# Land North of Thaxted Road, Saffron Walden, Essex

**Archaeology and Heritage Statement** 



# Land North of Thaxted Road, Saffron Walden, Essex

## **Archaeology and Heritage Statement**

Client: Kier Ventures Ltd.

Report no.: BSA 2212\_2b

Author: Ben Stephenson

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E: info@bsaheritage.co.uk T: 01235 536754 Web: 7 Spring Gardens, Abingdon, Oxon OX14 1AZ.

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## Section 1: Introduction and Methodology

- 1.1. This archaeology and heritage statement has been prepared by BSA Heritage Limited on behalf of Kier Ventures Limited, to support a forthcoming outline planning application for fifty five residential units and related development of land lying north of Thaxted Road, Saffron Walden, Essex.
- 1.2. The statement considers land lying on the south eastern edge of Saffron Walden and as shown on Figure 1: 'the site'. The overall area considered totals approximately 4.3 hectares. The site comprises two fields which are both largely rectangular in shape and bisected a bridleway running east to west through the site. Access to the site is to be provided through Knight Park into the western boundary of the southern parcel of the site.
- 1.3. The main part of the site slopes downwards from the south east to the north west and from circa 95 metres AOD to circa 80 metres where a watercourse marks the site's north western boundary. The site's centre point is located at NGR TL 5518 3740.
- 1.4. The site consists of two fields and is visually well contained by existing hedgerows. The immediate character of the site is defined by residential development to the north and the Knight Park commercial/retail centre to the south/south west. The settlement of Saffron Walden expands to the north, whilst the Cam Valley expands to the south.
- 1.5. The British Geological Survey records the whole of the site and a wider area as having chalk geology. Superficial deposits are detailed for the very south east of the site only, and as Lowestoft Formation Diamicton. A band of Head deposits of sand, gravel, silt and clay lies just west of the site in the north.
- 1.6. Sources consulted include the Essex Historic Environment Record (HER) which holds records relating to known or suspected archaeological and heritage sites, findspots<sup>1</sup> and the results of past archaeological investigations. Although HER data was originally secured in early 2022, a new search was completed in July 2023 centred on the site (Appendix 1). Essex Record Office in Chelmsford was visited and relevant historic maps and secondary sources have been checked.
- 1.7. The HER and Historic England's online National Heritage List for England were also consulted for information on designated heritage assets. Uttlesford District Council's website was also visited to secure information relating to planning policy, Saffron Walden Conservation Area and locally designated heritage. The above sources were complemented by an original site walkover in March 2022 and completion of geophysical survey across the site in October 2023 (Appendix 2).
- 1.8. Section 2 sets out the current policy context, Section 3 summarises heritage assets and previously recorded archaeology for the site and a wider study area. Section 4 confirms the findings of site visits and geophysical survey, whilst Section 5 confirms the archaeological and heritage implications of proposed development, informed by the scheme proposals (Appendix 3).

<sup>&</sup>lt;sup>1</sup> Findspots are the location of the recovery of archaeological material only, without associated features.

## **Section 2: Policy Context**

#### Legislation

- 2.1. The 1990 Planning (Listed Buildings and Conservation Areas) Act, as amended, confirms that in reaching planning decisions, the local planning authority should have special regard to preserving listed buildings and their settings and preserving or enhancing the character and appearance in conservation areas (HMSO 1990). The recently enacted Levelling Up and Regeneration Act has now extended this requirement to scheduled monuments and their settings (HMSO 2023).
- 2.2. A 2014 Court of Appeal ruling in Barnwell Manor Wind Energy Ltd v East Northants District Council, English Heritage and the National Trust made clear that to discharge this responsibility, decision makers must give considerable importance and weight to the desirability of preserving the setting of listed buildings when carrying out the balancing exercise of judging harm against other planning considerations, as required under the National Planning Policy Framework. By implication, and subsequent legal decision, preserving the character and appearance within conservation areas also has to be given considerable weight.

#### **National Policy**

- 2.3. The National Planning Policy Framework (NPPF) has been revised four times in recent years, the first updates since it was originally published in 2012 (DCLG 2012, DLUHC 2023). The policy wording for Historic Environment remains very similar, albeit that the order of certain paragraphs and numbering has changed.
- 2.4. Heritage assets are still defined in the NPPF glossary as any designated or undesignated element of the historic environment which is identified as being of such significance that it is a material consideration in the planning process. In determining applications which cause harm to heritage assets directly, or indirectly, through affecting a complementary setting, the NPPF now recommends that 'great weight' should be given to their conservation when reaching a planning decision (Paragraph 199).
- 2.5. The more important the asset, the greater the weight that should be ascribed. As heritage assets are irreplaceable, it is noted that any harm or loss should require clear and convincing justification. It notes that 'substantial harm' to or loss of designated heritage assets of the highest significance should be wholly exceptional and exceptional for Grade II listed buildings and conservation areas (Paragraph 200).
- 2.6. Paragraph 202 clarifies that, where a development proposal will lead to 'less than substantial harm' to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing an optimal viable use.
- 2.7. Paragraph 203 notes that effects on the significance of non-designated heritage assets, which confusingly includes 'locally listed buildings', require a balanced judgement weighing the scale of impact on the significance of the heritage asset against the benefits of the proposed development. Where heritage assets are to be lost, Paragraph 205 confirms that an appropriate record of the elements to be lost should be provided and both disseminated and archived by the developer, although the ability to record evidence should not be a factor in determining applications.

#### Local Policy

- 2.8. The current Local Development Plan for Saffron Walden consists of the Uttlesford Local Plan (2005) and the Saffron Walden Neighbourhood Plan (2022).
- 2.9. Policy ENV2 of the 2005 Local Plan relates to listed buildings and notes that development which affects a listed building should be in keeping with its '...scale, character and surroundings'.
- 2.10. Policy ENV4 Ancient Monuments and Sites of Archaeological Importance notes a 'presumption in favour of preservation in situ' for nationally important remains, echoing PPG16: Archaeology and Planning, which preceded the NPPF. If less important remains would be affected, the policy notes that development might be permitted, if its benefits outweigh the harm to archaeology. The policy also confirms that fieldwork might be required pre-determination to confirm the archaeological interest of a site and that further investigation to mitigate harm might be required where development is permitted.

#### Guidance

- 2.11. The Department for Communities and Local Government has produced Planning Practice Guidance which supports the NPPF (DCLG 2019). This includes a section titled *Conserving and Enhancing the Historic Environment*. More recently, Historic England has produced more detailed guidance on decision making: *Managing Significance in Decision-Taking in the Historic Environment* (Historic England 2015). Where relevant, this guidance has informed the assessment.
- 2.12. Historic England's *The Setting of Heritage Assets* is designed to guide determining what forms a setting and how it adds to or detracts from the significance of a heritage asset or assets (Historic England 2017). It also advises on assessing the effect of development proposals and how to avoid or minimise loss of or enhance significance. The guidance confirms that the consideration of setting is a matter of 'informed judgement' and sets out five stages involved in robust assessment of setting.
- 2.13. The heritage assets which have a setting, whether designated or undesignated, have to be defined through a suitable level of research. However, the guidance confirms that setting is not a heritage asset or designation in itself. The guidance highlights the fundamental basis of current policy; that although setting can cover a large area, not all of it is positive or anything other than neutral in relation to the significance of the heritage assets concerned. It sets out in detail the aspects of setting which may have a bearing on a heritage asset's significance.
- 2.14. In light of several Appeal decisions in relation to the effect of development on highly visible assets such as churches, the second edition Guidance includes specific reference to these and states:

'Being tall structures, church towers and spires are often widely visible across land- and townscapes, but where development does not impact on the significance of heritage assets visible in a wider setting or where not allowing significance to be appreciated, they are unlikely to be affected by small-scale development, unless that development competes with them, as tower blocks and wind turbines may. Even then, such an impact is more likely to be on the landscape values of the tower or spire rather than the heritage values, unless the development impacts on its significance, for instance by impacting on a designed or associative view.'

## **Section 3: Existing Baseline**

- 3.1. This section details designated or otherwise significant heritage assets and archaeology which might be affected by the proposed residential redevelopment of the site. Given considerable recent archaeological fieldwork within the study area, a number of duplicate and later records which relate to heritage which would not be affected by the proposals and do not aid an understanding of the site's archaeological potential are not included.
- 3.2. A gazetteer of those sites and investigations which are is provided as Appendix 1, although a number of designated heritage assets mentioned lie beyond the HER study area and hence an HER record was not supplied.
- 3.3. The HER records were complemented by online sources including Uttlesford District Council's website and Historic England's National Heritage List for England (NHLE), as well as historic maps and secondary sources consulted during a visit to Essex's archives in March 2022 and online since. Figure 1 marks the location of key assets and records mentioned below and Section 6 confirms references and sources.

#### **Designated Heritage Assets**

- 3.4. No designated heritage assets lie within or close to the site and there are no scheduled monuments or registered landscapes within a kilometre radius of the site. Indeed, there are only a small number of heritage assets which might realistically be harmed by the proposals through change to their setting.
- 3.5. The closest designated asset to the site is a Grade II listed barn at Herberts, more than half a kilometre south west of the site (Figure 1, HER 165).<sup>2</sup> The NHLE provided the listing citation and confirms that the barn is of 16<sup>th</sup> century origin and of timber, with weatherboarded walls and a tile roof, but with likely 19<sup>th</sup> century rebuilding and a 20<sup>th</sup> century lean-to extension. HER 165 confirms that Herberts farmstead likely had medieval origins.
- 3.6. The next closest designated heritage asset to the site is the southernmost detached part of the extensive Saffron Walden Conservation Area, a greater distance to the west of the site at its closest point (Figure 1, UDC 2018). Much of the conservation area covers the historic core of Saffron Walden, which has a well preserved medieval plan and numerous early buildings, remains of a castle and landmark parish church. However, that part of the conservation area closest to the site covers the Friends' School, its grounds and an area of Victorian suburban housing north of Mount Pleasant Road. The designated area is surrounded by existing development and on land which slopes away from the site.
- 3.7. The closest listed buildings in this direction include a 1913 brick water tower on Debden Road west of the Friends' School (2) and 64 Debden Road and 9 10 Mount Pleasant Road, late 19<sup>th</sup> century villas to the north of the water tower. All are Grade II listed and surrounded by other buildings.
- 3.8. South of the site, the next closest designated heritage asset other than Herberts' barn lies more than a kilometre distant and includes the isolated 'Old Pig and Whistle' on Thaxted Road. This 18<sup>th</sup> century thatched building is now in residential use, but may have been a public house. South west of the site, on Debden Road, Roos Farm farmhouse and a barn have earlier post-medieval origins. All are Grade II listed.

<sup>&</sup>lt;sup>2</sup> The barn now appears to belong to a residential property: 'The Granary', which may have been Herbert's granary, but which is not listed.

- 3.9. The closest designated heritage assets north and east of the site are a minimum of a kilometre distant, with intervening development. They include Grade II listed domestic buildings in Sewards End and the former Saffron Walden workhouse of 1837 which became the town hospital, but has more recently been converted to residential use.
- 3.10. The site visit also confirmed that the spire of the parish church, St Mary's, is just visible from higher parts of the site. This large medieval church is Grade I listed, although the citation notes that the spire was only added in the early 19<sup>th</sup> century. Although the Council maintains a list of locally designated structures, none of these lie anywhere near the site (UDC 2020).

#### **Other HER Records**

- 3.11. The HER details a limited number of records for those parts of the kilometre radius study area beyond the earlier parts of Saffron Walden well to the north. The most useful of these suggest that the area has been settled from prehistory.
- 3.12. In particular, recent archaeological investigations ahead of new development immediately north west of the site revealed two Bronze Age round barrows (HER 48520). The work included desk based research, geophysical survey and fieldwalking as well as trial trenching and subsequent archaeological excavation. The barrows were located on the highest land within the area considered (Figure 1). Other significant features found were limited to a small number of Bronze Age or Iron Age pits, all away from the site and likely connected with construction of the barrows.
- 3.13. Unusually, the fieldwork completed to inform this development north of Thaxted Road had included the northern part of the site currently being assessed, with both geophysical survey and trial trenching undertaken (Figure 1). However, the HER records that nothing of note had been identified by either method. That the barrows to the north were identified through geophysics indicated that any other sub-surface archaeology would have been picked up and this was reinforced by the results of trial trenching.
- 3.14. There is a slight lack of clarity in HER records received as to which areas were surveyed and multiple HER entries for the different stages of investigation focused north of Thaxted Road. Some development north of Thaxted Road appears to have not required field evaluation, likely given earlier ground disturbance. HER 15007 records two limekilns associated with a cement works in this area and built against the walls of a chalk quarry. This area has now been redeveloped, but only recording of the limekiln structures appears to have been required ahead of redevelopment.
- 3.15. South west of the site, the work associated with HER 48520 included fieldwalking south west of Thaxted Road which located nothing of note (Figure 1). More recently, the author oversaw geophysical survey of a larger area south west of the site and the road, but nothing of note was indicated by this work by Headland Archaeology in late 2022 (Figure 1, Berry 2022). This area has this month been tested through trial trenching, with very little recorded.<sup>3</sup>
- 3.16. Recent investigations north of the site, at Shire Hill Farm, evaluated an area of seven hectares (HER 49632). The work, undertaken by Archaeology South East in 2021, consisted of forty one trial trenches, but failed to locate any significant remains. Indeed, thirty five trenches were entirely devoid of remains. What was found was concentrated in the south west of the site and included a possibly medieval ditch, gully and pit and evidence of activity in recent centuries.

<sup>&</sup>lt;sup>3</sup> Recent fieldwork which involved the author south west of Thaxted Road and south of Radwinter Road has either yet to be ascribed an HER number or falls beyond the HER study area.

- 3.17. Investigations south of Radwinter Road and more than half a kilometre north of the site recorded some Iron Age and Roman pottery in trial trenching ahead of residential development. However, the report on this 2015 evaluation confirms that few sherds were found and they were not located in archaeological features, but in natural hollows (HER 48793, Reid & Markus 2015). A Roman settlement site has been postulated north of this and the Radwinter Road, but is not proven.
- 3.18. More recently, the author has overseen geophysical survey across an area east of that evaluated last decade (Figure 1). Very little of significance was indicated by this survey except for an enclosure in the east of the area surveyed, more than a kilometre north east of the site (Webb 2021). This has yet to be tested through trial trenching, which was conditioned, but this may be medieval or later given that it respects nearby boundaries.
- 3.19. When considered initially, it was clear that few records other than those generated by recent fieldwork were held by the HER for areas south of the site or close by. Those to the north tended to relate to late 19<sup>th</sup> or 20<sup>th</sup> century activity, whilst two cropmark sites well to the south of the site have been interpreted as reflecting post-medieval field systems (HERs 15183 & 19841).

#### **Other Sources**

- 3.20. Large-scale 18<sup>th</sup> century and early 19<sup>th</sup> century maps confirm that the site lay well away from the edge of Saffron Walden's settlement at that time and only a few farmsteads are marked, including Herberts and 'Sheer Hill', as well as Thaxted Road.
- 3.21. The earliest detailed map is the circa 1840 Tithe map which confirmed that the main part of the site consisted of the same two fields at that time, under arable cultivation. However, the smaller field was part of a larger one including land to its west.
- 3.22. By the 1881 first edition six inch map, the site retained the same arrangement as it had in 1840 (Figure 1). What is now a bridleway appears to have linked a farmstead to the east with Thaxted Road and a road to Sewards End. A track also ran off it north of the site and connecting to Shire Hill Farm. The footpath alongside the site's north eastern boundary is also shown.
- 3.23. Little change is shown within the site on later pre-war maps, but a 'cement works' was developed west of the site by the late 19<sup>th</sup> century, with substantial structures and also extraction of the local chalk and the boundary of this created the site's north western edge. A tramway is shown as running along the bridleway through the site linking areas of extraction further east to the works. These appear to have been in place until after the Second World War.
- 3.24. Secondary sources are focussed on the town itself. Although Saffron Walden's heritage formed part of The Royal Commission on the Historic Monuments of England's extensive early 20<sup>th</sup> century survey of the county, nothing was recorded close to the site itself (RCHME 1916). The site is likely to have been part of open fields with ridge and furrow before enclosure of the parish's open fields (Reid & Markus 2015).
- 3.25. Although the Victoria County History does not cover the parish, the conservation area and MOLA Northampton reports confirm the likely Anglo-Saxon origins of Saffron Walden which later became wealthy from the eponymous spice and wool (UDC 2018, Reid & Markus 2015). Herberts arm is likely to have been named after a 'John Herberd' recorded in 1269, whilst Shire Hill may be the 'Uppesire' recorded in 1387 (Reaney 1969).

## Section 4: Site Visit and Geophysical Survey

- 4.1. The site was visited in March 2022. The walkover confirmed that the site consists of two overgrown fields, divided by the south south west to north north east trackway which is now a bridleway (Plates 1 to 3).
- 4.2. Nothing of archaeological or heritage interest was apparent within either of these parcels. The boundaries are largely marked by wooded and hedged boundaries, although that marking the boundary between the northern parcel and new development has largely been lost (Plate 4). There was no indication of a tramway along the course of the bridleway.
- 4.3. As well as the now completed residential development north west of the site, development was also clear to the south west and south (Plates 2 & 5), with parts of the commercial park south of the site at a higher level, overshadowing the bridleway (Plate 6).
- 4.4. The 2022 site visit confirmed that, given topography and intervening development and vegetation, there is no inter-visibility with any of the closest designated heritage assets which would in any event be at a considerable distance.
- 4.5. The topography of Saffron Walden more widely does allow the spire of the landmark parish church to be discerned with a tutored eye from some locations within the site's eastern field, although distance makes this difficult to capture photographically.
- 4.6. The centre of Saffron Walden and areas close to the nearest designated heritage assets were visited and this confirmed that the site area would in no way influence the significance of the designated heritage assets within the town's historic core, including the parish church, or elsewhere. There were no views of the site available from close to the church, which is surrounded by older built form.

#### **Geophysical Survey**

4.7. Geophysical survey across the site's larger and eastern field was completed by SUMO Services in October 2023 and in accordance with a Written Scheme of Investigation agreed with the Essex archaeology advisor to Uttlesford (Appendix 2). The site field had recently been cleared of vegetation and all was suited to the magnetometry method employed. However, the survey did not pick up any magnetic anomalies which are likely to reflect significant sub-surface remains and only a small number of anomalies which are likely to be due to natural geology and pedology or agricultural activity.

## **Section 5: Impact Assessment and Conclusions**

- 5.1. This archaeology and heritage statement supports an outline planning application for development of the site for up to 55 dwellings, associated landscaping and open space, with access from Knight Park on land north of Thaxted Road, Saffron Walden on behalf of Kier Ventures Limited. The implications of desk-based assessment, a site walkover and geophysical survey are confirmed.
- 5.2. The site area does not contain any extant features of note other than hedged field boundaries which reflect longstanding boundaries. These are to be retained as part of the proposals, with access from the south through an existing gap (Appendix 3). It is unlikely that any remains of a late 19<sup>th</sup> century tramway survive within the site and these would rate as of very limited local interest, if present.
- 5.3. Given change to the 19<sup>th</sup> century arrangement of fields, including encroachment from recent development to the north and west, the site has no special historic landscape value. However, the bridleway which runs through the site follows a long-standing trackway heading east. It is to be retained, with its edge planting enhanced. This represents a negligible to minor beneficial effect in heritage terms.
- 5.4. The site is likely to have been agricultural for many centuries and few sites or features had previously been recorded in the study area. However, archaeological investigations associated with residential development north west of the site have more recently identified two Bronze Age round barrows and other prehistoric pits as sub-surface features.
- 5.5. Nonetheless, geophysical survey and trial trenching in the west of the current site associated with that development did not identify anything of note. Other recent investigation south, west and to its north has also found nothing significant. Indeed, Bronze Age barrows were often sited in marginal areas and past cultivation within the site will certainly have truncated any subsurface archaeological deposits.
- 5.6. Despite unexceptional potential, it was thought likely that the Council's archaeology advisor at Essex County Council will require completion of geophysical survey across the southern site field. Geophysical survey was subsequently completed in October 2023 across the site's eastern field. However, the survey did not indicate any likely sub-surface archaeological remains or any pattern of anomalies which might indicate significant deposits.
- 5.7. Given assessment of low archaeological potential following past fieldwork and the recent geophysical survey, the Council's archaeological advisor has agreed that all further fieldwork can be completed as a condition of planning permission. In the unlikely event that significant remains are revealed by trial trenching, they could be dealt with through further investigation ahead of, or during development. Suitable post-fieldwork analysis and publication of the results would accord with current policy, guidance and best practice.
- 5.8. The site does not contain any designated heritage assets and none lie close by. The closest asset is a Grade II listed post-medieval barn at Herberts, more than 600 metres south of the site. Modern development has severed any link between this asset and the site fields and no other heritage asset would be harmed by proposed change within the site, given its surroundings and their locations. Even though St. Mary's church spire can be seen from within the site, this does not equate to heritage harm to the town's parish church. Proposed development would not 'compete' with the church and is not part of a designed or associated view. Indeed, the spire is unlikely to be perceptible to the layperson.

### **Section 6: References and Sources**

Berry M. 2022 Land South of Thaxted Road, Saffron Walden, Essex – Geophysical Survey Report Cleckheaton (Headland Archaeology report ref. LSSW22)

Bettley J. & Pevsner N. 2007 The Buildings of England: Essex New Haven

Department for Communities and Local Government (DCLG) 2012 *National Planning Policy Framework* London

Department for Levelling-Up, Housing and Communities (DLUHC) 2023 *National Planning Policy Framework* London (5th edition)

Historic England 2015 *Historic Environment Good Practice Advice in Planning Note 2 – Managing Significance in Decision-Taking in the Historic Environment* London

Historic England 2017 *Historic Environment Good Practice Advice in Planning Note* 3 – *The Setting of Heritage Assets* London

HMSO 1990 Planning (Listed Buildings and Conservation Areas) Act London

HMSO 2023 Levelling-Up and Regeneration Act London

Reaney P. H. 1969 The Place-Names of Essex Cambridge (EPNS vol. 12)

Reid A. & Markus S. 2015 Archaeological Trial Trench Evaluation of Land at Radwinter Road, Saffron Walden, Essex (Mola Northampton unpublished client report ref. 15/196)

Royal Commission on the Historic Monuments of England (RCHME) 1916 An Inventory of the Historical Monuments in Essex, Vol. 1 – North West London

Uttlesford District Council (UDC) 2005 Uttlesford Local Plan – Adopted January 2005 Saffron Walden

Uttlesford District Council (UDC) 2018 Saffron Walden Conservation Area Appraisal and Management Proposals Saffron Walden

Uttlesford District Council (UDC) 2020 Uttlesford Local Heritage List (Draft) Saffron Walden

Webb A. 2021 Land South of Radwinter Road, Saffron Walden, Essex – Geophysical Survey Report Cleckheaton (Headland Archaeology report ref. RRSW21)

#### Maps

Saffron Walden Tithe map and apportionment, circa 1840 (ERO ref. D/CT 378)

Six inch to the mile Ordnance Survey map of 1881 and 1923 (Sheet IX) and twenty five inch maps of 1897 (Sheet IX.6)

#### Web Sources

British Geological Survey Geology Viewer accessed at www.bgs.ac.uk British History Online accessed at www.british-history.ac.uk/search Historic England's National Heritage List for England accessed at

OS maps of site accessed at National Library of Scotland at www.nls.uk

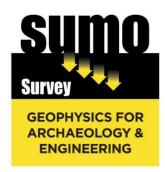
Uttlesford District Council website accessed at www.uttlesford.gov.uk/planning

## Appendix 1: Essex Historic Environment Record Gazetteer

HER/ Fig. 1 ref.	NGR (TL prefix)	Period	Notes
165	545 367	Medieval	Herberts is thought to be a farm with medieval origins and possibly a moat. Only a 16 <sup>th</sup> century and later t/f, tiled and boarded barn is now Grade II listed.
261 - 263	559 376	Iron Age & Roman	Pottery, including neck of a flagon, IA 'black ware' and millstone fragments found in 1930s. No further detail.
15007	5489 3738	Post- medieval	Lime kilns were recorded ahead of redevelopment of site, although no sub-surface investigation noted.
15724	5559 3763	19 <sup>th</sup> century	Site of bell's Brickworks shown on historic OS maps.
48520	5483	Prehistoric	Investigation of a circa 9ha site included desk based research, fieldwalking, geophysical survey, trial trenching and excavation. Remains of two early to middle Bronze Age barrows were located as well as a burial pit. Later Bronze Age and Iron Age pits were also found. Nothing else of note was recorded.
48792	5520 3817	Post- medieval	Remains of slighted field boundaries were recorded during 2015 trial trenching across circa 14ha involving a 5% sample (see also HER 48793).
48793	5546 2823	Iron Age & Roman	Two shallow infilled hollows found during trial trenching in 2015 contained pottery sherds (see also HER 48792).
49632	5502 3785	Medieval	41 trenches by ASE in 2021 across 7 hectare site ahead of development found little of note. In south west of site, a ditch, gully and pit may be medieval, with other features including a pond dated as late PM.

**Appendix 2: SUMO Services Geophysical Survey Report** 

Thaxted Road, Saffron Walden Archaeology & Heritage Statement December 2023



## **GEOPHYSICAL SURVEY REPORT**

## Land East of Thaxted Road, Saffron Walden, Essex

Client

## **BSA Heritage Ltd**

For

## **Kier Ventures Ltd**

Survey Report

## 14596

OASIS Ref. No.

## sumogeop1-519369

Date

## 09 October 2023



#### Survey Report 14596: Land East of Thaxted Road, Saffron Walden, Essex

Survey dates	28 September 2023
Field co-ordinator	Robert Knight BA MA
Field Team	Simon Lobel BSc
Report Date	09 October 2023
CAD Illustrations	Thomas Cockcroft MSc MCIfA
Report Author	Thomas Cockcroft MSc MCIfA

Project Manager	Simon Haddrell BEng AMBCS PCIfA
Report approved	Dr John Gater BSc DSc(Hon) MCIfA FSA

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

T: 01684 592266

geophysics@sumoservices.com

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		data)

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- Appendix A Technical Information: Magnetometer Survey Methods, Processing and Presentation
- Appendix B Technical Information: Magnetic Theory
- Appendix C OASIS Data Collection Sheet

#### 3 SURVEY TECHNIQUE

3.1 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. All survey techniques followed the guidance set out by CIFA (2014, updated 2020), Historic England (2008), and the European Archaeology Council (EAC) (2016).

Bartington Cart System Traverse Interval 1.0m Sample Interval 0.125m

The only processes performed on data are the following unless specifically stated otherwise:

- Zero Mean This process sets the background mean of each traverse within each grid to zero. The operation removes instrument 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.

#### 4 SUMMARY OF RESULTS

4.1 A magnetometer survey of 3 hectares of land east of Thaxted Road, Saffron Walden has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Several responses of uncertain origin have been plotted in the magnetic data which are likely to be due to a combination of natural and agricultural processes. Anomalies of natural origin have also been identified.

#### 5 INTRODUCTION

- 5.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for development. This survey forms part of an archaeological investigation being undertaken by **BSA Heritage Ltd** on behalf of **Kier Ventures Ltd**.
- 5.2 Site Details

NGR / Postcode	TL 55242 37401 / CB10 2UR		
Location	The site is located 1.5km south-west of Sewards End and is situated		
	on the south-eastern outskirt of Saffron Walden. The survey area is		
		he south-west by Saffron Walden Recycling Centre and Shopping Centre.	
HER	Essex HER	Shopping Centre.	
OASIS Ref. No.	sumogeop1-519369		
District	Uttleford District		
Parish	Saffron Walden Civil Parish		
Topography	Flat		
Land Use	Arable agricu	ulture	
Geology	Bedrock:	Lewes Nodular Chalk Formation and Seaford Chalk	
(BGS 2023)		Formation - Chalk	
	Superficial:	Lowestoft Formation - Diamicton	
Soils (CU 2023)	Soilscape 5:	Freely draining lime-rich loamy soils	
	Soilscape 9:	Lime-rich loamy and clayey soils with impeded drainage	
Survey Methods	Magnetomet	er survey (fluxgate gradiometer)	
Study Area	3 ha		

#### 5.3 Archaeological Background (BSA 2023)

5.3.1 The site area does not contain any extant features of note other than hedges which reflect longstanding boundaries. The site is likely to have been agricultural for many centuries and few sites or features had previously been recorded in the vicinity. However, archaeological investigations associated with residential development north of the site have more recently identified two Bronze Age round barrows and other prehistoric pits as sub-surface features. There are other indications that prehistoric and later settlement occurred within the study area; hence the site is deemed to have some archaeological potential.

#### 5.4 Aims and Objectives

5.4.1 To locate and characterise any anomalies of possible archaeological interest within the study area.

#### 6 RESULTS

#### 6.1 Probable / Possible Archaeology

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

#### 6.2 Uncertain

6.2.1 Several trends, weak pit-like anomalies and a zone of increased magnetic response have been recorded in the survey and have been assigned to the category of *Uncertain*. They generally lack the defined morphology of anomalies that would ordinarily warrant an archaeological interpretation. They are likely to be due to variations in the underlying geology or agricultural processes. While the weak pit-like responses could be nothing more than deeply buried ferrous debris.

#### 6.3 *Natural / Geological*

6.3.1 Weak sinuous bands of increased response are visible in the data which are due to underlying geological variations.

#### 6.4 Ferrous / Magnetic Disturbance

6.4.1 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.

#### 7 DATA APPRAISAL & CONFIDENCE ASSESSMENT

7.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is generally good. There is no *a priori* reason why archaeological features would not have been detected.

#### 8 CONCLUSION

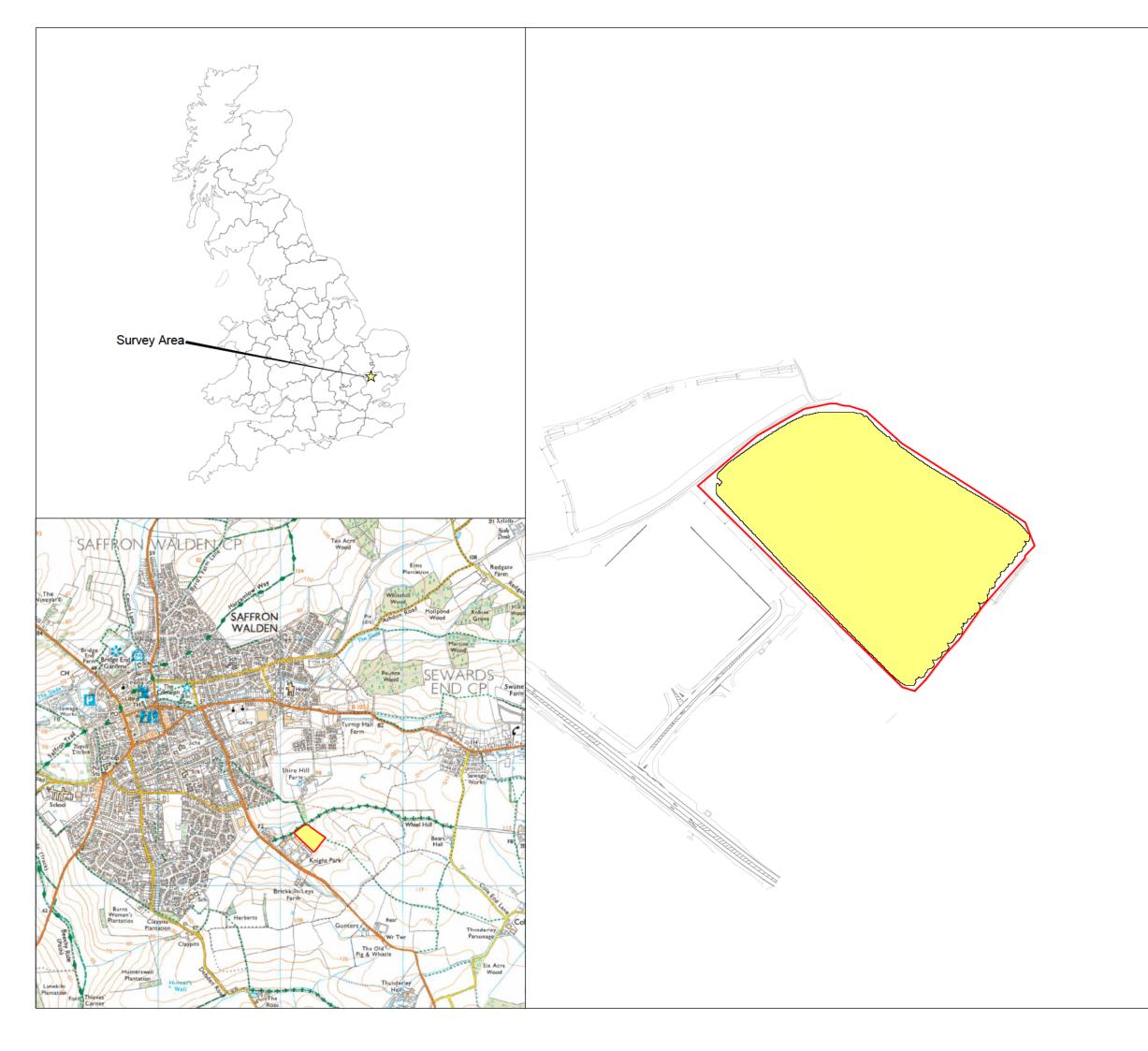
8.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Generally weak trends, pit-like anomalies and a zone of increased response are visible in the data and are likely due to a combination of natural and agricultural processes. Natural responses have also been detected in the survey.

#### 9 REFERENCES

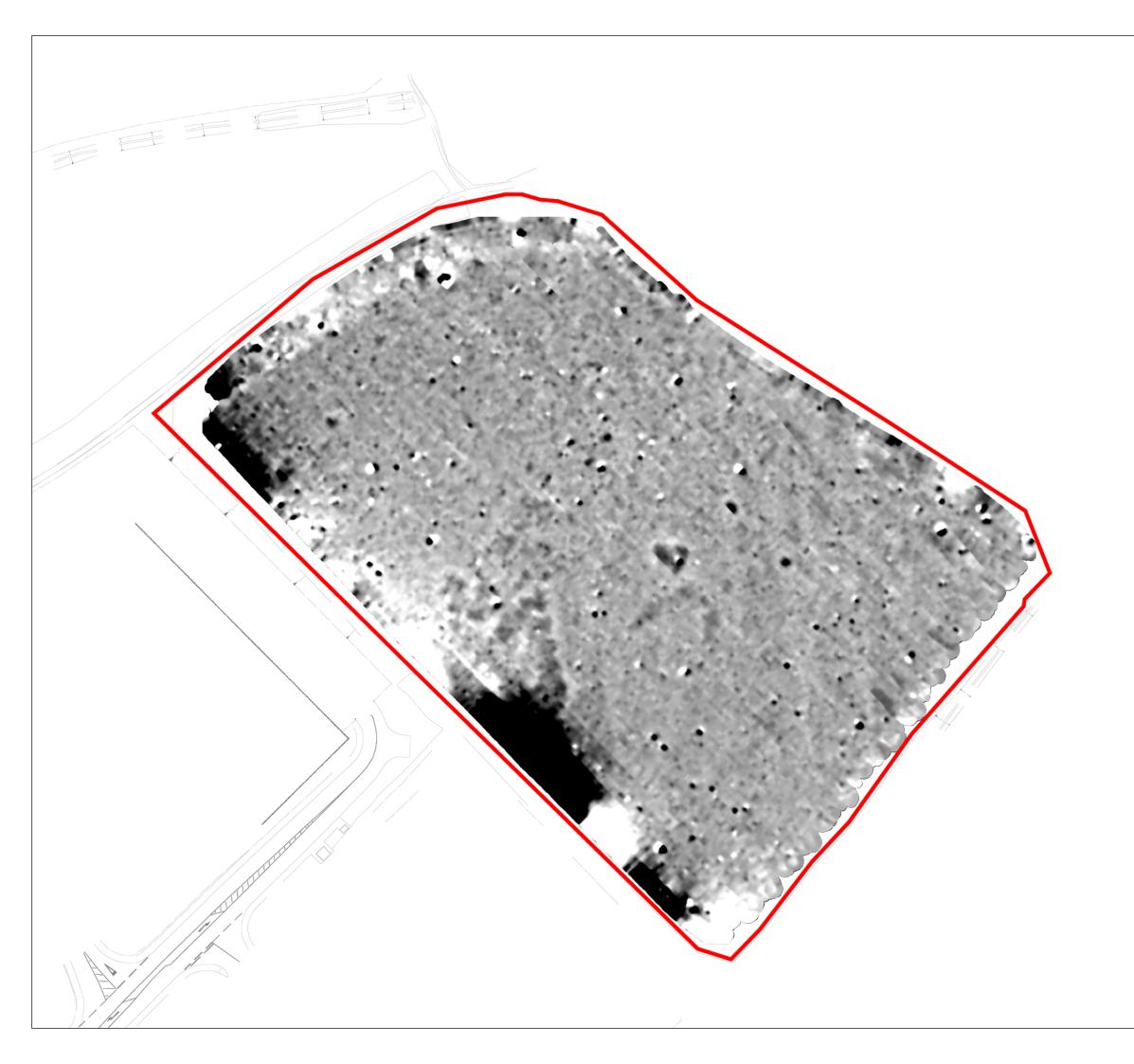
BGS 2023	British Geological Survey, Geology of Britain viewer [accessed 06/10/2023] <i>website</i> :
BSA 2023	Land East of Thaxted Road, Saffron Walden, Essex Archaeology and Heritage Statement. BSE Heritage, Abingdon
ClfA 2014 Amended 2020	Standard and Guidance for Archaeological Geophysical Survey. Amended 2020. ClfA Guidance note. Chartered Institute for Archaeologists, Reading
CU 2023	The Soils Guide. Available: www.landis.org.uk. Cranfield University, UK. [accessed 06/10/2023] <i>website:</i>
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 (now withdrawn, but used for evaluating suitability of soil types)

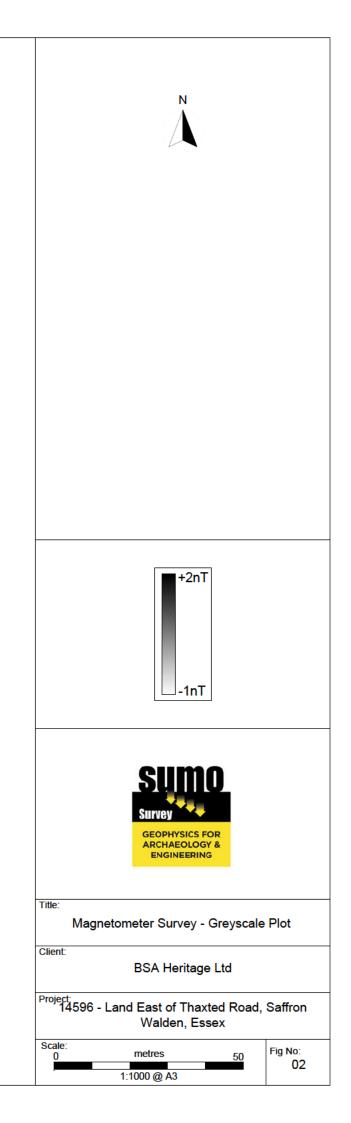
#### 10 ARCHIVE

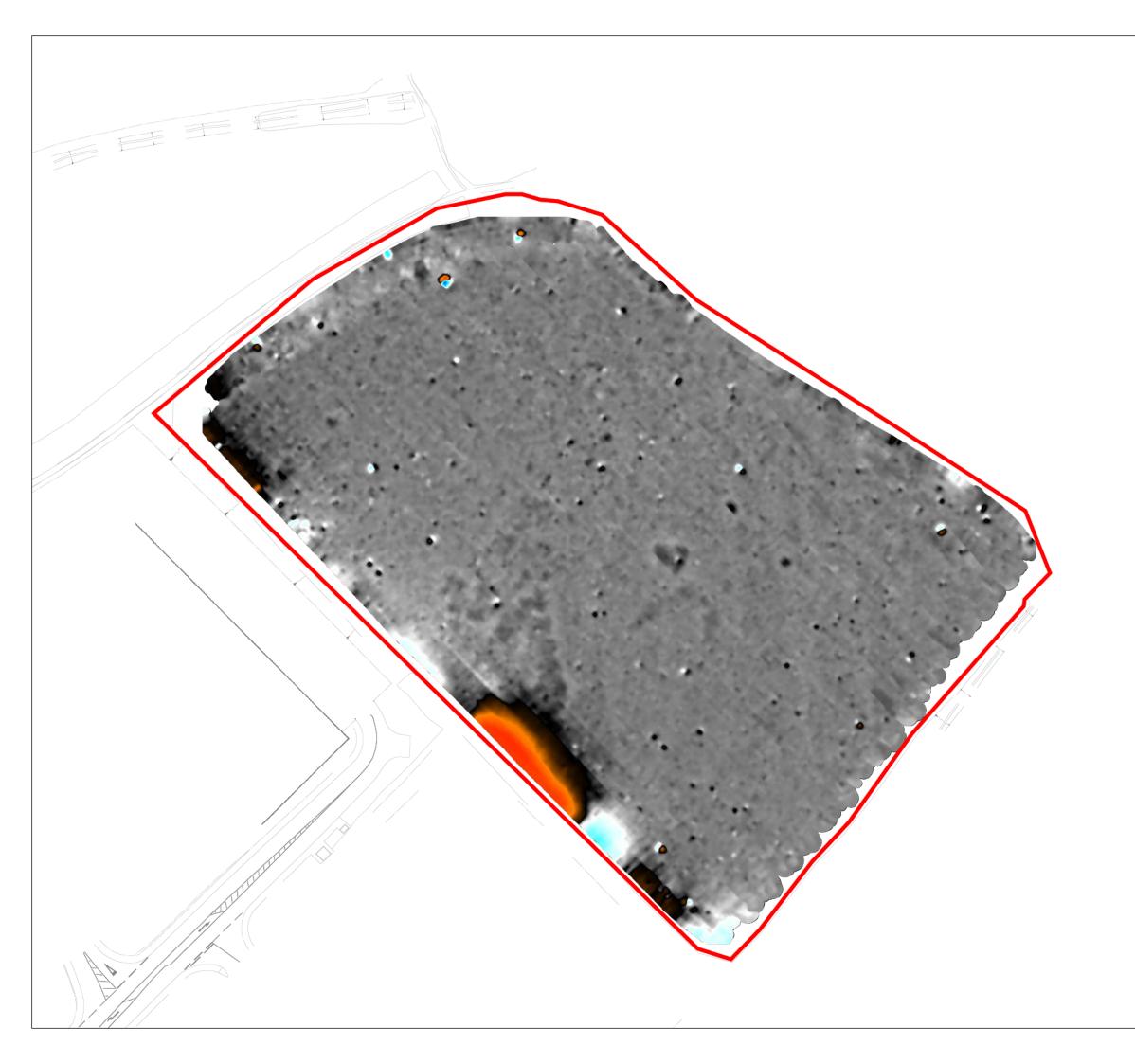
- 10.1 The minimally processed data, data images, XY traces and a copy of this report are stored in **SUMO Geophysics Ltd.'s** digital archive, on an internal RAID configured NAS drive in the Midlands Office. These data are also backed up to the Cloud for off-site storage.
- 10.2 The Grey Literature will be archived with OASIS and the relevant HER within a period of 12 months.

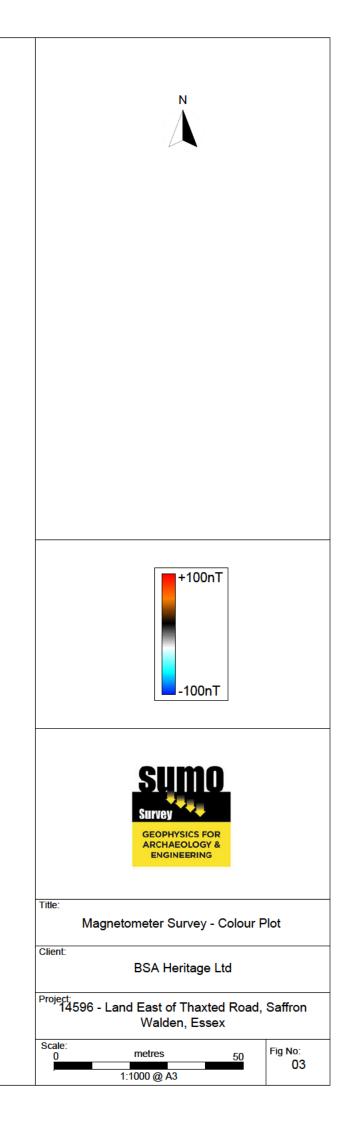


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Survey Areas	
SUITVBY GEOPHYSICS FOR ARCHAEOLOGY & ENGINEERING	
Title:	
Site Location	
BSA Heritage Ltd	
<sup>Project:</sup> 14596 - Land East of Thaxted Road, Walden, Essex	Saffron
Scale:	Fig No:

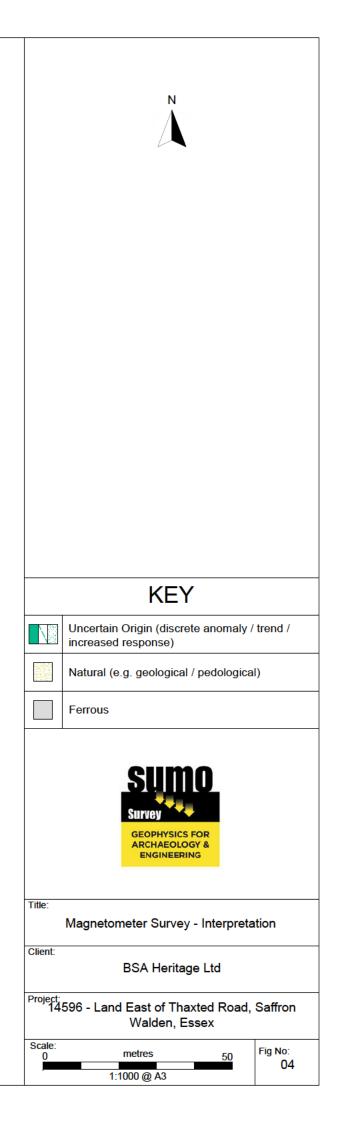


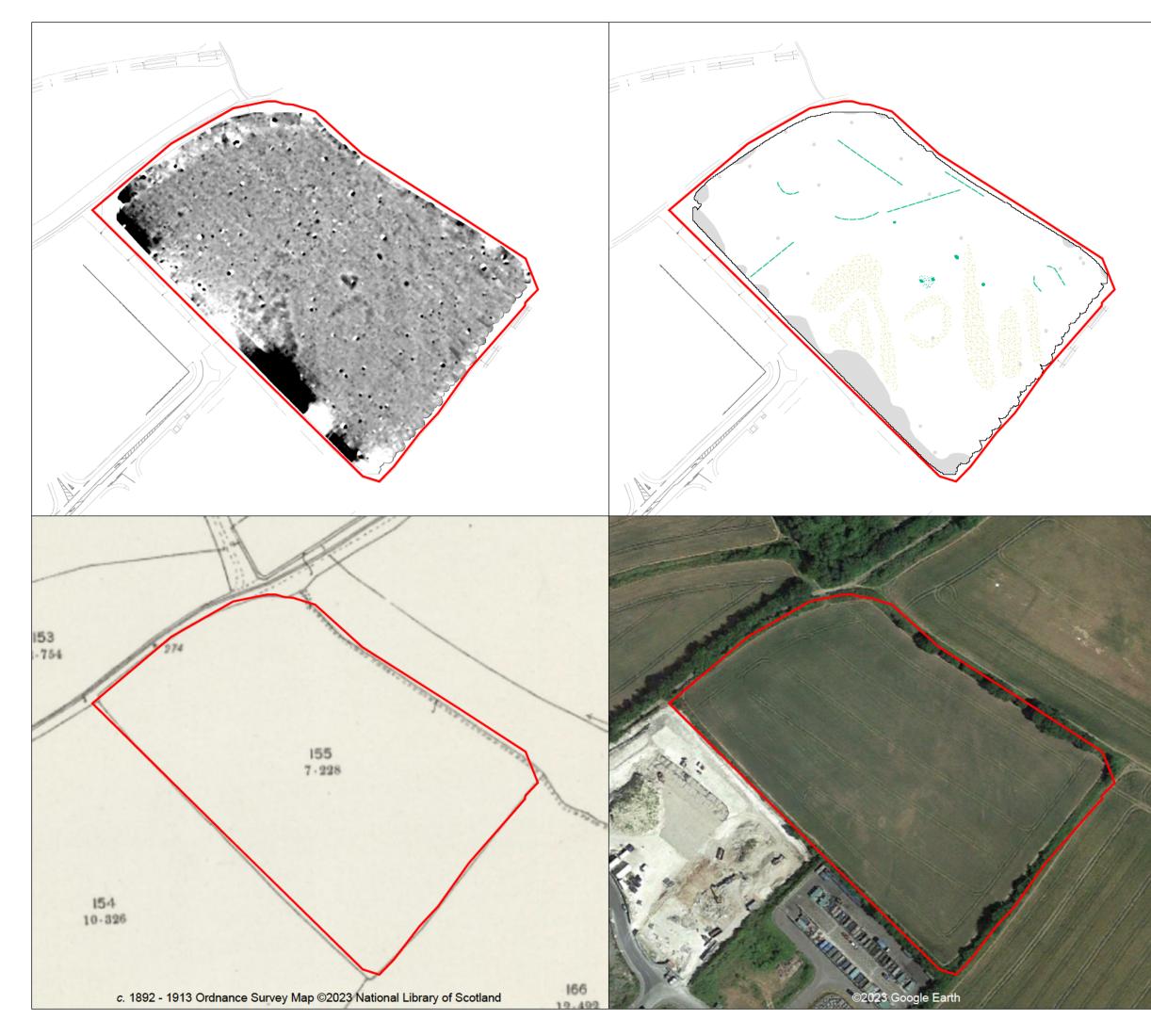


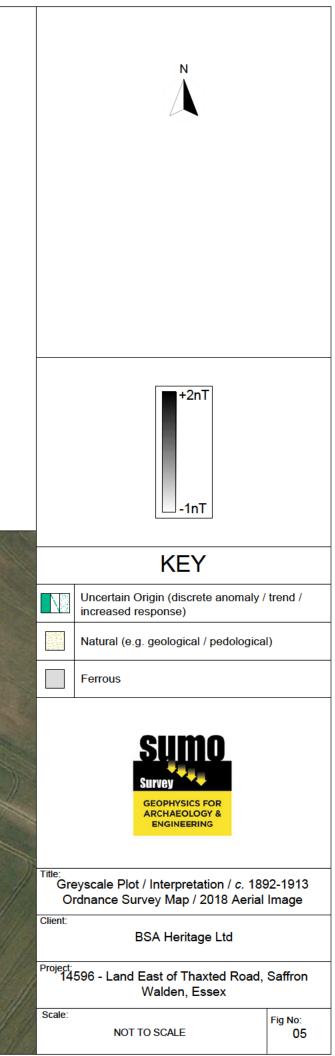


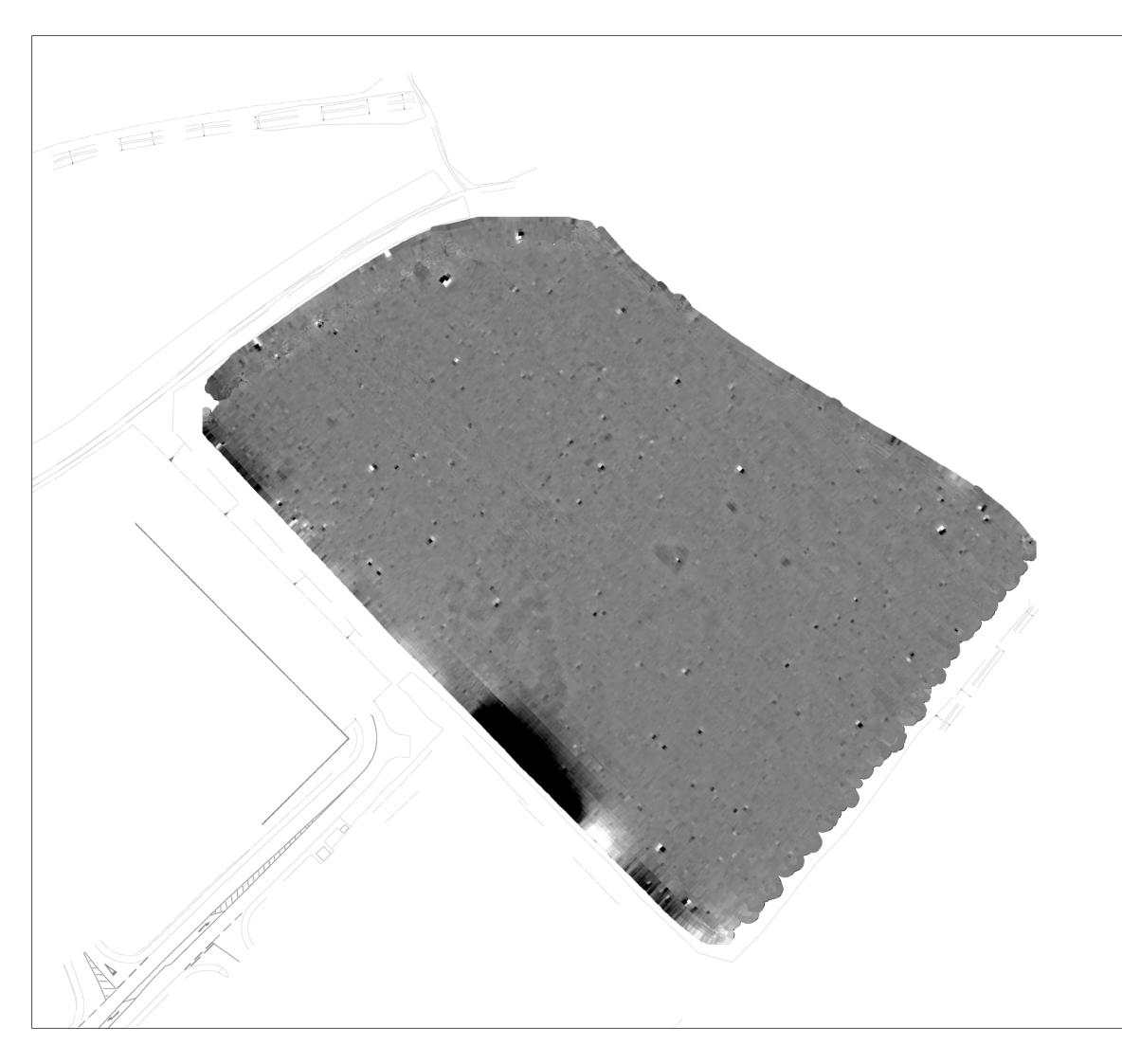


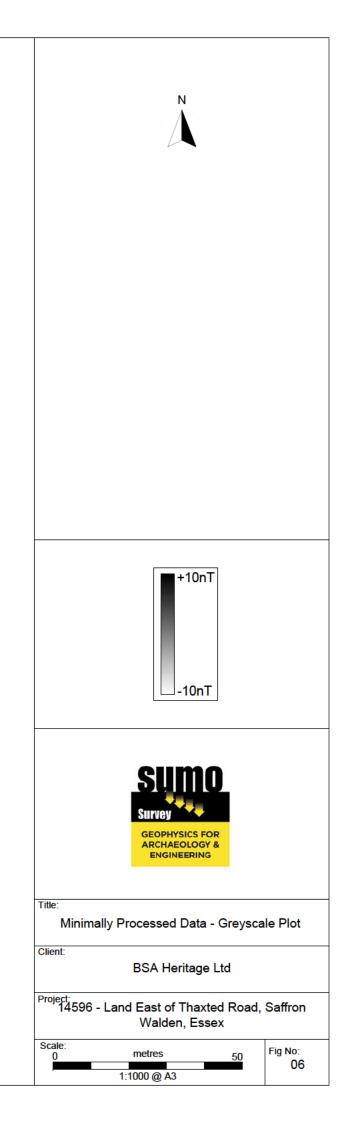


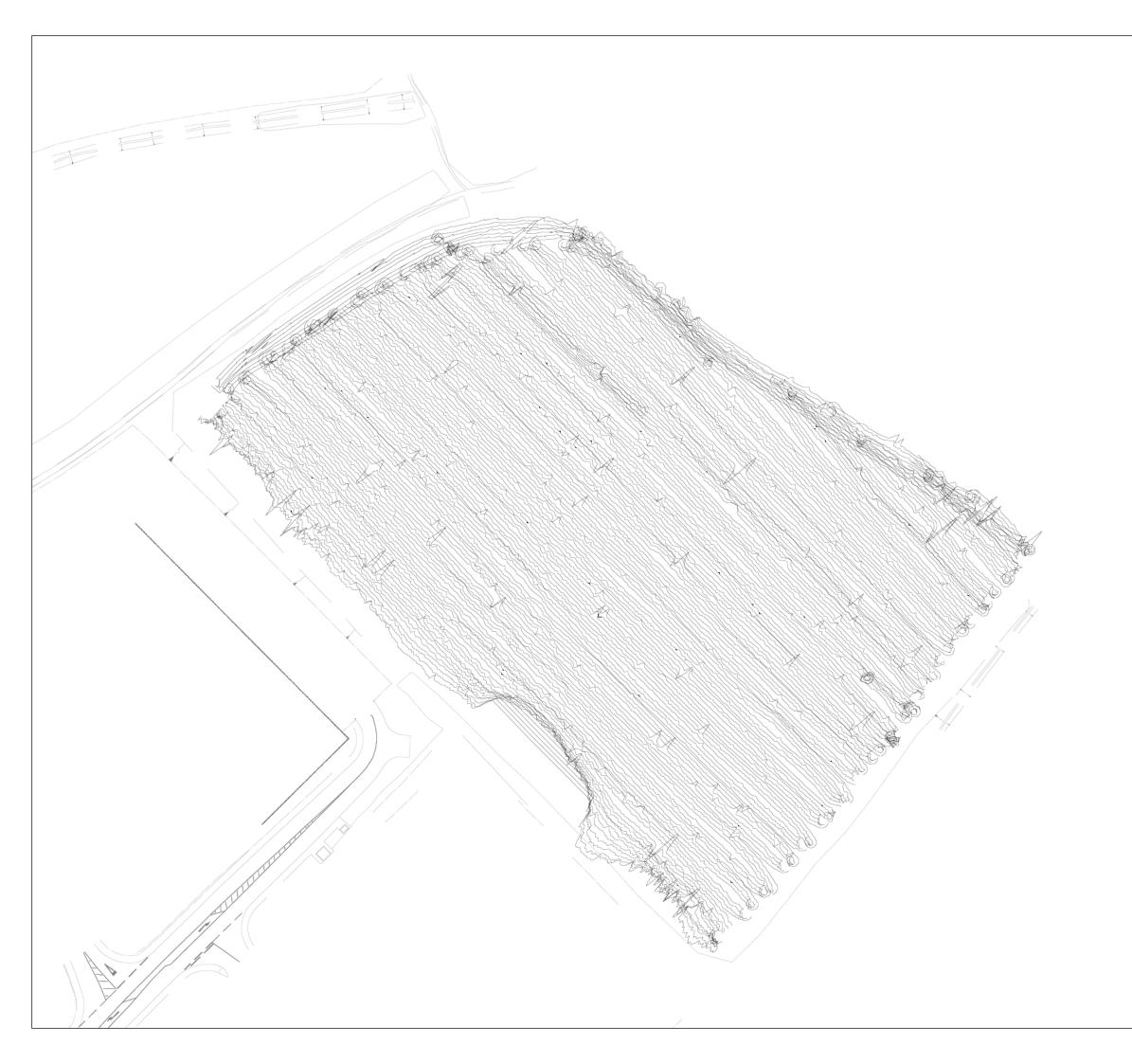


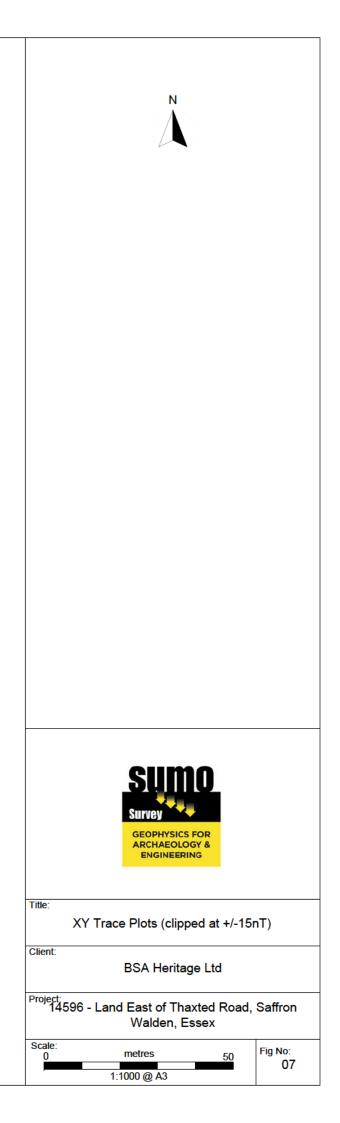


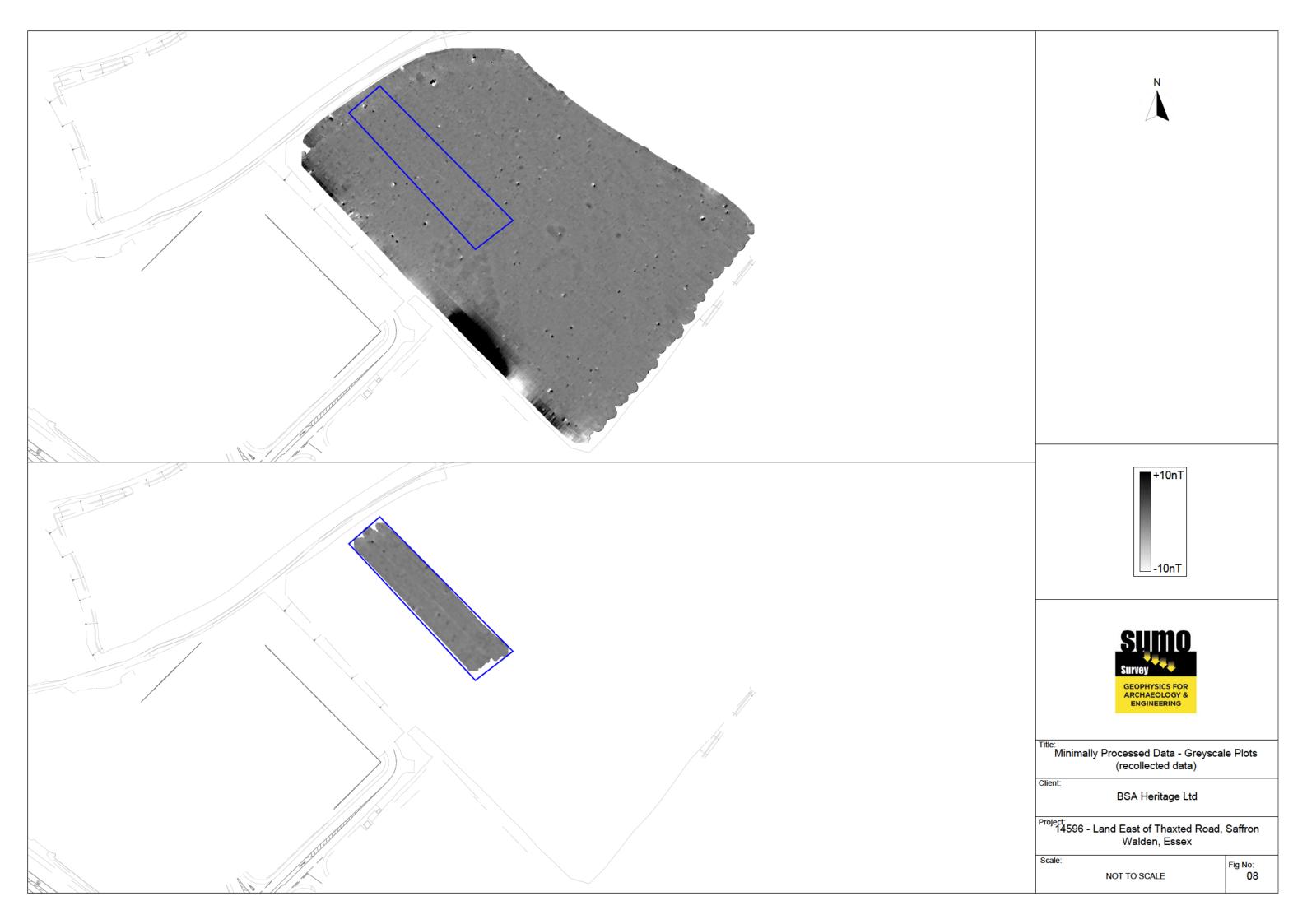












#### Appendix A - Technical Information: Magnetometer Survey Method

#### **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 rebroadcasts 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	1.0m	0.25m
Magnetometer	Bartington Cart System	1.0m	0.125m

#### Instrumentation:

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted horizontally, 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.

#### **Bartington Grad 601-2**

Hand-Held: Data will be collected using a Bartington Grad 601-2. The instrument consists of two paired sensors 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

#### **Bartington Cart System**

Data will be collected using a cart carrying four paired Bartington magnetic sensors. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings will be taken at 0.125m centres along traverses 1.0m apart.

#### **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.

#### **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 <i>Possible Archaeology / Natural</i> or (in the case of linear responses) <i>Possible Archaeology / Agriculture</i> ; 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.

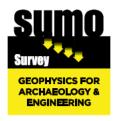
Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement 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.

## OASIS Summary for sumogeop1-519369

OASIS ID (UID)	sumogeop1-519369
Project Name	Geophysical Survey, Magnetometry Survey at Land East of Thaxted Road, Saffron Walden, Essex
Sitename	Land East of Thaxted Road, Saffron Walden, Essex
Sitecode	14596
Project Identifier(s)	SUMO-14596 Saffron Walden
Activity type	Geophysical Survey, Magnetometry Survey, MAGNETOMETRY SURVEY
Planning Id	
Reason For Investigation	Planning requirement
Organisation Responsible for work	SUMO Geophysics Ltd.
Project Dates	28-Sep-2023 - 28-Sep-2023
Location	Land East of Thaxted Road, Saffron Walden, Essex NGR : TL 55243 37403 LL : 52.013347636344086, 0.260685518877019 12 Fig : 555243,237403
Administrative Areas	
	Country : England
	County/Local Authority : Essex
	Local Authority District : Uttlesford
	Parish : Saffron Walden
Project Methodology	A temporary grid system was established over the site and marked out using canes. The location of the grid was set out using an RTK GPS system theoretically accurate to some 0.01m and referenced to OS co- ordinates. Data was collected using a cart carrying four paired Bartington magnetic sensors. Four 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. Each data point is geographically referenced using an on-board Trimble RTK survey grade GPS system. Readings were taken at 0.125m centres along traverses 1.0m apart. 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. Generally weak trends, pit-like anomalies and a zone of increased response are visible in the data and are likely due to a combination of natural and agricultural processes. Natural responses have also been detected in the survey.
Keywords	
Funder	Private or public corporation BSA Heritage Ltd
HER	Essex HER - unRev - STANDARD
Person Responsible for work	
HER Identifiers	
Archives	



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 3: Omega Architects Scheme Sketch Layout

Thaxted Road, Saffron Walden Archaeology & Heritage Statement December 2023

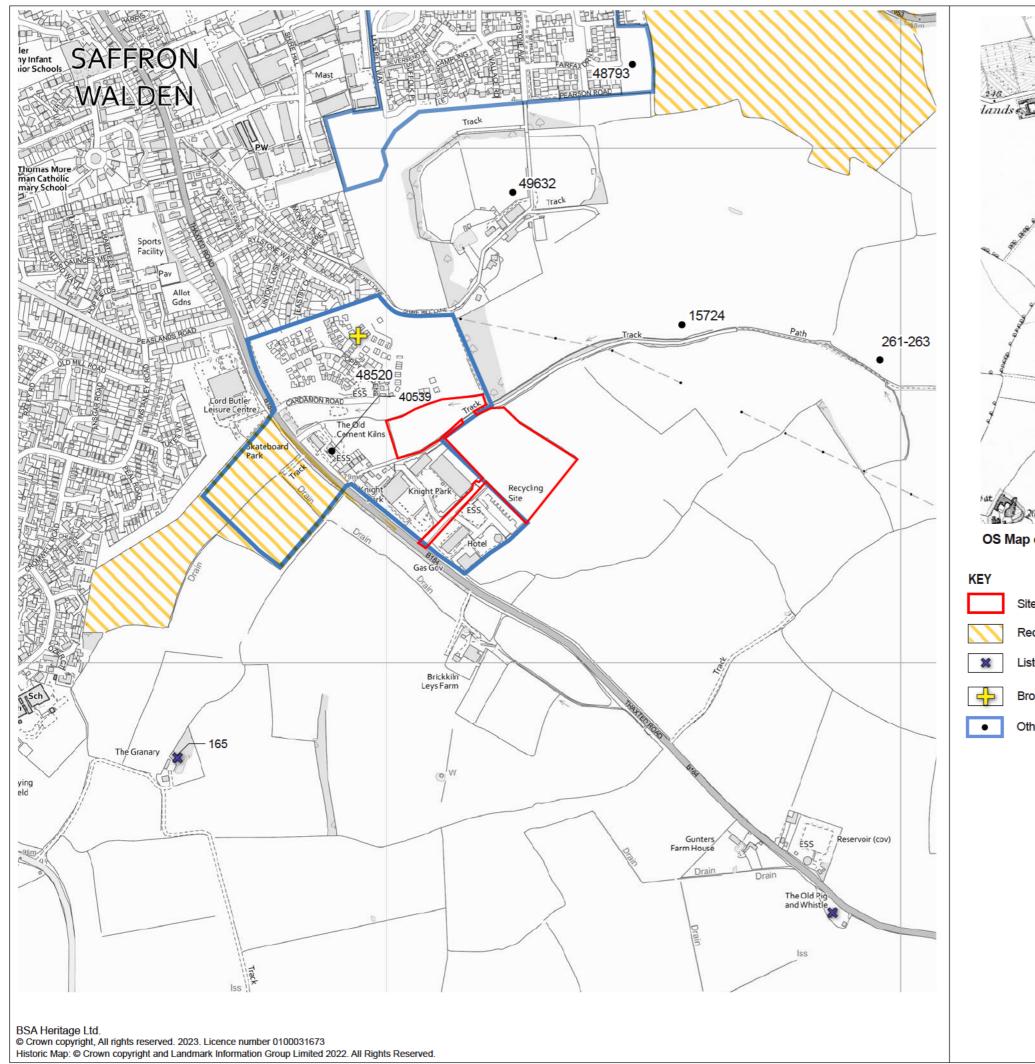


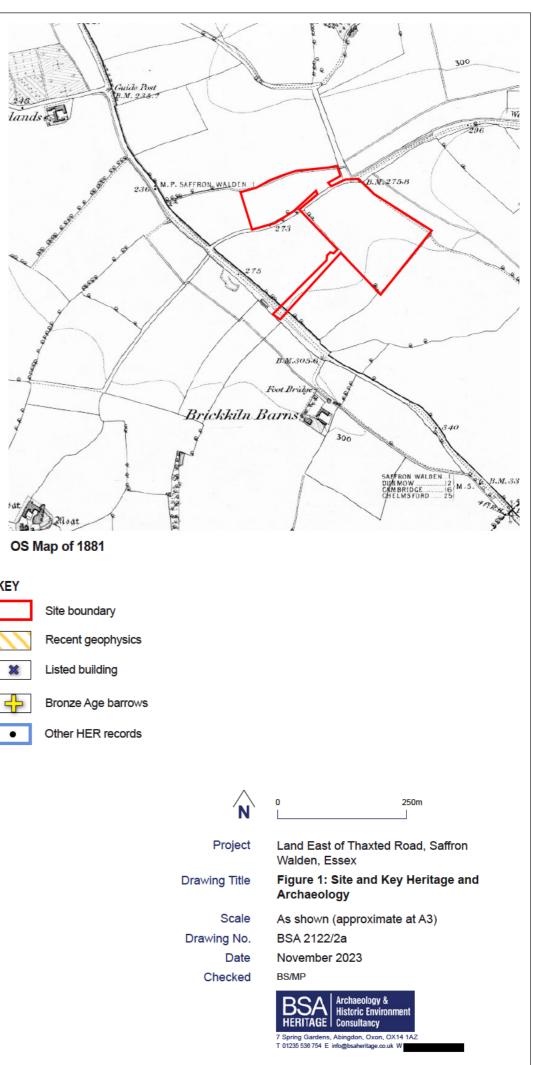
Scale



Figure 1: Site and Key Heritage and Archaeology

Thaxted Road, Saffron Walden Archaeology & Heritage Statement December 2023





## **Plates**



Plate 1: Eastern site field, looking south east



Plate 2: Western site field, looking west



Plate 3: Bridleway through site, looking north east



Plate 4: New residential development underway north west of site



Plate 5: Development south of site



Plate 6: Development south of site, looking north east

Thaxted Road, Saffron Walden Archaeology & Heritage Statement December 2023