

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
301	0.116	5.00	24.848	2100	341171.755	398261.713	2.278	22.570
302	0.000	5.00	24.889	2100	341171.784	398245.774	2.359	22.530
303	0.044	5.00	24.804	2100	341170.140	398236.833	2.297	22.507
304	0.086	5.00	24.604	2100	341163.691	398217.896	2.147	22.457
305	0.087	5.00	24.930	2100	341182.563	398211.489	2.523	22.407
306	0.084	5.00	24.545	2100	341164.026	398157.539	2.281	22.264
307	0.110	5.00	24.560	2100	341153.363	398126.466	2.378	22.182
308	0.024	5.00	24.487	2100	341152.150	398118.838	2.324	22.163
309	0.051	5.00	24.429	2100	341153.886	398112.588	2.282	22.147
310	0.007	5.00	24.422	2100	341160.001	398108.017	2.294	22.128
311	0.067	5.00	25.448	2100	341232.605	398252.883	2.958	22.490
312	0.045	5.00	25.549	2100	341225.464	398243.698	3.088	22.461
313	0.101	5.00	25.270	2100	341209.882	398202.012	2.920	22.350
314	0.174	5.00	25.019	2100	341240.137	398191.667	2.749	22.270
315	0.165	5.00	24.520	2100	341215.736	398119.536	2.440	22.080
316	0.077	5.00	24.628	2100	341205.904	398091.765	2.622	22.006
317	0.079	5.00	24.167	2100	341248.561	398076.627	2.274	21.893
318	0.138	5.00	24.287	2100	341258.098	398072.806	2.420	21.867
319	0.059	5.00	24.940	2100	341280.511	398126.107	3.116	21.824
320	0.081	5.00	24.761	2100	341272.674	398107.397	2.988	21.773
321	0.076	5.00	25.199	2100	341314.077	398089.943	3.538	21.661
322	0.140	5.00	24.990	2100	341270.227	398251.785	2.687	22.303
323	0.075	5.00	24.977	2100	341288.203	398226.386	2.663	22.314
324	0.014	5.00	24.853	2100	341290.854	398236.225	2.564	22.289
325	0.054	5.00	24.729	2100	341291.037	398251.602	2.478	22.251
326	0.107	5.00	24.459	2100	341342.489	398250.901	2.337	22.122
327	0.011	5.00	24.543	2100	341348.777	398246.770	2.440	22.103
328	0.033	5.00	24.615	2100	341350.800	398240.412	2.529	22.086
329	0.241	5.00	24.764	2100	341349.355	398225.951	2.714	22.050
330	0.136	5.00	25.232	2100	341333.656	398181.928	3.299	21.933
331	0.108	5.00	25.116	2100	341267.695	398176.505	3.121	21.995
332	0.086	5.00	25.468	2100	341297.165	398158.934	3.559	21.909
333	0.090	5.00	25.696	2100	341321.407	398148.178	3.853	21.843
334	0.153	5.00	25.125	2100	341360.416	398131.829	3.388	21.737
335	0.120	5.00	25.510	2100	341338.177	398079.352	3.915	21.595
336			25.307	1350	341355.981	398071.648	3.777	21.530

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	301	302	15.939	0.600	22.570	22.530	0.040	400.0	900	5.17	50.0
1.001	302	303	9.091	0.600	22.530	22.507	0.023	400.0	900	5.27	50.0
1.002	303	304	20.005	0.600	22.507	22.457	0.050	400.0	900	5.48	50.0
1.003	304	305	19.930	0.600	22.457	22.407	0.050	400.0	900	5.69	49.8
1.004	305	306	57.046	0.600	22.407	22.264	0.143	400.0	900	6.30	47.5
1.005	306	307	32.852	0.600	22.264	22.182	0.082	400.0	900	6.65	46.2
1.006	307	308	7.724	0.600	22.182	22.163	0.019	400.0	900	6.74	45.9
1.007	308	309	6.487	0.600	22.163	22.147	0.016	400.0	900	6.81	45.7
1.008	309	310	7.635	0.600	22.147	22.128	0.019	400.0	900	6.89	45.4
1.009	310	316	48.695	0.600	22.128	22.006	0.122	400.0	900	7.41	43.7
2.001	311	312	11.634	0.600	22.490	22.461	0.029	400.0	900	5.12	50.0
2.002	312	313	44.503	0.600	22.461	22.350	0.111	400.0	900	5.60	50.0
2.003	313	314	31.975	0.600	22.350	22.270	0.080	400.0	900	5.94	48.8
2.004	314	315	76.147	0.600	22.270	22.080	0.190	400.0	900	6.75	45.8
2.005	315	316	29.460	0.600	22.080	22.006	0.074	400.0	900	7.07	44.8
1.010	316	317	45.263	0.600	22.006	21.893	0.113	400.0	900	7.89	42.3
1.011	317	318	10.274	0.600	21.893	21.867	0.026	400.0	900	8.00	42.0
1.012	318	320	37.537	0.600	21.867	21.773	0.094	400.0	900	8.40	40.9
3.000	319	320	20.285	0.600	21.824	21.773	0.051	400.0	900	5.22	50.0
1.013	320	321	44.932	0.600	21.773	21.661	0.112	400.0	900	8.88	39.7
1.014	321	335	26.324	0.600	21.661	21.595	0.066	400.0	900	9.16	39.0
4.000	322	325	20.811	0.600	22.303	22.251	0.052	400.0	900	5.22	50.0
5.000	323	324	10.190	0.600	22.314	22.289	0.025	400.0	900	5.11	50.0
5.001	324	325	15.378	0.600	22.289	22.251	0.038	400.0	900	5.27	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)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.560	992.5	15.7	1.378	1.459	0.116	0.0	77	0.593
1.001	1.560	992.5	15.7	1.459	1.397	0.116	0.0	77	0.593
1.002	1.560	992.5	21.7	1.397	1.247	0.160	0.0	90	0.655
1.003	1.560	992.5	33.2	1.247	1.623	0.246	0.0	110	0.741
1.004	1.560	992.5	42.8	1.623	1.381	0.333	0.0	125	0.800
1.005	1.560	992.5	52.2	1.381	1.478	0.417	0.0	138	0.845
1.006	1.560	992.5	65.6	1.478	1.424	0.527	0.0	154	0.904
1.007	1.560	992.5	68.2	1.424	1.382	0.551	0.0	157	0.913
1.008	1.560	992.5	74.0	1.382	1.394	0.602	0.0	164	0.936
1.009	1.560	992.5	72.2	1.394	1.722	0.609	0.0	162	0.930
2.001	1.560	992.5	9.1	2.058	2.188	0.067	0.0	59	0.504
2.002	1.560	992.5	15.2	2.188	2.020	0.112	0.0	76	0.589
2.003	1.560	992.5	28.2	2.020	1.849	0.213	0.0	102	0.708
2.004	1.560	992.5	48.1	1.849	1.540	0.387	0.0	132	0.826
2.005	1.560	992.5	67.0	1.540	1.722	0.552	0.0	156	0.910
1.010	1.560	992.5	141.9	1.722	1.374	1.238	0.0	227	1.123
1.011	1.560	992.5	149.8	1.374	1.520	1.317	0.0	234	1.142
1.012	1.560	992.5	161.4	1.520	2.088	1.455	0.0	243	1.164
3.000	1.560	992.5	8.0	2.216	2.088	0.059	0.0	56	0.484
1.013	1.560	992.5	171.6	2.088	2.638	1.595	0.0	251	1.184
1.014	1.560	992.5	176.7	2.638	3.015	1.671	0.0	254	1.193
4.000	1.560	992.5	19.0	1.787	1.578	0.140	0.0	85	0.631
5.000	1.560	992.5	10.2	1.763	1.664	0.075	0.0	63	0.522
5.001	1.560	992.5	12.1	1.664	1.578	0.089	0.0	68	0.550

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)
4.001	325	326	51.457	0.600	22.251	22.122	0.129	400.0	900	5.82	49.3
4.002	326	327	7.524	0.600	22.122	22.103	0.019	400.0	900	5.90	49.0
4.003	327	328	6.672	0.600	22.103	22.086	0.017	400.0	900	5.97	48.7
4.004	328	329	14.533	0.600	22.086	22.050	0.036	400.0	900	6.13	48.1
4.005	329	330	46.738	0.600	22.050	21.933	0.117	400.0	900	6.63	46.3
4.006	330	333	35.904	0.600	21.933	21.843	0.090	400.0	900	7.01	44.9
6.000	331	332	34.311	0.600	21.995	21.909	0.086	400.0	900	5.37	50.0
6.001	332	333	26.521	0.600	21.909	21.843	0.066	400.0	900	5.65	50.0
4.007	333	334	42.296	0.600	21.843	21.737	0.106	400.0	900	7.46	43.6
4.008	334	335	56.995	0.600	21.737	21.595	0.142	400.0	900	8.07	41.8
1.015	335	336	19.399	0.600	21.595	21.530	0.065	298.0	375	9.47	38.3

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)
4.001	1.560	992.5	37.8	1.578	1.437	0.283	0.0	117	0.769
4.002	1.560	992.5	51.8	1.437	1.540	0.390	0.0	138	0.845
4.003	1.560	992.5	52.9	1.540	1.629	0.401	0.0	138	0.848
4.004	1.560	992.5	56.6	1.629	1.814	0.434	0.0	144	0.867
4.005	1.560	992.5	84.7	1.814	2.399	0.675	0.0	175	0.973
4.006	1.560	992.5	98.8	2.399	2.953	0.811	0.0	189	1.016
6.000	1.560	992.5	14.6	2.221	2.659	0.108	0.0	74	0.581
6.001	1.560	992.5	26.3	2.659	2.953	0.194	0.0	99	0.693
4.007	1.560	992.5	129.3	2.953	2.488	1.095	0.0	217	1.095
4.008	1.560	992.5	141.3	2.488	3.015	1.248	0.0	227	1.123
1.015	1.044	115.3	315.7	3.540	3.402	3.039	0.0	375	1.058

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	15.939	400.0	900	Circular_Default Sewer Type	24.848	22.570	1.378	24.889	22.530	1.459
1.001	9.091	400.0	900	Circular_Default Sewer Type	24.889	22.530	1.459	24.804	22.507	1.397
1.002	20.005	400.0	900	Circular_Default Sewer Type	24.804	22.507	1.397	24.604	22.457	1.247
1.003	19.930	400.0	900	Circular_Default Sewer Type	24.604	22.457	1.247	24.930	22.407	1.623
1.004	57.046	400.0	900	Circular_Default Sewer Type	24.930	22.407	1.623	24.545	22.264	1.381
1.005	32.852	400.0	900	Circular_Default Sewer Type	24.545	22.264	1.381	24.560	22.182	1.478
1.006	7.724	400.0	900	Circular_Default Sewer Type	24.560	22.182	1.478	24.487	22.163	1.424
1.007	6.487	400.0	900	Circular_Default Sewer Type	24.487	22.163	1.424	24.429	22.147	1.382
1.008	7.635	400.0	900	Circular_Default Sewer Type	24.429	22.147	1.382	24.422	22.128	1.394

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	301	2100	Manhole	Adoptable	302	2100	Manhole	Adoptable
1.001	302	2100	Manhole	Adoptable	303	2100	Manhole	Adoptable
1.002	303	2100	Manhole	Adoptable	304	2100	Manhole	Adoptable
1.003	304	2100	Manhole	Adoptable	305	2100	Manhole	Adoptable
1.004	305	2100	Manhole	Adoptable	306	2100	Manhole	Adoptable
1.005	306	2100	Manhole	Adoptable	307	2100	Manhole	Adoptable
1.006	307	2100	Manhole	Adoptable	308	2100	Manhole	Adoptable
1.007	308	2100	Manhole	Adoptable	309	2100	Manhole	Adoptable
1.008	309	2100	Manhole	Adoptable	310	2100	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)
1.009	48.695	400.0	900	Circular_Default Sewer Type	24.422	22.128	1.394	24.628	22.006	1.722
2.001	11.634	400.0	900	Circular_Default Sewer Type	25.448	22.490	2.058	25.549	22.461	2.188
2.002	44.503	400.0	900	Circular_Default Sewer Type	25.549	22.461	2.188	25.270	22.350	2.020
2.003	31.975	400.0	900	Circular_Default Sewer Type	25.270	22.350	2.020	25.019	22.270	1.849
2.004	76.147	400.0	900	Circular_Default Sewer Type	25.019	22.270	1.849	24.520	22.080	1.540
2.005	29.460	400.0	900	Circular_Default Sewer Type	24.520	22.080	1.540	24.628	22.006	1.722
1.010	45.263	400.0	900	Circular_Default Sewer Type	24.628	22.006	1.722	24.167	21.893	1.374
1.011	10.274	400.0	900	Circular_Default Sewer Type	24.167	21.893	1.374	24.287	21.867	1.520
1.012	37.537	400.0	900	Circular_Default Sewer Type	24.287	21.867	1.520	24.761	21.773	2.088
3.000	20.285	400.0	900	Circular_Default Sewer Type	24.940	21.824	2.216	24.761	21.773	2.088
1.013	44.932	400.0	900	Circular_Default Sewer Type	24.761	21.773	2.088	25.199	21.661	2.638
1.014	26.324	400.0	900	Circular_Default Sewer Type	25.199	21.661	2.638	25.510	21.595	3.015
4.000	20.811	400.0	900	Circular_Default Sewer Type	24.990	22.303	1.787	24.729	22.251	1.578
5.000	10.190	400.0	900	Circular_Default Sewer Type	24.977	22.314	1.763	24.853	22.289	1.664
5.001	15.378	400.0	900	Circular_Default Sewer Type	24.853	22.289	1.664	24.729	22.251	1.578
4.001	51.457	400.0	900	Circular_Default Sewer Type	24.729	22.251	1.578	24.459	22.122	1.437
4.002	7.524	400.0	900	Circular_Default Sewer Type	24.459	22.122	1.437	24.543	22.103	1.540
4.003	6.672	400.0	900	Circular_Default Sewer Type	24.543	22.103	1.540	24.615	22.086	1.629
4.004	14.533	400.0	900	Circular_Default Sewer Type	24.615	22.086	1.629	24.764	22.050	1.814
4.005	46.738	400.0	900	Circular_Default Sewer Type	24.764	22.050	1.814	25.232	21.933	2.399
4.006	35.904	400.0	900	Circular_Default Sewer Type	25.232	21.933	2.399	25.696	21.843	2.953
6.000	34.311	400.0	900	Circular_Default Sewer Type	25.116	21.995	2.221	25.468	21.909	2.659
6.001	26.521	400.0	900	Circular_Default Sewer Type	25.468	21.909	2.659	25.696	21.843	2.953
4.007	42.296	400.0	900	Circular_Default Sewer Type	25.696	21.843	2.953	25.125	21.737	2.488
4.008	56.995	400.0	900	Circular_Default Sewer Type	25.125	21.737	2.488	25.510	21.595	3.015

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.009	310	2100	Manhole	Adoptable	316	2100	Manhole	Adoptable
2.001	311	2100	Manhole	Adoptable	312	2100	Manhole	Adoptable
2.002	312	2100	Manhole	Adoptable	313	2100	Manhole	Adoptable
2.003	313	2100	Manhole	Adoptable	314	2100	Manhole	Adoptable
2.004	314	2100	Manhole	Adoptable	315	2100	Manhole	Adoptable
2.005	315	2100	Manhole	Adoptable	316	2100	Manhole	Adoptable
1.010	316	2100	Manhole	Adoptable	317	2100	Manhole	Adoptable
1.011	317	2100	Manhole	Adoptable	318	2100	Manhole	Adoptable
1.012	318	2100	Manhole	Adoptable	320	2100	Manhole	Adoptable
3.000	319	2100	Manhole	Adoptable	320	2100	Manhole	Adoptable
1.013	320	2100	Manhole	Adoptable	321	2100	Manhole	Adoptable
1.014	321	2100	Manhole	Adoptable	335	2100	Manhole	Adoptable
4.000	322	2100	Manhole	Adoptable	325	2100	Manhole	Adoptable
5.000	323	2100	Manhole	Adoptable	324	2100	Manhole	Adoptable
5.001	324	2100	Manhole	Adoptable	325	2100	Manhole	Adoptable
4.001	325	2100	Manhole	Adoptable	326	2100	Manhole	Adoptable
4.002	326	2100	Manhole	Adoptable	327	2100	Manhole	Adoptable
4.003	327	2100	Manhole	Adoptable	328	2100	Manhole	Adoptable
4.004	328	2100	Manhole	Adoptable	329	2100	Manhole	Adoptable
4.005	329	2100	Manhole	Adoptable	330	2100	Manhole	Adoptable
4.006	330	2100	Manhole	Adoptable	333	2100	Manhole	Adoptable
6.000	331	2100	Manhole	Adoptable	332	2100	Manhole	Adoptable
6.001	332	2100	Manhole	Adoptable	333	2100	Manhole	Adoptable
4.007	333	2100	Manhole	Adoptable	334	2100	Manhole	Adoptable
4.008	334	2100	Manhole	Adoptable	335	2100	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)
1.015	19.399	298.0	375	Circular_Default Sewer Type	25.510	21.595	3.540	25.307	21.530	3.402

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.015	335	2100	Manhole	Adoptable	336	1350	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
301	341171.755	398261.713	24.848	2.278	2100				
						0	1.000	22.570	900
302	341171.784	398245.774	24.889	2.359	2100				
						0	1.001	22.530	900
303	341170.140	398236.833	24.804	2.297	2100				
						0	1.002	22.507	900
304	341163.691	398217.896	24.604	2.147	2100				
						0	1.003	22.457	900
305	341182.563	398211.489	24.930	2.523	2100				
						0	1.004	22.407	900
306	341164.026	398157.539	24.545	2.281	2100				
						0	1.005	22.264	900
307	341153.363	398126.466	24.560	2.378	2100				
						0	1.006	22.182	900
308	341152.150	398118.838	24.487	2.324	2100				
						0	1.007	22.163	900
309	341153.886	398112.588	24.429	2.282	2100				
						0	1.008	22.147	900
310	341160.001	398108.017	24.422	2.294	2100				
						0	1.009	22.128	900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
311	341232.605	398252.883	25.448	2.958	2100	 0	2.001	22.490	900
312	341225.464	398243.698	25.549	3.088	2100	 1	2.001	22.461	900
						0	2.002	22.461	900
313	341209.882	398202.012	25.270	2.920	2100	 1	2.002	22.350	900
						0	2.003	22.350	900
314	341240.137	398191.667	25.019	2.749	2100	 1	2.003	22.270	900
						0	2.004	22.270	900
315	341215.736	398119.536	24.520	2.440	2100	 1	2.004	22.080	900
						0	2.005	22.080	900
316	341205.904	398091.765	24.628	2.622	2100	 1	2.005	22.006	900
						2	1.009	22.006	900
						0	1.010	22.006	900
317	341248.561	398076.627	24.167	2.274	2100	 1	1.010	21.893	900
						0	1.011	21.893	900
318	341258.098	398072.806	24.287	2.420	2100	 1	1.011	21.867	900
						0	1.012	21.867	900
319	341280.511	398126.107	24.940	3.116	2100	 0	3.000	21.824	900
320	341272.674	398107.397	24.761	2.988	2100	 1	3.000	21.773	900
						2	1.012	21.773	900
						0	1.013	21.773	900
321	341314.077	398089.943	25.199	3.538	2100	 1	1.013	21.661	900
						0	1.014	21.661	900
322	341270.227	398251.785	24.990	2.687	2100	 0	4.000	22.303	900
323	341288.203	398226.386	24.977	2.663	2100	 0	5.000	22.314	900

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
324	341290.854	398236.225	24.853	2.564	2100	 1	5.000	22.289	900
325	341291.037	398251.602	24.729	2.478	2100	0	5.001	22.289	900
						 1	5.001	22.251	900
						2	4.000	22.251	900
326	341342.489	398250.901	24.459	2.337	2100	0	4.001	22.251	900
						 1	4.001	22.122	900
327	341348.777	398246.770	24.543	2.440	2100	0	4.002	22.122	900
						 1	4.002	22.103	900
328	341350.800	398240.412	24.615	2.529	2100	0	4.003	22.103	900
						 1	4.003	22.086	900
329	341349.355	398225.951	24.764	2.714	2100	0	4.004	22.086	900
						 1	4.004	22.050	900
330	341333.656	398181.928	25.232	3.299	2100	0	4.005	22.050	900
						 1	4.005	21.933	900
331	341267.695	398176.505	25.116	3.121	2100	0	4.006	21.933	900
						 1	4.006	21.933	900
332	341297.165	398158.934	25.468	3.559	2100	0	6.000	21.995	900
						 1	6.000	21.909	900
333	341321.407	398148.178	25.696	3.853	2100	0	6.001	21.909	900
						 1	6.001	21.843	900
						2	4.006	21.843	900
334	341360.416	398131.829	25.125	3.388	2100	0	4.007	21.843	900
						 1	4.007	21.737	900
335	341338.177	398079.352	25.510	3.915	2100	0	4.008	21.737	900
						 1	4.008	21.595	900
336	341355.981	398071.648	25.307	3.777	1350	2	1.014	21.595	900
						 1	1.015	21.595	375
336	341355.981	398071.648	25.307	3.777	1350	0	1.015	21.530	375
						 1	1.015	21.530	375

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	✓
Summer CV	0.750	Drain Down Time (mins)	240	Check Discharge Volume	✓
Winter CV	0.840	Additional Storage (m³/ha)	20.0	100 year 360 minute (m³)	

Storm Durations

15	60	180	360	600	960	2160	4320
30	120	240	480	720	1440	2880	

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Pre-development Discharge Rate

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

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 335 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	21.595	Product Number	CTL-SHE-0199-2500-2400-2500
Design Depth (m)	2.400	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	25.0	Min Node Diameter (mm)	2100

Node 316 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	22.728
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	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	210.0	210.0	1.200	210.0	271.6	1.201	0.0	271.6

Node 317 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	22.493
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	210.0	210.0	1.200	210.0	271.6	1.201	0.0	271.6

Node 311 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	23.240
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	112

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	98.0	98.0	0.800	98.0	126.1	0.801	0.0	126.1

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute winter	301	10	22.637	0.067	11.0	0.3016	0.0000	OK
15 minute winter	302	11	22.600	0.070	10.7	0.2420	0.0000	OK
15 minute winter	303	11	22.582	0.075	14.6	0.2904	0.0000	OK
15 minute winter	304	11	22.552	0.095	22.2	0.4034	0.0000	OK
15 minute winter	305	11	22.510	0.103	29.4	0.4296	0.0000	OK
15 minute winter	306	12	22.378	0.114	35.5	0.4769	0.0000	OK
15 minute winter	307	13	22.327	0.145	42.5	0.6377	0.0000	OK
15 minute winter	308	13	22.309	0.146	42.8	0.5350	0.0000	OK
15 minute winter	309	13	22.288	0.141	45.8	0.5502	0.0000	OK
180 minute winter	310	136	22.274	0.146	16.8	0.5151	0.0000	OK
15 minute winter	311	10	22.542	0.052	6.3	0.2017	0.0000	OK
15 minute winter	312	11	22.524	0.063	10.4	0.2355	0.0000	OK
15 minute winter	313	11	22.433	0.083	19.0	0.3428	0.0000	OK
15 minute winter	314	12	22.377	0.107	33.7	0.5084	0.0000	OK
180 minute winter	315	136	22.275	0.195	15.3	0.9368	0.0000	OK
180 minute winter	316	136	22.274	0.268	34.0	1.0862	0.0000	OK
180 minute winter	317	136	22.274	0.381	34.6	1.5839	0.0000	OK
180 minute winter	318	136	22.274	0.407	34.2	1.8729	0.0000	OK
180 minute winter	319	136	22.274	0.450	2.6	1.7282	0.0000	OK
180 minute winter	320	136	22.274	0.501	32.0	2.0055	0.0000	OK
180 minute winter	321	136	22.274	0.613	25.7	2.3851	0.0000	OK
15 minute winter	322	10	22.374	0.071	13.2	0.3186	0.0000	OK
15 minute winter	323	10	22.370	0.056	7.1	0.2242	0.0000	OK
15 minute winter	324	11	22.351	0.062	8.2	0.2232	0.0000	OK
15 minute winter	325	11	22.346	0.095	25.4	0.3691	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	301	1.000	302	10.7	0.500	0.011	0.3458	
15 minute winter	302	1.001	303	10.7	0.447	0.011	0.2171	
15 minute winter	303	1.002	304	14.5	0.480	0.015	0.6050	
15 minute winter	304	1.003	305	21.6	0.575	0.022	0.7522	
15 minute winter	305	1.004	306	29.2	0.676	0.029	2.4635	
15 minute winter	306	1.005	307	34.3	0.616	0.035	1.8390	
15 minute winter	307	1.006	308	41.1	0.625	0.041	0.5119	
15 minute winter	308	1.007	309	42.8	0.662	0.043	0.4200	
15 minute winter	309	1.008	310	45.8	0.790	0.046	0.4503	
180 minute winter	310	1.009	316	16.7	0.466	0.017	5.4753	
15 minute winter	311	2.001	312	6.1	0.380	0.006	0.1938	
15 minute winter	312	2.002	313	10.0	0.420	0.010	1.0657	
15 minute winter	313	2.003	314	18.2	0.518	0.018	1.1385	
15 minute winter	314	2.004	315	31.8	0.648	0.032	3.7852	
180 minute winter	315	2.005	316	15.2	0.439	0.015	3.8121	
180 minute winter	316	1.010	317	32.4	0.628	0.033	9.3559	
180 minute winter	317	1.011	318	30.4	0.610	0.031	2.7402	
180 minute winter	318	1.012	320	29.8	0.587	0.030	12.0210	
180 minute winter	319	3.000	320	-1.3	0.087	-0.001	6.8871	
180 minute winter	320	1.013	321	23.7	0.436	0.024	18.4669	
180 minute winter	321	1.014	335	21.7	0.177	0.022	12.8053	
15 minute winter	322	4.000	325	13.0	0.469	0.013	0.6021	
15 minute winter	323	5.000	324	6.9	0.424	0.007	0.1779	
15 minute winter	324	5.001	325	7.8	0.309	0.008	0.4175	
15 minute winter	325	4.001	326	24.3	0.556	0.025	2.3174	

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.96%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	326	136	22.274	0.152	10.9	0.6637	0.0000	OK
180 minute winter	327	136	22.274	0.171	11.2	0.6060	0.0000	OK
180 minute winter	328	136	22.273	0.187	12.0	0.6984	0.0000	OK
180 minute winter	329	140	22.274	0.224	18.7	1.1713	0.0000	OK
180 minute winter	330	136	22.274	0.341	22.5	1.4607	0.0000	OK
180 minute winter	331	136	22.274	0.279	4.3	1.1602	0.0000	OK
180 minute winter	332	140	22.274	0.365	6.0	1.4421	0.0000	OK
180 minute winter	333	136	22.274	0.431	20.9	1.6941	0.0000	OK
180 minute winter	334	136	22.274	0.537	19.4	2.3438	0.0000	OK
180 minute winter	335	136	22.274	0.679	31.1	2.7679	0.0000	SURCHARGED
15 minute summer	336	1	21.530	0.000	24.7	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	326	4.002	327	10.9	0.468	0.011	0.5779	
180 minute winter	327	4.003	328	11.1	0.476	0.011	0.5964	
180 minute winter	328	4.004	329	12.0	0.459	0.012	1.5842	
180 minute winter	329	4.005	330	18.7	0.567	0.019	7.9982	
180 minute winter	330	4.006	333	18.3	0.517	0.018	9.3277	
180 minute winter	331	6.000	332	2.6	0.267	0.003	6.9980	
180 minute winter	332	6.001	333	3.7	0.188	0.004	7.1725	
180 minute winter	333	4.007	334	16.7	0.490	0.017	14.6788	
180 minute winter	334	4.008	335	13.4	0.216	0.013	25.8595	
180 minute winter	335	Hydro-Brake®	336	25.0				365.3

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	301	184	22.840	0.270	8.2	1.2123	0.0000	OK
180 minute winter	302	184	22.840	0.310	8.2	1.0744	0.0000	OK
180 minute winter	303	184	22.840	0.333	11.3	1.2803	0.0000	OK
180 minute winter	304	176	22.839	0.382	17.4	1.6307	0.0000	OK
180 minute winter	305	176	22.840	0.433	23.2	1.7974	0.0000	OK
180 minute winter	306	176	22.840	0.576	28.9	2.4172	0.0000	OK
180 minute winter	307	176	22.840	0.658	29.9	2.8865	0.0000	OK
180 minute winter	308	176	22.840	0.677	27.3	2.4835	0.0000	OK
180 minute winter	309	176	22.840	0.693	28.5	2.7092	0.0000	OK
180 minute winter	310	176	22.840	0.712	27.3	2.5089	0.0000	OK
180 minute winter	311	168	22.842	0.352	5.3	1.3774	0.0000	OK
180 minute winter	312	168	22.842	0.381	10.7	1.4292	0.0000	OK
180 minute winter	313	184	22.839	0.489	14.9	2.0322	0.0000	OK
180 minute winter	314	180	22.839	0.569	25.7	2.6899	0.0000	OK
180 minute winter	315	176	22.840	0.760	35.5	3.6603	0.0000	OK
180 minute winter	316	176	22.840	0.834	53.2	25.8241	0.0000	OK
180 minute winter	317	176	22.841	0.948	60.8	73.3842	0.0000	SURCHARGED
180 minute winter	318	176	22.841	0.974	37.3	4.4839	0.0000	SURCHARGED
180 minute winter	319	176	22.843	1.019	4.5	3.9132	0.0000	SURCHARGED
180 minute winter	320	176	22.842	1.069	37.4	4.2828	0.0000	SURCHARGED
180 minute winter	321	180	22.842	1.181	31.8	4.5983	0.0000	SURCHARGED
180 minute winter	322	180	22.838	0.535	9.9	2.4116	0.0000	OK
180 minute winter	323	180	22.838	0.524	5.3	2.1108	0.0000	OK
180 minute winter	324	180	22.838	0.549	5.8	1.9623	0.0000	OK
180 minute winter	325	180	22.839	0.588	16.0	2.2917	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	301	1.000	302	8.2	0.460	0.008	2.8183	
180 minute winter	302	1.001	303	8.2	0.420	0.008	1.8474	
180 minute winter	303	1.002	304	11.3	0.457	0.011	4.6851	
180 minute winter	304	1.003	305	17.1	0.542	0.017	5.5597	
180 minute winter	305	1.004	306	23.0	0.586	0.023	20.8099	
180 minute winter	306	1.005	307	22.5	0.528	0.023	15.1875	
180 minute winter	307	1.006	308	25.9	0.539	0.026	3.8928	
180 minute winter	308	1.007	309	25.6	0.553	0.026	3.3578	
180 minute winter	309	1.008	310	26.9	0.653	0.027	4.0529	
180 minute winter	310	1.009	316	24.2	0.477	0.024	28.0255	
180 minute winter	311	2.001	312	4.7	0.342	0.005	2.8169	
180 minute winter	312	2.002	313	8.5	0.377	0.009	13.4711	
180 minute winter	313	2.003	314	13.8	0.457	0.014	12.3703	
180 minute winter	314	2.004	315	23.9	0.517	0.024	37.7781	
180 minute winter	315	2.005	316	25.1	0.463	0.025	17.4460	
180 minute winter	316	1.010	317	41.2	0.575	0.042	28.2206	
180 minute winter	317	1.011	318	32.0	0.573	0.032	6.5114	
180 minute winter	318	1.012	320	32.3	0.598	0.033	23.7900	
180 minute winter	319	3.000	320	4.3	0.120	0.004	12.8561	
180 minute winter	320	1.013	321	27.9	0.455	0.028	28.4767	
180 minute winter	321	1.014	335	23.8	0.196	0.024	16.6835	
180 minute winter	322	4.000	325	8.7	0.381	0.009	8.6525	
180 minute winter	323	5.000	324	4.9	0.370	0.005	4.0169	
180 minute winter	324	5.001	325	4.9	0.268	0.005	6.4882	
180 minute winter	325	4.001	326	15.6	0.449	0.016	25.2272	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.79%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
180 minute winter	326	180	22.839	0.717	21.8	3.1415	0.0000	OK
180 minute winter	327	180	22.839	0.736	17.5	2.6168	0.0000	OK
180 minute winter	328	180	22.839	0.753	17.5	2.8055	0.0000	OK
180 minute winter	329	180	22.839	0.789	29.8	4.1331	0.0000	OK
180 minute winter	330	172	22.840	0.907	35.2	3.8890	0.0000	SURCHARGED
180 minute winter	331	180	22.839	0.844	7.6	3.5069	0.0000	OK
180 minute winter	332	180	22.840	0.931	10.7	3.6744	0.0000	SURCHARGED
180 minute winter	333	180	22.840	0.997	34.8	3.9194	0.0000	SURCHARGED
180 minute winter	334	172	22.842	1.105	33.3	4.8241	0.0000	SURCHARGED
180 minute winter	335	180	22.842	1.247	38.6	5.0850	0.0000	SURCHARGED
15 minute summer	336	1	21.530	0.000	25.0	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	326	4.002	327	16.9	0.499	0.017	4.1277	
180 minute winter	327	4.003	328	15.6	0.504	0.016	3.7431	
180 minute winter	328	4.004	329	15.3	0.477	0.015	8.3988	
180 minute winter	329	4.005	330	25.6	0.524	0.026	28.5716	
180 minute winter	330	4.006	333	27.6	0.477	0.028	22.7520	
180 minute winter	331	6.000	332	6.3	0.242	0.006	21.4668	
180 minute winter	332	6.001	333	11.1	0.198	0.011	16.8083	
180 minute winter	333	4.007	334	26.4	0.538	0.027	26.8061	
180 minute winter	334	4.008	335	30.5	0.277	0.031	36.1219	
180 minute winter	335	Hydro-Brake®	336	25.0				570.7

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	301	352	23.982	1.412	8.5	6.3279	0.0000	SURCHARGED
360 minute winter	302	352	23.982	1.452	7.3	5.0312	0.0000	SURCHARGED
360 minute winter	303	352	23.983	1.476	12.1	5.6772	0.0000	SURCHARGED
360 minute winter	304	352	23.983	1.526	16.3	6.5091	0.0000	SURCHARGED
360 minute winter	305	352	23.983	1.576	18.1	6.5461	0.0000	SURCHARGED
360 minute winter	306	352	23.984	1.720	20.2	7.2240	0.0000	SURCHARGED
360 minute winter	307	352	23.985	1.803	21.8	7.9142	0.0000	SURCHARGED
360 minute winter	308	352	23.985	1.822	19.7	6.6874	0.0000	SURCHARGED
360 minute winter	309	352	23.985	1.838	23.2	7.1886	0.0000	SURCHARGED
360 minute winter	310	352	23.985	1.857	25.0	6.5453	0.0000	SURCHARGED
360 minute winter	311	352	23.983	1.493	25.1	75.0470	0.0000	SURCHARGED
360 minute winter	312	352	23.983	1.522	24.1	5.7134	0.0000	SURCHARGED
360 minute winter	313	352	23.982	1.632	23.4	6.7828	0.0000	SURCHARGED
360 minute winter	314	352	23.984	1.714	21.2	8.1063	0.0000	SURCHARGED
360 minute winter	315	352	23.985	1.905	25.3	9.1743	0.0000	SURCHARGED
360 minute winter	316	352	23.984	1.978	62.5	247.6132	0.0000	SURCHARGED
360 minute winter	317	352	23.985	2.092	76.6	248.2971	0.0000	FLOOD RISK
360 minute winter	318	352	23.985	2.118	72.5	9.7502	0.0000	SURCHARGED
360 minute winter	319	352	23.983	2.159	4.3	8.2955	0.0000	SURCHARGED
360 minute winter	320	352	23.984	2.211	63.9	8.8565	0.0000	SURCHARGED
360 minute winter	321	352	23.984	2.323	56.2	9.0446	0.0000	SURCHARGED
360 minute winter	322	352	23.983	1.680	10.3	7.5719	0.0000	SURCHARGED
360 minute winter	323	352	23.983	1.669	5.5	6.7213	0.0000	SURCHARGED
360 minute winter	324	352	23.983	1.694	5.2	6.0533	0.0000	SURCHARGED
360 minute winter	325	352	23.983	1.732	16.0	6.7549	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)
360 minute winter	301	1.000	302	7.3	0.432	0.007	10.1017	
360 minute winter	302	1.001	303	8.8	0.391	0.009	5.7616	
360 minute winter	303	1.002	304	12.0	0.423	0.012	12.6786	
360 minute winter	304	1.003	305	13.2	0.492	0.013	12.6311	
360 minute winter	305	1.004	306	16.0	0.514	0.016	36.1543	
360 minute winter	306	1.005	307	16.3	0.462	0.016	20.8207	
360 minute winter	307	1.006	308	18.5	0.478	0.019	4.8953	
360 minute winter	308	1.007	309	20.3	0.487	0.020	4.1113	
360 minute winter	309	1.008	310	24.6	0.563	0.025	4.8389	
360 minute winter	310	1.009	316	25.9	0.393	0.026	30.8616	
360 minute winter	311	2.001	312	-22.2	0.311	-0.022	7.3733	
360 minute winter	312	2.002	313	-22.1	0.329	-0.022	28.2048	
360 minute winter	313	2.003	314	-19.0	0.390	-0.019	20.2649	
360 minute winter	314	2.004	315	15.0	0.418	0.015	48.2600	
360 minute winter	315	2.005	316	21.0	0.370	0.021	18.6710	
360 minute winter	316	1.010	317	-33.8	0.562	-0.034	28.6865	
360 minute winter	317	1.011	318	-71.3	0.565	-0.072	6.5114	
360 minute winter	318	1.012	320	-63.2	0.577	-0.064	23.7900	
360 minute winter	319	3.000	320	4.1	0.105	0.004	12.8561	
360 minute winter	320	1.013	321	-55.1	0.467	-0.056	28.4767	
360 minute winter	321	1.014	335	-51.5	0.164	-0.052	16.6835	
360 minute winter	322	4.000	325	9.0	0.332	0.009	13.1895	
360 minute winter	323	5.000	324	4.3	0.331	0.004	6.4582	
360 minute winter	324	5.001	325	4.8	0.234	0.005	9.7462	
360 minute winter	325	4.001	326	15.3	0.379	0.015	32.6121	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.88%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	326	352	23.985	1.863	22.0	8.1576	0.0000	SURCHARGED
360 minute winter	327	352	23.985	1.882	22.5	6.6885	0.0000	SURCHARGED
360 minute winter	328	352	23.985	1.899	24.3	7.0735	0.0000	SURCHARGED
360 minute winter	329	352	23.985	1.935	39.0	10.1378	0.0000	SURCHARGED
360 minute winter	330	352	23.984	2.051	46.6	8.7941	0.0000	SURCHARGED
360 minute winter	331	352	23.987	1.992	7.9	8.2780	0.0000	SURCHARGED
360 minute winter	332	352	23.986	2.077	12.9	8.1961	0.0000	SURCHARGED
360 minute winter	333	352	23.984	2.141	60.1	8.4179	0.0000	SURCHARGED
360 minute winter	334	352	23.984	2.247	67.8	9.8129	0.0000	SURCHARGED
360 minute winter	335	352	23.984	2.389	73.4	9.7413	0.0000	SURCHARGED
15 minute summer	336	1	21.530	0.000	25.0	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)
360 minute winter	326	4.002	327	21.8	0.436	0.022	4.7685	
360 minute winter	327	4.003	328	22.2	0.432	0.022	4.2285	
360 minute winter	328	4.004	329	24.0	0.405	0.024	9.2106	
360 minute winter	329	4.005	330	38.1	0.473	0.038	29.6213	
360 minute winter	330	4.006	333	45.2	0.472	0.046	22.7550	
360 minute winter	331	6.000	332	7.1	0.234	0.007	21.7454	
360 minute winter	332	6.001	333	12.2	0.182	0.012	16.8083	
360 minute winter	333	4.007	334	58.3	0.529	0.059	26.8061	
360 minute winter	334	4.008	335	65.9	0.253	0.066	36.1219	
360 minute winter	335	Hydro-Brake®	336	25.0				807.1