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York House Edison Park Dorcan Way Swindon SN3 3RB	Parcel KMF, Bicester SW NW3	
Date Nov 2018 File 6008-SW NW3.mdx	Designed by NP Checked by RB	
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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for 6008-SW NW3.SWS

Pipe Sizes STANDARD Manhole Sizes STANDARD










FSR Rainfall Model - England and Wales

Return Period (years)	100	Add Flow / Climate Change (%)	0
M5-60 (mm)	20.000	Minimum Backdrop Height (m)	0.900
Ratio R	0.400	Maximum Backdrop Height (m)	1.500
Maximum Rainfall (mm/hr)	75	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 6008-SW NW3.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)	Section Type	Auto Design
1.000	11.809	0.120	98.4	0.017	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	17.220	0.175	98.4	0.022	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	7.679	0.045	170.0	0.038	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	24.658	0.145	170.1	0.026	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.004	25.889	0.085	304.6	0.067	0.00	0.0	0.600	o	750	Pipe/Conduit	
2.000	5.654	0.035	161.5	0.087	5.00	0.0	0.600	o	225	Pipe/Conduit	
2.001	28.461	0.190	150.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
2.002	31.015	0.105	295.4	0.067	0.00	0.0	0.600	o	750	Pipe/Conduit	
1.005	7.240	0.025	289.6	0.021	0.00	0.0	0.600	o	750	Pipe/Conduit	







Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL (m)	E I.Area (ha)	E Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
1.000	75.00	5.19	71.150	0.017	0.0	0.0	0.0	1.01	17.9	3.5
1.001	75.00	5.48	71.030	0.039	0.0	0.0	0.0	1.01	17.9	7.9
1.002	75.00	5.61	70.780	0.077	0.0	0.0	0.0	1.00	39.8	15.6
1.003	75.00	6.02	70.735	0.103	0.0	0.0	0.0	1.00	39.7	20.9
1.004	75.00	6.29	70.065	0.170	0.0	0.0	0.0	1.60	706.1	34.5
2.000	75.00	5.09	70.835	0.087	0.0	0.0	0.0	1.03	40.8	17.7
2.001	75.00	5.54	70.800	0.087	0.0	0.0	0.0	1.07	42.4	17.7
2.002	75.00	5.86	70.085	0.154	0.0	0.0	0.0	1.62	717.1	31.3
1.005	75.00	6.36	69.980	0.345	0.0	0.0	0.0	1.64	724.2	70.1

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Network Design Table for 6008-SW NW3.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)	Section Type	Auto Design
3.000	4.426	0.044	100.6	0.068	5.00	0.0	0.600	o	150	Pipe/Conduit	
3.001	3.681	0.037	99.5	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.006	43.415	0.145	300.0	0.029	0.00	0.0	0.600	o	750	Pipe/Conduit	
4.000	4.038	0.040	101.0	0.069	5.00	0.0	0.600	o	150	Pipe/Conduit	
4.001	6.095	0.061	100.0	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
1.007	8.029	0.033	240.0	0.008	0.00	0.0	0.600	o	300	Pipe/Conduit	

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	75.00	5.07	71.600	0.068	0.0	0.0	0.0	1.00	17.7	13.8
3.001	75.00	5.13	71.556	0.068	0.0	0.0	0.0	1.01	17.8	13.8
1.006	75.00	6.81	69.955	0.442	0.0	0.0	0.0	1.61	711.5	89.8
4.000	75.00	5.07	71.150	0.069	0.0	0.0	0.0	1.00	17.7	14.0
4.001	75.00	5.17	71.110	0.069	0.0	0.0	0.0	1.00	17.8	14.0
1.007	75.00	6.94	69.810	0.519	0.0	0.0	0.0	1.01	71.4«	105.4

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PIPELINE SCHEDULES for 6008-SW NW3.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	o	150	31	72.417	71.150	1.117	Open Manhole	1200
1.001	o	150	32	72.279	71.030	1.099	Open Manhole	1200
1.002	o	225	33	72.159	70.780	1.154	Open Manhole	1200
1.003	o	225	34	72.190	70.735	1.230	Open Manhole	1200
1.004	o	750	35	72.504	70.065	1.689	Open Manhole	1800
2.000	o	225	40	72.734	70.835	1.674	Open Manhole	1200
2.001	o	225	41	72.701	70.800	1.676	Open Manhole	1200
2.002	o	750	42	72.880	70.085	2.045	Open Manhole	1800
1.005	o	750	36	72.490	69.980	1.760	Open Manhole	1800
3.000	o	150	43	72.300	71.600	0.550	Open Manhole	1200
3.001	o	150	44	72.300	71.556	0.594	Open Manhole	1200
1.006	o	750	37	72.400	69.955	1.695	Open Manhole	1800
4.000	o	150	45	71.850	71.150	0.550	Open Manhole	1200
4.001	o	150	46	71.802	71.110	0.542	Open Manhole	1200

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.000	11.809	98.4	32	72.279	71.030	1.099	Open Manhole	1200
1.001	17.220	98.4	33	72.159	70.855	1.154	Open Manhole	1200
1.002	7.679	170.0	34	72.190	70.735	1.230	Open Manhole	1200
1.003	24.658	170.1	35	72.504	70.590	1.689	Open Manhole	1800
1.004	25.889	304.6	36	72.490	69.980	1.760	Open Manhole	1800
2.000	5.654	161.5	41	72.701	70.800	1.676	Open Manhole	1200
2.001	28.461	150.0	42	72.880	70.610	2.045	Open Manhole	1800
2.002	31.015	295.4	36	72.490	69.980	1.760	Open Manhole	1800
1.005	7.240	289.6	37	72.400	69.955	1.695	Open Manhole	1800
3.000	4.426	100.6	44	72.300	71.556	0.594	Open Manhole	1200
3.001	3.681	99.5	37	72.400	71.519	0.731	Open Manhole	1800
1.006	43.415	300.0	38	71.833	69.810	1.273	Open Manhole	1800
4.000	4.038	101.0	46	71.802	71.110	0.542	Open Manhole	1200
4.001	6.095	100.0	38	71.833	71.049	0.634	Open Manhole	1800

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PIPELINE SCHEDULES for 6008-SW NW3.SWS

Upstream Manhole

PN	Hyd Sect	Diam (mm)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.007	o	300	38	71.833	69.810	1.723	Open Manhole	1800

Downstream Manhole

PN	Length (m)	Slope (1:X)	MH Name	C.Level (m)	I.Level (m)	D.Depth (m)	MH Connection	MH DIAM., L*W (mm)
1.007	8.029	240.0	39	71.650	69.777	1.573	Open Manhole	1350

Free Flowing Outfall Details for 6008-SW NW3.SWS

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.007	39	71.650	69.777	0.000	1350	0


Simulation Criteria for 6008-SW NW3.SWS

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	3
Number of Online Controls	3	Number of Time/Area Diagrams	0
Number of Offline Controls	0	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)	20.000	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for 6008-SW NW3.SWS

Orifice Manhole: 44, DS/PN: 3.001, Volume (m³): 0.9

Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 71.556

Orifice Manhole: 46, DS/PN: 4.001, Volume (m³): 0.8

Diameter (m) 0.025 Discharge Coefficient 0.600 Invert Level (m) 71.110

Complex Manhole: 38, DS/PN: 1.007, Volume (m³): 23.6


Hydro-Brake Optimum®

Unit Reference MD-SHE-0086-3900-1500-3900
Design Head (m) 1.500
Design Flow (l/s) 3.9
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 86
Invert Level (m) 69.810
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.500	3.9
Flush-Flo™	0.377	3.6
Kick-Flo®	0.772	2.9
Mean Flow over Head Range	-	3.2

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	2.6	1.200	3.5	3.000	5.4	7.000	8.0
0.200	3.3	1.400	3.8	3.500	5.8	7.500	8.3
0.300	3.6	1.600	4.0	4.000	6.2	8.000	8.5
0.400	3.6	1.800	4.2	4.500	6.5	8.500	8.8
0.500	3.5	2.000	4.4	5.000	6.8	9.000	9.0
0.600	3.4	2.200	4.7	5.500	7.2	9.500	9.3
0.800	2.9	2.400	4.8	6.000	7.5		
1.000	3.2	2.600	5.0	6.500	7.7		

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Weir

Discharge Coef 0.544 Width (m) 1.500 Invert Level (m) 71.315

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Storage Structures for 6008-SW NW3.SWS

Cellular Storage Manhole: 40, DS/PN: 2.000

Invert Level (m) 70.835 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	30.0	30.0	0.801	0.0	47.5
0.800	30.0	47.5			

Porous Car Park Manhole: 43, DS/PN: 3.000

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 6.3
 Membrane Percolation (mm/hr) 1000 Length (m) 50.0
 Max Percolation (l/s) 87.5 Slope (1:X) 200.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 71.600 Membrane Depth (mm) 0

Porous Car Park Manhole: 45, DS/PN: 4.000

Infiltration Coefficient Base (m/hr) 0.00000 Width (m) 7.1
 Membrane Percolation (mm/hr) 1000 Length (m) 45.0
 Max Percolation (l/s) 88.8 Slope (1:X) 200.0
 Safety Factor 2.0 Depression Storage (mm) 5
 Porosity 0.30 Evaporation (mm/day) 3
 Invert Level (m) 71.150 Membrane Depth (mm) 0

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

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 3
Number of Online Controls 3 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) 20.000 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 10, 30, 100
Climate Change (%) 0, 0, 0, 40


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	31	15 Winter	1	+0%	30/60 Winter				71.188
1.001	32	15 Winter	1	+0%	10/240 Winter				71.086
1.002	33	15 Winter	1	+0%	10/60 Winter				70.867
1.003	34	15 Winter	1	+0%	10/60 Winter				70.825
1.004	35	120 Winter	1	+0%	10/60 Summer				70.433
2.000	40	15 Winter	1	+0%	10/120 Winter				70.919
2.001	41	15 Winter	1	+0%	10/120 Winter				70.872
2.002	42	120 Winter	1	+0%	10/60 Summer				70.433
1.005	36	120 Winter	1	+0%	10/30 Winter				70.433
3.000	43	240 Winter	1	+0%	1/120 Winter				71.756
3.001	44	240 Winter	1	+0%	1/30 Summer				71.755
1.006	37	120 Winter	1	+0%	10/30 Winter				70.433
4.000	45	240 Winter	1	+0%	1/240 Winter				71.301
4.001	46	240 Winter	1	+0%	1/30 Winter				71.300
1.007	38	120 Winter	1	+0%	1/15 Summer				70.433

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1 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
1.000	31	-0.112	0.000	0.15		2.4	OK	
1.001	32	-0.094	0.000	0.30		4.9	OK	
1.002	33	-0.138	0.000	0.31		9.4	OK	
1.003	34	-0.134	0.000	0.34		12.4	OK	
1.004	35	-0.381	0.000	0.01		7.3	OK	
2.000	40	-0.141	0.000	0.29		8.8	OK	
2.001	41	-0.153	0.000	0.22		8.9	OK	
2.002	42	-0.402	0.000	0.01		6.4	OK	
1.005	36	-0.296	0.000	0.02		8.8	OK	
3.000	43	0.006	0.000	0.04		0.6	SURCHARGED	
3.001	44	0.049	0.000	0.05		0.6	SURCHARGED	
1.006	37	-0.271	0.000	0.02		9.3	OK	
4.000	45	0.001	0.000	0.04		0.6	SURCHARGED	
4.001	46	0.040	0.000	0.04		0.5	SURCHARGED	
1.007	38	0.323	0.000	0.07		3.6	SURCHARGED	

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10 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

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 3
Number of Online Controls 3 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) 20.000 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 10, 30, 100
Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	31	15 Winter	10	+0%	30/60 Winter				71.205
1.001	32	240 Winter	10	+0%	10/240 Winter				71.190
1.002	33	240 Winter	10	+0%	10/60 Winter				71.189
1.003	34	240 Winter	10	+0%	10/60 Winter				71.189
1.004	35	240 Winter	10	+0%	10/60 Summer				71.187
2.000	40	240 Winter	10	+0%	10/120 Winter				71.189
2.001	41	240 Winter	10	+0%	10/120 Winter				71.188
2.002	42	240 Winter	10	+0%	10/60 Summer				71.187
1.005	36	240 Winter	10	+0%	10/30 Winter				71.187
3.000	43	240 Winter	10	+0%	1/120 Winter				71.840
3.001	44	240 Winter	10	+0%	1/30 Summer				71.838
1.006	37	240 Winter	10	+0%	10/30 Winter				71.187
4.000	45	240 Winter	10	+0%	1/240 Winter				71.382
4.001	46	240 Winter	10	+0%	1/30 Winter				71.381
1.007	38	240 Winter	10	+0%	1/15 Summer				71.187

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10 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
1.000	31	-0.095	0.000	0.28		4.6	OK	
1.001	32	0.010	0.000	0.12		2.0	SURCHARGED	
1.002	33	0.184	0.000	0.13		3.9	SURCHARGED	
1.003	34	0.229	0.000	0.14		5.2	SURCHARGED	
1.004	35	0.372	0.000	0.02		8.0	SURCHARGED	
2.000	40	0.129	0.000	0.15		4.4	SURCHARGED	
2.001	41	0.163	0.000	0.11		4.4	SURCHARGED	
2.002	42	0.352	0.000	0.01		7.1	SURCHARGED	
1.005	36	0.457	0.000	0.02		7.8	SURCHARGED	
3.000	43	0.090	0.000	0.05		0.7	SURCHARGED	
3.001	44	0.132	0.000	0.06		0.7	SURCHARGED	
1.006	37	0.482	0.000	0.01		8.5	SURCHARGED	
4.000	45	0.082	0.000	0.05		0.7	SURCHARGED	
4.001	46	0.121	0.000	0.04		0.7	SURCHARGED	
1.007	38	1.077	0.000	0.07		3.7	SURCHARGED	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

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 3
Number of Online Controls 3 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) 20.000 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 10, 30, 100
Climate Change (%) 0, 0, 0, 40


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	31	120 Winter	30	+0%	30/60 Winter				71.367
1.001	32	120 Winter	30	+0%	10/240 Winter				71.364
1.002	33	120 Winter	30	+0%	10/60 Winter				71.357
1.003	34	120 Winter	30	+0%	10/60 Winter				71.354
1.004	35	120 Winter	30	+0%	10/60 Summer				71.344
2.000	40	120 Winter	30	+0%	10/120 Winter				71.354
2.001	41	120 Winter	30	+0%	10/120 Winter				71.351
2.002	42	120 Winter	30	+0%	10/60 Summer				71.344
1.005	36	120 Winter	30	+0%	10/30 Winter				71.344
3.000	43	240 Winter	30	+0%	1/120 Winter				71.886
3.001	44	240 Winter	30	+0%	1/30 Summer				71.884
1.006	37	120 Winter	30	+0%	10/30 Winter				71.343
4.000	45	240 Winter	30	+0%	1/240 Winter				71.446
4.001	46	240 Winter	30	+0%	1/30 Winter				71.446
1.007	38	120 Winter	30	+0%	1/15 Summer				71.341

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
for 6008-SW NW3.SWS

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
1.000	31	0.067	0.000	0.11		1.9	SURCHARGED	
1.001	32	0.184	0.000	0.25		4.2	SURCHARGED	
1.002	33	0.352	0.000	0.28		8.4	SURCHARGED	
1.003	34	0.394	0.000	0.31		11.2	SURCHARGED	
1.004	35	0.530	0.000	0.03		16.5	SURCHARGED	
2.000	40	0.294	0.000	0.31		9.3	SURCHARGED	
2.001	41	0.326	0.000	0.24		9.3	SURCHARGED	
2.002	42	0.509	0.000	0.03		14.3	SURCHARGED	
1.005	36	0.614	0.000	0.04		13.4	SURCHARGED	
3.000	43	0.136	0.000	0.06		0.7	SURCHARGED	
3.001	44	0.178	0.000	0.06		0.7	SURCHARGED	
1.006	37	0.638	0.000	0.02		14.0	SURCHARGED	
4.000	45	0.146	0.000	0.06		0.7	SURCHARGED	
4.001	46	0.186	0.000	0.05		0.7	SURCHARGED	
1.007	38	1.231	0.000	0.27		14.5	SURCHARGED	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for 6008-SW NW3.SWS

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 3
Number of Online Controls 3 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) 20.000 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 10, 30, 100
Climate Change (%) 0, 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
1.000	31	30 Winter	100	+40%	30/60 Winter				71.781
1.001	32	30 Winter	100	+40%	10/240 Winter				71.759
1.002	33	30 Winter	100	+40%	10/60 Winter				71.647
1.003	34	30 Winter	100	+40%	10/60 Winter				71.576
1.004	35	15 Winter	100	+40%	10/60 Summer				71.445
2.000	40	60 Winter	100	+40%	10/120 Winter				71.506
2.001	41	60 Winter	100	+40%	10/120 Winter				71.490
2.002	42	60 Winter	100	+40%	10/60 Summer				71.442
1.005	36	15 Winter	100	+40%	10/30 Winter				71.438
3.000	43	240 Winter	100	+40%	1/120 Winter				72.073
3.001	44	240 Winter	100	+40%	1/30 Summer				72.071
1.006	37	60 Winter	100	+40%	10/30 Winter				71.432
4.000	45	360 Winter	100	+40%	1/240 Winter				71.641
4.001	46	360 Winter	100	+40%	1/30 Winter				71.640
1.007	38	60 Winter	100	+40%	1/15 Summer				71.419

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for 6008-SW NW3.SWS

PN	US/MH Name	Surcharged		Flooded		Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m ³)	Flow / Cap.	Overflow (l/s)			
1.000	31	0.481	0.000	0.43		7.0	SURCHARGED	
1.001	32	0.579	0.000	0.94		15.7	SURCHARGED	
1.002	33	0.642	0.000	1.10		33.1	SURCHARGED	
1.003	34	0.616	0.000	1.20		43.9	SURCHARGED	
1.004	35	0.630	0.000	0.17		88.0	SURCHARGED	
2.000	40	0.446	0.000	0.71		21.1	SURCHARGED	
2.001	41	0.465	0.000	0.51		20.1	SURCHARGED	
2.002	42	0.606	0.000	0.06		32.7	SURCHARGED	
1.005	36	0.709	0.000	0.17		62.7	SURCHARGED	
3.000	43	0.323	0.000	0.07		0.9	FLOOD RISK	
3.001	44	0.365	0.000	0.08		0.9	FLOOD RISK	
1.006	37	0.727	0.000	0.15		87.3	SURCHARGED	
4.000	45	0.341	0.000	0.07		0.9	FLOOD RISK	
4.001	46	0.380	0.000	0.06		0.9	FLOOD RISK	
1.007	38	1.309	0.000	1.68		89.5	SURCHARGED	