

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	0.75
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	0	Minimum Backdrop Height (m)	1.500
CV	1.000	Preferred Cover Depth (m)	1.200
Time of Entry (mins)	5.00	Include Intermediate Ground	✓
Maximum Time of Concentration (mins)	30.00	Enforce best practice design rules	✓
Maximum Rainfall (mm/hr)	110.0		

1 2107940-NT2-SWS_A Manhole Type

Max Width (mm)	Diameter (mm)	Max Width (mm)	Diameter (mm)
374	1200	749	1500
499	1350	900	1800

>900 Link+900 mm

Max Depth (m)	Diameter (mm)	Max Depth (m)	Diameter (mm)
1.500	1050	99.999	1350

1 2107940-NT2-SWS_A Link Type

Shape	Circular	Auto Increment (mm)	75
Barrels	1	Follow Ground	x

Available Diameters (mm)

100 | 150

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
51	0.036	5.00	6.150	1200	500771.013	106170.592	1.492
53	0.030	5.00	3.877	1200	500796.168	106199.829	1.059
Headwall 54	0.014	5.00	3.536	1800	500805.038	106192.183	0.770
Headwall 55			3.500	1200	500792.886	106169.352	0.776
56			3.500	1200	500764.593	106136.046	0.860
Hydrobrake 1			3.500	1200	500760.592	106075.714	0.920
SW MH - EXISTING			3.070	1200	500765.698	106066.634	0.820

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	38.570	21.0	300	1 2107940-NT2-SWS_A	6.150	4.658	1.192	3.877	2.818	0.759
1.001	11.818	227.3	300	1 2107940-NT2-SWS_A	3.877	2.818	0.759	3.536	2.766	0.470
1.002	25.860	562.2	300	1 2107940-NT2-SWS_A	3.536	2.786	0.450	3.500	2.740	0.460
1.003	43.680	520.0	300	1 2107940-NT2-SWS_A	3.500	2.724	0.476	3.500	2.640	0.560

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	51	1200	Manhole	1 2107940-NT2-SWS_A	53	1200	Manhole	1 2107940-NT2-SWS_A
1.001	53	1200	Manhole	1 2107940-NT2-SWS_A	Headwall 54	1800	Manhole	1 2107940-NT2-SWS_A
1.002	Headwall 54	1800	Manhole	1 2107940-NT2-SWS_A	Headwall 55	1200	Manhole	1 2107940-NT2-SWS_A
1.003	Headwall 55	1200	Manhole	1 2107940-NT2-SWS_A	56	1200	Manhole	1 2107940-NT2-SWS_A

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)
1.004	59.600	993.3	300	1 2107940-NT2-SWS_A	3.500	2.640	0.560	3.500	2.580	0.620
1.005	10.417	31.6	300	1 2107940-NT2-SWS_A	3.500	2.580	0.620	3.070	2.250	0.520

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.004	56	1200	Manhole	1 2107940-NT2-SWS_A	Hydrobrake 1	1200	Manhole	1 2107940-NT2-SWS_A
1.005	Hydrobrake 1	1200	Manhole	1 2107940-NT2-SWS_A	SW MH - EXISTING	1200	Manhole	1 2107940-NT2-SWS_A

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
51	500771.013	106170.592	6.150	1.492	1200		0	1.000	4.658	300
53	500796.168	106199.829	3.877	1.059	1200		1	1.000	2.818	300
Headwall 54	500805.038	106192.183	3.536	0.770	1800		0	1.001	2.818	300
Headwall 55	500792.886	106169.352	3.500	0.776	1200		1	1.001	2.766	300
56	500764.593	106136.046	3.500	0.860	1200		0	1.002	2.786	300
Hydrobrake 1	500760.592	106075.714	3.500	0.920	1200		1	1.002	2.740	300
SW MH - EXISTING	500765.698	106066.634	3.070	0.820	1200		0	1.003	2.724	300
							1	1.003	2.640	300
							0	1.004	2.640	300
							1	1.004	2.580	300
							0	1.005	2.580	300
							1	1.005	2.250	300

Node Hydrobrake 1 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	2.580	Product Number	CTL-SHE-0047-8000-0566-8000
Design Depth (m)	0.566	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.8	Min Node Diameter (mm)	1200

Node Headwall 54 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	2.766
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m ²)	Inf Area (m ²)	Depth (m)	Area (m ²)	Inf Area (m ²)
0.000	7.2	0.0	0.500	40.7	0.0

Node Headwall 55 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	2.724	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	0.300	Number Required	1
Porosity	0.30	Pit Length (m)	43.680		

Node 56 Soakaway Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Invert Level (m)	2.640	Depth (m)	
Side Inf Coefficient (m/hr)	0.00000	Time to half empty (mins)		Inf Depth (m)	
Safety Factor	2.0	Pit Width (m)	0.300	Number Required	1
Porosity	1.00	Pit Length (m)	59.600		

Results for 2 year Critical Storm Duration. Lowest mass balance: 98.31%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	51	10	4.692	0.034	6.8	0.0553	0.0000	OK
15 minute summer	53	11	2.906	0.088	12.3	0.1496	0.0000	OK
15 minute summer	Headwall 54	12	2.892	0.126	14.6	1.7967	0.0000	OK
240 minute summer	Headwall 55	176	2.853	0.129	4.9	0.6528	0.0000	OK
240 minute summer	56	180	2.853	0.213	4.9	4.0476	0.0000	OK
240 minute summer	Hydrobrake 1	180	2.853	0.273	1.7	0.3087	0.0000	OK
30 minute summer	SW MH - EXISTING	61	2.264	0.014	0.8	0.0000	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)
15 minute summer	51	1.000	53	6.7	0.669	0.028	0.4160	
15 minute summer	53	1.001	Headwall 54	12.1	0.635	0.165	0.2601	
15 minute summer	Headwall 54	1.002	Headwall 55	11.7	0.623	0.253	0.4936	
240 minute summer	Headwall 55	1.003	56	4.9	0.345	0.102	1.7997	
240 minute summer	56	1.004	Hydrobrake 1	1.7	0.161	0.050	3.5987	
240 minute summer	Hydrobrake 1	1.005	SW MH - EXISTING	0.8	0.687	0.004	0.0122	18.8

Results for 30 year Critical Storm Duration. Lowest mass balance: 98.31%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	51	10	4.712	0.054	17.3	0.0866	0.0000	OK
240 minute winter	53	236	3.133	0.315	5.9	0.5356	0.0000	SURCHARGED
240 minute winter	Headwall 54	236	3.133	0.367	6.5	8.2365	0.0000	SURCHARGED
240 minute winter	Headwall 55	236	3.133	0.409	6.0	2.0725	0.0000	SURCHARGED
240 minute winter	56	236	3.133	0.493	4.7	9.3799	0.0000	SURCHARGED
240 minute winter	Hydrobrake 1	236	3.133	0.553	1.7	0.6259	0.0000	SURCHARGED
15 minute summer	SW MH - EXISTING	224	2.264	0.014	0.8	0.0000	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)
15 minute summer	51	1.000	53	17.2	0.811	0.070	0.9279	
240 minute winter	53	1.001	Headwall 54	5.3	0.410	0.072	0.8322	
240 minute winter	Headwall 54	1.002	Headwall 55	6.0	0.482	0.128	1.8210	
240 minute winter	Headwall 55	1.003	56	4.7	0.432	0.098	3.0759	
240 minute winter	56	1.004	Hydrobrake 1	1.7	0.192	0.048	4.1970	
240 minute winter	Hydrobrake 1	1.005	SW MH - EXISTING	0.8	0.687	0.004	0.0122	19.4

Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 98.31%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	51	10	4.729	0.071	30.4	0.1144	0.0000	OK
240 minute winter	53	208	3.501	0.683	10.3	1.1595	0.0000	SURCHARGED
240 minute winter	Headwall 54	208	3.501	0.735	11.6	23.6664	0.0000	FLOOD RISK
360 minute winter	Headwall 55	280	3.500	0.776	4.4	3.9281	3.0569	FLOOD
360 minute winter	56	280	3.500	0.860	3.5	16.3495	0.0963	FLOOD
180 minute winter	Hydrobrake 1	176	3.500	0.920	2.4	1.0405	0.0015	FLOOD
240 minute winter	SW MH - EXISTING	212	2.265	0.015	1.0	0.0000	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)
15 minute summer	51	1.000	53	30.2	0.898	0.124	1.4844	
240 minute winter	53	1.001	Headwall 54	9.4	0.435	0.129	0.8322	
240 minute winter	Headwall 54	1.002	Headwall 55	6.2	0.462	0.133	1.8210	
360 minute winter	Headwall 55	1.003	56	3.5	0.455	0.072	3.0759	
360 minute winter	56	1.004	Hydrobrake 1	1.4	0.196	0.040	4.1970	
180 minute winter	Hydrobrake 1	1.005	SW MH - EXISTING	1.0	0.728	0.005	0.0141	21.3