

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)
S13	0.137	5.00	2.727	1200	531003.297	337867.558	0.689
S12			2.901	1200	530978.600	337809.934	1.301
S11	0.018	5.00	3.005	1500	530987.836	337830.310	1.359
S10			3.229	1500	531014.995	337817.988	1.433
S9	0.222	5.00	3.072	1500	531024.156	337838.503	1.220
S8	0.184	5.00	2.958	1500	531036.836	337868.689	1.024
S7	0.181	5.00	3.163	1200	531049.298	337897.499	0.929

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)
S7-S8	S7	S8	31.390	0.600	2.234	2.104	0.130	241.5	300	5.52	64.0
S8-S9	S8	S9	32.741	0.600	1.934	1.852	0.082	399.3	450	6.06	61.3
S9-S10	S9	S10	22.468	0.600	1.852	1.796	0.056	401.2	450	6.43	59.7
S10-S11	S10	S11	29.824	0.600	1.796	1.721	0.075	397.7	450	6.92	57.6
S13-S11	S13	S11	40.329	0.600	2.038	1.871	0.167	241.5	300	5.67	63.2
S11-S12	S11	S12	22.372	0.600	1.646	1.600	0.046	486.3	525	7.29	56.2









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)
S7-S8	1.007	71.2	31.4	0.629	0.554	0.181	0.0	139	0.976
S8-S9	1.011	160.8	60.7	0.574	0.770	0.365	0.0	191	0.942
S9-S10	1.009	160.4	94.9	0.770	0.983	0.587	0.0	249	1.049
S10-S11	1.013	161.1	91.7	0.983	0.834	0.587	0.0	243	1.044
S13-S11	1.007	71.2	23.5	0.389	0.834	0.137	0.0	118	0.905
S11-S12	1.009	218.4	113.0	0.834	0.776	0.742	0.0	268	1.017

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)
S7-S8	31.390	241.5	300	Circular	3.163	2.234	0.629	2.958	2.104	0.554
S8-S9	32.741	399.3	450	Circular	2.958	1.934	0.574	3.072	1.852	0.770
S9-S10	22.468	401.2	450	Circular	3.072	1.852	0.770	3.229	1.796	0.983
S10-S11	29.824	397.7	450	Circular	3.229	1.796	0.983	3.005	1.721	0.834
S13-S11	40.329	241.5	300	Circular	2.727	2.038	0.389	3.005	1.871	0.834
S11-S12	22.372	486.3	525	Circular	3.005	1.646	0.834	2.901	1.600	0.776

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
S7-S8	S7	1200	Manhole	Adoptable	S8	1500	Manhole	Adoptable
S8-S9	S8	1500	Manhole	Adoptable	S9	1500	Manhole	Adoptable
S9-S10	S9	1500	Manhole	Adoptable	S10	1500	Manhole	Adoptable
S10-S11	S10	1500	Manhole	Adoptable	S11	1500	Manhole	Adoptable
S13-S11	S13	1200	Manhole	Adoptable	S11	1500	Manhole	Adoptable
S11-S12	S11	1500	Manhole	Adoptable	S12	1200	Manhole	Adoptable

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
S13	531003.297	337867.558	2.727	0.689	1200		S13-S11	2.038	300
S12	530978.600	337809.934	2.901	1.301	1200		S11-S12	1.600	525
S11	530987.836	337830.310	3.005	1.359	1500		S13-S11 S10-S11 S11-S12	1.871 1.721 1.646	300 450 525
S10	531014.995	337817.988	3.229	1.433	1500		S11-S12 S9-S10	1.646 1.796	525 450
S9	531024.156	337838.503	3.072	1.220	1500		S10-S11 S8-S9	1.796 1.852	450 450
S8	531036.836	337868.689	2.958	1.024	1500		S9-S10 S7-S8	1.852 2.104	450 300
S7	531049.298	337897.499	3.163	0.929	1200		S8-S9	1.934	450
							S7-S8	2.234	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 (m ³ /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: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S13	33	2.132	0.094	14.9	0.1068	0.0000	OK
60 minute summer	S12	34	1.787	0.187	79.7	0.0000	0.0000	OK
60 minute summer	S11	34	1.867	0.221	79.5	0.3907	0.0000	OK
60 minute summer	S10	34	1.996	0.200	62.9	0.3542	0.0000	OK
60 minute summer	S9	33	2.062	0.210	63.6	0.3709	0.0000	OK
60 minute summer	S8	33	2.096	0.162	39.7	0.2869	0.0000	OK
60 minute summer	S7	33	2.345	0.111	19.7	0.1253	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	S13	S13-S11	S11	14.8	0.796	0.208	0.7506	
60 minute summer	S11	S11-S12	S12	79.7	1.029	0.365	1.7339	85.4
60 minute summer	S10	S10-S11	S11	63.0	1.015	0.391	1.8534	
60 minute summer	S9	S9-S10	S10	62.9	0.899	0.392	1.5761	
60 minute summer	S8	S8-S9	S9	39.5	0.638	0.246	2.0293	
60 minute summer	S7	S7-S8	S8	19.7	0.856	0.277	0.7220	

Results for 30 year Critical Storm Duration. Lowest mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S13	33	2.173	0.135	28.3	0.1526	0.0000	OK
60 minute summer	S12	34	1.861	0.261	151.6	0.0000	0.0000	OK
60 minute summer	S11	34	1.963	0.317	151.0	0.5593	0.0000	OK
60 minute summer	S10	34	2.088	0.292	119.8	0.5162	0.0000	OK
60 minute summer	S9	33	2.167	0.315	120.9	0.5569	0.0000	OK
60 minute summer	S8	33	2.199	0.265	75.5	0.4685	0.0000	OK
60 minute summer	S7	33	2.395	0.161	37.4	0.1819	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	S13	S13-S11	S11	28.3	0.949	0.397	1.2009	
60 minute summer	S11	S11-S12	S12	151.6	1.247	0.694	2.7190	162.6
60 minute summer	S10	S10-S11	S11	119.8	1.223	0.744	2.9183	
60 minute summer	S9	S9-S10	S10	119.8	1.054	0.747	2.5530	
60 minute summer	S8	S8-S9	S9	75.0	0.695	0.466	3.5319	
60 minute summer	S7	S7-S8	S8	37.4	1.020	0.526	1.1516	

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.98%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
60 minute summer	S13	33	2.236	0.198	52.1	0.2235	0.0000	OK
60 minute summer	S12	33	1.959	0.359	280.8	0.0000	0.0000	OK
60 minute summer	S11	33	2.119	0.473	281.3	0.8354	0.0000	OK
60 minute summer	S10	33	2.308	0.512	222.9	0.9045	0.0000	SURCHARGED
60 minute summer	S9	33	2.467	0.615	223.0	1.0870	0.0000	SURCHARGED
60 minute summer	S8	33	2.548	0.614	138.7	1.0853	0.0000	SURCHARGED
60 minute summer	S7	33	2.698	0.464	68.8	0.5253	0.0000	SURCHARGED

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	S13	S13-S11	S11	51.9	1.037	0.729	2.2473	
60 minute summer	S11	S11-S12	S12	280.8	1.530	1.286	4.0533	299.1
60 minute summer	S10	S10-S11	S11	222.6	1.407	1.382	4.5734	
60 minute summer	S9	S9-S10	S10	222.9	1.407	1.389	3.5599	
60 minute summer	S8	S8-S9	S9	138.6	0.875	0.862	5.1876	
60 minute summer	S7	S7-S8	S8	68.7	1.074	0.965	2.2105	