

Appendix F Wastewater Network Calculations



Micro
Drainage

Donnachadh O'Brien & Associates		Page 3
Unit 5C, Elm House Millennium Park, Naas Kildare, Ireland	Arklow LRD Proposed WW Drainage Phase 1	
Date 01/03/2025	Designed by MJC	
File WASTEWATER CALCULATIONS_...	Checked by MJC	
Innovyze	Network 2020.1.3	

Network Design Table for Foul Network 1

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
7.000	69.737	1.992	35.0	0.000	11	0.0	1.500	o	225	Pipe/Conduit	
7.001	7.605	0.217	35.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
6.004	61.408	1.755	35.0	0.000	12	0.0	1.500	o	225	Pipe/Conduit	
1.009	38.040	0.761	50.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
1.010	47.074	0.941	50.0	0.000	7	0.0	1.500	o	225	Pipe/Conduit	
8.000	60.350	1.207	50.0	0.000	17	0.0	1.500	o	225	Pipe/Conduit	
8.001	6.055	0.173	35.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
8.002	61.539	1.490	41.3	0.000	3	0.0	1.500	o	225	Pipe/Conduit	
9.000	33.295	0.744	44.8	0.000	6	0.0	1.500	o	225	Pipe/Conduit	
9.001	33.338	0.722	46.2	0.000	4	0.0	1.500	o	225	Pipe/Conduit	
8.003	19.746	0.494	40.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
10.000	47.901	1.198	40.0	0.000	6	0.0	1.500	o	225	Pipe/Conduit	
8.004	29.054	0.726	40.0	0.000	5	0.0	1.500	o	225	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)
7.000	26.696	0.000	0.0	11	0.0	11	0.47	1.94	77.3	0.3
7.001	24.703	0.000	0.0	11	0.0	11	0.47	1.94	77.3	0.3
6.004	24.486	0.000	0.0	39	0.0	20	0.71	1.94	77.3	1.2
1.009	22.732	0.000	0.0	102	0.0	34	0.84	1.63	64.6	3.2
1.010	21.971	0.000	0.0	109	0.0	35	0.85	1.63	64.6	3.4
8.000	27.594	0.000	0.0	17	0.0	15	0.48	1.63	64.6	0.5
8.001	25.970	0.000	0.0	17	0.0	14	0.54	1.94	77.3	0.5
8.002	25.797	0.000	0.0	20	0.0	15	0.54	1.79	71.1	0.6
9.000	25.570	0.000	0.0	6	0.0	9	0.35	1.72	68.3	0.2
9.001	24.826	0.000	0.0	10	0.0	11	0.41	1.69	67.3	0.3
8.003	23.148	0.000	0.0	32	0.0	19	0.63	1.82	72.3	1.0
10.000	24.550	0.000	0.0	6	0.0	9	0.37	1.82	72.3	0.2
8.004	22.654	0.000	0.0	43	0.0	22	0.69	1.82	72.3	1.3

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
27.000	42.930	0.716	60.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
27.001	8.389	0.140	60.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
25.008	18.307	0.305	60.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
25.009	24.502	0.408	60.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
28.000	77.110	1.542	50.0	0.000	26	0.0	1.500	o	225	Pipe/Conduit	
28.001	8.733	0.146	60.0	0.000	1	0.0	1.500	o	225	Pipe/Conduit	
28.002	17.932	0.299	60.0	0.000	1	0.0	1.500	o	225	Pipe/Conduit	
25.010	30.785	0.513	60.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
25.011	13.872	0.231	60.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
25.012	17.441	0.291	60.0	0.000	2	0.0	1.500	o	225	Pipe/Conduit	
25.013	16.139	0.161	100.0	0.000	1	0.0	1.500	o	225	Pipe/Conduit	
1.030	39.005	0.390	100.0	0.000	2	0.0	1.500	o	300	Pipe/Conduit	
1.031	30.256	0.303	100.0	0.000	0	0.0	1.500	o	300	Pipe/Conduit	
29.000	60.829	0.406	150.0	0.000	11	0.0	1.500	o	225	Pipe/Conduit	

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)
27.000	9.575	0.000	0.0	2	0.0	6	0.22	1.48	59.0	0.1
27.001	8.859	0.000	0.0	2	0.0	6	0.22	1.48	59.0	0.1
25.008	8.720	0.000	0.0	51	0.0	26	0.64	1.48	59.0	1.6
25.009	8.415	0.000	0.0	53	0.0	26	0.64	1.48	59.0	1.7
28.000	10.410	0.000	0.0	26	0.0	18	0.55	1.63	64.6	0.8
28.001	8.451	0.000	0.0	27	0.0	19	0.52	1.48	59.0	0.8
28.002	8.305	0.000	0.0	28	0.0	19	0.53	1.48	59.0	0.9
25.010	8.006	0.000	0.0	81	0.0	32	0.73	1.48	59.0	2.5
25.011	6.824	0.000	0.0	83	0.0	32	0.74	1.48	59.0	2.6
25.012	6.592	0.000	0.0	85	0.0	33	0.74	1.48	59.0	2.7
25.013	5.974	0.000	0.0	86	0.0	37	0.62	1.15	45.6	2.7
1.030	3.930	0.000	0.0	543	0.0	84	1.04	1.39	98.0	17.0
1.031	3.540	0.000	0.0	543	0.0	84	1.04	1.39	98.0	17.0
29.000	4.564	0.000	0.0	11	0.0	16	0.28	0.94	37.2	0.3

PN	Length (m)	Fall (m)	Slope (1:X)	Area (ha)	Houses	Base Flow	k (l/s)	HYD SECT	DIA (mm)	Section Type	Auto Design
32.001	59.769	1.085	55.1	0.000	14	0.0	1.500	o	225	Pipe/Conduit	
30.007	20.727	0.207	100.0	0.000	4	0.0	1.500	o	225	Pipe/Conduit	
30.008	31.080	0.311	100.0	0.000	7	0.0	1.500	o	225	Pipe/Conduit	
30.009	30.137	0.301	100.0	0.000	4	0.0	1.500	o	225	Pipe/Conduit	
30.010	36.837	0.368	100.0	0.000	5	0.0	1.500	o	300	Pipe/Conduit	
30.011	28.081	0.281	100.0	0.000	4	0.0	1.500	o	300	Pipe/Conduit	
30.012	28.049	0.280	100.0	0.000	4	0.0	1.500	o	300	Pipe/Conduit	
30.013	23.317	0.233	100.0	0.000	2	0.0	1.500	o	300	Pipe/Conduit	
30.014	22.861	0.229	100.0	0.000	4	0.0	1.500	o	300	Pipe/Conduit	
30.015	27.863	0.139	200.0	0.000	0	0.0	1.500	o	300	Pipe/Conduit	
30.016	29.503	0.148	200.0	0.000	0	0.0	1.500	o	300	Pipe/Conduit	
30.017	18.852	0.094	200.0	0.000	0	0.0	1.500	o	300	Pipe/Conduit	
33.000	36.621	0.916	40.0	0.000	11	0.0	1.500	o	225	Pipe/Conduit	
33.001	23.969	0.599	40.0	0.000	6	0.0	1.500	o	225	Pipe/Conduit	
33.002	24.009	0.600	40.0	0.000	8	0.0	1.500	o	225	Pipe/Conduit	
33.003	24.102	0.603	40.0	0.000	6	0.0	1.500	o	225	Pipe/Conduit	
33.004	33.999	0.850	40.0	0.000	10	0.0	1.500	o	225	Pipe/Conduit	
33.005	50.165	0.334	150.0	0.000	11	0.0	1.500	o	225	Pipe/Conduit	

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)
32.001	8.885	0.000	0.0	22	0.0	17	0.50	1.55	61.6	0.7
30.007	7.800	0.000	0.0	50	0.0	29	0.53	1.15	45.6	1.6
30.008	7.593	0.000	0.0	57	0.0	30	0.55	1.15	45.6	1.8
30.009	7.282	0.000	0.0	61	0.0	31	0.56	1.15	45.6	1.9
30.010	5.695	0.000	0.0	66	0.0	30	0.55	1.39	98.0	2.1
30.011	5.327	0.000	0.0	70	0.0	31	0.56	1.39	98.0	2.2
30.012	5.046	0.000	0.0	74	0.0	32	0.57	1.39	98.0	2.3
30.013	4.766	0.000	0.0	76	0.0	32	0.58	1.39	98.0	2.4
30.014	4.533	0.000	0.0	80	0.0	33	0.59	1.39	98.0	2.5
30.015	3.808	0.000	0.0	80	0.0	39	0.46	0.98	69.2	2.5
30.016	3.668	0.000	0.0	80	0.0	39	0.46	0.98	69.2	2.5
30.017	3.521	0.000	0.0	80	0.0	39	0.46	0.98	69.2	2.5
33.000	7.791	0.000	0.0	11	0.0	12	0.45	1.82	72.3	0.3
33.001	6.875	0.000	0.0	17	0.0	14	0.52	1.82	72.3	0.5
33.002	6.276	0.000	0.0	25	0.0	17	0.58	1.82	72.3	0.8
33.003	5.676	0.000	0.0	31	0.0	18	0.63	1.82	72.3	1.0
33.004	5.073	0.000	0.0	41	0.0	21	0.68	1.82	72.3	1.3
33.005	4.090	0.000	0.0	52	0.0	32	0.46	0.94	37.2	1.6

