















Royal HaskoningDHV		Page 1
Manchester One Portland Street Manchester M1 3LF	Haverhill Great Willsey Park Area 4 FSR simulation results	
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Innovyze	Network 2019.1	

FOUL SEWERAGE DESIGN


Network Design Table for FW

« - Indicates pipe capacity < flow

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
16.000	1.447	0.118	12.3	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
16.001	8.879	0.353	25.2	0.000	3	0.0	1.500	o	100	Pipe/Conduit	
17.000	76.237	2.919	26.1	0.000	3	53.0	1.500	o	225	Pipe/Conduit	
18.000	14.200	1.055	13.5	0.000	4	0.0	1.500	o	150	Pipe/Conduit	
17.001	15.633	0.750	20.8	0.000	6	0.0	1.500	o	225	Pipe/Conduit	
17.002	33.046	0.670	49.3	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
17.003	18.734	0.380	49.3	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
17.004	99.696	3.105	32.1	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
17.005	38.164	1.965	19.4	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
19.000	13.958	0.300	46.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.000	11.139	0.138	80.7	0.000	0	0.0	0.600	o	150	Pipe/Conduit	
20.001	35.995	1.084	33.2	0.000	3	0.0	1.500	o	150	Pipe/Conduit	
20.002	28.526	0.916	31.1	0.000	13	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)
16.000	95.541	0.000	0.0	0	0.0	0.00	1.91	15.0	0.0
16.001	95.423	0.000	0.0	3	0.0	0.44	1.33	10.5	0.1
17.000	95.019	0.000	53.0	3	0.0	2.35	2.25	89.5	53.1
18.000	93.230	0.000	0.0	4	0.0	0.56	2.40	42.3	0.2
17.001	92.100	0.000	53.0	13	0.0	2.56	2.52	100.2	53.6
17.002	91.350	0.000	53.0	13	0.0	1.83	1.64	65.1	53.6
17.003	90.680	0.000	53.0	13	0.0	1.83	1.64	65.1	53.6
17.004	90.300	0.000	53.0	13	0.0	2.17	2.03	80.7	53.6
17.005	87.195	0.000	53.0	13	0.0	2.63	2.61	103.8	53.6
19.000	85.650	0.000	0.0	0	0.0	0.00	1.29	22.7	0.0
20.000	93.978	0.000	0.0	0	0.0	0.00	1.12	19.8	0.0
20.001	93.840	0.000	0.0	3	0.0	0.38	1.52	26.9	0.1
20.002	92.756	0.000	0.0	16	0.0	0.66	1.57	27.8	0.7

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FOUL SEWERAGE DESIGN

Network Design Table for FW

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
21.000	17.332	0.126	137.6	0.000	16	0.0	1.500	o	150	Pipe/Conduit	
20.003	12.888	0.690	18.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
22.000	13.844	0.172	80.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.004	40.222	2.160	18.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
23.000	34.591	1.643	21.1	0.000	10	0.0	1.500	o	150	Pipe/Conduit	
23.001	26.643	0.484	55.0	0.000	3	0.0	1.500	o	150	Pipe/Conduit	
23.002	28.474	0.524	54.3	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
24.000	9.257	0.164	56.4	0.000	2	0.0	1.500	o	100	Pipe/Conduit	
23.003	13.278	0.429	31.0	0.000	8	0.0	1.500	o	150	Pipe/Conduit	
23.004	81.224	0.938	86.6	0.000	7	0.0	1.500	o	150	Pipe/Conduit	
23.005	29.881	0.421	71.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
25.000	2.610	0.057	45.8	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
23.006	27.944	0.207	135.0	0.000	4	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)	
21.000	91.966	0.000	0.0	16	0.0	24	0.40	0.75	13.2	0.7
20.003	91.840	0.000	0.0	32	0.0	21	0.98	2.03	35.9	1.5
22.000	91.322	0.000	0.0	0	0.0	0	0.00	0.98	17.3	0.0
20.004	91.150	0.000	0.0	32	0.0	21	0.99	2.04	36.0	1.5
23.000	94.332	0.000	0.0	10	0.0	13	0.65	1.92	33.8	0.5
23.001	92.689	0.000	0.0	13	0.0	18	0.51	1.18	20.9	0.6
23.002	92.205	0.000	0.0	13	0.0	18	0.51	1.19	21.0	0.6
24.000	91.895	0.000	0.0	2	0.0	8	0.29	0.89	7.0	0.1
23.003	91.681	0.000	0.0	23	0.0	20	0.75	1.58	27.9	1.1
23.004	91.252	0.000	0.0	30	0.0	30	0.57	0.94	16.6	1.4
23.005	90.314	0.000	0.0	30	0.0	28	0.61	1.04	18.4	1.4
25.000	90.000	0.000	0.0	0	0.0	0	0.00	0.99	7.7	0.0
23.006	89.893	0.000	0.0	34	0.0	35	0.50	0.75	13.3	1.6

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FOUL SEWERAGE DESIGN

Network Design Table for FW

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
23.007	33.942	0.251	135.2	0.000	2	0.0	1.500	o	150	Pipe/Conduit	
23.008	33.942	0.251	135.2	0.000	3	0.0	1.500	o	150	Pipe/Conduit	
23.009	20.020	0.148	135.3	0.000	9	0.0	1.500	o	150	Pipe/Conduit	
23.010	6.199	0.046	134.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.005	10.199	0.075	136.0	0.000	2	0.0	1.500	o	150	Pipe/Conduit	
26.000	8.685	0.285	30.5	0.000	5	0.0	1.500	o	100	Pipe/Conduit	
20.006	39.544	0.293	135.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.007	13.755	0.102	134.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.008	18.512	1.220	15.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
27.000	15.535	0.244	63.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.009	21.650	0.406	53.3	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.010	20.874	0.154	135.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
20.011	30.705	1.390	22.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
19.001	16.851	0.500	33.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
19.002	25.818	0.716	36.1	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)
23.007	89.686	0.000	0.0	36	0.0	36	0.51	0.75	13.3	1.7
23.008	89.435	0.000	0.0	39	0.0	37	0.52	0.75	13.3	1.8
23.009	89.184	0.000	0.0	48	0.0	42	0.56	0.75	13.3	2.2
23.010	89.036	0.000	0.0	48	0.0	42	0.56	0.75	13.3	2.2
20.005	88.990	0.000	0.0	82	0.0	55	0.65	0.75	13.3	3.8
26.000	89.250	0.000	0.0	5	0.0	11	0.49	1.21	9.5	0.2
20.006	88.915	0.000	0.0	87	0.0	57	0.66	0.75	13.3	4.0
20.007	88.622	0.000	0.0	87	0.0	57	0.66	0.75	13.3	4.0
20.008	88.520	0.000	0.0	87	0.0	32	1.44	2.26	39.9	4.0
27.000	87.544	0.000	0.0	0	0.0	0	0.00	1.10	19.4	0.0
20.009	87.300	0.000	0.0	87	0.0	44	0.92	1.20	21.2	4.0
20.010	86.894	0.000	0.0	87	0.0	57	0.66	0.75	13.3	4.0
20.011	86.740	0.000	0.0	87	0.0	35	1.26	1.87	33.0	4.0
19.001	85.350	0.000	0.0	87	0.0	39	1.08	1.51	26.7	4.0
19.002	84.850	0.000	0.0	87	0.0	40	1.06	1.46	25.8	4.0

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FOUL SEWERAGE DESIGN

Network Design Table for FW

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
28.000	8.982	0.216	41.6	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
19.003	60.827	3.352	18.1	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
29.000	6.837	0.625	10.9	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
30.000	11.179	0.765	14.6	0.000	1600	0.0	1.500	o	300	Pipe/Conduit	
29.001	72.829	0.343	212.3	0.000	1600	11.2	1.500	o	375	Pipe/Conduit	
19.004	13.129	2.648	5.0	0.000	0	0.0	1.500	o	375	Pipe/Conduit	
31.000	51.057	2.040	25.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.000	13.741	0.280	49.1	0.000	4	0.0	1.500	o	100	Pipe/Conduit	
32.001	36.031	0.750	48.0	0.000	0	0.0	1.500	o	100	Pipe/Conduit	
33.000	12.430	1.151	10.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.002	61.892	0.500	123.8	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 (l/s)	Add Flow (l/s)	P.Dep (mm)	P.Vel (m/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
28.000	84.400	0.000	0.0	0	0.0	0	0.00	1.03	8.1	0.0
19.003	84.134	0.000	0.0	87	0.0	34	1.35	2.06	36.5	4.0
29.000	81.800	0.000	0.0	0	0.0	0	0.00	2.02	15.9	0.0
30.000	81.740	0.000	0.0	1600	0.0	110	3.15	3.64	257.1	74.0
29.001	80.900	0.000	11.2	3200	0.0	375	1.10	1.10	121.4	159.2
19.004	80.557	0.000	11.2	3287	0.0	115	5.70	7.22	797.6	163.2
31.000	89.611	0.000	0.0	0	0.0	0	0.00	1.76	31.0	0.0
32.000	96.680	0.000	0.0	4	0.0	11	0.39	0.95	7.5	0.2
32.001	96.400	0.000	0.0	4	0.0	11	0.39	0.96	7.6	0.2
33.000	96.751	0.000	0.0	0	0.0	0	0.00	2.68	47.3	0.0
32.002	95.600	0.000	0.0	4	0.0	12	0.26	0.79	13.9	0.2

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Network Design Table for FW

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
34.000	14.402	0.135	106.7	0.000	5	0.0	1.500	o	100	Pipe/Conduit	
32.003	40.094	0.267	150.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
35.000	46.364	0.707	65.6	0.000	9	0.0	1.500	o	100	Pipe/Conduit	
32.004	65.254	0.483	135.1	0.000	4	0.0	1.500	o	150	Pipe/Conduit	
32.005	46.545	0.345	135.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
36.000	18.055	1.882	9.6	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.006	63.556	0.471	134.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.007	54.762	0.439	124.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
37.000	19.194	0.192	100.0	0.000	0	1.3	1.500	o	150	Pipe/Conduit	
32.008	23.734	0.176	134.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.009	23.855	0.177	134.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.010	30.385	0.225	135.0	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.011	33.457	1.587	21.1	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)
34.000	95.800	0.000	0.0	5	0.0	15	0.32	0.64	5.1	0.2
32.003	95.100	0.000	0.0	9	0.0	19	0.32	0.71	12.6	0.4
35.000	95.590	0.000	0.0	9	0.0	17	0.45	0.82	6.5	0.4
32.004	94.833	0.000	0.0	22	0.0	28	0.44	0.75	13.3	1.0
32.005	94.350	0.000	0.0	22	0.0	28	0.44	0.75	13.3	1.0
36.000	95.854	0.000	0.0	0	0.0	0	0.00	2.84	50.2	0.0
32.006	94.005	0.000	0.0	22	0.0	28	0.44	0.75	13.3	1.0
32.007	93.534	0.000	0.0	22	0.0	28	0.45	0.78	13.8	1.0
37.000	95.650	0.000	1.3	0	0.0	30	0.53	0.88	15.5	1.3
32.008	93.095	0.000	1.3	22	0.0	42	0.56	0.75	13.3	2.3
32.009	92.919	0.000	1.3	22	0.0	42	0.56	0.75	13.3	2.3
32.010	92.742	0.000	1.3	22	0.0	42	0.56	0.75	13.3	2.3
32.011	92.517	0.000	1.3	22	0.0	27	1.08	1.91	33.8	2.3

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FOUL SEWERAGE DESIGN

Network Design Table for FW

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
38.000	8.107	0.684	11.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
39.000	74.568	0.681	109.5	0.000	3	0.0	1.500	o	150	Pipe/Conduit	
40.000	4.979	0.040	124.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
41.000	14.678	0.141	104.1	0.000	5	0.0	1.500	o	150	Pipe/Conduit	
40.001	19.249	0.130	148.1	0.000	5	0.0	1.500	o	150	Pipe/Conduit	
40.002	47.022	0.779	60.4	0.000	5	0.0	1.500	o	150	Pipe/Conduit	
40.003	22.056	0.251	87.9	0.000	5	0.0	1.500	o	150	Pipe/Conduit	
40.004	14.791	0.811	18.2	0.000	13	0.0	1.500	o	150	Pipe/Conduit	
40.005	34.066	0.252	135.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
40.006	34.848	0.538	64.8	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
39.001	29.033	0.216	134.4	0.000	8	0.0	1.500	o	150	Pipe/Conduit	
42.000	5.736	0.137	41.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
39.002	80.929	2.529	32.0	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)
38.000	92.700	0.000	0.0	0	0.0	0	0.00	2.55	45.1	0.0
39.000	95.650	0.000	0.0	3	0.0	11	0.25	0.84	14.8	0.1
40.000	97.770	0.000	0.0	0	0.0	0	0.00	0.78	13.9	0.0
41.000	97.871	0.000	0.0	5	0.0	13	0.30	0.86	15.2	0.2
40.001	97.730	0.000	0.0	10	0.0	20	0.33	0.72	12.7	0.5
40.002	97.600	0.000	0.0	15	0.0	19	0.52	1.13	19.9	0.7
40.003	96.821	0.000	0.0	20	0.0	24	0.50	0.93	16.5	0.9
40.004	96.570	0.000	0.0	33	0.0	21	1.00	2.06	36.4	1.5
40.005	95.759	0.000	0.0	33	0.0	34	0.50	0.75	13.3	1.5
40.006	95.507	0.000	0.0	33	0.0	29	0.64	1.09	19.3	1.5
39.001	94.969	0.000	0.0	44	0.0	40	0.54	0.75	13.3	2.0
42.000	94.890	0.000	0.0	0	0.0	0	0.00	1.36	24.0	0.0
39.002	94.753	0.000	0.0	44	0.0	28	0.90	1.55	27.4	2.0

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Network Design Table for FW














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
43.000	6.697	0.219	30.6	0.000	0	0.0	0.600	o	150	Pipe/Conduit	
39.003	48.409	0.323	149.9	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
38.001	23.667	0.158	149.8	0.000	3	0.0	1.500	o	150	Pipe/Conduit	
38.002	68.213	0.457	149.3	0.000	4	0.0	1.500	o	150	Pipe/Conduit	
44.000	13.288	0.184	72.2	0.000	0	5.6	1.500	o	150	Pipe/Conduit	
38.003	53.112	0.356	149.2	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
32.012	41.730	0.185	225.6	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.013	23.921	0.106	225.7	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.014	27.522	0.122	225.6	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.015	11.965	0.053	225.8	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.016	19.090	0.543	35.2	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.017	26.558	0.521	51.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.018	48.211	0.214	225.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
32.019	52.027	1.540	33.8	0.000	0	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)
43.000	92.443	0.000	0.0	0	0.0	0	0.00	1.83	32.3	0.0
39.003	92.224	0.000	0.0	44	0.0	41	0.52	0.71	12.6	2.0
38.001	91.901	0.000	0.0	47	0.0	42	0.53	0.71	12.6	2.2
38.002	91.743	0.000	0.0	51	0.0	44	0.55	0.72	12.7	2.4
44.000	91.470	0.000	5.6	0	0.0	57	0.91	1.03	18.2	5.6
38.003	91.286	0.000	5.6	51	0.0	86	0.76	0.72	12.7	8.0
32.012	90.855	0.000	6.9	73	0.0	90	0.69	0.76	30.3	10.3
32.013	90.670	0.000	6.9	73	0.0	90	0.69	0.76	30.3	10.3
32.014	90.564	0.000	6.9	73	0.0	90	0.69	0.76	30.3	10.3
32.015	90.442	0.000	6.9	73	0.0	90	0.69	0.76	30.3	10.3
32.016	90.389	0.000	6.9	73	0.0	56	1.35	1.94	77.1	10.3
32.017	89.846	0.000	6.9	73	0.0	61	1.18	1.61	64.0	10.3
32.018	89.325	0.000	6.9	73	0.0	90	0.69	0.76	30.4	10.3
32.019	89.111	0.000	6.9	73	0.0	55	1.37	1.98	78.7	10.3

FOUL SEWERAGE DESIGN


Network Design Table for FW

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
31.001	95.445	0.424	225.1	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
31.002	85.322	0.379	225.1	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
31.003	27.934	0.124	225.3	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
45.000	25.920	0.806	32.2	0.000	56	0.0	1.500	o	150	Pipe/Conduit	
31.004	87.929	1.543	57.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
31.005	65.604	0.400	164.0	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
46.000	9.892	0.925	10.7	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
31.006	63.852	0.286	223.3	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
31.007	63.852	0.283	225.6	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
47.000	8.946	0.944	9.5	0.000	0	0.0	1.500	o	150	Pipe/Conduit	
31.008	76.534	1.894	40.4	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
31.009	38.340	3.960	9.7	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
48.000	6.139	0.028	219.2	0.000	0	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)
31.001	87.571	0.000	6.9	73	0.0	90	0.69	0.76	30.4	10.3
31.002	87.146	0.000	6.9	73	0.0	90	0.69	0.76	30.4	10.3
31.003	86.767	0.000	6.9	73	0.0	90	0.69	0.76	30.3	10.3
45.000	87.524	0.000	0.0	56	0.0	31	0.97	1.55	27.4	2.6
31.004	86.643	0.000	6.9	129	0.0	70	1.21	1.52	60.5	12.9
31.005	85.100	0.000	6.9	129	0.0	94	0.82	0.90	35.6	12.9
46.000	85.700	0.000	0.0	0	0.0	0	0.00	2.69	47.5	0.0
31.006	84.700	0.000	6.9	129	0.0	102	0.73	0.77	30.5	12.9
31.007	84.414	0.000	6.9	129	0.0	102	0.73	0.76	30.3	12.9
47.000	85.150	0.000	0.0	0	0.0	0	0.00	2.86	50.5	0.0
31.008	84.131	0.000	6.9	129	0.0	64	1.37	1.81	71.9	12.9
31.009	82.237	0.000	6.9	129	0.0	45	2.27	3.70	147.1	12.9
48.000	78.305	0.000	0.0	0	0.0	0	0.00	0.77	30.8	0.0



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FOUL SEWERAGE DESIGN

Network Design Table for FW

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
31.010	48.894	0.218	224.3	0.000	0	0.0	1.500	o	225	Pipe/Conduit	
19.005	10.829	0.037	292.7	0.000	0	0.0	1.500	o	450	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)	
31.010	78.277	0.000	6.9	129	0.0	102	0.73	0.76	30.4	12.9
19.005	77.834	0.000	18.1	3416	0.0	450	1.05	1.05	167.4<	176.1

Manhole Schedules for FW

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)	Diameter (mm)	Backdr (mm)
F01	97.114	1.573	Junction		16.000	95.541	100				
F02	97.507	2.084	Open Manhole	1200	16.001	95.423	100	16.000	95.423	100	
F07	95.221	0.151	Open Manhole	1200		OUTFALL		16.001	95.070	100	
FDC.01	96.473	1.454	Open Manhole	1200	17.000	95.019	225				
F04	94.221	0.991	Open Manhole	1240 x 675	18.000	93.230	150				
F05	93.457	1.357	Open Manhole	1200	17.001	92.100	225	17.000	92.100	225	
								18.000	92.175	150	
F1.01	92.794	1.444	Open Manhole	1200	17.002	91.350	225	17.001	91.350	225	
F1.01A	93.445	2.765	Open Manhole	1200	17.003	90.680	225	17.002	90.680	225	
F1.01B	93.259	2.959	Open Manhole	1200	17.004	90.300	225	17.003	90.300	225	
F1.01C	89.915	2.720	Open Manhole	1200	17.005	87.195	225	17.004	87.195	225	
F1.01	96.665	11.435	Open Manhole	1200		OUTFALL		17.005	85.230	225	
F07	87.096	1.446	Open Manhole	1200	19.000	85.650	150				
F08	96.726	2.748	Open Manhole	1200	20.000	93.978	150				
F09	97.052	3.212	Open Manhole	1200	20.001	93.840	150	20.000	93.840	150	
F10	96.296	3.540	Open Manhole	1200	20.002	92.756	150	20.001	92.756	150	
F11	95.049	3.083	Open Manhole	1200	21.000	91.966	150				
F12	95.286	3.446	Open Manhole	1200	20.003	91.840	150	20.002	91.840	150	
								21.000	91.840	150	
F13	94.742	3.420	Open Manhole	1200	22.000	91.322	150				
F14	94.767	3.617	Open Manhole	1200	20.004	91.150	150	20.003	91.150	150	
								22.000	91.150	150	
F15	95.875	1.543	Open Manhole	1200	23.000	94.332	150				
F16	95.097	2.408	Open Manhole	1200	23.001	92.689	150	23.000	92.689	150	
F16A	94.421	2.216	Open Manhole	1200	23.002	92.205	150	23.001	92.205	150	
F17	93.330	1.435	Open Manhole	1200	24.000	91.895	100				
F18	93.674	1.993	Open Manhole	1200	23.003	91.681	150	23.002	91.681	150	
								24.000	91.731	100	
F19	92.858	1.606	Open Manhole	1200	23.004	91.252	150	23.003	91.252	150	
F20	92.126	1.812	Open Manhole	1200	23.005	90.314	150	23.004	90.314	150	
F21	92.820	2.820	Junction		25.000	90.000	100				
F22	92.712	2.819	Open Manhole	1200	23.006	89.893	150	23.005	89.893	150	
								25.000	89.943	100	
F23	92.856	3.170	Open Manhole	1200	23.007	89.686	150	23.006	89.686	150	
F24	93.030	3.595	Open Manhole	1200	23.008	89.435	150	23.007	89.435	150	
F25	92.925	3.741	Open Manhole	1200	23.009	89.184	150	23.008	89.184	150	

Manhole Schedules for FW



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)
F26	92.966	3.930	Open Manhole	1200	23.010	89.036	150	23.009	89.036	150	
F27	93.145	4.155	Open Manhole	1200	20.005	88.990	150	20.004	88.990	150	
								23.010	88.990	150	
F28	92.575	3.325	Open Manhole	1200	26.000	89.250	100				
F29	92.732	3.817	Open Manhole	1200	20.006	88.915	150	20.005	88.915	150	
								26.000	88.965	100	
F30	91.138	2.516	Open Manhole	1200	20.007	88.622	150	20.006	88.622	150	
F31	90.572	2.052	Open Manhole	1200	20.008	88.520	150	20.007	88.520	150	
F32	89.456	1.912	Open Manhole	1200	27.000	87.544	150				
F33	89.904	2.604	Open Manhole	1200	20.009	87.300	150	20.008	87.300	150	
								27.000	87.300	150	
F34	89.310	2.416	Open Manhole	1200	20.010	86.894	150	20.009	86.894	150	
F35	88.612	1.872	Open Manhole	1200	20.011	86.740	150	20.010	86.740	150	
F36	87.469	2.119	Open Manhole	1200	19.001	85.350	150	19.000	85.350	150	
								20.011	85.350	150	
F37	86.873	2.023	Open Manhole	1200	19.002	84.850	150	19.001	84.850	150	
F38	86.027	1.627	Junction		28.000	84.400	100				
F39	85.970	1.836	Open Manhole	1200	19.003	84.134	150	19.002	84.134	150	
								28.000	84.184	100	
F41	83.451	1.651	Junction		29.000	81.800	100				
F42	82.942	1.202	Junction		30.000	81.740	300				
F43	83.266	2.366	Open Manhole	1500	29.001	80.900	375	29.000	81.175	100	
								30.000	80.975	300	
F44	84.032	3.475	Open Manhole	1500	19.004	80.557	375	19.003	80.782	150	
								29.001	80.557	375	
F45	91.661	2.050	Open Manhole	1200	31.000	89.611	150				
F47	98.397	1.717	Junction		32.000	96.680	100				
F48	98.689	2.289	Open Manhole	1200	32.001	96.400	100	32.000	96.400	100	
F49	98.060	1.309	Open Manhole	1200	33.000	96.751	150				
F50	98.076	2.476	Open Manhole	1200	32.002	95.600	150	32.001	95.650	100	
								33.000	95.600	150	
F51	96.847	1.047	Junction		34.000	95.800	100				
F52	97.048	1.948	Open Manhole	1200	32.003	95.100	150	32.002	95.100	150	
								34.000	95.665	100	
F53	97.186	1.596	Open Manhole	1200	35.000	95.590	100				
F54	97.186	2.353	Open Manhole	1200	32.004	94.833	150	32.003	94.833	150	
								35.000	94.883	100	
F55	97.982	3.632	Open Manhole	1200	32.005	94.350	150	32.004	94.350	150	

Manhole Schedules for FW

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)
F56	98.842	2.988	Open Manhole	1200	36.000	95.854	150				
F57	98.766	4.794	Open Manhole	1200	32.006	94.005	150	32.005	94.005	150	
F58	98.520	4.986	Open Manhole	1200	32.007	93.534	150	32.006	93.534	150	
F59	97.116	1.466	Open Manhole	1200	37.000	95.650	150				
F61	96.831	3.736	Open Manhole	1200	32.008	93.095	150	32.007	93.095	150	
F62	96.200	3.281	Open Manhole	1200	32.009	92.919	150	37.000	95.458	150	2363
F63	95.916	3.174	Open Manhole	1200	32.010	92.742	150	32.008	92.919	150	
F64	95.595	3.078	Open Manhole	1200	32.011	92.517	150	32.009	92.742	150	
F65	94.893	2.193	Open Manhole	1200	38.000	92.700	150	32.010	92.517	150	
F66	97.689	2.039	Open Manhole	1200	39.000	95.650	150				
F67	99.235	1.465	Open Manhole	1200	40.000	97.770	150				
F68	99.221	1.350	Open Manhole	1200	41.000	97.871	150				
F69	99.326	1.596	Open Manhole	1200	40.001	97.730	150	40.000	97.730	150	
F70	99.320	1.720	Open Manhole	1200	40.002	97.600	150	41.000	97.730	150	
F71	98.554	1.733	Open Manhole	1200	40.003	96.821	150	40.001	97.600	150	
F72	98.160	1.590	Open Manhole	1200	40.004	96.570	150	40.002	96.821	150	
F74	97.877	2.118	Open Manhole	1200	40.005	95.759	150	40.003	96.570	150	
F75	97.372	1.865	Open Manhole	1200	40.006	95.507	150	40.004	95.759	150	
F76	97.103	2.134	Open Manhole	1200	39.001	94.969	150	40.005	95.507	150	
F77	96.562	1.672	Junction		42.000	94.890	150	39.000	94.969	150	
F78	96.853	2.100	Open Manhole	1200	39.002	94.753	150	40.006	94.969	150	
F79	93.999	1.556	Junction		43.000	92.443	150				
F80	94.911	2.687	Open Manhole	1200	39.003	92.224	150	39.001	94.753	150	
F81	95.022	3.121	Open Manhole	1200	38.001	91.901	150	42.000	94.753	150	
F82	95.531	3.788	Open Manhole	1200	38.002	91.743	150	43.000	92.224	150	
F83	95.478	4.008	Junction		44.000	91.470	150	39.002	92.224	150	
F84	95.582	4.296	Junction		38.003	91.286	150	43.000	92.224	150	
F85	94.918	4.063	Open Manhole	1200	32.012	90.855	225	38.001	91.743	150	115
F86	93.990	3.320	Open Manhole	1200	32.013	90.670	225	39.003	91.901	150	

Manhole Schedules for FW

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)
F87	93.305	2.741	Open Manhole	1200	32.014	90.564	225	32.013	90.564	225	
F88	92.560	2.118	Open Manhole	1200	32.015	90.442	225	32.014	90.442	225	
F89	92.398	2.009	Open Manhole	1200	32.016	90.389	225	32.015	90.389	225	
F90	92.249	2.403	Open Manhole	1200	32.017	89.846	225	32.016	89.846	225	
F91	92.202	2.877	Open Manhole	1200	32.018	89.325	225	32.017	89.325	225	
F92	91.056	1.945	Open Manhole	1200	32.019	89.111	225	32.018	89.111	225	
F93	91.117	3.546	Open Manhole	1200	31.001	87.571	225	31.000	87.571	150	
								32.019	87.571	225	
F96	89.540	2.394	Open Manhole	1200	31.002	87.146	225	31.001	87.147	225	1
F97	88.400	1.633	Open Manhole	1200	31.003	86.767	225	31.002	86.767	225	
F98	89.209	1.685	Open Manhole	1200	45.000	87.524	150				
F99	88.754	2.111	Open Manhole	1200	31.004	86.643	225	31.003	86.643	225	
								45.000	86.718	150	
F100	87.511	2.411	Open Manhole	1200	31.005	85.100	225	31.004	85.100	225	
F101	86.935	1.235	Open Manhole	1200	46.000	85.700	150				
F102	86.733	2.033	Open Manhole	1200	31.006	84.700	225	31.005	84.700	225	
								46.000	84.775	150	
F103	86.614	2.200	Open Manhole	1200	31.007	84.414	225	31.006	84.414	225	
F104	86.653	1.503	Open Manhole	1200	47.000	85.150	150				
F105	85.965	1.834	Open Manhole	1200	31.008	84.131	225	31.007	84.131	225	
								47.000	84.206	150	
F106	85.142	2.905	Open Manhole	1200	31.009	82.237	225	31.008	82.237	225	
F107	83.587	5.282	Open Manhole	1200	48.000	78.305	225				
F108	83.985	5.708	Open Manhole	1200	31.010	78.277	225	31.009	78.277	225	
								48.000	78.277	225	
F109	83.165	5.331	Open Manhole	1500	19.005	77.834	450	19.004	77.909	375	
								31.010	78.059	225	
F1.02	82.950	5.153	Open Manhole	1500		OUTFALL		19.005	77.797	450	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F01	568243.074	245694.927			No Entry	
F02	568243.852	245696.147	568243.852	245696.147	Required	

Manchester One  
 Portland Street  
 Manchester M1 3LF

Haverhill  
 Great Willsey Park  
 Area 4 FSR simulation results



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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F07	568236.591	245701.258			No Entry	
FDC.01	568086.820	245856.945	568086.820	245856.945	Required	
F04	568077.521	245777.317	568077.521	245777.317	Required	
F05	568064.947	245783.913	568064.947	245783.913	Required	
F1.01	568055.738	245771.279	568055.738	245771.279	Required	
F1.01A	568088.784	245771.279	568088.784	245771.279	Required	
F1.01B	568107.518	245771.279	568107.518	245771.279	Required	
F1.01C	568207.214	245771.279	568207.214	245771.279	Required	
F1.01	568245.378	245771.279			No Entry	
F07	568492.515	245906.497	568492.515	245906.497	Required	
F08	568277.961	245747.813	568277.961	245747.813	Required	
F09	568285.667	245739.770	568285.667	245739.770	Required	
F10	568312.263	245764.025	568312.263	245764.025	Required	
F11	568320.283	245794.387	568320.283	245794.387	Required	
F12	568333.454	245783.121	568333.454	245783.121	Required	

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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F13	568351.526	245780.655	568351.526	245780.655	Required	
F14	568343.115	245791.652	568343.115	245791.652	Required	
F15	568122.967	245887.109	568122.967	245887.109	Required	
F16	568149.311	245909.525	568149.311	245909.525	Required	
F16A	568160.800	245933.563	568160.800	245933.563	Required	
F17	568166.531	245965.797	568166.531	245965.797	Required	
F18	568173.079	245959.253	568173.079	245959.253	Required	
F19	568185.554	245954.704	568185.554	245954.704	Required	
F20	568252.958	245909.383	568252.958	245909.383	Required	
F21	568273.728	245887.263			No Entry	
F22	568275.194	245889.422	568275.194	245889.422	Required	
F23	568300.114	245876.779	568300.114	245876.779	Required	
F24	568327.894	245857.277	568327.894	245857.277	Required	
F25	568355.674	245837.775	568355.674	245837.775	Required	
F26	568368.714	245822.585	568368.714	245822.585	Required	

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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F27	568373.220	245818.326	568373.220	245818.326	Required	
F28	568384.374	245816.468	568384.374	245816.468	Required	
F29	568381.276	245824.582	568381.276	245824.582	Required	
F30	568418.719	245837.298	568418.719	245837.298	Required	
F31	568430.259	245844.783	568430.259	245844.783	Required	
F32	568456.333	245852.564	568456.333	245852.564	Required	
F33	568442.172	245858.953	568442.172	245858.953	Required	
F34	568448.137	245879.765	568448.137	245879.765	Required	
F35	568468.713	245883.278	568468.713	245883.278	Required	
F36	568497.659	245893.522	568497.659	245893.522	Required	
F37	568513.973	245897.741	568513.973	245897.741	Required	
F38	568533.761	245891.701			No Entry	
F39	568539.784	245898.365	568539.784	245898.365	Required	
F41	568666.476	245858.195			No Entry	
F42	568679.357	245861.430			No Entry	



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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F43	568668.658	245864.674	568668.658	245864.674	Required	
F44	568599.776	245888.324	568599.776	245888.324	Required	
F45	568185.353	246329.203	568185.353	246329.203	Required	
F47	568186.622	246819.552			No Entry	
F48	568172.925	246820.652	568172.925	246820.652	Required	
F49	568182.932	246784.828	568182.932	246784.828	Required	
F50	568170.502	246784.702	568170.502	246784.702	Required	
F51	568186.809	246723.400			No Entry	
F52	568172.417	246722.840	568172.417	246722.840	Required	
F53	568220.452	246687.374	568220.452	246687.374	Required	
F54	568174.315	246682.791	568174.315	246682.791	Required	
F55	568113.609	246658.855	568113.609	246658.855	Required	
F56	568063.899	246651.566	568063.899	246651.566	Required	
F57	568073.058	246636.007	568073.058	246636.007	Required	
F58	568018.769	246602.962	568018.769	246602.962	Required	

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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F59	567993.688	246571.201	567993.688	246571.201	Required	
F61	567974.500	246570.726	567974.500	246570.726	Required	
F62	567965.281	246548.856	567965.281	246548.856	Required	
F63	567971.026	246525.703	567971.026	246525.703	Required	
F64	567985.199	246498.826	567985.199	246498.826	Required	
F65	568135.908	246508.871	568135.908	246508.871	Required	
F66	568371.049	246513.097	568371.049	246513.097	Required	
F67	568299.040	246682.462	568299.040	246682.462	Required	
F68	568282.796	246680.249	568282.796	246680.249	Required	
F69	568297.270	246677.809	568297.270	246677.809	Required	
F70	568304.282	246659.882	568304.282	246659.882	Required	
F71	568301.566	246612.939	568301.566	246612.939	Required	
F72	568300.267	246590.921	568300.267	246590.921	Required	
F74	568297.552	246576.381	568297.552	246576.381	Required	
F75	568297.098	246542.318	568297.098	246542.318	Required	

Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F76	568296.694	246507.472	568296.694	246507.472	Required	
F77	568267.485	246512.014			No Entry	
F78	568267.685	246506.282	568267.685	246506.282	Required	
F79	568186.344	246511.145			No Entry	
F80	568186.777	246504.462	568186.777	246504.462	Required	
F81	568138.480	246501.183	568138.480	246501.183	Required	
F82	568115.376	246496.047	568115.376	246496.047	Required	
F83	568052.652	246468.225			No Entry	
F84	568048.853	246480.958			No Entry	
F85	567997.426	246467.683	567997.426	246467.683	Required	
F86	568010.571	246428.078	568010.571	246428.078	Required	
F87	568015.426	246404.655	568015.426	246404.655	Required	
F88	568025.860	246379.187	568025.860	246379.187	Required	
F89	568032.545	246369.264	568032.545	246369.264	Required	
F90	568045.269	246355.033	568045.269	246355.033	Required	

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Manhole Schedules for FW

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
F91	568060.289	246333.130	568060.289	246333.130	Required	
F92	568105.869	246317.420	568105.869	246317.420	Required	
F93	568150.961	246291.468	568150.961	246291.468	Required	
F96	568143.802	246196.292	568143.802	246196.292	Required	
F97	568211.353	246144.170	568211.353	246144.170	Required	
F98	568212.613	246100.002	568212.613	246100.002	Required	
F99	568227.389	246121.298	568227.389	246121.298	Required	
F100	568296.326	246066.715	568296.326	246066.715	Required	
F101	568345.959	246025.469	568345.959	246025.469	Required	
F102	568352.525	246032.868	568352.525	246032.868	Required	
F103	568409.031	246003.135	568409.031	246003.135	Required	
F104	568461.606	245965.367	568461.606	245965.367	Required	
F105	568465.538	245973.402	568465.538	245973.402	Required	
F106	568537.382	245947.025	568537.382	245947.025	Required	
F107	568575.448	245946.495	568575.448	245946.495	Required	

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Manhole Schedules for FW

<b>MH Name</b>	<b>Manhole Easting (m)</b>	<b>Manhole Northing (m)</b>	<b>Intersection Easting (m)</b>	<b>Intersection Northing (m)</b>	<b>Manhole Access</b>	<b>Layout (North)</b>
F108	568575.139	245940.364	568575.139	245940.364	Required	
F109	568603.867	245900.799	568603.867	245900.799	Required	
F1.02	568614.201	245897.561			No Entry	

PIPELINE SCHEDULES for FW

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)
16.000	o	100	F01	97.114	95.541	1.473	Junction	
16.001	o	100	F02	97.507	95.423	1.984	Open Manhole	1200
17.000	o	225	FDC.01	96.473	95.019	1.229	Open Manhole	1200
18.000	o	150	F04	94.221	93.230	0.841	Open Manhole	1240 x 675
17.001	o	225	F05	93.457	92.100	1.132	Open Manhole	1200
17.002	o	225	F1.01	92.794	91.350	1.219	Open Manhole	1200
17.003	o	225	F1.01A	93.445	90.680	2.540	Open Manhole	1200
17.004	o	225	F1.01B	93.259	90.300	2.734	Open Manhole	1200
17.005	o	225	F1.01C	89.915	87.195	2.495	Open Manhole	1200
19.000	o	150	F07	87.096	85.650	1.296	Open Manhole	1200
20.000	o	150	F08	96.726	93.978	2.598	Open Manhole	1200
20.001	o	150	F09	97.052	93.840	3.062	Open Manhole	1200
20.002	o	150	F10	96.296	92.756	3.390	Open Manhole	1200
21.000	o	150	F11	95.049	91.966	2.933	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)
16.000	1.447	12.3	F02	97.507	95.423	1.984	Open Manhole	1200
16.001	8.879	25.2	F07	95.221	95.070	0.051	Open Manhole	1200
17.000	76.237	26.1	F05	93.457	92.100	1.132	Open Manhole	1200
18.000	14.200	13.5	F05	93.457	92.175	1.132	Open Manhole	1200
17.001	15.633	20.8	F1.01	92.794	91.350	1.219	Open Manhole	1200
17.002	33.046	49.3	F1.01A	93.445	90.680	2.540	Open Manhole	1200
17.003	18.734	49.3	F1.01B	93.259	90.300	2.734	Open Manhole	1200
17.004	99.696	32.1	F1.01C	89.915	87.195	2.495	Open Manhole	1200
17.005	38.164	19.4	F1.01	96.665	85.230	11.210	Open Manhole	1200
19.000	13.958	46.5	F36	87.469	85.350	1.969	Open Manhole	1200
20.000	11.139	80.7	F09	97.052	93.840	3.062	Open Manhole	1200
20.001	35.995	33.2	F10	96.296	92.756	3.390	Open Manhole	1200
20.002	28.526	31.1	F12	95.286	91.840	3.296	Open Manhole	1200
21.000	17.332	137.6	F12	95.286	91.840	3.296	Open Manhole	1200

PIPELINE SCHEDULES for FW

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)
20.003	o	150	F12	95.286	91.840	3.296	Open Manhole	1200
22.000	o	150	F13	94.742	91.322	3.270	Open Manhole	1200
20.004	o	150	F14	94.767	91.150	3.467	Open Manhole	1200
23.000	o	150	F15	95.875	94.332	1.393	Open Manhole	1200
23.001	o	150	F16	95.097	92.689	2.258	Open Manhole	1200
23.002	o	150	F16A	94.421	92.205	2.066	Open Manhole	1200
24.000	o	100	F17	93.330	91.895	1.335	Open Manhole	1200
23.003	o	150	F18	93.674	91.681	1.843	Open Manhole	1200
23.004	o	150	F19	92.858	91.252	1.456	Open Manhole	1200
23.005	o	150	F20	92.126	90.314	1.662	Open Manhole	1200
25.000	o	100	F21	92.820	90.000	2.720	Junction	
23.006	o	150	F22	92.712	89.893	2.669	Open Manhole	1200
23.007	o	150	F23	92.856	89.686	3.020	Open Manhole	1200
23.008	o	150	F24	93.030	89.435	3.445	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)
20.003	12.888	18.7	F14	94.767	91.150	3.467	Open Manhole	1200
22.000	13.844	80.5	F14	94.767	91.150	3.467	Open Manhole	1200
20.004	40.222	18.6	F27	93.145	88.990	4.005	Open Manhole	1200
23.000	34.591	21.1	F16	95.097	92.689	2.258	Open Manhole	1200
23.001	26.643	55.0	F16A	94.421	92.205	2.066	Open Manhole	1200
23.002	28.474	54.3	F18	93.674	91.681	1.843	Open Manhole	1200
24.000	9.257	56.4	F18	93.674	91.731	1.843	Open Manhole	1200
23.003	13.278	31.0	F19	92.858	91.252	1.456	Open Manhole	1200
23.004	81.224	86.6	F20	92.126	90.314	1.662	Open Manhole	1200
23.005	29.881	71.0	F22	92.712	89.893	2.669	Open Manhole	1200
25.000	2.610	45.8	F22	92.712	89.943	2.669	Open Manhole	1200
23.006	27.944	135.0	F23	92.856	89.686	3.020	Open Manhole	1200
23.007	33.942	135.2	F24	93.030	89.435	3.445	Open Manhole	1200
23.008	33.942	135.2	F25	92.925	89.184	3.591	Open Manhole	1200

PIPELINE SCHEDULES for FW

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)
23.009	o	150	F25	92.925	89.184	3.591	Open Manhole	1200
23.010	o	150	F26	92.966	89.036	3.780	Open Manhole	1200
20.005	o	150	F27	93.145	88.990	4.005	Open Manhole	1200
26.000	o	100	F28	92.575	89.250	3.225	Open Manhole	1200
20.006	o	150	F29	92.732	88.915	3.667	Open Manhole	1200
20.007	o	150	F30	91.138	88.622	2.366	Open Manhole	1200
20.008	o	150	F31	90.572	88.520	1.902	Open Manhole	1200
27.000	o	150	F32	89.456	87.544	1.762	Open Manhole	1200
20.009	o	150	F33	89.904	87.300	2.454	Open Manhole	1200
20.010	o	150	F34	89.310	86.894	2.266	Open Manhole	1200
20.011	o	150	F35	88.612	86.740	1.722	Open Manhole	1200
19.001	o	150	F36	87.469	85.350	1.969	Open Manhole	1200
19.002	o	150	F37	86.873	84.850	1.873	Open Manhole	1200
28.000	o	100	F38	86.027	84.400	1.527	Junction	

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)
23.009	20.020	135.3	F26	92.966	89.036	3.780	Open Manhole	1200
23.010	6.199	134.8	F27	93.145	88.990	4.005	Open Manhole	1200
20.005	10.199	136.0	F29	92.732	88.915	3.667	Open Manhole	1200
26.000	8.685	30.5	F29	92.732	88.965	3.667	Open Manhole	1200
20.006	39.544	135.0	F30	91.138	88.622	2.366	Open Manhole	1200
20.007	13.755	134.9	F31	90.572	88.520	1.902	Open Manhole	1200
20.008	18.512	15.2	F33	89.904	87.300	2.454	Open Manhole	1200
27.000	15.535	63.7	F33	89.904	87.300	2.454	Open Manhole	1200
20.009	21.650	53.3	F34	89.310	86.894	2.266	Open Manhole	1200
20.010	20.874	135.5	F35	88.612	86.740	1.722	Open Manhole	1200
20.011	30.705	22.1	F36	87.469	85.350	1.969	Open Manhole	1200
19.001	16.851	33.7	F37	86.873	84.850	1.873	Open Manhole	1200
19.002	25.818	36.1	F39	85.970	84.134	1.686	Open Manhole	1200
28.000	8.982	41.6	F39	85.970	84.184	1.686	Open Manhole	1200



PIPELINE SCHEDULES for FW

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)
19.003	o	150	F39	85.970	84.134	1.686	Open Manhole	1200
29.000	o	100	F41	83.451	81.800	1.551	Junction	
30.000	o	300	F42	82.942	81.740	0.902	Junction	
29.001	o	375	F43	83.266	80.900	1.991	Open Manhole	1500
19.004	o	375	F44	84.032	80.557	3.100	Open Manhole	1500
31.000	o	150	F45	91.661	89.611	1.900	Open Manhole	1200
32.000	o	100	F47	98.397	96.680	1.617	Junction	
32.001	o	100	F48	98.689	96.400	2.189	Open Manhole	1200
33.000	o	150	F49	98.060	96.751	1.159	Open Manhole	1200
32.002	o	150	F50	98.076	95.600	2.326	Open Manhole	1200
34.000	o	100	F51	96.847	95.800	0.947	Junction	

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)
19.003	60.827	18.1	F44	84.032	80.782	3.100	Open Manhole	1500
29.000	6.837	10.9	F43	83.266	81.175	1.991	Open Manhole	1500
30.000	11.179	14.6	F43	83.266	80.975	1.991	Open Manhole	1500
29.001	72.829	212.3	F44	84.032	80.557	3.100	Open Manhole	1500
19.004	13.129	5.0	F109	83.165	77.909	4.881	Open Manhole	1500
31.000	51.057	25.0	F93	91.117	87.571	3.396	Open Manhole	1200
32.000	13.741	49.1	F48	98.689	96.400	2.189	Open Manhole	1200
32.001	36.031	48.0	F50	98.076	95.650	2.326	Open Manhole	1200
33.000	12.430	10.8	F50	98.076	95.600	2.326	Open Manhole	1200
32.002	61.892	123.8	F52	97.048	95.100	1.798	Open Manhole	1200
34.000	14.402	106.7	F52	97.048	95.665	1.283	Open Manhole	1200

PIPELINE SCHEDULES for FW

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)
32.003	o	150	F52	97.048	95.100	1.798	Open Manhole	1200
35.000	o	100	F53	97.186	95.590	1.496	Open Manhole	1200
32.004	o	150	F54	97.186	94.833	2.203	Open Manhole	1200
32.005	o	150	F55	97.982	94.350	3.482	Open Manhole	1200
36.000	o	150	F56	98.842	95.854	2.838	Open Manhole	1200
32.006	o	150	F57	98.766	94.005	4.611	Open Manhole	1200
32.007	o	150	F58	98.520	93.534	4.836	Open Manhole	1200
37.000	o	150	F59	97.116	95.650	1.316	Open Manhole	1200
32.008	o	150	F61	96.831	93.095	3.586	Open Manhole	1200
32.009	o	150	F62	96.200	92.919	3.131	Open Manhole	1200
32.010	o	150	F63	95.916	92.742	3.024	Open Manhole	1200
32.011	o	150	F64	95.595	92.517	2.928	Open Manhole	1200
38.000	o	150	F65	94.893	92.700	2.043	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)
32.003	40.094	150.2	F54	97.186	94.833	2.203	Open Manhole	1200
35.000	46.364	65.6	F54	97.186	94.883	2.203	Open Manhole	1200
32.004	65.254	135.1	F55	97.982	94.350	3.482	Open Manhole	1200
32.005	46.545	135.0	F57	98.766	94.005	4.611	Open Manhole	1200
36.000	18.055	9.6	F57	98.766	93.972	4.644	Open Manhole	1200
32.006	63.556	134.9	F58	98.520	93.534	4.836	Open Manhole	1200
32.007	54.762	124.7	F61	96.831	93.095	3.586	Open Manhole	1200
37.000	19.194	100.0	F61	96.831	95.458	1.223	Open Manhole	1200
32.008	23.734	134.9	F62	96.200	92.919	3.131	Open Manhole	1200
32.009	23.855	134.8	F63	95.916	92.742	3.024	Open Manhole	1200
32.010	30.385	135.0	F64	95.595	92.517	2.928	Open Manhole	1200
32.011	33.457	21.1	F85	94.918	90.930	3.838	Open Manhole	1200
38.000	8.107	11.9	F81	95.022	92.016	2.856	Open Manhole	1200

PIPELINE SCHEDULES for FW

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)
39.000	o	150	F66	97.689	95.650	1.889	Open Manhole	1200
40.000	o	150	F67	99.235	97.770	1.315	Open Manhole	1200
41.000	o	150	F68	99.221	97.871	1.200	Open Manhole	1200
40.001	o	150	F69	99.326	97.730	1.446	Open Manhole	1200
40.002	o	150	F70	99.320	97.600	1.570	Open Manhole	1200
40.003	o	150	F71	98.554	96.821	1.583	Open Manhole	1200
40.004	o	150	F72	98.160	96.570	1.440	Open Manhole	1200
40.005	o	150	F74	97.877	95.759	1.968	Open Manhole	1200
40.006	o	150	F75	97.372	95.507	1.715	Open Manhole	1200
39.001	o	150	F76	97.103	94.969	1.984	Open Manhole	1200
42.000	o	150	F77	96.562	94.890	1.522	Junction	
39.002	o	150	F78	96.853	94.753	1.950	Open Manhole	1200
43.000	o	150	F79	93.999	92.443	1.406	Junction	

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)
39.000	74.568	109.5	F76	97.103	94.969	1.984	Open Manhole	1200
40.000	4.979	124.5	F69	99.326	97.730	1.446	Open Manhole	1200
41.000	14.678	104.1	F69	99.326	97.730	1.446	Open Manhole	1200
40.001	19.249	148.1	F70	99.320	97.600	1.570	Open Manhole	1200
40.002	47.022	60.4	F71	98.554	96.821	1.583	Open Manhole	1200
40.003	22.056	87.9	F72	98.160	96.570	1.440	Open Manhole	1200
40.004	14.791	18.2	F74	97.877	95.759	1.968	Open Manhole	1200
40.005	34.066	135.2	F75	97.372	95.507	1.715	Open Manhole	1200
40.006	34.848	64.8	F76	97.103	94.969	1.984	Open Manhole	1200
39.001	29.033	134.4	F78	96.853	94.753	1.950	Open Manhole	1200
42.000	5.736	41.9	F78	96.853	94.753	1.950	Open Manhole	1200
39.002	80.929	32.0	F80	94.911	92.224	2.537	Open Manhole	1200
43.000	6.697	30.6	F80	94.911	92.224	2.537	Open Manhole	1200

PIPELINE SCHEDULES for FW

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)
39.003	o	150	F80	94.911	92.224	2.537	Open Manhole	1200
38.001	o	150	F81	95.022	91.901	2.971	Open Manhole	1200
38.002	o	150	F82	95.531	91.743	3.638	Open Manhole	1200
44.000	o	150	F83	95.478	91.470	3.858	Junction	
38.003	o	150	F84	95.582	91.286	4.146	Junction	
32.012	o	225	F85	94.918	90.855	3.838	Open Manhole	1200
32.013	o	225	F86	93.990	90.670	3.095	Open Manhole	1200
32.014	o	225	F87	93.305	90.564	2.516	Open Manhole	1200
32.015	o	225	F88	92.560	90.442	1.893	Open Manhole	1200
32.016	o	225	F89	92.398	90.389	1.784	Open Manhole	1200
32.017	o	225	F90	92.249	89.846	2.178	Open Manhole	1200
32.018	o	225	F91	92.202	89.325	2.652	Open Manhole	1200
32.019	o	225	F92	91.056	89.111	1.720	Open Manhole	1200
31.001	o	225	F93	91.117	87.571	3.321	Open Manhole	1200
31.002	o	225	F96	89.540	87.146	2.169	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)
39.003	48.409	149.9	F81	95.022	91.901	2.971	Open Manhole	1200
38.001	23.667	149.8	F82	95.531	91.743	3.638	Open Manhole	1200
38.002	68.213	149.3	F84	95.582	91.286	4.146	Junction	
44.000	13.288	72.2	F84	95.582	91.286	4.146	Junction	
38.003	53.112	149.2	F85	94.918	90.930	3.838	Open Manhole	1200
32.012	41.730	225.6	F86	93.990	90.670	3.095	Open Manhole	1200
32.013	23.921	225.7	F87	93.305	90.564	2.516	Open Manhole	1200
32.014	27.522	225.6	F88	92.560	90.442	1.893	Open Manhole	1200
32.015	11.965	225.8	F89	92.398	90.389	1.784	Open Manhole	1200
32.016	19.090	35.2	F90	92.249	89.846	2.178	Open Manhole	1200
32.017	26.558	51.0	F91	92.202	89.325	2.652	Open Manhole	1200
32.018	48.211	225.0	F92	91.056	89.111	1.720	Open Manhole	1200
32.019	52.027	33.8	F93	91.117	87.571	3.321	Open Manhole	1200
31.001	95.445	225.1	F96	89.540	87.147	2.168	Open Manhole	1200
31.002	85.322	225.1	F97	88.400	86.767	1.408	Open Manhole	1200


PIPELINE SCHEDULES for FW

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)
31.003	o	225	F97	88.400	86.767	1.408	Open Manhole	1200
45.000	o	150	F98	89.209	87.524	1.535	Open Manhole	1200
31.004	o	225	F99	88.754	86.643	1.886	Open Manhole	1200
31.005	o	225	F100	87.511	85.100	2.186	Open Manhole	1200
46.000	o	150	F101	86.935	85.700	1.085	Open Manhole	1200
31.006	o	225	F102	86.733	84.700	1.808	Open Manhole	1200
31.007	o	225	F103	86.614	84.414	1.975	Open Manhole	1200
47.000	o	150	F104	86.653	85.150	1.353	Open Manhole	1200
31.008	o	225	F105	85.965	84.131	1.609	Open Manhole	1200
31.009	o	225	F106	85.142	82.237	2.680	Open Manhole	1200
48.000	o	225	F107	83.587	78.305	5.057	Open Manhole	1200
31.010	o	225	F108	83.985	78.277	5.483	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)
31.003	27.934	225.3	F99	88.754	86.643	1.886	Open Manhole	1200
45.000	25.920	32.2	F99	88.754	86.718	1.886	Open Manhole	1200
31.004	87.929	57.0	F100	87.511	85.100	2.186	Open Manhole	1200
31.005	65.604	164.0	F102	86.733	84.700	1.808	Open Manhole	1200
46.000	9.892	10.7	F102	86.733	84.775	1.808	Open Manhole	1200
31.006	63.852	223.3	F103	86.614	84.414	1.975	Open Manhole	1200
31.007	63.852	225.6	F105	85.965	84.131	1.609	Open Manhole	1200
47.000	8.946	9.5	F105	85.965	84.206	1.609	Open Manhole	1200
31.008	76.534	40.4	F106	85.142	82.237	2.680	Open Manhole	1200
31.009	38.340	9.7	F108	83.985	78.277	5.483	Open Manhole	1200
48.000	6.139	219.2	F108	83.985	78.277	5.483	Open Manhole	1200
31.010	48.894	224.3	F109	83.165	78.059	4.881	Open Manhole	1500

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Innovyze	Network 2019.1	

PIPELINE SCHEDULES for FW

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)
19.005	o	450	F109	83.165	77.834	4.881	Open Manhole	1500

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)
19.005	10.829	292.7	F1.02	82.950	77.797	4.703	Open Manhole	1500

Simulation Criteria for FW

Volumetric Runoff Coeff	0.840	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m <sup>3</sup> /ha Storage	1.000
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)	10080
Foul Sewage per hectare (l/s)	0.000	Output Interval (mins)	2
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

Synthetic Rainfall Details

Rainfall Model	FSR	Profile Type	Winter
Return Period (years)	100	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	21.000	Storm Duration (mins)	15
Ratio R	0.430		