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| EWE Associates Ltd | | Page 1 |
| Windy Ridge Barn Thealby Lane Winterton DN15 9TG | |  |
| Date 14/10/2025 17:21 File 100yr+CC40% tank ... | Designed By Lea Checked By | |
| Micro Drainage | | Source Control W.12.4 |

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

Half Drain Time : 24 minutes.

| Storm Event | Max Level (m) | Max Depth (m) | Max Infiltration (1/s) | Max Control (1/s) | Max Σ Outflow (1/s) | Max Volume (m ³) | Status |
|-----------------|---------------|---------------|------------------------|-------------------|----------------------------|------------------------------|--------|
| 15 min Summer | 44.787 | 0.787 | 0.0 | 7.9 | 7.9 | 19.4 | O K |
| 30 min Summer | 44.794 | 0.794 | 0.0 | 8.0 | 8.0 | 19.6 | O K |
| 60 min Summer | 44.750 | 0.750 | 0.0 | 7.7 | 7.7 | 18.5 | O K |
| 120 min Summer | 44.637 | 0.637 | 0.0 | 7.5 | 7.5 | 15.7 | O K |
| 180 min Summer | 44.531 | 0.531 | 0.0 | 7.5 | 7.5 | 13.1 | O K |
| 240 min Summer | 44.429 | 0.429 | 0.0 | 7.5 | 7.5 | 10.6 | O K |
| 360 min Summer | 44.240 | 0.240 | 0.0 | 7.5 | 7.5 | 5.9 | O K |
| 480 min Summer | 44.182 | 0.182 | 0.0 | 7.0 | 7.0 | 4.5 | O K |
| 600 min Summer | 44.158 | 0.158 | 0.0 | 6.2 | 6.2 | 3.9 | O K |
| 720 min Summer | 44.142 | 0.142 | 0.0 | 5.5 | 5.5 | 3.5 | O K |
| 960 min Summer | 44.125 | 0.125 | 0.0 | 4.6 | 4.6 | 3.1 | O K |
| 1440 min Summer | 44.106 | 0.106 | 0.0 | 3.5 | 3.5 | 2.6 | O K |
| 2160 min Summer | 44.091 | 0.091 | 0.0 | 2.6 | 2.6 | 2.2 | O K |
| 2880 min Summer | 44.082 | 0.082 | 0.0 | 2.2 | 2.2 | 2.0 | O K |
| 4320 min Summer | 44.069 | 0.069 | 0.0 | 1.6 | 1.6 | 1.7 | O K |
| 5760 min Summer | 44.062 | 0.062 | 0.0 | 1.2 | 1.2 | 1.5 | O K |
| 7200 min Summer | 44.057 | 0.057 | 0.0 | 1.0 | 1.0 | 1.4 | O K |
| 8640 min Summer | 44.053 | 0.053 | 0.0 | 0.9 | 0.9 | 1.3 | O K |

| Storm Event | Rain (mm/hr) | Time-Peak (mins) |
|-----------------|--------------|------------------|
| 15 min Summer | 163.898 | 16 |
| 30 min Summer | 96.687 | 25 |
| 60 min Summer | 57.038 | 42 |
| 120 min Summer | 33.648 | 76 |
| 180 min Summer | 24.711 | 110 |
| 240 min Summer | 19.850 | 142 |
| 360 min Summer | 14.577 | 194 |
| 480 min Summer | 11.710 | 250 |
| 600 min Summer | 9.880 | 308 |
| 720 min Summer | 8.599 | 368 |
| 960 min Summer | 7.050 | 490 |
| 1440 min Summer | 5.329 | 734 |
| 2160 min Summer | 4.028 | 1088 |
| 2880 min Summer | 3.302 | 1460 |
| 4320 min Summer | 2.369 | 2192 |
| 5760 min Summer | 1.871 | 2872 |
| 7200 min Summer | 1.559 | 3632 |
| 8640 min Summer | 1.342 | 4400 |

Windy Ridge Barn
Thealby Lane
Winterton DN15 9TG



Date 14/10/2025 17:21
File 100yr+CC40% tank ...

Designed By Lea
Checked By

Micro Drainage

Source Control W.12.4

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 Σ Outflow (l/s) | Max Volume (m³) | Status |
|------------------|---------------|---------------|------------------------|-------------------|---------------------|-----------------|--------|
| 10080 min Summer | 44.050 | 0.050 | 0.0 | 0.8 | 0.8 | 1.2 | O K |
| 15 min Winter | 44.946 | 0.946 | 0.0 | 8.7 | 8.7 | 22.1 | O K |
| 30 min Winter | 45.215 | 1.215 | 0.0 | 9.8 | 9.8 | 22.2 | O K |
| 60 min Winter | 44.844 | 0.844 | 0.0 | 8.2 | 8.2 | 20.7 | O K |
| 120 min Winter | 44.668 | 0.668 | 0.0 | 7.5 | 7.5 | 16.5 | O K |
| 180 min Winter | 44.504 | 0.504 | 0.0 | 7.5 | 7.5 | 12.5 | O K |
| 240 min Winter | 44.310 | 0.310 | 0.0 | 7.5 | 7.5 | 7.6 | O K |
| 360 min Winter | 44.171 | 0.171 | 0.0 | 6.7 | 6.7 | 4.2 | O K |
| 480 min Winter | 44.142 | 0.142 | 0.0 | 5.5 | 5.5 | 3.5 | O K |
| 600 min Winter | 44.127 | 0.127 | 0.0 | 4.6 | 4.6 | 3.1 | O K |
| 720 min Winter | 44.116 | 0.116 | 0.0 | 4.0 | 4.0 | 2.9 | O K |
| 960 min Winter | 44.103 | 0.103 | 0.0 | 3.3 | 3.3 | 2.5 | O K |
| 1440 min Winter | 44.088 | 0.088 | 0.0 | 2.5 | 2.5 | 2.2 | O K |
| 2160 min Winter | 44.076 | 0.076 | 0.0 | 1.9 | 1.9 | 1.9 | O K |
| 2880 min Winter | 44.069 | 0.069 | 0.0 | 1.6 | 1.6 | 1.7 | O K |
| 4320 min Winter | 44.059 | 0.059 | 0.0 | 1.1 | 1.1 | 1.5 | O K |
| 5760 min Winter | 44.053 | 0.053 | 0.0 | 0.9 | 0.9 | 1.3 | O K |
| 7200 min Winter | 44.049 | 0.049 | 0.0 | 0.7 | 0.7 | 1.2 | O K |
| 8640 min Winter | 44.045 | 0.045 | 0.0 | 0.6 | 0.6 | 1.1 | O K |

| Storm Event | Rain (mm/hr) | Time-Peak (mins) |
|------------------|--------------|------------------|
| 10080 min Summer | 1.183 | 5104 |
| 15 min Winter | 163.898 | 16 |
| 30 min Winter | 96.687 | 26 |
| 60 min Winter | 57.038 | 46 |
| 120 min Winter | 33.648 | 82 |
| 180 min Winter | 24.711 | 118 |
| 240 min Winter | 19.850 | 146 |
| 360 min Winter | 14.577 | 190 |
| 480 min Winter | 11.710 | 250 |
| 600 min Winter | 9.880 | 308 |
| 720 min Winter | 8.599 | 368 |
| 960 min Winter | 7.050 | 488 |
| 1440 min Winter | 5.329 | 734 |
| 2160 min Winter | 4.028 | 1100 |
| 2880 min Winter | 3.302 | 1460 |
| 4320 min Winter | 2.369 | 2164 |
| 5760 min Winter | 1.871 | 2848 |
| 7200 min Winter | 1.559 | 3624 |
| 8640 min Winter | 1.342 | 4264 |

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Rainfall Details

| | |
|-----------------------|------------------------------|
| Rainfall Model | FEH |
| Return Period (years) | 100 |
| Site Location | 424450 422750 SE 24450 22750 |
| C (1km) | -0.024 |
| D1 (1km) | 0.349 |
| D2 (1km) | 0.420 |
| D3 (1km) | 0.291 |
| E (1km) | 0.297 |
| F (1km) | 2.341 |
| Summer Storms | Yes |
| Winter Storms | Yes |
| Cv (Summer) | 0.750 |
| Cv (Winter) | 0.840 |
| Shortest Storm (mins) | 15 |
| Longest Storm (mins) | 10080 |
| Climate Change % | +40 |

Time / Area Diagram

Total Area (ha) 0.080

| Time | Area |
|---------------|-------------|
| (mins) | (ha) |
| 0-4 | 0.080 |

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Model Details

Storage is Online Cover Level (m) 45.500

Cellular Storage Structure

Invert Level (m) 44.000 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000 | 26.0 | 26.0 | 2.600 | 0.0 | 44.4 |
| 0.200 | 26.0 | 30.1 | 2.800 | 0.0 | 44.4 |
| 0.400 | 26.0 | 34.2 | 3.000 | 0.0 | 44.4 |
| 0.600 | 26.0 | 38.2 | 3.200 | 0.0 | 44.4 |
| 0.800 | 26.0 | 42.3 | 3.400 | 0.0 | 44.4 |
| 1.000 | 0.0 | 44.4 | 3.600 | 0.0 | 44.4 |
| 1.200 | 0.0 | 44.4 | 3.800 | 0.0 | 44.4 |
| 1.400 | 0.0 | 44.4 | 4.000 | 0.0 | 44.4 |
| 1.600 | 0.0 | 44.4 | 4.200 | 0.0 | 44.4 |
| 1.800 | 0.0 | 44.4 | 4.400 | 0.0 | 44.4 |
| 2.000 | 0.0 | 44.4 | 4.600 | 0.0 | 44.4 |
| 2.200 | 0.0 | 44.4 | 4.800 | 0.0 | 44.4 |
| 2.400 | 0.0 | 44.4 | 5.000 | 0.0 | 44.4 |

Hydro-Brake® Outflow Control

Design Head (m) 0.900 Hydro-Brake® Type Md4 Invert Level (m) 44.000
Design Flow (l/s) 8.4 Diameter (mm) 107

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100 | 3.2 | 1.200 | 9.8 | 3.000 | 15.5 | 7.000 | 23.6 |
| 0.200 | 7.3 | 1.400 | 10.6 | 3.500 | 16.7 | 7.500 | 24.5 |
| 0.300 | 6.8 | 1.600 | 11.3 | 4.000 | 17.9 | 8.000 | 25.3 |
| 0.400 | 6.2 | 1.800 | 12.0 | 4.500 | 19.0 | 8.500 | 26.1 |
| 0.500 | 6.4 | 2.000 | 12.6 | 5.000 | 20.0 | 9.000 | 26.8 |
| 0.600 | 6.9 | 2.200 | 13.3 | 5.500 | 21.0 | 9.500 | 27.5 |
| 0.800 | 8.0 | 2.400 | 13.8 | 6.000 | 21.9 | | |
| 1.000 | 8.9 | 2.600 | 14.4 | 6.500 | 22.8 | | |