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)	100.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
RE1	0.004	4.00	34.100		20.032	86.529	0.400	33.700
S2	0.003	4.00	34.200	450	20.032	49.272	0.770	33.430
S1	0.003	4.00	34.200	450	-12.826	48.767	0.980	33.220
SOAKAWAY			34.200		-16.193	49.061	1.020	33.180
RE2	0.004	4.00	34.100		-12.390	86.168	0.400	33.700

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	RE1	S2	17.070	0.600	33.700	33.430	0.270	63.2	100	4.29	56.4
1.001	S2	S1	16.074	0.600	33.430	33.270	0.160	100.5	100	4.64	56.4
1.002	S1	SOAKAWAY	3.380	0.600	33.220	33.180	0.040	84.5	150	4.69	56.4
2.000	RE2	S1	16.314	0.600	33.700	33.270	0.430	37.9	100	4.22	56.4

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)
1.000	0.970	7.6	0.8	0.300	0.670	0.004	0.0	22	0.632
1.001	0.767	6.0	1.4	0.670	0.830	0.007	0.0	33	0.628
1.002	1.094	19.3	2.9	0.830	0.870	0.014	0.0	39	0.786
2.000	1.256	9.9	0.8	0.300	0.830	0.004	0.0	19	0.748

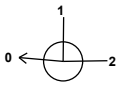
Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	17.070	63.2	100	Circular	34.100	33.700	0.300	34.200	33.430	0.670
1.001	16.074	100.5	100	Circular	34.200	33.430	0.670	34.200	33.270	0.830
1.002	3.380	84.5	150	Circular	34.200	33.220	0.830	34.200	33.180	0.870
2.000	16.314	37.9	100	Circular	34.100	33.700	0.300	34.200	33.270	0.830

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	RE1		Junction		S2	450	Manhole	Adoptable
1.001	S2	450	Manhole	Adoptable	S1	450	Manhole	Adoptable
1.002	S1	450	Manhole	Adoptable	SOAKAWAY		Junction	
2.000	RE2		Junction		S1	450	Manhole	Adoptable

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
RE1	20.032	86.529	34.100	0.400		 0	1.000	33.700	100
S2	20.032	49.272	34.200	0.770	450	 1	1.000	33.430	100
						0	1.001	33.430	100
S1	-12.826	48.767	34.200	0.980	450	 1	2.000	33.270	100
						2	1.001	33.270	100
						0	1.002	33.220	150
SOAKAWAY	-16.193	49.061	34.200	1.020		1	1.002	33.180	150
RE2	-12.390	86.168	34.100	0.400		 0	2.000	33.700	100

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	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
100	45	10	0

Node SOAKAWAY Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	32.670	Depth (m)	0.800
Side Inf Coefficient (m/hr)	0.03816	Time to half empty (mins)	2023	Inf Depth (m)	
Safety Factor	1.5	Pit Width (m)	2.500	Number Required	1
Porosity	0.95	Pit Length (m)	6.500		

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

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 (m³)	Flood (m³)	Status
15 minute summer	RE1	10	33.731	0.031	1.6	0.0000	0.0000	OK
15 minute summer	S2	10	33.479	0.049	2.8	0.0078	0.0000	OK
15 minute summer	S1	10	33.278	0.058	5.6	0.0093	0.0000	OK
960 minute winter	SOAKAWAY	645	33.037	-0.143	0.4	5.6603	0.0000	OK
15 minute summer	RE2	10	33.728	0.028	1.6	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)
15 minute summer	RE1	1.000	S2	1.6	0.557	0.210	0.0503
15 minute summer	S2	1.001	S1	2.8	0.741	0.460	0.0601
15 minute summer	S1	1.002	SOAKAWAY	5.6	0.914	0.288	0.0206
960 minute winter	SOAKAWAY	Infiltration		0.0			
15 minute summer	RE2	2.000	S1	1.6	0.920	0.162	0.0284

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

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 (m³)	Flood (m³)	Status
15 minute summer	RE1	10	33.736	0.036	2.1	0.0000	0.0000	OK
15 minute summer	S2	10	33.488	0.058	3.7	0.0093	0.0000	OK
15 minute summer	S1	10	33.288	0.068	7.4	0.0109	0.0000	OK
240 minute winter	SOAKAWAY	232	33.105	-0.075	1.4	6.7140	0.0000	OK
15 minute summer	RE2	10	33.732	0.032	2.1	0.0000	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)
15 minute summer	RE1	1.000	S2	2.1	0.593	0.276	0.0620
15 minute summer	S2	1.001	S1	3.7	0.791	0.609	0.0745
15 minute summer	S1	1.002	SOAKAWAY	7.4	0.983	0.381	0.0253
240 minute winter	SOAKAWAY	Infiltration		0.1			
15 minute summer	RE2	2.000	S1	2.1	0.993	0.213	0.0345

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd

Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 93.40%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	RE1	440	34.100	0.400	0.4	0.0000	0.0000	FLOOD RISK
480 minute winter	S2	464	34.142	0.712	0.7	0.1132	0.0000	FLOOD RISK
480 minute winter	S1	464	34.142	0.922	1.4	0.1466	0.0000	FLOOD RISK
480 minute winter	SOAKAWAY	464	34.142	0.962	2.2	12.3581	0.0000	OK
480 minute winter	RE2	440	34.100	0.400	0.4	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)
480 minute winter	RE1	1.000	S2	0.4	0.378	0.053	0.1336
480 minute winter	S2	1.001	S1	0.7	0.511	0.116	0.1258
480 minute winter	S1	1.002	SOAKAWAY	2.2	0.626	0.112	0.0595
480 minute winter	SOAKAWAY	Infiltration		0.1			
480 minute winter	RE2	2.000	S1	0.4	0.614	0.041	0.1276

Flow+ v16.0 Copyright © 1988-2026 Causeway Technologies Ltd