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Unit 1, Ensign House Parkway Court, Longbridge Road Plymouth, PL6 8LR	VICTORIA ROAD INFILTRATION BASIN B SURCHARGED OUTFALL	
Date 19/02/2026 File SWD NETWORK - INFILTRAT...	Designed by EPH Checked by	
Innovyze	Network 2019.1	

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Storm

Pipe Sizes STANDARD Manhole Sizes STANDARD

FEH Rainfall Model	
Return Period (years)	100
FEH Rainfall Version	1999
Site Location GB 386850 145550 ST 86850 45550	
C (1km)	-0.027
D1 (1km)	0.363
D2 (1km)	0.417
D3 (1km)	0.273
E (1km)	0.289
F (1km)	2.484
Maximum Rainfall (mm/hr)	50
Maximum Time of Concentration (mins)	30
Foul Sewage (l/s/ha)	0.000
Volumetric Runoff Coeff.	0.750
PIMP (%)	100
Add Flow / Climate Change (%)	0
Minimum Backdrop Height (m)	0.200
Maximum Backdrop Height (m)	1.500
Min Design Depth for Optimisation (m)	1.200
Min Vel for Auto Design only (m/s)	1.00
Min Slope for Optimisation (1:X)	500

Designed with Level Soffits

Surcharged Outfall Details for Storm

Outfall	Outfall C. Level	I. Level	Min	D,L	W
Pipe Number	Name	(m)	(m)	I. Level (mm)	(mm)
				(m)	

1.026	134.500	133.500	0.000	0	0
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Datum (m) 133.500 Offset (mins) 0

Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth	Time	Depth
(mins)	(m)	(mins)	(m)	(mins)	(m)	(mins)	(m)	(mins)	(m)	(mins)	(m)
30	0.701	330	0.701	630	0.701	930	0.701	1230	0.701	1530	0.701
60	0.701	360	0.701	660	0.701	960	0.701	1260	0.701	1560	0.701
90	0.701	390	0.701	690	0.701	990	0.701	1290	0.701	1590	0.701
120	0.701	420	0.701	720	0.701	1020	0.701	1320	0.701	1620	0.701
150	0.701	450	0.701	750	0.701	1050	0.701	1350	0.701	1650	0.701
180	0.701	480	0.701	780	0.701	1080	0.701	1380	0.701	1680	0.701
210	0.701	510	0.701	810	0.701	1110	0.701	1410	0.701	1710	0.701
240	0.701	540	0.701	840	0.701	1140	0.701	1440	0.701	1740	0.701
270	0.701	570	0.701	870	0.701	1170	0.701	1470	0.701	1770	0.701
300	0.701	600	0.701	900	0.701	1200	0.701	1500	0.701	1800	0.701

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Surcharged Outfall Details for Storm

Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)	Time (mins)	Depth (m)
1830	0.701	2010	0.701	2190	0.701	2370	0.701	2550	0.701	2730	0.701
1860	0.701	2040	0.701	2220	0.701	2400	0.701	2580	0.701	2760	0.701
1890	0.701	2070	0.701	2250	0.701	2430	0.701	2610	0.701	2790	0.701
1920	0.701	2100	0.701	2280	0.701	2460	0.701	2640	0.701	2820	0.701
1950	0.701	2130	0.701	2310	0.701	2490	0.701	2670	0.701	2850	0.701
1980	0.701	2160	0.701	2340	0.701	2520	0.701	2700	0.701	2880	0.701

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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 0.000
 Hot Start Level (mm) 0 Inlet Coefficient 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 16
 Number of Online Controls 15 Number of Time/Area Diagrams 0
 Number of Offline Controls 0 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FEH
 FEH Rainfall Version 1999
 Site Location GB 386850 145550 ST 86850 45550
 C (1km) -0.027
 D1 (1km) 0.363
 D2 (1km) 0.417
 D3 (1km) 0.273
 E (1km) 0.289
 F (1km) 2.484
 Cv (Summer) 0.750
 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
 Analysis Timestep 2.5 Second Increment (Extended)
 DTS Status OFF
 DVD Status ON
 Inertia 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) 100
 Climate Change (%) 45

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.000	DIST TANK	120 Winter	100	+45%	100/15 Summer			
1.001	SIC 225-1	180 Winter	100	+45%	100/15 Summer			
1.002	SMH 61	15 Winter	100	+45%	100/15 Summer			
2.000	SWRE 227-4	15 Winter	100	+45%	100/15 Summer			
2.001	SIC 227-3	15 Winter	100	+45%	100/15 Summer			
2.002	SIC 227-2	15 Winter	100	+45%	100/15 Summer			
2.003	SIC 227-1	15 Winter	100	+45%	100/15 Summer			
3.000	DIST TANK	120 Winter	100	+45%	100/15 Summer			
3.001	SIC 226-1	120 Winter	100	+45%	100/15 Summer			
1.003	SMH 60	15 Winter	100	+45%	100/15 Summer			

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

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.000	DIST TANK	138.206	0.431	0.000	0.16		0.6	FLOOD RISK	
1.001	SIC 225-1	138.231	0.476	0.000	0.04		0.6	FLOOD RISK	
1.002	SMH 61	137.902	0.567	0.000	0.20		5.4	SURCHARGED	
2.000	SWRE 227-4	138.018	0.398	0.000	0.35		2.7	FLOOD RISK	
2.001	SIC 227-3	138.006	0.536	0.000	0.71		5.2	FLOOD RISK	
2.002	SIC 227-2	137.970	0.690	0.000	0.71		4.9	FLOOD RISK	
2.003	SIC 227-1	137.955	0.765	0.000	0.96		19.2	FLOOD RISK	
3.000	DIST TANK	137.931	0.351	0.000	0.06		0.3	FLOOD RISK	
3.001	SIC 226-1	137.938	0.398	0.000	0.02		0.3	FLOOD RISK	
1.003	SMH 60	137.902	0.862	0.000	0.37		18.0	SURCHARGED	

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VICTORIA ROAD
INFILTRATION BASIN B
SURCHARGED OUTFALL

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Micro Drainage

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.004	SMH 59	15 Winter	100	+45%	100/15	Summer		
4.000	DIST TANK	60 Winter	100	+45%	100/15	Summer		
4.001	SIC 1-1	60 Winter	100	+45%	100/15	Summer		
4.002	SMH 64	15 Winter	100	+45%	100/15	Summer		
5.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
5.001	SIC 4-1	120 Winter	100	+45%	100/15	Summer		
4.003	SMH 63	15 Winter	100	+45%	100/15	Summer		
1.005	SMH 58	15 Winter	100	+45%	100/15	Summer		
6.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
6.001	SIC 5-1	120 Winter	100	+45%	100/15	Summer		
1.006	JUNCTION	60 Winter	100	+45%				
7.000	DIST TANK	60 Winter	100	+45%	100/15	Summer		
7.001	SIC 6-1	60 Winter	100	+45%	100/15	Summer		
1.007	JUNCTION	60 Winter	100	+45%				
8.000	DIST TANK	180 Winter	100	+45%	100/15	Summer		
8.001	SIC 7-1	180 Winter	100	+45%	100/15	Summer		
1.008	JUNCTION	60 Winter	100	+45%				
1.009	SMH 57	15 Winter	100	+45%	100/15	Summer		
1.010	SMH 56	15 Winter	100	+45%	100/15	Summer		
9.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
9.001	SIC 10-1	120 Winter	100	+45%	100/15	Summer		
1.011	JUNCTION	60 Winter	100	+45%				
10.000	SMH 62	15 Winter	100	+45%				
11.000	SIC 124-2	15 Winter	100	+45%	100/15	Summer		
11.001	SIC 124-1	15 Summer	100	+45%				
1.012	SMH 55	15 Winter	100	+45%	100/15	Summer		
12.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
12.001	SIC 14-1	120 Winter	100	+45%	100/15	Summer		
1.013	SMH 54	15 Winter	100	+45%	100/15	Summer		
1.014	JUNCTION	60 Winter	100	+45%				
13.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
13.001	SIC 121-1	120 Winter	100	+45%	100/15	Summer		
1.015	JUNCTION	60 Winter	100	+45%				
1.016	SMH 53	15 Winter	100	+45%	100/15	Summer		
14.000	DIST TANK	180 Winter	100	+45%	100/15	Summer		
14.001	SIC 119-1	180 Winter	100	+45%	100/15	Summer		
1.017	JUNCTION	60 Winter	100	+45%				
15.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
15.001	SIC 117-1	180 Winter	100	+45%	100/15	Summer		
1.018	JUNCTION	240 Winter	100	+45%				
16.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
16.001	SIC 104-1	120 Winter	100	+45%	100/15	Summer		
1.019	JUNCTION	360 Winter	100	+45%				
1.020	SMH 52	15 Winter	100	+45%	100/15	Summer		
17.000	DIST TANK	120 Winter	100	+45%	100/15	Summer		
17.001	SIC 105-1	120 Winter	100	+45%	100/15	Summer		
1.021	JUNCTION	360 Winter	100	+45%				
18.000	DIST TANK	180 Winter	100	+45%	100/15	Summer		
18.001	SIC 106-1	180 Winter	100	+45%	100/15	Summer		

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PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.004	SMH 59	137.875	1.140	0.000	0.76		62.0	FLOOD RISK	
4.000	DIST TANK	138.427	0.577	0.000	0.27		1.1	FLOOD RISK	
4.001	SIC 1-1	138.398	0.568	0.000	0.06		1.1	FLOOD RISK	
4.002	SMH 64	137.895	0.645	0.000	0.89		14.9	SURCHARGED	
5.000	DIST TANK	138.944	0.354	0.000	0.15		0.6	FLOOD RISK	
5.001	SIC 4-1	138.964	0.394	0.000	0.02		0.6	FLOOD RISK	
4.003	SMH 63	137.827	0.802	0.000	0.51		16.3	SURCHARGED	
1.005	SMH 58	137.763	1.223	0.000	0.61		65.4	SURCHARGED	
6.000	DIST TANK	139.187	0.387	0.000	0.09		0.3	FLOOD RISK	
6.001	SIC 5-1	139.205	0.425	0.000	0.01		0.3	FLOOD RISK	
1.006	JUNCTION	136.494	0.000	0.000	0.42		44.9	SURCHARGED*	
7.000	DIST TANK	139.450	0.445	0.000	0.16		0.6	FLOOD RISK	
7.001	SIC 6-1	139.428	0.443	0.000	0.02		0.6	FLOOD RISK	
1.007	JUNCTION	136.451	0.000	0.000	0.41		44.3	SURCHARGED*	
8.000	DIST TANK	139.449	0.389	0.000	0.09		0.4	FLOOD RISK	
8.001	SIC 7-1	139.474	0.434	0.000	0.01		0.3	FLOOD RISK	
1.008	JUNCTION	136.383	0.000	0.000	0.39		41.9	SURCHARGED*	
1.009	SMH 57	137.400	1.057	0.000	0.59		70.8	SURCHARGED	
1.010	SMH 56	137.298	1.050	0.000	0.66		88.3	SURCHARGED	
9.000	DIST TANK	139.148	0.418	0.000	0.16		0.6	FLOOD RISK	
9.001	SIC 10-1	139.173	0.463	0.000	0.02		0.6	FLOOD RISK	
1.011	JUNCTION	136.132	0.000	0.000	0.41		59.5	SURCHARGED*	
10.000	SMH 62	137.618	-0.057	0.000	0.71		33.6	OK	
11.000	SIC 124-2	137.863	0.038	0.000	1.12		8.2	SURCHARGED	
11.001	SIC 124-1	137.619	-0.046	0.000	0.57		13.7	OK	
1.012	SMH 55	137.048	1.056	0.000	1.63		163.0	SURCHARGED	
12.000	DIST TANK	138.319	0.414	0.000	0.25		1.0	FLOOD RISK	
12.001	SIC 14-1	138.342	0.457	0.000	0.04		0.9	SURCHARGED	
1.013	SMH 54	136.895	0.960	0.000	1.84		157.7	SURCHARGED	
1.014	JUNCTION	135.926	0.000	0.000	0.87		93.0	SURCHARGED*	
13.000	DIST TANK	137.848	0.418	0.000	0.15		0.6	FLOOD RISK	
13.001	SIC 121-1	137.865	0.455	0.000	0.02		0.6	SURCHARGED	
1.015	JUNCTION	135.874	0.000	0.000	0.95		102.1	SURCHARGED*	
1.016	SMH 53	136.415	0.603	0.000	0.93		169.5	SURCHARGED	
14.000	DIST TANK	137.064	0.389	0.000	0.09		0.4	FLOOD RISK	
14.001	SIC 119-1	137.089	0.434	0.000	0.01		0.3	FLOOD RISK	
1.017	JUNCTION	135.595	0.000	0.000	0.44		104.8	SURCHARGED*	
15.000	DIST TANK	136.486	0.346	0.000	0.14		0.6	FLOOD RISK	
15.001	SIC 117-1	136.512	0.392	0.000	0.03		0.6	FLOOD RISK	
1.018	JUNCTION	135.231	0.000	0.000	0.29		57.0	SURCHARGED*	
16.000	DIST TANK	136.347	0.387	0.000	0.09		0.3	FLOOD RISK	
16.001	SIC 104-1	136.365	0.425	0.000	0.02		0.3	FLOOD RISK	
1.019	JUNCTION	134.977	0.000	0.000	0.34		43.0	SURCHARGED*	
1.020	SMH 52	135.555	0.683	0.000	1.45		199.9	SURCHARGED	
17.000	DIST TANK	135.945	0.240	0.000	0.10		0.4	SURCHARGED	
17.001	SIC 105-1	135.944	0.259	0.000	0.01		0.3	SURCHARGED	
1.021	JUNCTION	134.748	0.000	0.000	0.33		45.1	SURCHARGED*	
18.000	DIST TANK	135.845	0.310	0.000	0.09		0.4	FLOOD RISK	
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Summary of Critical Results by Maximum Level (Rank 1) for Storm

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m ³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
18.001	SIC 106-1	135.844	0.329	0.000	0.02		0.3	FLOOD RISK	

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

PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surge	First (Y) Flood	First (Z) Overflow	Overflow Act.
1.022	JUNCTION	360 Winter	100	+45%				
1.023	SMH 51	60 Summer	100	+45%	100/15 Summer			
19.000	FC 1	360 Winter	100	+45%				
1.024	SMH 50B	60 Summer	100	+45%	100/15 Summer			
1.025	STORAGE	60 Summer	100	+45%	100/15 Summer			
1.026	SMH 50A	60 Summer	100	+45%	100/15 Summer			

PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Pipe Flow (l/s)	Status	Level Exceeded
1.022	JUNCTION	134.623	0.000	0.000	0.36		45.1	SURCHARGED*	
1.023	SMH 51	134.917	0.394	0.000	0.69		135.8	SURCHARGED	
19.000	FC 1	135.224	-0.126	0.000	0.06		3.5	OK	
1.024	SMH 50B	134.745	0.477	0.000	0.66		157.4	SURCHARGED	
1.025	STORAGE	134.535	0.640	0.000	1.77		158.3	SURCHARGED	
1.026	SMH 50A	134.368	0.478	0.000	1.94		158.6	SURCHARGED	