

H2OK Systems Limited		Page 1
Nanjerrick Court Allet, Truro TR4 9DJ		
Date 19/06/2018 14:01 File Trench 1.srcx	Designed by HShort Checked by	

Micro Drainage

Source Control 2017.1.2

Summary of Results for 100 year Return Period (+40%)

Half Drain Time : 2 minutes.

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Outflow (l/s)	Max Volume (m ³)	Status
15 min Summer	2.872	0.672	0.1	241.2	0.0	241.3	21.7	0 K
30 min Summer	2.882	0.682	0.1	246.4	0.0	246.4	22.0	0 K
60 min Summer	2.809	0.609	0.1	206.1	0.0	206.1	19.5	0 K
120 min Summer	2.729	0.529	0.0	149.1	0.0	149.1	16.6	0 K
180 min Summer	2.695	0.495	0.0	117.0	0.0	117.1	15.4	0 K
240 min Summer	2.677	0.477	0.0	96.4	0.0	96.5	14.8	0 K
360 min Summer	2.662	0.462	0.0	73.7	0.0	73.8	14.3	0 K
480 min Summer	2.656	0.456	0.0	61.9	0.0	61.9	14.0	0 K
600 min Summer	2.614	0.414	0.0	48.5	0.0	48.5	12.6	0 K
720 min Summer	2.555	0.355	0.0	42.9	0.0	43.0	10.5	0 K
960 min Summer	2.494	0.294	0.0	34.8	0.0	34.8	8.3	0 K
1440 min Summer	2.431	0.231	0.0	25.7	0.0	25.8	6.1	0 K
2160 min Summer	2.382	0.182	0.0	18.8	0.0	18.8	4.4	0 K
2880 min Summer	2.359	0.159	0.0	15.4	0.0	15.5	3.5	0 K
4320 min Summer	2.332	0.132	0.0	11.4	0.0	11.4	2.6	0 K
5760 min Summer	2.313	0.113	0.0	8.6	0.0	8.7	1.9	0 K
7200 min Summer	2.303	0.103	0.0	7.8	0.0	7.8	1.7	0 K
8640 min Summer	2.293	0.093	0.0	6.3	0.0	6.3	1.3	0 K
10080 min Summer	2.290	0.090	0.0	6.3	0.0	6.3	1.2	0 K
15 min Winter	2.921	0.721	0.1	265.5	0.0	265.6	23.4	Flood Risk

Storm Event	Rain (mm/hr)	Flooded Volume (m ³)	Discharge Volume (m ³)	Overflow Volume (m ³)	Time-Peak (mins)
15 min Summer	124.633	0.0	143.3	0.0	13
30 min Summer	83.789	0.0	192.6	0.0	20
60 min Summer	53.779	0.0	247.2	0.0	34
120 min Summer	33.337	0.0	306.5	0.0	64
180 min Summer	24.832	0.0	342.5	0.0	94
240 min Summer	20.006	0.0	367.9	0.0	124
360 min Summer	14.706	0.0	405.7	0.0	184
480 min Summer	11.818	0.0	434.7	0.0	242
600 min Summer	9.966	0.0	458.2	0.0	308
720 min Summer	8.665	0.0	478.1	0.0	368
960 min Summer	6.943	0.0	510.7	0.0	486
1440 min Summer	5.071	0.0	559.6	0.0	730
2160 min Summer	3.696	0.0	611.7	0.0	1100
2880 min Summer	2.949	0.0	650.8	0.0	1468
4320 min Summer	2.142	0.0	708.9	0.0	2188
5760 min Summer	1.705	0.0	752.3	0.0	2904
7200 min Summer	1.427	0.0	787.2	0.0	3672
8640 min Summer	1.235	0.0	817.7	0.0	4376
10080 min Summer	1.093	0.0	844.5	0.0	5048
15 min Winter	124.633	0.0	160.4	0.0	13

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Summary of Results for 100 year Return Period (+40%)

Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Overflow (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	2.882	0.682	0.1	246.6	0.0	246.7	22.1	0 K
60 min Winter	2.771	0.571	0.1	181.1	0.0	181.1	18.1	0 K
120 min Winter	2.696	0.496	0.0	118.1	0.0	118.1	15.5	0 K
180 min Winter	2.672	0.472	0.0	89.0	0.0	89.1	14.6	0 K
240 min Winter	2.661	0.461	0.0	72.0	0.0	72.1	14.3	0 K
360 min Winter	2.652	0.452	0.0	53.3	0.0	53.4	13.9	0 K
480 min Winter	2.554	0.354	0.0	42.2	0.0	42.2	10.4	0 K
600 min Winter	2.504	0.304	0.0	35.8	0.0	35.8	8.7	0 K
720 min Winter	2.471	0.271	0.0	31.5	0.0	31.5	7.5	0 K
960 min Winter	2.430	0.230	0.0	25.7	0.0	25.8	6.1	0 K
1440 min Winter	2.382	0.182	0.0	18.8	0.0	18.8	4.4	0 K
2160 min Winter	2.350	0.150	0.0	13.3	0.0	13.4	3.2	0 K
2880 min Winter	2.331	0.131	0.0	11.4	0.0	11.4	2.6	0 K
4320 min Winter	2.308	0.108	0.0	7.8	0.0	7.8	1.7	0 K
5760 min Winter	2.293	0.093	0.0	6.3	0.0	6.3	1.3	0 K
7200 min Winter	2.287	0.087	0.0	5.6	0.0	5.6	1.2	0 K
8640 min Winter	2.280	0.080	0.0	4.9	0.0	4.9	1.0	0 K
10080 min Winter	2.274	0.074	0.0	4.3	0.0	4.3	0.8	0 K

Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Overflow Volume (m³)	Time-Peak (mins)
30 min Winter	83.789	0.0	215.7	0.0	20
60 min Winter	53.779	0.0	276.9	0.0	34
120 min Winter	33.337	0.0	343.3	0.0	64
180 min Winter	24.832	0.0	383.6	0.0	96
240 min Winter	20.006	0.0	412.1	0.0	126
360 min Winter	14.706	0.0	454.4	0.0	188
480 min Winter	11.818	0.0	486.8	0.0	250
600 min Winter	9.966	0.0	513.2	0.0	310
720 min Winter	8.665	0.0	535.4	0.0	362
960 min Winter	6.943	0.0	572.0	0.0	494
1440 min Winter	5.071	0.0	626.7	0.0	728
2160 min Winter	3.696	0.0	685.2	0.0	1120
2880 min Winter	2.949	0.0	728.9	0.0	1484
4320 min Winter	2.142	0.0	794.0	0.0	2160
5760 min Winter	1.705	0.0	842.6	0.0	2928
7200 min Winter	1.427	0.0	881.7	0.0	3464
8640 min Winter	1.235	0.0	915.8	0.0	4344
10080 min Winter	1.093	0.0	945.8	0.0	5096

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<u>Model Details</u> Storage is Online Cover Level (m) 3.000 <u>Infiltration Trench Structure</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00100</td> <td>Trench Width (m)</td> <td>0.5</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>0.00100</td> <td>Trench Length (m)</td> <td>236.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Slope (1:X)</td> <td>2000.0</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Cap Volume Depth (m)</td> <td>0.000</td> </tr> <tr> <td>Invert Level (m)</td> <td>2.200</td> <td>Cap Infiltration Depth (m)</td> <td>0.000</td> </tr> </table> <u>Pipe Outflow Control</u> <table> <tr> <td>Diameter (m)</td> <td>0.450</td> <td>Entry Loss Coefficient</td> <td>0.500</td> </tr> <tr> <td>Slope (1:X)</td> <td>1000.0</td> <td>Coefficient of Contraction</td> <td>0.600</td> </tr> <tr> <td>Length (m)</td> <td>10.000</td> <td>Upstream Invert Level (m)</td> <td>2.200</td> </tr> <tr> <td>Roughness k (mm)</td> <td>0.600</td> <td></td> <td></td> </tr> </table> <u>Weir Overflow Control</u> Discharge Coef 0.544 Width (m) 10.000 Invert Level (m) 3.000			Infiltration Coefficient Base (m/hr)	0.00100	Trench Width (m)	0.5	Infiltration Coefficient Side (m/hr)	0.00100	Trench Length (m)	236.0	Safety Factor	2.0	Slope (1:X)	2000.0	Porosity	0.30	Cap Volume Depth (m)	0.000	Invert Level (m)	2.200	Cap Infiltration Depth (m)	0.000	Diameter (m)	0.450	Entry Loss Coefficient	0.500	Slope (1:X)	1000.0	Coefficient of Contraction	0.600	Length (m)	10.000	Upstream Invert Level (m)	2.200	Roughness k (mm)	0.600		
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Event: 15 min Winter

