

Design Settings

Rainfall Methodology	FSR	Maximum Time of Concentration (mins)	30.00
Return Period (years)	1	Maximum Rainfall (mm/hr)	50.0
Additional Flow (%)	0	Minimum Velocity (m/s)	1.00
FSR Region	England and Wales	Connection Type	Level Soffits
M5-60 (mm)	18.000	Minimum Backdrop Height (m)	0.200
Ratio-R	0.359	Preferred Cover Depth (m)	1.200
CV	0.750	Include Intermediate Ground	✓
Time of Entry (mins)	5.00	Enforce best practice design rules	x

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
1	0.025	5.00	48.350	600	385296.341	398058.635	1.950
2	0.009	5.00	48.000	600	385285.037	398046.594	1.800
3	0.004	5.00	47.750	600	385292.195	398039.802	1.670
4			47.300	600	385271.089	398018.303	1.650
5	0.055	5.00	47.400	1200	385264.705	398024.228	2.470
7	0.016	5.00	47.700	600	385268.925	398052.594	1.380
8	0.009	5.00	47.000	600	385257.822	398040.394	0.980
9	0.009	5.00	47.200	600	385260.074	398038.307	1.950
9A	0.012	5.00	47.200	600	385255.442	398033.457	2.135
10	0.024	5.00	47.000	1200	385241.440	398029.100	2.220
TANK			47.000	1200	385256.778	398015.926	2.300
FCC 1	0.024	5.00	47.000	1200	385261.128	398011.672	2.320
C1			47.000	1200	385263.731	398008.452	2.840
OUT 1			46.180		385261.720	397995.129	3.025
11	0.013	5.00	47.800	600	385289.068	398073.907	1.350
12			48.850	600	385309.844	398054.341	2.590
13	0.029	5.00	47.820	600	385293.272	398037.165	1.720
14	0.023	5.00	47.700	600	385286.741	398030.518	1.660
FCC 2	0.024	5.00	46.750	1200	385260.607	398003.568	1.540
OUT 2			46.750	1200	385261.763	397994.948	1.750

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)
1.000	16.583	82.9	150	1 STANDARD	48.350	46.400	1.800	48.000	46.200	1.650
1.001	9.926	82.7	150	1 STANDARD	48.000	46.200	1.650	47.750	46.080	1.520
1.002	27.898	64.9	150	1 STANDARD	47.750	46.080	1.520	47.300	45.650	1.500
1.003	11.071	15.4	150	1 STANDARD	47.300	45.650	1.500	47.400	44.930	2.320
1.004	11.477	49.9	150	1 STANDARD	47.400	44.930	2.320	47.000	44.700	2.150
2.000	17.703	59.0	150	1 STANDARD	47.700	46.320	1.230	47.000	46.020	0.830

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	1	600	Manhole	1 STANDARD	2	600	Manhole	1 STANDARD
1.001	2	600	Manhole	1 STANDARD	3	600	Manhole	1 STANDARD
1.002	3	600	Manhole	1 STANDARD	4	600	Manhole	1 STANDARD
1.003	4	600	Manhole	1 STANDARD	5	1200	Manhole	1 STANDARD
1.004	5	1200	Manhole	1 STANDARD	TANK	1200	Manhole	1 STANDARD
2.000	7	600	Manhole	1 STANDARD	8	600	Manhole	1 STANDARD

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)
2.001	4.628	77.1	150	1 STANDARD	47.000	46.020	0.830	47.200	45.960	1.090
2.002	14.674	79.3	150	1 STANDARD	47.200	45.250	1.800	47.200	45.065	1.985
2.003	11.215	83.1	150	1 STANDARD	47.200	45.065	1.985	47.400	44.930	2.320
3.000	12.646	158.1	150	1 STANDARD	47.000	44.780	2.070	47.000	44.700	2.150
1.006	8.540	427.0	225	1 STANDARD	47.000	44.700	2.075	47.000	44.680	2.095
1.007	9.224	20.7	225	1 STANDARD	47.000	44.680	2.095	47.000	44.235	2.540
1.008	13.474	13.4	300	1 STANDARD	47.000	44.160	2.540	46.180	43.155	2.725
4.000	28.539	150.0	150	1 STANDARD	47.800	46.450	1.200	48.850	46.260	2.440
4.001	23.867	149.2	150	1 STANDARD	48.850	46.260	2.440	47.820	46.100	1.570
4.002	9.319	155.3	150	1 STANDARD	47.820	46.100	1.570	47.700	46.040	1.510
4.003	37.540	45.2	150	1 STANDARD	47.700	46.040	1.510	46.750	45.210	1.390
4.004	8.697	41.4	150	1 STANDARD	46.750	45.210	1.390	46.750	45.000	1.600

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
2.001	8	600	Manhole	1 STANDARD	9	600	Manhole	1 STANDARD
2.002	9	600	Manhole	1 STANDARD	9A	600	Manhole	1 STANDARD
2.003	9A	600	Manhole	1 STANDARD	5	1200	Manhole	1 STANDARD
3.000	10	1200	Manhole	1 STANDARD	TANK	1200	Manhole	1 STANDARD
1.006	TANK	1200	Manhole	1 STANDARD	FCC 1	1200	Manhole	1 STANDARD
1.007	FCC 1	1200	Manhole	1 STANDARD	C1	1200	Manhole	1 STANDARD
1.008	C1	1200	Manhole	1 STANDARD	OUT 1		Manhole	1 STANDARD
4.000	11	600	Manhole	1 STANDARD	12	600	Manhole	1 STANDARD
4.001	12	600	Manhole	1 STANDARD	13	600	Manhole	1 STANDARD
4.002	13	600	Manhole	1 STANDARD	14	600	Manhole	1 STANDARD
4.003	14	600	Manhole	1 STANDARD	FCC 2	1200	Manhole	1 STANDARD
4.004	FCC 2	1200	Manhole	1 STANDARD	OUT 2	1200	Manhole	1 STANDARD

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
1	385296.341	398058.635	48.350	1.950	600		0	1.000	46.400	150
2	385285.037	398046.594	48.000	1.800	600		1	1.000	46.200	150
							0	1.001	46.200	150
3	385292.195	398039.802	47.750	1.670	600		1	1.001	46.080	150
							0	1.002	46.080	150
4	385271.089	398018.303	47.300	1.650	600		1	1.002	45.650	150
							0	1.003	45.650	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
5	385264.705	398024.228	47.400	2.470	1200		1	2.003	44.930	150
							2	1.003	44.930	150
							0	1.004	44.930	150
7	385268.925	398052.594	47.700	1.380	600		0	2.000	46.320	150
8	385257.822	398040.394	47.000	0.980	600		1	2.000	46.020	150
							0	2.001	46.020	150
9	385260.074	398038.307	47.200	1.950	600		1	2.001	45.960	150
							0	2.002	45.250	150
9A	385255.442	398033.457	47.200	2.135	600		1	2.002	45.065	150
							0	2.003	45.065	150
10	385241.440	398029.100	47.000	2.220	1200		0	3.000	44.780	150
TANK	385256.778	398015.926	47.000	2.300	1200		1	3.000	44.700	150
							2	1.004	44.700	150
							0	1.006	44.700	225
FCC 1	385261.128	398011.672	47.000	2.320	1200		1	1.006	44.680	225
C1	385263.731	398008.452	47.000	2.840	1200		0	1.007	44.680	225
							1	1.007	44.235	225
OUT 1	385261.720	397995.129	46.180	3.025			0	1.008	44.160	300
							1	1.008	43.155	300
11	385289.068	398073.907	47.800	1.350	600		0	4.000	46.450	150
12	385309.844	398054.341	48.850	2.590	600		1	4.000	46.260	150
							0	4.001	46.260	150
13	385293.272	398037.165	47.820	1.720	600		1	4.001	46.100	150
							0	4.002	46.100	150

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
14	385286.741	398030.518	47.700	1.660	600		1	4.002	46.040	150
							0	4.003	46.040	150
FCC 2	385260.607	398003.568	46.750	1.540	1200		1	4.003	45.210	150
							0	4.004	45.210	150
OUT 2	385261.763	397994.948	46.750	1.750	1200		1	4.004	45.000	150

Simulation Settings

Rainfall Methodology	FSR	Analysis Speed	Normal
FSR Region	England and Wales	Skip Steady State	x
M5-60 (mm)	18.000	Drain Down Time (mins)	240
Ratio-R	0.359	Additional Storage (m³/ha)	20.0
Summer CV	0.750	Check Discharge Rate(s)	x
Winter CV	0.840	Check Discharge Volume	x

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
30	0	0	0
100	40	0	0

Node FCC 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	44.680	Product Number	CTL-SHE-0126-8900-1800-8900
Design Depth (m)	1.800	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	8.9	Min Node Diameter (mm)	1200

Node FCC 2 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	✓	Sump Available	✓
Invert Level (m)	45.210	Product Number	CTL-SHE-0131-9000-1500-9000
Design Depth (m)	1.500	Min Outlet Diameter (m)	0.150
Design Flow (l/s)	9.0	Min Node Diameter (mm)	1200