

Mucklow & Harris Ltd		Page 1
5 Ardent Court	Fole Diary	
William James Way	CB COLLIER	
Henley in Arden, B95 5GF	Network A	
Date 23/07/2025 15:10	Designed by Ben Lee	
File STORM A 08.07.24.MDX	Checked by	
Innovyze	Network 2020.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model

Return Period (years)	2
FEH Rainfall Version	2013
Site Location GB 404500 337500 SK 04500 37500	
Data Type	Point
Maximum Rainfall (mm/hr)	0
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.000
Maximum Backdrop Height (m)	0.000
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

Time Area Diagram for Storm

Time (mins)	Area (ha)	Time (mins)	Area (ha)
0-4	0.336	4-8	0.211

Total Area Contributing (ha) = 0.547

Total Pipe Volume (m³) = 53.971

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
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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)
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Manhole Schedules for Storm											
MH Name	MH CL (m)	MH Depth (m)	MH Connection	MH Diam.,L*W (mm)	PN	Pipe Out Invert Level (m)	Diameter (mm)	PN	Pipes In Invert Level (m)	Diameter (mm)	Backdrop (mm)
10	112.825	2.025	Open Manhole	1350	1.000	110.800	375				
11	112.650	2.043	Open Manhole	1350	1.001	110.607	375	1.000	110.607	375	
12	112.250	2.419	Open Manhole	1800	2.000	109.831	825				
13	112.101	2.285	Open Manhole	1800	1.002	109.816	825	1.001	110.266	375	
								2.000	109.816	825	
14	112.300	2.538	Open Manhole	1800	1.003	109.762	825	1.002	109.762	825	
P1	111.900	1.000	Open Manhole	1200	3.000	110.900	225				
P2	111.900	1.200	Open Manhole	1200	3.001	110.700	225	3.000	110.700	225	
ATT TANK	111.800	1.950	Open Manhole	1350	4.000	109.850	375				
P3	111.900	2.067	Open Manhole	1350	3.002	109.833	375	3.001	109.983	225	
								4.000	109.833	375	
15	111.975	2.243	Open Manhole	1350	3.003	109.732	450	3.002	109.732	375	
FCC A	111.975	2.269	Open Manhole	3000	1.004	109.706	300	1.003	109.711	825	530
								3.003	109.706	450	
headwall	111.000	1.343	Open Manhole	0		OUTFALL		1.004	109.657	300	
No coordinates have been specified, layout information cannot be produced.											
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Network Classifications for Storm

PN	USMH Name	Pipe Dia (mm)	Min Cover Depth (m)	Max Cover Depth (m)	Pipe Type	MH Dia (mm)	MH Width (mm)	MH Ring Depth (m)	MH Type
1.000		10 375	1.650	1.668	Unclassified	1350	0	1.650	Unclassified
1.001		11 375	1.460	1.668	Unclassified	1350	0	1.668	Unclassified
2.000		12 825	1.460	1.594	Unclassified	1800	0	1.594	Unclassified
1.002		13 825	1.460	1.713	Unclassified	1800	0	1.460	Unclassified
1.003		14 825	1.439	1.713	Unclassified	1800	0	1.713	Unclassified
3.000		P1 225	0.775	0.975	Unclassified	1200	0	0.775	Unclassified
3.001		P2 225	0.975	1.692	Unclassified	1200	0	0.975	Unclassified
4.000	ATT TANK	375	1.575	1.692	Unclassified	1350	0	1.575	Unclassified
3.002	P3	375	1.692	1.868	Unclassified	1350	0	1.692	Unclassified
3.003	15	450	1.793	1.819	Unclassified	1350	0	1.793	Unclassified
1.004	FCC A	300	1.043	1.969	Unclassified	3000	0	1.969	Unclassified

Surcharged Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
1.004	headwall	111.000	109.657	0.000	0	0

Datum (m) 0.000 Offset (mins) 0

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
1	0.900	19	0.900	37	0.900	55	0.900	73	0.900	91	0.900
2	0.900	20	0.900	38	0.900	56	0.900	74	0.900	92	0.900
3	0.900	21	0.900	39	0.900	57	0.900	75	0.900	93	0.900
4	0.900	22	0.900	40	0.900	58	0.900	76	0.900	94	0.900
5	0.900	23	0.900	41	0.900	59	0.900	77	0.900	95	0.900
6	0.900	24	0.900	42	0.900	60	0.900	78	0.900	96	0.900
7	0.900	25	0.900	43	0.900	61	0.900	79	0.900	97	0.900
8	0.900	26	0.900	44	0.900	62	0.900	80	0.900	98	0.900
9	0.900	27	0.900	45	0.900	63	0.900	81	0.900	99	0.900
10	0.900	28	0.900	46	0.900	64	0.900	82	0.900	100	0.900
11	0.900	29	0.900	47	0.900	65	0.900	83	0.900	101	0.900
12	0.900	30	0.900	48	0.900	66	0.900	84	0.900	102	0.900
13	0.900	31	0.900	49	0.900	67	0.900	85	0.900	103	0.900
14	0.900	32	0.900	50	0.900	68	0.900	86	0.900	104	0.900
15	0.900	33	0.900	51	0.900	69	0.900	87	0.900	105	0.900
16	0.900	34	0.900	52	0.900	70	0.900	88	0.900	106	0.900
17	0.900	35	0.900	53	0.900	71	0.900	89	0.900	107	0.900
18	0.900	36	0.900	54	0.900	72	0.900	90	0.900	108	0.900

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Surcharged Outfall Details for Storm											
Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
127	0.900	161	0.900	195	0.900	229	0.900	263	0.900	297	0.900
128	0.900	162	0.900	196	0.900	230	0.900	264	0.900	298	0.900
129	0.900	163	0.900	197	0.900	231	0.900	265	0.900	299	0.900
130	0.900	164	0.900	198	0.900	232	0.900	266	0.900	300	0.900
131	0.900	165	0.900	199	0.900	233	0.900	267	0.900	301	0.900
132	0.900	166	0.900	200	0.900	234	0.900	268	0.900	302	0.900
133	0.900	167	0.900	201	0.900	235	0.900	269	0.900	303	0.900
134	0.900	168	0.900	202	0.900	236	0.900	270	0.900	304	0.900
135	0.900	169	0.900	203	0.900	237	0.900	271	0.900	305	0.900
136	0.900	170	0.900	204	0.900	238	0.900	272	0.900	306	0.900
137	0.900	171	0.900	205	0.900	239	0.900	273	0.900	307	0.900
138	0.900	172	0.900	206	0.900	240	0.900	274	0.900	308	0.900
139	0.900	173	0.900	207	0.900	241	0.900	275	0.900	309	0.900
140	0.900	174	0.900	208	0.900	242	0.900	276	0.900	310	0.900
141	0.900	175	0.900	209	0.900	243	0.900	277	0.900	311	0.900
142	0.900	176	0.900	210	0.900	244	0.900	278	0.900	312	0.900
143	0.900	177	0.900	211	0.900	245	0.900	279	0.900	313	0.900
144	0.900	178	0.900	212	0.900	246	0.900	280	0.900	314	0.900
145	0.900	179	0.900	213	0.900	247	0.900	281	0.900	315	0.900
146	0.900	180	0.900	214	0.900	248	0.900	282	0.900	316	0.900
147	0.900	181	0.900	215	0.900	249	0.900	283	0.900	317	0.900
148	0.900	182	0.900	216	0.900	250	0.900	284	0.900	318	0.900
149	0.900	183	0.900	217	0.900	251	0.900	285	0.900	319	0.900
150	0.900	184	0.900	218	0.900	252	0.900	286	0.900	320	0.900
151	0.900	185	0.900	219	0.900	253	0.900	287	0.900	321	0.900
152	0.900	186	0.900	220	0.900	254	0.900	288	0.900	322	0.900
153	0.900	187	0.900	221	0.900	255	0.900	289	0.900	323	0.900
154	0.900	188	0.900	222	0.900	256	0.900	290	0.900	324	0.900
155	0.900	189	0.900	223	0.900	257	0.900	291	0.900	325	0.900
156	0.900	190	0.900	224	0.900	258	0.900	292	0.900	326	0.900
157	0.900	191	0.900	225	0.900	259	0.900	293	0.900	327	0.900
158	0.900	192	0.900	226	0.900	260	0.900	294	0.900	328	0.900
159	0.900	193	0.900	227	0.900	261	0.900	295	0.900	329	0.900
160	0.900	194	0.900	228	0.900	262	0.900	296	0.900	330	0.900
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<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 Offline Controls 0 Number of Time/Area Diagrams 0 Number of Online Controls 1 Number of Storage Structures 7 Number of Real Time Controls 0 <u>Synthetic Rainfall Details</u> 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) 19.000 Storm Duration (mins) 30 Ratio R 0.373		
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Online Controls for Storm																																																																												
Hydro-Brake® Optimum Manhole: FCC A, DS/PN: 1.004, Volume (m³): 35.0																																																																												
Unit Reference MD-SHE-0288-5000-1500-5000																																																																												
Design Head (m)1.500																																																																												
Design Flow (l/s)50.0																																																																												
Flush-Flo™Calculated																																																																												
ObjectiveMinimise upstream storage																																																																												
ApplicationSurface																																																																												
Sump AvailableYes																																																																												
Diameter (mm)288																																																																												
Invert Level (m)109.706																																																																												
Minimum Outlet Pipe Diameter (mm)375																																																																												
Suggested Manhole Diameter (mm)2100																																																																												
<table><tr><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td><td>Control Points</td><td>Head (m)</td><td>Flow (l/s)</td></tr><tr><td>Design Point (Calculated)</td><td>1.500</td><td>49.9</td><td>Kick-Flo®</td><td>1.067</td><td>42.4</td></tr><tr><td>Flush-Flo™</td><td>0.505</td><td>49.8</td><td>Mean Flow over Head Range</td><td>-</td><td>42.1</td></tr></table>					Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	1.500	49.9	Kick-Flo®	1.067	42.4	Flush-Flo™	0.505	49.8	Mean Flow over Head Range	-	42.1																																																						
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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																																																																												
<table><tr><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td><td>Depth (m)</td><td>Flow (l/s)</td></tr><tr><td>0.100</td><td>8.9</td><td>1.200</td><td>44.9</td><td>3.000</td><td>69.8</td><td>7.000</td><td>105.4</td></tr><tr><td>0.200</td><td>29.7</td><td>1.400</td><td>48.3</td><td>3.500</td><td>75.2</td><td>7.500</td><td>109.0</td></tr><tr><td>0.300</td><td>47.6</td><td>1.600</td><td>51.5</td><td>4.000</td><td>80.3</td><td>8.000</td><td>112.5</td></tr><tr><td>0.400</td><td>49.4</td><td>1.800</td><td>54.5</td><td>4.500</td><td>85.0</td><td>8.500</td><td>115.9</td></tr><tr><td>0.500</td><td>49.8</td><td>2.000</td><td>57.4</td><td>5.000</td><td>89.5</td><td>9.000</td><td>119.2</td></tr><tr><td>0.600</td><td>49.6</td><td>2.200</td><td>60.1</td><td>5.500</td><td>93.7</td><td>9.500</td><td>122.4</td></tr><tr><td>0.800</td><td>48.2</td><td>2.400</td><td>62.7</td><td>6.000</td><td>97.8</td><td></td><td></td></tr><tr><td>1.000</td><td>44.8</td><td>2.600</td><td>65.1</td><td>6.500</td><td>101.7</td><td></td><td></td></tr></table>					Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	8.9	1.200	44.9	3.000	69.8	7.000	105.4	0.200	29.7	1.400	48.3	3.500	75.2	7.500	109.0	0.300	47.6	1.600	51.5	4.000	80.3	8.000	112.5	0.400	49.4	1.800	54.5	4.500	85.0	8.500	115.9	0.500	49.8	2.000	57.4	5.000	89.5	9.000	119.2	0.600	49.6	2.200	60.1	5.500	93.7	9.500	122.4	0.800	48.2	2.400	62.7	6.000	97.8			1.000	44.8	2.600	65.1	6.500	101.7		
Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)																																																																					
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<u>Storage Structures for Storm</u>		
<u>Porous Car Park Manhole: 10, DS/PN: 1.000</u>		
Infiltration Coefficient Base (m/hr)	0.00000	Width (m) 6.8
Membrane Percolation (mm/hr)	1000	Length (m) 10.0
Max Percolation (l/s)	18.9	Slope (1:X) 50.0
Safety Factor	2.0	Depression Storage (mm) 5
Porosity	0.30	Evaporation (mm/day) 3
Invert Level (m)	110.800	Cap Volume Depth (m) 0.350
<u>Porous Car Park Manhole: 11, DS/PN: 1.001</u>		
Infiltration Coefficient Base (m/hr)	0.00000	Width (m) 17.2
Membrane Percolation (mm/hr)	1000	Length (m) 10.0
Max Percolation (l/s)	47.8	Slope (1:X) 50.0
Safety Factor	2.0	Depression Storage (mm) 5
Porosity	0.30	Evaporation (mm/day) 3
Invert Level (m)	110.607	Cap Volume Depth (m) 0.350
<u>Porous Car Park Manhole: 12, DS/PN: 2.000</u>		
Infiltration Coefficient Base (m/hr)	0.00000	Width (m) 10.0
Membrane Percolation (mm/hr)	1000	Length (m) 14.5
Max Percolation (l/s)	40.3	Slope (1:X) 50.0
Safety Factor	2.0	Depression Storage (mm) 5
Porosity	0.30	Evaporation (mm/day) 3
Invert Level (m)	109.831	Cap Volume Depth (m) 0.350
<u>Porous Car Park Manhole: 13, DS/PN: 1.002</u>		
Infiltration Coefficient Base (m/hr)	0.00000	Width (m) 6.0
Membrane Percolation (mm/hr)	1000	Length (m) 10.0
Max Percolation (l/s)	16.7	Slope (1:X) 50.0
Safety Factor	2.0	Depression Storage (mm) 0
Porosity	0.30	Evaporation (mm/day) 0
Invert Level (m)	109.816	Cap Volume Depth (m) 0.350
<u>Porous Car Park Manhole: 14, DS/PN: 1.003</u>		
Infiltration Coefficient Base (m/hr)	0.00000	Width (m) 10.0
Membrane Percolation (mm/hr)	1000	Length (m) 24.8
Max Percolation (l/s)	68.9	Slope (1:X) 50.0
Safety Factor	2.0	Depression Storage (mm) 5
Porosity	0.30	Evaporation (mm/day) 3
Invert Level (m)	109.762	Cap Volume Depth (m) 0.350
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<u>Porous Car Park Manhole: P2, DS/PN: 3.001</u> <table> <tr> <td>Infiltration Coefficient Base (m/hr)</td> <td>0.00000</td> <td>Width (m)</td> <td>10.0</td> </tr> <tr> <td>Membrane Percolation (mm/hr)</td> <td>1000</td> <td>Length (m)</td> <td>10.4</td> </tr> <tr> <td>Max Percolation (l/s)</td> <td>28.9</td> <td>Slope (1:X)</td> <td>50.0</td> </tr> <tr> <td>Safety Factor</td> <td>2.0</td> <td>Depression Storage (mm)</td> <td>5</td> </tr> <tr> <td>Porosity</td> <td>0.30</td> <td>Evaporation (mm/day)</td> <td>3</td> </tr> <tr> <td>Invert Level (m)</td> <td>110.700</td> <td>Cap Volume Depth (m)</td> <td>0.350</td> </tr> </table> <u>Tank or Pond Manhole: ATT TANK, DS/PN: 4.000</u> Invert Level (m) 109.850 <table> <thead> <tr> <th>Depth (m)</th> <th>Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> <th>Depth (m)</th> <th>Area (m²)</th> </tr> </thead> <tbody> <tr><td>0.000</td><td>100.0</td><td>0.700</td><td>0.0</td><td>1.400</td><td>0.0</td><td>2.100</td><td>0.0</td></tr> <tr><td>0.100</td><td>100.0</td><td>0.800</td><td>0.0</td><td>1.500</td><td>0.0</td><td>2.200</td><td>0.0</td></tr> <tr><td>0.200</td><td>100.0</td><td>0.801</td><td>0.0</td><td>1.600</td><td>0.0</td><td>2.300</td><td>0.0</td></tr> <tr><td>0.300</td><td>100.0</td><td>1.000</td><td>0.0</td><td>1.700</td><td>0.0</td><td>2.400</td><td>0.0</td></tr> <tr><td>0.400</td><td>100.0</td><td>1.100</td><td>0.0</td><td>1.800</td><td>0.0</td><td>2.500</td><td>0.0</td></tr> <tr><td>0.401</td><td>0.0</td><td>1.200</td><td>0.0</td><td>1.900</td><td>0.0</td><td></td><td></td></tr> <tr><td>0.600</td><td>0.0</td><td>1.300</td><td>0.0</td><td>2.000</td><td>0.0</td><td></td><td></td></tr> </tbody> </table>			Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	10.0	Membrane Percolation (mm/hr)	1000	Length (m)	10.4	Max Percolation (l/s)	28.9	Slope (1:X)	50.0	Safety Factor	2.0	Depression Storage (mm)	5	Porosity	0.30	Evaporation (mm/day)	3	Invert Level (m)	110.700	Cap Volume Depth (m)	0.350	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	0.000	100.0	0.700	0.0	1.400	0.0	2.100	0.0	0.100	100.0	0.800	0.0	1.500	0.0	2.200	0.0	0.200	100.0	0.801	0.0	1.600	0.0	2.300	0.0	0.300	100.0	1.000	0.0	1.700	0.0	2.400	0.0	0.400	100.0	1.100	0.0	1.800	0.0	2.500	0.0	0.401	0.0	1.200	0.0	1.900	0.0			0.600	0.0	1.300	0.0	2.000	0.0		
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Mucklow & Harris Ltd

Page 11

5 Ardent Court

William James Way

Henley in Arden, B95 5GF

Fole Diary

CB COLLIER

Network A

Date 23/07/2025 15:10

Designed by Ben Lee

File STORM A 08.07.24.MDX

Checked by

Innovyze

Network 2020.1

1000 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 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 Offline Controls 0

Number of Time/Area Diagrams 0

Number of Online Controls 1

Number of Storage Structures 7

Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model

FSR

Ratio R 0.373

Region England and Wales Cv (Summer) 0.750

M5-60 (mm)

19.000 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm)

300.0

Analysis Timestep 2.5 Second Increment (Extended)

DTS Status

ON

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)

1000

Climate Change (%)

0

	US/MH		Return	Climate	First (X)	First (Y)	First (Z)	Overflow	Water
PN	Name	Storm	Period	Change	Surcharge	Flood	Overflow	Act.	Level
									(m)
1.000	10	15 Winter	1000	+0%					110.909
1.001	11	60 Winter	1000	+0%					110.858
2.000	12	60 Winter	1000	+0%	1000/30 Winter				110.849
1.002	13	60 Winter	1000	+0%	1000/30 Winter				110.849
1.003	14	60 Winter	1000	+0%	1000/30 Winter				110.845
3.000	P1	15 Winter	1000	+0%					110.962
3.001	P2	60 Winter	1000	+0%					110.848
4.000	ATT TANK	60 Winter	1000	+0%	1000/15 Winter				110.843
3.002	P3	60 Winter	1000	+0%	1000/15 Summer				110.843
3.003	15	60 Winter	1000	+0%	1000/15 Summer				110.842
1.004	FCC A	60 Winter	1000	+0%	1000/15 Summer				110.841

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Micro
Drainage

1000 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	Pipe	Status	Level Exceeded
		Depth (m)	Volume (m³)			Time (mins)	Flow (l/s)		
1.000	10	-0.266	0.000	0.19		5	30.9	OK	
1.001	11	-0.124	0.000	0.33		13	68.0	OK	
2.000	12	0.193	0.000	0.13		42	40.8	SURCHARGED	
1.002	13	0.208	0.000	0.27		38	128.5	SURCHARGED	
1.003	14	0.258	0.000	0.26		37	122.8	SURCHARGED	
3.000	P1	-0.163	0.000	0.17			10.5	OK	
3.001	P2	-0.077	0.000	0.12		11	12.5	OK	
4.000	ATT TANK	0.618	0.000	0.23			17.9	SURCHARGED	
3.002	P3	0.635	0.000	0.15			18.4	SURCHARGED	
3.003	15	0.660	0.000	0.20			19.2	SURCHARGED	
1.004	FCC A	0.835	0.000	0.88			49.7	SURCHARGED	