


Woods Hardwick		Page 0
15-17 Goldington Road Bedford MK40 3NH		
Date 25/01/2016 15:53	Designed by a.tew	
File SW EAST EXISTING 03.08....	Checked by	
Micro Drainage		Network 2014.1.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW EAST EXISTING 15.07.13.SWS







Pipe Sizes SW EAST EXISTING 15.07.13 Manhole Sizes SW EAST EXISTING 15.07.13

FEH Rainfall Model

Return Period (years)	2
Site Location GB 450500 225250 SP 50500 25250	
C (1km)	-0.023
D1 (1km)	0.328
D2 (1km)	0.309
D3 (1km)	0.264
E (1km)	0.292
F (1km)	2.461
Maximum Rainfall (mm/hr)	0
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.000
Maximum Backdrop Height (m)	0.000
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	0.75
Min Slope for Optimisation (1:X)	500


Designed with Level Inverts

Network Design Table for SW EAST EXISTING 15.07.13.SWS















PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.000	48.114	0.442	108.9	0.075	5.00	0.0	0.600	o	150	
1.001	22.970	0.291	78.9	0.086	0.00	0.0	0.600	o	225	
1.002	37.335	0.452	82.6	0.100	0.00	0.0	0.600	o	225	
1.003	22.125	0.316	70.0	0.063	0.00	0.0	0.600	o	225	
1.004	51.854	0.429	120.9	0.159	0.00	0.0	0.600	o	225	
2.000	41.092	0.280	146.8	0.048	5.00	0.0	0.600	o	150	

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)
1.000	0.00	5.83	126.100	0.075	0.0	0.0	0.0	0.96	17.0	0.0
1.001	0.00	6.09	125.583	0.161	0.0	0.0	0.0	1.47	58.6	0.0
1.002	0.00	6.53	125.292	0.261	0.0	0.0	0.0	1.44	57.2	0.0
1.003	0.00	6.76	124.840	0.324	0.0	0.0	0.0	1.56	62.2	0.0
1.004	0.00	7.49	124.524	0.483	0.0	0.0	0.0	1.19	47.2	0.0
2.000	0.00	5.83	124.970	0.048	0.0	0.0	0.0	0.83	14.6	0.0


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Network Design Table for SW EAST EXISTING 15.07.13.SWS















PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
2.001	8.985	0.108	83.2	0.000	0.00	0.0	0.600	o	150	
3.000	13.687	0.339	40.4	0.063	5.00	0.0	0.600	o	150	
3.001	22.832	0.195	117.1	0.039	0.00	0.0	0.600	o	150	
4.000	22.194	0.312	71.1	0.049	5.00	0.0	0.600	o	150	
2.002	16.307	0.123	132.6	0.055	0.00	0.0	0.600	o	225	
2.003	4.596	0.099	46.4	0.014	0.00	0.0	0.600	o	225	
2.004	20.712	0.228	90.8	0.000	0.00	0.0	0.600	o	225	
2.005	6.464	0.009	718.2	0.010	0.00	0.0	0.600	o	225	
5.000	20.917	0.101	207.1	0.060	5.00	0.0	0.600	o	150	
2.006	10.070	0.028	359.6	0.000	0.00	0.0	0.600	o	225	
1.005	48.316	0.508	95.1	0.066	0.00	0.0	0.600	o	300	
6.000	13.216	0.281	47.0	0.014	5.00	0.0	0.600	o	150	
6.001	26.709	0.461	57.9	0.010	0.00	0.0	0.600	o	150	
6.002	17.803	0.096	185.4	0.112	0.00	0.0	0.600	o	150	

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)
2.001	0.00	5.96	124.690	0.048	0.0	0.0	0.0	1.10	19.5	0.0
3.000	0.00	5.14	125.041	0.063	0.0	0.0	0.0	1.59	28.1	0.0
3.001	0.00	5.55	124.702	0.102	0.0	0.0	0.0	0.93	16.4	0.0
4.000	0.00	5.31	124.894	0.049	0.0	0.0	0.0	1.19	21.1	0.0
2.002	0.00	6.20	124.507	0.254	0.0	0.0	0.0	1.13	45.1	0.0
2.003	0.00	6.24	124.384	0.268	0.0	0.0	0.0	1.92	76.5	0.0
2.004	0.00	6.49	124.285	0.268	0.0	0.0	0.0	1.37	54.6	0.0
2.005	0.00	6.72	124.057	0.278	0.0	0.0	0.0	0.48	19.1	0.0
5.000	0.00	5.50	124.149	0.060	0.0	0.0	0.0	0.69	12.3	0.0
2.006	0.00	6.96	124.048	0.338	0.0	0.0	0.0	0.68	27.2	0.0
1.005	0.00	7.99	124.020	0.887	0.0	0.0	0.0	1.61	114.0	0.0
6.000	0.00	5.15	124.500	0.014	0.0	0.0	0.0	1.47	26.0	0.0
6.001	0.00	5.49	124.219	0.024	0.0	0.0	0.0	1.32	23.4	0.0
6.002	0.00	5.89	123.758	0.136	0.0	0.0	0.0	0.73	13.0	0.0

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Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.006	133.089	1.669	79.7	0.839	0.00	0.0	0.600	o	300	
7.000	66.402	0.334	198.8	0.112	5.00	0.0	0.600	o	225	
7.001	6.897	0.063	109.5	0.041	0.00	0.0	0.600	o	225	
7.002	48.291	0.423	114.2	0.064	0.00	0.0	0.600	o	225	
8.000	13.342	0.130	102.6	0.050	5.00	0.0	0.600	o	150	
8.001	5.774	0.295	19.6	0.030	0.00	0.0	0.600	o	150	
7.003	46.691	0.513	91.0	0.120	0.00	0.0	0.600	o	300	
9.000	22.722	0.189	120.2	0.050	5.00	0.0	0.600	o	150	
7.004	54.310	0.597	91.0	0.147	0.00	0.0	0.600	o	300	
7.005	9.580	0.101	94.9	0.059	0.00	0.0	0.600	o	300	
10.000	9.171	0.230	39.9	0.020	5.00	0.0	0.600	o	100	
11.000	8.009	0.100	80.1	0.020	5.00	0.0	0.600	o	100	
10.001	23.752	0.480	49.5	0.020	0.00	0.0	0.600	o	100	
10.002	3.094	0.166	18.6	0.021	0.00	0.0	0.600	o	100	

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)
1.006	0.00	9.25	123.512	1.862	0.0	0.0	0.0	1.76	124.6	0.0
7.000	0.00	6.20	124.910	0.112	0.0	0.0	0.0	0.92	36.7	0.0
7.001	0.00	6.29	124.576	0.153	0.0	0.0	0.0	1.25	49.7	0.0
7.002	0.00	6.95	124.513	0.217	0.0	0.0	0.0	1.22	48.6	0.0
8.000	0.00	5.22	124.590	0.050	0.0	0.0	0.0	0.99	17.5	0.0
8.001	0.00	5.27	124.460	0.080	0.0	0.0	0.0	2.29	40.4	0.0
7.003	0.00	7.42	124.015	0.417	0.0	0.0	0.0	1.65	116.5	0.0
9.000	0.00	5.41	123.691	0.050	0.0	0.0	0.0	0.92	16.2	0.0
7.004	0.00	7.97	123.502	0.614	0.0	0.0	0.0	1.65	116.6	0.0
7.005	0.00	8.07	122.905	0.673	0.0	0.0	0.0	1.61	114.1	0.0
10.000	0.00	5.12	123.880	0.020	0.0	0.0	0.0	1.22	9.6	0.0
11.000	0.00	5.16	123.750	0.020	0.0	0.0	0.0	0.86	6.8	0.0
10.001	0.00	5.52	123.650	0.060	0.0	0.0	0.0	1.10	8.6	0.0
10.002	0.00	5.54	123.170	0.081	0.0	0.0	0.0	1.80	14.1	0.0

Network Design Table for SW EAST EXISTING 15.07.13.SWS

















PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
7.006	45.650	0.483	94.5	0.009	0.00	0.0	0.600	o	300	
12.000	17.829	0.122	146.1	0.052	5.00	0.0	0.600	o	150	
12.001	15.689	0.099	158.5	0.020	0.00	0.0	0.600	o	150	
12.002	6.484	0.025	259.4	0.020	0.00	0.0	0.600	o	150	
12.003	44.989	0.268	167.9	0.041	0.00	0.0	0.600	o	150	
7.007	10.421	0.081	128.7	0.000	0.00	0.0	0.600	o	300	
13.000	12.628	0.130	97.1	0.082	5.00	0.0	0.600	o	150	
13.001	15.328	0.160	95.8	0.017	0.00	0.0	0.600	o	150	
7.008	38.158	0.397	96.1	0.036	0.00	0.0	0.600	o	300	
14.000	84.361	1.449	58.2	0.153	5.00	0.0	0.600	o	150	
1.007	35.645	0.308	115.7	0.051	0.00	0.0	0.600	o	300	
1.008	28.048	0.140	200.3	0.153	0.00	0.0	0.600	o	375	
15.000	19.183	0.220	87.2	0.182	5.00	0.0	0.600	o	150	

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)
7.006	0.00	8.54	122.804	0.763	0.0	0.0	0.0	1.62	114.3	0.0
12.000	0.00	5.36	122.985	0.052	0.0	0.0	0.0	0.83	14.7	0.0
12.001	0.00	5.69	122.863	0.072	0.0	0.0	0.0	0.80	14.1	0.0
12.002	0.00	5.86	122.764	0.092	0.0	0.0	0.0	0.62	10.9	0.0
12.003	0.00	6.83	122.739	0.133	0.0	0.0	0.0	0.77	13.7	0.0
7.007	0.00	8.66	122.321	0.896	0.0	0.0	0.0	1.38	97.9	0.0
13.000	0.00	5.21	122.530	0.082	0.0	0.0	0.0	1.02	18.0	0.0
13.001	0.00	5.46	122.400	0.099	0.0	0.0	0.0	1.03	18.1	0.0
7.008	0.00	9.06	122.240	1.031	0.0	0.0	0.0	1.60	113.4	0.0
14.000	0.00	6.06	123.442	0.153	0.0	0.0	0.0	1.32	23.3	0.0
1.007	0.00	9.65	121.843	3.097	0.0	0.0	0.0	1.46	103.2	0.0
1.008	0.00	10.02	121.460	3.250	0.0	0.0	0.0	1.28	141.0	0.0
15.000	0.00	5.30	121.540	0.182	0.0	0.0	0.0	1.08	19.0	0.0

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Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.009	101.240	1.201	84.3	0.510	0.00	0.0	0.600	o	375	
16.000	3.306	0.040	82.7	0.050	5.00	0.0	0.600	o	100	
16.001	7.073	0.090	78.6	0.050	0.00	0.0	0.600	o	100	
16.002	16.487	0.586	28.1	0.047	0.00	0.0	0.600	o	150	
17.000	10.073	0.206	48.9	0.030	5.00	0.0	0.600	o	100	
17.001	21.491	0.456	47.1	0.000	0.00	0.0	0.600	o	150	
16.003	23.505	0.394	59.7	0.149	0.00	0.0	0.600	o	150	
16.004	5.586	0.100	55.9	0.055	0.00	0.0	0.600	o	150	
16.005	23.006	0.380	60.5	0.000	0.00	0.0	0.600	o	150	
16.006	13.064	0.235	55.6	0.064	0.00	0.0	0.600	o	150	
16.007	19.115	0.171	111.8	0.022	0.00	0.0	0.600	o	150	
16.008	29.054	0.290	100.2	0.116	0.00	0.0	0.600	o	225	
18.000	56.247	0.904	62.2	0.037	5.00	0.0	0.600	o	100	
18.001	14.193	0.186	76.3	0.044	0.00	0.0	0.600	o	150	
16.009	133.341	0.379	351.8	0.058	0.00	0.0	0.600	o	225	
19.000	44.110	0.482	91.5	0.138	5.00	0.0	0.600	o	100	

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)
1.009	0.00	10.87	121.320	3.942	0.0	0.0	0.0	1.97	218.1	0.0
16.000	0.00	5.07	124.690	0.050	0.0	0.0	0.0	0.85	6.7	0.0
16.001	0.00	5.20	124.650	0.100	0.0	0.0	0.0	0.87	6.8	0.0
16.002	0.00	5.34	124.560	0.147	0.0	0.0	0.0	1.91	33.7	0.0
17.000	0.00	5.15	124.636	0.030	0.0	0.0	0.0	1.10	8.7	0.0
17.001	0.00	5.40	124.380	0.030	0.0	0.0	0.0	1.47	26.0	0.0
16.003	0.00	5.70	123.924	0.326	0.0	0.0	0.0	1.30	23.1	0.0
16.004	0.00	5.77	123.530	0.381	0.0	0.0	0.0	1.35	23.8	0.0
16.005	0.00	6.06	123.430	0.381	0.0	0.0	0.0	1.29	22.9	0.0
16.006	0.00	6.22	123.050	0.445	0.0	0.0	0.0	1.35	23.9	0.0
16.007	0.00	6.56	122.815	0.467	0.0	0.0	0.0	0.95	16.8	0.0
16.008	0.00	6.93	122.569	0.583	0.0	0.0	0.0	1.31	51.9	0.0
18.000	0.00	5.96	123.494	0.037	0.0	0.0	0.0	0.98	7.7	0.0
18.001	0.00	6.16	122.540	0.081	0.0	0.0	0.0	1.15	20.4	0.0
16.009	0.00	10.14	122.279	0.722	0.0	0.0	0.0	0.69	27.5	0.0
19.000	0.00	5.91	122.818	0.138	0.0	0.0	0.0	0.80	6.3	0.0

















Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
19.001	9.009	0.044	204.8	0.160	0.00	0.0	0.600	o	150	
19.002	19.171	0.167	114.8	0.010	0.00	0.0	0.600	o	150	
16.010	38.490	0.523	73.6	0.065	0.00	0.0	0.600	o	375	
16.011	13.701	0.266	51.5	0.356	0.00	0.0	0.600	o	150	
16.012	42.116	0.506	83.2	0.077	0.00	0.0	0.600	o	375	
16.013	27.671	0.416	66.5	0.018	0.00	0.0	0.600	oo	-2	
20.000	58.512	0.694	84.3	0.102	5.00	0.0	0.600	o	150	
1.010	24.359	0.530	46.0	0.000	0.00	0.0	0.600	o	375	
1.011	13.573	0.264	51.4	0.102	0.00	0.0	0.600	o	375	
21.000	50.350	0.840	59.9	0.015	5.00	0.0	0.600	\/	-3	
21.001	4.328	0.270	16.0	0.000	0.00	0.0	0.600	o	300	
21.002	8.059	0.260	31.0	0.000	0.00	0.0	0.600	\/	-3	
21.003	28.676	0.990	29.0	0.018	0.00	0.0	0.600	[]	-4	
1.012	66.057	1.350	48.9	0.045	0.00	0.0	0.600	[]	-4	
22.000	10.056	0.081	124.1	0.010	5.00	0.0	0.600	o	225	

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)
19.001	0.00	6.13	122.336	0.298	0.0	0.0	0.0	0.70	12.3	0.0
19.002	0.00	6.47	122.292	0.308	0.0	0.0	0.0	0.94	16.6	0.0
16.010	0.00	10.45	121.900	1.095	0.0	0.0	0.0	2.11	233.5	0.0
16.011	0.00	10.61	121.377	1.451	0.0	0.0	0.0	1.40	24.8	0.0
16.012	0.00	10.96	121.111	1.528	0.0	0.0	0.0	1.99	219.5	0.0
16.013	0.00	11.25	120.535	1.546	0.0	0.0	0.0	1.61	128.5	0.0
20.000	0.00	5.89	120.813	0.102	0.0	0.0	0.0	1.10	19.4	0.0
1.010	0.00	11.40	120.119	5.590	0.0	0.0	0.0	2.68	295.9	0.0
1.011	0.00	11.49	119.589	5.692	0.0	0.0	0.0	2.53	279.7	0.0
21.000	0.00	5.18	121.460	0.015	0.0	0.0	0.0	4.78	3562.4	0.0
21.001	0.00	5.19	120.620	0.015	0.0	0.0	0.0	3.95	278.9	0.0
21.002	0.00	5.21	120.350	0.015	0.0	0.0	0.0	6.65	4957.8	0.0
21.003	0.00	5.31	120.090	0.033	0.0	0.0	0.0	5.21	3126.8	0.0
1.012	0.00	11.76	119.100	5.770	0.0	0.0	0.0	4.01	2403.9	0.0
22.000	0.00	5.14	118.131	0.010	0.0	0.0	0.0	1.17	46.6	0.0

















Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.013	27.320	0.560	48.8	0.020	0.00	0.0	0.600	[]	-4	
23.000	12.568	0.171	73.5	0.041	5.00	0.0	0.600	o	150	
23.001	5.619	0.081	69.4	0.028	0.00	0.0	0.600	o	150	
23.002	15.043	0.245	61.4	0.022	0.00	0.0	0.600	o	150	
24.000	33.006	0.550	60.0	0.064	5.00	0.0	0.600	o	150	
24.001	3.821	0.180	21.2	0.028	0.00	0.0	0.600	o	150	
23.003	3.739	0.011	339.9	0.000	0.00	0.0	0.600	o	150	
23.004	5.210	0.015	347.3	0.000	0.00	0.0	0.600	o	150	
23.005	4.702	0.040	117.6	0.000	0.00	0.0	0.600	o	150	
23.006	32.817	0.366	89.7	0.000	0.00	0.0	0.600	o	150	
23.007	16.363	0.001	16363.0	0.000	0.00	0.0	0.600	o	150	
23.008	54.209	0.001	54209.0	0.013	0.00	0.0	0.600	o	150	
25.000	14.445	0.172	84.0	0.015	5.00	0.0	0.600	o	100	
23.009	19.229	0.400	48.1	0.015	0.00	0.0	0.600	o	150	
26.000	9.115	0.067	136.0	0.082	5.00	0.0	0.600	o	225	
26.001	17.163	0.130	132.0	0.021	0.00	0.0	0.600	o	225	

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)
1.013	0.00	11.88	117.750	5.800	0.0	0.0	0.0	4.01	2407.5	0.0
23.000	0.00	5.18	123.172	0.041	0.0	0.0	0.0	1.17	20.7	0.0
23.001	0.00	5.26	123.001	0.069	0.0	0.0	0.0	1.21	21.4	0.0
23.002	0.00	5.45	122.920	0.091	0.0	0.0	0.0	1.29	22.7	0.0
24.000	0.00	5.42	123.405	0.064	0.0	0.0	0.0	1.30	23.0	0.0
24.001	0.00	5.45	122.855	0.092	0.0	0.0	0.0	2.20	38.8	0.0
23.003	0.00	5.57	122.675	0.183	0.0	0.0	0.0	0.54	9.5	0.0
23.004	0.00	5.73	122.664	0.183	0.0	0.0	0.0	0.53	9.4	0.0
23.005	0.00	5.81	122.649	0.183	0.0	0.0	0.0	0.93	16.4	0.0
23.006	0.00	6.33	122.609	0.183	0.0	0.0	0.0	1.06	18.8	0.0
23.007	0.00	10.19	122.243	0.183	0.0	0.0	0.0	0.07	1.2	0.0
23.008	0.00	30.00	122.242	0.196	0.0	0.0	0.0	0.04	0.6	0.0
25.000	0.00	5.29	122.464	0.015	0.0	0.0	0.0	0.84	6.6	0.0
23.009	0.00	30.00	122.241	0.226	0.0	0.0	0.0	1.45	25.7	0.0
26.000	0.00	5.14	122.435	0.082	0.0	0.0	0.0	1.12	44.5	0.0
26.001	0.00	5.39	122.368	0.103	0.0	0.0	0.0	1.14	45.2	0.0


















Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
26.002	2.578	0.020	128.9	0.036	0.00	0.0	0.600	o	225	
26.003	33.041	0.376	87.9	0.141	0.00	0.0	0.600	o	225	
23.010	50.072	0.867	57.8	0.109	0.00	0.0	0.600	o	225	
23.011	3.561	0.040	89.0	0.024	0.00	0.0	0.600	o	150	
23.012	2.515	0.052	48.4	0.000	0.00	0.0	0.600	o	225	
27.000	21.823	0.950	23.0	0.138	5.00	0.0	0.600	o	150	
28.000	24.032	0.210	114.4	0.023	5.00	0.0	0.600	o	100	
28.001	13.759	0.119	115.6	0.018	0.00	0.0	0.600	o	150	
28.002	27.912	0.668	41.8	0.000	0.00	0.0	0.600	o	150	
23.013	42.090	0.133	316.5	0.266	0.00	0.0	0.600	o	225	
29.000	29.924	0.395	75.8	0.108	5.00	0.0	0.600	o	150	
29.001	28.247	0.250	113.0	0.037	0.00	0.0	0.600	o	150	
29.002	14.421	0.195	74.0	0.047	0.00	0.0	0.600	o	150	
23.014	12.664	0.555	22.8	0.048	0.00	0.0	0.600	o	225	
23.015	10.374	0.110	94.3	0.062	0.00	0.0	0.600	o	225	
23.016	27.326	0.029	942.3	0.069	0.00	0.0	0.600	o	300	

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)
26.002	0.00	5.42	122.238	0.139	0.0	0.0	0.0	1.15	45.7	0.0
26.003	0.00	5.82	122.218	0.280	0.0	0.0	0.0	1.40	55.5	0.0
23.010	0.00	30.00	121.841	0.615	0.0	0.0	0.0	1.72	68.6	0.0
23.011	0.00	30.00	120.974	0.639	0.0	0.0	0.0	1.07	18.8	0.0
23.012	0.00	30.00	120.934	0.639	0.0	0.0	0.0	1.89	75.0	0.0
27.000	0.00	5.17	121.918	0.138	0.0	0.0	0.0	2.11	37.3	0.0
28.000	0.00	5.56	121.880	0.023	0.0	0.0	0.0	0.72	5.6	0.0
28.001	0.00	5.80	121.670	0.041	0.0	0.0	0.0	0.93	16.5	0.0
28.002	0.00	6.10	121.551	0.041	0.0	0.0	0.0	1.56	27.6	0.0
23.013	0.00	30.00	120.882	1.084	0.0	0.0	0.0	0.73	29.0	0.0
29.000	0.00	5.43	121.665	0.108	0.0	0.0	0.0	1.16	20.4	0.0
29.001	0.00	5.93	121.270	0.145	0.0	0.0	0.0	0.94	16.7	0.0
29.002	0.00	6.14	121.020	0.192	0.0	0.0	0.0	1.17	20.7	0.0
23.014	0.00	30.00	120.749	1.324	0.0	0.0	0.0	2.75	109.4	0.0
23.015	0.00	30.00	120.194	1.386	0.0	0.0	0.0	1.35	53.5	0.0
23.016	0.00	30.00	120.084	1.455	0.0	0.0	0.0	0.50	35.6	0.0















Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
30.000	43.403	0.550	78.9	0.030	5.00	0.0	0.600	o	100	
30.001	15.654	0.110	142.3	0.012	0.00	0.0	0.600	o	150	
30.002	25.507	0.170	150.0	0.066	0.00	0.0	0.600	o	150	
30.003	14.388	0.100	143.9	0.043	0.00	0.0	0.600	o	150	
31.000	42.765	0.540	79.2	0.017	5.00	0.0	0.600	o	100	
31.001	7.338	0.050	146.8	0.036	0.00	0.0	0.600	o	150	
31.002	42.417	0.290	146.3	0.000	0.00	0.0	0.600	o	150	
30.004	16.920	0.120	141.0	0.088	0.00	0.0	0.600	o	150	
30.005	29.021	0.200	145.1	0.180	0.00	0.0	0.600	o	150	
30.006	29.194	0.200	146.0	0.037	0.00	0.0	0.600	o	150	
30.007	4.919	0.038	129.4	0.047	0.00	0.0	0.600	o	150	
30.008	4.903	0.038	129.0	0.002	0.00	0.0	0.600	o	150	
32.000	21.931	0.327	67.1	0.019	5.00	0.0	0.600	o	100	
32.001	20.176	0.324	62.3	0.012	0.00	0.0	0.600	o	150	
32.002	14.181	0.226	62.7	0.012	0.00	0.0	0.600	o	150	
32.003	22.288	0.800	27.9	0.000	0.00	0.0	0.600	o	150	
30.009	17.544	0.118	148.7	0.020	0.00	0.0	0.600	o	150	

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)
30.000	0.00	5.83	121.700	0.030	0.0	0.0	0.0	0.87	6.8	0.0
30.001	0.00	6.14	121.150	0.042	0.0	0.0	0.0	0.84	14.8	0.0
30.002	0.00	6.66	121.040	0.108	0.0	0.0	0.0	0.82	14.5	0.0
30.003	0.00	6.95	120.870	0.151	0.0	0.0	0.0	0.84	14.8	0.0
31.000	0.00	5.82	121.650	0.017	0.0	0.0	0.0	0.87	6.8	0.0
31.001	0.00	5.97	121.110	0.053	0.0	0.0	0.0	0.83	14.6	0.0
31.002	0.00	6.82	121.060	0.053	0.0	0.0	0.0	0.83	14.6	0.0
30.004	0.00	7.29	120.770	0.292	0.0	0.0	0.0	0.84	14.9	0.0
30.005	0.00	7.87	120.650	0.472	0.0	0.0	0.0	0.83	14.7	0.0
30.006	0.00	8.45	120.450	0.509	0.0	0.0	0.0	0.83	14.7	0.0
30.007	0.00	8.55	120.250	0.556	0.0	0.0	0.0	0.88	15.6	0.0
30.008	0.00	8.64	120.212	0.558	0.0	0.0	0.0	0.88	15.6	0.0
32.000	0.00	5.39	121.851	0.019	0.0	0.0	0.0	0.94	7.4	0.0
32.001	0.00	5.65	121.524	0.031	0.0	0.0	0.0	1.28	22.6	0.0
32.002	0.00	5.84	121.200	0.043	0.0	0.0	0.0	1.27	22.5	0.0
32.003	0.00	6.03	120.974	0.043	0.0	0.0	0.0	1.91	33.8	0.0
30.009	0.00	8.99	120.174	0.621	0.0	0.0	0.0	0.82	14.5	0.0

Network Design Table for SW EAST EXISTING 15.07.13.SWS


PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
23.017	24.198	0.169	143.2	0.066	0.00	0.0	0.600	o	300	
23.018	115.386	1.937	59.6	0.218	0.00	0.0	0.600	o	300	
23.019	11.635	0.560	20.8	0.051	0.00	0.0	0.600	o	300	
1.014	42.400	0.140	302.9	0.072	0.00	0.0	0.600	[]	-4	
33.000	179.697	1.930	93.1	0.170	5.00	0.0	0.600	o	225	
33.001	9.494	0.955	9.9	0.100	0.00	0.0	0.600	o	225	
1.015	109.761	0.900	122.0	0.086	0.00	0.0	0.600	o	400	
34.000	103.884	0.570	182.3	0.083	5.00	0.0	0.600	o	225	
34.001	114.526	0.520	220.2	0.155	0.00	0.0	0.600	o	300	
34.002	23.331	0.111	210.2	0.016	0.00	0.0	0.600	o	300	
35.000	42.073	0.233	180.6	0.030	5.00	0.0	0.600	o	100	
34.003	19.661	1.999	9.8	0.005	0.00	0.0	0.600	o	300	
1.016	139.907	1.157	120.9	0.107	0.00	0.0	0.600	o	450	
1.017	21.139	0.303	69.8	0.000	0.00	0.0	0.600	o	450	

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)
23.017	0.00	30.00	120.055	2.142	0.0	0.0	0.0	1.31	92.7	0.0
23.018	0.00	30.00	119.886	2.360	0.0	0.0	0.0	2.04	144.3	0.0
23.019	0.00	30.00	117.949	2.411	0.0	0.0	0.0	3.46	244.9	0.0
1.014	0.00	30.00	117.190	8.283	0.0	0.0	0.0	1.60	961.7	0.0
33.000	0.00	7.21	120.110	0.170	0.0	0.0	0.0	1.36	53.9	0.0
33.001	0.00	7.25	118.180	0.270	0.0	0.0	0.0	4.17	166.0	0.0
1.015	0.00	30.00	117.050	8.639	0.0	0.0	0.0	1.71	214.6	0.0
34.000	0.00	6.79	119.350	0.083	0.0	0.0	0.0	0.97	38.4	0.0
34.001	0.00	8.60	118.780	0.238	0.0	0.0	0.0	1.06	74.6	0.0
34.002	0.00	8.96	118.260	0.254	0.0	0.0	0.0	1.08	76.4	0.0
35.000	0.00	6.23	118.382	0.030	0.0	0.0	0.0	0.57	4.5	0.0
34.003	0.00	9.03	118.149	0.289	0.0	0.0	0.0	5.04	356.4	0.0
1.016	0.00	30.00	116.150	9.035	0.0	0.0	0.0	1.85	293.9	0.0
1.017	0.00	30.00	114.663	9.035	0.0	0.0	0.0	2.44	387.5	0.0

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Network Design Table for SW EAST EXISTING 15.07.13.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Auto Design
1.018	6.800	0.360	18.9	0.000	0.00	0.0	0.600	o	450	

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)
1.018	0.00	30.00	114.360	9.035	0.0	0.0	0.0	4.69	746.7	0.0

Free Flowing Outfall Details for SW EAST EXISTING 15.07.13.SWS


Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D, L (mm)	W (mm)
1.018	Outfall	115.550	114.000	113.550	0	0

Simulation Criteria for SW EAST EXISTING 15.07.13.SWS

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	1.000
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)	480
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	4
Number of Input Hydrographs	0	Number of Storage Structures	0
Number of Online Controls	0	Number of Time/Area Diagrams	0
Number of Offline Controls	2	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	100
Site Location	GB 450500 225250 SP 50500 25250
C (1km)	-0.023
D1 (1km)	0.328
D2 (1km)	0.309
D3 (1km)	0.264
E (1km)	0.292
F (1km)	2.461
Summer Storms	No
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	240

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Offline Controls for SW EAST EXISTING 15.07.13.SWS

Pipe Manhole: MH0100, DS/PN: 1.011, Loop to PN: 22.000

Diameter (m)	0.225	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	50.0	Coefficient of Contraction	0.600
Length (m)	77.412	Upstream Invert Level (m)	119.689

Pipe Manhole: MH0099, DS/PN: 22.000, Loop to PN: 23.019

Diameter (m)	0.225	Roughness k (mm)	0.600
Section Type	Pipe/Conduit	Entry Loss Coefficient	0.500
Slope (1:X)	194.0	Coefficient of Contraction	0.600
Length (m)	19.350	Upstream Invert Level (m)	118.131

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Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

Simulation Criteria

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


Synthetic Rainfall Details

Rainfall Model FEH
Site Location GB 450500 225250 SP 50500 25250
C (1km) -0.023
D1 (1km) 0.328
D2 (1km) 0.309
D3 (1km) 0.264
E (1km) 0.292
F (1km) 2.461
Cv (Summer) 0.750
Cv (Winter) 0.840

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


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

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
1.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			3
1.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
1.003	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
1.004	15 Summer	100	0%	100/15 Summer				
2.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			8
2.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
3.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
3.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
4.000	15 Winter	100	0%	100/15 Summer	100/15 Winter			1
2.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
2.003	15 Winter	100	0%	100/15 Summer				
2.004	15 Winter	100	0%	100/15 Summer				
2.005	15 Winter	100	0%	100/15 Summer				

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Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	Storm	Return Period	Climate Change	First X SurchARGE	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
5.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
2.006	60 Winter	100	0%	100/15 Summer	100/15 Summer			6
1.005	60 Winter	100	0%	100/15 Summer	100/15 Summer			11
6.000	15 Winter	100	0%	100/15 Summer				
6.001	30 Winter	100	0%	100/15 Summer	100/15 Summer			8
6.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
1.006	15 Winter	100	0%	100/15 Summer	100/15 Summer			10
7.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
7.001	15 Summer	100	0%	100/15 Summer	100/15 Summer			5
7.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
8.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
8.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
7.003	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
9.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			6
7.004	120 Winter	100	0%					
7.005	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
10.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
11.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			7
10.001	15 Summer	100	0%	100/15 Summer				
10.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
7.006	15 Winter	100	0%					
12.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
12.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
12.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
12.003	60 Winter	100	0%	100/15 Summer	100/15 Summer			9
7.007	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
13.000	120 Winter	100	0%	100/15 Summer	100/15 Summer			13
13.001	120 Winter	100	0%	100/15 Summer	100/15 Summer			13
7.008	60 Winter	100	0%	100/15 Summer	100/15 Summer			6
14.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
1.007	60 Winter	100	0%	100/15 Summer	100/15 Summer			13
1.008	15 Winter	100	0%	100/15 Summer				
15.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			9
1.009	15 Winter	100	0%	100/15 Summer	100/15 Summer			7
16.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			9
16.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
16.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
17.000	15 Winter	100	0%	100/15 Summer				
17.001	15 Winter	100	0%	100/15 Summer				
16.003	60 Winter	100	0%	100/15 Summer	100/15 Summer			13
16.004	60 Winter	100	0%	100/15 Summer	100/15 Summer			11
16.005	30 Winter	100	0%	100/15 Summer	100/15 Summer			7
16.006	15 Winter	100	0%	100/15 Summer	100/15 Summer			7
16.007	60 Winter	100	0%	100/15 Summer	100/15 Summer			9
16.008	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
18.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
18.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
16.009	15 Summer	100	0%	100/15 Summer	100/15 Summer			4
19.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			13
19.001	30 Winter	100	0%	100/15 Summer	100/15 Summer			12

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Date 25/01/2016 15:53 File SW EAST EXISTING 03.08....	Designed by a.tew Checked by	
Micro Drainage		Network 2014.1.1

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
19.002	120 Winter	100	0%	100/15 Summer				
16.010	120 Winter	100	0%	100/15 Summer				
16.011	120 Winter	100	0%	100/15 Summer	100/15 Summer			15
16.012	15 Winter	100	0%					
16.013	15 Winter	100	0%	100/15 Summer				
20.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
1.010	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
1.011	15 Winter	100	0%	100/15 Summer		100/15 Summer	18	
21.000	15 Winter	100	0%					
21.001	15 Winter	100	0%					
21.002	15 Winter	100	0%					
21.003	15 Winter	100	0%					
1.012	15 Winter	100	0%					
22.000	240 Winter	100	0%	100/15 Summer	100/15 Summer	100/15 Summer	18	15
1.013	60 Winter	100	0%					
23.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
23.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
23.002	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
24.000	30 Winter	100	0%	100/15 Summer	100/15 Summer			8
24.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			3
23.003	30 Winter	100	0%	100/15 Summer				
23.004	15 Winter	100	0%	100/15 Summer	100/15 Winter			2
23.005	15 Winter	100	0%	100/15 Summer				
23.006	15 Winter	100	0%	100/15 Summer				
23.007	15 Winter	100	0%	100/15 Summer				
23.008	30 Winter	100	0%	100/15 Summer	100/15 Winter			2
25.000	15 Winter	100	0%	100/15 Summer				
23.009	30 Winter	100	0%	100/15 Summer	100/15 Summer			6
26.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			8
26.001	15 Winter	100	0%	100/15 Summer				
26.002	15 Summer	100	0%	100/15 Summer				
26.003	15 Winter	100	0%	100/15 Summer	100/15 Summer			3
23.010	15 Winter	100	0%	100/15 Summer	100/15 Summer			7
23.011	120 Winter	100	0%	100/15 Summer	100/15 Summer			13
23.012	60 Winter	100	0%	100/15 Summer				
27.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
28.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
28.001	15 Winter	100	0%	100/15 Summer				
28.002	15 Winter	100	0%	100/15 Summer				
23.013	30 Winter	100	0%	100/15 Summer	100/15 Summer			10
29.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
29.001	30 Winter	100	0%	100/15 Summer	100/15 Summer			8
29.002	30 Winter	100	0%	100/15 Summer	100/15 Summer			8
23.014	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
23.015	60 Winter	100	0%	100/15 Summer	100/15 Summer			11
23.016	30 Winter	100	0%	100/15 Summer	100/15 Summer			11
30.000	120 Winter	100	0%	100/15 Summer	100/15 Summer			14
30.001	60 Winter	100	0%	100/15 Summer	100/15 Summer			11
30.002	30 Winter	100	0%	100/15 Summer	100/15 Summer			9
30.003	15 Winter	100	0%	100/15 Summer	100/15 Summer			5

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
31.000	120 Winter	100	0%	100/15 Summer	100/15 Summer			13
31.001	60 Winter	100	0%	100/15 Summer	100/15 Summer			13
31.002	30 Winter	100	0%	100/15 Summer				
30.004	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
30.005	60 Winter	100	0%	100/15 Summer	100/15 Summer			13
30.006	30 Winter	100	0%	100/15 Summer	100/15 Summer			11
30.007	15 Winter	100	0%	100/15 Summer	100/15 Summer			6
30.008	30 Winter	100	0%	100/15 Summer	100/15 Summer			9
32.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
32.001	15 Winter	100	0%	100/15 Summer				
32.002	15 Winter	100	0%	100/15 Summer				
32.003	15 Winter	100	0%	100/15 Summer				
30.009	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
23.017	15 Summer	100	0%	100/15 Summer				
23.018	15 Summer	100	0%	100/15 Summer	100/15 Summer			2
23.019	120 Winter	100	0%	100/15 Summer	100/15 Summer			15
1.014	60 Winter	100	0%					
33.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			4
33.001	15 Winter	100	0%	100/15 Summer	100/15 Summer			5
1.015	60 Winter	100	0%	100/15 Summer				
34.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
34.001	15 Winter	100	0%	100/15 Summer				
34.002	15 Winter	100	0%	100/15 Summer				
35.000	15 Winter	100	0%	100/15 Summer	100/15 Summer			2
34.003	15 Winter	100	0%					
1.016	60 Winter	100	0%					
1.017	15 Winter	100	0%	100/15 Summer				
1.018	15 Winter	100	0%	100/15 Summer				

PN	US/MH Name	Water Level (m)	Flooded Surch'ed Depth (m)	Flooded Volume (m³)	Pipe Flow / O'flow Cap. (l/s)	Pipe Flow (l/s)	Status
1.000	MH	127.109	0.859	9.236	1.11	0.0	FLOOD
1.001	0883	126.926	1.118	2.858	0.91	0.0	FLOOD
1.002	0810	126.691	1.174	17.112	0.93	0.0	FLOOD
1.003	0923	126.307	1.242	33.333	1.04	0.0	FLOOD
1.004	0822	126.423	1.674	0.000	1.66	0.0	FLOOD RISK
2.000	0961	125.679	0.559	9.225	0.68	0.0	FLOOD
2.001	0859	125.668	0.828	5.581	0.89	0.0	FLOOD
3.000	0799	125.727	0.536	16.044	0.54	0.0	FLOOD
3.001	0797	125.764	0.912	5.006	1.04	0.0	FLOOD
4.000	0860	126.362	1.318	0.100	1.35	0.0	FLOOD
2.002	0805	125.812	1.080	0.107	0.96	0.0	FLOOD
2.003	0825	125.736	1.127	0.000	0.96	0.0	FLOOD RISK
2.004	0824	125.632	1.122	0.000	0.87	0.0	FLOOD RISK
2.005	0804	125.450	1.168	0.000	2.33	0.0	FLOOD RISK
5.000	0863	125.329	1.030	10.109	0.74	0.0	FLOOD
2.006	0865	125.318	1.045	5.353	2.13	0.0	FLOOD
1.005	0816	125.293	0.973	136.809	0.91	0.0	FLOOD

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Pipe Flow (l/s)	Status
6.000	0852	125.465	0.815	0.000	0.35	0.0	8.4	FLOOD RISK
6.001	0818	125.400	1.031	11.271	0.55	0.0	12.2	FLOOD
6.002	0915	125.482	1.574	8.837	1.94	0.0	23.5	FLOOD
1.006	0908	125.216	1.404	132.000	1.10	0.0	133.4	FLOOD
7.000	MH	125.730	0.595	20.369	1.24	0.0	44.1	FLOOD
7.001	0991	125.742	0.941	1.352	1.27	0.0	44.8	FLOOD
7.002	0992	125.700	0.962	6.744	1.04	0.0	48.6	FLOOD
8.000	MH	125.594	0.854	4.031	1.00	0.0	16.0	FLOOD
8.001	MH	125.531	0.921	10.781	1.36	0.0	45.5	FLOOD
7.003	MH0662	125.536	1.221	10.266	0.79	0.0	86.9	FLOOD
9.000	MH0801	124.986	1.145	17.356	1.95	0.0	29.8	FLOOD
7.004	MH	123.802	0.000	0.000	0.72	0.0	83.7	SURCHARGED*
7.005	MH0823	124.963	1.758	0.635	1.75	0.0	139.0	FLOOD
10.000	MH0912	124.882	0.902	2.472	0.77	0.0	6.8	FLOOD
11.000	MH0913	124.756	0.906	5.808	1.43	0.0	8.9	FLOOD
10.001	MH0914	124.958	1.208	0.000	1.10	0.0	9.2	FLOOD RISK
10.002	MH0880	124.887	1.617	0.174	1.17	0.0	13.3	FLOOD
7.006	Blind	123.104	0.000	0.000	1.36	0.0	155.6	SURCHARGED*
12.000	MH0930	124.081	0.946	5.609	1.12	0.0	15.3	FLOOD
12.001	MH0931	124.031	1.018	1.058	1.39	0.0	18.0	FLOOD
12.002	MH0963	123.899	0.985	0.173	2.82	0.0	26.1	FLOOD
12.003	MH0927	123.731	0.842	36.519	1.25	0.0	16.6	FLOOD
7.007	MH0870	123.770	1.149	10.730	1.63	0.0	116.5	FLOOD
13.000	MH	123.273	0.593	43.126	1.82	0.0	29.8	FLOOD
13.001	MH0872	123.299	0.749	58.517	2.35	0.0	39.5	FLOOD
7.008	MH0871	123.560	1.020	8.314	0.96	0.0	100.8	FLOOD
14.000	MH0904	124.344	0.752	21.598	0.90	0.0	20.7	FLOOD
1.007	MH0867	123.349	1.206	221.284	1.99	0.0	189.5	FLOOD
1.008	S8	122.813	0.978	0.000	1.60	0.0	197.8	FLOOD RISK
15.000	MH0841	122.354	0.664	65.666	1.55	0.0	27.7	FLOOD
1.009	MH0868	122.493	0.798	68.069	1.15	0.0	241.0	FLOOD
16.000	MH0786	125.275	0.485	15.485	1.65	0.0	9.1	FLOOD
16.001	MH0785	125.356	0.606	0.882	1.80	0.0	11.1	FLOOD
16.002	MH0875	125.065	0.355	7.445	0.54	0.0	16.8	FLOOD
17.000	MH0874	125.338	0.602	0.000	1.31	0.0	10.6	FLOOD RISK
17.001	MH0885	125.000	0.470	0.000	0.43	0.0	10.6	FLOOD RISK
16.003	MH0837	124.933	0.859	53.702	1.14	0.0	25.0	FLOOD
16.004	MH0886	124.749	1.069	16.428	1.39	0.0	27.3	FLOOD
16.005	MH0877	124.696	1.116	1.475	0.92	0.0	20.0	FLOOD
16.006	S62	124.570	1.370	7.441	1.26	0.0	27.5	FLOOD
16.007	S63	124.289	1.324	17.264	2.24	0.0	35.3	FLOOD
16.008	MH1050	124.103	1.309	23.442	0.96	0.0	46.3	FLOOD
18.000	MH1054	124.716	1.122	3.850	0.95	0.0	7.2	FLOOD
18.001	S61	124.190	1.500	4.121	1.08	0.0	20.1	FLOOD
16.009	MH0056	124.079	1.575	0.328	1.96	0.0	52.9	FLOOD
19.000	MH1060	123.488	0.570	29.415	1.17	0.0	7.3	FLOOD
19.001	MH1064	122.831	0.345	33.355	1.88	0.0	20.4	FLOOD
19.002	MH1048	122.754	0.312	0.000	1.20	0.0	18.7	FLOOD RISK
16.010	MH0057	122.626	0.351	0.000	0.37	0.0	79.3	SURCHARGED

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	O'flow (l/s)	Pipe Flow (l/s)	Status
16.011	MH0104	122.448	0.921	210.745	2.12	0.0	48.2	FLOOD
16.012	MH0103	121.422	-0.064	0.000	0.45	0.0	89.3	OK
16.013	MH0102	121.318	0.558	0.000	0.75	0.0	89.8	SURCHARGED
20.000	MH1038	121.682	0.719	11.231	1.08	0.0	20.5	FLOOD
1.010	MH0101	121.072	0.578	3.039	1.30	0.0	330.3	FLOOD
1.011	MH0100	120.288	0.324	0.000	1.50	67.6	301.4	FLOOD RISK
21.000	Ditch	121.466	-0.444	0.000	0.00	0.0	8.9	OK
21.001	Pipe	120.672	-0.248	0.000	0.07	0.0	8.8	OK
21.002	Ditch	120.355	-0.445	0.000	0.01	0.0	8.8	OK
21.003	Culvert	120.099	-0.591	0.000	0.01	0.0	20.0	OK
1.012	Culvert	119.426	-0.274	0.000	0.16	0.0	333.2	OK
22.000	MH0099	119.226	0.870	344.965	2.88	32.7	111.7	FLOOD
1.013	Culvert	118.350	0.000	0.000	0.14	0.0	222.9	SURCHARGED*
23.000	MH0666	124.568	1.246	0.903	0.92	0.0	17.4	FLOOD
23.001	MH0668	124.425	1.274	4.813	0.83	0.0	14.6	FLOOD
23.002	MH0667	124.377	1.307	1.917	0.90	0.0	18.8	FLOOD
24.000	MH0686	124.096	0.541	21.075	0.66	0.0	14.6	FLOOD
24.001	MH0929	124.235	1.230	0.273	0.76	0.0	20.2	FLOOD
23.003	MH0928	124.245	1.420	0.000	2.50	0.0	24.8	FLOOD RISK
23.004	MH0665	124.198	1.384	0.048	2.74	0.0	24.4	FLOOD
23.005	MH0669	124.157	1.358	0.000	1.50	0.0	18.8	FLOOD RISK
23.006	MH0673	124.113	1.354	0.000	0.88	0.0	15.9	FLOOD RISK
23.007	MH0926	123.910	1.517	0.000	3.59	0.0	16.2	FLOOD RISK
23.008	MH0674	123.792	1.400	0.146	3.03	0.0	16.2	FLOOD
25.000	MH0974	123.356	0.792	0.000	0.67	0.0	4.2	FLOOD RISK
23.009	MH0688	123.293	0.902	1.051	0.86	0.0	20.8	FLOOD
26.000	MH0693	123.109	0.449	34.268	0.79	0.0	29.0	FLOOD
26.001	S11.1	123.208	0.615	0.000	0.72	0.0	29.0	FLOOD RISK
26.002	MH0690	123.326	0.863	0.000	1.05	0.0	29.2	FLOOD RISK
26.003	S113	123.327	0.884	6.472	0.95	0.0	49.3	FLOOD
23.010	S92	123.004	0.938	23.061	0.95	0.0	62.7	FLOOD
23.011	MH1193	122.317	1.193	127.522	4.13	0.0	51.7	FLOOD
23.012	MH1194	122.216	1.057	0.000	1.61	0.0	51.8	FLOOD RISK
27.000	MH1198	122.512	0.444	18.640	0.61	0.0	21.4	FLOOD
28.000	MH0937	122.632	0.652	1.791	1.31	0.0	7.2	FLOOD
28.001	MH0938	122.497	0.677	0.000	1.00	0.0	15.1	FLOOD RISK
28.002	MH1192	122.373	0.672	0.000	0.56	0.0	14.8	SURCHARGED
23.013	MH1195	122.187	1.080	58.666	2.18	0.0	60.1	FLOOD
29.000	MH0698	122.638	0.823	11.734	1.07	0.0	20.9	FLOOD
29.001	MH1202	122.191	0.771	12.128	1.12	0.0	18.0	FLOOD
29.002	MH1201	121.876	0.706	10.620	1.11	0.0	21.1	FLOOD
23.014	MH0998	121.704	0.730	1.925	0.90	0.0	84.9	FLOOD
23.015	MH0939	121.269	0.850	23.525	1.80	0.0	80.6	FLOOD
23.016	MH0994	120.950	0.566	60.043	3.73	0.0	91.4	FLOOD
30.000	RE	122.318	0.518	18.311	1.39	0.0	9.3	FLOOD
30.001	MH0704	122.411	1.111	11.011	0.51	0.0	7.0	FLOOD
30.002	MH	122.464	1.274	14.409	0.72	0.0	9.9	FLOOD
30.003	MH1222	122.523	1.503	3.018	0.69	0.0	9.4	FLOOD
31.000	RE	122.355	0.605	4.917	1.00	0.0	6.7	FLOOD

Summary of Critical Results by Maximum Level (Rank 1) for SW EAST EXISTING
15.07.13.SWS

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m ³)	Flow / Cap. (l/s)	O'flow (l/s)	Pipe Flow (l/s)	Status
31.001	MH0.28	122.357	1.097	16.999	0.50	0.0	6.3	FLOOD
31.002	MH0947	122.402	1.192	0.000	0.24	0.0	3.4	FLOOD RISK
30.004	MH0703	122.489	1.569	9.223	1.44	0.0	20.1	FLOOD
30.005	MH1223	122.270	1.470	49.814	1.75	0.0	24.6	FLOOD
30.006	MH0702	121.960	1.360	10.235	1.71	0.0	24.0	FLOOD
30.007	MH0701	121.694	1.294	4.384	2.29	0.0	28.0	FLOOD
30.008	MH0700	121.512	1.150	12.439	2.42	0.0	29.5	FLOOD
32.000	MH0944	122.281	0.330	0.364	1.14	0.0	8.1	FLOOD
32.001	MH0943	122.015	0.341	0.000	0.58	0.0	12.3	FLOOD RISK
32.002	MH0940	121.905	0.555	0.000	0.85	0.0	17.7	FLOOD RISK
32.003	MH0706	121.729	0.605	0.000	0.55	0.0	17.7	SURCHARGED
30.009	MH	121.482	1.158	1.961	2.48	0.0	33.7	FLOOD
23.017	MH0995	121.142	0.787	0.000	1.46	0.0	120.8	FLOOD RISK
23.018	MH0993	121.107	0.921	0.720	1.09	0.0	152.8	FLOOD
23.019	MH0097	119.183	0.934	399.856	0.82	0.0	153.5	FLOOD
1.014	Culvert	117.790	0.000	0.000	0.40	0.0	320.5	SURCHARGED*
33.000	132	121.118	0.783	8.155	1.01	0.0	53.8	FLOOD
33.001	133	119.128	0.723	8.473	0.59	0.0	81.4	FLOOD
1.015	Pipe	117.650	0.200	0.000	1.49	0.0	319.9	SURCHARGED*
34.000	MH	120.251	0.676	1.329	1.03	0.0	38.8	FLOOD
34.001	MH	119.893	0.813	0.000	1.37	0.0	99.4	FLOOD RISK
34.002	MH	118.684	0.124	0.000	1.49	0.0	101.0	FLOOD RISK
35.000	MH1053	119.487	1.005	0.918	2.28	0.0	10.0	FLOOD
34.003	MH0098	118.274	-0.175	0.000	0.36	0.0	112.1	OK
1.016	Pipe	116.600	0.000	0.000	1.28	0.0	375.4	SURCHARGED*
1.017	MH0498	115.402	0.289	0.000	1.27	0.0	393.1	SURCHARGED
1.018	PI	114.915	0.105	0.000	1.16	0.0	393.3	SURCHARGED