Early Roman settlement at land west of Hardwicke Fields, Haddenham, Cambs

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Archaeological Evaluation Report

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Summary

Between the 23rd of April and the 6th of May 2018, Oxford Archaeology East (OAE) undertook a 14-trench evaluation, targeting geophysical anomalies identified within a parcel of land north of Hardwick Fields, Haddenham, Cambridgeshire (Fig. 1; TL 4598 7576). This phase of works was undertaken to assess the survival and character of archaeological remains and to aid in developing a mitigation strategy prior to development taking place.

The evaluation revealed a relatively well-preserved Latest Iron Age to Early Roman enclosure, with surviving midden material backfilled into the ditches along with a roundhouse drip gully, and a large pond-like feature, all recorded in the north-eastern and central third of the area. Outside of this enclosure, other archaeological remains of the period were rare, with only a single ditch in Trench 2 possibly being contemporary with the enclosure. Later features, in the form of medieval to post-medieval furrows, were identified across the site, surviving best within the western half.

A total of 1699g of pottery and 3915g of animal bone were recovered from the evaluation. The pottery ranged in date from the Latest Iron Age to Early Roman period, mostly from the latter period. No metalwork of significance was recovered from the trenching. Environmental remains were moderately well preserved, with occasional charred cereal grains such as emmer wheat and barley being recovered from the samples, particularly one sample taken from the enclosure ditch in Trench 8.

The results of the evaluation indicate that the geophysical survey was very successful, with archaeological remains being clearly identified within the trenching where expected. Two phases of ridge and furrow were identified within the trenches and geophysical survey and it would appear these furrows do not mask any earlier features.

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The project was managed for Oxford Archaeology East by Matt Brudenell. The fieldwork was directed by Pat Moan, who was supported by Lexi Dawson and Toby Knight. Survey and digitizing was carried out by Katie Hutton and Gareth Rees. Site plans and figures were produced by David Brown. Thank you to the teams of OAE staff that cleaned and packaged the finds under the management of Natasha Dodwell, processed the environmental remains under the management of Rachel Fosberry.

1 INTRODUCTION

1.1 Scope of work

1.1.1 Oxford Archaeology East (OAE) was commissioned by Palace Green Homes to undertake a trial trench evaluation on land north of Harwicke Fields, Haddenham, Cambridgeshire (TL 4598 7576, Fig. 1). In total, 14 trenches were excavated, totalling 539.5m linear metres and equating to a 3.4% sample of the total development area.

1.1.2 The work was undertaken as a condition of Planning Permission (planning ref. 17/01756/FUM), to aid in the planning office's decision-making process for deciding on requirements for any mitigation of non-designated heritage assets within the development area. A brief was set by Andy Thomas of the CCC HET (Thomas, 2018) outlining the Local Authority's requirements for this phase of evaluation, supported by a written scheme of investigation which was produced by OAE detailing the methods by which OAE proposed to meet the requirements of the brief (Blackbourn & Brudenell 2018).

1.2 Location, topography and geology

1.2.1 Haddenham is located on a prominent ridge of land running east to west, with a further spur running south-west from the village (Fig. 1). This ridge is met on its western side by land situated at between 1 to 2m OD, which would have been fenland prior to its drainage in post-medieval and modern times. The historic fen-edge is approximately 1.2km north of the site (Fig. 2).

1.2.2 The subject site is situated at the western end of Haddenham, relatively close (*c.* 450m) to its historic core. The parcel of land sits near the northern edge of the ridge of land Haddenham is situated upon, with the south-eastern-most limit of the area lying at approximately 29mOD, dropping significantly to 19m OD at its northern and western limits (Fig. 3).

1.2.3 The area of proposed development is approximately 3.2ha in size and currently in use as arable farmland, bounded to its east by retirement properties, and the north, west and south by further farmland (both arable and pastoral).

1.2.4 The geology of the subject site is recorded as Woburn Sandstone with no superficial deposits within the very eastern limits of site, whilst the majority the area was of the Kimmeridge Clay Formation (BGS: http://mapapps.bgs.ac.uk/geologyofbritain /home.html; accessed 30/04/18). Upon excavation of the trenches, the geology across all was of Kimmeridge Clay Formation.

1.3 Archaeological and historical background

1.3.1 A thorough archaeological and historical background of the site was produced for the Written Scheme of Investigation (Blackbourn & Brudenell 2018); a revised version of which is provided below. Relevant Historic Environment Records are plotted on Fig. 1.

Early Prehistoric (up to 350BC)

1.3.2 Very few features or findspots are located within Haddenham which pre-date the Iron Age period. Evidence was found at excavations at 40 West End, only 100m south of the subject site, where features suggesting small scale, temporary encampments during the Mesolithic and Neolithic periods were revealed (MCB 17792). Evidence for Bronze Age activity was seen at an evaluation south of Wilburton Road, 1.5km south-east of the subject site, which uncovered a pit containing the partial and near complete skeletons of two cows and a dog along with a sherd of probable Bronze Age pottery and a sherd of Beaker vessel (MCB 20847).

1.3.3 Approximately 650m to the east of the subject site, at Chewells Lane, an archaeological evaluation revealed a number of postholes, a pit and a buried soil, dated to the Late Bronze Age to Early Iron Age period (ECB 5108).

1.3.4 Findspots nearby include a Neolithic axe-head, recovered 750m south of the site (CHER 02036), and within the same area a Bronze Age spearhead was also recovered (CHER 02040).

Iron Age and Romano-British (350BC – AD410)

1.3.5 A number of Iron Age and Roman settlements as well as findspots have been identified within the vicinity of the subject site. In general, the Isle of Ely and the fen-edge were well settled locations during the periods, with numerous small farmsteads known within the locality, which would have taken advantage of the rich resources of the fens. The nearest significant evidence for this was approximately 250m to the south-east of the subject site, just off West End (ECB 1939), where evidence for Roman occupation was revealed in the form of enclosure ditches and pits. Large quantities of Roman pottery were recovered as well as the remains of 14 cattle purposefully buried within a ditch. Within the vicinity find spots are also recorded including the recovery of part of a beehive quern thought to be of Iron Age or Roman date (CHER 02044) along with a Roman coin (CHER 05623).

1.3.6 Further activity was identified near West End (125m south-west of the subject site; MCB 18421), where Iron Age to Roman features were revealed during evaluation, with ditches, gullies and pits thought to be Iron Age in date being recorded along with enclosure ditches, pits and postholes dating to the Early to Middle Iron Age. Evidence for Roman settlement within the location was also present with boundary ditches and pits being revealed.

1.3.7 Approximately 1.5km to the south-east, south of Wilburton Road (MCB 20847), an enclosure of Late Iron Age to Roman date was identified in the northern part of a site containing pottery of a contemporary date. Similarly, the evaluation at Chewells Lane, mentioned previously, uncovered a number of Middle Iron Age ditches truncating the earlier buried soil (ECB 5108).

Anglo-Saxon and medieval

1.3.8 Haddenham has Anglo-Saxon origins, evidenced by its name, although archaeological evidence for this origin is sparse. The excavation at the Three Kings Pub, 600m south-

east of the subject sites revealed a small Early Saxon cemetery, thought to represent a familial unit (CHER 09831). Of the graves revealed, a double burial of a male and female contained a number of grave goods including a spear, knife, shield boss, amber and glass beads, a brooch, tweezers and a spindle whorl. Another nine individuals were uncovered and thought to date to the first half of the sixth century AD.

1.3.9 The location of Ovins Cross is located 750m south-east of the site and is Middle Saxon in date (CHER 05721). Two Saxo-Norman timber structures were identified below the medieval remains of Hinton Hall (CHER 05795a), 1km to the east, one of which contained two sherds of Ipswich ware pottery.

1.3.10 Early Anglo-Saxon evidence was also found during the Chewells Lane evaluation, east of the subject site, where a large pit was excavated, containing some Saxon pottery and a further trench that contained two large circular loom-weights (ECB 5108).

1.3.11 By the time of the Domesday book (1086), Haddenham was a moderate-sized village with 18 households. The village of Linden or Linden End was twice the size, located to the south of Haddenham (and now subsumed into the modern boundaries of Haddenham Village). Hinton Hall, located 1km east of the subject site is first mentioned in documentary sources in 1221 (CHER 05795; not illustrated) with many changes to the hall's design taking place in the following centuries. A survey of the surviving earthworks and building was undertaken in 1969 and the current hall is of 19th century date.

1.3.12 The village's focal point was The Holy Trinity church (CHER 05697), located 400m east of the subject site. The church has 13th century origins with changes to the transepts and chancel arch during the 15th century. A significant restoration of the church was undertaken during the 19th century. West of the church, a large medieval ditch was identified (MCB 18183) that contained a small assemblage of 12th to 14th century pottery and most probably represents an important village boundary during the medieval period.

1.3.13 Medieval to post-medieval features were revealed at 7-11 High Street (CB 15289), 480m south-east of the site, comprising pits and postholes representing typical back yard and garden activity during the period.

1.3.14 Medieval/post-medieval furrows survive as earthworks nearby, located in the pastoral fields directly east of the subject site, within the same field as a ballast pit earthwork (CHER 11497; partially visible on Fig. 2).

Post-medieval to modern

1.3.15 Development of the village through to the early 20th century was concentrated along the High Street, with most of the village's listed buildings being located along it (DCB 765, 975, 974, 800, 798, 796, 1342), many dating to the 17th and 18th centuries.

1.3.16 A large mound, located 900m south-east of the subject site and is thought to be the remains of a post-medieval windmill (CHER 05719; not illustrated). This mount measures 23m in diameter and stands 1.8m proud. As previously mentioned, in the field directly east of the subject site is the earthworks of a large ballast pit, dug during

the construction of the neighbouring railway. The record states the earthworks of a light rail track are still visible, and the area was later used for tennis courts and now as rough pasture (CHER 11497).

Previous Evaluative Work

1.3.17 Prior to this phase of archaeological evaluation, a geophysical survey was undertaken as an initial phase of evaluation for the proposed development area. The survey identified a series of anomalies (Fig. 2, Appendix D, Fortuny 2018). The most notable, and clear, anomaly was that of a multi-ditched enclosure within the central to north-eastern part of the area, with other possible features such as a roundhouse and other internal divisions. Ridge and furrow remains were clearly present across the development area, on an east to west alignment om the hillside in the southern half of the area and north to south in the more gently rolling topography on the northern two thirds of the area. It is probable that these medieval or post-medieval landscape features would mask less visible features relating to earlier phases of past land use (e.g. smaller discrete pits).

1.4 Aims

1.4.1 The overall project aims and objectives were to establish the character, date and state of preservation of any archaeological remains within the proposed development area. In particular, the scheme of works aimed to:

- Assess the ground truth of the geophysical survey results, by targeting anomalies identified.
- Establish the extent of any remains and their preservation.
- Identify any possible masking deposits overlying archaeological features.
- Set the results with their local, regional and national contexts.
- Provide enough information on any heritage assets within the proposed development area to aid in the construction of an archaeological mitigation strategy, dealing with the preservation and recording of features and the costs of any further works.

1.4.2 This evaluation takes place within, and will contribute to the goals of the Regional Research Frameworks relevant to this area:

- Research and Archaeology Revisited: Research and Archaeology: A Framework for the Eastern counties: 1. Resource Assessment (Glazebrook 1997, East Anglian Archaeology Occasional Papers 3)
- Research and Archaeology: A Framework for the Eastern counties: 2. Research Agenda and Strategy (Brown & Glazebrook 2000, East Anglian Archaeology Occasional Papers 8)
- Research and Archaeology Revisited: A Revised Framework for the East of England (Medlycott 2011, East Anglian Archaeology Occasional Papers 24)

1.5 Methodology

1.5.1 Trenches were targeted on anomalies identified from the geophysical survey. The initial trench design contained 12x40m long trenches and 1x20m trench, totalling a 3% sample of the development area. These trenches were opened using a 14-tonne tracked 360°-type excavator with a 2m wide bladed ditching bucket. The trenches were excavated to a depth where natural geology or archaeological deposits were encountered. A contingency of a further 1% by area of trenching was available to allow the distribution of any archaeology present within the development area to be more clearly defined. Part of this contingency was used in extending Trenches 2, 4 and 13 and opening Trench 14.

1.5.2 All archaeological features or deposits revealed were hand excavated, drawn and photographed, with 50% of discrete features and a 1m wide intervention in linear features being dug. All features were plotted using a Leica GS08 GPS with smartnet capabilities.

1.5.3 All archaeological deposits and topsoil were scanned with a metal detector and any finds retained expect for those clearly modern in date. Bucket sampling of the plough soil was also undertaken across all trenches, along with the other soil horizons machine excavated (subsoil and a layer in Trench 10). A total of 90 litres of soil from either end of every trench was hand sorted to aid in finds retrieval.

1.5.4 Environmental samples were taken for flotation processing in order to recover any charred or mineralised ecofacts (plant remains).

2 RESULTS

2.1 Introduction and presentation of results

2.1.1 The results of the evaluation are presented below with stratigraphic descriptions of deposits by trench, starting with those targeting the enclosure identified on the geophysical survey. The full details of all trenches with dimensions and depths of all deposits can be found in Appendix A. All trenches were 40m long unless otherwise stated and depths of topsoil and subsoil within each trench will not be described in the results narrative unless they were of an unusual depth (i.e. more than average).

2.2 General soils and ground conditions

2.2.1 The soil sequence between all trenches was fairly uniform. The natural geology of Kimmeridge Clay was overlain by a silty clay subsoil, which in turn was overlain by ploughsoil.

2.2.2 Ground conditions throughout the evaluation were generally good, and most trenches remained dry throughout, although a large quantity of standing water was present within Trench 9. Archaeological features, where present, were clear against the underlying natural geology.

2.3 General distribution of archaeological deposits

2.3.1 Archaeological features were present in many trenches, but the vast majority of archaeological evidence was found within the trenches located over the main geophysical anomalies in the north-eastern to central quadrant of the development area (Trenches 4, 6, 7, 8, 9 & 10; Figs 3-5). Trenches 4, 6, 7, 8, 9, 10, 11, 12 and 13 contained archaeological features. The remaining trenches (1, 2, 3, 5 and 14) contained no features of significant archaeological merit, with only furrows and 4 ditches being revealed. Other furrows, seen within the geophysical survey, did not survive at the machine-level within most trenches.

2.4 Trenches Targeting the Enclosure

2.4.1 As stated previously, the vast majority of archaeological features were revealed within trenches targeting the enclosure and its associated ditches seen on the geophysical results (Figs 5 & 6; Trenches 4, 6, 7, 8, 9 & 10). These are described below, starting with the northern-most trench and heading southwards.

Trench 4

2.4.2 Trench 4 (Fig. 6, Plate 1) was located within the north-eastern quarter of the area on a north to south alignment, measuring 24m long and targeting the area just outside of the enclosure's northern corner (Fig. 2). Initially this trench was 20m in length, but was extended southwards to clarify the position of the enclosure's corner.

2.4.3 A pair of ditches (**21** & **26**, Fig. 9, S.5 Plate 2) were revealed in the southern part of the trench, forming the corner of the enclosure, both were on a north-east to south-west alignment before appearing to turn to run south-east to north-west. A shallow pit was

also recorded between the two ditches that contained a large quantity of horse bone (**24**).

2.4.4 The inner, and earliest, ditch (**21**) was 3.1m wide and 0.52m deep with a wide, flat based U-shape profile. The lower fill (22) was a 0.24m thick dark bluish grey silty clay with occasional chalk inclusions. A moderate assemblage (37g) of Early Roman (early to middle 1st century) pottery along with some animal bone was recovered from the fill and the environmental sample was found to contain occasional charred cereal grains which may have been intrusive. Overlying this was a mid greyish brown silty clay with occasional chalk and small stone inclusions (23), 0.3m thick, which again contained a moderate assemblage of Early Roman pottery (257g) and animal bone.

2.4.5 This ditch was cut by a small pit (**24**) measuring 0.56m in diameter and 0.26m deep with a wide U-shape profile. The pit was infilled with a mid greyish brown silty clay (25) which contained 29g of Early Roman pottery and a large quantity of horse remains (895g).

2.4.6 Finally, pit **24** was truncated on its northern edge by ditch **26**. This ditch was 1.02m wide, 0.38m deep with a U-shaped profile. Its lowest fill was a mid greyish brown silty clay (27) with occasional stone inclusions, 0.12m thick, which contained Early Roman pottery (22g) and animal bone. Overlying this was a dark greyish brown silty clay fill (28), 0.3m thick, which contained 305g pottery of the same date along with animal bone. No preserved plant remains were recovered from the environmental sample taken from the pit.

Trenches 8 & 9

2.4.7 Directly south of Trench 4 was a pair of 40m long perpendicular trenches forming an 'L', sited to target the enclosure's southern corner as well as possible anomalies identified outside of it (Figs. 5 & 6). Natural geology was encountered at an average depth of 0.4m, with 0.1m of subsoil overlain by 0.3m of topsoil. The only exception to this was in the middle of, and at the north-eastern end of, Trench 9 (Plate 9), where 0.55m of subsoil overlay the modern pit, which was in turn overlain by 0.3m of topsoil.

2.4.8 Within Trench 9 the eastern arm of the enclosure, on a north-west to south-east alignment was exposed (ditch **5**, Fig. 9, S.3, Plate 4), along with a large modern pit, also seen on OS Second Edition mapping (Fortuna 2018, fig. 7), which was left unexcavated. Ditch **5** was at least 2.7m wide, 0.55m deep with a flat base and gently sloping sides. The lower fill (6) was a 0.25m thick dark grey silty clay that contained 96g of Early Roman pottery and animal bone, overlain by a 0.3m thick mid greyish brown silty clay (7).

2.4.9 Trench 8 (Plate 5) contained a pair of enclosure ditches forming the southern arm of the enclosure and a posthole (**1**, **8** & **10**, respectively) along with the poorly preserved remains of a possible roundhouse gully (gullies **12** and **14**).

2.4.10 Beginning at the north-western end of the trench, gullies **12** and **14** were relatively poorly preserved, having been truncated by modern ploughing. The inner gully (**12**) was 0.2m wide and 0.11m deep with a wide U-shaped profile, terminating halfway into the trench. It was filled with a mid brownish grey silty clay (13). Adjacent to this,

the outer gully (**14**) was 0.23m wide and 0.07m deep with a wide U-shaped profile, infilled with a mid brownish grey silty clay (15) that contained a large quantity of animal bone and a small assemblage of fired clay along with a single intrusive sherd of *c*. 14th century AD pottery.

2.4.11 Directly south of this was a pair of ditches relating to the southern arm of the enclosure. The most northerly of these two ditches (**1**, Fig. 9, S.1, Plate 6) was on a north-east to south-west alignment and was 1.4m wide and 0.66m deep with a U-shaped profile. The lower fill was a light yellowish grey silty clay (2), 0.2m thick that contained 16g of Early Roman pottery, which was overlain by a mid brownish grey silty clay (3), 0.3m thick, containing 33g of Latest Iron Age to Early Roman pottery and animal bone. The uppermost fill (4) was a dark brownish grey silty clay with frequent charcoal inclusions, 0.14m thick, which was interpreted as midden redeposited into the top of the ditch. A small assemblage of Early Roman pottery and animal bone was recovered from the fill. The environmental sample from this fill was the most productive from all taken across the evaluation, with charred spelt/emmer wheat, (some of which showed signs of germination), barley, bromes and occasional duckweed seeds.

2.4.12 Ditch **8** (Fig. 9, S.2) ran parallel to ditch **1**, measuring 1.85m wide and 0.4m deep with a wide U-shape profile. Its sole fill (9) was a dark brownish grey silty clay with moderate charcoal inclusions, which contained 130g of mid-1st century pottery. A small posthole was located adjacent to this ditch (**10**, Plate 7), measuring 0.3m in diameter and 0.11m deep with a U-shaped profile. Three sherds (1g) of Early Roman pottery was recovered from the mid brown silty clay fill (11) along with a 1g sherd of residual Early Bronze Age pottery.

Trench 7

2.4.13 This north-west to south-east trench was located south-west of Trenches 8 and 9 and contained a single ditch which formed the enclosure's north-western arm (**16**, Figs 6 & 9, S.4). This ditch was 1.4m wide and 0.7m deep with a U-shaped profile. The lower fill (17) was a light grey silty clay with occasional flint and chalk inclusions, 0.24m thick, which contained a small assemblage of animal bone. This was overlain by a mid brownish grey silty clay with occasional charcoal inclusions (18), 0.46m thick, from which 50g of Latest Iron Age and 234g of Early Roman pottery was recovered, along with 190g of animal bone.

2.4.14 No features were identified outside of the enclosure (north-westwards from ditch **16**).

Trench 6

2.4.15 To the south-west of Trench 7, this trench was on a north-west to south-east alignment, targeting ditches identified from the geophysical survey (Fig. 6). A pair of ditches and a single pit were uncovered, with the ditches forming part of a north-east to south-west boundary leading off the enclosure's south-western corner and continuing towards Trench 10. A single furrow also survived within the trench.

2.4.16 At the north-western end of the trench, a single furrow was excavated, measuring 1m wide and 0.2m deep. No finds were recovered.

2.4.17 Within the centre of the trench, two ditches and a single pit were revealed. The western-most ditch was left unexcavated, due to a field drain running through its centre, but it clearly relates to a ditch recorded by the geophysics, leading off the enclosure's north-western side. Adjacent to this was a small pit (**43**, Fig. 9, S.12) measuring 0.92m wide and 0.42m deep with a U-shaped profile. The lower fill (44) was a mid brownish grey silty clay with rare charcoal inclusions, 0.11m thick. Overlying this was a dark brownish grey silty clay with moderate charcoal inclusions, 0.31m thick, which contained 79g of Early Roman pottery. An environmental sample was taken and found to contain no preserved plant remains.

2.4.18 Directly to the east of the pit, was a further ditch (**35**, Fig. 9, S.14) which measured 1.8m wide and 0.27m deep with a U-shaped profile. The north-western edge of the ditch was very shallow and may represent part of a hedgerow on the edge of the ditch. The sole fill (36) was a dark brownish grey silty clay with moderate charcoal inclusions, which contained 70g of Early Roman pottery.

Trench 10

2.4.19 A large feature interpreted as a pond was revealed within the eastern third of the trench (**46**=**49**, Fig. 9, S.13, Plate 8). The continuation of the ditches identified within Trench 6 was not seen within Trench 10, possibly due to them being truncated or masked by this pond (Figs 5 & 6).

2.4.20 Two test pits were dug into the 8.6m diameter pond which was found to be between 0.5 and 0.65m deep. The pond's lowest fill (47, 50) was a mid grey silty clay with rare charcoal inclusions, 0.25m to 0.3m thick, which contained 181g of Latest Iron Age pottery (the majority of a vessel base with rilling) and animal bone, along with ostracods (bivalve crustaceans), indicating the feature originally held water. Overlying this was a mid brownish grey silty clay (48, 51) with rare charcoal inclusions. A large assemblage (684g) of animal bone, mostly cattle, and 126g of Early Roman pottery was recovered from the fill. The lower horizon of this deposits was a darker grey, suggesting water-lain deposition. Overlying these pond fills was a 0.25m thick layer of colluvium which had washed into the hollow formed by the infilled pond. The layer (58) was a light greyish brown silty clay with moderate flint and stone inclusions.

2.5 Trenches to the West

2.5.1 The trenching undertaken west of the identified enclosure (Figs 5 & 7, Trenches 1, 2, 3, 5 and 14) contained much less archaeological activity, with only the southern end of Trench 2 containing a number of ditches. Trenches 3 and 5 contained no significant features, with only three furrows being revealed in Trench 3.

Trench 2

2.5.2 This 44m long trench was located north-west of the enclosure, and within the southern end of the trench was three possible ditches (**29**, **31** and **33**) along with a further possible ditch (**37**), although only one (**31**) contained dateable artefacts.

2.5.3 Starting with the most southerly, ditch/furrow **29** was 0.6m wide and 0.2m deep, on a north-east to south-west alignment. No finds were recovered from the mid greyish brown silty clay (30) and the feature aligns well with a furrow identified on the geophysical survey. Just north of this was a possible ditch (**37**), measuring 1.3m wide and 0.4m deep, with an irregular profile. No finds were recovered from the mid brown silty clay fill, and during excavation it was questioned whether the feature was in fact subsoil surviving within a hollow in the geology.

2.5.4 Directly northwards, ditch **31** (Fig. 9, S.7) was 1.5m wide and 0.3m deep with a wide U-shaped profile. The sole fill (32) was a mid brownish grey silty clay with rare stone inclusions. A small amount of animal bone and a single abraded sherd (4g) of Latest Iron Age pottery was recovered from the fill along with 35g of fired clay, possibly the remains of a loom weight.

2.5.5 Finally, possible ditch **33** (Fig. 9, S.8) was directly north of ditch **31** and on a west-north-west to east-south-east alignment. The feature was 0.8m wide and 0.1m deep with a wide U-shaped profile. No finds were recovered from the mid greyish brown fill (34), and the feature may represent part of an earlier ridge and furrow system or again be sub-soil within a natural depression.

2.5.6 These last two ditches do not match well with any geophysical anomalies, although the northern-most (**33**) is aligned with the current boundary to the north, and may be an earlier iteration of this feature. Ditch **31**, on the other hand, may well be Early Roman in date.

Trenches 1 & 14

2.5.7 Trench 1 was on a west-north-west to east-south-east alignment. Three roughly north to south aligned furrows were revealed within the trench, none of which contained finds.

2.5.8 Trench 14 extended southwards from the eastern end of Trench 1, on a south-west to north-east alignment, for 30m. This trench was excavated to try and identify the continuation of ditch **31**, seen in Trench 2. This continuation was not found. The natural geology was overlain by a 0.3m thick spread of sterile colluvial material, overlain by 0.2m of subsoil and 0.2m of topsoil.

2.5.9 It is possible that the ditch was cut through the colluvium in this area and was not visible due to the similarity in the deposits.

2.6 Trenches to the South

2.6.1 The three trenches located on the crest of the hill, within the southern third of the site (Fig. 8, Trenches 11, 12 and 13), were found to contain features later in date than the Early Roman enclosure, with post-medieval finds being recovered from a probable furrow within Trench 13 and the remaining trenches containing further furrows and a single undated ditch.

Trench 11

2.6.2 To the south-east of Trench 10, this trench contained two furrows and a possible ditch (**52**, Fig. 9, S.15). The two furrows were east to west aligned, matching with those seen on geophysical survey and contained common clinker and ceramic building material inclusions. The ditch (**52**) was 0.7m wide and 0.3m deep with a U-shaped profile and also on an east to west alignment. The sole fill (53) was a mid brown silty clay with occasional stone inclusions. A single sherd (4g) of abraded Latest Iron Age pottery was recovered from the fill.

Trench 12

2.6.3 To the east of Trench 11, a pair of north to south furrows were revealed within the eastern 5m of Trench 12. One of them was excavated (**54**, Fig. 9, S. 16) and measured 0.86m wide and 0.19m deep with a flat-bottomed U-shape profile. Its sole fill (55) was a mid greyish brown silty clay with occasional stone inclusions. Abraded 1st to 3rd century AD pottery (4g) and animal bone was recovered from the fill.

Trench 13

2.6.4 The southernmost trench in the field, this trench contained three furrows, one of which was excavated (**39**, Fig. 9, S.10) and a pair of features identified as ditches at its western end (**41** and **56**). A 4m extension off the trench's northern side was excavated in order to more fully expose and characterise these features

2.6.5 The possible ditches (**41**, **56**, Fig. 9, S.11 & 17) were 0.5m and 0.85m wide, 0.1m and 0.12m deep, respectively, both with a U-shaped profile; the deeper of the two being located at the western end of the trench, heading down the hill's slope. The two features fills (42, 57) were a mid to dark greyish brown silty clay with occasional stone and charcoal inclusions. Clay tobacco pipe and a fragment of tile were recovered from the fill of ditch **56**. Neither of the features extended into the trench extension, suggesting they are the shallow remnants of furrows.

2.6.6 Truncating these possible ditches was a furrow (**39**) measuring 1.15m wide and 0.25m beep with a wide U-shape profile. The mid to dark greyish brown silty clay fill had rare clinker inclusions and contained post-medieval pottery along with a small assemblage of animal bone.

2.7 Bucket Sampling & Metal Detecting Results

2.7.1 Results of the bucket sampling were extremely limited. A fragment of tobacco pipe came from Trench 10, a sherd of post-medieval (18th century) pottery from Trench 1 and a further sherd of post-medieval pottery from Trench 11. No other artefacts of archaeological significance were recovered.

2.7.2 Similarly, a metal detector survey of the excavated soils and features resulted in no objects of significance being recovered, with only modern ironwork fragments being found.

2.8 Finds & Environmental summary

2.8.1 A moderate assemblage of Latest Iron Age (400g) to Early Roman pottery (1299g) was recovered from the evaluation, along with a very small assemblage of ceramic building material and fired clay (80g & 82g, respectively). Very few other artefacts were recovered, with a small number of sherds of post-medieval pottery being found in the top of unexcavated furrows (not retained).

2.8.2 A relatively large faunal assemblage was recovered from the evaluation (3915g, of which 2309g was identifiable to species), the vast majority of which was of horse and cattle. The bulk soil samples taken from features were found to contain occasional poorly to well preserved charred plant remains, with the best preservation found within ditch 1 (Trench 8), which contained charred barley, emmer and bromes along with duckweed seeds.

3 DISCUSSION

3.1 Reliability of field investigation

3.1.1 The results of the evaluation can be considered reliable; the horizon between the geology and sub-soil was clear within all trenches, whilst the dark silty fills of the archaeological features (particularly those of Early Roman date) contrasted well with the blue clay geology. Water ingress into certain trenches was a moderate issue, particularly after heavy rainfall, with standing water draining very slowly.

3.2 Evaluation objectives and results

3.2.1 The evaluation was successful in establishing the extent of non-designated archaeological remains within the development area; confirming the presence of a concentrated area of archaeological remains within the north-eastern to central part of the site which clearly related to an enclosure of Early Roman date, with limited archaeological evidence being found outside of this clearly defined area. The geophysical survey also appears to be extremely accurate, with the survey identifying the features very clearly, and the features also being readily apparent within the trenches (Figs 3 & 5).

3.2.2 Similarly, the ridge and furrow identified on the survey does not appear to have been masking any features and few discrete features appear to be surviving within the area. Overall the evaluation provides enough information on the heritage assets within the development area to aid in the construction of a mitigation strategy dealing with the preservation by record of the enclosure and associated features.

3.3 Interpretation

Early Roman Farmstead

3.3.1 The results of this evaluation have revealed a settlement in the form of a conquest-period enclosed farmstead situated near to the fen-edge (Fig. 2). Limited discrete features were revealed, but the relatively large quantities of material from the ditches (animal bone and pottery) along with the feature identified as a ring gully (part of a roundhouse) within the enclosure would suggest long term occupation within it, as opposed to a seasonal use for stock management. The enclosure is fairly typical in comparison to similar settlement types – with the ditches relating to an enclosed settlement, with no significant activity identified outside of the enclosures internal area. This focus is often attested to at other sites, for example the Late Iron Age enclosed farmstead at Cambourne ('Poplar Plantation Site' in Wright *et al*. 2009).

3.3.2 This form of settlement type is well-attested to within the local region during the Iron Age and Roman periods. A similar, if slightly later, settlement has been identified at Over (albeit only in cropmark form; Moan 2017) and Hall, in the context of the results of the Fenland Project, notes that "there were villas and the whole landscape was infilled with small rural settlements" (Hall 1996). Similarly, a recent case study by the Roman Rural Settlement Survey determined that 71% of known Roman settlement sites in the Fenland originated during the Late Iron Age (Smith *et al.* 2016, fig. 5.57).

3.3.3 Some differences can be highlighted between this settlement and others of similar date from the region. For example, the 'organic' morphology of the enclosure is a trait often associated with those settlements which have a Middle Iron Age origin. This can be seen in some of the Middle to Late Iron Age enclosures investigated approximately 5km south-west of the subject site during the Haddenham Project (Evans 2006). These excavations also produced one of the largest assemblages of Middle Iron Age Scored Ware pottery from Cambridgeshire, evidence of occupation through the Middle and Late Iron Age periods.

3.3.4 In this context, it is of interest that the evidence from the subject site suggest the settlement was only occupied during the immediate post-conquest to Early Roman period, due to the recovery of mainly early to mid-1st century AD material from the features. However, it may be that further investigation will identify an earlier origin and that the ditches excavated during this phase of evaluative works were infilled during the Early Roman period after being kept relatively clean through the preceding period.

3.3.5 The farmstead's topographic location is also of interest; situated upon a slight plateau at the base of a hill leading down off the higher ground in Haddenham to the south and east (Fig. 4). The boundary ditch extending from the enclosure's south-west corner then follows the base of the hill's slope, curving around it and heading south-west and then south. It may be that this ditch formed part of a trackway heading up to higher ground to the south-west where a larger settlement was located, although no current evidence for a settlement is known on the higher ground to the south-west, with the only known large Roman settlement being identified to the east.

3.3.6 Artefactual evidence from the enclosure clearly indicates a date for the infilling of the enclosure during the late 1st century. The lack of Iron Age ceramics is intriguing, suggesting a very short period for the establishment and occupation period of the farmstead. Similarly, the animal bone assemblage is perhaps more typical of a Romano-British than Iron Age settlement, dominated by cattle and horse (the latter largely originating from a single deposit), with relatively little sheep/goat and pig remains present. Clearly, the limited scope of these evaluative works precludes detailed interpretations of the material, and it may well be the characteristics of the assemblages change during any further investigation.

3.3.7 Other evidence for land-use during the period is limited, although the southern end of Trench 2 contained one ditch that had a sherd of abraded latest Iron Age pottery and 35g of fired clay, possibly indicating a field systems or boundary associated with the enclosure, although comparable features were not revealed within any other trenches.

Post-Roman land-use

3.3.8 No further evidence for occupation was found after the Early Roman enclosure fell into disuse. The medieval to post-medieval furrows identified on the geophysical survey, and found occasionally within the trenches suggest the land was part of open fields surrounding Haddenham during the periods. Two phases of ridge and furrow are apparent, with a broadly north to south system appearing to be the earliest (which

appear faintly on the geophysical survey). Then an east to west section on the within the southern part of the development area, along with a north-north-east to south-south-west section within the western half of the area are then in use (apparent as the darker regular linear anomalies on the geophysical survey). All the furrows contained occasional sherds of dateable pottery, all identified as post-medieval in date (AD1500 to 1750). Clinker was also noted in some of the later furrows.

3.3.9 Other than the furrows, other possible evidence of post-medieval land use included a ditch on a west-north-west to east-south-east alignment, seen in Trench 2. This ditch, and other regularly spaced ditches on the same alignment seen in the geophysical survey (although not identified in trenches) may be evidence for the initial fields implemented during the period of enclosure in the late post-medieval period.

3.3.10 Finally, the large modern pit located within the central part of Trench 9 correlates well with the cut of a large feature visible on the OS 2nd edition 6-inch mapping, *c.* 1882 (Fortuna 2018, fig. 7; p. 46 of this report). The function of the pit is unclear from the map, although may be a pond or an old clay extraction pit. The feature appears to have had limited impact on the preservation of the Early Roman enclosure.

3.4 Significance

3.4.1 The identification of an Early Roman enclosed farmstead is of regional significance, adding a further example to this well attested settlement type on the Fen-edge. The period of the occupation would appear to be relatively short lived during the 1st century, with no Middle Iron Age antecedent.

3.4.2 Outside of the identification of this enclosure, the rest of the development area appears to have limited archaeological potential. The furrows were relatively poorly preserved, having been heavily truncated by modern ploughing.

APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

A.1.1 Full Trench dimensions and descriptions of all features within each are tabulated below. Dating of features is provided where dateable artefacts were recovered. The date format is presented in short-hand; *i.e*. MC1 equals mid-1st century AD, E/MC1 equals early to mid-1st century AD *etc*.

Trench 1						
General description					**Orientation**	WNW-ESE
Trench contained three N-S furrows. Consists of topsoil (0.3m) and subsoil (0.2m) overlying a natural geology of clay.					**Length (m)**	30
					Width (m)	2
					Avg. depth (m)	0.5
Trench 2						
General description					**Orientation**	NNE-SSW
Four possible ditches present. Consists of topsoil (0.3m) and subsoil (0.3m) overlying natural geology of clay.					**Length (m)**	44
					Width (m)	2
					Avg. depth (m)	0.6
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
29	Cut	0.6	0.2	Ditch		
30	Fill	-	0.2	Ditch		
31	Cut	1.5	0.3	Ditch		
32	Fill	-	0.3	Ditch	Pottery	C1BC-MC1
33	Cut	0.8	0.1	Ditch		
34	Fill	-	0.1	Ditch		
37	Cut	1	0.4	Ditch		
38	Fill	-	0.4	Ditch		
Trench 3						
General description					**Orientation**	E-W
Trench devoid of archaeology. Consists of topsoil (0.25m) and subsoil (0.15m) overlying natural geology of clays and sands.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.4
Trench 4						
General description					**Orientation**	N-S
Two ditches a pit and furrow present. Consists of topsoil (0.38m) and subsoil (0.2m) overlying natural geology of clay.					**Length (m)**	24
					Width (m)	2
					Avg. depth (m)	0.58
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
21	Cut	3.1	0.52	Ditch		
22	Fill	-	0.24	Ditch	Pottery & Bone	E/MC1
23	Fill	-	0.3	Ditch	Pottery & Bone	E/MC1
24	Cut	0.56	0.26	Pit		
25	Fill	-	0.26	Pit	Pottery & Bone	E/MC1
26	Cut	1.02	0.38	Ditch		
27	Fill	-	0.12	Ditch	Pottery & Bone	MC1
28	Fill	-	0.3	Ditch	Pottery & Bone	MC1

Trench 5						
General description					**Orientation**	WNW-ESE
Three furrows present (unexcavated). Consists of topsoil (0.3m) and subsoil (0.2m) overlying natural geology of silty sand.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.5
Trench 6						
General description					**Orientation**	NW-SE
Two ditches, a pit and a furrow present. Consists of topsoil (0.32m) and subsoil (0.23m) overlying natural geology of clay.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.55
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
35	Cut	1.8	0.27	Ditch		
36	Fill	-	0.27	Ditch	Pottery	E/MC1
43	Cut	0.92	0.42	Pit		
44	Fill	-	0.11	Pit		
45	Fill	-	0.31	Pit	Pottery	MC1
Trench 7						
General description					**Orientation**	WNW-ESE
One ditch present. Consists of topsoil (0.32m) and subsoil (0.17m) overlying natural geology of clay and sands.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.47
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
16	Cut	1.4	0.7	Ditch		
17	Fill	-	0.24	Ditch		
18	Fill	-	0.46	Ditch	Pottery & Bone	MC1
Trench 8						
General description					**Orientation**	NW-SE
Two ditches, two ring gullies and a posthole present. Consists of topsoil (0.3m) and subsoil (0.11m) overlying natural geology of clay.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.41
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
1	Cut	1.4	0.66	Ditch		
2	Fill	-	0.2	Ditch	Pottery	E/MC1
3	Fill	-	0.3	Ditch	Pottery & Bone	E/MC1
4	Fill	-	0.14	Ditch	Pottery & Bone	E/MC1
8	Cut	1.85	0.4	Ditch		
9	Fill	-	0.4	Ditch	Pottery	MC1
10	Cut	0.3	0.11	Posthole		
11	Fill	-	0.11	Posthole	Pottery	E/MC1
12	Cut	0.2	0.11	Ring gully		
13	Fill	-	0.11	Ring gully		
14	Cut	0.23	0.07	Ring gully		
15	Fill	-	0.07	Ring gully	Bone & Fired Clay	

Trench 9						
General description					**Orientation**	NE-SW
One ditch and a large modern pit present (unexcavated). Consists of topsoil (0.3m) and subsoil (0.55m) overlying natural geology of clay.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.85
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
5	Cut	2.7+	0.55	Ditch		
6	Fill	-	0.25	Ditch	Pottery & Bone	E/MC1
7	Fill	-	0.3	Ditch		
Trench 10						
General description					**Orientation**	WNW-ESE
One large pond-like feature present. Consists of topsoil (0.3m) and subsoil (0.2m) overlying natural geology of clay.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.5
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
46	Cut	1	0.65	Pond		
47	Fill	-	0.25	Pond	Pottery	MC1
48	Fill	-	0.4	Pond	Pottery & Bone	MC1
49	Cut	1	0.5	Pond		
50	Fill	-	0.3	Pond	Pottery & Bone	MC1
51	Fill	-	0.2	Pond	Pottery & Bone	MC1
58	Layer	8	0.25	Colluvium		
Trench 11						
General description					**Orientation**	NNE-SSW
Two furrows and one ditch present. Consists of topsoil (0.25m) and subsoil (0.2m) overlying natural geology of clay.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.45
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
52	Cut	0.7	0.3	Ditch		
53	Fill	-	0.3	Ditch	Pottery	C1BC-MC2
Trench 12						
General description					**Orientation**	WSW-ENE
Two furrows present (one excavated). Consists of topsoil (0.28m) and subsoil (0.29m) overlying natural geology of clay.					**Length (m)**	30
					Width (m)	2
					Avg. depth (m)	0.57
Context No.	**Type**	**Width (m)**	**Depth (m)**	**Description**	**Finds**	**Date**
54	Cut	0.86	0.19	Furrow		
55	Fill	-	0.19	Furrow	Pottery & Bone	C1-C3
Trench 13						
General description					**Orientation**	NW-SE
Five furrows (three excavated) present. Consists of topsoil and subsoil overlying natural geology of silty sand.					**Length (m)**	40
					Width (m)	2
					Avg. depth (m)	0.30

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
39	Cut	1.15	0.25	Furrow		
40	Fill	-	0.25	Furrow		Pmed
41	Cut	0.5	0.1	Furrow		
42	Fill	-	0.1	Furrow		Pmed
56	Cut	0.85	0.3	Furrow		
57	Fill	-	0.3	Furrow	Tobacco Pipe & CBM	Pmed
Trench 14						
General description					**Orientation**	NE-SW
Trench devoid of archaeology. Consists of topsoil (0.2m) and subsoil (0.2m) overlying a colluvial spread (0.3m), in turn overlying natural geology of clay.					**Length (m)**	30
					Width (m)	2
					Avg. depth (m)	0.7

APPENDIX B FINDS REPORTS

B.1 Pottery

By Alice Lyons

Introduction & Methodology

B.1.1 A total of 157 sherds of latest Iron Age and Early Roman pottery, weighing 1699g, was recovered during the evaluation. The pottery comprised both handmade and wheelmade local coarseware jar/bowl products of utilitarian type. No finewares or imports were found.

B.1.2 Pottery was recovered from fifteen features mostly commonly ditches, a pond and pits (Table 2). The assemblage was significantly abraded with an average sherd size of only *c*. 11g.

B.1.3 The pottery was analysed following the national guidelines (Barclay *et al* 2016). The total assemblage scanned and a brief catalogue prepared. The sherds were examined using a hand lens (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types present. Vessel forms (jar, bowl) were recorded. The sherds were counted and weighed to the nearest whole gram and recorded by context. Decoration, residues and abrasion were also noted. OA East curates the pottery and archive.

Results

B.1.4 Haddenham is located in a rich archaeological landscape from which large contemporary pottery assemblages have been retrieved and analysed (Hill with Horne 2003; Hill and Braddock 2006). Although the pottery presented here is only a small and a significantly abraded assemblage it has been possible to characterise the material. The assemblage consists mostly of sand tempered vessels of undecorated utilitarian jar/bowl form, which are typical for the locality. In addition, the presence of wheel-made vessels which are generally not known in the region until the early to mid-1st century AD, provides a date for the majority of the assemblage - a period when the pottery making techniques of the latest Iron Age were still in use alongside the new wheel-making technologies of the coming Romano-British era.

Fabric	Sherd Count	Weight (g)	Weight (%)
SRW: Sandy reduced ware (Latest Iron Age - handmade)	92	1074	63.21
SGW: Sandy reduced ware (Early Roman - wheelmade)	34	357	21.01
SOW: Sandy oxidised ware (Early Roman- wheelmade)	27	214	12.60
STW: Shelly ware (Late Iron Age- handmade)	4	54	3.18
Total	**157**	**1699**	**100.00**

Table 1: The pottery fabrics, listed in descending order of weight (%)

B.1.5 This is a relatively small assemblage of latest Iron Age to Early Roman pottery typical of the locality and for time of deposition. Unfortunately, due to its abraded and poor condition it has limited potential for further analysis. It should, however, be included with any larger assemblage retrieved as part of the excavation phase. A larger assemblage will have greater potential to make a significant contribution to the growing corpus of contemporary ceramic data for the area.

Feature	Sherd Count	Weight (g)	Weight (%)
Ditch	127	1278	75.22
Pond	12	307	18.07
Pit	12	108	6.35
Furrow	2	4	0.24
Post-hole	4	2	0.12
Total	**157**	**1699**	**100.00**

Table 2: The assemblage by feature, listed in descending order of weight (%)

Pottery Catalogue

Key: B = base, C=century, D = decorated body sherd, Dsc = description, E=early, HM = handmade, L=late M=mid, R = rim, U=undecorated body sherd, WM - wheelmade.

Context	Cut	Trench	Feature	HM/WM	Fabric Family	Dsc	Form	Sherd Count	Weight (g)	Pot date
2	1	8	DITCH	HM	SRW	U	JAR	1	16	E/MC1
3	1	8	DITCH	HM	SRW	U	JAR/BOWL	5	33	C1BC-ADE/MC1
4	1	8	DITCH	HM	SRW	RU	JAR/BOWL	4	24	E/MC1
6	5	9	DITCH	HM	SRW	U	JAR/SJAR	4	92	E/MC1
9	8	8	DITCH	SW	SGW	UB	JAR	7	66	MC1
9	8	8	DITCH	HM	SRW	U	JAR	10	64	E/MC1
11	10	8	POSTHOLE	HM	SRW	U	BOWL	1	1	LNEO/EBA
11	10	8	POSTHOLE	WM	SOW	UD	JAR/BOWL	3	1	E/MC1
18	16	7	DITCH	HM	STW	RU	BOWL	3	50	C1BC-ADE/MC1
18	16	7	DITCH	SW	SGW	RU	JAR	4	57	MC1
18	16	7	DITCH	HM	SRW	U	JAR	8	177	E/MC1
22	21	4	DITCH	HM	SRW	U	JAR/BOWL	8	37	C1BC-ADE/MC1
23	21	4	DITCH	HM	SRW	RU	JAR	16	129	E/MC1
23	21	4	DITCH	HM	SRW	R	SJAR	1	69	E/MC1
23	21	4	DITCH	WM	SOW	R	LID	1	21	M/LC1
23	21	4	DITCH	HM	SRW	U	JAR	8	38	E/MC1
25	24	4	PIT	HM	SRW	U	JAR/BOWL	3	29	E/MC1
27	26	4	DITCH	SW	SGW	U	JAR/BOWL	2	12	MC1
27	26	4	DITCH	WM	SOW	U	JAR/LAG	2	6	MC1-MC2

Context	Cut	Trench	Feature	HM/WM	Fabric Family	Dsc	Form	Sherd Count	Weight (g)	Pot date
27	26	4	DITCH	HM	SRW	U	JAR/BOWL	1	4	C1BC-ADE/MC1
28	26	4	DITCH	WM	SOW	UB	JAR	12	108	M/LC1
28	26	4	DITCH	HM	SRW	RU	JAR	5	89	E/MC1
28	26	4	DITCH	WM	SGW	UD	JAR	13	108	E/MC1
32	31	2	DITCH	HM	SRW	U	JAR/BOWL	1	4	C1BC-ADE/MC1
36	35	6	DITCH	HM	SRW	RU	JAR/BOWL	5	27	C1BC-ADE/MC1
36	35	6	DITCH	SW	SOW	U	JAR/BOWL	3	16	E/MC1
36	35	6	DITCH	SW	SGW	U	JAR/BOWL	2	27	E/MC1
45	43	6	PIT	HM	SRW	U	JAR/BOWL	6	42	C1BC-ADE/MC1
45	43	6	PIT	SW	SGW	U	JAR/BOWL	1	10	M/LC1
45	43	6	PIT	WM	SOW	RU	JAR	2	27	E/MC1
48	46	10	POND	SW	SGW	B	JAR	2	61	MC1
50	49	10	POND	HM	SRW	UB	JAR	2	181	C1BC-ADE/MC1
51	49	10	POND	WM	SGW	B	JAR/BOWL	1	12	M/LC1
51	49	10	POND	HM	SRW	U	JAR/BOWL	3	18	C1BC-ADE/MC1
51	49	10	POND	SW	SOW	U	JAR/BOWL	4	35	E/MC1
53	52	11	DITCH	HM	STW	U	JAR/BOWL	1	4	C1BC-ADE/MC1
55	54	12	FURROW	WM	SGW	U	JAR/BOWL	2	4	C1-C2

B.2 Post-Roman pottery

By Carole Fletcher

Introduction

B.2.1 Archaeological works produced a single sherd of stratified post-Roman pottery from ring gully **14** in Trench 8, in the form of a single moderately abraded, undiagnostic body sherd from a Grimston ware glazed vessel (*c*.1200-1500) weighing 0.012kg. A further two sherds of post-medieval pottery (10g) were recovered from bucket sampling of the trenches (Trenches 1 and 11). A further three sherds were recovered from the top of unexcavated furrows within Trench 1, 12 and 13, all broadly dating to the medieval to post-medieval period and weighing 14g.

B.2.2 This small and fragmentary assemblage of pottery appears to be domestic in origin and may relate to rubbish deposition or manuring. The Grimston sherd is moderately abraded, indicating some reworking before deposition and does not definitively date the feature, as it may have become incorporated into the fill at a later date.

B.3 Ceramic Building Material & Fired Clay

By Carole Fletcher

B.3.1 A fragmentary assemblage of fired or burnt clay (19 pieces weighing 82g), was recovered from ditches, across four of the evaluated trenches. The bulk of the fired clay assemblage may relate to fired or burnt clay objects, possibly fragments of one or more loom weights.

B.3.2 The assemblage was quantified by context, counted and weighed, with fabric and form recorded where this was identifiable. Only complete dimensions were recorded. Dating is tentative, with reference made to any pottery recovered from the contexts.

B.3.3 A total of 80g of ceramic building material (CBM) was also recovered from fill 57 of furrow **56**. The fragment of CBM was of a tile, and most probably of post-medieval date.

B.3.4 Undiagnostic fragments of fired clay or burnt clay were recovered in Trenches 4, 7 and 8, from ditches **21**, **16**, and **1** respectively. Fired or burnt clay recovered from ditch **31** in Trench 2 includes three fragments which have characteristics that suggest they came from a fired clay object, possibly a loom weight; none of the fragments re-fit and no pierced holes are present. The small nature of the pieces suggests they been reworked prior to deposition. A similar small fragment was recovered from ditch **21** Trench 4. Overall the fired or burnt clay is not closely datable, however, the possible loom weight fragments have tentatively been identified as Iron Age, although they cannot be matched to any of the forms described by Poole (Poole 1984). Their presence indicates domestic occupation close to the area evaluated.

B.3.5 The assemblage is fragmentary; however, it suggests Iron Age domestic activity. Should further work be undertaken, additional fired or burnt clay deposits are likely to be

recovered, including further examples of possible loom weight(s). The present fired or burnt clay report should be incorporated into any later catalogue.

Fired Clay Catalogue

Trench	Context	Cut	Fired or Burnt Clay Form	Fired or Burnt Clay Description	No. of fragments	Weight (g)	Date
2	31	**32**	Formless fragment, possibly from a fired or burnt clay artefact	Moderately abraded irregular fragments of silty clay with some fine and coarse quartz. Rough surface and thick margin is reddish yellow (7.5YR 6/6), occasionally fire reddened and very pale brown (10YR 7/3) very pale with a very dark grey-black core. Fabric 1	5	35	?Iron Age
			Formless fragment	Abraded irregular fragments with some surface surviving. Silty fired clay, dull reddish yellow (7YR 6/6) with calcareous inclusions. Fabric 2	1	3	Not closely datable
4	22	**21**	Formless fragment	Abraded irregular fragments with some surface surviving. Silty fired clay, dull reddish yellow (7YR 6/6) with very pale brown swirls (10YR 8/3). Fabric 3	2	3	Not closely datable
			Formless fragment	Abraded irregular fragments. Fabric 3	3	8	Not closely datable
			Formless fragment, possibly from a fired or burnt clay artefact	Moderately abraded irregular fragment. Fabric 1	1	3	?Iron Age
7	17	**16**	Formless fragment	Abraded irregular fragments, one with surviving flat surface. Silty fired clay, dull reddish yellow (7YR 6/6) with very pale brown swirls (10YR 8/3), occasional 5YR 4/6 yellowish red swirls and occasional flint inclusions. Fabric 3 variant	5	25	
8	3	**1**	Formless fragment	Abraded irregular fragments with some surface surviving. Fabric 3	2	5	
Total					**19**	**82**	

APPENDIX C ENVIRONMENTAL REPORTS

C.1 Animal Bone

By Zoë Uí Choileáin

Introduction& Methodology

C.1.1 A moderate assemblage of animal bone weighing 3915g and totalling 123 countable fragments was recovered from the evaluation at Hardwicke Fields. The material belongs to the Late Iron Age/Early Roman period and was primarily recovered from ditches. All material recorded is hand collected. The fragmentation levels are high, however it is possible to identify 45 of the specimens to taxon. The remaining fragments were recorded as large or medium mammal but have not been included in this report.

C.1.2 All bone was identified using Schmid (1972). Preservation condition was evaluated using the 0-5 scale devised by Brickley and McKinley (2004, 14-15).

Results

C.1.3 The surface condition of the bone is good; 1-2 on the scale devised by Brickley and McKinley (*ibid*). Forty-two percent of the material represented is horse. Cattle dominates the remainder of the assemblage with minimal sheep/goat and pig bones present. NISP (Number of identifiable specimens) and MNI (Minimum Number of Individuals) are summarised for each taxon in the table below:

Species	NISP	NISP %	MNI	MNI percentage
cattle	16	35.55	1	20
Horse	19	42.22	2	40
Sheep/goat	9	20	1	20
Pig	1	2.22	1	20
Totals	**45**	**100**	**5**	**100**

Table 3: NISP (Number of Identifiable Specimens) and MNI (Minimum Number of Individuals) of the assemblage

C.1.4 The majority of the horse bone was recovered from pit **25** and represents a single animal. Three proximal horse femurs are present in the material from pit **25** giving an MNI of two for this taxon. The remaining specimens come primarily from ditches and represent cattle, sheep/goat and pig. The MNI for all three is one. There are no butchery marks observable on the bone, however the high level of fragmentation is likely to mask evidence of butchery or pathology. All of the material present is adult or older juvenile suggesting that animals were not being reared on site.

Conclusion

C.1.5 While this is a small assemblage it is a fairly typical representation of Late Iron Age to Early Roman faunal assemblages. Due to the high fragmentation it is not possible to

estimate withers height or take measurements of any specimens. There is high potential for extracting information on age at death from tooth wear patterns. It is recommended that should further excavations take place, the tooth wear patterns from this material be recorded and incorporated into any larger analysis as should material recovered from samples.

Trench	Cut	Context	Feature	Taxon	Weight (g)	Count	Condition
8	1	3	Ditch	Cattle	103	1	1
8	1	3	Ditch	Sheep/Goat	5	1	1
8	1	4	Ditch	Sheep/Goat	6	1	1
9	5	6	Ditch	Cattle	35	1	1
9	5	6	Ditch	Sheep/Goat	9	2	1
8	8	9	Ditch	Equid	21	1	1
8	8	9	Ditch	Sheep/Goat	3	1	1
8	14	15	Ring gully	Equid	58	1	1
8	14	15	Ring gully	Sheep/Goat	18	1	1
7	16	17	Ditch	Cattle	37	2	1
7	16	17	Ditch	Sheep/Goat	3	1	1
7	16	18	Ditch	Equid	152	1	1
7	16	18	Ditch	Sheep/Goat	6	1	1
4	21	22	Ditch	Cattle	17	1	1
4	21	23	Ditch	Cattle	456	4	1
4	21	23	Ditch	Pig	19	1	1
4	24	25	Pit	Cattle	27	1	1
4	24	25	Pit	Equid	895	15	1
4	26	28	Ditch	Cattle	203	2	1
4	26	28	Ditch	Sheep/Goat	4	1	1
2	31	32	Ditch	Cattle	82	2	1
10	49	51	Pond	Cattle	64	1	1
10	49	51	Pond	Equid	78	1	1
12	54	55	Furrow	Cattle	8	1	1
TOTALS					**2309**	**45**	

Table 4: Total weight count and taxa present per feature.

C.2 Environmental Samples

By Rachel Fosberry

Introduction& Methodology

C.2.1 Eight bulk samples were taken from features within the evaluated area in order to assess the quality of preservation of plant remains and their potential to provide useful data as part of further archaeological investigations. Samples were taken from features encountered within Trenches 2, 4, 6, 8 and 10.

C.2.2 The samples were soaked in a solution of sodium carbonate for 24hrs prior to processing to break down the heavy clay matrix. The total volume (up to 20L) of each of the samples was processed by tank flotation using modified Siraff-type equipment for the recovery of preserved plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve.

C.2.3 The dried flots were scanned using a binocular microscope at magnifications up to x 60 and an abbreviated list of the recorded remains are presented in Table 1. Identification of plant remains is with reference to the Digital Seed Atlas of the Netherlands (Cappers et al. 2006) and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

C.2.4 For the purpose of this initial assessment, items such as seeds and cereal grains have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-25, ### = 26-100, #### = 100+ specimens

C.2.5 Items that cannot be easily quantified such as charcoal and molluscs have been scored for abundance

+ = rare, ++ = moderate, +++ = abundant

Results

C.2.6 Preservation of plant remains is poor to moderate; the heavy clay soils proved difficult to process and most of the flots were comprised of modern rootlets and fine silt with extremely low volumes of charcoal.

C.2.7 Preserved plant remains have been preserved in samples from Trenches 4, 8 and 10. Ditch **21** in Trench 4 and pond **49** in Trench 10 both contain occasional charred cereal grains that are possibly intrusive. Fill 50 of Pond **49** contains ostracods (small bivalve crustaceans) as evidence that the feature originally contained water but has since dried out completely, precluding the survival of organic plant remains.

C.2.8 Fill 4 of enclosure ditch **1** in Trench 8 is the only sample that contains a significant assemblage of preserved plant remains. Preservation is by carbonisation (charring)

with occasional grains of spelt/emmer wheat (*Triticum spelta/dicoccum*), some of which show evidence of germination (shrunken sides, missing embryo ends), occasional grains of barley (*Hordeum vulgare*) along with oats (*Avena* sp.) and bromes (*Bromus* sp.) which were most likely weed of the cereal crop and a single charred rush (*Juncus* sp.) seed. A fragment of a cereal awn and a single spelt/emmer glume base were noted. Occasional seeds of duckweed (*Lemna* sp.) are also present indicating that water was present at some point, probably within the ditch itself. Molluscs in the form of land and wetland snails have been reasonably well preserved with moderate species diversity.

Sample No.	Context No.	Trench /area no.	Cut No.	Feature type	Volume processed (L)	Flot Volume (ml)	Preservation	Cereals	Chaff	Weed Seeds	Snails from flot	Charcoal <2mm	Charcoal > 2mm	Pottery	Small mammal bones	Large mammal bones	Burnt mammal bones
6	32	2	31	Ditch	16	1	none	0	0	0	0	0	0	0	0	#	0
4	22	4	21	Ditch	16	1	Charred	#	0	0	0	0	0	0	0	#	0
5	28	4	26	Ditch	14	1	none	0	0	0	+/+	0	0	#	0	##	0
7	45	6	43	Pit	18	1	none	0	0	0	+/+	0	0	#	0	##	#
1	4	8	1	Ditch	16	15	Charred	##	#	##	++/+	+	++	#	#	##	#
2	9	8	8	Ditch	17	1	none	0	0	0	+/+	0	0	#	0	##	#
3	13	8	12	Gully	8	1	none	0	0	0	0	0	0	0	0	0	0
8	50	10	49	Pond	8	1	Charred and w/l	#	0	0	+/+	0	0	0	0	#	0

Table 5: Environmental sample results

Discussion

C.2.9 The recovery of charred grain, chaff, weed seeds and charcoal indicates that there is further potential for the preservation of plant remains at this site, particularly in the area of the site where there is a possible settlement. Future excavation has the potential to recover larger, more meaningful assemblages that would contribute to the evidence of diet and economy during the Early Roman period at this site.

APPENDIX D GEOPHYSICAL SURVEY REPORT

Geophysical Survey Report

of

Land West of Hardwicke Fields

Haddenham, Cambridgeshire

For

Oxford Archaeology East

On Behalf Of

Palace Green Homes

Magnitude Surveys Ref: MSTL272

HER Event Number: HER- ECB5381

April 2018

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Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 3.6ha area of land west of Hardwicke Fields, Haddenham, Cambridgeshire. A fluxgate magnetometer survey was successfully completed; anomalies of a probable archaeological origin have been detected, these are indicative of a possible prehistoric farmstead and trackway. Several phases of agricultural activity, have been identified these include ridge and furrow ploughing, lazy bed cultivation, and a former pond. More recent ploughing trends and land drains have also been detected. The impact of modern activity on the results is minimal, limited to broad ferrous responses produced from adjacent fences.

Contents

List of Figures

1. Introduction

1.1. Magnitude Surveys Ltd (MS) was commissioned by Oxford Archaeology East on behalf of Palace Green Homes to undertake a geophysical survey on a c.3.6ha area of land west of Hardwicke Fields, Haddenham, Cambridgeshire (TL 4598 7573).

1.2. The geophysical survey comprised hand-carried GNSS-positioned fluxgate magnetometer survey.

1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute for Archaeologists (CIfA, 2014) and the European Archaeological Council (Schmidt et al., 2015).

1.4. The survey commenced on 6 April 2018 and took 1 day to complete.

2. Quality Assurance

2.1. The survey was conducted in line with the current best practice guidelines produced by Historic England (David et al., 2008), the Chartered Institute for Archaeologists (2014) and the European Archaeological Council (Schmidt et al., 2015).

2.2. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society of Archaeological Prospection).

2.3. Director Graeme Attwood is a Member of CIfA, as well as the Secretary of GeoSIG, the CIfA Geophysics Special Interest Group. Director Finnegan Pope-Carter is a Fellow of the London Geological Society, the chartered UK body for geophysicists and geologists, as well as a member of GeoSIG, the CIfA Geophysics Special Interest Group. Director Chrys Harris has a PhD in archaeological geophysics from the University of Bradford and is the Vice-Chair of the International Society for Archaeological Prospection.

2.4. All MS managers have relevant degree qualifications to archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees and/or field experience.

3. Objectives

3.1. The geophysical survey aimed to assess the subsurface archaeological potential of the survey area.

4. Geographic Background

4.1. The site is located c.17km north of Cambridge, to the north-western outskirts of the village of Haddenham (Figure 1). Survey was undertaken across the eastern portion of an arable field, bounded by the rear of housing at Hardwicke Fields to the east, pasture fields to the south and further arable fields to the west and north (Figure 2).

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Stubble, sloped downwards from the south-eastern corner to the north and west.	Bounded by hedgerows and wire fencing to the south and east and to the north by hedgerows. Short grass containing saplings and shrubs was present to the south-eastern corner.

4.3. The underlying geology comprises sedimentary bedrock of mudstone from Kimmeridge Clay Formation. No superficial deposits have been recorded on site (British Geological Survey, 2018).

4.4. The soils consist of lime-rich loamy and clayey soils with impeded drainage (Soilscapes, 2018).

5. Archaeological Background

5.1. The following section provides a brief overview of the archaeological background of the site and its surrounding landscape, summarising information provided in a written scheme of investigation by Oxford Archaeology (Blackbourn and Brudenell, 2018).

5.2. Scarce evidence of Mesolithic to Bronze Age activity has been identified from small scale, temporary encampments (MCB17792) during the Mesolithic and Neolithic 125m SW of the site, and two findspots which are recorded 750m to the south (CHER 02036 and CHER 02040) and a further findspot which is located 1km SW from the site (MCB 20847).

5.3. Numerous Iron Age and Roman settlements have been recorded in the vicinity to site, evidencing intense occupation and activity during those periods. Iron Age enclosures and roundhouses (MCB19486) have been uncovered 1km to the north of the site. An Iron Age and Roman settlement (MCB20847) has been identified 1km south-east of the site. Early to Middle Iron Age enclosure and a Roman settlement (MCB 18421) were recorded just 125m south-west of the site. Further Roman enclosures and finds (CB15624) were identified 250 south-east of the site.

5.4. Anglo-Saxon occupation is evidenced by a number of burials (CHER 09831) recorded 600m south-east of site, which are dated to the first half to the 6th century. Additionally, two Saxo-Norman timber structures below the remains of the medieval Hinton Hall (CHER 05795a) have been recovered 1km to the east of site.

5.5. The village of Haddenham is recorded in the Domesday Book. A medieval ditch (MCB 18183), thought to represent an important boundary, was identified 400m to the east of site. Medieval to post-medieval ridge & furrow (CHER 09869), and pits and post-holes (CB 15289) have been recorded 700m NW of the site. A large mound, suggested as the site of a post-medieval windmill

(CHER 05716) has been recorded 900m south-east of the site. Quarrying activity (MCB 17958) has been recorded 350m east of the site.

6. Methodology

6.1. Data Collection

6.1.1. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.2. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.3. The magnetic data were collected using MS' bespoke hand-carried GNSS-positioned system.

6.1.3.1. MS' hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a Hemisphere S321 GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The Hemisphere S321 GNSS Smart Antenna is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.3.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.3.3. A navigation system was integrated with the RTK GPS was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to Historic England's standards for "raw or minimally processed data" (see sect 4.2 in David et al., 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen et al. (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

6.3. Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the upper and/or lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figure 8). XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historic maps, LiDAR data, and soil and geology maps. Google Earth (2018) was consulted as well, to compare the results with recent land usages.

7. Results

7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports as well as reports of further work in order to constantly improve our knowledge and service.

7.2. Discussion

7.2.1. The geophysical results are presented in consideration with satellite imagery (Figure 6) and historic maps (Figure 7).

7.2.2. The fluxgate magnetometer survey has responded well to the survey area's environment. An area of archaeological activity as well as intensive agricultural utilisation of the field has been detected.

7.2.3. The area of archaeological activity is orientated NE-SW and comprises an alignment of a probable roundhouse with two adjacent rectilinear enclosures, internal structuring, and an adjoining trackway to the south-east. Together these likely form a Prehistoric Farmstead of a possible Iron-Age origin. Within the larger landscape, various areas of prehistoric settlement and occupation activity have been recorded (see section 5 Archaeological Background), the closest being an Early to Middle Iron Age enclosure consisting of ditches, gullies and pits just 125m south-west of the site.

7.2.4. Historic agricultural cultivation has been identified within the geophysical data including ridge and furrow ploughing and Lazy bed cultivation. These ploughing regimes are aligned near perpendicular to each other; spacing between the ridges maintain a regular 8m gap while the lazy bed cultivation, with its broader furrows has a variable spacing between 8m and 13m.

7.3. Interpretation

7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

7.3.1.2. **Undetermined** – Anomalies are classified as Undetermined when the anomaly origin is ambiguous through the geophysical results and there is no supporting or correlative evidence to warrant a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally not ferrous in nature.

7.3.1.3. **Ferrous (Discrete/Spread)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of modern metallic disturbance on or near the ground surface. A ferrous spread refers to a concentrated deposition of these discrete, dipolar anomalies. Broad dipolar ferrous responses from modern metallic features, such as fences, gates, neighbouring buildings and services, may mask any weaker underlying archaeological anomalies should they be present.

7.3.2. Magnetic Results - Specific Anomalies

7.3.2.1. **Archaeology (Prehistoric Farmstead)** – In the centre-east of the survey extent, numerous linear anomalies have been recorded consisting of a circular enclosure with two adjacent rectilinear enclosures and a possible trackway to the southeast. The entire area of activity measures c.90m in length by c.26m in width, and it is orientated NE-SW on its longest axis.

7.3.2.2. The circular anomaly [**A**], a possible roundhouse, has been recorded to the centre of the archaeological activity. It measures c.9m in diameter and it is composed of curvilinear anomalies that are generally weaker in their magnetic responses than the surrounding enclosure ditch features. A possible entrance measuring c.2-3m has been identified to the east of this enclosure, with two terminals at either side, this entrance appears to enter the trackway recorded to the east.

7.3.2.3. Two well-defined rectilinear enclosures [**B**] have been recorded adjacent to and north of A. Both enclosure have similar features: they measure c.20m by 20m and have subtle evidence for internal structuring. Each of the enclosures possess a possible entrance in their south eastern corner which measure c.2m in diameter. Like the possible entrance to A these both enter the potential trackway to the east and are demarcated by slightly bulbous ends which can be indicative of ditch terminals.

7.3.2.4. To the east of anomalies, A and B, a distinct linear ditch-like anomaly [**C**] has been identified and has been interpreted as a possible trackway. C curves around the enclosures recorded to its west and projects some 46m further south of anomaly A, measuring a total length of c. 86m. A small area of

'Archaeology Probable (Spread)' has been recorded at the southern end of C; it is likely this spread corresponds to magnetically enhanced material from the archaeological activity that has been ploughed out and dispersed across the trackway.

7.3.2.5. **Agricultural (Lazy bed cultivation)** – To the south-east of the site, seven magnetically enhanced, broad linear anomalies [**D**] have been identified. These distinct ditch-like features run down the hillside on an off west-east alignment. They are parallel and irregularly spaced, with gaps varying from 8m to 13m. The pattern of these anomalies is characteristic of early ploughing regimes, and possibly represents lazy bed cultivation.

7.3.2.6. **Agricultural (Ridge & Furrow)** – Broad, widely spaced parallel anomalies [**E**] dominate the western portion of the site and the north-eastern corner. They are recorded running in an off north-south alignment, perpendicular to D, and are characteristic of ridge and furrow ploughing. These have been categorised as 'Agricultural (Strong/Weak)'. This ploughing activity occurs within the greater agricultural landscape, as visible from satellite imagery (see Figure 6) in fields c.100-200m east-north-east of site.

7.3.2.7. **Agricultural** – A series of faint, linear trends have been recorded running WNW-ESE, as well as along the southern and eastern edges. These have been indicated as 'Agricultural (Trend)' and are indicative of modern ploughing activity. Their orientation correlates with recent ploughing schemes visible from satellite imagery (see Figure 6). In the same discrete alignment and location, a number of magnetically enhanced anomalies [**F**] have been recorded. These are possibly the result of ploughing, redistributing the magnetically enhanced deposits of previous ploughing regimes. They have been classified as 'Agricultural (Spread)'. An elongated anomaly [**H**], negative in magnetic response, has been recorded to the south-west of the survey area. It is in perpendicular alignment to the ridge and furrow ploughing regime recorded just north of it. This long linear anomaly seems to be cut by the ploughing regime to the north. When juxtaposed with satellite imagery (see Figure 6), F correlates with the changes in the ground conditions and has been categorized as 'Agricultural (Weak)'.

7.3.2.8. **Field drains** – A number of parallel magnetically enhanced linear trends have been identified orientated along a northwest-southeast axis. These are characteristic of land drains and have been categorised as 'Drainage Feature'.

7.3.2.9. **Ferrous (Former pond)** – A broad, strong ferrous anomaly [**E**] has been identified to the north-east of the site. It is collocated with a pond denoted on historic maps from 1888 until late 1950's (see Figure 7). The measured signal is most likely caused by an infill of mixed strongly magnetic material and has been classified as 'Ferrous'.

8. Conclusions

8.1. A fluxgate gradiometer survey has been successfully undertaken across the site. The survey has detected a range of anthropogenic responses, including both archaeological and agricultural features, with minimal influence from modern features on site.

8.2. Archaeological activity has been recorded to the centre-north of the site and is composed of a possible roundhouse with two adjacent enclosures with potential for internal features, each of these enclosures contains a break in the anomalous response possible indicating entrance ways from the adjacent trackway. This area of archaeological activity is well defined and has been interpreted as a prehistoric farmstead.

8.3. At least three distinct ploughing regimes have been identified throughout the survey area, reflecting an intensive agricultural usage of the field across various periods. Most noticeable are the lazy bed cultivation identified to south-east and the ridge & furrow ploughing scheme which dominate the western half of the site. Field drains and recent ploughing are also visible on the geophysical data. A former pond, recorded on historic maps has been identified

8.4. Modern activity is limited and consists largely of a ferrous 'halo' caused by the properties which border the site to the east.

9. Archiving

9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.

9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

9.3. Whenever possible, MS has a policy of making data available to view in easy to use forms on its website. This can benefit the client by making all of their reports available in a single repository, while also being a useful resource for research. Should a client wish to impose a time embargo on the availability of data, this can be achieved in discussion with MS.

10. Copyright

10.1. Copyright and the intellectual property pertaining to all reports, figures, and datasets produced by Magnitude Services Ltd. is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

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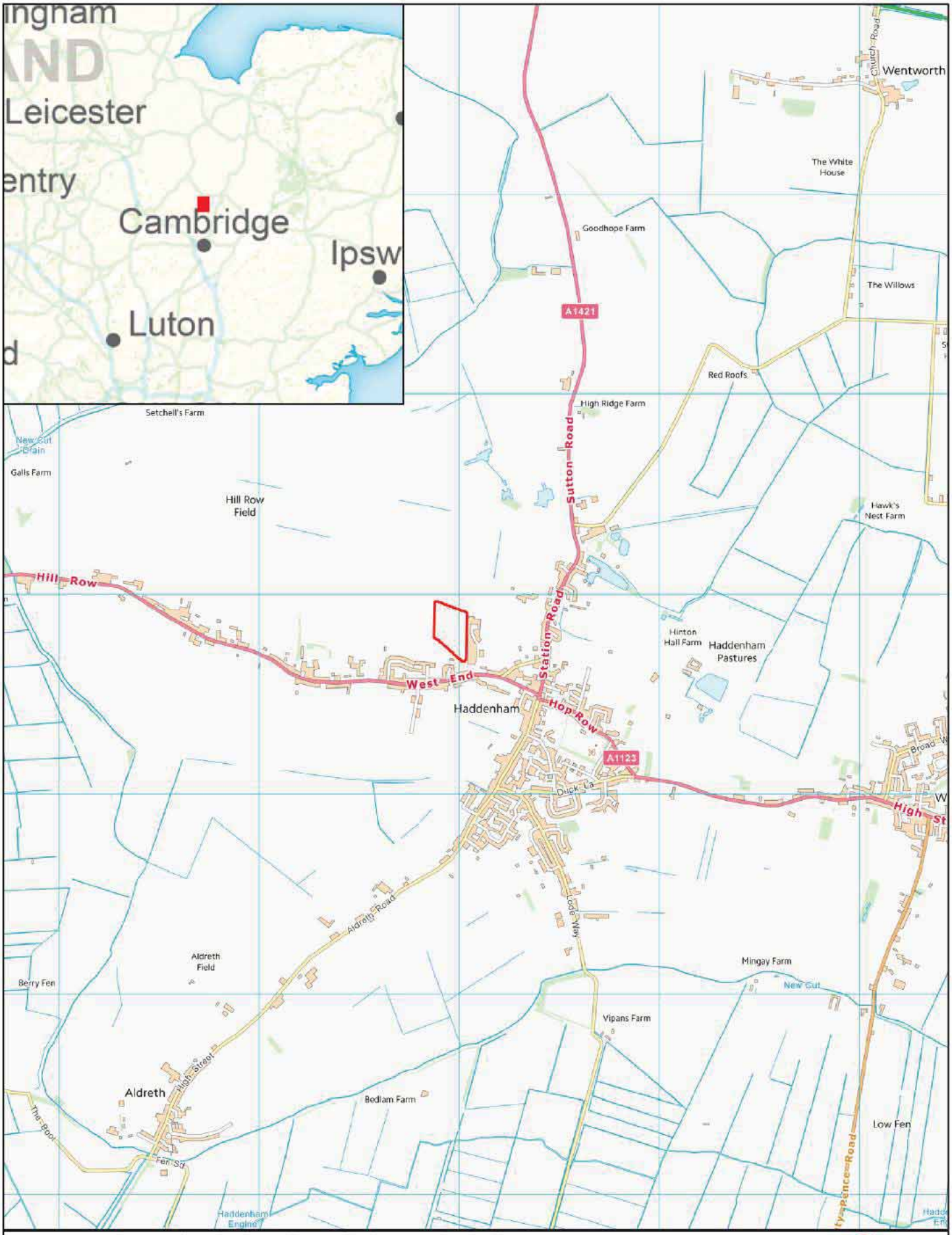


MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 1 - Site Location
1:25,000 @ A4

Site Boundary

N

0 0.5 1 km

magnitude surveys

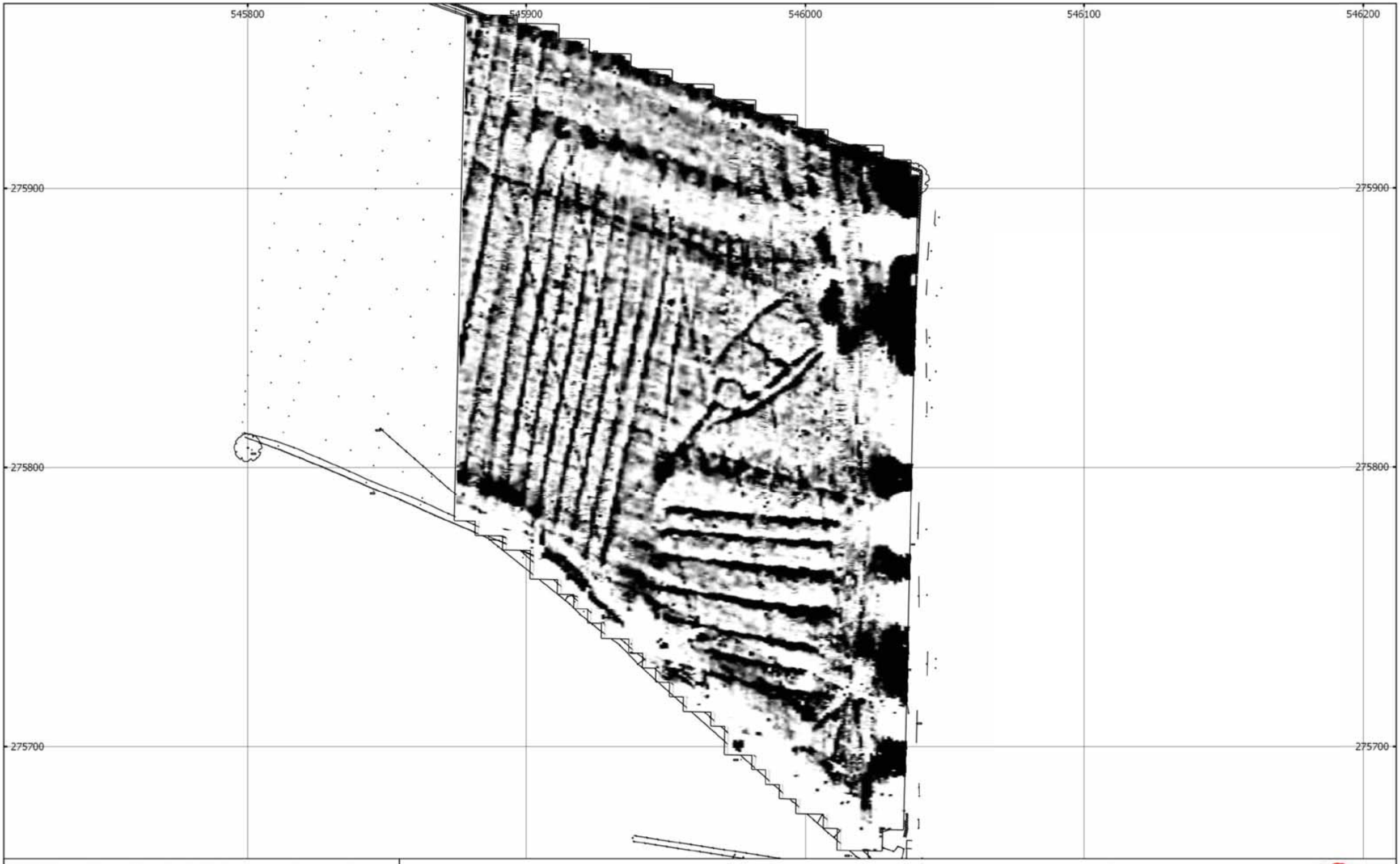
MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 2 - Location of Survey Area
1:5000 @ A3

Survey Extent

N

0 100 200 300 m

magnitude surveys



MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 3 - Magnetic Total Field (Lower Sensor)
1:1250 @ A3

magnitude surveys

545800
545900
546000
546100
546200
275900
275800
275700

MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 4 - Magnetic Gradient
1:1250 @ A3

-1 nT 2

N

0 30 60 90 m

magnitude surveys

545800 545900 546000 546100 546200

275900 275800 275700

E E F F G B B C A C F H D

MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 5 - Magnetic Interpretation
1:1250 @ A3

- Archaeology Probable (Strong)
- Archaeology Probable (Weak)
- Archaeology Probale (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Spread)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Drainage Feature

N

0 30 60 90 m

magnitude surveys

545600 545800 546000 546200

276000 276000

275800 275800

275600 275600

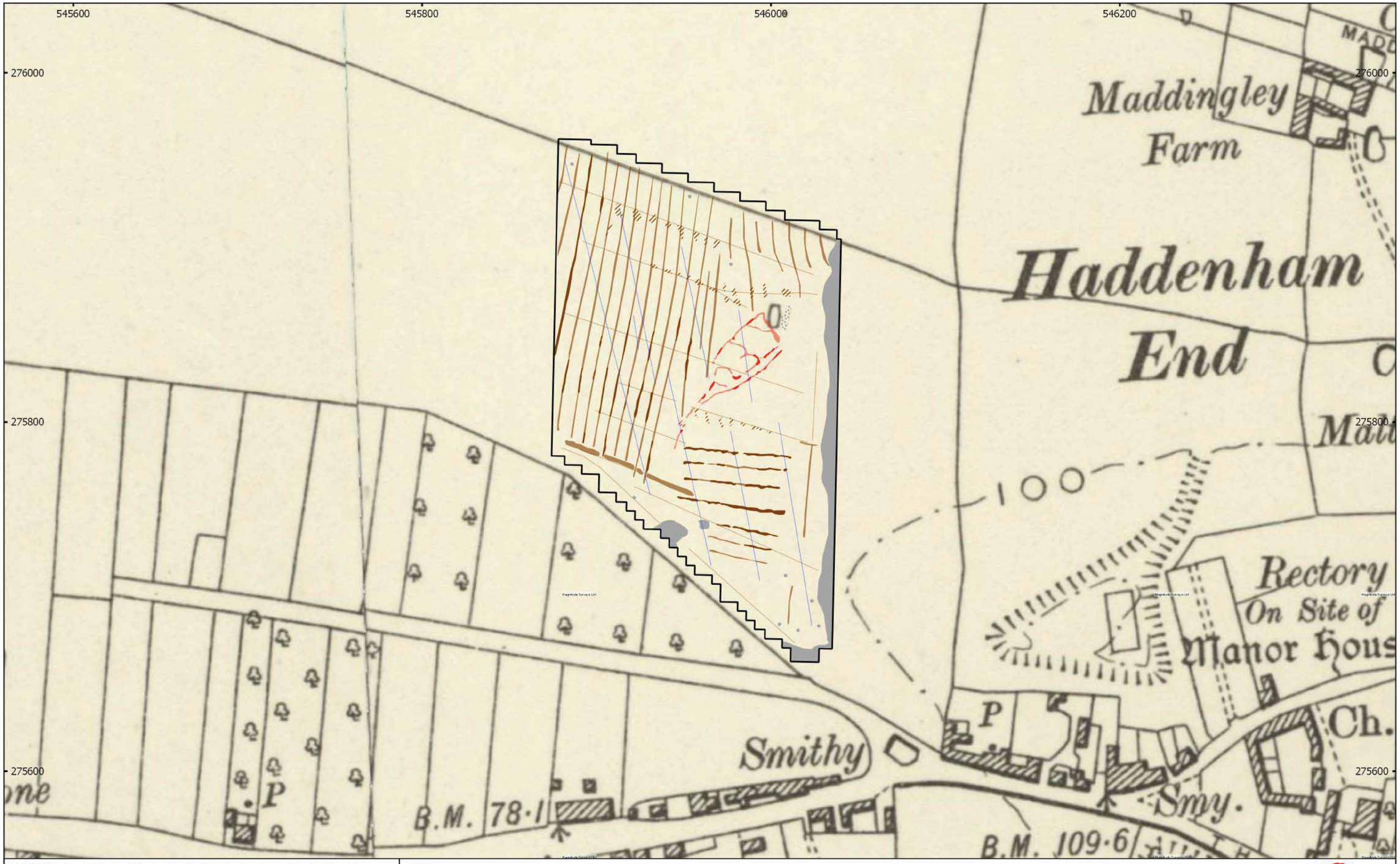
MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 6 - Magnetic Interpretation Over Satellite Imagery
1:2000 @ A3

- Archaeology Probable (Strong)
- Archaeology Probable (Weak)
- Archaeology Probale (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Spread)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Drainage Feature

N

0 50 100 150 m

magnitude surveys



MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 7 - Magnetic Interpretation Over Historic Maps
1:2000 @ A3

Contains historic maps: Ordnance Survey, 6" 2nd edition c. 1882-1913 © National Library of Scotland

- Archaeology Probable (Strong)
- Archaeology Probable (Weak)
- Archaeology Probale (Spread)
- Agricultural (Strong)
- Agricultural (Weak)
- Agricultural (Spread)
- Agricultural (Trend)
- Ferrous (Dipolar)
- Ferrous (Spread)/Magnetic Disturbance
- Drainage Feature

N

0 50 100 150 m

magnitude surveys

545800 545900 546000 546100 546200

275900 275800 275700

MSTL272 - Land West of Hardwicke Fields, Haddenham, Cambridgeshire
Figure 8 - XY Trace Plot
25nT/cm at 1:1250 @ A3

N

0 30 60 90 m

magnitude surveys

APPENDIX E BIBLIOGRAPHY

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APPENDIX F OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-315772
Project Name	Land west of Hardwicke Fields, Haddenham, Cambs

Start of Fieldwork	23/04/18	End of Fieldwork	04/05/18
Previous Work	Yes	Future Work	Yes

Project Reference Codes

Site Code	ECB 5381	Planning App. No.	17/01756/FUM
HER Number	ECB 5381	Related Numbers	

Prompt	Planning Condition
Development Type	Residential Housing
Place in Planning Process	After full determination (eg. As a condition)

Techniques used (tick all that apply)

☐ Aerial Photography – interpretation	☐ Grab-sampling	☐ Remote Operated Vehicle Survey
☐ Aerial Photography - new	☐ Gravity-core	☐ Sample Trenches
☐ Annotated Sketch	☐ Laser Scanning	☐ Survey/Recording of Fabric/Structure
☐ Augering	☐ Measured Survey	☒ Targeted Trenches
☐ Dendrochonological Survey	☐ Metal Detectors	☐ Test Pits
☐ Documentary Search	☐ Phosphate Survey	☐ Topographic Survey
☐ Environmental Sampling	☐ Photogrammetric Survey	☐ Vibro-core
☐ Fieldwalking	☐ Photographic Survey	☐ Visual Inspection (Initial Site Visit)
☐ Geophysical Survey	☐ Rectified Photography	

Monument	Period	Object	Period
Ditch	Roman (43 to 410)	Pottery	Late Iron Age (- 100 to 43)
pit	Late Iron Age (- 100 to 43)	Pottery	Roman (43 to 410)
furrow	Post Medieval (1540 to 1901)	Animal bone	Roman (43 to 410)

Insert more lines as appropriate.

Project Location

County	Cambridgeshire
District	East Cambs
Parish	Haddenham
HER office	Cambridgeshire
Size of Study Area	3.2ha
National Grid Ref	TL 4598 7576

Address (including Postcode)

Hardwicke Fields
Haddenham
Cambridgeshire
CB6 3TW

Project Originators

Organisation	OA East
Project Brief Originator	Andy Thomas
Project Design Originator	Matt Brudenell

Project Manager	Matt Brudenell
Project Supervisor	Pat Moan

Project Archives

	Location	ID
Physical Archive (Finds)	CCC Stores	ECB 5381
Digital Archive	OA East	HADHWF18
Paper Archive	CCC Stores	ECB 5381

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	☒	☐	☐
Ceramics	☒	☐	☐
Environmental	☐	☐	☐
Glass	☐	☐	☐
Human Remains	☐	☐	☐
Industrial	☐	☐	☐
Leather	☐	☐	☐
Metal	☐	☐	☐
Stratigraphic		☐	☐
Survey		☐	☐
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☐	☐	☐
Worked Stone/Lithic	☐	☐	☐
None	☐	☒	☒
Other	☐	☐	☐

Digital Media		Paper Media	
Database	☒	Aerial Photos	☐
GIS	☐	Context Sheets	☒
Geophysics	☐	Correspondence	☐
Images (Digital photos)	☒	Diary	☐
Illustrations (Figures/Plates)	☐	Drawing	☐
Moving Image	☐	Manuscript	☐
Spreadsheets	☐	Map	☐
Survey	☒	Matrices	☐
Text	☒	Microfiche	☐
Virtual Reality	☐	Miscellaneous	☐
		Research/Notes	☐
		Photos (negatives/prints/slides)	☐
		Plans	☐
		Report	☒
		Sections	☒
		Survey	☐

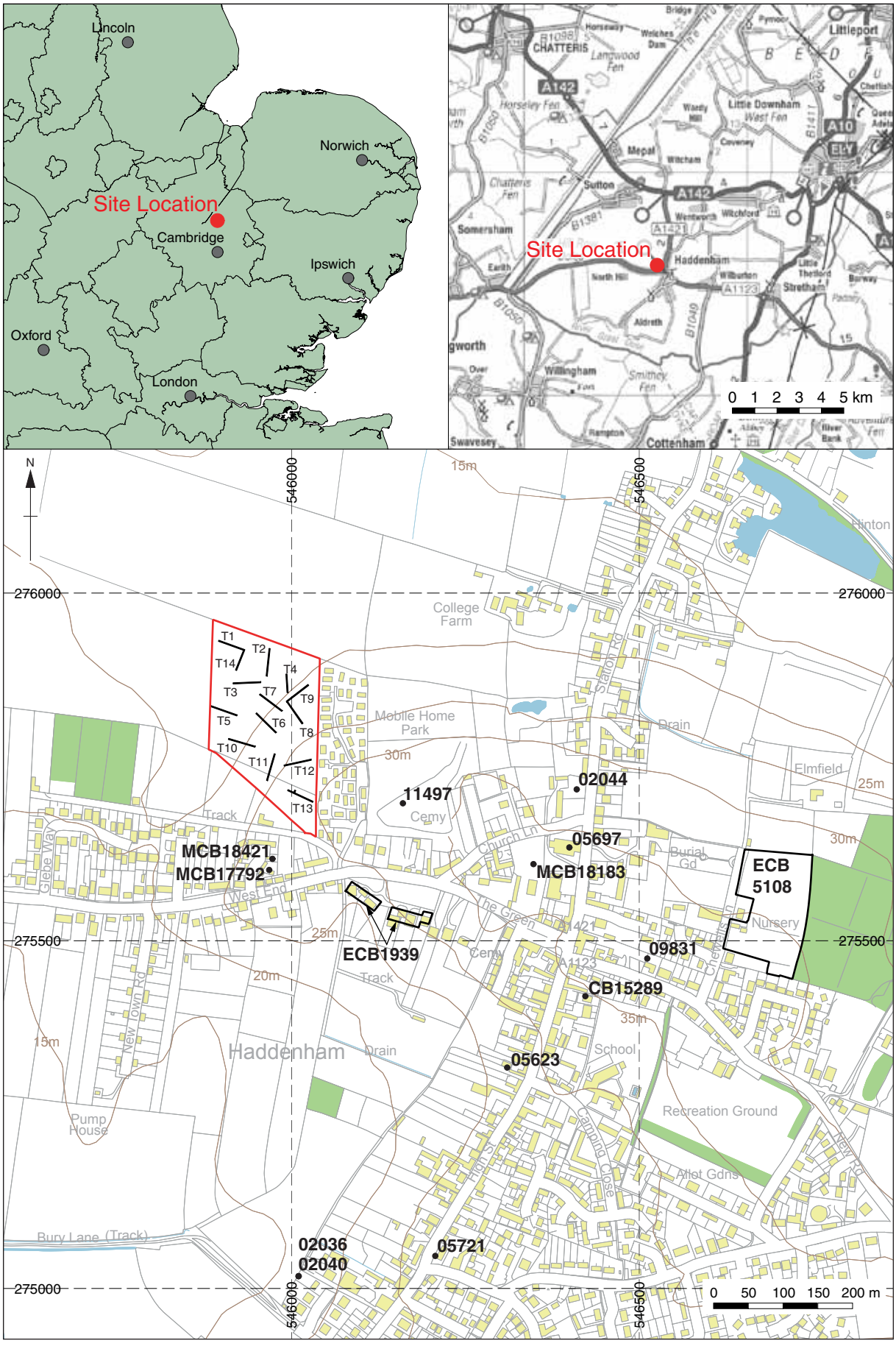

Figure 1: Site location showing archaeological trenches (black) in development area (red), with HER entries mentioned in the text

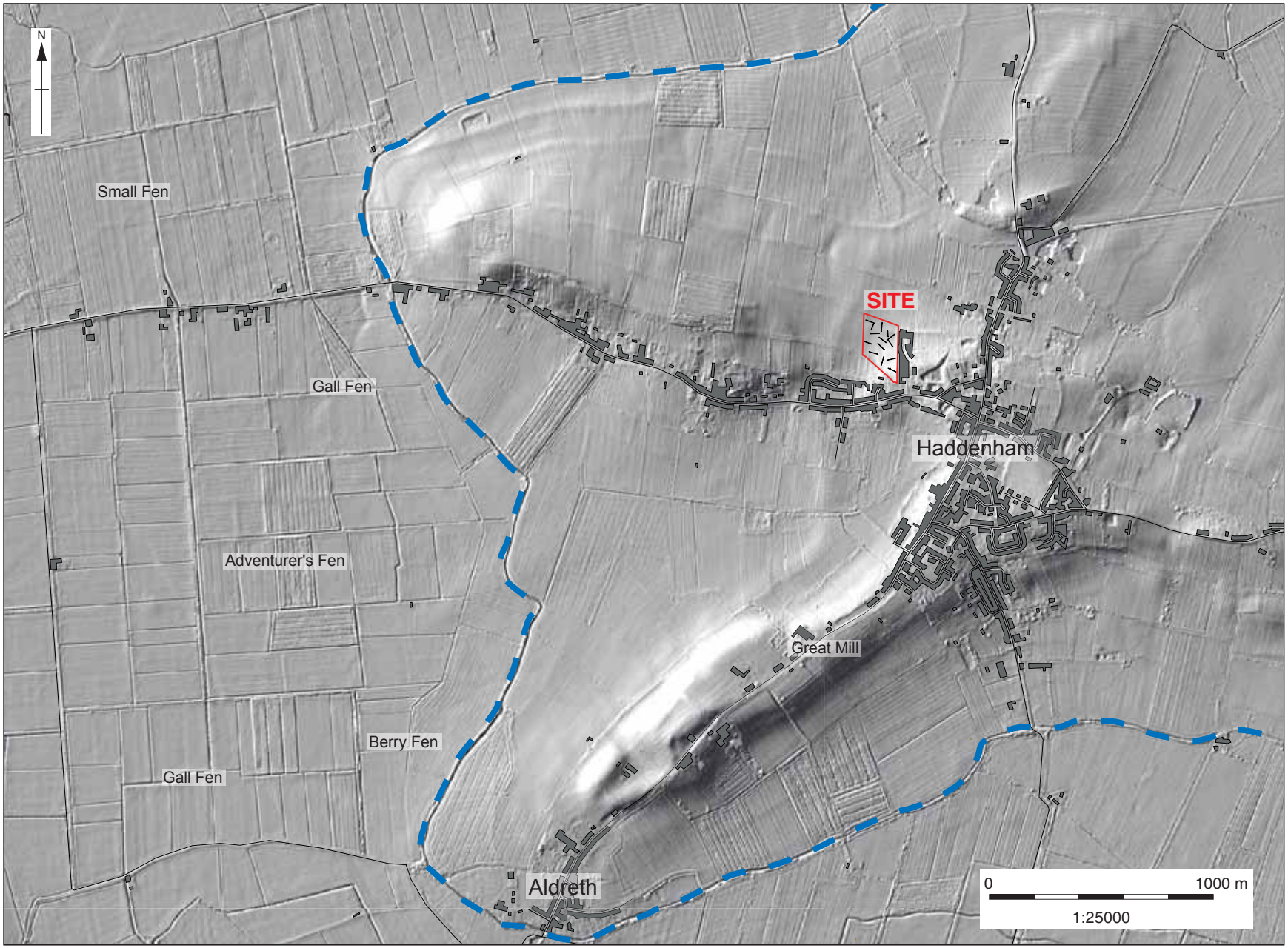

Figure 2: Site location (red) in relation to the historic fen-edge (blue)

Contains Environment Agency open source licence LIDAR data

Figure 3: Trenches overlain on the geophysical survey results

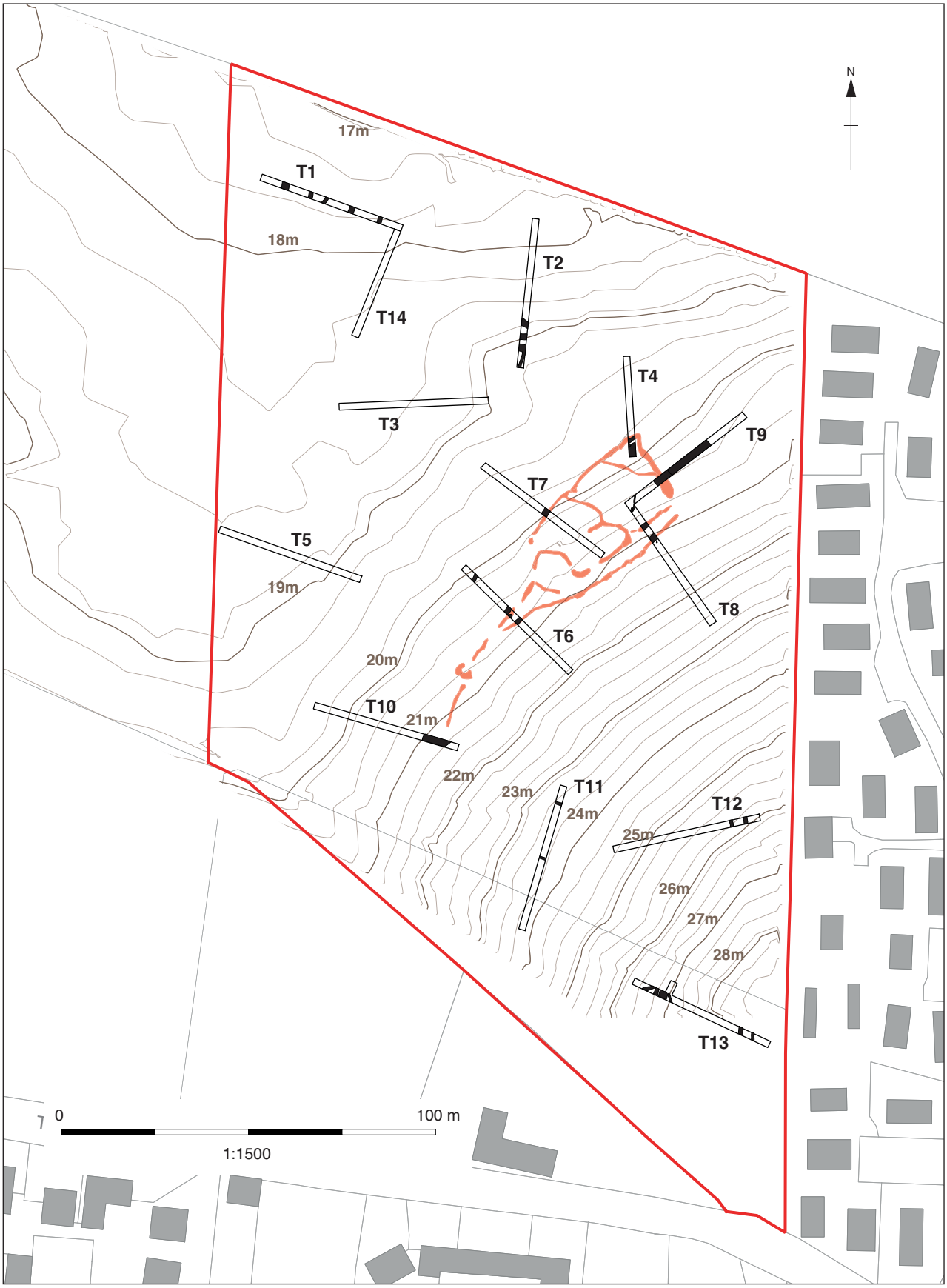

Figure 4: Trenches overlain on contour survey and the enclosure