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St Nicholas House St Nicholas Road Sutton SM1 1EL		
Date 28/06/2022 17:22 File FW - Network to existin...	Designed by tkillingback Checked by	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for Foul - Main

Pipe Sizes STANDARD Manhole Sizes STANDARD

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.200
Flow Per Person (l/per/day)	222.00	Maximum Backdrop Height (m)	1.500
Persons per House	3.00	Min Design Depth for Optimisation (m)	1.200
Domestic (l/s/ha)	0.00	Min Vel for Auto Design only (m/s)	0.75
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for Foul - Main

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
F1.000	58.102	2.585	22.5	0.000	26	0.0	1.500	o	150	Pipe/Conduit	
F2.000	46.835	0.585	80.1	0.000	12	0.0	1.500	o	150	Pipe/Conduit	
F3.000	7.635	0.339	22.5	0.000	27	0.0	1.500	o	150	Pipe/Conduit	
F1.001	64.905	0.811	80.0	0.000	13	0.0	1.500	o	150	Pipe/Conduit	
F4.000	23.363	1.038	22.5	0.000	8	0.0	1.500	o	150	Pipe/Conduit	
F4.001	11.195	0.498	22.5	0.000	4	0.0	1.500	o	150	Pipe/Conduit	
F1.002	21.088	0.264	79.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
F5.000	38.141	1.695	22.5	0.000	12	0.0	1.500	o	150	Pipe/Conduit	

Network Results Table

PN	US/IL (m)	E Area (ha)	E Base Flow (l/s)	E Hse	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
F1.000	39.150	0.000	0.0	26	0.0	20	0.86	1.85	32.8	1.2
F2.000	37.150	0.000	0.0	12	0.0	19	0.44	0.98	17.3	0.6
F3.000	36.904	0.000	0.0	27	0.0	20	0.88	1.85	32.7	1.2
F1.001	36.565	0.000	0.0	78	0.0	47	0.77	0.98	17.3	3.6
F4.000	37.290	0.000	0.0	8	0.0	12	0.59	1.85	32.7	0.4
F4.001	36.252	0.000	0.0	12	0.0	14	0.68	1.85	32.7	0.6
F1.002	35.754	0.000	0.0	90	0.0	50	0.80	0.98	17.3	4.2
F5.000	37.185	0.000	0.0	12	0.0	14	0.68	1.85	32.7	0.6

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PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
F1.003	28.401	0.355	80.0	0.000	12	0.0	1.500	o	150	Pipe/Conduit	
F1.004	42.871	0.536	80.0	0.000	12	0.0	1.500	o	150	Pipe/Conduit	
F1.005	37.548	0.469	80.0	0.000	12	0.0	1.500	o	150	Pipe/Conduit	
F1.006	37.905	0.474	80.0	0.000	12	0.0	1.500	o	150	Pipe/Conduit	
F1.007	39.464	0.897	44.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
F1.008	31.040	0.722	43.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	

Network Results Table

PN	US/IL (m)	Σ Area (ha)	Σ Base Flow (l/s)	Σ Hse	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
F1.003	35.490	0.000	0.0	114	0.0	57	0.86	0.98	17.3	5.3
F1.004	35.105	0.000	0.0	126	0.0	60	0.88	0.98	17.3	5.8
F1.005	34.569	0.000	0.0	138	0.0	63	0.90	0.98	17.3	6.4
F1.006	34.099	0.000	0.0	150	0.0	66	0.93	0.98	17.3	6.9
F1.007	33.624	0.000	0.0	150	0.0	56	1.15	1.32	23.4	6.9
F1.008	32.724	0.000	0.0	150	0.0	56	1.16	1.34	23.7	6.9

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Manhole Schedules for Foul - Main

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)
F1	40.500	1.350	Open Manhole	1200	F1.000	39.150	150				
F2	38.500	1.350	Open Manhole	1200	F2.000	37.150	150				
F3	40.375	3.471	Open Manhole	1200	F3.000	36.904	150				
F4	40.250	3.685	Open Manhole	1200	F1.001	36.565	150	F1.000	36.565	150	
								F2.000	36.565	150	
								F3.000	36.565	150	
F5	39.000	1.710	Open Manhole	1200	F4.000	37.290	150				
F6	39.500	3.248	Open Manhole	1200	F4.001	36.252	150	F4.000	36.252	150	
F7	39.750	3.996	Open Manhole	1200	F1.002	35.754	150	F1.001	35.754	150	
								F4.001	35.754	150	
F8	38.000	0.815	Open Manhole	1200	F5.000	37.185	150				
F9	39.375	3.885	Open Manhole	1200	F1.003	35.490	150	F1.002	35.490	150	
								F5.000	35.490	150	
F10	38.500	3.395	Open Manhole	1200	F1.004	35.105	150	F1.003	35.135	150	30
F11	37.000	2.431	Open Manhole	1200	F1.005	34.569	150	F1.004	34.569	150	
F12	35.000	0.901	Open Manhole	1200	F1.006	34.099	150	F1.005	34.100	150	1
F13	34.000	0.376	Open Manhole	1200	F1.007	33.624	150	F1.006	33.625	150	1
F14	34.000	1.276	Open Manhole	1200	F1.008	32.724	150	F1.007	32.727	150	3
F	34.000	1.998	Open Manhole	0		OUTFALL		F1.008	32.002	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F1	470613.723	109598.870	470613.723	109598.870	Required	
F2	470579.919	109534.620	470579.919	109534.620	Required	
F3	470630.517	109548.376	470630.517	109548.376	Required	
F4	470626.151	109542.113	470626.151	109542.113	Required	
F5	470603.331	109475.152	470603.331	109475.152	Required	



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Manhole Schedules for Foul - Main

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F6	470626.275	109479.558	470626.275	109479.558	Required	
F7	470637.386	109478.188	470637.386	109478.188	Required	
F8	470601.890	109454.541	470601.890	109454.541	Required	
F9	470639.934	109457.254	470639.934	109457.254	Required	
F10	470642.071	109428.934	470642.071	109428.934	Required	
F11	470633.405	109386.948	470633.405	109386.948	Required	
F12	470596.005	109383.629	470596.005	109383.629	Required	
F13	470558.275	109379.982	470558.275	109379.982	Required	
F14	470558.408	109340.519	470558.408	109340.519	Required	
F	470566.693	109310.604			No Entry	

Free Flowing Outfall Details for Foul - Main

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D, L (mm)	W (mm)
F1.008	F	34.000	32.002	32.008	0	0

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<u>Simulation Criteria for Foul - Main</u> 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 0 Number of Online Controls 0 Number of Time/Area Diagrams 0 Number of Offline Controls 0 Number of Real Time Controls 0 <u>Synthetic Rainfall Details</u> Rainfall Model FSR Profile Type Summer Return Period (years) 0 Cv (Summer) 0.750 Region England and Wales Cv (Winter) 0.840 M5-60 (mm) 0.000 Storm Duration (mins) 30 Ratio R 0.000		
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