

APPENDIX C

TOPOGRAPHICAL AND UTILITIES SURVEY

APPENDIX D EXCEEDANCE PLAN



DO NOT SCALE

FOR THE AVOIDANCE OF DOUBT, NO APPROVALS, REVIEWS, COMMENTS OR INDICATION OF SATISFACTION GIVEN BY ARC ENGINEERS IN TERMS OF SUBCONTRACT DRAWINGS, PRODUCTS OR PROPOSED MATERIALS SHALL REDUCE OR EXTINGUISH THE OBLIGATION OF THE SUB-CONTRACTOR OR SUPPLIER TO ADHERE TO THE SPECIFICATION, GENERAL ARRANGEMENT DRAWINGS, STATUTORY REQUIREMENTS AND GOOD WORKING PRACTICE. ARC ENGINEERS ACCEPT NO LIABILITY FOR THE SELECTION OF MATERIALS OR WORKMANSHIP IN THE EXECUTION OF THE WORKS.

GENERAL NOTES

1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE CONFLICT OF REQUIREMENTS EXISTS THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATIONS. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED.
4. ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR, ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER/ARCHITECT AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
5. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETE. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR UPON COMPLETION.
6. ALL WORK TO COMPLY TO CURRENT BUILDING REGULATIONS AND TO BE IN ACCORDANCE WITH THE RELEVANT BRITISH STANDARDS AND APPROPRIATE CODES OF PRACTICE.
7. FOR FURTHER NOTES REFER TO PROJECT SPECIFICATIONS.

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following risks and information.

Risks listed here are not exhaustive. Refer to Risk Assessment Register: 25047

Construction:



Demolition

No Unusual hazards/risks

For information relating to Use, Cleaning and Maintenance see Health & Safety File

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement



INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION



INDICATES A RESIDUAL RISK FOR INFORMATION



INDICATES A RESIDUAL RISK REQUIRING PROHIBITIVE ACTION



INDICATES A RESIDUAL RISK AS A WARNING

P4	CLIENT DETAILS AMENDED	SG	MG	AR	03.09.25
P3	SITE LAYOUT PLAN UPDATED. EXTERNAL LEVELS FLOW ARROWS UPDATED TO SUIT.	SG	MG	AR	02.09.25
P2	SITE LAYOUT PLAN UPDATED. EXTERNAL LEVELS FLOW ARROWS UPDATED TO SUIT.	SG	MG	AR	29.07.25
P1	INITIAL ISSUE	SG	MG	AR	10.07.25
REV	DETAIL	BY	CHK	APP	DATE

CONSULTING STRUCTURAL AND CIVIL ENGINEERS					
3 CADMAN COURT, LEEDS, LS2 0RX Phone: 0113 253 3904 www.arc-engineers.co.uk					
CLIENT:	PROPCO (WOKINGHAM) LTD				
PROJECT:	EVENDON'S LANE RESIDENTIAL CARE HOME, WOKINGHAM				
TITLE:	FLOOD EXCEEDANCE ROUTES				
DRAWING STATUS:	PRELIMINARY				
DRWN: SG	DATE: 10.07.25	CHECKED: MG	DATE: 10.07.25	APPROVED: AR	DATE: 10.07.25
CONTRACT No: 25047		SCALE @ A1: 1:250			
PROJECT No: ORIGINATOR: ZONE: LEVEL: TYPE: DISCIPLINE: NUMBER: REVISION:					
25047 - ARC - XX - XX - DR - C - 5002 - P4					

APPENDIX E

HYDRAULIC CALCULATIONS AND CATCHMENT AREAS

Design Settings

Rainfall Methodology	FEH-22	Minimum Velocity (m/s)	1.00
Return Period (years)	100	Connection Type	Level Soffits
Additional Flow (%)	40	Minimum Backdrop Height (m)	0.200
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)	50.0		

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)
MHSW01	0.036	5.00	62.850	450	479879.819	166969.209	1.000
MHSW02	0.014	5.00	63.000	450	479868.042	166971.483	0.800
MHSW03	0.023	5.00	62.850	600	479876.085	166975.943	1.155
MHSW04	0.069	5.00	63.560	600	479859.001	167006.752	1.500
MHSW05	0.029	5.00	62.975	1200	479867.760	166990.955	1.675
MHSW06	0.007	5.00	63.000	1200	479832.668	166971.496	1.870
MHSW07	0.021	5.00	63.000	450	479851.732	166959.996	0.800
MHSW08		5.00	63.000	450	479879.728	166949.480	0.800
MHSW09	0.040	5.00	63.000	600	479894.618	166957.736	1.225
MHSW10	0.026	5.00	63.000	600	479902.778	166943.020	1.395
MHSW11			63.000	600	479866.232	166922.755	1.675
MHSW12	0.005	5.00	63.000	600	479861.931	166923.988	1.705
MHSW13	0.020	5.00	63.000	450	479863.413	166942.363	0.800
MHSW14			62.805	600	479850.997	166943.706	1.665
MHSW15			62.635	1500	479841.932	166944.686	1.785
MHSW16			62.095	1500	479825.517	166939.119	1.350
MHSW17			61.995	1500	479809.799	166936.487	1.350
MHHW01			61.000	1	479802.611	166927.383	1.100
MHHW02			61.000	1	479794.509	166905.029	1.200
MHSW18			61.000	1800	479787.906	166897.033	2.025
OUTFALL			59.400	1200	479787.850	166881.588	0.530

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
1.000	MHSW01	MHSW03	7.700	0.600	61.850	61.770	0.080	96.2	150	5.13	50.0
2.000	MHSW02	MHSW03	9.197	0.600	62.200	61.820	0.380	24.2	100	5.10	50.0
1.001	MHSW03	MHSW05	17.166	0.600	61.695	61.375	0.320	53.6	225	5.29	50.0
3.000	MHSW04	MHSW05	18.063	0.600	62.060	61.375	0.685	26.4	225	5.12	50.0
1.002	MHSW05	MHSW06	40.126	0.600	61.300	61.130	0.170	236.0	300	5.94	50.0
1.003	MHSW06	MHSW15	28.365	0.600	61.130	61.000	0.130	218.2	300	6.39	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
1.000	1.024	18.1	9.1	0.850	0.930	0.036	0.0	75	1.026
2.000	1.575	12.4	3.5	0.700	0.930	0.014	0.0	36	1.355
1.001	1.789	71.1	18.5	0.930	1.375	0.073	0.0	78	1.507
3.000	2.558	101.7	17.5	1.275	1.375	0.069	0.0	63	1.925
1.002	1.019	72.0	43.3	1.375	1.570	0.171	0.0	168	1.064
1.003	1.060	74.9	45.0	1.570	1.335	0.178	0.0	168	1.107

Links

Name	US Node	DS Node	Length (m)	ks (mm) / n	US IL (m)	DS IL (m)	Fall (m)	Slope (1:X)	Dia (mm)	T of C (mins)	Rain (mm/hr)
4.000	MHSW08	MHSW09	17.026	0.600	62.200	61.850	0.350	48.6	150	5.20	50.0
4.001	MHSW09	MHSW10	16.827	0.600	61.775	61.605	0.170	99.0	225	5.41	50.0
4.002	MHSW10	MHSW11	41.789	0.600	61.605	61.325	0.280	149.2	225	6.06	50.0
4.003	MHSW11	MHSW12	4.474	0.600	61.325	61.295	0.030	149.1	225	6.13	50.0
4.004	MHSW12	MHSW14	22.547	0.600	61.295	61.140	0.155	145.5	225	6.48	50.0
5.000	MHSW13	MHSW14	12.488	0.600	62.200	61.215	0.985	12.7	150	5.07	50.0
4.005	MHSW14	MHSW15	9.118	0.600	61.140	61.075	0.065	140.3	225	6.62	50.0
6.000	MHSW07	MHSW15	18.178	0.600	62.200	61.150	1.050	17.3	150	5.12	50.0
1.004	MHSW15	MHSW16	17.333	0.600	60.850	60.745	0.105	165.1	450	6.80	50.0
1.005	MHSW16	MHSW17	15.937	0.600	60.745	60.645	0.100	159.4	450	6.97	50.0
1.006	MHSW17	MHHW01	11.600	0.600	60.645	59.900	0.745	15.6	450	7.00	50.0
1.007	MHHW01	MHHW02	23.777	0.600	59.900	59.800	0.100	237.8	450	7.30	50.0
1.008	MHHW02	MHSW18	10.370	0.600	59.800	58.975	0.825	12.6	450	7.33	50.0
1.009	MHSW18	OUTFALL	15.445	0.600	58.975	58.870	0.105	147.1	450	7.49	50.0

Name	Vel (m/s)	Cap (l/s)	Flow (l/s)	US Depth (m)	DS Depth (m)	Σ Area (ha)	Σ Add Inflow (l/s)	Pro Depth (mm)	Pro Velocity (m/s)
4.000	1.446	25.5	0.0	0.650	1.000	0.000	0.0	0	0.000
4.001	1.314	52.2	10.1	1.000	1.170	0.040	0.0	67	1.025
4.002	1.068	42.5	16.7	1.170	1.450	0.066	0.0	98	1.005
4.003	1.068	42.5	16.7	1.450	1.480	0.066	0.0	98	1.006
4.004	1.082	43.0	18.0	1.480	1.440	0.071	0.0	102	1.035
5.000	2.844	50.3	5.1	0.650	1.440	0.020	0.0	32	1.826
4.005	1.102	43.8	23.0	1.440	1.335	0.091	0.0	116	1.114
6.000	2.432	43.0	5.3	0.650	1.335	0.021	0.0	35	1.659
1.004	1.579	251.2	73.4	1.335	0.900	0.290	0.0	166	1.377
1.005	1.608	255.7	73.4	0.900	0.900	0.290	0.0	164	1.394
1.006	5.172	822.5	73.4	0.900	0.650	0.290	0.0	90	3.258
1.007	1.314	209.0	73.4	0.650	0.750	0.290	0.0	183	1.201
1.008	5.757	915.6	73.4	0.750	1.575	0.290	0.0	85	3.504
1.009	1.674	266.2	73.4	1.575	0.080	0.290	0.0	160	1.436

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	7.700	96.2	150	Circular	62.850	61.850	0.850	62.850	61.770	0.930
2.000	9.197	24.2	100	Circular	63.000	62.200	0.700	62.850	61.820	0.930
1.001	17.166	53.6	225	Circular	62.850	61.695	0.930	62.975	61.375	1.375
3.000	18.063	26.4	225	Circular	63.560	62.060	1.275	62.975	61.375	1.375
1.002	40.126	236.0	300	Circular	62.975	61.300	1.375	63.000	61.130	1.570
1.003	28.365	218.2	300	Circular	63.000	61.130	1.570	62.635	61.000	1.335

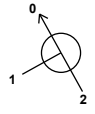
Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
1.000	MHSW01	450	Manhole	Adoptable	MHSW03	600	Manhole	Adoptable
2.000	MHSW02	450	Manhole	Adoptable	MHSW03	600	Manhole	Adoptable
1.001	MHSW03	600	Manhole	Adoptable	MHSW05	1200	Manhole	Adoptable
3.000	MHSW04	600	Manhole	Adoptable	MHSW05	1200	Manhole	Adoptable
1.002	MHSW05	1200	Manhole	Adoptable	MHSW06	1200	Manhole	Adoptable
1.003	MHSW06	1200	Manhole	Adoptable	MHSW15	1500	Manhole	Adoptable

Pipeline Schedule

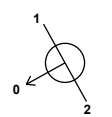
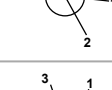
Link	Length (m)	Slope (1:X)	Dia (mm)	Link Type	US CL (m)	US IL (m)	US Depth (m)	DS CL (m)	DS IL (m)	DS Depth (m)
4.000	17.026	48.6	150	Circular	63.000	62.200	0.650	63.000	61.850	1.000
4.001	16.827	99.0	225	Circular	63.000	61.775	1.000	63.000	61.605	1.170
4.002	41.789	149.2	225	Circular	63.000	61.605	1.170	63.000	61.325	1.450
4.003	4.474	149.1	225	Circular	63.000	61.325	1.450	63.000	61.295	1.480
4.004	22.547	145.5	225	Circular	63.000	61.295	1.480	62.805	61.140	1.440
5.000	12.488	12.7	150	Circular	63.000	62.200	0.650	62.805	61.215	1.440
4.005	9.118	140.3	225	Circular	62.805	61.140	1.440	62.635	61.075	1.335
6.000	18.178	17.3	150	Circular	63.000	62.200	0.650	62.635	61.150	1.335
1.004	17.333	165.1	450	Circular	62.635	60.850	1.335	62.095	60.745	0.900
1.005	15.937	159.4	450	Circular	62.095	60.745	0.900	61.995	60.645	0.900
1.006	11.600	15.6	450	Circular	61.995	60.645	0.900	61.000	59.900	0.650
1.007	23.777	237.8	450	Circular	61.000	59.900	0.650	61.000	59.800	0.750
1.008	10.370	12.6	450	Circular	61.000	59.800	0.750	61.000	58.975	1.575
1.009	15.445	147.1	450	Circular	61.000	58.975	1.575	59.400	58.870	0.080

Link	US Node	Dia (mm)	Node Type	MH Type	DS Node	Dia (mm)	Node Type	MH Type
4.000	MHSW08	450	Manhole	Adoptable	MHSW09	600	Manhole	Adoptable
4.001	MHSW09	600	Manhole	Adoptable	MHSW10	600	Manhole	Adoptable
4.002	MHSW10	600	Manhole	Adoptable	MHSW11	600	Manhole	Adoptable
4.003	MHSW11	600	Manhole	Adoptable	MHSW12	600	Manhole	Adoptable
4.004	MHSW12	600	Manhole	Adoptable	MHSW14	600	Manhole	Adoptable
5.000	MHSW13	450	Manhole	Adoptable	MHSW14	600	Manhole	Adoptable
4.005	MHSW14	600	Manhole	Adoptable	MHSW15	1500	Manhole	Adoptable
6.000	MHSW07	450	Manhole	Adoptable	MHSW15	1500	Manhole	Adoptable
1.004	MHSW15	1500	Manhole	Adoptable	MHSW16	1500	Manhole	Adoptable
1.005	MHSW16	1500	Manhole	Adoptable	MHSW17	1500	Manhole	Adoptable
1.006	MHSW17	1500	Manhole	Adoptable	MHHW01	1	Manhole	Adoptable
1.007	MHHW01	1	Manhole	Adoptable	MHHW02	1	Manhole	Adoptable
1.008	MHHW02	1	Manhole	Adoptable	MHSW18	1800	Manhole	Adoptable
1.009	MHSW18	1800	Manhole	Adoptable	OUTFALL	1200	Manhole	Adoptable

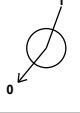
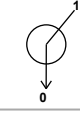
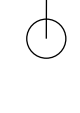
Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
MHSW01	479879.819	166969.209	62.850	1.000	450		0	1.000	61.850	150
MHSW02	479868.042	166971.483	63.000	0.800	450		0	2.000	62.200	100
MHSW03	479876.085	166975.943	62.850	1.155	600		1 2 0	2.000 1.000 1.001	61.820 61.770 61.695	100 150 225
MHSW04	479859.001	167006.752	63.560	1.500	600		0	3.000	62.060	225

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)	
MHSW05	479867.760	166990.955	62.975	1.675	1200		1	3.000	61.375	225
							2	1.001	61.375	225
							0	1.002	61.300	300
MHSW06	479832.668	166971.496	63.000	1.870	1200		1	1.002	61.130	300
							0	1.003	61.130	300
MHSW07	479851.732	166959.996	63.000	0.800	450			6.000	62.200	150
MHSW08	479879.728	166949.480	63.000	0.800	450			4.000	62.200	150
MHSW09	479894.618	166957.736	63.000	1.225	600		1	4.000	61.850	150
							0	4.001	61.775	225
MHSW10	479902.778	166943.020	63.000	1.395	600		1	4.001	61.605	225
							0	4.002	61.605	225
MHSW11	479866.232	166922.755	63.000	1.675	600		1	4.002	61.325	225
							0	4.003	61.325	225
MHSW12	479861.931	166923.988	63.000	1.705	600		1	4.003	61.295	225
							0	4.004	61.295	225
MHSW13	479863.413	166942.363	63.000	0.800	450			5.000	62.200	150
MHSW14	479850.997	166943.706	62.805	1.665	600		1	5.000	61.215	150
							2	4.004	61.140	225
							0	4.005	61.140	225
MHSW15	479841.932	166944.686	62.635	1.785	1500		1	6.000	61.150	150
							2	4.005	61.075	225
							3	1.003	61.000	300
							0	1.004	60.850	450
MHSW16	479825.517	166939.119	62.095	1.350	1500		1	1.004	60.745	450
							0	1.005	60.745	450
MHSW17	479809.799	166936.487	61.995	1.350	1500		1	1.005	60.645	450
							0	1.006	60.645	450

Manhole Schedule

Node	Easting (m)	Northing (m)	CL (m)	Depth (m)	Dia (mm)	Connections	Link	IL (m)	Dia (mm)
MHHW01	479802.611	166927.383	61.000	1.100	1		1	1.006	59.900 450
MHHW02	479794.509	166905.029	61.000	1.200	1		1	1.007 59.800	450
MHSW18	479787.906	166897.033	61.000	2.025	1800		1	1.008 58.975	450
OUTFALL	479787.850	166881.588	59.400	0.530	1200		1	1.009 58.870	450

Simulation Settings

Rainfall Methodology	FEH-22	Analysis Speed	Normal	Starting Level (m)	
Rainfall Events	Singular	Skip Steady State	x	Check Discharge Rate(s)	x
Summer CV	1.000	Drain Down Time (mins)	240	Check Discharge Volume	x
Winter CV	1.000	Additional Storage (m³/ha)	0.0		

Storm Durations

15 | 30 | 60 | 120 | 180 | 240 | 360 | 480 | 600 | 720 | 960 | 1440

Return Period (years)	Climate Change (CC %)	Additional Area (A %)	Additional Flow (Q %)
1	0	0	0
2	0	0	0
30	35	0	0
100	40	0	0

Node MHSW18 Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	58.975	Product Number	CTL-SHE-0025-4000-1800-4000
Design Depth (m)	1.800	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	0.4	Min Node Diameter (mm)	1200

Node MHSW01 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	62.420
Side Inf Coefficient (m/hr)	0.00000	Porosity	0.30	Time to half empty (mins)	3

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	66.0	66.0	0.300	66.0	74.6	0.301	0.0	74.6

Node MHHW02 Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	59.800
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	214.0	214.0	1.200	476.0	487.2

Results for 1 year Critical Storm Duration. Lowest mass balance: 96.40%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	MHSW01	10	61.898	0.048	3.7	0.0077	0.0000	OK
15 minute summer	MHSW02	10	62.224	0.024	1.5	0.0038	0.0000	OK
15 minute summer	MHSW03	10	61.746	0.051	7.6	0.0144	0.0000	OK
15 minute summer	MHSW04	10	62.101	0.041	7.2	0.0117	0.0000	OK
15 minute summer	MHSW05	10	61.403	0.103	17.6	0.1163	0.0000	OK
15 minute summer	MHSW06	11	61.233	0.103	18.3	0.1163	0.0000	OK
15 minute summer	MHSW07	10	62.223	0.023	2.2	0.0037	0.0000	OK
15 minute summer	MHSW08	1	62.200	0.000	0.0	0.0000	0.0000	OK
15 minute summer	MHSW09	10	61.818	0.043	4.2	0.0121	0.0000	OK
15 minute summer	MHSW10	10	61.666	0.061	6.9	0.0172	0.0000	OK
15 minute summer	MHSW11	11	61.392	0.067	6.8	0.0189	0.0000	OK
15 minute summer	MHSW12	11	61.358	0.063	7.3	0.0179	0.0000	OK
15 minute summer	MHSW13	10	62.221	0.021	2.1	0.0034	0.0000	OK
15 minute summer	MHSW14	11	61.214	0.074	9.3	0.0210	0.0000	OK
15 minute summer	MHSW15	11	60.959	0.109	29.2	0.1926	0.0000	OK
15 minute summer	MHSW16	12	60.854	0.109	29.0	0.1926	0.0000	OK
15 minute summer	MHSW17	12	60.702	0.057	29.2	0.1015	0.0000	OK
15 minute summer	MHHW01	11	60.195	0.295	29.3	0.0000	0.0000	OK
720 minute winter	MHHW02	705	60.002	0.202	3.9	47.7758	0.0000	OK
720 minute winter	MHSW18	705	60.002	1.027	0.9	2.6146	0.0000	SURCHARGED
720 minute winter	OUTFALL	705	58.877	0.007	0.3	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	MHSW01	1.000	MHSW03	3.7	0.779	0.203	0.0364	
15 minute summer	MHSW02	2.000	MHSW03	1.5	1.044	0.120	0.0131	
15 minute summer	MHSW03	1.001	MHSW05	7.5	1.148	0.105	0.1122	
15 minute summer	MHSW04	3.000	MHSW05	7.1	1.460	0.070	0.0883	
15 minute summer	MHSW05	1.002	MHSW06	17.6	0.846	0.244	0.8527	
15 minute summer	MHSW06	1.003	MHSW15	17.9	0.866	0.239	0.5885	
15 minute summer	MHSW07	6.000	MHSW15	2.2	1.266	0.051	0.0313	
15 minute summer	MHSW08	4.000	MHSW09	0.0	0.000	0.000	0.0000	
15 minute summer	MHSW09	4.001	MHSW10	4.2	0.605	0.080	0.1166	
15 minute summer	MHSW10	4.002	MHSW11	6.8	0.746	0.160	0.3846	
15 minute summer	MHSW11	4.003	MHSW12	6.8	0.715	0.160	0.0424	
15 minute summer	MHSW12	4.004	MHSW14	7.3	0.708	0.169	0.2316	
15 minute summer	MHSW13	5.000	MHSW14	2.1	1.389	0.041	0.0187	
15 minute summer	MHSW14	4.005	MHSW15	9.2	0.841	0.209	0.0993	
15 minute summer	MHSW15	1.004	MHSW16	29.0	0.984	0.115	0.5099	
15 minute summer	MHSW16	1.005	MHSW17	29.2	1.452	0.114	0.3291	
15 minute summer	MHSW17	1.006	MHHW01	29.3	1.197	0.036	0.7044	
15 minute summer	MHHW01	1.007	MHHW02	39.5	1.748	0.189	1.3164	
720 minute winter	MHHW02	1.008	MHSW18	0.9	0.127	0.001	1.1798	
720 minute winter	MHSW18	1.009	OUTFALL	0.3	0.376	0.001	0.0136	15.4

Results for 2 year Critical Storm Duration. Lowest mass balance: 97.68%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	MHSW01	10	61.916	0.066	6.4	0.0105	0.0000	OK
15 minute summer	MHSW02	10	62.231	0.031	2.5	0.0050	0.0000	OK
15 minute summer	MHSW03	10	61.762	0.067	12.9	0.0190	0.0000	OK
15 minute summer	MHSW04	10	62.112	0.052	12.2	0.0148	0.0000	OK
15 minute summer	MHSW05	10	61.438	0.138	30.1	0.1566	0.0000	OK
15 minute summer	MHSW06	11	61.269	0.139	31.0	0.1577	0.0000	OK
15 minute summer	MHSW07	10	62.230	0.030	3.7	0.0048	0.0000	OK
15 minute summer	MHSW08	1	62.200	0.000	0.0	0.0000	0.0000	OK
15 minute summer	MHSW09	10	61.831	0.056	7.1	0.0158	0.0000	OK
15 minute summer	MHSW10	10	61.685	0.080	11.6	0.0227	0.0000	OK
15 minute summer	MHSW11	11	61.415	0.090	11.5	0.0255	0.0000	OK
15 minute summer	MHSW12	11	61.380	0.085	12.4	0.0239	0.0000	OK
15 minute summer	MHSW13	10	62.227	0.027	3.5	0.0044	0.0000	OK
15 minute summer	MHSW14	11	61.241	0.101	15.8	0.0285	0.0000	OK
15 minute summer	MHSW15	11	60.996	0.146	50.0	0.2587	0.0000	OK
15 minute summer	MHSW16	11	60.888	0.143	49.9	0.2524	0.0000	OK
15 minute summer	MHSW17	12	60.719	0.074	49.6	0.1309	0.0000	OK
15 minute summer	MHHW01	10	60.248	0.348	49.7	0.0000	0.0000	OK
960 minute winter	MHHW02	930	60.088	0.288	4.1	70.7204	0.0000	OK
960 minute winter	MHSW18	930	60.088	1.113	0.9	2.8329	0.0000	SURCHARGED
960 minute winter	OUTFALL	930	58.878	0.008	0.3	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	MHSW01	1.000	MHSW03	6.4	0.896	0.351	0.0546	
15 minute summer	MHSW02	2.000	MHSW03	2.5	1.205	0.201	0.0190	
15 minute summer	MHSW03	1.001	MHSW05	12.8	1.329	0.180	0.1657	
15 minute summer	MHSW04	3.000	MHSW05	12.1	1.590	0.119	0.1459	
15 minute summer	MHSW05	1.002	MHSW06	29.8	0.953	0.414	1.2747	
15 minute summer	MHSW06	1.003	MHSW15	30.8	0.995	0.411	0.8785	
15 minute summer	MHSW07	6.000	MHSW15	3.7	1.471	0.085	0.0453	
15 minute summer	MHSW08	4.000	MHSW09	0.0	0.000	0.000	0.0000	
15 minute summer	MHSW09	4.001	MHSW10	7.0	0.697	0.135	0.1712	
15 minute summer	MHSW10	4.002	MHSW11	11.5	0.848	0.271	0.5727	
15 minute summer	MHSW11	4.003	MHSW12	11.6	0.812	0.272	0.0637	
15 minute summer	MHSW12	4.004	MHSW14	12.4	0.805	0.288	0.3473	
15 minute summer	MHSW13	5.000	MHSW14	3.5	1.612	0.069	0.0270	
15 minute summer	MHSW14	4.005	MHSW15	15.7	0.967	0.359	0.1483	
15 minute summer	MHSW15	1.004	MHSW16	49.9	1.134	0.198	0.7617	
15 minute summer	MHSW16	1.005	MHSW17	49.6	1.695	0.194	0.4788	
15 minute summer	MHSW17	1.006	MHHW01	49.7	1.457	0.060	0.8508	
15 minute summer	MHHW01	1.007	MHHW02	58.4	1.938	0.279	1.5763	
960 minute winter	MHHW02	1.008	MHSW18	0.9	0.166	0.001	1.3773	
960 minute winter	MHSW18	1.009	OUTFALL	0.3	0.376	0.001	0.0140	20.1

Results for 30 year +35% CC Critical Storm Duration. Lowest mass balance: 99.24%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	MHSW01	11	62.419	0.569	24.7	0.0906	0.0000	SURCHARGED
15 minute summer	MHSW02	12	62.435	0.235	9.6	0.0374	0.0000	SURCHARGED
15 minute summer	MHSW03	11	62.239	0.544	46.4	0.1538	0.0000	SURCHARGED
15 minute summer	MHSW04	11	62.217	0.157	47.3	0.0444	0.0000	OK
15 minute summer	MHSW05	11	62.068	0.768	109.3	0.8689	0.0000	SURCHARGED
15 minute summer	MHSW06	11	61.606	0.476	113.2	0.5380	0.0000	SURCHARGED
15 minute summer	MHSW07	10	62.262	0.062	14.4	0.0099	0.0000	OK
15 minute summer	MHSW08	1	62.200	0.000	0.0	0.0000	0.0000	OK
15 minute summer	MHSW09	11	62.022	0.247	27.5	0.0698	0.0000	SURCHARGED
15 minute summer	MHSW10	11	61.972	0.367	42.4	0.1040	0.0000	SURCHARGED
15 minute summer	MHSW11	12	61.675	0.350	40.4	0.0989	0.0000	SURCHARGED
15 minute summer	MHSW12	12	61.621	0.326	43.0	0.0922	0.0000	SURCHARGED
15 minute summer	MHSW13	10	62.254	0.053	13.7	0.0085	0.0000	OK
15 minute summer	MHSW14	11	61.429	0.289	55.6	0.0819	0.0000	SURCHARGED
15 minute summer	MHSW15	11	61.172	0.322	182.1	0.5686	0.0000	OK
15 minute summer	MHSW16	11	61.034	0.289	181.7	0.5110	0.0000	OK
15 minute summer	MHSW17	11	60.797	0.152	181.0	0.2688	0.0000	OK
1440 minute summer	MHHW01	1470	60.565	0.665	11.6	0.0000	0.0000	SURCHARGED
1440 minute summer	MHHW02	1470	60.565	0.765	11.4	227.7128	0.0000	SURCHARGED
1440 minute summer	MHSW18	1470	60.565	1.590	1.1	4.0473	0.0000	SURCHARGED
1440 minute summer	OUTFALL	1470	58.879	0.009	0.4	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	MHSW01	1.000	MHSW03	22.9	1.300	1.264	0.1356	
15 minute summer	MHSW02	2.000	MHSW03	9.0	1.582	0.730	0.0720	
15 minute summer	MHSW03	1.001	MHSW05	46.0	1.335	0.646	0.6827	
15 minute summer	MHSW04	3.000	MHSW05	46.2	1.598	0.454	0.6259	
15 minute summer	MHSW05	1.002	MHSW06	108.6	1.543	1.508	2.8256	
15 minute summer	MHSW06	1.003	MHSW15	112.7	1.609	1.504	1.9125	
15 minute summer	MHSW07	6.000	MHSW15	14.3	2.137	0.333	0.1218	
15 minute summer	MHSW08	4.000	MHSW09	0.0	0.000	0.000	0.1499	
15 minute summer	MHSW09	4.001	MHSW10	25.5	0.922	0.488	0.6692	
15 minute summer	MHSW10	4.002	MHSW11	40.4	1.099	0.952	1.6620	
15 minute summer	MHSW11	4.003	MHSW12	40.3	1.013	0.949	0.1779	
15 minute summer	MHSW12	4.004	MHSW14	43.7	1.099	1.016	0.8967	
15 minute summer	MHSW13	5.000	MHSW14	13.7	1.814	0.272	0.1451	
15 minute summer	MHSW14	4.005	MHSW15	55.5	1.403	1.268	0.3476	
15 minute summer	MHSW15	1.004	MHSW16	181.7	1.586	0.723	1.9842	
15 minute summer	MHSW16	1.005	MHSW17	181.0	2.349	0.708	1.2332	
15 minute summer	MHSW17	1.006	MHHW01	181.2	2.218	0.220	1.0198	
1440 minute summer	MHHW01	1.007	MHHW02	11.4	0.594	0.054	3.7673	
1440 minute summer	MHHW02	1.008	MHSW18	1.1	0.148	0.001	1.6431	
1440 minute summer	MHSW18	1.009	OUTFALL	0.4	0.377	0.001	0.0159	32.9

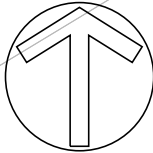
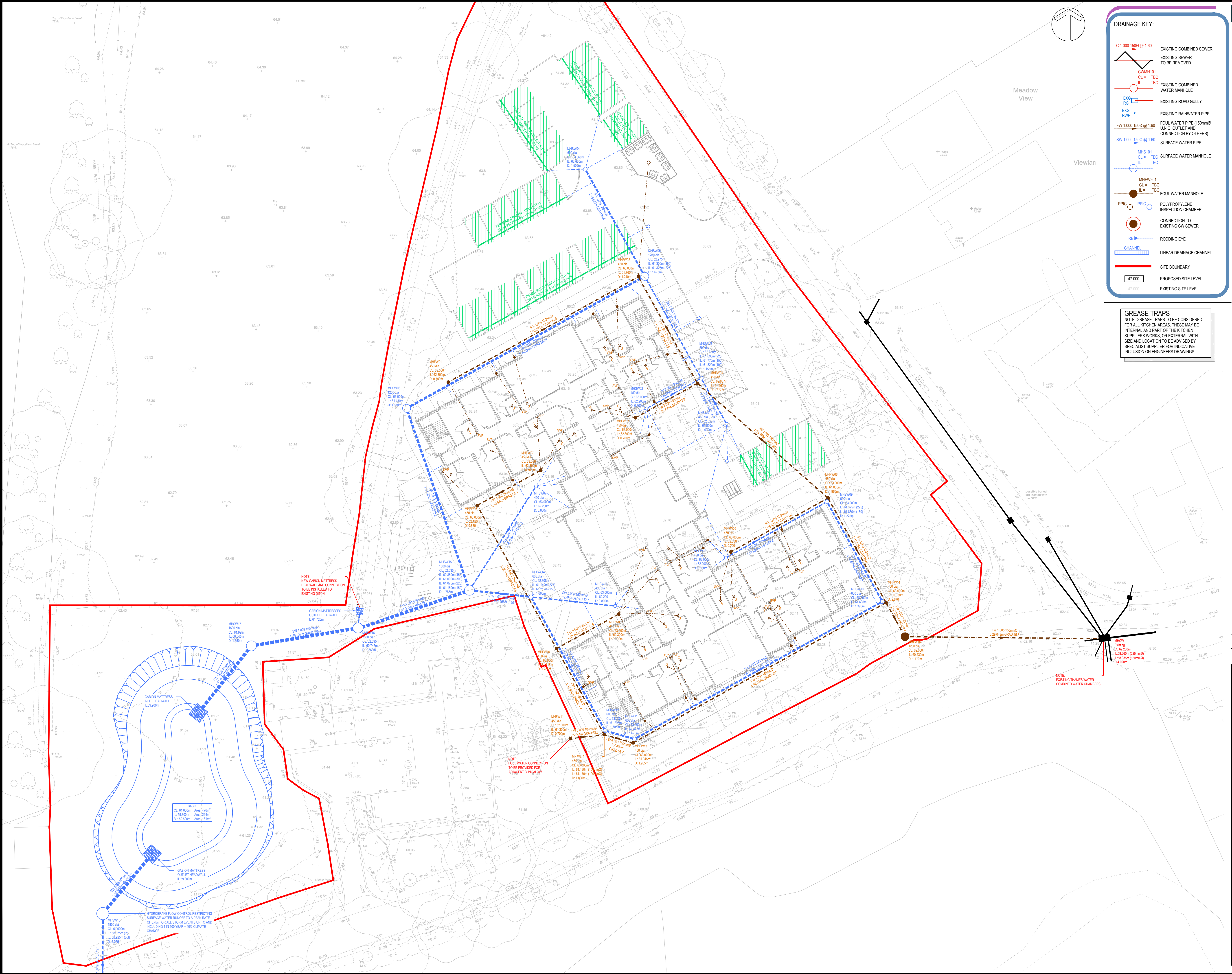
Results for 100 year +40% CC Critical Storm Duration. Lowest mass balance: 99.40%

Node Event	US Node	Peak (mins)	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	MHSW01	12	62.596	0.746	33.0	3.6133	0.0000	FLOOD RISK
15 minute summer	MHSW02	12	62.883	0.683	12.8	0.1086	0.0000	FLOOD RISK
15 minute summer	MHSW03	11	62.511	0.816	52.2	0.2310	0.0000	SURCHARGED
15 minute summer	MHSW04	11	62.691	0.631	63.3	0.1786	0.0000	SURCHARGED
15 minute summer	MHSW05	11	62.376	1.076	126.2	1.2165	0.0000	SURCHARGED
15 minute summer	MHSW06	11	61.756	0.626	132.0	0.7075	0.0000	SURCHARGED
15 minute summer	MHSW07	10	62.274	0.074	19.3	0.0117	0.0000	OK
15 minute summer	MHSW08	12	62.535	0.335	7.0	0.0532	0.0000	SURCHARGED
15 minute summer	MHSW09	12	62.529	0.754	36.7	0.2135	0.0000	SURCHARGED
15 minute summer	MHSW10	12	62.448	0.843	53.8	0.2385	0.0000	SURCHARGED
15 minute summer	MHSW11	12	61.970	0.645	52.3	0.1827	0.0000	SURCHARGED
15 minute summer	MHSW12	12	61.878	0.583	56.2	0.1651	0.0000	SURCHARGED
15 minute summer	MHSW13	10	62.263	0.063	18.3	0.0100	0.0000	OK
15 minute summer	MHSW14	11	61.550	0.410	72.1	0.1161	0.0000	SURCHARGED
15 minute summer	MHSW15	11	61.229	0.379	222.1	0.6688	0.0000	OK
15 minute summer	MHSW16	11	61.072	0.327	221.5	0.5785	0.0000	OK
15 minute summer	MHSW17	11	60.820	0.175	220.9	0.3089	0.0000	OK
1440 minute winter	MHHW01	1440	60.733	0.833	10.0	0.0000	0.0000	FLOOD RISK
1440 minute winter	MHHW02	1440	60.733	0.933	10.0	294.8546	0.0000	FLOOD RISK
1440 minute winter	MHSW18	1440	60.733	1.758	1.2	4.4751	0.0000	FLOOD RISK
1440 minute winter	OUTFALL	1440	58.879	0.009	0.4	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	MHSW01	1.000	MHSW03	40.0	2.273	2.211	0.1356	
15 minute summer	MHSW02	2.000	MHSW03	11.2	1.647	0.904	0.0720	
15 minute summer	MHSW03	1.001	MHSW05	56.1	1.411	0.789	0.6827	
15 minute summer	MHSW04	3.000	MHSW05	60.7	1.581	0.597	0.7184	
15 minute summer	MHSW05	1.002	MHSW06	125.9	1.788	1.748	2.8256	
15 minute summer	MHSW06	1.003	MHSW15	131.9	1.874	1.760	1.9514	
15 minute summer	MHSW07	6.000	MHSW15	19.2	2.298	0.446	0.1580	
15 minute summer	MHSW08	4.000	MHSW09	-7.0	-0.396	-0.273	0.2997	
15 minute summer	MHSW09	4.001	MHSW10	31.8	0.942	0.609	0.6692	
15 minute summer	MHSW10	4.002	MHSW11	52.3	1.314	1.231	1.6620	
15 minute summer	MHSW11	4.003	MHSW12	52.5	1.321	1.237	0.1779	
15 minute summer	MHSW12	4.004	MHSW14	56.6	1.424	1.316	0.8967	
15 minute summer	MHSW13	5.000	MHSW14	18.3	1.780	0.363	0.1534	
15 minute summer	MHSW14	4.005	MHSW15	71.7	1.804	1.637	0.3574	
15 minute summer	MHSW15	1.004	MHSW16	221.5	1.661	0.882	2.3042	
15 minute summer	MHSW16	1.005	MHSW17	220.9	2.436	0.864	1.4380	
15 minute summer	MHSW17	1.006	MHHW01	220.6	2.294	0.268	1.1013	
1440 minute winter	MHHW01	1.007	MHHW02	10.0	0.585	0.048	3.7673	
1440 minute winter	MHHW02	1.008	MHSW18	1.2	0.073	0.001	1.6431	
1440 minute winter	MHSW18	1.009	OUTFALL	0.4	0.377	0.001	0.0165	33.9

APPENDIX F

GENERAL ARRANGEMENT DRAWING OF PROPOSED SCHEME



DRAINAGE KEY:

- EXISTING COMBINED SEWER
- EXISTING SEWER TO BE REMOVED
- EXISTING COMBINED WATER MANHOLE
- EXISTING ROAD GULLY
- EXISTING RAINWATER PIPE
- FOUL WATER PIPE (150mm U.N.O. OUTLET AND CONNECTION BY OTHERS)
- SURFACE WATER PIPE
- SURFACE WATER MANHOLE
- FOUL WATER MANHOLE
- POLYPROPYLENE INSPECTION CHAMBER
- CONNECTION TO EXISTING COW SEWER
- RODDING EYE
- LINEAR DRAINAGE CHANNEL
- SITE BOUNDARY
- PROPOSED SITE LEVEL
- EXISTING SITE LEVEL

GREASE TRAPS
NOTE: GREASE TRAPS TO BE CONSIDERED FOR ALL KITCHEN AREAS. THESE MAY BE INTERNAL AND PART OF THE KITCHEN SUPPLIERS WORKS, OR EXTERNAL WITH SIZE AND LOCATION TO BE ADVISED BY SPECIALIST SUPPLIER FOR INDICATIVE INCLUSION ON ENGINEERS DRAWINGS.

DO NOT SCALE

FOR THE AVOIDANCE OF DOUBT, NO APPROVALS, REVIEWS, COMMENTS OR INDICATION OF SATISFACTION GIVEN BY ARC ENGINEERS IN TERMS OF SUBCONTRACT DRAWINGS, PRODUCTS OR PROPOSED MATERIALS SHALL REDUCE OR EXTINGUISH THE OBLIGATION OF THE SUB-CONTRACTOR OR SUPPLIER TO ADHERE TO THE SPECIFICATION, GENERAL ARRANGEMENT DRAWINGS, STATUTORY REQUIREMENTS AND GOOD WORKING PRACTICE. ARC ENGINEERS ACCEPT NO LIABILITY FOR THE SELECTION OF MATERIALS OR WORKMANSHIP IN THE EXECUTION OF THE WORKS.

GENERAL NOTES

- THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. WHERE CONFLICT OF REQUIREMENTS EXISTS THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATIONS. OTHERWISE THE STRICTEST PROVISION SHALL GOVERN.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
- DRAWINGS NOT TO BE SCALED.
- ALL DIMENSIONS TO BE CHECKED ON SITE BY THE CONTRACTOR, ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER/ARCHITECT AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETE. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR UPON COMPLETION.
- ALL WORK TO COMPLY TO CURRENT BUILDING REGULATIONS AND TO BE IN ACCORDANCE WITH THE RELEVANT BRITISH STANDARDS AND APPROPRIATE CODES OF PRACTICE.
- FOR FURTHER NOTES REFER TO PROJECT SPECIFICATIONS.

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following risks and information.

Risks listed here are not exhaustive. Refer to Risk Assessment Register: 25047

Construction:	
Demolition No Unusual hazards/risks	
For information relating to Use, Cleaning and Maintenance see Health & Safety File	
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement	
	INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION
	INDICATES A RESIDUAL RISK FOR INFORMATION
	INDICATES A RESIDUAL RISK REQUIRING PROHIBITIVE ACTION
	INDICATES A RESIDUAL RISK AS A WARNING

P4	CLIENT DETAILS AMENDED	SG	MG	AR	03.09.25
P3	SITE LAYOUT PLAN UPDATED. DRAINAGE LAYOUT UPDATED TO SUIT.	SG	MG	AR	02.09.25
P2	SITE LAYOUT PLAN UPDATED. DRAINAGE LAYOUT UPDATED TO SUIT.	SG	MG	AR	29.07.25
P1	INITIAL ISSUE	SG	MG	AR	10.07.25
REV	DETAIL	BY	CHK	APP	DATE

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PROPCO (WOKINGHAM) LTD							
PROJECT:							
EVENDON'S LANE RESIDENTIAL CARE HOME, WOKINGHAM							
TITLE:							
DRAINAGE GENERAL ARRANGEMENT							
DRAWING STATUS:							
PRELIMINARY							
DRAWN:	DATE:	CHECKED:	DATE:	APPROVED:	DATE:		
SG	10.07.25	MG	10.07.25	AR	10.07.25		
CONTRACT NO:	SCALE @ A1:						
25047	1:250						
PROJECT NO:	ORIGINATOR	ZONE	LEVEL	TYPE	DISCIPLINE	NUMBER	REVISION
25047	ARC	XX	XX	DR	C	5000	P4

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APPENDIX G

SuDS DETAILS

1. THESE NOTES ARE INTENDED TO AUGMENT DRAWINGS AND SPECIFICATIONS. IF THERE IS A CONFLICT, THE DRAWING OR SPECIFICATION SHALL PREVAIL UNLESS THE ORDER OF PRECEDENCE SHALL BE AS SHOWN IN THE SPECIFICATIONS. OTHERWISE, THE STRICTEST PROVISION SHALL CONTROL.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ENGINEERS AND ARCHITECTS DRAWINGS.
3. DRAWINGS NOT TO BE SCALED.
4. ALL DIMENSIONS TO BE SHOWN ON SITE BY THE CONTRACTOR. ANY DISCREPANCIES TO BE NOTIFIED TO THE ENGINEER/ARCHITECT AND FURTHER INSTRUCTIONS OBTAINED BEFORE WORK IS COMMENCED.
5. THE DESIGNER'S RESPONSIBILITY FOR THE DESIGN SHALL END AFTER THE BUILDING IS FULLY COMPLETE. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND THE ORDER OF ERECTION OF THE BUILDING. THE CONTRACTOR'S COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS ARE NECESSARY TO MAINTAIN THE STABILITY OF THE BUILDING. THE PROPERTY OF THE CONTRACTOR UPON COMPLETION.
6. ALL WORK TO COMPLY TO CURRENT BUILDING REGULATIONS AND TO BE IN ACCORDANCE WITH THE RELEVANT BRITISH STANDARDS AND NATIONAL CODES OF PRACTICE.
7. FOR FURTHER NOTES REFER TO PRESCRIPTION SPECIFICATIONS.

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following risks and information.

Risks listed here are not exhaustive. Refer to Risk Assessment Register: 25047

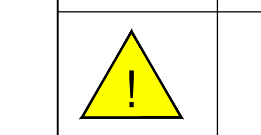
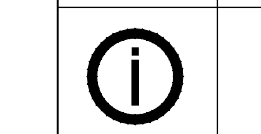
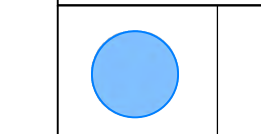
Construction:



Demolition	
No Unusual hazards/risks	

For information relating to Use, Cleaning and Maintenance see Health & Safety File

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement



P5	CLIENT DETAILS AMENDED	SG	MG	AR	03.09.25
P4	SITE LAYOUT PLAN UPDATED. SURFACE WATER DRAINAGE LAYOUT AMENDED.	SG	MG	AR	02.09.25
P3	INLET AND OUTLET HEADWALLS AMENDED. SECTIONS B-B AND C-C ADDED. POND LINER REPLACED WITH PUDDLE CLAY.	SG	MG	AR	29.07.25
P2	BASIN AMENDED TO HAVE A PERMANENT WET BASE	SG	MG	AR	10.07.25
P1	INITIAL ISSUE	SG	MG	AR	24.06.25
REV	DETAIL	BY	CHK	APP	DATE

ArcEngineers

CONSULTING STRUCTURAL AND CIVIL ENGINEERS

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Phone: 0113 253 3904
www.arc-engineers.co.uk

CLIENT: BRORCO (WOKINGHAM) LTD

PROJECT:
EVENDBONS LANE RESIDENTIAL CARE
HOME, WOKINGHAM

 NATIONAL SCIENCE FOUNDATION DIVISION OF EDUCATION	EDUCATION NATIONAL SCIENCE FOUNDATION
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DETENTION BASIN DETAIL

DRAWING STATUS: PRELIMINARY

DRAWN: SG	DATE: 26.06.25	CHECKED: MG	DATE: 26.06.25	APPROVED: AR	DATE: 24.06.25
CONTRACT NO: 25047			SCALE @ A1: 1:50 and 1:100		

PROJECT No.	ORIGINATOR	ZONE	LEVEL	TYPE	DISCIPLINE	NUMBER	REVISION
25047	- ARC	- XX	- XX	- DR	- C	- 5100	- P5

APPENDIX H

SuDS

MAINTENANCE AND MANAGEMENT



SUDS MANAGEMENT AND MAINTENANCE STRATEGY

PROJECT	EVENDONS LANE RESIDENTIAL CARE HOME, WOKINGHAM
PROJECT NUMBER	25047
CLIENT	PROPCO (WOKINGHAM) LTD
REPORT DATE	3 rd September 2025

REVISION	DATE	WRITTEN BY	REVIEWED BY
P1	29/07/2025	S. Griffiths	M. Ghomi
P2	02/09/2025	S. Griffiths	M. Ghomi
P3	03/09/2025	S. Griffiths	M. Ghomi

Contents

PROJECT ADDRESS	Error! Bookmark not defined.
1. INTRODUCTION	3
2. SUDS PROVISION WITHIN THE DEVELOPMENT	3
3. MAINTENANCE RESPONSIBILITIES	4
4. MAINTENANCE REGIME	4
5. INSPECTION LOGS	12

Appendices

1. Drawing 25047-ARC-XX-XX-DR-D-5000 - DRAINAGE GENERAL ARRANGEMENT
2. Drawing 25047-ARC-XX-XX-DR-D-5100 - DETENTION BASIN

1. INTRODUCTION

This management strategy has been prepared by ARC Engineers on behalf of Propco (Wokingham) Ltd in respect of Planning Conditions 32 and 33 of the permission granted 12th November 2024 and the operational requirements and functionality of the development whilst it is in use.

It should be borne in mind that the development is a fully functioning care home, operated and managed under a single point of ownership. It is important to understand this aspect differs considerable from a development where communal areas and external works maybe handed over to an independent management company which can quickly start to ignore their duties and responsibilities. In the circumstances of this development, the Care Home Operator fully understands their requirements for regular on-going maintenance, which is fundamental to providing an attractive living environment for their residents and guests.

2. SUDS PROVISION WITHIN THE DEVELOPMENT

The SUDS incorporated into this development are employed to:

- Reduce and manage surface water runoff.
- Improve the quality of water being discharged from the site.

The above provided for a design return period of one hundred years plus climate change, such that the development will not increase the risk of flooding to the site and its environs.

SUDS methods incorporated are:

- Permeable paving – Type C (No infiltration to ground)
- Geocellular system for attenuation.
- Filter drain
- Swale

This document outlines the long-term maintenance of the proposed surface water system and will make reference to the following documents, some of which provide further detail on the maintenance operations required:

- CIRIA Report C753 'The SUDS Manual', 2015
- CIRIA Report C625 'Model Agreements for Sustainable Water Management Systems', 2004
- Interpave, 'Permeable pavements: Guide to the Design, Construction and Maintenance of Concrete Block Permeable Pavements', ed. 4, 2006

3. MAINTENANCE RESPONSIBILITIES

The Care Home Operator will appoint a specific, named, Care home manager for the site as required under CQC legislation who will be responsible for all aspects of the operation of the site. To support the care home manager with general maintenance issues, a site-based caretaker / maintenance operative will also be appointed. The duties of these directly employed members of staff will be to undertake general inspections of all aspects of the building, and to identify areas that need attention from specialist Contractors. In respect of the maintenance of external works and SUDS features, a term contractor will be employed for this specific work to ensure that all necessary Health and Safety requirements and method statements are in place.

4. MAINTENANCE REGIME

The inspection of the SUDS features will be carried out by the site-based maintenance operative.

This will include inspecting:

- All external gullies draining hard landscaping areas.
- Inspecting external Rainwater Pipe connections.
- Inspecting hard landscaping areas with permeable paving to ensure there is no vegetation growth or trapped debris in the gaps between pavements.
- Lifting the PPIC inspection covers to all silt traps in the car parking and access road area to determine when to instruct specialist contractor to clear them.
- Inspection of the swale outfall to ensure there is no debris blocking the head wall.

The following section describes the required maintenance for each feature in turn. The SUDS Maintenance requirements listed below should be reviewed after the first 5 years, with a view to agreeing a new regime for the ongoing maintenance.

Notwithstanding the routine inspections and maintenance requirements, after severe storm events all features shall be inspected to clear debris and repair damaged structures or features. Records of the maintenance carried out shall be prepared by the maintenance manager / team.

PERMEABLE PAVEMENTS		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Brushing and vacuuming (standard cosmetic sweep over the whole surface)	Once a year, after autumn leaf fall, or reduced frequency as required, based on site-specific observations of clogging or manufacturer's recommendations – pay particular attention to areas where water runs onto pervious surface from adjacent impermeable areas as this area is most likely to collect the most sediment
Occasional Maintenance	Stabilise and mow contributing and adjacent areas	As required
	Removal of weeds or management using glyphosate applied directly into the weeds by an applicator rather than spraying	As required- once per year on less frequently used pavements
Remedial Actions	Remediate any landscaping which, through vegetation maintenance or soil slip, has been raised to within 50mm of the level of the paving	As required
	Remedial work to any depressions, rutting and cracked or broken blocks considered detrimental to the structural performance or a hazard to users, and replace lost jointing material	As required
	Rehabilitation of surface and upper substructure by remedial sweeping	Every 10 to 15 years or as required (if infiltration performance is reduced due to significant clogging)

Monitoring	Initial inspection	Monthly for three months after inspection
	Inspect for evidence of poor operation and/or weed growth – if required take remedial action	Three monthly 48h after large storms in first six months
	Inspect slit accumulation rates and establish appropriate brushing frequencies	Annually
	Monitor inspection chambers	Annually

WETLANDS / PONDS / SWALES / BASINS / BIO-DIVERSITY AREAS		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove litter and debris	Monthly (or as required)
	Cut the grass- public areas	Monthly (during growing season)
	Cut the meadow grass	Half yearly (Spring, before nesting season, Autumn)
	Inspect marginal and bankside vegetation and remove nuisance plants (for first 3 years)	Monthly (at start, then as required)
	Inspect inlets, outlets, banksides, structures, pipework, etc. for evidence of blockage and/or physical damage	Monthly
	Inspect water body for signs of poor water quality	Monthly (May-October)
	Inspect silt accumulation rates in any forebay and in main body of the pond and establish appropriate removal frequencies; undertake contamination testing once build-up has occurred to inform management and disposal options	Half yearly
	Check any mechanical devices, eg penstocks	Half yearly
	Hand cut submerged and emergent aquatic plants (at minimum of 0.1m above pond base; include max 25% pond surface)	Annually
	Remove 25% of bank vegetation from water's edge to minimum of 1m above water level	Annually
	Tidy all dead growth (scrub clearance) before start of growing season (note: tree	Annually

	maintenance is usually part of overall landscape maintenance contract)	
	Remove sediment from any forebay	Every 1-5 years, or as required
	Remove sediment and planting from one quadrant of the main body of ponds without sediment forebays	Every 5 years, or as required
Occasional Maintenance	Remove sediment from the main body of big ponds when pool volume is reduced by 20%	With effective pre-treatment this will only be required rarely, eg every 20-25 years
Remedial Actions	Repair erosion or other damage	As required
	Replant where necessary	As required
	Aerate pond when signs of eutrophication are detected	As required
	Realign rip-rap or repair other damage	As required
	Repair/rehabilitate inlets, outlets and overflows	As required

MANHOLES AND PIPES		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove and surface litter and detritus.	Monthly
	Inspect manhole covers for damage.	Annually
	Clean sumps and remove silt.	Annually
Occasional Maintenance	Carry out CCTV of outgoing pipework to identify problems.	Ten yearly
Remedial Actions	Replace damaged manhole covers.	As required
	Repair damaged manholes.	As required and as identified by CCTV
	Remove any root ingress or damage to pipework.	As required and as identified by CCTV

GULLIES		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Visually inspect gullies for surface damage.	Six monthly
	Remove and surface litter and detritus.	Monthly
	Inspect external covers for damage.	Annually
	Clean gullies and remove silt.	Annually
Occasional Maintenance	Carry out CCTV of outgoing pipework to identify problems.	Ten yearly
Remedial Actions	Replace damaged covers and gratings.	As required
	Replace or repair damaged outgoing pipework.	As required and as identified by CCTV
	Remove any root ingress or damage to outgoing pipework	

FLOW CONTROL		
Maintenance Schedule	Required Action	Typical Frequency
Regular Maintenance	Remove any surface litter and detritus.	Monthly
	Inspect manhole covers for damage.	Annually
	Clean sumps and remove silt.	Annually
	Inspect flow control device and seals.	Annually
Occasional Maintenance	Carry out CCTV of incoming and outgoing pipework to identify problems.	Ten yearly
Remedial Actions	Replace damaged manhole covers.	As required
	Repair any damage to flow control device.	As required
	Replace seals to flow control device.	As required
	Repair damaged manholes.	As required and as identified by CCTV
	Remove any root ingress or damage to pipework.	As required and as identified by CCTV

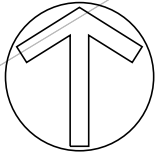
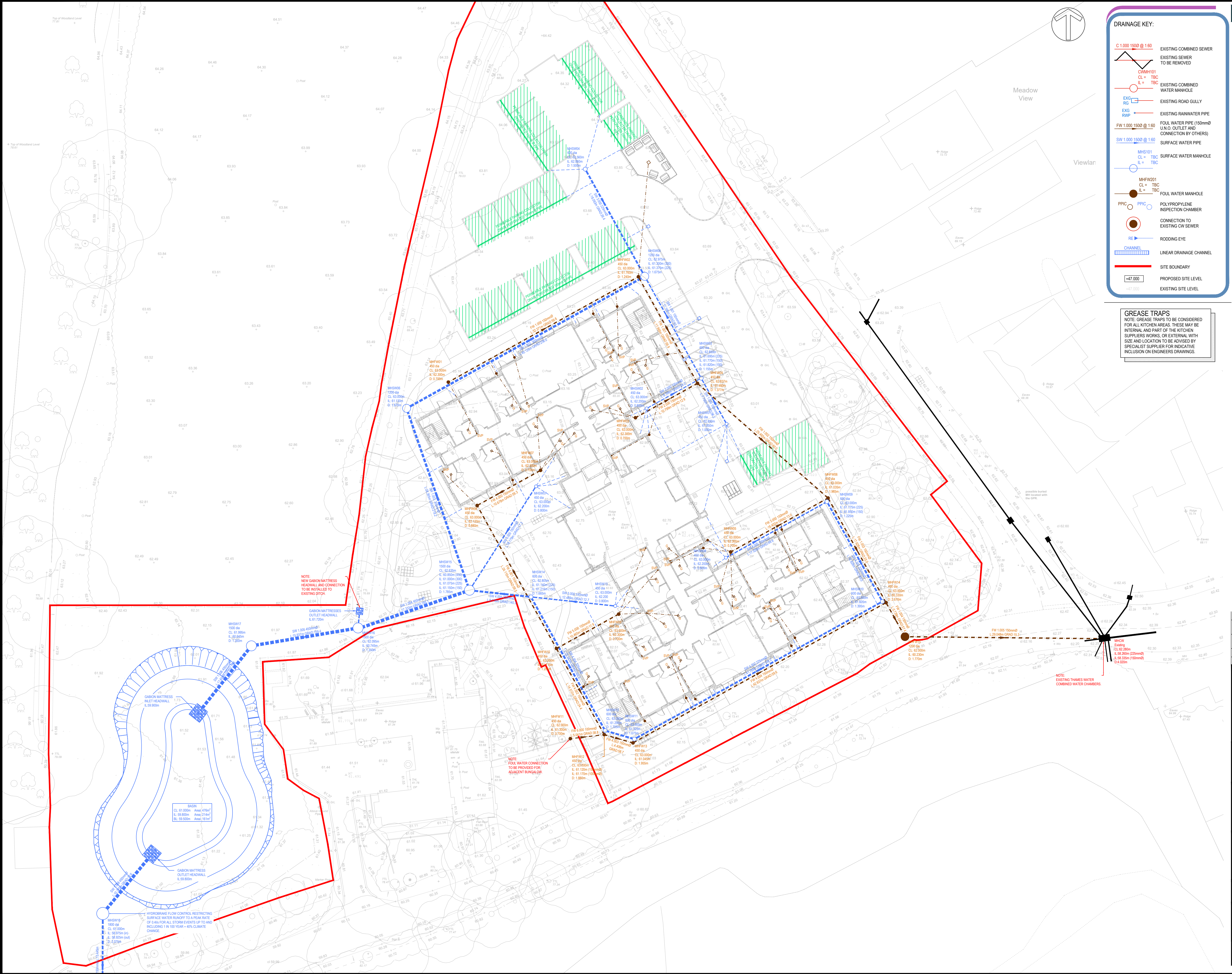
5. INSPECTION LOGS

SUDS / EXTERNAL SURFACE WATER DRAINAGE MAINTENANCE INSPECTION CHECKLIST				
SITE NAME AND ADDRESS				
Date of inspection		Details	Action Required (y/n)	Date Completed
Undertaken by				
Page 1 of 3				
Is there any evidence of erosion, channelling, ponding (where not desirable) or other poor hydraulic performance to car parking / access road?				
Is there any evidence of accidental spillages, oils, poor water quality, odours or nuisance insects?				
Have health and safety risks been identified to either the public or maintenance operatives?				
Silt/Sediment Accumulation				
Is there any sediment accumulation at inlets (or other defined accumulation zones such as the surface of filter drains, swales or infiltration basins and within proprietary devices)? If yes, state depth (mm) and extent. Is removal required? If yes, state waste disposal requirements and confirm that all waste management requirements have been complied with (consult environmental regulator)				

SUDS / EXTERNAL SURFACE WATER DRAINAGE MAINTENANCE INSPECTION CHECKLIST				
SITE NAME AND ADDRESS				
Date of inspection		Details	Action Required (y/n)	Date Completed
Undertaken by				
Page 2 of 3				
Is surface clogging visible potentially problematic where water has to soak into the underlying construction or ground (e.g. under drained swale or infiltration basin)?				
Does permeable or porous surfacing require sweeping to remove silt?				
Is there evidence of litter accumulation in the system? If yes, is blockage a risk?				
Is there any evidence of any other clogging or blockage of outlets or drainage paths?				
Is the vegetation condition satisfactory (density, weed growth, coverage, etc.)? (check against approved planning regime)				
Does any part of the system require weeding, pruning or mowing? (check against maintenance frequency state in approved design)				
Is there any evidence of invasive species becoming established? If yes, state action required				
Are any check dams or weirs in good condition?				

SUDS / EXTERNAL SURFACE WATER DRAINAGE MAINTENANCE INSPECTION CHECKLIST				
SITE NAME AND ADDRESS				
Date of inspection		Details	Action Required (y/n)	Date Completed
Undertaken by				
Page 3 of 3				
Is there any evidence of any accidental damage to the system (eg wheel ruts)?				
Is there any evidence of cross connections or other unauthorised inflows?				
Is there any evidence of tampering with the flow control?				
Are there any other matters that could affect the performance of the system in relation to the design objectives for hydraulic, water quality, biodiversity and visual aspects?				
OTHER OBSERVATIONS				
Information appended (eg photos)				
Continue as current Increase maintenance Decrease maintenance				
Proposed date for next inspection				

Appendices



DRAINAGE KEY:

- EXISTING COMBINED SEWER
- EXISTING SEWER TO BE REMOVED
- EXISTING COMBINED WATER MANHOLE
- EXISTING ROAD GULLY
- EXISTING RAINWATER PIPE
- FOUL WATER PIPE (150mm U.N.O. OUTLET AND CONNECTION BY OTHERS)
- SURFACE WATER PIPE
- SURFACE WATER MANHOLE
- FOUL WATER MANHOLE
- POLYPROPYLENE INSPECTION CHAMBER
- CONNECTION TO EXISTING COW SEWER
- RODDING EYE
- LINEAR DRAINAGE CHANNEL
- SITE BOUNDARY
- PROPOSED SITE LEVEL
- EXISTING SITE LEVEL

GREASE TRAPS
NOTE: GREASE TRAPS TO BE CONSIDERED FOR ALL KITCHEN AREAS. THESE MAY BE INTERNAL AND PART OF THE KITCHEN SUPPLIERS WORKS, OR EXTERNAL WITH SIZE AND LOCATION TO BE ADVISED BY SPECIALIST SUPPLIER FOR INDICATIVE INCLUSION ON ENGINEERS DRAWINGS.

DO NOT SCALE

FOR THE AVOIDANCE OF DOUBT, NO APPROVALS, REVIEWS, COMMENTS OR INDICATION OF SATISFACTION GIVEN BY ARC ENGINEERS IN TERMS OF SUBCONTRACT DRAWINGS, PRODUCTS OR PROPOSED MATERIALS SHALL REDUCE OR EXTINGUISH THE OBLIGATION OF THE SUB-CONTRACTOR OR SUPPLIER TO ADHERE TO THE SPECIFICATION, GENERAL ARRANGEMENT DRAWINGS, STATUTORY REQUIREMENTS AND GOOD WORKING PRACTICE. ARC ENGINEERS ACCEPT NO LIABILITY FOR THE SELECTION OF MATERIALS OR WORKMANSHIP IN THE EXECUTION OF THE WORKS.

GENERAL NOTES

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- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETE. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURE AND SEQUENCE AND ENSURE THAT THE BUILDING AND ITS COMPONENTS ARE SAFE DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER TEMPORARY BRACING, GUYS OR TIE-DOWNS WHICH MAY BE NECESSARY, SUCH MATERIAL REMAINING THE PROPERTY OF THE CONTRACTOR UPON COMPLETION.
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- FOR FURTHER NOTES REFER TO PROJECT SPECIFICATIONS.

SAFETY, HEALTH & ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following risks and information.

Risks listed here are not exhaustive. Refer to Risk Assessment Register: 25047

Construction:	
Demolition No Unusual hazards/risks	
For information relating to Use, Cleaning and Maintenance see Health & Safety File	
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement	
	INDICATES A RESIDUAL RISK REQUIRING A COMPULSORY ACTION
	INDICATES A RESIDUAL RISK FOR INFORMATION
	INDICATES A RESIDUAL RISK REQUIRING PROHIBITIVE ACTION
	INDICATES A RESIDUAL RISK AS A WARNING

P4	CLIENT DETAILS AMENDED	SG	MG	AR	03.09.25
P3	SITE LAYOUT PLAN UPDATED. DRAINAGE LAYOUT UPDATED TO SUIT.	SG	MG	AR	02.09.25
P2	SITE LAYOUT PLAN UPDATED. DRAINAGE LAYOUT UPDATED TO SUIT.	SG	MG	AR	29.07.25
P1	INITIAL ISSUE	SG	MG	AR	10.07.25
REV	DETAIL	BY	CHK	APP	DATE

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Phone: 0113 253 3904
www.arc-engineers.co.uk

CLIENT:							
PROPCO (WOKINGHAM) LTD							
PROJECT:							
EVENDON'S LANE RESIDENTIAL CARE HOME, WOKINGHAM							
TITLE:							
DRAINAGE GENERAL ARRANGEMENT							
DRAWING STATUS:							
PRELIMINARY							
DRAWN:	DATE:	CHECKED:	DATE:	APPROVED:	DATE:		
SG	10.07.25	MG	10.07.25	AR	10.07.25		
CONTRACT NO:	SCALE @ A1:						
25047	1:250						
PROJECT NO:	ORIGINATOR	ZONE	LEVEL	TYPE	DISCIPLINE	NUMBER	REVISION
25047	ARC	XX	XX	DR	C	5000	P4

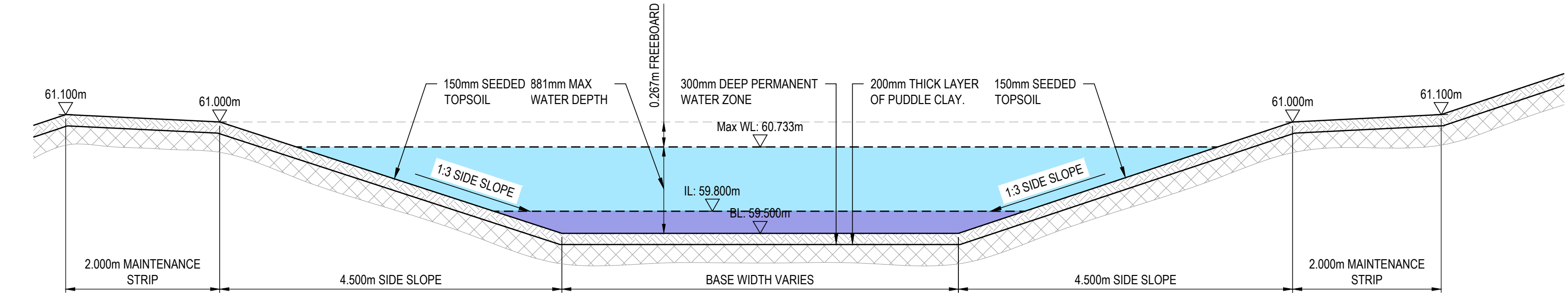
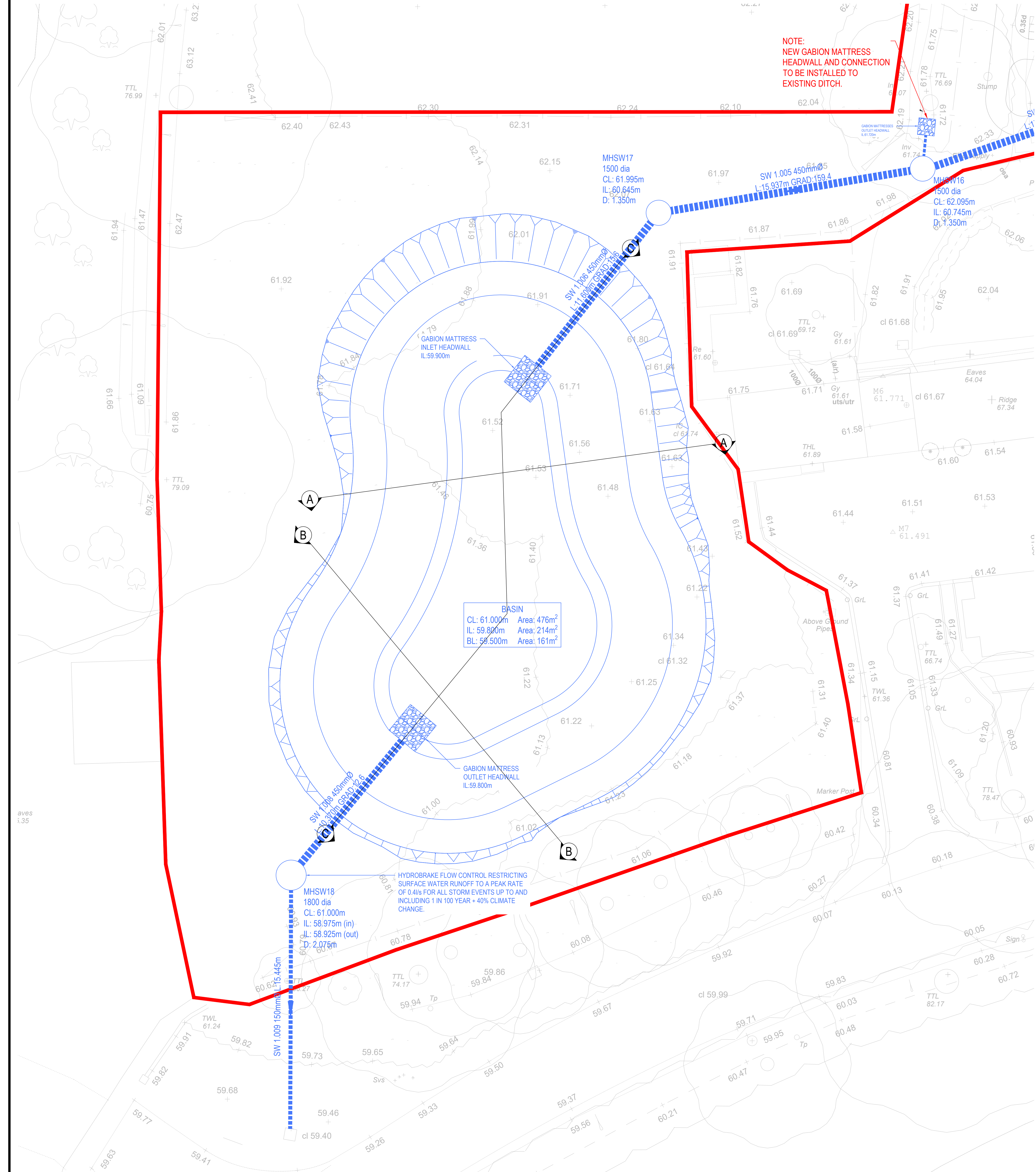
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DO NOT SCALE

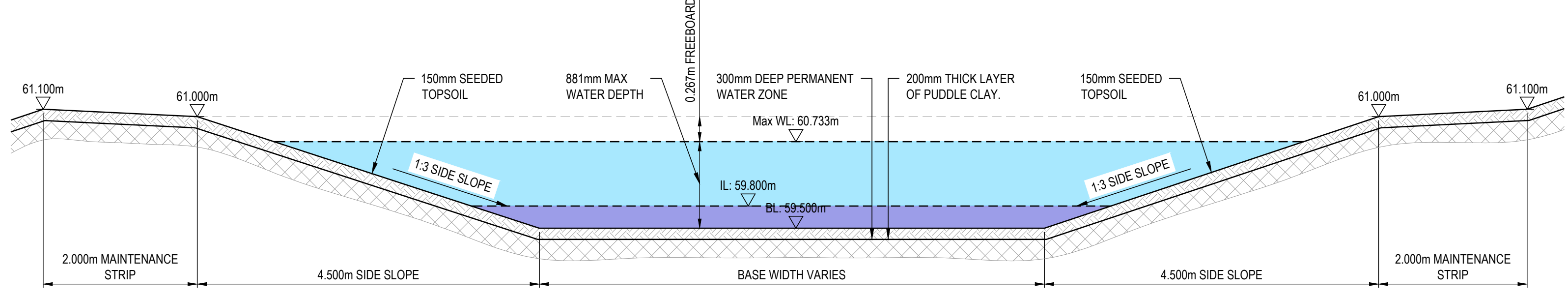
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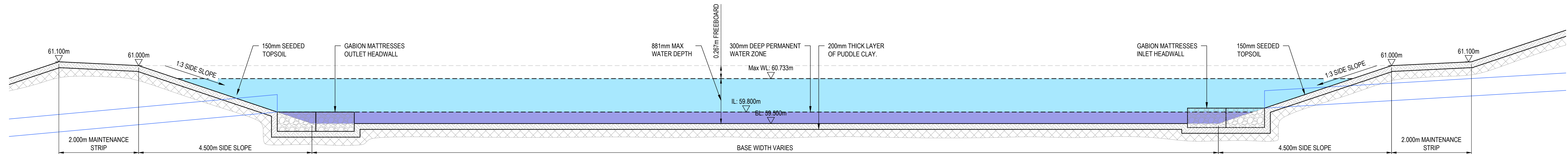
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Risks listed here are not exhaustive. Refer to Risk Assessment Register: 25047	
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Demolition	
No Unusual hazards/risks	
For information relating to Use, Cleaning and Maintenance see Health & Safety File	
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	INDICATES A RESIDUAL RISK REQUIRING PROHIBITIVE ACTION
	INDICATES A RESIDUAL RISK AS A WARNING



TYPICAL SECTION A-A THROUGH DETENTION BASIN.
SCALE 1:50



TYPICAL SECTION B-B THROUGH DETENTION BASIN.
SCALE 1:50



TYPICAL SECTION C-C THROUGH DETENTION BASIN.
SCALE 1:50

P1	CLIENT DETAILS AMENDED	SG	MG	AR	10.09.25
P4	SITE LAYOUT PLAN UPDATED SURFACE WATER DRAINAGE LAYOUT AMENDED	SG	MG	AR	02.09.25
P3	INLET AND OUTLET HEADWALLS AMENDED. SECTIONS B-B AND C-C ADDED. POND LINER REPLACED WITH PUDDLE CLAY	SG	MG	AR	29.07.25
P2	BASIN AMENDED TO HAVE A PERMANENT WATER ZONE	SG	MG	AR	10.07.25
P1	INITIAL ISSUE	SG	MG	AR	24.02.25
REV	DETAIL	BY	CHK	APP	DATE

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Phone: 0113 253 3804
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CLIENT: PROPCO (WOKINGHAM) LTD

PROJECT: EVENDONS LANE RESIDENTIAL CARE HOME, WOKINGHAM

TITLE: DETENTION BASIN DETAIL

DRAWING STATUS: PRELIMINARY

Drawn	Check	Designed	Date	Approved	Date
SG		MG	28.06.25	AR	24.06.25

PROJECT NO: 25047
SCALE: 1:50 and 1:100
PROJECT NO. ORIGINATOR. ZONE. LEVEL. TYPE. DISCIPLINE. NUMBER. REVISION
25047 - ARC - XX - XX - DR - C - 5100 - P5

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