


Woods Hardwick		Page 1
15-17 Goldington Road Bedford MK40 3NH		
Date 23/06/2016 11:45	Designed by a.tew	
File SW East proposed 23.06....	Checked by	
Micro Drainage		Network 2014.1.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for SW EAST PROPOSED 23.07.13.SWS

Pipe Sizes SW WEST DEVELOPMENT Manhole Sizes SW WEST DEVELOPMENT






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)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits


Network Design Table for SW EAST PROPOSED 23.07.13.SWS

# - 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)	HYD SECT	DIA (mm)	Auto Design
1.000	48.425	0.442	109.6	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	0.142	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)
1.000	0.00	5.84	126.100	0.075	0.0	0.0	0.0	0.96	17.0	0.0
1.001	0.00	6.10	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	6.77	124.840	0.324	0.0	0.0	0.0	1.56	62.2	0.0
1.004	0.00	7.50	124.524	0.466	0.0	0.0	0.0	1.19	47.2	0.0

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Network Design Table for SW EAST PROPOSED 23.07.13.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
2.000	41.092	0.280	146.8	0.048	5.00	0.0	0.600	o	150	
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	20.705	0.228	90.8	0.000	0.00	0.0	0.600	o	225	
2.005	6.475	0.009	719.4	0.010	0.00	0.0	0.600	o	225	
5.000	20.917	0.226	92.6	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	0.433	111.6	0.066	0.00	0.0	0.600	o	225	
1.006	70.328#	0.872	80.7	0.393	0.00	0.0	0.600	o	300	
6.000	13.630#	0.100	136.3	0.080	5.00	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)
2.000	0.00	5.83	124.970	0.048	0.0	0.0	0.0	0.83	14.6	0.0
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	5.33	124.349	0.060	0.0	0.0	0.0	1.04	18.5	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	8.15	124.020	0.870	0.0	0.0	0.0	1.24	49.2	0.0
1.006	0.00	8.82	123.512	1.263	0.0	0.0	0.0	1.75	123.9	0.0
6.000	0.00	5.17	123.100	0.080	0.0	0.0	0.0	1.34	95.1	0.0

Network Design Table for SW EAST PROPOSED 23.07.13.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
6.001	6.990#	0.360	19.4	0.000	0.00	0.0	0.600	o	300	
1.007	37.795#	0.840	45.0	0.000	0.00	0.0	0.600	o	450	
7.000	1.000	0.010	100.0	0.000	5.00	0.0	0.600	o	300	
7.001	9.685#	0.140	69.2	0.085	0.00	0.0	0.600	o	150	
1.008	15.594#	0.385	40.5	0.000	0.00	0.0	0.600	o	450	
8.000	66.397	0.579	114.7	0.112	5.00	0.0	0.600	o	150	
8.001	6.889	0.063	109.3	0.041	0.00	0.0	0.600	o	225	
8.002	48.289	0.423	114.2	0.064	0.00	0.0	0.600	o	225	
9.000	13.342	0.130	102.6	0.050	5.00	0.0	0.600	o	150	
9.001	5.771	0.295	19.6	0.030	0.00	0.0	0.600	o	150	
8.003	44.670#	0.550	81.2	0.120	0.00	0.0	0.600	o	225	
10.000	22.661#	0.151	150.1	0.050	5.00	0.0	0.600	o	150	
8.004	9.590#	0.055	174.4	0.000	0.00	0.0	0.600	o	225	
8.005	46.800#	0.430	108.8	0.147	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)
6.001	0.00	5.20	123.000	0.080	0.0	0.0	0.0	3.58	253.4	0.0
1.007	0.00	9.02	122.490	1.343	0.0	0.0	0.0	3.04	483.1	0.0
7.000	0.00	5.01	122.100	0.000	0.0	0.0	0.0	1.57	111.1	0.0
7.001	0.00	5.14	122.090	0.085	0.0	0.0	0.0	1.21	21.4	0.0
1.008	0.00	9.10	121.650	1.428	0.0	0.0	0.0	3.20	509.3	0.0
8.000	0.00	6.18	125.230	0.112	0.0	0.0	0.0	0.94	16.6	0.0
8.001	0.00	6.27	124.576	0.153	0.0	0.0	0.0	1.25	49.7	0.0
8.002	0.00	6.93	124.513	0.217	0.0	0.0	0.0	1.22	48.6	0.0
9.000	0.00	5.22	124.590	0.050	0.0	0.0	0.0	0.99	17.5	0.0
9.001	0.00	5.27	124.460	0.080	0.0	0.0	0.0	2.29	40.4	0.0
8.003	0.00	7.44	124.015	0.417	0.0	0.0	0.0	1.45	57.7	0.0
10.000	0.00	5.46	123.691	0.050	0.0	0.0	0.0	0.82	14.5	0.0
8.004	0.00	7.60	123.465	0.467	0.0	0.0	0.0	0.99	39.2	0.0
8.005	0.00	8.12	123.335	0.614	0.0	0.0	0.0	1.51	106.5	0.0


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Network Design Table for SW EAST PROPOSED 23.07.13.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
8.006	3.585#	0.353	10.2	0.059	0.00	0.0	0.600	o	300	
11.000	10.000	0.100	100.0	0.324	5.00	0.0	0.600	o	300	
11.001	12.723	0.210	60.6	0.000	0.00	0.0	0.600	o	300	
11.002	89.250#	0.438	203.8	0.041	0.00	0.0	0.600	o	300	
8.007	22.990#	0.402	57.2	0.000	0.00	0.0	0.600	o	300	
12.000	12.568	0.171	73.5	0.041	5.00	0.0	0.600	o	150	
12.001	5.616	0.030	187.2	0.048	0.00	0.0	0.600	o	150	
12.002	12.180#	0.076	160.3	0.044	0.00	0.0	0.600	o	150	
12.003	17.830#	0.032	557.2	0.052	0.00	0.0	0.600	o	150	
12.004	15.688#	0.099	158.5	0.050	0.00	0.0	0.600	o	150	
12.005	6.480#	0.371	17.5	0.030	0.00	0.0	0.600	o	150	
13.000	17.960	0.502	35.8	0.020	5.00	0.0	0.600	o	150	
14.000	1.000	0.517	1.9	0.020	5.00	0.0	0.600	o	150	
13.001	40.380	0.227	177.9	0.000	0.00	0.0	0.600	o	300	
12.006	26.051	0.093	280.1	0.057	0.00	0.0	0.600	o	300	

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)
8.006	0.00	8.13	122.905	0.673	0.0	0.0	0.0	4.96	350.7	0.0
11.000	0.00	5.11	123.300	0.324	0.0	0.0	0.0	1.57	111.1	0.0
11.001	0.00	5.21	123.200	0.324	0.0	0.0	0.0	2.02	143.0	0.0
11.002	0.00	6.57	122.990	0.365	0.0	0.0	0.0	1.10	77.6	0.0
8.007	0.00	8.32	122.552	1.038	0.0	0.0	0.0	2.08	147.3	0.0
12.000	0.00	5.18	123.172	0.041	0.0	0.0	0.0	1.17	20.7	0.0
12.001	0.00	5.31	123.001	0.089	0.0	0.0	0.0	0.73	12.9	0.0
12.002	0.00	5.56	122.971	0.133	0.0	0.0	0.0	0.79	14.0	0.0
12.003	0.00	6.27	122.895	0.185	0.0	0.0	0.0	0.42	7.4	0.0
12.004	0.00	6.60	122.863	0.235	0.0	0.0	0.0	0.80	14.1	0.0
12.005	0.00	6.65	122.764	0.265	0.0	0.0	0.0	2.42	42.8	0.0
13.000	0.00	5.18	123.122	0.020	0.0	0.0	0.0	1.69	29.8	0.0
14.000	0.00	5.00	123.145	0.020	0.0	0.0	0.0	7.30	129.1	0.0
13.001	0.00	5.75	122.470	0.040	0.0	0.0	0.0	1.18	83.1	0.0
12.006	0.00	7.11	122.243	0.362	0.0	0.0	0.0	0.93	66.1	0.0


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Network Design Table for SW EAST PROPOSED 23.07.13.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
8.008	56.214#	0.695	80.9	0.036	0.00	0.0	0.600	o	450	
15.000	18.666#	0.100	186.7	0.060	5.00	0.0	0.600	o	300	
15.001	5.606#	0.030	186.9	0.060	0.00	0.0	0.600	o	300	
15.002	25.784#	0.110	234.4	0.050	0.00	0.0	0.600	o	300	
15.003	7.630#	0.040	190.8	0.050	0.00	0.0	0.600	o	300	
15.004	12.974#	0.030	432.5	0.060	0.00	0.0	0.600	o	600	
16.000	14.093#	0.060	234.9	0.020	5.00	0.0	0.600	o	300	
15.005	39.671#	0.090	440.8	0.050	0.00	0.0	0.600	o	600	
15.006	31.681#	0.070	452.6	0.050	0.00	0.0	0.600	o	600	
17.000	17.303#	0.220	78.7	0.030	5.00	0.0	0.600	o	300	
15.007	5.047#	0.020	252.4	0.028	0.00	0.0	0.600	o	600	
15.008	14.888#	0.055	270.7	0.060	0.00	0.0	0.600	o	450	
1.009	41.647#	0.150	277.6	0.000	0.00	0.0	0.600	o	525	
1.010	67.139	0.250	268.6	0.067	0.00	0.0	0.600	o	525	

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)
8.008	0.00	8.73	122.000	1.436	0.0	0.0	0.0	2.26	359.8	0.0
15.000	0.00	5.27	122.150	0.060	0.0	0.0	0.0	1.15	81.1	0.0
15.001	0.00	5.35	122.050	0.120	0.0	0.0	0.0	1.15	81.1	0.0
15.002	0.00	5.77	122.020	0.170	0.0	0.0	0.0	1.02	72.3	0.0
15.003	0.00	5.88	121.910	0.220	0.0	0.0	0.0	1.13	80.2	0.0
15.004	0.00	6.07	121.570	0.280	0.0	0.0	0.0	1.16	329.3	0.0
16.000	0.00	5.23	121.900	0.020	0.0	0.0	0.0	1.02	72.2	0.0
15.005	0.00	6.64	121.540	0.350	0.0	0.0	0.0	1.15	326.1	0.0
15.006	0.00	7.11	121.450	0.400	0.0	0.0	0.0	1.14	321.8	0.0
17.000	0.00	5.16	121.900	0.030	0.0	0.0	0.0	1.77	125.4	0.0
15.007	0.00	7.16	121.380	0.458	0.0	0.0	0.0	1.53	432.1	0.0
15.008	0.00	7.36	121.360	0.518	0.0	0.0	0.0	1.23	195.8	0.0
1.009	0.00	9.62	121.230	3.382	0.0	0.0	0.0	1.34	289.9	0.0
1.010	0.00	10.44	121.080	3.449	0.0	0.0	0.0	1.36	294.8	0.0


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Network Design Table for SW EAST PROPOSED 23.07.13.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
18.000	3.269	0.040	81.7	0.050	5.00	0.0	0.600	o	100	
18.001	7.073	0.188	37.6	0.050	0.00	0.0	0.600	o	100	
18.002	16.487#	0.488	33.8	0.047	0.00	0.0	0.600	o	100	
19.000	10.073#	0.108	93.3	0.030	5.00	0.0	0.600	o	100	
19.001	21.491#	0.554	38.8	0.000	0.00	0.0	0.600	o	150	
18.003	28.600#	0.494	57.9	0.000	0.00	0.0	0.600	o	150	
18.004	33.124#	0.480	69.0	0.106	0.00	0.0	0.600	o	225	
18.005	70.423#	1.380	51.0	0.000	0.00	0.0	0.600	o	225	
20.000	10.000	0.070	142.9	0.200	5.00	0.0	0.600	o	450	
20.001	10.821	0.050	216.4	0.056	0.00	0.0	0.600	o	300	
18.006	80.000	0.365	219.2	0.118	0.00	0.0	0.600	o	300	
21.000	30.000	0.300	100.0	0.253	5.00	0.0	0.600	o	375	
21.001	21.575#	0.210	102.7	0.100	0.00	0.0	0.600	o	300	
21.002	53.884	0.400	134.7	0.074	0.00	0.0	0.600	o	300	
22.000	10.000	0.080	125.0	0.079	5.00	0.0	0.600	o	375	
22.001	12.515	0.130	96.3	0.050	0.00	0.0	0.600	o	300	

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)
18.000	0.00	5.06	124.690	0.050	0.0	0.0	0.0	0.85	6.7	0.0
18.001	0.00	5.16	124.650	0.100	0.0	0.0	0.0	1.26	9.9	0.0
18.002	0.00	5.36	124.462	0.147	0.0	0.0	0.0	1.33	10.5	0.0
19.000	0.00	5.21	124.636	0.030	0.0	0.0	0.0	0.80	6.3	0.0
19.001	0.00	5.43	124.478	0.030	0.0	0.0	0.0	1.62	28.6	0.0
18.003	0.00	5.79	123.924	0.177	0.0	0.0	0.0	1.32	23.4	0.0
18.004	0.00	6.14	123.355	0.283	0.0	0.0	0.0	1.58	62.7	0.0
18.005	0.00	6.78	122.875	0.283	0.0	0.0	0.0	1.84	73.0	0.0
20.000	0.00	5.10	121.540	0.200	0.0	0.0	0.0	1.70	270.2	0.0
20.001	0.00	5.27	121.470	0.256	0.0	0.0	0.0	1.06	75.3	0.0
18.006	0.00	8.04	121.420	0.657	0.0	0.0	0.0	1.06	74.8	0.0
21.000	0.00	5.28	122.400	0.253	0.0	0.0	0.0	1.81	200.1	0.0
21.001	0.00	5.51	122.100	0.353	0.0	0.0	0.0	1.55	109.6	0.0
21.002	0.00	6.17	121.890	0.427	0.0	0.0	0.0	1.35	95.6	0.0
22.000	0.00	5.10	121.700	0.079	0.0	0.0	0.0	1.62	178.8	0.0
22.001	0.00	5.23	121.620	0.129	0.0	0.0	0.0	1.60	113.3	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 (mm)	HYD SECT	DIA (mm)	Auto Design
21.003	50.998	0.435	117.2	0.071	0.00	0.0	0.600	o	300	
1.011	54.472#	0.820	66.4	0.237	0.00	0.0	0.600	o	525	
23.000	17.445#	0.840	20.8	0.000	5.00	0.0	0.600	o	375	
23.001	14.193	0.186	76.3	0.044	0.00	0.0	0.600	o	375	
23.002	3.120#	0.119	26.2	0.000	0.00	0.0	0.600	o	375	
23.003	58.196#	1.055	55.2	0.058	0.00	0.0	0.600	o	375	
24.000	3.280#	0.045	72.9	0.332	5.00	0.0	0.600	o	300	
24.001	19.867#	0.220	90.3	0.000	0.00	0.0	0.600	o	150	
23.004	72.000#	0.480	150.0	0.037	0.00	0.0	0.600	o	375	
25.000	25.142#	0.125	201.1	0.200	5.00	0.0	0.600	o	300	
25.001	15.181#	0.240	63.3	0.000	0.00	0.0	0.600	o	150	
23.005	29.329#	0.465	63.1	0.000	0.00	0.0	0.600	o	375	
1.012	25.940	0.200	129.7	0.077	0.00	0.0	0.600	oo	45	

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)
21.003	0.00	6.76	121.490	0.627	0.0	0.0	0.0	1.45	102.6	0.0
1.011	0.00	10.77	120.830	4.970	0.0	0.0	0.0	2.75	595.6	0.0
23.000	0.00	5.07	123.380	0.000	0.0	0.0	0.0	3.99	440.8	0.0
23.001	0.00	5.19	122.540	0.044	0.0	0.0	0.0	2.08	229.3	0.0
23.002	0.00	5.20	122.354	0.044	0.0	0.0	0.0	3.55	392.2	0.0
23.003	0.00	5.60	122.235	0.102	0.0	0.0	0.0	2.44	269.9	0.0
24.000	0.00	5.03	121.670	0.332	0.0	0.0	0.0	1.84	130.3	0.0
24.001	0.00	5.34	121.625	0.332	0.0	0.0	0.0	1.06	18.7	0.0
23.004	0.00	6.41	121.180	0.471	0.0	0.0	0.0	1.48	163.1	0.0
25.000	0.00	5.38	121.290	0.200	0.0	0.0	0.0	1.10	78.1	0.0
25.001	0.00	5.58	121.165	0.200	0.0	0.0	0.0	1.27	22.4	0.0
23.005	0.00	6.62	120.700	0.671	0.0	0.0	0.0	2.28	252.3	0.0
1.012	0.00	10.98	120.010	5.718	0.0	0.0	0.0	2.14	1206.7	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 (mm)	HYD SECT	DIA (mm)	Auto Design
26.000	29.000	0.480	60.4	0.180	5.00	0.0	0.600	o	300	
26.001	5.000	0.050	100.0	0.000	0.00	0.0	0.600	o	300	
1.013	24.091	0.185	130.2	0.000	0.00	0.0	0.600	oo	45	
27.000	36.380	0.160	227.4	0.180	5.00	0.0	0.600	o	300	
27.001	2.210	0.040	55.3	0.000	0.00	0.0	0.600	o	300	
1.014	11.037	0.075	147.2	0.000	0.00	0.0	0.600	o	525	
1.015	67.455#	0.450	149.9	0.016	0.00	0.0	0.600	o	525	
1.016	11.110#	0.080	138.9	0.000	0.00	0.0	0.600	o	525	
1.017	35.286#	0.180	196.0	0.000	0.00	0.0	0.600	o	525	
28.000	29.177#	0.300	97.3	0.047	5.00	0.0	0.600	o	300	
28.001	10.806#	0.370	29.2	0.100	0.00	0.0	0.600	o	300	
28.002	7.249#	0.075	96.7	0.062	0.00	0.0	0.600	o	150	
1.018	24.253#	0.080	303.2	0.010	0.00	0.0	0.600	o	525	
1.019	14.210#	0.050	284.2	0.000	0.00	0.0	0.600	o	525	
29.000	31.159#	0.230	135.5	0.020	5.00	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)
26.000	0.00	5.24	120.640	0.180	0.0	0.0	0.0	2.03	143.2	0.0
26.001	0.00	5.29	120.160	0.180	0.0	0.0	0.0	1.57	111.1	0.0
1.013	0.00	11.17	119.810	5.898	0.0	0.0	0.0	2.13	1204.2	0.0
27.000	0.00	5.58	120.050	0.180	0.0	0.0	0.0	1.04	73.4	0.0
27.001	0.00	5.60	119.890	0.180	0.0	0.0	0.0	2.12	149.8	0.0
1.014	0.00	11.27	119.625	6.078	0.0	0.0	0.0	1.84	399.2	0.0
1.015	0.00	11.88	119.550	6.094	0.0	0.0	0.0	1.83	395.6	0.0
1.016	0.00	11.98	119.100	6.094	0.0	0.0	0.0	1.90	411.1	0.0
1.017	0.00	12.35	119.020	6.094	0.0	0.0	0.0	1.60	345.5	0.0
28.000	0.00	5.30	119.960	0.047	0.0	0.0	0.0	1.59	112.7	0.0
28.001	0.00	5.37	119.660	0.147	0.0	0.0	0.0	2.92	206.4	0.0
28.002	0.00	5.48	119.290	0.209	0.0	0.0	0.0	1.02	18.1	0.0
1.018	0.00	12.66	118.840	6.313	0.0	0.0	0.0	1.28	277.3	0.0
1.019	0.00	12.84	118.760	6.313	0.0	0.0	0.0	1.32	286.5	0.0
29.000	0.00	5.38	120.500	0.020	0.0	0.0	0.0	1.35	95.4	0.0




Network Design Table for SW EAST PROPOSED 23.07.13.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	1.000#	0.020	50.0	0.000	5.00	0.0	0.600	o	100	
30.001	6.850#	0.510	13.4	0.086	0.00	0.0	0.600	o	150	
30.002	27.375#	0.120	228.1	0.000	0.00	0.0	0.600	o	300	
29.001	22.492#	0.100	224.9	0.000	0.00	0.0	0.600	o	300	
29.002	52.988#	0.350	151.4	0.030	0.00	0.0	0.600	o	300	
31.000	1.000	0.010	100.0	0.000	5.00	0.0	0.600	o	300	
32.000	22.652#	0.100	226.5	0.084	5.00	0.0	0.600	o	300	
32.001	31.508#	0.180	175.0	0.000	0.00	0.0	0.600	o	300	
31.001	4.813#	0.050	96.3	0.093	0.00	0.0	0.600	o	150	
29.003	51.933#	0.255	203.7	0.068	0.00	0.0	0.600	o	300	
33.000	10.000	0.040	250.0	0.066	5.00	0.0	0.600	o	300	
33.001	3.130	0.029	107.9	0.000	0.00	0.0	0.600	o	225	
33.002	42.106	0.506	83.2	0.018	0.00	0.0	0.600	o	375	
33.003	27.683	0.835	33.2	0.000	0.00	0.0	0.600	oo	-3	
29.004	20.452#	0.630	32.5	0.020	0.00	0.0	0.600	o	375	

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	5.02	121.120	0.000	0.0	0.0	0.0	1.09	8.6	0.0
30.001	0.00	5.06	121.050	0.086	0.0	0.0	0.0	2.76	48.8	0.0
30.002	0.00	5.50	120.390	0.086	0.0	0.0	0.0	1.04	73.3	0.0
29.001	0.00	5.86	120.270	0.106	0.0	0.0	0.0	1.04	73.8	0.0
29.002	0.00	6.55	120.170	0.136	0.0	0.0	0.0	1.28	90.2	0.0
31.000	0.00	5.01	120.030	0.000	0.0	0.0	0.0	1.57	111.1	0.0
32.000	0.00	5.36	120.300	0.084	0.0	0.0	0.0	1.04	73.5	0.0
32.001	0.00	5.81	120.200	0.084	0.0	0.0	0.0	1.19	83.8	0.0
31.001	0.00	5.88	120.020	0.177	0.0	0.0	0.0	1.02	18.1	0.0
29.003	0.00	7.34	119.820	0.381	0.0	0.0	0.0	1.10	77.6	0.0
33.000	0.00	5.17	121.200	0.066	0.0	0.0	0.0	0.99	70.0	0.0
33.001	0.00	5.21	121.160	0.066	0.0	0.0	0.0	1.26	50.0	0.0
33.002	0.00	5.56	120.981	0.084	0.0	0.0	0.0	1.99	219.5	0.0
33.003	0.00	5.77	120.475	0.084	0.0	0.0	0.0	2.28	182.4	0.0
29.004	0.00	7.44	119.490	0.485	0.0	0.0	0.0	3.19	352.3	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 (mm)	HYD SECT	DIA (mm)	Auto Design
1.020	11.100#	0.250	44.4	0.070	0.00	0.0	0.600	o	525	
34.000	16.507#	0.829	19.9	0.050	5.00	0.0	0.600	o	225	
1.021	65.237#	1.440	45.3	0.000	0.00	0.0	0.600	o	525	
1.022	7.970#	0.030	265.7	0.033	0.00	0.0	0.600	o	525	
1.023	49.110#	0.190	258.5	0.000	0.00	0.0	0.600	o	600	
35.000	43.403#	0.550	78.9	0.030	5.00	0.0	0.600	o	100	
35.001	15.654#	0.110	142.3	0.012	0.00	0.0	0.600	o	150	
35.002	25.507#	0.170	150.0	0.066	0.00	0.0	0.600	o	150	
35.003	14.388#	0.100	143.9	0.043	0.00	0.0	0.600	o	150	
36.000	32.387#	0.217	149.2	0.017	5.00	0.0	0.600	o	150	
36.001	14.350#	0.096	149.5	0.036	0.00	0.0	0.600	o	150	
36.002	42.417#	1.167	36.3	0.000	0.00	0.0	0.600	o	150	
35.004	16.920#	0.120	141.0	0.088	0.00	0.0	0.600	o	150	
35.005	29.021#	0.200	145.1	0.180	0.00	0.0	0.600	o	150	
35.006	29.194#	0.200	146.0	0.037	0.00	0.0	0.600	o	150	
35.007	4.919#	0.038	129.4	0.047	0.00	0.0	0.600	o	150	

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)
1.020	0.00	12.90	118.710	6.868	0.0	0.0	0.0	3.37	729.1	0.0
34.000	0.00	5.09	119.589	0.050	0.0	0.0	0.0	2.95	117.1	0.0
1.021	0.00	13.22	118.460	6.918	0.0	0.0	0.0	3.33	721.8	0.0
1.022	0.00	13.32	117.020	6.951	0.0	0.0	0.0	1.37	296.4	0.0
1.023	0.00	13.86	115.470	6.951	0.0	0.0	0.0	1.51	426.9	0.0
35.000	0.00	5.83	121.700	0.030	0.0	0.0	0.0	0.87	6.8	0.0
35.001	0.00	6.14	121.150	0.042	0.0	0.0	0.0	0.84	14.8	0.0
35.002	0.00	6.66	121.040	0.108	0.0	0.0	0.0	0.82	14.5	0.0
35.003	0.00	6.95	120.870	0.151	0.0	0.0	0.0	0.84	14.8	0.0
36.000	0.00	5.66	122.250	0.017	0.0	0.0	0.0	0.82	14.5	0.0
36.001	0.00	5.95	122.033	0.053	0.0	0.0	0.0	0.82	14.5	0.0
36.002	0.00	6.37	121.937	0.053	0.0	0.0	0.0	1.67	29.6	0.0
35.004	0.00	7.29	120.770	0.292	0.0	0.0	0.0	0.84	14.9	0.0
35.005	0.00	7.87	120.650	0.472	0.0	0.0	0.0	0.83	14.7	0.0
35.006	0.00	8.45	120.450	0.509	0.0	0.0	0.0	0.83	14.7	0.0
35.007	0.00	8.55	120.250	0.556	0.0	0.0	0.0	0.88	15.6	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 (mm)	HYD SECT	DIA (mm)	Auto Design
35.008	4.903#	0.038	129.0	0.002	0.00	0.0	0.600	o	150	
37.000	21.931#	0.327	67.1	0.019	5.00	0.0	0.600	o	100	
37.001	20.176#	0.324	62.3	0.012	0.00	0.0	0.600	o	150	
37.002	14.181#	0.226	62.7	0.012	0.00	0.0	0.600	o	150	
37.003	22.288#	0.800	27.9	0.000	0.00	0.0	0.600	o	150	
35.009	17.551#	0.119	147.5	0.020	0.00	0.0	0.600	o	150	
38.000	29.924#	0.395	75.8	0.108	5.00	0.0	0.600	o	150	
38.001	28.247#	0.250	113.0	0.037	0.00	0.0	0.600	o	150	
38.002	14.417#	0.195	73.9	0.017	0.00	0.0	0.600	o	150	
39.000	37.779#	0.329	114.8	0.023	5.00	0.0	0.600	o	100	
39.001	27.973#	0.669	41.8	0.018	0.00	0.0	0.600	o	150	
39.002	42.507#	0.133	319.6	0.266	0.00	0.0	0.600	o	225	
38.003	12.673#	0.555	22.8	0.048	0.00	0.0	0.600	o	225	
38.004	10.364#	0.110	94.2	0.062	0.00	0.0	0.600	o	225	
38.005	27.312#	0.029	941.8	0.069	0.00	0.0	0.600	o	300	
35.010	24.204#	0.169	143.2	0.066	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)
35.008	0.00	8.64	120.212	0.558	0.0	0.0	0.0	0.88	15.6	0.0
37.000	0.00	5.39	121.851	0.019	0.0	0.0	0.0	0.94	7.4	0.0
37.001	0.00	5.65	121.524	0.031	0.0	0.0	0.0	1.28	22.6	0.0
37.002	0.00	5.84	121.200	0.043	0.0	0.0	0.0	1.27	22.5	0.0
37.003	0.00	6.03	120.974	0.043	0.0	0.0	0.0	1.91	33.8	0.0
35.009	0.00	8.99	120.174	0.621	0.0	0.0	0.0	0.83	14.6	0.0
38.000	0.00	5.43	121.665	0.108	0.0	0.0	0.0	1.16	20.4	0.0
38.001	0.00	5.93	121.270	0.145	0.0	0.0	0.0	0.94	16.7	0.0
38.002	0.00	6.13	121.020	0.162	0.0	0.0	0.0	1.17	20.7	0.0
39.000	0.00	5.88	121.880	0.023	0.0	0.0	0.0	0.72	5.6	0.0
39.001	0.00	6.18	121.551	0.041	0.0	0.0	0.0	1.56	27.6	0.0
39.002	0.00	7.15	120.882	0.307	0.0	0.0	0.0	0.73	28.9	0.0
38.003	0.00	7.23	120.749	0.517	0.0	0.0	0.0	2.75	109.3	0.0
38.004	0.00	7.36	120.194	0.579	0.0	0.0	0.0	1.35	53.6	0.0
38.005	0.00	8.26	120.084	0.648	0.0	0.0	0.0	0.50	35.6	0.0
35.010	0.00	9.30	120.055	1.335	0.0	0.0	0.0	1.31	92.7	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 (mm)	HYD SECT	DIA (mm)	Auto Design
40.000	13.405#	0.060	223.4	0.060	5.00	0.0	0.600	o	300	
40.001	13.405#	0.050	268.1	0.000	0.00	0.0	0.600	o	300	
40.002	35.413#	0.140	253.0	0.000	0.00	0.0	0.600	o	300	
40.003	11.912#	0.050	238.2	0.000	0.00	0.0	0.600	o	300	
40.004	17.270#	0.064	269.8	0.000	0.00	0.0	0.600	o	300	
35.011	115.388#	2.913	39.6	0.208	0.00	0.0	0.600	o	300	
35.012	3.690#	0.303	12.2	0.050	0.00	0.0	0.600	o	300	
41.000	77.000#	1.680	45.8	0.094	5.00	0.0	0.600	o	225	
35.013	25.956#	1.090	23.8	0.000	0.00	0.0	0.600	o	300	
1.024	34.847#	0.120	290.4	0.036	0.00	0.0	0.600	o	600	
42.000	24.960#	0.060	416.0	0.074	5.00	0.0	0.600	o	525	
42.001	18.620#	0.050	372.4	0.038	0.00	0.0	0.600	o	525	
42.002	8.190#	0.020	409.5	0.080	0.00	0.0	0.600	o	525	
43.000	13.685#	0.140	97.8	0.028	5.00	0.0	0.600	o	150	
43.001	13.515#	0.185	73.1	0.030	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)
40.000	0.00	5.21	120.250	0.060	0.0	0.0	0.0	1.05	74.1	0.0
40.001	0.00	5.45	120.190	0.060	0.0	0.0	0.0	0.96	67.5	0.0
40.002	0.00	6.05	120.140	0.060	0.0	0.0	0.0	0.98	69.6	0.0
40.003	0.00	6.24	120.000	0.060	0.0	0.0	0.0	1.01	71.7	0.0
40.004	0.00	6.54	119.950	0.060	0.0	0.0	0.0	0.95	67.3	0.0
35.011	0.00	10.07	119.886	1.603	0.0	0.0	0.0	2.51	177.1	0.0
35.012	0.00	10.08	116.973	1.653	0.0	0.0	0.0	4.53	320.2	0.0
41.000	0.00	5.66	118.425	0.094	0.0	0.0	0.0	1.94	77.0	0.0
35.013	0.00	10.22	116.670	1.747	0.0	0.0	0.0	3.24	228.7	0.0
1.024	0.00	14.27	115.280	8.734	0.0	0.0	0.0	1.42	402.6	0.0
42.000	0.00	5.38	115.420	0.074	0.0	0.0	0.0	1.09	236.4	0.0
42.001	0.00	5.65	115.360	0.112	0.0	0.0	0.0	1.15	250.0	0.0
42.002	0.00	5.77	115.310	0.192	0.0	0.0	0.0	1.10	238.3	0.0
43.000	0.00	5.22	119.600	0.028	0.0	0.0	0.0	1.02	18.0	0.0
43.001	0.00	5.42	119.460	0.058	0.0	0.0	0.0	1.18	20.8	0.0


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Network Design Table for SW EAST PROPOSED 23.07.13.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
43.002	32.988#	0.400	82.5	0.013	0.00	0.0	0.600	o	225	
43.003	7.171#	0.050	143.4	0.000	0.00	0.0	0.600	o	225	
43.004	15.504#	0.150	103.4	0.010	0.00	0.0	0.600	o	225	
43.005	12.485#	0.120	104.0	0.005	0.00	0.0	0.600	o	225	
43.006	18.239#	0.170	107.3	0.005	0.00	0.0	0.600	o	225	
43.007	31.070#	1.190	26.1	0.040	0.00	0.0	0.600	o	225	
43.008	4.394#	0.445	9.9	0.030	0.00	0.0	0.600	o	225	
44.000	12.990#	0.125	103.9	0.018	5.00	0.0	0.600	o	225	
45.000	14.165#	0.750	18.9	0.050	5.00	0.0	0.600	o	150	
43.009	20.164#	0.200	100.8	0.025	0.00	0.0	0.600	o	300	
43.010	17.357#	0.325	53.4	0.010	0.00	0.0	0.600	o	300	
43.011	8.051#	0.050	161.0	0.014	0.00	0.0	0.600	o	525	
43.012	22.785#	0.280	81.4	0.017	0.00	0.0	0.600	o	525	
43.013	19.464#	0.230	84.6	0.017	0.00	0.0	0.600	o	525	
42.003	17.590#	0.050	351.8	0.040	0.00	0.0	0.600	o	525	
42.004	2.690#	0.080	33.6	0.018	0.00	0.0	0.600	o	300	
46.000	10.459#	0.935	11.2	0.000	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)
43.002	0.00	5.80	119.200	0.071	0.0	0.0	0.0	1.44	57.3	0.0
43.003	0.00	5.91	118.800	0.071	0.0	0.0	0.0	1.09	43.3	0.0
43.004	0.00	6.11	118.750	0.081	0.0	0.0	0.0	1.29	51.1	0.0
43.005	0.00	6.27	118.600	0.086	0.0	0.0	0.0	1.28	51.0	0.0
43.006	0.00	6.51	118.480	0.091	0.0	0.0	0.0	1.26	50.2	0.0
43.007	0.00	6.71	118.310	0.131	0.0	0.0	0.0	2.57	102.2	0.0
43.008	0.00	6.73	117.120	0.161	0.0	0.0	0.0	4.19	166.5	0.0
44.000	0.00	5.17	116.800	0.018	0.0	0.0	0.0	1.28	51.0	0.0
45.000	0.00	5.10	117.500	0.050	0.0	0.0	0.0	2.33	41.1	0.0
43.009	0.00	6.94	116.600	0.254	0.0	0.0	0.0	1.57	110.7	0.0
43.010	0.00	7.08	116.400	0.264	0.0	0.0	0.0	2.16	152.4	0.0
43.011	0.00	7.15	115.850	0.278	0.0	0.0	0.0	1.76	381.6	0.0
43.012	0.00	7.31	115.800	0.295	0.0	0.0	0.0	2.48	537.8	0.0
43.013	0.00	7.44	115.520	0.312	0.0	0.0	0.0	2.44	527.4	0.0
42.003	0.00	7.69	115.290	0.544	0.0	0.0	0.0	1.19	257.3	0.0
42.004	0.00	7.70	115.240	0.562	0.0	0.0	0.0	2.72	192.3	0.0
46.000	0.00	5.04	118.130	0.000	0.0	0.0	0.0	3.93	156.4	0.0


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Network Design Table for SW EAST PROPOSED 23.07.13.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
47.000	89.850#	1.360	66.1	0.100	5.00	0.0	0.600	o	225	
47.001	78.149#	1.195	65.4	0.047	0.00	0.0	0.600	o	225	
46.001	21.683#	1.660	13.1	0.011	0.00	0.0	0.600	o	225	
1.025	66.440#	0.130	511.1	0.036	0.00	0.0	0.600	o	600	
48.000	16.000#	0.970	16.5	0.009	5.00	0.0	0.600	o	150	
1.026	18.703#	0.030	623.4	0.021	0.00	0.0	0.600	o	750	
49.000	103.884#	0.570	182.3	0.083	5.00	0.0	0.600	o	225	
49.001	114.526#	0.520	220.2	0.155	0.00	0.0	0.600	o	300	
49.002	23.331#	0.111	210.2	0.046	0.00	0.0	0.600	o	300	
49.003	11.890#	2.624	4.5	0.005	0.00	0.0	0.600	o	300	
1.027	143.569#	0.270	532.0	0.030	0.00	0.0	0.600	o	750	
1.028	15.344#	0.040	383.6	0.000	0.00	0.0	0.600	oo	44	
1.029	2.088#	0.070	29.8	0.000	0.00	0.0	0.600	o	450	
1.030	3.000	0.030	100.0	0.000	0.00	0.0	0.600	o	450	
1.031	8.282	0.110	75.3	0.000	0.00	0.0	0.600	o	450	

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)
47.000	0.00	5.93	119.750	0.100	0.0	0.0	0.0	1.61	64.1	0.0
47.001	0.00	6.73	118.390	0.147	0.0	0.0	0.0	1.62	64.4	0.0
46.001	0.00	6.83	117.195	0.158	0.0	0.0	0.0	3.64	144.7	0.0
1.025	0.00	15.30	115.160	9.490	0.0	0.0	0.0	1.07	302.6	0.0
48.000	0.00	5.11	118.000	0.009	0.0	0.0	0.0	2.49	44.0	0.0
1.026	0.00	15.58	115.030	9.520	0.0	0.0	0.0	1.11	491.9	0.0
49.000	0.00	6.79	119.350	0.083	0.0	0.0	0.0	0.97	38.4	0.0
49.001	0.00	8.60	118.705	0.238	0.0	0.0	0.0	1.06	74.6	0.0
49.002	0.00	8.96	118.185	0.284	0.0	0.0	0.0	1.08	76.4	0.0
49.003	0.00	8.99	118.074	0.289	0.0	0.0	0.0	7.43	525.5	0.0
1.027	0.00	17.57	115.000	9.839	0.0	0.0	0.0	1.21	532.9	0.0
1.028	0.00	17.79	114.730	9.839	0.0	0.0	0.0	1.14	492.6	0.0
1.029	0.00	17.80	114.590	9.839	0.0	0.0	0.0	3.73	593.8	0.0
1.030	0.00	17.83	114.520	9.839	0.0	0.0	0.0	2.03	323.4	0.0
1.031	0.00	17.88	114.290	9.839	0.0	0.0	0.0	2.35	373.0	0.0

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Free Flowing Outfall Details for SW EAST PROPOSED 23.07.13.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.031	27	115.000	114.180	0.000	0	0
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Simulation Criteria for SW EAST PROPOSED 23.07.13.SWS

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m <sup>3</sup> /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)	60
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	27
Number of Online Controls	17	Number of Time/Area Diagrams	0
Number of Offline Controls	1	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)	15

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Online Controls for SW EAST PROPOSED 23.07.13.SWS

Orifice Manhole: 314 (D2b), DS/PN: 6.001, Volume (m<sup>3</sup>): 5.7

Diameter (m) 0.059 Discharge Coefficient 0.600 Invert Level (m) 123.000

Orifice Manhole: 318 (D2b), DS/PN: 7.001, Volume (m<sup>3</sup>): 4.8

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 122.090

Orifice Manhole: 47 (B4b), DS/PN: 11.001, Volume (m<sup>3</sup>): 6.2

Diameter (m) 0.160 Discharge Coefficient 0.600 Invert Level (m) 123.200

Hydro-Brake® Manhole: 311 (D3b), DS/PN: 15.008, Volume (m<sup>3</sup>): 6.4

Design Head (m) 1.700 Hydro-Brake® Type Md6 SW Only Invert Level (m) 121.360  
Design Flow (l/s) 80.7 Diameter (mm) 318

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	10.3	1.200	79.9	3.000	100.2	7.000	152.6
0.200	29.8	1.400	79.0	3.500	108.0	7.500	158.0
0.300	51.2	1.600	79.7	4.000	115.4	8.000	163.2
0.400	69.5	1.800	81.6	4.500	122.4	8.500	168.2
0.500	81.0	2.000	84.2	5.000	129.0	9.000	173.1
0.600	85.0	2.200	87.2	5.500	135.3	9.500	177.8
0.800	85.5	2.400	90.4	6.000	141.3		
1.000	82.6	2.600	93.6	6.500	147.1		

Pre-initialised control selected, excessive flows may result.

Orifice Manhole: 76 (B4a), DS/PN: 20.001, Volume (m<sup>3</sup>): 7.3

Diameter (m) 0.150 Discharge Coefficient 0.600 Invert Level (m) 121.470

Orifice Manhole: 78 (B4a), DS/PN: 21.001, Volume (m<sup>3</sup>): 8.6

Diameter (m) 0.147 Discharge Coefficient 0.600 Invert Level (m) 122.100


Orifice Manhole: 319 (D2b), DS/PN: 22.001, Volume (m<sup>3</sup>): 4.7

Diameter (m) 0.130 Discharge Coefficient 0.600 Invert Level (m) 121.620

Orifice Manhole: 91 (D2c), DS/PN: 24.001, Volume (m<sup>3</sup>): 5.9

Diameter (m) 0.079 Discharge Coefficient 0.600 Invert Level (m) 121.625



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Orifice Manhole: 94 (D2c), DS/PN: 25.001, Volume (m³): 6.8

Diameter (m) 0.069 Discharge Coefficient 0.600 Invert Level (m) 121.165

Orifice Manhole: 116, DS/PN: 26.001, Volume (m³): 7.4

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 120.160

Orifice Manhole: 119, DS/PN: 27.001, Volume (m³): 8.3

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 119.890

Hydro-Brake® Manhole: 12a, DS/PN: 1.014, Volume (m³): 24.2

Design Head (m) 1.450 Hydro-Brake® Type Md10 Invert Level (m) 119.625  
Design Flow (l/s) 440.0 Diameter (mm) 511

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	19.4	1.200	394.8	3.000	630.9	7.000	963.8
0.200	49.9	1.400	431.0	3.500	681.5	7.500	997.6
0.300	85.4	1.600	460.8	4.000	728.5	8.000	1030.3
0.400	123.5	1.800	488.7	4.500	772.7	8.500	1062.0
0.500	162.6	2.000	515.2	5.000	814.5	9.000	1092.8
0.600	201.7	2.200	540.3	5.500	854.3	9.500	1122.8
0.800	276.5	2.400	564.3	6.000	892.3		
1.000	342.3	2.600	587.4	6.500	928.7		

Orifice Manhole: 115 (D1a), DS/PN: 28.002, Volume (m³): 6.0

Diameter (m) 0.055 Discharge Coefficient 0.600 Invert Level (m) 119.290

Orifice Manhole: Private (D3b), DS/PN: 30.001, Volume (m³): 0.3

Diameter (m) 0.020 Discharge Coefficient 0.600 Invert Level (m) 121.050

Orifice Manhole: Bld 52 TC, DS/PN: 31.001, Volume (m³): 3.7

Diameter (m) 0.045 Discharge Coefficient 0.600 Invert Level (m) 120.020

Orifice Manhole: 99b (D1c), DS/PN: 33.001, Volume (m³): 3.0

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 121.160

Hydro-Brake® Manhole: 16 (D1b), DS/PN: 42.004, Volume (m³): 14.1

Design Head (m) 1.200 Hydro-Brake® Type Md6 SW Only Invert Level (m) 115.240  
Design Flow (l/s) 69.0 Diameter (mm) 300

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Hydro-Brake® Manhole: 16 (D1b), DS/PN: 42.004, Volume (m³): 14.1

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	9.8	1.200	68.6	3.000	89.1	7.000	135.9
0.200	28.0	1.400	68.4	3.500	96.1	7.500	140.6
0.300	47.4	1.600	69.6	4.000	102.7	8.000	145.2
0.400	63.1	1.800	71.7	4.500	108.9	8.500	149.7
0.500	71.6	2.000	74.3	5.000	114.8	9.000	154.0
0.600	74.0	2.200	77.2	5.500	120.4	9.500	158.3
0.800	73.5	2.400	80.1	6.000	125.8		
1.000	70.5	2.600	83.2	6.500	130.9		


Pre-initialised control selected, excessive flows may result.

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Offline Controls for SW EAST PROPOSED 23.07.13.SWS

Pipe Manhole: Ex MH, DS/PN: 34.000, Loop to PN: None

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)	119.589

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Storage Structures for SW EAST PROPOSED 23.07.13.SWS

Tank or Pond Manhole: 314 (D2b), DS/PN: 6.001

Invert Level (m) 123.000

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	39.0	1.000	39.0	1.001	0.0

Tank or Pond Manhole: 318 (D2b), DS/PN: 7.001

Invert Level (m) 122.090

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	40.0	1.000	40.0	1.001	0.0

Tank or Pond Manhole: 47 (B4b), DS/PN: 11.001

Invert Level (m) 123.800

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	60.0	1.000	60.0	1.001	0.0

Tank or Pond Manhole: 308 (D3b), DS/PN: 15.006

Invert Level (m) 121.450

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	162.0	1.000	162.0	1.001	0.0

Tank or Pond Manhole: 311 (D3b), DS/PN: 15.008


Invert Level (m) 121.360

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	175.5	1.000	175.5	1.001	0.0

Tank or Pond Manhole: 76 (B4a), DS/PN: 20.001

Invert Level (m) 121.780

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	65.0	1.200	65.0	1.201	0.0

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Porous Car Park Manhole: 77 (B4a), DS/PN: 21.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.6
Membrane Percolation (mm/hr)	1000	Length (m)	118.0
Max Percolation (l/s)	445.8	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	123.550	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 78 (B4a), DS/PN: 21.001

Invert Level (m) 122.200

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	20.0	1.000	20.0	1.001	0.0

Tank or Pond Manhole: 319 (D2b), DS/PN: 22.001

Invert Level (m) 121.620

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	238.0	0.500	238.0	0.501	0.0

Tank or Pond Manhole: 91 (D2c), DS/PN: 24.001

Invert Level (m) 121.850

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	72.0	1.200	72.0	1.201	0.0

Tank or Pond Manhole: 94a (D2c), DS/PN: 25.000

Invert Level (m) 121.490

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	18.0	0.500	18.0	0.501	0.0


Tank or Pond Manhole: 94 (D2c), DS/PN: 25.001

Invert Level (m) 121.390

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	36.0	1.200	36.0	1.201	0.0

Tank or Pond Manhole: 116, DS/PN: 26.001

Invert Level (m) 120.160

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Tank or Pond Manhole: 116, DS/PN: 26.001

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	108.5	1.200	108.5	1.201	0.0

Tank or Pond Manhole: 119, DS/PN: 27.001

Invert Level (m) 119.890

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	104.0	1.200	104.0	1.201	0.0

Tank or Pond Manhole: 12a, DS/PN: 1.014

Invert Level (m) 119.690

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	420.5	1.200	420.5	1.201	0.0

Tank or Pond Manhole: 121, DS/PN: 28.001

Invert Level (m) 119.660

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	60.0	0.500	60.0	0.501	0.0

Tank or Pond Manhole: 115 (D1a), DS/PN: 28.002

Invert Level (m) 119.290


Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	57.5	0.800	57.5	0.801	0.0

Porous Car Park Manhole: Private (D3b), DS/PN: 30.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.7
Membrane Percolation (mm/hr)	1000	Length (m)	30.0
Max Percolation (l/s)	105.8	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	5
Invert Level (m)	121.050	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: Bld 52 TC, DS/PN: 31.001

Invert Level (m) 120.050

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Tank or Pond Manhole: Bld 52 TC, DS/PN: 31.001

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	128.0	0.600	128.0	0.601	0.0

Tank or Pond Manhole: 99b (D1c), DS/PN: 33.001

Invert Level (m) 121.160

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	25.0	0.500	25.0	0.501	0.0

Complex Manhole: 18 (D1b), DS/PN: 42.000

Tank or Pond

Invert Level (m) 115.420

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	192.0	0.801	0.0	1.350	0.0
0.800	192.0	1.349	0.0	1.470	75.0

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.5
Membrane Percolation (mm/hr)	1000	Length (m)	55.0
Max Percolation (l/s)	129.9	Slope (1:X)	350.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.33	Evaporation (mm/day)	5
Invert Level (m)	116.420	Cap Volume Depth (m)	0.000

Tank or Pond Manhole: 19 (D1b), DS/PN: 42.001


Invert Level (m) 115.360

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	1.440	0.0	1.560	38.0

Tank or Pond Manhole: 20 (D1b), DS/PN: 42.002

Invert Level (m) 115.310

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	70.0	0.800	70.0	0.801	0.0

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Tank or Pond Manhole: 12 (D1b), DS/PN: 43.011

Invert Level (m) 115.850

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	23.0	0.800	23.0	0.801	0.0

Tank or Pond Manhole: 15 (D1b), DS/PN: 42.003

Invert Level (m) 115.290

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	25.0	0.800	25.0	0.801	0.0

Tank or Pond Manhole: 21, DS/PN: 1.026

Invert Level (m) 115.030


Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	52.0	2.000	52.0	2.001	0.0

Tank or Pond Manhole: Pond, DS/PN: 1.029

Invert Level (m) 114.590

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	547.7	0.940	813.2



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Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m <sup>3</sup> /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	27
Number of Online Controls	17	Number of Time/Area Diagrams	0
Number of Offline Controls	1	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	OFF


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

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	+30%	100/15 Summer	100/15 Summer			8
1.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
1.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
1.003	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
1.004	15 Winter	100	+30%	100/15 Summer				
2.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
2.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
3.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			10
3.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
4.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			3
2.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			3
2.003	15 Summer	100	+30%	100/15 Summer				
2.004	15 Winter	100	+30%	100/15 Summer				
2.005	15 Summer	100	+30%	100/15 Summer				

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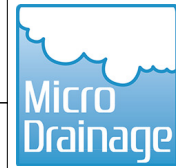
PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
5.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
2.006	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
1.005	60 Winter	100	+30%	100/15 Summer	100/15 Summer			11
1.006	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
6.000	60 Winter	100	+30%	100/15 Summer				
6.001	60 Winter	100	+30%	100/15 Summer				
1.007	15 Winter	100	+30%	100/15 Summer				
7.000	360 Winter	100	+30%	100/15 Summer				
7.001	360 Winter	100	+30%	100/15 Summer				
1.008	15 Winter	100	+30%	100/15 Summer				
8.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
8.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
8.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
9.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
9.001	30 Winter	100	+30%	100/15 Summer	100/15 Summer			6
8.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
10.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
8.004	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
8.005	120 Winter	100	+30%					
8.006	15 Winter	100	+30%	100/15 Summer				
11.000	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
11.001	15 Winter	100	+30%	100/15 Summer	100/15 Winter			2
11.002	15 Winter	100	+30%	100/15 Summer				
8.007	15 Winter	100	+30%	100/15 Summer				
12.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
12.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			8
12.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
12.003	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
12.004	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
12.005	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
13.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			3
14.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
13.001	15 Summer	100	+30%	100/15 Summer				
12.006	15 Winter	100	+30%	100/15 Summer				
8.008	15 Winter	100	+30%	100/15 Summer				
15.000	15 Winter	100	+30%	100/15 Summer				
15.001	15 Winter	100	+30%	100/15 Summer				
15.002	120 Winter	100	+30%	100/15 Summer				
15.003	120 Winter	100	+30%	100/15 Summer				
15.004	120 Winter	100	+30%	100/30 Summer				
16.000	120 Winter	100	+30%	100/30 Winter				
15.005	120 Winter	100	+30%	100/30 Summer				
15.006	120 Winter	100	+30%	100/15 Winter				
17.000	120 Winter	100	+30%	100/30 Winter				
15.007	120 Winter	100	+30%	100/15 Summer				
15.008	120 Winter	100	+30%	100/15 Summer				
1.009	15 Winter	100	+30%	100/15 Summer				
1.010	60 Winter	100	+30%	100/15 Summer				
18.000	30 Winter	100	+30%	100/15 Summer	100/15 Summer			11
18.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4

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PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
18.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			9
19.000	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
19.001	15 Winter	100	+30%	100/15 Summer				
18.003	15 Winter	100	+30%	100/15 Summer	100/15 Winter			1
18.004	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
18.005	15 Winter	100	+30%	100/15 Summer				
20.000	15 Winter	100	+30%	100/15 Summer				
20.001	15 Winter	100	+30%	100/15 Summer				
18.006	15 Winter	100	+30%	100/15 Summer				
21.000	15 Winter	100	+30%	100/15 Summer				
21.001	15 Winter	100	+30%	100/15 Summer				
21.002	15 Winter	100	+30%	100/15 Summer				
22.000	120 Winter	100	+30%	100/60 Winter				
22.001	120 Winter	100	+30%	100/30 Summer				
21.003	15 Winter	100	+30%	100/15 Summer				
1.011	120 Winter	100	+30%	100/15 Summer	100/30 Winter			5
23.000	60 Winter	100	+30%					
23.001	15 Winter	100	+30%					
23.002	15 Summer	100	+30%					
23.003	15 Summer	100	+30%					
24.000	60 Winter	100	+30%	100/15 Summer	100/15 Winter			4
24.001	60 Winter	100	+30%	100/15 Summer	100/15 Winter			5
23.004	120 Winter	100	+30%	100/15 Winter				
25.000	60 Winter	100	+30%	100/15 Summer	100/30 Winter			3
25.001	60 Winter	100	+30%	100/15 Summer				
23.005	120 Winter	100	+30%	100/15 Summer				
1.012	120 Winter	100	+30%	100/15 Summer				
26.000	960 Winter	100	+30%	100/15 Summer				
26.001	960 Winter	100	+30%	100/15 Summer				
1.013	120 Winter	100	+30%	100/15 Summer				
27.000	960 Winter	100	+30%	100/15 Summer				
27.001	960 Winter	100	+30%	100/15 Summer				
1.014	120 Winter	100	+30%	100/15 Summer	100/30 Winter			5
1.015	120 Winter	100	+30%	100/15 Summer				
1.016	120 Winter	100	+30%	100/15 Summer				
1.017	120 Winter	100	+30%	100/15 Summer				
28.000	120 Winter	100	+30%	100/60 Winter				
28.001	120 Winter	100	+30%	100/15 Summer				
28.002	120 Winter	100	+30%	100/15 Summer				
1.018	120 Winter	100	+30%	100/15 Summer				
1.019	120 Winter	100	+30%	100/15 Summer				
29.000	15 Winter	100	+30%					
30.000	480 Winter	100	+30%	100/15 Summer				
30.001	480 Winter	100	+30%	100/15 Summer				
30.002	480 Winter	100	+30%					
29.001	15 Winter	100	+30%					
29.002	15 Winter	100	+30%					
31.000	240 Winter	100	+30%	100/15 Summer				
32.000	240 Winter	100	+30%	100/30 Winter				
32.001	240 Winter	100	+30%	100/15 Winter				

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PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
31.001	240 Winter	100	+30%	100/15 Summer				
29.003	15 Winter	100	+30%	100/15 Summer				
33.000	30 Winter	100	+30%	100/15 Summer	100/15 Winter			7
33.001	15 Winter	100	+30%	100/15 Summer	100/15 Winter			3
33.002	15 Winter	100	+30%					
33.003	15 Winter	100	+30%					
29.004	15 Winter	100	+30%					
1.020	120 Winter	100	+30%	100/60 Winter				
34.000	15 Winter	100	+30%			100/15 Summer		18
1.021	120 Winter	100	+30%					
1.022	120 Winter	100	+30%	100/15 Summer				
1.023	120 Winter	100	+30%	100/15 Summer				
35.000	240 Winter	100	+30%	100/15 Summer	100/15 Summer			15
35.001	120 Winter	100	+30%	100/15 Summer	100/15 Summer			14
35.002	30 Winter	100	+30%	100/15 Summer	100/15 Summer			12
35.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
36.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
36.001	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
36.002	30 Winter	100	+30%	100/15 Summer				
35.004	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
35.005	120 Winter	100	+30%	100/15 Summer	100/15 Summer			14
35.006	60 Winter	100	+30%	100/15 Summer	100/15 Summer			11
35.007	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
35.008	30 Winter	100	+30%	100/15 Summer	100/15 Summer			9
37.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
37.001	15 Winter	100	+30%	100/15 Summer				
37.002	15 Winter	100	+30%	100/15 Summer				
37.003	15 Winter	100	+30%	100/15 Summer				
35.009	15 Winter	100	+30%	100/15 Summer	100/15 Summer			5
38.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			7
38.001	60 Winter	100	+30%	100/15 Summer	100/15 Summer			8
38.002	30 Winter	100	+30%	100/15 Summer	100/15 Summer			6
39.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			6
39.001	15 Winter	100	+30%	100/15 Summer				
39.002	15 Winter	100	+30%	100/15 Summer	100/15 Summer			8
38.003	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
38.004	30 Winter	100	+30%	100/15 Summer	100/15 Summer			8
38.005	15 Winter	100	+30%	100/15 Summer	100/15 Summer			8
35.010	15 Summer	100	+30%	100/15 Summer				
40.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
40.001	15 Summer	100	+30%	100/15 Summer	100/15 Summer			1
40.002	15 Summer	100	+30%	100/15 Summer				
40.003	15 Summer	100	+30%	100/15 Summer				
40.004	15 Winter	100	+30%	100/15 Summer				
35.011	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
35.012	15 Winter	100	+30%	100/15 Summer				
41.000	15 Winter	100	+30%	100/15 Summer				
35.013	15 Winter	100	+30%	100/15 Summer				
1.024	120 Winter	100	+30%	100/15 Summer				
42.000	120 Winter	100	+30%	100/15 Summer				

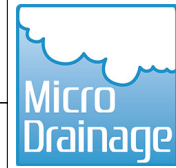
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PN	Storm	Return Period	Climate Change	First X Surchage	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
42.001	120 Winter	100	+30%	100/15 Summer				
42.002	120 Winter	100	+30%	100/15 Summer				
43.000	15 Winter	100	+30%	100/15 Summer				
43.001	15 Winter	100	+30%	100/15 Summer				
43.002	15 Winter	100	+30%	100/15 Summer				
43.003	15 Winter	100	+30%	100/15 Summer				
43.004	15 Winter	100	+30%	100/15 Summer				
43.005	15 Winter	100	+30%	100/15 Summer				
43.006	15 Winter	100	+30%	100/15 Summer				
43.007	15 Winter	100	+30%	100/15 Winter				
43.008	15 Winter	100	+30%	100/15 Summer				
44.000	15 Winter	100	+30%	100/15 Summer				
45.000	15 Winter	100	+30%	100/15 Summer				
43.009	15 Winter	100	+30%	100/15 Summer				
43.010	120 Winter	100	+30%	100/15 Summer				
43.011	120 Winter	100	+30%	100/15 Summer				
43.012	120 Winter	100	+30%	100/15 Summer				
43.013	120 Winter	100	+30%	100/15 Summer				
42.003	120 Winter	100	+30%	100/15 Summer				
42.004	120 Winter	100	+30%	100/15 Summer				
46.000	60 Winter	100	+30%					
47.000	15 Winter	100	+30%	100/15 Summer				
47.001	15 Winter	100	+30%	100/15 Summer				
46.001	15 Winter	100	+30%					
1.025	120 Winter	100	+30%	100/15 Summer				
48.000	15 Winter	100	+30%					
1.026	120 Winter	100	+30%	100/15 Summer				
49.000	15 Winter	100	+30%	100/15 Summer	100/15 Summer			4
49.001	15 Winter	100	+30%	100/15 Summer	100/15 Summer			2
49.002	15 Winter	100	+30%	100/15 Summer				
49.003	15 Winter	100	+30%					
1.027	120 Winter	100	+30%	100/15 Summer				
1.028	120 Winter	100	+30%	100/15 Summer				
1.029	120 Winter	100	+30%	100/15 Summer	100/15 Winter			14
1.030	240 Winter	100	+30%	100/15 Summer	100/120 Summer			6
1.031	240 Winter	100	+30%	100/15 Summer				

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
1.000	Ex MH	127.115	0.865	14.754	1.16	0.0	19.2	FLOOD
1.001	0883	126.930	1.122	6.882	0.92	0.0	49.2	FLOOD
1.002	0810	126.700	1.183	26.246	0.93	0.0	50.4	FLOOD
1.003	0923	126.319	1.254	45.453	1.04	0.0	58.9	FLOOD
1.004	0822	126.459	1.710	0.000	1.71	0.0	77.8	FLOOD RISK
2.000	0961	125.684	0.564	13.698	0.69	0.0	9.8	FLOOD
2.001	0859	125.672	0.832	9.926	0.86	0.0	14.7	FLOOD
3.000	0799	125.736	0.545	25.358	0.50	0.0	12.9	FLOOD
3.001	0797	125.768	0.916	9.392	1.02	0.0	15.9	FLOOD

15-17 Goldington Road  
Bedford  
MK40 3NH



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Checked by

Micro Drainage

Network 2014.1.1

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

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
4.000	0860	126.364	1.320	1.839	1.39	0.0	27.6	FLOOD
2.002	0805	125.814	1.082	2.160	1.01	0.0	40.2	FLOOD
2.003	0825	125.741	1.132	0.000	1.02	0.0	45.4	FLOOD RISK
2.004	0824	125.637	1.127	0.000	0.89	0.0	44.1	FLOOD RISK
2.005	0804	125.456	1.174	0.000	2.44	0.0	52.0	FLOOD RISK
5.000	0863	125.334	0.835	15.462	0.59	0.0	10.2	FLOOD
2.006	0865	125.315	1.042	1.686	2.44	0.0	50.6	FLOOD
1.005	0816	125.257	1.012	101.243	1.83	0.0	86.4	FLOOD
1.006	0908	125.117	1.305	37.207	1.58	0.0	186.8	FLOOD
6.000	Private (D2b)	123.652	0.252	0.000	0.33	0.0	26.2	SURCHARGED
6.001	314 (D2b)	123.648	0.348	0.000	0.03	0.0	5.0	SURCHARGED
1.007	8	123.317	0.377	0.000	0.45	0.0	193.4	SURCHARGED
7.000	Private (D2b)	123.974	1.574	0.000	0.00	0.0	0.1	FLOOD RISK
7.001	318 (D2b)	123.974	1.734	0.000	0.06	0.0	1.1	FLOOD RISK
1.008	8a	123.054	0.954	0.000	0.56	0.0	196.7	SURCHARGED
8.000	Ex MH	125.744	0.364	34.272	1.27	0.0	20.6	FLOOD
8.001	0991	125.744	0.943	2.892	0.75	0.0	26.4	FLOOD
8.002	0992	125.705	0.967	11.773	0.82	0.0	38.1	FLOOD
9.000	0827	125.597	0.857	7.469	1.05	0.0	16.8	FLOOD
9.001	0826	125.539	0.929	19.114	1.52	0.0	51.0	FLOOD
8.003	0662	125.546	1.306	20.597	1.41	0.0	77.4	FLOOD
10.000	0801	124.984	1.143	15.161	2.14	0.0	29.3	FLOOD
8.004	27	125.253	1.563	2.617	3.18	0.0	103.5	FLOOD
8.005	Ex blind	123.635	0.000	0.000	0.98	0.0	104.1	SURCHARGED*
8.006	0823	124.759	1.554	0.000	1.22	0.0	180.9	FLOOD RISK
11.000	46 (B4b)	125.700	2.100	0.377	2.96	0.0	234.6	FLOOD
11.001	47 (B4b)	125.441	1.941	8.355	0.57	0.0	65.5	FLOOD
11.002	48	124.486	1.196	0.000	0.90	0.0	67.1	SURCHARGED
8.007	41	124.322	1.470	0.000	1.73	0.0	225.2	SURCHARGED
12.000	0666	124.570	1.248	3.433	0.92	0.0	17.3	FLOOD
12.001	0668	124.435	1.284	15.280	2.01	0.0	21.5	FLOOD
12.002	0667	124.381	1.260	6.365	1.98	0.0	25.1	FLOOD
12.003	0930	124.103	1.058	28.019	4.43	0.0	30.7	FLOOD
12.004	0931	124.036	1.023	6.440	2.71	0.0	35.3	FLOOD
12.005	0963	123.899	0.985	0.024	1.42	0.0	51.2	FLOOD
13.000	KO	123.424	0.152	2.412	0.70	0.0	19.6	FLOOD
14.000	KO	123.447	0.152	1.800	0.43	0.0	19.4	FLOOD
13.001	56a	123.475	0.705	0.000	0.33	0.0	25.9	FLOOD RISK
12.006	56 (0927)	123.507	0.964	0.000	1.73	0.0	102.3	FLOOD RISK
8.008	42	123.382	0.932	0.000	0.98	0.0	323.5	SURCHARGED
15.000	301 (D3b)	123.141	0.691	0.000	0.64	0.0	44.6	FLOOD RISK
15.001	302 (D3b)	123.059	0.709	0.000	1.52	0.0	84.4	SURCHARGED
15.002	303 (D3b)	122.973	0.653	0.000	0.52	0.0	33.8	SURCHARGED
15.003	304 (D3b)	122.964	0.754	0.000	0.74	0.0	43.7	SURCHARGED
15.004	305 (D3b)	122.959	0.789	0.000	0.29	0.0	54.1	FLOOD RISK
16.000	306 (D3b)	122.958	0.758	0.000	0.07	0.0	4.0	FLOOD RISK
15.005	307 (D3b)	122.957	0.817	0.000	0.23	0.0	63.1	FLOOD RISK
15.006	308 (D3b)	122.954	0.904	0.000	0.18	0.0	46.6	FLOOD RISK
17.000	309 (D3b)	122.951	0.751	0.000	0.06	0.0	6.0	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
15.007	310 (D3b)	122.950	0.970	0.000	0.22	0.0	47.5	SURCHARGED
15.008	311 (D3b)	122.948	1.138	0.000	0.56	0.0	84.3	SURCHARGED
1.009	9	122.842	1.087	0.000	1.48	0.0	374.6	SURCHARGED
1.010	10	122.661	1.056	0.000	1.28	0.0	344.7	FLOOD RISK
18.000	0786	125.283	0.493	22.977	1.30	0.0	7.2	FLOOD
18.001	0785	125.361	0.611	5.905	1.25	0.0	11.2	FLOOD
18.002	0875	125.098	0.536	15.881	1.45	0.0	14.5	FLOOD
19.000	0874	125.339	0.603	0.093	2.40	0.0	14.0	FLOOD
19.001	0885	124.975	0.347	0.000	0.62	0.0	16.9	FLOOD RISK
18.003	0837	124.879	0.805	0.143	1.49	0.0	33.4	FLOOD
18.004	70	124.856	1.276	1.285	1.36	0.0	80.3	FLOOD
18.005	71	124.235	1.135	0.000	0.98	0.0	69.3	FLOOD RISK
20.000	75 (B4a)	123.078	1.088	0.000	0.85	0.0	144.0	FLOOD RISK
20.001	76 (B4a)	123.064	1.294	0.000	0.72	0.0	43.0	SURCHARGED
18.006	72	123.001	1.281	0.000	1.60	0.0	115.2	SURCHARGED
21.000	77 (B4a)	123.900	1.125	0.000	0.66	0.0	116.0	FLOOD RISK
21.001	78 (B4a)	123.879	1.479	0.000	0.57	0.0	54.7	SURCHARGED
21.002	79	123.000	0.810	0.000	1.02	0.0	92.0	SURCHARGED
22.000	Private (D2b)	122.507	0.432	0.000	0.14	0.0	15.6	SURCHARGED
22.001	319 (D2b)	122.506	0.586	0.000	0.25	0.0	22.3	SURCHARGED
21.003	80	122.595	0.805	0.000	1.10	0.0	106.9	SURCHARGED
1.011	11	122.391	1.036	61.146	0.89	0.0	474.4	FLOOD
23.000	83	123.380	-0.375	0.000	0.00	0.0	0.0	OK
23.001	Ex MH	122.657	-0.258	0.000	0.22	0.0	36.3	OK
23.002	Ex MH	122.487	-0.242	0.000	0.27	0.0	36.4	OK
23.003	86	122.384	-0.226	0.000	0.33	0.0	83.2	OK
24.000	Spur (D2c)	124.003	2.033	3.157	1.73	0.0	106.1	FLOOD
24.001	91 (D2c)	123.955	2.180	15.251	1.06	0.0	18.6	FLOOD
23.004	87	122.265	0.710	0.000	0.26	0.0	40.6	SURCHARGED
25.000	94a (D2c)	122.887	1.297	6.943	0.85	0.0	59.3	FLOOD
25.001	94 (D2c)	122.878	1.563	0.000	0.51	0.0	10.4	SURCHARGED
23.005	88	122.161	1.086	0.000	0.18	0.0	39.9	SURCHARGED
1.012	12	122.073	1.463	0.000	0.59	0.0	524.1	SURCHARGED
26.000	115	121.333	0.393	0.000	0.05	0.0	7.0	SURCHARGED
26.001	116	121.332	0.872	0.000	0.01	0.0	0.9	SURCHARGED
1.013	12b	121.921	1.511	0.000	0.61	0.0	522.1	SURCHARGED
27.000	118	121.519	1.169	0.000	0.10	0.0	7.0	SURCHARGED
27.001	119	121.517	1.327	0.000	0.02	0.0	1.1	SURCHARGED
1.014	12a	121.774	1.624	27.628	1.52	0.0	378.1	FLOOD
1.015	13	120.640	0.565	0.000	1.02	0.0	369.6	SURCHARGED
1.016	13a	120.191	0.566	0.000	1.47	0.0	364.4	SURCHARGED
1.017	13b	119.968	0.423	0.000	1.22	0.0	362.0	SURCHARGED
28.000	120	120.949	0.689	0.000	0.09	0.0	9.4	FLOOD RISK
28.001	121	120.947	0.987	0.000	0.13	0.0	19.7	SURCHARGED
28.002	115 (D1a)	120.943	1.503	0.000	0.45	0.0	7.0	SURCHARGED
1.018	13c	119.702	0.337	0.000	1.65	0.0	369.4	SURCHARGED
1.019	14	119.476	0.191	0.000	1.78	0.0	369.4	SURCHARGED
29.000	96 (D3b)	120.585	-0.215	0.000	0.17	0.0	15.1	OK
30.000	Dummy (D3b)	121.652	0.432	0.000	0.00	0.0	0.0	SURCHARGED

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

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
30.001	Private (D3b)	121.652	0.452	0.000	0.02	0.0	0.6	SURCHARGED
30.002	313	120.404	-0.286	0.000	0.01	0.0	0.6	OK
29.001	96a	120.371	-0.199	0.000	0.24	0.0	15.6	OK
29.002	96b	120.314	-0.156	0.000	0.44	0.0	37.8	OK
31.000	Bld 52 TC	120.889	0.559	0.000	0.00	0.0	0.0	FLOOD RISK
32.000	Bld 52 CP	120.893	0.293	0.000	0.15	0.0	9.6	SURCHARGED
32.001	Bld 52 CP	120.891	0.391	0.000	0.12	0.0	8.8	SURCHARGED
31.001	Bld 52 TC	120.889	0.719	0.000	0.28	0.0	3.9	FLOOD RISK
29.003	96c	120.197	0.077	0.000	1.13	0.0	83.1	SURCHARGED
33.000	99a (D1c)	122.104	0.604	3.730	0.60	0.0	33.0	FLOOD
33.001	99b (D1c)	122.104	0.719	0.103	0.17	0.0	5.0	FLOOD
33.002	99 (ex MH)	121.056	-0.300	0.000	0.09	0.0	17.5	OK
33.003	Ex MH	120.520	-0.180	0.000	0.10	0.0	17.3	OK
29.004	98	119.650	-0.215	0.000	0.37	0.0	111.1	OK
1.020	15	119.250	0.015	0.000	1.07	0.0	411.2	SURCHARGED
34.000	Ex MH	119.662	-0.152	0.000	0.23	14.5	24.2	OK
1.021	16	118.763	-0.222	0.000	0.63	0.0	415.5	OK
1.022	17	117.790	0.245	0.000	2.30	0.0	420.8	SURCHARGED
1.023	18	117.465	1.395	0.000	1.11	0.0	415.2	SURCHARGED
35.000	EX MH	122.331	0.531	30.600	1.40	0.0	9.3	FLOOD
35.001	0704	122.421	1.121	21.277	0.71	0.0	9.8	FLOOD
35.002	EX MH	122.471	1.281	21.465	0.50	0.0	6.9	FLOOD
35.003	1222	122.526	1.506	5.906	0.68	0.0	9.2	FLOOD
36.000	EX MH	122.700	0.300	0.196	0.81	0.0	11.3	FLOOD
36.001	EX MH	122.562	0.379	11.750	0.70	0.0	9.3	FLOOD
36.002	0947	122.541	0.454	0.000	0.31	0.0	8.9	FLOOD RISK
35.004	0703	122.501	1.581	21.339	1.45	0.0	20.1	FLOOD
35.005	1223	122.300	1.500	80.412	1.82	0.0	25.6	FLOOD
35.006	0702	121.966	1.366	15.823	2.03	0.0	28.5	FLOOD
35.007	0701	121.697	1.297	7.338	2.42	0.0	29.5	FLOOD
35.008	0700	121.517	1.155	17.307	2.57	0.0	31.4	FLOOD
37.000	0946	122.283	0.332	1.745	1.28	0.0	9.1	FLOOD
37.001	0943	122.158	0.484	0.000	0.61	0.0	12.9	FLOOD RISK
37.002	0940	122.043	0.693	0.000	1.00	0.0	20.7	FLOOD RISK
37.003	0706	121.814	0.690	0.000	0.64	0.0	20.5	FLOOD RISK
35.009	EX MH	121.485	1.161	4.612	2.62	0.0	35.7	FLOOD
38.000	0698	122.645	0.830	19.137	1.07	0.0	21.0	FLOOD
38.001	1202	122.195	0.775	16.310	1.51	0.0	24.2	FLOOD
38.002	1201	121.871	0.701	5.736	1.63	0.0	31.0	FLOOD
39.000	0937	122.633	0.653	3.475	1.14	0.0	6.3	FLOOD
39.001	0999	122.491	0.790	0.000	0.68	0.0	18.0	FLOOD RISK
39.002	1195	122.184	1.077	55.611	2.02	0.0	55.6	FLOOD
38.003	0998	121.707	0.733	5.174	0.90	0.0	84.9	FLOOD
38.004	0939	121.272	0.853	27.128	1.80	0.0	80.7	FLOOD
38.005	0994	120.959	0.575	68.911	4.30	0.0	105.3	FLOOD
35.010	0995	121.111	0.756	0.000	1.66	0.0	136.9	FLOOD RISK
40.000	S116a	121.156	0.606	5.647	0.66	0.0	40.2	FLOOD
40.001	S11b	121.150	0.660	0.021	0.70	0.0	38.8	FLOOD
40.002	S116c	121.142	0.702	0.000	0.58	0.0	36.9	SURCHARGED



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

PN	US/MH Name	Water Level (m)	Surch'd Depth (m)	Flooded Volume (m <sup>3</sup> )	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
40.003	S116d	121.128	0.828	0.000	0.68	0.0	39.1	SURCHARGED
40.004	S116e	121.118	0.868	0.000	0.77	0.0	44.1	SURCHARGED
35.011	S116	121.108	0.922	0.546	1.03	0.0	177.9	FLOOD
35.012	EX MH	118.657	1.384	0.000	1.38	0.0	190.3	FLOOD RISK
41.000	100	119.267	0.617	0.000	0.84	0.0	62.9	SURCHARGED
35.013	101	118.139	1.169	0.000	1.19	0.0	243.3	SURCHARGED
1.024	19	117.259	1.379	0.000	1.76	0.0	592.2	SURCHARGED
42.000	18 (D1b)	116.905	0.960	0.000	0.13	0.0	25.5	FLOOD RISK
42.001	19 (D1b)	116.906	1.021	0.000	0.13	0.0	25.9	FLOOD RISK
42.002	20 (D1b)	116.907	1.072	0.000	0.22	0.0	27.4	SURCHARGED
43.000	1 (D1b)	120.479	0.729	0.000	1.21	0.0	19.9	SURCHARGED
43.001	2 (D1b)	120.282	0.672	0.000	2.09	0.0	39.7	SURCHARGED
43.002	3 (D1b)	119.493	0.068	0.000	0.86	0.0	46.4	SURCHARGED
43.003	4 (D1b)	119.226	0.201	0.000	1.43	0.0	45.0	SURCHARGED
43.004	5 (D1b)	119.128	0.153	0.000	1.09	0.0	49.0	SURCHARGED
43.005	6 (D1b)	118.950	0.125	0.000	1.17	0.0	51.3	SURCHARGED
43.006	7 (D1b)	118.790	0.085	0.000	1.20	0.0	54.0	SURCHARGED
43.007	8 (D1b)	118.579	0.044	0.000	0.79	0.0	75.4	SURCHARGED
43.008	9 (D1b)	117.862	0.517	0.000	1.00	0.0	93.6	SURCHARGED
44.000	17 (D1b)	117.439	0.414	0.000	0.30	0.0	13.0	SURCHARGED
45.000	21 (D1b)	118.080	0.430	0.000	0.92	0.0	34.7	SURCHARGED
43.009	10 (D1b)	117.418	0.518	0.000	1.62	0.0	156.6	SURCHARGED
43.010	11 (D1b)	116.923	0.223	0.000	0.40	0.0	52.4	SURCHARGED
43.011	12 (D1b)	116.915	0.540	0.000	0.19	0.0	44.9	SURCHARGED
43.012	13 (D1b)	116.914	0.589	0.000	0.11	0.0	45.6	SURCHARGED
43.013	14 (D1b)	116.911	0.866	0.000	0.13	0.0	46.7	SURCHARGED
42.003	15 (D1b)	116.909	1.094	0.000	0.17	0.0	32.8	SURCHARGED
42.004	16 (D1b)	116.907	1.367	0.000	0.46	0.0	32.6	SURCHARGED
46.000	Dummy	118.130	-0.225	0.000	0.00	0.0	0.0	OK
47.000	HWD 1	121.047	1.072	0.000	1.02	0.0	63.5	FLOOD RISK
47.001	HWD 2	119.619	1.004	0.000	1.34	0.0	84.2	SURCHARGED
46.001	99	117.331	-0.089	0.000	0.67	0.0	88.2	OK
1.025	20	116.958	1.198	0.000	2.13	0.0	583.0	SURCHARGED
48.000	Private	118.042	-0.108	0.000	0.17	0.0	7.0	OK
1.026	21	116.476	0.696	0.000	2.14	0.0	566.7	SURCHARGED
49.000	Ex MH	120.258	0.683	8.037	1.26	0.0	47.5	FLOOD
49.001	Ex MH	120.024	1.019	4.043	1.53	0.0	111.3	FLOOD
49.002	Ex MH	118.758	0.273	0.000	1.89	0.0	127.7	FLOOD RISK
49.003	Ex MH	118.190	-0.184	0.000	0.32	0.0	129.5	OK
1.027	22	116.407	0.657	0.000	1.21	0.0	602.0	SURCHARGED
1.028	23	116.158	0.903	0.000	1.85	0.0	599.6	SURCHARGED
1.029	Pond	116.102	1.062	464.818	2.49	0.0	421.3	FLOOD
1.030	26	115.581	0.611	81.420	2.60	0.0	393.3	FLOOD
1.031	PI	115.094	0.354	0.000	2.10	0.0	393.3	FLOOD RISK*