HOP
CONSULTING CIVIL AND STRUCTURAL ENGINEERS

PLOT B, WOODSIDE GRANGE, HASSOCKS

FLOOD RISK AND DRAINAGE ASSESSMENT

OCTOBER 2025

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1.0 INTRODUCTION

1.1 HOP Consulting Ltd (HOP) has been instructed by the Client, Tony Lock, to undertake a Flood Risk and Drainage and Assessment report for the proposed redevelopment of Land at Woodside Grange, Hassocks.

1.2 The flood risk element of this report has been prepared in accordance with the principles of the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance (PPG) for Development and Flood Risk. The purpose of this report is to demonstrate that the risk of flooding from all sources is considered to be low and that foul and surface water discharge from the proposed development can be managed effectively and in accordance with the statutory authorities' requirements.

1.3 Details of the proposals have been provided by the Client which show the extent of the development. Information in this report has been received from a number of external parties and HOP does not accept liability for the accuracy of this information. Should there be material change in the development proposals or a change in end use, this report will need to be revised accordingly.

2.0 SITE SETTING AND DEVELOPMENT PROPOSALS

2.1 The Woodside Grange site is located to the north of Hassocks, West Sussex and encompasses Woodside Grange House, outbuildings, gardens, pond, swimming pool and a tennis court. Much of the wider site is undeveloped gardens and woodland with gentle falls to the west before steeply falling at the western boundary. A watercourse forms the western boundary of the wider site. The Woodside Grange site is bounded by fields to the north, woodland to the south and a recent housing development to the east. The adjacent housing development consists of up to 500 new homes and the developer, Taylor Wimpey, is understood to have been consulted to facilitate the development as Woodside Grange. Access to the wider site is currently via an unnamed private residential drive originating from the southeast of the site. A topographic survey of the site can be found in Appendix A.

2.2 The existing 1.7ha Woodside Grange site is to be divided into three; the existing house, two residential properties (Plot B) and a new property to be developed separately by the site's current owner (Plot A). This report considers the single new residence proposed for Plot B henceforth referred to as 'the site'.

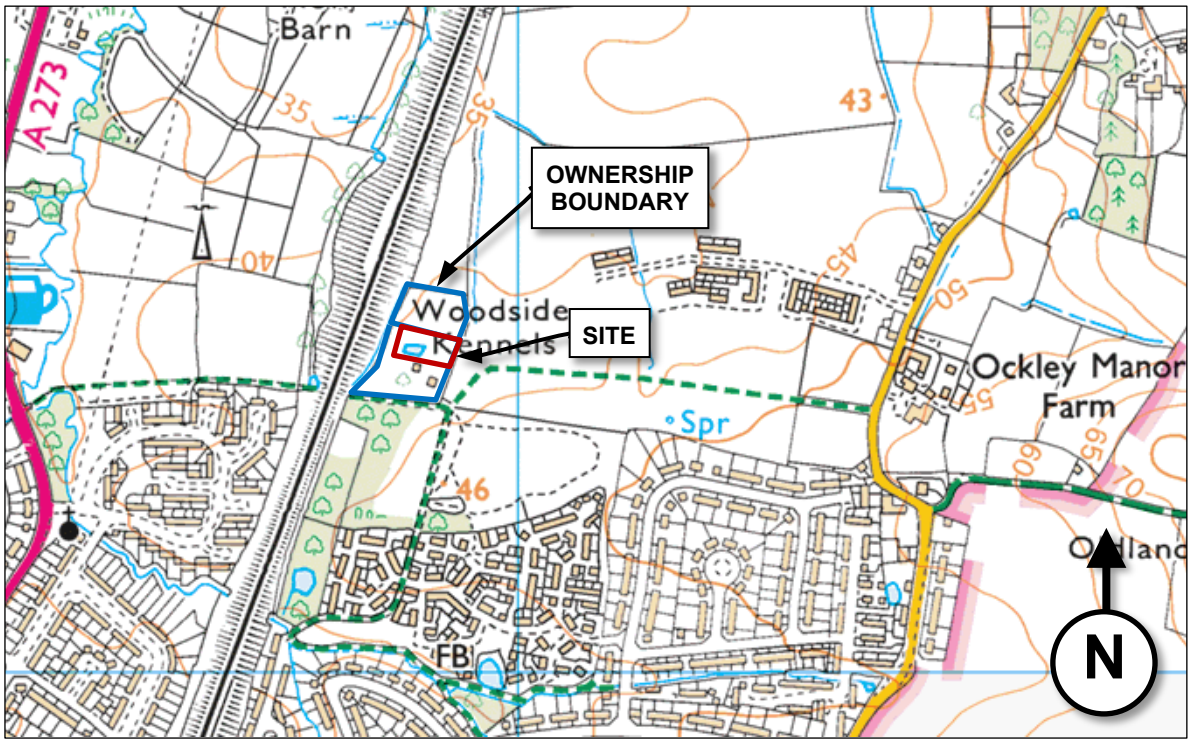


Figure 2.1 Site location.

2.3 The existing 0.30ha site includes a pond and a shed but is otherwise undeveloped. The BGS online geological mapping indicates the site to be underlain directly by bedrock geology of the Weald Clay Formation (mudstone), with no superficial deposits recorded. The site is outside any Source Protection Zone (SPZ) and its groundwater vulnerability is classified as unproductive.

2.4 The development proposals for the site are to construct two separate two-storey residential properties with parking and landscaping. A new shared-access drive is proposed to provide vehicle access from the southeast of the existing house plot to the site. This is shown on the

architect's layout in Appendix B. The existing pond is to be filled in as part of the development.

3.0 EXISTING DRAINAGE

SURFACE WATER

3.1 Surface water from the adjacent existing Woodside Grange house is understood to discharge to the watercourse to the west. A watercourse forms the western boundary of the site and can be seen in the photographs provided in Appendix C.

3.2 The topographic survey identifies levels to fall gently towards the watercourse which is expected to receive greenfield runoff flows from the site. Site investigations by a previous consultant identified ground levels to fall sharply from the western extent of the topographic survey with the invert level of the watercourse identified to be approximately 7m below the general site ground levels. The route and connectivity of the watercourse is shown in Figure 3.1 below.

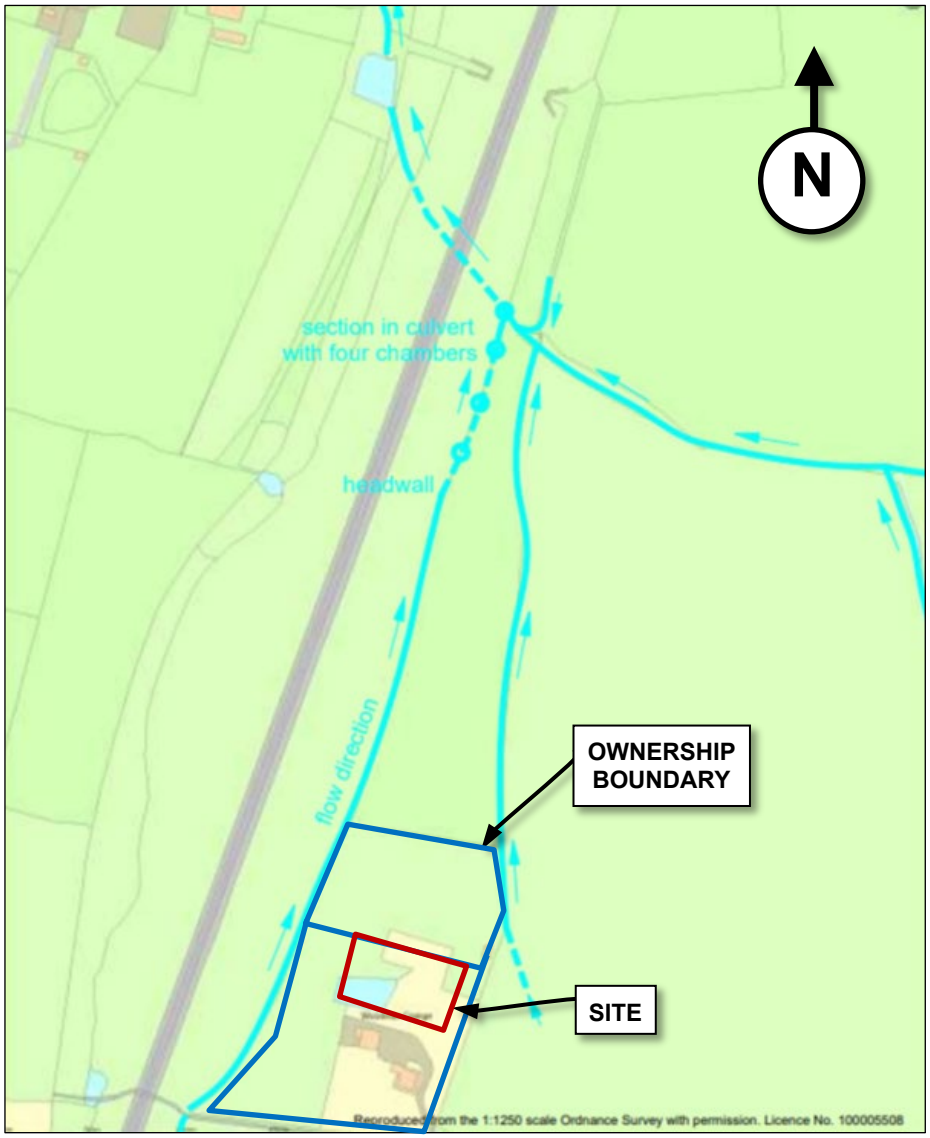


Figure 3.1 Watercourse connectivity map (from FRA available on the planning portal)

FOUL WATER

3.3 Foul water from the adjacent existing Woodside Grange house is understood to be managed by a cesspool tank. No public foul water drainage currently serves the site.

3.4 The Client has arranged for the recent Taylor Wimpey housing development to the east of the site to provide a connection point for foul sewerage. This connection point has been installed up to the site's boundary and provides capacity for the proposed residential properties to discharge by gravity. The location of this connection is marked by a post in the ground and shows the pipe to run under the existing ditch that borders the east of the site. The connection discharges into the Taylor Wimpey foul drainage network at Manhole F68 as confirmed by the client and photos of the connection's construction. The invert level at Manhole F68 is 40.998mAOD (Above Ordinance Datum).

3.5 The location of the post and depth of the ditch to the east of the site have been provided by the client. The ground level at the post is approximately 42.15mAOD. The ditch is not identified on the topographic survey as it lies just outside the site boundary. Site measurements by the client show it to be approximately 700mm deeper than adjacent ground levels in the location of the marker post. With a diameter of 100mm and minimum of 200mm of pipe cover assumed, the invert level of the connection at the site boundary is expected to be approximately 41.15mAOD.

4.0 PROPOSED DRAINAGE

Surface Water

4.1 The underlying geology and adjacent watercourses indicate that ground conditions are not favourable for the use of infiltration SuDS, and thus attenuation and discharge to the local drainage ditch is considered to be in accordance with the best practice guidance from the SuDS Manual, the Building Regulations Part H, and the National Standards for SuDS (NSSuDS). The NSSuDS states that surface water should be considered to be firstly collected for non-potable use; secondly discharged to ground via infiltration methods; thirdly to a watercourse (as proposed in this SuDS Assessment); and lastly to the public sewer.

4.2 Rainwater harvesting should be considered by the client. Due to the unpredictability of using significant volumes of stored water, especially during winter months, collecting rainwater for reuse is not considered able to provide a significant or practical contribution to the management of surface water at the site.

4.3 As surface water management through infiltration is not considered feasible, the scheme aims to replicate the existing drainage arrangement through an attenuated discharge limited by a flow control. The surface water from the impermeable roof area and parking will be managed at source discharging to the watercourse at rate limited to the greenfield runoff rate.

4.4 The greenfield runoff rate for the proposed 0.054ha drained area of the site has been calculated using the HR Wallingford online greenfield runoff estimation tool using the FEH statistical (2025) method. The greenfield runoff QBar and therefore the limiting discharge rate for the site is 0.5l/s. This can be found in Appendix D.

4.5 Each site is proposed to have an independent surface water management system. The 0.5l/s limiting rate for the site is therefore shared equally between the two properties. The resulting 0.25l/s rate per property is not feasible to achieve by vortex flow control devices or similar, without creating a significant blockage risk to the system. Should the system block, it is likely to overflow, or be manually overridden, both resulting in a far greater flow to the watercourse. The minimum flow rate achievable by a vortex flow control without creating a significant blockage risk is considered to be 1.0l/s. A limiting flow rate of 1.0l/s has been adopted for each property.

4.6 Using Causeway Flow modelling software, an attenuation pond with vortex flow control has been modelled to attenuate and discharge the surface water from each property. For the drained areas including the roof area, parking area and pond area, it can be shown that for the 1.0l/s limiting flow rate, a pond providing 7.1m^3 attenuation and an oversized pipe providing 4.8m^3 provides sufficient attenuation volume for storm events up to the 100-year return period plus 45% additional allowance for future climate change. These calculations can be found in Appendix D.

4.7 The proposed attenuation manages the surface water for the additional impermeable area so as not to have an adverse effect on the site and neighbouring properties in terms of flood risk.

4.8 The proposed connections to the watercourse should be via new headwalls for which Ordinary Watercourse Consenting should be applied for in due course. The headwalls should be located in a manner that does not impede or impact the flow of the watercourse.

Foul Water

4.9 A foul water sewer connection has been installed to the Plot A site's boundary by the adjacent developer. The adjacent development site is understood to ultimately discharge to the Southern Water sewer network. In addition to the existing house and the property proposed on Plot A, capacity has been provided for the proposed two properties' gravity connection in the adjacent development's drainage network and their ultimate connection to the southern water sewer network.

4.10 The invert level of the connection point is approximately 41.15mAOD. Based on surrounding ground levels, the proposed properties' finished floor levels (FFL) are approximately 44.25mAOD and 44.10mAOD, 3.10 and 2.95 metres higher respectively than the foul connection point. A gravity connection to the connection point provided is therefore considered to be feasible. The Drainage Strategy, provided in Appendix E, illustrates the proposed foul drainage layout and levels.

4.11 Using Southern Water's latest design guidance which includes a misconnection allowance, the peak foul flow from the proposed property is calculated to be 0.071l/s. A breakdown of this calculation is provided in Table 4.1 below.

Table 4.1 Peak foul flow rates to Southern Water guidance.

General housing peak foul flow		
Number of properties, N	2	Units
Occupancy, O	5	Persons / unit
Per capita flow, G (L/D)	125	litres / head / day
Population, P (NxO)	10	People
Storm duration, SD	300	Minutes
Peaking Factor, PF	2	
Peak Flow	**0.030**	**l/s**

For misconnection of surface water into foul		
Site Area, A	3000	m^2
Development density, DD (N/A/10000)	26.7	Units / Ha
Area allowance per property	2.1	m^2
Area misconnected	4.2	m^2
Peak flow	**0.041**	**l/s**

TOTAL PEAK FLOW	**0.071**	**l/s**

Water Quality

4.12 Both the SuDS Manual (CIRIA C753) and guidance from the EA, as outlined in the withdrawn but not replaced Pollution Prevention Guidance 3 (PPG3), state that rainwater runoff from roof areas is considered to be at very low risk of containing contaminants and does not require any pollution control to be implemented prior to discharge, outside of the removal of gross solids and sediments only.

4.13 Further reference to Table 26.2 of the SuDS Manual shows that the proposed land use for the development comprises individual property driveways and car parking which represent a low risk of pollution hazard level. The guidance for this level of risk is to use the simple index approach to pollution control requirements for discharging to surface waters, as is proposed at this site.

4.14 The notes to Table 26.2 state that extra measures may be required for discharges to protected resources, the guidance clarifies that in England and Wales, protected groundwater resources are represented by the catchment of a SPZ 1 classification. The development site lies outside of any designated SPZ.

4.15 The simple index approach is outlined in the SuDS Manual and provides pollution hazard indices for different land use classifications. An extract applicable to the development site is provided in Table 4.2. This shows total pollution hazard indices of; total suspended solids (TSS) 0.5; Metals 0.4; and Hydrocarbons 0.4.

Table 4.2 Extract of table 26.2 from the SuDS Manual.

Pollution hazard indices for different land use classifications				
Land use	**Pollution hazard level**	**Total suspended solids (TSS)**	**Metals**	**Hydro-carbons**
Residential roofs	Very low	0.2	0.2	0.05
Individual property driveways, residential car parks, low traffic roads (eg cul de sacs, homezones and general access roads) and non-residential car parking with infrequent change (eg schools, offices) ie < 300 traffic movements/day	Low	0.5	0.4	0.4

4.16 These are to be compared against mitigation indices for individual SuDS components, as provided in Table 26.3 of the SuDS Manual, an extract of which showing the mitigation indices for a permeable paving option is provided in Table 4.3.

Table 4.3 Extract of table 26.3 from the SuDS Manual.

Indicative SuDS mitigation indices for discharges to surface waters			
	Mitigation indices[1]		
Type of SuDS component	**TSS**	**Metals**	**Hydrocarbons**
Filter strip	0.4	0.4	0.5
Filter drain	0.4[2]	0.4	0.4
Swale	0.5	0.6	0.6
Bioretention system	0.8	0.8	0.8
Permeable pavement	0.7	0.6	0.7
Detention basin	0.5	0.5	0.6
Pond[4]	0.7[3]	0.7	0.5
Wetland	0.8[3]	0.8	0.8
Proprietary treatment systems[5,6]	These must demonstrate that they can address each of the contaminant types to acceptable levels for frequent events up to approximately the 1 in 1 year return period event, for inflow concentrations relevant to the contributing drainage area.		

4.17 The SuDS Manual also allows for proprietary systems such as oil interceptors, smart filters, membranes and silt/debris traps to be utilised to minimise the risk of watercourse pollution. These products must demonstrate that they can address each of the contaminant types as described in Table 4.2. The use of proprietary water quality control systems should not be required as the proposed attenuation ponds are shown above to effectively mitigate the pollution risk.

SuDS Maintenance

4.18 Details of SuDS operation and maintenance activities are provided within Chapter 32 of the SuDS Manual. A summary of typical key SuDS components is given in Table 4.4. A general maintenance schedule for the drainage elements can be found in Appendix F.

4.19 As can be seen, all SuDS components require regular inspection and for the first year the guidance states that monthly inspections are carried out and documented to inform the ongoing maintenance regime of the site drainage. SuDS components at the site are not to be adopted and will be maintained for their lifetime by the managing company of the development.

4.20 Further operational activities for the SuDS components described for the site include regular litter and debris removal; and weed and invasive plant control to ensure the drainage systems function without their design infiltration characteristics being compromised.

4.21 Contractors should protect SuDS components from adverse sediment runoff during the construction phase and an initial pre-handover inspection as required to ensure that the drainage system has been constructed as designed.

Table 4.4 Extract of Table 32.1 of the SuDS Manual.

Typical key SuDS components operation and maintenance activities (for full specifications, see Chapters 11–23)

Operation and maintenance activity	SuDS component												
	Pond	Wetland	Detention basin	Infiltration basin	Soakaway	Infiltration trench	Filter drain	Modular storage	Pervious pavement	Swale/bioretention/ trees	Filter strip	Green roofs	Proprietary treatment systems
Regular maintenance													
Inspection	■	■	■	■	■	■	■	■	■	■	■	■	■
Litter and debris removal	■	■	■	■	□	■	■	□	■	■	■		□
Grass cutting	■	■	■	■	□	■	■	□	□	■	■		
Weed and invasive plant control	□	□	□	□		□	□		□		□	■	
Shrub management (including pruning)	□	□	□	□					□	□	□		
Shoreline vegetation management	■	■	□										
Aquatic vegetation management	■	■	□										
Occasional maintenance													
Sediment management[1]	■	■	■	■	■	■	■	■	■	■	■		■
Vegetation replacement	□	□	□	□						□	□	■	
Vacuum sweeping and brushing									■				
Remedial maintenance													
Structure rehabilitation /repair	□	□	□	□	□	□	□	□	□	□	□	□	
Infiltration surface reconditioning				□	□	□	□		□	□	□		

Key
■ will be required
□ may be required

Notes
1 Sediment should be collected and managed in pre-treatment systems, upstream of the main device.

5.0 FLOOD RISK

5.1 Flood risk data has been obtained from the online EA Flood Map. The mapping shows the site to lie wholly within Flood Zone 1. The PPG to the NPPF defines Flood Zone 1 as having less than 1:1000 annual probability of river or sea flooding (less than 0.1%). Table 2 of the NPPF classifies residential developments of this nature as 'more vulnerable', which is deemed appropriate for Flood Zone 1.

5.2 The EA online Flood Map for Planning indicates tidal and fluvial flood risk only. Further sources of potential flood risk are considered below.

Sewer Flooding

5.3 There are no historical records of known highway or sewer flooding affecting the site. The proposed development will result in increased foul flow to the public sewer, however, capacity within the sewerage system has been confirmed by the adjacent developer and Southern Water. The risk of sewer flooding affecting the site is considered to be low.

Surface Water Flooding

5.4 The EA has produced surface water flood maps which, excluding the watercourse on the western site boundary and the pond which is to be filled in, indicate a very low risk of surface water flooding at the site.

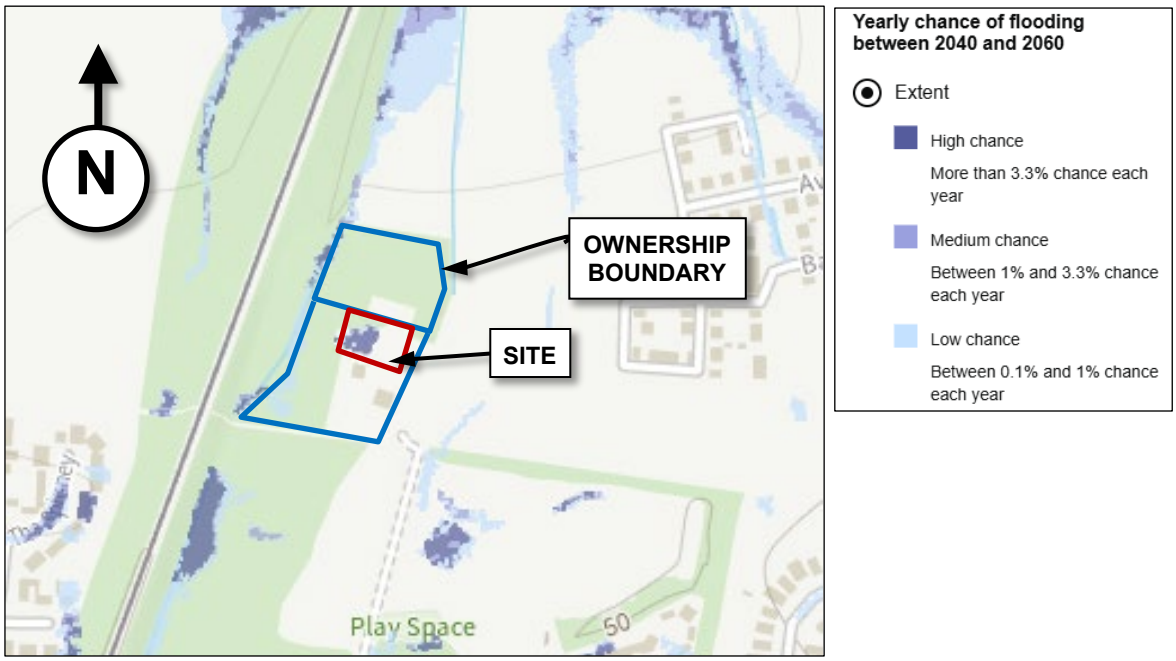


Figure 5.1 Extract of EA surface water flood mapping

5.5 To mitigate residual risks, the entrances to the properties should be set a minimum of 150mm above the surrounding ground levels to reduce the risk of potential surface water flow inundation.

Reservoir Flooding

5.6 The online EA maps show the Hassocks area to be outside of any flood risk associated with reservoir flooding and therefore the risk from this source is considered to be very low.

Groundwater Flooding

5.7 The site is underlain by bedrock geology of Weald Clay Formation, which is considered by the EA to be hydraulically inactive. The West Sussex County Council's (WSCC) Strategic Flood Risk Assessment (SFRA) identifies the Hassocks area to be at 'low' risk of groundwater flooding.

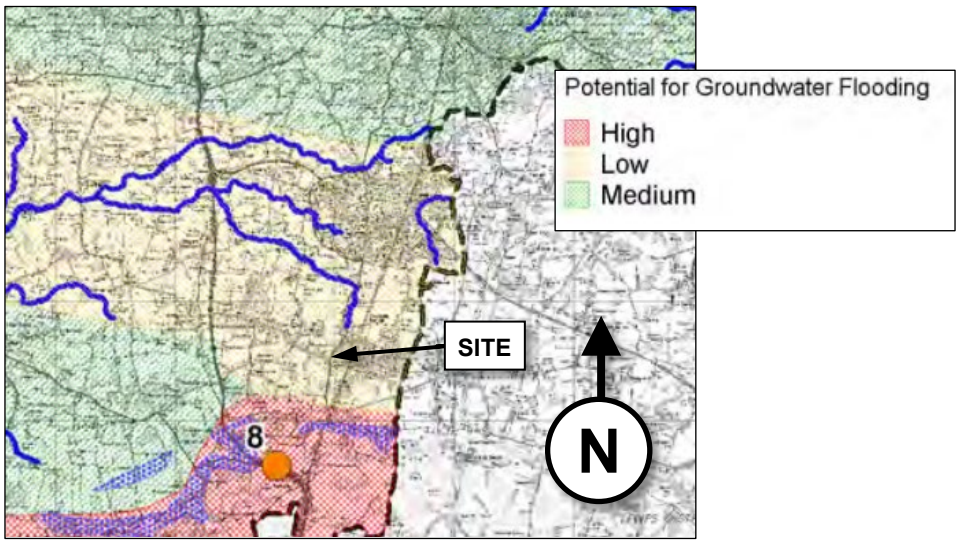


Figure 5.2 Extract of WSCC SFRA groundwater flood risk mapping

5.8 To further mitigate the risk of groundwater flooding, the property should be elevated a minimum of 150mm higher than the wider surrounding levels, as per the mitigation for surface water flood risk.

Climate Change

5.9 Increased rainfall intensity, longer storm durations and rising sea levels are all attributed to global climate change. The PPG to the NPPF states that an allowance for an increase in rainfall intensity over the design life of the development should be taken into account when designing surface water drainage systems. Current guidance dictates this allowance to be 45%.

RESIDUAL RISK

Exceedance Events

5.10 Residual risks are limited to exceedance events above the design criteria and/or a blockage failure of the sewer network. In an exceedance event, the surrounding topography would suggest that overland flows established from such potential events would be directed westwards away from the development to the watercourse, as per the current situation.

6.0 CONCLUSIONS

6.1 Surface water management is proposed through flow limiting devices and attenuation SuDS to ensure there is no adverse effect on the local drainage network. Surface water is proposed to discharge to the watercourse at the west of the site at a limited flow rate. SuDS proposals and key details accompany this report.

6.2 Local geological conditions indicate that infiltration SuDS are not a feasible method of surface water management at the site.

6.3 The use of an attenuation scheme comprising attenuation ponds and oversized pipes to manage surface water runoff from the site is considered compliant with EA guidance and the SuDS manual in terms of water quantity and quality. The site is not located within a SPZ and no additional pollution control measures are required in this regard.

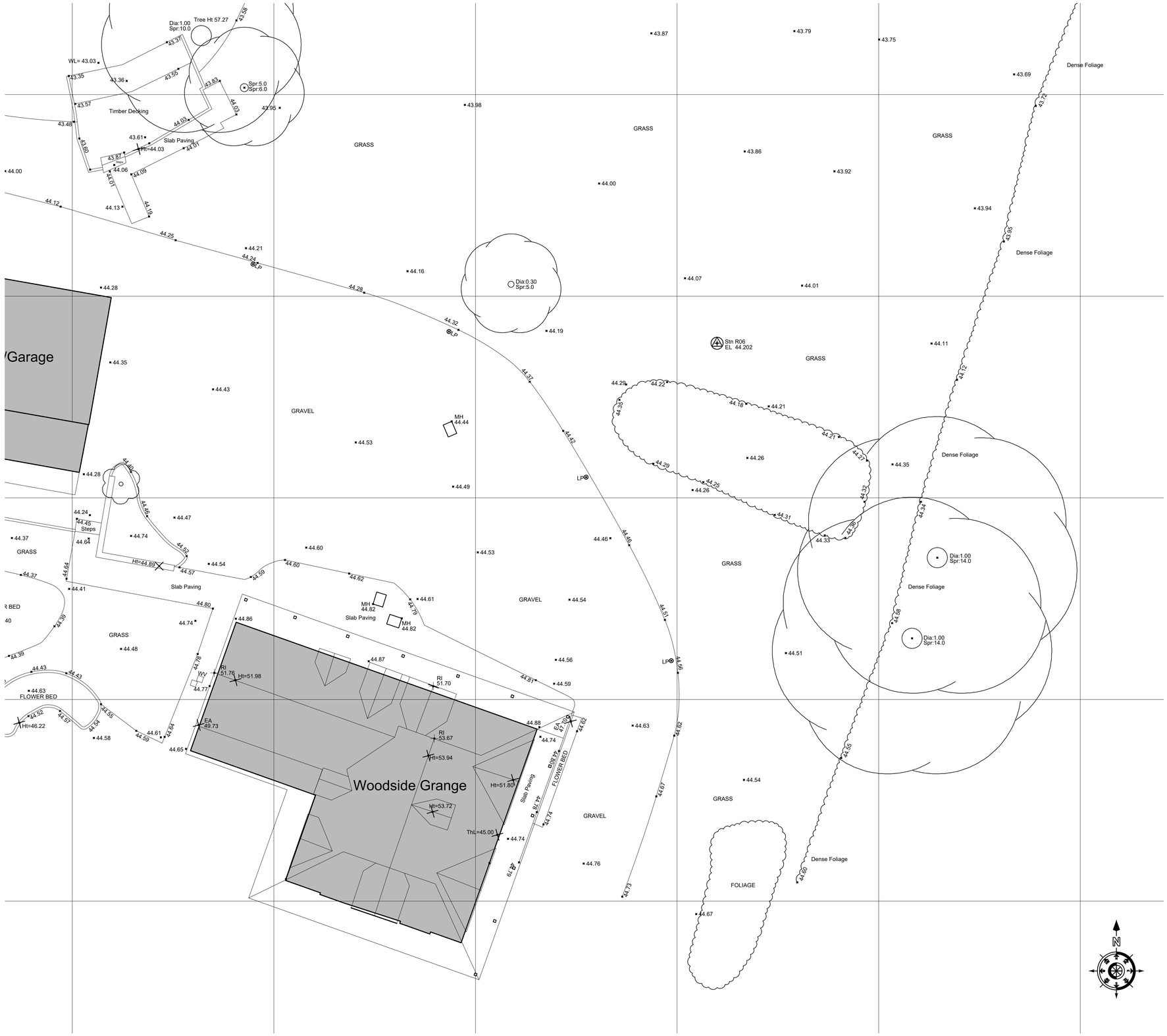
6.4 Surface water flood risk is considered to be mitigated through a suitably engineered external levels scheme to ensure potential surface water flows are directed away from buildings to the less vulnerable external areas. The site is located wholly within Flood Zone 1.

6.5 Maintenance requirements of SuDS elements during construction and operation phases have been identified in this report and should be included in the Operation and Maintenance and Health and Safety Manuals provided to the end client upon completion of the project. Management of SuDS elements after handover will become the responsibility the site management company.

6.6 It is proposed that the foul water is to be discharge to the public foul sewer via the adjacent development's recently installed foul drainage network. The connection location and capacity have been approved by the developer of the adjacent site and Southern Water.

6.7 This report has identified measures that ensure that the peak rate of surface water runoff is mitigated through the use of attenuation SuDS. This report shows that the proposals for the development at the Woodside Grange, Plot B site can be successfully implemented and managed sustainably and that there should be no increase in risk to future users and neighbouring properties in regard to flooding over the expected lifetime of the development.

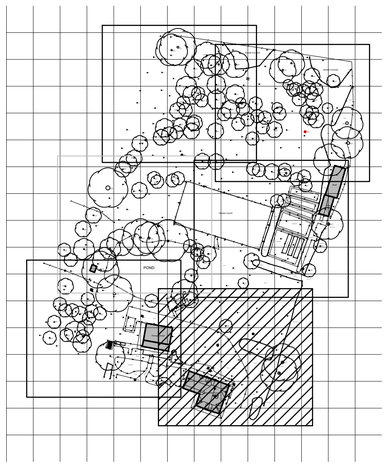
APPENDIX A – TOPOGRAPHIC SURVEY



TOPOGRAPHICAL SURVEY

0m 1 2 5m 10m

SCALE 1:100



NOT TO SCALE

LEGEND

BANKING (Top, Bottom)
BUSHES & HEDGES
MARSH
TREES — 3T / 0.2 / 6 (No of Trees, Dia of Base, Height of Tree)
NOTE:- SPREADS AND HEIGHTS ARE INDICATIVE ONLY
GATES (Single, Double)
RETAINING WALL (RTW)
SLOPING MASONRY
FENCE
WALL (Width drawn to scale) 0.23m
BUILDING - SURVEYED
BUILDING - SURVEYED BASIC DATA ONLY
OPEN SIDED BUILDING
GLASS ROOFED
CONTOURS (55.50)
OVERHEAD WIRES

ABBREVIATIONS (WHERE APPLICABLE)

AIR VALVE	AV	MANHOLE	MH
BED LEVEL	BL	MARKER	MKR
BELISHA BEACON	BB	NOTICE BOARD	NB
BOLLARD	B	NAME PLATE	NP
BRITISH TELECOM BOX	BTB	OVERHEAD WIRES	OHW
BRITISH TELECOM MANHOLE	BTMH	PARKING METER	PM
BRICKWORK	BKWK	RIDGE LEVEL	RID
BUS STOP	BS	ROAD SIGN	RS
CABLE TV	CATV	RETAINING WALL BOTTOM	RWB
COVER LEVEL	CL	RETAINING WALL TOP	RWT
CABLE MARKER	CM	STOP VALVE	SV
CONCRETE POST	CP	STOP COCK	SC
DOWN PIPE	DP	SOFFIT LEVEL	SOF
DROP KERB	DK	SPOT LEVEL	SL
EAVES LEVEL	EA	STRUCTURAL SLAB LEVEL	SSL
ELECTRICITY CABLE PIT	ELCP	STATION	STN
ELECTRICITY CONTROL BOX	ECB	TREE STUMP	ST
ELECTRICITY POLE	EP	TELEGRAPH POLE	TP
EARTH ROD	ER	TELEPHONE CALL BOX	TCB
FIRE HYDRANT	FH	TOP OF KERB	TK
FLOWER BED	FB	THRESHOLD LEVEL	TL
FOOTPATH	FP	TRAFFIC LIGHT	TL
FLOOR LEVEL	FL	TOP OF WALL	TW
FLAG STAFF	FS	UNDERGROUND	UG
GAS VALVE	GV	UNABLE TO LIFT	UTL
GATE STOP	GS	UNABLE TO SURVEY	UTS
GULLY	G	VENT PIPE	VP
GULLY OUTLET	GO	WATER LEVEL	WL
INSPECTION COVER	IC	WATER METER	WM
INVERT LEVEL	IL	WASH OUT	WO
LAMP POST	LP	WASTE PIPE	WP
LETTER BOX	LB	WATER VALVE	WV

BUILDING

ACCESS HATCH	AH	WINDOW CILL LEVEL	WCL
ARCH HEAD HEIGHT	AHH	WINDOW HEAD LEVEL	WHL
ARCH HEAD LEVEL	AHL	SKYLIGHT	SL
ARCH SPRINGER HEIGHT	ASH	SOIL AND VENT PIPE	SVP
ARCH SPRINGER LEVEL	ASL	THRESHOLD LEVEL	THL
BEAM	BE	WASH BASIN	WB
BEAM HEIGHT	BH	WATER TANK	WT
BEAM HEAD LEVEL	BHL		
BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	F-3-H		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

BUILDING

FENCES

BARBED WIRE FENCE	BWF
CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
CHESTNUT PALING FENCE	CPF
FENCE POST	FPO
INTERWOVEN FENCE	IWF
IRON RAILING FENCE	IRF
LARCH LAP FENCE	LLF
MISCELLANEOUS FENCING	Misc.F
PALISADE FENCE	PF
POST AND CHAIN FENCE	PCF
POST AND RAIL FENCE	PRF
POST AND WIRE	PWF
TUBULAR STEEL RAIL	TSRF
WIRE MESH FENCE	WMF
(Concrete Post/Steel Post/Timber Post)	(CP/SP/TP)

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NOTES

1. The Survey Grid is on Ordnance Survey Level & Grid.
2. Fences shown are not necessarily legal boundaries.
3. Dimensions should not be scaled. All dimensions should be checked on site before any fabrication / construction.
4. All drainage connections shown are sounded only. They have not been water tested.
5. Copyright of all data produced by ARCHIDATA shall remain with ARCHIDATA unless otherwise specifically agreed.
6. Information provided should not be altered or modified in any way. It should not be used for any purpose other than for which it was intended and should not be issued to other parties without prior agreement of ARCHIDATA.
7. ARCHIDATA cannot accept responsibility for any damage to computer systems which may result from viruses which may be contained in the data provided.
8. Preliminary data is generally unchecked therefore it is not guaranteed.
9. If the AutoCAD drawing is being read by any system other than AutoCAD it should be checked against a hard copy. ARCHIDATA cannot accept liability for omissions.
10. The tree species have been identified to the best of the surveyors knowledge. They have not been verified by an Arboriculturist and are not guaranteed. If they are important they should be verified. Tree heights are estimated. Trees have been shown diagrammatically (i.e. circular), however, their true shape in plan will be different.
11. Some CAD layers exists with additional information which are turned off.
12. This survey has been carried out to an accuracy consistent scale of 1:150; therefore interrogated dimensions will be within the tolerance associated with this scale. The same accuracies implied by the plottingscale are equally applicable to digital data supplied for CAD. The scale of this drawing should not be changed withour permission.

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REV	DATE	BY	AMENDMENT

SURVEY

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specialist land and building surveyors
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WEST SUSSEX BN44 3RD
TEL: (01903) 863225
MOB: (07762) 146343
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CLIENT
Tony Lock

JOB TITLE
Woodside Grange
Woodlands Road, Hassocks
BN6 8EX

DRAWING TITLE
Topographical Survey

DATE	SCALE-A1 SHEET	DRAWN BY	RO
10/04/23	1:100	CHECKED	RM

JOB NO.	DRAWING NO.	REVISION
AD23123	1.01	

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TOPOGRAPHICAL SURVEY

0m 1 2 5m 10m

SCALE 1:100

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LEGEND

BANKING (Top / Bottom)
BUSHES & HEDGES
MARSH
TREES — 3T / 0.2 / 6 (No of Trees / Dia of Base / Height of Tree)
NOTE:- SPREADS AND HEIGHTS ARE INDICATIVE ONLY
GATES (Single / Double)
RETAINING WALL (RTW)
SLOPING MASONRY
FENCE
WALL (Width drawn to scale) 0.23w
BUILDING - SURVEYED
BUILDING - SURVEYED BASIC DATA ONLY
OPEN SIDED BUILDING
GLASS ROOFED
CONTOURS 35.50
OVERHEAD WIRES

ABBREVIATIONS (WHERE APPLICABLE)

AIR VALVE	AV	MANHOLE	MH
BED LEVEL	BL	MARKER	MKR
BELISHA BEACON	BB	NOTICE BOARD	NB
BOLLARD	B	NAME PLATE	NP
BRITISH TELECOM BOX	BTB	OVERHEAD WIRES	OHW
BRITISH TELECOM MANHOLE	BTMH	PARKING METER	PM
BRICKWORK	BKWK	RIDGE LEVEL	RID
BUS STOP	BS	ROAD SIGN	RS
CABLE TV	CATV	RETAINING WALL BOTTOM	RWB
COVER LEVEL	CL	RETAINING WALL TOP	RWT
CABLE MARKER	CM	STOP VALVE	SV
CONCRETE POST	CP	STOP COCK	SC
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DROP KERB	DK	SPOT LEVEL	SL
EAVES LEVEL	EA	STRUCTURAL SLAB LEVEL	SSL
ELECTRICITY CABLE PIT	ELCP	STATION	STN
ELECTRICITY CONTROL BOX	ECB	TREE STUMP	ST
ELECTRICITY POLE	EP	TELEGRAPH POLE	TP
EARTH ROD	ER	TELEPHONE CALL BOX	TCB
FIRE HYDRANT	FH	TOP OF KERB	TK
FLOWER BED	FB	THRESHOLD LEVEL	TL
FOOTPATH	FP	TRAFFIC LIGHT	TL
FLOOR LEVEL	FL	TOP OF WALL	TW
FLAG STAFF	FS	UNDERGROUND	UG
GAS VALVE	GV	UNABLE TO LIFT	UTL
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GULLY	G	VENT PIPE	VP
GULLY OUTLET	GO	WATER LEVEL	WL
INSPECTION COVER	IC	WATER METER	WM
INVERT LEVEL	IL	WASH OUT	WO
LAMP POST	LP	WASTE PIPE	WP
LETTER BOX	LB	WATER VALVE	WV

BUILDING

ACCESS HATCH	AH	WINDOW CILL LEVEL	WCL
ARCH HEAD HEIGHT	AHH	WINDOW HEAD LEVEL	WHL
ARCH HEAD LEVEL	AHL	SKYLIGHT	SL
ARCH SPRINGER HEIGHT	ASH	SOIL AND VENT PIPE	SVP
ARCH SPRINGER LEVEL	ASL	THRESHOLD LEVEL	THL
BEAM	BE	WASH BASIN	WB
BEAM HEIGHT	BH	WATER TANK	WT
BEAM HEAD LEVEL	BHL		
BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	F-3-6		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

FENCES

BARBED WIRE FENCE	BWF
CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
CHESTNUT PALING FENCE	CPF
FENCE POST	FPO
INTERWOVEN FENCE	IWF
IRON RAILING FENCE	IRF
LARCH LAP FENCE	LLF
MISCELLANEOUS FENCING	Misc.F
PALISADE FENCE	PF
POST AND CHAIN FENCE	PCF
POST AND RAIL FENCE	PRF
POST AND WIRE	PWF
TUBULAR STEEL RAIL	TSRF
WIRE MESH FENCE	WMF

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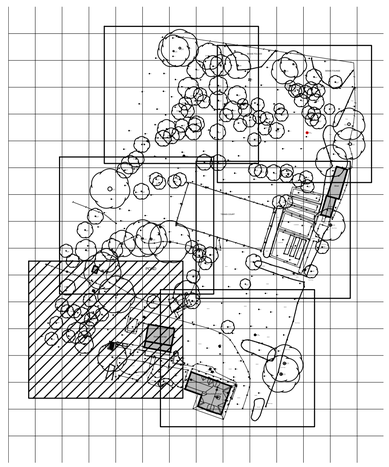

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TOPOGRAPHICAL SURVEY

0m 1 2 5m 10m

SCALE 1:100

LEGEND

BANKING (Top / Bottom)
BUSHES & HEDGES
MARSH
TREES — 3T / 0.2 / 6 (No of Trees / Dia of Base / Height of Tree)
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CONTOURS (35.50)
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BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	F-3/4		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

FENCES

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FENCE POST	FPO
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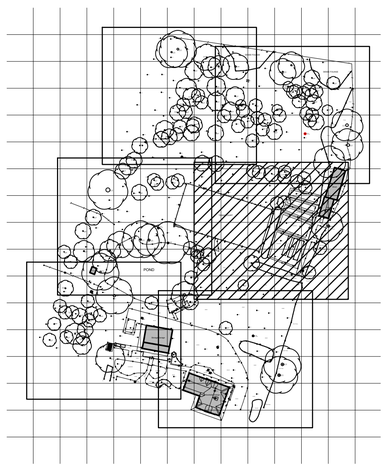

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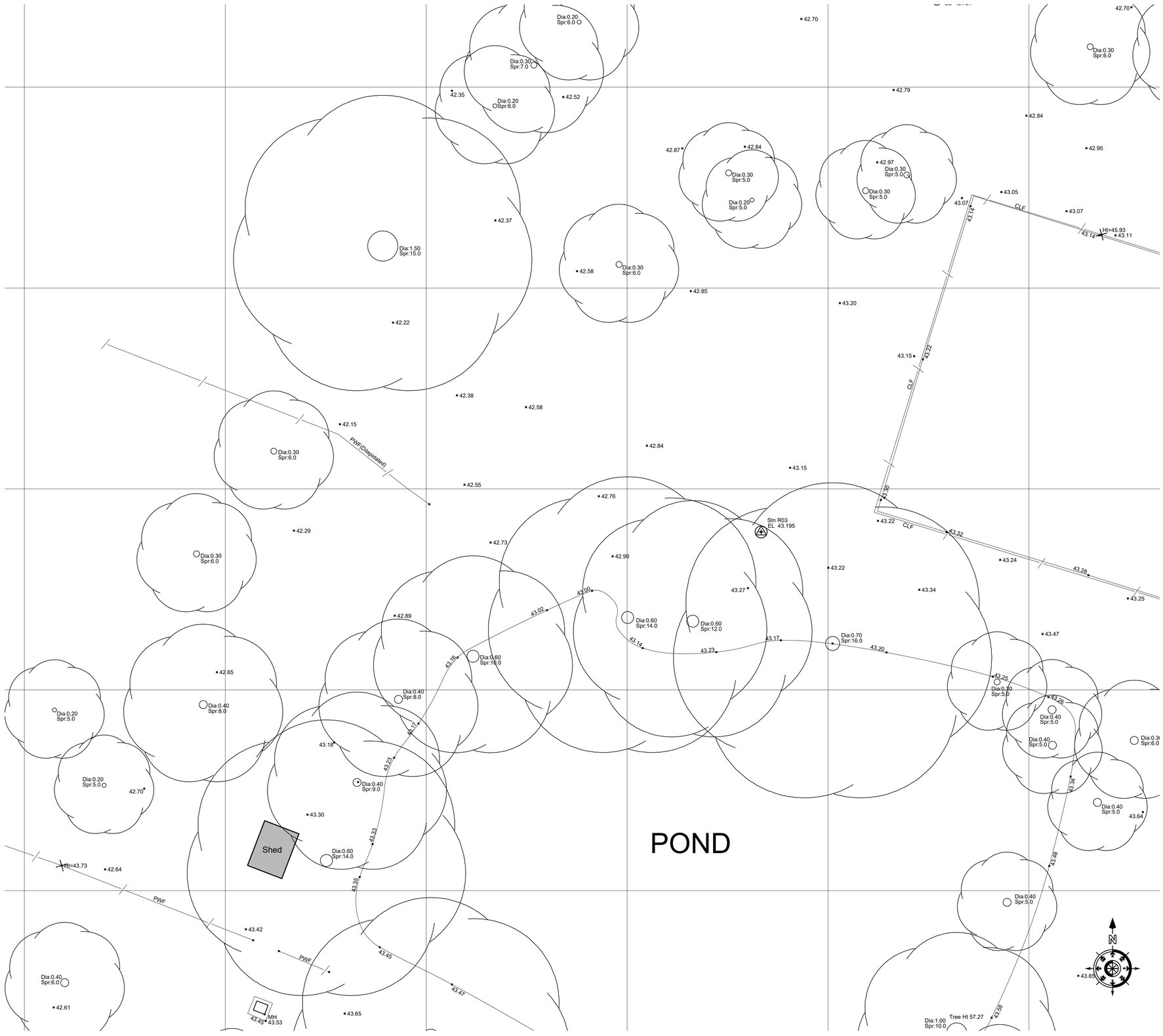
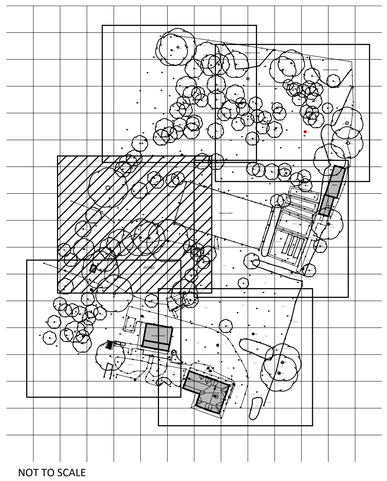


TOPOGRAPHICAL SURVEY

0m 1 2 5m 10m

SCALE 1:100



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COLUMN	Col		
CILL TO HEAD	C-H		
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FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	F-CH		
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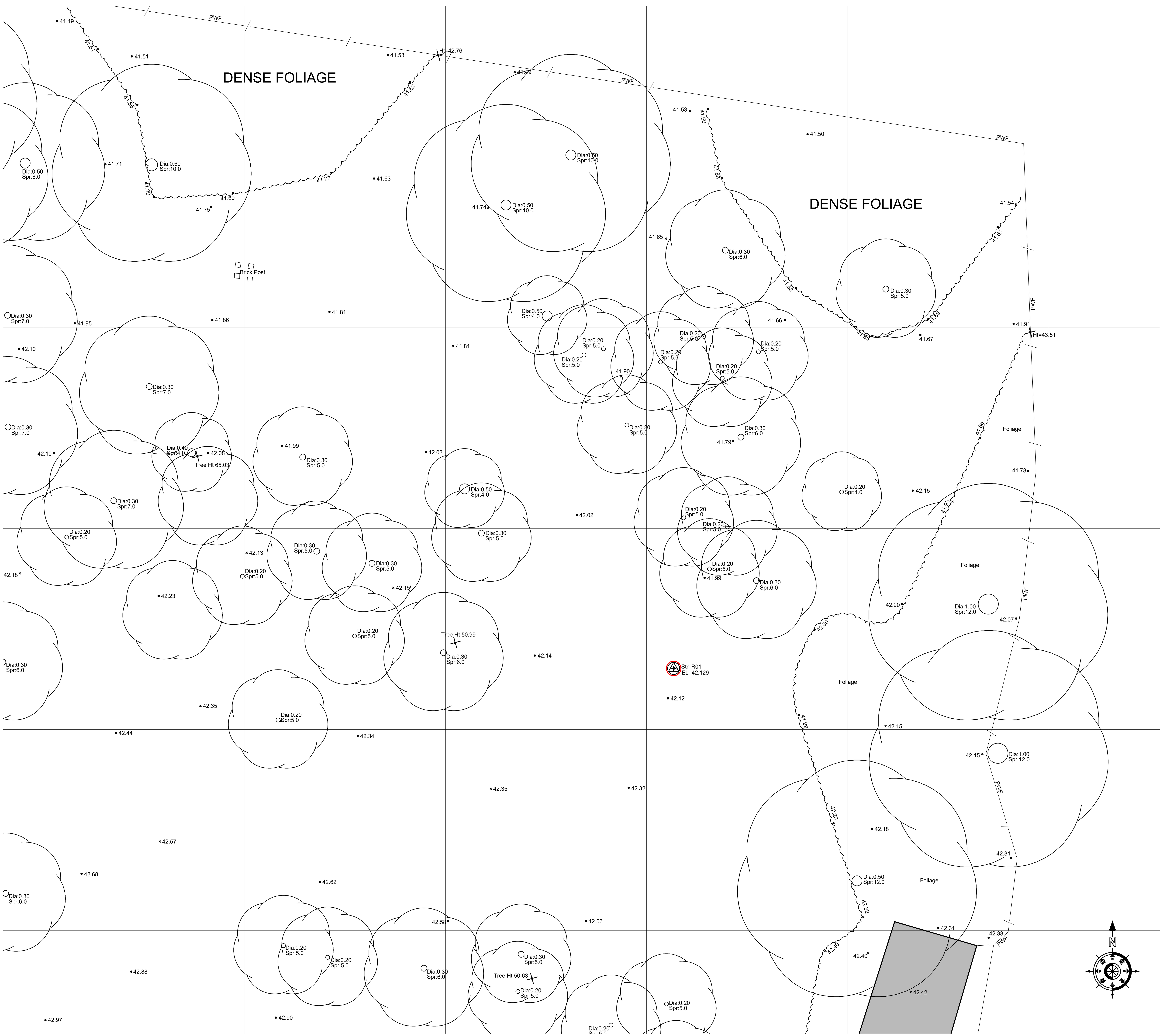

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0m 1 2 5m 10m

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LETTER BOX	LB	WATER VALVE	WV

BUILDING

ACCESS HATCH	AH	WINDOW CILL LEVEL	WCL
ARCH HEAD HEIGHT	AHH	WINDOW HEAD LEVEL	WHL
ARCH HEAD LEVEL	AHL	SKYLIGHT	SL
ARCH SPRINGER HEIGHT	ASH	SOIL AND VENT PIPE	SVP
ARCH SPRINGER LEVEL	ASL	THRESHOLD LEVEL	THL
BEAM	BE	WASH BASIN	WB
BEAM HEIGHT	BH	WATER TANK	WT
BEAM HEAD LEVEL	BHL		
BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	2.34		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

FENCES

BARBED WIRE FENCE	BWF
CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
CHESTNUT PALING FENCE	CPF
FENCE POST	FPO
INTERWOVEN FENCE	IWF
IRON RAILING FENCE	IRF
LARCH LAP FENCE	LLF
MISCELLANEOUS FENCING	Misc.F
PALISADE FENCE	PF
POST AND CHAIN FENCE	PCF
POST AND RAIL FENCE	PRF
POST AND WIRE	PWF
TUBULAR STEEL RAIL	TSRF
WIRE MESH FENCE	WMF
(Concrete Post/Steel Post/Timber Post)	(CP/SP/TP)

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Note:
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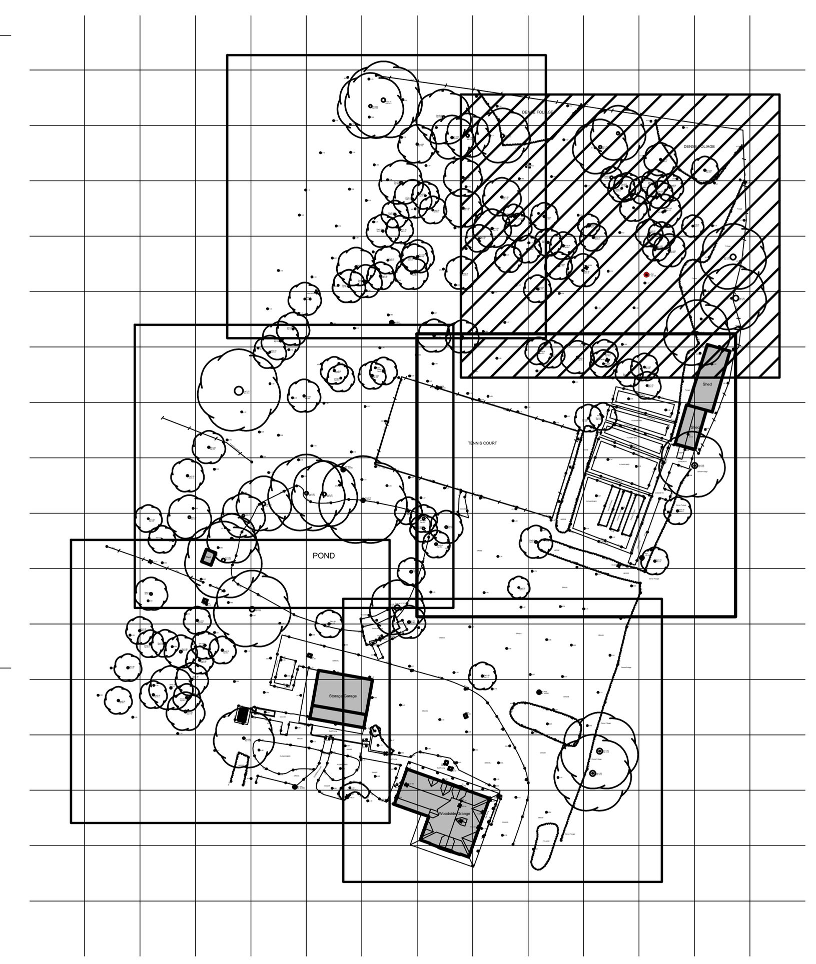
REV	DATE	BY	AMENDMENT



NOT TO SCALE

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CLIENT
Tony Lock

JOB TITLE
Woodside Grange
Woodlands Road, Hassocks
BN6 8EX

DRAWING TITLE
Topographical Survey

DATE	SCALE-A1 SHEET	DRAWN BY	CHECKED
10/04/23	1:100	RO	RM

JOB NO.	DRAWING NO.	REVISION
AD23123	1.05	

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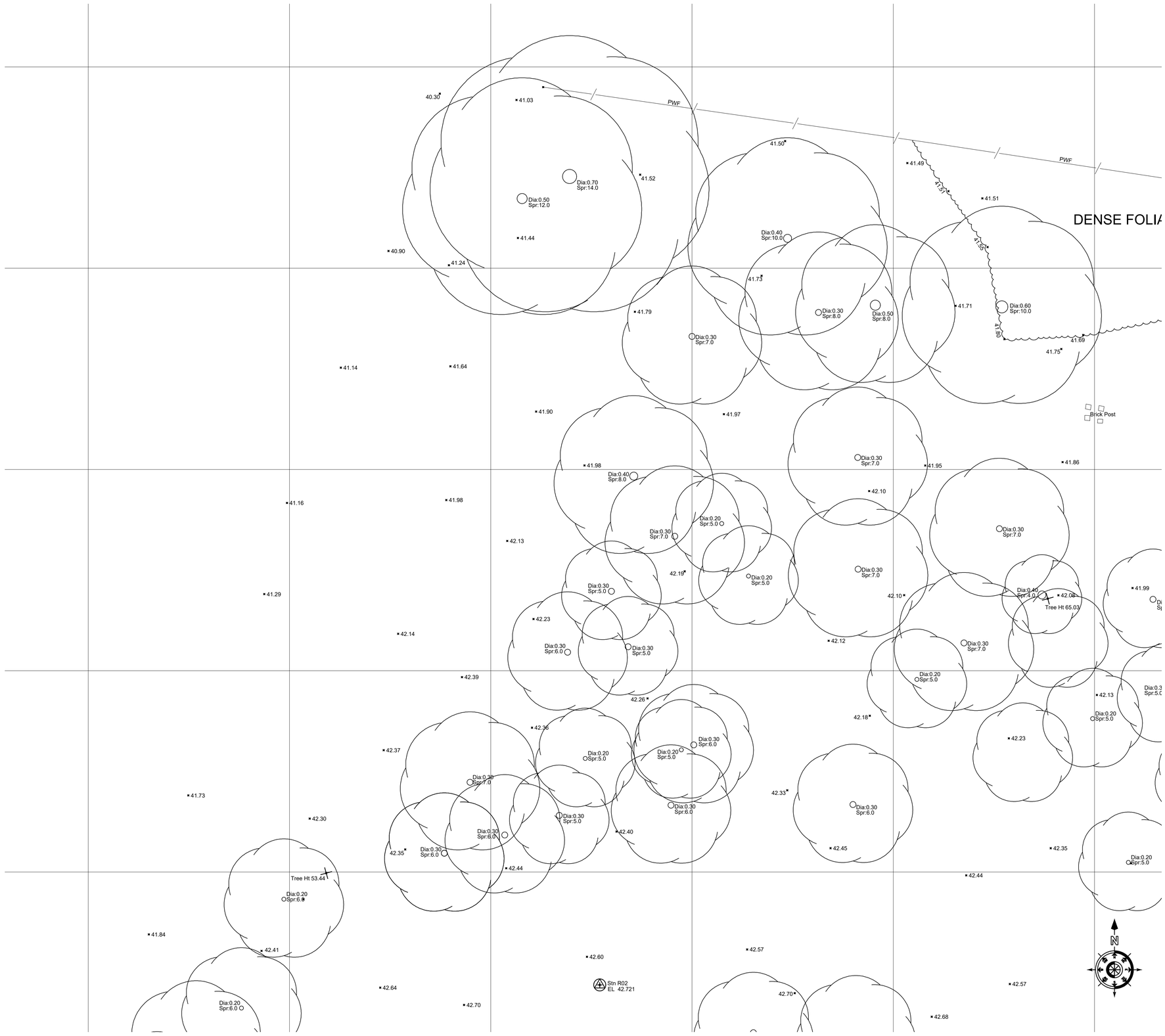
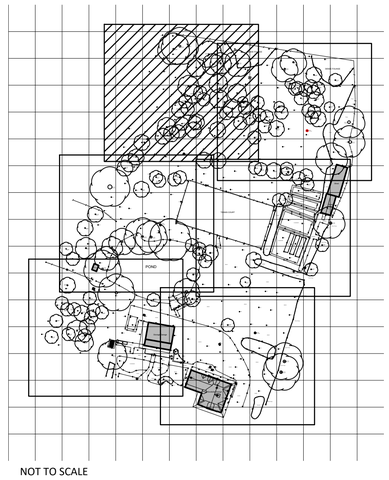


TOPOGRAPHICAL SURVEY

0m 1 2 5m 10m

SCALE 1:100



NOT TO SCALE

LEGEND

BANKING (Top / Bottom)
BUSHES & HEDGES
MARSH
TREES — 3T / 0.2 / 6 (No of Trees / Dia of Bole / Height of Tree)
NOTE:- SPREADS AND HEIGHTS ARE INDICATIVE ONLY
GATES (Single / Double)
RETAINING WALL (RTW)
SLOPING MASONRY
FENCE
WALL (Width drawn to scale) 0.23m
BUILDING - SURVEYED
BUILDING - SURVEYED BASIC DATA ONLY
OPEN SIDED BUILDING
GLASS ROOFED
CONTOURS (35.50)
OVERHEAD WIRES

ABBREVIATIONS (WHERE APPLICABLE)

AIR VALVE	AV	MANHOLE	MH
BED LEVEL	BL	MARKER	MKR
BELISHA BEACON	BB	NOTICE BOARD	NB
BOLLARD	B	NAME PLATE	NP
BRITISH TELECOM BOX	BTB	OVERHEAD WIRES	OHW
BRITISH TELECOM MANHOLE	BTMH	PARKING METER	PM
BRICKWORK	BKWK	RIDGE LEVEL	RID
BUS STOP	BS	ROAD SIGN	RS
CABLE TV	CATV	RETAINING WALL BOTTOM	RWB
COVER LEVEL	CL	RETAINING WALL TOP	RWT
CABLE MARKER	CM	STOP VALVE	SV
CONCRETE POST	CP	STOP COCK	SC
DOWN PIPE	DP	SOFFIT LEVEL	SOF
DROP KERB	DK	SPOT LEVEL	SL
EAVES LEVEL	EA	STRUCTURAL SLAB LEVEL	SSL
ELECTRICITY CABLE PIT	ELCP	STATION	STN
ELECTRICITY CONTROL BOX	ECB	TREE STUMP	ST
ELCTRICITY POLE	EP	TELEGRAPH POLE	TP
EARTH ROD	ER	TELEPHONE CALL BOX	TCB
FIRE HYDRANT	FH	TOP OF KERB	TK
FLOWER BED	FB	THRESHOLD LEVEL	TL
FOOTPATH	FP	TRAFFIC LIGHT	TL
FLOOR LEVEL	FL	TOP OF WALL	TW
FLAG STAFF	FS	UNDERGROUND	UG
GAS VALVE	GV	UNABLE TO LIFT	UTL
GATE STOP	GS	UNABLE TO SURVEY	UTS
GULLY	G	VENT PIPE	VP
GULLY OUTLET	GO	WATER LEVEL	WL
INSPECTION COVER	IC	WATER METER	WM
INVERT LEVEL	IL	WASH OUT	WO
LAMP POST	LP	WASTE PIPE	WP
LETTER BOX	LB	WATER VALVE	WV

BUILDING

ACCESS HATCH	AH	WINDOW CILL LEVEL	WCL
ARCH HEAD HEIGHT	AHH	WINDOW HEAD LEVEL	WHL
ARCH HEAD LEVEL	AHL	SKYLIGHT	SL
ARCH SPRINGER HEIGHT	ASH	SOIL AND VENT PIPE	SVP
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BEAM	BE	WASH BASIN	WB
BEAM HEIGHT	BH	WATER TANK	WT
BEAM HEAD LEVEL	BHL		
BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	F-3-6		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

FENCES

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CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
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FENCE POST	FPO
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DRAWING TITLE
Topographical Survey

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AD23123	1.06	

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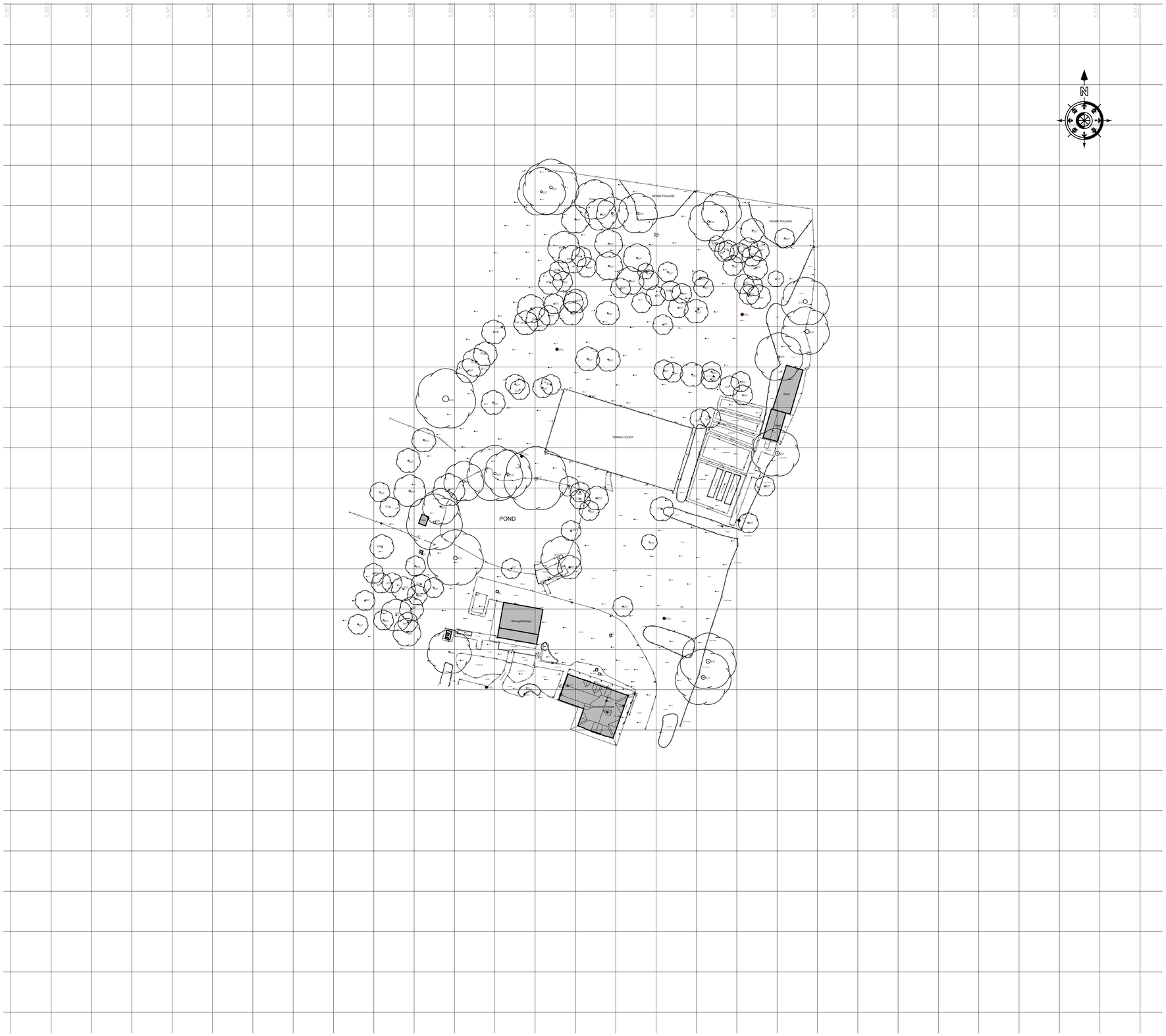

TOPOGRAPHICAL SURVEY

SCALE 1:500

LEGEND

BANKING (Top / Bottom)
BUSHES & HEDGES
MARSH
TREES — 3T / 0.2 / 6 (No of Trees / Dia of Bole / Height of Tree)
NOTE:- SPREADS AND HEIGHTS ARE INDICATIVE ONLY
GATES (Single / Double)
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SLOPING MASONRY
FENCE
WALL (Width drawn to scale) 0.23w
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BUILDING - SURVEYED BASIC DATA ONLY
OPEN SIDED BUILDING
GLASS ROOFED
CONTOURS 35.00
OVERHEAD WIRES

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BUS STOP	BS	ROAD SIGN	RS
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GULLY	G	VENT PIPE	VP
GULLY OUTLET	GO	WATER LEVEL	WL
INSPECTION COVER	IC	WATER METER	WM
INVERT LEVEL	IL	WASH OUT	WO
LAMP POST	LP	WASTE PIPE	WP
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BEAM HEAD LEVEL	BHL		
BEAM SOFFIT LEVEL	BSL		
COLUMN	Col		
CILL TO HEAD	C-H		
CEILING LEVEL	CL		
DOOR HEAD	DH		
DOOR HEAD LEVEL	DHL		
FIRE ALARM	FA		
FLOOR TO CILL	F-C		
FALSE CEILING	FC		
FLOOR TO CEILING HEIGHT	2.3-0		
FINISHED FLOOR LEVEL	FFL		
HOSE REEL	HR		
ROOF LEVEL	RL		
RADIATOR	Rad		
RAIN WATER PIPE	RWP		

FENCES

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CORRUGATED IRON FENCE	CIF
CLOSE BOARD FENCE	CBF
CHAIN LINK FENCE	CLF
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FENCE POST	FPO
INTERWOVEN FENCE	IWF
IRON RAILING FENCE	IRF
LARCH LAP FENCE	LLF
MISCELLANEOUS FENCING	Misc.F
PALISADE FENCE	PF
POST AND CHAIN FENCE	PCF
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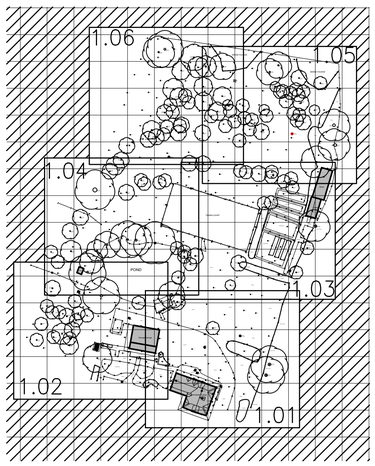

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CLIENT
Tony Lock

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Topographical Survey

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10/04/23	1:500	CHECKED	RM

JOB NO.	DRAWING NO.	REVISION
AD23123	1.07	

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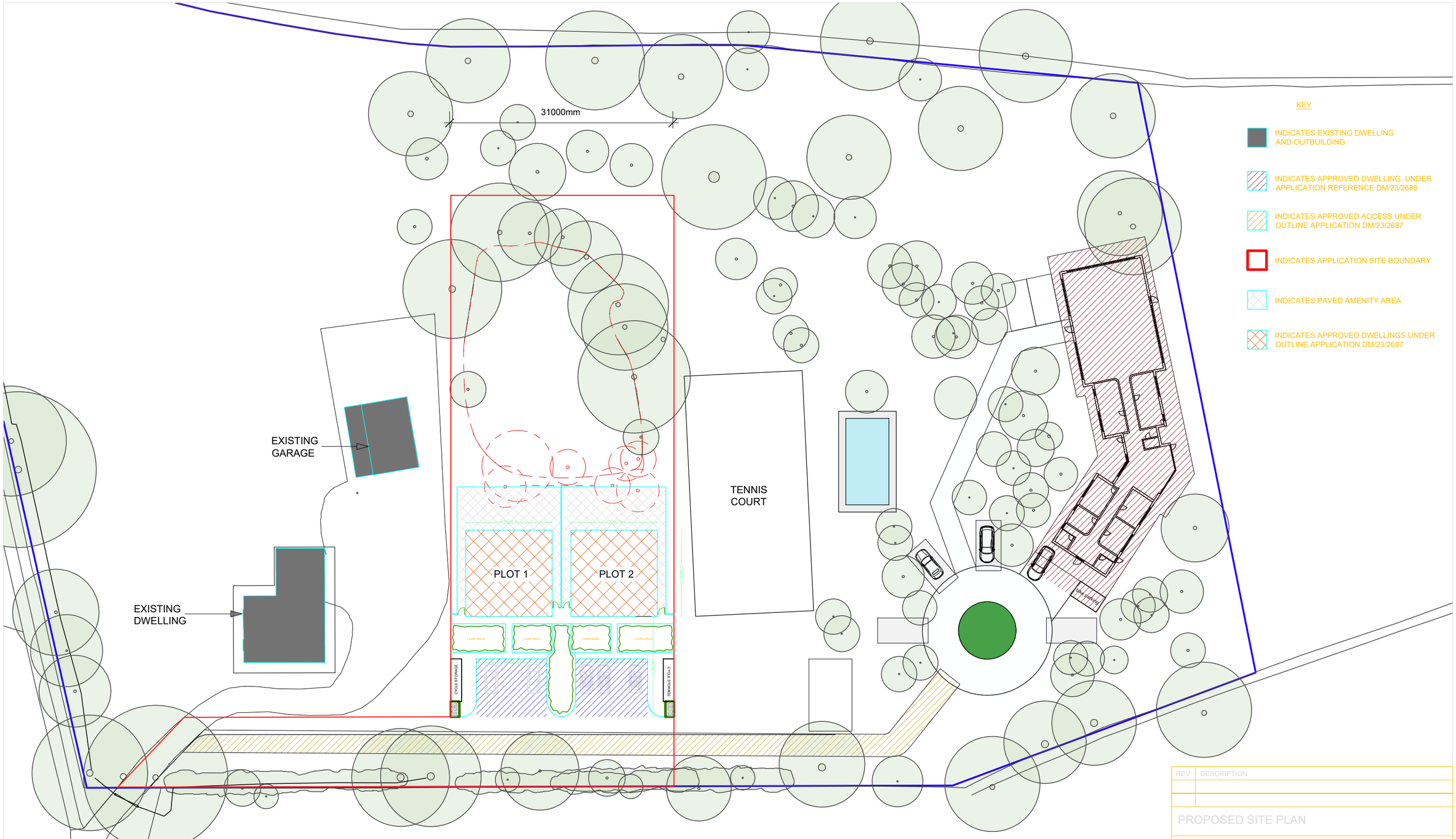
APPENDIX B – ARCHITECTURAL PLANS



PROPOSED SITE PLAN

0M 10M 50M 100M

REV	DESCRIPTION

PROPOSED SITE PLAN

PROPOSED RESIDENTIAL DEVELOPMENT CONSISTING OF 2 DWELLINGS - WOODSIDE GRANGE, HASSOCKS, BN6 8EX

CLIENT:	SAXON HOMES
DWG NO:	PL K1177/01
SCALE:	1/500 @ A3
DRAWN BY:	R.S.P.
DATE:	24/06/25
REV:	

MICHIGAN HOUSE, 17-19 CHORLEY NEW ROAD, BOLTON, BL1 4QR
TEL: 01204 392233 FAX: 01204 528505
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APPENDIX C – EXISTING SITE PHOTOGRAPHS

Existing house

Proposed Site A (south, facing tennis court and site B)

Ditch and boundary fence to the west of the site.

Watercourse to the east of the site to receive pond outflow.

The drainage ditch to the east of the site flowing underground northwards

APPENDIX D – SURFACE WATER CALCULATIONS

Greenfield runoff rate estimation tool

www.uksuds.com | Greenfield runoff rate estimation tool (https://www.uksuds.com/)

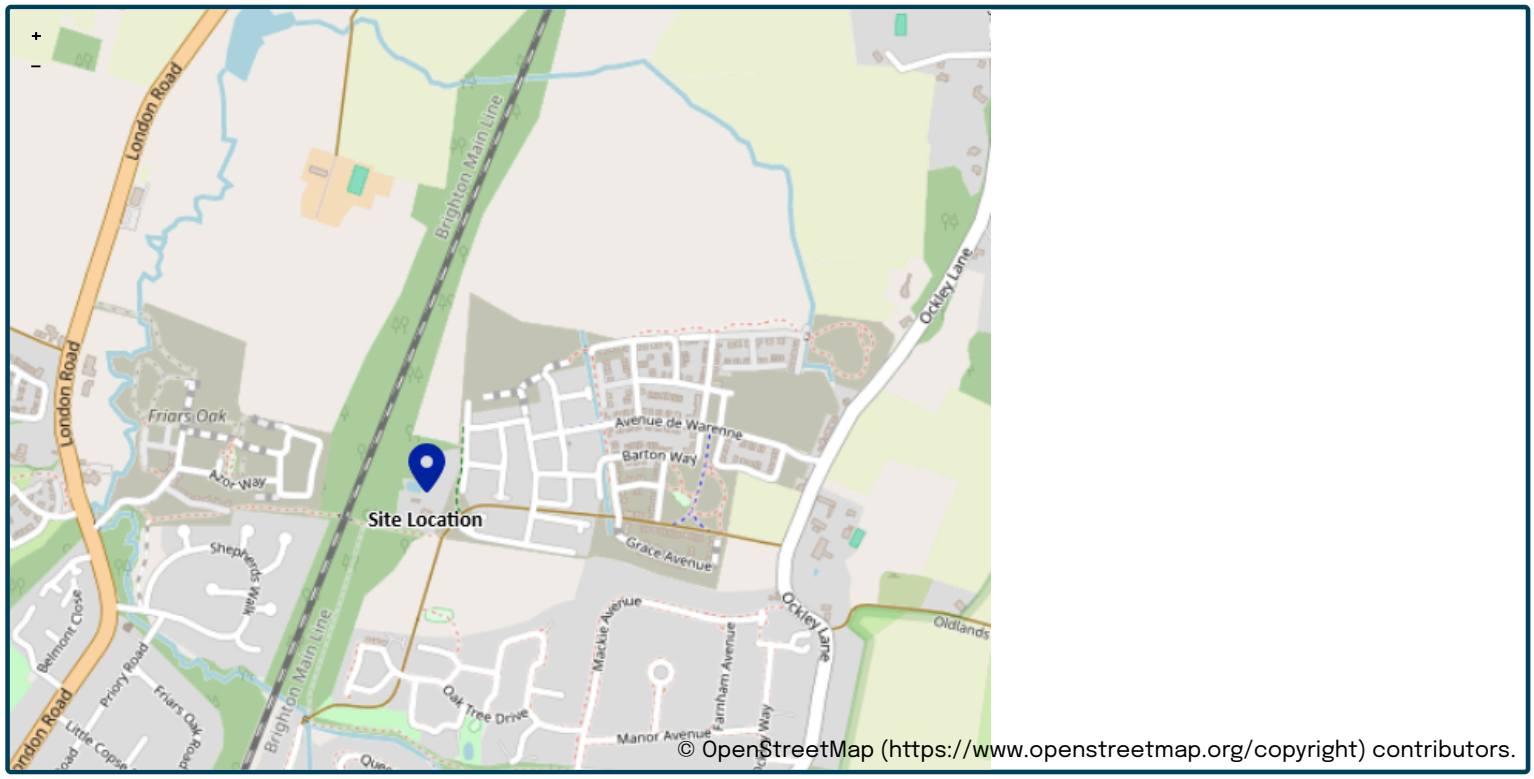
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	30/07/2026
Calculated by	IAS
Reference	16920 Plot B
Model version	2.2.3

Location

Site name	Woodside Grange
Site location	Hassocks



Site easting (British National Grid)	530876
Site northing (British National Grid)	116414

Site details

Total site area (ha)	0.05472	ha

Greenfield runoff

Method

Method	FEH statistical (2025)

FEH statistical (2025)

	My value		Map value
SAAR9120 (mm)	909 mm		
BFIHOST19scaled	0.36		
QMed-QBar conversion	1.136		1.136
QMed (l/s)	0.4 l/s		
QBar (FEH statistical 2025) (l/s)	0.5 l/s		

Growth curve factors

	My value		Map value
Hydrological region	7		7
1 year growth factor	0.85		
2 year growth factor	0.88		
10 year growth factor	1.62		
30 year growth factor	2.3		
100 year growth factor	3.19		
200 year growth factor	3.74		

Results

Method	FEH statistical (2025)
Flow rate 1 year (l/s)	0.4 l/s
Flow rate 2 year (l/s)	0.4 l/s
Flow rate 10 years (l/s)	0.7 l/s
Flow rate 30 years (l/s)	1.0 l/s
Flow rate 100 years (l/s)	1.4 l/s
Flow rate 200 years (l/s)	1.7 l/s

Please note runoff estimation is subject to significant uncertainty. Results are therefore normally reported to only 1 decimal place. Where 2 decimal places are provided, this does not indicate accuracy to this level, it has been adopted to prevent 'zero' figures from being reported. Outputs less than 0.01 l/s are reported as 0.01 l/s.

Disclaimer

This report was produced using the Greenfield runoff rate estimation tool (2.2.3) developed by HR Wallingford and available at uksuds.com (https://www.uksuds.com/). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (https://www.uksuds.com/terms-conditions). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.

Nodes

Name	Area (ha)	T of E (mins)	Cover Level (m)	Diameter (mm)	Easting (m)	Northing (m)	Depth (m)	Invert Level (m)
OUTFALL			42.700		29.744	89.942	6.900	35.800
Pond	0.002	5.00	42.350		10.342	87.005	0.500	41.850
Catch pit	0.022	5.00	43.500	1200	-28.152	58.615	1.540	41.960

Links (Results)

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)
1.001	4.326	34.0	13.4	0.400	6.800	0.024	0.0	43	4.061
1.000	0.968	154.0	12.3	1.090	0.050	0.022	0.0	86	0.589

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 %)
100	45	10	0

Node Pond Online Hydro-Brake® Control

Flap Valve	x	Objective	(HE) Minimise upstream storage
Replaces Downstream Link	x	Sump Available	✓
Invert Level (m)	41.500	Product Number	CTL-SHE-0048-1000-0900-1000
Design Depth (m)	0.900	Min Outlet Diameter (m)	0.075
Design Flow (l/s)	1.0	Min Node Diameter (mm)	1200

Node Pond Depth/Area Storage Structure

Base Inf Coefficient (m/hr)	0.00000	Safety Factor	2.0	Invert Level (m)	41.850
Side Inf Coefficient (m/hr)	0.00000	Porosity	1.00	Time to half empty (mins)	

Depth (m)	Area (m²)	Inf Area (m²)	Depth (m)	Area (m²)	Inf Area (m²)
0.000	2.0	0.0	0.500	29.0	0.0

Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +45% CC +10% A 15 minute summer	516.529	146.160	100 year +45% CC +10% A 240 minute summer	85.458	22.584
100 year +45% CC +10% A 15 minute winter	362.477	146.160	100 year +45% CC +10% A 240 minute winter	56.776	22.584
100 year +45% CC +10% A 30 minute summer	346.403	98.020	100 year +45% CC +10% A 360 minute summer	65.051	16.740
100 year +45% CC +10% A 30 minute winter	243.090	98.020	100 year +45% CC +10% A 360 minute winter	42.285	16.740
100 year +45% CC +10% A 60 minute summer	236.754	62.567	100 year +45% CC +10% A 480 minute summer	51.268	13.549
100 year +45% CC +10% A 60 minute winter	157.294	62.567	100 year +45% CC +10% A 480 minute winter	34.061	13.549
100 year +45% CC +10% A 120 minute summer	142.519	37.664	100 year +45% CC +10% A 600 minute summer	42.049	11.502
100 year +45% CC +10% A 120 minute winter	94.686	37.664	100 year +45% CC +10% A 600 minute winter	28.731	11.502
100 year +45% CC +10% A 180 minute summer	108.541	27.931	100 year +45% CC +10% A 720 minute summer	37.543	10.062
100 year +45% CC +10% A 180 minute winter	70.554	27.931	100 year +45% CC +10% A 720 minute winter	25.231	10.062

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Rainfall

Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)	Event	Peak Intensity (mm/hr)	Average Intensity (mm/hr)
100 year +45% CC +10% A 960 minute summer	30.938	8.147	100 year +45% CC +10% A 1440 minute summer	22.562	6.047
100 year +45% CC +10% A 960 minute winter	20.494	8.147	100 year +45% CC +10% A 1440 minute winter	15.163	6.047

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Results for 100 year +45% CC +10% A Critical Storm Duration. Lowest mass balance: 96.50%

Node Event	US Node	Level (m)	Depth (m)	Inflow (l/s)	Node Vol (m³)	Flood (m³)	Status
15 minute summer	OUTFALL	35.811	0.011	0.9	0.0000	0.0000	OK
120 minute winter	Pond	42.326	0.476	5.2	7.0813	0.0000	FLOOD RISK
120 minute winter	Catch pit	42.326	0.366	6.3	0.4145	0.0000	OK

US Node	Link	DS Node	Outflow (l/s)	Velocity (m/s)	Flow/Cap	Link Vol (m³)	Discharge Vol (m³)
Pond	1.001	OUTFALL	0.9	1.849	0.026	0.0093	9.3
Catch pit	1.000	Pond	19.5	0.490	0.127	4.8167	

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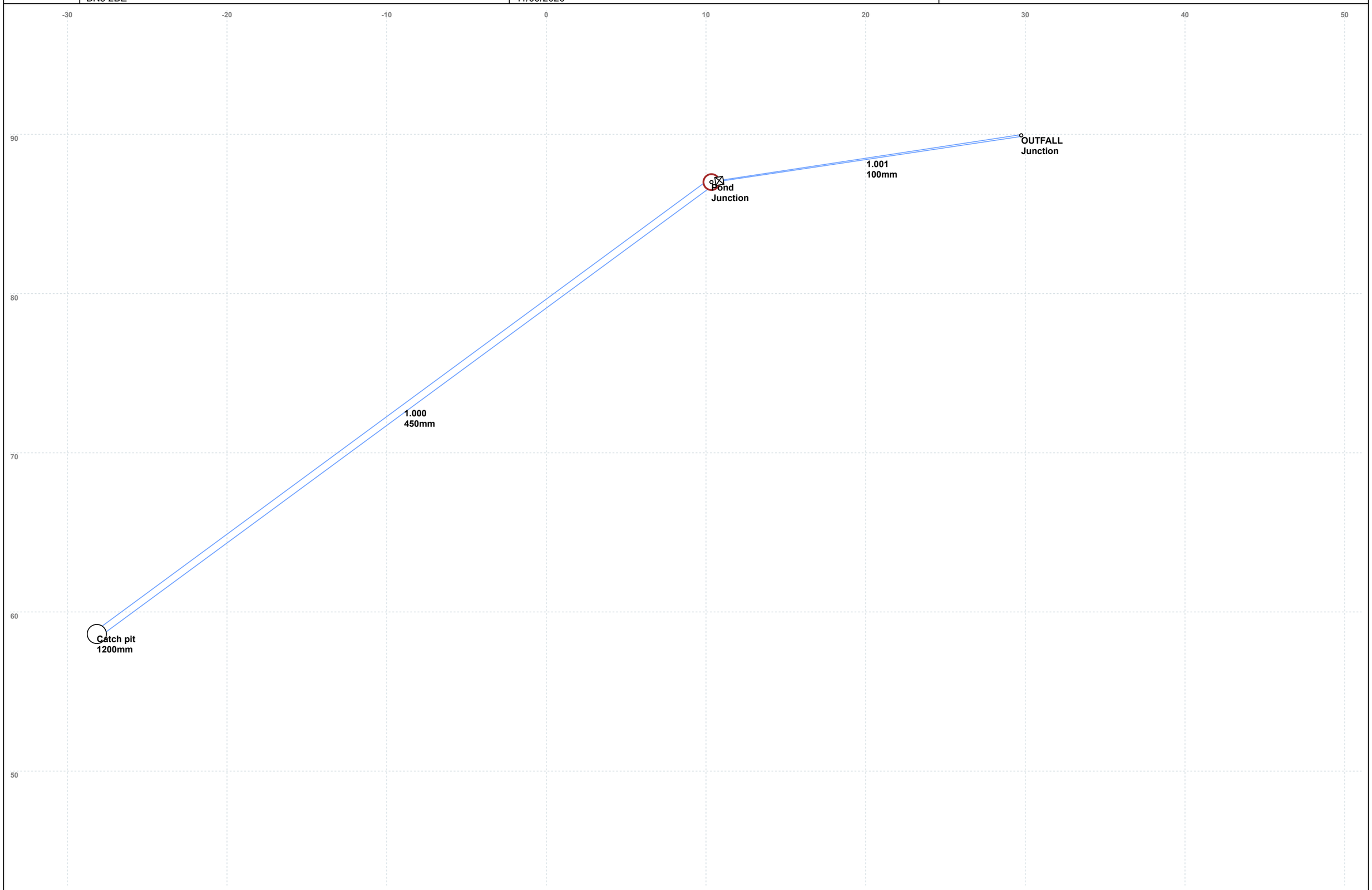

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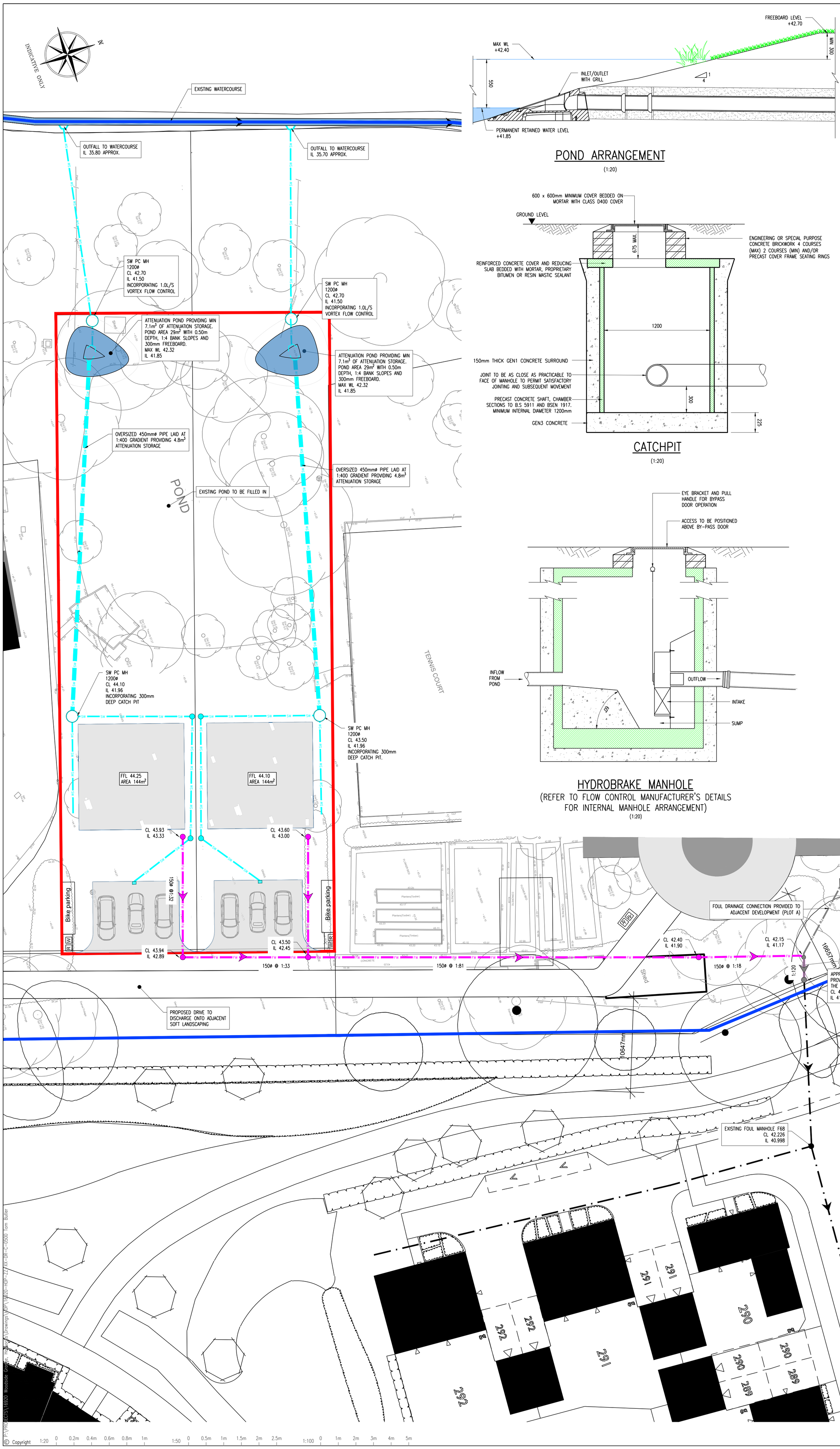
APPENDIX E – DRAINAGE STRATEGY

Project/Task No. 16920/01 Scale: 1:200 ORIGINAL DRAWING SIZE A1



1. GENERAL

A. This drawing is not to be scaled, work to figured dimensions only, confirmed on site.

B. This drawing is to be read in conjunction with all relevant architectural drawings, detailed specifications where applicable and all associated drawings in this series.

C. Any discrepancy on this drawing is to be reported immediately to the partnership for clarification.

D. The contractor is responsible for all temporary works and for the stability of the works in progress.

2. BELOW GROUND DRAINAGE

A. All foul and storm water drains which are not to be adopted as public sewers under a Section 104 Agreement must be constructed in accordance with Building Regulations Approved Document H, BS EN 752:2017 and, where appropriate, the relevant agreement certificates.

B. All adoptable drainage (manholes, sewers, gullies, gully connections, and other sewerage structures) intended to convey foul water and surface water are to be constructed in accordance with Water UK's 'Sewerage Sector Guidance' (SSG) and the relevant Council Design Guide.

C. Plastic pipes and fittings shall be of unplasticised polyvinyl chloride (PVC-U) complying with the requirements of BS EN 1401-1:2019 +A1:2023.

D. Concrete pipes shall be spun by a centrifugal process or be vertically pressed. Concrete pipes shall comply with the requirements of, and be tested in accordance with, BS 5911-1:2021 and BS EN 1916:2002.

E. Vitrified Clay pipes, fittings, joints, adaptors and couplings shall comply with the requirements of BS EN 295-1:2013 and BS EN 295-4:2013.

F. All private foul water drains are to be laid at minimum gradient of 1 in 40 at the head of pipe runs, and minimum 1 in 80 elsewhere, unless otherwise stated on the drawing. Use chamber main channel invert levels to set gradient. Incoming branch invert level is typically 50mm above main channel.

G. All private foul water drains are 100mm diameter, unless otherwise stated on the drawing.

H. All private surface water drains are to be laid at minimum gradient of 1 in 80 unless otherwise stated on the drawing. Use chamber main channel invert levels to set gradient. Incoming branch invert level is typically 50mm above main channel.

I. All private surface water drains are 150mm unless otherwise stated on the drawing.

J. Allow for rodding access above ground where rainwater downpipes do not have a direct connection to an inspection chamber.

K. Plastic Inspection Chambers shall comply with the requirements of BS EN 13598-1:2020.

L. Precast concrete manhole units shall comply with the requirements of BS 5911-3:2022 and BS EN 1917:2002. Manhole cover slabs situated under carriageways shall be heavy duty and those situated elsewhere shall be light duty. The relevant absorption tests required shall be carried out on a sample of those rings and slabs used unless a certificate of testing is supplied by the manufacturer.

M. Manhole covers and frames are to be a minimum of:
Class B125 in non-trafficked areas, footways and verges.
Class D400 in trafficked areas and highways.
Class E600 and F900 manhole covers to be used for heavy duty applications such as docks, airports and industrial areas.

N. Manhole covers and frames to be bedded and haunched externally in mortar.

O. All concrete used in drainage works is to comply with BRE Special Digest 1 (SD1:2005 – 3rd Edition) for Class 2 sulphate conditions.

P. Any existing drain or sewer being re-used is to be surveyed and levelled prior to commencement of the drainage works, and refurbished if necessary.

Q. Connections to an adopted sewer are only to be made after receiving approval, from the relevant Sewerage Undertaker, of a sewer connection application (Section 106 – Water Industry Act 1991).

R. All drains, sewers and manholes are to be cleaned and tested for water tightness on completion of construction.

S. Any above ground drainage is shown indicatively and must be confirmed by a suitably qualified third party.

LEGEND

- PROPOSED SURFACE WATER DRAIN
- PROPOSED FOUL WATER DRAIN
- EXISTING FOUL WATER DRAIN
- PROPOSED CONCRETE MANHOLE
- PROPOSED PLASTIC INSPECTION CHAMBER (PPIC)
- HIGHWAY GULLY
- PROPOSED OUTFALL
- POSITIVELY DRAINED IMPERMEABLE AREA
- SITE BOUNDARY
- OWNERSHIP BOUNDARY

Description	By	Aprvd.	Date	Rev.
FLOW LIMITED TO 1.0l/s	TRB	AK	11.09.26	P3
SITE BOUNDARIES REVISED	IAS	TRB	06.11.25	P2
FIRST ISSUE	IAS	TRB	31.10.25	P1

PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

Title
DRAINAGE LAYOUT

Project
PLOT B, WOODSIDE GRANGE, HASSOCKS BN6 8EX

Client
TONY LOCK

HOP
CONSULTING CIVIL AND STRUCTURAL ENGINEERS
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Drawing No. 16920-HOP-ZZ-XX-DR-C-0511
Status S0
Rev. P3

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P:\PROJECTS\16920 Woodside Grange, Hassocks\Drawings\HOP\16920-HOP-ZZ-XX-DR-C-0500 Tom Butler

1:20 0 0.2m 0.4m 0.6m 0.8m 1m
1:50 0 0.5m 1m 1.5m 2m 2.5m
1:100 0 1m 2m 3m 4m 5m

APPENDIX F – MAINTENANCE SCHEDULE

LAND AT WOODSIDE GRANGE, HASSOCKS

PROPOSED MAINTENANCE & INSPECTION SCHEDULE FOR BELOW GROUND DRAINAGE (FOUL WATER AND SURFACE WATER) INCLUDING SUSTAINABLE DRAINAGE SYSTEMS (SuDS)

Item	Required Maintenance/Monitoring	Suggested Frequency	Responsibility
Foul Water Drainage	Check inspection chambers and manholes for damage, condition and function.	Every year	Property Owner
	Undertake a CCTV drainage survey of the drainage network to establish condition.	Every ten years	Specialist
	Replace or repair malfunctioning parts or structures	As required	Specialist
Surface Water Drainage	Check inspection chambers and manholes for damage, condition and function.	Every year	Property Owner
	Undertake a CCTV drainage survey of the drainage network to establish condition.	Every ten years	Specialist
	Replace or repair malfunctioning parts or structures.	As required	Specialist
Gullies, Channel Drains and Catchpits	Check gullies and channel drains for damage, condition and function.	Every six months	Property Owner
	Remove sediment, oil/grease, litter and debris.	As necessary	Property Owner
	Replace or repair malfunctioning parts or structures.	As required	Specialist
Attenuation flow control devices	Inspect for damage, blockages	Every six months and after periods of heavy rainfall	Property Owner
	Littler, sediment and debris removal	As necessary	Specialist
Attenuation ponds	Inspect for damage, blockages or erosion	Every six months and after periods of heavy rainfall	Property Owner
	Littler and debris removal	As necessary	Property Owner
	Shoreline and aquatic vegetation management	Monthly during summer months, otherwise as required	Property Owner
	Sediment management	Every month for the first year and then annually, or as conditions require	Property Owner
General	Remove sediment, litter, debris and vegetation from the surface of pathways areas	As necessary and after heavy rainfall	Property Owner
Flood Flow Routes	Ensure flood flow routes are not obstructed (i.e. lower lying portions of the land that will direct surface water runoff away from vulnerable assets in the event of drainage failure).	Every year and during periods of heavy rainfall	Property Owner

NOTES

The property owners will be responsible for the implementation of the maintenance schedule for below ground drainage, by appointing appropriate persons and/or sub-consultants that are qualified to undertake these operations.

Maintenance is to be carried out by the property owners or by a specialist contractor, as noted in Responsibility column above.

This maintenance schedule has been produced with reference to the guidelines outlined in 'The SuDS Manual' (CIRIA C753: 2015). The suggested frequency of maintenance is considered a guide, and should not replace the guidance from manufacturers of proprietary systems.

Refer to Engineering drawings for location and details of below ground drainage assets and SuDS features.