

Design Settings

Rainfall Methodology	FEH-22	Maximum Time of Concentration (mins)	30.00	Preferred Cover Depth (m)	1.200
Return Period (years)	100	Maximum Rainfall (mm/hr)	50.0	Include Intermediate Ground	✓
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00	Enforce best practice design rules	x
CV	1.000	Connection Type	Level Soffits		
Time of Entry (mins)	5.00	Minimum Backdrop Height (m)	0.200		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Width (mm)	Easting (m)	Northing (m)	Depth (m)
6.0	0.183	5.00	107.000	600		522636.283	228387.349	0.700
6.1	0.081	5.00	102.800	60		522527.995	228130.406	0.700
7.0	0.090	5.00	96.500	600		522310.804	227623.265	0.600
6.2	0.202	5.00	96.250	600		522394.846	227817.527	0.600
6.3			95.750	1200		522389.171	227819.937	0.750
6.4			94.000	1500		522315.319	227819.702	1.575
6.5			92.800	1200	675	522262.617	227821.838	1.100
HW1			92.700	1		522229.698	227818.248	1.100
HW2		5.00	92.600	1		522191.099	227814.847	1.000
6.6/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	6.1	278.830	0.600	106.300	102.100	4.200	66.4	300	7.41	50.0
6.001	6.1	6.2	340.032	0.600	102.100	95.650	6.450	52.7	300	10.02	50.0
7.000	7.0	6.2	211.662	0.600	95.900	95.650	0.250	846.6	300	11.63	50.0
6.002	6.2	6.3	6.166	0.600	95.650	95.000	0.650	9.5	300	11.65	50.0
6.003	6.3	6.4	73.852	0.600	95.000	92.500	2.500	29.5	300	12.07	50.0
6.004	6.4	6.5	74.400	0.600	92.425	91.700	0.725	102.6	375	12.76	50.0
6.005	6.5	HW1	16.100	0.600	91.700	91.600	0.100	161.0	375	12.95	50.0
HW OUT	HW2	6.6/FC	9.700	0.600	91.600	91.450	0.150	64.7	375	5.07	50.0
6.006	6.6/FC	Outfall	16.700	0.600	91.450	90.800	0.650	25.7	100	5.25	50.0

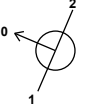
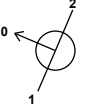
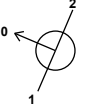
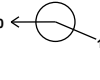
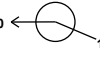
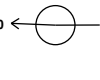
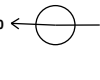
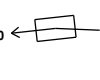
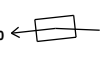
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
6.000	1.932	136.6	33.1	0.400	0.400	0.183	0.0	100	1.599
6.001	2.170	153.4	47.7	0.400	0.300	0.264	0.0	115	1.923
7.000	0.532	37.6	16.3	0.300	0.300	0.090	0.0	138	0.514
6.002	5.133	362.8	100.5	0.300	0.450	0.556	0.0	108	4.412
6.003	2.903	205.2	100.5	0.450	1.200	0.556	0.0	148	2.887
6.004	1.788	197.5	100.5	1.200	0.725	0.556	0.0	189	1.795
6.005	1.425	157.4	100.5	0.725	0.725	0.556	0.0	218	1.507
HW OUT	2.256	249.2	0.0	0.625	0.775	0.000	0.0	0	0.000
6.006	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	278.830	66.4	300	Circular	107.000	106.300	0.400	102.800	102.100	0.400
6.001	340.032	52.7	300	Circular	102.800	102.100	0.400	96.250	95.650	0.300
7.000	211.662	846.6	300	Circular	96.500	95.900	0.300	96.250	95.650	0.300
6.002	6.166	9.5	300	Circular	96.250	95.650	0.300	95.750	95.000	0.450
6.003	73.852	29.5	300	Circular	95.750	95.000	0.450	94.000	92.500	1.200
6.004	74.400	102.6	375	Circular	94.000	92.425	1.200	92.800	91.700	0.725
6.005	16.100	161.0	375	Circular	92.800	91.700	0.725	92.700	91.600	0.725
HW OUT	9.700	64.7	375	Circular	92.600	91.600	0.625	92.600	91.450	0.775
6.006	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	6.1	60		Manhole	Adoptable
6.001	6.1	60		Manhole	Adoptable	6.2	600		Manhole	Adoptable
7.000	7.0	600		Manhole	Adoptable	6.2	600		Manhole	Adoptable
6.002	6.2	600		Manhole	Adoptable	6.3	1200		Manhole	Adoptable
6.003	6.3	1200		Manhole	Adoptable	6.4	1500		Manhole	Adoptable
6.004	6.4	1500		Manhole	Adoptable	6.5	1200	675	Manhole	Adoptable
6.005	6.5	1200	675	Manhole	Adoptable	HW1	1		Manhole	Adoptable
HW OUT	HW2	1		Manhole	Adoptable	6.6/FC	1200	675	Manhole	Adoptable
6.006	6.6/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	522636.283	228387.349	107.000	0.700	600					
6.1	522527.995	228130.406	102.800	0.700	60			0	6.000	106.300
								1	6.000	102.100
								0	6.001	102.100
7.0	522310.804	227623.265	96.500	0.600	600					
								0	7.000	95.900
6.2	522394.846	227817.527	96.250	0.600	600			1	7.000	95.650
								2	6.001	95.650
								0	6.002	95.650
6.3	522389.171	227819.937	95.750	0.750	1200			1	6.002	95.000
								0	6.003	95.000
6.4	522315.319	227819.702	94.000	1.575	1500			1	6.003	92.500
								0	6.004	92.425
6.5	522262.617	227821.838	92.800	1.100	1200	675		1	6.004	91.700
								0	6.005	91.700
HW1	522229.698	227818.248	92.700	1.100	1			1	6.005	91.600
										

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					
6.6/FC	522190.233	227812.262	92.600	1.150	1200	675		0 HW OUT	91.600	375
								1 HW OUT	91.450	375
								0 6.006	91.450	100
Outfall	522176.766	227823.458	91.500	0.700	1			1 6.006	90.800	100

Simulation Settings

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

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 %)	Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0	100	25	0	0
30	25	0	0				

Node 6.6/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-0075-2600-1100-2600
Design Depth (m)	1.100	Min Outlet Diameter (m)	0.100
Design Flow (l/s)	2.6	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 (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	294.2	0.0	1.000	553.8	0.0	1.001	0.0	0.0

Node 6.1 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	6.000
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	102.100	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	Diameter (mm)	1000

Node 6.2 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)	6	Diameter (mm)	1000

Node 6.2 Link Surround Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Link	6.001
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	95.650	Surround Shape	(Trench)
Safety Factor	2.0	Time to half empty (mins)	0	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	11	106.395	0.095	30.7	0.5253	0.0000	OK
15 minute summer	6.1	13	102.194	0.094	42.0	0.2897	0.0000	OK
15 minute summer	7.0	12	96.016	0.116	15.1	0.3818	0.0000	OK
15 minute summer	6.2	13	95.743	0.093	69.0	1.5941	0.0000	OK
15 minute summer	6.3	13	95.116	0.116	63.2	0.1308	0.0000	OK
15 minute summer	6.4	14	92.567	0.142	62.9	0.2515	0.0000	OK
15 minute summer	6.5	13	91.881	0.181	62.1	0.1464	0.0000	OK
360 minute winter	HW1	344	91.870	0.270	15.9	0.0000	0.0000	OK
360 minute winter	HW2	344	91.870	0.270	16.9	0.0000	0.0000	OK
360 minute winter	6.6/FC	288	91.879	0.429	15.5	0.3475	0.0000	SURCHARGED
15 minute summer	Outfall	1	90.800	0.000	2.6	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	6.1	29.0	1.638	0.212	5.1531	
15 minute summer	6.1	6.001	6.2	33.2	1.766	0.217	6.4000	
15 minute summer	7.0	7.000	6.2	10.4	0.482	0.278	4.6030	
15 minute summer	6.2	6.002	6.3	63.2	2.909	0.174	0.1347	
15 minute summer	6.3	6.003	6.4	62.9	2.553	0.306	1.8194	
15 minute summer	6.4	6.004	6.5	62.1	1.382	0.315	3.3756	
15 minute summer	6.5	6.005	HW1	63.7	2.064	0.405	0.5297	
360 minute winter	HW1	Flow through Pond	HW2	10.0	0.020	0.007	88.4508	
360 minute winter	HW2	HW OUT	6.6/FC	15.5	0.364	0.062	0.9473	
360 minute winter	6.6/FC	Hydro-Brake®	Outfall	2.6				137.4

Results for 30 year +25% CC Critical Storm Duration. Lowest mass balance: 99.88%

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	106.493	0.193	104.6	1.0641	0.0000	OK
15 minute summer	6.1	12	102.306	0.206	146.6	0.7923	0.0000	OK
15 minute summer	7.0	12	96.168	0.268	51.5	0.8804	0.0000	OK
15 minute summer	6.2	13	95.908	0.258	267.0	8.5787	0.0000	OK
15 minute summer	6.3	14	95.530	0.530	207.2	0.5998	0.0000	FLOOD RISK
30 minute summer	6.4	24	92.917	0.492	210.7	0.8691	0.0000	SURCHARGED
480 minute winter	6.5	480	92.366	0.666	32.7	0.5395	0.0000	SURCHARGED
480 minute winter	HW1	480	92.366	0.766	31.7	0.0000	0.0000	OK
480 minute winter	HW2	480	92.366	0.766	19.2	0.0000	0.0000	FLOOD RISK
480 minute winter	6.6/FC	480	92.366	0.916	13.6	0.7419	0.0000	FLOOD RISK
15 minute summer	Outfall	1	90.800	0.000	2.6	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	6.1	102.4	2.162	0.750	13.4348	
15 minute summer	6.1	6.001	6.2	127.3	2.298	0.830	19.3954	
15 minute summer	7.0	7.000	6.2	41.5	0.656	1.102	13.4418	
15 minute summer	6.2	6.002	6.3	207.2	3.552	0.571	0.4159	
15 minute summer	6.3	6.003	6.4	197.2	3.217	0.961	5.2006	
30 minute summer	6.4	6.004	6.5	198.7	1.861	1.006	8.2061	
480 minute winter	6.5	6.005	HW1	31.7	0.914	0.201	1.7758	
480 minute winter	HW1	Flow through Pond	HW2	17.2	0.026	0.013	300.8118	
480 minute winter	HW2	HW OUT	6.6/FC	13.6	0.224	0.054	1.0699	
480 minute winter	6.6/FC	Hydro-Brake®	Outfall	2.6				259.3

Results for 100 year +25% CC Critical Storm Duration. Lowest mass balance: 98.41%

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	106.531	0.231	132.2	1.2705	0.0000	OK
15 minute summer	6.1	12	102.353	0.253	184.6	1.0617	0.0000	OK
15 minute summer	7.0	12	96.456	0.556	65.1	1.8264	0.0000	FLOOD RISK
15 minute summer	6.2	14	96.126	0.476	335.7	23.0837	0.0000	FLOOD RISK
15 minute summer	6.3	14	95.705	0.705	214.1	0.7978	0.0000	FLOOD RISK
60 minute summer	6.4	42	93.056	0.631	206.9	1.1144	0.0000	SURCHARGED
480 minute winter	6.5	480	92.525	0.825	40.4	0.6685	0.0000	FLOOD RISK
480 minute winter	HW1	480	92.525	0.925	39.7	0.0000	0.0000	OK
480 minute winter	HW2	480	92.525	0.925	20.9	0.0000	0.0000	FLOOD RISK
480 minute winter	6.6/FC	480	92.525	1.075	14.5	0.8710	0.0000	FLOOD RISK
15 minute summer	Outfall	1	90.800	0.000	2.6	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	6.1	128.7	2.237	0.942	16.3536	
15 minute summer	6.1	6.001	6.2	159.8	2.334	1.042	22.7403	
15 minute summer	7.0	7.000	6.2	48.7	0.691	1.293	14.9051	
15 minute summer	6.2	6.002	6.3	214.1	3.608	0.590	0.4342	
15 minute summer	6.3	6.003	6.4	201.5	3.210	0.982	5.2006	
60 minute summer	6.4	6.004	6.5	195.1	1.832	0.988	8.2061	
480 minute winter	6.5	6.005	HW1	39.7	0.969	0.252	1.7758	
480 minute winter	HW1	Flow through Pond	HW2	20.9	0.027	0.015	382.5443	
480 minute winter	HW2	HW OUT	6.6/FC	14.5	0.302	0.058	1.0699	
480 minute winter	6.6/FC	Hydro-Brake®	Outfall	2.6				266.5