STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Network 1

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	Add Flow / Climate Change (%)	0
M5-60 (mm)	18.000	Minimum Backdrop Height (m)	0.000
Ratio R	0.356	Maximum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	50	Min Design Depth for Optimisation (m)	1.200
Maximum Time of Concentration (mins)	30	Min Vel for Auto Design only (m/s)	1.00
Foul Sewage (l/s/ha)	0.000	Min Slope for Optimisation (1:X)	500
Volumetric Runoff Coeff.	0.750		

Designed with Level Soffits

Time Area Diagram for Surface Network 1

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.077	4-8	0.051

Total Area Contributing (ha) = 0.128

Total Pipe Volume (m^3) = 2.194

Network Design Table for Surface Network 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)
1.000	24.960	0.250	99.8	0.097	6.00	0.0	0.600	o	225
1.001	11.821	0.048	246.3	0.025	0.00	0.0	0.600	o	225
1.002	3.707	0.050	74.1	0.000	0.00	0.0	0.600	o	225
1.003	14.702	0.100	147.0	0.000	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	50.00	6.32	197.623	0.097	0.0	0.0	0.0	1.31	52.0	13.1
1.001	50.00	6.56	197.373	0.122	0.0	0.0	0.0	0.83	32.9	16.5
1.002	50.00	6.60	196.800	0.122	0.0	0.0	0.0	1.52	60.5	16.5
1.003	50.00	6.82	196.750	0.122	0.0	0.0	0.0	1.08	42.8	16.5

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Manhole Schedules for Surface Network 1

MH Name	MH CL (m)	MH Depth (m)	MH Connection	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)
S1	198.773	1.150	Open Manhole	1500	1.000	197.623	225				
S2	199.330	1.957	Open Manhole	1200	1.001	197.373	225	1.000	197.373	225	
S3	199.426	2.626	Open Manhole	1200	1.002	196.800	225	1.001	197.325	225	525
S4	199.500	2.750	Open Manhole	1200	1.003	196.750	225	1.002	196.750	225	
S5	199.605	2.955	Open Manhole	1200		OUTFALL		1.003	196.650	225	

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