

### Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	120.00
Return Period (years)	2	Maximum Rainfall (mm/hr)	250.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	19.000	Minimum Backdrop Height (m)	1.000
Ratio-R	0.400	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	✓

### Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
S6	0.115	5.00	3.155	1200	531059.305	337946.743	0.851
S5			3.474	1500	530947.127	337959.637	1.895
S4			3.606	1500	530965.084	337952.101	1.987
S3	0.458	5.00	3.244	1500	531067.032	337906.912	1.271
S2	0.134	5.00	3.264	1500	531080.243	337937.457	1.208
S1	0.093	5.00	3.178	1200	531096.429	337930.577	0.899

### Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
S1-S2	S1	S2	17.588	0.600	2.279	2.206	0.073	240.9	300	5.29	65.2
S6-S2	S6	S2	22.905	0.600	2.304	2.209	0.095	241.1	300	5.38	64.7
S2-S3	S2	S3	33.280	0.600	2.056	1.973	0.083	401.0	450	5.93	61.9
S3-S4	S3	S4	111.514	0.600	1.973	1.694	0.279	399.7	450	7.77	54.4
S4-S5	S4	S5	19.474	0.600	1.619	1.579	0.040	486.9	525	8.09	53.3

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
S1-S2	1.008	71.3	16.4	0.599	0.758	0.093	0.0	98	0.823
S6-S2	1.008	71.2	20.2	0.551	0.755	0.115	0.0	109	0.870
S2-S3	1.009	160.5	57.4	0.758	0.821	0.342	0.0	186	0.928
S3-S4	1.011	160.7	118.0	0.821	1.462	0.800	0.0	288	1.101
S4-S5	1.008	218.2	115.6	1.462	1.370	0.800	0.0	272	1.022

### Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
S1-S2	17.588	240.9	300	Circular	3.178	2.279	0.599	3.264	2.206	0.758
S6-S2	22.905	241.1	300	Circular	3.155	2.304	0.551	3.264	2.209	0.755
S2-S3	33.280	401.0	450	Circular	3.264	2.056	0.758	3.244	1.973	0.821
S3-S4	111.514	399.7	450	Circular	3.244	1.973	0.821	3.606	1.694	1.462



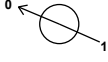



Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S1-S2	S1	1200	Manhole	Adoptable	S2	1500	Manhole	Adoptable
S6-S2	S6	1200	Manhole	Adoptable	S2	1500	Manhole	Adoptable
S2-S3	S2	1500	Manhole	Adoptable	S3	1500	Manhole	Adoptable
S3-S4	S3	1500	Manhole	Adoptable	S4	1500	Manhole	Adoptable

### Pipeline Schedule

Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
S4-S5	19.474	486.9	525	Circular	3.606	1.619	1.462	3.474	1.579	1.370

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S4-S5	S4	1500	Manhole	Adoptable	S5	1500	Manhole	Adoptable

### Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S6	531059.305	337946.743	3.155	0.851	1200				
						0	S6-S2	2.304	300
S5	530947.127	337959.637	3.474	1.895	1500				
						1	S4-S5	1.579	525
S4	530965.084	337952.101	3.606	1.987	1500				
						1	S3-S4	1.694	450
						0	S4-S5	1.619	525
S3	531067.032	337906.912	3.244	1.271	1500				
						1	S2-S3	1.973	450
						0	S3-S4	1.973	450
S2	531080.243	337937.457	3.264	1.208	1500				
						1	S1-S2	2.206	300
						2	S6-S2	2.209	300
						0	S2-S3	2.056	450
S1	531096.429	337930.577	3.178	0.899	1200				
						0	S1-S2	2.279	300

### Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	19.000	Drain Down Time (mins)	120
Ratio-R	0.400	Additional Storage (m³/ha)	0.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

### Storm Durations

60 | 180 | 360 | 720 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
2	0	0	0
30	0	0	0
100	40	0	0

**Results for 2 year Critical Storm Duration. Lowest mass balance: 99.43%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	33	2.391	0.087	12.5	0.0989	0.0000	OK
60 minute summer	S5	35	1.769	0.190	82.2	0.0000	0.0000	OK
60 minute summer	S4	34	1.844	0.225	82.2	0.3973	0.0000	OK
60 minute summer	S3	34	2.207	0.234	86.1	0.4131	0.0000	OK
60 minute summer	S2	34	2.224	0.168	37.2	0.2962	0.0000	OK
60 minute summer	S1	33	2.358	0.079	10.1	0.0891	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	S6-S2	S2	12.5	0.754	0.175	0.3801	
60 minute summer	S4	S4-S5	S5	82.2	1.041	0.377	1.5407	92.1
60 minute summer	S3	S3-S4	S4	82.2	1.097	0.511	8.3968	
60 minute summer	S2	S2-S3	S3	36.4	0.567	0.227	2.2789	
60 minute summer	S1	S1-S2	S2	10.1	0.707	0.142	0.2515	

**Results for 30 year Critical Storm Duration. Lowest mass balance: 99.43%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S6	33	2.429	0.125	23.8	0.1412	0.0000	OK
60 minute summer	S5	35	1.843	0.264	154.8	0.0000	0.0000	OK
60 minute summer	S4	34	1.939	0.320	155.0	0.5661	0.0000	OK
60 minute summer	S3	34	2.338	0.365	162.0	0.6445	0.0000	OK
60 minute summer	S2	34	2.355	0.299	70.8	0.5281	0.0000	OK
60 minute summer	S1	32	2.391	0.112	19.2	0.1267	0.0000	OK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
60 minute summer	S6	S6-S2	S2	23.9	0.869	0.335	0.6931	
60 minute summer	S4	S4-S5	S5	154.8	1.258	0.709	2.3986	175.3
60 minute summer	S3	S3-S4	S4	155.0	1.288	0.964	13.3724	
60 minute summer	S2	S2-S3	S3	67.3	0.592	0.420	4.1502	
60 minute summer	S1	S1-S2	S2	19.2	0.815	0.270	0.5096	

**Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.43%**

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m <sup>3</sup> )	Flood (m <sup>3</sup> )	Status
60 minute summer	S6	34	3.145	0.841	43.8	0.9512	0.0000	FLOOD RISK
60 minute summer	S5	34	1.946	0.367	292.1	0.0000	0.0000	OK
60 minute summer	S4	34	2.102	0.483	292.0	0.8536	0.0000	OK
60 minute summer	S3	34	3.035	1.062	295.7	1.8761	0.0000	FLOOD RISK
60 minute summer	S2	34	3.102	1.046	125.3	1.8483	0.0000	FLOOD RISK
60 minute summer	S1	34	3.126	0.847	35.4	0.9574	0.0000	FLOOD RISK

Link Event (Upstream Depth)	US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m <sup>3</sup> )	Discharge Vol (m <sup>3</sup> )
60 minute summer	S6	S6-S2	S2	42.5	0.875	0.597	1.6130	
60 minute summer	S4	S4-S5	S5	292.1	1.560	1.338	3.5930	320.6
60 minute summer	S3	S3-S4	S4	292.0	1.844	1.817	17.2587	
60 minute summer	S2	S2-S3	S3	125.3	0.791	0.781	5.2730	
60 minute summer	S1	S1-S2	S2	34.1	0.815	0.478	1.2385	