

Pell Frischmann		Page 1																																																																																																																
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Innovyze	Network 2020.1																																																																																																																	
Online Controls for Storm Hydro-Brake® Optimum Manhole: 6, DS/PN: 1.003, Volume (m³): 14.9 <table><tr><td>Unit Reference</td><td>MD-SHE-0108-5000-0831-5000</td></tr><tr><td>Design Head (m)</td><td>0.831</td></tr><tr><td>Design Flow (l/s)</td><td>5.0</td></tr><tr><td>Flush-Flo™</td><td>Calculated</td></tr><tr><td>Objective</td><td>Minimise upstream storage</td></tr><tr><td>Application</td><td>Surface</td></tr><tr><td>Sump Available</td><td>Yes</td></tr><tr><td>Diameter (mm)</td><td>108</td></tr><tr><td>Invert Level (m)</td><td>83.931</td></tr><tr><td>Minimum Outlet Pipe Diameter (mm)</td><td>150</td></tr><tr><td>Suggested Manhole Diameter (mm)</td><td>1200</td></tr></table> <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>0.831</td><td>5.0</td><td>Kick-Flo®</td><td>0.552</td><td>4.1</td></tr><tr><td>Flush-Flo™</td><td>0.249</td><td>5.0</td><td>Mean Flow over Head Range</td><td>-</td><td>4.3</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><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>3.7</td><td>1.200</td><td>5.9</td><td>3.000</td><td>9.1</td><td>7.000</td><td>13.6</td></tr><tr><td>0.200</td><td>5.0</td><td>1.400</td><td>6.4</td><td>3.500</td><td>9.8</td><td>7.500</td><td>14.1</td></tr><tr><td>0.300</td><td>5.0</td><td>1.600</td><td>6.8</td><td>4.000</td><td>10.5</td><td>8.000</td><td>14.5</td></tr><tr><td>0.400</td><td>4.8</td><td>1.800</td><td>7.2</td><td>4.500</td><td>11.1</td><td>8.500</td><td>14.9</td></tr><tr><td>0.500</td><td>4.5</td><td>2.000</td><td>7.5</td><td>5.000</td><td>11.6</td><td>9.000</td><td>15.4</td></tr><tr><td>0.600</td><td>4.3</td><td>2.200</td><td>7.9</td><td>5.500</td><td>12.2</td><td>9.500</td><td>15.8</td></tr><tr><td>0.800</td><td>4.9</td><td>2.400</td><td>8.2</td><td>6.000</td><td>12.7</td><td></td><td></td></tr><tr><td>1.000</td><td>5.4</td><td>2.600</td><td>8.5</td><td>6.500</td><td>13.2</td><td></td><td></td></tr></table>			Unit Reference	MD-SHE-0108-5000-0831-5000	Design Head (m)	0.831	Design Flow (l/s)	5.0	Flush-Flo™	Calculated	Objective	Minimise upstream storage	Application	Surface	Sump Available	Yes	Diameter (mm)	108	Invert Level (m)	83.931	Minimum Outlet Pipe Diameter (mm)	150	Suggested Manhole Diameter (mm)	1200	Control Points	Head (m)	Flow (l/s)	Control Points	Head (m)	Flow (l/s)	Design Point (Calculated)	0.831	5.0	Kick-Flo®	0.552	4.1	Flush-Flo™	0.249	5.0	Mean Flow over Head Range	-	4.3	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	0.100	3.7	1.200	5.9	3.000	9.1	7.000	13.6	0.200	5.0	1.400	6.4	3.500	9.8	7.500	14.1	0.300	5.0	1.600	6.8	4.000	10.5	8.000	14.5	0.400	4.8	1.800	7.2	4.500	11.1	8.500	14.9	0.500	4.5	2.000	7.5	5.000	11.6	9.000	15.4	0.600	4.3	2.200	7.9	5.500	12.2	9.500	15.8	0.800	4.9	2.400	8.2	6.000	12.7			1.000	5.4	2.600	8.5	6.500	13.2		
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Innovyze	Network 2020.1	

Storage Structures for Storm

Tank or Pond Manhole: 6, DS/PN: 1.003

Invert Level (m) 84.647

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.000	80.0	0.400	80.0	0.401	0.0

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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 2.000 Hot Start Level (mm) 0 Inlet Coefficient 0.800 Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000 Foul Sewage per hectare (l/s) 0.000 Number of Input Hydrographs 0 Number of Storage Structures 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 Ratio R 0.348 Region England and Wales Cv (Summer) 0.750 M5-60 (mm) 18.600 Cv (Winter) 0.840 Margin for Flood Risk Warning (mm) 300.0 DVD Status ON Analysis Timestep Fine Inertia Status ON DTS Status ON																																																																										
Profile(s) Summer and Winter Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080 Return Period(s) (years) 1, 2, 30, 45, 100 Climate Change (%) 0, 0, 0, 0, 45																																																																										
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