



# 98-138 Station Road, Kennett, Cambridgeshire

## Archaeological Evaluation Report

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## 98-138 Station Road, Kennett, Cambridgeshire

### *Archaeological Evaluation Report*

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## Summary

Between the 17th of July and 6<sup>th</sup> of November 2017, Oxford Archaeology East (OA East) conducted a programme of archaeological evaluation at land off Station Road, Kennett, Cambridgeshire (TL 69557 67934). The site covers c. 40ha and includes the Scheduled Howe Hill Bronze Age barrow (DCB231; SAM 27169), located on the northern site boundary.

The investigations comprised a survey of aerial photographs, a geophysical survey and a programme of trial trenching. The aerial photography survey was undertaken prior to the fieldwork, whilst fieldwork itself was conducted in three phases, each with a geophysical survey followed by trial trenching.

With the exception of one north-east to south-west aligned linear anomaly, the non-intrusive surveys only registered variations in the underlying geology, along with modern services and traces of recent agricultural activity. The trenching confirmed that the linear feature was a long, probably segmented prehistoric boundary ditch. This ditch proved to be one of only three features revealed across 121 trenches; the others comprising an Early Iron Age pit and an undated pit.

Overall, the evaluation revealed remarkably sparse archaeological remains at the site. Mesolithic to Early Bronze Age worked flints recovered from the topsoil and subsoil attest to fleeting episodes of occupation and/or task-based activities over the course of several millennia. Evidence for more sustained activity is potentially suggested by the presence of the Early Iron Age pit, although the absence of other features from surrounding trenches implies that any associated settlement was dispersed, of low intensity and possibly short-lived.

The results of the geophysical survey allow the segmented ditch line to be traced for a length of at least 320m across the site, whilst the survey of aerial photographs has identified a possible continuation of this feature beyond the site, to the south-west. Here, its path crosses the sloping lower ground below Dane Hill, and heads towards land rising up to the Chippenham barrow cemetery and associated Bronze Age ring ditches, broadly along the axis of the Icknield Belt. This ditch may have served to define a routeway between the monuments in the south-west and the area of Howe Hill barrow and the Kennett Valley.

Aside from a single sherd of medieval pottery, no other archaeological remains were recovered from the site. The overall scarcity of artefacts and cut features (corroborating the results of the non-intrusive surveys) suggests the site was not subject to prolonged periods of settlement activity, and did not attract additional funerary activity around the Howe Hill barrow.

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The project was managed by Matt Brudenell, while Andy Thomas monitored the trenching on behalf of the Cambridgeshire Historic Environment Team (CHET).



## 1 INTRODUCTION

### 1.1 Scope of work

- 1.1.1 OA East was commissioned by Palace Green Homes to conduct a programme of non-intrusive and intrusive works; namely geophysical survey, aerial photographic survey and trial trench evaluation, on land at 98-138 Station Road, Kennett, Cambridgeshire (TL 69557 67934; Fig. 1).
- 1.1.2 The works were undertaken as part of a proposal for residential development of up to 500 dwellings, a primary school, community facilities, green infrastructure and commercial development. The works were conducted in accordance with a Brief issued by CHET (Thomas 2017) and supplemented by a Written Scheme of Investigation (WSI) produced by OA East (Brudenell & Bush 2017).

### 1.2 Location, topography and geology

- 1.2.1 The site is located to the north-west of the village of Kennett in East Cambridgeshire, c.500m from the River Kennet. It covers c.40.6ha and is currently used as arable farmland, with three existing fields falling within the proposed development envelope (Howe Hill, 7.6ha; Middle Breck, 12.0ha; School and Station Field, 21.0ha).
- 1.2.2 The site is bounded by the Dane Hill Road/Station Road (B1085) to the north and east, the Cambridge to Ipswich railway line and industrial buildings to the south, agricultural land to the south-west, and Dane Hill Farm to the west.
- 1.2.3 The British Geological Survey (BGS) records the solid geology as comprising chalk of the Holywell Nodular Chalk Formation and New Pit Chalk Formation. This is overlain by River Terrace Deposits of sand and gravel in the northern half of the site. The land rests between 26m and 33m OD.

### 1.3 Archaeological and historical background

- 1.3.1 The following provides a summary of the archaeological background for the area surrounding the site, based on information provided by the Cambridgeshire Historic Environment Record (CHER) and Suffolk Historic Environment Record (SHER), under licence number 17\_1922. The location of relevant recorded sites and findspots are shown in Figure 3, alongside information extracted from the aerial photographic survey of the wider study area.

#### *Palaeolithic and Mesolithic*

- 1.3.2 Evidence of early prehistoric activity in the area is restricted to findspots, the closest of which is located on the eastern side of Station Road, just 180m from the proposed development boundary. This findspot (CHER 07675) consists of three Mesolithic tranchet axes and two flint blades. A single Palaeolithic hand axe (CHER 07681) has also been recovered around 300m south of the proposed site, close to Rosemary farm. Further to this, a large collection of Palaeolithic implements has also been recovered from Dane Hill Farm and Shambles Field, approximately 1km north-west of the

proposed site. This assemblage (CHER 07490) consists of 102 hand axes, two roughouts and 61 worked flakes.

### *Neolithic*

- 1.3.3 Findspots, in the form of worked flint, are recorded both within the proposed site and in the immediate environs. The assorted flint implements within the site itself (CHER 07572) are located just 100m south-west of the Howe Hill scheduled barrow (see below). A small assemblage of struck flint (MCB 17842) has been recovered during a small evaluation (ECB 2844) to the immediate north-east of the proposed site, off Dane Hill Road. No associated archaeological features were identified. Fieldwalking on land to the immediate north of the site (ECB 2054, 3021) produced assemblages of struck (MCB 16719) and burnt flint (MCB 16720) along with Neolithic pottery (MCB 18220); mostly indicative of transient activity, although the concentration of burnt flint could be indicative of a working area or small habitation site.
- 1.3.4 Additional evidence for Neolithic activity has been identified immediately west of the A11, around 1km away from the site. Fieldwalking (ECB 1581) in this location produced a flint arrowhead (CHER 10230), flint scatters (CHER 10228, 10229 & 10261) and a possible settlement site (CHER 07919). Further Neolithic remains are known of closer to the proposed site itself (around 700m to the west); these consist of a flint knapping (CHER 07488) and settlement site (CHER 07922). Further fieldwalking (ECB 1579) around 1km south-west of the proposed development area has also produced a collection of struck flint (CHER 10262). A polished stone axe (CHER 07847) has also been collected from land to the south of the Chippenham barrow cemetery (see below).

### *Bronze Age*

- 1.3.5 The proposed site is located within a known Bronze Age funerary landscape, which contains a number of scheduled bowl barrows; all of which survive as upstanding earthworks. The most pertinent is the Howe Hill bowl barrow (SAM 27169), which is located within the proposed site itself, on its northernmost edge (Plate 1). The barrow is one of best preserved and most visually impressive Bronze Age funerary monuments in Cambridgeshire, surviving to a height of c. 3m above the ground surface. It measuring c. 31m north to south by c. 28m east to west, with a level area on the summit measuring c. 6m across, and offering commanding views across the site. There is no visible indication of a surrounding ditch, and the barrow is not known to have been excavated.
- 1.3.6 The Howe Hill barrow forms part of a dispersed group of similar monuments occupying the high ground to the north-east of Newmarket; the nearest of these lies approximately 1.5km to the south-west.
- 1.3.7 This dispersed group of monuments is formed of a further seven barrows, known as the Chippenham barrow cemetery (CHER 07448), which are situated around the junction between the A11 and A14. Four of the barrows are encompassed under the designation of SAM 27180 (CHER 07748c, 07748d, 07748e, 07748f) along with the Rookery barrow (SAM 27178), Hilly Plantation barrow (SAM 27179; CHER 04425) and

barrow SAM 27177 (CHER 04465). Also in this location is the excavated Waterhill Farm barrow (CHER 07448a) and another possible barrow (CHER 07448b). Further funerary remains in the form of a ring ditch (CHER 09063), three possible barrows (CHER 10325) and one definitive barrow with associated cremations (CHER 04464) excavated in the 1940's, are also recorded in the vicinity of scheduled barrow SAM 27177. Two further unscheduled ring ditches (CHER 07921 and 09071) are recorded *c.*1km between the Chippenham barrow cemetery and the Howe Hill barrow. The aerial photographic survey (Willis *et al.* 2017) has also identified further potential barrows within this area, the closest of which is located just 140m south-west of the Middle Breck trenches.

### *Roman*

- 1.3.8 There is very limited evidence for Roman activity in the area. Fieldwalking (ECB 2054) to the immediate north of the proposed development site has produced low levels of Roman pottery (MCB 16719). Roman pottery sherds (CHER 04464a) were also recovered around the vicinity of Bronze Age barrow CHER 04464.

### *Anglo-Saxon and medieval*

- 1.3.9 Little in the way of post-Roman remains are recorded in the environs of the proposed development area. However, fieldwork undertaken *c.*0.8km to the south-east, close to Kentford village, identified an Anglo-Saxon settlement. Features included 21 sunken-feature buildings, two post-built halls and a number of pits (MSF 29473).
- 1.3.10 Medieval remains are restricted to three records. Firstly, a moated site close to Dane Hill Farm (CHER 01191), around 300m west of the site. Then, a site *c.*0.7m to the north, where fieldwork (ECB 1414) identified medieval occupation (CB 15728) in the form of beam slots, postholes, midden pits and a well. Finally, within Kentford village are the remains of a medieval bridge (MSF 14660).

### *Post-medieval and modern*

- 1.3.11 The land to the north of the proposed site is dominated by former gravel pits of 19th century date. These include MCB 22149, 22150, 22151, 23375, 23376, 23377. To the west is a former sand (MCB 23370) and chalk pit (MCB 23371), both of 20th century date. Just south of the proposed site is the Bury St Edmunds to Newmarket railway line (MSF 34995), completed in 1854. Opened in the same year was Kennett railway station (MCB 23374). A post-medieval milestone (MSF 18276) is also located on Bury Road. Within the site itself is the Kennett to Kirtling Green waterpipe.
- 1.3.12 A number of listed buildings and buildings of historic interest are recorded across the area which surrounds the site. Dane Hill Farm (MCB 23373) situated around 300m west of the site, is of an 19th century date. The school house on Station Road, immediately opposite the site, was built in 1865 and is Grade II Listed (DCB 596). Around 400m north-east of the site is the Grade II\* Listed Saint Nicholas' Church (DCB 962; CB 14884), which originates in the 12th century. Other notable buildings include Grade II Listed late 16th century Home Farmhouse (DCB 595) and Grade II Listed 17th century Gatehouse (DCB 963), both on Dane Hill Road. As well as the 18th century Grade II Listed Waterhall Farm (DCB 620), 19th century Rosemary Farm (MCB 23372),

the early 16th century Grade II Listed Bell public house (DCB 1446) and late 15th century Grade II listed Kennett End farmhouse (DCB 961).

## 1.4 Historic map regression

- 1.4.1 Historic mapping shows that the proposed site has been farmland from at least the time of enclosure in 1830 (Fig. 3). At this point, the site was formed of two plots, which do not bear any relation to the present land divisions of Howe Hill, Middle Breck and the School and Station Field. The First Edition Ordnance Survey map of 1884 (not produced here) shows the site as one extensive open field. This continues through all later mapping until the OS map of 1970 (not produced here), which shows the site as in its present configuration, having been divided into three fields.

## 1.5 Aerial photographic survey

- 1.5.1 An aerial photographic survey (Willis *et al.* 2017) has been undertaken for both the site and the wider area, the results of which are summarised here and are illustrated on Figure 2 alongside the HER data. The full report is presented in Appendix F.
- 1.5.2 Aerial and satellite images from online sources were consulted alongside vertical and oblique aerial photographs. Lidar data was also consulted; however, it did not cover the entirety of the search area.
- 1.5.3 Periglacial processes in areas of chalk geology can create patterning on the ground, which can resemble archaeological remains. Examples of this have been mapped to the immediate west of the School and Station Field. Buried modern services within the site are also mapped as clear cropmarks. No new features of possible archaeological origins have been recorded within the site itself. However, to the south-west to the site, in the wider search area, a number of possible ring ditches have been identified, along with the previously known extant barrows (see paragraph 1.3.6). A single north-east to south-west ditch has also been recorded in this area.

## 1.6 Geophysical survey

- 1.6.1 A geophysical survey (Swinbank & Fortuny 2017) has been undertaken across the site, the results of which are summarised here and are illustrated on Figure 4. The full report is presented in Appendix G.
- 1.6.2 The geological survey was undertaken using a hand-pulled and quad-towed cart system fluxgate gradiometer. The geology of the site resulted in noticeable variations in the natural background being recorded. Modern activity in the form of underground services are also visible. High levels of agricultural related activity (*i.e.* plough lines) have also been mapped across all three of the fields. A small number of 'undetermined' anomalies have also been recorded, these are most likely to reflect a combination of natural and agricultural processes, rather than being of archaeological origin.
- 1.6.3 The only anomaly of probable archaeological origin is a single segmented/discontinuous linear feature identified as extending for around 330m across the Middle Breck and Howe Hill fields on a north-east to south-west alignment.

## 2 EVALUATION AIMS AND METHODOLOGY

### 2.1 Aims

2.1.1 The evaluation sought to establish the character, date, state of preservation of archaeological remains within the proposed development area. The scheme of works detailed below aimed to:

- i. ground truth the geophysical survey results and those of the aerial photographic assessment, by testing a range of anomalies of likely archaeological origin, and areas where no anomalies registered
- ii. establish the presence or absence of archaeological remains, characterise where they are found (location, depth and extent), and establish the quality of preservation of any archaeology and environmental remains
- iii. provide sufficient coverage to establish the character, condition, date and purpose of any archaeological deposits
- iv. provide sufficient coverage to evaluate the likely impact of past land uses, and the possible presence of masking deposits
- v. set results in the local, regional, and national archaeological context – and, in particular, its wider cultural landscape and past environmental conditions
- vi. provide – in the event that archaeological remains are found – sufficient information to construct an archaeological mitigation strategy, dealing with preservation, the recording of archaeological deposits, working practices, timetables, and orders of cost.

### 2.2 Methodology

2.2.1 The development area was divided into three separate fields, a 3% sample of each area equated to the following:

- Middle Breck: 22 trenches
- Howe Hill: 36 trenches
- School and station field: 63 trenches

2.2.2 Overall, a total of 6,050 linear metres of trenching (121 trenches measuring 50x2.1m) was positioned across the whole site, targeted upon anomalies identified during the geophysical survey (Swinbank & Fortuny 2017) and aerial photographic survey (Willis *et al.* 2017).

2.2.3 Machine excavation was carried out under constant archaeological supervision with a tracked 360° excavator using a 2.1m wide toothless ditching bucket.

2.2.4 The survey was carried out with a Leica GS08 GPS.

2.2.5 Bucket sampling (of up to 90 litres) was undertaken on the top- and subsoils across all trenches, as well as on colluvial deposits, where present.

2.2.6 All archaeological features and deposits were recorded using OA East's pro-forma sheets. Trench locations, plans and sections were recorded at appropriate scales. Digital photographs were taken of all relevant features and deposits.

2.2.7 A total of five bulk environmental soil samples were taken in order to investigate the possible survival of micro- and macro-botanical remains.

## 3 RESULTS

### 3.1 Introduction

- 3.1.1 The results of the evaluation are presented below, and include a stratigraphic description of the trenches that contained archaeological remains. The full details of all trenches with dimensions and depths of all deposits can be found in Appendix A. Finds and environmental reports are presented in Appendices B and C.
- 3.1.2 Of the 121 trenches excavated, six contained archaeological remains, one contained a large geological feature and 114 were archaeologically blank. Topsoil (01) across the site consisted of a mid grey brown sandy silt, 0.25m to 0.45m thick, containing almost no post-medieval or modern debris. A total of 32 struck flints were collected from the topsoil. Subsoil (02) was only seen across the northern half of the Middle Breck field and in isolated locations across Station Field. Where seen, it consisted of a dark brown orange sandy silt, measuring between 0.05m and 0.3m in thickness and contained four struck flints, a single sherd of Neolithic pottery (14g) and a single sherd of medieval pottery (7g). Unstratified finds distributions across the site are illustrated on Figure 5. A colluvial layer (03) was also encountered and identified in trenches across the north-east of the Middle Breck field. It consisted of a mid orange silt which varied in thickness from 0.2m to 0.7m.
- 3.1.3 The results are presented below by field. Only trenches containing archaeological remains are discussed. A selection of blank trenches can be seen in Plates 2 to 5. Unless otherwise stated, no finds were recovered from the fills of excavated features.

### 3.2 Middle Breck Field

#### *Trench 8 (Fig. 6)*

- 3.2.1 Ditch **10** was aligned north-east to south-west. It measured 1.2m wide and was 0.54m deep with steeply sloping sides and a concave base (Fig. 8, S.3; Plate 6). It was filled with a light brown silty sand (11) which contained frequent levels of chalk pieces.

#### *Trench 14 (Fig. 6)*

- 3.2.2 Ditch **04** was the continuation of ditch **10**. It measured 1.25m wide and 0.88m deep with steeply sloping sides and a flat base (Fig. 8, S.1). Its lower fill was a 0.68m thick light brown silty sand (05) which contained moderate levels of chalk pieces. This was sealed by a 0.2m thick dark orange brown silty sand (06).

### 3.3 Howe Hill Field

#### *Trench 27 (Fig. 7)*

- 3.3.1 A natural silt filled hollow extended across the trench for 21m. Two test pits (**19**, **21**) were excavated through the hollow, along with a machine sondage. The hollow was filled with a mid brown silt (18, 20), up to 0.3m in thickness. A total of 22 multi-period struck flints and three unworked burnt flint fragments (40g) were recovered from the hollow along with 4g (three sherds) of Early Bronze Age pottery.

- 3.3.2 Sealed by this natural hollow was a geological feature (**16**). This feature was broadly linear in plan and was orientated north-west to south-east. It measured 1.5m wide and was 0.2m deep with a wide U-shaped profile. It was filled with a mid grey brown silt (**17**) which produced three Neolithic struck flints.

### *Trench 29 (Fig. 7)*

- 3.3.3 The continuation of the north-east to south-west aligned ditch from the Middle Breck field (**04, 10**) was identified in Trench 29. Ditch **12** measured 1.8m wide and 0.48m deep with steeply sloping sides and a concave base (Fig. 8, S.4). It was filled with a mid yellow brown clay silt (**13**) which produced 6g (three sherds) of prehistoric pottery and two Neolithic struck flints.

### *Trench 36 (Fig. 7)*

- 3.3.4 Ditch **14** was also the continuation of ditch **04, 10** and **12**. It measured 1.4m wide and 0.47m deep with gently sloping sides and a concave base (Fig. 8, S.5; Plate 7). It was filled with a mid brown orange silt (**15**).

## 3.4 School and Station Field

### *Trench 64 (Fig. 7)*

- 3.4.1 Situated at the northern end of the trench was storage pit **26**. The circular pit had a diameter of 1.3m and was 0.8m deep with undercutting sides and a flat base (Fig. 8, S.7; Plate 8). The pits basal fill (**25**) was a 0.34m thick mid brown grey silt sand which contained 102g (14 sherds) of Early Iron Age pottery, two struck flints and 72g of animal bone, along with burnt stone. This was followed by a 0.16m thick dark yellow grey silty sand (**24**), tipping in from the east and containing occasional medium-large rounded stone. An assemblage of 192g (24 sherds) of Early Iron Age pottery and 308g of animal bone was also recovered from this fill. Above this was a 0.28m thick mid brown grey silty sand (**23**) which contained 117g (10 sherds) of Early Iron Age pottery and two struck flints, along with burnt stone. The uppermost fill (**22**) consisted of a 0.26m thick mid yellow grey silty sand containing 61g (eight sherds) of Early Iron Age pottery and one struck flint.

### *Trench 88*

- 3.4.2 A single small pit (**28**) was identified at the centre of Trench 88. It was sub-circular in plan, measuring 0.5m long, 0.4m wide and 0.18m deep with a U-shaped profile (Plate 9). It was filled with a dark yellow grey silty sand (**27**) which contained 2g of fired clay.

## 3.5 Finds summary

- 3.5.1 A total of 67 pieces of struck flint, 503g (64 sherds) of pottery, 8g of fired clay and 459g of animal bone were recovered from excavated features and unstratified topsoil and subsoil deposits across the site.
- 3.5.2 The struck flint (Appendix B.1) ranges in date from the Mesolithic through to the Iron Age, with the majority of the assemblage coming from unstratified topsoil deposits. The pottery assemblage (Appendix B.2) is of a prehistoric date, with the exception of



one medieval sherd. The majority of this assemblage dates from the Early Iron Age period. The fired clay (Appendix B.3) is fragmentary and undiagnostic. The animal bone assemblage (Appendix C.1) entirely derives from the Iron Age storage pit in Trench 64.

- 3.5.3 A total of five environmental bulk soil samples (Appendix C.2) were also taken from features across the site. A very small amount of charred grain and charcoal was recovered.

## 4 DISCUSSION

- 4.1.1 The archaeological works off Station Road have revealed a low level of preserved archaeological remains, with cut features comprising just two pits and a long north-east to south-west aligned ditched boundary. Finds of worked flint from the topsoil, subsoil and one natural hollow attest to widespread but sporadic activity at the site from the Mesolithic to Early Bronze Age. The ditch line is also of prehistoric origin, but cannot be closely dated, nor can one of the pits. The other pit dates to the Early Iron Age, and may suggested the presence of a small, dispersed area of settlement.
- 4.1.2 The scarcity of archaeological features is consistent with the results of the geophysical survey, where only one anomaly of likely archaeological origin was identified – which corresponded to the ditch revealed in the trial trenching. The only other responses in the survey were of natural origin, relating to variations in the underlying geology, some of which also registered in the aerial photography survey. Where encountered, archaeological features were clearly visible within the trenches, and the topsoil and subsoil layers were easily set apart from the surface geology. For these reasons, the results of the evaluation are considered to have a good level of reliability, and show a close correlation with the results of non-intrusive surveys of the site.
- 4.1.3 The mains result of these combined investigations are discussed below.

### **Background Mesolithic, Neolithic and Bronze Age activity**

- 4.1.4 The 36 worked flints recovered from plough and subsoil attest to widespread, low-level prehistoric activity at the site, with material dating from the Mesolithic through to at least the Early Bronze Age. The flints were recovered from 24 trenches, with no more than four worked finds deriving from any one trench. Most this material was recovered from trenches along the north-eastern edge and southern part of the site, with very few derived from the western side. The material is chronologically mixed, and includes blades, simple secondary flakes and one bifacially worked implement; the majority of being characteristic of Later Neolithic and Early Bronze Age flint working technologies.
- 4.1.5 A groups of 22 worked flints and pieces of unworked burnt flint were also recovered from deposits filling the large natural hollow in Trench 27. The material is also clearly multi-period, with the condition of the pieces being consistent with a degree of post-depositional disturbance. As with the assemblage from the topsoil and subsoil deposits, the material dates from the Mesolithic through to the Early Bronze Age, with blades, hard-hammer struck secondary flakes, and a single scraper recovered.
- 4.1.6 Overall, the flint assemblage provides clear evidence for prehistoric activity at the site from the Mesolithic, Neolithic and Early Bronze Age. The precise character of this activity is difficult to pinpoint, but the material is likely to represent the residue of numerous fleeting episodes of occupation and/or task-based activities extending over a period of several millennia. Similar chronologically diverse assemblages of worked flint been recovered from the plough soil in the surrounding landscape, some of which may constitute denser and spatially better defined scatters (e.g. ECB 2054; ECB 1581; CHER 10228, 10229 and 10261). Combined, these attest to the widespread and long-term utilisation of this landscape zone.

### Ditched prehistoric boundary

- 4.1.7 The ditch line recorded in Trenches 8, 14, 29 and 36 (**4**, **10**, **12** and **14**) form a long linear boundary aligned north-east to south-west. The excavated sections correlate closely with the only probable archaeological anomaly identified in the geophysical survey, allowing the boundary to be traced for at least c. 350m within the site. The form of the anomaly implies that boundary is not be continuous, but comprises a series of ditch segments. This is in part corroborated by the results of the trial trenching, which revealed no signs of the ditch in Trench 21, where a break in the anomaly was also identified by the geophysical survey. The contrasting profiles, depths and fill sequences of the ditch slots excavated (1.2-1.8m wide and 0.20-0.88m deep) are a further indication that the ditch line may be made up of several distinct segments. There was no indication of the ditch in Trench 60, along the northern boundary of the site, where the ditch should have crossed had it continued from the south. Given that no geophysical anomaly was traced in this zone either, the combined results suggest the ditch line terminates on the gravel plateau between Trenches 36 and 60.
- 4.1.8 The southern extent of this ditch line remains unknown, but is likely to continue south of the site, perhaps corresponding to the linear feature identified from the aerial photograph assessment, c. 250 south-west of the site (Appendix F, Fig. 3, no. 15). This ditch line was c. 320m long, and if it does belong to the same boundary, suggests that as a whole this feature could extend over 900m. If this is the case, the ditch would cross the sloping low ground below Dane Hill and land rising up to the south-west towards the Chippenham barrow cemetery and associated Bronze Age ring ditches, broadly along the axis of the Icknield Belt (Ladd and Mortimer 2017,8, Fig. 1).
- 4.1.9 The length of the ditch line and the absence of the other perpendicular ditches suggests the feature is unlikely to relate to a field system, but may have served to demarcate a routeway – associated with the Icknield Belt - or link more locally the dispersed group of Bronze Age ring-ditches and barrows stretching from Howe Hill in the north-east, to the Chippenham cemetery in the south-west.
- 4.1.10 Few finds were recovered from the excavated ditch slots. They comprise just two Neolithic worked flints and three sherds (6g) of highly abraded prehistoric pottery; all recovered from ditch **12**, Trench 29. Whilst these may all be residual, the absence of later material, coupled with the overall character of the feature, suggests a prehistoric origin, with a date possibly as early as the Bronze Age.

### Iron Age activity

- 4.1.11 A single Early Iron Age pit (**26**) was recorded in Trench 64. The pit appears to sit in isolation, with no further features exposed in the box-extension excavated around the northern terminal of Trench 64. Adjacent trenches were also devoid of archaeology (Trenches 29, 36, 62, 65 and 68-69).
- 4.1.12 The pit is of a form typical of the Iron Age, and has yielded a coherent assemblage of artefacts including diagnostic sherds of Early Iron Age pottery, worked flint, fired clay and animal bone. The content and condition of the material is characteristic of that found on Early Iron Age domestic sites, making the absence of other features in the

vicinity intriguing. This absence, however, may be more apparent than real, as features can be dispersed and of low density on small, short-lived Early Iron Age settlement, as at Moulton, Suffolk (Bush 2011), *c.*4km to the south.

## 4.2 Significance

- 4.2.1 The investigations have revealed very sparse prehistoric remains at the site, with finds dating from the Mesolithic to Early Iron Age. Most of the artefacts recovered comprises Mesolithic to Early Bronze Age worked flint from the topsoil and subsoil, representing the residues of fleeting episodes of occupation and/or task-based activities over the course of several millennia.
- 4.2.2 Evidence for more sustained activity is potentially suggested by the presence of the Early Iron Age pit and its contents in Trench 64, although the absence of other features from surrounding trenches implies that any associated settlement was dispersed, of low intensity, and possibly short-lived. Aside from one other undated pit (in Trench 88), the only other features revealed was a ditched linear boundary. This was probably a segmented ditch line, with a length of at least 320m, and may be traced further to south-west beyond the site. The ditch line crosses the sloping lower ground below Dane Hill and heads towards land rising up to the south-west towards the Chippenham barrow cemetery and associated Bronze Age ring ditches, broadly along the axis of the Icknield Belt (Ladd and Mortimer 2017, 8, Fig. 1).
- 4.2.3 Seen in this context, the ditch may have served to define a path between the monuments to the south-west and the area of Howe Hill barrow and the Kennett Valley, crossing land that appears to have witnessed little sustained prehistoric occupation or other funerary activity. In fact, given the extensive area evaluated, covering some 40 hectares, the scarcity of archaeological remains of any period is quite remarkable.
- 4.2.4 Truncation by modern ploughing (as attested by the presence of plough scarring across the site) cannot wholly account for such scarcity and water supply may have been an important factor here, as most parts of the site are over 700m from a natural water source (the River Kennett to the east and a small stream to the west). However, it is possible that the monuments themselves may have had some bearing on the character of local occupation, especially in the prehistoric period, with the area perhaps being activity avoided, or simply being a landscape that communities passed through or visited on an episodic basis. There is certainly nothing to suggest that the Howe Hill barrow formed any kind of focus for later activity, whether funerary or settlement related. This heightens the impression that the barrow was somewhat isolated, being detached from the main groups of contemporary monuments to the south-west, and devoid of any sustained occupation of associated funerary activity in the immediate vicinity.

## APPENDIX A TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 1						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.5
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 2						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 3						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	Pottery	medieval

Trench 4						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.7
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 5						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 6						
<b>General description</b>				<b>Orientation</b>	N-S	
Trench devoid of archaeology.				<b>Length (m)</b>	50	
				<b>Width (m)</b>	2	
				<b>Depth (m)</b>	0.4-0.6	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 7						
<b>General description</b>				<b>Orientation</b>	E-W	
Trench devoid of archaeology.				<b>Length (m)</b>	50	
				<b>Width (m)</b>	2	
				<b>Depth (m)</b>	0.4-0.5	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 8						
<b>General description</b>				<b>Orientation</b>	E-W	
Trench contained a single NW-SE aligned ditch.				<b>Length (m)</b>	50	
				<b>Width (m)</b>	2	
				<b>Depth (m)</b>	0.4-0.55	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-
10	Cut	1.2	0.54	Ditch	-	-
11	Fill	-	0.54	Ditch	-	-

Trench 9						
<b>General description</b>				<b>Orientation</b>	N-S	
Trench devoid of archaeology.				<b>Length (m)</b>	50	
				<b>Width (m)</b>	2	
				<b>Depth (m)</b>	0.4-0.5	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-

Trench 10						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.45-0.65
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 11						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.5-0.7
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 12						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.5-0.55
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 13						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 14						
General description					Orientation	NW-SE
Trench contained a single NW-SE aligned ditch.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.7
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

2	Layer	-	-	Subsoil	-	-
4	Cut	1.25	0.88	Ditch	-	-
5	Fill	-	0.68	Ditch	-	-
6	Fill	-	0.2	Ditch	-	-

Trench 15						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.6-1.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-	-	Topsoil	-	-
2	Layer	-	-	Subsoil	-	-
3	Layer	-	-	Colluvium	-	-

Trench 16						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.5-0.7
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 17						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 18						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.45-0.8
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 19						
General description					Orientation	E-W



Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 20						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.45
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 21						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.5-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 22						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.5-0.8
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-
3	Layer	-		Colluvium	-	-

Trench 23						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.25-0.55
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 24						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 25						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 26						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 27						
General description					Orientation	NE-SW
Trench contained a natural hollow					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric
16	Cut			Natural	-	-
17	Fill			Natural	Flint	Prehistoric
18	Fill			Hollow	Pottery Flint	EBA Prehistoric
19	Cut			Hollow	-	-
20	Fill			Hollow	Flint	Prehistoric
21	Cut			Hollow	-	-

Trench 28						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2

Context No.	Type	Width (m)	Depth (m)	Description	Depth (m)	Date
1	Layer	-		Topsoil	-	-

Trench 29						
General description				Orientation	E-W	
Trench contained a NE-SW aligned ditch.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
12	Cut	-		Ditch	-	-
13	Fill			Ditch	Pottery Flint	Prehistoric Prehistoric

Trench 30						
General description				Orientation	NW-SE	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 31						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 32						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 33						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	

					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 34						
<b>General description</b>					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 35						
<b>General description</b>					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.25-0.3
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 36						
<b>General description</b>					Orientation	E-W
Trench contained a single NE-SW ditch.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
14	Cut	-		Ditch	-	-
15	Fill	-		Ditch		

Trench 37						
<b>General description</b>					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 38						
<b>General description</b>					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 39						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 40						
General description				Orientation	NE-SW	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 41						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 42						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 43						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date

1	Layer	-		Topsoil	-	-
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Trench 44						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 45						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 46						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 47						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 48						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 49						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 50						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 51						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.25-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 52						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 53						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.45
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 54						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50

					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 55						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.45
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 56						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 57						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.5
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 58						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.5
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 59						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4



Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 60						
General description				Orientation	NW-SE	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 61						
General description				Orientation	NE-SW	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 62						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.4-0.45	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric
2	Layer	-		Subsoil	Flint	Prehistoric

Trench 63						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.45	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	Flint	Prehistoric

Trench 64						
General description				Orientation	N-S	
Trench contained a single Iron Age storage pit				Length (m)	53	
				Width (m)	2	
				Depth (m)	0.4	

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	IA
22	Fill	-		Pit	Pottery Flint	EIA IA
23	Fill	-		Pit	Pottery	EIA
24	Fill	-		Pit	Pottery Flint Animal bone	EIA IA <i>ncd</i>
25	Fill	-		Pit	Pottery Flint Fired clay Animal bone	EIA IA <i>ncd</i> <i>ncd</i>
26	Cut			Pit	-	-

**Trench 65**

General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

**Trench 66**

General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

**Trench 67**

General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

**Trench 68**

General description				Orientation	NW-SE
Trench devoid of archaeology.				Length (m)	50
				Width (m)	2
				Depth (m)	0.4-0.5

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 69						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.45	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 70						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.4-0.45	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric
2	Layer	-		Subsoil	Flint	Prehistoric

Trench 71						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 72						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 73						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date

1	Layer	-		Topsoil	-	-
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Trench 74						
<b>General description</b>					<b>Orientation</b>	E-W
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.35-0.4
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	-	-

Trench 75						
<b>General description</b>					<b>Orientation</b>	N-S
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.35-0.4
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 76						
<b>General description</b>					<b>Orientation</b>	E-W
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.35-0.4
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	-	-

Trench 77						
<b>General description</b>					<b>Orientation</b>	N-S
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.4
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	-	-

Trench 78						
<b>General description</b>					<b>Orientation</b>	E-W
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.3-0.35
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	-	-

Trench 79						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 80						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 81						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 82						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 83						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 84						
General description					Orientation	E-W

Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 85						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4-0.65
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	-	-

Trench 86						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 87						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 88						
General description					Orientation	E-W
Trench contained a single small pit					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
27	Fill	-		Pit	Fired clay	<i>ncd</i>
28	Cut			Pit	-	-

Trench 89						
General description					Orientation	NE-SW

Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.6
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric
2	Layer	-		Subsoil	-	-

Trench 90						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 91						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 92						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 93						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 94						
General description					Orientation	NW-SE
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-
2	Layer	-		Subsoil	Pottery	Neolithic

Trench 95						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 96						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 97						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.45	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 98						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 99						
General description				Orientation	NW-SE	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	



Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 100						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 101						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 102						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 103						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 104						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 105						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 106						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 107						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 108						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.35-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 109						
General description					Orientation	E-W
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 110						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50

					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 111						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 112						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 113						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 114						
General description					Orientation	NE-SW
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.4
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 115						
General description					Orientation	N-S
Trench devoid of archaeology.					Length (m)	50
					Width (m)	2
					Depth (m)	0.3-0.35

Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 116						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 117						
General description				Orientation	NW-SE	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 118						
General description				Orientation	E-W	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.25-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 119						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.3-0.35	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	Flint	Prehistoric

Trench 120						
General description				Orientation	N-S	
Trench devoid of archaeology.				Length (m)	50	
				Width (m)	2	
				Depth (m)	0.35-0.4	
Context No.	Type	Width (m)	Depth (m)	Description	Finds	Date
1	Layer	-		Topsoil	-	-

Trench 121						
<b>General description</b>					<b>Orientation</b>	E-W
Trench devoid of archaeology.					<b>Length (m)</b>	50
					<b>Width (m)</b>	2
					<b>Depth (m)</b>	0.35-0.4
<b>Context No.</b>	<b>Type</b>	<b>Width (m)</b>	<b>Depth (m)</b>	<b>Description</b>	<b>Finds</b>	<b>Date</b>
1	Layer	-		Topsoil	-	-

## APPENDIX B FINDS REPORTS

### B.1 Flint

*By Lawrence Billington*

#### *Introduction and quantification*

B.1.1 A total of 67 worked flints and three fragments of unworked burnt flint (40g) were recovered during the evaluation. The lithics have been classified by broad type and are quantified, by trench and context, in Table 1. For the purposes of this report the assemblage is discussed in relation to three broad groups; those from topsoil/subsoil deposits (36 worked flints), from a large natural hollow and natural feature in Trench 27 (25 worked flints; 40g of burnt flint) and from cut features (six worked flints).

#### *Raw materials and condition*

B.1.2 The entire assemblage is made up of flint, generally fine grained and of good knapping quality. The colour of the flint, the size of removals and the character of surviving cortical surfaces suggest the exploitation of small to medium sized (under 100mm) cobbles of flint derived from secondary sources, probably from fluvial gravels. Such material would have been available relatively locally, including within the gravel terrace deposits which underlie the northern part of the site. Despite the sites relatively close proximity to flint bearing chalk and the well-documented presence of chalk derived flint in Neolithic assemblages in this part of Cambridgeshire (e.g. Brown 1996; Edmonds 1999) no definite chalk flint was identified in the assemblage.

B.1.3 The condition of the assemblage is very varied. Recortication is common, occurring on almost half of all the worked flint. This varies from a light blue sheen to a heavy opaque off-white and does not appear to have any clear chronological significance, probably relating more to the individual post-depositional histories of individual pieces and variability in soil conditions across the site. Little of the assemblage can be described as being in fresh condition. Most of the worked derived from cut features and from the Trench 27 natural hollow can be described as being in good condition although minor edge damage/rounding consistent with a degree of post-depositional disturbance is ubiquitous. The worked flint derived from topsoil and subsoil deposits is entirely characteristic of material derived a from ploughzone context and whilst some pieces are in relatively good condition most display some moderate to severe edge damage and/or breaks (cf Mallouf 1982).

#### *Results*

##### *Topsoil and subsoil*

B.1.4 Over half of the worked flint was recovered from topsoil and subsoil deposits. This material appears to have been fairly thinly distributed over the site as a whole, with the 36 worked flints deriving from 24 individual evaluation trenches, with no more than four worked flints deriving from any one trench. The majority of the flint derives

from trenches along the north-eastern edge and southern part of the site and it is notable that trenches over much of the western part of the site did not produce flint.

Trench	Context	Cut	Context type	Irregular waste	Primary flake	Secondary flake	Tertiary flake	Secondary blade-like flake	Tertiary blade-like flake	Secondary blade	Tertiary blade	Scraper	Bifacially flaked implement	Core	Total worked	Unworked burnt flint count	Unworked burnt flint weight (g)
27	1		Topsoil			2									2		
41	1		Topsoil								1				1		
46	1		Topsoil			2									2		
58	1		Topsoil			1									1		
59	1		Topsoil			1									1		
61	1		Topsoil			2			1	1					4		
62	1		Topsoil							1					1		
65	1		Topsoil			1									1		
70	1		Topsoil			1									1		
71	1		Topsoil			2									2		
75	1		Topsoil			1									1		
87	1		Topsoil							1					1		
89	1		Topsoil								1				1		
92	1		Topsoil			1			1						2		
95	1		Topsoil			1									1		
100	1		Topsoil								1				1		
102	1		Topsoil								1				1		
106	1		Topsoil			1									1		
108	1		Topsoil						1				1		2		
110	1		Topsoil			1									1		
112	1		Topsoil				1								1		
117	1		Topsoil			1					1				2		
119	1		Topsoil			1									1		
62	2		Subsoil			1									1		
63	2		Subsoil				1			1					2		
70	2		Subsoil			1									1		
29	13	12	Ditch			2									2		
64	22	26	Pit		1										1		
64	23	26	Pit			1									1		
64	25	26	Pit			1	1								2		
27	18	19	Hollow			2	2	1							5	1	13.3
27	20	21	Hollow	2		7	2	2	1		1	1		1	17	2	26.9
27	17	16	Natural			1	1	1							3		
			<b>Totals</b>	0	1	25	3	0	3	4	5	0	1	0	42	0	0

Table 1: Quantification of the flint assemblage by type and trench/context

- B.1.5 The assemblage is overwhelmingly dominated by unretouched removals with just one retouched piece and no cores. The worked flint is clearly chronologically mixed, representing activity from the Mesolithic through to at least the Early Bronze Age. The earliest activity is represented by a relatively large number of pieces which derive from systematic blade based technologies characteristic of the Mesolithic and earlier Neolithic. In total 16 blade-based pieces were recovered, making up just under half of the worked flint from topsoil and subsoil deposits. There is considerable variability within this blade-based material, and it seems very likely that both Mesolithic and earlier Neolithic activity is present, with fine prismatic bladelets more characteristic of Mesolithic technologies occurring alongside more robust and somewhat irregular blade-like pieces more typical of Neolithic industries.
- B.1.6 The remainder of the worked flint is dominated by simple secondary flakes, most of which derive from the working of single or multiple platform core with a minimum of platform preparation. Although a small proportion of this material may reflect the less structured product of earlier technologies, the majority is characteristic of Later Neolithic and Early Bronze Age technologies, whilst some of the more expediently worked pieces may also reflect activity in the Middle/Late Bronze Age or Iron Age.
- B.1.7 The single retouched piece (from Trench 108) has been classified here as a bifacially worked implement. This piece is broken at one end, the break appearing to have removed roughly a third of what was probably a broadly oval shaped tool. In its broken state, it measures 77mm long, 72mm wide and 16mm thick. It has been formed by almost completely covering, skilfully executed bifacial flaking - probably carried out by direct soft hammer percussion. A very small patch of cortex remains on one face of the piece but it is not possible to determine whether it was manufactured on a nodule or a large flake. Despite the quality of the flaking, this piece appears unfinished and is best described as a rough-out – in particular there is little of the finer retouch around the pieces edges characteristic of the final stages of the production of bifacial tools. It seems possible that the break on the piece occurred during manufacture and led to its discard. Given its broken and unfinished state, it is difficult to determine its typological affinities – its morphology is perhaps closest to earlier Neolithic 'laurel leaf' points/knives but it could equally be a Late Neolithic or Early Bronze Age product, being a rough-out for a discoidal or foliate knife.

#### *Natural hollow (Trench 27)*

- B.1.8 A total of 22 worked flints and 40g of unworked burnt flint were recovered from deposits infilling a large natural hollow in Trench 27. These flints were derived from two test pits, **21** and **19** which produced **12** and five worked flints respectively. A further three flints were recovered from natural feature (**16**) associated with the hollow. Taken as a whole, the assemblage from Trench 27 is disparate in terms of raw material and technological traits and is clearly multi-period, whilst the condition of many of the pieces is consistent with a degree of post-depositional disturbance. As with the assemblage from the topsoil and subsoil deposits, Mesolithic/earlier Neolithic material is represented by blade based pieces, although these are less well represented in the material from the hollow, with four blade-based removals and a single narrow flake/bladelet core deriving from the two test pits. The majority of the



worked flint is made up of hard-hammer struck secondary flakes, most consistent with a later Neolithic or Early Bronze age date. The sole retouched piece is a scraper, manufactured on a large and robust recorticated flake blank. The abrupt retouch at its distal end cuts through the recorticated surface of the flake, indicating that it was made on a 'scavenged' earlier blank – this kind of recycling of lithic material is found most commonly in assemblages dating to the Early Bronze Age and to later periods of prehistory.

### *Cut Features*

B.1.9 Worked flint was recovered from one excavated ditch section, **12** (Trench 29), which produced two worked flints. These are both relatively systematically produced flakes, likely to be of Neolithic date and are likely to be residual. Pit **26** produced four worked flints, derived from three separate contexts (see Table 1). Again, this material is made up entirely of unretouched removals but is notable for the complete absence of systematically reduced blade-based material and the crudeness of working of some of the flakes, including several struck from natural striking platforms and one with a very heavily crushed/battered striking platform, which might derive from a hammerstone or pounder. Although some of this material may be residual, it seems probable that some if not all of this material is broadly contemporary with the feature from which it derives and represents small scale and expedient Iron Age flint working.

### *Summary*

B.1.10 Although the worked flint assemblage provides clear evidence for prehistoric activity at the site from the Mesolithic potentially through to the Iron Age, any more detailed characterisation of this activity is hampered by the modest size of the assemblage and its recovery from mostly unstratified contexts. It is difficult to evaluate the significance of the flint derived from topsoil and subsoil deposits across the site, but it seems likely to represent the residue of numerous fleeting episodes of occupation and/or task-based activity extending over a period of several millennia. The recovery of flint from the natural hollow in Trench 27 demonstrate the potential for a substantial assemblage to be recovered from this feature given intensive sampling, but it should be emphasised that the assemblage appears to show signs of disturbance and is clearly chronologically mixed – on present evidence there seems little potential for the recovery of high integrity *in situ* lithic scatters from this feature. The worked flint from cut features includes a small amount of residual material together with a very small amount of probable Iron Age flintwork from pit **26**.

## B.2 Pottery

*By Matt Brudenell*

### *Introduction*

- B.2.1 The evaluation yielded 64 sherds of pottery (503g) with a mean sherd weight (MSW) of 7.9g. The pottery was recovered from seven contexts relating to a ditch, a natural hollow, a pit and two subsoil finds in Trenches 3, 27, 29, 64 and 94 (Table 2).
- B.2.2 With the exception of a single sherds of medieval pottery from the subsoil in Trench 3, all the material is prehistoric in date, with the vast majority being of Early Iron Age origin, c.600-350 BC. The pottery is in moderate condition. Most sherds are small, and those from the ditch interventions are heavily abraded.

<i>Trench</i>	<i>Cut</i>	<i>Context</i>	<i>Feature type</i>	<i>No. sherds</i>	<i>Weight (g)</i>	<i>Pottery spot date</i>
3	-	2	Subsoil	1	7	Medieval
27	19	18	Natural hollow	3	4	Early Bronze Age and generic prehistoric
29	12	13	Ditch	3	6	Generic prehistoric
64	26	22	Pit	8	61	Early Iron Age
64	26	23	Pit	10	117	Early Iron Age
64	26	24	Pit	24	192	Early Iron Age
64	26	25	Pit	14	102	Early Iron Age
94	-	2	Subsoil	1	14	Neolithic
<b>TOTAL</b>				<b>64</b>	<b>503</b>	

Table 2: Quantification of pottery

### *Methodology*

- C.1.1 All the prehistoric pottery has been fully recorded following the recommendations laid out by the Prehistoric Ceramic Research Group (2011). After a full inspection of the assemblage, fabric groups were devised on the basis of dominant inclusion types, their density and modal size. Sherds from all contexts were counted, weighed (to the nearest whole gram) and assigned to a fabric group. Sherd type was recorded, along with evidence for surface treatment, decoration, and the presence of soot and/or residue. Rim and base forms were described using a codified system recorded in the catalogue, and were assigned vessel numbers. Where possible, rim and base diameters were measured, and surviving percentages noted. In cases where a sherd or groups of refitting sherds retained portions of the rim, shoulder and/or other diagnostic features, the vessel was categorised by ceramic tradition (Collared Urn, Deverel-Rimbury *etc.*), with Early Iron Age vessels classified using a form series devised by the author (Brudenell 2012), and the class scheme created by John Barrett (1980).
- C.1.1 All pottery was subject to sherd size analysis. Sherds less than 4cm in diameter were classified as 'small' (50 sherds); sherds measuring 4-8cm were classified as 'medium' (13 sherds), and sherds over 8cm in diameter will be classified as 'large' (one sherds). The quantified data is presented on an Excel data sheet held with the site archive.

## *Prehistoric pottery fabrics*

F: Sherds with burnt flint too small to classify further

F1: Modern to common coarse burnt flint (mainly 2-4mm in size)

F2: Modern to common medium burnt flint (mainly 1-2mm in size)

FQ1: Modern to common coarse burnt flint (mainly 2-4mm in size) and quartz sand

FQ2: Modern to common medium burnt flint (mainly 1-2mm in size) and quartz sand

FQ3: Modern to common fine burnt flint (mainly <1mm in size) and quartz sand

GF1: Moderate to common f medium grog and bunt flint (mainly 1-2mm in size)

Q1: Moderate to common quartz sand

SQ1: Moderate to common fine shell (mainly <1mm in size) and sparse medium burnt flint (mainly 1-2mm in size)

<i>Fabric</i>	<i>Fabric group</i>	<i>No. sherds</i>	<i>Weight (g)</i>	<i>% fabric (by wt.)</i>	<i>MNV</i>
F	Flint	2	2	0.4	-
F1	Flint	1	14	2.8	-
F2	Flint	1	11	2.2	-
FQ1	Flint and sand	18	272	54.8	4
FQ2	Flint and sand	27	159	32.1	1
FQ3	Flint and sand	6	10	2	1
GF1	Grog and flint	1	2	0.4	-
Q1	Sand	6	20	4	2
SQ1	Shell and sand	1	6	1.2	-
<b>TOTAL</b>		<b>63</b>	<b>496</b>	<b>99.9</b>	<b>8</b>

Table 3: Quantification of prehistoric pottery by fabric. MNV calculated as the total number of different rims and bases (six rims, two bases)

## *Results*

### *Neolithic*

- C.1.1 A single sherd of abraded Neolithic pottery (14g) was recovered from the subsoil (context 02) in Trench 94. The sherd is in fabric F1 and includes very coarse crushed burnt flint in the paste, up to 8mm in size. The sherd cannot be date more closely within the Neolithic.

### *Early Bronze Age pottery*

- C.1.1 A single small abraded sherd of Early Bronze Age rusticated Beaker (2g) was recovered from ditch 19, Trench 27. The sherd is in a grog and flint tempered fabric (GF2) and has a fingertip impression on the surface. The fabrics type and form of decorated is typical of Early Bronze Age rusticated Beakers. However, the size and condition of the sherd suggests it could be residual. The other prehistoric sherds recovered from the ditch were not closely datable.

### *Early Iron Age pottery*

- C.1.1 Pit **26**, Trench 64, yielded a 56 sherds (426g) of Early Iron Age pottery. The pottery was recovered from all four fills of the pit, with the majority derived from the basal deposits, context 24 and 25. The pottery formed a coherent and contemporary group of Early Iron Age pottery dating, *c.*600-350 BC. Combined, the assemblage includes sherds in mainly flint and sand tempered fabrics (FQ1-3), with a smaller number of sandy wares (Q1) and single sherds in flint (F2) and shell and sand fabrics (SQ1).
- C.1.1 Based on the total number of different rims and bases identified (six rims, two bases), the group comprises a minimum of eight different vessels. Those represented include the partial profile of three decorated coarseware jars: two weekly shouldered jars with up-right necks decorated with fingertip impressions on the rim and shoulder, and one marked shoulder jar with hollowed neck, decorated with fingertip impression of the rim-top and pinching on the shoulder. The vessel forms and methods of decoration are entirely in keeping with local Early Iron Age potting traditions (Brudenell 2012). In total, there nine decorated coarseware sherds (132g) in the assemblage and six burnished fineware sherds (81g, all in fabrics F2).

### *Generic prehistoric pottery*

- C.1.1 Five sherds (8g) of 'generic' prehistoric pottery (pottery which cannot be assigned to a more specific period) were recovered from ditch **12**, Trench 29 (three sherds, 6g) and ditch **19**, Trench 27 (two sherds, 2g). The sherds were in fabrics F2 (two sherds, 5g), Q1 (one sherds, 1g) and F (two sherds, 2g). The sherds were all small and heavily abraded.

### *Medieval pottery*

- C.1.1 A single sherd of South-east Fenland Medieval Calcareous Buff Ware (SEFEN; 7g) was recovered from the subsoil (context 02) of Trench 3. The sherd dates from 1150-1450.

### *Discussion*

- C.1.1 The evaluation has revealed a small assemblage of pottery, with components dating from the Neolithic, Early Bronze Age, Early Iron Age and medieval periods. The most significant group of material comprises the Early Iron Age pottery from pit **26**, Trench 64. The pottery from the pit is typical of the Early Iron Age, and is characterised by fragments of a range of vessels used between *c.*600-350 BC across southern Cambridgeshire and parts of west Suffolk; the best local parallel being material from the Moulton Paddocks, Moulton, Suffolk (Brudenell 2011), *c.*4km to the south. The general character of the material is also typical of that generated and found within Early Iron Age settlement contexts, and may suggest the presence of a localised area of Iron Age activity around Trench 64.

## B.3 Fired clay

*By Matt Brudenell*

- C.1.1 Five small undiagnostic fragments of fired clay (8g) were recovered from the evaluation. Pit **26**, Trench 64 contained one fragment in a sparse fine sand fabric (2g). this derived from context 25. Pit **28**, Trench 88 yielded four fragments (6g) in a quartz sand fabric from context 27.

## APPENDIX C ENVIRONMENTAL REPORTS

### C.1 Animal bone

*By Zoë Ui Choileáin*

#### *Introduction*

- C.1.1 The site produced 459g of animal bone all from a single Iron Age storage pit **26**. (Trench 64). There were 380g or six countable fragments; of this, four fragments were identifiable to species.
- C.1.2 The method used to quantify this assemblage was based on that used for Knowth by McCormick and Murray (2007) which is modified from Albarella and Davis (1996). Identification of the faunal remains was carried out at OA East. References to Hillson (1992), Schmid (1972) and Grant (1982) were used where necessary.

#### *Results*

- C.1.3 The condition of the bone is general poor. The majority of the cortical bone has been affected by root etching and weathering. Most bone surfaces were almost entirely masked by these factors.
- C.1.4 Only a single species is represented by this assemblage – cattle. A minimum number of one individual was recorded. Three loose teeth were refitted to the highly fragmentary mandible; an incisor, a dp4 and M1. Wear stages of the dp4 and M1 suggest an age range between 8-18 months for this animal.
- C.1.5 Two chop marks were recorded on the anterior surface of the ischium on the left pelvis (context 124). These represent the only evidence of butchery in this assemblage.

<i>Cut</i>	<i>context</i>	<i>Taxon</i>	<i>Element</i>	<i>Side</i>	<i>Weight</i>	<i>No Frag</i>
26	24	cattle ( <i>Bos Taurus</i> )	pelvis	Left	173	1
		cattle ( <i>Bos Taurus</i> )	pelvis	Right	47	1
		cattle ( <i>Bos Taurus</i> )	mandible	-	45	1
		cattle ( <i>Bos Taurus</i> )	metacarpus	-	43	1
	25	large mammal	radius	-	65	1
		large mammal	rib	-	7	1

Table 4: Catalogue of the countable fragments in storage pit **26**

#### *Summary*

- C.1.6 This assemblage is small representing only a single feature on the site. There is some evidence of butchery for the purpose of meat consumption. In the single example recorded, the animal had not yet reached the optimal age range and therefore size for this purpose. Without a larger assemblage no real conclusions can be drawn as regards the butchery and dietary practices employed by this population.
- C.1.7 No further analysis is required unless further material is recovered during any later excavations. If further material is not recovered dispersal is recommended for this assemblage.

## C.2 Environmental Samples

*By Rachel Fosberry*

### *Introduction*

C.2.1 Five bulk samples were taken from features within the evaluated area at land off Station Road, Kennett, Cambridgeshire 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 Trench 14, 27, 64 and 88.

### *Methodology*

C.2.2 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 x60 and an abbreviated list of the recorded remains are presented in Table 5. 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).

### *Quantification*

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

### *Quantification*

C.2.6 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.2.7 Items that cannot be easily quantified such as charcoal and molluscs have been scored for abundance

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

## Results

- C.2.8 Preservation of plant remains is by carbonisation and is generally poor in that only occasional specimens are present. Most of the flots contain rootlets which may have caused movement of material between contexts.
- C.2.9 Trench 14 (Middle Breck): Fill 5 of undated ditch **04** produced a small assemblage of snail shells with moderate diversity indicating a calcareous deposit. The intrusive, burrowing blind snail, *Cecilioides acicula*, is present.
- C.2.10 Trench 27 (Howe Hill): Fill 20 of hollow **21** produced a single charred grain of wheat (*Triticum* sp.) that is likely to be spelt (*T. spelta*) or emmer (*T. dicoccum*), both hulled varieties of wheat that could be consistent with a Bronze Age date for this feature.
- C.2.11 Trench 64 (School and Station Field): Two samples were taken from Early Iron Age pit **26**; basal fill 25 contains two poorly preserved indeterminate cereal grains, a spelt wheat glume base and a seed of clover/medick (*Trifolium/Medicago* sp.). Second fill (24) contains four poorly preserved cereal grains identifiable as barley (*Hordeum vulgare*) and wheat. Both samples contain a moderate amount of wood charcoal.
- C.2.12 Trench 88 (School and Station Field): Fill 27 of pit **28** was devoid of preserved remains.

Sample No.	Context No.	Cut No.	Feature	Trench	Vol. processed (ml)	Flot vol. (ml)	Cereals	Chaff	Weed seeds	Snails	Charcoal <2mm	Charcoal >2mm	Estimated charcoal vol
1	5	4	Ditch	14	5	2				+++			0
2	20	21	Hollow	27	6	10	#				+		<1
3	24	26	Pit	64	16	15	#				+++	+++	3
4	27	28	Pit	88	9	2				+			0
5	25	26	Pit	64	17	10	#	#	#	+	+++	+++	5

Table 5: Environmental sample results

## Discussion

- C.2.13 The recovery of such small amounts of charred grain, chaff, weed seeds and charcoal indicates that the potential for the preservation of meaningful assemblages of plant remains is low.
- C.2.14 If further excavation is planned for this area, it is recommended that environmental sampling is carried out in accordance with Historic England guidelines (2011).



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## APPENDIX E OASIS REPORT FORM

### Project Details

OASIS Number	oxfordar3-300284		
Project Name	98-138 Station Road, Kennett, Cambridgeshire		
Start of Fieldwork	27-07-17	End of Fieldwork	6-11-17
Previous Work	No	Future Work	No

### Project Reference Codes

Site Code	KENSTR17	Planning App. No.	-
HER Number	ECB5171	Related Numbers	ECB5171-2

Prompt	EIA scoping report (16/01196/SCOPE)
Development Type	Mixed use – residential and commercial
Place in Planning Process	Pre-application

### Techniques used (tick all that apply)

- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Aerial Photography – interpretation | <input type="checkbox"/> Grab-sampling          | <input type="checkbox"/> Remote Operated Vehicle Survey         |
| <input type="checkbox"/> Aerial Photography - new                       | <input type="checkbox"/> Gravity-core           | <input type="checkbox"/> Sample Trenches                        |
| <input type="checkbox"/> Annotated Sketch                               | <input type="checkbox"/> Laser Scanning         | <input type="checkbox"/> Survey/Recording of Fabric/Structure   |
| <input type="checkbox"/> Augering                                       | <input type="checkbox"/> Measured Survey        | <input checked="" type="checkbox"/> Targeted Trenches           |
| <input type="checkbox"/> Dendrochronological Survey                     | <input type="checkbox"/> Metal Detectors        | <input type="checkbox"/> Test Pits                              |
| <input type="checkbox"/> Documentary Search                             | <input type="checkbox"/> Phosphate Survey       | <input type="checkbox"/> Topographic Survey                     |
| <input checked="" type="checkbox"/> Environmental Sampling              | <input type="checkbox"/> Photogrammetric Survey | <input type="checkbox"/> Vibro-core                             |
| <input type="checkbox"/> Fieldwalking                                   | <input type="checkbox"/> Photographic Survey    | <input type="checkbox"/> Visual Inspection (Initial Site Visit) |
| <input checked="" type="checkbox"/> Geophysical Survey                  | <input type="checkbox"/> Rectified Photography  |   |

Monument	Period	Object	Period
Ditch	Bronze Age ( - 2500 to - 700)	Flint	Neolithic ( - 4000 to - 2200)
Pit	Early Iron Age ( - 800 to - 400)	Pottery	Bronze Age ( - 2500 to - 700)
Pit	Uncertain	Pottery	Early Iron Age ( - 800 to - 400)
		Pottery	Post Medieval (1540 to 1901)

### Project Location

County	Cambridgeshire	Address (including Postcode) Land off Station Road/Dane Hill Road Kennett CB8 7QX
District	East Cambridgeshire	
Parish	Kennett	
HER office	Cambridgeshire	
Size of Study Area	40.6ha	
National Grid Ref	TL 69557 67934	

### Project Originators

Organisation	OA East
Project Brief Originator	Andy Thomas
Project Design Originator	Matt Brudenell and Louise Bush
Project Manager	Matt Brudenell
Project Supervisor	Louise Bush

## Project Archives

	Location	ID
Physical Archive (Finds)	CCC Store	ECB5171, ECB5172
Digital Archive	OA East	KENSTR17
Paper Archive	CCC Store	ECB5171

Physical Contents	Present?	Digital files associated with Finds	Paperwork associated with Finds
Animal Bones	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Ceramics	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Remains	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Survey		<input type="checkbox"/>	<input type="checkbox"/>
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Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Digital Media

Database	<input checked="" type="checkbox"/>
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Geophysics	<input checked="" type="checkbox"/>
Images (Digital photos)	<input checked="" type="checkbox"/>
Illustrations (Figures/Plates)	<input checked="" type="checkbox"/>
Moving Image	<input type="checkbox"/>
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Text	<input checked="" type="checkbox"/>
Virtual Reality	<input type="checkbox"/>

### Paper Media

Aerial Photos	<input type="checkbox"/>
Context Sheets	<input checked="" type="checkbox"/>
Correspondence	<input type="checkbox"/>
Diary	<input type="checkbox"/>
Drawing	<input type="checkbox"/>
Manuscript	<input type="checkbox"/>
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Matrices	<input type="checkbox"/>
Microfiche	<input type="checkbox"/>
Miscellaneous	<input type="checkbox"/>
Research/Notes	<input type="checkbox"/>
Photos (negatives/prints/slides)	<input type="checkbox"/>
Plans	<input checked="" type="checkbox"/>
Report	<input checked="" type="checkbox"/>
Sections	<input checked="" type="checkbox"/>
Survey	<input type="checkbox"/>

## Further Comments

## APPENDIX F AERIAL PHOTOGRAPHY SURVEY REPORT



Archaeology ▪ Research ▪ Law ▪ Environment ▪ Planning

**98-138 Station Road, Kennett, Cambridgeshire**

**Assessment of Aerial Imagery for Archaeology**

August 2017

**Air Photo Services Ltd.**

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# 98-138 Station Road, Kennett, Cambridgeshire

## Assessment of Aerial Imagery for Archaeology

**Client** Oxford Archaeology East

**Planning Authority** Cambridgeshire County Council

**Air Photo Services document reference** 217 07 02 / 1

**Air Photo Services project number** 217 07 02

**Site centred at** (NGR) TL 695 677, co-ordinates 56958, 26770

<b>Report status</b>	FINAL
<b>Issue date</b>	9 <sup>th</sup> August 2017
<b>Report prepared by</b>	Charlotte Willis MSc PCIfA Jack Powell BSc PCIfA Chris Cox MCIfA FSA
<b>QA checked by</b>	Philippa Griffiths BA
<b>Lidar visualisations processed and image interpretations by</b>	Charlotte Willis MSc PCIfA
<b>QA checked by</b>	Chris Cox MCIfA FSA

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- 3 ARCHAEOLOGICAL AND NATURAL FEATURES FROM AERIAL IMAGERY
- 4 AIR PHOTO INTERPRETATION AND MAPPING
- 5 RESULTS
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- 7 ACKNOWLEDGEMENTS
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## SUMMARY

S1 This assessment of aerial imagery considers land at Station Road, Kennett. The site is located at UK National Grid Reference (NGR) TL 695 677, co-ordinates 56958, 26770. The site is hereafter referred to as the study site, which extends beyond the redline boundary to the blue boundary shown on Figure 2.

S2 The assessment was completed by Air Photo Services in July and August 2017. The object of the assessment was to provide information on the location and nature of archaeological features which are visible on historic aerial photographs, modern aerial and satellite imagery and visualised Airborne Laser Scan (ALS) which is also known as light detection and ranging (Lidar) data, within the site.

S3 All aerial and satellite images displayed at all the timelines at [www.earth.google.com](http://www.earth.google.com), at [www.bing.com](http://www.bing.com) and [www.google.maps](http://www.google.maps) in July 2017 were consulted alongside vertical and oblique aerial photographs held as prints at the Historic England Archive in Swindon. The Cambridge University Collection of Aerial Photographs (CUCAP) is currently closed to consultation, but the online CUCAP database indicates that there are three sorties of vertical aerial photographs in this collection which cover the site and were taken in November 1977, June 1988 and August 2003. These are unlikely to add significant data to the assessment given the range of other aerial images available in the Historic England Archive. Lidar data were gathered by the UK Environment Agency in 1999, 2003 at 2m resolution and in 2009 at 1m resolution. The data were downloaded from the EA website and processed in July 2017. Lidar data coverage is only available over the eastern part of the wider area and a small northern and south-eastern corner of the proposed development site

### S4 **The proposed development site**

The proposed development site contains a statutorily protected Bronze Age bowl barrow known as the Howe Hill Barrow which lies within woodland at the north boundary of the proposed development site. This feature is recorded as **Feature 6** by this assessment and is best visible via visualised Lidar data. The site lies over chalky substrates which produce irregular sub-circular patterning in the soil and crops which is visible on aerial photos. **Area 14**, which is shown on Figure 3, shows some marks in germinating crops which could be defined as small enclosures or settlement features. However, these are not regularly shaped and are likely to be geological in origin. They may benefit from appropriate investigation to define their nature. **Feature 13** is the visible course and 'spread' of a modern below ground service which traverses the site and shows as marks in crops on numerous aerial images. There is potential here for further buried features, but none show as crop marks, on a substrate which easily facilitates the visibility of marks in crops over buried features.

### S5 **The wider area**

The wider area contains areas of statutorily protected known round barrows, further possible sub-circular features and mounds and some areas of former quarrying. There is potential in the wider area and the proposed development site for further evidence for Bronze Age funerary features and possibly for other buried heritage assets which may not be visible on aerial imagery to date.

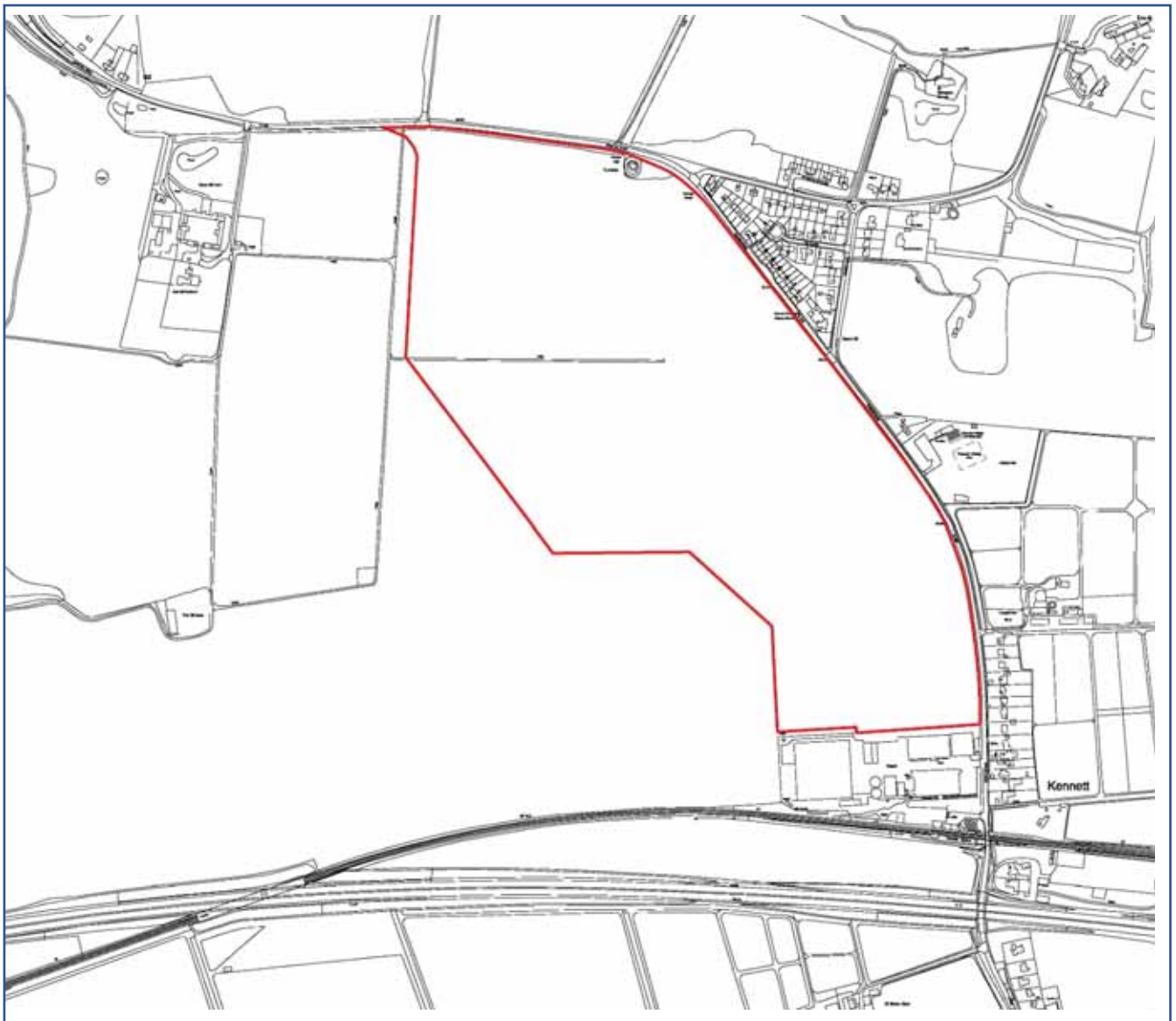
## 1 INTRODUCTION

- 1.1 This assessment of aerial imagery was completed by Air Photo Services in July 2017, in accordance with a Design Brief for Archaeological Evaluation (CHET 2017/ ECB5172).
- 1.2 The proposed development site is located at UK National Grid Reference (NGR) TL 695 677, co-ordinates 56958, 26770.
- 1.3 The object of the assessment was to provide information on the location and nature of archaeological features which are visible on historic aerial photographs, modern aerial and satellite imagery and visualised Airborne Laser Scan (ALS) which is also known as light detection and ranging (Lidar) data, within the site.
- 1.4 All aerial and satellite images displayed at all the timelines at [www.earth.google.com](http://www.earth.google.com), at [www.bing.com](http://www.bing.com) and [www.google.maps](http://www.google.maps) in July 2017 were consulted alongside vertical and oblique aerial photographs held as prints at the Historic England Archive in Swindon. The Cambridge University Collection of Aerial Photographs (CUCAP) is currently closed to consultation, but the online CUCAP database indicates that there are three sorties of vertical aerial photographs in this collection which cover the site and were taken in November 1977, June 1988 and August 2003. These are unlikely to add significant data to the assessment given the range of other aerial images available in the Historic England Archive.
- 1.5 It is important to note that aerial imagery usually only show part of the horizontal and vertical extent of buried and upstanding features. Their capacity to reveal features as crop marks, vegetation marks, soil marks or as the shadows cast by banks, ditches and walls, depends upon a number of environmental, lighting and agricultural factors prevalent at the time of the photographic survey.
- 1.6 For this assessment, the nature of the topographic features on site, and their identification as cut or embanked features (mounds or hollows) was considered.
- 1.7 To do this, stereoscopic pairs of vertical aerial photos were viewed using a magnifying mirror stereoscope to allow three-dimensional viewing and checking to single photos and differently visualised lidar data. This increased the reliability of the interpretations and identification of different feature types, as comparative analysis is good practise when considering multiple data sets.
- 1.8 Visualised Lidar data, discussed below, were used extensively alongside the historic and modern aerial photographs, and profiling was used to confirm the topography, alongside stereoscopic interpretation of the vertical APs.

## 2 THE STUDY SITE

### Location

2.1 **Figure 1** below shows the redline location of the proposed development site. **Figure 2** over the page shows the location of the wider area.



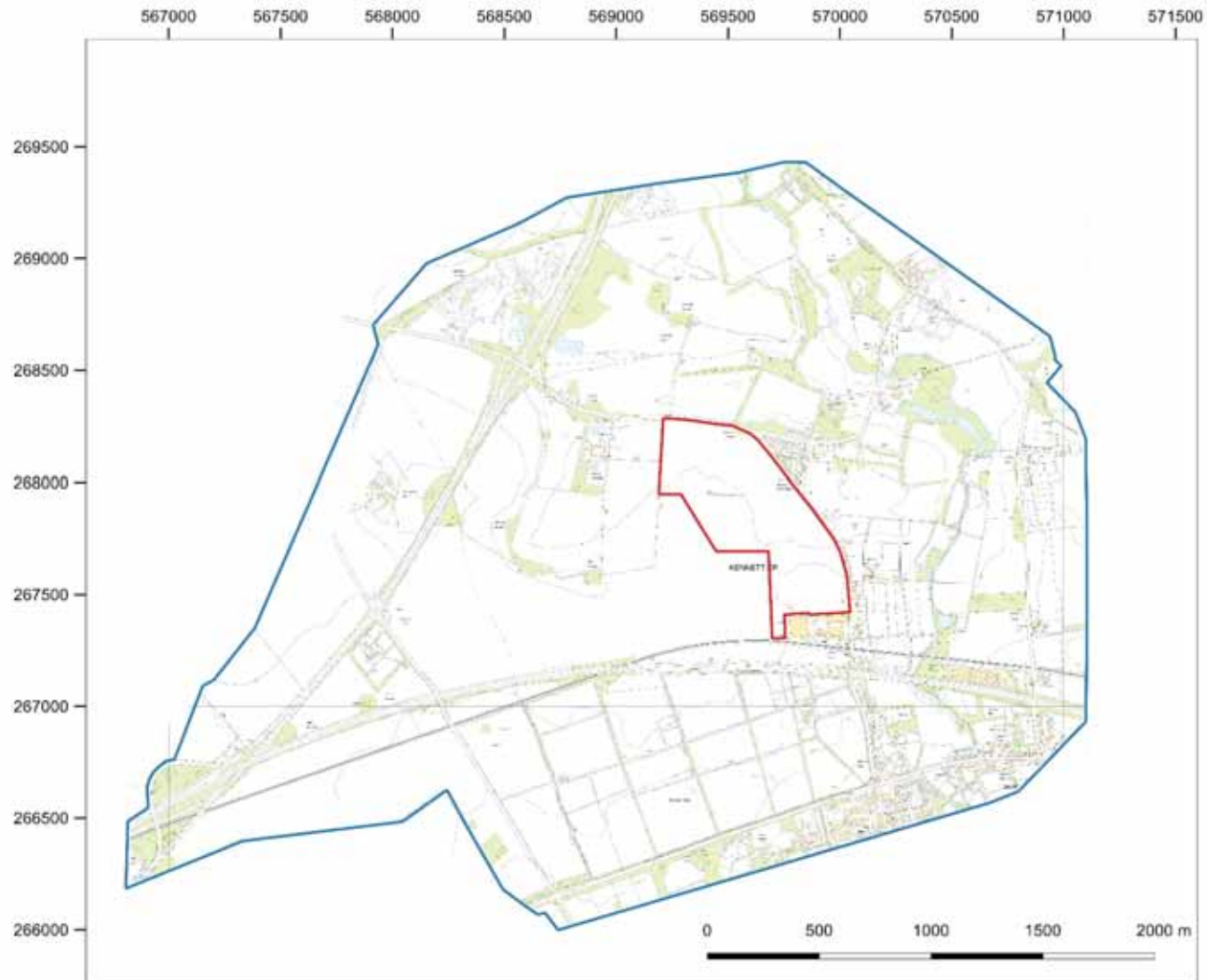




FIGURE 2  
Location of the site

-  Proposed development site
-  Wider study area

Station Road, Kennett  
Assessment of Aerial Imagery

Client Oxford Archaeology East  
Date August 2017  
Project APS 217 07 02  
By Charlotte Willis and Jack Powell  
Source Historic England Archive,  
[www.earth.google.com](http://www.earth.google.com)

### **Location and topography**

- 2.2 The site is centred at (NGR) TL 695 677, co-ordinates 56958, 26770. **Figure 3** appended to this report, shows the features recorded from aerial imagery within and adjacent to the site and within the wider study area as outlined by Oxford Archaeology East.
- 2.3 The site is largely level, with small slopes between 25m-30m in the north of the site to 30m-35m in the south. The site is under arable cultivation and the northern part of the wider study area has been subjected to largescale quarrying. The site is flanked by the A14 and A11 roads to the south and west.
- 2.4 Within the wider study area, there are residential developments to the northeast and industrial activity to the south, within an arable agricultural landscape.
- 2.5 The bedrock geology underlying the site is 'Holywell Nodular Chalk Formation' and the superficial geology for the site is sand and gravel (British Geological Survey (BGS) 2017). The southeast of the study area is free draining slightly acidic loamy soils over chalk and limestone. To the northeast are free draining slightly acidic sandy soils (Cranfield University 2017).

### **Previously recorded heritage assets**

- 2.6 The designated heritage assets recorded within the site by the Cambridge Historic Environment Record (CHER) include Howe Hill Barrow (SM 27169) to the north of the site. Howe Hill Barrow is recorded in the HER as unexcavated and likely to date to the Bronze Age.
- 2.7 CHER also records two undesignated heritage events and assets within the site. These are a watching brief along the Thetford aqueduct in 1991-2 (ECB1034) and a find spot of flint implements (MCB9144). Within the wider study area SHER (Suffolk Historic Environment Record) and CHER have identified a wide range of undesignated heritage assets including round barrows, a moated site, gravel pits and find spots in close proximity to the site.

### **3 ARCHAEOLOGICAL AND NATURAL FEATURES FROM AERIAL IMAGERY**

- 3.1 In suitably cultivated soils, sub-surface features – including archaeological ditches, banks, pits, walls or foundations – may be recorded from the air in different ways in different seasons. In spring and summer these may show through their effect on grass and crops growing above them.
- 3.2 Upstanding remains, which may survive in un-ploughed grassland, as on this site, are also best recorded in winter months when vegetation is sparse and the low angle of the sun helps pick out slight differences of height and slope.

#### **Limitations of the aerial photographic data**

- 3.3 Aerial photographic evidence is limited by seasonal, agricultural, meteorological and environmental factors which affect the extent to which either buried or upstanding archaeological features can be detected from the air.
- 3.4 The visibility of archaeological features may differ from year to year, dependent on the type of crop or land use, prevailing weather and levels of moisture in the soil over the grass or crop growing season. Differences in the intensity and angle of the light also assist greatly in seeing the nuances of slightly upstanding earthwork features, as are present on this site.
- 3.5 Individual photographs often record only a small percentage of the actual extent of buried or upstanding features, and a wide range of photos taken over a long timescale may be needed to reveal the extent of extant and any buried features from the air.

#### **Lidar data, by Charlotte Willis, MSc, PCIfA**

##### **Tile acquisition and download**

- 3.6 Airborne Laser Scan (ALS) data, otherwise known as Light Detection and Ranging (Lidar) data, have been collected from airborne survey platforms in more recent years at varying resolutions, and are available for download, processing and interpretation via the UK Environment Agency website, <http://environment.gov.uk/ds/survey#/download>.
- 3.7 These data, which we process from the American Standard Code for Information Interchange (ASCII) point cloud data, allow the visualisation and accurate recording of differences in the ground level when viewed as a Digital Surface Model (DSM) which includes tree cover and buildings and the ground level when seen as a Digital Terrain Model (DTM). These data are of assistance in recording micro and macro topographic features which may indicate relict or extant archaeological and historic landscapes and features alongside more modern features.
- 3.8 Airborne Laser Scan (ALS/Lidar) data digitally indicate differences in height of the ground surface by creation of a Digital Surface Model (DSM) via light pulses from a geo-located and stable airborne survey platform, and are interpreted via a series of digital visualisations to accurately depict these height differences (Bennett et al 2012, Hesse 2010, Stular et al 2012).
- 3.9 Lidar data are best interpreted and used in conjunction with modern and historic aerial photographs and maps to provide ground truth information for features and sites recorded via this prospection method.
- 3.10 The data needed were identified by using the EA timestamp shapefile detailing the Lidar file names within the area of interest and the Ordnance Survey 10km and 5km grid square to

identify the tiles and quarter sheets. Digital Terrain Models were selected as the primary data source as the ability to remove the tree canopy makes it ideal for prospection. Where DTM data were unavailable DSM were downloaded and processed. All dates and resolutions were downloaded which covered the area of interest and can be seen in the associated table which is appended to this report. The data were downloaded on the 14th July 2017 and processed on the same day.

- 3.11 The data were visualised into Hillshade, Multi directional Hillshade and Simple Local Relief Model (SLRM), Slope, Sky View Factor, Open Positive and Open Negative using the Relief Visualisation Toolkit (RVT) Version 1.2. These visualisations were chosen as they are of most use for archaeological prospection. The multiple ASCII tiles were merged before being visualised for ease of use in the GIS. The data were analysed alongside the APs and base mapping to double check the topography and nature of features interpreted from Lidar data.
- 3.12 There was not complete Lidar coverage of the site and the wider study area. The northeast of the wider study area and part of the site is best covered however this is at 2m resolution. This combination of factors has contributed to the data not being particularly useful for mapping purposes however it has proved helpful for cross referencing with the aerial photographs. The most useful dataset was the TL66 2003 2m DTM which was used, alongside the CHER data, to map gravel pits and the Howe Hill Barrow which are presently under tree cover.

## 4 AIR PHOTO INTERPRETATION AND MAPPING

### Photographs examined in this assessment

- 4.1 The most immediately informative aerial photographs of archaeological subjects tend to be those resulting from observer-directed flights. In this instance, there were no obliques which directly covered the study site, and vertical aerial photographs were used for all the interpretations.
- 4.2 Vertical aerial photographs have been taken over the whole of Britain and provide information on a series of dates between (usually) 1946–7 and the present. Many of these vertical surveys were not flown at times of the year that are best to record the archaeological features sought for this assessment and may have been taken at inappropriate dates to record crop and soil responses that may be seen above sub-surface features.
- 4.3 Vertical photographs are taken by a camera fixed inside an aircraft and with its exposures timed to take a series of overlapping views that can be examined stereoscopically. This technique was useful in this assessment, and assisted to confirm the topographic details which were demonstrated by the processing, visualisation and analysis of Lidar data.
- 4.4 Photographs and Lidar data which were consulted are listed in the **Appendix** to this report.

### Methodology

- 4.5 All photographs were interpreted and mapped at a level compatible with a 1:2500 scale base map.
- 4.6 The photographs were closely examined by eye and under 1.5x and 3x magnification and interpreted with the aid of a mirror stereoscope where appropriate, or in detail on screen when consulted as digital files.
- 4.7 Aerial photographs were digitally rectified to an OS map base using the Quantum GIS rectification tool. This was done in order to remove perspective distortion and ensure correct rectification of aerial photographs to the OS map (Scollar 2002 and 2014). Images from Google Earth were also interpreted and rectified to OS map bases (Scollar and Palmer 2008).
- 4.8 In all transformations prepared for this assessment the mean mismatches were less than  $\pm 2.5\text{m}$ . The rectified files were set as background layers in Quantum GIS where features were interpreted and drawn over the rectified photographs by Charlotte Willis.
- 4.9 Layers from this final drawing have been used to prepare the illustration for this report and are provided digitally for import to a Geographic Information System, in ESRI Shapefile (SHP) format.



## 5 RESULTS

- 5.1 The proposed development site and wider area was photographed from the air on numerous occasions from 1945 onwards. The earlier 1945 vertical photos were useful for informing about the heritage assets in the south west of the wider area, however the aerial photographs had cloud cover and were badly lit and therefore not useful for mapping.
- 5.2 There was a good selection of historic air photos to map from ranging from 1946 until 2000. The earlier historic air photos were difficult to rectify to the modern map due to the continuous development of the mining landscape in the north of the wider area and the changes to field boundaries in the south. However once rectified the 1940s photos were of good quality and the later photos are well lit and mostly rectified well to the base map. The 1946 RAF/106G/UK/1557 1306 and RAF/106G/UK/1557 1308, the 1959 RAF/58/2678 28, & the 1976 OS/76060 121 were particularly useful for mapping the possible ring ditch features in the centre of the wider area.
- 5.3 Although the Lidar did not cover the entirety of the site or the wider area, the TL66 2m SLRM visualisation was useful for mapping. The Howe Hill Barrow within the site which is usually under vegetation showed clearly on the SLRM visualisation. This visualisation was also useful for mapping the former gravel pits north of the site, alongside the historic air photos.

### **The proposed development site**

- 5.4 The proposed development site has always been under arable cultivation in all the years it has been recorded from the air, with the field boundaries changing in the centre of the site as time progressed.
- 5.5 The Howe Hill Barrow is recorded as AP site 6 at the northern extent of the proposed development site and was visible as an earthwork on oblique aerial photographs (1998) and Lidar data (2003). However, the barrow was masked by vegetation in most available vertical photographs (1959-1976).
- 5.6 Within the proposed development site and the wider area, the underlying chalk deposits create an appearance of patterned ground and some widespread regular large sub circular crop marked and soil marked features. Within the proposed development site, the 2007 timeline at Google Earth shows that there was a change in the crop type and growth regime within the site in this year.
- 5.7 This revealed an area of crop marked features which look like small enclosures or other cut features, which are recorded as AP site 14. These may possibly be archaeological features, but their somewhat irregular shape indicates that they may also be geological features, the edges of which are showing as quite well-defined crop marks. These have been mapped

as their origin is not known, and they show clearly on only this one year of available aerial photography.

- 5.8 There is also a buried modern service which traverses the proposed development area, which shows as a cropmark over the spread either side of a pipeline or similar service and is recorded as AP site 13.

### **The wider area**

- 5.9 The north of the wider area has been subject to a large amount of disturbance over the years it has been recorded from the air. This is a result of the quarrying and extraction in the north west of the wider area.
- 5.10 The south of the wider area has been under a mixture of arable cultivation and more recently pastoral fields. Like the north, the south has seen some changes in the landscape, most notably the construction of the A11 road.
- 5.11 The east and south east of the wider area is made up of arable and pastoral fields with a large amount of residential and industrial buildings.
- 5.12 The west of the wider area comprises mainly arable land and farms.
- 5.13 Within the wider area there are extant remains of the prehistoric landscape. These include surviving earthwork barrows in the southwest of the wider area and Howe Hill Barrow within the site boundary. There is also evidence of the Post Medieval and industrial landscapes and remnants of former quarries to the north of the site within the wider area.

### **Barrows**

- 5.14 There are three barrows that survive as earthworks within the wider area to the southwest of the site (APS Sites 8 & 9). The barrows are visible, most notably, in aerial photographs taken in 1942 and 1956. In all images, the barrows are masked by vegetation.
- 5.15 There are numerous possible archaeological features within the wider study area of which some may be ring ditches. AP site 12 denotes possible ring ditches to the southwest of the

wider study area which are most notably visible as cropmarks in the Google Earth 2007 capture and the 1946 historic air photo (frame 1306).

- 5.16 There is also a possible linear feature at AP site 15 which is directly to the north of one of the possible ring ditches which forms part of AP site 11 which is visible on the 2007 Google Earth capture.
- 5.17 There are a number of possible ring ditches and archaeological features within AP site 11. These can be seen in aerial photographs dating to 1946 (Frames 1306 & 1308), 1959 (Frame 28) and 1976 (Frame 121).
- 5.18 The CHER notes the presence of a barrow cemetery at TL 6740 6693 to the southwest of the wider area, however no evidence of the barrows was observed from modern or historic aerial photographs and Lidar data during this study.

### **Quarries**

- 5.19 There are four former gravel pits to the north of the wider study area (AP Sites 1 & 2) which are visible, as earthworks and in later captures as cropmarks, in vertical aerial photographs taken in 1959, 1963, 1968 and 1976 and in Google Earth captures dating between 1945 and 2007.
- 5.20 To the southwest of the wider area there is a former sand pit (AP Site 10) which is visible in aerial photos between 1946 and 1959.

## Gazetteer of sites

5.21 The following gazetteer summarises the sites which were recorded from aerial imagery. The full metadata behind the observations are recorded in an Excel spreadsheet which is supplied with this assessment and in the GIS attribute table supplied with the SHP files.

AP SITE	ASSET TYPE	EVIDENCE	PERIOD	MON UID	PREF REF	COMMENT
1	Former gravel pits	Earthworks	19th Century			Former gravel pits to the north of Halfmoon Plantation
2	Former gravel pits	Earthwork Mark in grass	19th century	MCB23376	MCB23376	Former gravel pits which seemed to be filled in between 1976 and 1999. These features can only be seen as cropmarks in the more recent imagery
3	Possible archaeology	Earthwork/	Unknown			Unknown ditch feature. Possibly archaeological in origin
4	Possible archaeology	Cropmark	Unknown			A group of four possible small mounds and two further possible mounds located to the west of the A11
5	Possible archaeology	Earthwork	Unknown			Possible bank feature
6	Bowl Barrow Depression possibly relating to a former water feature	Earthwork	Bronze Age		27169	Large bowl barrow in the north of the site. Referred to as Howe Hill in CHER
7		Earthwork/	Unknown			Depression possibly relating to a former water feature located to the west of Dane Hill Farm
8	Ring ditch	Earthwork/	Bronze Age		27179 & 27178	Two round barrows and a further three possible barrows south of Waterhall Farm
9	Round barrow and possible ring ditches	Earthworks/	Bronze age		27177	Bronze age round barrow with a possible ring ditch and ditch to the south of A14
10	Former sand pit	Earthwork	Unknown	MCB23370	MCB23370	Disused sand pit to the northeast of Waterhall Farm
11	Possible ring ditches	Earthwork	Bronze Age	MCB9546 & MCB10863	07921 & 09071	A group of possible ring ditches to the south of Dane Hill Farm

12	Ring ditch and possible ring ditches	Earthwork/ Cropmark	Bronze age	MCB10855	9063	One Bronze age ring ditch and a further two possible ring ditches to the south of Dane Hill Farm
13	Pipeline	Cropmark	Modern			Modern pipeline crossing the site
14	Possible geology	Cropmark	Unknown			Possible geological features
15	Possible archaeology	Cropmark	Unknown			Linear cut feature maybe archaeological in origin

## **6 CONCLUSION**

### **The proposed development site (outlined in red on Figure 3)**

- 6.1 The proposed development area contains the statutorily protected Howe Hill Barrow at its northern boundary. There is potential for further funerary sites, but none are visible as crop or soil marks in an area where crops do show the extent of buried features when present.
- 6.2 A modern service traverses the site, and there are some defined crop marked small sub-circular features which may be either geological or possibly archaeological in origin at the south west part of the site.

### **The wider study site (outlined in blue on Figure 3)**

- 6.2 The wider area contains evidence for Bronze Age funerary sites and areas of quarrying, alongside one potential ditch. There were fewer features visible as crop marks than expected, and Lidar data did not cover the whole extent of the wider area.
- 6.3 There is potential in the site and wider area for further buried heritage assets, which may not show clearly as buried eroded features on aerial photographs.

## 7 **ACKNOWLEDGEMENTS**

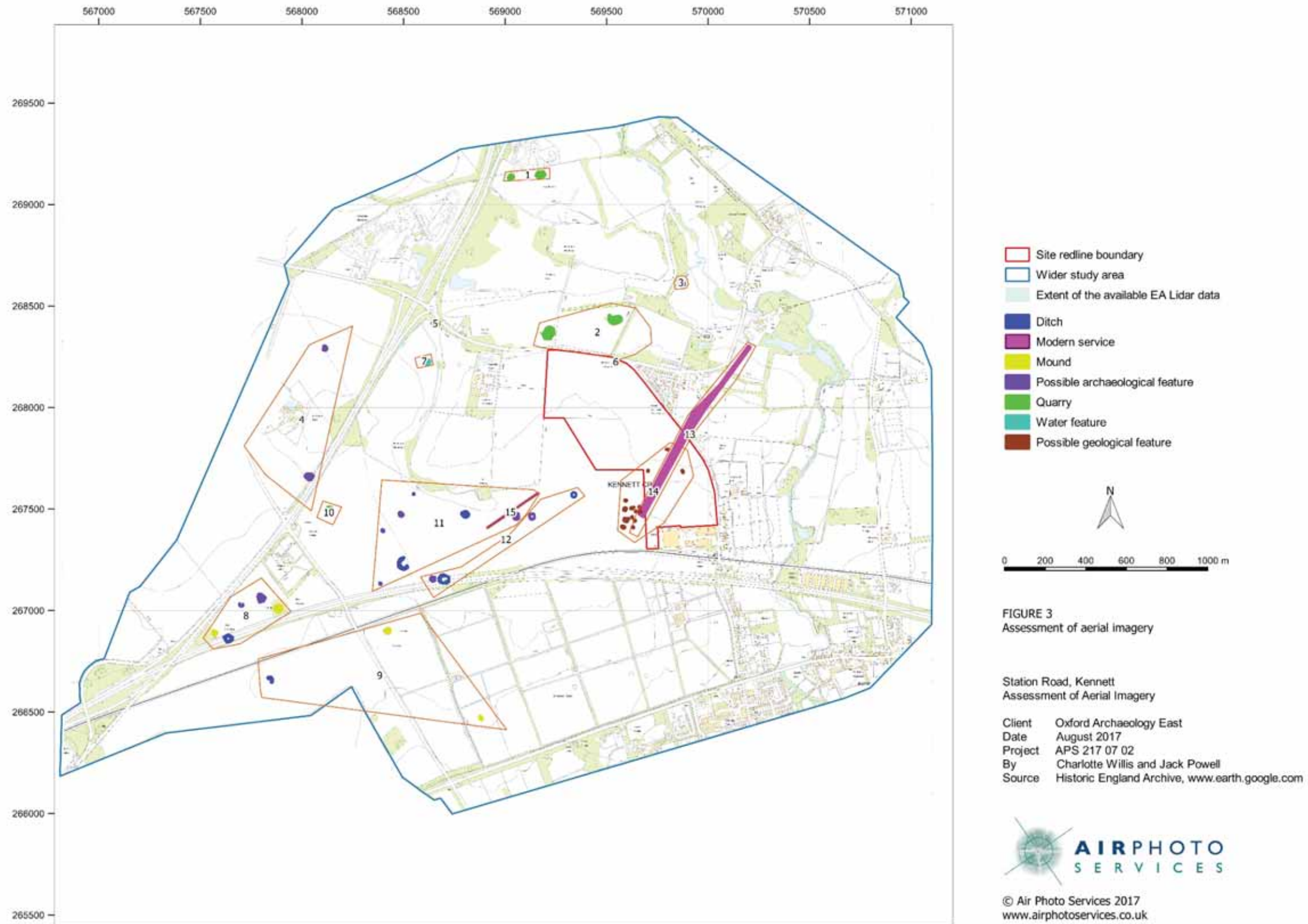
- 7.1 Many thanks to the Archive at Historic England and CHER and SHER and to our clients, Oxford Archaeology East, for provision of research materials for this assessment.

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**Figure 3** Assessment of aerial imagery



## APPENDIX

### Aerial photographs consulted for this assessment

Historic England Archive, enquiry reference 107956  
Verticals

Sortie number	Frame number	Held	Centre point	Date	Scale 1:
RAF/106G/UK/1490	3447	P	TL 704 664	09 MAY 1946	10000
RAF/106G/UK/1490	3448	P	TL 696 664	09 MAY 1946	10000
RAF/106G/UK/1490	3449	P	TL 689 663	09 MAY 1946	10000
RAF/106G/UK/1490	3450	P	TL 681 663	09 MAY 1946	10000
RAF/106G/UK/1490	3451	P	TL 673 663	09 MAY 1946	10000
RAF/106G/UK/1490	4437	P	TL 702 679	09 MAY 1946	10000
RAF/106G/UK/1490	4438	P	TL 694 679	09 MAY 1946	10000
RAF/106G/UK/1490	4439	P	TL 687 678	09 MAY 1946	10000
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Historic England Archive, enquiry reference 107956  
Obliques

Photo reference (NGR and Index number)	Film and frame number	Original number	Date	Map Reference (6 figure grid ref)
TL 6866 / 1	NMR 15748 / 18		07 AUG 1997	TL 684669
TL 6867 / 1	SFU 11556 / DI/11	SEE PRINTS	JUL 1976	TL 688671
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TL 7066 / 1	SFU 11556 / DI/8	SEE PRINTS	JUL 1976	TL 703667
TL 7066 / 2	SFU 11556 / DI/9	SEE PRINTS	JUL 1976	TL 703667

**The Cambridge University Collection of Aerial Photographs (CUCAP) is currently unavailable for consultation**

Examination of the CUCAP data base indicates 3 sorties of vertical aerial photos which are unlikely to add to the data gathered for this assessment. They were not available to view at <http://www.cambridgeairphotos.com/search/> which was used to identify them in the CUCAP online database.

**www.earth.google.com** consulted July 2017

- 1945 The GeoInformation Group
- 1999 Infoterra Ltd and Bluesky
- 2003 DigitalGlobe and The GeoInformation Group
- 2005 DigitalGlobe and The GeoInformation Group
- 2007 DigitalGlobe and The GeoInformation Group
- 2007 Infoterra Ltd and Bluesky and Getmapping plc
- 2008 Getmapping plc

## Environment Agency Lidar data downloaded 14<sup>th</sup> July 2017

LIDAR NAME	TILE NAME	DATE FLOWN	RESOLUTION IN METERS
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D0008992	TL66	1999	2
D0008993	TL66	1999	2

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END OF REPORT



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## APPENDIX G      GEOPHYSICAL SURVEY REPORT



**magnitude  
surveys**

**Geophysical Survey Report  
of  
Land off Station Road,  
Kennett**

**For  
Oxford Archaeology East**

**On Behalf Of  
Palace Green Homes**

**HER Event No. ECB5171**

**Magnitude Surveys Ref: MSTL147**

**October 2017**



## magnitude surveys

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**Report Checked by:**

Dr. Chrys Harris BA MSc PhD

**Report Issued:**

27 October 2017

### Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 41ha area of land off Station Road, Kennett, Cambridgeshire. A fluxgate gradiometer survey was successfully completed, and a long ditch anomaly was identified in the west of the site. Excavation of the ditch feature found evidence of a prehistoric origin. The geophysical results also reflect natural variations in the soil and geology and agricultural anomalies, as well as modern activity in the form of services.

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## 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. 41ha area of land off Station Road, Kennett, Cambridgeshire (TL 6943 6789).
- 1.2. The geophysical survey comprised both hand-pulled and quad towed cart-mounted fluxgate gradiometer 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 was completed over three tranches due to sections of the site being under crop. Initially survey took place over two days from 17 July 2017, c. 8ha was completed at this time. The second mobilisation took place over two days from 16 August 2017, when a further c. 12ha was completed. The final c. 21 ha was completed over four days from the 3 October 2017.

## 2. Quality Assurance

- 2.1. Project management, survey work, data processing and report production have been carried out by qualified and professional geophysicists to standards exceeding the current best practice (CIfA, 2014; David et al., 2008, Schmidt et al., 2015).
- 2.2. Magnitude Surveys is a corporate member of ISAP (International Society of Archaeological Prospection).
- 2.3. Director Graeme Attwood is a Member of the Chartered Institute for Archaeologists (CIfA), the chartered UK body for archaeologists, 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 for the International Society for Archaeological Prospection.
- 2.4. All MS managers have postgraduate qualifications in archaeological geophysics. All MS field staff have relevant archaeology or geophysics degrees and supervisors have at least three years' 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. 250m south-west of the centre of Kennett, Cambridgeshire, which is c. 26.5km northeast of Cambridge (Figure 1). The site is bounded on the north and east by Station road, on the south by an industrial complex, and arable land to the west (Figure 2). The site comprised three arable fields, two of which were recently harvested at the time of survey and the third which had been ploughed and rolled.

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Recently harvested arable land. Mostly flat, however a small gentle slope rose to the west from the northeast corner.	Farm tracks bounded the north and east of the survey area, and the field continued to the south and west. The plough direction was north-south.
2	Flat, recently harvested arable land. A small patch of bare ground was present central to the western half of the area.	Farm tracks bounded the west and south of the survey area, with a hedgerow to the north and grass banking to the east. The plough direction was north-south.
3	Gently sloping from north to south, and had been ploughed and rolled. The southernmost 150m of the area was under rougher ground.	A grass bank bounded the west, a hedgerow curved around the east and north, and a metal fence bounded the south.

4.3. The underlying geology comprises chalk of the Holywell Nodular New Pit formations. Superficial deposits across most of Area 2 and the northern half of Area 3 consist of sand and gravel River Terrace deposits, no superficial deposits are recorded in the southern half of site (British Geological Survey, 2017).

4.4. The soils vary across the site. The northern edge of Area 2 is freely draining slightly acid sandy soils. The soil in the rest of Area 2, all of Area 1 and most of Area 3 is freely draining slightly acid but base-rich soils. In the southern c. 200m of Area 3 the soil is shallow lime-rich, over chalk or limestone (Soilscapes, 2017).

## 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 derived from a HER search on Heritage Gateway (2017).
- 5.2. Prehistoric activity has been recorded within the vicinity of the site and the wider landscape. A Bronze Age bowl barrow (Scheduled Monument: 1015011) has been identified to the northern boundary of the site. It forms part of a larger, dispersed group of barrows from the same period in the wider landscape (CHER N. 04465; CHER N. 07921). Further recorded prehistoric activity in the wider landscape includes a Bronze Age ring ditch (CHER N. 09063) 950m SW of site; an early Mesolithic to late Bronze age settlement site (CHER N. 07922), 800m NW of site; and a number of isolated lithic findspots (CHER N. 07572, 07675, 07681, MCB16719, MCB17842 and MCB16720).
- 5.3. No evidence of activity from Romano-British to Medieval in date has been recorded within the immediate vicinity of the site or the surroundings.
- 5.4. Medieval activity has been identified in the form of a Moat (CHER N. 01191), located 550m west of site. There is no evidence for any remains from the late medieval to post medieval times within the site or the surrounding area.
- 5.5. Historic OS maps record the site from 1884 as open land. In the 1926 and 1927 maps, 'Flint Implements' were recorded to the northern end of the site; although no further information was provided on these implements. In the OS plan of 1970-71, the site is divided into three fields, that are crossed by tracks. There has been no significant change to the configuration of the area, other than the addition of field boundaries in the 1970s which were present at the time of survey.

## 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-pulled and quad-towed cart system.

6.1.3.1. MS' cart 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. In hand-pulled configuration, rows of temporary sight markers were established in each survey area to guide the surveyor and ensure full coverage with the cart. In quad-towed configuration, 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. Multiple greyscales images at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figures 9 and 10). 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, and soil and geology maps. Google Earth (2017) 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 7), historic maps (Figure 8), and XY Trace plots (Figures 9 and 10).

7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area. The superficial sand and gravel geology (see Para 4.3) has introduced noticeable variations into the natural background, mostly subtle amorphous changes, with some areas of concentrated variation which have been categorised as “Natural (Spread)”. Variation of the soils across the site (see Para 4.4) have likely added to this effect. The impact of modern activity is visible in the eastern area as the lines of underground services on the east and southern boundaries, and across the centre of the area, the northwest area contains a water pipe with a much weaker magnetic signal.

7.2.3. A linear anomaly on a NE-SW alignment extends through the southwest area to the southeast corner of the northwest area, excavation has revealed this is a ditch feature of prehistoric origin. No further anomalies of a possible or probable archaeological origin have been identified on the site by the fluxgate magnetometer survey. Agricultural activity has been identified in the form of modern tractor and plough lines in all three areas. Anomalies classified as “Undetermined” are considered likely to reflect a combination of these natural and agricultural processes.

### 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 (Probable)** – A weak linear feature extends c. 145m through the centre of Area 1 on a NE-SW alignment. The weak magnetic signal of this anomaly fades towards the north of Area 1, but intensifies again in the southeast corner of Area 2 for approximately 85m. If these responses represent a continuation of the same feature, rather than separate anomalies on the same alignment, the total length is in the region of 330m. Excavation results of the anomaly in Area 1 revealed this to be a prehistoric ditch possibly dating from the Middle Bronze Age.
- 7.3.2.2. **Agricultural** – Several series of parallel linear anomalies have been identified near the boundaries of all three survey areas: in the north of Area 1, the north and south of Area 2, and the north and east of Area 3. These correspond to the visible tractor and modern plough lines on recent satellite imagery (Figure 7) and are likely the result of repeated tractor movement. To the south of Area 3, a distinct change in modern plough direction is evident. The plough lines running perpendicular rather than parallel to the survey direction this has created a more pronounced effect in the survey results.
- 7.3.2.3. **Natural** – Magnetic anomalies caused by natural variations in the soils and superficial geology have been detected across the site. The small, discrete responses scattered across the site are characteristic of superficial deposits. Concentrated areas of these deposits have been categorised as “Natural (Spread)”. Broad, weak natural responses are similar to natural cropmark variations visible in recent satellite imagery (Google Earth, 2017).
- 7.3.2.4. **Undetermined** – The weak responses classified as “Undetermined” at the north-east of Area 1, and the west of Area 3, are considered likely to represent a combination of natural and agricultural processes.
- 7.3.2.5. **Service** – A linear anomaly crossing Area 2, and the northern corner of Area 3, on a sub E-W alignment has been identified as an underground service line. A map provided by Oxford Archaeology East to MS revealed a potable water line corresponding with this position. Another weak linear was identified in crossing the SE of Area 3 on a NE-SW alignment, this was identified as a service line using further mapping provided by Oxford Archaeology East. Further underground services are apparent in Area 3, running along the south and eastern boundaries. A service with 30m wide magnetic halo runs through the centre of

the survey area, this may have obscured weaker anomalies in the immediate vicinity.

## 8. Conclusions

- 8.1. The fluxgate gradiometer survey has been successfully completed across the site and has responded well to the environment of the survey area. Probable archaeological activity has been detected on the site, a long ditch feature has been identified crossing the western areas. The survey results also reflect natural variations within the soil and geology, as well as agricultural and modern activity.
- 8.2. A long linear anomaly has been identified crossing the western areas of the site, excavation has revealed this anomaly to be a ditch of prehistoric date. This ditch feature contained evidence which may place the origin within the Middle Bronze Age.
- 8.3. The agricultural activity identified is largely characteristic of modern land usage, this includes modern ploughing in the south of the site, and tractor lines which are evident in all three areas and visible in satellite imagery (Figure 7).
- 8.4. Modern activity was most notable on the site in the form of underground services. In the north a potable water line was detected, in the eastern area a service with a strong magnetic signal passes through the centre of the area and other services are visible on the south and east boundaries. Scattered ferrous points across the site are related to modern debris on or near the ground surface.

## 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 all reports to the ADS Grey Literature Library subject to any time embargo dictated by the client.
- 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

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## 11. References

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Figure 1 - Site Location

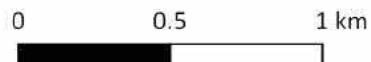
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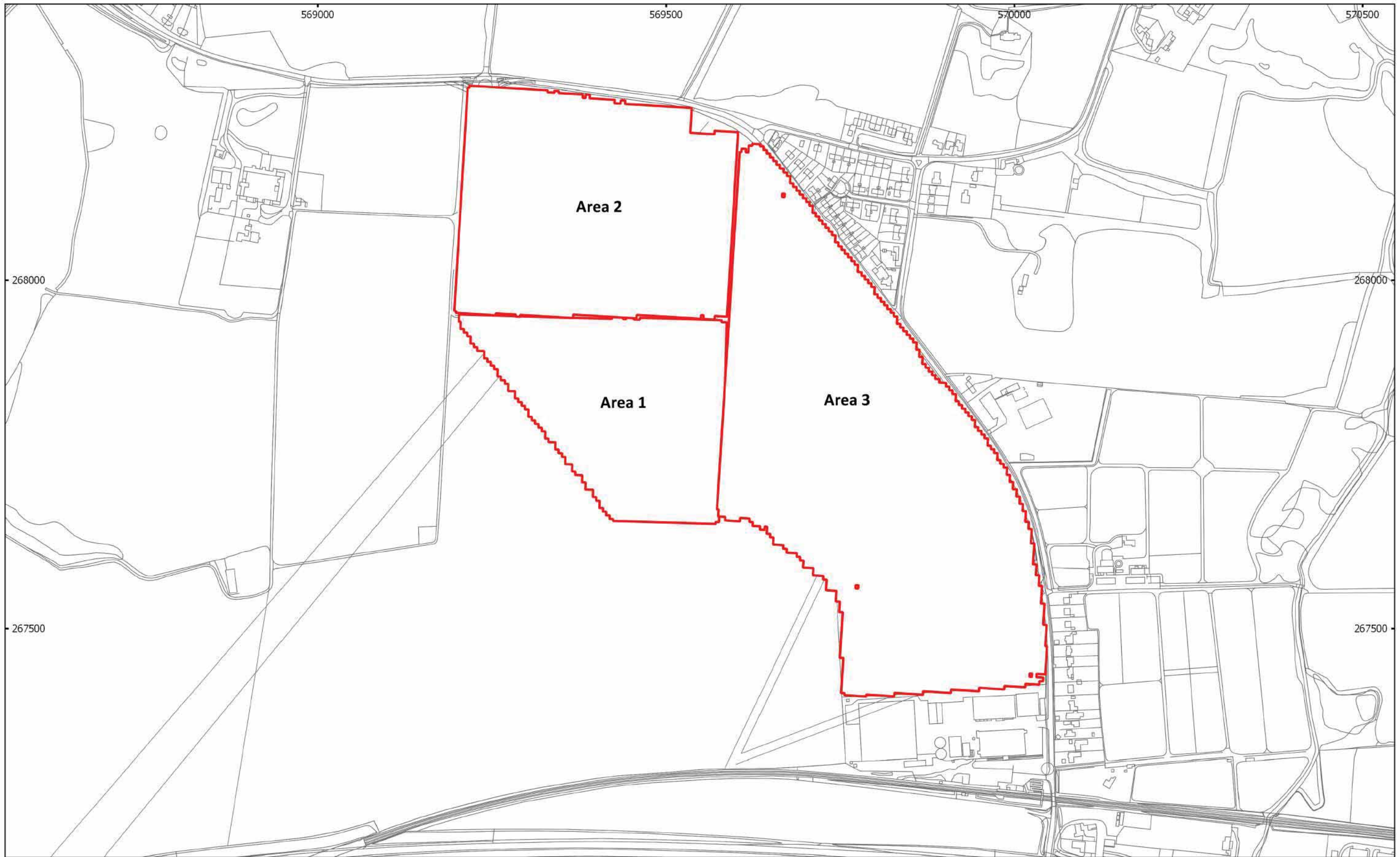
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 Survey Area

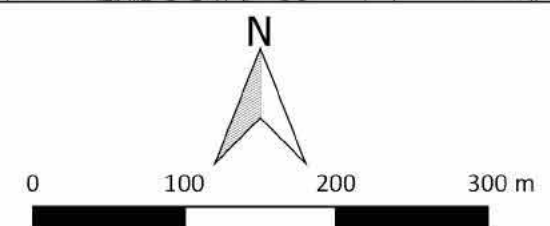


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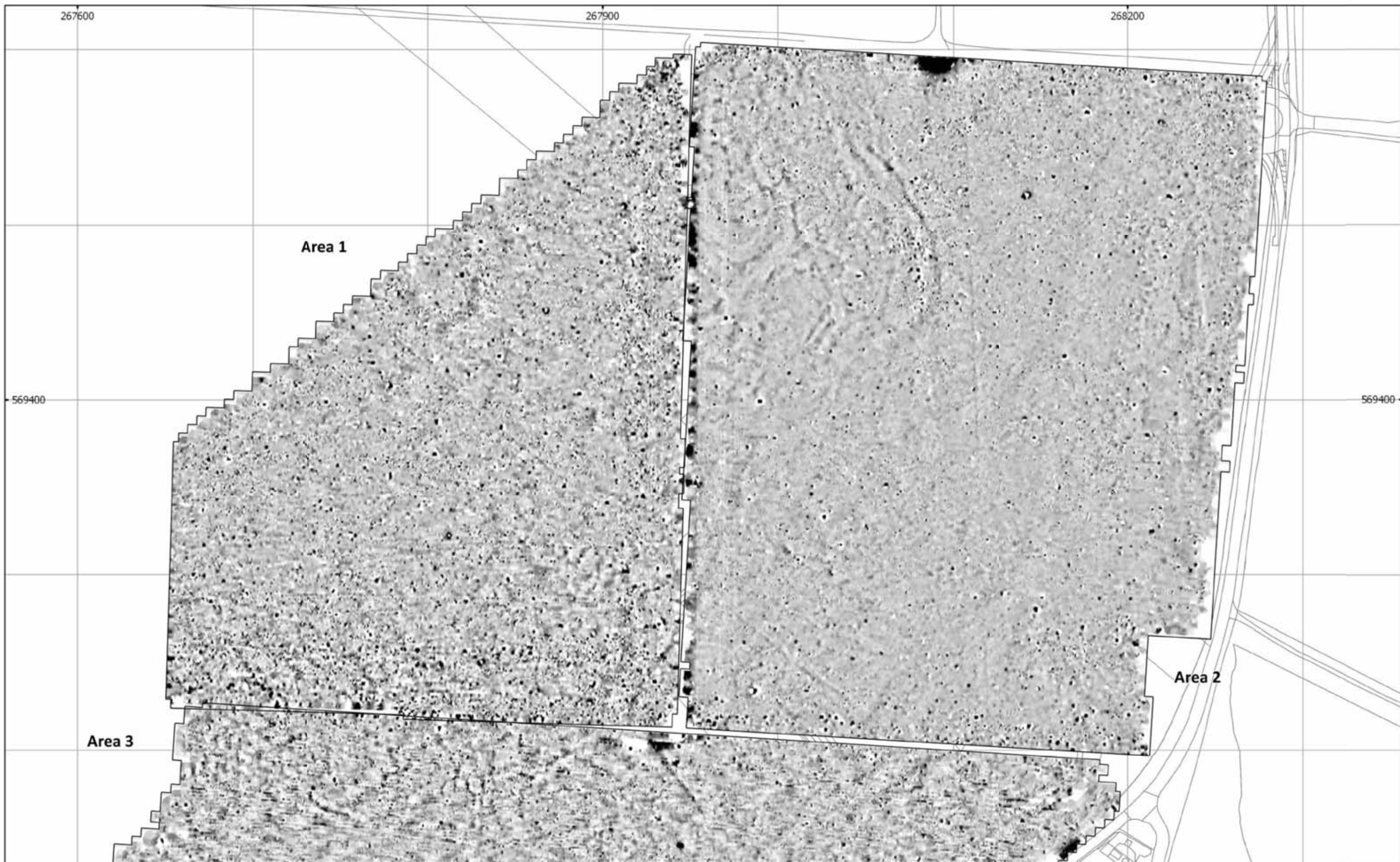


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Figure 2 - Location of Survey Areas  
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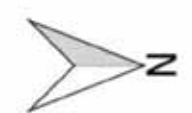
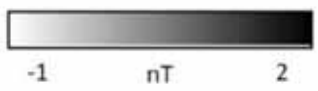
 Survey Extent



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Figure 3 - Magnetic Greyscale - Areas 1 and 2  
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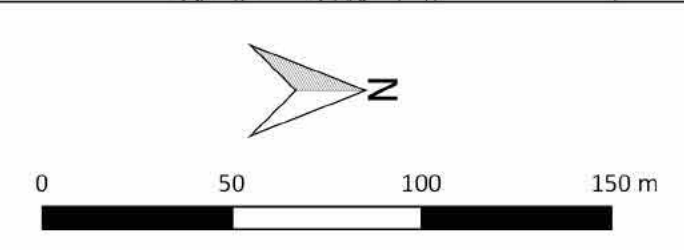


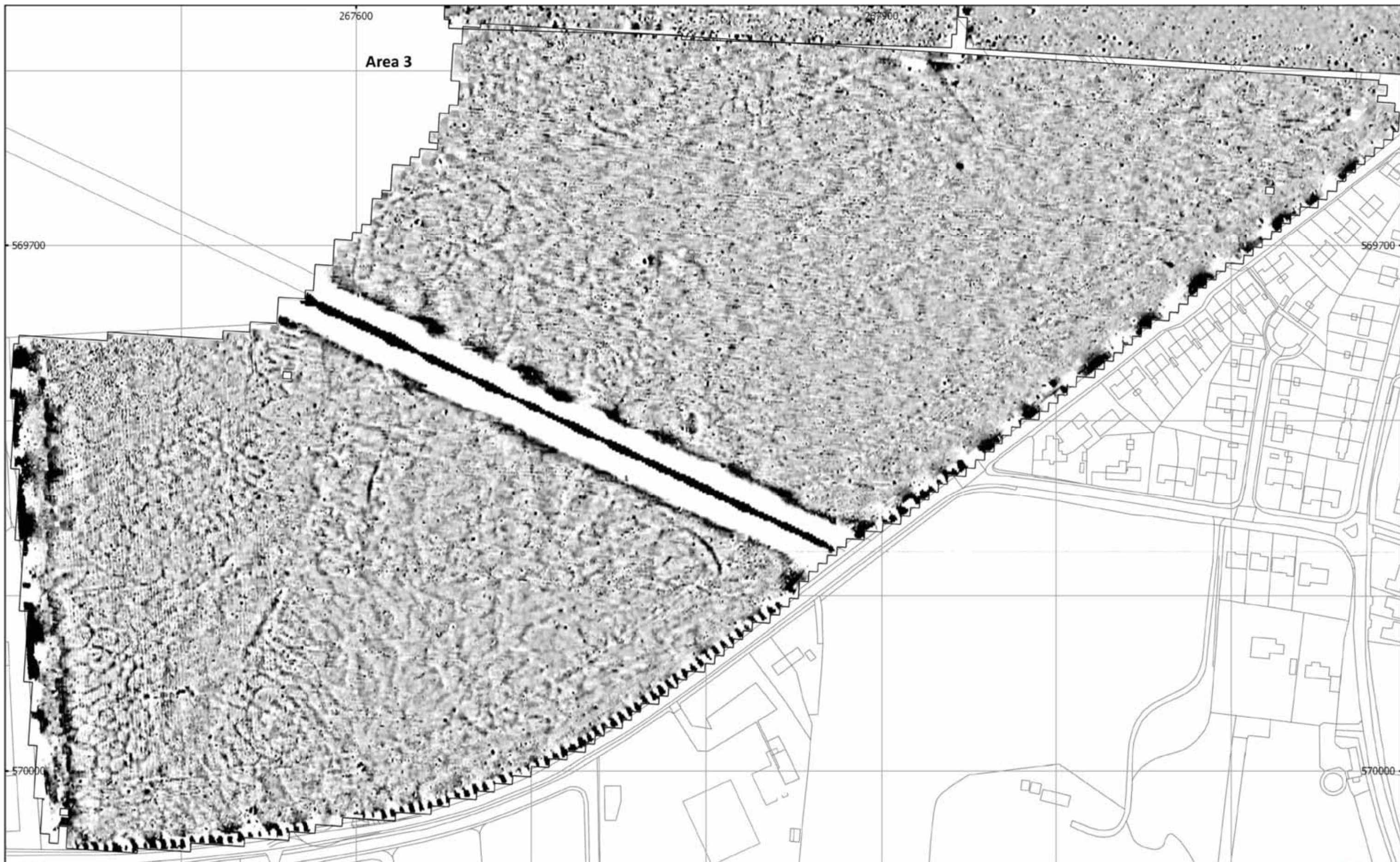
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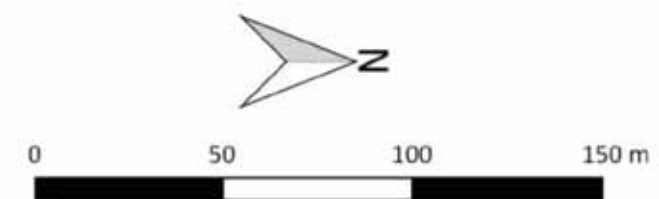
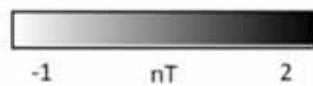
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 Figure 4 - Magnetic Interpretation - Areas 1 and 2  
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Figure 5 - Magnetic Greyscale - Area 3  
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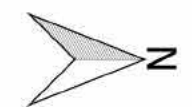


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 Figure 6 - Magnetic Interpretation - Area 3  
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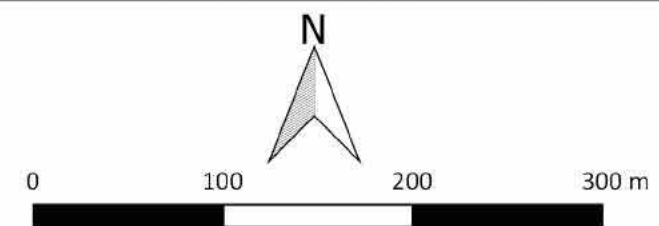
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| Natural (Spread)     | Ferrous (Spread)/Magnetic Disturbance |
| Natural (Trend)      | Service                               |



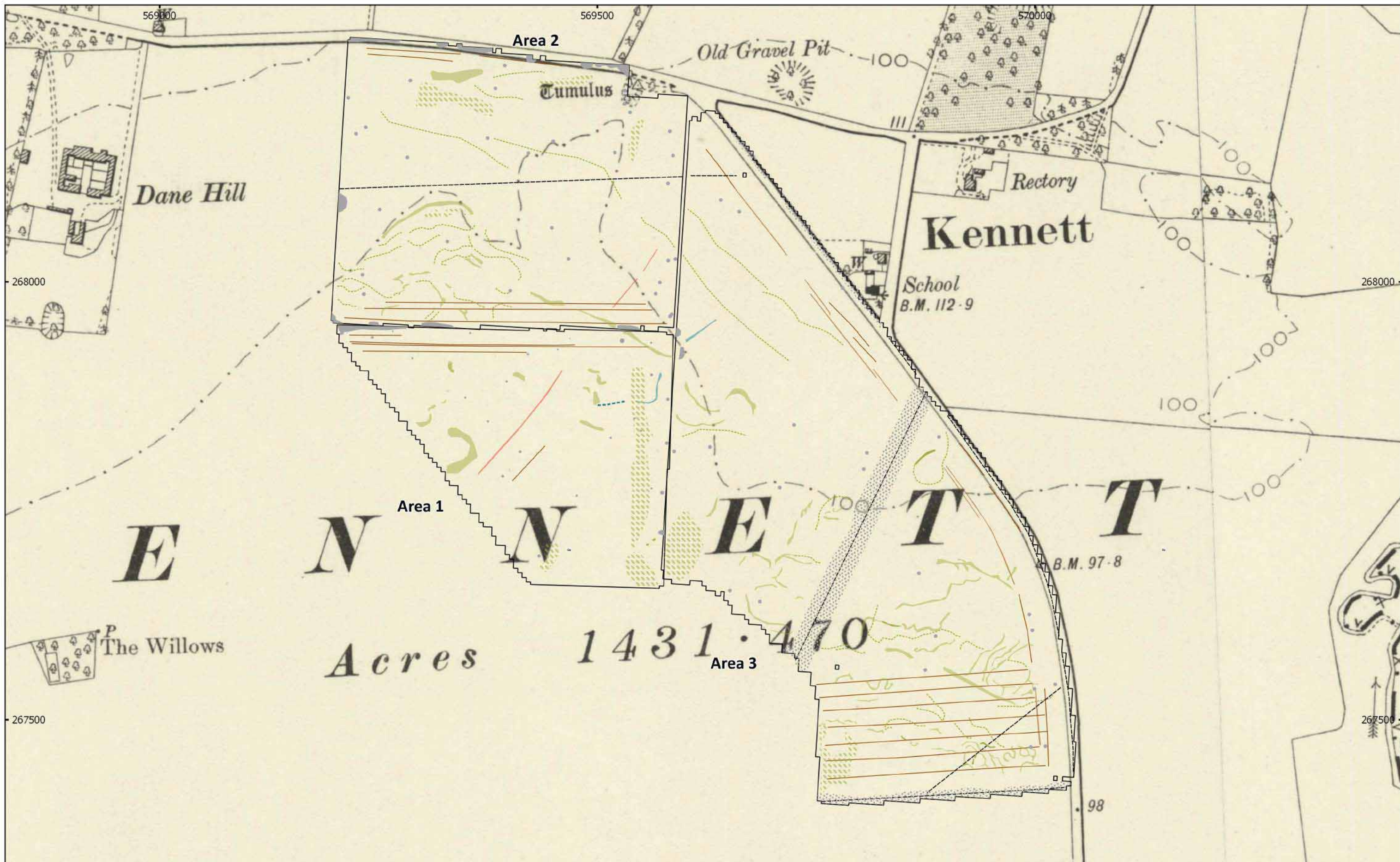


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 Figure 7 - Magnetic Interpretation Over Satellite Imagery  
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| <span style="color: brown;">—</span> Agricultural (Weak)       | <span style="color: lightblue;">- - -</span> Undetermined (Trend)  |
| <span style="color: brown;">—</span> Agricultural (Trend)      | <span style="color: grey;">■</span> Ferrous (Dipolar)  |
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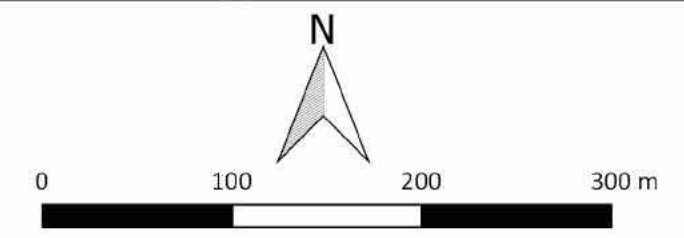


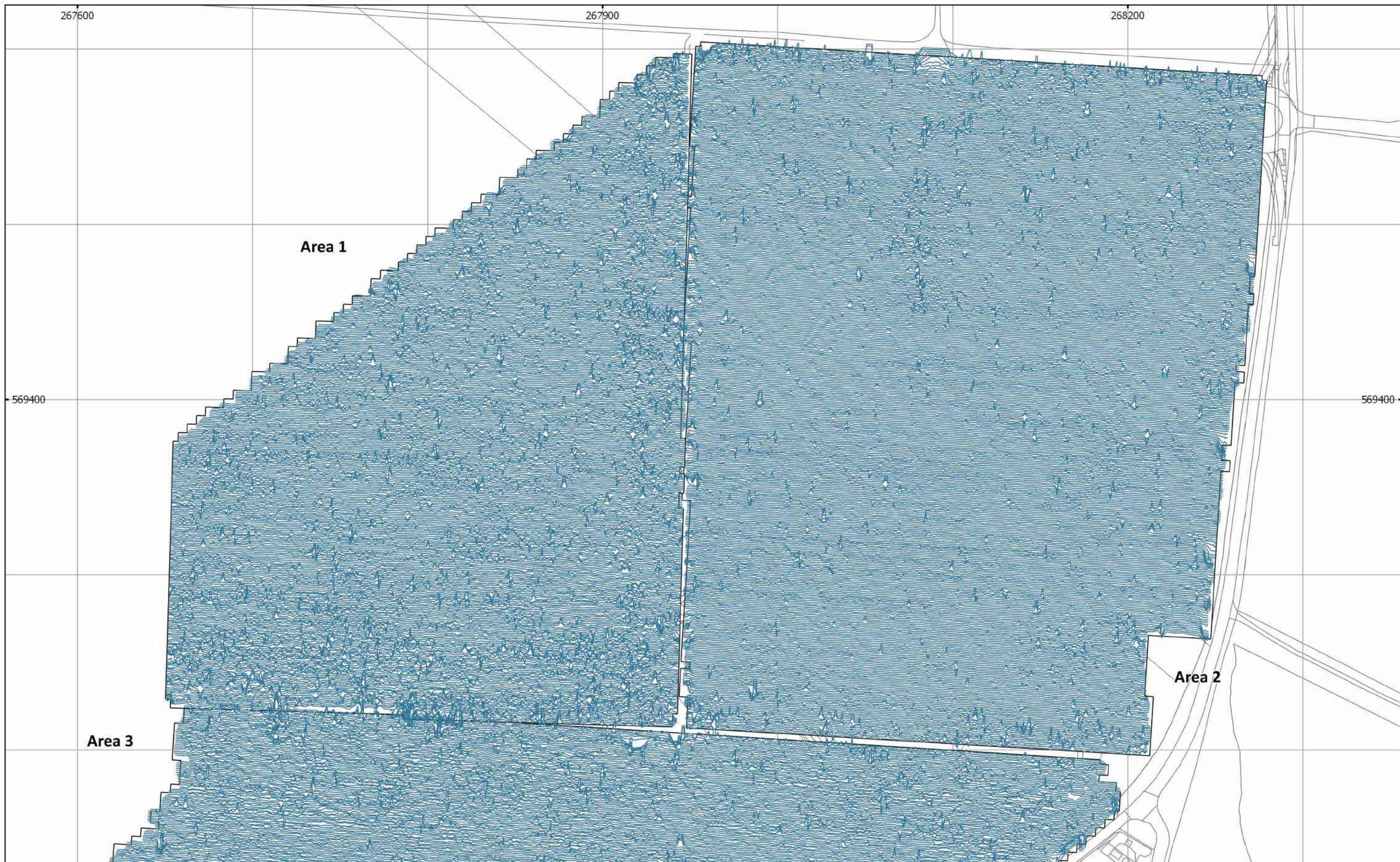




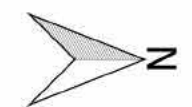
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 Figure 8 - Magnetic Interpretation Over Historic Mapping  
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| <span style="color: brown;">■</span> Agricultural (Weak)       | <span style="color: blue;">- - -</span> Undetermined (Trend)              |
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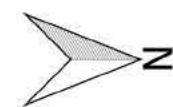
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Figure 9 - XY Traceplot - Areas 1 and 2  
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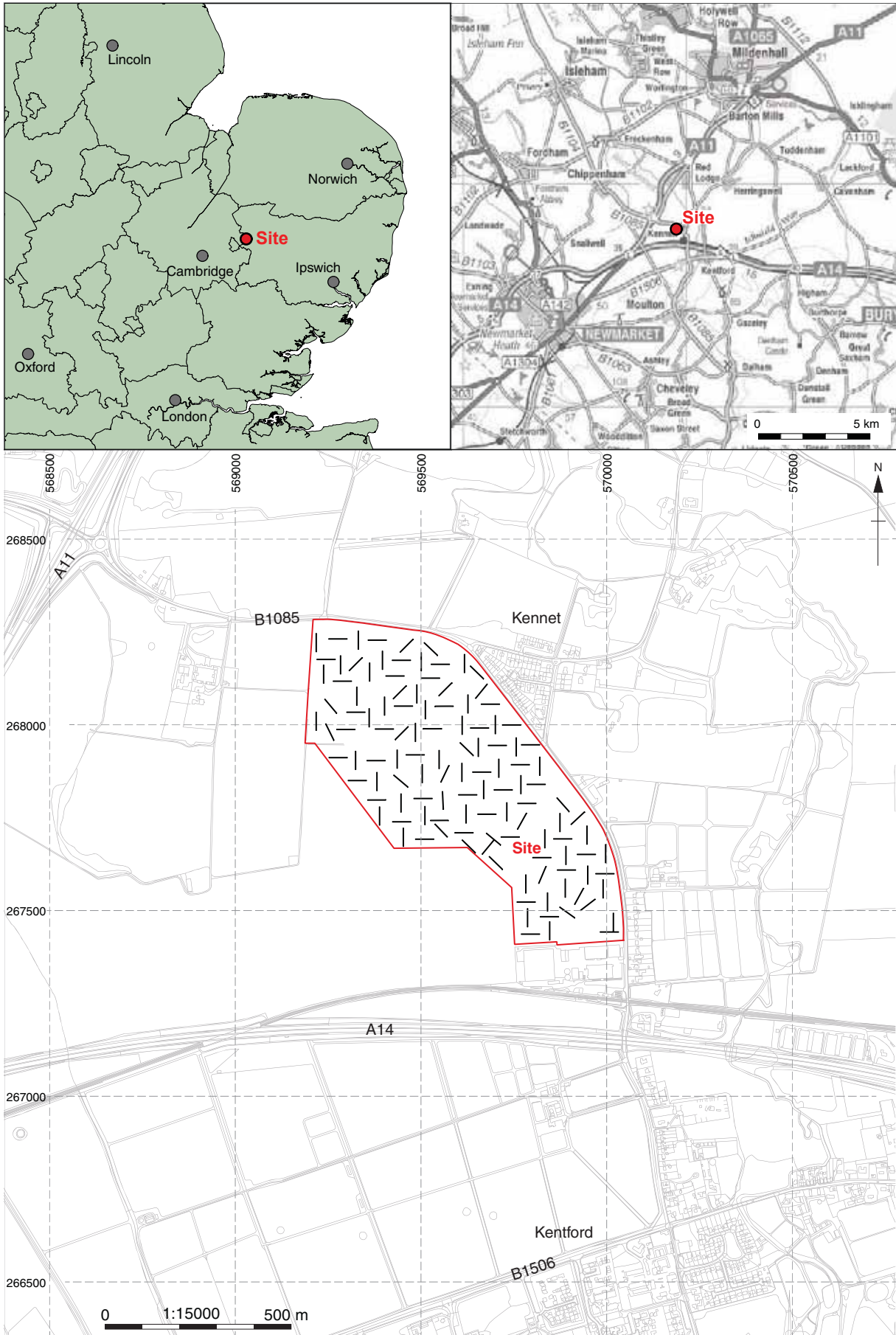


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Figure 10 - XY Traceplot - Area 3  
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Figure 1: Site location showing archaeological trenches (black) in development area (red)

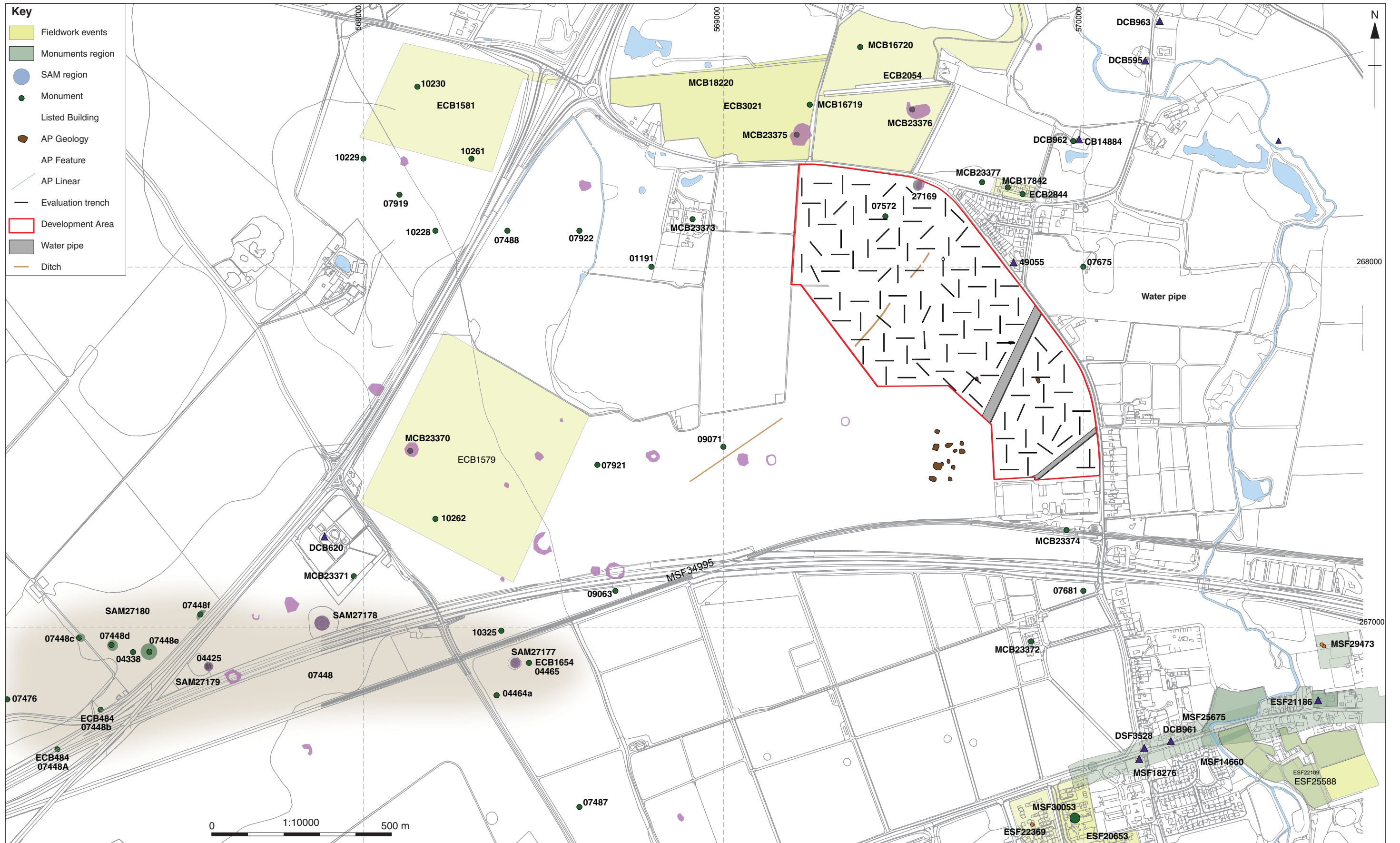


Figure 2: HER and aerial photography plot

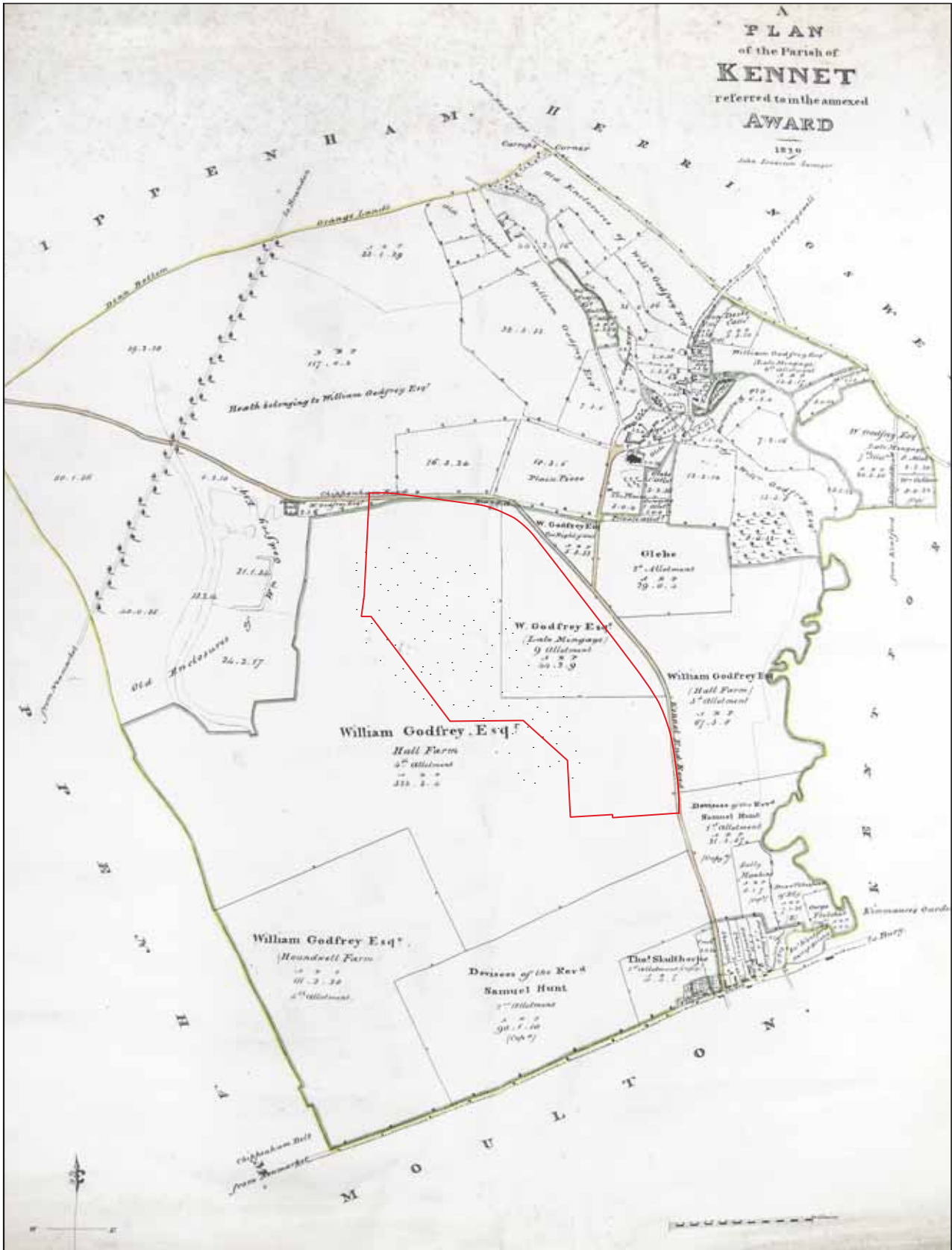


Figure 3: Inclosure map of 1830 (Site marked in red)

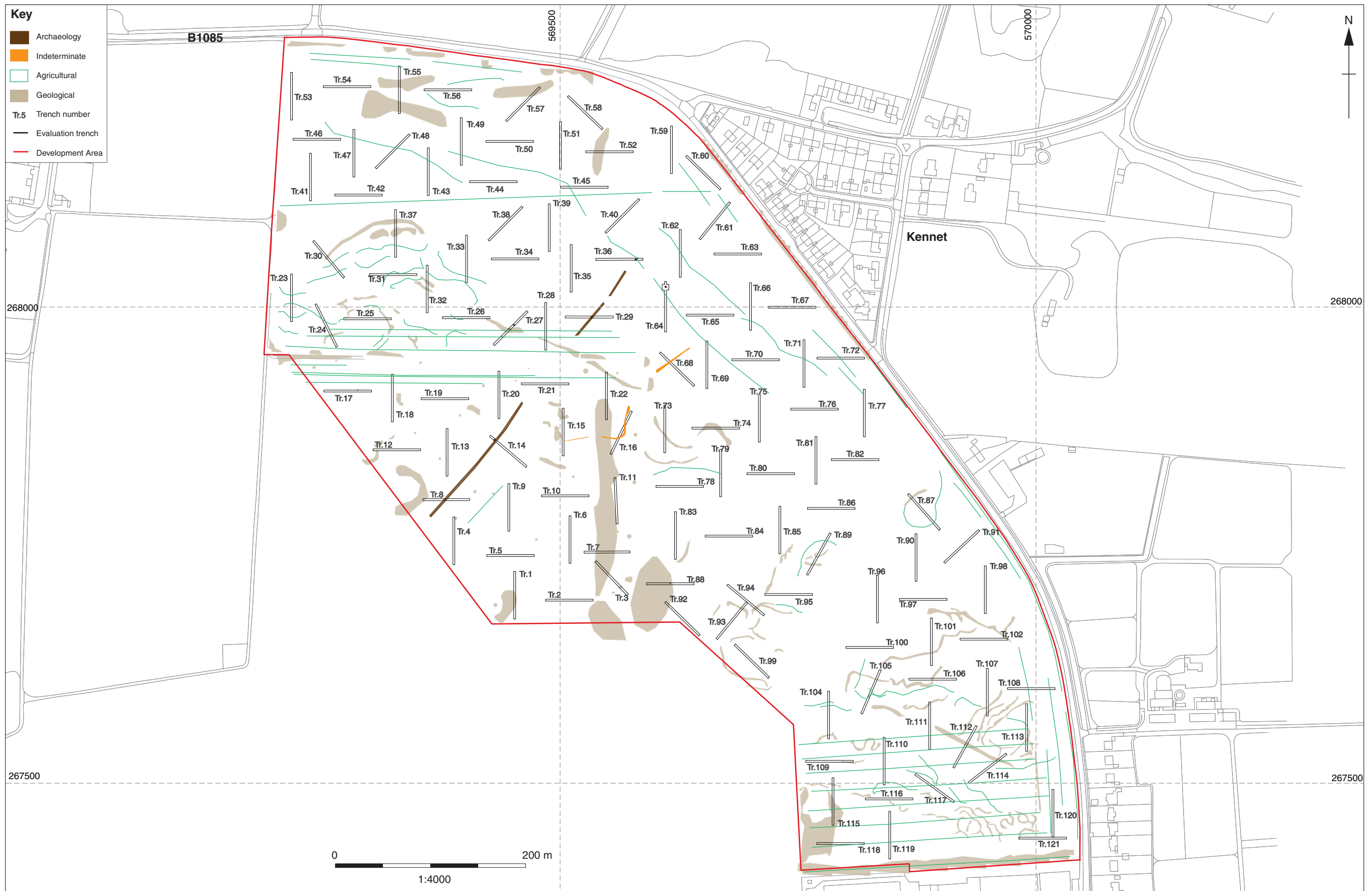


Figure 4: Trench plan. Scale 1:4000



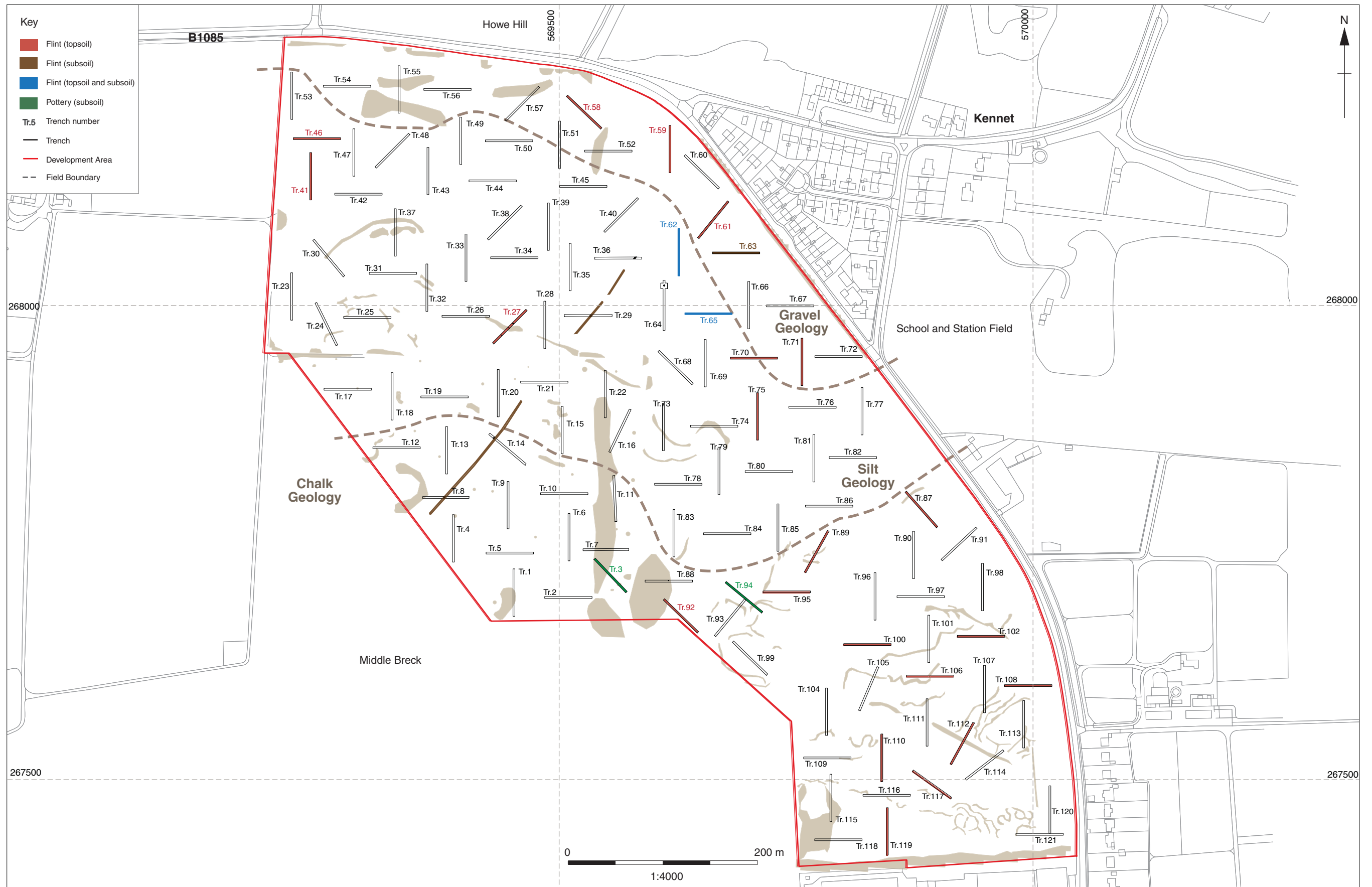


Figure 5: Plot of unstratified find locations and geological variations. Scale 1:4000

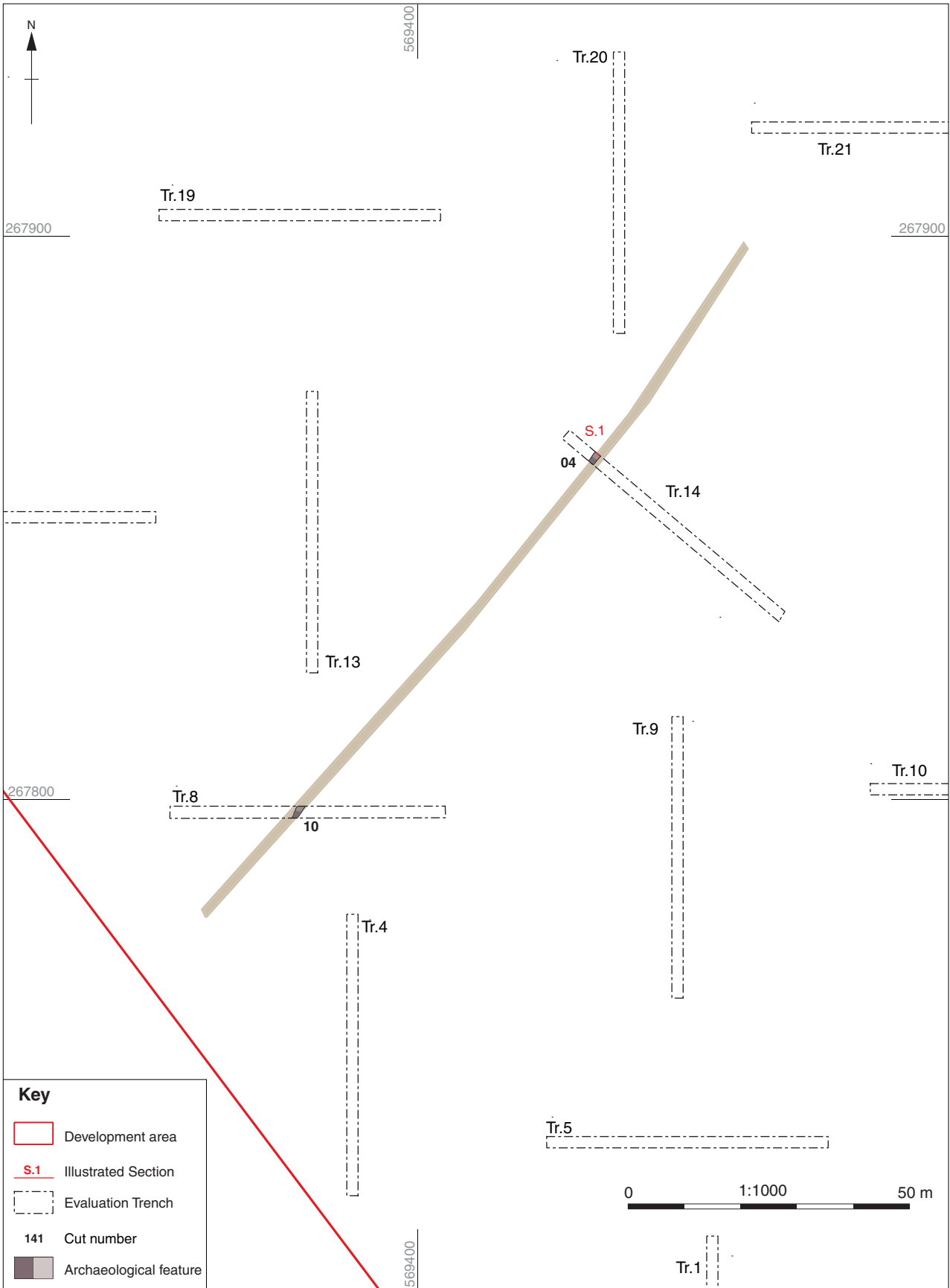


Figure 6: Trenches 8 and 14.

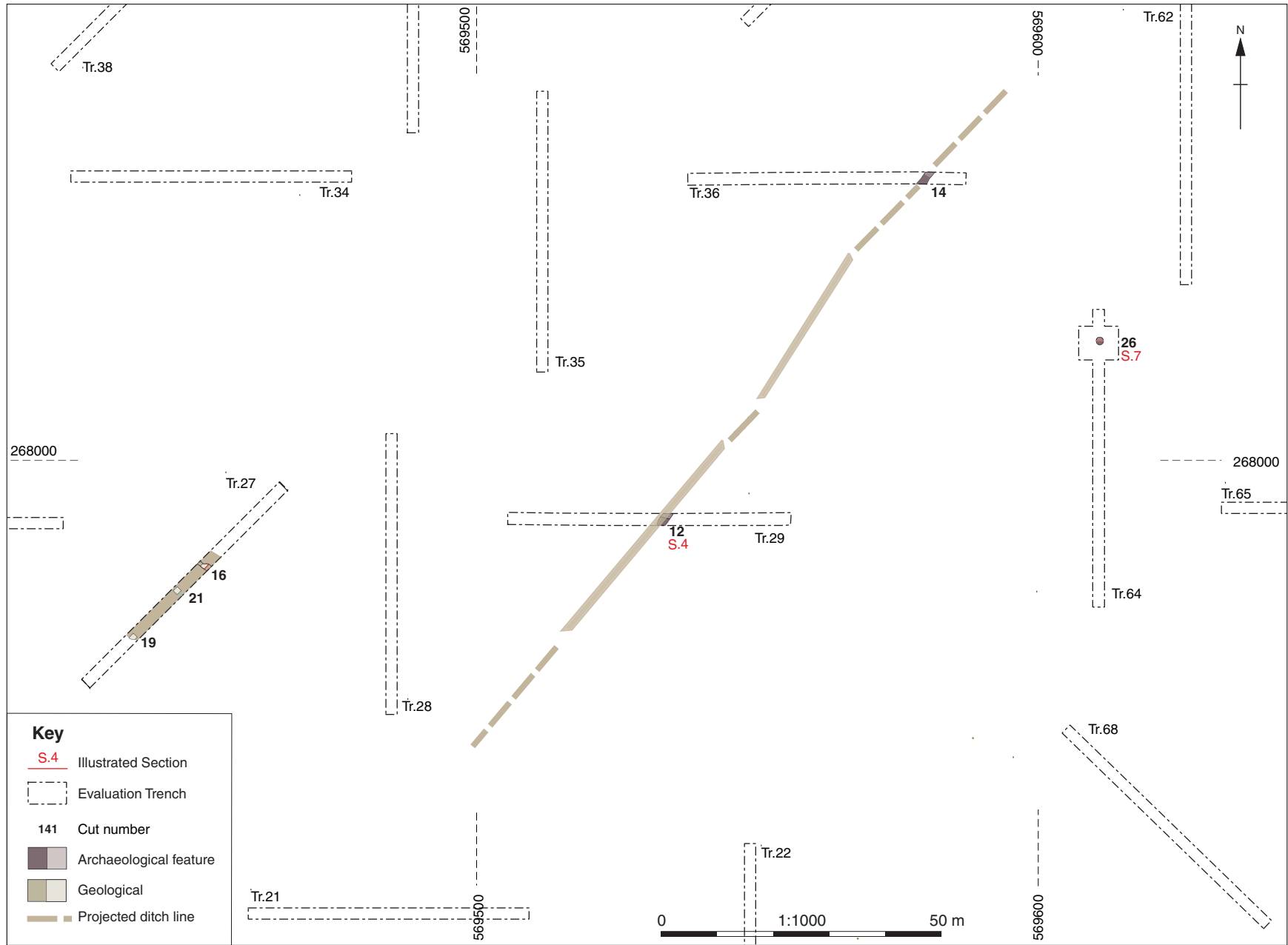


Figure 7: Trenches 27, 29, 36 and 64

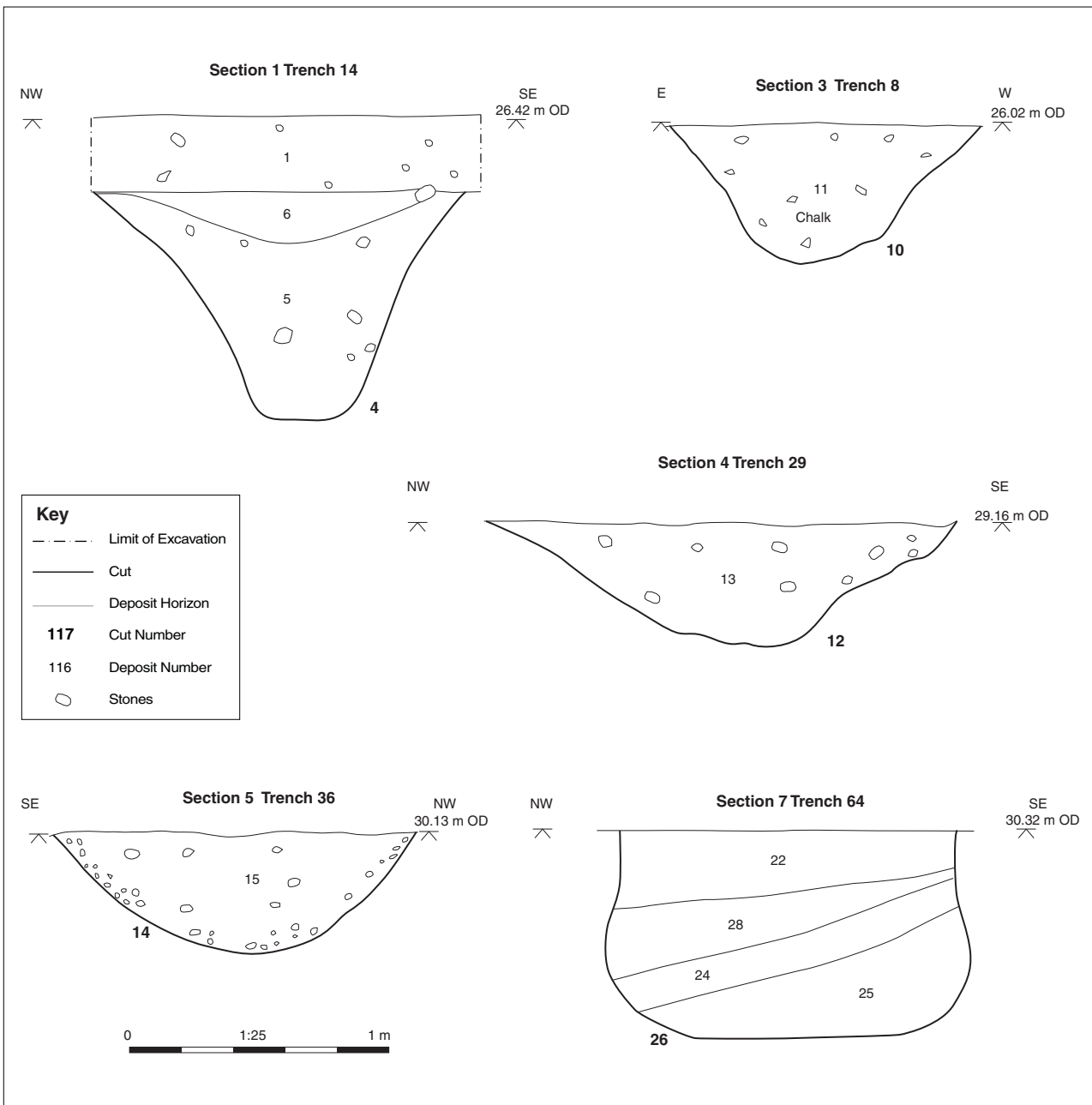


Figure 8: Selected sections



Plate 1: Howe Hill barrow (SAM 27169), looking north-east



Plate 2: Trench 4, looking south



Plate 3: Trench 38, post-rain, looking south-west



Plate 4: Trench 58, looking south-east



Plate 5: Trench 74, looking east



Plate 6: Ditch 10, Trench 8, looking south-west



Plate 7: Ditch **14**, Trench 36, looking north-east



Plate 8: Storage pit **26**, Trench 64, looking north





Plate 9: Pit **28**, Trench 88, looking west



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