



ARCH
ASSOCIATES

APPENDIX 4

SURFACE WATER DRAINAGE CALCULATIONS



Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	1	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	0.200
CV	1.000	Preferred Cover Depth (m)	1.500
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)	100.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
102	0.026	5.00	26.150	1350	449265.762	116633.048	2.559
FD Junction 5	0.067	5.00	25.800		449263.920	116615.550	2.263
FD Junction 4			25.480		449259.599	116595.413	2.006
FD Junction 3			25.720		449247.535	116550.824	2.388
FD Junction 2	0.121	5.00	25.600		449239.040	116523.540	2.356
FD Junction 1	0.006	5.00	25.600		449214.800	116479.952	2.509
101			25.300	1350	449175.649	116414.322	2.444
100			24.350	1350	449149.968	116429.898	1.752
99			22.975	1350	449106.700	116449.571	1.328
HW3			21.700		449090.820	116478.961	0.600
15A	0.076	5.00	22.050	1200	449000.831	116533.276	1.725
15	0.038	5.00	23.250	1200	448992.961	116567.829	3.063
14A	0.122	5.00	23.150	1200	448978.892	116596.095	1.725
14	0.088	5.00	22.625	1200	448970.868	116577.235	2.654
13			21.725	1200	448956.997	116544.633	1.899
18	0.033	5.00	21.425	1200	448989.330	116497.894	1.725
17	0.088	5.00	21.200	1200	448957.202	116515.144	1.800
12	0.098	5.00	21.075	1350	448943.444	116524.318	2.377
16	0.119	5.00	22.375	1200	448881.227	116634.035	1.725
10	0.105	5.00	20.625	1350	448849.734	116586.806	2.226
9	0.008	5.00	20.550	1350	448822.257	116605.129	2.286
SSID1	0.028	5.00	24.925	1800	449018.638	116619.420	5.495
8	0.096	5.00	23.200	1800	448966.096	116607.468	3.909
7	0.054	5.00	22.975	1800	448937.936	116619.449	3.838
25	0.125	5.00	24.575	1200	448977.685	116631.421	1.800
24	0.103	5.00	24.600	1200	448955.520	116653.093	1.951
6	0.075	5.00	23.100	1800	448930.107	116627.108	3.999
SSID9	0.048	5.00	26.080	1350	448949.619	116721.594	3.300
22	0.086	5.00	24.800	1200	448937.899	116675.890	1.725
23	0.088	5.00	24.650	1200	448907.308	116705.896	1.725
21	0.080	5.00	25.050	1500	448921.020	116692.397	4.977
5	0.066	5.00	23.175	1800	448892.807	116663.594	4.596
20	0.049	5.00	23.915	1200	448893.803	116701.436	1.725
19	0.027	5.00	23.175	1200	448883.238	116686.260	1.725
4	0.007	5.00	22.850	1800	448873.217	116682.756	4.545
3	0.006	5.00	22.300	1800	448858.070	116667.272	4.212
2	0.046	5.00	21.400	1800	448839.548	116635.132	3.497
1	0.018	5.00	20.875	1800	448832.920	116626.282	3.083
HW1			19.156		448814.965	116639.730	1.500
90	0.077	5.00	25.325	1200	449247.418	116608.535	1.725
89	0.013	5.00	24.775	1200	449222.994	116610.404	1.725
Att. Tank 1			25.200		449199.079	116555.259	2.485



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
98	0.052	5.00	25.215	1200	449234.596	116570.790	1.725
88	0.029	5.00	25.125	1200	449211.877	116578.492	2.349
87	0.021	5.00	25.415	1200	449208.105	116567.666	2.686
97	0.065	5.00	25.375	1200	449220.957	116529.037	1.725
86	0.057	5.00	25.250	1200	449190.053	116542.853	2.547
96	0.098	5.00	25.150	1200	449201.910	116483.607	1.725
85	0.060	5.00	23.750	1200	449163.631	116506.539	2.170
94	0.038	5.00	23.450	1200	449138.548	116468.459	1.725
93	0.020	5.00	23.925	1200	449148.752	116463.819	2.266
95	0.047	5.00	24.650	1200	449168.568	116460.527	2.129
92	0.031	5.00	24.300	1200	449157.722	116463.621	2.769
91	0.023	5.00	23.750	1200	449158.428	116496.412	2.856
84			23.025	1350	449146.020	116509.307	2.282
83	0.029	5.00	22.850	1350	449126.696	116495.027	2.181
HW2			21.700		449082.179	116462.958	1.200
48	0.029	5.00	27.215	1200	449143.385	116756.853	1.725
47	0.044	5.00	26.815	1200	449160.640	116752.334	1.725
46	0.050	5.00	26.515	1200	449159.859	116731.733	1.800
45	0.056	5.00	25.860	1350	449152.570	116684.682	1.875
68	0.057	5.00	24.815	1200	449162.173	116625.157	1.725
67	0.003	5.00	25.400	1200	449162.924	116663.653	2.390
44	0.015	5.00	25.515	1350	449152.192	116663.861	2.718
66	0.019	5.00	25.475	1200	449111.539	116639.294	1.800
65	0.075	5.00	25.900	1200	449111.891	116657.646	2.300
43	0.026	5.00	25.985	1350	449105.399	116664.775	3.265
64	0.045	5.00	28.025	1200	449087.756	116766.482	1.725
63	0.009	5.00	27.850	1200	449099.236	116766.482	1.725
62	0.052	5.00	27.700	1200	449110.302	116764.565	1.800
61	0.086	5.00	26.350	1200	449097.819	116684.000	1.800
60	0.079	5.00	26.175	1350	449097.576	116671.178	2.870
42	0.017	5.00	26.050	1350	449099.377	116663.406	3.349
53	0.022	5.00	26.850	1200	449064.717	116693.294	1.725
52	0.031	5.00	26.925	1200	449057.660	116700.200	2.047
55	0.072	5.00	27.200	1200	449045.250	116713.889	1.725
51	0.010	5.00	26.675	1200	449044.773	116696.947	1.950
54	0.034	5.00	26.550	1200	449032.634	116693.150	1.650
50	0.007	5.00	26.450	1200	449036.941	116688.938	1.800
49	0.052	5.00	26.125	1200	449052.862	116673.369	1.800
Att. Tank 2			23.700		449099.894	116543.723	3.210
59	0.060	5.00	25.050	1200	449079.899	116610.801	1.725
58	0.019	5.00	25.285	1200	449077.173	116622.789	1.977
57	0.095	5.00	25.200	1200	449064.998	116625.069	2.040
56	0.037	5.00	25.650	1200	449059.866	116647.637	2.584
41	0.052	5.00	25.775	1350	449057.302	116653.666	3.282
40	0.026	5.00	25.350	1350	449027.250	116646.126	2.934
81	0.022	5.00	27.500	1200	448976.451	116779.293	1.650
80	0.024	5.00	27.250	1200	448970.756	116768.449	1.650
79	0.074	5.00	27.025	1200	448963.849	116764.624	1.974
76	0.001	5.00	28.450	1200	449006.402	116772.007	1.650
74	0.056	5.00	28.600	1200	449052.813	116766.232	1.725
73	0.031	5.00	28.825	1200	449038.956	116766.232	2.031
72	0.023	5.00	28.850	1200	449018.882	116768.206	2.330



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
71	0.028	5.00	28.415	1200	449014.565	116750.590	2.399
75	0.074	5.00	27.050	1200	449013.561	116713.483	1.725
70	0.076	5.00	27.375	1200	448995.525	116731.121	2.273
SSID4	0.018	5.00	26.085	1500	448968.822	116703.815	2.405
39	0.091	5.00	25.090	1200	449115.854	116619.706	1.800
38	0.076	5.00	24.285	1200	449125.623	116577.270	2.084
31	0.055	5.00	24.515	1200	449160.114	116596.529	1.725
30	0.022	5.00	24.800	1200	449159.305	116555.224	2.503
29	0.049	5.00	24.100	1200	449146.041	116543.209	2.250
28	0.077	5.00	23.675	1350	449125.202	116543.441	3.137
36	0.074	5.00	22.100	1200	449061.237	116493.427	1.580
Att. Tank 3			22.200		449067.371	116507.109	1.730
37	0.048	5.00	22.875	1200	449089.443	116511.124	1.725
35	0.013	5.00	22.825	1350	449072.481	116518.507	2.454
34	0.032	5.00	22.950	1350	449074.346	116522.667	2.593
33	0.008	5.00	24.325	1200	449071.186	116580.625	1.650
32			23.875	1200	449075.905	116559.712	2.252
Att. Tank 4			24.925		449162.549	116644.405	1.875
27	0.124	5.00	23.525	1350	449074.586	116544.005	3.448
26	0.055	5.00	23.250	1350	449052.769	116544.248	3.227
11	0.112	5.00	20.700	1350	448896.589	116555.562	2.071
69	0.025	5.00	26.275	1800	448976.299	116711.461	2.212
SSID2	0.020	5.00	25.300	1500	449013.936	116642.927	4.020
SSID6	0.034	5.00	23.100	1500	449035.683	116543.560	3.269
Basin J			21.700		449044.510	116465.091	1.200
LA S12	0.550	5.00	22.610	1350	449064.886	116425.631	1.909
Basin I	0.007	5.00	22.750	1200	449095.972	116436.196	1.250
Basin I Inlet			21.700		449083.708	116445.060	1.200
LA Inlet			21.700		449062.093	116437.167	1.200
SSID10	0.014	5.00	26.575	1350	448934.783	116737.557	3.675
SSID8	0.014	5.00	22.075	1500	449027.763	116510.915	1.905
SSID7	0.014	5.00	22.550	1500	449034.018	116526.838	2.440
SSID5	0.036	5.00	24.115	1500	449027.676	116580.174	4.554
SSID3	0.036	5.00	25.600	1500	449003.766	116670.105	3.100
Basin H		5.00	19.156		448733.321	116703.121	1.500
Basin H FC			19.300	2400	448723.067	116702.612	1.747
Basin H Outfall			17.400		448693.613	116701.064	1.005
Att. Tank 5			25.475		449128.796	116664.318	2.700
Att. Tank 6			25.025		449078.536	116616.795	1.710
82	0.076	5.00	27.150	1200	448975.925	116752.815	1.925
Att. Tank 7			27.425		449004.346	116740.140	2.305
78			26.800	1200	448949.124	116756.470	1.818
SSID12	0.564	5.00	26.825	1350	448925.440	116765.131	3.715
SSID11	0.014	5.00	26.700	1350	448926.963	116750.097	3.700
77			26.950	1200	448939.123	116761.783	2.015
Att. Tank 8			27.000		448969.887	116758.720	1.810
Att. Tank 9			23.300		448992.367	116613.444	3.940
Att. Tank 10			22.415		448996.896	116550.552	2.165
Att. Tank 11			20.700		448920.017	116539.940	2.035
FD Junction 8	0.003	5.00	25.215		449191.667	116678.164	1.300
103	0.009	5.00	24.950	1350	449188.878	116652.396	1.115
FD Junction 7			24.625		449207.440	116647.404	0.849



Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
FD Junction 6			24.750		449233.594	116641.743	1.056

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)
29.004	102	FD Junction 5	17.595	15.000	23.591	23.537	0.054	325.0	375	8.46	31.6
29.005	FD Junction 5	FD Junction 4	20.595	15.000	23.537	23.474	0.063	325.0	375	9.04	30.5
29.006	FD Junction 4	FD Junction 3	46.192	15.000	23.474	23.332	0.142	325.0	375	10.35	28.5
29.007	FD Junction 3	FD Junction 2	28.576	15.000	23.332	23.244	0.088	325.0	375	11.15	27.3
29.008	FD Junction 2	FD Junction 1	49.875	15.000	23.244	23.091	0.153	325.0	375	12.56	25.6
29.009	FD Junction 1	101	76.421	15.000	23.091	22.856	0.235	325.0	375	14.71	23.5
29.010	101	100	30.035	0.600	22.856	22.598	0.258	116.4	375	15.01	23.2
29.011	100	99	47.530	0.600	22.598	21.647	0.951	50.0	375	15.32	22.9
29.012	99	HW3	33.406	0.600	21.647	21.100	0.547	61.1	375	15.56	22.7
25.000	15A	Att. Tank 10	10.719	0.600	20.325	20.250	0.075	142.9	225	5.16	40.2
25.002	15	14	24.012	0.600	20.187	20.046	0.141	170.3	225	5.74	38.3
26.000	14A	14	20.496	0.600	21.425	20.046	1.379	14.9	225	5.10	40.5
25.003	14	13	35.430	0.600	19.971	19.826	0.145	244.3	300	6.33	36.5
25.004	13	12	24.421	0.600	19.826	19.273	0.553	44.2	300	6.50	36.0
27.000	18	17	36.466	0.600	19.700	19.475	0.225	162.1	225	5.59	38.8
27.001	17	12	16.536	0.600	19.400	18.773	0.627	26.4	300	5.68	38.5
25.005	12	Att. Tank 11	8.158	0.600	18.698	18.665	0.033	247.2	375	6.62	35.7
25.007	11	10	56.317	0.600	18.629	18.399	0.230	244.9	375	7.55	33.5
28.000	16	10	56.766	0.600	20.650	18.549	2.101	27.0	225	5.37	39.5
25.008	10	9	33.026	0.600	18.399	18.264	0.135	244.6	375	8.03	32.4
25.009	9	1	23.689	0.600	18.264	18.167	0.097	244.2	375	8.37	31.8

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)
29.004	0.591	65.3	4.3	2.184	1.888	0.038	0.0	67	0.318
29.005	0.591	65.3	11.5	1.888	1.631	0.104	0.0	108	0.437
29.006	0.591	65.3	10.7	1.631	2.013	0.104	0.0	104	0.427
29.007	0.591	65.3	10.3	2.013	1.981	0.104	0.0	102	0.422
29.008	0.591	65.3	20.9	1.981	2.134	0.226	0.0	147	0.522
29.009	0.591	65.3	19.6	2.134	2.069	0.231	0.0	142	0.512
29.010	1.678	185.3	19.4	2.069	1.377	0.231	0.0	81	1.098
29.011	2.567	283.5	19.2	1.377	0.953	0.231	0.0	66	1.489
29.012	2.322	256.4	19.0	0.953	0.225	0.231	0.0	68	1.381
25.000	1.091	43.4	11.1	1.500	1.940	0.076	0.0	78	0.918
25.002	0.999	39.7	15.8	2.838	2.354	0.114	0.0	98	0.941
26.000	3.411	135.6	17.9	1.500	2.354	0.122	0.0	55	2.384
25.003	1.001	70.8	42.7	2.354	1.599	0.324	0.0	168	1.047
25.004	2.372	167.7	42.2	1.599	1.502	0.324	0.0	102	1.987
27.000	1.024	40.7	4.7	1.500	1.500	0.033	0.0	51	0.687
27.001	3.073	217.2	16.9	1.500	2.002	0.121	0.0	56	1.846
25.005	1.148	126.7	70.1	2.002	1.660	0.543	0.0	200	1.176
25.007	1.153	127.4	79.2	1.696	1.851	0.654	0.0	214	1.213
28.000	2.527	100.5	17.1	1.500	1.851	0.119	0.0	63	1.902
25.008	1.154	127.4	103.1	1.851	1.911	0.879	0.0	257	1.279
25.009	1.155	127.5	101.9	1.911	2.333	0.887	0.0	255	1.277



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)
1.009	SSID1	Att. Tank 9	6.942	0.600	19.430	19.360	0.070	99.2	750	7.58	33.4
1.011	8	7	30.603	0.600	19.291	19.137	0.154	198.7	750	7.88	32.8
1.012	7	6	10.952	0.600	19.137	19.101	0.036	304.2	750	8.00	32.5
18.000	25	24	30.999	0.600	22.775	22.649	0.126	246.0	300	5.52	39.0
18.001	24	6	36.346	0.600	22.649	19.551	3.098	11.7	300	5.65	38.6
1.013	6	5	52.178	0.600	19.101	18.579	0.522	100.0	750	8.31	31.9
19.007	SSID9	21	40.870	0.600	22.780	20.223	2.557	16.0	450	6.24	36.8
22.000	22	21	23.609	0.600	23.075	20.448	2.627	9.0	225	5.09	40.5
23.000	23	21	19.242	0.600	22.925	20.448	2.477	7.8	225	5.07	40.6
19.008	21	5	40.319	0.600	20.073	18.729	1.344	30.0	600	6.39	36.3
1.014	5	4	27.403	0.600	18.579	18.305	0.274	100.0	750	8.47	31.6
24.000	20	19	18.491	0.600	22.190	21.450	0.740	25.0	225	5.12	40.4
24.001	19	4	10.616	0.600	21.450	18.830	2.620	4.1	225	5.14	40.3
1.015	4	3	21.661	0.600	18.305	18.088	0.217	100.0	750	8.60	31.4
1.016	3	2	37.095	0.600	18.088	17.903	0.185	200.0	750	8.91	30.8
1.017	2	1	11.057	0.600	17.903	17.792	0.111	100.0	750	8.98	30.6
2.008	1	HW1	22.433	0.600	17.792	17.656	0.136	164.9	750	9.15	29.9
30.000	90	89	24.495	0.600	23.600	23.050	0.550	44.5	225	5.21	40.1
30.001	89	88	33.793	0.600	23.050	22.851	0.199	170.0	225	5.77	38.2
16.001	32	27	15.762	0.600	21.623	20.441	1.182	13.3	150	5.25	39.9
31.000	98	88	23.989	0.600	23.490	22.851	0.639	37.5	225	5.19	40.2
30.002	88	87	11.464	0.600	22.776	22.729	0.047	243.9	300	5.96	37.5
30.003	87	Att. Tank 1	2.842	0.600	22.729	22.715	0.014	203.0	300	6.00	37.4
32.000	97	86	33.852	0.600	23.650	22.778	0.872	38.8	225	5.27	39.9

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.009	2.810	1241.4	291.8	4.745	3.190	2.416	0.0	246	2.318
1.011	1.981	875.3	297.3	3.159	3.088	2.511	0.0	300	1.799
1.012	1.599	706.3	301.4	3.088	3.249	2.566	0.0	342	1.539
18.000	0.998	70.5	17.6	1.500	1.651	0.125	0.0	102	0.832
18.001	4.614	326.2	31.8	1.651	3.249	0.228	0.0	63	2.971
1.013	2.798	1236.2	330.9	3.249	3.846	2.869	0.0	263	2.389
19.007	5.104	811.8	111.1	2.850	4.377	0.837	0.0	111	3.619
22.000	4.390	174.6	12.5	1.500	4.377	0.086	0.0	41	2.586
23.000	4.723	187.8	12.9	1.500	4.377	0.088	0.0	40	2.746
19.008	4.456	1260.0	143.2	4.377	3.846	1.090	0.0	135	3.009
1.014	2.798	1236.2	459.8	3.846	3.795	4.025	0.0	316	2.603
24.000	2.628	104.5	7.2	1.500	1.500	0.049	0.0	40	1.526
24.001	6.545	260.2	11.1	1.500	3.795	0.076	0.0	31	3.275
1.015	2.798	1236.2	465.6	3.795	3.462	4.108	0.0	318	2.611
1.016	1.975	872.5	457.6	3.462	2.747	4.114	0.0	386	1.997
1.017	2.798	1236.2	460.8	2.747	2.333	4.160	0.0	316	2.603
2.008	2.176	961.3	547.4	2.333	0.750	5.066	0.0	406	2.243
30.000	1.965	78.1	11.1	1.500	1.500	0.077	0.0	57	1.396
30.001	1.000	39.7	12.4	1.500	2.049	0.090	0.0	87	0.888
16.001	2.773	49.0	1.1	2.102	2.934	0.008	0.0	16	1.163
31.000	2.141	85.1	7.5	1.500	2.049	0.052	0.0	44	1.322
30.002	1.002	70.8	23.2	2.049	2.386	0.171	0.0	118	0.900
30.003	1.100	77.7	26.0	2.386	2.185	0.192	0.0	119	0.993
32.000	2.106	83.7	9.3	1.500	2.247	0.065	0.0	51	1.402



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)
30.005	86	85	44.909	0.600	22.703	21.580	1.123	40.0	300	6.35	36.5
33.000	96	85	44.622	0.600	23.425	21.655	1.770	25.2	225	5.28	39.8
30.006	85	84	17.827	0.600	21.580	20.818	0.762	23.4	300	6.44	36.2
34.000	94	93	11.209	0.600	21.725	21.659	0.066	170.0	225	5.19	40.2
34.001	93	92	8.972	0.600	21.659	21.606	0.053	169.3	225	5.34	39.7
35.000	95	92	11.279	0.600	22.521	21.681	0.840	13.4	150	5.07	40.6
34.002	92	91	32.799	0.600	21.531	20.894	0.637	51.5	300	5.59	38.8
34.003	91	84	17.895	0.600	20.894	20.818	0.076	235.5	300	5.88	37.8
30.007	84	83	24.028	0.600	20.743	20.669	0.074	324.7	375	6.84	35.1
30.008	83	HW2	54.865	0.600	20.669	20.500	0.169	324.6	375	7.76	33.0
2.000	48	47	17.837	0.600	25.490	25.090	0.400	44.6	225	5.15	40.3
2.001	47	46	20.616	0.600	25.090	24.790	0.300	68.7	225	5.37	39.5
2.002	46	45	47.612	0.600	24.715	24.060	0.655	72.7	300	5.80	38.1
2.003	45	44	20.824	0.600	23.985	22.797	1.188	17.5	375	5.88	37.8
3.000	68	Att. Tank 4	6.751	0.600	23.090	23.050	0.040	168.8	225	5.11	40.4
3.002	67	44	10.734	0.600	23.010	22.947	0.063	170.4	225	5.40	39.4
2.004	44	Att. Tank 5	2.401	0.600	22.797	22.775	0.022	109.1	375	5.90	37.7
4.000	66	65	18.355	0.600	23.675	23.600	0.075	244.7	300	5.31	39.8
4.001	65	43	9.642	0.600	23.600	22.795	0.805	12.0	300	5.34	39.6
2.006	43	42	6.176	0.600	22.720	22.701	0.019	325.0	375	6.04	37.3
1.000	64	63	11.480	0.600	26.300	26.125	0.175	65.6	225	5.12	40.4
1.001	63	62	11.231	0.600	26.125	25.975	0.150	74.9	225	5.24	40.0
1.002	62	61	81.526	0.600	25.900	24.550	1.350	60.4	300	5.91	37.7
1.003	61	60	12.824	0.600	24.550	23.380	1.170	11.0	300	5.96	37.6

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)
30.005	2.493	176.2	41.4	2.247	1.870	0.314	0.0	99	2.052
33.000	2.616	104.0	14.1	1.500	1.870	0.098	0.0	56	1.844
30.006	3.264	230.7	61.7	1.870	1.907	0.471	0.0	106	2.782
34.000	1.000	39.7	5.5	1.500	2.041	0.038	0.0	56	0.702
34.001	1.002	39.8	8.2	2.041	2.469	0.057	0.0	69	0.791
35.000	2.764	48.8	6.9	1.979	2.469	0.047	0.0	38	1.956
34.002	2.196	155.2	19.0	2.469	2.556	0.136	0.0	71	1.507
34.003	1.020	72.1	21.7	2.556	1.907	0.158	0.0	112	0.894
30.007	1.000	110.4	80.0	1.907	1.806	0.630	0.0	237	1.086
30.008	1.000	110.4	78.6	1.806	0.825	0.659	0.0	235	1.083
2.000	1.964	78.1	4.2	1.500	1.500	0.029	0.0	36	1.061
2.001	1.579	62.8	10.4	1.500	1.500	0.072	0.0	62	1.179
2.002	1.846	130.5	16.9	1.500	1.500	0.122	0.0	72	1.284
2.003	4.345	479.9	24.4	1.500	2.343	0.178	0.0	57	2.316
3.000	1.003	39.9	8.3	1.500	1.650	0.057	0.0	69	0.793
3.002	0.999	39.7	8.5	2.165	2.343	0.060	0.0	71	0.800
2.004	1.734	191.5	34.5	2.343	2.325	0.253	0.0	107	1.327
4.000	1.000	70.7	2.7	1.500	2.000	0.019	0.0	40	0.488
4.001	4.567	322.8	13.5	2.000	2.890	0.094	0.0	41	2.288
2.006	0.999	110.4	50.3	2.890	2.974	0.373	0.0	178	0.977
1.000	1.617	64.3	6.6	1.500	1.500	0.045	0.0	49	1.054
1.001	1.513	60.1	7.8	1.500	1.500	0.054	0.0	55	1.055
1.002	2.026	143.2	14.5	1.500	1.500	0.106	0.0	64	1.316
1.003	4.774	337.5	26.1	1.500	2.495	0.192	0.0	56	2.870



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)
1.004	60	42	7.978	0.600	23.305	22.701	0.604	13.2	375	5.98	37.5
1.005	42	41	43.188	0.600	22.701	22.568	0.133	324.7	375	6.76	35.4
5.000	53	52	9.874	0.600	25.125	24.878	0.247	40.0	225	5.08	40.5
5.001	52	51	13.291	0.600	24.878	24.800	0.078	170.4	225	5.30	39.8
6.000	55	51	16.949	0.600	25.475	24.800	0.675	25.1	225	5.11	40.4
5.002	51	50	11.202	0.600	24.725	24.650	0.075	149.4	300	5.45	39.3
7.000	54	50	6.024	0.600	24.900	24.800	0.100	60.2	150	5.08	40.5
5.003	50	49	22.268	0.600	24.650	24.325	0.325	68.5	300	5.64	38.6
5.004	49	41	20.197	0.600	24.325	22.643	1.682	12.0	300	5.72	38.4
30.004	Att. Tank 1	86	2.842	0.600	22.715	22.703	0.012	236.8	300	6.05	37.3
8.000	59	Att. Tank 6	1.147	0.600	23.325	23.315	0.010	114.7	225	5.02	40.7
8.002	58	57	12.387	0.600	23.308	23.235	0.073	169.7	225	5.24	40.0
8.003	57	56	23.144	0.600	23.160	23.066	0.094	246.2	300	5.63	38.7
8.004	56	41	6.552	0.600	23.066	22.643	0.423	15.5	300	5.65	38.6
1.006	41	40	30.983	0.600	22.493	22.416	0.077	402.4	450	7.27	34.1
19.000	81	80	12.248	0.600	25.850	25.600	0.250	49.0	150	5.14	40.3
19.001	80	79	7.895	0.600	25.600	25.201	0.399	19.8	150	5.20	40.1
20.000	82	Att. Tank 8	3.445	0.600	25.225	25.190	0.035	98.4	225	5.04	40.7
10.000	76	72	13.046	0.600	26.800	26.670	0.130	100.0	150	5.22	40.1
9.000	74	73	13.857	0.600	26.875	26.794	0.081	171.1	225	5.23	40.0
9.001	73	72	20.171	0.600	26.794	26.595	0.199	101.4	225	5.49	39.1
9.002	72	71	18.137	0.600	26.520	26.016	0.504	36.0	300	5.61	38.7
9.003	71	Att. Tank 7	3.616	0.600	26.016	25.980	0.036	100.4	300	5.64	38.6
11.000	75	70	25.227	0.600	25.325	25.177	0.148	170.0	225	5.42	39.4

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)
1.004	5.007	553.0	36.7	2.495	2.974	0.271	0.0	65	2.889
1.005	1.000	110.4	84.6	2.974	2.832	0.662	0.0	246	1.097
5.000	2.075	82.5	3.3	1.500	1.822	0.022	0.0	30	1.016
5.001	0.998	39.7	7.7	1.822	1.650	0.054	0.0	67	0.778
6.000	2.621	104.2	10.6	1.500	1.650	0.072	0.0	48	1.693
5.002	1.284	90.8	19.3	1.650	1.500	0.136	0.0	93	1.026
7.000	1.298	22.9	5.0	1.500	1.500	0.034	0.0	47	1.037
5.003	1.902	134.4	24.6	1.500	1.500	0.176	0.0	86	1.458
5.004	4.561	322.4	31.6	1.500	2.832	0.228	0.0	63	2.937
30.004	1.017	71.9	25.9	2.185	2.247	0.192	0.0	125	0.937
8.000	1.220	48.5	8.8	1.500	1.485	0.060	0.0	65	0.930
8.002	1.001	39.8	11.4	1.752	1.740	0.079	0.0	82	0.866
8.003	0.997	70.5	24.2	1.740	2.284	0.173	0.0	121	0.907
8.004	4.014	283.7	29.3	2.284	2.832	0.210	0.0	65	2.626
1.006	1.007	160.2	141.9	2.832	2.484	1.151	0.0	331	1.131
19.000	1.441	25.5	3.2	1.500	1.500	0.022	0.0	36	0.990
19.001	2.274	40.2	6.7	1.500	1.674	0.046	0.0	41	1.691
20.000	1.318	52.4	11.1	1.700	1.585	0.076	0.0	70	1.049
10.000	1.005	17.8	0.1	1.500	2.030	0.001	0.0	7	0.241
9.000	0.996	39.6	8.0	1.500	1.806	0.056	0.0	69	0.787
9.001	1.298	51.6	12.3	1.806	2.030	0.087	0.0	74	1.067
9.002	2.629	185.8	15.4	2.030	2.099	0.110	0.0	58	1.607
9.003	1.568	110.9	19.3	2.099	1.145	0.139	0.0	84	1.185
11.000	1.000	39.7	10.5	1.500	1.973	0.074	0.0	79	0.846



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)
9.005	70	69	27.498	0.600	25.102	24.138	0.964	28.5	300	5.82	38.0
13.000	39	38	43.546	0.600	23.290	22.201	1.089	40.0	300	5.29	39.8
13.001	38	28	33.832	0.600	22.201	20.613	1.588	21.3	300	5.46	39.3
12.000	31	30	41.313	0.600	22.790	22.297	0.493	83.8	225	5.48	39.2
12.001	30	29	17.897	0.600	22.297	21.850	0.447	40.0	225	5.63	38.7
12.002	29	28	20.840	0.600	21.850	20.688	1.162	17.9	225	5.74	38.3
12.003	28	Att. Tank 2	15.310	0.600	20.538	20.490	0.048	319.0	375	5.99	37.4
15.000	36	Att. Tank 3	4.993	0.600	20.520	20.470	0.050	99.9	300	5.05	40.6
12.004	Att. Tank 2	27	15.310	0.600	20.490	20.152	0.338	45.3	375	6.09	37.2
14.000	37	35	18.499	0.600	21.150	20.521	0.629	29.4	225	5.13	40.4
14.001	35	34	4.559	0.600	20.371	20.357	0.014	325.6	375	5.43	39.3
14.002	34	27	21.339	0.600	20.357	20.291	0.066	323.3	375	5.79	38.1
16.000	33	32	21.439	0.600	22.675	21.623	1.052	20.4	150	5.16	40.3
15.001	Att. Tank 3	35	12.491	0.600	20.470	20.446	0.024	520.5	300	5.36	39.6
3.001	Att. Tank 4	67	6.751	0.600	23.050	23.010	0.040	168.8	225	5.22	40.0
12.005	27	26	21.818	0.600	20.077	20.023	0.054	404.0	450	6.45	36.2
1.007	40	SSID2	13.693	0.600	22.416	21.930	0.486	28.2	450	7.33	34.0
12.006	26	SSID6	17.100	0.600	20.023	19.981	0.042	407.1	450	6.73	35.4
37.000	Basin I	Basin I Inlet	15.132	0.600	21.500	20.500	1.000	15.1	300	5.06	40.6
38.000	LA S12	LA Inlet	11.869	0.600	20.701	20.500	0.201	59.1	450	5.07	40.5
19.006	SSID10	SSID9	21.793	0.600	22.900	22.780	0.120	181.6	450	6.11	37.1
17.000	SSID8	SSID7	17.108	0.600	20.170	20.110	0.060	285.1	600	5.20	40.1
17.001	SSID7	SSID6	16.805	0.600	20.110	19.970	0.140	120.0	600	5.32	39.7

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)
9.005	2.954	208.8	39.7	1.973	1.837	0.289	0.0	88	2.292
13.000	2.493	176.2	13.2	1.500	1.784	0.091	0.0	55	1.478
13.001	3.421	241.8	23.7	1.784	2.762	0.167	0.0	63	2.202
12.000	1.429	56.8	7.8	1.500	2.278	0.055	0.0	56	1.006
12.001	2.074	82.5	10.8	2.278	2.025	0.077	0.0	55	1.448
12.002	3.104	123.4	17.6	2.025	2.762	0.127	0.0	57	2.208
12.003	1.009	111.4	50.1	2.762	2.835	0.371	0.0	176	0.983
15.000	1.573	111.2	10.9	1.280	1.430	0.074	0.0	63	1.010
12.004	2.698	298.0	49.8	2.835	2.998	0.371	0.0	103	2.020
14.000	2.421	96.3	7.0	1.500	2.079	0.048	0.0	41	1.424
14.001	0.998	110.3	19.3	2.079	2.218	0.135	0.0	106	0.757
14.002	1.002	110.7	23.1	2.218	2.859	0.168	0.0	116	0.798
16.000	2.241	39.6	1.2	1.500	2.102	0.008	0.0	18	1.003
15.001	0.682	48.2	10.6	1.430	2.079	0.074	0.0	95	0.549
3.001	1.003	39.9	8.2	1.650	2.165	0.057	0.0	69	0.793
12.005	1.005	159.8	87.6	2.998	2.777	0.670	0.0	238	1.027
1.007	3.841	610.9	144.6	2.484	2.920	1.178	0.0	148	3.169
12.006	1.001	159.2	92.8	2.777	2.669	0.725	0.0	247	1.038
37.000	4.061	287.1	1.0	0.950	0.900	0.007	0.0	13	0.970
38.000	2.649	421.3	80.6	1.459	0.750	0.550	0.0	132	2.061
19.006	1.505	239.4	105.8	3.225	2.850	0.789	0.0	210	1.462
17.000	1.437	406.2	2.1	1.305	1.840	0.014	0.0	31	0.388
17.001	2.221	628.1	4.1	1.840	2.530	0.028	0.0	34	0.641



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)
12.007	SSID6	SSID5	37.479	0.600	19.831	19.561	0.270	138.8	600	7.03	34.6
12.008	SSID5	SSID1	40.273	0.600	19.561	19.441	0.120	335.6	600	7.54	33.5
1.008	SSID2	SSID1	23.973	0.600	21.280	20.700	0.580	41.3	600	7.44	33.7
9.007	SSID4	SSID3	48.554	0.600	23.680	22.500	1.180	41.1	600	6.11	37.1
9.008	SSID3	SSID2	29.018	0.600	22.500	21.280	1.220	23.8	600	6.21	36.9
36.000	Basin H	Basin H FC	10.267	0.600	17.656	17.553	0.103	100.0	675	5.07	40.6
36.001	Basin H FC	Basin H Outfall	29.495	0.600	17.553	16.395	1.158	25.5	675	5.16	40.3
2.005	Att. Tank 5	43	4.401	0.600	22.775	22.720	0.055	80.0	375	5.94	37.6
8.001	Att. Tank 6	58	1.147	0.600	23.315	23.308	0.007	163.9	225	5.03	40.7
19.002	79	78	16.832	0.600	25.051	24.982	0.069	243.9	300	5.48	39.2
21.000	SSID12	SSID11	15.111	0.600	23.110	23.000	0.110	137.4	450	5.15	40.3
19.005	SSID11	SSID10	14.778	0.600	23.000	22.900	0.100	147.8	450	5.87	37.9
19.003	78	77	11.325	0.600	24.982	24.935	0.047	241.0	300	5.67	38.5
19.004	77	SSID11	16.865	0.600	24.935	23.150	1.785	9.4	300	5.72	38.4
9.004	Att. Tank 7	70	1.616	0.600	25.120	25.102	0.018	89.8	300	5.66	38.6
20.001	Att. Tank 8	79	3.445	0.600	25.190	25.170	0.020	172.3	225	5.10	40.5
1.010	Att. Tank 9	8	6.942	0.600	19.360	19.291	0.069	100.6	750	7.62	33.3
25.001	Att. Tank 10	15	10.719	0.600	20.250	20.187	0.063	170.1	225	5.34	39.6
25.006	Att. Tank 11	11	8.158	0.600	18.665	18.629	0.036	226.6	375	6.74	35.4
9.006	69	SSID4	10.694	0.600	24.063	23.905	0.158	67.7	375	5.90	37.8
29.000	FD Junction 8	103	25.918	15.000	23.915	23.835	0.080	325.0	375	5.73	38.3
29.001	103	FD Junction 7	19.222	15.000	23.835	23.776	0.059	325.0	375	6.27	36.7
29.002	FD Junction 7	FD Junction 6	26.760	15.000	23.776	23.694	0.082	325.0	375	7.03	34.7

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)
12.007	2.065	583.8	98.5	2.669	3.954	0.787	0.0	166	1.555
12.008	1.323	374.2	99.7	3.954	4.884	0.823	0.0	211	1.128
1.008	3.795	1072.9	190.8	3.420	3.625	1.565	0.0	170	2.898
9.007	3.803	1075.3	44.4	1.805	2.500	0.331	0.0	82	1.919
9.008	5.006	1415.5	48.9	2.500	3.420	0.367	0.0	75	2.395
36.000	2.621	937.8	0.0	0.825	1.072	0.000	0.0	0	0.000
36.001	5.205	1862.8	0.0	1.072	0.330	0.000	0.0	0	0.000
2.005	2.027	223.8	34.4	2.325	2.890	0.253	0.0	99	1.481
8.001	1.018	40.5	8.8	1.485	1.752	0.060	0.0	71	0.816
19.002	1.002	70.8	27.7	1.674	1.518	0.196	0.0	130	0.943
21.000	1.732	275.5	82.2	3.265	3.250	0.564	0.0	167	1.518
19.005	1.670	265.6	105.9	3.250	3.225	0.774	0.0	197	1.579
19.003	1.008	71.3	27.3	1.518	1.715	0.196	0.0	129	0.943
19.004	5.143	363.6	27.2	1.715	3.250	0.196	0.0	55	3.054
9.004	1.660	117.3	19.3	2.005	1.973	0.139	0.0	82	1.235
20.001	0.993	39.5	11.0	1.585	1.630	0.076	0.0	81	0.855
1.010	2.790	1232.4	291.0	3.190	3.159	2.416	0.0	246	2.305
25.001	0.999	39.7	10.9	1.940	2.838	0.076	0.0	80	0.855
25.006	1.199	132.4	69.5	1.660	1.696	0.543	0.0	193	1.213
9.006	2.205	243.5	42.8	1.837	1.805	0.314	0.0	106	1.676
29.000	0.591	65.3	0.4	0.925	0.740	0.003	0.0	22	0.136
29.001	0.591	65.3	1.5	0.740	0.474	0.011	0.0	41	0.224
29.002	0.591	65.3	1.4	0.474	0.681	0.011	0.0	41	0.221



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)
29.003	FD Junction 6	102	33.322	15.000	23.694	23.591	0.103	325.0	375	7.97	32.6
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)		
29.003	0.591	65.3	1.3	0.681	2.184	0.011	0.0	39	0.215		

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)
29.004	17.595	325.0	375	Circular	26.150	23.591	2.184	25.800	23.537	1.888
29.005	20.595	325.0	375	Circular	25.800	23.537	1.888	25.480	23.474	1.631
29.006	46.192	325.0	375	Circular	25.480	23.474	1.631	25.720	23.332	2.013
29.007	28.576	325.0	375	Circular	25.720	23.332	2.013	25.600	23.244	1.981
29.008	49.875	325.0	375	Circular	25.600	23.244	1.981	25.600	23.091	2.134
29.009	76.421	325.0	375	Circular	25.600	23.091	2.134	25.300	22.856	2.069
29.010	30.035	116.4	375	Circular	25.300	22.856	2.069	24.350	22.598	1.377
29.011	47.530	50.0	375	Circular	24.350	22.598	1.377	22.975	21.647	0.953
29.012	33.406	61.1	375	Circular	22.975	21.647	0.953	21.700	21.100	0.225
25.000	10.719	142.9	225	Circular	22.050	20.325	1.500	22.415	20.250	1.940
25.002	24.012	170.3	225	Circular	23.250	20.187	2.838	22.625	20.046	2.354
26.000	20.496	14.9	225	Circular	23.150	21.425	1.500	22.625	20.046	2.354
25.003	35.430	244.3	300	Circular	22.625	19.971	2.354	21.725	19.826	1.599
25.004	24.421	44.2	300	Circular	21.725	19.826	1.599	21.075	19.273	1.502
27.000	36.466	162.1	225	Circular	21.425	19.700	1.500	21.200	19.475	1.500
27.001	16.536	26.4	300	Circular	21.200	19.400	1.500	21.075	18.773	2.002
25.005	8.158	247.2	375	Circular	21.075	18.698	2.002	20.700	18.665	1.660
25.007	56.317	244.9	375	Circular	20.700	18.629	1.696	20.625	18.399	1.851
28.000	56.766	27.0	225	Circular	22.375	20.650	1.500	20.625	18.549	1.851

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
29.004	102	1350	Manhole	Adoptable	FD Junction 5		Junction	
29.005	FD Junction 5		Junction		FD Junction 4		Junction	
29.006	FD Junction 4		Junction		FD Junction 3		Junction	
29.007	FD Junction 3		Junction		FD Junction 2		Junction	
29.008	FD Junction 2		Junction		FD Junction 1		Junction	
29.009	FD Junction 1		Junction		101	1350	Manhole	Adoptable
29.010	101	1350	Manhole	Adoptable	100	1350	Manhole	Adoptable
29.011	100	1350	Manhole	Adoptable	99	1350	Manhole	Adoptable
29.012	99	1350	Manhole	Adoptable	HW3		Junction	
25.000	15A	1200	Manhole	Adoptable	Att. Tank 10		Junction	
25.002	15	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
26.000	14A	1200	Manhole	Adoptable	14	1200	Manhole	Adoptable
25.003	14	1200	Manhole	Adoptable	13	1200	Manhole	Adoptable
25.004	13	1200	Manhole	Adoptable	12	1350	Manhole	Adoptable
27.000	18	1200	Manhole	Adoptable	17	1200	Manhole	Adoptable
27.001	17	1200	Manhole	Adoptable	12	1350	Manhole	Adoptable
25.005	12	1350	Manhole	Adoptable	Att. Tank 11		Junction	
25.007	11	1350	Manhole	Adoptable	10	1350	Manhole	Adoptable
28.000	16	1200	Manhole	Adoptable	10	1350	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)
25.008	33.026	244.6	375	Circular	20.625	18.399	1.851	20.550	18.264	1.911
25.009	23.689	244.2	375	Circular	20.550	18.264	1.911	20.875	18.167	2.333
1.009	6.942	99.2	750	Circular	24.925	19.430	4.745	23.300	19.360	3.190
1.011	30.603	198.7	750	Circular	23.200	19.291	3.159	22.975	19.137	3.088
1.012	10.952	304.2	750	Circular	22.975	19.137	3.088	23.100	19.101	3.249
18.000	30.999	246.0	300	Circular	24.575	22.775	1.500	24.600	22.649	1.651
18.001	36.346	11.7	300	Circular	24.600	22.649	1.651	23.100	19.551	3.249
1.013	52.178	100.0	750	Circular	23.100	19.101	3.249	23.175	18.579	3.846
19.007	40.870	16.0	450	Circular	26.080	22.780	2.850	25.050	20.223	4.377
22.000	23.609	9.0	225	Circular	24.800	23.075	1.500	25.050	20.448	4.377
23.000	19.242	7.8	225	Circular	24.650	22.925	1.500	25.050	20.448	4.377
19.008	40.319	30.0	600	Circular	25.050	20.073	4.377	23.175	18.729	3.846
1.014	27.403	100.0	750	Circular	23.175	18.579	3.846	22.850	18.305	3.795
24.000	18.491	25.0	225	Circular	23.915	22.190	1.500	23.175	21.450	1.500
24.001	10.616	4.1	225	Circular	23.175	21.450	1.500	22.850	18.830	3.795
1.015	21.661	100.0	750	Circular	22.850	18.305	3.795	22.300	18.088	3.462
1.016	37.095	200.0	750	Circular	22.300	18.088	3.462	21.400	17.903	2.747
1.017	11.057	100.0	750	Circular	21.400	17.903	2.747	20.875	17.792	2.333
2.008	22.433	164.9	750	Circular	20.875	17.792	2.333	19.156	17.656	0.750
30.000	24.495	44.5	225	Circular	25.325	23.600	1.500	24.775	23.050	1.500
30.001	33.793	170.0	225	Circular	24.775	23.050	1.500	25.125	22.851	2.049
16.001	15.762	13.3	150	Circular	23.875	21.623	2.102	23.525	20.441	2.934
31.000	23.989	37.5	225	Circular	25.215	23.490	1.500	25.125	22.851	2.049
30.002	11.464	243.9	300	Circular	25.125	22.776	2.049	25.415	22.729	2.386
30.003	2.842	203.0	300	Circular	25.415	22.729	2.386	25.200	22.715	2.185

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
25.008	10	1350	Manhole	Adoptable	9	1350	Manhole	Adoptable
25.009	9	1350	Manhole	Adoptable	1	1800	Manhole	Adoptable
1.009	SSID1	1800	Manhole	Adoptable	Att. Tank 9		Junction	
1.011	8	1800	Manhole	Adoptable	7	1800	Manhole	Adoptable
1.012	7	1800	Manhole	Adoptable	6	1800	Manhole	Adoptable
18.000	25	1200	Manhole	Adoptable	24	1200	Manhole	Adoptable
18.001	24	1200	Manhole	Adoptable	6	1800	Manhole	Adoptable
1.013	6	1800	Manhole	Adoptable	5	1800	Manhole	Adoptable
19.007	SSID9	1350	Manhole	Adoptable	21	1500	Manhole	Adoptable
22.000	22	1200	Manhole	Adoptable	21	1500	Manhole	Adoptable
23.000	23	1200	Manhole	Adoptable	21	1500	Manhole	Adoptable
19.008	21	1500	Manhole	Adoptable	5	1800	Manhole	Adoptable
1.014	5	1800	Manhole	Adoptable	4	1800	Manhole	Adoptable
24.000	20	1200	Manhole	Adoptable	19	1200	Manhole	Adoptable
24.001	19	1200	Manhole	Adoptable	4	1800	Manhole	Adoptable
1.015	4	1800	Manhole	Adoptable	3	1800	Manhole	Adoptable
1.016	3	1800	Manhole	Adoptable	2	1800	Manhole	Adoptable
1.017	2	1800	Manhole	Adoptable	1	1800	Manhole	Adoptable
2.008	1	1800	Manhole	Adoptable	HW1		Junction	
30.000	90	1200	Manhole	Adoptable	89	1200	Manhole	Adoptable
30.001	89	1200	Manhole	Adoptable	88	1200	Manhole	Adoptable
16.001	32	1200	Manhole	Adoptable	27	1350	Manhole	Adoptable
31.000	98	1200	Manhole	Adoptable	88	1200	Manhole	Adoptable
30.002	88	1200	Manhole	Adoptable	87	1200	Manhole	Adoptable
30.003	87	1200	Manhole	Adoptable	Att. Tank 1		Junction	



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)
32.000	33.852	38.8	225	Circular	25.375	23.650	1.500	25.250	22.778	2.247
30.005	44.909	40.0	300	Circular	25.250	22.703	2.247	23.750	21.580	1.870
33.000	44.622	25.2	225	Circular	25.150	23.425	1.500	23.750	21.655	1.870
30.006	17.827	23.4	300	Circular	23.750	21.580	1.870	23.025	20.818	1.907
34.000	11.209	170.0	225	Circular	23.450	21.725	1.500	23.925	21.659	2.041
34.001	8.972	169.3	225	Circular	23.925	21.659	2.041	24.300	21.606	2.469
35.000	11.279	13.4	150	Circular	24.650	22.521	1.979	24.300	21.681	2.469
34.002	32.799	51.5	300	Circular	24.300	21.531	2.469	23.750	20.894	2.556
34.003	17.895	235.5	300	Circular	23.750	20.894	2.556	23.025	20.818	1.907
30.007	24.028	324.7	375	Circular	23.025	20.743	1.907	22.850	20.669	1.806
30.008	54.865	324.6	375	Circular	22.850	20.669	1.806	21.700	20.500	0.825
2.000	17.837	44.6	225	Circular	27.215	25.490	1.500	26.815	25.090	1.500
2.001	20.616	68.7	225	Circular	26.815	25.090	1.500	26.515	24.790	1.500
2.002	47.612	72.7	300	Circular	26.515	24.715	1.500	25.860	24.060	1.500
2.003	20.824	17.5	375	Circular	25.860	23.985	1.500	25.515	22.797	2.343
3.000	6.751	168.8	225	Circular	24.815	23.090	1.500	24.925	23.050	1.650
3.002	10.734	170.4	225	Circular	25.400	23.010	2.165	25.515	22.947	2.343
2.004	2.401	109.1	375	Circular	25.515	22.797	2.343	25.475	22.775	2.325
4.000	18.355	244.7	300	Circular	25.475	23.675	1.500	25.900	23.600	2.000
4.001	9.642	12.0	300	Circular	25.900	23.600	2.000	25.985	22.795	2.890
2.006	6.176	325.0	375	Circular	25.985	22.720	2.890	26.050	22.701	2.974
1.000	11.480	65.6	225	Circular	28.025	26.300	1.500	27.850	26.125	1.500
1.001	11.231	74.9	225	Circular	27.850	26.125	1.500	27.700	25.975	1.500
1.002	81.526	60.4	300	Circular	27.700	25.900	1.500	26.350	24.550	1.500
1.003	12.824	11.0	300	Circular	26.350	24.550	1.500	26.175	23.380	2.495

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
32.000	97	1200	Manhole	Adoptable	86	1200	Manhole	Adoptable
30.005	86	1200	Manhole	Adoptable	85	1200	Manhole	Adoptable
33.000	96	1200	Manhole	Adoptable	85	1200	Manhole	Adoptable
30.006	85	1200	Manhole	Adoptable	84	1350	Manhole	Adoptable
34.000	94	1200	Manhole	Adoptable	93	1200	Manhole	Adoptable
34.001	93	1200	Manhole	Adoptable	92	1200	Manhole	Adoptable
35.000	95	1200	Manhole	Adoptable	92	1200	Manhole	Adoptable
34.002	92	1200	Manhole	Adoptable	91	1200	Manhole	Adoptable
34.003	91	1200	Manhole	Adoptable	84	1350	Manhole	Adoptable
30.007	84	1350	Manhole	Adoptable	83	1350	Manhole	Adoptable
30.008	83	1350	Manhole	Adoptable	HW2		Junction	
2.000	48	1200	Manhole	Adoptable	47	1200	Manhole	Adoptable
2.001	47	1200	Manhole	Adoptable	46	1200	Manhole	Adoptable
2.002	46	1200	Manhole	Adoptable	45	1350	Manhole	Adoptable
2.003	45	1350	Manhole	Adoptable	44	1350	Manhole	Adoptable
3.000	68	1200	Manhole	Adoptable	Att. Tank 4		Junction	
3.002	67	1200	Manhole	Adoptable	44	1350	Manhole	Adoptable
2.004	44	1350	Manhole	Adoptable	Att. Tank 5		Junction	
4.000	66	1200	Manhole	Adoptable	65	1200	Manhole	Adoptable
4.001	65	1200	Manhole	Adoptable	43	1350	Manhole	Adoptable
2.006	43	1350	Manhole	Adoptable	42	1350	Manhole	Adoptable
1.000	64	1200	Manhole	Adoptable	63	1200	Manhole	Adoptable
1.001	63	1200	Manhole	Adoptable	62	1200	Manhole	Adoptable
1.002	62	1200	Manhole	Adoptable	61	1200	Manhole	Adoptable
1.003	61	1200	Manhole	Adoptable	60	1350	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)
1.004	7.978	13.2	375	Circular	26.175	23.305	2.495	26.050	22.701	2.974
1.005	43.188	324.7	375	Circular	26.050	22.701	2.974	25.775	22.568	2.832
5.000	9.874	40.0	225	Circular	26.850	25.125	1.500	26.925	24.878	1.822
5.001	13.291	170.4	225	Circular	26.925	24.878	1.822	26.675	24.800	1.650
6.000	16.949	25.1	225	Circular	27.200	25.475	1.500	26.675	24.800	1.650
5.002	11.202	149.4	300	Circular	26.675	24.725	1.650	26.450	24.650	1.500
7.000	6.024	60.2	150	Circular	26.550	24.900	1.500	26.450	24.800	1.500
5.003	22.268	68.5	300	Circular	26.450	24.650	1.500	26.125	24.325	1.500
5.004	20.197	12.0	300	Circular	26.125	24.325	1.500	25.775	22.643	2.832
30.004	2.842	236.8	300	Circular	25.200	22.715	2.185	25.250	22.703	2.247
8.000	1.147	114.7	225	Circular	25.050	23.325	1.500	25.025	23.315	1.485
8.002	12.387	169.7	225	Circular	25.285	23.308	1.752	25.200	23.235	1.740
8.003	23.144	246.2	300	Circular	25.200	23.160	1.740	25.650	23.066	2.284
8.004	6.552	15.5	300	Circular	25.650	23.066	2.284	25.775	22.643	2.832
1.006	30.983	402.4	450	Circular	25.775	22.493	2.832	25.350	22.416	2.484
19.000	12.248	49.0	150	Circular	27.500	25.850	1.500	27.250	25.600	1.500
19.001	7.895	19.8	150	Circular	27.250	25.600	1.500	27.025	25.201	1.674
20.000	3.445	98.4	225	Circular	27.150	25.225	1.700	27.000	25.190	1.585
10.000	13.046	100.0	150	Circular	28.450	26.800	1.500	28.850	26.670	2.030
9.000	13.857	171.1	225	Circular	28.600	26.875	1.500	28.825	26.794	1.806
9.001	20.171	101.4	225	Circular	28.825	26.794	1.806	28.850	26.595	2.030
9.002	18.137	36.0	300	Circular	28.850	26.520	2.030	28.415	26.016	2.099
9.003	3.616	100.4	300	Circular	28.415	26.016	2.099	27.425	25.980	1.145
11.000	25.227	170.0	225	Circular	27.050	25.325	1.500	27.375	25.177	1.973
9.005	27.498	28.5	300	Circular	27.375	25.102	1.973	26.275	24.138	1.837

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.004	60	1350	Manhole	Adoptable	42	1350	Manhole	Adoptable
1.005	42	1350	Manhole	Adoptable	41	1350	Manhole	Adoptable
5.000	53	1200	Manhole	Adoptable	52	1200	Manhole	Adoptable
5.001	52	1200	Manhole	Adoptable	51	1200	Manhole	Adoptable
6.000	55	1200	Manhole	Adoptable	51	1200	Manhole	Adoptable
5.002	51	1200	Manhole	Adoptable	50	1200	Manhole	Adoptable
7.000	54	1200	Manhole	Adoptable	50	1200	Manhole	Adoptable
5.003	50	1200	Manhole	Adoptable	49	1200	Manhole	Adoptable
5.004	49	1200	Manhole	Adoptable	41	1350	Manhole	Adoptable
30.004	Att. Tank 1		Junction		86	1200	Manhole	Adoptable
8.000	59	1200	Manhole	Adoptable	Att. Tank 6		Junction	
8.002	58	1200	Manhole	Adoptable	57	1200	Manhole	Adoptable
8.003	57	1200	Manhole	Adoptable	56	1200	Manhole	Adoptable
8.004	56	1200	Manhole	Adoptable	41	1350	Manhole	Adoptable
1.006	41	1350	Manhole	Adoptable	40	1350	Manhole	Adoptable
19.000	81	1200	Manhole	Adoptable	80	1200	Manhole	Adoptable
19.001	80	1200	Manhole	Adoptable	79	1200	Manhole	Adoptable
20.000	82	1200	Manhole	Adoptable	Att. Tank 8		Junction	
10.000	76	1200	Manhole	Adoptable	72	1200	Manhole	Adoptable
9.000	74	1200	Manhole	Adoptable	73	1200	Manhole	Adoptable
9.001	73	1200	Manhole	Adoptable	72	1200	Manhole	Adoptable
9.002	72	1200	Manhole	Adoptable	71	1200	Manhole	Adoptable
9.003	71	1200	Manhole	Adoptable	Att. Tank 7		Junction	
11.000	75	1200	Manhole	Adoptable	70	1200	Manhole	Adoptable
9.005	70	1200	Manhole	Adoptable	69	1800	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)
13.000	43.546	40.0	300	Circular	25.090	23.290	1.500	24.285	22.201	1.784
13.001	33.832	21.3	300	Circular	24.285	22.201	1.784	23.675	20.613	2.762
12.000	41.313	83.8	225	Circular	24.515	22.790	1.500	24.800	22.297	2.278
12.001	17.897	40.0	225	Circular	24.800	22.297	2.278	24.100	21.850	2.025
12.002	20.840	17.9	225	Circular	24.100	21.850	2.025	23.675	20.688	2.762
12.003	15.310	319.0	375	Circular	23.675	20.538	2.762	23.700	20.490	2.835
15.000	4.993	99.9	300	Circular	22.100	20.520	1.280	22.200	20.470	1.430
12.004	15.310	45.3	375	Circular	23.700	20.490	2.835	23.525	20.152	2.998
14.000	18.499	29.4	225	Circular	22.875	21.150	1.500	22.825	20.521	2.079
14.001	4.559	325.6	375	Circular	22.825	20.371	2.079	22.950	20.357	2.218
14.002	21.339	323.3	375	Circular	22.950	20.357	2.218	23.525	20.291	2.859
16.000	21.439	20.4	150	Circular	24.325	22.675	1.500	23.875	21.623	2.102
15.001	12.491	520.5	300	Circular	22.200	20.470	1.430	22.825	20.446	2.079
3.001	6.751	168.8	225	Circular	24.925	23.050	1.650	25.400	23.010	2.165
12.005	21.818	404.0	450	Circular	23.525	20.077	2.998	23.250	20.023	2.777
1.007	13.693	28.2	450	Circular	25.350	22.416	2.484	25.300	21.930	2.920
12.006	17.100	407.1	450	Circular	23.250	20.023	2.777	23.100	19.981	2.669
37.000	15.132	15.1	300	Circular	22.750	21.500	0.950	21.700	20.500	0.900
38.000	11.869	59.1	450	Circular	22.610	20.701	1.459	21.700	20.500	0.750
19.006	21.793	181.6	450	Circular	26.575	22.900	3.225	26.080	22.780	2.850
17.000	17.108	285.1	600	Circular	22.075	20.170	1.305	22.550	20.110	1.840
17.001	16.805	120.0	600	Circular	22.550	20.110	1.840	23.100	19.970	2.530
12.007	37.479	138.8	600	Circular	23.100	19.831	2.669	24.115	19.561	3.954
12.008	40.273	335.6	600	Circular	24.115	19.561	3.954	24.925	19.441	4.884

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
13.000	39	1200	Manhole	Adoptable	38	1200	Manhole	Adoptable
13.001	38	1200	Manhole	Adoptable	28	1350	Manhole	Adoptable
12.000	31	1200	Manhole	Adoptable	30	1200	Manhole	Adoptable
12.001	30	1200	Manhole	Adoptable	29	1200	Manhole	Adoptable
12.002	29	1200	Manhole	Adoptable	28	1350	Manhole	Adoptable
12.003	28	1350	Manhole	Adoptable	Att. Tank 2		Junction	
15.000	36	1200	Manhole	Adoptable	Att. Tank 3		Junction	
12.004	Att. Tank 2		Junction		27	1350	Manhole	Adoptable
14.000	37	1200	Manhole	Adoptable	35	1350	Manhole	Adoptable
14.001	35	1350	Manhole	Adoptable	34	1350	Manhole	Adoptable
14.002	34	1350	Manhole	Adoptable	27	1350	Manhole	Adoptable
16.000	33	1200	Manhole	Adoptable	32	1200	Manhole	Adoptable
15.001	Att. Tank 3		Junction		35	1350	Manhole	Adoptable
3.001	Att. Tank 4		Junction		67	1200	Manhole	Adoptable
12.005	27	1350	Manhole	Adoptable	26	1350	Manhole	Adoptable
1.007	40	1350	Manhole	Adoptable	SSID2	1500	Manhole	Adoptable
12.006	26	1350	Manhole	Adoptable	SSID6	1500	Manhole	Adoptable
37.000	Basin I	1200	Manhole	Adoptable	Basin I Inlet		Junction	
38.000	LA S12	1350	Manhole	Adoptable	LA Inlet		Junction	
19.006	SSID10	1350	Manhole	Adoptable	SSID9	1350	Manhole	Adoptable
17.000	SSID8	1500	Manhole	Adoptable	SSID7	1500	Manhole	Adoptable
17.001	SSID7	1500	Manhole	Adoptable	SSID6	1500	Manhole	Adoptable
12.007	SSID6	1500	Manhole	Adoptable	SSID5	1500	Manhole	Adoptable
12.008	SSID5	1500	Manhole	Adoptable	SSID1	1800	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)
1.008	23.973	41.3	600	Circular	25.300	21.280	3.420	24.925	20.700	3.625
9.007	48.554	41.1	600	Circular	26.085	23.680	1.805	25.600	22.500	2.500
9.008	29.018	23.8	600	Circular	25.600	22.500	2.500	25.300	21.280	3.420
36.000	10.267	100.0	675	Circular	19.156	17.656	0.825	19.300	17.553	1.072
36.001	29.495	25.5	675	Circular	19.300	17.553	1.072	17.400	16.395	0.330
2.005	4.401	80.0	375	Circular	25.475	22.775	2.325	25.985	22.720	2.890
8.001	1.147	163.9	225	Circular	25.025	23.315	1.485	25.285	23.308	1.752
19.002	16.832	243.9	300	Circular	27.025	25.051	1.674	26.800	24.982	1.518
21.000	15.111	137.4	450	Circular	26.825	23.110	3.265	26.700	23.000	3.250
19.005	14.778	147.8	450	Circular	26.700	23.000	3.250	26.575	22.900	3.225
19.003	11.325	241.0	300	Circular	26.800	24.982	1.518	26.950	24.935	1.715
19.004	16.865	9.4	300	Circular	26.950	24.935	1.715	26.700	23.150	3.250
9.004	1.616	89.8	300	Circular	27.425	25.120	2.005	27.375	25.102	1.973
20.001	3.445	172.3	225	Circular	27.000	25.190	1.585	27.025	25.170	1.630
1.010	6.942	100.6	750	Circular	23.300	19.360	3.190	23.200	19.291	3.159
25.001	10.719	170.1	225	Circular	22.415	20.250	1.940	23.250	20.187	2.838
25.006	8.158	226.6	375	Circular	20.700	18.665	1.660	20.700	18.629	1.696
9.006	10.694	67.7	375	Circular	26.275	24.063	1.837	26.085	23.905	1.805
29.000	25.918	325.0	375	Circular	25.215	23.915	0.925	24.950	23.835	0.740
29.001	19.222	325.0	375	Circular	24.950	23.835	0.740	24.625	23.776	0.474
29.002	26.760	325.0	375	Circular	24.625	23.776	0.474	24.750	23.694	0.681
29.003	33.322	325.0	375	Circular	24.750	23.694	0.681	26.150	23.591	2.184

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.008	SSID2	1500	Manhole	Adoptable	SSID1	1800	Manhole	Adoptable
9.007	SSID4	1500	Manhole	Adoptable	SSID3	1500	Manhole	Adoptable
9.008	SSID3	1500	Manhole	Adoptable	SSID2	1500	Manhole	Adoptable
36.000	Basin H		Junction		Basin H FC	2400	Manhole	Adoptable
36.001	Basin H FC	2400	Manhole	Adoptable	Basin H Outfall		Junction	
2.005	Att. Tank 5		Junction		43	1350	Manhole	Adoptable
8.001	Att. Tank 6		Junction		58	1200	Manhole	Adoptable
19.002	79	1200	Manhole	Adoptable	78	1200	Manhole	Adoptable
21.000	SSID12	1350	Manhole	Adoptable	SSID11	1350	Manhole	Adoptable
19.005	SSID11	1350	Manhole	Adoptable	SSID10	1350	Manhole	Adoptable
19.003	78	1200	Manhole	Adoptable	77	1200	Manhole	Adoptable
19.004	77	1200	Manhole	Adoptable	SSID11	1350	Manhole	Adoptable
9.004	Att. Tank 7		Junction		70	1200	Manhole	Adoptable
20.001	Att. Tank 8		Junction		79	1200	Manhole	Adoptable
1.010	Att. Tank 9		Junction		8	1800	Manhole	Adoptable
25.001	Att. Tank 10		Junction		15	1200	Manhole	Adoptable
25.006	Att. Tank 11		Junction		11	1350	Manhole	Adoptable
9.006	69	1800	Manhole	Adoptable	SSID4	1500	Manhole	Adoptable
29.000	FD Junction 8		Junction		103	1350	Manhole	Adoptable
29.001	103	1350	Manhole	Adoptable	FD Junction 7		Junction	
29.002	FD Junction 7		Junction		FD Junction 6		Junction	
29.003	FD Junction 6		Junction		102	1350	Manhole	Adoptable

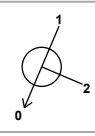
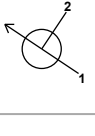
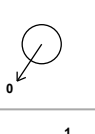
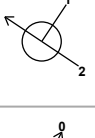
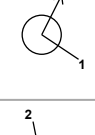
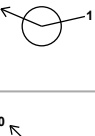
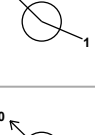
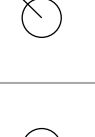


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
102	449265.762	116633.048	26.150	2.559	1350		1 29.003	23.591	375
FD Junction 5	449263.920	116615.550	25.800	2.263			1 29.004	23.537	375
FD Junction 4	449259.599	116595.413	25.480	2.006			1 29.005	23.474	375
FD Junction 3	449247.535	116550.824	25.720	2.388			1 29.006	23.332	375
FD Junction 2	449239.040	116523.540	25.600	2.356			1 29.007	23.244	375
FD Junction 1	449214.800	116479.952	25.600	2.509			1 29.008	23.091	375
101	449175.649	116414.322	25.300	2.444	1350		1 29.009	22.856	375
100	449149.968	116429.898	24.350	1.752	1350		1 29.010	22.598	375
99	449106.700	116449.571	22.975	1.328	1350		1 29.011	21.647	375
HW3	449090.820	116478.961	21.700	0.600			1 29.012	21.100	375
15A	449000.831	116533.276	22.050	1.725	1200		0 25.000	20.325	225
15	448992.961	116567.829	23.250	3.063	1200		1 25.001	20.187	225
14A	448978.892	116596.095	23.150	1.725	1200		0 26.000	21.425	225

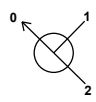
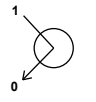
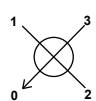
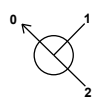
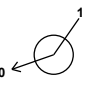
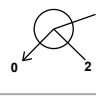
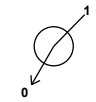
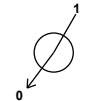
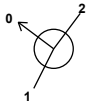


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
14	448970.868	116577.235	22.625	2.654	1200		1 2 0	26.000 25.002 25.003	20.046 20.046 19.971	225 225 300
13	448956.997	116544.633	21.725	1.899	1200		1 0	25.003 25.004	19.826 19.826	300 300
18	448989.330	116497.894	21.425	1.725	1200		0	27.000	19.700	225
17	448957.202	116515.144	21.200	1.800	1200		1 0	27.000 27.001	19.475 19.400	225 300
12	448943.444	116524.318	21.075	2.377	1350		1 2 0	27.001 25.004 25.005	18.773 19.273 18.698	300 300 375
16	448881.227	116634.035	22.375	1.725	1200		0	28.000	20.650	225
10	448849.734	116586.806	20.625	2.226	1350		1 2 0	28.000 25.007 25.008	18.549 18.399 18.399	225 375 375
9	448822.257	116605.129	20.550	2.286	1350		1 0	25.008 25.009	18.264 18.264	375 375
SSID1	449018.638	116619.420	24.925	5.495	1800		1 2 0	12.008 1.008 1.009	19.441 20.700 19.430	600 600 750
8	448966.096	116607.468	23.200	3.909	1800		1 0	1.010 1.011	19.291 19.291	750 750
7	448937.936	116619.449	22.975	3.838	1800		1 0	1.011 1.012	19.137 19.137	750 750
25	448977.685	116631.421	24.575	1.800	1200		0	18.000	22.775	300
24	448955.520	116653.093	24.600	1.951	1200		1 0	18.000 18.001	22.649 22.649	300 300

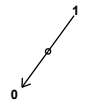
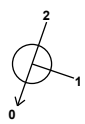
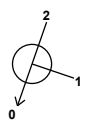
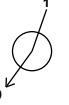
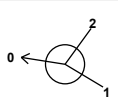
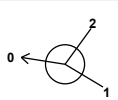
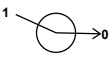


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
6	448930.107	116627.108	23.100	3.999	1800		1 2 0	18.001 1.012 19.101	300 750 750
SSID9	448949.619	116721.594	26.080	3.300	1350		1 0	19.006 19.007	450 450
22	448937.899	116675.890	24.800	1.725	1200		 0	22.000	23.075 225
23	448907.308	116705.896	24.650	1.725	1200		0	23.000	22.925 225
21	448921.020	116692.397	25.050	4.977	1500		1 2 3 0	23.000 22.000 19.007 19.008	20.448 20.448 20.223 20.073 225 225 450 600
5	448892.807	116663.594	23.175	4.596	1800		1 2 0	19.008 1.013 1.014	18.729 18.579 18.579 600 750 750
20	448893.803	116701.436	23.915	1.725	1200		0	24.000	22.190 225
19	448883.238	116686.260	23.175	1.725	1200		1 0	24.000 24.001	21.450 21.450 225 225
4	448873.217	116682.756	22.850	4.545	1800		1 2 0	24.001 1.014 1.015	18.830 18.305 18.305 225 750 750
3	448858.070	116667.272	22.300	4.212	1800		1 0	1.015 1.016	18.088 18.088 750 750
2	448839.548	116635.132	21.400	3.497	1800		1 0	1.016 1.017	17.903 17.903 750 750
1	448832.920	116626.282	20.875	3.083	1800		1 2 0	25.009 1.017 2.008	18.167 17.792 17.792 375 750 750
HW1	448814.965	116639.730	19.156	1.500			1	2.008	17.656 750

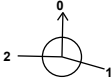
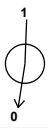
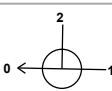


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
90	449247.418	116608.535	25.325	1.725	1200	 0	30.000	23.600	225
89	449222.994	116610.404	24.775	1.725	1200	 0	30.001	23.050	225
Att. Tank 1	449199.079	116555.259	25.200	2.485		 1	30.003	22.715	300
						0	30.004	22.715	300
98	449234.596	116570.790	25.215	1.725	1200	 0	31.000	23.490	225
88	449211.877	116578.492	25.125	2.349	1200	 1	31.000	22.851	225
						 2	30.001	22.851	225
						0	30.002	22.776	300
87	449208.105	116567.666	25.415	2.686	1200	 1	30.002	22.729	300
						0	30.003	22.729	300
97	449220.957	116529.037	25.375	1.725	1200	 0	32.000	23.650	225
86	449190.053	116542.853	25.250	2.547	1200	 1	32.000	22.778	225
						 2	30.004	22.703	300
						0	30.005	22.703	300
96	449201.910	116483.607	25.150	1.725	1200	 0	33.000	23.425	225
85	449163.631	116506.539	23.750	2.170	1200	 1	33.000	21.655	225
						 2	30.005	21.580	300
						0	30.006	21.580	300
94	449138.548	116468.459	23.450	1.725	1200	 0	34.000	21.725	225
93	449148.752	116463.819	23.925	2.266	1200	 1	34.000	21.659	225
						0	34.001	21.659	225
95	449168.568	116460.527	24.650	2.129	1200	 0	35.000	22.521	150

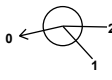
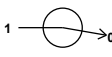
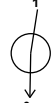
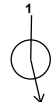
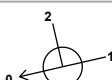
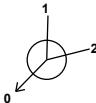


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
92	449157.722	116463.621	24.300	2.769	1200		1 35.000 2 34.001	21.681 21.606	150 225
91	449158.428	116496.412	23.750	2.856	1200		0 34.002 1 34.002	21.531 20.894	300 300
84	449146.020	116509.307	23.025	2.282	1350		1 34.003 2 30.006	20.818 20.818	300 300
83	449126.696	116495.027	22.850	2.181	1350		0 30.007 1 30.007	20.743 20.669	375 375
HW2	449082.179	116462.958	21.700	1.200			1 30.008	20.500	375
48	449143.385	116756.853	27.215	1.725	1200		0 2.000	25.490	225
47	449160.640	116752.334	26.815	1.725	1200		1 2.000 0 2.001	25.090 25.090	225 225
46	449159.859	116731.733	26.515	1.800	1200		1 2.001 0 2.002	24.790 24.715	225 300
45	449152.570	116684.682	25.860	1.875	1350		1 2.002 0 2.003	24.060 23.985	300 375
68	449162.173	116625.157	24.815	1.725	1200		0 3.000	23.090	225
67	449162.924	116663.653	25.400	2.390	1200		1 3.001 0 3.002	23.010 23.010	225 225
44	449152.192	116663.861	25.515	2.718	1350		1 3.002 2 2.003 0 2.004	22.947 22.797 22.797	225 375 375
66	449111.539	116639.294	25.475	1.800	1200		0 4.000	23.675	300



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
65	449111.891	116657.646	25.900	2.300	1200		1 4.000	23.600	300
43	449105.399	116664.775	25.985	3.265	1350		0 4.001 2.005	23.600 22.795 22.720	300 300 375
64	449087.756	116766.482	28.025	1.725	1200		0 1.000	26.300	225
63	449099.236	116766.482	27.850	1.725	1200		1 1.000	26.125	225
62	449110.302	116764.565	27.700	1.800	1200		0 1.001	26.125 25.975	225 225
61	449097.819	116684.000	26.350	1.800	1200		1 1.002	24.550	300
60	449097.576	116671.178	26.175	2.870	1350		0 1.003	24.550 23.380	300 300
42	449099.377	116663.406	26.050	3.349	1350		1 2.006 1.004	22.701 22.701	375 375
53	449064.717	116693.294	26.850	1.725	1200		0 5.000	25.125	225
52	449057.660	116700.200	26.925	2.047	1200		1 5.000	24.878	225
55	449045.250	116713.889	27.200	1.725	1200		0 6.000	25.475	225
51	449044.773	116696.947	26.675	1.950	1200		1 5.001 5.002	24.800 24.800 24.725	225 225 300
54	449032.634	116693.150	26.550	1.650	1200		0 7.000	24.900	150



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
50	449036.941	116688.938	26.450	1.800	1200		1 7.000 2 5.002	24.800 24.650	150 300
						0	5.003	24.650	300
49	449052.862	116673.369	26.125	1.800	1200		1 5.003	24.325	300
						0	5.004	24.325	300
Att. Tank 2	449099.894	116543.723	23.700	3.210			1 12.003	20.490	375
						0	12.004	20.490	375
59	449079.899	116610.801	25.050	1.725	1200		0 8.000	23.325	225
58	449077.173	116622.789	25.285	1.977	1200		1 8.001	23.308	225
						0	8.002	23.308	225
57	449064.998	116625.069	25.200	2.040	1200		1 8.002	23.235	225
						0	8.003	23.160	300
56	449059.866	116647.637	25.650	2.584	1200		1 8.003	23.066	300
						0	8.004	23.066	300
41	449057.302	116653.666	25.775	3.282	1350		1 8.004 2 5.004 3 1.005	22.643 22.643 22.568	300 300 375
						0	1.006	22.493	450
40	449027.250	116646.126	25.350	2.934	1350		1 1.006	22.416	450
						0	1.007	22.416	450
81	448976.451	116779.293	27.500	1.650	1200		0 19.000	25.850	150
80	448970.756	116768.449	27.250	1.650	1200		1 19.000	25.600	150
						0	19.001	25.600	150
79	448963.849	116764.624	27.025	1.974	1200		1 20.001 2 19.001	25.170 25.201	225 150
						0	19.002	25.051	300
76	449006.402	116772.007	28.450	1.650	1200		0 10.000	26.800	150

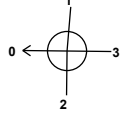
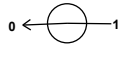
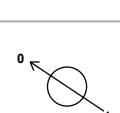
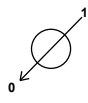
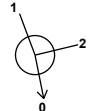


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
74	449052.813	116766.232	28.600	1.725	1200		0	9.000	26.875	225
73	449038.956	116766.232	28.825	2.031	1200		1	9.000	26.794	225
72	449018.882	116768.206	28.850	2.330	1200		0	9.001	26.794	225
71	449014.565	116750.590	28.415	2.399	1200		1	10.000	26.670	150
75	449013.561	116713.483	27.050	1.725	1200		2	9.001	26.595	225
70	448995.525	116731.121	27.375	2.273	1200		0	9.002	26.520	300
SSID4	448968.822	116703.815	26.085	2.405	1500		1	9.002	26.016	300
39	449115.854	116619.706	25.090	1.800	1200		0	9.003	26.016	300
38	449125.623	116577.270	24.285	2.084	1200		0	11.000	25.325	225
31	449160.114	116596.529	24.515	1.725	1200		1	11.000	25.177	225
30	449159.305	116555.224	24.800	2.503	1200		2	9.004	25.102	300
29	449146.041	116543.209	24.100	2.250	1200		0	9.005	25.102	300
28	449125.202	116543.441	23.675	3.137	1350		1	9.006	23.905	375
							0	9.007	23.680	600



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
36	449061.237	116493.427	22.100	1.580	1200		0	15.000	20.520	300
Att. Tank 3	449067.371	116507.109	22.200	1.730			1	15.000	20.470	300
							0	15.001	20.470	300
37	449089.443	116511.124	22.875	1.725	1200		0	14.000	21.150	225
35	449072.481	116518.507	22.825	2.454	1350		1	15.001	20.446	300
							2	14.000	20.521	225
34	449074.346	116522.667	22.950	2.593	1350		1	14.001	20.357	375
							0	14.001	20.371	375
33	449071.186	116580.625	24.325	1.650	1200		1	14.001	20.357	375
							0	14.002	20.357	375
32	449075.905	116559.712	23.875	2.252	1200		0	16.000	22.675	150
							1	16.000	21.623	150
Att. Tank 4	449162.549	116644.405	24.925	1.875			1	16.001	21.623	150
							0	16.001	21.623	150
27	449074.586	116544.005	23.525	3.448	1350		1	3.000	23.050	225
							0	3.001	23.050	225
26	449052.769	116544.248	23.250	3.227	1350		1	16.001	20.441	150
							2	14.002	20.291	375
11	448896.589	116555.562	20.700	2.071	1350		3	12.004	20.152	375
							0	12.005	20.077	450
69	448976.299	116711.461	26.275	2.212	1800		1	12.005	20.023	450
							0	12.006	20.023	450
SSID2	449013.936	116642.927	25.300	4.020	1500		1	25.006	18.629	375
							0	25.007	18.629	375

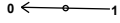
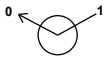


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
SSID6	449035.683	116543.560	23.100	3.269	1500	0 1 2	1 2 0	17.001 12.006 12.007	19.970 19.981 19.831	600 450 600
Basin J	449044.510	116465.091	21.700	1.200		0				
LA S12	449064.886	116425.631	22.610	1.909	1350	0	0	38.000	20.701	450
Basin I	449095.972	116436.196	22.750	1.250	1200	0	0	37.000	21.500	300
Basin I Inlet	449083.708	116445.060	21.700	1.200		0 1	1	37.000	20.500	300
LA Inlet	449062.093	116437.167	21.700	1.200		0 1	1	38.000	20.500	450
SSID10	448934.783	116737.557	26.575	3.675	1350	1 0	1 0	19.005 19.006	22.900 22.900	450 450
SSID8	449027.763	116510.915	22.075	1.905	1500	0	0	17.000	20.170	600
SSID7	449034.018	116526.838	22.550	2.440	1500	0 1	1 0	17.000 17.001	20.110 20.110	600 600
SSID5	449027.676	116580.174	24.115	4.554	1500	0 1	1 0	12.007 12.008	19.561 19.561	600 600
SSID3	449003.766	116670.105	25.600	3.100	1500	1 0	1 0	9.007 9.008	22.500 22.500	600 600
Basin H	448733.321	116703.121	19.156	1.500		0	0	36.000	17.656	675
Basin H FC	448723.067	116702.612	19.300	1.747	2400	0 1	1 0	36.000 36.001	17.553 17.553	675 675

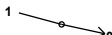
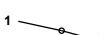


Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
Basin H Outfall	448693.613	116701.064	17.400	1.005		 1	36.001	16.395	675
Att. Tank 5	449128.796	116664.318	25.475	2.700		 1	2.004	22.775	375
						0	2.005	22.775	375
Att. Tank 6	449078.536	116616.795	25.025	1.710		 1	8.000	23.315	225
						0	8.001	23.315	225
82	448975.925	116752.815	27.150	1.925	1200	 0			
						0	20.000	25.225	225
Att. Tank 7	449004.346	116740.140	27.425	2.305		 1	9.003	25.980	300
						0	9.004	25.120	300
78	448949.124	116756.470	26.800	1.818	1200	 1	19.002	24.982	300
						0	19.003	24.982	300
SSID12	448925.440	116765.131	26.825	3.715	1350	 0			
						0	21.000	23.110	450
SSID11	448926.963	116750.097	26.700	3.700	1350	 1	21.000	23.000	450
						2	19.004	23.150	300
						0	19.005	23.000	450
77	448939.123	116761.783	26.950	2.015	1200	 1	19.003	24.935	300
						0	19.004	24.935	300
Att. Tank 8	448969.887	116758.720	27.000	1.810		 1	20.000	25.190	225
						0	20.001	25.190	225
Att. Tank 9	448992.367	116613.444	23.300	3.940		 1	1.009	19.360	750
						0	1.010	19.360	750
Att. Tank 10	448996.896	116550.552	22.415	2.165		 1	25.000	20.250	225
						0	25.001	20.250	225
Att. Tank 11	448920.017	116539.940	20.700	2.035		 1	25.005	18.665	375
						0	25.006	18.665	375



Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
FD Junction 8	449191.667	116678.164	25.215	1.300			0	29.000	23.915	375
103	449188.878	116652.396	24.950	1.115	1350		1	29.000	23.835	375
							0	29.001	23.835	375
FD Junction 7	449207.440	116647.404	24.625	0.849			1	29.001	23.776	375
							0	29.002	23.776	375
FD Junction 6	449233.594	116641.743	24.750	1.056			1	29.002	23.694	375
							0	29.003	23.694	375

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15 | 30 | 60 | 120 | 240 | 480 | 720 | 1440 | 2880

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	40	0	0
100	45	10	0

Node 69 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	24.063	Product Number	CTL-SHE-0177-1820-1942-1820
Design Depth (m)	1.942	Min Outlet Diameter (m)	0.225
Design Flow (l/s)	18.2	Min Node Diameter (mm)	1800

Node 77 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.650	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Flow (l/s)	100.0		
Invert Level (m)	24.935	Diameter (m)	0.257		



Node Basin I Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	21.500	Product Number	CTL-SHE-0047-1000-1000-1000
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Basin J Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	20.500	Product Number	CTL-SHE-0235-2960-1000-2960
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.300
Design Flow (l/s)	29.6	Min Node Diameter (mm)	1800

Node 40 Online Orifice Control

Flap Valve	x	Design Depth (m)	2.500	Discharge Coefficient	0.600
Replaces Downstream Link	x	Design Flow (l/s)	400.0		
Invert Level (m)	22.416	Diameter (m)	0.354		

Node Basin H FC Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	17.553	Product Number	CTL-SHE-0340-7080-1081-7080
Design Depth (m)	1.081	Min Outlet Diameter (m)	0.375
Design Flow (l/s)	70.8	Min Node Diameter (mm)	2400

Node Att. Tank 8 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	25.190	Depth (m)	0.840
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	5	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.000	Number Required	1
Porosity	0.94	Pit Length (m)	10.000		

Node Att. Tank 9 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	19.360	Depth (m)	1.470
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	9	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.500	Number Required	1
Porosity	0.94	Pit Length (m)	40.000		

Node Basin J Pond Storage Structure

Invert Level (m)	20.500	Time to half empty (mins)	0	Analyse flow through structure	x
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Inlets HW2

Depth (m)	Area (m²)	Depth (m)	Area (m²)
0.000	918.0	1.200	1693.0



Node Att. Tank 2 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	20.490	Depth (m)	0.840
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.94	Pit Length (m)	20.000		

Node Att. Tank 5 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	22.775	Depth (m)	1.050
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	17	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.000	Number Required	1
Porosity	0.94	Pit Length (m)	40.000		

Node Att. Tank 6 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	23.315	Depth (m)	1.470
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.500	Number Required	1
Porosity	0.94	Pit Length (m)	10.000		

Node Att. Tank 7 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	25.120	Depth (m)	1.260
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	63	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	6.000	Number Required	1
Porosity	0.94	Pit Length (m)	22.000		

Node Basin H Pond Storage Structure

Invert Level (m) 17.656 | Time to half empty (mins) | Analyse flow through structure x

Inlets
HW1

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	2820.0	1.500	4587.0

Node Att. Tank 10 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	20.250	Depth (m)	0.840
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	9	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.000	Number Required	1
Porosity	0.94	Pit Length (m)	14.000		

Node Att. Tank 4 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	23.050	Depth (m)	1.260
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	18	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.94	Pit Length (m)	25.000		



Node Att. Tank 3 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	20.470	Depth (m)	1.050
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	8	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.000	Number Required	1
Porosity	0.94	Pit Length (m)	20.000		

Node Att. Tank 1 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	22.715	Depth (m)	0.630
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	7	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	4.000	Number Required	1
Porosity	0.94	Pit Length (m)	25.000		

Node Att. Tank 11 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	18.665	Depth (m)	1.260
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	17	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	3.500	Number Required	1
Porosity	0.94	Pit Length (m)	40.000		



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	102	11	23.652	0.061	3.5	0.0876	0.0000	OK
15 minute summer	FD Junction 5	11	23.643	0.106	11.7	0.0000	0.0000	OK
15 minute summer	FD Junction 4	11	23.587	0.113	11.6	0.0000	0.0000	OK
15 minute summer	FD Junction 3	13	23.435	0.103	11.9	0.0000	0.0000	OK
15 minute summer	FD Junction 2	12	23.395	0.151	23.1	0.0000	0.0000	OK
30 minute summer	FD Junction 1	21	23.260	0.169	22.0	0.0000	0.0000	OK
30 minute summer	101	22	22.944	0.088	20.6	0.1256	0.0000	OK
30 minute summer	100	22	22.666	0.068	20.4	0.0972	0.0000	OK
30 minute summer	99	23	21.718	0.071	20.4	0.1022	0.0000	OK
30 minute summer	HW3	23	21.171	0.071	20.3	0.0000	0.0000	OK
15 minute summer	15A	10	20.400	0.075	10.2	0.0853	0.0000	OK
30 minute summer	15	20	20.260	0.073	8.7	0.0821	0.0000	OK
15 minute summer	14A	10	21.478	0.053	16.4	0.0594	0.0000	OK
15 minute summer	14	11	20.122	0.151	34.7	0.1713	0.0000	OK
15 minute summer	13	11	19.922	0.096	34.7	0.1089	0.0000	OK
15 minute summer	18	11	19.750	0.050	4.5	0.0566	0.0000	OK
15 minute summer	17	10	19.455	0.055	16.0	0.0618	0.0000	OK
15 minute summer	12	11	18.881	0.183	62.7	0.2618	0.0000	OK
15 minute summer	16	10	20.711	0.061	16.0	0.0686	0.0000	OK
30 minute summer	10	20	18.589	0.190	59.5	0.2713	0.0000	OK
30 minute summer	9	20	18.455	0.191	60.1	0.2734	0.0000	OK
30 minute summer	SSID1	21	19.667	0.237	205.0	0.6022	0.0000	OK
30 minute summer	8	22	19.550	0.259	188.9	0.6597	0.0000	OK
30 minute summer	7	22	19.406	0.269	192.4	0.6848	0.0000	OK
15 minute summer	25	10	22.878	0.103	16.7	0.1159	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	102	29.004	FD Junction 5	3.4	0.201	0.051	0.3276	
15 minute summer	FD Junction 5	29.005	FD Junction 4	11.6	0.439	0.178	0.5499	
15 minute summer	FD Junction 4	29.006	FD Junction 3	11.9	0.478	0.182	1.1625	
15 minute summer	FD Junction 3	29.007	FD Junction 2	10.9	0.351	0.168	0.9202	
15 minute summer	FD Junction 2	29.008	FD Junction 1	22.8	0.546	0.349	2.1775	
30 minute summer	FD Junction 1	29.009	101	20.6	0.621	0.316	2.5821	
30 minute summer	101	29.010	100	20.4	1.238	0.110	0.4977	
30 minute summer	100	29.011	99	20.4	1.452	0.072	0.6684	
30 minute summer	99	29.012	HW3	20.3	1.403	0.079	0.4827	17.6
15 minute summer	15A	25.000	Att. Tank 10	10.2	1.466	0.234	0.0891	
30 minute summer	15	25.002	14	8.6	0.792	0.216	0.2601	
15 minute summer	14A	26.000	14	16.3	2.067	0.120	0.1916	
15 minute summer	14	25.003	13	34.7	1.263	0.490	0.9770	
15 minute summer	13	25.004	12	34.6	1.834	0.206	0.4606	
15 minute summer	18	27.000	17	4.4	0.671	0.107	0.2366	
15 minute summer	17	27.001	12	15.9	1.364	0.073	0.2598	
15 minute summer	12	25.005	Att. Tank 11	62.7	1.998	0.495	0.3226	
15 minute summer	16	28.000	10	15.6	1.836	0.156	0.4839	
30 minute summer	10	25.008	9	59.4	1.058	0.466	1.8536	
30 minute summer	9	25.009	1	59.5	1.111	0.467	1.2717	
30 minute summer	SSID1	1.009	Att. Tank 9	203.2	2.053	0.164	0.8368	
30 minute summer	8	1.011	7	189.8	1.372	0.217	4.2358	
30 minute summer	7	1.012	6	193.0	1.590	0.273	1.3360	
15 minute summer	25	18.000	24	16.5	1.051	0.234	0.4935	



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	24	10	22.711	0.062	30.3	0.0706	0.0000	OK
30 minute summer	6	22	19.313	0.212	209.4	0.5393	0.0000	OK
15 minute summer	SSID9	11	22.893	0.113	105.8	0.1612	0.0000	OK
15 minute summer	22	10	23.115	0.040	11.5	0.0449	0.0000	OK
15 minute summer	23	10	22.964	0.039	11.8	0.0441	0.0000	OK
15 minute summer	21	11	20.212	0.139	138.6	0.2449	0.0000	OK
30 minute summer	5	20	18.866	0.287	312.9	0.7307	0.0000	OK
15 minute summer	20	10	22.231	0.041	6.6	0.0458	0.0000	OK
15 minute summer	19	10	21.481	0.031	10.2	0.0353	0.0000	OK
30 minute summer	4	20	18.611	0.306	318.3	0.7785	0.0000	OK
30 minute summer	3	21	18.429	0.341	317.5	0.8671	0.0000	OK
30 minute summer	2	21	18.233	0.330	322.8	0.8399	0.0000	OK
30 minute summer	1	21	18.112	0.320	384.1	0.8135	0.0000	OK
480 minute summer	HW1	312	17.874	0.218	144.9	0.0000	0.0000	OK
15 minute summer	90	10	23.655	0.055	10.3	0.0619	0.0000	OK
15 minute summer	89	11	23.135	0.085	12.0	0.0965	0.0000	OK
30 minute summer	Att. Tank 1	22	22.801	0.086	22.8	8.0819	0.0000	OK
15 minute summer	98	10	23.533	0.043	6.9	0.0490	0.0000	OK
15 minute summer	88	11	22.900	0.124	22.2	0.1403	0.0000	OK
15 minute summer	87	11	22.845	0.116	25.0	0.1307	0.0000	OK
15 minute summer	97	10	23.699	0.049	8.6	0.0554	0.0000	OK
30 minute summer	86	20	22.776	0.073	23.0	0.0821	0.0000	OK
15 minute summer	96	10	23.479	0.054	13.1	0.0612	0.0000	OK
30 minute summer	85	19	21.663	0.083	39.5	0.0943	0.0000	OK
15 minute summer	94	10	21.780	0.055	5.1	0.0623	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	24	18.001	6	30.0	2.877	0.092	0.3789	
30 minute summer	6	1.013	5	210.4	1.746	0.170	6.6438	
15 minute summer	SSID9	19.007	21	106.1	3.518	0.131	1.2322	
15 minute summer	22	22.000	21	11.4	2.464	0.065	0.1093	
15 minute summer	23	23.000	21	11.7	2.610	0.063	0.0866	
15 minute summer	21	19.008	5	138.7	2.924	0.110	1.9129	
30 minute summer	5	1.014	4	310.7	1.926	0.251	4.4346	
15 minute summer	20	24.000	19	6.6	1.615	0.063	0.0755	
15 minute summer	19	24.001	4	10.1	3.132	0.039	0.0343	
30 minute summer	4	1.015	3	317.1	1.751	0.257	3.9247	
30 minute summer	3	1.016	2	319.9	1.679	0.367	7.0670	
30 minute summer	2	1.017	1	323.4	1.770	0.262	2.0201	
30 minute summer	1	2.008	HW1	384.1	4.676	0.400	2.1494	
15 minute summer	90	30.000	89	10.2	1.016	0.131	0.2579	
15 minute summer	89	30.001	88	11.7	0.867	0.295	0.4573	
30 minute summer	Att. Tank 1	30.004	86	13.2	0.935	0.183	0.0416	
15 minute summer	98	31.000	88	6.9	1.240	0.081	0.1385	
15 minute summer	88	30.002	87	22.3	0.848	0.314	0.3009	
15 minute summer	87	30.003	Att. Tank 1	25.0	1.752	0.322	0.0517	
15 minute summer	97	32.000	86	8.5	1.349	0.101	0.2127	
30 minute summer	86	30.005	85	23.0	1.627	0.130	0.6433	
15 minute summer	96	33.000	85	12.9	1.777	0.124	0.3232	
30 minute summer	85	30.006	84	39.5	2.002	0.171	0.4127	
15 minute summer	94	34.000	93	5.0	0.561	0.127	0.1009	



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	93	10	21.729	0.070	7.6	0.0791	0.0000	OK
15 minute summer	95	10	22.559	0.038	6.3	0.0425	0.0000	OK
15 minute summer	92	10	21.599	0.068	18.0	0.0770	0.0000	OK
15 minute summer	91	11	21.011	0.117	20.9	0.1323	0.0000	OK
15 minute summer	84	12	20.953	0.210	59.2	0.3001	0.0000	OK
15 minute summer	83	12	20.874	0.205	62.2	0.2931	0.0000	OK
720 minute summer	HW2	435	20.596	0.096	14.6	0.0000	0.0000	OK
15 minute summer	48	10	25.524	0.034	3.9	0.0384	0.0000	OK
15 minute summer	47	10	25.151	0.061	9.7	0.0688	0.0000	OK
15 minute summer	46	11	24.787	0.072	16.2	0.0811	0.0000	OK
15 minute summer	45	11	24.041	0.056	23.1	0.0795	0.0000	OK
15 minute summer	68	10	23.156	0.066	7.6	0.0745	0.0000	OK
120 minute summer	67	68	23.052	0.042	2.8	0.0472	0.0000	OK
15 minute summer	44	11	22.890	0.093	26.4	0.1329	0.0000	OK
15 minute summer	66	10	23.714	0.039	2.6	0.0442	0.0000	OK
15 minute summer	65	10	23.640	0.040	12.6	0.0456	0.0000	OK
30 minute summer	43	22	22.871	0.151	22.4	0.2165	0.0000	OK
15 minute summer	64	10	26.348	0.047	6.1	0.0537	0.0000	OK
15 minute summer	63	10	26.180	0.055	7.3	0.0619	0.0000	OK
15 minute summer	62	11	25.964	0.064	14.1	0.0727	0.0000	OK
15 minute summer	61	11	24.608	0.058	25.2	0.0655	0.0000	OK
15 minute summer	60	11	23.369	0.064	35.3	0.0910	0.0000	OK
30 minute summer	42	22	22.860	0.159	40.1	0.2279	0.0000	OK
15 minute summer	53	10	25.154	0.029	3.0	0.0331	0.0000	OK
15 minute summer	52	10	24.945	0.067	7.2	0.0756	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	93	34.001	92	7.5	0.748	0.188	0.0902	
15 minute summer	95	35.000	92	6.3	1.859	0.128	0.0380	
15 minute summer	92	34.002	91	17.8	0.986	0.114	0.6122	
15 minute summer	91	34.003	84	20.8	0.773	0.289	0.4977	
15 minute summer	84	30.007	83	59.2	0.947	0.536	1.5007	
15 minute summer	83	30.008	HW2	62.8	2.293	0.568	1.7406	
15 minute summer	48	2.000	47	3.9	0.637	0.049	0.1105	
15 minute summer	47	2.001	46	9.5	1.126	0.151	0.1739	
15 minute summer	46	2.002	45	16.0	1.259	0.123	0.6063	
15 minute summer	45	2.003	44	23.2	1.516	0.048	0.3264	
15 minute summer	68	3.000	Att. Tank 4	7.6	1.528	0.190	0.0407	
120 minute summer	67	3.002	44	2.8	0.571	0.071	0.0530	
15 minute summer	44	2.004	Att. Tank 5	26.4	2.271	0.138	0.0432	
15 minute summer	66	4.000	65	2.5	0.461	0.035	0.1007	
15 minute summer	65	4.001	43	12.6	1.960	0.039	0.0729	
30 minute summer	43	2.006	42	22.8	0.580	0.207	0.2660	
15 minute summer	64	1.000	63	6.1	0.896	0.094	0.0777	
15 minute summer	63	1.001	62	7.1	0.992	0.119	0.0808	
15 minute summer	62	1.002	61	14.0	1.360	0.097	0.8381	
15 minute summer	61	1.003	60	25.1	2.739	0.074	0.1177	
15 minute summer	60	1.004	42	35.3	1.413	0.064	0.2139	
30 minute summer	42	1.005	41	40.4	0.893	0.365	2.4037	
15 minute summer	53	5.000	52	3.0	0.486	0.036	0.0635	
15 minute summer	52	5.001	51	7.0	0.741	0.177	0.1267	



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	10	25.522	0.047	9.7	0.0537	0.0000	OK
15 minute summer	51	10	24.822	0.097	18.0	0.1092	0.0000	OK
15 minute summer	54	10	24.949	0.049	4.6	0.0549	0.0000	OK
15 minute summer	50	10	24.741	0.091	23.3	0.1030	0.0000	OK
15 minute summer	49	11	24.386	0.061	29.9	0.0693	0.0000	OK
15 minute summer	Att. Tank 2	12	20.587	0.097	50.6	5.4590	0.0000	OK
30 minute summer	59	19	23.388	0.063	7.2	0.0718	0.0000	OK
30 minute summer	58	20	23.372	0.064	6.5	0.0725	0.0000	OK
15 minute summer	57	11	23.265	0.105	17.6	0.1188	0.0000	OK
15 minute summer	56	11	23.122	0.056	22.2	0.0637	0.0000	OK
15 minute summer	41	12	22.801	0.308	95.6	0.4404	0.0000	OK
15 minute summer	40	12	22.763	0.347	96.3	0.4960	0.0000	OK
15 minute summer	81	10	25.884	0.034	2.9	0.0386	0.0000	OK
15 minute summer	80	10	25.642	0.042	6.2	0.0472	0.0000	OK
15 minute summer	79	11	25.180	0.129	23.7	0.1457	0.0000	OK
15 minute winter	76	12	26.808	0.008	0.1	0.0090	0.0000	OK
15 minute summer	74	10	26.944	0.069	7.5	0.0778	0.0000	OK
15 minute summer	73	10	26.868	0.074	11.6	0.0840	0.0000	OK
15 minute summer	72	11	26.576	0.056	14.4	0.0636	0.0000	OK
15 minute summer	71	11	26.104	0.088	18.1	0.0992	0.0000	OK
15 minute summer	75	10	25.403	0.078	9.9	0.0880	0.0000	OK
30 minute summer	70	19	25.166	0.064	21.0	0.0722	0.0000	OK
30 minute summer	SSID4	21	23.736	0.056	19.1	0.0990	0.0000	OK
15 minute summer	39	10	23.343	0.053	12.2	0.0599	0.0000	OK
15 minute summer	38	10	22.262	0.061	22.2	0.0686	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	6.000	51	9.6	1.616	0.092	0.1008	
15 minute summer	51	5.002	50	17.8	0.950	0.196	0.2107	
15 minute summer	54	7.000	50	4.5	0.967	0.198	0.0283	
15 minute summer	50	5.003	49	23.1	1.648	0.172	0.3152	
15 minute summer	49	5.004	41	29.8	2.411	0.093	0.4752	
15 minute summer	Att. Tank 2	12.004	27	44.5	1.505	0.149	0.5103	
30 minute summer	59	8.000	Att. Tank 6	7.1	1.075	0.147	0.0103	
30 minute summer	58	8.002	57	6.5	0.725	0.164	0.1116	
15 minute summer	57	8.003	56	17.5	1.146	0.248	0.3600	
15 minute summer	56	8.004	41	22.1	1.948	0.078	0.1514	
15 minute summer	41	1.006	40	93.5	0.763	0.584	3.8199	
15 minute summer	40	1.007	SSID2	95.9	2.641	0.157	0.4976	
15 minute summer	81	19.000	80	2.9	0.826	0.113	0.0428	
15 minute summer	80	19.001	79	6.1	1.589	0.152	0.0304	
15 minute summer	79	19.002	78	23.7	0.787	0.334	0.5123	
15 minute winter	76	10.000	72	0.1	0.263	0.005	0.0046	
15 minute summer	74	9.000	73	7.4	0.684	0.187	0.1502	
15 minute summer	73	9.001	72	11.4	1.028	0.221	0.2237	
15 minute summer	72	9.002	71	14.4	1.115	0.078	0.2379	
15 minute summer	71	9.003	Att. Tank 7	18.2	1.116	0.164	0.0588	
15 minute summer	75	11.000	70	9.7	0.819	0.244	0.2994	
30 minute summer	70	9.005	69	21.0	1.059	0.101	1.1112	
30 minute summer	SSID4	9.007	SSID3	19.0	1.550	0.018	0.6026	
15 minute summer	39	13.000	38	12.1	1.307	0.069	0.4030	
15 minute summer	38	13.001	28	21.9	1.831	0.091	0.4652	



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	31	10	22.845	0.055	7.4	0.0624	0.0000	OK
15 minute summer	30	10	22.351	0.054	10.3	0.0613	0.0000	OK
15 minute summer	29	11	21.907	0.057	16.7	0.0647	0.0000	OK
15 minute summer	28	11	20.702	0.164	48.6	0.2341	0.0000	OK
15 minute summer	36	10	20.581	0.061	9.9	0.0694	0.0000	OK
30 minute summer	Att. Tank 3	22	20.529	0.059	9.0	3.3036	0.0000	OK
15 minute summer	37	10	21.190	0.040	6.4	0.0452	0.0000	OK
30 minute summer	35	19	20.460	0.089	10.0	0.1279	0.0000	OK
15 minute summer	34	11	20.448	0.091	13.8	0.1308	0.0000	OK
15 minute summer	33	10	22.693	0.018	1.1	0.0199	0.0000	OK
15 minute summer	32	11	21.638	0.015	1.1	0.0175	0.0000	OK
120 minute summer	Att. Tank 4	70	23.090	0.040	3.8	2.8498	0.0000	OK
15 minute summer	27	12	20.310	0.233	72.8	0.3338	0.0000	OK
15 minute summer	26	12	20.252	0.229	78.6	0.3282	0.0000	OK
30 minute summer	11	21	18.771	0.142	40.6	0.2038	0.0000	OK
30 minute summer	69	22	24.533	0.470	23.7	1.1970	0.0000	SURCHARGED
15 minute summer	SSID2	12	21.424	0.144	120.4	0.2544	0.0000	OK
15 minute summer	SSID6	12	19.992	0.161	86.0	0.2852	0.0000	OK
720 minute summer	Basin J	450	20.592	0.092	9.2	88.7636	0.0000	OK
15 minute summer	LA S12	10	20.835	0.134	73.6	0.1911	0.0000	OK
15 minute summer	Basin I	12	21.595	0.095	0.9	0.1071	0.0000	OK
15 minute summer	Basin I Inlet	12	20.511	0.011	0.7	0.0000	0.0000	OK
15 minute summer	LA Inlet	10	20.625	0.125	73.4	0.0000	0.0000	OK
15 minute summer	SSID10	11	23.111	0.211	99.3	0.3013	0.0000	OK
15 minute summer	SSID8	10	20.199	0.029	1.9	0.0513	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	31	12.000	30	7.3	0.984	0.129	0.3071	
15 minute summer	30	12.001	29	10.1	1.330	0.123	0.1365	
15 minute summer	29	12.002	28	16.6	2.134	0.134	0.1618	
15 minute summer	28	12.003	Att. Tank 2	50.6	1.570	0.454	0.5195	
15 minute summer	36	15.000	Att. Tank 3	9.9	1.589	0.089	0.0409	
30 minute summer	Att. Tank 3	15.001	35	4.1	0.487	0.084	0.1045	
15 minute summer	37	14.000	35	6.3	1.358	0.066	0.0863	
30 minute summer	35	14.001	34	10.0	0.491	0.090	0.0927	
15 minute summer	34	14.002	27	13.6	0.704	0.123	0.4132	
15 minute summer	33	16.000	32	1.1	1.035	0.027	0.0224	
15 minute summer	32	16.001	27	1.1	1.116	0.022	0.0149	
120 minute summer	Att. Tank 4	3.001	67	2.7	0.545	0.067	0.0333	
15 minute summer	27	12.005	26	72.8	0.887	0.455	1.7906	
15 minute summer	26	12.006	SSID6	79.2	1.079	0.497	1.2557	
30 minute summer	11	25.007	10	40.3	0.906	0.316	2.6144	
30 minute summer	69	9.006	SSID4	17.8	1.248	0.073	0.1525	
15 minute summer	SSID2	1.008	SSID1	119.9	2.446	0.112	1.1757	
15 minute summer	SSID6	12.007	SSID5	86.4	1.171	0.148	2.7743	
720 minute summer	Basin J	Hydro-Brake®		6.6				137.9
15 minute summer	LA S12	38.000	LA Inlet	73.4	1.951	0.174	0.4467	31.8
15 minute summer	Basin I	37.000	Basin I Inlet	0.7	0.876	0.003	0.0126	0.4
15 minute summer	SSID10	19.006	SSID9	99.7	1.949	0.417	1.1302	
15 minute summer	SSID8	17.000	SSID7	1.8	0.343	0.005	0.0933	



Results for 1 year Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	SSID7	11	20.143	0.033	3.6	0.0584	0.0000	OK
15 minute summer	SSID5	12	19.770	0.209	90.2	0.3688	0.0000	OK
15 minute summer	SSID3	11	22.552	0.052	22.7	0.0921	0.0000	OK
480 minute summer	Basin H	320	17.863	0.207	93.3	624.7992	0.0000	OK
720 minute summer	Basin H FC	435	17.918	0.365	86.2	1.6519	0.0000	OK
480 minute summer	Basin H Outfall	336	16.477	0.082	60.5	0.0000	0.0000	OK
30 minute summer	Att. Tank 5	22	22.861	0.086	33.1	12.9499	0.0000	OK
30 minute summer	Att. Tank 6	20	23.379	0.064	7.1	2.0943	0.0000	OK
15 minute summer	82	11	25.297	0.072	10.1	0.0815	0.0000	OK
30 minute summer	Att. Tank 7	22	25.178	0.058	16.9	7.1728	0.0000	OK
15 minute summer	78	11	25.121	0.139	23.7	0.1574	0.0000	OK
15 minute summer	SSID12	10	23.296	0.186	75.5	0.2663	0.0000	OK
15 minute summer	SSID11	11	23.214	0.214	97.1	0.3068	0.0000	OK
15 minute summer	77	12	25.098	0.163	23.3	0.1841	0.0000	OK
15 minute summer	Att. Tank 8	12	25.265	0.075	10.0	1.4117	0.0000	OK
30 minute summer	Att. Tank 9	22	19.602	0.242	203.2	31.8711	0.0000	OK
30 minute summer	Att. Tank 10	21	20.305	0.055	9.2	2.9101	0.0000	OK
30 minute summer	Att. Tank 11	22	18.807	0.142	58.1	18.6481	0.0000	OK
15 minute summer	FD Junction 8	11	23.934	0.019	0.4	0.0000	0.0000	OK
15 minute summer	103	11	23.876	0.041	1.5	0.0585	0.0000	OK
15 minute summer	FD Junction 7	13	23.822	0.046	1.5	0.0000	0.0000	OK
30 minute summer	FD Junction 6	23	23.728	0.034	1.3	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 summer	SSID7	17.001	SSID6	3.6	0.611	0.006	0.0996	
15 minute summer	SSID5	12.008	SSID1	88.4	0.998	0.236	3.6353	
15 minute summer	SSID3	9.008	SSID2	22.5	0.827	0.016	0.9228	
480 minute summer	Basin H	36.000	Basin H FC	93.6	0.752	0.100	1.4571	
720 minute summer	Basin H FC	36.001	Basin H Outfall	57.7	2.368	0.031	0.7285	1218.0
30 minute summer	Att. Tank 5	2.005	43	18.0	0.679	0.080	0.1335	
30 minute summer	Att. Tank 6	8.001	58	5.0	0.551	0.122	0.0106	
15 minute summer	82	20.000	Att. Tank 8	10.0	1.163	0.191	0.0385	
30 minute summer	Att. Tank 7	9.004	70	7.9	0.934	0.067	0.0152	
15 minute summer	78	19.003	77	23.3	0.659	0.327	0.4009	
15 minute summer	SSID12	21.000	SSID11	75.0	1.118	0.272	1.0248	
15 minute summer	SSID11	19.005	SSID10	97.5	1.325	0.367	1.0877	
15 minute summer	77	19.004	SSID11	23.0	2.840	0.063	0.1596	
15 minute summer	Att. Tank 8	20.001	79	8.6	0.775	0.219	0.0384	
30 minute summer	Att. Tank 9	1.010	8	184.4	1.432	0.150	0.8946	
30 minute summer	Att. Tank 10	25.001	15	5.3	0.592	0.132	0.0988	
30 minute summer	Att. Tank 11	25.006	11	34.6	0.910	0.261	0.3119	
15 minute summer	FD Junction 8	29.000	103	0.3	0.080	0.005	0.1095	
15 minute summer	103	29.001	FD Junction 7	1.5	0.251	0.023	0.1270	
15 minute summer	FD Junction 7	29.002	FD Junction 6	1.4	0.292	0.021	0.1447	
30 minute summer	FD Junction 6	29.003	102	1.1	0.171	0.017	0.2354	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	102	12	23.888	0.297	24.3	0.4255	0.0000	OK
15 minute summer	FD Junction 5	12	23.895	0.358	53.1	0.0000	0.0000	OK
15 minute summer	FD Junction 4	12	23.878	0.404	50.1	0.0000	0.0000	SURCHARGED
15 minute summer	FD Junction 3	12	23.857	0.525	50.8	0.0000	0.0000	SURCHARGED
15 minute summer	FD Junction 2	12	23.841	0.597	91.7	0.0000	0.0000	SURCHARGED
15 minute summer	FD Junction 1	12	23.549	0.458	90.1	0.0000	0.0000	SURCHARGED
15 minute summer	101	12	23.051	0.195	89.6	0.2796	0.0000	OK
15 minute summer	100	13	22.745	0.147	88.9	0.2101	0.0000	OK
15 minute summer	99	13	21.803	0.156	89.4	0.2228	0.0000	OK
15 minute summer	HW3	13	21.251	0.151	89.5	0.0000	0.0000	OK
15 minute summer	15A	12	20.692	0.367	48.1	0.4152	0.0000	SURCHARGED
30 minute summer	15	20	20.627	0.440	47.7	0.4974	0.0000	SURCHARGED
15 minute summer	14A	10	21.550	0.125	76.8	0.1415	0.0000	OK
15 minute summer	14	11	20.578	0.607	131.5	0.6869	0.0000	SURCHARGED
15 minute summer	13	12	20.033	0.207	120.2	0.2345	0.0000	OK
15 minute summer	18	10	19.816	0.116	21.0	0.1314	0.0000	OK
30 minute summer	17	19	19.531	0.131	69.5	0.1479	0.0000	OK
30 minute summer	12	22	19.530	0.832	239.6	1.1904	0.0000	SURCHARGED
15 minute summer	16	10	20.793	0.143	75.1	0.1621	0.0000	OK
30 minute summer	10	20	19.186	0.787	191.9	1.1262	0.0000	SURCHARGED
30 minute summer	9	19	18.805	0.541	195.1	0.7748	0.0000	SURCHARGED
30 minute summer	SSID1	22	20.288	0.858	594.2	2.1848	0.0000	SURCHARGED
30 minute summer	8	21	20.219	0.928	699.4	2.3619	0.0000	SURCHARGED
30 minute summer	7	21	20.126	0.989	708.1	2.5161	0.0000	SURCHARGED
15 minute summer	25	10	23.029	0.254	78.7	0.2874	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	102	29.004	FD Junction 5	29.3	0.372	0.449	1.7788	
15 minute summer	FD Junction 5	29.005	FD Junction 4	50.1	0.705	0.767	2.2526	
15 minute summer	FD Junction 4	29.006	FD Junction 3	50.8	0.548	0.779	5.0948	
15 minute summer	FD Junction 3	29.007	FD Junction 2	54.6	0.515	0.836	3.1518	
15 minute summer	FD Junction 2	29.008	FD Junction 1	87.0	0.789	1.333	5.5011	
15 minute summer	FD Junction 1	29.009	101	89.6	0.936	1.372	6.4313	
15 minute summer	101	29.010	100	88.9	1.823	0.480	1.4678	
15 minute summer	100	29.011	99	89.4	2.150	0.315	1.9774	
15 minute summer	99	29.012	HW3	89.5	2.116	0.349	1.4139	62.8
15 minute summer	15A	25.000	Att. Tank 10	45.1	1.776	1.040	0.4263	
30 minute summer	15	25.002	14	49.1	1.239	1.238	0.9550	
15 minute summer	14A	26.000	14	76.4	2.170	0.563	0.6398	
15 minute summer	14	25.003	13	120.2	1.808	1.699	2.1679	
15 minute summer	13	25.004	12	120.3	2.459	0.718	1.1940	
15 minute summer	18	27.000	17	20.5	1.019	0.503	0.7338	
30 minute summer	17	27.001	12	68.5	1.373	0.315	0.8259	
30 minute summer	12	25.005	Att. Tank 11	234.6	2.127	1.851	0.8998	
15 minute summer	16	28.000	10	74.6	2.204	0.743	1.8864	
30 minute summer	10	25.008	9	191.8	1.739	1.505	3.6427	
30 minute summer	9	25.009	1	196.3	1.781	1.539	2.5387	
30 minute summer	SSID1	1.009	Att. Tank 9	572.4	2.869	0.461	3.0553	
30 minute summer	8	1.011	7	702.0	1.796	0.802	13.4690	
30 minute summer	7	1.012	6	713.8	2.114	1.011	4.8202	
15 minute summer	25	18.000	24	77.9	1.609	1.104	1.5103	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	24	10	22.794	0.145	142.8	0.1644	0.0000	OK
30 minute summer	6	20	20.077	0.976	746.3	2.4832	0.0000	SURCHARGED
15 minute summer	SSID9	11	23.047	0.267	471.0	0.3819	0.0000	OK
15 minute summer	22	10	23.165	0.089	53.9	0.1012	0.0000	OK
15 minute summer	23	10	23.013	0.088	55.5	0.0998	0.0000	OK
15 minute summer	21	11	20.467	0.394	624.5	0.6964	0.0000	OK
30 minute summer	5	20	19.926	1.347	1078.7	3.4275	0.0000	SURCHARGED
15 minute summer	20	10	22.283	0.093	31.0	0.1047	0.0000	OK
15 minute summer	19	10	21.515	0.065	47.9	0.0731	0.0000	OK
15 minute summer	4	12	19.570	1.265	1111.7	3.2194	0.0000	SURCHARGED
30 minute summer	3	20	19.233	1.145	1118.7	2.9135	0.0000	SURCHARGED
15 minute winter	2	11	18.785	0.882	1131.7	2.2448	0.0000	SURCHARGED
15 minute winter	1	11	18.510	0.718	1312.6	1.8269	0.0000	OK
240 minute winter	HW1	240	18.387	0.731	508.1	0.0000	0.0000	OK
15 minute summer	90	11	23.777	0.177	48.2	0.2005	0.0000	OK
15 minute summer	89	11	23.595	0.545	54.5	0.6169	0.0000	SURCHARGED
30 minute summer	Att. Tank 1	21	23.072	0.357	104.3	33.5584	0.0000	SURCHARGED
15 minute summer	98	10	23.585	0.095	32.4	0.1080	0.0000	OK
15 minute summer	88	12	23.195	0.419	102.3	0.4735	0.0000	SURCHARGED
30 minute summer	87	21	23.094	0.365	106.6	0.4123	0.0000	SURCHARGED
15 minute summer	97	10	23.764	0.114	40.7	0.1289	0.0000	OK
30 minute summer	86	21	23.053	0.350	128.7	0.3963	0.0000	SURCHARGED
15 minute summer	96	11	23.569	0.144	61.5	0.1632	0.0000	OK
15 minute summer	85	12	22.781	1.201	199.4	1.3579	0.0000	SURCHARGED
15 minute summer	94	12	22.626	0.901	23.8	1.0188	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 summer	24	18.001	6	141.9	4.275	0.435	1.8382	
30 minute summer	6	1.013	5	776.0	2.014	0.628	22.9646	
15 minute summer	SSID9	19.007	21	471.9	5.081	0.581	3.7951	
15 minute summer	22	22.000	21	53.7	3.772	0.307	0.3358	
15 minute summer	23	23.000	21	55.3	3.987	0.294	0.2669	
15 minute summer	21	19.008	5	641.1	3.287	0.509	9.6344	
30 minute summer	5	1.014	4	1079.2	2.452	0.873	12.0606	
15 minute summer	20	24.000	19	30.9	2.504	0.296	0.2291	
15 minute summer	19	24.001	4	47.8	4.423	0.184	0.2610	
15 minute summer	4	1.015	3	1107.3	2.516	0.896	9.5335	
30 minute summer	3	1.016	2	1121.1	2.547	1.285	16.3263	
15 minute winter	2	1.017	1	1127.7	2.563	0.912	4.8305	
15 minute winter	1	2.008	HW1	1432.1	5.801	1.490	6.1513	
15 minute summer	90	30.000	89	46.0	1.350	0.589	0.8982	
15 minute summer	89	30.001	88	53.6	1.347	1.348	1.3440	
30 minute summer	Att. Tank 1	30.004	86	112.0	1.751	1.558	0.2001	
15 minute summer	98	31.000	88	32.3	1.257	0.379	0.6692	
15 minute summer	88	30.002	87	102.3	1.453	1.444	0.8073	
30 minute summer	87	30.003	Att. Tank 1	104.3	1.835	1.342	0.2001	
15 minute summer	97	32.000	86	41.0	1.996	0.489	0.9500	
30 minute summer	86	30.005	85	130.5	2.246	0.741	3.1625	
15 minute summer	96	33.000	85	59.3	2.444	0.570	1.4872	
15 minute summer	85	30.006	84	166.5	2.365	0.722	1.2554	
15 minute summer	94	34.000	93	21.8	0.743	0.549	0.4458	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	93	12	22.606	0.947	33.5	1.0707	0.0000	SURCHARGED
15 minute summer	95	12	22.821	0.300	29.7	0.3391	0.0000	SURCHARGED
15 minute summer	92	12	22.566	1.035	78.3	1.1701	0.0000	SURCHARGED
15 minute summer	91	12	22.420	1.526	77.7	1.7261	0.0000	SURCHARGED
15 minute summer	84	12	22.298	1.555	238.8	2.2251	0.0000	SURCHARGED
15 minute summer	83	12	21.855	1.186	251.0	1.6974	0.0000	SURCHARGED
120 minute summer	HW2	94	20.756	0.256	164.5	0.0000	0.0000	OK
15 minute summer	48	10	25.563	0.073	18.1	0.0827	0.0000	OK
15 minute summer	47	10	25.242	0.152	45.5	0.1722	0.0000	OK
15 minute summer	46	10	24.885	0.170	76.4	0.1923	0.0000	OK
15 minute summer	45	10	24.105	0.120	109.9	0.1724	0.0000	OK
60 minute summer	68	42	23.576	0.486	24.7	0.5491	0.0000	SURCHARGED
60 minute summer	67	42	23.569	0.559	42.5	0.6326	0.0000	SURCHARGED
30 minute summer	44	23	23.621	0.824	111.1	1.1793	0.0000	SURCHARGED
15 minute summer	66	10	23.762	0.087	12.0	0.0979	0.0000	OK
15 minute summer	65	10	23.686	0.086	59.2	0.0975	0.0000	OK
30 minute summer	43	23	23.618	0.898	244.1	1.2854	0.0000	SURCHARGED
15 minute summer	64	10	26.415	0.115	28.5	0.1305	0.0000	OK
15 minute summer	63	10	26.258	0.133	33.9	0.1508	0.0000	OK
15 minute summer	62	11	26.047	0.147	66.3	0.1666	0.0000	OK
15 minute summer	61	9	24.680	0.130	119.0	0.1466	0.0000	OK
30 minute summer	60	19	23.692	0.387	158.0	0.5544	0.0000	SURCHARGED
30 minute summer	42	20	23.622	0.921	179.9	1.3175	0.0000	SURCHARGED
15 minute summer	53	10	25.188	0.063	14.1	0.0707	0.0000	OK
15 minute summer	52	10	25.062	0.184	33.6	0.2086	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	93	34.001	92	31.8	1.050	0.797	0.3568	
15 minute summer	95	35.000	92	29.1	2.699	0.595	0.1986	
15 minute summer	92	34.002	91	66.4	1.186	0.428	2.3097	
15 minute summer	91	34.003	84	77.5	1.100	1.074	1.2602	
15 minute summer	84	30.007	83	233.6	2.118	2.115	2.6502	
15 minute summer	83	30.008	HW2	244.1	3.213	2.210	4.1739	
15 minute summer	48	2.000	47	18.0	0.910	0.231	0.3547	
15 minute summer	47	2.001	46	44.9	1.651	0.714	0.5608	
15 minute summer	46	2.002	45	75.4	1.891	0.578	1.8992	
15 minute summer	45	2.003	44	109.6	2.098	0.228	1.4661	
60 minute summer	68	3.000	Att. Tank 4	24.1	1.246	0.604	0.2685	
60 minute summer	67	3.002	44	-41.4	-1.042	-1.043	0.4269	
30 minute summer	44	2.004	Att. Tank 5	93.6	2.258	0.489	0.2648	
15 minute summer	66	4.000	65	11.9	0.712	0.168	0.3076	
15 minute summer	65	4.001	43	59.0	1.935	0.183	0.4201	
30 minute summer	43	2.006	42	-175.5	-1.591	-1.590	0.6812	
15 minute summer	64	1.000	63	28.4	1.261	0.441	0.2582	
15 minute summer	63	1.001	62	33.5	1.464	0.558	0.2572	
15 minute summer	62	1.002	61	64.9	2.127	0.453	2.5733	
15 minute summer	61	1.003	60	120.7	3.928	0.358	0.6198	
30 minute summer	60	1.004	42	152.2	1.487	0.275	0.8800	
30 minute summer	42	1.005	41	136.0	1.233	1.231	4.7635	
15 minute summer	53	5.000	52	14.0	0.658	0.170	0.2164	
15 minute summer	52	5.001	51	33.0	0.989	0.832	0.4715	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	10	25.578	0.103	45.5	0.1168	0.0000	OK
15 minute summer	51	10	24.992	0.267	84.6	0.3020	0.0000	OK
15 minute summer	54	10	25.037	0.137	21.4	0.1548	0.0000	OK
15 minute summer	50	10	24.880	0.230	108.8	0.2603	0.0000	OK
15 minute summer	49	11	24.482	0.157	140.5	0.1772	0.0000	OK
15 minute summer	Att. Tank 2	13	20.930	0.440	221.9	24.8194	0.0000	SURCHARGED
30 minute summer	59	21	23.765	0.440	34.2	0.4975	0.0000	SURCHARGED
30 minute summer	58	21	23.754	0.446	38.2	0.5048	0.0000	SURCHARGED
30 minute summer	57	20	23.726	0.566	73.0	0.6404	0.0000	SURCHARGED
30 minute summer	56	20	23.653	0.587	85.3	0.6640	0.0000	SURCHARGED
30 minute summer	41	20	23.603	1.110	220.4	1.5880	0.0000	SURCHARGED
30 minute summer	40	20	23.411	0.995	229.6	1.4244	0.0000	SURCHARGED
15 minute summer	81	12	25.957	0.107	13.8	0.1208	0.0000	OK
15 minute summer	80	12	25.912	0.312	29.2	0.3533	0.0000	SURCHARGED
15 minute summer	79	12	25.717	0.666	87.6	0.7527	0.0000	SURCHARGED
15 minute summer	76	12	26.814	0.014	0.3	0.0155	0.0000	OK
15 minute summer	74	11	27.103	0.228	35.0	0.2574	0.0000	SURCHARGED
15 minute summer	73	11	27.028	0.234	53.7	0.2648	0.0000	SURCHARGED
15 minute summer	72	10	26.647	0.127	66.3	0.1431	0.0000	OK
15 minute summer	71	10	26.230	0.214	83.9	0.2426	0.0000	OK
60 minute winter	75	57	25.799	0.474	23.3	0.5355	0.0000	SURCHARGED
60 minute winter	70	57	25.797	0.695	46.1	0.7858	0.0000	SURCHARGED
15 minute summer	SSID4	8	23.744	0.064	26.6	0.1130	0.0000	OK
15 minute summer	39	10	23.408	0.118	57.5	0.1330	0.0000	OK
15 minute summer	38	10	22.337	0.136	104.7	0.1541	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	6.000	51	45.4	1.959	0.435	0.4565	
15 minute summer	51	5.002	50	83.4	1.343	0.919	0.6959	
15 minute summer	54	7.000	50	21.2	1.352	0.922	0.0938	
15 minute summer	50	5.003	49	108.5	2.302	0.807	1.0563	
15 minute summer	49	5.004	41	139.5	2.414	0.433	1.0870	
15 minute summer	Att. Tank 2	12.004	27	165.0	1.496	0.554	1.6886	
30 minute summer	59	8.000	Att. Tank 6	32.8	1.453	0.675	0.0456	
30 minute summer	58	8.002	57	39.1	1.050	0.984	0.4926	
30 minute summer	57	8.003	56	66.1	1.484	0.938	1.6298	
30 minute summer	56	8.004	41	69.9	1.887	0.247	0.4614	
30 minute summer	41	1.006	40	218.0	1.376	1.361	4.9091	
30 minute summer	40	1.007	SSID2	229.7	3.226	0.376	0.9754	
15 minute summer	81	19.000	80	13.8	1.144	0.544	0.1900	
15 minute summer	80	19.001	79	26.0	1.913	0.646	0.1390	
15 minute summer	79	19.002	78	87.2	1.239	1.232	1.1853	
15 minute summer	76	10.000	72	0.3	0.378	0.017	0.0103	
15 minute summer	74	9.000	73	34.0	0.920	0.858	0.5511	
15 minute summer	73	9.001	72	52.3	1.425	1.014	0.7615	
15 minute summer	72	9.002	71	66.2	1.610	0.356	0.7446	
15 minute summer	71	9.003	Att. Tank 7	83.4	1.645	0.752	0.1832	
60 minute winter	75	11.000	70	22.6	0.949	0.569	1.0033	
60 minute winter	70	9.005	69	35.9	1.145	0.172	1.9364	
15 minute summer	SSID4	9.007	SSID3	26.2	1.575	0.024	0.8692	
15 minute summer	39	13.000	38	57.1	2.015	0.324	1.2348	
15 minute summer	38	13.001	28	104.0	1.827	0.430	1.7174	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	31	10	22.920	0.130	34.8	0.1470	0.0000	OK
15 minute summer	30	10	22.430	0.133	48.3	0.1501	0.0000	OK
15 minute summer	29	11	21.984	0.134	79.0	0.1517	0.0000	OK
15 minute summer	28	12	21.100	0.562	230.2	0.8041	0.0000	SURCHARGED
15 minute summer	36	13	20.849	0.329	46.8	0.3725	0.0000	SURCHARGED
15 minute summer	Att. Tank 3	13	20.847	0.377	90.8	21.2885	0.0000	SURCHARGED
15 minute summer	37	10	21.236	0.086	30.2	0.0972	0.0000	OK
15 minute summer	35	13	20.830	0.459	59.8	0.6574	0.0000	SURCHARGED
15 minute summer	34	13	20.822	0.465	66.9	0.6650	0.0000	SURCHARGED
15 minute summer	33	10	22.712	0.037	5.0	0.0423	0.0000	OK
15 minute summer	32	10	21.655	0.032	5.0	0.0364	0.0000	OK
60 minute summer	Att. Tank 4	42	23.574	0.524	62.1	36.9644	0.0000	SURCHARGED
30 minute summer	27	21	20.805	0.728	259.2	1.0420	0.0000	SURCHARGED
30 minute summer	26	21	20.633	0.610	282.1	0.8724	0.0000	SURCHARGED
30 minute summer	11	23	19.426	0.797	147.2	1.1406	0.0000	SURCHARGED
60 minute winter	69	57	25.790	1.727	40.4	4.3948	0.0000	SURCHARGED
15 minute summer	SSID2	11	21.514	0.234	284.8	0.4139	0.0000	OK
30 minute summer	SSID6	22	20.460	0.629	308.9	1.1112	0.0000	SURCHARGED
120 minute summer	Basin J	96	20.745	0.245	88.0	250.0545	0.0000	OK
15 minute summer	LA S12	10	21.047	0.346	346.1	0.4957	0.0000	OK
30 minute summer	Basin I	23	22.664	1.164	4.0	1.3163	0.0000	FLOOD RISK
30 minute summer	Basin I Inlet	24	20.513	0.013	1.1	0.0000	0.0000	OK
15 minute summer	LA Inlet	10	20.803	0.303	345.3	0.0000	0.0000	OK
15 minute summer	SSID10	11	23.764	0.864	441.3	1.2371	0.0000	SURCHARGED
30 minute summer	SSID8	22	20.462	0.292	29.8	0.5159	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	31	12.000	30	34.4	1.432	0.606	0.9939	
15 minute summer	30	12.001	29	47.9	1.971	0.581	0.4353	
15 minute summer	29	12.002	28	78.1	2.396	0.632	0.6714	
15 minute summer	28	12.003	Att. Tank 2	221.9	2.189	1.991	1.6886	
15 minute summer	36	15.000	Att. Tank 3	45.5	1.853	0.410	0.3516	
15 minute summer	Att. Tank 3	15.001	35	53.5	1.016	1.110	0.8796	
15 minute summer	37	14.000	35	30.1	1.902	0.313	0.4929	
15 minute summer	35	14.001	34	63.7	0.816	0.577	0.5028	
15 minute summer	34	14.002	27	71.0	1.100	0.641	2.3536	
15 minute summer	33	16.000	32	5.0	1.607	0.125	0.0664	
15 minute summer	32	16.001	27	4.9	1.326	0.101	0.1605	
60 minute summer	Att. Tank 4	3.001	67	-41.5	-1.044	-1.040	0.2685	
30 minute summer	27	12.005	26	259.1	1.635	1.621	3.4569	
30 minute summer	26	12.006	SSID6	282.2	1.802	1.772	2.7094	
30 minute summer	11	25.007	10	147.7	1.339	1.160	6.2116	
60 minute winter	69	9.006	SSID4	18.2	1.255	0.075	0.1548	
15 minute summer	SSID2	1.008	SSID1	283.5	3.034	0.264	2.2456	
30 minute summer	SSID6	12.007	SSID5	299.6	1.460	0.513	10.5570	
120 minute summer	Basin J	Hydro-Brake®		28.7				282.0
15 minute summer	LA S12	38.000	LA Inlet	345.3	2.821	0.820	1.4500	149.5
30 minute summer	Basin I	37.000	Basin I Inlet	1.1	0.975	0.004	0.0165	2.5
15 minute summer	SSID10	19.006	SSID9	442.3	3.091	1.848	2.7934	
30 minute summer	SSID8	17.000	SSID7	-23.7	0.535	-0.058	2.5980	



Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	SSID7	22	20.455	0.345	37.6	0.6096	0.0000	OK
30 minute summer	SSID5	21	20.391	0.830	320.4	1.4666	0.0000	SURCHARGED
15 minute summer	SSID3	10	22.575	0.075	48.3	0.1317	0.0000	OK
240 minute winter	Basin H	244	18.369	0.713	407.1	2341.7890	0.0000	SURCHARGED
240 minute winter	Basin H FC	244	18.368	0.815	268.5	3.6867	0.0000	SURCHARGED
2880 minute summer	Basin H Outfall	1440	16.484	0.089	72.5	0.0000	0.0000	OK
30 minute summer	Att. Tank 5	23	23.621	0.846	332.8	127.2696	0.0000	SURCHARGED
30 minute summer	Att. Tank 6	21	23.761	0.446	53.2	14.6722	0.0000	SURCHARGED
15 minute summer	82	12	25.762	0.537	47.6	0.6076	0.0000	SURCHARGED
60 minute winter	Att. Tank 7	57	25.797	0.677	78.6	83.9990	0.0000	SURCHARGED
15 minute summer	78	12	25.569	0.587	87.2	0.6638	0.0000	SURCHARGED
15 minute summer	SSID12	11	24.507	1.397	354.9	1.9993	0.0000	SURCHARGED
15 minute summer	SSID11	11	24.222	1.222	434.1	1.7492	0.0000	SURCHARGED
15 minute summer	77	12	25.458	0.523	86.9	0.5910	0.0000	SURCHARGED
15 minute summer	Att. Tank 8	12	25.734	0.544	45.4	10.2297	0.0000	SURCHARGED
30 minute summer	Att. Tank 9	22	20.256	0.896	572.4	117.9327	0.0000	SURCHARGED
30 minute summer	Att. Tank 10	21	20.651	0.401	66.9	21.1205	0.0000	SURCHARGED
30 minute summer	Att. Tank 11	23	19.473	0.808	250.1	106.3971	0.0000	SURCHARGED
15 minute summer	FD Junction 8	11	23.955	0.040	1.7	0.0000	0.0000	OK
15 minute summer	103	14	23.920	0.084	6.9	0.1209	0.0000	OK
15 minute summer	FD Junction 7	13	23.931	0.155	7.1	0.0000	0.0000	OK
30 minute summer	FD Junction 6	21	23.899	0.205	21.5	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	SSID7	17.001	SSID6	-31.8	0.623	-0.051	3.4786	
30 minute summer	SSID5	12.008	SSID1	301.9	1.308	0.807	11.3440	
15 minute summer	SSID3	9.008	SSID2	48.2	1.544	0.034	1.7653	
240 minute winter	Basin H	36.000	Basin H FC	268.5	0.988	0.286	3.6651	
240 minute winter	Basin H FC	36.001	Basin H Outfall	72.2	2.567	0.039	0.8301	1630.6
30 minute summer	Att. Tank 5	2.005	43	-239.2	-2.169	-1.069	0.4854	
30 minute summer	Att. Tank 6	8.001	58	36.1	0.907	0.890	0.0456	
15 minute summer	82	20.000	Att. Tank 8	45.4	1.518	0.866	0.1370	
60 minute winter	Att. Tank 7	9.004	70	-35.4	1.252	-0.302	0.1138	
15 minute summer	78	19.003	77	86.9	1.234	1.219	0.7975	
15 minute summer	SSID12	21.000	SSID11	350.7	2.214	1.273	2.3942	
15 minute summer	SSID11	19.005	SSID10	432.7	2.731	1.629	2.3415	
15 minute summer	77	19.004	SSID11	86.5	3.605	0.238	0.7726	
15 minute summer	Att. Tank 8	20.001	79	48.7	1.225	1.234	0.1370	
30 minute summer	Att. Tank 9	1.010	8	688.6	1.730	0.559	3.0553	
30 minute summer	Att. Tank 10	25.001	15	42.7	1.074	1.075	0.4263	
30 minute summer	Att. Tank 11	25.006	11	136.6	1.239	1.032	0.8998	
15 minute summer	FD Junction 8	29.000	103	1.6	0.136	0.025	0.3149	
15 minute summer	103	29.001	FD Junction 7	7.1	0.394	0.108	0.5700	
15 minute summer	FD Junction 7	29.002	FD Junction 6	8.5	0.467	0.129	1.3954	
30 minute summer	FD Junction 6	29.003	102	-15.5	0.267	-0.237	2.5413	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	102	21	24.432	0.841	66.2	1.2030	0.0000	SURCHARGED
30 minute summer	FD Junction 5	21	24.422	0.885	59.5	0.0000	0.0000	SURCHARGED
30 minute summer	FD Junction 4	21	24.378	0.904	56.6	0.0000	0.0000	SURCHARGED
30 minute summer	FD Junction 3	21	24.283	0.951	57.2	0.0000	0.0000	SURCHARGED
30 minute summer	FD Junction 2	21	24.225	0.981	113.1	0.0000	0.0000	SURCHARGED
30 minute summer	FD Junction 1	21	23.796	0.705	113.2	0.0000	0.0000	SURCHARGED
30 minute summer	101	21	23.081	0.225	112.4	0.3214	0.0000	OK
30 minute summer	100	22	22.765	0.167	111.4	0.2387	0.0000	OK
30 minute summer	99	22	21.824	0.177	111.7	0.2535	0.0000	OK
30 minute summer	HW3	22	21.271	0.171	112.0	0.0000	0.0000	OK
30 minute summer	15A	21	21.072	0.747	62.7	0.8443	0.0000	SURCHARGED
30 minute summer	15	21	21.005	0.818	57.4	0.9250	0.0000	SURCHARGED
15 minute summer	14A	11	22.014	0.589	109.0	0.6662	0.0000	SURCHARGED
15 minute summer	14	11	21.016	1.045	181.8	1.1822	0.0000	SURCHARGED
30 minute summer	13	20	20.380	0.554	142.4	0.6263	0.0000	SURCHARGED
30 minute summer	18	19	20.106	0.406	27.3	0.4593	0.0000	SURCHARGED
30 minute summer	17	20	20.035	0.635	99.6	0.7184	0.0000	SURCHARGED
30 minute summer	12	22	19.981	1.283	302.4	1.8360	0.0000	SURCHARGED
15 minute summer	16	11	21.731	1.081	106.5	1.2221	0.0000	SURCHARGED
30 minute summer	10	21	19.567	1.168	233.8	1.6709	0.0000	SURCHARGED
30 minute summer	9	21	19.045	0.781	237.4	1.1171	0.0000	SURCHARGED
30 minute summer	SSID1	21	21.404	1.974	699.9	5.0232	0.0000	SURCHARGED
30 minute summer	8	21	21.341	2.050	791.8	5.2161	0.0000	SURCHARGED
30 minute summer	7	21	21.225	2.088	803.7	5.3128	0.0000	SURCHARGED
15 minute summer	25	10	23.260	0.485	111.6	0.5488	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)
30 minute summer	102	29.004	FD Junction 5	-44.6	0.414	-0.683	1.9407	
30 minute summer	FD Junction 5	29.005	FD Junction 4	56.6	0.710	0.867	2.2716	
30 minute summer	FD Junction 4	29.006	FD Junction 3	57.2	0.554	0.876	5.0948	
30 minute summer	FD Junction 3	29.007	FD Junction 2	58.0	0.526	0.888	3.1518	
30 minute summer	FD Junction 2	29.008	FD Junction 1	109.0	0.988	1.669	5.5011	
30 minute summer	FD Junction 1	29.009	101	112.4	1.125	1.722	6.8457	
30 minute summer	101	29.010	100	111.4	1.918	0.601	1.7433	
30 minute summer	100	29.011	99	111.7	2.267	0.394	2.3417	
30 minute summer	99	29.012	HW3	112.0	2.240	0.437	1.6706	119.2
30 minute summer	15A	25.000	Att. Tank 10	60.4	1.519	1.392	0.4263	
30 minute summer	15	25.002	14	58.3	1.465	1.467	0.9550	
15 minute summer	14A	26.000	14	103.6	2.606	0.764	0.8151	
15 minute summer	14	25.003	13	150.6	2.159	2.128	2.4950	
30 minute summer	13	25.004	12	139.2	2.440	0.830	1.7197	
30 minute summer	18	27.000	17	27.4	1.023	0.673	1.4503	
30 minute summer	17	27.001	12	88.3	1.386	0.406	1.1645	
30 minute summer	12	25.005	Att. Tank 11	299.7	2.717	2.364	0.8998	
15 minute summer	16	28.000	10	99.6	2.505	0.991	2.2576	
30 minute summer	10	25.008	9	232.6	2.109	1.826	3.6427	
30 minute summer	9	25.009	1	235.7	2.137	1.848	2.6128	
30 minute summer	SSID1	1.009	Att. Tank 9	690.3	3.138	0.556	3.0553	
30 minute summer	8	1.011	7	796.0	1.870	0.909	13.4690	
30 minute summer	7	1.012	6	808.0	2.173	1.144	4.8202	
15 minute summer	25	18.000	24	109.6	1.752	1.555	1.7257	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	24	9	22.818	0.169	201.6	0.1913	0.0000	OK
30 minute summer	6	21	21.148	2.047	857.3	5.2102	0.0000	SURCHARGED
15 minute summer	SSID9	11	23.119	0.339	639.2	0.4854	0.0000	OK
15 minute summer	22	9	23.181	0.106	76.4	0.1202	0.0000	OK
15 minute summer	23	9	23.030	0.105	78.7	0.1187	0.0000	OK
30 minute summer	21	21	21.241	1.168	811.2	2.0645	0.0000	SURCHARGED
30 minute summer	5	21	20.864	2.285	1372.2	5.8158	0.0000	SURCHARGED
15 minute summer	20	10	22.304	0.114	43.9	0.1287	0.0000	OK
15 minute summer	19	10	21.527	0.077	67.8	0.0876	0.0000	OK
30 minute summer	4	21	20.287	1.982	1405.9	5.0432	0.0000	SURCHARGED
30 minute summer	3	21	19.755	1.667	1403.0	4.2421	0.0000	SURCHARGED
30 minute summer	2	21	19.028	1.125	1419.8	2.8622	0.0000	SURCHARGED
240 minute winter	1	240	18.680	0.888	691.3	2.2602	0.0000	SURCHARGED
240 minute winter	HW1	240	18.679	1.023	689.9	0.0000	0.0000	OK
15 minute summer	90	11	24.752	1.152	68.3	1.3032	0.0000	SURCHARGED
30 minute summer	89	21	24.486	1.436	70.1	1.6241	0.0000	FLOOD RISK
30 minute summer	Att. Tank 1	21	24.235	1.520	198.9	59.2670	0.0000	SURCHARGED
30 minute summer	98	21	24.352	0.862	42.3	0.9745	0.0000	SURCHARGED
30 minute summer	88	21	24.316	1.540	130.8	1.7417	0.0000	SURCHARGED
30 minute summer	87	21	24.259	1.530	143.8	1.7307	0.0000	SURCHARGED
30 minute summer	97	21	24.310	0.660	53.0	0.7464	0.0000	SURCHARGED
30 minute summer	86	21	24.210	1.507	138.2	1.7049	0.0000	SURCHARGED
15 minute summer	96	11	24.435	1.010	87.3	1.1422	0.0000	SURCHARGED
30 minute summer	85	21	23.587	2.007	214.1	2.2695	0.0000	FLOOD RISK
15 minute summer	94	12	23.450	1.725	33.7	1.9510	0.1160	FLOOD

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	24	18.001	6	200.8	4.315	0.616	2.0200	
30 minute summer	6	1.013	5	864.6	2.202	0.699	22.9646	
15 minute summer	SSID9	19.007	21	634.5	5.076	0.782	5.8574	
15 minute summer	22	22.000	21	76.2	4.042	0.437	0.6795	
15 minute summer	23	23.000	21	78.6	4.273	0.418	0.5484	
30 minute summer	21	19.008	5	784.0	2.923	0.622	11.3569	
30 minute summer	5	1.014	4	1368.3	3.109	1.107	12.0606	
15 minute summer	20	24.000	19	43.7	2.723	0.419	0.2979	
15 minute summer	19	24.001	4	67.7	4.272	0.260	0.2753	
30 minute summer	4	1.015	3	1400.2	3.182	1.133	9.5335	
30 minute summer	3	1.016	2	1399.8	3.181	1.604	16.3263	
30 minute summer	2	1.017	1	1419.1	3.225	1.148	4.8664	
240 minute winter	1	2.008	HW1	689.9	3.113	0.718	9.8732	
15 minute summer	90	30.000	89	62.9	1.582	0.805	0.9742	
30 minute summer	89	30.001	88	67.1	1.687	1.688	1.3440	
30 minute summer	Att. Tank 1	30.004	86	124.6	1.925	1.733	0.2001	
30 minute summer	98	31.000	88	40.7	1.228	0.478	0.9541	
30 minute summer	88	30.002	87	126.2	1.793	1.782	0.8073	
30 minute summer	87	30.003	Att. Tank 1	141.4	2.008	1.819	0.2001	
30 minute summer	97	32.000	86	52.5	1.976	0.627	1.3463	
30 minute summer	86	30.005	85	143.9	2.313	0.816	3.1625	
15 minute summer	96	33.000	85	81.5	2.363	0.783	1.7747	
30 minute summer	85	30.006	84	191.5	2.720	0.830	1.2554	
15 minute summer	94	34.000	93	26.9	0.764	0.677	0.4458	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	93	12	23.412	1.753	43.5	1.9823	0.0000	SURCHARGED
15 minute summer	95	12	23.900	1.379	42.1	1.5599	0.0000	SURCHARGED
15 minute summer	92	12	23.336	1.805	98.9	2.0410	0.0000	SURCHARGED
15 minute summer	91	12	23.038	2.144	113.6	2.4245	0.0000	SURCHARGED
30 minute summer	84	21	22.844	2.101	277.1	3.0059	0.0000	FLOOD RISK
15 minute summer	83	12	22.222	1.553	284.1	2.2227	0.0000	SURCHARGED
120 minute summer	HW2	104	20.863	0.363	221.8	0.0000	0.0000	OK
15 minute summer	48	10	25.578	0.088	25.7	0.0997	0.0000	OK
15 minute summer	47	11	25.333	0.243	64.5	0.2751	0.0000	SURCHARGED
15 minute summer	46	10	24.931	0.216	106.3	0.2438	0.0000	OK
30 minute summer	45	21	24.813	0.828	146.0	1.1843	0.0000	SURCHARGED
60 minute summer	68	43	24.109	1.019	35.6	1.1524	0.0000	SURCHARGED
60 minute summer	67	39	24.137	1.127	99.5	1.2752	0.0000	SURCHARGED
30 minute summer	44	21	24.778	1.981	157.6	2.8346	0.0000	SURCHARGED
30 minute summer	66	21	24.762	1.087	15.7	1.2296	0.0000	SURCHARGED
30 minute summer	65	21	24.780	1.180	77.5	1.3342	0.0000	SURCHARGED
30 minute summer	43	21	24.778	2.058	325.0	2.9446	0.0000	SURCHARGED
15 minute summer	64	10	26.449	0.149	40.5	0.1688	0.0000	OK
15 minute summer	63	10	26.297	0.172	48.1	0.1947	0.0000	OK
15 minute summer	62	10	26.080	0.180	94.1	0.2038	0.0000	OK
30 minute summer	61	21	24.929	0.379	158.8	0.4281	0.0000	SURCHARGED
30 minute summer	60	21	24.830	1.525	217.9	2.1824	0.0000	SURCHARGED
30 minute summer	42	21	24.778	2.077	244.0	2.9721	0.0000	SURCHARGED
15 minute summer	53	12	25.508	0.383	20.0	0.4327	0.0000	SURCHARGED
15 minute summer	52	12	25.490	0.612	43.8	0.6922	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 summer	93	34.001	92	38.5	1.064	0.965	0.3568	
15 minute summer	95	35.000	92	34.8	2.759	0.713	0.1986	
15 minute summer	92	34.002	91	95.6	1.358	0.616	2.3097	
15 minute summer	91	34.003	84	112.0	1.590	1.553	1.2602	
30 minute summer	84	30.007	83	277.9	2.520	2.517	2.6502	
15 minute summer	83	30.008	HW2	283.2	3.554	2.564	4.8530	
15 minute summer	48	2.000	47	25.6	0.948	0.328	0.4799	
15 minute summer	47	2.001	46	62.2	1.738	0.990	0.7977	
15 minute summer	46	2.002	45	105.3	2.017	0.807	2.4858	
30 minute summer	45	2.003	44	145.0	1.618	0.302	2.2968	
60 minute summer	68	3.000	Att. Tank 4	34.2	1.332	0.858	0.2685	
60 minute summer	67	3.002	44	-98.2	-2.469	-2.473	0.4269	
30 minute summer	44	2.004	Att. Tank 5	-103.3	2.366	-0.539	0.2648	
30 minute summer	66	4.000	65	15.8	0.716	0.223	1.2925	
30 minute summer	65	4.001	43	72.3	1.989	0.224	0.6790	
30 minute summer	43	2.006	42	-240.6	-2.182	-2.180	0.6812	
15 minute summer	64	1.000	63	40.3	1.328	0.627	0.3475	
15 minute summer	63	1.001	62	47.6	1.569	0.791	0.3403	
15 minute summer	62	1.002	61	94.3	2.165	0.658	3.9147	
30 minute summer	61	1.003	60	153.0	3.879	0.453	0.9031	
30 minute summer	60	1.004	42	212.7	1.929	0.385	0.8800	
30 minute summer	42	1.005	41	150.3	1.363	1.361	4.7635	
15 minute summer	53	5.000	52	22.2	0.670	0.269	0.3927	
15 minute summer	52	5.001	51	44.9	1.130	1.132	0.5286	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	55	11	25.645	0.170	64.5	0.1921	0.0000	OK
15 minute summer	51	12	25.372	0.647	112.7	0.7319	0.0000	SURCHARGED
15 minute summer	54	12	25.408	0.508	30.4	0.5748	0.0000	SURCHARGED
15 minute summer	50	12	25.214	0.564	143.2	0.6380	0.0000	SURCHARGED
30 minute summer	49	21	24.818	0.493	179.3	0.5575	0.0000	SURCHARGED
30 minute summer	Att. Tank 2	21	21.780	1.290	283.1	47.4042	0.0000	SURCHARGED
30 minute summer	59	23	24.515	1.190	48.9	1.3464	0.0000	SURCHARGED
30 minute summer	58	23	24.509	1.201	62.7	1.3584	0.0000	SURCHARGED
30 minute summer	57	21	24.502	1.342	77.7	1.5181	0.0000	SURCHARGED
30 minute summer	56	21	24.501	1.435	83.4	1.6228	0.0000	SURCHARGED
30 minute summer	41	21	24.500	2.007	303.2	2.8716	0.0000	SURCHARGED
30 minute summer	40	21	24.132	1.716	313.7	2.4560	0.0000	SURCHARGED
15 minute summer	81	12	26.768	0.918	19.6	1.0383	0.0000	SURCHARGED
15 minute summer	80	12	26.704	1.104	36.3	1.2481	0.0000	SURCHARGED
15 minute summer	79	12	26.489	1.438	124.5	1.6260	0.0000	SURCHARGED
15 minute summer	76	11	26.816	0.016	0.5	0.0186	0.0000	OK
15 minute summer	74	11	27.484	0.609	49.7	0.6893	0.0000	SURCHARGED
15 minute summer	73	11	27.323	0.529	75.8	0.5984	0.0000	SURCHARGED
15 minute summer	72	10	26.686	0.166	95.1	0.1872	0.0000	OK
15 minute summer	71	11	26.332	0.316	120.2	0.3573	0.0000	SURCHARGED
60 minute winter	75	59	26.238	0.913	33.6	1.0329	0.0000	SURCHARGED
60 minute winter	70	59	26.236	1.134	67.1	1.2829	0.0000	SURCHARGED
15 minute summer	SSID4	11	23.749	0.069	31.1	0.1217	0.0000	OK
15 minute summer	39	10	23.432	0.142	81.6	0.1603	0.0000	OK
15 minute summer	38	11	22.400	0.199	148.9	0.2254	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
15 minute summer	55	6.000	51	63.4	1.929	0.608	0.6095	
15 minute summer	51	5.002	50	109.0	1.549	1.201	0.7888	
15 minute summer	54	7.000	50	28.3	1.607	1.234	0.1061	
15 minute summer	50	5.003	49	140.8	2.268	1.047	1.5681	
30 minute summer	49	5.004	41	174.7	2.520	0.542	1.4223	
30 minute summer	Att. Tank 2	12.004	27	184.3	1.671	0.618	1.6886	
30 minute summer	59	8.000	Att. Tank 6	45.4	1.570	0.937	0.0456	
30 minute summer	58	8.002	57	64.4	1.619	1.618	0.4926	
30 minute summer	57	8.003	56	78.2	1.471	1.109	1.6298	
30 minute summer	56	8.004	41	86.6	1.852	0.305	0.4614	
30 minute summer	41	1.006	40	302.2	1.907	1.887	4.9091	
30 minute summer	40	1.007	SSID2	313.4	3.431	0.513	1.2498	
15 minute summer	81	19.000	80	15.1	1.132	0.595	0.2156	
15 minute summer	80	19.001	79	32.4	1.872	0.806	0.1390	
15 minute summer	79	19.002	78	122.4	1.738	1.728	1.1853	
15 minute summer	76	10.000	72	0.4	0.424	0.025	0.0135	
15 minute summer	74	9.000	73	48.2	1.212	1.216	0.5511	
15 minute summer	73	9.001	72	75.4	1.896	1.460	0.7927	
15 minute summer	72	9.002	71	95.2	1.640	0.512	1.0000	
15 minute summer	71	9.003	Att. Tank 7	119.9	1.719	1.081	0.2462	
60 minute winter	75	11.000	70	32.5	0.960	0.818	1.0033	
60 minute winter	70	9.005	69	32.3	1.111	0.155	1.9364	
15 minute summer	SSID4	9.007	SSID3	30.9	1.574	0.029	1.0136	
15 minute summer	39	13.000	38	81.3	2.134	0.461	1.7749	
15 minute summer	38	13.001	28	144.0	2.223	0.595	2.0319	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	31	12	23.078	0.288	49.4	0.3254	0.0000	SURCHARGED
15 minute summer	30	12	22.782	0.485	69.7	0.5485	0.0000	SURCHARGED
15 minute summer	29	12	22.490	0.640	103.3	0.7242	0.0000	SURCHARGED
30 minute summer	28	21	21.943	1.405	290.4	2.0111	0.0000	SURCHARGED
30 minute summer	36	23	21.652	1.132	61.0	1.2802	0.0000	SURCHARGED
30 minute summer	Att. Tank 3	23	21.682	1.212	153.9	59.2482	0.0000	SURCHARGED
30 minute summer	37	23	21.804	0.654	39.4	0.7400	0.0000	SURCHARGED
30 minute summer	35	23	21.678	1.307	127.5	1.8709	0.0000	SURCHARGED
30 minute summer	34	23	21.653	1.296	108.2	1.8550	0.0000	SURCHARGED
15 minute summer	33	10	22.720	0.045	7.1	0.0508	0.0000	OK
15 minute summer	32	10	21.661	0.038	7.1	0.0434	0.0000	OK
60 minute summer	Att. Tank 4	43	24.107	1.057	121.4	74.4995	0.0000	SURCHARGED
30 minute summer	27	21	21.633	1.556	272.8	2.2267	0.0000	SURCHARGED
30 minute summer	26	21	21.594	1.571	313.9	2.2475	0.0000	SURCHARGED
30 minute summer	11	23	19.846	1.217	174.8	1.7416	0.0000	SURCHARGED
60 minute winter	69	59	26.228	2.165	36.3	5.5093	0.0000	FLOOD RISK
15 minute summer	SSID2	11	21.548	0.268	355.0	0.4731	0.0000	OK
30 minute summer	SSID6	21	21.531	1.700	345.3	3.0040	0.0000	SURCHARGED
120 minute summer	Basin J	108	20.850	0.350	121.5	368.4675	0.0000	OK
15 minute summer	LA S12	10	21.330	0.629	490.6	0.9003	0.0000	SURCHARGED
60 minute summer	Basin I	34	22.750	1.250	4.4	1.4138	0.7436	FLOOD
15 minute summer	Basin I Inlet	14	20.514	0.014	1.1	0.0000	0.0000	OK
30 minute summer	LA Inlet	17	20.948	0.448	451.7	0.0000	0.0000	OK
15 minute summer	SSID10	11	24.309	1.409	597.3	2.0166	0.0000	SURCHARGED
30 minute summer	SSID8	21	21.553	1.383	98.2	2.4433	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 summer	31	12.000	30	50.0	1.503	0.881	1.6431	
15 minute summer	30	12.001	29	61.3	1.924	0.743	0.7118	
15 minute summer	29	12.002	28	97.9	2.487	0.793	0.8288	
30 minute summer	28	12.003	Att. Tank 2	283.1	2.567	2.541	1.6886	
30 minute summer	36	15.000	Att. Tank 3	59.0	1.612	0.531	0.3516	
30 minute summer	Att. Tank 3	15.001	35	-124.4	-1.767	-2.581	0.8796	
30 minute summer	37	14.000	35	39.1	1.859	0.407	0.7357	
30 minute summer	35	14.001	34	-105.3	-0.955	-0.955	0.5028	
30 minute summer	34	14.002	27	101.3	1.207	0.915	2.3536	
15 minute summer	33	16.000	32	7.1	1.772	0.178	0.0855	
15 minute summer	32	16.001	27	7.0	1.310	0.143	0.1667	
60 minute summer	Att. Tank 4	3.001	67	-97.2	-2.444	-2.436	0.2685	
30 minute summer	27	12.005	26	268.8	1.697	1.682	3.4569	
30 minute summer	26	12.006	SSID6	310.7	1.961	1.952	2.7094	
30 minute summer	11	25.007	10	175.3	1.589	1.376	6.2116	
60 minute winter	69	9.006	SSID4	18.8	1.268	0.077	0.1590	
15 minute summer	SSID2	1.008	SSID1	352.9	3.190	0.329	3.1635	
30 minute summer	SSID6	12.007	SSID5	312.9	1.462	0.536	10.5570	
120 minute summer	Basin J	Hydro-Brake®		29.6				403.5
15 minute summer	LA S12	38.000	LA Inlet	489.8	3.092	1.163	1.8631	212.2
60 minute summer	Basin I	37.000	Basin I Inlet	1.1	0.984	0.004	0.0169	3.9
15 minute summer	SSID10	19.006	SSID9	598.5	3.904	2.500	3.1233	
30 minute summer	SSID8	17.000	SSID7	-86.3	0.566	-0.212	4.8189	



Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 99.73%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
30 minute summer	SSID7	21	21.533	1.423	131.4	2.5153	0.0000	SURCHARGED
30 minute summer	SSID5	21	21.471	1.910	342.7	3.3752	0.0000	SURCHARGED
15 minute summer	SSID3	10	22.584	0.084	62.7	0.1487	0.0000	OK
240 minute winter	Basin H	248	18.659	1.003	446.4	3460.8290	0.0000	SURCHARGED
240 minute winter	Basin H FC	248	18.658	1.105	263.9	5.0005	0.0000	SURCHARGED
480 minute summer	Basin H Outfall	216	16.484	0.089	72.5	0.0000	0.0000	OK
30 minute summer	Att. Tank 5	21	24.778	2.003	415.3	157.9952	0.0000	SURCHARGED
30 minute summer	Att. Tank 6	23	24.513	1.198	101.1	39.4165	0.0000	SURCHARGED
15 minute summer	82	12	26.594	1.369	67.4	1.5484	0.0000	SURCHARGED
60 minute winter	Att. Tank 7	59	26.237	1.117	121.1	138.5450	0.0000	SURCHARGED
15 minute summer	78	12	26.196	1.214	122.4	1.3728	0.0000	SURCHARGED
15 minute summer	SSID12	11	25.722	2.612	503.1	3.7378	0.0000	SURCHARGED
15 minute summer	SSID11	11	25.148	2.148	585.3	3.0731	0.0000	SURCHARGED
15 minute summer	77	12	25.977	1.042	120.7	1.1787	0.0000	SURCHARGED
15 minute summer	Att. Tank 8	12	26.540	1.350	64.8	15.8014	0.0000	SURCHARGED
30 minute summer	Att. Tank 9	21	21.372	2.012	690.3	193.5178	0.0000	SURCHARGED
30 minute summer	Att. Tank 10	22	21.031	0.781	109.4	41.1085	0.0000	SURCHARGED
30 minute summer	Att. Tank 11	24	19.907	1.242	350.9	163.3944	0.0000	SURCHARGED
30 minute summer	FD Junction 8	21	24.466	0.551	30.9	0.0000	0.0000	SURCHARGED
30 minute summer	103	21	24.459	0.624	46.8	0.8934	0.0000	SURCHARGED
30 minute summer	FD Junction 7	21	24.468	0.692	43.4	0.0000	0.0000	FLOOD RISK
30 minute summer	FD Junction 6	21	24.451	0.757	56.9	0.0000	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
30 minute summer	SSID7	17.001	SSID6	-120.1	0.631	-0.191	4.7336	
30 minute summer	SSID5	12.008	SSID1	327.3	1.310	0.875	11.3440	
15 minute summer	SSID3	9.008	SSID2	62.1	1.568	0.044	2.1105	
240 minute winter	Basin H	36.000	Basin H FC	263.9	0.867	0.281	3.6651	
240 minute winter	Basin H FC	36.001	Basin H Outfall	71.4	2.577	0.038	0.8254	1626.1
30 minute summer	Att. Tank 5	2.005	43	-318.2	-2.886	-1.422	0.4854	
30 minute summer	Att. Tank 6	8.001	58	60.2	1.515	1.487	0.0456	
15 minute summer	82	20.000	Att. Tank 8	63.4	1.650	1.210	0.1370	
60 minute winter	Att. Tank 7	9.004	70	-58.5	1.220	-0.499	0.1138	
15 minute summer	78	19.003	77	120.7	1.715	1.694	0.7975	
15 minute summer	SSID12	21.000	SSID11	496.3	3.133	1.801	2.3942	
15 minute summer	SSID11	19.005	SSID10	585.1	3.693	2.203	2.3415	
15 minute summer	77	19.004	SSID11	127.7	3.814	0.351	1.1876	
15 minute summer	Att. Tank 8	20.001	79	58.2	1.464	1.475	0.1370	
30 minute summer	Att. Tank 9	1.010	8	778.2	1.794	0.631	3.0553	
30 minute summer	Att. Tank 10	25.001	15	52.9	1.330	1.331	0.4263	
30 minute summer	Att. Tank 11	25.006	11	169.7	1.539	1.281	0.8998	
30 minute summer	FD Junction 8	29.000	103	-28.9	-0.368	-0.443	2.8587	
30 minute summer	103	29.001	FD Junction 7	-40.4	0.423	-0.619	2.1201	
30 minute summer	FD Junction 7	29.002	FD Junction 6	-43.4	-0.435	-0.665	2.9515	
30 minute summer	FD Junction 6	29.003	102	-56.9	-0.516	-0.872	3.6753	



**ARCH
ASSOCIATES**

BOX CULVERT CALCULATION



UPPER ACRE
ONE HORTON HEATH

BOX CULVERT CALCULATION

for

UPPER ACRE
ONE HORTON HEATH

ISSUE		A	B	C
Issued By	C Hendry			
Date	18.11.2025			
Purpose	Information			
Approved By	CH			

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1.0 Box Culvert Calculation

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The surface water flows through the existing watercourse are estimated using the Manning Resistance Equation. The surface water flows have been estimated based on the 1 in 1000 year data provided by the Environment Agency, which shows a maximum water level of 23.800mAOD.

The existing flows through the watercourse for the 1:1000YR storm event is estimated as follows:

Gradient of Ditch = 1:97

$S = 0.0103$

Manning's Equation: $Q = 1/n \times R^{2/3} \times S^{1/2} \times A$

A (Cross-sectional Area) = 3.95m^2

P (Wetted Perimeter of Flow) = 14.66m

R (Hydraulic Radius of Flow) = $A/P = 3.95 / 14.66 = 0.264\text{m}$

n (Roughness Coefficient) = 0.04

$$Q_{\text{Flood 1000y}} = 1/0.04 \times 0.2694^{2/3} \times 0.0103^{1/2} \times 3.95 = 4.18\text{m}^3/\text{s}$$

$$D_{\text{Flood 1000y}} = 1.383\text{m}$$

Assume 2.4m wide x 1.8m high box culvert to incorporate 300mm freeboard:

Box Culvert Sizing at Design Depth 1.383m:

$$A \text{ (Cross-sectional Area)} = 2.4 \times 1.383 = 3.319\text{m}^2$$

$$P \text{ (Wetted Perimeter of Flow)} = 2.4 + (2 \times 1.383) = 5.166\text{m}$$

$$R \text{ (Hydraulic Radius of Flow)} = A/P = 3.319 / 5.166 = 0.642\text{m}$$

$$S = 0.0103$$

$$n = 0.011$$

$$Q = 1/0.011 \times 0.642^{2/3} \times 0.0103^{1/2} \times 3.319 = 4.21\text{m}^3/\text{s}$$

$4.21\text{m}^3/\text{s} > 4.18\text{m}^3/\text{s} \therefore$ Culvert Size is sufficient to accommodate the 1:1000YR storm event.