

# Archaeological evaluation on land east of Newbarn Road, Great Tey, Essex, CO6 1AD

October 2020



**by Dr Elliott Hicks and Laura Pooley**

figures by Chris Lister, Ben Holloway, Emma Holloway and Laura Pooley

fieldwork by Ben Holloway with Alec Wade, Alexander Smith and Bronagh Quinn

**commissioned by Brad Davies (Mersea Homes)**

NGR: TL 8883 2599 (centre)  
Planning ref.: 200399  
CAT project ref.: 20/07k  
ECC code: ECC4564  
OASIS ref.: colchest3-404834



## **Colchester Archaeological Trust**

Roman Circus House,  
Roman Circus Walk,  
Colchester,  
Essex, CO2 7GZ

tel.: 01206 501785  
email: [eh2@catuk.org](mailto:eh2@catuk.org)

**CAT Report 1608**  
October 2020

## Contents

1	Summary	1
2	Introduction	1
3	Archaeological background	1
4	Aim	2
5	Results	3
6	Finds	7
7	Environmental samples	10
8	Discussion	11
9	Acknowledgements	11
10	References	11
11	Abbreviations and glossary	12
12	Contents of archive	13
13	Archive deposition	13
Appendix 1	Context list	14
Appendix 2	Pottery list	16
Appendix 3	CBM list	17

Figures after p17

CAT wsi

OASIS summary sheet

Geophysical Survey Report by Magnitude Surveys

## List of photographs, tables and figures

Cover: site shot

Photograph 1	T2 trench shot, looking east	3
Photograph 2	T4 trench shot, looking east	4
Photograph 3	T11 trench shot, looking north	6
Table 1	Details on the main types of ceramics and pottery	7
Table 2	Quantities of pottery and CBM from specific features	7
Table 3	Details on the prehistoric pottery fabrics represented in the assemblage	8
Table 4	Quantities of pottery, CBM and baked clay from specific features	8
Table 5	Approximate dates for the individual features and contexts	9
Table 6	Flints by context	10
Table 7	Animal bone by context	10
Fig 1	Site location	
Fig 2	Phased results	
Fig 3	Results in relation to the geophysical survey (Magnitude Surveys 2020)	
Fig 4	Trench plans	
Fig 5	Trench plans	
Fig 6	Sections	
Fig 7	Sections	
Fig 8	Sections	

## 1 Summary

*An archaeological evaluation (twelve trial-trenches) was carried out on land east of Newbarn Road, Great Tey, Essex in advance of the construction of thirty new dwellings with associated groundworks. The development site lies to the north of a Roman villa and to the northwest of sites of Bronze Age activity on land east of Brook Road and at Teybrook Farm. Forty features – eleven ditches, ten pits, fourteen postholes, a possible quarry pit, a gully, a gully or natural feature, a natural feature and a tree-throw – were excavated. The majority of datable features had their origins in the Bronze Age, including a series of postholes indicating the presence of at least one structure on the site during this period. Some evidence of Roman and medieval activity was also uncovered.*

## 2 Introduction (Fig 1)

This is the report for an archaeological evaluation on land east of Newbarn Road, Great Tey, Essex which was carried out from 7th to 12th October 2020. The work was commissioned by Brad Davies of Mersea Homes in advance of the construction of thirty new dwellings with associated parking facilities, landscaping, services, an access road and an area of public open space, and was carried out by Colchester Archaeological Trust (CAT).

As the site lies within an area highlighted by the EHER/CHER as having a high potential for archaeological deposits, an archaeological condition was recommended by the Colchester Borough Council Archaeological Advisor (CBCAA). This recommendation was for an archaeological evaluation by trial-trenching and was based on the guidance given in the *National Planning Policy Framework* (MHCLG 2019).

All archaeological work was carried out in accordance with a *Brief for a Trial Trenched Evaluation*, detailing the required archaeological work, written by Dr Jess Tipper (CBCAA 2020), and a written scheme of investigation (WSI) prepared by CAT in response to the brief and agreed with ECCPS (CAT 2020).

In addition to the brief and WSI, all fieldwork and reporting was done in accordance with English Heritage's *Management of Research Projects in the Historic Environment* (MoRPHE) (English Heritage 2006), and with *Standards for field archaeology in the East of England* (EAA 14 and 24). This report mirrors standards and practices contained in the Institute for Archaeologists' *Standard and guidance for archaeological field evaluation* (CIfA 2014a) and *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014b).

## 3 Archaeological background

The following archaeological background draws on the Colchester Archaeological Trust report archive and the Colchester Historic Environment Record (CHER) accessed via the Colchester Heritage Explorer ([www.colchesterheritage.co.uk](http://www.colchesterheritage.co.uk)):

The development site lies to the west of the historic centre of Great Tey. It is located within the southeastern corner of a much larger area highlighted on the CHER as containing 'cropmarks of former field boundaries', most of which appear on the first edition OS map of 1874 (CHER MCC8648). Thirty-seven listed buildings are located within a 500m radius of the development site, most of which range in date from the 15th to 19th centuries. The church of St Barnabas to the southeast (MCC4249, MCC7018-21) is dated to the 12th century (MCC7019), but parts of the church tower are thought to pre-date the Norman Conquest. The church also includes a large quantity of Roman brick and tile, especially within the tower (MCC7018), which is thought to have come from the Roman villa near Warren Farm.

Approximately 600m SSE of the development site is the site of a Roman villa (Scheduled Ancient Monument 1013516). In 1953, deep ploughing between the farmhouse and

Roman River tore up mortar, painted wall plaster and tiles, mostly hollow flue tiles (ECC3437/MCC7023). Excavations at the site in the mid 1950s revealed a corridor paved with red tesserae, thought to be part of a winged corridor (ECC3431), and further excavations carried out in 1971 uncovered part of a masonry building dating from the later 2nd to the mid/late 4th century (ECC3089). Further investigation distinguished at least four phases of occupation at the site, including evidence for undated timber buildings.

Little archaeological work has been carried out in the immediate vicinity of the development site. In 1992, CAT monitored the installation of a water pipe to the south and east (CAT Report 1000, 92/10b and 92/11b). Finds recovered included isolated fragments of primarily pottery and tile, but a large undated ditch, some 3.9m wide, was revealed in the area around Tey Brook Piggeries.

During 2003-5, excavations were carried out by the Colchester Archaeological Group at Teybrook Farm, approximately 1km southeast of the site (Pooley & Brooks, 2020). The earliest evidence of human activity recorded was a large number of pieces of residual and unstratified worked flint, dating to the Mesolithic, Neolithic and Bronze Age periods. A single Neolithic pit/scoop was also excavated. The most significant discovery was a ring-ditch (barrow) within which were fourteen cremation burials. Eleven of the burials were in urns of the Middle Bronze Age Ardleigh-style, a regional variant of the broad Deverel-Rimbury pottery tradition found in northeast Essex and southeast Suffolk. The cremated remains of eight individuals survived. Both males and females were represented, ranging in age from 30-40 years to a neonate/infant 0-1 years old. An Anglo-Saxon ditch, possibly an estate boundary, had later been cut through the ring-ditch. Most of the pottery recovered from this ditch was of 6th- to early 8th-century date and indicated the presence of an Anglo-Saxon settlement in the vicinity.

An evaluation followed by excavation was carried out by CAT on land east of Brook Road, Great Tey earlier this year. Five features were recorded: a Middle Bronze Age pit, a Middle Bronze Age ditch, a possible pit, a pit/tree-throw and a tree-throw, the latter of which were undatable. These deposits were thought to represent an extension of activity uncovered at Teybrook Farm (ECC4560, CAT Reports 1508 and 1597).

As part of the initial pre-planning application, CAT completed an archaeological desk-based assessment (DBA) of the proposed development site (CAT Report 1548). The report concluded that the potential for previously unknown archaeological remains on the site was moderate to high.

Prior to this evaluation a geophysical survey was carried out in September 2020 on the development site to help inform the position of the trial-trenches. A fluxgate gradiometer survey detected anomalies of an agricultural origin including an unmapped former field boundary, possible drainage ditches and modern ploughing (Magnitude Surveys 2020). No anomalies suggestive of significant archaeological activity were identified. Anomalies of undetermined origin could be archaeological, but could equally relate to agricultural or modern processes (Magnitude Surveys 2020). The Geophysical Survey Report (Magnitude Surveys 2020) is appended to the end of this report

#### **4 Aim**

The aims of the archaeological evaluation were to record the extent of any surviving archaeological deposits and to assess the archaeological potential of the site to allow the CBCAA to determine if further investigation is required.



## 5 Results (Figs 2-8)

Twelve trial-trenches, 30m long by 1.8m wide, were machine-excavated under the supervision of a CAT archaeologist. They were cut through modern topsoil (L1, 0.16-0.33m thick) and subsoil (L2, c 0.13-0.44m thick) onto natural (L3, encountered at a depth of 0.38-0.65m below current ground level). Sondages were excavated in trenches T2, T3, T5, T6, T7 and T12 to confirm the identification of L3 as natural.

A phased plan of the site is shown on Fig 2, which has been overlaid onto the geophysical survey on Fig 3. For detailed trench plans see Figs 4-5 and for section drawings see Figs 6-8.

### Trench 1 (T1)

Ditch F1 passed through the southern half of the trench on a ESE-WNW alignment. It was 1.49m wide and 0.38m deep, and produced a single fragment of Roman brick (along with a piece of residual worked flint).

Postholes F2 and F3 lay to the north of F1. They were 0.26m wide and 0.1m deep and 0.25m wide and 0.06m deep, respectively. Pit F4 lay at the northern end of the trench. The feature extended beyond the limit of excavation (LOE) but its exposed extent was 0.59m wide and 0.25m deep. No dating evidence was recovered from these features.

Post-glacial natural feature F5 was also excavated and a modern land drain between F4 and F5 was one of the agricultural features recorded on the geophysical survey.

### Trench 2 (T2)

Ditch F6 passed through the centre of the trench on a north/south alignment and was 1.55m wide and 0.57m deep. A flint flake from the ditch suggests that it could be of prehistoric date.

Undatable pits F19, F20 and F21 lay to the west of F6. They were 0.66-1.52m wide and 0.32-0.6m deep.



Photograph 1 T2 trench shot – looking east

### Trench 3 (T3)

Undatable ditch F8 cut across the trench at its western end on an east/west alignment. The feature extended beyond the LOE but it was over 1.29m wide and measured 0.35m

deep. It was probably one of the 'undetermined' anomalies recorded in the geophysical survey, although another of these anomalies slightly further to the west was not identified during the evaluation.

Undatable pits F25 and F26 were also excavated. Both features extended beyond the LOE but their exposed extents were 0.55 and 0.11m deep and 0.75m wide and 0.1m deep, respectively.

Anomaly 1c on the geophysical survey was not detected during the evaluation.

#### **Trench 4 (T4)**

Ditch F7 passed through the western half of the trench. Oriented north/south, it was 0.75m wide and 0.26m deep, and produced a substantial quantity of Bronze Age pottery (60 sherds). This ditch was recorded on the geophysical survey.

Postholes F9, F10, F11, F12, F13, F14, F15, F16, F17, F18, F24 and F39 lay scattered along the length of the trench ranging from 0.2m to 0.45m diameter and 0.07 to 0.28m deep. Postholes F11, F12, F13, F14, F15, F16 and F18 contained pottery of a Bronze Age date, while F10, F17 and F39 produced pottery dating to the Late Bronze Age or Early Iron Age. Postholes F9 and F24 yielded no dating evidence.



**Photograph 2** T4 trench shot – looking east

#### **Trench 5 (T5)**

Ditch F33 in the southern half of the trench was initially aligned NNW to SSE before turning 90° to a NE/SW alignment. It was 0.63-0.84m wide and 0.12-0.16m deep, and produced a single fragment of burnt Roman tile. The ditch does broadly correspond to an

'agricultural' anomaly on the geophysics survey, although the survey failed to plot the 90° return.

A further ditch, F22, passed through the northern end of the trench on a NW-SE alignment. It was 0.48m wide and 0.13m deep, and produced no dating evidence. It is in the position of an 'agricultural' anomaly on the geophysical survey, but the alignment of the two features does not match.

Undatable pit F23 extended beyond the LOE, as exposed it was 0.85m wide and 0.27m deep.

#### **Trench 6 (T6)**

A large deep feature, provisionally identified as a quarry pit, was uncovered at the southern end of the trench. The size and shape of F35 could not be determined but as excavated in had a gently sloping edge (recorded to a depth of 0.9m) which then significant increased in depth towards the end of the trench where it was augured to a maximum depth of c 1.49m below current ground level. A small fragment of Roman pottery and brick/tile were recovered from the pit fill along with residual prehistoric flints. Like F1 (T1) and F33 (T5) this feature could potentially represent Roman activity on the development site. A 'undetermined' anomaly on the geophysics does align with the edge of this pit and are possibly part of the same feature.

Undatable gully F40 extended into the northern end of the trench on a NNW-SSE alignment before terminating. It was 0.35m wide and 0.17m deep. It may however, have been natural in origin.

A large agricultural anomaly 1b as identified on the geophysical survey was not identified in Trench 6 or 7 and was possibly a shallow drainage feature.

#### **Trench 7 (T7)**

Another large pit, F31, was uncovered at the northern end of the trench. The full dimensions of the feature could not be ascertained but was at least 0.25m deep. A single sherd of medieval pottery was recovered from the backfill, but at only 2g this could be a residual sherd from a later feature.

A large agricultural anomaly 1b as identified on the geophysical survey was not identified in Trench 6 or 7 and was possibly a shallow drainage feature.

#### **Trench 8 (T8)**

Undatable ditch F27 passed through the centre of the trench on a north/south alignment. It was 1.17m wide and 0.35m deep.

Tree-throw F36 was also excavated.

#### **Trench 9 (T9)**

Two undatable ditches, F29 and F30, were uncovered at the northern end of trench. F29 was 0.88m wide and 0.19m deep, and was aligned WNW-ESE; F30 was 1.49m wide and 0.13m deep, and was aligned NNW-SSE.

A further undatable ditch, F28, at the southern end of the trench was on a probably north/south alignment and terminated within the trench. It was 0.67m wide and 0.11m deep.

Two 'undetermined' anomalies, 1c, from the geophysical survey cross this trench. Ditch F30 is located in the position of the northern-most anomaly but as plotted the two features are not on the same alignment. Ditch F28 is almost certainly the southern-most anomaly, which suggests that the ditch does continue to the south.

### **Trench 10 (T10)**

Undatable ditch F38 was 0.55m wide, 0.23m deep and was oriented NE-SW. The ditch cut undated pit F37 which extended beyond LOE, but its exposed dimensions were 1.15m wide and 0.17m deep.

A modern land in this trench is on the same alignment as 'agricultural' feature 1a as recorded on the geophysical survey.

### **Trench 11 (T11)**

Ditch F41 ran on a north/south alignment along the eastern side of the trench. The feature extended beyond LOE so its width could not be determine, but it was 0.3m deep. A flint flake from the ditch could be of prehistoric date but is more likely to be of natural origin. The ditch does not appear on the geophysical survey. There is a much smaller anomaly plotted on the northern edge of the ditch, but the two do not appear to be part of the same feature.

A modern land in this trench is on the same alignment as 'agricultural' feature 1a as recorded on the geophysical survey.



**Photograph 3** T11 trench shot – looking north

### **Trench 12 (T12)**

Undatable gully F34 was oriented NW-SE and was 0.68m wide and 0.13m deep. Although on the same alignment, it does not appear to be the same 'undetermined' anomaly plotted on the geophysical survey 5m further to the SW.



## 6 Finds

### 6.1 Pottery and ceramic building material

by Dr Matthew Loughton

The evaluation uncovered 113 sherds of pottery and ceramic building material (henceforth CBM) with a weight of 1.26kg and 0.22 vessels (Table 1). Pottery and CBM was recovered from fifteen features although most of the material came from ditch F7 and posthole F10 (Table 2).

Ceramic material	No.	Weight (g)	MSW (g)	Rim EVE
Pottery	96	327	3	0.22
CBM	17	931	55	-
<b>All</b>	<b>113</b>	<b>1,258</b>	<b>11</b>	<b>0.22</b>

**Table 1** Details on the main types of ceramics and pottery

Context	Description	No.	Weight (g)	MSW (g)	EVE
F1	Ditch	1	64	64	0.00
F7	Ditch	61	209	3	0.12
F10	Posthole	10	26	3	0.05
F11	Posthole	1	1	1	0.00
F12	Posthole	3	4	1	0.00
F13	Posthole	8	22	3	0.00
F14	Posthole	1	18	18	0.00
F15	Posthole	1	1	1	0.00
F16	Posthole	4	11	3	0.00
F17	Posthole	1	2	2	0.00
F18	Posthole	15	29	2	0.00
F31	Pit	1	2	2	0.00
F33	Ditch	1	822	822	0.00
F35	?Quarry pit	2	29	15	0.00
F39	Posthole	3	18	6	0.05
<b>Total</b>		<b>113</b>	<b>1,258</b>	<b>11</b>	<b>0.22</b>

**Table 2** Quantities of pottery and CBM from specific features

#### Prehistoric pottery

There were 94 sherds of handmade prehistoric pottery with a weight of 314g, while the mean sherd weight (MSW) is only 4g (Table 3). The rim EVE is 0.22 (Table 3). The majority of prehistoric pottery is found in flint tempered (HMF) and flint and sand tempered fabrics (HMFS) with rare sand and flint tempered sherds (Table 3). Most of the fabrics are oxidized orange while some sherds have darker brown coloured surfaces. One small sherd from ditch F7 was comb decorated while another was decorated with finger/thumb vertical wipe marks. In contrast, the rarer handmade sand and flint tempered (HMSF) sherds are darker coloured (black) and finer.

Fabric Group	Description	No.	Weight (g)	MSW (g)	Rim	EVE
HMF	Hand made with flint	69	256	4	3	0.17
HMFS	Hand made with flint and sand	21	40	2	0	0.00
HMSF	Hand made with sand and flint	4	18	5	2	0.05
<b>Total</b>		<b>94</b>	<b>314</b>	<b>3</b>	<b>5</b>	<b>0.22</b>

**Table 3** Details on the prehistoric pottery fabrics represented in the assemblage

Sherds of prehistoric pottery were recovered from ten features (Table 4) although most of this material was recovered from ditch F7, including 0.12 vessels (rim EVE). Postholes F10, F11, F12, F13, F14, F15, F16, F17, F18 and F39 produced 34 sherds of prehistoric pottery with a weight of 107g and 0.10 vessels (EVE) (Table 4).

Context	Description	No.	Weight (g)	MSW (g)	Rim	EVE
F7	Linear	60	207	3	2	0.12
F10	Post hole	5	19	4	1	0.05
F11	Post hole	1	1	1	0	0.00
F12	Post hole	1	2	2	0	0.00
F13	Post hole	8	22	3	0	0.00
F14	Post hole	1	18	18	0	0.00
F15	Post hole	1	1	1	0	0.00
F16	Post hole	2	7	4	0	0.00
F17	Post hole	1	2	2	0	0.00
F18	Post hole	12	22	18	0	0.00
F39	Post hole	2	13	7	1	0.05
<b>Total</b>		<b>94</b>	<b>314</b>	<b>3</b>	<b>4</b>	<b>0.22</b>

**Table 4** Quantities of pottery, CBM and baked clay from specific features and contexts

There was very little in the way of diagnostic and decorated sherds to aid the dating of this material. Ditch F7 produced two small Bronze Age Bucket urns (EVE: 0.12) and/or small cup-sized vessels of Bucket urn form (Lavender 2007, 72-74 fig. 51 nos. 76, 79, 83). Posthole F39 contained a shouldered jar (EVE: 0.05) possibly of Late Bronze Age/Early Iron Age date. Finally, posthole F10 contained two vessels (EVE: 0.05) in a finer hand-made sand and flint tempered fabric (HMSF) including a small jar with a slightly everted rim possibly of Late Bronze Age/Early Iron Age or even Early Iron Age date.

#### Roman pottery

There was only one worn sherd of Roman coarse, principally locally-produced grey ware pottery with a weight of 11g which came from ?quarry pit F35.

#### Post-Roman pottery

There was one sherd of early medieval sandy ware pottery (fabric F13) with a weight of only 2g which came from the pit F31.

#### Ceramic building material (CBM)

There were seventeen sherds of CBM with a weight of 931g. Three sherds of Roman CBM with a weight of 904g, including pieces of brick and tile, were recovered from ditch F1, ditch F33 and ?quarry pit F35. The remaining CBM consists of fourteen sherds of baked clay with a weight of 27g which was recovered from ditch F7 and postholes F10, F12, F16, F18 and F39.



## Conclusion

Table 5 summarizes the dating evidence for the features and layers which produced dateable ceramic finds. Most of the features date to the Bronze Age although there is a small quantity of Late Bronze Age/Early Iron Age material and even possibly some Early Iron Age material. There were also three Roman features (F1, F33, F35) and one early medieval feature (F31).

Context	Feature type	Prehistoric	Roman	Post-Roman	CBM	Overall date approx.
F1	Ditch	HMF	-	-	RB	Roman
F7	Ditch	HMF HMFS	-	-	-	Bronze Age
F10	Posthole	HMF HMSF	-	-	-	Late Bronze Age/Early Iron Age or Early Iron Age?
F11	Posthole	HMF	-	-	-	Bronze Age
F12	Posthole	HMF	-	-	-	Bronze Age
F13	Posthole	HMF	-	-	-	Bronze Age
F14	Posthole	HMF	-	-	-	Bronze Age
F15	Posthole	HMF	-	-	-	Bronze Age
F16	Posthole	HMF	-	-	-	Bronze Age
F17	Posthole	HMFS	-	-	-	Late Bronze Age/ Early Iron Age?
F18	Posthole	HMF	-	-	-	Bronze Age
F31	Pit	-	-	F13	-	11th to early 13th century
F33	Ditch	-	-	-	RT	Roman
F35	?Quarry pit	-	GX	-	RBT	Roman
F39	Posthole	HMF	-	-	-	Late Bronze Age/ Early Iron Age?

**Table 5** Approximate dates for the individual features

## 6.2 Flints

*by Adam Wightman*

The lithic assemblage recovered during the trial-trenching evaluation comprised a total of thirteen worked flints (Table 6). They were recovered from a Roman ditch (F1), a Roman ?quarry pit (F35), a ?Neolithic/Bronze Age ditch (F6), a Bronze Age ditch (F7), two Bronze Age postholes (F13 and F15), a Late Bronze Age/Early Iron Age posthole (F39), and a ?Neolithic/Bronze Age ditch (F41). The worked flints from F1 and F35 are almost certainly residual in these contexts, whereas the other worked flints could be contemporary with the features from which they were recovered.

Two retouched flakes (both medium-sized hard-hammer flakes with retouched notches on one lateral edge), one core fragment and ten flakes (four broken) were recovered during the evaluation. None of the worked flints can be dated based on typological characteristics. Two of the flakes appear to have been detached with a soft hammer and there is evidence that the platform of the core was carefully prepared before the removal of one of the hard hammer flakes from its parent core. The other flakes are all hard hammer flakes or broken so that it is not possible to tell how they were detached. The relatively high incidence of use-wear or edge-damage on the pieces either suggests that the flakes were being used prior to being discarded, or that they became damaged since

being discarded (perhaps due to spending time in the topsoil before becoming incorporated in the fills of the features from which they were recovered).

The worked flints belong to a period of prehistoric activity on the site. However, It is not possible to date the worked flints either based on typological or technological characteristics. It is probable that they date to sometime in the later prehistoric period (Mesolithic-Bronze Age), probably the Neolithic or Bronze Age.

Context	Finds no.	Artefact type	Cortex %	Soft/hard hammer	modification
F1	1	retouched notch	45	hard	Small notch on right lateral – ?platform preparation
F6	2	broken flake	0		Distal end of flake
F7	<12>	core fragment	0		
		flake	35	hard	Use-wear/edge damage (or very poor retouched notch)
		broken flake	0		Crazed flint, broken proximal
		flake	15	?soft	Use-wear/edge-damage
F13	<6>	broken flake	0		
		broken flake	0		Use-wear/edge-damage
F15	7	flake	25	hard	?Use-wear/edge-damage
F35	12	flake	0	hard	
		retouched flake	0	hard	Retouched notch and retouched edges
F39	<11>	flake	35	soft	
F41	13	?flake	0	hard	Large, patinated ?flake or a natural piece (more likely)

**Table 6** Flints by context

### 6.3 Animal bone

by Alec Wade

The evaluation produced six pieces of animal bone (total weight 54g) from the fill of an undated ditch (F8) in trench three. The only identified species was cow.

Context	Finds no.	No. of pieces	Weight (g)	Species	Comments
F8 (T3, undated ditch)	3	1	52	Cow	Cow metatarsal (broken into five fragments during excavation due to its poor condition).
		5	2	Unidentified	Unidentifiable small fragments – possibly including pieces of mandible?
<b>Total</b>		<b>6</b>	<b>54</b>		

**Table 7** Animal bone by context

## 7 Environmental samples

Environmental samples were taken from features F7 (40L), F9 (10L), F10 (10L), F11 (10L), F12 (10L), F13 (20L), F15 (10L), F16 (10L), F17 (20L), F18 (20L), F24 (10L) and F39 (10L). They were all 100% processed by Colchester Archaeological Trust using a Siraf-type flotation device with the flot collected in a 300-micron mesh sieve. The samples from F9, F15 and F24 were devoid of material. The samples from F7, F10, F11, F12, F13, F16, F17, F18 and F39 produced pottery, ceramic building material and worked flint (see Section 6). None of the samples produced any environmental remains.

## 8 Discussion

Forty features were recorded during evaluation at this site: eleven ditches, ten pits, fourteen postholes, a possible quarry pit, a gully, a gully or natural feature, a natural feature and a tree-throw. These remains were fairly evenly distributed across the site with a concentration of Bronze Age features and finds in Trench T4. While assemblages of artefacts were recovered from a number of features, over half (twenty-one) did not produce any dating evidence.

The most significant features were a Bronze Age ditch and series of postholes located in trench T4. The majority of the postholes (x7) produced pottery sherds dating to the Bronze Age with three others producing pottery dated to the Late Bronze Age or Early Iron Age, perhaps suggesting a later Bronze Age date for this activity. While these features clearly represent the remains of at least one posted structure they are scattered throughout the trench and the layout cannot at this time be perceived. The flint flake in ditch F6 (T2) indicates that this feature is of a Neolithic or Bronze Age date, and given the discovery of Bronze Age activity in T4 could be related. Unfortunately, the flint flake from F41 (T11) could potentially be of natural origin, so it is uncertain if this ditch is similarly related to this phase of prehistoric activity or not.

The Bronze Age remains on this site form part of a broader historical landscape revealed by archaeological investigations around Great Tey. Recent excavations on land east of Brook Road, c 560m southeast, uncovered a pit and a ditch dating to the Bronze Age, while excavations conducted at Teybrook Farm, c 1km to the southeast, uncovered a ring-ditch containing fourteen Middle Bronze Age cremation burials. It is possible that the Bronze Age remains revealed during this investigation are related to those at these other sites.

These excavations also revealed evidence of Roman and medieval activity, albeit scarce. Ditch F1 (T1), ditch F33 (T5) and possible quarry pit F35 (T6) produced three fragments of Roman brick/tile along with one pottery sherd. Likewise, pit F31 (T7) yielded one sherd of pottery dating from the 11th to the early 13th century. Given the location of the Roman villa c 600m SSE of the development site, with the medieval centre of Great Tey surrounding St Barnabus Church c 410m to the southeast, this activity is perhaps not surprising.

The evaluation confirmed the identification of some of the 'agricultural' anomalies detected during the geophysical survey. However, one of these anomalies actually dates to the Bronze Age (F7 in T4) and another to the Roman period (F33 in T5). Similarly, some of the 'undetermined' anomalies also appear to be of archaeological origin (ie F6 in T2). However, some of the anomalies from the geophysical survey were not identified during the evaluation, suggesting some were perhaps natural or very shallow linears.

## 9 Acknowledgements

CAT thanks Brad Davies and Mersea Homes for commissioning and funding the work. The project was managed by C Lister, fieldwork was carried out by B Holloway with A Wade, A Smith and B Quinn. Figures are by C Lister, B Holloway, E Holloway and L Pooley. The project was monitored for Colchester Borough Council by Dr Jess Tipper and Dr Richard Hoggett.

## 10 References

Note: all CAT reports, except for DBAs, are available online in PDF format at <http://cat.essex.ac.uk>

Brown, D	2011	<i>Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation</i>
CAR 7	2000	<i>Colchester Archaeological Report 7: Post-Roman pottery from excavations in Colchester, 1971-85</i> , by J Cotter
CAR 10	1999	<i>Colchester Archaeological Report 10: Roman pottery from</i>

		<i>excavations in Colchester, 1971-86</i> , by R Symonds & S Wade
CAT	2020	<i>Health &amp; Safety Policy</i>
CAT Report 1000	Forth-coming	<i>A miscellany of unpublished Colchester and Essex sites: 1984-2000</i> (sites not published in any Colchester Archaeological Report, or in <i>the CAT Report Series from 1997</i> ), by H Brooks
CAT Report 1508	2020	<i>Archaeological evaluation on land east of Brook Road, Great Tey, Essex, CO6 1JG: January 2020</i> , by E Hicks
CAT Report 1548	2020	<i>Archaeological Desk-Based Assessment and Heritage Statement</i> , by Pip Parmenter
CAT Report 1597	2020	<i>Archaeological excavation on land east of Brook Road, Great Tey, Essex: July-August 2020</i> , by E Hicks
CBCAA	2020	<i>Brief for an Archaeological Evaluation at Land to east of Newbarn Road, Great Tey, Colchester</i> , by J Tipper
CIfA	2014a	<i>Standard and Guidance for archaeological evaluation</i>
CIfA	2014b	<i>Standard and guidance for the collection, documentation, conservation and research of archaeological materials</i>
Gurney, D	2003	<i>Standards for field archaeology in the East of England</i> . East Anglian Archaeology Occasional Papers 14 (EAA 14).
Historic England (HE)	2015	<i>Management of Research Projects in the Historic Environment (MoRPHE)</i>
Lavender, N	2007	'Prehistoric pottery', in M Germany (ed.), <i>Neolithic and Bronze Age Monuments and Middle Iron Age Settlement at Lodge Farm, St Osyth, Essex</i> , 62-77
Magnitude Surveys	2020	<i>Geophysical Survey Report of Land East of Newbarn Road, Great Tey, Essex</i> .
Medlycott, M	2011	<i>Research and archaeology revisited: A revised framework for the East of England</i> . East Anglian Archaeology Occasional Papers 24 (EAA 24)
MHCLG	2019	<i>National Planning Policy Framework</i> . Ministry of Housing, Communities and Local Government.
Pooley, L & Brooks, H	2020	<i>Middle Bronze Age burials and an Anglo-Saxon ditch: Excavations by the Colchester Archaeological Group in 2003-5 at Teybrook Farm, Brook Road, Great Tey, Essex, CO6 1JF</i> (unpublished grey literature report submitted to the CHER)
Schmid, E	1972	<i>Atlas of Animal Bones</i>

## 11 Abbreviations and glossary

Anglo-Saxon	period from c 500 – 1066
Bronze Age	period from c 2500 – 700 BC
CAT	Colchester Archaeological Trust
CBCAA	Colchester Borough Council Archaeological Advisor
CBM	ceramic building material, ie brick/tile
CHER	Colchester Historic Environment Record
CIfA	Chartered Institute for Archaeologists
context	specific location of finds on an archaeological site
EHER	Essex Historic Environment Record
feature (F)	an identifiable thing like a pit, a wall, a drain: can contain 'contexts'
Iron Age	period from 700 BC to Roman invasion of AD 43
late Prehistoric	period from c 4,000 BC to AD 43 (Neolithic, Bronze Age and Iron Age)
layer (L)	distinct or distinguishable deposit (layer) of material
medieval	period from AD 1066 to c 1500
Mesolithic	period from c 10,000 – 4000BC
modern	period from c AD 1800 to the present
natural	geological deposit undisturbed by human activity
Neolithic	period from c 4000 – 2500 BC
NGR	National Grid Reference
OASIS	<b>O</b> nline <b>A</b> ccess <b>S</b> to the <b>I</b> ndex of <b>A</b> rchaeological <b>I</b> nvestigations, <a href="http://oasis.ac.uk/pages/wiki/Main">http://oasis.ac.uk/pages/wiki/Main</a>
prehistoric	pre-Roman
residual	something out of its original context, eg a Roman coin in a modern pit
Roman	the period from AD 43 to c AD 410
section	(abbreviation sx or Sx) vertical slice through feature/s or layer/s
wsi	written scheme of investigation

## 12 Contents of archive

**Finds:** part of one box (all finds)

### **Paper record**

One A4 document wallet containing:

The report (CAT Report 1608)

CBC evaluation brief, CAT written scheme of investigation

Original site records (trench sheet, sections)

Site digital photographic thumbnails and log

### **Digital record**

The report (CAT Report 1608)

CBC evaluation brief, CAT written scheme of investigation

Site digital photographs, photographic thumbnails and log

Graphic files

Survey data

## 13 Archive deposition

The paper and digital archive is currently held by the Colchester Archaeological Trust at Roman Circus House, Roman Circus Walk, Colchester, Essex CO2 7GZ, but will be permanently deposited with Colchester Museum under project ref. ECC4564.

© Colchester Archaeological Trust 2020

### **Distribution list:**

Brad Davies, Mersea Homes

Dr Richard Hoggett, Colchester Borough Council Planning Services

Essex Historic Environment Record



### **Colchester Archaeological Trust**

Roman Circus House,

Roman Circus Walk,

Colchester,

Essex, CO2 7GZ

tel.: 01206 501785

email: [eh2@catuk.org](mailto:eh2@catuk.org)

Checked by: Philip Crummy

Date: 5.11.2020

**Appendix 1 Context list**

Context	Trench	Finds No.	Sample No.	Feature / layer type	Description	Date
L1	All	-	-	Topsoil	Soft, moist dark grey/brown silty-clay	Modern
L2	All	-	-	Subsoil	Firm, moist medium orange/brown silty-clay	Undatable
L3	All	-	-	Natural	Firm, moist light/medium orange clay with very occasional gravel	Post-glacial
F1	T1	1	-	Ditch	Firm, dry/moist medium grey/brown clayey-silt	Roman
F2	T1	-	-	Posthole	Soft, moist light/medium grey silty-clay	Undatable
F3	T1	-	-	Posthole	Soft, moist light/medium grey silty-clay	Undatable
F4	T1	-	-	Pit	Soft, moist light/medium grey silty-clay	Undatable
F5	T1	-	-	Natural feature	Firm/hard, medium grey/brown sandy silty-clay	Post-glacial
F6	T2	2	-	Ditch	Firm/hard, dry medium grey/brown silty-clay with very occasional stones	?Neolithic / Bronze Age
F7	T4	6	<12>	Ditch	Soft, moist medium/dark grey silty-clay with charcoal flecks	Bronze Age
F8	T3	3	-	Ditch	Firm, moist medium grey/brown clayey-silt	Undatable
F9	T4	-	<3>	Posthole	Soft, moist medium grey silty-clay	Undatable
F10	T4	-	<4>	Posthole	Soft, moist medium grey silty-clay	Late Bronze Age / Early Iron Age or Early Iron Age
F11	T4	-	<1>	Posthole	Soft, moist medium grey silty-clay	Bronze Age
F12	T4	-	<5>	Posthole	Soft, moist medium grey silty-clay	Bronze Age
F13	T4	-	<6>	Posthole	Soft, moist medium grey silty-clay	Bronze Age
F14	T4	7	-	Posthole	Soft, moist medium grey silty-clay	Bronze Age
F15	T4	8	<7>	Posthole	Soft, moist light grey silty-clay	Bronze Age
F16	T4	-	<8>	Posthole	Soft, moist light grey silty-clay	Bronze Age
F17	T4	9	<9>	Posthole	Soft, moist light grey silty-clay	Late Bronze Age / Early Iron Age
F18	T4	-	<10>	Posthole	Soft, moist light grey silty-clay	Bronze Age
F19	T2	-	-	?Pit	Firm, grey/brown silty-clay	Undatable
F20	T2	-	-	Pit	Firm/hard, dry medium yellow/brown/black silty-clay with charcoal and daub flecks	Undatable
F21	T2	-	-	Pit	Firm, moist grey/brown silty-clay with very occasional stones	Undatable
F22	T5	-	-	Ditch	Friable, moist medium grey/brown clayey-silt	Undatable
F23	T5	-	-	Pit	Firm, moist medium grey/brown	Undatable



					clayey-silt	
F24	T4	-	<2>	Posthole	Soft, moist light grey silty-clay	Undatable
F25	T3	-	-	Pit	Firm, moist medium grey/brown clayey-silt	Undatable
F26	T3	-	-	Pit	Firm, moist medium grey/brown clayey-silt	Undatable
F27	T8	-	-	Ditch	Soft, moist medium orange/brown silty-clay	Undatable
F28	T9	-	-	Ditch	Firm, moist medium grey/brown silty-clay	Undatable
F29	T9	-	-	Ditch	Firm, moist medium grey/brown silty-clay	Undatable
F30	T9	-	-	Ditch	Firm, moist medium grey silty-clay	Undatable
F31	T7	11	-	Pit	Firm/hard, medium grey/brown sandy-silty-clay with very frequent stones	11th to early 13th century
F32	FEATURE VOIDED					
F33	T5	10	-	Ditch	Firm, moist medium grey/brown clayey-silt	Roman
F34	T12	-	-	Gully	Firm, moist light/medium grey silty-clay	Undatable
F35	T6	12	-	?Quarry pit	Firm/hard, dry medium green/grey/brown silty-clay with charcoal and daub flecks and very occasional stones	Roman
F36	T8	-	-	Tree-throw	Firm, moist medium grey/brown silty-clay	Undatable
F37	T10	-	-	Pit	Soft, moist medium grey/brown sandy-silt	Undatable
F38	T10	-	-	Ditch	Soft, moist medium grey/brown sandy-silt	Undatable
F39	T4	-	<11>	Posthole	Soft, moist light/medium grey silty-clay with charcoal flecks	Late Bronze Age / Early Iron Age
F40	T6	-		?Gully / natural feature	Friable/firm, moist medium grey/brown silty-clay	Undatable
F41	T11	13		Ditch	Firm, moist medium/dark grey/brown clayey-silt	?Neolithic / Bronze Age

\*Finds numbers 4 and 5 were not used

**Appendix 2 Pottery list**

Cxt	Feature type	Finds/ Sample no.	No.	Wt (g)	MSW	Rim	Handle	Base	Soot	Burn	Fabric Group	Typology	EVE	Diam.	Comments	Date
F007	DITCH	6	8	93	12						HMF				ORANGE SURF., DARKER CORE	BRONZE AGE
F007	DITCH	6	1	3	3						HMFS				BLACK	LATE BRONZE AGE?
F007	DITCH	<12>	7	11	2						HMF				ORANGE	BRONZE AGE
F007	DITCH	<12>	25	65	3	2	0	0			HMF	BUCKET URN/CUP	0.07	110		BRONZE AGE
F007	DITCH	<12>									HMF	BUCKET URN/CUP	0.05	120		BRONZE AGE
F007	DITCH	<12>	18	27	1.5						HMFS				BLACK, FINER FABRIC	LATE BRONZE AGE?
F007	DITCH	<12>	1	8	8					X	HMFS					BRONZE AGE
F010	POST HOLE	<4>	1	1	1						HMF					BRONZE AGE
F010	POST HOLE	<4>	4	18	5	2	0	1			HMSF	JAR	0.04	170	BLACK FINER FABRIC	LATE BRONZE AGE/ EARLY IRON AGE?
F010	POST HOLE	<4>									HMSF	?	0.01	?	BLACK FINER FABRIC	LATE BRONZE AGE/ EARLY IRON AGE?
F011	POST HOLE	<1>	1	1	1						HMF				ORANGE SURF., DARKER CORE	BRONZE AGE
F012	POST HOLE	<5>	1	2	2						HMF					BRONZE AGE
F013	POST HOLE	<6>	2	3	2						HMF				ORANGE	BRONZE AGE
F013	POST HOLE	<6>	6	19	3						HMF				DARK BROWN/BLACK	BRONZE AGE
F014	PIT/POST HOLE	7	1	18	18						HMF				BROWN	BRONZE AGE
F015	POST HOLE	8	1	1	1					X	HMF					BRONZE AGE
F016	POST HOLE	<8>	2	7	4						HMF				DARK BROWN, COARSE FLINT	BRONZE AGE
F017	POST HOLE	<9>	1	2	2						HMFS					LATE BRONZE AGE/ EARLY IRON AGE?
F018	POST HOLE	<10>	2	3	2						HMF				ORANGE	BRONZE AGE
F018	POST HOLE	<10>	7	13	2						HMF				ORANGE	BRONZE AGE
F018	POST HOLE	<10>	2	4	2						HMF				BROWN	BRONZE AGE
F018	POST HOLE	<10>	1	2	2						HMF				BLACK, FINER FABRIC	BRONZE AGE
F031	PIT	11	1	2	2				X		F13					11TH-EARLY 13TH CENTURY
F035	QUARRY PIT	12	1	11	11						GX					ROMAN
F039	POST HOLE	<11>	2	13	7	1	0	0			HMF	JAR	0.05	90		LATE BRONZE AGE/ EARLY IRON AGE?

**Appendix 3 CBM list**

Context	Feature	Finds/ sample no.	No.	Wt (g)	MSW	Typology	Burning	Date
F001	DITCH	1	1	64	64	Roman brick	X	ROMAN
F007	DITCH	<12>	1	2	2	Baked clay		?
F010	POST HOLE	<4>	5	7	1.4	Baked clay		?
F012	POST HOLE	<5>	2	2	1	Baked clay		?
F016	POST HOLE	<8>	1	2	2	Baked clay	X	?
F016	POST HOLE	<8>	1	2	2	Baked clay		?
F018	POST HOLE	<10>	1	4	4	Baked clay		?
F018	POST HOLE	<10>	2	3	2	Baked clay		?
F033	DITCH	10	1	822	822	Roman tile	X	ROMAN
F035	QUARRY PIT	12	1	18	18	Roman brick/tile		ROMAN
F039	POST HOLE	<11>	1	5	5	Baked clay	X	?

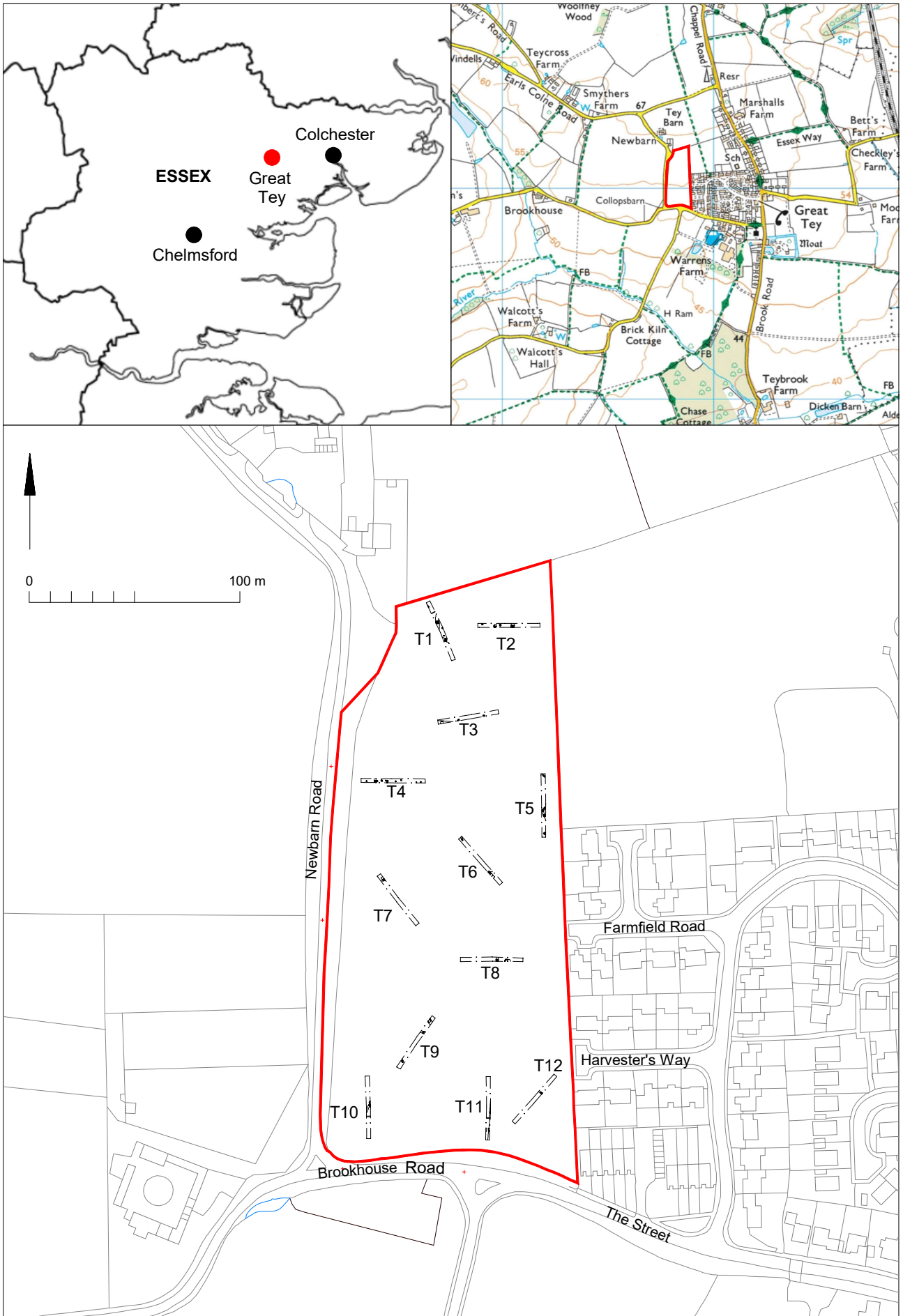


Fig 1 Site location

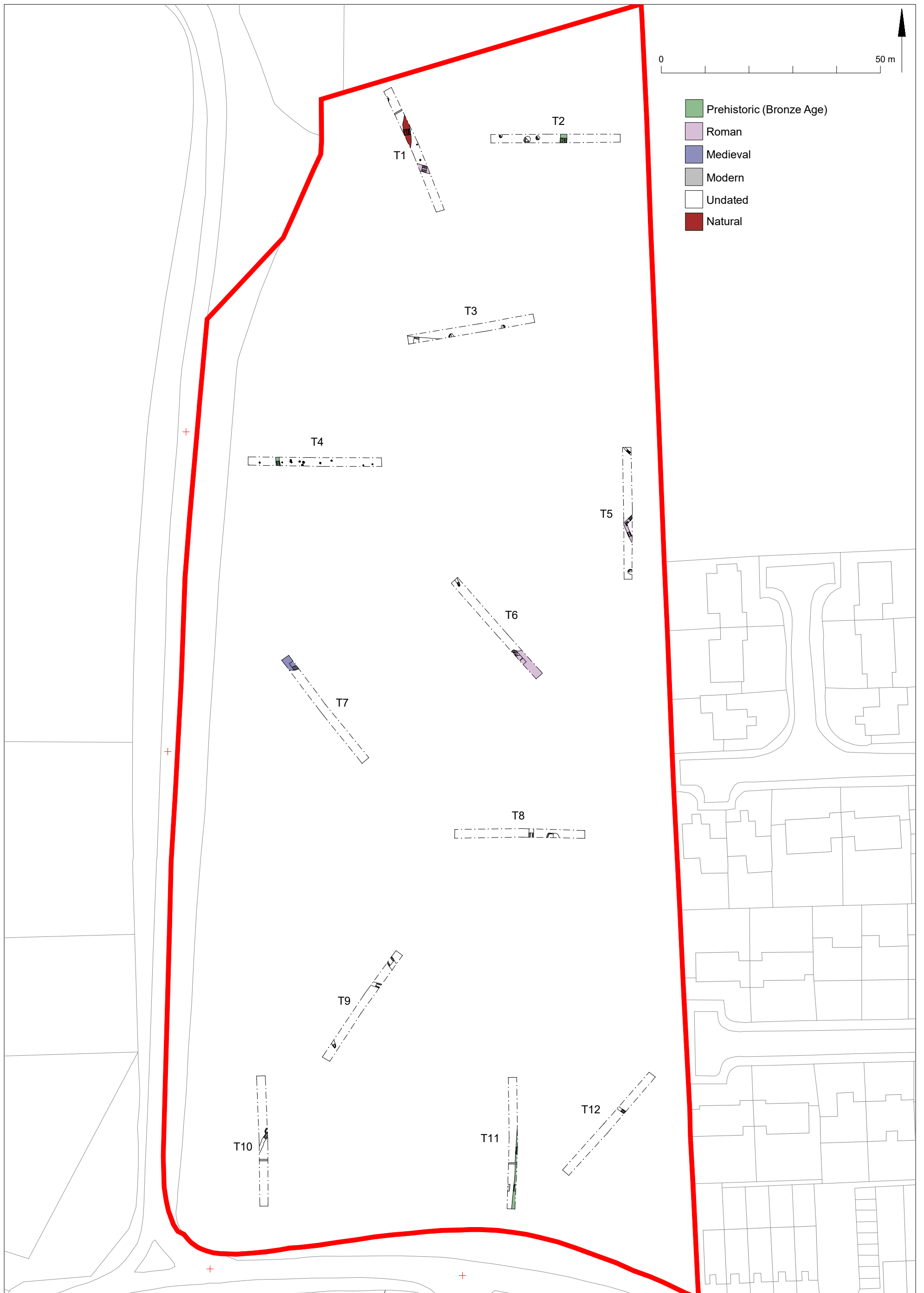


Fig 2 Phased results



Fig 3 Results in relation to geophysical survey (Magnitude Surveys 2020)



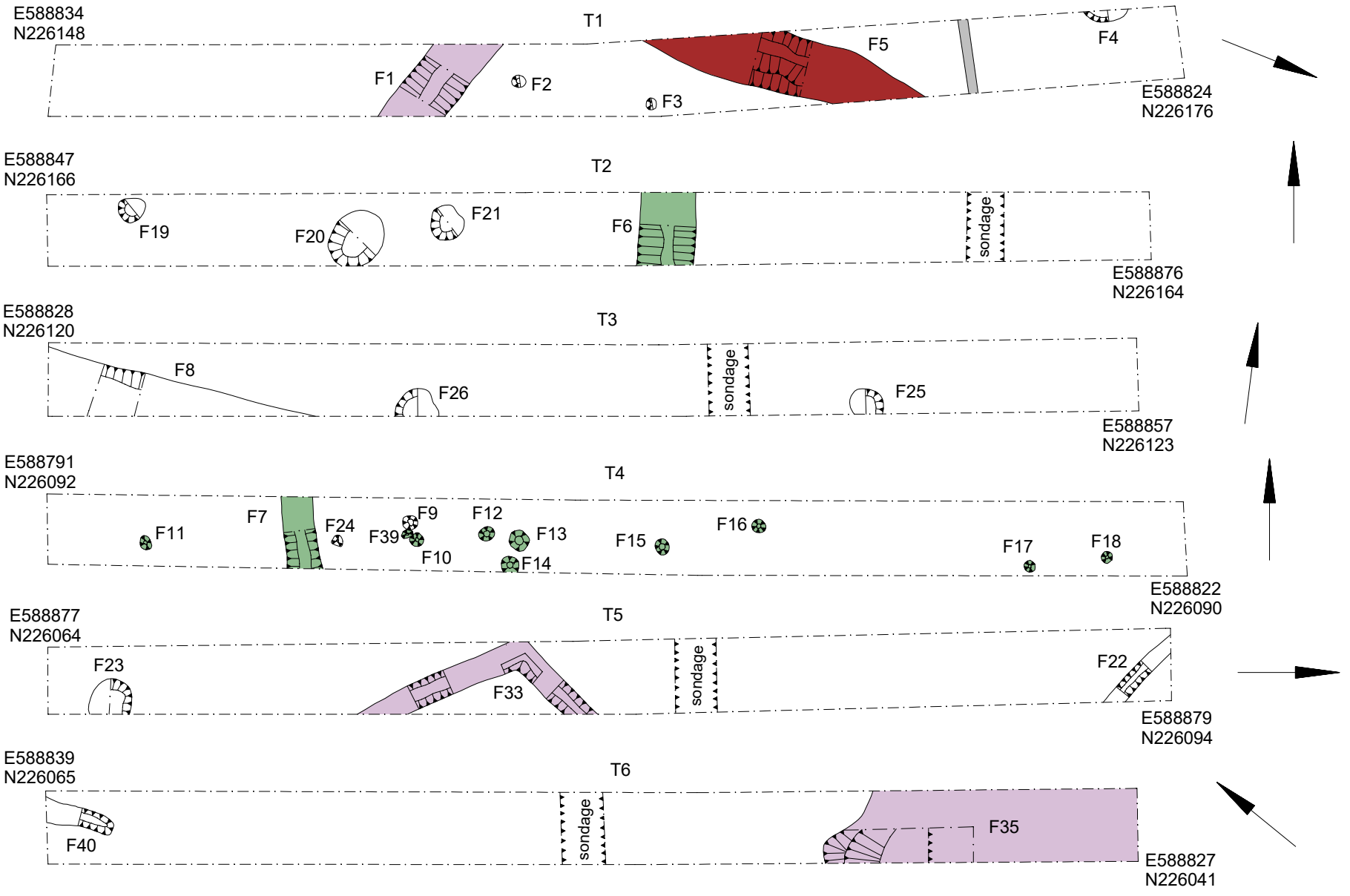
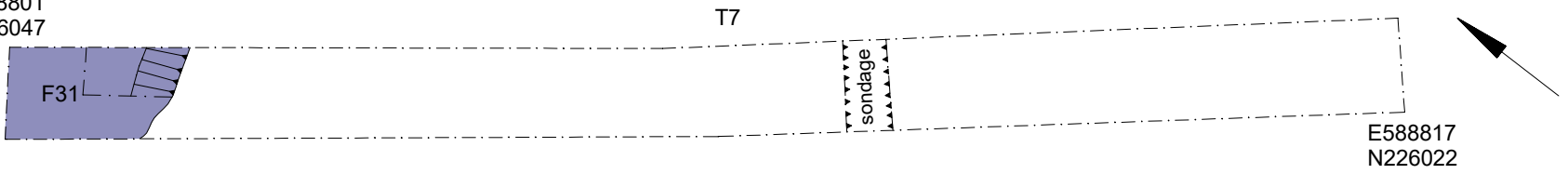


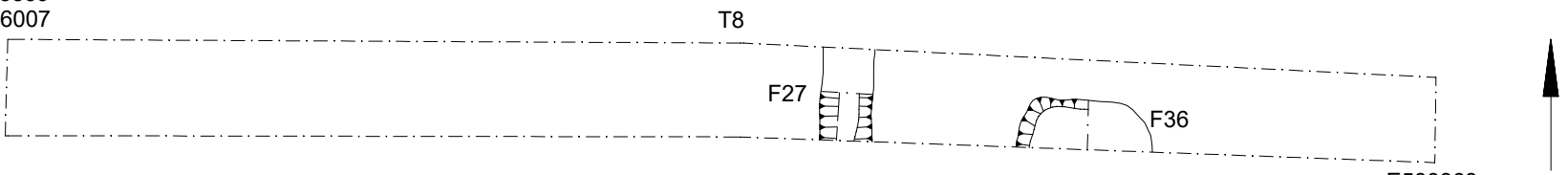
Fig 4 Trench plans (see Fig 2 for phasing key)



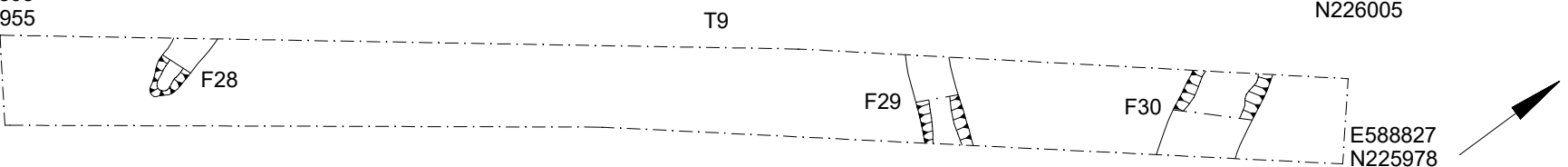
E588801  
N226047



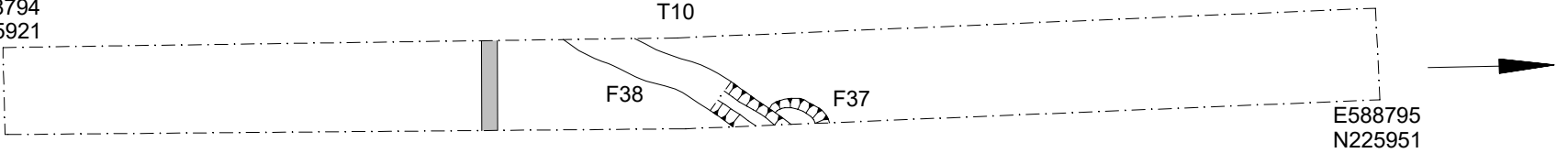
E588839  
N226007



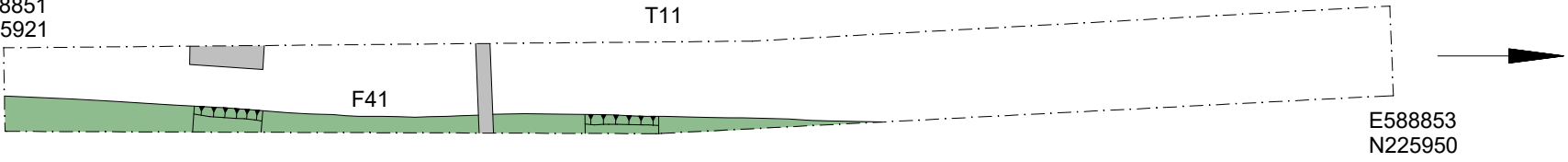
E588808  
N225955



E588794  
N225921



E588851  
N225921



E588863  
N225929

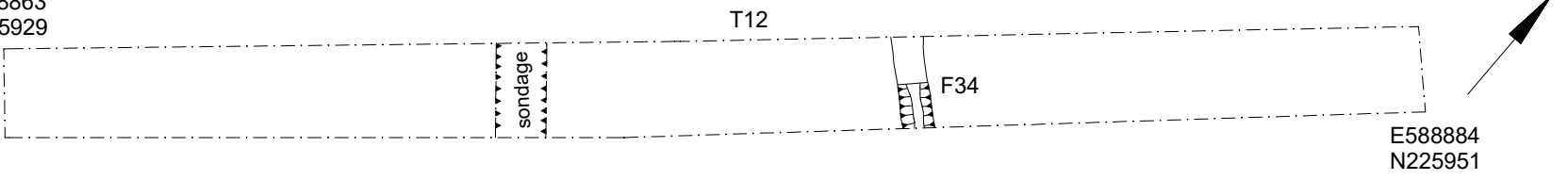


Fig 5 Trench plans (see Fig 2 for phasing key)

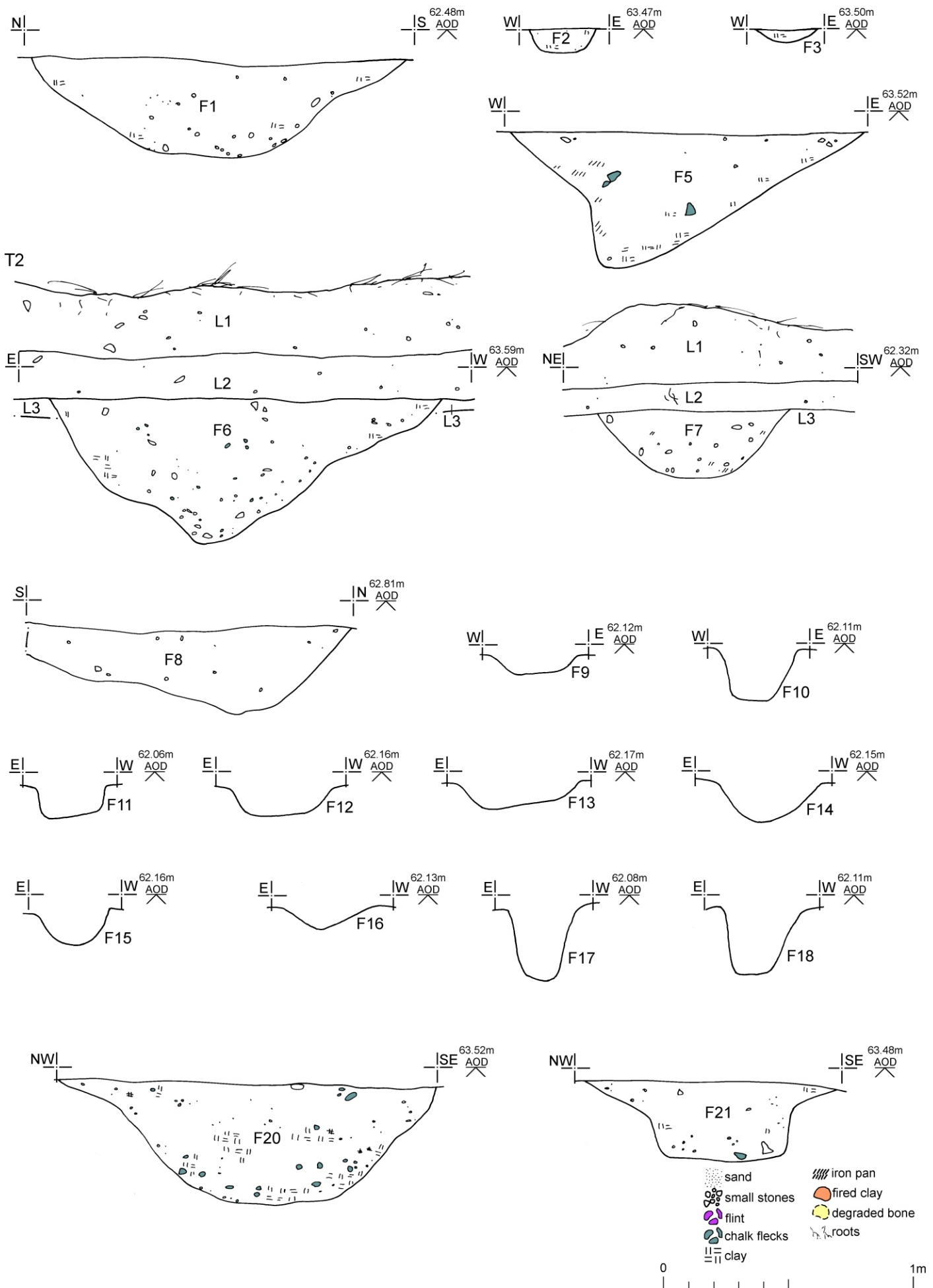


Fig 6 Sections.

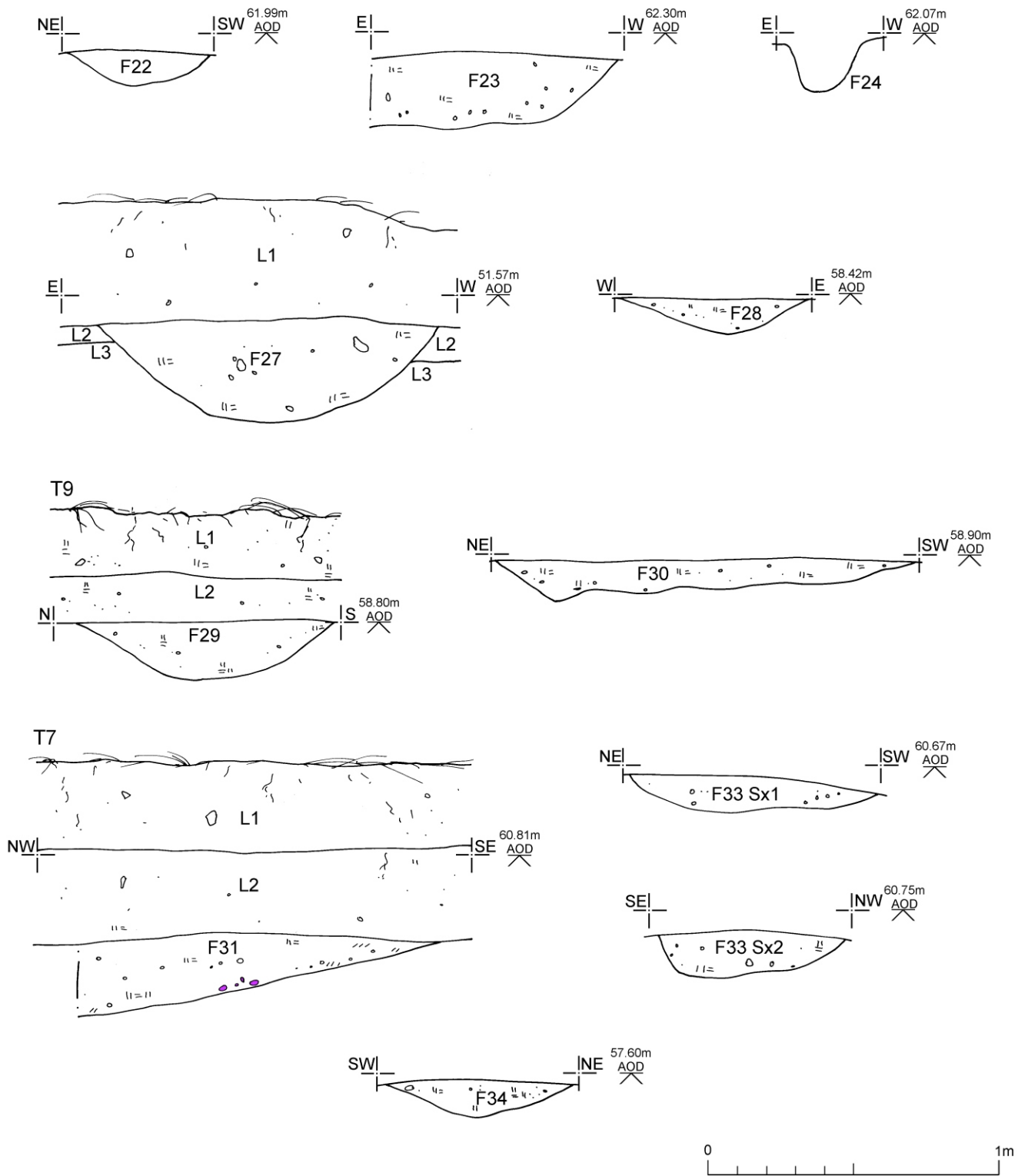


Fig 7 Sections.

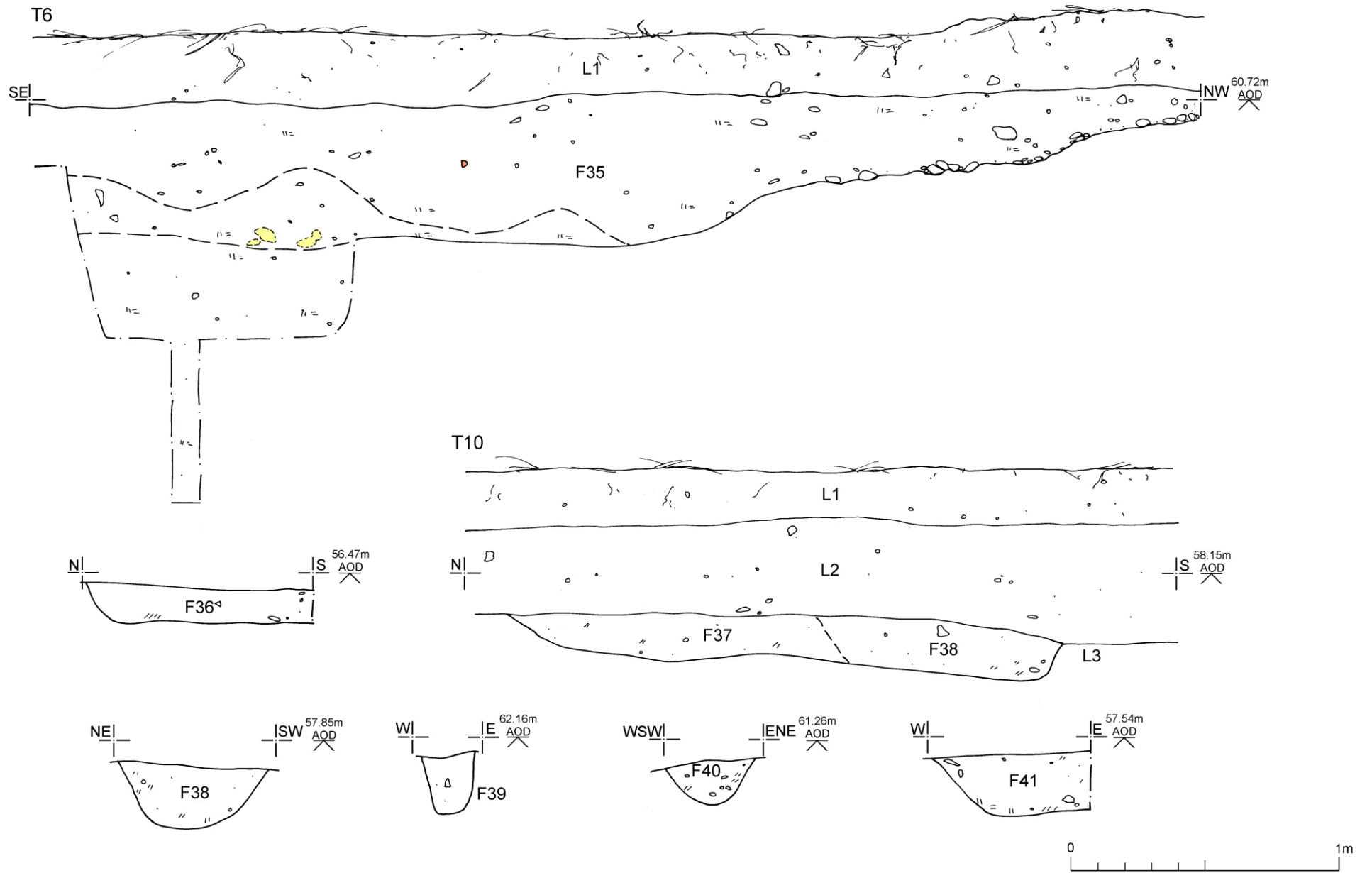


Fig 8 Sections.

# Essex Historic Environment Record/ Essex Archaeology and History

## Summary sheet

<b>Address:</b> Land east of Newbarn Road, Great Tey, Essex, CO6 1AD	
<b>Parish:</b> Colchester	<b>District:</b> Colchester
<b>NGR:</b> TL 8883 2599 (centre)	<b>Site code:</b> CAT project ref.: 20/07k CHER ref: ECC4564 OASIS ref: colchest3-404834
<b>Type of work:</b> Evaluation	<b>Site director/group:</b> Colchester Archaeological Trust
<b>Date of work:</b> 7th-12th October 2020	<b>Size of area investigated:</b> 2.93ha
<b>Location of curating museum:</b> Colchester museum	<b>Funding source:</b> Developer
<b>Further seasons anticipated?</b> Not known	<b>Related CHER/SMR number:</b> CHER MCC4249, MCC7018, MCC7019, MCC7023, MCC8648; ECC3431, ECC3437, ECC4560
<b>Final report:</b> CAT Report 1608	
<b>Periods represented:</b> Bronze Age, Roman, Medieval	
<b>Summary of fieldwork results:</b> An archaeological evaluation (twelve trial-trenches) was carried out on land east of Newbarn Road, Great Tey, Essex in advance of the construction of thirty new dwellings with associated groundworks. The development site lies to the north of a Roman villa and to the northwest of sites of Bronze Age activity on land east of Brook Road and at Teybrook Farm. Forty features – eleven ditches, ten pits, fourteen postholes, a possible quarry pit, a gully, a gully or natural feature, a natural feature and a tree-throw – were excavated. The majority of datable features had their origins in the Bronze Age, including a series of postholes indicating the presence of at least one structure on the site during this period. Some evidence of Roman and medieval activity was also uncovered.	
<b>Previous summaries/reports:</b> None	
<b>CBC monitor:</b> Dr Jess Tipper	
<b>Keywords:</b> -	<b>Significance:</b> **
<b>Author of summary:</b> Dr Elliott Hicks	<b>Date of summary:</b> November 2020



# **Written Scheme of Investigation (WSI) for an archaeological evaluation by trial-trenching on land east of Newbarn Road, Great Tey, Essex, CO6 1AD.**

**NGR:** TL 8883 2599 (centre)  
**District:** Colchester  
**Parish:** Great Tey

**Pre-planning reference:** 200399

**Commissioned by:** Brad Davies (Mersea Homes Ltd)  
**On behalf of:** Mersea Homes Ltd

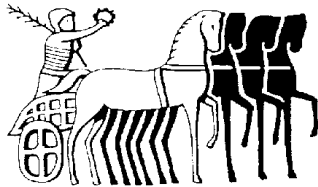
**Curating museum:** Colchester  
**CHER project code:** tbc

**CAT project code:** 2020/07k  
**Oasis project ID:** colchest3-404834

**Site manager:** Chris Lister

**CBC monitor:** Jess Tipper

**This WSI written:** 02/10/2020



COLCHESTER ARCHAEOLOGICAL TRUST,  
Roman Circus House,  
Roman Circus Walk,  
Colchester,  
Essex, CO2 7GZ

*tel:* 01206 501785  
*email:* [eh@catuk.org](mailto:eh@catuk.org)

## Site location and description

The proposed development site is located on a plot of land to the east of Newbarn Road / to the north of The Street, Great Tey, Essex (Fig 1). The site is centred on National Grid Reference (NGR) TL 8883 2599. The site forms a 2.9 hectare plot situated on the western edge of the village on land currently in use as agricultural farmland.

## Proposed work

The development comprises erection of 30 dwellings (including nine affordable homes), with associated parking facilities, landscaping, services and access road, an area of public open space and any associated groundworks.

## Archaeological background

The following archaeological background is based on the Colchester Archaeological Trust report archive and the Colchester Historic Environment Records (ECC and MCC numbers) accessible via the Colchester Heritage Explorer ([www.colchesterheritage.co.uk](http://www.colchesterheritage.co.uk)):

As part of the initial pre-planning application CAT completed an Archaeological Desk-based Assessment on the proposed site, see CAT Report 1548 for a full archaeological background. Some key nearby sites include:

The site is recorded as being within an area of cropmarks recorded through aerial photography depicting historic field boundaries which appear on 1<sup>st</sup> edition OS mapping (MCC8648).

Southwest of the site on land south of Warren Farm is the site of Roman villa (Scheduled Ancient Monument no. 1013516). In 1953 deep ploughing between the farmhouse and Roman River tore up mortar, painted wall plaster and tiles, mostly hollow flue-tiles (ECC3437/MCC7023). A Roman coin and pottery were also found. The site was part excavated by Campen in the mid 1950s who claimed it was a winged corridor villa, of which he had excavated the corridor paved with red tesserae (ECC3431). The site was confirmed by Bassett in 1971. This area was the focus of a fieldwalking survey in 2004 by Colchester Archaeological Group (ECC3824). Finds were recovered from prehistoric to modern periods (with the exception of Anglo-Saxon) but the majority was medieval or post medieval, and there was also a large quantity of Roman tile and pottery.

Around the centre of the village there are a number of historic buildings ranging in date from the 15th to 19th centuries except for the Church of St Barnabas (MCC4249). Parts of the tower are thought to date to pre-Norman Conquest, however the church is dated by RCHM as 12th-century with later alterations (MCC7019). The fabric of the church includes a large quantity of Roman brick and tile, especially within the tower, thought to have possibly come from the villa to near Warren Farm (MCC7018).

Archaeological work in the area is limited, although CAT carried out an Anglian Water pipework project in October and November 1992 connecting between the eastern side of the village (CAT Report 1000, 92/10b) and the western side of the village (CAT Report 1000, 92/11b). Finds recovered during the watching brief included isolated fragments of primarily pottery and tile. The area around Tey Brook Piggeries revealed a 3.9m wide ditch.

Outside of the DBA search area but of significance to the background area of the village was revealed during excavations at Teybrook Farm, Great Tey, Essex by the Colchester Archaeological Group in 2003-5. The earliest evidence of human activity recorded was a large number of pieces of residual and unstratified worked flint, dating to the Mesolithic, Neolithic and Bronze Age periods. A single Neolithic pit/scoop was also excavated. The most significant discovery was a ring-ditch (barrow) within which were 14 cremation burials. Eleven of the burials were in urns of the Middle Bronze Age Ardleigh-style, a regional variant of the broad Deverel-Rimbury pottery tradition, found in northeast Essex and southeast Suffolk. The cremated remains of 8 individuals had survived. Both males and females were represented, ranging in age from 30-40 years to a neonate/infant 0-1 years old. An Anglo-Saxon ditch,

possibly an estate boundary, had later been cut through the ring-ditch. Dated from the 6th to the early 8th century, most of the pottery recovered from this ditch was domestic in nature and likely indicates the presence of an Anglo-Saxon settlement in the vicinity. A pit and two/three postholes were also of similar date (Pooley & Brooks, 2000).

An evaluation followed by excavation on land east of Brook Road by CAT in 2020 revealed five features: a Middle Bronze Age pit and a Bronze Age pit, a undated possible pit, an undated pit or treethrow and a treethrow, all of which lay in the northern part of the site. It was also determined that all of the features uncovered during evaluation at the site were natural in origin. The remains uncovered during this investigation may represent an extension of activity at Teybrook Farm to the south, where excavations have revealed deposits dating to the Bronze Age (ECC4560, CAT Reports 1508 and 1597).

## **Project background**

The project is currently at the pre-planning application stage. Based on advice sought by the Colchester Borough Council Archaeological Advisor an archaeological evaluation condition was placed on the site as part of the pre-application assessment.

As the site lies within an area highlighted by the CHER as having a high potential for archaeological deposits, an archaeological condition was recommended by the Colchester Borough Council Archaeological Advisor (CBCAA). The recommended archaeological condition is based on the guidance given in the National Planning Policy Framework (MHCLG 2019).

## **Requirement for work** (Figs 1-2)

The required archaeological work was for an archaeological evaluation. This formed two parts, firstly a geophysical survey of the site. This was undertaken by Magnitude Survey on behalf of CAT (ECC4542). This WSI covers the subsequent evaluation phase. Details are given in a Project Brief written by CBCAA (CBC 2020).

Specifically, twelve linear trenches each measuring 30m long and 1.8m wide will be located in a grid across the proposed development site. This equates to 360m of trenching, covering an area of 648m<sup>2</sup>. The trenches form a 3.5% sample coverage offering a spread across the site with trenches targeting key features highlighted by the geophysical survey (see Fig 2). The evaluation also includes a contingency of 1% trenching to test any unforeseen discoveries. Trenches may need to be widened in localised areas to facilitate the excavation of deep archaeological features (if encountered)

The evaluation is required to enable the archaeological resource, both in quality and extent, to be accurately quantified. To:

- Identify the date, approximate form and purpose of any archaeological deposit, together with its likely extent, localised depth and quality of preservation.
- Evaluate the likely impact of past land uses, and the possible presence of masking colluvial/alluvial deposits.
- Establish the potential for the survival of environmental evidence
- Provide sufficient information to construct an archaeological conservation strategy, dealing with preservation, the recording of archaeological deposits, working practices, timetables and orders of cost.

Further archaeological evaluation could be required if unusual deposits or other archaeological finds of significance are recovered, this decision will be made by the CBCAA and will be the subject of an additional brief and WSI.

## **General methodology**

All work carried out by CAT will be in accordance with:

- professional standards of the Chartered Institute for Archaeologists, including its *Code of Conduct* (CIfA 2014a, b)
- Standards and Frameworks published by East Anglian Archaeology (Gurney 2003, Medlycott 2011)
- relevant Health & Safety guidelines and requirements (CAT 2019)
- the Project Brief issued by the CBCAA (CBC 2020).

Professional CAT field archaeologists will undertake all specified archaeological work, for which they will be suitably experienced and qualified.

Notification of the supervisor/project manager's name and the start date for the project will be provided to CBCAA one week before start of work.

Unless it is the responsibility of other site contractors, CAT will study mains service locations and avoid damage to these.

At the start of work (immediately before fieldwork commences) an OASIS online record <http://ads.ahds.ac.uk/project/oasis/> will be initiated and key fields completed on Details, Location and Creators forms. At the end of the project all parts of the OASIS online form will be completed for submission to CHER. This will include an uploaded .PDF version of the entire report.

A unique HER event number will be obtained from the CBCAA prior to the commencement of fieldwork. The curating museum will be notified of the details of the project and the event code, which will be used to identify the project archive when depositing at the end of the project.

## **Staffing**

The number of field staff for this project is estimated as follows: One supervisor plus four archaeologists for four days.

In charge of day-to-day site work: Ben Holloway/Mark Baister

## **Evaluation methodology**

Where appropriate, modern overburden and any topsoil stripping/levelling will be performed using a mechanical excavator equipped with a toothless ditching bucket under the supervision and to the satisfaction of a professional archaeologist. If no archaeologically significant deposits are exposed, machine excavation will continue until natural subsoil is reached.

Where necessary, areas will be cleaned by hand to ensure the visibility of archaeological deposits.

If archaeological features or deposits are uncovered time will be allowed for these to be excavated, planned and recorded.

All features or deposits will be excavated by hand. This includes a 50% sample of discrete features (pits, etc), 10% of linear features (ditches, etc) in 1m wide sections, and 100% of complex structures/features. Complex archaeological structures such as walls, kilns, ovens or burials will be carefully cleaned, planned and fully recorded, but where possible left *in situ*. Only if it can be demonstrated that the complex structure/feature is likely to be destroyed by groundworks will it be removed, or on the rare occasion where full excavation (or exhumation in the case of burials) is necessary to achieve the objectives of the evaluation.

Burials, if encountered, will be left *in situ* at this evaluation stage with an on site human bone specialist available to record as much information as possible.

Fast hand-excavation techniques involving (for instance) picks, forks and mattocks will not be used on complex stratigraphy.

A sondage will be excavated in each trench to test the stratigraphy of the site. This will occur in every trench unless it can be demonstrated that a feature excavated within a particular trench has clearly penetrated into natural.

A representative section will be drawn of each trench, to include ground level, the depth of machining within the trench and the depth of any sondages.

A metal detector will be used to examine the trench, contexts and spoil heaps, and the finds recovered.

Individual records of excavated contexts, layers, features or deposits will be entered on proforma record sheets. Registers will be compiled of finds, small finds and soil samples.

### **Site surveying**

The evaluation trench and any features will be surveyed by Total Station or GPS, unless the particulars of the features indicate that manual planning techniques should be employed. Normal scale for archaeological site plans and sections is 1:20 and 1:10 respectively, unless circumstances indicate that other scales would be more appropriate.

The site grid will be tied into the National Grid. Corners of excavation areas will be located by NGR coordinates.

### **Environmental sampling policy**

The number and range of samples collected will be adequate to determine the potential of the site, with particular focus on palaeoenvironmental remains including both biological remains (e.g. plants, small vertebrates) and small sized artefacts (e.g. smithing debris), and to provide information for sampling strategies on any future excavation. Samples will be collected for potential micromorphical and other pedological sedimentological analysis. Environmental bulk samples will be 40 litres in size (assuming context is large enough).

Sampling strategies will address questions of:

- the range of preservation types (charred, mineral-replaced, waterlogged), and their quality
- concentrations of macro-remains
- and differences in remains from undated and dated features
- variation between different feature types and areas of site

CAT has an arrangement with Val Fryer / Lisa Gray whereby any potentially rich environmental layers or features will be appropriately sampled as a matter of course. Trained CAT staff will process the samples and the flots will be sent to Val Fryer or Lisa Gray for analysis and reporting.

Should any complex, or otherwise outstanding deposits be encountered, VF or LG will be asked onto site to advise. Waterlogged 'organic' features will always be sampled. In all cases, the advice of VF/LG and/or the Historic England Regional Advisor in Archaeological Science (East of England) on sampling strategies for complex or waterlogged deposits will be followed, including the taking of monolith samples.

### **Human remains**

CBCAA will be notified immediately if any human remains are encountered during the evaluation.

Burials, if encountered, will be left *in situ* at this evaluation stage. Following HE guidance (HE 2018) if the human remains are not to be lifted, the project osteologist will be available to record the human remains *in situ* (i.e. a site visit).

If circumstances indicated it were prudent or necessary to remove remains from the site, the following criteria would be applied; if it is clear from their position, context, depth, or other factors that the remains are ancient, then normal procedure is to apply to the Department of Justice for a licence to remove them. Conditions laid down by the DoJ license will be followed. If it seems that the remains are not ancient, then the coroner, the client, and the CBCAA will be informed, and any advice and/or instruction from the coroner will be followed.

Human remains removed from site for analysis may be sent for radiocarbon dating (see finds section).

## Photographic record

Will include both general and feature-specific photographs, the latter with scale and north arrow. A photo register giving context number, details, and direction of shot will be prepared on site, and included in site archive. Digital site photographs will be taken and archived as per Historic England guidelines (HE 2015a).

## Finds

All significant finds will be retained.

All finds, where appropriate, will be washed and marked with site code and context number. CAT may use local volunteers to assist the CAT Finds Officer with this task.

Most of our finds reports are written internally by CAT Staff under the supervision and direction of Philip Crummy (Director) and Howard Brooks (Deputy Director). This includes specialist subjects such as:

ceramic finds (pottery and ceramic building material): Matthew Loughton

animal bones: Alec Wade (or Adam Wightman, small groups only)

small finds, metalwork, coins, etc: Laura Pooley

non-ceramic bulk finds: Laura Pooley

flints: Adam Wightman

environmental processing: Bronagh Quinn

project osteologist (human remains): Meghan Seehra

or to outside specialists:

animal and human bone: Julie Curl (*Sylvanus*)

environmental assessment and analysis: Val Fryer / Lisa Gray

radiocarbon dating: SUERC Radiocarbon Dating Laboratory, Glasgow

conservation/x-ray: Laura Ratcliffe (LR Conservation) / Norfolk Museums Service, Conservation and Design Services

Other specialists whose opinion can be sought on large or complex groups include:

flint: Hazel Martingell

prehistoric pottery: Stephen Benfield / Nigel Brown / Paul Sealey

Roman pottery: Stephen Benfield / Paul Sealey / Jo Mills / Val Rigby / Gwladys Monteil

Roman brick/tile: Ernest Black / Ian Betts (MOLA)

Roman glass: Hilary Cool

small finds: Nina Crummy

other: EH Regional Adviser in Archaeological Science (East of England).

All finds of potential treasure will be removed to a safe place, and the coroner informed immediately, in accordance with the rules of the Treasure Act 1996. The definition of treasure is given in pages 3-5 of the Code of Practice of the above act. This refers primarily to gold or silver objects.

Requirements for conservation and storage of finds will be agreed with the appropriate museum prior to the start of work, and confirmed to CBCAA.

A contingency will be made in the budget for scientific assessment/analysis. This can include soil micromorphological assessment, absolute dating in the event that archaeomagnetic and/or (more probably) radiocarbon dating is required, if burning is encountered or human remains (in which case it might be necessary to lift a small sample for absolute dating). The Historic England Regional Science Advisor will be consulted for advice on this.

### **Post-excavation assessment**

An updated post-excavation assessment (PXA) will be submitted within 2 months or at an alternatively agreed time with the ECCHEA. Post-excavation assessments and updated project designs will be prepared in accordance with Historic England principals of MoRPHE (HE 2006) and East Anglian Archaeology notes (2015). PXAs will include an assessment of the archaeological value of the results, and include a statement of significance for retention of artefacts, based on specialist advice, for retention or discard agreed with the depositing museum.

Where archaeological results do not warrant a post-excavation assessment then agreement will be sought from the ECCHEA to proceed straight to grey literature / publication.

### **Results**

Notification will be given to CBCAA when the fieldwork has been completed

An appropriate archive will be prepared to minimum acceptable standards outlined in *Management of Research Projects in the Historic Environment* (HE 2015b).

The report will be submitted within 6 months of the end of fieldwork, with a copy supplied to CBCAA as a PDF.

The report will contain:

- Location plan of the groundworks in relation to the proposed development. At least two corners of the site will be given 10 figure grid references.
- Section/s drawings showing depth of deposits from present ground level with Ordnance Datum, vertical and horizontal scale.
- Archaeological methodology and detailed results including a suitable conclusion and discussion and results referring to Regional Research Frameworks (Medlycott 2011).
- All specialist reports or assessments
- A concise non-technical summary of the project results.
- An inventory of the archive and any statement of retention and discard strategy based on specialist advice. CAT has a non-site specific finds retention strategy approved by Colchester Museum (CAT 2016).

An EHER summary sheet will also be completed within four weeks and supplied to CBCAA.

Results will be published, to at least a summary level (i.e. round-up in *Essex Archaeology & History*) in the year following the archaeological field work. An allowance will be made in the project costs for the report to be published in an adequately peer reviewed journal or monograph series

### **Archive deposition**

It is a policy of Colchester Borough Council that the integrity of the site archive be maintained (i.e. all finds and records should be properly curated by a single organisation), with the archive available for public consultation. To achieve this desired aim it is assumed that the full

archive will be deposited in Colchester Museums *unless otherwise agreed in advance*. (A full copy of the archive shall in any case be deposited).

**By accepting this WSI, the client agrees to deposit the archive, including all artefacts, at Colchester & Ipswich Museum.**

The requirements for archive storage will be agreed with the curating museum. If the finds are to remain with the landowner, a full copy of the archive will be housed with the curating museum.

The archive will be deposited with Colchester & Ipswich Museum or an alternate repository (approved by COLEM and CBCAA) within 3 months of the completion of the final publication report, with a summary of the contents of the archive supplied to CBCAA. Digital archives will be curated with the Archaeology Data Service, or similar accredited digital archive repository, that safeguard the long-term curation of digital records. Prior to deposition CAT's data management plan (based on the official guidelines from the Digital Curation Centre [DCC 2013]) will ensure the integrity of the digital archive.

The CBCAA will be notified of the archiving timetable throughout the project and once deposition has occurred.

A digital / vector drawing of the site be given to the CBCAA for integration into the HER.

## Monitoring

CBCAA will be responsible for monitoring progress and standards throughout the project, and will be kept regularly informed during fieldwork, post-excavation and publication stages.

Notification of the start of work will be given to CBCAA one week in advance of its commencement.

Any variations in this WSI will be agreed with CBCAA prior to them being carried out.

CBCAA will be notified when the fieldwork is complete.

The involvement of CBCAA shall be acknowledged in any report or publication generated by this project.

## References

Note: CAT reports, except for DBAs, are available online in PDF format at <http://cat.essex.ac.uk>

Brown, D	2011	<i>Archaeological Archives: A guide to best practice in creation, compilation, transfer and curation</i>
CAT	2016	<i>Colchester Archaeological Trust Finds Retention Policy</i> . By S Benfield
CAT	2019	<i>Health &amp; Safety Policy</i>
CAT Report 1000	forthcoming	<i>A miscellany of unpublished Colchester and Essex sites: 1984-2000 (sites not published in any Colchester Archaeological Report, or in the CAT Report Series from 1997)</i> . By H Brooks
CAT Report 1508	2020	<i>Archaeological evaluation on land east of Brook Road, Great Tey, Essex, CO6 1JG: January 2020</i>
CAT Report 1597	2020	<i>Archaeological excavation on land east of Brook Road, Great Tey, Essex – July-August 2020</i>
CBCAA	2020	<i>Brief for an Archaeological Evaluation at Land to east of Newbarn Road, Great Tey, Colchester</i> . By J Tipper
CIfA	2014a	<i>Standard and Guidance for archaeological evaluation</i>
CIfA	2014b	<i>Standard and guidance for the collection, documentation, conservation and research of archaeological materials</i>
East Anglian Archaeology	2015	<i>Advice note for Post Excavation Assessment</i>



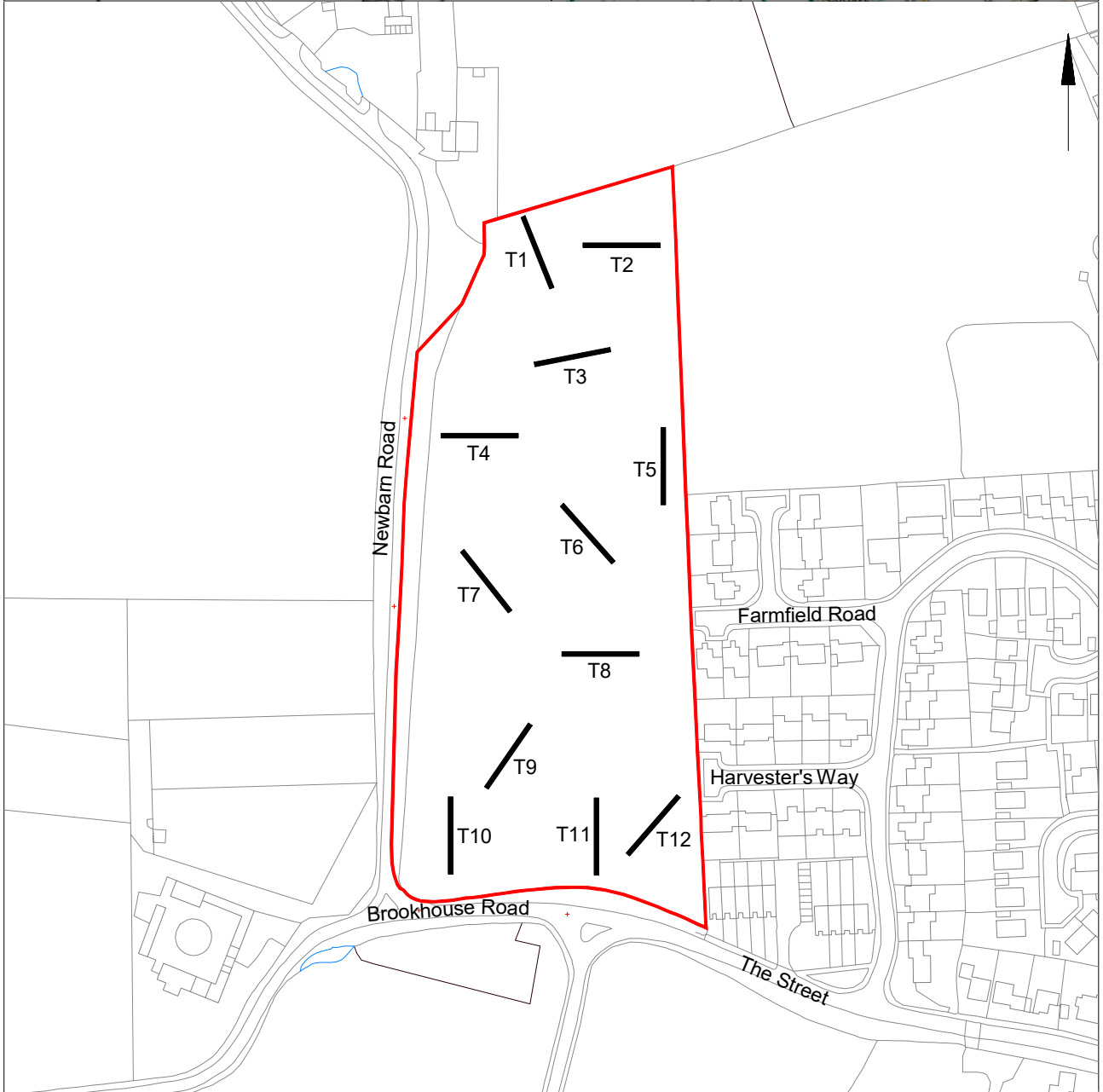
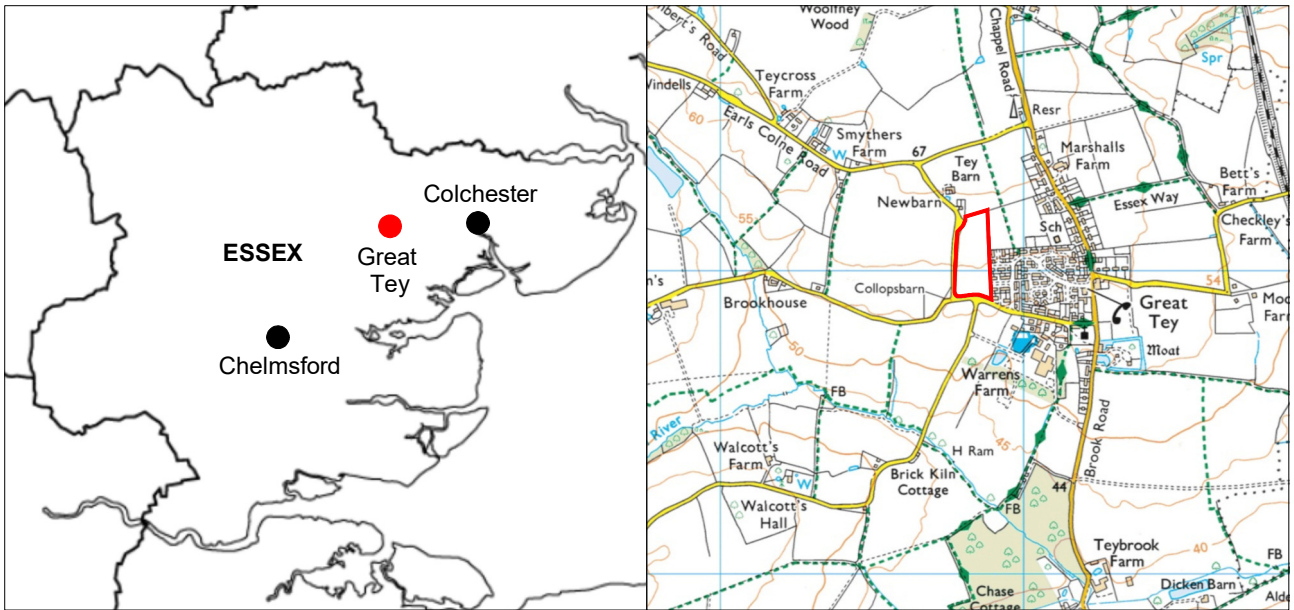
Gurney, D	2003	<i>Standards for field archaeology in the East of England</i> . East Anglian Archaeology Occasional Papers 14 (EAA 14).
Historic England (HE)	2006	<i>Management of Research Projects in the Historic Environment (MoPHE)</i>
Historic England (HE)	2015a	<i>Digital Image capture and File Storage: Guidelines for best practice</i> . By S Cole & P Backhouse
Historic England (HE)	2015b	<i>Management of Research Projects in the Historic Environment (MoRPHE)</i>
Historic England (HE)	2018	<i>The Role of the Human Osteologist in an Archaeological Fieldwork Project</i> . By S Mays, M Brickley and J Sidell
Medlycott, M	2011	<i>Research and archaeology revisited: A revised framework for the East of England</i> . East Anglian Archaeology Occasional Papers 24 (EAA 24)
MHCLG	2019	<i>National Planning Policy Framework</i> . Ministry of Housing, Communities and Local Government.
Pooley, L & Brooks, H	2000	<i>Middle Bronze Age burials and an Anglo-Saxon ditch: Excavations by the Colchester Archaeological Group in 2003-5 at Teybrook Farm, Brook Road, Great Tey, Essex, CO6 1JF</i>

E Holloway



Colchester Archaeological Trust,  
 Roman Circus House,  
 Roman Circus Walk,  
 Colchester,  
 Essex, CO2 2GZ

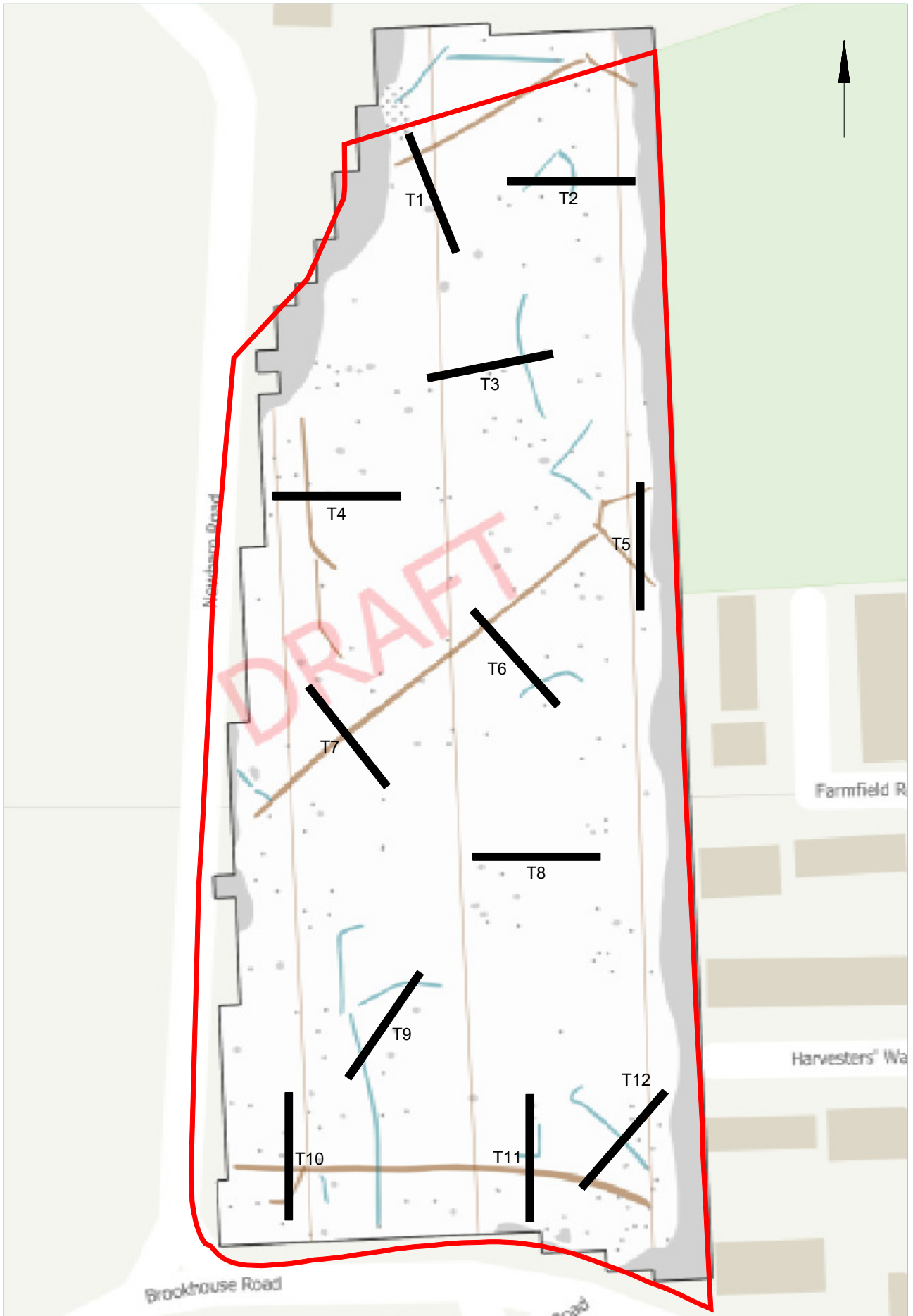
tel: 01206 501785  
 email: [eh@catuk.org](mailto:eh@catuk.org)



© Crown copyright. All rights reserved. Licence number 100039294.

Fig 1 Site location and trench proposal.





© Crown copyright. All rights reserved. Licence number 100039294.

Fig 2 Trench proposal in relation to preliminary geophysics results.



# OASIS DATA COLLECTION FORM: England

[List of Projects](#) | [Manage Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [Log out](#)

[Printable version](#)

**OASIS ID: colchest3-401094**

## Project details

Project name	Archaeological evaluation on land adjacent Red House Farm, Sudbury Road, Newton, Suffolk, CO10 0QH
Short description of the project	An archaeological evaluation (five trial-trenches) was carried out on land adjacent to Red House Farm, Sudbury Road, Newton, Suffolk in advance of the construction of nine new dwellings with associated infrastructure. An evaluation on an adjacent site to the south in 2019 revealed a medieval pit, two post-medieval ditches/pits and a modern path along with several undated features. Thirty-one features were uncovered during this current evaluation: eight ditches, seven pits, five tree-throws, four natural features, two gullies, two pits/natural features, a pit/posthole, a pit/tree-throw and a tree-throw/natural feature. Sherds of Roman pottery from a ditch may indicate activity on the site in the Romano-British period. A ditch and a pit/tree-throw both contained medieval pottery sherds, with two other pits producing medieval/post-medieval and post-medieval dating evidence. A number of tree-throws on the site could be indicative of a period of tree-clearance.
Project dates	Start: 16-09-2020 End: 17-09-2020
Previous/future work	No / Not known
Any associated project reference codes	2020/07c - Contracting Unit No.
Any associated project reference codes	DC/18/00190 - Planning Application No.
Any associated project reference codes	NEN 027 - Sitecode
Any associated project reference codes	colchest3-401094 - OASIS form ID
Type of project	Field evaluation
Site status	None
Current Land use	Cultivated Land 1 - Minimal cultivation
Monument type	DITCH Roman
Monument type	DITCH Medieval
Monument type	PIT/TREE-THROW Medieval
Monument type	PIT Post Medieval
Monument type	PITS Uncertain
Monument type	DITCHES Uncertain
Monument type	TREE-THROWS Uncertain
Significant Finds	POTTERY Roman
Significant Finds	POTTERY Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	CBM Medieval
Significant Finds	CBM Post Medieval
Significant Finds	IRON OBJECT Post Medieval
Significant Finds	IRON OBJECT Modern
Significant Finds	STEEL OBJECT Modern
Significant Finds	ALUMINIUM OBJECT Modern
Significant Finds	ANIMAL BONE Uncertain
Methods & techniques	""Sample Trenches""
Development type	Rural residential
Prompt	Planning condition
Position in the planning process	Not known / Not recorded

## Project location

Country	England
Site location	SUFFOLK BABERGH NEWTON land adjacent to Red House Farm, Sudbury Road
Postcode	CO10 0QH
Study area	0.5 Hectares
Site coordinates	TL 9126 4100 52.033875936653 0.788640155813 52 02 01 N 000 47 19 E Point
Height OD / Depth	Min: 63.68m Max: 64.08m

### Project creators

Name of Organisation Colchester Archaeological Trust  
Project brief originator HEM Team Officer, SCC  
Project design originator Laura Pooley  
Project director/manager Chris Lister  
Project supervisor Mark Baister  
Type of sponsor/funding body Developer

### Project archives

Physical Archive recipient Suffolk County Council Archaeology Service  
Physical Archive ID NEN 027  
Physical Contents "Animal Bones","Ceramics"  
Digital Archive recipient Suffolk County Council Archaeology Service  
Digital Archive ID NEN 027  
Digital Media available "Images raster / digital photography","Survey","Text"  
Paper Archive recipient Suffolk County Council Archaeology Service  
Paper Archive ID NEN 027  
Paper Media available "Context sheet","Miscellaneous Material","Photograph","Report","Section"

### Project bibliography 1

Publication type Grey literature (unpublished document/manuscript)  
Title Archaeological evaluation on land adjacent to Red House Farm, Sudbury Road, Newton, Suffolk, CO10 0QH: September 2020  
Author(s)/Editor(s) Hicks, E.  
Other bibliographic details CAT Report 1603  
Date 2020  
Issuer or publisher Colchester Archaeological Trust  
Place of issue or publication Colchester  
Description A4 loose-leaf brass-stapled  
URL <http://cat.essex.ac.uk>  
  
Entered by Laura Pooley (lp@catuk.org)  
Entered on 16 November 2020

**OASIS:**

Please e-mail [Historic England](#) for OASIS help and advice  
© ADS 1996-2012 Created by [Jo Gilham](#) and [Jen Mitcham](#), email [Last modified Wednesday 9 May 2012](#)  
Cite only: <http://www.oasis.ac.uk/form/print.cfm?id=408051> for this page

[Cookies](#) [Privacy Policy](#)



**magnitude  
surveys**

**Geophysical Survey Report  
of**

**Land East of Newbarn Road,  
Great Tey, Essex**

**For  
Colchester Archaeological Trust**

**On Behalf of  
Mersea Homes**

**Magnitude Surveys Ref: MSTL726**

**Colchester HER Event Number: ECC4542**

**September 2020**



## magnitude surveys

Unit 17, Commerce Court

Challenge Way

Bradford

BD4 8NW

01274 926020

[info@magnitudesurveys.co.uk](mailto:info@magnitudesurveys.co.uk)

**Report By:**

Sophie Peel BSc (Hons)

**Report Approved By:**

Finnegan Pope-Carter BSc (Hons) MSc FGS

**Issue Date:**

02 October 2020

### Abstract

Magnitude Surveys was commissioned to assess the subsurface archaeological potential of a c. 2.9ha area of Land East of Newbarn Road, Great Tey, Essex. A fluxgate gradiometer survey was successfully completed across the survey area. The geophysical survey has detected anomalies of an agricultural origin; including an unmapped former field boundary, possible drainage ditches and modern ploughing. No anomalies suggestive of significant archaeological activity have been identified. Anomalies of undetermined origin have been detected, these could relate to agricultural, or modern processes, although an archaeological origin cannot be ruled out. The impact of modern activity on the results is present in the form of magnetic disturbance from fencing along field edges and a buried service.



## Contents

Abstract.....	2
List of Figures .....	4
1. Introduction .....	5
2. Quality Assurance .....	5
3. Objectives.....	6
4. Geographic Background.....	6
5. Archaeological Background.....	6
6. Methodology.....	7
6.2. Data Collection.....	7
6.3. Data Processing.....	7
6.4. Data Visualisation and Interpretation.....	8
7. Results.....	9
7.1. Qualification.....	9
7.2. Discussion.....	9
7.3. Interpretation.....	9
7.3.1. General Statements .....	9
7.3.2. Magnetic Results - Specific Anomalies.....	10
8. Conclusions .....	11
9. Archiving .....	12
10. Copyright.....	12
11. References .....	12
12. Project Metadata .....	13
13. Document History .....	13

## List of Figures

Figure 1:	Site Location	1:25,000 @ A4
Figure 2:	Location of Survey Area	1:5,000 @ A3
Figure 3:	Magnetic Gradient	1:1,500 @ A3
Figure 4:	Magnetic Total Field	1:1,500 @ A3
Figure 5:	Magnetic Interpretation	1:1,500 @ A3
Figure 6:	Magnetic Interpretation Over Historic Maps and Satellite Imagery	1:2,000 @ A3
Figure 7:	XY Trace Plot	1:1,500 @ A3



## 1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by Colchester Archaeological Trust on behalf of Mersea Homes to undertake a geophysical survey on a c.2.9ha area of land east of Newbarn Road, Great Tey, Essex (TL888259).
- 1.2. The geophysical survey comprised hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK for its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken earth houses, and industrial activity (David *et al.*, 2008).
- 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. It was conducted in line with a WSI produced by MS (Rigby, 2020).
- 1.5. The survey commenced on 23<sup>rd</sup> September 2020 and took one day to complete.

## 2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CifA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society of Archaeological Prospection).
- 2.2. The directors of MS are involved in the cutting edge of research and the development of guidance/policy. Specifically, Dr. Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CifA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CifA Geophysics Special Interest Group); Dr. Kayt Armstrong has a PhD in archaeological geophysics from Bournemouth University, is a Member of CifA, the Editor of ISAP News, and is the UK Management Committee representative for the COST Action SAGA; Dr. Paul Johnson has a PhD in archaeology from the University of Southampton, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers have relevant degree qualifications to archaeology or geophysics. All MS field and office staff have relevant archaeology or geophysics degrees and/or field experience.
- 2.4. Data collection was repeated over the same traverses to demonstrate the consistency and reliability of the geophysical survey. These are presented below:

Traverse 14:



Traverse 28:



### 3. Objectives

- 3.1. The objective of this geophysical survey was to assess the subsurface archaeological potential of the survey area.

### 4. Geographic Background

- 4.1. The site is located c. 380m west of Great Tey, Essex (Figure 1). Gradiometer survey was undertaken across one field under arable cultivation. The survey area was bounded by Tey Barn and an agricultural field to the north, a playing field and housing estate to the east, by Brookhouse Road to the south, and further agricultural fields to the west.

- 4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	Flat arable field with quinoa stubble.	Bounded to the northeast, south and west by hedgerow and the southeast and northwest by wire fencing. The field continued to the north,

- 4.3. The underlying geology comprises London clay formation – clay, silt and sand. Superficial deposits of Lowestoft formation - Diamicton (British Geological Survey, 2020).
- 4.4. The soils consist of slightly acid loamy and clayey soils with impeded drainage (Soilscapes, 2020).

### 5. Archaeological Background

- 5.1. The following is a summary of an archaeological desk-based assessment produced and provided by Colchester Archaeological Trust (Colchester Archaeological Trust., 2020).
- 5.2. Roman period activity has been recorded as find spots, 200m to the southwest, where Roman mortar, painted wall plaster and tiles, as well as a coin were recovered. A paved corridor of a Roman villa (SM1013516) was discovered 700m to the south with possibly at least four phases of occupation including possible Romano-British ‘small stone circular structures’ identified in the same location. A trackway has been recorded c 675m to the southwest of the survey area as well as pits, a post-hole structure, gullies, boundary ditches and two corn driers.
- 5.3. Early medieval activity has been identified, in the same location as the trackway above (see 5.2), in the form of a medieval cobbled surface possibly associated with a stock enclosure.
- 5.4. Post-medieval field boundaries are visible on aerial photography in fields surrounding the survey area.

## 6. Methodology

6.1. Magnetometer surveys are generally the most cost-effective and suitable geophysical technique for the detection of archaeology in England. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

### 6.2. Data Collection

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

6.2.2. 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

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

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

6.2.3.2. 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.

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

### 6.3. Data Processing

6.3.1. 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.

## 6.4. Data Visualisation and Interpretation

6.4.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from the lower sensors. The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figure 7). XY trace plots visualise the magnitude and form of the geophysical response, aiding in anomaly interpretation.

6.4.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historic maps, LiDAR data, and soil and geology maps. Google Earth (2020) was consulted as well, to compare the results with recent land usages.

6.4.3. Geodetic position of results - All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data by the client.

## 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 and historic maps (Figure 6).

7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area. No anomalies suggestive of significant archaeological features have been detected across the survey area. The geophysical survey has detected anomalies of agricultural origin. Modern interference has been produced along the boundaries of the survey area, by fencing adjacent to the survey area (see section 4.2) as well as haloes produced by a service along the eastern boundary of the survey area.

7.2.3. Evidence of agricultural activity has been detected throughout the survey area (Figure 5). Linear anomalies have been identified as a possible unmapped field boundary, possible drainage ditches and modern ploughing trends.

7.2.4. Linear and curvilinear positive anomalies classified as 'Undetermined' have been identified. There is no evidence to ascertain a differentiation between a modern, historic or archaeological origin. The relatively small survey area and resulting lack of context also prevents a more confident classification.

### 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. **Ferrous (Spike)** – Discrete ferrous-like, dipolar anomalies are likely to be the result of isolated modern metallic debris on or near the ground surface.

- 7.3.1.3. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentrated deposition of discrete, dipolar ferrous anomalies and other highly magnetic material.
- 7.3.1.4. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures along the edges of the field have been classified as ‘Magnetic Disturbance’. These magnetic ‘haloes’ will obscure the response of any weaker underlying features, should they be present, often over a greater footprint than the structure they are being caused by.
- 7.3.1.5. **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.

### 7.3.2. Magnetic Results - Specific Anomalies

- 7.3.2.1. **Agricultural (Weak)** – In the south of the survey area, a linear anomaly, [1a], has been identified which is parallel to the modern field boundary. The anomaly has a weak positive signature, most explicit in the gradient data (Figure 4). The shape and magnetic signal of the anomaly are indicative of a cut feature with a magnetically enhanced infill, suggesting that it could be an unmapped former field boundary. Crossing northeast to southwest across the survey area, two weak positive linear anomalies, [1b], have been identified and are most explicit in the gradient data (Figure 4). They exhibit a signal similar to [1a] yet do not collocate with modern or mapped historic boundaries (Figure 6). However their shape and signal suggests that they have a similar agricultural origin, possibly relating to drainage ditches. Near the eastern boundary two curvilinear positive magnetic anomalies have been identified that exhibit a weak positive magnetic signal (Figure 4) and measure between c.16m and c.33m in length. When compared with recent satellite imagery (Figure 6) the anomalies correlate with visible headland cultivation.
- 7.3.2.2. **Agricultural (Trends)** – A series of parallel linear anomalies have been detected crossing the survey area in a north-south orientation (Figure 5). These linear trends are characteristic of modern ploughing activity.
- 7.3.2.3. **Service** – A linear anomaly has been detected parallel to the eastern boundary of the survey area running north to south (Figure 5). The anomaly consists of a dipolar magnetic signal which casts a broad magnetic halo, typical of a buried service.
- 7.3.2.4. **Undetermined** – Throughout the survey area, a number of linear and curvilinear anomalies have been identified, which exhibit a weak magnetic signal (Figure 4). Linear anomalies, [1c], have been detected which have possible returns. They are not visible on satellite imagery or recorded on historic maps, which could indicate an older origin. However, their magnetic signal is very weak, and



it is difficult to ascertain whether these are a result of agricultural or earlier anthropogenic activity. The lack of context and defined pattern prevents a confident classification and therefore have been classified as 'Undetermined'.

## 8. Conclusions

- 8.1. A fluxgate gradiometer survey has successfully been undertaken across the whole survey area. The geophysical survey has detected a range of anomalies of agricultural origin. Modern interference is generally limited to the periphery of the survey area produced by metal fencing, and a broad ferrous halo from a buried service.
- 8.2. No anomalies suggestive of significant archaeological features were identified, however anomalies of undetermined origin have been recorded. These could relate to agricultural, or modern processes, although an archaeological origin cannot be ruled out.
- 8.3. Agricultural activity has been detected across the survey area in the form of an unmapped former field boundary, possible drainage ditches and modern ploughing trends.

## 9. Archiving

- 9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.
- 9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to the any dictated time embargoes.

## 10. Copyright

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

## 11. References

British Geological Survey, 2020. Geology of Britain. [Colchester, Essex] <http://mapapps.bgs.ac.uk/geologyofbritain/home.html/>. [Accessed 03/08/2020].

Chartered Institute for Archaeologists, 2014. Standards and guidance for archaeological geophysical survey. ClfA.

David, A., Linford, N., Linford, P. and Martin, L., 2008. Geophysical survey in archaeological field evaluation: research and professional services guidelines (2<sup>nd</sup> edition). Historic England.

Google Earth, 2020. Google Earth Pro V 7.1.7.2606.

Magnitude Surveys, 2020. Written Scheme of Investigation For a Geophysical Survey of Newbarn Road, Great Tey, Essex. Magnitude Surveys. Bradford.

Olsen, N., Toffner-Clausen, L., Sabaka, T.J., Brauer, P., Merayo, J.M.G., Jorgensen, J.L., Leger, J.M., Nielsen, O.V., Primdahl, F., and Risbo, T., 2003. Calibration of the Orsted vector magnetometer. *Earth Planets Space* 55: 11-18.

Schmidt, A. and Ernenwein, E., 2013. Guide to good practice: geophysical data in archaeology. 2nd ed., Oxbow Books, Oxford.

Schmidt, A., Linford, P., Linford, N., David, A., Gaffney, C., Sarris, A. and Fassbinder, J., 2015. Guidelines for the use of geophysics in archaeology: questions to ask and points to consider. EAC Guidelines 2. European Archaeological Council: Belgium.

Soilscapes, 2020. [Colchester, Essex]. Cranfield University, National Soil Resources Institute [<http://landis.org.uk>]. [Accessed 03/08/2020].

## 12. Project Metadata

MS Job Code	MSTL726
Project Name	Newbarn Road, Great Tey, Essex
Client	Colchester Archaeological Trust
Grid Reference	TL888259
Survey Techniques	Magnetometry
Survey Size (ha)	2.9ha (Magnetometry)
Survey Dates	2020-09-23
Project Lead	Leanne Swinbank, BA ACIfA
Project Officer	William Rigby BA MA PCIfA
Colchester HER Event No	ECC4542
OASIS No	N/A
S42 Licence No	N/A
Report Version	0.2

## 13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	SP	WR	01 October 2020
0.2	Draft for Project Lead	SP	FPC	02 October 2020



MSTL726 - Land East of Newbarn Road, Great Tey, Essex

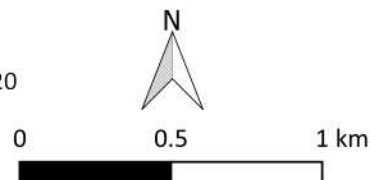
Figure 1 - Site Location

1:25,000 @ A4

Copyright Magnitude Surveys Ltd 2020

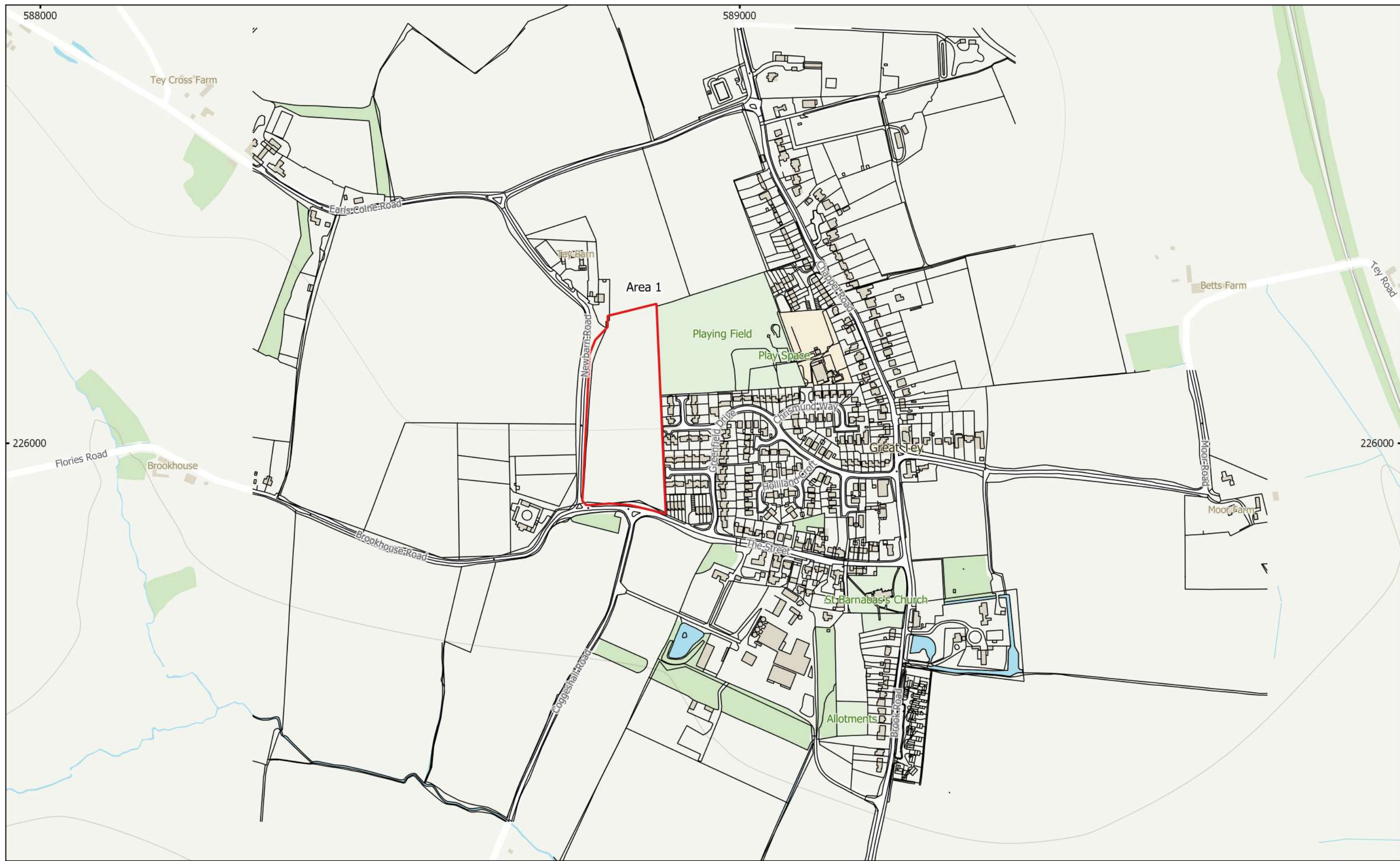
Contains Ordnance Survey data © Crown Copyright and database right 2020

 Site Boundary



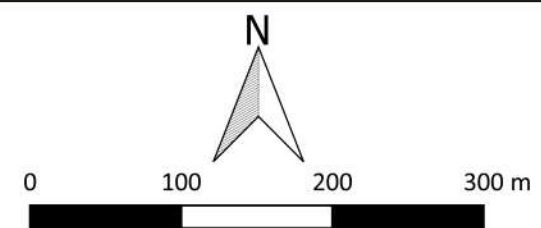
**magnitude**  
surveys





MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
 Figure 2 - Location of Survey Area  
 1:5,000 @ A3  
 Copyright Magnitude Surveys Ltd 2020  
 Contains mapping provided by the client OS100039294.

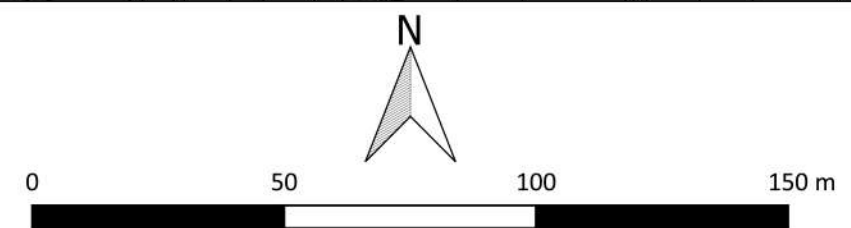
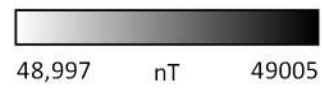
 Survey Area







MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
 Figure 3 - Magnetic Total Field (Lower Sensor)  
 1:1,500 @ A3  
 Copyright Magnitude Surveys Ltd 2020  
 Contains mapping provided by the client OS100039294

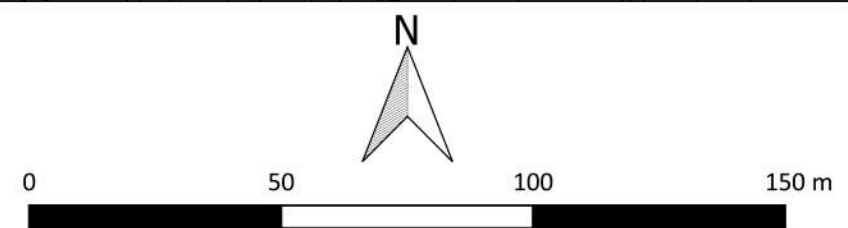
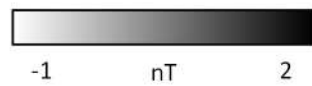


**magnitude**  
surveys





MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
Figure 4 - Magnetic Gradient  
1:1,500 @ A3  
Copyright Magnitude Surveys Ltd 2020  
Contains mapping provided by the client OS100039294



**magnitude**  
surveys





MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
 Figure 5 - Magnetic Interpretation  
 1:1,500 @ A3  
 Copyright Magnitude Surveys Ltd 2020  
 Contains mapping provided by the client OS100039294

- |                         |                      |
|-------------------------|----------------------|
| Agricultural (Weak)     | Agricultural (Trend) |
| Magnetic Disturbance    | Service              |
| Ferrous/Debris (Spread) | Ferrous (Spike)      |
| Undetermined (Weak)     |                      |

N

0      50      100      150 m

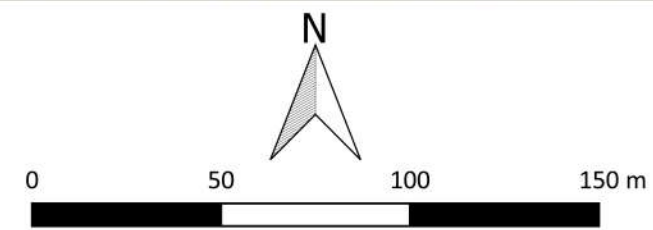
**magnitude surveys**





MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
 Figure 6 - Magnetic Interpretation Over Historic Maps and Satellite Imagery  
 1:2,000 @ A3  
 Copyright Magnitude Surveys Ltd 2020  
 Contains historic maps: Ordnance Survey, 6" 2nd edition c. 1882-1913 ©  
 National Library of Scotland  
 Contains satellite imagery © 2020 Bing Satellite

- |                         |                      |
|-------------------------|----------------------|
| Agricultural (Weak)     | Agricultural (Trend) |
| Magnetic Disturbance    | Service              |
| Ferrous/Debris (Spread) | Ferrous (Spike)      |
| Undetermined (Weak)     |                      |







MSTL726 - Land East of Newbarn Road, Great Tey, Essex  
Figure 7 - XY Trace Plot  
30nT/cm at 1:1,500 @ A3  
Copyright Magnitude Surveys Ltd 2020  
Contains mapping provided by the client OS100039294

