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Cedar Barn White Lodge Walgrave Northampton NN6 9PY	26417 - Station Road, Market Bosworth - 1 in 100 Yr +40% CC (FEH)	
Date 11/10/2024 15:19	Designed by CDG	
File 26417 - DRAINAGE MODEL ...	Checked by TL	
XP Solutions		Network 2016.1

Simulation Criteria for Storm

Volumetric Runoff Coeff	0.750	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m ³ /ha Storage	2.000
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 Storage Structures	1
Number of Online Controls	1	Number of Time/Area Diagrams	0
Number of Offline Controls	0	Number of Real Time Controls	0

Synthetic Rainfall Details

Rainfall Model	FEH
Return Period (years)	1
Site Location	439400 302750 SK 39400 02750
C (1km)	-0.029
D1 (1km)	0.362
D2 (1km)	0.338
D3 (1km)	0.281
E (1km)	0.309
F (1km)	2.369
Summer Storms	Yes
Winter Storms	Yes
Cv (Summer)	0.750
Cv (Winter)	0.840
Storm Duration (mins)	30

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<u>Online Controls for Storm</u> <u>Hydro-Brake Optimum® Manhole: SA35, DS/PN: S1.014, Volume (m³): 6.0</u> Unit Reference MD-SHE-0203-2120-1025-2120 Design Head (m)1.025 Design Flow (l/s)21.2 Flush-Flo™Calculated ObjectiveMinimise upstream storage ApplicationSurface Sump AvailableYes Diameter (mm)203 Invert Level (m)94.125 Minimum Outlet Pipe Diameter (mm)225 Suggested Manhole Diameter (mm)1500 <table><tr><th>Control Points</th><th>Head (m)</th><th>Flow (l/s)</th></tr><tr><td>Design Point (Calculated)</td><td>1.025</td><td>21.2</td></tr><tr><td>Flush-Flo™</td><td>0.349</td><td>21.1</td></tr><tr><td>Kick-Flo®</td><td>0.737</td><td>18.1</td></tr><tr><td>Mean Flow over Head Range</td><td>-</td><td>17.8</td></tr></table> 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 <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>7.0</td><td>1.200</td><td>22.8</td><td>3.000</td><td>35.4</td><td>7.000</td><td>53.3</td></tr><tr><td>0.200</td><td>19.4</td><td>1.400</td><td>24.6</td><td>3.500</td><td>38.1</td><td>7.500</td><td>55.2</td></tr><tr><td>0.300</td><td>21.0</td><td>1.600</td><td>26.2</td><td>4.000</td><td>40.7</td><td>8.000</td><td>56.9</td></tr><tr><td>0.400</td><td>21.1</td><td>1.800</td><td>27.7</td><td>4.500</td><td>43.1</td><td>8.500</td><td>58.6</td></tr><tr><td>0.500</td><td>20.7</td><td>2.000</td><td>29.1</td><td>5.000</td><td>45.3</td><td>9.000</td><td>60.3</td></tr><tr><td>0.600</td><td>20.2</td><td>2.200</td><td>30.5</td><td>5.500</td><td>47.5</td><td>9.500</td><td>61.9</td></tr><tr><td>0.800</td><td>18.8</td><td>2.400</td><td>31.8</td><td>6.000</td><td>49.5</td><td></td><td></td></tr><tr><td>1.000</td><td>20.9</td><td>2.600</td><td>33.1</td><td>6.500</td><td>51.5</td><td></td><td></td></tr></table>			Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	1.025	21.2	Flush-Flo™	0.349	21.1	Kick-Flo®	0.737	18.1	Mean Flow over Head Range	-	17.8	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	7.0	1.200	22.8	3.000	35.4	7.000	53.3	0.200	19.4	1.400	24.6	3.500	38.1	7.500	55.2	0.300	21.0	1.600	26.2	4.000	40.7	8.000	56.9	0.400	21.1	1.800	27.7	4.500	43.1	8.500	58.6	0.500	20.7	2.000	29.1	5.000	45.3	9.000	60.3	0.600	20.2	2.200	30.5	5.500	47.5	9.500	61.9	0.800	18.8	2.400	31.8	6.000	49.5			1.000	20.9	2.600	33.1	6.500	51.5		
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<u>Storage Structures for Storm</u> <u>Tank or Pond Manhole: SHW3, DS/PN: S1.013</u> Invert Level (m) 94.150 <table><tr><th>Depth (m)</th><th>Area (m²)</th><th>Depth (m)</th><th>Area (m²)</th></tr><tr><td>0.000</td><td>1900.0</td><td>1.000</td><td>1900.0</td></tr></table>			Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	0.000	1900.0	1.000	1900.0
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