

PROPOSED SURFACE WATER DRAINAGE CALCULATIONS

AT

HOLT ROAD, WREXHAM

FOR

EURO GARAGES LTD

Our Ref: **10802/002/02**

STORM WATER DESIGN NETWORK 1 v2

Sanderson Associates		Page 0
Sanderson House Jubilee Way Huddersfield, WF4 4TD	Euro Garages Ltd Holt Road, Wrexham Storm Network 1 v2	
Date 28/01/2019	Designed by LM	
File Storm Net 1 v2 22.01.19...	Checked by	
Micro Drainage		Network 2018.1.1

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for STORM NET 1 V1.SWS

Pipe Sizes STORM NET 2 V1 Manhole Sizes STORM NET 2 V1

FSR Rainfall Model - England and Wales

Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.322	Minimum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	75	Maximum Backdrop Height (m)	0.000
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for STORM NET 1 V1.SWS

- Indicates pipe length does not match coordinates

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	13.208	0.403	32.8	0.067	4.00	0.0	0.600	o	225	Pipe/Conduit	
2.000	38.470	0.508	75.7	0.061	4.00	0.0	0.600	o	150	Pipe/Conduit	
3.000	29.735	0.297	100.1	0.015	4.00	0.0	0.600	o	150	Pipe/Conduit	
3.001	19.309#	0.211	91.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.001	4.851	0.049	99.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.002	14.058#	0.121	116.2	0.054	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	38.740#	0.368	105.3	0.053	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	47.77	4.10	74.950	0.067	0.0	0.0	0.0	2.29	91.2	8.7
2.000	45.90	4.55	75.300	0.061	0.0	0.0	0.0	1.16	20.4	7.6
3.000	46.14	4.49	73.300	0.015	0.0	0.0	0.0	1.00	17.7	1.9
3.001	44.97	4.80	75.003	0.015	0.0	0.0	0.0	1.05	18.6	1.9
2.001	44.67	4.88	74.792	0.076	0.0	0.0	0.0	1.01	17.8	9.2
2.002	43.78	5.13	74.743	0.130	0.0	0.0	0.0	0.93	16.5	15.4
1.001	42.10	5.64	74.547	0.250	0.0	0.0	0.0	1.27	50.7	28.5

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Network Design Table for STORM NET 1 V1.SWS

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.002	3.001	0.030	100.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
4.000	17.104	0.171	100.0	0.070	4.00	0.0	0.600	o	225	Pipe/Conduit	
4.001	3.001	0.030	100.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	10.411#	0.084	123.9	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	3.000#	0.084	35.7	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.002	41.98	5.68	74.179	0.250	0.0	0.0	0.0	1.31	52.0	28.5
4.000	47.25	4.22	74.350	0.070	0.0	0.0	0.0	1.31	52.0	9.0
4.001	47.10	4.26	74.179	0.070	0.0	0.0	0.0	1.31	52.0	9.0
1.003	41.52	5.82	74.149	0.320	0.0	0.0	0.0	1.17	46.6	36.0
1.004	41.45	5.85	74.065	0.320	0.0	0.0	0.0	2.20	87.3	36.0

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Manhole Schedules for STORM NET 1 V1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
100	76.050	1.100	Junction		1.000	74.950	225				
1	76.057	0.757	Open Manhole	600	2.000	75.300	150				
4	75.720	2.420	Open Manhole	600	3.000	73.300	150				
5	76.084	3.081	Open Manhole	600	3.001	75.003	150	3.000	73.003	150	
2	76.090	1.298	Open Manhole	600	2.001	74.792	150	2.000	74.792	150	
								3.001	74.792	150	
3	76.033	1.290	Open Manhole	1200	2.002	74.743	150	2.001	74.743	150	
101	75.985	1.438	Junction		1.001	74.547	225	1.000	74.547	225	
								2.002	74.622	150	
102	75.576	1.397	Junction		1.002	74.179	225	1.001	74.179	225	
106	75.459	1.109	Junction		4.000	74.350	225				
107	75.559	1.380	Junction		4.001	74.179	225	4.000	74.179	225	
103	75.576	1.427	Open Manhole	1200	1.003	74.149	225	1.002	74.149	225	
								4.001	74.149	225	
104	75.065	1.000	Junction		1.004	74.065	225	1.003	74.065	225	
105	75.471	1.490	Open Manhole	0		OUTFALL		1.004	73.981	225	

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Micro Drainage	Network 2018.1.1	

PIPELINE SCHEDULES for STORM NET 1 V1.SWS

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
1.000	o	225	100	76.050	74.950	0.875	Junction		
2.000	o	150	1	76.057	75.300	0.607	Open Manhole		600
3.000	o	150	4	75.720	73.300	2.270	Open Manhole		600
3.001	o	150	5	76.084	75.003	0.931	Open Manhole		600
2.001	o	150	2	76.090	74.792	1.148	Open Manhole		600
2.002	o	150	3	76.033	74.743	1.140	Open Manhole		1200
1.001	o	225	101	75.985	74.547	1.213	Junction		
1.002	o	225	102	75.576	74.179	1.172	Junction		
4.000	o	225	106	75.459	74.350	0.884	Junction		
4.001	o	225	107	75.559	74.179	1.155	Junction		
1.003	o	225	103	75.576	74.149	1.202	Open Manhole		1200
1.004	o	225	104	75.065	74.065	0.775	Junction		

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
1.000	13.208	32.8	101	75.985	74.547	1.213	Junction		
2.000	38.470	75.7	2	76.090	74.792	1.148	Open Manhole		600
3.000	29.735	100.1	5	76.084	73.003	2.931	Open Manhole		600
3.001	19.309#	91.5	2	76.090	74.792	1.148	Open Manhole		600
2.001	4.851	99.0	3	76.033	74.743	1.140	Open Manhole		1200
2.002	14.058#	116.2	101	75.985	74.622	1.213	Junction		
1.001	38.740#	105.3	102	75.576	74.179	1.172	Junction		
1.002	3.001	100.0	103	75.576	74.149	1.202	Open Manhole		1200
4.000	17.104	100.0	107	75.559	74.179	1.155	Junction		
4.001	3.001	100.0	103	75.576	74.149	1.202	Open Manhole		1200
1.003	10.411#	123.9	104	75.065	74.065	0.775	Junction		
1.004	3.000#	35.7	105	75.471	73.981	1.265	Open Manhole		0

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Micro Drainage		Network 2018.1.1

Free Flowing Outfall Details for STORM NET 1 V1.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.004	105	75.471	73.981	0.000	0	0

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<u>Online Controls for STORM NET 1 V1.SWS</u> <u>Pump Manhole: 104, DS/PN: 1.004, Volume (m³): 0.4</u> Invert Level (m) 74.065		
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Storage Structures for STORM NET 1 V1.SWS

Filter Drain Manhole: 101, DS/PN: 1.001

Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.850
Safety Factor	2.0	Number of Pipes	1
Porosity	0.30	Slope (1:X)	32.8
Invert Level (m)	74.547	Cap Volume Depth (m)	0.000
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000
Trench Length (m)	13.2		

Filter Drain Manhole: 102, DS/PN: 1.002

Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	1.172
Safety Factor	2.0	Number of Pipes	1
Porosity	0.30	Slope (1:X)	105.2
Invert Level (m)	74.179	Cap Volume Depth (m)	0.000
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000
Trench Length (m)	38.7		

Filter Drain Manhole: 107, DS/PN: 4.001

Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.225
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.884
Safety Factor	2.0	Number of Pipes	1
Porosity	0.30	Slope (1:X)	100.0
Invert Level (m)	74.179	Cap Volume Depth (m)	0.000
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000
Trench Length (m)	17.1		

Infiltration Basin Manhole: 104, DS/PN: 1.004

Invert Level (m)	74.065	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.07920	Porosity	1.00
Infiltration Coefficient Side (m/hr)	0.07920		

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	105.0	1.000	290.0

CRITICAL STORM EVENT
(1 in 100yr + 30% c/c)

Sanderson Associates

Sanderson House

Jubilee Way

Huddersfield, WF4 4TD

Date 28/01/2019

File Storm Net 1 v2 22.01.19...

Euro Garages Ltd

Holt Road, Wrexham

Storm Network 1 v2

Designed by LM

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Micro Drainage

Network 2018.1.1

Summary of Critical Results by Maximum Level (Rank 1) for STORM NET 1
V1.SWS

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	0.800
Manhole Headloss Coeff (Global)	0.500	Flow per Person per Day (l/per/day)	0.000
Foul Sewage per hectare (l/s)	0.000		

Number of Input Hydrographs 0 Number of Storage Structures 4

Number of Online Controls 1 Number of Time/Area Diagrams 0

Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model	FSR	Ratio R	0.322
Return Period (years)	100	Cv (Summer)	0.750
Region England and Wales		Cv (Winter)	0.840
M5-60 (mm)	18.000		

Margin for Flood Risk Warning (mm) 300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status OFF

DVD Status ON

Inertia Status ON

Profile(s) Winter

Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720

Sensitivity flows(s) (%) 0, +30

								Water
PN	US/MH Name	Storm	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Level (m)
1.000	100	30 Winter	+30%					75.175
2.000	1	15 Winter	+30%	+0%/15 Winter	+30%/15 Winter			76.058
3.000	4	30 Winter	+30%	+0%/15 Winter	+0%/15 Winter			75.723
3.001	5	15 Winter	+30%	+0%/15 Winter				75.867
2.001	2	15 Winter	+30%	+0%/15 Winter				75.946
2.002	3	15 Winter	+30%	+0%/15 Winter				75.936
1.001	101	15 Winter	+30%	+0%/15 Winter				75.522
1.002	102	30 Winter	+30%	+0%/15 Winter				74.900
4.000	106	120 Winter	+30%					74.575
4.001	107	480 Winter	+30%	+0%/15 Winter				74.888
1.003	103	480 Winter	+30%	+0%/15 Winter				74.888
1.004	104	480 Winter	+30%	+0%/15 Winter				74.881

Surcharged Flooded								Pipe
PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	100	0.000	0.000	0.26		23.1	SURCHARGED*	

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Summary of Critical Results by Maximum Level (Rank 1) for STORM NET 1
V1.SWS

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)			
2.000	1	0.608	1.157	0.89		17.7	FLOOD	1
3.000	4	2.273	2.829	0.73		12.4	FLOOD	4
3.001	5	0.714	0.000	0.81		14.0	FLOOD RISK	
2.001	2	1.004	0.000	1.77		24.5	FLOOD RISK	
2.002	3	1.043	0.000	2.01		30.3	FLOOD RISK	
1.001	101	0.750	0.000	1.35		68.4	SURCHARGED*	
1.002	102	0.496	0.000	1.98		59.1	SURCHARGED*	
4.000	106	0.000	0.000	0.22		11.5	SURCHARGED*	
4.001	107	0.484	0.000	0.13		4.0	SURCHARGED*	
1.003	103	0.514	0.000	0.48		18.8	SURCHARGED	
1.004	104	0.591	0.000	0.00		0.0	FLOOD RISK*	

STORM WATER DESIGN NETWORK 2 v2

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for STORM NET 2 V1.SWS

Pipe Sizes STORM NET 2 V1 Manhole Sizes STORM NET 2 V1

FSR Rainfall Model - England and Wales			
Return Period (years)	1	PIMP (%)	100
M5-60 (mm)	18.000	Add Flow / Climate Change (%)	0
Ratio R	0.322	Minimum Backdrop Height (m)	0.000
Maximum Rainfall (mm/hr)	75	Maximum Backdrop Height (m)	0.000
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Network Design Table for STORM NET 2 V1.SWS

- Indicates pipe length does not match coordinates

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	24.953	0.250	99.8	0.049	4.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	7.364	0.073	100.9	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	26.612	0.491	54.2	0.027	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.003	3.065	0.030	102.2	0.015	0.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	14.055	0.141	99.7	0.039	4.00	0.0	0.600	o	150	Pipe/Conduit	
2.001	3.001	0.030	100.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.004	3.100	0.031	100.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.005	3.000#	0.041	73.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	Σ I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	46.46	4.41	74.923	0.049	0.0	0.0	0.0	1.01	17.8	6.2
1.001	45.97	4.54	74.673	0.049	0.0	0.0	0.0	1.00	17.7	6.2
1.002	44.75	4.86	74.600	0.076	0.0	0.0	0.0	1.37	24.2	9.2
1.003	44.56	4.91	74.109	0.091	0.0	0.0	0.0	0.99	17.6	11.0
2.000	47.19	4.23	74.250	0.039	0.0	0.0	0.0	1.01	17.8	5.0
2.001	46.99	4.28	74.109	0.039	0.0	0.0	0.0	1.00	17.8	5.0
1.004	44.37	4.96	74.079	0.130	0.0	0.0	0.0	1.00	17.8	15.6
1.005	44.22	5.01	74.048	0.130	0.0	0.0	0.0	1.18	20.8	15.6

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Manhole Schedules for STORM NET 2 V1.SWS

MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam., L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
200	75.600	0.677	Open Manhole	600	1.000	74.923	150				
201	75.300	0.627	Open Manhole	600	1.001	74.673	150	1.000	74.673	150	
202	75.300	0.700	Junction		1.002	74.600	150	1.001	74.600	150	
203	75.150	1.041	Junction		1.003	74.109	150	1.002	74.109	150	
207	75.350	1.100	Junction		2.000	74.250	150				
208	75.150	1.041	Junction		2.001	74.109	150	2.000	74.109	150	
204	75.150	1.071	Open Manhole	1200	1.004	74.079	150	1.003	74.079	150	
								2.001	74.079	150	
205	75.048	1.000	Junction		1.005	74.048	150	1.004	74.048	150	
206	75.254	1.247	Open Manhole	0		OUTFALL		1.005	74.007	150	

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PIPELINE SCHEDULES for STORM NET 2 V1.SWS

Upstream Manhole

- Indicates pipe length does not match coordinates

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
1.000	o	150	200	75.600	74.923	0.527	Open Manhole		600
1.001	o	150	201	75.300	74.673	0.477	Open Manhole		600
1.002	o	150	202	75.300	74.600	0.550	Junction		
1.003	o	150	203	75.150	74.109	0.891	Junction		
2.000	o	150	207	75.350	74.250	0.950	Junction		
2.001	o	150	208	75.150	74.109	0.891	Junction		
1.004	o	150	204	75.150	74.079	0.921	Open Manhole		1200
1.005	o	150	205	75.048	74.048	0.850	Junction		

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., (mm)	L*W
1.000	24.953	99.8	201	75.300	74.673	0.477	Open Manhole		600
1.001	7.364	100.9	202	75.300	74.600	0.550	Junction		
1.002	26.612	54.2	203	75.150	74.109	0.891	Junction		
1.003	3.065	102.2	204	75.150	74.079	0.921	Open Manhole		1200
2.000	14.055	99.7	208	75.150	74.109	0.891	Junction		
2.001	3.001	100.0	204	75.150	74.079	0.921	Open Manhole		1200
1.004	3.100	100.0	205	75.048	74.048	0.850	Junction		
1.005	3.000#	73.2	206	75.254	74.007	1.097	Open Manhole		0

Free Flowing Outfall Details for STORM NET 2 V1.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D, L (mm)	W (mm)
1.005	206	75.254	74.007	0.000	0	0

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Sanderson House Jubilee Way Huddersfield, WF4 4TD	Euro Garages Ltd Holt Road, Wrexham Storm Network 2 v2	
Date 28/01/2019	Designed by LM	
File Storm Net 2 v2 22.01.19...	Checked by	
Micro Drainage		Network 2018.1.1
<u>Online Controls for STORM NET 2 V1.SWS</u> <u>Pump Manhole: 205, DS/PN: 1.005, Volume (m³): 0.0</u> Invert Level (m) 74.048		
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Sanderson House Jubilee Way Huddersfield, WF4 4TD	Euro Garages Ltd Holt Road, Wrexham Storm Network 2 v2	
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Micro Drainage		Network 2018.1.1

Storage Structures for STORM NET 2 V1.SWS

Filter Drain Manhole: 203, DS/PN: 1.003

Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.150
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.891
Safety Factor	2.0	Number of Pipes	1
Porosity	0.30	Slope (1:X)	54.2
Invert Level (m)	74.109	Cap Volume Depth (m)	0.000
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000
Trench Length (m)	26.6		

Filter Drain Manhole: 208, DS/PN: 2.001

Infiltration Coefficient Base (m/hr)	0.00000	Pipe Diameter (m)	0.150
Infiltration Coefficient Side (m/hr)	0.00000	Pipe Depth above Invert (m)	0.891
Safety Factor	2.0	Number of Pipes	1
Porosity	0.30	Slope (1:X)	100.0
Invert Level (m)	74.109	Cap Volume Depth (m)	0.000
Trench Width (m)	0.6	Cap Infiltration Depth (m)	0.000
Trench Length (m)	14.1		

Infiltration Basin Manhole: 205, DS/PN: 1.005

Invert Level (m)	74.048	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.07920	Porosity	1.00
Infiltration Coefficient Side (m/hr)	0.07920		

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	19.0	1.000	131.0

CRITICAL STORM EVENT
(1 in 100yr + 30% c/c)

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Micro Drainage		Network 2018.1.1

Summary of Critical Results by Maximum Level (Rank 1) for STORM NET 2
V1.SWS

PN	US/MH	Surcharged	Flooded	Flow / Cap.	Overflow (l/s)	Pipe	Status	Level
	Name	Depth (m)	Volume (m³)			Flow (l/s)		Exceeded
2.001	208	0.640	0.000	0.24		2.6	FLOOD RISK*	
1.004	204	0.669	0.000	0.79		8.7	FLOOD RISK	
1.005	205	0.697	0.000	0.00		0.0	FLOOD RISK*	