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Park House Sandpiper Court Chester CH4 9QU	Upper Denbigh Road, St Asaph DRAFT FW Design	
Date 15/09/2021 File 7866 FW01.MDX	Designed by Coopers Checked by AJ	
Micro Drainage	Network 2018.1.1	

FOUL SEWERAGE DESIGN

















Design Criteria for 7866 FW01.FWS

Pipe Sizes 7866 FW01 Manhole Sizes 7866 FW01

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)	225.00	Maximum Backdrop Height (m)	0.000
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)	0.75
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for 7866 FW01.FWS

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	27.836	0.348	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	32.757	0.218	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	23.515	0.157	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	59.414	0.396	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	17.544	0.219	80.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.001	26.324	0.640	41.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	71.400	0.476	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.005	14.593	0.097	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.006	13.855	0.092	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.007	13.046	0.087	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.008	18.126	0.121	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.009	12.352	0.082	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.010	25.159	0.168	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.011	9.546	0.064	149.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.012	25.281	0.169	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.013	25.549	0.170	150.0	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)
1.000	46.060	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
1.001	45.712	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	45.494	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.003	45.337	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
2.000	45.800	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
2.001	45.581	0.000	0.0	0	0.0	0	0.00	1.37	24.2	0.0
1.004	44.941	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.005	44.465	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.006	44.368	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.007	44.275	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.008	44.188	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.009	44.067	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.010	43.985	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.011	43.817	0.000	0.0	0	0.0	0	0.00	0.72	12.7	0.0
1.012	43.753	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.013	43.585	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

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Network Design Table for 7866 FW01.FWS

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
1.014	20.787	0.139	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.015	22.490	0.150	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.016	19.250	0.128	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.017	17.472	0.117	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.018	10.908	0.073	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.019	14.225	0.095	150.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.020	18.064	0.120	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.021	17.400	0.116	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.022	40.381	0.269	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.023	43.354	0.328	132.2	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)
1.014	43.414	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.015	43.276	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.016	43.126	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.017	42.998	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.018	42.881	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.019	42.808	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.020	42.714	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.021	42.593	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.022	42.477	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.023	42.208	0.000	0.0	0	0.0	0	0.00	0.76	13.5	0.0



Manhole Schedules for 7866 FW01.FWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	Pipe Out PN	Invert Level (m)	Diameter (mm)	Pipes In PN	Invert Level (m)	Diameter (mm)	Backdrop (mm)
1	47.422	1.362	Open Manhole	1200	1.000	46.060	150				
2	47.075	1.363	Open Manhole	1200	1.001	45.712	150	1.000	45.712	150	
3	46.665	1.171	Open Manhole	1200	1.002	45.494	150	1.001	45.494	150	
4	46.603	1.266	Open Manhole	1200	1.003	45.337	150	1.002	45.337	150	
5	47.603	1.803	Open Manhole	1200	2.000	45.800	150				
6	47.531	1.950	Open Manhole	1200	2.001	45.581	150	2.000	45.581	150	
7	47.271	2.330	Open Manhole	1200	1.004	44.941	150	1.003	44.941	150	
								2.001	44.941	150	
8	48.159	3.694	Open Manhole	1200	1.005	44.465	150	1.004	44.465	150	
9	48.352	3.984	Open Manhole	1200	1.006	44.368	150	1.005	44.368	150	
10	48.383	4.108	Open Manhole	1200	1.007	44.275	150	1.006	44.275	150	
11	48.155	3.967	Open Manhole	1200	1.008	44.188	150	1.007	44.188	150	
12	47.695	3.628	Open Manhole	1200	1.009	44.067	150	1.008	44.067	150	
13	47.403	3.418	Open Manhole	1200	1.010	43.985	150	1.009	43.985	150	
14	46.703	2.886	Open Manhole	1200	1.011	43.817	150	1.010	43.817	150	
15	46.289	2.536	Open Manhole	1200	1.012	43.753	150	1.011	43.753	150	
16	45.152	1.567	Open Manhole	1200	1.013	43.585	150	1.012	43.585	150	
17	45.192	1.777	Open Manhole	1200	1.014	43.414	150	1.013	43.414	150	
18	45.441	2.165	Open Manhole	1200	1.015	43.276	150	1.014	43.276	150	
19	45.717	2.592	Open Manhole	1200	1.016	43.126	150	1.015	43.126	150	
20	45.805	2.807	Open Manhole	1200	1.017	42.998	150	1.016	42.998	150	
21	45.645	2.764	Open Manhole	1200	1.018	42.881	150	1.017	42.881	150	
22	45.413	2.604	Open Manhole	1200	1.019	42.808	150	1.018	42.808	150	
23	44.929	2.215	Open Manhole	1200	1.020	42.714	150	1.019	42.714	150	
24	44.098	1.505	Open Manhole	1200	1.021	42.593	150	1.020	42.593	150	
25	43.365	0.888	Open Manhole	1200	1.022	42.477	150	1.021	42.477	150	
26	43.963	1.755	Open Manhole	1200	1.023	42.208	150	1.022	42.208	150	
27	43.828	1.948	Open Manhole	0		OUTFALL		1.023	41.880	150	




PIPELINE SCHEDULES for 7866 FW01.FWS

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	1	47.422	46.060	1.212	Open Manhole	1200
1.001	o	150	2	47.075	45.712	1.213	Open Manhole	1200
1.002	o	150	3	46.665	45.494	1.021	Open Manhole	1200
1.003	o	150	4	46.603	45.337	1.116	Open Manhole	1200
2.000	o	150	5	47.603	45.800	1.653	Open Manhole	1200
2.001	o	150	6	47.531	45.581	1.800	Open Manhole	1200
1.004	o	150	7	47.271	44.941	2.180	Open Manhole	1200
1.005	o	150	8	48.159	44.465	3.544	Open Manhole	1200
1.006	o	150	9	48.352	44.368	3.834	Open Manhole	1200
1.007	o	150	10	48.383	44.275	3.958	Open Manhole	1200
1.008	o	150	11	48.155	44.188	3.817	Open Manhole	1200
1.009	o	150	12	47.695	44.067	3.478	Open Manhole	1200
1.010	o	150	13	47.403	43.985	3.268	Open Manhole	1200
1.011	o	150	14	46.703	43.817	2.736	Open Manhole	1200
1.012	o	150	15	46.289	43.753	2.386	Open Manhole	1200
1.013	o	150	16	45.152	43.585	1.417	Open Manhole	1200
1.014	o	150	17	45.192	43.414	1.627	Open Manhole	1200
1.015	o	150	18	45.441	43.276	2.015	Open Manhole	1200
1.016	o	150	19	45.717	43.126	2.442	Open Manhole	1200
1.017	o	150	20	45.805	42.998	2.657	Open Manhole	1200
1.018	o	150	21	45.645	42.881	2.614	Open Manhole	1200
1.019	o	150	22	45.413	42.808	2.454	Open Manhole	1200
1.020	o	150	23	44.929	42.714	2.065	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	27.836	80.0	2	47.075	45.712	1.213	Open Manhole	1200
1.001	32.757	150.0	3	46.665	45.494	1.021	Open Manhole	1200
1.002	23.515	150.0	4	46.603	45.337	1.116	Open Manhole	1200
1.003	59.414	150.0	7	47.271	44.941	2.180	Open Manhole	1200
2.000	17.544	80.1	6	47.531	45.581	1.800	Open Manhole	1200
2.001	26.324	41.1	7	47.271	44.941	2.180	Open Manhole	1200
1.004	71.400	150.0	8	48.159	44.465	3.544	Open Manhole	1200
1.005	14.593	150.0	9	48.352	44.368	3.834	Open Manhole	1200
1.006	13.855	150.0	10	48.383	44.275	3.958	Open Manhole	1200
1.007	13.046	150.0	11	48.155	44.188	3.817	Open Manhole	1200
1.008	18.126	150.0	12	47.695	44.067	3.478	Open Manhole	1200
1.009	12.352	150.0	13	47.403	43.985	3.268	Open Manhole	1200
1.010	25.159	150.0	14	46.703	43.817	2.736	Open Manhole	1200
1.011	9.546	149.2	15	46.289	43.753	2.386	Open Manhole	1200
1.012	25.281	150.0	16	45.152	43.585	1.417	Open Manhole	1200
1.013	25.549	150.0	17	45.192	43.414	1.627	Open Manhole	1200
1.014	20.787	150.0	18	45.441	43.276	2.015	Open Manhole	1200
1.015	22.490	150.0	19	45.717	43.126	2.442	Open Manhole	1200
1.016	19.250	150.0	20	45.805	42.998	2.657	Open Manhole	1200
1.017	17.472	150.0	21	45.645	42.881	2.614	Open Manhole	1200
1.018	10.908	150.0	22	45.413	42.808	2.454	Open Manhole	1200
1.019	14.225	150.1	23	44.929	42.714	2.065	Open Manhole	1200
1.020	18.064	150.0	24	44.098	42.593	1.355	Open Manhole	1200

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PIPELINE SCHEDULES for 7866 FW01.FWS

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)
1.021	o	150	24	44.098	42.593	1.355	Open Manhole	1200
1.022	o	150	25	43.365	42.477	0.738	Open Manhole	1200
1.023	o	150	26	43.963	42.208	1.605	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)
1.021	17.400	150.0	25	43.365	42.477	0.738	Open Manhole	1200
1.022	40.381	150.0	26	43.963	42.208	1.605	Open Manhole	1200
1.023	43.354	132.2	27	43.828	41.880	1.798	Open Manhole	0