

### Design Settings

Rainfall Methodology	FEH-22		Minimum Velocity (m/s)	1.00
Return Period (years)	2		Connection Type	Level Soffits
Additional Flow (%)	0		Minimum Backdrop Height (m)	0.200
CV	1.000		Preferred Cover Depth (m)	1.200
Time of Entry (mins)	4.00		Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00		Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	50.0			

### Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
RE1	0.002	4.00	6.300	150	502956.320	103063.930	0.500
S1	0.003	4.00	6.300	315	502961.810	103063.350	0.555
S2			6.300	900	502963.150	103054.100	0.950
SA1			6.300	150	502962.390	103049.710	1.000
RE2	0.005	4.00	6.250	150	502946.739	103056.150	0.735
PP1	0.002		6.300		502963.447	103064.773	0.480

### 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)
2.000	RE1	S1	5.521	0.600	5.800	5.745	0.055	100.0	100	4.12	50.0
2.001	S1	S2	9.347	0.600	5.745	5.585	0.160	58.4	100	4.27	50.0
1.001	S2	SA1	3.000	0.600	5.350	5.300	0.050	60.0	150	4.31	50.0
1.000	RE2	S2	16.539	0.600	5.515	5.350	0.165	100.2	150	4.27	50.0



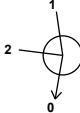


Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
2.000	0.769	6.0	0.4	0.400	0.455	0.002	0.0	17	0.420
2.001	1.010	7.9	0.9	0.455	0.615	0.005	0.0	23	0.672
1.001	1.301	23.0	1.8	0.800	0.850	0.010	0.0	28	0.776
1.000	1.003	17.7	0.9	0.585	0.800	0.005	0.0	23	0.526

### 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)
2.000	5.521	100.0	100	Circular	6.300	5.800	0.400	6.300	5.745	0.455
2.001	9.347	58.4	100	Circular	6.300	5.745	0.455	6.300	5.585	0.615
1.001	3.000	60.0	150	Circular	6.300	5.350	0.800	6.300	5.300	0.850
1.000	16.539	100.2	150	Circular	6.250	5.515	0.585	6.300	5.350	0.800

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.000	RE1	150	Manhole	Adoptable	S1	315	Manhole	Adoptable
2.001	S1	315	Manhole	Adoptable	S2	900	Manhole	Adoptable
1.001	S2	900	Manhole	Adoptable	SA1	150	Manhole	Adoptable
1.000	RE2	150	Manhole	Adoptable	S2	900	Manhole	Adoptable

**Manhole Schedule**

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
RE1	502956.320	103063.930	6.300	0.500	150					
						0	2.000	5.800	100	
S1	502961.810	103063.350	6.300	0.555	315		1	2.000	5.745	100
						0	2.001	5.745	100	
S2	502963.150	103054.100	6.300	0.950	900		1	2.001	5.585	100
						2	1.000	5.350	150	
						0	1.001	5.350	150	
SA1	502962.390	103049.710	6.300	1.000	150		1	1.001	5.300	150
RE2	502946.739	103056.150	6.250	0.735	150					
						0	1.000	5.515	150	
PP1	502963.447	103064.773	6.300	0.480		o				

**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 (m <sup>3</sup> /ha)	0.0		

**Storm Durations**

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

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

**Node S5 Online Orifice Control**

Flap Valve	x	Design Depth (m)	0.600	Discharge Coefficient	0.600
Replaces Downstream Link	✓	Design Flow (l/s)	0.5		
Invert Level (m)	0.000	Diameter (m)	0.017		

**Node SA1 Soakaway Storage Structure**

Base Inf Coefficient (m/hr)	0.30300	Invert Level (m)	5.300	Depth (m)	0.400
Side Inf Coefficient (m/hr)	0.30300	Time to half empty (mins)	58	Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	2.500	Number Required	1
Porosity	0.95	Pit Length (m)	3.000		

**Node PP1 Carpark Storage Structure**

Base Inf Coefficient (m/hr)	0.30300	Invert Level (m)	5.820	Slope (1:X)	80.0
Side Inf Coefficient (m/hr)	0.30300	Time to half empty (mins)	10	Depth (m)	0.350
Safety Factor	2.0	Width (m)	5.000	Inf Depth (m)	
Porosity	0.30	Length (m)	4.000		

**Approval Settings**

Node Size	✓	Minimum Full Bore Velocity (m/s)	
Node Losses	✓	Maximum Full Bore Velocity (m/s)	3.000
Link Size	✓	Proportional Velocity	✓
Minimum Diameter (mm)	150	Return Period (years)	
Link Length	✓	Minimum Proportional Velocity (m/s)	0.750
Maximum Length (m)	100.000	Maximum Proportional Velocity (m/s)	3.000
Coordinates	✓	Surcharged Depth	✓
Accuracy (m)	1.000	Return Period (years)	
Crossings	✓	Maximum Surcharged Depth (m)	0.100
Cover Depth	✓	Flooding	✓
Minimum Cover Depth (m)		Return Period (years)	30
Maximum Cover Depth (m)	3.000	Time to Half Empty	x
Backdrops	✓	Discharge Rates	✓
Minimum Backdrop Height (m)		Discharge Volume	✓
Maximum Backdrop Height (m)	1.500	100 year 360 minute (m <sup>3</sup> )	
Full Bore Velocity	✓		

**Results for 10 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute summer	RE1	10	5.825	0.025	0.8	0.0004	0.0000	OK
15 minute summer	S1	10	5.780	0.035	2.0	0.0028	0.0000	OK
60 minute summer	S2	46	5.491	0.141	3.1	0.0897	0.0000	OK
60 minute summer	SA1	47	5.491	0.191	4.2	1.3643	0.0000	OK
15 minute summer	RE2	10	5.550	0.035	2.1	0.0006	0.0000	OK
15 minute summer	PP1	11	5.855	0.035	0.8	0.0749	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )
15 minute summer	RE1	2.000	S1	0.8	0.406	0.132	0.0109
15 minute summer	S1	2.001	S2	2.0	0.823	0.251	0.0226
60 minute summer	S2	1.001	SA1	4.2	0.650	0.184	0.0522
60 minute summer	SA1	Infiltration		0.4			
15 minute summer	RE2	1.000	S2	2.1	0.535	0.118	0.1124
15 minute summer	PP1	Infiltration		0.6			

**Results for 30 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute summer	RE1	10	5.829	0.029	1.1	0.0005	0.0000	OK
15 minute summer	S1	10	5.787	0.042	2.7	0.0033	0.0000	OK
60 minute summer	S2	48	5.562	0.212	4.4	0.1346	0.0000	SURCHARGED
60 minute summer	SA1	48	5.562	0.262	5.6	1.8687	0.0000	OK
60 minute summer	RE2	49	5.562	0.047	1.7	0.0008	0.0000	OK
15 minute summer	PP1	11	5.863	0.043	1.1	0.1143	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )
15 minute summer	RE1	2.000	S1	1.1	0.444	0.182	0.0137
15 minute summer	S1	2.001	S2	2.7	0.890	0.339	0.0282
60 minute summer	S2	1.001	SA1	5.6	0.730	0.245	0.0528
60 minute summer	SA1	Infiltration		0.4			
60 minute summer	RE2	1.000	S2	1.7	0.473	0.096	0.1845
15 minute summer	PP1	Infiltration		0.7			

**Results for 30 year +40% CC Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute summer	RE1	10	5.834	0.034	1.5	0.0006	0.0000	OK
15 minute summer	S1	10	5.796	0.051	3.8	0.0040	0.0000	OK
120 minute summer	S2	90	5.686	0.336	3.1	0.2136	0.0000	SURCHARGED
120 minute summer	SA1	90	5.686	0.386	4.1	2.7562	0.0000	OK
120 minute summer	RE2	90	5.686	0.171	1.6	0.0031	0.0000	SURCHARGED
15 minute summer	PP1	12	5.875	0.055	1.5	0.1822	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )
15 minute summer	RE1	2.000	S1	1.5	0.472	0.248	0.0176
15 minute summer	S1	2.001	S2	3.8	0.969	0.478	0.0365
120 minute summer	S2	1.001	SA1	4.1	0.669	0.180	0.0528
120 minute summer	SA1	Infiltration		0.5			
120 minute summer	RE2	1.000	S2	1.6	0.378	0.089	0.2912
15 minute summer	PP1	Infiltration		0.9			

**Results for 100 year Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
15 minute summer	RE1	10	5.833	0.033	1.4	0.0006	0.0000	OK
15 minute summer	S1	10	5.793	0.048	3.4	0.0037	0.0000	OK
60 minute summer	S2	54	5.641	0.291	4.4	0.1849	0.0000	SURCHARGED
60 minute summer	SA1	54	5.641	0.341	5.4	2.4333	0.0000	OK
60 minute summer	RE2	54	5.641	0.126	2.2	0.0023	0.0000	OK
15 minute summer	PP1	12	5.872	0.052	1.4	0.1620	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )
15 minute summer	RE1	2.000	S1	1.4	0.474	0.232	0.0164
15 minute summer	S1	2.001	S2	3.4	0.944	0.428	0.0336
60 minute summer	S2	1.001	SA1	5.4	0.739	0.236	0.0528
60 minute summer	SA1	Infiltration		0.5			
60 minute summer	RE2	1.000	S2	2.2	0.456	0.122	0.2758
15 minute summer	PP1	Infiltration		0.9			

**Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 100.00%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
60 minute winter	RE1	60	5.969	0.169	0.9	0.0030	0.0000	SURCHARGED
60 minute winter	S1	59	5.969	0.224	2.2	0.0175	0.0000	SURCHARGED
60 minute winter	S2	59	5.969	0.619	4.3	0.3934	0.0000	SURCHARGED
60 minute winter	SA1	59	5.969	0.669	3.9	2.8656	0.0000	OK
60 minute winter	RE2	59	5.969	0.454	2.2	0.0082	0.0000	FLOOD RISK
15 minute summer	PP1	12	5.895	0.075	2.0	0.3047	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )
60 minute winter	RE1	2.000	S1	0.9	0.428	0.149	0.0432
60 minute winter	S1	2.001	S2	2.3	0.846	0.286	0.0731
60 minute winter	S2	1.001	SA1	3.9	0.812	0.170	0.0528
60 minute winter	SA1	Infiltration		0.5			
60 minute winter	RE2	1.000	S2	2.1	0.434	0.121	0.2912
15 minute summer	PP1	Infiltration		0.9			