Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	17.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.840	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
SWIC28		5.00	41.937	450	385217.343	397319.134	0.837
SWIC27			41.968	450	385223.244	397316.079	0.912
SWIC26		5.00	41.973	315	385228.528	397313.343	0.921
SWIC25			41.969	315	385227.615	397313.818	0.924
SWIC24			41.964	450	385226.283	397314.564	0.931
SWIC20		5.00	42.000	450	385203.924	397304.880	0.995
SWIC21			42.000	450	385208.209	397302.746	1.027
SWIC22			42.000	450	385213.996	397299.612	1.071
SWIC23			42.000	450	385216.888	397297.981	1.094
SWIC13	0.115	5.00	41.670	600	385216.970	397288.899	2.064
Junction			41.670		385213.220	397290.946	2.092
SWIC14	0.008	5.00	42.000	450	385205.134	397317.930	0.798
SWMH12			41.800	1200	385196.969	397299.706	2.345
SWIC11	0.012	5.00	41.256	450	385200.631	397265.865	0.901
SWIC10			41.250	450	385196.741	397267.998	0.925
SWIC09			41.236	450	385195.279	397268.798	0.922
SWIC08	0.010	5.00	41.250	450	385193.442	397269.767	0.950
SWIC07			41.225	450	385191.287	397270.991	0.942
SWIC06			41.142	450	385186.185	397273.795	0.898
SWIC05	0.004	5.00	41.141	450	385184.197	397274.904	0.912
SWIC04			41.199	450	385183.308	397275.400	0.977
SWIC03			41.356	450	385192.000	397291.478	1.256
SWIC02			41.409	450	385193.733	397293.270	1.326
SWMH01			41.574	1350	385193.321	397294.907	2.159
CW01			41.638	1200	385190.854	397292.906	2.244
CW02			41.210	1200	385177.875	397267.666	2.275

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	SWIC28	SWIC27	6.645	0.600	41.100	41.056	0.044	150.0	150	5.14	46.1
1.001	SWIC27	SWIC24	3.396	0.600	41.056	41.033	0.023	150.0	150	5.20	45.9
2.000	SWIC26	SWIC25	1.029	0.600	41.052	41.045	0.007	150.0	150	5.02	46.6
2.001	SWIC25	SWIC24	1.527	0.600	41.045	41.035	0.010	150.0	150	5.05	46.5
1.002	SWIC24	SWIC23	19.059	0.600	41.033	40.906	0.127	150.0	150	5.59	44.4
3.000	SWIC20	SWIC21	4.787	0.600	41.005	40.973	0.032	150.0	150	5.10	46.3
3.001	SWIC21	SWIC22	6.581	0.600	40.973	40.929	0.044	150.0	150	5.23	45.8
3.002	SWIC22	SWIC23	3.320	0.600	40.929	40.907	0.022	150.0	150	5.30	45.5
1.003	SWIC23	Junction	7.934	0.600	40.906	39.914	0.992	8.0	150	5.63	44.3
4.000	SWIC13	Junction	4.272	0.600	39.606	39.578	0.028	150.0	375	5.05	46.5
1.004	Junction	SWMH12	18.468	0.600	39.578	39.455	0.123	150.0	375	5.84	43.5
5.000	SWIC14	SWMH12	19.970	0.600	41.202	41.069	0.133	150.0	225	5.31	45.4
1.005	SWMH12	SWMH01	6.029	0.600	39.455	39.415	0.040	150.0	375	5.91	43.3
6.000	SWIC11	SWIC10	4.436	0.600	40.355	40.325	0.030	150.0	150	5.09	46.3
6.001	SWIC10	SWIC09	1.667	0.600	40.325	40.314	0.011	150.0	150	5.12	46.2
6.002	SWIC09	SWIC08	2.077	0.600	40.314	40.300	0.014	150.0	150	5.17	46.0
6.003	SWIC08	SWIC07	2.478	0.600	40.300	40.283	0.017	150.0	150	5.22	45.8
6.004	SWIC07	SWIC06	5.822	0.600	40.283	40.244	0.039	150.0	150	5.34	45.4
6.005	SWIC06	SWIC05	2.276	0.600	40.244	40.229	0.015	150.0	150	5.38	45.2
6.006	SWIC05	SWIC04	1.018	0.600	40.229	40.222	0.007	150.0	150	5.40	45.1
6.007	SWIC04	SWIC03	18.277	0.600	40.222	40.100	0.122	150.0	150	5.78	43.8
6.008	SWIC03	SWIC02	2.493	0.600	40.100	40.083	0.017	150.0	150	5.83	43.6
6.009	SWIC02	SWMH01	1.688	0.600	40.083	40.072	0.011	150.0	150	5.86	43.5
1.006	SWMH01	CW01	3.179	0.600	39.415	39.394	0.021	150.0	225	5.96	43.1

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.818	14.5	0.0	0.687	0.762	0.000	0.0	0	0.000
1.001	0.818	14.5	0.0	0.762	0.781	0.000	0.0	0	0.000
2.000	0.818	14.5	0.0	0.771	0.774	0.000	0.0	0	0.000
2.001	0.818	14.5	0.0	0.774	0.779	0.000	0.0	0	0.000
1.002	0.818	14.5	0.0	0.781	0.944	0.000	0.0	0	0.000
3.000	0.818	14.5	0.0	0.845	0.877	0.000	0.0	0	0.000
3.001	0.818	14.5	0.0	0.877	0.921	0.000	0.0	0	0.000
3.002	0.818	14.5	0.0	0.921	0.943	0.000	0.0	0	0.000
1.003	3.584	63.3	0.0	0.944	1.606	0.000	0.0	0	0.000
4.000	1.477	163.1	16.2	1.689	1.717	0.115	0.0	79	0.956
1.004	1.477	163.1	15.2	1.717	1.970	0.115	0.0	77	0.935
5.000	1.065	42.3	1.0	0.573	0.506	0.008	0.0	24	0.448
1.005	1.477	163.1	16.1	1.970	1.784	0.122	0.0	79	0.951
6.000	0.818	14.5	1.6	0.751	0.775	0.012	0.0	34	0.545
6.001	0.818	14.5	1.6	0.775	0.772	0.012	0.0	34	0.545
6.002	0.818	14.5	1.6	0.772	0.800	0.012	0.0	34	0.545
6.003	0.818	14.5	3.0	0.800	0.792	0.022	0.0	47	0.648
6.004	0.818	14.5	3.0	0.792	0.748	0.022	0.0	46	0.644
6.005	0.818	14.5	3.0	0.748	0.762	0.022	0.0	46	0.644
6.006	0.818	14.5	3.5	0.762	0.827	0.026	0.0	50	0.674
6.007	0.818	14.5	3.4	0.827	1.106	0.026	0.0	50	0.670
6.008	0.818	14.5	3.4	1.106	1.176	0.026	0.0	50	0.670
6.009	0.818	14.5	3.4	1.176	1.352	0.026	0.0	50	0.670
1.006	1.065	42.3	19.4	1.934	2.019	0.148	0.0	107	1.042

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Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.007	CW01	CW02	28.383	0.600	39.394	38.935	0.459	61.8	225	6.24	42.2

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.007	1.666	66.2	18.9	2.019	2.050	0.148	0.0	82	1.442

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	6.645	150.0	150	Circular	41.937	41.100	0.687	41.968	41.056	0.762
1.001	3.396	150.0	150	Circular	41.968	41.056	0.762	41.964	41.033	0.781
2.000	1.029	150.0	150	Circular	41.973	41.052	0.771	41.969	41.045	0.774
2.001	1.527	150.0	150	Circular	41.969	41.045	0.774	41.964	41.035	0.779
1.002	19.059	150.0	150	Circular	41.964	41.033	0.781	42.000	40.906	0.944
3.000	4.787	150.0	150	Circular	42.000	41.005	0.845	42.000	40.973	0.877
3.001	6.581	150.0	150	Circular	42.000	40.973	0.877	42.000	40.929	0.921
3.002	3.320	150.0	150	Circular	42.000	40.929	0.921	42.000	40.907	0.943
1.003	7.934	8.0	150	Circular	42.000	40.906	0.944	41.670	39.914	1.606
4.000	4.272	150.0	375	Circular	41.670	39.606	1.689	41.670	39.578	1.717
1.004	18.468	150.0	375	Circular	41.670	39.578	1.717	41.800	39.455	1.970
5.000	19.970	150.0	225	Circular	42.000	41.202	0.573	41.800	41.069	0.506
1.005	6.029	150.0	375	Circular	41.800	39.455	1.970	41.574	39.415	1.784
6.000	4.436	150.0	150	Circular	41.256	40.355	0.751	41.250	40.325	0.775
6.001	1.667	150.0	150	Circular	41.250	40.325	0.775	41.236	40.314	0.772
6.002	2.077	150.0	150	Circular	41.236	40.314	0.772	41.250	40.300	0.800
6.003	2.478	150.0	150	Circular	41.250	40.300	0.800	41.225	40.283	0.792
6.004	5.822	150.0	150	Circular	41.225	40.283	0.792	41.142	40.244	0.748
6.005	2.276	150.0	150	Circular	41.142	40.244	0.748	41.141	40.229	0.762

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	SWIC28	450	Manhole	Adoptable	SWIC27	450	Manhole	Adoptable
1.001	SWIC27	450	Manhole	Adoptable	SWIC24	450	Manhole	Adoptable
2.000	SWIC26	315	Manhole	Adoptable	SWIC25	315	Manhole	Adoptable
2.001	SWIC25	315	Manhole	Adoptable	SWIC24	450	Manhole	Adoptable
1.002	SWIC24	450	Manhole	Adoptable	SWIC23	450	Manhole	Adoptable
3.000	SWIC20	450	Manhole	Adoptable	SWIC21	450	Manhole	Adoptable
3.001	SWIC21	450	Manhole	Adoptable	SWIC22	450	Manhole	Adoptable
3.002	SWIC22	450	Manhole	Adoptable	SWIC23	450	Manhole	Adoptable
1.003	SWIC23	450	Manhole	Adoptable	Junction		Junction	
4.000	SWIC13	600	Manhole	Adoptable	Junction		Junction	
1.004	Junction		Junction		SWMH12	1200	Manhole	Adoptable
5.000	SWIC14	450	Manhole	Adoptable	SWMH12	1200	Manhole	Adoptable
1.005	SWMH12	1200	Manhole	Adoptable	SWMH01	1350	Manhole	Adoptable
6.000	SWIC11	450	Manhole	Adoptable	SWIC10	450	Manhole	Adoptable
6.001	SWIC10	450	Manhole	Adoptable	SWIC09	450	Manhole	Adoptable
6.002	SWIC09	450	Manhole	Adoptable	SWIC08	450	Manhole	Adoptable
6.003	SWIC08	450	Manhole	Adoptable	SWIC07	450	Manhole	Adoptable
6.004	SWIC07	450	Manhole	Adoptable	SWIC06	450	Manhole	Adoptable
6.005	SWIC06	450	Manhole	Adoptable	SWIC05	450	Manhole	Adoptable

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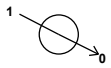
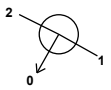
Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.006	1.018	150.0	150	Circular	41.141	40.229	0.762	41.199	40.222	0.827
6.007	18.277	150.0	150	Circular	41.199	40.222	0.827	41.356	40.100	1.106
6.008	2.493	150.0	150	Circular	41.356	40.100	1.106	41.409	40.083	1.176
6.009	1.688	150.0	150	Circular	41.409	40.083	1.176	41.574	40.072	1.352
1.006	3.179	150.0	225	Circular	41.574	39.415	1.934	41.638	39.394	2.019
1.007	28.383	61.8	225	Circular	41.638	39.394	2.019	41.210	38.935	2.050

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
6.006	SWIC05	450	Manhole	Adoptable	SWIC04	450	Manhole	Adoptable
6.007	SWIC04	450	Manhole	Adoptable	SWIC03	450	Manhole	Adoptable
6.008	SWIC03	450	Manhole	Adoptable	SWIC02	450	Manhole	Adoptable
6.009	SWIC02	450	Manhole	Adoptable	SWMH01	1350	Manhole	Adoptable
1.006	SWMH01	1350	Manhole	Adoptable	CW01	1200	Manhole	Adoptable
1.007	CW01	1200	Manhole	Adoptable	CW02	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC28	385217.343	397319.134	41.937	0.837	450				
						0	1.000	41.100	150
SWIC27	385223.244	397316.079	41.968	0.912	450	1	1.000	41.056	150
									
						0	1.001	41.056	150
SWIC26	385228.528	397313.343	41.973	0.921	315				
						0	2.000	41.052	150
SWIC25	385227.615	397313.818	41.969	0.924	315	1	2.000	41.045	150
						0	2.001	41.045	150
SWIC24	385226.283	397314.564	41.964	0.931	450	1	2.001	41.035	150
						2	1.001	41.033	150
									
						0	1.002	41.033	150
SWIC20	385203.924	397304.880	42.000	0.995	450				
						0	3.000	41.005	150
SWIC21	385208.209	397302.746	42.000	1.027	450	1	3.000	40.973	150
						0	3.001	40.973	150
SWIC22	385213.996	397299.612	42.000	1.071	450	1	3.001	40.929	150
						0	3.002	40.929	150

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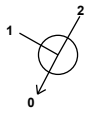
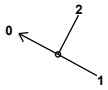
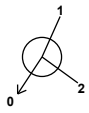
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC23	385216.888	397297.981	42.000	1.094	450		1 3.002	40.907	150
							2 1.002	40.906	150
							0 1.003	40.906	150
SWIC13	385216.970	397288.899	41.670	2.064	600				
							0 4.000	39.606	375
Junction	385213.220	397290.946	41.670	2.092			1 4.000	39.578	375
							2 1.003	39.914	150
							0 1.004	39.578	375
SWIC14	385205.134	397317.930	42.000	0.798	450				
							0 5.000	41.202	225
SWMH12	385196.969	397299.706	41.800	2.345	1200		1 5.000	41.069	225
							2 1.004	39.455	375
							0 1.005	39.455	375
SWIC11	385200.631	397265.865	41.256	0.901	450				
							0 6.000	40.355	150
SWIC10	385196.741	397267.998	41.250	0.925	450		1 6.000	40.325	150
							0 6.001	40.325	150
SWIC09	385195.279	397268.798	41.236	0.922	450		1 6.001	40.314	150
							0 6.002	40.314	150
SWIC08	385193.442	397269.767	41.250	0.950	450		1 6.002	40.300	150
							0 6.003	40.300	150
SWIC07	385191.287	397270.991	41.225	0.942	450		1 6.003	40.283	150
							0 6.004	40.283	150
SWIC06	385186.185	397273.795	41.142	0.898	450		1 6.004	40.244	150
							0 6.005	40.244	150
SWIC05	385184.197	397274.904	41.141	0.912	450		1 6.005	40.229	150
							0 6.006	40.229	150
SWIC04	385183.308	397275.400	41.199	0.977	450		1 6.006	40.222	150
							0 6.007	40.222	150

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Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
SWIC03	385192.000	397291.478	41.356	1.256	450	1	6.007	40.100	150
						0	6.008	40.100	150
SWIC02	385193.733	397293.270	41.409	1.326	450	1	6.008	40.083	150
						0	6.009	40.083	150
SWMH01	385193.321	397294.907	41.574	2.159	1350	1	6.009	40.072	150
						2	1.005	39.415	375
						0	1.006	39.415	225
CW01	385190.854	397292.906	41.638	2.244	1200	1	1.006	39.394	225
						0	1.007	39.394	225
CW02	385177.875	397267.666	41.210	2.275	1200	1	1.007	38.935	225

Simulation Settings

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

Storm Durations

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

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	45	0	0

Node SWMH01 Online Hydro-Brake® Control

Flap Valve	✓	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	39.415	Product Number	CTL-SHE-0087-3500-1112-3500
Design Depth (m)	1.112	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	3.5	Min Node Diameter (mm)	1200

Node SWMH12 Online Orifice Control

Flap Valve	x	Design Depth (m)	1.800	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	0.5		
Invert Level (m)	39.455	Diameter (m)	0.025		

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Node SWMH12 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	41.075
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	220

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	310.0	0.0	0.500	310.0	0.0	0.501	0.0	0.0

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Results for 2 year Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SWIC28	1	41.100	0.000	0.0	0.0000	0.0000	OK
60 minute winter	SWIC27	54	41.085	0.029	0.4	0.0046	0.0000	OK
60 minute winter	SWIC26	55	41.085	0.033	0.3	0.0025	0.0000	OK
60 minute winter	SWIC25	55	41.084	0.039	0.5	0.0031	0.0000	OK
60 minute winter	SWIC24	54	41.084	0.051	1.2	0.0082	0.0000	OK
60 minute winter	SWIC20	55	41.086	0.081	1.1	0.0128	0.0000	OK
60 minute winter	SWIC21	54	41.084	0.111	1.8	0.0177	0.0000	OK
60 minute winter	SWIC22	55	41.084	0.155	2.7	0.0247	0.0000	SURCHARGED
120 minute winter	SWIC23	96	41.085	0.179	2.5	0.0285	0.0000	SURCHARGED
60 minute winter	SWIC13	55	41.090	1.484	9.0	2.0682	0.0000	SURCHARGED
120 minute winter	Junction	96	41.091	1.513	4.8	0.0000	0.0000	SURCHARGED
15 minute winter	SWIC14	11	41.228	0.026	1.2	0.0089	0.0000	OK
120 minute winter	SWMH12	92	41.084	1.629	3.5	2.6899	0.0000	SURCHARGED
15 minute winter	SWIC11	10	40.393	0.038	1.8	0.0159	0.0000	OK
15 minute winter	SWIC10	11	40.367	0.042	1.8	0.0067	0.0000	OK
15 minute winter	SWIC09	11	40.358	0.044	1.7	0.0070	0.0000	OK
15 minute winter	SWIC08	11	40.354	0.054	3.2	0.0197	0.0000	OK
15 minute winter	SWIC07	11	40.334	0.051	3.2	0.0082	0.0000	OK
15 minute winter	SWIC06	11	40.301	0.057	3.2	0.0091	0.0000	OK
15 minute winter	SWIC05	11	40.288	0.059	3.7	0.0147	0.0000	OK
15 minute winter	SWIC04	11	40.274	0.052	3.7	0.0083	0.0000	OK
15 minute winter	SWIC03	12	40.159	0.059	3.7	0.0094	0.0000	OK
15 minute winter	SWIC02	12	40.141	0.058	3.7	0.0092	0.0000	OK
15 minute winter	SWMH01	16	39.773	0.358	4.9	0.5117	0.0000	SURCHARGED
15 minute winter	CW01	17	39.429	0.035	3.5	0.0401	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	SWIC28	1.000	SWIC27	0.0	0.000	0.000	0.0000	
60 minute winter	SWIC27	1.001	SWIC24	-0.4	-0.149	-0.025	0.0130	
60 minute winter	SWIC26	2.000	SWIC25	-0.3	-0.280	-0.022	0.0033	
60 minute winter	SWIC25	2.001	SWIC24	-0.5	-0.247	-0.031	0.0067	
60 minute winter	SWIC24	1.002	SWIC23	-1.2	-0.104	-0.081	0.2185	
60 minute winter	SWIC20	3.000	SWIC21	-1.1	-0.177	-0.078	0.0565	
60 minute winter	SWIC21	3.001	SWIC22	-1.8	-0.213	-0.127	0.1040	
60 minute winter	SWIC22	3.002	SWIC23	-2.7	-0.255	-0.189	0.0584	
120 minute winter	SWIC23	1.003	Junction	-2.5	-0.170	-0.040	0.1397	
60 minute winter	SWIC13	4.000	Junction	6.7	0.480	0.041	0.4712	
120 minute winter	Junction	1.004	SWMH12	3.2	0.354	0.020	2.0370	
15 minute winter	SWIC14	5.000	SWMH12	1.1	0.463	0.027	0.0491	
120 minute winter	SWMH12	Orifice	SWMH01	1.6				
15 minute winter	SWIC11	6.000	SWIC10	1.8	0.480	0.123	0.0165	
15 minute winter	SWIC10	6.001	SWIC09	1.7	0.443	0.121	0.0070	
15 minute winter	SWIC09	6.002	SWIC08	1.8	0.353	0.121	0.0104	
15 minute winter	SWIC08	6.003	SWIC07	3.2	0.580	0.219	0.0136	
15 minute winter	SWIC07	6.004	SWIC06	3.2	0.554	0.219	0.0334	
15 minute winter	SWIC06	6.005	SWIC05	3.1	0.498	0.217	0.0143	
15 minute winter	SWIC05	6.006	SWIC04	3.7	0.622	0.256	0.0061	
15 minute winter	SWIC04	6.007	SWIC03	3.7	0.626	0.255	0.1090	
15 minute winter	SWIC03	6.008	SWIC02	3.7	0.578	0.255	0.0159	
15 minute winter	SWIC02	6.009	SWMH01	3.7	0.631	0.253	0.0098	
15 minute winter	SWMH01	Hydro-Brake®	CW01	3.5				
15 minute winter	CW01	1.007	CW02	3.5	0.884	0.053	0.1123	10.5

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Results for 2 year Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	CW02	17	38.970	0.035	3.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)

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Results for 30 year Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	SWIC28	116	41.207	0.107	0.2	0.0170	0.0000	OK
120 minute winter	SWIC27	110	41.207	0.151	0.3	0.0240	0.0000	SURCHARGED
120 minute winter	SWIC26	120	41.207	0.155	3.1	0.0121	0.0000	SURCHARGED
120 minute winter	SWIC25	116	41.208	0.163	0.5	0.0127	0.0000	SURCHARGED
120 minute winter	SWIC24	118	41.207	0.174	2.1	0.0277	0.0000	SURCHARGED
120 minute winter	SWIC20	112	41.208	0.203	2.0	0.0322	0.0000	SURCHARGED
120 minute winter	SWIC21	112	41.208	0.235	3.0	0.0373	0.0000	SURCHARGED
120 minute winter	SWIC22	118	41.208	0.279	3.3	0.0443	0.0000	SURCHARGED
120 minute winter	SWIC23	118	41.208	0.302	5.5	0.0480	0.0000	SURCHARGED
120 minute winter	SWIC13	114	41.216	1.610	10.6	2.2445	0.0000	SURCHARGED
120 minute winter	Junction	116	41.208	1.630	10.5	0.0000	0.0000	SURCHARGED
15 minute winter	SWIC14	11	41.237	0.035	2.2	0.0121	0.0000	OK
120 minute winter	SWMH12	116	41.206	1.751	9.9	14.2171	0.0000	SURCHARGED
15 minute winter	SWIC11	10	40.410	0.055	3.4	0.0230	0.0000	OK
15 minute winter	SWIC10	11	40.391	0.066	3.4	0.0104	0.0000	OK
15 minute winter	SWIC09	11	40.384	0.070	3.3	0.0112	0.0000	OK
15 minute winter	SWIC08	11	40.380	0.080	6.0	0.0295	0.0000	OK
15 minute winter	SWIC07	11	40.360	0.077	6.0	0.0122	0.0000	OK
15 minute winter	SWIC06	11	40.331	0.087	6.0	0.0138	0.0000	OK
15 minute winter	SWIC05	11	40.317	0.088	7.1	0.0217	0.0000	OK
30 minute winter	SWIC04	26	40.300	0.078	5.6	0.0124	0.0000	OK
30 minute winter	SWIC03	26	40.299	0.199	5.6	0.0317	0.0000	SURCHARGED
30 minute winter	SWIC02	26	40.299	0.216	5.6	0.0343	0.0000	SURCHARGED
30 minute winter	SWMH01	26	40.298	0.883	6.9	1.2637	0.0000	SURCHARGED
120 minute winter	CW01	82	39.429	0.035	3.5	0.0401	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
120 minute winter	SWIC28	1.000	SWIC27	0.2	-0.052	0.016	0.1031	
120 minute winter	SWIC27	1.001	SWIC24	0.5	0.062	0.035	0.0598	
120 minute winter	SWIC26	2.000	SWIC25	-3.1	-0.191	-0.212	0.0181	
120 minute winter	SWIC25	2.001	SWIC24	1.3	0.191	0.093	0.0269	
120 minute winter	SWIC24	1.002	SWIC23	-2.1	-0.175	-0.145	0.3355	
120 minute winter	SWIC20	3.000	SWIC21	-2.0	-0.225	-0.138	0.0843	
120 minute winter	SWIC21	3.001	SWIC22	-3.0	-0.203	-0.206	0.1159	
120 minute winter	SWIC22	3.002	SWIC23	-3.3	-0.418	-0.230	0.0584	
120 minute winter	SWIC23	1.003	Junction	-5.5	-0.311	-0.087	0.1397	
120 minute winter	SWIC13	4.000	Junction	10.5	0.480	0.064	0.4712	
120 minute winter	Junction	1.004	SWMH12	9.2	0.369	0.057	2.0370	
15 minute winter	SWIC14	5.000	SWMH12	2.1	0.558	0.051	0.0926	
120 minute winter	SWMH12	Orifice	SWMH01	1.7				
15 minute winter	SWIC11	6.000	SWIC10	3.4	0.524	0.232	0.0290	
15 minute winter	SWIC10	6.001	SWIC09	3.3	0.487	0.227	0.0129	
15 minute winter	SWIC09	6.002	SWIC08	3.3	0.383	0.228	0.0184	
15 minute winter	SWIC08	6.003	SWIC07	6.0	0.655	0.417	0.0231	
15 minute winter	SWIC07	6.004	SWIC06	6.0	0.620	0.418	0.0571	
15 minute winter	SWIC06	6.005	SWIC05	6.0	0.567	0.417	0.0242	
15 minute winter	SWIC05	6.006	SWIC04	7.1	0.725	0.491	0.0100	
30 minute winter	SWIC04	6.007	SWIC03	5.6	0.682	0.391	0.2458	
30 minute winter	SWIC03	6.008	SWIC02	5.6	0.634	0.387	0.0439	
30 minute winter	SWIC02	6.009	SWMH01	5.6	0.702	0.386	0.0297	
30 minute winter	SWMH01	Hydro-Brake®	CW01	3.5				
120 minute winter	CW01	1.007	CW02	3.5	0.884	0.053	0.1123	36.7

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Results for 30 year Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
120 minute winter	CW02	82	38.970	0.035	3.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	SWIC28	180	41.498	0.398	0.2	0.0633	0.0000	SURCHARGED
180 minute winter	SWIC27	180	41.499	0.443	0.4	0.0705	0.0000	SURCHARGED
180 minute winter	SWIC26	180	41.499	0.447	0.3	0.0349	0.0000	SURCHARGED
180 minute winter	SWIC25	176	41.501	0.456	1.0	0.0356	0.0000	SURCHARGED
240 minute winter	SWIC24	228	41.498	0.465	0.7	0.0739	0.0000	SURCHARGED
180 minute winter	SWIC20	176	41.499	0.494	1.2	0.0785	0.0000	SURCHARGED
180 minute winter	SWIC21	176	41.499	0.526	2.1	0.0836	0.0000	SURCHARGED
180 minute winter	SWIC22	180	41.499	0.570	2.7	0.0906	0.0000	SURCHARGED
180 minute winter	SWIC23	180	41.499	0.593	4.7	0.0943	0.0000	SURCHARGED
180 minute winter	SWIC13	176	41.508	1.902	14.9	2.6518	0.0000	FLOOD RISK
180 minute winter	Junction	180	41.499	1.921	14.7	0.0000	0.0000	FLOOD RISK
180 minute winter	SWIC14	176	41.498	0.296	1.0	0.1031	0.0000	SURCHARGED
180 minute winter	SWMH12	176	41.498	2.043	14.0	41.7164	0.0000	SURCHARGED
30 minute winter	SWIC11	27	40.566	0.211	5.0	0.0883	0.0000	SURCHARGED
30 minute winter	SWIC10	27	40.565	0.240	5.0	0.0382	0.0000	SURCHARGED
30 minute winter	SWIC09	28	40.568	0.254	4.9	0.0404	0.0000	SURCHARGED
30 minute winter	SWIC08	27	40.564	0.264	9.0	0.0971	0.0000	SURCHARGED
30 minute winter	SWIC07	27	40.565	0.282	8.8	0.0448	0.0000	SURCHARGED
30 minute winter	SWIC06	27	40.563	0.319	8.5	0.0507	0.0000	SURCHARGED
30 minute winter	SWIC05	27	40.564	0.335	10.0	0.0832	0.0000	SURCHARGED
30 minute winter	SWIC04	28	40.562	0.340	9.9	0.0540	0.0000	SURCHARGED
30 minute winter	SWIC03	27	40.559	0.459	9.3	0.0729	0.0000	SURCHARGED
30 minute winter	SWIC02	27	40.558	0.475	8.1	0.0755	0.0000	SURCHARGED
30 minute winter	SWMH01	28	40.557	1.142	9.1	1.6344	0.0000	SURCHARGED
30 minute winter	CW01	27	39.430	0.036	3.5	0.0402	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
180 minute winter	SWIC28	1.000	SWIC27	0.2	-0.033	0.014	0.1170	
180 minute winter	SWIC27	1.001	SWIC24	-0.4	-0.034	-0.025	0.0598	
180 minute winter	SWIC26	2.000	SWIC25	1.0	0.055	0.066	0.0181	
180 minute winter	SWIC25	2.001	SWIC24	0.7	-0.049	0.046	0.0269	
240 minute winter	SWIC24	1.002	SWIC23	-0.6	-0.037	-0.044	0.3355	
180 minute winter	SWIC20	3.000	SWIC21	-1.2	-0.166	-0.082	0.0843	
180 minute winter	SWIC21	3.001	SWIC22	-2.1	-0.163	-0.147	0.1159	
180 minute winter	SWIC22	3.002	SWIC23	-2.7	-0.160	-0.189	0.0584	
180 minute winter	SWIC23	1.003	Junction	-4.7	-0.264	-0.073	0.1397	
180 minute winter	SWIC13	4.000	Junction	14.7	0.498	0.090	0.4712	
180 minute winter	Junction	1.004	SWMH12	13.4	0.276	0.082	2.0370	
180 minute winter	SWIC14	5.000	SWMH12	0.9	0.360	0.021	0.7942	
180 minute winter	SWMH12	Orifice	SWMH01	1.8				
30 minute winter	SWIC11	6.000	SWIC10	5.0	0.529	0.344	0.0781	
30 minute winter	SWIC10	6.001	SWIC09	4.9	0.487	0.338	0.0293	
30 minute winter	SWIC09	6.002	SWIC08	4.8	0.374	0.330	0.0366	
30 minute winter	SWIC08	6.003	SWIC07	8.8	0.687	0.608	0.0436	
30 minute winter	SWIC07	6.004	SWIC06	8.5	0.657	0.589	0.1025	
30 minute winter	SWIC06	6.005	SWIC05	8.3	0.617	0.577	0.0401	
30 minute winter	SWIC05	6.006	SWIC04	9.9	0.802	0.682	0.0179	
30 minute winter	SWIC04	6.007	SWIC03	9.3	0.754	0.641	0.3218	
30 minute winter	SWIC03	6.008	SWIC02	8.1	0.692	0.560	0.0439	
30 minute winter	SWIC02	6.009	SWMH01	7.8	0.739	0.540	0.0297	
30 minute winter	SWMH01	Hydro-Brake®	CW01	3.5				
30 minute winter	CW01	1.007	CW02	3.5	0.886	0.053	0.1129	33.6

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 94.43%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute winter	CW02	27	38.970	0.035	3.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)

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