Archaeology South-East

ASE

ARCHAEOLOGICAL EXCAVATION

LAND AT PIPPINS ROAD, BURNHAM-ON-CROUCH, ESSEX

FINAL REPORT

ASE Project No: 170962
Site Code: BCMR 17

ASE Report No: 2018250

August 2018

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Abstract

This report presents the results of an archaeological excavation carried out by Archaeology South-East on land at Pippins Road, Burnham-on-Crouch, Essex, in the period 20 November to 18 December 2017. The fieldwork was commissioned by CgMs Ltd, on behalf of their client, in advance of residential development.

Prior trial-trench evaluation of the overall 5.57ha development area had established the presence of archaeological remains. These comprised a low density and low complexity scatter of pits and linear ditches/gullies of definite and probable Late Bronze Age/earliest Iron Age date present across the western and southern parts of the site. Geoarchaeological test-pitting recorded a basic sequence of silts and clays with some interbeds of clayey gravel and sandy gravel, but no humanly struck flints or palaeobotanically useful deposits were identified.

Two excavation areas totalling 1,771sq m were investigated in the south of the site, targeting remains found by the preceding evaluation.

An irregular and interrupted ditched boundary of Late Bronze Age to Early Iron Age date extended east/west across both excavation areas. A parallel ditch to its south, crossing Area A only, is considered contemporary, though appears to have passed out of use several centuries before the northern boundary. A scatter of contemporary pits was present, mostly located to the north of the boundary. Amongst these, three unurned cremation burials were recorded, one of which has been radiocarbon dated to 1236–1051 cal BC. An unstratified socketed bronze axe head and associated two further fragments of copper alloy, found together in a modern agricultural drain, probably constitute at least part of a dispersed hoard of Late Bronze Age metalwork. Two further Bronze Age metalwork hoards are known in the vicinity of the site and form part of a south-east Essex cluster in the wider distribution of such deposits.

Middle Iron Age land use was represented by a cluster of short curving ditches/gullies and pits/postholes found to the south of the earlier boundaries and an isolated pit elsewhere. The clustered remains may constitute a structure, but the group is probably best viewed as an activity area – potentially involving both crop processing and metalworking.

Apparently intrusive finds of Late Iron Age/Roman pottery encountered in Late Bronze Age/Early Iron Age boundary ditch and related pit features may include instances of deliberately deposited material inserted into the boundary remains.

This prehistoric boundary location and the various activities apparently focused upon it, particularly the deposition of Late Bronze Age metalwork, are considered to be of local significance and importance.

It is proposed that the results of the archaeological investigations are disseminated by means of publication of a short article in the county journal, Essex Archaeology and History.

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1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East (ASE), the contracting division of UCL's Institute of Archaeology Centre for Applied Archaeology, was commissioned by CgMs Consulting, on behalf of their client, to conduct an archaeological excavation on land at Pippins Road, Burnham-on-Crouch, in fulfilment of a condition attached to planning consent.

1.1.2 Prior site evaluation had established the presence of potentially significant archaeological remains in two areas to the south of the site. Excavation, targeted on these two areas, was required in order to mitigate the effects of forthcoming residential development (ASE 2017a).

1.2 Location, Topography and Geology

1.2.1 The town of Burnham-on-Crouch is located in the south-east of Essex, in Maldon District, 7.5 miles north-east of Southend-on-Sea and 17 miles south-east of Chelmsford. Burnham-on-Crouch is located on the Dengie Peninsular, a broad spur of land between the Blackwater Estuary and the River Crouch.

1.2.2 The overall development site is located on the eastern edge of the town, at the end of Pippins road (NGR TQ 95469 96587) and comprises a 5.57ha area of land (Fig. 1). The site consists of agricultural land, which is bounded by residential housing to the west, allotments to the south and agricultural land to the north and east.

1.2.3 The British Geological Survey (BGS 2017) identifies the underlying geology as London Clay overlain by Head deposits of clay and silt. The site is located on generally flat land at a height of approximately *c.*10m AOD.

1.3 Planning Background

1.3.1 Outline planning permission (Ref. No: 17/00126/MAL) has been approved by Maldon District Council for the development of the site for up to 75 dwellings, provision of public space, a pavilion building and vehicular access from Pippins Road. An archaeological condition was placed on the planning application. Condition 10 relates to archaeology and states:

'No development or preliminary groundworks of any kind shall take place until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the local planning authority.

REASON: To safeguard the potential archaeological interest of the site

1.3.2 In accordance with the planning condition, ASE was commissioned by CgMs to undertake archaeological investigations on site. This consisted of a 25-trench evaluation, undertaken in August 2017, which revealed a scatter of

remains of Late Bronze Age/Early Iron Age date in the south of the site (ASE 2017a).

1.3.3 As the proposed development was judged to have significant impact on the archaeological resource, further archaeological work was requested by the ECC Place Services Archaeological Advisor. The specified work entailed targeted excavation of the two areas of the site with archaeological potential, as identified by the evaluation.

1.3.4 The methodology and programme for this mitigation work was set out in a Written Scheme of Investigation (WSI) (ASE 2017b), which was approved by ECC Place Services prior to the commencement of fieldwork.

1.4 Circumstances and Dates of Work

1.4.1 The fieldwork was undertaken by Archaeology South-East between 20 November and 18 December 2017. The site was staffed by ASE archaeologists, project managed by Gemma Stevenson and directed in the field by Angus Forshaw. The post-excavation process was managed by Mark Atkinson.

1.5 Scope of the Report

1.5.1 Following the fieldwork, it was agreed with the ECC Place Services Archaeological Advisor that it was appropriate to prepare a final report presenting the results.

1.5.2 This final excavation report has been prepared in accordance with the guidelines laid out in *Management of Research Projects in the Historic Environment (MoRPHE)* and *Project Planning Notes 3 (PPN3): Archaeological Excavation* (Historic England 2008).

1.5.3 The report seeks to quantify and describe the results, to place the recorded remains from the site within the local archaeological and historical setting, and to interpret them and to discuss their significance. It also identifies any further analysis or research required to bring the results to an appropriate level of publication.

2.0 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

2.1 Introduction

2.1.1 The following summary is based on the most pertinent information drawn from the Essex Historic Environment Record (EHER), the historic towns assessment prepared for Burnham-on-Crouch (ECC 1999), the results from the archaeological evaluation (ASE 2017a) and other readily available documentary and mapping sources. The locations of sites and findspots mentioned in this text are shown on Figure 1.

2.2 Prehistoric

2.2.1 A sparse scatter of prehistoric flint artefacts and debitage has been recorded around Burnham-on-Crouch, predominantly on the western side of the town, within the area between the railway line and the River Crouch to the south. These include a prehistoric 'semi-leaf-shaped' flint tool (EHER 11318) *c*.1.2km west of the site and Clactonian implements (EHER 11214) *c*.1.2km to the south-west. Two Palaeolithic cores and flakes were recovered from Thatched Cottage (EHER 11350, 11310) *c.*1,1km to the north-west.

2.2.2 In addition to the flint artefacts, a founder's hoard of six Bronze Age loopless palstave axes (EHER 11211) was also recorded *c.*1.5km to the south-west of the site.

2.2.3 In 2010, another Bronze Age hoard comprising 214 objects (PAS ID: ESS-8822A3) was discovered by metal detectorist in a field approximately 700m to the south-east of the site area. The hoard contained complete and fragmented objects, and is thought to represent largely waste pieces to be recast. It included axes, spearheads and knives, along with fragments of swords and waste ingots. Some of the objects were placed within a pottery vessel. These hoards form part of a widespread phenomenon of deposits of buried Middle/Late Bronze Age metalwork across south-east Essex.

2.2.4 The earliest nucleated settlement at Burnham-on-Crouch appears to have been a Late Iron Age farmstead (EHER 11332) situated on the Dengie Peninsular between the city of Caesaromagus (Chelmsford) to the west and the fort at Othona (Bradwell) to the east. The Burnham-on-Crouch Archaeological Society undertook an excavation of the farmstead, at the Springfield Industrial Estate, in the 1970s; its findings have not been published, although photographs at Burnham Museum apparently show Roman remains underneath *c.*1m of alluvium (ECC 1999).

2.2.5 The only evidence for Early Iron Age activity comprises a small bowl (EHER 11334) with an ompholos base *c*.300m to the south of the site, significantly detached and to the east of all the Late Iron Age finds.

2.2.6 The trenching investigation of cropmarks plotted *c*.300m south-east of the site, by the Maldon Archaeology and History Group in 2006, revealed a 72m-wide rectilinear Iron Age defended enclosure (EHER 16031) with entrances to the north and west. A prehistoric trackway of possible Bronze Age origin was found adjacent to the enclosure.

2.2.7 Approximately *c*.920m to the south-west of the site were several Late Iron Age burials with associated 'Belgic' pottery vessels (EHER 11235), found in the 1930's.

2.3 Roman

2.3.1 A 1st-century AD Romano-British farmstead succeeded the Late Iron Age farmstead (EHER 11333, 15291), to the west of the site. The Dengie peninsular was an ideal location for salt extraction, given its estuaries and coastal marshland. A large 'red hill' of over 221m in diameter at Stoneyhills (EHER 47316), situated *c*.900m to the north of the site, is evidence of this exploitation.

2.3.2 The exploitation of this area may have been connected with the development of a possible north/south aligned Roman Road (EHER 11285), whose route may have connected the north and south coasts of the peninsular via the Stoneyhills area. The postulated route of this road is preserved in a north/south aligned pathway and hedge lines that pass *c*.300m to the west of the site.

2.3.3 Re-used Roman ceramic building material (CBM) forms part of the fabric of St. Mary's Church (EHER 11225), located on Church Road.

2.4 Anglo-Saxon and Medieval

2.4.1 The Domesday Book records Burnham as a small manorial village in 1086 (ECC 1999, 5 and 7), suggesting that the village had origins in the Anglo-Saxon period.

2.4.2 The Saxon village was probably situated around St. Mary's Church (EHER 11226), *c*.725m north-west of the site, on Church Road. The extant church was erected in the 14th century but may have been preceded by earlier structures. A moat at Hall Farm (EHER 11224), immediately north of the church, may indicate the location of a homestead or hall central to the original medieval village core. It is postulated that the area surrounding Hall Farm, possibly encroaching on the site, may be the location of a deserted medieval village (EHER 11223), although this would be beyond the postulated extent of the church and hall complex (ECC 1999, 22).

2.4.3 In 1253, a market was granted to the Fitzwalter family (EHER 18400) who owned the manor of Burnham. This may have coincided with the shift of the village's nucleus away from St. Mary's Church to the riverside, where the modern-day Quay and High Street are situated. The new nucleus of Burnham-on-Crouch may have been planted to take advantage of the estuary, both for trade and as a fishery. Elements of the later medieval town's layout certainly appear planned, particularly the High Street at a tangent to the Quay, which would have allowed the maximum number of plots to have access from ship to warehouse (ECC 1999, 7).

2.5 Post-medieval and Modern

2.5.1 The post-medieval town, economy and industry were based on the fishing trade, especially oysters, and on ancillary services, such as boatbuilding and coopering (ECC 1999, 8). Burnham Hall, the manor of Burnham, remained situated on the northern edge of the town and was built in the 17th century on

the moated site at Hall Farm (EHER 25033).

2.5.2 An important industry to the development of the post-medieval town was the brickworks situated on Green Lane, *c*.1.2km north-west of the site (EHER 48260). A water-filled clay-pit, probably 'Croxtons Pit' remains visible on Brickfield Farm.

2.5.3 In 1883, Burnham Railway Station (EHER 40547) was built on the Wickford to Southminster line. The railway station, *c*.570m to the west, lies opposite the Mildmay Ironworks (EHER 15291), which were opened in 1899 and were the largest employer in the town after boatbuilding, but have now been demolished.

2.5.4 During the Second World War, the defence of the Dengie Peninsular against potential invasion was taken seriously and this is reflected in the placement of defensive installations from the period. A road barrier was situated on Pannel's Bridge (EHER 40973), *c*.550m north of the site, Spigot Mortar Emplacements were placed alongside the rail line *c*.550m west of the site (EHER 21276) and close to the junction of Church Road and Maldon Road (EHER 21277), *c*.660m north-west of the site, where a further road barrier was also present (EHER 21278). Approximately *c*.800m east of the site was a flight station (EHER 19347), operational from 1915 for the Royal Navy Air Service and passed to the Royal Flying Corps in 1916 until July 1919 when the site returned to arable farming. No permanent facilities of any kind were erected at this site, with personnel being provided with tents at the northern edge of the site near Dammer Wick Farm.

2.6 Historic Mapping

2.6.1 Chapman and Andre's 1777 map provides an accurate and detailed portrayal of the 18th-century landscape of the Dengie Peninsular, including the town of Burnham-on-Crouch and the site. The extent of the town is clearly limited to a simple arrangement of streets on the riverside, while the site is situated significantly to the north in a rural landscape of scattered farms. The site occupies undeveloped, likely agricultural, land.

2.6.2 The 1849 Tithe Map and Apportionment depicts a landscape very similar to that on Chapman and Andre's 1777 map, albeit in more detail and with greater accuracy. The town of Burnham to the south of the site remains largely constrained to the riverside, with buildings fronting onto the Quay, High Street and Burnham Street, and little other development. A large gravel pit (No.230) is situated to the south, between the town and the site. The site remains agricultural fields set among scattered farms.

2.6.3 The 1880 OS map depicts the beginning of the development and expansion of Burnham in the late 19th century, just prior to the establishment of the railway (opened in 1883). The northern extent of residential development around the riverside nucleus of the town now extends up Church Road, although there are still substantial areas of agricultural land surrounding it. The area of the site remains unchanged; however, the gravel pit depicted on the Tithe map appears to have been filled in.

2.6.4 The 1898 OS map depicts the landscape north of the town of Burnham bisected by the GER Southminster railway line, although its local impact appears

relatively slight. The railway station is situated to the north of the town and to the west of the site, but with the exception of the Railway Hotel, has yet to see the extent of the town expand to meet it. The site remains little changed.

2.6.5 The 1924 OS map depicts the gradual expansion of Burnham-on-Crouch with the construction of the Mildmay Iron Works, a school, residential dwellings and the establishment of an orchard around the station. There is now a continual line of predominantly residential development along Church Road, connecting the nucleus of the town with St. Mary's Church and Burnham Hall. The site continues to lie in agricultural land, with the field immediately to the south marked as allotment gardens, and the disused gravel pit is labelled "Old Gravel Pit".

2.6.6 The site remains the same up to the present day. The 1975 OS map shows the land adjacent to the southern part of the western site boundary has been developed for housing, with the rest of the western boundary being built up by the 1990s.

2.7 Previous Archaeological Investigations

2.7.1 An archaeological evaluation was conducted on the site in August 2017. Twenty-five trenches were excavated across the development area. Archaeological remains were present in ten of the excavated trenches, primarily in the south and west of the site. These remains consisted of a low density and low complexity of pits and ditches/gullies of Late Bronze Age/earliest Iron Age date (ASE 2017a).

2.7.2 Five geoarchaeological test pits were also excavated down to the London clay bedrock. They revealed a basic sequence of silts and clays with interbeds of clayey and sandy gravel, but no humanly struck flints or palaeobonatically useful deposits (Quest 2017).

3.0 ARCHAEOLOGICAL METHODOLOGY AND RESEARCH OBJECTIVES

3.1 Archaeological methodology

3.1.1 As specified in the WSI (ASE 2017b), two areas were opened up by machine for archaeological excavation. Area A was targeted on a ditch and possible pit initially identified in evaluation Trench 21 and Area B was targeted on a further number of discrete features identified during the evaluation.

3.1.2 The excavation areas were stripped using a tracked mechanical 360° excavator with a toothless ditching bucket. Overburden layers, including topsoil and subsoil, were carefully removed under direct archaeological supervision in shallow spits until the top of the natural deposit or tops of archaeological features/deposits were exposed.

3.1.3 The removed overburden was transported by dumper away from the excavation areas and stockpiled. There was no requirement for re-instatement of the ground at the completion of the fieldwork.

3.1.4 The western excavation area (Area A) was rectangular in shape and was centred on, and incorporated evaluation, Trench 21. Following a visit from the site monitoring officer, it was agreed to extend the area to the east to fully expose possible layers. The total extent of Area A was 722sq m.

3.1.5 The larger of the two excavation areas (Area B) incorporated the majority of evaluation Trench 22 and the western half of Trench 23. It was initially rectangular in shape but was extended to the south, following consultation with the monitoring officer, in order to expose the extent of features continuing southwards. The total extent of Area B was 1049sq m.

3.1.6 Once the site was stripped, a pre-excavation plan was created using Global Positioning System (GPS) planning technology, which was made available through digital AutoCAD files and printed at a suitable scale for on-site use. The plan was updated during regular visits by ASE surveyors.

3.1.7 Subsequent hand excavation and recording of the site was carried out using standard ASE methodologies and in accordance with the WSI (ASE 2017b). Specific feature sampling strategies were employed, including:

- Linear features (ditches and gullies) had all relationships defined, investigated and recorded. All terminals were excavated. Sufficient of the feature lengths were excavated in order to determine the character of the feature over its entire course.

- With the exception of modern disturbances, a minimum of 50% of discrete features were excavated. Further investigation was a matter of onsite judgment, but as a minimum their extent, date and function were sought. Selected pits and post-holes were fully excavated.

3.1.8 All excavated deposits and features were recorded using the ASE standard context record sheet. Sections were drawn at a scale of 1:10 with excavated features and final site boundaries planned by GPS.

3.1.9 A full digital photographic record of all features was compiled, which also included working shots to represent more generally the nature of the site and fieldwork.

3.1.10 All artefacts from excavated contexts were collected and retained for specialist identification and study, in line with the ASE artefact collection policy and CIfA guidelines (CIfA 2014c).

3.1.11 Palaeoenvironmental soil samples were collected from suitable excavated contexts, such as well-sealed slowly silted features, sealed hearths and sealed features containing carbonised remains. The sampling aimed to recover spatial and temporal information concerning the occupation of the site. A standard bulk sample size of 40 litres (or 100% of small features) was taken from dated/datable sealed contexts to recover environmental remains such as fish, small mammals, molluscs and botanicals. A small number of appropriate deposits were identified on site.

3.1.12 On-site sampling methodology, processing and recording was undertaken within current Historic England guidelines (Historic England 2011) and in close consultation with the ASE environmental specialist (Dr Lucy Allott). Samples were processed through tank flotation unless considered detrimental to the samples or recovery rate. Flots and residues were air-dried prior to analysis.

3.1.13 All work was carried out in accordance with Chartered Institute for Archaeologists (CIfA) *Code of Conduct* (CIfA 2014a) and *Standard and Guidance for archaeological excavation* (CIfA 2014b), and in compliance with *Standards for Field Archaeology in the East of England* (Gurney 2003).

3.2 Project Aims and Research Objectives

3.2.1 The latest research aims and objectives for the project were set out in the WSI prepared for the excavation (ASE 2017b) and took account of the results of the preceding evaluation phase of work.

3.2.2 The general aims of the archaeological excavation were as follows:

- To preserve by record the location, extent, date, character, condition, significance and quality of all surviving archaeological remains
- To determine further the date and purpose of the features recorded in the evaluation and to discover whether they were part of a larger group of features

3.2.3 Site-specific research aims comprised:

- Is there any evidence of Iron Age activity on site, such as features associated with the known enclosure located to the south of the site?
- Is there any evidence of Roman activity on site, such as roadside settlement or agriculture?
- Is there any evidence of Iron Age or Roman salt drying on the site?

- Is there any evidence for medieval or post-medieval farming on the site?

3.2.4 Site-specific research objectives, with relation to Medlycott (2011) and Brown and Glazebrook (2000), were:

Iron Age

RO1: Zonation of use/internal spaces, interaction with hinterland, location with ref to topography and geology, resources, communication routes, etc. (Medlycott 2011, 31)

Roman

RO2: What forms do the farms take, and is the planned farmstead widespread across the region? What forms of buildings are present and how far can functions be attributed to them? Are there chronological/regional/ landscape variations in settlement location, density or type? (Medlycott 2011, 47)

RO3: How far can the size and shape of fields be related to the agricultural regimes identified, and what is the relationship between rural and urban sites (Medlycott 2011, 47)

Medieval

RO4: 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? How far can the size and shape of fields be related to agricultural regimes? What is the relationship between rural and urban sites? (Medlycott 2011, 70)

4.0 ARCHAEOLOGICAL RESULTS

4.1 Summary

4.1.1 Two archaeological areas were excavated covering a total of 1771sq m. Area A measured 722sq m and Area B measured 1049sq m. Their locations in relation to the evaluation trenches are shown on Figure 2. Archaeological remains were present in both areas and are discussed under provisional date-phased headings determined primarily through assessment of the dateable artefacts, predominantly the pottery, and secondarily through the creation of relative chronologies where stratigraphic relationships exist.

4.1.2 As part of the stratigraphic analysis of the excavated remains, individual context numbers, referred to thus: [000], have been grouped together and are generally referred to by their group label (G0). In this way, linear features, such as ditches that may have numerous individual excavated segments/slots and associated context numbers, are discussed as single entities, as are other cut features, such as pits or post-holes, may have been grouped together by structure, common date and/or type. Environmental samples are listed within triangular brackets <00>. References to text sections within this report are referred to thus: (3.7).

4.1.3 Three periods of activity have been identified, largely based on the recovered pottery. Some of the remains are undated due to the lack of recoverable finds and have therefore been grouped as Period 0, although some could potentially belong to Period 1. The three periods of activity are as follows:

- Period 1: Late Bronze Age/Early Iron Age
- Period 2: Middle Iron Age
- Period 3: Late Iron Age/Roman

4.1.4 The recorded archaeological remains are described and discussed under these period headings, determined through assessment of the dateable artefacts and stratigraphic relationships, where these exist. All features are illustrated in plan with context/group numbers and excavation extents shown (Figs 3 and 4). Group numbers are marked on subsequent period plans for the excavation areas (Figs 5 and 7). A selection of sections and photographs are incorporated as appropriate (Figs 6 and 8-10). Detailed information regarding all features recorded, including contexts, groups and period allocation, are presented in Appendix 1. A group list is included as Appendix 2.

4.1.5 There is a slight ‘background’ of earlier prehistoric residual finds of Mesolithic to Middle Neolithic date that suggests a limited, and presumably transient, presence in the landscape at this time.

4.1.6 Evidence for land use during the Late Bronze Age/Early Iron Age is in the form of an irregular linear boundary running across both excavation areas. A parallel ditch running to the south in Area A is considered contemporary, though appears to pass out of use several centuries before the northern boundary. A scattering of pits primarily to the north of the boundary further indicates land use. Three cremation burials were scattered across the site, one of which has been radiocarbon dated to this period. An unstratified

socketed bronze axe head and an associated further fragment of copper alloy, found together in a modern agricultural drain, probably constitute at least part of a dispersed hoard of Bronze Age metalwork.

4.1.7 Limited activity has been found from the Middle Iron Age. The remains of a possible structure, formed of a series of short ditches and pits, were found in the south-east of Area B. An isolated pit in Area A is also of this date.

4.1.8 Later finds of Late Iron Age/Roman pottery were found scattered across the site but are thought to primarily be intrusive. Whilst they may indicate the dating of certain features, the fragmentary nature of the material and association with early material makes it likely that much of this is intrusive in nature. However, this material does at least indicate a continued presence in the landscape at this time.

4.2 Deposit sequence

4.2.1 Across the excavated areas, a uniform stratigraphic sequence was recorded, comprising a *c*.0.26-0.50m thickness of dark greyish brown silty clay ploughsoil [1001] overlying a compact mid brownish orange silty clay natural deposit with occasional gravel patches [1002]. There was no subsoil across the excavated areas.

4.2.2 The archaeological features were all found cut into the natural deposits and overlain by the ploughsoil.

4.3 Residual Earlier Prehistoric Material

4.3.1 Three pieces of worked flint were found as residual finds in features of probable Late Bronze Age/Early Iron Age date. A fragmentary core from fill [10/003] of pit [10/004] (G22) and the medial part of a bladelet and a blade-like flake from fill [1162] of pit [1163] (G15), which indicate flint use broadly during the Mesolithic/Middle Neolithic period. These pieces do little more than attest to an ephemeral earlier prehistoric presence in the landscape. This activity has not been accorded a site period.

4.4 Period 1: Late Bronze Age/Early Iron Age (*c.*1150-500 BC) (Fig. 5)

4.4.1 The majority of all features identified across both site areas were of Late Bronze Age/Early Iron Age date. In essence, a pair of parallel boundaries (D1 and D2) comprised a number of interrupted ditches that ran across both excavation areas on an irregular east/west alignment. These ditches contained mixed dating material spanning *c.*1150-500 BC. The distribution of the Late Bronze Age/Early Iron Age pottery suggests that boundary D2 went out of use several centuries before D1 (see 5.3.14).

Ditch D1

4.4.2 Ditch D1 was the northernmost of the two major ditched boundaries recorded. It was formed of seven distinct interrupted lengths of ditch (G1–G7, west to east) that ran across both excavation Areas A and B on a sinuous east/west alignment, continuing beyond them in either direction.

4.4.3 The exposed western end of the boundary, ditch G1, was recorded across Area A for *c.*24m, extending beyond its limit, though it was not identified in nearby evaluation trenches. Three excavated slots [1165, 21/005, 1173] had similar moderately sloping sides and each contained single mid-dark grey brown silty clay fills, from which nine pottery sherds of broadly Late Bronze Age/Early Iron Age (largely *c*.1150-800 BC) date were retrieved. The ditch measured between 1.06–1.30m in width and was between 0.26–0.37m deep. At its east end, the ditch appeared to end in a rounded terminal (seg. [1173]), intersecting slightly with the west end of ditch G2 [1177], though they had an unclear relationship (Fig. 6, section 1). Both, however, appeared to cut underlying G15 pit [1175], located at the juncture of the ditches and containing a single fill [1176] of mid orange brown silty clay containing charcoal flecks. The probable pit was heavily truncated but measured 0.37m in depth and contained no finds (Fig. 6, section 1).

4.4.4 The entire *c.*24m length of ditch G2 was exposed across the centre of Area A. It was thought to cut irregular spread G13 (see 4.4.00), though their relationship was not conclusive. The excavated segments [1056, 1113, 1177, 1217, 1241] measured between 1.11–1.50m wide and between 0.22–0.38m in depth. All contained single fills of mid grey brown silty clay, except for the western terminus [1177], which contained a basal fill of compacted mid grey brown silty clay. Finds recovered from segments [1177], [1217] and [1113] comprised nine sherds of Late Bronze Age/Early Iron Age pottery, three of which were probably *c*.1150-800 BC in date and the remaining six sherds *c*.800-500 BC.

4.4.5 Ditch G3 extended across the two excavation areas, its western terminal being recorded as segment [1115] at the eastern edge of Area A and the eastern terminal as segment [1035] at the west edge of Area B. Its projected length was *c.*11m. Its west end was located immediately beyond the terminal of the G2 ditch. The ditch had moderately sloping sides and measured between 0.67–0.90m wide and 0.07–0.15m deep. The excavated segments [1035, 1115] both contained light grey brown silty clay fills, with [1035] containing an additional upper fill of mid grey brown silty clay. Eights sherds of Late Bronze Age/Early Iron pottery (probably *c*.800-500 BC) and an intrusive sherd of Early Roman (*c*.AD 40-100) pottery were recovered from ditch G3.

4.4.6 The D1 boundary continued across the middle of Area B in the form of a distinctly irregular curvilinear ditch (G4) measuring *c.*24m long. The segments excavated across its whole width, [1086, 1106, 1135, 1147, 1210], were generally of a similar profile with moderately sloping sides and a rounded base and between 0.79–1.0m wide and 0.10–0.25m in depth (Fig. 6, section 2). The eastern terminus slot [1086, 1106] is the exception to this, as it measured 1.52m wide and 0.45m deep. This could perhaps indicate the presence of a separate short ditch/pit, as opposed to the continuation of the same ditch, though this was not clear. Ditch G4 contained a single fill of light to mid greyish brown sandy/clayey silt with moderate pebbles and rare charcoal flecks. Seventeen sherds of Late Bronze Age/Early Iron Age (largely *c*.1150-800 BC) pottery were recovered from its various investigated segments.

4.4.7 Poorly-defined deposit [1086, 1123, 1208] was identified across the eastern *c*.12m of the D1 boundary ditch G4 in Area B. This deposit was formed of mid grey brown clay silt with orange mottling and was of irregular shape/extent in plan, measuring 3.65m at its widest and up to 0.20m deep (Fig. 6, section 2). Its western extent was not clearly established due to its similarities with the ditch fill. Itperhaps constitutes a general spread/wash of upper fill material or subsequent accumulation of material due to subsidence. The only finds recovered from this deposit were two sherds of Late Bronze Age/Early Iron Age (*c*.1150-800 BC) pottery and a single intrusive, tiny fragment of brick of probable post-medieval date from [1123].

4.4.8 A short length of narrow ditch, G19, protruded from the eastern terminal of ditch G4, seemingly having been truncated by it. It was also truncated by pit [1034] (G14) and was not found to continue to the east of this. The exposed extent of ditch G19 measured 0.75m long, 0.31–0.44m wide and 0.19m deep. Where excavated within segment [1118], it had straight steep sides and a flat base. Its single fill [1117] comprised light brownish grey clayey silt and contained a single bodysherd of Late Bronze Age/Early Iron Age (*c*.800-500 BC) pottery.

4.4.9 To the immediate west of the G19 ditch were oval pits [1032] and [1034] (G14), on the line of the D1 boundary, between ditches G4 and G5. The G14 pits are thought to represent the continuation of the boundary ditch D1 – perhaps even constituting the blocking of the gap between G4 and G5. Pit [1032] measured 1.38m x 0.93m x 0.06m and had concave sides imperceptibly breaking into an undulating base. It contained a single fill [1031] of light greyish brown sandy silt with occasional pebbles. The pit contained comparable dating material in the form of a single Late Bronze Age/Early Iron Age pottery sherd (*c*.800-500 BC in date). Pit [1034] measured 1.10m wide, 1.75m in length and was 0.08m deep (Fig. 6, section 10). It contained a single firm, light grey silty clay fill [1033], from which six sherds of Late Bronze Age/Early Iron Age date were recovered, as well as twenty sherds comprising part of a single Late Iron Age vessel. This later pottery is most likely intrusive, possibly representing a deliberate deposition inserted into the boundary remains (see 4.6).

4.4.10 After a gap of *c*.5.86m beyond the east end of G4 (and, perhaps at least as pertinently, 5.22m beyond the end gully [1118]?), a significantly narrower and straighter length of ditch, G5, continued eastwards across Area B. Rounded terminals were identified at either end of this 12.90m long ditch. Three segments, [1024, 1026, 1028], were excavated across it, all containing a mid brownish grey/greyish brown silty clay fill with Late Bronze Age/Early Iron Age pottery. The G5 ditch measured generally 0.50–0.79m wide (1.2m at its widest) and 0.21–0.29m deep. The excavated ditch segments contained seventeen sherds of Late Bronze Age/Early Iron Age pottery (all *c*.800-500 BC) in total, as well as two pieces of burnt flint and sixteen amorphous fragments of fired clay.

4.4.11 At the eastern edge of Area B, ditch G6 cut G18 deposits [1015-1020, 1121] (see 4.4.17). Although truncated along its northern edge, sufficient of its western terminal [1120] survived to show that it was a relatively narrow linear feature, perhaps *c*.0.66m wide and up to 0.29m deep (Fig. 6, section 5). The terminal was located a short distance (1.55m) from the east end of G5 and

this ditch was exposed for a length of *c*.7m before reaching the excavation area limit. It contained a single fill of light greyish brown silty clay with occasional stones, from which three sherds of Late Bronze Age/Early Iron Age (*c.*1150-800 BC) pottery and a fragment of probable briquetage were retrieved.

4.4.12 The G6 ditch was cut along its north edge by more substantial ditch G7, which measured *c.*7.6m long and again continued beyond the eastern edge of Area B. The two excavated segments, [1014, 1108], measured between 1.10–1.91m wide and 0.39–0.40m in depth, and had moderately sloping sides and a rounded base (Fig. 6, section 5). Each contained a single fill of dark greyish brown silty clay that yielded six sherds of Late Bronze Age/Early Iron Age (*c*.800-500 BC) pottery, a tiny fragment of fired clay and two intrusive sherds of Late Iron Age/Early Roman pottery. It is notable that the west terminal of G7 coincided with that of G6. It is likely that G7 was a direct replacement of the G6 ditch and so represents a modification or maintenance of the D1 boundary.

Ditch D2

4.4.13 To the south, and roughly parallel with ditch D1, lay a similarly curvilinear boundary, ditch D2. The ditch extended east/west across Area A but did not continue into Area B. As exposed, it comprised two distinct ditch lengths (G8 andG9).

4.4.14 Ditch G8 was exposed for a distance of *c.*44m, extending west beyond the excavation area, though it was not found to continue into nearby evaluation trenches. The ditch ended in a rounded terminal at its east, *c*.4.5m short of the eastern edge of Area A. Where investigated in segments [1069, 1140, 1159, 1167, 1201, 1230], it measured between 0.79–1.15m wide and 0.11–0.20m deep, with shallow sloping sides and a slightly concave/flat base (Fig. 6, sections 3 and 4). The eastern terminus [1140] cut earlier pit [1142], the remains of which protruded north of the ditch. In the centre of the area, ditch G8 cut across a possible ditch and associated spread/pit (G10). All the segments contained a single mid greyish brown silty clay fill. In total, 154 sherds of Late Bronze Age/Early Iron Age (*c*.1150-800 BC) pottery were recovered from the excavated ditch segments and the fill surface along the length of the ditch ([1237]).

4.4.15 A short, 3.70m length of narrow ditch (G9) at the eastern edge of Area A is judged to be the continuation of the D2 boundary. Ditch G9 was investigated at its rounded western terminal [1091]. It did not continue into Area B and is presumed to terminate in the unexcavated area between the two excavation areas. The ditch measured 0.82m wide and 0.17m deep, and had sloping sides and a concave base (Fig. 6, section 6). Thirteen sherds of Late Bronze Age/Early Iron Age (*c*.800-500 BC) pottery were recovered from the mid greyish brown clay silt fill.

Features and deposits ?pre-dating D1 and D2

4.4.16 Along D1 ditch G2 was an area, measuring *c*.5m x 14m, of possible irregular pits (G13). The extents of individual pits were not clear, perhaps as a result of multiple/prolonged use or an overlying sealing deposit. Four segments

([1051, 1054, 1219, 1234, 1236, 1239]) were excavated across them, revealing fairly homogenous mid greyish brown silty clay fills with occasional charcoal within the features. The profiles of these possible pits appeared generally to comprise moderately straight sides and flat bases, measuring *c*.0.13–0.28m deep. Finds were recovered from within the various segments, as well from the general surface of the homogenous fills ([1242]). Fourteen sherds from a probably intrusive single Roman vessel were discovered within excavated segment [1051], as well as six sherds of Late Bronze Age/Early Iron Age (*c*.800-500 BC) pottery. Five sherds of Late Bronze Age/Early Iron Age (c.1150-800 BC) pottery were also retrieved from [1236]. The fragmented nature of the Roman pottery suggests that it is intrusive, possibly directly the result of Roman period later land use activity or else due to post-medieval/modern ploughing.

4.4.17 At the eastern edge of Area B, D1 boundary ditch G6 was seemingly cut into the top of G18 deposits [1015–1020, 1121], which collectively extended across an irregular area against the eastern trench baulk measuring *c.*9m x 12m and 0.06–0.13m deep. The seven deposits [1015–1020, 1121] consisted of varying grey silty clay with lenses of gravels throughout. Eight sherds of Late Bronze Age/Early Iron Age pottery were recovered from [1018] and two fragments of fired clay from [1019]. This material may have been intrusive, deriving from the fills of truncating ditches G6 and G7.

4.4.18 Toward the centre of Area A, D2 ditch G8 cut through a thin layer. This deposit was irregular in plan and, where investigated in segments [1071, 1073, 1126, 1136, 1203, 21/007], was a maximum of 0.16m deep. It appeared to be a single uniform deposit comprising mid grey brown clayey silt with occasional stone and charcoal inclusions; however, it is possible that at least part of this could have instead been the fill of a shallow and poorly defined ditch, G10. In particular, excavated segment [1071] could be regarded as a linear, north/south aligned, cut, *c*.1.6–1.9m wide and 0.08–0.17m deep. Its east side may have been recorded as [1073] and, although much of its remainder could have been obscured by the 'layer', a northern terminal might be defined by [21/007]. It is therefore postulated that [1071, 1073, 21/007] constitute the northern end of a ditch, potentially positioned perpendicularly to D1 and perhaps contemporary with it. This then, has implications for the previously assumed contemporaneity of D1 and D2 (see Discussion). It is also possible that [1126, 1136, 1203] constitute the remains of potential shallow pits or material accumulated in a natural depression. If so, they appeared to have generally shallow straight sides and flat bases (Fig. 6, section 3). Segments [1071, 1126, 21/007] contained, in total, eleven sherds of Late Bronze Age/Early Iron Age (*c*.1150-800 BC) pottery, whilst [1073, 1203] together contained four sherds of Late Bronze Age/Early Iron Age (*c*.800-500 BC) pottery.

Other features

4.4.19 Across both excavation areas and the surrounding evaluation trenches were a total of 35 small to medium sized pits, which contained diagnostic material of Late Bronze Age/Early Iron Age date.

4.4.20 Nineteen of these pits were located within Area A (G15), with fourteen ([1099, 1101, 1103, 1111, 1150, 1152, 1163, 1169, 1172, 1183, 1206, 1216,

1228, 1232]) forming a noticeable cluster in the north-east of the area. The pits do not seem to form any discernible patterning or alignments. They were generally of rounded to slightly elongated oval shape and measured up to 1.66m wide, and were generally between 0.10–26m deep. All had single mid greyish brown clay silt and silty clay fills. The other pits within Area A ([1093, 1142, 1175, 1198, 1200]) were scattered across its extents. The low incidence of intercutting relationships between these pits is perhaps notable; however, the similarity in type and fills is suggestive that they were all roughly contemporary. Only pits [1111, 1140 and 1175] had stratigraphic relationships with the D1 and D2 boundaries, all being cut by their ditches. It may be significant that only three pits, either Period 1 or undated, were located south of the D1 boundary.

4.4.21 Area B contained nine demonstrably Period 1 pits (G20), which were scattered across the area and seven of which ([1088, 1096, 1098, 1040, 1007, 1029, 1090]) were located amongst a scatter of undated (though likely contemporary) pits in the south-west. These small to medium sized pits were all oval and shallow measuring up to 0.15m deep (Fig. 6, section 9) with mid greyish brown silty clay fills. Intercutting pits [1043 and 1045] (Fig. 6, section 7), in the north-east of the area, produced a significant amount of Late Bronze Age and were much deeper than the other pits in the area measuring up to 0.50m in depth. Half of the earlier pit [1043] was excavated during the evaluation phase within Trench 23 as [23/009]. While finds from this portion were thought to be of a slightly later, it is likely that it represents a continued use throughout the period as opposed to a separate phase of use. The later pit [1045] measured 1.40m x 0.80m and 0.35m deep and contained pottery sherds of contemporary date. The location of elongated pit [1088] in the gap between D1 boundary ditches G3 and G4 is reminiscent of pits [1032] and [1034] between ditches G4 and G5. Although not neatly aligned with the boundary, it is speculated that this pit may have also been either closely associated with, or part of, it.

4.4.22 Four pits [10/004, 11/005, 15/004, 16/004] and gully [17/005] (G22), excavated in evaluation Trenches 10, 11, 15, 16 and 17, respectively, were broadly dated to the Late Bronze Age/Early Iron Age. Pits [10/004, 11/005, 15/004, 16/004] were sub-/circular in plan, ranging in size from 0.64m x 0.40m to 2.00m x 1.3m+ and 0.29–0.43m deep. Their profiles varied, comprising either steep straight sides and flat bases or concave sides and concave bases. They typically contained single fills of light to mid orangey to greyish brown silt and clay with occasional charcoal flecks and stones. Pits [10/004, 15/004, 16/004] contained eleven, four and seventeen sherds of pottery dated *c*.1150-800 BC, respectively, whilst pit [11/005] contained six sherds dated *c*.800-500 BC. In addition, three fragments of fired clay, three pieces of worked flint and five of burnt flint were recovered across pits [10/004, 11/005, 15/004]. Gully [17/005] was NE/SW aligned, measuring 6.0m+ x 0.36m and 0.15m deep, and had a rounded terminal at its north-east end and extended beyond the trench limits to the south-west. It had slightly concave sides and a rounded to V-shaped base. Its single fill of mid greyish brown clayey silt contained fourteen sherds of pottery dated *c*.1150-800 BC.

4.4.23 Three widely scattered shallow pits, [1078, 1080, 1082] (G17), are identified as probable simple, unurned, cremation burials. The cut features measured

between 0.26m-0.82m wide, 0.45m-0.61m long and between 0.06m-0.15m in depth (Fig. 6, section 8). Each contained a single dark grey silty clay fill with common charcoal inclusions and small quantities of burnt bone. None contained pottery or other diagnostic artefacts. Radiocarbon dating of a burnt bone sample from the fill of pit [1082] has produced a date of 1236-1051 cal BC (Beta-496818; Appendix 7), confirming its conjectured Late Bronze Age date. The other burials are assumed to be of similar date. The three burials were scattered across both site areas with no distinct concentration. While it is possible these were interred into an unenclosed landscape prior to the establishment of the D1/D2 boundary, none has a stratigraphic relationship that demonstrates or infers this. It is equally likely that they were inserted alongside the ditches, in a recognised/valued liminal location in what was by now a managed and structured landscape. However, given the limited area exposed by the excavations, it is not possible to see any more-extensive spatial patterning to support this postulation. Burials [1080 and 1082] were south of boundary D1, while [1078] was to its north. None were more than 8.8m distant from it.

4.4.24 In the north of Area A, a bronze socketed axe head (RF<1>) (Fig. 9) and two other metalwork fragments (RF<2>, Fig. 10, and <4>) were discovered during the machine stripping of the area. These items were retrieved from the top of a modern, pebble-filled, land drain that ran across the northern part of the excavation area (Fig. 3). While unstratified, and given the known incidence of Bronze Age metalwork hoards in the vicinity (2.2.2–3), it is highly likely that they constitute the remains of a disturbed and dispersed hoard. As for the G17 cremation burials, it may be speculated that this hoard was purposefully deposited, for whatever reason, in the vicinity of the D1 boundary.

4.5 Period 2: Middle Iron Age (*c.*300-50 BC) (Fig. 7)

4.5.1 A single Middle Iron Age feature was present in the south of Area A in the west. Moderately large pit [1186] (G11) was located to the south of boundary ditch D2 and was oval in plan. It had fairly straight sides and a roughly flat base, and measured 3.48m x 1.87m and 0.19m deep (Fig. 7, section 12). It contained two fills: a basal fill [1187] of moderately compact, mid orange brown silty clay with grey mottling and an upper fill [1188] of dark grey brown silty clay. Both deposits contained charcoal, with the upper containing a greater concentration, as well as a single sherd of likely Middle Iron Age pottery. A bulk soil sample (<10>) collected from [1188] produced oak and hazel charcoal.

4.5.2 In the south-east of Area B was a complex of two short curving ditches/gullies, five small pits/postholes and one large pit (G12), at least some of which are postulated to have formed a possible structure. The features all contained similar dating material and are thought to be contemporary. Large pit [1010/1155] was located at the juncture of the two ditches, was oval in plan, and measured 3.1m x 3.6m x 0.20m. It contained a single fill of mid greyish brown sandy silt containing pottery and daub. Underlying the pit were two smaller further pits [1006 and 1022], which were not visible until the base of pit [1010] was exposed (Fig. 7, section 11). Pit [1006] was oval, with a single light brown grey silt fill, from which eighteen bodysherds of a single Middle Iron Age pottery vessel were recovered.

Adjacent pit [1022] was only seen in section and extended to 0.11m below the base of pit [1010]. It contained thirteen fragments of bone within its light brownish grey sandy silt fill.

4.5.3 The western short ditch ([1064, 1125]) was thought to cut the edge of pit [1010], though the similarity in fills made this relationship indistinct. The slightly curving ditch was 6.05m long, and up to 0.30m deep, with a distinctly bulbous east end where it intersected with pit [1010]. In total, twenty-seven sherds of Iron Age pottery and three intrusive sherds of Roman pottery were retrieved from the terminals, with five fragments of slag, nineteen fragments of fired clay, including three probable briquetage fragments, nine cattle teeth fragments and one piece of indeterminate animal bone also recovered from the eastern terminus [1125], along with a glass bead (RF<3>). The bead, while not particularly diagnostic, is relatively rare in Britain; where found, they are generally in Middle Iron Age to Roman contexts. The eastern curving ditch [1062, 1076] had an equally unclear relationship with pit [1010], though its dating perhaps suggests that they may have been utilised at the same time. It measured *c.*6.5m long and was up to 1.14m wide and 0.18m deep, with a similar light brownish grey sandy silt fill.

4,5.4 Three further small pits/postholes [1066, 1068, 1145] (G21) were present in the immediate surrounds of the gullies and large pit. These are speculated to be associated with them and to be part of the postulated structure, as no other examples were found in the vicinity. Adjacent pits [1066, 1068] were to the immediate north and were similar in shape; both oval and measuring between 0.79–1.0m wide and 0.10–0.13m deep, with a single pottery sherd recovered from the fill of [1066]. Pit [1145] was to the south and presumably within the interior of the structure. Though undated, it is likely contemporary. It measured 0.65m x 0.63m x 0.20m, with a single dark grey silty clay fill.

4.5.5 The form and nature of this possible structure, comprised of a series of short gullies small pits/postholes and one large pit (G12), based on the stratigraphic evidence is not overly clear. However, the finds and environmental remains recovered from these features may indicate the nature of possibly associated/nearby activities. Ditch terminus [1125] is notable for its small quantity of briquetage and slag, to which burnt orange silt clay hearth lining was adhered. Environmental samples <7> and <8>, collected from fill [1124] of [1125], also yielded small quantities of hammerscale, including flakes and spheres. The metallurgical remains, though small in quantity, are indicative of at least low-level rural iron smithing on site. It is also noteworthy that the soil samples collected from the G12 features contained a range of carbonised plant remans (see 6.0). Although preservation of the cereal remains was generally poor and many of the caryopses were indeterminate, examples of barley, including the hulled variety, and wheat were recognised. The identification of large numbers of a variety of weed seeds is also indicative of cultivation within the vicinity of the site. Given the material and environmental evidence, it is possible that the potential G12 structure was a focal point for typical rural activities associated with smithing and crop cultivation.

4.6 Period 3: Late Iron Age to Roman (Figs 3 and 4)

4.6.1 Period 1 pit [1034] (G14), as already mentioned (see 4.4.8), contained twenty sherds of Late Iron Age pottery that comprised part of a single vessel. While the finds are suggestive of a Period 3 date, the location and shallow nature of the pit, and its similarities to G14 pit [1032], are indicative of this later pottery likely being intrusive. Nevertheless, the recovery of a distinct group of Late Iron Age pottery from this single pit likely demonstrates later use of the landscape.

4.6.2 Additional Roman material was recovered from possible pit [1051] (G13) in the form of rim and thirteen bodysherds comprising part of a single Roman grey ware vessel. The pit is currently phased as Period 1 and likely contemporary with the D1 boundary. This pottery was found with Late Bronze Age/Early Iron Age material and its fragmentary state suggests that it has been damaged by ploughing and may be intrusive to the feature. The pottery, however, is perhaps still indicative of a possible deliberate deposition and limited land use during the Roman period

4.6.3 Whether it can be inferred from the above examples that the prehistoric boundary was still visible in the Late Iron Age and Roman landscape is uncertain.

4.6.4 A further twenty-two sherds of later Iron Age/Roman date were recovered from various features attributed to Periods 1 and 2. These are all thought to be intrusive in nature, though are indicative of a general presence within the landscape.

4.7 Unphased and Undated Features (Figs 3-5 and 7)

4.7.1 A number of features recorded across the site did not contain dating evidence or have either stratigraphic or spatial relationships with other dated remains. These have not been allocated to a specific period. They are nevertheless valid archaeological features and many, if not all, are likely to belong to Period 1.

Area A (G16)

4.7.2 In the west of Area A were six undated pits/postholes ([1161, 1190, 1192, 1194, 1196, 1214]). All were located to the north of the northern east/west aligned ditch (D1) and fairly isolated. The features measured between 0.36–1.48m wide and 0.06–0.20m deep, and all contained single, undated fills of light brownish grey clayey silt or dark grey silty clay, with occasional stones and charcoal flecks.

4.7.3 A further seven undated pits/postholes were located elsewhere within Area A. Six of these ([1181, 1185, 1212, 1222, 1224, 1226]) were in the north-east of Area A, in an area containing other pits, which are datable to Period 1, and north of D1. The pits were oval in plan and fairly shallow, measuring between 0.35–1.50m wide and 0.09–0.24m deep. They all contained fills of light grey brown silty clay. A further pit [1148] was also in the east of Area A but was to the south of boundary ditch D1. It measured 0.83m x 0.74m and was 0.23m deep with convex sides and a rounded base.

Area B (G21)

4.7.4 A similar scatter of undated pits/postholes was found in Area B, with ten ([1003, 1011, 1058, 1060, 1084, 1110, 1139, 22/005, 22/009, 22/011]) to the immediate south of D1 in an area containing pits datable to Period 1. All were similar in form to the surrounding datable pits, being oval and sub-circular, and contained similar fills of mid/dark grey silty clay, though no structural shapes are visible. The features measured between 0.33m-1.85m x 0.05m-0.16m.

4.7.5 Three postholes ([1129, 1131, 1133]) were in the south-east of Area B and form a possible line being fairly evening spaced between 7-8.5m apart. The postholes were oval in plan and measured between 0.36m-0.40m wide and up to 0.07m deep, with single sterile fills of dark grey silty clay.

4.7.6 A further three undated pits were within Area B to the north of the ditch boundary ([1039, 1047, 1156]). All of these features were oval in plan with no directly associated datable features and contained single fills of dark grey brown silty clay with occasional charcoal flecks or light greyish brown sandy silt and

Evaluation area (G23)

4.7.7 During the evaluation phase of investigations, three undated possible pits [1/004], 6/005] and [10/006] were recorded in the north-west of the site. These features were sub-oval or circular in plan shape, ranging in size from 0.87m x 0.40m x 0.12m to 1.25m+ x 0.57m x 0.12m. They generally contained single fills of mid brownish grey silty clay, though possible pit [10/006] contained a fill of mid orangey brown clayey silt more characteristic of the natural deposits.

5.0 FINDS

5.1 Summary

5.1.1 A moderate-sized assemblage of finds was recovered during the evaluation and excavation at Pippins Road, Burnham-on-Crouch. All finds were washed and dried or air-dried as appropriate. They were subsequently quantified by count and weight, and bagged by material and context. The hand-collected bulk finds are quantified in Appendix 3; material recovered from the residues of environmental samples is quantified separately in Appendix 4a-c. Four objects were assigned unique registered finds numbers and are detailed in section 5.10. All finds have been packed and stored following CIfA guidelines (2014c). Conservation cleaning, stabilisation and assessment of the metalwork has been undertaken.

5.2 **Flintwork** by Karine Le Hégarat

5.2.1 The evaluation and the excavation produced just eight pieces of struck flint weighing 57g. They were both hand-collected and retrieved from bulk soil samples. A small amount of burnt unworked flint fragments (836g) was also recovered. The pieces of worked flint were quantified by piece count and weight, and they were catalogued directly into an Excel spreadsheet.

5.2.2 The assemblage is entirely composed of knapping waste. It comprises five flakes, a blade-like flake, a bladelet and a core. The fragmentary core (16g) from context [10/003], the medial part of the bladelet and the blade-like flake from context [1162] indicate flint use during the Mesolithic/Middle Neolithic period. Context [11/004] produced a flake with an obtuse plain platform. It displays several cones of percussion indicative of mishits. The relatively thick flake is likely to be late prehistoric (Middle Neolithic to Late Bronze Age/Early Iron Age). The remaining flakes are technologically poor, but they are crudely worked implying also a late prehistoric date.

5.2.3 The raw material selected for the manufacture of the pieces of struck flint is mid to dark grey. The blade-like flake displays an orange band below the dark olive green cortex, indicating the use of Bullhead beds flint. Overall, the pieces display moderate edge damage indicating some post depositional movement.

5.2.4 The burnt flint fragments are mainly small (measuring up to 45mm) and the majority display reddish tinge suggesting that the degree to which the flint had been heated was relatively low. These were hand-retrieved from the fills of Period 1 ditch segments [1024 and 1159], Period 1 pits [1228, 1232, 10/003 and 15/003], Period 2 pit [1155] and undated pits [1181 and 1212].

5.3 **Prehistoric and Roman Pottery** by Anna Doherty

5.3.1 A moderate-sized assemblage of prehistoric pottery was recovered during the evaluation and excavation, totalling 695 sherds, weighing 5.96kg. The pottery belongs predominantly to the Late Bronze Age/Early Iron Age Post-Deverel-Rimbury (PDR) tradition. A small quantity of Middle Iron Age and Late Iron Age/Roman pottery was also recorded.

Methodology

5.3.2 The pottery was examined using a x20 binocular microscope and quantified by sherd count, weight and Estimated Vessel Number (ENV) on *pro forma* records and in an Excel spreadsheet. Prehistoric pottery has been recorded according to a site-specific fabric type-series, according to the guidelines of the Prehistoric Ceramic Research Group (PCRG 2010; Table 1). Late Iron Age and Roman pottery was recorded using fabric codes from the Essex regional type-series (Biddulph *et al.* 2015) and the Camulodunum form typology (Hawkes and Hull 1947).

5.3.3 The material quantified in this report was hand-collected on site. A very small number of additional sherds were also noted in the residues of environmental samples (quantified by weight in Appendix 4). This material was briefly examined for spot-dating purposes but found to comprise very small featureless bodysherds in similar fabric types to hand-collected material from the same contexts and was therefore excluded from further quantification and analysis.

Fabric	Description
FLIN1	Sparse ill-sorted flint of 1-5mm in a low-fired dense very silty matrix
FLIN2	Moderate, moderately-sorted flint of 0.2-2.5mm in a silty matrix
FLIN3	Very common/abundant ill-sorted flint of 0.2-3mm in a silty matrix
FLIN4	Moderate/common ill-sorted flint of 0.2-4mm (or very rarely to 6mm) in a silty matrix
FLIN5	Very common/abundant flint mostly of <1mm with a some rare coarser examples up to 2.5mm in a silty matrix
FLIN6	Common/very common ill-sorted flint of 0.5-6mm in a silty matrix
FLIN7	Common/very common ill-sorted flint of 0.5-11mm in a silty matrix
FLGR1	Sparse/moderate flint of 0.5-4mm (or very rarely up to 6mm) and sparse rounded grog of 1-3mm
FLGR2	Sparse/moderate flint of 0.5-2.5mm (or very rarely up to 6mm) and sparse rounded grog of 1-2mm
FLQU1	Sparse ill-sorted flint of 0.5-3mm with some rounded milky quartz and polycrystalline quartz in a similar size range; moderate to common quartz of 0.3-0.8mm
FLQU2	Very common/abundant ill-sorted flint of 0.2-3mm with moderate ill-sorted quartz of 0.1-0.8mm
FLQU3	Moderate well-sorted flint of 0.2-1mm in a matrix with common fine quart of silt-sized to 0.1mm
FLQU4	Moderate, moderately sorted flint of 0.2-2.5mm with moderate ill-sorted quartz of 0.1-0.8mm
FLQU5	Moderate, moderately sorted flint of 0.2-2.5mm with very common to abundant quartz of 0.4-0.6mm
FLQU6	Sparse flint of 0.2-2.5mm in a matrix with common fine quartz of silt-sized to 0.1mm
FLQU7	Moderate flint of 0.2-4mm and moderate ill-sorted quartz of 0.1-0.8mm
QUAR1	Moderate to common quartz sand of 0.1-0.8mm
QUAR2	A very silty matrix with sparse larger quartz grains up to 0.6mm, rare very fine organic material can occur
QUAR3	Abundant rounded quartz of 0.4-0.6mm

Fabric	Description
QUOR1	A very silty matrix with sparse larger quartz grains up to 0.6mm with moderate linear organic matter and/or voids of up to 3mm in width and 8mm in length
QUGR1	A very silty matrix with sparse larger quartz grains up to 0.6mm with moderate fine rounded grog or argillaceous inclusions of around 1mm
QUGF1	A very silty matrix with sparse larger grains up to 0.6mm with moderate fine rounded grog or argillaceous inclusions of around 1mm and sparse flint of 0.5-2.5mm
SHEL1	A dense matrix with very common, poorly-defined fine voids of up to 2.5mm; often partially filled or surrounded by calcareous matter and merging into the background matrix

Table 1: Fabric descriptions for prehistoric pottery

Period 1: Late Bronze Age/Early Iron Age

Stratigraphic context

5.3.4 Overall 513 sherds, weighing 4.54 kg, were recovered from stratified deposits assigned to Period 1, although this total did include a few intrusive Late Iron Age and Roman fragments (excluded from quantification by fabric in Table 2). Nearly half of this material was recovered from ditches D1 and D2 and most of the reminder was found in pit groups G15 and G20. The pottery from the pits mostly comprised very small individual assemblages of fewer than ten sherds each, spread over a large number of features; however, moderate-sized groups of over 50 sherds each were noted in pits [1043] and [23/009].

Fabrics

5.3.5 The assemblage assigned to Period 1 includes a fairly large number of individual fabrics (Table 2), which can be grouped into a few broader fabric categories. Perhaps the earliest material comprises the very coarse flint-tempered wares FLIN6 and FLIN7, the former associated with flint of up to 6mm in size and the latter with extremely coarse inclusions of up to 11mm. These sherds did not have any diagnostic features, but they are predominantly associated with thick-walled body profiles and are therefore likely to represent fragments from Middle Bronze Age Deverel-Rimbury (DR) vessels. It is likely that this material is entirely residual, as it often occurred with more typically Late Bronze Age fabrics and forms.

Fabric	Sherds	Weight (g)	ENV
FLGR1	16	335	6
FLGR2	23	134	9
FLIN1	3	16	3
FLIN2	49	149	36
FLIN3	83	1067	41
FLIN4	39	664	24
FLIN5	129	684	26
FLIN6	9	140	5
FLIN7	1	96	1

Fabric	Sherds	Weight (g)	ENV
FLQU1	4	33	2
FLQU2	7	30	4
FLQU3	18	92	15
FLQU4	57	355	31
FLQU5	16	133	9
FLQU6	18	88	17
FLQU7	11	339	8
QUAR1	2	12	2
QUAR2	10	34	5
QUAR3	2	10	2
SHEL1	5	27	2
Total	*502*	*4438*	*248*

Table 2: Quantification of pottery fabrics from Period 1 (excluding obviously intrusive material)

5.3.6 Two fabrics contain both flint and grog inclusions, one of which is fairly coarse (FLGR1) and the other moderately coarse (FLGR2). In north Essex and south Suffolk, the use of grog tempering tends to be more strongly associated with Middle Bronze Age assemblages of the Ardleigh DR tradition. However, in north Kent, there is some evidence for the emergence of flint-and-grog fabrics in transitional Middle/Late Bronze Age assemblages of the later 2nd millennium (Morris 2006, 78-79). This may also be the case for sites north of the Thames, where similar fabrics were noted in transitional Middle/Late Bronze Age groups from Hall Road, Rochford, for example (ASE 2016). As with the very coarse flint-tempered wares, these fabrics were predominantly found with other typically Late Bronze Age pottery. In one case, a small rim from a thin-walled, hook-rim jar of probable Late Bronze Age post-Deverel-Rimbury (PDR) type was recorded in a flint-and-grog fabric (FLGR1).

5.3.7 The majority of the Period 1 assemblage (*c.*60%) is made up by non-sandy fabrics with fairly common frequencies of moderately coarse or coarse flint, with maximum inclusion size around 2.5-4mm (Fabrics FLIN1-5). A smaller proportion, just over a quarter of the assemblage, comprises flint-tempered wares containing more visible quartz sand (FLQU1-7). Again, both coarse and moderately coarse variants occur, but overall these fabrics tend to have slightly lower frequencies of flint and the majority of examples have slightly finer grades of temper (in most cases not exceeding 2.5mm). One true fine ware (FLQU3) was also noted amongst this material.

5.3.8 Other minor fabric types include a few sherds in purely sandy wares (QUAR1-3) and fragments in shelly fabrics (SHEL1), both of which are probably indicative of Iron Age dating.

Forms

5.3.9 Few diagnostic feature sherds were recovered from the site. Those that are present tend to occur as isolated vessels in individual pits, meaning that

there are no large diagnostic groups of pottery. Two fairly large parts of vessel profiles were recovered and these are probably most in keeping with plain ware PDR assemblages from south-east and central Essex, dating to around 1150-800 BC. For example, a thin-walled and fairly finely finished shouldered jar, with a flint-gritted base and upright to slightly everted rim, from pit [1096] (G20), can be paralleled in the largely plain ware assemblages from the Mucking North Ring, Springfield Park, Chelmsford and South Hornchurch (e.g. Barrett and Bond 1988, fig. 23, 90; Court and Mepham 3003, fig. 6, no. 14; Harrison 2000, fig. 15, no. 13). Similarly, a bipartite bowl from pit [1043] (G20) can be compared to an example from Mucking North Ring (Barrett and Bond 1988, fig. 22, no. 59). In addition, a small rim from pit [16/004] appears to come from an early PDR hook rim jar with a thin-walled profile (similar for example see Harrison 2000 fig. 16, no. 23 from South Hornchurch). One vessel of some note is a tiny cup of about 40mm diameter (and similar height), again closely paralleled in the South Hornchurch assemblage (Harrison 2000, fig. 17, no. 44).

5.3.10 Another vessel from G15 pit [1172] is associated with a sandier flint-tempered fabric (FLQU7). It has a well-defined shoulder and short, fairly strongly everted rim. Although not decorated *per se*, its rim has a slight 'pie crust' effect created using the pinched forming technique and there is prominent finger smearing on the external surface. These attributes appear more in keeping with an earliest Iron Age date (post *c*. 800 BC). This form can be paralleled in slightly later local assemblages, for example in the decorated PDR groups from the upper ditch fills at the Springfield Lyons enclosure (e.g. Brown 2013, fig. 3.30, 176).

5.3.11 In addition, a very fragmentary group of partial rim sherds from G20 pit [23/009] all appear likely to belong to this slightly later period based on the occurrence of necked jar profiles with flattened rim tips, strongly everted rim profiles and a single example of a neckless plain profile jar with internal bead. Taken together with the prevalence of sandier flint-tempered wares within this group, an earliest Iron Age date seems probable. Overall, decoration is very uncommon in the current assemblage, but typically earlier Iron Age style finger-tipping was noted on the shoulders of two vessels.

Summary of dating evidence

5.3.12 Although the assemblage lacks very large well-stratified and closely datable assemblages, there is some evidence for differentiation in date within Period 1. As has been noted above, some form types fit better into a PDR plain ware date range (*c*.1150-800 BC), whilst a few others appear more typical of decorated PDR assemblages of the earliest Iron Age (*c*.800-500 BC). Given the fairly undiagnostic nature of the assemblage, it is difficult to determine whether this indicates very long-lived activity or a shorter duration of occupation centred around the 9th-8th centuries BC.

5.3.13 Another useful indicator of dating is the differential distribution of fabric types. It has been noted above that both sandy and non-sandy flint-tempered wares are well represented in the assemblage. As a general rule, we would expect sandier wares with sparser, finer flint to become progressively more common over the lifespan of the PDR tradition. At the Mucking South Rings, for example, it was noted that sandier fabrics were

more prevalent in the interior features than in the ditch assemblages, potentially suggesting that the ditches were backfilled at an earlier date (Brudenell 2015).

5.3.14 It is probably therefore of chronological significance that the non-sandy flint-tempered wares make up nearly 95% of the large aggregate pottery group from ditch D2, but only 30% of the slightly smaller assemblage (76 sherds) from the parallel ditch D1. Instead, the northernmost ditch contains a much larger proportion of sandier flint tempered wares (over 50% of sherds) and there is also a small minority of non-flint-tempered sandy wares that do not occur in ditch D2. Despite the very similar alignment of the two ditches, this suggests that the southern ditch (D2) probably went out of use significantly earlier than the northern ditch (D1). Similarly, although pit groups G15 and G20 did contain a few diagnostic sherds of plain ware PDR type, the aggregate assemblage has a similar fabric profile to that from ditch D1, suggesting that most of the material in these features should probably also be assigned to the earliest Iron Age.

Period 2: Middle Iron Age

5.3.15 A small assemblage of Middle Iron Age pottery was recovered from features forming possible structure G12, with one additional sherd from pit [1186] (G11). This assemblage is quantified by fabric type in Table 3. Just one sandy flint-tempered fabric was recovered amongst this assemblage and this possibly represents a residual sherd originating in Period 1. The remainder of the assemblage is made up by non flint-tempered hand-made sandy fabrics mostly containing fairly coarse quartz sand of up to 0.6-0.8mm (QUAR1-3). The most common fabric type, QUOR1, also contained some linear voids or inclusions of burnt out organic matter. A few partial rim profiles from this period are all from necked profile jars mostly with rim profiles, which are more rounded than those encountered in Period 1. A single jar with a more strongly flaring rim profile was encountered in pit [1125].

Fabric	Sherds	Weight (g)	ENV
FLQU5	1	3	1
QUAR1	1	3	1
QUAR2	4	18	4
QUOR1	69	783	10
Total	*75*	*807*	*16*

Table 3: Quantification of pottery fabrics from Period 2 (excluding some intrusive material)

Period 3: Late Iron Age/Roman

5.3.16 Two pottery-producing pits are assigned to Period 3. These produced small and rather mixed pottery assemblages. The largest of these, thirty-two sherds, weighing 206g, from G14 pit [1034], contained a number of residual Late Bronze Age/Early Iron Age flint-tempered sherds. It also produced seemingly handmade coarse sandy wares similar to fabrics encountered in Period 2 (QUAR2-3). However, the forms associated with the sandy wares, a necked jar comparable to Cam 241/242, as well as separate sherd

featuring shoulder ripples, clearly both appear to be influenced by the Gallo-Belgic tradition, suggesting a date of deposition in the Late Iron Age.

5.3.17 Possible G13 pit [1051] also contained a tiny rim and non-fitting bodysherds from a Roman grey ware vessel of uncertain overall form.

5.3.18 In addition to material well-stratified in Period 3, a further twenty-two probable Late Iron Age and Roman sherds were found as intrusive elements in Periods 1 and 2, and in unphased features. These include some sparsely grog-tempered sandy wares (QUGR1, QUGF1), early shell-tempered wares (ESH), storage jar fabrics (STOR) and unsourced coarse oxidised (RED) and grey ware (GRS) fabrics.

Conclusion

5.3.19 This moderate-sized assemblage of predominantly post-Deverel-Rimbury (PDR) pottery was lacking in large stratified groups but the few diagnostic feature sherds, together with the range of fabrics recovered from different stratified feature groups, suggests some longevity of landuse. This activity likely began in the plain ware phase of the PDR tradition (c.1150-800BC) and continued into the decorated phase in the earliest Iron Age (800-500BC). In addition, some very fragmentary sherds of Middle Iron Age, Late Iron Age and Roman date were recovered.

5.4 Ceramic Building Material by Isa Benedetti-Whitton

5.4.1 A single brick crumb weighing 4g was recovered from fill [1122] of Period 1 pit [1123]. It was formed from a quartz-rich orange fabric. It was too small to be accurately dated, but fabrics like this are often early post-medieval.

5.5 Fired Clay by Trista Clifford

5.5.1 A small assemblage of 202 fragments weighing a total of 1122g was retrieved from 21 separate contexts. The assemblage was examined by eye and fabrics were determined using a x20 magnification binocular microscope. A series of four fabrics were observed (Table 4).

Fabric	Description
F1	Sparse fine quartz and sparse grassy voids
F2	Sandier version of F1 with iron rich streaks/ inclusions
F3	Abundant find quartz, sparse medium to large quartz
F4	Silty with grassy voids and sparse calcareous inclusions

Table 4: Fabric descriptions for fired clay

5.5.2 The assemblage is in poor condition and largely consists of abraded, amorphous pieces. A small amount of probable briquetage was recovered in fabrics F4 and F3 from contexts [1087], [1109], [1119], [1124] and [1242]. These fragments are not diagnostic of form but do exhibit the characteristic colours of fired clay associated with salt working. No other diagnostic pieces were recovered apart from a 90 degree edge/corner, possibly from an object

such as a fire bar or oven brick made in F2 from fill [1158] of D2 ditch segment [1159] (G8).

5.6 Geological Material by Luke Barber

5.6.1 The only stone recovered consists of two pieces (22g) of chert from fill [1009] of Period 2 pit [1010]). Beyond having been burnt, the pieces have not been humanly modified. The stone has no potential for further study and have been discarded.

5.7 Metallurgical Remains by Luke Barber

5.7.1 The excavations recovered just 326g of slag from the site. This total is composed of five hand-collected pieces (294g) from a single deposit – [1124], the fill of Period 2 pit [1125] - with the remainder deriving from ten environmental sample residues. The latter were only quantified by weight due to the presence of numerous very small pieces. The minimum weight value recorded was 1g, even if the sample contained less than that figure. Each residue was carefully scanned under x10 magnification in order to establish the presence and nature of any micro slags. The assemblage has been fully listed in Table 5 as part of the visible archive.

Context	Sample	Residue	Type	No	Weight (g)	Comments
1009	1	Magnetic	Magnetic fines	-	2	Round granules of ferruginous siltstone and sandstone
1038	2	Magnetic	Magnetic fines	-	1	
1038	2	Magnetic	Hammerscale	-	1	Flakes (to 2mm) x10-20, sphere x1
1063	3	Magnetic	Magnetic fines	-	1	includes some stone surface flaking
1077	4	Magnetic	Magnetic fines	-	1	
1079	5	Magnetic	Magnetic fines	-	1	
1081	6	Magnetic	Magnetic fines	-	1	
1124	-	-	-	5	294	Mid grey, well aerated with some vitrification and adhering burnt orange silt clay hearth lining
1124	7	Magnetic	Magnetic fines	-	16	
1124	7	Magnetic	Hammerscale	-	1	Flakes (to 2mm) <x10, sphere x1
1124	8	Magnetic	Magnetic fines	-	1	
1124	8	Magnetic	Hammerscale	-	1	Flakes (to 2mm) <x10
1154	9	Magnetic	Magnetic fines	-	4	
1188	10	Magnetic	Magnetic fines	-	1	

Table 5: Slag assemblage quantification

5.7.2 Most contexts produce low quantities of ‘magnetic fines’ from the residues. This material consists of rounded granules of ferruginous sandstone and siltstone whose magnetic properties have been enhanced through burning.

Such heating may be the result of any number of activities, including domestic hearths and bonfires and is not an indicator of metalworking.

5.7.3 Context [1124] stands out, as it was the only deposit to produce hand-collected slag. All is, strictly speaking, iron slag that is not diagnostic of process; however, it is suspected that it originates from smithing. This suggestion is reinforced by the two environmental samples from [1124], both of which produced small quantities of hammerscale, a type typical of smithing. The only other context to produce hammerscale was [1038], the fill of undated pit [1039]. Overall, the assemblage suggests some very limited iron smithing at the site – a not unexpected activity on rural sites of the period.

5.7.4 The slag assemblage is small and suggests only very low-level rural working. It is not considered to hold any potential for further analysis beyond that undertaken from assessment and no separate report is needed for publication. The assemblage has been discarded.

5.8 **Animal Bone** by Emily Johnson

5.8.1 A small, poorly preserved assemblage of 29 animal bone fragments, weighing approximately 18g, was recovered from the excavations at Pippins Road. The assemblage was largely fragmentary cattle teeth, deriving from hand-collected and bulk-earth sampled contexts from only three excavated contexts (Table 6).

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Context	Cattle tooth fragments	Indeterminate
[1021]	13	
[1063] <3>	4	
[1124]	9	1
[1124] <8>	2	

Table 6: Animal bone assemblage

5.8.2 All material came from fills of Period 2 features: pit [1022], ditch segment [1064] and pit [1125].

5.9 **Human Bone** by Lucy Sibun

5.9.1 Cremated human bone was recovered from three contexts, all G17 Late Bronze Age burial pit fills; [1077], [1079] and [1081]. All three were unurned and were recovered from the site as bulk soil samples <4>, <5> and <6> respectively. Unidentifiable burnt bone was recovered from three additional contexts, undated G16 pit fill [1004], Period 2 G12 pit fill [1124] and Period 2 G11 pit fill [1188].

Methodology

5.9.2 The bone was processed and fractions of <2mm, 2-4mm, 4-8mm and <8mm were presented for analysis. Recording and analysis of the bone followed the procedures outlined by McKinley (2004). The assemblage was examined to record the degree of fragmentation and fragment colour. The presence and weight of fragments from all skeletal areas (skull, axial skeleton, upper limb and lower limb) was noted. Age estimations were

carried out with reference to Bass (1987) and Buikstra and Ubelaker (1994) but age estimations were only possible as 'adult'. The material was also examined for the presence of possible staining on bone or for animal bone.

Results

5.9.3 The bone has been quantified by skeletal area in Table 7 below.

Context/ sample		**Weight per skeletal element (grams)**					**Percentage of whole assemblage**	**Total**
	Fragment size (mm)	Skull	Axial	Upper limb	Lower Limb	Unidentified		
1077 <04>	2-4					49.37	41.2	119.79
	4-8	2.28	2.19	4.24	12.91	31.63	44.5	
	9-20	3.13			11.12		11.9	
	21-30				2.92		2.4	
	% of identifiable material	13.9	5.6	10.9	69.5			
1079 <5>	2-4					51.14	20.38	250.90
	4-8	16.48	5.94	7.66	14.44	90.38	53.8	
	9-20	4.45	1.97	7.18	7.02		8.2	
	21-30	9.71	2.81	3.29	28.43		17.6	
	% of identifiable material	28.0	9.8	16.6	45.6			
1081 <6>	2-4	2.46				67.64	23.4	299.88
	4-8	10.35	16.15	7.22	5.48	80.31	39.9	
	9-20	15.41	8.03	10.84	8.6	50.91	31.3	
	21-30	1.7		5.57	6.65		4.6	
	30+				2.56		0.8	
	% of identifiable material	29.6	23.9	23.4	23.1			

Table 7: Quantification of identifiable human bone from pits [1078], [1080] and [1082]

Demography

5.9.4 The percentage of each assemblage identifiable to skeletal area ranged between 32% for [1077] and 44% for [1081]. All three assemblages appeared to represent the remains of a single adult individual, but this age estimate is based on fragment size alone. No sexually dimorphic fragments were present, and no pathological lesions were noted on any bone fragments.

Pyre technology and cremation ritual

5.9.5 The weight of cremated bone ranges from 119g for [1077] to 299g for [1081] and these quantities represent between 7% and 18% of the expected weight of cremated bone produced by an adult (McKinley 1993, 285). Cremation burials from the Bronze Age often produce large quantities of bone and it

has been suggested that time taken for the collection of bone for burial may reflect the status of the individual (McKinley 2006, 26). Alternatively, it may simple reflect the state of preservation of the remains and may suggest that these pit fills had suffered a degree of truncation; this is certainly suggested if the depth of features is taken into account, with the deepest, [1081], measuring only 0.11m.

5.9.6 The assemblage is highly fragmented with the largest percentages (between approximately 40-54%) recovered from the 4-8mm fraction in each case. This is not surprising for an unurned cremation burial that has not had the added protection of a vessel. This degree of fragmentation is also common for this period (McKinley 2006, 27-8) and, at Middle Bronze Age sites, has been interpreted as a possible attempt to crush the bone before burial (Anderson 2005, 17). The largest fragments from all assemblages and skeletal areas measured between approximately 20mm-30mm, with the largest single fragment recovered from a lower limb in [1081], measuring and 34mm.

5.9.7 In pits [1079] and [1081 the lower limb was the best represented skeletal area, followed by the skull with the upper limb and commonly less well preserved axial skeleton, present in smaller proportions. In [1081] all skeletal areas were more equally represented. A single tooth root fragment and smaller elements of the hand were recovered in the assemblage from [1079], suggesting possible collection *en-masse* rather than hand selection of elements (McKinley 2006, 35).

5.9.8 Over 95% of the cremated bone fragments in each assemblage were white in colour, indicative of an effective cremation process (Holden *et al.* 1995a, b) where temperatures would have reached in excess of 600°C (McKinley 2004, 11). No animal bone was present in the assemblages.

5.10 Registered Finds by Trista Clifford

5.10.1 Four objects were assigned registered find numbers (RF<1-4>). Metalwork items RF<1> and RF<2> were x-rayed, cleaned and stabilised as appropriate by the ASE conservator prior to analysis.

5.10.2 RF<1> is a cast copper-alloy socketed axe of South-Eastern Type dating to the Late Bronze Age, *c*.1000-800 BC (Fig. 9). The loop is missing due to fairly recent damage, there is also recent damage to one face of the axe. The cutting edge is slightly flared and convex, and exhibits use damage on the edge, which occurred in antiquity. The axe measures 88.7mm in length and the cutting edge is 42.6mm wide. The socket has a moulded collar of uneven width around the circumference. It is 73mm deep, extending almost to the blade interior edge, and the aperture measures 33.3 x 32.8mm. The axe was recovered from land drain fill [1001].

5.10.3 During conservation of RF<1>, it was observed that the decorative and also functional ridge around the socket was possibly tinned, suggested by the dark surface here. This would require confirmation by archaeometric analysis.

5.10.4 This same land drain context also contained a small amount of copper alloy possible casting waste (RF<4>) and a very worn and corroded fragment of copper-alloy bar (RF<2>), measuring 12mm in length. The latter fragment is sub-circular in section, exhibiting two moulded collars or projections along the length, and curves slightly before a terminating (old) break (Fig. 10). It may be part of a tool or a cauldron staple, and could be of Bronze Age or later date.

5.10.5 Lastly, a globular bead (RF<3>) made from opaque orange glass was recovered from pit fill [1124]. The bead measures 9.5mm in diameter with a height of 7.7mm. It belongs to Guido's (1978) Group 7vii/ Foulds (2016) Class I type 107. Beads of this type are rare in Britain; Foulds records only three in her corpus, from Meare and East Anglia. She describes them as not diagnostic for dating purposes, having deposition contexts of Middle Iron Age to early Roman date (Foulds 2016, 74).

6.0 ENVIRONMENTAL SAMPLES by Stacey Adams

6.1 Introduction

6.1.1 Ten bulk soil samples were taken during excavations at Burnham-On-Crouch for the recovery of environmental remains such as plant macrofossils, wood charcoal, faunal remains and mollusca, as well as to assist finds recovery. Samples were collected from Middle Iron Age pits as well as unphased pits and Late Bronze Age cremation burials. Cremation pit [1082] has been radiocarbon dated as 1236 to 1051 cal BC (Beta-496818). The following report discusses the charred plant macrofossils and wood charcoal and their contribution to understanding the nature of the site and its arable economy, fuel selection and use, and the local environment.

6.2 Methodology

6.2.1 The bulk samples, ranging from 10 to 40L 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 8mm, 4mm and 2mm sieves and each fraction sorted for environmental and artefactual remains (Appendix 4a). 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 sorted, in their entirety, under a stereozoom microscope at 7-45x magnifications for charred plant macrofossils and their contents recorded in Appendix 4b. Identification of the charred remains was based on observations of gross morphology and surface structure. Quantification was based on the minimum 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 400x 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 not sufficient enough to permit satisfactory identification. Charcoal from three samples (<6>, <8> and <10>) was submitted for analysis as they contained >50 fragments (***/ ****) from the >4mm fractions with a weight of >3g. Undated features were omitted from analysis. Fifty fragments from each sample were submitted for identification. Quantification and taxonomic identifications of the analysed charcoal is recorded in Appendix 4c and nomenclature follows Stace (1997).

6.3 Results

6.3.1 The majority of the samples from Burnham-On-Crouch contained between 1 and 10 charred plant macrofossils. In total, >50 charred individuals were

identified in Middle Iron Age pits [1010], [1155] and [1186], whilst charred plant macrofossils were absent from cremation pit fill [1077]. Preservation of the remains ranged from poor to good with the cereals occurring in a poorer state than that of the wild/ weed seeds.

6.3.2 Preservation of the charcoal was moderate in pit [1186] and the lower fill of pit [1125] and poor in cremation pit [1082]. In total, 9% of the assemblage was indeterminate, largely due to distortion caused by thermal degradation during the charring process and to the presence of knotwood. Vitrification, radial cracks and post-depositional sediment were recorded in a number of the fragments, particularly those from cremation pit [1082]. These features distort the anatomical features of the charcoal often hindering identification.

Period 1: Late Bronze Age/ Early Iron Age (*c*.1150-500 BC)
Samples <4> (1077) [1078], <5> (1079) [1080] and 6> (1081) [1082]

6.3.3 The heavy residues from the fills of cremation burials [1078], [1080] and [1082] contained occasional fire-cracked flint and magnetic material. Possible ash was identified in cremation pit [1078]. Charcoal fragments were frequent in the pits, whilst burnt bone was abundant. The flot contained 60-90% uncharred material of modern roots and recent seeds of fat hen (*Chenopodium album*) and buttercups (*Ranunculus* sp.). Modern insects and worm capsules were recorded along with burnt bone fragments. Small quantities of charcoal were also present in the flots.

Charred Plant Macrofossils

6.3.4 Three charred seeds of dock (*Rumex* sp.) were identified within cremation pit [1082], one of which belonged to sheep's sorrel (*Rumex acetosella*). Preservation of the remains was moderate. A large wild legume (Fabaceae) was recorded in cremation pit [1080] and no charred remains were present in cremation pit [1078].

Charcoal

6.3.5 The charcoal fragments in cremation pit [1082] were poorly preserved and were subject to large levels of distortion. Over three quarters of the fragments were affected by vitrification. Vitrification is a process that distorts the anatomical features of the charcoal giving it a glassy appearance. It has often been attributed to high temperatures and prolonged burning time (Gale and Cutler 2000; Prior and Alvin 1983), although recent experiments claim that vitrification is not induced by such factors and that the cause is still unknown (McParland *et al* 2010). Radial cracks were frequent and are often associated with the burning of fresh or damp wood (Fiorentino and D'Oronzo 2010). Post-depositional sediment affected over half the fragments indicating a changing water table after burial. All the identifiable fragments were of oak (*Quercus* sp.). They mostly derived from large branch or stem wood, although one fragment was recorded as round wood. The charcoal recovered from cremations [1078] and [1080] were not submitted for identification.

Period 2: Middle Iron Age (300-50 BC)
Samples <1> (1009) [1010], <3> (1063) [1064], <7> (1124) [1125], <8> (1124) [1125], <9> (1154) [1155] and <10> (1188) [1186]

6.3.6 The heavy residues from the Middle Iron Age features at Pippins Road each contained fragments of pot, fire-cracked flint and magnetic material. Fired clay was recovered from all Middle Iron Age features excluding the lower fill of pit [1125]. Charcoal fragments were recovered from all features and were present in sufficient quantities in pit [1186] and the lower fill of pit [1125] to be submitted for identification. Pits [1010] and [1186], as well as the upper and lower fills of pit [1125], each contained fragments of burnt bone. Unburnt animal bone was recovered from ditch [1064] and the lower fill of pit [1125].

6.3.7 The Middle Iron Age flots contained between 5 and 99% uncharred material of modern roots and straw as well as recent seeds of fumitory (*Fumaria* sp.), red valerian (*Centranthus ruber*), nipplewort (*Lapsana communis*), fat hen, knotgrass (*Polygonum aviculare*), willowleaf lettuce (*Lactuca saligna*), nightshade (*Solanum* sp.) and cabbage-type (Brassicaceae). Bread wheat (*Triticum aestivum*) rachis and indeterminate grass tubers were also present. Charcoal fragments were present within all flots and were particularly abundant in ditch [1064]. Modern insects and worm capsules were recorded in pits [1010] and [1186]. Burrowing molluscs (Ceciloides) were present in pit [1186] and the lower fill of pit [1125]. Pit [1010] contained several burnt bone fragments and small quantities of hammerscale.

Charred Plant Macrofossils

Cereal Remains

6.3.8 Charred cereal remains were identified in all Middle Iron Age features, excluding the lower fill of pit [1125]. Preservation of the cereals was largely poor with many of the caryopses indeterminate. Barley (*Hordeum vulgare*) was the most common cereal with caryopses identified in the lower fill of pit [1125] and pits [1010] and [1186]. A barley grain of the hulled variety was present within the latter feature. Wheat (*Triticum* sp.) was represented in the upper fill of pit [1125] by two caryopses, one of which was noted as squat and rounded. Indeterminate cereal culm nodes and straw fragments were recovered from pits [1010] and [1155].

Weed Seeds

6.3.9 Charred weed seeds were abundant in pits [1010] and [1155]. The pits contained seeds indicative of the cultivation of sandy loam soils including fat hen and ribwort plantain (*Plantago lanceolata*). Pit [1155] contained corn spurrey (*Spergula arvensis*) and knotgrass, both similarly associated with dry, sandy soils. Taxa associated with wet environs and saline, coastal environments were present in both features represented by rushes, (*Juncus* spp.), sedges (*Carex* sp.) and greater plantain (*Plantago major*). Sneezewort (*Achillea ptarmica*), recorded in pit [1010], is another indicator of damp and marshy fields whilst stinking mayweed (*Anthemis cotula*) is associated with heavy clay soils. Self-heal (*Prunella vulgaris*) was identified in pits [1010] and [1186], a weed of calcareous chalk soils. The latter feature also contained large seeded cleavers (*Galium aparine*). Common arable

weeds of oraches (*Atriplex* sp.), stitchwort (*Stellaria* sp.), campion (*Silene* sp.), clover-type (*Trifolium*-type) and nightshade were recorded in the assemblage. Wild grasses (Poaceae) including fescues (*Festuca* sp.), foxtails (*Alopecurus* sp.), annual meadow-grass (*Poa annua*) and oat (*Avena* sp.) were also present.

Charcoal

6.3.10 Preservation of the charcoal in pit [1186] and the lower fill of pit [1125] was moderate with most fragments identifiable and little distortion of the anatomical features.

6.3.11 Oak was the dominant taxon in the Middle Iron Age features and was largely from fast-growing wood with small annual growth rings. Hazel (*Corylus avellana*), associated with shrubby environs, was identified in pit [1186] and the lower fill of pit [1125]. Plum-type (*Prunus*-type) charcoal was also present within the above features. The rays were mostly 4-6 seriate indicting that it likely derived from blackthorn (*Prunus spinosa*) wood. Blackthorn is another taxon of shrubby environs as is that of the apple sub-family (Maloideae). A single fragment of field maple (*Acer campestre*) was identified in the lower fill of pit [1125] representing light, open areas.

Unphased
Sample <2> (1038) [1039]

6.3.12 The heavy residue from the undated pit [1039] contained magnetic material, as well as fired clay and charcoal fragments, although they have not been submitted for identification due to the lack of phasing.

6.3.13 The flot contained 30% uncharred material of modern roots and straw, as well as recent seeds of fat hen and seeds of the pink family (Caryophyllaceae). Moderate quantities of charcoal fragments were present within the flot, as were small quantities of hammerscale .

Charred Plant Macrofossils

6.3.14 Pit [1039] contained a single poorly-preserved, indeterminate cereal caryopsis.

6.4 Discussion

Period 1: Late Bronze Age/ Early Iron Age (*c*.1150-500 BC)

Charred Plant Macrofossils

6.4.1 The dock seeds and wild legume recorded in cremation pits [1082] and [1080], respectively, were likely charred along with the wood and not intentionally included in the cremation.

Charcoal

6.4.2 The oak charcoal identified in cremation pit [1082] was likely the fuel used on the cremation pyre. The fast growing nature of the wood suggests that it

was cut down as a young tree, as oak grows rapidly in its youth. The large number of radial cracks in the fragments indicates that the wood may have been burnt when it was freshly harvested and not dried out before use. Oak would have been selected as it is an excellent fuel wood with prolonged burning times. Oak is often the fuel of choice for cremation burials in southern England in the Bronze Age (Smith 2002, 20), as was the case at this site.

Period 2: Middle Iron Age (300-50 BC)

Charred Plant Macrofossils

6.4.3 The small quantities of cereal caryopses along with the large number of weed seeds indicate that cereal crop processing was being carried out at Burnham-On-Crouch. Barley and wheat were potentially both being cultivated although it is possible that one cereal occurs as a contaminant of the other. The small nature of the weed seeds suggest that they may derive from the fine-sieving by-product of cereal processing.

6.4.4 The presence of large numbers of weed seeds associated with the cultivation of sandy loam soils suggests that the inhabitants of this location were avoiding the local London Clay in preference for lighter, more acidic soils. Stinking mayweed, recorded in pit [1010], was the only indicator of clay cultivation and may represent some expansion of agriculture onto these harder-to-till lands. The nearest calcareous soils are found across the estuary in Kent indicating that some agricultural contact may have been made to the south. Alternatively, the species may be an alien in the region. The recovery of plant taxa associated with damp and saline environments is unsurprising considering the proximity of the site to the River Crouch and the North Sea.

6.4.5 Similar charred plant macrofossils were recorded at the Middle Iron Age salt working site at Stanford Wharf to the south of the River Crouch (Hunter 2012). Hulled wheat was the predominant cereal recorded with barley as a contaminant. Similarly, taxa of saline, wet and sandy environs were recorded as well as stinking mayweed. This suggests similar expansion onto clay soils in this period and a possible archaeobotancial signature for the area surrounding the River Crouch.

Charcoal

6.4.6 The charcoal identified at Pippins Road indicates that shrubby oak forests were exploited for fuel. The small quantities of round wood suggests that the timber was harvested from trees rather than opportunistically collected from the forest floor. Riverine taxa of poplar / willow (Populus / Salix) are identified here and at a contemporary site at Witham, some distance to the east (Adams 2017), despite the latter site not lying adjacent to a river.

7.0 DISCUSSION

7.1 Introduction

7.1.1 The excavation of land at Pippins Road, Burnham-on-Crouch, has largely fulfilled the general aims of the archaeological investigation by establishing the extent and quality of the surviving archaeological remains present on the site. A large proportion of the features encountered during the excavation have been dated based on their diagnostic content. These are discussed below, by broad period, taking into consideration the significance of the results in terms of the wider context of the site.

7.2 Mesolithic/Middle Neolithic

7.2.1 The few pieces of residual worked flint of Mesolithic/Middle Neolithic date recovered from the excavation provide evidence of a limited and probably transitory prehistoric presence in the landscape at this time.

7.3 Late Bronze Age/Early Iron Age

7.3.1 Most of the dated archaeological remains belong to the Late Bronze Age/Early Iron Age and consist of two broadly east/west aligned curvilinear boundary ditches (D1 and D2), with a scattering of pits (G15) of contemporary date. Three unurned cremation burials (G17) have been dated/phased to the early part of this period, but could potentially predate it – instead perhaps being late in the Middle Bronze Age. An unstratified Bronze Age socketed axe head (RF<1>) and associated copper-alloy fragments (RF<2> and <4>) were also discovered within the excavation area.

7.3.2 Although seemingly of similar date and to be closely associated with one another, the two Late Bronze Age ditches exhibit differences that hint at a more complex Period 1 landscape development than is first apparent.

7.3.3 The northern boundary ditch D1 across the two excavation areas is fairly intermittent and shallow in places, which could suggest it may have been associated with a hedgerow or a flanking earthwork, or both. It is also evident that it underwent several seemingly localised modifications along its course, perhaps suggesting that it had a prolonged lifespan as a functioning boundary. Pottery evidence collected from the various components of this boundary suggest a wide date range covering the Late Bronze Age to Early Iron Age.

7.3.4 The southern ditch D2 is clearly of shorter length compared to D1 and does not seem to simply either represent a contemporary parallel boundary (e.g. with a trackway in between) or a forerunner/replacement of it. No re-cutting episodes were identified along it and the recovered pottery assemblage suggests that it became defunct by the end of the Late Bronze Age. Lacking a distinct Early Iron Age component, it is possible that ditch D2 passed out of use several centuries before D1. If the G10 north/south ditch is correctly identified, it is perhaps probable that the more extensive D1 ditch, with which it is perpendicularly positioned, was the earlier boundary. Ditch D2 was then a relatively short-lived supplementary feature established alongside D1 after

ditch D10 had passed out of use. Ditch D1 is postulated to have endured as a functioning boundary for a time after D2 also passed out of use.

7.3.5 The Period 1 pits are broadly of similar date to the boundary features. Like ditch D1, many possibly span the Late Bronze Age to Early Iron Age. In addition, most are located to the north and so may be positioned in relation to D1 rather than D2. Instances of pits being either truncated by the ditches or cut into them is minimal. It is assumed that this depositional practise, and the wider land use activity it was part of, was undertaken in relation to, and respect of, the D1/D2 boundary.

7.3.6 The cremation deposits are scattered across the site, with no clear concentration. This could in part be due to the nature of the survival of the remains, with all being heavily truncated. Other, shallower deposits across the site may have been entirely ploughed out and so are not present within the archaeological record. The surviving burials are postulated to have been placed alongside, and in relation to, the D1 and/or D2 boundaries. Later Bronze Age cemetery activity is generally found in peripheral locations, away from settlements. It is possible that this boundary constituted a significant liminal location in the landscape, perhaps marking the edge of a local territory, at which it was deemed suitable for placing the dead. However, their scattered location on both sides of the boundary D1 could equally indicate that they pre-date the boundary. The radiocarbon dating of the G17 cremation burial [1082] (1236-1051 cal BC) to the beginning of the Late Bronze Age, or perhaps the end of the Middle Bronze Age, might suggest the burials were already present in the landscape when the boundary was established. The peripheral or boundary nature of this location may have been recognised well before it was formalised by the establishment of the D1 and D2 ditches.

7.3.7 The unstratified socketed axe head and associated bronze fragments discovered on site likely indicate the presence of a hoard of Bronze Age material in the immediate vicinity, which has been disturbed by ploughing and dispersed. The incidence of Middle and Late Bronze Age metalwork hoards within south-east Essex is relatively high. These hoards are generally dominated by axe heads, with the majority being of the Ewart Park Industrial Phase, specifically the regional manifestation known as the Carp's Tongue Complex, and are the most common artefacts of the Late Bronze Age in the region (O'Connor 1980, 161). Surrounding hoards have commonly been discovered unstratified and by metal detector, with fifteen objects recovered at Barling (Crowe 2003,1-18) found spread across a field and assumed to originate from a single hoard deposit. A similar deposit from Fingringhoe (Sealey 1987, 7) was recovered unstratified from the ploughsoil of the site. Other hoard locations, such as Vange (Brown 1998, 1-18), Basildon (Brown 1986, 141-2) and Wickford (Brown 1988, 242-3), have been recovered during pipeline or drainage works, making the circumstances of their deposition difficult to discern. While Bronze Age hoards in Great Wakering (Crowe 2003, 1-18) and in Burnham-on-Crouch itself (PAS ID: ESS-8822A3) were both thought to be from primarily sealed contexts, the number of finds recovered unstratified suggest hoards are commonly disturbed by ploughing and other activity; as such, the recovered Pippins Road objects may belong to a similarly disturbed deposit. It is also possible that the axe head and bronze fragments were associated with the nearby cremation burial [1078],

and were displaced by ploughing to the adjacent location. This apparent association between metalwork and cremation remains has been noted at Little Totham, further north in the county, near Maldon, where fragments of Bronze waste, including axe fragments, were recovered from an area of cremation burials (Adkins 1987, 107-8).

7.3.8 While it is likely that the majority, if not all, of the pit digging, burial activity and deposition of the metalwork hoard was carried out with reference to the Late Bronze Age boundary, it is less clear how the site remains relate to land use evidence in the wider vicinity. It is possible that the tentative Bronze Age trackway and Iron Age rectilinear enclosure recorded to the south-east of the site (EHER 16031), and the nearby metalwork hoard findspots (EHER 11211; PAS ESS-8822A3), were contemporary elements within the landscape.

7.4 Middle Iron Age

7.1.7 The features of Middle Iron Age date are all located in the south-east of the excavated area, in a distinct cluster. The complex of intercutting pits/postholes and short gullies (G12) may constitute part of a possible structure, though are poorly understood and are perhaps best regarded as denoting an 'activity area' in the landscape. The slag remains from ditch terminus [1125] are suggestive of small-scale metalwork, which could indicate an area of production activity on the edge possible agricultural land. The charcoal remains of blackthorn and field maple recovered from ditch terminus [1125] are indicative of light, open areas such as fields or meadows. Further environmental evidence of cereal caryopses and weed seeds suggests that cereal crop processing was being carried out at the site, supporting the view of small-scale agriculture land in the area.

7.5 Late Iron Age/Early Roman

7.5.1 No features across the site are of demonstrably Late Iron Age/Early Roman date. Those that contained pottery of this date were found alongside earlier pottery of Late Bronze Age/Early Iron Age. Given the nature and associations of the features concerned, and the fragmented nature of the material, it is judged that this pottery was intrusive in all instances. However, it is possible that the two distinct groups of Late Iron Age/Early Roman pottery comprised significant parts of individual vessels, found in Period 1 features [1051] (G13) and [1034] (G14) are instead indicative of deliberate deposition. Given their conspicuous occurrence along the Bronze Age boundary, it may be appropriate to postulate that some trace of it endured in the Late Iron Age to Roman landscape.

7.6 Realisation of the Research Aims and Objectives

7.6.1 The results of the excavation have largely fulfilled the general aims of the archaeological monitoring by establishing the extent, character and quality of the surviving archaeological remains present on site. It has also been demonstrated that the prehistoric features identified in the trial-trench evaluation were part of a larger complex of Late Bronze Age/Early Iron Age features.

7.6.2 The nature of the Late Bronze Age/Early Iron Age archaeological remains excavated on site, comprising two boundary ditches and a series of scattered pits and occasional cremation burials, provide limited information regarding the organisation and use of the immediate landscape. However, in conjunction with the dispersed metalwork hoard, these have a local significance and some potential to contribute to the understanding of later Bronze Age deposition practices in south-east Essex and beyond. The archaeological features on site were possibly of a date that broadly coincides with the features that have been investigated at the cropmark enclosure to the south-east of the site (EHER 16031). Whether or not the Middle Iron Age remains found indicate continued activity and land use to the north of the cropmark enclosure, with the environmental and slag evidence indicative of agricultural and processing/manufacturing activities, is unknown.

7.6.3 There is minimal evidence of Roman activity on site, limited to isolated and presumed intrusive finds found within likely earlier contexts. These have some slight significance in that two pottery finds might constitute placed deposits inserted into the prehistoric boundary remains. It is possible that the land continued to be utilised for agricultural purposes, but there is no evidence for field systems or rural settlement located in relation to the Roman road to the west, or for 'red hills' or other salt drying remains other than a few possible briquetage fragments (in earlier Iron Age contexts).

7.6.4 There is no evidence of medieval or post-medieval farming on site, other than two late land drains running NW/SE across the site. The land was likely used for agricultural purposes throughout this time, and certainly from 1777 onwards, where the land is depicted on historic mapping as a rural landscape comprising fields.

8.0 PUBLICATION PROPOSAL

8.1 Publication need/rationale

8.1.1 The consideration of the results of this excavation demonstrate that the recorded prehistoric stratigraphic remains, primarily those of Late Bronze Age date, have some local context and significance, particularly in terms of the understanding of the nature of landscape boundaries and the activities/practices associated with them – especially burial and deposition of metalwork hoards. The pottery and metalwork finds have direct relevance to this.

8.2 Preliminary Publication Synopsis

8.2.1 It is suggested that a summary of the main results of the archaeological work are presented as a short article for publication in the local journal, *Essex Archaeology and History*. In essence, the article will present a concise account of the boundary significance of this location and provide a context for the consideration of the cremation burials and, particularly, the dispersed hoard items, which will provide the main focus for discussion.

8.2.2 The site context will primarily comprise a summary of the stratigraphic sequence and supporting dating evidence. A short prehistoric pottery report and a metalwork report will be included. All other finds will only be alluded to where pertinent in the site narrative text. The metalwork items will be described in detail, appropriately illustrated and discussed with reference to regional comparanda and specifically to other hoards previously found across south-east Essex. Consideration will be given to exploration of the significance of the liminal function of this location in the later Bronze Age and Early Iron Age.

8.2.3 The working title of the article will be: '*A Late Bronze Age boundary and dispersed metalwork hoard at Burnham-on-Crouch*'.

8.2.4 It is estimated that the article will total approximately five or six EAH pages; *c*.3000 words plus figures.

8.3 Publication tasks

8.3.1 Little further analytical work is required for any of the stratigraphic, artefactual or environmental data sets beyond that already undertaken for the PXA.

8.3.2 The tasks and resourcing required to complete analysis and reporting for publication are identified below and listed in Table 8.

Stratigraphic

8.3.3 The stratigraphic sequence and its chronology will be checked and refined where possible. A concise account of the site sequence will be written to provide an introduction, background and context for the discovery of the Bronze Age metalwork items. Reference to wider studies on Bronze Age

metalwork hoards and the significance of boundaries/peripheral locations will be made (e.g. Buckley *et al* 1986; Yates and Bradley 2010).

Prehistoric pottery

8.3.4 The prehistoric pottery assemblage merits a short publication, quantifying the wares found and overviewing the vessel forms present and their dating. Brief comparison to site assemblages elsewhere in south-east Essex would be made. Emphasis will be on the Bronze Age/Early Iron Age component of the assemblage, with only summary coverage of later material.

Metalwork

8.3.5 The Burnham-on-Crouch area is the location of a large Bronze Age hoard site, which produced 69 socketed axes of similar type and dating to RF<1>, as well as other weapons, tools, casting waste and ingots (PAS ESS-8822A3; ESS-CC3994). The presence of this axe together with another copper alloy object suggests a continuity of hoarding behaviour at this time and as such these objects are of local and regional significance. Consequently, a full report on the axe and associated copper alloy objects will be produced by a Bronze Age metalwork specialist (Dot Boughton) for the publication.

Other finds

8.3.6 The other finds pertinent to the description and discussion of the prehistoric phases of site use (worked flint, fired clay, slag, burnt bone) will be briefly summarised, drawn from the current report texts, with any information useful to site interpretation and dating subsumed into the site narrative.

Environmental remains

8.3.7 All required analysis and research on the environmental remains extracted from bulk soil samples has been undertaken. The results text in this report will be subsumed into the site narrative, as appropriate.

Illustration

8.3.8 The publication article will provisionally require the following illustration figures:

- Site location, including pertinent local sites mentioned in text
- Site plan, with features shaded according to phase, etc.
- Selected Late Bronze Age/Early Iron Age pottery drawings
- Bronze Age metalwork items <1, 2 and 4>, both drawings and photographs

Task description	Duration
Stratigraphic analysis & reporting	
Review dating/grouping/ phasing of *c*.270 contexts	1.5 days
Research Bronze Age boundaries, peripheral deposition activities, metalwork hoards	1.5 days
Digestion and integration of finds summary reports	0.5 day
Write intro & background text	0.5 days
Write & integrate period-driven narrative of the site sequence	1 day
Write discussion/conclusion text, acknowledgements, collate biblio	1 day
Sub-total	**6 days**
Specialist analysis & reporting	
Prehistoric pottery	1 day
Bronze Age metalwork (external specialist)	fee
Integration of other finds & enviro information into publication draft	0.5 day
Sub-total	**1.5 days**
Illustration	
Stratigraphic figures (plans, sections, photographs, etc)	1 day
Finds figures (pottery, metalwork, bead)	2 days
Sub-total	**3 days**
Production	
Editing of the collated draft report	1 day
Amendment of the draft for submission to EAH	0.5 day
Report draft amendment following EAH reader/editor comments	0.5 days
Checking of EAH proofs	0.25 days
Project Management	0.75 days
EAH print page cost	cost
Sub-total	**3.5 days**
Archiving	
Checking & collation of archive	0.5 day
Museum deposition	0.25 days
Sub-total	**0.75 days**

Table 8: Resource for analysis and publication tasks

8.4 Artefacts and Archive Deposition

8.4.1 The site archive is currently held at the offices at ASE. Following completion of all post-excavation work, including any publication work, the site archive will be deposited with Colchester Museum.

8.4.2 The contents of the archive are tabulated below (Tables 9 and 10) though the finds and environmental samples ultimately deposited as part of the archive are dependent on specialist recommendations and regional archive requirements.

Context sheets	1242 (excav)
Drawing sheets	13
Digital photos	c.100
Context register	7
Drawing register	3
Photographic register	5
Environmental sample sheets	10
Environmental sample register	1

Table 9: Quantification of site paper archive (from excavation phase)

Bulk finds (quantity e.g. 1 bag, 1 box, 0.5 box 0.5 of a box)	4 boxes
Registered finds (number of)	4
Flots and environmental remains from bulk samples	10
Palaeoenvironmental specialists samples (e.g. columns, prepared slides)	0
Waterlogged wood	0

Table 10: Quantification of artefact and environmental samples (from excavation phase)

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Appendix 1: Context Register

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1001	Layer	Topsoil	1001				
1002	Layer	Natural	1002				
1003	Cut	Pit	1003	55	21	-	0
1004	Fill	Fill, single	1003	55	21	-	0
1005	Fill	Fill, single	1006	37	12	-	2
1006	Cut	Pit	1006	37	12	-	2
1007	Cut	Pit	1007	46	20	-	1
1008	Fill	Fill, single	1007	46	20	-	1
1009	Fill	Fill, single	1010	35	12	-	2
1010	Cut	Pit	1010	35	12	-	2
1011	Cut	Posthole	1011	51	21	-	0
1012	Fill	Fill, single	1011	51	21	-	0
1013	Fill	Fill, single	1014	22	7	D1	1
1014	Cut	Ditch	1014	22	7	D1	1
1015	Deposit	Layer	1015	129	18		1
1016	Deposit	Layer	1016	129	18		1
1017	Deposit	Layer	1017	129	18		1
1018	Deposit	Layer	1018	129	18		1
1019	Deposit	Layer	1019	129	18		1
1020	Deposit	Layer	1020	129	18		1
1021	Fill	Fill, single	1022	38	12	-	2
1022	Cut	Pit	1022	38	12	-	2
1023	Fill	Fill, single	1024	17	5	D1	1
1024	Cut	Ditch, boundary	1024	17	5	D1	1
1025	Fill	Fill, single	1026	19	5	D1	1
1026	Cut	Ditch terminus	1026	19	5	D1	1
1027	Fill	Fill, single	1028	18	5	D1	1
1028	Cut	Ditch, boundary	1028	18	5	D1	1
1029	Cut	Pit	1029	47	20	-	1
1030	Fill	Fill, single	1029	47	20	-	1
1031	Fill	Fill, single	1032	16	14	D1	1
1032	Cut	Pit	1032	16	14	D1	1
1033	Fill	Fill, single	1034	118	14	D1	1
1034	Cut	Pit	1034	118	14	D1	1
1035	Cut	Ditch terminus	1035	10	3	D1	1
1036	Fill	Fill, basal	1035	10	3	D1	1
1037	Fill	Fill, upper	1035	10	3	D1	1
1038	Fill	Fill, single	1039	67	21	-	0
1039	Cut	Pit	1039	67	21	-	0
1040	Cut	Pit	1040	60	20	-	1
1041	Fill	Fill, single	1040	60	20	-	1

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1042	Fill	Fill	1043	64	20	-	1
1043	Cut	Pit	1043	64	20	-	1
1044	Fill	Fill, single	1045	65	20	-	1
1045	Cut	Pit	1045	65	20	-	1
1046	Fill	Fill, single	1047	63	21	-	0
1047	Cut	Pit	1047	63	21	-	0
1048	Fill	Fill, single	1049	66	15	-	1
1049	Cut	Pit	1049	66	15	-	1
1050	Fill	Fill, single	1051	102	13	-	1
1051	Cut	Pit	1051	102	13	-	1
1052	Deposit	Layer	1052	103			
1053	Fill	Fill, single	1054	104	13	-	1
1054	Cut	Pit	1054	104	13	-	1
1055	Fill	Fill, single	1056	6	2	D1	1
1056	Cut	Ditch, boundary	1056	6	2	D1	1
1057	Fill	Fill, single	1058	50	21	-	0
1058	Cut	Pit	1058	50	21	-	0
1059	Fill	Fill, single	1060	49	21	-	0
1060	Cut	Pit	1060	49	21	-	0
1061	Fill	Fill, single	1062	33	12	-	2
1062	Cut	Ditch terminus	1062	33	12	-	2
1063	Fill	Fill, single	1064	31	12	-	2
1064	Cut	Ditch terminus	1064	31	12	-	2
1065	Fill	Fill, single	1066	39	12	-	2
1066	Cut	Pit	1066	39	12	-	2
1067	Fill	Fill	1068	40	12	-	2
1068	Cut	Pit	1068	40	12	-	2
1069	Cut	Ditch, boundary	1069	27	8	D2	1
1070	Fill	Fill, single	1069	27	8	D2	1
1071	Cut	Ditch	1071	108	10	-	1
1072	Fill	Fill	1071	108	10	-	1
1073	Cut	Ditch	1073	109	10	-	1
1074	Fill	Fill, single	1073	109	10	-	1
1075	Fill	Fill, single	1076	34	12	-	2
1076	Cut	Ditch	1076	34	12	-	2
1077	Fill	Fill, single	1078	78	17	-	1
1078	Cut	Pit, cremation	1078	78	17	-	1
1079	Fill	Fill, single	1080	70	17	-	1
1080	Cut	Pit, cremation	1080	70	17	-	1
1081	Fill	Fill, single	1082	56	17	-	1
1082	Cut	Pit, cremation	1082	56	17	-	1
1083	Fill	Fill, single	1084	45	21	-	0

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1084	Cut	Pit	1084	45	21	-	0
1085	Fill	Fill, single	1086	115	4	D1	1
1086	Cut	Ditch terminus	1086	115	4	D1	1
1087	Fill	Fill, single	1088	61	20	-	1
1088	Cut	Pit	1088	61	20	-	1
1089	Fill	Fill, single	1090	116	20	-	1
1090	Cut	Pit	1090	116	20	-	1
1091	Cut	Ditch terminus	1091	29	9	D2	1
1092	Fill	Fill, single	1091	29	9	D2	1
1093	Cut	Pit	1093	68	15	-	1
1094	Fill	Fill, single	1093	68	15	-	1
1095	Fill	Fill, single	1096	58	20	-	1
1096	Cut	Pit	1096	58	20	-	1
1097	Fill	Fill, single	1098	59	20	-	1
1098	Cut	Pit	1098	59	20	-	1
1099	Cut	Pit	1099	97	15	-	1
1100	Fill	Fill, single	1099	97	15	-	1
1101	Cut	Pit	1101	98	15	-	1
1102	Fill	Fill, single	1101	98	15	-	1
1103	Cut	Pit	1103	99	15	-	1
1104	Fill	Fill, single	1103	99	15	-	1
1105	Fill	Fill	1106	14	4	D1	1
1106	Cut	Ditch terminus	1106	14	4	D1	1
1107	Fill	Fill, single	1108	21	7	D1	1
1108	Cut	Ditch terminus	1108	21	7	D1	1
1109	Fill	Fill, single	1110	57	21	-	0
1110	Cut	Pit	1110	57	21	-	0
1111	Cut	Pit	1111	100	15	-	1
1112	Fill	Fill, single	1111	100	15	-	1
1113	Cut	Ditch terminus	1113	8	2	D1	1
1114	Fill	Fill, single	1113	8	2	D1	1
1115	Cut	Ditch terminus	1115	9	3	D1	1
1116	Fill	Fill, single	1115	9	3	D1	1
1117	Fill	Fill, single	1118	15	19	D1	1
1118	Cut	Ditch	1118	15	19	D1	1
1119	Fill	Fill, single	1120	20	6	D1	1
1120	Cut	Ditch	1120	20	6	D1	1
1121	Deposit	Layer	1121	129	18		1
1122	Fill	Fill, single	1123	115	4	D1	1
1123	Cut	Pit	1123	115	4	D1	1
1124	Fill	Fill, single	1125	32	12	-	2
1125	Cut	Pit	1125	32	12	-	2

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1126	Cut	Pit	1126	110	10	-	1
1127	Fill	Fill, single	1126	110	10	-	1
1128	Fill	Fill, single	1129	42	21	-	0
1129	Cut	Pit	1129	42	21	-	0
1130	Fill	Fill, single	1131	43	21	-	0
1131	Cut	Pit	1131	43	21	-	0
1132	Fill	Fill, single	1133	44	21	-	0
1133	Cut	Pit	1133	44	21	-	0
1134	Fill	Fill, single	1135	12	4	D1	1
1135	Cut	Ditch	1135	12	4	D1	1
1136	Cut	Pit	1136	111	10	-	1
1137	Fill	Fill, single	1136	111	10	-	1
1138	Fill	Fill, single	1139	48	21	-	0
1139	Cut	Pit	1139	48	21	-	0
1140	Cut	Ditch terminus	1140	28	8	D2	1
1141	Fill	Fill, single	1140	28	8	D2	1
1142	Cut	Pit	1142	114	15	-	1
1143	Fill	Fill, single	1142	114	15	-	1
1144	Fill	Fill, single	1145	41	12	-	2
1145	Cut	Pit	1145	41	12	-	2
1146	Fill	Fill, single	1147	11	4	D1	1
1147	Cut	Ditch terminus	1147	11	4	D1	1
1148	Cut	Pit	1148	69	16	-	0
1149	Fill	Fill, single	1148	69	16	-	0
1150	Cut	Pit	1150	86	15	-	1
1151	Fill	Fill, single	1150	86	15	-	1
1152	Cut	Pit	1152	87	15	-	1
1153	Fill	Fill, single	1152	87	15	-	1
1154	Fill	Fill, single	1155	36	12	-	2
1155	Cut	Pit	1155	36	12	-	2
1156	Cut	Pit	1156	62	21	-	0
1157	Fill	Fill, single	1156	62	21	-	0
1158	Fill	Fill, single	1159	23	8	D2	1
1159	Cut	Ditch	1159	23	8	D2	1
1160	Fill	Fill, single	1161	72	16	-	0
1161	Cut	Pit	1161	72	16	-	0
1162	Fill	Fill, single	1163	88	15	-	1
1163	Cut	Pit	1163	88	15	-	1
1164	Fill	Fill, single	1165	1	1	D1	1
1165	Cut	Ditch	1165	1	1	D1	1
1166	Fill	Fill, single	1167	25	8	D2	1
1167	Cut	Ditch	1167	25	8	D2	1

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1168	Fill	Fill, single	1169	81	15	-	1
1169	Cut	Pit	1169	81	15	-	1
1170	Fill	Fill, upper	1172	82	15	-	1
1171	Fill	Fill, basal	1172	82	15	-	1
1172	Cut	Pit	1172	82	15	-	1
1173	Cut	Ditch, boundary	1173	3	1	D1	1
1174	Fill	Fill, single	1173	3	1	D1	1
1175	Cut	Pit	1175	80	15	-	1
1176	Fill	Fill, single	1175	80	15	-	1
1177	Cut	Ditch terminus	1177	4	2	D1	1
1178	Fill	Fill, basal	1177	4	2	D1	1
1179	Fill	Fill, upper	1177	4	2	D1	1
1180	Fill	Fill, single	1181	89	16	-	0
1181	Cut	Pit	1181	89	16	-	0
1182	Fill	Fill, single	1183	90	15	-	1
1183	Cut	Pit	1183	90	15	-	1
1184	Fill	Fill, single	1185	91	16	-	0
1185	Cut	Pit	1185	91	16	-	0
1186	Cut	Pit	1186	30	11	-	2
1187	Fill	Fill, basal	1186	30	11	-	2
1188	Fill	Fill, upper	1186	30	11	-	2
1189	Fill	Fill, single	1190	77	16	-	0
1190	Cut	Pit	1190	77	16	-	0
1191	Fill	Fill, single	1192	75	16	-	0
1192	Cut	Pit	1192	75	16	-	0
1193	Fill	Fill, single	1194	73	16	-	0
1194	Cut	Pit	1194	73	16	-	0
1195	Fill	Fill, single	1196	74	16	-	0
1196	Cut	Pit	1196	74	16	-	0
1197	Fill	Fill, single	1198	79	15	-	1
1198	Cut	Pit	1198	79	15	-	1
1199	Fill	Fill, single	1200	76	15	-	1
1200	Cut	Pit	1200	76	15	-	1
1201	Cut	Ditch, boundary	1201	26	8	D2	1
1202	Fill	Fill, single	1201	26	8	D2	1
1203	Cut	Pit	1203	112	10	-	1
1204	Fill	Fill, single	1203	112	10	-	1
1205	Fill	Fill, single	1206	92	15	-	1
1206	Cut	Pit	1206	92	15	-	1
1207	Fill	Fill, single	1208	117	4	D1	1
1208	Cut	Pit	1208	117	4	D1	1
1209	Fill	Fill, single	1210	13	4	D1	1

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
1210	Cut	Ditch, boundary	1210	13	4	D1	1
1211	Fill	Fill	1212	93	16	-	0
1212	Cut	Pit	1212	93	16	-	0
1213	Fill	Fill, single	1214	71	16	-	0
1214	Cut	Pit	1214	71	16	-	0
1215	Fill	Fill, single	1216	94	15	-	1
1216	Cut	Pit	1216	94	15	-	1
1217	Cut	Ditch	1217	5	2	D1	1
1218	Fill	Fill, single	1217	5	2	D1	1
1219	Cut	Pit	1219	105	13	-	1
1220	Fill	Fill, single	1219	105	13	-	1
1221	Fill	Fill, single	1222	83	16	-	0
1222	Cut	Pit	1222	83	16	-	0
1223	Fill	Fill, single	1224	84	16	-	0
1224	Cut	Pit	1224	84	16	-	0
1225	Fill	Fill, single	1226	85	16	-	0
1226	Cut	Pit	1226	85	16	-	0
1227	Fill	Fill, single	1228	95	15	-	1
1228	Cut	Pit	1228	95	15	-	1
1229	Fill	Fill, single	1230	24	8	D2	1
1230	Cut	Ditch	1230	24	8	D2	1
1231	Fill	Fill, single	1232	96	15	-	1
1232	Cut	Pit	1232	96	15	-	1
1233	Fill	Fill, single	1234	106	13	-	1
1234	Cut	Pit	1234	106	13	-	1
1235	Fill	Fill, single	1236	107	13	-	1
1236	Cut	Pit	1236	107	13	-	1
1237	Fill	Fill, upper		101	8	D2	1
1238	Fill	Fill, single	1239	119	13	-	1
1239	Cut	Pit	1239	119	13	-	1
1240	Fill	Fill, single	1241	7	2	D1	1
1241	Cut	Ditch, boundary	1241	7	2	D1	1
1242	Finds	From top of G13	1242	-	-		1
1/003	Fill	Fill, single	1/004	121	16	-	0
1/004	Cut	Pit	1/004	121	16	-	0
6/004	Fill	Fill, single	6/005	122	16	-	0
6/005	Cut	Pit	6/005	122	16	-	0
10/003	Fill	Fill, single	10/004	123	22	-	1
10/004	Cut	Pit	10/004	123	22	-	1
10/005	Fill	Fill, single	10/006	124	16	-	0
10/006	Cut	Pit	10/006	124	16	-	0
11/004	Fill	Fill, single	11/005	125	22	-	1

Context	Type	Interpretation	Parent	Sub Group	Group	Land Use	Period
11/005	Cut	Pit	11/005	125	22	-	1
15/003	Fill	Fill, single	15/004	126	22	-	1
15/004	Cut	Pit	15/004	126	22	-	1
16/003	Fill	Fill, single	16/004	127	22	-	1
16/004	Cut	Pit	16/004	127	22	-	1
17/004	Fill	Fill, single	17/005	128	22	-	1
17/005	Cut	Gully	17/005	128	22	-	1
21/004	Fill	Fill, single	21/005	2	1	D1	1
21/005	Cut	Ditch, boundary	21/005	2	1	D1	1
21/006	Fill	Fill, single	21/007	113	10	-	1
21/007	Cut	Ditch	21/007	113	10	-	1
22/004	Fill	Fill, single	22/005	52	21	-	0
22/005	Cut	Pit	22/005	52	21	-	0
22/008	Fill	Fill, single	22/009	53	21	-	0
22/009	Cut	Pit	22/009	53	21	-	0
22/010	Fill	Fill, single	22/011	54	21	-	0
22/011	Cut	Pit	22/011	54	21	-	0
23/005	Fill	Fill, upper	23/009	120	15	-	1
23/006	Fill	Fill, intermediate	23/009	120	15	-	1
23/007	Fill	Fill, intermediate	23/009	120	15	-	1
23/008	Fill	Fill, basal	23/009	120	15	-	1
23/009	Cut	Pit	23/009	120	15	-	1

Appendix 2: Group list

Group	Description	Contents	Land use	Period
1	Curvilinear E/W ditch in A	1165, 1173, 21/005	D1	1
2	Curvilinear E/W ditch in A	1056, 1113, 1177, 1217, 1241	D1	1
3	Ditch in A & B	1035, 1115	D1	1
4	Curvilinear E/W ditch in B	1086, 1106, 1123, 1135, 1147, 1208, 1210	D1	1
5	E/W ditch in B	1024, 1026, 1028	D1	1
6	E/W ditch in B	1120	D1	1
7	Recut ENE/WSW ditch in B	1014, 1108	D1	1
8	Curvilinear E/W ditch in A	1069, 1140, 1159, 1167, 1201, 1230	D2	1
9	E/W ditch in A	1091	D2	1
10	Spread & poss N/S ditch in A	1071, 1073, 1126, 1136, 1203, 21/007		1
11	Large IA pit in A	1186		2
12	IA semi-circular ?structure in B	1006, 1010 = 1155, 1022, 1062, 1064, 1066, 1068, 1076, 1125, 1145		2
13	Shallow pits in A	1051, 1054, 1219, 1234, 1236, 1239		1
14	Pits in B, forming part of D1?	1032, 1034	D1	1
15	LBA pits & gully in A	1049, 1093, 1099, 1101, 1103, 1111, 1142, 1150, 1152, 1163, 1169, 1172, 1175, 1183, 1198, 1200, 1206, 1216, 1228, 1232		1
16	Undated pits in A	1148, 1161, 1181, 1185, 1190, 1192, 1194, 1196, 1212, 1214, 1222, 1224, 1226	-	0
17	LBA cremation burials	1078, 1080, 1082		1
18	Layers in east of B	1015, 1016, 1017, 1018, 1019, 1020, 1121		1
19	Gully / small ditch in B	1118	D1	1
20	LBA pits in B	1007, 1029, 1040, 1043 = 23/009, 1045, 1088, 1090, 1096, 1098		1
21	Undated pits in B	1003, 1011, 1039, 1047, 1058, 1060, 1084, 1110, 1129, 1131, 1133, 1139, 1156, 22/005, 22/009, 22/011	-	0
22	LBA features in eval trenches	10/004, 11/005, 15/004, 16/004, 17/005		1
23	Undated features in eval trenches	1/004, 6/005, 10/006	-	0

Appendix 3: Quantification of hand-collected bulk finds

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Stone	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Burnt Flint	Weight (g)	Fired Clay	Weight (g)
us			15	186												
1005			18	40												
1008			5	42											1	18
1009			5	144			2	22							50	268
1013			4	8											1	<2
1018			9	22												
1019															2	11
1021											13	8				
1023	1	4	14	58									2	8		
1025			2	20												
1027			1	6											16	50
1030			1	4												
1031			2	6												
1033			26	190									1	8		
1036			2	6												
1037			3	4												
1041			2	6												
1042			58	1080											2	18
1044			9	68									2	20		
1048			2	36												
1050			20	50												
1061			5	20												
1063			4	36											7	80
1065			1	10											2	16
1070			75	442												
1072			5	26												
1074			1	24												
1075			2	6											2	8
1087			6	20											3	4
1089			2	2												
1092			13	62												
1094			2	14												
1095			9	46												
1102			11	18												
1104			4	30												
1105			10	66												
1107			8	66												
1109															3	8
1112	1	10	1	62												
1114			3	8												
1116			8	66												
1117			1	4												

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Stone	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Burnt Flint	Weight (g)	Fired Clay	Weight (g)
1119			3	12											1	8
1122			2	14	1	4										
1124			28	346					6	310	10	10			19	116
1127			1	8												
1134			3	14												
1137			4	52												
1141			11	192												
1146			4	30												
1153			1	4												
1154			9	168									1	28	70	440
1158			13	50									1	56	1	20
1160															3	8
1162	1	6	1	8											1	16
1164			2	10												
1166			1	14												
1168			6	68												
1170			7	226												
1174			4	28												
1178			3	22												
1180													2	24		
1182			1	4												
1188			1	26											6	58
1191			1	2												
1193			1	6											1	2
1197			4	16												
1199			1	8												
1202			1	6												
1204			3	22												
1205			2	2												
1211													2	36		
1215			2	4												
1218			3	24												
1227	1	4	4	28									1	20		
1229			45	304												
1232			3	14									2	90	1	4
1235			5	54												
1237			9	138											1	6
1242			32	150											1	10
6/004	2	14														
10/003	2	18	9	94									3	22	1	20
11/004	1	12	6	16											1	2
15/003			4	144									2	68	1	6
16/003			18	120												
17/004			14	94												

Context	Lithics	Weight (g)	Pottery	Weight (g)	CBM	Weight (g)	Stone	Weight (g)	Slag	Weight (g)	Bone	Weight (g)	Burnt Flint	Weight (g)	Fired Clay	Weight (g)
21/004			3	14												
21/006			1	4												
23/005			31	380												
23/007			3	70												
23/008			9	44												
Total	*9*	*68*	*688*	*6058*	*1*	*4*	*2*	*22*	*6*	*310*	*23*	*18*	*19*	*380*	*197*	*1197*

Appendix 4: Environmental Data

4a: Residue quantification (key: * = 1-10, ** = 11-50, *** = 51-250, **** = >250)

Period	Sample Number	Context	Context / Deposit Type and Parent Context	Sample Volume (L)	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Bone and Teeth	Weight (g)	Burnt Bone >8mm	Weight (g)	Burnt Bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Other (eg. Pot, flint etc.) (presence/ weight)
1	4	1077	Cremation Pit [1078]	10	**	4	***	5			**	16	***	53	****	51	Ash? (**/7g) Mag.Mat. >2mm (*/<1g) Mag.Mat. <2mm (*/<1g)
	5	1079	Cremation Pit [1080]	20	***	55	****	16			***	68	***	136	****	106	Partially Burnt Bone? (*/116g) FCF (*/12g) Mag.Mat. <2mm (*/<1g)
	6	1081	Cremation Pit [1082]	20	***	8	****	12			***	123	***	136	****	142	FCF (**/65g) Mag.Mat. >2mm (*/<1g) Mag.Mat. <2mm (**/1g)
2	1	1009	Pit [1010]	40	*	<1	***	2							*	<1	Pot (**/47g) F.Clay (*/28g/) FCF (*/38g) Mag.Mat. >2mm (**/2g) Mag.Mat. <2mm (***/<1g)
	3	1063	Ditch [1064]	30	**	8	***	3	*	<1							Pot (*/5g) F.Clay (*/<1g) FCF (*/20g) Mag.Mat. >2mm (*/<1g) Mag.Mat. <2mm (***/<1g)
	7	1124	Upper Fill of Pit [1125]	40	**	3	***	2					*	1			Pot (*/13g) F.Clay (*/16g) Ash? (**/12g) FCF (**/51g) Mag.Mat. >2mm (**/13g) Mag.Mat. <2mm (****/1g)
	8	1124	Lower Fill of Pit [1125]	40	***	6	***	4	*	1	*	1	*	1	*	<1	Pot (*/5g) FCF (**/54g) Mag.Mat. >2mm (**/1g) Mag.Mat. <2mm (**/<1g)

Period	Sample Number	Context	Context / Deposit Type and Parent Context	Sample Volume (L)	Charcoal >4mm	Weight (g)	Charcoal 2-4mm	Weight (g)	Bone and Teeth	Weight (g)	Burnt Bone >8mm	Weight (g)	Burnt Bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Other (eg. Pot, flint etc.) (presence/ weight)
2	9	1154	Pit [1155]	40	**	11	***	4									Pot (*/1g) F.Clay (**/124g) FCF (**/183g) Flint (*/8g) Mag.Mat. >2mm (***/4g) Mag.Mat. <2mm (***/1g)
	10	1188	Pit [1186]	40	***	20	***	4					*	<1	*	<1	Pot (*/16g) F.Clay (**/42g) FCF (**/19g) Mag.Mat. >2mm (**/<1g) Mag.Mat. <2mm (***/<1g)
Unphased	2	1038	Pit [1039]	30	**	6	***	7									F.Clay (*/23g) Mag.Mat. >2mm (*/<1g) Mag.Mat. <2mm (**/<1g)

4b: Flot quantification (key: * = 1-10, ** = 11-50, *** = 51-250, **** = >250) **and preservation** (key: + = poor, ++ = moderate, +++ = good)

	Period	1			2						Unphased
	Sample Number	<4>	<5>	<6>	<1>	<3>	<7>	<8>	<9>	<10>	<2>
	Context Number	1077	1079	1081	1009	1063	1124	1124	1154	1188	1038
	Parent Context	1078	1080	1082	1010	1064	1125	1125	1155	1186	1039
	Feature Type	Cremation Pit	Cremation Pit	Cremation Pit	Pit	Ditch	Upper Fill of Pit	Lower Fill of Pit	Pit	Pit	Pit
	Flot Volume (ml)	10	35	5	35	160	25	20	15	45	25
	Flot Weight (g)	4	12	2	8	61	5	3	3	19	7
	Preservation		+	++	+/+++	+	++	++	++	++	+
Taxonomic Identification	**English Name**										
Crop Cereals											
Hordeum vulgare L.	Barley grain				1		2			3	
	Barley grain (hulled)									1	
Triticum/ Hordeum	Wheat/ Barley grain (hulled)									1	
Triticum sp. L.	Wheat grain						1				
	Wheat grain (rounded)						1				
Cerealia indet.	Indeterminate grain				2	1	2			7	1
	Indeterminate culm node				1						
	Indeterminate straw fragment				2				1		
Wild/ Weed Seeds											
Chenopodium album L.	Fat hen				23				11	11	
Atriplex sp.	Orache				6				5		
Stellaria sp. L.	Stitchwort				2				1		
Spergula arvensis L.	Corn spurrey								1		
Silene sp. L.	Campion				1						
POLYGONACEAE	Knotweed core								1		
Polygonum aviculare L.	Knotgrass								1		
Rumex sp.	Dock			2							
Rumex acetosella L.	Sheep's sorrel			1							
BRASSICACEAE	Cabbage family								1		
Potentilla erecta (L.) Raeusch.	Tormentil								2		
FABACEAE	Wild legume (large)		1								
	Wild legume (small)								7		

Trifolium-type	Clover-type				7				5		
Solanum sp. L.	Nightshade								1		
LAMIACEAE	Mint family								1		
Prunella vulgaris L.	Self-heal				2					1	
Mentha sp. L.	Mint				3				1		
Plantago major L.	Greater plantain				2				1		
Plantago lanceolata L.	Ribwort plantain				2				1		
Galium aparine L.	Cleaver									3	
Achillea ptarmica L.	Sneezewort				2						
Anthemis coltula L.	Stinking mayweed				6						
Juncus sp. L.	Rush				4				48		
Carex sp. L.	Sedge (trigonous)								1		
	Sedge (lenticular)				1						
	Sedge in urticle (trigonous)							1		2	
	Sedge in urticle (lenticular)				24						
Poaceae	Wild grass (large)								1		
	Wild grass (small)				11				23	4	
Festuca sp. L.	Fescue				1						
Alopecurus sp. L.	Foxtail				11				3		
Poa annua L.	Annual meadow-grass								1		
Avena sp. L.	Oat					1					
Wild indet.	Indeterminate wild				20		1		1	1	
	Charcoal >4mm	*	**		*	***					
	Charcoal 2-4mm	**	***	*	**	****	*		**	**	**
	Charcoal <2mm	***	****	**	***	****	**	*	***	***	***
	Modern Insects/ Worm Capsules		*	*	**					*	****
	Ceciloides	**	*	*				*		*	
	Burnt Bone			*	*						
	Hammerscale				*						*

4c: Preservation of charcoal (key: + = poor, ++ = moderate, +++ = good)

	Period	1	2	
	Sample Number	6	8	10
	Context	1081	1124	1188
	Parent Context	1082	1125	1186
	Context/ Deposit Type	Cremation Pit	Lower Fill of Pit	Pit
	Preservation	+	++	++
Taxonomic Identifications				
Quercus sp. L.	Oak	45 rw:1	27 fg: 14	34 fg: 2
Corylus avellana L.	Hazel		3 rw: 2	3 rw: 3
Populus/ Salix	Poplar/ Willow		1	1
Prunus spp. L.	Plum-type		7	2
cf. *Prunus* sp. L.	cf. Plum-type		1	
Maloideae	Apple sub-family		5	6
Acer campestre L.	Field maple		1	
Indet.	Indeterminate	5	5	4
	Vitrified	37	3	3
	Radial Cracks	30		8
	Post-depositional sediment	23	1	
	Distorted	14	6	4
	Knotwood	3		1

Appendix 5: HER Summary Form

Site name/Address: Land at Pippins Road, Burnham-on-Crouch CM0 8DH	
Parish: *Burnham-on-Crouch*	***District:*** *Maldon*
NGR: TQ 9538 9654	***Site Code:*** *BCMR17*
Type of Work: Excavation	***Site Director/Group:*** *Angus Forshaw, Archaeology South-East*
Date of Work: 20/11/17 to 18/12/17	***Size of Area Investigated:*** *1771sq m*
Location of Curating Museum: *Colchester*	***Funding source:*** *Client*
Further Seasons Anticipated?: *No*	***Related HER No:*** *-*
Final Report: *EAH article*	***OASIS No:*** *307029*
Periods Represented: *Late Bronze Age/earliest Iron Age, Middle Iron Age, Late Iron Age/Early Roman, Modern*	

SUMMARY OF FIELDWORK RESULTS:

Excavation was carried out in advance of residential development after trial-trench evaluation of the overall 5.57ha development area established the presence of Late Bronze Age/earliest Iron Age remains across the western and southern parts of the site.

Two adjacent excavation areas were investigated in the south of the site, targeting remains found by the preceding evaluation.

An irregular and interrupted ditched boundary of Late Bronze Age to Early Iron Age date extended east/west across both excavation areas. A parallel ditch to its south, crossing Area A only, is considered contemporary, though appears to have passed out of use several centuries before the northern boundary. A scatter of contemporary pits was present, mostly located to the north of the boundary. Amongst these, three unurned cremation burials were recorded, one of which has been radiocarbon dated to 1236–1051 cal BC. An unstratified socketed bronze axe head and associated two further fragments of copper alloy, found together in a modern agricultural drain, probably constitute at least part of a dispersed hoard of Late Bronze Age metalwork (c. 1000-80 BC). Two further Bronze Age metalwork hoards are known in the vicinity of the site and form part of a south-east Essex cluster in the wider distribution of such deposits.

Middle Iron Age land use was represented by a cluster of short curving ditches/gullies and pits/postholes found to the south of the earlier boundaries and an isolated pit elsewhere. The clustered remains may constitute a structure, but the group is probably best viewed as an activity area – potentially involving both crop processing and metalworking.

Apparently intrusive finds of Late Iron Age/Roman pottery encountered in Late Bronze Age/Early Iron Age boundary ditch and related pit features may include instances of deliberately deposited material inserted into the boundary remains.

Previous Summaries/Reports:

Quest. 2017, *Land rear of Pippins Road, Burnham-on-Crouch, Essex. Geoarchaeological Fieldwork Report,* unpubl. Quest (Reading University) project 105/17

ASE 2017, *Archaeological and Geoarchaeological Evaluation, Land at Pippins Road, Burnham-on-Crouch, Essex, CM0 8DH.* Unpubl. ASE Rep. 2017390

Author of Summary: *Mark Atkinson*	***Date of Summary:*** *31/07/2018*

Appendix 6: OASIS summary

OASIS ID: archaeol6-307029	
Project details	
Project name	Pippins Road, Burnham-on-Crouch
Short description of the project	Two adjacent excavation areas were investigated, targeting remains found by the preceding evaluation. An irregular and interrupted ditched boundary of Late Bronze Age to Early Iron Age date extended east/west across both excavation areas. A parallel ditch to its south, crossing Area A only, is considered contemporary, though appears to have passed out of use several centuries before the northern boundary. A scatter of contemporary pits and three unurned cremation burials were recorded, one of which has been radiocarbon dated to 1236-1051 cal BC. A socketed bronze axe head and associated two further fragments of copper alloy, found together in a modern agricultural drain, probably constitute at least part of a dispersed hoard of Late Bronze Age metalwork. Middle Iron Age land use was represented by a cluster of short curving ditches/gullies and pits/postholes found to the south of the earlier boundaries and an isolated pit elsewhere. Apparently intrusive finds of Late Iron Age/Roman pottery encountered in Late Bronze Age/Early Iron Age boundary ditch and related pit features may include instances of deliberately deposited material inserted into the boundary remains.
Project dates	Start: 20-11-2017 End: 18-12-2017
Previous/future work	Yes / No
Any associated project reference codes	170962 - Contracting Unit No. BCMR17 – Sitecode 17/00126/MAL - Planning Application No.
Type of project	Recording project
Site status	None
Current Land use	Cultivated Land 2 - Operations to a depth less than 0.25m
Monument type	DITCH Late Bronze Age PIT Late Bronze Age CREMATION BURIAL Late Bronze Age PIT Middle Iron Age GULLY Middle Iron Age
Significant Finds	POTTERY Late Bronze Age POTTERY Early Iron Age POTTERY Middle Iron Age POTTERY Late Iron Age POTTERY Roman PALSTAVE AXEHEAD Late Bronze Age FIRED CLAY Late Bronze Age GLASS BEAD Late Iron Age
Investigation type	"'Open-area excavation"'
Prompt	Planning condition
Project location	
Country	England
Site location	ESSEX MALDON BURNHAM ON CROUCH Pippins Road

Postcode	CM0 8DH
Study area	1771 Square metres
Site coordinates	TQ 9538 9654 51.633142571706 0.823529473568 51 37 59 N 000 49 24 E Point
Project creators	
Name of Organisation	Archaeology South-East
Project brief originator	Essex County Council Place Services
Project design originator	ASE/CgMs
Project director/manager	Andy Leonard
Project supervisor	Angus Forshaw
Type of sponsor/funding body	client
Project archives	
Physical Archive recipient	Colchester Museum
Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Human Bones","Industrial","Metal","Worked stone/lithics"
Digital Archive recipient	Colchester Museum
Digital Contents	"Animal Bones","Ceramics","Environmental","Glass","Human Bones","Industrial","Metal","Stratigraphic","Survey","Worked stone/lithics"
Digital Media available	"Images raster / digital photography","Spreadsheets","Text"
Paper Archive recipient	Colchester Museum
Paper Contents	"Animal Bones","Ceramics","Environmental","Glass","Human Bones","Metal","Stratigraphic","Worked stone/lithics"
Paper Media available	"Context sheet","Photograph","Plan","Report","Section"
Project bibliography	
Publication type	Grey literature (unpublished document/manuscript)
Title	Archaeological excavation. Land at Pippins Road, Burnham-on-Crouch, Essex. Final report.
Author(s)/Editor(s)	Forshaw, A.
Other bibliographic details	ASE rep. 2018250
Date	2018
Issuer or publisher	Archaeology South-East
Place of issue or publication	Witham
Description	A4, PDF format
Entered by	Mark Atkinson (mark.atkinson@ucl.ac.uk)
Entered on	1 August 2018

Appendix 7: Radiocarbon dating certificate

BetaCal 3.21

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): INTCAL13)

(Variables: d13C = -20.3 o/oo)

Laboratory number **Beta-496818**

Conventional radiocarbon age **2950 ± 30 BP**

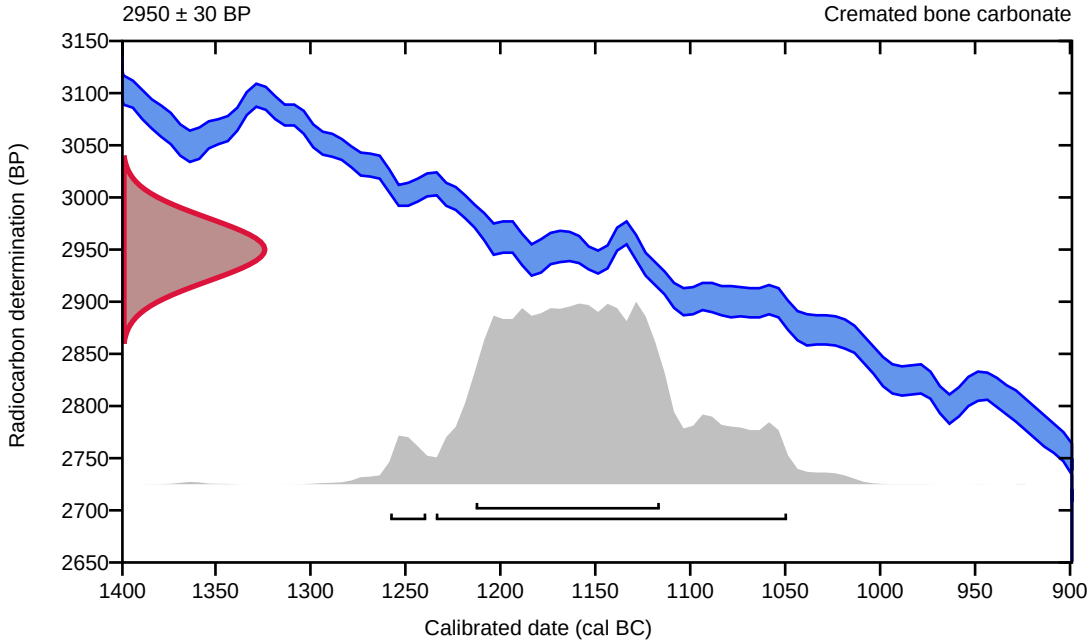
95.4% probability

(92.2%)	1236 - 1051 cal BC	(3185 - 3000 cal BP)
(3.2%)	1260 - 1241 cal BC	(3209 - 3190 cal BP)

68.2% probability

(68.2%)	1215 - 1118 cal BC	(3164 - 3067 cal BP)

BCMR17-1081



Database used

INTCAL13

References

References to Probability Method

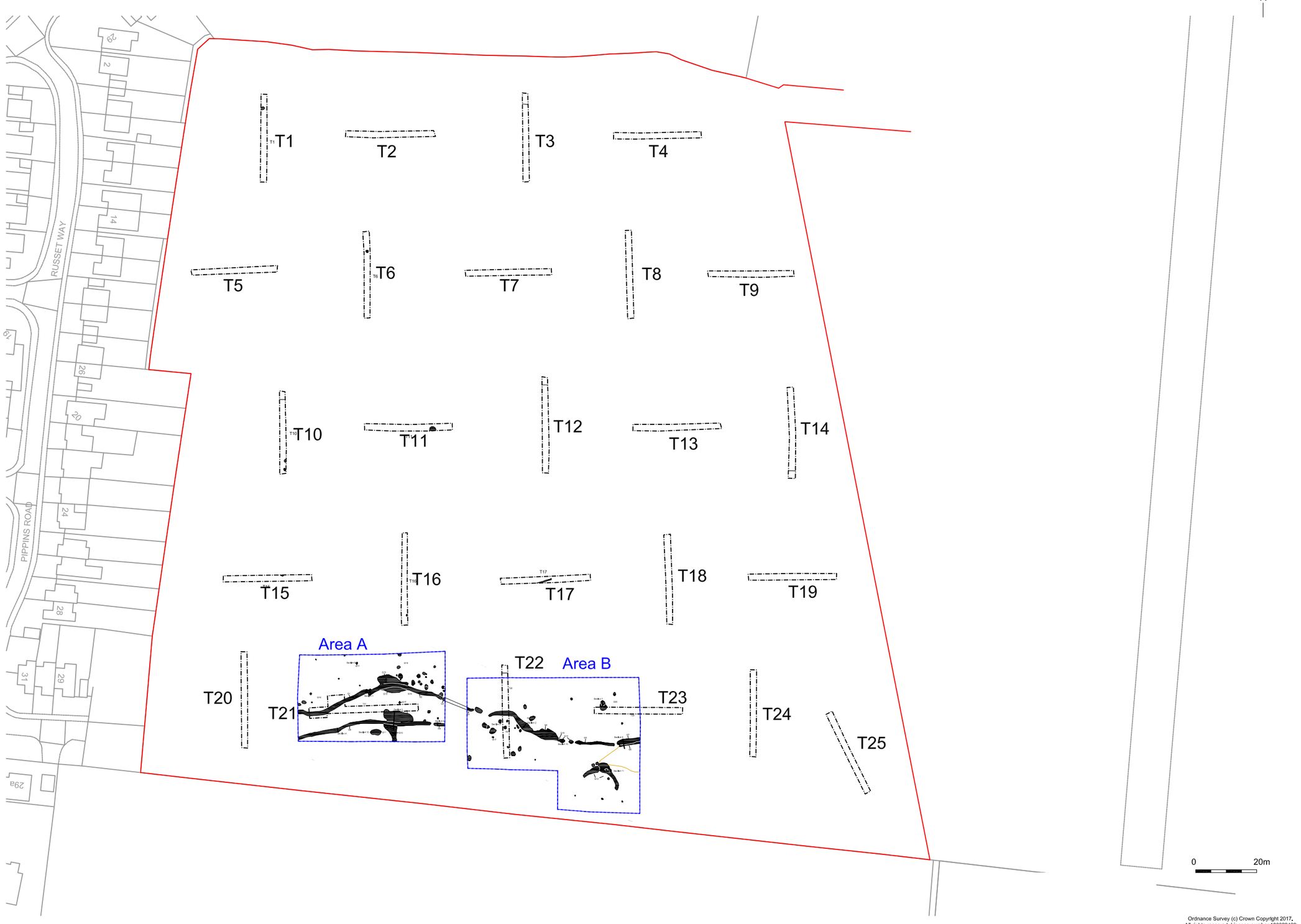
Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database INTCAL13

Reimer, et.al., 2013, Radiocarbon55(4).

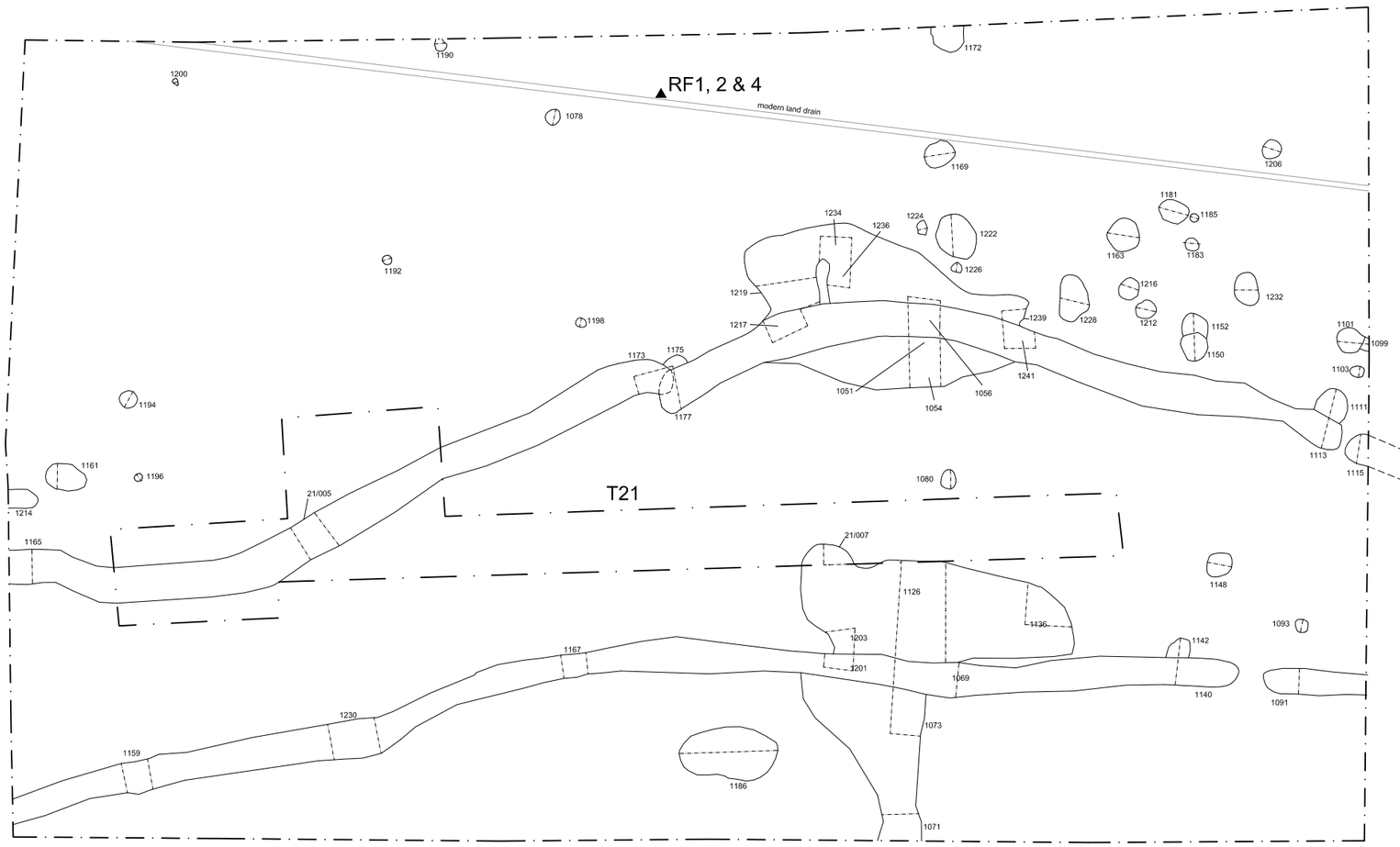
Beta Analytic Radiocarbon Dating Laboratory
4985 S.W. 74th Court, Miami, Florida 33155 • Tel: (305)667-5167 • Fax: (305)663-0964 • Email: beta@radiocarbon.com

© Archaeology South-East		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 1
Project Ref: 170962	July 2018	Site location and selected HER references	
Report No: 2018250	Drawn by: APL		

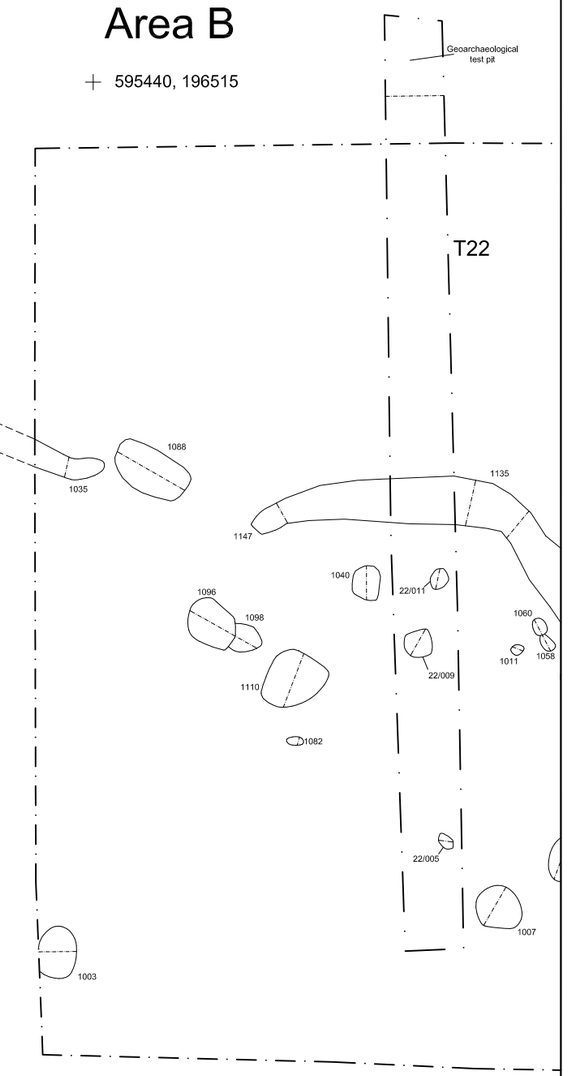


© Archaeology South-East		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 2
Project Ref: 170962	July 2018	Location of excavation areas	
Report Ref: 2018250	Drawn by: APL		

Area A



Area B



N

© **Archaeology South-East**		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 3
Project Ref: 170962	July 2018	Area A, plan of all features	
Report Ref: 2018250	Drawn by: APL		

Area B

595440, 196515

595490, 196515

595425, 196490

Geoarchaeological test pit

T22

T23

G18

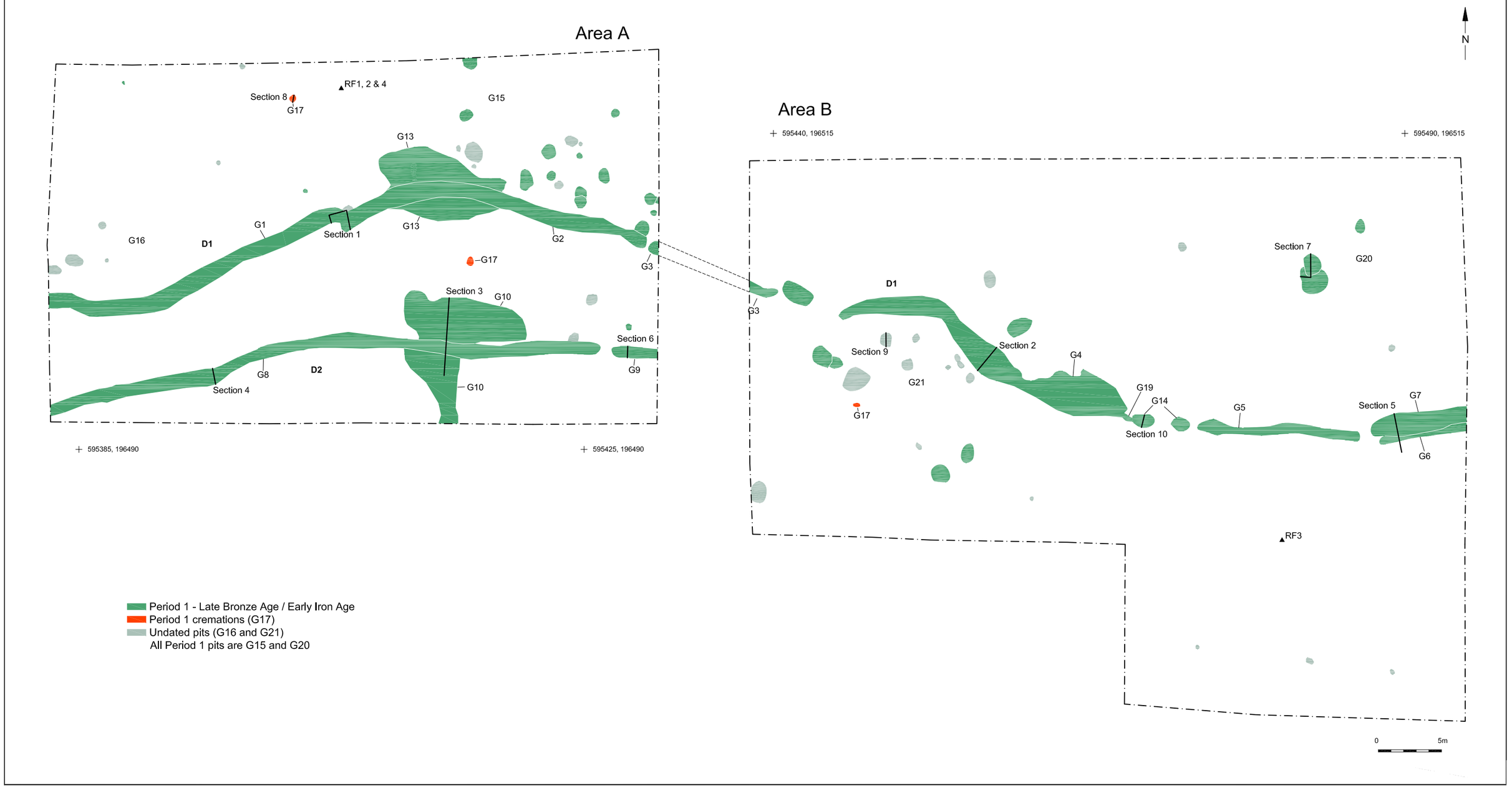
RF3

N

0 5m

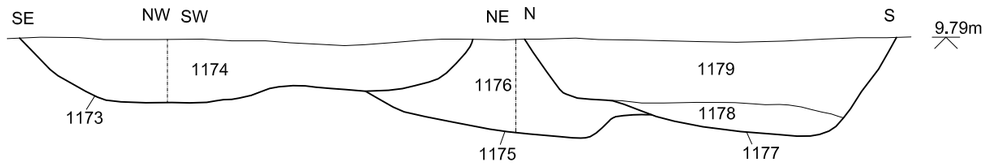
1206
1181
1185
1183
1216
1212
1232
1152
1150
1101
1099
1103
1111
1113
1115
1148
1093
1142
1140
1091
1088
1035
1147
1135
1156
1090
1040
22/011
1096
1098
1110
1060
1011
1058
1210
1139
1208
1123
22/009
1086
1082
1106
1118
1034
1032
1024
1028
1026
1108
1014
1120
1121
1020
22/005
1029
1007
1003
1084
1047
1049
1045
1043
23/009
1039
1068
1066
1195
1010
1006
1022
1125
1076
1064
1145
1062
1133
1131
1129
modern land drain

© Archaeology South-East		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 4
Project Ref: 170962	July 2018	Area B, plan of all features	
Report Ref: 2018250	Drawn by: APL		



© Archaeology South-East		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 5
Project Ref: 170962	July 2018	Plan of Period 1 features	
Report Ref: 2018250	Drawn by: APL		

Section 1



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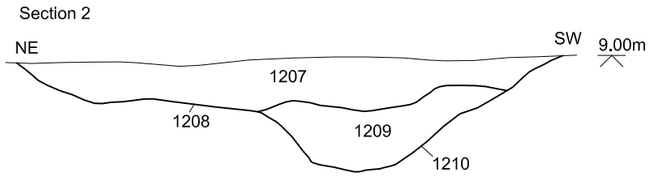

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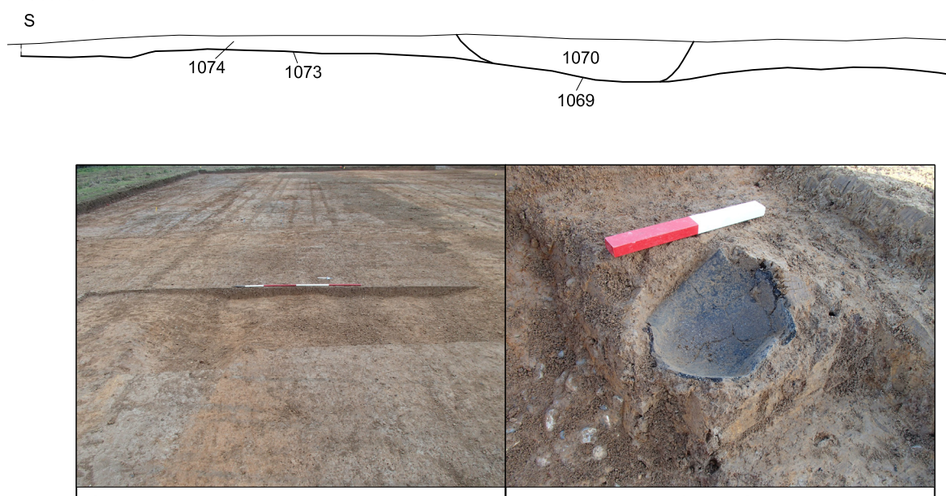

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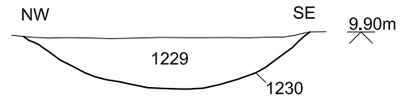
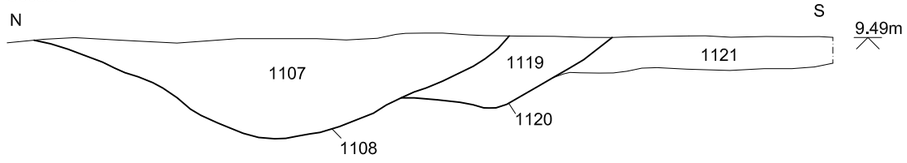


Section 3

In situ pottery vessel in fill 1070, Section 3

Section 5



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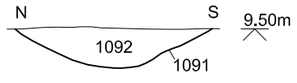

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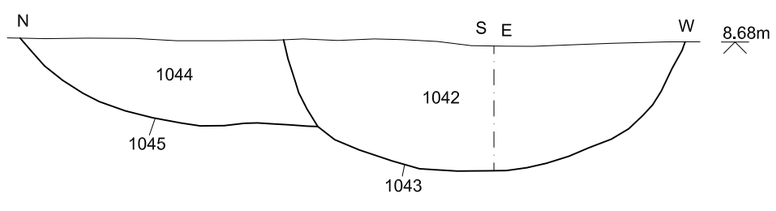
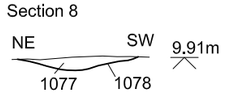


Section 8



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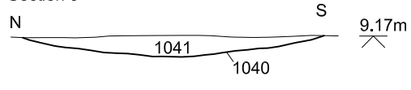
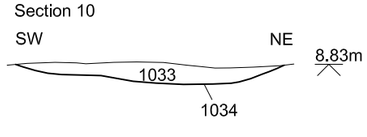


Section 10



0 0.5m

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Project Ref: 170962	July 2018	Sections 1 - 10	
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Area A

Area B

N

595440, 196515

595490, 196515

595425, 196490

G16

G21

Section 12

G11

Section 11

G12

Section 11

W E 8.59m

1009

1021 1010

1022

Section 12

W E

1188

1187

1186

0 0.5m

Period 2 - Middle Iron Age

Undated pits (G16 and G21)

0 5m

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Land at Pippins Road, Burnham-on-Crouch, Essex

Plan of Period 2 features and Sections 11 - 12

Fig. 7

Pit 1093, G15, Period 1

Ditch 1113, G2 (left) and Pit 1111, G15 (right), Period 1

Pits 1150 and 1152, G15, Period 1

Ditch 1135, G4, Period 1

Ditch 1028, G5, Period 1

General site view

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Project Ref: 170962	July 2018	Selected site photographs	
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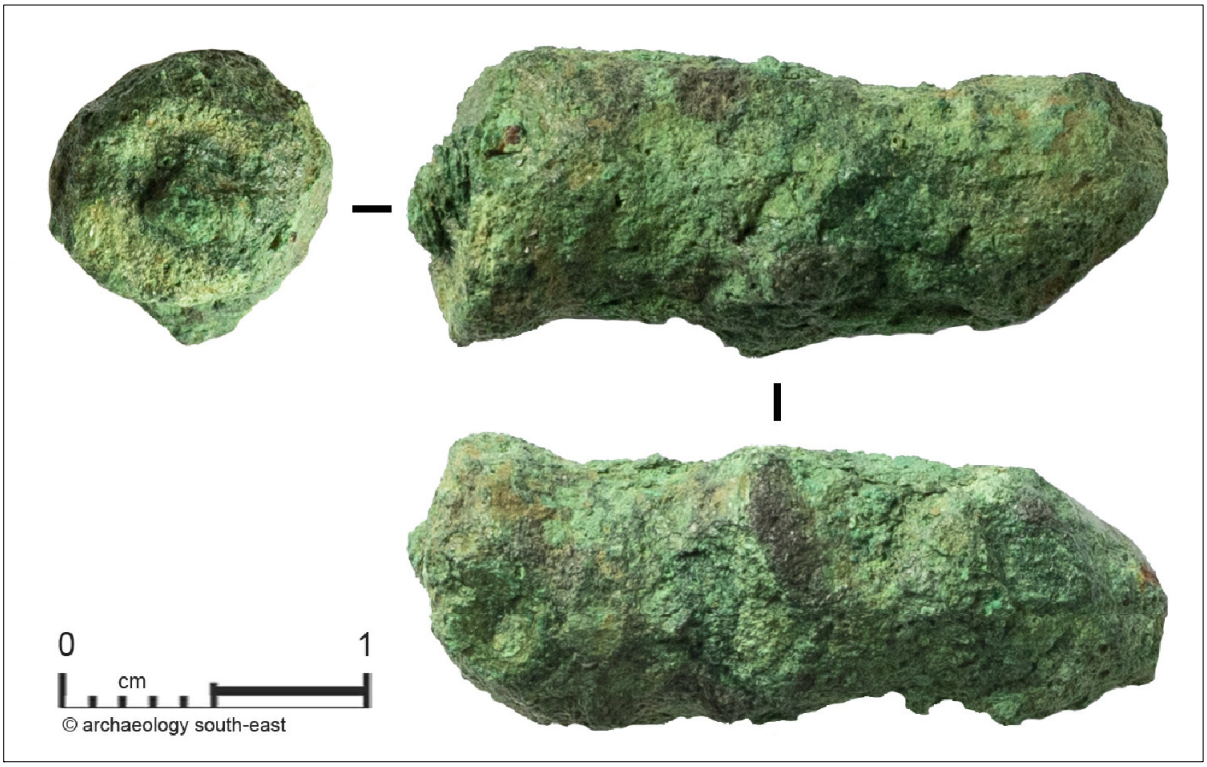
© Archaeology South-East		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 9
Project Ref: 170962	July 2018	Photographs of RF<1>	
Report Ref: 2018250	Drawn by: APL		



© **Archaeology South-East**		Land at Pippins Road, Burnham-on-Crouch, Essex	Fig. 10
Project Ref: 170962	July 2018	Photographs of RF<2>	
Report Ref: 2018250	Drawn by: APL		

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