

Appendix I

Site 3D Pond Calculations

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S101	0.057	1.350	Type C	126.134	124.709	1.200	387193.930	146230.772
S102	0.100	1.350	Type C	124.715	123.290	1.200	387183.832	146213.770
S103	0.028	1.350	Type C	123.276	121.851	1.200	387172.473	146200.257
S104	0.029	1.350	Type C	121.979	120.350	1.329	387157.623	146192.758
S105	0.054	1.350	Type C	121.054	119.480	1.274	387142.700	146191.050
S106	0.087	1.350	Type C	120.455	118.870	1.285	387129.929	146194.540
S107	0.032	1.350	Type C	119.929	118.275	1.279	387114.041	146207.533
S108	0.211	1.350	Type C	119.660	117.995	1.290	387098.449	146228.545
S109	0.039	1.350	Type C	124.824	123.399	1.200	387177.964	146291.213
S110	0.260	1.200	Type B	124.506	122.640	1.566	387173.412	146280.313
S111	0.048	1.350	Type C	119.890	118.395	1.270	387084.093	146294.942
S112	0.090	1.350	Type C	119.612	117.920	1.392	387085.136	146266.993
S113	0.047	1.350	Type B	119.520	117.390	1.680	387089.954	146254.221
S114	0.019	1.350	Type C	119.580	118.155	1.200	387122.700	146175.300
S115	0.115	1.350	Type C	117.876	116.140	1.436	387100.723	146157.778
S116	0.115	1.350	Type B	117.514	115.425	1.639	387090.032	146157.877
S117	0.359	1.500	Unknown	116.752	114.700	1.302	387028.657	146235.672
S118	0.139	1.800	Type B	116.913	114.550	1.613	387001.780	146270.420
S119	0.209	1.350	Type C	120.347	118.847	1.200	387081.100	146339.896
S120	0.152	1.350	Type C	120.100	118.510	1.290	387082.854	146315.863
S121	0.089	1.350	Type C	118.427	116.625	1.427	387050.055	146310.222
S122	0.114	1.800	Type B	116.729	114.450	1.529	386994.880	146296.098
S123 (Inlet)	0.091	1.350	Unknown	115.800	114.350	0.700	386990.522	146312.555
S124	0.069	1.350	Type C	118.975	117.420	1.330	387064.170	146456.530
S125	0.000	1.200	Type B	118.407	116.535	1.647	387058.277	146475.735
S126	0.184	1.200	Type B	118.167	116.175	1.617	387051.414	146478.593
S127	0.062	1.350	Type C	116.376	114.603	1.399	386981.363	146456.976
S128	0.000	1.350	Type C	116.100	114.521	1.204	386965.629	146452.120
S129	0.032	1.350	Type C	116.000	114.425	1.200	386968.375	146433.104
S130	0.000	1.350	Type C	115.900	114.391	1.134	386973.043	146428.281
S131 (Inlet)	0.000	1.350	Unknown	115.800	114.350	1.075	386978.734	146422.394
S132	0.013	1.350	Type C	121.826	120.401	1.200	387129.030	146438.005
S133	0.196	1.350	Type C	121.541	120.041	1.200	387114.438	146437.352
S134	0.148	1.350	Type C	120.302	118.670	1.332	387068.706	146401.396
S135	0.045	1.350	Type C	119.992	118.320	1.372	387076.485	146418.166
S136	0.066	1.200	Type B	119.889	117.895	1.619	387073.954	146425.236
S137	0.107	1.200	Type B	117.144	114.400	2.369	387010.951	146405.732
S138 (Inlet)	0.037	1.350	Unknown	115.800	114.350	1.075	387001.915	146402.810
S139 (Outlet)	0.000	1.900	Unknown	115.800	114.300	0.500	386973.230	146373.713
S140 (Control)	0.000	1.900	Unknown	116.105	114.250	1.555	386966.692	146371.395
S141 (Outfall)	0.000	1.350	Type C	113.500	112.150	1.050	386917.912	146357.255

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S101	124.709	S102	123.290	Circ	0.225mØ	19.775	13.9	0.600	1.200	1.200
1.001	S102	123.290	S103	121.851	Circ	0.225mØ	17.653	12.3	0.600	1.200	1.200
1.002	S103	121.851	S104	120.425	Circ	0.225mØ	16.635	11.7	0.600	1.200	1.329
1.003	S104	120.350	S105	119.480	Circ	0.3mØ	15.021	17.3	0.600	1.329	1.274
1.004	S105	119.480	S106	118.870	Circ	0.3mØ	13.239	21.7	0.600	1.274	1.285
1.005	S106	118.870	S107	118.350	Circ	0.3mØ	20.525	39.5	0.600	1.285	1.279
1.006	S107	118.275	S108	117.995	Circ	0.375mØ	26.165	93.4	0.600	1.279	1.290
1.007	S108	117.995	S113	117.465	Circ	0.375mØ	27.045	51.0	0.600	1.290	1.680
2.000	S109	123.399	S110	122.715	Circ	0.225mØ	11.813	17.3	0.600	1.200	1.566
2.001	S110	122.640	S113	117.540	Circ	0.3mØ	87.442	17.1	0.600	1.566	1.680
3.000	S111	118.395	S112	117.995	Circ	0.225mØ	27.969	69.9	0.600	1.270	1.392
3.001	S112	117.920	S113	117.540	Circ	0.3mØ	13.650	35.9	0.600	1.392	1.680
1.008	S113	117.390	S117	115.000	Circ	0.45mØ	64.041	26.8	0.600	1.680	1.302
4.000	S114	118.155	S115	116.215	Circ	0.225mØ	28.107	14.5	0.600	1.200	1.436
4.001	S115	116.140	S116	115.576	Circ	0.3mØ	10.692	18.9	0.600	1.436	1.639
4.002	S116	115.425	S117	115.000	Circ	0.45mØ	99.091	232.9	0.600	1.639	1.302

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.009	S117	114.700	S118	114.550	Circ	0.75mØ	43.929	292.9	0.600	1.302	1.613
1.010	S118	114.550	S122	114.450	Circ	0.75mØ	26.589	265.9	0.600	1.613	1.529
5.000	S119	118.847	S120	118.510	Circ	0.3mØ	24.097	71.6	0.600	1.200	1.290
5.001	S120	118.510	S121	116.700	Circ	0.3mØ	33.280	18.4	0.600	1.290	1.427
5.002	S121	116.625	S122	114.825	Circ	0.375mØ	56.955	31.6	0.600	1.427	1.529
1.011	S122	114.450	S123 (Inlet)	114.350	Circ	0.75mØ	17.024	170.2	0.600	1.529	0.700
1.012	S123 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	63.556	1271.1	0.600	-0.050	0.000
6.000	S124	117.420	S125	116.535	Circ	0.225mØ	20.090	22.7	0.600	1.330	1.647
6.001	S125	116.535	S126	116.325	Circ	0.225mØ	7.433	35.4	0.600	1.647	1.617
6.002	S126	116.175	S127	114.655	Circ	0.375mØ	73.311	48.2	0.600	1.617	1.346
6.003	S127	114.603	S128	114.521	Circ	0.375mØ	16.467	200.0	0.600	1.399	1.204
6.004	S128	114.521	S129	114.425	Circ	0.375mØ	19.214	200.0	0.600	1.204	1.200
6.005	S129	114.425	S130	114.391	Circ	0.375mØ	6.712	200.0	0.600	1.200	1.134
6.006	S130	114.391	S131 (Inlet)	114.350	Circ	0.375mØ	8.189	200.0	0.600	1.134	1.075
6.007	S131 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	48.991	979.8	0.600	-0.050	0.000
7.000	S132	120.401	S133	120.116	Circ	0.225mØ	14.607	51.2	0.600	1.200	1.200
7.001	S133	120.041	S136	117.970	Circ	0.3mØ	42.258	20.4	0.600	1.200	1.619
8.000	S134	118.670	S135	118.320	Circ	0.3mØ	18.486	52.8	0.600	1.332	1.372
8.001	S135	118.320	S136	118.120	Circ	0.3mØ	7.510	37.6	0.600	1.372	1.469
7.002	S136	117.895	S137	114.400	Circ	0.375mØ	65.953	18.9	0.600	1.619	2.369
7.003	S137	114.400	S138 (Inlet)	114.350	Circ	0.375mØ	9.497	189.9	0.600	2.369	1.075
7.004	S138 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	40.859	817.2	0.600	-0.050	0.000
1.013	S139 (Outlet)	114.300	S140	114.250	Circ	1mØ	6.937	138.7	0.600	0.500	0.855
1.014	S140	114.250	S141 (Outfall)	112.150	Circ	0.3mØ	50.788	24.2	0.600	1.555	1.050

Outfall Details

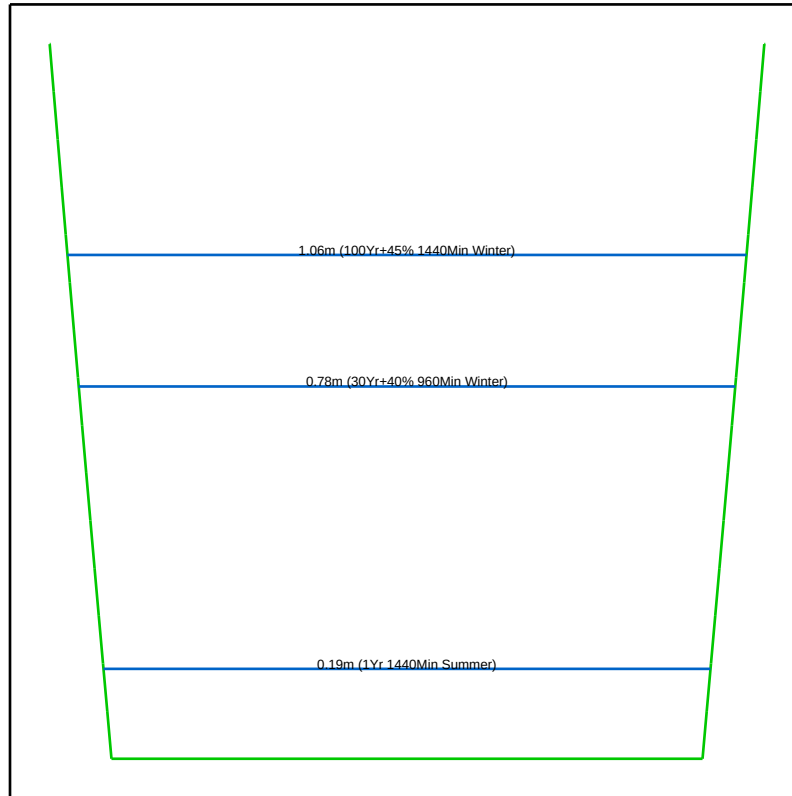
Outfall Manhole S141 (Outfall) : Free Discharge

Flow Control Details

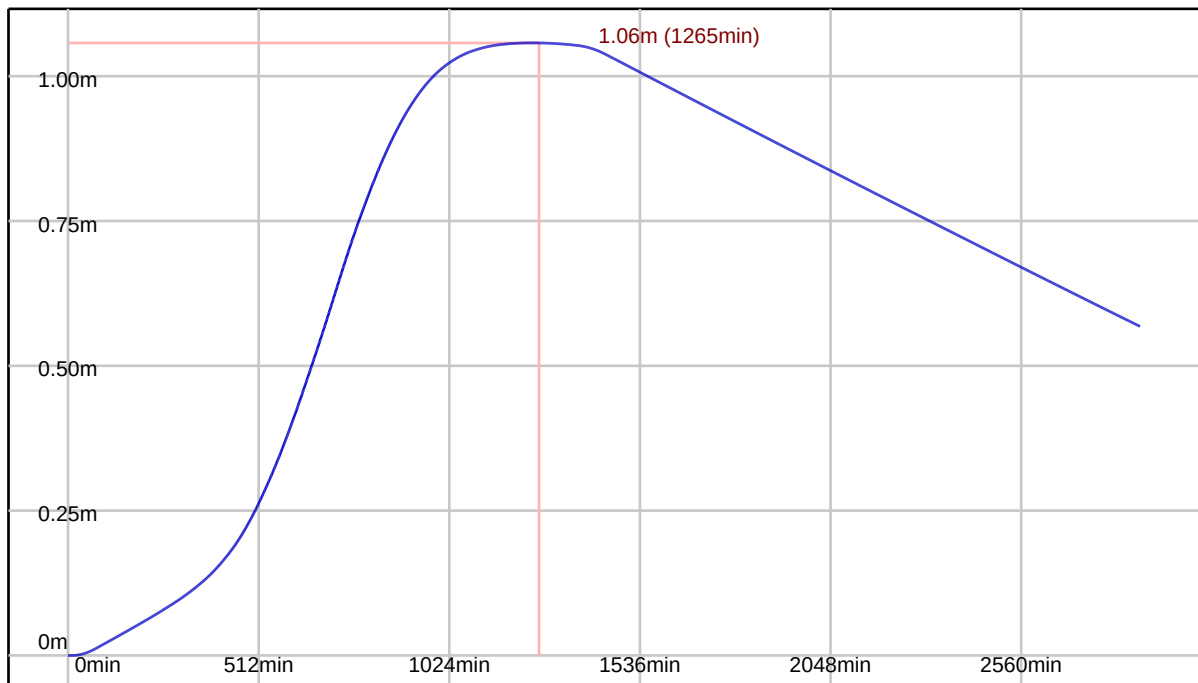
Pond Structure at Manhole S139 (Outlet)

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.300	1.500	3520.190	115.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S139 (Outlet)



Pond at S139 (Outlet) (100Yr+45% 1440Min Winter)

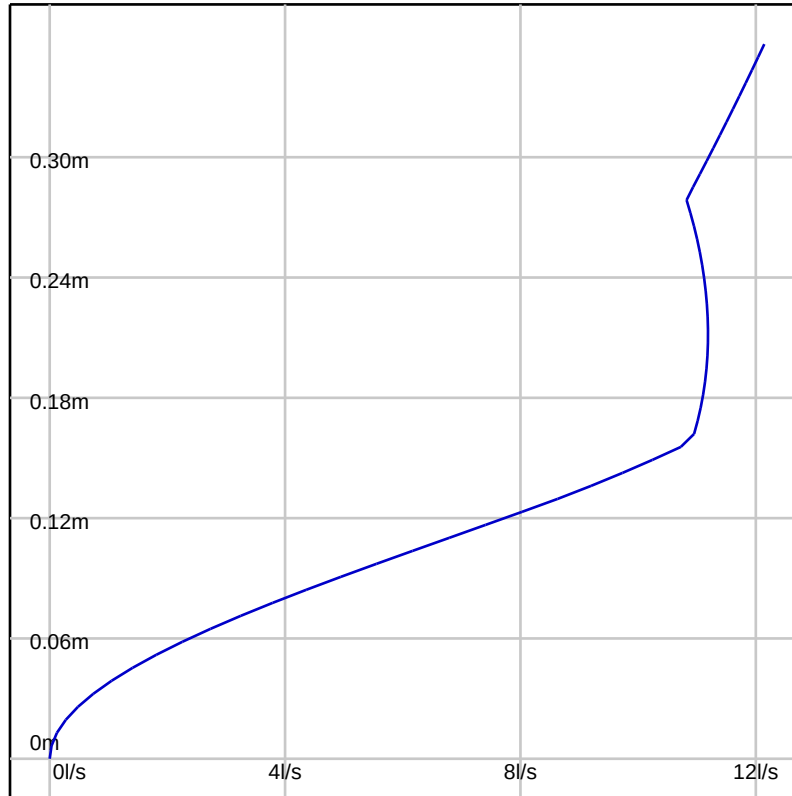


Controls within Manhole S140 (Control)

Hydro-Brake® Optimum Control at Manhole S140 (Control)

Model Ref	Design Depth (m)	Design Flow (l/s)	Depth Above Invert (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0163-1120-0300-1120	0.300	11.200	0.000	0.212	11.188	0.279	10.819

Hydro-Brake® Optimum Control at S140



Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.275	0.066	0.600

Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_386947_146323_v5_0_1.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160

Return Periods (yrs) + Climate Change: (1, +0%), (30, +40%), (100, +45%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	11.915	0.00	-0.39	30Yr+40% 360Min Winter	11.961	0.00	0.07
1Yr 15Min Summer	11.915	0.00	-0.37	30Yr+40% 480Min Summer	9.633	0.00	0.03
1Yr 30Min Winter	7.960	0.00	-0.34	30Yr+40% 480Min Winter	9.633	0.00	0.08
1Yr 30Min Summer	7.960	0.00	-0.34	30Yr+40% 600Min Summer	8.116	0.00	0.04
1Yr 60Min Summer	5.084	0.00	-0.27	30Yr+40% 600Min Winter	8.116	0.00	0.18
1Yr 60Min Winter	5.084	0.00	-0.28	30Yr+40% 720Min Summer	7.041	0.00	0.04
1Yr 120Min Summer	4.408	0.00	-0.14	30Yr+40% 720Min Winter	7.041	0.00	0.28
1Yr 120Min Winter	4.408	0.00	-0.14	30Yr+40% 960Min Summer	5.631	0.00	0.22
1Yr 180Min Summer	3.874	0.00	-0.10	30Yr+40% 960Min Winter	5.631	0.00	0.23
1Yr 180Min Winter	3.874	0.00	-0.09	30Yr+40% 1440Min Summer	4.110	0.00	0.16
1Yr 240Min Summer	3.339	0.00	-0.07	30Yr+40% 1440Min Winter	4.110	0.00	0.14
1Yr 240Min Winter	3.339	0.00	-0.06	30Yr+40% 2160Min Summer	3.003	0.00	0.16
1Yr 360Min Summer	2.695	0.00	-0.03	30Yr+40% 2160Min Winter	3.003	0.00	0.14
1Yr 360Min Winter	2.695	0.00	-0.03	100Yr+45% 15Min Summer	131.920	0.00	-0.07
1Yr 480Min Summer	2.285	0.00	-0.02	100Yr+45% 15Min Winter	131.920	0.00	0.03
1Yr 480Min Winter	2.285	0.00	-0.03	100Yr+45% 30Min Summer	88.785	0.00	0.04
1Yr 600Min Summer	1.979	0.00	-0.01	100Yr+45% 30Min Winter	88.785	0.00	0.01
1Yr 600Min Winter	1.979	0.00	-0.01	100Yr+45% 60Min Summer	57.027	0.00	0.04
1Yr 720Min Summer	1.749	0.00	0.00	100Yr+45% 60Min Winter	57.027	0.00	0.04
1Yr 720Min Winter	1.749	0.00	0.01	100Yr+45% 120Min Summer	34.592	0.00	0.10
1Yr 960Min Summer	1.443	0.00	0.03	100Yr+45% 120Min Winter	34.592	0.00	0.10
1Yr 960Min Winter	1.443	0.00	0.03	100Yr+45% 180Min Summer	25.675	0.00	0.12
1Yr 1440Min Summer	1.104	0.00	0.05	100Yr+45% 180Min Winter	25.675	0.00	0.13
1Yr 1440Min Winter	1.104	0.00	0.06	100Yr+45% 240Min Summer	20.844	0.00	0.14
1Yr 2160Min Winter	0.849	0.00	0.07	100Yr+45% 240Min Winter	20.844	0.00	0.14
1Yr 2160Min Summer	0.849	0.00	0.06	100Yr+45% 360Min Summer	15.445	0.00	0.14
30Yr+40% 15Min Winter	100.378	0.00	0.00	100Yr+45% 360Min Winter	15.445	0.00	0.14
30Yr+40% 15Min Summer	100.378	0.00	0.04	100Yr+45% 480Min Summer	12.480	0.00	0.14
30Yr+40% 30Min Summer	67.083	0.00	-0.02	100Yr+45% 480Min Winter	12.480	0.00	0.14
30Yr+40% 30Min Winter	67.083	0.00	-0.06	100Yr+45% 600Min Summer	10.580	0.00	0.12
30Yr+40% 60Min Summer	42.693	0.00	-0.03	100Yr+45% 600Min Winter	10.580	0.00	0.21
30Yr+40% 60Min Winter	42.693	0.00	-0.05	100Yr+45% 720Min Summer	9.240	0.00	0.10
30Yr+40% 120Min Summer	26.513	0.00	0.01	100Yr+45% 720Min Winter	9.240	0.00	0.22
30Yr+40% 120Min Winter	26.513	0.00	0.01	100Yr+45% 960Min Summer	7.463	0.00	0.19
30Yr+40% 180Min Summer	19.917	0.00	0.03	100Yr+45% 960Min Winter	7.463	0.00	0.26
30Yr+40% 180Min Winter	19.917	0.00	0.03	100Yr+45% 1440Min Summer	5.501	0.00	0.19
30Yr+40% 240Min Summer	16.156	0.00	0.04	100Yr+45% 1440Min Winter	5.501	0.00	0.18
30Yr+40% 240Min Winter	16.156	0.00	0.03	100Yr+45% 2160Min Winter	4.015	0.00	0.10
30Yr+40% 360Min Summer	11.961	0.00	0.04	100Yr+45% 2160Min Summer	4.015	0.00	0.09

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.735	0.026	4.005		OK
S102	15 min Summer	8	123.331	0.041	10.986		OK
S103	15 min Summer	8	121.894	0.044	12.914		OK
S104	15 min Summer	8	120.397	0.047	14.886		OK
S105	15 min Summer	8	119.536	0.056	18.624		OK
S106	15 min Summer	8	118.944	0.074	24.674		OK
S107	15 min Summer	9	118.365	0.090	26.710		OK
S108	15 min Summer	9	118.091	0.096	41.120		OK
S109	15 min Summer	8	123.422	0.023	2.766		OK
S110	15 min Summer	9	122.695	0.055	20.228		OK
S111	15 min Summer	9	118.430	0.035	3.232		OK
S112	15 min Summer	8	117.966	0.046	9.624		OK
S113	15 min Summer	9	117.493	0.103	74.627		OK
S114	15 min Summer	8	118.171	0.015	1.312		OK
S115	15 min Summer	8	116.179	0.039	9.389		OK
S116	15 min Summer	10	115.506	0.081	14.322		OK
S117	15 min Summer	9	114.897	0.197	114.442		OK
S118	15 min Summer	9	114.753	0.203	124.200		OK
S119	15 min Summer	8	118.914	0.067	14.696		OK
S120	15 min Summer	8	118.572	0.062	25.315		OK
S121	15 min Summer	9	116.699	0.074	30.793		OK
S122	15 min Summer	9	114.662	0.212	162.867		OK
S123 (Inlet)	15 min Summer	9	114.578	0.228	168.453		OK
S124	15 min Summer	8	117.452	0.032	4.827		OK
S125	15 min Summer	8	116.570	0.035	4.795		OK
S126	15 min Summer	9	116.236	0.061	17.170		OK
S127	15 min Summer	9	114.700	0.098	21.591		OK
S128	15 min Summer	9	114.619	0.098	21.653		OK
S129	15 min Summer	9	114.527	0.102	23.851		OK
S130	1440 min Summer	864	114.501	0.110	2.343		OK
S131 (Inlet)	1440 min Summer	914	114.489	0.139	1.757		OK
S132	15 min Summer	9	120.418	0.017	0.885		OK
S133	15 min Summer	8	120.089	0.049	14.725		OK
S134	15 min Summer	8	118.722	0.052	10.448		OK
S135	15 min Summer	8	118.375	0.055	13.559		OK
S136	15 min Summer	8	117.961	0.066	32.624		OK
S137	15 min Summer	9	114.532	0.132	39.581		OK
S138 (Inlet)	1440 min Summer	898	114.494	0.144	1.312		OK
S139 (Outlet)	1440 min Summer	925	114.489	0.189	10.377		OK
S140 (Control)	1440 min Summer	941	114.516	0.266	18.244		OK
S141 (Outfall)	1440 min Summer	920	112.195	0.045	11.174		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.033	1.078	3.979	0.028	OK
1.001	15 min Summer	8	S102	S103	0.042	2.105	10.935	0.073	OK
1.002	15 min Summer	8	S103	S104	0.044	2.358	12.818	0.084	OK
1.003	15 min Summer	8	S104	S105	0.052	1.829	14.834	0.055	OK
1.004	15 min Summer	8	S105	S106	0.065	1.636	18.523	0.077	OK
1.005	15 min Summer	9	S106	S107	0.074	1.794	24.538	0.138	OK
1.006	15 min Summer	9	S107	S108	0.093	1.262	26.837	0.130	OK
1.007	15 min Summer	9	S108	S113	0.096	1.860	41.424	0.148	OK
2.000	15 min Summer	8	S109	S110	0.023	1.302	2.743	0.022	OK
2.001	15 min Summer	9	S110	S113	0.055	2.289	20.547	0.076	OK
3.000	15 min Summer	9	S111	S112	0.035	0.840	3.287	0.053	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
3.001	15 min Summer	8	S112	S113	0.046	1.403	9.537	0.051	OK
1.008	15 min Summer	9	S113	S117	0.103	2.724	74.940	0.120	OK
4.000	15 min Summer	8	S114	S115	0.015	1.092	1.279	0.009	OK
4.001	15 min Summer	8	S115	S116	0.039	1.746	9.339	0.036	OK
4.002	15 min Summer	10	S116	S117	0.081	0.804	15.663	0.074	OK
1.009	15 min Summer	9	S117	S118	0.200	1.210	114.802	0.160	OK
1.010	15 min Summer	9	S118	S122	0.208	1.263	123.969	0.164	OK
5.000	15 min Summer	8	S119	S120	0.065	1.297	14.590	0.111	OK
5.001	15 min Summer	8	S120	S121	0.062	2.363	25.038	0.096	OK
5.002	15 min Summer	9	S121	S122	0.074	2.029	31.161	0.087	OK
1.011	15 min Summer	9	S122	S123 (Inlet)	0.220	1.505	162.293	0.172	OK
1.012	1440 min Summer	920	S123 (Inlet)	S139 (Outlet)	0.164	0.572	29.871	0.014	OK
6.000	15 min Summer	8	S124	S125	0.034	1.289	4.795	0.044	OK
6.001	15 min Summer	8	S125	S126	0.035	1.188	4.741	0.054	OK
6.002	15 min Summer	9	S126	S127	0.061	1.472	17.365	0.060	OK
6.003	15 min Summer	9	S127	S128	0.098	0.945	21.653	0.154	OK
6.004	15 min Summer	9	S128	S129	0.100	0.915	21.694	0.154	OK
6.005	15 min Summer	9	S129	S130	0.102	0.975	23.753	0.169	OK
6.006	1440 min Summer	902	S130	S131 (Inlet)	0.123	0.498	7.122	0.051	OK
6.007	1440 min Summer	928	S131 (Inlet)	S139 (Outlet)	0.164	0.149	3.944	0.002	OK
7.000	15 min Summer	9	S132	S133	0.017	0.634	0.899	0.012	OK
7.001	15 min Summer	8	S133	S136	0.049	1.941	14.517	0.059	OK
8.000	15 min Summer	8	S134	S135	0.053	1.217	10.384	0.068	OK
8.001	15 min Summer	8	S135	S136	0.055	1.530	13.454	0.074	OK
7.002	15 min Summer	9	S136	S137	0.099	1.409	32.321	0.070	OK
7.003	15 min Summer	9	S137	S138 (Inlet)	0.125	1.231	39.831	0.275	OK
7.004	1440 min Summer	911	S138 (Inlet)	S139 (Outlet)	0.166	0.393	7.859	0.003	OK
1.013	1440 min Summer	946	S139 (Outlet)	S140	0.227	0.422	36.166	0.016	OK
1.014	1440 min Summer	920	S140	S141 (Outfall)	0.045	1.692	11.174	0.049	OK

Return Period Yrs: 30.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.784	0.075	33.776		OK
S102	15 min Summer	8	123.418	0.127	92.770		OK
S103	15 min Summer	8	121.990	0.139	109.225		OK
S104	15 min Summer	8	120.493	0.143	126.187		OK
S105	15 min Summer	9	119.699	0.219	153.364		OK
S106	15 min Summer	9	119.443	0.573	202.013		Surcharged
S107	15 min Summer	9	118.817	0.542	217.176		Surcharged
S108	15 min Summer	9	118.534	0.539	334.174		Surcharged
S109	15 min Summer	8	123.464	0.065	23.322		OK
S110	15 min Summer	8	122.814	0.174	177.353		OK
S111	15 min Summer	8	118.500	0.105	28.382		OK
S112	15 min Summer	8	118.057	0.137	81.730		OK
S113	15 min Summer	9	117.735	0.345	607.679		OK
S114	15 min Summer	8	118.198	0.043	11.057		OK
S115	15 min Summer	8	116.253	0.113	79.349		OK
S116	15 min Summer	10	115.702	0.277	118.606		OK
S117	15 min Summer	9	115.601	0.901	945.897		Surcharged
S118	15 min Summer	9	115.380	0.830	1000.746		Surcharged
S119	15 min Summer	8	119.072	0.226	123.927		OK
S120	15 min Summer	8	118.713	0.203	213.759		OK
S121	15 min Summer	8	116.860	0.235	264.814		OK
S122	15 min Summer	9	115.219	0.769	1324.843		Surcharged
S123 (Inlet)	960 min Winter	876	115.084	0.734	6.992		OK
S124	15 min Summer	8	117.514	0.094	40.706		OK
S125	15 min Summer	8	116.641	0.106	40.575		OK
S126	15 min Summer	8	116.362	0.187	149.676		OK
S127	960 min Winter	869	115.081	0.479	1.710		Surcharged
S128	960 min Winter	871	115.081	0.561	1.693		Surcharged
S129	960 min Winter	871	115.081	0.657	1.865		Surcharged
S130	960 min Winter	871	115.081	0.690	1.865		Surcharged
S131 (Inlet)	960 min Winter	870	115.081	0.731	1.872		OK
S132	15 min Summer	8	120.450	0.049	7.772		OK
S133	15 min Summer	8	120.189	0.148	124.382		OK
S134	15 min Summer	8	118.831	0.161	88.110		OK
S135	15 min Summer	8	118.490	0.170	114.604		OK
S136	15 min Summer	8	118.100	0.205	276.751		OK
S137	960 min Winter	870	115.081	0.681	3.115		Surcharged
S138 (Inlet)	960 min Winter	870	115.081	0.731	3.299		OK
S139 (Outlet)	960 min Winter	866	115.081	0.781	18.587		OK
S140 (Control)	960 min Winter	866	115.081	0.831	18.724		Surcharged
S141 (Outfall)	960 min Winter	870	112.208	0.058	18.724		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.101	1.951	33.680	0.240	OK
1.001	15 min Summer	8	S102	S103	0.133	3.777	92.538	0.620	OK
1.002	15 min Summer	8	S103	S104	0.139	4.216	108.745	0.710	OK
1.003	15 min Summer	9	S104	S105	0.180	3.260	125.965	0.469	OK
1.004	15 min Summer	9	S105	S106	0.260	2.668	153.689	0.642	OK
1.005	15 min Summer	9	S106	S107	0.300	2.814	198.906	1.122	Surcharged
1.006	15 min Summer	10	S107	S108	0.375	1.957	216.129	1.045	Surcharged
1.007	15 min Summer	9	S108	S113	0.375	2.991	330.354	1.178	Surcharged
2.000	15 min Summer	8	S109	S110	0.082	2.012	23.261	0.185	OK
2.001	15 min Summer	9	S110	S113	0.183	4.000	176.185	0.653	OK
3.000	15 min Summer	8	S111	S112	0.105	1.542	28.054	0.451	OK
3.001	15 min Summer	9	S112	S113	0.165	2.338	81.546	0.439	OK
1.008	15 min Summer	9	S113	S117	0.398	4.303	607.759	0.970	OK
4.000	15 min Summer	8	S114	S115	0.043	2.087	10.959	0.080	OK
4.001	15 min Summer	9	S115	S116	0.118	3.208	79.235	0.309	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
4.002	15 min Summer	10	S116	S117	0.363	1.217	143.825	0.682	OK
1.009	15 min Summer	10	S117	S118	0.750	2.088	922.461	1.282	Surcharged
1.010	15 min Summer	10	S118	S122	0.750	2.270	1002.946	1.328	Surcharged
5.000	15 min Summer	8	S119	S120	0.215	2.280	123.308	0.938	OK
5.001	15 min Summer	8	S120	S121	0.203	4.173	212.236	0.815	OK
5.002	15 min Summer	9	S121	S122	0.304	3.252	263.578	0.739	OK
1.011	15 min Summer	9	S122	S123 (Inlet)	0.724	3.034	1325.892	1.402	OK
1.012	960 min Winter	876	S123 (Inlet)	S139 (Outlet)	0.758	0.814	127.770	0.061	OK
6.000	15 min Summer	8	S124	S125	0.100	2.369	40.575	0.370	OK
6.001	15 min Summer	8	S125	S126	0.106	2.181	40.344	0.460	OK
6.002	15 min Summer	9	S126	S127	0.280	1.944	148.536	0.515	OK
6.003	240 min Summer	228	S127	S128	0.375	1.174	54.475	0.387	Surcharged
6.004	240 min Summer	155	S128	S129	0.375	0.975	54.072	0.384	Surcharged
6.005	180 min Summer	105	S129	S130	0.375	1.064	71.993	0.511	Surcharged
6.006	60 min Winter	49	S130	S131 (Inlet)	0.375	1.523	99.387	0.705	Surcharged
6.007	960 min Winter	870	S131 (Inlet)	S139 (Outlet)	0.756	0.419	15.335	0.006	OK
7.000	15 min Summer	8	S132	S133	0.061	1.028	7.722	0.106	OK
7.001	15 min Summer	8	S133	S136	0.148	3.546	123.406	0.500	OK
8.000	15 min Summer	8	S134	S135	0.165	2.198	87.828	0.573	OK
8.001	15 min Summer	8	S135	S136	0.170	2.760	114.108	0.628	OK
7.002	15 min Summer	8	S136	S137	0.290	3.008	275.585	0.596	OK
7.003	60 min Winter	52	S137	S138 (Inlet)	0.375	1.939	168.468	1.165	Surcharged
7.004	960 min Winter	870	S138 (Inlet)	S139 (Outlet)	0.756	0.495	27.586	0.010	OK
1.013	960 min Winter	866	S139 (Outlet)	S140	0.806	0.422	57.915	0.026	OK
1.014	960 min Winter	870	S140	S141 (Outfall)	0.058	1.971	18.724	0.083	OK

Return Period Yrs: 100.0

Climate Change %: 45

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.795	0.086	44.402		OK
S102	15 min Summer	8	123.443	0.153	121.963		OK
S103	15 min Summer	8	122.021	0.171	143.607		OK
S104	15 min Summer	10	120.929	0.579	136.878		Surcharged
S105	15 min Summer	10	120.712	1.232	171.664		Surcharged
S106	15 min Summer	10	120.417	1.547	225.238		Flood Risk
S107	15 min Summer	10	119.631	1.356	243.288		Flood Risk
S108	15 min Summer	10	119.276	1.281	370.650		Surcharged
S109	15 min Summer	8	123.474	0.075	30.659		OK
S110	15 min Summer	8	122.851	0.211	233.156		OK
S111	15 min Summer	10	118.545	0.150	29.717		OK
S112	15 min Summer	10	118.488	0.568	84.488		Surcharged
S113	15 min Summer	10	118.415	1.025	673.106		Surcharged
S114	15 min Summer	8	118.204	0.049	14.535		OK
S115	15 min Summer	9	116.305	0.165	100.092		OK
S116	15 min Summer	9	116.148	0.722	184.733		Surcharged
S117	15 min Summer	9	115.873	1.173	1091.578		Surcharged
S118	15 min Summer	9	115.573	1.023	1167.839		Surcharged
S119	15 min Summer	8	119.262	0.415	162.916		Surcharged
S120	15 min Summer	8	118.762	0.252	279.260		OK
S121	15 min Summer	8	116.914	0.289	345.994		OK
S122	1440 min Winter	1246	115.358	0.908	14.106		Surcharged
S123 (Inlet)	1440 min Winter	1246	115.358	1.008	14.639		OK
S124	15 min Summer	8	117.530	0.110	53.512		OK
S125	15 min Summer	8	116.660	0.125	53.347		OK
S126	15 min Summer	8	116.397	0.222	196.789		OK
S127	1440 min Winter	1246	115.358	0.755	1.858		Surcharged
S128	1440 min Winter	1249	115.358	0.837	1.846		Surcharged
S129	1440 min Winter	1249	115.358	0.933	2.033		Surcharged
S130	1440 min Winter	1249	115.358	0.967	2.034		Surcharged
S131 (Inlet)	1440 min Winter	1244	115.358	1.008	2.058		OK
S132	15 min Summer	8	120.457	0.056	10.217		OK
S133	15 min Summer	8	120.216	0.175	163.519		OK
S134	15 min Summer	8	118.862	0.192	115.829		OK
S135	15 min Summer	8	118.525	0.205	150.672		OK
S136	15 min Summer	8	118.140	0.245	363.854		OK
S137	1440 min Winter	1249	115.358	0.958	3.380		Surcharged
S138 (Inlet)	1440 min Winter	1246	115.358	1.008	3.603		OK
S139 (Outlet)	1440 min Winter	1245	115.357	1.057	20.297		Surcharged
S140 (Control)	1440 min Winter	1228	115.360	1.110	14.246		Surcharged
S141 (Outfall)	1440 min Winter	1252	112.210	0.060	20.277		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.119	2.064	44.284	0.316	OK
1.001	15 min Summer	8	S102	S103	0.162	3.977	121.671	0.815	OK
1.002	15 min Summer	9	S103	S104	0.196	4.421	142.943	0.934	OK
1.003	15 min Summer	9	S104	S105	0.300	3.286	159.343	0.593	Surcharged
1.004	15 min Winter	9	S105	S106	0.300	2.704	171.747	0.717	Surcharged
1.005	15 min Winter	9	S106	S107	0.300	3.118	220.423	1.243	Surcharged
1.006	15 min Winter	11	S107	S108	0.375	2.180	240.782	1.164	Surcharged
1.007	15 min Winter	10	S108	S113	0.375	3.255	359.512	1.281	Surcharged
2.000	15 min Summer	8	S109	S110	0.105	2.074	30.584	0.243	OK
2.001	15 min Summer	8	S110	S113	0.255	3.958	231.740	0.860	OK
3.000	15 min Summer	10	S111	S112	0.187	1.608	37.110	0.597	OK
3.001	15 min Summer	9	S112	S113	0.300	2.237	100.385	0.540	Surcharged
1.008	15 min Winter	11	S113	S117	0.450	4.381	649.891	1.038	OK
4.000	15 min Summer	9	S114	S115	0.069	2.070	14.464	0.105	OK
4.001	15 min Summer	9	S115	S116	0.233	3.212	104.096	0.406	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
4.002	15 min Winter	10	S116	S117	0.450	1.206	163.714	0.776	OK
1.009	15 min Winter	10	S117	S118	0.750	2.377	1050.003	1.459	Surcharged
1.010	15 min Winter	10	S118	S122	0.750	2.539	1121.872	1.485	Surcharged
5.000	15 min Summer	8	S119	S120	0.276	2.357	160.352	1.220	OK
5.001	15 min Summer	8	S120	S121	0.276	4.292	276.875	1.064	OK
5.002	15 min Summer	8	S121	S122	0.332	3.420	344.886	0.967	OK
1.011	960 min Summer	575	S122	S123 (Inlet)	0.750	1.247	377.402	0.399	Surcharged
1.012	1440 min Winter	1246	S123 (Inlet)	S139 (Outlet)	1.033	0.761	128.876	0.061	OK
6.000	15 min Summer	8	S124	S125	0.118	2.536	53.347	0.487	OK
6.001	15 min Summer	8	S125	S126	0.125	2.332	53.060	0.605	OK
6.002	15 min Summer	8	S126	S127	0.298	2.074	195.374	0.677	OK
6.003	15 min Winter	9	S127	S128	0.375	1.974	218.020	1.547	Surcharged
6.004	15 min Winter	9	S128	S129	0.375	1.971	217.684	1.545	Surcharged
6.005	30 min Winter	27	S129	S130	0.375	1.854	195.550	1.388	Surcharged
6.006	30 min Winter	24	S130	S131 (Inlet)	0.375	2.124	197.007	1.398	Surcharged
6.007	1440 min Winter	1244	S131 (Inlet)	S139 (Outlet)	1.033	0.373	15.243	0.006	OK
7.000	15 min Summer	8	S132	S133	0.078	1.029	10.157	0.139	OK
7.001	15 min Summer	8	S133	S136	0.175	3.786	162.244	0.657	OK
8.000	15 min Summer	8	S134	S135	0.198	2.329	115.471	0.754	OK
8.001	15 min Summer	8	S135	S136	0.204	2.925	150.029	0.825	OK
7.002	15 min Summer	8	S136	S137	0.310	3.712	362.364	0.784	OK
7.003	30 min Summer	24	S137	S138 (Inlet)	0.375	3.714	404.112	2.794	Surcharged
7.004	1440 min Winter	1249	S138 (Inlet)	S139 (Outlet)	1.033	0.446	22.344	0.008	OK
1.013	2160 min Winter	1456	S139 (Outlet)	S140	1.000	0.422	75.652	0.034	Surcharged
1.014	1440 min Winter	1252	S140	S141 (Outfall)	0.060	2.018	20.277	0.089	OK

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S101	0.057	1.350	Type C	126.134	124.709	1.200	387193.930	146230.772
S102	0.100	1.350	Type C	124.715	123.290	1.200	387183.832	146213.770
S103	0.028	1.350	Type C	123.276	121.851	1.200	387172.473	146200.257
S104	0.029	1.350	Type C	121.979	120.350	1.329	387157.623	146192.758
S105	0.054	1.350	Type C	121.054	119.480	1.274	387142.700	146191.050
S106	0.087	1.350	Type C	120.455	118.870	1.285	387129.929	146194.540
S107	0.032	1.350	Type C	119.929	118.275	1.279	387114.041	146207.533
S108	0.211	1.350	Type C	119.660	117.995	1.290	387098.449	146228.545
S109	0.039	1.350	Type C	124.824	123.399	1.200	387177.964	146291.213
S110	0.260	1.200	Type B	124.506	122.640	1.566	387173.412	146280.313
S111	0.048	1.350	Type C	119.890	118.395	1.270	387084.093	146294.942
S112	0.090	1.350	Type C	119.612	117.920	1.392	387085.136	146266.993
S113	0.047	1.350	Type B	119.520	117.390	1.680	387089.954	146254.221
S114	0.019	1.350	Type C	119.580	118.155	1.200	387122.700	146175.300
S115	0.115	1.350	Type C	117.876	116.140	1.436	387100.723	146157.778
S116	0.115	1.350	Type B	117.514	115.425	1.639	387090.032	146157.877
S117	0.359	1.500	Unknown	116.752	114.700	1.302	387028.657	146235.672
S118	0.139	1.800	Type B	116.913	114.550	1.613	387001.780	146270.420
S119	0.209	1.350	Type C	120.347	118.922	1.200	387081.100	146339.896
S120	0.152	1.350	Type C	120.100	118.510	1.290	387082.854	146315.863
S121	0.089	1.350	Type C	118.427	116.625	1.427	387050.055	146310.222
S122	0.114	1.800	Type B	116.729	114.450	1.529	386994.880	146296.098
S123 (Inlet)	0.091	1.350	Unknown	115.800	114.350	0.700	386990.522	146312.555
S124	0.069	1.350	Type C	118.975	117.420	1.330	387064.170	146456.530
S125	0.000	1.200	Type B	118.407	116.535	1.647	387058.277	146475.735
S126	0.184	1.200	Type B	118.167	116.175	1.617	387051.414	146478.593
S127	0.062	1.350	Type C	116.376	114.603	1.399	386981.363	146456.976
S128	0.000	1.350	Type C	116.100	114.521	1.204	386965.629	146452.120
S129	0.032	1.350	Type C	116.000	114.425	1.200	386968.375	146433.104
S130	0.000	1.350	Type C	115.900	114.391	1.134	386973.043	146428.281
S131 (Inlet)	0.000	1.350	Unknown	115.800	114.350	1.075	386978.734	146422.394
S132	0.013	1.350	Type C	121.826	120.401	1.200	387129.030	146438.005
S133	0.196	1.350	Type C	121.541	120.041	1.200	387114.438	146437.352
S134	0.148	1.350	Type C	120.302	118.670	1.332	387068.706	146401.396
S135	0.045	1.350	Type C	119.992	118.320	1.372	387076.485	146418.166
S136	0.066	1.200	Type B	119.889	117.895	1.619	387073.954	146425.236
S137	0.107	1.200	Type B	117.144	114.400	2.369	387010.951	146405.732
S138 (Inlet)	0.037	1.350	Unknown	115.800	114.350	1.075	387001.915	146402.810
S139 (Outlet)	0.000	1.900	Unknown	115.800	114.300	0.500	386973.230	146373.713
S140 (Control)	0.000	1.900	Type B	116.105	114.250	1.555	386966.692	146371.395
S141 (Outfall)	0.000	1.350	Type C	113.500	112.150	1.050	386917.912	146357.255

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S101	124.709	S102	123.290	Circ	0.225mØ	19.775	13.9	0.600	1.200	1.200
1.001	S102	123.290	S103	121.851	Circ	0.225mØ	17.653	12.3	0.600	1.200	1.200
1.002	S103	121.851	S104	120.425	Circ	0.225mØ	16.635	11.7	0.600	1.200	1.329
1.003	S104	120.350	S105	119.480	Circ	0.3mØ	15.021	17.3	0.600	1.329	1.274
1.004	S105	119.480	S106	118.870	Circ	0.3mØ	13.239	21.7	0.600	1.274	1.285
1.005	S106	118.870	S107	118.350	Circ	0.3mØ	20.525	39.5	0.600	1.285	1.279
1.006	S107	118.275	S108	117.995	Circ	0.375mØ	26.165	93.4	0.600	1.279	1.290
1.007	S108	117.995	S113	117.465	Circ	0.375mØ	27.045	51.0	0.600	1.290	1.680
2.000	S109	123.399	S110	122.715	Circ	0.225mØ	11.813	17.3	0.600	1.200	1.566
2.001	S110	122.640	S113	117.540	Circ	0.3mØ	87.442	17.1	0.600	1.566	1.680
3.000	S111	118.395	S112	117.995	Circ	0.225mØ	27.969	69.9	0.600	1.270	1.392
3.001	S112	117.920	S113	117.540	Circ	0.3mØ	13.650	35.9	0.600	1.392	1.680
1.008	S113	117.390	S117	115.000	Circ	0.45mØ	64.041	26.8	0.600	1.680	1.302
4.000	S114	118.155	S115	116.215	Circ	0.225mØ	28.107	14.5	0.600	1.200	1.436
4.001	S115	116.140	S116	115.576	Circ	0.3mØ	10.692	18.9	0.600	1.436	1.639
4.002	S116	115.425	S117	115.000	Circ	0.45mØ	99.091	232.9	0.600	1.639	1.302

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (m)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.009	S117	114.700	S118	114.550	Circ	0.75mØ	43.929	292.9	0.600	1.302	1.613
1.010	S118	114.550	S122	114.450	Circ	0.75mØ	26.589	265.9	0.600	1.613	1.529
5.000	S119	118.922	S120	118.585	Circ	0.225mØ	24.097	71.6	0.600	1.200	1.290
5.001	S120	118.510	S121	116.700	Circ	0.3mØ	33.280	18.4	0.600	1.290	1.427
5.002	S121	116.625	S122	114.825	Circ	0.375mØ	56.955	31.6	0.600	1.427	1.529
1.011	S122	114.450	S123 (Inlet)	114.350	Circ	0.75mØ	17.024	170.2	0.600	1.529	0.700
1.012	S123 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	63.556	1271.1	0.600	-0.050	0.000
6.000	S124	117.420	S125	116.535	Circ	0.225mØ	20.090	22.7	0.600	1.330	1.647
6.001	S125	116.535	S126	116.325	Circ	0.225mØ	7.433	35.4	0.600	1.647	1.617
6.002	S126	116.175	S127	114.655	Circ	0.375mØ	73.311	48.2	0.600	1.617	1.346
6.003	S127	114.603	S128	114.521	Circ	0.375mØ	16.467	200.0	0.600	1.399	1.204
6.004	S128	114.521	S129	114.425	Circ	0.375mØ	19.214	200.0	0.600	1.204	1.200
6.005	S129	114.425	S130	114.391	Circ	0.375mØ	6.712	200.0	0.600	1.200	1.134
6.006	S130	114.391	S131 (Inlet)	114.350	Circ	0.375mØ	8.189	200.0	0.600	1.134	1.075
6.007	S131 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	48.991	979.8	0.600	-0.050	0.000
7.000	S132	120.401	S133	120.116	Circ	0.225mØ	14.607	51.2	0.600	1.200	1.200
7.001	S133	120.041	S136	117.970	Circ	0.3mØ	42.258	20.4	0.600	1.200	1.619
8.000	S134	118.670	S135	118.320	Circ	0.3mØ	18.486	52.8	0.600	1.332	1.372
8.001	S135	118.320	S136	118.120	Circ	0.3mØ	7.510	37.6	0.600	1.372	1.469
7.002	S136	117.895	S137	114.400	Circ	0.375mØ	65.953	18.9	0.600	1.619	2.369
7.003	S137	114.400	S138 (Inlet)	114.350	Circ	0.375mØ	9.497	189.9	0.600	2.369	1.075
7.004	S138 (Inlet)	114.350	S139 (Outlet)	114.300	Circ	1.5mØ	40.859	817.2	0.600	-0.050	0.000
1.013	S139 (Outlet)	114.300	S140	114.250	Circ	1mØ	6.937	138.7	0.600	0.500	0.855
1.014	S140	114.250	S141 (Outfall)	112.150	Circ	0.3mØ	50.788	24.2	0.600	1.555	1.050

Outfall Details

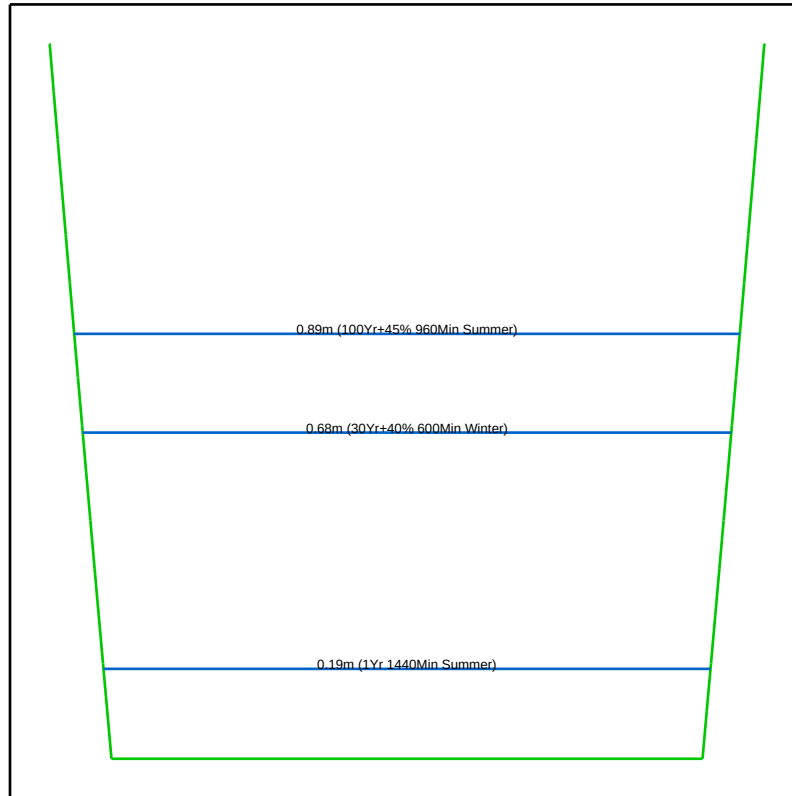
Outfall Manhole S141 (Outfall) : Free Discharge

Flow Control Details

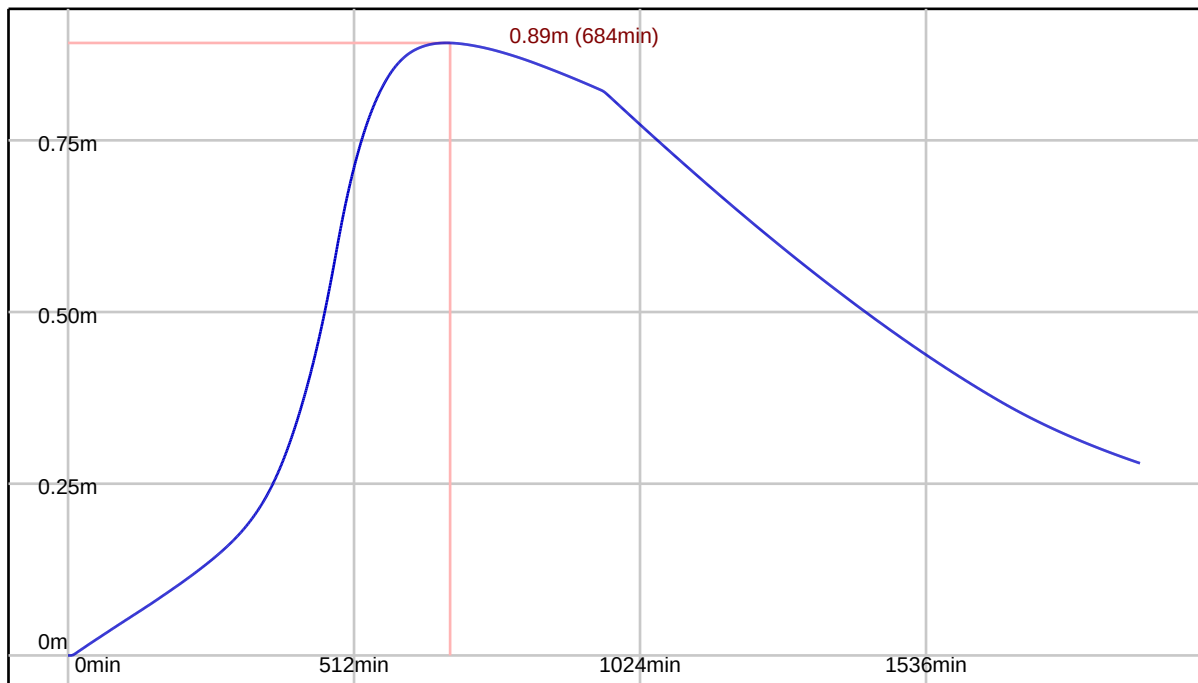
Pond Structure at Manhole S139 (Outlet)

Pond Invert (m)	Max Depth (m)	Volume To Water Level (m3)	Water Level (m)	Freeboard (m)	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
114.300	1.500	3520.190	115.500	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S139 (Outlet)



Pond at S139 (Outlet) (100Yr+45% 960Min Summer)

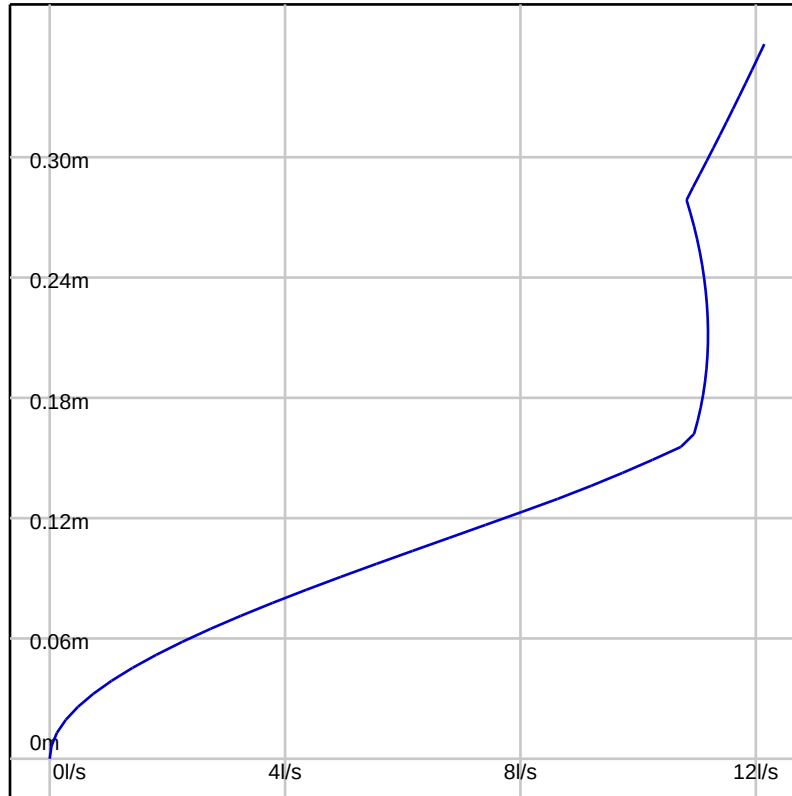


Controls within Manhole S140 (Control)

Hydro-Brake® Optimum Control at Manhole S140 (Control)

Model Ref	Design Depth (m)	Design Flow (l/s)	Depth Above Invert (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0163-1120-0300-1120	0.300	11.200	0.000	0.212	11.188	0.279	10.819

Hydro-Brake® Optimum Control at S140



Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.275	0.145	0.600

Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_386947_146323_v5_0_1.xml

Summer (Cv: 1.00), Winter (Cv: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760

Return Periods (yrs) + Climate Change: (1, +0%), (30, +40%), (100, +45%)

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	11.915	0.00	-0.39	30Yr+40% 600Min Summer	8.116	0.00	0.02
1Yr 15Min Summer	11.915	0.00	-0.38	30Yr+40% 600Min Winter	8.116	0.00	0.27
1Yr 30Min Winter	7.960	0.00	-0.34	30Yr+40% 720Min Summer	7.041	0.00	0.10
1Yr 30Min Summer	7.960	0.00	-0.34	30Yr+40% 720Min Winter	7.041	0.00	0.29
1Yr 60Min Winter	5.084	0.00	-0.28	30Yr+40% 960Min Summer	5.631	0.00	0.21
1Yr 60Min Summer	5.084	0.00	-0.27	30Yr+40% 960Min Winter	5.631	0.00	0.22
1Yr 120Min Summer	4.408	0.00	-0.14	30Yr+40% 1440Min Summer	4.110	0.00	0.18
1Yr 120Min Winter	4.408	0.00	-0.14	30Yr+40% 1440Min Winter	4.110	0.00	0.28
1Yr 180Min Summer	3.874	0.00	-0.09	30Yr+40% 2160Min Summer	3.003	0.00	0.20
1Yr 180Min Winter	3.874	0.00	-0.09	30Yr+40% 2160Min Winter	3.003	0.00	0.25
1Yr 240Min Summer	3.339	0.00	-0.07	30Yr+40% 2880Min Summer	2.403	0.00	0.28
1Yr 240Min Winter	3.339	0.00	-0.07	30Yr+40% 2880Min Winter	2.403	0.00	0.03
1Yr 360Min Summer	2.695	0.00	-0.03	30Yr+40% 4320Min Summer	1.771	0.00	0.02
1Yr 360Min Winter	2.695	0.00	-0.04	30Yr+40% 4320Min Winter	1.771	0.00	0.01
1Yr 480Min Summer	2.285	0.00	-0.02	30Yr+40% 5760Min Summer	1.438	0.00	0.03
1Yr 480Min Winter	2.285	0.00	-0.02	30Yr+40% 5760Min Winter	1.438	0.00	0.00
1Yr 600Min Summer	1.979	0.00	-0.01	100Yr+45% 15Min Summer	131.920	0.00	-0.05
1Yr 600Min Winter	1.979	0.00	-0.01	100Yr+45% 15Min Winter	131.920	0.00	0.02
1Yr 720Min Winter	1.749	0.00	0.00	100Yr+45% 30Min Summer	88.785	0.00	0.02
1Yr 720Min Summer	1.749	0.00	0.00	100Yr+45% 30Min Winter	88.785	0.00	-0.02
1Yr 960Min Summer	1.443	0.00	0.03	100Yr+45% 60Min Summer	57.027	0.00	0.01
1Yr 960Min Winter	1.443	0.00	0.03	100Yr+45% 60Min Winter	57.027	0.00	0.01
1Yr 1440Min Summer	1.104	0.00	0.05	100Yr+45% 120Min Summer	34.592	0.00	0.04
1Yr 1440Min Winter	1.104	0.00	0.06	100Yr+45% 120Min Winter	34.592	0.00	0.04
1Yr 2160Min Summer	0.849	0.00	0.06	100Yr+45% 180Min Summer	25.675	0.00	0.04
1Yr 2160Min Winter	0.849	0.00	0.07	100Yr+45% 180Min Winter	25.675	0.00	0.04
1Yr 2880Min Summer	0.710	0.00	0.07	100Yr+45% 240Min Summer	20.844	0.00	0.02
1Yr 2880Min Winter	0.710	0.00	0.07	100Yr+45% 240Min Winter	20.844	0.00	0.03
1Yr 4320Min Summer	0.565	0.00	0.06	100Yr+45% 360Min Summer	15.445	0.00	-0.00
1Yr 4320Min Winter	0.565	0.00	0.08	100Yr+45% 360Min Winter	15.445	0.00	-0.00
1Yr 5760Min Winter	0.490	0.00	0.07	100Yr+45% 480Min Summer	12.480	0.00	-0.03
1Yr 5760Min Summer	0.490	0.00	0.06	100Yr+45% 480Min Winter	12.480	0.00	-0.03
30Yr+40% 15Min Summer	100.378	0.00	0.03	100Yr+45% 600Min Summer	10.580	0.00	-0.05
30Yr+40% 15Min Winter	100.378	0.00	-0.01	100Yr+45% 600Min Winter	10.580	0.00	0.09
30Yr+40% 30Min Summer	67.083	0.00	-0.03	100Yr+45% 720Min Summer	9.240	0.00	-0.05
30Yr+40% 30Min Winter	67.083	0.00	-0.07	100Yr+45% 720Min Winter	9.240	0.00	0.16
30Yr+40% 60Min Summer	42.693	0.00	-0.06	100Yr+45% 960Min Summer	7.463	0.00	0.14
30Yr+40% 60Min Winter	42.693	0.00	-0.07	100Yr+45% 960Min Winter	7.463	0.00	0.23
30Yr+40% 120Min Summer	26.513	0.00	-0.03	100Yr+45% 1440Min Summer	5.501	0.00	0.29
30Yr+40% 120Min Winter	26.513	0.00	-0.04	100Yr+45% 1440Min Winter	5.501	0.00	0.19
30Yr+40% 180Min Winter	19.917	0.00	-0.03	100Yr+45% 2160Min Summer	4.015	0.00	0.21
30Yr+40% 180Min Summer	19.917	0.00	-0.04	100Yr+45% 2160Min Winter	4.015	0.00	0.18
30Yr+40% 240Min Summer	16.156	0.00	-0.04	100Yr+45% 2880Min Summer	3.180	0.00	0.17
30Yr+40% 240Min Winter	16.156	0.00	-0.03	100Yr+45% 2880Min Winter	3.180	0.00	0.12
30Yr+40% 360Min Summer	11.961	0.00	-0.05	100Yr+45% 4320Min Summer	2.279	0.00	0.14
30Yr+40% 360Min Winter	11.961	0.00	0.05	100Yr+45% 4320Min Winter	2.279	0.00	0.13
30Yr+40% 480Min Summer	9.633	0.00	-0.05	100Yr+45% 5760Min Winter	1.799	0.00	-0.01
30Yr+40% 480Min Winter	9.633	0.00	0.25	100Yr+45% 5760Min Summer	1.799	0.00	0.15

Simulation Results

Return Period Yrs: 1.0

Climate Change %: 0

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.735	0.026	4.005		OK
S102	15 min Summer	8	123.331	0.041	10.986		OK
S103	15 min Summer	8	121.894	0.044	12.914		OK
S104	15 min Summer	8	120.397	0.047	14.886		OK
S105	15 min Summer	8	119.536	0.056	18.624		OK
S106	15 min Summer	8	118.944	0.074	24.674		OK
S107	15 min Summer	9	118.365	0.090	26.710		OK
S108	15 min Summer	9	118.091	0.096	41.120		OK
S109	15 min Summer	8	123.422	0.023	2.766		OK
S110	15 min Summer	9	122.695	0.055	20.228		OK
S111	15 min Summer	9	118.430	0.035	3.232		OK
S112	15 min Summer	8	117.966	0.046	9.624		OK
S113	15 min Summer	9	117.493	0.103	74.627		OK
S114	15 min Summer	8	118.171	0.015	1.312		OK
S115	15 min Summer	8	116.179	0.039	9.389		OK
S116	15 min Summer	10	115.506	0.081	14.322		OK
S117	15 min Summer	9	114.897	0.197	114.442		OK
S118	15 min Summer	9	114.753	0.203	124.199		OK
S119	15 min Summer	8	118.995	0.074	14.696		OK
S120	15 min Summer	8	118.572	0.062	25.242		OK
S121	15 min Summer	9	116.699	0.074	30.800		OK
S122	15 min Summer	9	114.662	0.212	162.855		OK
S123 (Inlet)	15 min Summer	9	114.578	0.228	168.431		OK
S124	15 min Summer	8	117.452	0.032	4.827		OK
S125	15 min Summer	8	116.570	0.035	4.795		OK
S126	15 min Summer	9	116.236	0.061	17.170		OK
S127	15 min Summer	9	114.700	0.098	21.591		OK
S128	15 min Summer	9	114.619	0.098	21.653		OK
S129	15 min Summer	9	114.527	0.102	23.851		OK
S130	1440 min Summer	864	114.502	0.111	2.477		OK
S131 (Inlet)	1440 min Summer	924	114.490	0.140	2.425		OK
S132	15 min Summer	9	120.418	0.017	0.885		OK
S133	15 min Summer	8	120.089	0.049	14.725		OK
S134	15 min Summer	8	118.722	0.052	10.448		OK
S135	15 min Summer	8	118.375	0.055	13.559		OK
S136	15 min Summer	8	117.961	0.066	32.624		OK
S137	15 min Summer	9	114.532	0.132	39.581		OK
S138 (Inlet)	1440 min Summer	893	114.494	0.144	2.780		OK
S139 (Outlet)	1440 min Summer	920	114.489	0.189	11.387		OK
S140 (Control)	1440 min Summer	945	114.513	0.263	14.615		OK
S141 (Outfall)	1440 min Summer	926	112.195	0.045	11.173		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.033	1.078	3.979	0.028	OK
1.001	15 min Summer	8	S102	S103	0.042	2.105	10.935	0.073	OK
1.002	15 min Summer	8	S103	S104	0.044	2.358	12.818	0.084	OK
1.003	15 min Summer	8	S104	S105	0.052	1.829	14.834	0.055	OK
1.004	15 min Summer	8	S105	S106	0.065	1.636	18.523	0.077	OK
1.005	15 min Summer	9	S106	S107	0.074	1.794	24.538	0.138	OK
1.006	15 min Summer	9	S107	S108	0.093	1.262	26.837	0.130	OK
1.007	15 min Summer	9	S108	S113	0.096	1.860	41.424	0.148	OK
2.000	15 min Summer	8	S109	S110	0.023	1.302	2.743	0.022	OK
2.001	15 min Summer	9	S110	S113	0.055	2.289	20.547	0.076	OK
3.000	15 min Summer	9	S111	S112	0.035	0.840	3.287	0.053	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
3.001	15 min Summer	8	S112	S113	0.046	1.403	9.537	0.051	OK
1.008	15 min Summer	9	S113	S117	0.103	2.724	74.940	0.120	OK
4.000	15 min Summer	8	S114	S115	0.015	1.092	1.279	0.009	OK
4.001	15 min Summer	8	S115	S116	0.039	1.746	9.339	0.036	OK
4.002	15 min Summer	10	S116	S117	0.081	0.804	15.663	0.074	OK
1.009	15 min Summer	9	S117	S118	0.200	1.210	114.802	0.160	OK
1.010	15 min Summer	9	S118	S122	0.208	1.263	123.967	0.164	OK
5.000	15 min Summer	8	S119	S120	0.074	1.279	14.516	0.236	OK
5.001	15 min Summer	8	S120	S121	0.062	2.363	25.023	0.096	OK
5.002	15 min Summer	9	S121	S122	0.074	2.029	31.151	0.087	OK
1.011	15 min Summer	9	S122	S123 (Inlet)	0.220	1.505	162.271	0.172	OK
1.012	1440 min Summer	920	S123 (Inlet)	S139 (Outlet)	0.164	0.572	29.871	0.014	OK
6.000	15 min Summer	8	S124	S125	0.034	1.289	4.795	0.044	OK
6.001	15 min Summer	8	S125	S126	0.035	1.188	4.741	0.054	OK
6.002	15 min Summer	9	S126	S127	0.061	1.472	17.365	0.060	OK
6.003	15 min Summer	9	S127	S128	0.098	0.945	21.653	0.154	OK
6.004	15 min Summer	9	S128	S129	0.100	0.915	21.694	0.154	OK
6.005	15 min Summer	9	S129	S130	0.102	0.975	23.753	0.169	OK
6.006	1440 min Summer	884	S130	S131 (Inlet)	0.123	0.498	6.988	0.050	OK
6.007	1440 min Summer	924	S131 (Inlet)	S139 (Outlet)	0.164	0.149	3.944	0.002	OK
7.000	15 min Summer	9	S132	S133	0.017	0.634	0.899	0.012	OK
7.001	15 min Summer	8	S133	S136	0.049	1.941	14.517	0.059	OK
8.000	15 min Summer	8	S134	S135	0.053	1.217	10.384	0.068	OK
8.001	15 min Summer	8	S135	S136	0.055	1.530	13.454	0.074	OK
7.002	15 min Summer	9	S136	S137	0.099	1.409	32.321	0.070	OK
7.003	15 min Summer	9	S137	S138 (Inlet)	0.125	1.231	39.831	0.275	OK
7.004	1440 min Summer	911	S138 (Inlet)	S139 (Outlet)	0.166	0.393	7.919	0.003	OK
1.013	1440 min Summer	945	S139 (Outlet)	S140	0.226	0.422	33.784	0.015	OK
1.014	1440 min Summer	926	S140	S141 (Outfall)	0.045	1.692	11.173	0.049	OK

Return Period Yrs: 30.0

Climate Change %: 40

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.784	0.075	33.776		OK
S102	15 min Summer	8	123.418	0.127	92.769		OK
S103	15 min Summer	8	121.990	0.139	109.223		OK
S104	15 min Summer	8	120.493	0.143	126.187		OK
S105	15 min Summer	9	119.699	0.219	153.375		OK
S106	15 min Summer	9	119.443	0.573	202.019		Surcharged
S107	15 min Summer	9	118.817	0.542	217.177		Surcharged
S108	15 min Summer	9	118.534	0.539	334.176		Surcharged
S109	15 min Summer	8	123.464	0.065	23.322		OK
S110	15 min Summer	8	122.814	0.174	177.353		OK
S111	15 min Summer	8	118.500	0.105	28.382		OK
S112	15 min Summer	8	118.057	0.137	81.730		OK
S113	15 min Summer	9	117.735	0.345	607.693		OK
S114	15 min Summer	8	118.198	0.043	11.057		OK
S115	15 min Summer	8	116.253	0.113	79.349		OK
S116	15 min Summer	9	115.697	0.272	141.718		OK
S117	15 min Summer	9	115.590	0.890	948.566		Surcharged
S118	15 min Summer	9	115.373	0.823	994.880		Surcharged
S119	15 min Summer	9	120.003	1.082	118.775		Surcharged
S120	15 min Summer	9	118.707	0.197	204.439		OK
S121	15 min Summer	9	116.855	0.230	255.141		OK
S122	15 min Summer	9	115.205	0.755	1321.410		Surcharged
S123 (Inlet)	15 min Summer	9	115.032	0.682	1390.286		OK
S124	15 min Summer	8	117.514	0.094	40.706		OK
S125	15 min Summer	8	116.641	0.106	40.574		OK
S126	15 min Summer	8	116.362	0.187	149.676		OK
S127	15 min Summer	9	115.051	0.448	180.828		Surcharged
S128	600 min Winter	475	114.985	0.464	3.684		Surcharged
S129	600 min Winter	476	114.985	0.560	3.984		Surcharged
S130	600 min Winter	476	114.985	0.594	3.987		Surcharged
S131 (Inlet)	600 min Winter	476	114.985	0.635	3.989		OK
S132	15 min Summer	8	120.450	0.049	7.772		OK
S133	15 min Summer	8	120.189	0.148	124.381		OK
S134	15 min Summer	8	118.831	0.161	88.110		OK
S135	15 min Summer	8	118.490	0.170	114.603		OK
S136	15 min Summer	8	118.100	0.205	276.750		OK
S137	600 min Winter	477	114.985	0.585	6.555		Surcharged
S138 (Inlet)	600 min Winter	479	114.985	0.635	6.902		OK
S139 (Outlet)	600 min Winter	478	114.985	0.685	37.839		OK
S140 (Control)	600 min Winter	478	114.985	0.735	39.452		Surcharged
S141 (Outfall)	600 min Winter	478	112.234	0.084	39.455		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.101	1.951	33.680	0.240	OK
1.001	15 min Summer	8	S102	S103	0.133	3.777	92.537	0.620	OK
1.002	15 min Summer	8	S103	S104	0.139	4.216	108.745	0.710	OK
1.003	15 min Summer	9	S104	S105	0.180	3.260	125.965	0.469	OK
1.004	15 min Summer	9	S105	S106	0.260	2.668	153.690	0.642	OK
1.005	15 min Winter	9	S106	S107	0.300	2.898	190.831	1.076	Surcharged
1.006	15 min Winter	9	S107	S108	0.375	1.994	204.585	0.989	Surcharged
1.007	15 min Winter	9	S108	S113	0.375	3.022	309.870	1.104	Surcharged
2.000	15 min Summer	8	S109	S110	0.082	2.007	23.261	0.185	OK
2.001	15 min Summer	9	S110	S113	0.183	3.999	176.183	0.653	OK
3.000	15 min Summer	8	S111	S112	0.105	1.542	28.054	0.451	OK
3.001	15 min Summer	9	S112	S113	0.165	2.338	81.545	0.439	OK
1.008	15 min Summer	9	S113	S117	0.398	4.312	607.767	0.970	OK
4.000	15 min Summer	8	S114	S115	0.043	2.087	10.959	0.080	OK
4.001	15 min Summer	9	S115	S116	0.116	3.208	79.234	0.309	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
4.002	15 min Summer	9	S116	S117	0.361	1.216	143.822	0.682	OK
1.009	15 min Summer	10	S117	S118	0.750	2.076	917.194	1.275	Surcharged
1.010	15 min Summer	9	S118	S122	0.750	2.265	1000.780	1.325	Surcharged
5.000	15 min Winter	9	S119	S120	0.225	2.746	109.181	1.776	OK
5.001	15 min Summer	9	S120	S121	0.197	4.152	204.749	0.787	OK
5.002	15 min Summer	9	S121	S122	0.303	3.177	255.524	0.716	OK
1.011	15 min Summer	9	S122	S123 (Inlet)	0.716	3.080	1338.444	1.415	OK
1.012	600 min Winter	462	S123 (Inlet)	S139 (Outlet)	0.666	0.962	149.277	0.071	OK
6.000	15 min Summer	8	S124	S125	0.100	2.369	40.574	0.370	OK
6.001	15 min Summer	8	S125	S126	0.106	2.181	40.344	0.460	OK
6.002	15 min Summer	9	S126	S127	0.280	1.944	148.535	0.515	OK
6.003	720 min Summer	485	S127	S128	0.375	0.862	27.462	0.195	Surcharged
6.004	180 min Summer	143	S128	S129	0.375	1.087	66.282	0.470	Surcharged
6.005	180 min Summer	105	S129	S130	0.375	1.064	72.010	0.511	Surcharged
6.006	60 min Winter	51	S130	S131 (Inlet)	0.375	1.523	99.387	0.705	Surcharged
6.007	600 min Winter	478	S131 (Inlet)	S139 (Outlet)	0.660	0.469	17.309	0.007	OK
7.000	15 min Summer	8	S132	S133	0.061	1.028	7.722	0.106	OK
7.001	15 min Summer	8	S133	S136	0.148	3.546	123.406	0.500	OK
8.000	15 min Summer	8	S134	S135	0.165	2.198	87.827	0.573	OK
8.001	15 min Summer	8	S135	S136	0.170	2.760	114.108	0.628	OK
7.002	15 min Summer	8	S136	S137	0.290	3.008	275.583	0.596	OK
7.003	60 min Winter	53	S137	S138 (Inlet)	0.375	1.939	168.472	1.165	Surcharged
7.004	600 min Winter	479	S138 (Inlet)	S139 (Outlet)	0.660	0.603	32.402	0.012	OK
1.013	600 min Winter	478	S139 (Outlet)	S140	0.710	0.458	56.464	0.025	OK
1.014	600 min Winter	478	S140	S141 (Outfall)	0.084	2.446	39.455	0.174	OK

Return Period Yrs: 100.0

Climate Change %: 45

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S101	15 min Summer	8	124.795	0.086	44.403		OK
S102	15 min Summer	8	123.443	0.153	121.963		OK
S103	15 min Summer	8	122.021	0.171	143.603		OK
S104	15 min Summer	10	120.927	0.577	136.861		Surcharged
S105	15 min Summer	10	120.711	1.231	171.710		Surcharged
S106	15 min Summer	10	120.415	1.545	225.337		Flood Risk
S107	15 min Summer	10	119.627	1.352	243.456		Surcharged
S108	15 min Summer	10	119.272	1.277	370.916		Surcharged
S109	15 min Summer	8	123.474	0.075	30.659		OK
S110	15 min Summer	8	122.851	0.211	233.158		OK
S111	15 min Summer	10	118.542	0.147	29.714		OK
S112	15 min Summer	10	118.482	0.562	84.725		Surcharged
S113	15 min Summer	10	118.409	1.019	673.766		Surcharged
S114	15 min Summer	8	118.204	0.049	14.535		OK
S115	15 min Summer	9	116.302	0.162	100.096		OK
S116	15 min Summer	9	116.138	0.713	184.748		Surcharged
S117	15 min Summer	10	115.859	1.159	1067.700		Surcharged
S118	15 min Summer	9	115.560	1.010	1172.124		Surcharged
S119	15 min Summer	8	120.347	1.425	162.918	3.092	Flood
S120	15 min Summer	8	118.743	0.233	252.612		OK
S121	15 min Summer	8	116.896	0.271	321.111		OK
S122	15 min Summer	10	115.344	0.894	1541.818		Surcharged
S123 (Inlet)	960 min Summer	676	115.192	0.842	33.635		OK
S124	15 min Summer	8	117.530	0.110	53.513		OK
S125	15 min Summer	8	116.660	0.125	53.345		OK
S126	15 min Summer	8	116.397	0.222	196.788		OK
S127	15 min Summer	9	115.322	0.719	237.490		Surcharged
S128	960 min Summer	677	115.192	0.671	4.213		Surcharged
S129	960 min Summer	677	115.192	0.767	4.637		Surcharged
S130	960 min Summer	677	115.192	0.801	4.637		Surcharged
S131 (Inlet)	960 min Summer	677	115.192	0.842	4.637		OK
S132	15 min Summer	8	120.457	0.056	10.217		OK
S133	15 min Summer	8	120.216	0.175	163.521		OK
S134	15 min Summer	8	118.862	0.192	115.831		OK
S135	15 min Summer	8	118.525	0.205	150.659		OK
S136	15 min Summer	8	118.140	0.245	363.841		OK
S137	960 min Summer	677	115.192	0.792	7.703		Surcharged
S138 (Inlet)	960 min Summer	677	115.192	0.842	8.189		OK
S139 (Outlet)	960 min Summer	677	115.192	0.892	46.046		OK
S140 (Control)	960 min Summer	677	115.192	0.942	45.986		Surcharged
S141 (Outfall)	960 min Summer	677	112.241	0.091	45.986		Outfall

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
1.000	15 min Summer	8	S101	S102	0.119	2.064	44.282	0.316	OK
1.001	15 min Summer	8	S102	S103	0.162	3.977	121.666	0.815	OK
1.002	15 min Summer	9	S103	S104	0.196	4.421	142.930	0.933	OK
1.003	15 min Summer	9	S104	S105	0.300	3.286	159.347	0.593	Surcharged
1.004	15 min Winter	9	S105	S106	0.300	2.704	171.865	0.718	Surcharged
1.005	15 min Winter	9	S106	S107	0.300	3.121	220.605	1.244	Surcharged
1.006	15 min Winter	11	S107	S108	0.375	2.181	240.896	1.164	Surcharged
1.007	15 min Winter	10	S108	S113	0.375	3.257	359.777	1.282	Surcharged
2.000	15 min Summer	8	S109	S110	0.105	2.074	30.583	0.243	OK
2.001	15 min Summer	8	S110	S113	0.255	3.964	231.734	0.860	OK
3.000	15 min Summer	10	S111	S112	0.186	1.608	37.108	0.597	OK
3.001	15 min Summer	9	S112	S113	0.300	2.237	100.399	0.540	Surcharged
1.008	15 min Winter	11	S113	S117	0.450	4.379	650.703	1.039	OK
4.000	15 min Summer	9	S114	S115	0.068	2.070	14.463	0.105	OK
4.001	15 min Summer	9	S115	S116	0.231	3.212	104.092	0.406	OK

Conduits

Pipe No.	Critical Storm	Peak (mins)	US Manhole	DS Manhole	Flow Depth (m)	Max Velocity (m/s)	Max Flow (l/s)	Flow / Capacity	Status
4.002	15 min Winter	10	S116	S117	0.450	1.207	165.664	0.785	OK
1.009	15 min Winter	10	S117	S118	0.750	2.337	1032.260	1.435	Surcharged
1.010	30 min Summer	17	S118	S122	0.750	2.550	1126.595	1.491	Surcharged
5.000	15 min Winter	9	S119	S120	0.225	3.363	133.703	2.175	OK
5.001	15 min Summer	8	S120	S121	0.233	4.279	251.991	0.968	OK
5.002	15 min Summer	8	S121	S122	0.323	3.358	320.227	0.898	OK
1.011	15 min Summer	10	S122	S123 (Inlet)	0.750	3.543	1565.026	1.655	Surcharged
1.012	960 min Summer	676	S123 (Inlet)	S139 (Outlet)	0.867	1.022	224.949	0.107	OK
6.000	15 min Summer	8	S124	S125	0.118	2.536	53.345	0.487	OK
6.001	15 min Summer	8	S125	S126	0.125	2.332	53.057	0.605	OK
6.002	15 min Summer	8	S126	S127	0.298	2.074	195.373	0.677	OK
6.003	15 min Winter	9	S127	S128	0.375	1.979	218.603	1.551	Surcharged
6.004	15 min Winter	9	S128	S129	0.375	1.979	218.603	1.551	Surcharged
6.005	30 min Summer	28	S129	S130	0.375	2.139	233.949	1.660	Surcharged
6.006	30 min Winter	24	S130	S131 (Inlet)	0.375	2.128	192.720	1.368	Surcharged
6.007	960 min Summer	677	S131 (Inlet)	S139 (Outlet)	0.867	0.530	23.617	0.010	OK
7.000	15 min Summer	8	S132	S133	0.078	1.030	10.157	0.139	OK
7.001	15 min Summer	8	S133	S136	0.175	3.786	162.234	0.657	OK
8.000	15 min Summer	8	S134	S135	0.198	2.329	115.458	0.754	OK
8.001	15 min Summer	8	S135	S136	0.204	2.925	150.025	0.825	OK
7.002	15 min Summer	8	S136	S137	0.310	3.712	362.378	0.784	OK
7.003	30 min Summer	24	S137	S138 (Inlet)	0.375	3.691	403.281	2.788	Surcharged
7.004	960 min Summer	677	S138 (Inlet)	S139 (Outlet)	0.867	0.681	46.802	0.018	OK
1.013	960 min Summer	677	S139 (Outlet)	S140	0.917	0.426	45.987	0.021	OK
1.014	960 min Summer	677	S140	S141 (Outfall)	0.091	2.555	45.986	0.203	OK