

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S32	1.302	1800	Type B	38.737	36.120	1.867	526063.349	122870.845
S104	0.000	1800	Type C	36.200	35.200	0.250	526056.537	122798.242
S105	0.058	1800	Type C	36.000	35.130	0.120	526050.902	122758.542
S33	0.052	1800	Type C	36.000	34.730	0.520	526042.366	122736.080
S34	0.226	---	Type C	35.200	34.470	-0.170	526034.333	122698.682
S31OC	0.024	1500	Type C	35.200	34.010	0.890	525961.730	122675.073
S6	0.000	1350	Type C	40.064	38.740	1.174	526011.007	122854.002
S96	0.000	1350	Type C	37.847	36.810	0.887	525987.018	122781.648
S7	0.000	1350	Type C	37.675	36.400	1.125	525978.970	122765.474
S8	0.982	1500	Type C	37.341	36.310	0.881	525959.542	122751.184
S9	0.117	1500	Type C	36.767	36.140	0.102	525912.272	122724.736
S10	0.075	---	Type C	37.000	36.080	0.395	525906.831	122717.842
S14 OC	0.000	1500	Type C	37.000	35.990	0.785	525920.192	122698.339
S13CP	0.000	1350	Type C	35.199	33.590	1.309	525919.758	122680.675
S26	0.085	1350	Type C	34.420	32.785	1.335	525908.991	122671.514
S27	0.078	1350	Type B	33.028	31.074	1.654	525901.910	122649.594
S28	0.032	1200	Type B	32.184	30.047	1.837	525888.117	122637.915
S15	0.819	1500	Type C	35.328	33.690	1.113	525832.057	122711.380
S11 OC	0.008	1500	Type C	34.300	33.300	0.775	525835.605	122696.094
S22	0.153	1350	Type C	33.860	32.310	1.325	525844.619	122681.626
S23	0.109	1350	Type B	31.175	29.210	1.590	525844.868	122634.848
S24	0.009	1350	Type B	30.122	27.980	1.767	525820.584	122629.826
S25	0.052	1350	Type B	28.897	26.874	1.648	525806.704	122612.016
S16	0.188	1350	Type C	33.388	31.920	1.168	525795.834	122684.191
S108	0.051	1350	Type C	31.047	29.663	1.234	525762.275	122635.322
S17	0.183	1350	Type B	30.602	28.703	1.524	525793.666	122635.073
S115	0.000	1350	Type B	29.059	27.111	1.573	525790.747	122612.278
S111	0.105	1200	Type B	27.239	25.395	1.544	525773.885	122580.966
S18	0.000	1350	Type B	27.507	24.950	2.182	525790.948	122581.370
S109	0.000	1350	Type C	27.273	25.925	1.197	525798.546	122591.383
S95CP	0.000	1350	Type B	27.351	24.625	2.350	525798.581	122580.002
S116	0.000	1350	Type B	27.080	24.328	2.377	525805.840	122577.649
S113CP	0.155	1200	Type B	27.118	24.870	1.948	525838.692	122581.891
S117	0.000	1200	Type B	26.100	24.100	1.700	525828.875	122568.304
S29	0.111	1500	Type C	26.100	24.100	1.475	525822.408	122568.762
S30	0.000	1500	Type B	26.816	23.710	2.581	525774.042	122571.858
S19 CP	0.000	1500	Type B	26.714	23.580	2.609	525805.637	122569.574
S20	0.000	2100	Type B	26.348	23.525	2.299	525803.542	122561.586
S99	0.054	1350	Type C	25.584	24.067	1.367	525834.587	122546.924
S100	0.045	1500	Type B	25.739	23.303	1.911	525798.454	122548.222
S36	0.115	1500	Type B	25.210	22.920	1.765	525795.130	122535.876
S97	0.078	1350	Type C	24.751	23.354	1.171	525760.029	122525.031
S98	0.000	1500	Type B	24.697	22.480	1.692	525793.638	122523.666
S37	0.156	1500	Type C	23.618	22.070	1.023	525798.700	122492.493
S38	0.000	1500	Type C	23.245	21.896	0.824	525805.614	122457.925
S119	0.000	1500	Type C	23.150	21.853	0.772	525824.263	122449.988
S101	0.205	1350	Type C	24.840	23.320	1.220	525896.361	122523.364
S102	0.075	1350	Type B	24.659	22.333	1.951	525860.625	122525.092
S103	0.146	1350	Type C	23.093	21.976	0.668	525859.323	122461.607
S118	0.000	1350	Type C	23.150	21.916	0.784	525845.018	122449.193
S35	0.192	1500	Type C	23.000	21.950	0.525	525794.574	122450.269
S120	0.000	1500	Type C	23.150	21.861	0.764	525823.254	122448.270
S3	0.124	1500	Type C	23.150	21.848	0.852	525827.100	122447.602
S2	0.000	2100	Type C	23.000	21.832	0.643	525822.709	122442.111
S1	0.000	2100	Type C	21.885	21.800	-0.440	525821.402	122432.592

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.000	S32	36.120	S104	35.200	Circ	750	72.922	79	0.600	1.867	0.250
1.001	S104	35.200	S105	35.130	Circ	750	40.097	573	0.600	0.250	0.120

Pipe Schedule

Pipe Number	US Manhole	US IL (m)	DS Manhole	DS IL (m)	Shape	Dimension (mm)	Length (m)	Gradient (1:x)	Roughness (mm)	US Depth To Soffit (m)	DS Depth To Soffit (m)
1.002	S105	35.130	S33	34.730	Circ	750	24.030	60	0.600	0.120	0.520
1.003	S33	34.730	S34	34.620	Circ	750	38.251	348	0.600	0.520	-0.170
1.004	S34	34.470	S31OC	34.010	Circ	900	76.345	166	0.600	-0.170	0.290
1.005	S31OC	34.010	S13CP	33.590	Circ	300	42.345	101	0.600	0.890	1.309
2.000	S6	38.740	S96	36.810	Circ	150	76.227	39	0.600	1.174	0.887
2.001	S96	36.810	S7	36.400	Circ	150	18.065	44	0.600	0.887	1.125
2.002	S7	36.400	S8	36.310	Circ	150	24.118	268	0.600	1.125	0.881
2.003	S8	36.310	S9	36.140	Circ	525	54.166	319	0.600	0.506	0.102
2.004	S9	36.140	S10	36.080	Circ	525	8.782	146	0.600	0.102	0.395
2.005	S10	36.080	S14 OC	35.990	Circ	525	23.641	263	0.600	0.395	0.485
2.006	S14 OC	35.990	S13CP	33.665	Circ	225	17.669	8	0.600	0.785	1.309
1.006	S13CP	33.590	S26	32.785	Circ	300	14.137	18	0.600	1.309	1.335
1.007	S26	32.785	S27	31.074	Circ	300	23.035	13	0.600	1.335	1.654
1.008	S27	31.074	S28	30.047	Circ	300	18.074	18	0.600	1.654	1.837
1.009	S28	30.047	S23	29.285	Circ	300	43.357	57	0.600	1.837	1.590
3.000	S15	33.690	S11 OC	33.300	Circ	525	15.692	40	0.600	1.113	0.475
3.001	S11 OC	33.300	S22	32.310	Circ	225	17.047	17	0.600	0.775	1.325
3.002	S22	32.310	S23	29.360	Circ	225	46.779	16	0.600	1.325	1.590
1.010	S23	29.210	S24	27.980	Circ	375	24.797	20	0.600	1.590	1.767
1.011	S24	27.980	S25	26.874	Circ	375	22.580	20	0.600	1.767	1.648
1.012	S25	26.874	S116	24.328	Circ	375	34.378	14	0.600	1.648	2.377
4.000	S16	31.920	S17	28.778	Circ	300	49.166	16	0.600	1.168	1.524
5.000	S108	29.663	S17	28.928	Circ	150	31.391	43	0.600	1.234	1.524
4.001	S17	28.703	S115	27.111	Circ	375	22.981	14	0.600	1.524	1.573
4.002	S115	27.111	S18	25.875	Circ	375	30.909	25	0.600	1.573	1.257
6.000	S111	25.395	S18	25.025	Circ	300	17.068	46	0.600	1.544	2.182
4.003	S18	24.950	S95CP	24.625	Circ	375	7.754	24	0.600	2.182	2.350
7.000	S109	25.925	S95CP	25.650	Circ	150	11.381	41	0.600	1.197	1.551
4.004	S95CP	24.625	S116	24.328	Circ	375	7.632	26	0.600	2.350	2.377
1.013	S116	24.328	S19 CP	23.730	Circ	375	8.078	14	0.600	2.377	2.609
8.000	S113CP	24.870	S117	24.100	Circ	300	16.762	22	0.600	1.948	1.700
8.001	S117	24.100	S29	24.475	Circ	300	6.484	17	0.600	1.700	1.325
8.002	S29	24.100	S19 CP	23.580	Circ	525	16.790	32	0.600	1.475	2.609
9.000	S30	23.710	S19 CP	23.580	Circ	525	31.678	244	0.600	2.581	2.609
1.014	S19 CP	23.580	S20	23.525	Circ	525	8.259	149	0.600	2.609	2.299
1.015	S20	23.525	S100	23.303	Circ	525	14.299	64	0.600	2.299	1.911
10.000	S99	24.067	S100	23.678	Circ	150	36.157	93	0.600	1.367	1.911
1.016	S100	23.303	S36	22.920	Circ	525	12.785	33	0.600	1.911	1.765
1.017	S36	22.920	S98	22.480	Circ	525	12.301	28	0.600	1.765	1.692
11.000	S97	23.354	S98	22.780	Circ	225	33.636	59	0.600	1.171	1.692
1.018	S98	22.480	S37	22.070	Circ	525	31.582	77	0.600	1.692	1.023
1.019	S37	22.070	S38	21.896	Circ	525	35.252	202	0.600	1.023	0.824
1.020	S38	21.896	S119	21.853	Circ	525	20.268	471	0.600	0.824	0.772
1.021	S119	21.853	S3	21.848	Circ	525	3.707	842	0.600	0.772	0.777
12.000	S101	23.320	S102	22.408	Circ	300	35.778	39	0.600	1.220	1.951
12.001	S102	22.333	S103	22.051	Circ	375	63.498	225	0.600	1.951	0.668
12.002	S103	21.976	S118	21.916	Circ	450	18.941	317	0.600	0.668	0.784
12.003	S118	21.916	S3	21.848	Circ	450	17.989	266	0.600	0.784	0.852
13.000	S35	21.950	S120	21.861	Circ	525	28.749	321	0.600	0.525	0.764
13.001	S120	21.861	S3	21.848	Circ	525	3.903	321	0.600	0.764	0.777
1.022	S3	21.848	S2	21.832	Circ	525	7.031	429	0.600	0.777	0.643
1.023	S2	21.832	S1	21.800	Circ	525	9.609	300	0.600	0.643	-0.440

Outfall Details

Outfall Manhole S1 : Free Discharge

Flow Control Details

Controls within Manhole S31OC

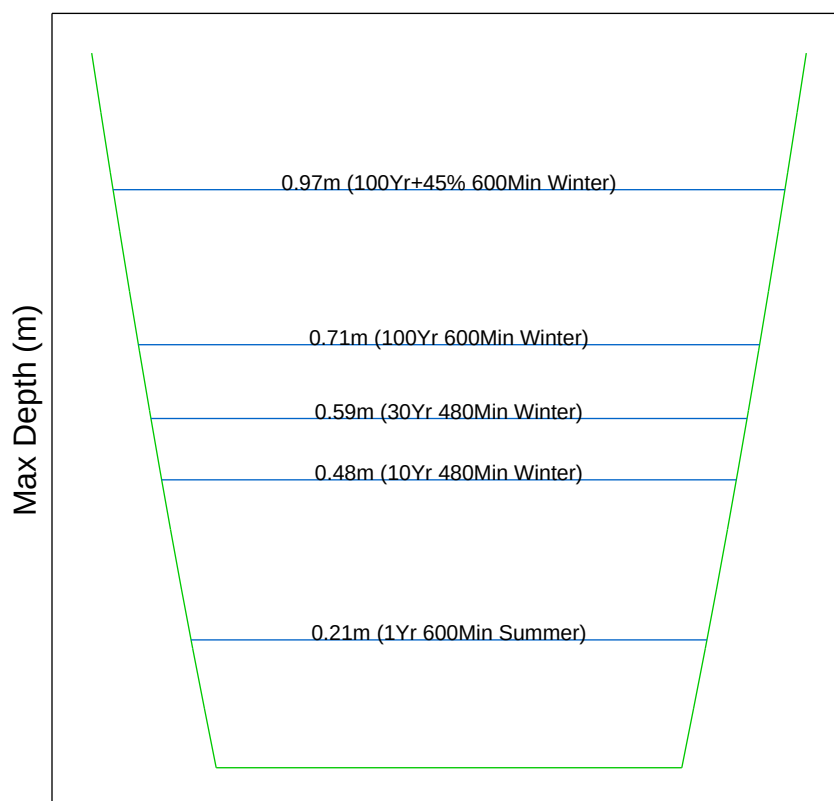
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.075	0.600

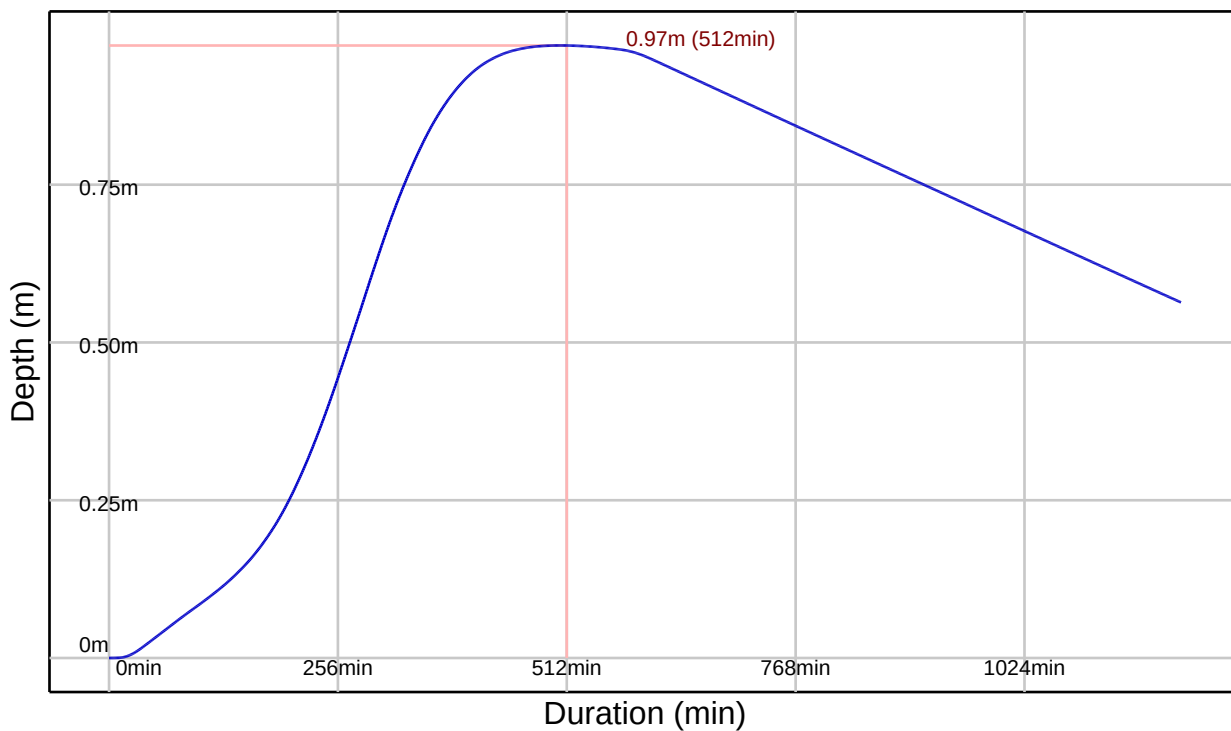
Pond Structure at Manhole S31OC

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
34.000	1.200	595.916	34.900	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S31OC



Pond 8 at S31OC (100Yr+45% 600Min Winter)



Controls within Manhole S14 OC

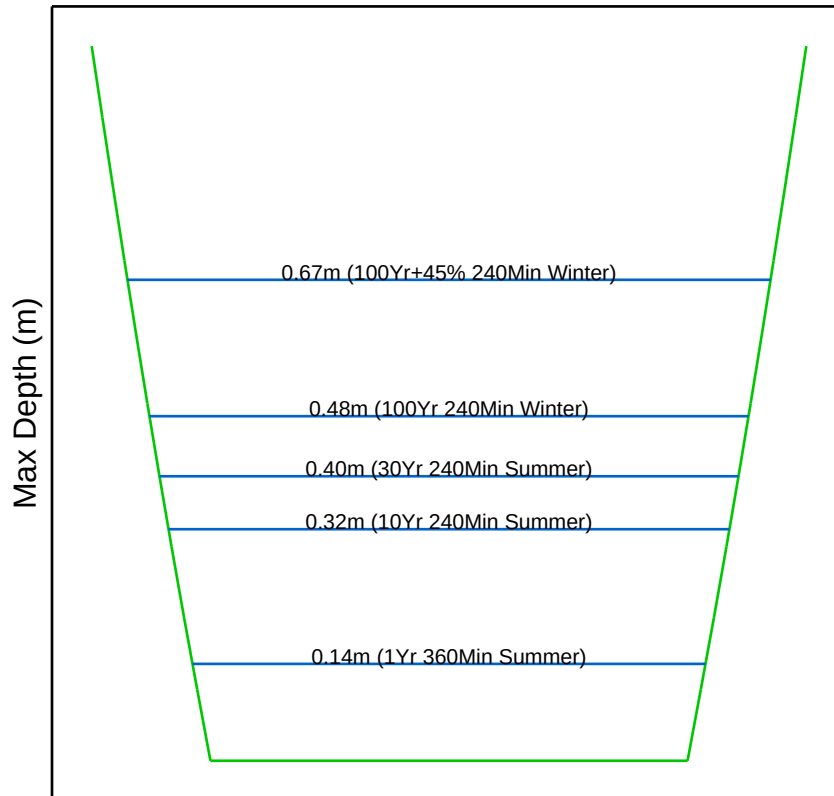
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.100	0.600

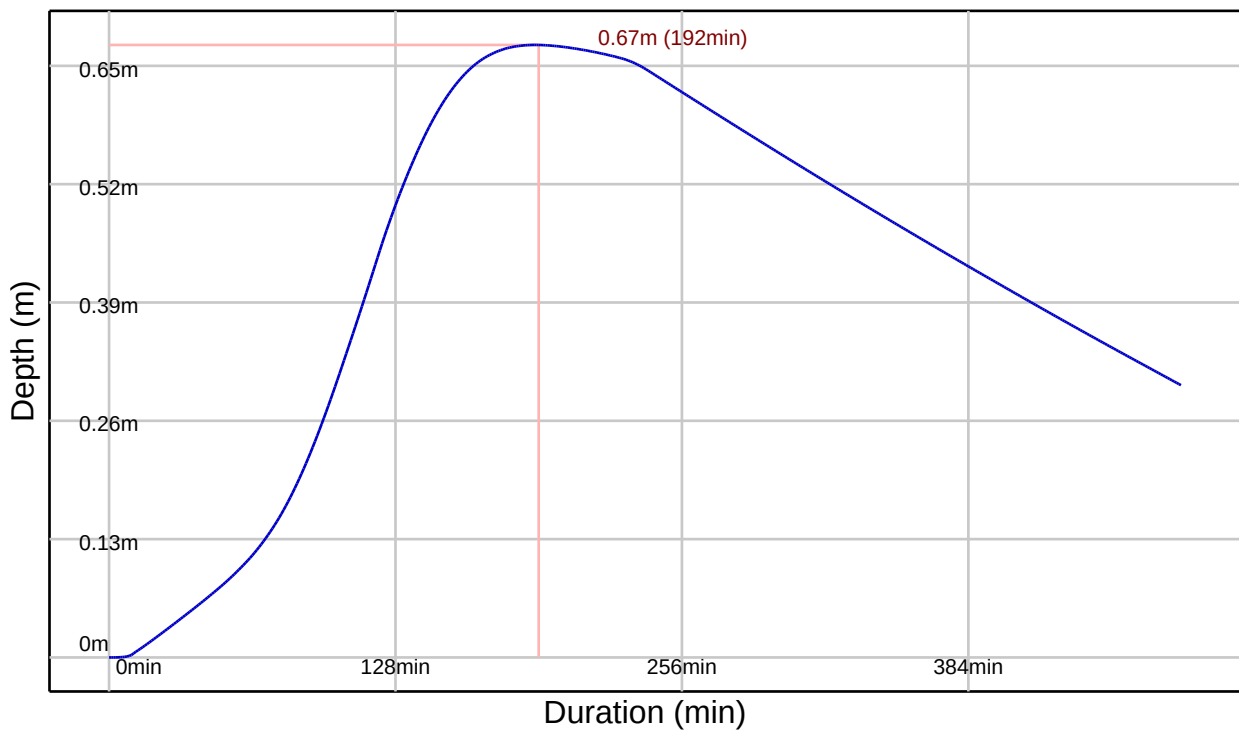
Pond Structure at Manhole S14 OC

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
36.000	1.000	323.592	36.700	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S14 OC



Pond 12 at S14 OC (100Yr+45% 240Min Winter)



Controls within Manhole S11 OC

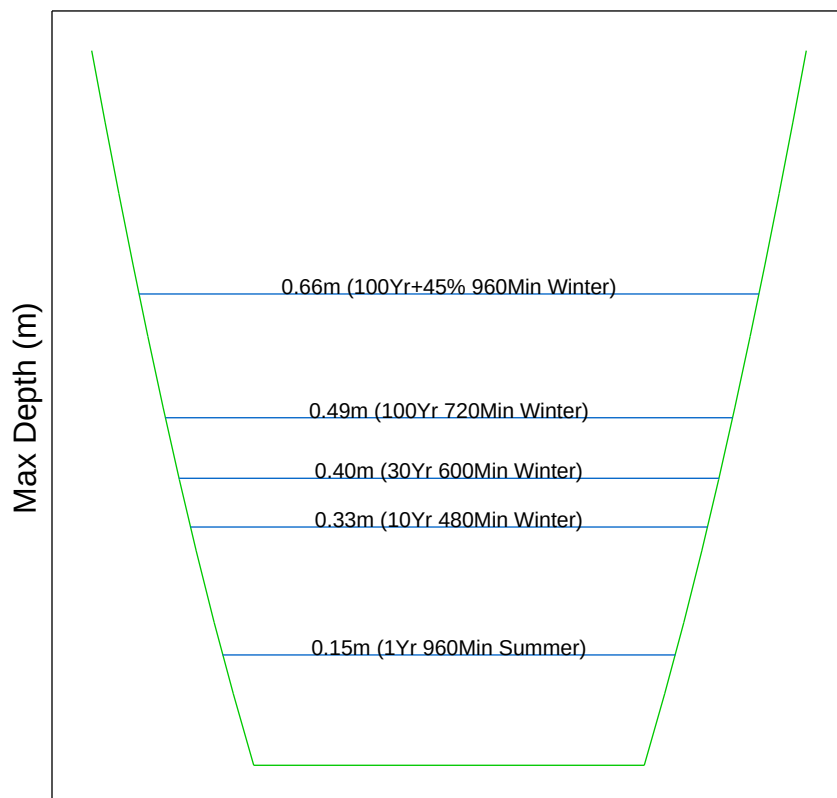
Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.000	0.050	0.600

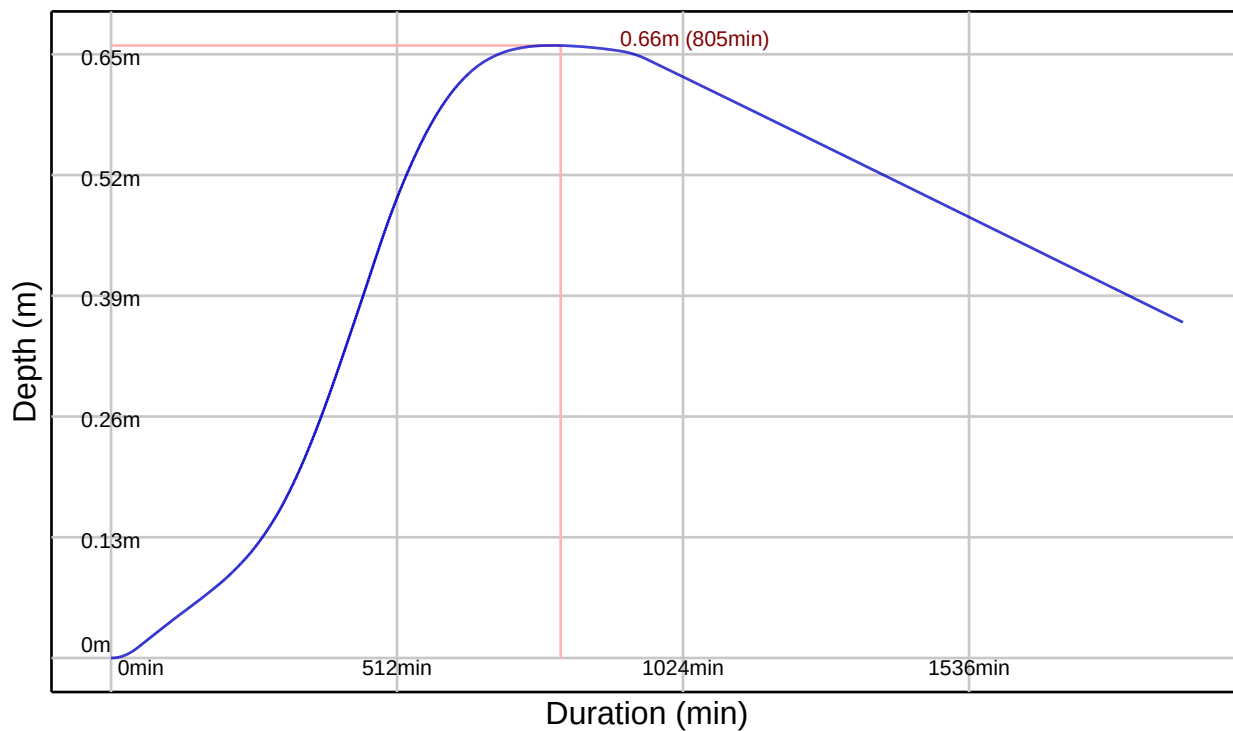
Pond Structure at Manhole S11 OC

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
33.300	1.000	423.433	34.000	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S11 OC



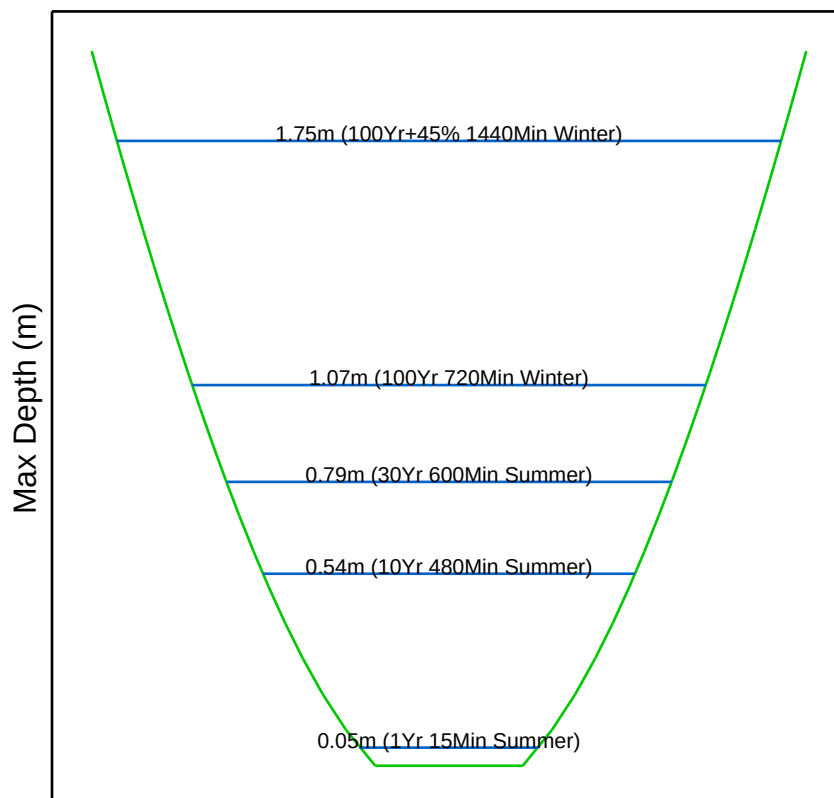
Pond 10 at S11 OC (100Yr+45% 960Min Winter)



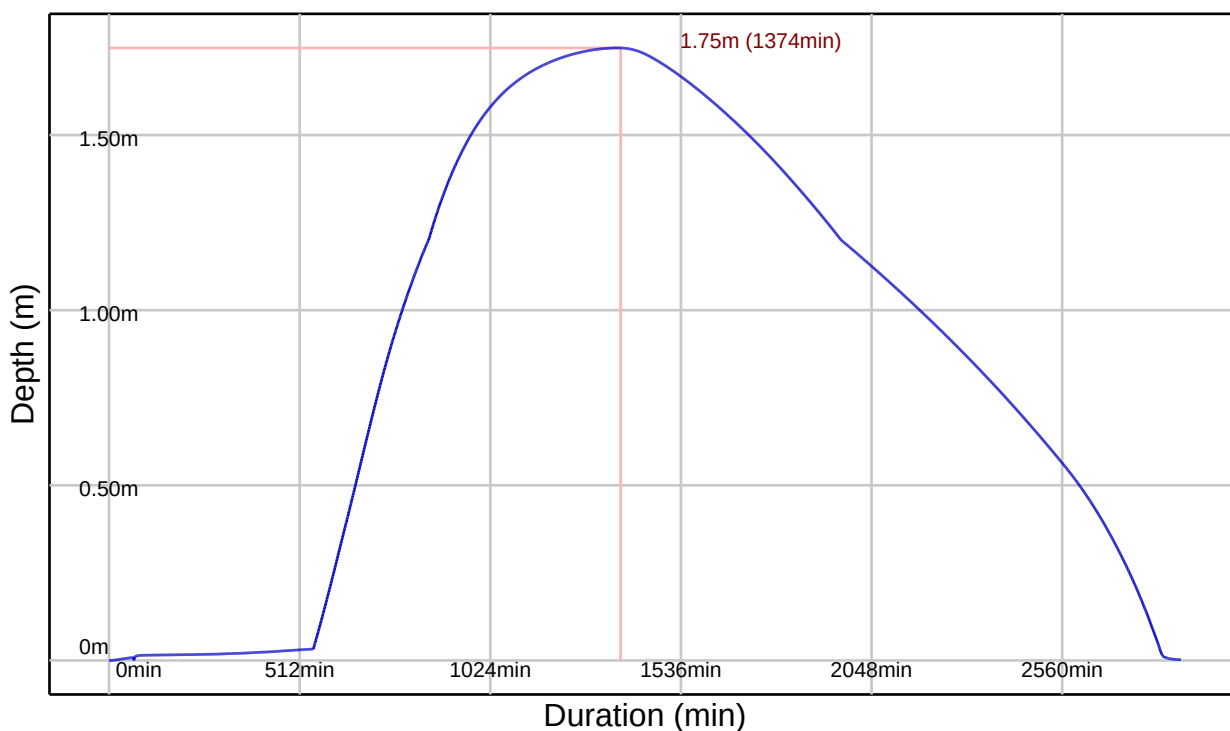
Pond Structure at Manhole S29

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
24.100	2.000	765.235	25.800	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S29



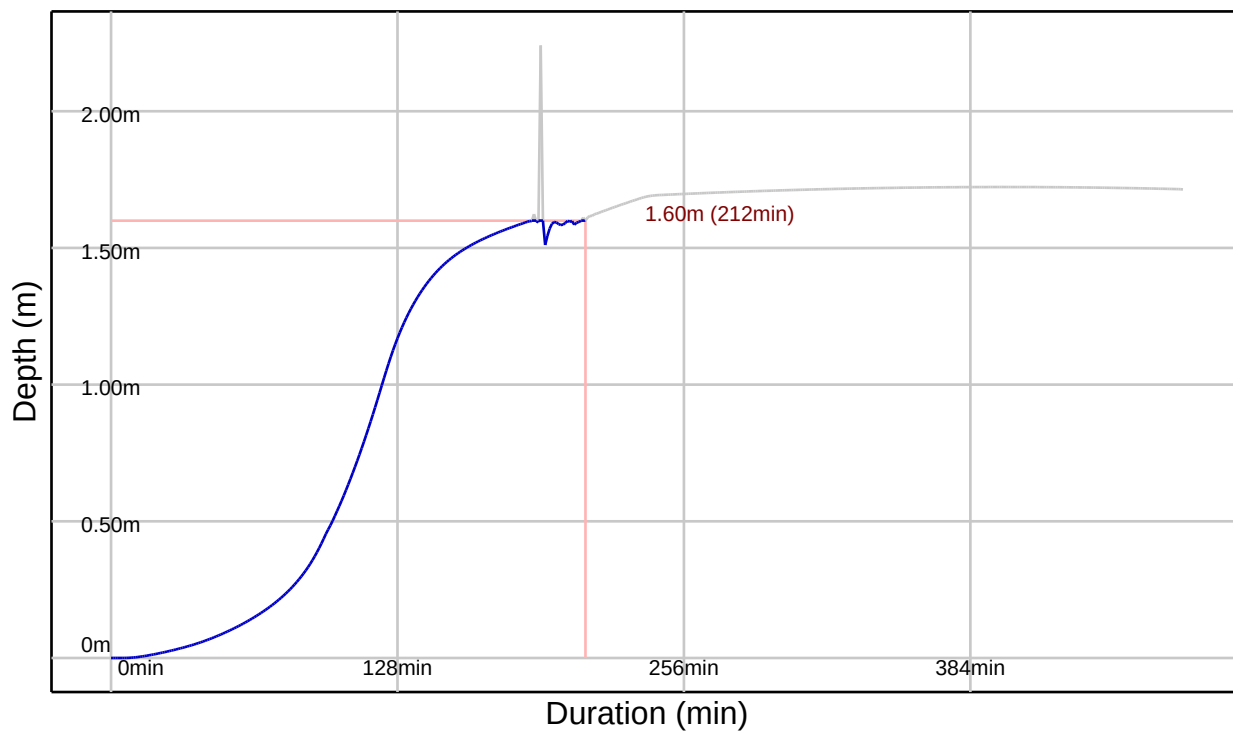
Pond 3 at S29 (100Yr+45% 1440Min Winter)



Tank Structure at Manhole S30

Tank Invert (m)	Tank Height (m)	Porosity Ratio (%)	Area (m2)	Effective Area (m2) Area x Porosity Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
23.700	1.600	95.00	350.560	333.032	532.851	0.00000000	0.00000000	2.00

Tank 1 at S30 (100Yr+45% 240Min Summer)

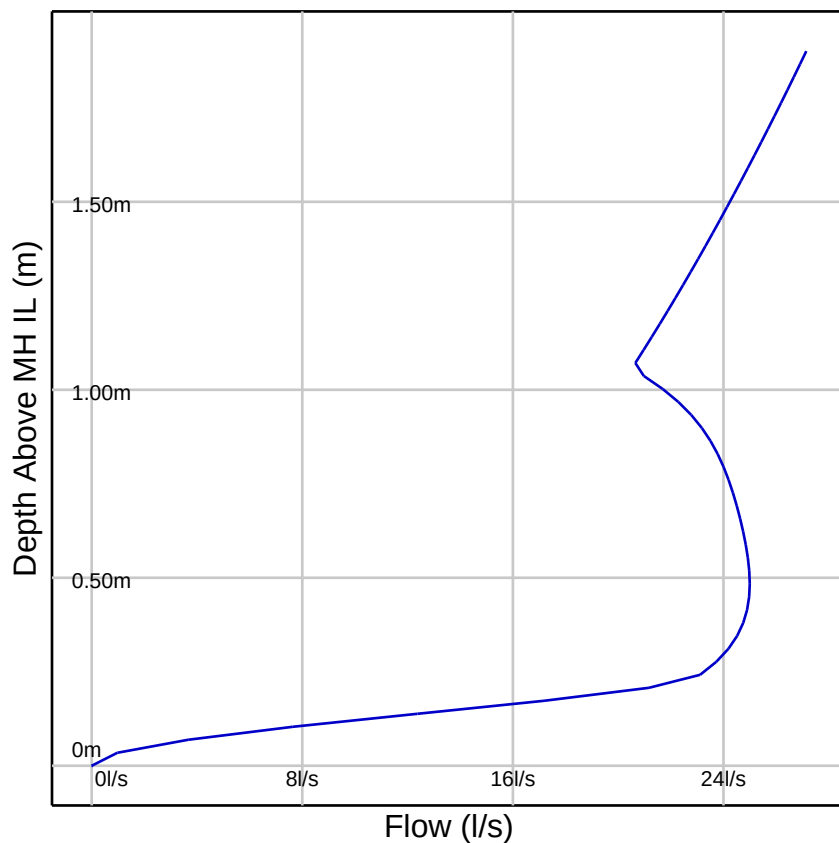


Controls within Manhole S20

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0211-2500-1600-2500	1.600	25.000	0.000	0.484	24.998	1.055	20.500

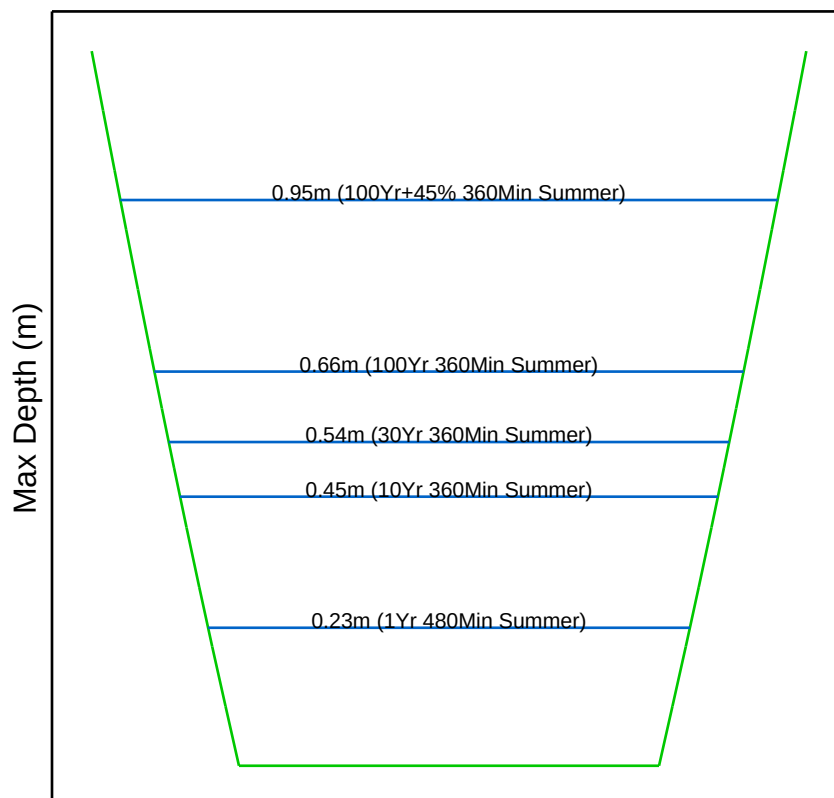
Hydro-Brake® Optimum Control from S20 to S100



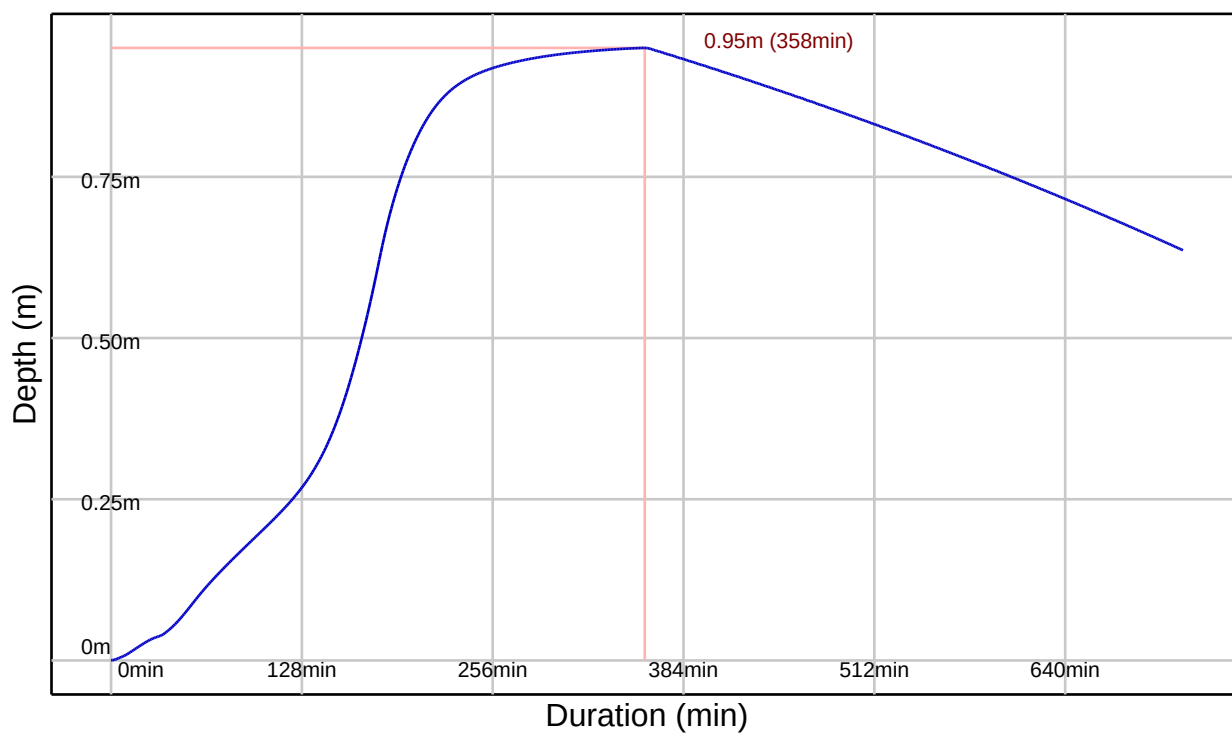
Pond Structure at Manhole S35

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
21.950	1.200	259.731	22.850	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S35



Pond 9 at S35 (100Yr+45% 360Min Summer)

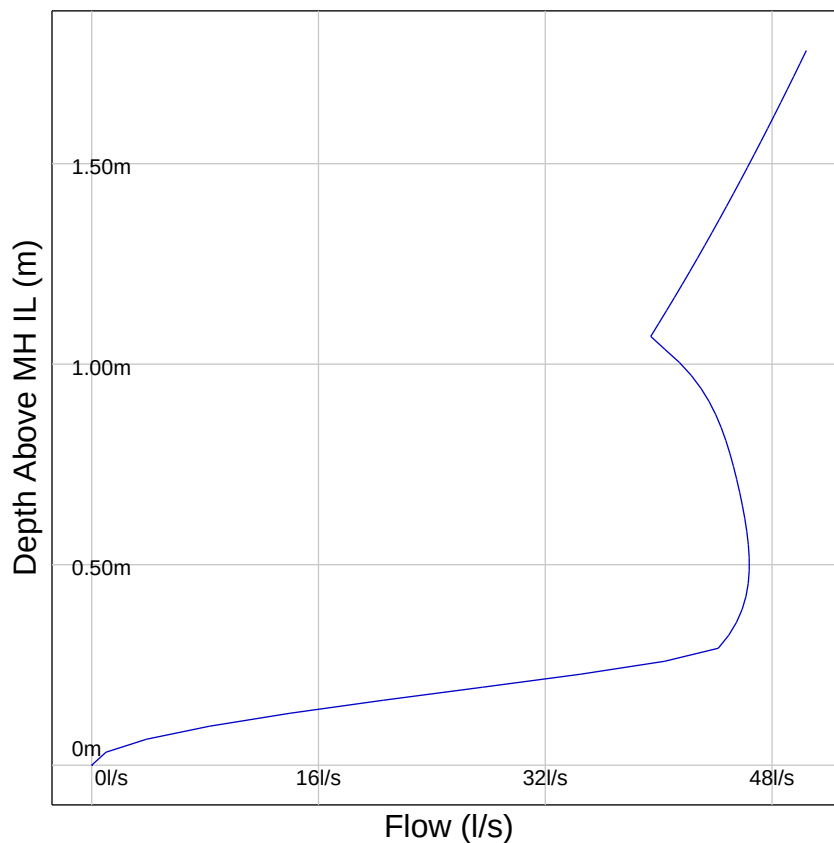


Controls within Manhole S2

Hydro-Brake® Optimum Control

Model Ref	Design Depth (m)	Design Flow (l/s)	Invert Offset (m)	FF Head (m)	FF Flow (l/s)	KF Head (m)	KF Flow (l/s)
SHE-0279-4640-1500-4640	1.500	46.400	0.000	0.500	46.396	1.064	39.347

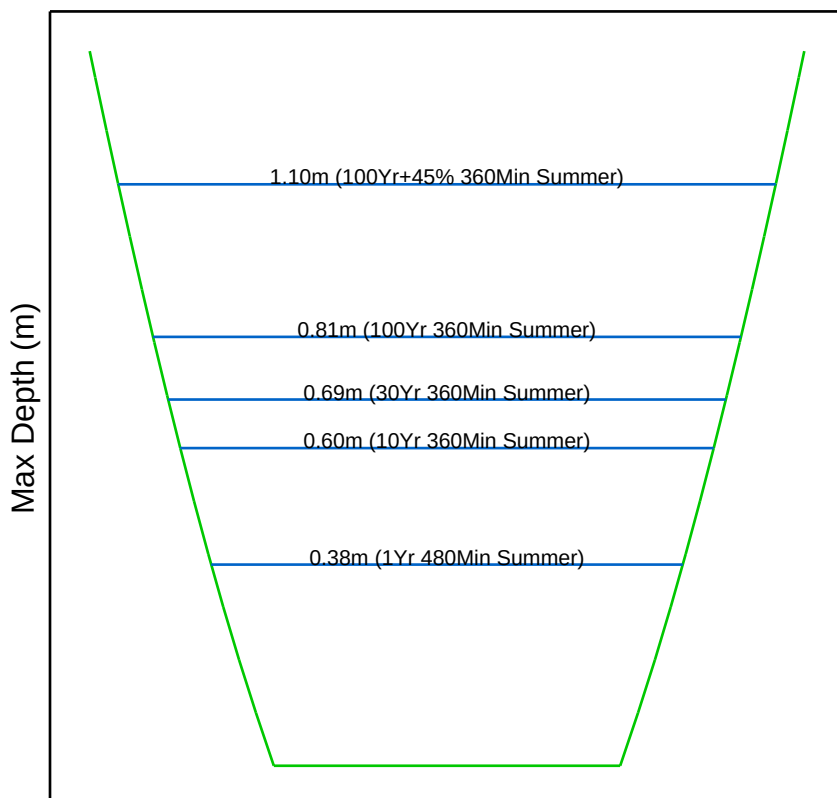
Hydro-Brake® Optimum Control from S2 to S1



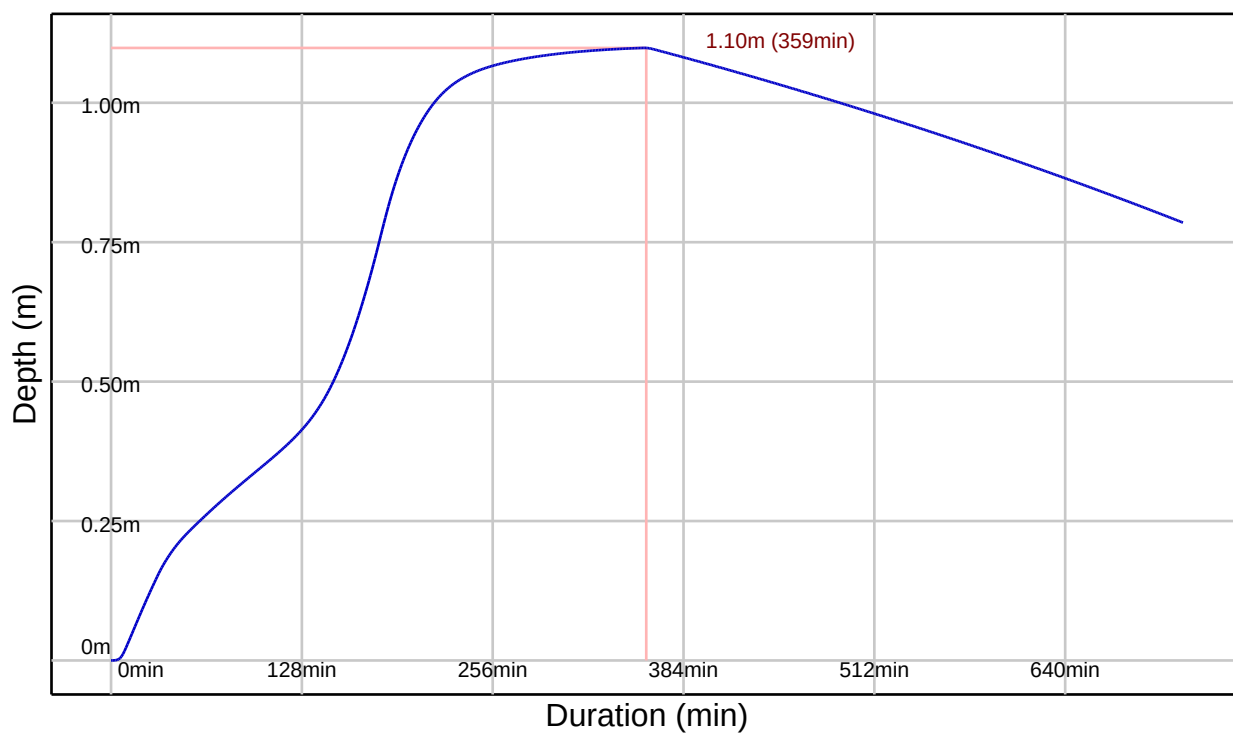
Pond Structure at Manhole S2

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
21.800	1.350	552.572	22.850	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at S2



Pond 1 at S2 (100Yr+45% 360Min Summer)



Simulation Settings

FEH2022 (point): Filename=FEH_Point_Descriptors_525634_122741_v5_1_0.xml

Summer (Cv min: 0.40, max: 1.00), Winter (Cv min: 0.40, max: 1.00)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 8640, 10080

Return Periods (yrs) + Climate Change: (1, +0%), (10, +0%), (30, +0%), (100, +0%), (100, +45%)

Manhole Flood Risk Freeboard: 0.300m

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
1Yr 15Min Winter	14.400	0.00	-0.03	30Yr 480Min Summer	7.403	0.00	0.15
1Yr 15Min Summer	14.400	0.00	-0.02	30Yr 480Min Winter	7.403	0.00	0.15
1Yr 30Min Winter	9.543	0.00	0.05	30Yr 600Min Summer	6.218	0.00	0.04
1Yr 30Min Summer	9.543	0.00	0.03	30Yr 600Min Winter	6.218	0.00	0.04
1Yr 60Min Winter	6.143	0.00	0.04	30Yr 720Min Summer	5.382	0.00	-0.01
1Yr 60Min Summer	6.143	0.00	0.05	30Yr 720Min Winter	5.382	0.00	-0.01
1Yr 120Min Winter	5.157	0.00	0.02	30Yr 960Min Summer	4.291	0.00	0.00
1Yr 120Min Summer	5.157	0.00	0.04	30Yr 960Min Winter	4.291	0.00	0.00
1Yr 180Min Summer	4.455	0.00	0.02	30Yr 1440Min Summer	3.109	0.00	0.01
1Yr 180Min Winter	4.455	0.00	0.01	30Yr 1440Min Winter	3.109	0.00	0.01
1Yr 240Min Summer	3.755	0.00	0.00	30Yr 8640Min Summer	0.851	0.00	0.00
1Yr 240Min Winter	3.755	0.00	0.01	30Yr 8640Min Winter	0.851	0.00	0.00
1Yr 360Min Summer	2.978	0.00	0.03	30Yr 10080Min Summer	0.777	0.00	0.00
1Yr 360Min Winter	2.978	0.00	0.02	30Yr 10080Min Winter	0.777	0.00	0.00
1Yr 480Min Winter	2.505	0.00	0.02	100Yr 15Min Summer	100.383	0.00	0.25
1Yr 480Min Summer	2.505	0.00	0.03	100Yr 15Min Winter	100.383	0.00	0.24
1Yr 600Min Summer	2.157	0.00	0.04	100Yr 30Min Summer	67.241	0.00	0.32
1Yr 600Min Winter	2.157	0.00	0.03	100Yr 30Min Winter	67.241	0.00	0.32
1Yr 720Min Winter	1.898	0.00	0.03	100Yr 60Min Summer	43.178	0.00	0.47
1Yr 720Min Summer	1.898	0.00	0.04	100Yr 60Min Winter	43.178	0.00	0.46
1Yr 960Min Summer	1.561	0.00	0.04	100Yr 120Min Summer	26.048	0.00	0.45
1Yr 960Min Winter	1.561	0.00	0.03	100Yr 120Min Winter	26.048	0.00	0.48
1Yr 1440Min Summer	1.178	0.00	0.03	100Yr 180Min Summer	19.245	0.00	0.45
1Yr 1440Min Winter	1.178	0.00	0.02	100Yr 180Min Winter	19.245	0.00	0.45
1Yr 8640Min Summer	0.429	0.00	0.00	100Yr 240Min Summer	15.588	0.00	0.43
1Yr 8640Min Winter	0.429	0.00	0.00	100Yr 240Min Winter	15.588	0.00	0.43
1Yr 10080Min Summer	0.405	0.00	0.00	100Yr 360Min Summer	11.485	0.00	0.35
1Yr 10080Min Winter	0.405	0.00	0.00	100Yr 360Min Winter	11.485	0.00	0.36
10Yr 15Min Summer	61.131	0.00	-0.02	100Yr 480Min Summer	9.230	0.00	0.28
10Yr 15Min Winter	61.131	0.00	-0.02	100Yr 480Min Winter	9.230	0.00	0.28
10Yr 30Min Summer	40.365	0.00	0.11	100Yr 600Min Summer	7.789	0.00	0.19
10Yr 30Min Winter	40.365	0.00	0.10	100Yr 600Min Winter	7.789	0.00	0.20
10Yr 60Min Summer	25.483	0.00	0.17	100Yr 720Min Summer	6.775	0.00	0.12
10Yr 60Min Winter	25.483	0.00	0.16	100Yr 720Min Winter	6.775	0.00	0.12
10Yr 120Min Summer	16.279	0.00	0.17	100Yr 960Min Summer	5.435	0.00	-0.01
10Yr 120Min Winter	16.279	0.00	0.18	100Yr 960Min Winter	5.435	0.00	-0.01
10Yr 180Min Summer	12.362	0.00	0.20	100Yr 1440Min Summer	3.970	0.00	0.01
10Yr 180Min Winter	12.362	0.00	0.19	100Yr 1440Min Winter	3.970	0.00	0.01
10Yr 240Min Summer	10.009	0.00	0.16	100Yr 8640Min Summer	1.035	0.00	0.00
10Yr 240Min Winter	10.009	0.00	0.15	100Yr 8640Min Winter	1.035	0.00	0.00
10Yr 360Min Summer	7.416	0.00	0.05	100Yr 10080Min Summer	0.935	0.00	0.00
10Yr 360Min Winter	7.416	0.00	0.04	100Yr 10080Min Winter	0.935	0.00	0.00
10Yr 480Min Summer	5.972	0.00	-0.02	100Yr+45% 15Min Summer	145.555	0.00	0.31
10Yr 480Min Winter	5.972	0.00	-0.02	100Yr+45% 15Min Winter	145.555	0.00	0.33
10Yr 600Min Summer	5.020	0.00	-0.00	100Yr+45% 30Min Summer	97.499	0.00	0.63
10Yr 600Min Winter	5.020	0.00	-0.00	100Yr+45% 30Min Winter	97.499	0.00	0.64
10Yr 720Min Winter	4.344	0.00	0.00	100Yr+45% 60Min Summer	62.609	0.00	0.79
10Yr 720Min Summer	4.344	0.00	0.00	100Yr+45% 60Min Winter	62.609	0.00	0.81
10Yr 960Min Winter	3.465	0.00	0.00	100Yr+45% 120Min Summer	37.769	0.00	0.85
10Yr 960Min Summer	3.465	0.00	0.01	100Yr+45% 120Min Winter	37.769	0.00	0.85
10Yr 1440Min Summer	2.517	0.00	0.01	100Yr+45% 180Min Summer	27.905	0.00	1.96
10Yr 1440Min Winter	2.517	0.00	0.01	100Yr+45% 180Min Winter	27.905	0.00	1.06
10Yr 8640Min Summer	0.726	0.00	0.00	100Yr+45% 240Min Summer	22.603	0.00	2.11
10Yr 8640Min Winter	0.726	0.00	0.00	100Yr+45% 240Min Winter	22.603	0.00	1.37

Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
10Yr 10080Min Summer	0.667	0.00	0.00	100Yr+45% 360Min Summer	16.654	0.00	0.92
10Yr 10080Min Winter	0.667	0.00	0.00	100Yr+45% 360Min Winter	16.654	0.00	2.25
30Yr 15Min Summer	79.814	0.00	0.15	100Yr+45% 480Min Summer	13.384	0.00	2.82
30Yr 15Min Winter	79.814	0.00	0.15	100Yr+45% 480Min Winter	13.384	0.00	3.02
30Yr 30Min Summer	53.125	0.00	0.26	100Yr+45% 600Min Summer	11.293	0.00	0.46
30Yr 30Min Winter	53.125	0.00	0.23	100Yr+45% 600Min Winter	11.293	0.00	0.86
30Yr 60Min Summer	33.742	0.00	0.28	100Yr+45% 720Min Summer	9.823	0.00	0.33
30Yr 60Min Winter	33.742	0.00	0.26	100Yr+45% 720Min Winter	9.823	0.00	0.34
30Yr 120Min Summer	20.790	0.00	0.27	100Yr+45% 960Min Summer	7.880	0.00	1.16
30Yr 120Min Winter	20.790	0.00	0.30	100Yr+45% 960Min Winter	7.880	0.00	0.39
30Yr 180Min Summer	15.537	0.00	0.33	100Yr+45% 1440Min Summer	5.756	0.00	0.09
30Yr 180Min Winter	15.537	0.00	0.33	100Yr+45% 1440Min Winter	5.756	0.00	0.02
30Yr 240Min Summer	12.555	0.00	0.32	100Yr+45% 8640Min Summer	1.500	0.00	0.00
30Yr 240Min Winter	12.555	0.00	0.31	100Yr+45% 8640Min Winter	1.500	0.00	0.00
30Yr 360Min Summer	9.235	0.00	0.24	100Yr+45% 10080Min Winter	1.356	0.00	0.00
30Yr 360Min Winter	9.235	0.00	0.24	100Yr+45% 10080Min Summer	1.356	0.00	0.00

Simulation Results

Return Period (yrs) + Climate Change (%):

1yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.209	0.089	45.821		OK
S104	15 min Summer	9	35.337	0.137	44.487		OK
S105	15 min Summer	9	35.216	0.086	49.180		OK
S33	15 min Summer	10	34.871	0.141	51.317		OK
S34	15 min Summer	10	34.592	0.122	64.389		OK
S31OC	600 min Summer	396	34.215	0.215	4.766		OK
S6	15 min Winter	0	38.740	0.000	0.000		OK
S96	15 min Winter	0	36.810	0.000	0.000		OK
S7	15 min Summer	9	36.433	0.033	0.063		OK
S8	15 min Summer	9	36.428	0.118	32.046		OK
S9	15 min Summer	8	36.361	0.221	35.548		OK
S10	15 min Summer	8	36.348	0.268	58.865		OK
S14 OC	360 min Summer	222	36.136	0.136	6.060		OK
S13CP	480 min Summer	299	33.631	0.041	10.694		OK
S26	480 min Summer	276	32.824	0.039	11.719		OK
S27	180 min Summer	97	31.120	0.046	14.040		OK
S28	15 min Summer	9	30.114	0.067	16.083		OK
S15	15 min Summer	7	33.795	0.105	34.261		OK
S11 OC	960 min Summer	618	33.454	0.154	1.887		OK
S22	15 min Summer	8	32.358	0.048	13.192		OK
S23	15 min Summer	8	29.283	0.073	38.186		OK
S24	15 min Summer	9	28.055	0.075	38.913		OK
S25	15 min Summer	9	26.944	0.070	43.309		OK
S16	15 min Summer	8	31.968	0.048	16.036		OK
S108	15 min Summer	8	29.703	0.040	4.385		OK
S17	15 min Summer	8	28.763	0.060	31.133		OK
S115	15 min Summer	9	27.181	0.070	30.489		OK
S111	15 min Summer	8	25.442	0.047	8.959		OK
S18	15 min Summer	8	25.029	0.079	39.481		OK
S109	15 min Winter	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	24.705	0.080	39.495		OK
S116	15 min Summer	8	24.425	0.096	81.656		OK
S113CP	15 min Summer	8	24.916	0.046	13.210		OK
S117	240 min Summer	40	24.594	0.494	0.676		OK
S29	15 min Summer	10	24.151	0.051	18.875		OK
S30	360 min Summer	231	23.887	0.187	0.000		OK
S19 CP	15 min Summer	10	23.949	0.369	95.192		OK
S20	15 min Winter	10	23.947	0.422	26.721		OK
S99	15 min Summer	9	24.117	0.050	4.440		OK
S100	15 min Summer	9	23.372	0.069	32.485		OK
S36	15 min Summer	9	22.993	0.073	41.969		OK
S97	15 min Summer	8	23.401	0.047	6.620		OK
S98	15 min Summer	9	22.582	0.102	48.538		OK
S37	15 min Summer	8	22.219	0.149	60.850		OK
S38	480 min Summer	298	22.184	0.288	27.981		OK
S119	480 min Summer	299	22.182	0.330	27.904		OK
S101	15 min Summer	8	23.383	0.063	17.473		OK
S102	15 min Summer	9	22.438	0.105	23.050		OK
S103	480 min Summer	299	22.182	0.206	3.847		OK
S118	480 min Summer	299	22.182	0.266	3.847		OK
S35	480 min Summer	299	22.182	0.232	1.702		OK
S120	480 min Summer	299	22.182	0.321	1.694		OK
S3	480 min Summer	299	22.182	0.333	34.540		OK
S2	480 min Summer	300	22.180	0.380	34.411		OK
S1	480 min Summer	300	21.914	0.114	34.451		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	9	S32	S104	0.113	1.128	45.057	0.032	OK
1.001	15 min Summer	9	S104	S105	0.111	1.083	44.452	0.087	OK
1.002	15 min Summer	10	S105	S33	0.113	1.188	48.644	0.030	OK
1.003	15 min Summer	10	S33	S34	0.138	0.939	52.473	0.080	OK
1.004	600 min Summer	363	S34	S31OC	0.122	0.522	19.283	0.012	OK
1.005	480 min Summer	327	S31OC	S13CP	0.041	0.866	4.706	0.043	OK
2.000	15 min Winter	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	9	S96	S7	0.017	0.000	0.000	0.000	OK
2.002	15 min Summer	10	S7	S8	0.076	0.094	0.760	0.071	OK
2.003	15 min Summer	9	S8	S9	0.169	0.795	32.071	0.119	OK
2.004	15 min Summer	9	S9	S10	0.245	0.833	53.732	0.134	OK
2.005	15 min Summer	9	S10	S14 OC	0.139	1.858	68.371	0.230	OK
2.006	360 min Summer	222	S14 OC	S13CP	0.027	2.253	6.107	0.032	OK
1.006	480 min Summer	296	S13CP	S26	0.040	1.931	10.697	0.040	OK
1.007	180 min Summer	102	S26	S27	0.042	1.946	11.227	0.037	OK
1.008	15 min Summer	8	S27	S28	0.056	1.531	13.768	0.052	OK
1.009	15 min Summer	9	S28	S23	0.066	1.402	16.292	0.110	OK
3.000	960 min Summer	586	S15	S11 OC	0.087	0.970	7.163	0.009	OK
3.001	15 min Summer	18	S11 OC	S22	0.027	0.848	0.628	0.005	OK
3.002	15 min Summer	8	S22	S23	0.047	2.131	12.947	0.099	OK
1.010	15 min Summer	9	S23	S24	0.074	2.464	38.180	0.085	OK
1.011	15 min Summer	9	S24	S25	0.073	2.602	39.057	0.088	OK
1.012	15 min Summer	9	S25	S116	0.083	2.387	43.424	0.079	OK
4.000	15 min Summer	8	S16	S17	0.048	2.194	15.815	0.056	OK
5.000	15 min Summer	8	S108	S17	0.040	1.142	4.281	0.157	OK
4.001	15 min Summer	8	S17	S115	0.065	2.434	31.030	0.059	OK
4.002	15 min Summer	9	S115	S18	0.069	2.204	30.772	0.077	OK
6.000	15 min Summer	8	S111	S18	0.046	1.275	8.882	0.054	OK
4.003	15 min Summer	9	S18	S95CP	0.080	2.305	39.495	0.096	OK
7.000	15 min Winter	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.088	1.999	39.584	0.100	OK
1.013	15 min Summer	10	S116	S19 CP	0.155	3.191	83.273	0.152	OK
8.000	15 min Summer	8	S113CP	S117	0.173	0.903	13.159	0.055	OK
8.001	360 min Summer	181	S117	S29	0.185	0.127	5.011	0.019	OK
8.002	15 min Summer	10	S29	S19 CP	0.210	0.225	18.207	0.021	OK
9.000	15 min Summer	18	S30	S19 CP	0.266	0.250	8.645	0.028	OK
1.014	15 min Summer	10	S19 CP	S20	0.395	0.575	43.296	0.109	OK
1.015	15 min Summer	10	S20	S100	0.070	1.497	24.681	0.041	OK
10.000	15 min Summer	9	S99	S100	0.050	0.876	4.512	0.245	OK
1.016	15 min Summer	9	S100	S36	0.071	1.871	32.609	0.039	OK
1.017	15 min Summer	9	S36	S98	0.087	1.777	42.090	0.046	OK
11.000	15 min Summer	8	S97	S98	0.046	1.101	6.464	0.095	OK
1.018	15 min Summer	9	S98	S37	0.125	1.225	48.537	0.088	OK
1.019	480 min Summer	299	S37	S38	0.200	0.627	34.893	0.103	OK
1.020	480 min Summer	299	S38	S119	0.309	0.410	34.319	0.155	OK
1.021	480 min Summer	299	S119	S3	0.331	0.375	34.030	0.206	OK
12.000	15 min Summer	8	S101	S102	0.062	1.626	17.239	0.097	OK
12.001	15 min Summer	9	S102	S103	0.104	0.922	22.979	0.173	OK
12.002	480 min Summer	299	S103	S118	0.236	0.381	11.008	0.061	OK
12.003	480 min Summer	299	S118	S3	0.299	0.271	10.644	0.054	OK
13.000	480 min Summer	489	S35	S120	0.276	0.053	3.604	0.013	OK
13.001	480 min Summer	489	S120	S3	0.327	0.040	3.761	0.014	OK
1.022	480 min Summer	299	S3	S2	0.341	0.555	43.320	0.186	OK
1.023	480 min Summer	300	S2	S1	0.118	0.948	34.451	0.124	OK

Return Period (yrs) + Climate Change (%):

10yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.302	0.182	194.564		OK
S104	15 min Summer	8	35.473	0.273	192.789		OK
S105	15 min Summer	9	35.322	0.192	211.978		OK
S33	15 min Summer	9	35.039	0.309	231.164		OK
S34	15 min Summer	9	34.734	0.264	292.341		OK
S31OC	480 min Winter	380	34.483	0.483	7.583		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Winter	7	36.610	0.210	0.000		Surcharged
S8	15 min Summer	8	36.588	0.278	142.435		OK
S9	15 min Winter	6	36.503	0.363	80.709		OK
S10	15 min Winter	6	36.502	0.422	129.794		OK
S14 OC	240 min Summer	164	36.324	0.324	10.592		Surcharged
S13CP	240 min Winter	191	33.643	0.053	18.237		OK
S26	15 min Summer	9	32.853	0.068	36.266		OK
S27	15 min Summer	9	31.170	0.096	62.981		OK
S28	15 min Summer	9	30.198	0.151	73.835		OK
S15	15 min Summer	7	33.889	0.199	145.602		OK
S11 OC	480 min Winter	407	33.633	0.333	2.893		Surcharged
S22	15 min Summer	8	32.413	0.103	56.642		OK
S23	15 min Summer	9	29.371	0.161	166.161		OK
S24	15 min Summer	9	28.147	0.167	169.411		OK
S25	15 min Summer	9	27.022	0.148	187.721		OK
S16	15 min Summer	8	32.020	0.100	68.092		OK
S108	15 min Summer	8	29.754	0.091	18.620		OK
S17	15 min Summer	8	28.829	0.126	132.723		OK
S115	15 min Summer	8	27.261	0.150	132.451		OK
S111	15 min Summer	8	25.493	0.098	38.044		OK
S18	15 min Summer	8	25.138	0.188	169.362		OK
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	24.839	0.214	166.923		OK
S116	15 min Summer	9	24.658	0.330	355.115		OK
S113CP	15 min Summer	8	24.966	0.096	56.091		OK
S117	15 min Summer	7	24.678	0.578	53.136		OK
S29	480 min Summer	481	24.637	0.537	0.326		Surcharged
S30	480 min Summer	481	24.638	0.938	0.000		Surcharged
S19 CP	480 min Summer	481	24.637	1.057	20.885		Surcharged
S20	480 min Summer	481	24.637	1.112	20.885		Surcharged
S99	15 min Summer	9	24.196	0.129	18.845		OK
S100	15 min Summer	8	23.396	0.093	59.783		OK
S36	15 min Summer	8	23.037	0.117	101.140		OK
S97	15 min Summer	8	23.455	0.100	28.110		OK
S98	15 min Summer	8	22.655	0.175	128.635		OK
S37	360 min Summer	235	22.404	0.334	31.756		OK
S38	360 min Summer	236	22.403	0.507	31.731		OK
S119	360 min Summer	235	22.402	0.549	32.097		Surcharged
S101	15 min Summer	8	23.452	0.132	74.192		OK
S102	15 min Summer	8	22.574	0.241	100.839		OK
S103	360 min Summer	234	22.402	0.426	8.493		OK
S118	360 min Summer	234	22.402	0.486	8.462		Surcharged
S35	360 min Summer	235	22.402	0.452	3.726		OK
S120	360 min Summer	235	22.402	0.541	3.724		Surcharged
S3	360 min Summer	235	22.402	0.553	46.520		Surcharged
S2	360 min Summer	236	22.400	0.600	46.017		Surcharged
S1	360 min Summer	236	21.932	0.132	46.189		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	S32	S104	0.228	1.701	192.789	0.139	OK
1.001	15 min Summer	9	S104	S105	0.232	1.645	191.910	0.374	OK
1.002	15 min Summer	9	S105	S33	0.250	1.650	213.106	0.133	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
1.003	15 min Summer	9	S33	S34	0.300	1.406	231.494	0.351	OK
1.004	480 min Winter	348	S34	S31OC	0.261	0.626	34.151	0.022	OK
1.005	360 min Winter	301	S31OC	S13CP	0.053	1.010	7.603	0.069	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	7	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	12	S7	S8	0.150	0.156	2.252	0.210	Surcharged
2.003	15 min Winter	8	S8	S9	0.310	1.187	132.935	0.492	OK
2.004	15 min Winter	7	S9	S10	0.392	1.274	155.325	0.388	OK
2.005	240 min Summer	162	S10	S14 OC	0.284	0.938	54.857	0.184	OK
2.006	240 min Summer	164	S14 OC	S13CP	0.036	2.668	10.929	0.058	OK
1.006	30 min Summer	33	S13CP	S26	0.053	2.163	14.976	0.056	OK
1.007	15 min Summer	9	S26	S27	0.082	2.295	36.012	0.118	OK
1.008	15 min Summer	9	S27	S28	0.123	2.289	62.807	0.236	OK
1.009	15 min Summer	9	S28	S23	0.148	2.103	73.351	0.497	OK
3.000	480 min Winter	354	S15	S11 OC	0.179	1.306	17.470	0.023	OK
3.001	15 min Summer	18	S11 OC	S22	0.059	1.200	1.940	0.015	OK
3.002	15 min Summer	8	S22	S23	0.102	3.193	56.014	0.427	OK
1.010	15 min Summer	9	S23	S24	0.164	3.592	166.299	0.372	OK
1.011	15 min Summer	9	S24	S25	0.157	3.863	169.675	0.382	OK
1.012	15 min Summer	9	S25	S116	0.239	2.778	188.005	0.344	OK
4.000	15 min Summer	8	S16	S17	0.099	3.318	67.509	0.239	OK
5.000	15 min Summer	8	S108	S17	0.089	1.669	18.350	0.673	OK
4.001	15 min Summer	8	S17	S115	0.138	3.580	132.451	0.250	OK
4.002	15 min Summer	8	S115	S18	0.147	3.277	131.434	0.327	OK
6.000	15 min Summer	8	S111	S18	0.105	1.767	37.928	0.231	OK
4.003	15 min Summer	9	S18	S95CP	0.200	2.847	168.916	0.411	OK
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.272	2.272	168.035	0.424	OK
1.013	15 min Summer	9	S116	S19 CP	0.353	3.311	353.761	0.647	OK
8.000	15 min Summer	8	S113CP	S117	0.198	1.132	55.973	0.234	OK
8.001	480 min Summer	481	S117	S29	0.231	0.246	10.078	0.038	OK
8.002	480 min Winter	698	S29	S19 CP	0.525	0.296	56.343	0.066	OK
9.000	720 min Winter	788	S30	S19 CP	0.525	0.266	42.729	0.138	OK
1.014	600 min Summer	393	S19 CP	S20	0.525	0.507	72.049	0.182	OK
1.015	15 min Summer	8	S20	S100	0.081	1.549	25.018	0.041	OK
10.000	15 min Summer	9	S99	S100	0.128	1.212	19.181	1.042	OK
1.016	15 min Summer	8	S100	S36	0.105	1.951	59.648	0.071	OK
1.017	15 min Summer	8	S36	S98	0.146	2.062	100.893	0.110	OK
11.000	15 min Summer	8	S97	S98	0.099	1.642	27.742	0.408	OK
1.018	15 min Summer	9	S98	S37	0.240	1.350	127.693	0.231	OK
1.019	360 min Summer	235	S37	S38	0.421	0.690	59.358	0.175	OK
1.020	360 min Summer	236	S38	S119	0.516	0.520	58.133	0.262	OK
1.021	240 min Summer	143	S119	S3	0.525	0.509	68.265	0.414	OK
12.000	15 min Summer	8	S101	S102	0.149	2.191	73.835	0.415	OK
12.001	15 min Summer	9	S102	S103	0.270	1.229	100.335	0.756	OK
12.002	360 min Summer	234	S103	S118	0.438	0.474	32.808	0.182	OK
12.003	240 min Summer	138	S118	S3	0.450	0.397	42.755	0.217	OK
13.000	360 min Summer	369	S35	S120	0.488	0.056	7.387	0.027	OK
13.001	240 min Summer	249	S120	S3	0.525	0.039	7.689	0.029	OK
1.022	240 min Summer	141	S3	S2	0.525	0.768	109.202	0.470	OK
1.023	360 min Summer	236	S2	S1	0.137	1.029	46.189	0.166	OK

Return Period (yrs) + Climate Change (%):
30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.328	0.208	254.037		OK
S104	15 min Summer	8	35.514	0.314	251.896		OK
S105	15 min Summer	9	35.357	0.227	276.577		OK
S33	15 min Summer	9	35.089	0.359	301.820		OK
S34	15 min Summer	9	34.775	0.305	382.362		OK
S31OC	480 min Winter	387	34.586	0.586	10.207		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Summer	8	36.637	0.237	1.367		Surcharged
S8	15 min Summer	8	36.636	0.326	185.482		OK
S9	15 min Winter	5	36.536	0.396	71.889		OK
S10	15 min Winter	5	36.553	0.473	77.935		OK
S14 OC	240 min Summer	167	36.398	0.398	12.188		Surcharged
S13CP	240 min Winter	194	33.646	0.056	20.538		OK
S26	15 min Summer	9	32.863	0.078	47.678		OK
S27	15 min Summer	9	31.185	0.111	82.819		OK
S28	15 min Summer	9	30.227	0.180	97.271		OK
S15	15 min Summer	7	33.917	0.227	190.144		OK
S11 OC	600 min Winter	499	33.702	0.402	3.201		Surcharged
S22	15 min Summer	8	32.431	0.121	73.802		OK
S23	15 min Summer	9	29.399	0.189	218.499		OK
S24	15 min Summer	9	28.177	0.197	222.857		OK
S25	15 min Summer	9	27.046	0.172	246.912		OK
S16	15 min Summer	8	32.036	0.116	88.906		OK
S108	15 min Summer	8	29.773	0.110	24.311		OK
S17	15 min Summer	8	28.850	0.147	173.309		OK
S115	15 min Summer	8	27.287	0.175	172.971		OK
S111	15 min Summer	8	25.507	0.112	49.672		OK
S18	15 min Summer	9	25.250	0.300	217.344		OK
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	25.109	0.483	216.537		Surcharged
S116	15 min Summer	9	24.983	0.655	462.260		Surcharged
S113CP	15 min Summer	8	24.997	0.127	73.236		OK
S117	600 min Summer	600	24.894	0.794	0.269		OK
S29	600 min Summer	600	24.894	0.794	0.457		Surcharged
S30	600 min Summer	600	24.895	1.195	0.128		Surcharged
S19 CP	600 min Summer	600	24.894	1.314	22.779		Surcharged
S20	600 min Summer	600	24.894	1.369	22.648		Surcharged
S99	15 min Summer	10	24.358	0.291	20.432		Surcharged
S100	15 min Summer	9	23.402	0.099	66.784		OK
S36	15 min Summer	8	23.050	0.130	120.775		OK
S97	15 min Summer	8	23.472	0.118	36.702		OK
S98	15 min Summer	7	22.671	0.191	148.854		OK
S37	360 min Summer	239	22.496	0.426	30.886		OK
S38	360 min Summer	240	22.495	0.599	30.702		Surcharged
S119	360 min Summer	240	22.494	0.641	30.704		Surcharged
S101	15 min Summer	8	23.474	0.154	96.871		OK
S102	15 min Summer	9	22.690	0.357	126.922		OK
S103	360 min Summer	240	22.494	0.518	9.207		Surcharged
S118	360 min Summer	240	22.494	0.578	9.206		Surcharged
S35	360 min Summer	240	22.494	0.544	4.149		Surcharged
S120	360 min Summer	240	22.494	0.633	4.117		Surcharged
S3	360 min Summer	240	22.494	0.645	46.694		Surcharged
S2	360 min Summer	241	22.492	0.692	46.380		Surcharged
S1	360 min Summer	208	21.933	0.133	46.390		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	S32	S104	0.261	1.839	251.896	0.181	OK
1.001	15 min Summer	9	S104	S105	0.270	1.746	250.376	0.488	OK
1.002	15 min Summer	9	S105	S33	0.293	1.740	278.244	0.174	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
1.003	15 min Summer	9	S33	S34	0.347	1.516	302.920	0.459	OK
1.004	480 min Winter	389	S34	S31OC	0.348	0.652	42.337	0.027	OK
1.005	360 min Winter	315	S31OC	S13CP	0.056	1.045	8.466	0.077	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	6	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	7	S7	S8	0.150	0.238	4.206	0.392	Surcharged
2.003	15 min Winter	8	S8	S9	0.347	1.268	169.544	0.628	OK
2.004	15 min Winter	8	S9	S10	0.434	1.383	193.283	0.483	OK
2.005	240 min Summer	166	S10	S14 OC	0.358	1.003	68.288	0.229	OK
2.006	240 min Summer	167	S14 OC	S13CP	0.038	2.763	12.318	0.065	OK
1.006	30 min Summer	33	S13CP	S26	0.059	2.253	17.310	0.065	OK
1.007	15 min Summer	9	S26	S27	0.095	2.484	47.607	0.156	OK
1.008	15 min Summer	9	S27	S28	0.146	2.436	82.871	0.311	OK
1.009	15 min Summer	9	S28	S23	0.177	2.248	97.547	0.661	OK
3.000	600 min Winter	444	S15	S11 OC	0.213	1.278	18.189	0.024	OK
3.001	15 min Summer	18	S11 OC	S22	0.069	1.247	2.215	0.018	OK
3.002	15 min Summer	8	S22	S23	0.119	3.407	73.030	0.556	OK
1.010	15 min Summer	9	S23	S24	0.193	3.814	218.795	0.489	OK
1.011	15 min Summer	9	S24	S25	0.185	4.128	223.350	0.502	OK
1.012	15 min Summer	9	S25	S116	0.274	2.866	247.313	0.452	OK
4.000	15 min Summer	8	S16	S17	0.114	3.566	88.188	0.312	OK
5.000	15 min Summer	8	S108	S17	0.108	1.755	23.932	0.878	OK
4.001	15 min Summer	8	S17	S115	0.161	3.809	172.971	0.327	OK
4.002	15 min Summer	8	S115	S18	0.171	3.504	171.686	0.428	OK
6.000	15 min Summer	9	S111	S18	0.167	1.832	49.521	0.302	OK
4.003	15 min Summer	9	S18	S95CP	0.337	2.859	216.537	0.527	OK
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Summer	9	S95CP	S116	0.375	2.238	214.947	0.543	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	3.859	426.176	0.779	Surcharged
8.000	15 min Summer	8	S113CP	S117	0.214	1.352	72.835	0.305	OK
8.001	960 min Summer	1501	S117	S29	0.300	0.479	20.689	0.077	Surcharged
8.002	1440 min Winter	959	S29	S19 CP	0.525	0.280	57.582	0.067	OK
9.000	1440 min Winter	1574	S30	S19 CP	0.525	0.281	26.530	0.086	OK
1.014	720 min Winter	426	S19 CP	S20	0.525	0.506	59.265	0.150	OK
1.015	15 min Summer	8	S20	S100	0.084	1.544	24.923	0.041	OK
10.000	15 min Summer	10	S99	S100	0.142	1.297	22.457	1.220	OK
1.016	15 min Summer	9	S100	S36	0.114	2.021	66.805	0.079	OK
1.017	15 min Summer	8	S36	S98	0.159	2.203	120.430	0.131	OK
11.000	15 min Summer	8	S97	S98	0.116	1.754	36.249	0.533	OK
1.018	15 min Summer	9	S98	S37	0.286	1.376	158.176	0.286	OK
1.019	360 min Summer	239	S37	S38	0.476	0.712	67.376	0.198	OK
1.020	180 min Summer	101	S38	S119	0.525	0.594	92.358	0.417	OK
1.021	60 min Winter	43	S119	S3	0.525	0.738	119.792	0.726	OK
12.000	15 min Summer	9	S101	S102	0.216	2.234	96.443	0.542	OK
12.001	15 min Summer	9	S102	S103	0.366	1.250	122.837	0.925	OK
12.002	15 min Winter	9	S103	S118	0.450	1.114	177.189	0.982	OK
12.003	15 min Winter	9	S118	S3	0.450	1.114	177.171	0.898	OK
13.000	240 min Summer	299	S35	S120	0.525	0.049	8.262	0.031	OK
13.001	180 min Winter	190	S120	S3	0.525	0.056	12.143	0.045	OK
1.022	60 min Winter	43	S3	S2	0.525	1.320	199.402	0.858	OK
1.023	360 min Summer	208	S2	S1	0.137	1.030	46.390	0.167	OK

Return Period (yrs) + Climate Change (%):
100yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.355	0.235	319.506		OK
S104	15 min Summer	8	35.556	0.356	317.122		OK
S105	15 min Summer	9	35.395	0.265	347.636		OK
S33	15 min Summer	9	35.140	0.410	379.643		OK
S34	15 min Summer	9	34.817	0.347	481.787		OK
S31OC	600 min Winter	479	34.710	0.710	5.764		Surcharged
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	0	36.810	0.000	0.000		OK
S7	15 min Summer	8	36.704	0.304	0.085		Surcharged
S8	15 min Summer	8	36.696	0.386	233.283		OK
S9	15 min Winter	5	36.580	0.440	86.018		OK
S10	15 min Winter	5	36.564	0.484	128.840		OK
S14 OC	240 min Winter	183	36.482	0.482	13.702		Surcharged
S13CP	240 min Winter	200	33.649	0.059	22.847		OK
S26	15 min Summer	9	32.873	0.088	59.416		OK
S27	15 min Summer	8	31.200	0.126	104.516		OK
S28	15 min Summer	9	30.259	0.212	121.931		OK
S15	15 min Summer	1	33.956	0.266	26.313		OK
S11 OC	720 min Winter	596	33.786	0.486	3.543		Surcharged
S22	15 min Summer	8	32.450	0.140	92.645		OK
S23	15 min Summer	8	29.431	0.221	275.855		OK
S24	15 min Summer	8	28.208	0.228	280.270		OK
S25	15 min Summer	9	27.086	0.213	310.714		OK
S16	15 min Summer	8	32.052	0.132	111.818		OK
S108	15 min Summer	9	29.840	0.177	29.273		Surcharged
S17	15 min Summer	8	28.871	0.168	217.187		OK
S115	15 min Summer	8	27.313	0.202	216.873		OK
S111	15 min Summer	9	25.785	0.390	59.812		Surcharged
S18	15 min Summer	9	25.737	0.787	267.154		Surcharged
S109	15 min Summer	0	25.925	0.000	0.000		OK
S95CP	15 min Summer	9	25.547	0.921	263.134		Surcharged
S116	15 min Summer	9	25.362	1.034	570.427		Surcharged
S113CP	720 min Winter	707	25.165	0.295	0.329		OK
S117	720 min Winter	707	25.165	1.065	0.329		OK
S29	720 min Winter	707	25.165	1.065	0.565		Surcharged
S30	720 min Winter	707	25.165	1.465	0.000		Surcharged
S19 CP	720 min Winter	707	25.165	1.585	24.760		Surcharged
S20	720 min Winter	707	25.165	1.640	24.761		Surcharged
S99	15 min Summer	10	24.607	0.540	25.697		Surcharged
S100	15 min Summer	9	23.408	0.105	75.423		OK
S36	15 min Summer	8	23.064	0.144	143.036		OK
S97	15 min Summer	8	23.491	0.136	46.160		OK
S98	15 min Summer	8	22.683	0.203	188.191		OK
S37	15 min Summer	9	22.624	0.554	274.753		Surcharged
S38	360 min Summer	258	22.613	0.717	31.806		Surcharged
S119	360 min Summer	258	22.612	0.759	31.806		Surcharged
S101	15 min Summer	9	23.523	0.203	116.644		OK
S102	15 min Summer	9	22.997	0.664	159.038		Surcharged
S103	15 min Summer	9	22.623	0.647	235.975		Surcharged
S118	360 min Summer	258	22.612	0.696	8.296		Surcharged
S35	360 min Summer	259	22.612	0.662	3.690		Surcharged
S120	360 min Summer	258	22.612	0.751	3.689		Surcharged
S3	360 min Summer	258	22.612	0.763	46.196		Surcharged
S2	360 min Summer	259	22.610	0.810	46.010		Surcharged
S1	180 min Summer	98	21.933	0.133	46.390		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	S32	S104	0.296	1.960	317.122	0.228	OK
1.001	15 min Summer	9	S104	S105	0.310	1.828	314.684	0.614	OK
1.002	15 min Summer	9	S105	S33	0.337	1.819	349.991	0.219	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
1.003	15 min Summer	9	S33	S34	0.394	1.625	381.872	0.579	OK
1.004	600 min Winter	477	S34	S31OC	0.472	0.639	44.544	0.029	OK
1.005	360 min Winter	328	S31OC	S13CP	0.059	1.079	9.374	0.085	OK
2.000	15 min Summer	0	S6	S96	0.000	0.000	0.000	0.000	OK
2.001	15 min Summer	6	S96	S7	0.075	0.000	0.000	0.000	OK
2.002	15 min Winter	11	S7	S8	0.150	0.177	2.881	0.268	Surcharged
2.003	15 min Summer	8	S8	S9	0.386	1.365	230.404	0.853	OK
2.004	15 min Winter	9	S9	S10	0.462	1.495	239.355	0.598	OK
2.005	240 min Winter	183	S10	S14 OC	0.442	1.020	53.412	0.179	OK
2.006	240 min Winter	183	S14 OC	S13CP	0.040	2.850	13.725	0.072	OK
1.006	30 min Summer	33	S13CP	S26	0.065	2.329	19.467	0.073	OK
1.007	15 min Summer	9	S26	S27	0.107	2.634	59.397	0.195	OK
1.008	15 min Summer	9	S27	S28	0.169	2.553	103.856	0.390	OK
1.009	15 min Summer	9	S28	S23	0.208	2.351	122.749	0.832	OK
3.000	720 min Winter	594	S15	S11 OC	0.291	1.258	19.819	0.026	OK
3.001	15 min Summer	18	S11 OC	S22	0.079	1.287	2.467	0.020	OK
3.002	15 min Summer	8	S22	S23	0.138	3.582	91.678	0.698	OK
1.010	15 min Summer	9	S23	S24	0.224	4.008	275.111	0.615	OK
1.011	15 min Summer	9	S24	S25	0.220	4.226	281.080	0.632	OK
1.012	15 min Summer	9	S25	S116	0.294	3.347	310.755	0.568	OK
4.000	15 min Summer	8	S16	S17	0.130	3.785	110.949	0.393	OK
5.000	15 min Summer	8	S108	S17	0.143	1.764	29.280	1.074	OK
4.001	15 min Summer	8	S17	S115	0.185	4.001	216.873	0.410	OK
4.002	15 min Summer	8	S115	S18	0.196	3.697	215.518	0.537	OK
6.000	15 min Summer	9	S111	S18	0.300	1.757	58.380	0.356	Surcharged
4.003	15 min Winter	9	S18	S95CP	0.375	2.865	244.664	0.596	Surcharged
7.000	15 min Summer	0	S109	S95CP	0.000	0.000	0.000	0.000	OK
4.004	15 min Winter	9	S95CP	S116	0.375	2.256	242.709	0.613	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	4.759	525.636	0.961	Surcharged
8.000	720 min Winter	707	S113CP	S117	0.298	0.385	7.294	0.031	OK
8.001	180 min Summer	117	S117	S29	0.300	0.703	31.614	0.118	Surcharged
8.002	60 min Winter	42	S29	S19 CP	0.525	0.389	50.499	0.059	OK
9.000	15 min Winter	18	S30	S19 CP	0.525	0.232	50.213	0.162	OK
1.014	15 min Winter	36	S19 CP	S20	0.525	0.787	53.431	0.135	OK
1.015	15 min Summer	8	S20	S100	0.086	1.537	25.020	0.041	OK
10.000	15 min Summer	10	S99	S100	0.145	1.537	26.914	1.462	OK
1.016	15 min Summer	9	S100	S36	0.124	2.051	75.465	0.090	OK
1.017	15 min Summer	8	S36	S98	0.173	2.286	142.595	0.155	OK
11.000	15 min Summer	8	S97	S98	0.134	1.848	45.596	0.670	OK
1.018	15 min Summer	9	S98	S37	0.364	1.384	187.222	0.339	OK
1.019	180 min Summer	137	S37	S38	0.525	0.811	110.667	0.326	OK
1.020	15 min Winter	9	S38	S119	0.525	1.165	252.162	1.137	OK
1.021	30 min Summer	17	S119	S3	0.525	1.124	243.300	1.474	OK
12.000	15 min Summer	9	S101	S102	0.252	2.198	119.201	0.670	OK
12.001	15 min Winter	9	S102	S103	0.375	1.287	142.171	1.071	Surcharged
12.002	15 min Winter	9	S103	S118	0.450	1.356	215.674	1.195	OK
12.003	15 min Winter	9	S118	S3	0.450	1.348	214.420	1.087	OK
13.000	60 min Winter	67	S35	S120	0.525	0.038	8.102	0.030	OK
13.001	30 min Winter	22	S120	S3	0.525	0.204	44.268	0.165	OK
1.022	30 min Winter	23	S3	S2	0.525	1.707	338.739	1.458	OK
1.023	180 min Summer	98	S2	S1	0.137	1.030	46.390	0.167	OK

Return Period (yrs) + Climate Change (%):
100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S32	15 min Summer	8	36.411	0.291	463.189		OK
S104	15 min Summer	8	35.643	0.443	459.582		OK
S105	15 min Summer	9	35.476	0.346	505.735		OK
S33	15 min Summer	9	35.244	0.514	552.242		OK
S34	600 min Winter	505	34.971	0.501	10.840		OK
S31OC	600 min Winter	505	34.971	0.971	11.150		Flood Risk
S6	15 min Summer	0	38.740	0.000	0.000		OK
S96	15 min Summer	10	36.868	0.058	0.000		OK
S7	15 min Summer	8	36.882	0.482	4.569		Surcharged
S8	15 min Summer	8	36.897	0.587	338.192		Surcharged
S9	240 min Winter	190	36.673	0.533	14.242		Flood Risk
S10	240 min Winter	190	36.673	0.593	16.668		Surcharged
S14 OC	240 min Winter	190	36.673	0.673	16.669		Surcharged
S13CP	360 min Winter	289	33.655	0.065	27.249		OK
S26	15 min Summer	9	32.890	0.105	84.290		OK
S27	15 min Summer	9	31.246	0.172	148.556		OK
S28	15 min Summer	9	30.543	0.496	174.492		Surcharged
S15	15 min Summer	1	34.038	0.348	38.196		OK
S11 OC	960 min Winter	792	33.960	0.660	4.146		Surcharged
S22	15 min Summer	8	32.501	0.191	133.911		OK
S23	15 min Summer	8	29.494	0.284	383.760		OK
S24	15 min Summer	10	28.502	0.522	363.457		Surcharged
S25	15 min Summer	10	27.665	0.792	403.438		Surcharged
S16	15 min Summer	8	32.084	0.164	162.103		OK
S108	15 min Summer	10	30.401	0.738	35.274		Surcharged
S17	15 min Summer	8	28.910	0.207	306.158		OK
S115	15 min Summer	9	27.428	0.317	300.088		OK
S111	15 min Summer	10	26.943	1.548	72.072		Flood Risk
S18	15 min Summer	10	26.864	1.914	342.321		Surcharged
S109	15 min Summer	10	26.545	0.619	0.864		Surcharged
S95CP	15 min Summer	10	26.539	1.914	344.642		Surcharged
S116	15 min Summer	10	26.221	1.893	743.462		Surcharged
S113CP	1440 min Winter	1369	25.849	0.979	0.735		Surcharged
S117	1440 min Winter	1369	25.849	1.749	0.735		Flood Risk
S29	1440 min Winter	1369	25.849	1.749	1.262		Flood Risk
S30	240 min Summer	192	25.941	2.241	0.000		Surcharged
S19 CP	1440 min Winter	1368	25.849	2.269	27.153		Surcharged
S20	1440 min Winter	1368	25.848	2.324	27.143		Surcharged
S99	15 min Summer	10	25.248	1.181	37.288		Surcharged
S100	15 min Summer	9	23.421	0.118	92.516		OK
S36	15 min Summer	8	23.102	0.182	190.574		OK
S97	15 min Summer	8	23.537	0.182	66.919		OK
S98	15 min Summer	9	23.031	0.551	251.307		Surcharged
S37	15 min Summer	9	22.937	0.867	374.564		Surcharged
S38	360 min Summer	357	22.902	1.006	33.787		Surcharged
S119	360 min Summer	357	22.900	1.048	33.793		Flood Risk
S101	15 min Summer	9	24.381	1.061	169.162		Surcharged
S102	15 min Summer	10	23.656	1.323	203.396		Surcharged
S103	15 min Summer	10	22.954	0.978	311.221		Flood Risk
S118	360 min Summer	357	22.900	0.984	6.303		Flood Risk
S35	360 min Summer	358	22.900	0.950	2.381		Flood Risk
S120	360 min Summer	357	22.900	1.039	2.326		Flood Risk
S3	360 min Summer	357	22.900	1.052	44.220		Flood Risk
S2	360 min Summer	358	22.898	1.098	43.194		Flood Risk
S1	30 min Summer	21	21.933	0.133	46.392		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	S32	S104	0.367	2.136	459.582	0.331	OK
1.001	15 min Summer	9	S104	S105	0.394	1.949	457.945	0.893	OK
1.002	15 min Summer	9	S105	S33	0.430	1.945	509.240	0.319	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
1.003	15 min Summer	9	S33	S34	0.486	1.828	554.168	0.840	OK
1.004	600 min Winter	505	S34	S31OC	0.700	0.704	65.683	0.043	OK
1.005	480 min Winter	433	S31OC	S13CP	0.064	1.151	11.100	0.100	OK
2.000	15 min Summer	10	S6	S96	0.029	0.000	0.000	0.000	OK
2.001	15 min Summer	10	S96	S7	0.104	0.401	5.255	0.196	OK
2.002	15 min Winter	10	S7	S8	0.150	0.270	4.779	0.445	Surcharged
2.003	15 min Summer	8	S8	S9	0.518	1.522	328.208	1.215	OK
2.004	240 min Summer	167	S9	S10	0.525	0.880	102.958	0.257	OK
2.005	60 min Winter	57	S10	S14 OC	0.525	1.725	212.650	0.714	OK
2.006	240 min Winter	191	S14 OC	S13CP	0.044	3.004	16.479	0.087	OK
1.006	30 min Summer	33	S13CP	S26	0.075	2.442	23.088	0.087	OK
1.007	15 min Summer	9	S26	S27	0.138	2.739	84.329	0.277	OK
1.008	15 min Summer	9	S27	S28	0.236	2.643	148.998	0.560	OK
1.009	15 min Summer	9	S28	S23	0.294	2.441	167.348	1.134	OK
3.000	960 min Winter	792	S15	S11 OC	0.397	1.226	31.595	0.041	OK
3.001	15 min Summer	18	S11 OC	S22	0.105	1.353	2.908	0.023	OK
3.002	15 min Summer	8	S22	S23	0.185	3.777	131.962	1.005	OK
1.010	15 min Summer	9	S23	S24	0.330	4.215	386.034	0.863	OK
1.011	15 min Summer	9	S24	S25	0.375	4.231	386.145	0.869	Surcharged
1.012	15 min Winter	10	S25	S116	0.375	3.784	402.584	0.736	Surcharged
4.000	15 min Summer	8	S16	S17	0.162	4.145	160.911	0.570	OK
5.000	15 min Winter	10	S108	S17	0.150	1.953	34.507	1.265	Surcharged
4.001	15 min Summer	9	S17	S115	0.258	4.221	306.074	0.579	OK
4.002	15 min Summer	9	S115	S18	0.346	3.884	294.842	0.734	OK
6.000	15 min Winter	9	S111	S18	0.300	1.796	73.557	0.449	Surcharged
4.003	15 min Winter	9	S18	S95CP	0.375	2.990	330.204	0.804	Surcharged
7.000	30 min Summer	19	S109	S95CP	0.150	0.727	10.110	0.365	Surcharged
4.004	30 min Summer	17	S95CP	S116	0.375	2.942	324.953	0.820	Surcharged
1.013	15 min Winter	9	S116	S19 CP	0.375	6.367	703.259	1.286	Surcharged
8.000	180 min Summer	125	S113CP	S117	0.300	0.956	45.840	0.192	Surcharged
8.001	30 min Winter	21	S117	S29	0.300	1.840	95.968	0.357	Surcharged
8.002	480 min Winter	323	S29	S19 CP	0.525	0.826	178.772	0.209	OK
9.000	15 min Winter	20	S30	S19 CP	0.525	0.249	53.971	0.174	OK
1.014	10080 min Summer	5214	S19 CP	S20	0.525	0.506	71.522	0.181	OK
1.015	15 min Summer	8	S20	S100	0.092	1.473	24.976	0.041	OK
10.000	15 min Winter	10	S99	S100	0.150	1.898	33.535	1.822	Surcharged
1.016	15 min Summer	9	S100	S36	0.150	2.120	92.582	0.110	OK
1.017	15 min Summer	9	S36	S98	0.339	2.203	196.588	0.214	OK
11.000	15 min Summer	9	S97	S98	0.201	1.962	65.935	0.969	OK
1.018	15 min Summer	9	S98	S37	0.525	1.419	246.234	0.446	OK
1.019	15 min Winter	9	S37	S38	0.525	1.584	342.963	1.010	OK
1.020	15 min Winter	9	S38	S119	0.525	1.562	338.182	1.525	OK
1.021	15 min Winter	9	S119	S3	0.525	1.553	336.084	2.036	OK
12.000	15 min Winter	9	S101	S102	0.300	2.212	149.729	0.842	Surcharged
12.001	15 min Winter	10	S102	S103	0.375	1.783	196.977	1.483	Surcharged
12.002	15 min Winter	9	S103	S118	0.450	1.868	297.099	1.646	OK
12.003	15 min Winter	9	S118	S3	0.450	1.850	294.234	1.492	OK
13.000	15 min Winter	14	S35	S120	0.525	0.566	122.602	0.456	OK
13.001	15 min Winter	14	S120	S3	0.525	0.571	123.629	0.460	OK
1.022	30 min Summer	19	S3	S2	0.525	2.441	522.924	2.250	OK
1.023	120 min Summer	61	S2	S1	0.137	1.030	46.391	0.167	OK