Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	100	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	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Depth (m)
OB1	0.013	5.00	84.202	600	600	0.496
S101	0.095	5.00	84.225	1200		1.000
S102			84.225	1200		1.500
OB2	0.013	5.00	84.206	600	600	0.500
S103	0.095	5.00	84.129	1200		1.200
S104			84.229	1200		1.852
S105	0.053	5.00	85.078	1200		1.000
S106	0.021	5.00	85.076	1200		1.204
S107	0.053	5.00	85.031	1200		1.200
S108			85.031	1200		1.399
S109			84.580	1350		2.376
S110	0.061	5.00	84.575	1200		1.046
S111	0.017	5.00	84.608	1200		1.482
S112	0.062	5.00	84.520	1200		1.200
S113			84.559	1200		1.606
S114			84.352	1350		2.210
OB3	0.051	5.00	84.445	600	600	0.753
S115	0.020	5.00	84.506	1200		1.200
OB4	0.023	5.00	84.641	600	600	0.750
S116	0.087	5.00	84.233	1200		1.129
OB5	0.045	5.00	83.446	600	600	0.750
S117	0.034	5.00	83.828	1200		1.228
OB6	0.089	5.00	84.083	600	600	0.750
S118			84.125	1350		1.888
PI-1			84.195			2.073
S119			84.195	1350		2.093
TANK			84.256			2.706
HB			84.449	1500		2.916
S120			84.350	1200		2.847
S121			83.584	1200		3.794
Ex.MH			83.650	1350		4.510

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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	OB1	S101	1.900	0.600	83.706	83.300	0.406	4.7	150	5.01	50.0
1.001	S101	S102	75.000	0.600	83.225	82.725	0.500	150.0	225	6.18	50.0
1.002	S102	S104	30.300	0.600	82.725	82.452	0.273	111.0	225	6.59	50.0
3.000	OB2	S104	6.080	0.600	83.706	82.527	1.179	5.2	150	5.02	50.0
2.000	S103	S104	71.500	0.600	82.929	82.452	0.477	149.9	225	6.12	50.0
1.003	S104	S109	14.770	0.600	82.377	82.279	0.098	150.7	300	6.78	50.0
4.000	S105	S106	30.900	0.600	84.078	83.872	0.206	150.0	225	5.48	50.0
4.001	S106	S108	35.000	0.600	83.872	83.632	0.240	145.8	225	6.02	50.0
5.000	S107	S108	29.800	0.600	83.831	83.632	0.199	149.7	225	5.47	50.0
4.002	S108	S109	16.000	0.600	83.632	82.354	1.278	12.5	225	6.10	50.0
1.004	S109	S114	9.270	0.600	82.204	82.142	0.062	149.5	375	6.88	50.0
6.000	S110	S111	60.400	0.600	83.529	83.126	0.403	149.9	225	5.94	50.0
6.001	S111	S113	24.500	0.600	83.126	82.953	0.173	141.6	225	6.32	50.0
7.000	S112	S113	55.000	0.600	83.320	82.953	0.367	149.9	225	5.86	50.0
6.002	S113	S114	8.100	0.600	82.953	82.899	0.054	150.0	225	6.44	50.0
1.005	S114	TANK	8.450	0.600	82.142	82.085	0.057	148.2	375	6.98	50.0
8.000	OB3	S115	4.230	0.600	83.692	83.306	0.386	11.0	225	5.02	50.0
8.001	S115	S116	19.000	0.600	83.306	83.179	0.127	149.6	225	5.31	50.0
9.000	OB4	S116	7.380	0.600	83.891	83.254	0.637	11.6	150	5.04	50.0
8.002	S116	S118	32.600	0.600	83.104	82.312	0.792	41.2	300	5.54	50.0
10.000	OB5	S117	10.040	0.600	82.696	82.600	0.096	104.6	225	5.13	50.0
10.001	S117	S118	32.000	0.600	82.600	82.387	0.213	150.2	225	5.63	50.0
11.000	OB6	S118	4.620	0.600	83.333	82.312	1.021	4.5	300	5.01	50.0
8.003	S118	PI-1	2.310	0.600	82.237	82.222	0.015	154.0	375	5.66	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)
1.000	4.690	82.9	1.8	0.346	0.775	0.013
1.001	1.065	42.3	14.6	0.775	1.275	0.108
1.002	1.240	49.3	14.6	1.275	1.552	0.108
3.000	4.467	78.9	1.8	0.350	1.552	0.013
2.000	1.065	42.4	12.9	0.975	1.552	0.095
1.003	1.278	90.3	29.3	1.552	2.001	0.216
4.000	1.065	42.3	7.2	0.775	0.979	0.053
4.001	1.080	43.0	10.0	0.979	1.174	0.074
5.000	1.066	42.4	7.2	0.975	1.174	0.053
4.002	3.718	147.8	17.2	1.174	2.001	0.127
1.004	1.479	163.4	46.5	2.001	1.835	0.343
6.000	1.065	42.4	8.3	0.821	1.257	0.061
6.001	1.096	43.6	10.6	1.257	1.381	0.078
7.000	1.065	42.4	8.4	0.975	1.381	0.062
6.002	1.065	42.3	19.0	1.381	1.228	0.140
1.005	1.486	164.1	65.5	1.835	1.796	0.483
8.000	3.975	158.0	6.9	0.528	0.975	0.051
8.001	1.066	42.4	9.6	0.975	0.829	0.071
9.000	2.976	52.6	3.1	0.600	0.829	0.023
8.002	2.457	173.7	24.5	0.829	1.513	0.181
10.000	1.278	50.8	6.1	0.525	1.003	0.045
10.001	1.064	42.3	10.7	1.003	1.513	0.079
11.000	7.438	525.8	12.1	0.450	1.513	0.089
8.003	1.457	161.0	47.3	1.513	1.598	0.349

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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)
8.004	PI-1	S119	3.000	0.600	82.122	82.102	0.020	150.0	375	5.69	50.0
8.005	S119	TANK	2.500	0.600	82.102	82.085	0.017	147.1	375	5.72	50.0
1.006	TANK	HB	2.500	0.600	81.550	81.533	0.017	147.1	375	7.01	50.0
1.007	HB	S120	4.500	0.600	81.533	81.503	0.030	150.0	225	7.08	50.0
1.008	S120	S121	16.610	0.600	81.503	81.392	0.111	149.6	225	7.34	50.0
1.009	S121	Ex.MH	8.630	0.600	79.790	79.140	0.650	13.3	225	7.38	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)
8.004	1.477	163.1	47.3	1.698	1.718	0.349
8.005	1.492	164.7	47.3	1.718	1.796	0.349
1.006	1.492	164.7	112.8	2.331	2.541	0.832
1.007	1.065	42.3	112.8	2.691	2.622	0.832
1.008	1.066	42.4	112.8	2.622	1.967	0.832
1.009	3.610	143.5	112.8	3.569	4.285	0.832

Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	1.900	4.7	150	84.202	83.706	0.346	84.225	83.300	0.775
1.001	75.000	150.0	225	84.225	83.225	0.775	84.225	82.725	1.275
1.002	30.300	111.0	225	84.225	82.725	1.275	84.229	82.452	1.552
3.000	6.080	5.2	150	84.206	83.706	0.350	84.229	82.527	1.552
2.000	71.500	149.9	225	84.129	82.929	0.975	84.229	82.452	1.552
1.003	14.770	150.7	300	84.229	82.377	1.552	84.580	82.279	2.001
4.000	30.900	150.0	225	85.078	84.078	0.775	85.076	83.872	0.979
4.001	35.000	145.8	225	85.076	83.872	0.979	85.031	83.632	1.174
5.000	29.800	149.7	225	85.031	83.831	0.975	85.031	83.632	1.174
4.002	16.000	12.5	225	85.031	83.632	1.174	84.580	82.354	2.001
1.004	9.270	149.5	375	84.580	82.204	2.001	84.352	82.142	1.835
6.000	60.400	149.9	225	84.575	83.529	0.821	84.608	83.126	1.257
6.001	24.500	141.6	225	84.608	83.126	1.257	84.559	82.953	1.381
7.000	55.000	149.9	225	84.520	83.320	0.975	84.559	82.953	1.381

Link	US Node	Dia (mm)	Width (mm)	Node Type	DS Node	Dia (mm)	Node Type
1.000	OB1	600	600	Manhole	S101	1200	Manhole
1.001	S101	1200		Manhole	S102	1200	Manhole
1.002	S102	1200		Manhole	S104	1200	Manhole
3.000	OB2	600	600	Manhole	S104	1200	Manhole
2.000	S103	1200		Manhole	S104	1200	Manhole
1.003	S104	1200		Manhole	S109	1350	Manhole
4.000	S105	1200		Manhole	S106	1200	Manhole
4.001	S106	1200		Manhole	S108	1200	Manhole
5.000	S107	1200		Manhole	S108	1200	Manhole
4.002	S108	1200		Manhole	S109	1350	Manhole
1.004	S109	1350		Manhole	S114	1350	Manhole
6.000	S110	1200		Manhole	S111	1200	Manhole
6.001	S111	1200		Manhole	S113	1200	Manhole
7.000	S112	1200		Manhole	S113	1200	Manhole

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Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
6.002	8.100	150.0	225	84.559	82.953	1.381	84.352	82.899	1.228
1.005	8.450	148.2	375	84.352	82.142	1.835	84.256	82.085	1.796
8.000	4.230	11.0	225	84.445	83.692	0.528	84.506	83.306	0.975
8.001	19.000	149.6	225	84.506	83.306	0.975	84.233	83.179	0.829
9.000	7.380	11.6	150	84.641	83.891	0.600	84.233	83.254	0.829
8.002	32.600	41.2	300	84.233	83.104	0.829	84.125	82.312	1.513
10.000	10.040	104.6	225	83.446	82.696	0.525	83.828	82.600	1.003
10.001	32.000	150.2	225	83.828	82.600	1.003	84.125	82.387	1.513
11.000	4.620	4.5	300	84.083	83.333	0.450	84.125	82.312	1.513
8.003	2.310	154.0	375	84.125	82.237	1.513	84.195	82.222	1.598
8.004	3.000	150.0	375	84.195	82.122	1.698	84.195	82.102	1.718
8.005	2.500	147.1	375	84.195	82.102	1.718	84.256	82.085	1.796
1.006	2.500	147.1	375	84.256	81.550	2.331	84.449	81.533	2.541
1.007	4.500	150.0	225	84.449	81.533	2.691	84.350	81.503	2.622
1.008	16.610	149.6	225	84.350	81.503	2.622	83.584	81.392	1.967
1.009	8.630	13.3	225	83.584	79.790	3.569	83.650	79.140	4.285

Link	US Node	Dia (mm)	Width (mm)	Node Type	DS Node	Dia (mm)	Node Type
6.002	S113	1200		Manhole	S114	1350	Manhole
1.005	S114	1350		Manhole	TANK		Junction
8.000	OB3	600	600	Manhole	S115	1200	Manhole
8.001	S115	1200		Manhole	S116	1200	Manhole
9.000	OB4	600	600	Manhole	S116	1200	Manhole
8.002	S116	1200		Manhole	S118	1350	Manhole
10.000	OB5	600	600	Manhole	S117	1200	Manhole
10.001	S117	1200		Manhole	S118	1350	Manhole
11.000	OB6	600	600	Manhole	S118	1350	Manhole
8.003	S118	1350		Manhole	PI-1		Junction
8.004	PI-1			Junction	S119	1350	Manhole
8.005	S119	1350		Manhole	TANK		Junction
1.006	TANK			Junction	HB	1500	Manhole
1.007	HB	1500		Manhole	S120	1200	Manhole
1.008	S120	1200		Manhole	S121	1200	Manhole
1.009	S121	1200		Manhole	Ex.MH	1350	Manhole

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
OB1	84.202	0.496	600	600				
					0	1.000	83.706	150
S101	84.225	1.000	1200		1	1.000	83.300	150
					◯			
					0	1.001	83.225	225
S102	84.225	1.500	1200		1	1.001	82.725	225
					◯			
					0	1.002	82.725	225

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Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
OB2	84.206	0.500	600	600	0	3.000	83.706	150
S103	84.129	1.200	1200		0	2.000	82.929	225
S104	84.229	1.852	1200		1	3.000	82.527	150
					2	2.000	82.452	225
					3	1.002	82.452	225
					0	1.003	82.377	300
S105	85.078	1.000	1200		0	4.000	84.078	225
S106	85.076	1.204	1200		1	4.000	83.872	225
					0	4.001	83.872	225
S107	85.031	1.200	1200		0	5.000	83.831	225
S108	85.031	1.399	1200		1	5.000	83.632	225
					2	4.001	83.632	225
					0	4.002	83.632	225
S109	84.580	2.376	1350		1	4.002	82.354	225
					2	1.003	82.279	300
					0	1.004	82.204	375
S110	84.575	1.046	1200		0	6.000	83.529	225
S111	84.608	1.482	1200		1	6.000	83.126	225
					0	6.001	83.126	225
S112	84.520	1.200	1200		0	7.000	83.320	225
S113	84.559	1.606	1200		1	7.000	82.953	225
					2	6.001	82.953	225
					0	6.002	82.953	225
S114	84.352	2.210	1350		1	6.002	82.899	225
					2	1.004	82.142	375
					0	1.005	82.142	375

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Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
OB3	84.445	0.753	600	600	0	8.000	83.692	225
S115	84.506	1.200	1200		1	8.000	83.306	225
					0	8.001	83.306	225
OB4	84.641	0.750	600	600	0	9.000	83.891	150
S116	84.233	1.129	1200		1	9.000	83.254	150
					2	8.001	83.179	225
					0	8.002	83.104	300
OB5	83.446	0.750	600	600	0	10.000	82.696	225
S117	83.828	1.228	1200		1	10.000	82.600	225
					0	10.001	82.600	225
OB6	84.083	0.750	600	600	0	11.000	83.333	300
S118	84.125	1.888	1350		1	11.000	82.312	300
					2	10.001	82.387	225
					3	8.002	82.312	300
					0	8.003	82.237	375
PI-1	84.195	2.073			1	8.003	82.222	375
					0	8.004	82.122	375
S119	84.195	2.093	1350		1	8.004	82.102	375
					0	8.005	82.102	375
TANK	84.256	2.706			1	8.005	82.085	375
					2	1.005	82.085	375
					0	1.006	81.550	375
HB	84.449	2.916	1500		1	1.006	81.533	375
					0	1.007	81.533	225
S120	84.350	2.847	1200		1	1.007	81.503	225
					0	1.008	81.503	225

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Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
S121	83.584	3.794	1200		1	1.008	81.392	225
					0	1.009	79.790	225
Ex.MH	83.650	4.510	1350		1	1.009	79.140	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)	10080
Ratio-R	0.400	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15	60	180	360	600	960	2160	4320	7200	10080
30	120	240	480	720	1440	2880	5760	8640	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	45	0	0

Node HB Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	81.533	Product Number	CTL-SHE-0197-2020-1200-2020
Design Depth (m)	1.200	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	20.2	Min Node Diameter (mm)	1500

Node TANK Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	81.550
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	152

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	310.3	0.0	1.200	310.3	0.0	1.201	0.0	0.0

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Results for 1 year Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	OB1	10	83.721	0.015	1.5	0.0054	0.0000	OK
15 minute winter	S101	10	83.311	0.086	12.8	0.0974	0.0000	OK
15 minute winter	S102	11	82.803	0.078	12.6	0.0879	0.0000	OK
15 minute winter	OB2	10	83.721	0.015	1.5	0.0053	0.0000	OK
15 minute winter	S103	11	83.006	0.077	11.3	0.0876	0.0000	OK
15 minute winter	S104	11	82.489	0.112	24.2	0.1271	0.0000	OK
15 minute winter	S105	10	84.136	0.058	6.3	0.0652	0.0000	OK
15 minute winter	S106	11	83.944	0.072	8.7	0.0811	0.0000	OK
15 minute winter	S107	10	83.891	0.060	6.3	0.0683	0.0000	OK
15 minute winter	S108	11	83.681	0.049	14.6	0.0559	0.0000	OK
15 minute winter	S109	11	82.349	0.145	38.7	0.2078	0.0000	OK
15 minute winter	S110	10	83.591	0.062	7.3	0.0700	0.0000	OK
15 minute winter	S111	11	83.194	0.068	9.0	0.0773	0.0000	OK
15 minute winter	S112	10	83.382	0.062	7.4	0.0701	0.0000	OK
15 minute winter	S113	11	83.055	0.102	16.0	0.1151	0.0000	OK
15 minute winter	S114	12	82.297	0.155	53.8	0.2220	0.0000	OK
15 minute winter	OB3	10	83.722	0.030	6.1	0.0108	0.0000	OK
15 minute winter	S115	10	83.375	0.069	8.5	0.0786	0.0000	OK
15 minute winter	OB4	10	83.915	0.024	2.7	0.0086	0.0000	OK
15 minute winter	S116	10	83.176	0.072	21.3	0.0813	0.0000	OK
15 minute winter	OB5	10	82.746	0.050	5.4	0.0180	0.0000	OK
15 minute winter	S117	11	82.672	0.072	9.4	0.0817	0.0000	OK
15 minute winter	OB6	10	83.362	0.029	10.6	0.0105	0.0000	OK
15 minute winter	S118	10	82.375	0.138	40.4	0.1971	0.0000	OK
15 minute winter	PI-1	11	82.265	0.143	40.2	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)
15 minute winter	OB1	1.000	S101	1.5	1.730	0.018	0.0016	
15 minute winter	S101	1.001	S102	12.6	0.991	0.297	0.9722	
15 minute winter	S102	1.002	S104	12.1	1.020	0.245	0.3603	
15 minute winter	OB2	3.000	S104	1.5	1.720	0.019	0.0053	
15 minute winter	S103	2.000	S104	10.7	0.892	0.252	0.8567	
15 minute winter	S104	1.003	S109	24.0	1.051	0.265	0.3387	
15 minute winter	S105	4.000	S106	6.2	0.662	0.146	0.2895	
15 minute winter	S106	4.001	S108	8.6	0.996	0.199	0.3027	
15 minute winter	S107	5.000	S108	6.2	0.840	0.146	0.2200	
15 minute winter	S108	4.002	S109	14.7	2.337	0.099	0.1005	
15 minute winter	S109	1.004	S114	38.5	0.935	0.236	0.3815	
15 minute winter	S110	6.000	S111	7.0	0.759	0.166	0.5717	
15 minute winter	S111	6.001	S113	8.9	0.650	0.203	0.3381	
15 minute winter	S112	7.000	S113	7.1	0.598	0.169	0.7236	
15 minute winter	S113	6.002	S114	15.5	0.939	0.365	0.1334	
15 minute winter	S114	1.005	TANK	54.0	1.307	0.329	0.3488	
15 minute winter	OB3	8.000	S115	6.1	0.934	0.038	0.0286	
15 minute winter	S115	8.001	S116	8.2	0.816	0.194	0.1921	
15 minute winter	OB4	9.000	S116	2.7	1.533	0.051	0.0129	
15 minute winter	S116	8.002	S118	20.9	1.655	0.120	0.4130	
15 minute winter	OB5	10.000	S117	5.3	0.618	0.105	0.0875	
15 minute winter	S117	10.001	S118	9.2	0.848	0.217	0.3459	
15 minute winter	OB6	11.000	S118	10.6	2.430	0.020	0.0328	
15 minute winter	S118	8.003	PI-1	40.2	1.166	0.250	0.0797	
15 minute winter	PI-1	8.004	S119	40.3	1.077	0.247	0.1123	

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Results for 1 year Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S119	11	82.238	0.136	40.3	0.1951	0.0000	OK
120 minute winter	TANK	90	81.753	0.203	31.7	59.8852	0.0000	OK
120 minute winter	HB	90	81.753	0.220	10.9	0.3886	0.0000	OK
120 minute winter	S120	90	81.584	0.081	10.9	0.0916	0.0000	OK
120 minute winter	S121	92	79.834	0.044	10.9	0.0499	0.0000	OK
120 minute winter	Ex.MH	92	79.182	0.042	10.9	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)
15 minute winter	S119	8.005	TANK	40.5	1.187	0.246	0.0852	
120 minute winter	TANK	1.006	HB	10.9	0.250	0.066	0.1601	
120 minute winter	HB	1.007	S120	10.9	0.808	0.258	0.0608	
120 minute winter	S120	1.008	S121	10.9	0.877	0.257	0.2066	
120 minute winter	S121	1.009	Ex.MH	10.9	2.068	0.076	0.0455	92.1

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	OB1	10	83.728	0.022	3.8	0.0079	0.0000	OK
15 minute winter	S101	10	83.372	0.147	31.5	0.1658	0.0000	OK
15 minute winter	S102	11	82.859	0.134	30.7	0.1510	0.0000	OK
15 minute winter	OB2	9	83.729	0.023	3.8	0.0081	0.0000	OK
15 minute winter	S103	11	83.060	0.131	27.7	0.1478	0.0000	OK
15 minute winter	S104	11	82.579	0.202	60.5	0.2282	0.0000	OK
15 minute winter	S105	10	84.172	0.094	15.4	0.1059	0.0000	OK
15 minute winter	S106	11	83.989	0.117	21.3	0.1328	0.0000	OK
15 minute winter	S107	10	83.928	0.097	15.4	0.1100	0.0000	OK
15 minute winter	S108	11	83.707	0.075	35.8	0.0852	0.0000	OK
15 minute winter	S109	11	82.472	0.268	96.0	0.3840	0.0000	OK
15 minute winter	S110	10	83.630	0.101	17.8	0.1141	0.0000	OK
15 minute winter	S111	11	83.238	0.112	22.4	0.1270	0.0000	OK
15 minute winter	S112	10	83.420	0.100	18.1	0.1134	0.0000	OK
15 minute winter	S113	11	83.145	0.192	39.5	0.2170	0.0000	OK
15 minute winter	S114	11	82.415	0.273	133.9	0.3906	0.0000	OK
15 minute winter	OB3	10	83.738	0.046	14.9	0.0167	0.0000	OK
15 minute winter	S115	10	83.422	0.116	20.7	0.1308	0.0000	OK
15 minute winter	OB4	10	83.929	0.038	6.7	0.0137	0.0000	OK
15 minute winter	S116	10	83.215	0.111	52.2	0.1260	0.0000	OK
15 minute winter	OB5	10	82.779	0.083	13.1	0.0297	0.0000	OK
15 minute winter	S117	10	82.720	0.120	22.9	0.1356	0.0000	OK
15 minute winter	OB6	10	83.378	0.045	25.9	0.0161	0.0000	OK
15 minute winter	S118	10	82.468	0.231	99.8	0.3300	0.0000	OK
15 minute winter	PI-1	10	82.366	0.244	99.1	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)
15 minute winter	OB1	1.000	S101	3.8	1.713	0.046	0.0094	
15 minute winter	S101	1.001	S102	30.7	1.213	0.724	1.9264	
15 minute winter	S102	1.002	S104	30.4	1.277	0.616	0.7209	
15 minute winter	OB2	3.000	S104	3.8	2.209	0.048	0.0212	
15 minute winter	S103	2.000	S104	26.5	1.126	0.627	1.6857	
15 minute winter	S104	1.003	S109	60.0	1.244	0.664	0.7267	
15 minute winter	S105	4.000	S106	15.2	0.836	0.359	0.5626	
15 minute winter	S106	4.001	S108	21.0	1.296	0.490	0.5703	
15 minute winter	S107	5.000	S108	15.1	1.086	0.357	0.4165	
15 minute winter	S108	4.002	S109	36.0	2.811	0.244	0.2623	
15 minute winter	S109	1.004	S114	95.5	1.122	0.585	0.7896	
15 minute winter	S110	6.000	S111	17.4	0.955	0.410	1.1051	
15 minute winter	S111	6.001	S113	22.1	0.795	0.507	0.6845	
15 minute winter	S112	7.000	S113	17.6	0.717	0.416	1.4566	
15 minute winter	S113	6.002	S114	38.3	1.137	0.905	0.2718	
15 minute winter	S114	1.005	TANK	133.2	1.624	0.812	0.6940	
15 minute winter	OB3	8.000	S115	14.9	1.156	0.094	0.0559	
15 minute winter	S115	8.001	S116	20.3	1.028	0.478	0.3751	
15 minute winter	OB4	9.000	S116	6.7	1.972	0.127	0.0249	
15 minute winter	S116	8.002	S118	51.9	1.742	0.299	0.9892	
15 minute winter	OB5	10.000	S117	13.0	0.751	0.256	0.1742	
15 minute winter	S117	10.001	S118	22.3	1.068	0.528	0.6695	
15 minute winter	OB6	11.000	S118	25.9	2.476	0.049	0.1004	
15 minute winter	S118	8.003	PI-1	99.1	1.477	0.616	0.1549	
15 minute winter	PI-1	8.004	S119	98.8	1.356	0.606	0.2186	

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Results for 30 year Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	S119	10	82.329	0.227	98.8	0.3245	0.0000	OK
120 minute winter	TANK	94	82.038	0.488	76.3	143.7816	0.0000	SURCHARGED
120 minute winter	HB	94	82.037	0.504	20.3	0.8907	0.0000	SURCHARGED
120 minute winter	S120	94	81.618	0.115	20.1	0.1305	0.0000	OK
120 minute winter	S121	94	79.851	0.061	20.1	0.0691	0.0000	OK
120 minute winter	Ex.MH	94	79.197	0.057	20.1	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)
15 minute winter	S119	8.005	TANK	98.4	1.501	0.597	0.1640	
120 minute winter	TANK	1.006	HB	20.3	0.308	0.123	0.2757	
120 minute winter	HB	1.007	S120	20.1	0.927	0.475	0.0977	
120 minute winter	S120	1.008	S121	20.1	1.024	0.475	0.3266	
120 minute winter	S121	1.009	Ex.MH	20.1	2.435	0.140	0.0714	221.4

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	OB1	12	84.029	0.323	7.1	0.1164	0.0000	FLOOD RISK
15 minute winter	S101	12	84.021	0.796	55.3	0.9003	0.0000	FLOOD RISK
15 minute winter	S102	12	83.263	0.538	49.9	0.6083	0.0000	SURCHARGED
15 minute winter	OB2	10	83.736	0.030	7.1	0.0109	0.0000	OK
15 minute winter	S103	11	83.614	0.685	51.7	0.7746	0.0000	SURCHARGED
15 minute winter	S104	11	82.931	0.554	102.9	0.6266	0.0000	SURCHARGED
15 minute winter	S105	10	84.215	0.137	28.9	0.1555	0.0000	OK
15 minute winter	S106	11	84.050	0.178	40.0	0.2015	0.0000	OK
15 minute winter	S107	10	83.973	0.142	28.9	0.1605	0.0000	OK
15 minute winter	S108	11	83.738	0.106	67.2	0.1199	0.0000	OK
15 minute winter	S109	11	82.745	0.541	169.5	0.7747	0.0000	SURCHARGED
15 minute winter	S110	11	83.677	0.148	33.2	0.1674	0.0000	OK
15 minute winter	S111	11	83.496	0.370	41.9	0.4182	0.0000	SURCHARGED
15 minute winter	S112	11	83.485	0.165	33.8	0.1868	0.0000	OK
15 minute winter	S113	11	83.330	0.377	68.8	0.4261	0.0000	SURCHARGED
180 minute winter	S114	168	82.621	0.479	62.9	0.6855	0.0000	SURCHARGED
15 minute winter	OB3	10	83.759	0.067	27.8	0.0240	0.0000	OK
15 minute winter	S115	10	83.487	0.181	38.6	0.2043	0.0000	OK
15 minute winter	OB4	10	83.944	0.053	12.5	0.0193	0.0000	OK
15 minute winter	S116	10	83.263	0.159	97.6	0.1800	0.0000	OK
15 minute winter	OB5	10	82.825	0.129	24.5	0.0463	0.0000	OK
15 minute winter	S117	11	82.799	0.199	42.7	0.2255	0.0000	OK
15 minute winter	OB6	10	83.394	0.061	48.5	0.0219	0.0000	OK
180 minute winter	S118	168	82.621	0.384	45.4	0.5495	0.0000	SURCHARGED
180 minute winter	PI-1	168	82.621	0.499	45.4	0.0000	0.0000	SURCHARGED

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 winter	OB1	1.000	S101	11.0	1.781	0.133	0.0334	
15 minute winter	S101	1.001	S102	49.9	1.272	1.177	2.9828	
15 minute winter	S102	1.002	S104	51.0	1.281	1.033	1.2051	
15 minute winter	OB2	3.000	S104	7.1	2.284	0.090	0.0612	
15 minute winter	S103	2.000	S104	48.3	1.213	1.139	2.8436	
15 minute winter	S104	1.003	S109	102.8	1.460	1.138	1.0401	
15 minute winter	S105	4.000	S106	28.6	0.962	0.675	0.9120	
15 minute winter	S106	4.001	S108	39.4	1.492	0.917	0.9121	
15 minute winter	S107	5.000	S108	28.5	1.277	0.673	0.6642	
15 minute winter	S108	4.002	S109	67.4	2.830	0.456	0.4653	
15 minute winter	S109	1.004	S114	168.8	1.531	1.033	1.0225	
15 minute winter	S110	6.000	S111	32.6	1.045	0.769	2.0373	
15 minute winter	S111	6.001	S113	38.5	0.969	0.884	0.9744	
15 minute winter	S112	7.000	S113	32.5	0.876	0.766	1.9526	
15 minute winter	S113	6.002	S114	68.1	1.713	1.609	0.3166	
180 minute winter	S114	1.005	TANK	62.9	1.358	0.383	0.9320	
15 minute winter	OB3	8.000	S115	27.7	1.269	0.175	0.0931	
15 minute winter	S115	8.001	S116	37.7	1.165	0.890	0.6170	
15 minute winter	OB4	9.000	S116	12.4	2.321	0.237	0.0396	
15 minute winter	S116	8.002	S118	96.9	1.752	0.558	1.7552	
15 minute winter	OB5	10.000	S117	24.2	0.818	0.476	0.3030	
15 minute winter	S117	10.001	S118	41.6	1.144	0.984	1.2164	
15 minute winter	OB6	11.000	S118	48.5	2.365	0.092	0.1846	
180 minute winter	S118	8.003	PI-1	45.4	1.205	0.282	0.2548	
180 minute winter	PI-1	8.004	S119	45.4	1.111	0.278	0.3309	

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Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.82%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	S119	168	82.621	0.519	45.4	0.7424	0.0000	SURCHARGED
180 minute winter	TANK	168	82.621	1.071	108.3	315.6229	0.0000	SURCHARGED
180 minute winter	HB	168	82.620	1.087	20.6	1.9210	0.0000	SURCHARGED
120 minute winter	S120	286	81.618	0.115	20.1	0.1305	0.0000	OK
120 minute winter	S121	286	79.851	0.061	20.1	0.0691	0.0000	OK
120 minute winter	Ex.MH	286	79.197	0.057	20.1	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)
180 minute winter	S119	8.005	TANK	45.4	1.224	0.276	0.2757	
180 minute winter	TANK	1.006	HB	20.6	0.275	0.125	0.2757	
180 minute winter	HB	1.007	S120	20.1	0.927	0.475	0.0977	
120 minute winter	S120	1.008	S121	20.1	1.024	0.475	0.3266	
120 minute winter	S121	1.009	Ex.MH	20.1	2.435	0.140	0.0714	422.0

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