

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	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)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	x
Maximum Rainfall (mm/hr)	0.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
4.0	0.125	5.00	107.000	600		522635.259	228404.233	0.525
5.0	0.020	5.00	99.250	600		522378.329	228487.561	0.450
4.3			99.350	600		522398.203	228472.229	0.675
HW1			99.300	1		522396.712	228465.335	0.800
HW2		5.00	99.300	1		522384.991	228462.770	0.800
4.4/FC			99.100	1200	675	522377.100	228463.160	1.400
Outfall			98.000	1		522360.834	228415.777	1.000

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.000	4.0	4.3	246.700	0.600	106.475	98.675	7.800	31.6	225	6.76	0.0
5.000	5.0	4.3	30.100	0.600	98.800	98.750	0.050	602.0	150	6.25	0.0
4.003	4.3	HW1	6.900	0.600	98.675	98.500	0.175	39.4	225	6.82	0.0
4.004	HW2	4.4/FC	8.900	0.600	98.500	97.700	0.800	11.1	225	5.04	0.0
4.005	4.4/FC	Outfall	52.900	0.600	97.700	97.000	0.700	75.6	225	5.62	0.0

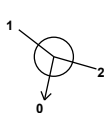
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	2.334	92.8	0.0	0.300	0.450	0.125	0.0	0	0.000
5.000	0.403	7.1	0.0	0.300	0.450	0.020	0.0	0	0.000
4.003	2.089	83.1	0.0	0.450	0.575	0.145	0.0	0	0.000
4.004	3.945	156.8	0.0	0.575	1.175	0.000	0.0	0	0.000
4.005	1.506	59.9	0.0	1.175	0.775	0.000	0.0	0	0.000

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)
4.000	246.700	31.6	225	Circular	107.000	106.475	0.300	99.350	98.675	0.450
5.000	30.100	602.0	150	Circular	99.250	98.800	0.300	99.350	98.750	0.450
4.003	6.900	39.4	225	Circular	99.350	98.675	0.450	99.300	98.500	0.575
4.004	8.900	11.1	225	Circular	99.300	98.500	0.575	99.100	97.700	1.175
4.005	52.900	75.6	225	Circular	99.100	97.700	1.175	98.000	97.000	0.775

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
4.000	4.0	600		Manhole	Adoptable	4.3	600		Manhole	Adoptable
5.000	5.0	600		Manhole	Adoptable	4.3	600		Manhole	Adoptable
4.003	4.3	600		Manhole	Adoptable	HW1	1		Manhole	Adoptable
4.004	HW2	1		Manhole	Adoptable	4.4/FC	1200	675	Manhole	Adoptable
4.005	4.4/FC	1200	675	Manhole	Adoptable	Outfall	1		Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
4.0	522635.259	228404.233	107.000	0.525	600					
							0	4.000	106.475	225
5.0	522378.329	228487.561	99.250	0.450	600					
							0	5.000	98.800	150
4.3	522398.203	228472.229	99.350	0.675	600					
							1	5.000	98.750	150
							2	4.000	98.675	225
							0	4.003	98.675	225
HW1	522396.712	228465.335	99.300	0.800	1					
							1	4.003	98.500	225
HW2	522384.991	228462.770	99.300	0.800	1					
							0	4.004	98.500	225
4.4/FC	522377.100	228463.160	99.100	1.400	1200	675				
							1	4.004	97.700	225
							0	4.005	97.700	225
Outfall	522360.834	228415.777	98.000	1.000	1					
							1	4.005	97.000	225

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Detailed	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	1440	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	20.0		

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 %)
2	0	0	0
30	25	0	0
100	25	0	0

Node 4.4/FC Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	97.700	Product Number	CTL-SHE-0050-1300-1300-1300
Design Depth (m)	1.300	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.3	Min Node Diameter (mm)	1200

Node HW2 Flow through Pond Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Main Channel Length (m)	11.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	98.500	Main Channel Slope (1:X)	9999.0
Safety Factor	2.0	Time to half empty (mins)	728	Main Channel n	0.050

Inlets

HW1

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	86.4	0.0	0.800	217.2	0.0	0.801	0.0	0.0

Node 4.3 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	5.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	98.750	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	688	Diameter (mm)	1000

Results for 2 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	4.0	11	106.545	0.070	21.0	0.3549	0.0000	OK
15 minute summer	5.0	11	98.874	0.074	3.4	0.0868	0.0000	OK
15 minute summer	4.3	12	98.771	0.096	23.0	0.0625	0.0000	OK
240 minute summer	HW1	192	98.676	0.176	8.3	0.0000	0.0000	OK
240 minute summer	HW2	192	98.676	0.176	4.6	0.0000	0.0000	OK
240 minute summer	4.4/FC	192	98.676	0.976	2.0	0.7907	0.0000	SURCHARGED
15 minute summer	Outfall	1	97.000	0.000	1.1	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)	Discharge Vol (m³)
15 minute summer	4.0	4.000	4.3	19.8	1.617	0.214	3.2261	
15 minute summer	5.0	5.000	4.3	3.1	0.452	0.438	0.2082	
15 minute summer	4.3	4.003	HW1	21.8	2.124	0.263	0.0737	
240 minute summer	HW1	Flow through Pond	HW2	4.6	0.016	0.003	17.7461	
240 minute summer	HW2	4.004	4.4/FC	2.0	0.285	0.013	0.3255	
240 minute summer	4.4/FC	Hydro-Brake®	Outfall	1.1				31.9

Results for 30 year +25% CC Critical Storm Duration. Lowest mass balance: 99.50%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	4.0	11	106.618	0.143	71.4	0.7226	0.0000	OK
15 minute summer	5.0	11	98.995	0.195	11.4	0.2288	0.0000	FLOOD RISK
240 minute winter	4.3	240	98.976	0.301	14.9	1.7441	0.0000	SURCHARGED
240 minute winter	HW1	240	98.976	0.476	20.3	0.0000	0.0000	OK
240 minute winter	HW2	240	98.976	0.476	10.8	0.0000	0.0000	SURCHARGED
240 minute winter	4.4/FC	240	98.976	1.276	2.5	1.0337	0.0000	FLOOD RISK
15 minute summer	Outfall	1	97.000	0.000	1.2	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	4.0	4.000	4.3	68.9	2.215	0.742	8.0764	
15 minute summer	5.0	5.000	4.3	10.7	0.628	1.503	0.5260	
240 minute winter	4.3	4.003	HW1	20.3	1.186	0.245	0.2744	
240 minute winter	HW1	Flow through Pond	HW2	10.8	0.021	0.008	59.6356	
240 minute winter	HW2	4.004	4.4/FC	2.5	0.337	0.016	0.3540	
240 minute winter	4.4/FC	Hydro-Brake®	Outfall	1.3				85.9

Results for 100 year +25% CC Critical Storm Duration. Lowest mass balance: 99.41%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	4.0	11	106.646	0.171	90.3	0.8644	0.0000	OK
15 minute summer	5.0	12	99.180	0.380	14.5	0.4455	0.0000	FLOOD RISK
360 minute winter	4.3	352	99.079	0.404	13.3	2.6972	0.0000	FLOOD RISK
360 minute winter	HW1	352	99.079	0.579	10.8	0.0000	0.0000	OK
360 minute winter	HW2	352	99.079	0.579	6.3	0.0000	0.0000	FLOOD RISK
360 minute winter	4.4/FC	352	99.079	1.379	2.2	1.1166	0.0000	FLOOD RISK
15 minute summer	Outfall	1	97.000	0.000	1.2	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	4.0	4.000	4.3	87.2	2.330	0.939	8.9079	
15 minute summer	5.0	5.000	4.3	12.6	0.718	1.778	0.5299	
360 minute winter	4.3	4.003	HW1	10.8	1.122	0.130	0.2744	
360 minute winter	HW1	Flow through Pond	HW2	6.3	0.018	0.005	77.3257	
360 minute winter	HW2	4.004	4.4/FC	2.2	0.217	0.014	0.3540	
360 minute winter	4.4/FC	Hydro-Brake®	Outfall	1.3				114.8