

MJA Consulting									Page 1																																																																																																																																																																																																																																																																																																							
Ipsum Court, 24 The Quadrant Abingdon Science Park Abingdon, OX14 3YS					QVH Surface Water Network																																																																																																																																																																																																																																																																																																											
Date 16/12/2025 File SWS 161225.MDX					Designed by C.Pendle Checked by																																																																																																																																																																																																																																																																																																											
Innovyze					Network 2020.1																																																																																																																																																																																																																																																																																																											
<u>Existing Network Details for Storm</u> * - Indicates pipe has been modified outside of System 1 <table><tr><th>PN</th><th>Length (m)</th><th>Fall (m)</th><th>Slope (1:X)</th><th>I.Area (ha)</th><th>T.E. (mins)</th><th>k (mm)</th><th>HYD SECT</th><th>DIA (mm)</th><th>Section</th><th>Type</th></tr><tr><td>* S1.000</td><td>50.259</td><td>0.630</td><td>79.8</td><td>0.130</td><td>5.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S2.000</td><td>14.069</td><td>0.047</td><td>299.3</td><td>0.102</td><td>5.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S2.001</td><td>6.530</td><td>0.015</td><td>435.3</td><td>0.029</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S2.002</td><td>39.805</td><td>0.174</td><td>228.8</td><td>0.022</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S2.003</td><td>6.673</td><td>0.030</td><td>222.4</td><td>0.016</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S3.000</td><td>2.346</td><td>0.016</td><td>146.6</td><td>0.018</td><td>5.00</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.001</td><td>8.776</td><td>0.119</td><td>73.7</td><td>0.000</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.002</td><td>10.901</td><td>0.147</td><td>74.2</td><td>0.000</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.003</td><td>31.299</td><td>0.429</td><td>73.0</td><td>0.070</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.004</td><td>8.048</td><td>1.138</td><td>7.1</td><td>0.048</td><td>0.00</td><td>0.600</td><td>o</td><td>300</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S4.000</td><td>20.321</td><td>0.150</td><td>135.5</td><td>0.102</td><td>5.00</td><td>0.600</td><td>o</td><td>375</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.005</td><td>19.561</td><td>0.115</td><td>170.1</td><td>0.000</td><td>0.00</td><td>0.600</td><td>o</td><td>375</td><td>Pipe/Conduit</td><td></td></tr><tr><td>* S1.006</td><td>3.733</td><td>0.048</td><td>77.8</td><td>0.044</td><td>0.00</td><td>0.600</td><td>o</td><td>150</td><td>Pipe/Conduit</td><td></td></tr></table> <table><tr><th>PN</th><th>US/MH Name</th><th>US/CL (m)</th><th>US/IL (m)</th><th>US C.Depth (m)</th><th>DS/CL (m)</th><th>DS/IL (m)</th><th>DS C.Depth (m)</th><th>Ctrl</th><th>US/MH (mm)</th></tr><tr><td>* S1.000</td><td>1</td><td>122.372</td><td>120.625</td><td>1.447</td><td>123.577</td><td>119.995</td><td>3.282</td><td></td><td>1200</td></tr><tr><td>* S2.000</td><td>2</td><td>124.661</td><td>120.261</td><td>4.100</td><td>124.523</td><td>120.214</td><td>4.009</td><td></td><td>1200</td></tr><tr><td>* S2.001</td><td>3</td><td>124.523</td><td>120.214</td><td>4.009</td><td>124.450</td><td>120.199</td><td>3.951</td><td></td><td>1200</td></tr><tr><td>* S2.002</td><td>4</td><td>124.450</td><td>120.199</td><td>3.951</td><td>123.832</td><td>120.025</td><td>3.507</td><td></td><td>1200</td></tr><tr><td>* S2.003</td><td>5</td><td>123.832</td><td>120.025</td><td>3.507</td><td>123.577</td><td>119.995</td><td>3.282</td><td></td><td>1200</td></tr><tr><td>* S3.000</td><td>6</td><td>123.587</td><td>120.161</td><td>3.276</td><td>123.577</td><td>120.145</td><td>3.282</td><td></td><td>1200</td></tr><tr><td>* S1.001</td><td>2</td><td>123.577</td><td>119.995</td><td>3.282</td><td>123.100</td><td>119.876</td><td>2.924</td><td>Hydro-Brake®</td><td>1200</td></tr><tr><td>* S1.002</td><td>3</td><td>123.100</td><td>119.876</td><td>2.924</td><td>122.683</td><td>119.729</td><td>2.654</td><td></td><td>1200</td></tr><tr><td>* S1.003</td><td>4</td><td>122.683</td><td>119.729</td><td>2.654</td><td>120.881</td><td>119.300</td><td>1.281</td><td></td><td>1200</td></tr><tr><td>* S1.004</td><td>5</td><td>120.881</td><td>119.300</td><td>1.281</td><td>120.226</td><td>118.162</td><td>1.764</td><td></td><td>1200</td></tr><tr><td>* S4.000</td><td>6</td><td>120.064</td><td>115.700</td><td>3.989</td><td>120.226</td><td>115.550</td><td>4.301</td><td></td><td>1350</td></tr><tr><td>* S1.005</td><td>6</td><td>120.226</td><td>115.550</td><td>4.301</td><td>118.812</td><td>115.435</td><td>3.002</td><td></td><td>1350</td></tr><tr><td>* S1.006</td><td>7</td><td>118.812</td><td>115.435</td><td>3.227</td><td>118.260</td><td>115.387</td><td>2.723</td><td>Hydro-Brake®</td><td>1350</td></tr></table>											PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section	Type	* S1.000	50.259	0.630	79.8	0.130	5.00	0.600	o	300	Pipe/Conduit		* S2.000	14.069	0.047	299.3	0.102	5.00	0.600	o	300	Pipe/Conduit		* S2.001	6.530	0.015	435.3	0.029	0.00	0.600	o	300	Pipe/Conduit		* S2.002	39.805	0.174	228.8	0.022	0.00	0.600	o	300	Pipe/Conduit		* S2.003	6.673	0.030	222.4	0.016	0.00	0.600	o	300	Pipe/Conduit		* S3.000	2.346	0.016	146.6	0.018	5.00	0.600	o	150	Pipe/Conduit		* S1.001	8.776	0.119	73.7	0.000	0.00	0.600	o	300	Pipe/Conduit		* S1.002	10.901	0.147	74.2	0.000	0.00	0.600	o	300	Pipe/Conduit		* S1.003	31.299	0.429	73.0	0.070	0.00	0.600	o	300	Pipe/Conduit		* S1.004	8.048	1.138	7.1	0.048	0.00	0.600	o	300	Pipe/Conduit		* S4.000	20.321	0.150	135.5	0.102	5.00	0.600	o	375	Pipe/Conduit		* S1.005	19.561	0.115	170.1	0.000	0.00	0.600	o	375	Pipe/Conduit		* S1.006	3.733	0.048	77.8	0.044	0.00	0.600	o	150	Pipe/Conduit		PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)	* S1.000	1	122.372	120.625	1.447	123.577	119.995	3.282		1200	* S2.000	2	124.661	120.261	4.100	124.523	120.214	4.009		1200	* S2.001	3	124.523	120.214	4.009	124.450	120.199	3.951		1200	* S2.002	4	124.450	120.199	3.951	123.832	120.025	3.507		1200	* S2.003	5	123.832	120.025	3.507	123.577	119.995	3.282		1200	* S3.000	6	123.587	120.161	3.276	123.577	120.145	3.282		1200	* S1.001	2	123.577	119.995	3.282	123.100	119.876	2.924	Hydro-Brake®	1200	* S1.002	3	123.100	119.876	2.924	122.683	119.729	2.654		1200	* S1.003	4	122.683	119.729	2.654	120.881	119.300	1.281		1200	* S1.004	5	120.881	119.300	1.281	120.226	118.162	1.764		1200	* S4.000	6	120.064	115.700	3.989	120.226	115.550	4.301		1350	* S1.005	6	120.226	115.550	4.301	118.812	115.435	3.002		1350	* S1.006	7	118.812	115.435	3.227	118.260	115.387	2.723	Hydro-Brake®	1350
PN	Length (m)	Fall (m)	Slope (1:X)	I.Area (ha)	T.E. (mins)	k (mm)	HYD SECT	DIA (mm)	Section	Type																																																																																																																																																																																																																																																																																																						
* S1.000	50.259	0.630	79.8	0.130	5.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S2.000	14.069	0.047	299.3	0.102	5.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S2.001	6.530	0.015	435.3	0.029	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S2.002	39.805	0.174	228.8	0.022	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S2.003	6.673	0.030	222.4	0.016	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S3.000	2.346	0.016	146.6	0.018	5.00	0.600	o	150	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.001	8.776	0.119	73.7	0.000	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.002	10.901	0.147	74.2	0.000	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.003	31.299	0.429	73.0	0.070	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.004	8.048	1.138	7.1	0.048	0.00	0.600	o	300	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S4.000	20.321	0.150	135.5	0.102	5.00	0.600	o	375	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.005	19.561	0.115	170.1	0.000	0.00	0.600	o	375	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
* S1.006	3.733	0.048	77.8	0.044	0.00	0.600	o	150	Pipe/Conduit																																																																																																																																																																																																																																																																																																							
PN	US/MH Name	US/CL (m)	US/IL (m)	US C.Depth (m)	DS/CL (m)	DS/IL (m)	DS C.Depth (m)	Ctrl	US/MH (mm)																																																																																																																																																																																																																																																																																																							
* S1.000	1	122.372	120.625	1.447	123.577	119.995	3.282		1200																																																																																																																																																																																																																																																																																																							
* S2.000	2	124.661	120.261	4.100	124.523	120.214	4.009		1200																																																																																																																																																																																																																																																																																																							
* S2.001	3	124.523	120.214	4.009	124.450	120.199	3.951		1200																																																																																																																																																																																																																																																																																																							
* S2.002	4	124.450	120.199	3.951	123.832	120.025	3.507		1200																																																																																																																																																																																																																																																																																																							
* S2.003	5	123.832	120.025	3.507	123.577	119.995	3.282		1200																																																																																																																																																																																																																																																																																																							
* S3.000	6	123.587	120.161	3.276	123.577	120.145	3.282		1200																																																																																																																																																																																																																																																																																																							
* S1.001	2	123.577	119.995	3.282	123.100	119.876	2.924	Hydro-Brake®	1200																																																																																																																																																																																																																																																																																																							
* S1.002	3	123.100	119.876	2.924	122.683	119.729	2.654		1200																																																																																																																																																																																																																																																																																																							
* S1.003	4	122.683	119.729	2.654	120.881	119.300	1.281		1200																																																																																																																																																																																																																																																																																																							
* S1.004	5	120.881	119.300	1.281	120.226	118.162	1.764		1200																																																																																																																																																																																																																																																																																																							
* S4.000	6	120.064	115.700	3.989	120.226	115.550	4.301		1350																																																																																																																																																																																																																																																																																																							
* S1.005	6	120.226	115.550	4.301	118.812	115.435	3.002		1350																																																																																																																																																																																																																																																																																																							
* S1.006	7	118.812	115.435	3.227	118.260	115.387	2.723	Hydro-Brake®	1350																																																																																																																																																																																																																																																																																																							
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Innovyze	Network 2020.1	

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)
S1	122.372	1.747	Open Manhole	1200	S1.000	120.625	300				
S2	124.661	4.400	Open Manhole	1200	S2.000	120.261	300				
S3	124.523	4.309	Open Manhole	1200	S2.001	120.214	300	S2.000	120.214	300	
S4	124.450	4.251	Open Manhole	1200	S2.002	120.199	300	S2.001	120.199	300	
S5	123.832	3.807	Open Manhole	1200	S2.003	120.025	300	S2.002	120.025	300	
S6	123.587	3.426	Open Manhole	1200	S3.000	120.161	150				
S2	123.577	3.582	Open Manhole	1200	S1.001	119.995	300	S1.000	119.995	300	
								S2.003	119.995	300	
								S3.000	120.145	150	
S3	123.100	3.224	Open Manhole	1200	S1.002	119.876	300	S1.001	119.876	300	
S4	122.683	2.954	Open Manhole	1200	S1.003	119.729	300	S1.002	119.729	300	
S5	120.881	1.581	Open Manhole	1200	S1.004	119.300	300	S1.003	119.300	300	
S6	120.064	4.364	Open Manhole	1350	S4.000	115.700	375				
S6	120.226	4.676	Open Manhole	1350	S1.005	115.550	375	S1.004	118.162	300	2537
								S4.000	115.550	375	
S7	118.812	3.377	Open Manhole	1350	S1.006	115.435	150	S1.005	115.435	375	
S	118.260	2.873	Open Manhole	1350		OUTFALL		S1.006	115.387	150	

MH Name	Manhole Easting (m)	Manhole Northing (m)	Intersection Easting (m)	Intersection Northing (m)	Manhole Access	Layout (North)
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S1	539661.082	139303.045	539661.082	139303.045	Required	
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S2	539740.160	139270.162	539740.160	139270.162	Required	
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S3	539726.262	139267.970	539726.262	139267.970	Required	
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S4	539719.841	139266.784	539719.841	139266.784	Required	
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S5	539711.779	139305.765	539711.779	139305.765	Required	
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S6	539712.729	139312.976	539712.729	139312.976	Required	
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Innovyze	Network 2020.1	

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)
S1.000	o	300	S1	122.372	120.625	1.447	Open Manhole	1200
S2.000	o	300	S2	124.661	120.261	4.100	Open Manhole	1200
S2.001	o	300	S3	124.523	120.214	4.009	Open Manhole	1200
S2.002	o	300	S4	124.450	120.199	3.951	Open Manhole	1200
S2.003	o	300	S5	123.832	120.025	3.507	Open Manhole	1200
S3.000	o	150	S6	123.587	120.161	3.276	Open Manhole	1200
S1.001	o	300	S2	123.577	119.995	3.282	Open Manhole	1200
S1.002	o	300	S3	123.100	119.876	2.924	Open Manhole	1200
S1.003	o	300	S4	122.683	119.729	2.654	Open Manhole	1200
S1.004	o	300	S5	120.881	119.300	1.281	Open Manhole	1200
S4.000	o	375	S6	120.064	115.700	3.989	Open Manhole	1350
S1.005	o	375	S6	120.226	115.550	4.301	Open Manhole	1350
S1.006	o	150	S7	118.812	115.435	3.227	Open Manhole	1350

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)
S1.000	50.259	79.8	S2	123.577	119.995	3.282	Open Manhole	1200
S2.000	14.069	299.3	S3	124.523	120.214	4.009	Open Manhole	1200
S2.001	6.530	435.3	S4	124.450	120.199	3.951	Open Manhole	1200
S2.002	39.805	228.8	S5	123.832	120.025	3.507	Open Manhole	1200
S2.003	6.673	222.4	S2	123.577	119.995	3.282	Open Manhole	1200
S3.000	2.346	146.6	S2	123.577	120.145	3.282	Open Manhole	1200
S1.001	8.776	73.7	S3	123.100	119.876	2.924	Open Manhole	1200
S1.002	10.901	74.2	S4	122.683	119.729	2.654	Open Manhole	1200
S1.003	31.299	73.0	S5	120.881	119.300	1.281	Open Manhole	1200
S1.004	8.048	7.1	S6	120.226	118.162	1.764	Open Manhole	1350
S4.000	20.321	135.5	S6	120.226	115.550	4.301	Open Manhole	1350
S1.005	19.561	170.1	S7	118.812	115.435	3.002	Open Manhole	1350
S1.006	3.733	77.8	S	118.260	115.387	2.723	Open Manhole	1350

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: S2, DS/PN: S1.001, Volume (m³): 7.9

Unit Reference	MD-SHE-0048-1500-2250-1500
Design Head (m)	2.250
Design Flow (l/s)	1.5
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	48
Invert Level (m)	119.995
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	2.250	1.5
Flush-Flo™	0.208	0.9
Kick-Flo®	0.427	0.7
Mean Flow over Head Range	-	1.1

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	0.8	1.200	1.1	3.000	1.7	7.000	2.5
0.200	0.9	1.400	1.2	3.500	1.8	7.500	2.6
0.300	0.8	1.600	1.3	4.000	1.9	8.000	2.7
0.400	0.8	1.800	1.4	4.500	2.1	8.500	2.8
0.500	0.8	2.000	1.4	5.000	2.2	9.000	2.8
0.600	0.8	2.200	1.5	5.500	2.3	9.500	2.9
0.800	0.9	2.400	1.5	6.000	2.3		
1.000	1.0	2.600	1.6	6.500	2.4		

Hydro-Brake® Optimum Manhole: S7, DS/PN: S1.006, Volume (m³): 6.8

Unit Reference	MD-SHE-0078-4000-2400-4000
Design Head (m)	2.400
Design Flow (l/s)	4.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	78
Invert Level (m)	115.435
Minimum Outlet Pipe Diameter (mm)	100
Suggested Manhole Diameter (mm)	1200

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Ipsium Court, 24 The Quadrant Abingdon Science Park Abingdon, OX14 3YS	QVH Surface Water Network																																																																																								
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<u>Hydro-Brake® Optimum Manhole: S7, DS/PN: S1.006, Volume (m³): 6.8</u> <table><tr><th>Control Points</th><th>Head (m)</th><th>Flow (l/s)</th></tr><tr><td>Design Point (Calculated)</td><td>2.400</td><td>4.0</td></tr><tr><td>Flush-Flo™</td><td>0.344</td><td>2.8</td></tr><tr><td>Kick-Flo®</td><td>0.697</td><td>2.3</td></tr><tr><td>Mean Flow over Head Range</td><td>-</td><td>3.0</td></tr></table> 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><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th><th>Depth (m)</th><th>Flow (l/s)</th></tr><tr><td>0.100</td><td>2.2</td><td>1.200</td><td>2.9</td><td>3.000</td><td>4.4</td><td>7.000</td><td>6.6</td></tr><tr><td>0.200</td><td>2.7</td><td>1.400</td><td>3.1</td><td>3.500</td><td>4.8</td><td>7.500</td><td>6.8</td></tr><tr><td>0.300</td><td>2.8</td><td>1.600</td><td>3.3</td><td>4.000</td><td>5.1</td><td>8.000</td><td>7.0</td></tr><tr><td>0.400</td><td>2.8</td><td>1.800</td><td>3.5</td><td>4.500</td><td>5.4</td><td>8.500</td><td>7.2</td></tr><tr><td>0.500</td><td>2.7</td><td>2.000</td><td>3.7</td><td>5.000</td><td>5.6</td><td>9.000</td><td>7.4</td></tr><tr><td>0.600</td><td>2.6</td><td>2.200</td><td>3.8</td><td>5.500</td><td>5.9</td><td>9.500</td><td>7.6</td></tr><tr><td>0.800</td><td>2.4</td><td>2.400</td><td>4.0</td><td>6.000</td><td>6.1</td><td></td><td></td></tr><tr><td>1.000</td><td>2.7</td><td>2.600</td><td>4.1</td><td>6.500</td><td>6.4</td><td></td><td></td></tr></table>			Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	2.400	4.0	Flush-Flo™	0.344	2.8	Kick-Flo®	0.697	2.3	Mean Flow over Head Range	-	3.0	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	2.2	1.200	2.9	3.000	4.4	7.000	6.6	0.200	2.7	1.400	3.1	3.500	4.8	7.500	6.8	0.300	2.8	1.600	3.3	4.000	5.1	8.000	7.0	0.400	2.8	1.800	3.5	4.500	5.4	8.500	7.2	0.500	2.7	2.000	3.7	5.000	5.6	9.000	7.4	0.600	2.6	2.200	3.8	5.500	5.9	9.500	7.6	0.800	2.4	2.400	4.0	6.000	6.1			1.000	2.7	2.600	4.1	6.500	6.4		
Control Points	Head (m)	Flow (l/s)																																																																																							
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Storage Structures for Storm

Cellular Storage Manhole: S5, DS/PN: S2.003

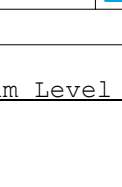
Invert Level (m) 119.990 Safety Factor 2.0
Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
Infiltration Coefficient Side (m/hr) 0.00000

Depth (m)	Area (m ²)	Inf. Area (m ²)	Depth (m)	Area (m ²)	Inf. Area (m ²)
0.000	180.0	180.0	2.251	0.0	405.4
2.250	180.0	405.4			

Cellular Storage Manhole: S6, DS/PN: S1.005

Invert Level (m) 115.565 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	100.0	100.0	2.251	0.0	215.0
2.250	100.0	215.0			

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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 * 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 2
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	FEH
FEH Rainfall Version	2013
Site Location GB 535450 137800 TQ 35450 37800	
Data Type	Catchment
Cv (Summer)	1.000
Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	50.0
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, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	45, 45, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Flooded Volume (m³)	Pipe Flow (l/s)	Status
S1.000	S1 4320 minute	2 year Summer I+45%	122.372	120.751	0.000	1.8	OK
S2.000	S2 4320 minute	2 year Summer I+45%	124.661	120.751	0.000	1.4	SURCHARGED
S2.001	S3 4320 minute	2 year Summer I+45%	124.523	120.751	0.000	1.7	SURCHARGED
S2.002	S4 4320 minute	2 year Summer I+45%	124.450	120.751	0.000	2.0	SURCHARGED
S2.003	S5 4320 minute	2 year Summer I+45%	123.832	120.751	0.000	0.8	SURCHARGED
S3.000	S6 4320 minute	2 year Summer I+45%	123.587	120.751	0.000	0.2	SURCHARGED
S1.001	S2 4320 minute	2 year Summer I+45%	123.577	120.751	0.000	0.9	SURCHARGED
S1.002	S3 4320 minute	2 year Summer I+45%	123.100	119.890	0.000	0.9	OK
S1.003	S4 15 minute	2 year Summer I+45%	122.683	119.809	0.000	19.0	OK
S1.004	S5 15 minute	2 year Summer I+45%	120.881	119.369	0.000	31.5	OK
S4.000	S6 360 minute	2 year Winter I+45%	120.064	116.308	0.000	4.9	SURCHARGED
S1.005	S6 360 minute	2 year Winter I+45%	120.226	116.308	0.000	2.9	SURCHARGED
S1.006	S7 360 minute	2 year Winter I+45%	118.812	116.308	0.000	2.8	SURCHARGED

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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	2
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	FEH
FEH Rainfall Version	2013
Site Location	GB 535450 137800 TQ 35450 37800
Data Type	Catchment
Cv (Summer)	1.000
Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	50.0
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, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	45, 45, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Flooded Volume (m³)	Pipe Flow (l/s)	Status
S1.000	S1	2880 minute 30 year Winter I+45%	122.372	121.522	0.000	2.5	SURCHARGED
S2.000	S2	2880 minute 30 year Winter I+45%	124.661	121.515	0.000	2.0	SURCHARGED
S2.001	S3	2880 minute 30 year Winter I+45%	124.523	121.515	0.000	2.5	SURCHARGED
S2.002	S4	2880 minute 30 year Winter I+45%	124.450	121.514	0.000	2.9	SURCHARGED
S2.003	S5	2880 minute 30 year Winter I+45%	123.832	121.514	0.000	1.4	SURCHARGED
S3.000	S6	2880 minute 30 year Winter I+45%	123.587	121.522	0.000	0.3	SURCHARGED
S1.001	S2	2880 minute 30 year Winter I+45%	123.577	121.553	0.000	1.3	SURCHARGED
S1.002	S3	2880 minute 30 year Winter I+45%	123.100	119.894	0.000	1.3	OK
S1.003	S4	15 minute 30 year Summer I+45%	122.683	119.873	0.000	55.7	OK
S1.004	S5	15 minute 30 year Summer I+45%	120.881	119.422	0.000	93.4	OK
S4.000	S6	480 minute 30 year Winter I+45%	120.064	117.201	0.000	7.2	SURCHARGED
S1.005	S6	480 minute 30 year Winter I+45%	120.226	117.201	0.000	3.7	SURCHARGED
S1.006	S7	480 minute 30 year Winter I+45%	118.812	117.202	0.000	3.5	SURCHARGED

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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 2
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	FEH
FEH Rainfall Version	2013
Site Location GB 535450 137800 TQ 35450 37800	
Data Type	Catchment
Cv (Summer)	1.000
Cv (Winter)	1.000

Margin for Flood Risk Warning (mm)	50.0
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, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years)	2, 30, 100
Climate Change (%)	45, 45, 45

PN	US/MH Name	Event	US/CL (m)	Water Level (m)	Flooded Volume (m³)	Pipe Flow (l/s)	Status
S1.000	S1 2880 minute	100 year Winter I+45%	122.372	122.107	0.000	3.3	SURCHARGED
S2.000	S2 2880 minute	100 year Winter I+45%	124.661	122.100	0.000	2.6	SURCHARGED
S2.001	S3 2880 minute	100 year Winter I+45%	124.523	122.100	0.000	3.3	SURCHARGED
S2.002	S4 2880 minute	100 year Winter I+45%	124.450	122.100	0.000	3.8	SURCHARGED
S2.003	S5 2880 minute	100 year Winter I+45%	123.832	122.099	0.000	1.6	SURCHARGED
S3.000	S6 2880 minute	100 year Winter I+45%	123.587	122.107	0.000	0.4	SURCHARGED
S1.001	S2 4320 minute	100 year Winter I+45%	123.577	122.138	0.000	1.4	SURCHARGED
S1.002	S3 15 minute	100 year Summer I+45%	123.100	119.903	0.000	1.0	OK
S1.003	S4 15 minute	100 year Summer I+45%	122.683	119.896	0.000	70.9	OK
S1.004	S5 15 minute	100 year Summer I+45%	120.881	119.440	0.000	119.0	OK
S4.000	S6 720 minute	100 year Winter I+45%	120.064	117.739	0.000	6.7	SURCHARGED
S1.005	S6 720 minute	100 year Winter I+45%	120.226	117.738	0.000	4.1	SURCHARGED
S1.006	S7 600 minute	100 year Winter I+45%	118.812	117.739	0.000	3.9	SURCHARGED

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