



Curtins Consulting Ltd

File: Existing Drainage 17.10.22

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Network: Storm Network

Marta Wolska

28/10/2022

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
MH596	0.270	5.00	70.820	1200	385108.565	402271.451	0.767
MH557	0.050	5.00	72.160	1350	385133.356	402301.933	2.500
MH536	0.050	5.00	71.960	1350	385129.006	402339.787	2.510
MH535	0.137	5.00	70.560	1350	385138.959	402383.361	1.410
MH534	0.137	5.00	70.020	1350	385145.952	402423.994	1.020
MH530	0.103	5.00	70.210	1350	385136.868	402461.908	1.380
MH528	0.218	5.00	70.350	1350	385126.400	402503.675	1.620
MH521	0.080	5.00	70.910	1350	385088.414	402539.455	2.450
RE1	0.376	5.00	71.550	150	384949.375	402529.560	1.300
MH605			71.620	1350	384962.713	402479.564	1.580
MH606			70.840	1350	384967.069	402480.671	0.875
MH504			71.810	1350	384973.583	402481.708	1.920
RE2	0.173	5.00	71.470	150	384974.670	402539.846	0.770
MH502	0.173	5.00	71.550	1350	384974.588	402507.142	1.000
MH503	0.173	5.00	71.730	1350	384980.417	402483.007	1.880
MH520			71.950	1350	385005.036	402487.157	2.380
MH519			72.130	1350	385031.166	402494.082	2.730
MH540	0.057	5.00	74.570	1200	385089.520	402449.647	0.960
MH539			73.790	1200	385079.380	402445.317	2.010
MH546	0.072	5.00	74.600	1350	385062.131	402469.314	4.390
MH526	0.020	5.00	70.850	1200	385086.062	402500.858	0.830
MH524	0.020	5.00	70.930	1350	385065.263	402495.461	1.270
MH523	0.012	5.00	71.290	1350	385048.316	402499.110	2.120
MH518	0.020	5.00	71.530	1350	385035.242	402506.752	2.730
MH529		5.00	71.000	1200	385150.933	402509.282	0.560
MH517	0.020	5.00	70.730	1350	385082.797	402521.722	0.870
MH515	0.020	5.00	70.730	1350	385080.810	402522.485	1.170
MH513	0.020	5.00	70.700	1350	385066.996	402532.033	1.540
MH512	0.020	5.00	70.850	1350	385045.765	402526.787	2.020
MH511			70.660	1350	385042.060	402530.771	1.860
MH516	0.040	5.00	70.730	1200	385081.986	402523.322	1.060
MH514	0.040	5.00	70.670	1350	385068.890	402533.087	1.270
MH510	0.065	5.00	70.640	1350	385038.825	402531.999	1.960
MH522			69.820	1350	385036.396	402556.930	4.110
MH505	0.169	5.00	68.250	1350	385016.161	402590.248	4.590
MH506			68.450	1350	385016.304	402595.199	4.990
MH506A	0.000	5.00	68.710	1350	385029.291	402604.831	5.331
MH056B	0.000	5.00	64.500	1200	385032.085	402620.297	4.350
MH056C	0.000	5.00	57.200	1200	385057.794	402614.937	5.120
MH056D			54.140	1200	385070.279	402611.609	5.440
UU			50.500	1200	385172.538	402547.526	6.390

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
EXS9	0.222	5.00	63.500	1800	385017.214	402628.882	3.020
MH056E			64.850	1500	385027.980	402615.313	2.250

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	MH596	MH557	39.291	0.600	70.053	69.726	0.327	120.0	150	5.71	50.0
1.001	MH557	MH536	38.103	0.600	69.660	69.450	0.210	181.4	225	6.37	50.0
1.002	MH536	MH535	44.696	0.600	69.450	69.251	0.199	225.0	225	7.23	50.0
1.003	MH535	MH534	41.230	0.600	69.150	69.000	0.150	274.9	300	7.96	50.0
1.004	MH534	MH530	38.987	0.600	69.000	68.830	0.170	229.3	300	8.59	50.0
1.005	MH530	MH528	43.059	0.600	68.830	68.730	0.100	430.6	300	9.54	50.0
1.006	MH528	MH521	52.184	0.600	68.730	68.460	0.270	193.3	300	10.31	50.0
1.007	MH521	MH522	54.875	0.600	68.460	65.785	2.675	20.5	300	10.58	50.0
2.000	RE1	MH605	51.745	0.600	70.250	70.040	0.210	246.4	225	6.04	50.0
2.001	MH605	MH606	4.494	0.600	70.040	69.965	0.075	60.0	300	6.08	50.0
2.002	MH606	MH504	6.596	0.600	69.965	69.890	0.075	87.9	300	6.14	50.0
2.003	MH504	MH503	6.956	0.600	69.890	69.850	0.040	173.9	300	6.24	50.0
3.000	RE2	MH502	32.704	0.600	70.700	70.550	0.150	218.0	225	5.62	50.0
3.001	MH502	MH503	24.829	0.600	70.550	70.053	0.497	50.0	225	5.84	50.0
2.004	MH503	MH520	24.966	0.600	69.850	69.570	0.280	89.2	375	6.46	50.0
2.005	MH520	MH519	27.032	0.600	69.570	69.400	0.170	159.0	375	6.77	50.0
2.006	MH519	MH518	13.309	0.600	69.400	68.800	0.600	22.2	375	6.83	50.0
4.000	MH540	MH539	11.026	0.600	73.610	71.780	1.830	6.0	100	5.06	50.0
4.001	MH539	MH546	29.553	0.600	71.780	70.210	1.570	18.8	100	5.33	50.0
4.002	MH546	MH523	32.843	0.600	70.210	69.170	1.040	31.6	150	5.64	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	0.916	16.2	36.6	0.617	2.284	0.270	0.0
1.001	0.967	38.5	43.4	2.275	2.285	0.320	0.0
1.002	0.867	34.5	50.1	2.285	1.084	0.370	0.0
1.003	0.943	66.7	68.7	1.110	0.720	0.507	0.0
1.004	1.034	73.1	87.3	0.720	1.080	0.644	0.0
1.005	0.751	53.1	101.2	1.080	1.320	0.747	0.0
1.006	1.127	79.7	130.8	1.320	2.150	0.965	0.0
1.007	3.486	246.4	141.6	2.150	3.735	1.045	0.0
2.000	0.828	32.9	51.0	1.075	1.355	0.376	0.0
2.001	2.033	143.7	51.0	1.280	0.575	0.376	0.0
2.002	1.677	118.5	51.0	0.575	1.620	0.376	0.0
2.003	1.189	84.0	51.0	1.620	1.580	0.376	0.0
3.000	0.881	35.0	23.4	0.545	0.775	0.173	0.0
3.001	1.854	73.7	46.9	0.775	1.452	0.346	0.0
2.004	1.919	212.0	121.3	1.505	2.005	0.895	0.0
2.005	1.434	158.4	121.3	2.005	2.355	0.895	0.0
2.006	3.861	426.4	121.3	2.355	2.355	0.895	0.0
4.000	3.170	24.9	7.7	0.860	1.910	0.057	0.0
4.001	1.788	14.0	7.7	1.910	4.290	0.057	0.0
4.002	1.798	31.8	17.5	4.240	1.970	0.129	0.0

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
5.000	MH526	MH524	21.488	0.600	70.020	69.660	0.360	59.7	100	5.36	50.0
5.001	MH524	MH523	17.335	0.600	69.660	69.313	0.347	50.0	100	5.62	50.0
4.003	MH523	MH518	15.144	0.600	69.170	68.918	0.252	60.0	225	5.79	50.0
2.007	MH518	MH522	50.191	0.600	68.800	65.710	3.090	16.2	375	7.01	50.0
6.000	MH529	MH517	69.262	0.600	70.440	69.860	0.580	119.4	100	6.64	50.0
6.001	MH517	MH515	2.128	0.600	69.860	69.560	0.300	7.1	100	6.66	50.0
6.002	MH515	MH513	16.793	0.600	69.560	69.224	0.336	50.0	100	6.91	50.0
6.003	MH513	MH512	21.870	0.600	69.160	68.830	0.330	66.3	150	7.21	50.0
6.004	MH512	MH511	5.441	0.600	68.830	68.800	0.030	181.4	150	7.33	50.0
6.005	MH511	MH510	3.460	0.600	68.800	68.680	0.120	28.8	150	7.36	50.0
7.000	MH516	MH514	16.336	0.600	69.670	69.400	0.270	60.5	150	5.21	50.0
7.001	MH514	MH510	30.085	0.600	69.400	68.680	0.720	41.8	150	5.53	50.0
6.006	MH510	MH522	25.049	0.600	68.680	66.175	2.505	10.0	100	7.53	50.0
1.008	MH522	MH505	38.981	0.600	65.710	63.660	2.050	19.0	375	10.73	50.0
1.009	MH505	MH506	4.953	0.600	63.660	63.460	0.200	24.8	375	10.76	50.0
1.010	MH506	MH506A	16.169	0.600	63.460	63.379	0.081	200.0	375	10.97	50.0
1.011	MH506A	MH056E	10.564	0.600	63.379	62.600	0.779	13.6	375	11.00	50.0
1.012	MH056E	MH056B	26.262	0.600	62.600	60.150	2.450	10.7	375	11.04	50.0
1.013	MH056B	MH056C	26.262	0.600	60.150	55.100	5.050	5.2	375	11.09	50.0
1.014	MH056C	MH056D	12.921	0.600	52.080	52.010	0.070	184.6	375	11.26	50.0
1.015	MH056D	UU	120.679	0.600	48.700	44.110	4.590	26.3	375	11.82	50.0
8.000	EXS9	MH056B	17.171	0.600	60.480	60.150	0.330	52.0	225	5.16	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
5.000	0.999	7.8	2.7	0.730	1.170	0.020	0.0
5.001	1.092	8.6	5.4	1.170	1.877	0.040	0.0
4.003	1.691	67.2	24.5	1.895	2.387	0.181	0.0
2.007	4.514	498.6	148.5	2.355	3.735	1.096	0.0
6.000	0.702	5.5	0.0	0.460	0.770	0.000	0.0
6.001	2.921	22.9	2.7	0.770	1.070	0.020	0.0
6.002	1.092	8.6	5.4	1.070	1.376	0.040	0.0
6.003	1.237	21.9	8.1	1.390	1.870	0.060	0.0
6.004	0.743	13.1	10.8	1.870	1.710	0.080	0.0
6.005	1.882	33.3	10.8	1.710	1.810	0.080	0.0
7.000	1.295	22.9	5.4	0.910	1.120	0.040	0.0
7.001	1.561	27.6	10.8	1.120	1.810	0.080	0.0
6.006	2.458	19.3	30.5	1.860	3.545	0.225	0.0
1.008	4.171	460.7	320.7	3.735	4.215	2.366	0.0
1.009	3.653	403.5	343.6	4.215	4.615	2.535	0.0
1.010	1.277	141.1	343.6	4.615	4.956	2.535	0.0
1.011	4.942	545.8	343.6	4.956	1.875	2.535	0.0
1.012	5.560	614.1	343.6	1.875	3.975	2.535	0.0
1.013	7.988	882.3	373.6	3.975	1.725	2.757	0.0
1.014	1.330	146.9	373.6	4.745	1.755	2.757	0.0
1.015	3.545	391.6	373.6	5.065	6.015	2.757	0.0
8.000	1.817	72.2	30.1	2.795	4.125	0.222	0.0

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	39.291	120.0	150	1 STANDARD	70.820	70.053	0.617	72.160	69.726	2.284
1.001	38.103	181.4	225	1 STANDARD	72.160	69.660	2.275	71.960	69.450	2.285
1.002	44.696	225.0	225	1 STANDARD	71.960	69.450	2.285	70.560	69.251	1.084
1.003	41.230	274.9	300	1 STANDARD	70.560	69.150	1.110	70.020	69.000	0.720
1.004	38.987	229.3	300	1 STANDARD	70.020	69.000	0.720	70.210	68.830	1.080
1.005	43.059	430.6	300	1 STANDARD	70.210	68.830	1.080	70.350	68.730	1.320
1.006	52.184	193.3	300	1 STANDARD	70.350	68.730	1.320	70.910	68.460	2.150
1.007	54.875	20.5	300	1 STANDARD	70.910	68.460	2.150	69.820	65.785	3.735
2.000	51.745	246.4	225	1 STANDARD	71.550	70.250	1.075	71.620	70.040	1.355
2.001	4.494	60.0	300	1 STANDARD	71.620	70.040	1.280	70.840	69.965	0.575
2.002	6.596	87.9	300	1 STANDARD	70.840	69.965	0.575	71.810	69.890	1.620
2.003	6.956	173.9	300	1 STANDARD	71.810	69.890	1.620	71.730	69.850	1.580
3.000	32.704	218.0	225	1 STANDARD	71.470	70.700	0.545	71.550	70.550	0.775
3.001	24.829	50.0	225	1 STANDARD	71.550	70.550	0.775	71.730	70.053	1.452
2.004	24.966	89.2	375	1 STANDARD	71.730	69.850	1.505	71.950	69.570	2.005
2.005	27.032	159.0	375	1 STANDARD	71.950	69.570	2.005	72.130	69.400	2.355
2.006	13.309	22.2	375	1 STANDARD	72.130	69.400	2.355	71.530	68.800	2.355
4.000	11.026	6.0	100	1 STANDARD	74.570	73.610	0.860	73.790	71.780	1.910
4.001	29.553	18.8	100	1 STANDARD	73.790	71.780	1.910	74.600	70.210	4.290
4.002	32.843	31.6	150	1 STANDARD	74.600	70.210	4.240	71.290	69.170	1.970
5.000	21.488	59.7	100	1 STANDARD	70.850	70.020	0.730	70.930	69.660	1.170
5.001	17.335	50.0	100	1 STANDARD	70.930	69.660	1.170	71.290	69.313	1.877
4.003	15.144	60.0	225	1 STANDARD	71.290	69.170	1.895	71.530	68.918	2.387
2.007	50.191	16.2	375	1 STANDARD	71.530	68.800	2.355	69.820	65.710	3.735
6.000	69.262	119.4	100	1 STANDARD	71.000	70.440	0.460	70.730	69.860	0.770

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	MH596	1200	Manhole	1 STANDARD	MH557	1350	Manhole	1 STANDARD
1.001	MH557	1350	Manhole	1 STANDARD	MH536	1350	Manhole	1 STANDARD
1.002	MH536	1350	Manhole	1 STANDARD	MH535	1350	Manhole	1 STANDARD
1.003	MH535	1350	Manhole	1 STANDARD	MH534	1350	Manhole	1 STANDARD
1.004	MH534	1350	Manhole	1 STANDARD	MH530	1350	Manhole	1 STANDARD
1.005	MH530	1350	Manhole	1 STANDARD	MH528	1350	Manhole	1 STANDARD
1.006	MH528	1350	Manhole	1 STANDARD	MH521	1350	Manhole	1 STANDARD
1.007	MH521	1350	Manhole	1 STANDARD	MH522	1350	Manhole	1 STANDARD
2.000	RE1	150	Manhole	1 STANDARD	MH605	1350	Manhole	1 STANDARD
2.001	MH605	1350	Manhole	1 STANDARD	MH606	1350	Manhole	1 STANDARD
2.002	MH606	1350	Manhole	1 STANDARD	MH504	1350	Manhole	1 STANDARD
2.003	MH504	1350	Manhole	1 STANDARD	MH503	1350	Manhole	1 STANDARD
3.000	RE2	150	Manhole	1 STANDARD	MH502	1350	Manhole	1 STANDARD
3.001	MH502	1350	Manhole	1 STANDARD	MH503	1350	Manhole	1 STANDARD
2.004	MH503	1350	Manhole	1 STANDARD	MH520	1350	Manhole	1 STANDARD
2.005	MH520	1350	Manhole	1 STANDARD	MH519	1350	Manhole	1 STANDARD
2.006	MH519	1350	Manhole	1 STANDARD	MH518	1350	Manhole	1 STANDARD
4.000	MH540	1200	Manhole	1 STANDARD	MH539	1200	Manhole	1 STANDARD
4.001	MH539	1200	Manhole	1 STANDARD	MH546	1350	Manhole	1 STANDARD
4.002	MH546	1350	Manhole	1 STANDARD	MH523	1350	Manhole	1 STANDARD
5.000	MH526	1200	Manhole	1 STANDARD	MH524	1350	Manhole	1 STANDARD
5.001	MH524	1350	Manhole	1 STANDARD	MH523	1350	Manhole	1 STANDARD
4.003	MH523	1350	Manhole	1 STANDARD	MH518	1350	Manhole	1 STANDARD
2.007	MH518	1350	Manhole	1 STANDARD	MH522	1350	Manhole	1 STANDARD
6.000	MH529	1200	Manhole	1 STANDARD	MH517	1350	Manhole	1 STANDARD

Pipeline Schedule

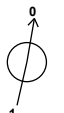
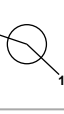
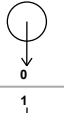
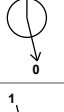
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.001	2.128	7.1	100	1 STANDARD	70.730	69.860	0.770	70.730	69.560	1.070
6.002	16.793	50.0	100	1 STANDARD	70.730	69.560	1.070	70.700	69.224	1.376
6.003	21.870	66.3	150	1 STANDARD	70.700	69.160	1.390	70.850	68.830	1.870
6.004	5.441	181.4	150	1 STANDARD	70.850	68.830	1.870	70.660	68.800	1.710
6.005	3.460	28.8	150	1 STANDARD	70.660	68.800	1.710	70.640	68.680	1.810
7.000	16.336	60.5	150	1 STANDARD	70.730	69.670	0.910	70.670	69.400	1.120
7.001	30.085	41.8	150	1 STANDARD	70.670	69.400	1.120	70.640	68.680	1.810
6.006	25.049	10.0	100	1 STANDARD	70.640	68.680	1.860	69.820	66.175	3.545
1.008	38.981	19.0	375	1 STANDARD	69.820	65.710	3.735	68.250	63.660	4.215
1.009	4.953	24.8	375	1 STANDARD	68.250	63.660	4.215	68.450	63.460	4.615
1.010	16.169	200.0	375	1 STANDARD	68.450	63.460	4.615	68.710	63.379	4.956
1.011	10.564	13.6	375	1 STANDARD	68.710	63.379	4.956	64.850	62.600	1.875
1.012	26.262	10.7	375	1 STANDARD	64.850	62.600	1.875	64.500	60.150	3.975
1.013	26.262	5.2	375	1 STANDARD	64.500	60.150	3.975	57.200	55.100	1.725
1.014	12.921	184.6	375	1 STANDARD	57.200	52.080	4.745	54.140	52.010	1.755
1.015	120.679	26.3	375	1 STANDARD	54.140	48.700	5.065	50.500	44.110	6.015
8.000	17.171	52.0	225	1 STANDARD	63.500	60.480	2.795	64.500	60.150	4.125

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
6.001	MH517	1350	Manhole	1 STANDARD	MH515	1350	Manhole	1 STANDARD
6.002	MH515	1350	Manhole	1 STANDARD	MH513	1350	Manhole	1 STANDARD
6.003	MH513	1350	Manhole	1 STANDARD	MH512	1350	Manhole	1 STANDARD
6.004	MH512	1350	Manhole	1 STANDARD	MH511	1350	Manhole	1 STANDARD
6.005	MH511	1350	Manhole	1 STANDARD	MH510	1350	Manhole	1 STANDARD
7.000	MH516	1200	Manhole	1 STANDARD	MH514	1350	Manhole	1 STANDARD
7.001	MH514	1350	Manhole	1 STANDARD	MH510	1350	Manhole	1 STANDARD
6.006	MH510	1350	Manhole	1 STANDARD	MH522	1350	Manhole	1 STANDARD
1.008	MH522	1350	Manhole	1 STANDARD	MH505	1350	Manhole	1 STANDARD
1.009	MH505	1350	Manhole	1 STANDARD	MH506	1350	Manhole	1 STANDARD
1.010	MH506	1350	Manhole	1 STANDARD	MH506A	1350	Manhole	1 STANDARD
1.011	MH506A	1350	Manhole	1 STANDARD	MH056E	1500	Manhole	1 STANDARD
1.012	MH056E	1500	Manhole	1 STANDARD	MH056B	1200	Manhole	1 STANDARD
1.013	MH056B	1200	Manhole	1 STANDARD	MH056C	1200	Manhole	1 STANDARD
1.014	MH056C	1200	Manhole	1 STANDARD	MH056D	1200	Manhole	1 STANDARD
1.015	MH056D	1200	Manhole	1 STANDARD	UU	1200	Manhole	1 STANDARD
8.000	EXS9	1800	Manhole	1 STANDARD	MH056B	1200	Manhole	1 STANDARD

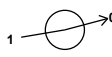
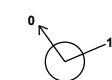
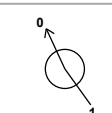
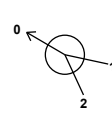
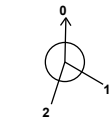
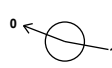
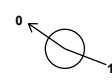
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MH596	385108.565	402271.451	70.820	0.767	1200				
						0	1.000	70.053	150
MH557	385133.356	402301.933	72.160	2.500	1350		1	1.000	69.726
						0	1.001	69.660	225

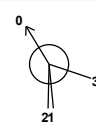
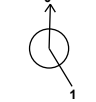
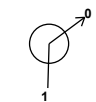
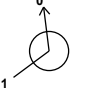
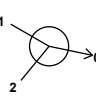
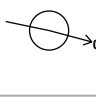
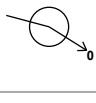
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
MH536	385129.006	402339.787	71.960	2.510	1350		1	1.001	69.450	225
MH535	385138.959	402383.361	70.560	1.410	1350		1	1.002	69.251	225
MH534	385145.952	402423.994	70.020	1.020	1350		1	1.003	69.000	300
MH530	385136.868	402461.908	70.210	1.380	1350		1	1.004	68.830	300
MH528	385126.400	402503.675	70.350	1.620	1350		1	1.005	68.730	300
MH521	385088.414	402539.455	70.910	2.450	1350		1	1.006	68.460	300
RE1	384949.375	402529.560	71.550	1.300	150		0	2.000	70.250	225
MH605	384962.713	402479.564	71.620	1.580	1350		1	2.000	70.040	225
MH606	384967.069	402480.671	70.840	0.875	1350		1	2.001	69.965	300
MH504	384973.583	402481.708	71.810	1.920	1350		1	2.002	69.890	300
RE2	384974.670	402539.846	71.470	0.770	150		0	3.000	70.700	225
MH502	384974.588	402507.142	71.550	1.000	1350		1	3.000	70.550	225
MH503	384980.417	402483.007	71.730	1.880	1350		1	3.001	70.053	225
							2	2.003	69.850	300
							0	2.004	69.850	375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MH520	385005.036	402487.157	71.950	2.380	1350		1 2.004	69.570	375
							0 2.005	69.570	375
MH519	385031.166	402494.082	72.130	2.730	1350		1 2.005	69.400	375
							0 2.006	69.400	375
MH540	385089.520	402449.647	74.570	0.960	1200		0 4.000	73.610	100
MH539	385079.380	402445.317	73.790	2.010	1200		1 4.000	71.780	100
							0 4.001	71.780	100
MH546	385062.131	402469.314	74.600	4.390	1350		1 4.001	70.210	100
							0 4.002	70.210	150
MH526	385086.062	402500.858	70.850	0.830	1200		0 5.000	70.020	100
MH524	385065.263	402495.461	70.930	1.270	1350		1 5.000	69.660	100
							0 5.001	69.660	100
MH523	385048.316	402499.110	71.290	2.120	1350		1 5.001	69.313	100
							2 4.002	69.170	150
							0 4.003	69.170	225
MH518	385035.242	402506.752	71.530	2.730	1350		1 4.003	68.918	225
							2 2.006	68.800	375
							0 2.007	68.800	375
MH529	385150.933	402509.282	71.000	0.560	1200		0 6.000	70.440	100
MH517	385082.797	402521.722	70.730	0.870	1350		1 6.000	69.860	100
							0 6.001	69.860	100
MH515	385080.810	402522.485	70.730	1.170	1350		1 6.001	69.560	100
							0 6.002	69.560	100
MH513	385066.996	402532.033	70.700	1.540	1350		1 6.002	69.224	100
							0 6.003	69.160	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MH512	385045.765	402526.787	70.850	2.020	1350		1 6.003	68.830	150
MH511	385042.060	402530.771	70.660	1.860	1350		0 6.004 1 6.004	68.830 68.800	150 150
MH516	385081.986	402523.322	70.730	1.060	1200		0 7.000	69.670	150
MH514	385068.890	402533.087	70.670	1.270	1350		1 7.000	69.400	150
MH510	385038.825	402531.999	70.640	1.960	1350		0 7.001 1 7.001 2 6.005	69.400 68.680 68.680	150 150 150
MH522	385036.396	402556.930	69.820	4.110	1350		0 6.006 1 6.006 2 2.007 3 1.007 0 1.008	68.680 66.175 65.710 65.785 65.710	100 100 375 300 375
MH505	385016.161	402590.248	68.250	4.590	1350		1 1.008	63.660	375
MH506	385016.304	402595.199	68.450	4.990	1350		0 1.009 1 1.009	63.660 63.460	375 375
MH506A	385029.291	402604.831	68.710	5.331	1350		0 1.010 1 1.010	63.460 63.379	375 375
MH056B	385032.085	402620.297	64.500	4.350	1200		1 8.000 2 1.012	60.150 60.150	225 375
MH056C	385057.794	402614.937	57.200	5.120	1200		0 1.013 1 1.013	60.150 55.100	375 375
MH056D	385070.279	402611.609	54.140	5.440	1200		0 1.014 1 1.014	52.080 52.010	375 375
UU	385172.538	402547.526	50.500	6.390	1200		0 1.015 1 1.015	48.700 44.110	375 375

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
EXS9	385017.214	402628.882	63.500	3.020	1800		0	8.000	60.480	225
MH056E	385027.980	402615.313	64.850	2.250	1500		1	1.011	62.600	375
							0	1.012	62.600	375

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	17.000	Drain Down Time (mins)	240
Ratio-R	0.400	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	0	0	0
100	40	0	0

Node UU Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to 100yr, 100yr+40% CC 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440 minute storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	1.375	300	1.375	600	1.375	900	1.375	1200	1.375
60	1.375	360	1.375	660	1.375	960	1.375	1260	1.375
120	1.375	420	1.375	720	1.375	1020	1.375	1320	1.375
180	1.375	480	1.375	780	1.375	1080	1.375	1380	1.375
240	1.375	540	1.375	840	1.375	1140	1.375	1440	1.375

Node UU Surcharged Outfall

Overrides Design Area	x	Depression Storage Area (m²)	0	Evapo-transpiration (mm/day)	0
Overrides Design Additional Inflow	x	Depression Storage Depth (mm)	0		

Applies to 100yr+40% CC 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440 minute storms

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
0	1.375	300	1.375	600	1.375	900	1.375	1200	1.375
60	1.375	360	1.375	660	1.375	960	1.375	1260	1.375
120	1.375	420	1.375	720	1.375	1020	1.375	1320	1.375
180	1.375	480	1.375	780	1.375	1080	1.375	1380	1.375
240	1.375	540	1.375	840	1.375	1140	1.375	1440	1.375

Node EXS9 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	60.480	Product Number	CTL-SHE-0164-1270-0900-1270
Design Depth (m)	0.900	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	12.7	Min Node Diameter (mm)	1200

Node EXS9 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	60.480
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	0

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	53.0	0.0	0.500	387.0	0.0

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH596	12	70.453	0.400	32.2	3.2680	0.0000	SURCHARGED
15 minute winter	MH557	11	69.797	0.137	26.6	0.2511	0.0000	OK
15 minute winter	MH536	12	69.624	0.174	32.0	0.3192	0.0000	OK
15 minute winter	MH535	11	69.336	0.186	45.4	0.6285	0.0000	OK
15 minute winter	MH534	12	69.235	0.235	60.2	0.9658	0.0000	OK
15 minute winter	MH530	12	69.150	0.320	66.9	0.9366	0.0000	SURCHARGED
15 minute winter	MH528	12	69.001	0.271	86.8	1.1159	0.0000	OK
15 minute winter	MH521	12	68.590	0.130	92.3	0.2718	0.0000	OK
15 minute winter	RE1	11	70.544	0.294	44.8	1.7044	0.0000	SURCHARGED
15 minute winter	MH605	12	70.181	0.141	40.0	0.2024	0.0000	OK
15 minute winter	MH606	12	70.119	0.154	40.1	0.2210	0.0000	OK
15 minute winter	MH504	11	70.076	0.186	40.2	0.2657	0.0000	OK
15 minute winter	RE2	10	70.826	0.126	20.6	0.5688	0.0000	OK
15 minute winter	MH502	11	70.674	0.124	40.5	0.6087	0.0000	OK
15 minute winter	MH503	11	70.045	0.195	98.2	0.6373	0.0000	OK
15 minute winter	MH520	11	69.793	0.223	98.0	0.3196	0.0000	OK
15 minute winter	MH519	11	69.535	0.135	97.5	0.1933	0.0000	OK
15 minute winter	MH540	10	73.646	0.036	6.8	0.0826	0.0000	OK
15 minute winter	MH539	10	71.829	0.049	6.7	0.0550	0.0000	OK
15 minute winter	MH546	10	70.283	0.073	15.3	0.1275	0.0000	OK
15 minute winter	MH526	10	70.057	0.037	2.4	0.0602	0.0000	OK
15 minute winter	MH524	11	69.714	0.054	4.7	0.0936	0.0000	OK
15 minute winter	MH523	11	69.261	0.091	20.8	0.1412	0.0000	OK
15 minute winter	MH518	11	68.924	0.124	120.2	0.1951	0.0000	OK
15 minute summer	MH529	1	70.440	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH596	1.000	MH557	21.7	1.235	1.342	0.6705	
15 minute winter	MH557	1.001	MH536	26.6	0.927	0.691	1.1096	
15 minute winter	MH536	1.002	MH535	31.1	1.023	0.901	1.3555	
15 minute winter	MH535	1.003	MH534	44.8	0.901	0.672	2.1485	
15 minute winter	MH534	1.004	MH530	55.5	0.906	0.760	2.5246	
15 minute winter	MH530	1.005	MH528	64.4	0.932	1.212	2.9567	
15 minute winter	MH528	1.006	MH521	84.9	1.713	1.065	2.5125	
15 minute winter	MH521	1.007	MH522	92.2	3.211	0.374	1.5765	
15 minute winter	RE1	2.000	MH605	40.0	1.127	1.215	1.7088	
15 minute winter	MH605	2.001	MH606	40.1	1.158	0.279	0.1555	
15 minute winter	MH606	2.002	MH504	40.2	0.988	0.339	0.2713	
15 minute winter	MH504	2.003	MH503	40.5	0.947	0.482	0.3276	
15 minute winter	RE2	3.000	MH502	20.0	0.884	0.570	0.7389	
15 minute winter	MH502	3.001	MH503	40.0	1.841	0.542	0.5389	
15 minute winter	MH503	2.004	MH520	98.0	1.553	0.462	1.5754	
15 minute winter	MH520	2.005	MH519	97.5	1.879	0.615	1.4072	
15 minute winter	MH519	2.006	MH518	97.0	2.896	0.228	0.4481	
15 minute winter	MH540	4.000	MH539	6.7	2.155	0.271	0.0346	
15 minute winter	MH539	4.001	MH546	6.7	1.342	0.474	0.1456	
15 minute winter	MH546	4.002	MH523	15.0	1.537	0.472	0.3219	
15 minute winter	MH526	5.000	MH524	2.3	0.677	0.296	0.0740	
15 minute winter	MH524	5.001	MH523	4.6	1.092	0.534	0.0727	
15 minute winter	MH523	4.003	MH518	20.9	1.445	0.311	0.2196	
15 minute winter	MH518	2.007	MH522	119.8	2.862	0.240	2.1440	
15 minute summer	MH529	6.000	MH517	0.0	0.000	0.000	0.0421	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH517	10	69.882	0.022	2.4	0.0408	0.0000	OK
15 minute winter	MH515	11	69.614	0.054	4.7	0.0951	0.0000	OK
15 minute winter	MH513	11	69.218	0.058	6.9	0.0975	0.0000	OK
15 minute winter	MH512	13	68.995	0.165	9.2	0.2688	0.0000	SURCHARGED
15 minute winter	MH511	13	68.983	0.183	8.9	0.2612	0.0000	SURCHARGED
15 minute winter	MH516	10	69.716	0.046	4.8	0.0872	0.0000	OK
15 minute winter	MH514	10	69.460	0.060	9.5	0.1237	0.0000	OK
15 minute winter	MH510	13	68.972	0.292	25.7	0.6124	0.0000	SURCHARGED
15 minute winter	MH522	12	65.895	0.185	229.5	0.2641	0.0000	OK
15 minute winter	MH505	12	64.233	0.573	245.6	1.2433	0.0000	SURCHARGED
15 minute winter	MH506	12	64.034	0.574	243.5	0.8212	0.0000	SURCHARGED
15 minute winter	MH506A	12	63.593	0.214	242.7	0.3068	0.0000	OK
15 minute winter	MH056B	13	60.295	0.145	246.8	0.1639	0.0000	OK
15 minute winter	MH056C	13	52.692	0.612	247.2	0.6925	0.0000	SURCHARGED
15 minute winter	MH056D	13	48.920	0.220	247.8	0.2492	0.0000	OK
15 minute winter	UU	13	44.324	0.214	249.1	0.0000	0.0000	OK
60 minute winter	EXS9	42	60.591	0.111	13.6	10.4569	0.0000	OK
15 minute winter	MH056E	12	62.782	0.182	242.3	0.3212	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH517	6.001	MH515	2.3	0.866	0.102	0.0059	
15 minute winter	MH515	6.002	MH513	4.6	1.092	0.534	0.0705	
15 minute winter	MH513	6.003	MH512	6.9	0.792	0.314	0.2561	
15 minute winter	MH512	6.004	MH511	8.9	1.080	0.675	0.0958	
15 minute winter	MH511	6.005	MH510	8.8	0.846	0.264	0.0609	
15 minute winter	MH516	7.000	MH514	4.7	0.847	0.206	0.0913	
15 minute winter	MH514	7.001	MH510	9.3	0.968	0.337	0.3637	
15 minute winter	MH510	6.006	MH522	20.0	2.660	1.035	0.1921	
15 minute winter	MH522	1.008	MH505	229.9	2.561	0.499	3.2017	
15 minute winter	MH505	1.009	MH506	243.5	2.208	0.604	0.5463	
15 minute winter	MH506	1.010	MH506A	242.7	2.464	1.721	1.4180	
15 minute winter	MH506A	1.011	MH056E	242.3	4.107	0.444	0.6234	
15 minute winter	MH056B	1.013	MH056C	247.2	6.646	0.280	0.9773	
15 minute winter	MH056C	1.014	MH056D	247.8	2.246	1.687	1.4018	
15 minute winter	MH056D	1.015	UU	249.1	3.769	0.636	7.9753	150.9
60 minute winter	EXS9	Hydro-Brake®	MH056B	6.9				
15 minute winter	MH056E	1.012	MH056B	241.7	5.253	0.394	1.2097	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH596	9	70.820	0.767	78.6	6.2672	15.8485	FLOOD
15 minute winter	MH557	12	70.588	0.928	39.6	1.6990	0.0000	SURCHARGED
15 minute winter	MH536	12	70.484	1.034	43.7	1.8916	0.0000	SURCHARGED
15 minute winter	MH535	11	70.227	1.077	71.4	3.6358	0.0000	SURCHARGED
15 minute winter	MH534	11	70.020	1.020	108.2	4.2004	7.3574	FLOOD
15 minute winter	MH530	11	69.913	1.083	96.4	3.1670	0.0000	FLOOD RISK
15 minute winter	MH528	11	69.645	0.915	146.6	3.7735	0.0000	SURCHARGED
15 minute winter	MH521	13	68.648	0.188	155.5	0.3913	0.0000	OK
15 minute winter	RE1	11	71.550	1.300	109.5	7.5426	2.7796	FLOOD
15 minute winter	MH605	12	70.473	0.433	72.6	0.6191	0.0000	SURCHARGED
15 minute winter	MH606	12	70.428	0.463	72.1	0.6625	0.0000	SURCHARGED
15 minute winter	MH504	12	70.374	0.484	74.4	0.6925	0.0000	SURCHARGED
15 minute winter	RE2	12	71.298	0.598	50.4	2.6960	0.0000	FLOOD RISK
15 minute winter	MH502	12	71.062	0.512	88.2	2.5027	0.0000	SURCHARGED
15 minute winter	MH503	12	70.318	0.468	194.3	1.5307	0.0000	SURCHARGED
15 minute winter	MH520	12	70.005	0.435	192.4	0.6223	0.0000	SURCHARGED
15 minute winter	MH519	12	69.607	0.207	192.8	0.2960	0.0000	OK
15 minute winter	MH540	10	73.670	0.060	16.6	0.1380	0.0000	OK
15 minute winter	MH539	12	72.162	0.382	16.5	0.4315	0.0000	SURCHARGED
15 minute winter	MH546	11	70.470	0.260	34.2	0.4566	0.0000	SURCHARGED
15 minute winter	MH526	10	70.083	0.063	5.8	0.1020	0.0000	OK
15 minute winter	MH524	12	69.902	0.242	11.5	0.4225	0.0000	SURCHARGED
15 minute summer	MH523	11	69.319	0.149	45.1	0.2297	0.0000	OK
15 minute winter	MH518	13	68.991	0.191	241.7	0.3017	0.0000	OK
15 minute summer	MH529	1	70.440	0.000	0.0	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH596	1.000	MH557	25.9	1.469	1.598	0.6917	
15 minute winter	MH557	1.001	MH536	32.3	0.963	0.839	1.5154	
15 minute winter	MH536	1.002	MH535	37.6	1.050	1.091	1.7776	
15 minute winter	MH535	1.003	MH534	70.7	1.004	1.060	2.9034	
15 minute winter	MH534	1.004	MH530	73.3	1.041	1.003	2.7454	
15 minute winter	MH530	1.005	MH528	88.3	1.255	1.664	3.0322	
15 minute winter	MH528	1.006	MH521	134.9	2.123	1.693	3.0476	
15 minute winter	MH521	1.007	MH522	151.3	3.223	0.614	3.2048	
15 minute winter	RE1	2.000	MH605	72.6	1.827	2.206	2.0580	
15 minute winter	MH605	2.001	MH606	72.1	1.199	0.502	0.3165	
15 minute winter	MH606	2.002	MH504	74.4	1.104	0.627	0.4645	
15 minute winter	MH504	2.003	MH503	77.4	1.153	0.922	0.4898	
15 minute winter	RE2	3.000	MH502	40.7	1.022	1.160	1.3007	
15 minute winter	MH502	3.001	MH503	81.3	2.046	1.104	0.9875	
15 minute winter	MH503	2.004	MH520	192.4	1.754	0.908	2.7537	
15 minute winter	MH520	2.005	MH519	192.8	2.115	1.217	2.3329	
15 minute winter	MH519	2.006	MH518	193.0	3.336	0.453	0.7811	
15 minute winter	MH540	4.000	MH539	16.5	2.539	0.662	0.0699	
15 minute winter	MH539	4.001	MH546	14.4	1.876	1.027	0.2312	
15 minute winter	MH546	4.002	MH523	32.2	1.890	1.015	0.5767	
15 minute winter	MH526	5.000	MH524	5.7	0.791	0.726	0.1401	
15 minute winter	MH524	5.001	MH523	9.7	1.239	1.130	0.1339	
15 minute summer	MH523	4.003	MH518	45.1	1.719	0.670	0.3969	
15 minute winter	MH518	2.007	MH522	239.7	3.184	0.481	4.1845	
15 minute summer	MH529	6.000	MH517	0.0	0.000	0.000	0.2710	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	MH517	16	70.157	0.297	5.9	0.5624	0.0000	SURCHARGED
15 minute winter	MH515	16	70.155	0.595	10.8	1.0548	0.0000	SURCHARGED
15 minute winter	MH513	15	70.130	0.970	14.1	1.6401	0.0000	SURCHARGED
15 minute winter	MH512	15	70.117	1.287	15.8	2.0967	0.0000	SURCHARGED
15 minute winter	MH511	15	70.109	1.309	10.8	1.8726	0.0000	SURCHARGED
15 minute winter	MH516	14	70.203	0.533	11.6	1.0058	0.0000	SURCHARGED
15 minute winter	MH514	14	70.190	0.790	21.7	1.6289	0.0000	SURCHARGED
15 minute winter	MH510	15	70.101	1.421	33.8	2.9777	0.0000	SURCHARGED
15 minute winter	MH522	13	67.207	1.497	409.9	2.1424	0.0000	SURCHARGED
15 minute winter	MH505	13	65.385	1.725	416.5	3.7394	0.0000	SURCHARGED
15 minute winter	MH506	13	64.804	1.344	415.9	1.9227	0.0000	SURCHARGED
15 minute winter	MH506A	13	63.723	0.344	415.5	0.4929	0.0000	OK
15 minute winter	MH056B	14	60.353	0.203	427.3	0.2299	0.0000	OK
15 minute winter	MH056C	14	53.350	1.270	427.4	1.4361	0.0000	SURCHARGED
15 minute winter	MH056D	14	50.146	1.446	427.7	1.6359	0.0000	SURCHARGED
30 minute winter	UU	20	44.490	0.380	408.7	0.0000	0.0000	OK
60 minute winter	EXS9	45	60.689	0.209	33.1	26.5876	0.0000	OK
15 minute winter	MH056E	13	62.862	0.262	415.3	0.4636	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute winter	MH517	6.001	MH515	5.2	0.975	0.228	0.0167	
15 minute winter	MH515	6.002	MH513	8.6	1.190	0.998	0.1314	
15 minute winter	MH513	6.003	MH512	11.3	0.841	0.518	0.3850	
15 minute winter	MH512	6.004	MH511	10.8	1.102	0.822	0.0958	
15 minute winter	MH511	6.005	MH510	12.8	0.833	0.384	0.0609	
15 minute winter	MH516	7.000	MH514	10.7	0.990	0.470	0.2876	
15 minute winter	MH514	7.001	MH510	16.2	1.042	0.588	0.5296	
15 minute winter	MH510	6.006	MH522	22.4	2.866	1.161	0.1960	
15 minute winter	MH522	1.008	MH505	391.0	3.545	0.849	4.2995	
15 minute winter	MH505	1.009	MH506	415.9	3.771	1.031	0.5463	
15 minute winter	MH506	1.010	MH506A	415.5	3.768	2.945	1.7487	
15 minute winter	MH506A	1.011	MH056E	415.3	4.373	0.761	0.9949	
15 minute winter	MH056B	1.013	MH056C	427.4	7.534	0.484	1.4900	
15 minute winter	MH056C	1.014	MH056D	427.7	3.878	2.912	1.4107	
15 minute winter	MH056D	1.015	UU	424.0	4.143	1.083	13.3049	345.4
60 minute winter	EXS9	Hydro-Brake®	MH056B	12.4				
15 minute winter	MH056E	1.012	MH056B	415.1	5.778	0.676	1.8816	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	MH596	15	70.820	0.767	78.8	6.2672	27.9969	FLOOD
15 minute winter	MH557	11	70.763	1.103	40.9	2.0199	0.0000	SURCHARGED
15 minute winter	MH536	11	70.669	1.219	47.4	2.2309	0.0000	SURCHARGED
15 minute winter	MH535	11	70.343	1.193	89.7	4.0276	0.0000	FLOOD RISK
15 minute winter	MH534	10	70.020	1.020	138.2	4.2004	22.1464	FLOOD
15 minute winter	MH530	11	69.984	1.154	101.9	3.3737	0.0000	FLOOD RISK
15 minute winter	MH528	11	69.797	1.067	160.0	4.3975	0.0000	SURCHARGED
15 minute winter	MH521	13	68.996	0.536	175.5	1.1177	0.0000	SURCHARGED
15 minute winter	RE1	9	71.550	1.300	141.2	7.5426	15.3011	FLOOD
15 minute winter	MH605	11	70.604	0.564	74.0	0.8064	0.0000	SURCHARGED
15 minute winter	MH606	11	70.565	0.600	71.6	0.8589	0.0000	FLOOD RISK
15 minute winter	MH504	11	70.520	0.630	73.7	0.9016	0.0000	SURCHARGED
15 minute winter	RE2	10	71.470	0.770	65.0	3.4735	4.5406	FLOOD
15 minute winter	MH502	11	71.358	0.808	106.0	3.9520	0.0000	FLOOD RISK
15 minute winter	MH503	11	70.474	0.624	213.9	2.0425	0.0000	SURCHARGED
15 minute winter	MH520	11	70.090	0.520	212.7	0.7441	0.0000	SURCHARGED
15 minute winter	MH519	11	69.618	0.218	211.7	0.3126	0.0000	OK
15 minute winter	MH540	12	73.795	0.185	21.4	0.4294	0.0000	SURCHARGED
15 minute winter	MH539	13	72.878	1.098	20.4	1.2413	0.0000	SURCHARGED
15 minute winter	MH546	12	70.924	0.714	40.5	1.2556	0.0000	SURCHARGED
15 minute winter	MH526	12	70.263	0.243	7.5	0.3927	0.0000	SURCHARGED
15 minute winter	MH524	12	70.061	0.401	13.4	0.7001	0.0000	SURCHARGED
15 minute winter	MH523	12	69.334	0.164	51.1	0.2529	0.0000	OK
15 minute winter	MH518	13	69.066	0.266	269.5	0.4199	0.0000	OK
30 minute winter	MH529	27	70.645	0.205	2.5	0.2313	0.0000	SURCHARGED

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	MH596	1.000	MH557	25.0	1.418	1.542	0.6917	
15 minute winter	MH557	1.001	MH536	32.7	0.968	0.851	1.5154	
15 minute winter	MH536	1.002	MH535	41.5	1.057	1.204	1.7776	
15 minute winter	MH535	1.003	MH534	89.8	1.275	1.347	2.9034	
15 minute winter	MH534	1.004	MH530	74.0	1.052	1.013	2.7454	
15 minute winter	MH530	1.005	MH528	89.1	1.265	1.678	3.0322	
15 minute winter	MH528	1.006	MH521	147.2	2.195	1.848	3.6748	
15 minute winter	MH521	1.007	MH522	165.3	3.146	0.671	3.8643	
15 minute winter	RE1	2.000	MH605	74.0	1.860	2.246	2.0580	
15 minute winter	MH605	2.001	MH606	71.6	1.190	0.498	0.3165	
15 minute winter	MH606	2.002	MH504	73.7	1.096	0.622	0.4645	
15 minute winter	MH504	2.003	MH503	76.5	1.149	0.910	0.4898	
15 minute winter	RE2	3.000	MH502	42.0	1.057	1.199	1.3007	
15 minute winter	MH502	3.001	MH503	88.7	2.230	1.203	0.9875	
15 minute winter	MH503	2.004	MH520	212.7	1.928	1.003	2.7537	
15 minute winter	MH520	2.005	MH519	211.7	2.141	1.337	2.3909	
15 minute winter	MH519	2.006	MH518	211.9	3.336	0.497	0.9780	
15 minute winter	MH540	4.000	MH539	20.4	2.633	0.819	0.0863	
15 minute winter	MH539	4.001	MH546	15.6	1.993	1.110	0.2312	
15 minute winter	MH546	4.002	MH523	36.4	2.071	1.147	0.5782	
15 minute winter	MH526	5.000	MH524	6.3	0.839	0.802	0.1681	
15 minute winter	MH524	5.001	MH523	11.1	1.422	1.297	0.1343	
15 minute winter	MH523	4.003	MH518	51.2	1.760	0.762	0.4402	
15 minute winter	MH518	2.007	MH522	264.3	3.159	0.530	4.8667	
30 minute winter	MH529	6.000	MH517	-2.5	-0.368	-0.460	0.5419	

Results for 100 year Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	MH517	25	70.630	0.770	8.8	1.4565	0.0000	FLOOD RISK
30 minute winter	MH515	25	70.630	1.070	10.3	1.8970	0.0000	FLOOD RISK
30 minute winter	MH513	24	70.619	1.459	12.1	2.4673	0.0000	FLOOD RISK
30 minute winter	MH512	24	70.610	1.780	14.3	2.8994	0.0000	FLOOD RISK
30 minute winter	MH511	24	70.603	1.803	11.3	2.5805	0.0000	FLOOD RISK
15 minute winter	MH516	14	70.698	1.028	15.0	1.9390	0.0000	FLOOD RISK
30 minute winter	MH514	23	70.670	1.270	20.2	2.6175	0.2203	FLOOD
30 minute winter	MH510	24	70.599	1.918	30.0	4.0192	0.0000	FLOOD RISK
15 minute winter	MH522	13	67.984	2.274	446.7	3.2547	0.0000	SURCHARGED
15 minute winter	MH505	13	65.898	2.238	455.8	4.8523	0.0000	SURCHARGED
15 minute winter	MH506	13	65.210	1.750	452.6	2.5045	0.0000	SURCHARGED
15 minute winter	MH506A	13	63.935	0.556	452.7	0.7951	0.0000	SURCHARGED
15 minute winter	MH056B	13	60.365	0.215	465.0	0.2433	0.0000	OK
15 minute winter	MH056C	14	53.662	1.582	464.7	1.7897	0.0000	SURCHARGED
15 minute winter	MH056D	14	52.509	3.809	462.4	4.3085	0.0000	SURCHARGED
15 minute summer	UU	1	45.485	1.375	452.4	0.0000	0.0000	OK
60 minute winter	EXS9	47	60.741	0.261	43.4	37.7208	0.0000	SURCHARGED
15 minute winter	MH056E	13	62.882	0.282	452.6	0.4982	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	MH517	6.001	MH515	4.8	0.952	0.210	0.0167	
30 minute winter	MH515	6.002	MH513	7.5	1.194	0.877	0.1314	
30 minute winter	MH513	6.003	MH512	10.1	0.813	0.462	0.3850	
30 minute winter	MH512	6.004	MH511	11.3	1.089	0.860	0.0958	
30 minute winter	MH511	6.005	MH510	13.6	0.875	0.408	0.0609	
15 minute winter	MH516	7.000	MH514	11.1	0.977	0.484	0.2876	
30 minute winter	MH514	7.001	MH510	14.7	0.950	0.534	0.5296	
30 minute winter	MH510	6.006	MH522	23.9	3.054	1.238	0.1960	
15 minute winter	MH522	1.008	MH505	416.4	3.776	0.904	4.2995	
15 minute winter	MH505	1.009	MH506	452.6	4.104	1.122	0.5463	
15 minute winter	MH506	1.010	MH506A	452.7	4.105	3.209	1.7834	
15 minute winter	MH506A	1.011	MH056E	452.6	4.369	0.829	1.0522	
15 minute winter	MH056B	1.013	MH056C	464.7	7.663	0.527	1.5926	
15 minute winter	MH056C	1.014	MH056D	462.4	4.193	3.148	1.4251	
15 minute winter	MH056D	1.015	UU	461.8	4.187	1.179	13.3105	409.6
60 minute winter	EXS9	Hydro-Brake®	MH056B	12.6				
15 minute winter	MH056E	1.012	MH056B	452.5	5.838	0.737	2.0258	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	MH596	13	70.820	0.767	110.3	6.2672	54.5530	FLOOD
15 minute winter	MH557	11	70.920	1.260	40.7	2.3064	0.0000	SURCHARGED
15 minute winter	MH536	10	70.877	1.427	51.1	2.6110	0.0000	SURCHARGED
15 minute winter	MH535	10	70.527	1.377	115.1	4.6472	0.0000	FLOOD RISK
30 minute winter	MH534	15	70.020	1.020	167.6	4.2004	63.6494	FLOOD
15 minute winter	MH530	11	70.111	1.281	108.1	3.7451	0.0000	FLOOD RISK
15 minute winter	MH528	11	70.141	1.411	174.8	5.8158	0.0000	FLOOD RISK
15 minute winter	MH521	12	69.542	1.082	190.5	2.2547	0.0000	SURCHARGED
15 minute winter	RE1	8	71.550	1.300	197.6	7.5426	37.4032	FLOOD
15 minute winter	MH605	11	70.759	0.719	73.7	1.0285	0.0000	SURCHARGED
15 minute winter	MH606	11	70.726	0.761	71.1	1.0885	0.0000	FLOOD RISK
15 minute winter	MH504	11	70.685	0.795	74.1	1.1383	0.0000	SURCHARGED
15 minute winter	RE2	9	71.470	0.770	98.3	3.4735	20.0720	FLOOD
15 minute winter	MH502	10	71.508	0.958	111.6	4.6877	0.0000	FLOOD RISK
15 minute winter	MH503	12	70.648	0.798	235.7	2.6104	0.0000	SURCHARGED
15 minute winter	MH520	12	70.274	0.704	232.4	1.0077	0.0000	SURCHARGED
15 minute winter	MH519	12	69.879	0.479	232.1	0.6850	0.0000	SURCHARGED
15 minute winter	MH540	12	74.570	0.960	30.0	2.2253	0.3870	FLOOD
15 minute winter	MH539	14	73.656	1.876	21.7	2.1217	0.0000	FLOOD RISK
15 minute winter	MH546	12	71.784	1.574	50.7	2.7687	0.0000	SURCHARGED
15 minute winter	MH526	13	70.733	0.713	10.5	1.1507	0.0000	FLOOD RISK
15 minute winter	MH524	13	70.527	0.867	16.2	1.5140	0.0000	SURCHARGED
15 minute winter	MH523	13	69.864	0.694	59.0	1.0721	0.0000	SURCHARGED
15 minute winter	MH518	12	69.643	0.843	297.4	1.3301	0.0000	SURCHARGED
15 minute winter	MH529	16	70.749	0.309	3.6	0.3496	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute winter	MH596	1.000	MH557	25.0	1.420	1.545	0.6917	
15 minute winter	MH557	1.001	MH536	36.0	0.985	0.936	1.5154	
15 minute winter	MH536	1.002	MH535	43.1	1.084	1.250	1.7776	
15 minute winter	MH535	1.003	MH534	112.4	1.596	1.686	2.9034	
30 minute winter	MH534	1.004	MH530	73.8	1.048	1.010	2.7454	
15 minute winter	MH530	1.005	MH528	87.9	1.249	1.656	3.0322	
15 minute winter	MH528	1.006	MH521	150.9	2.259	1.894	3.6748	
15 minute winter	MH521	1.007	MH522	173.3	3.142	0.703	3.8643	
15 minute winter	RE1	2.000	MH605	73.7	1.853	2.238	2.0580	
15 minute winter	MH605	2.001	MH606	71.1	1.189	0.495	0.3165	
15 minute winter	MH606	2.002	MH504	74.1	1.097	0.625	0.4645	
15 minute winter	MH504	2.003	MH503	77.1	1.158	0.918	0.4898	
15 minute winter	RE2	3.000	MH502	41.3	1.038	1.178	1.3007	
15 minute winter	MH502	3.001	MH503	89.7	2.255	1.217	0.9875	
15 minute winter	MH503	2.004	MH520	232.4	2.107	1.096	2.7537	
15 minute winter	MH520	2.005	MH519	232.1	2.285	1.465	2.9816	
15 minute winter	MH519	2.006	MH518	229.1	3.312	0.537	1.4679	
15 minute winter	MH540	4.000	MH539	21.7	2.813	0.870	0.0863	
15 minute winter	MH539	4.001	MH546	17.8	2.283	1.271	0.2312	
15 minute winter	MH546	4.002	MH523	41.4	2.350	1.302	0.5782	
15 minute winter	MH526	5.000	MH524	6.5	0.834	0.824	0.1681	
15 minute winter	MH524	5.001	MH523	12.7	1.629	1.486	0.1356	
15 minute winter	MH523	4.003	MH518	57.8	1.783	0.860	0.6023	
15 minute winter	MH518	2.007	MH522	279.3	3.231	0.560	5.5359	
15 minute winter	MH529	6.000	MH517	-3.6	-0.487	-0.645	0.5419	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.69%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute winter	MH517	36	70.730	0.870	9.2	1.6452	1.5997	FLOOD
30 minute winter	MH515	20	70.730	1.170	12.8	2.0744	0.7058	FLOOD
15 minute winter	MH513	11	70.700	1.540	15.0	2.6041	1.2529	FLOOD
15 minute winter	MH512	12	70.693	1.863	16.3	3.0352	0.0000	FLOOD RISK
15 minute winter	MH511	11	70.660	1.860	13.3	2.6617	0.1254	FLOOD
15 minute winter	MH516	11	70.730	1.060	21.0	1.9992	1.1555	FLOOD
30 minute winter	MH514	18	70.670	1.270	25.8	2.6175	6.8648	FLOOD
30 minute winter	MH510	19	70.640	1.960	39.5	4.1062	5.5197	FLOOD
15 minute winter	MH522	12	68.570	2.860	454.0	4.0931	0.0000	SURCHARGED
15 minute winter	MH505	12	66.428	2.768	496.5	6.0006	0.0000	SURCHARGED
15 minute winter	MH506	12	65.616	2.156	491.5	3.0859	0.0000	SURCHARGED
15 minute winter	MH506A	12	64.112	0.733	491.7	1.0482	0.0000	SURCHARGED
15 minute winter	MH056B	12	60.378	0.228	504.3	0.2575	0.0000	OK
15 minute winter	MH056C	13	54.901	2.821	504.1	3.1900	0.0000	SURCHARGED
15 minute winter	MH056D	13	53.564	4.864	497.8	5.5009	0.0000	SURCHARGED
15 minute summer	UU	1	45.485	1.375	487.3	0.0000	0.0000	OK
60 minute winter	EXS9	50	60.822	0.342	60.8	58.4485	0.0000	SURCHARGED
15 minute winter	MH056E	12	62.905	0.305	491.7	0.5395	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute winter	MH517	6.001	MH515	4.4	0.943	0.190	0.0167	
30 minute winter	MH515	6.002	MH513	8.5	1.178	0.991	0.1314	
15 minute winter	MH513	6.003	MH512	10.3	0.833	0.470	0.3850	
15 minute winter	MH512	6.004	MH511	11.6	0.979	0.884	0.0958	
15 minute winter	MH511	6.005	MH510	13.7	0.785	0.411	0.0609	
15 minute winter	MH516	7.000	MH514	11.3	0.972	0.496	0.2876	
30 minute winter	MH514	7.001	MH510	14.9	0.942	0.540	0.5296	
30 minute winter	MH510	6.006	MH522	24.0	3.061	1.241	0.1960	
15 minute winter	MH522	1.008	MH505	429.2	3.891	0.932	4.2995	
15 minute winter	MH505	1.009	MH506	491.5	4.457	1.218	0.5463	
15 minute winter	MH506	1.010	MH506A	491.7	4.459	3.486	1.7834	
15 minute winter	MH506A	1.011	MH056E	491.7	4.526	0.901	1.0903	
15 minute winter	MH056B	1.013	MH056C	504.1	7.786	0.571	1.7000	
15 minute winter	MH056C	1.014	MH056D	497.8	4.514	3.389	1.4251	
15 minute winter	MH056D	1.015	UU	495.3	4.491	1.265	13.3105	490.5
60 minute winter	EXS9	Hydro-Brake®	MH056B	12.7				
15 minute winter	MH056E	1.012	MH056B	491.7	5.870	0.801	2.1814	