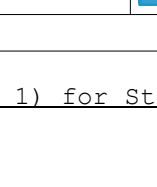


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XP Solutions		Network 2016.1																												
<u>Simulation Criteria for Storm</u> Volumetric Runoff Coeff 0.750 Additional Flow - % of Total Flow 0.000 Areal Reduction Factor 1.000 MADD Factor * 10m³/ha Storage 2.000 Hot Start (mins) 0 Inlet Coefficient 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 <u>Synthetic Rainfall Details</u> <table> <tr> <td>Rainfall Model</td> <td>FEH</td> </tr> <tr> <td>Return Period (years)</td> <td>1</td> </tr> <tr> <td>Site Location</td> <td>439400 302750 SK 39400 02750</td> </tr> <tr> <td>C (1km)</td> <td>-0.029</td> </tr> <tr> <td>D1 (1km)</td> <td>0.362</td> </tr> <tr> <td>D2 (1km)</td> <td>0.338</td> </tr> <tr> <td>D3 (1km)</td> <td>0.281</td> </tr> <tr> <td>E (1km)</td> <td>0.309</td> </tr> <tr> <td>F (1km)</td> <td>2.369</td> </tr> <tr> <td>Summer Storms</td> <td>Yes</td> </tr> <tr> <td>Winter Storms</td> <td>Yes</td> </tr> <tr> <td>Cv (Summer)</td> <td>0.750</td> </tr> <tr> <td>Cv (Winter)</td> <td>0.840</td> </tr> <tr> <td>Storm Duration (mins)</td> <td>30</td> </tr> </table>			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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Online Controls for Storm Hydro-Brake Optimum® Manhole: SA35, DS/PN: S1.014, Volume (m³): 6.0 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 Control Points Head (m) Flow (l/s) Design Point (Calculated)1.02521.2 Flush-Flo™0.34921.1 Kick-Flo®0.73718.1 Mean Flow over Head Range-17.8 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) 0.1007.0 1.20022.8 3.00035.4 7.00053.3 0.20019.4 1.40024.6 3.50038.1 7.50055.2 0.30021.0 1.60026.2 4.00040.7 8.00056.9 0.40021.1 1.80027.7 4.50043.1 8.50058.6 0.50020.7 2.00029.1 5.00045.3 9.00060.3 0.60020.2 2.20030.5 5.50047.5 9.50061.9 0.80018.8 2.40031.8 6.00049.5 1.00020.9 2.60033.1 6.50051.5 ©1982-2016 XP Solutions		

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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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0.000	1900.0	1.000	1900.0							
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

Simulation Criteria

Areal Reduction Factor	1.000	Additional Flow - % of Total Flow	0.000
Hot Start (mins)	0	MADD Factor * 10m³/ha Storage	2.000
Hot Start Level (mm)	0	Inlet Coefficient	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 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	FSR	Ratio R	0.400
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	20.200	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
Return Period(s) (years)	1
Climate Change (%)	0

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	SA1	15 Winter	1	+0%					98.906
S1.001	SA2	15 Winter	1	+0%					98.411
S1.002	SA3	15 Winter	1	+0%					98.175
S2.000	SA4	15 Winter	1	+0%					102.237
S2.001	SA5	15 Winter	1	+0%					101.920
S2.002	SA6	15 Winter	1	+0%					100.874
S2.003	SA7	15 Winter	1	+0%					99.956
S2.004	SA8	15 Winter	1	+0%					99.933
S2.005	SA9	15 Winter	1	+0%					99.795
S2.006	SA10	15 Winter	1	+0%					99.107
S1.003	SA11	15 Winter	1	+0%					97.877
S1.004	SA12	15 Winter	1	+0%					97.709
S3.000	SA13	15 Winter	1	+0%					102.180
S3.001	SA14	15 Winter	1	+0%					101.468
S3.002	SA15	15 Winter	1	+0%					99.110
S3.003	SA16	15 Winter	1	+0%					98.898
S3.004	SA17	15 Winter	1	+0%					97.581
S3.005	SA18	15 Winter	1	+0%					97.446

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
S1.000	SA1	-0.144	0.000	0.27		10.7	OK	
S1.001	SA2	-0.199	0.000	0.24		19.3	OK	
S1.002	SA3	-0.165	0.000	0.41		27.7	OK	
S2.000	SA4	-0.163	0.000	0.17		10.8	OK	
S2.001	SA5	-0.230	0.000	0.12		19.8	OK	
S2.002	SA6	-0.226	0.000	0.14		29.0	OK	
S2.003	SA7	-0.104	0.000	0.73		38.1	OK	
S2.004	SA8	-0.097	0.000	0.79		46.9	OK	
S2.005	SA9	-0.175	0.000	0.36		55.5	OK	
S2.006	SA10	-0.338	0.000	0.14		64.0	OK	
S1.003	SA11	-0.188	0.000	0.64		99.0	OK	
S1.004	SA12	-0.271	0.000	0.33		106.6	OK	
S3.000	SA13	-0.170	0.000	0.13		10.8	OK	
S3.001	SA14	-0.157	0.000	0.20		19.8	OK	
S3.002	SA15	-0.065	0.000	0.84		29.1	OK	
S3.003	SA16	-0.202	0.000	0.23		38.2	OK	
S3.004	SA17	-0.319	0.000	0.19		47.1	OK	
S3.005	SA18	-0.254	0.000	0.39		55.7	OK	

