

## **ARCHAEOLOGICAL EXCAVATION**

**AREA A4, PHASE 4  
BRADWELL QUARRY  
ESSEX**

## **POST-EXCAVATION ASSESSMENT**

**ASE Project No: 160891  
Site Code: BDAF12**

**ASE Report No: 2017159**



**September 2017**

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## **Abstract**

*This report presents the summary results of an archaeological 'strip, map and sample' excavation carried out by Archaeology South-East over a c.3.5ha area of arable land (Area A4 Phase 4) situated in the north-eastern corner of Bradwell Quarry (formerly Rivenhall Airfield), 4km east of Braintree. The fieldwork was commissioned by The Guildhouse Consultancy, on behalf of Blackwater Aggregates, in advance of extraction of sand and gravel. The work on Area A4 Phase 4 was carried out in Autumn 2016 and followed evaluation by trial trenching in 2012 and the excavation of Area A4 Phases 1-3 to its west.*

*A relatively low density and complexity of remains was recorded.*

*Up to seven undated pits and post-holes in the east of the site could potentially be of prehistoric date. Similar undated features encountered across previous areas of the quarry have generally been assumed to be of Bronze or Iron Age date, in keeping with the majority of dated pit remains.*

*No definite remains of Roman or Saxon date were identified. The majority dated to the medieval period and were concentrated in the northwest of the site. The remains consisted of a number of ditches forming several small enclosures, a collection of possible structural features and a few pits. Collectively, these probably constitute part of a farmstead located adjacent to Cuthedge Lane. Pottery evidence suggests that the farmstead was in fairly continuous use from the early 13th century into the 14th century, perhaps with two sub-phases of land use activity being apparent (early 13th century and later 13th to 14th century).*

*In the post-medieval period the location of the former farmstead was crossed by two roughly north/south aligned ditches. One contained broadly 16th to 19th century pottery and the other several ceramic field drains. In the south of the site one undated gully containing animal bone may also date to the post-medieval period. A near-by ditch infilled with brick rubble is depicted on the 1st edition Ordnance Survey map as is a second brick-infilled ditch at the western limit of the site. Both were levelled during construction of the WW2 airfield.*

*It is judged that the medieval remains from this phase of quarry works merit publication and are collated and disseminated with the results of previous Area A4 Phases 1 to 3. Further analysis and reporting tasks required to produce/contribute to an article for publication in the county journal 'Essex Archaeology & History' are identified and quantified.*

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## **1.0 INTRODUCTION**

### **1.1 Site Background**

1.1.1 Archaeology South-East (ASE), the contracting division of the Centre for Applied Archaeology (CAA), Institute of Archaeology (IoA), University College London (UCL) were commissioned by The Guildhouse Consultancy on behalf of Blackwater Aggregates Ltd to undertake the archaeological '*strip, map and sample*' excavation of a c.3.5ha strip area (Area 4 Phase 4), in advance of the north-eastern enlargement of the extraction works at Bradwell Quarry, in Autumn 2016.

### **1.2 Location**

1.2.1 Bradwell Quarry Area A4 Phase 4 consists of c.3.5ha of arable land located in the north-eastern part of the former WW2 Rivenhall Airfield, 4km east of Braintree. The land forms part of Allshot's Farm. It lies north-east of Silver End and is bounded by Cuthedge Lane to the north, the Area A4 Phase 3 extraction area to the west and farmland to the south and east. The eastern end of the former WW2 runway encroached into the south-west of the Phase 4 area and was not subject to excavation. The extents of Phase 4, in relation to the whole of Quarry Area 4 area, are shown on Figures 1 and 2.

### **1.3 Geology and Topography**

1.3.1 The site sits at c.50m AOD on the boulder clay plateau, on the interfluvium between the south-east flowing rivers Brain and Blackwater to the south-west and NNE respectively. The surface and near-surface geology of the locality consists of chalky till with outwash sands and gravels, silts and clay (The Lowestoft Formation) above a continuous or near continuous sheet of fluvial sand and gravel (Kesgrave Sands and Gravels) above a marine deposit of stiff, blue grey clay (London Clay) (British Geological Survey (BGS) Map Sheet 223 (scale 1:50,000)).

1.3.3 The local topsoil comprises mid to dark greyish brown friable silt clay with occasional stones. It directly overlies the Lowestoft Formation deposits and is between 0.3m to 0.4m thick.

### **1.4 Circumstances and Dates of Work**

1.4.1 The investigation was commissioned by The Guildhouse Consultancy on behalf of Blackwater Aggregates Ltd in advance of extraction of sand and gravel. No specific brief was issued for this phase of work; however, archaeological monitoring and excavation was undertaken in accordance with a Project Design (ASE 2014) produced for Area 4 Phase 1 after consultation with Essex County Council (ECC) Place Services.

1.4.2 The archaeological work was undertaken between the 12 October and 8 December 2016. The work was supervised by Trevor Ennis with the assistance of ASE archaeologists. Archaeological surveying was carried out by Nathalie Gonzalez. The fieldwork was managed by Andy Leonard.

- 1.4.3 The investigation of Quarry Area A4 has been preceded by archaeological works undertaken elsewhere across the quarry extents over the last c.20 years. Extensive areas have been subject to evaluation, excavation and/or watching brief to the south of Area A4 (see section 2).
- 1.4.4 A Cultural Heritage (Archaeology) Statement was prepared for Rivenhall Airfield in 1997 by Oxford Archaeological Associates, which included Area A4 (Oxford Archaeological Associates 1997). Evaluation of Areas A4 and A3, consisting of 165 trenches, was carried out between August and October 2012 (Germany 2014).
- 1.4.5 ASE produced a Desk-Based Assessment (DBA) for Areas A3 and A4 in 2014 (ASE 2014a)

## **1.5 Archaeological Methodology**

- 1.5.1 Archaeology South East is a Registered Archaeological Organisation with the Chartered Institute of Field Archaeologists (CIfA) and all work was carried out in accordance with CIfA by-laws and guidelines for excavation and artefacts (CIfA 2014a; 2014b; 2014c) and complied with Standards for Field Archaeology in the East of England (Gurney 2003).
- 1.5.2 Topsoil stripping was undertaken by the quarry operator's contractor using a 360° mechanical excavator fitted with a flat-bladed bucket under archaeological supervision. The overburden was mechanically excavated in spits until natural geology was exposed or until archaeological features or deposits were uncovered. Initial stripping of the area was undertaken under constant archaeological supervision changing to regular monitoring visits once the correct machining depth and confidence in the driver had been established.
- 1.5.3 As stripping of the overburden progressed, the exposed surface was regularly inspected for the presence of archaeological remains and a pre-excavation plan was compiled using GPS planning technology.
- 1.5.4 The observed archaeological remains were appropriately sample excavated by hand. All archaeological features and deposits were recorded using standard ASE methodologies. Written records comprising Watching Brief record sheets and individual context recording sheets were created. After excavation, features were planned at a scale of 1:20 and sections drawn at 1:10. A GPS with map-based software was used to locate site boundaries and archaeological features and relate them to the Ordnance Survey. Colour digital photographs were taken of significant archaeological features.
- 1.5.5 All stratified artefacts were collected and retained in accordance with standard ASE practice and CIfA (2014c) guidelines.
- 1.5.6 An environmental sampling strategy was carried out, following current English Heritage (2011) guidelines. A standard bulk sample size of 40 litres (or 100% of small features) was taken from dated/datable sealed contexts to recover environmental material such as charcoal, charred plant remains, small mammal and fish bone.

## **1.6 Organisation of the Report**

- 1.6.1 This post-excavation assessment (PXA) and updated project design (UPD) has been prepared in accordance with the guidelines laid out in Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (English Heritage 2008).
- 1.6.2 The report seeks to place the results from Area A4 Phase 4 (hereafter referred to as 'the site') within the local archaeological and historical setting; to quantify and summarise the results; specify their significance and potential, including any capacity to address the original research aims, listing any new research criteria; and to lay out what further analysis work is required to enable their final dissemination, and what form the latter should take.
- 1.6.3 Following on from the 2012 archaeological evaluation conducted by ECC FAU (Germany 2014), all Area A4 monitoring and excavation has retained the same site code: BDAF12. Context and sample numbering, etc., has run consecutively across the various A4 phase areas.
- 1.6.4 Where appropriate the results from the preceding evaluation have been integrated and assessed with the results from the subsequent strip, map and sample investigation.

## **2.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND**

### **2.1 Introduction**

2.1.1 A Cultural Heritage (Archaeology) Statement (Oxford Archaeological Associates 1997) has already been prepared for Rivenhall Airfield and is held in the Essex Historic Environment Record (EHER), together with records of all fieldwork to date within the airfield. In addition, much archaeological work has been undertaken in recent years immediately to the south and west of the Quarry Area A4 site in connection with extraction at Bradwell Quarry Site R (Germany in prep), the current A2 quarry extension and the Integrated Waste Management Facility site (Germany 2017). This has been previously reported upon and is not reiterated here.

2.1.2 The following is a summary of the most pertinent information and is taken from the Area A3/A4 evaluation report (ECC FAU 2014) and desk-based assessment (ASE 2014a).

### **2.2 Site specific Background**

2.2.1 Prehistoric remains found across Site R and Area A2 mostly comprise Middle Bronze Age and Middle Iron Age pits, with a multi-phase roundhouse also being recorded in the southeast of Site R. The incidence of Roman and Saxon period remains across these same areas is minimal, though a potential Late Iron Age and Early Roman occupation site is present at the south end of Area A2, probably extending beyond into Area A5.

2.2.2 Bradwell is not mentioned by name in the Domesday Survey, the first documentary reference dating to 1238, and there is minimal evidence for Bradwell and its church having developed from a Late Saxon predecessor. Holy Trinity Church and Bradwell Hall (the seat of the only manor in the parish) lie 1km from the nearest settlement and c.1.3km north of the middle of Rivenhall Airfield. The church and the Hall form an isolated church / hall complex and were probably founded during the first half of the 12th century (Rodwell 1998, 59).

2.2.3 Bradwell displays a non-nucleated settlement pattern, consisting of thinly scattered farms and cottages, for most of its history. Some of those settlements are named on historic maps, e.g. Capon's Farm. Others are still in existence e.g. Herring's (Herons) Farm and Heyward's (Haywards) Farm. Within the wider A4 site itself is an unnamed group of cottages within a ?moat. Digitisation and enlargement of the 1880 Ordnance Survey plan of the cottages reveals the settlement to have comprised two adjoining enclosures, each with one L-shaped building. Historically, access to the site was via local footpaths and a cobbled trackway which continued southwards and linked Cuthedge Lane to Woodhouse Farm. The settlement was levelled when the airfield was built in 1943. Cuthedge Lane accesses all of these settlements and is thus likely to have been in continuous use since at least the late medieval period.

2.2.4 The construction of the airfield in the mid-20th century included airfield runways, taxiways and aircraft parking bays.



## **2.3 Previous Archaeological Fieldwork**

- 2.3.1 Gravel extraction has prompted five phases of archaeological fieldwork at Rivenhall Airfield. These comprise fieldwalking and selective geophysical survey of the entire airfield during 1991 and 1992 (Medlycott 1991; Johnson 1992), continuous monitoring and intermittent excavation of Site R between 1991 and 2010 (Peachey 2003; Allen and Roy 2006; Germany 2006; Ennis 2008; Germany forthcoming), trial-trenching of Areas A2 and A5 in 2006 and 2010 (Ennis 2006; Germany 2010, Germany 2017), archaeological excavation and monitoring of part of area A2 during 2011 and 2012 (Germany 2017) and trial trenching of A3 and A4 in 2012 (Germany 2014).
- 2.3.2 The continuous observation of topsoil stripping and intermittent excavation of Site R between 1991 and 2010 recorded a small number of archaeological sites, features and finds. These included a Middle Iron Age round-house in the western part and two medieval enclosures. The western medieval enclosure contained a well, pits and post-holes and was possibly part of small farmstead, while the northern medieval enclosure may have been used for crop processing. The western enclosure continued in a modified form into the late medieval period and was eventually incorporated into a network of post-medieval field boundaries. Evidence for land use in other periods was minimal. Middle Bronze Age pits and finds were present on the northern and southern limits of the area and were possibly related to habitation and domestic activity.
- 2.3.3 The A2 and A5 trial-trenching discovered a small number of Middle Iron Age pits north of Sheepcotes Farm which may have been related to the Middle Iron Age roundhouse found previously in Site R. Pits and enclosure ditches dating to the 11th to 13th / 14th-century were also present at the same location and are likely to have been associated with Sheepcotes Farm, an adjacent long-lived settlement that is documented to have been founded during or before the 12th century.
- 2.3.4 The archaeological monitoring and excavation of the eastern two thirds of Area A2 in 2011 and 2012 revealed two medieval sites, both of which contained remains of enclosures, ponds and medieval buildings. The southern most of these dated to the 12th to mid-13th century and was probably an agricultural working area, complete with large barn or byre, while its counterpart to the north was probably a messuage (a house and outbuildings in a defined plot), dating to the early 13th to 15th century. Late 12th / early 13th-century enclosure ditches lay to the west of both sites.
- 2.3.5 The archaeological trial trenching of Areas 3 and 4, undertaken in 2012, identified two areas of archaeological interest, both situated within Area 4. The earlier of the two consisted of an Early Iron Age gully conjectured to have been part of a small enclosure lying close to an area of settlement. No further features of this date were noted in any of the surrounding trenches. The other area of archaeological interest from the evaluation comprised a medieval to modern settlement site south of Capons Farm. Early OS mapping indicates it may have been moated and to have contained one or more cottages in its latest stages. The recorded remains included one of the two cottages, a series of medieval gullies, un-datable and post-medieval post-holes, and a large feature which is likely to have been part of the south side of the moat.

*Area A4 Phase 1*

- 2.3.6 The strip, map and sample excavation of the 5.4ha extent of A4 Phase 1 exposed the remains of a Middle to Late Bronze Age unenclosed farmstead in the east of the area (ASE 2017a). This consisted of a ring-ditch, thought to be an eaves-drip gully to a roundhouse, surrounded by groups of pits and a possible watering hole. Clusters of postholes may have denoted associated structures to the east and north-west of the ring-ditch. Three undated unurned cremation burials and a scatter of other dated and undated pits and post-holes may also have been prehistoric. In the north-east of the area, one corner of a previously unrecorded medieval ditched enclosure was exposed. Pottery from the enclosure ditch and from internal pits provided a 12th to early 13th century date.
- 2.3.7 In the south-west of the A4 phase 1 area was a moated enclosure which had been partially investigated by the evaluation. Within the moated area was a fairly modest settlement which originated in the 12th century and continued to be occupied until the creation of the airfield in the mid-20th century (ASE 2017a). Medieval cess pits, rubbish pits, a well, ponds, drainage gullies and postholes of possible structures were recorded, but no definite medieval buildings discerned. The moat, which consisted of substantial ditches, may have been a post-medieval construct, post-dating the earlier features. The enclosure formed by the moat was later divided into two parts by a north-south ditch. Either side of this subdivision were foundations of brick cottages built over earlier occupation features. Three out of four of these cottages, along with the moat, are shown on 19th century mapping and attest to the continued occupation of this moated site until the mid-20th century.

*Area A4 Phase 2*

- 2.3.8 In Area A4 Phase 2 extensive modern disturbance was noted caused by construction of former airfield fuel tanks and aircraft parking bays, and their subsequent removal. The site was also crossed by concrete airfield access tracks. A few modern postholes or pits containing coal and glass were investigated. The eastern part of the area was crossed by two ditches of post-medieval or later date. None of the prehistoric and medieval remains found in Area A4 Phase 1 were identified to extend into the Phase 2 area. An HER summary only was produced for these results.

*Area A4 Phase 3*

- 2.3.9 Most recent work in Area A4 Phase 3 (to the immediate west of the Phase 4 area) revealed the remains of five Late Iron Age/Early Roman cremation burials (ASE 2017b). A sample of burnt bone from one burial has been radiocarbon dated to 20 cal BC-AD cal 125 (BETA-455775; 1950±30), which is of a consistent date with pottery recovered from the same feature (c.AD 10-70). With the exception of modern airfield remains/disturbance, the only other archaeological features were post-medieval field ditches, backfilled in the 19th century, continuations of ditches identified in other phases of work and on historic mapping.

### **3.0 ORIGINAL RESEARCH AIMS AND OBJECTIVES**

#### **3.1 General Aims and Objectives**

- 3.1.1 The aim of the on-going archaeological work is to record archaeological remains exposed within Bradwell Quarry before their destruction by successive phases of mineral extraction. The long term objective is to obtain a greater understanding of the development of the prehistoric, Roman and medieval landscape within the Rivenhall / Bradwell area.

#### **3.2 Specific Research Objectives**

- 3.2.1 Based upon the results of the evaluation and on the results of investigation within the surrounding vicinity of the quarry, the project-specific research objectives focused only on the medieval period and were set out in the Project Design (ASE 2014b). While this was appropriate for Area 4 Phase 1 with its moated occupation enclosure, they are of less relevance for the results of later phases of work. The original research objectives (ORO's) were:

**ORO 1:** With particular regard to the possible moated site, to identify any evidence for the date of establishment, status of the inhabitants over time, the original form of the monument and the structures upon it, including any evidence for expansion, contraction or alteration, and the function of the site over time. Attention will also be paid to evidence for subsequent changes in status, use and periods of occupation and/ or abandonment, as the medieval pottery assemblage from the site would suggest a hiatus in activity in the 15th and 16th century. With regard to Medlycott 2011, the regional study of moated sites, incorporating excavated, documentary and cartographic evidence, is highlighted as a regional research topic for the medieval period and any further evidence for a postulated moated house thought to have first occupied the site would have the potential to contribute towards this research objective.

**ORO 2:** The archaeological work will provide a further opportunity to test the theory suggested by other recent work in the Rivenhall / Bradwell area that the modern landscape of Bradwell parish is largely a 12th century construct derived from a dispersed settlement pattern based upon Bradwell church and hall, isolated tenant farms and cottages, with utility and working areas, such as barns and quarries, connected by narrow roads and farm tracks, all within a network of small fields. With regard to Medlycott 2011, the origins, development and dynamics of different medieval rural settlement types is highlighted as needing further research. The examination of the possible moated site, coupled with the evidence provided by other recent archaeological work in the Rivenhall/ Bradwell area has the potential to add to our understanding of the way places appear, grow, shift and disappear (Medlycott 2011, 70).

- 3.2.2 Following completion of the fieldwork the research objectives for the project identified above were to be reviewed/ refined as necessary as part of the post-excavation assessment and publication process, with reference to the pertinent themes and questions identified in *Research and Archaeology: a Framework for the Eastern Counties, 2. research agenda and strategy* (Brown and Glazebrook 2000) and *Research and Archaeology Revisited: a revised framework for the East of England* (Medlycott 2011).

3.2.3 The original research objectives for the project are reviewed/ refined in Section 8.1 of this report.

## **4.0 ARCHAEOLOGICAL RESULTS**

### **4.1 Introduction**

4.1.1 The archaeological remains identified in Area 4 Phase 4 define three main periods of land use – medieval, post-medieval and modern. In addition a number of undated pits were present which in some instances could potentially be of prehistoric date. While stratigraphic intercut complexity indicates some degree of change and replacement over time, none of these periods have been formally split into separate phases of land use and development. Modern features, such as patches of concrete/brick debris, defunct service lines, etc., mostly relate to WW2 and later use of the site and are not described/discussed in detail.

4.1.2 For the purposes of this post-excavation assessment the results are described and discussed at the context and group level. Further interpretation, including the assigning of land use elements will be carried out during the analysis stage. All contexts are referred to in square brackets [0000], with environmental samples listed in triangular brackets <00> and registered finds referred to thus RF<00>. A context register is provided as Appendix 1 and a group list as Appendix 2. All features are shown on Figure 2, labelled by group number.

### **4.2 Natural Deposits, Overburden and Evidence of Truncation**

4.2.1 The removed overburden consisted of a homogenous dark grey-brown clay-silt plough soil generally 0.3-0.4m thick. This removed directly onto natural deposits of brownish orange silty clay. Archaeological remains were found cut into this clay and often through into an underlying deposit of yellow chalk-flecked clay.

4.3.2 The site was located at the eastern end of the former WW2 airfield and is likely to have been subject to vertical truncation associated with the construction of runways, access roads and dispersal loops. Horizontal truncation may also have occurred during levelling prior to airfield construction. The absence of subsoil may be suggestive of this. In the west of the site modern disturbance containing brick rubble was present close to the end of the former main runway. Other modern features included two WW2 or later service trenches and a water main (Fig. 2).

4.3.3 Truncation as a result of post-medieval and modern agriculture was evidenced by a few plough scars, occasional mole drains and ceramic field drains.

### **4.3 Medieval**

4.3.1 Medieval remains consisting of several enclosure ditches and associated pitting were identified in the north-east of the site, adjacent to and continuing beyond the limit of excavation (Fig. 3). These remains broadly dated from the 12th to 14th centuries.

4.3.2 Ditch G30 was aligned WNW/ESE and was investigated in three segments ([989], [997] and [1008]). The ditch was over 9m long and appeared to have a rounded terminus (truncated by post-medieval ditch G37) to the east and to the west was obscured by the modern water main easement. It was generally up to 1.75m wide by 0.75m deep but widened and became slightly deeper (0.9m)

towards its eastern end before noticeably sloping upwards (Fig. 6, section 8). The ditch had up to five fills and contained about 40% of an early 13th century cooking pot in a primary fill [1006]. The upper fills contained a variety of medieval pottery, including late 13th to 14th century material, implying that the ditch was in-use for much of the 13th century.

- 4.3.3 Ditch G31 was located 3m south of ditch G30, on a parallel alignment. It was investigated in two segments ([1025] and [1027]). The ditch was 1.58m wide and up to 0.66m deep and contained up to two clay silt fills (Fig. 6, section 9). Pottery was only recovered from upper fill [1023] and included sherds from a late 13th to 14th century cooking pot and two sherds from a pipkin of probable 14th century date. Again obscured at its west end by the water main easement, its eastern extent was indistinct though may have extended beyond G37 at least as far as the corner of later ditch G32.
- 4.3.4 Ditch G34 was aligned roughly NW/SE and was investigated in three places ([922], [931] and [1038]). The ditch was approximately 40m long and up to 2.74m wide by 0.62m deep (Fig. 6, section 3). It had a rounded, slightly bulbous, terminus at its NW end while to the east it was truncated by post-medieval ditch G38. It is noted that the ditch curved northwards in the vicinity of segment [931] and it is possible that it turned and ran along the same line as later ditch G38. The upper fill [921] of middle segment [922] contained a range of medieval pottery, the latest of which dated to the later 13th to 14th century. Other finds from this context included part of a medieval horseshoe (<RF2>) and a curving iron strap with thickened rim (RF<4>) possibly part of the binding for a bucket or other wooden vessel.
- 4.3.5 Ditch G33 was aligned roughly N/S and appeared to be contemporary with NW/SE ditches G32 and G34, with which it merged. The central section of the ditch, seg. [908], was 1.65m wide by 0.75m deep and contained two brownish grey clay silt fills ([906] and [907]). Later 12th to 14th century pottery and animal bone was recovered from upper fill [906]. The northern end of the ditch continued through a possible pond area ([946]) at the edge of the site where it appeared to widen out on its western edge and was investigated in two segments [942] (Fig. 6, section 5) and [972]. A medieval horseshoe (<RF3>) was recovered from the primary fill [971] of ditch [972] and a large iron nail (<RF1>) from the primary fill [941] of ditch [942].
- 4.3.6 Ditch G32 was primarily aligned WNW/ESE and was investigated in two segments ([903] and [905]). The ditch was 22m long and appeared integral with ditch G33 to the east and to the west turned north-east where it was recorded as ditch G35. Western excavated segment [903] was the slightly larger at 1.65m wide by 0.85m deep (Fig. 6, section 1). Segment [905] contained a single brown clay-silt fill which was also evident as the main fill in segment [903]. In addition, segment [903] contained a greyer upper fill [901] that in plan was observed not to extend as far eastwards as segment [905] but did continue to the west (as [982]) and merged into the top fill of ditch return G35. Although pottery from this ditch had an overall date range of 12th to 14th century closer inspection suggests a possible date of late 12th to early 13th century for the main fill and a date of early 13th to early 14th century for upper fill [901 / 982].
- 4.3.7 Ditch G35, the integral northern return of G32, was aligned NE/SW and

appeared to continued beyond the edge of the site to the north. Ditch G35 was in excess of 7m long and was investigated in two segments ([958] and [961]). The ditch was up to 1.95m wide, though shallow at only 0.28m deep (Fig. 6, section 6). It was filled by a fairly consistent dark grey to dark greyish brown clay-silt ([957 / 959]) from which four sherds of later 12th to 14th century pottery and a few fragments of oyster shell were recovered. Segment [961] also had a second (lower) fill of dark brown silty clay [960].

- 4.3.8 The top of ditch G35 was cut by two pits [956] and [965] (G42). Elongated pit [956] was c.2.2m long by 0.92m wide and 0.18m deep and was located directly above ditch G35, cutting into its fill (Fig. 6, section 6). It contained a main upper fill [954] of mid grey clay silt containing frequent flecks of chalk and occasional flecks and pieces of baked clay. An underlying fill [955] was little more than a dark grey thin band of silt and charcoal in the base of the feature. Recovered finds included two sherds of late 13th to 14th century pottery and a fragment from a possible Coggeshall 'great brick'. A bulk soil sample (<30>) taken from these deposits contained charred cereal grains (wheat and oats) and legumes of pea/vetch.

Pit [965] was roughly square or rectangular, truncating the eastern edge of ditch GG% and its fill, and continuing beyond the edge of the excavated area. It was c.1.8m long, by 0.42m deep as dug. It contained three fills – a dark brown silty clay primary fill [964], a main fill of dark grey silty clay [963] that contained a few sherds of early 13th to 14th century pottery and a localised upper fill of redeposited yellowish brown clay [962].

- 4.3.9 Pit group G39 consisted of five possibly structural features ([912], [967 / 975], [977], [979] and [981]) located just within the corner of the enclosure formed by ditches G32 and G35.

Along the northern edge of excavation was sub-rectangular feature [967 / 975], c.2.4m long by 1.2m wide and 0.2m deep with gradually sloping sides and a flattish base (Fig. 6, section 7). It was mainly filled with compact light greyish white to yellowish white chalky silty clay [966 / 974], the lower part of which may have been burnt *in-situ*. The top of the feature was infilled by darker grey silty clay [973] flecked with chalk and charcoal. No finds were recovered from either fill. The high chalk content and compact nature suggested that it may have functioned as some form of foundation.

- 4.3.10 Irregular gully [979], c.1m long by 0.33m wide, but very shallow at only 0.07m deep, ran roughly parallel with feature [967 / 975] and was seemingly cut at its west end by ditch G35. The gully was filled with dark grey silty clay [978]. At the southern end of the gully was sub-circular post-hole [977] of c.0.55m diameter and a depth of 0.16m. The post-hole had a similar fill [976] to the gully and it is probable that they may have been contemporary features. Finds from the gully consisted of two sherds of later 12th to 14th century pottery, small fragments of tile and fired clay.

- 4.3.11 Small oval features, post-hole [912] and pit [981] were located further to the east of the gully. Post-hole [912] was 0.48m long by 0.10m deep. No finds were recovered from its mid brownish grey clay silt fill [911]. The pit was slightly longer at 0.58m but shallower at only 0.06m deep, and had gradual sides and a flat base. It contained two fills, a marginally upper fill of dark red baked clay in the east and chalk and charcoal flecked grey silty clay in the west. One sherd of later

12th to 14th century pottery was recovered.

- 4.3.12 Pit [1002] (G43) was cut into the top fill of ditch G30. The pit was slightly oval in plan, 1.8m long by 0.35m deep (Fig. 6, section 8). It had a single dark grey fill containing numerous fragments of oyster shell and a variety of medieval pottery, the latest of which dated from the mid-13th to 14th century.
- 4.3.13 Located north of ditch G30 was cluster of discrete features (G40) consisting of three pits ([1017], [1019], and [1028]), a post-hole [1016] and an irregular feature of probable natural origin [1021]. The largest feature, oval pit [1028], was 1.35m long by 0.23m deep and contained a single silty clay fill. Finds consisted of two early to mid-13th century pottery sherds and three more widely dated 12th to 14th century sherds.
- Pits [1017] and [1019] were smaller and shallower (0.04m deep and 0.12m deep respectively) and were located close to the edge of the site. Both contained sherds of later 12th to 14th century pottery. Post-hole [1016] was located immediately north of the probable terminus of ditch G30 and had been truncated by post-medieval ditch G37. It was in excess of 0.2m long and survived to a depth of 0.16m. Its light greyish brown silty clay fill contained 33 sherds of pottery including nineteen from the same later 12th to 14th century wheel-thrown vessel.
- 4.3.14 To the east of the terminus of ditch G30 was an elongated pit G44 [1013], 2m long by 0.6m wide by 0.13m deep. It had a single silty clay fill [1014] containing one large sherd of mid-12th to 13th century pottery. Rather than being a pit *per se*, this feature could be construed to have blocked the gap between ditches G30 and G35.
- 4.3.15 Shallow sub-circular pit G46 [910] was located centrally within the enclosure formed by ditches G32, G33 and G34. It was 0.95m long by 0.09m deep. No finds were present in its clay silt fill [909].
- 4.3.16 Ditch G36 was the most westerly of the boundary features recorded and may have defined the western extent of the medieval occupation area. It was initially obscured by disturbance associated with the water main easement, but was clarified after additional machining. The ditch, aligned roughly NNE/SSW, was 3.6m wide by 1.2m deep and was exposed in plan for about 5m. Where investigated in segment [1035] it contained two mid to dark greyish brown clay silt fills of similar (c.0.6m) thickness. No finds were recovered.
- 4.3.17 Substantial pit G45 (seg. [1032]) appeared vaguely pear-shaped in plan and was approximately 6m long by 5.3m wide and over 1.4m deep (not bottomed; Fig. 6, section 10). It had a slightly organic dark brownish grey clay silt main fill [995]. Numerous small bones from a juvenile pig (or pigs) were recovered from a localised area of this fill (bulk soil Sample <38>) and other retrieved finds consisted of a large piece of medieval roof tile and an unidentified iron object. The pit had two lower fills ([1030] and [1031]). The lowest, [1031], consisted of light grey chalky clay that initially looked natural, but inclusions of charcoal, fragments of baked clay and pieces of brick indicated it was not. The brick pieces have been identified as fragments of Coggeshall 'great bricks' dating to the 12th/13th century.
- 4.3.18 Three further pits (G41) were located in the enclosure north of ditch G32. In the



centre of the area was a solitary sub-circular pit [938], 0.95m long by 0.13m deep. Its single dark grey fill [937] contained two sherds of later 12th to 14th century pottery. About 8m to the east were two intercutting features [944] and [946] containing similar mid greyish brown clay silt fills. Both features continued beyond the northern edge of the excavated area. Pit [944] appeared oval in plan and was over 1.7m long by c.1.3m wide and 0.25m deep. One sherd of 13th to 14th century pottery and a probable fragment of medieval horseshoe (<RF5>) were recovered from its fill [943]. Feature [946] was considerably larger, at c.5.4m long by 2.5m+ wide, and was up to 0.35m deep. It was located at the junction of ditches G32 and G33 and perhaps constitutes a shallow pond or watering hole.

#### **4.4 Post-medieval and Modern**

- 4.4.1 At the east of the medieval settlement area was a large, roughly N/S aligned, ditch [986] (G38) that could be traced across the site for over 150m. Where excavated at its north end, it was 3.44m wide by 0.99m deep and contained three silty clay fills. Finds consisted of a sherd of 13th to 16th century pottery, roof tile and part of an iron bucket handle (<RF6>). Several ceramic field drains were present within this ditch, particularly to the south, beyond the junction with ditch G34, where one was noted at its base. This ditch extended for over 150m across the site and linked with a brick rubble infilled ditch that is depicted on the 1st edition Ordnance Survey map of 1876 (Fig. 2)
- 4.4.2 A second roughly N/S aligned ditch (G37) crossed the western part of the medieval settlement area. This was investigated in three separate segments ([988], [996] and [1012]) and partially exposed in a fourth [1010]. The ditch was over 23m long (becoming obscured to the south) and was up to 3.4m wide by 0.5m deep. Clearly relatively late in the site sequence, it cut the infilled remains of ditches G30, G31(?) and G34, pit G45 (Fig. 6, section 8) and posthole [1016] (G40). Recovered finds consisted of residual medieval (12th-14th century) pottery, two sherds of later 16th to 19th century pottery and three sherds of 17th to earlier 18th century pottery. It was not possible to trace the route of this ditch further south as it was obscured by loose material underlying the position of a former bund. It does not appear to coincide with a boundary shown on historic mapping.
- 4.4.3 Along the north-western and southern sides of the Phase 4 area were two ditches both containing 20th-century brick rubble. The ditches, depicted on early editions of Ordnance Survey mapping from 1876 through to the 1930s, were infilled during airfield construction.
- 4.4.4 Running diagonally through the centre of the site was a line of disturbance up to c.6m wide associated with the route of the former water main (now re-directed). To its west was a roughly parallel service trench and to its east an L-shaped cable trench, both of WW2 or later date. In the south-west of the site were two distinct patches of modern disturbance amidst a wider disturbed area, close to the end of the former runway, where brick and tile rubble had been compacted into the top of the natural deposit, probably during airfield construction.

## **4.6 Undated**

- 4.6.1 Four small groups of undated features (G47, G48, G49 and G50) were present in the eastern half of the site (Fig. 2). Although none contained any diagnostic dating evidence, some may be of prehistoric or medieval date.
- 4.6.2 In the north-east of the site were three small pit/post-hole features G47 (Fig. 4). The largest of three, pit [924], was pear-shaped in plan and measured 0.86m long by 0.12m deep (Fig. 6, section 4). It was filled by dark grey silty clay with frequent charcoal inclusions. The other two, smaller, features ([926] and [928]) were oval in plan. Post-hole [926] measured 0.6m long by 0.17m deep and pit [928] measured 0.37m long by 0.07m deep. Charcoal was present within the silty clay fill of [928] and occasional flecks of charcoal and baked clay were noted within the fill of [926]. No finds were recovered from any of these features.
- 4.6.3 In the east of the investigation area were a further four pit/post-hole features G48 (Fig. 4). Sub-circular pits [915] and [918] were of similar length (0.6m) and depth (0.12m/0.13m) (Fig. 6, section 2). Both contained a grey upper fill and a darker lower fill with frequent charcoal inclusions. Baked clay was also noted within the lower fill of [915]. Nearby circular pit [920] was smaller, with a diameter of 0.3m, and contained a blander orange-brown silty clay fill. Pit [933] located 30m to the north-west was larger at 0.9m in length, but only 0.05m deep. Frequent charcoal inclusions were present within its fill.
- 4.6.4 In the south-east of the site were a group of three features G49 (Fig. 4). Two, gully [949] and pit [951], were located some 3m apart and the third, pit [953], was located c.12m to the north. Gully [949] was shallow, 0.5m wide by 0.11m deep, with a rounded southern end that appeared to peter-out to the north just after 3m. Its mid greyish brown silty clay fill contained occasional flecks of charcoal, baked clay and a fragment of animal bone. The presence of the latter within the gravelly soils perhaps suggests a more recent date (medieval or later?), for this undated feature. Pit [951], to its west, was sub-circular in plan, 0.6m long by 0.12m deep. It contained a dark greyish brown charcoal-flecked fill. Pit [953] to the north was vaguely oval in shape, 0.9m long by 0.06m deep, and contained a single brownish grey silty clay fill with common charcoal inclusions.
- 4.6.5 In the east of the site was a single elongated pit [936] (G50), 0.5m long by 0.23m deep (Fig. 2). It contained two fills: a light reddish grey upper fill and a very dark black charcoal lower fill. Undercutting along the side and the freshness of the fill suggests that this might be a burnt-out tree root.

## **5.0 FINDS**

### **5.1 Introduction**

5.1.1 A moderately large assemblage of predominantly medieval finds was recovered during the current phase of excavation at Bradwell Quarry (Area A4, Phase 4). All finds were washed and dried or air dried as appropriate. They were subsequently quantified by count and weight and were bagged by material and context (Appendix 3). A total of six objects have been assigned unique registered finds numbers. These are described in section 5.11. All finds have been packed and stored following ClfA guidelines (2014c).

### **5.2 Worked and burnt flint** by Karine Le Hegarat

5.2.1 A single flake weighing 4g was recovered from the upper fill [1000] of medieval ditch [997] (G30). The artefact displays moderate edge damage suggesting some post depositional movement. It is made from a fine-grained dark brown flint but is otherwise chronologically undiagnostic.

5.2.2 A small assemblage (22g) of burnt unworked flint was also recovered from bulk soil samples <37, 38 and 39>, extracted from contexts [1006], [995] and [1001] respectively. The fragments are all small (<15mm) and reddish in colour. They could be of prehistoric origin, though all were retrieved from medieval features and so are more likely to be later.

### **5.3 Pottery** by Helen Walker

5.3.1 A total of 377 sherds of pottery weighing 4351g was excavated from thirty-nine contexts and has been catalogued according to Cunningham's typology of post-Roman pottery in Essex (Cunningham 1985, 1-16; expanded by Drury et al. 1993 and Cotter 2000). Some of Cunningham's rim form codes are quoted in this report. All the pottery comes from a cluster of features at the northern end of the site fronting onto Cuthedge Lane.

#### *Medieval*

5.3.2 Nearly all the pottery is medieval in date. The earliest pottery present comprises sherds of shell-and-sand-tempered ware, all from the same vessel, found in G30 ditch feature [1003] and dating to the 11th to earlier 13th centuries. A small number of examples of the contemporary early medieval ware are present, but show either developed rim types or are borderline medieval coarseware suggesting a date not before the late 12th to early 13th century. Of a similar date are examples of early medieval ware – transitional, which is thought to be an early product of the Hedingham industry (Walker 2012, 34). Medieval coarseware, spanning the late 12th to 14th centuries, is by far the most frequent ware and includes a substantial proportion of Hedingham coarseware. Finewares comprise examples of Hedingham fineware datable to the 13th to mid-14th century, no early types dating to the mid- to late 12th century are present. Sherds of sandy orange ware, with a similar date range to the Hedingham fineware examples are also frequent. One sherd found in modern topsoil [900] has been identified as Colchester ware, a type of sandy orange ware made in and around Colchester.

5.3.3 As is typical of medieval sites, the cooking-pot is the most frequent vessel type, these can be assigned an approximate date range by their rim type and there are examples of cooking-pots with:

- B4 rims dating to c.1200 in medieval coarseware
- Curved over or cavetto rims dating to the first half of the 13th century in medieval coarseware
- H2 rims dating to the first half of the 13th century in Hedingham coarseware
- H1 rims spanning the 13th century in early medieval ware and medieval coarseware
- H3 rims dating to the late 13th to 14th centuries in medieval coarseware
- E5 rims dating to the late 13th to 14th centuries in Hedingham coarseware and medieval coarseware

5.3.4 In addition, there is an H2 rim from a storage jar or large cooking-pot in Hedingham coarseware. Three large, wide bowls with flared or necked profiles were identified, in early medieval ware – transitional, Hedingham coarseware and medieval coarseware, with the addition of a small carinated bowl in Hedingham coarseware. Other coarsewares comprise the lower handle attachment of a jug in Hedingham coarseware and the remnant of a handled vessel in medieval coarseware. It is wheel-thrown indicating a date of not before the mid/late 13th century.

5.3.5 Fragments from glazed jugs occur in sandy orange ware and Hedingham fineware. The only style of jug identified in Hedingham fineware is the stamped strip jug including examples showing rows of cartwheel stamps around the rim and around the shoulder. Jug fragments in sandy orange ware comprise a thumbled jug base and a jug handle decorated with a column of skewer marks under a greenish glaze, these can be dated to the mid-13th to mid-14th century. Also in sandy orange ware is a bifid handle and flat base from a pipkin showing the characteristic heavy fire-blackening on the underside, which is datable to the mid- 14th to 15th century.

5.3.6 The greatest concentrations of pottery occur around the centre of the site, with G30 ditch segment [1008] producing the largest assemblage of 1600g. The next highest concentrations are from G31 ditch segment [1025] at 695g and G32 ditch segment [903] at 502g. The more peripheral ditches such as G33 on the eastern side and ditch segments [997] and [1027] at the western end of G30 and G31 produced much less pottery, less than 100g. In addition, ditch segment [905] at the eastern end of G32 produced only 9g of pottery. The pits and other non-linear features produced only a little pottery, all producing less than 100g, indicating they did not serve as rubbish pits. The exceptions to this are G43 pit [1002] and G40 pit/post-hole [1016]. However, as pit [1002] cut ditch segment [1008] at least some of the pottery is derived from the earlier feature, as evidenced by a sherd linkage between the two features. No horizontal sherd linkages were noted to indicate that there was horizontal movement of pottery which is caused by levelling after the site went out of use as is common at medieval farmstead sites.

5.3.7 Several of the ditch groups had more than one fill that contained pottery and these were examined to see if the upper fills contained later pottery than that from the primary fills. Evidence for this was present in G30 ditch segment [1008]

where the primary fill contained an earlier 13th century H1 cooking-pot rim in early medieval ware, but the later fills produced examples of sandy orange ware jugs and the more developed H3 and E5 cooking-pot rims datable to the late 13th to 14th century. A similar situation occurs in G33 ditch segment [972] although with such small assemblages the evidence is somewhat tentative.

*Post-medieval and modern*

- 5.3.8 A small amount of pottery was excavated from parallel north/south ditches G37 and G38 and from modern topsoil [900]. However, the bulk of this material is medieval and derives from the previous period of land use. The only (possibly) later material from G38 is a single sherd of unglazed, unfeatured, sandy orange ware which may be medieval or late medieval in date, spanning the 13th to 16th centuries. Post-medieval finds from G37 comprise two small sherds of internally glazed post-medieval red earthenware and three sherds of black-glazed ware most probably from a drinking vessel, from ditch segment [996], which are most likely to date to the 17th to earlier 18th centuries.

*Discussion*

- 5.3.9 The bulk of the pottery spans the early 13th to mid/late 14th centuries with some slight evidence for two sub-phases of medieval occupation, one dating from the early 13th century and the second dating from the late 13th/14th century. The latest piece is the sandy orange ware pipkin fragment dating from the mid-14th to 15th centuries, but the absence of any other 15th century pottery indicates a date of not after the later 14th century. There is not enough pottery to indicate occupation during the post-medieval period.

**5.4 Ceramic Building Material** by Isa Benedetti-Whitton

- 5.4.1 A small assemblage of thirty-eight pieces of ceramic building material (CBM) weighing 2732g were recovered from seventeen contexts. All the material appears to be of medieval date. Quantification of CBM by type, quantity and weight is presented in Table 1.

CBM form	Count	% of total	Weight (g)	% of total
Roof tile	24	63.2	1577	57.7
Great brick	11	28.9	1113	40.7
Spall	3	7.9	42	1.5
<i>Total:</i>	<i>38</i>	<i>100%</i>	<i>2732g</i>	<i>100%</i>

Table 1: Quantification of CBM

*Methodology*

- 5.4.2 All the material was quantified by form, weight and fabric and recorded on standard recording forms. This information was then entered into a digital Excel spreadsheet. Fabric descriptions were developed with the aid of a x20 binocular microscope and use the following conventions: frequency of inclusions as sparse, moderate, common or abundant; the size of inclusions as fine (up to 0.25mm), medium (up to 0.25 and 0.5mm), coarse (0.5-1.0mm) and very coarse (larger than 1.0mm). Fabric samples and items of interest have been retained.

*Summary of fabrics and forms*

- 5.4.3 The assemblage was comprised of roof tile, brick pieces, and undiagnostic spall

fragments. The brick pieces were initially believed to be Roman based on their dimensions – Roman bricks being essentially broad and thick tiles. However, the brick pieces from Area 4 of Bradwell Quarry – when they survived enough for thickness to be measured – were often too thick for Roman tile which is rarely greater than 50mm, and there were certain other characteristics that would be unusual for Roman brick, but also distinguished them from later medieval brick. Although no physical sample was available for comparison, fabric and form descriptions provided by Pat Ryan (Ryan 1996, 22; 94) strongly suggest the brick pieces are fragments of Coggeshall ‘great bricks’, which are believed to be the earliest example of post-Roman brick to have been manufactured in England after the Roman period (Wilson 2006, 231; Ryan 1996, 28).

- 5.4.4 Coggeshall great bricks are associated with the bequeathment of Coggeshall Abbey to the Cistercians in AD 1148, and examples of great bricks can still be found *in situ* in surviving medieval churches in Essex such as St Nicholas’ Chapel, part of Coggeshall Abbey, built c.1220 (Ryan 1996, plates 5a and 5b) and Holy Trinity Church in Bradwell (also known as Bradwell-juxta-Coggeshall; Ryan 1996, 26). Their initial manufacture is believed to have started as early as the first half of the 12th century AD, ending approximately one hundred years later c.1230 (Wilson 2006, 231-32). Like Roman bricks, they take the form of large tiles; the better preserved examples from Bradwell Quarry recovered from contexts [904], [1001], and [1031] measure 40-58mm in thickness, with an average thickness of 48mm. Very coarse moulding sand, including flint chips, was apparent on several fragments.
- 5.4.5 The brick fabric was also particularly coarse (see COG1, Table 2), which is a noted characteristic of Coggeshall bricks, as are wide reduced cores which were also in evidence on a few brick fragments. The examples from Bradwell Quarry were also all slightly underfired, which alongside the narrow layer of oxidised clay that made up the surfaces of these brick fragments distinguished them from Roman bricks, which tend to be both hard and evenly fired to a consistent and bright orange colour, even when crafted from a quartz-rich clay.
- 5.4.6 It is possible that some of the Coggeshall bricks were re-purposed, or that they represent kiln lining or wasters. The surfaces of brick pieces from [954] and [1022] were both pale grey in colour, as if subject to prolonged heat exposure. To date, no location has been identified conclusively as the manufacturing site for Coggeshall great bricks, although a number of excavated clay pits to the north-east of Coggeshall Abbey contained what are believed to be Coggeshall brick wasters and therefore it has been suggested as a possible kiln site (Drury 1981, 139, note 4).
- 5.4.7 As large and fairly fragile objects, Coggeshall bricks would have been problematic to move in bulk, so it would make sense that they were produced locally to where they were intended to be used. However, Coggeshall and Bradwell are less than five miles apart so transport may not have been overly challenging and it is possible that wasters from a Coggeshall Abbey manufacturing site ended up in refuse deposits at Bradwell Quarry. Definitive examples of Coggeshall brick have been found during excavations at Cressing Temple, where it was incorporated into rubble walling contemporaneous with the period when Coggeshall bricks were being produced (Ryan 1996, 28). Several other sites across Essex have also revealed Coggeshall brick being used both

as wall rubble and structurally, indicating that even during its 'lifetime' Coggleshall brick was being used for various building purposes (Drury 1981,126, Figure 91).

- 5.4.8 Roof tile in two fabrics, T1 and T2, was collected from ten contexts. From the accompanying finds, it is suggested that tile manufactured from T2 – which is also more similar to COG1 – is of earlier date than that formed from T1. The T2 tile, like the Coggleshall brick, tended to be consistently slightly underfired and have similar very coarse and flinty moulding sand. It would not be unreasonable to suggest that they shared a common kiln source. The T1 roof tile fabric was finer and more evenly and well fired, with a finer (but still coarse) moulding sand.
- 5.4.9 Generally, it is very difficult to assign a narrow date range to roof tile, which changes very little in form between the 14th and 19th centuries. However, based on the fact that the brick fragments are very likely to be Coggleshall brick, which can be dated with relative security to the 12th-13th century, and T2 appears to be coeval and possibly produced simultaneously with the Coggleshall brick fabric, a 12th-13th century date is suggested for the tile made from T2. T1 – being better made with a more refined fabric – appears later, although well preserved examples were found in features containing earlier pottery (c.12th-14th century), for instance fills [921] in ditch [922], and fills [904, 939 and 941] in ditch [942].

Fabric	Description
COG1	Micaceous, orange-brown fabric with common coarse and very coarse quartz, sparse flint and calcareous deposits.
T1	Fine and micaceous orange fabric. 'Clean' looking with sparse medium and coarse quartz.
T2	Orange-brown fabric with common fine and medium quartz, shell and mica creating 'gritty' texture. Sparse-moderate quartz and black ferrous material.

Table 2: CBM fabric descriptions

## 5.5 Fired Clay by Trista Clifford

- 5.5.1 A small assemblage of 22 fragments weighing 156g was recovered from ten separate contexts. The assemblage was rapidly assessed for any diagnostic features; fabrics were distinguished using a x10 magnification hand lens. The assemblage has been recorded digitally on an excel spreadsheet for the site archive.
- 5.5.2 The assemblage is in poor condition; all fragments are small and abraded with no diagnostic features present that would inform function or form. The majority of pieces are of fabric F1, a pinkish cream fabric with common chalk inclusions up to 10mm and moderate fine-coarse quartz, identified during previous excavation of Area 1 (Benedetti-Whitton 2016). A single fragment in fabric F2 was present in ditch fill [1023] (ibid.). Ditch [1006] contained a fragment in a sandy fabric with abundant straw/stem voids together with a small well fired fragment in an abundantly sandy fabric, which may be part of a roof tile.
- 5.5.3 The fired clay assemblage from Phase 4 Area 1 was recovered from features of prehistoric date. The similarity between the fabrics from the two assemblages, together with the undiagnostic character of the present assemblage, suggests that the material from this area is largely residual since most derives from contexts of medieval date or later.

## 5.6 Metallurgical Remains by Luke Barber

- 5.6.1 The archaeological work recovered just 15g of material classified as slag, from ten individually numbered contexts. All the material was recovered from the magnetic element of environmental residues. The assemblage is summarised in Table 3.
- 5.6.2 All of the material consists of magnetic fines – granules of ferruginous siltstone and sandstone which have had their magnetism enhanced through burning. In all residues, many of these ‘fines’ had been well rolled and some are so spherical they are likely to be iron-stained ooliths from degraded limestones. All such spheres were carefully inspected under x20 magnification and were duly discounted as being spheroidal hammerscale: the complete absence of the more common hammerscale flakes confirming this conclusion. As such the samples produced no evidence of metalworking within the excavation area.

Context	Sample	Slag type	Weight
917	32	Magnetic fines	<1g
921	31	Magnetic fines	<1g
923	33	Magnetic fines	<1g
932	34	Magnetic fines	6g
954	30	Magnetic fines	1g
974	35	Magnetic fines	<1g
995	38	Magnetic fines	<1g
1001	39	Magnetic fines	1g
1003	36	Magnetic fines	<1g
1006	37	Magnetic fines	1g

Table 3: Slag assemblage

## 5.7 Bulk Metalwork by Trista Clifford

- 5.7.1 A small assemblage comprising 12 iron objects weighing a total of 150g was recovered during the Area A4 Phase 4 excavations. The assemblage is pottery dated to the 12th-16th century. The ironwork is in poor condition overall; most objects are severely corroded. The assemblage has been recorded on pro forma recording sheets for the site archive.
- 5.7.2 Single general purpose nails were recovered from contexts [939], [984], [1001], [1003] and [1004]. Contexts [1003] and [1004] contained single horseshoe nails of Goodhall type C which are dated to 13-14th century (Goodhall 2011, 364). A probable horseshoe nail from ditch fill [968] is possibly of the earlier type A (ibid.)
- 5.7.3 Lastly, undiagnostic plate fragments were recovered from quarry pit fill [995] and ditch fill [1001]; x-radiography may help identify the function of these objects.

## 5.8 Animal Bone by Hayley Forsyth-Magee

- 5.8.1 Excavations produced a small assemblage of faunal remains containing 459 fragments, recovered from 12 contexts. The majority of the assemblage is dominated by mammal bones, with the exception of a single bird bone fragment. The assemblage was retrieved through hand-collection and whole earth



samples. The majority of the assemblage is in a good-moderate state of preservation, with minimal signs of surface erosion present. Provisional pottery dating indicates that the majority of the assemblage is medieval, ranging from the mid-late 12th – 15th century, predominately from pit/quarry and ditch fills.

5.8.2 The assemblage has been recorded onto an Excel spreadsheet in accordance with the zoning system outlined by Serjeantson (1996). Where possible, bone fragments have been identified to species and the skeletal element, part and proportion, represented. Specimens that could not be confidently identified to taxa, such as long-bone and vertebrae fragments, have been recorded according to their size and categorised as large, medium or small mammal. The bones and teeth of sheep/goat specimens were not distinguished between (Boessneck 1969; Boessneck *et al* 1964; Halstead *et al* 2002; Hillson 1995; Kratochvil 1969; Payne 1969 and 1985; Prummel and Frisch 1986; Schmid 1972) due to bone fragmentation and dentition wear. The identification criteria of rabbit and hare specimens has been undertaken with reference to Callou (1997). Age at death data has been collected for each specimen where observable. Tooth eruption and wear has been recorded from mandibular dentition with two or more teeth in-situ, according to Grant (1982). The state of epiphyseal bone fusion has been recorded as fused, unfused and fusing. Specimens have then been studied for signs of butchery, burning, gnawing, non-metric traits and pathology. No mammalian metrical data or burnt faunal bone has been recorded.

5.8.3 The faunal remains are in a good-moderate state of preservation with minimal signs of surface erosion (Table 4). No complete long bones were present. The assemblage consists of 459 fragments, of which 389 fragments were identified to taxa (Table 5).

Period (Range)	No. Fragments	NISP	Preservation		
			Good	Moderate	Poor
Mid 12th-15th Century	181	125	20%	55%	25%
Undated	278	264	71%	25%	4%
<i>Total</i>	<i>459</i>	<i>389</i>			

Table 4: Animal bone quantification, NISP (Number of Identifiable Specimens) counts and percentage preservation based on the NISP.

5.8.4 A range of taxa have been identified including domestic and wild fauna. The assemblage is dominated by pig remains, with cattle and sheep/goat remains present in smaller quantities. The Number of Identified Specimen (NISP) data in Table 5 has been skewed by the presence of pig Articulated Bone Group (ABG) deposits. Dog and horse are the only other domesticates present within the assemblage. Wild taxa are represented by a small number of bird, deer and rabbit remains, the limited presence of wild taxa suggests that these resources were not overly exploited. Moderate quantities of large and medium mammal bone fragments were present due to the levels of fragmentation, preservation and taphonomic burial processes. The assemblage was retrieved through hand-collection and four whole earth samples. Provisional dating indicates that the majority of the assemblage is medieval, ranging from the mid-late 12th – 14th century, predominately from pit/quarry and ditch fills. Evidence of butchery and gnawing have been recorded and where observable age at death data has also been noted.

Taxa	NISP	MNI
Cattle	6	2
Sheep/goat	11	2
Pig	194	2
Horse	1	1
Dog	9	1
Large Mammal	56	1
Medium Mammal	45	1
MM/Pig	63	1
Deer	1	1
Rabbit	1	1
Bird	2	1
<i>Total</i>	<i>389</i>	<i>14</i>

Table 5: Animal bone NISP (Number of Identified Specimens) and MNI (Minimum Number of Individuals) counts

- 5.8.5 Although the NISP count (Table 5) is high for pig remains, likely due to whole carcass disposal, the MNI count suggests that there is a minimum of two animals present within the assemblage based on the count of skeletal elements.
- 5.8.6 Four whole earth samples, <36>, <37>, <38>, <39>, produced 310 fragments of bone, of which 265 fragments were identifiable to taxa. The whole earth samples contained mostly pig remains, as well as medium mammal, large mammal, sheep/goat, cattle, horse, deer and rabbit retrieved from pit/quarry, ditch and pit features.
- 5.8.7 Two Articulated Bone Groups (ABG's), one near complete and one partial deposit (Hill 1995; Morris 2008; 2010; 2011), were recovered from the assemblage and includes pigs from G45 pit/quarry fill [995] and a dog skull from G33 ditch fill [906] respectively. These types of deposits are not uncommon in the medieval period (Morris 2010).
- 5.8.8 Analysis of element representation indicates that meat and non-meat bearing bones are present within this assemblage. Evidence of butchery was observed in only three faunal remains. Chop marks were observed in a cattle mandible from G30 ditch fill [991], which had also been gnawed, and a large mammal rib fragment from G30 ditch fill [1003]. Cut marks were observed in a sheep/goat mandible from pit [1001]. These butchery marks are suggestive of carcass portioning and disposal of domestic waste. Evidence of canid gnawing was observed in five faunal fragments and includes a cattle mandible from ditch fill [991], two sheep/goat metatarsals from pit [1001] and ditch [1003], a medium mammal scapula from G43 pit fill [1001] and a bird long bone from G32 ditch fill [901].
- 5.8.9 Analysis of the fusion data available shows that both adult and juvenile individuals are present within this assemblage. The majority of which are juvenile pigs, due to whole carcass disposal, retrieved from G45 pit/quarry fill [995]. The presence of these juvenile remains suggests that animals may have been bred on site. Mandibular wear stages (MWS) were recorded for two sheep/goat mandibles from pit fill [1001] and ditch fill [1003] with values of 33 and 34 respectively. No long bones were recorded and no evidence of burning, non-

metric traits or pathology was observed.

## 5.9 **Burnt Bone** by Dr Paola Ponce

5.9.1 A small amount of burnt bone was recovered from two fills, [1003] and [1006], of G30 ditch segment [1008], dated to the medieval period. The fills underwent flotation and were processed as environmental samples <36> [1003], and <37> [1006]. Bone fragments were collected and subjected to careful recording and separated in sieve fractions of 2-4mm, 4-8mm and >8mm. The total of weight of the deposit was established and the assemblage then examined to record the degree of fragmentation and fragment colour.

### *Results*

5.9.2 The total weight of burnt bone recovered from both contexts was 2.5 grams (Table 6). None of the burnt bone could be positively identified as human or non-human.

Context	Weight (grams)			
	2-4mm	4-8mm	>8mm	Total
1003 <36>	-	1.0	-	1.0
1006 <37>	-	-	1.5	1.5
<i>Total</i>	-	1.0	1.5	2.5

Table 6: Burnt bone quantification

5.9.3 With regards to the degree of oxidation of the organic component of bone, it is noted that the assemblage showed a combination of grey and blue hues, thus suggesting an incompletely oxidising process (at temperatures of up to c. 600°C).

## 5.10 **Shell** by Trista Clifford

5.10.1 A moderate assemblage of 344 marine shells weighing 3.67kg was both hand collected on site and retrieved from bulk soil samples. Shell was recovered from 21 individual contexts. The assemblage was retrieved predominantly from contexts pottery dated to the 12th-14th centuries. It was recorded for the archive on pro forma sheets.

5.10.2 Two edible species were identified: Edible oyster (*Ostrea edulis*), which dominates the assemblage, together with a very small quantity (<10 individuals) of Common whelk (*Buccinum undatum*). Small quantities of land snail were also noted but were not identified.

5.10.3 The largest assemblages come from G30 ditch fill [1003] and G43 pit fill [1001], with a minimum number (MNI) of 62 and 67 individuals respectively. These groups contain predominantly adult specimens, although juveniles were also present along with several very long-lived specimens. Minimal parasitic activity was observed, although probable parasitic mollusc boreholes were present on two individuals. The shell was, overall, in good condition.

## 5.11 **Registered Finds** by Trista Clifford

5.11.1 A small assemblage of six iron registered finds was recovered from contexts dated by pottery to 12-16th century (Table 7). Each object was given a

Registered Find number and recorded on pro forma sheets for the site archive. The assemblage has not been x-rayed at the time of writing; the condition varies from good (RF<1>) to very poor (RF<2>).

RF	Context	Pot date	Feature	Object	Material	Period	Wt (g)
1	941	12-14th C	Ditch	NAIL	IRON	MED	146
2	921	12-14th C	Ditch	HOSH	IRON	MED	46
3	971	13th C	Ditch	HOSH	IRON	MED	174
4	921	12-14th C	Ditch	?BIND	IRON	MED	82
5	943	13-14th C	Pit	HOSH	IRON	MED	70
6	984	Post-med	Ditch	HAND	IRON	MED	79

Table 7: Registered finds

#### *Horseshoes*

- 5.11.2 Three horseshoes of medieval form were recovered. The most complete is RF<3>, a Type 4 (Clarke 1995) shoe with thickened calkin from ditch fill [971]. RF<2> consists of one branch with two visible square nail holes and no calkin; the shape and nail holes suggest it is probably also a Type 4 shoe. Lastly, a short branch fragment, broken across a (?countersunk) nail hole, which also has a thickened calkin, RF<5>, came from pit fill [943]. The width of the web suggests it is either a type 3 or 4 shoe. A broadly 13th-14th century date for these shoes is suggested.

#### *Other objects*

- 5.11.3 Other objects recovered include RF<1>, a complete large, probably structural, nail from ditch fill [941] and an incomplete bucket handle, RF<6>, from ditch fill [984]. A curving strap with thickened rim and a circular nail hole may be part of the binding for a bucket or wooden vessel (RF<4> ditch fill [921]).

## 6.0 ENVIRONMENTAL SAMPLES by Stacey Adams

### 6.1 Introduction

6.1.1 Ten bulk soil samples (<30> to <39>) were taken from medieval pit, ditch and posthole features during excavations at Bradwell Quarry for the recovery of environmental remains such as plant macrofossils, wood charcoal, faunal remains and Mollusca, as well as to assist finds recovery. The following report assesses the preservation of the charred plant macrofossils and wood charcoal and their potential to inform on the diet, arable economy and local environment of the site as well as fuel selection and use.

### 6.2 Methodology

6.2.1 The bulk samples, ranging from 10 to 50L in volume, were processed by flotation, in their entirety, using a 500µm mesh for the heavy residue and a 250µm mesh for the retention of the flot before being air-dried. The residues were passed through 8, 4 and 2mm sieves and each fraction sorted for environmental and artefactual remains (Table 8). Artefacts recovered from the samples were distributed to specialists, and are incorporated in the relevant sections of this volume where they add further information to the existing finds assemblage. The flots were scanned under a stereozoom microscope at 7-45x magnifications and their contents recorded (Table 9). Where necessary, flots were subsampled and 100ml of the volume scanned. Provisional identification of the charred remains was based on observations of gross morphology and surface structure and quantification was based on approximate number of individuals. Nomenclature follows Stace (1997) for wild plants and Zohary and Hopf (1994) for cereals.

6.2.2 Charcoal fragments were fractured by hand along three planes (transverse, radial and tangential) according to standardised procedures (Gale and Cutler 2000; Hather 2000). Specimens were viewed under a stereozoom microscope for initial grouping, and an incident light microscope at magnifications up to 500x to facilitate identification of the woody taxa present. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Schoch *et al* 2004; Hather 2000; Schweingruber 1990). Identifications were given to species where possible, however genera, family or group names have been given where anatomical differences between taxa are insufficient to permit satisfactory identification. Ten fragments were submitted for identification from samples with >3g of wood charcoal from the >4mm fraction of the heavy residues. Quantification and taxonomic identifications of charcoal are recorded in Table 8 and nomenclature follows Stace (1997).

### 6.3 Results

*Samples <30> [954], <31> [921], <32> [917], <33> [923], <34> [932], <35> [974], <36> [1003], <37> [1006], <38> [995] and <39> [1001]*

6.3.1 The heavy residues contained artefactual remains of pottery, mortar, fired clay, iron and daub as well as fire-cracked flint and magnetic material. Environmental remains from the residues include animal bone and teeth, burnt bone and marine and land molluscs. Charcoal fragments were recovered from all of the residues

and were present in sufficient numbers (>3g from the >4mm fraction of the heavy residues) in five of the samples (<30>, <32>, <33>, <34> and <39>) to be submitted for identification.

- 6.3.2 The flots contained between 5 and 90% uncharred material including modern roots, twigs and bread wheat (*Triticum aestivum*) rachis as well as modern seeds of goosefoots (Chenopodiaceae). Charcoal fragments were present within all of the flots and were particularly abundant in pits [956], [924] and [933] and posthole [918]. Land molluscs were present in the majority of the flots and animal bone was frequent in the flot from pit [1032]. The flot from pit [975] contained a small amount of slag-like material.

#### *Charred Plant Macrofossils*

- 6.3.3 Preservation of the charred plant material ranged from poor to moderate and macrofossils were present in over half of the flots. Pits [924], [933] and [1032] and posthole [918] contained no charred plant macrofossils. Individual charred seeds were rare (1-10) in ditch [922] and pit [975], occasional (11-50) within pit [956] and ditch [1008] and frequent (51-250) in pit [1002].
- 6.3.4 Cereal caryopsis were the most common charred plant type and were largely of the free-threshing variety of wheat (*Triticum* sp.). Many of the cereal grains were indeterminate whilst a number could not be assigned to the free-threshing variety of wheat due to poor preservation. Oat (*Avena* sp.) grains were identified in pit [956] and ditch [1008], although no floret bases were present to distinguish between the wild and cultivated varieties. A single cereal culm node was present in ditch [1008].
- 6.3.5 Weed seeds were rare within the flots and were largely of small wild grasses (Poaceae) and clover-type (*Trifolium*-type) wild legumes. Pit [956] contained several large legumes of pea/ vetch (*Pisum/ Vicia*) variety, a number of which still retained the wrinkly surface of the testa.

#### *Charcoal*

- 6.3.6 Preservation of the charcoal from Bradwell Quarry ranged from moderate to good with only 4 of the 50 fragments indeterminate. The fragments were occasionally distorted by radial cracks and post-depositional sediment, although these distortions did not prevent the identification of the fragments.
- 6.3.7 Oak (*Quercus* sp.) was the most common taxon identified and was the only charcoal variety within pits [924] and [933]. Field maple (*Acer campestre*) dominated pit [956] and was accompanied by two fragments of the apple sub-family (Maloideae). The fragments from pit [1002] followed a similar pattern, although the taxa were more varied with oak, elm (*Ulmus* sp.) and hazel/ alder (*Corylus/ Alnus*) present. Posthole [918] was formed of predominantly oak charcoal as well as two hazel/ alder and two indeterminate fragments. Fragments of round wood were identified in pits [956] and [1002].

**Table 8:** Environmental sample residue quantification (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) and weights in grams

Preservation (+ = poor, ++ = moderate, +++ = good). Key: RC = radial cracks, PDS = post-depositional, RW = round wood, D = distorted, DP = diffuse porous

Sample Number	Context	Context / Parent Context	Sample Volume (L)	Sub-Sample Volume (L)	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Charcoal Identifications	Preservation	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Fishbone and Microfauna	Weight (g)	Marine Molluscs	Weight (g)	Land Snail Shells	Weight (g)	Other (eg. pot, cbm, flint) (quantity/ weight)
30	954	Pit [956]	50	50	***	12	****	16	<i>Acer campestre</i> (8) [RW:2] Maloideae (2) [RW:1]	+++													Mortar (****/534g) Mag.Mat. >2mm (**/<1g) Mag.Mat. <2mm (****/2g)
31	921	Ditch [922]	40	40	*	<1	**	1											*	<1	**	5g	Pot (* /10g) Mag.Mat >2mm (**/2g) Mag.Mat <2mm (**/<1g)
32	917	Posthole [918]	10	10	****	41	****	140	<i>Quercus</i> sp. (6) <i>Corylus/ Alnus</i> (2) [PDS:1] Indet. (2)	++													Mag.Mat >2mm (**/<1g) Mag.Mat <2mm (* /<1g)
33	923	Pit [924]	40	40	***	51	****	30	<i>Quercus</i> sp. (10) [RC:1]	+++													F.Clay (* /15g) Mag.Mat >2mm (**/1g) Mag.Mat. <2mm (**/<1g)
34	932	Pit [933]	40	40	****	17	****	60	<i>Quercus</i> sp. (10) [RC:3]	+++													FCF (**/32g) Pot? (* /7g) F.Clay (* /7g) Mag.Mat. >2mm (**/5g) Mag.Mat. <2mm (**/<2g)
35	974	Pit [975]	40	40			*	<1															Mortar? (**/50g) Mag.Mat. >2mm (**/1g) Mag.Mat. <2mm (**/<1g)

Sample Number	Context	Context / Parent Context	Sample Volume (L)	Sub-Sample Volume (L)	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Charcoal Identifications	Preservation	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Fishbone and Microfauna	Weight (g)	Marine Molluscs	Weight (g)	Land Snail Shells	Weight (g)	Other (eg. pot, cbm, flint) (quantity/ weight)
36	1003	Ditch [1008]	40	40	***	3	***	1			*	46			*	<1			*	215	*	<1	Pot (**/102g) Fe (*9g) Mag.Mat. >2 (**/1g) Mag.Mat. <2mm (***/2g)
37	1006	Ditch [1008]	40	40	**	2	****	<1			**	22	*	<1							*	<1	Pot (*31g) Daub (**/29g) FCF (*12g) Mag.Mat. >2mm (***/2g) Mag.Mat. <2mm (***/2g)
38	995	Pit [1032]	40	40	*	<1	**	<1			****	125					*	<1			*	<1	FCF (*5g) Daub? (*3g) Mag.Mat >2mm (*/<1g) Mag.Mat. <2mm (***/<1g)
39	1001	Pit [1002]	40	40	***	4	****	1	<i>Quercus</i> sp. (3) [RW:1] <i>Acer campestre</i> (2) <i>Ulmus</i> sp. (1) Maloideae (1) <i>Corylus/ Alnus</i> (1) Indet. (2) [D:2, DP:1]	++	**	33						**	163	*	<1	Pot (**/85g) Daub (**/50g) FCF (*10g) Fe (*18g) Mag.Mat. >2mm (***/2g) Mag.Mat. <2mm (***/2g)	



**Table 9:** Environmental sample flot quantification (\* = 1-10, \*\* = 11-50, \*\*\* = 51-250, \*\*\*\* = >250) Preservation (+ = poor, ++ = moderate, +++ = good)

Sample Number	Context	Weight (g)	Flot Volume (ml)	Volume Scanned (ml)	Uncharred (%)	Sediment (%)	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Charred Botanicals	Identifications	Preservation	Mammal Bone	Land Molluscs	Industrial Debris	
30	954	13	70	70	40	10	Chenopodiaceae**	***	***	****	**	Triticum sp. FTW Cerealía indet. Avena sp.	++	*	Poaceae (small) Trifolium-type	++	*	Pisum/ Vicia (large with wrinkled testa)	++				
31	921	17	60	60	70	20	Chenopodiaceae* T.aestivum rachis**		*	**	*	Cerealía indet. Triticum sp. FTW	+									****	
32	917	13	45	45	15	5	Chenopodiaceae** T.aestivum rachis*	***	****	****													
33	923	75	270	100	5			****	****	****													
34	932	119	290	100	5			****	****	****													
35	974	37	110	100	30	5			**	***	*	Cerealía indet.	+									**	*

Sample Number	Context	Weight (g)	Flot Volume (ml)	Volume Scanned (ml)	Uncharred (%)	Sediment (%)		Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Crop seeds charred	Identifications	Preservation	Weed Seeds Charred	Identifications	Preservation	Other Charred Botanicals	Identifications	Preservation	Mammal Bone	Land Molluscs	Industrial Debris
36	1003	9	40	40	70	5			**	***	***	**	Triticum sp. FTW Cerealia indet. Avena sp.	++	*	Poaceae (small)	++					***	
37	1006	7	20	20	70	10		*	**	**	**	**	Cerealia indet. Triticum sp. FTW	+	*	Cerealia culm node Poaceae (small)	++					**	
38	995	19	70	70	90	5			*	**											***	****	
39	1001	39	45	45	50	10		*	**	***	***	***	Triticum sp. FTW Cerealia indet.	++	*	Poaceae (small)	+					***	

## **7.0 OVERVIEW AND SIGNIFICANCE OF RESULTS**

### **7.1 Stratigraphic Sequence**

#### *Prehistoric*

7.1.1 Up to seven undated features (G47 and G48) in the east of the site may potentially be of prehistoric date. Although there was no confirmatory pottery evidence, several contained flecks of charcoal and baked clay, the latter often associated with remains of prehistoric date. Other undated pits and post-holes of possible prehistoric date have been encountered across the quarry, most recently in Area 4 Phase 1 (ASE 2017a), and are generally assumed to be of Bronze Age or Iron Age date in keeping with the majority of dated remains encountered across the site. For example, remains of a Middle to Late Bronze Age unenclosed settlement were present in Area 4 Phase 1 along with a few scattered features of Iron Age date (ASE 2017a) and in Area 4 Phase 3, five cremation burials of Late Iron Age or Early Roman date were excavated (ASE 2017b). Other than implying that prehistoric activity was widespread across the landscape the undated, but possible prehistoric remains, are of low significance and have negligible potential to inform as to the nature of prehistoric land use.

#### *Medieval*

7.1.2 Medieval remains were concentrated in the west of the site close to its northern border and consisted of a number of ditches defining several small enclosures, a collection of possible structural features and a few pits. The remains probably constitute the rear of a farmstead located adjacent to Cuthedge Lane and it is likely that further elements survive within the c.24m wide gap between the edge of the excavated area and this lane. The eastern limit of the farmstead is likely perpetuated by the northern end of post-medieval ditch G38, and the western limit probably by undated ditch G36.

7.1.3 The bulk of the recovered pottery spans the early 13th to mid- to late 14th centuries with some slight evidence for two sub-phases of medieval occupation, the earlier dating to the early 13th century and the later to the late 13th-14th century. However, in practice, it is probable that occupation was broadly continuous throughout this period. A modest degree of intercutting provides further evidence for change and development through this time span and there is some potential to apply phasing to this medieval period in order to refine the sequence of development in its land use. Some preliminary phasing distinctions are presented in Figure 5.

7.1.4 Ditch G30 was perhaps one of the earliest features as it contained part of an early 13th century cooking pot in its primary fill. The ditch was long-lived as late 13th to 14th century pottery was recovered from its upper fills. To the east, the lower/main fill of ditch G32 contained pottery of possible early 13th century date. Machining at the end of the project showed that ditch G31 merged with ditch G32 suggesting that this too may have had earlier origins. Early pottery in a lower fill of [972] suggests that at least the northern part of G33 may also be contemporary. Pit G44 could also be of similar date as could large pit G45

which contained fragments of Coggeshall bricks dating to the 12th/13th century.

- 7.1.5 To the north of ditch G32, and east of ditch G35, was a small concentration of possible structural features (G39), poorly dated but stratigraphically that may be of earlier date. The features included a small ?fire-pit and a sub-rectangular chalk-filled foundation. No definite structure could be discerned but the remains continued north beyond the edge of the excavation and may have been truncated to the west both by ditch G35 and pit group G42.
- 7.1.6 The localised enclosure system was no doubt complete by the later 13th century with ditches G34, G35 and the greater length of G33 possibly dating to this time. Ditch G34 curved towards later ditch G38 suggesting that the northern part of this ditch may have had medieval origins. Also by this time, the junction of ditches G32 and G33 may have developed into a shallow ponded area [946]. To the west, ditch G30 may have been infilled by the end of the 13th century.
- 7.1.7 Pottery evidence indicates that ditch G31 was not fully in-filled until the 14th century. Other potential features of this date include pit G43, which cuts infilled ditch G30, and the two pits of G42, which truncate ditch G35. There is no evidence to suggest that the farmstead continues in use beyond the 14th century.
- 7.1.8 Apart from pottery, the recovered arefactual and environmental assemblages (see below) are limited in range and quantity. Ditches and particularly pits, contain generally small assemblages of cultural material that are not very informative as to function, wealth and economy of the farmstead. This is likely to be a result of only the very rear of the farmstead plot being investigated. The form and function of this fragment of medieval settlement cannot be easily understood from the recorded remains and so the site has limited potential for further analysis. However, it has greater significance and potential for research in terms of its group value. A moated medieval farmstead and part of another probable farm enclosure a short distance to the west in a similar position alongside Cuthedge Lane have been investigated in Quarry Area A4 Phase 1. In addition, further farm settlements have been recorded in Area A2. This example from Area A4 Phase 4 therefore has potential for comparative study with these other sites and to contribute to the understanding of the chronology, nature and organisation of the medieval rural settlement pattern.

#### *Post-medieval*

- 7.1.9 Post-medieval land use is represented by the two roughly north/south aligned post-medieval ditches G37 and G38 that define part of the late agricultural landscape of enclosed fields. Neither are depicted on early Ordnance Survey mapping, implying that they had gone out of use before the third quarter of the 19th century. Ditch G37 was the better dated producing five sherds of 16th to 19th century pottery. Ditch G38 yielded only a single sherd of 13th to 16th century pottery that may be residual. Several ceramic field drains of late post-medieval or modern date were inserted into this ditch, presumably when it was infilled. These ditches clearly constitute defunct parts of the same enclosure

system alongside Cuthedge Lane as similarly aligned surviving ditches such as that to the east of Area 4 Phase 4 (Fig. 2).

7.1.10 To the south, the brick rubble infilled ditch that runs parallel with the lane is depicted on the 1st edition Ordnance Survey map as is a second brick-infilled ditch at the western limit of the site (Fig. 2). Similarly, these are further elements of the post-medieval enclosure system. However, these became defunct at a later date than G37 and G38, being infilled as part of the WW2 airfield construction works.

7.1.11 All of the post-medieval ditches relate to late agricultural land use. These are generally well understood in their wider landscape context and have a low local significance. They have little or no potential for further study.

## **7.2 Medieval Pottery**

7.2.1 The medieval pottery assemblage is a typical domestic assemblage, although the relative preponderance of bowls indicates slight evidence of a specialised activity, perhaps dairying. Although small, when taken together with the evidence from pottery assemblages from previous excavations at Bradwell Quarry, it will shed light on dating, function and pattern of settlement, also showing changes and developments over time. It is recommended that a specialist publication report should be included in the publication, though there is no potential for further analysis.

## **7.3 Ceramic Building Material**

7.3.1 The discovery of potential Coggeshall brick fragments at this site is significant, although given the size of the assemblage it is only important on a local level. Positive confirmation of this identification would usefully increase the known distribution and use of this material. The potential for further discoveries in future quarry phases (and retrospectively in the Area A2 assemblages?) might also lead to further understanding of the distribution network or additional potential manufacturing sites of Coggeshall great bricks.

7.3.2 Apart from the similarity between the Coggeshall fabric and that of T2, suggesting a common source, the roof tile found at Bradwell Quarry is of no real significance other than adding to the list of roof tile fabrics that have been collected from the various areas of excavation across the extent of the quarry.

7.3.3 The CBM from Area 4 Phase 4 therefore has potential as a reference collection, but has no potential for further work as a standalone assemblage.

## **7.4 Bulk Metalwork**

7.4.1 The bulk metalwork assemblage is small and rather homogenous therefore is of minimal significance. The plate fragments would benefit from x-radiography to aid identification; the remaining objects have no potential for further analysis.

## **7.5 Shell**

7.5.1 The shell assemblage represents utilisation of the marine resource for food although not on a large enough scale for it to be considered a primary diet component. The assemblage contains two groups which are statistically viable for further analysis, those from [1001] and [1003]. These have the potential to elucidate the nature of the resource (farmed or wild), onsite consumption or disposal areas, and the location of the marine resource.

## **7.6 Registered Finds**

7.6.1 The registered finds assemblage is small and homogenous, consisting primarily of horseshoes, and as such is of limited significance. Previous phases of work have produced a similar assemblage of medieval material (ASE 2017a). Although it has the potential to elucidate the nature of activity during the 12th -16th centuries, it does not hold much potential for further analysis.

## **7.7 Other Finds**

7.7.1 The other finds retrieved from Area A4 Phase 4 have been identified as being of low significance with no potential for further analysis, beyond that already done for this report. These finds categories are:

- Worked and burnt flint
- Fired Clay
- Metallurgical Remains
- Animal Bone
- Burnt Bone

## **7.8 Environmental Samples**

### *Charred Plant Macrofossils*

7.8.1 The charred plant macrofossils indicate the presence of crop processing activities at Bradwell Quarry. Cultivation of free-threshing wheat is typical of the early medieval period in south-east England, although evidence for the cultivation of legumes is limited. The paucity of weed seeds associated with crop processing makes it difficult to determine the type of agricultural regime at the site.

7.8.2 The earlier phases of investigation at Bradwell Quarry produced little in the way of charred plant macrofossils, whereas, the plant remains from this current phase have the potential to inform on the arable economy and diet at the site and can be compared to contemporary sites such as Stansted Airport (Carruthers 2007). It is recommended that samples containing >10 individuals should be submitted for analysis, considering the paucity of plant remains from the earlier phases and the limited evidence for medieval agricultural practice within the Essex area.

### *Charcoal*

7.8.3 The charcoal from Phase 4 at Bradwell Quarry indicates the exploitation of mixed woodland as well as open areas, indicated by the presence of field maple (Rodwell 1991; Polunin and Walters 1985). The dominance of oak within

a number of features and the mixed nature of other deposits may indicate deliberate selection for different activities at the site.

- 7.8.4 The charcoal from Phase 4 has the potential to inform on the local environment and fuel selection and use and can be compared to the charcoal from the earlier phases of excavation within the quarry. Comparable sites with medieval charcoal assemblages in Essex are rare, therefore the charcoal from the Phase 4 excavations at Bradwell Quarry are essential for understanding fuel exploitation in this area. The moderate/ good preservation of the charcoal fragments will allow the majority of the fragments to be identified to genus/ species level.

## 8.0 PUBLICATION PROJECT

### 8.1 Revised research agenda: Aims and Objectives

8.1.1 This section combines those original research objectives that the site archive has the potential to address with any new research aims identified in the assessment process by stratigraphic, finds and environmental specialists to produce a set of revised research aims that will form the basis of any future research agenda.

Of the two original research objectives, the first (ORO1) was specific to the moated site in Area 4 Phase 1 and so is not relevant to this Phase 4 site. However, the second objective (ORO2), concerning the theory that the modern local landscape is largely a 12th century construct, is still valid for this later phase of work and has been incorporated into the proposed revised research agenda, below.

8.1.2 The following research questions/themes have been identified that further study of the Area A4 Phase 4 site archive has the potential to contribute to.

**RRO1:** Can the phasing/development of the medieval settlement enclosure be further refined and understood? Can the detail of its function, status, relative wealth or economic basis be discerned?

**RRO2:** How does this medieval rural settlement site compare to other examples, especially those previously excavated within Bradwell Quarry? Is there morphological or chronological difference, evidence of settlement hierarchy or specialism? Is their functioning inter-related?

**RRO3:** To what extent does the medieval site evidence accord with the theory suggested by other recent work in the Rivenhall / Bradwell area that the modern landscape of Bradwell parish is largely a 12th century construct derived from a dispersed settlement pattern based upon Bradwell church and hall, isolated tenant farms and cottages, with utility and working areas, such as barns and quarries, connected by narrow roads and farm tracks, all within a network of small fields?

**RRO4:** What cereal crops were cultivated and can crop processing activities be identified? How does the archaeobotanical assemblage from Bradwell Quarry compare with that of other contemporary sites in Essex?

**RRO5:** What kind of vegetation grew near the site and how was the local environment exploited? To what extent was targeted wood selection carried out and is there any evidence for woodland management techniques? How does the charcoal assemblage from Phase 4 compare to the charcoal from other phases of work and can similarities/ differences be distinguished? Can a local signature of fuel selection and use be detected through comparison to contemporary sites in Essex? Can the charcoal within the pits be associated with different fuel burning activities?

8.1.3 The identified Revised Research Objectives for this project have the potential to address a number of questions and themes identified as requiring further



study in: *Research and Archaeology: a Framework for the Eastern Counties, 2. research agenda and strategy* (Brown and Glazebrook 2000) and *Research and Archaeology Revisited: a revised framework for the East of England* (Medlycott 2011). These include:

- The principal research requirement is for definition of the *actual* medieval settlement patterns across the region; the dating of each element in the settlement patterns (nucleation/dispersion, moated sites, isolated farms/halls, field systems, greens, Ends, Tyes, isolated cottages, hamlets, *etc.*); and the relationship of the medieval pattern to any earlier pattern. (Wade 2000, 24)
- The origins and development of the different rural settlement types need further research, also the dynamics of medieval settlement. Much of the region has primarily a dispersed pattern, not nucleated, and more small hamlets are being discovered all the time. More data will add to our understanding of the way places appear, grow, shift and disappear. (Medlycott 2011, 70)
- What forms do farms take, what range of building-types are present and how far can functions be attributed to them? Are there regional or landscape variations in settlement location, density or type? (Medlycott 2011, 70)
- How far can the size and shape of fields be related to agricultural regimes? (Medlycott 2011, 70)
- The need to determine the extent of *[agricultural]* specialisation and surplus production can only be addressed by sampling the entire hierarchy of post-Roman sites... Priority should be given to the detailed examination of good animal bone and charred cereal deposits. (Wase 2000, 25)
- What is the relationship between rural and urban sites? (Medlycott 2011, 70)

## **8.2 Preliminary Publication Synopsis**

8.2.1 It has been previously suggested that the results of the archaeological works should be disseminated by means of their amalgamation with those of the other Bradwell Quarry strip areas (i.e. A2 and A4 Phases 1-3) into a single article for publication in *Essex Archaeology and History*. The Area A4 Phase 4 site would provide a useful addition to this article, primarily providing a further example medieval settlement, but also contributing to the general picture of landscape development from the prehistoric to post-medieval period.

8.2.2 Such an article would set the site within the context of other recent ECC FAU and ASE excavations within Bradwell Quarry and make reference to the content of the forthcoming Site R publication article (Germany forthcoming).

8.2.3 The article would seek to address the individual site-specific research questions identified in this post-excavation assessment and updated project design, and would be presented within a chronological framework. The results of the larger/significant finds and environmental analysis outlined above would be presented in part as separate specialist reports, with the minor finds categories more likely integrated into the site narrative.

### **8.3 Publication Project**

#### **8.3.1 *Stratigraphic Method Statement***

The c.140 contexts generated by the investigation of the A4 Phase 4 site have been dated, grouped and some initial phasing done for this report. It will be necessary to review and revise this as necessary with reference to a wider land-use structure that encompasses all the various A4 phase areas, and to define land use entities.

8.3.2 The results will be integrated into a period-driven narrative of the wider area A4 sequence. This will draw on specialist information in order to fully address the revised research aims. The narrative will include relevant selection of period/phase plans, sections and photographs. A detailed breakdown of the stratigraphic tasks is shown in Table 10.

### **8.4 Further Work**

#### **8.4.1 *Medieval pottery***

A standalone specialist analysis report will be prepared, largely based on the existing text. Three pottery vessels require illustration. Tasks:

- Preparation of medieval pottery text for publication 2 days
- Extraction of material for illustration, catalogue etc. 0.5 days
- Total 2.5 days

#### **8.4.2 *Shell***

A short analysis report is proposed, concentrating on contexts [1001] and [1003]. The results would be amalgamated with those from previous phases of work at the quarry. Tasks:

- Prepare specialist analysis report 1 day

#### **8.4.3 *Registered Finds***

The assemblage has been recorded in full for the site archive. It would benefit from x-radiography in order to clarify any details in the objects that may be obscured by corrosion product. As a standalone assemblage, a full report is not warranted; text from the above report can be included in the site narrative. However, should all phases of work be published together a short report and catalogue of the medieval assemblage across all phases is proposed for publication. Tasks:

- Report and catalogue preparation 1 day

#### **8.4.4 *Other finds***

No further work is required on any of the other finds assemblages retrieved from the Area 4 Phase 4 strip area. As appropriate, the descriptive text from this report can be integrated into the publication report.

#### 8.4.5 *Environmental Samples*

##### Charred Plant Macrofossils:

The identification, quantification and analysis of charred plant macrofossils from five samples is proposed. A subsequent report would detail the results and make comparisons to other contemporary sites within the area. Tasks:

- Identifications, quantification and data entry 2.5 days
- Visit to reference collection for identifications 1 day
- Literature consultation and report production 1 day
- Total 4.5 days

##### Charcoal:

It is proposed that further identification work be carried out on the charcoal from five samples. One hundred fragments from each of the samples will be submitted for identification, this number is based on the minimum number of fragments principle for temperate regions proposed by Asouti & Austin (2005). A subsequent report will analyse and discuss the results and compare it with contemporary sites within the quarry and wider region. Tasks:

- Identifications and data entry 2.5 days
- Literature consultation and report production 1 day
- Total 3.5 days

#### 8.4.6 *Illustration*

The Area A4 Phase 4 medieval remains will require detailed illustration in two or perhaps three stratigraphic figures (including plans, sections and photographs). The undated but potentially prehistoric features may also warrant a figure. Other features such as those of post-medieval or modern date may be integrated into plan figures prepared for the wider site. Three medieval pottery sherds require illustration

- Plans, sections, photographs 3 days
- Finds illustration 0.5 days
- Total 3.5 days

<b>Task description</b>	<b>Duration</b>
<b><i>Stratigraphic analysis and reporting</i></b>	
Review dating/grouping/ phasing of c.140 contexts.	2 days
Define and describe landuses	1 day
Documentary research, inc. relevant study of archaeological features, sites and published themes of the surrounding area / region	1 day
Write and integrate period-driven narrative of the site sequence, inc. combination of the stratigraphic period descriptions and the relevant portions of completed finds, environmental and analytical reports.	4 days
Write intro, discussion, conclusion and acknowledgements texts	1.5 days
<b>Sub-total</b>	<b>9.5 days</b>
<b><i>Specialist analysis and reporting</i></b>	
Medieval pottery	2.5 days
Shell	1 day
Registered Finds	1 day
Integration of other finds & enviro information into publication draft	1 day
Environmental Charred Plant Macrofossils and Charcoal	8 days
<b>Sub-total</b>	<b>13.5 days</b>
<b><i>Illustration</i></b>	
Stratigraphic figures (plans, sections, photographs, etc.)	3 days
Finds figures (medieval pottery)	0.5 day
<b>Sub-total</b>	<b>3.5 days</b>
<b><i>Production</i></b>	
Internal editing of the period-driven narrative, finds and environmental reports	1 day
Internal amendment of edited text	0.5
External reader's comments amendments	0.5
EAH page cost (approx. 10 pages)	cost
Project Management	1 day
<b>Sub-total</b>	<b>3.5 days</b>

Table 10: Resource for analysis and publication tasks

## 8.5 Artefacts and Archive Deposition

7.6.1 The site archive is currently held at the offices of ASE. Following completion of all post-excavation work, including any publication work, the site archive will be deposited with Braintree Museum. The contents of the Area 4 Phase 4 archive are tabulated below (Table 11).

No. of files	1 file
Context Register	1
Number of Contexts	140
Drawing Register	1
Plan and sections sheets	11
Photographic Register	1
Digital photographs	104 images
Sample Register	1
Sample sheets	10
Bulk Samples	10
Bulk finds	2 boxes

Table 11: Quantification of site archive

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## Appendix 1: Context Register

Context	type	Interpretation	Parent	Group	Comments	Prov. date
900	l	Layer	900		Plough soil	Modern
901	f	Ditch fill	903	32	Upper	Medieval
902	f	Ditch fill	903	32	Primary	Medieval
903	c	Ditch	903	32	Aligned WNW/ESE	Medieval
904	f	Ditch fill	905	32	Single	Medieval
905	c	Ditch	905	32	Aligned WNW/ESE	Medieval
906	f	Ditch fill	908	33	Upper	Medieval
907	f	Ditch fill	908	33	Primary	Medieval
908	c	Ditch	908	33	Aligned NNE/SSW	Medieval
909	f	Pit fill	910	46	Single	Medieval?
910	c	Pit	910	46	Undated but probably med.	Medieval?
911	f	Post-hole fill	912	39	Single	Medieval
912	c	Posthole	912	39	Possible structural feature	Medieval
913	f	Pit fill	915	48	Upper	Undated
914	f	Pit fill	915	48	Primary	Undated
915	c	pit	915	48	Undated feature	Undated
916	f	Post-hole fill	918	48	Upper	Undated
917	f	Post-hole fill	918	48	Primary	Undated
918	c	Posthole	918	48	Undated feature	Undated
919	f	Pit fill	920	48	Single	Undated
920	c	Pit	920	48	Undated feature	Undated
921	f	Ditch fill	922	34	Upper	Medieval
922	c	Ditch	922	34	aligned NW/SE ditch	Medieval
923	f	Pit fill	924	47	Single	Undated
924	c	Pit	924	47	Undated feature	Undated
925	f	Post-hole fill	926	47	Single	Undated
926	c	Posthole	926	47	Undated feature	Undated
927	f	Pit fill	928	47	Single	Undated
928	c	Pit	928	47	Undated feature	Undated
929	f	Ditch fill	922	34	Primary	Medieval
930	f	Ditch fill	931	34	Single	Medieval
931	c	Ditch	931	34	aligned NW/SE	Medieval
932	f	Pit fill	933	48	Single	Undated
933	c	Pit	933	48	Undated feature	Undated
934	f	Root hole fill	936	50	Upper	Modern?
935	f	Root hole fill	936	50	Primary	Modern?
936	c	Tree root hole	936	50	Possible burnt tree root	Modern?
937	f	Pit fill	938	41	Single	Medieval
938	c	Pit	938	41	Pit to N of G32	Medieval

Context	type	Interpretation	Parent	Group	Comments	Prov. date
939	f	Ditch fill	942	33	Upper	Medieval
940	f	Ditch fill	942	33	Secondary	Medieval
941	f	Ditch fill	942	33	Primary	Medieval
942	c	ditch	942	33	Aligned NNE/SSW	Medieval
943	f	Pit fill	944	41	Single	Medieval
944	c	Pit	944	41	Pit N of G32	Medieval
945	f	Pond fill	946	41	Single	Medieval
946	c	Pond	946	41	On G32/G33 junction	Medieval
947	f	Pit fill	981	39	Upper	Medieval
948	f	Gully fill	949	49	Single	Undated
949	c	Gully	949	49	Undated feature	Undated
950	f	Pit fill	951	49	Single	Undated
951	c	pit	951	49	Undated feature	Undated
952	f	Pit fill	953	49	Single	Undated
953	c	Ppit	953	49	Undated feature	Undated
954	f	Pit fill	956	42	Upper	Medieval
955	f	Pit fill	956	42	Secondary	Medieval
956	c	Pit	956	42	Pit cutting G35	Medieval
957	f	Ditch fill	958	35	Single	Medieval
958	c	Ditch	958	35	Aligned NE/SW	Medieval
959	f	Ditch fill	961	35	Upper	Medieval
960	f	Ditch fill	961	35	Primary	Medieval
961	c	Ditch	961	35	Aligned NE/SW	Medieval
962	f	Pit fill	965	42	Upper	Medieval
963	f	Pit fill	965	42	Secondary	Medieval
964	f	Pit fill	965	42	Primary	Medieval
965	c	Pit	965	42	Pit cutting G35	Medieval
966	f	Pad fill	967	39	Primary	Medieval
967	c	pad	967	39	Equals 975	Medieval
968	f	Ditch fill	972	33	Upper	Medieval
969	f	Ditch fill	972	33	Tertiary	Medieval
970	f	Ditch fill	972	33	Secondary	Medieval
971	f	Ditch fill	972	33	Primary	Medieval
972	c	Ditch	972	33	Aligned NNE/SSW	Medieval
973	f	fill, upper	975	39	Upper	Medieval
974	f	fill, primary	975	39	Primary	Medieval
975	c	pad	975	39	Possible structural feature	Medieval
976	f	Post-hole fill	977	39	Single	Medieval
977	c	Post-hole	977	39	Possible structural feature	Medieval
978	f	Gully fill	979	39	Single	Medieval
979	c	Gully	979	39	Possible structural feature	Medieval

Context	type	Interpretation	Parent	Group	Comments	Prov. date
980	f	Pit fill	981	39	Primary	Medieval
981	c	Pit	981	39	Possible structural feature	Medieval
982	f	Ditch fill	903	32	Fill	Medieval
983	f	Ditch fill	986	38	Upper	Post-med
984	f	Ditch fill	986	38	Primary	Post-med
985	f	Ditch fill	986	38	Basal	Post-med
986	c	Ditch	986	38	N/S ditch	Post-med
987	f	Ditch fill	988	37	Single	Post-med
988	c	Ditch	988	37	Aligned NNE/SSW	Post-med
989	c	Ditch	989	30	Aligned WNW/ESE	Medieval
990	f	Ditch fill	989	30	Primary	Medieval
991	f	Ditch fill	989	30	Secondary	Medieval
992	f	Ditch fill	989	30	Tertiary	Medieval
993	f	Ditch fill	989	30	Upper	Medieval
994	f	Ditch fill	996	37	Single	Post-med
995	f	Pit fill	1032	45	Upper	Late med?
996	c	Ditch	996	37	Aligned NNE/SSW	Post-med
997	c	Ditch	997	30	Aligned WNW/ESE	Medieval
998	f	Ditch fill	997	30	Primary	Medieval
999	f	Ditch fill	997	30	Secondary	Medieval
1000	f	Ditch fill	997	30	Upper	Medieval
1001	f	Pit fill	1002	43	Single	Medieval
1002	c	Pit	1002	43	Pit cutting G30	Medieval
1003	f	Ditch fill	1008	30	Upper	Medieval
1004	f	Ditch fill	1008	30	Intermediate	Medieval
1005	f	Ditch fill	1008	30	Secondary	Medieval
1006	f	Ditch fill	1008	30	Primary	Medieval
1007	f	Ditch fill	1008	30	Primary	Medieval
1008	c	Ditch	1008	30	Aligned WNW/ESE	Medieval
1009	f	Ditch fill	1010	37	Single	Post-med
1010	c	Ditch	1010	37	Aligned NNE/SSW	Post-med
1011	f	Ditch fill	1012	37	Single	Post-med
1012	c	Ditch	1012	37	Aligned NNE/SSW	Post-med
1013	c	Pit	1013	44	Pit N of G31 continuation	Medieval
1014	f	Pit fill	1013	44	Single	Medieval
1015	f	Post-hole fill	1016	40	Single	Medieval
1016	c	Post-hole	1016	40	Feature N of G30	Medieval
1017	c	Pit	1017	40	Feature N of G30	Medieval
1018	f	Pit fill	1017	40	Single	Medieval
1019	c	Pit	1019	40	Feature N of G30	Medieval
1020	f	Pit fill	1019	40	Single	Medieval

<b>Context</b>	<b>type</b>	<b>Interpretation</b>	<b>Parent</b>	<b>Group</b>	<b>Comments</b>	<b>Prov. date</b>
1021	c	Root disturbance	1021	40	Feature N of G30	Medieval
1022	f	Root-hole fill	1021	40	Single	Medieval
1023	f	Ditch fill, upper	1025	31	Upper	Medieval
1024	f	Ditch fill, primary	1025	31	Primary	Medieval
1025	c	Ditch	1025	31	Aligned WNW/ESE	Medieval
1026	f	Ditch fill, single	1027	31	Single	Medieval
1027	c	Ditch	1027	31	Aligned WNW/ESE	Medieval
1028	c	Pit	1028	40	Feature N of G30	Medieval
1029	f	Pit fill	1028	40	Single	Medieval
1030	f	Pit fill	1032	45	Secondary	Medieval?
1031	f	Pit fill	1032	45	Primary	Medieval?
1032	c	Pit	1032	45	Big pit or quarry	Medieval?
1033	f	Ditch fill, upper	1035	36	Upper	Medieval?
1034	f	Ditch fill, primary	1035	36	Primary	Medieval?
1035	c	ditch	1035	36	Aligned NNE/SSW	Medieval?
1036	f	Ditch fill	989	30	Upper	Medieval
1037	f	Ditch fill	1038	34	Single	Medieval
1038	c	Ditch terminus	1038	34	Aligned NW/SE	Medieval

**Appendix 2: Group List**

<b>Group</b>	<b>Area</b>	<b>Description</b>	<b>Contexts</b>	<b>Period</b>
30	4.4	WNW/ESE ditch	989, 997, 1008	Medieval
31	4.4	WNW/ESE ditch	1025, 1027	Medieval
32	4.4	WNW/ESE ditch	903, 905	Medieval
33	4.4	NNE/SSW ditch	908, 942, 972	Medieval
34	4.4	NW/SE ditch	922, 931	Medieval
35	4.4	NE/SW ditch	958, 961	Medieval
36	4.4	NNE/SSW ditch	1035	Medieval?
37	4.4	NNE/SSW ditch	988, 996, 1010, 1012	Post-med
38	4.4	N/S ditch	986	Post-med
39	4.4	Poss. structural feats.	912, 967, 975, 977, 979, 981	Medieval
40	4.4	Features N of G30	1016, 1017, 1019, 1028, 1021?	Medieval
41	4.4	Pits & pond N of G32	938, 944, 946	Medieval
42	4.4	Pits cutting G35	956, 965	Medieval
43	4.4	Pit cutting G30	1002	Medieval
44	4.4	Pit N of G31	1013	Medieval
45	4.4	Big pit or Quarry	1032	Medieval
46	4.4	Undated pit	910	Medieval?
47	4.4	Undated feats. In E(N)	924, 926, 928	Undated
48	4.4	Undated feats. In E(C)	915, 918, 920, 933	Undated
49	4.4	Undated feats. In E(S)	949, 951, 953	Undated
50	4.4	Poss. burnt tree root	936	Modern?

Appendix 3: Quantification of bulk finds

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Iron	Weight (g)	Metal	Weight (g)	Bone	Weight (g)	Fired Clay	Weight (g)	Shell	Weight (g)
900			2	78												
901			29	234							23	78	4	40	2	22
902			15	230									1	2	3	36
904			3	8	3	380										
906			6	80							39	132			2	14
921			20	130	14	120	2	100							4	28
929											1	26			9	2
937			2	12											1	24
939			3	26	3	22	1	10								
941			1	6	1	6										
943			1	22			1	72								
947			1	12												
948											22	18				
954			2	22	1	56									2	16
959			4	36											2	8
963			3	26	3	212										
968			3	42			1	2								
971			1	12												
976			2	6	2	36							3	10		
983			1	8	1	48										
984							2	82	1	<2						
988			2	10												
991			6	62							3	20			30	526
993			1	4											1	10
994			5	12	8	338							2	36	1	20
995					2	768	1	86			24	34				
998															4	52
1000	1	4	4	42	1	28									1	20
1001			23	166	5	192					18	88	2	36	120	1218
1003			92	1014							27	114			112	1214
1004			2	10			2	16							3	54
1006			29	570									2	6		
1009			4	16	2	70										
1011			9	48	1	50					1	10				
1014			1	66												
1015			33	348											1	36
1018			3	4												
1020			2	14									1	6		
1022					2	124									1	8
1023			48	690							14	116	1	8	2	16

Context	Lithics		Pottery	CBM		Iron	Metal	Bone	Fired Clay	Shell	Weight (g)					
	Weight (g)		Weight (g)	Weight (g)		Weight (g)	Weight (g)	Weight (g)	Weight (g)	Weight (g)	Weight (g)	Weight (g)				
1026			2	22	1	128										
1029			5	38					1	2	2	20				
1031					2	438										
1036			2	64												
1037			2	6					5	10						
<i>Total</i>	<i>1</i>	<i>4</i>	<i>374</i>	<i>4196</i>	<i>52</i>	<i>3016</i>	<i>10</i>	<i>368</i>	<i>1</i>	<i>0</i>	<i>172</i>	<i>636</i>	<i>22</i>	<i>156</i>	<i>303</i>	<i>3344</i>



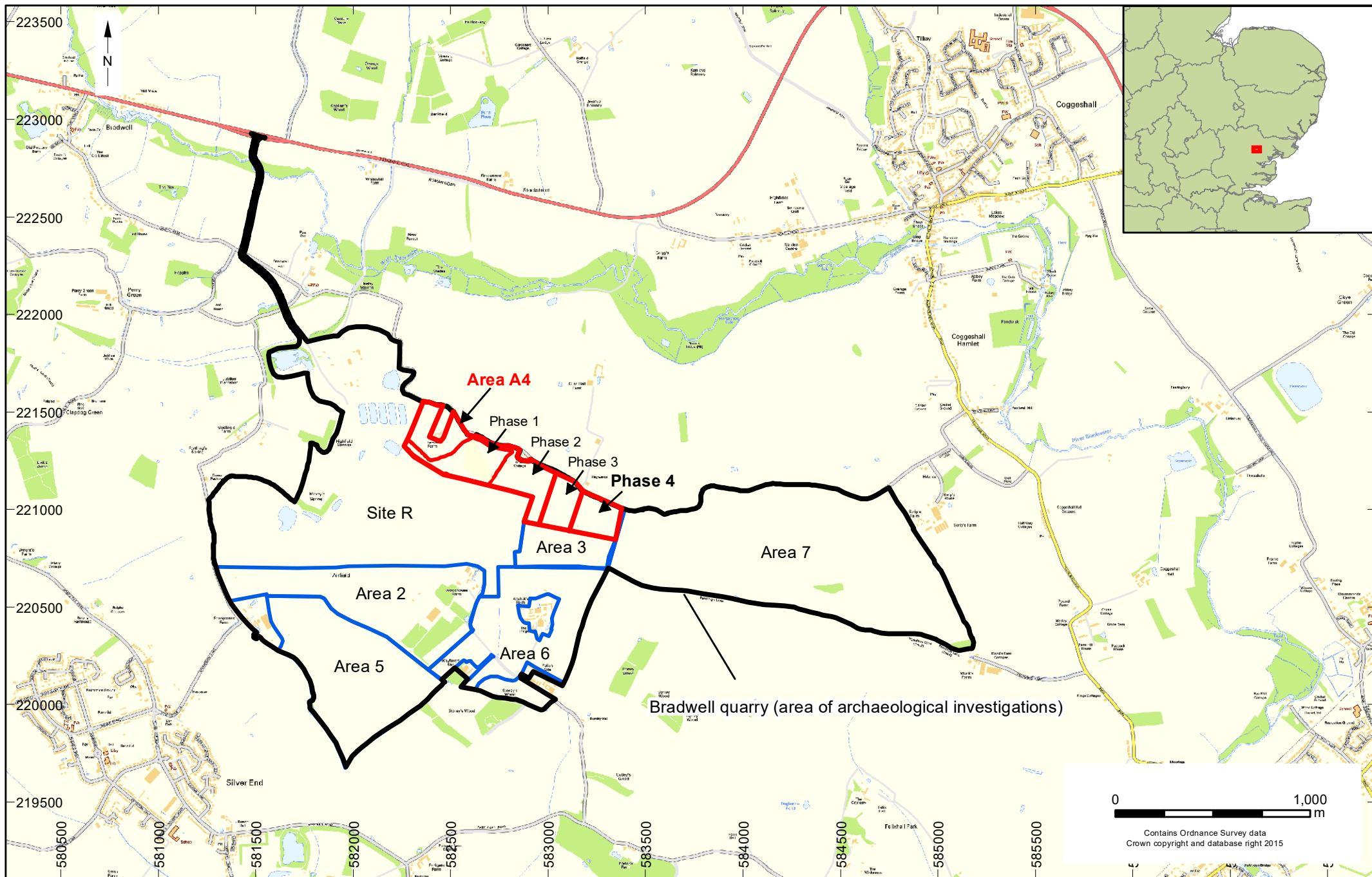
**Appendix 4: HER Summary Form**

<b>Site name/Address:</b> Area A4, Phase 4, Bradwell Quarry, Braintree, Essex	
<b>Parish:</b> Bradwell	<b>District:</b> Braintree
<b>NGR:</b> TL 83260 20950	<b>Site Code:</b> BDAF 12
<b>Type of Work:</b> Archaeological Excavation	<b>Site Director/Group:</b> T. Ennis, Archaeology South-East
<b>Date of Work:</b> 12th October - 8th December 2016	<b>Size of Area Investigated:</b> c.3.5 ha
<b>Location of Finds/Curating Museum:</b> Braintree	<b>Funding source:</b> Client
<b>Further Seasons Anticipated?:</b> Yes	<b>Related HER Nos:</b> -
<b>Final Report:</b> EAH article	<b>OASIS No:</b> 281094
<b>Periods Represented:</b> Prehistoric, Medieval, Post-medieval., Modern	
<p><b>SUMMARY OF FIELDWORK RESULTS:</b>  <i>An archaeological 'strip, map and sample' excavation was carried out over a c.3.5ha area of arable land (Area A4 Phase 4). The fieldwork in Area 4 Phase 4 followed evaluation by trial trenching in 2012 and the excavation of Area A4 Phases 1-3 to its west over recent years.</i></p> <p><i>Up to seven undated pits and post-holes in the east of the site could potentially be of prehistoric date. No firm dating evidence was found to support this theory although the presence of charcoal and baked clay is often associated with prehistoric features. Similar undated features encountered across previous areas of the quarry have generally been assumed to be of Bronze or Iron Age date in keeping with the majority of dated remains.</i></p> <p><i>The majority of remains present date to the medieval period and were concentrated in the west of the site close to its northern boundary. The remains consisted of a number of ditches forming several small enclosures, a collection of possible structural features and a few pits and probably form part of a farmstead located adjacent to Cuthedge Lane. It is likely that further parts of the farmstead survive within the c.24m wide gap between the edge of the excavated area and this lane.</i></p> <p><i>Pottery evidence suggests that the farmstead was in fairly continuous use from the early 13th century through into the 14th century. Although there is slight evidence to perhaps suggest two sub-phases of occupation or more intense activity, in the early 13th century and again in the later 13th to 14th century. One ditch and possibly two or three pits were not finally infilled until the 14th century. There was no evidence to suggest that the farmstead continued in use beyond this date.</i></p> <p><i>In the post-medieval period the former farmstead area is cut by two roughly north/south aligned ditches. One contained broad 16th to 19th century pottery and the other several ceramic field drains. In the south of the site one undated gully containing animal bone may also date to the post-medieval period. A near-by ditch infilled with brick rubble is depicted on the 1st edition Ordnance Survey map as is a second brick-infilled ditch at the western limit of the site. Both were levelled during construction of the WW2 airfield.</i></p>	
<b>Previous Summaries/Reports:</b> - Germany, M. 2014, <i>Allshotts Farm, Rivenhall Airfield, Essex: Archaeological Evaluation (Areas A3 and A4)</i> . ECC FAU report 2604	
<b>Author of Summary:</b> T. Ennis	<b>Date of Summary:</b> July 2017

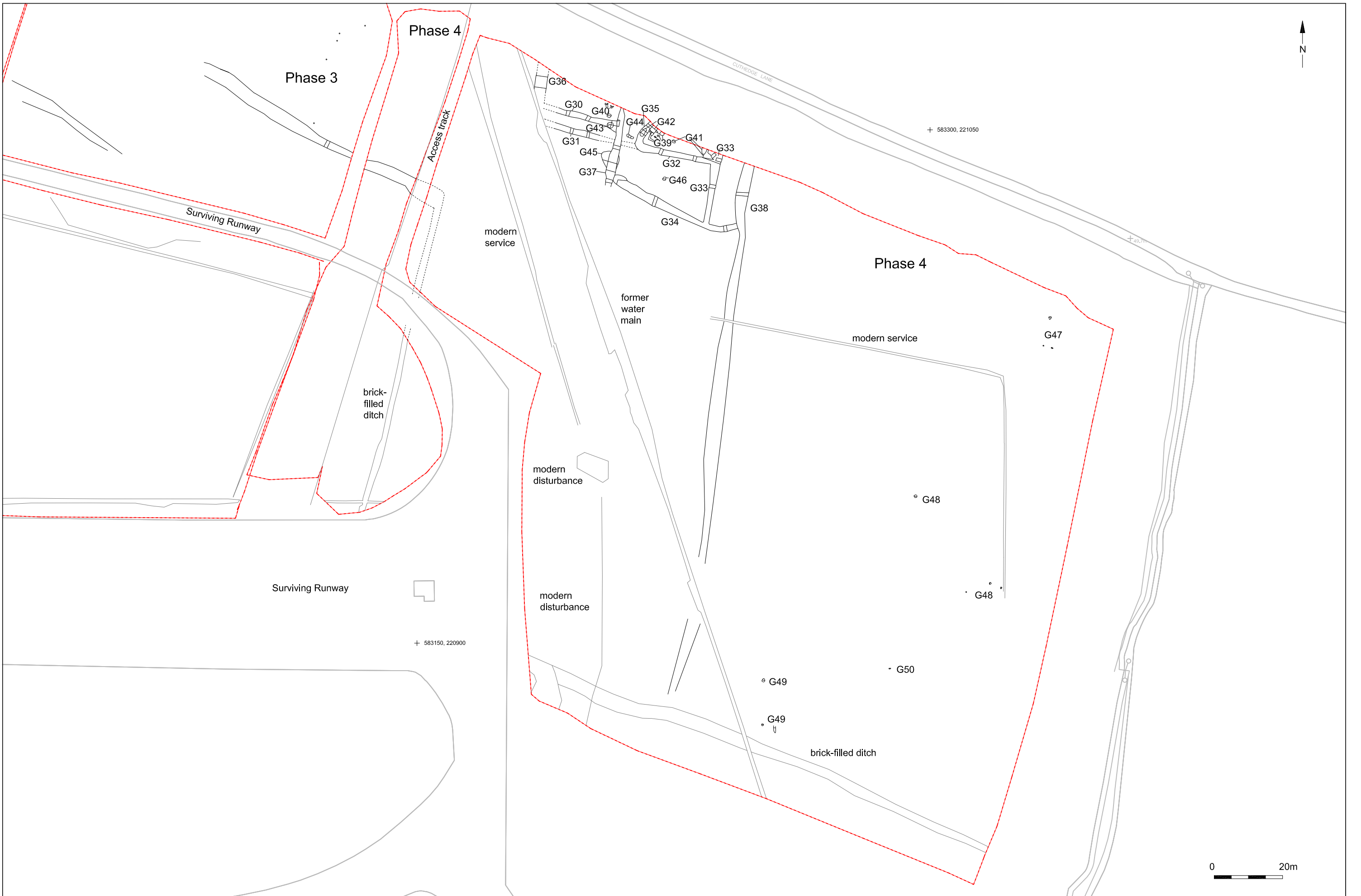
**Appendix 4: OASIS Form**

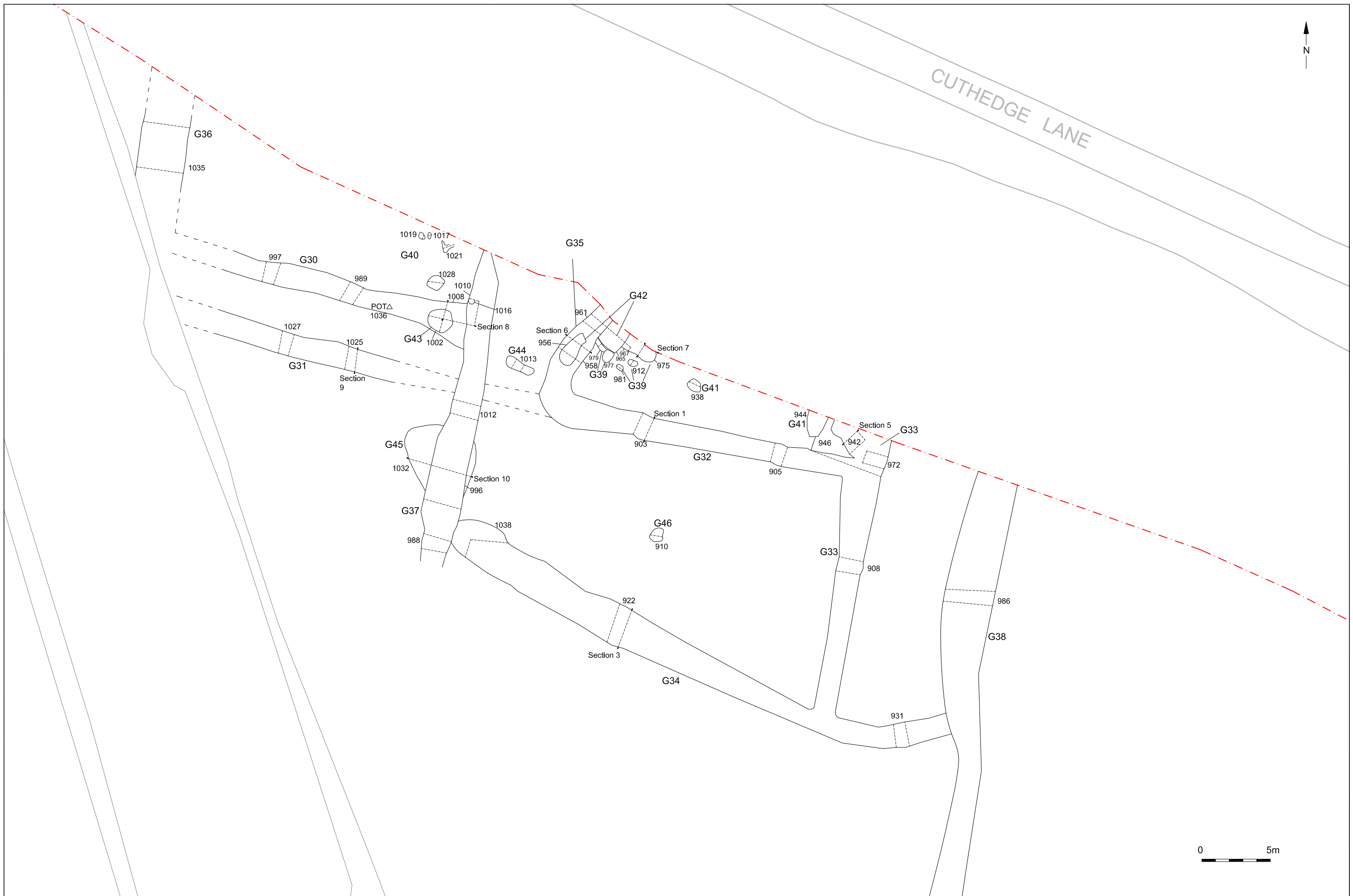
<b>OASIS ID: 281094</b>	
<b>Project details</b>	
Project name	Archaeological Excavation: Area A4, Phase 4, Bradwell Quarry
Short description of the project	Archaeological 'strip, map and sample' excavation was carried out over a c.3.5ha area of arable land (Area A4 Phase 4). The majority of remains present date to the medieval period and were concentrated in the west of the site close to its northern boundary. The remains consisted of a number of ditches forming several small enclosures, a collection of possible structural features and a few pits. These probably form the rear part of a farmstead located adjacent to Cuthedge Lane. Pottery evidence suggests that it was in fairly continuous use from the early 13th century through into the 14th century. Although there is slight evidence to perhaps suggest two sub-phases of occupation or more intense activity, in the early 13th century and again in the later 13th to 14th century.
Project dates	Start: 12-10-2016 End: 08-12-2016
Previous/future work	Yes / Yes
Any associated project ref. codes	BDAF12 – Site code
Type of project	Recording project
Current Land use	Cultivated Land 3 - Operations to a depth more than 0.25m
Monument type	DITCHES Medieval
Monument type	PITS Medieval
Monument type	POST-HOLES Medieval
Monument type	DITCHES Post Medieval
Monument type	PITS Uncertain
Significant Finds	POTTERY Medieval
Significant Finds	POTTERY Post Medieval
Investigation type	"Part Excavation", "Watching Brief"
Prompt	Direction from Local Planning Authority - PPS
<b>Project location</b>	
Country	England
Site location	ESSEX BRAINTREE BRADWELL Bradwell Quarry
Study area	3.5 Hectares
Site coordinates	TL 83260 20950 51.856499512991 0.661448661376 51 51 23 N 000 39 41 E Point
<b>Project creators</b>	
Name of Organisation	Archaeology South East
Project design originator	ASE
Project manager	Niall Oakey

Project supervisor	Trevor Ennis
Type of sponsor	client
<b>Project archives</b>	
Physical Archive recipient	Braintree Museum
Physical Archive ID	BDAF12
Physical Contents	"Ceramics"
Digital Archive recipient	Braintree Museum
Digital Archive ID	BDAF12
Digital Contents	"Ceramics", "Stratigraphic"
Digital Media available	"Images raster / digital photography", "Text"
Paper Archive recipient	Braintree Museum
Paper Archive ID	BDAF12
Paper Contents	"Ceramics", "Stratigraphic", "Survey"
Paper Media available	"Context sheet", "Photograph", "Plan", "Report", "Section", "Survey", "Unpublished Text"
<b>Project bibliography</b>	
Publication type	Grey literature (unpublished document/manuscript)
Title	Area A4 Phase 4, Bradwell Quarry, Essex: Summary Post-Excavation Assessment
Author(s)/Editor(s)	Ennis, T.
Other bibliographic details	Rep No. 2017159
Date	2017
Issuer or publisher	Archaeology South-East
Place of issue or publication	Witham
Description	A4 blue spine, c.60 pages with illis
Entered by	Trevor Ennis (t.ennis@ucl.ac.uk)
Entered on	25 July 2017

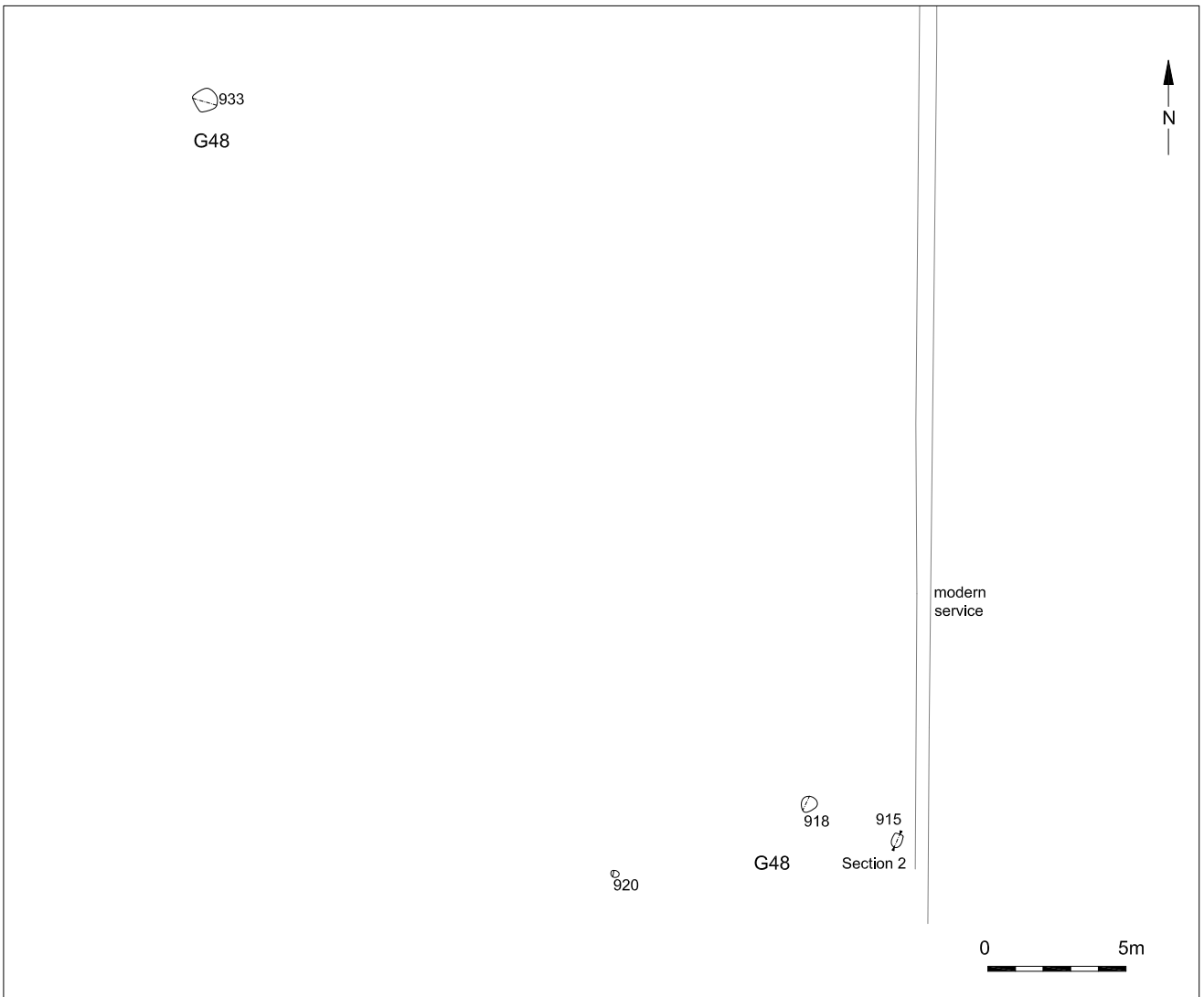
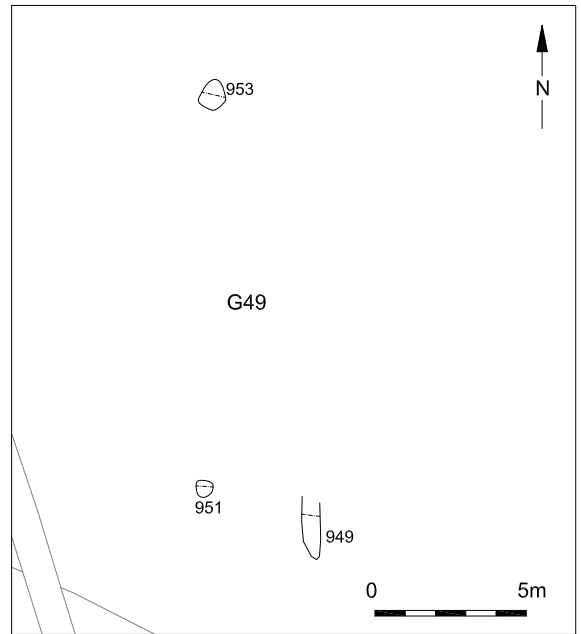
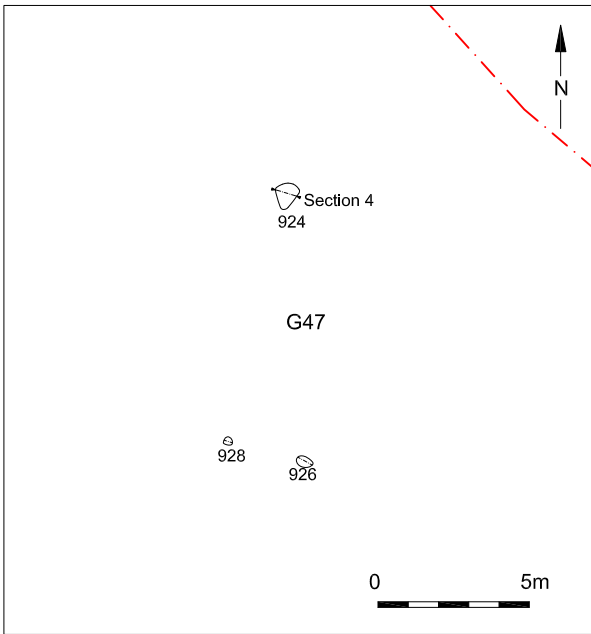


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Project Ref: 160891	June 2017	Location of Area A4, Phase 4	
Report No: 2017159	Drawn by: APL		

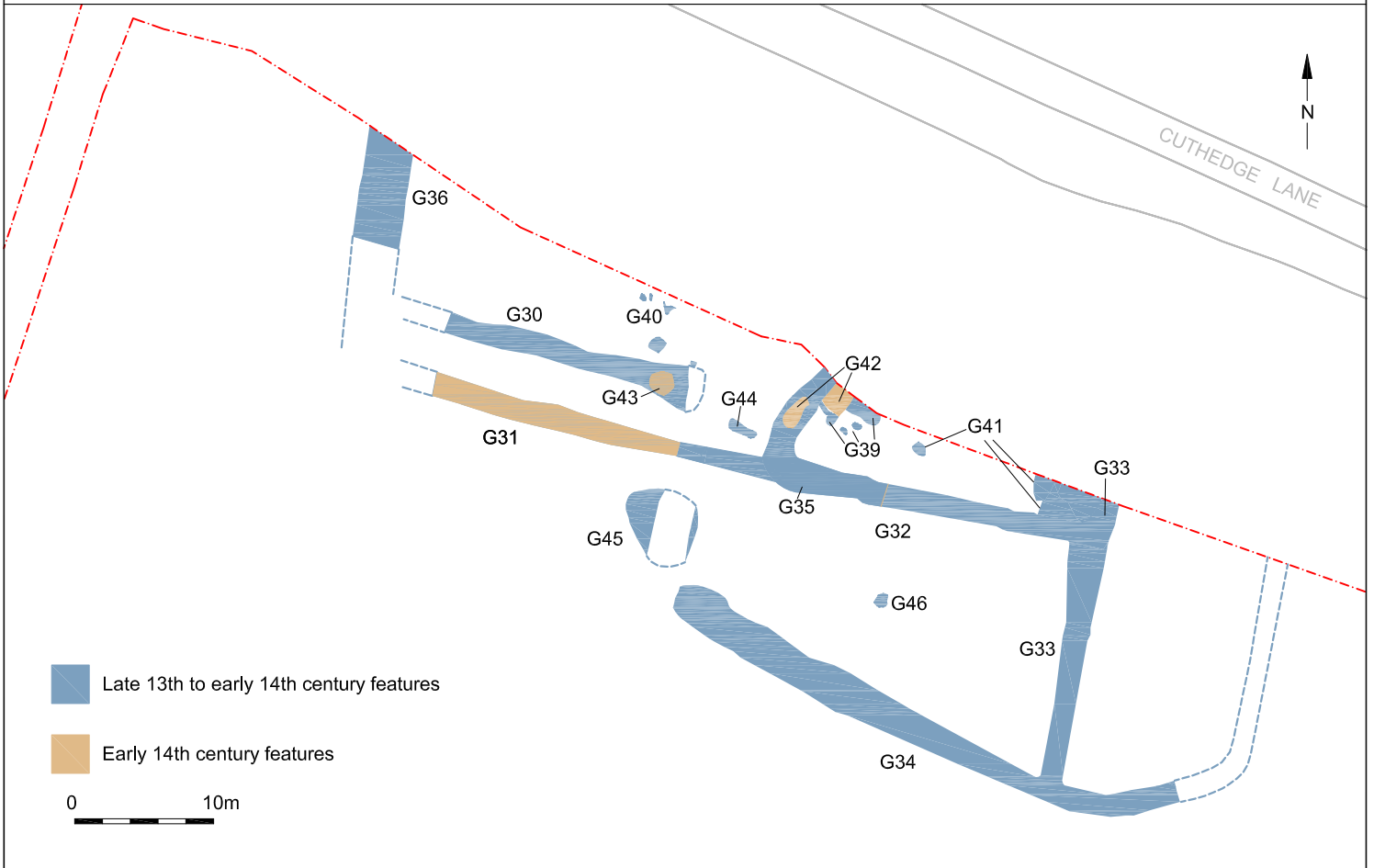
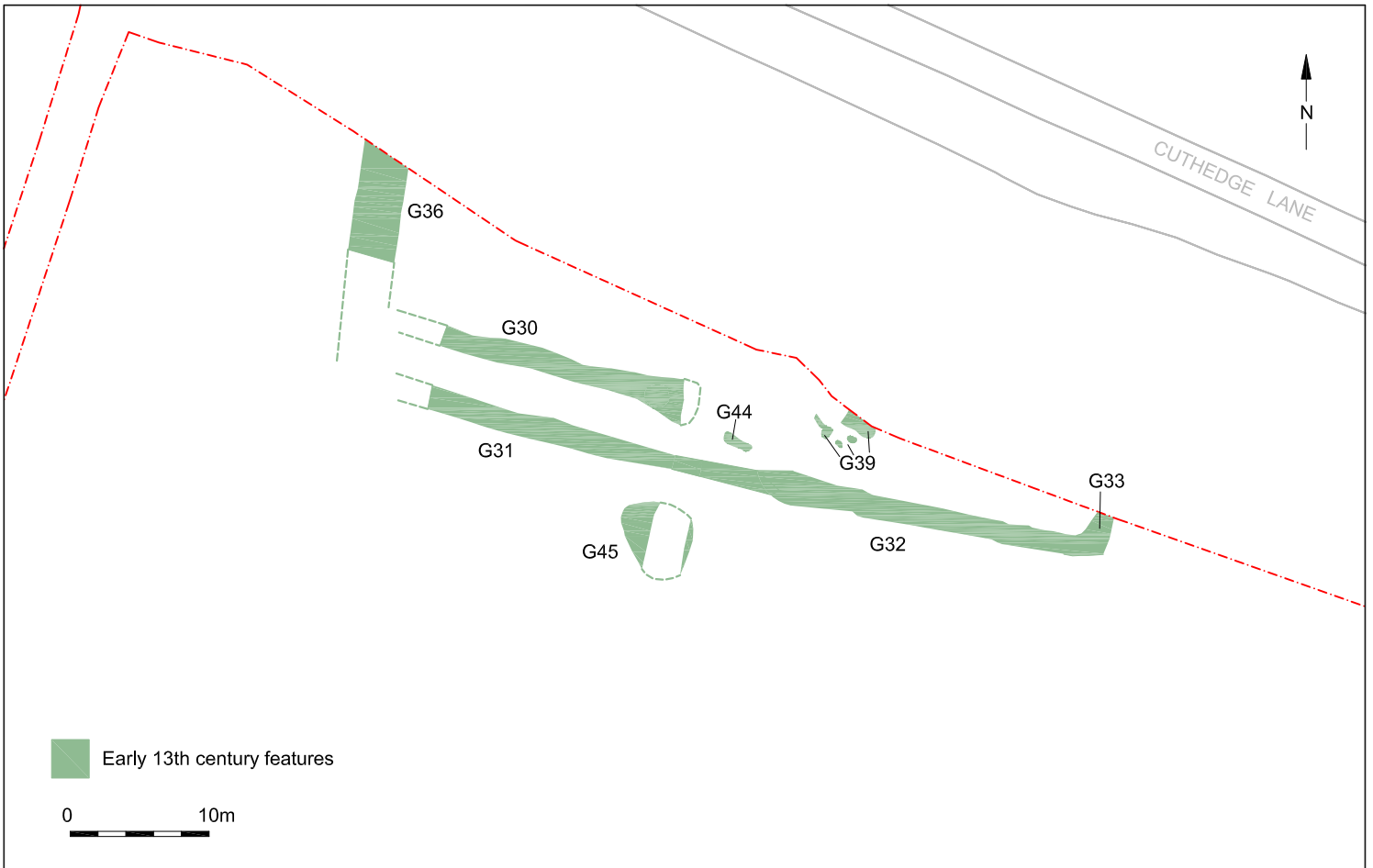




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Project Ref: 160891	June 2017	Detail of north area	
Report Ref: 2017159	Drawn by: APL		

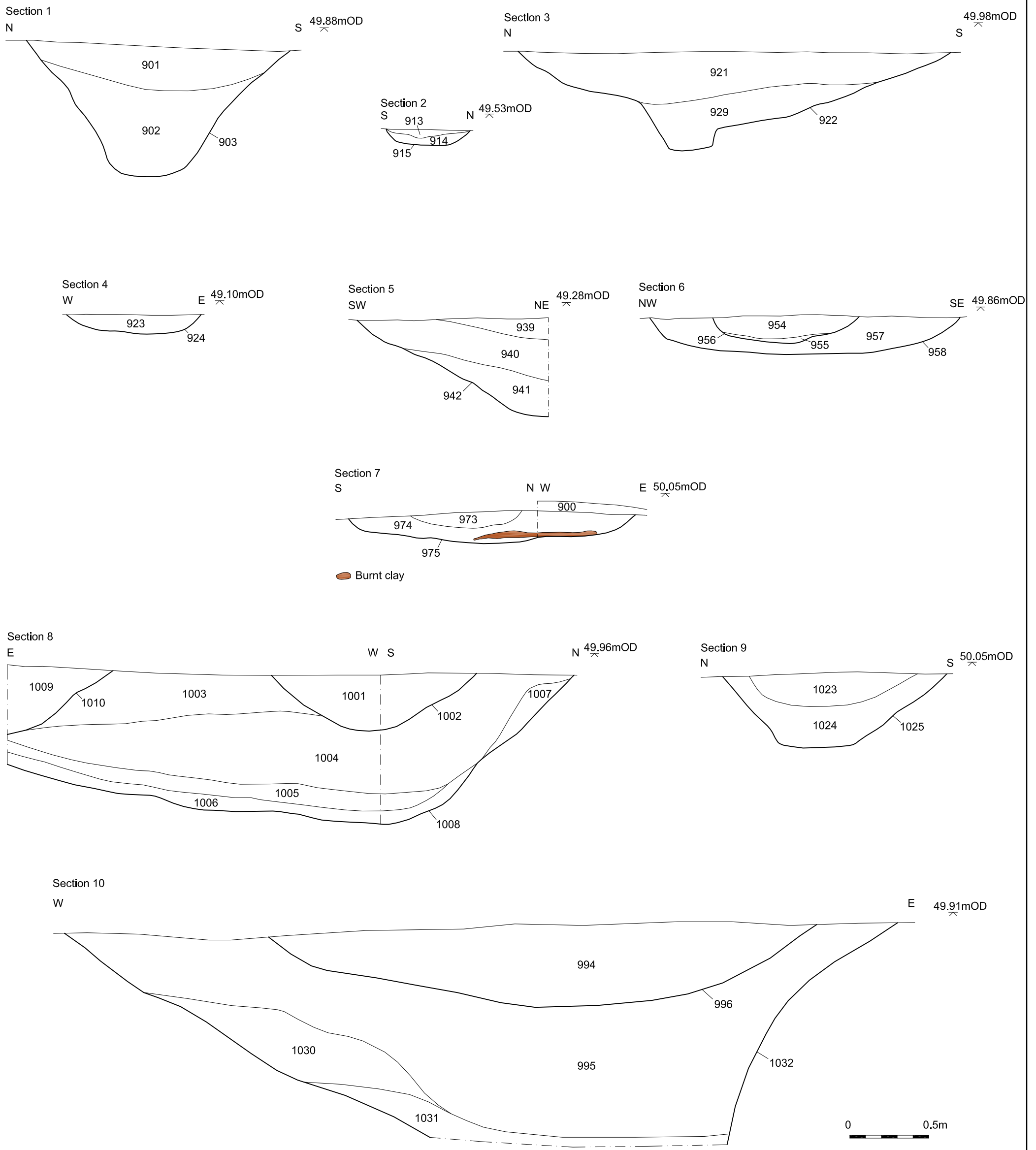


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Project Ref: 160891	June 2017	Detail of north area	
Report Ref: 2017159	Drawn by: APL		



© Archaeology South-East		Bradwell Quarry, Area A4, Phase 4	Fig. 5
Project Ref: 160891	July 2017	Medieval features	
Report Ref: 2017159	Drawn by: APL		





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Project Ref: 160891	June 2017	Sections 1 - 10	
Report Ref: 2017159	Drawn by: APL		

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