

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)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
6.0	0.193	5.00	107.500	600		522640.148	228393.644	0.600
7.0	0.100	5.00	96.300	600		522308.873	227603.320	0.600
6.5	0.141	5.00	96.250	600		522397.628	227816.369	0.600
6.6			95.750	1200		522389.171	227819.937	1.050
6.7			94.000	1500		522315.319	227819.702	1.575
6.8			92.800	1200	675	522241.234	227819.467	1.100
HW1			92.700	1		522229.698	227818.248	1.100
HW2		5.00	92.600	1		522191.099	227814.847	1.000
6.9 / FC			92.600	1200	675	522190.233	227812.262	1.150
Outfall			91.500	1		522176.766	227823.458	0.700

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)
6.000	6.0	6.5	626.149	0.600	106.900	95.650	11.250	55.7	300	9.94	50.0
7.000	7.0	6.5	230.797	0.600	95.700	95.650	0.050	4615.9	300	22.32	50.0
6.005	6.5	6.6	9.179	0.600	95.650	94.700	0.950	9.7	300	22.35	50.0
6.006	6.6	6.7	73.852	0.600	94.700	92.500	2.200	33.6	300	22.80	50.0
6.007	6.7	6.8	74.400	0.600	92.425	91.700	0.725	102.6	375	23.50	50.0
6.008	6.8	HW1	16.100	0.600	91.700	91.600	0.100	161.0	375	23.68	50.0
6.009	HW2	6.9 / FC	9.700	0.600	91.600	91.450	0.150	64.7	375	5.07	50.0
6.010	6.9 / FC	Outfall	16.700	0.600	91.450	90.800	0.650	25.7	100	5.25	50.0

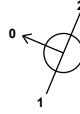
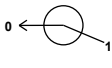
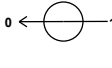
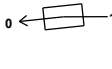
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.000	2.111	149.2	34.9	0.300	0.300	0.193	0.0	98	1.732
7.000	0.222	15.7	18.1	0.300	0.300	0.100	0.0	300	0.225
6.005	5.086	359.5	78.4	0.300	0.750	0.434	0.0	95	4.096
6.006	2.722	192.4	78.4	0.750	1.200	0.434	0.0	133	2.589
6.007	1.788	197.5	78.4	1.200	0.725	0.434	0.0	164	1.687
6.008	1.425	157.4	78.4	0.725	0.725	0.434	0.0	187	1.424
6.009	2.256	249.2	0.0	0.625	0.775	0.000	0.0	0	0.000
6.010	1.529	12.0	0.0	1.050	0.600	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)
6.000	626.149	55.7	300	Circular	107.500	106.900	0.300	96.250	95.650	0.300
7.000	230.797	4615.9	300	Circular	96.300	95.700	0.300	96.250	95.650	0.300
6.005	9.179	9.7	300	Circular	96.250	95.650	0.300	95.750	94.700	0.750
6.006	73.852	33.6	300	Circular	95.750	94.700	0.750	94.000	92.500	1.200
6.007	74.400	102.6	375	Circular	94.000	92.425	1.200	92.800	91.700	0.725
6.008	16.100	161.0	375	Circular	92.800	91.700	0.725	92.700	91.600	0.725
6.009	9.700	64.7	375	Circular	92.600	91.600	0.625	92.600	91.450	0.775
6.010	16.700	25.7	100	Circular	92.600	91.450	1.050	91.500	90.800	0.600

Link	US Node	Dia (mm)	Width (mm)	Node Type	MH Type	DS Node	Dia (mm)	Width (mm)	Node Type	MH Type
6.000	6.0	600		Manhole	Adoptable	6.5	600		Manhole	Adoptable
7.000	7.0	600		Manhole	Adoptable	6.5	600		Manhole	Adoptable
6.005	6.5	600		Manhole	Adoptable	6.6	1200		Manhole	Adoptable
6.006	6.6	1200		Manhole	Adoptable	6.7	1500		Manhole	Adoptable
6.007	6.7	1500		Manhole	Adoptable	6.8	1200	675	Manhole	Adoptable
6.008	6.8	1200	675	Manhole	Adoptable	HW1	1		Manhole	Adoptable
6.009	HW2	1		Manhole	Adoptable	6.9 / FC	1200	675	Manhole	Adoptable
6.010	6.9 / 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)
6.0	522640.148	228393.644	107.500	0.600	600					
7.0	522308.873	227603.320	96.300	0.600	600					
6.5	522397.628	227816.369	96.250	0.600	600					
6.6	522389.171	227819.937	95.750	1.050	1200					
6.7	522315.319	227819.702	94.000	1.575	1500					
6.8	522241.234	227819.467	92.800	1.100	1200	675				
HW1	522229.698	227818.248	92.700	1.100	1					

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Width (mm)	Connections	Link	IL (m)	Dia (mm)
HW2	522191.099	227814.847	92.600	1.000	1					
6.9 / FC	522190.233	227812.262	92.600	1.150	1200	675		0	6.009	91.600
								1	6.009	91.450
								0	6.010	91.450
Outfall	522176.766	227823.458	91.500	0.700	1			1	6.010	90.800
										100

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
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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 6.9 / FC Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	91.450	Product Number	CTL-SHE-0062-1700-1000-1700
Design Depth (m)	1.000	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.7	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)	33.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	91.600	Main Channel Slope (1:X)	9999.0
Safety Factor	2.0	Time to half empty (mins)		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	222.5	0.0	1.000	473.7	0.0	1.001	0.0	0.0

Node 6.5 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	7.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	95.650	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	3	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	6.0	12	106.986	0.086	32.4	0.5796	0.0000	OK
30 minute summer	7.0	21	95.861	0.161	14.7	0.5804	0.0000	OK
30 minute summer	6.5	21	95.719	0.069	48.7	2.9192	0.0000	OK
30 minute summer	6.6	22	94.794	0.094	40.8	0.1068	0.0000	OK
30 minute summer	6.7	22	92.539	0.114	40.6	0.2009	0.0000	OK
360 minute winter	6.8	360	91.887	0.187	12.3	0.1513	0.0000	OK
360 minute winter	HW1	360	91.887	0.287	12.3	0.0000	0.0000	OK
360 minute winter	HW2	360	91.887	0.287	12.9	0.0000	0.0000	OK
360 minute winter	6.9 / FC	360	91.890	0.440	9.5	0.3565	0.0000	SURCHARGED
15 minute summer	Outfall	1	90.800	0.000	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)	Discharge Vol (m³)
15 minute summer	6.0	6.000	6.5	24.8	1.785	0.166	8.7805	
30 minute summer	7.0	7.000	6.5	8.2	0.330	0.522	5.8434	
30 minute summer	6.5	6.005	6.6	40.8	2.634	0.113	0.1427	
30 minute summer	6.6	6.006	6.7	40.6	2.166	0.211	1.3841	
30 minute summer	6.7	6.007	6.8	40.5	1.252	0.205	2.4102	
360 minute winter	6.8	6.008	HW1	12.3	0.697	0.078	1.1696	
360 minute winter	HW1	Flow through Pond	HW2	7.1	0.019	0.007	73.7986	
360 minute winter	HW2	6.009	6.9 / FC	9.5	0.253	0.038	0.9737	
360 minute winter	6.9 / FC	Hydro-Brake®	Outfall	1.6				107.2

Results for 30 year +25% CC Critical Storm Duration. Lowest mass balance: 99.85%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	6.0	12	107.077	0.177	110.4	1.1887	0.0000	OK
15 minute summer	7.0	12	96.132	0.432	57.2	1.5610	0.0000	FLOOD RISK
15 minute summer	6.5	13	95.818	0.168	204.2	8.4224	0.0000	OK
15 minute summer	6.6	13	94.932	0.232	174.1	0.2622	0.0000	OK
15 minute summer	6.7	14	92.703	0.278	172.1	0.4919	0.0000	OK
480 minute winter	6.8	488	92.358	0.658	25.4	0.5328	0.0000	SURCHARGED
480 minute winter	HW1	488	92.358	0.758	24.5	0.0000	0.0000	OK
480 minute winter	HW2	488	92.358	0.758	15.4	0.0000	0.0000	FLOOD RISK
480 minute winter	6.9 / FC	488	92.358	0.908	8.0	0.7353	0.0000	FLOOD RISK
15 minute summer	Outfall	1	90.800	0.000	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)	Discharge Vol (m³)
15 minute summer	6.0	6.000	6.5	96.7	2.387	0.648	25.7944	
15 minute summer	7.0	7.000	6.5	39.8	0.637	2.533	12.7974	
15 minute summer	6.5	6.005	6.6	174.1	3.534	0.484	0.4540	
15 minute summer	6.6	6.006	6.7	172.1	3.047	0.894	4.1850	
15 minute summer	6.7	6.007	6.8	172.6	1.819	0.874	7.0291	
480 minute winter	6.8	6.008	HW1	24.5	0.795	0.156	1.7758	
480 minute winter	HW1	Flow through Pond	HW2	13.0	0.025	0.012	240.2753	
480 minute winter	HW2	6.009	6.9 / FC	8.0	0.210	0.032	1.0699	
480 minute winter	6.9 / FC	Hydro-Brake®	Outfall	1.6				168.1

Results for 100 year +25% CC Critical Storm Duration. Lowest mass balance: 99.83%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	6.0	11	107.107	0.207	139.4	1.3930	0.0000	OK
15 minute summer	7.0	12	96.290	0.590	72.2	2.1324	0.0000	FLOOD RISK
15 minute summer	6.5	13	95.859	0.209	259.6	10.6464	0.0000	OK
15 minute summer	6.6	13	95.248	0.548	213.7	0.6194	0.0000	SURCHARGED
15 minute summer	6.7	12	92.748	0.323	200.3	0.5708	0.0000	OK
600 minute winter	6.8	615	92.507	0.807	25.9	0.6540	0.0000	FLOOD RISK
600 minute winter	HW1	615	92.507	0.907	25.4	0.0000	0.0000	OK
600 minute winter	HW2	615	92.507	0.907	14.4	0.0000	0.0000	FLOOD RISK
600 minute winter	6.9 / FC	615	92.507	1.057	8.5	0.8564	0.0000	FLOOD RISK
15 minute summer	Outfall	1	90.800	0.000	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)	Discharge Vol (m³)
15 minute summer	6.0	6.000	6.5	122.9	2.472	0.824	31.6719	
15 minute summer	7.0	7.000	6.5	50.1	0.753	3.190	14.1727	
15 minute summer	6.5	6.005	6.6	213.7	3.618	0.595	0.5637	
15 minute summer	6.6	6.006	6.7	200.3	2.999	1.041	5.2004	
15 minute summer	6.7	6.007	6.8	193.5	1.858	0.980	7.7245	
600 minute winter	6.8	6.008	HW1	25.4	0.787	0.161	1.7758	
600 minute winter	HW1	Flow through Pond	HW2	13.4	0.025	0.012	304.7728	
600 minute winter	HW2	6.009	6.9 / FC	8.5	0.201	0.034	1.0699	
600 minute winter	6.9 / FC	Hydro-Brake®	Outfall	1.7				191.6