

Amey Group Plc		Page 1
South East Hub, Explorer II Fleming Way, Crawley West Sussex, RH10 9GT		
Date 04/08/2022 13:59 File Clayton Bridge 50 year ...	Designed by 139254 Checked by	
Innovyze	Network 2020.1.3	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes M8 CJV Manhole Sizes STANDARD

FSR Rainfall Model - England and Wales

Return Period (years)	50	PIMP (%)	50
M5-60 (mm)	18.500	Add Flow / Climate Change (%)	0
Ratio R	0.315	Minimum Backdrop Height (m)	0.200
Maximum Rainfall (mm/hr)	50	Maximum Backdrop Height (m)	1.500
Maximum Time of Concentration (mins)	30	Min Design Depth for Optimisation (m)	0.600
Foul Sewage (l/s/ha)	0.000	Min Vel for Auto Design only (m/s)	0.80
Volumetric Runoff Coeff.	0.750	Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

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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 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 0.300

Region England and Wales Cv (Summer) 0.750

M5-60 (mm)

18.800 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0

DVD Status OFF

Analysis Timestep

Fine Inertia Status OFF

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)

50

Climate Change (%)

40

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	Water Level (m)
S1.000	S1	15 Winter	50	+40%					71.671
S1.001	S2	15 Summer	50	+40%					71.312
S1.002	S3	15 Winter	50	+40%					71.033
S1.003	S4	15 Winter	50	+40%					70.761
S1.004	S5	15 Winter	50	+40%					70.578
S1.005	S6	15 Winter	50	+40%					70.344
S1.006	S7	15 Winter	50	+40%					70.247
S2.000	S8	15 Winter	50	+40%					70.993
S2.001	S9	15 Winter	50	+40%					70.705
S1.007	S10	120 Winter	50	+40%					70.149
S1.008	S11	120 Winter	50	+40%	50/15 Summer				70.145
S1.009	S12	120 Winter	50	+40%	50/15 Summer				70.140
S1.010	S13	15 Winter	50	+40%					60.716

PN	US/MH Name	Depth (m)	Volume (m³)	Flow / Cap.	Over (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
S1.000	S1	-0.084	0.000	0.40			6.9	OK	

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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Surcharged Flooded		Flow / Overflow		Half Drain Time (mins)	Pipe Flow (l/s)	Status	Level Exceeded
		Depth (m)	Volume (m³)	Cap.	(l/s)				
S1.001	S2	-0.143	0.000	0.28			13.7	OK	
S1.002	S3	-0.122	0.000	0.42			20.2	OK	
S1.003	S4	-0.094	0.000	0.62			27.1	OK	
S1.004	S5	-0.037	0.000	0.98			33.6	OK	
S1.005	S6	-0.121	0.000	0.65			39.9	OK	
S1.006	S7	-0.105	0.000	0.74			44.9	OK	
S2.000	S8	-0.057	0.000	0.69			11.8	OK	
S2.001	S9	-0.043	0.000	0.84			14.1	OK	
S1.007	S10	-0.131	0.000	0.10			23.0	OK	
S1.008	S11	0.794	0.000	0.47			21.6	SURCHARGED	
S1.009	S12	0.942	0.000	0.02		104	5.0	SURCHARGED	
S1.010	S13	-0.160	0.000	0.19			5.0	OK	