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Date 01/06/2023 File 81270 - ATTENUATION BASIN	Designed by AGS Checked by DE																																																																																																																																																																																																																																																																					
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<u>Summary of Results for 1 year Return Period</u> Half Drain Time: 570 minutes <table><tr><th>Storm Event</th><th>Max Level (m)</th><th>Max Depth (m)</th><th>Max Infiltration (l/s)</th><th>Max Control (l/s)</th><th>Max Outflow (l/s)</th><th>Max Volume (m³)</th><th>Status</th></tr><tr><td>15 min Summer</td><td>98.471</td><td>0.166</td><td>3.5</td><td>2.0</td><td>1.5</td><td>150.064</td><td>O K</td></tr><tr><td>30 min Summer</td><td>98.522</td><td>0.217</td><td>3.5</td><td>2.0</td><td>1.5</td><td>196.168</td><td>O K</td></tr><tr><td>60 min Summer</td><td>98.575</td><td>0.270</td><td>3.6</td><td>2.0</td><td>1.6</td><td>244.080</td><td>O K</td></tr><tr><td>120 min Summer</td><td>98.629</td><td>0.324</td><td>3.6</td><td>2.0</td><td>1.6</td><td>292.896</td><td>O K</td></tr><tr><td>180 min Summer</td><td>98.559</td><td>0.354</td><td>3.6</td><td>2.0</td><td>1.6</td><td>320.016</td><td>O K</td></tr><tr><td>240 min Summer</td><td>98.678</td><td>0.373</td><td>3.6</td><td>2.0</td><td>1.6</td><td>337.192</td><td>O K</td></tr><tr><td>360 min Summer</td><td>98.697</td><td>0.392</td><td>3.6</td><td>2.0</td><td>1.6</td><td>354.368</td><td>O K</td></tr><tr><td>480 min Summer</td><td>98.703</td><td>0.397</td><td>3.6</td><td>2.0</td><td>1.6</td><td>358.888</td><td>O K</td></tr><tr><td>600 min Summer</td><td>98.704</td><td>0.398</td><td>3.6</td><td>2.0</td><td>1.6</td><td>359.792</td><td>O K</td></tr><tr><td>720 min Summer</td><td>98.705</td><td>0.399</td><td>3.6</td><td>2.0</td><td>1.6</td><td>360.696</td><td>O K</td></tr><tr><td>960 min Summer</td><td>98.706</td><td>0.400</td><td>3.6</td><td>2.0</td><td>1.6</td><td>361.600</td><td>O K</td></tr><tr><td>1440 min Summer</td><td>98.706</td><td>0.401</td><td>3.6</td><td>2.0</td><td>1.6</td><td>362.504</td><td>O K</td></tr><tr><td>2160 min Summer</td><td>98.703</td><td>0.398</td><td>3.6</td><td>2.0</td><td>1.6</td><td>359.792</td><td>O K</td></tr><tr><td>2880 min Summer</td><td>98.697</td><td>0.393</td><td>3.6</td><td>2.0</td><td>1.6</td><td>354.368</td><td>O K</td></tr><tr><td>4320 min Summer</td><td>98.688</td><td>0.382</td><td>3.6</td><td>2.0</td><td>1.6</td><td>345.328</td><td>O K</td></tr><tr><td>5760 min Summer</td><td>98.677</td><td>0.371</td><td>3.6</td><td>2.0</td><td>1.6</td><td>335.384</td><td>O K</td></tr><tr><td>7200 min Summer</td><td>98.658</td><td>0.352</td><td>3.6</td><td>2.0</td><td>1.6</td><td>318.208</td><td>O K</td></tr><tr><td>8640 min Summer</td><td>98.638</td><td>0.332</td><td>3.6</td><td>2.0</td><td>1.6</td><td>300.128</td><td>O K</td></tr><tr><td>10080 min Summer</td><td>98.618</td><td>0.312</td><td>3.5</td><td>2.0</td><td>1.5</td><td>282.048</td><td>O K</td></tr></table> <table><tr><th>Storm Event</th><th>Rain (mm/hr)</th><th>Flooded Volume (m³)</th><th>Discharge Volume (m³)</th><th>Time-Peak (mins)</th></tr><tr><td>15 min Summer</td><td>132.861</td><td>0.0</td><td>126.7</td><td>23</td></tr><tr><td>30 min Summer</td><td>87.290</td><td>0.0</td><td>128.4</td><td>38</td></tr><tr><td>60 min Summer</td><td>54.633</td><td>0.0</td><td>253.2</td><td>68</td></tr><tr><td>120 min Summer</td><td>330.95</td><td>0.0</td><td>259.9</td><td>126</td></tr><tr><td>180 min Summer</td><td>24.358</td><td>0.0</td><td>261.7</td><td>186</td></tr><tr><td>240 min Summer</td><td>19.485</td><td>0.0</td><td>263.0</td><td>246</td></tr><tr><td>360 min Summer</td><td>14.144</td><td>0.0</td><td>267.2</td><td>362</td></tr><tr><td>480 min Summer</td><td>11.275</td><td>0.0</td><td>271.1</td><td>480</td></tr><tr><td>600 min Summer</td><td>9.449</td><td>0.0</td><td>274.2</td><td>526</td></tr><tr><td>720 min Summer</td><td>8.176</td><td>0.0</td><td>276.4</td><td>578</td></tr><tr><td>960 min Summer</td><td>6.502</td><td>0.0</td><td>279.1</td><td>692</td></tr><tr><td>1440 min Summer</td><td>4.700</td><td>0.0</td><td>280.1</td><td>958</td></tr><tr><td>2160 min Summer</td><td>3.392</td><td>0.0</td><td>533.5</td><td>1384</td></tr><tr><td>2880 min Summer</td><td>2.689</td><td>0.0</td><td>531.2</td><td>1820</td></tr><tr><td>4320 min Summer</td><td>1.935</td><td>0.0</td><td>519.5</td><td>2732</td></tr><tr><td>5760 min Summer</td><td>1.531</td><td>0.0</td><td>863.6</td><td>3696</td></tr><tr><td>7200 min Summer</td><td>1.276</td><td>0.0</td><td>871.8</td><td>4616</td></tr><tr><td>8640 min Summer</td><td>1.099</td><td>0.0</td><td>878.8</td><td>5448</td></tr><tr><td>10080 min Summer</td><td>0.968</td><td>0.0</td><td>884.7</td><td>6248</td></tr></table>			Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status	15 min Summer	98.471	0.166	3.5	2.0	1.5	150.064	O K	30 min Summer	98.522	0.217	3.5	2.0	1.5	196.168	O K	60 min Summer	98.575	0.270	3.6	2.0	1.6	244.080	O K	120 min Summer	98.629	0.324	3.6	2.0	1.6	292.896	O K	180 min Summer	98.559	0.354	3.6	2.0	1.6	320.016	O K	240 min Summer	98.678	0.373	3.6	2.0	1.6	337.192	O K	360 min Summer	98.697	0.392	3.6	2.0	1.6	354.368	O K	480 min Summer	98.703	0.397	3.6	2.0	1.6	358.888	O K	600 min Summer	98.704	0.398	3.6	2.0	1.6	359.792	O K	720 min Summer	98.705	0.399	3.6	2.0	1.6	360.696	O K	960 min Summer	98.706	0.400	3.6	2.0	1.6	361.600	O K	1440 min Summer	98.706	0.401	3.6	2.0	1.6	362.504	O K	2160 min Summer	98.703	0.398	3.6	2.0	1.6	359.792	O K	2880 min Summer	98.697	0.393	3.6	2.0	1.6	354.368	O K	4320 min Summer	98.688	0.382	3.6	2.0	1.6	345.328	O K	5760 min Summer	98.677	0.371	3.6	2.0	1.6	335.384	O K	7200 min Summer	98.658	0.352	3.6	2.0	1.6	318.208	O K	8640 min Summer	98.638	0.332	3.6	2.0	1.6	300.128	O K	10080 min Summer	98.618	0.312	3.5	2.0	1.5	282.048	O K	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)	15 min Summer	132.861	0.0	126.7	23	30 min Summer	87.290	0.0	128.4	38	60 min Summer	54.633	0.0	253.2	68	120 min Summer	330.95	0.0	259.9	126	180 min Summer	24.358	0.0	261.7	186	240 min Summer	19.485	0.0	263.0	246	360 min Summer	14.144	0.0	267.2	362	480 min Summer	11.275	0.0	271.1	480	600 min Summer	9.449	0.0	274.2	526	720 min Summer	8.176	0.0	276.4	578	960 min Summer	6.502	0.0	279.1	692	1440 min Summer	4.700	0.0	280.1	958	2160 min Summer	3.392	0.0	533.5	1384	2880 min Summer	2.689	0.0	531.2	1820	4320 min Summer	1.935	0.0	519.5	2732	5760 min Summer	1.531	0.0	863.6	3696	7200 min Summer	1.276	0.0	871.8	4616	8640 min Summer	1.099	0.0	878.8	5448	10080 min Summer	0.968	0.0	884.7	6248
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Catherine House Old Harborough Road Brixworth NN6 9BX			Kyngs Golf Club - 81270 1 in 100 year storm + 40%CC				
Date 01/06/2023 File 81270 - ATTENUATION BASIN			Designed by AGS Checked by DE				
Micro Drainage Source Control 2018.1.1							
Summary of Results for 1 year Return Period							
Storm Event	Max Level (m)	Max Depth (m)	Max Infiltration (l/s)	Max Control (l/s)	Max Outflow (l/s)	Max Volume (m³)	Status
15 min Winter	98.491	0.186	3.5	2.0	1.5	168.144	O K
30 min Winter	98.548	0.243	3.6	2.0	1.6	219.672	O K
60 min Winter	98.607	0.302	3.6	2.0	1.6	273.008	O K
120 min Winter	98.667	0.362	3.6	2.0	2.2	327.248	O K
180 min Winter	98.698	0.393	3.6	2.0	2.9	355.272	O K
240 min Winter	98.712	0.407	3.6	2.0	3.4	367.928	O K
360 min Winter	98.720	0.415	3.6	2.0	3.5	375.160	O K
480 min Winter	98.722	0.417	3.6	2.0	3.7	376.968	O K
600 min Winter	98.725	0.420	3.6	2.0	3.8	379.680	O K
720 min Winter	98.727	0.422	3.6	2.0	3.8	381.488	O K
960 min Winter	98.727	0.422	3.6	2.0	3.6	381.488	O K
1440 min Winter	98.723	0.418	3.6	2.0	3.2	377.872	O K
2160 min Winter	98.717	0.412	3.6	2.0	2.8	372.448	O K
2880 min Winter	98.711	0.406	3.6	2.0	12.3	367.024	O K
4320 min Winter	98.700	0.395	3.6	2.0	2.0	357.080	O K
5760 min Winter	98.690	0.386	3.6	2.0	1.8	348.944	O K
7200 min Winter	98.680	0.376	3.6	2.0	1.6	339.904	O K
8640 min Winter	98.663	0.358	3.6	2.0	1.6	323.632	O K
10080 min Winter	98.635	0.330	3.6	2.0	1.6	298.320	O K
	Storm Event	Rain (mm/hr)	Flooded Volume (m³)	Discharge Volume (m³)	Time-Peak (mins)		
	15 min Winter	132.861	0.0	127.5	23		
	30 min Winter	87.290	0.0	129.5	37		
	60 min Winter	54.663	0.0	258.9	66		
	120 min Winter	33.095	0.0	262.8	126		
	180 min Winter	24.358	0.0	267.2	182		
	240 min Winter	19.485	0.0	272.2	238		
	360 min Winter	14.144	0.0	279.6	340		
	480 min Winter	11.275	0.0	285.0	380		
	600 min Winter	9.449	0.0	289.0	450		
	720 min Winter	8.176	0.0	291.9	522		
	960 min Winter	6.502	0.0	295.7	666		
	1440 min Winter	4.700	0.0	298.2	954		
	2160 min Winter	3.392	0.0	553.3	1384		
	2880 min Winter	2.689	0.0	551.4	1820		
	4320 min Winter	1.935	0.0	539.0	2728		
	5760 min Winter	1.531	0.0	887.4	3696		
	7200 min Winter	1.276	0.0	896.6	4752		
	8640 min Winter	1.099	0.0	904.4	5880		
	10080 min Winter	0.968	0.0	911.1	6752		
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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>1</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>19.300</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) 2.710 <table> <thead> <tr> <th>Time (mins)</th> <th>Area</th> <th>Time (mins)</th> <th>Area</th> </tr> <tr> <th>From:</th> <th>To:</th> <th>From:</th> <th>To:</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>4</td> <td>4</td> <td>8</td> </tr> <tr> <td></td> <td>1.540</td> <td></td> <td>1.170</td> </tr> </tbody> </table>			Rainfall Model	FSR	Winter Storms	Yes	Return period(years)	1	Cv (Summer)	0.750	Region	England and Wales	Cv (Winter)	0.840	M5-60 (mm)	19.300	Shortest Storm (mins)	15	Ratio R	0.400	Longest Storm (mins)	10080	Summer Storms	Yes	Climate Change%	+0	Time (mins)	Area	Time (mins)	Area	From:	To:	From:	To:	0	4	4	8		1.540		1.170
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PRP		Page 1																																				
Catherine House Old Harborough Road Brixworth NN6 9BX	Kyngs Golf Club - 81270 1 in 100 year storm + 40%CC																																					
Date 01/06/2023 File 81270 - ATTENUATION BASIN	Designed by AGS Checked by DE																																					
Micro Drainage		Source Control 2018.1.1																																				
<u>Model Details</u> Storage is Online Cover Level (m) 100.40 <table> <tr> <td>Invert Level (m)</td> <td>98.305</td> <td>Safety Factor</td> <td>2.0</td> </tr> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.3816</td> <td>Porosity</td> <td>1.00</td> </tr> <tr> <td>Infiltration Coefficient Side (m/hr)</td> <td>0.3816</td> <td></td> <td></td> </tr> </table> <table> <thead> <tr> <th>Depth (m)</th> <th>Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> </tr> </thead> <tbody> <tr> <td>0.000</td> <td>934.0</td> <td>0.700</td> <td>984.0</td> </tr> </tbody> </table> <u>Pipe Outflow Control</u> <table> <tr> <td>Diameter (m)</td> <td>0.150</td> <td>Entry Loss Coefficient</td> <td>0.500</td> </tr> <tr> <td>Slope (1:x)</td> <td>150.0</td> <td>Coefficient of Contraction</td> <td>0.600</td> </tr> <tr> <td>Length (m)</td> <td>95.230</td> <td>Upstream Invert Level (m)</td> <td>101.640</td> </tr> <tr> <td>Roughness k (mm)</td> <td>0.600</td> <td></td> <td></td> </tr> </table>			Invert Level (m)	98.305	Safety Factor	2.0	Infiltration Coefficient Base (m/hr)	0.3816	Porosity	1.00	Infiltration Coefficient Side (m/hr)	0.3816			Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	0.000	934.0	0.700	984.0	Diameter (m)	0.150	Entry Loss Coefficient	0.500	Slope (1:x)	150.0	Coefficient of Contraction	0.600	Length (m)	95.230	Upstream Invert Level (m)	101.640	Roughness k (mm)	0.600		
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