

Project: EVERYTHING RETREAT 25221-PWA-00-XX-CA-C-P01 SURFACE WATER CALCULATIONS		Date: 22/12/2025		PWA / GROUP CONSULTING ENGINEERS	
Report Details: Type: Junctions Storm Phase: Phase Flow Path: Flow Path		Designed by: EL	Checked by: IB		Approved By: LS
		PWA GROUP: SUMMIT HOUSE RIPEARIAN WAY CROSSHILLS			

Name	Junction Type	Easting (m)	Northing (m)	Cover Level (m)	Depth (m)	Invert Level (m)	Chamber Shape	Diameter (m)
Manhole (1)	Manhole	366384.369	431320.140	185.142	1.062	184.080	Circular	1.200
Manhole	Manhole	366390.870	431319.525	184.900	0.950	183.950	Circular	1.200


Name	Lock
Manhole (1)	None
Manhole	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
Manhole (1)	Inlet	Pipe	(None)	No Restriction
Manhole	Inlet	Pipe (1)	(None)	No Restriction

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
Manhole (1)	Outlet	Pipe (1)	Hydro-Brake®
	Invert Level (m)	184.080	
	Design Depth (m)	1.000	
	Design Flow (L/s)	2.7	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	<input checked="" type="checkbox"/>	
	Unit Reference	SHE-0078-2700-1000-2700	

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Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Level (m)	185.142
Depth (m)	0.400
Base Level (m)	184.142
Number of Crates Long	9
Number of Crates Wide	9
Number of Crates High	1
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	15.990

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	Catchment Area
Bypass Destination	(None)
Capacity Type	No Restriction


Outlets

Outlet

Outgoing Connection	Pipe
Outlet Type	Free Discharge

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Name	Cover Level (m) Invert Level (m)	Manhole Size (m)	Connection Details				Type
Coordinates (m)	Depth (m)		Incoming Connections	Connection Type	Connection Invert (m)	Connection Size (mm)	Junction Type
			Outgoing Connections				Cover
Manhole (1)	185.142 184.080	Diameter / Length: 1.200	{1} Pipe	Pipe	184.080	Diam/Width: 150	Manhole
E:366384.369 N:431320.140	1.062		{a} Pipe (1)	Pipe	184.080	Diam/Width: 150	Not Applicable
Manhole	184.900 183.950		{1} Pipe (1)	Pipe	183.950	Diam/Width: 150	Manhole
E:366390.870 N:431319.525	0.950						Not Applicable

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Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
Catchment Area	Cellular Storage		Time of Concentration	0.055	100	0	100	0.055
TOTAL		0.0		0.055				0.055

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FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Manhole (1)	FSR: 1 years: +0 %: 30 mins: Winter	185.142	184.080	184.198	0.118	2.0	0.134	0.000	2.0	3.817	OK
Manhole	FSR: 1 years: +0 %: 30 mins: Winter	184.900	183.950	183.978	0.028	2.0	0.000	0.000	2.0	3.805	OK

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FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Manhole (1)	FSR: 2 years: +0 %: 30 mins: Winter	185.142	184.080	184.219	0.139	2.3	0.157	0.000	2.3	4.913	OK
Manhole	FSR: 2 years: +0 %: 30 mins: Winter	184.900	183.950	183.980	0.030	2.3	0.000	0.000	2.3	4.896	OK

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FSR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Manhole (1)	FSR: 30 years: +30 %: 60 mins: Winter	185.1 42	184.0 80	184.41 3	0.333	2.9	0.377	0.000	2.7	15.769	Surcharged
Manhole	FSR: 30 years: +30 %: 60 mins: Winter	184.9 00	183.9 50	183.98 3	0.033	2.7	0.000	0.000	2.7	15.736	OK

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FSR: 100 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Outflow

Junction	Storm Event	Cover Level (m)	Invert Level (m)	Max. Level (m)	Max. Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Status
Manhole (1)	FSR: 100 years: +35 %: 15 mins: Winter	185.1 42	184.0 80	184.41 5	0.335	3.3	0.379	0.000	2.7	3.873	Surcharged
Manhole	FSR: 100 years: +35 %: 60 mins: Winter	184.9 00	183.9 50	183.98 3	0.033	2.7	0.000	0.000	2.7	16.471	OK

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FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 1 years: +0 %: 30 mins: Winter	184.200	184.200	0.058	0.058	4.5	2.235	0.000	0.000	2.0	3.862	86.021	OK

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FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 2 years: +0 %: 30 mins: Winter	184.221	184.221	0.079	0.079	5.9	3.022	0.000	0.000	2.3	4.973	81.103	OK

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FSR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Max. Avg. Depth


Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 30 years: +30 %: 60 mins: Winter	184.414	184.414	0.272	0.272	11.3	10.481	0.000	0.000	2.9	15.902	34.455	OK

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FSR: 100 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Max. Avg. Depth

Stormwater Control	Storm Event	Max. US Level (m)	Max. DS Level (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Residant Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 100 years: +35 %: 120 mins: Winter	185.028	185.028	0.886	0.886	10.4	15.866	0.000	0.000	3.4	30.168	0.775	OK

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FSR: 1 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Total Discharge Volume

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	Cellular Storage	Manhole (1)	185.142	184.155	0.031	18.043	0.2	0.02	0.5	OK
Pipe (1)	FSR: 1 years: +0 %: 1440 mins: Winter	Pipe	Manhole (1)	Manhole	185.142	184.130	0.015	18.042	0.6	0.02	0.5	OK

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FSR: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Total Discharge Volume

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 2 years: +0 %: 1440 mins: Winter	Pipe	Cellular Storage	Manhole (1)	185.142	184.156	0.034	21.253	0.2	0.02	0.6	OK
Pipe (1)	FSR: 2 years: +0 %: 1440 mins: Winter	Pipe	Manhole (1)	Manhole	185.142	184.134	0.016	21.252	0.6	0.02	0.6	OK

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FSR: 30 years: Increase Rainfall (%): +30: Critical Storm Per Item: Rank By: Total Discharge Volume

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 30 years: +30 %: 1440 mins: Winter	Pipe	Cellular Storage	Manhole (1)	185.142	184.168	0.056	46.130	0.3	0.04	1.4	OK
Pipe (1)	FSR: 30 years: +30 %: 1440 mins: Winter	Pipe	Manhole (1)	Manhole	185.142	184.166	0.024	46.103	0.7	0.05	1.3	OK

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FSR: 100 years: Increase Rainfall (%): +35: Critical Storm Per Item: Rank By: Total Discharge Volume

Connection	Storm Event	Connection Type	From	To	Upstream Cover Level (m)	Max. US Water Level (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
Pipe	FSR: 100 years: +35 %: 1440 mins: Winter	Pipe	Cellular Storage	Manhole (1)	185.142	184.186	0.074	59.943	0.3	0.06	1.8	OK
Pipe (1)	FSR: 100 years: +35 %: 1440 mins: Winter	Pipe	Manhole (1)	Manhole	185.142	184.184	0.027	59.855	0.8	0.07	1.7	OK