Land West of Ixworth Road, Thurston, Suffolk

Archaeological Excavation Report

March 2019

Client: CgMs Consulting on behalf of Persimmon Homes

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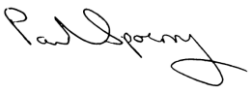
Signature:	

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Land West of Ixworth Road, Thurston, Suffolk

Archaeological Evaluation Report

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Summary

On the 7th and 8th of January 2019, Oxford Archaeology East (OA East) undertook an archaeological excavation on land west of Ixworth Road, Thurston (TL 91667 66080). The 20x20m excavation area was opened over the north end of Trench 13 of the previous evaluation where two Neolithic pits had been uncovered.

The excavation revealed two more pits, one Neolithic and one Early Bronze Age in date. Few finds were recovered, most finds came from the Early Bronze Age pit. The pit contained 13 sherds of pottery including one of possible rusticated beaker and 23 pieces of burnt stone and flint.

Acknowledgements

OA East would like to thank CgMs Heritage for commissioning the project. Thanks also to Rachel Abraham who monitored the work on behalf of Suffolk County Council. The project was managed for OA East by Louise Moan. The fieldwork was directed and carried out by the author. Survey and digitising were also carried out by the author. Thanks also go to the various find's processors, specialists, illustrator and editor for their contributions.

1 INTRODUCTION

1.1 Scope of work

1.1.1 OA East was commissioned by CgMs Heritage on behalf of Persimmon Homes to undertake a small excavation on land west of Ixworth Road, Thurston, Suffolk (TL 91667 66080; Fig 1).

1.1.2 The archaeological investigations began with a Desk-Based Assesment (DBA, Clarke 2016). This was then followed by a geophysical survey (Davies 2016) which uncovered probable geological features (throughout) and post-medieval quarry pits (in the south of the site) in addition to parallel ditches probably marking the line of the roman road known as Peddars Way in the south-west and north-west of the site.

1.1.3 In September 2018, a trial trench evaluation was undertaken by OA East consisting of 67 trenches (Ladd 2018; Fig 1). As a result of these works, archaeological mitigation for the site required an open area (20x20m) of excavation targeted on the northern end of Trench 13 where Neolithic pits containing quantities of struck flint were uncovered. Provision was made to extend this area should significant remains be defined that clearly extended beyond the initial strip.

1.1.4 The work was undertaken as a condition of Planning Permission (planning ref. 4963/16). A brief was set by Rachael Abraham of Suffolk County Council outlining the Local Authority's requirements for work necessary to inform the planning process. A written scheme of investigation was produced by OA East (Bush 2018) detailing the methods by which OA East proposed to meet the requirements of the brief.

1.2 Location, topography and geology

1.2.1 The site comprises of an arable field located on the northern edge of Thurston, at a height of *c*.50.49m OD, immediately west of Ixworth Road and east of Mill Lane (Fig 1). The nearest watercourse to the site is a stream 500m to the east which flows north, joining the Black Bourn, a tributary of the Little Ouse.

1.2.2 The site is situated on a bedrock geology of undifferentiated Chalk Formation, with superficial deposits of sand/Lowestoft Formation diamicton across the majority of the area (BGS 2018).

1.3 Archaeological and historical background

1.3.1 The following is taken from the archaeological evaluation report (Ladd 2018).

1.3.2 The site has been the subject of a full DBA (Clarke 2016) in which the archaeological and historical background of the site is discussed and will not be repeated here. The distribution map of records provided by the Suffolk Historic Environment Record (HER) is reproduced in Figure 2 and summarised below. The DBA concluded there was moderate potential for remains of the late prehistoric and Roman periods and limited potential for other periods.

1.3.3 Mesolithic and Neolithic flints have been found in the area, with a hammerstone possibly found on the site itself (Fig 2; THS025). Finds associated with a possible Bronze Age or later lake village were found at Barton Mere *c*.800m north-west of the site (Fig

2; PKM017, BRG007, BRG Misc/MSF 22915). The Roman Road known as Peddars Way between Chelmsford and Ixworth was thought to run close to the site's eastern boundary (Fig 2; PKM032/THS007; Margary No. 33a). The site lies between the centres of Thurston (Fig 2; around St Peter's Church, THS006) and Pakenham (Fig 2; PKM065) which were established by the Late Saxon periods. The site was probably under cultivation or pasture from the medieval period onwards.

1.4 Previous Work

1.4.1 The archaeological evaluation opened a total of 67 trenches across the 8.3ha development area (Ladd 2018; Fig 3). Few archaeological features were found. An Early Neolithic pit containing 102 sherds of struck flints and a single sherd of pottery was uncovered in the north of the site. Adjacent to this was a second, undated but potentially related pit. Residual flints were found across the site.

1.4.2 A pair of road-side ditches marking Peddars Way, the Roman Road linking Chelmsford to Ixworth, were found in the south-west of the site. These were clearly visible, albeit intermittent, on the results of a geophysical survey of the area and appeared in two of the four trenches that were sited to intersect with them. A single iron nail was found in one of the ditches. There was no sign of associated roadside settlement.

1.4.3 Post-medieval quarry pits, some shown on 19th and 20th century Ordnance Survey maps, were present in the south of the field. One had been back-filled in the late 20th century. A field boundary ditch, probably filled in during the 20th century, was found in the north of the site. Environmental preservation was poor and no bone was recovered.

2 EVALUATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The overall aim of the investigation was to preserve by record the archaeological evidence contained within the footprint of the development area, prior to damage by development, and investigate the origins, date, development, phasing, spatial organisation, character, function, status, and significance of the remains revealed, and place these in their local, regional and national archaeological context.

2.1.2 Based on the results of the evaluation, the more specific aim of the excavation was to find the extent of the Neolithic activity and discover whether the pit identified in the evaluation was a solitary feature or part of a larger pit group.

2.2 Methodology

2.2.1 An 20x20m area was machine excavated using a 22 tonne 360° mechanical excavator under constant archaeological supervision.

2.2.2 All archaeological features were recorded using OA East's pro-forma sheets. Plans and sections were recorded at appropriate scales and digital photographs were taken of all relevant features and deposits.

2.2.3 Site survey was carried out by RTK GPS with SmartNET

2.2.4 Spoil and features were scanned with a metal detector to aid recovery of artefacts, but none were found.

2.2.5 One bulk environmental sample was taken during the archaeological works in order to investigate the possible survival of micro- and macro- archaeobotanical remains.

3 RESULTS

3.1 General soils and ground conditions

3.1.1 The natural geology into which the archaeological features were cut consisted of soft sands with some flint gravel. This was overlain by a subsoil consisting of mid brownish grey sandy silt measuring *c*.0.2m thick. The topsoil across the site consisted of a *c*.0.3m dark brown sandy silt.

3.1.2 Ground conditions throughout the excavation were generally good and the area remained dry throughout. Archaeological features, where present, were easy to identify against the underlying natural geology.

3.2 General distribution of archaeological deposits

3.2.1 A total of two archaeological features were uncovered by the excavation (Fig 4).

3.2.2 Pit **1** (section 1, Fig 5) was located towards the south-west corner of the excavation area, approximately 8m to the south of the two pits discovered in the evaluation. It was circular in plan and measured 0.85m in diameter and 0.22m in depth with steeply sloping sides and a flat base. It contained two very soft fills, the lower fill (2) measured 0.2m thick and appeared to be a deliberate deposit of dark grey silty sand that contained 28g of Early Bronze Age pottery and eight struck flints. A total of 309g of burnt flint and 1514g of burnt stone was also recovered. The entire fill was sampled for environmental remains and flint debitage retrieval. The sample produced further fragments of pottery, some flint debitage, several fragments of hazelnut shell, two barley grains and 20ml of charcoal. The upper fill (3) was much thinner, up to 0.1m at its thick. This consisted of a mid greyish brown silty sand most likely formed by secondary silting once the pit had been backfilled with the burnt material.

3.2.3 Pit **4** (section 2, Fig 5) was located approximately 5m to the south-east of the pits uncovered by the evaluation. It was sub-circular, measuring between 0.8m and 0.6m in diameter and 0.3m deep. It had a more uneven profile than pit **1**, with a slight step on its southern side, although due to the soft nature of the sand this could be a result of natural disturbance. Pit **4** contained only one fill (5) which consisted of mid brownish grey silty sand that produced only one struck flint. This fill was slightly firmer than that of pit **1** and no charcoal was present.

3.4 Finds summary

3.4.1 The excavation produced: 13 sherds (28g) of Early Bronze Age pottery were recovered including a sherd of rusticated beaker, ten worked flints, 309g of unworked burnt flint (13 pieces) and 1514g of burnt stone (10 pieces).

4 DISCUSSION

4.1 Early Neolithic

4.1.1 Neolithic pits are often found in small groups or clusters such as at Kilverstone, Suffolk (Garrow 2006, p.27). The main aim of this excavation was to determine whether the two pits identified in the evaluation (pits **11** and **13**) were part of a cluster or associated with any other evidence of Neolithic occupation.

4.1.2 Pit **4** contained only one struck flint likely to be of Neolithic date (App B.2). The laurel leaf point was recovered from the natural close to pit **11** (excavated in the evaluation) with which it may have been associated. In size and shape, pit **4** is very similar to the pits uncovered by the evaluation (Ladd 2018).

4.1.3 The lack of further features of Neolithic date does not diminish the possibility of occupation during this period. Duncan Garrow's study of Neolithic/Early Bronze Age pits shows huge variation in the numbers of pits within clusters and the location in which they have been dug. He noted that majority of Neolithic pit sites tend to be close to rivers, often elevated just above the flood plain and those which were furthest from a watercourse seemed to have the fewest pits (Garrow 2006, p.26). As this site is located 0.5km west of a watercourse it would suggest that the pits at Thurston fit with this pattern.

4.2 Early Bronze Age

4.2.1 Pit **1** was Early Bronze Age in date and appears to be typical of pits of this type in the region, similar pits have been found at Worlingham, Suffolk and Kilverstone, Norfolk (Garrow 2006, p. 119-120). It contained 13 sherds of Bronze Age pottery including one sherd decorated with fingernail impressions which could be from a rusticated beaker. The presence of hazelnut shells in the environmental sample taken from pit **1** is indicative of domestic activity. The lower fill may represent the remains of a hearth as charcoal was present along with burnt flint and stone (App C.1).

4.2.2 The HER search revealed that Barton Mere (Fig 2; BRG007), the site of a possible Bronze Age lake village, lies 800m to the north-west of the site. Pit **1** is further evidence that this site lay within a wider zone of occupation during this period upon the light sand and gravel soils of the area.

APPENDIX A CONTEXT INVENTORY

Context	Cut	Category	Type	Function	Length (m)	Width (m)	Depth (m)	Shape in Plan	Side	Break of Slope	Base	Colour	Fine component	Coarse component	Compaction
1	1	cut	pit	unknown	0.9	0.85	0.22	circular	steep	gradual	Flat				
2	1	fill	pit	backfill			0.2					dark brownish grey	silty sand	moderate inclusion of small and medium burnt stone and flint, occasional un-burnt flint and flecks of charcoal	soft
3	1	fill	pit	backfill			0.1					mid greyish brown	silty sand	occasional small flints	soft
4	4	cut	pit	unknown	0.8	0.6	0.3	Sub-circular	Steep, stepped on south side	gradual	concave				
5	4	fill	pit	backfill								mid brownish grey	silty sand	frequent small and medium flint	soft

APPENDIX B FINDS REPORTS

B.1 Pottery

By Nick Gilmour

B.1.1 A total of 13 sherds (28g) of prehistoric pottery was found on this site. All this material was retrieved from context 2, within pit **1**. Three sherds (8g) were recovered from soil sample 1, with the remainder found during hand excavation.

B.1.2 All of the pottery is in the same fabric. It contains common medium and course grog (2-4mm) and sparse quartz sand. One sherd (9g) is decorated with two vertical fingernail impressions. A single sherd (3g) is from a plain upright and rounded rim.

B.1.3 This pottery is of Early Bronze Age date (*c*.2400-1800BC). The single decorated sherd could be from a Rusticated Beaker.

B.2 Flint and Stone

By Lawrence Billington

Introduction

B.2.1 Ten worked flints, 309g of unworked burnt flint (13 pieces) and 1514g of burnt stone (10 pieces) were recovered during the excavation. This assemblage can be added to the lithics recovered during the evaluation, 132 worked flints and 10g (one piece) of unworked burnt flint. The assemblage from the evaluation has been fully described in the evaluation report (Billington in Ladd 2018) and the details are not presented again here, although the material is quantified alongside the excavation assemblage by context in Table 1.

B.2.2 Aside from a single unstratified worked flint collected from the natural, the flint and stone from the excavation phase of works was derived from two pits (**1** and **4**).

Pit 1

B.2.3 Pit **1** produced 309g of unworked burnt flint, 1514g of unworked burnt stone and eight struck flints, all from fill 2, associated with several sherds of early Bronze Age pottery, including a possible sherd of rusticated beaker. Two of the struck flints are simple hard-hammer struck flakes and are heavily burnt/calcined – in identical condition to the unworked burnt flint from the same context, whilst the remaining six are very small (unburnt) chips collected form the residue of an environmental sample. The unworked burnt flint takes the form of thirteen small to medium sized (up to 50mm in size and 84g) thermally fractured and heavily burnt chunks. The burnt stone is made up of ten small to medium sized pieces of fine to medium grained sandstone (the largest piece measuring up to 100mm across and weighing 418g), all heavily burnt and fractured.

Pit 4

B.2.4 A single worked flint was recovered from pit **4**, a lightly burnt secondary flake. This piece is well-struck, with a neatly trimmed striking platform and is likely to be of Neolithic date.

Unstratified

B.2.5 A fine, broken bifacially worked tool of ovate form was recovered from the natural of the site. In its broken state, this piece measures up to 59mm in length, 37mm wide and 8mm thick. It bears covering bifacial retouch across the entirety of both faces, and no traces of the original flake/blank surface survive. One end, probably originally the more pointed (proximal) end of the piece, is broken. The break has a distinctive wedge-shaped fracture that is often taken as an indicator of deliberate breakage, but in this context may well be attributable to mechanical damage sustained in the plough soil. This piece can be confidently classified as a laurel leaf point, small ovate shaped bifaces, presumably representing cutting tools, which are more or less exclusively associated with early Neolithic assemblages (see Brown 1995, 82-3), best known in the region from the extensive Early Neolithic pit site at Hurst Fen, Mildenhall - which yielded around 42 examples (Clark *et al.* 1960).

Discussion

B.2.6 The small assemblage from the excavation includes a relatively substantial assemblage of burnt flint and stone from pit **1**, associated with probable Beaker pottery. Although intentionally burnt/heated flint and stone occurs in all periods of prehistory in the region, it is especially characteristic of the Chalcolithic/Early Bronze Age (especially Beaker related). This is seen most clearly in the large accumulations of burnt lithics known as burnt mounds, the few well-dated examples of which have radiocarbon dates falling between *c*.2300 and 1900 cal BC, and/or are associated with Beaker pottery (see Healy *et al.* 2014, 61-2). The precise function of such burnt stone and flint remains a matter of speculation, and was probably varied, but it is generally thought that it was used to heat water as some sort of domestic/craft type activity.

B.2.7 The single flint from pit **4** seems more likely to relate to earlier (Neolithic) activity at the site, whilst the laurel leaf provides provided good evidence for earlier Neolithic activity, complementing the relatively large assemblage of worked flint recovered from a pit during the evaluation (evaluation, pit **11**) and the probable earlier Neolithic material recovered as a residual element from other features encountered during the trenching (Table 1; see Billington in Ladd 2018).

Phase	Trench	Context	Cut	Sample	Context type	Chip	Irregular waste	Primary flake	Secondary flake	Tertiary flake	Secondary blade-like flake	Tertiary blade-like flake	Secondary blade	Tertiary blade	Retouched flake	Laurel leaf	Core	**Total worked**	Unworked burnt flint count	Unworked burnt flint weight (g)	Burnt stone count	Burnt stone weight (g)
Evaluation	13	12	11		Pit	40	2	3	26	15	6	3	1	2	1		3	**102**	1	10		
	13	14	13		Pit			1		1								**2**				
	13	15	11		Finds unit (pit)			2	5	3	1						1	**12**				
	59	2	1	1	Ditch	6				1			1					**8**				
	59	2	1		Ditch				4	1								**5**				
	10/46/52	10			Subsoil			1	1				1					**3**				
Evaluation totals						*46*	*2*	*7*	*36*	*21*	*7*	*3*	*3*	*2*	*1*		*4*	***132***	*1*	*10*		
Excavation		2	1	1	Pit	6												**6**				
		2	1		Pit				1	1								**2**	13	308.8	10	1514.2
		5	4		Pit				1									**1**				
					Unstrat'											1		**1**				
Excavation totals						*6*			*2*	*1*						*1*		***10***	*13*	*308.8*	*10*	*1514.2*
Grand totals						**52**	**2**	**7**	**38**	**22**	**7**	**3**	**3**	**2**	**1**	**1**	**4**	**142**	**14**	**318.8**	**10**	**1514.2**

Table 1: Basic quantification of the flint assemblage by context.

APPENDIX C ENVIRONMENTAL REPORTS

C.1 Environmental Samples

By Rachel Fosberry and Martha Craven

Introduction

C.1.1 A single bulk sample was taken from fill 2 of Neolithic pit **1** within the excavated area.

Methodology

C.1.2 The full volume of the sample (34 litres) 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 sample was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieve. A magnet was dragged through each residue fraction for the recovery of magnetic residues prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds.

C.1.3 The dried flot was subsequently sorted using a binocular microscope at magnifications up to x 60. 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 (2010) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. 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).

Results and Discussion

C.1.4 The flot produced approximately 20ml of charcoal. The flot contains two barley grains (*Hordeum vulgare*) and an unidentified fragment of a cereal. Modern rootlets and snails are also present within the flot which could indicate soil disturbance.

C.1.5 The residue contained occasional fragments of pottery and some flint debitage. Several fragments of hazelnut shell (*Corylus avellana*), representing approximately 2 whole nuts, were also recovered from the residue.

C.1.6 Hazelnuts would have been an important wild food resource in the Neolithic period and their burnt shells are frequently recovered from pits. The shells are the product of consumption that, if burnt, survives well in archaeological deposits which partly explains their frequent recovery (Jones 2000, 80). Barley was one of the first cereals to be cultivated in Britain. It is possible that the charred remains were the deliberate inclusion of the remains of a cooking hearth (along with flint debitage and pottery fragments.

APPENDIX D WRITTEN SCHEME OF INVESTIGATION

D.1 General background

D.1.1 This Written Scheme of Investigation (WSI) conforms to the principles identified in Historic England's guidance documents Management of Research Projects in the Historic Environment (MoRPHE), specifically the MoRPHE Project Manager's Guide (2015) and Project Planning Note 3: Archaeological Excavation (2008).

D.1.2 All work will be conducted in accordance with the Chartered Institute for Archaeologists Code of Conduct (2014) and Standard and Guidance for Archaeological Excavation (2014).

D.1.3 This WSI also incorporates the requirements of the EAA Standards for Field Archaeology in the East of England (Gurney 2003) and conforms to the Suffolk County Council's Requirements for a Trenched Archaeological Evaluation (2017).

D.1.4 The decision on the need for any further work/mitigation will be made by Suffolk County Council Archaeology Service (SCCAS) following the results of the evaluation. The scope of any further work (if required) will be specified in a separate SCCAS brief and require the submission and approval of a separate WSI.

Circumstances of the project

D.1.5 Oxford Archaeology East (OA East) have been commissioned by CgMs Consulting on behalf of Persimmon Homes to conduct an archaeological trial trench evaluation on 12.7ha of land west of Ixworth Road, Thurston, Suffolk (centred on TL 91716 65914).

The proposed archaeological strategy

D.1.6 A 4% sample of the site is proposed, which consists of 66 trenches (measuring 30x1.8m).

D.1.7 The trenching strategy is based on the results of the geophysical survey, with possible archaeological anomalies being targeted and a standard grid array to provide a representative sample of the entire development area.

Changes to this method statement

D.1.8 If changes need to be made to the methods outlined below – either before or during works on site – SCCAS will be informed and asked to consider changes before they are made. Changes will be formally agreed before work on site commences, or else at the earliest available opportunity.

D.2 Geology and topography

D.2.1 The site is located on the northern edge of Thurston, on land to the immediate west of the Ixworth Road and east of Mill Lane.

D.2.2 The proposed site is situated on a bedrock geology of Lewes Nodular Chalk Formation, Seaford Chalk Formation, Newhaven Chalk Formation and Culver Chalk Formation (undifferentiated), with superficial deposits of sand across the majority of the area, with Lowestoft Formation diamicton present around the periphery. The site is

currently under arable land and is situated at around a height of 42m OD (to the south-west) and 50m OD (to the north-east).

D.3 Archaeological background

D.3.1 A comprehensive Desk-based Assessment (DBA) has been undertaken on the site previously (Clarke 2016). Therefore, only pertinent records are reiterated here.

Prehistoric

D.3.2 A single findspot is recorded within the limits of the proposed site itself – a prehistoric flint hammer (MSF33810) recovered from the south-westernmost corner of the site. Beyond this, the closest archaeological remains have been discovered *c*.100m south-west of the site during archaeological monitoring at Red Marley, where a pit and ditch containing Neolithic pottery and struck flint was recorded (MSF20817/THS011). Other Neolithic and Bronze Age finds have been identified between 0.8km and 1.2km away from the site.

D.3.3 Observations made during gravel extraction at Sheep Lane (*c.*200m north-west of the site) recorded a possible Iron Age hearth (MSF6883/THS001) and Iron Age pottery has been recovered some 400m south of the site at Thurston Heath (MSF6886/THS004).

Roman

D.3.4 The course of Peddlar's Way (MSF6888/THS007), the Roman road from Chelmsford to Ixworth is recorded as running immediately adjacent to the western limit of the site. A Roman road surface and associated pottery is purported to have been uncovered during the early 20th century (MSF6884/THS002), some 400m south-west of the site. However, more recent excavations closer to the current site had negative results (MSF21000 and MSF22935).

Anglo-Saxon and medieval

D.3.5 The historic settlement of Thurston is located around 1km south-east of the site and is recorded in the Domesday Book of 1086.

D.3.6 Medieval remains are minimal across this area, with a small number of later medieval coins being recovered from land approximately 700m west to the west of the site (MSF12106/BRG misc).

Post-medieval and modern

D.3.7 All post-medieval mapping (see DBA) shows the site to be under arable land. The 1887, 1905, 1950 and 1958 Ordnance Survey Maps shows a footpath bisecting the site from north-west to south-east. This has been removed however by the 1978 Ordnance Survey Map.

Undated

D.3.8 A geophysical survey (MSF35619/THS031) undertaken on land around 400m to the east of the site identified a series on anomalies including pits, ditches and a possible trackway.

D.4 Aims and objectives

Aims of the evaluation

D.4.1 This evaluation will seek to establish the character, date, state of preservation of archaeological remains within the proposed development area. The scheme of works detailed below aims to:

- establish the presence or absence of archaeological remains on the site, characterise where they are found (location, depth and extent), and establish the quality of preservation of any archaeology and environmental remains
- provide sufficient coverage to establish the character, condition, date and purpose of any archaeological deposits
- provide sufficient coverage to evaluate the likely impact of past land uses, and the possible presence of masking deposits
- 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.

Research frameworks

D.4.2 This excavation takes place within, and will contribute to the goals of Regional Research Frameworks relevant to this area:

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

D.5 Methods

Background research

D.5.1 A suitable level of documentary research will be undertaken before work on site commences. This research will draw on information in the Suffolk Historic Environment Record and County Records Office, and will include any relevant historical sources, maps, previous archaeological finds, and past archaeological investigations in the vicinity. The results will not be presented separately but will be incorporated into the final evaluation report.

Event number and site code

D.5.2 In consultation with the SHER, a parish code has been issued for the project: THS 030. OA East's unique site code for the project is XSFIRT18. An OASIS number has also been assigned for the project (oxfordar3-322782).

D.6 Trial Trenching

Excavation standards

D.6.1 The proposed archaeological evaluation and analysis will be conducted in accordance with current best archaeological practice and the appropriate national and regional standards and guidelines.

D.6.2 All work will be conducted in accordance with the Chartered Institute for Archaeologists' Code of Conduct and Standard and Guidance for Archaeological Field Evaluations, and Suffolk County Council's Requirements for a Trenched Archaeological Evaluation (2017).

D.6.3 All fieldwork will be undertaken in accordance with the requirements of the OA Field Manual (ed. D Wilkinson 1992), and the revised OA fieldwork manual (publication forthcoming). Further guidance is provided to all excavators in the form of the OA Fieldwork Crib Sheets – a companion guide to the Fieldwork Manual. These have been issued ahead of formal publication of the revised Fieldwork Manual.

Pre-commencement

D.6.4 Before work on site commences, service plans will be checked to ensure that access and groundworks can be conducted safely.

D.6.5 In order to minimise damage to the site and disruption to site users, OA East will agree the following with the client/landowner before work on site commences:

- the location of entrance ways
- locations for welfare units
- soil storage areas
- refuelling points for plant (if necessary), and the extent of any bunding required around fuel dumps
- access routes for plant and vehicles across the site
- Access routes to, from and between trenches will be agreed on site at the start of works. Where possible, access routes will use tramlines in the crop, in order to reduce crop damage.

Trenching methods

D.6.6 A total of 66 trenches measuring 30m by 1.8m will be excavated. This is equivalent to a 4% sample of the development area. During machine stripping, the location of trenches may be altered if there are site obstructions, services, or modern disturbance. If so, the location of affected trenches will be re-surveyed.

D.6.7 Service plans will be checked before work commences on site. All machine excavation will take place under the supervision of a suitably qualified and experienced archaeologist.

D.6.8 All trenches will be excavated by a mechanical excavator to the depth of geological horizons, or to the upper interface of archaeological features or deposits, whichever is encountered first. A toothless ditching bucket with a minimum bucket width of 1.8m

will be used to excavate the trenches. Overburden will be excavated in spits not greater than 0.1m thick.

D.6.9 Topsoil, subsoil, and archaeological deposits will be kept separate during excavation, to allow for sequential backfilling of excavations. The trenches will not be backfilled without the approval of the SCCAS.

D.6.10 All machine excavation will take place under constant supervision of a suitably qualified and experienced archaeologist. The top of the first archaeological deposit will be cleared by machine, but will then be cleaned off by hand. Any archaeological deposits present will then be excavated by context to the level of the geological horizon where safe to do so. Trench spoil will be scanned visually and with a metal detector to aid recovery of artefacts.

Excavation of archaeological features and deposits

D.6.11 All features will be investigated and recorded to provide an accurate evaluation of archaeological potential, whilst at the same time minimising disturbance to archaeological structures, features, and deposits. All relationships between features or deposits will be investigated and recorded. Any natural subsoil surface revealed will be hand cleaned and examined for archaeological deposits and artefacts. Excavation will characterise the full archaeological sequence down to undisturbed natural deposits. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their character.

D.6.12 Excavation of all archaeological deposits will be done by hand unless otherwise agreed by the SCCAS. Significant archaeological features (e.g. solid or bonded structural remains, building slots or post-holes) will be preserved intact, even if fills are sampled.

D.6.13 Exposed surfaces will be cleaned by trowel and hoe as necessary in order to clarify features and deposits. Unless otherwise agreed by the SCCAS all features will be investigated and recorded to provide an accurate evaluation of archaeological potential, whilst at the same time minimising disturbance to archaeological structures, features and deposits.

D.6.14 There will be sufficient excavation to give clear evidence for the period, depth, and nature of any archaeological deposit. Investigation slots through all linear features will be a least 1m in width. Discrete features will be half-sectioned or excavated in quadrants where they are large or found to be deep. In necessary, an auger will be used to gain information from deep deposits below 1m in depth.

Recording of archaeological deposits and features

D.6.15 Records will comprise survey, drawn, written, and photographic data.

Survey

D.6.16 Surveying will be done using a survey-grade differential GPS (Leica CS10/GS08 or Leica 1200) fitted with "smartnet" technology with an accuracy of 5mm horizontal and 10mm vertical.

D.6.17 All trenches and any archaeological features located within them will be planned by GPS and accurately tied into the Ordnance Survey National Grid and located on the 1:2500 or 1:1250 map of the area. Elevations will be levelled to the Ordnance Datum.

Written records

D.6.18 A register of all trenches, features, photographs, survey levels, small finds, and human remains will be kept.

D.6.19 All features, layers and deposits will be issued with unique context numbers. Each feature will be individually documented on context sheets, and hand-drawn in section and plan. Written descriptions will be recorded on pro-forma sheets comprising factual data and interpretative elements.

D.6.20 Where stratified deposits are encountered, a Harris Matrix will be compiled during the course of the excavation.

Plans and sections

D.6.21 Localised site plans of complex features (if needed) will be drawn at 1:20.

D.6.22 Long sections showing layers will be drawn at 1:50. Sections of features or short lengths of trenches will be drawn at 1:10 or 1:20. All section levels will be tied in to Ordnance Datum.

D.6.23 All site drawings will include the following information: site name, site code, scale, plan or section number, relevant context or feature numbers, orientation, date and the name or initials of the archaeologist who prepared the drawing.

Photographs

D.6.24 The photographic record will comprise high resolution digital photographs. Photographs will include both general site shots and photographs of specific features. Every feature will be photographed at least once. Photographs will include a scale, north arrow, site code, and feature number (where relevant), unless they are to be used in publications. The photograph register will record these details, and photograph numbers will be listed on corresponding context sheets.

D.7 Exceptional remains, including human remains

Significant archaeological features

D.7.1 If exceptional or unexpected features are uncovered, the SCCAS will be informed, and their advice sought on further excavation or preservation.

D.7.2 Significant archaeological features (e.g. solid or bonded structural remains, building slots or post-holes) will be preserved intact, even if fills are sampled. The following features will normally be cleaned, recorded and preserved for future excavation, unless directed to by the SCCAS:

- layers relating to domestic or industrial activity (e.g. floor, middens)
- discrete features relating to domestic or industrial activity (e.g. kilns, ovens, hearths)
- artefact scatters (e.g. flint, metal-working debris).

D.7.3 If preservation in situ is required by the SCCAS, all exposed surfaces will be cleaned and prepared for reburial beneath construction materials. If appropriate, the areas will be protected with geotextile or other buffering materials.

Human remains

D.7.4 If human remains are encountered, the Client, County Coroner, and the SCCAS will be informed immediately.

D.7.5 Unless directed otherwise by the SCCAS human remains will be left in situ (covered and protected), until a full program of excavation is agreed by the SCCAS and Client. No further excavation will then take place in the vicinity of the remains until removal becomes necessary. If the remains are under imminent threat, or if the SCCAS requires information on date and preservation, we will excavate and remove them.

D.7.6 Human remains will be excavated in accordance with all appropriate legislation and Environmental Health regulations. Excavation will only take place after Oxford Archaeology has obtained a Ministry of Justice exhumation license.

D.8 Metal detecting and the Treasure Act

D.8.1 Metal detector searches will take place at all stages of the excavation by an experienced metal detector user (Tom Lucking). Trench footprints will be detected immediately before mechanical stripping. Trench spoil (topsoil and subsoil) and all archaeological features and deposits will also be detected. To prevent losses from night-hawking, features will be metal detected immediately after stripping.

D.8.2 Metal detectors will not be set to discriminate against iron.

D.8.3 Artefacts will be removed and given a small find number. Labels will be placed on the location of each 'small find' and surveyed in with a GPS.

D.8.4 If finds are made that might constitute ‘Treasure’ under the definition of the Treasure Act (1996), they will, if possible, be excavated and removed to a safe place. Should it not be possible to remove the finds on the day they are found, suitable security will be arranged. Finds constituting Treasure will be immediately reported to the Suffolk Finds Liaison Officer (FLO) who will then inform the coroner within 14 days.

D.9 Post-excavation processing

D.9.1 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. The Project Manager and fieldwork project officer will be given feedback to enable them to develop excavation strategies during fieldwork.

D.9.2 Any finds requiring specialist treatment and conservation will be sent for appropriate treatment.

D.9.3 Finds will be marked with context numbers and the Parish Code, as detailed in Archaeological Archives in Suffolk, Guidelines for preparation and deposition (Suffolk County Council Archaeological Service 2017).

D.10 Finds recovery and processing

Standards for finds handling

D.10.1 Finds will be exposed, lifted, cleaned, conserved, marked, bagged, and boxed in line with the standards in:

- United Kingdom Institute for Conservators (2012) Conservation Guidelines No. 2
- Watkinson & Neal (1988) First Aid for Finds
- Chartered Institute for Archaeologists (2014) Standard and Guidance for the Collection, Documentation, Conservation and Research of Archaeological Materials
- English Heritage (1995) A Strategy for the Care and Investigation of Finds.
- Where finds require conservation, this will be done in accordance with the guidelines of the Institute for Conservation (ICON)

Procedures for finds handling

D.10.2 At the start of work, a finds supervisor will be appointed to oversee the collection, processing, cataloguing, and specialist advice on all artefacts collected.

D.10.3 Artefacts will be collected by hand, sieving, and metal detector. Excavation areas and spoil will be scanned visually and with a metal detector to aid recovery of artefacts. All finds will be bagged and labelled according to the individual deposit from which they were recovered, ready for later cleaning and analysis. 'Special/small finds' may be located more accurately by GPS if appropriate.

D.10.4 Processing will take place in tandem with excavation, and advice will be sought from relevant specialists on key artefact types. (See the Appendix for a list of specialists.)

D.10.5 All artefacts recovered from excavated features will be retained for post-excavation processing and assessment, except:

- those which are obviously modern in date
- where very large volumes are recovered (typically ceramic building material)
- where directed to discard on site by the SCCAS.
- Where artefacts are not removed from site, a strategy will be employed to ensure a sufficient sample is retained, in order to characterise the date and function of the features they were excavated from. A record will be kept of the quantity and nature of artefacts which are not removed from site.

D.11 Sampling for environmental remains and small artefact retrieval

Standards for sampling and processing

D.11.1 Features will be sampled and processed in accordance with the guidelines set out in:

- English Heritage (2011, 2nd edition) Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation.
- Association for Environmental Archaeology (1995) Environmental archaeology and archaeological evaluations. Recommendations concerning the environmental archaeology component of archaeological evaluations in England. Working Papers of

the Association for Environmental Archaeology 2. York: Association for Environmental Archaeology.
- Dobney, K., Hall, A., Kenward, H. & Milles, A. (1992) A working classification of sample types for environmental archaeology. Circaea 9.1: 24-26
- Murphy, P.L. & Wiltshire, P.E.J. (1994) A guide to sampling archaeological deposits for environmental analysis.

Procedures for sampling and processing

D.11.2 Bulk samples (40 litres or 100% of context) will be taken from a range of site features and deposits to target the recovery of plant remains (charcoal and macrobotanticals) fish, bird, small mammal and amphibian bone and small artefacts. Environmental samples will be taken from well-stratified, datable deposits. Samples will be labelled with the site code, context number, and sample number.

D.11.3 If appropriate, monolith samples of waterlogged deposits and buried soils will be taken for pollen analysis, soil micro-morphological, or sedimentological analysis. Where consistent with the aims of the evaluation, samples will be taken from deposits, artefacts, and ecofacts for scientific (absolute) dating.

D.11.4 Where features containing very small artefacts – such as micro-debitage and hammerscale – are identified, bulk samples will be taken (up to 40 litres or 100% of context).

D.11.5 Typically, 10 litres of each bulk sample will be processed using tank flotation, with the remaining sub-sample processed where appropriate or necessary. Waterlogged samples will be wet sieved and stored in cool or wet conditions as appropriate.

D.11.6 Where practical, waterlogged wood specimens will be recorded in detail on site, in situ. When removed, they will be cleaned and photographed, and stored in wet cool conditions for assessment by a suitably qualified specialist (see the Appendix).

D.11.7 The project team will consult Historic England's Scientific Advisor on environmental sampling and dating where necessary.

D.12 Reporting

Evaluation Report

D.12.1 Post-excavation analysis and reporting will follow guidance in Historic England's (2015) Management of Research Projects in the Historic Environment (MoRPHE).

Contents of the evaluation report

D.12.2 The report will include:

- a title page detailing site address, site code and accession number, NGR, author/originating body, client's name and address
- full list of contents
- a non-technical summary of the findings
- the aims of the evaluation
- a description of the geology and topography of the area

- a description of the methodologies used
- a description of the findings
- tables summarising features and artefacts
- site and trench location plans, and plans of each area excavated showing the archaeological features found
- sections of excavated features
- interpretation of the archaeological features found
- specialist reports on artefacts and environmental finds
- relevant colour photographs of features and the site
- a predictive model of surviving archaeological remains, where affected by development proposals, and assessment of their importance at local, regional and national level.
- a bibliography of all reference material
- the OASIS reference and summary form.
- Draft and final reports
- A draft digital copy of the report will be supplied to SCCAS for comment. Following approval of the draft report, a copy will be sent to the client for submission to the Local Planning Authority, and a hard copy will be supplied to the SCCAS/ for deposition with the Suffolk Historic Environment Record.
- A copy of the approved report will be uploaded to the OASIS database.
- Where positive results are drawn from the evaluation, a summary statement will be provided to the SCCAS suitable for inclusion in the Proceedings of the Suffolk Institute of Archaeology and History annual round up.

OASIS

D.12.3 A digital copy of the approved report will be uploaded to the OASIS database. A copy of the OASIS Data Collection Form will be included in the report.

D.13 Archiving

Archive standards

D.13.1 The site archive will conform to the requirements of Appendix 1 of the Historic England's (2015) Management of Research Projects in the Historic Environment (MoRPHE) and the Archaeological Archives in Suffolk, Guidelines for preparation and deposition (Suffolk County Council Archaeological Service 2017).

D.13.2 The preparation of the archive will follow the guidelines contained in Guidelines for the Preparation of Excavation Archives for Long Term Storage (United Kingdom Institute for Conservation, 1990), Standards in the Museum care of Archaeological Collections (Museums and Galleries Commission 1992), and Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation (Brown 2007).

Archive contents

D.13.3 The archive will be quantified, ordered, and indexed. It will include:

- artefacts

- ecofacts
- project documentation – including plans, section drawings, context sheets, registers, and specialist reports
- photographs (digital photographs will be stored on CD-ROM, and colour printouts made of key features)
- an archive-standard CD-ROM with electronic documentation (such as GIS and CAD files)
- a printed copy of the Written Brief
- a printed copy of the WSI
- a printed copy of the final report
- a printed copy of the OASIS form.

D.13.4 It is Oxford Archaeology Ltd's policy, in line with accepted practice, to keep site archives (paper and artefactual) together wherever possible.

D.13.5 A digital security copy of all documentary parts of the archive will also be made and retained by Oxford Archaeology.

Transfer of ownership

D.13.6 OA East will seek to transfer title of ownership of the complete project archive to Suffolk County Council or another registered local depository at the appropriate time. Until then, all artefactual and paper archive material relating to the project will be held in storage by OA East.

D.14 Timetable

D.14.1 Trial trenching will take approximately three weeks (including backfilling). This does not allow for delays caused by bad weather.

D.14.2 Post-excavation processing and assessment tasks will commence shortly after the evaluation commences, to inform the strategy, and minimise time required to prepare the report after the fieldwork is completed.

D.14.3 Post-excavation tasks and report writing is anticipated to take 4 weeks following the end of fieldwork, unless there are exceptional discoveries requiring more lengthy analysis.

D.15 Staffing and support

Fieldwork

D.15.1 The fieldwork team will be made up of the following staff:

- 1 x Project Manager (supervisory only, not based on site)
- 1 x Project Officer/Supervisor (full-time)
- 3 x Site Assistants (as required)
- 1 x Archaeological Surveyor
- 1 x Finds Assistant (part-time, as required)
- 1 x Environmental Assistant (part-time, as required)

D.15.2 Site work will be directed by one of OAE's Project Officers or Supervisors.

D.15.3 All Site Assistants will be drawn from a pool of qualified and experienced staff. Oxford Archaeology East will not employ volunteer, amateur, or student staff, whether paid or unpaid, except as an addition to the team stated above.

Post-excavation processing

D.15.4 We anticipate that the site may produce later prehistoric to medieval remains. Environmental remains will also be sampled.

D.15.5 Pottery will be assessed by Matt Brudenell (prehistoric), Alice Lyons (Roman) and Dr Paul Spoerry (Saxon and medieval).

D.15.6 Environmental analysis will be carried out by OA East staff, in consultation with the OA Environmental Department in Oxford. The results will be reported to Historic England's Regional Scientific Advisor. Environmental analysis will be undertaken by Rachel Fosberry (charred plant macrofossils, plant macrofossils), Liz Stafford (land molluscs), and Denise Druce and Mairead Rutherford (pollen analysis).

D.15.7 Faunal remains will be examined by Hayley Foster.

D.15.8 Conservation will be undertaken by Ipswich and Colchester Museums / Karen Barker (Antiquities Conservator) and will be undertaken in accordance with guidelines issued by the Institute for Conservation (ICON).

D.15.9 In the event that OA's in-house specialists are unable to undertake the work within the time constraints of the project, or if other remains are found, specialists from the list in the Appendix will be approached to carry out analysis.

D.16 Other matters

Monitoring

D.16.1 The SCCAS will be informed appropriately of dates and arrangements to allow for adequate monitoring of the works.

D.16.2 During the excavation, representatives of the client, OA East and the SCCAS will meet on site to monitor the excavations, discuss progress and findings to date, and excavation strategies to be followed

Insurance

D.16.3 OA East is covered by Public and Employer's Liability Insurance. The underwriting company is Lloyds Underwriters, policy number CC004337. Details of the policy can be supplied on request to the Oxford Archaeology East office.

Chartered Institute for Archaeologists

D.16.4 Oxford Archaeology is a Registered Organisation with the Chartered Institute for Archaeologists (CIfA), and is bound by CIfA By-Laws, Standards, and Policy.

Services, Public Rights of Way, Tree Preservation Orders etc.

D.16.5 The client will inform the project manager of any live or disused cables, gas pipes, water pipes or other services that may be affected by the proposed excavations before the commencement of fieldwork. Hidden cables/services should be clearly identified and marked where necessary. If there are overhead cables on the site or in the approachways, a survey must be completed by the relevant authority before plant is taken onto site.

D.16.6 The client will likewise inform the project manager of any public rights of way or permissive paths on or near the land which might affect or be affected by the work.

D.16.7 The client will inform the Project Manager if the site is a Scheduled Ancient Monument, Site of Special Scientific Interest (SSSI), or any other type of designated site. The client will also inform the project manager of any trees subject to Tree Preservation Orders, protected hedgerows, protected wildlife, nesting birds, or areas of ecological significance within the site or on its boundaries.

Site Security

D.16.8 Unless previously agreed with the Project Manager in writing, this specification and any associated statement of costs is based on the assumption that the site will be sufficiently secure for archaeological work to commence. All security requirements, including fencing, padlocks for gates etc. are the responsibility of the client.

Access

D.16.9 The client will secure access to the site for archaeological personnel and plant, and obtain the necessary permissions from owners and tenants to place a mobile office and portable toilet on or near to the site. Any costs incurred to secure access, or incurred as a result of withholding of access will not be Oxford Archaeology's responsibility. The costs of any delays as a result of withheld access will be passed on to the client in addition to the project costs already specified.

Site Preparation

D.16.10 The client is responsible for clearing the site and preparing it so as to allow archaeological work to take place without further preparatory works, and any cost statement accompanying or associated with this specification is offered on this basis. Unless previously agreed in writing, the costs of any preparatory work required, including tree felling and removal, scrub or undergrowth clearance, removal of concrete or hard standing, demolition of buildings or sheds, or removal of excessive overburden, refuse or dumped material, will be charged to the client, in addition to any costs for archaeological evaluation already agreed.

Site offices and welfare

D.16.11 All site facilities – including welfare facilities, tool stores, mess huts, and site offices – will be positioned to minimise disruption to other site users, and to minimise impact on the environment (including buried archaeology).

Backfilling/Reinstatement

D.16.12 Backfilling – but not specialist reinstatement – of trenches is included in the cost unless otherwise agreed with the client. Backfilling will only take place with the approval of the SCCAS.

Health and Safety, Risk Assessments

D.16.13 A risk assessment and method statement (RAMS) covering all activities to be carried out during the lifetime of the project will be prepared before work commences, and sent to the SCCAS. The risk assessment will conform to the requirements of health and safety legislation and regulations, and will draw on OA East's activity-specific risk assessment literature.

D.16.14 All aspects of the project, both in the field and in the office will be conducted according to OA East's Health and Safety Policy, Oxford Archaeology Ltd's Health and Safety Policy, and Health and Safety in Field Archaeology (J.L. Allen and A. St John-Holt, 1997). A copy of OA East's Health and Safety Policy can be supplied on request.

D.17 Consultant specialists

NAME	SPECIALISM	ORGANISATION
Allen, Leigh	Worked bone, CBM, medieval metalwork	Oxford Archaeology
Allen, Martin	Medieval coins	Fitzwilliam Museum
Anderson, Sue	HSR, pottery and CBM	Suffolk County Council
Bayliss, Alex	C14	English Heritage
Biddulph, Edward	Roman pottery	Oxford Archaeology
Billington, Laurence	Lithics	Oxford Archaeology
Bishop, Barry	Lithics	Freelance
Blinkhorn, Paul	Iron Age, Anglo-Saxon and medieval pottery	Freelance
Boardman, Sheila	Plant macrofossils, charcoal	Oxford Archaeology
Bonsall, Sandra	Plant macrofossils; pollen preparations	Oxford Archaeology
Booth, Paul	Roman pottery and coins	Oxford Archaeology
Boreham, Steve	Pollen and soils/ geology	Cambridge University
Brown, Lisa	Prehistoric pottery	Oxford Archaeology
Cane, Jon	illustration & reconstruction artist	Freelance
Champness, Carl	Snails, geoarchaeology	Oxford Archaeology
Cotter, John	Medieval/post-Medieval finds, pottery, CBM	Oxford Archaeology
Crummy, Nina	Small Find Assemblages	Freelance
Cowgill, Jane	Slag/metalworking residues	Freelance
Dickson, Anthony	Worked Flint	Oxford Archaeology
Dodwell, Natasha	Osteologist	Oxford Archaeologist
Donelly, Mike	Flint	Oxford Archaeology
Doonan, Roger	Slags, metallurgy	

NAME	SPECIALISM	ORGANISATION
Druce, Denise	Pollen, charred plants, charcoal/wood identification, sediment coring and interpretation	Oxford Archaeology
Drury, Paul	CBM (specialised)	Freelance
Evans, Jerry	Roman pottery	Freelance
Fletcher, Carole	Medieval pot, glass, small finds	Oxford Archaeology
Fosberry, Rachel	Charred plant remains	Oxford Archaeology
Foster, Haley	Zooarchaeologist	Oxford Archaeology
Fryer, Val	Molluscs/environmental	Freelance
Gale, Rowena	Charcoal ID	Freelance
Geake, Helen	Small finds	Freelance
Gleed-Owen, Chris	Herpetologist	
Goffin, Richenda	Post-Roman pottery, building materials, painted wall plaster	Suffolk CC
Hamilton-Dyer, Sheila	Fish and small animal bones	
Howard-Davis, Chris	Small finds, Mesolithic flint, RB coarse pottery, leather, wooden objects and wood technology;	Oxford Archaeology
Hunter, Kath	Archaeobotany (charred, waterlogged and mineralised plant remains)	Oxford Archaeology
Jones, Jenny	Conservation	ASUD, Durham University
King, David	Window glass & lead	
Locker, Alison	Fishbone	
Loe, Louise	Osteologist	Oxford Archaeology
Lyons, Alice	Late Iron Age/Roman pottery	Oxford Archaeology
Macaulay, Stephen	Roman pottery	Oxford Archaeology
Masters, Pete	geophysics	Cranfield University
Middleton, Paul	Phosphates/garden history	Peterborough Regional College
Mould, Quita	Ironwork, leather	
Nicholson, Rebecca	Fish and small mammal and bird bones, shell	Oxford Archaeology
Palmer, Rog	Aerial photographs	Air Photo Services
Percival, Sarah	Prehistoric pottery, quern stones	Freelance
Poole, Cynthia	Multi-period finds, CBM, fired clay	Oxford Archaeology
Popescu, Adrian	Roman coins	Fitzwilliam Museum
Rackham, James	Faunal and plant remains, can arrange pollen analysis	
Riddler, Ian	Anglo-Saxon bone objects & related artefact types	Freelance
Robinson, Mark	Insects	
Rowland, Steve	Faunal and human bone	Oxford Archaeology
Rutherford, Mairead	Pollen, non-pollen palynomorphs, dinoflagellate cysts, diatoms	Oxford Archaeology

NAME	SPECIALISM	ORGANISATION
Samuels, Mark	Architectural stonework	Freelance
Scaife, Rob	Pollen	
Scott, Ian	Roman, Medieval, post-medieval finds, metalwork, glass	Oxford Archaeology
Sealey, Paul	Iron Age pottery	Freelance
Shafrey, Ruth	Worked stone, cbm	Oxford Archaeology
Smith, Ian	Animal Bone	Oxford Archaeology
Spoerry, Paul	Medieval pottery	Oxford Archaeology
Stafford, Liz	Snails	Oxford Archaeology
Strid, Lena	Animal bone	Oxford Archaeology
Tyers, Ian	Dendrochronology	
Ui Choileain, Zoe	Human bone	Oxford Archaeology
Vickers, Kim	Insects	Sheffield University
Wadeson, Stephen	Samian, Roman glass	Oxford Archaeology
Walker, Helen	Medieval Pottery in the Essex area	
Way, Twigs	Medieval landscape and garden history	Freelance
Webb, Helen	Osteologist	Oxford Archaeology
Willis, Steve	Iron Age pottery	
Young, Jane	Medieval Pottery in the Lincolnshire area	
Zant, John	Coins	Oxford Archaeology

Radiocarbon dating is normally undertaken for Oxford Archaeology East by SUERC and by the Oxford University Accelerator Laboratory.

Geophysical prospection is normally undertaken by Magnitude Surveys Ltd.

APPENDIX E BIBLIOGRAPHY

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APPENDIX F OASIS REPORT FORM

Project Details

OASIS Number	oxfordar3-335169
Project Name	Land West of Ixworth Road, Thurston, Suffolk

Start of Fieldwork	07-01-2019	End of Fieldwork	08-01-2019
Previous Work	Yes	Future Work	No

Project Reference Codes

Site Code	THS030	Planning App. No.	4963/16
HER Number	THS030	Related Numbers	oxfordar3-322782

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

Techniques used (tick all that apply)

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

Monument	Period
Pit	Early Bronze Age (- 2500 to - 1500)
	Choose an item.
	Choose an item.

Object	Period
Pottery	Early Bronze Age (- 2500 to - 1500)
Flint	Neolithic (- 4000 to - 2200)
	Choose an item.

Project Location

County	Suffolk
District	Mid Suffolk
Parish	Thurston
HER office	Suffolk
Size of Study Area	20m by 20m
National Grid Ref	TL 91667 66080

Address (including Postcode)

Land west of Ixworth Road
Thurston
Suffolk
IP31 3QE

Project Originators

Organisation	Oxford Archaeology East
Project Brief Originator	Rachael Abraham (Suffolk CC)
Project Design Originator	Louise Moan (OA East)
Project Manager	Louise Moan (OA East)
Project Supervisor	Emily Abrehart (OA East)

Project Archives

	Location	ID
Physical Archive (Finds)	Suffolk county stores	THS030
Digital Archive	Suffolk county stores	THS030
Paper Archive	Suffolk county stores	THS030

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

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

Further Comments

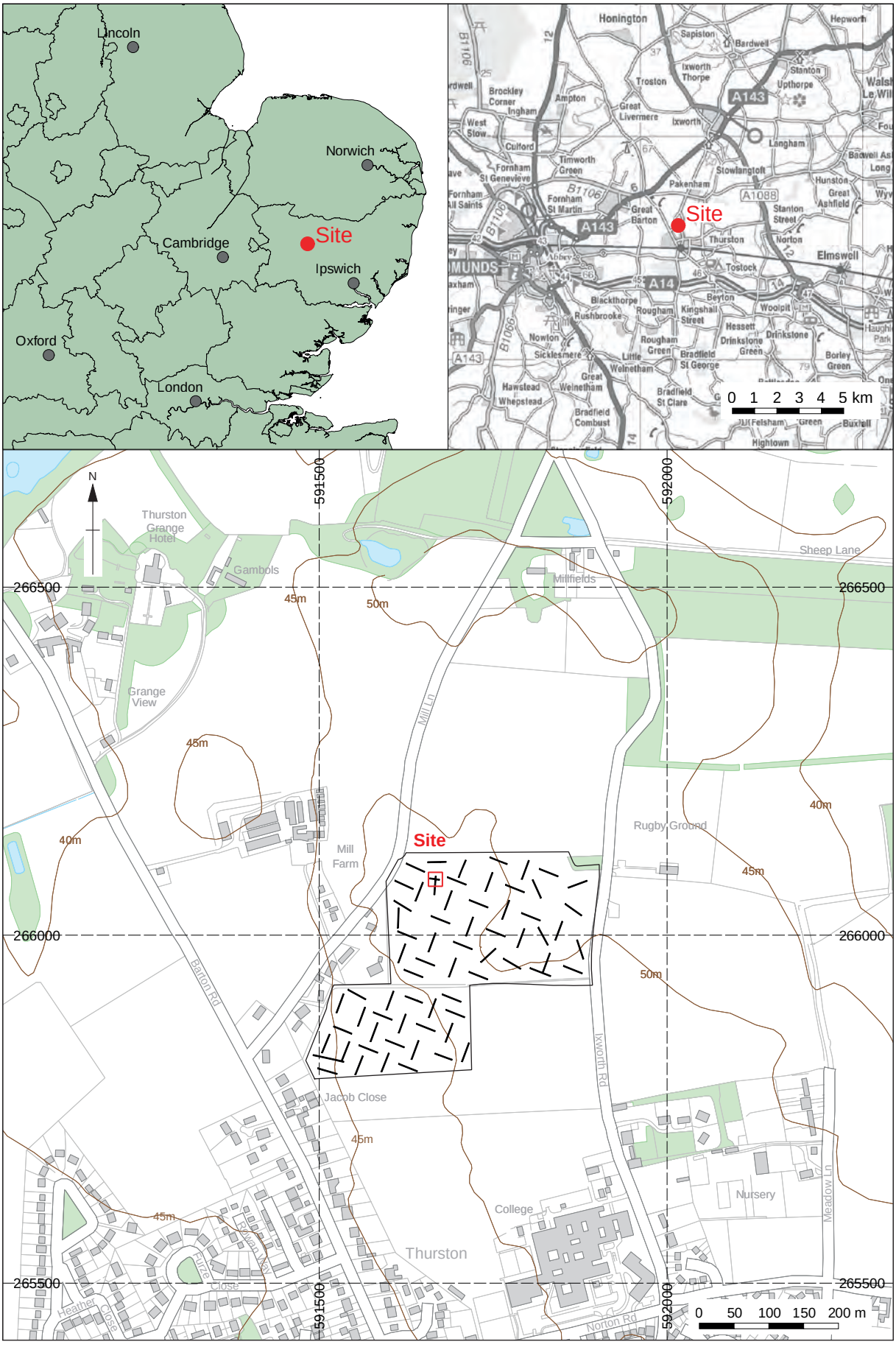

Figure 1: Site location showing excavation area (red) with 2018 evaluation trenches and development area (black)

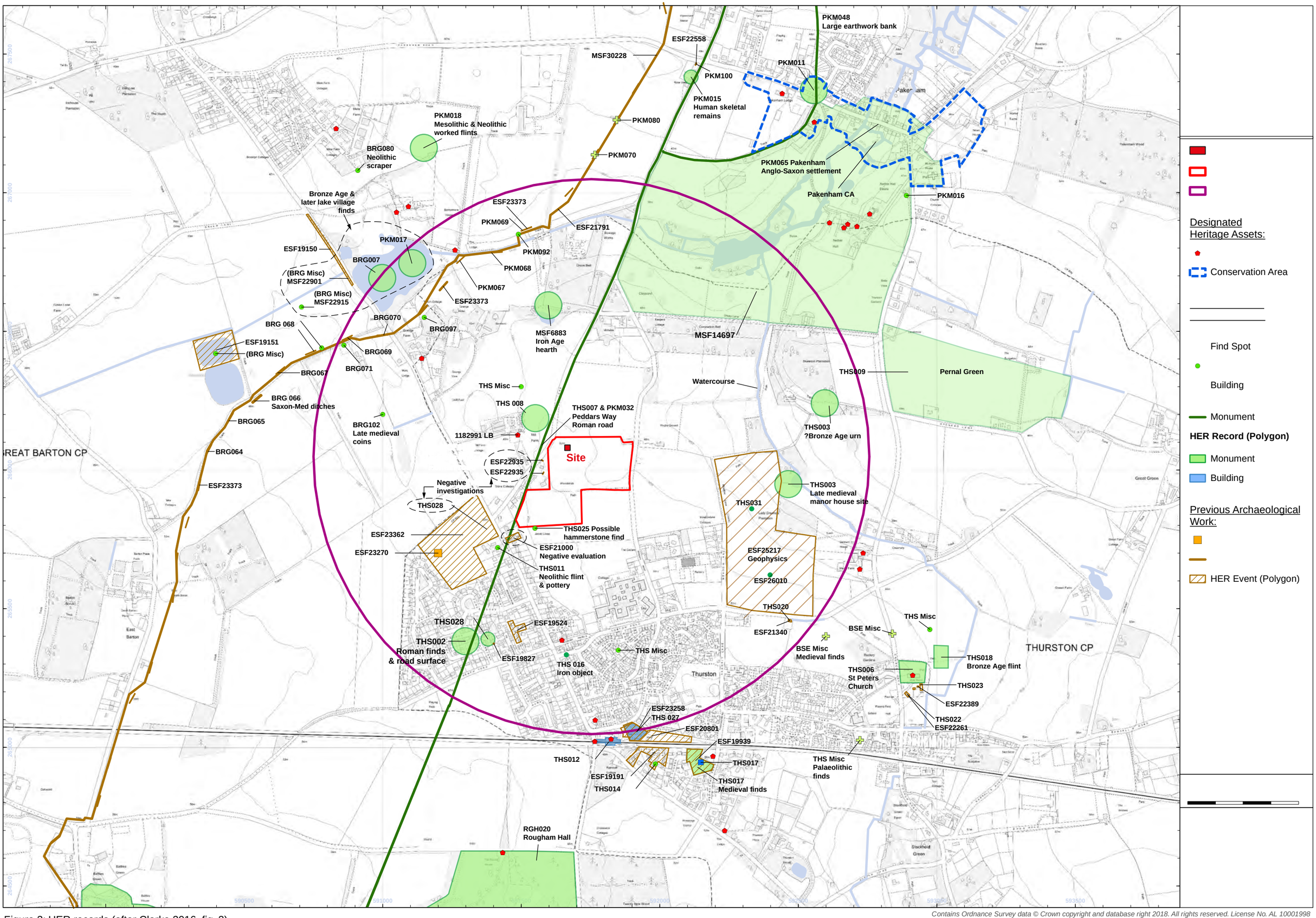

Figure 2: HER records (after Clarke 2016, fig. 2)

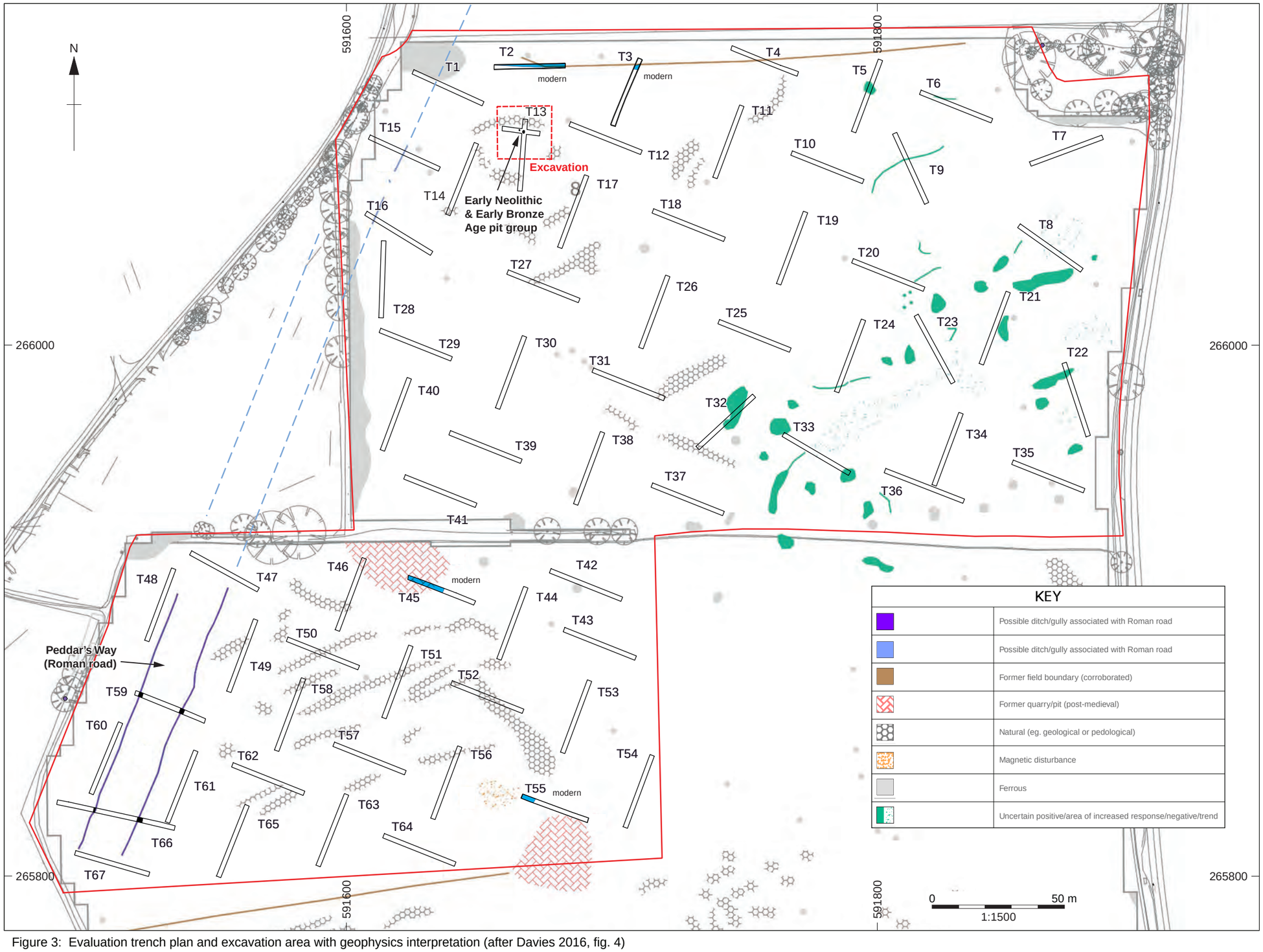

Figure 3: Evaluation trench plan and excavation area with geophysics interpretation (after Davies 2016, fig. 4)

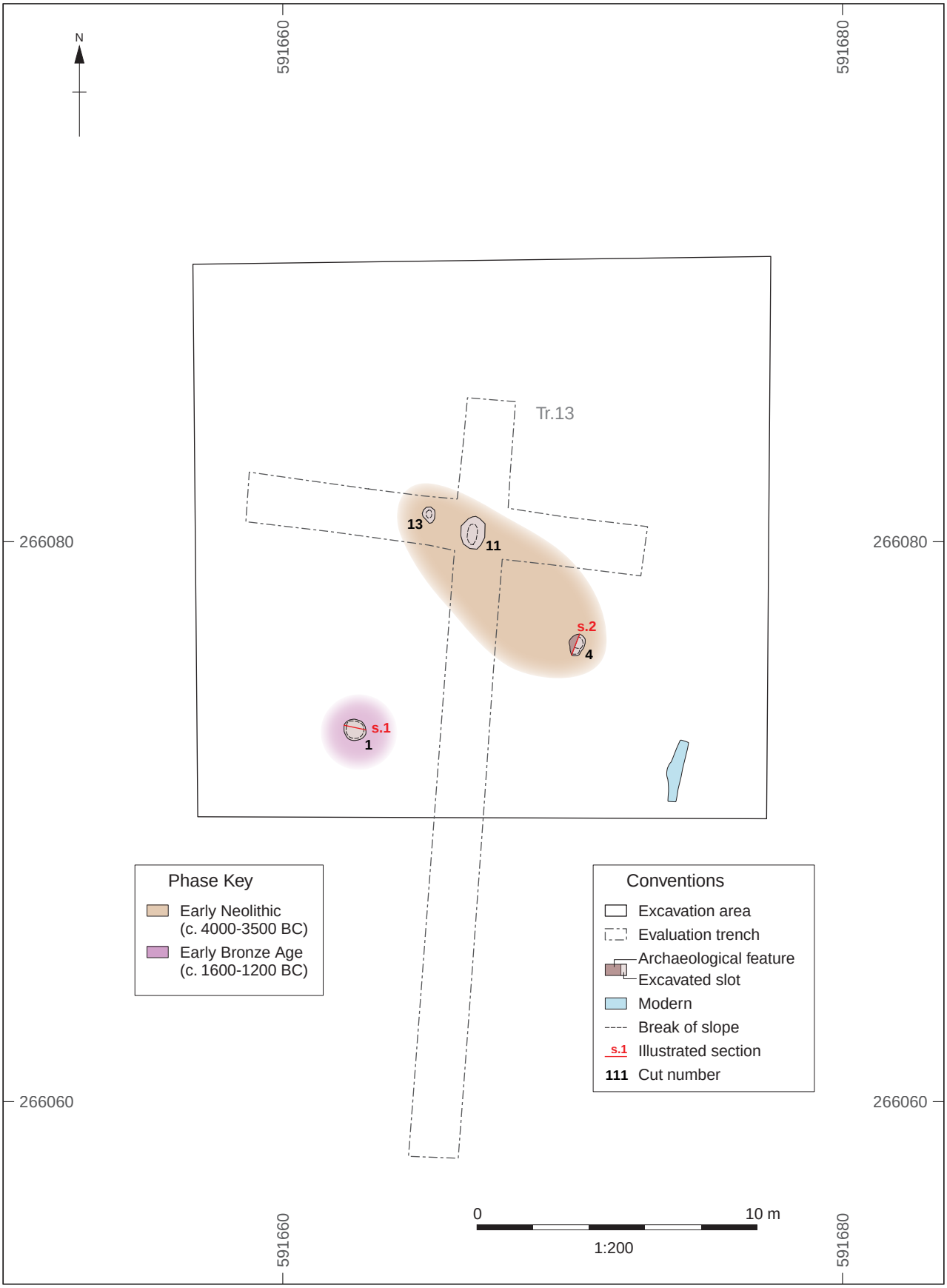

Figure 4: Site plan

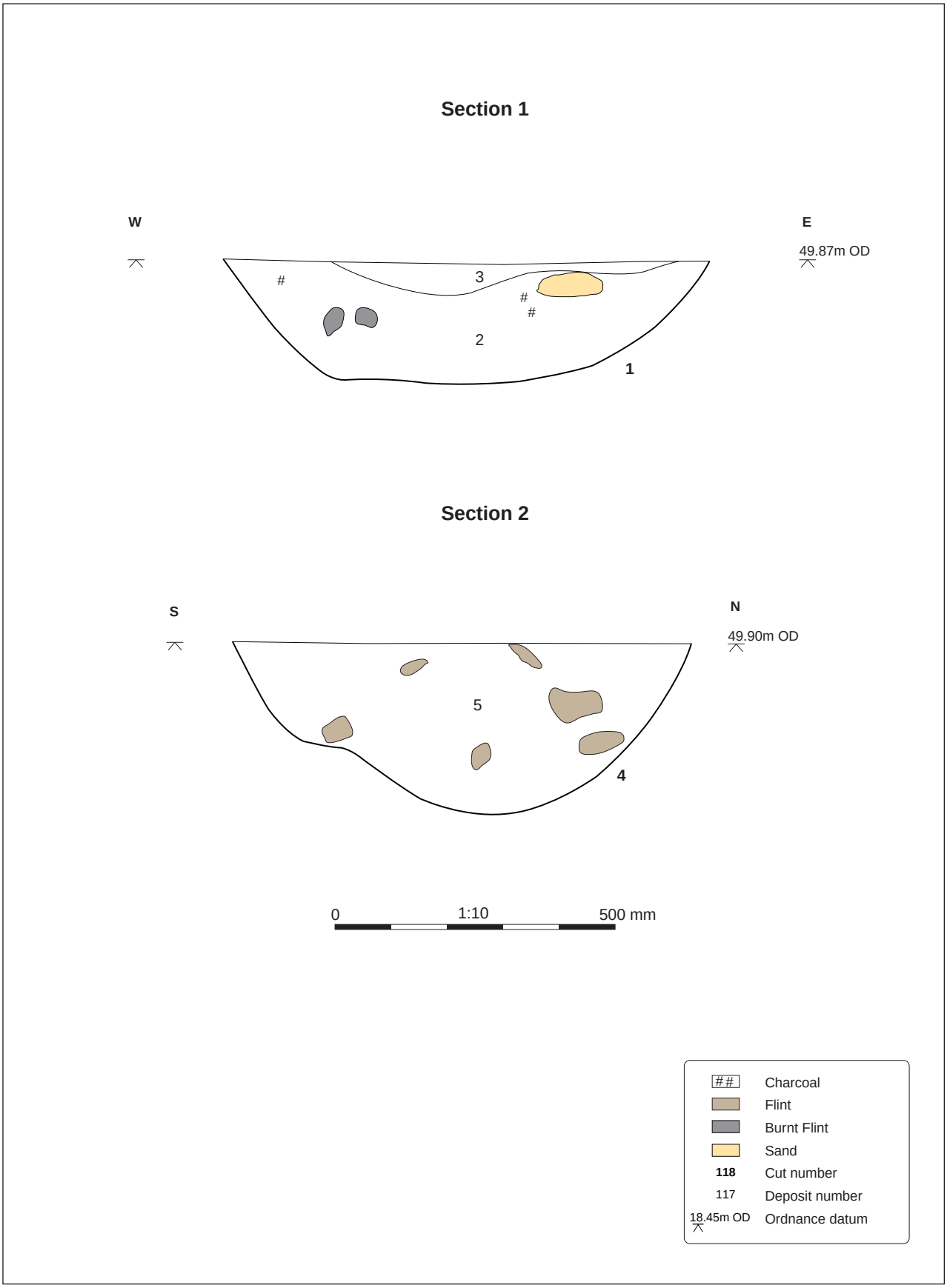

Figure 5: Sections

Plate 1: Pit **1**, looking north

Plate 2: Pit **4**, looking west

Plate 3: Excavation area with pit **1** fully excavated, looking north-east

Plate 4: Excavation area, looking south-west

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