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104 Yorkshire St Rochdale Lancashire OL16 1JY	PLOTS 3 & 4 attenuation myra devs 28 low cudworth	
Date jun 2023 File CALC-T~1.SRC	Designed By ds Checked By	
Micro Drainage	Source Control W.10.4	

Summary of Results for 30 year Return Period (+40%)

Storm Duration (mins)	Maximum Control (1/s)	Maximum Outflow (1/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
15 Summer	2.3	2.3	45.2258	0.4257	3.0	O K
30 Summer	2.3	2.3	45.2502	0.4502	3.2	O K
60 Summer	2.3	2.3	45.2263	0.4262	3.0	O K
120 Summer	2.3	2.3	45.2238	0.4237	3.0	O K
180 Summer	2.3	2.3	45.1063	0.3062	2.1	O K
240 Summer	2.3	2.3	45.0168	0.2167	1.5	O K
360 Summer	2.1	2.1	44.9083	0.1083	0.8	O K
480 Summer	1.9	1.9	44.8553	0.0553	0.4	O K
600 Summer	1.7	1.7	44.8383	0.0382	0.3	O K
720 Summer	1.5	1.5	44.8273	0.0272	0.2	O K
960 Summer	1.2	1.2	44.8128	0.0128	0.1	O K
1440 Summer	0.9	0.9	44.8000	0.0000	0.0	O K
2160 Summer	0.7	0.7	44.8000	0.0000	0.0	O K
2880 Summer	0.5	0.5	44.8000	0.0000	0.0	O K
4320 Summer	0.4	0.4	44.8000	0.0000	0.0	O K
5760 Summer	0.3	0.3	44.8000	0.0000	0.0	O K
7200 Summer	0.3	0.3	44.8000	0.0000	0.0	O K
8640 Summer	0.2	0.2	44.8000	0.0000	0.0	O K
10080 Summer	0.2	0.2	44.8000	0.0000	0.0	O K
15 Winter	2.3	2.3	45.2968	0.4967	3.5	O K
30 Winter	2.3	2.3	45.3923	0.5922	4.1	O K
60 Winter	2.3	2.3	45.4533	0.6533	4.5	O K
120 Winter	2.3	2.3	45.2243	0.4242	3.0	O K
180 Winter	2.3	2.3	45.0493	0.2492	1.7	O K
240 Winter	2.2	2.2	44.9403	0.1403	1.0	O K


Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
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15 Summer	76.03	15
30 Summer	49.50	25
60 Summer	30.81	42
120 Summer	18.61	78
180 Summer	13.72	108
240 Summer	10.99	138
360 Summer	8.03	194
480 Summer	6.43	250
600 Summer	5.40	308
720 Summer	4.69	370
960 Summer	3.74	490
1440 Summer	2.72	0
2160 Summer	1.98	0
2880 Summer	1.58	0
4320 Summer	1.14	0
5760 Summer	0.91	0
7200 Summer	0.76	0
8640 Summer	0.66	0
10080 Summer	0.58	0
15 Winter	76.03	16
30 Winter	49.50	28
60 Winter	30.81	48
120 Winter	18.61	82
180 Winter	13.72	112
240 Winter	10.99	140

Summary of Results for 30 year Return Period (+40%)

Storm Duration (mins)	Maximum Control (1/s)	Maximum Outflow (1/s)	Maximum Water Level (m OD)	Maximum Depth (m)	Maximum Volume (m ³)	Status
360 Winter	1.8	1.8	44.8463	0.0462	0.3	O K
480 Winter	1.5	1.5	44.8278	0.0277	0.2	O K
600 Winter	1.2	1.2	44.8158	0.0158	0.1	O K
720 Winter	1.1	1.1	44.8068	0.0068	0.0	O K
960 Winter	0.9	0.9	44.8000	0.0000	0.0	O K
1440 Winter	0.7	0.7	44.8000	0.0000	0.0	O K
2160 Winter	0.5	0.5	44.8000	0.0000	0.0	O K
2880 Winter	0.4	0.4	44.8000	0.0000	0.0	O K
4320 Winter	0.3	0.3	44.8000	0.0000	0.0	O K
5760 Winter	0.2	0.2	44.8000	0.0000	0.0	O K
7200 Winter	0.2	0.2	44.8000	0.0000	0.0	O K
8640 Winter	0.2	0.2	44.8000	0.0000	0.0	O K
10080 Winter	0.1	0.1	44.8000	0.0000	0.0	O K

Storm Duration (mins)	Rain (mm/hr)	Time-Peak (mins)
360 Winter	8.03	188
480 Winter	6.43	252
600 Winter	5.40	310
720 Winter	4.69	372
960 Winter	3.74	0
1440 Winter	2.72	0
2160 Winter	1.98	0
2880 Winter	1.58	0
4320 Winter	1.14	0
5760 Winter	0.91	0
7200 Winter	0.76	0
8640 Winter	0.66	0
10080 Winter	0.58	0

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Rainfall Details

Region	ENG+WAL	Shortest Storm (mins)	15
Return Period (years)	30	Longest Storm (mins)	10080
M5-60 (mm)	20.000	Summer Storms	Yes
Ratio-R	0.400	Winter Storms	Yes
Cv (Summer)	0.750	Climate Change %	+40
Cv (Winter)	0.840		

Pipe Network

Volume in Pipe Network (m ³)	1	Dia of Outfall Pipe (m)	0.100
Slope of Outfall Pipe (1:x)	100.0	Roughness of Outfall Pipe	0.600

Time / Area Diagram

Total Area (ha) = 0.028

Time	(mins)	Area
from:	to:	(ha)
0	4	0.028

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Rochdale
Lancashire OL16 1JY

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Tank/Pond Details

Invert Level (m) 44.800 Ground Level (m) 46.000

Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)	Depth (m)	Area (m ²)
0.00	7.0	0.50	7.0	1.00	6.0	1.50	0.4	2.00	0.4	2.50	0.4
0.10	7.0	0.60	6.0	1.10	6.0	1.60	0.4	2.10	0.4		
0.20	7.0	0.70	6.0	1.20	0.4	1.70	0.4	2.20	0.4		
0.30	7.0	0.80	6.0	1.30	0.4	1.80	0.4	2.30	0.4		
0.40	7.0	0.90	6.0	1.40	0.4	1.90	0.4	2.40	0.4		

Depth / Flow Outflow Control

Invert Level of Control 44.750

Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)	Depth (m)	Flow (l/s)
0.10	1.9	0.80	2.0	2.00	3.2	4.00	4.5	7.00	6.0
0.20	2.2	1.00	2.3	2.20	3.4	4.50	4.8	7.50	6.2
0.30	2.3	1.20	2.4	2.40	3.5	5.00	5.1	8.00	6.4
0.40	2.3	1.40	2.6	2.60	3.7	5.50	5.3	8.50	6.6
0.50	2.2	1.60	2.9	3.00	3.9	6.00	5.6	9.00	6.8
0.60	2.0	1.80	3.0	3.50	4.3	6.50	5.8	9.50	7.0