Diamond Wood & Shaw Limited
The Old School · Blaby Road · Enderby · Leicester · LE19 4AR
Tel: 0116 284 8989 · Email: mail@dwsltd.co.uk

Detailed Drainage Calculations

Client:	Central Coop
Architect:	Corporate Architecture Ltd
Project:	The Bluebell, Desford
Project No:	23-20333
Document No:	0-010
Issue:	1
Status:	P2
Date:	13.06.2025
Engineer:	PG

Issue Status:
A=Approval
B=Building Regulations
C=Construction
D=Draft
P=Preliminary
R=Review
T=Tender
Z=Final Construction

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	2	PIMP (%)	100
M5-60 (mm)	20.400	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	1.200
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	1.00
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.112	4-8	0.034

Total Area Contributing (ha) = 0.146

Total Pipe Volume (m³) = 4.388

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)	HYD SECT	DIA (mm)	Section Type	Auto Design
1.000	20.993	0.235	89.3	0.011	5.00	0.0	0.600	o	150	Pipe/Conduit	
2.000	13.586	0.200	67.9	0.009	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.001	10.016	0.360	27.8	0.000	0.00	0.0	0.600	o	150	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	5.33	129.685	0.011	0.0	0.0	0.0	1.06	18.8	1.5
2.000	50.00	5.19	129.650	0.009	0.0	0.0	0.0	1.22	21.6	1.2
1.001	50.00	5.42	129.450	0.020	0.0	0.0	0.0	1.92	33.9	2.7

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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)	HYD SECT	DIA (mm)	Section Type	Auto Design
3.000	21.275	0.410	51.9	0.014	5.00	0.0	0.600	o	150	Pipe/Conduit	
4.000	11.902	0.360	33.1	0.010	5.00	0.0	0.600	o	150	Pipe/Conduit	
1.002	26.947	0.120	224.6	0.036	0.00	0.0	0.600	o	225	Pipe/Conduit	
5.000	18.415	0.285	64.6	0.015	5.00	0.0	0.600	o	150	Pipe/Conduit	
5.001	23.220	0.100	232.2	0.019	0.00	0.0	0.600	o	225	Pipe/Conduit	
6.000	15.614	0.280	55.8	0.012	5.00	0.0	0.600	o	150	Pipe/Conduit	
6.001	1.086	0.105	10.3	0.005	0.00	0.0	0.600	o	150	Pipe/Conduit	
5.002	9.532	0.045	211.8	0.007	0.00	0.0	0.600	o	225	Pipe/Conduit	
1.003	1.078	0.005	215.6	0.008	0.00	0.0	0.600	o	150	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	50.00	5.25	129.500	0.014	0.0	0.0	0.0	1.40	24.7	1.9
4.000	50.00	5.11	129.450	0.010	0.0	0.0	0.0	1.76	31.0	1.4
1.002	50.00	5.93	129.015	0.080	0.0	0.0	0.0	0.87	34.5	10.8
5.000	50.00	5.24	129.400	0.015	0.0	0.0	0.0	1.25	22.1	2.0
5.001	50.00	5.70	129.040	0.034	0.0	0.0	0.0	0.85	33.9	4.6
6.000	50.00	5.19	129.450	0.012	0.0	0.0	0.0	1.35	23.9	1.6
6.001	50.00	5.20	129.170	0.017	0.0	0.0	0.0	3.15	55.7	2.3
5.002	50.00	5.88	128.940	0.058	0.0	0.0	0.0	0.89	35.6	7.9
1.003	50.00	5.96	128.895	0.146	0.0	0.0	0.0	0.68	12.0«	19.8

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Manhole Schedules for Storm

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)
S1	130.685	1.000	Open Manhole	480	1.000	129.685	150				
S3	130.850	1.200	Open Manhole	480	2.000	129.650	150				
S2	130.650	1.200	Open Manhole	480	1.001	129.450	150	1.000	129.450	150	
								2.000	129.450	150	
S6	130.400	0.900	Open Manhole	480	3.000	129.500	150				
S4	130.650	1.200	Open Manhole	480	4.000	129.450	150				
S5	130.400	1.385	Open Manhole	600	1.002	129.015	225	1.001	129.090	150	
								3.000	129.090	150	
								4.000	129.090	150	
S7	130.300	0.900	Open Manhole	480	5.000	129.400	150				
S8	130.300	1.260	Open Manhole	480	5.001	129.040	225	5.000	129.115	150	
S9	130.050	0.600	Open Manhole	480	6.000	129.450	150				
S10	129.950	0.780	Open Manhole	480	6.001	129.170	150	6.000	129.170	150	
S11	129.950	1.010	Open Manhole	480	5.002	128.940	225	5.001	128.940	225	
								6.001	129.065	150	50
S12	129.700	0.805	Open Manhole	600	1.003	128.895	150	1.002	128.895	225	
								5.002	128.895	225	
	129.600	0.710	Open Manhole	0		OUTFALL		1.003	128.890	150	

No coordinates have been specified, layout information cannot be produced.

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PIPELINE SCHEDULES for Storm

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	S1	130.685	129.685	0.850	Open Manhole	480
2.000	o	150	S3	130.850	129.650	1.050	Open Manhole	480
1.001	o	150	S2	130.650	129.450	1.050	Open Manhole	480
3.000	o	150	S6	130.400	129.500	0.750	Open Manhole	480
4.000	o	150	S4	130.650	129.450	1.050	Open Manhole	480
1.002	o	225	S5	130.400	129.015	1.160	Open Manhole	600
5.000	o	150	S7	130.300	129.400	0.750	Open Manhole	480
5.001	o	225	S8	130.300	129.040	1.035	Open Manhole	480
6.000	o	150	S9	130.050	129.450	0.450	Open Manhole	480
6.001	o	150	S10	129.950	129.170	0.630	Open Manhole	480
5.002	o	225	S11	129.950	128.940	0.785	Open Manhole	480
1.003	o	150	S12	129.700	128.895	0.655	Open Manhole	600

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	20.993	89.3	S2	130.650	129.450	1.050	Open Manhole	480
2.000	13.586	67.9	S2	130.650	129.450	1.050	Open Manhole	480
1.001	10.016	27.8	S5	130.400	129.090	1.160	Open Manhole	600
3.000	21.275	51.9	S5	130.400	129.090	1.160	Open Manhole	600
4.000	11.902	33.1	S5	130.400	129.090	1.160	Open Manhole	600
1.002	26.947	224.6	S12	129.700	128.895	0.580	Open Manhole	600
5.000	18.415	64.6	S8	130.300	129.115	1.035	Open Manhole	480
5.001	23.220	232.2	S11	129.950	128.940	0.785	Open Manhole	480
6.000	15.614	55.8	S10	129.950	129.170	0.630	Open Manhole	480
6.001	1.086	10.3	S11	129.950	129.065	0.735	Open Manhole	480
5.002	9.532	211.8	S12	129.700	128.895	0.580	Open Manhole	600
1.003	1.078	215.6		129.600	128.890	0.560	Open Manhole	0

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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)
1.003		129.600	128.890	0.000	0	0

Simulation Criteria for Storm

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 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	6
Number of Online Controls	2	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)	2	Cv (Summer)	0.750
Region	England and Wales	Cv (Winter)	0.840
M5-60 (mm)	20.400	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for Storm

Orifice Manhole: S5, DS/PN: 1.002, Volume (m³): 1.1

Diameter (m) 0.011 Discharge Coefficient 0.600 Invert Level (m) 129.015

Orifice Manhole: S12, DS/PN: 1.003, Volume (m³): 1.6

Diameter (m) 0.034 Discharge Coefficient 0.600 Invert Level (m) 128.895

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Storage Structures for Storm

Porous Car Park Manhole: S1, DS/PN: 1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.5
Membrane Percolation (mm/hr)	1000	Length (m)	20.0
Max Percolation (l/s)	30.6	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	130.180	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S3, DS/PN: 2.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	8.2
Membrane Percolation (mm/hr)	1000	Length (m)	10.0
Max Percolation (l/s)	22.8	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	130.150	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S6, DS/PN: 3.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.0
Membrane Percolation (mm/hr)	1000	Length (m)	14.0
Max Percolation (l/s)	19.4	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	129.770	Cap Volume Depth (m)	0.400

Porous Car Park Manhole: S4, DS/PN: 4.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.5
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	22.9	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	129.885	Cap Volume Depth (m)	0.400

Complex Manhole: S5, DS/PN: 1.002

Cellular Storage

Invert Level (m)	129.015	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	90.0	90.0	0.601	0.0	115.2
0.600	90.0	115.2			

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Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0
Membrane Percolation (mm/hr)	1000	Length (m)	11.0
Max Percolation (l/s)	30.6	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	129.560	Cap Volume Depth (m)	0.400

Complex Manhole: S8, DS/PN: 5.001

Cellular Storage

Invert Level (m)	129.040	Safety Factor	2.0
Infiltration Coefficient Base (m/hr)	0.00000	Porosity	0.95
Infiltration Coefficient Side (m/hr)	0.00000		

Depth (m)	Area (m²)	Inf. Area (m²)	Depth (m)	Area (m²)	Inf. Area (m²)
0.000	42.0	42.0	0.601	0.0	60.6
0.600	42.0	60.6			

Porous Car Park

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	5.5
Membrane Percolation (mm/hr)	1000	Length (m)	15.0
Max Percolation (l/s)	22.9	Slope (1:X)	80.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	129.655	Cap Volume Depth (m)	0.400

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1 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 * 10m³/ha Storage 2.000
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 Storage Structures 6
Number of Online Controls 2 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) 20.400 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 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	S1	15 Winter	1	+0%	100/960 Winter			
2.000	S3	15 Summer	1	+0%	100/480 Winter			
1.001	S2	30 Winter	1	+0%	100/240 Winter			
3.000	S6	15 Winter	1	+0%	100/360 Winter			
4.000	S4	15 Winter	1	+0%	100/240 Winter			
1.002	S5	1440 Winter	1	+0%	30/120 Summer			
5.000	S7	15 Winter	1	+0%	100/60 Winter			
5.001	S8	240 Winter	1	+0%	30/30 Winter			
6.000	S9	15 Winter	1	+0%	100/60 Winter			
6.001	S10	15 Winter	1	+0%	30/120 Winter			
5.002	S11	240 Winter	1	+0%	30/15 Summer			
1.003	S12	240 Winter	1	+0%	1/15 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	129.711	-0.124	0.000	0.05		5	0.9	OK

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
2.000	S3	129.674	-0.126	0.000	0.03		3	0.7	OK
1.001	S2	129.476	-0.124	0.000	0.07			2.0	OK
3.000	S6	129.531	-0.119	0.000	0.09		6	2.0	OK
4.000	S4	129.472	-0.128	0.000	0.04		5	1.2	OK
1.002	S5	129.208	-0.032	0.000	0.00			0.1	OK
5.000	S7	129.432	-0.118	0.000	0.10			2.1	OK
5.001	S8	129.136	-0.129	0.000	0.01		116	0.4	OK
6.000	S9	129.478	-0.122	0.000	0.08			1.7	OK
6.001	S10	129.204	-0.116	0.000	0.11			2.3	OK
5.002	S11	129.135	-0.030	0.000	0.02			0.6	OK
1.003	S12	129.134	0.089	0.000	0.07			0.7	SURCHARGED

PN	US/MH Name	Level Exceeded
1.000	S1	
2.000	S3	
1.001	S2	
3.000	S6	
4.000	S4	
1.002	S5	
5.000	S7	
5.001	S8	
6.000	S9	
6.001	S10	
5.002	S11	
1.003	S12	

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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 * 10m³/ha Storage 2.000
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 Storage Structures 6
Number of Online Controls 2 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) 20.400 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 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	S1	15 Winter	30	+0%	100/960 Winter			
2.000	S3	15 Winter	30	+0%	100/480 Winter			
1.001	S2	15 Winter	30	+0%	100/240 Winter			
3.000	S6	15 Winter	30	+0%	100/360 Winter			
4.000	S4	15 Winter	30	+0%	100/240 Winter			
1.002	S5	1440 Winter	30	+0%	30/120 Summer			
5.000	S7	15 Winter	30	+0%	100/60 Winter			
5.001	S8	120 Winter	30	+0%	30/30 Winter			
6.000	S9	15 Winter	30	+0%	100/60 Winter			
6.001	S10	120 Winter	30	+0%	30/120 Winter			
5.002	S11	120 Winter	30	+0%	30/15 Summer			
1.003	S12	120 Winter	30	+0%	1/15 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	129.732	-0.103	0.000	0.21		6	3.8	OK

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
2.000	S3	129.691	-0.109	0.000	0.16		8	3.1	OK
1.001	S2	129.499	-0.101	0.000	0.23			6.8	OK
3.000	S6	129.547	-0.103	0.000	0.21		6	4.9	OK
4.000	S4	129.485	-0.115	0.000	0.12		6	3.5	OK
1.002	S5	129.435	0.195	0.000	0.00			0.1	SURCHARGED
5.000	S7	129.451	-0.099	0.000	0.25			5.2	OK
5.001	S8	129.333	0.068	0.000	0.04		117	1.2	SURCHARGED
6.000	S9	129.494	-0.106	0.000	0.19			4.2	OK
6.001	S10	129.332	0.012	0.000	0.09			1.8	SURCHARGED
5.002	S11	129.332	0.167	0.000	0.04			1.3	SURCHARGED
1.003	S12	129.330	0.285	0.000	0.12			1.3	SURCHARGED

PN	US/MH Name	Level Exceeded
1.000	S1	
2.000	S3	
1.001	S2	
3.000	S6	
4.000	S4	
1.002	S5	
5.000	S7	
5.001	S8	
6.000	S9	
6.001	S10	
5.002	S11	
1.003	S12	

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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 * 10m³/ha Storage 2.000
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 Storage Structures 6
Number of Online Controls 2 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) 20.400 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, 240, 360, 480, 960, 1440
Return Period(s) (years) 1, 30, 100
Climate Change (%) 0, 0, 40

WARNING: Half Drain Time has not been calculated as the structure is too full.

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	S1	1440 Winter	100	+40%	100/960 Winter			
2.000	S3	1440 Winter	100	+40%	100/480 Winter			
1.001	S2	1440 Winter	100	+40%	100/240 Winter			
3.000	S6	1440 Winter	100	+40%	100/360 Winter			
4.000	S4	1440 Winter	100	+40%	100/240 Winter			
1.002	S5	1440 Winter	100	+40%	30/120 Summer			
5.000	S7	120 Winter	100	+40%	100/60 Winter			
5.001	S8	120 Winter	100	+40%	30/30 Winter			
6.000	S9	120 Winter	100	+40%	100/60 Winter			
6.001	S10	120 Winter	100	+40%	30/120 Winter			
5.002	S11	240 Winter	100	+40%	30/15 Summer			
1.003	S12	120 Winter	100	+40%	1/15 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 Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
1.000	S1	129.972	0.137	0.000	0.02		595	0.3	SURCHARGED
2.000	S3	129.972	0.172	0.000	0.01		653	0.3	SURCHARGED
1.001	S2	129.972	0.372	0.000	0.02			0.6	SURCHARGED
3.000	S6	129.972	0.322	0.000	0.02		306	0.4	SURCHARGED
4.000	S4	129.972	0.372	0.000	0.01		169	0.3	SURCHARGED
1.002	S5	129.972	0.732	0.000	0.01			0.2	SURCHARGED
5.000	S7	129.707	0.157	0.000	0.15			3.1	SURCHARGED
5.001	S8	129.703	0.438	0.000	0.13			4.0	SURCHARGED
6.000	S9	129.702	0.102	0.000	0.11			2.4	SURCHARGED
6.001	S10	129.700	0.380	0.000	0.15			3.1	FLOOD RISK
5.002	S11	129.699	0.534	0.000	0.13			3.7	FLOOD RISK
1.003	S12	129.696	0.651	0.000	0.18			2.0	FLOOD RISK

PN	US/MH Name	Level Exceeded
1.000	S1	
2.000	S3	
1.001	S2	
3.000	S6	
4.000	S4	
1.002	S5	
5.000	S7	
5.001	S8	
6.000	S9	
6.001	S10	
5.002	S11	
1.003	S12	

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