

Waterman Group							Page 32		
Pickfords Wharf Clink Street London, SE1 9DG				MIRA LAND SOUTH OF A5 EED13833					
Date 11/01/2022				Designed by AS					
File SURFACE WATER DRAINAGE ...				Checked by HC					
Innovyze				Network 2020.1.3					
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>									
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Flow / Cap.	Overflow (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
15.002	69	81.009	0.609	0.000	0.38			199.6	SURCHARGED
15.003	70	80.867	0.767	0.000	0.64			220.5	SURCHARGED
16.000	71	82.316	1.525	0.000	2.35			349.5	SURCHARGED
16.001	72	81.364	0.730	0.000	2.23			333.3	SURCHARGED
16.002	73	80.903	0.439	0.000	0.48			71.6	SURCHARGED
16.003	74	80.917	0.627	0.000	0.80			117.8	SURCHARGED
16.004	75	80.917	0.773	0.000	0.51			75.6	SURCHARGED
16.005	76	81.158	1.178	0.000	1.40			207.5	SURCHARGED
16.006	77	81.160	1.333	0.000	0.32			46.0	SURCHARGED
16.007	78	80.205	0.475	0.000	0.30			40.8	SURCHARGED
16.008	79	80.195	0.525	0.000	0.28			40.3	SURCHARGED
16.009	80	80.183	0.605	0.000	0.31			40.8	SURCHARGED
17.000	81	82.321	-0.204	0.000	0.56			144.9	OK
17.001	82	81.802	-0.223	0.000	0.49			283.7	OK
18.000	83	81.326	0.681	0.000	0.58			87.2	SURCHARGED
18.001	84	81.309	0.830	0.000	0.66			99.3	SURCHARGED
18.002	85	81.270	0.975	0.000	0.60			89.9	SURCHARGED
18.003	86	81.194	1.098	0.000	0.78			116.1	SURCHARGED
18.004	87	80.069	0.136	0.000	0.37			54.5	SURCHARGED
18.005	88	80.069	0.262	0.000	0.17			38.1	SURCHARGED
17.002	89	80.069	0.508	0.000	0.10			22.2	SURCHARGED
16.010	90	80.173	0.797	0.000	0.60			61.0	SURCHARGED
16.011	91	80.172	0.813	0.000	0.47			66.3	SURCHARGED
16.012	92	80.170	0.908	0.000	0.47			66.2	SURCHARGED
16.013	93	80.167	1.149	0.000	0.43			27.9	SURCHARGED
19.000	94	80.853	1.203	3.206	2.80			416.5	FLOOD
19.001	95	80.276	0.789	0.000	0.27			40.2	SURCHARGED
19.002	96	80.271	0.978	0.000	0.38			56.8	SURCHARGED
19.003	97	80.265	1.122	0.000	0.42			60.3	SURCHARGED
19.004	98	80.258	1.221	0.000	0.46			65.8	SURCHARGED
20.000	99	80.853	1.203	3.200	1.91			72.5	FLOOD
20.001	100	80.254	0.866	0.000	0.13			4.8	SURCHARGED
19.005	101	80.252	1.320	0.000	0.10			14.3	SURCHARGED
16.014	102	80.144	1.672	0.000	0.51			35.0	SURCHARGED
1.016	103	79.988	1.686	0.000	3.03			104.8	SURCHARGED*
1.017	104	78.207	0.000	0.000	1.95			67.4	SURCHARGED*
1.018	105	78.552	0.438	0.000	1.16			85.6	SURCHARGED*
21.000	106	80.678	0.878	0.000	0.47			125.3	SURCHARGED
21.001	107	80.503	1.053	0.000	0.72			151.6	FLOOD RISK
21.002	108	80.381	1.085	0.000	0.96			176.0	FLOOD RISK
21.003	109	80.280	1.107	0.000	0.32			143.9	SURCHARGED
22.000	110	80.279	0.554	0.000	1.90			284.5	SURCHARGED
22.001	111	79.960	0.410	0.000	0.90			137.6	SURCHARGED
22.002	112	79.787	0.465	0.000	1.40			209.1	SURCHARGED
22.003	113	79.526	0.378	0.000	1.59			235.1	SURCHARGED
22.004	114	79.186	0.181	0.000	1.99			270.9	SURCHARGED
22.005	115	79.159	0.221	0.000	0.22			31.7	SURCHARGED
23.000	116	80.446	0.612	0.000	0.87			252.3	SURCHARGED
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Pickfords Wharf	MIRA	
Clink Street	LAND SOUTH OF A5	
London, SE1 9DG	EED13833	
Date 11/01/2022	Designed by AS	
File SURFACE WATER DRAINAGE ...	Checked by HC	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Water	Surcharged	Flooded			Half Drain	Pipe	Status
		Level	Depth	Volume	Flow /	Overflow	Time	Flow	
		(m)	(m)	(m³)	Cap.	(l/s)	(mins)	(l/s)	
24.000	117	80.411	0.611	0.000	0.33			89.3	SURCHARGED

	US/MH	Level
PN	Name	Exceeded
15.002	69	
15.003	70	
16.000	71	
16.001	72	
16.002	73	
16.003	74	
16.004	75	
16.005	76	
16.006	77	
16.007	78	
16.008	79	
16.009	80	
17.000	81	
17.001	82	
18.000	83	
18.001	84	
18.002	85	
18.003	86	
18.004	87	
18.005	88	
17.002	89	
16.010	90	
16.011	91	
16.012	92	
16.013	93	
19.000	94	2
19.001	95	
19.002	96	
19.003	97	
19.004	98	
20.000	99	3
20.001	100	
19.005	101	
16.014	102	
1.016	103	
1.017	104	
1.018	105	
21.000	106	
21.001	107	
21.002	108	
21.003	109	
22.000	110	

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Pickfords Wharf Clink Street London, SE1 9DG	MIRA LAND SOUTH OF A5 EED13833	
Date 11/01/2022	Designed by AS	
File SURFACE WATER DRAINAGE ...	Checked by HC	
Innovyze	Network 2020.1.3	

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

PN	US/MH Name	Level Exceeded
22.001		111
22.002		112
22.003		113
22.004		114
22.005		115
23.000		116
24.000		117

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Pickfords Wharf Clink Street London, SE1 9DG						MIRA LAND SOUTH OF A5 EED13833			
Date 11/01/2022 File SURFACE WATER DRAINAGE ...						Designed by AS Checked by HC			
Innovyze						Network 2020.1.3			
<u>Summary of Critical Results by Maximum Level (Rank 1) for Storm</u>									
PN	US/MH Name	Storm	Return Period	Climate Change	First (X) Surcharge	First (Y) Flood	First (Z) Overflow	Overflow Act.	
23.001	118	15 Winter	100	+40%	100/15 Summer				
23.002	119	15 Winter	100	+40%	100/15 Summer				
23.003	120	15 Winter	100	+40%	100/15 Summer				
21.004	121	15 Winter	100	+40%	30/15 Summer				
21.005	122	15 Winter	100	+40%					
21.006	123	1440 Winter	100	+40%	30/1440 Winter				
1.019	124	1440 Winter	100	+40%					
25.000	125	30 Winter	100	+40%	100/15 Summer				
25.001	126	30 Winter	100	+40%	30/15 Summer				
25.002	127	60 Winter	100	+40%	30/30 Winter				
25.003	128	600 Winter	100	+40%	30/30 Winter				
25.004	129	600 Winter	100	+40%	30/30 Winter				
25.005	130	600 Winter	100	+40%	30/240 Winter	100/360 Winter			
25.006	131	600 Winter	100	+40%	30/120 Winter	100/480 Winter			
25.007	132	600 Winter	100	+40%	30/120 Summer	100/480 Winter			
26.000	133	60 Winter	100	+40%	100/15 Summer				
26.001	134	60 Winter	100	+40%	30/30 Summer				
26.002	135	120 Winter	100	+40%	30/60 Winter				
26.003	136	15 Winter	100	+40%	30/60 Winter				
26.004	137	15 Winter	100	+40%	100/15 Summer				
26.005	138	15 Winter	100	+40%	100/15 Summer				
26.006	139	15 Winter	100	+40%	100/15 Summer				
25.008	140	480 Winter	100	+40%	30/60 Summer	100/600 Winter			
27.000	141	15 Winter	100	+40%	30/15 Summer				
27.001	142	15 Winter	100	+40%	30/15 Summer				
27.002	143	60 Winter	100	+40%					
27.003	144	60 Winter	100	+40%					
27.004	145	240 Winter	100	+40%					
27.005	146	240 Winter	100	+40%					
27.006	147	15 Winter	100	+40%					
27.007	148	15 Winter	100	+40%					
27.008	149	15 Winter	100	+40%					
27.009	150	15 Winter	100	+40%					
27.010	151	15 Winter	100	+40%					
27.011	152	960 Winter	100	+40%	100/240 Winter				
25.009	153	960 Winter	100	+40%	1/960 Winter				
25.010	154	1440 Summer	100	+40%					
25.011	155	1440 Summer	100	+40%					
25.012	156	1440 Summer	100	+40%	1/180 Winter				
25.013	157	960 Winter	100	+40%	30/180 Summer				
1.020	158	1440 Winter	100	+40%					
PN	US/MH Name	Water Level (m)	Surcharged Depth (m)	Flooded Volume (m³)	Half Drain Time (mins)	Pipe Flow (l/s)	Status		
23.001	118	80.387	0.649	0.000	1.38	401.9	SURCHARGED		
23.002	119	80.265	0.625	0.000	1.51	410.0	SURCHARGED		
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Pickfords Wharf	MIRA	
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Innovyze	Network 2020.1.3	

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 / Overflow Cap. (l/s)	Half Drain Time (mins)	Pipe Flow (l/s)	Status
23.003	120	80.136	0.559	0.000	1.65		395.0	SURCHARGED
21.004	121	79.532	1.011	0.000	2.62		420.9	SURCHARGED*
21.005	122	78.396	0.000	0.000	2.62		421.6	SURCHARGED*
21.006	123	78.132	0.026	0.000	0.52		34.4	SURCHARGED*
1.019	124	77.979	-0.141	0.000	0.81		107.2	OK
25.000	125	84.353	0.703	0.000	0.96		287.4	SURCHARGED
25.001	126	84.239	1.341	0.000	1.47		445.5	SURCHARGED
25.002	127	82.534	0.529	0.000	1.16		337.3	SURCHARGED
25.003	128	82.266	0.747	0.000	0.76		217.8	SURCHARGED
25.004	129	82.153	1.061	0.000	0.80		230.1	SURCHARGED
25.005	130	82.024	1.375	2.927	0.79		114.6	FLOOD
25.006	131	82.003	1.476	3.057	0.76		111.5	FLOOD
25.007	132	82.001	1.603	0.919	0.80		110.8	FLOOD
26.000	133	84.145	0.495	0.000	0.95		145.6	SURCHARGED
26.001	134	84.099	0.686	0.000	1.57		239.1	SURCHARGED
26.002	135	83.627	0.448	0.000	1.34		204.2	SURCHARGED
26.003	136	83.870	0.936	0.000	1.11		169.6	SURCHARGED
26.004	137	83.787	1.103	0.000	1.02		315.6	SURCHARGED
26.005	138	83.654	1.141	0.000	1.28		869.2	FLOOD RISK
26.006	139	82.392	0.638	0.000	1.25		1028.5	SURCHARGED
25.008	140	81.991	1.668	0.000	0.39		225.4	FLOOD RISK
27.000	141	83.590	0.940	0.000	2.98		394.8	FLOOD RISK
27.001	142	83.075	0.482	0.000	2.88		391.2	SURCHARGED
27.002	143	82.469	-0.057	0.000	0.84		118.9	OK
27.003	144	82.408	-0.030	0.000	1.00		142.5	OK
27.004	145	82.321	-0.021	0.000	0.18		24.5	OK
27.005	146	81.886	-0.389	0.000	0.04		24.5	OK
27.006	147	81.026	-0.198	0.000	0.11		15.2	OK
27.007	148	81.026	-0.102	0.000	0.35		45.6	OK
27.008	149	80.986	-0.092	0.000	0.39		53.2	OK
27.009	150	80.940	-0.062	0.000	0.98		141.8	OK
27.010	151	80.636	-0.249	0.000	0.40		219.3	OK
27.011	152	80.173	0.372	0.000	0.90		86.2	SURCHARGED
25.009	153	80.282	1.777	0.000	1.96		212.1	SURCHARGED
25.010	154	78.467	0.000	0.000	1.13		182.4	SURCHARGED*
25.011	155	78.402	0.000	0.000	1.13		182.3	SURCHARGED*
25.012	156	78.891	0.701	0.000	1.86		137.8	SURCHARGED*
25.013	157	78.354	0.286	0.000	2.46		145.2	SURCHARGED
1.020	158	77.851	-0.749	0.000	0.08		247.8	OK

PN	US/MH Name	Level Exceeded
23.001	118	
23.002	119	
23.003	120	
21.004	121	

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G. Foul Water Calculations and Diversion information

Appendices



Project Title: MIRA South - Existing
Calculations Title: Existing Foul Flow Estimate

Sheet No: 1 of 5
By: K. Tolson
Checked: H. Chetty
Project No: EED13833
Date: 14.01.2021
Date: 14.01.2021

	Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential				2.12	24	
Existing property = 160 litres/person/day	400.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.000
New property = 125 litres/person/day	312.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.000
Occupancy = 2.5 persons						
Hotel	500.0 litres per room	British Water (2013)	0 rooms	3	24	0.000
Student Accommodation	200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.000
Offices	750.0 litres per 100m ²	Jones (1992)	m ²	3	10	0.000
Retail	400.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Cinema	10.0 litres per seat	Jones (1992)	0 seats*	3	8	0.000
Health Club/Sports Centre	50.0 litres per customer	British Water (2013)	0 customers**	3	16	0.000
Day School	90.0 litres per pupil	British Water (2013)	0 pupils	3	10	0.000
Boarding School	175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.000
Hospital	750.0 litres per bed	Jones (1992)	0 beds	3	3 DWF Flat	0.000
Nursing Home	350.0 litres per bed	British Water (2013)	0 beds	3	24	0.000
Restaurant	30.0 litres per cover	British Water (2013)	0 covers	3	8	0.000
Pub/Club	15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	12	0.000
Warehouse	150.0 litres per 100m ²	Jones (1992)	m ²	3	3 DWF Flat	0.000
Manufacturing	550.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Commercial	300.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
SUB TOTAL						0.0
Infiltration percentage	8%					0.0
TOTAL						0.0

* Foul flow rate needs to be calculated based on number of seats. An allowance of 4m² has been made for each seat.

Floor area = 0 m² 4 m² per person

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person



Project Title: MIRA South - Zone 30
Calculations Title: Proposed Foul Flow Estimate

Sheet No: 2 of 5 Project No: EED13833
By: K. Tolson Date: 14.01.2021
Checked: H. Chetty Date: 14.01.2021

	Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential				2.12	24	
Existing property = 160 litres/person/day	400.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.000
New property = 125 litres/person/day	312.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.000
Occupancy = 2.5 persons						
Hotel	500.0 litres per room	British Water (2013)	0 rooms	3	24	0.000
Student Accommodation	200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.000
Offices	750.0 litres per 100m ²	Jones (1992)	m ²	3	10	0.000
Retail	400.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Cinema	10.0 litres per seat	Jones (1992)	0 seats*	3	8	0.000
Health Club/Sports Centre	50.0 litres per customer	British Water (2013)	0 customers**	3	16	0.000
Day School	90.0 litres per pupil	British Water (2013)	0 pupils	3	10	0.000
Boarding School	175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.000
Hospital	750.0 litres per bed	Jones (1992)	0 beds	3	3 DWF Flat	0.000
Nursing Home	350.0 litres per bed	British Water (2013)	0 beds	3	24	0.000
Restaurant	30.0 litres per cover	British Water (2013)	0 covers	3	8	0.000
Pub/Club	15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	12	0.000
Warehouse	150.0 litres per 100m ²	Jones (1992)	m ²	3	3 DWF Flat	0.000
Manufacturing	550.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Commercial	300.0 litres per 100m ²	Jones (1992)	81250 m ²	3	3 DWF Flat	8.464
SUB TOTAL						8.5
Infiltration percentage	8%					0.7
TOTAL						9.1

* Foul flow rate needs to be calculated based on number of seats. An allowance of 4m² has been made for each seat.

Floor area = 0 m² 4 m² per person

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person



Project Title: MIRA South - Zone 1
Calculations Title: Proposed Foul Flow Estimate

Sheet No: 3 of 5 Project No: EED13833
By: K. Tolson Date: 14.01.2021
Checked: H. Chetty Date: 14.01.2021

	Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential				2.12	24	
Existing property = 160 litres/person/day	400.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.000
New property = 125 litres/person/day	312.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.000
Occupancy = 2.5 persons						
Hotel	500.0 litres per room	British Water (2013)	0 rooms	3	24	0.000
Student Accommodation	200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.000
Offices	750.0 litres per 100m ²	Jones (1992)	m ²	3	10	0.000
Retail	400.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Cinema	10.0 litres per seat	Jones (1992)	0 seats*	3	8	0.000
Health Club/Sports Centre	50.0 litres per customer	British Water (2013)	0 customers**	3	16	0.000
Day School	90.0 litres per pupil	British Water (2013)	0 pupils	3	10	0.000
Boarding School	175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.000
Hospital	750.0 litres per bed	Jones (1992)	0 beds	3	3 DWF Flat	0.000
Nursing Home	350.0 litres per bed	British Water (2013)	0 beds	3	24	0.000
Restaurant	30.0 litres per cover	British Water (2013)	0 covers	3	8	0.000
Pub/Club	15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	12	0.000
Warehouse	150.0 litres per 100m ²	Jones (1992)	m ²	3	3 DWF Flat	0.000
Manufacturing	550.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Commercial	300.0 litres per 100m ²	Jones (1992)	17500 m ²	3	3 DWF Flat	1.823
SUB TOTAL						1.8
Infiltration percentage	8%					0.1
TOTAL						2.0

* Foul flow rate needs to be calculated based on number of seats. An allowance of 4m² has been made for each seat.

Floor area = 0 m² 4 m² per person

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person



Project Title: MIRA South - Zone 10
Calculations Title: Proposed Foul Flow Estimate

Sheet No: 4 of 5 Project No: EED13833
By: K. Tolson Date: 14.01.2021
Checked: H. Chetty Date: 14.01.2021

	Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential				2.12	24	
Existing property = 160 litres/person/day	400.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.000
New property = 125 litres/person/day	312.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.000
Occupancy = 2.5 persons						
Hotel	500.0 litres per room	British Water (2013)	0 rooms	3	24	0.000
Student Accommodation	200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.000
Offices	750.0 litres per 100m ²	Jones (1992)	m ²	3	10	0.000
Retail	400.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Cinema	10.0 litres per seat	Jones (1992)	0 seats*	3	8	0.000
Health Club/Sports Centre	50.0 litres per customer	British Water (2013)	0 customers**	3	16	0.000
Day School	90.0 litres per pupil	British Water (2013)	0 pupils	3	10	0.000
Boarding School	175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.000
Hospital	750.0 litres per bed	Jones (1992)	0 beds	3	3 DWF Flat	0.000
Nursing Home	350.0 litres per bed	British Water (2013)	0 beds	3	24	0.000
Restaurant	30.0 litres per cover	British Water (2013)	0 covers	3	8	0.000
Pub/Club	15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	12	0.000
Warehouse	150.0 litres per 100m ²	Jones (1992)	m ²	3	3 DWF Flat	0.000
Manufacturing	550.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Commercial	300.0 litres per 100m ²	Jones (1992)	18500 m ²	3	3 DWF Flat	1.927
SUB TOTAL						1.9
Infiltration percentage	8%					0.2
TOTAL						2.1

* Foul flow rate needs to be calculated based on number of seats. An allowance of 4m² has been made for each seat.

Floor area = 0 m² 4 m² per person

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person



Project Title: MIRA South - Zone 20
Calculations Title: Proposed Foul Flow Estimate

Sheet No: 5 of 5 Project No: EED13833
By: K. Tolson Date: 14.01.2021
Checked: H. Chetty Date: 14.01.2021

	Dry Weather Flow Rate (per day)	Source	Number of	Factor	Profile (hours)	Peak Flow Rate (litres/second)
Residential				2.12	24	
Existing property = 160 litres/person/day	400.0 litres per unit	Thames Water Guidelines (2016)	0 existing units			0.000
New property = 125 litres/person/day	312.5 litres per unit	Thames Water Guidelines (2016)	0 proposed units			0.000
Occupancy = 2.5 persons						
Hotel	500.0 litres per room	British Water (2013)	0 rooms	3	24	0.000
Student Accommodation	200.0 litres per bed	Thames Water Guidelines (2016)	0 beds	3	24	0.000
Offices	750.0 litres per 100m ²	Jones (1992)	m ²	3	10	0.000
Retail	400.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Cinema	10.0 litres per seat	Jones (1992)	0 seats*	3	8	0.000
Health Club/Sports Centre	50.0 litres per customer	British Water (2013)	0 customers**	3	16	0.000
Day School	90.0 litres per pupil	British Water (2013)	0 pupils	3	10	0.000
Boarding School	175.0 litres per pupil	British Water (2013)	0 pupils	3	24	0.000
Hospital	750.0 litres per bed	Jones (1992)	0 beds	3	3 DWF Flat	0.000
Nursing Home	350.0 litres per bed	British Water (2013)	0 beds	3	24	0.000
Restaurant	30.0 litres per cover	British Water (2013)	0 covers	3	8	0.000
Pub/Club	15.0 litres per customer	Butler and Davies (2004)	0 customers***	3	12	0.000
Warehouse	150.0 litres per 100m ²	Jones (1992)	m ²	3	3 DWF Flat	0.000
Manufacturing	550.0 litres per 100m ²	Jones (1992)	0 m ²	3	3 DWF Flat	0.000
Commercial	300.0 litres per 100m ²	Jones (1992)	96250 m ²	3	3 DWF Flat	10.026
SUB TOTAL						10.0
Infiltration percentage	8%					0.8
TOTAL						10.8

* Foul flow rate needs to be calculated based on number of seats. An allowance of 4m² has been made for each seat.

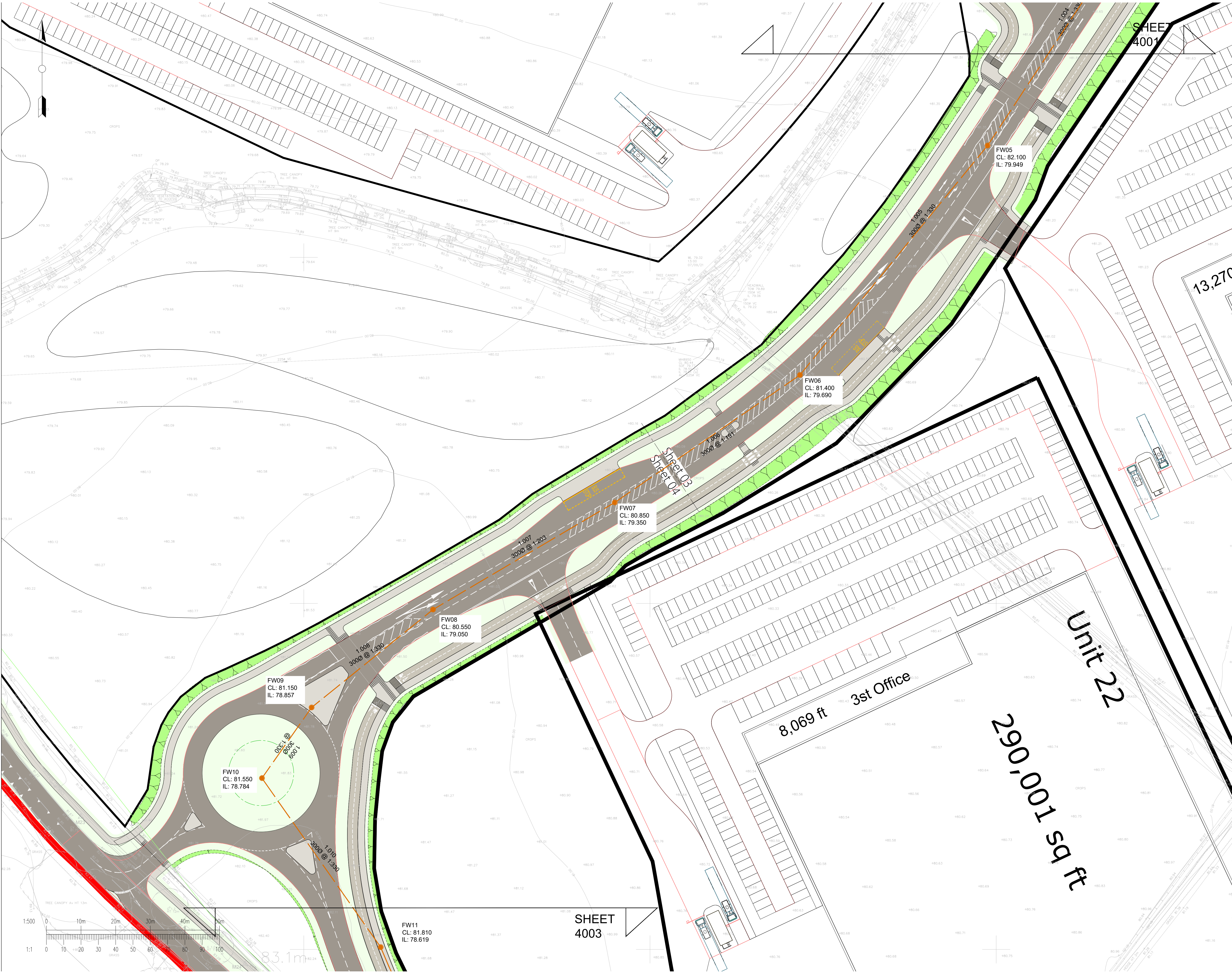
Floor area = 0 m² 4 m² per person

** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person

*** Foul flow rate needs to be calculated based on number of customers. An allowance of 4m² has been made for each customer.

Floor area = 0 m² 4 m² per person



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KEY

PROPOSED FOUL PRIVATE DRAINAGE SYSTEM

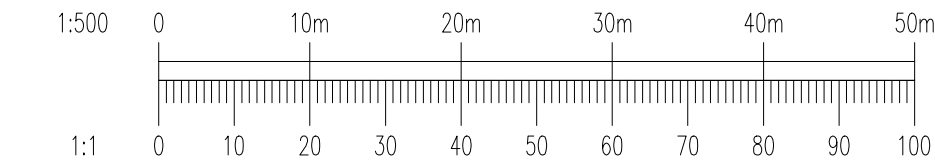
Rev	Date	Description	By
A03	03.08.22	MASTER PLAN UPDATED.	AKL
A02	24.05.22	DRAINAGE REVISED TO SUIT NEW LAYOUT.	AKL
A01	21.12.21	FIRST ISSUE	AS

Amendments

Project	MIRA Technology Park
Title	MIRA Southern Manufacturing Sector Proposed Foul Water Layout S185 Diversion - Sheet 2 of 3
Client	HORIBA MIRA

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Designed By	AS	Checked By	HC	Waterman Ref	WIB13833		
Drawn By	AS	Date	DEC 2021	Scales @ A1	1:500		
Project	Originator	Volume	Level	Type	Role	Number	Revision
13833-WIB-SMS-XX-DR-C-04002							A03



SHEET
4002

CL: 81.810
IL: 78.619

FW12
CL: 81.770
IL: 78.414

FW13
CL: 81.450
IL: 78.160

FW14
CL: 81.430
IL: 77.930

FW15
CL: 81.000
IL: 77.724

S38
CL: 81.000
IL: 77.542

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KEY

PROPOSED FOUL PRIVATE DRAINAGE SYSTEM

A03	03.08.22	MASTER PLAN UPDATED.	AKL
A02	24.05.22	DRAINAGE REVISED TO SUIT NEW LAYOUT.	AKL
A01	21.12.21	FIRST ISSUE	AS
Rev	Date	Description	By

Amendments	
Project	MIRA Technology Park
Title	MIRA Southern Manufacturing Sector Proposed Foul Water Layout S185 Diversion - Sheet 3 of 3
Client	HORIBA MIRA



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Designed By	AS	Checked By	HC	Waterman Ref	WIB13833
Drawn By	AS	Date	DEC 2021	Scales @ A1	1:500
Project - Originator - Volume - Level - Type - Role - Number					Revision
13833-WIB-SMS-XX-DR-C-04003					A03



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KEY

PROPOSED FOUL PRIVATE DRAINAGE SYSTEM

Rev	Date	Description	By
A03	03.08.22	MASTER PLAN UPDATED.	AKL
A02	24.05.22	DRAINAGE REVISED TO SUIT NEW LAYOUT.	AKL
A01	21.12.21	FIRST ISSUE	AS

Amendments

Project	MIRA Technology Park
Title	MIRA Southern Manufacturing Sector Proposed Foul Water Layout S185 Diversion - Sheet 1 of 3
Client	HORIBA MIRA

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Designed By	AS	Checked By	HC	Waterman Ref	WIB13833
Drawn By	AS	Date	DEC 2021	Scales @ A1	1:500
Project - Originator - Volume - Level - Type - Role - Number					Revision
13833-WIB-SMS-XX-DR-C-04001					A03

UK and Ireland Office Locations

