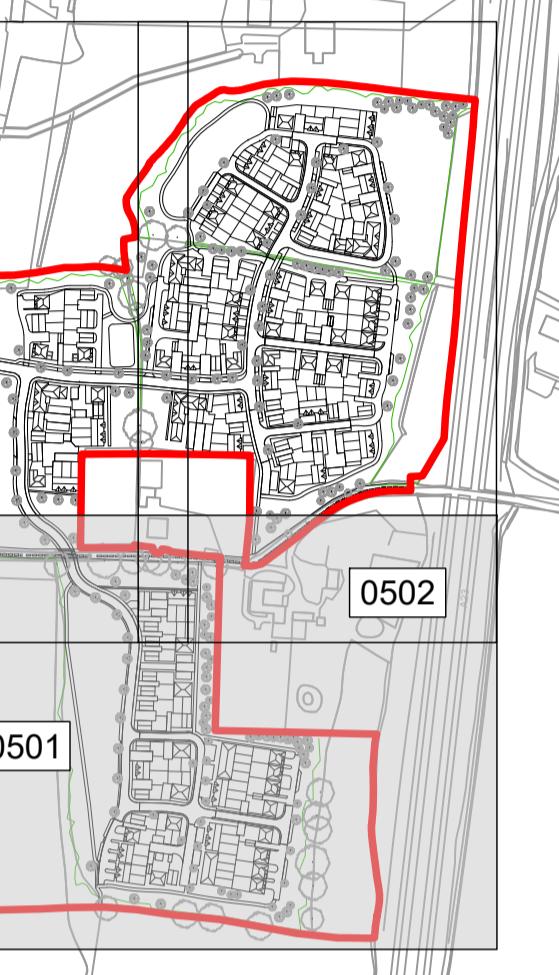


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4. PAUL BASHAM ASSOCIATES ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF BACKGROUND INFORMATION PRODUCED BY THIRD PARTIES - THIS MUST BE TREATED AS INDICATIVE ONLY.
  - 4.1. TOPO SURVEY: 17179-100-REV2, RECEIVED 09.04.25
  - 4.2. MASTERPLAN: P24-0029\_DE\_002\_06, RECEIVED 12.09.25
5. THIS DRAWING SHOULD ONLY BE USED FOR CONSTRUCTION IF THE PROJECT PHASE IN THE TITLE FRAME BELOW IS SHOWN AS "CONSTRUCTION". PAUL BASHAM ASSOCIATES TAKE NO RESPONSIBILITY FOR CONSTRUCTION WORKS UNDERTAKEN TO DRAWINGS WHICH ARE NOT MARKED UNDER THIS PHASE.

**KEY PLAN @ 1:5000**



**LEGEND**

- APPLICATION BOUNDARY
- SURFACE WATER SEWER
- SURFACE WATER MANHOLES
- SURFACE WATER FLOW CONTROL
- SURFACE WATER OUTLET
- PROPOSED FOUL WATER SEWER
- PROPOSED FOUL WATER MANHOLES
- ATTENUATION BASIN
- INDICATIVE SEDIMENT FOREBAY
- DISPLACED FLOOD AREA
- CATCHMENT 1 - TOTAL AREA: 4.933ha EFFECTIVE AREA: 3.874ha
- CATCHMENT 2 - TOTAL AREA: 1.994ha EFFECTIVE AREA: 1.556ha
- EXCEEDANCE FLOW PATH
- ROOT PROTECTION AREAS

## PRELIMINARY

DRAWING/DESIGN IS STILL 'IN DEVELOPMENT'  
YOU ARE ADVISED TO MAKE DUE ALLOWANCE

P02 UPDATED TO LATEST ARCHITECT LAYOUT 26.09.2025 SF COH

P01 FIRST ISSUE 09.10.2023 RL RW

Rev Description Date By App

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associates

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**Client**  
**WELBECK LAND**

Project Name

**SAYERS COMMON LAND AT COOMBE FARM**

Title

**SITE LAYOUT DRAINAGE STRATEGY SHEET 1 OF 3**

Project Phase

**PRELIMINARY**

Date Created

Drawn By

Approved By

Suitability Code

05.10.2023

RL

RW

-

PBA Project Number

145.5007

Scale

1:500

(AT A1)

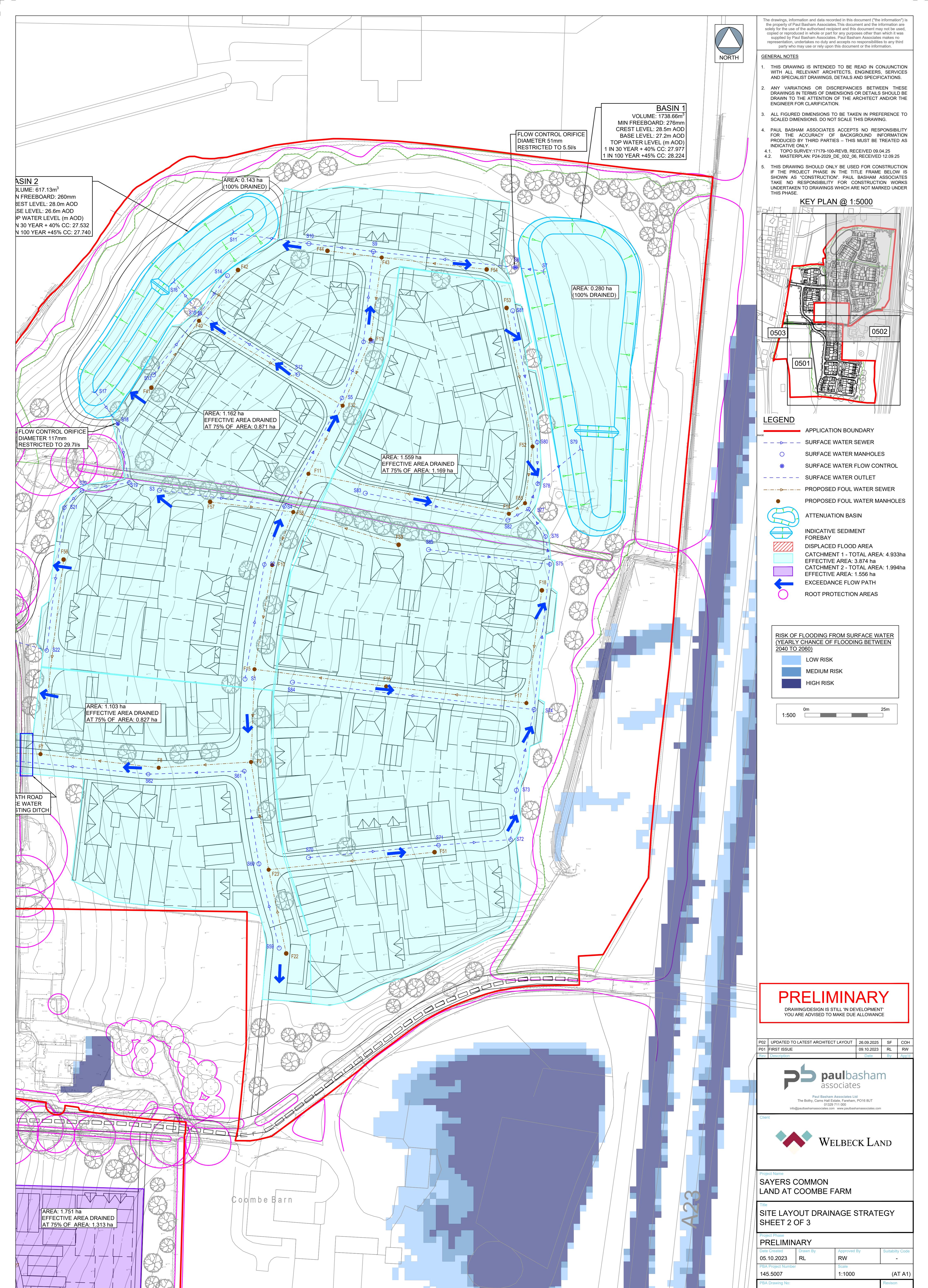
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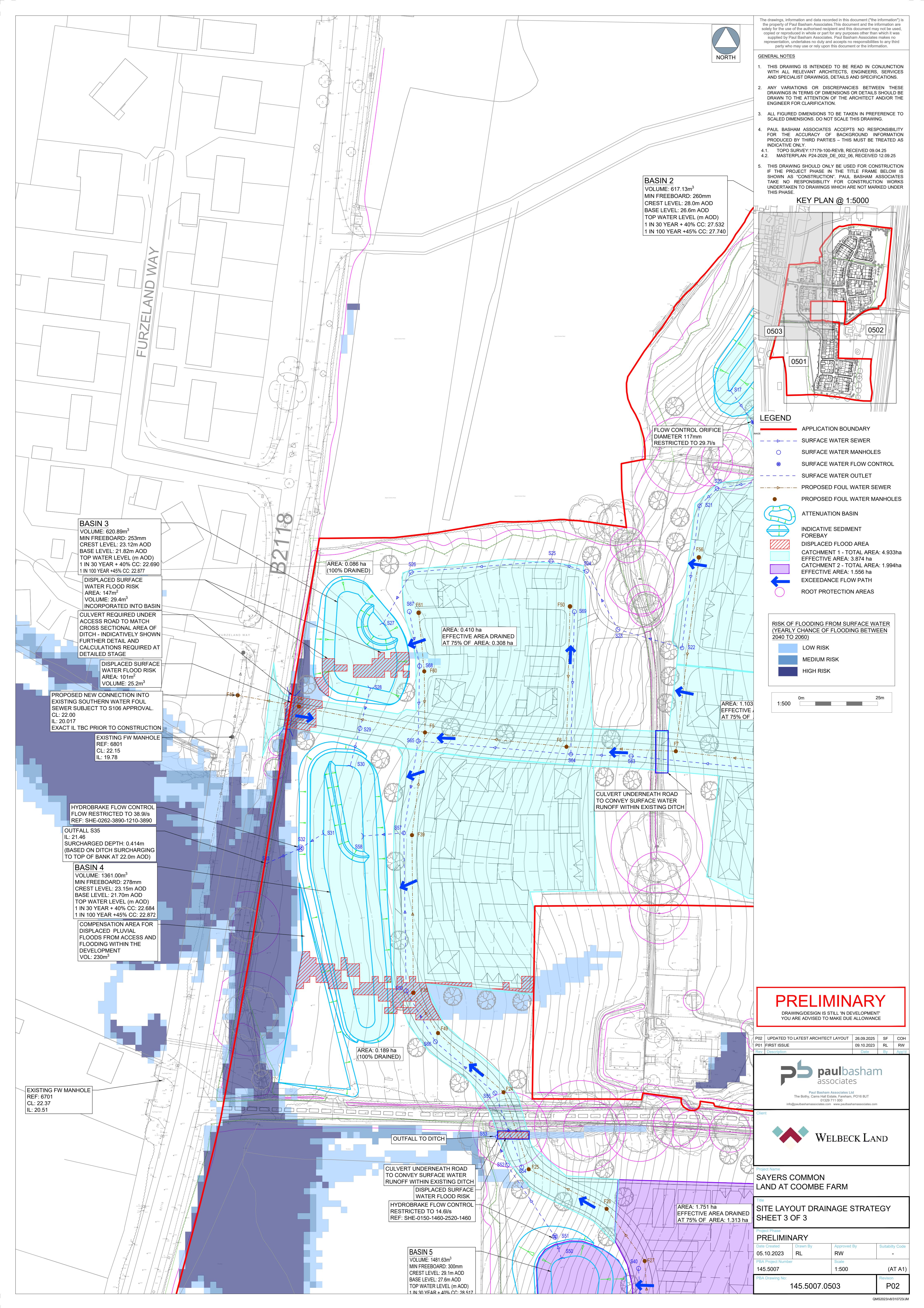
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Revision

P02

QMS2010/v6/310723JM



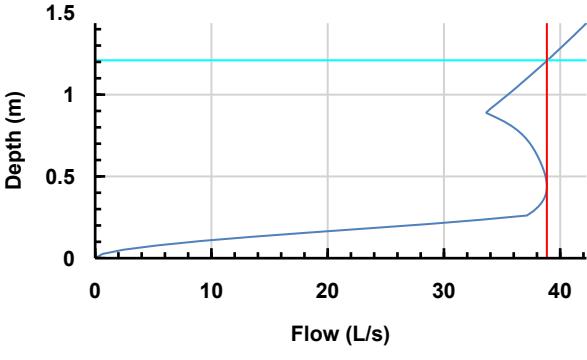


## Appendix J



Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)	Date: 26/09/2025	
Report Details: Type: Junctions Storm Phase: Catchment 1	Designed by: SF	
	Checked by: COH	

### Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S23	Outlet	S23-S24	Free Discharge
S26	Outlet	S26-S27	Free Discharge
S27	Outlet	S27-S28	Free Discharge
S19	Outlet	S19-S20	Free Discharge
S21	Outlet	S21-S22	Free Discharge
S30	Outlet	S30-S31	Free Discharge
S16	Outlet	S16-S17	Free Discharge
S9	Outlet	S9-S10	Free Discharge
S10	Outlet	S10-S11	Free Discharge
S11	Outlet	S11-S16	Free Discharge
S25	Outlet	S25-S26	Free Discharge
S22	Outlet	S22-S23	Free Discharge
	Outlet	S8-S9	Orifice
S8	Diameter (m)	0.051	
	Coefficient of Discharge	0.600	
	Invert Level (m)	27.160	
S20	Outlet	S20-S21	Free Discharge
	Outlet	S18-S19	Orifice
	Diameter (m)	0.117	
S18	Coefficient of Discharge	0.600	
	Invert Level (m)	26.517	
	Outlet	S32-S33	Hydro-Brake®
S32	Invert Level (m)	21.639	
	Design Depth (m)	1.210	
	Design Flow (L/s)	38.9	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	<input checked="" type="checkbox"/>	
Unit Reference		SHE-0262-3890-1210-3890	
			
S29	Outlet	S29-S30	Free Discharge
S24	Outlet	S24-S25	Free Discharge

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)	Date: 26/09/2025	Designed by: SF Checked by: COH Approved By: MDW
Report Details: Type: Stormwater Controls Storm Phase: Catchment 1	Company Address: Paul Basham Associates	
		 DRN



**Basin 2**

Type : Pond

**Dimensions**

Exceedance Level (m)	28.000
Depth (m)	1.400
Base Level (m)	26.600
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	5.97
Total Volume (m <sup>3</sup> )	616.724

Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
0.000	287.71	0.000
0.100	334.81	31.096
0.200	383.43	66.981
0.300	432.60	107.757
0.400	482.33	153.480
0.500	532.61	204.206
0.600	583.46	259.990
0.700	634.86	320.888
0.800	686.82	386.954
0.900	739.33	458.246
1.000	792.40	534.817
1.100	846.04	616.724
1.200	900.22	704.023
1.300	954.97	796.769
1.400	1009.66	894.988

**Advanced**

Perimeter	Circular
Length (m)	85.366
Friction Scheme	Manning's n
n	0.35

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)	Date: 26/09/2025	Designed by: SF Checked by: COH Approved By: MDW
Report Details: Type: Stormwater Controls Storm Phase: Catchment 1	Company Address: Paul Basham Associates	
		 DRN



**Basin 3**

Type : Pond

#### Dimensions

Exceedance Level (m)	23.120
Depth (m)	1.300
Base Level (m)	21.820
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	3.263
Total Volume (m <sup>3</sup> )	620.763

Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
0.000	481.97	0.000
0.100	507.71	49.479
0.200	534.53	101.585
0.300	561.92	156.402
0.400	589.87	213.986
0.500	618.39	274.393
0.600	647.47	337.681
0.700	677.12	403.905
0.800	707.34	473.123
0.900	738.11	545.390
1.000	769.46	620.763
1.100	801.37	699.299
1.200	833.84	781.053
1.300	868.63	866.171

#### Advanced

Perimeter	Circular
Length (m)	43.259
Friction Scheme	Manning's n
n	0.35

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)	Date: 26/09/2025	Designed by: SF Checked by: COH Approved By: MDW
Report Details: Type: Stormwater Controls Storm Phase: Catchment 1	Company Address: Paul Basham Associates	
		



**Basin 4**

Type : Pond

#### Dimensions

Exceedance Level (m)	23.150
Depth (m)	1.450
Base Level (m)	21.700
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	4.682
Total Volume (m <sup>3</sup> )	1360.641

Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
0.000	858.73	0.000
0.100	912.37	88.542
0.200	967.66	182.530
0.300	1023.52	282.076
0.400	1079.95	387.237
0.500	1136.95	498.069
0.600	1194.51	614.630
0.700	1252.64	736.976
0.800	1311.34	865.163
0.900	1370.60	999.249
1.000	1430.43	1139.290
1.100	1490.83	1285.343
1.200	1551.80	1437.464
1.300	1613.33	1595.711
1.400	1675.44	1760.140
1.450	1708.77	1844.743

#### Advanced

Perimeter	Circular
Length (m)	94.198
Friction Scheme	Manning's n
n	0.35

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)	Date: 26/09/2025	Designed by: SF	Checked by: COH	Approved By: MDW
Report Details: Type: Stormwater Controls Storm Phase: Catchment 1	Company Address: Paul Basham Associates			
				



**Basin 1**

Type : Pond

#### Dimensions

Exceedance Level (m)	28.500
Depth (m)	1.300
Base Level (m)	27.200
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	4.754
Total Volume (m <sup>3</sup> )	1738.314

Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
0.000	1395.94	0.000
0.100	1461.50	142.860
0.200	1529.04	292.374
0.300	1597.24	448.676
0.400	1666.09	611.830
0.500	1735.59	781.902
0.600	1805.74	958.957
0.700	1876.55	1143.060
0.800	1948.01	1334.278
0.900	2020.13	1532.674
1.000	2092.90	1738.314
1.100	2166.32	1951.264
1.200	2240.39	2171.589
1.300	2334.37	2400.311

#### Advanced

Perimeter	Circular
Length (m)	100.897
Friction Scheme	Manning's n
n	0.35

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)		Date: 26/09/2025					
		Designed by: SF	Checked by: COH	Approved By: MDW			
Report Details: Type: Inflow Summary Storm Phase: Catchment 1		Company Address: Paul Basham Associates					

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
864.91m - 1.019	S27		Time of Concentration	0.086	100	0	100	0.086
1433.95m - 1.009	Basin 2		Time of Concentration	0.143	100	0	100	0.143
1891.93m - 1.022	S30		Time of Concentration	0.189	100	0	100	0.189
2801.16m - 3.000	Basin 1		Time of Concentration	0.280	100	0	100	0.280
4104.28m - 1.022	S30		Time of Concentration	0.410	75	0	75	0.308
11026.47m - 1.022	S30		Time of Concentration	1.103	75	0	75	0.827
11618.50m - 1.009	Basin 2		Time of Concentration	1.162	75	0	75	0.871
15586.88m - 3.000	Basin 1		Time of Concentration	1.559	75	0	75	1.169
<b>TOTAL</b>		<b>0.0</b>		<b>4.933</b>				<b>3.874</b>

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)		Date: 26/09/2025		Designed by: SF		Checked by: COH		Approved By: MDW		
		Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 1								



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.  
Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residenc Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Half Drain Down Time (mins)	Percentage Available (%)	Status
Basin 2	FEH: 2 years: +0 %: 240 mins: Summer	27.025	0.425	72.6	165.808	0.000	18.2		73.115	OK
Basin 3	FEH: 2 years: +0 %: 1440 mins: Summer	22.447	0.627	23.2	355.040	0.000	15.5	395	42.806	OK
Basin 4	FEH: 2 years: +0 %: 1440 mins: Summer	22.444	0.744	42.6	793.220	0.000	24.7	590	41.702	OK
Basin 1	FEH: 2 years: +0 %: 2880 mins: Summer	27.529	0.329	18.0	494.623	0.000	3.1		71.546	OK

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)			Date: 26/09/2025				Designed by: SF Checked by: COH Approved By: MDW			I DRN
Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 1			Company Address: Paul Basham Associates							



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max.  
Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residue nt Volume (m³)	Max. Flood ed Volume (m³)	Max. Outflo w (L/s)	Half Drain Down Time (mins )	Percentag e Available (%)	Status
Basin 2	FEH: 30 years: +40 %: 240 mins: Summer	27.532	0.932	187.2	482.195	0.000	26.9	180	21.814	OK
Basin 3	FEH: 30 years: +40 %: 1440 mins: Summer	22.690	0.870	27.3	523.195	0.000	25.1	810	15.717	OK
Basin 4	FEH: 30 years: +40 %: 1440 mins: Summer	22.684	0.984	71.6	1116.987	0.000	38.8	925	17.907	OK
Basin 1	FEH: 30 years: +40 %: 1440 mins: Winter	27.977	0.777	45.3	1289.406	0.000	4.8		25.824	OK

Project: Land at Coombe Farm Sayers Common Catchment 1 (Northern Catchment)			Date: 26/09/2025 Designed by: SF Checked by: COH Approved By: MDW					
Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 1			Company Address: Paul Basham Associates					



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:  
Max. Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residet Volume (m³)	Max. Flood ed Volume (m³)	Max. Outflow (L/s)	Half Drain Down Time (mins )	Percentag e Available (%)	Status
Basin 2	FEH: 100 years: +45 %: 360 mins: Summer	27.740	1.140	182.6	651.028	0.000	29.7	330	-5.562	Flood Risk
Basin 3	FEH: 100 years: +45 %: 1440 mins: Summer	22.877	1.057	30.4	665.456	0.000	26.6	1050	-7.200	Flood Risk
Basin 4	FEH: 100 years: +45 %: 1440 mins: Summer	22.872	1.172	88.5	1393.865	0.000	38.9	1175	-2.442	Flood Risk
Basin 1	FEH: 100 years: +45 %: 2880 mins: Winter	28.224	1.024	35.1	1788.499	0.000	5.5		-2.887	Flood Risk

Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)	Date: 26/09/2025	Designed by: SF	Checked by: COH	Approved By: MDW
Report Details: Type: Junctions Storm Phase: Catchment 2	Company Address: Paul Basham Associates			



### Outlets

Junction	Outlet Name	Outgoing Connection	Outlet Type
S52	Outlet	S52-S53	Free Discharge
	Outlet	S51-S52	Hydro-Brake®
	Invert Level (m)	26.380	
	Design Depth (m)	2.520	
	Design Flow (L/s)	14.6	
	Objective	Minimise Upstream Storage Requirements	
	Application	Surface Water Only	
	Sump Available	<input checked="" type="checkbox"/>	
	Unit Reference	SHE-0150-1460-2520-1460	
	3		
S51	Depth (m)		
	2		
	1		
	0		
	0	10	15
		Flow (L/s)	

Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)	Date: 26/09/2025	Designed by: SF	Checked by: COH	Approved By: MDW
Report Details: Type: Stormwater Controls Storm Phase: Catchment 2	Company Address: Paul Basham Associates			
				



**Basin 5**

Type : Pond

#### Dimensions

Exceedance Level (m)	29.100
Depth (m)	1.500
Base Level (m)	27.600
Freeboard (mm)	300
Initial Depth (m)	0.000
Porosity (%)	100
Average Slope (1:X)	5.498
Total Volume (m <sup>3</sup> )	1481.130

Depth (m)	Area (m <sup>2</sup> )	Volume (m <sup>3</sup> )
0.000	825.09	0.000
0.100	890.23	85.745
0.200	957.25	178.099
0.300	1024.83	277.183
0.400	1092.98	383.055
0.500	1161.69	495.771
0.600	1230.96	615.387
0.700	1300.80	741.958
0.800	1371.20	875.543
0.900	1442.16	1016.196
1.000	1513.69	1163.974
1.100	1585.78	1318.933
1.200	1658.43	1481.130
1.300	1731.65	1650.621
1.400	1805.43	1827.462
1.500	1878.53	2011.648

#### Advanced

Perimeter	Circular
Length (m)	113.982
Friction Scheme	Manning's n
n	0.35

Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)		Date: 26/09/2025					
		Designed by: SF	Checked by: COH	Approved By: MDW			
Report Details: Type: Inflow Summary Storm Phase: Catchment 2		Company Address: Paul Basham Associates					

Inflow Label	Connected To	Flow (L/s)	Runoff Method	Area (ha)	Percentage Impervious (%)	Urban Creep (%)	Adjusted Percentage Impervious (%)	Area Analysed (ha)
2425.38m - 1.005	Basin 5		Time of Concentration	0.243	100	0	100	0.243
17510.29m - 1.006	Basin 5		Time of Concentration	1.751	75	0	75	1.313
<b>TOTAL</b>		<b>0.0</b>		<b>1.994</b>				<b>1.556</b>

Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)			Date: 26/09/2025			Designed by: SF Checked by: COH Approved By: MDW				
Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 2			Company Address: Paul Basham Associates							



FEH: 2 years: Increase Rainfall (%): +0: Critical Storm Per Item: Rank By: Max.  
Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residenc Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Half Drain Down Time (mins )	Percentage Available (%)	Status
Basin 5	FEH: 2 years: +0 %: 240 mins: Summer	27.960	0.360	111.3	340.093	0.000	24.9		77.038	OK

Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)			Date: 26/09/2025			Designed by: SF			Checked by: COH		Approved By: MDW	
Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 2			Company Address: Paul Basham Associates									



FEH: 30 years: Increase Rainfall (%): +40: Critical Storm Per Item: Rank By: Max.  
Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residenc Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Half Drain Down Time (mins )	Percentage Available (%)	Status
Basin 5	FEH: 30 years: +40 %: 600 mins: Winter	28.517	0.917	102.3	1041.423	0.000	38.9	415	29.687	OK



Project: Land at Coombe Farm Sayers Common Catchment 2 (Southern Catchment)			Date: 26/09/2025			Designed by: SF Checked by: COH Approved By: MDW			I DRN
Report Details: Type: Stormwater Controls Summary Storm Phase: Catchment 2			Company Address: Paul Basham Associates						



FEH: 100 years: Increase Rainfall (%): +45: Critical Storm Per Item: Rank By:  
Max. Avg. Depth

Stormwater Control	Storm Event	Max. Avg. Level (m)	Max. Avg. Depth (m)	Max. Inflow (L/s)	Max. Residet Volume (m³)	Max. Flooded Volume (m³)	Max. Outflow (L/s)	Half Drain Down Time (mins )	Percentag e Available (%)	Status
Basin 5	FEH: 100 years: +45 %: 600 mins: Winter	28.761	1.161	126.4	1416.830	0.000	47.7		4.341	OK