1.05		107	34.0	FLOOD RISK	
S6.009	S31	0.172	0.000	0.90		154	37.5	FLOOD RISK	

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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.	Water Level (m)
S6.010	S32	120 Summer	100	+40%	100/60 Summer				1.831
S1.017	S33	120 Summer	100	+40%	100/60 Summer				1.739
S7.000	S34	180 Summer	100	+40%	100/120 Summer				1.880
S7.001	S35	15 Summer	100	+40%	30/15 Summer				1.949
S7.002	S36	15 Summer	100	+40%	30/15 Summer				2.002
S7.003	S37	15 Summer	100	+40%	30/15 Summer	100/15 Summer			1.998
S7.004	S38	15 Summer	100	+40%	30/15 Summer	100/15 Summer			1.986
S7.005	S39	15 Summer	100	+40%	30/15 Summer	100/15 Summer			1.970
S7.006	S40	30 Summer	100	+40%	30/15 Summer				1.943
S7.007	S41	15 Summer	100	+40%	30/15 Summer				1.860
S7.008	S42	120 Summer	100	+40%	100/120 Summer				1.816
S7.009	S43	120 Summer	100	+40%	100/120 Summer				1.795
S1.018	S44	120 Summer	100	+40%					1.679
S8.000	S45	15 Summer	100	+40%	30/30 Summer	100/15 Summer			2.053
S8.001	S46	15 Summer	100	+40%	30/15 Summer	100/15 Summer			2.041
S8.002	S47	30 Summer	100	+40%	30/15 Summer	100/15 Summer			2.029
S8.003	S48	30 Summer	100	+40%	30/15 Summer	100/15 Summer			2.015
S8.004	S49	30 Winter	100	+40%	30/15 Summer	100/15 Winter			2.001
S8.005	S50	30 Summer	100	+40%	30/15 Summer	100/15 Summer			1.963
S8.006	S51	15 Summer	100	+40%	30/15 Summer	100/15 Summer			1.953
S8.007	S52	30 Summer	100	+40%	30/15 Summer	100/15 Summer			1.939
S8.008	S53	30 Summer	100	+40%	30/15 Summer				1.921
S8.009	S54	30 Summer	100	+40%	30/15 Summer				1.866
S8.010	S55	120 Summer	100	+40%	100/15 Summer				1.798
S8.011	S56	120 Summer	100	+40%					1.786
S8.012	S57	120 Summer	100	+40%	100/60 Summer				1.784
S8.013	S58	120 Summer	100	+40%					1.746
S8.014	S59	120 Summer	100	+40%	100/60 Summer				1.746
S9.000	S60	15 Summer	100	+40%	30/15 Summer				2.115
S10.000	S61	60 Summer	100	+40%					1.822
S10.001	S62	120 Summer	100	+40%	100/30 Summer				1.743
S8.015	S63	120 Summer	100	+40%					1.729
S8.016	S64	120 Summer	100	+40%	100/30 Summer				1.725
S8.017	S65	120 Summer	100	+40%					1.683
S11.000	S66	15 Summer	100	+40%	30/15 Summer				2.114
S8.018	S67	120 Summer	100	+40%					1.682
S1.019	S68	120 Summer	100	+40%					1.678
S1.020	S69	60 Summer	100	+40%	100/60 Summer				1.072

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
S6.010	S32	0.178	0.000	0.43			39.1	FLOOD RISK*	
S1.017	S33	0.041	0.000	1.23		106	150.9	SURCHARGED	
S7.000	S34	0.040	0.000	0.52		82	22.4	FLOOD RISK	
S7.001	S35	0.123	0.000	0.39			16.7	FLOOD RISK	
S7.002	S36	0.190	0.000	0.43		9	18.5	FLOOD RISK	
S7.003	S37	0.200	0.570	0.44			18.8	FLOOD	2
S7.004	S38	0.202	1.860	0.89		7	38.2	FLOOD	3
S7.005	S39	0.200	0.155	1.53			65.8	FLOOD	3
S7.006	S40	0.187	0.000	2.24		23	96.0	FLOOD RISK	
S7.007	S41	0.118	0.000	3.10			125.5	FLOOD RISK	
S7.008	S42	0.089	0.000	0.87		89	48.6	FLOOD RISK	
S7.009	S43	0.025	0.000	0.37			71.3	FLOOD RISK	
S1.018	S44	-0.272	0.000	0.05			187.3	OK	
S8.000	S45	0.200	0.136	0.21		13	8.9	FLOOD	2
S8.001	S46	0.201	0.983	0.57			24.6	FLOOD	4

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

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
S8.002	S47	0.202	2.132	0.69		21	29.8	FLOOD	5
S8.003	S48	0.201	1.129	1.20			51.2	FLOOD	5
S8.004	S49	0.200	0.063	1.04		38	49.6	FLOOD	3
S8.005	S50	0.201	1.427	1.04			62.6	FLOOD	5
S8.006	S51	0.200	0.099	1.46			62.7	FLOOD	3
S8.007	S52	0.200	0.133	1.64			70.4	FLOOD	2
S8.008	S53	0.196	0.000	1.90			80.9	FLOOD RISK	
S8.009	S54	0.155	0.000	1.58			94.1	FLOOD RISK	
S8.010	S55	0.071	0.000	0.86		80	64.5	FLOOD RISK	
S8.011	S56	-0.299	0.000	0.02			62.9	OK	
S8.012	S57	0.000	0.000	0.36		79	46.9	SURCHARGED	
S8.013	S58	-0.286	0.000	0.01			45.8	OK	
S8.014	S59	0.015	0.000	0.45		71	71.9	SURCHARGED*	
S9.000	S60	0.290	0.000	2.27			151.6	FLOOD RISK	
S10.000	S61	-0.114	0.000	0.62		39	104.5	OK	
S10.001	S62	0.053	0.000	0.74			85.7	SURCHARGED	
S8.015	S63	-0.248	0.000	0.02			190.7	OK	
S8.016	S64	0.049	0.000	1.66		83	154.1	SURCHARGED	
S8.017	S65	-0.269	0.000	0.04			153.8	OK	
S11.000	S66	0.339	0.000	2.98			151.7	FLOOD RISK	
S8.018	S67	-0.269	0.000	0.02			180.5	OK	
S1.019	S68	-0.122	0.000	0.99		71	344.8	OK*	
S1.020	S69	0.000	0.000	1.18			322.1	SURCHARGED	

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