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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 100 year Return Period (+40%)</u> Half Drain Time : 768 minutes.							
Storm Event	Max Level	Max Depth	Max Infiltration	Max Control	Max Σ Outflow	Max Volume	Status
	(m)	(m)	(l/s)	(l/s)	(l/s)	(m³)	
15 min Summer	8.805	0.305	0.0	0.5	0.5	18.2	O K
30 min Summer	8.897	0.397	0.0	0.5	0.5	23.7	O K
60 min Summer	8.988	0.488	0.0	0.5	0.5	29.2	O K
120 min Summer	9.072	0.572	0.0	0.5	0.5	34.3	O K
180 min Summer	9.113	0.613	0.0	0.5	0.5	36.7	O K
240 min Summer	9.135	0.635	0.0	0.5	0.5	38.0	O K
360 min Summer	9.150	0.650	0.0	0.5	0.5	38.9	O K
480 min Summer	9.152	0.652	0.0	0.5	0.5	39.0	O K
600 min Summer	9.144	0.644	0.0	0.5	0.5	38.6	O K
720 min Summer	9.135	0.635	0.0	0.5	0.5	38.0	O K
960 min Summer	9.115	0.615	0.0	0.5	0.5	36.8	O K
1440 min Summer	9.075	0.575	0.0	0.5	0.5	34.4	O K
2160 min Summer	9.014	0.514	0.0	0.5	0.5	30.8	O K
2880 min Summer	8.957	0.457	0.0	0.5	0.5	27.4	O K
4320 min Summer	8.856	0.356	0.0	0.5	0.5	21.3	O K
5760 min Summer	8.771	0.271	0.0	0.5	0.5	16.2	O K
7200 min Summer	8.704	0.204	0.0	0.5	0.5	12.2	O K
8640 min Summer	8.654	0.154	0.0	0.5	0.5	9.2	O K
10080 min Summer	8.620	0.120	0.0	0.5	0.5	7.2	O K
15 min Winter	8.842	0.342	0.0	0.5	0.5	20.4	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
15 min Summer	130.597	0.0	18.6	19			
30 min Summer	85.825	0.0	24.4	34			
60 min Summer	53.779	0.0	30.6	64			
120 min Summer	32.595	0.0	37.1	122			
180 min Summer	24.012	0.0	41.0	182			
240 min Summer	19.224	0.0	43.8	242			
360 min Summer	13.954	0.0	47.7	362			
480 min Summer	11.125	0.0	50.7	480			
600 min Summer	9.325	0.0	53.1	582			
720 min Summer	8.069	0.0	55.2	624			
960 min Summer	6.417	0.0	58.5	744			
1440 min Summer	4.640	0.0	63.2	998			
2160 min Summer	3.350	0.0	68.7	1408			
2880 min Summer	2.656	0.0	72.6	1816			
4320 min Summer	1.912	0.0	78.4	2592			
5760 min Summer	1.513	0.0	82.7	3296			
7200 min Summer	1.261	0.0	86.2	3968			
8640 min Summer	1.086	0.0	89.1	4664			
10080 min Summer	0.957	0.0	91.6	5256			
15 min Winter	130.597	0.0	20.8	19			
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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	8.945	0.445	0.0	0.5	0.5	26.7	O K
60 min Winter	9.049	0.549	0.0	0.5	0.5	32.9	O K
120 min Winter	9.146	0.646	0.0	0.5	0.5	38.7	O K
180 min Winter	9.195	0.695	0.0	0.5	0.5	41.6	O K
240 min Winter	9.222	0.722	0.0	0.5	0.5	43.2	O K
360 min Winter	9.246	0.746	0.0	0.5	0.5	44.6	O K
480 min Winter	9.253	0.753	0.0	0.5	0.5	45.1	O K
600 min Winter	9.251	0.751	0.0	0.5	0.5	44.9	O K
720 min Winter	9.242	0.742	0.0	0.5	0.5	44.4	O K
960 min Winter	9.213	0.713	0.0	0.5	0.5	42.7	O K
1440 min Winter	9.160	0.660	0.0	0.5	0.5	39.5	O K
2160 min Winter	9.072	0.572	0.0	0.5	0.5	34.3	O K
2880 min Winter	8.987	0.487	0.0	0.5	0.5	29.1	O K
4320 min Winter	8.833	0.333	0.0	0.5	0.5	19.9	O K
5760 min Winter	8.711	0.211	0.0	0.5	0.5	12.6	O K
7200 min Winter	8.627	0.127	0.0	0.5	0.5	7.6	O K
8640 min Winter	8.595	0.095	0.0	0.5	0.5	5.7	O K
10080 min Winter	8.584	0.084	0.0	0.4	0.4	5.1	O K
Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)			
30 min Winter	85.825	0.0	27.2	33			
60 min Winter	53.779	0.0	34.3	62			
120 min Winter	32.595	0.0	41.6	122			
180 min Winter	24.012	0.0	46.0	180			
240 min Winter	19.224	0.0	49.1	238			
360 min Winter	13.954	0.0	53.4	354			
480 min Winter	11.125	0.0	56.8	466			
600 min Winter	9.325	0.0	59.5	578			
720 min Winter	8.069	0.0	61.7	686			
960 min Winter	6.417	0.0	65.4	868			
1440 min Winter	4.640	0.0	70.4	1084			
2160 min Winter	3.350	0.0	77.0	1536			
2880 min Winter	2.656	0.0	81.3	1960			
4320 min Winter	1.912	0.0	87.8	2764			
5760 min Winter	1.513	0.0	92.7	3456			
7200 min Winter	1.261	0.0	96.5	4032			
8640 min Winter	1.086	0.0	99.8	4496			
10080 min Winter	0.957	0.0	102.6	5240			
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<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>100</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>+40</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)	100	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 %	+40	Time (mins)	Area	From: To:	(ha)	0	4 0.076
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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		
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