



Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh,
Hampshire

Southern Strategic Land Two LLP

Prepared by:

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SLR Project No.: 416.065671.00001

14 May 2025

Revision: 01

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
00	5 December 2024	J Lynds	H Preston	N Bosanko
01	14 May 2025	H Preston	H Preston	N Bosanko
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Executive Summary

SLR Consulting Limited has prepared this Nutrient Neutrality Assessment and Mitigation Strategy (NNAMS) on behalf of Southern Strategic Land Two LLP to support a planning application for the proposed development of up to 150 new residential dwellings. The site is located at Denhams Corner, Horton Heath, Hampshire.

The key findings from the report are that the site will generate additional nutrient loadings post development, and mitigation measures will be required.

It is therefore proposed that the developer purchases nutrient credits from a credit provider within the Solent catchment.



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Acronyms and Abbreviations

AOD	Above Ordnance Datum
BGL	Below Ground Level
BGS	British Geological Survey
Ha	Hectare
LLFA	Lead Local Flood Authority
LURA	Levelling Up and Regeneration Act
N	Nitrate
NBC	Nutrient Budget Calculator
NE	Natural England
NNAMS	Nutrient Neutrality Assessment and Mitigation Strategy
NVZ	Nitrate Vulnerable Zone
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TN	Total Nitrogen
WWTW	Wastewater Treatment Works



1.0 Introduction

Authorisation

- 1.1 SLR Consulting has been appointed by Southern Strategic Land Two LLP to prepare a Nutrient Neutrality Assessment and Mitigation Strategy (NNAMS), which will support a planning application for up to 150 proposed residential dwellings at Denhams Corner, Horton Heath, Hampshire. Refer to Drawing No. 23063-0100 (Proposed Site Layout – issued 08.05.2025) by Corstorphine & Wright in **Appendix A**.

Background

- 1.2 The site is a greenfield site approximately 9.0 hectares (ha) in size, and is located at Denhams Corner in the southeastern part of Horton Heath, a semi-rural village in the borough of Eastleigh, in Hampshire.
- 1.3 According to Natural England, the site is within the catchment of the Solent Special Protection Area (SPA) and Special Area of Conservation (SAC). Development within this area has the potential to generate adverse impacts with regard to nitrate (N) pollution of the Solent¹.
- 1.4 A NNAMS is required by Eastleigh Borough Council, in order to validate the planning application. This NNAMS has been developed in accordance with the guidelines set out by Natural England with regards to the Solent and Southampton Water Special Protected Area (SPA)².
- 1.5 A drainage strategy is currently being prepared for the site, to support the planning application. This NNAMS has been prepared in tandem with the drainage strategy.

Aims and Objectives

- 1.6 The aim of this NNAMS is to demonstrate that the site can be developed safely for residential purposes, without increasing the nitrate loading to the Solent SAC. The objectives of this NNAMS are to:
- Review the relevant nutrient policy documents to ensure that the development proposals are in accordance with this and other regional and local guidance.
 - Undertake a desk-based review of the available information to assess the anticipated impacts of the development, using the Solent Nutrient Budget Calculator v3.0 (updated May 2024).
 - Identify nutrient mitigation requirements.

¹ <https://publications.naturalengland.org.uk/publication/6522945605468160> accessed May 2025

² Natural England (February 2022) Nutrient Neutrality Generic Methodology. <https://www.eastleigh.gov.uk/media/14765/phosphate-mitigation-strategy.pdf> [Accessed: May 2025].



- Prepare nutrient mitigation strategy.
- Summarise the above into an NNAMS report using supporting information and based on guidance from Eastleigh Borough Council and Natural England.

Limitations

1.7 The general limitations of this assessment are that:

- A number of sources have been used to compile this document; whilst we believe them to be trustworthy, SLR is unable to guarantee the accuracy of the information that has been provided by others.
- This report is based on information available at the time of preparing the NNAMS. Consequently, there is potential for further information to become available or variations to the development proposals to be made. These changes may lead to future alteration to the conclusions or calculations in this report.



2.0 Site Description

Site Location and Description

- 2.1 The site is located at the southern end of the village of Horton Heath which is around 4.8km southeast of Eastleigh and is centred at Ordnance Survey (OS) grid reference of SU 49935 16370. The site is greenfield, is surrounded by woodland and is bordered by a drainage ditch at the eastern end. A roadway (Snakemoor Lane) is indicated immediately south of the site.
- 2.2 Horton Heath village is located to the north of the site. To the southwest of the site there are two residential dwellings. Surrounding the site to the east and south there is woodland and agricultural land classed as grassland³. The Horton Heath Stream is indicated approximately 60m east of the site.
- 2.3 A topographical survey has been undertaken for the site. This indicates that ground levels fall away from a high point in the central part of the site. The highest ground level is indicated to be 34.91m above Ordnance Datum (m AOD) in the central part of the site. The lowest ground level on the site is 26.15m AOD, at the south-eastern end of the site. Refer to Drawing No. 1234HH01B (Site Survey – Sheets 1 to 11) by Siteline in **Appendix B**.

Geology and Hydrogeology

- 2.4 The 1 in 50,000 scale British Geological Survey (BGS) online mapping⁴ indicates that the solid geology beneath the site comprises of Sand, Silt and Clay of the Wittering Formation. No superficial deposits are indicated to be present beneath the site.
- 2.5 A ground investigation was undertaken at the site in October 2024, which included infiltration testing to BRE (DG) 365, in three trial pits. The results of these tests indicated that the site is unsuitable for infiltration drainage. Refer to Report No. AD0804 (Ground Investigation Report) by Advanced Investigation Systems Limited in **Appendix C**.
- 2.6 The National Soil Resources Institute (NSRI) known as SoilScapes was accessed via an online mapping tool⁵. Soil across the site is comprised of slowly permeable, seasonally wet, slightly acidic but base-rich loamy and clayey soils. SoilScapes identifies the site as having impeded drainage. This supports the conclusions of the ground investigation.

³ UKCEH Land Cover Map 2015 from UK Water Resources Portal available at <https://eip.ceh.ac.uk/hydrology/water-resources/> [Accessed May 2025]

⁴ BGS Geology of Britain Viewer, Surface Geology available at <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed: May 2025]

⁵ Soilscapes available at <https://www.landis.org.uk/soilscapes/> [Accessed May 2025]



- 2.7 BGS borehole records⁶ were reviewed for a 500m radius surrounding the site. This indicated that there are no borehole records within a 500m radius of the site.
- 2.8 The entire site is underlain by 'Secondary A' Aquifer bedrock, according to the online MAGIC mapping tool⁷. Secondary A aquifers are comprised of permeable layers that can support local water supplies, and may form an important source of base flow to rivers.

⁶ BGS Geology of Britain Viewer, Borehole Scans available at <http://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed: May 2025]

⁷ Defra, MAGIC Map available at <https://magic.defra.gov.uk/magicmap.aspx> [Accessed May 2025].



Hydrology and Existing Drainage

- 2.9 1 in 50,000 scale Ordnance Survey (OS) mapping indicates that a drainage ditch is located at the eastern end of the site. This ditch connects to the Horton Heath Stream approximately 60m east of the site. The Horton Heath Stream is classified by the Environment Agency as a 'statutory main river'⁸.
- 2.10 Horton Heath Stream is a tributary of the Upper Hamble, which discharges to the Solent, approximately 9km south of the site.
- 2.11 Sewer records have been obtained from Southern Water and are enclosed in **Appendix D**. These show that the closest foul gravity sewer is approximately 0.38km north west of the site just north of Cherry Drove. The 150mm gravity sewer flows north. No surface water sewers are present on the site or in the vicinity of the site.
- 2.12 The topographic survey, enclosed in **Appendix B**, indicates the direction of surface water drainage at the existing site. The topography appears to be elevated at the western side of the site at approximately 34.6m AOD, to the east where elevations drop to around 32.31m AOD. This appears to demonstrate that the majority of surface water runoff from the existing site drains towards the existing ditch at the eastern end of the site, and onwards to the Horton Heath Stream.

⁸ Environment Agency (2023) Statutory Main River Map available at <https://environment.data.gov.uk/dataset/25dde009-ba7d-40de-8380-c5c3bb32ccdc> [Accessed: May 2025].



3.0 Planning Policy and Guidance

Natural England Nutrient Neutrality Advice

- 3.1 Natural England (NE)'s advice applies to development proposals which have the potential to affect water quality in such a way as to cause adverse nutrient impacts on designated habitats sites.
- 3.2 The aim is to enable new development to proceed in a way which is 'nutrient neutral' and will not result in additional nutrient loading to protected habitats post development.

Solent SPA and SAC

- 3.3 The Solent SPA and SAC is a major estuarine system and is located in one of the only major sheltered channels in Europe. The estuary comprises intertidal mudflats and sandbanks, inter- and sub-tidal rock, saltmarsh, lagoons, reed beds, and marsh. The site supports wintering birds, and plant and invertebrate communities. Solent and Southampton Water is designated as a SPA for several species including Dark-bellied brent goose (*Branta bernicla bernicla*), Eurasian teal (*Anas crecca*) and Ringed plover (*Charadrius hiaticula*)⁹.
- 3.4 The Solent is affected by eutrophication, where nutrients, namely nitrogen (N) and phosphorous (P), enter the water environment and cause dense algal blooms which impact the protected habitats and species.
- 3.5 In March 2022, Natural England designated the Solent as a 'habitats site in unfavourable condition due to excessive nutrients which require a Habitats Regulations Assessment (HRA) and where nutrient neutrality has been identified as a potential mitigation solution to enable development to proceed'¹⁰. Therefore, a nutrient neutrality assessment and mitigation strategy is required for the site.
- 3.6 The latest Nutrient Budget Calculator (NBC) for the Solent was published by Natural England in May 2024. A guidance document regarding the Solent NBC has also been published¹. These documents have been used to assess the nutrient budget for the Site.

Policy Conclusions

- 3.7 The development proposals are consistent with the policies set out by Natural England and Eastleigh Borough Council. This is because the nutrient budget for the site has been calculated using Natural England guidance. This is discussed in the following sections.

⁹ Natural England, Designated Sites View: Solent and Southampton Water SPA, available at [Designated Sites View \(naturalengland.org.uk\)](https://designatedsites.naturalengland.org.uk) [Accessed May 2025]

¹⁰ NE785 Revised Edition Natural England Water Quality and Nutrient Neutrality Advice (16 March 2022)



4.0 Assessment of Nutrient Neutrality

Nutrient Neutrality Generic Methodology

- 4.1 A Nutrient Neutrality Generic Methodology (NECR459) has been developed by Natural England and was published in November 2022¹¹. Therefore, Natural England's Nutrient Neutrality Generic Methodology (NECR459) and the Solent Nutrient Budget Calculator (NBC) V3.0 (updated May 2024) have been used to assess the nutrient budget for the site. The calculations are included in **Appendix E**.

Stage 1: Calculate nutrient loading from additional wastewater

- 4.2 The proposed development comprises up to 150 new dwellings. The average occupancy rate given by the Solent NBC is 2.4 people per dwelling, giving a post development population of 360.
- 4.3 Foul water from the proposed development will be discharged to the existing public foul sewer network in the vicinity of the site. Southern Water have confirmed that the wastewater from the site will discharge to Chickenhall Eastleigh Wastewater Treatment Works (WWTW). Refer to correspondence in **Appendix C**.
- 4.4 The nitrate removal capacity of Chickenhall Eastleigh WWTW is to be upgraded by 2030, to comply with the requirements of the Levelling Up and Regeneration Act (LURA)¹². This will entail a reduction in milligrams (mg) of total nitrogen (TN) per litre in the final effluent from Chickenhall Eastleigh WWTW, from the current permit level of 25mg TN/litre, to 8mg TN/litre from 2030.
- 4.5 The additional nutrient loading from wastewater generated by the proposed development has been calculated as **394.47 kg TN/year** before 2030, and **113.61 kg TN/year** from 2030. Refer to the nutrient calculations for the site (Version 3.0) in **Appendix E**.

Stage 2: Calculate existing nutrient load from current land use

- 4.6 The site is located within the East Hampshire Rivers catchment.
- 4.7 The Landis Soilscales tool¹³ was used to determine the soil type for the Site, as specified in the 'Information' tab of the NBC. The soils are classified as 'impeded drainage'.

¹¹ Nutrient Neutrality Generic Methodology: Natural England Commissioned Report NECR459 (November 2022)

¹² https://www.gov.uk/government/publications/notice-of-designation-of-sensitive-catchment-areas-2024/information-about-nutrient-significant-plants?pk_campaign=newsletter_6756 accessed May 2025

¹³ Cranfield University (2024) Landis Soilscales Viewer <https://www.landis.org.uk/soilscales/> [Accessed May 2025]



- 4.8 The UK Soil Observatory tool¹⁴ was used to determine that the site is within a Nitrate Vulnerable Zone (NVZ).
- 4.9 The annual average rainfall for the site was determined using the National River Flow Archive¹⁵. The annual average rainfall for the site is 750 – 800 mm.
- 4.10 The site is currently used for agriculture. The client has advised that the site has previously been used for grazing cattle. The current land use for the whole site has therefore been classified as 'Dairy'.
- 4.11 All of the above information was added to the NBC, which calculates the nutrient loading from the existing Site.
- 4.12 The existing nutrient load from the current land use was calculated as **175.86 kg TN/year**. Refer to **Appendix D**.

Stage 3: Calculate nutrient load from future land use

- 4.13 The developable area of the proposed site will comprise 5.25 ha, including associated roadways and gardens. This area has been classified as 'Residential urban land'. The remainder of the site (3.75 ha) comprises public open greenspace and woodland. This area has therefore been classified as 'Greenspace'.
- 4.14 The nutrient loading from the post development site was calculated as **87.09 kg TN/year**. Refer to **Appendix D**.

Stage 4: Calculate input from on-site Sustainable Urban Drainage Systems (SuDS)

- 4.15 A ground investigation at the site in October 2024 has indicated that the site is unsuitable for infiltration drainage. Refer to Report No. AD0804 (Ground Investigation Report) by Advanced Investigation Systems Limited in **Appendix C**.
- 4.16 Surface water runoff from the proposed development will be collected in an on-site network of grassed swales and ponds, and discharged to the drainage ditch immediately east of the site, at greenfield runoff rates. The proposed ponds will contain a permanent water level, as well as space to attenuate on-site runoff.
- 4.17 Current best practice guidance regarding the use of SuDS to reduce nitrogen pollution¹⁶ indicates that a SuDS treatment train comprising a pond with a permanent level of water, followed by a SuDS device that provides aerobic biological activity, such as a grassed swale. The proposed SuDS treatment train comprises two ponds, which are lined by a grassed swale. Runoff from the lower pond will discharge to the drainage ditch immediately east of the site, via another

¹⁴ UK Soil Observatory (2024) Nitrate Vulnerability Zones (NVZ) – England [UK Soil Observatory \(bgs.ac.uk\)](https://bgs.ac.uk) [Accessed: May 2025]

¹⁵ National River Flow Archive, available at [National River Flow Archive \(ceh.ac.uk\)](https://ceh.ac.uk) [Accessed: May 2025]

¹⁶ Bradley, J. (2022) Using SuDS to reduce nitrogen in surface water runoff, C815, CIRIA, London, UK



grassed swale¹⁷. Therefore, the proposed SuDS treatment train has been considered to capture and remove 30% of the nitrogen in the surface water runoff from the development, in accordance with C815.

Stage 5: Calculate the net change in nutrient load from the proposed development

- 4.18 The Natural England methodology added the calculated nutrient loading from the additional population and the net change in nutrient loading from the proposed land use change, to calculate the nutrient budget for the proposed site.
- 4.19 A 20% precautionary buffer was added to the result by the calculator, to account for uncertainties in the nutrient methodology. This is therefore reflected in the outputs below.
- 4.20 The total post development nutrient budget for the site has been calculated based on the current permit limit for Chickenhall Eastleigh WWTW, and the post 2030 permit discharge limit. The calculations include the 20% buffer. Refer to Table 4-1 and calculations in **Appendix D** for the post development nutrient loadings for the Site.

Table 4-1: Post Development Nutrient Loading for the Site (including 20% buffer)

	Current Loading (kg/year)	Post 2030 Loading (kg/year)
Total Nitrogen (TN)	339.54	2.50

¹⁷ Report No. 416.065671.00001 FRA and Drainage Strategy – Denhams Corner, Horton Heath (by SLR Consulting) December 2024



5.0 Mitigation Measures

- 5.1 It is proposed to discharge post development surface water runoff to a drainage ditch at the eastern end of the site, which connects to the Horton Heath Stream.
- 5.2 Post development foul flows will be discharged to the public foul sewer network, which connects to Chickenhall Eastleigh WWTW.

On-Site Mitigation

- 5.3 The proposed SuDS treatment train of two ponds with a permanent water level and grassed conveyance swales will mitigate 30% of the nitrogen in the surface water runoff from the site.

Off-Site Mitigation

- 5.4 Off-site mitigation can include the conversion of agricultural land within the East Hampshire Rivers catchment to new woodland or wetland, to remove an equivalent quantity of nitrates from the East Hampshire Rivers catchment. This would require a long-term agreement with a third-party landowner.

Nutrient Credit Schemes

- 5.5 Eastleigh Borough Council has prepared a nutrient offset scheme, which provides nutrient credits to offset against new development in the Hamble catchment¹⁸. These credits are currently sold at £3000 + VAT per kg of nitrate.
- 5.6 A number of private nutrient credit schemes are currently operational in the Solent area¹⁹.
- 5.7 It is envisaged that nutrient mitigation will be secured via the purchase of credits, and that this will be secured via a planning condition and a legal agreement with the credit provider.

Interim Measures

- 5.8 A higher level of mitigation is required from the time of first occupation of the site until 2030, when Chickenhall Eastleigh WWTW is due to be upgraded. This can be provided by purchasing short term credits from interim off-site measures such as land fallowing, the planting of cover crops or riparian buffer strips, from credit providers within the East Hampshire Rivers catchment.

¹⁸ <https://www.eastleigh.gov.uk/business/developers-how-to-unlock-your-development#:~:text=Our%20Solution%20for%20the%20Solent,of%20the%20nitrate%20credits%20available.>
Accessed May 2025

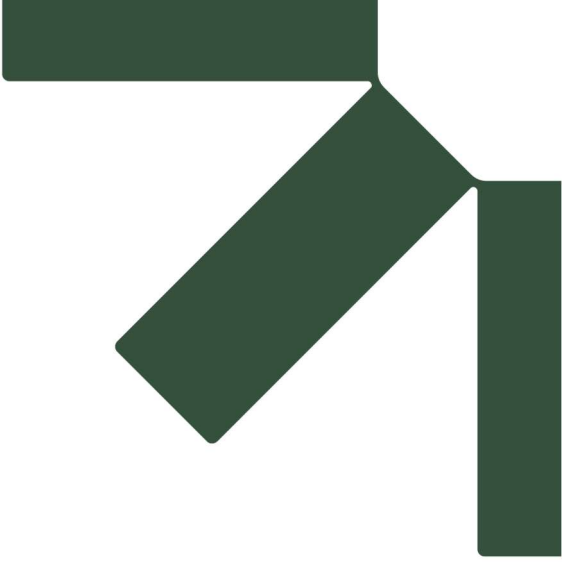
¹⁹ Partnership for South Hampshire (2024) Potential Nutrient Mitigation Schemes
<https://www.push.gov.uk/work/mitigation-schemes-available-to-developers/> [Accessed: May 2025]



6.0 Conclusions

- 6.1 This Nutrient Neutrality Assessment and Mitigation Strategy (NNAMS) has been undertaken to accompany a planning application for construction of up to 150 new dwellings at a site at Denhams Corner, Horton Heath, Eastleigh, Hampshire.
- 6.2 This report has been prepared by SLR Consulting on behalf of Southern Strategic Land Two LLP in accordance with the guidelines set out by Natural England.
- 6.3 The site will generate additional nutrient loadings post development for both the current permit limit from Chickenhall Eastleigh WWTW, and for the reduced permit limit from 2030. Mitigation measures will be required.
- 6.4 It is anticipated that post development surface water runoff will be collected in an on-site network of grassed swales and ponds which contain a permanent water level, and discharged to a drainage ditch immediately east of the site at greenfield runoff rates.
- 6.5 Post development foul effluent will be discharged to the existing public foul sewer network, subject to approval from Southern Water.
- 6.6 It is proposed that mitigation credits to offset the nutrient loading from the proposed development (currently 339.54 kg TN/year) will be purchased from a credit provider operating within the East Hampshire Rivers catchment. A reduced number of credits to offset will be required from 2030 (for 2.50 kg/TN/year), as upgrades to Chickenhall Eastleigh WWTW will reduce the loading from the proposed development. The purchase of credits will be secured via a planning condition.





Appendix A Proposed Site Layout

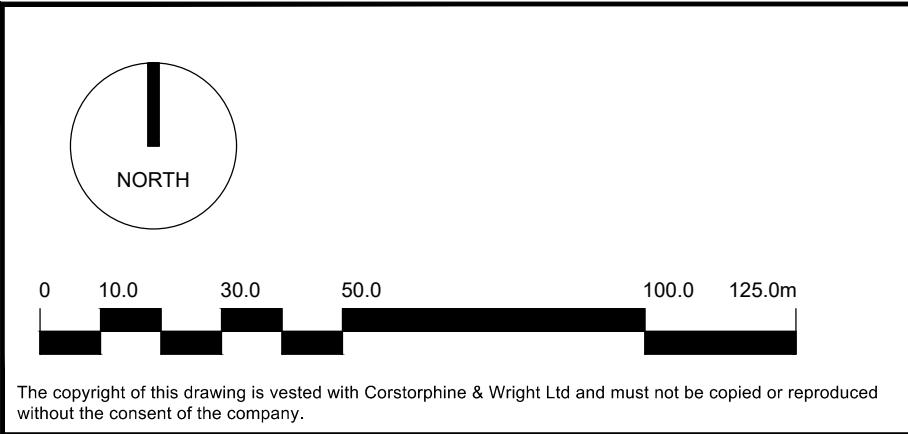
Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh, Hampshire

Southern Strategic Land Two LLP

SLR Project No.: 416.065671.00001

14 May 2025



Rev.	Description	Date	Drw.	Chk.

Client
Southern Strategic
Land LLP

Project
Denhams Corner
Horton Heath

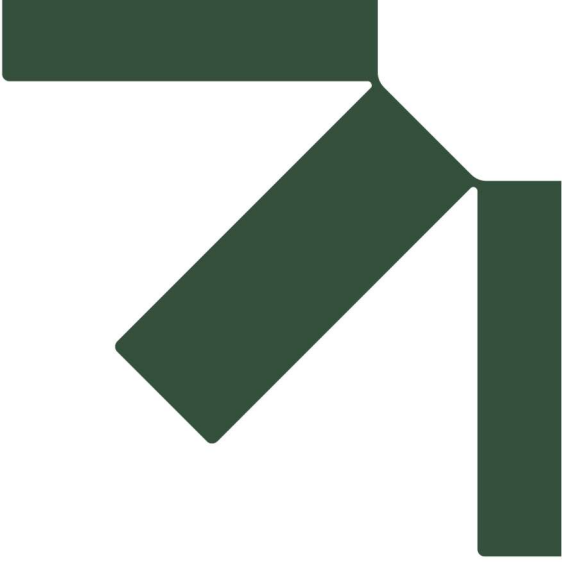
Drawing Title
Proposed Site Layout

Drawing Status
PLANNING

Corstorphine & Wright

Fordingbridge Studio
27 Glasshouse Studios, Fryern Court Road, Fordingbridge, SP6 1QX
01425 655806
corstorphine-wright.com

Drawing No. 23063-0100				Revision P-00
Drawn SL	Checked DH	Paper Size A2	Scale 1:1250	Date 08.05.25



Appendix B Topographical Survey

Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh, Hampshire

Southern Strategic Land Two LLP

SLR Project No.: 416.065671.00001

14 May 2025

TREES	
A	Ash
AL	Alder
AP	Apple
B	Beech
BA	Bay
BT	Blackthorn
CB	Cedar
CH	Copper Beech
CY	Cherry
CO	Cypress
EL	Elm
EU	Eucalyptus
FI	Field Maple
FR	Fruit
H	Hornbeam
HC	Horse Chestnut
HO	Horn Oak
HW	Hawthorn
HY	Holly
HZ	Hazel
IB	Indian Bean Tree
JM	Japanese Maple
LS	Laburnum
LM	Lime
LO	Locus Tree
LR	Laurel
L	Maple
M	Magnolia
MP	Monkey Puzzle
OK	Oak
P	Palm
PL	Plane
PM	Plum
PO	Poplar
P	Pear
PR	Redwood
RD	Red Oak
R	Rhododendron
RO	Rowan
S	Silver Birch
SC	Sweet Chestnut
SP	Scots Pine
SU	Spruce
T	Tulip Tree
U	Unidentified
W	Willow
WB	Whitebeam
WN	Walnut
Y	Yew
Species / Dia / Spread (max) / Ht e.g. OK / 0.6 / 8 / 15	

ABBREVIATIONS	
BT	British Telecom
BOL	Bollard
CB	Control Box
CL	Cover Level
CTV	Cable Television
EP	Electric Pole
EH	Fire Hydrant
GSV	Gas Stop Valve
HT	Height
HVC	High Voltage Cable
IC	Inspection Cover
IL	Invert Level
LP	Lamp Post
MH	Man-Hole
MKR	Marker
MW	Monitoring Well
O/H	Overhead
G	Road Gully
PB	Post Box
PC	Pram Crossing
RNP	Road Name Plate
RS	Road Sign
S/A	Soakaway
ST	Stay / Strut
SV	Stop Valve (Unidentified)
TB	Telephone Box
TC	Telecom
TH	Trail Hole
TL	Traffic Light
TP	Telegraph Pole
UTL	Unable to Lift
VP	Vent pipe
WM	Water Meter
WSV	Water Stop Valve

FENCES	
BWF	Barbed Wire Fence
CBF	Closed Board Fence
CP	Concrete Post
CPF	Chestnut Paling Fence
CWF	Chicken Wire Fence
IRF	Iron Railing Fence
PKF	Picket Fence
PRF	Post & Rail Fence
PWF	Post & Wire Fence
SCF	Security Fence
SP	Steel Post
WMF	Wire Mesh Fence
WPF	Wood Panel Fence



REVISION B - JULY 2024
Survey of wooded area north of Lane End House.

REVISION A - NOVEMBER 2023
Highway survey extended east on Snake Moor Lane.

NOTES

The survey grid has been related to OS National Grid using a flat earth projection and metric scale factor of 1, centred on Station HT. Levels are related to OS datum determined from the National GPS Network using OS2415.

All settings out should be referenced to the permanent control stations shown on this survey. Do not use GNSS/GPS operating on the OS Active Network without first carrying out a site calibration.

The position and height of adjacent buildings have been obtained using higher level reflectless measurement and may not take account of single storey extensions or conservatories below the line of sight.

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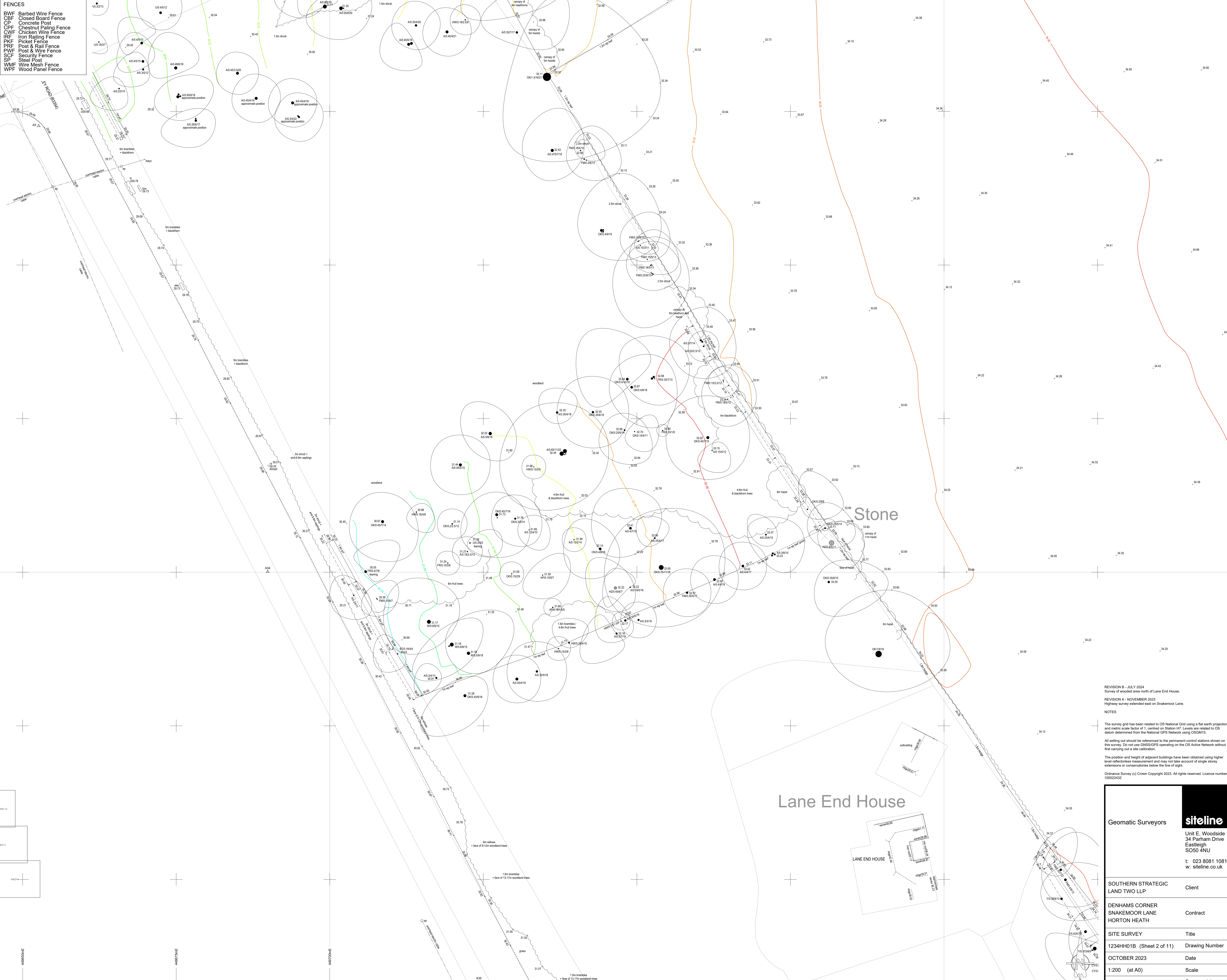
Geomatic Surveyors	
Unit E, Woodside 34 Parham Drive Eastleigh SO50 4NU t: 023 8081 1081 w: siteline.co.uk	
SOUTHERN STRATEGIC LAND TWO LLP	Client
DENHAM'S CORNER SNAKEMOOR LANE HORTON HEATH	Contract
SITE SURVEY	Title
1234HH01B (Sheet 1 of 11)	Drawing Number
OCTOBER 2023	Date
1:200 (at A0)	Scale
HB AB	Surveyor(s)

- TREES
- A Ash
 - AL Alder
 - AP Apple
 - B Beech
 - BA Bay
 - BB Blackthorn
 - CB Cedar
 - CH Chestnut
 - CO Copper Beech
 - CY Cypress
 - EL Elm
 - EU Eucalyptus
 - FM Field Maple
 - FR Fruit
 - HG Hornbeam
 - HC Horse Chestnut
 - HO Horn Oak
 - HW Hawthorn
 - HY Holly
 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LS Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Palm
 - PL Plane
 - PM Plum
 - PO Poplar
 - PR Pear
 - R Redwood
 - RO Red Oak
 - RH Rhododendron
 - RS Rowan
 - SB Silver Birch
 - SC Sweet Chestnut
 - SP Scots Pine
 - SS Sycamore
 - ST Tulip Tree
 - U Underside
 - W Willow
 - WB Whitebeam
 - WN Walnut
 - Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK 1.0 / 6 / 8 / 15

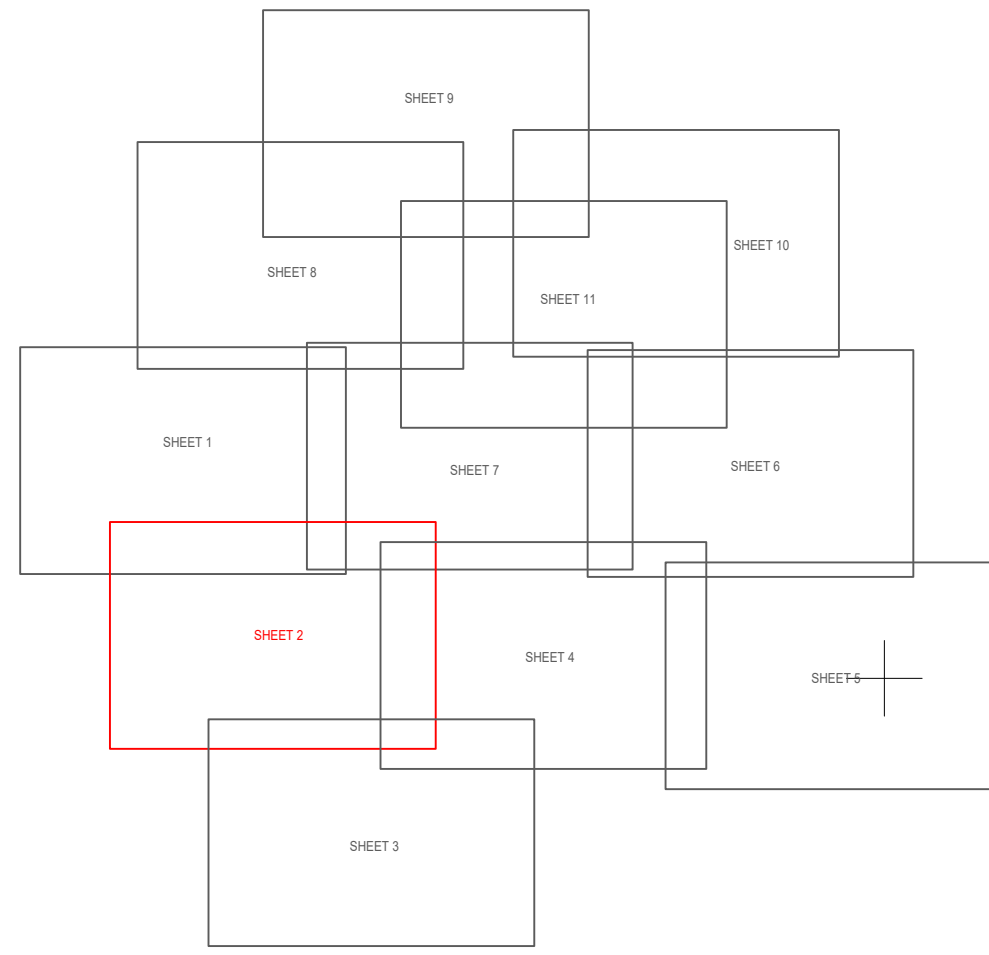
- ABBREVIATIONS
- BT British Telecom
 - BOL Bollard
 - CB Control Box
 - CL Cover Level
 - CTV Cable Television
 - EP Electric Pole
 - FH Fire Hydrant
 - GSV Gas Stop Valve
 - HT Height
 - HVC High Voltage Cable
 - IC Inspection Cover
 - IL Invert Level
 - LP Lamp Post
 - MH Man-Hole
 - MKR Marker
 - MW Monitoring Well
 - O/H Overhead
 - G Road Gully
 - PB Post Box
 - PC Pram Crossing
 - RNP Road Name Plate
 - RS Road Sign
 - S/A Sooty
 - SV Stop Valve (Unidentified)
 - TB Telephone Box
 - TC Telecom
 - TH Trial Hole
 - TL Traffic Light
 - TP Telegraph Pole
 - UTL Unable to Lift
 - VP Vent pipe
 - WM Water Meter
 - WSV Water Stop Valve

- FENCES
- BWF Barbed Wire Fence
 - CBF Closed Board Fence
 - CP Concrete Post
 - CPF Chestnut Paling Fence
 - CWF Chicken Wire Fence
 - IRF Iron Railing Fence
 - PKF Picket Fence
 - PWF Post & Rail Fence
 - SCF Security Fence
 - SP Steel Post
 - WMF Wire Mesh Fence
 - WPF Wood Panel Fence



REVISION B - JULY 2024
Survey of wooded area north of Lane End House.
REVISION A - NOVEMBER 2023
Highway survey extended east on Snake Moor Lane.
NOTES

The survey grid has been related to OS National Grid using a flat earth projection and metric scale factor of 1, centred on Station 47. Levels are related to OS datum determined from the National GPS Network using OSBM15.
All setting out should be referenced to the permanent control stations shown on this survey. Do not use GNSS/GPS operating on the OS Active Network without first carrying out a site calibration.
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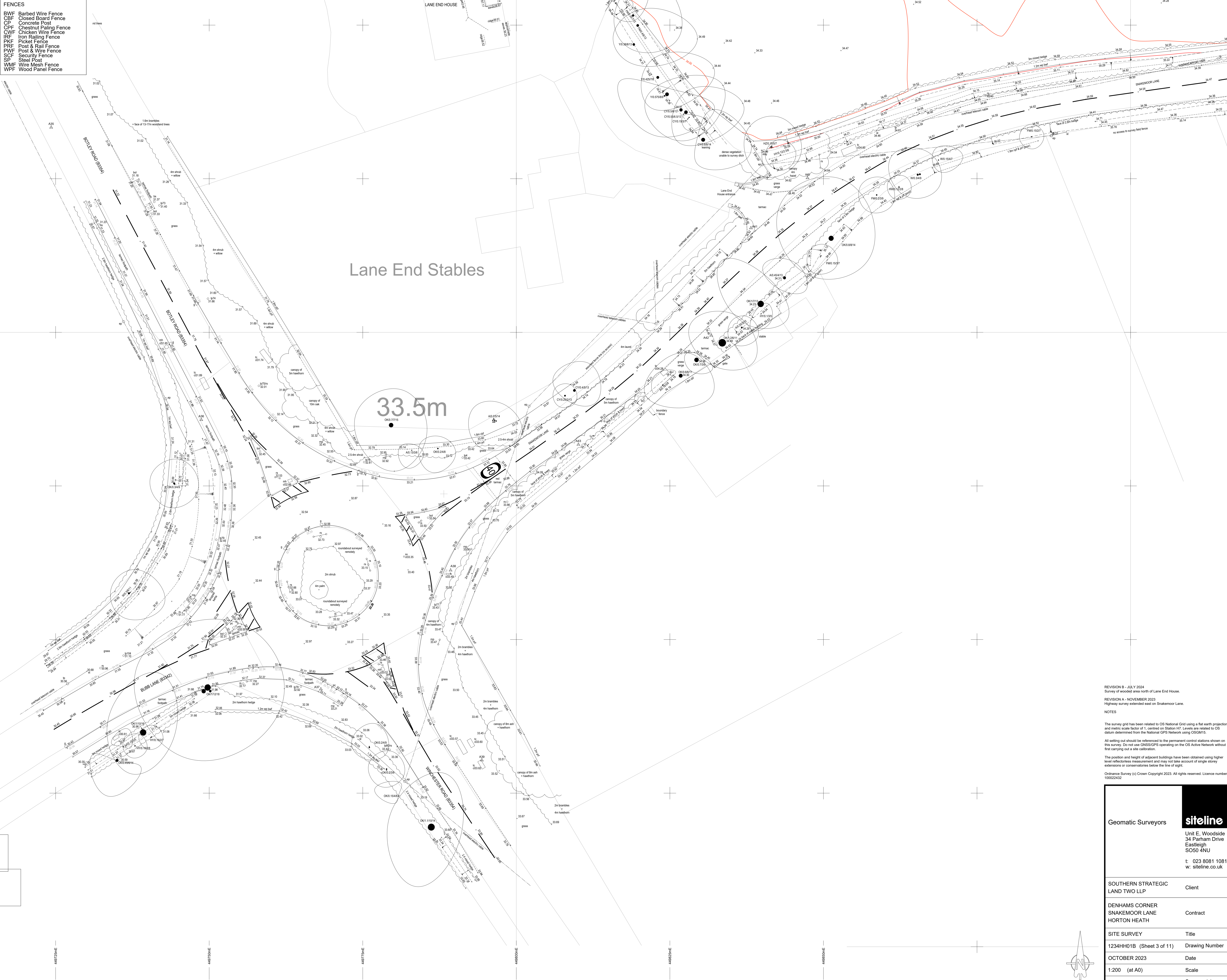
SOUTHERN STRATEGIC LAND TWO LLP	Client
DENHAM'S CORNER SNAKEMOOR LANE HORTON HEATH	Contract
SITE SURVEY	Title
1234HH01B (Sheet 2 of 11)	Drawing Number
OCTOBER 2023	Date
1:200 (at A0)	Scale
HB AB	Surveyor(s)

- TREES
- A Ash
 - AL Alder
 - AP Apple
 - B Beech
 - BA Bay
 - BT Blackthorn
 - CB Cedar
 - CBH Copper Beech
 - CH Cherry
 - CO Cypress
 - EL Elm
 - EU Eucalyptus
 - FM Field Maple
 - FR Fruit
 - HB Hornbeam
 - HC Horse Chestnut
 - HO Horn Oak
 - HW Hawthorn
 - HY Holly
 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LS Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Palm
 - PL Plane
 - PM Plum
 - PO Poplar
 - PR Pear
 - RO Redwood
 - ROD Red Oak
 - ROD Rhododendron
 - ROW Rowan
 - SB Silver Birch
 - SC Sweet Chestnut
 - SP Scots Pine
 - SCS Sycamore
 - SW Willow
 - U Unidentified
 - W Whitebeam
 - WB Walnut
 - WN Yew
 - Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK 10.6 / 8 / 15

- ABBREVIATIONS
- BT British Telecom
 - BOL Bollard
 - CB Control Box
 - CL Cover Level
 - CTV Cable Television
 - EP Electric Pole
 - FH Fire Hydrant
 - GSV Gas Stop Valve
 - HT Height
 - HVC High Voltage Cable
 - IC Inspection Cover
 - IL Invert Level
 - LP Lamp Post
 - MH Man-Hole
 - MKR Marker
 - MW Monitoring Well
 - O/H Overhead
 - G Road Gully
 - PB Post Box
 - PC Pram Crossing
 - RNP Road Name Plate
 - RS Road Sign
 - S/A Sootaway
 - SV Stop Valve (Unidentified)
 - TB Telephone Box
 - TC Telecom
 - TH Trial Hole
 - TL Traffic Light
 - TP Telegraph Pole
 - UTL Unable to Lift
 - VP Vent pipe
 - WM Water Meter
 - WSV Water Stop Valve

- FENCES
- BWF Barbed Wire Fence
 - CBF Closed Board Fence
 - CP Concrete Post
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REVISION B - JULY 2024
Survey of wooded area north of Lane End House.

REVISION A - NOVEMBER 2023
Highway survey extended east on Snakemoor Lane.

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Geomatic Surveyors

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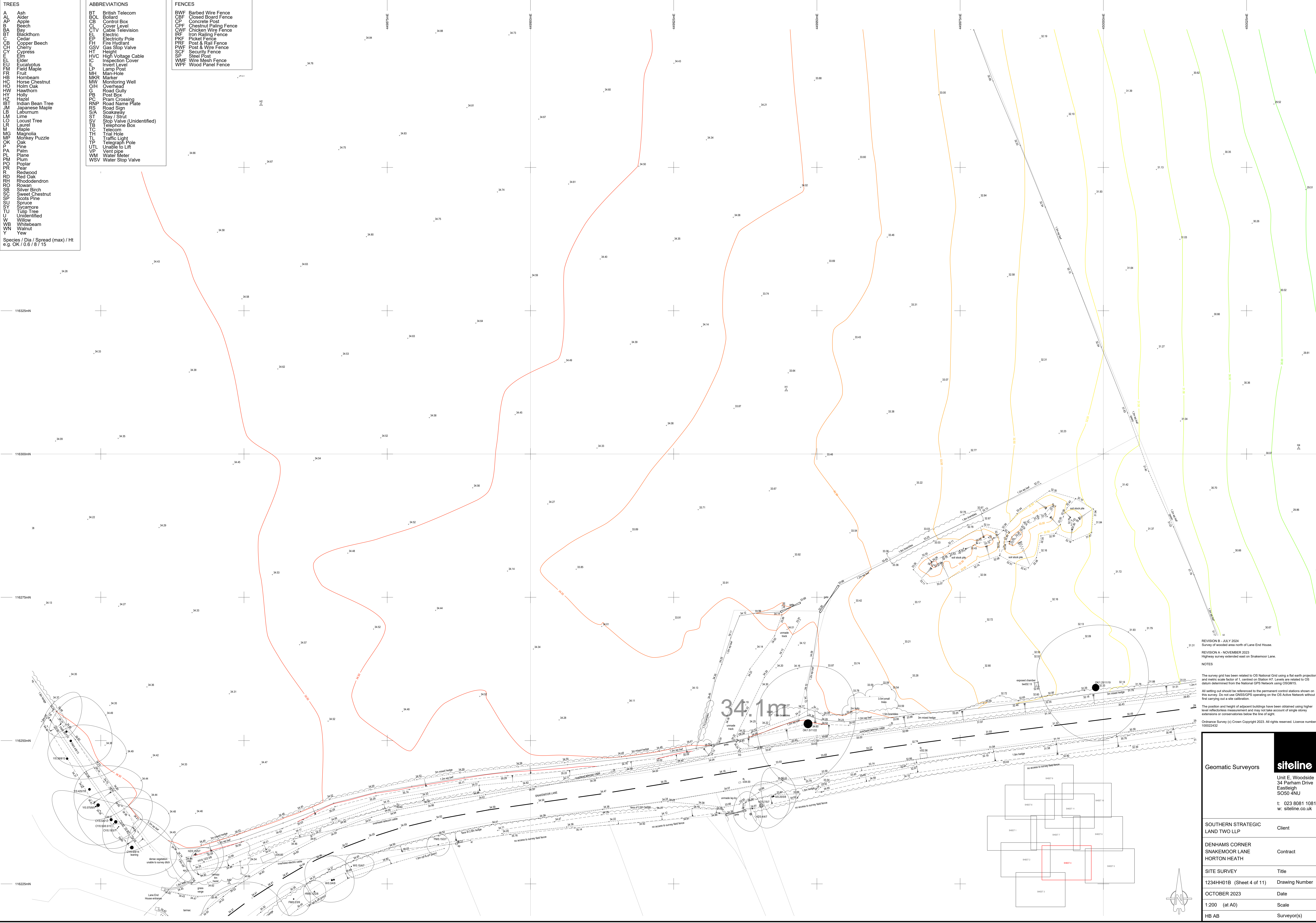
SOUTHERN STRATEGIC LAND TWO LLP	Client
DENHAM'S CORNER SNAKEMOOR LANE HORTON HEATH	Contract
SITE SURVEY	Title
1234HH01B (Sheet 3 of 11)	Drawing Number
OCTOBER 2023	Date
1:200 (at A0)	Scale
HB AB	Surveyor(s)

TREES
A Ash
AL Alder
AP Apple
B Beech
BA Bay
BT Blackthorn
CB Cedar
CH Copper Beech
CY Cherry
CY Cypress
E Elm
EL Eucalyptus
EU Field Maple
FR Fruit
HB Hornbeam
HC Horse Chestnut
HO Holm Oak
HW Hawthorn
HY Holly
HZ Hazel
IBT Indian Bean Tree
JM Japanese Maple
LS Laburnum
LM Lime
LO Locust Tree
LR Laurel
M Maple
MG Magnolia
MP Monkey Puzzle
OK Oak
P Pine
PL Plane
PM Plum
PO Poplar
PR Pear
RD Redwood
RH Red Oak
RO Rhododendron
RW Rowan
SB Silver Birch
SC Sweet Chestnut
SP Scots Pine
SU Spruce
SY Sycamore
TU Tulip Tree
U Unidentified
W Willow
WB Whitebeam
WN Walnut
Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15

ABBREVIATIONS
BT British Telecom
BOL Bollard
CB Control Box
CL Cover Level
CTV Cable Television
EP Electric Pole
FH Fire Hydrant
GSV Gas Stop Valve
HT Height
HVC High Voltage Cable
IC Inspection Cover
IL Invert Level
LP Lamp Post
MH Man-Hole
MKR Marker
MW Monitoring Well
O/H Overhead
G Road Gully
PB Post Box
PC Pram Crossing
RNP Road Name Plate
RS Road Sign
S/A Soakaway
SV Stop Valve (Unidentified)
TB Telephone Box
TC Telecom
TH Trial Hole
TL Traffic Light
TP Telegraph Pole
UTL Unable to Lift
VP Vent pipe
WM Water Meter
WSV Water Stop Valve

FENCES
BWF Barbed Wire Fence
CBF Closed Board Fence
CP Concrete Post
CPF Chestnut Paling Fence
CWF Chicken Wire Fence
IRF Iron Railing Fence
PKF Picket Fence
PRF Post & Rail Fence
PWF Post & Wire Fence
SCF Security Fence
SP Steel Post
WMF Wire Mesh Fence
WPF Wood Panel Fence

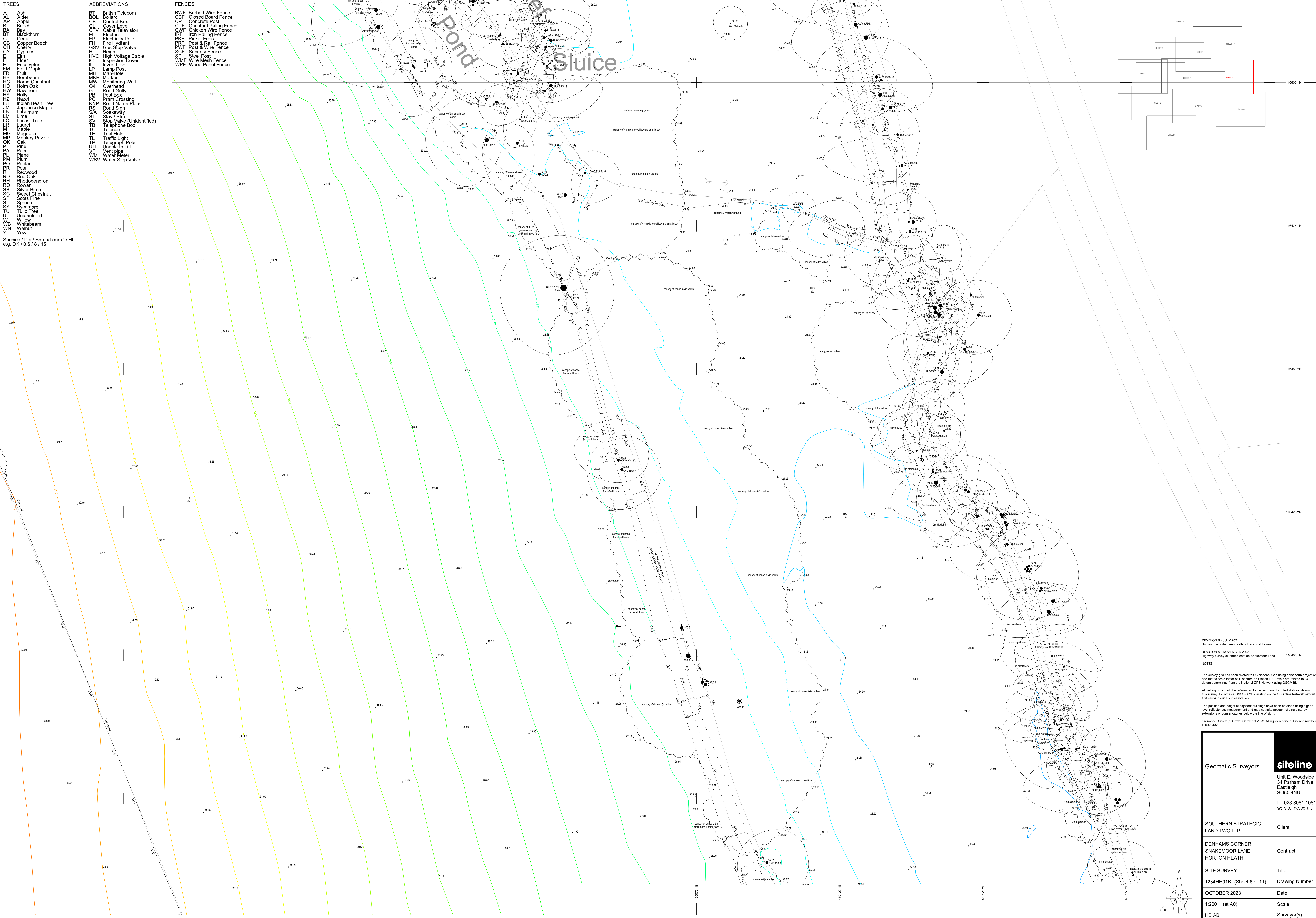


- TREES
- AL Ash
 - AP Apple
 - B Birch
 - BAT Blackthorn
 - CB Cedar
 - CBH Copper Beech
 - CHY Cherry
 - CHY Cypress
 - EL Elm
 - ELM Eucalyptus
 - ELM Field Maple
 - FR Fruit
 - FRB Hornbeam
 - HC Horse Chestnut
 - HO Horn Oak
 - HW Hawthorn
 - HZ Holly
 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LS Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Pine
 - PL Plane
 - PO Poplar
 - PR Pear
 - PR Redwood
 - PR Red Oak
 - PR Rhododendron
 - PR Rowan
 - PR Silver Birch
 - PR Sweet Chestnut
 - PR Scots Pine
 - PR Spruce
 - PR Larch
 - PR Tulip Tree
 - PR Unidentified
 - PR Willow
 - PR Whitebeam
 - PR Walnut
 - Y Yew

Species / Dia / Spread (max) / Ht
e.g. OK 10.6 / 8 / 15

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 - BOL Bollard
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 - EP Electric Pole
 - EPH Electricity Pole
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 - EPH Gas Stop Valve
 - EPH Height
 - EPH High Voltage Cable
 - EPH Inspection Cover
 - EPH Invert Level
 - EPH Lamp Post
 - EPH Man-Hole
 - EPH Marker
 - EPH Monitoring Well
 - EPH Overhead
 - EPH Road Gully
 - EPH Road Sign
 - EPH Roadway
 - EPH Stop Valve (Unidentified)
 - EPH Stay / Strut
 - EPH Stop Valve
 - EPH Telephone Box
 - EPH Trial Hole
 - EPH Traffic Light
 - EPH Telegraph Pole
 - EPH Unable to Lift
 - EPH Vent pipe
 - EPH Water Meter
 - EPH Water Stop Valve

- FENCES
- BWF Barbed Wire Fence
 - CBF Closed Board Fence
 - CP Concrete Post
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 - CPH Iron Railing Fence
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 - CPH Post & Rail Fence
 - CPH Post & Wire Fence
 - CPH Security Fence
 - CPH Steel Post
 - CPH Wire Mesh Fence
 - CPH Wood Panel Fence

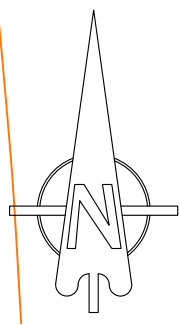


REVISION B - JULY 2024
Survey of wooded area north of Lane End House.
REVISION A - NOVEMBER 2023
Highway survey extended east on Snakemoor Lane.
NOTES

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Geomatic Surveyors	
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SOUTHERN STRATEGIC LAND TWO LLP	Client
DENHAM'S CORNER SNAKEMOOR LANE HORTON HEATH	Contract
SITE SURVEY	Title
1234HH01B (Sheet 6 of 11)	Drawing Number
OCTOBER 2023	Date
1:200 (at A0)	Scale
HB AB	Surveyor(s)

Species / Dia / Spread (max) / Ht
e.g. OK / 0.6 / 8 / 15



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	SOUTHERN STRATEGIC LAND TWO LLP Client
	DENHAMS CORNER SNAKEMOOR LANE HORTON HEATH Contract
	SITE SURVEY Title
	1234HH01B (Sheet 7 of 11) Drawing Number
OCTOBER 2023 1:200 (at A0) MR AP	Date
	Scale
	<i>Surveyor(s)</i>

- TREES

A

AL

AP

B

BA

BT

CB

CH

CY

EL

EU

FR

HB

HC

HO

HW

HY

HZ

IBT

JM

LS

LM

LO

LR

M

MG

MP

OK

P

PL

PM

PO

PR

R

RH

RJ

RS

S

SC

SP

SU

T

U

W

WB

WN

Y

Ash

Alder

Apple

Beech

Bay

Blackthorn

Cedar

Copper Beech

Cherry

Cypress

Elm

Elder

Eucalyptus

Field Maple

Fruit

Hambeam

Horse Chestnut

Hornbeam

Holly

Hawthorn

Hazel

Indian Bean Tree

Japanese Maple

Laburnum

Lime

Locus Tree

Laurel

Maple

Magnolia

Monkey Puzzle

Oak

Palm

Pine

Plane

Plum

Poplar

Pear

Redwood

Red Oak

Rhododendron

Rowan

Silver Birch

Sweet Chestnut

Scots Pine

Spruce

Sycamore

Tulip Tree

Unidentified

Willow

Whitebeam

Walnut

Yew
- Species / Dia / Spread (max) / Ht

e.g. OK / 0.6 / 8 / 15

ABBREVIATIONS

BT

BOL

CB

CL

CTV

EP

EL

FSV

HT

HVC

IC

IL

LP

MH

MR

MW

O/H

G

PB

PC

RNP

RS

S/A

ST

S/V

TB

TC

TH

TL

TP

UTL

VP

WM

WSV

British Telecom

Bollard

Control Box

Cover Level

Cable Television

Electric Pole

Electric

Gas Stop Valve

Height

High Voltage Cable

Inspection Cover

Invert Level

Lamp Post

Man-Hole

Marker

Monitoring Well

Overhead

Road Gully

Post Box

Pram Crossing

Road Name Plate

Road Sign

Soakaway

Stay / Strut

Stop Valve (Unidentified)

Telephone Box

Telecom

Trial Hole

Traffic Light

Telegraph Pole

Unable to Lift

Vent pipe

Water Meter

Water Stop Valve

FENCES

BWF

CBF

CP

CPF

CWF

IRF

PRF

PWF

SCF

SP

WMF

WPF

Barbed Wire Fence

Closed Board Fence

Concrete Post

Chestnut Paling Fence

Chicken Wire Fence

Iron Railing Fence

Picket Fence

Post & Rail Fence

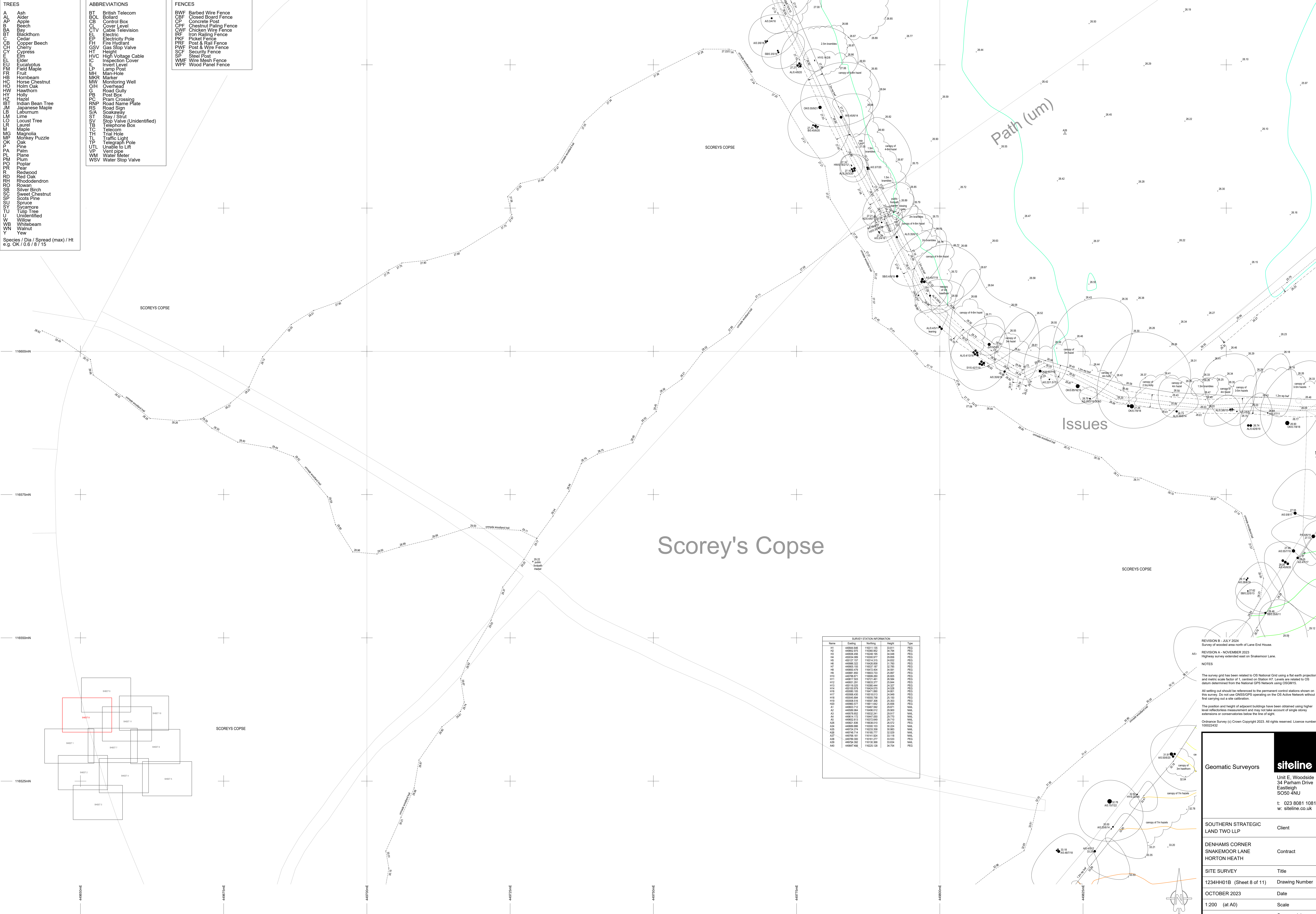
Post & Wire Fence

Security Fence

Steel Post

Wire Mesh Fence

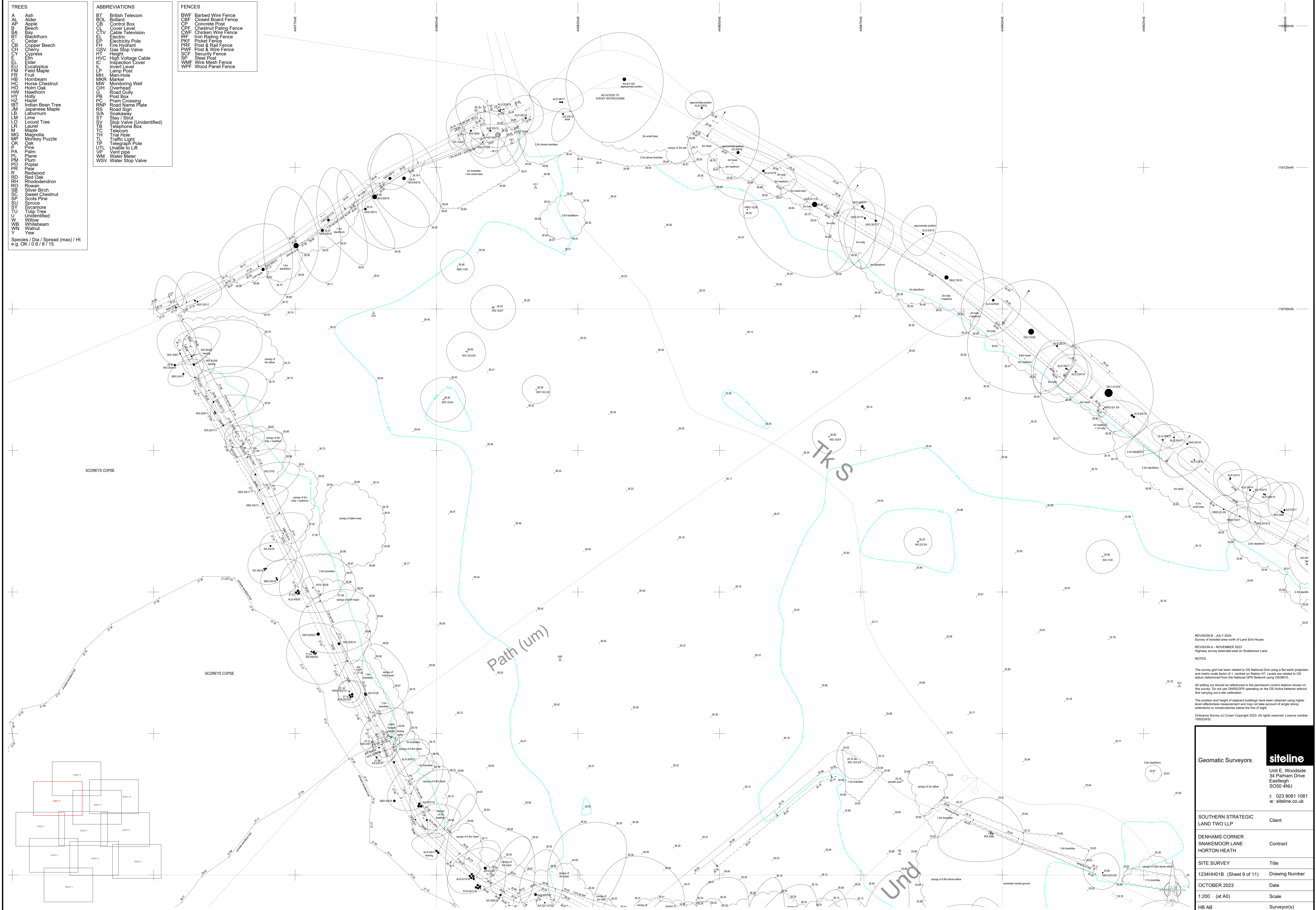
Wood Panel Fence



ABBREVIATIONS		ABBREVIATIONS	
AL	Ash	BT	British Telecom
AP	Apple	BOL	Bollard
BA	Beech	CB	Control Box
BBA	Beech	CL	Cover Level
CB	Blackthorn	CTV	Cable Television
CC	Cedar	EL	Electric
CH	Copper Beech	EP	Electricity Pole
CHC	Cherry	GH	Gas
CM	Cypress	GSV	Gas Stop Valve
CU	Cum	HT	Height
EL	Elder	HVC	High Voltage Cable
ELU	Eum	IC	Inspection Cover
EM	European	I	Invert Level
FB	Field Maple	LP	Lamp Post
HB	Fruit	MH	Man-Hole
HC	Hornbeam	MK	Marker
HO	Horse Chestnut	MW	Monitoring Well
HZ	Horn Oak	O/H	Overhead
HW	Hamthorn	G	Road Gully
HY	Hazel	PB	Post Box
IB	Hazel	PC	Pan Crossing
IBT	Indian Bean Tree	RNP	Road Name Plate
JM	Japanese Maple	R	Road Sign
LB	Laburnum	S/A	Soakaway
LM	Lime	ST	Street
LO	Locust Tree	SV	Stop Valve (Unidentified)
LR	Laurel	TB	Telephone Box
MA	Maple	TC	Telecom
MG	Magnolia	TL	Trail Light
MP	Mountain Yew	TR	Traffic Light
OK	Oak	UTL	Telephone Graph
P	Pine	UTL	Under Traffic Light
PA	Palm	VP	Vent pipe
PL	Plum	WM	Water Meter
PM	Poplar	WSV	Water Stop Valve
PR	Pur		
R	Redwood		
RD	Red Oak		
RH	Rhododendron		
RO	Rowan		
SB	Silver Birch		
SC	Sweet Chestnut		
SP	Scots Pine		
SU	Spruce		
SU	Sycamore		
T	Tulip Tree		
U	Unidentified		
W	Willow		
WB	Whitebeam		
WN	Walnut		
Y	Yew		

FENCES

BWF	Barbed Wire Fence
CBF	Closed Board Fence
CP	Concrete Post
CPF	Chestnut Paling Fence
CWF	Chicken Wire Fence
IRF	Iron Railing Fence
PKF	Picket Fence
PRF	Post & Rail Fence
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SCF	Security Fence
SP	Steel Post
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WPF	Wood Panel Fence



REVISION B - JULY 2024
Survey of wooded area north of Lane End House

NOTES

and metric scale factor of 1, centred on Station H7. Levels are related to OS datum determined from the National GPS Network using OSGM15.

this survey. Do not use GNSS/GPS operating on the OS Active Network without first carrying out a site calibration.

extensions or conservatories below the line of sight.

[illegible]

Geomatic Surveyors:

Unit E, Woodside
34 Parham Drive
Eastleigh
SO50 4NU

SOUTHERN STRATEGI

DENHAMS CORNER

SNAKEMOOR LANE

HORTON HEATH

SITE SURVEY

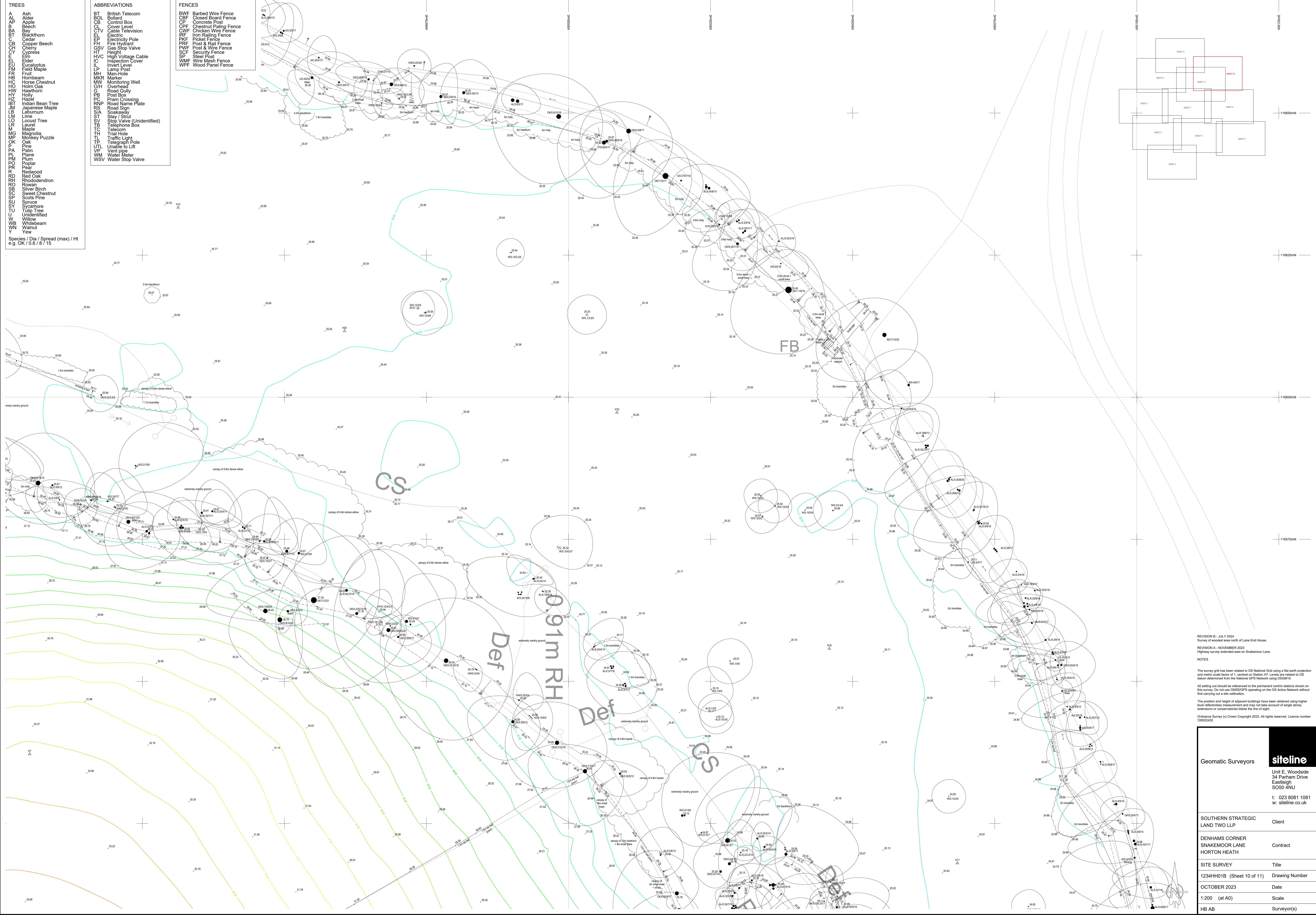
SITE SURVEY

1234HH01B (Sheet 9 of 10)

OCTOBER 2023

1:200 (at A0)

UP AD



- TREES**
- AL Ash
 - AP Alder
 - B Beech
 - BA Bay
 - BT Blackthorn
 - CB Cedar
 - CBH Copper Beech
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 - CP Cypress
 - EL Elder
 - ELU Eucalyptus
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 - HO Horn Oak
 - HW Hawthorn
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 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LS Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Pine
 - PL Plane
 - PM Plum
 - PO Poplar
 - PR Pear
 - R Redwood
 - RO Red Oak
 - RH Rhododendron
 - RS Rowan
 - SB Silver Birch
 - SC Sweet Chestnut
 - SP Scots Pine
 - SU Spruce
 - T Tulip Tree
 - U Underscore
 - UW Willow
 - WB Whitebeam
 - WN Walnut
 - Y Yew
- Species / Dia / Spread (max) / Ht
e.g. OK 10.5 / 5 / 15

- ABBREVIATIONS**
- BT British Telecom
 - BOL Bollard
 - CB Control Box
 - CL Cover Level
 - CTV Cable Television
 - EL Electric
 - ELP Electricity Pole
 - EH Fire Hydrant
 - GSV Gas Stop Valve
 - HT Height
 - HVC High Voltage Cable
 - IC Inspection Cover
 - IL Invert Level
 - LP Lamp Post
 - MH Man-Hole
 - MR Marker
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 - TL Traffic Light
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 - UTL Unable to Lift
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- FENCES**
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REVISION B - JULY 2024
Survey of wooded area north of Lane End House.

REVISION A - NOVEMBER 2023
Highway survey extended east on Snakemoor Lane.

NOTES

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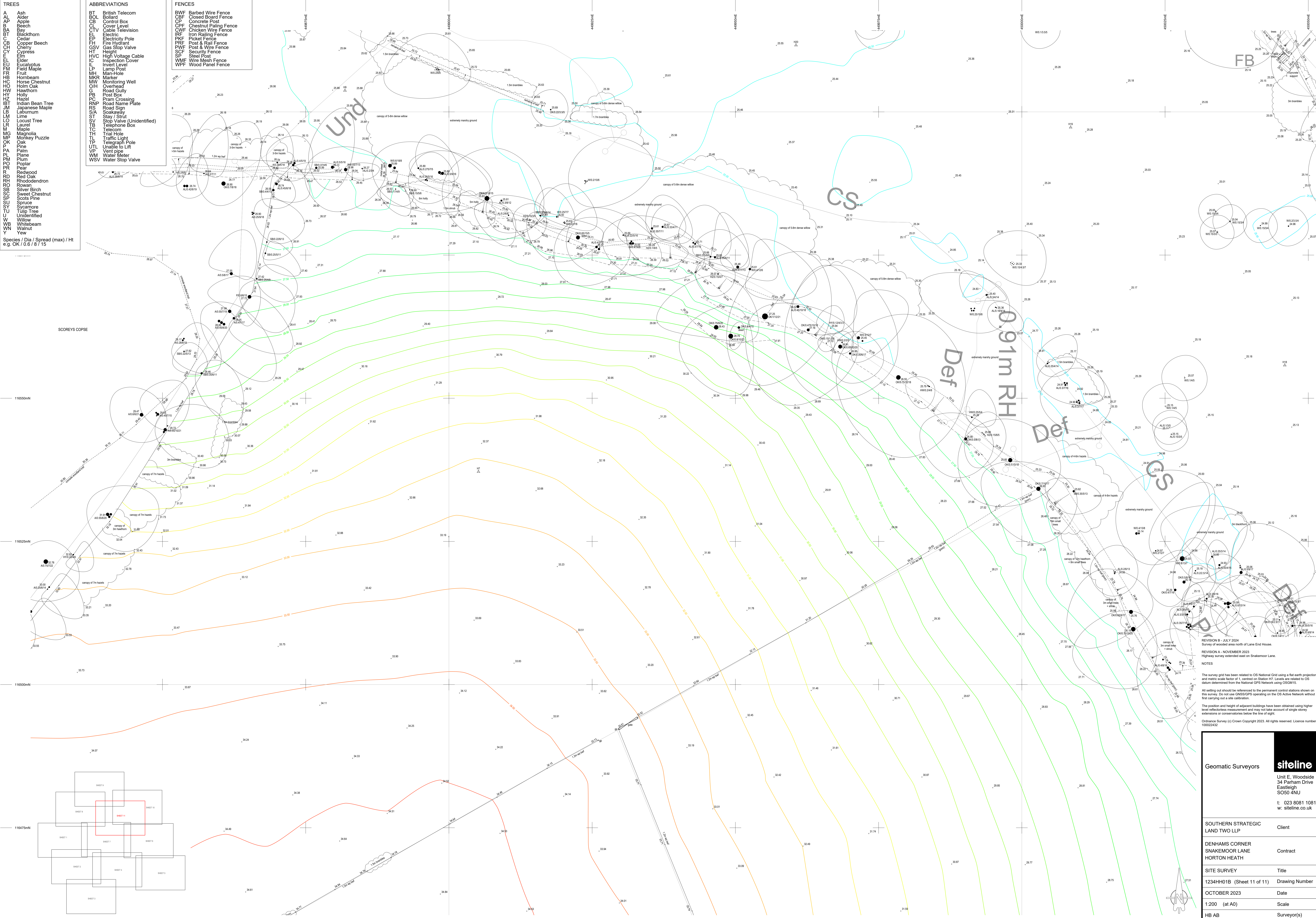
Geomatic Surveyors		siteline Unit E, Woodside 34 Parham Drive Eastleigh SO50 4NU t: 023 8081 1081 w: siteline.co.uk	
SOUTHERN STRATEGIC LAND TWO LLP			Client
DENHAMS CORNER SNAKEMOOR LANE HORTON HEATH			Contract
SITE SURVEY			Title
1234HH01B (Sheet 10 of 11)		Drawing Number	
OCTOBER 2023		Date	
1:200 (at A0)		Scale	
HB AB		Surveyor(s)	

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 - HO Horn Oak
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 - HZ Hazel
 - IBT Indian Bean Tree
 - JM Japanese Maple
 - LB Laburnum
 - LM Lime
 - LO Locust Tree
 - LR Laurel
 - M Maple
 - MG Magnolia
 - MP Monkey Puzzle
 - OK Oak
 - P Pine
 - PL Plane
 - PM Poplar
 - PO Pear
 - PR Redwood
 - RD Red Oak
 - RH Rhododendron
 - RO Rowan
 - SB Silver Birch
 - SC Sweet Chestnut
 - SP Scots Pine
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 - TU Tulip Tree
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 - W Willow
 - WB Whitebeam
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Species / Dia / Spread (max) / Ht
e.g. OK 10.0 / 8 / 15

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REVISION B - JULY 2024
Survey of recorded area north of Lane End House.
REVISION A - NOVEMBER 2023
Highway survey extended east on Snake Moor Lane.

NOTES

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Geomatic Surveyors

siteline

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SOUTHERN STRATEGIC
LAND TWO LLP

Client

DENHAM'S CORNER
SNAKEMOOR LANE
HORTON HEATH

Contract

SITE SURVEY

Title

1234HH01B (Sheet 11 of 11)

Drawing Number

OCTOBER 2023

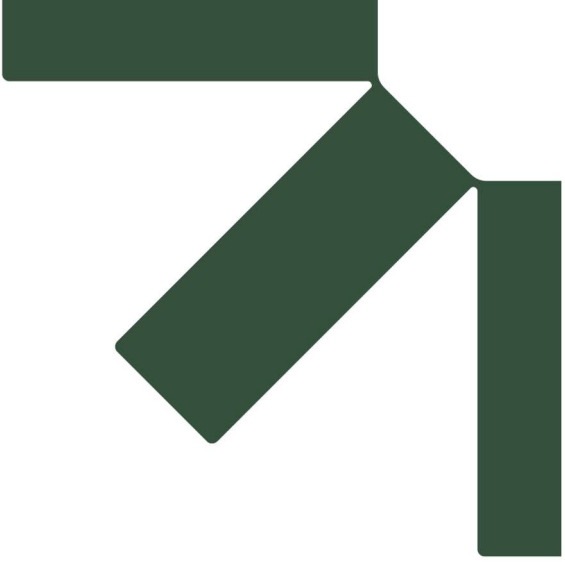
Date

1:200 (at A0)

Scale

HB AB

Surveyor(s)



Appendix C Ground Investigation Report

Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh, Hampshire

Southern Strategic Land Two LLP

SLR Project No.: 416.065671.00001

14 May 2025



JOB NO. AD0804

GROUND INVESTIGATION REPORT

Geotechnical Factual Report

Land at Denham's Corner, North of Snakemoor Lane
Horton Heath, Hampshire, SO32 2BW

OCTOBER 2024



On behalf of:
M & G Developments Ltd

Advanced Investigation Systems Ltd
Stout Road, Henley, Langport, Somerset, TA10 9AZ

Email enquiries@windowsampling.com
Web www.windowsampling.com

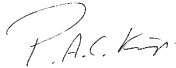
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Advanced Investigation Systems is an AGS Data Provider

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath, Hampshire

Job No. AD0804

Issue/revision	Issue 1.1	Issue 2.1	
Remarks	Geotechnical Factual Report (Interim)	Geotechnical Factual Report	
Date	23 October 2024	06 November 2024	
Reissue Date	N/A	N/A	
Produced by	Paul Kings MSc FGS	Paul Kings MSc FGS	
Signature			
Checked by	Alison Kings	Alison Kings	
Issued by	Paul Kings	Paul Kings	

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GROUND INVESTIGATION GEOTECHNICAL FACTUAL REPORT

Project Title	Land at Denham's Corner	Job Number	AD0804
Location	North of Snakemoor Lane, Horton Heath, Hampshire, SO32 2BW	Date	06 November 2024
Client	M & G Developments Ltd	Engineer	SLR Consulting Limited

1. INTRODUCTION

	Comments	References
1.1 Preamble	Following an instruction from the Client, and under the direction of the Engineer, a ground investigation including drainage (infiltration) testing was undertaken by Advanced Investigation Systems Ltd within a field to the north of Snakemoor Lane, Horton Heath.	Instruction date: 27 August 2024
1.2 Proposed Development	The investigation was designed to examine ground and groundwater conditions with respect to the construction of sustainable drainage systems (SuDS) in support of a surface drainage water strategy for the Site. At the time of the investigation the study area was in use as arable farmland and a maize crop had recently been harvested.	
1.3 Purpose of Investigation	The investigation had the following objectives: 1) Obtain information concerning ground and groundwater conditions; 2) Determine drainage characteristics and soakaway design Infiltration rate parameters. Access was good for all ground investigation plant and test equipment.	

2. SITE DESCRIPTION

	Comments	References
2.1 Site Size & Extent	The Site lies just beyond the south-eastern margins of Horton Heath, 9km north-east of Southampton City Centre and is centered on Grid Coordinates: Easting 449897, Northing 116374. The nearest Post Code is SO32 2BW. The investigation was carried out within an approximate pentagonal area with maximum dimensions of 320m by 300m. The aerial image (dated 2020) below, shows the location of the field that comprises the study area. 	Google Earth, 2024
2.2 Topography	Regionally, the Site is slightly elevated within a gently undulating landscape. The study area was raised centrally with a maximum elevation of 35.0m AOD, reducing to the north and east to approximately 27.0m AOD.	Google Earth, 2024
2.3 Geology	The BGS on-line viewer indicates Sand, Silt and Clay of the Wittering Formation immediately underlying the Site. The Wittering Formation is described as greyish brown laminated clay; wavy- to lenticular-bedded sand interbedded with clay in equal proportions; and fine- to medium-grained sparsely glauconitic sand. The strata encountered by this investigation was consistent with the former designation.	BGS Online Viewer (2024) BGS Lexicon (2024)

3. INVESTIGATION STRATEGY

	Comments	References
3.1 Methodology & Techniques	<u>Underground Services</u> Once suitable exploratory hole locations had been identified, an on-site underground services check, was carried out by A.I.S. Ltd prior to excavation, probing and drilling. The check used standard radio & electromagnetic detection techniques including a cable avoidance tool and signal generator; compliant with PAS 128 & HSG47 and constituted a PAS128 Type B survey. <u>Trial Pits (Machine Excavated)</u> Three trial pits (TP01, TP02 & TP03) were machine excavated with a 5 tonne, 360-degree, mechanical excavator to depths of 2.10m, 2.40m & 2.30m BGL, in order to determine ground conditions and to carry out full-scale BRE365 surface water infiltration tests, determine drainage conditions and where possible, drainage design parameters. During the trial pit excavation and borehole drilling process, detailed engineering descriptions to BS 5930:2015+A1:2020 (Code of practice for ground investigation) were made of all strata encountered and the ground water conditions were recorded by a Geotechnical Engineer. The trial pit logs are appended.	PAS 128: Specification for underground utility detection, verification and location BSI, 2022 Health & Safety Guidance 47. HSE, 2014 BRE3 DG365: 2016 BS5930:2015+A1:2020 Appendix 1
3.2 <i>In Situ</i> Testing	<u>Infiltration (Soakaway) Testing</u> Infiltration testing to the BRE 365: 2016 procedure (Digest 365), was carried out within Trial Pits TP01, TP02 & TP03. Water was provided by a water bowser and high volume delivery rate, pumping system. The trial pit (soakaway) infiltration tests were facilitated by the insertion of slotted well-screen to the base of each pit and with a small stick-up above ground level, and then the pit partially infilled with 10-20mm washed gravel. The slotted pipe and gravel infill ensured consistency of readings and prevent caving/collapse of the sides of the exploratory holes. The permeable infill also had a safety function that removed the potential for accidental slips or falls into the excavations. On conclusion of the testing, any remaining water was pumped from the trial pit and the excavation were backfilled with arisings compacted in suitable lifts to ensure optimum compaction. The test results are appended.	BRE Digest DG365, 2016 Appendix 2
3.3 Laboratory Testing	Not required.	

4. RESULTS

	Comments	References
4.1 Ground Conditions	The main stratum types and ground conditions encountered by the investigation can be summarized, from top to base, as follows: <u>Topsoil</u> Initially TOPSOIL comprising firm to stiff, dark brown-grey, slightly gravelly, organic silty CLAY with gravel of sub angular, flint chert was encountered to a depth of between 0.3m and 0.4m BGL. <u>Superficial Deposits (Head)</u> Underlying the Topsoil, firm to stiff, brown mottled light grey-brown, sandy, slightly gravelly CLAY where the gravel is disseminated sub angular, fine medium coarse flint & chert. This horizon was interpreted as Head* Deposits and was proved to a depth of between 0.9m and 1.1m BGL. The gravel content was recorded as fine medium coarse, sub angular, flint & chert. <i>*Head is defined as poorly sorted and poorly stratified angular soil/rock debris and/or clayey hill-wash and soil creep, mantling a hillslope and deposited by solifluction and gelifluction and is dependent on the upslope source and distance from the source.</i> <u>Bedrock (Wittering Formation)</u> Underlying the Head Deposits, firm to stiff, brown mottled light grey brown & gleyed, locally sandy & silty, CLAY was proved to the base of trial pits TP01 & TP03 In trial pit TP02, loose, light brown yellow, silty, fine SAND was proved to the base of the excavation at 2.4m BGL. The trial pit logs are appended.	Appendix 1 Appendix 1
4.2 Groundwater	No groundwater was encountered within any of the trial pits, and all were recorded as dry.	Appendix 1

Comments		References																	
5.1	Surface Water Drainage (Infiltration Testing)	<u>Infiltration testing</u> With respect to surface water drainage design, the results from the full-scale infiltration testing within trial pits TP01, TP02 & TP03 are appended and summarised in Figure 2 below: <table><tr><th>Trial Pit</th><th>Infiltration First Filling (m/s)</th><th>Infiltration Second Filling (m/s)</th><th>Infiltration Third Filling (m/s)</th></tr><tr><td>TP01(SA)</td><td>No measurable infiltration – test abandoned</td><td>No test</td><td>No test</td></tr><tr><td>TP02(SA)</td><td>5.91 x 10⁻⁶</td><td>1.87 x 10⁻⁶ (Test result extrapolated)</td><td>No test</td></tr><tr><td>TP02(SA)</td><td>No measurable infiltration – test abandoned</td><td>No test</td><td>No test</td></tr></table> <u>Figure 2: Summary of Infiltration Test Results</u> No measurable infiltration was recorded in trial pits TP01 & TP03 and the tests were abandoned. In trial pit 02, a silty Sand horizon encountered towards the base of the excavation proved sufficiently permeable to enable one complete and one partial test within a single day.	Trial Pit	Infiltration First Filling (m/s)	Infiltration Second Filling (m/s)	Infiltration Third Filling (m/s)	TP01(SA)	No measurable infiltration – test abandoned	No test	No test	TP02(SA)	5.91 x 10 ⁻⁶	1.87 x 10 ⁻⁶ (Test result extrapolated)	No test	TP02(SA)	No measurable infiltration – test abandoned	No test	No test	Appendix 2
Trial Pit	Infiltration First Filling (m/s)	Infiltration Second Filling (m/s)	Infiltration Third Filling (m/s)																
TP01(SA)	No measurable infiltration – test abandoned	No test	No test																
TP02(SA)	5.91 x 10 ⁻⁶	1.87 x 10 ⁻⁶ (Test result extrapolated)	No test																
TP02(SA)	No measurable infiltration – test abandoned	No test	No test																

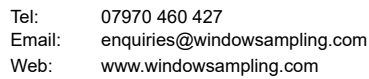
The findings & opinions given in this document are subject to the limitations imposed by employing normal site investigation methods & techniques. They are relevant to the dates when the assessment was undertaken but should not necessarily be relied upon to represent conditions at a substantially later date. Factual information has largely been obtained from exploratory holes, which, by their nature, provide specific information about a relatively small area of ground.

APPENDIX 1

Trial Pit Logs (Machine Excavated)

 ADVANCED INVESTIGATION SYSTEMS LTD Tel: 07970 460 427 Email: enquiries@windowsampling.com Web: www.windowsampling.com		TRIAL PIT RECORD			Trial Pit Number TP01			
Site: Land at Denhams Corner, Horton Heath		Engineer: SLR Consulting			Plant Equipment: 5 tonne Takeuchi Slew			
Client: M & G Developments		Elevation mAOD: 28.500		Easting: 450046.00		Northing: 116283.00		
		Start: 14/10/2024		Finish: 14/10/2024		Scale: 1:25		
GROUND WATER		SAMPLING & IN SITU TESTING			STRATA RECORD		Sheet 1 of 1	
Strike	Well	Depth (m)	Depth/Type (m)	Sampler / Recovery	Depth mBGL	Depth mAOD	Key	Description
								TOPSOIL: firm to stiff dark brown grey slightly gravelly organic silty CLAY. Gravel is sub angular flint chert.
						28.0		Firm to stiff brown mottled light grey brown sandy slightly gravelly CLAY. Gravel is disseminated sub angular fine medium coarse flint chert.
						27.0		Firm to stiff brown mottled light grey brown & gleyed sandy silty CLAY.
						26.0		
						25.0		
						24.0		
Remarks / Orientation / Dimensions / Stability Dry hole. 50mm ID slotted well screen installed to 2.10m BGL. Infiltration test carried out. Backfilled with arisings. Trial pit dimensions: 1.2m x 0.3m.								ES ES Sample ● Disturbed Sample W Water Sample φ Bulk Sample WLS Windowless Sampler WS Window Sampler  Depth to water strike  Standing water depth
								Job No. AD0804

 ADVANCED INVESTIGATION SYSTEMS LTD Tel: 07970 460 427 Email: enquiries@windowsampling.com Web: www.windowsampling.com		TRIAL PIT RECORD				Trial Pit Number TP02			
Site: Land at Denhams Corner, Horton Heath		Engineer: SLR Consulting			Plant Equipment: 5 tonne Takeuchi Slew				
Client: M & G Developments		Elevation mAOD: 33.500		Easting: 449909.00		Northing: 116517.00			
		Start: 14/10/2024		Finish: 14/10/2024		Scale: 1:25			
GROUND WATER		SAMPLING & IN SITU TESTING			STRATA RECORD		Sheet 1 of 1		
Strike	Well	Depth (m)	Depth/Type (m)		Sampler / Recovery	Depth mBGL	Depth mAOD	Key	Description
									TOPSOIL: firm to stiff dark brown grey slightly gravelly organic silty CLAY. Gravel is sub angular flint chert.
							33.0		Stiff brown sandy very gravelly silty CLAY. Gravel is fine medium coarse sub angular to rounded flint chert.
						1			Stiff brown mottled light grey & gleyed very sandy silty CLAY. Locally laminated fabric with silty sand interlaminae & partings.
							32.0		
						2			Loose light brown yellow silty fine SAND.
							31.0		
						3			
							30.0		
						4			
							29.0		
						5			
Remarks / Orientation / Dimensions / Stability Dry hole. 50mm ID slotted well screen installed to 2.4m BGL. Infiltration test carried out. Backfilled with arisings. Pit dimensions 1.5m x 0.3m.								ES ES Sample ● □ Disturbed Sample W Water Sample φ Bulk Sample WLS Windowless Sampler WS Window Sampler  Depth to water strike  Standing water depth	
								Job No. AD0804	



Trial Pit
Number

TP03

Land at Denhams Corner, Horton Heath

SLR Consulting

5 tonne Takeuchi Slew

M & G Developments

34.000	449841.00	116349.00
--------	-----------	-----------

14/10/2024	14/10/2024
------------	------------

1:25

Sheet 1 of 1

Remarks / Orientation / Dimensions / Stability Dry hole, 50mm ID slotted well screen installed to 2.3m BGL. Infiltration tests carried out. Backfilled with arisings. Pit dimensions 1.2m x 0.3m.	ES ES Sample ☒ Disturbed Sample W Water Sample ⊕ Bulk Sample WLS Windowless Sampler WS Window Sampler Depth to water strike Standing water depth Job No. AD0804
--	---

APPENDIX 2

Infiltration Test Reports



ADVANCED
INVESTIGATION
SYSTEMS LTD

www.windowssampling.com

CALCULATION OF SOIL INFILTRATION RATE

To: BRE Digest 365: 2015

Engineer: SLR Consulting
Client: M&G Developments
Site: Land at Denham's Corner, Horton Heath
Job No: AD0804

Trial Pit Number	TP01(SA)
Test Number:	1
Date	14 October 2024
Trial Pit Width (m)	0.30
Trial Pit Length (m)	1.20
Trial Pit Depth (m)	2.10
Effective Storage Depth (m)	0.70
Maximum Effective Depth (m BGL)	1.40
Empty Depth (m BGL)	2.10
V _{p75-25} (m ³)	0.13
a _{p50} (m ²)	1.41
t _{p75-25}	N/a

Time (min)	Depth (m BGL)
0	1.25
10	1.25
20	1.25
60	1.25
123	1.25

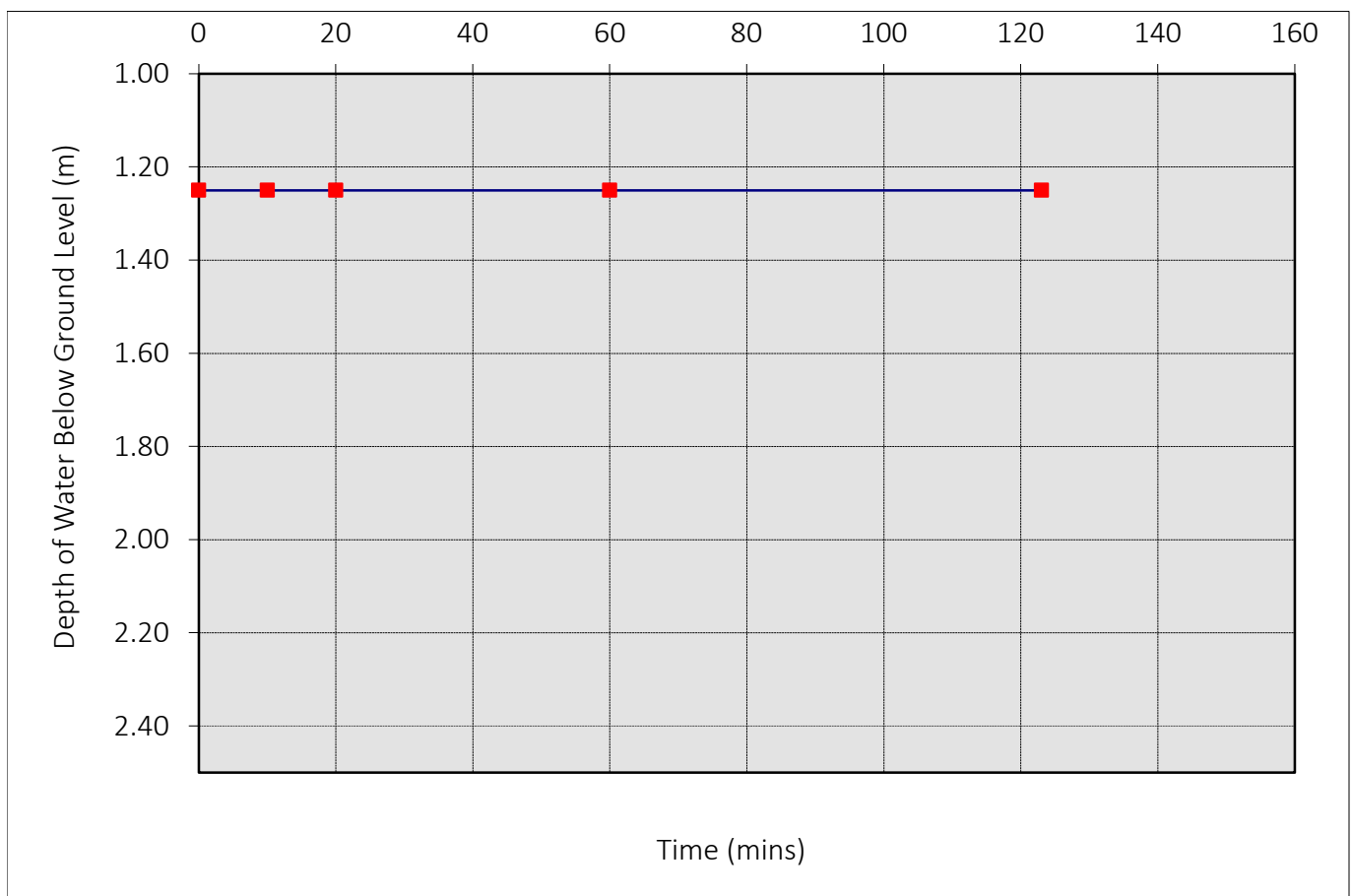
Comments:

No measureable infiltration, test terminated.

SOIL INFILTRATION RATE (m/s)

N/a

75% Full (m BGL)	1.58
25% Full (m BGL)	1.93





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CALCULATION OF SOIL INFILTRATION RATE

To: BRE Digest 365: 2015

Engineer:

SLR Consulting

Client:

M&G Developments

Site:

Land at Denham's Corner, Horton Heath

Job No:

AD0804

Trial Pit Number	TP02(SA)
Test Number:	1
Date	14 October 2024
Trial Pit Width (m)	0.30
Trial Pit Length (m)	1.50
Trial Pit Depth (m)	2.40
Effective Storage Depth (m)	1.00
Maximum Effective Depth (m BGL)	1.40
Empty Depth (m BGL)	2.40
V _{p75-25} (m ³)	0.23
a _{p50} (m ²)	2.25
t _{p75-25}	282

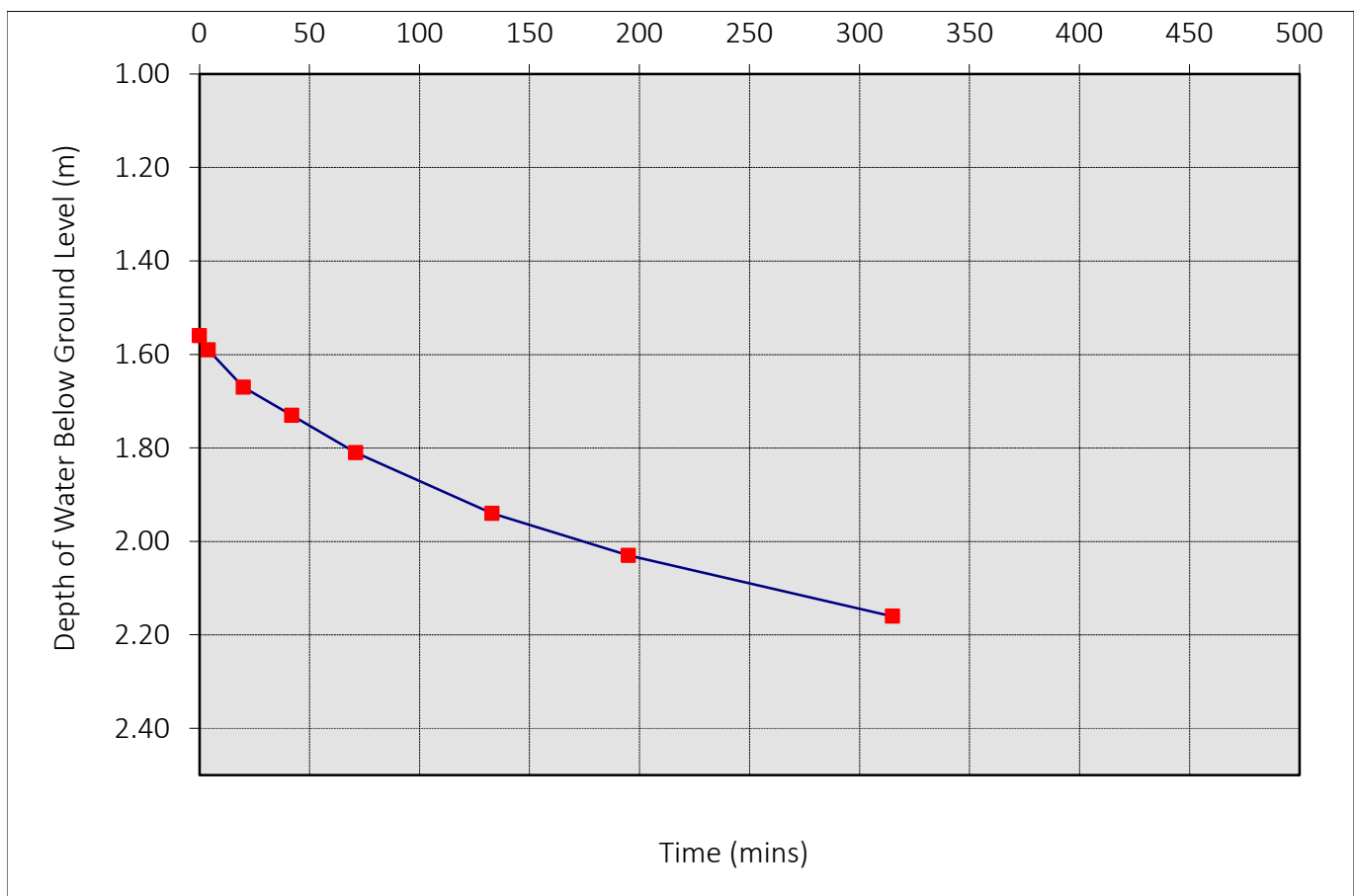
Time (min)	Depth (m BGL)
0	1.56
4	1.59
20	1.67
42	1.73
71	1.81
133	1.94
195	2.03
315	2.16

Comments:

SOIL INFILTRATION RATE (m/s)

5.91E-06

75% Full (m BGL)	1.65
25% Full (m BGL)	2.15





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CALCULATION OF SOIL INFILTRATION RATE

To: BRE Digest 365: 2015

Engineer:
Client:
Site:
Job No:

SLR Consulting
M&G Developments
Land at Denham's Corner, Horton Heath
AD0804

Trial Pit Number	TP02(SA)
Test Number:	2
Date	14 October 2024
Trial Pit Width (m)	0.30
Trial Pit Length (m)	1.50
Trial Pit Depth (m)	2.40
Effective Storage Depth (m)	1.00
Maximum Effective Depth (m BGL)	1.40
Empty Depth (m BGL)	2.40
V _{p75-25} (m ³)	0.23
a _{p50} (m ²)	2.25
t _{p75-25}	890

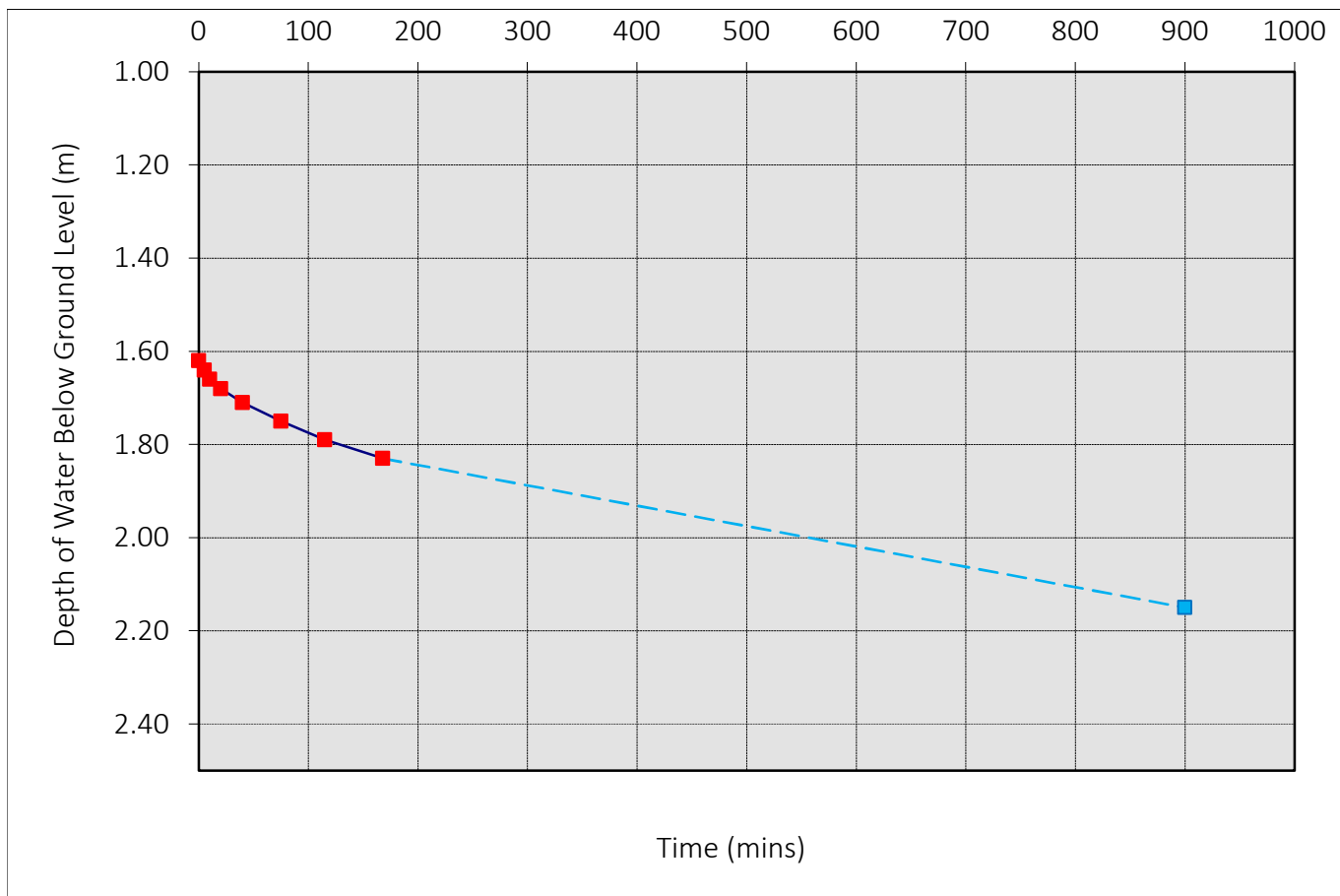
Time (min)	Depth (m BGL)
0	1.62
5	1.64
10	1.66
20	1.68
40	1.71
75	1.75
115	1.79
168	1.83
900	2.15

Comments:

Final data point extrapolated

SOIL INFILTRATION RATE (m/s) 1.87E-06

75% Full (m BGL)	1.65
25% Full (m BGL)	2.15





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SYSTEMS LTD

www.windowssampling.com

CALCULATION OF SOIL INFILTRATION RATE

To: BRE Digest 365: 2015

Engineer: SLR Consulting
Client: M&G Developments
Site: Land at Denham's Corner, Horton Heath
Job No: AD0804

Trial Pit Number	TP03(SA)
Test Number:	1
Date	14 October 2024
Trial Pit Width (m)	0.30
Trial Pit Length (m)	1.20
Trial Pit Depth (m)	2.30
Effective Storage Depth (m)	0.90
Maximum Effective Depth (m BGL)	1.40
Empty Depth (m BGL)	2.30
V _{p75-25} (m ³)	0.16
a _{p50} (m ²)	1.71
t _{p75-25}	N/a

Time (min)	Depth (m BGL)
0	1.03
10	1.03
24	1.03
65	1.03
89	1.03
145	1.03

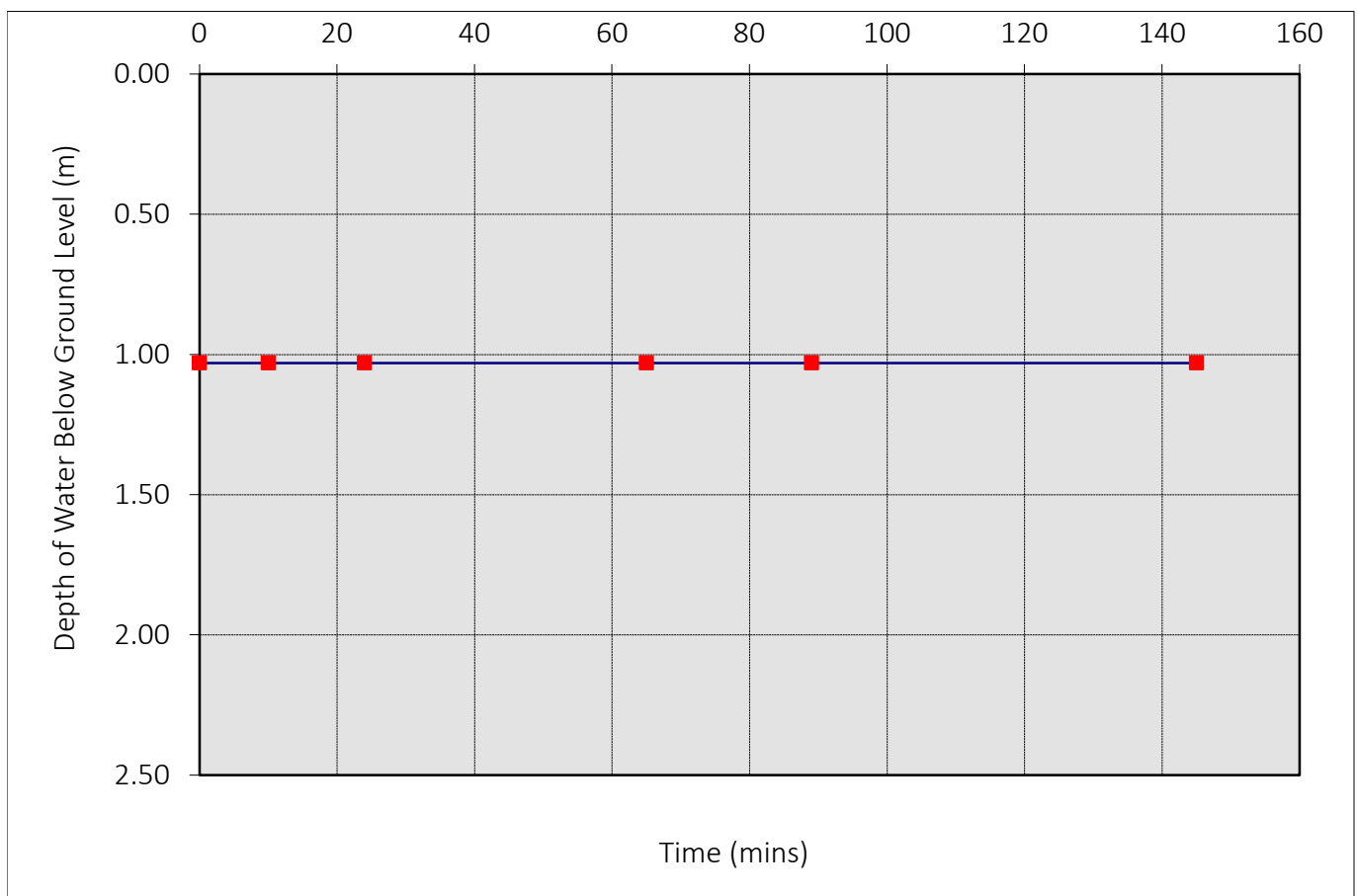
Comments:

No measureable infiltration, test terminated.

SOIL INFILTRATION RATE (m/s)

N/a

75% Full (m BGL)	1.63
25% Full (m BGL)	2.08



APPENDIX 3

Site Photographs



SITE PHOTOGRAPHS

Job No. AD0804

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath

Ref.: TP01(SA)

Description: View east towards excavation of trial pit TP01(SA)



Ref.: TP01(SA)

Description: TP01: Internal View





SITE PHOTOGRAPHS

Job No. AD0804

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath

Ref.: TP01(SA)

Description: Trial Pit TP01(SA) - arisings



Ref.: TP02(SA)

Description: TP02: Internal View





SITE PHOTOGRAPHS

Job No. AD0804

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath

Ref.: TP02(SA)

Description: View north towards excavation of Trial Pit TP02(SA)



Ref.: TP02(SA)

Description: TP02: Arisings





SITE PHOTOGRAPHS

Job No. AD0804

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath

Ref.: TP03(SA)

Description: View north and excavation of trial pit TP03(SA)



Ref.: TP03(SA)

Description: TP03: Internal View





SITE PHOTOGRAPHS

Job No. AD0804

Site: Land at Denham's Corner, North of Snakemoor Lane, Horton Heath

Ref.: TP03(SA)

Description: Trial Pit TP03(SA) arisings.



APPENDIX 4

Site Plan



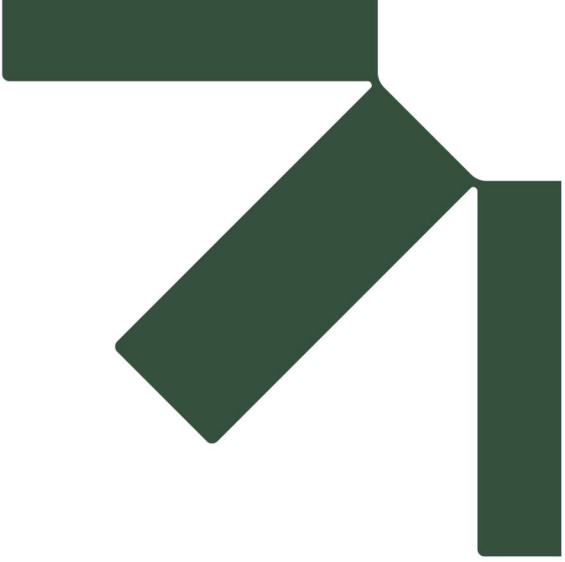
Scale:	NTS	Drawn:	PK	Date:	14 October 2024
Drawing No:	After Bing Mapping 2024	Rev:	1	Job No:	AD0804
Title:	Aerial Image with Exploratory Hole (Trial Pit) and Infiltration Test Locations Land at Denham's Corner, North of Snakemoor Lane, Horton Heath, Hampshire, SO32 2BW			 Advanced Investigation Systems Ltd Web: www.windowssampling.com	

APPENDIX 5

Important Notice

IMPORTANT NOTICE

1. This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of Advanced Investigation Systems Ltd being obtained. Advanced Investigation Systems Ltd accepts no responsibility or liability for the consequences of this document in part or in whole being used for any other purpose than that for which it was commissioned. Any persons so using or relying upon this document such other purpose does so at their own risk. Advanced Investigation Systems Ltd accepts no responsibility or liability for this document other than to the person or organisation by whom it was commissioned. The intellectual copyright for this report remains with Advanced Investigation Systems Ltd.
2. The findings and opinions given in this document are subject to the limitations imposed by employing normal site assessment methods and techniques. They are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date. Factual information has largely been obtained from exploratory holes which, by their nature, provide specific information about a relatively small sample of the subsoil. The opinions, where included herein, are based primarily upon information obtained during the assessment and from our experience; if additional information becomes available which might impact upon our stated opinions we request the opportunity to review such information and modify our opinions if necessary.
3. The findings and opinions conveyed via this report are based on information obtained from a variety of sources as detailed in this report, and which Advanced Investigation Systems Ltd believes are reliable. Nevertheless, Advanced Investigation Systems Ltd cannot and does not guarantee the authenticity or reliability of the information it has relied upon.
4. Unless otherwise stated in this document, the assessment has been carried out to current accepted national and international standards, guide lines and legislation. No liability can be accepted by Advanced Investigation Systems Ltd for the effects of any future changes to such guidelines and legislation.
5. The Institute of Civil Engineers (ICE) Conditions of Contract for Ground Investigations (2003), together with the Specification for Ground Investigation Steering Group, published by Thomas Telford (1993) applies to these works carried out by Advanced Investigation Systems Ltd and their Sub-contractors.



Appendix D Sewer Records and Correspondence

Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh, Hampshire

Southern Strategic Land Two LLP

SLR Project No.: 416.065671.00001

14 May 2025

Helena Preston

From: Southern Water Planning <SouthernWaterPlanning@southernwater.co.uk>
Sent: 05 November 2024 11:48
To: Helena Preston; EIR - Environmental Information Regulations
Subject: RE: The Form 'Developer services submit a query' was submitted

You don't often get email from southernwaterplanning@southernwater.co.uk. [Learn why this is important](#)

Good Morning,

The closest WwTW area for the address is CHICKENHALL EASTLEIGH.

@EIR - [Environmental Information Regulations](#) will you advise on the permit levels for this WwTW?

Kind Regards

Rachael Powys-Keck
Future Growth Planner, South East Region
T. 03303030119
M. 07922861263
southernwater.co.uk



From: Developer Services <Developer.Services@southernwater.co.uk>
Sent: Tuesday, November 5, 2024 11:39 AM
To: Southern Water Planning <SouthernWaterPlanning@southernwater.co.uk>
Subject: FW: The Form 'Developer services submit a query' was submitted

Hi team,

Can you please see the attach below and assist the customer further . Customer is asking to confirm the WWTW catchment for the site -Denhams Corner, Horton Heath- SO32 2BW, and the permit levels for the receiving WWTW. Hope this is something you will be able to assist , if not could you please guide me to right team.

Thank you for time

Many thanks

Tejal Shah
Technical Service Delivery Advisor
Developer Services

From: Helena Preston <hpreston@slrconsulting.com>
Sent: Tuesday, November 5, 2024 11:21 AM
To: Developer Services <Developer.Services@southernwater.co.uk>
Subject: RE: The Form 'Developer services submit a query' was submitted

Hi Tejal,

Please can you confirm the WWTW catchment for the site, and the permit levels for the receiving WWTW.

If you have any more questions, please contact me.

Many thanks
Helena

Helena Preston

Associate Hydrologist - Hydrology & Hydrogeology

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Treenwood House, Rowden Lane, Bradford on Avon, Wiltshire, United Kingdom BA15 2AU



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SLR Consulting Limited. A company incorporated in England and Wales with registered number 03880506 and with its registered office at 1 Bartholomew Lane, EC2N 2AX.

From: Developer Services <Developer.Services@southernwater.co.uk>
Sent: Monday, November 4, 2024 4:18 PM
To: Helena Preston <hpreston@slrconsulting.com>
Subject: RE: The Form 'Developer services submit a query' was submitted

You don't often get email from developer.services@southernwater.co.uk. [Learn why this is important](#)

Hi Helena,

Thank you for getting in touch with us through our online portal.

I am bit confused with your query hence tried to contact you to discuss further but was not able to reach you .

You please confirm if you want to know about wastewater treatment catchment for the proposed site or you want to know about water nutrient .

I have tried to check for drainage catchment , the nearest catchment for SO302HJ-CHICKENHALL EASTLEIGH.

If you have any further questions please let us know.

Many thanks

Tejal Shah
Technical Service Delivery Advisor
Developer Services

T. 0330 303 0119
southernwater.co.uk

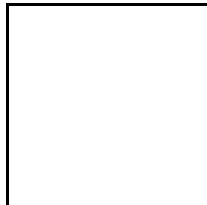


From: no-reply@web.southernwater.co.uk <no-reply@web.southernwater.co.uk>

Sent: Monday, November 4, 2024 9:06 AM

To: Developer Services <Developer.Services@southernwater.co.uk>

Subject: The Form 'Developer services submit a query' was submitted



Admin Notification

The following details has been submitted from the Southern Water website:

First name

Helena

Last name

Preston

Site name or first line of address

Denhams Corner, Horton Heath

Site post code

SO32 2BW

Application reference number

How can we help?

Other

Email

hpreston@slrconsulting.com

Phone number

07977627414

Your message

We are working on behalf of a developer who is planning to construct up to 155 new dwellings on this site. It is intended to discharge post development foul water to the public foul sewer to the north-west of the site. Refer to attached Southern Water sewer records. The site is within the catchment area of the Solent, and so is affected by nutrient neutrality. In order to calculate the nutrient loading from the proposed development, please can you advise the WWTW which will treat wastewater from the proposed development. Many thanks

Attach a document

[/media/forms/upload/form_57e84d8a-388f-45e7-b5cf-2277f3a62520/f7931b6a-a0f9-4846-bd79-3d2b0ddf9141/1590342_a0_wastewater.pdf](/media/forms/upload/form_57e84d8a-388f-45e7-b5cf-2277f3a62520/f7931b6a-a0f9-4846-bd79-3d2b0ddf9141/1590342_a0_wastewater.pdf)

Consent for storing submitted data

True

■

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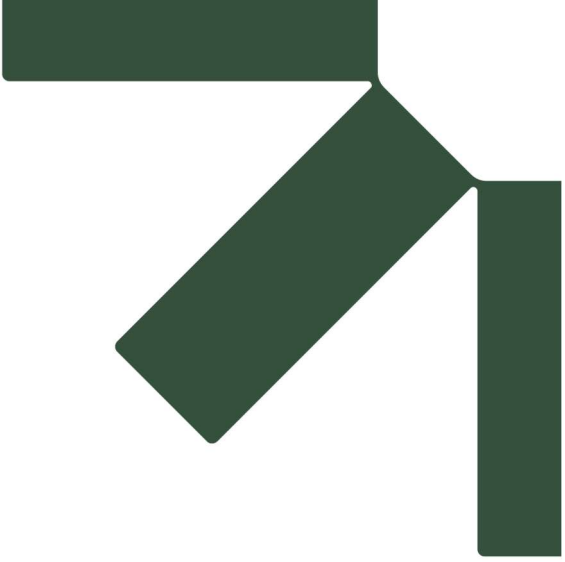
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Appendix E Calculations

Nutrient Neutrality Assessment and Mitigation Strategy

Land at Denhams Corner, Horton Heath, Eastleigh, Hampshire

Southern Strategic Land Two LLP

SLR Project No.: 416.065671.00001

14 May 2025

Nutrients from wastewater	
This sheet contains 2 tables. The tables are separated by a heading, which describes the following table. Note: You will need to fill in cells B5 to B10 in the first table 'Water infrastructure information'. Cell B11 is automatically calculated and will state '0.00' unless the user inputs have been entered. Cells A12 to A13 and B12 to B13 are automatically generated and will state 'Not applicable' depending on the inputs to cells B5 and B10. You may need to fill in cell C11 depending on the information you entered in cell B10. Cells C5 to C10 and cells C12 to C13 are intentionally blank cells. You do not need to fill in any cells in the second table 'Final calculation of nutrient load from wastewater'. Cells B17 to B19 are automatically calculated and will state '0.00' unless the user inputs have been entered to the first table 'Water infrastructure information'. Cells A20 to A23, cell B21 and cell B23 are automatically generated and will state 'Not applicable' depending on the user inputs to the first table 'Water infrastructure information'. Cell B16, cell B20 and cell B22 are intentionally blank cells. How to fill in the table 'Water infrastructure information' Cell B5: Enter the date of first occupancy. Cell B6: Enter the average occupancy rate of the development. The default rate is 2.4, this should not be edited without sufficient evidence. Cell B7: Enter the water usage. This value should be kept at 120 unless other efficiency measures are used. Cell B8: Enter the total number of dwellings or units that will be within the development site as of the project completion date. Cell B9: Choose whether the development can apply deductible acceptable loading from the dropdown list. Cell B10: Choose the receiving wastewater treatment works (WwTW) from the dropdown list. If you select 'Package Treatment Plant user defined' or 'Septic Tank user defined', you must enter their certified value of total nitrogen (TN) in cell C11. Otherwise the default values will be used in the calculation of the nutrient load associated with wastewater. Nutrient permits may be changing for the WwTW you select, from 01/01/2025, or 01/04/2030. If the date of first occupancy is in-between changing permit dates, multiple permit limits may be automatically generated in cells B11 to B13. If applicable, up to 3 values for the nutrient loading associated with wastewater will be presented in cell B19, B21, and B23.	
Water infrastructure information	
Description of required information	Data entry column - user inputs required
Date of first occupancy (dd/mm/yyyy):	01/12/2025
Average occupancy rate (people/dwelling or people/unit):	2.40
Water usage (litres/person/day):	120
Development proposal (dwellings/units):	150
Include deductible acceptable loading?	Yes
Wastewater treatment works:	Chickenhall Eastleigh WwTW
Current wastewater treatment works N permit (mg TN/litre):	25.00
Not applicable	Not applicable
Post 2030 WwTW N permit (mg TN/litre):	8
Final calculation of nutrient load from wastewater	
Description of values generated	Values generated
Post-2030 wastewater nutrient loading	
Additional population (people):	360.00
Wastewater by development (litres/day):	43200.00
Annual wastewater TN load (kg TN/yr):	113.61
Pre-2030 wastewater nutrient loading	
Annual wastewater TN load (kg TN/yr):	394.47
Not applicable	
Not applicable	Not applicable

Nutrients from current land use

This sheet contains 2 tables. The tables are separated by a heading, which describes the following table.

Note: You will need to fill in cells B5 to B8 in the first table 'Current land use information'. You will need to fill in cells A11 to A27, and B11 to B27 in the second table 'Current land uses'. Cells B28 and C11 to C28 are automatically calculated and will state '0.00' unless the user inputs have been entered. Cells D11 to D27 are automatically generated and will state 'Not applicable' depending on automatically generated data in cells C11 to C27. Row 28 is a Total Row. The Total Row states 'Totals:' in cell A28 and automatically calculates the total sum of cells B11 to B27 in cell B28 and C11 to C27 in cell C28. Cell D28 is intentionally blank.

How to fill in the table 'Current land use information'

Cell B5: Choose the operational catchment the site is located within from the dropdown list.

Cell B6: Choose the soil drainage type associated with the predominant soil type within the development site from the dropdown list.

Cell B7: Choose the annual average rainfall the development will receive from the dropdown list. If the rainfall volume is not on the list, select the nearest value.

Cell B8: Choose whether the development is in a nitrate vulnerable zone (NVZ) from the dropdown list.

How to fill in the table 'Current land uses'

Cell A11-A27: Choose the existing (pre-development) land use type(s) from the dropdown list.

Cells B11-B27: Enter the area in hectares of each land use type.

The nutrient load from current land uses is shown in cells C11-C27 for total nitrogen (TN).

The total nutrient load from current land uses is shown in cell C28 for TN.

Current land use information

Description of required information	Data entry column - user inputs required
Operational catchment:	East Hampshire Rivers
Soil drainage type:	Impeded drainage
Annual average rainfall (mm):	750.1 - 800
Within nitrate vulnerable zone (NVZ):	Yes

Current land uses

Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	Notes on data
Dairy	9.00	175.86	Not applicable
		0.00	Not applicable
		0.00	Not applicable

		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
		0.00	Not applicable
Totals:	9.00	175.86	

Nutrients from future land use		
This sheet contains one table. Note: You will need to fill in cells A5 to A21 and B5 to B21. Cells B22 and C5 to C22 are automatically generated calculations and will state '0.00' unless the user inputs have been entered. Row 22 is a Total Row. The Total Row states 'Totals:' in cell A22 and automatically calculates the total sum of cells B5 to B21 in cell B22 and C5 to C21 in cell C22. How to fill in the table 'Future land uses' Cells A5-A21: Choose the future (post-development) land use type(s) of landcover present on the new site from the dropdown list Cells B5-B21: Enter the area in hectares of each land use type. The nutrient load from future land uses is shown in cells C5 to C21 for total nitrogen (TN). The total nutrient load from future land uses is shown in cell C22 for TN.		
Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	5.25	75.84
Greenspace	3.75	11.25
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
		0.00
Totals:	9.00	87.09

Nutrients from future land use after sustainable urban drainage system (SuDS) treatment

This sheet contains one table.

Note: You will need to fill in cells A5 to A29, cells B5 to B29, cells C5 to C29, cells E5 to E29 and cells F5 to F29 if you are including SUDs to remove nutrients from the surface runoff. Cell B30, cells D5 to D30 and cells G5 to G30 are automatically calculated and will state "0.0" unless the user inputs have been entered. Cells H5 to H29 are automatically generated and will state "Not applicable" unless the total area of the landscape entered is larger than the total area of the landscape entered into the worksheet "Nutrients from future land use". Row 30 is a Total Row. The Total Row states "Totals" in cell A30 and automatically calculates the total sum of cells B5 to B29 in cell B30, cells D5 to D29 in cell D30 and cells G5 to G29 in cell G30. Cell C30, cell E30, cell F30 and cell H30 are intentionally blank.

How to fill in the table 'Suds information'

Cells A5 to A29: Choose the future (post-development) land use type(s) of landcover present on the new site within the SuDS catchment area from the dropdown list. Only landcovers entered into the worksheet titled 'Nutrients_from_future_land_use' can be entered.

Cells B5 to B29: Enter the area in hectares of each new land use type within the SuDS catchment area.

Cells C5 to C29: Enter the percentage of the flow entering the SuDS feature. If all flow is being diverted to the SuDS feature then this value should be set to 100%.

The annual total nitrogen (TN) loads associated with the landcovers in the SuDS catchment area are automatically calculated in cells D5 to D29.

Cells E5 to E29: Enter the name of the SuDS features used to intercept surface flows can be entered in. Any text can be entered into these cells.

Cells F5 to F29: Enter the nutrient removal rates associated with the SuDS features for TN.

Values for columns F must be identified by the user and must be specific to the SuDS features being implemented.

The annual TN loads removed by the SuDS features are automatically calculated in cells G5 to G29 for TN. These values are subtracted from the nutrient budget.

You do not need to fill in column H 'Notes on data'. It will state 'Not applicable' unless the total area of each landcover within the SuDS catchment area exceeds the area of the landcovers entered into the worksheet titled 'Nutrients from future land use'.

The total nutrient load removed through the SuDS features is shown in cell G30 for TN.

SuDS information

New land use type(s) within SuDS catchment area - user inputs required	SuDS catchment area (ha) - user inputs required	Percentage of flow entering the SuDS (%) - user inputs required	Annual nitrogen inputs to SuDS feature(s) (kg TN/yr)	Name of SuDS feature(s) - user inputs required	TN removal rate for features - user specified (%) - user inputs required	Annual nitrogen load removed by SuDS (kg TN/yr)	Notes on data
Residential urban land	5.25	100.00	75.84	Ponds and grassed bioswales	30.00	22.75	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
			0.00			0.00	Not applicable
Totals:	5.25		75.84			22.75	

Final nutrient budgets

This worksheet contains one table. This table is automatically populated using the outputs from the previous worksheets.

Note: You do not need to fill in any cells in the table. Cells B5 to B8 and cell B10 are automatically calculated and will state '0.00' unless the user inputs have been entered to all of the required worksheets. Cells A11 to A14, cell B12 and cell B14 are automatically generated and will state 'Not applicable' depending on the user inputs to the worksheet 'Nutrients_from_wastewater'. Cell B9, B11 and B13 are intentionally blank.

This table presents calculations that underpin the final annual nutrient budget for the development site. Up to 3 values for the nutrient budget may be presented in cells B10, B12 and B14 for total nitrogen (TN).

Total nutrient budget calculations

Description of values generated	Values generated
Wastewater TN load (kg TN/year):	113.61
Net land use TN change (kg TN/year):	-111.52
TN budget:	2.09
TN budget + 20% buffer:	2.50
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	2.50
Pre-2030 nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	339.54
Not applicable	
Not applicable	Not applicable



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