| | |
|---|---|
| West Midlands House<br>Gipsy Lane Willenhall<br>West Midlands WV13 2HA | Tatenhill Lane<br>Burton<br>SWS |
| Date 01-06-2017<br>File TLB - SW NETWORK 1.MDX | Designed by sm<br>Checked by |
| XP Solutions | Network 2014.1 |

## STORM SEWER DESIGN by the Modified Rational Method

### Design Criteria for SW-NET1.SWS

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

| | | | |
|---|---|---|---|
| Return Period (years) | 2 | Add Flow / Climate Change (%) | 0 |
| M5-60 (mm) | 19.400 | Minimum Backdrop Height (m) | 0.000 |
| Ratio R | 0.400 | Maximum Backdrop Height (m) | 0.000 |
| Maximum Rainfall (mm/hr) | 50 | Min Design Depth for Optimisation (m) | 1.200 |
| Maximum Time of Concentration (mins) | 30 | Min Vel for Auto Design only (m/s) | 1.00 |
| Foul Sewage (l/s/ha) | 0.000 | Min Slope for Optimisation (1:X) | 500 |
| Volumetric Runoff Coeff. | 0.750 | | |

Designed with Level Soffits

### Network Design Table for SW-NET1.SWS

« - Indicates pipe capacity < flow

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.000 | 17.408 | 0.035 | 497.4 | 0.042 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.001 | 20.075 | 0.040 | 501.9 | 0.024 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.002 | 23.735 | 0.047 | 505.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.003 | 19.455 | 0.039 | 498.8 | 0.034 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.004 | 10.715 | 0.021 | 510.2 | 0.030 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.005 | 10.857 | 0.022 | 493.5 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.006 | 14.248 | 0.028 | 508.9 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.007 | 45.704 | 0.091 | 502.2 | 0.125 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 2.000 | 5.373 | 0.036 | 149.3 | 0.049 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.008 | 27.879 | 0.056 | 497.8 | 0.097 | 0.00 | 0.0 | 0.600 | o | 225 | |

### Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.000 | 50.00 | 5.50 | 46.940 | 0.042 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0 | 5.7 |
| 1.001 | 50.00 | 6.08 | 46.905 | 0.066 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9 | 8.9 |
| 1.002 | 50.00 | 6.77 | 46.865 | 0.066 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9 | 8.9 |
| 1.003 | 50.00 | 7.33 | 46.818 | 0.100 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0 | 13.5 |
| 1.004 | 50.00 | 7.64 | 46.779 | 0.130 | 0.0 | 0.0 | 0.0 | 0.57 | 22.7 | 17.6 |
| 1.005 | 50.00 | 7.95 | 46.758 | 0.130 | 0.0 | 0.0 | 0.0 | 0.58 | 23.1 | 17.6 |
| 1.006 | 50.00 | 8.37 | 46.736 | 0.130 | 0.0 | 0.0 | 0.0 | 0.57 | 22.8 | 17.6 |
| 1.007 | 49.56 | 9.69 | 46.708 | 0.255 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9« | 34.2 |
| 2.000 | 50.00 | 5.08 | 46.653 | 0.049 | 0.0 | 0.0 | 0.0 | 1.07 | 42.5 | 6.6 |
| 1.008 | 47.50 | 10.49 | 46.617 | 0.401 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 51.6 |

## Network Design Table for SW-NET1.SWS

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|
| 3.000 | 9.614 | 0.064 | 150.2 | 0.041 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.009 | 40.627 | 0.081 | 501.6 | 0.054 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 4.000 | 3.253 | 0.022 | 147.9 | 0.042 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.010 | 9.382 | 0.019 | 493.8 | 0.009 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.011 | 41.136 | 0.082 | 501.7 | 0.017 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 5.000 | 14.663 | 0.029 | 505.6 | 0.044 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 5.001 | 45.014 | 0.090 | 500.2 | 0.072 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 5.002 | 38.357 | 0.077 | 498.1 | 0.087 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 5.003 | 34.246 | 0.068 | 503.6 | 0.061 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 6.000 | 6.004 | 0.040 | 150.1 | 0.075 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 5.004 | 21.765 | 0.044 | 500.0 | 0.040 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 7.000 | 10.979 | 0.022 | 499.0 | 0.067 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 5.005 | 42.023 | 0.084 | 500.3 | 0.081 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 5.006 | 10.490 | 0.021 | 499.5 | 0.059 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 1.012 | 26.963 | 0.054 | 499.3 | 0.028 | 0.00 | 0.0 | 0.600 | o | 225 | |

## Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| 3.000 | 50.00 | 5.15 | 46.625 | 0.041 | 0.0 | 0.0 | 0.0 | 1.06 | 42.3 | 5.6 |
| 1.009 | 44.83 | 11.66 | 46.561 | 0.496 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9« | 60.2 |
| 4.000 | 50.00 | 5.05 | 46.502 | 0.042 | 0.0 | 0.0 | 0.0 | 1.07 | 42.7 | 5.7 |
| 1.010 | 44.26 | 11.93 | 46.480 | 0.547 | 0.0 | 0.0 | 0.0 | 0.58 | 23.1« | 65.6 |
| 1.011 | 41.95 | 13.12 | 46.461 | 0.564 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9« | 65.6 |
| 5.000 | 50.00 | 5.43 | 46.792 | 0.044 | 0.0 | 0.0 | 0.0 | 0.57 | 22.9 | 6.0 |
| 5.001 | 50.00 | 6.72 | 46.763 | 0.116 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0 | 15.7 |
| 5.002 | 50.00 | 7.83 | 46.673 | 0.203 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 27.5 |
| 5.003 | 50.00 | 8.82 | 46.596 | 0.264 | 0.0 | 0.0 | 0.0 | 0.58 | 22.9« | 35.7 |
| 6.000 | 50.00 | 5.09 | 46.568 | 0.075 | 0.0 | 0.0 | 0.0 | 1.06 | 42.3 | 10.2 |
| 5.004 | 50.00 | 9.45 | 46.528 | 0.379 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 51.3 |
| 7.000 | 50.00 | 5.32 | 46.506 | 0.067 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0 | 9.1 |
| 5.005 | 47.09 | 10.66 | 46.484 | 0.527 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 67.2 |
| 5.006 | 46.38 | 10.96 | 46.400 | 0.586 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 73.6 |
| 1.012 | 40.59 | 13.90 | 46.379 | 1.178 | 0.0 | 0.0 | 0.0 | 0.58 | 23.0« | 129.5 |

## Network Design Table for SW-NET1.SWS

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Auto Design |
|---|---|---|---|---|---|---|---|---|---|---|
| 8.000 | 4.420 | 0.029 | 152.4 | 0.075 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.013 | 6.594 | 0.013 | 507.2 | 0.027 | 0.00 | 0.0 | 0.600 | o | 225 | |
| 9.000 | 9.592 | 0.064 | 149.9 | 0.038 | 5.00 | 0.0 | 0.600 | o | 225 | |
| 1.014 | 5.061 | 0.012 | 421.8 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | |

## Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|---|---|---|---|---|---|---|---|---|---|---|
| 8.000 | 50.00 | 5.07 | 46.354 | 0.075 | 0.0 | 0.0 | 0.0 | 1.06 | 42.0 | 10.2 |
| 1.013 | 40.27 | 14.09 | 46.325 | 1.280 | 0.0 | 0.0 | 0.0 | 0.57 | 22.8« | 139.6 |
| 9.000 | 50.00 | 5.15 | 46.376 | 0.038 | 0.0 | 0.0 | 0.0 | 1.07 | 42.4 | 5.1 |
| 1.014 | 40.05 | 14.22 | 46.312 | 1.318 | 0.0 | 0.0 | 0.0 | 0.63 | 25.1« | 143.0 |

## Manhole Schedules for SW-NET1.SWS

| MH Name | MH CL (m) | MH Depth (m) | MH Connection | MH Diam.,L*W (mm) | Pipe Out PN | Pipe Out Invert Level (m) | Pipe Out Diameter (mm) | Pipes In PN | Pipes In Invert Level (m) | Pipes In Diameter (mm) | Backdrop (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 48.159 | 1.219 | Open Manhole | 1200 | 1.000 | 46.940 | 225 | | | | |
| 4 | 48.016 | 1.111 | Open Manhole | 1200 | 1.001 | 46.905 | 225 | 1.000 | 46.905 | 225 | |
| 6 | 48.089 | 1.224 | Open Manhole | 1200 | 1.002 | 46.865 | 225 | 1.001 | 46.865 | 225 | |
| 8 | 47.931 | 1.113 | Open Manhole | 1200 | 1.003 | 46.818 | 225 | 1.002 | 46.818 | 225 | |
| 10 | 47.716 | 0.937 | Open Manhole | 1200 | 1.004 | 46.779 | 225 | 1.003 | 46.779 | 225 | |
| 12 | 47.685 | 0.927 | Open Manhole | 1200 | 1.005 | 46.758 | 225 | 1.004 | 46.758 | 225 | |
| 14 | 47.815 | 1.079 | Open Manhole | 1350 | 1.006 | 46.736 | 225 | 1.005 | 46.736 | 225 | |
| 16 | 47.724 | 1.016 | Open Manhole | 1200 | 1.007 | 46.708 | 225 | 1.006 | 46.708 | 225 | |
| 201 | 47.765 | 1.112 | Open Manhole | 1200 | 2.000 | 46.653 | 225 | | | | |
| 18 | 47.646 | 1.029 | Open Manhole | 1200 | 1.008 | 46.617 | 225 | 1.007 | 46.617 | 225 | |
| | | | | | | | | 2.000 | 46.617 | 225 | |
| 301 | 47.825 | 1.200 | Open Manhole | 1200 | 3.000 | 46.625 | 225 | | | | |
| 20 | 47.784 | 1.223 | Open Manhole | 1200 | 1.009 | 46.561 | 225 | 1.008 | 46.561 | 225 | |
| | | | | | | | | 3.000 | 46.561 | 225 | |
| 401 | 47.875 | 1.373 | Open Manhole | 1200 | 4.000 | 46.502 | 225 | | | | |
| 22 | 47.766 | 1.286 | Open Manhole | 1200 | 1.010 | 46.480 | 225 | 1.009 | 46.480 | 225 | |
| | | | | | | | | 4.000 | 46.480 | 225 | |
| 24 | 47.695 | 1.234 | Open Manhole | 1200 | 1.011 | 46.461 | 225 | 1.010 | 46.461 | 225 | |
| 34 | 47.762 | 0.970 | Open Manhole | 1350 | 5.000 | 46.792 | 225 | | | | |
| 36 | 47.990 | 1.227 | Open Manhole | 1200 | 5.001 | 46.763 | 225 | 5.000 | 46.763 | 225 | |
| 38 | 47.980 | 1.307 | Open Manhole | 1200 | 5.002 | 46.673 | 225 | 5.001 | 46.673 | 225 | |
| 40 | 47.818 | 1.222 | Open Manhole | 1200 | 5.003 | 46.596 | 225 | 5.002 | 46.596 | 225 | |
| 601 | 47.875 | 1.307 | Open Manhole | 1200 | 6.000 | 46.568 | 225 | | | | |
| 42 | 47.739 | 1.211 | Open Manhole | 1200 | 5.004 | 46.528 | 225 | 5.003 | 46.528 | 225 | |
| | | | | | | | | 6.000 | 46.528 | 225 | |
| 701 | 47.517 | 1.011 | Open Manhole | 1200 | 7.000 | 46.506 | 225 | | | | |
| 44 | 47.455 | 0.971 | Open Manhole | 1350 | 5.005 | 46.484 | 225 | 5.004 | 46.484 | 225 | |
| | | | | | | | | 7.000 | 46.484 | 225 | |
| 46 | 47.629 | 1.229 | Open Manhole | 1200 | 5.006 | 46.400 | 225 | 5.005 | 46.400 | 225 | |
| 26 | 47.855 | 1.476 | Open Manhole | 1350 | 1.012 | 46.379 | 225 | 1.011 | 46.379 | 225 | |
| | | | | | | | | 5.006 | 46.379 | 225 | |
| 801 | 47.945 | 1.591 | Open Manhole | 1200 | 8.000 | 46.354 | 225 | | | | |
| 28 | 47.730 | 1.405 | Open Manhole | 1200 | 1.013 | 46.325 | 225 | 1.012 | 46.325 | 225 | |
| | | | | | | | | 8.000 | 46.325 | 225 | |
| 901 | 47.555 | 1.179 | Open Manhole | 1200 | 9.000 | 46.376 | 225 | | | | |
| 30 | 47.579 | 1.267 | Open Manhole | 3000 | 1.014 | 46.312 | 225 | 1.013 | 46.312 | 225 | |
| | | | | | | | | 9.000 | 46.312 | 225 | |
| 32 | 47.367 | 1.067 | Open Manhole | 1200 | | OUTFALL | | 1.014 | 46.300 | 225 | |

## Free Flowing Outfall Details for SW-NET1.SWS

| Outfall Pipe Number | Outfall Name | C. Level (m) | I. Level (m) | Min I. Level (m) | D,L (mm) | W (mm) |
|---|---|---|---|---|---|---|
| 1.014 | 32 | 47.367 | 46.300 | 46.150 | 1200 | 0 |

## Simulation Criteria for SW-NET1.SWS

| | | | |
|---|---|---|---|
| Volumetric Runoff Coeff | 0.750 | Additional Flow - % of Total Flow | 0.000 |
| Areal Reduction Factor | 1.000 | MADD Factor * 10m³/ha Storage | 0.000 |
| Hot Start (mins) | 0 | Inlet Coeffiecient | 0.800 |
| Hot Start Level (mm) | 0 | Flow per Person per Day (l/per/day) | 0.000 |
| Manhole Headloss Coeff (Global) | 0.500 | Run Time (mins) | 60 |
| Foul Sewage per hectare (l/s) | 0.000 | Output Interval (mins) | 1 |

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 21 Number of Real Time Controls 0

## Synthetic Rainfall Details

| | | | |
|---|---|---|---|
| Rainfall Model | FSR | Profile Type | Summer |
| Return Period (years) | 100 | Cv (Summer) | 0.750 |
| Region | England and Wales | Cv (Winter) | 0.840 |
| M5-60 (mm) | 19.400 | Storm Duration (mins) | 30 |
| Ratio R | 0.400 | | |

## Online Controls for SW-NET1.SWS

### Complex Manhole: 30, DS/PN: 1.014, Volume (m³): 9.4

#### Hydro-Brake Optimum®

| | |
|---|---|
| Unit Reference | MD-SHE-0145-9700-0900-9700 |
| Design Head (m) | 0.900 |
| Design Flow (l/s) | 9.7 |
| Flush-Flo™ | Calculated |
| Objective | Minimise upstream storage |
| Diameter (mm) | 145 |
| Invert Level (m) | 46.312 |
| Minimum Outlet Pipe Diameter (mm) | 225 |
| Suggested Manhole Diameter (mm) | 1200 |

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---|---|---|---|---|---|
| Design Point (Calculated) | 0.900 | 9.7 | Kick-Flo® | 0.620 | 8.1 |
| Flush-Flo™ | 0.281 | 9.6 | Mean Flow over Head Range | - | 8.2 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|---|---|---|---|---|---|---|---|
| 0.100 | 5.2 | 1.200 | 11.1 | 3.000 | 17.1 | 7.000 | 25.6 |
| 0.200 | 9.4 | 1.400 | 11.9 | 3.500 | 18.4 | 7.500 | 26.5 |
| 0.300 | 9.6 | 1.600 | 12.7 | 4.000 | 19.6 | 8.000 | 27.4 |
| 0.400 | 9.4 | 1.800 | 13.4 | 4.500 | 20.7 | 8.500 | 28.2 |
| 0.500 | 9.1 | 2.000 | 14.1 | 5.000 | 21.8 | 9.000 | 29.0 |
| 0.600 | 8.4 | 2.200 | 14.7 | 5.500 | 22.8 | 9.500 | 29.6 |
| 0.800 | 9.1 | 2.400 | 15.4 | 6.000 | 23.8 | | |
| 1.000 | 10.1 | 2.600 | 16.0 | 6.500 | 24.7 | | |

#### Hydro-Brake Optimum®

| | |
|---|---|
| Unit Reference | MD-SHE-0208-2330-1290-2330 |
| Design Head (m) | 1.290 |
| Design Flow (l/s) | 23.3 |
| Flush-Flo™ | Calculated |
| Objective | Minimise upstream storage |
| Diameter (mm) | 208 |
| Invert Level (m) | 47.002 |
| Minimum Outlet Pipe Diameter (mm) | 225 |
| Suggested Manhole Diameter (mm) | 1500 |

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---|---|---|---|---|---|
| Design Point (Calculated) | 1.290 | 23.2 | Kick-Flo® | 0.883 | 19.3 |
| Flush-Flo™ | 0.403 | 23.1 | Mean Flow over Head Range | - | 19.7 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

Hydro-Brake Optimum®

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|---|---|---|---|---|---|---|---|
| 0.100 | 7.1 | 1.200 | 22.4 | 3.000 | 34.7 | 7.000 | 52.3 |
| 0.200 | 20.0 | 1.400 | 24.1 | 3.500 | 37.4 | 7.500 | 54.0 |
| 0.300 | 22.7 | 1.600 | 25.7 | 4.000 | 39.9 | 8.000 | 55.8 |
| 0.400 | 23.1 | 1.800 | 27.2 | 4.500 | 42.2 | 8.500 | 57.4 |
| 0.500 | 22.9 | 2.000 | 28.6 | 5.000 | 44.4 | 9.000 | 59.1 |
| 0.600 | 22.5 | 2.200 | 29.9 | 5.500 | 46.5 | 9.500 | 60.6 |
| 0.800 | 21.0 | 2.400 | 31.2 | 6.000 | 48.5 | | |
| 1.000 | 20.5 | 2.600 | 32.4 | 6.500 | 50.4 | | |

Hydro-Brake Optimum®

| | |
|---|---|
| Unit Reference | MD-SHE-0231-3000-1390-3000 |
| Design Head (m) | 1.390 |
| Design Flow (l/s) | 30.0 |
| Flush-Flo™ | Calculated |
| Objective | Minimise upstream storage |
| Diameter (mm) | 231 |
| Invert Level (m) | 47.069 |
| Minimum Outlet Pipe Diameter (mm) | 300 |
| Suggested Manhole Diameter (mm) | 1800 |

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---|---|---|---|---|---|
| Design Point (Calculated) | 1.390 | 29.8 | Kick-Flo® | 0.964 | 25.0 |
| Flush-Flo™ | 0.442 | 29.8 | Mean Flow over Head Range | - | 25.4 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake Optimum® as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|---|---|---|---|---|---|---|---|
| 0.100 | 7.7 | 1.200 | 27.8 | 3.000 | 43.1 | 7.000 | 65.0 |
| 0.200 | 23.2 | 1.400 | 29.9 | 3.500 | 46.5 | 7.500 | 67.2 |
| 0.300 | 29.1 | 1.600 | 31.9 | 4.000 | 49.6 | 8.000 | 69.4 |
| 0.400 | 29.8 | 1.800 | 33.7 | 4.500 | 52.5 | 8.500 | 71.4 |
| 0.500 | 29.7 | 2.000 | 35.5 | 5.000 | 55.2 | 9.000 | 73.5 |
| 0.600 | 29.4 | 2.200 | 37.1 | 5.500 | 57.8 | 9.500 | 75.4 |
| 0.800 | 28.1 | 2.400 | 38.7 | 6.000 | 60.3 | | |
| 1.000 | 25.5 | 2.600 | 40.3 | 6.500 | 62.7 | | |

## Storage Structures for SW-NET1.SWS

### Porous Car Park Manhole: 4, DS/PN: 1.001

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 24.1 |
| Max Percolation (l/s) | 33.5 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.150 | Cap Volume Depth (m) | 0.300 |

### Porous Car Park Manhole: 8, DS/PN: 1.003

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 8.9 |
| Max Percolation (l/s) | 12.4 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.550 | Cap Volume Depth (m) | 0.300 |

### Cellular Storage Manhole: 12, DS/PN: 1.005

| | | | |
|---|---|---|---|
| Invert Level (m) | 46.758 | Safety Factor | 2.0 |
| Infiltration Coefficient Base (m/hr) | 0.00000 | Porosity | 0.95 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | | |

| Depth (m) | Area (m²) | Inf. Area (m²) | Depth (m) | Area (m²) | Inf. Area (m²) |
|---|---|---|---|---|---|
| 0.000 | 75.0 | 75.0 | 0.500 | 0.0 | 91.0 |
| 0.400 | 75.0 | 91.0 | | | |

### Infiltration Trench Manhole: 14, DS/PN: 1.006

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 40.0 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.000 |
| Invert Level (m) | 47.250 | Cap Infiltration Depth (m) | 0.000 |

### Complex Manhole: 16, DS/PN: 1.007

#### Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 17.3 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 47.050 | Cap Infiltration Depth (m) | 0.000 |

#### Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Safety Factor | 2.0 |
| Membrane Percolation (mm/hr) | 1000 | Porosity | 0.30 |
| Max Percolation (l/s) | 49.9 | Invert Level (m) | 47.300 |

Porous Car Park

| | | | |
|---|---|---|---|
| Width (m) | 5.0 | Depression Storage (mm) | 5 |
| Length (m) | 35.9 | Evaporation (mm/day) | 3 |
| Slope (1:X) | 80.0 | Cap Volume Depth (m) | 0.300 |

Complex Manhole: 201, DS/PN: 2.000

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 36.2 |
| Max Percolation (l/s) | 50.3 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.000 | Cap Volume Depth (m) | 0.300 |

Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 94.7 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 47.250 | Cap Infiltration Depth (m) | 0.000 |

Complex Manhole: 301, DS/PN: 3.000

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 7.7 |
| Max Percolation (l/s) | 10.7 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 46.900 | Cap Volume Depth (m) | 0.300 |

Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.00900 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.00900 | Trench Length (m) | 55.4 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.900 | Cap Infiltration Depth (m) | 0.000 |

Complex Manhole: 20, DS/PN: 1.009

Infiltration Blanket

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 142.3 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.960 | | |

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 12.2 |
| Max Percolation (l/s) | 16.9 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.350 | Cap Volume Depth (m) | 0.300 |

Complex Manhole: 401, DS/PN: 4.000

Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 56.1 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.950 | Cap Infiltration Depth (m) | 0.000 |

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 35.3 |
| Max Percolation (l/s) | 49.0 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.250 | Cap Volume Depth (m) | 0.300 |

Complex Manhole: 24, DS/PN: 1.011

Infiltration Blanket

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 16.5 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.850 | | |

Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 17.0 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.000 |
| Invert Level (m) | 46.850 | Cap Infiltration Depth (m) | 0.000 |

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 34.7 |
| Max Percolation (l/s) | 48.2 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.200 | Cap Volume Depth (m) | 0.300 |

## Complex Manhole: 34, DS/PN: 5.000

### Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 30.0 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.000 |
| Invert Level (m) | 47.100 | Cap Infiltration Depth (m) | 0.000 |

### Cellular Storage

| | | | |
|---|---|---|---|
| Invert Level (m) | 46.792 | Safety Factor | 2.0 |
| Infiltration Coefficient Base (m/hr) | 0.00000 | Porosity | 0.95 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | | |

| Depth (m) | Area (m²) | Inf. Area (m²) | Depth (m) | Area (m²) | Inf. Area (m²) |
|---|---|---|---|---|---|
| 0.000 | 48.0 | 48.0 | 0.500 | 0.0 | 60.8 |
| 0.400 | 48.0 | 60.8 | | | |

## Porous Car Park Manhole: 36, DS/PN: 5.001

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 27.0 |
| Max Percolation (l/s) | 37.5 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.450 | Cap Volume Depth (m) | 0.300 |

## Porous Car Park Manhole: 38, DS/PN: 5.002

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 30.0 |
| Max Percolation (l/s) | 41.7 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.350 | Cap Volume Depth (m) | 0.300 |

## Complex Manhole: 40, DS/PN: 5.003

### Infiltration Blanket

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 139.5 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.850 | | |

### Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Porosity | 0.30 |
| Membrane Percolation (mm/hr) | 1000 | Invert Level (m) | 47.300 |
| Max Percolation (l/s) | 65.8 | Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 47.4 |

Porous Car Park

| | | | |
|---|---|---|---|
| Slope (1:X) | 80.0 | Evaporation (mm/day) | 3 |
| Depression Storage (mm) | 5 | Cap Volume Depth (m) | 0.300 |

Complex Manhole: 601, DS/PN: 6.000

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 28.0 |
| Max Percolation (l/s) | 38.9 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 46.500 | Cap Volume Depth (m) | 0.300 |

Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 160.7 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.500 | Cap Infiltration Depth (m) | 0.000 |

Complex Manhole: 701, DS/PN: 7.000

Infiltration Blanket

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 54.4 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.740 | | |

Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 13.0 |
| Max Percolation (l/s) | 18.1 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.050 | Cap Volume Depth (m) | 0.300 |

Complex Manhole: 44, DS/PN: 5.005

Infiltration Blanket

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 129.9 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.620 | | |

## Lined Soakaway

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.00000 | Ring Diameter (m) | 1.50 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Pit Multiplier | 1.5 |
| Safety Factor | 2.0 | Number Required | 1 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.000 |
| Invert Level (m) | 46.620 | Cap Infiltration Depth (m) | 0.000 |

## Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.00900 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 13.3 |
| Max Percolation (l/s) | 18.5 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.050 | Cap Volume Depth (m) | 0.300 |

## Complex Manhole: 46, DS/PN: 5.006

## Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 33.5 |
| Max Percolation (l/s) | 46.5 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 46.450 | Cap Volume Depth (m) | 0.300 |

## Complex Manhole: 801, DS/PN: 8.000

## Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 60.0 |
| Max Percolation (l/s) | 83.3 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 47.050 | Cap Volume Depth (m) | 0.300 |

## Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 73.1 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 47.050 | Cap Infiltration Depth (m) | 0.000 |

## Cellular Storage

| | | | |
|---|---|---|---|
| Invert Level (m) | 47.050 | Safety Factor | 2.0 |
| Infiltration Coefficient Base (m/hr) | 0.00000 | Porosity | 0.95 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | | |

## Cellular Storage

| Depth (m) | Area (m²) | Inf. Area (m²) | Depth (m) | Area (m²) | Inf. Area (m²) |
|---|---|---|---|---|---|
| 0.000 | 48.0 | 48.0 | 0.500 | 0.0 | 60.8 |
| 0.400 | 48.0 | 60.8 | | | |

## Infiltration Blanket Manhole: 28, DS/PN: 1.013

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Diameter/Width (m) | 5.0 |
| Safety Factor | 2.0 | Length (m) | 44.7 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.350 | | |

## Complex Manhole: 901, DS/PN: 9.000

## Porous Car Park

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Width (m) | 5.0 |
| Membrane Percolation (mm/hr) | 1000 | Length (m) | 14.2 |
| Max Percolation (l/s) | 19.7 | Slope (1:X) | 80.0 |
| Safety Factor | 2.0 | Depression Storage (mm) | 5 |
| Porosity | 0.30 | Evaporation (mm/day) | 3 |
| Invert Level (m) | 46.550 | Cap Volume Depth (m) | 0.300 |

## Infiltration Trench

| | | | |
|---|---|---|---|
| Infiltration Coefficient Base (m/hr) | 0.01440 | Trench Width (m) | 0.6 |
| Infiltration Coefficient Side (m/hr) | 0.01440 | Trench Length (m) | 78.0 |
| Safety Factor | 2.0 | Slope (1:X) | 500.0 |
| Porosity | 0.30 | Cap Volume Depth (m) | 0.450 |
| Invert Level (m) | 46.550 | Cap Infiltration Depth (m) | 0.000 |

## Summary of Critical Results by Maximum Level (Rank 1) for SW-NET1.SWS

### Simulation Criteria

| | | | |
|---|---|---|---|
| Areal Reduction Factor | 1.000 | Additional Flow - % of Total Flow | 0.000 |
| Hot Start (mins) | 0 | MADD Factor * 10m³/ha Storage | 0.000 |
| Hot Start Level (mm) | 0 | Inlet Coeffiecient | 0.800 |
| Manhole Headloss Coeff (Global) | 0.500 | Flow per Person per Day (l/per/day) | 0.000 |
| Foul Sewage per hectare (l/s) | 0.000 | | |

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 1 Number of Storage Structures 21 Number of Real Time Controls 0

### Synthetic Rainfall Details

| | | | |
|---|---|---|---|
| Rainfall Model | | FSR | Ratio R 0.400 |
| Region | England and Wales | Cv (Summer) | 0.750 |
| M5-60 (mm) | 19.400 | Cv (Winter) | 0.840 |

| | |
|---|---|
| Margin for Flood Risk Warning (mm) | 300.0 |
| Analysis Timestep | 2.5 Second Increment (Extended) |
| DTS Status | OFF |
| DVD Status | ON |
| Inertia Status | ON |

| | |
|---|---|
| Profile(s) | Summer and Winter |
| Duration(s) (mins) | 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080 |
| Return Period(s) (years) | 1, 30, 100 |
| Climate Change (%) | 0, 0, 40 |

| PN | Storm | Return Period | Climate Change | First X Surcharge | First Y Flood | First Z Overflow | O/F Act. | Lvl Exc. |
|---|---|---|---|---|---|---|---|---|
| 1.000 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.001 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.002 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.003 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.004 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.005 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.006 | 60 Winter | 100 | +40% | 30/15 Summer | | | | |
| 1.007 | 60 Winter | 100 | +40% | 1/15 Winter | | | | |
| 2.000 | 60 Winter | 100 | +40% | 1/15 Summer | | | | |
| 1.008 | 60 Winter | 100 | +40% | 1/15 Summer | | | | |
| 3.000 | 180 Winter | 100 | +40% | 1/15 Summer | | | | |
| 1.009 | 180 Winter | 100 | +40% | 1/15 Summer | | | | |
| 4.000 | 180 Winter | 100 | +40% | 1/15 Summer | | | | |
| 1.010 | 180 Winter | 100 | +40% | 1/15 Summer | | | | |
| 1.011 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |
| 5.000 | 30 Winter | 100 | +40% | 100/15 Summer | | | | |
| 5.001 | 30 Winter | 100 | +40% | 30/15 Summer | | | | |
| 5.002 | 240 Winter | 100 | +40% | 30/15 Summer | | | | |
| 5.003 | 240 Winter | 100 | +40% | 30/15 Summer | | | | |
| 6.000 | 240 Winter | 100 | +40% | 30/15 Summer | | | | |
| 5.004 | 240 Winter | 100 | +40% | 1/120 Winter | | | | |
| 7.000 | 240 Winter | 100 | +40% | 1/60 Winter | | | | |
| 5.005 | 240 Winter | 100 | +40% | 1/30 Winter | | | | |
| 5.006 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |
| 1.012 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |
| 8.000 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |

Summary of Critical Results by Maximum Level (Rank 1) for SW-NET1.SWS

| PN | Storm | Return Period | Climate Change | First X Surcharge | First Y Flood | First Z Overflow | O/F Act. | Lvl Exc. |
|---|---|---|---|---|---|---|---|---|
| 1.013 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |
| 9.000 | 240 Winter | 100 | +40% | 1/15 Winter | | | | |
| 1.014 | 240 Winter | 100 | +40% | 1/15 Summer | | | | |

| PN | US/MH Name | Water Level (m) | Surch'ed Depth (m) | Flooded Volume (m³) | Flow / Cap. | O'flow (l/s) | Pipe Flow (l/s) | Status |
|---|---|---|---|---|---|---|---|---|
| 1.000 | 2 | 47.771 | 0.606 | 0.000 | 0.68 | 0.0 | 12.1 | SURCHARGED |
| 1.001 | 4 | 47.759 | 0.629 | 0.000 | 0.67 | 0.0 | 12.8 | FLOOD RISK |
| 1.002 | 6 | 47.741 | 0.651 | 0.000 | 0.54 | 0.0 | 11.2 | SURCHARGED |
| 1.003 | 8 | 47.723 | 0.680 | 0.000 | 1.04 | 0.0 | 19.7 | FLOOD RISK |
| 1.004 | 10 | 47.697 | 0.693 | 0.000 | 1.90 | 0.0 | 27.9 | FLOOD RISK |
| 1.005 | 12 | 47.675 | 0.692 | 0.000 | 1.04 | 0.0 | 15.8 | FLOOD RISK |
| 1.006 | 14 | 47.653 | 0.692 | 0.000 | 0.99 | 0.0 | 15.4 | FLOOD RISK |
| 1.007 | 16 | 47.625 | 0.692 | 0.000 | 1.26 | 0.0 | 27.7 | FLOOD RISK |
| 2.000 | 201 | 47.484 | 0.606 | 0.000 | 0.21 | 0.0 | 6.2 | FLOOD RISK |
| 1.008 | 18 | 47.482 | 0.640 | 0.000 | 2.16 | 0.0 | 46.2 | FLOOD RISK |
| 3.000 | 301 | 47.409 | 0.559 | 0.000 | 0.09 | 0.0 | 3.1 | SURCHARGED |
| 1.009 | 20 | 47.407 | 0.621 | 0.000 | 0.89 | 0.0 | 19.4 | SURCHARGED |
| 4.000 | 401 | 47.362 | 0.635 | 0.000 | 0.15 | 0.0 | 4.2 | SURCHARGED |
| 1.010 | 22 | 47.361 | 0.656 | 0.000 | 1.46 | 0.0 | 23.0 | SURCHARGED |
| 1.011 | 24 | 47.341 | 0.655 | 0.000 | 0.88 | 0.0 | 19.2 | SURCHARGED |
| 5.000 | 34 | 47.512 | 0.495 | 0.000 | 0.89 | 0.0 | 14.1 | FLOOD RISK |
| 5.001 | 36 | 47.493 | 0.505 | 0.000 | 1.25 | 0.0 | 27.5 | SURCHARGED |
| 5.002 | 38 | 47.390 | 0.492 | 0.000 | 0.79 | 0.0 | 17.2 | SURCHARGED |
| 5.003 | 40 | 47.374 | 0.553 | 0.000 | 0.60 | 0.0 | 13.0 | SURCHARGED |
| 6.000 | 601 | 47.360 | 0.567 | 0.000 | 0.17 | 0.0 | 5.0 | SURCHARGED |
| 5.004 | 42 | 47.359 | 0.606 | 0.000 | 0.64 | 0.0 | 12.8 | SURCHARGED |
| 7.000 | 701 | 47.343 | 0.612 | 0.000 | 0.23 | 0.0 | 3.4 | FLOOD RISK |
| 5.005 | 44 | 47.342 | 0.633 | 0.000 | 0.45 | 0.0 | 9.8 | FLOOD RISK |
| 5.006 | 46 | 47.313 | 0.688 | 0.000 | 0.73 | 0.0 | 11.0 | SURCHARGED |
| 1.012 | 26 | 47.297 | 0.693 | 0.000 | 1.24 | 0.0 | 26.5 | SURCHARGED |
| 8.000 | 801 | 47.215 | 0.636 | 0.000 | 0.27 | 0.0 | 7.9 | SURCHARGED |
| 1.013 | 28 | 47.214 | 0.664 | 0.000 | 1.36 | 0.0 | 28.5 | SURCHARGED |
| 9.000 | 901 | 47.165 | 0.564 | 0.000 | 0.10 | 0.0 | 3.5 | SURCHARGED |
| 1.014 | 30 | 47.164 | 0.627 | 0.000 | 1.23 | 0.0 | 29.2 | SURCHARGED |