

Dudleys Structural and Civil Engineers		Page 1
Suite 3 Tithe House 35 Town Street Horsforth Leeds West Yorkshire LS18 5LJ		
Date 08/06/2017 14:36 File 170606 FW.MDX	Designed by kieran.breheney Checked by	
Micro Drainage	Network 2017.1.1	

Network 2017.1.1

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)	0.000
Flow Per Person (l/per/day)	222.00	Maximum Backdrop Height (m)	5.000
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)	1.00
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	100

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
1.000	79.999	4.706	17.0	0.000	16	0.0	1.500	0	150	Pipe/Conduit	
1.001	16.280	0.407	40.0	0.000	5	0.0	1.500	0	150	Pipe/Conduit	
1.002	21.056	0.234	90.0	0.000	3	0.0	1.500	0	150	Pipe/Conduit	
1.003	22.566	0.150	150.0	0.000	6	0.0	1.500	0	150	Pipe/Conduit	
1.004	7.135	0.048	150.0	0.000	0	0.0	1.500	0	150	Pipe/Conduit	
1.005	30.148	0.201	150.0	0.000	0	0.0	1.500	0	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)
1.000	191.900	0.000	0.0	16	0.0	15	0.82	2.13	37.7	0.7
1.001	187.194	0.000	0.0	21	0.0	21	0.66	1.39	24.5	1.0
1.002	184.400	0.000	0.0	24	0.0	27	0.52	0.92	16.3	1.1
1.003	184.166	0.000	0.0	30	0.0	34	0.47	0.71	12.6	1.4
1.004	184.016	0.000	0.0	30	0.0	34	0.47	0.71	12.6	1.4
1.005	183.968	0.000	0.0	30	0.0	34	0.47	0.71	12.6	1.4

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)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
FW1.0	194.040	2.140	Open Manhole	1200	1.000	191.900	150				
FW1.1	189.260	2.066	Open Manhole	1200	1.001	187.194	150	1.000	187.194	150	
FW1.2	188.750	4.350	Open Manhole	1200	1.002	184.400	150	1.001	186.787	150	2387
FW1.3	188.100	3.934	Open Manhole	1200	1.003	184.166	150	1.002	184.166	150	
5	187.850	3.834	Open Manhole	1200	1.004	184.016	150	1.003	184.016	150	
6	187.800	3.832	Open Manhole	1200	1.005	183.968	150	1.004	183.968	150	
FW1.4	187.510	3.743	Open Manhole	1200		OUTFALL		1.005	183.767	150	

PIPELINE SCHEDULES for Foul - Main

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	FW1.0	194.040	191.900	1.990	Open Manhole	1200
1.001	o	150	FW1.1	189.260	187.194	1.916	Open Manhole	1200
1.002	o	150	FW1.2	188.750	184.400	4.200	Open Manhole	1200
1.003	o	150	FW1.3	188.100	184.166	3.784	Open Manhole	1200
1.004	o	150	5	187.850	184.016	3.684	Open Manhole	1200
1.005	o	150	6	187.800	183.968	3.682	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	79.999	17.0	FW1.1	189.260	187.194	1.916	Open Manhole	1200
1.001	16.280	40.0	FW1.2	188.750	186.787	1.813	Open Manhole	1200
1.002	21.056	90.0	FW1.3	188.100	184.166	3.784	Open Manhole	1200
1.003	22.566	150.0	5	187.850	184.016	3.684	Open Manhole	1200
1.004	7.135	150.0	6	187.800	183.968	3.682	Open Manhole	1200
1.005	30.148	150.0	FW1.4	187.510	183.767	3.593	Open Manhole	1200

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)
1.005	FW1.4	187.510	183.767	0.000	1200	0

Simulation Criteria for Foul - Main

Volumetric Runoff Coeff	0.750	Manhole Headloss Coeff (Global)	0.500	Inlet Coefficient	0.800
Areal Reduction Factor	1.000	Foul Sewage per hectare (l/s)	0.000	Flow per Person per Day (l/per/day)	0.000
Hot Start (mins)	0	Additional Flow - % of Total Flow	0.000	Run Time (mins)	60
Hot Start Level (mm)	0	MADD Factor * 10m ³ /ha Storage	2.000	Output Interval (mins)	1
Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0					
Number of Online Controls 0 Number of Storage Structures 0 Number of Real Time Controls 0					

Synthetic Rainfall Details

Rainfall Model	FSR	M5-60 (mm)	0.000	Cv (Summer)	0.750
Return Period (years)	0	Ratio R	0.000	Cv (Winter)	0.840
Region	England and Wales	Profile Type	Summer Storm	Duration (mins)	30