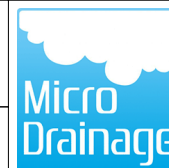


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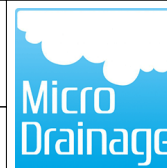
Network Design Table for Storm 1

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section	Type	Auto Design
S4.000	12.589	0.126	99.9	0.014	5.00	0.0	0.600	o	150	Pipe/Conduit		🔒
S5.000	10.311	0.126	81.8	0.008	5.00	0.0	0.600	o	150	Pipe/Conduit		🔒
S4.001	12.088	0.310	39.0	0.004	0.00	0.0	0.600	o	150	Pipe/Conduit		🔓
S6.000	10.419	0.436	23.9	0.004	5.00	0.0	0.600	o	150	Pipe/Conduit		🔒
S4.002	13.785	0.138	99.9	0.005	0.00	0.0	0.600	o	150	Pipe/Conduit		🔓
S4.003	2.226	0.223	10.0	0.017	0.00	0.0	0.600	o	150	Pipe/Conduit		🔒
S1.007	4.012	0.080	50.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		🔓
S1.008	12.192	1.219	10.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit		🔓

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S4.000	45.75	5.21	53.400	0.014	0.0	0.0	0.0	1.01	17.8	1.7
S5.000	45.95	5.15	53.400	0.008	0.0	0.0	0.0	1.11	19.7	1.0
S4.001	45.29	5.33	53.274	0.026	0.0	0.0	0.0	1.62	28.6	3.2
S6.000	46.22	5.08	53.400	0.004	0.0	0.0	0.0	2.07	36.6	0.5
S4.002	44.47	5.56	52.964	0.035	0.0	0.0	0.0	1.01	17.8	4.2
S4.003	44.43	5.57	52.826	0.052	0.0	0.0	0.0	3.21	56.7	6.3
S1.007	43.02	5.99	50.339	0.140	0.0	0.0	0.0	1.43	25.2	16.3
S1.008	42.82	6.06	50.259	0.140	0.0	0.0	0.0	3.20	56.6	16.3

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Manhole Schedules for Storm 1

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Pipe Out Diameter (mm)	PN	Pipes In Invert Level (m)	Pipes In Diameter (mm)	Backdrop (mm)
S1	52.200	0.900	Open Manhole	450	S1.000	51.300	150				
S2	52.200	0.994	Open Manhole	450	S1.001	51.206	150	S1.000	51.206	150	
S3	52.200	1.128	Open Manhole	600	S1.002	51.072	225	S1.001	51.072	150	
S4	52.400	1.482	Open Manhole	600	S1.003	50.918	225	S1.002	50.918	225	
S5	53.150	0.900	Open Manhole	450	S2.000	52.250	150				
S6	52.780	1.992	Open Manhole	600	S1.004	50.788	225	S1.003	50.788	225	
								S2.000	51.880	150	103
S7	53.000	2.490	Open Manhole	600	S1.005	50.510	300	S1.004	50.585	225	
S8	53.350	2.902	Open Manhole	600	S3.000	50.448	300				
STANK	53.350	2.950	Open Manhole	1800	S1.006	50.400	300	S1.005	50.475	300	
								S3.000	50.400	300	
S9	54.150	0.750	Open Manhole	450	S4.000	53.400	150				
S10	54.150	0.750	Open Manhole	450	S5.000	53.400	150				
S11	54.150	0.876	Open Manhole	450	S4.001	53.274	150	S4.000	53.274	150	
								S5.000	53.274	150	
S12	54.150	0.750	Open Manhole	450	S6.000	53.400	150				
S13	54.150	1.186	Open Manhole	450	S4.002	52.964	150	S4.001	52.964	150	
								S6.000	52.964	150	
S14	54.100	1.274	Open Manhole	450	S4.003	52.826	150	S4.002	52.826	150	
S15	54.120	3.781	Open Manhole	1800	S1.007	50.339	150	S1.006	50.339	300	
								S4.003	52.603	150	220
S16	54.150	3.891	Open Manhole	1200	S1.008	50.259	150	S1.007	50.259	150	
SUU 2005	54.100	5.060	Open Manhole	2400		OUTFALL		S1.008	49.040	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S1	387232.839	397055.884	387232.839	397055.884	Required	
S2	387233.795	397050.307	387233.795	397050.307	Required	
S3	387232.800	397046.925	387232.800	397046.925	Required	
S4	387236.404	397031.981	387236.404	397031.981	Required	



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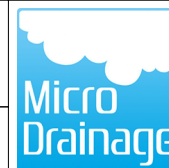
Manhole Schedules for Storm 1

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
S5	387242.261	397008.332	387242.261	397008.332	Required	
S6	387239.520	397019.357	387239.520	397019.357	Required	
S7	387219.737	397014.597	387219.737	397014.597	Required	
S8	387215.452	397023.410	387215.452	397023.410	Required	
STANK	387216.303	397013.753	387216.303	397013.753	Required	
S9	387248.367	396994.709	387248.367	396994.709	Required	
S10	387238.528	396981.622	387238.528	396981.622	Required	
S11	387236.154	396991.655	387236.154	396991.655	Required	
S12	387226.935	396978.871	387226.935	396978.871	Required	
S13	387224.368	396988.968	387224.368	396988.968	Required	
S14	387221.559	397002.464	387221.559	397002.464	Required	
S15	387219.399	397001.929	387219.399	397001.929	Required	
S16	387215.458	397001.176	387215.458	397001.176	Required	
SUU 2005	387218.524	396989.376			No Entry	

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Area Summary for Storm 1

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.007	0.007	0.007
1.001	-	-	100	0.003	0.003	0.003
1.002	-	-	100	0.021	0.021	0.021
1.003	-	-	100	0.017	0.017	0.017
2.000	-	-	100	0.013	0.013	0.013
1.004	-	-	100	0.010	0.010	0.010
1.005	-	-	100	0.017	0.017	0.017
3.000	-	-	100	0.000	0.000	0.000
1.006	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.014	0.014	0.014
5.000	-	-	100	0.008	0.008	0.008
4.001	-	-	100	0.004	0.004	0.004
6.000	-	-	100	0.004	0.004	0.004
4.002	-	-	100	0.005	0.005	0.005
4.003	-	-	100	0.017	0.017	0.017
1.007	-	-	100	0.000	0.000	0.000
1.008	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.140	0.140	0.140

Free Flowing Outfall Details for Storm 1

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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S1.008	SUU 2005	54.100	49.040	0.000	2400	0
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Simulation Criteria for Storm 1

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m³/ha Storage	2.000
Hot Start (mins)	0	Inlet 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	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Summer
Return Period (years)	1	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	18.000	Storm Duration (mins)	30
Ratio R	0.356		

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Online Controls for Storm 1

Complex Manhole: S15, DS/PN: S1.007, Volume (m³): 10.4

Hydro-Brake® Optimum

Unit Reference	MD-SHE-0062-1800-1100-1800
Design Head (m)	1.100
Design Flow (l/s)	1.8
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	62
Invert Level (m)	50.339
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	1.8
Flush-Flo™	0.272	1.6
Kick-Flo®	0.554	1.3
Mean Flow over Head Range	-	1.5

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.100	1.4	1.200	1.9	3.000	2.8	7.000	4.2
0.200	1.6	1.400	2.0	3.500	3.1	7.500	4.4
0.300	1.6	1.600	2.1	4.000	3.3	8.000	4.5
0.400	1.6	1.800	2.2	4.500	3.4	8.500	4.6
0.500	1.5	2.000	2.4	5.000	3.6	9.000	4.8
0.600	1.4	2.200	2.5	5.500	3.8	9.500	4.9
0.800	1.6	2.400	2.6	6.000	3.9		
1.000	1.7	2.600	2.7	6.500	4.1		

Orifice

Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 51.139

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