


JNP Group		Page 1
Link House, St Mary's Way Chesham, Buckinghamshire HP5 1HR	C86354-JNP-XX-XX-CA-C-1004 P01 Western Parcel Green Lane, Chesterton	
Date 10/11/2022 File C86354-JNP-XX-XX-CA-	Designed by AS Checked by MAH	

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STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD






FEH Rainfall Model

Return Period (years)	100
FEH Rainfall Version	2013
Site Location GB 455736 220987 SP 55736 20987	
Data Type	Point
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	1.000
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits


Network Design Table for Storm

« - Indicates pipe capacity < flow

PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	5.000	0.050	100.0	0.309	5.00	0.0	0.600		ooo	225	Triple Pipe	
1.001	18.600	0.460	40.4	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
2.000	5.000	0.050	100.0	0.281	5.00	0.0	0.600		ooo	225	Triple Pipe	
2.001	46.000	0.460	100.0	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
1.002	43.700	0.220	198.6	0.189	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)
1.000	50.00	5.06	73.250	0.309	0.0	0.0	0.0	1.31	156.0	55.8
1.001	50.00	5.26	73.200	0.309	0.0	0.0	0.0	1.59	28.1«	55.8
2.000	50.00	5.06	73.250	0.281	0.0	0.0	0.0	1.31	156.0	50.7
2.001	50.00	5.83	73.200	0.281	0.0	0.0	0.0	1.00	17.8«	50.7
1.002	50.00	6.48	72.590	0.779	0.0	0.0	0.0	1.11	78.6«	140.6

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Network Design Table for Storm


PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	Base Flow (l/s)	k (mm)	n	HYD SECT	DIA (mm)	Section Type	Auto Design
1.003	51.700	0.250	206.8	0.078	0.00	0.0	0.600		o	375	Pipe/Conduit	
3.000	5.000	0.050	100.0	0.295	5.00	0.0	0.600		ooo	225	Triple Pipe	
3.001	13.400	0.230	58.3	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
4.000	5.000	0.050	100.0	0.321	5.00	0.0	0.600		ooo	300	Triple Pipe	
4.001	35.300	0.480	73.5	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
1.004	18.400	0.040	460.0	0.238	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.005	100.000	0.175	571.4	0.080	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.006	6.000	0.080	75.0	0.561	0.00	0.0	0.600		o	600	Pipe/Conduit	
1.007	40.000	0.125	320.0	0.000	0.00	0.0		0.045	3 \=/	150	1:3 Swale	
5.000	10.000	0.100	100.0	0.733	5.00	0.0		0.045	ooo	525	Triple Pipe	
5.001	35.100	0.400	87.8	0.000	0.00	0.0	0.600		o	150	Pipe/Conduit	
1.008	80.000	0.420	190.5	0.000	0.00	0.0		0.045	3 \=/	150	1:3 Swale	

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)
1.003	50.00	7.17	72.295	0.857	0.0	0.0	0.0	1.26	138.7<	154.7
3.000	50.00	5.06	72.550	0.295	0.0	0.0	0.0	1.31	156.0	53.3
3.001	50.00	5.23	72.500	0.295	0.0	0.0	0.0	1.32	23.3<	53.3
4.000	50.00	5.05	72.800	0.321	0.0	0.0	0.0	1.57	333.4	58.0
4.001	50.00	5.55	72.750	0.321	0.0	0.0	0.0	1.17	20.7<	58.0
1.004	50.00	7.44	71.820	1.711	0.0	0.0	0.0	1.13	319.2	308.9
1.005	50.00	9.09	71.780	1.791	0.0	0.0	0.0	1.01	286.0<	323.4
1.006	50.00	9.12	71.605	2.352	0.0	0.0	0.0	2.81	795.7	424.7
1.007	50.00	10.48	71.525	2.352	0.0	0.0	0.0	0.49	405.7<	424.7
5.000	50.00	5.29	71.900	0.733	0.0	0.0	0.0	0.57	372.7	132.3
5.001	50.00	5.84	71.800	0.733	0.0	0.0	0.0	1.07	19.0<	132.3
1.008	50.00	12.57	71.400	3.085	0.0	0.0	0.0	0.64	525.9<	557.0

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.008		71.500	70.980	70.980	0	0

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Simulation Criteria for Storm

Volumetric Runoff Coeff	1.000	Additional Flow - % of Total Flow	0.000
Areal Reduction Factor	1.000	MADD Factor * 10m <sup>3</sup> /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	6
Number of Online Controls	6	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)	100
FEH Rainfall Version	2013
Site Location	GB 455736 220987 SP 55736 20987
Data Type	Point
Summer Storms	Yes
Winter Storms	No
Cv (Summer)	1.000
Cv (Winter)	0.840
Storm Duration (mins)	30

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Online Controls for Storm

Orifice Manhole: 2, DS/PN: 1.001, Volume (m³): 2.2

Diameter (m) 0.024 Discharge Coefficient 0.600 Invert Level (m) 73.200

Orifice Manhole: 4, DS/PN: 2.001, Volume (m³): 2.2

Diameter (m) 0.029 Discharge Coefficient 0.600 Invert Level (m) 73.200

Orifice Manhole: 8, DS/PN: 3.001, Volume (m³): 1.8

Diameter (m) 0.037 Discharge Coefficient 0.600 Invert Level (m) 72.500

Orifice Manhole: 10, DS/PN: 4.001, Volume (m³): 2.7

Diameter (m) 0.037 Discharge Coefficient 0.600 Invert Level (m) 72.750


Hydro-Brake® Optimum Manhole: 15, DS/PN: 1.007, Volume (m³): 143.4

Unit Reference	MD-SHE-0101-5100-1375-5100
Design Head (m)	1.375
Design Flow (l/s)	5.1
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	101
Invert Level (m)	71.525
Minimum Outlet Pipe Diameter (mm)	150
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.375	5.1	Kick-Flo®	0.840	4.1
Flush-Flo™	0.406	5.1	Mean Flow over Head Range	-	4.5

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	3.4	0.800	4.3	2.000	6.1	4.000	8.4
0.200	4.7	1.000	4.4	2.200	6.3	4.500	8.9
0.300	5.0	1.200	4.8	2.400	6.6	5.000	9.3
0.400	5.1	1.400	5.1	2.600	6.9	5.500	9.8
0.500	5.1	1.600	5.5	3.000	7.3	6.000	10.2
0.600	4.9	1.800	5.8	3.500	7.9	6.500	10.6

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Hydro-Brake® Optimum Manhole: 15, DS/PN: 1.007, Volume (m<sup>3</sup>): 143.4

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
7.000	11.0	8.000	11.7	9.000	12.4		
7.500	11.3	8.500	12.0	9.500	12.7		


Hydro-Brake® Optimum Manhole: 16, DS/PN: 5.001, Volume (m<sup>3</sup>): 9.0

Unit Reference	MD-SHE-0055-1100-0550-1100
Design Head (m)	0.550
Design Flow (l/s)	1.1
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	55
Invert Level (m)	71.800
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	0.550	1.1	Kick-Flo®	0.360	0.9
Flush-Flo™	0.166	1.1	Mean Flow over Head Range	-	1.0

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	1.1	1.200	1.6	3.000	2.4	7.000	3.5
0.200	1.1	1.400	1.7	3.500	2.5	7.500	3.7
0.300	1.0	1.600	1.8	4.000	2.7	8.000	3.8
0.400	1.0	1.800	1.9	4.500	2.9	8.500	3.9
0.500	1.1	2.000	2.0	5.000	3.0	9.000	4.0
0.600	1.1	2.200	2.1	5.500	3.1	9.500	4.1
0.800	1.3	2.400	2.1	6.000	3.3		
1.000	1.4	2.600	2.2	6.500	3.4		

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Storage Structures for Storm

Tank or Pond Manhole: 2, DS/PN: 1.001

Invert Level (m) 73.200

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.150	50.0	0.151	462.0	0.700	758.0

Tank or Pond Manhole: 4, DS/PN: 2.001

Invert Level (m) 73.200

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.100	50.0	0.101	426.0	0.700	654.0

Tank or Pond Manhole: 8, DS/PN: 3.001

Invert Level (m) 72.500

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.200	50.0	0.201	634.0	0.500	972.0

Tank or Pond Manhole: 10, DS/PN: 4.001

Invert Level (m) 72.750

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.150	50.0	0.151	634.0	0.500	972.0

Tank or Pond Manhole: 15, DS/PN: 1.007


Invert Level (m) 72.000

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.150	50.0	0.151	1431.0	1.050	2008.0

Tank or Pond Manhole: 16, DS/PN: 5.001

Invert Level (m) 71.800

Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )
0.000	0.0	0.200	50.0	0.201	2062.0	0.550	2446.0

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2 year Return Period 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 \* 10m<sup>3</sup>/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 6  
Number of Online Controls 6 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FEH  
FEH Rainfall Version 2013  
Site Location GB 455736 220987 SP 55736 20987  
Data Type Point  
Cv (Summer) 1.000  
Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF  
Analysis Timestep Fine Inertia Status OFF  
DTS 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) 2, 30, 100  
Climate Change (%) 0, 0, 40


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	1	600 Winter	2	+0%	2/240 Summer			
1.001	2	600 Winter	2	+0%	2/15 Summer			
2.000	3	480 Winter	2	+0%	30/15 Summer			
2.001	4	480 Winter	2	+0%	2/15 Summer			
1.002	5	15 Summer	2	+0%	30/15 Summer	100/15 Summer		
1.003	6	15 Summer	2	+0%	30/15 Summer			
3.000	7	360 Winter	2	+0%	30/15 Summer			
3.001	8	360 Winter	2	+0%	2/15 Summer			
4.000	9	360 Winter	2	+0%	100/15 Summer			
4.001	10	360 Winter	2	+0%	2/15 Summer			
1.004	11	960 Winter	2	+0%	30/15 Summer	100/10080 Summer		
1.005	12	960 Winter	2	+0%	30/15 Summer			
1.006	14	960 Winter	2	+0%	2/120 Summer			
1.007	15	960 Winter	2	+0%				
5.000	15	15 Summer	2	+0%	100/15 Summer			

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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1)  
for Storm

PN	US/MH Name	Water	Surcharged	Flooded	Half Drain Pipe		Flow (1/s)	Status	Level Exceeded
		Level (m)	Depth (m)	Volume (m <sup>3</sup> )	Flow / Cap.	Overflow (1/s)			
1.000	1	73.494	0.019	0.000	0.07		6.6	SURCHARGED	
1.001	2	73.494	0.144	0.000	0.02		0.6	SURCHARGED	
2.000	3	73.435	-0.040	0.000	0.08		7.1	OK	
2.001	4	73.435	0.085	0.000	0.05		0.8	SURCHARGED	
1.002	5	72.734	-0.156	0.000	0.45		33.2	OK	1
1.003	6	72.451	-0.219	0.000	0.36		45.9	OK	
3.000	7	72.774	-0.001	0.000	0.10		9.3	OK	
3.001	8	72.773	0.123	0.000	0.07		1.4	SURCHARGED	
4.000	9	72.988	-0.112	0.000	0.06		10.1	OK	
4.001	10	72.988	0.088	0.000	0.07		1.3	SURCHARGED	
1.004	11	72.306	-0.114	0.000	0.05		11.1	OK	
1.005	12	72.303	-0.077	0.000	0.05		12.2	OK	
1.006	14	72.303	0.098	0.000	0.06		19.9	SURCHARGED	
1.007	15	72.303	-1.047	0.000	0.00		5.1	OK	
5.000	15	72.139	-0.286	0.000	0.42		149.3	OK	




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2 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
5.001	16	720	Winter	2	+0%	2/15	Summer		72.086
1.008	18	4320	Winter	2	+0%				71.474

PN	US/MH Name	Surcharged		Flooded		Half Drain Pipe		Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Time (mins)	Flow (l/s)		
5.001	16	0.136	0.000	0.06			1.1	SURCHARGED	
1.008	18	-0.426	0.000	0.01			6.2	OK	

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30 year Return Period 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 \* 10m<sup>3</sup>/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 6  
Number of Online Controls 6      Number of Time/Area Diagrams 0  
Number of Offline Controls 0      Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FEH  
FEH Rainfall Version 2013  
Site Location GB 455736 220987 SP 55736 20987  
Data Type Point  
Cv (Summer) 1.000  
Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0      DVD Status OFF  
Analysis Timestep Fine Inertia Status OFF  
DTS 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) 2, 30, 100  
Climate Change (%) 0, 0, 40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	1	720 Winter	30	+0%	2/240 Summer			
1.001	2	720 Winter	30	+0%	2/15 Summer			
2.000	3	600 Winter	30	+0%	30/15 Summer			
2.001	4	600 Winter	30	+0%	2/15 Summer			
1.002	5	15 Summer	30	+0%	30/15 Summer	100/15 Summer		
1.003	6	15 Summer	30	+0%	30/15 Summer			
3.000	7	360 Winter	30	+0%	30/15 Summer			
3.001	8	360 Winter	30	+0%	2/15 Summer			
4.000	9	360 Winter	30	+0%	100/15 Summer			
4.001	10	360 Winter	30	+0%	2/15 Summer			
1.004	11	1440 Winter	30	+0%	30/15 Summer	100/10080 Summer		
1.005	12	1440 Winter	30	+0%	30/15 Summer			
1.006	14	960 Winter	30	+0%	2/120 Summer			
1.007	15	960 Winter	30	+0%				
5.000	15	15 Summer	30	+0%	100/15 Summer			

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water		Surcharged		Flooded		Half Drain Pipe		Status	Level Exceeded
		Level (m)	Depth (m)	Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Pipe Flow (l/s)				
1.000	1	73.633	0.158	0.000	0.11			10.5	SURCHARGED		
1.001	2	73.632	0.282	0.000	0.03			0.8	SURCHARGED		
2.000	3	73.572	0.097	0.000	0.12			11.1	SURCHARGED		
2.001	4	73.572	0.222	0.000	0.06			1.0	SURCHARGED		
1.002	5	73.071	0.181	0.000	1.31			96.6	SURCHARGED		1
1.003	6	72.673	0.003	0.000	0.94			121.6	SURCHARGED		
3.000	7	72.865	0.090	0.000	0.19			17.9	SURCHARGED		
3.001	8	72.865	0.215	0.000	0.08			1.7	SURCHARGED		
4.000	9	73.088	-0.012	0.000	0.11			19.5	OK		
4.001	10	73.088	0.188	0.000	0.08			1.6	SURCHARGED		
1.004	11	72.528	0.108	0.000	0.06			13.6	SURCHARGED		
1.005	12	72.529	0.149	0.000	0.06			15.0	SURCHARGED		
1.006	14	72.523	0.318	0.000	0.10			34.1	SURCHARGED		
1.007	15	72.523	-0.827	0.000	0.00			5.1	OK		
5.000	15	72.328	-0.097	0.000	0.97			346.3	OK		


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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
5.001	16	960 Winter	30	+0%	2/15 Summer				72.177
1.008	18	1440 Summer	30	+0%					71.474

PN	US/MH Name	Surcharged		Flooded		Half Drain Pipe		Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap. (l/s)	Overflow (l/s)	Time (mins)	Flow (l/s)		
5.001	16	0.227	0.000	0.06			1.1	SURCHARGED	
1.008	18	-0.426	0.000	0.01			6.2	OK	

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100 year Return Period 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 \* 10m<sup>3</sup>/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 6  
Number of Online Controls 6 Number of Time/Area Diagrams 0  
Number of Offline Controls 0 Number of Real Time Controls 0


Synthetic Rainfall Details

Rainfall Model FEH  
FEH Rainfall Version 2013  
Site Location GB 455736 220987 SP 55736 20987  
Data Type Point  
Cv (Summer) 1.000  
Cv (Winter) 1.000

Margin for Flood Risk Warning (mm) 300.0 DVD Status OFF  
Analysis Timestep Fine Inertia Status OFF  
DTS 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) 2, 30, 100  
Climate Change (%) 0, 0, 40


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	1	15 Summer	100	+40%	2/240 Summer			
1.001	2	960 Winter	100	+40%	2/15 Summer			
2.000	3	720 Winter	100	+40%	30/15 Summer			
2.001	4	720 Winter	100	+40%	2/15 Summer			
1.002	5	15 Summer	100	+40%	30/15 Summer	100/15 Summer		
1.003	6	15 Summer	100	+40%	30/15 Summer			
3.000	7	15 Summer	100	+40%	30/15 Summer			
3.001	8	600 Winter	100	+40%	2/15 Summer			
4.000	9	600 Winter	100	+40%	100/15 Summer			
4.001	10	600 Winter	100	+40%	2/15 Summer			
1.004	11	15 Summer	100	+40%	30/15 Summer	100/10080 Summer		
1.005	12	15 Summer	100	+40%	30/15 Summer			
1.006	14	2880 Winter	100	+40%	2/120 Summer			
1.007	15	2880 Winter	100	+40%				
5.000	15	15 Summer	100	+40%	100/15 Summer			

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Surcharged		Flooded		Half Drain Pipe		Status	Level Exceeded
		Level (m)	Depth (m)	Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)		
1.000	1	73.847	0.372	0.000	2.72		257.4	SURCHARGED	
1.001	2	73.837	0.487	0.000	0.04		1.0	SURCHARGED	
2.000	3	73.780	0.305	0.000	0.18		16.9	SURCHARGED	
2.001	4	73.779	0.429	0.000	0.08		1.3	SURCHARGED	
1.002	5	74.503	1.613	2.566	1.82		133.8	FLOOD	1
1.003	6	73.858	1.188	0.000	1.45		187.0	FLOOD RISK	
3.000	7	73.126	0.351	0.000	2.61		246.4	FLOOD RISK	
3.001	8	73.003	0.353	0.000	0.08		1.7	FLOOD RISK	
4.000	9	73.235	0.135	0.000	0.12		22.6	SURCHARGED	
4.001	10	73.235	0.335	0.000	0.10		2.0	SURCHARGED	
1.004	11	73.327	0.907	0.000	1.74		367.8	FLOOD RISK	
1.005	12	73.194	0.814	0.000	1.38		368.4	FLOOD RISK	
1.006	14	72.849	0.644	0.000	0.07		25.2	SURCHARGED	
1.007	15	72.849	-0.501	0.000	0.00		5.1	OK	
5.000	15	72.613	0.188	0.000	1.74		622.5	FLOOD RISK	

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100 year Return Period Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
5.001	16	1440	Winter	100	+40%	2/15	Summer		72.325
1.008	18	2880	Winter	100	+40%				71.474

PN	US/MH Name	Surcharged		Flooded		Half Drain Pipe		Status	Level Exceeded
		Depth (m)	Volume (m³)	Flow / Cap.	Overflow (l/s)	Time (mins)	Flow (l/s)		
5.001	16	0.375	0.000	0.06			1.1	SURCHARGED	
1.008	18	-0.426	0.000	0.01			6.2	OK	