

Archibald Shaw Limited		Page 1
One Little London Chichester Sussex PO19 1PP	ELM GROVE NORTH PIPE NETWORK M20	
Date Jan. 2023 File NORTH M20.sws	Designed By PF Checked By	
Micro Drainage	System1 W.11.2	

STORM SEWER DESIGN by the Modified Rational Method

Global Variables

Pipe Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.PIP
Manhole Size File C:\Program Files\Micro Drainage Ltd\WinDes\STANDARD.MHS

Location - England & Wales

Return Period (years)	20
M5-60 (mm)	20.000
Ratio R	0.350
Maximum Rainfall (mm/hr)	50
Foul Sewage (l/s/ha)	0.00
Overflow Setting (*Foul only)	0
Volumetric Runoff Coeff.	1.00
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Cover Depth for Optimisation (m)	0.100
Min Vel for Auto Design Only (m/s)	1.00
Min Slope for Optimisation (1:X)	500
Minimum Outfall Invert (m)	0.000
Ground Level at Outfall (m)	0.000
Outfall Manhole Name	
Outfall Manhole Dia/Length (mm)	0
Outfall Manhole Width (mm)	0

Designed with Level Soffits

Network Design Table

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	T.E. (mins)	DWF (l/s)	k (mm)	HYD SECT	DIA (mm)
1.000	30.38	0.135	225.0	0.027	5.00	0.0	0.600	o	225
1.001	13.14	0.180	73.0	0.012	0.00	0.0	0.600	o	225

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E.Area (ha)	E.DWF (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	CAP (l/s)	Flow (l/s)
1.000	50.0	5.6	6.165	0.027	0.0	0.0	0.0	0.87	34.5	4.9
1.001	50.0	5.7	6.030	0.039	0.0	0.0	0.0	1.53	60.9	7.0

Archibald Shaw Limited		Page 2
One Little London Chichester Sussex PO19 1PP	ELM GROVE NORTH PIPE NETWORK M20	
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Time Area Diagram

Time From (mins)	Time To (mins)	Area (ha)
0	4	0.029
4	8	0.010

Total Area Contributing (ha) = 0.039

Total Pipe Volume (m³) = 1.730

Archibald Shaw Limited		Page 3
One Little London Chichester Sussex PO19 1PP	ELM GROVE NORTH PIPE NETWORK M20	
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PIPELINE SCHEDULES

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	o	225	1	6.500	6.165	0.110	1050
1.001	o	225	2	6.500	6.030	0.245	1050

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH No.	C.Level (m)	I.Level (m)	C.Depth (m)	MH DIAM., L*W (mm)
1.000	30.38	225.0	2	6.500	6.030	0.245	1050
1.001	13.14	73.0		0.000	5.850	-6.075	0

MANHOLE SCHEDULES

M/Ho1e Number	Cover Level (m)	M/Ho1e Depth (m)	M/Ho1e Diam., L*W (mm)	PN	Pipes Out IL.(m)	D (mm)	PN	Pipes In IL.(m)	D (mm)
1	6.500	0.335	1050	1.000	6.165	225			
2	6.500	0.470	1050	1.001	6.030	225	1.000	6.030	225
	0.000	-5.850	0		OUTFALL		1.001	5.850	225