Land off Woodway Road
Sibford Ferris
Oxfordshire

Archaeological Evaluation Approach

for
Blue Cedar Homes
BBHC Project: 1900

December 2021

1. INTRODUCTION

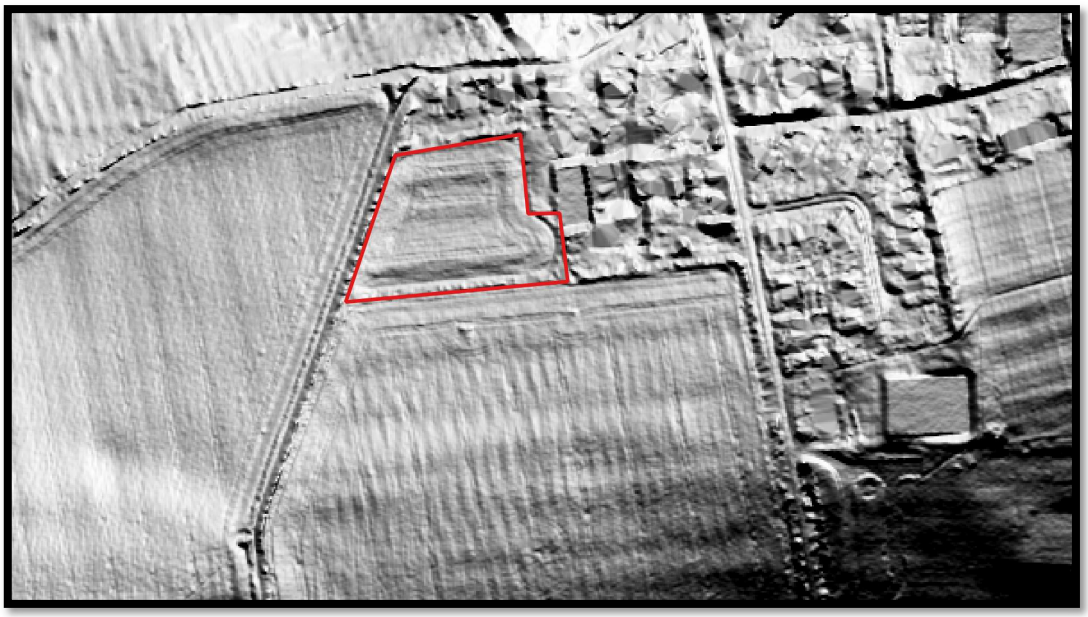
1.1 This note, explaining the approach to archaeological evaluation of the application site, has been prepared to accompany a planning application to be submitted to Cherwell District Council for a residential development on land off Woodway Road, Sibford Ferris, Oxfordshire (site centred at NGR 435391, 237175). BBHC (Bristol & Bath Heritage Consultancy Limited) was commissioned by Blue Cedar Homes to agree an appropriate scope for archaeological evaluation of the site with Oxfordshire County Council Archaeological Services (OCCAS), and to procure competitive tenders for the archaeological work required. The scope of the works has been agreed through email correspondence between Simon Cox of BBHC and Richard Oram and Victoria Green of OCCAS.

1.2 The evaluation is broken into two stages, Stage 1: Magnetometer survey, which was completed in November 2021 by SUMO Survey (Appendix 1), and Stage 2: Archaeological evaluation by trial trenching to be carried out by Red River Archaeology (RRA), the methodology for which has been agreed with OCCAS by way of an approved Written Scheme of Investigation (WSI; Appendix 2) produced in response to an archaeological evaluation *brief* produced by OCCAS. This note should therefore be read in conjunction with the SUMO Survey report included here at Appendix 1, and the RRA WSI for archaeological trial trenching included at Appendix 2.

2. ARCHAEOLOGICAL BACKGROUND

2.1 The site lies at the south-western extent of the village of Sibford Ferris, which has its origins in the Saxon period (Orion Heritage 2018). A site immediately to the south of the application site, and which formed part of the same field until the mid 20th century, has been the subject of an archaeological desk-based assessment (Orion Heritage 2018), assessment and interpretation of aerial imagery and LiDAR data (Airphoto Services 2018), Magnetometer survey (Magnitude Surveys 2019) and archaeological evaluation by trial trenching (Cotswold Archaeology 2019). Prior to these assessments and evaluations of the appeal site to the south there had been little archaeological work within the area, other than an archaeological watching brief at the Manor House. Findspots, including a number of prehistoric arrowheads and scrapers, have been recorded across the wider landscape. However, the desk-based

assessment and aerial photographic assessment, which included the application site within their study areas, suggested there was no evidence for archaeological features within the site environs, and no LiDAR data was available from DEFRA at the time. Data has since become available from the 2019 National LiDAR programme, and this has been analysed using Hillshade analysis from three different azimuths (0, 75 and 315) and Sky-View Factor (ambient occlusion) analysis. Whilst slight banks around the perimeter of the paddock, and ridges within it, are visible these appear to relate to recent ploughing and cultivation patterns that can be seen on satellite imagery, and it is not possible to discern any clear potential archaeological earthwork features either within the site, nor the known enclosures and ditches seen in the field to the south. Any prehistoric and Roman features within the site therefore appear likely to be obscured by later agricultural activity in these visualisations.



Hillshade analysis of 2019 National LiDAR 1m DTM (azimuth 0, z20, alt35)

2.2 Despite the seemingly low archaeological potential identified in the desk-based assessments the Magnitude Magnetometer survey of the appeal site strongly suggested potential rectilinear enclosure systems within the appeal site, thought to be indicative of prehistoric activity (Magnitude Surveys 2019). This was largely borne out by the subsequent Cotswold Archaeology trial-trench evaluation (CA 2019). Broadly middle to late-Iron Age pottery was recovered from a ditched enclosure and large boundary ditch, along with further isolated pits and a ditch. This was concentrated in the eastern part of the appeal site, in an area to the south-east of the application site. Limited evidence for Roman occupation was also present in the form of a second

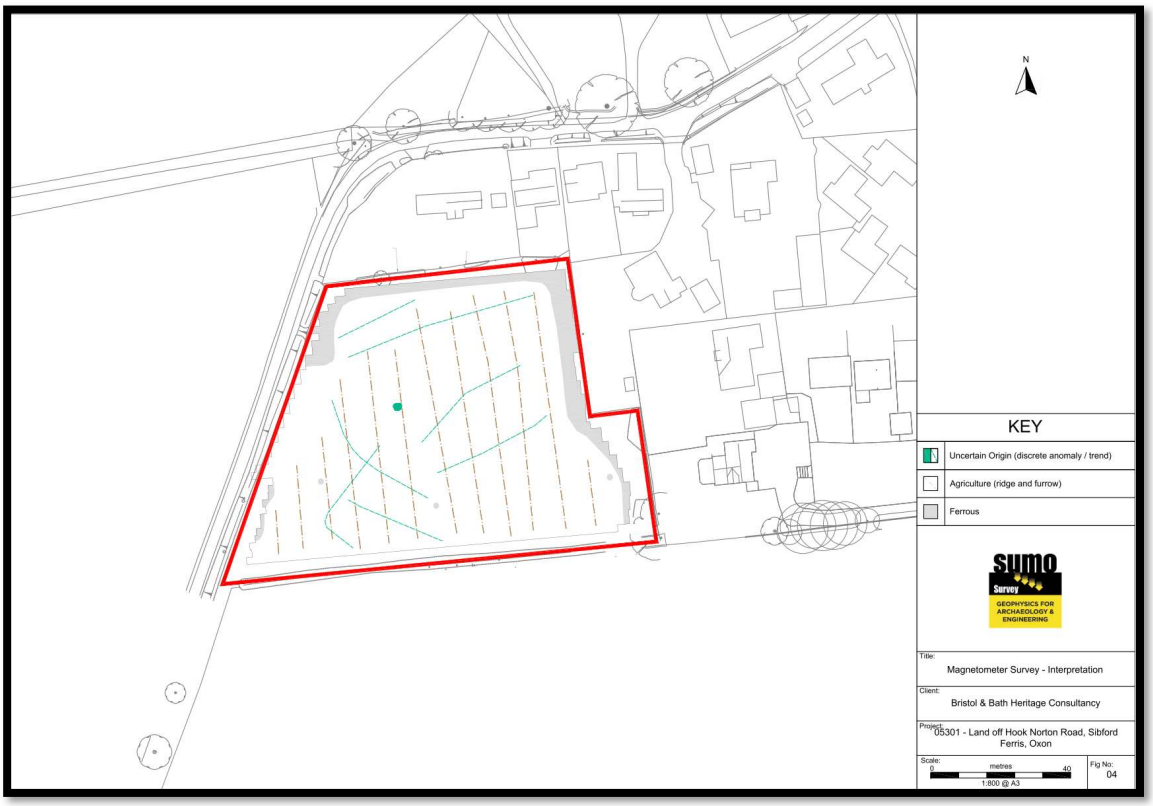
enclosure. Another large enclosure, along with pits and ditches, was identified in the east of the site, but was undated. The stratigraphic relationships between the enclosures could not be established during the evaluation, but it is suggested they were not all contemporary, and that the prehistoric settlement had grown organically over a period of time (CA 2019). Not all of the geophysical anomalies detected in the Magnetometer survey were detected during trial trenching (ibid.). Ditch-like features detected by the Magnetometer survey appear to extend northwards, below the housing development at Stewart's Court, to the immediate east of the application site, although none of the anomalies appear certain to continue into the application site itself, and it may be that activity is concentrated towards a precursor of Hook Norton Road a short distance to the east.

2.3 Despite the evidence for settlement in the Iron Age and Roman periods it seems likely the application site subsequently lay within the agricultural hinterland of the village throughout the Saxon, medieval and post-medieval periods. It remains today as undeveloped agricultural land, although the village expanded into the areas to the immediate north and east of the site in the second half of the 20th century. The boundary between the application site and the appeal site to the south appears to have been formed in the middle of the 20th century, prior to which the two formed part of a larger field.

2.4 Following on from the results of the 2019 Cotswold Archaeology evaluation and preceding geophysical survey, a Written Scheme of Investigation for Archaeological Mitigation at the appeal site to the south of the current application site was prepared in May 2021 (Orion Heritage 2021). This requires archaeological excavation of an area of enclosure features identified in the east of that site. At the time of writing, it is not known whether the mitigation works proposed have commenced or been completed.

2.5 A geophysical survey of the application site (Stage 1 of the archaeological evaluation) was carried out in November 2021 by SUMO Survey (Appendix 1). The survey did not record any magnetic responses that could be interpreted as being of definite archaeological interest. A number of uncertain linear trends and a weak pit-like response were visible in the magnetic data. Ridge and furrow ploughing was also visible in the dataset. While they were considered unlikely to be a product of natural or agricultural processes an archaeological origin could not be entirely dismissed, given the excavated features due south of the site. However, the archaeological

features revealed to the south of the application site appeared to relate to ditch-defined enclosures which did not appear to continue northwards into the application site.



SUMO Survey 2021 Magnetometer Survey interpretation (see Appendix 1 for further detail)

3. FURTHER ARCHAEOLOGICAL EVALUATION TO SUPPORT THE APPLICATION

3.1 To further investigate the anomalies detected within the Stage 1 SUMO Magnetometer survey OCCAS produced a *brief* for the Stage 2 trial trench evaluation of the site. In response Red River Archaeology has produced a WSI for the Stage 2 trial trenching (Appendix 2). The Stage 2 evaluation comprises the excavation of six trenches of 20m length by 1.8m width in the locations shown on the plan included at Appendix 2, with a further contingency of up to 30 linear metres of trenching held back for further investigation of any features of interest. The Stage 2 trenching will commence on 15 December 2021, with a monitoring visit by OCCAS on the morning of 16 December 2021 to inspect the work in progress. The works on site will take up to five days to complete, and a brief interim note on the results is expected before

Christmas, with a full report on the trial trenching expected in mid-January, well in advance of the anticipated determination date for the planning application. BBHC will continue to work closely with Red River Archaeology, and liaise with OCCAS, to ensure that the results of the Stage 2 evaluation are provided to the local authority's archaeological advisors in a timely fashion during the determination period.

4. REFERENCES

Air Photo Services 2018 Interpretation and reporting on aerial imagery to inform a Heritage Assessment at Sibford Ferris, Oxfordshire. **Air Photo Services letter report 218 07 02 – 1**

BGS (British Geological Survey) 2021 *Geology of Britain Viewer* http://mapapps.bgs.ac.uk/geologyofbritain/home.html Accessed 22 October 2021

CA (Cotswold Archaeology) 2019 *Land West of Hook Norton Road, Sibford Ferris, Cherwell, Oxfordshire: Archaeological Evaluation*. **CA Report MK0053_1**

Hey, G. and Hind, J. 2014 *Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas.* Oxford Wessex Archaeology

Magnitude Surveys 2019 *Geophysical Survey Report of Land west of Hook Norton Road, Sibford Ferris*. **Magnitude Report MSSP440**

Orion Heritage 2018 *Land West of Hook Norton Road, Sibford Ferris, Archaeological Desk-based Assessment*. **Orion Heritage Reference PN1803/1**

Orion Heritage 2021 *Land West of Hook Norton Road, Sibford Ferris, Archaeological Mitigation Written Scheme of Investigation*. **Orion Heritage Reference PN1803/Mitigation WSI/1**

RRA (Red River Archaeology) 2021 *Land off Woodway Road, Sibford Ferris, Oxon: Written Scheme of Investigation for Archaeological Evaluation. RRA Project Code* **0421**

SUMO 2021 *Geophysical Survey Report: Land off Hook Norton Road, Sibford Ferris, Oxon. SUMO Report* **05301**

APPENDIX 1: MAGNETOMETER SURVEY REPORT

GEOPHYSICAL SURVEY REPORT

Land off Hook Norton Road, Sibford Ferris, Oxon

Client

Bristol & Bath Heritage Consultancy

For

Blue Cedar Homes Ltd

Survey Report

SUMO-05301

OAIS Ref. No.

sumogeop1-503058

Date

November 2021

Survey Report 05301: Land off Hook Norton Road, Sibford Ferris, Oxon

Survey dates	15 November 2021
Field co-ordinator	Liam Brice-Bateman BA
Field Team	Liz Williams BA
Report Date	26 November 2021
CAD Illustrations	Thomas Cockcroft MSc
Report Author	Thomas Cockcroft MSc
Project Manager	Simon Haddrell BEng AMBCS PCIfA
Report approved	Dr John Gater BSc DSc(Hon) MCIfA FSA

SUMO Geophysics Ltd
Cowburn Farm
Market Street
Thornton
Bradford
BD13 3HW

T: 01274 835016

SUMO Geophysics Ltd
Vineyard House
Upper Hook Road
Upton upon Severn
Worcestershire
WR8 0SA

T: 01684 592266

www.sumoservices.com
geophysics@sumoservices.com

TABLE OF CONTENTS

1. LIST OF FIGURES

Figure 01	NTS	Site Location
Figure 02	1:800	Magnetometer Survey - Greyscale Plot
Figure 03	1:800	Magnetometer Survey - Colour Plot
Figure 04	1:800	Magnetometer Survey - Interpretation
Figure 05	1:1200	Magnetometer Survey - Greyscale and Colour Plots / Interpretation / 1884 - 1887 Ordnance Survey Maps (OH 2018)
Figure 06	1:1100	Magnetometer Survey - Greyscale Plot / Trench Location Plan Showing Archaeological Features (CA 2019)
Figure 07	1:1100	Magnetometer Survey - Interpretation / Trench Location Plan Showing Archaeological Features (CA 2019)
Figure 08	1:800	Minimally Processed Data - Greyscale Plot
Figure 09	1:800	XY Trace Plot (clipped at +/-15nT)

2. SURVEY TECHNIQUE

Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site.

Bartington Grad 601-2 Traverse Interval 1.0m Sample Interval 0.25m

3 SUMMARY OF RESULTS

3.1 A magnetometer survey of 0.7ha of land off Hook Norton Road, Sibford Ferris has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. A number of uncertain linear trends and a weak pit-like response are visible in the magnetic data. While they are likely to be a product of natural or agricultural processes an archaeological origin cannot be entirely dismissed given the excavated features due south of the site. Ridge and furrow ploughing is also visible in the dataset.

4 INTRODUCTION

4.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for residential development. This survey forms part of an archaeological investigation being undertaken by **Bristol & Bath Heritage Consultancy** on behalf of **Blue Cedar Homes Ltd.**

4.2 Site details

NGR / Postcode	SP 35397 37174 / OX15 5RF
Location	The site is located 3.7km north of Hook Norton and 4.5km south-east of Lower Brailes. The survey area is bounded to the west by Woodway Road and to the east by houses off Hook Norton Road.
HER	Oxfordshire County Council
OASIS Ref. No.	sumogeop1-503058
District	Cherwell
Parish	Sibford Ferris
Topography	Generally flat
Current Land Use	Pasture
Geology (BGS 2021)	Bedrock: Northampton Sand Formation - sandstone, limestone and ironstone Superficial: None recorded
Soils (CU 2021)	Soilscape 7: Freely draining slightly acid but base-rich soils.
Archaeology (CA 2019)	In 2019 Cotswold Archaeology carried out an archaeological evaluation due south of the survey area. A previous geophysical survey of the site identified a number of anomalies indicative of prehistoric settlement features, these results can be seen in Figures 06 and 07. The evaluation identified a concentration of archaeological remains within the eastern part of the site, with a lower density of archaeological remains within the southern part of the site. The earliest identified features comprised ditches forming elements of an enclosure (Enclosure 1) and a large boundary ditch, along with further isolated pits and a ditch, which contained pottery of broadly Middle to Late Iron Age date. The evidence indicates domestic settlement within the Iron Age, concentrated in the eastern part of the site. Further limited evidence for Roman occupation associated with a second enclosure (Enclosure 2) was also identified. A further large, undated, possible enclosure (Enclosure 3) was identified in the eastern part of the site, along with pits and ditches further indicating settlement activity.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	0.7 ha

4.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the survey area which may be associated with the excavated archaeological remains located due south.

5 RESULTS

5.1 *Probable / Possible Archaeology*

5.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

5.2 *Uncertain*

5.2.1 A number of linear trends and a weak pit-like anomaly have been recorded in the survey and have been assigned to the category of *Uncertain*. They lack the defined morphology of anomalies that would normally be interpreted as being of archaeological interest. These anomalies could reflect variations in the underlying pedology or be a product of modern agricultural processes; the two parallel uncertain trends in the north of the site could be headlands for the ridge and furrow ploughing. However, given that archaeological features have been excavated due south of the survey (see Figures 06 and 07); archaeological origins for these responses cannot be entirely dismissed. The previous geophysical survey and evaluation did not record any archaeological anomalies / features extending into the site.

5.3 *Agricultural – Ridge and Furrow*

5.3.1 A series of parallel broad, widely spaced linear anomalies are visible in the magnetic data and indicate past ridge and furrow agricultural regimes.

5.4 *Ferrous / Magnetic Disturbance*

5.4.1 Ferrous responses close to boundaries are due to adjacent fences and gates. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

6 DATA APPRAISAL & CONFIDENCE ASSESSMENT

6.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is variable. The results from this survey indicate the presence of ridge and furrow ploughing plus uncertain responses; given the magnetometer survey due south of the site identified numerous features of archaeological interest there is no *a priori* reason why archaeological features would not have been detected in this survey. However, weaker anomalies of archaeological interest are likely to have been masked by the ridge and furrow ploughing, if present.

7 CONCLUSION

7.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. A number of linear curvilinear trends and a weak pit-like response have been categorised as uncertain; they are likely to be a product of natural or agricultural processes. However, an archaeological provenance cannot be entirely dismissed given the excavated features located due south of the site. Ridge and furrow ploughing is also visible in the dataset.

8 REFERENCES

BGS 2021 British Geological Survey, Geology of Britain viewer [accessed 26/11/2021] *website*: (http://www.bgs.ac.uk/opengeoscience/home.html?Accordion1=1#maps)

CA 2019 *Land west of Hook Norton Road, Sibford Ferris, Cherwell Oxfordshire; Archaeological Evaluation*. Cotswold Archaeology, Cirencester

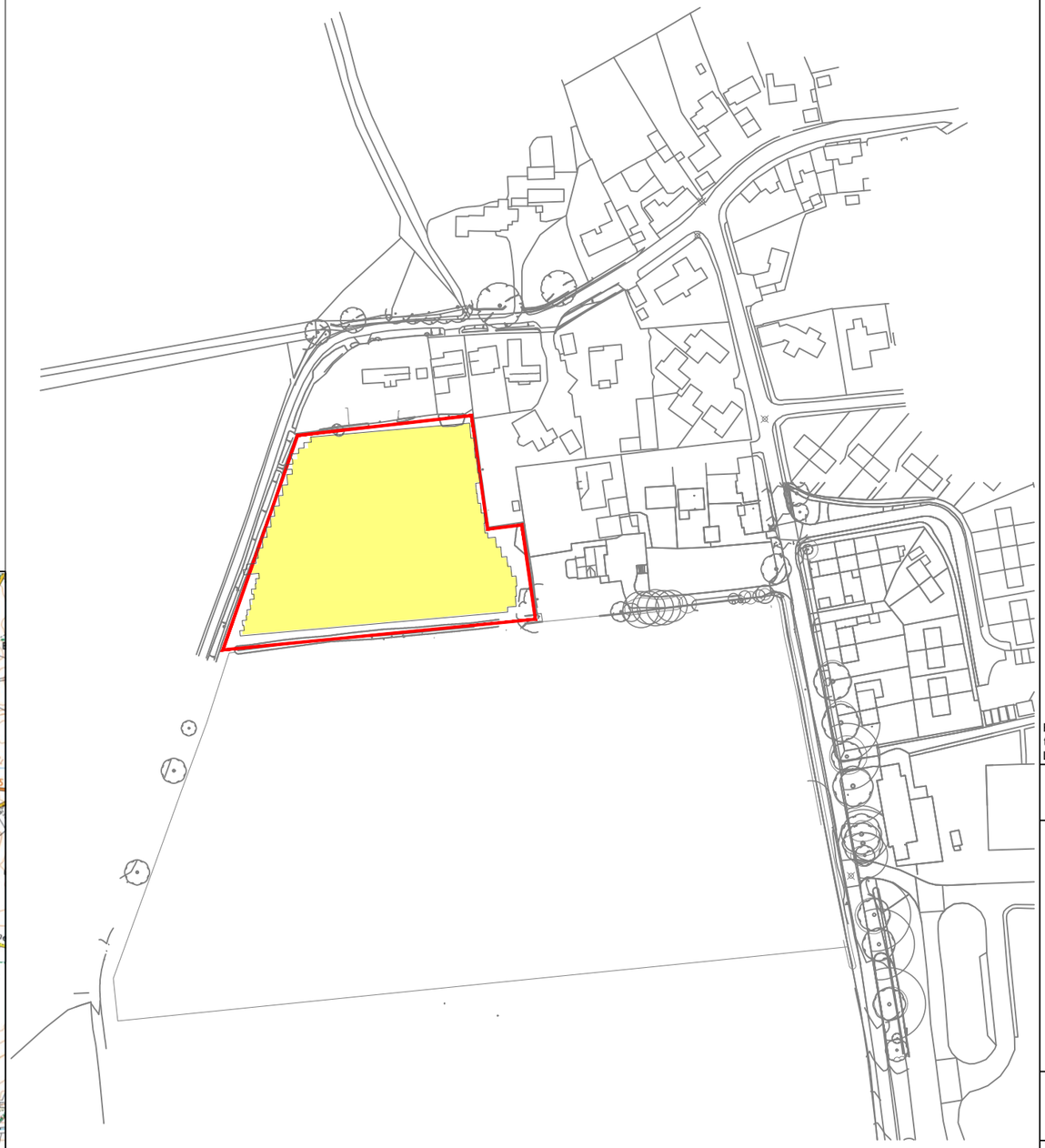
CIfA 2014 *Standard and Guidance for Archaeological Geophysical Survey.* Amended 2016. CifA Guidance note. Chartered Institute for Archaeologists, Reading http://www.archaeologists.net/sites/default/files/CifAS%26Ggeophysics_2.pdf

CU 2021 The Soils Guide. Available: www.landis.org.uk. Cranfield University, UK. [accessed 26/11/2021] *website: http://mapapps2.bgs.ac.uk/ukso/home.html*

EAC 2016 *EAC Guidelines for the Use of Geophysics in Archaeology,* European Archaeological Council, Guidelines 2.

EH 2008 *Geophysical Survey in Archaeological Field Evaluation.* English Heritage, Swindon https://content.historicengland.org.uk/images-books/publications/geophysical-survey-in-archaeological-field-evaluation/geophysics-guidelines.pdf/

OH 2018 *Land west of Hook Norton Road, Sibford Ferris; Archaeological Desk-Based Assessment. Orion Heritage, London*



Reproduced from Ordnance Survey's 1:25 000 map of 1998 with the permission of the controller of Her Majesty's Stationery Office. Crown Copyright reserved. Licence No: 100018665

Survey Areas

N

sumo Survey
GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title:
Site Location

Client:
Bristol & Bath Heritage Consultancy

Project:
05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:
NOT TO SCALE

Fig No:
01

N

+2nT

-1nT

sumo Survey

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title:

Magnetometer Survey - Greyscale Plot

Client:

Bristol & Bath Heritage Consultancy

Project:

05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:

0 metres 40

1:800 @ A3

Fig No:

02

N

+100nT

-100nT

sumo Survey

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title:

Magnetometer Survey - Colour Plot

Client:

Bristol & Bath Heritage Consultancy

Project:

05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:

0 metres 40

1:800 @ A3

Fig No:

03

KEY

	Uncertain Origin (discrete anomaly / trend)
	Agriculture (ridge and furrow)
	Ferrous

sumo Survey
GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

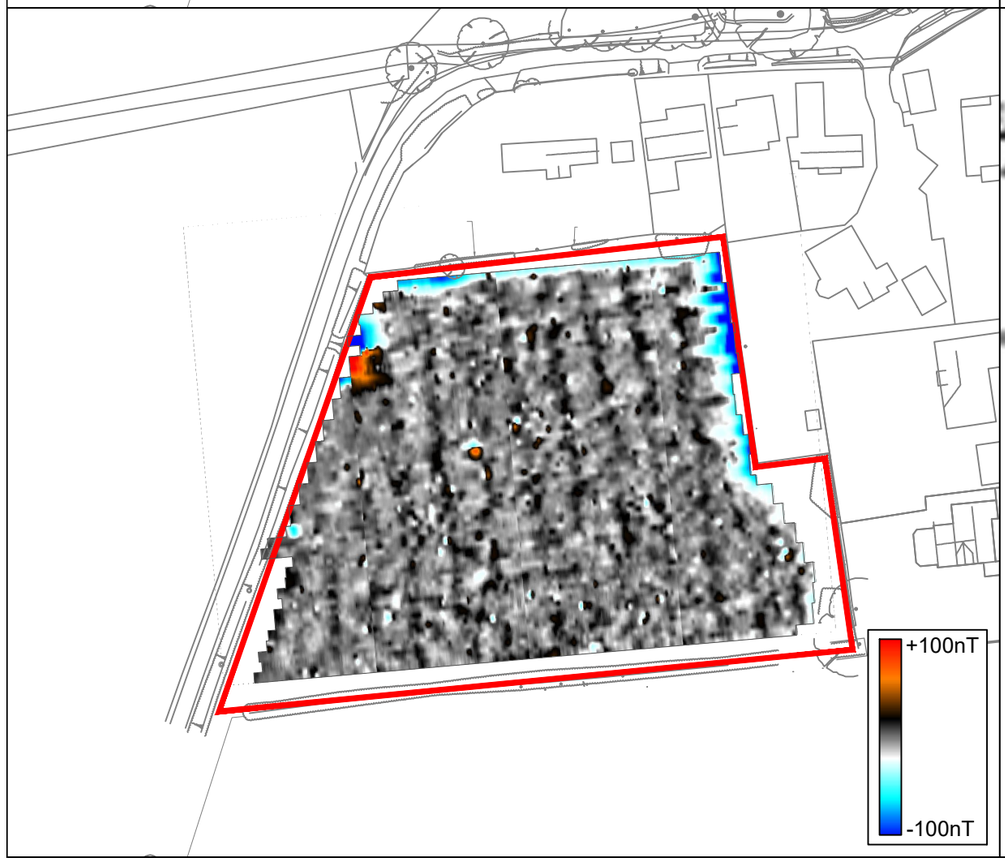
Title:
Magnetometer Survey - Interpretation

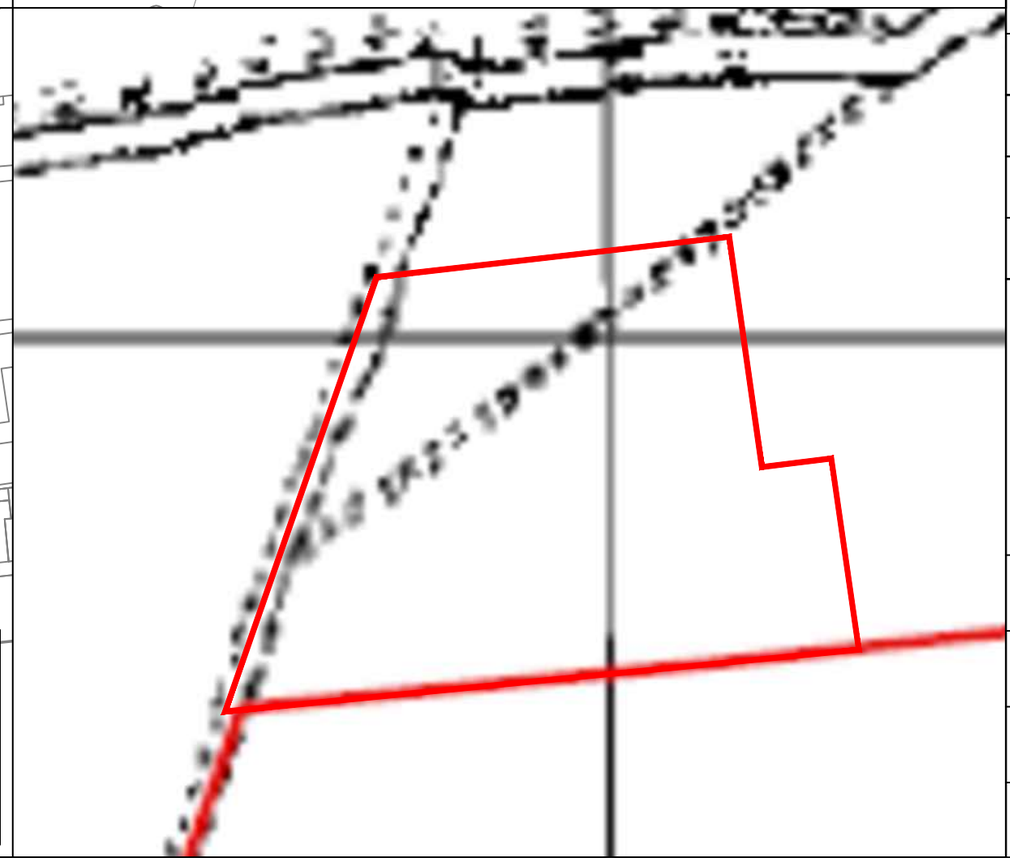
Client:
Bristol & Bath Heritage Consultancy

Project:
05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:
0 metres 40
1:800 @ A3

Fig No:
04





N

KEY

	Uncertain Origin (discrete anomaly / trend)
	Agriculture (ridge and furrow)
	Ferrous

sumo Survey
GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title: Magnetometer Survey - Greyscale and Colour Plots / Interpretation / 1884 - 1887 Ordnance Survey Maps (OH 2018)

Client: Bristol & Bath Heritage Consultancy

Project: 05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale: 0 metres 60
1:1200 @ A3

Fig No: 05

Title: Magnetometer Survey - Greyscale Plot / Trench Location Plan Showing Archaeological Features (CA 2019)

Client: Bristol & Bath Heritage Consultancy

Project: 05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale: 0 metres 55
1:1100 @ A3

Fig No: 06


N
Site boundary
Evaluation trench
Archaeological feature
30m buffer around SZTT
Geophysical survey
(Magnitude Surveys, 2019)
Archaeology probable (strong)
Archaeology probable (weak)
Archaeology probable (spread)
Archaeology possible (strong)
Archaeology possible (weak)
Agricultural (weak)
Natural (strong)
Natural (weak)
Magnetic disturbance
Ferrous/debris (spread)
Ferrous (spike)
Agricultural (trend)
Service
KEY
Uncertain Origin (discrete anomaly / trend)
Agriculture (ridge and furrow)
Ferrous
sumo Survey
GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING
Title: Magnetometer Survey - Interpretation / Trench Location Plan Showing Archaeological Features (CA 2019)
Client: Bristol & Bath Heritage Consultancy
Project: 05301 - Land off Hook Norton Road, Sibford Ferris, Oxon
Scale: 0 metres 55
1:1100 @ A3
Fig No: 07

N

+10nT

-10nT

sumo Survey

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title:

Minimally Processed Data - Greyscale Plot

Client:

Bristol & Bath Heritage Consultancy

Project:

05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:

0 metres 40

1:800 @ A3

Fig No:

08

sumo Survey

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

Title:

XY Trace Plot (clipped at +/-15nT)

Client:

Bristol & Bath Heritage Consultancy

Project:

05301 - Land off Hook Norton Road, Sibford Ferris, Oxon

Scale:

0 metres 40

1:800 @ A3

Fig No:

09

Appendix A - Technical Information: Magnetometer Survey Method, Processing and Presentation

Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

Instrumentation: Bartington *Grad* 601-2

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m. The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

Data Processing

Zero Mean Traverse	This process sets the background mean of each traverse within each grid to zero. The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/ Colourscale Plot	This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.

Presentation of results and interpretation

The presentation of the results includes a ‘minimally processed data’ and a ‘processed data’ greyscale plot. Magnetic anomalies are identified, interpreted and plotted onto the ‘Interpretation’ drawings.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: Abbey Wall or Roman Road. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: Probable, or Possible Archaeology. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification Possible.

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall,* etc.) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

Archaeology / Probable Archaeology	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
Possible Archaeology	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
Industrial / Burnt-Fired	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
Former Field Boundary (probable & possible)	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
Ridge & Furrow	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
Agriculture (ploughing)	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
Land Drain	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
Natural	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
Magnetic Disturbance	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
Service	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
Ferrous	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
Uncertain Origin	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of *Possible Archaeology* / *Natural* or (in the case of linear responses) *Possible Archaeology* / *Agriculture*; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

Summary for sumogeop1-503058

OASIS ID (UID)	sumogeop1-503058
Project Name	Geophysical Survey at Land off Hook Norton Road, Sibford Ferris, Oxon
Activity type	Geophysical Survey, MAGNETOMETRY SURVEY
Project Identifier(s)	05301
Planning Id	
Reason For Investigation	Planning requirement
Organisation Responsible for work	SUMO Geophysics Ltd.
Project Dates	15-Nov-2021 - 15-Nov-2021
Location	Land off Hook Norton Road, Sibford Ferris, Oxon NGR : SP 35392 37167 LL : 52.0317919560689, -1.48551984497011 12 Fig : 435392,237167
Administrative Areas	Country : England County : Oxfordshire District : Cherwell Parish : Sibford Ferris
Project Methodology	A temporary grid system will be established over the site and marked out using canes. The location of the grid will be set out using an RTK GPS system theoretically accurate to some 0.01m and referenced to OS co-ordinates. Hand Held: Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors (see below) and readings are logged at 0.25m centres along traverses 1.0m apart across 30m grids. The collection of data at 0.25m centres provides an appropriate methodology balancing cost and time with resolution as per Historic England guidelines. Two sensors mounted 1m horizontally apart and very accurately aligned to nullify the effects of the earth's magnetic field. Readings relate to the difference in localised magnetic anomalies compared with the general magnetic background.

Project Results	The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. A number of linear curvilinear trends and a weak pit-like response have been categorised as uncertain; they are likely to be a product of natural or agricultural processes. However, an archaeological provenance cannot be entirely dismissed given the excavated features located due south of the site. Ridge and furrow ploughing is also visible in the dataset.
Keywords	Ridge And Furrow - POST MEDIEVAL - FISH Thesaurus of Monument Types
HER	Oxfordshire HER - unRev - STANDARD
HER Identfiers	
Archives	

sumo Survey

GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING

- Archaeological
- Geophysical
- Laser Scanning
- Measured Building
- Topographic
- Utility Mapping

SUMO Services Ltd, incorporated under the laws of England and Wales,
Company Registration No.4275993.
Registered Office Unit 8 Hayward Business Centre, New Lane, Havant, Hampshire, PO9 2NL

APPENDIX 2: WRITTEN SCHEME OF INVESTIGATION FOR ARCHAEOLOGICAL TRIAL TRENCH EVALUATION

Land off Woodway Road
Sibford Ferris
Oxfordshire

Written Scheme of Investigation for Archaeological Evaluation

Date: November 2021
Client: Blue Cedar Homes
Project Code: RR0421

Red River Archaeology

Land Off Woodway Road
Sibford Ferris
Oxfordshire

Written Scheme of Investigation
for Archaeological Evaluation

Rev Number	Description	Undertaken	Approved	Date
1.0	Draft for approval by Oxfordshire County Planning Archaeologist	PW	MC	26/11/21
1.1	Addressed external comments	PW	MC	30/11/2021

CONTENTS

FIGURES

1. INTRODUCTION

1.1 Project Background

1.1.1 This document is a Written Scheme of Investigation (WSI) for archaeological evaluation on land off Woodway Road, Sibford Ferris, Oxfordshire (National Grid Reference SP 35383 37172), prepared for Bristol and Bath Heritage Consultancy (BBHC) on behalf of the client Blue Cedar Homes.

1.1.2 The site has been outlined for a proposed residential development and the archaeological evaluation forms part of the pre-application assessment of the site. The archaeological investigation of land immediately to the south of the site demonstrated the existence of archaeological remains which may extend into the present site. Therefore, in line with local policy, an archaeological evaluation for the present site will be deemed essential to understand the likely presence/absence and significance of any archaeological remains within it. The evaluation is broken into two stages, Stage 1: Magnetometer survey, which has been completed by SUMO Survey, and Stage 2: Archaeological evaluation by trial trenching, the methodology for which is set out in this Written Scheme of Investigation.

1.1.3 The scope of the archaeological evaluation works required was defined in *Land off Hook Norton Road, Sibford Ferris, Oxon: Design Brief for Archaeological Field Evaluation* (2021) issued by Oxfordshire County Archaeological Services (OCAS) and *Archaeological Evaluation: Stage 2 Archaeological Trial Trench Evaluation* by BBHC (2021), and it forms the basis of this WSI.

1.1.4 This WSI has been guided in its composition by the Standard and guidance: Archaeological field evaluation (CIfA, 2020a), and *the Management of Archaeological Projects 2* (English Heritage, 1991), and the *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide (*Historic England, 2015).

1.2 Site Location and Description

1.2.1 The Site (Figure 1) covers an area of approximately 7600m², and comprises a paddock located at the south-western edge of the village of Sibford Ferris. It is bounded to the north by the gardens of residential properties fronting on to Woodway Road, to the west by Woodway Road, to the south by the development site noted above (1.1.2) and to the east by residential properties fronting Woodway Road and Stewart's Court. The site is situated approximately 1km to the north of the river Stour. Ground levels within the site vary from 166m aOD (above Ordnance Datum) in the north-west to c. 173m aOD in the south-east.

1.2.2 The underlying bedrock geology across the entirety of the application site is mapped as Northampton Sand Formation, sandstone, limestone and ironstone (BGS online viewer, accessed 22/11/2021). No superficial deposits are recorded.

1.3 Archaeological Background

1.3.1 The site lies at the south-western extent of the village of Sibford Ferris, which has its origins in the Saxon period (Orion Heritage, 2018). The development site immediately to the south of the present site, and which formed part of the same field until the mid 20th century, has been the subject of an archaeological desk-based assessment (Orion Heritage, 2018), assessment and interpretation of aerial imagery (Airphoto Services, 2018), Magnetometer survey (Magnitude Surveys, 2019) and archaeological evaluation by trial trenching (Cotswold Archaeology, 2019). Prior to these assessments and evaluations of the development site to the south, there had been little archaeological work within the area, other than an archaeological watching brief at the Manor House. Findspots, including a number of prehistoric arrowheads and scrapers, have been recorded across the wider landscape. However, the desk-based assessment and aerial photographic assessment, which included the present application site within their study areas, suggested there was no evidence for archaeological features within the site environs.

1.3.2 LiDAR data has been analysed using Hillshade analysis from three different azimuths (0, 75 and 315) and Sky-View Factor (ambient occlusion) analysis. Whilst slight banks around the perimeter of the paddock, and ridges within it, are visible these appear to relate to recent ploughing and cultivation patterns that can be seen on satellite imagery, and it is not possible to discern any clear potential archaeological earthwork features either within the site, nor the known enclosures and ditches seen in the field to the south. Any Prehistoric and Roman features within the site, therefore, appear likely to be obscured by later agricultural activity in these visualisations.

1.3.3 Despite the seemingly low archaeological potential identified in the desk-based assessments, the Magnitude magnetometer survey of the development site to the south strongly suggested potential rectilinear enclosure systems within the development site, thought to be indicative of prehistoric activity (Magnitude Surveys, 2019). This was largely borne out by the subsequent Cotswold Archaeology (2019) trial-trench evaluation. Broadly middle to late-Iron Age pottery was recovered from a ditched enclosure and large boundary ditch, along with further isolated pits and a ditch. This was concentrated in the eastern part of the development site, in an area to the south-east of the present site.

1.3.4 Limited evidence for Roman occupation was also present in the form of a second enclosure. Another large enclosure, along with pits and ditches, was identified in the east of the site, but was undated. The stratigraphic relationships between the enclosures could not be established during the evaluation, but it is suggested they were not all contemporary, and that the prehistoric settlement had grown organically over a period of time (Cotswold Archaeology, 2019). Ditch-like features detected by the magnetometer survey appear to extend northwards, below the housing development at Stewart's Court, to the immediate east of the present site,

although none of the anomalies appear certain to continue into the present site itself, and it may be that activity is concentrated towards a precursor of Hook Norton Road a short distance to the east.

1.3.5 Despite the evidence for settlement in the Iron Age and Roman periods, it seems likely the site subsequently lay within the agricultural hinterland of the village throughout the Saxon, medieval and post-medieval periods. It remains today as undeveloped agricultural land, although the village expanded into the areas to the immediate north and east of the site in the second half of the 20th century. The boundary between the present site and the development site to the south appears to have been formed in the middle of the 20th century, prior to which the two formed part of a larger field.

1.3.6 Following on from the results of the 2019 Cotswold Archaeology evaluation and preceding geophysical survey, a Written Scheme of Investigation for Archaeological Mitigation at the development site to the south of the current site was prepared in May 2021 (Orion Heritage, 2021). This requires archaeological excavation of an area of enclosure features identified in the east of that site. At the time of writing, it is not known whether the mitigation works proposed have commenced or been completed.

2. AIMS AND METHODOLOGY

2.1 Aims and Objectives of the Evaluation

2.1.1 In accordance with *Standard and guidance: Archaeological field evaluation* (CIfA, 2020a), the evaluation has been designed to be minimally intrusive and minimally destructive to archaeological remains. The information gathered will enable the local planning authority to identify and assess the particular significance of any heritage asset, consider the impact of the proposed development upon it, and to avoid or minimise conflict between the heritage asset's conservation and any aspect of the development proposal, in line with the *National Planning Policy Framework* (Department of Communities and Local Government, 2019). The aims of the evaluation proposed in this WSI are to:

- Determine the extent, condition, nature, character, date and significance of any archaeological remains encountered
- Establish the nature of the activity on the site
- Identify any artefacts relating to the occupation or use of the site
- Provide further information on the archaeology of the site from any archaeological remains encountered
- Determine the heritage significance of any archaeological remains encountered
- To make available to interested parties the results of the investigation subject to any confidentiality restrictions
- These results will be used to inform any potential need for further archaeological evaluation or mitigation works, with reference to the research priorities identified within the *Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas* (https://library.thehumanjourney.net/2597/).

2.1.2 These aims will be achieved through pursuit of the following specific objectives:

- To define and identify the nature of archaeological deposits on site, and date these where possible
- To attempt to characterise the nature and preservation of the archaeological sequence and recover as much information as possible about the spatial patterning and extent of features present on the site
- To recover a well dated stratigraphic sequence which will attempt to determine the complexity of the horizontal and vertical stratigraphy present, and to recover coherent artefact, ecofact and environmental samples

- To determine the potential of the site to provide palaeoenvironmental and/or economic evidence and the forms in which such evidence may be present

2.1.3 While there is no specific archaeological information about the site itself, it has the potential to seek address research aims defined within the *Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas* (https://library.thehumanjourney .net/2597/). Relevant related topics from the Research Agenda include:

- Sites with well-preserved deposits of both late Iron Age and Roman date should be given careful attention in order to investigate continuity of local tradition at these sites
- The evidence for major change in settlement occupation across the diverse landscapes of the region between the late Iron Age and the early medieval period needs to be collated
- The identification of the extent to which there was continuity of use between Romano-British sites and Anglo-Saxon
- Identifying and exploring the extent to which Romano-British agricultural practices persisted into the Anglo-Saxon period
- Arriving at a better understanding of the relationship – economic, political, social – between incoming Anglo-Saxons and surviving Romano-British communities across the region

2.2 Methodology

2.2.1 The archaeological fieldwork will be undertaken by Red River Archaeology Ltd and consists of the excavation of six evaluation trenches, measuring 20m x 1.8m as shown on Figure 1. The trenches have been positioned to investigated geophysical anomalies and to test 'blank' areas of the site. An additional 30m of contingency trenching is available to further investigate archaeological remains. The contingency will be deployed in agreement with BBHC and OCAS.

2.2.2 Any amendments to the investigation plan will be agreed with the archaeological advisor to the local planning authority. Evaluation trenches will be set out on OS National Grid (NGR) co-ordinates using GPS, and scanned for live services by trained staff using CAT and Genny equipment. The position of the evaluation trench may be adjusted on site to account for services and other practical constraints, with the approval of the archaeological advisor to local planning authority, but will aim to sample the identified potential linear feature if practicable. The final 'as dug' plan will be recorded with GPS.

2.2.3 Non-significant overburden will be removed to the top of archaeological deposits or natural substrates, whichever is encountered first. This will be achieved through use of a mechanical

excavator with a toothless grading bucket under constant archaeological supervision. Thereafter cleaning and excavation will be conducted by hand.

2.2.4 All archaeological deposits and features will be subjected to appropriate levels of investigation without compromising the feature with regard to future study. Decisions about the relative value of archaeological deposits and features will be made in consultation with the archaeological advisor to the local planning authority. Sample excavation of archaeological deposits will be limited and minimally intrusive, sufficient to achieve the aims and objectives identified above, and at this stage there is no requirement to sample all archaeological features encountered. Where appropriate, excavation will not compromise the integrity of the archaeological record, and will be undertaken in such a way as to allow for the subsequent protection of remains either for conservation or to allow more detailed investigations to be conducted under better conditions at a later date.

2.2.5 All spoil heaps will be examined for finds, including scanning with a metal detector.

2.2.6 Excavation of each context excavated, will wherever possible be carried out in such a way as to produce at least one representative cross-section of the deposit. Intersections of features will be investigated to record and understand their stratigraphic relationships.

2.3 Human Remains

2.3.1 If human remains are encountered the client's archaeological advisor, the archaeological advisor to the local planning authority and the local Coroner will be informed immediately. Human remains should be left in situ and only removed if absolutely necessary. Where excavation of human remains is unavoidable, it will be undertaken following the provision of a Burial Licence issued by the Ministry of Justice (Coroner's Division) in accordance with Section 25 of the Burial Act 1857. It is essential that the post-excavation assessment of excavated human remains contains an analysis of the material and a statement for the final deposition of the assemblage. The qualified statement must address future research potential, where applicable, and the options for reburial.

2.3.2 If human remains are uncovered, which require excavation, they will be excavated with due reverence and in accordance with recognised professional guidelines (Historic England, 2018 and IFA, 2004). The site will be adequately screened from public view. If human remains are not to be removed their physical security will be ensured, by backfilling as soon as possible after recording.

2.4 Treasure

2.4.1 Any artefacts that fall under the statutory definition of Treasure (as defined by the Treasure Act of 1996 and its revision of 2002) will be reported immediately to the client, the

archaeological advisor to the local planning authority, the relevant Coroner's Office, the Finds Liaison Officer (FLO - Edward Caswell: Edward.Caswell@Oxfordshire.gov.uk) and the landowner. A treasure receipt will be completed, and a report submitted to the FLO within 14 days of understanding the find is Treasure. Failure to report within 14 days is a criminal offence. The FLO will obtain a treasure number and report on to the coroner. The treasure receipt and report will include the date and circumstances of the discovery, the identity of the finder (Red River Archaeology) and (as exactly as possible) the location of the find.

2.4.2 To protect the finds from theft, Red River Archaeology will record the finds and remove them to a safe place. Where recording and removal is not feasible or appropriate on the day of discovery Red River Archaeology shall, in liaison with the client and the archaeological advisor to the local planning authority, ensure that adequate site security is provided.

2.5 Survey Control

2.5.1 Horizontal survey control of the site will be by means of a co-ordinate grid, using metric measurements, relative to the National Grid.

2.5.2 Vertical survey control will be tied to the Ordnance Survey datum. Details of the method employed will be recorded, including the assumed height of the reference point.

2.5.3 The electronic survey record will be retained with the project archive.

2.6 Recording

2.4.1 All recording will be by Red River Archaeology standard method and will be undertaken on pro forma record sheets. Red River Archaeology has adopted the Museum of London Recording Manual (MOLA, 1994), which is issued to all sites as standard; these will be organised to be compatible in analogue and digital formats with other archaeological records in Oxfordshire. All contexts, special finds and environmental samples will be given unique numbers. Any waterlogged wood, bone or metallurgical samples taken will also receive unique numbers.

2.4.2 Each archaeological feature or deposit will be recorded by means of a measured plan at an appropriate scale (if not done by use of GPS which captures data at 1:1, these will generally be at 1:20 or 1:50). Spot heights will be taken on the deposit and their location recorded on the plan.

2.4.3 Cross sections will be recorded by means of a measured drawing at an appropriate scale (generally 1:10). The height of a datum on the drawing will be calculated and recorded. The locations of cross sections will be recorded either on the site plans, or relative to the site grid. Cut features will be recorded in profile and plan at an appropriate scale and their location accurately identified.

2.4.4 All drawn records will be clearly marked with a unique site number, and will be individually identified. The scale of the plan will be recorded. All drawings will be drawn on dimensionally stable media. All plans will be drawn relative to the site grid and at least two grid references marked on each plan.

2.4.5 Each archaeological context will be recorded separately by means of a written description. The stratigraphic relationships of each context will be recorded. Red River Archaeology *pro forma* record sheets will be used throughout. An index will be kept of all record types. All trenches will be recorded even if no archaeological deposits have been identified.

2.4.6 A full photographic record will be made using Digital Single Lens Reflex (SLR) cameras equipped with an image sensor of not less than 10 megapixels in high resolution TIFF (uncompressed) format. This will record both the detail and the general context of the principal features and the site as a whole.

2.6.7 Images may be captured in RAW format, but archiving should follow the guidance given by Historic England (2015b). Digital images will be archived in both a JPEG and TIFF formats. The latter as uncompressed 8-bits per channel TIFF version 6 file of not less than 25Mbs (See section 2.3 of the Historic England guidance). Each excavation context will be recorded photographically prior to removal. All photographs will feature an appropriately sized scale.

2.7 Finds and Samples

2.7.1 Artefact collection policy will be concerned with the provision of adequate samples for meeting the objectives of the work. If archaeological objects are recovered an appropriate retention/ discard strategy will be agreed with the relevant repository. Discarded artefactual materials will be described and quantified through assignment to broad categories in the field.

2.7.2 All retained finds and archaeoenvironmental samples are to be treated and conserved in accordance with the English Heritage guidance document *A Strategy for the Care and Investigation of Finds* (English Heritage, 1995) and the United Kingdom Institute for Conservation's document *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC, 1990). Assessment and analysis of finds and archaeoenvironmental samples will be undertaken, as necessary. Finds and sample storage will be at Red River Archaeology offices.

2.7.3 All finds, where appropriate, will be retained from each archaeological context excavated.

2.7.4 All finds, where appropriate, shall be washed.

2.7.5 All pottery, and other finds, where appropriate, shall be marked with the site code and context number.

2.7.6 Finds work will be undertaken in line with the Chartered Institute for Archaeologists *Standards* and *Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA, 2020b).

2.8 Environmental Sampling

2.8.1 Suitable contexts will be subjected to environmental sampling at an appropriate scale in accordance with *Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation, 2nd Edition* (English Heritage, 2011). As a minimum bulk environmental soil samples will be a minimum of 40 litres, and if appropriate up to 100%, will be taken from fills of well-dated or significant features or fills with good preservation of organic or burnt organic plant remains. Buried soils and sediment sequences will be inspected and recorded on site by the environmental coordinator or suitable member of his team. Samples for laboratory assessment will be collected as appropriate. Where there is evidence for industrial activity, macroscopic technological residues (or a sample of them) will be collected by hand. Separate samples (c. 10 ml) should be collected for micro-slags (hammerscale and spherical droplets) by the environmental coordinator or suitable member of their team.

2.8.2 Any bone recovered from stratified deposits will also be subject to assessment; analysis will be limited to material that can provide metrical, ageing or sex information.

2.8.3 Decisions regarding the need for, and suitability of, any future environmental or other sampling (including scientific dating) will be made on site in consultation with the archaeological advisor to the local planning authority. This will include identifying which contexts may be suitable for such works. The Historic England Regional Scientific Advisor (Jane Corcoran: jane.corcoran@HistoricEngland.org.uk) will be invited to visit the site as appropriate, should remains of potential significance be identified.

2.8.4 All artefactual and ecofactual remains, whether stratified or not, will be collected, bagged and labelled. Artefacts will be subject to preliminary study on site in order to help date archaeological features and contexts. All artefactual and ecofactual evidence will be stored and processed in accordance with *First Aid For Finds* (Leigh et al., 2001) and Red River Archaeology Ltd. standard environmental sampling practice; finds will be stored at the Red River Archaeology archive store until transferred to an appropriate museum. All finds will be assessed by the relevant specialists.

2.9 Post-Excavation

2.9.1 Following completion of fieldwork, all artefacts and environmental samples will be processed, assessed, conserved and packaged in accordance with Oxfordshire Museums guidelines. An accession number has been requested from the Museums Service. Red River Archaeology will make arrangements with Oxfordshire Museums for the deposition of the site archive and,

subject to agreement with the legal landowner(s), the artefact collection. The archive will be stored by Red River Archaeology until deposition.

2.9.2 A typescript report will be prepared immediately once site works are completed. This will include a full written description and interpretation of the results, including specialist reports. In accordance with the CIfA standards and guidance (2020a) the Evaluation Report will include as a minimum, the following: A summary sheet providing the following information:

- Site name and grid reference
- Site activity (i.e. type of investigation)
- Date and duration of project
- Contractor Site code
- Area of site
- Summary of results
- Monuments identified
- Location and reference of archive

- And the following main sections, as appropriate to results:
  - Summary
  - Site location
  - Archaeological and historical background
  - Fieldwork methodology
  - Description of results (including stratigraphic description, if necessary)
  - Interpretation of the results in the appropriate context
  - Summary of the archaeological potential of the proposed development site and its immediate surrounding area
  - Consideration of the significance of the findings on a local, regional and national basis
  - Critical review of the effectiveness of the methodology
  - References
  - Appropriate photographs in colour
  - Location Plan (no smaller than 1:10 000)

- Site layout plans on an OS base, with north point and scale with the location of trial pits/trenches
- Plans and sections of significant archaeological remains, as necessary, including Cardinal Points, Ordnance Datum, vertical and horizontal scales
- Site matrices where appropriate
- Specialist descriptions of artefacts and ecofacts as required
- Summary of the contents of the project archive and its location (including summary catalogues of finds)
- Photographic Register
- Copy of the OASIS record form

2.9.3 The report will be fully illustrated with drawings to an appropriate scale showing location, trench layout, recorded features and deposits, trench plans and section drawings. The report will include all elements set out in the brief. The report will be produced following the on-site works, with an interim report submitted within two weeks of completion of fieldwork unless delayed by circumstances beyond the control of Red River Archaeology. In some cases specialist reports (e.g. radiocarbon dating) may take longer to be produced.

2.9.4 A copy of the report will be provided to the client in the first instance and then to archaeological advisor the local planning authority for approval.

2.9.5 Copies of the approved report in digital format (including PDF/A standard and shapefiles as required), will be supplied to the Local Planning Authority and the Oxfordshire Historic Environment Record, and an additional copy will be deposited with the site archive. The report will become a public document after a period not exceeding six months. Copyright of the report will remain with Red River Archaeology, but will be licenced for use by the client, and the Oxfordshire Historic Environment Team for planning purposes and bona fide research purposes.

2.9.6 A digital copy of the report will be archived with the Archaeological Data Service (ADS) and an OASIS record (Online AccesS to the Index of archaeological investigationS) will be created.

2.9.7 All retained finds and palaeoenvironmental samples will be treated and conserved in accordance with the English Heritage guidance document *A Strategy for the Care and Investigation of Finds* (English Heritage, 1995) and the UKIC's document *Guidelines for the Preparation of Excavation Archives for Long Term Storage* (UKIC, 1990).

2.9.8 Should no further work be required, an ordered, indexed, and internally consistent site archive will be prepared and deposited in accordance with *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation* (Archaeological Archives Forum, 2011),

Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives (CIfA, 2020c), *Standards in the Museum Care of Archaeological Collections* (Museums and Galleries Commission, 1992), *Towards an Accessible Archive* and *The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales* (Society of Museum Archaeologists, 1995). The archive will also be prepared in a format agreed with the Oxfordshire County Museum Service, who will be consulted concerning their requirements. Red River Archaeology will, with the agreement of the owners, ensure that the full integrated site archive including all finds shall, will be deposited after completion of post-excavation work with the County Museums Service (Oxfordshire Museums) unless another repository is indicated. A transfer of Title form will be signed by the land owner and the report will clearly indicate whether or not this has been done. As the limited scope of this work is likely to restrict its publication value, it is anticipated that a short publication note only will be produced, suitable for inclusion within an appropriate local archaeological journal.

2.9.9 Any artefacts retrieved during the investigation will be catalogued, retained and stored in a secure location at Red River Archaeology offices. The treatment of any artefacts retrieved during the investigation will comply with all relevant CIfA guidelines (CIfA, 2020c). Any organic material/artefacts that are retrieved during the excavation will be cleaned by hand without the use of metal tools. Material to be retained will be covered in the matrix it was found in, and placed inside watertight wrappings, either double wrapped in grip-top bags, or sealed inside lengths of polythene layflat tubing, using a heated strip sealer or adhesive tape. Black polythene refuse sacks will also be used as an outer wrapping to exclude light and to protect the watertight layers of packaging.

2.9.10 The analysis of the finds and environmental data will be undertaken by appropriate specialists and Red River Archaeology under the overall direction of the Project Manager. These will include:

- Paul Blinkhorn — Saxon, medieval and post-medieval pottery
- Derek Hurst — Medieval and post-medieval pottery
- Rob Hedge — Prehistoric Pottery
- Jane Timby — Roman/Iron Age pottery
- Mark Lodwick — Small finds
- Rob Young — Lithics
- Carmelita Troy — Osteoarchaeologist
- Val Fryer — Archaeobotanist and charcoal specialist
- Michael Allen — Molluscs

- Dr Keith Wilkinson Geoarchaeology

2.9.11 Further specialists may be required depending on the artefacts/ materials identified. All the above are published specialists in their field, and full members of the CIfA or equivalent professional bodies.

3. PROGRAMME AND MONITORING

3.1 Programme and Resourcing

3.1.1 It is intended that the work shall commence at the earliest possible opportunity to enable information gathered to filter into the overall design and planning programme of the proposed construction works.

3.1.2 The field team will consist of a maximum of up to three staff (1 x Project Leader, 2 x Archaeologist) and it is expected that works will take a maximum of five days on site to complete. A report on the works will be normally produced with four weeks of completion of the fieldwork.

3.1.3 The overall management of the various stages of the project will be carried out by Phil Weston (MCIfA), who will oversee all phases of the archaeological programme of works, through to its completion. Day to day responsibility however will rest with the Project Leader who will be on-site throughout the project.

3.2 Monitoring

3.2.1 Oxfordshire County Archaeological Service, the archaeological advisor to the local planning authority, will monitor progress and standards throughout the project. Notification of the start of site works will be made by the client's heritage consultant to the Oxfordshire County Archaeological Service ten working days prior to commencement of the work in order to arrange a date for the monitoring visit(s).

3.2.2 This monitoring will either be in the form of site visits or it may be agreed that it can be done from photographs. This decision will be taken by the archaeological advisor to the local planning authority. The trenches will not be backfilled until after they have been monitored and signed off by the archaeological advisor to the local planning authority.

3.2.3 Any variations to this WSI shall be agreed by the client's heritage consultant with the archaeological advisor to the local planning authority, in writing, prior to them being carried out.

3.2.4 Red River Archaeology Ltd is a Registered Organisation (RO) with the Chartered Institute for Archaeologists. As an RO, Red River Archaeology endorses the Code of Conduct (CIfA, 2019). Red River Archaeology Project Managers and Project Officers hold either full Member or Associate status within the CIfA.

4. ADDITIONAL INFORMATION

4.1 Health and Safety

4.1.1 A risk assessment and method statements (RAMS) for the archaeological evaluation trenching works will be produced and submitted to the client for review prior to the progression of such works.

4.1.2 The following statutory provisions and codes of practice will be adhered to where relevant:

- All statutory provisions and by-laws relating to the work in question, especially the *Health and Safety at Work etc. Act 1974*
- The Chartered Institute for Archaeologists *Code of Conduct* (CIfA, 2019)

4.2 Known Constraints

4.2.1 An 11kV High Voltage overhead service crosses the site north-north-west/south-south-east. A 10m buffer zone has been established and the plant will not operate within the buffer zone. It will be necessary for the plant to pass beneath the cables to access the four trenches to the east. Red River Archaeology will provide goalposts for the plant to pass beneath the cables and its passage will be constantly monitored by the Red River site supervisor.

4.3 Variations

4.3.1 Any variations to this Written Scheme of Investigation that may be needed as a result of the emerging results of works will be approved in advance with the archaeological advisor to the local planning authority.

5. REFERENCES

Air Photo Services, 2018, *Interpretation and reporting on aerial imagery to inform a Heritage Assessment at Sibford Ferris, Oxfordshire*, Air Photo Services letter report 218 07 02 – 1

Archaeological Archives Forum, 2011, *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation*

Bristol and Bath Heritage Consultancy, 2021, *Land off Woodway Road, Sibford Ferris, Oxfordshire Specification for an Archaeological Evaluation: Stage 2 Archaeological Trial-trench evaluation*, BBHC Report: 18065

Chartered Institute for Archaeologists (CIfA), 2019, *Code of Conduct*

CIfA, 2020a, *Standard and Guidance: Archaeological field evaluation*

CIfA, 2020b, *Standards and Guidance for the collection, documentation, conservation and research of archaeological materials*

CIfA, 2020c, *Standard and guidance for the creation, compilation, transfer and deposition of archaeological archives*

Cotswold Archaeology, 2019, *Land West of Hook Norton Road, Sibford Ferris, Cherwell, Oxfordshire: Archaeological Evaluation*, CA Report MK0053_1

Department of Communities and Local Government, 2019, *National Planning Policy Framework*

English Heritage (EH), 1991, *Management of Archaeological Projects 2*

EH, 1995, *A Strategy for the Care and Investigation of Finds*

EH, 2011, *Environmental Archaeology: a guide to the theory and practice of methods from sampling and recording to post-excavation, 2nd Edition*

Hey, G. and Hind, J. (eds), 2014, *Solent-Thames Research Framework for the Historic Environment: Resource Assessments and Research Agendas*, Oxford Wessex Monograph No. 6

Historic England (HE), 2015, *Management of Research Projects in the Historic Environment (MORPHE): Project Manager's Guide*

HE, 2015b, *Digital Image Capture and File Storage: Guidelines for Best Practice*

HE, 2018, *The Role of the Human Osteologist in an Archaeological Fieldwork Project*

Institute of Field Archaeologists, 2004, *Guidelines to the Standards for Recording Human Remains*, IFA Paper No. 7

Leigh, D., Watkinson, D. and Neal, V., 1998, *First Aid for Finds: Practical Guide for Archaeologists*

Magnitude Surveys, 2019, *Geophysical Survey Report of Land west of Hook Norton Road, Sibford Ferris*, Magnitude Report MSSP440

Museums and Galleries Commission, 1992, *Standards in the Museum Care of Archaeological Collections*

Museum of London, 1994, *Archaeological Site Manual*

Orion Heritage, 2018, *Land West of Hook Norton Road, Sibford Ferris, Archaeological Desk-Based Assessment*, Orion Heritage Reference PN1803/1

Orion Heritage, 2021, *Land West of Hook Norton Road, Sibford Ferris, Archaeological Mitigation Written Scheme of Investigation*, Orion Heritage Reference PN1803/Mitigation WSI/1

Oxfordshire County Archaeological Services (OCAS), (2021), *Land off Hook Norton Road, Sibford Ferris, Oxon: Design Brief for Archaeological Field Evaluation*

Society of Museum Archaeologists, 1995, *Towards an Accessible Archive. The Transfer of Archaeological Archives to Museums: Guidelines for Use in England, Northern Ireland, Scotland and Wales*

Treasure Act, 1996, Code of Practice (2nd Revision), DCMS

Treasure (Designation) Order 2002, TSO

United Kingdom Institute for Conservation, 1990, *Guidelines for the Preparation of Excavation Archives for Long Term Storage*

Online Sources

British Geological Survey online viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html (accessed 22/11/21)

Solent-Thames Research Framework for the Historic Environment Resource Assessments and Research Agendas Research agendas (oxfordarchaeology.com) (accessed 22/11/21)

FIGURE

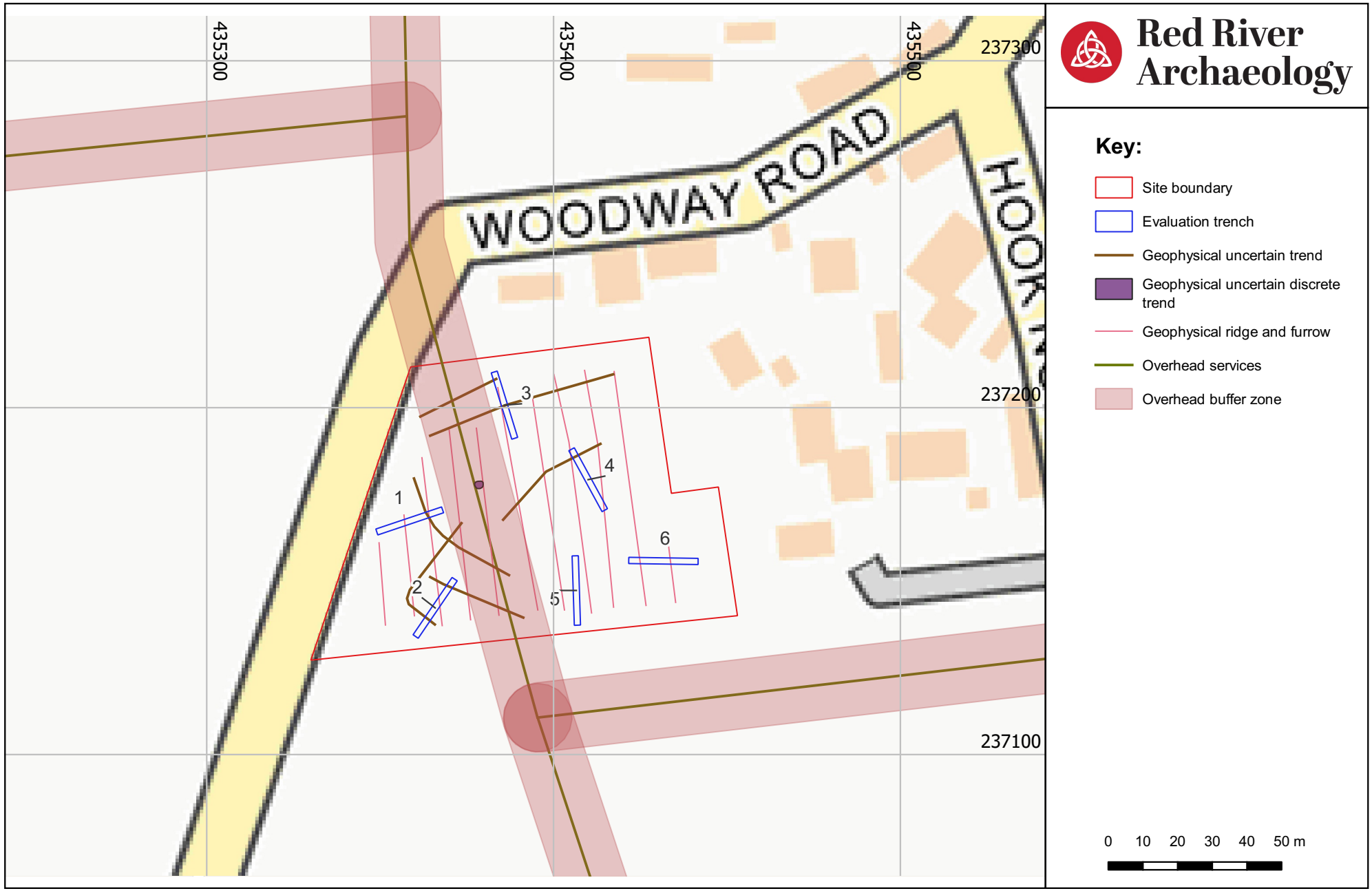


Figure 2 - Proposed trench layout. Scale - 1:1,500 @ A4