APPENDIX I
CALCULATIONS

Existing Network Details for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	18.793	0.200	94.0	0.036	5.00	0.0	0.600	o	150
1.001	13.036	0.200	65.2	0.037	0.00	0.0	0.600	o	150
1.002	27.113	0.300	90.4	0.037	0.00	0.0	0.600	o	150
2.000	19.824	0.000	0.0	0.034	5.00	0.0	0.600	o	150
1.003	29.277	0.250	117.1	0.038	0.00	0.0	0.600	o	150
3.000	16.323	0.160	102.0	0.000	5.00	0.0	0.600	\/	-1
3.001	29.730	0.940	31.6	0.000	0.00	0.0	0.600	\/	-2
3.002	20.210	0.600	33.7	0.000	0.00	0.0	0.600	\/	-2
3.003	23.867	0.350	68.2	0.000	0.00	0.0	0.600	\/	-2
1.004	5.799	0.260	22.3	0.000	0.00	0.0	0.600	oo	-6
1.005	10.342	0.290	35.7	0.000	0.00	0.0	0.600	\/	-2
4.000	32.723	0.600	54.5	0.000	5.00	0.0	0.600	\/	-2
1.006	21.936	0.500	43.9	0.071	0.00	0.0	0.600	\/	-3
1.007	42.538	1.350	31.5	0.000	0.00	0.0	0.600	o	300

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Vel (m/s)	Cap (l/s)
1.000	52.900	0.036	0.0	1.04	18.3
1.001	52.700	0.073	0.0	1.25	22.0
1.002	52.500	0.110	0.0	1.06	18.7
2.000	52.200	0.034	0.0	0.00	0.0
1.003	52.200	0.182	0.0	0.93	16.4
3.000	54.000	0.000	0.0	3.58	2586.8
3.001	53.840	0.000	0.0	8.72	18656.3
3.002	52.900	0.000	0.0	8.45	18077.2
3.003	52.300	0.000	0.0	5.93	12696.5
1.004	51.950	0.182	0.0	3.34	471.4
1.005	51.690	0.182	0.0	8.21	17567.7
4.000	52.000	0.000	0.0	6.64	14200.4
1.006	51.400	0.253	0.0	4.72	2296.7
1.007	50.900	0.253	0.0	2.81	198.7

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Existing Network Details for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
5.000	23.620	0.150	157.5	0.049	5.00	0.0	0.600	o	150
5.001	29.508	0.200	147.5	0.039	0.00	0.0	0.600	o	150
5.002	18.801	0.150	125.3	0.012	0.00	0.0	0.600	o	150
5.003	20.764	0.150	138.4	0.036	0.00	0.0	0.600	o	150
6.000	11.646	0.100	116.5	0.000	5.00	0.0	0.600	o	300
6.001	18.396	1.600	11.5	0.000	0.00	0.0	0.600	\/	-1
5.004	27.656	1.800	15.4	0.020	0.00	0.0	0.600	\/	-4
7.000	35.264	0.228	154.7	0.059	5.00	0.0	0.600	o	225
5.005	36.560	0.950	38.5	0.000	0.00	0.0	0.600	\/	-4
1.008	20.868	0.750	27.8	0.040	0.00	0.0	0.600	\/	-4
8.000	23.378	0.475	49.2	0.102	5.00	0.0	0.600	o	150
8.001	10.822	0.200	54.1	0.014	0.00	0.0	0.600	o	225

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Vel (m/s)	Cap (l/s)
5.000	52.950	0.049	0.0	0.80	14.1
5.001	52.800	0.088	0.0	0.83	14.6
5.002	52.600	0.100	0.0	0.90	15.8
5.003	52.450	0.136	0.0	0.85	15.1
6.000	54.000	0.000	0.0	1.46	102.9
6.001	53.900	0.000	0.0	10.68	7724.4
5.004	52.300	0.156	0.0	10.31	12278.5
7.000	50.728	0.059	0.0	1.05	41.7
5.005	50.500	0.215	0.0	6.51	7752.4
1.008	49.550	0.508	0.0	7.66	9120.1
8.000	49.900	0.102	0.0	1.44	25.4
8.001	49.350	0.116	0.0	1.78	70.9

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Existing Network Details for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
9.000	27.801	0.375	74.1	0.053	5.00	0.0	0.600	o	150
8.002	6.578	0.050	131.6	0.020	0.00	0.0	0.600	o	150
8.003	16.411	0.100	164.1	0.000	0.00	0.0	0.600	o	150
8.004	17.555	0.100	175.5	0.000	0.00	0.0	0.600	o	225
10.000	35.749	0.500	71.5	0.056	5.00	0.0	0.600	o	225
8.005	11.847	0.075	158.0	0.022	0.00	0.0	0.600	o	225
11.000	49.312	0.100	493.1	0.000	5.00	0.0	0.600	\/	-2
8.006	27.240	0.100	272.4	0.020	0.00	0.0	0.600	o	150
1.009	31.432	0.100	314.3	0.000	0.00	0.0	0.600	\/	-5
1.010	43.754	0.150	291.7	0.016	0.00	0.0	0.600	o	300
1.011	13.410	0.060	223.5	0.000	0.00	0.0	0.600	o	300
12.000	18.963	0.100	189.6	0.000	5.00	0.0	0.600	o	150
12.001	18.433	0.160	115.2	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Vel (m/s)	Cap (l/s)
9.000	49.600	0.053	0.0	1.17	20.7
8.002	49.150	0.189	0.0	0.87	15.5
8.003	49.100	0.189	0.0	0.78	13.8
8.004	49.000	0.189	0.0	0.98	39.1
10.000	49.400	0.056	0.0	1.55	61.6
8.005	48.900	0.267	0.0	1.04	41.3
11.000	48.850	0.000	0.0	2.20	4704.0
8.006	48.750	0.287	0.0	0.60	10.7
1.009	48.650	0.795	0.0	2.56	4541.9
1.010	48.550	0.811	0.0	0.92	64.7
1.011	48.400	0.811	0.0	1.05	74.0
12.000	48.600	0.000	0.0	0.73	12.8
12.001	48.500	0.000	0.0	0.94	16.5

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Existing Network Details for NETWORK 1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.012	12.498	0.090	138.9	0.000	0.00	0.0	0.600	o	150

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ DWF (l/s)	Vel (m/s)	Cap (l/s)
1.012	48.340	0.811	0.0	0.85	15.0

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
1(1)	54.500	1.600	1200	1.000	52.900	150				
2(1)	53.900	1.200	1200	1.001	52.700	150	1.000	52.700	150	
3(1)	53.700	1.200	1200	1.002	52.500	150	1.001	52.500	150	
15(1)	53.800	1.600	1200	2.000	52.200	150				
4(1)	53.500	1.300	1200	1.003	52.200	150	1.002	52.200	150	
							2.000	52.200	150	
17(1)	55.000	1.000	1200	3.000	54.000	-1				
18(1)	54.580	0.740	1200	3.001	53.840	-2	3.000	53.840	-1	
19(1)	53.650	0.750	1200	3.002	52.900	-2	3.001	52.900	-2	
20(1)	52.920	0.620	1200	3.003	52.300	-2	3.002	52.300	-2	
5(1)	52.700	0.750	1500	1.004	51.950	-6	1.003	51.950	150	
							3.003	51.950	-2	
6(1)	52.500	0.810	1200	1.005	51.690	-2	1.004	51.690	-6	
16(1)	53.000	1.000	1200	4.000	52.000	-2				
7(1)	52.700	1.300	1200	1.006	51.400	-3	1.005	51.400	-2	
							4.000	51.400	-2	
8(1)	52.450	1.550	1200	1.007	50.900	300	1.006	50.900	-3	
21(1)	54.200	1.250	1200	5.000	52.950	150				
22(1)	54.200	1.400	1200	5.001	52.800	150	5.000	52.800	150	
23(1)	55.150	2.550	1200	5.002	52.600	150	5.001	52.600	150	
24(1)	54.350	1.900	1200	5.003	52.450	150	5.002	52.450	150	
27(1)	54.600	0.600	1200	6.000	54.000	300				
28(1)	54.600	0.700	1200	6.001	53.900	-1	6.000	53.900	300	
25(1)	53.300	1.000	1200	5.004	52.300	-4	5.003	52.300	150	
							6.001	52.300	-1	
29(1)	53.000	2.272	1200	7.000	50.728	225				
26(1)	51.270	0.770	1200	5.005	50.500	-4	5.004	50.500	-4	
							7.000	50.500	225	
9(1)	50.400	0.850	1425	1.008	49.550	-4	1.007	49.550	300	
							5.005	49.550	-4	
30(1)	51.300	1.400	1200	8.000	49.900	150				
31(1)	50.800	1.450	1200	8.001	49.350	225	8.000	49.425	150	
37(1)	51.000	1.400	1200	9.000	49.600	150				
32(1)	50.600	1.450	1200	8.002	49.150	150	8.001	49.150	225	
							9.000	49.225	150	75
33(1)	50.450	1.350	1200	8.003	49.100	150	8.002	49.100	150	
34(1)	50.200	1.200	1200	8.004	49.000	225	8.003	49.000	150	
39(1)	50.850	1.450	1200	10.000	49.400	225				
35(1)	50.400	1.500	1200	8.005	48.900	225	8.004	48.900	225	
							10.000	48.900	225	
38(1)	49.800	0.950	1200	11.000	48.850	-2				
36(1)	50.200	1.450	1200	8.006	48.750	150	8.005	48.825	225	150
							11.000	48.750	-2	
10(1)	49.900	1.250	1200	1.009	48.650	-5	1.008	48.800	-4	150
							8.006	48.650	150	
11(1)	49.500	0.950	1200	1.010	48.550	300	1.009	48.550	-5	

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18 Frogmore Road
Hemel Hempstead
Hertfordshire

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Manhole Schedules for NETWORK 1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Diam.,L*W (mm)	Pipe Out PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	Pipes In PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
12(1)	49.300	0.900	1200	1.011	48.400	300	1.010	48.400	300	
40(1)	49.600	1.000	1200	12.000	48.600	150				
41(1)	49.400	0.900	1200	12.001	48.500	150	12.000	48.500	150	
13(1)	49.500	1.160	1200	1.012	48.340	150	1.011	48.340	300	
							12.001	48.340	150	
14	49.300	1.050	600 x 975		OUTFALL		1.012	48.250	150	

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	o	150	1(1)	54.500	52.900	1.450	1200
1.001	o	150	2(1)	53.900	52.700	1.050	1200
1.002	o	150	3(1)	53.700	52.500	1.050	1200
2.000	o	150	15(1)	53.800	52.200	1.450	1200
1.003	o	150	4(1)	53.500	52.200	1.150	1200
3.000	\/	-1	17(1)	55.000	54.000	0.999	1200
3.001	\/	-2	18(1)	54.580	53.840	0.739	1200
3.002	\/	-2	19(1)	53.650	52.900	0.749	1200
3.003	\/	-2	20(1)	52.920	52.300	0.619	1200
1.004	oo	-6	5(1)	52.700	51.950	0.450	1500
1.005	\/	-2	6(1)	52.500	51.690	0.809	1200
4.000	\/	-2	16(1)	53.000	52.000	0.999	1200
1.006	\/	-3	7(1)	52.700	51.400	1.299	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.000	18.793	94.0	2(1)	53.900	52.700	1.050	1200
1.001	13.036	65.2	3(1)	53.700	52.500	1.050	1200
1.002	27.113	90.4	4(1)	53.500	52.200	1.150	1200
2.000	19.824	0.0	4(1)	53.500	52.200	1.150	1200
1.003	29.277	117.1	5(1)	52.700	51.950	0.600	1500
3.000	16.323	102.0	18(1)	54.580	53.840	0.739	1200
3.001	29.730	31.6	19(1)	53.650	52.900	0.749	1200
3.002	20.210	33.7	20(1)	52.920	52.300	0.619	1200
3.003	23.867	68.2	5(1)	52.700	51.950	0.749	1500
1.004	5.799	22.3	6(1)	52.500	51.690	0.510	1200
1.005	10.342	35.7	7(1)	52.700	51.400	1.299	1200
4.000	32.723	54.5	7(1)	52.700	51.400	1.299	1200
1.006	21.936	43.9	8(1)	52.450	50.900	1.549	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.007	o	300	8(1)	52.450	50.900	1.250	1200
5.000	o	150	21(1)	54.200	52.950	1.100	1200
5.001	o	150	22(1)	54.200	52.800	1.250	1200
5.002	o	150	23(1)	55.150	52.600	2.400	1200
5.003	o	150	24(1)	54.350	52.450	1.750	1200
6.000	o	300	27(1)	54.600	54.000	0.300	1200
6.001	\/	-1	28(1)	54.600	53.900	0.699	1200
5.004	\/	-4	25(1)	53.300	52.300	0.999	1200
7.000	o	225	29(1)	53.000	50.728	2.047	1200
5.005	\/	-4	26(1)	51.270	50.500	0.769	1200
1.008	\/	-4	9(1)	50.400	49.550	0.849	1425
8.000	o	150	30(1)	51.300	49.900	1.250	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
1.007	42.538	31.5	9(1)	50.400	49.550	0.550	1425
5.000	23.620	157.5	22(1)	54.200	52.800	1.250	1200
5.001	29.508	147.5	23(1)	55.150	52.600	2.400	1200
5.002	18.801	125.3	24(1)	54.350	52.450	1.750	1200
5.003	20.764	138.4	25(1)	53.300	52.300	0.850	1200
6.000	11.646	116.5	28(1)	54.600	53.900	0.400	1200
6.001	18.396	11.5	25(1)	53.300	52.300	0.999	1200
5.004	27.656	15.4	26(1)	51.270	50.500	0.769	1200
7.000	35.264	154.7	26(1)	51.270	50.500	0.545	1200
5.005	36.560	38.5	9(1)	50.400	49.550	0.849	1425
1.008	20.868	27.8	10(1)	49.900	48.800	1.099	1200
8.000	23.378	49.2	31(1)	50.800	49.425	1.225	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
8.001	o	225	31(1)	50.800	49.350	1.225	1200
9.000	o	150	37(1)	51.000	49.600	1.250	1200
8.002	o	150	32(1)	50.600	49.150	1.300	1200
8.003	o	150	33(1)	50.450	49.100	1.200	1200
8.004	o	225	34(1)	50.200	49.000	0.975	1200
10.000	o	225	39(1)	50.850	49.400	1.225	1200
8.005	o	225	35(1)	50.400	48.900	1.275	1200
11.000	\/	-2	38(1)	49.800	48.850	0.949	1200
8.006	o	150	36(1)	50.200	48.750	1.300	1200
1.009	\/	-5	10(1)	49.900	48.650	1.249	1200
1.010	o	300	11(1)	49.500	48.550	0.650	1200
1.011	o	300	12(1)	49.300	48.400	0.600	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
8.001	10.822	54.1	32(1)	50.600	49.150	1.225	1200
9.000	27.801	74.1	32(1)	50.600	49.225	1.225	1200
8.002	6.578	131.6	33(1)	50.450	49.100	1.200	1200
8.003	16.411	164.1	34(1)	50.200	49.000	1.050	1200
8.004	17.555	175.5	35(1)	50.400	48.900	1.275	1200
10.000	35.749	71.5	35(1)	50.400	48.900	1.275	1200
8.005	11.847	158.0	36(1)	50.200	48.825	1.150	1200
11.000	49.312	493.1	36(1)	50.200	48.750	1.449	1200
8.006	27.240	272.4	10(1)	49.900	48.650	1.100	1200
1.009	31.432	314.3	11(1)	49.500	48.550	0.949	1200
1.010	43.754	291.7	12(1)	49.300	48.400	0.600	1200
1.011	13.410	223.5	13(1)	49.500	48.340	0.860	1200

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PIPELINE SCHEDULES for NETWORK 1.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
12.000	o	150	40(1)	49.600	48.600	0.850	1200
12.001	o	150	41(1)	49.400	48.500	0.750	1200
1.012	o	150	13(1)	49.500	48.340	1.010	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH DIAM., L*W (mm)
12.000	18.963	189.6	41(1)	49.400	48.500	0.750	1200
12.001	18.433	115.2	13(1)	49.500	48.340	1.010	1200
1.012	12.498	138.9	14	49.300	48.250	0.900	600 x 975

Free Flowing Outfall Details for NETWORK 1.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.012	14	49.300	48.250	48.250	600	975

Simulation Criteria for NETWORK 1.SWS

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
PIMP (% impervious)	100	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Run Time (mins)	60
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	1
Number of Input Hydrographs	0	Number of Storage Structures	16
Number of Online Controls	4	Number of Time/Area Diagrams	0
Number of Offline Controls	0		

Synthetic Rainfall Details

Rainfall Model		FSR	Ratio R 0.385
Return Period (years)		2	Profile Type Summer
Region	England and Wales		Cv (Summer) 0.750
M5-60 (mm)	26.350		Cv (Winter) 0.840

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Synthetic Rainfall Details

Storm Duration (mins) 30

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Online Controls for NETWORK 1.SWS

Hydro-Brake® Manhole: 7(1), DS/PN: 1.006, Volume (m³): 88.5

Design Head (m) 1.000 Hydro-Brake® Type Md4 Invert Level (m) 51.400
Design Flow (l/s) 5.0 Diameter (mm) 81

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.5	1.200	5.6	3.000	8.9	7.000	13.5
0.200	3.6	1.400	6.0	3.500	9.6	7.500	14.0
0.300	3.1	1.600	6.5	4.000	10.2	8.000	14.5
0.400	3.3	1.800	6.9	4.500	10.8	8.500	14.9
0.500	3.6	2.000	7.2	5.000	11.4	9.000	15.3
0.600	4.0	2.200	7.6	5.500	12.0	9.500	15.8
0.800	4.6	2.400	7.9	6.000	12.5		
1.000	5.1	2.600	8.2	6.500	13.0		

Hydro-Brake® Manhole: 36(1), DS/PN: 8.006, Volume (m³): 105.0

Design Head (m) 1.000 Hydro-Brake® Type Md4 Invert Level (m) 48.750
Design Flow (l/s) 2.0 Diameter (mm) 51

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.200	2.2	3.000	3.5	7.000	5.4
0.200	1.0	1.400	2.4	3.500	3.8	7.500	5.6
0.300	1.1	1.600	2.6	4.000	4.1	8.000	5.7
0.400	1.3	1.800	2.7	4.500	4.3	8.500	5.9
0.500	1.4	2.000	2.9	5.000	4.5	9.000	6.1
0.600	1.6	2.200	3.0	5.500	4.8	9.500	6.2
0.800	1.8	2.400	3.1	6.000	5.0		
1.000	2.0	2.600	3.3	6.500	5.2		

Orifice Manhole: 10(1), DS/PN: 1.009, Volume (m³): 25.2

Diameter (m) 0.069 Discharge Coefficient 0.600 Invert Level (m) 48.650

Hydro-Brake® Manhole: 13(1), DS/PN: 1.012, Volume (m³): 2.5

Design Head (m) 0.700 Hydro-Brake® Type Md4 Invert Level (m) 48.340
Design Flow (l/s) 5.0 Diameter (mm) 88

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.7	0.600	4.7	1.600	7.6	2.600	9.7
0.200	4.5	0.800	5.4	1.800	8.1	3.000	10.5
0.300	3.8	1.000	6.0	2.000	8.5	3.500	11.3
0.400	3.9	1.200	6.6	2.200	9.0	4.000	12.1
0.500	4.3	1.400	7.1	2.400	9.3	4.500	12.8

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Hydro-Brake® Manhole: 13(1), DS/PN: 1.012, Volume (m³): 2.5

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
5.000	13.5	6.500	15.4	8.000	17.1	9.500	18.6
5.500	14.2	7.000	16.0	8.500	17.6		
6.000	14.8	7.500	16.5	9.000	18.1		

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Storage Structures for NETWORK 1.SWS

Porous Car Park Manhole: 1(1), DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	41.7	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	53.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 2(1), DS/PN: 1.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	41.7	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.500	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 3(1), DS/PN: 1.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	41.7	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.500	Cap Volume Depth (m)	0.400

Tank or Pond Manhole: 16(1), DS/PN: 4.000

Invert Level (m) 52.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5.0	0.700	250.0	1.400	325.0	2.100	325.0
0.100	120.0	0.800	284.0	1.500	325.0	2.200	325.0
0.200	140.0	0.900	305.0	1.600	325.0	2.300	325.0
0.300	160.0	1.000	325.0	1.700	325.0	2.400	325.0
0.400	180.0	1.100	325.0	1.800	325.0	2.500	325.0
0.500	190.0	1.200	325.0	1.900	325.0		
0.600	220.0	1.300	325.0	2.000	325.0		

Porous Car Park Manhole: 21(1), DS/PN: 5.000

Infiltration Coefficient Base (m/hr)	0.00000	Invert Level (m)	53.200
Membrane Percolation (mm/hr)	1000	Width (m)	18.0
Max Percolation (l/s)	50.0	Length (m)	10.0
Safety Factor	2.0	Slope (1:X)	200.0
Porosity	0.30	Depression Storage (mm)	5

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Porous Car Park Manhole: 21(1), DS/PN: 5.000

Evaporation (mm/day) 3 Cap Volume Depth (m) 0.400

Porous Car Park Manhole: 22(1), DS/PN: 5.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	17.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	47.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	53.200	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 23(1), DS/PN: 5.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	22.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	61.1	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 29(1), DS/PN: 7.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	32.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	88.9	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.728	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: 30(1), DS/PN: 8.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	35.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	97.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.000	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: 37(1), DS/PN: 9.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	38.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	105.6	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.800	Cap Volume Depth (m)	0.000

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Porous Car Park Manhole: 32(1), DS/PN: 8.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	17.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	47.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.500	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 33(1), DS/PN: 8.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	25.0	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.100	Cap Volume Depth (m)	0.400

Tank or Pond Manhole: 36(1), DS/PN: 8.006

Invert Level (m) 48.750

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5.0	0.700	390.0	1.400	450.0	2.100	450.0
0.100	250.0	0.800	410.0	1.500	450.0	2.200	450.0
0.200	270.0	0.900	430.0	1.600	450.0	2.300	450.0
0.300	300.0	1.000	450.0	1.700	450.0	2.400	450.0
0.400	330.0	1.100	450.0	1.800	450.0	2.500	450.0
0.500	350.0	1.200	450.0	1.900	450.0		
0.600	370.0	1.300	450.0	2.000	450.0		

Tank or Pond Manhole: 10(1), DS/PN: 1.009

Invert Level (m) 48.800

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5.0	1.400	510.0	2.800	510.0	4.200	510.0
0.200	330.0	1.600	510.0	3.000	510.0	4.400	510.0
0.400	350.0	1.800	510.0	3.200	510.0	4.600	510.0
0.600	390.0	2.000	510.0	3.400	510.0	4.800	510.0
0.800	430.0	2.200	510.0	3.600	510.0	5.000	510.0
1.000	475.0	2.400	510.0	3.800	510.0		
1.200	510.0	2.600	510.0	4.000	510.0		

Tank or Pond Manhole: 11(1), DS/PN: 1.010

Invert Level (m) 48.650

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Tank or Pond Manhole: 11(1), DS/PN: 1.010

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5.0	0.200	200.0	0.400	225.0	0.600	250.0

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Tank or Pond Manhole: 11(1), DS/PN: 1.010

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.800	275.0	2.000	275.0	3.200	275.0	4.400	275.0
1.000	275.0	2.200	275.0	3.400	275.0	4.600	275.0
1.200	275.0	2.400	275.0	3.600	275.0	4.800	275.0
1.400	275.0	2.600	275.0	3.800	275.0	5.000	275.0
1.600	275.0	2.800	275.0	4.000	275.0		
1.800	275.0	3.000	275.0	4.200	275.0		

Tank or Pond Manhole: 40(1), DS/PN: 12.000

Invert Level (m) 48.600

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	5.0	0.700	175.0	1.400	175.0	2.100	175.0
0.100	150.0	0.800	175.0	1.500	175.0	2.200	175.0
0.200	170.0	0.900	175.0	1.600	175.0	2.300	175.0
0.300	175.0	1.000	175.0	1.700	175.0	2.400	175.0
0.400	175.0	1.100	175.0	1.800	175.0	2.500	175.0
0.500	175.0	1.200	175.0	1.900	175.0		
0.600	175.0	1.300	175.0	2.000	175.0		

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

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

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

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	30 Winter	100	+40%	100/15 Summer				
1.001	30 Winter	100	+40%	100/15 Summer				
1.002	30 Winter	100	+40%	30/15 Winter				
2.000	15 Winter	100	+40%	1/15 Summer				
1.003	30 Winter	100	+40%	30/15 Summer				
3.000	15 Winter	30	0%					
3.001	15 Winter	30	0%					
3.002	15 Winter	30	0%					
3.003	240 Winter	100	+40%					
1.004	240 Winter	100	+40%	100/30 Winter				
1.005	240 Winter	100	+40%					
4.000	240 Winter	100	+40%					
1.006	240 Winter	100	+40%	1/30 Winter				
1.007	240 Winter	100	+40%					
5.000	30 Winter	100	+40%	30/15 Summer				
5.001	30 Winter	100	+40%	30/15 Summer				
5.002	15 Summer	100	+40%	1/15 Winter				
5.003	15 Summer	100	+40%	1/15 Summer				
6.000	15 Winter	30	0%					
6.001	15 Winter	30	0%					
5.004	15 Summer	100	+40%					
7.000	15 Winter	100	+40%					
5.005	15 Winter	100	+40%					
1.008	15 Winter	100	+40%					
8.000	30 Winter	100	+40%	30/15 Summer				
8.001	60 Winter	100	+40%	30/15 Summer				
9.000	30 Winter	100	+40%	30/15 Summer				
8.002	60 Winter	100	+40%	1/15 Summer				
8.003	60 Winter	100	+40%	1/15 Summer				
8.004	1440 Winter	100	+40%	30/960 Winter				
10.000	15 Winter	100	+40%	100/15 Winter				
8.005	1440 Winter	100	+40%	30/15 Summer				
11.000	1440 Winter	100	+40%					
8.006	1440 Winter	100	+40%	1/30 Winter				
1.009	1440 Winter	100	+40%	100/1440 Winter				
1.010	1440 Winter	100	+40%	1/1440 Winter				
1.011	1440 Summer	100	+40%	1/120 Summer	1/360 Summer			14
12.000	1440 Summer	100	+40%	1/1440 Winter				
12.001	1440 Winter	30	0%	1/60 Summer	1/1440 Winter			4
1.012	1440 Winter	100	+40%	1/15 Summer	1/360 Summer			13

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 1.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1(1)	53.225	0.175	0.000	1.00	0.0	17.2	SURCHARGED
1.001	2(1)	53.329	0.479	0.000	0.72	0.0	14.5	SURCHARGED
1.002	3(1)	53.361	0.711	0.000	1.04	0.0	18.5	SURCHARGED
2.000	15(1)	53.655	1.305	0.000	6.19	0.0	25.4	FLOOD RISK
1.003	4(1)	53.293	0.943	0.000	2.13	0.0	33.4	FLOOD RISK
3.000	17(1)	54.000	-0.630	0.000	0.00	0.0	0.0	OK
3.001	18(1)	53.840	-0.850	0.000	0.00	0.0	0.0	OK
3.002	19(1)	52.900	-0.850	0.000	0.00	0.0	0.0	OK
3.003	20(1)	52.440	-0.710	0.000	0.00	0.0	0.1	OK
1.004	5(1)	52.440	0.190	0.000	0.07	0.0	18.6	FLOOD RISK
1.005	6(1)	52.440	-0.100	0.000	0.00	0.0	18.4	FLOOD RISK
4.000	16(1)	52.439	-0.411	0.000	0.00	0.0	3.6	OK
1.006	7(1)	52.440	0.590	0.000	0.00	0.0	5.2	FLOOD RISK
1.007	8(1)	50.933	-0.267	0.000	0.03	0.0	5.2	OK
5.000	21(1)	53.484	0.384	0.000	1.10	0.0	14.7	SURCHARGED
5.001	22(1)	53.434	0.484	0.000	1.37	0.0	19.2	SURCHARGED
5.002	23(1)	53.459	0.709	0.000	1.29	0.0	19.1	SURCHARGED
5.003	24(1)	53.443	0.843	0.000	2.53	0.0	35.9	SURCHARGED
6.000	27(1)	54.000	-0.300	0.000	0.00	0.0	0.0	OK
6.001	28(1)	53.900	-0.630	0.000	0.00	0.0	0.0	OK
5.004	25(1)	52.356	-0.644	0.000	0.01	0.0	53.1	OK
7.000	29(1)	50.866	-0.087	0.000	0.68	0.0	26.9	OK
5.005	26(1)	50.583	-0.617	0.000	0.02	0.0	70.9	OK
1.008	9(1)	49.644	-0.606	0.000	0.03	0.0	105.7	OK
8.000	30(1)	50.221	0.171	0.000	0.95	0.0	22.9	SURCHARGED
8.001	31(1)	49.904	0.329	0.000	0.43	0.0	25.8	SURCHARGED
9.000	37(1)	49.911	0.161	0.000	0.79	0.0	15.6	SURCHARGED
8.002	32(1)	49.876	0.576	0.000	2.16	0.0	28.2	SURCHARGED
8.003	33(1)	49.667	0.417	0.000	2.10	0.0	27.0	SURCHARGED
8.004	34(1)	49.515	0.290	0.000	0.17	0.0	6.1	SURCHARGED
10.000	39(1)	49.631	0.006	0.000	0.77	0.0	45.0	SURCHARGED
8.005	35(1)	49.514	0.389	0.000	0.25	0.0	8.8	SURCHARGED
11.000	38(1)	49.513	-0.187	0.000	0.00	0.0	0.0	FLOOD RISK
8.006	36(1)	49.513	0.613	0.000	0.11	0.0	1.1	SURCHARGED
1.009	10(1)	49.487	0.037	0.000	0.00	0.0	6.5	SURCHARGED
1.010	11(1)	49.165	0.315	0.000	0.17	0.0	10.4	SURCHARGED
1.011	12(1)	49.305	0.605	6.479	0.18	0.0	10.9	FLOOD
12.000	40(1)	49.007	0.257	0.000	0.09	0.0	1.1	SURCHARGED
12.001	41(1)	49.400	0.750	0.213	0.09	0.0	1.4	FLOOD
1.012	13(1)	49.501	1.011	4.679	0.37	0.0	5.0	FLOOD

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Existing Network Details for NETWORK 2.SWS

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	1.000	19.430	1.750	11.1	0.043	5.00	0.600	o	150
*	2.000	24.177	0.200	120.9	0.039	5.00	0.600	o	150
*	1.001	41.815	0.850	49.2	0.017	0.00	0.600	o	150
*	1.002	14.316	0.600	23.9	0.092	0.00	0.600	o	150
*	1.003	14.260	0.350	40.7	0.000	0.00	0.600	o	225
*	3.000	22.736	0.150	151.6	0.026	5.00	0.600	o	225
*	1.004	16.041	0.100	160.4	0.055	0.00	0.600	o	225
*	4.000	37.716	2.650	14.2	0.000	5.00	0.600	\/	-1
*	1.005	46.238	0.350	132.1	0.000	0.00	0.600	o	600
*	1.006	8.984	0.700	12.8	0.000	0.00	0.600	o	150
*	1.007	19.367	0.200	96.8	0.000	0.00	0.600	ooo	-2
*	1.008	15.385	0.100	153.8	0.000	0.00	0.600	\/	-3
*	1.009	48.456	1.150	42.1	0.000	0.00	0.600	\/	-3

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	1(2)	57.504	56.000	1.354	56.904	54.250	2.504		1200
*	2.000	17(2)	55.850	54.450	1.250	56.904	54.250	2.504		1200
*	1.001	2(2)	56.904	54.250	2.504	54.833	53.400	1.283		1200
*	1.002	3(2)	54.833	53.400	1.283	54.300	52.800	1.350		1200
*	1.003	4(2)	54.300	52.800	1.275	54.400	52.450	1.725		1200
*	3.000	18(2)	54.050	52.600	1.225	54.400	52.450	1.725		1200
*	1.004	5(2)	54.400	52.450	1.725	53.000	52.350	0.425		1200
*	4.000	19(2)	55.700	55.000	0.699	53.000	52.350	0.649		1200
*	1.005	6(2)	53.000	52.350	0.050	53.000	52.000	0.400		1200
*	1.006	7(2)	53.000	52.000	0.850	52.000	51.300	0.550	Hydro-Brake®	1200
*	1.007	8(2)	52.000	51.300	0.699	52.400	51.100	1.299		1200
*	1.008	9(2)	52.400	51.100	1.299	51.750	51.000	0.749		1200
*	1.009	10(2)	51.750	51.000	0.749	50.500	49.850	0.649		1200

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Existing Network Details for NETWORK 2.SWS

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	1.010	26.523	0.300	88.4	0.000	0.00	0.600	\/	-3
*	1.011	33.907	0.700	48.4	0.000	0.00	0.600	\/	-3
*	5.000	27.723	0.150	184.8	0.046	5.00	0.600	o	225
*	5.001	26.239	0.150	174.9	0.071	0.00	0.600	o	225
*	1.012	19.090	0.150	127.3	0.000	0.00	0.600	ooo	-2
*	6.000	19.722	0.200	98.6	0.050	5.00	0.600	o	225
*	6.001	36.818	0.300	122.7	0.031	0.00	0.600	o	225
*	6.002	25.927	0.200	129.6	0.053	0.00	0.600	o	225
*	6.003	32.960	0.200	164.8	0.021	0.00	0.600	o	225
*	6.004	34.631	0.200	173.2	0.077	0.00	0.600	o	225
*	6.005	22.760	0.150	151.7	0.058	0.00	0.600	o	225
*	7.000	19.531	0.200	97.7	0.038	5.00	0.600	o	150
*	7.001	28.539	0.200	142.7	0.028	0.00	0.600	o	225
*	7.002	22.781	0.200	113.9	0.056	0.00	0.600	o	225
*	7.003	21.225	0.200	106.1	0.027	0.00	0.600	o	300
*	7.004	9.834	0.600	16.4	0.013	0.00	0.600	o	300

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.010	11(2)	50.500	49.850	0.649	50.200	49.550	0.649		1200
*	1.011	12(2)	50.200	49.550	0.649	50.300	48.850	1.449		1200
*	5.000	20(2)	50.300	49.150	0.925	50.150	49.000	0.925		1200
*	5.001	21(2)	50.150	49.000	0.925	50.300	48.850	1.225		1200
*	1.012	13(2)	50.300	48.850	1.449	50.100	48.700	1.399	Orifice	1200
*	6.000	22(2)	52.063	50.500	1.338	51.980	50.300	1.455		1200
*	6.001	23(2)	51.980	50.300	1.455	51.279	50.000	1.054		1200
*	6.002	24(2)	51.279	50.000	1.054	51.950	49.800	1.925	Orifice	1200
*	6.003	25(2)	51.950	49.800	1.925	51.624	49.600	1.799		1200
*	6.004	26(2)	51.624	49.600	1.799	51.500	49.400	1.875		1200
*	6.005	27(2)	51.500	49.400	1.875	50.900	49.250	1.425	Hydro-Brake®	1200
*	7.000	31(2)	53.200	51.900	1.150	53.000	51.700	1.150		1200
*	7.001	32(2)	53.000	51.700	1.075	53.000	51.500	1.275		1200
*	7.002	33(2)	53.000	51.500	1.275	52.400	51.300	0.875	Orifice	1200
*	7.003	34(2)	52.400	51.300	0.800	51.900	51.100	0.500		1200
*	7.004	35(2)	51.900	51.100	0.500	51.209	50.500	0.409		1200

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Existing Network Details for NETWORK 2.SWS

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	7.005	19.595	1.250	15.7	0.000	0.00	0.600	\/	-1
*	6.006	24.696	0.250	98.8	0.000	0.00	0.600	\/	-1
*	6.007	29.647	0.200	148.2	0.000	0.00	0.600	\/	-1
*	8.000	26.585	0.200	132.9	0.021	5.00	0.600	o	225
*	8.001	30.860	0.325	95.0	0.051	0.00	0.600	o	225
*	6.008	9.794	0.100	97.9	0.055	0.00	0.600	o	300
*	1.013	19.558	0.100	195.6	0.000	0.00	0.600	o	225
*	1.014	49.157	1.300	37.8	0.000	0.00	0.600	o	375

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	7.005	36(2)	51.209	50.500	0.708	50.900	49.250	1.649		1200
*	6.006	28(2)	50.900	49.250	1.649	51.000	49.000	1.999		1200
*	6.007	29(2)	51.000	49.000	1.999	50.900	48.800	2.099		1200
*	8.000	37(2)	50.900	49.400	1.275	50.900	49.200	1.475		1200
*	8.001	38(2)	50.900	49.200	1.475	50.900	48.875	1.800	Orifice	1200
*	6.008	30(2)	50.900	48.800	1.800	50.100	48.700	1.100	Orifice	1200
*	1.013	14(2)	50.100	48.700	1.175	50.000	48.600	1.175	Hydro-Brake®	1200
*	1.014	15(2)	50.000	48.600	1.025	49.954	47.300	2.279		1200

Free Flowing Outfall Details for NETWORK 2.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.014	16	49.954	47.300	47.400	0	0

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Simulation Criteria for NETWORK 2.SWS

Volumetric Runoff Coeff	0.750	Foul Sewage per hectare (l/s)	0.000
PIMP (% impervious)	100	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Run Time (mins)	60
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	1

Number of Input Hydrographs	0	Number of Storage Structures	20
Number of Online Controls	8	Number of Time/Area Diagrams	0
Number of Offline Controls	0		

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	26.350	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for NETWORK 2.SWS

Hydro-Brake® Manhole: 7(2), DS/PN: 1.006, Volume (m³): 13.9

Design Head (m) 1.000 Hydro-Brake® Type Md4 Invert Level (m) 52.000
Design Flow (l/s) 2.0 Diameter (mm) 51

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.200	2.2	3.000	3.5	7.000	5.4
0.200	1.0	1.400	2.4	3.500	3.8	7.500	5.6
0.300	1.1	1.600	2.6	4.000	4.1	8.000	5.7
0.400	1.3	1.800	2.7	4.500	4.3	8.500	5.9
0.500	1.4	2.000	2.9	5.000	4.5	9.000	6.1
0.600	1.6	2.200	3.0	5.500	4.8	9.500	6.2
0.800	1.8	2.400	3.1	6.000	5.0		
1.000	2.0	2.600	3.3	6.500	5.2		

Orifice Manhole: 13(2), DS/PN: 1.012, Volume (m³): 42.1

Diameter (m) 0.049 Discharge Coefficient 0.600 Invert Level (m) 48.850

Orifice Manhole: 24(2), DS/PN: 6.002, Volume (m³): 2.9

Diameter (m) 0.021 Discharge Coefficient 0.600 Invert Level (m) 50.000

Hydro-Brake® Manhole: 27(2), DS/PN: 6.005, Volume (m³): 3.7

Design Head (m) 1.000 Hydro-Brake® Type Md4 Invert Level (m) 49.400
Design Flow (l/s) 2.0 Diameter (mm) 51

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.2	1.200	2.2	3.000	3.5	7.000	5.4
0.200	1.0	1.400	2.4	3.500	3.8	7.500	5.6
0.300	1.1	1.600	2.6	4.000	4.1	8.000	5.7
0.400	1.3	1.800	2.7	4.500	4.3	8.500	5.9
0.500	1.4	2.000	2.9	5.000	4.5	9.000	6.1
0.600	1.6	2.200	3.0	5.500	4.8	9.500	6.2
0.800	1.8	2.400	3.1	6.000	5.0		
1.000	2.0	2.600	3.3	6.500	5.2		

Orifice Manhole: 33(2), DS/PN: 7.002, Volume (m³): 2.8

Diameter (m) 0.021 Discharge Coefficient 0.600 Invert Level (m) 51.500

Orifice Manhole: 38(2), DS/PN: 8.001, Volume (m³): 2.9

Diameter (m) 0.021 Discharge Coefficient 0.600 Invert Level (m) 49.200

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Orifice Manhole: 30(2), DS/PN: 6.008, Volume (m³): 24.1

Diameter (m) 0.069 Discharge Coefficient 0.600 Invert Level (m) 48.800

Hydro-Brake® Manhole: 14(2), DS/PN: 1.013, Volume (m³): 6.0

Design Head (m) 1.000 Hydro-Brake® Type Md4 Invert Level (m) 48.700
Design Flow (l/s) 10.2 Diameter (mm) 115

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.3	1.200	11.3	3.000	17.9	7.000	27.3
0.200	8.5	1.400	12.2	3.500	19.3	7.500	28.2
0.300	8.4	1.600	13.0	4.000	20.6	8.000	29.1
0.400	7.4	1.800	13.8	4.500	21.9	8.500	30.0
0.500	7.5	2.000	14.6	5.000	23.0	9.000	30.9
0.600	8.0	2.200	15.3	5.500	24.2	9.500	31.8
0.800	9.2	2.400	16.0	6.000	25.2		
1.000	10.3	2.600	16.6	6.500	26.3		

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Storage Structures for NETWORK 2.SWS

Porous Car Park Manhole: 1(2), DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	24.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	66.7	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	56.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 17(2), DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	25.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	69.4	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.400	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: 2(2), DS/PN: 1.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	35.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	97.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.200	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 3(2), DS/PN: 1.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	44.4	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	53.400	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 5(2), DS/PN: 1.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	27.8	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.200	Cap Volume Depth (m)	0.400

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Tank or Pond Manhole: 6(2), DS/PN: 1.005

Invert Level (m) 52.450

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	975.0	1.400	1050.0	2.800	1050.0	4.200	1050.0
0.200	1050.0	1.600	1050.0	3.000	1050.0	4.400	1050.0
0.400	1050.0	1.800	1050.0	3.200	1050.0	4.600	1050.0
0.600	1050.0	2.000	1050.0	3.400	1050.0	4.800	1050.0
0.800	1050.0	2.200	1050.0	3.600	1050.0	5.000	1050.0
1.000	1050.0	2.400	1050.0	3.800	1050.0		
1.200	1050.0	2.600	1050.0	4.000	1050.0		

Porous Car Park Manhole: 20(2), DS/PN: 5.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	22.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 21(2), DS/PN: 5.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	22.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 22(2), DS/PN: 6.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	38.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	105.6	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.500	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 23(2), DS/PN: 6.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	37.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	102.8	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.300	Cap Volume Depth (m)	0.400

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Complex Manhole: 24(2), DS/PN: 6.002

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	17.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	47.2	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.000	Cap Volume Depth (m)	0.400

Cellular Storage

Invert Level (m)	50.000	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	64.0	64.0	0.500	0.0	76.8
0.400	64.0	76.8			

Porous Car Park Manhole: 25(2), DS/PN: 6.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	38.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	105.6	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.800	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: 26(2), DS/PN: 6.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	40.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	111.1	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.600	Cap Volume Depth (m)	0.400

Cellular Storage Manhole: 27(2), DS/PN: 6.005

Invert Level (m)	49.400	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	25.0	25.0	0.500	0.0	33.0
0.400	25.0	33.0			

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Porous Car Park Manhole: 31(2), DS/PN: 7.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	44.4	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.900	Cap Volume Depth (m)	0.400

Complex Manhole: 32(2), DS/PN: 7.001

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	13.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	36.1	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.700	Cap Volume Depth (m)	0.400

Complex Manhole: 33(2), DS/PN: 7.002

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	12.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	33.3	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.500	Cap Volume Depth (m)	0.400

Cellular Storage

Invert Level (m)	51.500	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	150.0	150.0	0.500	0.0	170.0
0.400	150.0	170.0			

Porous Car Park Manhole: 37(2), DS/PN: 8.000

Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.30
Membrane Percolation (mm/hr)	1000	Invert Level (m)	49.400
Max Percolation (l/s)	33.3	Width (m)	12.0
Safety Factor	2.0	Length (m)	10.0

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Porous Car Park Manhole: 37(2), DS/PN: 8.000

Slope (1:X)	200.0	Evaporation (mm/day)	3
Depression Storage (mm)	5	Cap Volume Depth (m)	0.400

Complex Manhole: 38(2), DS/PN: 8.001

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	30.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	83.3	Slope (1:X)	200.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	49.200	Cap Volume Depth (m)	0.400

Cellular Storage

Invert Level (m)	49.200	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	49.0	49.0	0.500	0.0	60.2
0.400	49.0	60.2			

Cellular Storage Manhole: 14(2), DS/PN: 1.013

Invert Level (m)	48.700	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	169.0	169.0	0.500	0.0	189.8
0.400	169.0	189.8			

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 2.SWS

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)	1, 30, 100
Climate Change (%)	0, 0, 40

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18 Frogmore Road
Hemel Hempstead
Hertfordshire HP3 9RT

Date 01/01/0001 | Designed By IMarks
File Network 2.MDX | Checked By
XP Solutions | Network W.12.5

Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 2.SWS

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	+40%					
2.000	30 Winter	100	+40%					
1.001	30 Winter	100	+40%	100/30 Winter				
1.002	30 Winter	100	+40%	100/15 Summer				
1.003	15 Winter	100	+40%	100/15 Summer				
3.000	15 Winter	100	+40%	30/15 Winter				
1.004	15 Winter	100	+40%	30/15 Summer				
4.000	15 Winter	30	0%					
1.005	960 Winter	100	+40%					
1.006	960 Winter	100	+40%	1/15 Summer				
1.007	960 Winter	100	+40%					
1.008	960 Winter	100	+40%					
1.009	960 Winter	100	+40%					
1.010	120 Winter	100	+40%					
1.011	120 Winter	100	+40%					
5.000	120 Winter	100	+40%	30/30 Winter				
5.001	120 Winter	100	+40%	30/15 Summer				
1.012	120 Winter	100	+40%	1/30 Winter				
6.000	960 Winter	100	+40%	100/480 Winter				
6.001	960 Winter	100	+40%	100/60 Winter				
6.002	960 Winter	100	+40%	1/480 Winter				
6.003	360 Winter	100	+40%	100/60 Winter				
6.004	360 Winter	100	+40%	30/60 Summer				
6.005	360 Winter	100	+40%	1/15 Winter				
7.000	960 Winter	100	+40%	100/15 Winter				
7.001	960 Winter	100	+40%	100/240 Summer				
7.002	960 Winter	100	+40%	30/120 Winter				
7.003	15 Winter	100	+40%					
7.004	15 Summer	100	+40%					
7.005	15 Summer	100	+40%					
6.006	60 Winter	100	+40%					
6.007	60 Winter	100	+40%	100/60 Winter				
8.000	480 Winter	100	+40%					
8.001	480 Winter	100	+40%	30/360 Winter				
6.008	60 Winter	100	+40%	30/15 Summer				
1.013	480 Winter	100	+40%	100/60 Winter				
1.014	1440 Summer	100	+40%					

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Summary of Critical Results by Maximum Level (Rank 1) for NETWORK 2.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m³)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	1(2)	56.084	-0.066	0.000	0.60	0.0	30.3	OK
2.000	17(2)	54.561	-0.039	0.000	0.90	0.0	13.7	OK
1.001	2(2)	54.413	0.013	0.000	0.92	0.0	22.6	SURCHARGED
1.002	3(2)	53.806	0.256	0.000	1.19	0.0	40.2	SURCHARGED
1.003	4(2)	53.261	0.236	0.000	0.57	0.0	40.4	SURCHARGED
3.000	18(2)	53.258	0.433	0.000	0.53	0.0	20.5	SURCHARGED
1.004	5(2)	53.203	0.528	0.000	2.50	0.0	90.6	SURCHARGED
4.000	19(2)	55.000	-0.700	0.000	0.00	0.0	0.0	OK
1.005	6(2)	52.644	-0.306	0.000	0.01	0.0	5.7	OK
1.006	7(2)	52.646	0.496	0.000	0.04	0.0	1.6	SURCHARGED
1.007	8(2)	51.307	-0.293	0.000	0.01	0.0	1.6	OK
1.008	9(2)	51.106	-0.744	0.000	0.00	0.0	1.6	OK
1.009	10(2)	51.003	-0.747	0.000	0.00	0.0	1.6	OK
1.010	11(2)	50.000	-0.600	0.000	0.00	0.0	1.8	OK
1.011	12(2)	50.000	-0.300	0.000	0.00	0.0	3.2	FLOOD RISK
5.000	20(2)	50.013	0.638	0.000	0.30	0.0	10.7	FLOOD RISK
5.001	21(2)	50.009	0.784	0.000	0.76	0.0	27.4	FLOOD RISK
1.012	13(2)	50.000	0.850	0.000	0.02	0.0	5.1	SURCHARGED
6.000	22(2)	50.772	0.047	0.000	0.05	0.0	2.5	SURCHARGED
6.001	23(2)	50.772	0.247	0.000	0.06	0.0	2.8	SURCHARGED
6.002	24(2)	50.770	0.545	0.000	0.02	0.0	0.7	SURCHARGED
6.003	25(2)	50.902	0.877	0.000	0.09	0.0	3.6	SURCHARGED
6.004	26(2)	50.902	1.077	0.000	0.07	0.0	2.5	SURCHARGED
6.005	27(2)	50.899	1.274	0.000	0.06	0.0	2.5	SURCHARGED
7.000	31(2)	52.176	0.126	0.000	0.11	0.0	1.9	SURCHARGED
7.001	32(2)	52.175	0.250	0.000	0.06	0.0	2.5	SURCHARGED
7.002	33(2)	52.174	0.449	0.000	0.02	0.0	0.7	SURCHARGED
7.003	34(2)	51.403	-0.197	0.000	0.26	0.0	24.5	OK
7.004	35(2)	51.187	-0.213	0.000	0.19	0.0	36.1	OK
7.005	36(2)	50.511	-0.689	0.000	0.01	0.0	36.1	OK
6.006	28(2)	49.735	-0.215	0.000	0.01	0.0	16.2	OK
6.007	29(2)	49.731	0.031	0.000	0.01	0.0	8.1	SURCHARGED
8.000	37(2)	49.610	-0.015	0.000	0.04	0.0	1.6	OK
8.001	38(2)	49.610	0.185	0.000	0.01	0.0	0.6	SURCHARGED
6.008	30(2)	49.721	0.621	0.000	0.11	0.0	8.8	SURCHARGED
1.013	14(2)	49.130	0.205	0.000	0.25	0.0	8.5	SURCHARGED
1.014	15(2)	48.641	-0.334	0.000	0.03	0.0	8.5	OK

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Existing Network Details for SW NETWORK 3 2021.3.29.SWS

* - Indicates pipe has been modified outside of System 1

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	1.000	34.446	0.870	39.6	0.053	5.00	0.600	o	225
*	1.001	18.385	0.940	19.6	0.009	0.00	0.600	o	225
*	1.002	20.314	1.015	20.0	0.040	0.00	0.600	o	225
*	1.003	22.458	1.075	20.9	0.023	0.00	0.600	o	225
*	2.000	33.083	1.150	28.8	0.085	5.00	0.600	o	225
*	2.001	20.408	0.320	63.8	0.023	0.00	0.600	o	225
*	2.002	28.051	0.450	62.3	0.022	0.00	0.600	o	225
*	1.004	24.695	0.995	24.8	0.025	0.00	0.600	o	225
*	1.005	37.159	0.280	132.7	0.035	0.00	0.600	o	375
*	1.006	26.661	0.265	100.6	0.040	0.00	0.600	o	375
*	1.007	22.863	0.085	269.0	0.012	0.00	0.600	o	375
*	3.000	14.157	0.120	118.0	0.027	5.00	0.600	o	150
*	3.001	13.715	1.475	9.3	0.019	0.00	0.600	o	150
*	1.008	24.871	0.075	331.6	0.000	0.00	0.600	o	375
*	1.009	17.206	0.050	344.1	0.000	0.00	0.600	o	375

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	1.000	S1(3)	59.750	58.250	1.275	58.880	57.380	1.275		1200
*	1.001	S2(3)	58.880	57.380	1.275	57.940	56.440	1.275		1200
*	1.002	S3(3)	57.940	56.440	1.275	56.925	55.425	1.275		1200
*	1.003	S4(3)	56.925	55.425	1.275	56.000	54.350	1.425		1200
*	2.000	S23(3)	57.770	56.270	1.275	56.620	55.120	1.275		1200
*	2.001	S24(3)	56.620	55.120	1.275	56.300	54.800	1.275		1200
*	2.002	S25(3)	56.300	54.800	1.275	56.000	54.350	1.425		1200
*	1.004	S5(3)	56.000	54.350	1.425	54.730	53.355	1.150		1200
*	1.005	S6(3)	54.730	53.205	1.150	54.580	52.925	1.280		1200
*	1.006	S7(3)	54.580	52.925	1.280	54.500	52.660	1.465		1200
*	1.007	S8(3)	54.500	52.660	1.465	54.700	52.575	1.750		1200
*	3.000	S26(3)	55.820	54.320	1.350	55.230	54.200	0.880		1200
*	3.001	S27(3)	55.230	54.200	0.880	54.700	52.725	1.825	Orifice	1200
*	1.008	S9(3)	54.700	52.575	1.750	54.900	52.500	2.025		1200
*	1.009	S10(3)	54.900	52.500	2.025	54.900	52.450	2.075		1200

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Existing Network Details for SW NETWORK 3 2021.3.29.SWS

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	4.000	29.659	0.100	296.6	0.000	5.00	0.600	o	300
*	5.000	18.833	0.430	43.8	0.050	5.00	0.600	o	225
*	5.001	11.733	0.800	14.7	0.000	0.00	0.600	o	225
*	1.010	36.231	0.100	362.3	0.065	0.00	0.600	o	375
*	1.011	18.581	0.100	185.8	0.050	0.00	0.600	\/	40
*	1.012	24.898	0.065	383.0	0.024	0.00	0.600	\/	40
*	1.013	33.111	0.635	52.1	0.037	0.00	0.600	\/	40
*	1.014	9.859	0.200	49.3	0.016	0.00	0.600	\/	40
*	6.000	77.000	0.950	81.1	0.150	5.00	0.600	o	225
*	6.001	38.042	0.700	54.3	0.016	0.00	0.600	o	225
*	6.002	15.706	0.100	157.1	0.004	0.00	0.600	o	225
*	7.000	21.402	0.540	39.6	0.044	5.00	0.600	o	225
*	7.001	25.843	0.700	36.9	0.040	0.00	0.600	o	225
*	6.003	19.950	0.120	166.3	0.000	0.00	0.600	o	225

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	4.000	S28(3)	54.800	52.550	1.950	54.900	52.450	2.150		1200
*	5.000	S29(3)	55.330	53.830	1.275	54.900	53.400	1.275		1200
*	5.001	S30(3)	54.900	53.400	1.275	54.900	52.600	2.075		1200
*	1.010	S11(3)	54.900	52.450	2.075	54.000	52.350	1.275	Hydro-Brake®	1200
*	1.011	S12(3)	54.000	52.350	1.050	53.700	52.250	0.850		1200
*	1.012	S13(3)	53.700	52.250	0.850	53.400	52.185	0.615		1200
*	1.013	S14(3)	53.400	52.185	0.615	52.850	51.550	0.700	Weir	1200
*	1.014	S15(3)	52.850	51.550	0.700	52.500	51.350	0.550	Weir	1200
*	6.000	S31(3)	55.800	54.000	1.575	54.550	53.050	1.275		1200
*	6.001	S32(3)	54.550	53.050	1.275	54.030	52.350	1.455		1200
*	6.002	S33(3)	54.030	52.350	1.455	53.850	52.250	1.375		1200
*	7.000	S37(3)	55.040	53.540	1.275	54.500	53.000	1.275		1200
*	7.001	S38(3)	54.500	53.000	1.275	53.850	52.300	1.325		1200
*	6.003	S34(3)	53.850	52.250	1.375	54.000	52.130	1.645		1200

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Existing Network Details for SW NETWORK 3 2021.3.29.SWS

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	6.004	18.285	0.130	140.7	0.015	0.00	0.600	o	225
*	6.005	15.478	0.650	23.8	0.025	0.00	0.600	o	225
*	1.015	43.396	0.150	289.3	0.040	0.00	0.600	\/	40
*	1.016	13.618	0.120	113.5	0.048	0.00	0.600	\/	40
*	1.017	9.964	0.080	124.6	0.006	0.00	0.600	\/	40
*	1.018	34.122	0.100	341.2	0.094	0.00	0.600	\/	40
*	1.019	43.777	2.100	20.8	0.000	0.00	0.600	o	375
*	8.000	74.223	1.550	47.9	0.000	5.00	0.600	o	300
*	8.001	32.955	0.550	59.9	0.000	0.00	0.600	o	300
*	9.000	19.444	0.150	129.6	0.020	5.00	0.600	o	225
*	9.001	25.697	0.100	257.0	0.019	0.00	0.600	o	225
*	10.000	13.664	0.300	45.5	0.030	5.00	0.600	o	225
*	10.001	15.274	0.650	23.5	0.012	0.00	0.600	o	225
*	9.002	15.628	0.075	208.4	0.015	0.00	0.600	o	300
*	9.003	49.321	0.200	246.6	0.085	0.00	0.600	o	225

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	6.004	S35(3)	54.000	52.130	1.645	53.010	52.000	0.785		1200
*	6.005	S36(3)	53.010	52.000	0.785	52.500	51.350	0.925		1200
*	1.015	S16(3)	52.500	51.350	0.550	52.450	51.200	0.650		1200
*	1.016	S17(3)	52.450	51.200	0.650	52.280	51.080	0.600	Weir	1200
*	1.017	S18(3)	52.280	51.080	0.600	52.400	51.000	0.800	Weir	1200
*	1.018	S19(3)	52.400	51.000	0.800	52.150	50.900	0.650	Weir	1200
*	1.019	S20(3)	52.150	50.900	0.875	50.500	48.800	1.325	Hydro-Brake®	1200
*	8.000	S39(3)	53.600	52.400	0.900	52.100	50.850	0.950		1200
*	8.001	S40(3)	52.100	50.850	0.950	51.800	50.300	1.200		1200
*	9.000	S43(3)	52.500	51.000	1.275	52.350	50.850	1.275		1200
*	9.001	S44(3)	52.350	50.850	1.275	52.650	50.750	1.675		1200
*	10.000	S47(3)	53.200	51.700	1.275	52.900	51.400	1.275		1200
*	10.001	S48(3)	52.900	51.400	1.275	52.650	50.750	1.675		1200
*	9.002	S45(3)	52.650	50.675	1.675	52.600	50.600	1.700		1200
*	9.003	S48(3)	52.600	50.600	1.775	51.800	50.400	1.175		1200

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Existing Network Details for SW NETWORK 3 2021.3.29.SWS

	PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)
*	8.002	29.576	0.125	236.6	0.000	0.00	0.600	o	300
*	8.003	54.942	1.300	42.3	0.032	0.00	0.600	o	300
*	11.000	25.924	0.200	129.6	0.000	5.00	0.600	o	225
*	1.020	7.934	0.300	26.4	0.000	0.00	0.600	o	225
*	1.021	14.478	1.100	13.2	0.000	0.00	0.600	o	150

	PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)
*	8.002	S41(3)	51.800	50.225	1.275	52.000	50.100	1.600	Hydro-Brake®	1200
*	8.003	S42(3)	52.000	50.100	1.600	50.500	48.800	1.400		1200
*	11.000	49(3) Pond	50.500	49.000	1.275	50.500	48.800	1.475		1200
*	1.020	S21(3)	50.500	48.800	1.475	50.500	48.500	1.775		1200
*	1.021	S22(3)	50.500	48.500	1.850	49.350	47.400	1.800	Hydro-Brake®	1200

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Setting Out Information - True Coordinates (SW NETWORK 3 2021.3.29.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
1.000	S1(3)	1200		589400.843	133827.913	
1.001	S2(3)	1200		589407.500	133794.116	
1.002	S3(3)	1200		589401.509	133776.735	
1.003	S4(3)	1200		589381.274	133774.942	
2.000	S23(3)	1200		589344.257	133840.451	
2.001	S24(3)	1200		589340.806	133807.548	
2.002	S25(3)	1200		589345.785	133787.757	
1.004	S5(3)	1200		589361.411	133764.462	
1.005	S6(3)	1200		589346.338	133744.901	
1.006	S7(3)	1200		589374.956	133721.198	
1.007	S8(3)	1200		589393.455	133701.998	
3.000	S26(3)	1200		589426.877	133736.264	
3.001	S27(3)	1200		589417.353	133725.789	
1.008	S9(3)	1200		589413.731	133712.561	
1.009	S10(3)	1200		589434.417	133698.754	

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Setting Out Information - True Coordinates (SW NETWORK 3 2021.3.29.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
4.000	S28(3)	1200		589463.175	133713.741	
5.000	S29(3)	1200		589477.520	133689.892	
5.001	S30(3)	1200		589459.324	133685.038	
1.010	S11(3)	1200		589448.035	133688.238	
1.011	S12(3)	1200		589429.540	133657.083	
1.012	S13(3)	1200		589439.231	133641.229	
1.013	S14(3)	1200		589448.485	133618.115	
1.014	S15(3)	1200		589458.956	133586.703	
6.000	S31(3)	1200		589627.721	133633.955	
6.001	S32(3)	1200		589555.744	133606.598	
6.002	S33(3)	1200		589517.868	133603.043	
7.000	S37(3)	1200		589510.011	133653.240	
7.001	S38(3)	1200		589515.489	133632.550	
6.003	S34(3)	1200		589503.599	133609.605	
6.004	S35(3)	1200		589490.367	133594.674	

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Setting Out Information - True Coordinates (SW NETWORK 3 2021.3.29.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
6.005	S36(3)	1200		589472.984	133589.005	
1.015	S16(3)	1200		589462.588	133577.538	
1.016	S17(3)	1200		589487.415	133541.945	
1.017	S18(3)	1200		589496.295	133531.622	
1.018	S19(3)	1200		589496.940	133521.679	
1.019	S20(3)	1200		589471.270	133499.199	
8.000	S39(3)	1200		589628.471	133441.975	
8.001	S40(3)	1200		589555.294	133454.390	
9.000	S43(3)	1200		589484.387	133560.253	
9.001	S44(3)	1200		589496.926	133545.392	
10.000	S47(3)	1200		589530.595	133555.889	
10.001	S48(3)	1200		589528.977	133542.321	
9.002	S45(3)	1200		589518.409	133531.293	
9.003	S48(3)	1200		589525.406	133517.319	
8.002	S41(3)	1200		589525.280	133467.998	

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Setting Out Information - True Coordinates (SW NETWORK 3 2021.3.29.SWS)

PN	USMH Name	Dia/Len (mm)	Width (mm)	US Easting (m)	US Northing (m)	Layout (North)
8.003	S42(3)	1200		589495.704	133468.078	
11.000	49(3) Pond	1200		589466.311	133472.206	
1.020	S21(3)	1200		589440.764	133467.801	
1.021	S22(3)	1200		589438.050	133460.346	

PN	DSMH Name	Dia/Len (mm)	Width (mm)	DS Easting (m)	DS Northing (m)	Layout (North)
1.021	Net 3 outfall	900	900	589433.089	133446.744	

Free Flowing Outfall Details for SW NETWORK 3 2021.3.29.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.021	Net 3 outfall	49.350	47.400	47.400	900	900

Simulation Criteria for SW NETWORK 3 2021.3.29.SWS

Volumetric Runoff Coeff	0.840	Foul Sewage per hectare (l/s)	0.000
PIMP (% impervious)	100	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet Coeffiecient	0.800
Hot Start Level (mm)	0	Run Time (mins)	960
Manhole Headloss Coeff (Global)	0.500	Output Interval (mins)	8

Number of Input Hydrographs	0	Number of Storage Structures	31
Number of Online Controls	10	Number of Time/Area Diagrams	0
Number of Offline Controls	0		

Synthetic Rainfall Details

Rainfall Model	FSR	Region	England and Wales
Return Period (years)	100	M5-60 (mm)	26.350

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Synthetic Rainfall Details

Ratio R	0.400	Cv (Winter)	0.840
Profile Type	Summer	Storm Duration (mins)	480
Cv (Summer)	0.840		

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Online Controls for SW NETWORK 3 2021.3.29.SWS

Orifice Manhole: S27(3), DS/PN: 3.001, Volume (m³): 1.4

Diameter (m) 0.050 Discharge Coefficient 0.600 Invert Level (m) 54.200

Hydro-Brake® Manhole: S11(3), DS/PN: 1.010, Volume (m³): 7.0

Design Head (m) 1.650 Diameter (mm) 102
Design Flow (l/s) 8.0 Invert Level (m) 52.450
Hydro-Brake® Type Md5 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	3.0	1.200	6.9	3.000	10.8	7.000	16.6
0.200	4.2	1.400	7.4	3.500	11.7	7.500	17.1
0.300	4.1	1.600	7.9	4.000	12.5	8.000	17.7
0.400	4.2	1.800	8.4	4.500	13.3	8.500	18.3
0.500	4.5	2.000	8.9	5.000	14.0	9.000	18.8
0.600	4.9	2.200	9.3	5.500	14.7	9.500	19.3
0.800	5.6	2.400	9.7	6.000	15.3		
1.000	6.3	2.600	10.1	6.500	16.0		

Weir Manhole: S14(3), DS/PN: 1.013, Volume (m³): 94.6

Discharge Coef 0.544 Width (m) 0.300 Invert Level (m) 52.700

Weir Manhole: S15(3), DS/PN: 1.014, Volume (m³): 127.0

Discharge Coef 0.544 Width (m) 0.300 Invert Level (m) 52.250

Weir Manhole: S17(3), DS/PN: 1.016, Volume (m³): 167.4

Discharge Coef 0.544 Width (m) 0.300 Invert Level (m) 51.950

Weir Manhole: S18(3), DS/PN: 1.017, Volume (m³): 50.2

Discharge Coef 0.544 Width (m) 0.300 Invert Level (m) 51.750

Weir Manhole: S19(3), DS/PN: 1.018, Volume (m³): 36.1

Discharge Coef 0.544 Width (m) 0.300 Invert Level (m) 51.500

Hydro-Brake® Manhole: S20(3), DS/PN: 1.019, Volume (m³): 130.9

Design Head (m) 1.200 Diameter (mm) 151
Design Flow (l/s) 15.0 Invert Level (m) 50.900
Hydro-Brake® Type Md5 SW Only

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Hydro-Brake® Manhole: S20(3), DS/PN: 1.019, Volume (m³): 130.9

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	5.1	0.200	9.9	0.300	11.1	0.400	11.0

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Hydro-Brake® Manhole: S20(3), DS/PN: 1.019, Volume (m³): 130.9

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.500	11.0	1.800	18.4	4.000	27.4	7.500	37.6
0.600	11.3	2.000	19.4	4.500	29.1	8.000	38.8
0.800	12.4	2.200	20.4	5.000	30.7	8.500	40.0
1.000	13.8	2.400	21.3	5.500	32.2	9.000	41.2
1.200	15.0	2.600	22.1	6.000	33.6	9.500	42.3
1.400	16.2	3.000	23.8	6.500	35.0		
1.600	17.4	3.500	25.7	7.000	36.3		

Hydro-Brake® Manhole: S41(3), DS/PN: 8.002, Volume (m³): 5.9

Design Head (m) 1.500 Diameter (mm) 83
Design Flow (l/s) 5.0 Invert Level (m) 50.225
Hydro-Brake® Type Md5 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.1	1.200	4.5	3.000	7.2	7.000	11.0
0.200	2.5	1.400	4.9	3.500	7.8	7.500	11.4
0.300	2.5	1.600	5.2	4.000	8.3	8.000	11.7
0.400	2.7	1.800	5.6	4.500	8.8	8.500	12.1
0.500	2.9	2.000	5.9	5.000	9.3	9.000	12.4
0.600	3.2	2.200	6.1	5.500	9.7	9.500	12.8
0.800	3.7	2.400	6.4	6.000	10.2		
1.000	4.1	2.600	6.7	6.500	10.6		

Hydro-Brake® Manhole: S22(3), DS/PN: 1.021, Volume (m³): 2.5

Design Head (m) 1.600 Diameter (mm) 89
Design Flow (l/s) 6.0 Invert Level (m) 48.500
Hydro-Brake® Type Md5 SW Only

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	2.4	1.200	5.2	3.000	8.3	7.000	12.6
0.200	3.0	1.400	5.6	3.500	8.9	7.500	13.1
0.300	2.9	1.600	6.0	4.000	9.5	8.000	13.5
0.400	3.1	1.800	6.4	4.500	10.1	8.500	13.9
0.500	3.4	2.000	6.7	5.000	10.7	9.000	14.3
0.600	3.7	2.200	7.1	5.500	11.2	9.500	14.7
0.800	4.3	2.400	7.4	6.000	11.7		
1.000	4.8	2.600	7.7	6.500	12.2		

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Storage Structures for SW NETWORK 3 2021.3.29.SWS

Porous Car Park Manhole: S1(3), DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	25.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	69.4	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	58.250	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S2(3), DS/PN: 1.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.5
Max Percolation (l/s)	26.3	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	57.380	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S3(3), DS/PN: 1.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.3
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	45.3	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	56.440	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S4(3), DS/PN: 1.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.7
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	26.9	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	55.425	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S23(3), DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	39.5
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	109.7	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	56.270	Cap Volume Depth (m)	0.400

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Porous Car Park Manhole: S24(3), DS/PN: 2.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	27.8	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	55.120	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S25(3), DS/PN: 2.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	22.2
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	61.7	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.800	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S5(3), DS/PN: 1.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	3.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	8.3	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.275	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S26(3), DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	26.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	72.2	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.320	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S27(3), DS/PN: 3.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	6.7
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	18.6	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.200	Cap Volume Depth (m)	0.400

Tank or Pond Manhole: S28(3), DS/PN: 4.000

Invert Level (m) 52.550

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	45.0	0.200	90.0	0.400	135.0	0.600	170.0

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Tank or Pond Manhole: S28(3), DS/PN: 4.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.800	215.0	2.000	475.0	3.200	545.0	4.400	545.0
1.000	250.0	2.200	510.0	3.400	545.0	4.600	545.0
1.200	295.0	2.400	545.0	3.600	545.0	4.800	545.0
1.400	340.0	2.600	545.0	3.800	545.0	5.000	545.0
1.600	385.0	2.800	545.0	4.000	545.0		
1.800	430.0	3.000	545.0	4.200	545.0		

Porous Car Park Manhole: S13(3), DS/PN: 1.012

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	27.8	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.250	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: S14(3), DS/PN: 1.013

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	6.0
Max Percolation (l/s)	16.7	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.185	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S31(3), DS/PN: 6.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	140.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	388.9	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	54.000	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S32(3), DS/PN: 6.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	16.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	44.4	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	53.050	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S33(3), DS/PN: 6.002

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	19.4
Membrane Percolation (mm/hr)	1000	Safety Factor	2.0

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Porous Car Park Manhole: S33(3), DS/PN: 6.002

Porosity	0.30	Slope (1:X)	100.0
Invert Level (m)	52.350	Depression Storage (mm)	5
Width (m)	7.0	Evaporation (mm/day)	3
Length (m)	10.0	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S34(3), DS/PN: 6.003

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	55.6	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.250	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S35(3), DS/PN: 6.004

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	9.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	25.0	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.130	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S16(3), DS/PN: 1.015

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	15.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	41.7	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.350	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S17(3), DS/PN: 1.016

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.0
Max Percolation (l/s)	15.3	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.200	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S18(3), DS/PN: 1.017

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	7.6
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	21.1	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.080	Cap Volume Depth (m)	0.400

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Porous Car Park Manhole: S19(3), DS/PN: 1.018

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	56.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	155.6	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.000	Cap Volume Depth (m)	0.400

Cellular Storage Manhole: S20(3), DS/PN: 1.019

Invert Level (m)	50.900	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	225.0	225.0	0.500	0.0	249.0
0.400	225.0	249.0			

Porous Car Park Manhole: S39(3), DS/PN: 8.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	150.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	416.7	Slope (1:X)	150.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	52.400	Cap Volume Depth (m)	0.500

Porous Car Park Manhole: S40(3), DS/PN: 8.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	20.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	55.6	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.850	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S43(3), DS/PN: 9.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	195.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	541.7	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.000	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: S44(3), DS/PN: 9.001

Infiltration Coefficient Base (m/hr)	0.00000	Max Percolation (l/s)	58.3
Membrane Percolation (mm/hr)	1000	Safety Factor	2.0

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Porous Car Park Manhole: S44(3), DS/PN: 9.001

Porosity	0.30	Slope (1:X)	100.0
Invert Level (m)	50.850	Depression Storage (mm)	5
Width (m)	21.0	Evaporation (mm/day)	3
Length (m)	10.0	Cap Volume Depth (m)	0.000

Porous Car Park Manhole: S47(3), DS/PN: 10.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	36.1	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.700	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S48(3), DS/PN: 10.001

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	13.0
Max Percolation (l/s)	36.1	Slope (1:X)	0.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	51.400	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S45(3), DS/PN: 9.002

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	14.0
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	38.9	Slope (1:X)	100.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	50.675	Cap Volume Depth (m)	0.400

Tank or Pond Manhole: 49(3) Pond, DS/PN: 11.000

Invert Level (m) 49.000

Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	10.0	1.400	1000.0	2.800	1100.0	4.200	1100.0
0.200	10.0	1.600	1100.0	3.000	1100.0	4.400	1100.0
0.400	10.0	1.800	1100.0	3.200	1100.0	4.600	1100.0
0.600	10.0	2.000	1100.0	3.400	1100.0	4.800	1100.0
0.800	700.0	2.200	1100.0	3.600	1100.0	5.000	1100.0
1.000	800.0	2.400	1100.0	3.800	1100.0		
1.200	900.0	2.600	1100.0	4.000	1100.0		

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Summary of Critical Results by Maximum Level (Rank 1) for SW NETWORK 3 2021.3.29.SWS

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)	2, 30, 100
Climate Change (%)	0, 0, 40

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Summary of Critical Results by Maximum Level (Rank 1) for SW NETWORK 3 2021.3.29.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.000	15 Summer	100	+40%					
1.001	15 Summer	100	+40%					
1.002	15 Summer	100	+40%					
1.003	30 Summer	100	+40%					
2.000	15 Summer	100	+40%					
2.001	30 Summer	100	+40%	100/30 Summer				
2.002	30 Summer	100	+40%	100/15 Summer				
1.004	30 Summer	100	+40%	100/15 Summer				
1.005	30 Summer	100	+40%	30/15 Summer				
1.006	30 Summer	100	+40%	30/15 Summer				
1.007	30 Summer	100	+40%	2/15 Summer				
3.000	60 Winter	100	+40%	100/15 Summer				
3.001	60 Winter	100	+40%	2/30 Summer				
1.008	30 Summer	100	+40%	2/15 Summer				
1.009	30 Summer	100	+40%	2/15 Summer				
4.000	480 Winter	100	+40%	2/15 Summer				
5.000	30 Summer	100	+40%	100/15 Summer				
5.001	30 Summer	100	+40%	100/15 Summer				
1.010	360 Winter	100	+40%	2/15 Summer				
1.011	120 Summer	100	+40%					
1.012	120 Summer	100	+40%					
1.013	120 Summer	100	+40%					
1.014	240 Summer	100	+40%					
6.000	30 Summer	100	+40%					
6.001	60 Summer	100	+40%					
6.002	60 Summer	100	+40%	100/15 Summer				
7.000	15 Summer	100	+40%					
7.001	15 Summer	100	+40%					
6.003	60 Summer	100	+40%	100/15 Summer				
6.004	120 Summer	100	+40%	100/15 Summer				
6.005	120 Summer	100	+40%	100/30 Summer				
1.015	240 Summer	100	+40%					
1.016	1440 Summer	100	+40%					
1.017	1440 Summer	100	+40%					
1.018	1440 Summer	100	+40%					
1.019	1440 Summer	100	+40%	100/60 Summer				
8.000	15 Winter	30	0%					
8.001	120 Winter	100	+40%	100/30 Summer				
9.000	240 Summer	100	+40%					
9.001	60 Summer	100	+40%	100/15 Summer				
10.000	15 Summer	100	+40%					
10.001	30 Summer	100	+40%					
9.002	15 Summer	100	+40%	30/15 Summer				
9.003	15 Summer	100	+40%	2/15 Summer				
8.002	120 Winter	100	+40%	2/15 Summer				
8.003	1440 Summer	100	+40%	100/960 Summer				
11.000	1440 Summer	100	+40%	2/960 Summer				
1.020	1440 Summer	100	+40%	2/15 Summer				

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Summary of Critical Results by Maximum Level (Rank 1) for SW NETWORK 3 2021.3.29.SWS

PN	Storm	Return Period	Climate Change	First X Surcharge	First Y Flood	First Z Overflow	O/F Act.	Lvl Exc.
1.021	1440 Summer	100	+40%	2/15 Summer	100/1440 Winter			

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18 Frogmore Road
Hemel Hempstead
Hertfordshire HP3 9RT

Date 01/01/0001 | Designed By IMarks
File SW NETWORK 3.MDX | Checked By
XP Solutions | Network W.12.5

Summary of Critical Results by Maximum Level (Rank 1) for SW NETWORK 3 2021.3.29.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m^3)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.000	S1(3)	58.365	-0.110	0.000	0.51	0.0	39.8	OK
1.001	S2(3)	57.482	-0.123	0.000	0.42	0.0	44.8	OK
1.002	S3(3)	56.579	-0.086	0.000	0.68	0.0	71.7	OK
1.003	S4(3)	55.638	-0.012	0.000	0.67	0.0	70.4	OK
2.000	S23(3)	56.394	-0.101	0.000	0.57	0.0	52.3	OK
2.001	S24(3)	55.424	0.079	0.000	0.91	0.0	54.1	SURCHARGED
2.002	S25(3)	55.355	0.330	0.000	0.91	0.0	55.7	SURCHARGED
1.004	S5(3)	55.254	0.679	0.000	0.96	0.0	92.3	SURCHARGED
1.005	S6(3)	54.708	1.128	0.000	0.62	0.0	97.9	FLOOD RISK
1.006	S7(3)	54.579	1.279	0.000	0.67	0.0	116.6	FLOOD RISK
1.007	S8(3)	54.433	1.398	0.000	1.18	0.0	122.9	FLOOD RISK
3.000	S26(3)	54.540	0.070	0.000	0.23	0.0	3.5	SURCHARGED
3.001	S27(3)	54.534	0.184	0.000	0.05	0.0	2.9	SURCHARGED
1.008	S9(3)	54.323	1.373	0.000	1.29	0.0	122.3	SURCHARGED
1.009	S10(3)	54.200	1.325	0.000	1.39	0.0	122.0	SURCHARGED
4.000	S28(3)	54.106	1.256	0.000	0.13	0.0	7.3	SURCHARGED
5.000	S29(3)	54.251	0.196	0.000	0.56	0.0	39.5	SURCHARGED
5.001	S30(3)	54.161	0.536	0.000	0.29	0.0	33.6	SURCHARGED
1.010	S11(3)	54.110	1.285	0.000	0.08	0.0	7.2	SURCHARGED
1.011	S12(3)	52.849	-0.772	0.000	0.00	0.0	24.0	OK
1.012	S13(3)	52.847	-0.674	0.000	0.00	0.0	20.6	OK
1.013	S14(3)	52.842	-0.614	0.000	0.00	0.0	27.3	OK
1.014	S15(3)	52.389	-0.432	0.000	0.00	0.0	26.1	OK
6.000	S31(3)	54.146	-0.079	0.000	0.74	0.0	41.6	OK
6.001	S32(3)	53.184	-0.091	0.000	0.66	0.0	44.1	OK
6.002	S33(3)	52.781	0.206	0.000	1.13	0.0	41.2	SURCHARGED
7.000	S37(3)	53.656	-0.109	0.000	0.52	0.0	39.4	OK
7.001	S38(3)	53.189	-0.036	0.000	0.99	0.0	79.0	OK
6.003	S34(3)	52.665	0.190	0.000	1.32	0.0	47.9	SURCHARGED
6.004	S35(3)	52.498	0.143	0.000	1.05	0.0	41.4	SURCHARGED
6.005	S36(3)	52.375	0.150	0.000	0.52	0.0	48.9	SURCHARGED
1.015	S16(3)	52.280	-0.341	0.000	0.01	0.0	64.2	FLOOD RISK
1.016	S17(3)	52.250	-0.221	0.000	0.00	0.0	32.7	FLOOD RISK
1.017	S18(3)	52.206	-0.145	0.000	0.00	0.0	32.9	FLOOD RISK
1.018	S19(3)	52.172	-0.099	0.000	0.01	0.0	37.1	FLOOD RISK
1.019	S20(3)	52.145	0.870	0.000	0.04	0.0	15.3	FLOOD RISK
8.000	S39(3)	52.400	-0.300	0.000	0.00	0.0	0.0	OK
8.001	S40(3)	51.258	0.108	0.000	0.05	0.0	7.2	SURCHARGED
9.000	S43(3)	51.115	-0.110	0.000	0.07	0.0	3.0	OK
9.001	S44(3)	51.246	0.171	0.000	0.09	0.0	2.6	SURCHARGED
10.000	S47(3)	51.797	-0.128	0.000	0.38	0.0	25.7	OK
10.001	S48(3)	51.513	-0.112	0.000	0.39	0.0	37.4	OK
9.002	S45(3)	51.551	0.576	0.000	0.14	0.0	9.0	SURCHARGED
9.003	S48(3)	51.599	0.774	0.000	1.01	0.0	31.8	SURCHARGED
8.002	S41(3)	51.398	0.873	0.000	0.06	0.0	4.2	SURCHARGED
8.003	S42(3)	50.486	0.086	0.000	0.03	0.0	5.4	SURCHARGED
11.000	49(3) Pond	50.478	1.253	0.000	0.19	0.0	8.1	FLOOD RISK

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Summary of Critical Results by Maximum Level (Rank 1) for SW NETWORK 3 2021.3.29.SWS

PN	US/MH Name	Water Level (m)	Surch'ed Depth (m)	Flooded Volume (m^3)	Flow / Cap.	O'flow (l/s)	Pipe Flow (l/s)	Status
1.020	S21(3)	50.489	1.464	0.000	0.10	0.0	7.5	FLOOD RISK
1.021	S22(3)	50.483	1.833	0.000	0.15	0.0	6.7	FLOOD RISK

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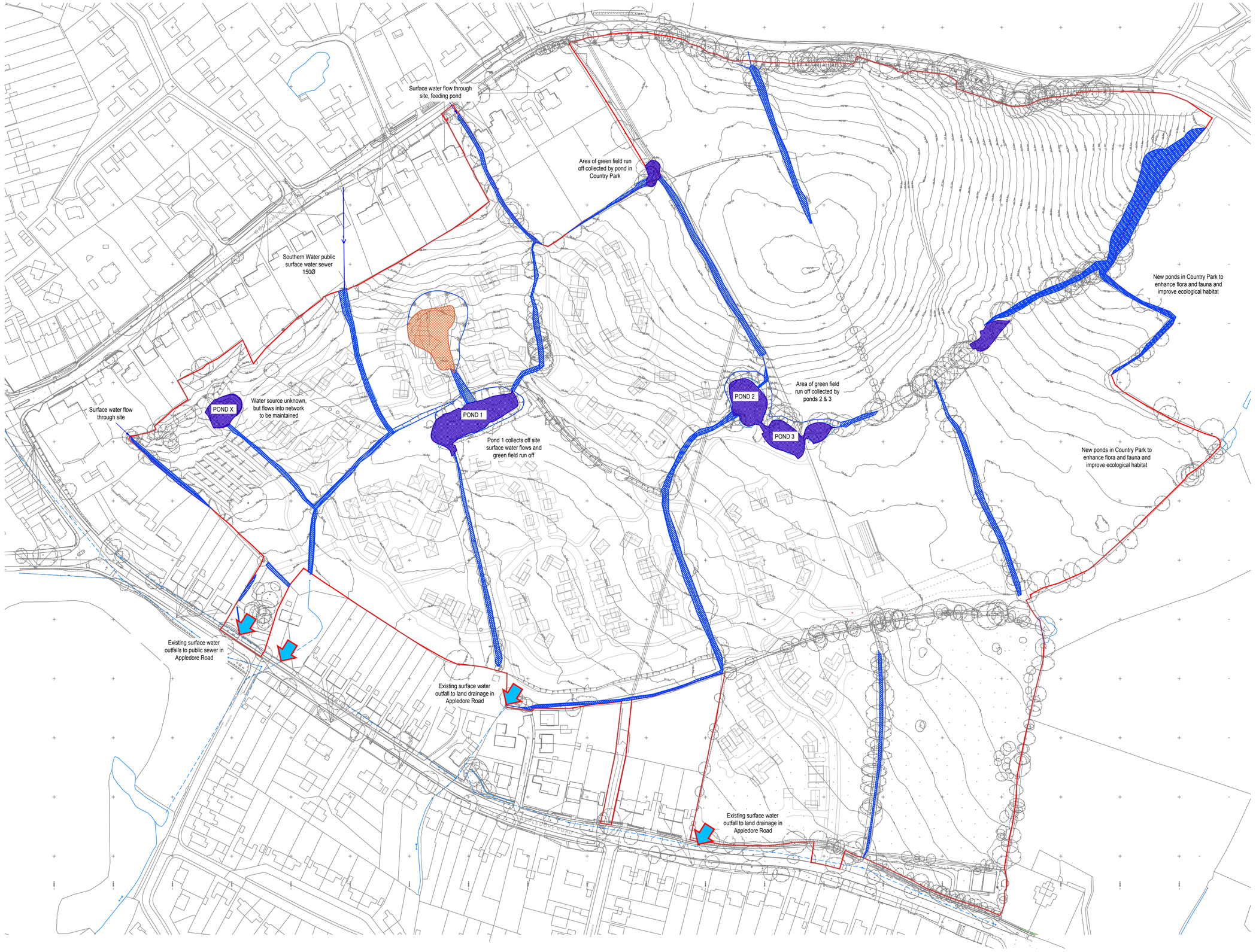
APPENDIX J
WORKING DRAWINGS AND SURFACE WATER DRAINAGE STRATEGY



CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

LEGEND:

- SITE BOUNDARY
- EXISTING DITCH
- EXISTING POND
- EXISTING MINERAL EXTRACTION PIT TO BE FILLED
- EXISTING SURFACE WATER SEWERS
- EXISTING SURFACE WATER OUTFALL FROM ___ DEVELOPMENT SITE

Notes:
1. This drawing should be read in conjunction with all relevant architects and engineers drawings.
2. As far as practicable all existing swales, ditches and ponds are to be retained in their current condition with nominal clearing of organic mulch and general detritus carried out. No excavation works shall be carried out in the root protection areas.

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P06	23.04.21	Site layout updated.	JC	MEF	MEF
P05	20.04.21	Site layout updated.	IWM	MEF	MEF

RSK
LAND & DEVELOPMENT ENGINEERING LTD
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom
Tel: +44 (0) 1442 437500
Fax: +44 (0) 1442 437550
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client
WATES DEVELOPMENTS

Project Title
APPLEDORE ROAD
TENTERDEN

Status
FOR PLANNING

Drawing Title
EXISTING DITCH, PONDS & SURFACE WATER DRAINAGE FEATURES

Drawn	Date	Checked	Date	Approved	Date
IWM	07.19	IWM	07.19		

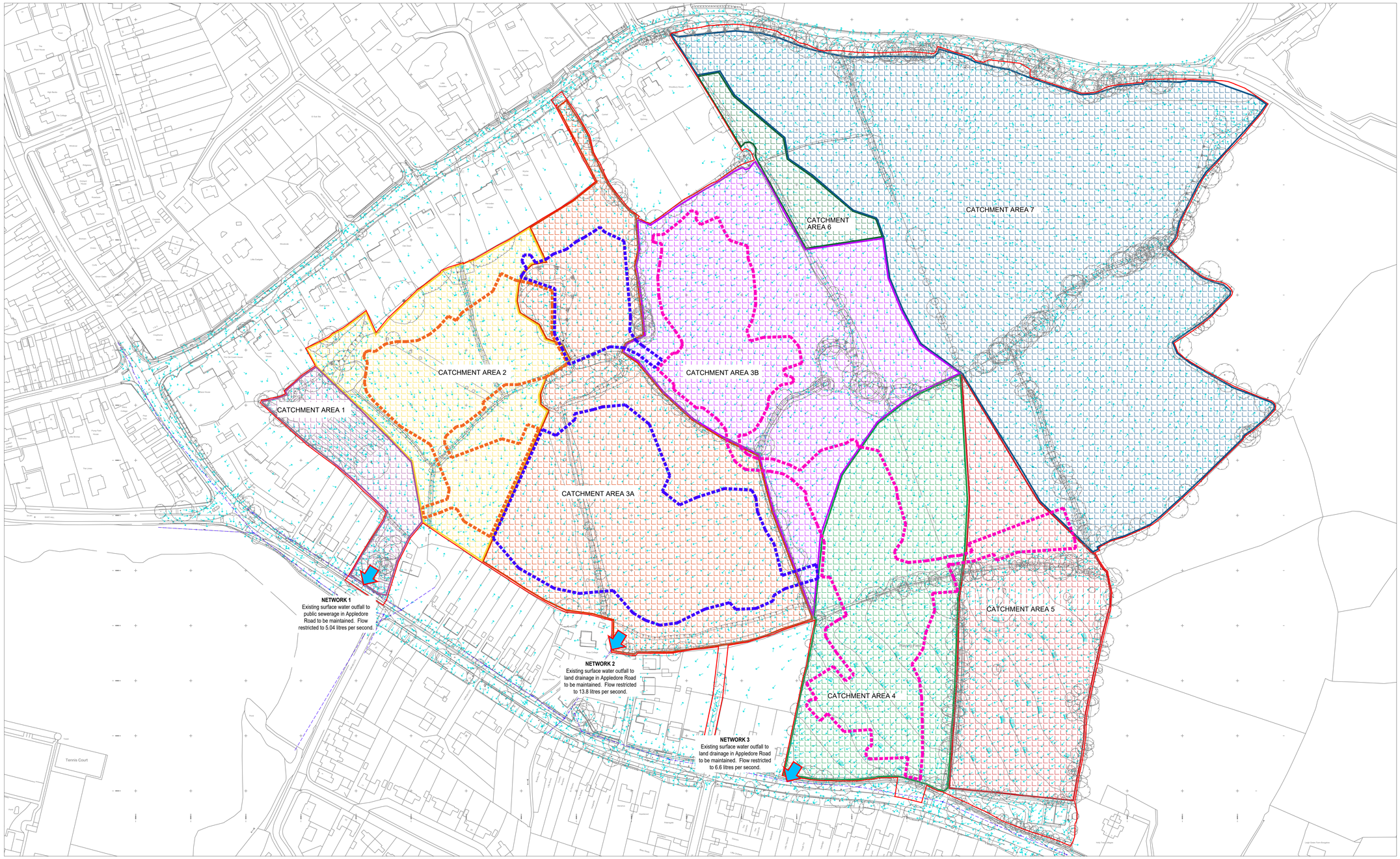
Scale	Orig Size	Dimensions	Revision
1:1250	A1	m	P06

Drawing File
133187-C-ALL-01-02-01_02 EXISITING DITCH & POND FEATURES.DWG

Project No.	Originator	Unit	Site Area	Series	Number	Sheet
133187	RSK	C	ALL	01	02	01

Scale 1:1250
0 25 50 75 100m

File Location: \\HH-NAS02\LDE\133000-133999\133187 - APPLEDORE ROAD, TENTERDEN\GRAPHIN\FRASTRUCTURE\DRAWINGS\01 - PRE-DESIGN DRAWINGS\133187-C-ALL-01-02-01_02 EXISITING DITCH & POND FEATURES.DWG



EXISTING GREENFIELD RUNOFF					
EXISTING CATCHMENT AREA (ha)	QBAR IH124 (l/s)	ASHFORD BOROUGH COUNCIL ENV9 (4l/s/ha)	DEVELOPABLE AREA (ha)	PROPOSED DISCHARGE RATE (l/s)	SURFACE WATER OUTFALL
CATCHMENT 1 0.647	3.600	2.588	1.26	5.04	OUTFALL 1
CATCHMENT 2 2.169	10.400	8.676			
CATCHMENT 3A 4.161	17.385	16.644	2.55	10.2	OUTFALL 2
CATCHMENT 3B 3.474	14.515	13.896			
CATCHMENT 4 2.804	13.100	11.216	1.75	7.0	OUTFALL 3
CATCHMENT 5 2.267	10.800	9.068			
CATCHMENT 6 0.416	2.400	1.664			
CATCHMENT 7 7.759	32.400	31.036			

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

KEY:

- SITE BOUNDARY
- CATCHMENT AREA 1
- CATCHMENT AREA 2
- CATCHMENT AREA 3A
- CATCHMENT AREA 3B
- CATCHMENT AREA 4
- CATCHMENT AREA 5
- CATCHMENT AREA 6
- CATCHMENT AREA 7
- FLOW ARROW

KEY

- Network 1 developable area
- Network 2 developable area
- Network 3 developable area

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P05	30.03.21	Site layout updated. Outfall data revised to reflect amended developable area.	JS	MEF	MEF

RSK

LAND & DEVELOPMENT ENGINEERING LTD

18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom

Tel: +44 (0) 1442 437500
Fax: +44 (0) 1442 437550
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client
WATES DEVELOPMENTS

Project Title
APPLEDORE ROAD
TENTERDEN

Status
FOR PLANNING

Drawing Title
EXISTING OVERLAND FLOW ROUTES AND CATCHMENT AREAS

Drawn	Date	Checked	Date	Approved	Date
IWM	01.19	MEF	01.19		

Scale	Orig Size	Dimensions	Revision
1:1000	A0	m	P05

Drawing File
133187-C-ALL-01-03-01 OL FLOW AND CATCHMENT AREAS WIP.DWG

Project No.	Originator	Unit	Site Area	Series	Number	Sheet
133187	RSK	C	ALL	01	03	01

Scale 1:1000
0 10 20 30 40 50m

File Location: K:\133000-133999\133187 - APPLEDORE ROAD, TENTERDEN\DRAWINGS\TECHNICAL\PRE-DESIGN DRAWINGS\133187-C-ALL-01-03-01 OL FLOW AND CATCHMENT AREAS WIP.DWG

CIVIL / STRUCTURAL DESIGN RISK MANAGEMENT

Abnormal or unusual residual risks associated with the design outcomes shown on this drawing are:-

RSK LDE LTD has followed its Design Risk Management process for Hazard Elimination and Risk reduction in developing the designs shown on this drawing.
Abnormal or unusual residual risks may be shown above where it is considered that such risk may not normally be expected by competent persons engaged on work of this nature or type.

KEY:

- SITE BOUNDARY
- S(1)15 / 2.000 — PROPOSED SURFACE WATER SEWER (PIPE)
- SURFACE WATER SuDS FEATURE (SWALE/POND etc)
- EXISTING SURFACE WATER SEWER

Notes:

1. This drawing should be read in conjunction with all relevant architects and engineers drawings.
2. As far as practicable all existing swales, ditches and ponds are to be retained in their current condition with nominal clearing of organic mulch and general detritus carried out. No excavation works shall be carried out in the root protection areas.
3. All manhole references and pipe runs shown within existing and proposed swales, ditches and pond features (red dashed lines) represent a linear feature or node within the Microdrainage models for the development.

Rev.	Date	Amendment	Drawn	Chkd.	Appd.
P06	23.04.21	Site layout revised to suit	JC	MEF	MEF
P05	20.04.21	Site layout revised. Drainage GA amended to suit	IWM	MEF	MEF

RSK
LAND & DEVELOPMENT ENGINEERING LTD
18 Frogmore Road
Hemel Hempstead
Hertfordshire
HP3 9RT
United Kingdom
Tel: +44 (0) 1442 437500
Fax: +44 (0) 1442 437550
Email: info@rsk.co.uk
Web: www.rsk.co.uk

Client: WATES DEVELOPMENTS

Project Title: APPLEDORE ROAD TENTERDEN

Status: FOR PLANNING

Drawing Title: PROPOSED SURFACE WATER GENERAL ARRANGEMENT (Sheet 2 of 2)

Drawn	Date	Checked	Date	Approved	Date
IWM	08.19	MEF	08.19		

Scale	Orig Size	Dimensions	Revision
1:500	A0	m	P06

Drawing File: 133187-C-ALL-05-03 PROPOSED SW GA.DWG

Project No.	Originator	Unit	Site Area	Series	Number	Sheet
133187	RSK	C	ALL	05	03	02

Scale 1:500
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