

Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 1 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 1 REV F.FWS

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)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 1 REV F.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	44.664	0.576	77.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	30.006	0.200	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	15.654	0.104	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	12.955	0.086	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	51.131	0.341	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	11.030	0.545	20.2	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
2.001	45.924	0.306	150.1	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
2.002	6.428	0.043	150.0	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
2.003	74.466	0.496	150.0	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
2.004	29.808	0.199	150.0	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
1.005	41.560	2.362	17.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.006	36.607	0.244	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	24.946	0.000	0.0	0	0.0	0	0.00	1.00	17.6	0.0
1.001	24.370	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	24.170	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.003	24.066	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.004	23.979	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
2.000	23.695	0.000	0.0	0	0.0	0	0.00	1.48	11.7	0.0
2.001	23.150	0.000	0.0	0	0.0	0	0.00	0.54	4.3	0.0
2.002	22.844	0.000	0.0	0	0.0	0	0.00	0.54	4.3	0.0
2.003	22.801	0.000	0.0	0	0.0	0	0.00	0.54	4.3	0.0
2.004	22.305	0.000	0.0	0	0.0	0	0.00	0.54	4.3	0.0
1.005	22.056	0.000	0.0	0	0.0	0	0.00	2.10	37.0	0.0
1.006	19.694	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
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Network Design Table for 7778 - FW NET 1 REV F.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
3.000	37.607	0.485	77.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.001	13.869	0.601	23.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.002	49.886	0.333	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.003	48.801	0.325	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.004	46.657	0.311	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.005	25.573	0.170	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.006	27.102	1.855	14.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.007	61.366	0.409	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
4.000	52.486	0.676	77.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
4.001	31.416	0.209	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
5.000	31.086	0.401	77.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
4.002	51.367	0.342	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
4.003	28.706	0.191	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
6.000	39.548	0.510	77.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
6.001	14.938	0.100	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
7.000	37.542	0.652	57.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
6.002	63.395	0.882	71.9	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)
3.000	23.530	0.000	0.0	0	0.0	0	0.00	1.00	17.6	0.0
3.001	23.045	0.000	0.0	0	0.0	0	0.00	1.83	32.3	0.0
3.002	22.444	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
3.003	22.111	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
3.004	21.786	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
3.005	21.475	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
3.006	21.305	0.000	0.0	0	0.0	0	0.00	2.30	40.6	0.0
1.007	19.450	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
4.000	23.409	0.000	0.0	0	0.0	0	0.00	0.99	17.6	0.0
4.001	22.733	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
5.000	24.103	0.000	0.0	0	0.0	0	0.00	1.00	17.6	0.0
4.002	22.524	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
4.003	22.181	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
6.000	23.481	0.000	0.0	0	0.0	0	0.00	1.00	17.6	0.0
6.001	22.971	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
7.000	23.552	0.000	0.0	0	0.0	0	0.00	1.16	20.4	0.0
6.002	22.871	0.000	0.0	0	0.0	0	0.00	1.03	18.3	0.0

Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 1 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Network Design Table for 7778 - FW NET 1 REV F.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
4.004	77.691	1.859	41.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.008	25.186	0.168	149.9	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)
4.004	20.900	0.000	0.0	0	0.0	0	0.00	1.36	24.0
1.008	19.041	0.000	0.0	0	0.0	0	0.00	0.71	12.6

Coopers		Page 3
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 1 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 1 REV F.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)
101	26.596	1.650	Open Manhole	1200	1.000	24.946	150				
102	26.586	2.216	Open Manhole	1200	1.001	24.370	150	1.000	24.370	150	
103	26.665	2.495	Open Manhole	1200	1.002	24.170	150	1.001	24.170	150	
104	26.535	2.469	Open Manhole	1200	1.003	24.066	150	1.002	24.066	150	
105	26.315	2.336	Open Manhole	1200	1.004	23.979	150	1.003	23.979	150	
106	25.345	1.650	Open Manhole	1200	2.000	23.695	100				
107	25.175	2.025	Open Manhole	1200	2.001	23.150	100	2.000	23.150	100	
108	25.617	2.773	Open Manhole	1200	2.002	22.844	100	2.001	22.844	100	
109	25.662	2.861	Open Manhole	1200	2.003	22.801	100	2.002	22.801	100	
110	26.060	3.755	Open Manhole	1200	2.004	22.305	100	2.003	22.305	100	
111	25.463	3.407	Open Manhole	1200	1.005	22.056	150	1.004	23.638	150	1582
								2.004	22.106	100	
112	24.771	5.077	Open Manhole	1200	1.006	19.694	150	1.005	19.694	150	
113	25.180	1.650	Open Manhole	1200	3.000	23.530	150				
114	24.290	1.245	Open Manhole	1200	3.001	23.045	150	3.000	23.045	150	
115	23.794	1.350	Open Manhole	1200	3.002	22.444	150	3.001	22.444	150	
116	23.955	1.844	Open Manhole	1200	3.003	22.111	150	3.002	22.111	150	
117	24.098	2.312	Open Manhole	1200	3.004	21.786	150	3.003	21.786	150	
118	23.885	2.410	Open Manhole	1200	3.005	21.475	150	3.004	21.475	150	
119	24.311	3.006	Open Manhole	1200	3.006	21.305	150	3.005	21.305	150	
120	23.200	3.750	Open Manhole	1200	1.007	19.450	150	1.006	19.450	150	
								3.006	19.450	150	
121	25.059	1.650	Open Manhole	1200	4.000	23.409	150				
122	25.715	2.982	Open Manhole	1200	4.001	22.733	150	4.000	22.733	150	
123	25.753	1.650	Open Manhole	1200	5.000	24.103	150				
124	26.141	3.618	Open Manhole	1200	4.002	22.524	150	4.001	22.524	150	
								5.000	23.702	150	1178
125	26.407	4.226	Open Manhole	1200	4.003	22.181	150	4.002	22.181	150	
126	25.131	1.650	Open Manhole	1200	6.000	23.481	150				
127	25.339	2.368	Open Manhole	1200	6.001	22.971	150	6.000	22.971	150	
128	25.202	1.650	Open Manhole	1200	7.000	23.552	150				
129	25.492	2.621	Open Manhole	1200	6.002	22.871	150	6.001	22.871	150	
								7.000	22.900	150	29
130	26.049	5.149	Open Manhole	1200	4.004	20.900	150	4.003	21.990	150	1090
								6.002	21.990	150	1090
131	23.312	4.271	Open Manhole	1200	1.008	19.041	150	1.007	19.041	150	
								4.004	19.041	150	
132	22.800	3.927	Open Manhole	0		OUTFALL		1.008	18.873	150	

Coopers		Page 4
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024 File 7778 FW NET 1 REV F.MDX	Designed by JAR Checked by AJ	
Micro Drainage	Network 2020.1.3	

Manhole Schedules for 7778 - FW NET 1 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
101	341050.049	398526.753	341050.049	398526.753	Required	
102	341008.270	398542.545	341008.270	398542.545	Required	
103	340980.216	398553.193	340980.216	398553.193	Required	
104	340965.587	398558.762	340965.587	398558.762	Required	
105	340970.146	398570.888	340970.146	398570.888	Required	
106	341129.770	398551.377	341129.770	398551.377	Required	
107	341133.617	398561.714	341133.617	398561.714	Required	
108	341090.528	398577.600	341090.528	398577.600	Required	
109	341085.795	398581.949	341085.795	398581.949	Required	
110	341016.103	398608.182	341016.103	398608.182	Required	
111	340988.219	398618.718	340988.219	398618.718	Required	
112	341002.909	398657.595	341002.909	398657.595	Required	
113	341179.259	398552.069	341179.259	398552.069	Required	
114	341178.645	398589.671	341178.645	398589.671	Required	
115	341183.749	398602.566	341183.749	398602.566	Required	
116	341137.471	398621.191	341137.471	398621.191	Required	
117	341092.199	398639.412	341092.199	398639.412	Required	

Coopers		Page 5
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 1 REV F.MDX	Checked by AJ	
Micro Drainage		Network 2020.1.3

Manhole Schedules for 7778 - FW NET 1 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
118	341048.937	398656.886	341048.937	398656.886	Required	
119	341025.192	398666.378	341025.192	398666.378	Required	
120	341015.875	398691.829	341015.875	398691.829	Required	
121	340827.034	398602.375	340827.034	398602.375	Required	
122	340876.131	398583.823	340876.131	398583.823	Required	
123	340894.531	398543.639	340894.531	398543.639	Required	
124	340905.519	398572.718	340905.519	398572.718	Required	
125	340923.675	398620.769	340923.675	398620.769	Required	
126	340832.207	398670.022	340832.207	398670.022	Required	
127	340869.202	398656.043	340869.202	398656.043	Required	
128	340887.751	398705.135	340887.751	398705.135	Required	
129	340874.528	398669.999	340874.528	398669.999	Required	
130	340933.840	398647.615	340933.840	398647.615	Required	
131	340961.474	398720.225	340961.474	398720.225	Required	
132	340971.033	398743.527			No Entry	

Coopers		Page 6
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 1 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 1 REV F.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	101	26.596	24.946	1.500	Open Manhole	1200
1.001	o	150	102	26.586	24.370	2.066	Open Manhole	1200
1.002	o	150	103	26.665	24.170	2.345	Open Manhole	1200
1.003	o	150	104	26.535	24.066	2.319	Open Manhole	1200
1.004	o	150	105	26.315	23.979	2.186	Open Manhole	1200
2.000	o	100	106	25.345	23.695	1.550	Open Manhole	1200
2.001	o	100	107	25.175	23.150	1.925	Open Manhole	1200
2.002	o	100	108	25.617	22.844	2.673	Open Manhole	1200
2.003	o	100	109	25.662	22.801	2.761	Open Manhole	1200
2.004	o	100	110	26.060	22.305	3.655	Open Manhole	1200
1.005	o	150	111	25.463	22.056	3.257	Open Manhole	1200
1.006	o	150	112	24.771	19.694	4.927	Open Manhole	1200
3.000	o	150	113	25.180	23.530	1.500	Open Manhole	1200
3.001	o	150	114	24.290	23.045	1.095	Open Manhole	1200
3.002	o	150	115	23.794	22.444	1.200	Open Manhole	1200
3.003	o	150	116	23.955	22.111	1.694	Open Manhole	1200
3.004	o	150	117	24.098	21.786	2.162	Open Manhole	1200
3.005	o	150	118	23.885	21.475	2.260	Open Manhole	1200
3.006	o	150	119	24.311	21.305	2.856	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	44.664	77.5	102	26.586	24.370	2.066	Open Manhole	1200
1.001	30.006	150.0	103	26.665	24.170	2.345	Open Manhole	1200
1.002	15.654	150.0	104	26.535	24.066	2.319	Open Manhole	1200
1.003	12.955	150.0	105	26.315	23.979	2.186	Open Manhole	1200
1.004	51.131	150.0	111	25.463	23.638	1.675	Open Manhole	1200
2.000	11.030	20.2	107	25.175	23.150	1.925	Open Manhole	1200
2.001	45.924	150.1	108	25.617	22.844	2.673	Open Manhole	1200
2.002	6.428	150.0	109	25.662	22.801	2.761	Open Manhole	1200
2.003	74.466	150.0	110	26.060	22.305	3.655	Open Manhole	1200
2.004	29.808	150.0	111	25.463	22.106	3.257	Open Manhole	1200
1.005	41.560	17.6	112	24.771	19.694	4.927	Open Manhole	1200
1.006	36.607	150.0	120	23.200	19.450	3.600	Open Manhole	1200
3.000	37.607	77.5	114	24.290	23.045	1.095	Open Manhole	1200
3.001	13.869	23.1	115	23.794	22.444	1.200	Open Manhole	1200
3.002	49.886	150.0	116	23.955	22.111	1.694	Open Manhole	1200
3.003	48.801	150.0	117	24.098	21.786	2.162	Open Manhole	1200
3.004	46.657	150.0	118	23.885	21.475	2.260	Open Manhole	1200
3.005	25.573	150.0	119	24.311	21.305	2.856	Open Manhole	1200
3.006	27.102	14.6	120	23.200	19.450	3.600	Open Manhole	1200

Coopers		Page 7
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024 File 7778 FW NET 1 REV F.MDX	Designed by JAR Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 1 REV F.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)
1.007	o	150	120	23.200	19.450	3.600	Open Manhole	1200
4.000	o	150	121	25.059	23.409	1.500	Open Manhole	1200
4.001	o	150	122	25.715	22.733	2.832	Open Manhole	1200
5.000	o	150	123	25.753	24.103	1.500	Open Manhole	1200
4.002	o	150	124	26.141	22.524	3.468	Open Manhole	1200
4.003	o	150	125	26.407	22.181	4.076	Open Manhole	1200
6.000	o	150	126	25.131	23.481	1.500	Open Manhole	1200
6.001	o	150	127	25.339	22.971	2.218	Open Manhole	1200
7.000	o	150	128	25.202	23.552	1.500	Open Manhole	1200
6.002	o	150	129	25.492	22.871	2.471	Open Manhole	1200
4.004	o	150	130	26.049	20.900	4.999	Open Manhole	1200
1.008	o	150	131	23.312	19.041	4.121	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)
1.007	61.366	150.0	131	23.312	19.041	4.121	Open Manhole	1200
4.000	52.486	77.6	122	25.715	22.733	2.832	Open Manhole	1200
4.001	31.416	150.0	124	26.141	22.524	3.468	Open Manhole	1200
5.000	31.086	77.5	124	26.141	23.702	2.289	Open Manhole	1200
4.002	51.367	150.0	125	26.407	22.181	4.076	Open Manhole	1200
4.003	28.706	150.0	130	26.049	21.990	3.909	Open Manhole	1200
6.000	39.548	77.5	127	25.339	22.971	2.218	Open Manhole	1200
6.001	14.938	150.0	129	25.492	22.871	2.471	Open Manhole	1200
7.000	37.542	57.6	129	25.492	22.900	2.442	Open Manhole	1200
6.002	63.395	71.9	130	26.049	21.990	3.909	Open Manhole	1200
4.004	77.691	41.8	131	23.312	19.041	4.121	Open Manhole	1200
1.008	25.186	149.9	132	22.800	18.873	3.777	Open Manhole	0

Coopers		Page 8
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 1 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Free Flowing Outfall Details for 7778 - FW NET 1 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.008	132	22.800	18.873	0.000	0	0
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Simulation Criteria for 7778 - FW NET 1 REV F.FWS

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /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 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	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		

Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 2 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 2 REV F.FWS

Pipe Sizes 7778 - FW NET 1 REV F Manhole Sizes 7778 - FW NET 1 REV F

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 2 REV F.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	10.100	0.115	87.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	9.623	0.064	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	65.742	1.171	56.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	59.507	1.194	49.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	37.432	0.250	149.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	12.774	0.085	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.005	15.067	0.100	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.000	24.617	0.308	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.006	55.394	0.369	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.007	10.580	0.071	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 (l/s)	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	25.050	0.000	0.0	0	0.0	0	0.00	0.93	16.5	0.0
1.001	24.935	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	24.871	0.000	0.0	0	0.0	0	0.00	1.17	20.7	0.0
2.000	24.894	0.000	0.0	0	0.0	0	0.00	1.24	22.0	0.0
1.003	23.700	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.004	23.450	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.005	23.365	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
3.000	24.719	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
1.006	23.264	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.007	22.895	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 2 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 2 REV F.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)
201	26.400	1.350	Open Manhole	1200	1.000	25.050	150				
202	26.282	1.347	Open Manhole	1200	1.001	24.935	150	1.000	24.935	150	
203	26.308	1.437	Open Manhole	1200	1.002	24.871	150	1.001	24.871	150	
204	26.244	1.350	Open Manhole	1200	2.000	24.894	150				
205	26.510	2.810	Open Manhole	1200	1.003	23.700	150	1.002	23.700	150	
								2.000	23.700	150	
206	26.153	2.703	Open Manhole	1200	1.004	23.450	150	1.003	23.450	150	
207	26.230	2.865	Open Manhole	1200	1.005	23.365	150	1.004	23.365	150	
208	26.069	1.350	Open Manhole	1200	3.000	24.719	150				
209	26.415	3.151	Open Manhole	1200	1.006	23.264	150	1.005	23.264	150	
								3.000	24.411	150	1147
210	25.277	2.381	Open Manhole	1200	1.007	22.895	150	1.006	22.895	150	
211	24.926	2.102	Open Manhole	0		OUTFALL		1.007	22.825	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
201	341151.704	398494.260	341151.704	398494.260	Required	
202	341160.230	398488.845	341160.230	398488.845	Required	
203	341164.859	398480.408	341164.859	398480.408	Required	
204	341232.189	398423.259	341232.189	398423.259	Required	
205	341230.559	398482.744	341230.559	398482.744	Required	
206	341267.976	398483.803	341267.976	398483.803	Required	
207	341280.267	398487.281	341280.267	398487.281	Required	
208	341312.572	398487.358	341312.572	398487.358	Required	
209	341290.528	398498.314	341290.528	398498.314	Required	

Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 2 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Manhole Schedules for 7778 - FW NET 2 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
210	341311.560	398549.561	341311.560	398549.561	Required	
211	341315.433	398559.407			No Entry	

Coopers		Page 3
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 2 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 2 REV F.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	201	26.400	25.050	1.200	Open Manhole	1200
1.001	o	150	202	26.282	24.935	1.197	Open Manhole	1200
1.002	o	150	203	26.308	24.871	1.287	Open Manhole	1200
2.000	o	150	204	26.244	24.894	1.200	Open Manhole	1200
1.003	o	150	205	26.510	23.700	2.660	Open Manhole	1200
1.004	o	150	206	26.153	23.450	2.553	Open Manhole	1200
1.005	o	150	207	26.230	23.365	2.715	Open Manhole	1200
3.000	o	150	208	26.069	24.719	1.200	Open Manhole	1200
1.006	o	150	209	26.415	23.264	3.001	Open Manhole	1200
1.007	o	150	210	25.277	22.895	2.231	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	10.100	87.8	202	26.282	24.935	1.197	Open Manhole	1200
1.001	9.623	150.0	203	26.308	24.871	1.287	Open Manhole	1200
1.002	65.742	56.1	205	26.510	23.700	2.660	Open Manhole	1200
2.000	59.507	49.8	205	26.510	23.700	2.660	Open Manhole	1200
1.003	37.432	149.7	206	26.153	23.450	2.553	Open Manhole	1200
1.004	12.774	150.0	207	26.230	23.365	2.715	Open Manhole	1200
1.005	15.067	150.0	209	26.415	23.264	3.001	Open Manhole	1200
3.000	24.617	80.0	209	26.415	24.411	1.854	Open Manhole	1200
1.006	55.394	150.0	210	25.277	22.895	2.231	Open Manhole	1200
1.007	10.580	150.0	211	24.926	22.825	1.952	Open Manhole	0

Free Flowing Outfall Details for 7778 - FW NET 2 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	211	24.926	22.825	0.000	0	0

Coopers		Page 4
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 2 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Simulation Criteria for 7778 - FW NET 2 REV F.FWS

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /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 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	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		

Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 3 REV F.FWS

Pipe Sizes 7778 - FW NET 2 REV F Manhole Sizes 7778 - FW NET 2 REV F

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 3 REV F.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	26.035	0.325	80.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	12.256	0.082	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	19.167	0.622	30.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	13.392	0.167	80.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.001	38.706	1.106	35.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	53.462	1.171	45.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.000	36.175	0.452	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.001	30.093	0.817	36.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
4.000	36.938	0.247	149.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.002	55.737	0.372	149.8	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	23.579	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
1.001	23.254	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	23.172	0.000	0.0	0	0.0	0	0.00	1.58	28.0	0.0
2.000	23.823	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
2.001	23.656	0.000	0.0	0	0.0	0	0.00	1.48	26.2	0.0
1.003	22.550	0.000	0.0	0	0.0	0	0.00	1.30	23.0	0.0
3.000	23.437	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
3.001	22.985	0.000	0.0	0	0.0	0	0.00	1.45	25.6	0.0
4.000	22.415	0.000	0.0	0	0.0	0	0.00	0.72	12.6	0.0
3.002	22.168	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Network Design Table for 7778 - FW NET 3 REV F.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
3.003	24.459	0.417	58.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	13.054	0.087	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.005	48.481	0.423	114.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
5.000	36.243	0.453	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
5.001	25.302	0.169	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
5.002	63.057	0.420	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
5.003	22.707	0.151	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.006	9.719	0.065	149.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.007	39.871	0.266	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.008	14.677	0.098	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.009	9.322	0.062	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.010	6.539	0.044	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.011	63.630	0.424	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.012	71.395	0.476	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.013	18.111	0.121	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.014	23.750	0.158	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.015	16.795	0.112	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.016	91.596	0.611	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.017	15.001	0.100	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.018	11.045	0.074	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.019	8.701	0.058	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)
3.003	21.796	0.000	0.0	0	0.0	0	0.00	1.14	20.2	0.0
1.004	21.379	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.005	21.292	0.000	0.0	0	0.0	0	0.00	0.82	14.4	0.0
5.000	22.066	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
5.001	21.613	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
5.002	21.444	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
5.003	21.024	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.006	20.873	0.000	0.0	0	0.0	0	0.00	0.72	12.6	0.0
1.007	20.808	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.008	20.542	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.009	20.444	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.010	20.382	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.011	20.339	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.012	19.914	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.013	19.438	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.014	19.318	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.015	19.159	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.016	19.047	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.017	18.437	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.018	18.337	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.019	18.263	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Network Design Table for 7778 - FW NET 3 REV F.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
1.020	5.786	0.039	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.021	48.238	0.322	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 (l/s)	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.020	18.205	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.021	18.167	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 3
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 3 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 3 REV F.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)
301	25.229	1.650	Open Manhole	1200	1.000	23.579	150				
302	24.906	1.652	Open Manhole	1200	1.001	23.254	150	1.000	23.254	150	
303	24.769	1.597	Open Manhole	1200	1.002	23.172	150	1.001	23.172	150	
304	25.473	1.650	Open Manhole	1200	2.000	23.823	150				
305	25.263	1.607	Open Manhole	1200	2.001	23.656	150	2.000	23.656	150	
306	24.733	2.183	Open Manhole	1200	1.003	22.550	150	1.002	22.550	150	
								2.001	22.550	150	
307	25.087	1.650	Open Manhole	1200	3.000	23.437	150				
308	24.243	1.258	Open Manhole	1200	3.001	22.985	150	3.000	22.985	150	
309	23.729	1.314	Open Manhole	1200	4.000	22.415	150				
310	23.725	1.557	Open Manhole	1200	3.002	22.168	150	3.001	22.168	150	
								4.000	22.168	150	
311	24.421	2.625	Open Manhole	1200	3.003	21.796	150	3.002	21.796	150	
312	24.717	3.338	Open Manhole	1200	1.004	21.379	150	1.003	21.379	150	
								3.003	21.379	150	
313	24.558	3.266	Open Manhole	1200	1.005	21.292	150	1.004	21.292	150	
314	23.416	1.350	Open Manhole	1200	5.000	22.066	150				
315	23.868	2.255	Open Manhole	1200	5.001	21.613	150	5.000	21.613	150	
316	24.186	2.741	Open Manhole	1200	5.002	21.444	150	5.001	21.444	150	
317	24.383	3.359	Open Manhole	1200	5.003	21.024	150	5.002	21.024	150	
318	24.243	3.374	Open Manhole	1200	1.006	20.873	150	1.005	20.869	150	
								5.003	20.873	150	
319	24.360	3.552	Open Manhole	1200	1.007	20.808	150	1.006	20.808	150	
320	24.347	3.805	Open Manhole	1200	1.008	20.542	150	1.007	20.542	150	
321	24.193	3.749	Open Manhole	1200	1.009	20.444	150	1.008	20.444	150	
322	24.030	3.648	Open Manhole	1200	1.010	20.382	150	1.009	20.382	150	
323	23.954	3.615	Open Manhole	1200	1.011	20.339	150	1.010	20.339	150	
324	23.288	3.374	Open Manhole	1200	1.012	19.914	150	1.011	19.914	150	
325	23.082	3.643	Open Manhole	1200	1.013	19.438	150	1.012	19.438	150	
326	22.929	3.611	Open Manhole	1200	1.014	19.318	150	1.013	19.318	150	
327	21.987	2.827	Open Manhole	1200	1.015	19.159	150	1.014	19.159	150	
328	21.665	2.618	Open Manhole	1200	1.016	19.047	150	1.015	19.047	150	
329	21.782	3.346	Open Manhole	1200	1.017	18.437	150	1.016	18.437	150	
330	22.953	4.616	Open Manhole	1200	1.018	18.337	150	1.017	18.337	150	
331	21.934	3.671	Open Manhole	1200	1.019	18.263	150	1.018	18.263	150	
332	21.792	3.587	Open Manhole	1200	1.020	18.205	150	1.019	18.205	150	
333	21.586	3.419	Open Manhole	1200	1.021	18.167	150	1.020	18.167	150	
334	19.200	1.355	Open Manhole	0		OUTFALL		1.021	17.845	150	

Coopers		Page 4
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Manhole Schedules for 7778 - FW NET 3 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
301	341056.548	398464.165	341056.548	398464.165	Required	
302	341080.869	398454.878	341080.869	398454.878	Required	
303	341089.681	398446.360	341089.681	398446.360	Required	
304	341142.797	398433.590	341142.797	398433.590	Required	
305	341130.947	398427.351	341130.947	398427.351	Required	
306	341092.241	398427.364	341092.241	398427.364	Required	
307	341039.113	398453.762	341039.113	398453.762	Required	
308	341027.039	398419.661	341027.039	398419.661	Required	
309	340982.134	398403.503	340982.134	398403.503	Required	
310	341016.996	398391.294	341016.996	398391.294	Required	
311	341069.783	398373.402	341069.783	398373.402	Required	
312	341094.236	398373.940	341094.236	398373.940	Required	
313	341094.523	398360.889	341094.523	398360.889	Required	
314	340954.920	398348.926	340954.920	398348.926	Required	
315	340989.201	398337.163	340989.201	398337.163	Required	
316	341014.192	398333.206	341014.192	398333.206	Required	
317	341073.819	398312.692	341073.819	398312.692	Required	

Coopers		Page 5
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024 File 7778 FW NET 3 REV F.MDX	Designed by JAR Checked by AJ	
Micro Drainage	Network 2020.1.3	

Manhole Schedules for 7778 - FW NET 3 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
318	341096.524	398312.449	341096.524	398312.449	Required	
319	341096.842	398302.735	341096.842	398302.735	Required	
320	341098.280	398262.889	341098.280	398262.889	Required	
321	341098.809	398248.222	341098.809	398248.222	Required	
322	341090.928	398243.242	341090.928	398243.242	Required	
323	341084.389	398243.287	341084.389	398243.287	Required	
324	341024.200	398263.930	341024.200	398263.930	Required	
325	340956.680	398287.131	340956.680	398287.131	Required	
326	340939.352	398292.403	340939.352	398292.403	Required	
327	340930.438	398270.389	340930.438	398270.389	Required	
328	340924.647	398254.624	340924.647	398254.624	Required	
329	340898.356	398166.883	340898.356	398166.883	Required	
330	340898.238	398151.882	340898.238	398151.882	Required	
331	340887.200	398151.481	340887.200	398151.481	Required	
332	340881.295	398145.091	340881.295	398145.091	Required	
333	340880.115	398139.427	340880.115	398139.427	Required	
334	340880.328	398091.189			No Entry	

Coopers		Page 6
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 3 REV F.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	301	25.229	23.579	1.500	Open Manhole	1200
1.001	o	150	302	24.906	23.254	1.502	Open Manhole	1200
1.002	o	150	303	24.769	23.172	1.447	Open Manhole	1200
2.000	o	150	304	25.473	23.823	1.500	Open Manhole	1200
2.001	o	150	305	25.263	23.656	1.457	Open Manhole	1200
1.003	o	150	306	24.733	22.550	2.033	Open Manhole	1200
3.000	o	150	307	25.087	23.437	1.500	Open Manhole	1200
3.001	o	150	308	24.243	22.985	1.108	Open Manhole	1200
4.000	o	150	309	23.729	22.415	1.164	Open Manhole	1200
3.002	o	150	310	23.725	22.168	1.407	Open Manhole	1200
3.003	o	150	311	24.421	21.796	2.475	Open Manhole	1200
1.004	o	150	312	24.717	21.379	3.188	Open Manhole	1200
1.005	o	150	313	24.558	21.292	3.116	Open Manhole	1200
5.000	o	150	314	23.416	22.066	1.200	Open Manhole	1200
5.001	o	150	315	23.868	21.613	2.105	Open Manhole	1200
5.002	o	150	316	24.186	21.444	2.591	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	26.035	80.1	302	24.906	23.254	1.502	Open Manhole	1200
1.001	12.256	150.0	303	24.769	23.172	1.447	Open Manhole	1200
1.002	19.167	30.8	306	24.733	22.550	2.033	Open Manhole	1200
2.000	13.392	80.2	305	25.263	23.656	1.457	Open Manhole	1200
2.001	38.706	35.0	306	24.733	22.550	2.033	Open Manhole	1200
1.003	53.462	45.7	312	24.717	21.379	3.188	Open Manhole	1200
3.000	36.175	80.0	308	24.243	22.985	1.108	Open Manhole	1200
3.001	30.093	36.8	310	23.725	22.168	1.407	Open Manhole	1200
4.000	36.938	149.5	310	23.725	22.168	1.407	Open Manhole	1200
3.002	55.737	149.8	311	24.421	21.796	2.475	Open Manhole	1200
3.003	24.459	58.7	312	24.717	21.379	3.188	Open Manhole	1200
1.004	13.054	150.0	313	24.558	21.292	3.116	Open Manhole	1200
1.005	48.481	114.7	318	24.243	20.869	3.224	Open Manhole	1200
5.000	36.243	80.0	315	23.868	21.613	2.105	Open Manhole	1200
5.001	25.302	150.0	316	24.186	21.444	2.591	Open Manhole	1200
5.002	63.057	150.0	317	24.383	21.024	3.209	Open Manhole	1200

Coopers		Page 7
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 3 REV F.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)
5.003	o	150	317	24.383	21.024	3.209	Open Manhole	1200
1.006	o	150	318	24.243	20.873	3.220	Open Manhole	1200
1.007	o	150	319	24.360	20.808	3.402	Open Manhole	1200
1.008	o	150	320	24.347	20.542	3.655	Open Manhole	1200
1.009	o	150	321	24.193	20.444	3.599	Open Manhole	1200
1.010	o	150	322	24.030	20.382	3.498	Open Manhole	1200
1.011	o	150	323	23.954	20.339	3.465	Open Manhole	1200
1.012	o	150	324	23.288	19.914	3.224	Open Manhole	1200
1.013	o	150	325	23.082	19.438	3.493	Open Manhole	1200
1.014	o	150	326	22.929	19.318	3.461	Open Manhole	1200
1.015	o	150	327	21.987	19.159	2.677	Open Manhole	1200
1.016	o	150	328	21.665	19.047	2.468	Open Manhole	1200
1.017	o	150	329	21.782	18.437	3.196	Open Manhole	1200
1.018	o	150	330	22.953	18.337	4.466	Open Manhole	1200
1.019	o	150	331	21.934	18.263	3.521	Open Manhole	1200
1.020	o	150	332	21.792	18.205	3.437	Open Manhole	1200
1.021	o	150	333	21.586	18.167	3.269	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)
5.003	22.707	150.0	318	24.243	20.873	3.220	Open Manhole	1200
1.006	9.719	149.5	319	24.360	20.808	3.402	Open Manhole	1200
1.007	39.871	150.0	320	24.347	20.542	3.655	Open Manhole	1200
1.008	14.677	150.0	321	24.193	20.444	3.599	Open Manhole	1200
1.009	9.322	150.0	322	24.030	20.382	3.498	Open Manhole	1200
1.010	6.539	150.0	323	23.954	20.339	3.465	Open Manhole	1200
1.011	63.630	150.0	324	23.288	19.914	3.224	Open Manhole	1200
1.012	71.395	150.0	325	23.082	19.438	3.493	Open Manhole	1200
1.013	18.111	150.0	326	22.929	19.318	3.461	Open Manhole	1200
1.014	23.750	150.0	327	21.987	19.159	2.677	Open Manhole	1200
1.015	16.795	150.0	328	21.665	19.047	2.468	Open Manhole	1200
1.016	91.596	150.0	329	21.782	18.437	3.196	Open Manhole	1200
1.017	15.001	150.0	330	22.953	18.337	4.466	Open Manhole	1200
1.018	11.045	150.0	331	21.934	18.263	3.521	Open Manhole	1200
1.019	8.701	150.0	332	21.792	18.205	3.437	Open Manhole	1200
1.020	5.786	150.0	333	21.586	18.167	3.269	Open Manhole	1200
1.021	48.238	150.0	334	19.200	17.845	1.205	Open Manhole	0

Free Flowing Outfall Details for 7778 - FW NET 3 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.021	334	19.200	17.845	0.000	0	0

Coopers		Page 8
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 3 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Simulation Criteria for 7778 - FW NET 3 REV F.FWS

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 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	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		

Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 4 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 4 REV F.FWS

Pipe Sizes 7778 - FW NET 3 REV F Manhole Sizes 7778 - FW NET 3 REV F

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 4 REV F.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	47.921	0.599	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	14.017	0.175	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	81.261	0.542	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	13.420	0.089	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	12.148	0.531	22.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	26.031	0.174	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	22.650	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
2.000	23.400	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
1.001	22.051	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	21.509	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.003	21.420	0.000	0.0	0	0.0	0	0.00	1.84	32.5	0.0
1.004	20.889	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 4 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 4 REV F.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)
401	24.300	1.650	Open Manhole	1200	1.000	22.650	150				
402	25.074	1.674	Open Manhole	1200	2.000	23.400	150				
403	24.899	2.848	Open Manhole	1200	1.001	22.051	150	1.000	22.051	150	1174
								2.000	23.225	150	
404	23.936	2.427	Open Manhole	1200	1.002	21.509	150	1.001	21.509	150	
405	24.000	2.580	Open Manhole	1200	1.003	21.420	150	1.002	21.420	150	
406	24.187	3.298	Open Manhole	1200	1.004	20.889	150	1.003	20.889	150	
407	23.292	2.576	Open Manhole	0		OUTFALL		1.004	20.715	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
401	341141.807	398228.970	341141.807	398228.970	Required	
402	341200.370	398208.806	341200.370	398208.806	Required	
403	341187.117	398213.369	341187.117	398213.369	Required	
404	341160.164	398136.708	341160.164	398136.708	Required	
405	341155.847	398124.001	341155.847	398124.001	Required	
406	341156.090	398111.856	341156.090	398111.856	Required	
407	341135.639	398095.751			No Entry	

Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024 File 7778 FW NET 4 REV F.MDX	Designed by JAR Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 4 REV F.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	401	24.300	22.650	1.500	Open Manhole	1200
2.000	o	150	402	25.074	23.400	1.524	Open Manhole	1200
1.001	o	150	403	24.899	22.051	2.698	Open Manhole	1200
1.002	o	150	404	23.936	21.509	2.277	Open Manhole	1200
1.003	o	150	405	24.000	21.420	2.430	Open Manhole	1200
1.004	o	150	406	24.187	20.889	3.148	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	47.921	80.0	403	24.899	22.051	2.698	Open Manhole	1200
2.000	14.017	80.0	403	24.899	23.225	1.524	Open Manhole	1200
1.001	81.261	150.0	404	23.936	21.509	2.277	Open Manhole	1200
1.002	13.420	150.0	405	24.000	21.420	2.430	Open Manhole	1200
1.003	12.148	22.9	406	24.187	20.889	3.148	Open Manhole	1200
1.004	26.031	150.0	407	23.292	20.715	2.426	Open Manhole	0

Free Flowing Outfall Details for 7778 - FW NET 4 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.004	407	23.292	20.715	0.000	0	0
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Simulation Criteria for 7778 - FW NET 4 REV F.FWS

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 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	Ratio R	0.000
Return Period (years)	0	Profile Type	Summer
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	0.000	Cv (Winter)	0.840

Coopers		Page 3
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024 File 7778 FW NET 4 REV F.MDX	Designed by JAR Checked by AJ	
Micro Drainage	Network 2020.1.3	
<u>Synthetic Rainfall Details</u> Storm Duration (mins) 30		
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Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 5 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 5 REV F.FWS

Pipe Sizes 7778 - FW NET 4 REV F Manhole Sizes 7778 - FW NET 4 REV F

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 5 REV F.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	61.284	0.777	78.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.000	14.482	0.181	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
2.001	15.006	0.100	150.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	59.616	0.397	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	12.659	0.084	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	19.158	0.128	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	72.475	0.494	146.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.000	40.072	0.501	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
3.001	23.726	0.785	30.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.005	19.557	0.130	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.006	29.820	0.199	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	23.950	0.000	0.0	0	0.0	0	0.00	0.99	17.4	0.0
2.000	23.454	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
2.001	23.273	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.001	23.173	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	22.776	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.003	22.691	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.004	22.563	0.000	0.0	0	0.0	0	0.00	0.72	12.8	0.0
3.000	23.355	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
3.001	22.854	0.000	0.0	0	0.0	0	0.00	1.60	28.2	0.0
1.005	22.069	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.006	21.939	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 5 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Network Design Table for 7778 - FW NET 5 REV F.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
1.007	5.291	0.035	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)	
1.007	21.740	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 5 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 5 REV F.FWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., I*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
501	25.300	1.350	Open Manhole	1200	1.000	23.950	150				
502	24.804	1.350	Open Manhole	1200	2.000	23.454	150				
503	24.620	1.347	Open Manhole	1200	2.001	23.273	150	2.000	23.273	150	
504	24.535	1.362	Open Manhole	1200	1.001	23.173	150	1.000	23.173	150	
								2.001	23.173	150	
505	24.264	1.488	Open Manhole	1200	1.002	22.776	150	1.001	22.776	150	
506	24.414	1.723	Open Manhole	1200	1.003	22.691	150	1.002	22.691	150	
507	24.669	2.106	Open Manhole	1200	1.004	22.563	150	1.003	22.563	150	
508	25.005	1.650	Open Manhole	1200	3.000	23.355	150				
509	25.508	2.654	Open Manhole	1200	3.001	22.854	150	3.000	22.854	150	
510	25.624	3.555	Open Manhole	1200	1.005	22.069	150	1.004	22.069	150	
								3.001	22.069	150	
511	25.419	3.480	Open Manhole	1200	1.006	21.939	150	1.005	21.939	150	
512	25.050	3.310	Open Manhole	1200	1.007	21.740	150	1.006	21.740	150	
513	24.985	3.280	Open Manhole	0		OUTFALL		1.007	21.705	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
501	341229.146	398251.978	341229.146	398251.978	Required	
502	341285.618	398222.801	341285.618	398222.801	Required	
503	341289.864	398236.647	341289.864	398236.647	Required	
504	341290.430	398251.642	341290.430	398251.642	Required	
505	341350.035	398250.504	341350.035	398250.504	Required	
506	341351.016	398237.883	341351.016	398237.883	Required	
507	341348.026	398218.959	341348.026	398218.959	Required	
508	341266.226	398180.920	341266.226	398180.920	Required	

Manhole Schedules for 7778 - FW NET 5 REV F.FWS

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
509	341300.681	398160.460	341300.681	398160.460	Required	
510	341322.496	398151.130	341322.496	398151.130	Required	
511	341340.507	398143.509	341340.507	398143.509	Required	
512	341367.969	398131.889	341367.969	398131.889	Required	
513	341372.842	398129.827			No Entry	

Coopers		Page 4
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 5 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 5 REV F.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	501	25.300	23.950	1.200	Open Manhole	1200
2.000	o	150	502	24.804	23.454	1.200	Open Manhole	1200
2.001	o	150	503	24.620	23.273	1.197	Open Manhole	1200
1.001	o	150	504	24.535	23.173	1.212	Open Manhole	1200
1.002	o	150	505	24.264	22.776	1.338	Open Manhole	1200
1.003	o	150	506	24.414	22.691	1.573	Open Manhole	1200
1.004	o	150	507	24.669	22.563	1.956	Open Manhole	1200
3.000	o	150	508	25.005	23.355	1.500	Open Manhole	1200
3.001	o	150	509	25.508	22.854	2.504	Open Manhole	1200
1.005	o	150	510	25.624	22.069	3.405	Open Manhole	1200
1.006	o	150	511	25.419	21.939	3.330	Open Manhole	1200
1.007	o	150	512	25.050	21.740	3.160	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	61.284	78.9	504	24.535	23.173	1.212	Open Manhole	1200
2.000	14.482	80.0	503	24.620	23.273	1.197	Open Manhole	1200
2.001	15.006	150.1	504	24.535	23.173	1.212	Open Manhole	1200
1.001	59.616	150.0	505	24.264	22.776	1.338	Open Manhole	1200
1.002	12.659	150.0	506	24.414	22.691	1.573	Open Manhole	1200
1.003	19.158	150.0	507	24.669	22.563	1.956	Open Manhole	1200
1.004	72.475	146.7	510	25.624	22.069	3.405	Open Manhole	1200
3.000	40.072	80.0	509	25.508	22.854	2.504	Open Manhole	1200
3.001	23.726	30.2	510	25.624	22.069	3.405	Open Manhole	1200
1.005	19.557	150.0	511	25.419	21.939	3.330	Open Manhole	1200
1.006	29.820	150.0	512	25.050	21.740	3.160	Open Manhole	1200
1.007	5.291	150.0	513	24.985	21.705	3.130	Open Manhole	0

Free Flowing Outfall Details for 7778 - FW NET 5 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	513	24.985	21.705	0.000	0	0

Coopers		Page 5
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 5 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

Simulation Criteria for 7778 - FW NET 5 REV F.FWS

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 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	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		

Coopers		Page 0
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 6 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

FOUL SEWERAGE DESIGN

Design Criteria for 7778 - FW NET 6 REV F.FWS

Pipe Sizes 7778 - FW NET 5 REV F Manhole Sizes 7778 - FW NET 5 REV F

Industrial Flow (l/s/ha)	0.00	Add Flow / Climate Change (%)	0
Industrial Peak Flow Factor	0.00	Minimum Backdrop Height (m)	0.900
Flow Per Person (l/per/day)	225.00	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)	0.71
Domestic Peak Flow Factor	6.00	Min Slope for Optimisation (1:X)	150

Designed with Level Soffits

Network Design Table for 7778 - FW NET 6 REV F.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	22.736	0.284	80.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.001	53.427	0.356	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.002	31.778	0.212	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.003	12.661	0.084	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.004	58.103	0.387	150.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
1.005	8.943	0.060	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	22.950	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
1.001	22.666	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.002	22.310	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.003	22.098	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.004	22.013	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0
1.005	21.626	0.000	0.0	0	0.0	0	0.00	0.71	12.6	0.0

Coopers		Page 1
Park House Sandpiper Court Chester CH4 9QU		Cherryfield Drive Kirkby
Date 23/04/2024 File 7778 FW NET 6 REV F.MDX		Designed by JAR Checked by AJ
Micro Drainage		Network 2020.1.3



Manhole Schedules for 7778 - FW NET 6 REV F.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)
601	24.600	1.650	Open Manhole	1200	1.000	22.950	150				
602	24.370	1.704	Open Manhole	1200	1.001	22.666	150	1.000	22.666	150	
603	24.652	2.342	Open Manhole	1200	1.002	22.310	150	1.001	22.310	150	
604	24.663	2.565	Open Manhole	1200	1.003	22.098	150	1.002	22.098	150	
605	24.716	2.703	Open Manhole	1200	1.004	22.013	150	1.003	22.013	150	
606	25.450	3.824	Open Manhole	1200	1.005	21.626	150	1.004	21.626	150	
607	25.234	3.667	Open Manhole	0		OUTFALL		1.005	21.566	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
601	341217.654	398118.271	341217.654	398118.271	Required	
602	341210.324	398096.749	341210.324	398096.749	Required	
603	341259.696	398076.331	341259.696	398076.331	Required	
604	341271.971	398105.642	341271.971	398105.642	Required	
605	341283.574	398100.575	341283.574	398100.575	Required	
606	341336.805	398077.287	341336.805	398077.287	Required	
607	341344.717	398073.117			No Entry	



Coopers		Page 2
Park House Sandpiper Court Chester CH4 9QU	Cherryfield Drive Kirkby	
Date 23/04/2024	Designed by JAR	
File 7778 FW NET 6 REV F.MDX	Checked by AJ	
Micro Drainage	Network 2020.1.3	

PIPELINE SCHEDULES for 7778 - FW NET 6 REV F.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	601	24.600	22.950	1.500	Open Manhole	1200
1.001	o	150	602	24.370	22.666	1.554	Open Manhole	1200
1.002	o	150	603	24.652	22.310	2.192	Open Manhole	1200
1.003	o	150	604	24.663	22.098	2.415	Open Manhole	1200
1.004	o	150	605	24.716	22.013	2.553	Open Manhole	1200
1.005	o	150	606	25.450	21.626	3.674	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	22.736	80.0	602	24.370	22.666	1.554	Open Manhole	1200
1.001	53.427	150.0	603	24.652	22.310	2.192	Open Manhole	1200
1.002	31.778	150.0	604	24.663	22.098	2.415	Open Manhole	1200
1.003	12.661	150.0	605	24.716	22.013	2.553	Open Manhole	1200
1.004	58.103	150.0	606	25.450	21.626	3.674	Open Manhole	1200
1.005	8.943	150.0	607	25.234	21.566	3.517	Open Manhole	0

Free Flowing Outfall Details for 7778 - FW NET 6 REV F.FWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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1.005	607	25.234	21.566	0.000	0	0
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Simulation Criteria for 7778 - FW NET 6 REV F.FWS

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 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	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		