

Design Settings

Rainfall Methodology	FEH-13	Minimum Velocity (m/s)	1.00
Return Period (years)	2	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	0.750	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0		

Adoptable Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1200

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.088	5.00	28.610	1200	530915.685	120974.478	1.410
11	0.048	5.00	28.296	1200	530958.608	120977.608	1.496
2			28.265	1200	530943.711	120975.271	1.830
3	0.040	5.00	28.201	1200	530944.413	120966.318	1.826
12	0.127	5.00	27.727	1200	530911.715	120922.055	1.427
4	0.133	5.00	27.566	1350	530931.393	120917.102	1.853
13	0.167	5.00	27.404	1200	531005.194	120839.857	2.404
14			27.185	1200	530978.283	120856.264	2.328
16	0.072	5.00	28.034	1200	531011.846	120954.225	1.500
17	0.243	5.00	27.754	1350	530969.716	120885.135	1.622
15	0.036	5.00	27.354	1500	530962.776	120860.487	2.720
5	0.093	5.00	26.974	1500	530919.903	120872.162	2.763
18	0.104	5.00	26.285	1200	530868.803	120854.777	1.560
10	0.091	5.00	26.581	1200	530875.519	120879.522	1.961
6	0.064	5.00	26.847	1500	530918.803	120867.472	2.647
7	0.060	5.00	25.985	1500	530904.953	120813.822	2.353
8	0.331	5.00	26.300	1500	530946.036	120802.312	2.755
9			25.900	1500	530972.406	120786.000	2.418
09-306			25.600	1500	530979.476	120793.918	2.175
09-305	0.000		25.800	1200	531000.855	120780.311	2.614
09-304A	0.000		25.800	1200	531038.904	120776.566	3.558
09-311	0.159	5.00	29.642	1350	530768.487	120874.142	2.188
09-310			28.281	1350	530804.171	120862.502	1.575
09-309			26.671	1200	530838.738	120850.775	0.965
09-317	0.150	5.00	26.500	1200	530882.832	120797.171	3.069
09-316	0.000		25.970	1200	530922.341	120788.236	2.793
09-315	0.000		25.800	1200	530950.928	120771.246	2.956
09-315A	0.000		25.346	1200	530952.343	120760.113	3.056
09-314	0.023	5.00	25.400	1200	530974.722	120751.883	3.233
09-313A	0.075	5.00	25.700	1200	530987.700	120767.912	3.729
09-313	0.000		25.350	1200	531025.808	120736.909	3.593

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
09-313B	0.000		24.850	1200	531043.450	120755.165	3.203
09-304	0.000		24.800	1500	531055.148	120755.297	3.420
09-303	0.000		23.600	1200	531070.129	120735.413	4.364
HW1	0.000		19.920		531086.191	120735.666	0.790
HW2	0.000	5.00	20.200		531102.779	120735.399	1.070
09-302	0.000		20.200	1200	531106.043	120731.815	1.122
09-301	0.000		19.900	1200	531097.582	120725.704	0.937
HW3	0.000		19.810		531098.205	120722.803	0.902

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	1	2	28.037	0.600	27.200	26.510	0.690	40.6	225	5.23	50.0
2.000	11	2	15.079	0.600	26.800	26.510	0.290	52.0	225	5.14	50.0
1.001	2	3	8.980	0.600	26.435	26.375	0.060	150.0	300	5.34	50.0
1.002	3	4	50.909	0.600	26.375	25.863	0.512	99.4	300	5.88	50.0
3.000	12	4	20.292	0.600	26.300	25.938	0.362	56.1	225	5.19	50.0
1.003	4	5	46.386	0.600	25.713	24.286	1.427	32.5	450	6.10	49.6
4.000	13	14	31.518	0.600	25.000	24.857	0.143	220.0	300	5.50	50.0
4.001	14	15	16.072	0.600	24.857	24.784	0.073	220.0	300	5.75	50.0
5.000	16	17	80.922	0.600	26.534	26.282	0.252	321.1	300	6.55	48.1
5.001	17	15	25.606	0.600	26.132	24.634	1.498	17.1	450	6.63	47.8
4.002	15	5	44.434	0.600	24.634	24.286	0.348	127.7	450	7.05	46.4
1.004	5	6	4.817	0.600	24.211	24.200	0.011	437.9	525	7.12	46.2
6.000	09-311	09-310	37.534	0.600	27.454	26.706	0.748	50.2	375	5.24	50.0
6.001	09-310	09-309	36.502	0.600	26.706	25.706	1.000	36.5	225	5.52	50.0
6.002	09-309	18	30.330	0.600	25.706	24.800	0.906	33.5	225	5.75	50.0
6.003	18	10	25.640	0.600	24.725	24.620	0.105	244.2	300	6.17	49.4
6.004	10	6	44.930	0.600	24.620	24.425	0.195	230.4	300	6.90	46.9

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.000	2.058	81.8	11.9	1.185	1.530	0.088	0.0
2.000	1.818	72.3	6.5	1.271	1.530	0.048	0.0
1.001	1.281	90.6	18.4	1.530	1.526	0.136	0.0
1.002	1.576	111.4	23.9	1.526	1.403	0.176	0.0
3.000	1.750	69.6	17.2	1.202	1.403	0.127	0.0
1.003	3.575	568.6	58.7	1.403	2.238	0.436	0.0
4.000	1.056	74.6	22.6	2.104	2.028	0.167	0.0
4.001	1.056	74.6	22.6	2.028	2.270	0.167	0.0
5.000	0.872	61.6	9.4	1.200	1.172	0.072	0.0
5.001	4.935	784.9	40.8	1.172	2.270	0.315	0.0
4.002	1.797	285.9	65.2	2.270	2.238	0.518	0.0
1.004	1.064	230.3	131.1	2.238	2.122	1.047	0.0
6.000	2.563	283.0	21.5	1.813	1.200	0.159	0.0
6.001	2.172	86.4	21.5	1.350	0.740	0.159	0.0
6.002	2.268	90.2	21.5	0.740	1.260	0.159	0.0
6.003	1.001	70.8	35.2	1.260	1.661	0.263	0.0
6.004	1.031	72.9	45.0	1.661	2.122	0.354	0.0

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)
1.005	6	7	55.409	0.600	24.200	23.632	0.568	97.6	525	7.53	45.0
1.006	7	8	42.665	0.600	23.632	23.545	0.087	490.4	525	8.24	43.0
1.007	8	9	31.007	0.600	23.545	23.482	0.063	492.2	525	8.75	41.7
1.008	9	09-306	10.615	0.600	23.482	23.425	0.057	186.2	300	8.91	41.4
7.000	09-317	09-316	40.507	0.600	23.431	23.177	0.254	159.5	225	5.65	50.0
7.001	09-316	09-315	33.255	0.600	23.177	22.844	0.333	100.0	225	6.08	49.7
7.002	09-315	09-315A	11.223	0.600	22.844	22.290	0.554	20.3	225	6.14	49.5
7.003	09-315A	09-314	23.844	0.600	22.290	22.167	0.123	193.9	225	6.57	48.0
7.004	09-314	09-313A	20.624	0.600	22.167	22.046	0.121	170.0	225	6.91	46.9
7.005	09-313A	09-313	49.126	0.600	21.971	21.757	0.214	230.0	300	7.70	44.5
7.006	09-313	09-313B	25.387	0.600	21.757	21.647	0.110	230.0	300	8.11	43.4
1.009	09-306	09-305	25.342	0.600	23.425	23.186	0.239	106.0	300	9.18	40.7
1.010	09-305	09-304A	38.233	0.600	23.186	22.242	0.944	40.5	300	9.44	40.2
1.011	09-304A	09-304	26.763	0.600	22.242	21.380	0.862	31.0	300	9.60	39.8
7.007	09-313B	09-304	11.699	0.600	21.647	21.530	0.117	100.0	150	8.31	42.9
1.012	09-304	09-303	24.896	0.600	21.380	19.236	2.144	11.6	300	9.69	39.6
1.013	09-303	HW1	16.064	0.600	19.236	19.180	0.056	286.9	300	9.98	39.0
1.014	HW2	09-302	4.848	0.600	19.130	19.078	0.052	93.2	150	5.08	50.0
1.015	09-302	09-301	10.437	0.600	19.078	18.963	0.115	90.8	150	5.24	50.0
1.016	09-301	HW3	2.967	0.600	18.963	18.908	0.055	53.9	150	5.28	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)
1.005	2.268	490.9	178.8	2.122	1.828	1.465	0.0
1.006	1.004	217.4	177.9	1.828	2.230	1.525	0.0
1.007	1.003	217.0	210.0	2.230	1.893	1.856	0.0
1.008	1.149	81.2	208.1	2.118	1.875	1.856	0.0
7.000	1.033	41.1	20.3	2.844	2.568	0.150	0.0
7.001	1.307	52.0	20.2	2.568	2.731	0.150	0.0
7.002	2.920	116.1	20.1	2.731	2.831	0.150	0.0
7.003	0.935	37.2	19.5	2.831	3.008	0.150	0.0
7.004	1.000	39.7	22.0	3.008	3.429	0.173	0.0
7.005	1.032	73.0	29.9	3.429	3.293	0.248	0.0
7.006	1.032	73.0	29.1	3.293	2.903	0.248	0.0
1.009	1.526	107.9	204.8	1.875	2.314	1.856	0.0
1.010	2.477	175.1	202.0	2.314	3.258	1.856	0.0
1.011	2.831	200.1	200.3	3.258	3.120	1.856	0.0
7.007	1.005	17.8	28.8	3.053	3.120	0.248	0.0
1.012	4.638	327.8	225.9	3.120	4.064	2.104	0.0
1.013	0.923	65.2	222.3	4.064	0.440	2.104	0.0
1.014	1.041	18.4	0.0	0.920	0.972	0.000	0.0
1.015	1.055	18.6	0.0	0.972	0.787	0.000	0.0
1.016	1.372	24.2	0.0	0.787	0.752	0.000	0.0

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	28.037	40.6	225	Circular_Default Sewer Type	28.610	27.200	1.185	28.265	26.510	1.530
2.000	15.079	52.0	225	Circular_Default Sewer Type	28.296	26.800	1.271	28.265	26.510	1.530
1.001	8.980	150.0	300	Circular_Default Sewer Type	28.265	26.435	1.530	28.201	26.375	1.526
1.002	50.909	99.4	300	Circular_Default Sewer Type	28.201	26.375	1.526	27.566	25.863	1.403
3.000	20.292	56.1	225	Circular_Default Sewer Type	27.727	26.300	1.202	27.566	25.938	1.403
1.003	46.386	32.5	450	Circular_Default Sewer Type	27.566	25.713	1.403	26.974	24.286	2.238
4.000	31.518	220.0	300	Circular_Default Sewer Type	27.404	25.000	2.104	27.185	24.857	2.028
4.001	16.072	220.0	300	Circular_Default Sewer Type	27.185	24.857	2.028	27.354	24.784	2.270
5.000	80.922	321.1	300	Circular_Default Sewer Type	28.034	26.534	1.200	27.754	26.282	1.172
5.001	25.606	17.1	450	Circular_Default Sewer Type	27.754	26.132	1.172	27.354	24.634	2.270
4.002	44.434	127.7	450	Circular_Default Sewer Type	27.354	24.634	2.270	26.974	24.286	2.238
1.004	4.817	437.9	525	Circular_Default Sewer Type	26.974	24.211	2.238	26.847	24.200	2.122
6.000	37.534	50.2	375	Circular_Default Sewer Type	29.642	27.454	1.813	28.281	26.706	1.200
6.001	36.502	36.5	225	Circular_Default Sewer Type	28.281	26.706	1.350	26.671	25.706	0.740
6.002	30.330	33.5	225	Circular_Default Sewer Type	26.671	25.706	0.740	26.285	24.800	1.260
6.003	25.640	244.2	300	Circular_Default Sewer Type	26.285	24.725	1.260	26.581	24.620	1.661
6.004	44.930	230.4	300	Circular_Default Sewer Type	26.581	24.620	1.661	26.847	24.425	2.122
1.005	55.409	97.6	525	Circular_Default Sewer Type	26.847	24.200	2.122	25.985	23.632	1.828
1.006	42.665	490.4	525	Circular_Default Sewer Type	25.985	23.632	1.828	26.300	23.545	2.230
1.007	31.007	492.2	525	Circular_Default Sewer Type	26.300	23.545	2.230	25.900	23.482	1.893
1.008	10.615	186.2	300	Circular_Default Sewer Type	25.900	23.482	2.118	25.600	23.425	1.875
7.000	40.507	159.5	225	Circular_Default Sewer Type	26.500	23.431	2.844	25.970	23.177	2.568
7.001	33.255	100.0	225	Circular_Default Sewer Type	25.970	23.177	2.568	25.800	22.844	2.731
7.002	11.223	20.3	225	Circular_Default Sewer Type	25.800	22.844	2.731	25.346	22.290	2.831
7.003	23.844	193.9	225	Circular_Default Sewer Type	25.346	22.290	2.831	25.400	22.167	3.008

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
2.000	11	1200	Manhole	Adoptable	2	1200	Manhole	Adoptable
1.001	2	1200	Manhole	Adoptable	3	1200	Manhole	Adoptable
1.002	3	1200	Manhole	Adoptable	4	1350	Manhole	Adoptable
3.000	12	1200	Manhole	Adoptable	4	1350	Manhole	Adoptable
1.003	4	1350	Manhole	Adoptable	5	1500	Manhole	Adoptable
4.000	13	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
4.001	14	1200	Manhole	Adoptable	15	1500	Manhole	Adoptable
5.000	16	1200	Manhole	Adoptable	17	1350	Manhole	Adoptable
5.001	17	1350	Manhole	Adoptable	15	1500	Manhole	Adoptable
4.002	15	1500	Manhole	Adoptable	5	1500	Manhole	Adoptable
1.004	5	1500	Manhole	Adoptable	6	1500	Manhole	Adoptable
6.000	09-311	1350	Manhole	Adoptable	09-310	1350	Manhole	Adoptable
6.001	09-310	1350	Manhole	Adoptable	09-309	1200	Manhole	Adoptable
6.002	09-309	1200	Manhole	Adoptable	18	1200	Manhole	Adoptable
6.003	18	1200	Manhole	Adoptable	10	1200	Manhole	Adoptable
6.004	10	1200	Manhole	Adoptable	6	1500	Manhole	Adoptable
1.005	6	1500	Manhole	Adoptable	7	1500	Manhole	Adoptable
1.006	7	1500	Manhole	Adoptable	8	1500	Manhole	Adoptable
1.007	8	1500	Manhole	Adoptable	9	1500	Manhole	Adoptable
1.008	9	1500	Manhole	Adoptable	09-306	1500	Manhole	Adoptable
7.000	09-317	1200	Manhole	Adoptable	09-316	1200	Manhole	Adoptable
7.001	09-316	1200	Manhole	Adoptable	09-315	1200	Manhole	Adoptable
7.002	09-315	1200	Manhole	Adoptable	09-315A	1200	Manhole	Adoptable
7.003	09-315A	1200	Manhole	Adoptable	09-314	1200	Manhole	Adoptable

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)
7.004	20.624	170.0	225	Circular_Default Sewer Type	25.400	22.167	3.008	25.700	22.046	3.429
7.005	49.126	230.0	300	Circular_Default Sewer Type	25.700	21.971	3.429	25.350	21.757	3.293
7.006	25.387	230.0	300	Circular_Default Sewer Type	25.350	21.757	3.293	24.850	21.647	2.903
1.009	25.342	106.0	300	Circular_Default Sewer Type	25.600	23.425	1.875	25.800	23.186	2.314
1.010	38.233	40.5	300	Circular_Default Sewer Type	25.800	23.186	2.314	25.800	22.242	3.258
1.011	26.763	31.0	300	Circular_Default Sewer Type	25.800	22.242	3.258	24.800	21.380	3.120
7.007	11.699	100.0	150	Circular_Default Sewer Type	24.850	21.647	3.053	24.800	21.530	3.120
1.012	24.896	11.6	300	Circular_Default Sewer Type	24.800	21.380	3.120	23.600	19.236	4.064
1.013	16.064	286.9	300	Circular_Default Sewer Type	23.600	19.236	4.064	19.920	19.180	0.440
1.014	4.848	93.2	150	Circular_Default Sewer Type	20.200	19.130	0.920	20.200	19.078	0.972
1.015	10.437	90.8	150	Circular_Default Sewer Type	20.200	19.078	0.972	19.900	18.963	0.787
1.016	2.967	53.9	150	Circular_Default Sewer Type	19.900	18.963	0.787	19.810	18.908	0.752

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
7.004	09-314	1200	Manhole	Adoptable	09-313A	1200	Manhole	Adoptable
7.005	09-313A	1200	Manhole	Adoptable	09-313	1200	Manhole	Adoptable
7.006	09-313	1200	Manhole	Adoptable	09-313B	1200	Manhole	Adoptable
1.009	09-306	1500	Manhole	Adoptable	09-305	1200	Manhole	Adoptable
1.010	09-305	1200	Manhole	Adoptable	09-304A	1200	Manhole	Adoptable
1.011	09-304A	1200	Manhole	Adoptable	09-304	1500	Manhole	Adoptable
7.007	09-313B	1200	Manhole	Adoptable	09-304	1500	Manhole	Adoptable
1.012	09-304	1500	Manhole	Adoptable	09-303	1200	Manhole	Adoptable
1.013	09-303	1200	Manhole	Adoptable	HW1		Junction	
1.014	HW2		Junction		09-302	1200	Manhole	Adoptable
1.015	09-302	1200	Manhole	Adoptable	09-301	1200	Manhole	Adoptable
1.016	09-301	1200	Manhole	Adoptable	HW3		Junction	

Simulation Settings

Rainfall Methodology	FEH-22	Skip Steady State	✓	Check Discharge Rate(s)	✓
Rainfall Events	Singular	Drain Down Time (mins)	240	Check Discharge Volume	✓
Summer CV	0.750	Additional Storage (m³/ha)	20.0	100 year 360 minute (m³)	
Analysis Speed	Detailed	Starting Level (m)			

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	1	0	0
30	0	0	0
100	40	4	0

Pre-development Discharge Rate

Site Makeup	Greenfield	Region	1
Greenfield Method	IH124	Growth Factor 1 year	0.85
Positively Drained Area (ha)		Growth Factor 30 year	1.95
SAAR (mm)		Growth Factor 100 year	2.48
Soil Index	1	Betterment (%)	0
SPR	0.10	QBar	

Pre-development Discharge Rate

Q 1 year (l/s)	Q 100 year (l/s)
Q 30 year (l/s)	

Pre-development Discharge Volume

Site Makeup	Greenfield	Return Period (years)	100
Greenfield Method	FSR/FEH	Climate Change (%)	0
Positively Drained Area (ha)		Storm Duration (mins)	360
Soil Index	1	Betterment (%)	0
SPR	0.10	PR	
CWI		Runoff Volume (m³)	

Node 09-310 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	26.706	Product Number	CTL-SHE-0095-4500-1350-4500
Design Depth (m)	1.350	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	4.5	Min Node Diameter (mm)	1200

Node 9 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	23.482	Product Number	CTL-SHE-0143-1220-2100-1220
Design Depth (m)	2.100	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	12.2	Min Node Diameter (mm)	1500

Node 09-313B Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	21.647	Product Number	CTL-SHE-0083-5000-3000-5000
Design Depth (m)	3.000	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	5.0	Min Node Diameter (mm)	1200

Node 09-311 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	27.454
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	144

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	225.0	0.0	0.800	225.0	0.0	0.801	0.0	0.0

Node 8 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	23.545
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.97	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	477.0	0.0	1.500	477.0	0.0	1.501	0.0	0.0

Node 18 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	24.725
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.97	Time to half empty (mins)	8

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	52.0	0.0	0.800	52.0	0.0	0.801	0.0	0.0

Node HW2 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	25.600
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	19.130	Main Channel Slope (1:X)	99999.0
Safety Factor	2.0	Time to half empty (mins)		Main Channel n	0.001

Inlets

HW1

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	269.0	0.0	0.800	480.0	0.0

Node 09-313B Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	21.647
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.97	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	64.5	0.0	1.500	64.5	0.0	1.501	0.0	0.0

Node 9 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	23.482
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	216.0	0.0	1.500	216.0	0.0	1.501	0.0	0.0

Results for 1 year +1% CC Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	27.248	0.048	8.0	0.1137	0.0000	OK
15 minute summer	11	10	26.838	0.038	4.4	0.0678	0.0000	OK
15 minute summer	2	10	26.514	0.079	12.2	0.0893	0.0000	OK
15 minute summer	3	11	26.451	0.076	15.7	0.1199	0.0000	OK
15 minute summer	12	10	26.363	0.063	11.5	0.1843	0.0000	OK
15 minute summer	4	11	25.791	0.078	38.2	0.2239	0.0000	OK
15 minute summer	13	10	25.093	0.093	15.2	0.2353	0.0000	OK
15 minute summer	14	11	24.952	0.095	15.0	0.1073	0.0000	OK
15 minute summer	16	12	26.595	0.061	6.5	0.1281	0.0000	OK
15 minute summer	17	11	26.188	0.056	26.5	0.2475	0.0000	OK
15 minute summer	15	11	24.755	0.121	44.4	0.2462	0.0000	OK
15 minute summer	5	11	24.419	0.208	90.9	0.5069	0.0000	OK
120 minute summer	18	70	24.788	0.063	7.8	3.3508	0.0000	OK
120 minute summer	10	68	24.698	0.078	10.7	0.1605	0.0000	OK
15 minute summer	6	11	24.362	0.162	106.1	0.3644	0.0000	OK
15 minute summer	7	11	23.906	0.274	110.4	0.6232	0.0000	OK
480 minute summer	8	320	23.793	0.248	43.0	115.7757	0.0000	OK
480 minute summer	9	320	23.793	0.311	21.0	64.2713	0.0000	SURCHARGED
480 minute summer	09-306	320	23.493	0.068	11.2	0.1209	0.0000	OK
480 minute summer	09-305	320	23.238	0.052	11.2	0.0589	0.0000	OK
480 minute summer	09-304A	328	22.292	0.050	11.2	0.0566	0.0000	OK
180 minute summer	09-311	104	27.487	0.033	6.6	7.5596	0.0000	OK
180 minute summer	09-310	112	26.886	0.180	4.6	0.2582	0.0000	OK
180 minute summer	09-309	112	25.739	0.033	4.0	0.0370	0.0000	OK
15 minute summer	09-317	10	23.522	0.091	13.6	0.1914	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	7.8	1.293	0.096	0.1697	
15 minute summer	11	2.000	2	4.3	0.990	0.060	0.0660	
15 minute summer	2	1.001	3	12.1	0.853	0.133	0.1296	
15 minute summer	3	1.002	4	15.5	1.114	0.139	0.7089	
15 minute summer	12	3.000	4	11.3	1.269	0.163	0.1809	
15 minute summer	4	1.003	5	38.3	1.643	0.067	1.3303	
15 minute summer	13	4.000	14	15.0	0.804	0.200	0.5892	
15 minute summer	14	4.001	15	14.9	0.811	0.200	0.2960	
15 minute summer	16	5.000	17	5.5	0.571	0.089	0.7758	
15 minute summer	17	5.001	15	26.4	1.282	0.034	0.5840	
15 minute summer	15	4.002	5	44.6	1.220	0.156	1.6295	
15 minute summer	5	1.004	6	90.8	1.339	0.394	0.3273	
120 minute summer	18	6.003	10	7.1	0.577	0.100	0.3226	
120 minute summer	10	6.004	6	10.6	0.740	0.145	0.6436	
15 minute summer	6	1.005	7	105.3	1.264	0.214	4.7171	
15 minute summer	7	1.006	8	115.5	2.018	0.531	2.6310	
120 minute summer	8	1.007	9	45.6	1.130	0.210	2.5917	
480 minute summer	9	Hydro-Brake®	09-306	11.2				
480 minute summer	09-306	1.009	09-305	11.2	1.111	0.104	0.2564	
480 minute summer	09-305	1.010	09-304A	11.2	1.410	0.064	0.3033	
480 minute summer	09-304A	1.011	09-304	11.2	1.674	0.056	0.1839	
180 minute summer	09-311	6.000	09-310	4.6	0.303	0.016	1.0666	
180 minute summer	09-310	Hydro-Brake®	09-309	4.0				
180 minute summer	09-309	6.002	18	4.0	1.146	0.045	0.1070	
15 minute summer	09-317	7.000	09-316	13.4	0.952	0.326	0.5710	

Results for 1 year +1% CC Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	09-316	11	23.261	0.084	13.4	0.0950	0.0000	OK
15 minute summer	09-315	11	22.895	0.051	13.4	0.0581	0.0000	OK
15 minute summer	09-315A	11	22.386	0.096	13.4	0.1086	0.0000	OK
15 minute summer	09-314	12	22.267	0.100	15.2	0.1269	0.0000	OK
15 minute summer	09-313A	12	22.081	0.110	20.9	0.1686	0.0000	OK
15 minute summer	09-313	12	21.874	0.117	20.8	0.1326	0.0000	OK
240 minute summer	09-313B	156	21.867	0.220	8.9	14.0210	0.0000	SURCHARGED
360 minute summer	09-304	240	21.422	0.042	14.3	0.0749	0.0000	OK
360 minute summer	09-303	240	19.332	0.096	14.3	0.1087	0.0000	OK
480 minute summer	HW1	352	19.238	0.107	14.2	0.0000	0.0000	OK
480 minute summer	HW2	352	19.237	0.107	14.0	0.0000	0.0000	OK
480 minute summer	09-302	352	19.183	0.105	13.9	0.1187	0.0000	OK
480 minute summer	09-301	352	19.053	0.090	13.9	0.1015	0.0000	OK
480 minute summer	HW3	352	18.989	0.081	13.9	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	09-316	7.001	09-315	13.4	1.335	0.258	0.3376	
15 minute summer	09-315	7.002	09-315A	13.4	1.185	0.115	0.1288	
15 minute summer	09-315A	7.003	09-314	13.2	0.807	0.355	0.3918	
15 minute summer	09-314	7.004	09-313A	15.0	0.915	0.379	0.3393	
15 minute summer	09-313A	7.005	09-313	20.8	0.851	0.285	1.2011	
15 minute summer	09-313	7.006	09-313B	21.3	1.412	0.291	0.4603	
240 minute summer	09-313B	Hydro-Brake®	09-304	3.2				
360 minute summer	09-304	1.012	09-303	14.3	1.161	0.043	0.3174	
360 minute summer	09-303	1.013	HW1	14.3	0.765	0.219	0.2993	
30 minute summer	HW1	Flow through pond	HW2	14.6	0.070	0.000	20.6300	
480 minute summer	HW2	1.014	09-302	13.9	1.046	0.758	0.0646	
480 minute summer	09-302	1.015	09-301	13.9	1.153	0.747	0.1260	
480 minute summer	09-301	1.016	HW3	13.9	1.343	0.575	0.0308	330.1

Results for 30 year Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	27.298	0.098	30.7	0.2340	0.0000	OK
15 minute summer	11	10	26.875	0.075	16.8	0.1325	0.0000	OK
15 minute summer	2	10	26.608	0.173	47.3	0.1962	0.0000	OK
15 minute summer	3	11	26.537	0.162	60.6	0.2542	0.0000	OK
15 minute summer	12	10	26.440	0.140	44.3	0.4063	0.0000	OK
15 minute summer	4	11	25.867	0.154	148.5	0.4422	0.0000	OK
15 minute summer	13	10	25.212	0.212	58.3	0.5345	0.0000	OK
15 minute summer	14	11	25.069	0.212	57.4	0.2400	0.0000	OK
15 minute summer	16	11	26.664	0.130	25.1	0.2722	0.0000	OK
15 minute summer	17	10	26.242	0.110	105.3	0.4850	0.0000	OK
15 minute summer	15	12	24.896	0.262	173.4	0.5327	0.0000	OK
15 minute summer	5	12	24.811	0.600	352.7	1.4638	0.0000	SURCHARGED
30 minute summer	18	20	24.865	0.140	37.5	7.4023	0.0000	OK
30 minute summer	10	19	24.821	0.201	54.4	0.4129	0.0000	OK
15 minute summer	6	12	24.734	0.534	415.9	1.2028	0.0000	SURCHARGED
480 minute summer	7	456	24.332	0.700	84.2	1.5942	0.0000	SURCHARGED
480 minute summer	8	456	24.332	0.787	100.5	367.4061	0.0000	SURCHARGED
480 minute summer	9	456	24.332	0.850	39.1	175.8642	0.0000	SURCHARGED
720 minute summer	09-306	870	23.497	0.072	12.2	0.1264	0.0000	OK
180 minute summer	09-305	388	23.240	0.054	12.2	0.0615	0.0000	OK
960 minute summer	09-304A	1050	22.295	0.053	12.2	0.0602	0.0000	OK
120 minute summer	09-311	92	27.572	0.118	25.1	26.8459	0.0000	OK
30 minute summer	09-310	21	27.598	0.892	25.6	1.2769	0.0000	SURCHARGED
60 minute summer	09-309	170	25.740	0.034	4.5	0.0390	0.0000	OK
15 minute summer	09-317	11	23.764	0.333	52.4	0.7010	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	30.6	1.832	0.373	0.4677	
15 minute summer	11	2.000	2	16.7	1.296	0.231	0.2127	
15 minute summer	2	1.001	3	46.6	1.159	0.515	0.3624	
15 minute summer	3	1.002	4	60.4	1.596	0.542	1.9256	
15 minute summer	12	3.000	4	43.8	1.777	0.629	0.4998	
15 minute summer	4	1.003	5	148.1	1.609	0.260	4.7883	
15 minute summer	13	4.000	14	57.4	1.083	0.769	1.6705	
15 minute summer	14	4.001	15	57.3	1.154	0.768	0.7975	
15 minute summer	16	5.000	17	22.9	0.853	0.372	2.1955	
15 minute summer	17	5.001	15	104.7	1.737	0.133	1.5706	
15 minute summer	15	4.002	5	173.7	1.357	0.608	5.6491	
15 minute summer	5	1.004	6	340.0	1.714	1.476	1.0406	
30 minute summer	18	6.003	10	29.1	0.750	0.411	1.0428	
15 minute summer	10	6.004	6	54.7	1.082	0.750	2.6820	
15 minute summer	6	1.005	7	392.4	1.831	0.799	11.9702	
15 minute summer	7	1.006	8	410.2	2.395	1.887	7.9912	
30 minute summer	8	1.007	9	248.6	2.182	1.146	6.3100	
180 minute summer	9	Hydro-Brake®	09-306	12.2				
180 minute summer	09-306	1.009	09-305	12.2	1.138	0.113	0.2726	
480 minute summer	09-305	1.010	09-304A	12.2	1.445	0.070	0.3247	
60 minute summer	09-304A	1.011	09-304	12.2	1.688	0.061	0.1949	
30 minute summer	09-311	6.000	09-310	25.6	0.509	0.090	2.4959	
30 minute summer	09-310	Hydro-Brake®	09-309	4.5				
60 minute summer	09-309	6.002	18	4.5	1.183	0.050	0.1577	
15 minute summer	09-317	7.000	09-316	50.6	1.277	1.232	1.5465	

Results for 30 year Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	09-316	11	23.372	0.195	50.6	0.2207	0.0000	OK
15 minute summer	09-315	12	22.981	0.137	50.7	0.1546	0.0000	OK
15 minute summer	09-315A	12	22.793	0.503	49.3	0.5684	0.0000	SURCHARGED
15 minute summer	09-314	12	22.529	0.362	55.4	0.4614	0.0000	SURCHARGED
180 minute summer	09-313A	176	22.468	0.497	29.2	0.7619	0.0000	SURCHARGED
180 minute summer	09-313	176	22.468	0.711	27.4	0.8037	0.0000	SURCHARGED
180 minute summer	09-313B	176	22.467	0.820	24.4	52.2583	0.0000	SURCHARGED
180 minute summer	09-304	384	21.424	0.044	15.5	0.0780	0.0000	OK
180 minute summer	09-303	384	19.336	0.100	15.5	0.1135	0.0000	OK
1440 minute summer	HW1	900	19.247	0.117	15.5	0.0000	0.0000	OK
1440 minute summer	HW2	900	19.247	0.117	15.4	0.0000	0.0000	OK
1440 minute summer	09-302	900	19.192	0.114	15.4	0.1285	0.0000	OK
1440 minute summer	09-301	900	19.059	0.096	15.4	0.1087	0.0000	OK
1440 minute summer	HW3	900	18.995	0.087	15.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	09-316	7.001	09-315	50.7	1.741	0.976	0.9993	
15 minute summer	09-315	7.002	09-315A	49.3	1.485	0.425	0.3648	
15 minute summer	09-315A	7.003	09-314	49.1	1.235	1.320	0.9483	
15 minute summer	09-314	7.004	09-313A	55.4	1.394	1.394	0.7998	
15 minute summer	09-313A	7.005	09-313	76.3	1.179	1.046	3.2986	
15 minute summer	09-313	7.006	09-313B	73.0	1.656	1.001	1.7877	
15 minute summer	09-313B	Hydro-Brake®	09-304	3.3				
180 minute summer	09-304	1.012	09-303	15.5	1.188	0.047	0.3366	
180 minute summer	09-303	1.013	HW1	15.5	0.783	0.237	0.3175	
30 minute summer	HW1	Flow through pond	HW2	24.5	0.096	0.001	32.4425	
1440 minute summer	HW2	1.014	09-302	15.4	1.064	0.839	0.0703	
1440 minute summer	09-302	1.015	09-301	15.4	1.175	0.828	0.1369	
1440 minute summer	09-301	1.016	HW3	15.4	1.374	0.637	0.0333	1023.0

Results for 100 year +40% CC +4% A Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	10	27.337	0.137	56.2	0.3333	0.0000	OK
15 minute summer	11	9	26.904	0.104	30.7	0.1867	0.0000	OK
15 minute summer	2	11	26.725	0.290	86.4	0.3284	0.0000	OK
15 minute summer	3	11	26.633	0.258	110.1	0.4101	0.0000	OK
15 minute summer	12	11	26.714	0.414	81.2	1.2333	0.0000	SURCHARGED
15 minute summer	4	12	26.230	0.517	269.1	1.5108	0.0000	SURCHARGED
15 minute summer	13	12	26.722	1.722	106.7	4.4347	0.0000	SURCHARGED
15 minute summer	14	12	26.480	1.623	91.6	1.8359	0.0000	SURCHARGED
15 minute summer	16	11	26.725	0.191	46.0	0.4069	0.0000	OK
15 minute summer	17	12	26.386	0.254	194.4	1.1555	0.0000	OK
15 minute summer	15	12	26.331	1.697	287.5	3.4652	0.0000	SURCHARGED
15 minute summer	5	12	25.914	1.703	573.7	4.2025	0.0000	SURCHARGED
30 minute summer	18	21	25.838	1.113	158.2	43.1791	0.0000	SURCHARGED
30 minute summer	10	21	25.777	1.157	99.5	2.4241	0.0000	SURCHARGED
15 minute summer	6	12	25.673	1.473	604.7	3.3433	0.0000	SURCHARGED
720 minute summer	7	510	25.037	1.405	107.6	3.2288	0.0000	SURCHARGED
600 minute summer	8	435	25.036	1.491	147.3	696.2501	0.0000	SURCHARGED
960 minute summer	9	645	25.285	1.803	89.0	311.0888	0.0000	SURCHARGED
4320 minute summer	09-306	4320	23.497	0.072	12.2	0.1264	0.0000	OK
960 minute summer	09-305	450	23.240	0.054	12.2	0.0615	0.0000	OK
4320 minute summer	09-304A	4380	22.295	0.053	12.2	0.0601	0.0000	OK
120 minute summer	09-311	120	27.722	0.268	47.8	60.9903	0.0000	OK
120 minute summer	09-310	114	27.722	1.016	12.8	1.4536	0.0000	SURCHARGED
15 minute summer	09-309	14	25.795	0.089	5.4	0.1008	0.0000	OK
15 minute summer	09-317	12	25.711	2.280	95.9	4.8974	0.0000	SURCHARGED

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	1	1.000	2	55.9	1.877	0.683	0.8992	
15 minute summer	11	2.000	2	30.6	1.300	0.423	0.4234	
15 minute summer	2	1.001	3	84.5	1.289	0.933	0.6031	
15 minute summer	3	1.002	4	109.6	1.753	0.983	3.3356	
15 minute summer	12	3.000	4	78.5	1.974	1.128	0.8070	
15 minute summer	4	1.003	5	250.6	1.744	0.441	7.3496	
15 minute summer	13	4.000	14	91.6	1.301	1.228	2.2195	
15 minute summer	14	4.001	15	89.8	1.275	1.203	1.1318	
15 minute summer	16	5.000	17	42.8	1.006	0.695	3.4615	
15 minute summer	17	5.001	15	185.7	1.896	0.237	3.2094	
15 minute summer	15	4.002	5	279.1	1.761	0.976	7.0403	
15 minute summer	5	1.004	6	568.0	2.630	2.467	1.0406	
15 minute summer	18	6.003	10	-105.5	-1.499	-1.491	1.8056	
15 minute summer	10	6.004	6	105.1	1.506	1.442	3.1639	
15 minute summer	6	1.005	7	553.1	2.560	1.127	11.9702	
15 minute summer	7	1.006	8	585.4	2.801	2.692	9.2170	
15 minute summer	8	1.007	9	383.0	2.568	1.765	6.6985	
15 minute summer	9	Hydro-Brake®	09-306	12.2				
15 minute summer	09-306	1.009	09-305	12.2	1.138	0.113	0.2726	
180 minute summer	09-305	1.010	09-304A	12.2	1.443	0.070	0.3230	
120 minute summer	09-304A	1.011	09-304	12.2	1.688	0.061	0.1939	
15 minute summer	09-311	6.000	09-310	43.6	0.722	0.154	2.8713	
15 minute summer	09-310	Hydro-Brake®	09-309	4.5				
30 minute summer	09-309	6.002	18	21.2	1.183	0.235	0.7688	
15 minute summer	09-317	7.000	09-316	76.5	1.923	1.863	1.6110	

Results for 100 year +40% CC +4% A Critical Storm Duration. Lowest mass balance: 90.23%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	09-316	13	24.805	1.628	76.5	1.8410	0.0000	SURCHARGED
15 minute summer	09-315	13	24.174	1.330	70.1	1.5041	0.0000	SURCHARGED
240 minute summer	09-315A	212	24.156	1.866	26.5	2.1106	0.0000	SURCHARGED
240 minute summer	09-314	212	24.155	1.988	29.4	2.5430	0.0000	SURCHARGED
240 minute summer	09-313A	212	24.154	2.183	42.0	3.3819	0.0000	SURCHARGED
240 minute summer	09-313	212	24.153	2.396	41.0	2.7102	0.0000	SURCHARGED
240 minute summer	09-313B	212	24.153	2.506	40.3	96.7128	0.0000	SURCHARGED
1440 minute summer	09-304	690	21.424	0.044	15.4	0.0779	0.0000	OK
1440 minute summer	09-303	690	19.336	0.100	15.4	0.1134	0.0000	OK
2880 minute summer	HW1	1440	19.247	0.116	15.4	0.0000	0.0000	OK
2880 minute summer	HW2	1440	19.246	0.116	15.4	0.0000	0.0000	OK
2880 minute summer	09-302	1440	19.191	0.113	15.4	0.1282	0.0000	OK
2880 minute summer	09-301	1440	19.059	0.096	15.4	0.1085	0.0000	OK
2880 minute summer	HW3	1440	18.995	0.087	15.4	0.0000	0.0000	OK

Link Event (Outflow)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	09-316	7.001	09-315	70.1	1.762	1.348	1.3226	
15 minute summer	09-315	7.002	09-315A	67.0	1.684	0.577	0.4464	
15 minute summer	09-315A	7.003	09-314	67.2	1.690	1.807	0.9483	
15 minute summer	09-314	7.004	09-313A	75.3	1.895	1.896	0.8202	
15 minute summer	09-313A	7.005	09-313	107.2	1.523	1.470	3.4594	
15 minute summer	09-313	7.006	09-313B	105.6	1.694	1.448	1.7877	
240 minute summer	09-313B	Hydro-Brake®	09-304	4.6				
1440 minute summer	09-304	1.012	09-303	15.4	1.187	0.047	0.3362	
1440 minute summer	09-303	1.013	HW1	15.4	0.783	0.237	0.3171	
30 minute summer	HW1	Flow through pond	HW2	27.9	0.099	0.001	32.3146	
2880 minute summer	HW2	1.014	09-302	15.4	1.064	0.837	0.0702	
2880 minute summer	09-302	1.015	09-301	15.4	1.174	0.826	0.1366	
2880 minute summer	09-301	1.016	HW3	15.4	1.373	0.635	0.0333	1882.0