

Design Settings

Rainfall Methodology	FEH-22	Maximum Time of Concentration (mins)	30.00	Preferred Cover Depth (m)	1.200
Return Period (years)	5	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)	Node Type	Manhole Type	Diameter (mm)	Depth (m)
1	0.082	10.00	44.900	Manhole	Adoptable	450	0.859
2			44.790	Manhole	Adoptable	450	0.777
3			44.790	Manhole	Adoptable	450	0.893
4	0.033	5.00	44.700	Manhole	Adoptable	450	0.861
5	0.131	5.00	44.600	Manhole	Adoptable	450	0.836
6	0.049	10.00	44.600	Manhole	Adoptable	450	0.870
7			44.550	Manhole	Adoptable	1200	0.835
7_OUT			44.460	Manhole	Adoptable	450	0.820

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	Link Type	Rain (mm/hr)
1.000	1	2	4.148	0.600	44.041	44.013	0.028	148.1	150	Circular	50.0
1.001	2	3	17.402	0.600	44.013	43.897	0.116	150.0	150	Circular	50.0
1.002	3	4	8.761	0.600	43.897	43.839	0.058	151.1	150	Circular	50.0
1.003	4	5	22.482	0.600	43.839	43.764	0.075	299.8	150	Circular	50.0
1.004	5	7	7.298	0.600	43.764	43.715	0.049	148.9	150	Circular	50.0
2.000	6	7	2.315	0.600	43.730	43.715	0.015	154.3	150	Circular	50.0
1.005	7	7_OUT	11.323	0.600	43.715	43.640	0.075	151.0	150	Circular	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)
1.000	0.823	14.5	14.8	0.709	0.627	0.082	0.0	126	0.935
1.001	0.818	14.5	14.8	0.627	0.743	0.082	0.0	127	0.928
1.002	0.815	14.4	14.8	0.743	0.711	0.082	0.0	128	0.924
1.003	0.575	10.2	20.9	0.711	0.686	0.115	0.0	150	0.586
1.004	0.821	14.5	44.5	0.686	0.685	0.246	0.0	150	0.836
2.000	0.806	14.2	8.8	0.720	0.685	0.049	0.0	86	0.850
1.005	0.815	14.4	53.3	0.685	0.670	0.295	0.0	150	0.831

Pipeline Schedule

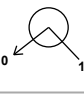
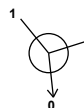
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
1.000	4.148	148.1	150	Circular	44.900	44.041	0.709	44.790	44.013	0.627
1.001	17.402	150.0	150	Circular	44.790	44.013	0.627	44.790	43.897	0.743
1.002	8.761	151.1	150	Circular	44.790	43.897	0.743	44.700	43.839	0.711
1.003	22.482	299.8	150	Circular	44.700	43.839	0.711	44.600	43.764	0.686
1.004	7.298	148.9	150	Circular	44.600	43.764	0.686	44.550	43.715	0.685
2.000	2.315	154.3	150	Circular	44.600	43.730	0.720	44.550	43.715	0.685
1.005	11.323	151.0	150	Circular	44.550	43.715	0.685	44.460	43.640	0.670

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	450	Manhole	Adoptable	2	450	Manhole	Adoptable
1.001	2	450	Manhole	Adoptable	3	450	Manhole	Adoptable
1.002	3	450	Manhole	Adoptable	4	450	Manhole	Adoptable
1.003	4	450	Manhole	Adoptable	5	450	Manhole	Adoptable
1.004	5	450	Manhole	Adoptable	7	1200	Manhole	Adoptable
2.000	6	450	Manhole	Adoptable	7	1200	Manhole	Adoptable
1.005	7	1200	Manhole	Adoptable	7_OUT	450	Manhole	Adoptable

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type
1	44.900	0.859	450	Manhole	Adoptable					
						0	1.000	44.041	150	Circular

Manhole Schedule

Node	CL (m)	Depth (m)	Dia (mm)	Node Type	MH Type	Connections	Link	IL (m)	Dia (mm)	Link Type	
2	44.790	0.777	450	Manhole	Adoptable		1	1.000	44.013	150	Circular
3	44.790	0.893	450	Manhole	Adoptable		0	1.001	44.013	150	Circular
						1	1.001	43.897	150	Circular	
4	44.700	0.861	450	Manhole	Adoptable		0	1.002	43.897	150	Circular
						1	1.002	43.839	150	Circular	
5	44.600	0.836	450	Manhole	Adoptable		0	1.003	43.839	150	Circular
						1	1.003	43.764	150	Circular	
6	44.600	0.870	450	Manhole	Adoptable		0	1.004	43.764	150	Circular
						0	2.000	43.730	150	Circular	
7	44.550	0.835	1200	Manhole	Adoptable		1	2.000	43.715	150	Circular
						2	1.004	43.715	150	Circular	
						0	1.005	43.715	150	Circular	
7_OUT	44.460	0.820	450	Manhole	Adoptable		1	1.005	43.640	150	Circular

L

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File: RWB-LINK-XX-XX-CA-C-0500-Surface Water Calculation

Network: Storm Network 1

Designer: DD

26/01/2026

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Simulation Settings

Rainfall Methodology

FEH-22

Rainfall Events

Singular

Summer CV

1.000

Winter CV

1.000

Analysis Speed

Detailed

Skip Steady State

x

Drain Down Time (mins)

240

Additional Storage (m³/ha)

0.0

Starting Level (m)

Check Discharge Rate(s)

x

Check Discharge Volume

x

Storm Durations

15

30

60

120

180

240

360

480

600

720

960

1440

2160

Return Period (years)

1

30

Climate Change (CC %)

0

35

Additional Area (A %)

0

0

Additional Flow (Q %)

0

0

Return Period (years)

100

Climate Change (CC %)

40

Additional Area (A %)

0

Additional Flow (Q %)

0

Node 7 Online Hydro-Brake® Control

Flap Valve

x

Replaces Downstream Link

x

Invert Level (m)

43.715

Design Depth (m)

1.000

Design Flow (l/s)

2.0

Objective (HE) Minimise upstream storage

Sump Available

Product Number

CTL-SHE-0067-2000-1000-2000

Min Outlet Diameter (m)

0.100

Min Node Diameter (mm)

1200

Node 1 Carpark Storage Structure

Base Inf Coefficient (m/hr)

0.00000

Side Inf Coefficient (m/hr)

0.00000

Safety Factor

5.0

Porosity

0.30

Invert Level (m)

44.300

Time to half empty (mins)

Width (m)

28.500

Length (m)

28.500

Slope (1:X)

9999.0

Depth (m)

0.500

Inf Depth (m)

Node 5 Carpark Storage Structure

Base Inf Coefficient (m/hr)

0.00000

Side Inf Coefficient (m/hr)

0.00000

Safety Factor

5.0

Porosity

0.30

Invert Level (m)

44.100

Time to half empty (mins)

Width (m)

30.600

Length (m)

30.600

Slope (1:X)

9999.0

Depth (m)

0.500

Inf Depth (m)

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Node 6 Carpark Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Width (m)	22.100	Depth (m)	0.500
Side Inf Coefficient (m/hr)	0.00000	Invert Level (m)	44.100	Length (m)	22.100	Inf Depth (m)	
Safety Factor	5.0	Time to half empty (mins)		Slope (1:X)	9999.0		

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
1 year 15 minute summer	60.206	17.036	30 year +35% CC 15 minute summer	388.370	109.895
1 year 15 minute winter	42.250	17.036	30 year +35% CC 15 minute winter	272.541	109.895
1 year 30 minute summer	37.878	10.718	30 year +35% CC 30 minute summer	246.231	69.675
1 year 30 minute winter	26.581	10.718	30 year +35% CC 30 minute winter	172.794	69.675
1 year 60 minute summer	24.596	6.500	30 year +35% CC 60 minute summer	160.614	42.446
1 year 60 minute winter	16.341	6.500	30 year +35% CC 60 minute winter	106.708	42.446
1 year 120 minute summer	20.398	5.391	30 year +35% CC 120 minute summer	101.781	26.898
1 year 120 minute winter	13.552	5.391	30 year +35% CC 120 minute winter	67.621	26.898
1 year 180 minute summer	17.279	4.447	30 year +35% CC 180 minute summer	78.123	20.104
1 year 180 minute winter	11.232	4.447	30 year +35% CC 180 minute winter	50.782	20.104
1 year 240 minute summer	14.306	3.781	30 year +35% CC 240 minute summer	61.173	16.166
1 year 240 minute winter	9.504	3.781	30 year +35% CC 240 minute winter	40.642	16.166
1 year 360 minute summer	11.334	2.917	30 year +35% CC 360 minute summer	45.430	11.691
1 year 360 minute winter	7.368	2.917	30 year +35% CC 360 minute winter	29.531	11.691
1 year 480 minute summer	8.977	2.372	30 year +35% CC 480 minute summer	34.826	9.204
1 year 480 minute winter	5.964	2.372	30 year +35% CC 480 minute winter	23.138	9.204
1 year 600 minute summer	7.335	2.006	30 year +35% CC 600 minute summer	27.844	7.616
1 year 600 minute winter	5.012	2.006	30 year +35% CC 600 minute winter	19.025	7.616
1 year 720 minute summer	6.505	1.744	30 year +35% CC 720 minute summer	24.294	6.511
1 year 720 minute winter	4.372	1.744	30 year +35% CC 720 minute winter	16.327	6.511
1 year 960 minute summer	5.286	1.392	30 year +35% CC 960 minute summer	19.250	5.069
1 year 960 minute winter	3.501	1.392	30 year +35% CC 960 minute winter	12.752	5.069
1 year 1440 minute summer	3.766	1.009	30 year +35% CC 1440 minute summer	13.260	3.554
1 year 1440 minute winter	2.531	1.009	30 year +35% CC 1440 minute winter	8.911	3.554
1 year 2160 minute summer	2.664	0.736	30 year +35% CC 2160 minute summer	9.041	2.499
1 year 2160 minute winter	1.835	0.736	30 year +35% CC 2160 minute winter	6.230	2.499

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +40% CC 15 minute summer	511.276	144.674	100 year +40% CC 360 minute winter	38.014	15.049
100 year +40% CC 15 minute winter	358.790	144.674	100 year +40% CC 480 minute summer	44.818	11.844
100 year +40% CC 30 minute summer	327.631	92.708	100 year +40% CC 480 minute winter	29.776	11.844
100 year +40% CC 30 minute winter	229.916	92.708	100 year +40% CC 600 minute summer	35.816	9.796
100 year +40% CC 60 minute summer	214.511	56.689	100 year +40% CC 600 minute winter	24.472	9.796
100 year +40% CC 60 minute winter	142.516	56.689	100 year +40% CC 720 minute summer	31.229	8.370
100 year +40% CC 120 minute summer	132.807	35.097	100 year +40% CC 720 minute winter	20.988	8.370
100 year +40% CC 120 minute winter	88.234	35.097	100 year +40% CC 960 minute summer	24.688	6.501
100 year +40% CC 180 minute summer	101.117	26.021	100 year +40% CC 960 minute winter	16.354	6.501
100 year +40% CC 180 minute winter	65.728	26.021	100 year +40% CC 1440 minute summer	16.944	4.541
100 year +40% CC 240 minute summer	78.904	20.852	100 year +40% CC 1440 minute winter	11.388	4.541
100 year +40% CC 240 minute winter	52.422	20.852	100 year +40% CC 2160 minute summer	11.466	3.169
100 year +40% CC 360 minute summer	58.480	15.049	100 year +40% CC 2160 minute winter	7.900	3.169

Results for 1 year Critical Storm Duration. Lowest mass balance: 99.74%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	1	12	44.197	0.156	5.1	0.0248	0.0000	SURCHARGED
15 minute summer	2	12	44.191	0.178	5.2	0.0283	0.0000	SURCHARGED
15 minute summer	3	12	44.173	0.276	5.3	0.0440	0.0000	SURCHARGED
15 minute summer	4	12	44.164	0.324	7.9	0.0516	0.0000	SURCHARGED
240 minute summer	5	176	44.151	0.387	9.4	13.7320	0.0000	SURCHARGED
240 minute summer	6	176	44.150	0.420	3.0	6.6348	0.0000	SURCHARGED
240 minute summer	7	176	44.150	0.435	3.1	0.4923	0.0000	SURCHARGED
60 minute winter	7_OUT	24	43.677	0.037	2.0	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	1	1.000	2	5.2	0.656	0.357	0.0730	
15 minute summer	2	1.001	3	5.3	0.570	0.366	0.3064	
15 minute summer	3	1.002	4	5.4	0.325	0.375	0.1542	
15 minute summer	4	1.003	5	7.8	0.442	0.765	0.3958	
240 minute summer	5	1.004	7	3.1	0.251	0.211	0.1285	
240 minute summer	6	2.000	7	-1.1	-0.062	-0.077	0.0408	
240 minute summer	7	1.005	7_OUT	2.0	0.563	0.136	0.0393	44.7



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File: RWB-LINK-XX-XX-CA-C-0500-Surface Water Calculation
Network: Storm Network 1
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26/01/2026

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Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 98.84%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
360 minute winter	1	360	44.428	0.387	6.6	30.8393	0.0000	SURCHARGED
360 minute winter	2	360	44.428	0.415	5.1	0.0659	0.0000	SURCHARGED
360 minute winter	3	360	44.427	0.530	5.1	0.0843	0.0000	SURCHARGED
360 minute winter	4	360	44.427	0.588	7.4	0.0935	0.0000	FLOOD RISK
360 minute winter	5	360	44.427	0.663	16.6	90.3109	0.0000	FLOOD RISK
360 minute winter	6	360	44.426	0.696	6.2	44.7340	0.0000	FLOOD RISK
360 minute winter	7	360	44.426	0.711	4.4	0.8046	0.0000	FLOOD RISK
60 minute summer	7_OUT	7	43.677	0.037	2.0	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)
360 minute winter	1	1.000	2	5.1	0.459	0.351	0.0730	
360 minute winter	2	1.001	3	5.1	0.438	0.352	0.3064	
360 minute winter	3	1.002	4	5.1	0.288	0.352	0.1542	
360 minute winter	4	1.003	5	7.3	0.417	0.723	0.3958	
360 minute winter	5	1.004	7	4.4	0.252	0.306	0.1285	
360 minute winter	6	2.000	7	-2.5	-0.145	-0.179	0.0408	
360 minute winter	7	1.005	7_OUT	1.9	0.563	0.135	0.0392	60.8

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.93%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
480 minute winter	1	472	44.516	0.475	7.7	52.3228	0.0000	SURCHARGED
480 minute winter	2	472	44.516	0.503	4.6	0.0800	0.0000	FLOOD RISK
480 minute winter	3	472	44.516	0.619	4.6	0.0984	0.0000	FLOOD RISK
480 minute winter	4	472	44.516	0.677	6.7	0.1076	0.0000	FLOOD RISK
480 minute winter	5	472	44.515	0.751	14.9	114.9588	0.0000	FLOOD RISK
480 minute winter	6	472	44.514	0.784	5.6	57.3184	0.0000	FLOOD RISK
480 minute winter	7	472	44.514	0.799	4.1	0.9041	0.0000	FLOOD RISK
180 minute summer	7_OUT	12	43.677	0.037	2.0	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)
480 minute winter	1	1.000	2	4.6	0.446	0.317	0.0730	
480 minute winter	2	1.001	3	4.6	0.420	0.318	0.3064	
480 minute winter	3	1.002	4	4.6	0.322	0.318	0.1542	
480 minute winter	4	1.003	5	6.7	0.378	0.654	0.3958	
480 minute winter	5	1.004	7	4.1	0.234	0.284	0.1285	
480 minute winter	6	2.000	7	-2.2	-0.127	-0.157	0.0408	
480 minute winter	7	1.005	7_OUT	2.0	0.563	0.135	0.0392	75.4