

Network Details

Manhole Schedule

Manhole	Catchment Area (ha)	Size (mm)	Type	CL (m)	IL (m)	Depth To Soffit (m)	Easting (m)	Northing (m)
S40	0.345	1350	Type C	41.228	39.566	1.211	386504.608	156354.861
HW11	0.000	---	Type C	40.781	39.525	0.806	386510.042	156361.042
S41	0.881	1350	Type B	41.640	39.558	1.632	386473.110	156388.503
HW12	0.000	---	Type C	40.781	39.525	0.806	386479.744	156389.198
HW13	0.000	---	Type C	40.781	39.300	1.031	386493.497	156405.591
S42	0.000	2700	Type B	41.481	39.264	1.767	386493.437	156412.822
S43	0.262	1350	Type B	41.399	39.199	1.750	386493.312	156427.868
S44	0.000	1350	Type C	40.554	38.726	1.378	386537.227	156474.190
S45	0.654	1500	Type C	40.414	38.544	1.345	386547.994	156480.027
S46	0.000	1500	Type C	39.898	38.016	1.282	386580.282	156520.728
S47	0.469	1500	Type C	39.825	37.924	1.301	386582.467	156531.097
S48	0.000	1500	Type C	39.543	37.693	1.250	386598.877	156551.783
S49	0.298	1800	Type C	38.997	37.106	1.141	386632.927	156594.706
S50	0.087	1350	Type C	39.112	37.611	1.201	386677.625	156586.822
S51	0.124	1800	Type C	39.114	36.996	1.368	386646.824	156611.967
S52	0.034	1800	Type C	39.093	36.781	1.413	386632.098	156624.732
S53	0.028	1800	Type B	39.211	36.724	1.587	386620.812	156637.522
S54	0.939	1350	Type B	39.375	37.291	1.634	386579.915	156640.178
S55	0.012	1500	Type B	39.254	37.083	1.571	386588.855	156647.840
S56	0.000	1500	Type C	39.120	37.017	1.502	386600.933	156652.789
S57	0.035	1800	Type B	39.131	36.658	1.573	386612.493	156655.384
S58	0.019	1800	Type C	39.000	36.615	1.484	386610.849	156668.162
S59	0.025	1800	Type C	38.911	36.572	1.438	386612.030	156680.991
S60	0.025	1800	Type C	38.926	36.529	1.497	386615.979	156693.255
S61	0.021	1800	Type B	39.003	36.486	1.617	386622.506	156704.362
S62	0.270	1800	Type B	38.979	36.443	1.636	386631.298	156713.780
S63	0.581	1800	Type B	38.931	36.288	1.743	386666.689	156744.195
S64	0.215	1800	Type B	38.645	36.139	1.607	386700.614	156773.350
S65	0.068	1950	Type B	38.517	35.945	1.522	386709.873	156782.714
E-I-S17	0.000	1950	Type C	38.178	35.826	1.302	386726.256	156811.335
E-I-S18	0.263	1950	Type B	38.277	35.691	1.535	386742.262	156848.306
E-I-S19	0.329	2100	Type C	37.684	35.557	1.077	386710.820	156873.636
E-I-HW10	0.000	0	Unknown	36.850	35.525	0.275	386705.345	156880.375
I-S20	1.600	1500	Type B	37.738	35.569	1.569	386649.280	156901.959
I-HW11	0.000	0	Unknown	36.885	35.525	0.760	386654.229	156908.029
I-HW12	0.000	0	Unknown	36.850	35.300	1.250	386648.609	156965.817
I-S21	0.000	2400	Type B	37.550	35.263	1.987	386648.864	156973.157
I-HW13	0.000	0	Unknown	37.000	35.244	1.456	386649.024	156977.770

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	S40	39.566	HW11	39.525	Circ	450	8.231	200	0.600	1.211	0.806
1.001	HW11	39.525	HW13	39.300	Circ	750	47.522	211	0.600	0.506	0.731
2.000	S41	39.558	HW12	39.525	Circ	450	6.671	200	0.600	1.632	0.806
2.001	HW12	39.525	HW13	39.300	Circ	450	21.398	95	0.600	0.806	1.031
1.002	HW13	39.300	S42	39.264	Circ	450	7.231	200	0.600	1.031	1.767
1.003	S42	39.264	S43	39.199	Circ	450	15.047	231	0.600	1.767	1.750
1.004	S43	39.199	S44	38.726	Circ	450	63.830	135	0.600	1.750	1.378
1.005	S44	38.726	S45	38.619	Circ	450	12.247	115	0.600	1.378	1.345
1.006	S45	38.544	S46	38.091	Circ	525	51.952	115	0.600	1.345	1.282
1.007	S46	38.016	S47	37.924	Circ	600	10.597	115	0.600	1.282	1.301
1.008	S47	37.924	S48	37.693	Circ	600	26.404	115	0.600	1.301	1.250
1.009	S48	37.693	S49	37.256	Circ	600	54.789	125	0.600	1.250	1.141
1.010	S49	37.106	S51	36.996	Circ	750	22.161	200	0.600	1.141	1.368
3.000	S50	37.611	S51	37.446	Circ	300	39.762	240	0.600	1.201	1.368
1.011	S51	36.996	S52	36.931	Circ	750	19.489	300	0.600	1.368	1.413
1.012	S52	36.781	S53	36.724	Circ	900	17.057	300	0.600	1.413	1.587
1.013	S53	36.724	S57	36.658	Circ	900	19.704	300	0.600	1.587	1.573
4.000	S54	37.291	S55	37.233	Circ	450	11.774	200	0.600	1.634	1.571
4.001	S55	37.083	S56	37.017	Circ	600	13.053	200	0.600	1.571	1.502

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)
4.002	S56	37.017	S57	36.958	Circ	600	11.847	200	0.600	1.502	1.573
1.014	S57	36.658	S58	36.615	Circ	900	12.883	300	0.600	1.573	1.484
1.015	S58	36.615	S59	36.572	Circ	900	12.883	300	0.600	1.484	1.438
1.016	S59	36.572	S60	36.529	Circ	900	12.883	300	0.600	1.438	1.497
1.017	S60	36.529	S61	36.486	Circ	900	12.883	300	0.600	1.497	1.617
1.018	S61	36.486	S62	36.443	Circ	900	12.883	300	0.600	1.617	1.636
1.019	S62	36.443	S63	36.288	Circ	900	46.665	300	0.600	1.636	1.743
1.020	S63	36.288	S64	36.139	Circ	900	44.731	300	0.600	1.743	1.607
1.021	S64	36.139	S65	36.095	Circ	900	13.168	300	0.600	1.607	1.522
1.022	S65	35.945	E-I-S17	35.835	Circ	1050	32.978	300	0.600	1.522	1.293
1.023	E-I-S17	35.826	E-I-S18	35.691	Circ	1050	40.288	300	0.600	1.302	1.535
1.024	E-I-S18	35.691	E-I-S19	35.557	Circ	1050	40.376	300	0.600	1.535	1.077
1.025	E-I-S19	35.557	E-I-HW10	35.525	Circ	1050	8.682	273	0.600	1.077	0.275
1.026	E-I-HW10	35.525	I-HW12	35.300	Rect	1500x1100	102.564	456	0.600	0.225	0.450
5.000	I-S20	35.569	I-HW11	35.525	Circ	600	7.832	176	0.600	1.569	0.760
5.001	I-HW11	35.525	I-HW12	35.300	Rect	1200x1200	58.061	258	0.600	0.160	0.350
1.027	I-HW12	35.300	I-S21	35.263	Circ	300	7.345	199	0.600	1.250	1.987
1.028	I-S21	35.263	I-HW13	35.244	Circ	300	4.615	245	0.600	1.987	1.456

Outfall Details

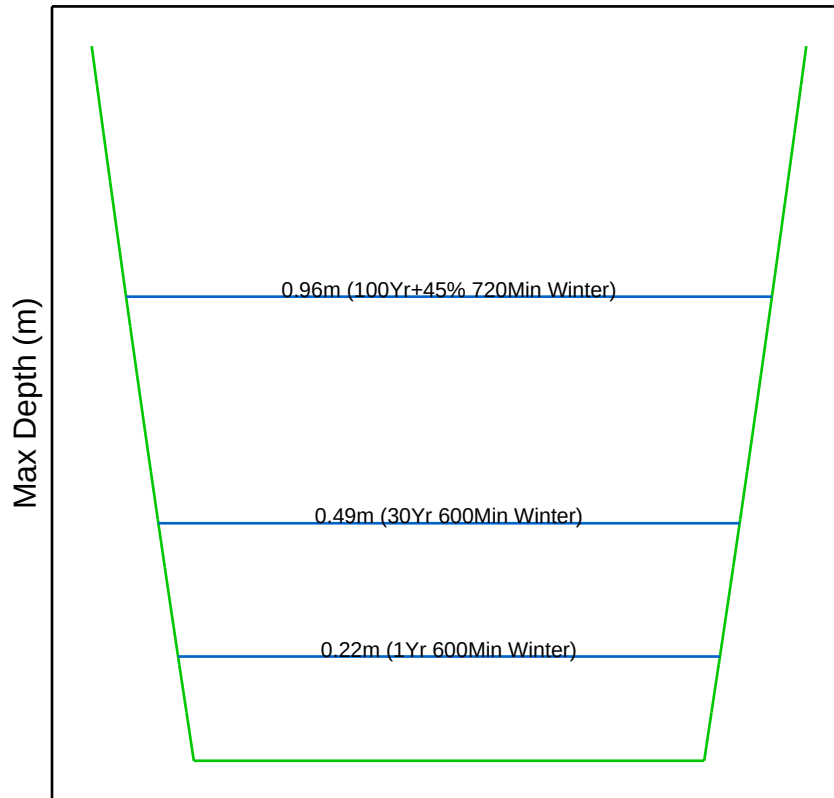
Outfall Manhole I-HW13 : Free Discharge

Flow Control Details

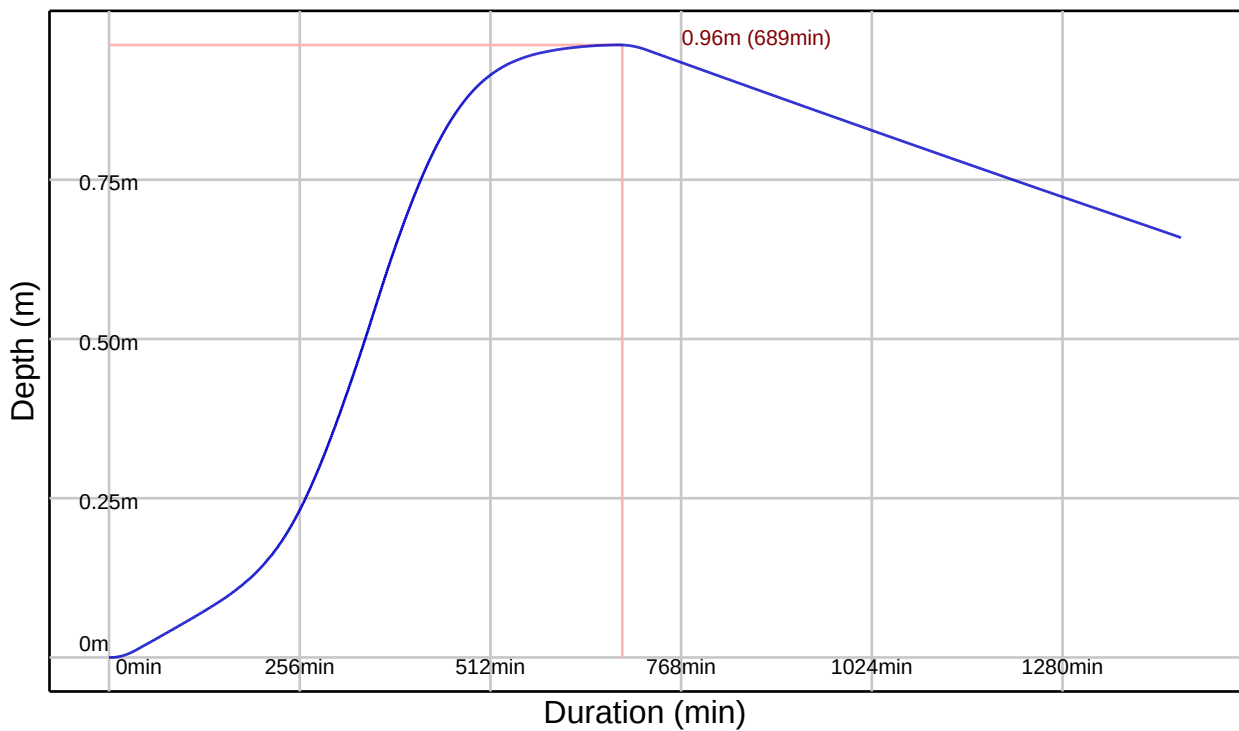
Pond Structure at Manhole HW13

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
39.300	1.481	1041.760	40.481	0.300	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at HW13



Basin H at HW13 (100Yr+45% 720Min Winter)

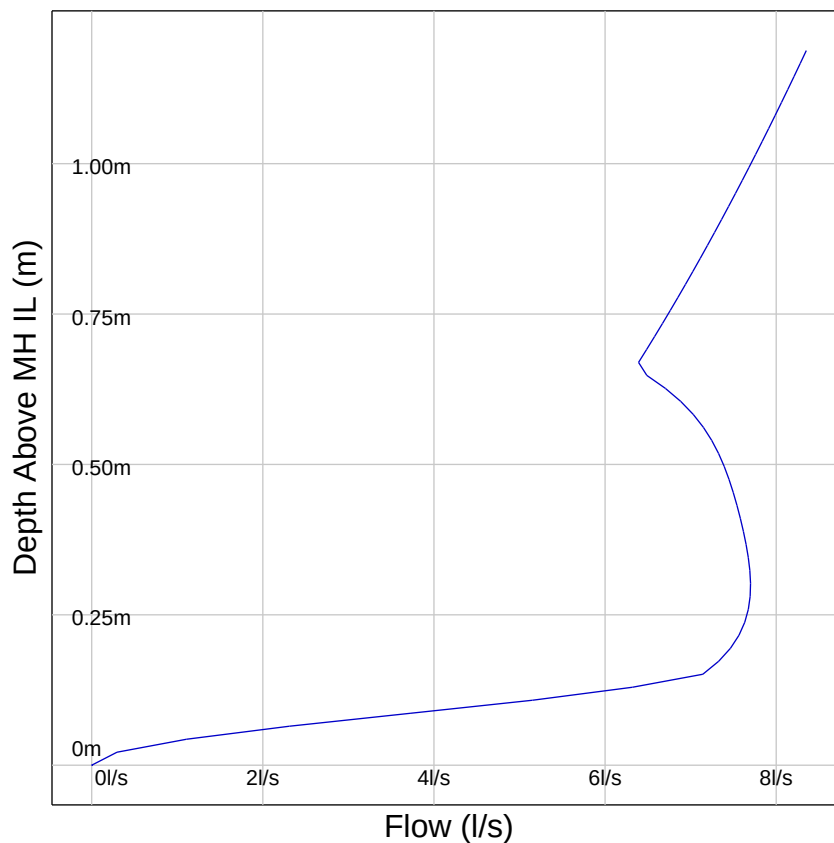


Controls within Manhole S42

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-0129-7700-1000-7700	1.000	7.700	0.000	0.298	7.700	0.659	6.345

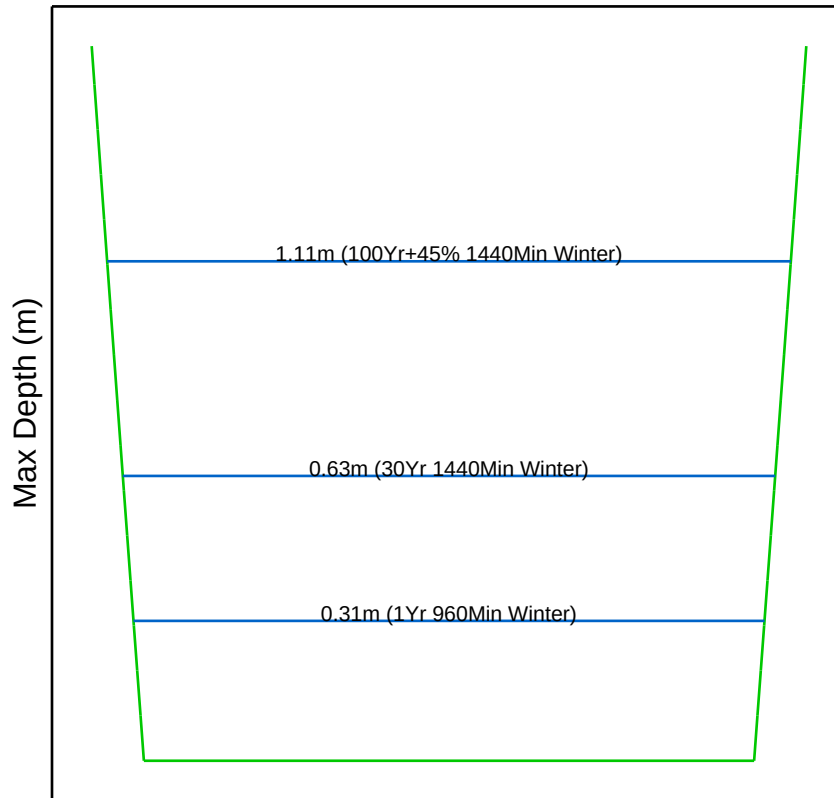
Hydro-Brake® Optimum Control from S42 to S43



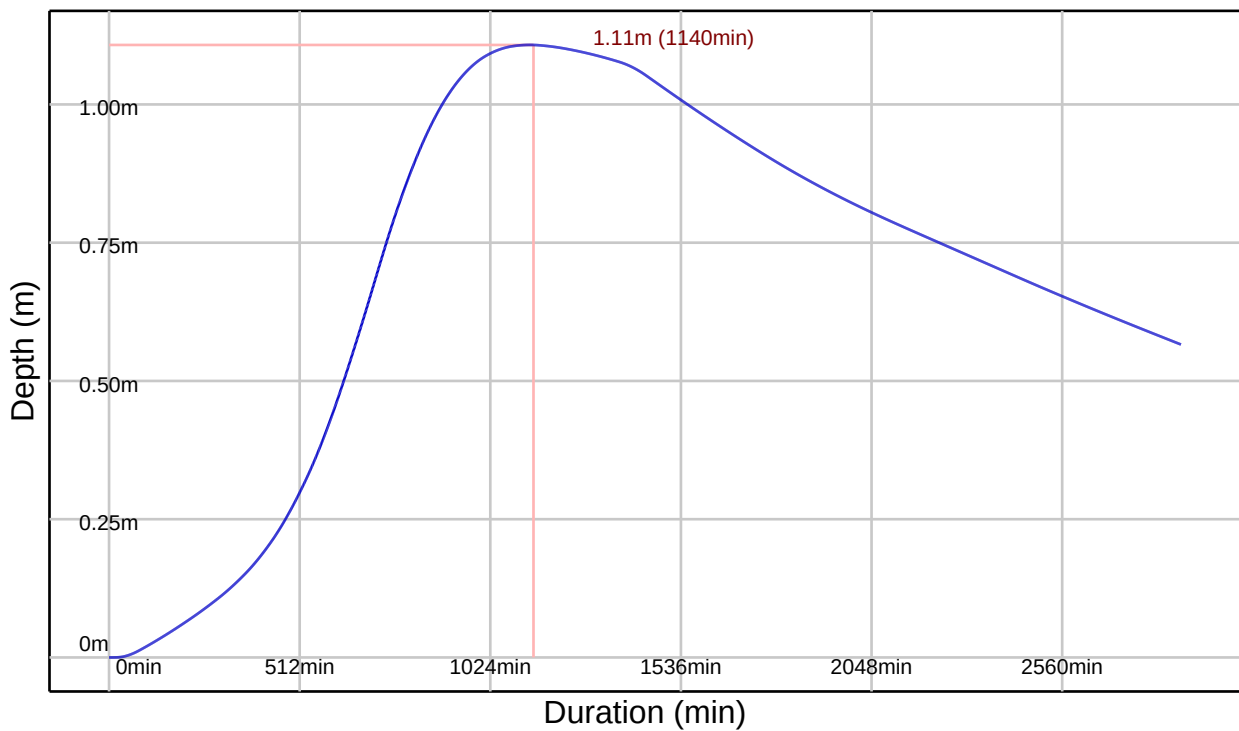
Pond Structure at Manhole I-HW12

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
35.300	1.585	4908.265	36.500	0.385	0.00000000	0.00000000	2.00

Pond Depth/Area Diagram at I-HW12



Pond F at I-HW12 (100Yr+45% 1440Min Winter)

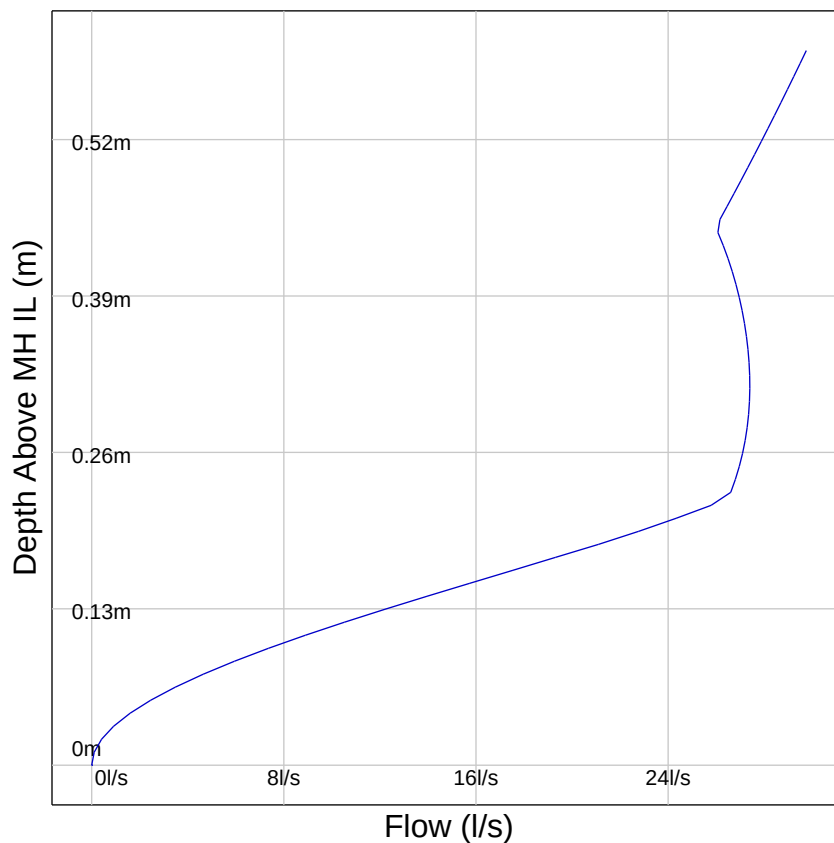


Controls within Manhole I-S21

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-0234-2740-0500-2740	0.500	27.400	0.000	0.315	27.401	0.447	25.975

Hydro-Brake® Optimum Control from I-S21 to I-HW13



Orifice Control

Invert Offset (m)	Orifice Diameter (m)	Discharge Coeff
0.800	0.130	0.600

Simulation Settings

FSR: M5-60=20.10, R=0.39, Locale=England and Wales

Summer (Cv: 0.75), Winter (Cv: 0.84)

Global Time of Entry: 5.0 mins

Durations (mins): 15, 30, 600, 720, 960, 1440, 2160

Return Periods (yrs) + Climate Change: (1, +0%), (30, +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	36.298	0.00	0.07	30Yr 720Min Winter	4.777	0.00	-0.01
1Yr 15Min Summer	36.298	0.00	0.04	30Yr 960Min Summer	3.821	0.00	0.00
1Yr 30Min Winter	23.156	0.00	-0.04	30Yr 960Min Winter	3.821	0.00	-0.00
1Yr 30Min Summer	23.156	0.00	-0.03	30Yr 1440Min Summer	2.786	0.00	0.00
1Yr 600Min Winter	2.705	0.00	-0.01	30Yr 1440Min Winter	2.786	0.00	0.00
1Yr 600Min Summer	2.705	0.00	-0.01	30Yr 2160Min Summer	2.029	0.00	0.00
1Yr 720Min Winter	2.368	0.00	-0.00	30Yr 2160Min Winter	2.029	0.00	0.00
1Yr 720Min Summer	2.368	0.00	-0.01	100Yr+45% 15Min Summer	142.604	0.00	0.20
1Yr 960Min Summer	1.919	0.00	-0.00	100Yr+45% 15Min Winter	142.604	0.00	0.18
1Yr 960Min Winter	1.919	0.00	-0.00	100Yr+45% 30Min Summer	94.023	0.00	0.11
1Yr 1440Min Summer	1.428	0.00	-0.00	100Yr+45% 30Min Winter	94.023	0.00	0.10
1Yr 1440Min Winter	1.428	0.00	-0.00	100Yr+45% 600Min Summer	10.257	0.00	0.00
1Yr 2160Min Winter	1.063	0.00	0.00	100Yr+45% 600Min Winter	10.257	0.00	0.02
1Yr 2160Min Summer	1.063	0.00	0.00	100Yr+45% 720Min Summer	8.881	0.00	0.01
30Yr 15Min Summer	75.787	0.00	0.16	100Yr+45% 720Min Winter	8.881	0.00	0.02
30Yr 15Min Winter	75.787	0.00	0.18	100Yr+45% 960Min Summer	7.069	0.00	0.00
30Yr 30Min Summer	49.539	0.00	0.01	100Yr+45% 960Min Winter	7.069	0.00	0.01
30Yr 30Min Winter	49.539	0.00	0.01	100Yr+45% 1440Min Summer	5.117	0.00	-0.00
30Yr 600Min Winter	5.502	0.00	-0.01	100Yr+45% 1440Min Winter	5.117	0.00	-0.01
30Yr 600Min Summer	5.502	0.00	-0.01	100Yr+45% 2160Min Winter	3.698	0.00	0.00
30Yr 720Min Summer	4.777	0.00	-0.00	100Yr+45% 2160Min Summer	3.698	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
S40	15 min Winter	8	39.722	0.156	57.780		OK
HW11	15 min Winter	8	39.665	0.140	57.600		OK
S41	15 min Winter	4	39.994	0.435	57.531		OK
HW12	15 min Winter	4	39.989	0.464	54.293		Surcharged
HW13	600 min Winter	420	39.516	0.216	7.496		OK
S42	600 min Winter	406	39.551	0.287	8.118		OK
S43	15 min Winter	8	39.319	0.120	45.260		OK
S44	15 min Winter	9	38.848	0.122	44.497		OK
S45	15 min Winter	9	38.753	0.209	148.527		OK
S46	15 min Winter	9	38.248	0.232	150.427		OK
S47	15 min Winter	9	38.178	0.254	224.745		OK
S48	15 min Winter	9	37.948	0.254	225.785		OK
S49	15 min Winter	9	37.430	0.324	274.512		OK
S50	15 min Winter	9	37.701	0.090	13.805		OK
S51	15 min Winter	9	37.344	0.348	308.553		OK
S52	15 min Winter	9	37.185	0.404	312.826		OK
S53	15 min Winter	9	37.158	0.434	315.121		OK
S54	15 min Winter	8	37.571	0.280	157.458		OK
S55	15 min Winter	8	37.332	0.249	158.410		OK
S56	15 min Winter	8	37.257	0.239	157.664		OK
S57	15 min Winter	9	37.140	0.482	469.771		OK
S58	15 min Winter	10	37.096	0.481	461.010		OK
S59	15 min Winter	10	37.052	0.480	467.845		OK
S60	15 min Winter	10	37.005	0.476	474.329		OK
S61	15 min Winter	10	36.955	0.469	479.628		OK
S62	15 min Winter	10	36.900	0.456	517.140		OK
S63	15 min Winter	10	36.771	0.483	596.783		OK
S64	15 min Winter	10	36.615	0.477	628.094		OK
S65	15 min Winter	10	36.412	0.467	635.328		OK
E-I-S17	15 min Winter	10	36.289	0.463	634.043		OK
E-I-S18	15 min Winter	10	36.145	0.453	662.121		OK
E-I-S19	15 min Winter	11	35.978	0.421	701.512		OK
E-I-HW10	15 min Winter	10	35.849	0.324	686.826		OK
I-S20	15 min Winter	8	35.858	0.288	268.237		OK
I-HW11	15 min Summer	7	35.726	0.201	244.081		OK
I-HW12	960 min Winter	723	35.610	0.310	26.135		Surcharged
I-S21	960 min Winter	723	35.607	0.344	26.094		Surcharged
I-HW13	960 min Winter	723	35.359	0.114	26.094		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	S40	HW11	0.148	1.271	57.600	0.253	OK
1.001	600 min Winter	401	HW11	HW13	0.122	0.489	5.437	0.006	OK
2.000	15 min Winter	8	S41	HW12	0.443	1.560	148.071	0.650	OK
2.001	15 min Winter	8	HW12	HW13	0.229	2.916	149.098	0.450	OK
1.002	600 min Winter	467	HW13	S42	0.251	0.513	40.151	0.176	OK
1.003	15 min Winter	34	S42	S43	0.089	0.717	6.408	0.030	OK
1.004	15 min Winter	9	S43	S44	0.121	1.295	44.497	0.160	OK
1.005	15 min Winter	9	S44	S45	0.128	1.329	45.247	0.150	OK
1.006	15 min Winter	9	S45	S46	0.205	1.919	150.427	0.333	OK
1.007	15 min Winter	9	S46	S47	0.243	1.412	150.776	0.235	OK
1.008	15 min Winter	9	S47	S48	0.254	1.981	225.785	0.351	OK
1.009	15 min Winter	9	S48	S49	0.249	2.050	227.395	0.370	OK
1.010	15 min Winter	9	S49	S51	0.336	1.433	274.765	0.315	OK
3.000	15 min Winter	9	S50	S51	0.089	0.809	14.234	0.200	OK
1.011	15 min Winter	9	S51	S52	0.336	1.605	307.521	0.433	OK
1.012	15 min Winter	9	S52	S53	0.419	1.075	310.635	0.271	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
1.013	15 min Winter	10	S53	S57	0.458	0.975	314.301	0.274	OK
4.000	15 min Winter	8	S54	S55	0.268	1.585	156.349	0.686	OK
4.001	15 min Winter	8	S55	S56	0.244	1.457	157.664	0.325	OK
4.002	15 min Winter	8	S56	S57	0.229	1.577	156.067	0.322	OK
1.014	15 min Winter	10	S57	S58	0.480	1.347	465.312	0.406	OK
1.015	15 min Winter	10	S58	S59	0.480	1.356	464.571	0.405	OK
1.016	15 min Winter	10	S59	S60	0.478	1.373	471.027	0.411	OK
1.017	15 min Winter	10	S60	S61	0.472	1.410	476.922	0.416	OK
1.018	15 min Winter	10	S61	S62	0.463	1.463	481.512	0.420	OK
1.019	15 min Winter	10	S62	S63	0.470	1.557	520.145	0.454	OK
1.020	15 min Winter	10	S63	S64	0.480	1.739	599.691	0.523	OK
1.021	15 min Winter	10	S64	S65	0.456	1.939	626.367	0.546	OK
1.022	15 min Winter	10	S65	E-I-S17	0.461	1.742	634.043	0.369	OK
1.023	15 min Winter	11	E-I-S17	E-I-S18	0.458	1.761	634.289	0.369	OK
1.024	15 min Winter	11	E-I-S18	E-I-S19	0.437	1.963	669.645	0.390	OK
1.025	15 min Winter	11	E-I-S19	E-I-HW10	0.372	2.562	704.606	0.391	OK
1.026	960 min Winter	723	E-I-HW10	I-HW12	0.198	0.388	59.579		OK
5.000	15 min Winter	8	I-S20	I-HW11	0.240	2.583	267.625	0.518	OK
5.001	960 min Winter	722	I-HW11	I-HW12	0.198	0.323	17.910		OK
1.027	960 min Winter	722	I-HW12	I-S21	0.300	0.493	26.094	0.332	Surcharged
1.028	960 min Winter	723	I-S21	I-HW13	0.119	0.997	26.094	0.370	OK

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

30yr+0%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S40	15 min Winter	8	39.794	0.228	120.690		OK
HW11	600 min Winter	480	39.792	0.267	2.149		OK
S41	15 min Winter	3	40.189	0.630	77.552		Surcharged
HW12	15 min Winter	3	40.181	0.656	70.819		Surcharged
HW13	600 min Winter	483	39.792	0.492	7.525		Surcharged
S42	600 min Winter	484	39.793	0.529	7.258		Surcharged
S43	15 min Winter	8	39.377	0.178	93.608		OK
S44	15 min Winter	9	38.926	0.200	92.501		OK
S45	15 min Winter	8	38.871	0.327	316.457		OK
S46	15 min Winter	9	38.400	0.384	311.291		OK
S47	15 min Winter	9	38.337	0.413	469.662		OK
S48	15 min Winter	9	38.103	0.409	472.234		OK
S49	15 min Winter	9	37.686	0.580	571.982		OK
S50	15 min Winter	8	37.746	0.135	30.631		OK
S51	15 min Winter	10	37.635	0.640	589.450		OK
S52	15 min Winter	10	37.566	0.785	612.065		OK
S53	15 min Winter	10	37.542	0.819	625.698		OK
S54	15 min Winter	8	37.801	0.510	328.893		Surcharged
S55	15 min Winter	9	37.563	0.480	314.927		OK
S56	15 min Winter	10	37.539	0.522	270.529		OK
S57	15 min Winter	10	37.516	0.858	915.227		OK
S58	15 min Winter	10	37.465	0.850	925.449		OK
S59	15 min Winter	10	37.411	0.839	934.726		OK
S60	15 min Winter	10	37.355	0.826	943.903		OK
S61	15 min Winter	10	37.296	0.809	951.773		OK
S62	15 min Winter	10	37.232	0.788	1028.738		OK
S63	15 min Winter	10	37.095	0.807	1194.449		OK
S64	15 min Winter	10	36.894	0.755	1261.495		OK
S65	15 min Winter	10	36.692	0.747	1282.630		OK
E-I-S17	15 min Winter	10	36.557	0.731	1283.424		OK
E-I-S18	15 min Winter	10	36.396	0.705	1356.367		OK
E-I-S19	15 min Winter	10	36.200	0.643	1444.106		OK
E-I-HW10	15 min Winter	10	36.023	0.498	1439.377		OK
I-S20	15 min Winter	8	36.048	0.479	560.284		OK
I-HW11	1440 min Winter	1147	35.932	0.407	5.127		OK
I-HW12	1440 min Winter	1147	35.932	0.632	28.313		Surcharged
I-S21	1440 min Winter	1147	35.928	0.665	28.304		Surcharged
I-HW13	1440 min Winter	1147	35.364	0.120	28.304		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	600 min Winter	480	S40	HW11	0.247	0.829	11.058	0.049	OK
1.001	600 min Winter	480	HW11	HW13	0.380	0.588	10.946	0.013	OK
2.000	15 min Winter	8	S41	HW12	0.450	2.026	308.533	1.354	OK
2.001	600 min Winter	483	HW12	HW13	0.359	1.125	37.880	0.114	OK
1.002	720 min Winter	463	HW13	S42	0.450	0.505	43.045	0.189	OK
1.003	15 min Summer	11	S42	S43	0.143	0.720	10.160	0.048	OK
1.004	15 min Winter	9	S43	S44	0.188	1.474	92.501	0.333	OK
1.005	15 min Winter	9	S44	S45	0.224	1.393	92.460	0.307	OK
1.006	15 min Winter	9	S45	S46	0.316	2.286	311.291	0.688	OK
1.007	15 min Winter	9	S46	S47	0.399	1.587	315.275	0.491	OK
1.008	15 min Winter	9	S47	S48	0.411	2.288	472.234	0.735	OK
1.009	15 min Winter	9	S48	S49	0.420	2.359	473.641	0.771	OK
1.010	15 min Winter	9	S49	S51	0.607	1.585	563.619	0.647	OK
3.000	15 min Winter	9	S50	S51	0.158	0.977	29.606	0.415	OK
1.011	15 min Winter	10	S51	S52	0.638	1.781	622.030	0.875	OK
1.012	15 min Winter	10	S52	S53	0.802	1.099	622.233	0.543	OK
1.013	15 min Winter	10	S53	S57	0.838	1.022	630.644	0.550	OK
4.000	15 min Winter	8	S54	S55	0.422	2.112	327.372	1.437	OK
4.001	15 min Winter	10	S55	S56	0.500	1.618	326.733	0.673	OK
4.002	15 min Winter	10	S56	S57	0.540	1.739	317.044	0.653	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
1.014	15 min Winter	10	S57	S58	0.854	1.507	927.760	0.809	OK
1.015	15 min Winter	10	S58	S59	0.844	1.516	927.897	0.809	OK
1.016	15 min Winter	10	S59	S60	0.832	1.533	937.014	0.817	OK
1.017	15 min Winter	10	S60	S61	0.818	1.559	946.128	0.825	OK
1.018	15 min Winter	10	S61	S62	0.799	1.605	954.416	0.832	OK
1.019	15 min Winter	10	S62	S63	0.798	1.746	1034.578	0.902	OK
1.020	15 min Winter	10	S63	S64	0.781	2.051	1202.246	1.049	OK
1.021	15 min Winter	10	S64	S65	0.710	2.347	1263.936	1.102	OK
1.022	15 min Winter	10	S65	E-I-S17	0.735	1.984	1283.424	0.748	OK
1.023	15 min Winter	10	E-I-S17	E-I-S18	0.718	2.055	1284.063	0.748	OK
1.024	15 min Winter	10	E-I-S18	E-I-S19	0.674	2.326	1353.684	0.788	OK
1.025	15 min Winter	10	E-I-S19	E-I-HW10	0.571	3.027	1439.377	0.799	OK
1.026	1440 min Winter	1148	E-I-HW10	I-HW12	0.519	0.418	83.211		OK
5.000	1440 min Winter	1147	I-S20	I-HW11	0.384	1.615	25.958	0.050	OK
5.001	1440 min Winter	1147	I-HW11	I-HW12	0.519	0.327	25.242		OK
1.027	1440 min Winter	1144	I-HW12	I-S21	0.300	0.491	28.304	0.360	Surcharged
1.028	1440 min Winter	1147	I-S21	I-HW13	0.125	1.019	28.304	0.401	OK

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

100yr+45%

Manholes

Manhole	Critical Storm	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Flood (m3)	Status
S40	720 min Winter	684	40.262	0.696	2.127		Surcharged
HW11	720 min Winter	684	40.262	0.737	2.127		OK
S41	15 min Winter	8	41.020	1.462	581.076		Surcharged
HW12	15 min Winter	8	40.637	1.112	579.239		Flood Risk
HW13	720 min Winter	685	40.262	0.962	7.450		Surcharged
S42	720 min Winter	685	40.262	0.998	7.491		Surcharged
S43	15 min Winter	10	40.236	1.037	135.330		Surcharged
S44	15 min Winter	10	40.167	1.441	107.307		Surcharged
S45	15 min Winter	10	40.149	1.605	436.229		Flood Risk
S46	15 min Winter	11	39.753	1.737	402.989		Flood Risk
S47	15 min Winter	10	39.690	1.766	646.410		Flood Risk
S48	15 min Winter	11	39.448	1.755	607.800		Flood Risk
S49	15 min Winter	11	38.979	1.872	736.693		Flood Risk
S50	15 min Winter	11	38.915	1.303	33.230		Flood Risk
S51	15 min Winter	11	38.867	1.871	841.693		Flood Risk
S52	15 min Winter	10	38.735	1.955	841.140		Surcharged
S53	15 min Winter	10	38.684	1.960	844.390		Surcharged
S54	15 min Winter	9	39.230	1.938	581.974		Flood Risk
S55	15 min Winter	10	38.811	1.729	497.412		Surcharged
S56	15 min Winter	10	38.716	1.698	497.231		Surcharged
S57	15 min Winter	10	38.626	1.968	1345.558		Surcharged
S58	15 min Winter	10	38.515	1.900	1345.382		Surcharged
S59	15 min Winter	10	38.403	1.831	1351.144		Surcharged
S60	15 min Winter	10	38.289	1.760	1357.573		Surcharged
S61	15 min Winter	10	38.174	1.688	1362.348		Surcharged
S62	15 min Winter	10	38.058	1.615	1497.102		Surcharged
S63	15 min Winter	10	37.749	1.461	1790.146		Surcharged
S64	15 min Winter	10	37.325	1.186	1896.408		Surcharged
S65	15 min Winter	10	37.100	1.155	1928.718		Surcharged
E-I-S17	15 min Winter	10	36.911	1.085	1926.833		Surcharged
E-I-S18	15 min Winter	10	36.702	1.010	2060.970		OK
E-I-S19	15 min Winter	10	36.430	0.873	2231.792		OK
E-I-HW10	1440 min Winter	1131	36.408	0.883	37.835		OK
I-S20	1440 min Winter	1130	36.408	0.838	10.183		Surcharged
I-HW11	1440 min Winter	1130	36.408	0.883	10.183		OK
I-HW12	1440 min Winter	1130	36.408	1.108	48.145		Surcharged
I-S21	1440 min Winter	1131	36.397	1.134	48.044		Surcharged
I-HW13	1440 min Winter	1131	35.406	0.162	48.044		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	720 min Summer	417	S40	HW11	0.450	0.901	24.710	0.108	OK
1.001	720 min Winter	684	HW11	HW13	0.743	0.622	16.553	0.020	OK
2.000	15 min Winter	8	S41	HW12	0.450	3.642	579.239	2.543	OK
2.001	600 min Summer	336	HW12	HW13	0.450	1.342	72.936	0.220	OK
1.002	30 min Summer	20	HW13	S42	0.450	0.624	45.708	0.201	OK
1.003	15 min Winter	13	S42	S43	0.450	0.713	19.208	0.091	OK
1.004	15 min Winter	9	S43	S44	0.450	1.513	162.344	0.584	OK
1.005	15 min Winter	14	S44	S45	0.450	1.475	194.154	0.644	OK
1.006	15 min Winter	8	S45	S46	0.525	2.230	426.250	0.942	OK
1.007	15 min Winter	12	S46	S47	0.600	1.513	418.721	0.652	Surcharged
1.008	15 min Winter	10	S47	S48	0.600	2.357	633.388	0.986	Surcharged
1.009	15 min Winter	11	S48	S49	0.600	2.232	623.273	1.015	Surcharged
1.010	15 min Winter	11	S49	S51	0.750	1.710	755.526	0.867	Surcharged
3.000	30 min Summer	15	S50	S51	0.300	0.965	42.703	0.599	Surcharged
1.011	15 min Winter	12	S51	S52	0.750	1.950	861.467	1.212	Surcharged
1.012	15 min Winter	12	S52	S53	0.900	1.417	901.647	0.786	OK
1.013	15 min Winter	12	S53	S57	0.900	1.482	942.676	0.822	OK
4.000	15 min Winter	8	S54	S55	0.450	3.779	601.036	2.638	OK
4.001	15 min Winter	8	S55	S56	0.600	2.063	583.228	1.202	Surcharged
4.002	15 min Winter	8	S56	S57	0.600	1.971	557.416	1.148	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
1.014	15 min Winter	10	S57	S58	0.900	2.099	1335.336	1.165	OK
1.015	15 min Winter	11	S58	S59	0.900	2.120	1348.739	1.176	OK
1.016	15 min Winter	11	S59	S60	0.900	2.152	1369.062	1.194	OK
1.017	15 min Winter	11	S60	S61	0.900	2.184	1389.433	1.212	OK
1.018	15 min Winter	11	S61	S62	0.900	2.213	1408.083	1.228	OK
1.019	15 min Winter	11	S62	S63	0.900	2.408	1531.915	1.336	OK
1.020	15 min Winter	10	S63	S64	0.900	2.806	1785.009	1.557	OK
1.021	15 min Winter	10	S64	S65	0.900	2.976	1893.571	1.652	OK
1.022	15 min Winter	10	S65	E-I-S17	1.050	2.225	1926.833	1.122	OK
1.023	15 min Winter	10	E-I-S17	E-I-S18	1.030	2.242	1925.025	1.121	OK
1.024	15 min Winter	10	E-I-S18	E-I-S19	0.942	2.530	2061.781	1.201	OK
1.025	1440 min Winter	1131	E-I-S19	E-I-HW10	0.867	1.742	146.883	0.082	OK
1.026	1440 min Winter	1131	E-I-HW10	I-HW12	0.991	0.510	143.847		OK
5.000	720 min Summer	435	I-S20	I-HW11	0.600	1.962	115.644	0.224	Surcharged
5.001	1440 min Winter	1130	I-HW11	I-HW12	0.995	0.389	46.269		OK
1.027	1440 min Winter	1128	I-HW12	I-S21	0.300	0.680	48.044	0.612	Surcharged
1.028	1440 min Winter	1131	I-S21	I-HW13	0.169	1.168	48.044	0.681	OK