

BHA Consulting Ltd							Page 1
Oakleigh Connaught Road Attleborough NR17 2BW			3591 Doubledays Agricultural, Holbeach St. John				
Date 05/01/2021 File Pump and Storage.SRCX			Designed by RB Checked by KE				
Micro Drainage			Source Control 2018.1.1				
<u>Summary of Results for 30 year Return Period</u> Half Drain Time : 364 minutes.							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
15 min Summer	8.666	0.166	0.0	0.5	0.5	9.9	O K
30 min Summer	8.713	0.213	0.0	0.5	0.5	12.7	O K
60 min Summer	8.757	0.257	0.0	0.5	0.5	15.4	O K
120 min Summer	8.795	0.295	0.0	0.5	0.5	17.6	O K
180 min Summer	8.809	0.309	0.0	0.5	0.5	18.5	O K
240 min Summer	8.814	0.314	0.0	0.5	0.5	18.8	O K
360 min Summer	8.812	0.312	0.0	0.5	0.5	18.7	O K
480 min Summer	8.808	0.308	0.0	0.5	0.5	18.4	O K
600 min Summer	8.802	0.302	0.0	0.5	0.5	18.1	O K
720 min Summer	8.796	0.296	0.0	0.5	0.5	17.7	O K
960 min Summer	8.781	0.281	0.0	0.5	0.5	16.8	O K
1440 min Summer	8.749	0.249	0.0	0.5	0.5	14.9	O K
2160 min Summer	8.705	0.205	0.0	0.5	0.5	12.3	O K
2880 min Summer	8.668	0.168	0.0	0.5	0.5	10.1	O K
4320 min Summer	8.617	0.117	0.0	0.5	0.5	7.0	O K
5760 min Summer	8.593	0.093	0.0	0.5	0.5	5.6	O K
7200 min Summer	8.581	0.081	0.0	0.4	0.4	4.8	O K
8640 min Summer	8.571	0.071	0.0	0.4	0.4	4.3	O K
10080 min Summer	8.564	0.064	0.0	0.3	0.3	3.9	O K
15 min Winter	8.686	0.186	0.0	0.5	0.5	11.1	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	72.014	0.0	10.2	18			
30 min Summer	46.909	0.0	13.3	33			
60 min Summer	29.238	0.0	16.6	62			
120 min Summer	17.704	0.0	20.2	122			
180 min Summer	13.070	0.0	22.3	182			
240 min Summer	10.495	0.0	23.9	240			
360 min Summer	7.666	0.0	26.2	306			
480 min Summer	6.135	0.0	27.9	366			
600 min Summer	5.158	0.0	29.4	430			
720 min Summer	4.475	0.0	30.6	498			
960 min Summer	3.575	0.0	32.6	636			
1440 min Summer	2.602	0.0	35.6	908			
2160 min Summer	1.892	0.0	38.8	1296			
2880 min Summer	1.508	0.0	41.2	1648			
4320 min Summer	1.094	0.0	44.9	2336			
5760 min Summer	0.871	0.0	47.6	3000			
7200 min Summer	0.729	0.0	49.9	3744			
8640 min Summer	0.631	0.0	51.7	4488			
10080 min Summer	0.558	0.0	53.4	5152			
15 min Winter	72.014	0.0	11.5	18			
©1982-2018 Innovyze							

BHA Consulting Ltd					Page 2		
Oakleigh Connaught Road Attleborough NR17 2BW			3591 Doubledays Agricultural, Holbeach St. John				
Date 05/01/2021 File Pump and Storage.SRCX			Designed by RB Checked by KE				
Micro Drainage			Source Control 2018.1.1				
Summary of Results for 30 year Return Period							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Σ Outflow (l/s)	Max Volume (m³)	Status
30 min Winter	8.739	0.239	0.0	0.5	0.5	14.3	O K
60 min Winter	8.790	0.290	0.0	0.5	0.5	17.4	O K
120 min Winter	8.834	0.334	0.0	0.5	0.5	20.0	O K
180 min Winter	8.853	0.353	0.0	0.5	0.5	21.1	O K
240 min Winter	8.860	0.360	0.0	0.5	0.5	21.6	O K
360 min Winter	8.860	0.360	0.0	0.5	0.5	21.5	O K
480 min Winter	8.852	0.352	0.0	0.5	0.5	21.1	O K
600 min Winter	8.844	0.344	0.0	0.5	0.5	20.6	O K
720 min Winter	8.835	0.335	0.0	0.5	0.5	20.0	O K
960 min Winter	8.812	0.312	0.0	0.5	0.5	18.7	O K
1440 min Winter	8.764	0.264	0.0	0.5	0.5	15.8	O K
2160 min Winter	8.697	0.197	0.0	0.5	0.5	11.8	O K
2880 min Winter	8.643	0.143	0.0	0.5	0.5	8.6	O K
4320 min Winter	8.592	0.092	0.0	0.5	0.5	5.5	O K
5760 min Winter	8.575	0.075	0.0	0.4	0.4	4.5	O K
7200 min Winter	8.564	0.064	0.0	0.3	0.3	3.8	O K
8640 min Winter	8.555	0.055	0.0	0.3	0.3	3.3	O K
10080 min Winter	8.549	0.049	0.0	0.2	0.2	2.9	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	46.909	0.0	14.9	33			
60 min Winter	29.238	0.0	18.6	62			
120 min Winter	17.704	0.0	22.6	120			
180 min Winter	13.070	0.0	25.0	178			
240 min Winter	10.495	0.0	26.8	234			
360 min Winter	7.666	0.0	29.3	342			
480 min Winter	6.135	0.0	31.3	394			
600 min Winter	5.158	0.0	32.9	464			
720 min Winter	4.475	0.0	34.3	542			
960 min Winter	3.575	0.0	36.5	692			
1440 min Winter	2.602	0.0	39.8	980			
2160 min Winter	1.892	0.0	43.4	1368			
2880 min Winter	1.508	0.0	46.2	1728			
4320 min Winter	1.094	0.0	50.3	2332			
5760 min Winter	0.871	0.0	53.3	3056			
7200 min Winter	0.729	0.0	55.8	3808			
8640 min Winter	0.631	0.0	58.0	4496			
10080 min Winter	0.558	0.0	59.8	5240			
©1982-2018 Innovyze							

BHA Consulting Ltd		Page 3																														
Oakleigh Connaught Road Attleborough NR17 2BW	3591 Doubledays Agricultural, Holbeach St. John																															
Date 05/01/2021 File Pump and Storage.SRCX	Designed by RB Checked by KE																															
Micro Drainage		Source Control 2018.1.1																														
<u>Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FSR</td> <td>Winter Storms</td> <td>Yes</td> </tr> <tr> <td>Return Period (years)</td> <td>30</td> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Region</td> <td>England and Wales</td> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>M5-60 (mm)</td> <td>19.000</td> <td>Shortest Storm (mins)</td> <td>15</td> </tr> <tr> <td>Ratio R</td> <td>0.400</td> <td>Longest Storm (mins)</td> <td>10080</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> <td>Climate Change %</td> <td>+0</td> </tr> </table> <u>Time Area Diagram</u> Total Area (ha) 0.076 <table> <tr> <td>Time (mins)</td> <td>Area</td> </tr> <tr> <td>From: To:</td> <td>(ha)</td> </tr> <tr> <td>0</td> <td>4 0.076</td> </tr> </table>			Rainfall Model	FSR	Winter Storms	Yes	Return Period (years)	30	Cv (Summer)	0.750	Region	England and Wales	Cv (Winter)	0.840	M5-60 (mm)	19.000	Shortest Storm (mins)	15	Ratio R	0.400	Longest Storm (mins)	10080	Summer Storms	Yes	Climate Change %	+0	Time (mins)	Area	From: To:	(ha)	0	4 0.076
Rainfall Model	FSR	Winter Storms	Yes																													
Return Period (years)	30	Cv (Summer)	0.750																													
Region	England and Wales	Cv (Winter)	0.840																													
M5-60 (mm)	19.000	Shortest Storm (mins)	15																													
Ratio R	0.400	Longest Storm (mins)	10080																													
Summer Storms	Yes	Climate Change %	+0																													
Time (mins)	Area																															
From: To:	(ha)																															
0	4 0.076																															
©1982-2018 Innovyze																																

BHA Consulting Ltd		Page 4																																																																																										
Oakleigh Connaught Road Attleborough NR17 2BW	3591 Doubledays Agricultural, Holbeach St. John																																																																																											
Date 05/01/2021 File Pump and Storage.SRCX	Designed by RB Checked by KE																																																																																											
Micro Drainage		Source Control 2018.1.1																																																																																										
Model Details Storage is Online Cover Level (m) 10.000 Cellular Storage Structure Invert Level (m) 8.500 Safety Factor 2.0 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95 Infiltration Coefficient Side (m/hr) 0.00000 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th><th>Inf. Area (m²)</th></tr><tr><td>0.000</td><td>63.0</td><td>63.0</td><td>0.801</td><td>0.0</td><td>88.6</td></tr><tr><td>0.800</td><td>63.0</td><td>88.6</td><td></td><td></td><td></td></tr></table> Pump Outflow Control Invert Level (m) 8.500 <table><tr><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th></tr><tr><td>0.100</td><td>0.5000</td><td>0.900</td><td>0.5000</td><td>1.700</td><td>0.0000</td><td>2.500</td><td>0.0000</td></tr><tr><td>0.200</td><td>0.5000</td><td>1.000</td><td>0.5000</td><td>1.800</td><td>0.0000</td><td>2.600</td><td>0.0000</td></tr><tr><td>0.300</td><td>0.5000</td><td>1.100</td><td>0.5000</td><td>1.900</td><td>0.0000</td><td>2.700</td><td>0.0000</td></tr><tr><td>0.400</td><td>0.5000</td><td>1.200</td><td>0.5000</td><td>2.000</td><td>0.0000</td><td>2.800</td><td>0.0000</td></tr><tr><td>0.500</td><td>0.5000</td><td>1.300</td><td>0.5000</td><td>2.100</td><td>0.0000</td><td>2.900</td><td>0.0000</td></tr><tr><td>0.600</td><td>0.5000</td><td>1.400</td><td>0.5000</td><td>2.200</td><td>0.0000</td><td>3.000</td><td>0.0000</td></tr><tr><td>0.700</td><td>0.5000</td><td>1.500</td><td>0.5000</td><td>2.300</td><td>0.0000</td><td></td><td></td></tr><tr><td>0.800</td><td>0.5000</td><td>1.600</td><td>0.0000</td><td>2.400</td><td>0.0000</td><td></td><td></td></tr></table>			Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)	0.000	63.0	63.0	0.801	0.0	88.6	0.800	63.0	88.6				Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	0.5000	0.900	0.5000	1.700	0.0000	2.500	0.0000	0.200	0.5000	1.000	0.5000	1.800	0.0000	2.600	0.0000	0.300	0.5000	1.100	0.5000	1.900	0.0000	2.700	0.0000	0.400	0.5000	1.200	0.5000	2.000	0.0000	2.800	0.0000	0.500	0.5000	1.300	0.5000	2.100	0.0000	2.900	0.0000	0.600	0.5000	1.400	0.5000	2.200	0.0000	3.000	0.0000	0.700	0.5000	1.500	0.5000	2.300	0.0000			0.800	0.5000	1.600	0.0000	2.400	0.0000		
Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)																																																																																							
0.000	63.0	63.0	0.801	0.0	88.6																																																																																							
0.800	63.0	88.6																																																																																										
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																																																					
0.100	0.5000	0.900	0.5000	1.700	0.0000	2.500	0.0000																																																																																					
0.200	0.5000	1.000	0.5000	1.800	0.0000	2.600	0.0000																																																																																					
0.300	0.5000	1.100	0.5000	1.900	0.0000	2.700	0.0000																																																																																					
0.400	0.5000	1.200	0.5000	2.000	0.0000	2.800	0.0000																																																																																					
0.500	0.5000	1.300	0.5000	2.100	0.0000	2.900	0.0000																																																																																					
0.600	0.5000	1.400	0.5000	2.200	0.0000	3.000	0.0000																																																																																					
0.700	0.5000	1.500	0.5000	2.300	0.0000																																																																																							
0.800	0.5000	1.600	0.0000	2.400	0.0000																																																																																							
©1982-2018 Innovyze																																																																																												