

## Network Details

### Manhole Schedule

Manhole	Catchment Area (ha)	Diameter (m)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S19	0.025	0.450	Type E	121.400	120.250	1.000	539039.063	137833.087
S20	0.008	1.350	Type C	121.400	119.946	1.304	539024.684	137806.350
S21	0.000	1.350	Type C	121.400	119.859	1.391	539028.881	137798.734
S22	0.004	1.350	Type C	121.400	119.800	1.450	539026.824	137793.128
S23	0.015	1.200	Type B	121.400	119.574	1.601	539013.871	137785.431
S14	0.000	0.450	Type E	121.400	120.400	0.850	539023.245	137842.093
S15	0.024	0.450	Type E	121.400	120.335	0.915	539017.169	137839.762
S16	0.000	0.450	Type E	121.400	120.133	1.117	539007.347	137822.097
S32	0.011	0.450	Type E	121.300	120.150	1.000	538980.595	137812.055
S17	0.025	1.200	Type B	121.400	119.331	1.919	538996.210	137802.084
S18	0.000	1.200	Type B	119.379	117.131	2.023	538990.056	137795.458
S1	0.009	0.450	Type E	119.000	117.500	1.350	538981.934	137834.444
S2	0.003	0.450	Type E	118.350	117.430	0.770	538976.236	137828.639
S3	0.000	1.350	Type C	118.847	117.279	1.418	538969.622	137816.467
S4	0.053	1.350	Type C	118.565	117.164	1.251	538962.823	137807.174
S5	0.000	1.500	Type B	119.307	117.034	2.124	538983.510	137789.717
S25	0.006	0.450	Type E	120.150	119.000	1.000	539015.797	137757.364
S26	0.012	1.350	Type C	120.300	118.845	1.305	539010.700	137742.766
S27	0.025	1.200	Type B	120.173	118.300	1.723	538983.613	137750.913
S29	0.006	1.350	Type C	120.150	118.500	1.500	539014.210	137766.646
S31	0.012	0.450	Type E	120.183	118.833	1.200	538998.472	137762.879
S30	0.027	1.200	Type B	120.581	118.361	2.071	539000.865	137770.576
S28	0.000	1.350	Type B	119.876	118.200	1.526	538989.713	137771.042
S6	0.011	1.200	Type B	119.751	116.800	2.801	538988.186	137777.896
S7	0.012	1.350	Type B	118.203	116.352	1.701	538974.386	137775.766
S8	0.013	1.200	Type B	115.574	113.711	1.713	538960.088	137786.769
S9	0.010	1.200	Type B	112.692	110.900	1.642	538947.957	137801.556
S10	0.007	1.350	Type B	110.633	108.800	1.683	538946.347	137815.490
S11	0.012	1.200	Type B	109.134	107.350	1.634	538946.463	137825.120
S12	0.000	1.200	Type B	108.150	106.350	1.650	538941.214	137834.674
S13	0.000	1.200	Type B	107.962	106.300	1.512	538936.739	137841.534

### 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)
1.000	S19	120.250	S20	119.946	Circ	0.15mØ	30.358	100.0	0.600	1.000
1.001	S20	119.946	S21	119.859	Circ	0.15mØ	8.697	100.0	0.600	1.304
1.002	S21	119.859	S22	119.800	Circ	0.15mØ	5.971	100.0	0.600	1.391
1.003	S22	119.800	S23	119.649	Circ	0.15mØ	15.067	100.0	0.600	1.450
1.004	S23	119.574	S17	119.331	Circ	0.225mØ	24.274	100.0	0.600	1.601
2.000	S14	120.400	S15	120.335	Circ	0.15mØ	6.509	100.0	0.600	0.850
2.001	S15	120.335	S16	120.133	Circ	0.15mØ	20.211	100.0	0.600	0.915
2.002	S16	120.133	S17	119.331	Circ	0.15mØ	22.903	28.6	0.600	1.117
3.000	S32	120.150	S17	119.406	Circ	0.15mØ	18.527	24.9	0.600	1.000
1.005	S17	119.331	S18	117.131	Circ	0.225mØ	9.043	4.1	0.600	1.844
1.006	S18	117.131	S5	117.034	Circ	0.225mØ	8.706	89.1	0.600	2.023
4.000	S1	117.500	S2	117.430	Circ	0.15mØ	8.134	115.7	0.600	1.350
4.001	S2	117.430	S3	117.279	Circ	0.15mØ	13.853	92.1	0.600	0.770
4.002	S3	117.279	S4	117.164	Circ	0.15mØ	11.515	100.0	0.600	1.418
4.003	S4	117.164	S5	117.034	Circ	0.15mØ	27.068	207.1	0.600	1.251
1.007	S5	117.034	S6	116.800	Circ	0.15mØ	12.713	54.4	0.600	2.124
5.000	S25	119.000	S26	118.845	Circ	0.15mØ	15.463	100.0	0.600	1.000
5.001	S26	118.845	S27	118.300	Circ	0.15mØ	28.286	51.9	0.600	1.305
5.002	S27	118.300	S28	118.200	Circ	0.15mØ	21.033	210.3	0.600	1.723
6.000	S29	118.500	S30	118.361	Circ	0.15mØ	13.911	100.0	0.600	1.500
7.000	S31	118.833	S30	118.361	Circ	0.15mØ	8.061	17.1	0.600	1.200
6.001	S30	118.361	S28	118.200	Circ	0.15mØ	11.163	69.4	0.600	2.070
5.003	S28	118.200	S6	116.800	Circ	0.15mØ	7.021	5.0	0.600	1.526
1.008	S6	116.800	S7	116.352	Circ	0.15mØ	13.964	31.1	0.600	2.801
1.009	S7	116.352	S8	113.711	Circ	0.15mØ	18.041	6.8	0.600	1.701
1.010	S8	113.711	S9	110.900	Circ	0.15mØ	19.126	6.8	0.600	1.713

## 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)
1.011	S9	110.900	S10	108.800	Circ	0.15mØ	14.027	6.7	0.600	1.642
1.012	S10	108.800	S11	107.350	Circ	0.15mØ	9.631	6.6	0.600	1.683
1.013	S11	107.350	S12	106.350	Circ	0.15mØ	10.901	10.9	0.600	1.634
1.014	S12	106.350	S13	106.300	Circ	0.15mØ	8.190	163.8	0.600	1.650

## Outfall Details

Outfall Manhole S13 : Free Discharge

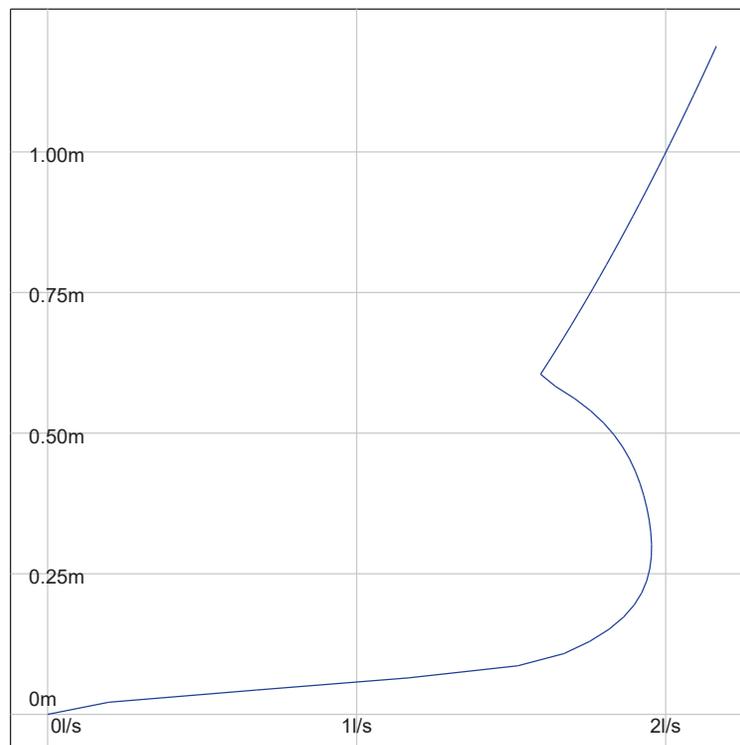
## Flow Control Details

Controls within Manhole S5

Hydro-Brake® Optimum Control at Manhole S5

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-0067-2000-1000-2000	1.000	2.000	0.000	0.296	1.954	0.599	1.588

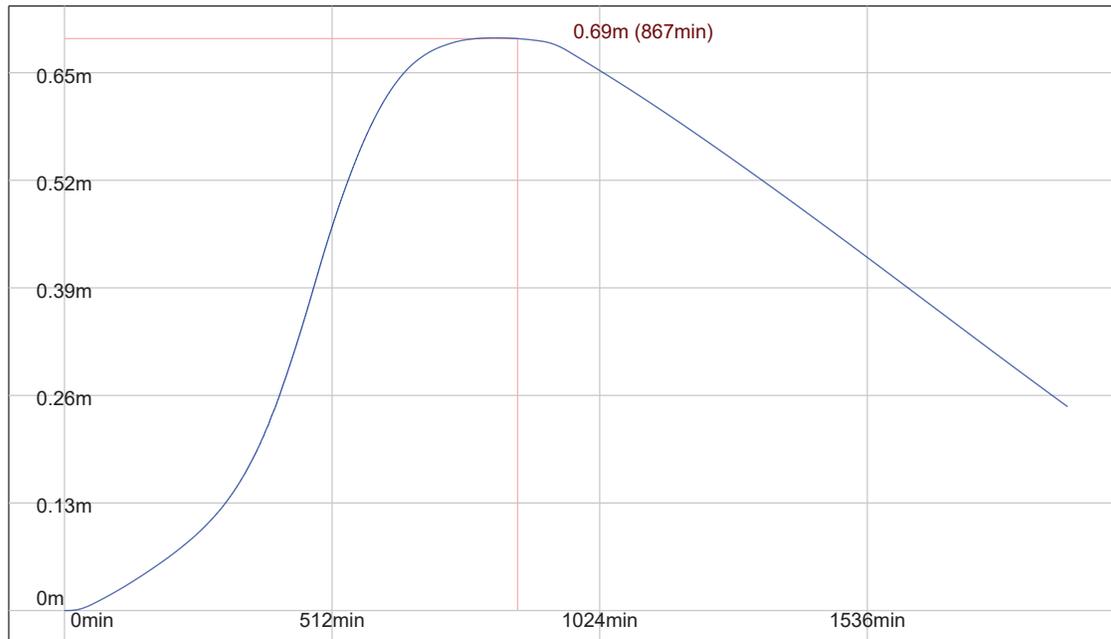
Hydro-Brake® Optimum Control at S5



## Tank Structure at Manhole S5

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m <sup>2</sup> )	Effective Area (m <sup>2</sup> ) Area x Void Ratio	Max Storage (m <sup>3</sup> ) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
117.034	1.000	95.00	250.024	237.523	237.523	0.00000000	0.00000000	3.00

### Tank at S5 (100Yr+45% 960Min Winter)

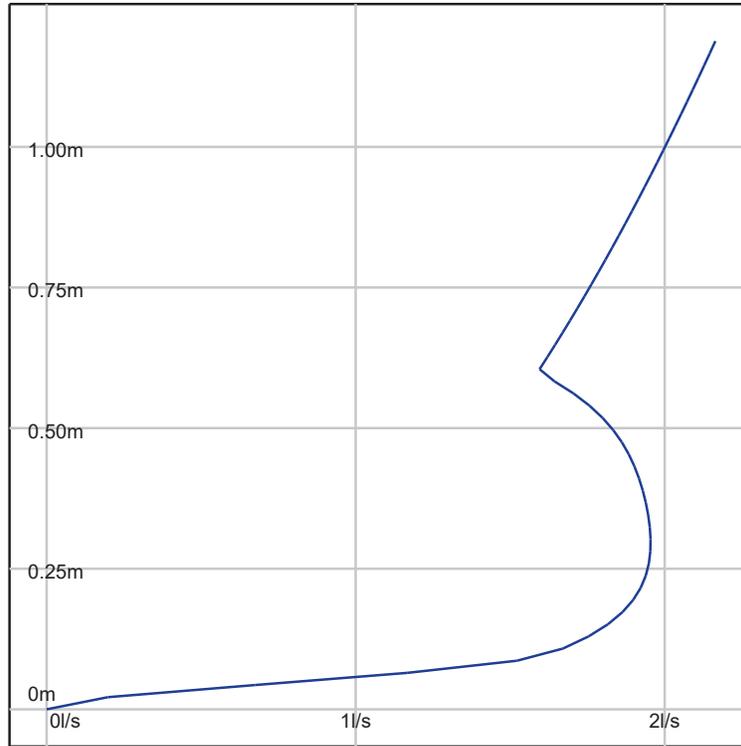


## Controls within Manhole S28

### Hydro-Brake® Optimum Control at Manhole S28

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-0067-2000-1000-2000	1.000	2.000	0.000	0.296	1.954	0.599	1.588

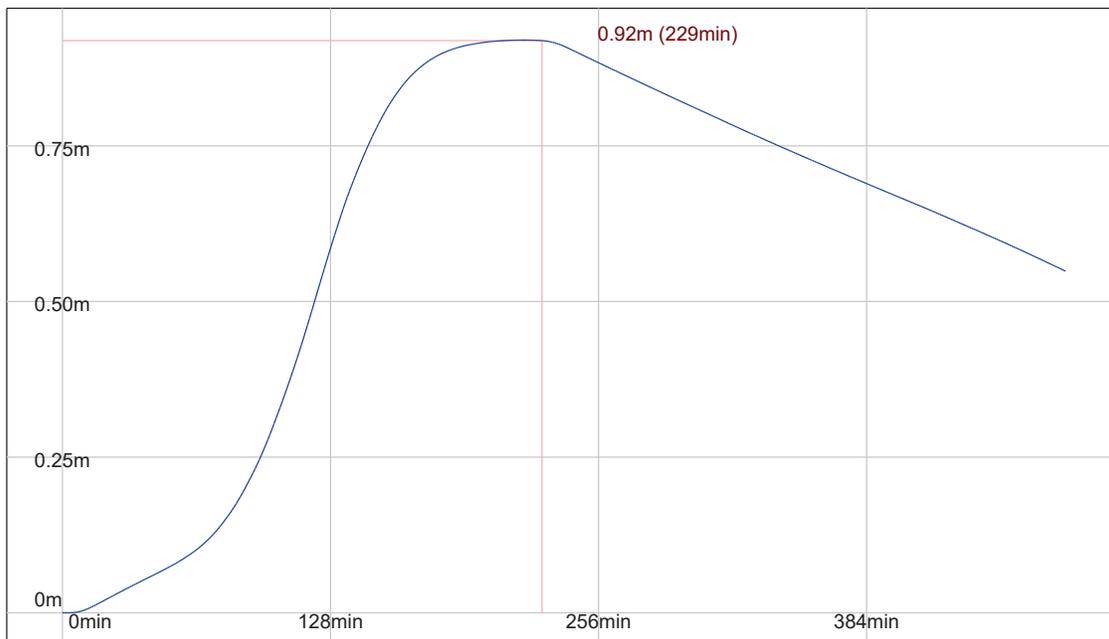
Hydro-Brake® Optimum Control at S28



Tank Structure at Manhole S28

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
118.200	1.000	95.00	60.002	57.002	57.002	0.00000000	0.00000000	3.00

Tank at S28 (100Yr+45% 240Min Winter)



Controls within Manhole S7

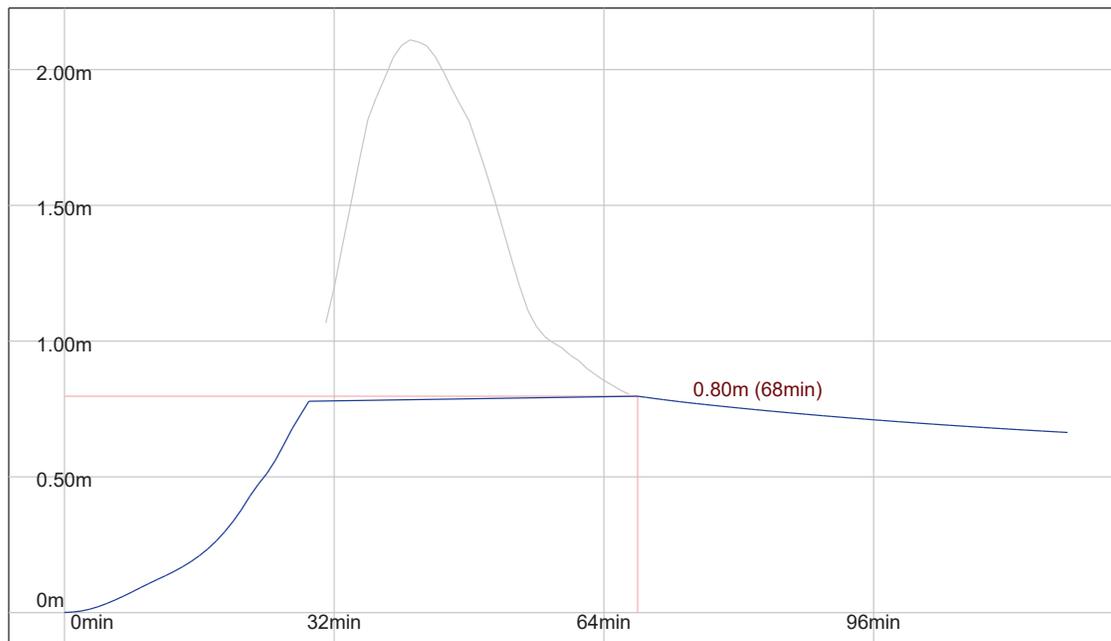
## Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.075	0.050	0.600

## Tank Structure at Manhole S7

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
116.352	0.800	95.00	6.000	5.700	4.560	0.00000000	0.00000000	2.00

## Tank at S7 (100Yr+45% 60Min Winter)



## Controls within Manhole S8

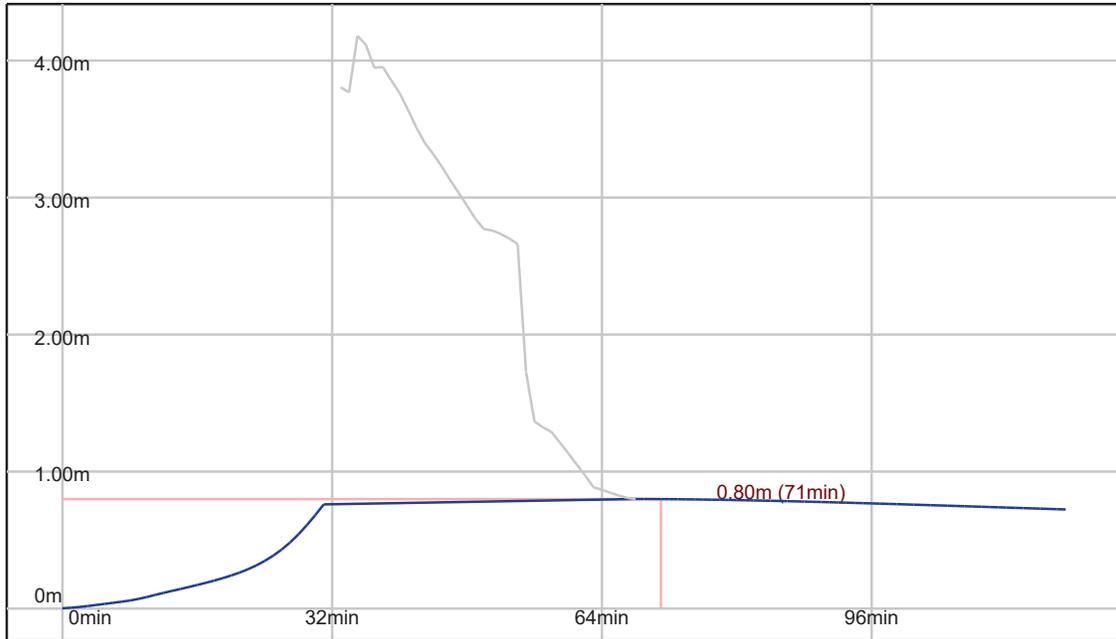
### Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.075	0.050	0.600

## Tank Structure at Manhole S8

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
113.711	0.800	95.00	6.002	5.702	4.562	0.00000000	0.00000000	2.00

## Tank at S8 (100Yr+45% 60Min Summer)



### Controls within Manhole S9

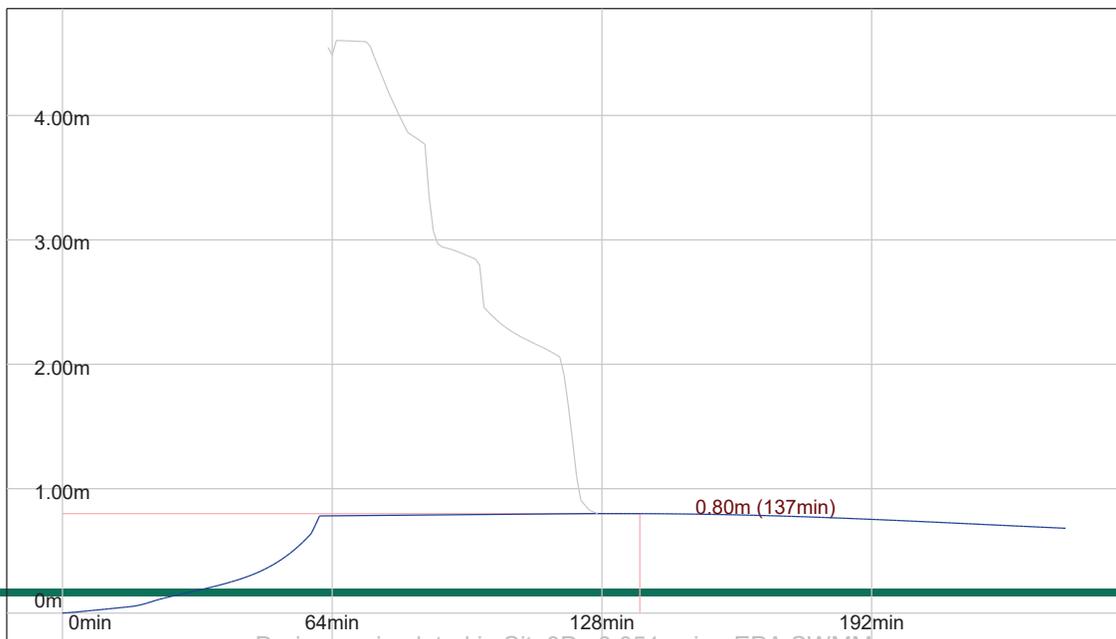
#### Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.075	0.050	0.600

### Tank Structure at Manhole S9

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m2)	Effective Area (m2) Area x Void Ratio	Max Storage (m3) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
110.900	0.800	95.00	6.000	5.700	4.560	0.00000000	0.00000000	2.00

## Tank at S9 (100Yr+45% 120Min Summer)



## Controls within Manhole S10

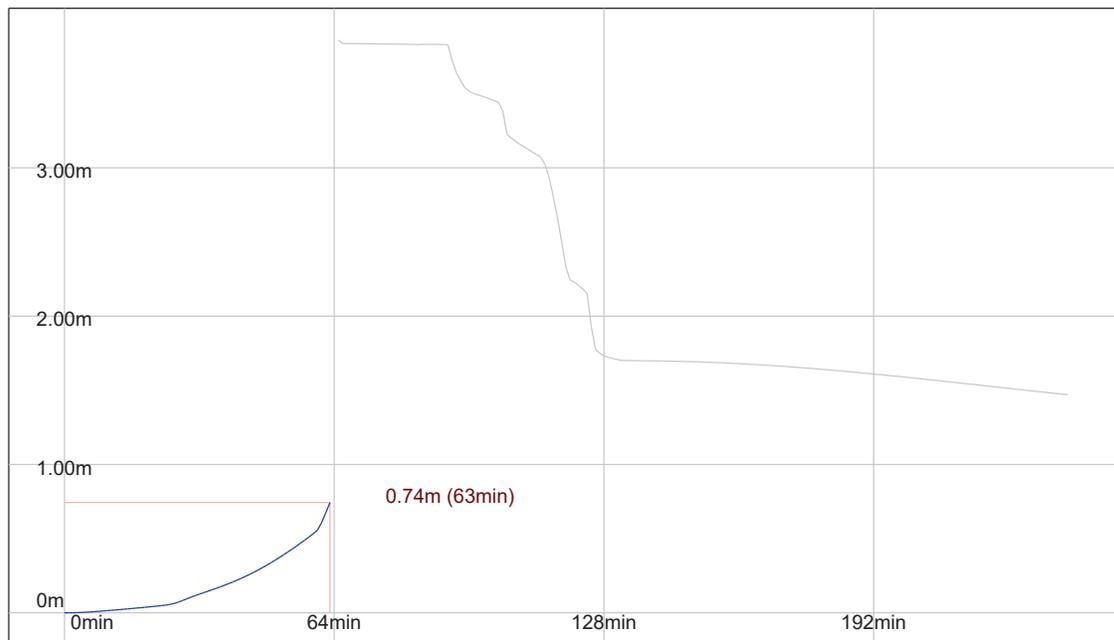
### Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.075	0.050	0.600

### Tank Structure at Manhole S10

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m <sup>2</sup> )	Effective Area (m <sup>2</sup> ) Area x Void Ratio	Max Storage (m <sup>3</sup> ) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
108.800	0.800	95.00	6.002	5.702	4.561	0.00000000	0.00000000	2.00

### Tank at S10 (100Yr+45% 120Min Winter)



## Controls within Manhole S11

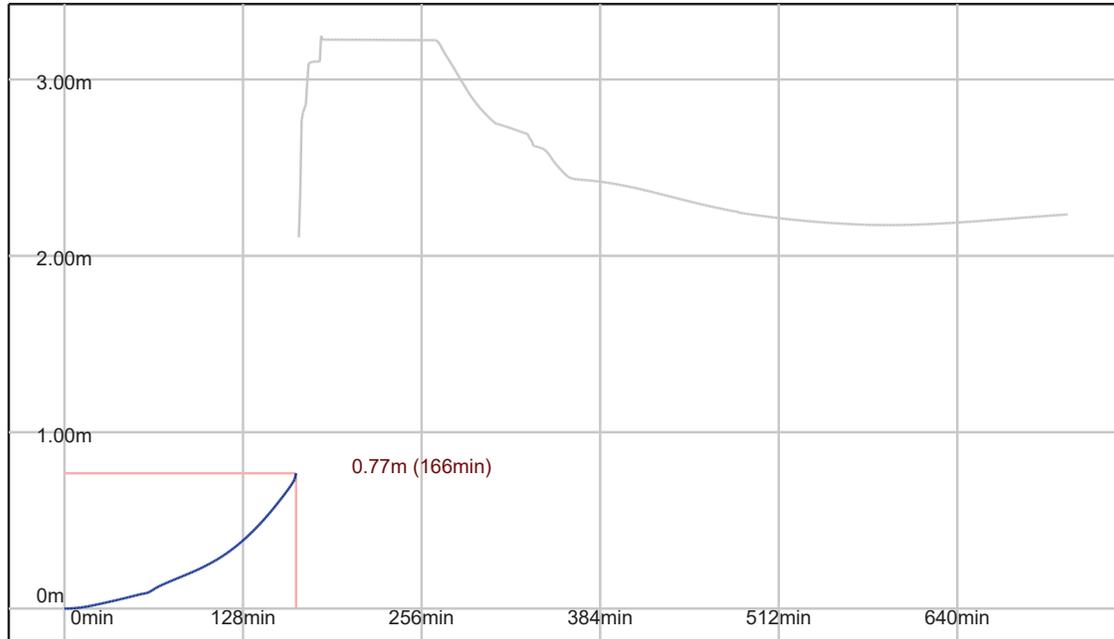
### Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.075	0.050	0.600

### Tank Structure at Manhole S11

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m <sup>2</sup> )	Effective Area (m <sup>2</sup> ) Area x Void Ratio	Max Storage (m <sup>3</sup> ) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
107.350	0.800	95.00	6.000	5.700	4.560	0.00000000	0.00000000	2.00

Tank at S11 (100Yr+45% 360Min Winter)

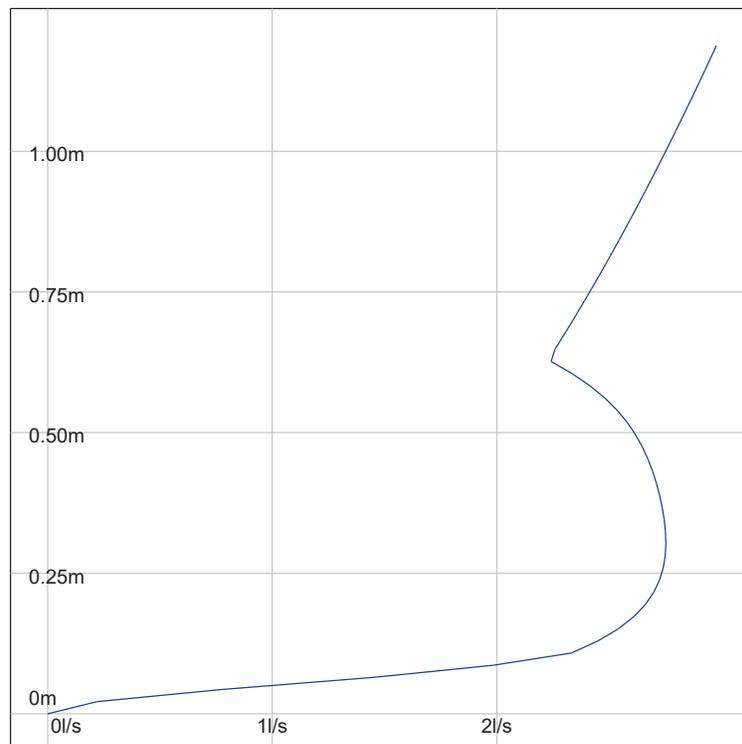


Controls within Manhole S12

Hydro-Brake® Optimum Control at Manhole S12

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-0079-2750-1000-2750	1.000	2.750	0.000	0.304	2.753	0.628	2.228

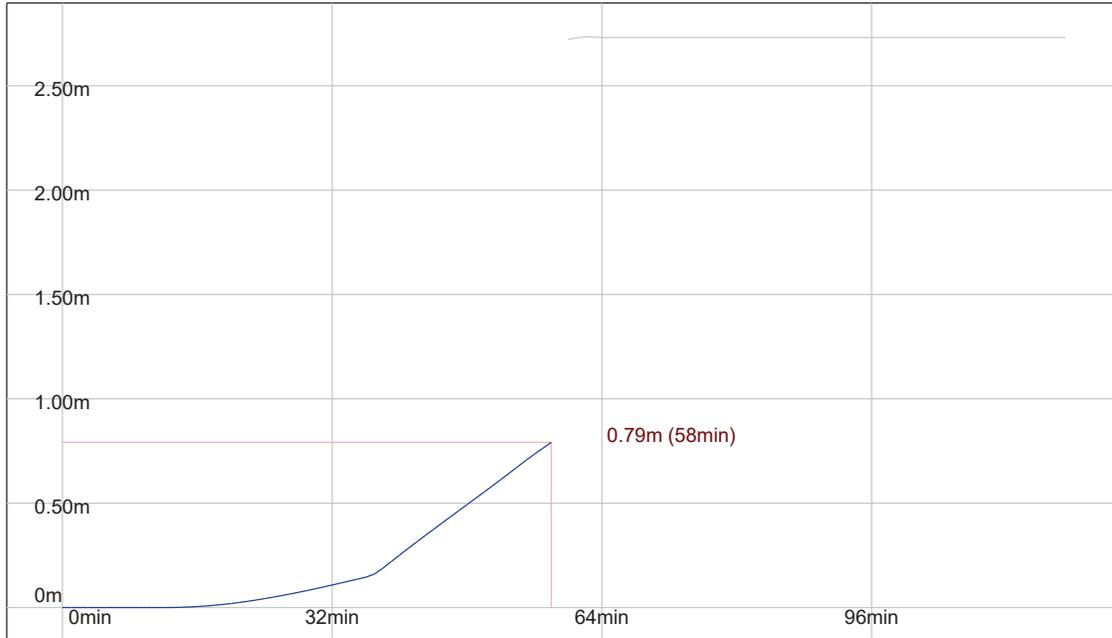
Hydro-Brake® Optimum Control at S12



## Tank Structure at Manhole S12

Tank Invert (m)	Tank Height (m)	Void Ratio (%)	Area (m <sup>2</sup> )	Effective Area (m <sup>2</sup> ) Area x Void Ratio	Max Storage (m <sup>3</sup> ) Effective Area x Height	Infil Base (m/hr)	Infil Side (m/hr)	Safety Factor
106.350	0.800	95.00	12.500	11.875	9.500	0.00000000	0.00000000	2.00

## Tank at S12 (100Yr+45% 60Min Summer)



## Simulation Settings

FEH2022 (point): Filename=FEH\_Point\_Descriptors\_538957\_137770\_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, 7200

Return Periods (yrs) + Climate Change: (2, +45%), (30, +45%), (100, +45%)

### Simulated Rainfall Events

Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %	Storm	Average Intensity (mm/hr)	Runoff Continuity %	Flow Continuity %
2Yr+45% 15Min Winter	45.820	0.00	1.38	30Yr+45% 600Min Winter	9.375	0.00	-0.13
2Yr+45% 15Min Summer	45.820	0.00	1.06	30Yr+45% 720Min Summer	8.143	0.00	-0.34
2Yr+45% 30Min Winter	30.160	0.00	1.88	30Yr+45% 720Min Winter	8.143	0.00	-0.26
2Yr+45% 30Min Summer	30.160	0.00	1.82	30Yr+45% 960Min Summer	6.530	0.00	-0.35
2Yr+45% 60Min Winter	19.056	0.00	2.18	30Yr+45% 960Min Winter	6.530	0.00	-0.28
2Yr+45% 60Min Summer	19.056	0.00	2.14	30Yr+45% 1440Min Summer	4.777	0.00	-0.29
2Yr+45% 120Min Winter	13.443	0.00	2.22	30Yr+45% 1440Min Winter	4.777	0.00	-0.18
2Yr+45% 120Min Summer	13.443	0.00	2.06	30Yr+45% 2160Min Summer	3.508	0.00	-0.20
2Yr+45% 180Min Summer	10.782	0.00	1.73	30Yr+45% 2160Min Winter	3.508	0.00	-0.12
2Yr+45% 180Min Winter	10.782	0.00	1.79	30Yr+45% 2880Min Summer	2.827	0.00	-0.13
2Yr+45% 240Min Summer	8.907	0.00	0.51	30Yr+45% 2880Min Winter	2.827	0.00	-0.05
2Yr+45% 240Min Winter	8.907	0.00	0.57	30Yr+45% 4320Min Summer	2.098	0.00	-0.06
2Yr+45% 360Min Summer	6.832	0.00	-0.28	30Yr+45% 4320Min Winter	2.098	0.00	-0.04
2Yr+45% 360Min Winter	6.832	0.00	-0.30	30Yr+45% 5760Min Summer	1.706	0.00	-0.06
2Yr+45% 480Min Summer	5.628	0.00	-0.30	30Yr+45% 5760Min Winter	1.706	0.00	-0.03
2Yr+45% 480Min Winter	5.628	0.00	-0.32	30Yr+45% 7200Min Summer	1.463	0.00	-0.04
2Yr+45% 600Min Summer	4.792	0.00	-0.28	30Yr+45% 7200Min Winter	1.463	0.00	0.00
2Yr+45% 600Min Winter	4.792	0.00	-0.31	100Yr+45% 15Min Summer	152.789	0.00	2.97
2Yr+45% 720Min Summer	4.184	0.00	-0.28	100Yr+45% 15Min Winter	152.789	0.00	3.15
2Yr+45% 720Min Winter	4.184	0.00	-0.29	100Yr+45% 30Min Summer	102.545	0.00	2.98
2Yr+45% 960Min Summer	3.387	0.00	-0.27	100Yr+45% 30Min Winter	102.545	0.00	3.10
2Yr+45% 960Min Winter	3.387	0.00	-0.22	100Yr+45% 60Min Summer	65.855	0.00	2.69
2Yr+45% 1440Min Summer	2.509	0.00	-0.21	100Yr+45% 60Min Winter	65.855	0.00	2.70
2Yr+45% 1440Min Winter	2.509	0.00	-0.16	100Yr+45% 120Min Summer	39.229	0.00	1.99
2Yr+45% 2160Min Summer	1.874	0.00	-0.14	100Yr+45% 120Min Winter	39.229	0.00	2.08
2Yr+45% 2160Min Winter	1.874	0.00	0.00	100Yr+45% 180Min Summer	28.797	0.00	1.58
2Yr+45% 2880Min Summer	1.540	0.00	-0.02	100Yr+45% 180Min Winter	28.797	0.00	1.63
2Yr+45% 2880Min Winter	1.540	0.00	0.00	100Yr+45% 240Min Summer	23.340	0.00	1.28
2Yr+45% 4320Min Summer	1.188	0.00	0.00	100Yr+45% 240Min Winter	23.340	0.00	1.33
2Yr+45% 4320Min Winter	1.188	0.00	0.00	100Yr+45% 360Min Summer	17.241	0.00	0.89
2Yr+45% 5760Min Summer	1.001	0.00	0.00	100Yr+45% 360Min Winter	17.241	0.00	0.94
2Yr+45% 5760Min Winter	1.001	0.00	0.00	100Yr+45% 480Min Summer	13.904	0.00	0.61
2Yr+45% 7200Min Winter	0.886	0.00	0.00	100Yr+45% 480Min Winter	13.904	0.00	0.70
2Yr+45% 7200Min Summer	0.886	0.00	0.00	100Yr+45% 600Min Summer	11.785	0.00	0.09
30Yr+45% 15Min Summer	120.790	0.00	2.62	100Yr+45% 600Min Winter	11.785	0.00	0.24
30Yr+45% 15Min Winter	120.790	0.00	2.83	100Yr+45% 720Min Summer	10.303	0.00	-0.09
30Yr+45% 30Min Summer	80.511	0.00	2.95	100Yr+45% 720Min Winter	10.303	0.00	-0.02
30Yr+45% 30Min Winter	80.511	0.00	2.92	100Yr+45% 960Min Summer	8.358	0.00	-0.20
30Yr+45% 60Min Summer	51.230	0.00	3.04	100Yr+45% 960Min Winter	8.358	0.00	-0.12
30Yr+45% 60Min Winter	51.230	0.00	2.92	100Yr+45% 1440Min Summer	6.205	0.00	-0.24
30Yr+45% 120Min Summer	31.153	0.00	2.01	100Yr+45% 1440Min Winter	6.205	0.00	-0.18
30Yr+45% 120Min Winter	31.153	0.00	1.94	100Yr+45% 2160Min Summer	4.590	0.00	-0.18
30Yr+45% 180Min Winter	23.129	0.00	1.49	100Yr+45% 2160Min Winter	4.590	0.00	-0.11
30Yr+45% 180Min Summer	23.129	0.00	1.41	100Yr+45% 2880Min Summer	3.693	0.00	-0.15
30Yr+45% 240Min Summer	18.746	0.00	1.15	100Yr+45% 2880Min Winter	3.693	0.00	-0.09
30Yr+45% 240Min Winter	18.746	0.00	1.17	100Yr+45% 4320Min Summer	2.712	0.00	-0.10
30Yr+45% 360Min Winter	13.839	0.00	0.80	100Yr+45% 4320Min Winter	2.712	0.00	-0.06
30Yr+45% 360Min Summer	13.839	0.00	0.75	100Yr+45% 5760Min Summer	2.174	0.00	-0.08
30Yr+45% 480Min Summer	11.125	0.00	0.12	100Yr+45% 5760Min Winter	2.174	0.00	-0.03
30Yr+45% 480Min Winter	11.125	0.00	0.23	100Yr+45% 7200Min Winter	1.836	0.00	-0.03
30Yr+45% 600Min Summer	9.375	0.00	-0.21	100Yr+45% 7200Min Summer	1.836	0.00	-0.03

## Simulation Results

Return Period Yrs: 2.0

Climate Change %: 45

### Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S19	15 min Winter	8	120.310	0.060	6.068		OK
S20	15 min Winter	8	120.016	0.070	7.989		OK
S21	15 min Winter	9	119.929	0.070	7.770		OK
S22	15 min Winter	9	119.874	0.074	8.772		OK
S23	15 min Winter	9	119.652	0.078	12.390		OK
S14	-	0	120.400	0.000	0.000		OK
S15	15 min Winter	8	120.396	0.061	5.893		OK
S16	15 min Winter	8	120.175	0.042	5.822		OK
S32	15 min Winter	8	120.178	0.028	2.757		OK
S17	15 min Winter	9	119.379	0.048	26.409		OK
S18	480 min Winter	317	117.249	0.117	2.370		OK
S1	15 min Winter	8	117.536	0.036	2.186		OK
S2	15 min Winter	8	117.469	0.040	2.893		OK
S3	15 min Winter	9	117.321	0.042	2.801		OK
S4	15 min Winter	9	117.325	0.161	14.455		Surcharged
S5	480 min Winter	364	117.233	0.233	1.455		Surcharged
S25	15 min Winter	8	119.030	0.030	1.556		OK
S26	15 min Winter	8	118.888	0.042	4.454		OK
S27	180 min Winter	133	118.471	0.171	0.978		Surcharged
S29	15 min Winter	8	118.528	0.028	1.378		OK
S31	15 min Winter	8	118.859	0.027	3.000		OK
S30	180 min Winter	133	118.470	0.110	0.991		OK
S28	180 min Winter	133	118.470	0.270	1.970		Surcharged
S6	360 min Winter	242	117.117	0.317	3.791		Surcharged
S7	360 min Winter	242	117.111	0.711	4.078		Surcharged
S8	480 min Winter	331	114.535	0.775	4.285		Surcharged
S9	480 min Winter	356	111.748	0.798	4.360		Surcharged
S10	600 min Winter	431	110.620	1.780	4.424		Flood Risk
S11	600 min Winter	431	109.896	2.496	4.555		Flood Risk
S12	480 min Summer	375	109.140	2.740	3.060		Flood Risk
S13	240 min Summer	260	106.339	0.039	2.981		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 Winter	8	S19	S20	0.065	0.820	5.984	0.338	OK
1.001	15 min Winter	8	S20	S21	0.070	0.980	7.885	0.445	OK
1.002	15 min Winter	9	S21	S22	0.072	0.938	7.865	0.444	OK
1.003	15 min Winter	9	S22	S23	0.074	1.014	8.873	0.500	OK
1.004	15 min Winter	9	S23	S17	0.063	1.368	12.435	0.239	OK
2.000	15 min Winter	8	S14	S15	0.031	0.000	0.000	0.000	OK
2.001	15 min Winter	8	S15	S16	0.052	1.081	5.822	0.328	OK
2.002	15 min Winter	8	S16	S17	0.045	1.294	5.751	0.172	OK
3.000	15 min Winter	8	S32	S17	0.028	1.200	2.723	0.076	OK
1.005	15 min Winter	9	S17	S18	0.079	2.146	26.489	0.103	OK
1.006	480 min Winter	350	S18	S5	0.156	0.720	11.115	0.202	OK
4.000	15 min Winter	8	S1	S2	0.038	0.612	2.164	0.131	OK
4.001	15 min Winter	9	S2	S3	0.041	0.762	2.861	0.155	OK
4.002	15 min Winter	10	S3	S4	0.096	0.249	2.959	0.167	OK
4.003	15 min Winter	9	S4	S5	0.131	0.888	14.433	1.179	OK
1.007	360 min Winter	338	S5	S6	0.117	0.803	1.845	0.077	OK
5.000	15 min Winter	8	S25	S26	0.036	0.471	1.538	0.087	OK
5.001	180 min Summer	107	S26	S27	0.085	0.425	2.025	0.082	OK
5.002	180 min Summer	107	S27	S28	0.150	0.569	4.329	0.356	Surcharged
6.000	180 min Winter	131	S29	S30	0.059	0.187	0.424	0.024	OK
7.000	180 min Winter	131	S31	S30	0.059	0.416	0.923	0.021	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
6.001	180 min Winter	133	S30	S28	0.130	0.805	3.327	0.156	OK
5.003	180 min Winter	133	S28	S6	0.083	0.997	1.946	0.024	OK
1.008	120 min Summer	73	S6	S7	0.150	0.456	4.010	0.125	Surcharged
1.009	360 min Winter	242	S7	S8	0.087	0.382	4.080	0.060	OK
1.010	480 min Winter	331	S8	S9	0.088	0.400	4.287	0.062	OK
1.011	480 min Winter	356	S9	S10	0.088	0.406	4.360	0.063	OK
1.012	600 min Winter	431	S10	S11	0.150	0.402	4.424	0.064	Surcharged
1.013	480 min Winter	358	S11	S12	0.150	1.237	4.296	0.079	Surcharged
1.014	240 min Summer	260	S12	S13	0.039	0.808	2.981	0.216	OK

Return Period Yrs: 30.0

Climate Change %: 45

## Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S19	15 min Winter	8	120.359	0.109	16.015		OK
S20	15 min Winter	9	120.134	0.187	20.197		Surcharged
S21	15 min Winter	10	120.040	0.181	18.357		Surcharged
S22	15 min Winter	10	119.976	0.177	20.611		Surcharged
S23	15 min Winter	9	119.698	0.124	29.568		OK
S14	15 min Winter	8	120.444	0.044	0.128		OK
S15	15 min Winter	8	120.444	0.109	15.555		OK
S16	15 min Winter	8	120.203	0.071	15.288		OK
S32	15 min Winter	8	120.196	0.046	7.278		OK
S17	15 min Winter	8	119.409	0.077	67.723		OK
S18	600 min Winter	508	117.517	0.386	1.211		Surcharged
S1	15 min Winter	11	117.883	0.383	3.465		Surcharged
S2	15 min Winter	11	117.879	0.449	5.080		Surcharged
S3	15 min Winter	11	117.865	0.585	5.457		Surcharged
S4	15 min Winter	10	117.855	0.691	30.296		Surcharged
S5	600 min Winter	509	117.517	0.517	1.888		Surcharged
S25	15 min Winter	8	119.049	0.049	4.107		OK
S26	30 min Summer	17	118.923	0.077	10.254		OK
S27	240 min Winter	211	118.916	0.616	0.844		Surcharged
S29	240 min Winter	211	118.916	0.416	0.110		Surcharged
S31	240 min Winter	211	118.916	0.083	0.240		OK
S30	240 min Winter	211	118.916	0.555	0.865		Surcharged
S28	240 min Winter	211	118.916	0.716	1.711		Surcharged
S6	60 min Summer	37	117.497	0.697	4.213		Surcharged
S7	60 min Summer	37	117.493	1.093	5.197		Flood Risk
S8	120 min Winter	77	116.501	2.741	6.515		Flood Risk
S9	120 min Winter	73	114.950	4.000	7.844		Flood Risk
S10	120 min Winter	73	112.677	3.837	7.554		Flood Risk
S11	600 min Summer	315	110.630	3.230	6.339		Flood Risk
S12	600 min Summer	315	109.138	2.738	2.972		Flood Risk
S13	240 min Summer	146	106.339	0.039	2.984		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 Winter	8	S19	S20	0.129	1.015	15.822	0.892	OK
1.001	30 min Summer	16	S20	S21	0.150	1.148	18.827	1.062	Surcharged
1.002	30 min Summer	17	S21	S22	0.150	1.089	18.385	1.037	Surcharged
1.003	15 min Winter	10	S22	S23	0.140	1.207	20.757	1.171	OK
1.004	15 min Winter	9	S23	S17	0.100	1.743	29.506	0.568	OK
2.000	15 min Winter	11	S14	S15	0.076	0.052	0.260	0.015	OK
2.001	15 min Winter	8	S15	S16	0.090	1.386	15.288	0.862	OK
2.002	15 min Winter	8	S16	S17	0.074	1.747	15.158	0.454	OK
3.000	15 min Winter	8	S32	S17	0.046	1.589	7.207	0.201	OK
1.005	15 min Winter	8	S17	S18	0.151	2.450	67.552	0.261	OK
1.006	120 min Summer	78	S18	S5	0.225	1.313	34.678	0.630	OK
4.000	30 min Summer	16	S1	S2	0.150	0.719	4.820	0.293	Surcharged
4.001	15 min Winter	13	S2	S3	0.150	0.778	6.421	0.347	Surcharged
4.002	15 min Winter	13	S3	S4	0.150	0.610	10.773	0.608	Surcharged
4.003	30 min Summer	19	S4	S5	0.150	1.637	28.736	2.347	Surcharged
1.007	120 min Summer	125	S5	S6	0.150	0.356	2.032	0.084	Surcharged
5.000	30 min Summer	17	S25	S26	0.061	0.606	3.892	0.220	OK
5.001	30 min Summer	17	S26	S27	0.114	0.782	10.821	0.438	OK
5.002	15 min Winter	9	S27	S28	0.150	1.312	23.191	1.909	Surcharged
6.000	30 min Winter	18	S29	S30	0.150	0.273	2.679	0.151	Surcharged
7.000	240 min Winter	211	S31	S30	0.116	0.448	1.608	0.037	OK
6.001	15 min Winter	8	S30	S28	0.150	1.770	24.333	1.141	Surcharged
5.003	1440 min Summer	989	S28	S6	0.083	0.798	1.954	0.024	OK
1.008	15 min Winter	9	S6	S7	0.150	0.694	8.145	0.255	Surcharged
1.009	120 min Winter	83	S7	S8	0.130	0.483	5.347	0.078	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
1.010	120 min Summer	68	S8	S9	0.150	0.731	8.372	0.122	Surcharged
1.011	120 min Summer	71	S9	S10	0.150	0.813	9.427	0.136	Surcharged
1.012	60 min Winter	46	S10	S11	0.150	0.731	8.365	0.120	Surcharged
1.013	120 min Winter	93	S11	S12	0.150	1.232	9.215	0.170	Surcharged
1.014	240 min Summer	146	S12	S13	0.039	0.808	2.984	0.216	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
S19	15 min Winter	9	120.572	0.322	19.024		Surcharged
S20	15 min Winter	10	120.278	0.331	22.340		Surcharged
S21	15 min Winter	10	120.142	0.283	22.453		Surcharged
S22	15 min Winter	10	120.052	0.252	24.631		Surcharged
S23	15 min Winter	9	119.710	0.136	34.891		OK
S14	15 min Winter	8	120.468	0.068	0.185		OK
S15	15 min Winter	8	120.468	0.133	19.669		OK
S16	15 min Winter	9	120.214	0.081	18.958		OK
S32	15 min Winter	8	120.202	0.052	9.203		OK
S17	15 min Winter	8	119.417	0.086	81.846		OK
S18	960 min Winter	823	117.692	0.561	1.036		Surcharged
S1	30 min Summer	18	118.188	0.688	5.104		Surcharged
S2	30 min Summer	18	118.182	0.753	6.054		Surcharged
S3	30 min Summer	18	118.167	0.888	5.304		Surcharged
S4	30 min Summer	18	118.156	0.992	34.371		Surcharged
S5	960 min Winter	823	117.692	0.692	1.629		Surcharged
S25	240 min Winter	218	119.121	0.121	0.143		OK
S26	240 min Winter	218	119.121	0.275	0.411		Surcharged
S27	240 min Winter	220	119.120	0.820	0.944		Surcharged
S29	240 min Winter	220	119.120	0.620	0.123		Surcharged
S31	240 min Winter	220	119.120	0.287	0.269		Surcharged
S30	240 min Winter	220	119.120	0.759	0.969		Surcharged
S28	240 min Winter	220	119.120	0.920	1.913		Surcharged
S6	60 min Winter	41	118.512	1.712	4.381		Surcharged
S7	60 min Winter	41	118.509	2.109	4.634		Flood Risk
S8	60 min Summer	35	117.940	4.180	8.019		Flood Risk
S9	120 min Summer	65	115.553	4.603	8.828		Flood Risk
S10	120 min Winter	65	112.701	3.861	8.239		Flood Risk
S11	360 min Winter	184	110.647	3.247	7.467		Flood Risk
S12	60 min Summer	59	109.144	2.744	2.887		Flood Risk
S13	600 min Summer	296	106.339	0.039	2.983		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 Winter	9	S19	S20	0.150	1.040	18.347	1.035	Surcharged
1.001	15 min Winter	9	S20	S21	0.150	1.283	22.674	1.279	Surcharged
1.002	15 min Winter	10	S21	S22	0.150	1.252	22.127	1.248	Surcharged
1.003	15 min Winter	10	S22	S23	0.144	1.388	24.182	1.364	OK
1.004	15 min Winter	9	S23	S17	0.111	1.822	34.773	0.670	OK
2.000	15 min Winter	10	S14	S15	0.101	0.054	0.384	0.022	OK
2.001	15 min Winter	8	S15	S16	0.107	1.429	19.168	1.081	OK
2.002	15 min Winter	9	S16	S17	0.083	1.896	19.114	0.573	OK
3.000	15 min Winter	8	S32	S17	0.052	1.697	9.122	0.255	OK
1.005	15 min Winter	9	S17	S18	0.155	2.787	81.570	0.316	OK
1.006	30 min Winter	27	S18	S5	0.225	1.778	69.872	1.269	OK
4.000	15 min Winter	7	S1	S2	0.150	0.735	5.609	0.341	Surcharged
4.001	15 min Winter	13	S2	S3	0.150	0.830	7.565	0.409	Surcharged
4.002	15 min Winter	14	S3	S4	0.150	0.725	12.809	0.722	Surcharged
4.003	15 min Winter	11	S4	S5	0.150	1.917	33.877	2.767	Surcharged
1.007	120 min Summer	128	S5	S6	0.150	0.354	2.045	0.085	Surcharged
5.000	240 min Winter	218	S25	S26	0.135	0.417	1.038	0.059	OK
5.001	30 min Summer	16	S26	S27	0.150	0.846	11.955	0.484	Surcharged
5.002	15 min Winter	9	S27	S28	0.150	1.524	26.938	2.217	Surcharged
6.000	15 min Winter	11	S29	S30	0.150	0.274	4.015	0.226	Surcharged
7.000	120 min Summer	86	S31	S30	0.150	0.528	4.800	0.111	Surcharged
6.001	15 min Winter	9	S30	S28	0.150	1.804	30.041	1.408	Surcharged
5.003	60 min Winter	46	S28	S6	0.150	0.834	3.160	0.039	Surcharged
1.008	15 min Winter	8	S6	S7	0.150	0.713	8.382	0.262	Surcharged
1.009	30 min Winter	31	S7	S8	0.150	0.583	6.804	0.099	Surcharged

## 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
1.010	60 min Summer	35	S8	S9	0.150	0.859	10.044	0.146	Surcharged
1.011	60 min Winter	38	S9	S10	0.150	0.936	11.062	0.160	Surcharged
1.012	180 min Winter	92	S10	S11	0.150	0.807	9.352	0.135	Surcharged
1.013	120 min Summer	85	S11	S12	0.150	1.205	9.224	0.170	Surcharged
1.014	600 min Summer	296	S12	S13	0.039	0.808	2.983	0.216	OK