

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)	0.350
Time of Entry (mins)	2.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	75.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
S3	0.009	2.00	50.300	500	986.208	984.874	1.050	49.250
S9	0.003	2.00	50.300	450	995.621	983.628	0.632	49.668
S7			50.300	450	990.163	980.746	1.129	49.171
S6	0.009	2.00	50.300	450	985.291	981.182	1.073	49.227
S8	0.003	2.00	50.300	450	993.829	977.741	0.644	49.656
OUTFALL	0.000		50.300	450	995.043	981.273	1.614	48.686
DT1	0.027	2.00	50.100	100	995.495	968.089	0.350	49.750

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	S3	S6	3.804	0.600	49.250	49.227	0.023	165.4	150	2.19	57.0
1.001	S9	S3	9.495	0.600	49.668	49.350	0.318	29.9	100	2.11	57.0
2.003	S6	S7	4.891	0.600	49.227	49.171	0.056	87.3	150	2.39	57.0
3.000	S8	S6	9.205	0.600	49.656	49.277	0.379	24.3	100	2.31	57.0
1.003	S7	OUTFALL	4.908	0.600	49.171	48.686	0.485	10.1	150	2.42	57.0
3.001	DT1	S8	9.795	0.600	49.750	49.656	0.094	104.2	100	2.22	57.0

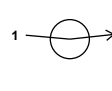
Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	0.778	13.8	2.5	0.900	0.923	0.012	0.0	43	0.591
1.001	1.417	11.1	0.6	0.532	0.850	0.003	0.0	16	0.755
2.003	1.076	19.0	10.5	0.923	0.979	0.051	0.0	79	1.101
3.000	1.573	12.4	6.2	0.544	0.923	0.030	0.0	50	1.578
1.003	3.185	56.3	10.5	0.979	1.464	0.051	0.0	44	2.444
3.001	0.753	5.9	5.6	0.250	0.544	0.027	0.0	77	0.855

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	3.804	165.4	150	Circular	50.300	49.250	0.900	50.300	49.227	0.923
1.001	9.495	29.9	100	Circular	50.300	49.668	0.532	50.300	49.350	0.850
2.003	4.891	87.3	150	Circular	50.300	49.227	0.923	50.300	49.171	0.979
3.000	9.205	24.3	100	Circular	50.300	49.656	0.544	50.300	49.277	0.923
1.003	4.908	10.1	150	Circular	50.300	49.171	0.979	50.300	48.686	1.464
3.001	9.795	104.2	100	Circular	50.100	49.750	0.250	50.300	49.656	0.544

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	S3	500	Manhole	Adoptable	S6	450	Manhole	Adoptable
1.001	S9	450	Manhole	Adoptable	S3	500	Manhole	Adoptable
2.003	S6	450	Manhole	Adoptable	S7	450	Manhole	Adoptable
3.000	S8	450	Manhole	Adoptable	S6	450	Manhole	Adoptable
1.003	S7	450	Manhole	Adoptable	OUTFALL	450	Manhole	Adoptable
3.001	DT1	100	Manhole	Adoptable	S8	450	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S3	986.208	984.874	50.300	1.050	500		1.001	49.350	100
S9	995.621	983.628	50.300	0.632	450		1.001	49.668	100
S7	990.163	980.746	50.300	1.129	450		2.003	49.171	150
S6	985.291	981.182	50.300	1.073	450		1.000	49.227	150
S8	993.829	977.741	50.300	0.644	450		3.001	49.656	100
OUTFALL	995.043	981.273	50.300	1.614	450		1.003	48.686	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
DT1	995.495	968.089	50.100	0.350	100				
						0	3.001	49.750	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)	1440	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
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Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
10	0	0	0
30	45	0	0
100	45	0	0

Node S7 Online Orifice Control

Flap Valve	x	Design Depth (m)	0.954	Discharge Coefficient	0.650
Replaces Downstream Link	x	Design Flow (l/s)	0.5		
Invert Level (m)	49.171	Diameter (m)	0.015		

Node DT1 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	49.750	Slope (1:X)	153.0
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)	384	Depth (m)	0.300
Safety Factor	2.0	Width (m)	26.000	Inf Depth (m)	
Porosity	0.30	Length (m)	10.000		

Node S3 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	49.350
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	504

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	27.0	27.0	0.400	27.0	34.4	0.401	0.0	34.4

Node S6 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	49.350
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.95	Time to half empty (mins)	504

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	24.0	24.0	0.400	24.0	30.9	0.401	0.0	30.9

Results for 2 year Critical Storm Duration. Lowest mass balance: 99.02%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S3	304	49.512	0.262	0.7	4.2290	0.0000	SURCHARGED
15 minute summer	S9	9	49.687	0.019	0.8	0.0029	0.0000	OK
360 minute winter	S7	304	49.512	0.341	0.3	0.0543	0.0000	SURCHARGED
360 minute winter	S6	304	49.512	0.285	1.2	3.7587	0.0000	SURCHARGED
15 minute summer	S8	10	49.688	0.032	2.7	0.0051	0.0000	OK
15 minute summer	OUTFALL	1	49.430	0.744	0.2	0.0000	0.0000	OK
30 minute summer	DT1	19	49.797	0.047	5.6	1.3035	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)
360 minute winter	S3	1.000	S6	-0.3	0.122	-0.021	0.0670	
15 minute summer	S9	1.001	S3	0.8	0.813	0.072	0.0240	
360 minute winter	S7	1.003	OUTFALL	0.3	0.828	0.005	0.0017	12.8
360 minute winter	S6	2.003	S7	0.3	0.141	0.016	0.0861	
15 minute summer	S8	3.000	S6	2.7	0.762	0.222	0.0459	
30 minute summer	DT1	3.001	S8	2.3	0.835	0.397	0.0279	

Results for 10 year Critical Storm Duration. Lowest mass balance: 99.56%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute summer	S3	360	49.645	0.395	1.7	7.6564	0.0000	SURCHARGED
15 minute summer	S9	9	49.693	0.025	1.5	0.0040	0.0000	OK
360 minute summer	S7	360	49.645	0.474	0.4	0.0754	0.0000	SURCHARGED
360 minute summer	S6	360	49.645	0.418	2.6	6.8033	0.0000	SURCHARGED
30 minute summer	S8	18	49.700	0.044	4.8	0.0069	0.0000	OK
15 minute summer	OUTFALL	1	49.430	0.744	0.3	0.0000	0.0000	OK
30 minute summer	DT1	20	49.816	0.066	10.6	2.6135	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)
360 minute summer	S3	1.000	S6	-0.8	0.168	-0.059	0.0670	
15 minute summer	S9	1.001	S3	1.5	0.947	0.135	0.0385	
360 minute summer	S7	1.003	OUTFALL	0.3	0.870	0.006	0.0020	21.3
360 minute summer	S6	2.003	S7	0.4	0.081	0.019	0.0861	
30 minute summer	S8	3.000	S6	4.8	0.748	0.390	0.0511	
30 minute summer	DT1	3.001	S8	4.2	0.963	0.705	0.0427	

Results for 30 year +45% CC Critical Storm Duration. Lowest mass balance: 99.32%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
240 minute winter	S3	236	49.907	0.657	3.0	10.4144	0.0000	SURCHARGED
240 minute winter	S9	236	49.907	0.239	0.4	0.0380	0.0000	SURCHARGED
240 minute winter	S7	236	49.907	0.736	0.5	0.1170	0.0000	SURCHARGED
240 minute winter	S6	236	49.907	0.680	4.6	9.2509	0.0000	SURCHARGED
240 minute winter	S8	236	49.907	0.251	3.6	0.0399	0.0000	SURCHARGED
15 minute summer	OUTFALL	1	49.430	0.744	0.3	0.0000	0.0000	OK
240 minute winter	DT1	236	49.907	0.157	4.2	9.7009	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
240 minute winter	S3	1.000	S6	-1.5	0.158	-0.113	0.0670	
240 minute winter	S9	1.001	S3	0.4	0.437	0.038	0.0743	
240 minute winter	S7	1.003	OUTFALL	0.4	0.931	0.008	0.0023	33.8
240 minute winter	S6	2.003	S7	0.5	0.391	0.025	0.0861	
240 minute winter	S8	3.000	S6	3.5	0.695	0.282	0.0720	
240 minute winter	DT1	3.001	S8	3.3	0.882	0.553	0.0766	

Results for 100 year +45% CC Critical Storm Duration. Lowest mass balance: 99.22%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	S3	352	50.028	0.778	2.6	10.4381	0.0000	FLOOD RISK
360 minute winter	S9	352	50.028	0.360	0.3	0.0572	0.0000	FLOOD RISK
360 minute winter	S7	352	50.028	0.857	0.5	0.1362	0.0000	FLOOD RISK
360 minute winter	S6	352	50.028	0.801	4.2	9.2701	0.0000	FLOOD RISK
360 minute winter	S8	352	50.028	0.372	3.3	0.0592	0.0000	FLOOD RISK
15 minute summer	OUTFALL	1	49.430	0.744	0.4	0.0000	0.0000	OK
360 minute winter	DT1	352	50.028	0.278	4.8	19.1135	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
360 minute winter	S3	1.000	S6	-1.4	0.159	-0.101	0.0670	
360 minute winter	S9	1.001	S3	0.3	0.426	0.027	0.0743	
360 minute winter	S7	1.003	OUTFALL	0.5	0.954	0.008	0.0024	40.9
360 minute winter	S6	2.003	S7	0.5	0.162	0.025	0.0861	
360 minute winter	S8	3.000	S6	3.2	0.625	0.255	0.0720	
360 minute winter	DT1	3.001	S8	3.0	0.836	0.500	0.0766	