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Date 03/10/22 File 65203468-SWE-ZZ-XX-CA-C...	Designed by BP Checked by TC	
Innovyze	Network 2020.1	


STORM SEWER DESIGN by the Modified Rational Method

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
S1.000	46.790	0.240	195.0	0.114	3.00	0.0	0.600	o	150	Pipe/Conduit	
S2.000	3.106	0.053	58.6	0.004	3.00	0.0	0.600	o	100	Pipe/Conduit	
S3.000	12.280	0.210	58.5	0.013	3.00	0.0	0.600	o	100	Pipe/Conduit	
S1.001	16.446	0.175	94.0	0.000	0.00	0.0	0.600	o	100	Pipe/Conduit	
S4.000	8.474	0.080	105.9	0.041	3.00	0.0	0.600	o	150	Pipe/Conduit	
S4.001	11.109	0.140	79.4	0.009	0.00	0.0	0.600	o	150	Pipe/Conduit	
S4.002	11.337	0.075	151.2	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S5.000	8.012	0.040	200.3	0.042	3.00	0.0	0.600	o	150	Pipe/Conduit	
S5.001	0.904	0.090	10.0	0.020	0.00	0.0	0.600	o	150	Pipe/Conduit	
S4.003	4.433	0.100	44.3	0.006	0.00	0.0	0.600	o	225	Pipe/Conduit	
S4.004	12.842	0.200	64.2	0.006	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.002	23.803	0.225	105.8	0.045	0.00	0.0	0.600	o	300	Pipe/Conduit	
S6.000	19.568	0.160	122.3	0.036	3.00	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)
S1.000	0.00	4.09	13.140	0.114	0.0	0.0	0.0	0.72	12.7	0.0
S2.000	0.00	3.05	13.550	0.004	0.0	0.0	0.0	1.01	7.9	0.0
S3.000	0.00	3.20	13.700	0.013	0.0	0.0	0.0	1.01	7.9	0.0
S1.001	0.00	4.43	12.900	0.131	0.0	0.0	0.0	0.79	6.2	0.0
S4.000	0.00	3.14	13.270	0.041	0.0	0.0	0.0	0.98	17.2	0.0
S4.001	0.00	3.31	13.190	0.050	0.0	0.0	0.0	1.13	20.0	0.0
S4.002	0.00	3.49	12.975	0.050	0.0	0.0	0.0	1.06	42.2	0.0
S5.000	0.00	3.19	13.210	0.042	0.0	0.0	0.0	0.71	12.5	0.0
S5.001	0.00	3.19	13.170	0.062	0.0	0.0	0.0	3.20	56.6	0.0
S4.003	0.00	3.52	12.900	0.118	0.0	0.0	0.0	1.97	78.3	0.0
S4.004	0.00	3.66	12.800	0.124	0.0	0.0	0.0	1.63	65.0	0.0
S1.002	0.00	4.69	12.525	0.300	0.0	0.0	0.0	1.53	108.0	0.0
S6.000	0.00	3.28	13.170	0.036	0.0	0.0	0.0	1.18	47.0	0.0

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STORM SEWER DESIGN by the Modified Rational Method

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
S6.001	2.990	0.300	10.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.003	7.114	0.050	142.3	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S7.000	7.144	0.095	75.2	0.024	3.00	0.0	0.600	o	150	Pipe/Conduit	
S7.001	2.035	0.204	10.0	0.000	0.00	0.0	0.600	o	225	Pipe/Conduit	
S1.004	6.797	0.050	135.9	0.000	0.00	0.0	0.600	o	300	Pipe/Conduit	
S1.005	2.919	0.020	146.0	0.000	0.00	0.0	0.600	o	150	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)
S6.001	0.00	3.29	13.010	0.036	0.0	0.0	0.0	4.17	165.8	0.0
S1.003	0.00	4.78	12.300	0.336	0.0	0.0	0.0	1.32	93.0	0.0
S7.000	0.00	3.10	12.960	0.024	0.0	0.0	0.0	1.16	20.5	0.0
S7.001	0.00	3.11	12.790	0.024	0.0	0.0	0.0	4.17	165.7	0.0
S1.004	0.00	4.87	12.250	0.360	0.0	0.0	0.0	1.35	95.2	0.0
S1.005	0.00	4.93	12.200	0.360	0.0	0.0	0.0	0.83	14.7	0.0

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Area Summary for Storm

Pipe Number	PIMP Type	PIMP Name	PIMP (%)	Gross Area (ha)	Imp. Area (ha)	Pipe Total (ha)
1.000	-	-	100	0.114	0.114	0.114
2.000	-	-	100	0.004	0.004	0.004
3.000	-	-	100	0.013	0.013	0.013
1.001	-	-	100	0.000	0.000	0.000
4.000	-	-	100	0.041	0.041	0.041
4.001	-	-	100	0.009	0.009	0.009
4.002	-	-	100	0.000	0.000	0.000
5.000	-	-	100	0.042	0.042	0.042
5.001	-	-	100	0.020	0.020	0.020
4.003	-	-	100	0.006	0.006	0.006
4.004	-	-	100	0.006	0.006	0.006
1.002	-	-	100	0.045	0.045	0.045
6.000	-	-	100	0.036	0.036	0.036
6.001	-	-	100	0.000	0.000	0.000
1.003	-	-	100	0.000	0.000	0.000
7.000	-	-	100	0.024	0.024	0.024
7.001	-	-	100	0.000	0.000	0.000
1.004	-	-	100	0.000	0.000	0.000
1.005	-	-	100	0.000	0.000	0.000
				Total	Total	Total
				0.360	0.360	0.360

Free Flowing Outfall Details for Storm

Outfall Pipe Number	Outfall Name	C. Level (m)	I. Level (m)	Min I. Level (m)	D,L (mm)	W (mm)
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S1.005	S	14.550	12.180	0.000	0	0
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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	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 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	Site Location	D2 (1km)	0.000
Return Period (years)	100	C (1km)	0.000	D3 (1km) 0.000
FEH Rainfall Version	1999	D1 (1km)	0.000	E (1km) 0.000

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Synthetic Rainfall Details

F (1km) 0.000 Winter Storms Yes Cv (Winter) 0.840
Summer Storms Yes Cv (Summer) 0.750 Storm Duration (mins) 30

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Online Controls for Storm

Hydro-Brake® Optimum Manhole: SSW10, DS/PN: S1.001, Volume (m³): 2.5

Unit Reference	MD-SHE-0046-1000-1100-1000
Design Head (m)	1.100
Design Flow (l/s)	1.0
Flush-Flo™	Calculated
Objective	Minimise upstream storage
Application	Surface
Sump Available	Yes
Diameter (mm)	46
Invert Level (m)	12.900
Minimum Outlet Pipe Diameter (mm)	75
Suggested Manhole Diameter (mm)	1200

Control Points	Head (m)	Flow (l/s)
Design Point (Calculated)	1.100	1.0
Flush-Flo™	0.200	0.8
Kick-Flo®	0.408	0.6
Mean Flow over Head Range	-	0.8


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	0.7	1.200	1.0	3.000	1.6	7.000	2.3
0.200	0.8	1.400	1.1	3.500	1.7	7.500	2.4
0.300	0.8	1.600	1.2	4.000	1.8	8.000	2.5
0.400	0.7	1.800	1.2	4.500	1.9	8.500	2.5
0.500	0.7	2.000	1.3	5.000	2.0	9.000	2.6
0.600	0.8	2.200	1.4	5.500	2.1	9.500	2.7
0.800	0.9	2.400	1.4	6.000	2.2		
1.000	1.0	2.600	1.5	6.500	2.2		

Pump Manhole: SSWPS, DS/PN: S1.005, Volume (m³): 3.1

Invert Level (m) 12.200

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.001	18.0000	5.000	18.0000

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Storage Structures for Storm


Porous Car Park Manhole: SSW9, DS/PN: S1.000

Infiltration Coefficient Base (m/hr)	0.00000	Width (m)	22.6
Membrane Percolation (mm/hr)	1000	Length (m)	25.0
Max Percolation (l/s)	156.9	Slope (1:X)	500.0
Safety Factor	2.0	Depression Storage (mm)	5
Porosity	0.30	Evaporation (mm/day)	3
Invert Level (m)	13.400	Cap Volume Depth (m)	0.650

Cellular Storage Manhole: SSW7, DS/PN: S1.003

Invert Level (m)	12.300	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	66.5	0.0	1.201	0.0	0.0
1.200	66.5	0.0			

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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 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 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 608500 165050 TR 08500 65050
Data Type Catchment
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 ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 40, 45


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SSW9	360 Winter	2	+0%	2/60 Summer			
S2.000	SPPIC	60 Summer	2	+0%	30/120 Summer			
S3.000	SPPIC	60 Summer	2	+0%	100/120 Winter	100/960 Winter		
S1.001	SSW10	60 Summer	2	+0%	2/60 Summer			
S4.000	SSW1	60 Summer	2	+0%	100/60 Summer			
S4.001	SSW2	60 Summer	2	+0%	100/60 Summer			
S4.002	SSW3	60 Summer	2	+0%	100/60 Summer			
S5.000	SHD1	60 Summer	2	+0%	30/60 Summer			
S5.001	SHD2	60 Summer	2	+0%	100/60 Summer			
S4.003	SSW4	60 Summer	2	+0%	100/60 Summer			
S4.004	SSW5	60 Summer	2	+0%	100/60 Summer			
S1.002	SSW6	60 Summer	2	+0%	30/60 Winter			
S6.000	SHD3	60 Summer	2	+0%				
S6.001	SHD4	60 Summer	2	+0%				
S1.003	SSW7	60 Summer	2	+0%	30/60 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Pipe		Status
						Time (mins)	Flow (l/s)	
S1.000	SSW9	13.504	0.214	0.000	0.11	217	1.3	SURCHARGED
S2.000	SPPIC	13.566	-0.084	0.000	0.06		0.4	OK
S3.000	SPPIC	13.728	-0.072	0.000	0.17		1.3	OK
S1.001	SSW10	13.525	0.525	0.000	0.13		0.8	SURCHARGED
S4.000	SSW1	13.323	-0.097	0.000	0.27		4.0	OK
S4.001	SSW2	13.243	-0.097	0.000	0.27		4.8	OK
S4.002	SSW3	13.029	-0.171	0.000	0.13		4.8	OK
S5.000	SHD1	13.274	-0.086	0.000	0.38		4.1	OK
S5.001	SHD2	13.227	-0.093	0.000	0.31		5.8	OK
S4.003	SSW4	12.976	-0.149	0.000	0.25		11.1	OK
S4.004	SSW5	12.869	-0.156	0.000	0.21		11.7	OK
S1.002	SSW6	12.607	-0.218	0.000	0.17		16.2	OK
S6.000	SHD3	13.213	-0.182	0.000	0.08		3.5	OK
S6.001	SHD4	13.041	-0.194	0.000	0.05		3.5	OK
S1.003	SSW7	12.402	-0.198	0.000	0.25	21	15.4	OK


PN	US/MH Name	Level Exceeded
S1.000	SSW9	
S2.000	SPPIC	
S3.000	SPPIC	1
S1.001	SSW10	
S4.000	SSW1	
S4.001	SSW2	
S4.002	SSW3	
S5.000	SHD1	
S5.001	SHD2	
S4.003	SSW4	
S4.004	SSW5	
S1.002	SSW6	
S6.000	SHD3	
S6.001	SHD4	
S1.003	SSW7	

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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.	Water Level (m)
S7.000	SSW11	60	Summer	2	+0%	100/60	Winter		12.996
S7.001	SSW12	60	Summer	2	+0%	100/60	Summer		12.818
S1.004	SSW8	60	Summer	2	+0%	30/60	Summer		12.356
S1.005	SSWPS	60	Summer	2	+0%	30/60	Summer		12.201

PN	US/MH Name	Depth (m)	Surcharged Volume (m³)	Flooded Flow / Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S7.000	SSW11	-0.114	0.000	0.13		2.4	OK	
S7.001	SSW12	-0.197	0.000	0.04		2.4	OK	
S1.004	SSW8	-0.194	0.000	0.27		16.9	OK	
S1.005	SSWPS	-0.149	0.000	1.58		16.8	OK	

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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 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 608500 165050 TR 08500 65050
Data Type Catchment
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 ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 40, 45


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SSW9	720 Winter	30	+40%	2/60 Summer			
S2.000	SPPIC	720 Winter	30	+40%	30/120 Summer			
S3.000	SPPIC	720 Winter	30	+40%	100/120 Winter	100/960 Winter		
S1.001	SSW10	720 Winter	30	+40%	2/60 Summer			
S4.000	SSW1	60 Summer	30	+40%	100/60 Summer			
S4.001	SSW2	60 Summer	30	+40%	100/60 Summer			
S4.002	SSW3	60 Summer	30	+40%	100/60 Summer			
S5.000	SHD1	60 Summer	30	+40%	30/60 Summer			
S5.001	SHD2	60 Summer	30	+40%	100/60 Summer			
S4.003	SSW4	60 Summer	30	+40%	100/60 Summer			
S4.004	SSW5	60 Summer	30	+40%	100/60 Summer			
S1.002	SSW6	60 Winter	30	+40%	30/60 Winter			
S6.000	SHD3	60 Summer	30	+40%				
S6.001	SHD4	60 Summer	30	+40%				
S1.003	SSW7	60 Winter	30	+40%	30/60 Summer			

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

PN	US/MH Name	Level (m)	Water Surcharged			Flooded		Half Drain Pipe		Status
			Depth (m)	Volume (m³)	Flow / Overflow Cap. (l/s)	Time (mins)	Flow (l/s)			
S1.000	SSW9	13.799	0.509	0.000	0.07	659	0.9	SURCHARGED		
S2.000	SPPIC	13.792	0.142	0.000	0.03		0.2	SURCHARGED		
S3.000	SPPIC	13.793	-0.007	0.000	0.08		0.6	OK		
S1.001	SSW10	13.792	0.792	0.000	0.15		0.9	SURCHARGED		
S4.000	SSW1	13.377	-0.043	0.000	0.85		12.9	OK		
S4.001	SSW2	13.298	-0.042	0.000	0.87		15.6	OK		
S4.002	SSW3	13.085	-0.115	0.000	0.44		15.6	OK		
S5.000	SHD1	13.375	0.015	0.000	1.22		13.2	SURCHARGED		
S5.001	SHD2	13.319	-0.001	0.000	1.00		18.8	OK		
S4.003	SSW4	13.055	-0.070	0.000	0.81		36.2	OK		
S4.004	SSW5	12.937	-0.088	0.000	0.68		38.0	OK		
S1.002	SSW6	12.864	0.039	0.000	0.43		41.2	SURCHARGED		
S6.000	SHD3	13.249	-0.146	0.000	0.27		11.3	OK		
S6.001	SHD4	13.067	-0.168	0.000	0.15		11.3	OK		
S1.003	SSW7	12.837	0.237	0.000	0.32	31	19.6	SURCHARGED		


PN	US/MH Name	Level Exceeded
S1.000	SSW9	
S2.000	SPPIC	
S3.000	SPPIC	1
S1.001	SSW10	
S4.000	SSW1	
S4.001	SSW2	
S4.002	SSW3	
S5.000	SHD1	
S5.001	SHD2	
S4.003	SSW4	
S4.004	SSW5	
S1.002	SSW6	
S6.000	SHD3	
S6.001	SHD4	
S1.003	SSW7	

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Innovyze	Network 2020.1	

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.	Water Level (m)
S7.000	SSW11	60 Summer	30	+40%	100/60 Winter				13.028
S7.001	SSW12	60 Summer	30	+40%	100/60 Summer				12.841
S1.004	SSW8	60 Winter	30	+40%	30/60 Summer				12.834
S1.005	SSWPS	60 Winter	30	+40%	30/60 Summer				12.829

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S7.000	SSW11	-0.082	0.000	0.43		7.5	OK	
S7.001	SSW12	-0.174	0.000	0.12		7.5	OK	
S1.004	SSW8	0.284	0.000	0.36		21.9	SURCHARGED	
S1.005	SSWPS	0.479	0.000	1.69		18.0	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 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 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 608500 165050 TR 08500 65050
Data Type Catchment
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 ON
Inertia Status ON

Profile(s) Summer and Winter
Duration(s) (mins) 60, 120, 180, 240, 360, 480, 600, 720, 960, 1440
Return Period(s) (years) 2, 30, 100
Climate Change (%) 0, 40, 45


PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
S1.000	SSW9	960 Winter	100	+45%	2/60 Summer			
S2.000	SPPIC	960 Winter	100	+45%	30/120 Summer			
S3.000	SPPIC	960 Winter	100	+45%	100/120 Winter	100/960 Winter		
S1.001	SSW10	960 Winter	100	+45%	2/60 Summer			
S4.000	SSW1	60 Summer	100	+45%	100/60 Summer			
S4.001	SSW2	60 Summer	100	+45%	100/60 Summer			
S4.002	SSW3	60 Winter	100	+45%	100/60 Summer			
S5.000	SHD1	60 Summer	100	+45%	30/60 Summer			
S5.001	SHD2	60 Summer	100	+45%	100/60 Summer			
S4.003	SSW4	60 Winter	100	+45%	100/60 Summer			
S4.004	SSW5	60 Winter	100	+45%	100/60 Summer			
S1.002	SSW6	60 Winter	100	+45%	30/60 Winter			
S6.000	SHD3	60 Summer	100	+45%				
S6.001	SHD4	60 Winter	100	+45%				
S1.003	SSW7	60 Winter	100	+45%	30/60 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Pipe		Status
						Time (mins)	Flow (l/s)	
S1.000	SSW9	14.279	0.989	0.000	0.09	1.1	FLOOD RISK	
S2.000	SPPIC	14.270	0.620	0.000	0.03	0.2	FLOOD RISK	
S3.000	SPPIC	14.270	0.470	0.040	0.09	0.7	FLOOD	
S1.001	SSW10	14.270	1.270	0.000	0.18	1.1	FLOOD RISK	
S4.000	SSW1	13.488	0.068	0.000	1.12	17.0	SURCHARGED	
S4.001	SSW2	13.383	0.043	0.000	1.15	20.7	SURCHARGED	
S4.002	SSW3	13.311	0.111	0.000	0.46	16.4	SURCHARGED	
S5.000	SHD1	13.495	0.135	0.000	1.59	17.2	SURCHARGED	
S5.001	SHD2	13.390	0.070	0.000	1.35	25.4	SURCHARGED	
S4.003	SSW4	13.295	0.170	0.000	0.86	38.3	SURCHARGED	
S4.004	SSW5	13.228	0.203	0.000	0.71	39.6	SURCHARGED	
S1.002	SSW6	13.184	0.359	0.000	0.53	51.1	SURCHARGED	
S6.000	SHD3	13.263	-0.132	0.000	0.36	15.3	OK	
S6.001	SHD4	13.143	-0.092	0.000	0.15	11.8	OK	
S1.003	SSW7	13.141	0.541	0.000	0.33	43	20.2	SURCHARGED

PN	US/MH Name	Level Exceeded
S1.000	SSW9	
S2.000	SPPIC	
S3.000	SPPIC	1
S1.001	SSW10	
S4.000	SSW1	
S4.001	SSW2	
S4.002	SSW3	
S5.000	SHD1	
S5.001	SHD2	
S4.003	SSW4	
S4.004	SSW5	
S1.002	SSW6	
S6.000	SHD3	
S6.001	SHD4	
S1.003	SSW7	

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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) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S7.000	SSW11	60	Winter	100	+45%	100/60	Winter		13.146
S7.001	SSW12	60	Winter	100	+45%	100/60	Summer		13.137
S1.004	SSW8	60	Winter	100	+45%	30/60	Summer		13.136
S1.005	SSWPS	60	Winter	100	+45%	30/60	Summer		13.128

PN	US/MH Name	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S7.000	SSW11	0.036	0.000	0.45		7.9	SURCHARGED	
S7.001	SSW12	0.122	0.000	0.12		7.9	SURCHARGED	
S1.004	SSW8	0.586	0.000	0.37		22.4	SURCHARGED	
S1.005	SSWPS	0.778	0.000	1.69		18.0	SURCHARGED	