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Technology Services Sherwood House, Sherwood Ave. Newark, Nottinghamshire, NG...	Hoyland Common Surfacel Water S104	
Date 26/04/2021 File Hoyland Drainage 23 Apr...	Designed by S.McLean Checked by	

Innovyze Network 2020.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Southern Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD








FSR Rainfall Model - England and Wales

Return Period (years)	30	PIMP (%)	100
M5-60 (mm)	19.000	Add Flow / Climate Change (%)	0
Ratio R	0.362	Minimum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	0	Maximum Backdrop Height (m)	0.000
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 Soffits


Network Design Table for Southern Storm

- Indicates pipe length does not match coordinates

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.000	82.999	1.700	48.8	0.000	5.00	0.0	0.600		o	600	Pipe/Conduit	
S1.001	32.400	0.089	364.0	1.395	0.00	0.0	0.600		o	600	Pipe/Conduit	
S2.000	12.439	0.220	56.5	0.053	5.00	0.0	0.600		o	150	Pipe/Conduit	
S2.001	76.706	1.130	67.9	0.148	0.00	0.0	0.600		o	400	Pipe/Conduit	
S3.000	33.903	0.340	99.7	0.177	5.00	0.0	0.600		o	225	Pipe/Conduit	
S3.001	22.430	0.225	99.7	0.032	0.00	0.0	0.600		o	225	Pipe/Conduit	
S3.002	14.007	1.110	12.6	0.018	0.00	0.0	0.600		o	225	Pipe/Conduit	













Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	0.00	5.40	144.000	0.000	0.0	0.0	0.0	3.49	987.1	0.0
S1.001	0.00	5.82	142.289	1.395	0.0	0.0	0.0	1.27	359.2	0.0
S2.000	0.00	5.15	144.000	0.053	0.0	0.0	0.0	1.34	23.7	0.0
S2.001	0.00	5.71	143.530	0.201	0.0	0.0	0.0	2.29	288.2	0.0
S3.000	0.00	5.43	144.250	0.177	0.0	0.0	0.0	1.31	52.1	0.0
S3.001	0.00	5.72	143.910	0.209	0.0	0.0	0.0	1.31	52.1	0.0
S3.002	0.00	5.78	143.685	0.227	0.0	0.0	0.0	3.70	147.3	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.002	62.922	0.125	503.4	0.227	0.00	0.0	0.600		o	900	Pipe/Conduit	
S4.000	39.559	2.175	18.2	1.080	5.00	0.0	0.600		o	400	Pipe/Conduit	
S1.003	47.456	0.392	121.1	0.001	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S5.000	62.680	1.800	34.8	0.000	5.00	0.0	0.600		o	750	Pipe/Conduit	
S5.001	21.284	0.054	394.1	3.186	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.004	53.710	0.095	565.4	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S6.000	19.201	1.746	11.0	0.743	5.00	0.0	0.600		o	375	Pipe/Conduit	
S1.005	88.554	0.255	347.3	0.000	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S7.000	79.483	0.500	159.0	0.115	5.00	0.0	0.600		o	300	Pipe/Conduit	
S8.000	25.044	0.437	57.3	0.050	5.00	0.0	0.600		o	150	Pipe/Conduit	
S7.001	87.478	0.900	97.2	0.165	0.00	0.0	0.600		o	300	Pipe/Conduit	
S7.002	17.979	0.900	20.0	0.000	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)
S1.002	0.00	6.58	141.900	2.050	0.0	0.0	0.0	1.39	884.1	0.0
S4.000	0.00	5.15	144.450	1.080	0.0	0.0	0.0	4.44	558.3	0.0
S1.003	0.00	6.81	141.475	3.131	0.0	0.0	0.0	3.40	3844.7	0.0
S5.000	0.00	5.22	143.400	0.000	0.0	0.0	0.0	4.75	2099.3	0.0
S5.001	0.00	5.47	141.579	3.186	0.0	0.0	0.0	1.40	620.0	0.0
S1.004	0.00	7.38	141.075	6.317	0.0	0.0	0.0	1.57	1771.3	0.0
S6.000	0.00	5.06	143.551	0.743	0.0	0.0	0.0	5.49	606.3	0.0
S1.005	0.00	8.12	140.980	7.060	0.0	0.0	0.0	2.00	2264.1	0.0
S7.000	0.00	6.06	143.925	0.115	0.0	0.0	0.0	1.24	88.0	0.0
S8.000	0.00	5.31	144.065	0.050	0.0	0.0	0.0	1.33	23.5	0.0
S7.001	0.00	6.98	143.425	0.330	0.0	0.0	0.0	1.59	112.7	0.0
S7.002	0.00	7.06	142.525	0.330	0.0	0.0	0.0	3.53	249.8	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.006	52.304	0.064	817.3	0.127	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S9.000	44.142	2.225	19.8	0.034	5.00	0.0	0.600		o	150	Pipe/Conduit	
S9.001	41.803	0.200	209.0	0.020	0.00	0.0	0.600		o	225	Pipe/Conduit	
S9.002	14.044	5.164	2.7	0.001	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.007	55.675	0.110	506.1	0.099	0.00	0.0	0.600		o	1200	Pipe/Conduit	
S1.008	56.046	0.110	509.5	0.000	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S1.009	67.180	0.130	516.8	0.000	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S10.000	4.937	0.076	65.0	1.644	5.00	0.0	0.600		o	600	Pipe/Conduit	
S10.001	22.203	0.342	64.9	0.001	0.00	0.0	0.600		o	600	Pipe/Conduit	
S11.000	15.772	0.563	28.0	0.027	5.00	0.0	0.600		o	150	Pipe/Conduit	
S11.001	14.455	0.516	28.0	0.027	0.00	0.0	0.600		o	150	Pipe/Conduit	
S11.002	15.366	0.549	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.003	14.153	0.505	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.004	12.029	0.430	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.005	12.029	0.430	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.006	11.159	0.399	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.007	11.758	0.420	28.0	0.027	0.00	0.0	0.600		o	225	Pipe/Conduit	
S11.008	14.422	0.527	27.4	0.030	0.00	0.0	0.600		o	225	Pipe/Conduit	













Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.006	0.00	8.79	140.725	7.517	0.0	0.0	0.0	1.30	1470.9	0.0
S9.000	0.00	5.32	149.300	0.034	0.0	0.0	0.0	2.27	40.1	0.0
S9.001	0.00	6.10	147.000	0.054	0.0	0.0	0.0	0.90	35.8	0.0
S9.002	0.00	6.13	146.800	0.055	0.0	0.0	0.0	7.99	317.8	0.0
S1.007	0.00	9.35	140.661	7.671	0.0	0.0	0.0	1.66	1872.9	0.0
S1.008	0.00	9.87	140.401	7.671	0.0	0.0	0.0	1.77	2540.3	0.0
S1.009	0.00	10.51	140.291	7.671	0.0	0.0	0.0	1.76	2522.3	0.0
S10.000	0.00	5.03	141.329	1.644	0.0	0.0	0.0	3.02	855.2	0.0
S10.001	0.00	5.15	141.253	1.645	0.0	0.0	0.0	3.03	855.5	0.0
S11.000	0.00	5.14	145.700	0.027	0.0	0.0	0.0	1.91	33.7	0.0
S11.001	0.00	5.26	145.137	0.054	0.0	0.0	0.0	1.91	33.7	0.0
S11.002	0.00	5.37	144.546	0.081	0.0	0.0	0.0	2.48	98.7	0.0
S11.003	0.00	5.46	143.997	0.108	0.0	0.0	0.0	2.48	98.6	0.0
S11.004	0.00	5.54	143.492	0.135	0.0	0.0	0.0	2.48	98.7	0.0
S11.005	0.00	5.62	143.062	0.162	0.0	0.0	0.0	2.48	98.7	0.0
S11.006	0.00	5.70	142.632	0.189	0.0	0.0	0.0	2.48	98.8	0.0
S11.007	0.00	5.78	142.233	0.216	0.0	0.0	0.0	2.48	98.7	0.0
S11.008	0.00	5.87	141.813	0.246	0.0	0.0	0.0	2.51	99.8	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S12.000	10.499	0.262	40.1	0.023	5.00	0.0	0.600		o	150	Pipe/Conduit	
S12.001	9.155	0.229	40.0	0.023	0.00	0.0	0.600		o	150	Pipe/Conduit	
S12.002	13.659	0.341	40.1	0.024	0.00	0.0	0.600		o	150	Pipe/Conduit	
S12.003	13.064	0.507	25.8	0.024	0.00	0.0	0.600		o	150	Pipe/Conduit	
S1.010	54.232	0.100	542.3	0.000	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S13.000	30.796	0.314	98.1	1.530	5.00	0.0	0.600		o	500	Pipe/Conduit	
S1.011	80.096	0.140	572.1	0.237	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S14.000	13.053	0.326	40.0	0.010	5.00	0.0	0.600		o	225	Pipe/Conduit	
S1.012	60.662	0.371	163.5	0.070	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S1.013	88.541	3.130	28.3	0.128	0.00	0.0	0.600		o	1350	Pipe/Conduit	
S15.000	494.826	2.800	176.7	6.053	8.00	0.0	0.600		o	1200	Pipe/Conduit	
S16.000	79.840	0.340	234.8	1.440	8.00	0.0	0.600		o	1500	Pipe/Conduit	
S15.001	132.986	0.560	237.5	0.990	0.00	0.0	0.600		o	1500	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S12.000	0.00	5.11	142.700	0.023	0.0	0.0	0.0	1.59	28.2	0.0
S12.001	0.00	5.21	142.438	0.046	0.0	0.0	0.0	1.60	28.2	0.0
S12.002	0.00	5.35	142.209	0.070	0.0	0.0	0.0	1.59	28.2	0.0
S12.003	0.00	5.46	141.868	0.094	0.0	0.0	0.0	1.99	35.2	0.0
S1.010	0.00	11.04	140.161	9.656	0.0	0.0	0.0	1.72	2461.7	0.0
S13.000	0.00	5.23	141.225	1.530	0.0	0.0	0.0	2.19	430.7	0.0
S1.011	0.00	11.83	140.061	11.423	0.0	0.0	0.0	1.67	2396.3	0.0
S14.000	0.00	5.10	141.372	0.010	0.0	0.0	0.0	2.07	82.4	0.0
S1.012	0.00	12.15	139.921	11.503	0.0	0.0	0.0	3.14	4498.2	0.0
S1.013	0.00	12.35	139.550	11.631	0.0	0.0	0.0	7.57	10841.0	0.0
S15.000	0.00	10.93	140.800	6.053	0.0	0.0	0.0	2.81	3179.6	0.0
S16.000	0.00	8.48	138.000	1.440	0.0	0.0	0.0	2.80	4939.2	0.0
S15.001	0.00	11.73	137.660	8.483	0.0	0.0	0.0	2.78	4911.4	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S17.000	462.157	3.400	135.9	5.963	8.00	0.0	0.600		o	1200	Pipe/Conduit	
S15.002	292.037	0.450	649.0	0.990	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S15.003	37.319	0.380	98.2	1.080	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S1.014	90.000	1.560	57.7	0.248	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S18.000	29.267	0.366	80.0	0.037	5.00	0.0	0.600		o	225	Pipe/Conduit	
S18.001	12.678	0.158	80.2	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.002	10.199	0.170	60.0	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.003	40.463	0.803	50.4	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
S18.004	41.139	2.057	20.0	0.037	0.00	0.0	0.600		o	225	Pipe/Conduit	
S19.000	133.933	7.000	19.1	0.434	5.00	0.0	0.600		o	400	Pipe/Conduit	
S18.005	13.219	0.040	330.5	0.001	0.00	0.0	0.600		o	750	Pipe/Conduit	
S1.015	79.324	1.657	47.9	0.195	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S20.000	31.979	0.640	50.0	0.051	5.00	0.0	0.600		o	225	Pipe/Conduit	
S20.001	12.928	0.259	49.9	0.001	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)
S17.000	0.00	10.40	140.800	5.963	0.0	0.0	0.0	3.21	3627.5	0.0
S15.002	0.00	14.63	137.100	15.435	0.0	0.0	0.0	1.68	2962.1	0.0
S15.003	0.00	14.78	136.650	16.515	0.0	0.0	0.0	4.33	7650.1	0.0
S1.014	0.00	15.04	136.270	28.394	0.0	0.0	0.0	5.65	9988.2	0.0
S18.000	0.00	5.33	140.200	0.037	0.0	0.0	0.0	1.46	58.2	0.0
S18.001	0.00	5.48	139.834	0.074	0.0	0.0	0.0	1.46	58.1	0.0
S18.002	0.00	5.58	139.676	0.111	0.0	0.0	0.0	1.69	67.3	0.0
S18.003	0.00	5.94	139.506	0.148	0.0	0.0	0.0	1.85	73.4	0.0
S18.004	0.00	6.18	138.703	0.185	0.0	0.0	0.0	2.94	116.9	0.0
S19.000	0.00	5.52	142.000	0.434	0.0	0.0	0.0	4.33	544.3	0.0
S18.005	0.00	6.32	135.000	0.620	0.0	0.0	0.0	1.53	677.6	0.0
S1.015	0.00	15.26	134.210	29.209	0.0	0.0	0.0	6.21	10967.2	0.0
S20.000	0.00	5.29	136.400	0.051	0.0	0.0	0.0	1.85	73.8	0.0
S20.001	0.00	5.40	135.760	0.052	0.0	0.0	0.0	1.86	73.8	0.0

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PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S21.000	20.916	1.698	12.3	0.036	5.00	0.0	0.600		o	150	Pipe/Conduit	
S20.002	27.538	0.551	50.0	0.102	0.00	0.0	0.600		o	225	Pipe/Conduit	
S20.003	25.548	1.047	24.4	0.001	0.00	0.0	0.600		o	225	Pipe/Conduit	
S1.016	47.712	2.152	22.2	0.080	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S1.017	62.617	3.800	16.5	0.136	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S1.018	75.293	2.091	36.0	0.087	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S22.000	25.244	0.261	96.7	0.059	5.00	0.0	0.600		o	225	Pipe/Conduit	
S23.000	17.422	1.330	13.1	0.009	5.00	0.0	0.600		o	225	Pipe/Conduit	
S24.000	5.925	0.059	100.4	0.015	5.00	0.0	0.600		o	225	Pipe/Conduit	
S24.001	13.787	0.138	99.9	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
S24.002	10.801	0.108	100.0	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
S24.003	16.961	0.170	99.8	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
S24.004	11.665	0.117	99.7	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
S24.005	16.731	1.404	11.9	0.015	0.00	0.0	0.600		o	225	Pipe/Conduit	
S23.001	18.860	0.886	21.3	0.141	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)
S21.000	0.00	5.12	137.200	0.036	0.0	0.0	0.0	2.89	51.0	0.0
S20.002	0.00	5.65	135.427	0.190	0.0	0.0	0.0	1.85	73.7	0.0
S20.003	0.00	5.81	134.876	0.191	0.0	0.0	0.0	2.66	105.8	0.0
S1.016	0.00	15.34	132.553	29.480	0.0	0.0	0.0	9.13	16126.4	0.0
S1.017	0.00	15.44	130.401	29.616	0.0	0.0	0.0	10.59	18709.5	0.0
S1.018	0.00	15.62	126.601	29.703	0.0	0.0	0.0	7.16	12649.0	0.0
S22.000	0.00	5.32	126.045	0.059	0.0	0.0	0.0	1.33	52.9	0.0
S23.000	0.00	5.08	128.000	0.009	0.0	0.0	0.0	3.63	144.5	0.0
S24.000	0.00	5.08	128.666	0.015	0.0	0.0	0.0	1.30	51.9	0.0
S24.001	0.00	5.25	128.607	0.030	0.0	0.0	0.0	1.31	52.0	0.0
S24.002	0.00	5.39	128.469	0.045	0.0	0.0	0.0	1.31	52.0	0.0
S24.003	0.00	5.61	128.361	0.060	0.0	0.0	0.0	1.31	52.0	0.0
S24.004	0.00	5.75	128.191	0.075	0.0	0.0	0.0	1.31	52.1	0.0
S24.005	0.00	5.83	128.074	0.090	0.0	0.0	0.0	3.81	151.6	0.0
S23.001	0.00	5.94	126.670	0.240	0.0	0.0	0.0	2.85	113.3	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.019	46.644	2.043	22.8	0.126	0.00	0.0	0.600		o	1500	Pipe/Conduit	
S25.000	53.173	0.266	199.9	0.039	5.00	0.0	0.600		o	300	Pipe/Conduit	
S25.001	8.753	0.118	74.2	0.065	0.00	0.0	0.600		o	300	Pipe/Conduit	
S1.020	62.116	0.409	151.9	0.001	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.021	90.000	0.557	161.6	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S26.000	389.805	5.250	74.2	4.066	5.00	0.0	0.600		o	900	Pipe/Conduit	
S27.000	400.138	5.250	76.2	4.067	5.00	0.0	0.600		o	900	Pipe/Conduit	
S26.001	59.408	5.140	11.6	0.000	0.00	0.0	0.600		o	1050	Pipe/Conduit	
S1.022	89.882	1.500	59.9	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.023	57.349	2.500	22.9	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.024	47.349	2.700	17.5	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.025	63.910	3.550	18.0	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.026	20.812	1.150	18.1	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.027	43.217	2.000	21.6	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.028	38.874	2.000	19.4	0.000	0.00	0.0	0.600		o	1650	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)
S1.019	0.00	15.70	124.509	30.128	0.0	0.0	0.0	8.99	15891.2	0.0
S25.000	0.00	5.80	124.050	0.039	0.0	0.0	0.0	1.11	78.3	0.0
S25.001	0.00	5.88	123.784	0.104	0.0	0.0	0.0	1.83	129.2	0.0
S1.020	0.00	15.99	122.316	30.233	0.0	0.0	0.0	3.69	7884.3	0.0
S1.021	0.00	16.40	121.907	30.233	0.0	0.0	0.0	3.57	7642.9	0.0
S26.000	0.00	6.79	132.500	4.066	0.0	0.0	0.0	3.64	2314.9	0.0
S27.000	0.00	6.86	132.500	4.067	0.0	0.0	0.0	3.59	2284.7	0.0
S26.001	0.00	6.95	127.090	8.133	0.0	0.0	0.0	10.16	8800.3	0.0
S1.022	0.00	16.66	121.350	38.366	0.0	0.0	0.0	5.88	12568.5	0.0
S1.023	0.00	16.76	119.850	38.366	0.0	0.0	0.0	9.51	20330.8	0.0
S1.024	0.00	16.83	117.350	38.366	0.0	0.0	0.0	10.88	23256.8	0.0
S1.025	0.00	16.93	114.650	38.366	0.0	0.0	0.0	10.73	22953.3	0.0
S1.026	0.00	16.96	111.100	38.366	0.0	0.0	0.0	10.71	22893.2	0.0
S1.027	0.00	17.04	109.950	38.366	0.0	0.0	0.0	9.80	20948.5	0.0
S1.028	0.00	17.10	107.950	38.366	0.0	0.0	0.0	10.33	22089.2	0.0

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Network Design Table for Southern Storm

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
S1.029	72.258	2.000	36.1	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.030	51.127	2.000	25.6	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.031	37.340#	0.250	149.4	0.000	0.00	0.0	0.600		o	1650	Pipe/Conduit	
S1.032	12.984	0.050	259.7	1.950	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.033	22.469	0.250	89.9	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.034	26.923	0.350	76.9	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.035	26.133	0.350	74.7	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.036	53.944	0.700	77.1	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S28.000	34.000	0.250	136.0	1.625	5.00	0.0	0.600		o	750	Pipe/Conduit	
S1.037	61.586	0.200	307.9	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.038	67.858	0.350	193.9	0.000	0.00	0.0	0.600		o	400	Pipe/Conduit	
S1.039	17.718#	0.440	40.3	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.040	7.144	0.180	39.7	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.041	8.609	0.215	40.0	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.042	12.217	0.305	40.1	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.043	18.952#	0.475	39.9	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.044	20.332#	0.995	20.4	0.000	0.00	0.0		0.035	\	-4	Pipe/Conduit	
S1.045	6.940#	0.656	10.6	0.000	0.00	0.0		0.035	o	375	Pipe/Conduit	
S1.046	11.939	0.299	39.9	0.000	0.00	0.0		0.035	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)
S1.029	0.00	17.26	105.950	38.366	0.0	0.0	0.0	7.57	16194.4	0.0
S1.030	0.00	17.35	103.950	38.366	0.0	0.0	0.0	9.01	19257.6	0.0
S1.031	0.00	17.52	101.950	38.366	0.0	0.0	0.0	3.72	7950.5	0.0
S1.032	0.00	17.71	101.400	40.316	0.0	0.0	0.0	1.17	146.6	0.0
S1.033	0.00	17.90	101.300	40.316	0.0	0.0	0.0	1.99	250.3	0.0
S1.034	0.00	18.10	101.050	40.316	0.0	0.0	0.0	2.15	270.7	0.0
S1.035	0.00	18.30	100.700	40.316	0.0	0.0	0.0	2.19	274.7	0.0
S1.036	0.00	18.72	100.350	40.316	0.0	0.0	0.0	2.15	270.4	0.0
S28.000	0.00	5.24	99.900	1.625	0.0	0.0	0.0	2.40	1059.4	0.0
S1.037	0.00	19.68	99.600	41.941	0.0	0.0	0.0	1.07	134.5	0.0
S1.038	0.00	20.52	99.400	41.941	0.0	0.0	0.0	1.35	169.9	0.0
S1.039	0.00	20.67	98.950	41.941	0.0	0.0	0.0	1.94	2668.2	0.0
S1.040	0.00	20.73	98.110	41.941	0.0	0.0	0.0	1.95	2687.6	0.0
S1.041	0.00	20.80	97.430	41.941	0.0	0.0	0.0	1.94	2675.7	0.0
S1.042	0.00	20.91	96.715	41.941	0.0	0.0	0.0	1.94	2675.2	0.0
S1.043	0.00	21.07	95.910	41.941	0.0	0.0	0.0	1.95	2680.5	0.0
S1.044	0.00	21.20	94.935	41.941	0.0	0.0	0.0	2.72	3745.5	0.0
S1.045	0.00	21.26	93.940	41.941	0.0	0.0	0.0	1.81	200.2	0.0
S1.046	0.00	21.47	93.284	41.941	0.0	0.0	0.0	0.93	103.1	0.0

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Conduit Sections for Southern Storm

NOTE: Diameters less than 66 refer to section numbers of hydraulic conduits. These conduits are marked by the symbols:- [] box culvert, \ / open channel, oo dual pipe, ooo triple pipe, O egg.

Section numbers < 0 are taken from user conduit table

Section Number	Conduit Type	Major Dimn. (mm)	Minor Dimn. (mm)	Side Slope (Deg)	Corner Splay (mm)	4*Hyd Radius (m)	XSect Area (m ²)
-4	\ /	750	500	14.0		1.128	1.378

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PIPELINE SCHEDULES for Southern 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	600	SCA3.0	145.500	144.000	0.900	Open Manhole	1500
S1.001	o	600	SCA3.1	145.500	142.289	2.611	Open Manhole	1500
S2.000	o	150	S1.1	145.300	144.000	1.150	Open Manhole	1200
S2.001	o	400	S1.2	145.124	143.530	1.194	Open Manhole	1350
S3.000	o	225	S2.1	147.600	144.250	3.125	Open Manhole	1200
S3.001	o	225	S2.2	147.350	143.910	3.215	Open Manhole	1200
S3.002	o	225	S2.3	146.900	143.685	2.990	Open Manhole	1200
S1.002	o	900	S1	146.630	141.900	3.830	Open Manhole	2100
S4.000	o	400	SC4B	148.450	144.450	3.600	Open Manhole	1500
S1.003	o	1200	S2	147.728	141.475	5.053	Open Manhole	2100
S5.000	o	750	SCB3.0	145.600	143.400	1.450	Open Manhole	1800
S5.001	o	750	SCB3.1	145.600	141.579	3.271	Open Manhole	2100

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	82.999	48.8	SCA3.1	145.500	142.300	2.600	Open Manhole	1500
S1.001	32.400	364.0	S1	146.630	142.200	3.830	Open Manhole	2100
S2.000	12.439	56.5	S1.2	145.124	143.780	1.194	Open Manhole	1350
S2.001	76.706	67.9	S1	146.630	142.400	3.830	Open Manhole	2100
S3.000	33.903	99.7	S2.2	147.350	143.910	3.215	Open Manhole	1200
S3.001	22.430	99.7	S2.3	146.900	143.685	2.990	Open Manhole	1200
S3.002	14.007	12.6	S1	146.630	142.575	3.830	Open Manhole	2100
S1.002	62.922	503.4	S2	147.728	141.775	5.053	Open Manhole	2100
S4.000	39.559	18.2	S2	147.728	142.275	5.053	Open Manhole	2100
S1.003	47.456	121.1	S3	148.131	141.083	5.848	Open Manhole	2100
S5.000	62.680	34.8	SCB3.1	145.600	141.600	3.250	Open Manhole	2100
S5.001	21.284	394.1	S3	148.131	141.525	5.856	Open Manhole	2100

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PIPELINE SCHEDULES for Southern 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)
S1.004	o	1200	S3	148.131	141.075	5.856	Open Manhole	2100
S6.000	o	375	SC4A	148.600	143.551	4.674	Open Manhole	1500
S1.005	o	1200	S4	148.425	140.980	6.245	Open Manhole	2100
S7.000	o	300	S5.1	146.000	143.925	1.775	Open Manhole	1200
S8.000	o	150	S5.2.1	145.676	144.065	1.461	Open Manhole	1200
S7.001	o	300	S5.2	146.900	143.425	3.175	Open Manhole	1350
S7.002	o	300	S20	147.860	142.525	5.035	Open Manhole	1350
S1.006	o	1200	S5	148.719	140.725	6.794	Open Manhole	2100
S9.000	o	150	S6.1	151.000	149.300	1.550	Open Manhole	1200
S9.001	o	225	S6.3	149.000	147.000	1.775	Open Manhole	1200
S9.002	o	225	S6.4	148.300	146.800	1.275	Open Manhole	1200
S1.007	o	1200	S6	148.192	140.661	6.331	Open Manhole	2100

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)
S1.004	53.710	565.4	S4	148.425	140.980	6.245	Open Manhole	2100
S6.000	19.201	11.0	S4	148.425	141.805	6.245	Open Manhole	2100
S1.005	88.554	347.3	S5	148.719	140.725	6.794	Open Manhole	2100
S7.000	79.483	159.0	S5.2	146.900	143.425	3.175	Open Manhole	1350
S8.000	25.044	57.3	S5.2	146.900	143.628	3.122	Open Manhole	1350
S7.001	87.478	97.2	S20	147.860	142.525	5.035	Open Manhole	1350
S7.002	17.979	20.0	S5	148.719	141.625	6.794	Open Manhole	2100
S1.006	52.304	817.3	S6	148.192	140.661	6.331	Open Manhole	2100
S9.000	44.142	19.8	S6.3	149.000	147.075	1.775	Open Manhole	1200
S9.001	41.803	209.0	S6.4	148.300	146.800	1.275	Open Manhole	1200
S9.002	14.044	2.7	S6	148.192	141.636	6.331	Open Manhole	2100
S1.007	55.675	506.1	S7	147.204	140.551	5.453	Open Manhole	2400

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PIPELINE SCHEDULES for Southern 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)
S1.008	o	1350	S7	147.204	140.401	5.453	Open Manhole	2400
S1.009	o	1350	S8	145.954	140.291	4.313	Open Manhole	2400
S10.000	o	600	SC6.0	144.875	141.329	2.946	Open Manhole	1500
S10.001	o	600	SC6.1	144.875	141.253	3.022	Open Manhole	1500
S11.000	o	150	SHWD9.1	146.900	145.700	1.050	Open Manhole	1200
S11.001	o	150	SHWD9.2	146.600	145.137	1.313	Open Manhole	1200
S11.002	o	225	SHWD9.3	146.200	144.546	1.429	Open Manhole	1200
S11.003	o	225	SHWD9.4	145.900	143.997	1.678	Open Manhole	1200
S11.004	o	225	SHWD9.5	145.600	143.492	1.883	Open Manhole	1200
S11.005	o	225	SHWD9.6	145.400	143.062	2.113	Open Manhole	1200
S11.006	o	225	SHWD9.7	145.200	142.632	2.343	Open Manhole	1200
S11.007	o	225	SHWD9.8	145.000	142.233	2.542	Open Manhole	1200
S11.008	o	225	SHWD9.9	144.800	141.813	2.762	Open Manhole	1200
S12.000	o	150	SHWD9.10	143.900	142.700	1.050	Open Manhole	1200
S12.001	o	150	SHWD9.11	144.300	142.438	1.712	Open Manhole	1200
S12.002	o	150	SHWD9.12	144.400	142.209	2.041	Open Manhole	1200
S12.003	o	150	SHWD9.13	144.600	141.868	2.582	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)
S1.008	56.046	509.5	S8	145.954	140.291	4.313	Open Manhole	2400
S1.009	67.180	516.8	S9	144.800	140.161	3.289	Open Manhole	2700
S10.000	4.937	65.0	SC6.1	144.875	141.253	3.022	Open Manhole	1500
S10.001	22.203	64.9	S9	144.800	140.911	3.289	Open Manhole	2700
S11.000	15.772	28.0	SHWD9.2	146.600	145.137	1.313	Open Manhole	1200
S11.001	14.455	28.0	SHWD9.3	146.200	144.621	1.429	Open Manhole	1200
S11.002	15.366	28.0	SHWD9.4	145.900	143.997	1.678	Open Manhole	1200
S11.003	14.153	28.0	SHWD9.5	145.600	143.492	1.883	Open Manhole	1200
S11.004	12.029	28.0	SHWD9.6	145.400	143.062	2.113	Open Manhole	1200
S11.005	12.029	28.0	SHWD9.7	145.200	142.632	2.343	Open Manhole	1200
S11.006	11.159	28.0	SHWD9.8	145.000	142.233	2.542	Open Manhole	1200
S11.007	11.758	28.0	SHWD9.9	144.800	141.813	2.762	Open Manhole	1200
S11.008	14.422	27.4	S9	144.800	141.286	3.289	Open Manhole	2700
S12.000	10.499	40.1	SHWD9.11	144.300	142.438	1.712	Open Manhole	1200
S12.001	9.155	40.0	SHWD9.12	144.400	142.209	2.041	Open Manhole	1200
S12.002	13.659	40.1	SHWD9.13	144.600	141.868	2.582	Open Manhole	1200
S12.003	13.064	25.8	S9	144.800	141.361	3.289	Open Manhole	2700

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PIPELINE SCHEDULES for Southern 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)
S1.010	o	1350	S9	144.800	140.161	3.289	Open Manhole	2700
S13.000	o	500	SC5.0	144.200	141.225	2.475	Open Manhole	1500
S1.011	o	1350	S10	144.132	140.061	2.721	Open Manhole	2400
S14.000	o	225	S11.1	143.350	141.372	1.753	Open Manhole	1200
S1.012	o	1350	S11	143.709	139.921	2.438	Open Manhole	2400
S1.013	o	1350	S12	142.806	139.550	1.906	Open Manhole	2400
S15.000	o	1200	SC1.1	143.250	140.800	1.250	Open Manhole	2100
S16.000	o	1500	SC1.2	141.000	138.000	1.500	Open Manhole	2400
S15.001	o	1500	SC1.3	143.250	137.660	4.090	Open Manhole	2400
S17.000	o	1200	SC1.4	143.250	140.800	1.250	Open Manhole	2100

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)
S1.010	54.232	542.3	S10	144.132	140.061	2.721	Open Manhole	2400
S13.000	30.796	98.1	S10	144.132	140.911	2.721	Open Manhole	2400
S1.011	80.096	572.1	S11	143.709	139.921	2.438	Open Manhole	2400
S14.000	13.053	40.0	S11	143.709	141.046	2.438	Open Manhole	2400
S1.012	60.662	163.5	S12	142.806	139.550	1.906	Open Manhole	2400
S1.013	88.541	28.3	S13	141.158	136.420	3.388	Open Manhole	2700
S15.000	494.826	176.7	SC1.3	143.250	138.000	4.050	Open Manhole	2400
S16.000	79.840	234.8	SC1.3	143.250	137.660	4.090	Open Manhole	2400
S15.001	132.986	237.5	SC1.5	142.000	137.100	3.400	Open Manhole	2400
S17.000	462.157	135.9	SC1.5	142.000	137.400	3.400	Open Manhole	2400

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PIPELINE SCHEDULES for Southern Storm

Upstream Manhole

PN	Hyd Diam Sect (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S15.002	o 1500	SC1.5	142.000	137.100	3.400	Open Manhole	2400
S15.003	o 1500	SC1.6	141.350	136.650	3.200	Open Manhole	2400
S1.014	o 1500	S13	141.158	136.270	3.388	Open Manhole	2700
S18.000	o 225	SHWD14.1	141.700	140.200	1.275	Open Manhole	1200
S18.001	o 225	SHWD14.2	141.300	139.834	1.241	Open Manhole	1200
S18.002	o 225	SHWD14.3	141.200	139.676	1.299	Open Manhole	1200
S18.003	o 225	SHWD14.4	141.000	139.506	1.269	Open Manhole	1200
S18.004	o 225	SHWD14.5	140.200	138.703	1.272	Open Manhole	1200
S19.000	o 400	SEx Drain	144.000	142.000	1.600	Open Manhole	1350
S18.005	o 750	SHWD14.6	139.350	135.000	3.600	Open Manhole	1800
S1.015	o 1500	S14	138.755	134.210	3.045	Open Manhole	2400
S20.000	o 225	S15.1	137.800	136.400	1.175	Open Manhole	1200
S20.001	o 225	S15.2	138.900	135.760	2.915	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)
S15.002	292.037	649.0	SC1.6	141.350	136.650	3.200	Open Manhole	2400
S15.003	37.319	98.2	S13	141.158	136.270	3.388	Open Manhole	2700
S1.014	90.000	57.7	S14	138.755	134.710	2.545	Open Manhole	2400
S18.000	29.267	80.0	SHWD14.2	141.300	139.834	1.241	Open Manhole	1200
S18.001	12.678	80.2	SHWD14.3	141.200	139.676	1.299	Open Manhole	1200
S18.002	10.199	60.0	SHWD14.4	141.000	139.506	1.269	Open Manhole	1200
S18.003	40.463	50.4	SHWD14.5	140.200	138.703	1.272	Open Manhole	1200
S18.004	41.139	20.0	SHWD14.6	139.350	136.646	2.479	Open Manhole	1800
S19.000	133.933	19.1	SHWD14.6	139.350	135.000	3.950	Open Manhole	1800
S18.005	13.219	330.5	S14	138.755	134.960	3.045	Open Manhole	2400
S1.015	79.324	47.9	S15	135.658	132.553	1.605	Open Manhole	2400
S20.000	31.979	50.0	S15.2	138.900	135.760	2.915	Open Manhole	1200
S20.001	12.928	49.9	S15.3	138.600	135.501	2.874	Open Manhole	1200

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PIPELINE SCHEDULES for Southern 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)
S21.000	o	150	S15.3.1	139.500	137.200	2.150	Open Manhole	1200
S20.002	o	225	S15.3	138.600	135.427	2.948	Open Manhole	1200
S20.003	o	225	S15.4	137.122	134.876	2.021	Open Manhole	1200
S1.016	o	1500	S15	135.658	132.553	1.605	Open Manhole	2400
S1.017	o	1500	S16	133.472	130.401	1.571	Open Manhole	2400
S1.018	o	1500	S17	130.797	126.601	2.696	Open Manhole	2400
S22.000	o	225	S18.1	129.659	126.045	3.389	Open Manhole	1200
S23.000	o	225	S18.7.1	129.629	128.000	1.404	Open Manhole	1200
S24.000	o	225	SHWD18.1	130.000	128.666	1.109	Open Manhole	1200
S24.001	o	225	SHWD18.2	130.000	128.607	1.168	Open Manhole	1200
S24.002	o	225	SHWD18.3	129.800	128.469	1.106	Open Manhole	1200
S24.003	o	225	SHWD18.4	129.600	128.361	1.014	Open Manhole	1200
S24.004	o	225	SHWD18.5	129.500	128.191	1.084	Open Manhole	1200
S24.005	o	225	S18.6	129.507	128.074	1.208	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)
S21.000	20.916	12.3	S15.3	138.600	135.502	2.948	Open Manhole	1200
S20.002	27.538	50.0	S15.4	137.122	134.876	2.021	Open Manhole	1200
S20.003	25.548	24.4	S15	135.658	133.829	1.604	Open Manhole	2400
S1.016	47.712	22.2	S16	133.472	130.401	1.571	Open Manhole	2400
S1.017	62.617	16.5	S17	130.797	126.601	2.696	Open Manhole	2400
S1.018	75.293	36.0	S18	129.191	124.510	3.181	Open Manhole	2700
S22.000	25.244	96.7	S18	129.191	125.784	3.182	Open Manhole	2700
S23.000	17.422	13.1	S18.7	129.195	126.670	2.300	Open Manhole	1200
S24.000	5.925	100.4	SHWD18.2	130.000	128.607	1.168	Open Manhole	1200
S24.001	13.787	99.9	SHWD18.3	129.800	128.469	1.106	Open Manhole	1200
S24.002	10.801	100.0	SHWD18.4	129.600	128.361	1.014	Open Manhole	1200
S24.003	16.961	99.8	SHWD18.5	129.500	128.191	1.084	Open Manhole	1200
S24.004	11.665	99.7	S18.6	129.507	128.074	1.208	Open Manhole	1200
S24.005	16.731	11.9	S18.7	129.195	126.670	2.300	Open Manhole	1200

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PIPELINE SCHEDULES for Southern 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)
S23.001	o	225	S18.7	129.195	126.670	2.300	Open Manhole	1200
S1.019	o	1500	S18	129.191	124.509	3.182	Open Manhole	2700
S25.000	o	300	S19.1	125.500	124.050	1.150	Open Manhole	1200
S25.001	o	300	S19.2	127.800	123.784	3.716	Open Manhole	1200
S1.020	o	1650	S19	128.114	122.316	4.148	Open Manhole	2700
S1.021	o	1650	S20	125.595	121.907	2.038	Open Manhole	2700
S26.000	o	900	SC2.1	134.750	132.500	1.350	Open Manhole	1800
S27.000	o	900	SC2.2	134.750	132.500	1.350	Open Manhole	1800
S26.001	o	1050	SC2.3	134.750	127.090	6.610	Open Manhole	2400
S1.022	o	1650	S21	125.067	121.350	2.067	Open Manhole	2700
S1.023	o	1650	S22	123.793	119.850	2.293	Open Manhole	2700
S1.024	o	1650	S23	121.375	117.350	2.375	Open Manhole	2700
S1.025	o	1650	S24	119.011	114.650	2.711	Open Manhole	2700

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)
S23.001	18.860	21.3	S18	129.191	125.784	3.182	Open Manhole	2700
S1.019	46.644	22.8	S19	128.114	122.466	4.148	Open Manhole	2700
S25.000	53.173	199.9	S19.2	127.800	123.784	3.716	Open Manhole	1200
S25.001	8.753	74.2	S19	128.114	123.666	4.148	Open Manhole	2700
S1.020	62.116	151.9	S20	125.595	121.907	2.038	Open Manhole	2700
S1.021	90.000	161.6	S21	125.067	121.350	2.067	Open Manhole	2700
S26.000	389.805	74.2	SC2.3	134.750	127.250	6.600	Open Manhole	2400
S27.000	400.138	76.2	SC2.3	134.750	127.250	6.600	Open Manhole	2400
S26.001	59.408	11.6	S21	125.067	121.950	2.067	Open Manhole	2700
S1.022	89.882	59.9	S22	123.793	119.850	2.293	Open Manhole	2700
S1.023	57.349	22.9	S23	121.375	117.350	2.375	Open Manhole	2700
S1.024	47.349	17.5	S24	119.011	114.650	2.711	Open Manhole	2700
S1.025	63.910	18.0	S25	114.700	111.100	1.950	Open Manhole	2700

PIPELINE SCHEDULES for Southern Storm

Upstream Manhole

PN	Hyd Diam Sect (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
S1.026	o 1650		S25 114.700	111.100	1.950	Open Manhole	2700
S1.027	o 1650		S26 113.689	109.950	2.089	Open Manhole	2700
S1.028	o 1650		S27 111.476	107.950	1.876	Open Manhole	2700
S1.029	o 1650		S28 109.916	105.950	2.316	Open Manhole	2700
S1.030	o 1650		S29 108.735	103.950	3.135	Open Manhole	2700
S1.031	o 1650		S30 108.211	101.950	4.611	Open Manhole	2700
S1.032	o 400	S1-31 Basin control	105.000	101.400	3.200	Open Manhole	2300
S1.033	o 400		S32 103.000	101.300	1.300	Open Manhole	1350
S1.034	o 400		S33 102.800	101.050	1.350	Open Manhole	1350
S1.035	o 400		S34 102.800	100.700	1.700	Open Manhole	1350
S1.036	o 400		S35 102.800	100.350	2.050	Open Manhole	1350
S28.000	o 750	SPrivate HW	102.800	99.900	2.150	Junction	
S1.037	o 400		S36 102.500	99.600	2.500	Open Manhole	2500
S1.038	o 400		S37 101.417	99.400	1.617	Open Manhole	1350
S1.039	\/-4	SSwale Start (Outfalling headwall)	100.744	98.950	1.294	Open Manhole	2100
S1.040	\/-4	SSwale 1	99.110	98.110	0.500	Junction	
S1.041	\/-4	SSwale 2	98.430	97.430	0.500	Junction	
S1.042	\/-4	SSwale 3	97.715	96.715	0.500	Junction	

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)
S1.026	20.812	18.1		S26 113.689	109.950	2.089	Open Manhole	2700
S1.027	43.217	21.6		S27 111.476	107.950	1.876	Open Manhole	2700
S1.028	38.874	19.4		S28 109.916	105.950	2.316	Open Manhole	2700
S1.029	72.258	36.1		S29 108.735	103.950	3.135	Open Manhole	2700
S1.030	51.127	25.6		S30 108.211	101.950	4.611	Open Manhole	2700
S1.031	37.340#	149.4	S1-31 Basin control	105.000	101.700	1.650	Open Manhole	2300
S1.032	12.984	259.7		S32 103.000	101.350	1.250	Open Manhole	1350
S1.033	22.469	89.9		S33 102.800	101.050	1.350	Open Manhole	1350
S1.034	26.923	76.9		S34 102.800	100.700	1.700	Open Manhole	1350
S1.035	26.133	74.7		S35 102.800	100.350	2.050	Open Manhole	1350
S1.036	53.944	77.1		S36 102.500	99.650	2.450	Open Manhole	2500
S28.000	34.000	136.0		S36 102.500	99.650	2.100	Open Manhole	2500
S1.037	61.586	307.9		S37 101.417	99.400	1.617	Open Manhole	1350
S1.038	67.858	193.9	SSwale Start (Outfalling headwall)	100.744	99.050	1.294	Open Manhole	2100
S1.039	17.718#	40.3	SSwale 1	99.110	98.510	0.100	Junction	
S1.040	7.144	39.7	SSwale 2	98.430	97.930	0.000	Junction	
S1.041	8.609	40.0	SSwale 3	97.715	97.215	0.000	Junction	
S1.042	12.217	40.1	SSwale 4	96.910	96.410	0.000	Junction	

Technology Services
 Sherwood House, Sherwood Ave.
 Newark, Nottinghamshire, NG...

Hoyland Common
 Surfacer Water
 S104



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PIPELINE SCHEDULES for Southern 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)
S1.043	\/	-4	SSwale 4	96.910	95.910	0.500	Junction	
S1.044	\/	-4	SSwale 5	95.935	94.935	0.500	Junction	
S1.045	o	375	SHeadwall End	94.440	93.940	0.125	Open Manhole	2100
S1.046	o	375	S38	94.330	93.284	0.671	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)
S1.043	18.952#	39.9	SSwale 5	95.935	95.435	0.000	Junction	
S1.044	20.332#	20.4	SHeadwall End	94.440	93.940	0.000	Open Manhole	2100
S1.045	6.940#	10.6	S38	94.330	93.284	0.671	Open Manhole	1350
S1.046	11.939	39.9	S	93.500	92.985	0.140	Open Manhole	2100

Free Flowing Outfall Details for Southern Storm


Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
S1.046	S	93.500	92.985	0.000	2100	0

Simulation Criteria for Southern Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	0.000
Hot Start (mins)	0	Inlet Coefficient	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	2
Number of Online Controls	2	Number of Time/Area Diagrams	0
Number of Offline Controls	1	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	30	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	19.000	Storm Duration (mins)	30
Ratio R	0.351		

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Online Controls for Southern Storm

Hydroslide Manhole: S1-31 Basin control, DS/PN: S1.032, Volume (m³): 89.5

Design Head (m)	0.800	Invert Level (m)	101.400
Design Flow (l/s)	82.4	Maximum Head (m)	1.050
Range	Mini	Minimum Pipe Diameter (mm)	300
Application	Stormwater	Minimum Manhole Diameter (mm)	1500
Model	DR 300 M		

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	8.2	1.200	79.3	3.000	125.4	7.000	191.5
0.200	31.1	1.400	85.6	3.500	135.4	7.500	198.2
0.300	58.4	1.600	91.5	4.000	144.7	8.000	204.7
0.400	82.4	1.800	97.1	4.500	153.5	8.500	211.0
0.500	82.4	2.000	102.4	5.000	161.8	9.000	217.1
0.600	82.4	2.200	107.3	5.500	169.7	9.500	223.1
0.800	82.4	2.400	112.1	6.000	177.3		
1.000	82.4	2.600	116.7	6.500	184.5		

Hydro-Brake® Optimum Manhole: S36, DS/PN: S1.037, Volume (m³): 35.2

Unit Reference	MD-SHE-0344-8240-2520-8240
Design Head (m)	2.520
Design Flow (l/s)	82.4
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	344
Invert Level (m)	99.650
Minimum Outlet Pipe Diameter (mm)	375
Suggested Manhole Diameter (mm)	Site Specific Design (Contact Hydro International)

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.520	82.4
Flush-Flo™	0.764	82.4
Kick-Flo®	1.664	67.4
Mean Flow over Head Range	-	71.1

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	10.0	0.400	76.9	0.800	82.4	1.400	76.7
0.200	34.9	0.500	79.9	1.000	81.5	1.600	70.6
0.300	63.6	0.600	81.6	1.200	79.7	1.800	70.0

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Hydro-Brake® Optimum Manhole: S36, DS/PN: S1.037, Volume (m³): 35.2

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
2.000	73.7	3.500	96.6	6.000	125.6	8.500	148.9
2.200	77.2	4.000	103.1	6.500	130.7	9.000	153.2
2.400	80.5	4.500	109.2	7.000	135.5	9.500	157.3
2.600	83.7	5.000	115.0	7.500	140.1		
3.000	89.7	5.500	120.4	8.000	144.6		

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<p><u>Offline Controls for Southern Storm</u></p> <p><u>Complex Manhole: S1-31 Basin control, DS/PN: S1.032, Loop to PN: S28.000</u></p> <p><u>Weir</u></p> <p>Discharge Coef 0.544 Width (m) 10.000 Invert Level (m) 102.254</p> <p><u>V-Notch Weir</u></p> <p>Angle of V in Degrees 135.000 Invert Level (m) 102.254 Discharge Coefficient 0.590</p>		
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Storage Structures for Southern Storm

Tank or Pond Manhole: S1-31 Basin control, DS/PN: S1.032


Invert Level (m) 101.400

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	21274.0	1.000	23842.0	1.301	0.0
0.854	23444.0	1.300	24565.0		

Tank or Pond Manhole: S36, DS/PN: S1.037

Invert Level (m) 99.650

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	0.0	0.350	5524.0	2.350	8200.0	3.050	9241.0
0.349	0.0	1.350	6808.0	2.750	8791.0	3.051	0.0

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
Hot Start Level (mm) 0 Inlet Coefficient 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 2
Number of Online Controls 2 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.351
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status OFF
DTS 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, 0, 30


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SCA3.0	15 Summer	1	+0%				
S1.001	SCA3.1	15 Winter	1	+0%	30/15 Summer			
S2.000	S1.1	15 Winter	1	+0%	100/15 Summer			
S2.001	S1.2	15 Winter	1	+0%				
S3.000	S2.1	15 Winter	1	+0%	30/15 Summer			
S3.001	S2.2	15 Winter	1	+0%	30/15 Summer			
S3.002	S2.3	15 Winter	1	+0%	100/15 Winter			
S1.002	S1	15 Winter	1	+0%	100/15 Summer			
S4.000	SC4B	15 Winter	1	+0%	100/15 Summer			
S1.003	S2	15 Winter	1	+0%	100/15 Summer			
S5.000	SCB3.0	15 Summer	1	+0%				
S5.001	SCB3.1	15 Winter	1	+0%	30/15 Summer			
S1.004	S3	15 Winter	1	+0%	100/15 Summer			
S6.000	SC4A	15 Winter	1	+0%				
S1.005	S4	15 Winter	1	+0%	100/15 Summer			
S7.000	S5.1	15 Winter	1	+0%	100/15 Summer			
S8.000	S5.2.1	15 Winter	1	+0%	100/15 Summer			
S7.001	S5.2	15 Winter	1	+0%	100/15 Summer			

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S1.000	SCA3.0	144.000	-0.600	0.000	0.00			0.0	OK
S1.001	SCA3.1	142.578	-0.311	0.000	0.47			139.4	OK
S2.000	S1.1	144.058	-0.092	0.000	0.31			6.7	OK
S2.001	S1.2	143.607	-0.323	0.000	0.08			22.6	OK
S3.000	S2.1	144.357	-0.118	0.000	0.45			21.9	OK
S3.001	S2.2	144.028	-0.107	0.000	0.54			25.5	OK
S3.002	S2.3	143.755	-0.155	0.000	0.21			27.4	OK
S1.002	S1	142.225	-0.575	0.000	0.28			209.5	OK
S4.000	SC4B	144.592	-0.258	0.000	0.27			136.8	OK
S1.003	S2	141.779	-0.896	0.000	0.13			325.9	OK
S5.000	SCB3.0	143.400	-0.750	0.000	0.00			0.0	OK
S5.001	SCB3.1	142.050	-0.279	0.000	0.71			317.7	OK
S1.004	S3	141.662	-0.613	0.000	0.45			620.4	OK
S6.000	SC4A	143.661	-0.265	0.000	0.19			94.2	OK
S1.005	S4	141.517	-0.663	0.000	0.34			650.6	OK
S7.000	S5.1	144.009	-0.216	0.000	0.16			13.8	OK
S8.000	S5.2.1	144.119	-0.096	0.000	0.28			6.2	OK
S7.001	S5.2	143.547	-0.178	0.000	0.33			36.2	OK


PN	US/MH Name	Level Exceeded
S1.000	SCA3.0	
S1.001	SCA3.1	
S2.000	S1.1	
S2.001	S1.2	
S3.000	S2.1	
S3.001	S2.2	
S3.002	S2.3	
S1.002	S1	
S4.000	SC4B	
S1.003	S2	
S5.000	SCB3.0	
S5.001	SCB3.1	
S1.004	S3	
S6.000	SC4A	
S1.005	S4	
S7.000	S5.1	
S8.000	S5.2.1	
S7.001	S5.2	

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S7.002	S20	15 Winter	1	+0%	100/15 Winter			
S1.006	S5	15 Winter	1	+0%	30/15 Summer			
S9.000	S6.1	15 Winter	1	+0%				
S9.001	S6.3	15 Winter	1	+0%				
S9.002	S6.4	15 Winter	1	+0%				
S1.007	S6	15 Winter	1	+0%	100/15 Summer			
S1.008	S7	15 Winter	1	+0%	100/15 Summer			
S1.009	S8	30 Winter	1	+0%	100/15 Summer			
S10.000	SC6.0	15 Winter	1	+0%	30/15 Summer			
S10.001	SC6.1	15 Winter	1	+0%	100/15 Summer			
S11.000	SHWD9.1	15 Winter	1	+0%				
S11.001	SHWD9.2	15 Winter	1	+0%				
S11.002	SHWD9.3	15 Winter	1	+0%				
S11.003	SHWD9.4	15 Winter	1	+0%				
S11.004	SHWD9.5	15 Winter	1	+0%	100/15 Summer			
S11.005	SHWD9.6	15 Winter	1	+0%	100/15 Summer			
S11.006	SHWD9.7	15 Winter	1	+0%	100/15 Summer			
S11.007	SHWD9.8	15 Winter	1	+0%	100/15 Summer			
S11.008	SHWD9.9	15 Winter	1	+0%	100/15 Summer			
S12.000	SHWD9.10	15 Winter	1	+0%	100/15 Summer			
S12.001	SHWD9.11	15 Winter	1	+0%	100/15 Summer			
S12.002	SHWD9.12	15 Winter	1	+0%	100/15 Summer			
S12.003	SHWD9.13	15 Winter	1	+0%	100/15 Summer			
S1.010	S9	30 Winter	1	+0%	100/15 Summer			
S13.000	SC5.0	15 Winter	1	+0%	30/15 Summer			
S1.011	S10	30 Winter	1	+0%	100/15 Summer			
S14.000	S11.1	15 Winter	1	+0%				
S1.012	S11	30 Winter	1	+0%				
S1.013	S12	30 Winter	1	+0%				
S15.000	SC1.1	15 Winter	1	+0%				
S16.000	SC1.2	15 Winter	1	+0%	100/15 Winter			
S15.001	SC1.3	15 Winter	1	+0%	100/15 Summer			
S17.000	SC1.4	15 Winter	1	+0%				
S15.002	SC1.5	15 Winter	1	+0%	100/15 Summer			
S15.003	SC1.6	30 Winter	1	+0%				
S1.014	S13	30 Winter	1	+0%				
S18.000	SHWD14.1	15 Winter	1	+0%				
S18.001	SHWD14.2	15 Winter	1	+0%	100/15 Winter			
S18.002	SHWD14.3	15 Winter	1	+0%	100/15 Summer			
S18.003	SHWD14.4	15 Winter	1	+0%	100/15 Summer			
S18.004	SHWD14.5	15 Winter	1	+0%				
S19.000	SEx Drain	15 Winter	1	+0%				
S18.005	SHWD14.6	15 Winter	1	+0%				
S1.015	S14	30 Winter	1	+0%				
S20.000	S15.1	15 Winter	1	+0%				
S20.001	S15.2	15 Winter	1	+0%	100/15 Summer			
S21.000	S15.3.1	15 Winter	1	+0%				

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Water	Surcharged	Flooded	Half Drain		Pipe	Status
		Level (m)	Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Time (mins)	
S7.002	S20	142.608	-0.217	0.000	0.17		36.3	OK
S1.006	S5	141.392	-0.533	0.000	0.58		658.7	OK
S9.000	S6.1	149.333	-0.117	0.000	0.11		4.3	OK
S9.001	S6.3	147.066	-0.159	0.000	0.19		6.4	OK
S9.002	S6.4	146.823	-0.202	0.000	0.02		6.5	OK
S1.007	S6	141.228	-0.633	0.000	0.45		654.7	OK
S1.008	S7	140.991	-0.760	0.000	0.33		637.7	OK
S1.009	S8	140.874	-0.767	0.000	0.30		597.3	OK
S10.000	SC6.0	141.666	-0.263	0.000	0.60		207.8	OK
S10.001	SC6.1	141.501	-0.352	0.000	0.35		205.7	OK
S11.000	SHWD9.1	145.733	-0.117	0.000	0.11		3.4	OK
S11.001	SHWD9.2	145.183	-0.104	0.000	0.20		6.3	OK
S11.002	SHWD9.3	144.595	-0.176	0.000	0.10		9.1	OK
S11.003	SHWD9.4	144.053	-0.169	0.000	0.14		12.1	OK
S11.004	SHWD9.5	143.556	-0.161	0.000	0.18		15.0	OK
S11.005	SHWD9.6	143.132	-0.155	0.000	0.21		17.9	OK
S11.006	SHWD9.7	142.708	-0.149	0.000	0.25		20.7	OK
S11.007	SHWD9.8	142.314	-0.144	0.000	0.28		23.6	OK
S11.008	SHWD9.9	141.898	-0.140	0.000	0.31		26.7	OK
S12.000	SHWD9.10	142.734	-0.116	0.000	0.12		2.9	OK
S12.001	SHWD9.11	142.485	-0.103	0.000	0.21		5.3	OK
S12.002	SHWD9.12	142.266	-0.093	0.000	0.31		7.9	OK
S12.003	SHWD9.13	141.927	-0.091	0.000	0.33		10.5	OK
S1.010	S9	140.753	-0.758	0.000	0.35		648.4	OK
S13.000	SC5.0	141.486	-0.239	0.000	0.53		192.0	OK
S1.011	S10	140.614	-0.797	0.000	0.35		686.3	OK
S14.000	S11.1	141.391	-0.206	0.000	0.02		1.3	OK
S1.012	S11	140.350	-0.921	0.000	0.22		686.5	OK
S1.013	S12	139.797	-1.103	0.000	0.08		689.5	OK
S15.000	SC1.1	141.160	-0.840	0.000	0.20		604.8	OK
S16.000	SC1.2	138.215	-1.285	0.000	0.04		142.1	OK
S15.001	SC1.3	138.106	-1.054	0.000	0.19		800.9	OK
S17.000	SC1.4	141.131	-0.869	0.000	0.16		548.3	OK
S15.002	SC1.5	137.849	-0.751	0.000	0.43		1192.5	OK
S15.003	SC1.6	137.215	-0.935	0.000	0.30		1177.3	OK
S1.014	S13	136.764	-1.006	0.000	0.24		1861.0	OK
S18.000	SHWD14.1	140.245	-0.180	0.000	0.08		4.6	OK
S18.001	SHWD14.2	139.897	-0.162	0.000	0.17		8.6	OK
S18.002	SHWD14.3	139.748	-0.153	0.000	0.22		12.5	OK
S18.003	SHWD14.4	139.580	-0.151	0.000	0.24		16.5	OK
S18.004	SHWD14.5	138.768	-0.160	0.000	0.18		20.3	OK
S19.000	SEx Drain	142.086	-0.314	0.000	0.10		53.6	OK
S18.005	SHWD14.6	135.217	-0.533	0.000	0.18		74.4	OK
S1.015	S14	134.699	-1.011	0.000	0.23		1880.4	OK
S20.000	S15.1	136.446	-0.179	0.000	0.09		6.4	OK
S20.001	S15.2	135.808	-0.177	0.000	0.10		6.5	OK


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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S21.000	S15.3.1	137.231	-0.119	0.000	0.09		4.6	OK


PN	US/MH Name	Level Exceeded
S7.002	S20	
S1.006	S5	
S9.000	S6.1	
S9.001	S6.3	
S9.002	S6.4	
S1.007	S6	
S1.008	S7	
S1.009	S8	
S10.000	SC6.0	
S10.001	SC6.1	
S11.000	SHWD9.1	
S11.001	SHWD9.2	
S11.002	SHWD9.3	
S11.003	SHWD9.4	
S11.004	SHWD9.5	
S11.005	SHWD9.6	
S11.006	SHWD9.7	
S11.007	SHWD9.8	
S11.008	SHWD9.9	
S12.000	SHWD9.10	
S12.001	SHWD9.11	
S12.002	SHWD9.12	
S12.003	SHWD9.13	
S1.010	S9	
S13.000	SC5.0	
S1.011	S10	
S14.000	S11.1	
S1.012	S11	
S1.013	S12	
S15.000	SC1.1	
S16.000	SC1.2	
S15.001	SC1.3	
S17.000	SC1.4	
S15.002	SC1.5	
S15.003	SC1.6	
S1.014	S13	
S18.000	SHWD14.1	
S18.001	SHWD14.2	
S18.002	SHWD14.3	
S18.003	SHWD14.4	

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PN	US/MH Name	Level Exceeded
S18.004	SHWD14.5	
S19.000	SEx Drain	
S18.005	SHWD14.6	
S1.015	S14	
S20.000	S15.1	
S20.001	S15.2	
S21.000	S15.3.1	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge
S20.002		S15.3 15 Winter	1	+0%	100/15 Summer
S20.003		S15.4 15 Winter	1	+0%	
S1.016		S15 30 Winter	1	+0%	
S1.017		S16 30 Winter	1	+0%	
S1.018		S17 30 Winter	1	+0%	
S22.000		S18.1 15 Winter	1	+0%	
S23.000		S18.7.1 15 Winter	1	+0%	
S24.000		SHWD18.1 15 Winter	1	+0%	
S24.001		SHWD18.2 15 Winter	1	+0%	
S24.002		SHWD18.3 15 Winter	1	+0%	
S24.003		SHWD18.4 15 Winter	1	+0%	
S24.004		SHWD18.5 15 Winter	1	+0%	
S24.005		S18.6 15 Winter	1	+0%	
S23.001		S18.7 15 Winter	1	+0%	100/15 Summer
S1.019		S18 30 Winter	1	+0%	
S25.000		S19.1 15 Winter	1	+0%	100/15 Winter
S25.001		S19.2 15 Winter	1	+0%	100/15 Summer
S1.020		S19 30 Winter	1	+0%	100/15 Summer
S1.021		S20 30 Winter	1	+0%	100/15 Winter
S26.000		SC2.1 15 Winter	1	+0%	
S27.000		SC2.2 15 Winter	1	+0%	
S26.001		SC2.3 15 Winter	1	+0%	
S1.022		S21 30 Winter	1	+0%	
S1.023		S22 30 Winter	1	+0%	
S1.024		S23 30 Winter	1	+0%	
S1.025		S24 30 Winter	1	+0%	
S1.026		S25 30 Winter	1	+0%	
S1.027		S26 30 Winter	1	+0%	
S1.028		S27 30 Winter	1	+0%	
S1.029		S28 30 Winter	1	+0%	
S1.030		S29 30 Winter	1	+0%	
S1.031		S30 30 Winter	1	+0%	30/30 Winter
S1.032	S1-31 Basin control	2160 Winter	1	+0%	1/2160 Winter
S1.033		S32 2160 Winter	1	+0%	100/360 Winter
S1.034		S33 2160 Winter	1	+0%	100/360 Winter
S1.035		S34 2160 Winter	1	+0%	100/240 Winter
S1.036		S35 2160 Winter	1	+0%	100/180 Winter
S28.000	SPrivate HW	15 Winter	1	+0%	
S1.037		S36 15 Winter	1	+0%	1/15 Summer
S1.038		S37 15 Winter	1	+0%	
S1.039	SSwale Start (Outfalling headwall)	15 Winter	1	+0%	
S1.040		SSwale 1 15 Winter	1	+0%	
S1.041		SSwale 2 15 Winter	1	+0%	
S1.042		SSwale 3 15 Winter	1	+0%	
S1.043		SSwale 4 15 Winter	1	+0%	
S1.044		SSwale 5 15 Winter	1	+0%	
S1.045	SHeadwall End	15 Winter	1	+0%	

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

PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S20.002		S15.3			135.515
S20.003		S15.4			134.949
S1.016		S15			133.012
S1.017		S16			130.793
S1.018		S17			127.064
S22.000		S18.1			126.104
S23.000		S18.7.1			128.009
S24.000		SHWD18.1			128.700
S24.001		SHWD18.2			128.649
S24.002		SHWD18.3			128.520
S24.003		SHWD18.4			128.418
S24.004		SHWD18.5			128.257
S24.005		S18.6			128.114
S23.001		S18.7			126.747
S1.019		S18			124.976
S25.000		S19.1			124.101
S25.001		S19.2			123.858
S1.020		S19			123.032
S1.021		S20			122.565
S26.000		SC2.1			132.792
S27.000		SC2.2			132.794
S26.001		SC2.3			127.353
S1.022		S21			121.875
S1.023		S22			120.308
S1.024		S23			117.798
S1.025		S24			115.065
S1.026		S25			111.662
S1.027		S26			110.439
S1.028		S27			108.439
S1.029		S28			106.438
S1.030		S29			104.438
S1.031		S30			102.749
S1.032	S1-31 Basin control		100/120 Winter	31	101.815
S1.033		S32			101.459
S1.034		S33			101.199
S1.035		S34			100.848
S1.036		S35			100.494
S28.000	SPrivate HW				100.162
S1.037		S36			100.007
S1.038		S37			99.587
S1.039	SSwale Start (Outfalling headwall)				99.032
S1.040		SSwale 1			98.191
S1.041		SSwale 2			97.511
S1.042		SSwale 3			96.796
S1.043		SSwale 4			95.991
S1.044		SSwale 5			95.003

Technology Services
 Sherwood House, Sherwood Ave.
 Newark, Nottinghamshire, NG...

Hoyland Common
 Surfacer Water
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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
 for Southern Storm

PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.045	SHeadwall End				94.100

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)
S20.002	S15.3	-0.137	0.000	0.32		
S20.003	S15.4	-0.152	0.000	0.23		
S1.016	S15	-1.041	0.000	0.21		
S1.017	S16	-1.108	0.000	0.15		
S1.018	S17	-1.037	0.000	0.21		
S22.000	S18.1	-0.166	0.000	0.15		
S23.000	S18.7.1	-0.216	0.000	0.01		
S24.000	SHWD18.1	-0.191	0.000	0.06		
S24.001	SHWD18.2	-0.183	0.000	0.08		
S24.002	SHWD18.3	-0.174	0.000	0.12		
S24.003	SHWD18.4	-0.168	0.000	0.14		
S24.004	SHWD18.5	-0.159	0.000	0.19		
S24.005	S18.6	-0.185	0.000	0.07		
S23.001	S18.7	-0.148	0.000	0.25		
S1.019	S18	-1.033	0.000	0.21		
S25.000	S19.1	-0.249	0.000	0.06		
S25.001	S19.2	-0.226	0.000	0.14		
S1.020	S19	-0.934	0.000	0.39		
S1.021	S20	-0.992	0.000	0.34		
S26.000	SC2.1	-0.608	0.000	0.22		
S27.000	SC2.2	-0.606	0.000	0.23		
S26.001	SC2.3	-0.787	0.000	0.14		
S1.022	S21	-1.125	0.000	0.22		
S1.023	S22	-1.192	0.000	0.17		
S1.024	S23	-1.202	0.000	0.17		
S1.025	S24	-1.235	0.000	0.14		
S1.026	S25	-1.088	0.000	0.25		
S1.027	S26	-1.161	0.000	0.19		
S1.028	S27	-1.161	0.000	0.19		
S1.029	S28	-1.162	0.000	0.19		
S1.030	S29	-1.162	0.000	0.19		
S1.031	S30	-0.851	0.000	0.47		
S1.032	S1-31 Basin control	0.015	0.000	0.63	0.0	
S1.033	S32	-0.241	0.000	0.33		
S1.034	S33	-0.251	0.000	0.30		
S1.035	S34	-0.252	0.000	0.30		
S1.036	S35	-0.256	0.000	0.28		
S28.000	SPrivate HW	-0.488	0.000	0.26		
S1.037	S36	0.007	0.000	0.57		
S1.038	S37	-0.213	0.000	0.45		


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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Surcharged Flooded			Half Drain
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)
S1.039	SSwale Start (Outfalling headwall)	-0.418	0.000	0.03	
S1.040	SSwale 1	-0.419	0.000	0.03	
S1.041	SSwale 2	-0.419	0.000	0.03	
S1.042	SSwale 3	-0.419	0.000	0.03	
S1.043	SSwale 4	-0.419	0.000	0.03	
S1.044	SSwale 5	-0.432	0.000	0.02	
S1.045	SHeadwall End	-0.215	0.000	0.38	


PN	US/MH Name	Pipe		Status	Level Exceeded
		Flow (l/s)			
S20.002		S15.3	21.8	OK	
S20.003		S15.4	22.0	OK	
S1.016		S15	1886.3	OK	
S1.017		S16	1888.1	OK	
S1.018		S17	1888.6	OK	
S22.000		S18.1	7.4	OK	
S23.000		S18.7.1	1.1	OK	
S24.000		SHWD18.1	1.9	OK	
S24.001		SHWD18.2	3.5	OK	
S24.002		SHWD18.3	5.1	OK	
S24.003		SHWD18.4	6.7	OK	
S24.004		SHWD18.5	8.3	OK	
S24.005		S18.6	9.9	OK	
S23.001		S18.7	25.8	OK	
S1.019		S18	1900.1	OK	
S25.000		S19.1	4.8	OK	
S25.001		S19.2	11.7	OK	
S1.020		S19	1902.2	OK	
S1.021		S20	1897.7	OK	
S26.000		SC2.1	502.9	OK	
S27.000		SC2.2	501.8	OK	
S26.001		SC2.3	987.8	OK	
S1.022		S21	2065.6	OK	
S1.023		S22	2066.0	OK	
S1.024		S23	2065.9	OK	
S1.025		S24	2065.4	OK	
S1.026		S25	2064.7	OK	
S1.027		S26	2065.0	OK	
S1.028		S27	2065.7	OK	
S1.029		S28	2065.8	OK	
S1.030		S29	2065.5	OK	
S1.031		S30	2064.5	OK	
S1.032	S1-31 Basin control		70.2	SURCHARGED	
S1.033		S32	70.2	OK	

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.034		S33 70.2	OK	
S1.035		S34 70.2	OK	
S1.036		S35 70.2	OK	
S28.000	SPrivate HW	203.4	OK*	
S1.037		S36 71.6	SURCHARGED	
S1.038		S37 71.6	OK	
S1.039	SSwale Start (Outfalling headwall)	71.6	OK	
S1.040	SSwale 1	71.6	OK	
S1.041	SSwale 2	71.6	OK	
S1.042	SSwale 3	71.6	OK	
S1.043	SSwale 4	71.6	OK	
S1.044	SSwale 5	71.6	OK	
S1.045	SHeadwall End	71.6	OK	


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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.046	S38	15 Winter	1	+0%					93.520

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.046	S38	-0.139	0.000	0.72			71.6	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
Hot Start Level (mm) 0 Inlet Coefficient 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 2
Number of Online Controls 2 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.351
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status OFF
DTS 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, 0, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SCA3.0	15 Summer	30	+0%				
S1.001	SCA3.1	15 Winter	30	+0%	30/15	Summer		
S2.000	S1.1	15 Winter	30	+0%	100/15	Summer		
S2.001	S1.2	15 Winter	30	+0%				
S3.000	S2.1	15 Winter	30	+0%	30/15	Summer		
S3.001	S2.2	15 Winter	30	+0%	30/15	Summer		
S3.002	S2.3	15 Winter	30	+0%	100/15	Winter		
S1.002	S1	15 Winter	30	+0%	100/15	Summer		
S4.000	SC4B	15 Winter	30	+0%	100/15	Summer		
S1.003	S2	15 Winter	30	+0%	100/15	Summer		
S5.000	SCB3.0	15 Summer	30	+0%				
S5.001	SCB3.1	15 Winter	30	+0%	30/15	Summer		
S1.004	S3	15 Winter	30	+0%	100/15	Summer		
S6.000	SC4A	15 Winter	30	+0%				
S1.005	S4	15 Winter	30	+0%	100/15	Summer		
S7.000	S5.1	15 Winter	30	+0%	100/15	Summer		
S8.000	S5.2.1	15 Winter	30	+0%	100/15	Summer		
S7.001	S5.2	15 Winter	30	+0%	100/15	Summer		

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S1.000	SCA3.0	144.000	-0.600	0.000	0.00		0.0	OK
S1.001	SCA3.1	142.909	0.020	0.000	1.22		362.7	SURCHARGED
S2.000	S1.1	144.099	-0.051	0.000	0.76		16.4	OK
S2.001	S1.2	143.663	-0.267	0.000	0.24		65.0	OK
S3.000	S2.1	144.660	0.185	0.000	1.08		52.8	SURCHARGED
S3.001	S2.2	144.268	0.133	0.000	1.26		60.1	SURCHARGED
S3.002	S2.3	143.799	-0.111	0.000	0.50		64.4	OK
S1.002	S1	142.500	-0.300	0.000	0.70		524.3	OK
S4.000	SC4B	144.691	-0.159	0.000	0.67		335.2	OK
S1.003	S2	142.359	-0.316	0.000	0.30		741.4	OK
S5.000	SCB3.0	143.400	-0.750	0.000	0.00		0.0	OK
S5.001	SCB3.1	142.530	0.201	0.000	1.87		830.4	SURCHARGED
S1.004	S3	142.275	0.000	0.000	1.07		1473.4	OK
S6.000	SC4A	143.730	-0.196	0.000	0.46		230.8	OK
S1.005	S4	142.113	-0.067	0.000	0.81		1550.2	OK
S7.000	S5.1	144.061	-0.164	0.000	0.40		33.8	OK
S8.000	S5.2.1	144.158	-0.057	0.000	0.68		15.3	OK
S7.001	S5.2	143.655	-0.070	0.000	0.89		96.8	OK

PN	US/MH Name	Level Exceeded
S1.000	SCA3.0	
S1.001	SCA3.1	
S2.000	S1.1	
S2.001	S1.2	
S3.000	S2.1	
S3.001	S2.2	
S3.002	S2.3	
S1.002	S1	
S4.000	SC4B	
S1.003	S2	
S5.000	SCB3.0	
S5.001	SCB3.1	
S1.004	S3	
S6.000	SC4A	
S1.005	S4	
S7.000	S5.1	
S8.000	S5.2.1	
S7.001	S5.2	

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


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.
S7.002	S20	15 Winter	30	+0%	100/15 Winter			
S1.006	S5	15 Winter	30	+0%	30/15 Summer			
S9.000	S6.1	15 Winter	30	+0%				
S9.001	S6.3	15 Winter	30	+0%				
S9.002	S6.4	15 Winter	30	+0%				
S1.007	S6	15 Winter	30	+0%	100/15 Summer			
S1.008	S7	30 Winter	30	+0%	100/15 Summer			
S1.009	S8	30 Winter	30	+0%	100/15 Summer			
S10.000	SC6.0	15 Winter	30	+0%	30/15 Summer			
S10.001	SC6.1	15 Winter	30	+0%	100/15 Summer			
S11.000	SHWD9.1	15 Winter	30	+0%				
S11.001	SHWD9.2	15 Winter	30	+0%				
S11.002	SHWD9.3	15 Winter	30	+0%				
S11.003	SHWD9.4	15 Winter	30	+0%				
S11.004	SHWD9.5	15 Winter	30	+0%	100/15 Summer			
S11.005	SHWD9.6	15 Winter	30	+0%	100/15 Summer			
S11.006	SHWD9.7	15 Winter	30	+0%	100/15 Summer			
S11.007	SHWD9.8	15 Winter	30	+0%	100/15 Summer			
S11.008	SHWD9.9	15 Winter	30	+0%	100/15 Summer			
S12.000	SHWD9.10	15 Winter	30	+0%	100/15 Summer			
S12.001	SHWD9.11	15 Winter	30	+0%	100/15 Summer			
S12.002	SHWD9.12	15 Winter	30	+0%	100/15 Summer			
S12.003	SHWD9.13	15 Winter	30	+0%	100/15 Summer			
S1.010	S9	30 Winter	30	+0%	100/15 Summer			
S13.000	SC5.0	15 Winter	30	+0%	30/15 Summer			
S1.011	S10	30 Winter	30	+0%	100/15 Summer			
S14.000	S11.1	15 Winter	30	+0%				
S1.012	S11	30 Winter	30	+0%				
S1.013	S12	30 Winter	30	+0%				
S15.000	SC1.1	15 Winter	30	+0%				
S16.000	SC1.2	15 Winter	30	+0%	100/15 Winter			
S15.001	SC1.3	15 Winter	30	+0%	100/15 Summer			
S17.000	SC1.4	15 Winter	30	+0%				
S15.002	SC1.5	15 Winter	30	+0%	100/15 Summer			
S15.003	SC1.6	30 Winter	30	+0%				
S1.014	S13	30 Winter	30	+0%				
S18.000	SHWD14.1	15 Winter	30	+0%				
S18.001	SHWD14.2	15 Winter	30	+0%	100/15 Winter			
S18.002	SHWD14.3	15 Winter	30	+0%	100/15 Summer			
S18.003	SHWD14.4	15 Winter	30	+0%	100/15 Summer			
S18.004	SHWD14.5	15 Winter	30	+0%				
S19.000	SEx Drain	15 Winter	30	+0%				
S18.005	SHWD14.6	15 Winter	30	+0%				
S1.015	S14	30 Winter	30	+0%				
S20.000	S15.1	15 Winter	30	+0%				
S20.001	S15.2	15 Winter	30	+0%	100/15 Summer			
S21.000	S15.3.1	15 Winter	30	+0%				

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)
S7.002	S20	142.666	-0.159	0.000	0.45		96.2
S1.006	S5	141.960	0.035	0.000	1.39		1575.2
S9.000	S6.1	149.353	-0.097	0.000	0.27		10.4
S9.001	S6.3	147.113	-0.112	0.000	0.48		16.4
S9.002	S6.4	146.836	-0.189	0.000	0.06		16.7
S1.007	S6	141.861	0.000	0.000	1.02		1487.4
S1.008	S7	141.409	-0.342	0.000	0.73		1413.4
S1.009	S8	141.289	-0.352	0.000	0.70		1387.4
S10.000	SC6.0	142.087	0.158	0.000	1.47		508.9
S10.001	SC6.1	141.690	-0.163	0.000	0.86		503.8
S11.000	SHWD9.1	145.753	-0.097	0.000	0.27		8.4
S11.001	SHWD9.2	145.217	-0.070	0.000	0.55		17.2
S11.002	SHWD9.3	144.631	-0.140	0.000	0.30		26.1
S11.003	SHWD9.4	144.097	-0.125	0.000	0.41		34.9
S11.004	SHWD9.5	143.608	-0.109	0.000	0.52		43.7
S11.005	SHWD9.6	143.191	-0.096	0.000	0.62		52.4
S11.006	SHWD9.7	142.777	-0.080	0.000	0.73		60.9
S11.007	SHWD9.8	142.392	-0.066	0.000	0.82		69.1
S11.008	SHWD9.9	141.983	-0.055	0.000	0.89		78.0
S12.000	SHWD9.10	142.754	-0.096	0.000	0.28		7.1
S12.001	SHWD9.11	142.522	-0.066	0.000	0.59		14.7
S12.002	SHWD9.12	142.319	-0.040	0.000	0.87		22.5
S12.003	SHWD9.13	141.984	-0.034	0.000	0.95		30.4
S1.010	S9	141.167	-0.344	0.000	0.83		1530.5
S13.000	SC5.0	141.929	0.204	0.000	1.28		467.5
S1.011	S10	141.016	-0.395	0.000	0.84		1637.3
S14.000	S11.1	141.402	-0.195	0.000	0.04		3.1
S1.012	S11	140.620	-0.651	0.000	0.53		1637.7
S1.013	S12	139.939	-0.961	0.000	0.18		1644.8
S15.000	SC1.1	141.387	-0.613	0.000	0.43		1317.9
S16.000	SC1.2	138.591	-0.909	0.000	0.09		346.5
S15.001	SC1.3	138.549	-0.611	0.000	0.39		1658.2
S17.000	SC1.4	141.339	-0.661	0.000	0.38		1316.1
S15.002	SC1.5	138.480	-0.120	0.000	0.95		2600.3
S15.003	SC1.6	137.572	-0.578	0.000	0.69		2676.3
S1.014	S13	137.067	-0.703	0.000	0.55		4328.5
S18.000	SHWD14.1	140.270	-0.155	0.000	0.21		11.3
S18.001	SHWD14.2	139.943	-0.116	0.000	0.47		23.3
S18.002	SHWD14.3	139.807	-0.094	0.000	0.63		35.4
S18.003	SHWD14.4	139.643	-0.088	0.000	0.67		46.6
S18.004	SHWD14.5	138.821	-0.107	0.000	0.52		58.2
S19.000	SEx Drain	142.137	-0.263	0.000	0.25		131.1
S18.005	SHWD14.6	135.365	-0.385	0.000	0.47		191.0
S1.015	S14	134.997	-0.713	0.000	0.54		4362.9
S20.000	S15.1	136.473	-0.152	0.000	0.23		15.7
S20.001	S15.2	135.837	-0.148	0.000	0.25		15.8


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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)
S21.000	S15.3.1	137.249	-0.101	0.000	0.23		11.2


PN	US/MH Name	Status	Level Exceeded
S7.002	S20	OK	
S1.006	S5	SURCHARGED	
S9.000	S6.1	OK	
S9.001	S6.3	OK	
S9.002	S6.4	OK	
S1.007	S6	OK	
S1.008	S7	OK	
S1.009	S8	OK	
S10.000	SC6.0	SURCHARGED	
S10.001	SC6.1	OK	
S11.000	SHWD9.1	OK	
S11.001	SHWD9.2	OK	
S11.002	SHWD9.3	OK	
S11.003	SHWD9.4	OK	
S11.004	SHWD9.5	OK	
S11.005	SHWD9.6	OK	
S11.006	SHWD9.7	OK	
S11.007	SHWD9.8	OK	
S11.008	SHWD9.9	OK	
S12.000	SHWD9.10	OK	
S12.001	SHWD9.11	OK	
S12.002	SHWD9.12	OK	
S12.003	SHWD9.13	OK	
S1.010	S9	OK	
S13.000	SC5.0	SURCHARGED	
S1.011	S10	OK	
S14.000	S11.1	OK	
S1.012	S11	OK	
S1.013	S12	OK	
S15.000	SC1.1	OK	
S16.000	SC1.2	OK	
S15.001	SC1.3	OK	
S17.000	SC1.4	OK	
S15.002	SC1.5	OK	
S15.003	SC1.6	OK	
S1.014	S13	OK	
S18.000	SHWD14.1	OK	
S18.001	SHWD14.2	OK	
S18.002	SHWD14.3	OK	
S18.003	SHWD14.4	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Status	Level Exceeded
S18.004	SHWD14.5	OK	
S19.000	SEx Drain	OK	
S18.005	SHWD14.6	OK	
S1.015	S14	OK	
S20.000	S15.1	OK	
S20.001	S15.2	OK	
S21.000	S15.3.1	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge
S20.002		S15.3 15 Winter	30	+0%	100/15 Summer
S20.003		S15.4 15 Winter	30	+0%	
S1.016		S15 30 Winter	30	+0%	
S1.017		S16 30 Winter	30	+0%	
S1.018		S17 30 Winter	30	+0%	
S22.000		S18.1 15 Winter	30	+0%	
S23.000		S18.7.1 15 Winter	30	+0%	
S24.000		SHWD18.1 15 Winter	30	+0%	
S24.001		SHWD18.2 15 Winter	30	+0%	
S24.002		SHWD18.3 15 Winter	30	+0%	
S24.003		SHWD18.4 15 Winter	30	+0%	
S24.004		SHWD18.5 15 Winter	30	+0%	
S24.005		S18.6 15 Winter	30	+0%	
S23.001		S18.7 15 Winter	30	+0%	100/15 Summer
S1.019		S18 30 Winter	30	+0%	
S25.000		S19.1 15 Winter	30	+0%	100/15 Winter
S25.001		S19.2 15 Winter	30	+0%	100/15 Summer
S1.020		S19 30 Winter	30	+0%	100/15 Summer
S1.021		S20 30 Winter	30	+0%	100/15 Winter
S26.000		SC2.1 15 Winter	30	+0%	
S27.000		SC2.2 15 Winter	30	+0%	
S26.001		SC2.3 15 Winter	30	+0%	
S1.022		S21 30 Winter	30	+0%	
S1.023		S22 30 Winter	30	+0%	
S1.024		S23 30 Winter	30	+0%	
S1.025		S24 30 Winter	30	+0%	
S1.026		S25 30 Winter	30	+0%	
S1.027		S26 30 Winter	30	+0%	
S1.028		S27 30 Winter	30	+0%	
S1.029		S28 30 Winter	30	+0%	
S1.030		S29 30 Winter	30	+0%	
S1.031		S30 30 Winter	30	+0%	30/30 Winter
S1.032	S1-31 Basin control	2160 Winter	30	+0%	1/2160 Winter
S1.033		S32 600 Winter	30	+0%	100/360 Winter
S1.034		S33 360 Winter	30	+0%	100/360 Winter
S1.035		S34 600 Winter	30	+0%	100/240 Winter
S1.036		S35 480 Winter	30	+0%	100/180 Winter
S28.000	SPrivate HW	15 Winter	30	+0%	
S1.037		S36 7200 Winter	30	+0%	1/15 Summer
S1.038		S37 7200 Winter	30	+0%	
S1.039	SSwale Start (Outfalling headwall)	7200 Winter	30	+0%	
S1.040		SSwale 1 7200 Winter	30	+0%	
S1.041		SSwale 2 7200 Winter	30	+0%	
S1.042		SSwale 3 7200 Winter	30	+0%	
S1.043		SSwale 4 7200 Winter	30	+0%	
S1.044		SSwale 5 7200 Winter	30	+0%	
S1.045	SHeadwall End	7200 Winter	30	+0%	

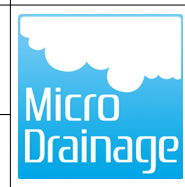
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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S20.002		S15.3			135.593
S20.003		S15.4			135.006
S1.016		S15			133.282
S1.017		S16			131.021
S1.018		S17			127.337
S22.000		S18.1			126.141
S23.000		S18.7.1			128.023
S24.000		SHWD18.1			128.721
S24.001		SHWD18.2			128.677
S24.002		SHWD18.3			128.559
S24.003		SHWD18.4			128.463
S24.004		SHWD18.5			128.310
S24.005		S18.6			128.145
S23.001		S18.7			126.819
S1.019		S18			125.252
S25.000		S19.1			124.131
S25.001		S19.2			123.913
S1.020		S19			123.548
S1.021		S20			123.007
S26.000		SC2.1			132.986
S27.000		SC2.2			132.990
S26.001		SC2.3			127.502
S1.022		S21			122.208
S1.023		S22			120.594
S1.024		S23			118.077
S1.025		S24			115.323
S1.026		S25			112.034
S1.027		S26			110.738
S1.028		S27			108.742
S1.029		S28			106.743
S1.030		S29			104.742
S1.031		S30			103.696
S1.032	S1-31 Basin control		100/120 Winter	31	102.254
S1.033		S32			101.473
S1.034		S33			101.214
S1.035		S34			100.863
S1.036		S35			100.508
S28.000	SPrivate HW				100.341
S1.037		S36			100.255
S1.038		S37			99.602
S1.039	SSwale Start (Outfalling headwall)				99.038
S1.040		SSwale 1			98.196
S1.041		SSwale 2			97.517
S1.042		SSwale 3			96.802
S1.043		SSwale 4			95.997
S1.044		SSwale 5			95.008

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.045	SHeadwall End				94.111

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)
S20.002	S15.3	-0.059	0.000	0.88		
S20.003	S15.4	-0.095	0.000	0.62		
S1.016	S15	-0.771	0.000	0.48		
S1.017	S16	-0.880	0.000	0.36		
S1.018	S17	-0.764	0.000	0.49		
S22.000	S18.1	-0.129	0.000	0.37		
S23.000	S18.7.1	-0.202	0.000	0.02		
S24.000	SHWD18.1	-0.170	0.000	0.14		
S24.001	SHWD18.2	-0.155	0.000	0.21		
S24.002	SHWD18.3	-0.135	0.000	0.33		
S24.003	SHWD18.4	-0.123	0.000	0.42		
S24.004	SHWD18.5	-0.106	0.000	0.54		
S24.005	S18.6	-0.154	0.000	0.21		
S23.001	S18.7	-0.076	0.000	0.76		
S1.019	S18	-0.757	0.000	0.49		
S25.000	S19.1	-0.219	0.000	0.16		
S25.001	S19.2	-0.171	0.000	0.37		
S1.020	S19	-0.418	0.000	0.91		
S1.021	S20	-0.550	0.000	0.78		
S26.000	SC2.1	-0.414	0.000	0.50		
S27.000	SC2.2	-0.410	0.000	0.50		
S26.001	SC2.3	-0.638	0.000	0.32		
S1.022	S21	-0.792	0.000	0.54		
S1.023	S22	-0.906	0.000	0.41		
S1.024	S23	-0.923	0.000	0.40		
S1.025	S24	-0.977	0.000	0.35		
S1.026	S25	-0.716	0.000	0.61		
S1.027	S26	-0.862	0.000	0.46		
S1.028	S27	-0.858	0.000	0.46		
S1.029	S28	-0.857	0.000	0.46		
S1.030	S29	-0.858	0.000	0.46		
S1.031	S30	0.096	0.000	1.14		
S1.032	S1-31 Basin control	0.454	0.000	0.73	0.0	
S1.033	S32	-0.227	0.000	0.39		
S1.034	S33	-0.236	0.000	0.35		
S1.035	S34	-0.237	0.000	0.35		
S1.036	S35	-0.242	0.000	0.33		
S28.000	SPrivate HW	-0.309	0.000	0.64		
S1.037	S36	0.255	0.000	0.65		
S1.038	S37	-0.198	0.000	0.51		


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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Surcharged		Flooded		Half Drain
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)	Time (mins)
S1.039	SSwale Start (Outfalling headwall)	-0.412	0.000	0.03		
S1.040	SSwale 1	-0.414	0.000	0.03		
S1.041	SSwale 2	-0.413	0.000	0.03		
S1.042	SSwale 3	-0.413	0.000	0.03		
S1.043	SSwale 4	-0.413	0.000	0.03		
S1.044	SSwale 5	-0.427	0.000	0.02		
S1.045	SHeadwall End	-0.204	0.000	0.43		


PN	US/MH Name	Pipe		Status	Level Exceeded
		Flow (l/s)			
S20.002		S15.3	60.4	OK	
S20.003		S15.4	60.4	OK	
S1.016		S15	4381.1	OK	
S1.017		S16	4389.1	OK	
S1.018		S17	4393.1	OK	
S22.000		S18.1	18.1	OK	
S23.000		S18.7.1	2.8	OK	
S24.000		SHWD18.1	4.6	OK	
S24.001		SHWD18.2	9.5	OK	
S24.002		SHWD18.3	14.5	OK	
S24.003		SHWD18.4	19.3	OK	
S24.004		SHWD18.5	24.0	OK	
S24.005		S18.6	28.6	OK	
S23.001		S18.7	77.7	OK	
S1.019		S18	4410.7	OK	
S25.000		S19.1	11.7	OK	
S25.001		S19.2	32.2	OK	
S1.020		S19	4410.9	OK	
S1.021		S20	4396.5	OK	
S26.000		SC2.1	1117.9	OK	
S27.000		SC2.2	1108.3	OK	
S26.001		SC2.3	2238.5	OK	
S1.022		S21	4983.3	OK	
S1.023		S22	4954.7	OK	
S1.024		S23	4969.6	OK	
S1.025		S24	4986.8	OK	
S1.026		S25	4991.5	OK	
S1.027		S26	4981.8	OK	
S1.028		S27	4963.4	OK	
S1.029		S28	4953.4	OK	
S1.030		S29	4978.9	OK	
S1.031		S30	4975.9	SURCHARGED	
S1.032	S1-31 Basin control		82.4	SURCHARGED	
S1.033		S32	82.4	OK	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.034		S33 82.4	OK	
S1.035		S34 82.4	OK	
S1.036		S35 82.4	OK	
S28.000	SPrivate HW	498.3	OK*	
S1.037		S36 81.0	SURCHARGED	
S1.038		S37 81.0	OK	
S1.039	SSwale Start (Outfalling headwall)	81.0	OK	
S1.040	SSwale 1	81.0	OK	
S1.041	SSwale 2	81.0	OK	
S1.042	SSwale 3	81.1	OK	
S1.043	SSwale 4	81.1	OK	
S1.044	SSwale 5	81.1	OK	
S1.045	SHeadwall End	81.1	OK	


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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.046	S38	7200 Winter	30	+0%					93.542

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.046	S38	-0.117	0.000	0.82			81.1	OK	

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

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
Hot Start Level (mm) 0 Inlet Coefficient 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 2
Number of Online Controls 2 Number of Time/Area Diagrams 0
Number of Offline Controls 1 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FSR Ratio R 0.351
Region England and Wales Cv (Summer) 0.750
M5-60 (mm) 19.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0 DVD Status ON
Analysis Timestep Fine Inertia Status OFF
DTS 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, 0, 30

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SCA3.0	15 Summer	100	+30%				
S1.001	SCA3.1	15 Winter	100	+30%	30/15	Summer		
S2.000	S1.1	15 Winter	100	+30%	100/15	Summer		
S2.001	S1.2	15 Winter	100	+30%				
S3.000	S2.1	15 Winter	100	+30%	30/15	Summer		
S3.001	S2.2	15 Winter	100	+30%	30/15	Summer		
S3.002	S2.3	15 Winter	100	+30%	100/15	Winter		
S1.002	S1	15 Winter	100	+30%	100/15	Summer		
S4.000	SC4B	15 Winter	100	+30%	100/15	Summer		
S1.003	S2	15 Winter	100	+30%	100/15	Summer		
S5.000	SCB3.0	15 Winter	100	+30%				
S5.001	SCB3.1	15 Winter	100	+30%	30/15	Summer		
S1.004	S3	15 Winter	100	+30%	100/15	Summer		
S6.000	SC4A	15 Winter	100	+30%				
S1.005	S4	30 Winter	100	+30%	100/15	Summer		
S7.000	S5.1	15 Winter	100	+30%	100/15	Summer		
S8.000	S5.2.1	15 Winter	100	+30%	100/15	Summer		
S7.001	S5.2	15 Winter	100	+30%	100/15	Summer		

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S1.000	SCA3.0	144.000	-0.600	0.000	0.00		0.0	OK
S1.001	SCA3.1	143.870	0.981	0.000	1.93		571.5	SURCHARGED
S2.000	S1.1	144.288	0.138	0.000	1.26		27.2	SURCHARGED
S2.001	S1.2	143.706	-0.224	0.000	0.39		106.4	OK
S3.000	S2.1	145.992	1.517	0.000	1.76		86.0	SURCHARGED
S3.001	S2.2	144.999	0.864	0.000	2.08		98.8	SURCHARGED
S3.002	S2.3	144.235	0.325	0.000	0.79		101.2	SURCHARGED
S1.002	S1	143.640	0.840	0.000	1.04		777.6	SURCHARGED
S4.000	SC4B	145.566	0.716	0.000	1.09		547.6	SURCHARGED
S1.003	S2	143.538	0.863	0.000	0.49		1226.7	SURCHARGED
S5.000	SCB3.0	144.042	-0.108	0.000	0.01		10.3	OK
S5.001	SCB3.1	144.044	1.715	0.000	2.87		1277.2	SURCHARGED
S1.004	S3	143.488	1.213	0.000	1.75		2408.8	SURCHARGED
S6.000	SC4A	143.800	-0.126	0.000	0.77		388.1	OK
S1.005	S4	143.272	1.092	0.000	1.24		2373.7	SURCHARGED
S7.000	S5.1	144.659	0.434	0.000	0.63		53.1	SURCHARGED
S8.000	S5.2.1	144.822	0.607	0.000	1.01		22.6	SURCHARGED
S7.001	S5.2	144.454	0.729	0.000	1.28		139.1	SURCHARGED

US/MH Level Exceeded


S1.000	SCA3.0
S1.001	SCA3.1
S2.000	S1.1
S2.001	S1.2
S3.000	S2.1
S3.001	S2.2
S3.002	S2.3
S1.002	S1
S4.000	SC4B
S1.003	S2
S5.000	SCB3.0
S5.001	SCB3.1
S1.004	S3
S6.000	SC4A
S1.005	S4
S7.000	S5.1
S8.000	S5.2.1
S7.001	S5.2

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


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S7.002	S20	30 Winter	100	+30%	100/15 Winter			
S1.006	S5	30 Winter	100	+30%	30/15 Summer			
S9.000	S6.1	15 Winter	100	+30%				
S9.001	S6.3	15 Winter	100	+30%				
S9.002	S6.4	15 Winter	100	+30%				
S1.007	S6	30 Winter	100	+30%	100/15 Summer			
S1.008	S7	30 Winter	100	+30%	100/15 Summer			
S1.009	S8	30 Winter	100	+30%	100/15 Summer			
S10.000	SC6.0	15 Winter	100	+30%	30/15 Summer			
S10.001	SC6.1	15 Winter	100	+30%	100/15 Summer			
S11.000	SHWD9.1	15 Winter	100	+30%				
S11.001	SHWD9.2	15 Winter	100	+30%				
S11.002	SHWD9.3	15 Winter	100	+30%				
S11.003	SHWD9.4	15 Winter	100	+30%				
S11.004	SHWD9.5	15 Winter	100	+30%	100/15 Summer			
S11.005	SHWD9.6	15 Winter	100	+30%	100/15 Summer			
S11.006	SHWD9.7	15 Winter	100	+30%	100/15 Summer			
S11.007	SHWD9.8	15 Winter	100	+30%	100/15 Summer			
S11.008	SHWD9.9	15 Winter	100	+30%	100/15 Summer			
S12.000	SHWD9.10	15 Winter	100	+30%	100/15 Summer			
S12.001	SHWD9.11	15 Winter	100	+30%	100/15 Summer			
S12.002	SHWD9.12	15 Winter	100	+30%	100/15 Summer			
S12.003	SHWD9.13	15 Winter	100	+30%	100/15 Summer			
S1.010	S9	30 Winter	100	+30%	100/15 Summer			
S13.000	SC5.0	15 Winter	100	+30%	30/15 Summer			
S1.011	S10	30 Winter	100	+30%	100/15 Summer			
S14.000	S11.1	15 Winter	100	+30%				
S1.012	S11	30 Winter	100	+30%				
S1.013	S12	30 Winter	100	+30%				
S15.000	SC1.1	15 Winter	100	+30%				
S16.000	SC1.2	15 Winter	100	+30%	100/15 Winter			
S15.001	SC1.3	15 Winter	100	+30%	100/15 Summer			
S17.000	SC1.4	15 Winter	100	+30%				
S15.002	SC1.5	15 Winter	100	+30%	100/15 Summer			
S15.003	SC1.6	30 Winter	100	+30%				
S1.014	S13	30 Winter	100	+30%				
S18.000	SHWD14.1	15 Winter	100	+30%				
S18.001	SHWD14.2	15 Winter	100	+30%	100/15 Winter			
S18.002	SHWD14.3	15 Winter	100	+30%	100/15 Summer			
S18.003	SHWD14.4	15 Winter	100	+30%	100/15 Summer			
S18.004	SHWD14.5	15 Winter	100	+30%				
S19.000	SEx Drain	15 Winter	100	+30%				
S18.005	SHWD14.6	15 Winter	100	+30%				
S1.015	S14	30 Winter	100	+30%				
S20.000	S15.1	15 Winter	100	+30%				
S20.001	S15.2	15 Winter	100	+30%	100/15 Summer			
S21.000	S15.3.1	15 Winter	100	+30%				

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)
S7.002	S20	143.225	0.400	0.000	0.55		117.3
S1.006	S5	142.960	1.035	0.000	2.17		2457.3
S9.000	S6.1	149.371	-0.079	0.000	0.45		17.5
S9.001	S6.3	147.160	-0.065	0.000	0.81		27.5
S9.002	S6.4	146.848	-0.177	0.000	0.10		28.1
S1.007	S6	142.617	0.756	0.000	1.69		2475.4
S1.008	S7	142.253	0.502	0.000	1.27		2446.4
S1.009	S8	142.081	0.440	0.000	1.22		2417.2
S10.000	SC6.0	142.980	1.051	0.000	2.44		847.7
S10.001	SC6.1	142.231	0.378	0.000	1.44		844.1
S11.000	SHWD9.1	145.771	-0.079	0.000	0.45		14.1
S11.001	SHWD9.2	145.252	-0.035	0.000	0.93		28.9
S11.002	SHWD9.3	144.660	-0.111	0.000	0.50		43.9
S11.003	SHWD9.4	144.160	-0.062	0.000	0.68		58.7
S11.004	SHWD9.5	143.984	0.267	0.000	0.79		66.3
S11.005	SHWD9.6	143.746	0.459	0.000	0.90		75.6
S11.006	SHWD9.7	143.402	0.545	0.000	1.04		87.2
S11.007	SHWD9.8	142.962	0.504	0.000	1.17		98.6
S11.008	SHWD9.9	142.374	0.336	0.000	1.27		111.0
S12.000	SHWD9.10	143.019	0.169	0.000	0.43		10.9
S12.001	SHWD9.11	142.975	0.387	0.000	0.82		20.4
S12.002	SHWD9.12	142.824	0.465	0.000	1.18		30.5
S12.003	SHWD9.13	142.344	0.326	0.000	1.28		41.0
S1.010	S9	141.885	0.374	0.000	1.50		2774.7
S13.000	SC5.0	142.916	1.191	0.000	2.14		782.2
S1.011	S10	141.579	0.168	0.000	1.56		3040.2
S14.000	S11.1	141.412	-0.185	0.000	0.07		5.2
S1.012	S11	140.990	-0.281	0.000	0.98		3037.5
S1.013	S12	140.093	-0.807	0.000	0.34		3043.6
S15.000	SC1.1	141.623	-0.377	0.000	0.71		2177.7
S16.000	SC1.2	139.514	0.014	0.000	0.15		560.3
S15.001	SC1.3	139.501	0.341	0.000	0.58		2469.4
S17.000	SC1.4	141.543	-0.457	0.000	0.63		2208.0
S15.002	SC1.5	139.303	0.703	0.000	1.47		4036.8
S15.003	SC1.6	138.150	0.000	0.000	1.00		3864.2
S1.014	S13	137.368	-0.402	0.000	0.89		6932.9
S18.000	SHWD14.1	140.293	-0.132	0.000	0.35		19.0
S18.001	SHWD14.2	140.066	0.007	0.000	0.74		36.9
S18.002	SHWD14.3	139.962	0.061	0.000	0.97		54.2
S18.003	SHWD14.4	139.802	0.071	0.000	1.04		72.8
S18.004	SHWD14.5	138.861	-0.067	0.000	0.82		91.3
S19.000	SEx Drain	142.184	-0.216	0.000	0.42		220.4
S18.005	SHWD14.6	135.503	-0.247	0.000	0.77		314.3
S1.015	S14	135.293	-0.417	0.000	0.87		7014.8
S20.000	S15.1	136.497	-0.128	0.000	0.38		26.4
S20.001	S15.2	136.185	0.200	0.000	0.50		32.0


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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)
s21.000	s15.3.1	137.265	-0.085	0.000	0.39		18.8

PN	US/MH Name	Status	Level Exceeded
S7.002	S20	SURCHARGED	
S1.006	S5	SURCHARGED	
S9.000	S6.1	OK	
S9.001	S6.3	OK	
S9.002	S6.4	OK	
S1.007	S6	SURCHARGED	
S1.008	S7	SURCHARGED	
S1.009	S8	SURCHARGED	
S10.000	SC6.0	SURCHARGED	
S10.001	SC6.1	SURCHARGED	
S11.000	SHWD9.1	OK	
S11.001	SHWD9.2	OK	
S11.002	SHWD9.3	OK	
S11.003	SHWD9.4	OK	
S11.004	SHWD9.5	SURCHARGED	
S11.005	SHWD9.6	SURCHARGED	
S11.006	SHWD9.7	SURCHARGED	
S11.007	SHWD9.8	SURCHARGED	
S11.008	SHWD9.9	SURCHARGED	
S12.000	SHWD9.10	SURCHARGED	
S12.001	SHWD9.11	SURCHARGED	
S12.002	SHWD9.12	SURCHARGED	
S12.003	SHWD9.13	SURCHARGED	
S1.010	S9	SURCHARGED	
S13.000	SC5.0	SURCHARGED	
S1.011	S10	SURCHARGED	
S14.000	S11.1	OK	
S1.012	S11	OK	
S1.013	S12	OK	
S15.000	SC1.1	OK	
S16.000	SC1.2	SURCHARGED	
S15.001	SC1.3	SURCHARGED	
S17.000	SC1.4	OK	
S15.002	SC1.5	SURCHARGED	
S15.003	SC1.6	OK	
S1.014	S13	OK	
S18.000	SHWD14.1	OK	
S18.001	SHWD14.2	SURCHARGED	
S18.002	SHWD14.3	SURCHARGED	
S18.003	SHWD14.4	SURCHARGED	


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

PN	US/MH Name	Status	Level Exceeded
S18.004	SHWD14.5	OK	
S19.000	SEx Drain	OK	
S18.005	SHWD14.6	OK	
S1.015	S14	OK	
S20.000	S15.1	OK	
S20.001	S15.2	SURCHARGED	
S21.000	S15.3.1	OK	

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


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge
S20.002		S15.3	15 Winter	100 +30%	100/15 Summer
S20.003		S15.4	15 Winter	100 +30%	
S1.016		S15	30 Winter	100 +30%	
S1.017		S16	30 Winter	100 +30%	
S1.018		S17	30 Winter	100 +30%	
S22.000		S18.1	15 Winter	100 +30%	
S23.000		S18.7.1	15 Winter	100 +30%	
S24.000		SHWD18.1	15 Winter	100 +30%	
S24.001		SHWD18.2	15 Winter	100 +30%	
S24.002		SHWD18.3	15 Winter	100 +30%	
S24.003		SHWD18.4	15 Winter	100 +30%	
S24.004		SHWD18.5	15 Winter	100 +30%	
S24.005		S18.6	15 Winter	100 +30%	
S23.001		S18.7	15 Winter	100 +30%	100/15 Summer
S1.019		S18	30 Winter	100 +30%	
S25.000		S19.1	30 Winter	100 +30%	100/15 Winter
S25.001		S19.2	30 Winter	100 +30%	100/15 Summer
S1.020		S19	30 Winter	100 +30%	100/15 Summer
S1.021		S20	30 Winter	100 +30%	100/15 Winter
S26.000		SC2.1	15 Winter	100 +30%	
S27.000		SC2.2	15 Winter	100 +30%	
S26.001		SC2.3	15 Winter	100 +30%	
S1.022		S21	30 Winter	100 +30%	
S1.023		S22	30 Winter	100 +30%	
S1.024		S23	30 Winter	100 +30%	
S1.025		S24	30 Winter	100 +30%	
S1.026		S25	30 Winter	100 +30%	
S1.027		S26	30 Winter	100 +30%	
S1.028		S27	30 Winter	100 +30%	
S1.029		S28	30 Winter	100 +30%	
S1.030		S29	30 Winter	100 +30%	
S1.031		S30	30 Winter	100 +30%	30/30 Winter
S1.032	S1-31 Basin control	480	Winter	100 +30%	1/2160 Winter
S1.033		S32	2880 Winter	100 +30%	100/360 Winter
S1.034		S33	2880 Winter	100 +30%	100/360 Winter
S1.035		S34	2880 Winter	100 +30%	100/240 Winter
S1.036		S35	2880 Winter	100 +30%	100/180 Winter
S28.000	SPrivate HW	10080	Summer	100 +30%	
S1.037		S36	2880 Winter	100 +30%	1/15 Summer
S1.038		S37	2880 Winter	100 +30%	
S1.039	SSwale Start (Outfalling headwall)	2880	Winter	100 +30%	
S1.040		SSwale 1	2880 Winter	100 +30%	
S1.041		SSwale 2	2880 Winter	100 +30%	
S1.042		SSwale 3	2880 Winter	100 +30%	
S1.043		SSwale 4	2880 Winter	100 +30%	
S1.044		SSwale 5	2880 Winter	100 +30%	
S1.045	SHeadwall End	2880	Winter	100 +30%	

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

PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S20.002		S15.3			136.149
S20.003		S15.4			135.052
S1.016		S15			133.542
S1.017		S16			131.221
S1.018		S17			127.603
S22.000		S18.1			126.176
S23.000		S18.7.1			128.028
S24.000		SHWD18.1			128.739
S24.001		SHWD18.2			128.700
S24.002		SHWD18.3			128.590
S24.003		SHWD18.4			128.501
S24.004		SHWD18.5			128.361
S24.005		S18.6			128.168
S23.001		S18.7			127.415
S1.019		S18			125.887
S25.000		S19.1			124.643
S25.001		S19.2			124.638
S1.020		S19			124.634
S1.021		S20			123.774
S26.000		SC2.1			133.196
S27.000		SC2.2			133.202
S26.001		SC2.3			127.643
S1.022		S21			122.520
S1.023		S22			120.827
S1.024		S23			118.304
S1.025		S24			115.525
S1.026		S25			112.390
S1.027		S26			111.005
S1.028		S27			109.005
S1.029		S28			107.005
S1.030		S29			105.424
S1.031		S30			104.345
S1.032	S1-31 Basin control		100/120 Winter	31	102.394
S1.033		S32			102.215
S1.034		S33			102.211
S1.035		S34			102.206
S1.036		S35			102.202
S28.000	SPrivate HW				100.650
S1.037		S36			102.196
S1.038		S37			99.604
S1.039	SSwale Start (Outfalling headwall)				99.038
S1.040		SSwale 1			98.197
S1.041		SSwale 2			97.517
S1.042		SSwale 3			96.802
S1.043		SSwale 4			95.997
S1.044		SSwale 5			95.008


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

PN	US/MH Name	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.045	SHeadwall End				94.113

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)
S20.002		S15.3	0.497	0.000	1.37	
S20.003		S15.4	-0.049	0.000	0.96	
S1.016		S15	-0.511	0.000	0.77	
S1.017		S16	-0.680	0.000	0.58	
S1.018		S17	-0.498	0.000	0.78	
S22.000		S18.1	-0.094	0.000	0.62	
S23.000		S18.7.1	-0.197	0.000	0.04	
S24.000		SHWD18.1	-0.152	0.000	0.23	
S24.001		SHWD18.2	-0.132	0.000	0.35	
S24.002		SHWD18.3	-0.104	0.000	0.55	
S24.003		SHWD18.4	-0.085	0.000	0.70	
S24.004		SHWD18.5	-0.055	0.000	0.90	
S24.005		S18.6	-0.131	0.000	0.35	
S23.001		S18.7	0.520	0.000	1.24	
S1.019		S18	-0.122	0.000	0.79	
S25.000		S19.1	0.293	0.000	0.22	
S25.001		S19.2	0.554	0.000	0.50	
S1.020		S19	0.668	0.000	1.45	
S1.021		S20	0.217	0.000	1.24	
S26.000		SC2.1	-0.204	0.000	0.83	
S27.000		SC2.2	-0.198	0.000	0.84	
S26.001		SC2.3	-0.497	0.000	0.54	
S1.022		S21	-0.480	0.000	0.85	
S1.023		S22	-0.673	0.000	0.66	
S1.024		S23	-0.696	0.000	0.63	
S1.025		S24	-0.775	0.000	0.55	
S1.026		S25	-0.360	0.000	0.97	
S1.027		S26	-0.595	0.000	0.74	
S1.028		S27	-0.595	0.000	0.74	
S1.029		S28	-0.595	0.000	0.74	
S1.030		S29	-0.176	0.000	0.73	
S1.031		S30	0.745	0.000	1.81	
S1.032	S1-31 Basin control	S31	0.594	0.000	0.73	914.1
S1.033		S32	0.515	0.000	0.39	
S1.034		S33	0.761	0.000	0.35	
S1.035		S34	1.106	0.000	0.35	
S1.036		S35	1.452	0.000	0.33	
S28.000	SPrivate HW	S36	0.000	0.000	0.21	
S1.037		S36	2.196	0.000	0.66	
S1.038		S37	-0.196	0.000	0.52	


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

PN	US/MH Name	Surcharged Flooded			Half Drain
		Depth (m)	Volume (m ³)	Flow / Overflow Cap. (l/s)	Time (mins)
S1.039	SSwale Start (Outfalling headwall)	-0.412	0.000	0.03	
S1.040	SSwale 1	-0.413	0.000	0.04	
S1.041	SSwale 2	-0.413	0.000	0.04	
S1.042	SSwale 3	-0.413	0.000	0.03	
S1.043	SSwale 4	-0.413	0.000	0.03	
S1.044	SSwale 5	-0.427	0.000	0.02	
S1.045	SHeadwall End	-0.202	0.000	0.44	


PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S20.002		S15.3 93.7	SURCHARGED	
S20.003		S15.4 94.0	OK	
S1.016		S15 7036.2	OK	
S1.017		S16 7054.9	OK	
S1.018		S17 7066.9	OK	
S22.000		S18.1 30.4	OK	
S23.000		S18.7.1 4.7	OK	
S24.000		SHWD18.1 7.8	OK	
S24.001		SHWD18.2 16.1	OK	
S24.002		SHWD18.3 24.3	OK	
S24.003		SHWD18.4 32.4	OK	
S24.004		SHWD18.5 40.0	OK	
S24.005		S18.6 47.8	OK	
S23.001		S18.7 126.2	SURCHARGED	
S1.019		S18 7028.2	OK	
S25.000		S19.1 16.0	SURCHARGED	
S25.001		S19.2 43.4	SURCHARGED	
S1.020		S19 7015.3	SURCHARGED	
S1.021		S20 6995.4	SURCHARGED	
S26.000		SC2.1 1862.7	OK	
S27.000		SC2.2 1852.3	OK	
S26.001		SC2.3 3743.2	OK	
S1.022		S21 7880.3	OK	
S1.023		S22 7879.3	OK	
S1.024		S23 7877.1	OK	
S1.025		S24 7874.8	OK	
S1.026		S25 7872.3	OK	
S1.027		S26 7878.0	OK	
S1.028		S27 7878.6	OK	
S1.029		S28 7876.9	OK	
S1.030		S29 7863.6	OK	
S1.031		S30 7867.4	SURCHARGED	
S1.032	S1-31 Basin control	82.4	SURCHARGED	
S1.033		S32 82.4	SURCHARGED	

Technology Services Sherwood House, Sherwood Ave. Newark, Nottinghamshire, NG...	Hoyland Common Surfacel Water S104	
Date 26/04/2021 File Hoyland Drainage 23 Apr...	Designed by S.McLean Checked by	

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

PN	US/MH Name	Pipe Flow (l/s)	Status	Level Exceeded
S1.034		S33 82.4	SURCHARGED	
S1.035		S34 82.4	SURCHARGED	
S1.036		S35 82.4	SURCHARGED	
S28.000	SPrivate HW	164.1	SURCHARGED*	
S1.037		S36 82.4	SURCHARGED	
S1.038		S37 82.4	OK	
S1.039	SSwale Start (Outfalling headwall)	82.4	OK	
S1.040	SSwale 1	82.4	OK	
S1.041	SSwale 2	82.4	OK	
S1.042	SSwale 3	82.4	OK	
S1.043	SSwale 4	82.4	OK	
S1.044	SSwale 5	82.4	OK	
S1.045	SHeadwall End	82.4	OK	

Technology Services Sherwood House, Sherwood Ave. Newark, Nottinghamshire, NG...	Hoyland Common Surfacel Water S104	
Date 26/04/2021 File Hoyland Drainage 23 Apr...	Designed by S.McLean Checked by	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surchage	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.046	S38	2880 Winter	100	+30%					93.545

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Level Status	Exceeded
S1.046	S38	-0.114	0.000	0.83			82.4	OK	