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Sheppard Lockton House Cafferata Way Newark, NG24 2TN	Phase 2 Malting Lane Donington Phase 1/2 FEH	
Date 24/02/2014 File renumbered PH1 NEW PH2 ...	Designed by PAE Checked by	
Innovyze	Network 2020.1.3	

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)	19.000	Add Flow / Climate Change (%)	0
Ratio R	0.400	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	100	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	60	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

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
S1.000	39.354	0.052	756.8	0.071	5.00	0.0	0.600	o	750	Pipe/Conduit	
S2.000	18.425	0.024	767.7	0.160	5.00	0.0	0.600	o	750	Pipe/Conduit	
S2.001	19.155	0.025	766.2	0.013	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.001	19.627	0.025	785.1	0.062	0.00	0.0	0.600	o	900	Pipe/Conduit	
S1.002	33.835	0.045	751.9	0.000	0.00	0.0	0.600	o	900	Pipe/Conduit	
S3.000	42.871	0.062	691.5	0.153	5.00	0.0	0.600	o	750	Pipe/Conduit	
S1.003	14.182	0.020	709.1	0.037	0.00	0.0	0.600	o	900	Pipe/Conduit	

Network Results Table

PN	Rain (mm/hr)	T.C. (mins)	US/IL Σ (m)	I.Area (ha)	Σ Base Flow (l/s)	Foul (l/s)	Add Flow (l/s)	Vel (m/s)	Cap (l/s)	Flow (l/s)
S1.000	63.30	5.65	0.292	0.071	0.0	0.0	0.0	1.01	445.9	12.2
S2.000	65.07	5.31	0.289	0.160	0.0	0.0	0.0	1.00	442.7	28.2
S2.001	63.42	5.62	0.265	0.173	0.0	0.0	0.0	1.00	443.2	29.7
S1.001	61.87	5.94	0.090	0.306	0.0	0.0	0.0	1.11	706.3	51.3
S1.002	59.61	6.44	0.065	0.306	0.0	0.0	0.0	1.13	721.9	51.3
S3.000	63.17	5.68	0.232	0.153	0.0	0.0	0.0	1.06	466.8	26.2
S1.003	58.75	6.64	0.020	0.496	0.0	0.0	0.0	1.17	743.6	78.9

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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
S4.000	7.085	0.010	708.5	0.116	5.00	0.0	0.600	o	750	Pipe/Conduit	
S4.001	29.549	0.042	703.5	0.016	0.00	0.0	0.600	o	750	Pipe/Conduit	
S4.002	20.574	0.029	709.4	0.094	0.00	0.0	0.600	o	750	Pipe/Conduit	
S4.003	44.540	0.064	695.9	0.099	0.00	0.0	0.600	o	750	Pipe/Conduit	
S5.000	42.768	0.061	701.1	0.130	5.00	0.0	0.600	o	750	Pipe/Conduit	
S4.004	46.535	0.066	705.1	0.165	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.004	7.751	0.015	516.7	0.000	0.00	0.0	0.600	o	900	Pipe/Conduit	
S6.000	5.015	0.478	10.5	0.000	5.00	0.0	0.600	o	750	Pipe/Conduit	
S6.001	3.523	0.387	9.1	0.000	0.00	0.0	0.600	o	750	Pipe/Conduit	
S1.005	2.335	0.021	111.2	0.000	0.00	0.0	0.600	o	150	Pipe/Conduit	
S1.006	61.147	-1.285	-47.6	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S1.007	15.846	0.095	166.8	0.000	0.00	0.0	0.600	o	225	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)
S4.000	66.11	5.11	0.361	0.116	0.0	0.0	0.0	1.04	461.1	20.8
S4.001	63.63	5.58	0.351	0.132	0.0	0.0	0.0	1.05	462.7	22.7
S4.002	62.02	5.91	0.309	0.226	0.0	0.0	0.0	1.04	460.7	38.0
S4.003	58.86	6.62	0.280	0.325	0.0	0.0	0.0	1.05	465.3	51.8
S5.000	63.15	5.68	0.277	0.130	0.0	0.0	0.0	1.05	463.5	22.2
S4.004	55.92	7.36	0.216	0.620	0.0	0.0	0.0	1.05	462.2	93.9
S1.004	55.57	7.45	0.000	1.116	0.0	0.0	0.0	1.37	872.5	167.9
S6.000	66.69	5.01	1.000	0.000	0.0	0.0	0.0	8.67	3829.3	0.0
S6.001	66.65	5.02	0.522	0.000	0.0	0.0	0.0	9.31	4111.4	0.0
S1.005	55.42	7.49	-0.044	1.116	0.0	0.0	0.0	0.95	16.8	167.9
S1.006	29.93	22.16	-0.065	1.116	0.0	0.0	0.0	0.07	0.5	167.9
S1.007	29.71	22.42	1.095	1.116	0.0	0.0	0.0	1.01	40.1	167.9

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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	0.000
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

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)	19.000	Storm Duration (mins)	30
Ratio R	0.400		

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Online Controls for Storm

Pump Manhole: SPh1_PSTN, DS/PN: S1.006, Volume (m³): 16.0

Invert Level (m) -0.065

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.200	6.5000	1.800	6.5000	3.400	6.5000	5.000	6.5000
0.400	6.5000	2.000	6.5000	3.600	6.5000	5.200	6.5000
0.600	6.5000	2.200	6.5000	3.800	6.5000	5.400	6.5000
0.800	6.5000	2.400	6.5000	4.000	6.5000	5.600	6.5000
1.000	6.5000	2.600	6.5000	4.200	6.5000	5.800	6.5000
1.200	6.5000	2.800	6.5000	4.400	6.5000	6.000	6.5000
1.400	6.5000	3.000	6.5000	4.600	6.5000		
1.600	6.5000	3.200	6.5000	4.800	6.5000		

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Storage Structures for Storm

Tank or Pond Manhole: SPh1_HW1, DS/PN: S6.000

Invert Level (m) 1.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	1052.0	0.700	1388.0	1.301	0.0	2.100	0.0
0.100	1098.0	0.800	1439.0	1.500	0.0	2.200	0.0
0.200	1145.0	0.900	1490.0	1.600	0.0	2.300	0.0
0.300	1193.0	1.000	1541.0	1.700	0.0	2.400	0.0
0.400	1241.0	1.100	1593.0	1.800	0.0	2.500	0.0
0.500	1290.0	1.200	1646.0	1.900	0.0		
0.600	1339.0	1.300	1699.0	2.000	0.0		

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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 * 10m ³ /ha Storage	0.000
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	FEH
FEH Rainfall Version	1999
Site Location	GB 520400 334650 TF 20400 34650
C (1km)	-0.021
D1 (1km)	0.305
D2 (1km)	0.317
D3 (1km)	0.192
E (1km)	0.307
F (1km)	2.510
Cv (Summer)	0.750
Cv (Winter)	0.840

Margin for Flood Risk Warning (mm)	450.0
Analysis Timestep	2.5 Second Increment (Extended)
DTS Status	OFF
DVD Status	OFF
Inertia Status	OFF

Profile(s)	Summer and Winter
Duration(s) (mins)	60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	1, 2, 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)
S1.000	S1	120 Winter	1	+0%	30/60 Summer				0.622
S2.000	S2	120 Winter	1	+0%	30/60 Summer				0.622
S2.001	S3	120 Winter	1	+0%	30/60 Summer				0.622
S1.001	S4	120 Winter	1	+0%	30/60 Summer				0.622
S1.002	S5	120 Winter	1	+0%	30/60 Summer				0.622
S3.000	S6	120 Winter	1	+0%	30/60 Summer				0.622
S1.003	S7	120 Winter	1	+0%	30/60 Summer				0.623
S4.000	SPh1_1	120 Winter	1	+0%	30/60 Summer				0.622
S4.001	SPh1_2	120 Winter	1	+0%	30/60 Summer				0.622

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

PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Level	
		Depth (m)	Volume (m³)					Status	Exceeded
S1.000	S1	-0.420	0.000	0.01			2.7	OK	
S2.000	S2	-0.417	0.000	0.03			6.7	OK	
S2.001	S3	-0.393	0.000	0.03			5.8	OK	
S1.001	S4	-0.368	0.000	0.02			6.9	OK	
S1.002	S5	-0.343	0.000	0.01			4.2	OK	
S3.000	S6	-0.360	0.000	0.02			6.3	OK	
S1.003	S7	-0.297	0.000	0.01			3.4	OK	
S4.000	SPh1_1	-0.489	0.000	0.02			4.9	OK	
S4.001	SPh1_2	-0.479	0.000	0.02			5.2	OK	

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1 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.
S4.002	SPh1_3	120 Winter	1	+0%	30/60 Summer			
S4.003	SPh1_4	120 Winter	1	+0%	30/60 Summer			
S5.000	SPh1_5	120 Winter	1	+0%	30/60 Summer			
S4.004	SPh1_6	120 Winter	1	+0%	30/60 Summer			
S1.004	SPh1_7	120 Winter	1	+0%	30/60 Summer			
S6.000	SPh1_HW1	60 Summer	1	+0%				
S6.001	SPh1_8	120 Winter	1	+0%	30/60 Winter			
S1.005	SPh1_9	120 Winter	1	+0%	1/60 Summer			
S1.006	SPh1_PSTN	120 Winter	1	+0%	1/60 Summer			
S1.007	SPh1_10	180 Winter	1	+0%				

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
S4.002	SPh1_3	0.622	-0.437	0.000	0.03			7.9	OK
S4.003	SPh1_4	0.622	-0.408	0.000	0.03			10.9	OK
S5.000	SPh1_5	0.622	-0.405	0.000	0.01			5.4	OK
S4.004	SPh1_6	0.623	-0.343	0.000	0.04			15.8	OK
S1.004	SPh1_7	0.623	-0.277	0.000	0.02			9.7	OK
S6.000	SPh1_HW1	1.000	-0.750	0.000	0.00			0.0	OK
S6.001	SPh1_8	0.622	-0.650	0.000	0.00			0.1	OK
S1.005	SPh1_9	0.622	0.516	0.000	0.73			7.9	SURCHARGED
S1.006	SPh1_PSTN	0.615	0.580	0.000	3.55			6.5	SURCHARGED
S1.007	SPh1_10	1.160	-0.160	0.000	0.18			6.5	OK

PN	US/MH Name	Level Exceeded
S4.002	SPh1_3	
S4.003	SPh1_4	
S5.000	SPh1_5	
S4.004	SPh1_6	
S1.004	SPh1_7	
S6.000	SPh1_HW1	
S6.001	SPh1_8	
S1.005	SPh1_9	
S1.006	SPh1_PSTN	
S1.007	SPh1_10	

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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 * 10m³/ha Storage 0.000
 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 FEH
 FEH Rainfall Version 1999
 Site Location GB 520400 334650 TF 20400 34650
 C (1km) -0.021
 D1 (1km) 0.305
 D2 (1km) 0.317
 D3 (1km) 0.192
 E (1km) 0.307
 F (1km) 2.510
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 450.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640,
 10080
 Return Period(s) (years) 1, 2, 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)
S1.000	S1	180 Winter	2	+0%	30/60 Summer				0.721
S2.000	S2	180 Winter	2	+0%	30/60 Summer				0.721
S2.001	S3	180 Winter	2	+0%	30/60 Summer				0.721
S1.001	S4	180 Winter	2	+0%	30/60 Summer				0.721
S1.002	S5	180 Winter	2	+0%	30/60 Summer				0.721
S3.000	S6	180 Winter	2	+0%	30/60 Summer				0.721
S1.003	S7	180 Winter	2	+0%	30/60 Summer				0.721
S4.000	SPh1_1	180 Winter	2	+0%	30/60 Summer				0.721
S4.001	SPh1_2	180 Winter	2	+0%	30/60 Summer				0.721

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

PN	US/MH Name	Surcharged Flooded		Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Level	
		Depth (m)	Volume (m³)					Status	Exceeded
S1.000	S1	-0.321	0.000	0.01			2.6	OK	
S2.000	S2	-0.318	0.000	0.03			6.2	OK	
S2.001	S3	-0.294	0.000	0.02			5.1	OK	
S1.001	S4	-0.269	0.000	0.02			5.6	OK	
S1.002	S5	-0.244	0.000	0.01			3.6	OK	
S3.000	S6	-0.261	0.000	0.02			5.9	OK	
S1.003	S7	-0.199	0.000	0.01			3.3	OK	
S4.000	SPh1_1	-0.390	0.000	0.01			4.4	OK	
S4.001	SPh1_2	-0.380	0.000	0.01			4.5	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.
S4.002	SPh1_3	180 Winter	2	+0%	30/60 Summer			
S4.003	SPh1_4	180 Winter	2	+0%	30/60 Summer			
S5.000	SPh1_5	180 Winter	2	+0%	30/60 Summer			
S4.004	SPh1_6	180 Winter	2	+0%	30/60 Summer			
S1.004	SPh1_7	180 Winter	2	+0%	30/60 Summer			
S6.000	SPh1_HW1	60 Summer	2	+0%				
S6.001	SPh1_8	180 Winter	2	+0%	30/60 Winter			
S1.005	SPh1_9	180 Winter	2	+0%	1/60 Summer			
S1.006	SPh1_PSTN	180 Winter	2	+0%	1/60 Summer			
S1.007	SPh1_10	120 Winter	2	+0%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S4.002	SPh1_3	0.721	-0.338	0.000	0.03		6.5	OK
S4.003	SPh1_4	0.721	-0.309	0.000	0.02		9.0	OK
S5.000	SPh1_5	0.721	-0.306	0.000	0.01		5.0	OK
S4.004	SPh1_6	0.721	-0.245	0.000	0.03		13.0	OK
S1.004	SPh1_7	0.721	-0.179	0.000	0.02		8.9	OK
S6.000	SPh1_HW1	1.000	-0.750	0.000	0.00		0.0	OK
S6.001	SPh1_8	0.721	-0.551	0.000	0.00		0.1	OK
S1.005	SPh1_9	0.721	0.615	0.000	0.70		7.6	SURCHARGED
S1.006	SPh1_PSTN	0.714	0.679	0.000	3.55		6.5	SURCHARGED
S1.007	SPh1_10	1.160	-0.160	0.000	0.18		6.5	OK

PN	US/MH Name	Level Exceeded
S4.002	SPh1_3	
S4.003	SPh1_4	
S5.000	SPh1_5	
S4.004	SPh1_6	
S1.004	SPh1_7	
S6.000	SPh1_HW1	
S6.001	SPh1_8	
S1.005	SPh1_9	
S1.006	SPh1_PSTN	
S1.007	SPh1_10	

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30 year Return Period Summary of Critical Results by Maximum Level (Rank 1)
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Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
 Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 0.000
 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 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
 FEH Rainfall Version 1999
 Site Location GB 520400 334650 TF 20400 34650
 C (1km) -0.021
 D1 (1km) 0.305
 D2 (1km) 0.317
 D3 (1km) 0.192
 E (1km) 0.307
 F (1km) 2.510
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 450.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status OFF
 Inertia Status OFF

Profile(s) Summer and Winter
 Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 720, 960,
 1440, 2160, 2880, 4320, 5760, 7200, 8640,
 10080
 Return Period(s) (years) 1, 2, 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)
S1.000	S1	60 Winter	30	+0%	30/60 Summer				1.391
S2.000	S2	60 Winter	30	+0%	30/60 Summer				1.393
S2.001	S3	60 Winter	30	+0%	30/60 Summer				1.392
S1.001	S4	60 Winter	30	+0%	30/60 Summer				1.390
S1.002	S5	60 Winter	30	+0%	30/60 Summer				1.388
S3.000	S6	60 Winter	30	+0%	30/60 Summer				1.388
S1.003	S7	60 Winter	30	+0%	30/60 Summer				1.386
S4.000	SPh1_1	60 Winter	30	+0%	30/60 Summer				1.399
S4.001	SPh1_2	60 Winter	30	+0%	30/60 Summer				1.398

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

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
S1.000	S1	0.349	0.000	0.03		12.2	SURCHARGED	
S2.000	S2	0.354	0.000	0.14		29.8	SURCHARGED	
S2.001	S3	0.377	0.000	0.10		22.2	SURCHARGED	
S1.001	S4	0.400	0.000	0.08		26.6	SURCHARGED	
S1.002	S5	0.423	0.000	0.05		25.8	SURCHARGED	
S3.000	S6	0.406	0.000	0.07		28.3	SURCHARGED	
S1.003	S7	0.466	0.000	0.14		42.0	SURCHARGED	
S4.000	SPh1_1	0.288	0.000	0.07		21.2	SURCHARGED	
S4.001	SPh1_2	0.297	0.000	0.06		19.9	SURCHARGED	

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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.
S4.002	SPh1_3	60 Winter	30	+0%	30/60 Summer			
S4.003	SPh1_4	60 Winter	30	+0%	30/60 Summer			
S5.000	SPh1_5	60 Winter	30	+0%	30/60 Summer			
S4.004	SPh1_6	60 Winter	30	+0%	30/60 Summer			
S1.004	SPh1_7	60 Winter	30	+0%	30/60 Summer			
S6.000	SPh1_HW1	360 Winter	30	+0%				
S6.001	SPh1_8	60 Winter	30	+0%	30/60 Winter			
S1.005	SPh1_9	60 Winter	30	+0%	1/60 Summer			
S1.006	SPh1_PSTN	60 Winter	30	+0%	1/60 Summer			
S1.007	SPh1_10	60 Winter	30	+0%				

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
S4.002	SPh1_3	1.397	0.338	0.000	0.09			23.6	SURCHARGED
S4.003	SPh1_4	1.394	0.364	0.000	0.08			32.7	SURCHARGED
S5.000	SPh1_5	1.392	0.365	0.000	0.06			23.8	SURCHARGED
S4.004	SPh1_6	1.391	0.425	0.000	0.13			51.2	SURCHARGED
S1.004	SPh1_7	1.383	0.483	0.000	0.22			93.1	SURCHARGED
S6.000	SPh1_HW1	1.130	-0.620	0.000	0.01			6.7	OK
S6.001	SPh1_8	1.364	0.092	0.000	0.01			6.0	SURCHARGED
S1.005	SPh1_9	1.378	1.272	0.000	1.76			19.1	SURCHARGED
S1.006	SPh1_PSTN	1.371	1.336	0.000	3.55			6.5	SURCHARGED
S1.007	SPh1_10	1.160	-0.160	0.000	0.18			6.5	OK

PN	US/MH Name	Level Exceeded
S4.002	SPh1_3	
S4.003	SPh1_4	
S5.000	SPh1_5	
S4.004	SPh1_6	
S1.004	SPh1_7	
S6.000	SPh1_HW1	
S6.001	SPh1_8	
S1.005	SPh1_9	
S1.006	SPh1_PSTN	
S1.007	SPh1_10	

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

PN	US/MH Name	Surcharged Flooded		Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)					
S1.000	S1	0.903	0.000	0.08		29.4	SURCHARGED	
S2.000	S2	0.918	0.000	0.34		71.8	FLOOD RISK	
S2.001	S3	0.934	0.000	0.34		74.1	FLOOD RISK	
S1.001	S4	0.951	0.000	0.38		127.0	SURCHARGED	
S1.002	S5	0.967	0.000	0.24		125.7	SURCHARGED	
S3.000	S6	0.950	0.000	0.18		67.8	FLOOD RISK	
S1.003	S7	1.001	0.000	0.70		202.7	FLOOD RISK	
S4.000	SPh1_1	0.872	0.000	0.16		50.5	SURCHARGED	
S4.001	SPh1_2	0.879	0.000	0.17		54.6	SURCHARGED	

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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) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S4.002	SPh1_3	60 Summer	100	+40%	30/60 Summer			
S4.003	SPh1_4	60 Summer	100	+40%	30/60 Summer			
S5.000	SPh1_5	60 Summer	100	+40%	30/60 Summer			
S4.004	SPh1_6	60 Summer	100	+40%	30/60 Summer			
S1.004	SPh1_7	60 Summer	100	+40%	30/60 Summer			
S6.000	SPh1_HW1	600 Winter	100	+40%				
S6.001	SPh1_8	60 Summer	100	+40%	30/60 Winter			
S1.005	SPh1_9	60 Summer	100	+40%	1/60 Summer			
S1.006	SPh1_PSTN	60 Summer	100	+40%	1/60 Summer			
S1.007	SPh1_10	120 Summer	100	+40%				

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
S4.002	SPh1_3	1.975	0.916	0.000	0.37		91.5	SURCHARGED
S4.003	SPh1_4	1.964	0.934	0.000	0.33		127.4	FLOOD RISK
S5.000	SPh1_5	1.954	0.927	0.000	0.15		56.7	FLOOD RISK
S4.004	SPh1_6	1.945	0.979	0.000	0.63		242.8	FLOOD RISK
S1.004	SPh1_7	1.908	1.008	0.000	1.04		446.7	FLOOD RISK
S6.000	SPh1_HW1	1.513	-0.237	0.000	0.03		34.7	OK
S6.001	SPh1_8	1.810	0.538	0.000	0.01		7.3	FLOOD RISK
S1.005	SPh1_9	1.888	1.782	0.000	3.50		38.0	FLOOD RISK
S1.006	SPh1_PSTN	1.826	1.791	0.000	3.55		6.5	FLOOD RISK
S1.007	SPh1_10	1.160	-0.160	0.000	0.18		6.5	OK

PN	US/MH Name	Level Exceeded
S4.002	SPh1_3	
S4.003	SPh1_4	
S5.000	SPh1_5	
S4.004	SPh1_6	
S1.004	SPh1_7	
S6.000	SPh1_HW1	
S6.001	SPh1_8	
S1.005	SPh1_9	
S1.006	SPh1_PSTN	
S1.007	SPh1_10	