

WSP Group Ltd		Page 3
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Date 29/04/2021 10:47	Designed by UKSMM003	
File 70064036_CROWN STREET C...	Checked by	
XP Solutions	Network 2018.1	

Online Controls for Storm

Hydro-Brake® Optimum Manhole: SW 06, DS/PN: 1.002, Volume (m³): 4.1

Unit Reference	MD-SHE-0165-1390-1300-1390
Design Head (m)	1.300
Design Flow (l/s)	13.9
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	165
Invert Level (m)	30.088
Minimum Outlet Pipe Diameter (mm)	225
Suggested Manhole Diameter (mm)	1500

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.300	13.9
Flush-Flo™	0.391	13.9
Kick-Flo®	0.854	11.4
Mean Flow over Head Range	-	12.0

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	5.9	1.200	13.3	3.000	20.6	7.000	31.0
0.200	12.9	1.400	14.4	3.500	22.2	7.500	32.1
0.300	13.7	1.600	15.3	4.000	23.7	8.000	33.1
0.400	13.9	1.800	16.2	4.500	25.1	8.500	34.1
0.500	13.7	2.000	17.0	5.000	26.4	9.000	35.0
0.600	13.5	2.200	17.8	5.500	27.6	9.500	35.9
0.800	12.2	2.400	18.5	6.000	28.8		
1.000	12.2	2.600	19.3	6.500	29.9		

WSP Group Ltd		Page 5							
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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 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 0.365									
Region England and Wales Cv (Summer) 0.750									
M5-60 (mm) 18.000 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, 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) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.	
1.000	SW 06A	30 Winter	30	+0%	30/15 Summer				
1.001	DUMMY NODE	30 Winter	30	+0%	30/15 Summer				
2.000	AGDR CONNCTN 1	15 Winter	30	+0%					
3.000	AGDR CONNCTN 2	15 Winter	30	+0%					
1.002	SW 06	30 Winter	30	+0%	30/15 Summer				
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	SW 06A	30.562	0.131	0.000	0.01		0.6	SURCHARGED	
1.001	DUMMY NODE	30.562	0.174	0.000	0.21		12.4	SURCHARGED	
2.000	AGDR CONNCTN 1	31.523	-0.102	0.000	0.57		20.4	OK	
3.000	AGDR CONNCTN 2	31.524	-0.101	0.000	0.58		20.7	OK	
1.002	SW 06	30.564	0.251	0.000	0.49		13.8	SURCHARGED	
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Simulation Criteria

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

Rainfall Model	FSR	Ratio R	0.365
Region	England and Wales	Cv (Summer)	0.750
M5-60 (mm)	18.000	Cv (Winter)	0.840

Profile(s)	Summer and Winter
n(s) (mins)	15, 30, 60, 120, 240, 360, 480, 960, 1440
(s) (years)	1, 30, 100
Change (%)	0, 0, 40

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