Appendix D

Storm Water Design Report

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	MWP:		

Name	Junction Type	Easting (m)	Northing (m)	Cover Elevation (m)	Depth (m)	Invert Elevation (m)	Chamber Shape	Diameter (m)
MH1	Manhole	497159.294	591418.088	43.186	1.450	41.736	Circular	1.200
MH2	Manhole	497159.826	591392.304	43.059	1.495	41.564	Circular	1.200
MH3	Manhole	497223.925	591376.127	43.857	2.734	41.123	Circular	1.200
MH4	Manhole	497216.643	591325.153	41.832	1.425	40.407	Circular	1.200
MH5	Manhole	497207.517	591300.988	41.383	1.500	39.883	Circular	1.200
MH6	Manhole	497159.806	591316.453	41.709	2.160	39.549	Circular	1.200
MH7	Manhole	497160.205	591386.073	42.900	1.450	41.450	Circular	1.200
MH8	Manhole	497161.623	591338.180	41.966	1.450	40.516	Circular	1.200
MH9	Manhole	497136.380	591318.898	41.981	1.450	40.531	Circular	1.200
Manhole	Manhole	497150.264	591327.966	41.913	2.291	39.622	Circular	1.200

Name	Lock
MH1	None
MH2	None
MH3	None
MH4	None
MH5	None
MH6	None
MH7	None
MH8	None
MH9	None
Manhole	None

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
MH1	Inlet (1)	Catchment Area	(None)	No Restriction
	Inlet (2)	Catchment Area (6)	(None)	No Restriction
MH2	Inlet	1.000	(None)	No Restriction
	Inlet (10)	Catchment Area (66)	(None)	No Restriction
	Inlet (2)	Catchment Area (52)	(None)	No Restriction
	Inlet (4)	Catchment Area (1)	(None)	No Restriction
	Inlet (5)	Catchment Area (7)	(None)	No Restriction
	Inlet (6)	Catchment Area (38)	(None)	No Restriction
	Inlet (8)	Catchment Area (51)	(None)	No Restriction
	Inlet (9)	Catchment Area (67)	(None)	No Restriction
MH3	Inlet	1.001	(None)	No Restriction
	Inlet (10)	Catchment Area (42)	(None)	No Restriction
	Inlet (11)	Catchment Area (11)	(None)	No Restriction
	Inlet (12)	Catchment Area (13)	(None)	No Restriction
	Inlet (13)	Catchment Area (10)	(None)	No Restriction
	Inlet (14)	Catchment Area (12)	(None)	No Restriction
	Inlet (15)	Catchment Area (41)	(None)	No Restriction
	Inlet (16)	Catchment Area (8)	(None)	No Restriction
	Inlet (17)	Catchment Area (9)	(None)	No Restriction
	Inlet (18)	Catchment Area (50)	(None)	No Restriction
	Inlet (19)	Catchment Area (65)	(None)	No Restriction
	Inlet (2)	Catchment Area (14)	(None)	No Restriction
	Inlet (20)	Catchment Area (15)	(None)	No Restriction
	Inlet (3)	Catchment Area (17)	(None)	No Restriction
	Inlet (4)	Catchment Area (16)	(None)	No Restriction
	Inlet (5)	Catchment Area (35)	(None)	No Restriction
	Inlet (6)	Catchment Area (36)	(None)	No Restriction
	Inlet (7)	Catchment Area (37)	(None)	No Restriction
	Inlet (8)	Catchment Area (49)	(None)	No Restriction
	Inlet (9)	Catchment Area (48)	(None)	No Restriction
	Inlet	1.002	(None)	No Restriction
	Inlet (1)	Catchment Area (46)	(None)	No Restriction

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	MWP:		

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
MH4	Inlet (10)	Catchment Area (34)	(None)	No Restriction
	Inlet (11)	Catchment Area (20)	(None)	No Restriction
	Inlet (12)	Catchment Area (18)	(None)	No Restriction
	Inlet (17)	Catchment Area (62)	(None)	No Restriction
	Inlet (18)	Catchment Area (63)	(None)	No Restriction
	Inlet (19)	Catchment Area (64)	(None)	No Restriction
	Inlet (2)	Catchment Area (23)	(None)	No Restriction
	Inlet (3)	Catchment Area (22)	(None)	No Restriction
	Inlet (4)	Catchment Area (47)	(None)	No Restriction
	Inlet (5)	Catchment Area (43)	(None)	No Restriction
	Inlet (6)	Catchment Area (33)	(None)	No Restriction
	Inlet (7)	Catchment Area (32)	(None)	No Restriction
	Inlet (8)	Catchment Area (21)	(None)	No Restriction
	Inlet (9)	Catchment Area (19)	(None)	No Restriction
MH5	Inlet	1.003	(None)	No Restriction
	Inlet (2)	Catchment Area (30)	(None)	No Restriction
	Inlet (3)	Catchment Area (31)	(None)	No Restriction
	Inlet (4)	Catchment Area (44)	(None)	No Restriction
	Inlet (5)	Catchment Area (60)	(None)	No Restriction
	Inlet (6)	Catchment Area (45)	(None)	No Restriction
	Inlet (7)	Catchment Area (61)	(None)	No Restriction
MH6	Inlet	1.004	(None)	No Restriction
	Inlet (1)	2.001	(None)	No Restriction
	Inlet (2)	Catchment Area (59)	(None)	No Restriction
	Inlet (3)	Catchment Area (55)	(None)	No Restriction
	Inlet (5)	Catchment Area (56)	(None)	No Restriction
	Inlet (6)	Catchment Area (57)	(None)	No Restriction
	Inlet (7)	Catchment Area (28)	(None)	No Restriction
	Inlet (8)	Catchment Area (29)	(None)	No Restriction
	Inlet (9)	3.000	(None)	No Restriction
MH7	Inlet	Catchment Area (2)	(None)	No Restriction
	Inlet (1)	Catchment Area (4)	(None)	No Restriction
	Inlet (2)	Catchment Area (39)	(None)	No Restriction
	Inlet (3)	Catchment Area (3)	(None)	No Restriction
	Inlet (4)	Catchment Area (5)	(None)	No Restriction
	Inlet (5)	Catchment Area (24)	(None)	No Restriction
	Inlet (6)	Catchment Area (25)	(None)	No Restriction
MH8	Inlet (1)	2.000	(None)	No Restriction
	Inlet (3)	Catchment Area (53)	(None)	No Restriction
	Inlet (4)	Catchment Area (40)	(None)	No Restriction
	Inlet (5)	Catchment Area (26)	(None)	No Restriction
	Inlet (6)	Catchment Area (27)	(None)	No Restriction
	Inlet (8)	Catchment Area (54)	(None)	No Restriction
MH9	Inlet	Catchment Area (58)	(None)	No Restriction
Manhole	Inlet	1.005	(None)	No Restriction

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
MH1	Outlet	1.000	Free Discharge
MH2	Outlet	1.001	Free Discharge
MH3	Outlet	1.002	Free Discharge
MH4	Outlet	1.003	Free Discharge
MH5	Outlet	1.004	Free Discharge
MH6	Outlet	1.005	Free Discharge
MH7	Outlet	2.000	Free Discharge
MH8	Outlet	2.001	Free Discharge
MH9	Outlet	3.000	Free Discharge
Manhole	Outlet	1.006	Free Discharge

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	MWP:		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	41.849
Depth (m)	1.600
Base Elevation (m)	37.249
Number of Crates Long	25
Number of Crates Wide	25
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	478.000

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	1.006
Bypass Destination	(None)
Capacity Type	No Restriction

Advanced

Base Infiltration Rate (m/hr)	0.684
Safety Factor	10.0

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	MWP:		

Name	From	To	Length (m)	Connection Type	Slope (1:x)	Manning's n	Diameter / Base Width (mm)	Curved
1.000	MH1	MH2	25.790	Pipe	150.000	0.013	225	☐
1.001	MH2	MH3	66.109	Pipe	150.000	0.013	225	☐
1.002	MH3	MH4	51.492	Pipe	71.916	0.013	225	☐
1.003	MH4	MH5	25.831	Pipe	49.295	0.013	300	☐
1.004	MH5	MH6	50.155	Pipe	260.000	0.013	375	☐
2.000	MH7	MH8	47.914	Pipe	51.299	0.013	225	☐
2.001	MH8	MH6	21.803	Pipe	22.547	0.013	225	☐
3.000	MH9	MH6	23.553	Pipe	28.006	0.013	225	☐
1.005	MH6	Manhole	14.952	Pipe	220.000	0.013	375	☐
1.006	Manhole	Cellular Storage	5.437	Pipe	36.281	0.013	375	☐

Name	Upstream Cover Elevation (m)	Upstream Invert Elevation (m)	Downstream Cover Elevation (m)	Downstream Invert Elevation (m)	Part Family	Lock	Wall Thickness (mm)	Material
1.000	43.186	41.736	43.059	41.564		All	0	
1.001	43.059	41.564	43.857	41.123		All	0	
1.002	43.857	41.123	41.832	40.407		All	0	
1.003	41.832	40.407	41.383	39.883		All	0	
1.004	41.383	39.883	41.709	39.690		All	0	
2.000	42.900	41.450	41.966	40.516		All	0	
2.001	41.966	40.516	41.709	39.549		All	0	
3.000	41.981	40.531	41.709	39.690		All	0	
1.005	41.709	39.690	41.913	39.622		All	0	
1.006	41.913	39.622	41.849	39.472		All	0	

Name	Trench Width (mm)	Bedding Material	Surrounding Material
1.000	0		
1.001	0		
1.002	0		
1.003	0		
1.004	0		
2.000	0		
2.001	0		
3.000	0		
1.005	0		
1.006	0		

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH1	FSR: 1 years: +20 %: 15 mins: Summer	43.186	41.736	41.774	0.038	2.5	0.043	0.000	2.3	1.081	OK
MH2	FSR: 1 years: +20 %: 15 mins: Summer	43.059	41.564	41.647	0.083	12.3	0.094	0.000	10.7	5.373	OK
MH3	FSR: 1 years: +20 %: 15 mins: Summer	43.857	41.123	41.247	0.123	32.8	0.140	0.000	29.3	14.914	OK
MH4	FSR: 1 years: +20 %: 15 mins: Summer	41.832	40.407	40.528	0.121	48.5	0.137	0.000	46.1	23.234	OK
MH5	FSR: 1 years: +20 %: 15 mins: Summer	41.383	39.883	40.062	0.179	54.4	0.203	0.000	48.9	26.566	OK
MH6	FSR: 1 years: +20 %: 15 mins: Summer	41.709	39.549	39.898	0.350	79.9	0.396	0.000	72.9	40.107	OK
MH7	FSR: 1 years: +20 %: 15 mins: Summer	42.900	41.450	41.513	0.063	11.1	0.071	0.000	10.5	4.801	OK
MH8	FSR: 1 years: +20 %: 15 mins: Summer	41.966	40.516	40.581	0.065	17.8	0.073	0.000	17.1	7.965	OK
MH9	FSR: 1 years: +20 %: 15 mins: Summer	41.981	40.531	40.544	0.013	0.6	0.015	0.000	0.6	0.273	OK
Manhole	FSR: 1 years: +20 %: 15 mins: Summer	41.913	39.622	39.770	0.148	72.9	0.168	0.000	70.9	40.055	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH1	FSR: 5 years: +20 %: 15 mins: Summer	43.186	41.736	41.783	0.047	3.8	0.053	0.000	3.5	1.632	OK
MH2	FSR: 5 years: +20 %: 15 mins: Summer	43.059	41.564	41.670	0.106	18.6	0.120	0.000	16.5	8.142	OK
MH3	FSR: 5 years: +20 %: 15 mins: Summer	43.857	41.123	41.289	0.166	49.9	0.188	0.000	44.5	22.605	OK
MH4	FSR: 5 years: +20 %: 15 mins: Summer	41.832	40.407	40.566	0.159	73.6	0.180	0.000	70.3	35.185	OK
MH5	FSR: 5 years: +20 %: 15 mins: Summer	41.383	39.883	40.122	0.239	82.9	0.271	0.000	75.1	40.339	OK
MH6	FSR: 5 years: +20 %: 15 mins: Summer	41.709	39.549	39.964	0.415	122.3	0.469	0.000	113.7	61.032	OK
MH7	FSR: 5 years: +20 %: 15 mins: Summer	42.900	41.450	41.529	0.079	16.7	0.089	0.000	16.0	7.240	OK
MH8	FSR: 5 years: +20 %: 15 mins: Summer	41.966	40.516	40.597	0.081	27.1	0.091	0.000	26.1	12.013	OK
MH9	FSR: 5 years: +20 %: 15 mins: Summer	41.981	40.531	40.547	0.016	0.9	0.018	0.000	0.9	0.411	OK
Manhole	FSR: 5 years: +20 %: 15 mins: Summer	41.913	39.622	39.817	0.195	113.7	0.220	0.000	111.2	60.976	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH1	FSR: 30 years: +20 %: 15 mins: Summer	43.186	41.736	41.793	0.057	5.5	0.065	0.000	5.2	2.394	OK
MH2	FSR: 30 years: +20 %: 15 mins: Summer	43.059	41.564	41.699	0.135	27.3	0.153	0.000	24.7	11.905	OK
MH3	FSR: 30 years: +20 %: 15 mins: Summer	43.857	41.123	41.472	0.349	73.8	0.395	0.000	56.9	33.218	Surcharged
MH4	FSR: 30 years: +20 %: 15 mins: Summer	41.832	40.407	40.595	0.188	99.6	0.213	0.000	98.8	51.584	OK
MH5	FSR: 30 years: +20 %: 15 mins: Summer	41.383	39.883	40.232	0.349	117.3	0.395	0.000	103.1	59.344	OK
MH6	FSR: 30 years: +20 %: 15 mins: Summer	41.709	39.549	40.083	0.534	172.6	0.604	0.000	160.2	89.880	Surcharged
MH7	FSR: 30 years: +20 %: 15 mins: Summer	42.900	41.450	41.547	0.097	24.5	0.110	0.000	23.5	10.622	OK
MH8	FSR: 30 years: +20 %: 15 mins: Summer	41.966	40.516	40.616	0.100	39.8	0.113	0.000	38.6	17.627	OK
MH9	FSR: 30 years: +20 %: 15 mins: Summer	41.981	40.531	40.551	0.020	1.4	0.022	0.000	1.3	0.599	OK
Manhole	FSR: 30 years: +20 %: 15 mins: Summer	41.913	39.622	39.866	0.244	160.2	0.276	0.000	157.9	89.821	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH1	FSR: 100 years: +20 %: 15 mins: Summer	43.186	41.736	41.901	0.165	24.8	0.186	0.000	6.6	3.666	OK
MH2	FSR: 100 years: +20 %: 15 mins: Summer	43.059	41.564	41.973	0.409	28.6	0.463	0.000	31.9	16.066	Surcharged
MH3	FSR: 100 years: +20 %: 15 mins: Summer	43.857	41.123	41.970	0.847	72.1	0.958	0.000	61.4	43.005	Surcharged
MH4	FSR: 100 years: +20 %: 15 mins: Summer	41.832	40.407	40.993	0.586	116.6	0.663	0.000	108.9	66.744	Surcharged
MH5	FSR: 100 years: +20 %: 15 mins: Summer	41.383	39.883	40.603	0.720	132.8	0.814	0.000	127.4	76.870	Surcharged
MH6	FSR: 100 years: +20 %: 15 mins: Summer	41.709	39.549	40.289	0.741	217.4	0.838	0.000	213.4	116.438	Surcharged
MH7	FSR: 100 years: +20 %: 15 mins: Summer	42.900	41.450	41.563	0.113	31.7	0.128	0.000	30.5	13.738	OK
MH8	FSR: 100 years: +20 %: 15 mins: Summer	41.966	40.516	40.632	0.116	51.5	0.132	0.000	50.0	22.789	OK
MH9	FSR: 100 years: +20 %: 15 mins: Summer	41.981	40.531	40.553	0.022	1.8	0.025	0.000	1.7	0.774	OK
Manhole	FSR: 100 years: +20 %: 15 mins: Summer	41.913	39.622	39.924	0.302	213.4	0.342	0.000	208.4	116.375	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	37.360	37.360	0.111	0.111	70.9	32.816	0.000	8.934	0.0	0.000	93.135	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 5 years: +20 %: 15 mins: Summer	37.428	37.428	0.179	0.179	111.2	53.189	0.000	9.188	0.0	0.000	88.873	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	37.524	37.524	0.275	0.275	157.9	81.777	0.000	9.396	0.0	0.000	82.892	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	37.613	37.613	0.364	0.364	208.4	108.170	0.000	9.516	0.0	0.000	77.370	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH1	MH2	43.186	41.775	0.063	1.201	0.3	0.07	2.4	OK
1.001	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH2	MH3	43.059	41.650	0.107	6.005	0.6	0.31	11.4	OK
1.002	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH3	MH4	43.857	41.252	0.127	16.724	1.3	0.59	31.2	OK
1.003	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH4	MH5	41.832	40.533	0.157	26.050	1.3	0.36	49.1	OK
1.004	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH5	MH6	41.383	40.071	0.203	29.799	0.9	0.48	52.5	OK
2.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH7	MH8	42.900	41.515	0.066	5.370	1.1	0.18	11.1	OK
2.001	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH8	MH6	41.966	40.583	0.213	8.907	0.5	0.19	18.1	OK
3.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH9	MH6	41.981	40.545	0.116	0.306	0.0	0.01	0.6	OK
1.005	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH6	Manhole	41.709	39.908	0.187	45.025	1.4	0.66	78.6	OK
1.006	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.913	39.777	0.143	44.972	2.0	0.26	76.7	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH1	MH2	43.186	41.784	0.079	1.827	0.3	0.1	3.7	OK
1.001	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH2	MH3	43.059	41.674	0.142	9.109	0.7	0.48	17.5	OK
1.002	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH3	MH4	43.857	41.298	0.170	25.298	1.5	0.89	47.2	OK
1.003	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH4	MH5	41.832	40.573	0.209	39.386	1.4	0.54	74.6	OK
1.004	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH5	MH6	41.383	40.135	0.269	45.168	0.9	0.74	80.1	OK
2.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH7	MH8	42.900	41.531	0.082	8.123	1.3	0.27	16.9	OK
2.001	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH8	MH6	41.966	40.599	0.225	13.467	0.7	0.29	27.6	OK
3.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH9	MH6	41.981	40.548	0.152	0.462	0.0	0.01	0.9	OK
1.005	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH6	Manhole	41.709	39.976	0.245	68.405	1.6	1.03	121.8	OK
1.006	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.913	39.826	0.185	68.347	2.2	0.41	119.4	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH1	MH2	43.186	41.795	0.103	2.684	0.3	0.15	5.5	OK
1.001	FSR: 30 years: +20 %: 15 mins: Summer	Pipe	MH2	MH3	43.059	41.699	0.225	11.905	0.6	0.67	24.7	OK
1.002	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH3	MH4	43.857	41.650	0.225	37.225	1.6	1.16	61.4	Surcharged
1.003	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH4	MH5	41.832	40.603	0.300	57.825	1.4	0.74	101.8	OK
1.004	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH5	MH6	41.383	40.346	0.375	66.535	1.0	0.96	104.9	Surcharged
2.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH7	MH8	42.900	41.550	0.102	11.892	1.4	0.4	24.8	OK
2.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH8	MH6	41.966	40.619	0.225	19.734	1.0	0.43	40.7	OK
3.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH9	MH6	41.981	40.551	0.222	0.668	0.0	0.02	1.4	OK
1.005	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH6	Manhole	41.709	40.113	0.340	100.782	1.6	1.44	170.3	Surcharged
1.006	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.913	39.877	0.230	100.718	2.4	0.58	168.1	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
1.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH1	MH2	43.186	42.192	0.225	3.550	0.4	0.39	14.2	Surcharged
1.001	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH2	MH3	43.059	42.163	0.225	17.437	0.8	0.88	32.2	Surcharged
1.002	FSR: 100 years: +20 %: 30 mins: Winter	Pipe	MH3	MH4	43.857	42.181	0.225	69.579	1.8	1.32	69.9	Surcharged
1.003	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH4	MH5	41.832	41.107	0.300	74.820	1.6	0.84	115.0	Surcharged
1.004	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH5	MH6	41.383	40.680	0.375	86.170	1.2	1.25	136.0	Surcharged
2.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH7	MH8	42.900	41.567	0.118	15.388	1.5	0.51	32.2	OK
2.001	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH8	MH6	41.966	40.636	0.225	25.537	1.3	0.56	52.8	OK
3.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH9	MH6	41.981	40.554	0.225	0.867	0.0	0.02	1.8	OK
1.005	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH6	Manhole	41.709	40.332	0.375	130.511	2.1	1.93	227.8	Surcharged
1.006	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.913	39.943	0.284	130.446	2.5	0.77	224.8	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

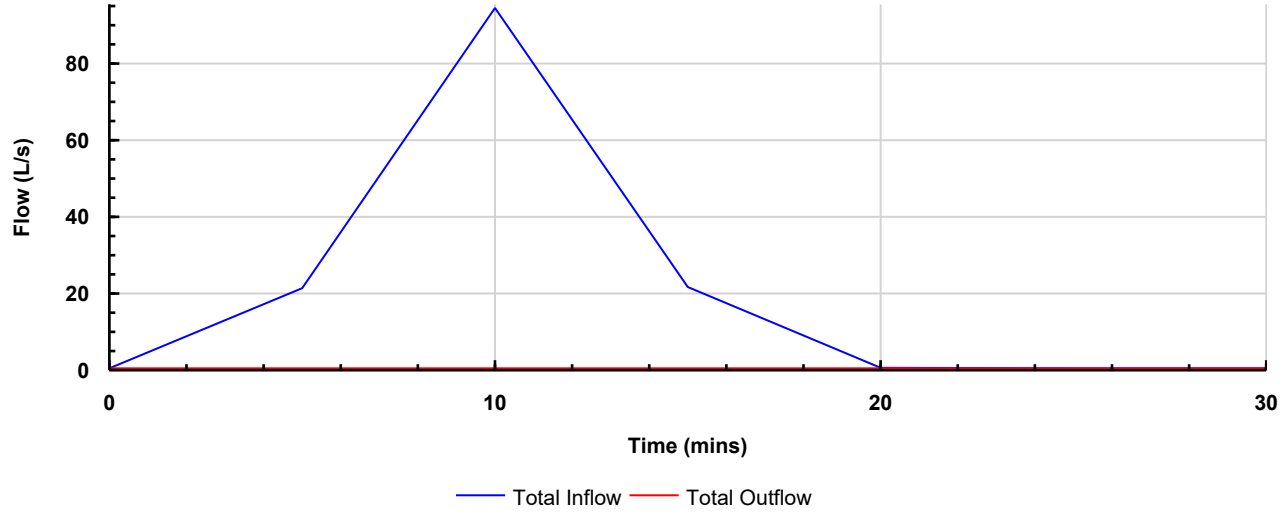
Phase
FSR: 1 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

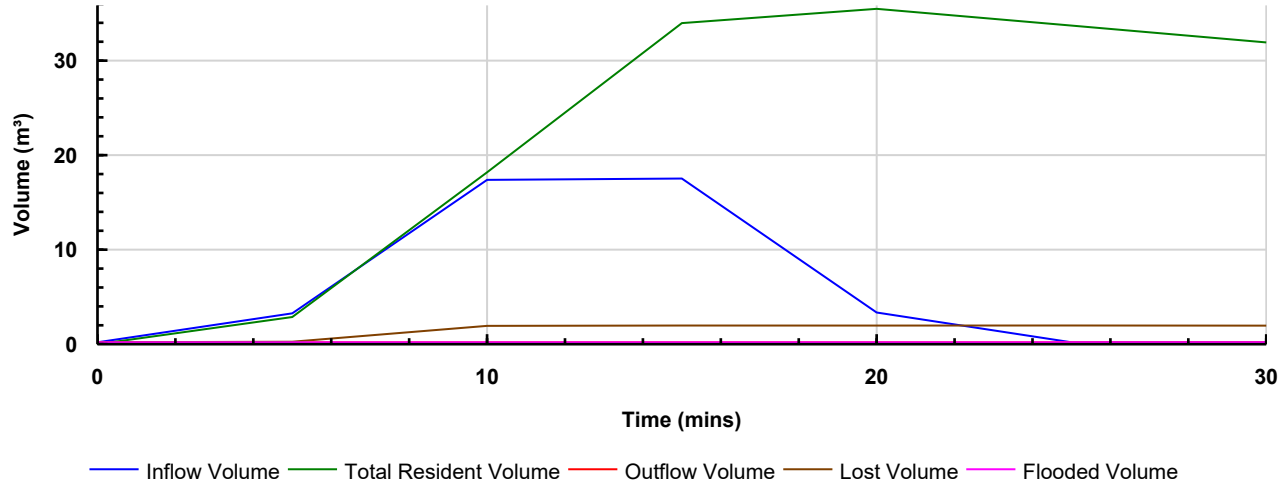
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	94.5	40.955	0.0	0.000

Graphs

Flow Graph



Volume Graph



Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

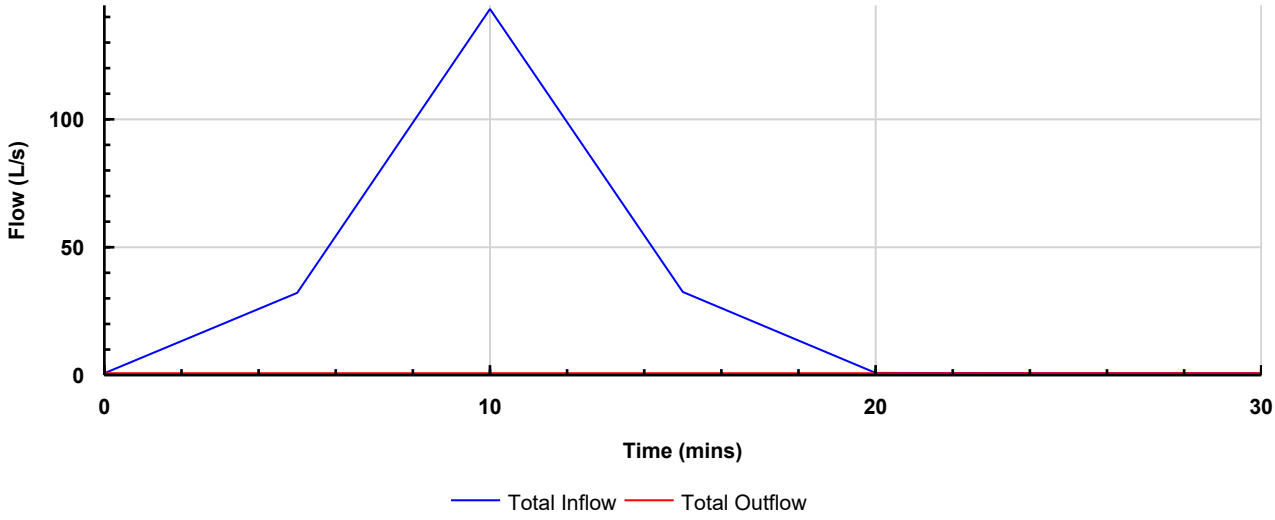
Phase
FSR: 5 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

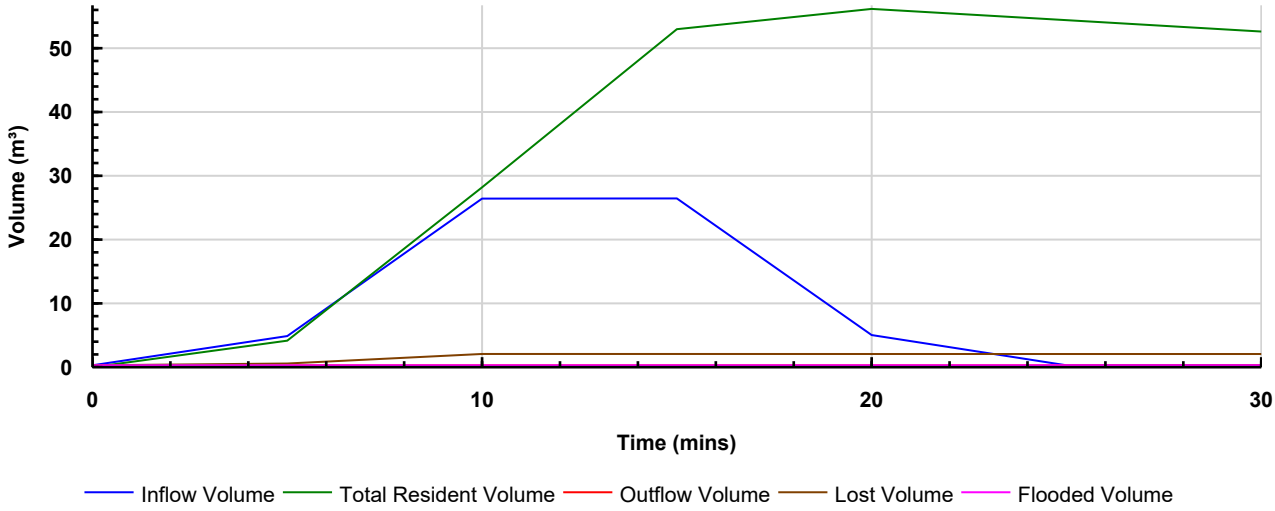
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	143.1	61.931	0.0	0.000

Graphs

Flow Graph



Volume Graph



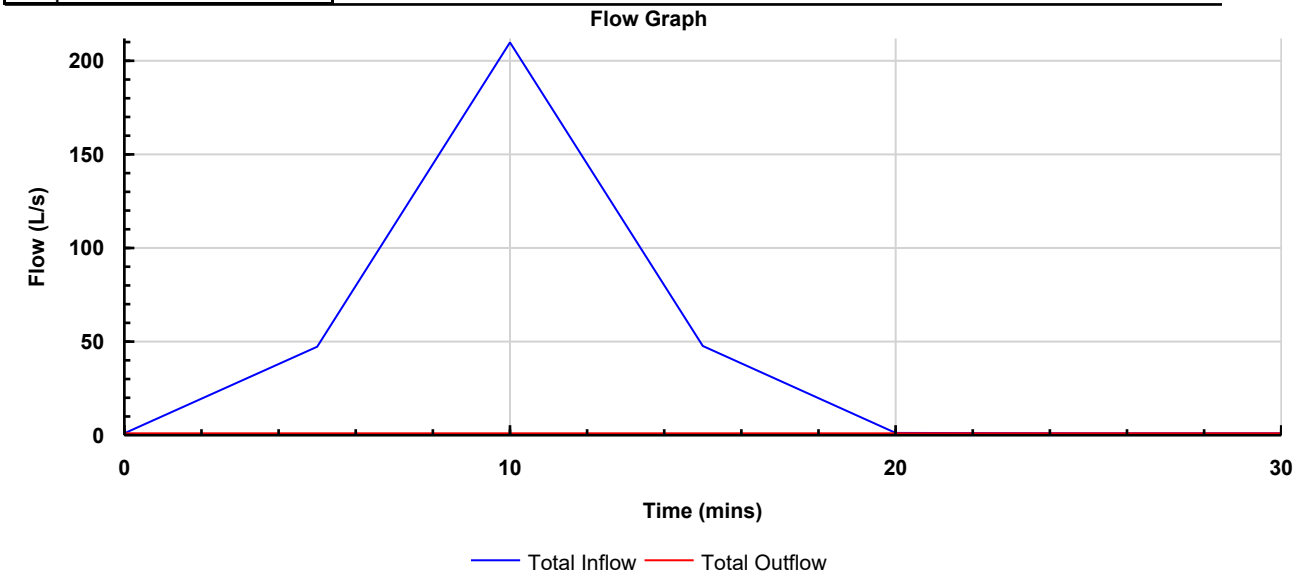
Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

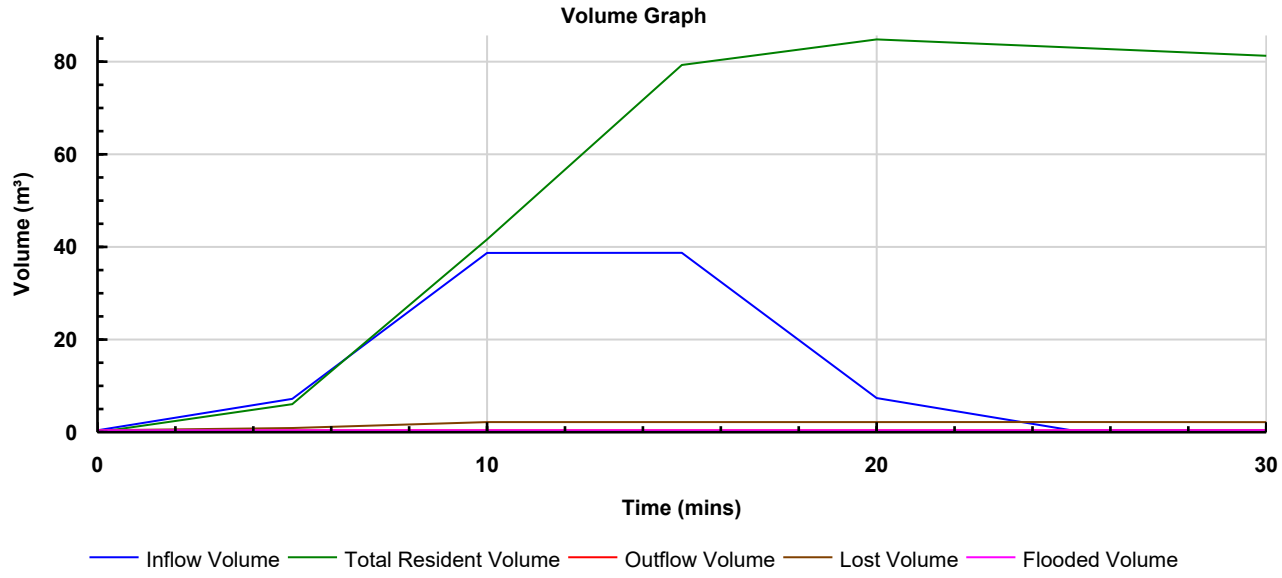
Phase
FSR: 30 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	209.8	90.797	0.0	0.000

Graphs





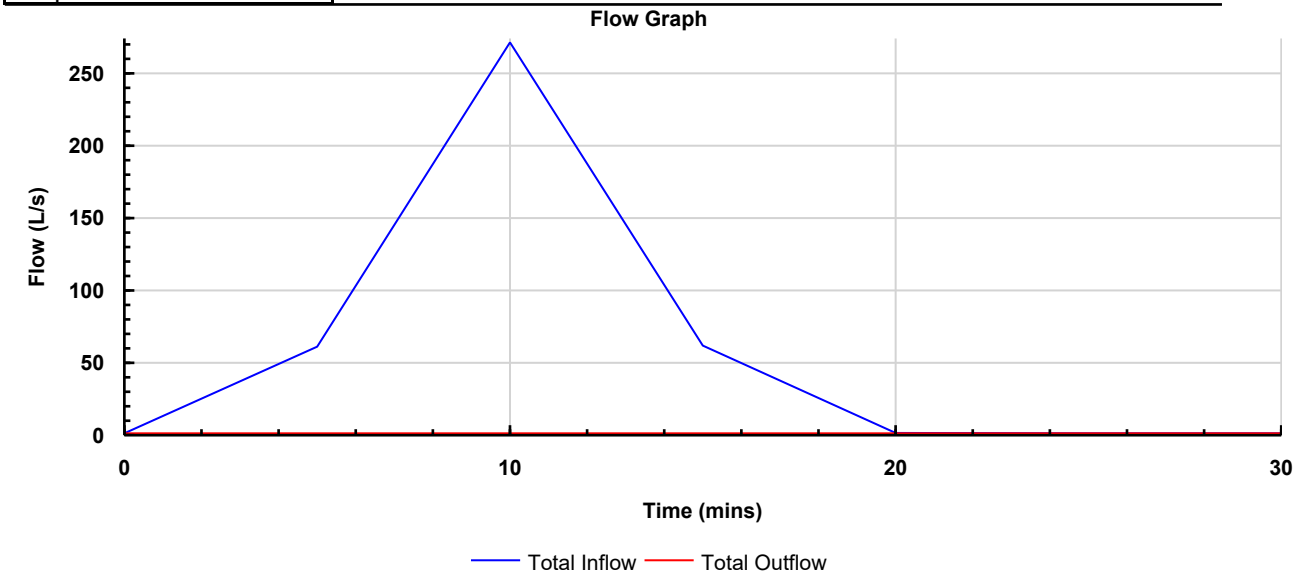
Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

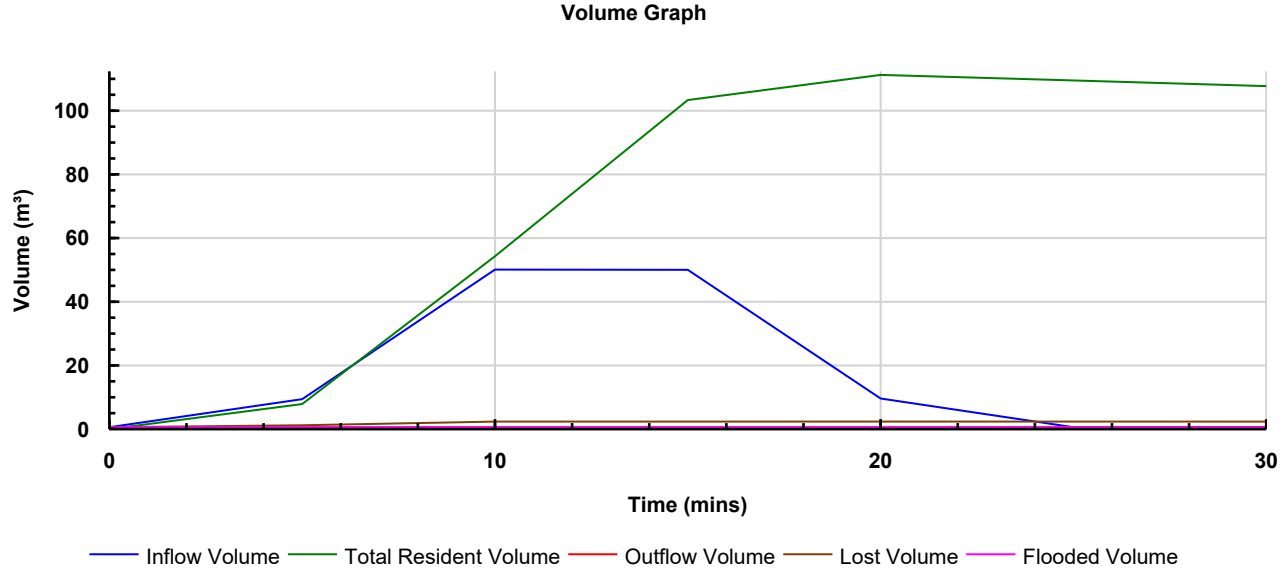
Phase
FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	271.4	117.385	0.0	0.000

Graphs





Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	MWP:		

Name	From	To	Length (m)	Connection Type	Slope (1:x)	Manning's n	Diameter / Base Width (mm)	Curved
4.000	MH10	MH11	28.354	Pipe	150.000	0.013	225	☐
4.001	MH11	MH12	8.734	Pipe	150.000	0.013	225	☐
4.002	MH12	13	14.075	Pipe	150.000	0.013	225	☐
4.003	13	MH14	32.397	Pipe	150.000	0.013	225	☐
4.004	MH14	MH15	36.454	Pipe	260.000	0.013	300	☐
4.005	MH15	MH16	32.514	Pipe	82.733	0.013	300	☐
4.006	MH16	MH17	19.701	Pipe	260.000	0.013	375	☐
6.000	MH18	MH17	38.037	Pipe	18.886	0.013	225	☐
5.000	MH19	MH20	50.807	Pipe	25.252	0.013	225	☐
5.001	MH20	MH16	27.255	Pipe	260.000	0.013	300	☐
7.000	MH21	13	46.815	Pipe	164.263	0.013	225	☐
4.007	MH17	Manhole	7.055	Pipe	200.000	0.013	375	☐
4.008	Manhole	Cellular Storage	8.407	Pipe	200.000	0.013	375	☐

Name	Upstream Cover Elevation (m)	Upstream Invert Elevation (m)	Downstream Cover Elevation (m)	Downstream Invert Elevation (m)	Part Family	Lock	Wall Thickness (mm)	Material
4.000	41.345	39.895	41.199	39.706		All	0	
4.001	41.199	39.706	41.328	39.648		None	0	
4.002	41.328	39.648	41.541	39.554		All	0	
4.003	41.541	39.554	41.713	39.338		All	0	
4.004	41.713	39.338	41.434	39.198		All	0	
4.005	41.434	39.198	40.696	38.805		All	0	
4.006	40.696	38.805	40.696	38.729		All	0	
6.000	42.193	40.743	40.696	38.729		All	0	
5.000	42.372	40.922	40.360	38.910		All	0	
5.001	40.360	38.910	40.696	38.805		All	0	
7.000	41.286	39.839	41.541	39.554		All	0	
4.007	40.696	38.729	40.826	38.694		All	0	
4.008	40.826	38.694	40.414	38.652		All	0	

Name	Trench Width (mm)	Bedding Material	Surrounding Material
4.000	0		
4.001	0		
4.002	0		
4.003	0		
4.004	0		
4.005	0		
4.006	0		
6.000	0		
5.000	0		
5.001	0		
7.000	0		
4.007	0		
4.008	0		

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	MWP:		

Name	Cover Elevation (m) Invert Elevation (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
MH10	41.345 39.895	Diameter / Length: 1.200					Manhole
E:497217.562 N:591270.390	1.450		{a} 4.000	Pipe	39.895	Diam/Width:225	Not Applicable
MH11	41.199 39.706	Diameter / Length: 1.200	{1} 4.000	Pipe	39.706	Diam/Width:225	Manhole
E:497190.988 N:591280.279	1.493		{a} 4.001	Pipe	39.706	Diam/Width:225	Not Applicable
MH12	41.328 39.648	Diameter / Length: 1.200	{1} 4.001	Pipe	39.648	Diam/Width:225	Manhole
E:497192.105 N:591288.941	1.680		{a} 4.002	Pipe	39.648	Diam/Width:225	Not Applicable
13	41.541 39.554	Diameter / Length: 1.200	{1} 4.002 {2} 7.000	Pipe Pipe	39.554 39.554	Diam/Width:225 Diam/Width:225	Manhole
E:497197.155 N:591302.078	1.987		{a} 4.003	Pipe	39.554	Diam/Width:225	Not Applicable

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	MWP:		

Name	Cover Elevation (m) Invert Elevation (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
MH21	41.286 39.839	Diameter / Length: 1.200					Manhole
E:497240.948 N:591285.534	1.447		{a} 7.000	Pipe	39.839	Diam/Width:225	Not Applicable
MH14	41.713 39.338	Diameter / Length: 1.200	{1} 4.003	Pipe	39.338	Diam/Width:225	Manhole
E:497166.249 N:591311.794	2.375		{a} 4.004	Pipe	39.338	Diam/Width:300	Not Applicable
MH15	41.434 39.198	Diameter / Length: 1.200	{1} 4.004	Pipe	39.198	Diam/Width:300	Manhole
E:497161.448 N:591275.657	2.237		{a} 4.005	Pipe	39.198	Diam/Width:300	Not Applicable
MH16	40.696 38.805	Diameter / Length: 1.200	{1} 4.005 {2} 5.001	Pipe Pipe	38.805 38.805	Diam/Width:300 Diam/Width:300	Manhole
E:497165.049 N:591243.344	1.891		{a} 4.006	Pipe	38.805	Diam/Width:375	Not Applicable

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	MWP:		

Name	Cover Elevation (m) Invert Elevation (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
MH20	40.360 38.910	Diameter / Length: 1.200	{1} 5.000	Pipe	38.910	Diam/Width:225	Manhole
E:497161.834 N:591216.278	1.450		{a} 5.001	Pipe	38.910	Diam/Width:300	Not Applicable
MH19	42.372 40.922	Diameter / Length: 1.200					Manhole
E:497211.401 N:591205.119	1.450		{a} 5.000	Pipe	40.922	Diam/Width:225	Not Applicable
MH18	42.193 40.743	Diameter / Length: 1.200					Manhole
E:497220.210 N:591231.779	1.450		{a} 6.000	Pipe	40.743	Diam/Width:225	Not Applicable
MH17	40.696 38.729	Diameter / Length: 1.200	{1} 4.006 {2} 6.000	Pipe Pipe	38.729 38.729	Diam/Width:375 Diam/Width:225	Manhole
E:497184.654 N:591245.291	1.967		{a} 4.007	Pipe	38.729	Diam/Width:375	Not Applicable

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Manhole Schedule Storm Phase: Phase	MWP:		

Name	Cover Elevation (m) Invert Elevation (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	40.826 38.694	Diameter / Length: 1.200	{1} 4.007	Pipe	38.694	Diam/Width:375	Manhole
E:497183.411 N:591238.346	2.133		{a} 4.008	Pipe	38.694	Diam/Width:375	Not Applicable

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH10	FSR: 1 years: +20 %: 15 mins: Summer	41.345	39.895	39.957	0.062	6.5	0.071	0.000	6.2	2.838	OK
MH11	FSR: 1 years: +20 %: 15 mins: Summer	41.199	39.706	39.784	0.078	9.0	0.088	0.000	8.4	4.076	OK
MH12	FSR: 1 years: +20 %: 15 mins: Summer	41.328	39.648	39.720	0.072	8.6	0.082	0.000	8.2	4.165	OK
13	FSR: 1 years: +20 %: 15 mins: Summer	41.541	39.554	39.662	0.108	18.6	0.122	0.000	16.0	8.937	OK
MH21	FSR: 1 years: +20 %: 15 mins: Summer	41.286	39.839	39.907	0.068	7.7	0.077	0.000	7.0	3.346	OK
MH14	FSR: 1 years: +20 %: 15 mins: Summer	41.713	39.338	39.444	0.106	17.5	0.120	0.000	14.9	9.510	OK
MH15	FSR: 1 years: +20 %: 15 mins: Summer	41.434	39.198	39.300	0.102	29.1	0.116	0.000	26.7	15.642	OK
MH16	FSR: 1 years: +20 %: 15 mins: Summer	40.696	38.805	39.001	0.196	51.1	0.222	0.000	45.1	28.386	OK
MH20	FSR: 1 years: +20 %: 15 mins: Summer	40.360	38.910	39.027	0.117	20.7	0.132	0.000	15.9	9.202	OK
MH19	FSR: 1 years: +20 %: 15 mins: Summer	42.372	40.922	40.980	0.058	13.4	0.065	0.000	12.9	5.838	OK
MH18	FSR: 1 years: +20 %: 15 mins: Summer	42.193	40.743	40.828	0.085	32.2	0.097	0.000	31.6	14.049	OK
MH17	FSR: 1 years: +20 %: 15 mins: Summer	40.696	38.729	38.969	0.240	76.8	0.271	0.000	72.0	42.304	OK
Manhole	FSR: 1 years: +20 %: 15 mins: Summer	40.826	38.694	38.913	0.220	72.0	0.248	0.000	69.1	42.241	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH10	FSR: 5 years: +20 %: 15 mins: Summer	41.345	39.895	39.973	0.078	9.9	0.088	0.000	9.4	4.279	OK
MH11	FSR: 5 years: +20 %: 15 mins: Summer	41.199	39.706	39.805	0.099	13.8	0.112	0.000	12.9	6.159	OK
MH12	FSR: 5 years: +20 %: 15 mins: Summer	41.328	39.648	39.739	0.091	13.2	0.103	0.000	12.6	6.301	OK
13	FSR: 5 years: +20 %: 15 mins: Summer	41.541	39.554	39.697	0.143	28.6	0.162	0.000	24.8	13.524	OK
MH21	FSR: 5 years: +20 %: 15 mins: Summer	41.286	39.839	39.925	0.086	11.6	0.097	0.000	10.8	5.046	OK
MH14	FSR: 5 years: +20 %: 15 mins: Summer	41.713	39.338	39.476	0.138	27.1	0.156	0.000	23.8	14.436	OK
MH15	FSR: 5 years: +20 %: 15 mins: Summer	41.434	39.198	39.329	0.131	45.3	0.149	0.000	42.2	23.742	OK
MH16	FSR: 5 years: +20 %: 15 mins: Summer	40.696	38.805	39.084	0.279	77.4	0.315	0.000	66.3	43.116	OK
MH20	FSR: 5 years: +20 %: 15 mins: Summer	40.360	38.910	39.107	0.197	31.5	0.223	0.000	22.4	13.940	OK
MH19	FSR: 5 years: +20 %: 15 mins: Summer	42.372	40.922	40.994	0.072	20.3	0.081	0.000	19.7	8.841	OK
MH18	FSR: 5 years: +20 %: 15 mins: Summer	42.193	40.743	40.851	0.108	48.8	0.122	0.000	48.1	21.208	OK
MH17	FSR: 5 years: +20 %: 15 mins: Summer	40.696	38.729	39.048	0.319	114.4	0.361	0.000	108.6	64.208	OK
Manhole	FSR: 5 years: +20 %: 15 mins: Summer	40.826	38.694	38.978	0.284	108.6	0.322	0.000	104.7	64.140	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH10	FSR: 30 years: +20 %: 15 mins: Summer	41.345	39.895	39.991	0.096	14.5	0.108	0.000	13.8	6.281	OK
MH11	FSR: 30 years: +20 %: 15 mins: Summer	41.199	39.706	39.833	0.127	20.3	0.143	0.000	18.8	9.051	OK
MH12	FSR: 30 years: +20 %: 15 mins: Summer	41.328	39.648	39.771	0.124	19.4	0.140	0.000	17.9	9.271	OK
13	FSR: 30 years: +20 %: 15 mins: Summer	41.541	39.554	39.748	0.194	41.4	0.219	0.000	35.7	19.885	OK
MH21	FSR: 30 years: +20 %: 15 mins: Summer	41.286	39.839	39.946	0.107	17.0	0.121	0.000	15.9	7.398	OK
MH14	FSR: 30 years: +20 %: 15 mins: Summer	41.713	39.338	39.512	0.174	39.0	0.196	0.000	37.4	21.302	OK
MH15	FSR: 30 years: +20 %: 15 mins: Summer	41.434	39.198	39.395	0.198	68.9	0.224	0.000	45.1	35.007	OK
MH16	FSR: 30 years: +20 %: 15 mins: Summer	40.696	38.805	39.341	0.536	108.8	0.607	0.000	105.9	63.501	Surcharged
MH20	FSR: 30 years: +20 %: 15 mins: Summer	40.360	38.910	39.415	0.505	46.6	0.571	0.000	44.8	20.472	Surcharged
MH19	FSR: 30 years: +20 %: 15 mins: Summer	42.372	40.922	41.011	0.089	29.8	0.100	0.000	29.2	12.916	OK
MH18	FSR: 30 years: +20 %: 15 mins: Summer	42.193	40.743	40.880	0.137	71.6	0.155	0.000	70.8	31.063	OK
MH17	FSR: 30 years: +20 %: 15 mins: Summer	40.696	38.729	39.250	0.521	176.8	0.590	0.000	173.4	94.464	Surcharged
Manhole	FSR: 30 years: +20 %: 15 mins: Summer	40.826	38.694	39.124	0.430	173.4	0.487	0.000	169.9	94.391	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH10	FSR: 100 years: +20 %: 15 mins: Summer	41.345	39.895	40.006	0.111	18.6	0.125	0.000	17.9	8.217	OK
MH11	FSR: 100 years: +20 %: 15 mins: Summer	41.199	39.706	39.906	0.200	26.1	0.226	0.000	18.1	11.845	OK
MH12	FSR: 100 years: +20 %: 15 mins: Summer	41.328	39.648	39.886	0.238	18.2	0.270	0.000	22.0	12.169	Surcharged
13	FSR: 100 years: +20 %: 15 mins: Summer	41.541	39.554	39.877	0.323	42.6	0.365	0.000	42.0	26.097	Surcharged
MH21	FSR: 100 years: +20 %: 15 mins: Summer	41.286	39.839	39.964	0.125	21.9	0.141	0.000	20.7	9.633	OK
MH14	FSR: 100 years: +20 %: 15 mins: Summer	41.713	39.338	39.769	0.432	43.0	0.488	0.000	47.4	28.605	Surcharged
MH15	FSR: 100 years: +20 %: 15 mins: Summer	41.434	39.198	39.716	0.518	66.8	0.586	0.000	74.4	45.573	Surcharged
MH16	FSR: 100 years: +20 %: 15 mins: Summer	40.696	38.805	39.575	0.770	133.8	0.871	0.000	128.4	84.758	Surcharged
MH20	FSR: 100 years: +20 %: 15 mins: Summer	40.360	38.910	39.684	0.774	60.0	0.875	0.000	55.9	26.334	Surcharged
MH19	FSR: 100 years: +20 %: 15 mins: Summer	42.372	40.922	41.024	0.102	38.3	0.116	0.000	37.8	16.728	OK
MH18	FSR: 100 years: +20 %: 15 mins: Summer	42.193	40.743	40.912	0.169	92.1	0.191	0.000	88.5	40.324	OK
MH17	FSR: 100 years: +20 %: 15 mins: Summer	40.696	38.729	39.426	0.697	217.0	0.789	0.000	214.5	120.462	Surcharged
Manhole	FSR: 100 years: +20 %: 15 mins: Summer	40.826	38.694	39.227	0.533	214.5	0.603	0.000	213.0	119.022	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	36.491	36.491	0.115	0.115	69.1	34.212	0.000	9.408	0.0	0.000	92.834	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 5 years: +20 %: 15 mins: Summer	36.564	36.564	0.188	0.188	104.7	55.841	0.000	9.609	0.0	0.000	88.304	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	36.665	36.665	0.289	0.289	169.9	85.871	0.000	9.759	0.0	0.000	82.014	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	36.754	36.754	0.378	0.378	213.0	112.164	0.000	9.845	0.0	0.000	76.507	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
4.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH10	MH11	41.345	39.959	0.072	3.182	0.6	0.18	6.5	OK
4.001	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH11	MH12	41.199	39.786	0.077	4.573	0.7	0.24	8.9	OK
4.002	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH12	13	41.328	39.723	0.094	4.679	0.6	0.24	8.7	OK
4.003	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	13	MH14	41.541	39.667	0.112	10.024	0.9	0.47	17.2	OK
4.004	FSR: 1 years: +20 %: 30 mins: Winter	Pipe	MH14	MH15	41.713	39.450	0.108	15.354	0.7	0.28	16.7	OK
4.005	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH15	MH16	41.434	39.305	0.157	17.567	0.8	0.27	29.0	OK
4.006	FSR: 1 years: +20 %: 30 mins: Winter	Pipe	MH16	MH17	40.696	39.012	0.225	45.723	0.7	0.45	49.3	OK
6.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH18	MH17	42.193	40.831	0.169	15.731	1.0	0.32	33.3	OK
5.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH19	MH20	42.372	40.981	0.094	6.570	0.9	0.15	13.6	OK
5.001	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH20	MH16	40.360	39.038	0.167	10.344	0.4	0.28	16.7	OK
7.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH21	13	41.286	39.909	0.092	3.739	0.5	0.21	7.4	OK
4.007	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH17	Manhole	40.696	38.980	0.240	47.492	1.0	0.62	77.0	OK
4.008	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	40.826	38.923	0.215	47.426	1.1	0.6	74.8	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
4.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH10	MH11	41.345	39.975	0.091	4.800	0.7	0.27	9.9	OK
4.001	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH11	MH12	41.199	39.808	0.098	6.910	0.8	0.37	13.6	OK
4.002	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH12	13	41.328	39.742	0.122	7.070	0.6	0.36	13.4	OK
4.003	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	13	MH14	41.541	39.704	0.147	15.174	1.0	0.72	26.6	OK
4.004	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH14	MH15	41.713	39.483	0.141	16.200	0.8	0.43	25.9	OK
4.005	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH15	MH16	41.434	39.335	0.221	26.612	0.8	0.43	45.6	OK
4.006	FSR: 5 years: +20 %: 30 mins: Winter	Pipe	MH16	MH17	40.696	39.098	0.309	68.553	0.8	0.68	73.9	OK
6.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH18	MH17	42.193	40.854	0.225	23.749	1.3	0.49	50.8	OK
5.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH19	MH20	42.372	40.996	0.147	9.887	0.8	0.23	20.7	OK
5.001	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH20	MH16	40.360	39.130	0.262	15.600	0.5	0.39	23.6	OK
7.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH21	13	41.286	39.927	0.119	5.658	0.5	0.33	11.4	OK
4.007	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH17	Manhole	40.696	39.070	0.321	71.941	1.2	0.95	118.1	OK
4.008	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	40.826	38.995	0.275	71.870	1.3	0.92	114.2	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
4.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH10	MH11	41.345	39.994	0.115	7.045	0.7	0.4	14.6	OK
4.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH11	MH12	41.199	39.838	0.133	10.149	0.8	0.54	19.9	OK
4.002	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH12	13	41.328	39.782	0.170	10.400	0.6	0.5	18.4	OK
4.003	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	13	MH14	41.541	39.761	0.192	22.307	1.0	1.02	37.6	OK
4.004	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH14	MH15	41.713	39.515	0.223	23.956	1.0	0.65	38.9	OK
4.005	FSR: 30 years: +20 %: 30 mins: Winter	Pipe	MH15	MH16	41.434	39.430	0.300	56.161	0.8	0.56	59.7	OK
4.006	FSR: 30 years: +20 %: 30 mins: Winter	Pipe	MH16	MH17	40.696	39.304	0.375	101.953	1.0	1	109.1	Surcharged
6.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH18	MH17	42.193	40.884	0.225	34.803	1.9	0.72	74.2	OK
5.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH19	MH20	42.372	41.013	0.225	14.462	0.8	0.34	30.7	OK
5.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH20	MH16	40.360	39.452	0.300	22.924	0.6	0.75	45.2	Surcharged
7.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH21	13	41.286	39.949	0.159	8.272	0.6	0.48	16.8	OK
4.007	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH17	Manhole	40.696	39.286	0.375	105.890	1.6	1.44	179.0	Surcharged
4.008	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	40.826	39.151	0.375	105.817	1.6	1.43	177.7	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
4.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH10	MH11	41.345	40.010	0.192	9.274	0.6	0.52	18.9	OK
4.001	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH11	MH12	41.199	39.976	0.225	13.316	0.7	0.57	20.8	Surcharged
4.002	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH12	13	41.328	39.964	0.225	13.624	0.6	0.63	23.3	Surcharged
4.003	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	13	MH14	41.541	39.950	0.225	29.381	1.1	1.23	45.0	Surcharged
4.004	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH14	MH15	41.713	39.864	0.300	31.986	0.8	0.85	50.9	Surcharged
4.005	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH15	MH16	41.434	39.829	0.300	51.642	1.1	0.71	75.5	Surcharged
4.006	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH16	MH17	40.696	39.662	0.375	93.773	1.3	1.32	143.6	Surcharged
6.000	FSR: 100 years: +20 %: 15 mins: Summer	Pipe	MH18	MH17	42.193	40.912	0.225	40.324	2.2	0.86	88.5	OK
5.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH19	MH20	42.372	41.027	0.225	18.754	1.0	0.45	39.8	OK
5.001	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH20	MH16	40.360	39.781	0.300	31.218	0.8	0.95	57.2	Surcharged
7.000	FSR: 100 years: +20 %: 15 mins: Summer	Pipe	MH21	13	41.286	39.964	0.221	9.633	0.5	0.59	20.7	OK
4.007	FSR: 100 years: +20 %: 30 mins: Winter	Pipe	MH17	Manhole	40.696	39.692	0.375	194.585	2.8	2.49	308.9	Surcharged
4.008	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	40.826	39.257	0.375	170.991	2.0	1.82	226.0	Surcharged

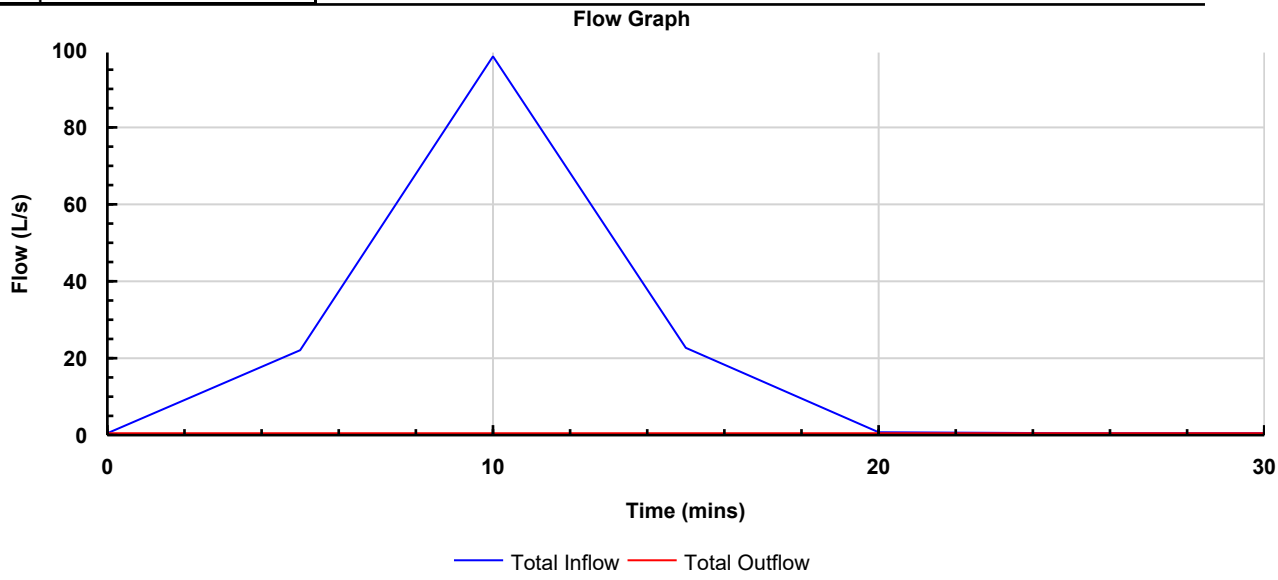
Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

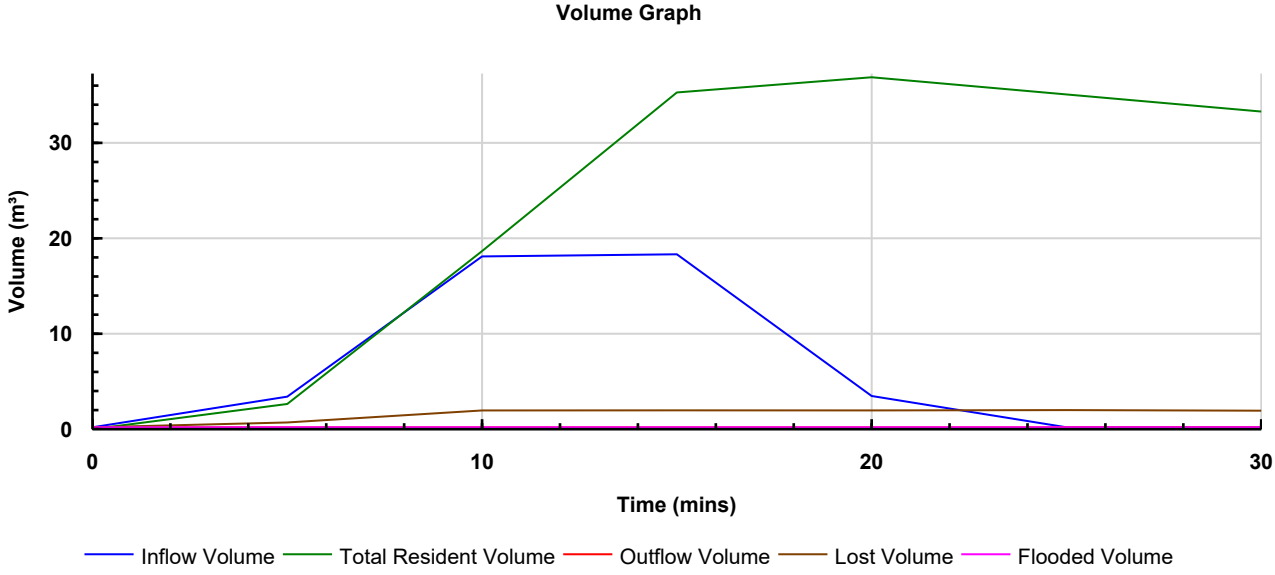
Phase
FSR: 1 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	98.5	42.752	0.0	0.000

Graphs





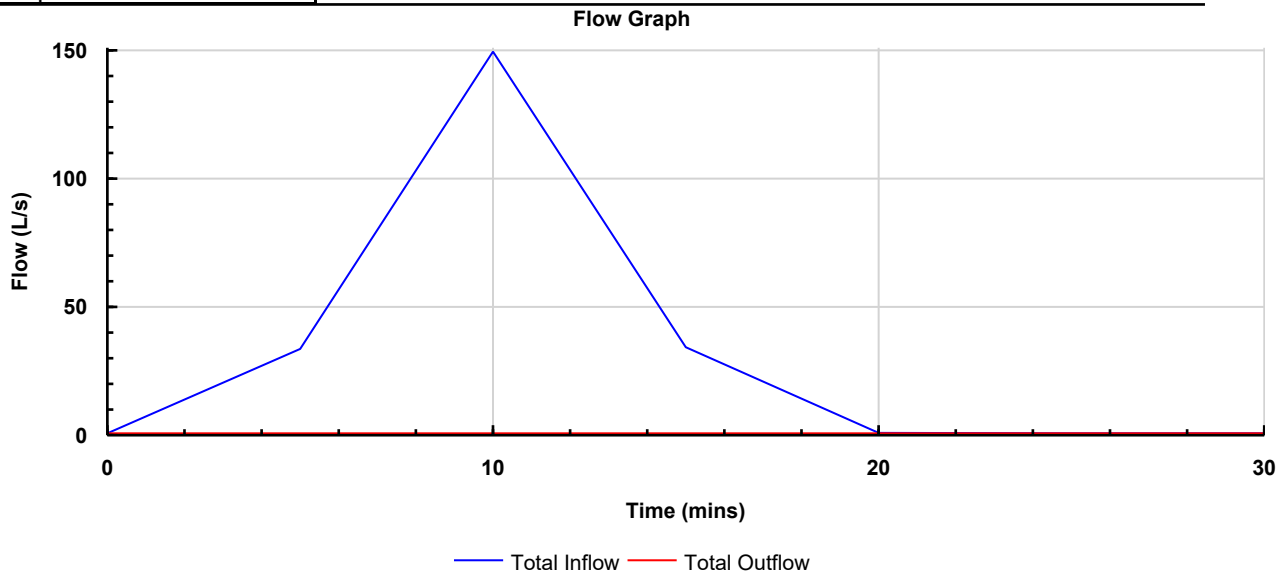
Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

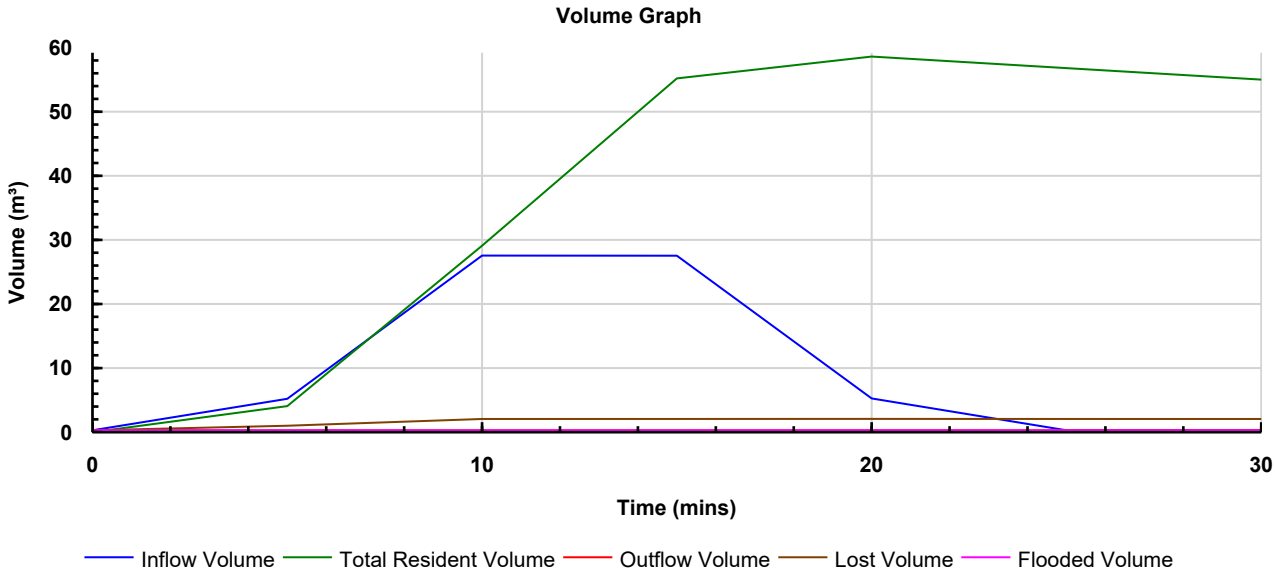
Phase
FSR: 5 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	149.5	64.706	0.0	0.000

Graphs





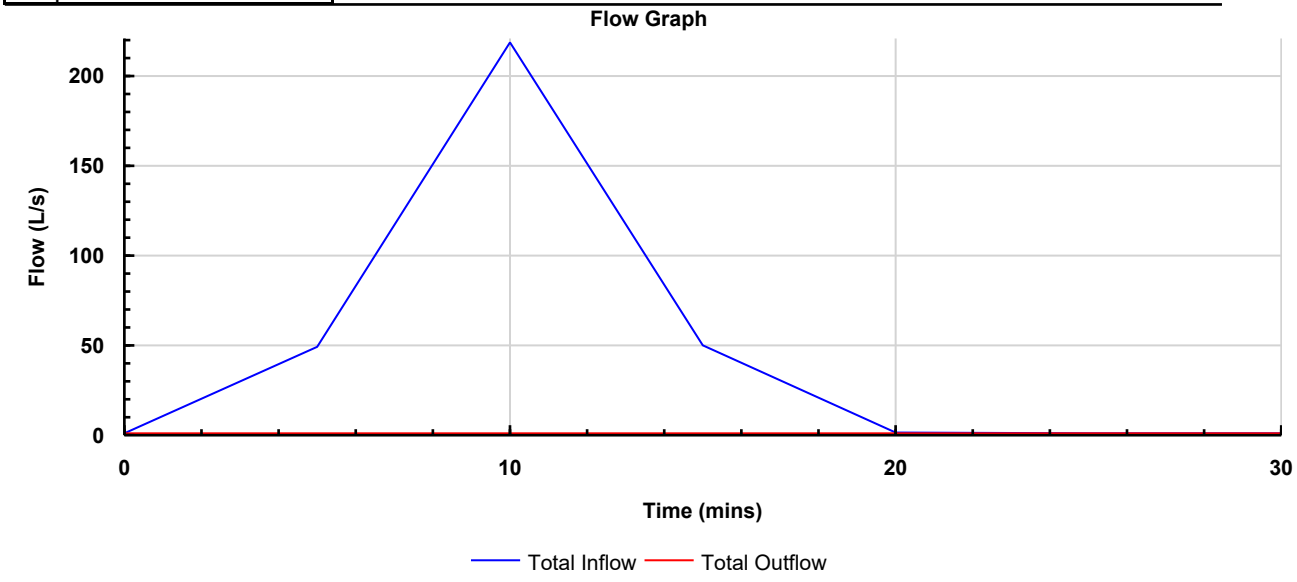
Deerpark Housing:	Date: 16/02/2026			
	Designed by: RK	Checked by:	Approved By:	
Report Details: Type: Phase Management Storm Phase: Phase	MWP:			

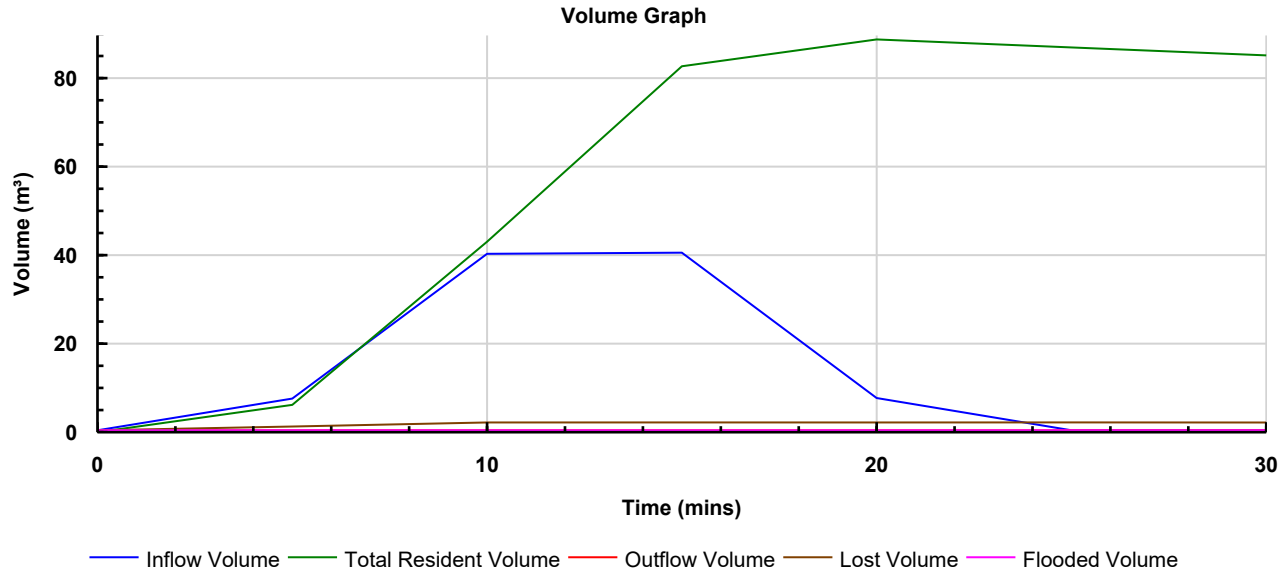
Phase
FSR: 30 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	218.7	94.915	0.0	0.000

Graphs





Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Phase Management Storm Phase: Phase	MWP:		

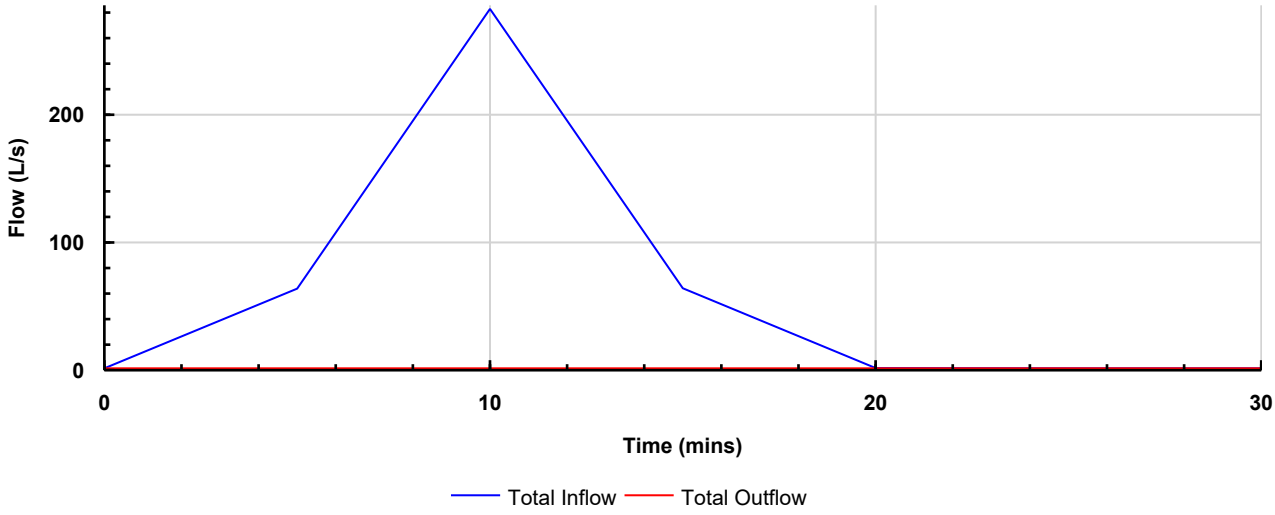
Phase
FSR: 100 years: Increase Rainfall (%): +20: 15 mins: Summer

Tables

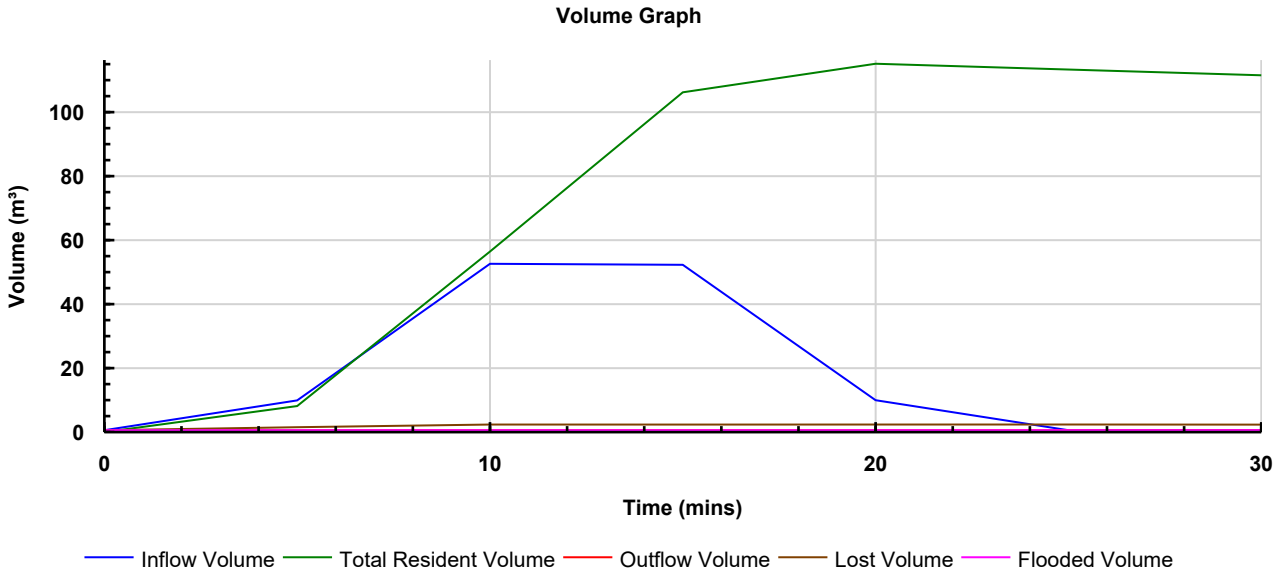
Name	Max. Inflow (L/s)	Total Inflow Volume (m³)	Max. Outflow (L/s)	Total Outflow Volume (m³)
TOTAL	282.8	123.036	0.0	0.000

Graphs

Flow Graph



Volume Graph



Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	MWP:		

Name	Junction Type	Easting (m)	Northing (m)	Cover Elevation (m)	Depth (m)	Invert Elevation (m)	Chamber Shape	Diameter (m)
MH22	Manhole	497163.164	591110.193	41.183	1.483	39.700	Circular	1.200
MH23	Manhole	497151.813	591142.772	41.793	3.399	38.395	Circular	1.200
MH24	Manhole	497150.874	591160.190	42.306	3.795	38.511	Circular	1.200
MH25	Manhole	497199.555	591149.681	42.445	1.450	40.995	Circular	1.200
MH26	Manhole	497160.065	591211.103	40.422	1.566	38.856	Circular	1.200
Manhole	Manhole	497162.278	591141.220	41.962	3.738	38.224	Circular	1.200

Name	Lock
MH22	None
MH23	None
MH24	None
MH25	None
MH26	None
Manhole	None

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Storm Phase: Phase	MWP:		

Inlets

Junction	Inlet Name	Incoming Item(s)	Bypass Destination	Capacity Type
MH22	Inlet (1)	Catchment Area (1)	(None)	No Restriction
	Inlet (10)	Catchment Area (7)	(None)	No Restriction
	Inlet (2)	Catchment Area (2)	(None)	No Restriction
	Inlet (3)	Catchment Area (3)	(None)	No Restriction
	Inlet (4)	Catchment Area (28)	(None)	No Restriction
	Inlet (5)	Catchment Area	(None)	No Restriction
	Inlet (6)	Catchment Area (42)	(None)	No Restriction
	Inlet (7)	Catchment Area (4)	(None)	No Restriction
	Inlet (8)	Catchment Area (5)	(None)	No Restriction
	Inlet (9)	Catchment Area (6)	(None)	No Restriction
MH23	Inlet	Catchment Area (9)	(None)	No Restriction
	Inlet (1)	Catchment Area (10)	(None)	No Restriction
	Inlet (2)	Catchment Area (8)	(None)	No Restriction
	Inlet (3)	Catchment Area (29)	(None)	No Restriction
	Inlet (4)	Catchment Area (11)	(None)	No Restriction
	Inlet (5)	Catchment Area (30)	(None)	No Restriction
	Inlet (6)	9.000	(None)	No Restriction
	Inlet (7)	8.001	(None)	No Restriction
MH24	Inlet (1)	Catchment Area (41)	(None)	No Restriction
	Inlet (10)	Catchment Area (38)	(None)	No Restriction
	Inlet (13)	8.000	(None)	No Restriction
	Inlet (14)	10.000	(None)	No Restriction
	Inlet (2)	Catchment Area (46)	(None)	No Restriction
	Inlet (3)	Catchment Area (44)	(None)	No Restriction
	Inlet (4)	Catchment Area (12)	(None)	No Restriction
	Inlet (5)	Catchment Area (13)	(None)	No Restriction
	Inlet (6)	Catchment Area (15)	(None)	No Restriction
	Inlet (7)	Catchment Area (16)	(None)	No Restriction
	Inlet (8)	Catchment Area (17)	(None)	No Restriction
	Inlet (9)	Catchment Area (14)	(None)	No Restriction
MH25	Inlet	Catchment Area (23)	(None)	No Restriction
	Inlet (1)	Catchment Area (45)	(None)	No Restriction
	Inlet (2)	Catchment Area (47)	(None)	No Restriction
	Inlet (3)	Catchment Area (39)	(None)	No Restriction
	Inlet (4)	Catchment Area (40)	(None)	No Restriction
MH26	Inlet (1)	Catchment Area (43)	(None)	No Restriction
	Inlet (2)	Catchment Area (22)	(None)	No Restriction
	Inlet (3)	Catchment Area (21)	(None)	No Restriction
	Inlet (4)	Catchment Area (20)	(None)	No Restriction
	Inlet (5)	Catchment Area (19)	(None)	No Restriction
	Inlet (6)	Catchment Area (18)	(None)	No Restriction
	Inlet (7)	Catchment Area (31)	(None)	No Restriction
	Inlet (8)	Catchment Area (26)	(None)	No Restriction
Manhole	Inlet	8.002	(None)	No Restriction

Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
MH22	Outlet	9.000	Free Discharge
MH23	Outlet	8.002	Free Discharge
MH24	Outlet	8.001	Free Discharge
MH25	Outlet	10.000	Free Discharge
MH26	Outlet	8.000	Free Discharge
Manhole	Outlet	8.003	Free Discharge

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Storm Phase: Phase	MWP:		



Cellular Storage

Type : Cellular Storage

Dimensions

Exceedance Elevation (m)	41.700
Depth (m)	1.600
Base Elevation (m)	36.794
Number of Crates Long	20
Number of Crates Wide	20
Number of Crates High	4
Porosity (%)	95
Crate Length (m)	1
Crate Width (m)	0.5
Crate Height (m)	0.4
Total Volume (m³)	307.306

Inlets

Inlet

Inlet Type	Point Inflow
Incoming Item(s)	8.003
Bypass Destination	(None)
Capacity Type	No Restriction

Advanced

Base Infiltration Rate (m/hr)	0.576
Safety Factor	10.0

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Storm Phase: Phase	MWP:		

Name	From	To	Length (m)	Connection Type	Slope (1:x)	Manning's n	Diameter / Base Width (mm)	Curved
8.002	MH23	Manhole	10.579	Pipe	150.000	0.013	300	☐
9.000	MH22	MH23	34.500	Pipe	26.437	0.013	225	☐
8.000	MH26	MH24	51.736	Pipe	150.000	0.013	300	☐
8.001	MH24	MH23	17.443	Pipe	150.000	0.013	300	☐
10.000	MH25	MH24	49.802	Pipe	20.049	0.013	225	☐
8.003	Manhole	Cellular Storage	16.274	Pipe	190.000	0.013	300	☐

Name	Upstream Cover Elevation (m)	Upstream Invert Elevation (m)	Downstream Cover Elevation (m)	Downstream Invert Elevation (m)	Part Family	Lock	Wall Thickness (mm)	Material
8.002	41.793	38.395	41.962	38.324		All	0	
9.000	41.183	39.700	41.793	38.395		All	0	
8.000	40.422	38.856	42.306	38.511		All	0	
8.001	42.306	38.511	41.793	38.395		None	0	
10.000	42.445	40.995	42.306	38.511		All	0	
8.003	41.962	38.224	41.700	38.138		All	0	

Name	Trench Width (mm)	Bedding Material	Surrounding Material
8.002	0		
9.000	0		
8.000	0		
8.001	0		
10.000	0		
8.003	0		

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH22	FSR: 1 years: +20 %: 15 mins: Summer	41.183	39.700	39.750	0.050	9.6	0.056	0.000	9.3	4.173	OK
MH23	FSR: 1 years: +20 %: 15 mins: Summer	41.793	38.395	38.569	0.175	47.5	0.198	0.000	43.5	23.340	OK
MH24	FSR: 1 years: +20 %: 15 mins: Summer	42.306	38.511	38.654	0.143	36.9	0.162	0.000	32.0	16.530	OK
MH25	FSR: 1 years: +20 %: 15 mins: Summer	42.445	40.995	41.065	0.070	21.8	0.079	0.000	21.2	9.516	OK
MH26	FSR: 1 years: +20 %: 15 mins: Summer	40.422	38.856	38.909	0.053	6.1	0.060	0.000	5.5	2.634	OK
Manhole	FSR: 1 years: +20 %: 15 mins: Summer	41.962	38.224	38.401	0.177	43.5	0.200	0.000	41.1	23.300	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH22	FSR: 5 years: +20 %: 15 mins: Summer	41.183	39.700	39.761	0.061	14.5	0.069	0.000	14.1	6.319	OK
MH23	FSR: 5 years: +20 %: 15 mins: Summer	41.793	38.395	38.630	0.236	72.0	0.267	0.000	67.4	35.424	OK
MH24	FSR: 5 years: +20 %: 15 mins: Summer	42.306	38.511	38.704	0.193	56.1	0.218	0.000	48.5	25.078	OK
MH25	FSR: 5 years: +20 %: 15 mins: Summer	42.445	40.995	41.083	0.088	33.0	0.099	0.000	32.2	14.390	OK
MH26	FSR: 5 years: +20 %: 15 mins: Summer	40.422	38.856	38.922	0.066	9.2	0.075	0.000	8.4	4.006	OK
Manhole	FSR: 5 years: +20 %: 15 mins: Summer	41.962	38.224	38.464	0.240	67.4	0.271	0.000	64.0	35.378	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH22	FSR: 30 years: +20 %: 15 mins: Summer	41.183	39.700	39.775	0.075	21.3	0.085	0.000	20.8	9.273	OK
MH23	FSR: 30 years: +20 %: 15 mins: Summer	41.793	38.395	38.724	0.329	97.7	0.372	0.000	93.6	52.384	Surcharged
MH24	FSR: 30 years: +20 %: 15 mins: Summer	42.306	38.511	38.824	0.313	82.9	0.355	0.000	63.1	37.106	Surcharged
MH25	FSR: 30 years: +20 %: 15 mins: Summer	42.445	40.995	41.104	0.109	48.5	0.123	0.000	47.5	21.111	OK
MH26	FSR: 30 years: +20 %: 15 mins: Summer	40.422	38.856	38.937	0.081	13.5	0.091	0.000	12.5	5.894	OK
Manhole	FSR: 30 years: +20 %: 15 mins: Summer	41.962	38.224	38.572	0.348	93.6	0.393	0.000	90.6	52.388	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Junctions Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Junction	Storm Event	Cover Elevation (m)	Invert Elevation (m)	Max. Elevation (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
MH22	FSR: 100 years: +20 %: 15 mins: Summer	41.183	39.700	39.785	0.085	26.8	0.096	0.000	26.6	12.004	OK
MH23	FSR: 100 years: +20 %: 15 mins: Summer	41.793	38.395	38.947	0.552	121.1	0.624	0.000	118.8	68.464	Surcharged
MH24	FSR: 100 years: +20 %: 15 mins: Summer	42.306	38.511	39.087	0.576	89.4	0.652	0.000	77.1	48.837	Surcharged
MH25	FSR: 100 years: +20 %: 15 mins: Summer	42.445	40.995	41.121	0.126	61.0	0.142	0.000	60.6	27.369	OK
MH26	FSR: 100 years: +20 %: 15 mins: Summer	40.422	38.856	39.091	0.235	24.4	0.266	0.000	6.4	8.290	OK
Manhole	FSR: 100 years: +20 %: 15 mins: Summer	41.962	38.224	38.721	0.497	118.8	0.563	0.000	117.3	68.480	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	36.896	36.896	0.102	0.102	41.1	19.331	0.000	5.035	0.0	0.000	93.709	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident Volume (m³)	Max. Flooded Volume (m³)	Total Lost Volume (m³)	Max. Outflow (L/s)	Total Discharge Volume (m³)	Percentage Available (%)	Status
Cellular Storage	FSR: 5 years: +20 %: 15 mins: Summer	36.958	36.958	0.164	0.164	64.0	31.098	0.000	5.139	0.0	0.000	89.881	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	37.047	37.047	0.253	0.253	90.6	48.005	0.000	5.219	0.0	0.000	84.379	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Stormwater Controls Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flooded Volume

Stormwater Control	Storm Event	Max. US Elevation (m)	Max. DS Elevation (m)	Max. US Depth (m)	Max. DS Depth (m)	Max. Inflow (L/s)	Max. Resident 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: +20 %: 15 mins: Summer	37.131	37.131	0.337	0.337	117.3	64.112	0.000	5.265	0.0	0.000	79.137	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 1 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
8.002	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH23	Manhole	41.793	38.577	0.174	26.217	1.1	0.59	46.5	OK
9.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH22	MH23	41.183	39.751	0.117	4.690	0.5	0.11	9.8	OK
8.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH26	MH24	40.422	38.911	0.102	2.957	0.3	0.07	5.8	OK
8.001	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH24	MH23	42.306	38.660	0.166	18.553	0.8	0.43	34.1	OK
10.000	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	MH25	MH24	42.445	41.067	0.111	10.669	1.1	0.22	22.3	OK
8.003	FSR: 1 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.962	38.409	0.174	26.175	1.0	0.63	44.2	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 5 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
8.002	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH23	Manhole	41.793	38.642	0.228	39.663	1.2	0.91	71.8	OK
9.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH22	MH23	41.183	39.763	0.155	7.075	0.5	0.17	14.9	OK
8.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH26	MH24	40.422	38.924	0.136	4.473	0.3	0.11	8.9	OK
8.001	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH24	MH23	42.306	38.714	0.225	28.074	0.9	0.65	51.5	OK
10.000	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	MH25	MH24	42.445	41.085	0.147	16.129	1.2	0.34	33.9	OK
8.003	FSR: 5 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.962	38.477	0.229	39.615	1.2	0.98	68.6	OK

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 30 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
8.002	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH23	Manhole	41.793	38.779	0.300	58.761	1.4	1.27	100.0	Surcharged
9.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH22	MH23	41.183	39.777	0.225	10.393	0.6	0.25	22.0	OK
8.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH26	MH24	40.422	38.939	0.230	6.640	0.2	0.17	13.2	OK
8.001	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH24	MH23	42.306	38.888	0.300	41.633	1.0	0.87	68.4	Surcharged
10.000	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	MH25	MH24	42.445	41.108	0.225	23.654	1.3	0.5	50.2	OK
8.003	FSR: 30 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.962	38.608	0.300	58.764	1.3	1.34	93.8	Surcharged

Deerpark Housing:	Date: 16/02/2026		
	Designed by: RK	Checked by:	Approved By:
Report Details: Type: Connections Summary Storm Phase: Phase	MWP:		

FSR: 100 years: Increase Rainfall (%): +20: Critical Storm Per Item: Rank By: Max. Flow

Connection	Storm Event	Connection Type	From	To	Upstream Cover Elevation (m)	Max. US Water Elevation (m)	Max. Flow Depth (m)	Discharge Volume (m³)	Max. Velocity (m/s)	Flow / Capacity	Max. Flow (L/s)	Status
8.002	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH23	Manhole	41.793	39.054	0.300	76.823	1.8	1.65	130.4	Surcharged
9.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH22	MH23	41.183	39.788	0.225	13.457	0.7	0.32	28.4	OK
8.000	FSR: 100 years: +20 %: 30 mins: Winter	Pipe	MH26	MH24	40.422	39.099	0.300	12.355	0.3	0.16	12.6	OK
8.001	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH24	MH23	42.306	39.271	0.300	54.565	1.3	1.17	92.7	Surcharged
10.000	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	MH25	MH24	42.445	41.126	0.225	30.657	1.6	0.64	64.6	OK
8.003	FSR: 100 years: +20 %: 15 mins: Winter	Pipe	Manhole	Cellular Storage	41.962	38.769	0.300	76.869	1.8	1.78	124.6	Surcharged

Appendix E

Maintenance Plan and Schedule for Storm Drainage Infrastructure

MWP

Maintenance Plan and Schedule for Storm Drainage Infrastructure

Residential Development, Deerpark

On behalf of Ross-Park Residential HS **Limited**

September 2026

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2.1 Storm Drains 2
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Appendix B - Product Data Sheets

Project No.	Doc. No.	Rev.	Date	Prepared By	Checked By	Approved By	Status
25123	25123-ZZ-ZZZ-RP-MWP-CE-6008	0	09/03/2026	AH	DD	IB	Information
25123	25123-ZZ-ZZZ-RP-MWP-CE-6008	1	29/09/2026	AH	DD	IB	Information

MWP, Engineering and Environmental Consultants
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www.mwp.ie

QUALITY I.S. EN ISO 9001:2015 NSAI Certified
HEALTH & SAFETY I.S. ISO 45001:2018 NSAI Certified
ENVIRONMENT I.S. EN ISO 14001:2015 NSAI Certified
BUILDING INFORMATION MODELLING ISO 19650-2:2018 NSAI Certified
ENGINEERS IRELAND CPD ACCREDITED EMPLOYER

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1. Introduction

MWP were commissioned by Ross -Park Residential HS Limited. to provide a maintenance plan and schedule in relation to the drainage design in connection with a planning application for a Residential Development at Deer Park, Tralee, Co.Kerry.

This Report outlines the engineering design proposals for the elements described above relating to the planning application.

1.1 Location and Proposed Development

The development is proposed to be constructed on land north of Ardshanavooly, on the outskirts of Killarney, Co. Kerry, refer to Figure 1 for a site location map. The site area within the red line boundary is approximately 3.8ha. It is currently in a predominantly greenfield condition. The site is located to the north of Killarney and consists of agricultural fields on a slight south-facing slope. The Figure 1 below shows the proposed site.



Figure 1 Aerial Image of Proposed Site

A review of the EPA map-viewer determined that there are no watercourses traversing the proposed development site and there are none within the immediate vicinity, as shown in Error! Reference source not found..

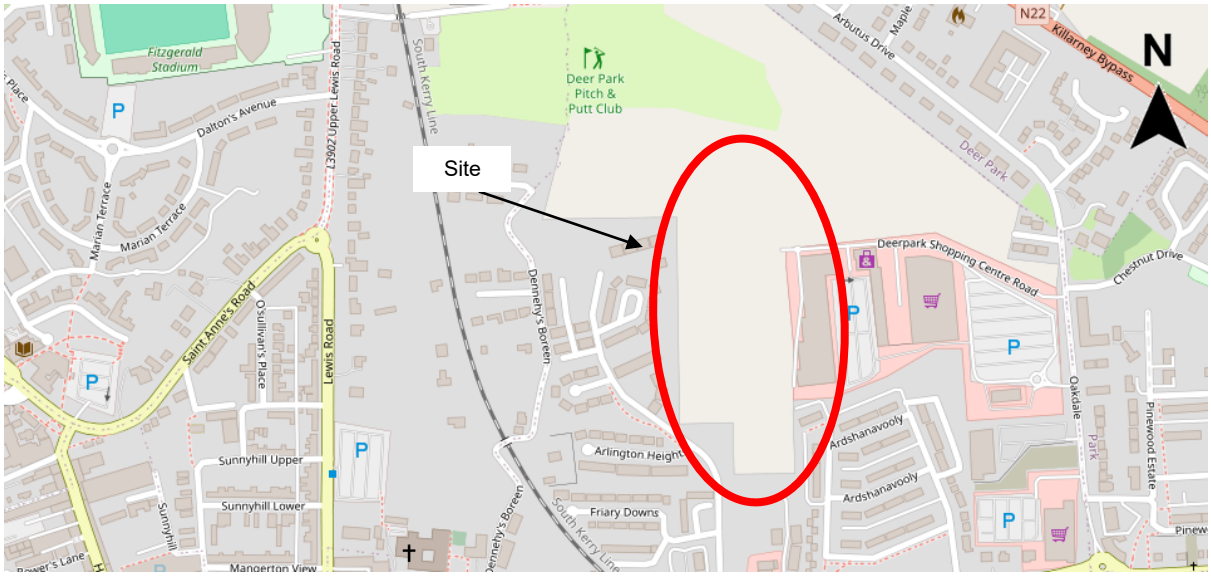


Figure 2 Water courses in vicinity of the site (EPA Maps)

Ross-Park Ltd intend to apply for planning permission for a Large-Scale Residential Development (LRD) at Ardshanavooly (townland), Killarney, Co. Kerry.

The development will consist of the construction of a residential development of 188 no. residential units with ancillary creche, landscaping and all associated site development works.

The proposed development includes the construction of 120 no. two storey houses comprising of 51 no. townhouse units (35 no. 3-bed units, 16 no. 4-bed units), 50 no. semi-detached units (32 no. 3-bed units, 18 no. 4-bed units), 19 no. mews houses (19 no. 2-bed units), and 68 no. apartments in 2 no. four storey blocks (36 no. 1-bed units, 32 no. 2-bed units).

Vehicular access to the proposed development will be via the proposed Killarney Strategic Links Project - Links Road A-C, part of which will be delivered by the proposed development. The design includes short and longer term future accesses reflecting the phased delivery of Links Road A-C, as well as pedestrian/cycle infrastructure to/from Friary Downs / the R876 to the south and internally within the development site and to adjoining areas.

2. Recommended Maintenance

All elements of the drainage system should be inspected following a major storm event. Maintenance should be carried out in tandem with the specification outlined by the manufacturer and be conducted to whichever is the most onerous. When carrying out maintenance, it is essential that a record of inspection and maintenance on all elements is kept and updated when required. A proposed template to record the maintenance and inspections conducted on the site can be found in Appendix A.

2.1 Storm Drains

It is recommended all storm drains are cleaned every 6 months. Further recommendation is shown below:

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Inspection	Monthly
	Litter/debris removal	Monthly or as required

Occasional Maintenance	Sediment removal – silt build-up should be removed	Every 6 months
Remedial Maintenance	Repair (as a result of damage or vandalism)	As required

2.2 Kingspan Klargester Bypass Separators

Kingspan Klargester recommends checking the oil levels after the first 3 months. This will give an indication on when the separators should be maintained.

2.3 Operation & Maintenance requirements for attenuation storage tanks as per CIRIA C753 – SuDS Manual 2015 & Wavin Aquacell O&M Manual

Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Inspect and identify areas that are not operating correctly. Take action where required	Monthly for 3 months. Yearly thereafter.
	Remove debris from catchment surface. (where it may cause risk to performance.)	Monthly
	For systems where rainfall infiltrates into the tank from above, check surface of filter for blockage by sediment, algae or other matter; remove and replace surface infiltration medium as necessary.	Annually
	Remove sediment from pre-treatment structures, isolation rows, and/ or internal forebays	Annually, or as required
Remedial Maintenance	Repair/rehabilitate inlets, outlet, overflows and vents	As required.
Monitoring	Inspect/check all inlets, outlets, vents and overflows to ensure that they are in good condition and operating as designed	Annually & following large storms
	Survey inside of system for sediment build-up and remove if necessary	Every 6 months or as required.

2.4 Operation & Maintenance requirements for silt traps as per CIRIA C753 – SuDS Manual 2015

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Inspection	Monthly
	Litter/debris removal	Monthly or as required
Occasional Maintenance	Sediment removal – silt stores should be emptied	Every 6 months
Remedial Maintenance	Repair (as a result of damage or vandalism)	As required

2.5 Operation & Maintenance requirements for hydro brakes as per CIRIA C753 – SuDS Manual 2015

Maintenance should be carrying out in tandem with the specification outlined by the manufacturer. As a general guide, the following requirements should be met:

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Inspection	Monthly
	Litter/debris removal	Monthly or as required
Occasional Maintenance	Sediment removal – silt stores should be emptied	Every 6 months
Remedial Maintenance	Repair (as a result of damage or vandalism)	As required

2.6 External drainage system – Drainage adjacent to road

The drainage system should be inspected regularly to coincide with the aforementioned specification. A general guideline is shown below:

Maintenance Schedule	Required Action	Typical Frequency
Routine Maintenance	Inspection	Monthly
	Litter/debris removal	Monthly or as required
Occasional Maintenance	Sediment removal – silt stores should be emptied	Every 6 months
Remedial Maintenance	Repair (as a result of damage or vandalism)	As required

Appendix A

Proposed Maintenance and Inspection Schedule Record Sheet

Date	Item Inspected/ Maintained	Inspection/ Maintenance Type	Comment on condition of Item prior to the Works and detail of what works were performed	Inspected/Maintained by:

Appendix B

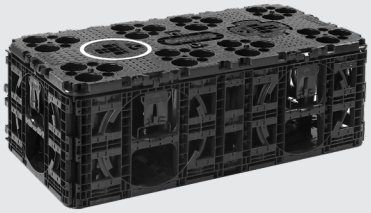
Product Data Sheets

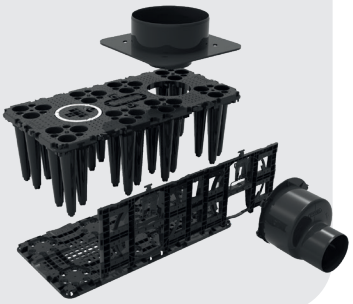
AquaCell

Product Description

Geocellular units for detention and infiltration of rainwater.

The optimal solution for fast installation and total access for inspection and cleaning.





Technical information

Dimensions		
Length	48 in	1200 mm
Width	24 in	600 mm
Height	16 in	400 mm
Gross volume (without bottom)	10.25 cf	
Void ratio*		94-96%
Weight main unit	24 lb	11kg
Pipe connections	6-12 in	160-315 mm
Tank volume per truck	<11406 ft^3	<323 m^3

*Void ratio varies based on number of system layers & side panels

Accessibility		
Vertical access	10 in	250 mm
Width inspection channel (bottom)	8 in	200 mm
Accessible surface area	54%	

General	
Material	Recycled polypropylene
Color	Black
Connectors	Integrated
Standard	EN17152-1

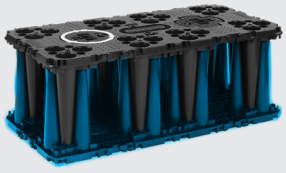
Window of Application*		
Type of Load	Regular	Extra strong
H-10 Traffic Loading	d=12in. / H= 14.4ft	d=12in. / H=26.2 ft
HS-20 Traffic Loading	d=24 in. / H=14.4ft	d=18 in. / H=26.2ft
HS-25 Traffic Loading	d=32in. / H=14.1 ft	d=22in. / H=26.1 ft.

*General indication for installation above groundwater level, according to instructions for single layer tanks. For multi-layer tanks, the window of application may be limited. Wavin always recommends a minimum cover of 12 inches (0.3 meter). For specific projects, seek advice of Wavin.

Regular Configuration



Extra strong Configuration



@Montréal 9.2025

Orbia's Building and Infrastructure business Wavin is an innovative solutions provider for the global building and infrastructure industry. Backed by more than 60 years of product development experience, Wavin is advancing life around the world by building healthy, sustainable environments for global citizens. Whether it's to improve the distribution of clean drinking water, to make sanitation accessible for everyone, to create climate resilient cities, or to design comfortable living spaces, Wavin collaborates with municipal leaders, engineers, contractors, and installers to help future-proof communities, buildings and homes. Wavin has 12,000+ employees around 65 production sites worldwide, serving over 80 countries through a global sales and distribution network.

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© 2025 Wavin Wavin reserves the right to make alterations without prior notice. Due to continuous product development, changes in technical spefications may change. Installation must comply with the installation instructions.

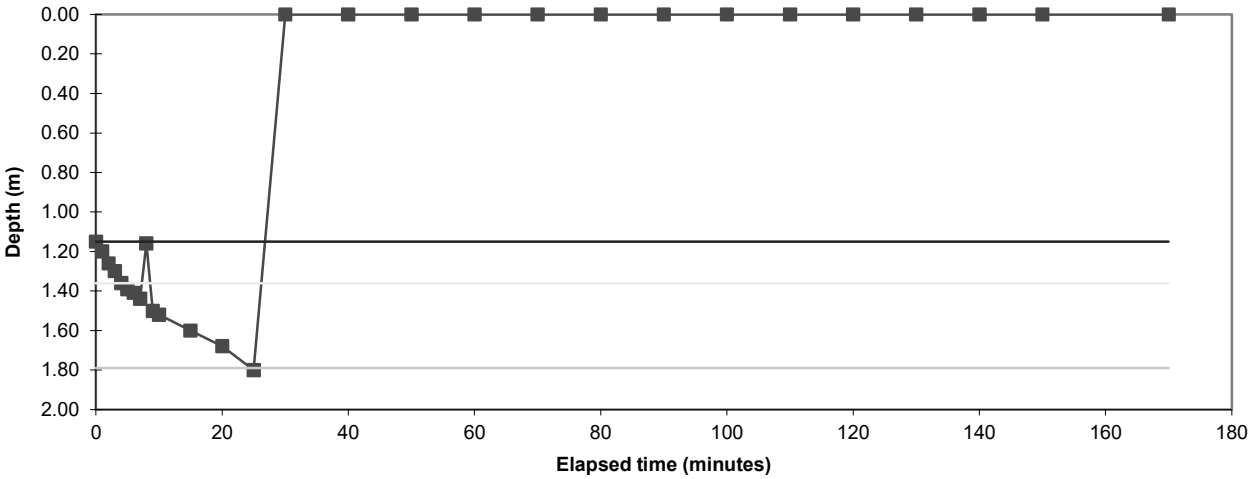
Appendix F

Infiltration Testing

Soakaway Test

Trial Pit No:	1	Test No:	1	Date:	12/02/2026
Length (m):	2.40	Datum height:		0.00	m agl
Width (m):	1.80	Granular infill:	None		
Depth (m):	2.00	Porosity of infill:	1		(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	1.15	30	
1	1.20	40	
2	1.26	50	
3	1.30	60	
4	1.36	70	
5	1.39	80	
6	1.41	90	
7	1.44	100	
8	1.16	110	
9	1.50	120	
10	1.52	130	
15	1.60	140	
20	1.68	150	
25	1.80	170	



Start water depth for analysis (mbgl):	1.15		
75% effective depth (mbgl):	1.36	Elapsed time (mins):	4.0
50% effective depth (mbgl):	1.58		
25% effective depth (mbgl):	1.79	Elapsed time (mins):	24.6
Base of soakage zone (mbgl):	2.00		

Volume outflow between 75% and 25% effective depth (m3):	1.858
Mean surface area of outflow (m^2):	7.85
(side area at 50% effective depth + base area)	
Time for outflow between 75% and 25% effective depth (mins):	20.6

Soil infiltration rate (m/s):	**1.9E-4**

Remarks Results processed following BRE 365 (2007).

Notes:

Water depths measured below ground level

Project **Deerpark**

Project No. **25123**

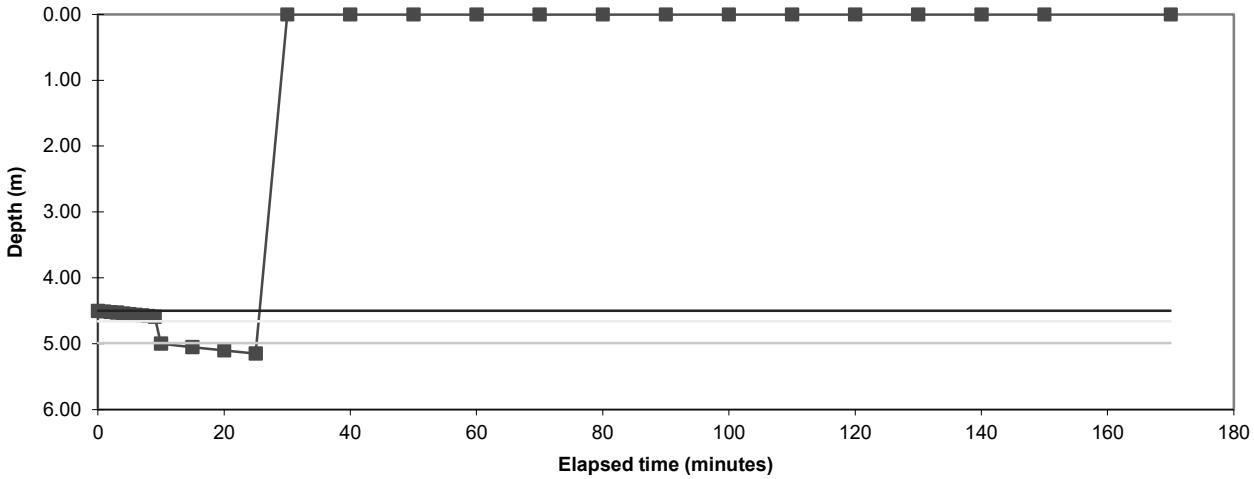
Carried out for **Ross park Ltd**

Figure

Soakaway Test

Trial Pit No:	1	Test No:	1	Date:	12/02/2026
Length (m):	2.40	Datum height:		0.00	m agl
Width (m):	1.20	Granular infill:	None		
Depth (m):	5.15	Porosity of infill:	1		(assumed)

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	4.50	30	
1	4.51	40	
2	4.52	50	
3	4.53	60	
4	4.54	70	
5	4.55	80	
6	4.56	90	
7	4.57	100	
8	4.58	110	
9	4.59	120	
10	5.00	130	
15	5.05	140	
20	5.10	150	
25	5.15	170	



Start water depth for analysis (mbgl):	4.50		
75% effective depth (mbgl):	4.66	Elapsed time (mins):	9.2
50% effective depth (mbgl):	4.83		
25% effective depth (mbgl):	4.99	Elapsed time (mins):	10.0
Base of soakage zone (mbgl):	5.15		

Volume outflow between 75% and 25% effective depth (m3):	0.950
Mean surface area of outflow (m^2):	5.18
(side area at 50% effective depth + base area)	
Time for outflow between 75% and 25% effective depth (mins):	0.8

Soil infiltration rate (m/s):	**3.8E-3**

Remarks Results processed following BRE 365 (2007).

Notes:	Project	Deerpark	Figure
Water depths measured below ground level	Project No.	25123	
	Carried out for	Ross Park Ltd	

Appendix G

Proposed EV Charging Information

EC CHARGING
powering e-mobility
www.eccharging.com

10 Years Dedicated to Charge Point Manufacture



BUSINESS AND FLEET EV CHARGING

PROFESSIONAL AC DOUBLE OUTLET CHARGING







Professional double outlet charging units suitable for wall or ground mounting and available for both single and three phase connection, with an output range from 3kW to 22kW
RFID card or mobile phone app access, with on-line monitoring facility for charge point management and billing purposes
Open Charge Point Protocol (OCPP) v1.6 compliant, which enables connection to open public/private charging networks.
Dynamic load balancing enables the management and sharing of available power.



DIMENSIONS (WALL UNIT)	H 570 D 180 W 320 (MM)
DIMENSIONS (PEDESTAL UNIT)	H 1200 D 200 W 300 (MM)
ENERGY METER	MID APPROVED
MAINS CONNECTION	230V TO 400V 50Hz
CHARGING OUTPUT	3kW TO 22kW AC (single/three phase)
CURRENT PROTECTION	RCD TYPE A 40A MCB TYPE B 40A
SOCKET	TYPE 2 EV SOCKETS
OPERATING TEMPERATURE	-20 DEG C TO +55 DEG C
CHARGEPOINT PROTOCOL	OCPP V1.6
STANDARDS	IEC62196-2 IEC61851 (1) (22)
PROTECTION	IP55 PROTECTED
OUTER CASING	STAINLESS STEEL CASING
COMMUNICATION	GSM GPRS INTEGRATED





Contact

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UK: T: +44(0)7733 483881 E: james@eccharging.com

Appendix H

Proposed Public Lighting Layout



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REV	DATE	DESCRIPTION	BY	APP
P03	02/09/26	Issued For Planning	M.S	F.F
P02	12/03/26	Issued For Planning	S.C	F.F
P01	27/02/26	Issued For Planning	S.C	F.F

MWP
ENGINEERING AND ENVIRONMENTAL CONSULTANTS
CORK | TRALEE | LONDON | LIMERICK
mwp.ie

PROJECT:
DEERPARK HOUSING DEVELOPMENT

CLIENT:
Ross-Park Residential HS Limited

TITLE:
SITE LIGHTING LAYOUT

DRAWN:	CHECKED:	APPROVED:
S.C	F.F	F.F
PROJECT NUMBER:	DATE:	SCALE @ A1:
25123	26/02/2026	1:500

ACCEPTANCE CODE:	PURPOSE OF ISSUE:	PURPOSE CODE:
S	ISSUED FOR PLANNING PERMISSION	P3

DRAWING NUMBER: 25123-ZZ-ZZZ-DR-MWP-EE-9100
REV: P03

Appendix I

Swept Path Analysis