Excavation Report

Neolithic, Bronze Age and Modern Activity at Bata Fields East Tilbury Essex

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May 2016

Client: CgMs Consultings on behalf of Persimmon Homes

OA East Report No: 1707
OASIS No: oxfordar3-191718
NGR: 567711 178553

Neolithic, Bronze Age and Modern Activity at Bata Fields, East Tilbury, Essex

Archaeological Excavation

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Report Date: May 2016

Report Number:	1707
Site Name:	Bata Fields, East Tilbury, Essex
HER Event No:	-
Date of Works:	7 October to 14 November 2014 and 6 May to 25 June 2015
Client Name:	CgMs Consulting on behalf of Persimmon Homes
Client Ref:	12567
Planning Ref:	-
Grid Ref:	TQ 676 786
Site Code:	THBA14
Finance Code:	XEXBAT14
Receiving Body:	Thurrock Museum
OASIS No:	oxfordar3-191718
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Position:	Project Officer
Date:	March 2016. Updated May 2016
Checked by:	Aileen Connor
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Date:	May 2016
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Summary

From October to November 2014 and from April to June 2015, Oxford Archaeology East carried out two archaeological excavations on land off Bata Avenue, East Tilbury, Essex (NGR 567711 178553) ahead of the construction of a new housing development along with associated roadways, open green spaces and sub-surface drainage infrastructure.

The works (totalling 2.92ha) identified archaeological remains ranging in date from the Late Neolithic through to the Late Bronze Age along with modern agricultural activity. The finds assemblage was dominated by pottery dating from the Middle Bronze Age, the majority of which was found in a large north-south to west-east aligned ditch on the western side of the site. Lesser amounts of Late Neolithic, Early and Late Bronze Age were also collected. High quality struck flint (which was particularly prevalent across the eastern side of the site), quantities of baked clay and baked clay objects were also present. Environmental remains were generally poor, with the small quantities recovered likely to be the result of accidental scatter rather than deliberate deposition. These environmental assemblages were almost exclusively collected from pits and postholes, with the majority of the ditches being sterile.

The earliest feature on (the eastern side of) the site was a Late Neolithic/Early Bronze Age double enclosure measuring approximately 11m by 15m. This consisted of an annular ditch with a contemporary sub-rectangular ditch extending westward from it, with a small possible entrance way to the south. A single cremation was recovered from the centre of the sub-rectangular enclosure but with no associated dating evidence the cremation was subject to radiocarbon dating, returning a result of 1741-1535 cal. BC.

Situated in the eastern centre of the site was a small annular ditch (with an internal measurement of just 3.5m). This 'mini barrow' dates to the Middle Bronze Age and contained a small assemblage of pottery and struck flint. Two further highly truncated possible barrows were identified to the east and south-west. No datable material was recovered from these. No internal features were identified within the barrows.

A total of eight linear gullies on two separate alignments were seen to be running toward and terminating at the barrow. These sets of parallel gullies could potentially be droveways of Middle Bronze Age date. Each set of gullies formed a routeway between 2m and 5m in width.

Small pits (some containing Middle Bronze Age pottery and worked flint) were found scattered across the excavation area with some clustering, particularly in the north-west area of the site to the north of a very large ditch. The ditch, which measured up to 3.5m wide and 1.6m deep, contained a layer of dark soil rich in burnt flint and a mix of Late Deverel-Rimbury and early Post Deverel-Rimbury pottery. The pottery-rich fill is reminiscent of a midden which may have been located on its northern edge.

Across the north-western side of site was a Middle Bronze Age coaxial field system, aligned north-east to south-west, with smaller internal divisions seen extending at right angles from it.

Two sides of a Middle Bronze Age enclosure were found on the eastern side of the site, with a staggered entranceway on its south-west side. Within this enclosure were approximately 30 postholes forming a number of structures. Also seen within this enclosure was a large area of compacted ground containing Middle Bronze Age pottery, loomweight fragments and struck flint. This has been interpreted as a potential work area. Another similar (yet smaller) area was seen across the centre of the western side of the site.

Located at the southernmost end of site, close to one of the droveways was a single pit containing a large quantity of cremated bone and Late Bronze Age pottery. Another cremation was found on the western side of the site, but did not contain any pottery. Two complete urns and the truncated base of a third were also identified on the north-western side of the site. However, these were devoid of cremated remains.

Across the entire site was a series of modern field boundaries, which was positioned on the same alignment as the Middle Bronze Age field system. These ditches correspond with field boundaries on the 1873 and 1938 Ordnance Survey Maps.

Overall, the archaeological excavations at Bata Fields have identified features relating to a prehistoric settlement, funerary and monumental landscape with activity spanning the Early Neolithic through to the Late Bronze Age.

1 INTRODUCTION

1.1 Location and scope of work

1.1.1 An open-area archaeological excavation was conducted at land off Bata Avenue, East Tilbury, Essex (Fig. 1). The site was excavated in two areas (A and B).

1.1.2 The archaeological works were undertaken in accordance with a Written Scheme of Investigation issued by CgMs Consulting (Gailey 2011a) and supplemented by a Specification (Gailey 2011b).

1.1.3 The work was designed to assist in defining the character and extent of any archaeological remains within the proposed redevelopment area, in accordance with the guidelines set out in *National Planning Policy Framework* (Department for Communities and Local Government March 2012).

1.1.4 The site archive is currently held by OA East and will be deposited with the appropriate county stores in due course.

1.2 Geology and topography

1.2.1 The British Geological Survey (BGS 2014) records the geology of the site to consist of a bedrock geology of Thanet Formation sand, with superficial deposits of the Taplow Gravel Formation sand and gravel.

1.2.2 The stripped area also revealed a large area of grey silt, located at the lowest point of the site (predominantly across Area A). This is potentially the remnants of a palaeochannel or old riverbed.

1.2.3 The site lies on a very gentle south-east facing slope. Its highest point sits at 6.9m OD (to the north-west), gradually falling away to around 4.7m OD across the central and eastern portion of the site. This is followed by a sharp drop (in the area of the palaeochannel) down to 3.9m OD, across a distance of just 10m. By the southernmost limit of the site, levels rise back up to 4.3m OD.

1.3 Archaeological and historical background

Prehistoric

1.3.1 Superficial geologies of terrace gravels have resulted in a number of Palaeolithic and Mesolithic findspots across the area. For example, a group of Acheulian hand axes of probable Palaeolithic origin have been found at Chadwell St Mary (*c.*2.6km west of site, EHER 1729), in Gun Hill gravel pit (*c.*2km south-west, EHER 1786) and close to the church in East Tilbury itself (EHER 1744). Mesolithic finds, also from Gun Hill gravel pit, consist of flint flakes, a leaf-shaped arrowhead and scrapers (EHER 1786). Further to this, a Mesolithic tranchet axe has been recorded at the Orsett causewayed enclosure (*c.*3km north-west of site, EHER 8932).

1.3.2 Neolithic finds from the area are seen in the form of a small flint chipped axe or chisel dredged from the Thames off East Tilbury (EHER 1671),along with two flint axeheads found on land 1.6km north-west of site (EHER 1768).

1.3.3 Early Bronze Age settlement evidence is relatively rare in the area. Middle Bronze Age activity at Mucking (*c.*1.7km to the north) comprised of a series of rectangular field systems, which were later superseded by a single massive double ditched enclosure in the Late Bronze Age which has been termed a 'mini hillfort'. Contemporary with the appearance of the enclosure is the development of large-scale field systems.

1.3.4 Evidence for funerary activities across this landscape can be seen at Mucking where eight Middle Bronze Age barrows were excavated along with associated burials and cremations. In the immediate vicinity of the site (0.3km north-west) are the remains of three barrows, one of which is double ditched (EHER 1747, 1748 and 1749). The double ditched barrow can clearly be seen on Google Earth (see image dated 7/9/2013). Investigation in 1959 by the Thurrock Historical Society of one of the barrows identified a central cairn, inside which was an inverted urn containing calcined bone, which was sat upon a quern stone. During archaeological works to the immediate west of these barrows, a possible cremation cemetery was uncovered (EHER 14985), ahead of the laying of a gas pipe in the early 1990's between Horndon and Coalhouse Fort. A total of four urned and two unurned cremations were identified, one of which was recorded as being positioned in a pit lined with flint nodules which bore close similarities to the cairn at the centre of the double ring ditch.

1.3.5 Recently completed excavations at Mill House Farm, Chadwell St Mary (*c.*1.7km west) have uncovered a dense and complex site consisting almost entirely of Late Bronze Age activity encompassing enclosures, ring-ditches, cremations, possible smelting and a vast number of pits. An assemblage of in excess of 8000 sherds of pottery has been recovered, predominantly coming from pits (Andy Peachey pers. comm.).

1.3.6 Significant levels Iron Age remains have been recorded in the vicinity of the site. Large quantities of Late Iron Age and Roman pottery, along with salt making briquetage were collected during gravel quarrying close to Coalhouse Fort (EHER 9006). An assemblage of Iron Age pottery has also been found just to the east of Coalhouse Fort (EHER 1687).

1.3.7 Further to this, part of a sub-rectangular enclosure with associated pits containing Iron Age pottery and animal bone has been identified off Love Lane, 1km south of the site (EHER 1738). Investigations at Mucking have also identified a settlement containing approximately 110 roundhouses and a large ditch containing substantial quantities of Iron Age pottery. Significant Iron Age settlement remains have also been uncovered at Orsett Cock, 3.6km north-west of the site (EHER 1857).

Roman

1.3.8 High levels of Roman remains have been uncovered to the south of site, around the area of Coalhouse Fort. These include a number of findspots of Roman pottery, tesserae, coins and human remains (*e.g.* EHER 1688, 1689, 1690, 1751, 1762 and 9004). Further to this, the Thames floodplain is known to contain a large number of redhill salt-making sites. Two such sites are located in the East Tilbury marshes, 1.8km south of the subject site (EHER 48575).

Anglo-Saxon

1.3.9 Excavations at Mucking have identified a significant Anglo-Saxon settlement comprising 53 posthole buildings, 203 SFBs and two cemeteries containing approximately 800 cremations and inhumations. An Anglo-Saxon settlement has also been identified at Gun Hill. The only other known Anglo-Saxon evidence in the area is a collection of sceatta coins (EHER 9001) found by metal detectorists on land opposite the church.

Medieval

1.3.10 During the medieval period, reclamation of the marches gained momentum. Sea walls were constructed to protect land from flooding and documentary evidence records the repair of the sea walls and embankments between Barking and East Tilbury in 1328 and 1353 (Pocock & Simmonds 2005, 3). St Katherine's Church situated at the

southern end of the settlement, dates from the early 12th century and is Grade I Listed (EHER 35317).

Post-medieval and modern

1.3.11 The most notable post-medieval features in the vicinity of the site all relate to East Tilbury's military history. Coalhouse Fort (a scheduled monument, SMR 1756) was first constructed by Henry VIII in 1539/1540. It was subsequently largely rebuilt in 1799, again in 1847-1855 and 1861-1874. Quick-fire guns and a rifle range were added in the 19th century and finally a low level radar tower was installed during the Second World War. The nearby East Tilbury Battery (also scheduled, SMR 1823) was built in 1889 to support Coalhouse Fort with long range fire. A second Wing Battery was built to the south of the Fort between 1889 and 1893. There are also records of many Second World War anti-aircraft positions in and around this area, including a scheduled battery at Bowaters Farm (1.3km south of site, SMR 9082).

1.3.12 In 1852 the construction of the railway line running from Fenchurch Street to Southend-on-Sea via Barking and Tilbury was begun (LBBD n.d., 1). The track reached Tilbury by 1854 and Southend-on-Sea in 1856. A station was opened at Low Street (1.6km south-west of East Tilbury) in 1861. This was followed by a station at East Tilbury itself in 1936, to facilitate the Bata Shoe factory (see below). The Low Street station was closed in 1967.

1.3.13 In 1933 the British Bata Shoe Company Ltd. was established in East Tilbury (Smith 2007, 15). This resulted in the northern end of the village increasingly being taken over by settlement associated with the factory. The first houses were built from 1933-1935 on Bata Avenue, which forms the southern limit of the site (Smith 2007, 36, fig. 51). These houses were designed by Czechoslovakian architects Gahura and Karfik in the International Modern Movement Style, *i.e.* with flat roofs (Smith 2007, 36). Housing for the factory continued to be built right up to 1963. These 352 houses are located to the immediate east of site and make up a 'garden village' setting. The Bata factory and associated settlement are now considered to be a conservation area.

1.3.14 By the 1950s over 3000 people worked at the factory in East Tilbury. By the 1960s manufacturing began to relocate overseas. The Bata housing estate was sold in 1980 followed by the closure of the factory in 1997 (Smith 2007, 16).

Evaluation and geophysical survey

1.3.15 In 2004 a 0.97ha geophysical survey was undertaken across the central portion of the development site (GSB 2004), the results of which identified part of a large ditch type anomaly of archaeological origin along with a field boundary of likely post-medieval date.

1.3.16 During 2005, a 292 trench evaluation was carried out across land at East Tilbury and Linford (Pocock & Simmonds 2005). The evaluation covered a much larger area than the development site in question. The trenches excavated within the present development consisted of Trenches 367 to 422.

1.3.17 A Late Bronze Age settlement surrounded by a substantial enclosure ditch was identified in the north-western portion of the site. The smaller ditches and pits uncovered in the trenches surrounding this enclosure were identified as potentially being the remains of fields and paddocks associated with the settlement.

1.3.18 In 2010 a further geophysical survey (5.28ha in size) was undertaken to extend on that of the 2004 survey results (GSB 2010). Two sides of a rectilinear ditch type anomaly were recorded in the north-western area of the development site (which corresponded

with the large ditch found during the evaluation works). No other definitive archaeological anomalies were identified anywhere else on the site. A few isolated short linear responses and weak trends were tentatively highlighted as possible archaeology, but this was based more on their proximity to known excavated features (from the evaluation) than on the form and pattern of the geophysical responses themselves. Based on the results, the survey was not extended to cover the entire development site.

1.4 Acknowledgements

1.4.1 The author would like to extend thanks to Suzanne Gailey of CgMs Consulting for commissioning the archaeological works. Fieldwork was carried out by the author with the assistance of Lukas Barnes, Alex Cameron, Jack Eason, Lindsey Kemp, Toby Knight, Diogo Silva and Adam Tuffey.

1.4.2 Machine excavation of Area A was undertaken by Danbury Plant Hire and of Area B by Anthill Plant Hire. Thanks also go to Richard Havis of the Essex County Council Historic Environment Team (ECC HET) for monitoring the works. The project was managed by Aileen Connor. The various finds processors and specialists, along with the illustrator and editor, are also thanked for their contributions.

2 Aims and Methodology

2.1 Aims

2.1.1 The original aims of the project were set out in the Specification and Written Scheme of Investigation (Gailey 2011a, 2011b), subsequently being further defined in the Project Design (Bush 2014).

2.1.2 The main aims of this excavation were to:

- Ascertain the character, quality and degree of survival of archaeological remains on the site and ensure that the features impacted by the development will be preserved by record prior to the redevelopment of the site.
- Define the extent, character and chronology of the Bronze Age settlement activity and its relationship with the surrounding prehistoric landscape.
- Clarify spacial and chronological changes in prehistoric activities on the site.
- Establish the character of archaeological remains and place these within the context of the landscape, settlement and activity patterns in the area.

2.2 Research Aims and Objectives

2.2.1 The aims and objectives of the excavation were developed with reference to the *Archaeological Research Framework for the Greater Thames Estuary* (Williams & Brown 1999) and *Research and Archaeology Revisited: a revised framework for the East of England* (Medleycott 2011).

2.2.2 Pertinent research aims include:

- The relationship between Neolithic and Bronze Age funerary landscapes.
- Typological identification of Later Bronze Age pottery. The variation in occurrence and abundance of 'fine wares' versus 'coarse wares'.
- Study of the development, frequency and significance of flint-working in the Bronze Age, together with the identification of particular trends and characteristics.

2.3 Methodology

2.3.1 The methodology used followed that which was outlined in the Specification and detailed in the Written Scheme of Investigation.

2.3.2 On Area A, due to conditions being extremely wet with saturated overburden, the topsoil was stripped using two 360º type excavators, as the ground was too unstable for the use of a moxy dump truck. The subsoil was stripped using a single 20 tonne 360º type excavator using a 2m wide flat bladed ditching bucket. Subsoil heaps were constructed on the site itself in areas devoid of archaeological remains. On Area B, the entire site was stripped using two 360º type excavators equipped with 2m wide flat bladed ditching buckets. All spoil was double handed across the area to create bunds to the north and south.

2.3.3 All machining was carried out under constant supervision by a suitably qualified and experienced archaeologist. All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales. Digital and monochrome photographs were taken of all relevant features and deposits.

2.3.4 A total of 113 environmental samples were collected from 96 different contexts (equating to 1,340 litres of soil) in order to assess the possible survival of micro- and macro- botanical remains.

3 RESULTS

3.1 Introduction

3.1.1 The archaeological works at Bata Fields, East Tilbury have revealed evidence of Early Neolithic through to Late Bronze Age occupation on the site along with modern agricultural activity (Fig. 2).

3.1.2 The development area (totalling 13.7ha) was subject to two open-area excavations and an area of archaeological monitoring. Area A was 1.28ha in size and located across the eastern portion of the development area, whilst Area B measured 1.64ha in size and was situated in the north-western part of the development area. The two excavation areas were situated on either side of a set of overhead power lines. The area of archaeological monitoring was located across the southern extent of the development. Further to this, a total of nine evaluation trenches were dug between the two excavation areas and to the east and south of Area A to check for the extent of certain features.

3.1.3 Topsoil (01) across the site consisted of a dark brown grey sandy silt, *c.*0.2m in thickness, containing low levels of post-medieval and modern debris. Subsoil (02) consisted of a mid brown orange silty sand, up to *c.*0.3m in thickness, containing low levels of post-medieval and modern debris along with 103 sherds (383g) of Middle to Later Bronze Age pottery, 17 sherds (53g) of Early Roman pottery, two fragments (91g) of briquetage, one fragment (6g) of baked clay and 40 struck flints (which included 10 blades and two scrapers). The high number of archaeological finds within the subsoil would imply that the site has been subject to a degree of truncation.

3.1.4 The results of the archaeological works are presented below by period, with site divisions (Areas) only acting as a guide to location. Spot dates have been applied to the results and the features have been assigned phasing. Unless otherwise stated, the features did not contain any datable finds.

3.1.5 The periods are as follows:

Natural Landscape

Undated

Period 1: Late Neolithic/Early Bronze Age (*c.*3000-1600 BC)

Period 2.1: Middle Bronze Age (*c.*1600-1200 BC)

Period 2.2: Middle Bronze Age (*c.*1600-1200 BC)

Period 2.3: Middle Bronze age (*c.*1600-1200 BC)

Period 3: Late Bronze Age (*c.*1200-800 BC)

Period 4: Modern (1700-present)

3.1.6 A large proportion of the archaeology across the site was dated to the Middle Bronze Age. Within this period three sub-phases have been identified through a combination of stratigraphic relationships and feature types.

3.1.7 A comprehensive list of context numbers and their associated phasing is available in Appendix 1.

3.2 Natural Landscape Deposits

3.2.1 Situated across the central and southern portion of the site was a number of natural deposits (Fig. 3). These deposits highlight the changing landscape in this area and may provide insight into why this area was inhabited. A series of finds ranging in date

from the Late Neolithic through to the post-medieval period were recovered from these natural features. None of the finds can be considered to be *in situ* as they were all heavily abraded.

Deposit 564, located on the western edge of the site, consisted of an area of mid brown sandy silt approximately 11m long and 6m wide from which an assemblage of Later Bronze Age (65g) and Iron Age (74g) pottery was recovered. A total of 37g of struck flint and 14g of lava quern were also collected. Middle Bronze Age pit **559** was cut through the top of this deposit.

Deposit 508, located across the central part of Area B consisted of an area of mid yellow orange clay silt approximately 22m long and 12m wide from which 25g of post-medieval pottery, 27g of CBM, 308g of Middle to Later Bronze Age pottery, 53g of struck flint and 67g of lava quern were recovered.

The largest deposit on the site was that of deposit 142 (165 and 704). It was located across the lowest lying portion of Area A, throughout Trench 7 and across the southernmost corner of Area B. It extended beyond the western limits of the site, but measured at least 50m by 115m and was up to 0.3m in thickness. The deposit was made up of a mid grey silt and is potentially the remnants of a palaeochannel. In all, 18 sherds (115g) of Late Neolithic and Middle to Later Bronze Age pottery, 15 fragments (344g) of undatable baked clay, six fragments (92g) of lava quern and 42 struck flints (including 12 blades), along with an assemblage of unworked burnt flint were all recovered from test pits dug through this deposit.

3.3 Undated

3.3.1 Scattered across the site were a small number of features which could not be phased due to their lack of finds and their disassociation with any of the other features on the site (Fig. 3).

Tree throws

3.3.2 A total of two tree throws located on the western side of the site were identified.

Tree throw **493** was truncated by Middle Bronze Age field system ditch **495**. It measured 1.14m long, 0.76m wide and was 0.4m deep with an irregular profile. It was filled with a mid grey brown silty clay (492).

Further west, another tree throw (**531**) was partially truncated by Middle Bronze Age field system ditch **407**. It was at least 0.3m wide and was 0.15m deep with a bowl shaped profile. It was filled with a light yellow grey sandy silt (530).

Gully

3.3.3 A single north-south aligned gully was seen to extend from the northern limit of excavation in Area B. It traversed the site for *c.*30m before turning westward and petering out.

Approximately 1.6m east of tree throw **539** was a gully (**489**, **491** and **555**). It varied in width from 0.34m to 0.42m and in depth from 0.07m to 0.11m. It was filled with a light grey brown clay sand (488, 490 and 554). It is notable that this narrow enclosure gully ran on a completely different alignment to other features on the site. Whilst no dating can confirm, it is possible that this feature is of an Iron Age date.

Pit and posthole

3.3.4 One pit and one posthole could not be assigned to a phased period.

Located at the northern end of Area A, posthole **04** had a diameter of 0.26m and was 0.03m deep with gently sloping sides and a flat base. It was filled with a dark orange grey sandy silt (03).

Pit **276** was 1.1m long, 0.76m wide and 0.1m deep with gently sloping sides and a flat base. It was filled with a mid brown grey sandy silt (275). This pit was cut into the top of natural deposit 142.

3.4 Period 1: Late Neolithic/Early Bronze Age

Monument

3.4.1 Located at the northern end of Area A was a 'monument' consisting of two sub-circular elements orientated north-northeast to south-southwest (Fig. 4, Plate 1). The overall dimensions of the feature were *c.*12.5m by 27m. The eastern element consisted of a sub-circular ditch with the internal dimensions of 7.5m by 8.5m. The western element was a sub-oval ditch with internal dimensions of 10.5m by 16m.

Ditch **10** (**12**, **18**, **20**, **46**, **59**, **60**, **699** and **703**) formed the main western loop of monument **51**, with an entrance part way across the southern arm. The ditch varied in width from 0.7m to 1.34m with a bowl shaped profile. The depth of the ditch varied from 0.12m to 0.4m. It was filled with a single mid grey brown sandy silt (09, 11, 17, 19, 45, 58, 61, 698 and 702) which contained three sherds (22g) of Later Neolithic/Early Bronze Age pottery, two fragments of baked clay (18g) and nine struck flint flakes.

Ditch **14** (**16**, **36** and **63**) formed the continuation of ditch **10**, with the terminus to the west. The ditch ran north-east to south-west and was slightly curvilinear in plan. It varied in width from 0.59m to 0.9m with steeply sloping sides and a concave base. It varied in depth from 0.14m to 0.2m and contained a single mid grey brown sandy silt (13, 15, 35 and 62) which contained a single sherd (1g) of Middle to Later Bronze Age pottery and one flint flake.

Ditch **22** (**23**, **25**, **28**, **30**, **32**, **34**, **38**, **39**, **42**, **44**, **47** and **49**) formed the eastern annular ditch of the monument. The ditch varied in width from 0.38m to 1.3m had steeply sloping sides and a concave base (Fig. 12, S.11 & S.16). It was filled with a single mid grey brown sandy silt (21, 24, 26, 27, 29, 31, 33, 37, 40, 41, 43 48 and 50) with charcoal inclusions which varied in depth from 0.18m to 0.36m. Finds collected from the fills consisted of one sherd (3g) of Late Neolithic/Early Bronze Age pottery, three sherds (1g) of Middle to Later Bronze Age pottery and a collection of seven struck flints. Environmental samples taken from this ditch produced only sparse charcoal.

3.4.2 Two features were identified within the western element, consisting of a single posthole and a pit or tree throw *c.*2m to the north-west. Whilst the posthole was undated and the pit contained Middle to Bronze Age pottery (one sherd, 3g), they are likely to have been contemporary with the monument and probably formed part of its internal structure and use.

Posthole **06** had a diameter of 0.3m and was 0.11m deep with a bowl shaped profile. It was filled with a mid brown sandy silt (05) with a moderate level of medium sized sub-rounded stones at the base.

Pit or tree throw **07** was situated just off centre within the monument. It was 1.74m long, 0.4m wide and 0.03m deep with irregular sides and base. The fill consisted of a mid orange grey sandy silt (08). Clustered within the fill of this feature was an area of slightly darker fill which contained 121.2g of cremated human bone (see Appendix C.1), a single sherd (3g) of Middle to Later Bronze Age pottery and one flint flake. A radiocarbon sample of the cremated bone produced a date of 1741-1535 cal. BC (95.4% probability, SUERC-58006, see Appendix D).

Pits

3.4.3 Situated at the central and southern end of Area A were two pits (Fig. 4).

Pit **227** had a diameter of 0.9m and was 0.21m deep with gently sloping sides and a flat base. It was filled with a single mid grey brown sandy silt (226) which contained six

sherds (24g) of Early Bronze Age pottery and a small assemblage of struck flint consisting of two blades, six flakes and a chunk.

Pit **231** was located 2.3m to the north of pit **227**. Pit **231** was 1.09m long, 0.88m wide, 0.15m deep and contained three fills (Fig. 12, S.92). The basal fill (230) was made up of a 0.05m thick mid yellow brown sandy silt and contained struck flint. Above this, fill 229 was a 0.07m thick dark grey brown sandy silt with frequent charcoal inclusions. Struck and burnt flint was collected from this fill. The latest fill (228) consisted of a 0.13m thick mid grey brown sandy silt which contained an assemblage of 26 struck flints, consisting of six blades, fifteen flakes, two chunks and three scrapers (Fig. 13). Alongside this, sixteen sherds (117g) of Later Neolithic pottery and five sherds (16g) of likely intrusive Middle to Later Bronze Age pottery was also collected.

3.5 Period 2.1: Middle Bronze Age

3.5.1 The archaeology making up this initial phase of the Middle Bronze Age consists of a substantial enclosure ditch with associated smaller parallel ditches and a series of funerary monuments, pits and droveways (Fig. 5).

Barrows

3.5.2 Situated toward the southern end of Area A was a group of three probable barrows. These had clearly been truncated since no mounds or internal features survived.

Barrow 1

3.5.3 The most substantial of the three was **240** (Plates 2 & 3), which consisted of an annular ditch measuring 0.72m to 0.94m in width and between 0.3m and 0.42m in depth. The feature had an internal diameter of 3.5m. A total of seven slots were excavated through the ditch (**242**, **244**, **246**, **248**, **264**, **266** and **268**).

The ditch profile formed a bowl shape with steeply sloping sides and a concave base. Each slot contained two fills, except for two slots (**244** and **246**) on its western side which contained three fills (Fig. 12, S.100 & S.130).

Basal fill 268 (370-375) consisted of a mid brown orange sandy silt measuring from 0.07m to 0.18m in thickness. Above this was fill 245 (369) which was only seen on the western side of the ditch. It was made up of a light grey sandy silt, 0.06m to 0.11m in thickness which contained three struck flint flakes. The latest fill (241, 243, 247, 263, 265, 267) consisted of a mid grey brown sandy silt measuring between 0.12m and 0.36m in thickness. A total of 51 sherds (524g) of Middle Bronze Age pottery and 21 struck flints (including four blades and two cores) were collected from this fill along with two fragments (56g) of baked clay. A darker dump of sandy silt (355), measuring 0.03m to 0.11m in thickness was also seen on the western side of the ditch.

A total of eight bulk environmental soil samples were taken from the ditch, however they were devoid of plant remains and only contained sparse charcoal.

Barrow 2

3.5.4 Barrow **155** was located *c*.33m south-west of Barrow 1. It had an internal diameter of 5.2m. A total of seven slots were excavated through the gully (**274**, **278**, **280**, **282**, **284**, **286** and **288**). The ring gully had been completely truncated away on its northernmost edge.

The gully had gently sloping sides and a concave base. It varied in width from 0.26m to 0.42m and in depth from 0.04m to 0.1m. The single fill (156, 277, 279, 281, 283, 285 and 287) consisted of a light grey brown sandy silt and contained two struck flint flakes and a flint blade. Environmental samples taken from the ring gully produced only very sparse charcoal.

Barrow 3

3.5.5 A further possible barrow (**293**) way 25m east of Barrow 1. The feature had an internal diameter of 7.8m. As with barrow 2, the gully was incomplete on its southern side, but was not believed to have formal terminals (Plate 4). A total of eleven slots were dug through the gully (**320**, **322**, **324**, **326**, **328**, **330**, **332**, **334**, **336**, **338** and **340**).

> The gully had gently sloping sides and a concave base. It varied in width from 0.33m to 0.6m and in depth from 0.06m to 0.18m. It was filled with a light orange grey sandy silt (319, 321, 323, 325, 327, 329, 331, 333, 335 and 337) which contained a struck flint flake, two flint cores and four flint blades. Environmental samples taken from the ring gully produced only very sparse charcoal.

Droveways

3.5.6 In the area immediately surrounding the barrows was a series of ditches and gullies. These features appeared to form a collection of droveways which approached and 'funnelled' toward the barrows.

Droveway 1

3.5.7 The westernmost pair of gullies (**146** and **150**) were located approximately 2.5m north of Barrow 2. Aligned east-west, they extended for *c.*30m across the site. They were both slightly curvilinear in plan, with a gap 3.5m wide between the two gullies at their western end, which narrowed to 2m as it continued eastward. It is notable that this droveway follows the edge of alluvial deposit 142.

> Gully **146** (**148**) ran broadly east to west. It was 0.15m to 0.43m wide and 0.08m to 0.19m deep with a U-shaped profile. It was filled with a mid orange grey sandy silt (145 and 147) which contained three struck flints.
>
> Parallel gully **150** (**152**, **157** and **167**) was slightly curvilinear in plan. It was 0.19m to 0.55m wide and 0.09m to 0.14m deep with a U-shaped profile. It was filled with a light orange grey silty sand (149, 151, 158 and 166).

Droveway 2

3.5.8 Apparently 'closing off' the above gullies was a set of three north-northwest to south-southeast aligned gullies (**217**, **169** and **172**). The most westerly of the three (**217**) was notably shorter and thus may have formed part of a different droveway which was no longer present.

> Gully **217** (**219** and **221**) was situated *c.*3.8m to the west of, and ran parallel with gully **169**. Gully **217** was 0.24m to 0.31m wide and 0.06m to 0.12m deep with a bowl shaped profile. It was filled with a light grey brown sandy silt (216, 218 and 220) which contained 12 sherds (138g) of Middle Bronze Age pottery and struck flint.
>
> Gully **169** (**171**, **209**, **211** and **213**) was orientated north-northwest to south-southeast (Plate 5). It measured between 0.24m to 0.41m in width and was 0.07m to 0.11m deep with a U-shaped profile. It was filled with a light brown grey silty sand (168, 170, 208, 210 and 212) which contained 36 sherds (338g) of Middle Bronze Age pottery, four struck flint flakes and two flint blades. An environmental samples taken from fill 210 produced a single charred cereal grain.
>
> Situated around 1.6m to the east and running parallel to the other features was gully **172** (**203**, **205** and **207**). The gully was between 0.24m and 0.35m wide and measured 0.1m to 0.14m in depth with a U-shaped profile. It was filled with a light brown grey sandy silt (173, 202, 204 and 206) and contained a struck flint flake and two cores.

Droveway 3

3.5.9 Approximately 3m to the east of Droveway 2 was ditch **197** which extended from the southern limit of excavation, the ditch was orientated north-northwest (parallel with Droveway 2). It terminated in broadly the same location as the above droveway gullies, providing a 3m wide entranceway before starting again and continuing across the site in a northerly direction before gently turning westward. It is notable that the route of the northern branch of this droveway follows the edge of alluvial deposit 142.

> Ditch **197** (**199**, **201**, **225**, **233**, **235**, **250** and **254**) was orientated north-northwest to south-southeast with an entranceway at its midpoint. The ditch measured between 0.5m and 0.96m wide and was 0.15m to 0.26m deep. The single fill (196, 198, 200, 224, 232, 234, 249 and 243) consisted of a light grey brown sandy silt and contained three struck flint flakes and two flint blades.

3.5.10 Lying just to the east of ditch **197** was another ditch (**183**) which extended across the site for *c.*40m in a broadly north-west to south-east direction and is likely to be contemporary with ditch **197**. Together these two ditches formed a droveway between 1m and 2m wide which terminated on either side of Barrow 1. A potential 3m wide entranceway was identified at the northern end of ditch **183** where its continuation (**252**) was truncated away by later ditch **162** (Fig. 12, S.101).

> Ditch **183** (**185**, **290** and **292**) was between 0.4m and 1.1m in width and 0.16m to 0.19m in depth with gently sloping sides and a concave base. It was filled with a light orange grey sandy silt (182, 184, 289 and 291) which contained a struck flint flake, two blades, a core and a flint scraper.
>
> Ditch **252** (**256**) was truncated by ditch **162** (Period 2.3). It was 0.23m to 0.38m wide and 0.08m to 0.15m deep with gently sloping sides and a concave base. It was filled with a mid brown grey sandy silt (251 and 255) which contained three flint blades and a struck flint flake.

3.5.11 Located 3m beyond the southern terminus of ditch **183** was a north-east to south-west aligned short ditch (**187**). This extended for *c.*8m along the south-eastern side of Barrow 1, appearing to close off access to the barrow from the south-east.

> Short ditch **187** (**189** and **191**) was orientated north-east to south-west. It measured 7.7m long, 0.44m wide and was 0.07m deep with gently sloping sides and a concave base. It was filled with a light yellow grey sandy silt (186, 188 and 190) which contained three struck flint flakes.

Droveway 4

3.5.12 The final droveway was made up of three parallel gullies (**348**, **352** and **354**) aligned north-west to south-east. These gullies were very similar to those in Droveway 2.

> Gully **348** (**350**) was orientated north-west to south-east. It was 0.2m wide and varied in depth from 0.05m to 0.08m with a bowl shaped profile. It was filled with a mid brown grey sandy silt (347 and 249) which contained a flint blade.
>
> Located *c.*4.5m to the north-east and running parallel with **348** was gully **352** (**361**). The gully measured 0.33m wide and was 0.07m deep with gently sloping sides and a flat base. It was filled with a mid grey brown silty clay (351 and 360).
>
> Gully **354** (**359**) was 0.45m north-east and parallel to gully **352**. It was 0.4m to 0.5m wide and 0.08m to 0.14m deep with a bowl shaped profile. It was filled with a mid brown grey silty sand (353 and 358).

Pits

3.5.13 A series of pits were identified across this area of the site. A further three pits of equivalent date were identified in this area during the evaluation, in Trench 395 (Pocock

& Simmonds 2005, 33). These pits are shown of Figure 5 (as **39506**, **39508** and **39514**).

Elongated pit **239** was located to the immediate east of Droveway 2. It was 2.5m long, 0.35m wide and 0.08m deep with steeply sloping sides and a concave base. It was filled with a light orange grey sandy silt (238) which contained struck flint.

Pit **174** was positioned *c.*1.5m north of Droveway 2. It measured 1.18m long, 0.52m wide and 0.28m deep with steeply sloping sides and a flat base. It was filled with a dark grey brown sandy silt (175) with frequent manganese inclusions. The fill contained nine struck flints along with burnt flint and eight fragments (243g) of structural baked clay.

Approximately 4.5m north-east was elongated pit **177** (**179**), which measured 3.5m in length. It was positioned parallel with and immediately adjacent to ditch **197**. It was 0.32m wide and 0.2m deep with a U-shaped profile. It was filled with a light grey brown sandy silt (176 and 178) which contained a struck flint flake.

Pit **181** measured 1.06m long, 0.8m wide and 0.12m deep, with gently sloping sides and a concave base. It was filled with a dark grey brown sandy silt (180) with charcoal inclusions and contained seven fragments (13g) of baked clay.

Pit **364** was located adjacent to probable barrow **293**. It measured 2.5m long, 0.92m wide and 0.2m deep with gently sloping sides and an irregular base. It was filled with a mid grey brown sandy silt (365) which contained eight struck flint flakes.

Pit **193** was positioned on the southern side of ditch **187**. It measured 0.68m in diameter and 0.2m deep with gently sloping sides and a flat base. It was filled with a mid grey brown sandy silt (192) and contained a struck flint flake.

Located c.7m to the west, pit **195** was sub-rectangular in plan. It measured 1.38m long, 1.1m wide and 0.16m deep with steeply sloping sides and a flat base. Its single fill (194) consisted of a mid orange grey sandy silt with frequent burnt flint inclusions. Two fragments (270g) of a baked clay loomweight were recovered from the fill.

Enclosure 1

3.5.14 Two-sided enclosure **597** was located across the south-western side of Area B. The ditch extended south-east away from the westernmost limit of excavation, for *c.*38m before turning to continue on an east-northeast alignment (for *c.*67m) and terminating within the excavation area. The ditch itself varied in width from 2.6m to 3.5m and in depth from 1.3m to 1.8m. A total of ten interventions were hand excavated into the ditch (a further two, including the terminus, were dug during the evaluation). Each intervention showed the ditch to have very steeply sloping sides and a concave base (Plates 6, 7 & 8). Investigated slots contained between four and eight fills (Fig. 12, S.213 and S.218).

3.5.15 The majority of the fills within this ditch have been formed by natural infilling. However, a midden-type deposit used to backfill the ditch was identified (slumping in from the interior of the enclosure) along a section approximately 44m long of the southern arm. The pottery from this deposit is a mixture of Late Deverel-Rimbury and early Post Deverel-Rimbury wares, implying that the ditch would have remained open for an extended period of time.

Ditch **597** (**610**, **611**, **631**, **637**, **670**, **680**, **661**, **686** and **697**) had a basal fill consisting of a compact light grey brown sandy silt (609, 612, 617, 630, 639, 669, 672, 679, 685 and 696) which contained four flint flakes. This was followed by a series of natural slumps (628, 629, 638, 673 and 674) falling in from both sides of the ditch. Finds from these slumps included 469g of Middle Bronze Age pottery. Above this was a fill of mid brown grey sandy silt (616, 620, 640 and 668), followed by a layer of mid grey brown sandy silt (608, 615, 621, 641, 667, 678, 684 and 695) which contained 1595g of Middle Bronze

Age pottery and five flint flakes. Further natural slump fills followed (614, 627), both of which were derived from the inside of the enclosure. A layer consisting of a very dark grey sandy silt was seen above this (607, 622, 626, 642, 665, 677, 683 and 694), which contained abundant levels of burnt stone and unworked burnt flint along with 4208g of Middle Bronze Age pottery, 313g of structural baked clay, a Later Bronze Age briquetage pedestal (44g) and five fragments (65g) of loomweight. Ten struck flints, one blade and nine flint chunks were also collected. This midden-type layer, which slumped in from the interior of the enclosure, was only seen along the southern branch of the ditch and was most concentrated around interventions **610**, **670**, **680** and **697** (Plate 9). A mid brown grey sandy silt (613, 622, 632, 643, 649, 650, 663, 664, 676, 682 and 693) containing 1981g of Middle to Later Bronze Age pottery, part of a baked clay loomweight (SF10, 89g), 23g of baked clay, a flint blade and low levels of burnt stone followed. The final fill consisted of a mid grey brown sandy silt (596, 606, 623, 633, 644, 662, 671, 675 and 681) which contained 842g of Middle to Later Bronze Age pottery, 61g of structural baked clay and a further 11g of undiagnostic baked clay. A total of 12 flakes, five chunks, one scraper and one retouched flake were also collected. Environmental samples taken from the fills of this ditch produced low quantities of cereals, beans and weed seeds.

3.5.16 Located around 2m to the south of ditch **597** was a parallel (and probably associated) ditch (**654**).

Ditch **654** (**656**, **658** and **692**) ran in an east-northeast to west-southwest direction. It was 0.5m to 0.7m wide and 0.1m to 0.28m deep with gently sloping sides and a concave base. It was filled with a light grey brown sandy silt (653, 655, 657 and 691) which contained 6g of Middle to Later Bronze Age pottery.

3.5.17 Situated approximately 75m north of ditch **654** was another narrow ditch (**547**). Whilst this ditch was devoid of datable finds, its parallel alignment and similar dimensions mean that it is likely to be associated with ditch **654**.

Ditch **547** (**553**) was aligned east-northeast to west-southwest. It measured between 0.65m and 0.9m wide and 0.05m to 0.12m deep with gently sloping sides and a concave base. It was filled with a light grey brown sandy silt (546 and 552) which contained animal bone.

3.6 Period 2.2: Middle Bronze Age

Field system

3.6.1 Located across Area B was a Middle Bronze Age field system (Fig. 6). This consisted of five north-east to south-west aligned ditches (**381**, **409**, **413**, **577** and **646**) spaced *c.*20m apart with smaller north-west to south-east aligned internal divisions (**407**, **443**, **445** and **595**). This field system probably continued north-westward for at least another 40m, as it was picked up during the evaluation in Trenches 371 and 375 (Pocock & Simmonds 2005, 27-29).

The northernmost ditch, **409** (**419**, **425**, **441**, **487**, **515** and **541**) ran in a north-east to south-west direction. The ditch varied in width from 0.4m to 0.6m and in depth from 0.06m to 0.15m with gently sloping sides and a concave base. It was filled with a mid grey brown clay sand (408, 424, 440, 486, 514 and 540) which contained Middle to Later Bronze Age pottery (2g) and two struck flint flakes. An environmental sample taken from this ditch was devoid of plant remains.

Located 20m south, ditch **381** (**417**, **527**, **545**, **549** and **567**) was aligned north-east to south-west and terminated within the excavation area. The ditch varied in width from 0.44m to 0.61m and in depth from 0.1m to 0.2m with a bowl shaped profile. It was filled with a light grey brown sandy silt (380, 416, 526, 543, 548 and 566) which contained 6g of Middle to Later Bronze Age pottery.

A further 20m further south, ditch **413** (**423**, **439**, **495**, **497**, **521**, **551** and **690**) was orientated north-east to south-west. It measured 0.44m to 1.08m wide and 0.06m to 0.3m deep with a bowl shaped profile. It was filled with a light grey brown sandy silt (412, 422, 438, 494, 496, 520, 550 and 689). A single piece of CBM (63g) was collected from the fill along with a fragment of baked clay plate (40g) and an undiagnostic piece of baked clay (7g).

Gully **499** (**501**) was aligned north-east to south-west, running parallel with ditch **413** which was situated 1.2m to the north. The gully was between 0.22m and 0.25m wide and 0.05m deep with gently sloping sides and a concave base. It was filled with a light grey brown clay sand (498 and 500).

Ditch **577** (**585**) ran in a north-east to south-west direction, 20m to the south of ditch **413** and terminated within the excavation area. Ditch **577** measured 0.7m to 1.02m wide and 0.1m to 0.32m deep with a bowl shaped profile. It was filled with a mid grey brown sandy silt (576 and 584) which contained a single struck flint flake.

Located 40m to the south of ditch **577** was parallel ditch **646** (**648**). It was 0.38m wide and 0.05m to 0.1m deep with a bowl shaped profile. It was filled with a mid orange brown sandy silt (645 and 647).

Ditch **443** (**513**) ran in a north-west to south-east direction and truncated ditch **409**. It varied in width from 0.22m to 0.4m and in depth from 0.08m to 0.15m and had a bowl shaped profile (Fig. 12, S.181). It was filled with a mid brown grey clay sand (442 and 512).

Situated 2m to the south-west and running parallel with ditch **443** was ditch **445** (**511**). It varied in width from 0.18m to 0.37m and in depth from 0.06m to 0.1m with a bowl shaped profile. It was filled with a mid brown grey clay sand (444 and 510).

Ditch **407** (**529** and **543**) was aligned north-west to south-east, extending north-westward from ditch **381**. The ditch varied in width from 0.3m to 0.58m and in depth from 0.04m to 0.11m and had gently sloping sides and a concave base. It was filled with a light grey brown sandy silt (406, 528 and 542).

Ditch **595** (**652** and **660**) was aligned north-west to south-east and extended away from ditch **646**. It was 0.64m to 0.98m wide and 0.28m to 0.46m deep with steeply sloping sides and a concave base. It was filled with a light orange brown sandy silt (594, 651 and 659) which contained a single struck flint flake.

3.7 Period 2.3: Middle Bronze Age

Enclosure 2

3.7.1 To the immediate south-east of Late Neolithic monument **51** were the remnants of a substantial enclosure (**91**; Figs. 7 and 8). This consisted of two sides of a sub-rectangular enclosure ditch orientated north-northwest to south-southeast before turning to run east-northeast. An entranceway was noted on the south-west side. A short gully (**128**) was positioned immediately inside and across the entrance, to perhaps filter access or restrict a direct view into the enclosure.

3.7.2 Located at the very north-eastern limit of the site was a ditch terminus (**53**). It is possible that this is the returning side of the enclosure. If so, then then enclosure would have an internal length of around 80m.

Ditch **91** (**95**, **97**, **99**, **134**, **136**, **138**, **140** and **356**) varied in width from 0.4m to 1.18m and in depth from 0.15m to 0.32m. It was filled with a single mid grey brown silty sand (90, 94, 96, 98, 135, 137, 139 and 357) which contained 21 sherds (144g) of Middle to Later Bronze Age pottery and three struck flints (one of which was a blade). Environmental samples taken from this ditch produced only sparse charcoal.

The entranceway to the enclosure measured 2.7m wide. Located 2.8m inside the enclosure entrance was north-northwest to south-southeast aligned short gully **128** (**130**), which measured 3.2m in length, 0.4m in width and was 0.12m deep. It was filled with a mid grey brown sandy silt (127, 129).

Ditch **53** was 0.6m wide and 0.1m deep with a bowl shaped profile and was orientated east-northeast to west-southwest. It was filled with a mid grey brown sandy silt (52) with rare charcoal inclusions. Finds recovered from the fill consisted of eight sherds (6g) of Middle to Later Bronze Age pottery and 6g of undatable metalworking debris.

Internal features

Deposit

3.7.3 Assuming that ditch **53** made up part of Enclosure 2, then located within the enclosure was an extensive mixed deposit forming a single spread (85). Its full extent was not revealed within Area A (since it continued eastward), but it was at least 20m by 27m. This compacted spread is tentatively thought to be the remnant of some form of work area since it contained high concentrations of finds.

The spread consisted of a large number of undulations with different dumps of fill mixing across it (66, 68, 70, 71, 73, 75, 77, 79, 81, 83, 84, 101, 103, 105 and 111). It varied in depth from 0.1m to 0.35m. A total of 182 sherds (703g) of Middle to Later Bronze Age pottery, five fragments (192g) of undiagnostic baked clay, 28g of CBM and four struck flints were recovered from it.

Posthole Structure 1

3.7.4 Located on the south-eastern side of Enclosure 2 was a group of nine postholes forming a clear rectangular structure measuring 2.5m by 3m in size (Fig. 8).

At its north-western corner, posthole **311** had a diameter of 0.33m and was 0.21m deep with a U-shaped profile and was filled with a mid orange grey clay sand (312). Located *c.*1m to the north-northeast was posthole **313**. This posthole had a diameter of 0.27m and was 0.15m deep with vertical sides and a concave base. It was filled with a light grey clay sand (314). Posthole **317** formed the north-eastern corner and was located 1.4m north-northeast of posthole **313**. Posthole **317** was 0.22m in diameter and 0.1m deep with vertical sides and a concave base and was filled with a mid orange grey clay sand (318).

Posthole **315** was situated 0.5m to the south. It had a diameter of 0.38m and was 0.13m deep with a U-shaped profile. It was filled with a mid orange grey clay sand (316) which contained one sherd (4g) of Middle to Later Bronze Age pottery. Posthole **309** was located 1.3m to the south. It had a diameter of 0.2m and was 0.16m deep with vertical sides and a concave base. It was filled with a light grey clay sand (310). Posthole **307** was 1.3m to the south-southeast and formed the south-eastern corner of the structure. Posthole **307** measured 0.32m in diameter and was 0.24m deep with vertical sides and a concave base. It was filled with a mid orange grey clay sand (308).

Posthole **305** was situated 1.3m west-southwest of posthole **307**. It was 0.24m in diameter and was 0.19m deep with a U-shaped profile. It was filled with a mid orange grey clay sand (306). Posthole **303** formed the south-western corner of the structure and was located 1m west-southwest of posthole **307**. Posthole **303** was 0.47m long, 0.35m wide and 0.28m deep with a U-shaped profile. It was filled with a mid orange grey clay sand (304) which contained one sherd (1g) of Middle to Later Bronze Age pottery.

Posthole **366** was situated 0.5m north of posthole **305**. It measured 0.36m in diameter and was 0.13m deep with near vertical sides and a concave base. It was filled with a light grey clay sand (367) which contained a single sherd (1g) of Middle to Later Bronze Age pottery.

Other pits and postholes

3.7.5 A further 21 pits and postholes were located within Enclosure 2 (Fig. 8). Some of these remaining features are likely to form other domestic structures or fence lines, however no other clear structures were apparent. Environmental samples taken from this area produced the best results.

Situated 1m to the south of posthole **305** (in Structure 1) was posthole **301**. It had a diameter of 0.2m and was 0.19m wide and vertical sides and a concave base. It was filled with light grey clay sand (302) which contained a single sherd (5g) of Middle to Later Bronze Age pottery. Immediately adjacent to this was posthole **299**. It had a diameter of 0.14m and was 0.17m deep with a U-shaped profile. It was filled with a mid orange grey clay sand (300) which contained a single sherd (5g) of Middle to Later Bronze Age pottery. These two postholes may have been associated with Structure 1.

Posthole **362** was located *c.*3.4m east of posthole **309** (in Structure 1). It had a diameter of 0.2 and was 0.16m deep with vertical sides and a concave base. It was filled with a dark grey brown clay sand (363).

Located *c.*3.5m west of Structure 1 was pit **297**. It measured 1m in diameter and 0.22m deep with a bowl shaped profile. It was filled with a single mid grey brown sandy clay (298) which contained 11 sherds (59g) of Middle to Later Bronze Age pottery, three fragments (69g) of baked clay plate, 10 pieces of undiagnostic baked clay (28g) and a struck flint chunk.

Pit **294** lay 4.5m further west. It had a diameter of 1.35m and was 0.18m deep with gently sloping sides and a flat base (Plate 10). The basal fill (295) consisted of a 0.18m thick mid grey brown sandy clay with large stone and burnt flint inclusions. A total of 29 sherds (569g) of Middle to Later Bronze Age pottery was collected from this fill along with two fragments (98g) of baked clay. Above this, fill 296 was made up of a 0.1m thick dark brown grey sandy clay with charcoal inclusions. The environmental sample taken from this pit produced the largest charred plant assemblage across the whole site in the form of three spelt/emmer grains, two emmer glume bases plus three indeterminate glume bases and six indeterminate grains. Charred weed seeds including a vetch, bindweed and dock were also seen.

Posthole **107** was 2.2m south-west of pit **294**. It measured 0.19m in diameter and 0.08m in depth with a U-shaped profile. It was filled with a dark brown clay silt (106).

Pit **109**, located *c.*5.6m north of posthole **107**, was 0.5m long, 0.34m wide and 0.08m deep with steeply sloping sides and a flat base. It was filled with a mid orange grey clay silt (108) which contained 16 sherds (42g) of Later Bronze Age pottery. An environmental sample taken from the fill produced a number of grains.

Approximately 1m to the north, pit **122** had a diameter of 0.6m and was 0.15m wide with steeply sloping sides and a concave base (Fig. 12, S.42). The single fill (121) consisted of a mid orange grey clay silt with occasional charcoal and burnt flint inclusions. Situated at the very base of the pit were the remains of two Later Bronze Age vessels (weighing 1,024g, Plate 11). An environmental sample produced occasional wheat and barley grains along with a degraded spikelet fork of spelt/emmer wheat.

Elongated pit **341** was located *c.*1m to the north-east. The pit was orientated north-northwest to south-southeast and measured 1.55m long, 0.3m wide and 0.15m deep, with steeply sloping sides and a flat base. It was filled with a mid grey brown sandy clay (342) which contained six sherds (16g) of Later Bronze Age pottery. This feature was almost identical to the short gully (**128**) across entranceway to Enclosure 2, and thus may have served a similar purpose.

Posthole **377** was located immediately west of feature **341**. It had a diameter of 0.14m and was 0.1m deep with a U-shaped profile. It was filled with a mid grey brown sandy clay (276).

Situated 2mm to the west of elongated pit **341** was pit **93**. It was 0.46m long, 0.3m wide and 0.11m deep with vertical sides and a concave base. The pit was filled with a mid brown grey sandy silt (92) with occasional charcoal inclusions and large sub-rounded stones. A total of ten sherds (19g) of Middle to Later Bronze Age pottery was collect from the fill. The environmental sample contained charred sedge seeds that may be indicative of roofing material and/or use as fuel.

Approximately 3.2m north-east was posthole **89**. This posthole was 0.36m long, 0.18m wide and 0.2m deep with vertical sides and a flat base. The fill (88) consisted of a dark orange grey silty clay with frequent charcoal inclusions. A total of 22 sherds (77g) of Middle to Later Bronze Age pottery were recovered from the fill along with four fragments (103g) of baked clay. An environmental samples taken from the fill produced grain seeds.

Posthole **87** was located 1m to the north. It was 0.36m long, 0.2m wide and 0.15m deep with near vertical sides and a flat base. It was filled with a dark grey silty clay (86) with frequent charcoal and burnt flint inclusions. A total of 121 sherds (501g) of Middle to Later Bronze Age pottery were collected along with six fragments (111g) of baked clay. An environmental sample taken from the fill was seen to contain charred sedge seeds that may be indicative of roofing material and/or use as fuel.

Pit **343** was situated 0.5m east of posthole **87**. It was 0.45m long, 0.35m wide and 0.2m deep with steeply sloping sides and a flat base. It was filled with a mid yellow brown silty clay (244) with frequent stone and flint inclusions.

Pit **345** lay 5m to the north-east. It measured 0.5m long, 0.4m wide and 0.2m deep with steeply sloping sides and a flat base. It was filled with a mid brown yellow silty clay (346) with frequent stone and flint inclusions.

At the northern end of the enclosure, 3.5m east of the terminus, pit **56** was 0.59m in diameter and 0.09m deep with gently sloping sides and a flat base. It was filled with a single mid grey brown sandy clay (57) which contained five sherds (31g) of Middle Bronze Age pottery.

Further east, pit **117** measured 0.31m in diameter and 0.09m in depth with a bowl shape profile. It was filled with a mid orange grey silty clay (116) with occasional charcoal and burnt flint inclusions. A single struck flint flake was collected from this fill. The environmental samples from this feature produced a collection of indet grains.

Located 3.5m to the south-west was pit/posthole **115**. This posthole was 0.29m in diameter and 0.07m deep with a bowl shaped profile. It was filled with a mid orange grey silty clay (114).

Immediately south-west of this was posthole **113**. It had a diameter of 0.2m and was 0.03m deep with a bowl shaped profile. It was filled with a dark grey silty clay (112) with frequent charcoal and burnt flint inclusions.

Pit **120** was *c*.7m to the south of posthole **113**. It had a diameter of 0.27m and was 0.22m deep with a bowl shaped profile. It contained two fills. The basal fill (119) was made up of a 0.2m thick mid orange brown silty clay. Above this, fill 118 consisted of a 0.09m thick dark grey silty clay with frequent charcoal inclusions and contained one sherd (4g) of Middle to Later Bronze Age pottery.

A further 7.5m to the south, pit **124** was 0.78m in diameter and 0.21m deep with a bowl shaped profile. It was filled with mid orange brown sandy silt (123).

Approximately 7m to the east was pit **126**. The pit was 0.5m long, 0.32m wide and 0.12m deep with gently sloping sides and a concave base. It was filled with a dark orange brown silty clay (125) which contained a single sherd (2g) of Middle to Later Bronze Age pottery and nine fragments (45g) of baked clay.

Enclosure 3

3.7.6 Situated on the western edge of Area A was Enclosure 3. Its north-eastern branch was gradually truncated away as it continued up slope toward Enclosure 2. It is therefore likely that originally it would have continued further across the site. Under this assumption, the enclosure potentially contained four internal features.

Ditch **162** (**164**, **258**, **260** and **262**) was aligned north-east to south-west before turning to continue in a slightly curvilinear east-west direction. It measured between 0.35m and 0.7m in width and was 0.1m to 0.29m deep (Fig. 12, S.101). It was filled with a mid grey sandy silt (161, 163, 257, 259 and 261) which contained three struck flint flakes and five flint blades. The east-west branch of Enclosure 3 was also seen to cut over the top of and take the same route as ditch **197** (Period 2.1).

Extending out from (and parallel with) enclosure ditch **162** was ditch **270**, which terminated within the site. No stratigraphic relationship was attained between these two features. Ditch **270** was 0.75m wide and 0.12m deep with gently sloping sides and a flat base. It was filled with a mid brown grey sandy silt (269) which contained two fragments (16g) of baked clay. Environmental samples taken from this ditch produced only sparse charcoal.

Internal features

At the south-western corner of Enclosure 3 was pit **273**, which was truncated by ditch terminus **270**. The pit had a diameter of 0.7m and was 0.18m deep with steeply sloping sides and a concave base. The lower of the two fills (272) consisted of a dark grey sandy silt, 0.06m in thickness and contained moderate levels of charcoal along with abundant burnt flint fragments. Above this, fill 271 was a light brown grey sandy silt, 0.11m thick.

Pit **65** was located around 8m north of ditch **162**. It was 1.06m long, 0.5m wide and 0.14m deep with gently sloping sides and a concave base. It was filled with a single mid grey brown sandy silt (64) which contained six sherds (43g) of Middle to Later Bronze Age pottery.

Pit **55** was 1.1m long, 0.4m wide and 0.12m deep with gently sloping sides and a concave base. It was filled with a single mid grey brown sandy silt (54). Whilst no finds were recovered from the fill, its dimensions and profile would suggest an association with pit **65**.

Pit **131** was located *c.*5m south-west from the corner of Enclosure 2. It was 2.78m long, 1.24m wide and 0.38m deep with gently sloping sides and a slightly irregular concave base. The pit contained two fills, the lower of which (132) was 0.2m thick and consisted of a mid grey brown silty sand with charcoal flecks which contained two struck flint flakes. Above this, fill 133 was made up of a 0.26m thick mid brown red silty sand with charcoal flecks. Finds from the feature consisted of four struck flints and burnt flint. The environmental samples produced a single charred dock seed.

Pit groups

3.7.7 Situated across the entirety of Area B was a total of 56 pits and postholes. These features have been collected into a number of pit groups. The majority of these pits and postholes are naturally clustered together, but a few solitary pits have been grouped with their nearest associated features.

3.7.8 Whilst not all of the pits contained datable finds, their morphology and location would suggest that they were contemporary with those around them which produced finds.

Pit Group 1

3.7.9 Located around the terminus of ditch **597**, Pit Group 1 consisted of four pits (Fig. 9a).

Pit **593** had a diameter of 0.75m and was 0.18m deep with gently sloping sides and a concave base. It was filled with a mid grey brown sandy silt (592) which contained 26g of of Middle to Later Bronze Age pottery. This pit was truncated by elongated pit **688**.

Elongated pit **688** measured 1.6m long, 0.8m wide and was 0.38m deep with steeply sloping sides and a concave base. It was filled with a mid orange grey sandy silt (687) which contained two flint flakes and two blades.

Pit **636** was located immediately south of ditch **654** (Period 2.1). It measured 1.24m long, 0.66m wide and 0.42m deep with near vertical sides and a flat base. The basal fill (635) consisted of a dark grey sandy silt which contained abundant levels of burnt stone and charcoal. A struck flint flake and blade was recovered from the fill. Above this was a 0.2m thick light pink brown sandy silt (634) which contained a high level of burnt stone. The pit cut displayed evidence for *in situ* burning.

Pit Group 2

3.7.10 A total of six pits were assigned to this grouping and located near to the corner of Enclosure 1 (Fig. 9a).

The westernmost pit (**583**) had a diameter of 0.94m and was 0.37m deep with vertical sides and a flat base. It was filled with a mid grey brown sandy silt (582) which contained 358g of Middle to Later Bronze Age pottery, a briquetage pedestal (37g), 3g of undatable baked clay, 4g of lava quern, a flint flake, a flint fragment and unworked burnt flint.

Pit **603** measured 1.08m long, 0.58m wide and 0.12m deep with a bowl shaped profile. It was filled with a dark orange grey sandy silt (602) which contained 84g of of Middle to Later Bronze Age pottery. The western edge of this pit was truncated by pit **605**.

Pit **605** had a diameter of 1.02m and was 0.23m deep with a bowl shaped profile. It was filled with a mid grey brown sandy silt (604).

Pit **589** had a diameter of 0.5m and was 0.12m deep with gently sloping sides and a concave base. It was filled with a mid brown grey sandy silt (588).

Pit **599** had a diameter of 0.4m and was 0.05m deep with gently sloping sides and a concave base. It was filled with a light grey brown sandy silt (598). An environmental sample produced a selection of emmer and indet grains.

Pit **601** had a diameter of 0.5m and was 0.1m deep with a bowl shaped profile. It was filled with a mid brown grey sandy silt (600).

Pit Group 3

3.7.11 This cluster of features was located around 18m north of Pit Group 2 and was made up of five features (Fig. 9b).

Pit **575** was 1.3m long, 1.02m wide and 0.24m deep with a bowl shaped profile. It was filled with a dark grey brown sandy silt (574) which contained 171g of of Middle to Later Bronze Age pottery, a Later Bronze Age briquetage pedestal (56g), 40 fragments (261) of baked clay plate and a further 3g of undiagnostic baked clay. A flint flake and unworked burnt flint were also recovered.

Pit **573** measured 0.59m in diameter and was 0.2m deep with gently sloping sides and a concave base. It was filled with a mid grey brown silty sand (572) which contained 46g of decorated of Middle to Later Bronze Age pottery.

Pit **563** had a diameter of 0.36m and was 0.1m deep with a bowl shaped profile. It was filled with a mid grey brown silty sand (562) which contained 188g of Later Bronze Age pottery and unworked burnt flint.

Pit **559** measured 2.3m long, 1m wide and 0.25m deep with steeply sloping sides and a concave base (Fig. 12, S.191). It was filled with a mid grey brown sandy silt (558) which

contained 107g of Middle to Later Bronze Age pottery and unworked burnt flint. An environmental sample produced a number of grain and weed seeds.

Pit **561** was situated 6m to the east of pit **559**. It measured 2.5m in length, 0.5m in width and was 0.15m deep with a bowl shaped profile. It was filled with a mid grey brown silty sand (560) which contained unworked burnt flint.

Pit Group 4

3.7.12 Pit Group 4 was clustered in and around one of the Middle Bronze Age field system ditches (Fig. 9b). The group of ten postholes at the centre of the group may have formed a structure.

Isolated to the south-west, posthole **517** was 0.5m long, 0.2m wide and 0.07m deep with a bowl shaped profile. It was filled with a mid brown grey sandy silt (516) which contained 96g of Middle to Later Bronze Age pottery and unworked burnt flint.

Pit **523** had a diameter of 0.37m and was 0.05m deep with a bowl shaped profile. It was filled with a light grey brown sandy silt (522). Approximately 1m to the north-west was pit **525**. It measured 0.34m in diameter and was 0.07m deep with gently sloping sides and a flat base. It was filled with a light grey brown sandy silt (524).

Pit **403** measured 0.4m in diameter and was 0.11m deep with a bowl shaped profile. It was filled with a very dark grey clay sand (402).

Pit **533** measured 1.3m long, 0.4m wide and was 0.12m deep with an irregular profile. It was filled with a dark grey brown sandy silt (532).

Located around ditch **381** (Period 2.2), was a group of ten postholes. Posthole **383** was 0.22m in diameter and 0.11m deep with a bowl shaped profile. It was filled with a mid grey brown sandy silt (382). Posthole **385** had a diameter of 0.2m and was 0.12m deep with a U-shaped profile. It was filled with a dark grey brown sandy silt (384). Posthole **387** had a diameter of 0.22m and was 0.1m deep with a U-shaped profile. It was filled with a dark grey brown sandy silt (386). Posthole **389** had a diameter of 0.16m and was 0.16m deep with a U-shaped profile. It was filled with a mid grey brown sandy silt (388). Posthole **391** had a diameter of 0.16m and was 0.06m deep with gently sloping sides and a concave base. It was filled with a mid grey brown sandy silt (390). Posthole **393** measured 0.2m in diameter and was 0.11m deep with vertical sides and a concave base. It was filled with a dark grey brown sandy silt (392). Posthole **395** had a diameter of 0.19m and was 0.18m deep with a U-shaped profile. It was filled with a dark grey brown sandy silt (394). Posthole **397** was 0.19m in diameter and 0.17m deep with a U-shaped profile. It was filled with a mid grey brown sandy silt (396). Posthole **399** measured 0.2m in diameter and was 0.13m deep with steeply sloping sides and a concave base. It was filled with a mid grey brown sandy silt (398). Posthole **401** measured 0.18m in diameter and was 0.07m deep with gently sloping sides and a concave base. It was filled with a mid grey brown sandy silt (400).

Pit **405** measured 0.25m in diameter and was 0.23m deep with vertical sides and a concave base. It was filled with a very dark grey clay sand (404) which contained a high level of charcoal. An environmental samples from this fill produced indet wheat grain.

Pit Group 5

3.7.13 Pit Group 5 straddled a possible hedgerow associated with the Middle Bronze Age field system (Fig. 9c). The group consisted of five pits, two of which (**433** and **435**) contained Middle Bronze Age urns, which would appear to have been purposely deposited in the ground complete (Plate 12). These urns (which were initially believed to be cremations) were lifted whole, so as to be excavated at the Oxford Archaeology East office. However, upon excavation of the contents, no cremated bone was uncovered. These are therefore believed to have been token deposits.

Posthole **427** had a diameter of 0.34m and was 0.12m deep with a bowl shaped profile. It was filled with a dark grey clay silt (426) which contained a high level of charcoal.

Pit **429** was located 2m to the north-east. It measured 0.56m wide and was 0.11m deep with gently sloping sides and a concave base. It was filled with a mid grey brown sandy clay (428).

Pit **433** had a diameter of 0.28m and was 0.05m deep. Within the pit was the truncated base of a Middle Bronze Age urn (SF11, 344g). The cut of the pit was only fractionally larger than the vessel which, therefore, would have fitted snugly into it.

Pit **431** had a diameter of 0.46m and was 0.1m deep with gently sloping sides and a concave base. It was filled with a dark grey brown clay sand (430) which contained 38g of decorated Middle Bronze Age pottery.

Pit **435** was situated 3.5m north-east of pit **433**. It had a diameter of 0.4m, was 0.3m deep and contained the lower portions of a Middle Bronze Age urn (sf12, 4551g, Fig. 13). As with the previous feature, the pit was only slightly larger than the vessel itself.

Pit Group 6

3.7.14 Pit Group 6 consisted of a cluster of six pits/postholes with a further three satellite postholes *c.*8m to the north-east (Fig. 9c).

Pit **451** measured 0.4m in diameter and was 0.08m deep with gently sloping sides and a concave base. It was filled with a dark brown grey clay sand (550). Immediately to the east, posthole **449** ad a diameter of 0.2m and was 0.06m deep with a bowl shaped profile. It was filled with a mid grey brown clay sand (448).

Located 2m further east, posthole **447** measured 0.17m in diameter and was 0.03m deep with a bowl shaped profile. It was filled with a mid brown grey clay sand (446) which contained an indeterminate chunk of flint.

Approximately 2.5m north of pit **451**, pit **453** measured 0.49m in diameter and was 0.08m deep with gently sloping sides and a flat base. It was filled with a mid grey brown sandy silt (452) which contained a single flint blade.

Located 0.6m to the north was pit **455**. It measured 0.23m in diameter and was 0.07m deep with steeply sloping sides and a concave base. It was filled with a dark orange grey clay sand (454) which contained seven pieces from a briquetage pedestal (115g) along with a further 3g of undatable baked clay.

To the immediate east, pit **459** had a diameter of 0.6m and was 0.27m deep with vertical sides and a flat base (Plate 13). The basal fill (458) consisted of a 0.02m thick mid green grey clay which formed a lining to the base and sides of the pit (Fig. 12, S.162). Above this was a 0.23m thick mid yellow brown clay sand (457) which contained pieces of unworked burnt flint. The latest fill (456) consisted of a 0.15m thick mid grey brown clay sand which contained 470g of Middle Bronze Age pottery, six pieces of structural baked clay (147g) and 13g of undiagnostic baked clay. A large flint assemblage consisting of two blades, 18 flakes, 38 chunks and 13 fragments was also collected, along with 234g of burnt stone.

Posthole **461** was 0.35m in diameter and 0.06m deep with gently sloping sides and a concave base. It was filled with a mid grey brown clay sand (460).

Posthole **469** measured 0.3m in diameter and was 0.04m deep with gently sloping sides and a concave base. It was filled with a light grey brown clay sand (468).

Pit **485** was 0.34m in diameter and 0.06m deep with steeply sloping sides and a concave base. It was filled with a light orange grey clay sand (484) which contained 2g of baked clay.

Pit Group 7

3.7.15 The most northerly pit group (Pit Group 7) consisted of ten pits and postholes (Fig. 9d). One of the pits was an outlier on its own, whilst the remainder where fairly clustered together. The line of postholes on the southern side of the group may represent a structure or fenceline of some sort.

Pit **483** was located adjacent to the northernmost limit of excavation. It had a diameter of 0.5m and was 0.1m deep with gently sloping sides and a concave base. It was filled with a mid brown grey silty clay (482).

Pit **467** had a diameter of 0.3m and was 0.1m deep. The pit contained the truncated remains of a Middle Bronze Age urn (SF13), similar to those seen in Pit Group 5 (Plate 14). As with the previous token deposits, the cut for the pit was only fractionally larger than the vessel itself.

Posthole **479** measured 0.2m wide and 0.1m deep with a U-shaped profile. It was filled with a mid grey brown clay sand (478). To its immediate south-west, pit **481** measured 0.3m in diameter and was 0.25m deep with vertical sides and a concave base. It was filled with a mid grey brown clay sand (480). An environmental sample taken from the fill produced the largest assemblage of charred remains, consisting of barley and wheat grains.

Around 3.5m to the west, pit **465** had a diameter of 0.59m and was 0.28m deep with vertical sides and a flat base. The basal fill (509) consisted of a mid green orange clay, 0.04m in thickness. This fill was situated across the base and all up the sides of the pit, suggesting that it may have been a clay lining for the pit. The main fill (464) was a 0.25m thick mid grey brown clay sand which contained 132g of Middle to Later Bronze Age pottery, 5g of baked clay and two flint flakes.

Posthole **463** was 2m to the south. It measured 0.27m in diameter and was 0.15m deep with vertical sides and a concave base. It was filled with a dark grey brown clay silt (462) with charcoal inclusions which contained 118g of decorated Middle Bronze Age pottery.

Posthole **477** measured 0.27m in diameter and was 0.08m deep with a bowl shaped profile. It was filled with a light grey brown clay sand (476). Located to the immediate south, posthole **471** measured 0.22m in diameter and was 0.05m deep with a bowl shaped profile. It was filled with a light grey brown clay sand (470).

To the immediate east of posthole **477**, posthole **473** measured 0.3m in diameter and was 0.07m deep with a bowl shaped profile. It was filled with a light grey brown clay sand (472).

A further 1.3m to the north-east, posthole **475** had a diameter of 0.29m and was 0.07m deep with a bowl shaped profile. It was filled with a light grey brown clay sand (474) which contained 10g of baked clay.

Pit Group 8

3.7.16 At the north-eastern edge of Area B were two intercutting pits (Fig. 7).

Pit **503** measured 0.46m in diameter and was 0.14m deep with gently sloping sides and a concave base. It was filled with a mid orange brown clay sand (502) which contained 41g of Middle to Later Bronze Age pottery, a flint flake, chunk and unworked burnt flint.

Pit **503** was cut over the top of pit **505 and** measured 0.42m in diameter and was 0.04m deep with a bowl shaped profile. It was filled with a mid grey brown clay sand (504).

Tree throw

3.7.17 A single large tree throw has been attributed to this period. Whilst the finds recovered from the fill could not be closely dated, their similarity to pieces found in other features

of a Middle Bronze Age date, mean that it is likely to associated with this period of activity.

Extending beyond the northern limit of Area B was probable tree throw **539**. The feature was approximately 4m long, at least 2m wide and was 0.45m deep with an irregular profile. The basal fill (538) consisted of a 0.25m thick mid grey brown silty sand. Above this was a 0.16m thick burnt fill of a deep red silty sand (537). The final fill (536) was also burnt and made up of 0.13m thick light pink brown silty sand which contained 11 pieces of undiagnostic baked clay (120g).

3.8 Period 3: Late Bronze Age

Cremations

3.8.1 Two pits containing cremated human remains were identified on the site (Fig. 10). These pits were located 145m apart with no associated activity in their immediate environs.

Situated at the southernmost end of Area A was pit **215** (Plate 15). The pit measured 0.56m in diameter and 0.18m deep with vertical sides and a flat base. It was filled with a single dark orange grey sandy silt (214) which contained a 275.5g cremated human bone (see Appendix C.1) along with a single struck flint flake and 18 sherds (256g) of Late Bronze Age pottery. A radiocarbon sample of the cremated bone produced a date of 1208-1011 cal. BC (95.4% probability, SUERC-58010). Environmental samples taken from the pit produced moderate amounts of charcoal along with occasional charred grains of spelt or emmer, charred seeds of knotgrass and fragments of tubers of false oat grass.

Approximately 145m north-west, in Area B, was pit **625**. It was 0.6m long, 0.5m wide and 0.15m deep with near vertical sides and a concave base. It was filled with a dark yellow grey sandy silt (624) which contained 25g of cremated human bone. A radiocarbon sample of the cremated bone produced a date of 1218-1029 cal. BC (95.4% probability, SUERC-63286). The environmental samples produced a single burnt tuber.

3.8.2 The radiocarbon dating suggests the attribution of these burials to the Late Bronze Age.

3.9 Period 4: Modern

3.9.1 Located across both excavation areas was a series of modern ditches (Fig. 11) which correspond with field boundaries on the 1873 and 1938 Ordnance Survey Maps (see Gailey 2009, figs. 6 and 7).

3.9.2 Primarily located across Area A, ditch **144** (**153**, **159**, **223** and **237**) extended in a north-west to south-east direction where it merged with a ditch extending from the south-west before turning to continue south-eastward. A further contemporary ditch extended off in a north-easterly direction.

This series of ditches varied in width from 0.55m to 1.3m and in depth from 0.19m to 0.4m. The ditch had a bowl shaped profile and was filled by a dark grey brown sandy silt (143, 154, 160, 222 and 236). Finds from the fill consisted of a complete tobacco pipe bowl (10g), a tobacco pipe stem (12g), 34g of struck flint and 38g of tile.

The first clay pipe bowl (from slot **153**) dates from the late 17th to early 18th century, whilst the second (from slot **257**) dates from the early 19th century.

3.9.3 Ditch **144** continued north-westwards across Area B where it terminated just before the corner of ditch **581**, creating a field entrance 2.5m wide. Ditch **581** continued in a south-easterly direction before turning south-west. Two contemporary parallel ditches were positioned to the immediate south (**587** and **591**) and both terminated 5m from ditch **144**.

Ditch **581** (**619**) varied in width from 0.7m to 0.9m and in depth from 0.1m to 0.3m. It was filled with a mid brown grey sandy silt (581 and 618).

Ditch **587** measured 0.9m and was 0.25m deep with a bowl shaped profile. It was filled with a mid brown grey sandy clay (586).

Ditch **591** measured 0.85m wide and was 0.2m deep with gently sloping sides and a concave base. It was filled with a mid brown grey sandy clay (590).

3.9.4 Ditch **379** (**411**, **421**, **437**, **507** and **535**) crossed the site in a north-east to south-west direction, terminating 2m from ditch **581**, thus creating a further field enclosure.

Ditch **379** varied in width from 0.92m to 1.6m and 0.22m to 0.34m in depth with moderately steep sloping sides and a concave base. It was filled with a mid grey brown sandy silt (378, 410, 420, 436, 506 and 534). The fill contained 2g of Middle to Later Bronze Age pottery, 10g of struck flint and a peg tile (53g).

3.9.5 The main north-west to south-east branch of ditches **144** and **581** appear to have been superseded by a probable tree line, as a series of pits containing substantial tree roots were seen cutting over the top of these two ditches.

3.9.6 Inside field boundary ditch **581** were are number of contemporary features (none of which were excavated). A row of ten postholes were positioned in a line parallel with the north-west to south-east branch of the ditch. The postholes of this probable fenceline contained the remnants of wooden posts. A similar parallel fenceline of four posts was identified approximately 12m to the west. Also identified within this area was a dog burial, two pits containing glass bottles and ironwork, and four pits containing broken up concrete.

3.9.7 Located approximately 25m to the east of boundary ditch **581** was large pit **571**. This pit measured 6m in diameter, was 1.2m deep and contained four fills. The pit corresponded with a modern ferrous anomaly identified during the geophysical survey (GBS 2010).

The basal fill (570) consisted of a 0.5m thick mid brown sandy silt which contained low levels of modern ironwork. Above this was a 0.2m thick mid yellow orange sandy gravel (569). This was followed by a 0.18m thick layer of of mid orange brown sandy gravel (568). The latest fill (565) consisted of a 0.5m thick dark grey brown sandy silt which contained pieces of ironwork, glass, clinker and degraded wood. None of the finds from this feature were retained.

3.9.8 Situated across the south-western corner of Area B was an area measuring approximately 50m by 50m in size which had the appearance of having previously been machine stripped. Beneath the subsoil was a highly compacted layer of dark brown grey clay silt *c.*0.1m thick which contained high levels of tile and glazed pottery. This area of disturbance could potentially be associated with the construction of the railway between 1852 and 1858 (Labrum 1994) or with the construction of East Tilbury station in 1936 (Smith 2008). This disturbance also corresponds with findings from the geophysical survey (GBS 2010).

3.10 Area of Archaeological Monitoring

3.10.1 Across the southern limit of the development was an area of archaeological monitoring. The machine excavation of a large sub-circular pond measuring approximately 120m in length and 30m in width was carried out under archaeological supervision. No features were identified (Plate 16).

3.11 Evaluation Trenches

3.11.1 A total of nine trenches were excavated across the development area in order to check for the potential for the continuation of archaeological remains.

3.11.2 Trench 1 was orientated north-northwest to south-southeast. It measured 13.8m in length and was devoid of archaeology.

3.11.3 Trench 2 was orientated north-west to south-east. It measured 15.3m in length and contained a single ditch (unexcavated) which was the continuation of enclosure **91**.

3.11.4 Trench 3 was orientated north-east to south-west. It measured 19.2m in length and was devoid of archaeology.

3.11.5 Trench 4 was orientated east-northeast to west-southwest. It measured 19m and contained a single ditch (unexcavated) which was the continuation of post-medieval ditch **144**.

3.11.6 Trench 5 was orientated east to west. It measured 12m in length and was devoid of archaeology.

3.11.7 Trench 6 was orientated north to south. It measured 17m in length and was devoid of archaeology.

3.11.8 Trench 7 was orientated north-northeast to south-southwest. It measured 15.8m in length and contained the continuation of alluvial deposit 142 across its full length (see paragraph 3.2.1). Two test pits were excavated into this deposit but no finds were recovered.

3.11.9 Trench 8 was orientated north-east to south-west. It measured 17.6m in length and was devoid of archaeology.

3.11.10 Trench 9 was orientated north-northwest to south-southeast. It measured 27m in length and contained a single ditch (**701**) which was 1.45m wide and 0.19m deep with gently sloping sides and a concave base. The single fill (700) consisted of a light brown grey silty sand and contained two struck flint flakes.

3.12 Finds Summaries

Metalworking debris

3.12.1 A single piece of undiagnostic vesicular slag (weighing 6g) was recovered from the fill of Middle Bronze Age ditch **53** (Period 2.3). The slag is not closely datable (Sarah Percival pers. comm.).

Struck flint (Appendix B.1)

3.12.2 A total of 411 pieces of struck flint were recovered from across the site. Due to its technological character, the bulk of the assemblage can be assigned to a Middle/Late Bronze Age stone working tradition. A small assemblage of Late Mesolithic/Early Neolithic implements were collected from either unstratified or later contexts.

Pottery (Appendix B.2)

3.12.3 The pottery assemblage consists of 1,864 sherds weighing 22.765kg. The 202g assemblage of Late Neolithic/Early Bronze Age pottery consisted of sherds of Grooved Ware and Beaker. The bulk of the pottery dates to the Middle to Later Bronze Age (2.246kg). The assemblage contains Deverel-Rimbury Middle Bronze Age forms with some post Deverel-Rimbury (PDR) Later Bronze Age style vessels. This assemblage compares well with that from Mucking.

3.12.4 A total of 80g of Late Iron Age pottery was was also collected from natural spreads on the site. A very small assemblage of Early Roman pottery (weighing 53g) was also collected (predominantly from unstratified contexts).

Worked stone (Appendix B.3)

3.12.5 An assemblage of 12 fragments (177g) of lava quern was collected from a pit and natural spreads. It was all highly abraded and none of it was datable.

CBM (Appendix B.4)

3.12.6 A total of 214g of post-medieval CBM was recovered from across the site, primarily from the modern field boundaries. The assemblage predominantly consists of flat tiles, including one with a peg hole.

Baked clay (Appendix B.5)

3.12.7 An assemblage of 226 pieces of baked clay (3.118kg) was collected from a variety of features. Seven different fabrics were present. The assemblage consists of a mixture of undiagnostic pieces (1.217kg) along with structural (764g) and plate (370g) pieces. Fragments of loomweight (424g) were also recovered from three separate contexts. A total of 343g of briquetage was also collected. The pieces recovered were all pedestals dating to the Later Bronze Age. The diagnostic pieces of baked clay and briquetage show likely salt-making on or near the site and compare well with assemblages from Mucking and Springfield Lyons.

3.13 Environmental Summaries

Human skeletal remains (Appendix C.1 and C.2)

3.13.1 A total of three deposits of cremated human remains were recovered during the archaeological works. All deposits were unurned although Late Bronze Age pottery (256g) was also recovered from deposit 214.

3.13.2 All three of the cremations were subject to radiocarbon dating (see Appendix D):

- Deposit 08 (pit **07**; Period 1) – 1741-1535 cal. BC (SUERC-58006, 95.4% probability)
- Deposit 214 (pit **215**; Period 3) – 1208-1011 cal. BC (SUERC-58010, 95.4% probability)
- Deposit 624 (pit **625**; Period 3) – 1218-1029 cal. BC (SUERC-63286, 95.4% probability)

3.13.3 Due to the high degree of fragmentation to all the remains, little in the way of osteological data could be gathered. However, all are believed to be formal cremation deposits, rather than pyre or token deposits.

Animal bone (Appendix C.3)

3.13.4 A total of 80g of animal bone was recovered from site, all of which came from Middle Bronze Age ditches in Area B. Overall preservation was poor. The assemblage was made up of domestic animals with only cow and sheep/goat being identifiable.

Environmental samples (Appendix C.4)

3.13.5 A total of 113 bulk environmental samples were collected from 97 different contexts (equating to 832 litres of soil). The environmental samples have shown that preserved plant remains are sparse although occasional charred grains and chaff elements were recovered from some of the Bronze Age deposits.

4 Discussion and Conclusions

4.1 Late Neolithic/Early Bronze Age

Monument

4.1.1 The monument located toward the northern end of Area A is an unusual feature with few known parallels. The most local example is a cropmark from Danbury, Essex (Priddy & Buckley 1987, 60, fig.37, no.51). Here it was described as a sub-rectangular enclosure with D-shaped compound. A further cropmark example is from Tollesbury, Essex (Kemble 2001, 54, fig.17). This cropmark is remarkably similar both in design and its dimensions. Kemble refers to this cropmark as a long mortuary enclosure. The issue with these two examples is that they are cropmarks, which means they cannot offer any further insight into their exact date or function.

4.1.2 Archaeological works at Eynesbury in Cambridgeshire however, have identified a similar monument, which is referred to simply as a double enclosure (Ellis 2004, 24, fig.16). The Eynesbury example contained little material evidence to provide a concrete date and function, but it was situated *c.*60m to the west of a Neolithic long barrow and cursus, and thus believed to be associated with it. Whilst no such monumental features were identified within the present site, the recovery of 25g of Late Neolithic pottery would imply a contemporary date. Further to this, the presence of an Early Bronze Age cremation deposit within the elongated element of the feature (Period 1, pit **08**) reinforces the likely funerary function of the monument.

4.2 Middle Bronze Age

Barrows and associated funerary remains

4.2.1 The presence of three barrows across the southern end of the site highlights the continuing use of this area for funerary activity. It would seem likely that these barrows formed part of a larger group. This is reinforced by the presence of three barrows to the immediate north-west (EHER 1747, 1748 and 1749) and associated cremation cemetery (EHER 14985).

4.2.2 Excavations at Mucking (just 1.7km to the north) identified a total of eight barrows (see Evans *et al.* 2016, 88-99). Whilst the size of the barrows across Mucking and the present subject site varied somewhat (the smallest being 4.2m wide and the largest 14m), they both clearly fall into the 'Ardleigh Group' style; a Middle Bronze Age funerary custom dating to *c.*1400-1200BC (Brown 1999, 171-7). The main characteristics of this tradition involve clusters of small ring-ditches and cremation burials in straight sided bucket urns of the Deverel-Rimbury tradition (Germany 2007, 113). The Ardleigh style is generally expressed as being confined to north-east Essex and south-east Suffolk (Germany 2007, 113). However, the discovery of similar traits at both Mucking and East Tilbury demonstrate that this tradition is in fact more widespread. Ring ditches are seen in this area to cluster along the gravel terraces of the Thames (see Holgate 1996, fig.3), and in Kent along the eastern chalky peninsular (see Booth *et al.* 2011, fig. 3.52).

4.2.3 No cremations or burials were identified relating directly to the barrows, however this does not mean that none were ever there. Truncation through ploughing is always a factor and is the likely reason as to why no mounds are still extant. Taphonomic factors such as the soil composition and pH could also have affected the remains. Across the entire site, just 80g of non-cremated bone was recovered (and what was recovered all came from the midden-type fill of the ditch of Enclosure 2). This extremely low density of bone highlights the likelihood that soil has played a factor in preservation. A similar

situation was observed at Mucking where the burials associated with the barrows did not contain any bone, merely a silhouette of where the body had originally lain (Evans *et al.* 2016, figs. 2.33 & 2.34).

4.2.4 However, likely associated funerary remains at East Tilbury were identified in the form of three bucket urn 'token' cremations. It is notable that each pit was only slightly larger than the pot it contained. This would have meant that excess soil from the excavated pit could have been mounded over the top of the pot, potentially acting as a location marker. Similar examples have been uncovered at St Osyth (Germany 2007, 41), the Ardleigh cemetery and rings Site 7 (Brown 1999, 165), at Site 4 (Ardleigh) of the Braintree to Colchester pipeline (Rees forthcoming, 45) and at Iwade in Kent (Bishop & Bagwell 2005, 14). On the face of it, these token cremations appear oddly placed, lying around 180m north-west of the barrows. However if you take into consideration that the double ditched and other barrows (outside of the site) are part of the same grouping, then the position of these pits makes more sense, being located in the area between the barrows. This approach to placement between barrows and as satellite to them was also observed at St Osyth (Germany 2007) and Brightlingsea (Clarke & Lavender 2008).

4.2.5 Fieldwork ahead of the Horndon to Coalhouse Fort gas pipeline (Smoothy 1993) uncovered part of a cremation cemetery which also displayed this placement of cinerary urns in the area surrounding the barrows. As with the above examples, three of the four urns were placed in pits only just large enough to fit the vessel in. These three vessels have been identified as Deverel-Rimbury bucket urns (Brown 1993, 1). The fourth vessel (which was in a markedly different style of pit) was believed to be earlier in date, possible being an Early Bronze Age Biconical Urn (Brown 1993, 1). This ceremonial theme is continued on the site itself by the presence of two cremations (located to the south and west of the barrows). These two cremations were radiocarbon dated to the start of the Late Bronze Age (*c.*1200-1000 BC), thus showing how the site continued to be an important location for burial practices for over a millennia. However, these two cremations are the latest archaeological features on the site, highlighting perhaps the end of use at this particular location.

Settlement remains

4.2.6 A dilemma which often arises around these Middle Bronze Age funerary sites is the lack of clear occupation-related evidence. The southern branch of the large two sided enclosure ditch on Area B (Enclosure 1) contained a purposely deposited backfill of midden-type material containing burnt stone, flint, pottery and burnt clay. This material stretched along the ditch for around 44m, but was particularly concentrated along a *c.*14m section (around slots **610**, **670**, **680** and **697**). The presence of such a deposit would imply that settlement activity must be located nearby.

4.2.7 Whilst a series of pit groups were identified in the area around this enclosure, there is no other evidence for domestic related activity directly associable with this enclosure. Therefore, it would seem more plausible that the waste materials would have been transported to the 'midden' from another part of the site. Domestic activity within Enclosure 2, located approximately 120m to the east on the periphery of Area A, is the likely source of this material. However, this brings up the question of why the need to deliberately move the settlement waste away from the structures producing it to a dump-site some 100m away, when there is plenty of space to create a midden close by? The answer to this could be practical or cultural, or as is frequently the case, both.

4.2.8 Small scale salt-making and craft production can also be attested for on the site. The presence of loomweight fragments, structural material and briquetage from the midden-type fill of enclosure ditch 1 attests to this. Later Bronze Age salt-making remains have also bee uncovered in the environs at Mucking (Evans *et al.* 2016) and Gun Hill (Drury & Rodwell 1973).

Field system

4.2.9 Yates (2007, 15) describes Bronze Age field systems as being distinguishably rectilinear, thus creating a grid of fields. Within this, two forms of layout are proposed, namely coaxial and aggregate. A coaxial field system has one prevailing orientation with boundaries following one alignment or extending at right angles from it. Such systems tend to be marked out by undeviating linear boundaries which do not allow for topographical obstructions. Droveways, formed by paired ditches or other forms of division, may be incorporated to aid movement through the field systems. It is in these respects that a coaxial system creates a formal layout within the landscape. Aggregate field systems on the other hand, consist of rectilinear fields where one layout axis is not dominant over another. Meaning that fields were added on a piecemeal basis rather than in adherence to a single plan.

4.2.10 The field system on this site is coaxial and encompassed an area approximately 1.3ha in size, but is clearly larger than this as it extends beyond the limits of the excavated site. It is can be tracked north-westward for at least another 40m, as it was identified during the evaluation in Trenches 371 and 375 (Pocock & Simmonds 2005, 27-29). The primarily north-east to south-west divisions are located every 20m across the site. Only four internal divisions were identified, with just two providing a measurable dimension, resulting in an internal paddock measuring 20×25m.

4.2.11 A related field system, on the same alignments, has been identified at Mucking (Evans *et al.* 2016, 99-105), although here, much larger field blocks were apparent compared with at the present site. A feature identifiable on both sites is the presence of a double ditch line dividing the field blocks (labelled as ditches **443** and **445** at East Tilbury and ditches BAD 14 and 15 at Mucking). Evans (2016, 101) states that this double ditch is unlikely to be a droveway, but rather delineates a hedgerow, the reasoning being that the interval between the two ditches is too narrow for a droveway. At Mucking this space between measured between 1.6m and 2.75m (Evans *et al.* 2016, 101), the example at East Tilbury measures between 1.4m and 2.2m.

4.2.12 Along the Thames Valley other examples of field systems can be seen. One such example is known at Heathrow Terminal 5 (Lewis *et al*. 2010) where the field system spread over approximately 40ha. This system extended over a much wider area as it was mapped and excavated over at least a further 16ha at the Imperial Sports Ground, 2.5km to the north (Crockett 2001). Field systems have also been identified at North Shoebury (Wymer & Brown 1995), Brightlingsea (Clarke 1996), Gravesend (Mudd 1994), and along the routes of the A120 (Timby *et al.* 2007) and High Speed 1 (Booth *et al.* 2011).

4.3 Modern

4.3.1 The field boundary ditches which traverse both excavation areas correspond with those on the 1873 and 1938 Ordnance Survey Maps (see Gailey 2009, figs. 6 and 7). It is evident that there were several phases to these boundaries, with a line of trees superseding a number (but not all) of the ditches.

4.3.2 It is interesting that these field boundary ditches run on the same alignment as the Middle Bronze Age field system, thus showing that the landscape in this area has

essentially remained unaltered for millennia. It is not an uncommon occurrence for post-medieval boundaries to follow earlier ditch systems, with further examples of such occurrences being seen at Stanley Road, Great Chesterford (Moan 2014) and on the Papworth Hospital site, Cambridge (Phillips 2015).

4.4 Conclusion

4.4.1 Overall, the archaeological works at Bata Fields, East Tilbury have extended the current knowledge base of prehistoric activity in the subject area. This prehistoric landscape contains both funerary and settlement activity, and highlights the complex relationship held between the two during the Bronze Age period. The type of features along with the ceramic tradition shows that the site shares close affinities with that of Mucking, located *c.*1.7km to the north.

5 Publication

5.1.1 It is proposed that a short article of approximately 3000-4000 words, two figures and two plates, be produced on the findings from the site, published in Essex Archaeology and History.

5.1.2 The working title for the article is 'A Late Neolithic and Middle Bronze Age funerary landscape at East Tilbury'. The article would centre on the Late Neolithic monument along with the Middle Bronze Age barrows and associated droveways, and how these tie in to the wider landscape. Particular reference would be made to the recently excavated Bronze Age complex at Mill House Farm Chadwell St Mary (Archaeological Solutions). Figures would include detailed site plan and a figure to show the site in its wider context to include information from the HER, relevant excavations and aerial photographs.

Appendix A. Context Inventory with Phasing

Context	Cut	Area	Master Number	Category	Feature Type	Phase
1		AB		layer	topsoil	-
2		AB		layer	subsoil	-
3	4	A		fill	post hole	0
4	4	A	4	cut	post hole	0
5	6	A		fill	post hole	1
6	6	A	6	cut	post hole	1
7	7	A	7	cut	tree throw	1
8	7	A		fill	tree throw	1
9	10	A		fill	ditch	1
10	10	A	51	cut	ditch	1
11	12	A		fill	ditch	1
12	12	A	51	cut	ditch	1
13	14	A		fill	ditch	1
14	14	A	51	cut	ditch	1
15	16	A		fill	ditch	1
16	16	A	51	cut	ditch	1
17	18	A		fill	ditch	1
18	18	A	51	cut	ditch	1
19	20	A		fill	ditch	1
20	20	A	51	cut	ditch	1
21	22	A		fill	ditch	1
22	22	A	51	cut	ditch	1
23	23	A	51	cut	ditch	1
24	23	A		fill	ditch	1
25	25	A	51	cut	ditch	1
26	25	A		fill	ditch	1
27	28	A		fill	ditch	1
28	28	A	51	cut	ditch	1
29	30	A		fill	ditch	1
30	30	A	51	cut	ditch	1
31	32	A		fill	ditch	1
32	32	A	51	cut	ditch	1
33	34	A		fill	ditch	1
34	34	A	51	cut	ditch	1
35	36	A		fill	ditch	1
36	36	A	51	cut	ditch	1
37	38	A		fill	ditch	1
38	38	A	51	cut	ditch	1
39	39	A	51	cut	ditch	1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
40	39	A		fill	ditch	1
41	42	A		fill	ditch	1
42	42	A	51	cut	ditch	1
43	44	A		fill	ditch	1
44	44	A	51	cut	ditch	1
45	46	A		fill	ditch	1
46	46	A	51	cut	ditch	1
47	47	A	51	cut	ditch	1
48	47	A		fill	ditch	1
49	49	A	51	cut	ditch	1
50	49	A		fill	ditch	1
51		A	51	master number	ditch	1
52	53	A		fill	ditch	2.3
53	53	A	53	cut	ditch	2.3
54	55	A		fill	pit	0
55	55	A	55	cut	pit	0
56	56	A	56	cut	pit	2.3
57	56	A		fill	pit	2.3
58	58	A	51	cut	ditch	1
59	58	A		fill	ditch	1
60	60	A	51	cut	ditch	1
61	60	A		fill	ditch	1
62	63	A	51	fill	ditch	1
63	63	A		cut	ditch	1
64	65	A	65	fill	pit	2.3
65	65	A		cut	pit	2.3
66	85	A	85	layer	spread	2.3
67		A		VOID		
68	85	A	85	layer	spread	2.3
69		A		VOID		
70	85	A	85	layer	spread	2.3
71	85	A	85	layer	spread	2.3
72		A		VOID		
73	85	A	85	layer	spread	2.3
74		A		VOID		
75	85	A	85	layer	spread	2.3
76		A		VOID		
77		A	85	layer	spread	2.3
78		A		VOID		
79	85	A	85	layer	spread	2.3
80		A		VOID		
81	85	A	85	layer	spread	2.3

Context	Cut	Area	Master Number	Category	Feature Type	Phase
82				VOID		
83		A	85	layer	spread	2.3
84	85	A	85	layer	spread	2.3
85	85	A	85	Master	spread	2.3
86	87	A		fill	post hole	2.3
87	87	A	87	cut	post hole	2.3
88	89	A		fill	post hole	2.3
89	89	A	89	cut	post hole	2.3
90	91	A		fill	ditch	2.3
91	91	A	91	cut	ditch	2.3
92	93	A		fill	post hole	2.3
93	93	A	91	cut	post hole	2.3
94	95	A		fill	ditch	2.3
95	95	A	91	cut	ditch	2.3
96	97	A		fill	ditch	2.3
97	97	A	91	cut	ditch	2.3
98	99	A		fill	ditch	2.3
99	99	A	91	cut	ditch	2.3
100				VOID		
101	85	A	85	layer	spread	2.3
102				VOID		
103		A	85	layer	spread	2.3
104				VOID		
105		A	85	layer	spread	2.3
106	107	A		fill	post hole	2.3
107	107	A	107	cut	post hole	2.3
108	109	A		fill	post hole	2.3
109	109	A	109	cut	post hole	2.3
110				VOID		
111		A	85	layer	spread	2.3
112	113	A		fill	post hole	2.3
113	113	A	113	cut	post hole	2.3
114	115	A		fill	post hole	2.3
115	115	A	115	cut	post hole	2.3
116	117	A		fill	post hole	2.3
117	117	A	117	cut	post hole	2.3
118	120	A		fill	pit	2.3
119	120	A		fill	pit	2.3
120	120	A	120	cut	pit	2.3
121	122	A		fill	pit	2.3
122	122	A	122	cut	pit	2.3
123	124	A		fill	pit	2.3

Context	Cut	Area	Master Number	Category	Feature Type	Phase
124	124	A	124	cut	pit	2.3
125	126	A		fill	pit	2.3
126	126	A	126	cut	pit	2.3
127	128	A		fill	ditch	2.3
128	128	A	128	cut	ditch	2.3
129	130	A		fill	ditch	2.3
130	130	A	128	cut	ditch	2.3
131	131	A	131	cut	pit	2.3
132	131	A		fill	pit	2.3
133	130	A		fill	pit	2.3
134	134	A	91	cut	ditch	2.3
135	134	A		fill	ditch	2.3
136	136	A	91	cut	ditch	2.3
137	136	A		fill	ditch	2.3
138	138	A	91	cut	ditch	2.3
139	138	A		fill	ditch	2.3
140	140	A	91	cut	ditch	2.3
141	141	A		fill	ditch	2.3
142		A	142	layer	alluvial deposit	0
143	144	A		fill	ditch	4
144	144	A	144	cut	ditch	4
145	146	A		fill	gully	2.1
146	146	A	146	cut	gully	2.1
147	148	A		fill	gully	2.1
148	148	A	146	cut	gully	2.1
149	150	A		fill	gully	2.1
150	150	A	150	cut	gully	2.1
151	152	A		fill	gully	2.1
152	152	A	150	cut	gully	2.1
153	153	A	144	cut	gully	2.1
154	153	A		fill	gully	2.1
155	155	A	274	cut	gully	2.1
156	155	A		fill	gully	2.1
157	157	A	150	cut	gully	2.1
158	157	A		fill	gully	2.1
159	159	A	144	cut	ditch/gully	4
160	159	A		fill	ditch/gully	4
161	162	A		fill	ditch	2.3
162	162	A	162	cut	ditch	2.3
163	164	A		fill	ditch	2.3
164	164	A	162	cut	ditch	2.3
165		A	142	layer	alluvial deposit	0

Context	Cut	Area	Master Number	Category	Feature Type	Phase
166	167	A		fill	gully	2.1
167	167	A	150	cut	gully	2.1
168	169	A		fill	gully	2.1
169	169	A	169	cut	gully	2.1
170	171	A		fill	gully	2.1
171	171	A	169	cut	gully	2.1
172	172	A	172	cut	gully	2.1
173	172	A		fill	gully	2.1
174	174	A	174	cut	pit	2.1
175	174	A		fill	pit	2.1
176	177	A		fill	gully	2.2
177	177	A	177	cut	gully	2.2
178	179	A		fill	gully	2.2
179	179	A	177	cut	gully	2.2
180	181	A		fill	tree throw	2.1
181	181	A	181	cut	tree throw	2.1
182	183	A		fill	ditch	2.1
183	183	A	183	cut	ditch	2.1
184	185	A		fill	ditch	2.1
185	185	A	183	cut	ditch	2.1
186	187	A		fill	gully	2.1
187	187	A	187	cut	gully	2.1
188	189	A		fill	gully	2.1
189	189	A	187	cut	gully	2.1
190	191	A		fill	gully	2.1
191	191	A	187	cut	gully	2.1
192	193	A		fill	pit	2.1
193	193	A	193	cut	pit	2.1
194	195	A		fill	pit	2.1
195	195	A	195	cut	pit	2.1
196	197	A		fill	ditch	2.2
197	197	A	197	cut	ditch	2.2
198	199	A		fill	ditch	2.2
199	199	A	197	cut	ditch	2.2
200	201	A		fill	ditch	2.2
201	201	A	197	cut	ditch	2.2
202	203	A		fill	gully	2.1
203	203	A	172	cut	gully	2.1
204	205	A		fill	gully	2.1
205	205	A	172	cut	gully	2.1
206	207	A		fill	gully	2.1
207	207	A	172	cut	gully	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
208	209	A		fill	gully	2.1
209	209	A	169	cut	gully	2.1
210	211	A		fill	gully	2.1
211	211	A	169	cut	gully	2.1
212	213	A		fill	gully	2.1
213	213	A	169	cut	gully	2.1
214	215	A		fill	pit	3
215	215	A	215	cut	pit	3
216	217	A		fill	gully	2.1
217	217	A	217	cut	gully	2.1
218	219	A		fill	gully	2.1
219	219	A	217	cut	gully	2.1
220	221	A		fill	gully	2.1
221	221	A	217	cut	gully	2.1
222	223	A		fill	ditch	4
223	223	A	114	cut	ditch	4
224	225	A		fill	ditch	2.2
225	225	A	197	cut	ditch	2.2
226	227	A		fill	pit	1
227	227	A	227	cut	pit	1
228	231	A		fill	pit	1
229	231	A		fill	pit	1
230	231	A		fill	pit	1
231	231	A	231	cut	pit	1
232	233	A		fill	ditch	2.2
233	233	A	197	cut	ditch	2.2
234	235	A		fill	ditch	2.2
235	235	A	197	cut	ditch	2.2
236	237	A		fill	ditch	4
237	237	A	144	cut	ditch	4
238	239	A		fill	pit	0
239	239	A	239	cut	pit	0
240		A	240	master	Barrow	2.1
241	242	A		fill	ditch	2.1
242	242	A	240	cut	ditch	2.1
243	244	A		fill	ditch	2.1
244	244	A	240	cut	ditch	2.1
245	246	A		fill	ditch	2.1
246	246	A	240	cut	ditch	2.1
247	248	A		fill	ditch	2.1
248	248	A	240	cut	ditch	2.1
249	250	A		fill	ditch	2.2

Context	Cut	Area	Master Number	Category	Feature Type	Phase
250	250	A	197	cut	ditch	2.2
251	252	A		fill	gully	2.1
252	252	A	252	cut	gully	2.1
253	254	A		fill	ditch	2.2
254	254	A	254	cut	ditch	2.2
255	256	A		fill	gully	2.1
256	256	A	252	cut	gully	2.1
257	258	A		fill	ditch	2.3
258	258	A	162	cut	ditch	2.3
259	260	A		fill	ditch	2.3
260	260	A	162	cut	ditch	2.3
261	261	A		fill	ditch	2.3
262	261	A	162	cut	ditch	2.3
263	264	A		fill	ditch	2.1
264	264	A	240	cut	ditch	2.1
265	266	A		fill	ditch	2.1
266	266	A	240	cut	ditch	2.1
267	268	A		fill	ditch	2.1
268	268	A	240	cut	ditch	2.1
269	270	A		fill	ditch	2.3
270	270	A	270	cut	ditch	2.3
271	273	A		fill	pit	0
272	273	A		fill	pit	0
273	273	A	273	cut	pit	0
274				VOID		
275	276	A		fill	pit	2.1
276	276	A	276	cut	pit	2.1
277	278	A		fill	ring gully	2.1
278	278	A	274	cut	ring gully	2.1
279	280	A		fill	ring gully	2.1
280	280	A	274	cut	ring gully	2.1
281	282	A		fill	ring gully	2.1
282	282	A	274	cut	ring gully	2.1
283	284	A		fill	ring gully	2.1
284	284	A	274	cut	ring gully	2.1
285	286	A		fill	ring gully	2.1
286	286	A	274	cut	ring gully	2.1
287	288	A		fill	ring gully	2.1
288	288	A	274	cut	ring gully	2.1
289	290	A		fill	ditch	2.1
290	290	A	183	cut	ditch	2.1
291	292	A		fill	ditch	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
292	292	A	183	cut	ditch	2.1
293	0	A	293	master	ring gully	2.1
294	294	A	294	cut	pit	2.3
295	294	A		fill	pit	2.3
296	294	A		fill	pit	2.3
297	297	A	297	cut	pit	2.3
298	297	A		fill	pit	2.3
299	299	A	299	cut	post hole	2.3
300	299	A		fill	post hole	2.3
301	301	A	301	cut	post hole	2.3
302	301	A		fill	post hole	2.3
303	303	A	303	cut	post hole	2.3
304	303	A		fill	post hole	2.3
305	305	A	305	cut	post hole	2.3
306	305	A		fill	post hole	2.3
307	307	A	307	cut	post hole	2.3
308	307	A		fill	post hole	2.3
309	309	A	309	cut	post hole	2.3
310	309	A		fill	post hole	2.3
311	311	A	311	cut	post hole	2.3
312	311	A		fill	post hole	2.3
313	313	A	313	cut	post hole	2.3
314	313	A		fill	post hole	2.3
315	315	A	315	cut	post hole	2.3
316	315	A		fill	post hole	2.3
317	317	A	317	cut	post hole	2.3
318	317	A		fill	post hole	2.3
319	320	A		fill	gully	2.1
320	320	A	293	cut	gully	2.1
321	322	A		fill	gully	2.1
322	322	A	293	cut	gully	2.1
323	324	A		fill	gully	2.1
324	324	A	293	cut	gully	2.1
325	326	A		fill	gully	2.1
326	326	A	293	cut	gully	2.1
327	328	A		fill	gully	2.1
328	328	A	293	cut	gully	2.1
329	330	A		fill	gully	2.1
330	330	A	293	cut	gully	2.1
331	332	A		fill	gully	2.1
332	332	A	293	cut	gully	2.1
333	334	A		fill	gully	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
334	334	A	293	cut	gully	2.1
335	336	A		fill	gully	2.1
336	336	A	293	cut	gully	2.1
337	338	A		fill	gully	2.1
338	338	A	293	cut	gully	2.1
339	340	A		fill	gully	2.1
340	340	A	293	cut	gully	2.1
341	341	A	31	cut	gully	2.3
342	341	A		fill	gully/pit	2.3
343	343	A	343	cut	post hole	2.3
344	343	A		fill	post hole	2.3
345	345	A	345	cut	post hole	2.3
346	346	A		fill	post hole	2.3
347	348	A		fill	gully	2.1
348	348	A	348	cut	gully	2.1
349	350	A		fill	gully	2.1
350	350	A	348	cut	gully	2.1
351	352	A		fill	gully	2.1
352	352	A	352	cut	gully	2.1
353	354	A		fill	gully	2.1
354	354	A	354	cut	gully	2.1
355	244	A		fill	ditch	2.1
356	356	A	91	cut	ditch	2.3
357	356	A		fill	ditch	2.3
358	359	A		fill	gully	2.1
359	359	A	354	cut	gully	2.1
360	361	A		fill	gully	2.1
361	361	A	352	cut	gully	2.1
362	362	A	362	cut	post hole	2.3
363	362	A		fill	post hole	2.3
364	364	A	364	cut	tree throw	2.1
365	364	A		fill	tree throw	2.1
366	366	A	366	cut	post hole	2.1
367	366	A		fill	post hole	2.3
368	242	A		fill	ditch	2.1
369	344	A		fill	ditch	2.1
370	344	A		fill	ditch	2.1
371	246	A		fill	ditch	2.1
372	248	A		fill	ditch	2.1
373	264	A		fill	ditch	2.1
374	266	A		fill	ditch	2.1
375	268	A		fill	ditch	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
376	377	A		fill	post hole	2.3
377	377	A	377	cut	post hole	2.3
378	379	B		fill	ditch	4
379	379	B	379	cut	ditch	4
380	381	B		fill	ditch	2.2
381	381	B	381	cut	ditch	2.2
382	383	B		fill	post hole	2.3
383	383	B	383	cut	post hole	2.3
384	385	B		fill	post hole	2.3
385	385	B	385	cut	post hole	2.3
386	387	B		fill	post hole	2.3
387	387	B	387	cut	post hole	2.3
388	389	B		fill	post hole	2.3
389	389	B	389	cut	post hole	2.3
390	391	B		fill	post hole	2.3
391	391	B	391	cut	post hole	2.3
392	393	B		fill	post hole	2.3
393	393	B	393	cut	post hole	2.3
394	395	B		fill	post hole	2.3
395	395	B	395	cut	post hole	2.3
396	397	B		fill	post hole	2.3
397	397	B	397	cut	post hole	2.3
398	399	B		fill	post hole	2.3
399	399	B	399	cut	post hole	2.3
400	401	B		fill	post hole	2.3
401	401	B	401	cut	post hole	2.3
402	403	B		fill	pit	2.3
403	403	B	403	cut	pit	2.3
404	405	B		fill	pit	2.3
405	405	B	405	cut	pit	2.3
406	407	B		fill	ditch	2.2
407	407	B	407	cut	ditch	2.2
408	409	B		fill	ditch	2.2
409	409	B	409	cut	ditch	2.2
410	411	B		fill	ditch	4
411	411	B	379	cut	ditch	4
412	413	B		fill	ditch	2.2
413	413	B	413	cut	ditch	2.2
414				VOID		
415				VOID		
416	417	B		fill	ditch	2.2
417	417	B	381	cut	ditch	2.2

Context	Cut	Area	Master Number	Category	Feature Type	Phase
418	419	B		fill	ditch	2.2
419	419	B	409	cut	ditch	2.2
420	421	B		fill	ditch	4
421	421	B	379	cut	ditch	4
422	423	B		fill	ditch	2.2
423	423	B	413	cut	ditch	2.2
424	425	B		fill	ditch	2.2
425	425	B	409	cut	ditch	2.2
426	427	B		fill	post hole	2.3
427	427	B	427	cut	post hole	2.3
428	429	B		fill	pit	2.3
429	429	B	429	cut	pit	2.3
430	431	B		fill	pit	2.3
431	431	B	431	cut	pit	2.3
432	433	B		fill	pit	2.3
433	433	B	433	cut	pit	2.3
434	435	B		fill	pit	2.3
435	435	B	435	cut	pit	2.3
436	437	B		fill	ditch	4
437	437	B	379	cut	ditch	4
438	439	B		fill	gully	2.2
439	439	B	413	cut	gully	2.2
440	441	B		fill	ditch	2.2
441	441	B	409	cut	ditch	2.2
442	443	B		fill	gully	2.2
443	443	B	443	cut	gully	2.2
444	445	B		fill	gully	2.2
445	445	B	445	cut	gully	2.2
446	447	B		fill	post hole	2.3
447	447	B	447	cut	post hole	2.3
448	449	B		fill	post hole	2.3
449	449	B	449	cut	post hole	2.3
450	451	B		fill	pit	2.3
451	451	B	451	cut	pit	2.3
452	453	B		fill	pit	2.3
453	453	B	453	cut	pit	2.3
454	455	B		fill	pit	2.3
455	455	B	455	cut	pit	2.3
456	459	B		fill	pit	2.3
457	459	B		fill	pit	2.3
458	459	B		fill	pit	2.3
459	459	B	459	cut	pit	2.3

Context	Cut	Area	Master Number	Category	Feature Type	Phase
460	461	B		fill	post hole	2.3
461	461	B	461	cut	post hole	2.3
462	463	B		fill	post hole	2.3
463	463	B	463	cut	post hole	2.3
464	465	B		fill	pit	2.3
465	465	B	465	cut	pit	2.3
466	467	B		fill	pit	2.3
467	467	B	467	cut	pit	2.3
468	469	B		fill	post hole	2.3
469	469	B	469	cut	post hole	2.3
470	471	B		fill	post hole	2.3
471	471	B	471	cut	post hole	2.3
472	473	B		fill	post hole	2.3
473	473	B	473	cut	post hole	2.3
474	475	B		fill	post hole	2.3
475	475	B	475	cut	post hole	2.3
476	477	B		fill	post hole	2.3
477	477	B	477	cut	post hole	2.3
478	479	B		fill	post hole	2.3
479	479	B	479	cut	post hole	2.3
480	481	B		fill	pit	2.3
481	481	B	481	cut	pit	2.3
482	483	B		fill	pit	2.3
483	483	B	483	cut	pit	2.3
484	485	B		fill	pit	2.3
485	485	B	485	cut	pit	2.3
486	487	B		fill	ditch	2.2
487	487	B	409	cut	ditch	2.2
488	489	B		fill	gully	0
489	489	B	489	cut	gully	0
490	491	B		fill	gully	0
491	791	B	489	cut	gully	0
492	493	B		fill	tree throw	0
493	493	B	493	cut	tree throw	0
494	495	B		fill	ditch	2.2
495	495	B	413	cut	ditch	2.2
496	497	B		fill	ditch	2.2
497	497	B	413	cut	ditch	2.2
498	499	B		fill	gully	2.2
499	499	B	499	cut	gully	2.2
500	501	B		fill	gully	2.2
501	501	B	499	cut	gully	2.2

Context	Cut	Area	Master Number	Category	Feature Type	Phase
502	503	B		fill	pit	2.3
503	503	B	503	cut	pit	2.3
504	505	B		fill	pit	2.3
505	505	B	505	cut	pit	2.3
506	507	B		fill	ditch	4
507	507	B	379	cut	ditch	4
508		B	508	layer	spread	0
509	465	B		fill	pit	2.3
510	511	B		fill	gully	2.3
511	511	B	445	cut	gully	2.3
512	513	B		fill	gully	2.3
513	513	B	443	cut	gully	2.3
514	515	B		fill	ditch	2.2
515	515	B	409	cut	ditch	2.2
516	517	B		fill	post hole	2.3
517	517	B	517	cut	post hole	2.3
518				VOID		
519				VOID		
520	521	B		fill	gully	2.2
521	521	B	413	cut	gully	2.2
522	523	B		fill	pit	2.3
523	523	B	523	cut	pit	2.3
524	525	B		fill	pit	2.3
525	525	B	525	cut	pit	2.3
526	527	B		fill	ditch	2.2
527	527	B	381	cut	ditch	2.2
528	529	B		fill	ditch	2.2
529	529	B	407	cut	ditch	2.2
530	531	B		fill	tree throw	0
531	531	B	531	cut	tree throw	0
532	533	B		fill	pit	2.3
533	533	B	533	cut	pit	2.3
534	535	B		fill	ditch	4
535	535	B	379	cut	ditch	4
536	539	B		fill	tree throw	2.3
537	539	B		fill	tree throw	2.3
538	539	B		fill	tree throw	2.3
539	539	B	539	cut	tree throw	2.3
540	541	B		fill	ditch	2.2
541	541	B	409	cut	ditch	2.2
542	543	B		fill	ditch	2.2
543	543	B	407	cut	ditch	2.2

Context	Cut	Area	Master Number	Category	Feature Type	Phase
544	545	B		fill	ditch	2.2
545	545	B	381	cut	ditch	2.2
546	547	B		fill	ditch	2.1
547	547	B	547	cut	ditch	2.1
548	549	B		fill	ditch	2.2
549	549	B	381	cut	ditch	2.2
550	551	B		fill	ditch	2.2
551	551	B	413	cut	ditch	2.2
552	553	B		fill	ditch	2.1
553	553	B	547	cut	ditch	2.1
554	555	B		fill	gully	0
555	555	B	489	cut	gully	0
556	557	B		fill	ditch	2.2
557	557	B	409	cut	ditch	2.2
558	559	B		fill	pit	2.3
559	559	B	559	cut	pit	2.3
560	561	B		fill	pit	2.3
561	561	B	561	cut	pit	2.3
562	563	B		fill	pit	2.3
563	563	B	563	cut	pit	2.3
564		B	564	layer	spread	0
565	571	B		fill	pit	4
566	567	B		fill	ditch	2.2
567	567	B	381	cut	ditch	2.2
568	571	B		fill	pit	4
569	571	B		fill	pit	4
570	571	B		fill	pit	4
571	571	B	571	cut	pit	4
572	573	B		fill	pit	2.3
573	573	B	573	cut	pit	2.3
574	575	B		fill	pit	2.3
575	575	B	575	cut	pit	2.3
576	577	B		fill	ditch	2.2
577	577	B	519	cut	ditch	2.2
578	579	B		fill	pit	4
579	579	B	579	cut	pit	4
580	581	B		fill	ditch	4
581	581	B	581	cut	ditch	4
582	583	B		fill	pit	2.3
583	583	B	583	cut	pit	2.3
584	585	B		fill	ditch	2.2
585	585	B	577	cut	ditch	2.2

Context	Cut	Area	Master Number	Category	Feature Type	Phase
586	587	B		fill	ditch	4
587	587	B	519	cut	ditch	4
588	589	B		fill	pit	2.3
589	589	B	589	cut	pit	2.3
590	591	B		fill	ditch	2.3
591	591	B	581	cut	ditch	2.3
592	593	B		fill	pit	2.3
593	593	B	593	cut	pit	2.3
594	595	B		fill	ditch	2.2
595	595	B	595	cut	ditch	2.2
596	597	B		fill	ditch	2.1
597	597	B	597	cut	ditch	2.1
598	599	B		fill	pit	2.3
599	599	B	599	cut	pit	2.3
600	601	B		fill	pit	2.3
601	601	B	601	cut	pit	2.3
602	603	B		fill	pit	2.3
603	603	B	603	cut	pit	2.3
604	605	B		fill	pit	2.3
605	605	B	605	cut	pit	2.3
606	610	B		fill	ditch	2.1
607	610	B		fill	ditch	2.1
608	610	B		fill	ditch	2.1
609	610	B		fill	ditch	2.1
610	610	B	579	cut	ditch	2.1
611	611	B	579	cut	ditch	2.1
612	611	B		fill	ditch	2.1
613	597	B		fill	ditch	2.1
614	597	B		fill	ditch	2.1
615	597	B		fill	ditch	2.1
616	597	B		fill	ditch	2.1
617	597	B		fill	ditch	2.1
618	619	B		fill	ditch	4
619	619	B	581	cut	ditch	4
620	611	B		fill	ditch	2.1
621	611	B		fill	ditch	2.1
622	611	B		fill	ditch	2.1
623	611	B		fill	ditch	2.1
624	625	B		fill	pit	3
625	625	B	625	cut	pit	3
626	631	B		fill	ditch	2.1
627	631	B		fill	ditch	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
628	631	B		fill	ditch	2.1
629	631	B		fill	ditch	2.1
630	631	B		fill	ditch	2.1
631	631	B	579	cut	ditch	2.1
632	631	B		fill	ditch	2.1
633	631	B		fill	ditch	2.1
634	636	B		fill	pit	2.3
635	636	B		fill	pit	2.3
636	636	B	636	cut	pit	2.3
637	637	B	579	cut	ditch	2.1
638	637	B		fill	ditch	2.1
639	637	B		fill	ditch	2.1
640	637	B		fill	ditch	2.1
641	637	B		fill	ditch	2.1
642	637	B		fill	ditch	2.1
643	637	B		fill	ditch	2.1
644	637	B		fill	ditch	2.1
645	646	B		fill	gully	2.2
646	646	B	646	cut	gully	2.2
647	648	B		fill	gully	2.2
648	648	B	646	cut	gully	2.2
649	610	B		fill	ditch	2.1
650	610	B		fill	ditch	2.1
651	652	B		fill	ditch	2.2
652	652	B	595	cut	ditch	2.2
653	654	B		fill	ditch	2.1
654	654	B	654	cut	ditch	2.1
655	656	B		fill	ditch	2.1
656	656	B	654	cut	ditch	2.1
657	658	B		fill	ditch	2.1
658	658	B	654	cut	ditch	2.1
659	660	B		fill	ditch	2.2
660	660	B	595	cut	ditch	2.2
661	661	B	597	cut	ditch	2.1
662	670	B		fill	ditch	2.1
663	670	B		fill	ditch	2.1
664	670	B		fill	ditch	2.1
665	670	B		fill	ditch	2.1
666	670	B		fill	ditch	2.1
667	670	B		fill	ditch	2.1
668	670	B		fill	ditch	2.1
669	670	B		fill	ditch	2.1

Context	Cut	Area	Master Number	Category	Feature Type	Phase
670	670	B	597	cut	ditch	2.1
671	661	B		fill	ditch	2.1
672	661	B		fill	ditch	2.1
673	661	B		fill	ditch	2.1
674	661	B		fill	ditch	2.1
675	680	B		fill	ditch	2.1
676	680	B		fill	ditch	2.1
677	680	B		fill	ditch	2.1
678	680	B		fill	ditch	2.1
679	680	B		fill	ditch	2.1
680	680	B	597	cut	ditch	2.1
681	686	B		fill	ditch	2.1
682	686	B		fill	ditch	2.1
683	686	B		fill	ditch	2.1
684	686	B		fill	ditch	2.1
685	686	B		fill	ditch	2.1
686	686	B	597	cut	ditch	2.1
687	688	B		fill	pit	2.3
688	688	B	688	cut	pit	2.3
689	690	B		fill	gully	2.2
690	690	B	413	cut	gully	2.2
691	692	B		fill	ditch	2.1
692	692	B	654	cut	ditch	2.1
693	697	B		fill	ditch	2.1
694	697	B		fill	ditch	2.1
695	697	B		fill	ditch	2.1
696	697	B		fill	ditch	2.1
697	697	B	597	cut	ditch	2.1
698	699	A		fill	ditch	1
699	699	A	51	cut	ditch	1
700	701	B		fill	ditch	0
701	701	B	701	cut	ditch	0
702	703	A		fill	ditch	1
703	703	A	51	cut	ditch	1
704		B	142	layer	alluvium	0

Appendix B. Finds Reports

B.1 Struck flint

By Antony Dickson with Aidan Parker

Introduction

B.1.1 Between August and September 2005 Oxford Archaeology (OA) carried out an archaeological evaluation on land at East Tilbury and Linford. In the main the results of the evaluation identified Late Bronze Age activity surrounded by a substantial enclosure ditch. Beyond the main settlement the evaluation also revealed evidence for fields and paddocks associated with the settlement (Simmonds 2005).

B.1.2 A small assemblage of flaked lithics, comprising 145 pieces, was recovered during the evaluation. This material was subject to a lithic assessment and assigned to a later prehistoric flint working tradition (Devaney 2005). This was based on the technological character of the assemblage, as a lack of any diagnostic pieces meant that a chronology could not be refined further. Bronze Age ceramics, along with a smaller amount of Later Neolithic material, were also recovered from many of the flint-bearing contexts, and this too supported the later prehistoric date for the bulk of the lithic assemblage (ibid).

B.1.3 Two subsequent phases of excavation were undertaken from October to November 2014 and April to June 2015. In addition to recording further elements of features identified during the early phases of evaluation, the work also revealed a Late Neolithic/Early Bronze Age enclosure; and a working area, three barrows and several pits dating to the Middle Bronze Age. A small assemblage of 198 flaked lithics was recovered from the first phase of excavation and the later phase assemblage comprises 222 pieces.

B.1.4 Therefore, a total of 420 lithics were subject to detailed lithic analysis. The analysis has been designed in order to determine the character and scale of flint working at the site. Additionally, it also aims to characterise the technological aspects of the assemblage, identify lithic reduction strategies and interpret them alongside those of a similar technological and chronological standing from the wider region.

Methodology

B.1.5 The detailed typological and attribute analysis involved the recording of the physical characteristics of the worked stone, raw material identification and the metrical analysis of tools and waste. In addition, the material was characterised in technological terms. This was based upon a number of criteria: the recognition of distinctive forms, such as rejuvenation flakes, an assessment of the orientation of scars on the dorsal surfaces of flakes and blades, the characterisation of platforms and the categorisation of flake and blade terminations. Although some of these criteria can be ambiguous, they can provide hints to the range of reduction strategies represented in a given assemblage.

B.1.6 Flakes and blades were also characterised and quantified in terms of their position within a generalised reduction sequence. Each one was assigned to primary, secondary or tertiary stages. Such an approach has its limitations, and it necessarily needs to be set alongside more qualitative observations on flake character and on the nature of broken material. However, it does provide a basis for establishing whether or not particular assemblages contain all, or only selected, stages in the reduction of particular cores and/or tools. It should be noted that pieces of stone recognised as natural or

representing thermal fractures (unless intentionally modified in some way) have been left out of the discussion.

B.1.7 The results of the detailed typological and attribute analysis are presented below by reference to core technology, flake and blade categorisation and morphology, and tool characterisation. The results are also discussed alongside other excavated assemblages in order to consider the role of stone working activity at East Tilbury in a local and wider landscape context. The text is supplemented with tables in order to elaborate on the discussion of the struck lithics.

Results

B.1.8 The lithic assemblage contains 420 pieces. This can be broken down into 267 pieces of unmodified blade and flake debitage (64%); four core trimming pieces (1%); nine cores and core fragments (2%); 23 retouched pieces (5%), of which 12 are scraper forms; 105 indeterminate chunks and fragments (25%); three pebbles (1%); and nine thermal flakes (2%) (Table 1).

B.1.9 Table 2 quantifies the amount of broken blade and flake debitage within the assemblage. These 118 pieces (28%) were subject to analysis to determine material type, edge preservation and degree of recortication and those aspects will be included in the discussion. However, they were omitted from the metrical attribute analysis and will not be included in any discussion of those traits. A similar approach is adopted for the thermal flakes, as none of them were subject to intentional modification, and they are not included in the technological discussion. Two of the three pebbles recorded (Table 1) are natural, however, they have been subject to heating. In total, 85 pieces of flint (20%) are burnt and they include 78 indeterminate chunks and fragments and four flakes, two of which are broken. One of the scrapers also shows signs of being burnt, though not as heavily as the majority of the other pieces.

B.1.10 Flint is the sole raw material type represented in the assemblage. It is fine grained with few inclusions and flaws, and has a white chalky cortex, and is likely to have been procured from local sources (Barclay *et al.* 2011, 218). In general terms the flint can be separated into brown and grey material. The brown flint is very dark, opaque, almost blackish-brown in colour, becoming lighter and more translucent on thinner flakes, and shows no sign of surface alteration. The grey flint is opaque, light to medium grey in colour and has undergone varying degrees of recortication. This is represented as a thin, milky white veneer that becomes thicker and greyer as surface alteration becomes more advanced. When this material has experienced subsequent post-depositional damage, or has been reworked, the original brown colour of the material can be observed, indicating that it is the same material as the brown flint. A small quantity of a light grey, opaque flint (showing no evidence for geochemical surface alteration), with a coarser texture than the brown/grey flint described above, could represent an inferior quality material that was possibly procured from river gravel deposits (ibid). Beyond these types of flint, a single broad blade, from alluvial deposit 142, has a thin pitted cortex and is a deep reddish-orange colour. It is possible it the piece may have been subject to heating, but it bears none of the spalls and cracks often associated with burnt flint.

B.1.11 A total of 253 pieces (60%) of the debitage retained acute fresh edges. This suggests that post-depositional damage is minimal, and as such, the broken debitage within the assemblage is possibly a product of stone working.

Context	Blade	Core	Core fragment	Core-trimming	Edge retouched	Flake	Indeterminate chunk	Indeterminate fragment	Pebble	Scraper	Thermal flake	Total
2	10	1	2	2	3	19			1	2		**40**
8						1						**1**
9						1						**1**
11						1						**1**
13						1						**1**
20						1						**1**
21	1											**1**
26			1			2				1		**4**
33						1						**1**
43						1						**1**
70					1							**1**
84	1					1					1	**3**
90								1				**1**
94	1											**1**
116						1						**1**
132						2						**2**
133						2	2					**4**
139							1					**1**
142	4					4						**8**
145						3						**3**
161	3					3						**6**
165	4					7	6		1			**18**
170	1					2						**3**
175						3	6		1		1	**11**
176						1						**1**
182		1								1		**2**
186						3						**3**

Context	Blade	Core	Core fragment	Core-trimming	Edge retouched	Flake	Indeterminate chunk	Indeterminate fragment	Pebble	Scraper	Thermal flake	Total
192						1						**1**
198						1						**1**
202						1					1	**2**
206			1	1								**2**
208	1											**1**
210						1		1				**2**
214						1						**1**
222					1					1		**2**
226	2					6	1					**9**
228	6				2	13	2			3	3	**29**
232						1						**1**
234	1					1						**2**
240	1				1	1	2	2				**7**
241	1					2				1		**4**
243						1						**1**
245						3						**3**
247		1										**1**
249	1											**1**
251	2											**2**
253	1											**1**
255	1					1						**2**
259	2											**2**
263	2					1		1				**4**
265						1	1					**2**
267				1		1						**2**
282						2						**2**
283	1											**1**

Context	Blade	Core	Core fragment	Core-trimming	Edge retouched	Flake	Indeterminate chunk	Indeterminate fragment	Pebble	Scraper	Thermal flake	Total
289	2					1						**3**
298							1					**1**
321						1						**1**
325	1											**1**
327	1											**1**
329		1										**1**
331	1											**1**
335	1	1										**2**
365						8						**8**
408						2						**2**
420						2						**2**
446							1					**1**
452	1											**1**
456	2					18	38	13			2	**73**
464						2						**2**
502						1	1					**2**
508	1					3	1					**5**
564					1	2	1					**4**
574						1	1	1				**3**
576						1						**1**
582						1		1				**2**
596						1				1		**2**
607						3	2	1				**6**
612						1						**1**
621						5						**5**
622						1						**1**
626						3	1					**4**

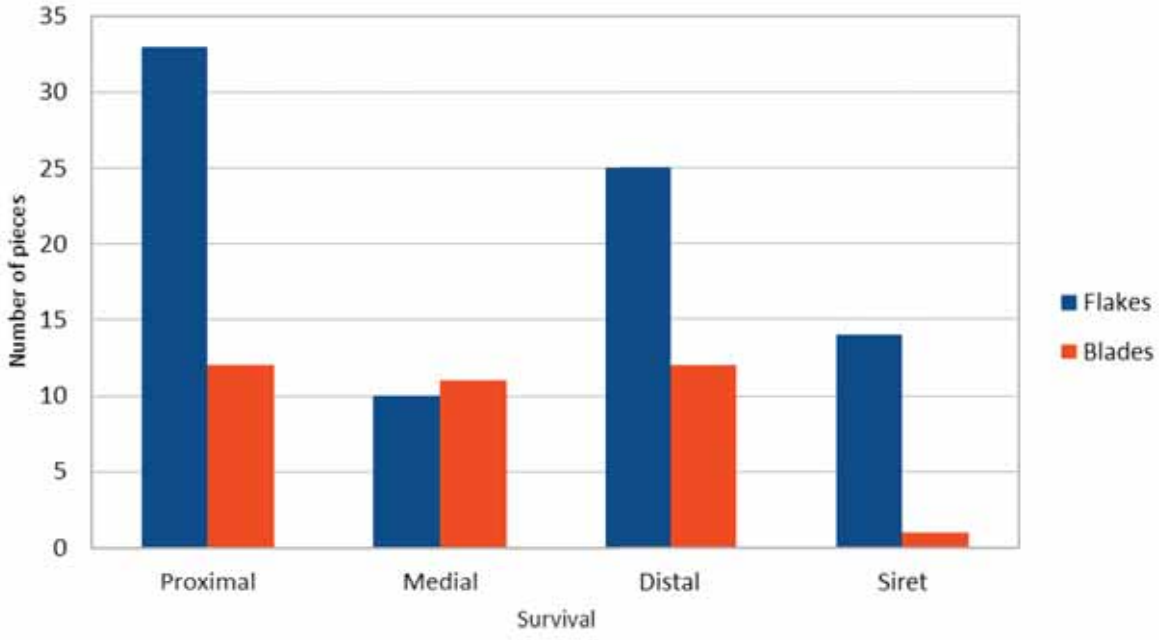
Context	Blade	Core	Core fragment	Core-trimming	Edge retouched	Flake	Indeterminate chunk	Indeterminate fragment	Pebble	Scraper	Thermal flake	Total
632	1											**1**
633							1	1				**2**
635	1					1						**2**
640						1						**1**
644						5	1					**6**
659						1						**1**
664						1	2					**3**
665						1						**1**
671	1				1	6	2					**10**
673	2					1						**3**
677	1											**1**
679						2				1		**3**
683						1						**1**
687	2					2						**4**
694						1	4	2				**7**
695						2						**2**
696						1						**1**
698	1					3						**4**
700						2						**2**
702						3						**3**
704	4				1	7	3			1		**16**
767											1	**1**
Total	**70**	**5**	**4**	**4**	**11**	**197**	**81**	**24**	**3**	**12**	**9**	**420**

Table 1: Flint quantification

Context	Blades	Flakes	Total	Context	Blades	Flakes	Total	Context	Blades	Flakes	Total
2	6	10	**16**	228	3	8	**11**	464		1	**1**
8		1	**1**	234		1	**1**	508	1		**1**
9		1	**1**	241		1	**1**	574		1	**1**
11		1	**1**	243		1	**1**	596		1	**1**
13		1	**1**	245		1	**1**	621		3	**3**
20		1	**1**	249	1		**1**	622		1	**1**
43		1	**1**	251	1		**1**	635		1	**1**
84	1		**1**	255	1		**1**	644		1	**1**
132		1	**1**	259	2		**2**	664		1	**1**
133		1	**1**	263	2	1	**3**	671		2	**2**
142	1		**1**	265		1	**1**	673	1		**1**
161		1	**1**	267		1	**1**	677	1		**1**
165	4	2	**6**	282		2	**2**	679		2	**2**
170	1	2	**3**	283	1		**1**	687	1	1	**2**
176		1	**1**	325	1		**1**	698	1	1	**2**
198		1	**1**	331	1		**1**	700		1	**1**
208	1		**1**	365		1	**1**	702		2	**2**
214		1	**1**	420		1	**1**	704	2	4	**6**
226	1	2	**3**	456	2	11	**13**	**Total**	**37**	**81**	**118**

Table 2: Quantification of broken blade and flake debitage

B.1.12 Graph 1 shows a slight bias of proximal fragments (the proximal end surviving) within the assemblage, although, this is unlikely to signify intentional snapping and, as noted above, is likely to reflect breakage during stone working. Also of comment, is the presence of a relatively high number of siret fractures within the flake debitage. A siret fracture is a flake, or less often a blade blank, that has broken accidentally during removal and quite often they represent pieces that have split along their main axis. They often occur during hard hammer reduction, and may also relate to raw material quality and/or the skill of the person involved in stone working.

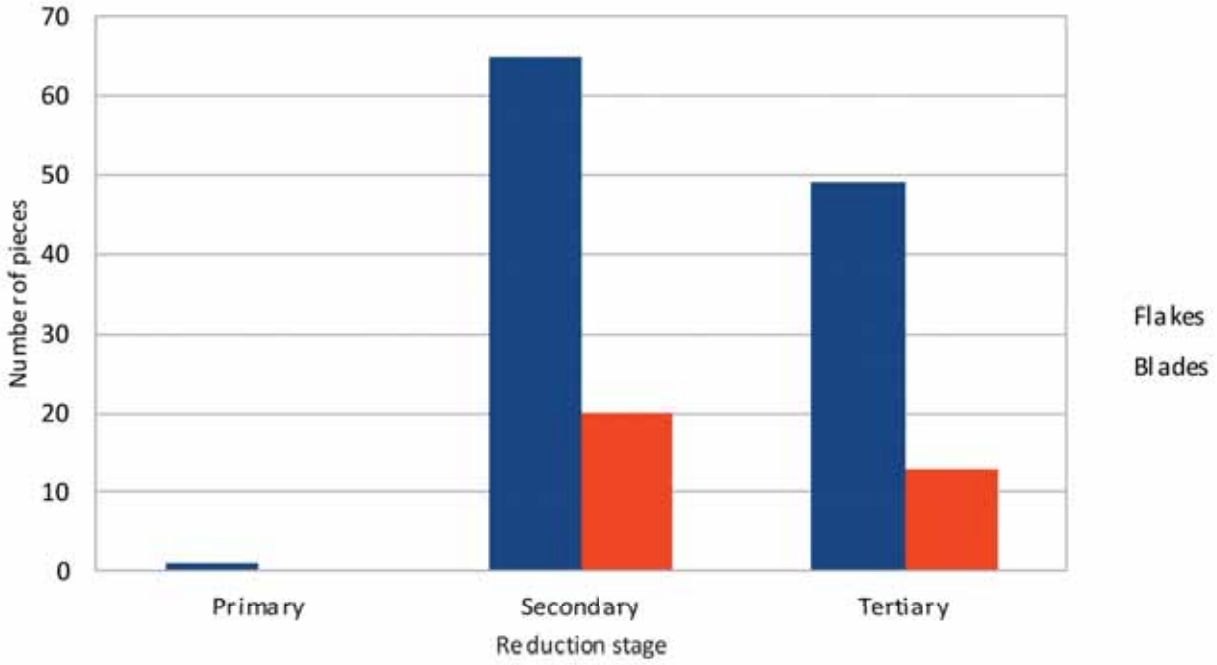


Graph 1: Chart quantifying the broken debitage by survival

B.1.13 Core technology within the assemblage is varied and is diagnostic of both early and later prehistoric flint working traditions. In total, nine cores were recovered (including four fragments, Table 1) along with four examples of core-trimming pieces. Two of the complete cores are worked uni-directionally from single platforms. The larger example, from context 182 (ditch **183**, Period 2.1), is a conical blade core which can be reconciled with a Late Mesolithic/Early Neolithic technology. The reason for its discard is unclear as it has not been worked exhaustively. The second specimen, a slightly smaller and more irregular conical core, has traces of crushing at the base, suggesting the use of an anvil during reduction, or the possibility that it was utilised in an abrasive process such as stone working. The core-trimming pieces are not items usually associated with later prehistoric reduction strategies (for example the piece from context 206 of gully **207**; Period 2.1), and their presence therefore also highlights a residual element of an earlier technology within the assemblage (Ballin 2002, 19).

B.1.14 The remaining core technology is diagnostic to a later prehistoric reduction strategy, though one of the complete cores, a flaked pebble and two core fragments were recovered from subsoil deposits (context 02) rather than secure archaeological contexts. A multi-platform core (context 329 of gully **330**; Period 2.1) is worked from at least four identifiable platforms, although the presence of negative flake scars unrelated to any of the existing platform suggests that knapping trajectories were more extensive. Similarly, a core (context 247 of ditch **248**; Period 2.1), worked multi-directionally from

platforms at right-angles, also bears negative flake scars which are directionally independent to any of the surviving platforms. Both of these reduction strategies point to a later flint working tradition in which stone working was unmethodical and new platforms were achieved by simply rotating the nodule until a suitable edge or ridge could be used (Ballin 2002). The two core fragments (context 26 of ditch **25**; Phase 1 and 206of gully **207**; Period 2.1), from secure contexts, are also diagnostic of a later prehistoric technology due to their irregular character and seemingly lack of conventional platforms. The larger fragment, from context 26, was re-worked from a fracture plane for the removal of several flakes and probably represents the opportunistic re-use of a nodule, which is a trait associated with later prehistoric technologies (Young and Humphrey 1999). In addition to the recognisable cores several of the indeterminate chunks are minimally flaked and are likely to relate to the *ad hoc* flaking of nodules. Those pieces show a general pattern of unstructured, uni-directional blank removal.

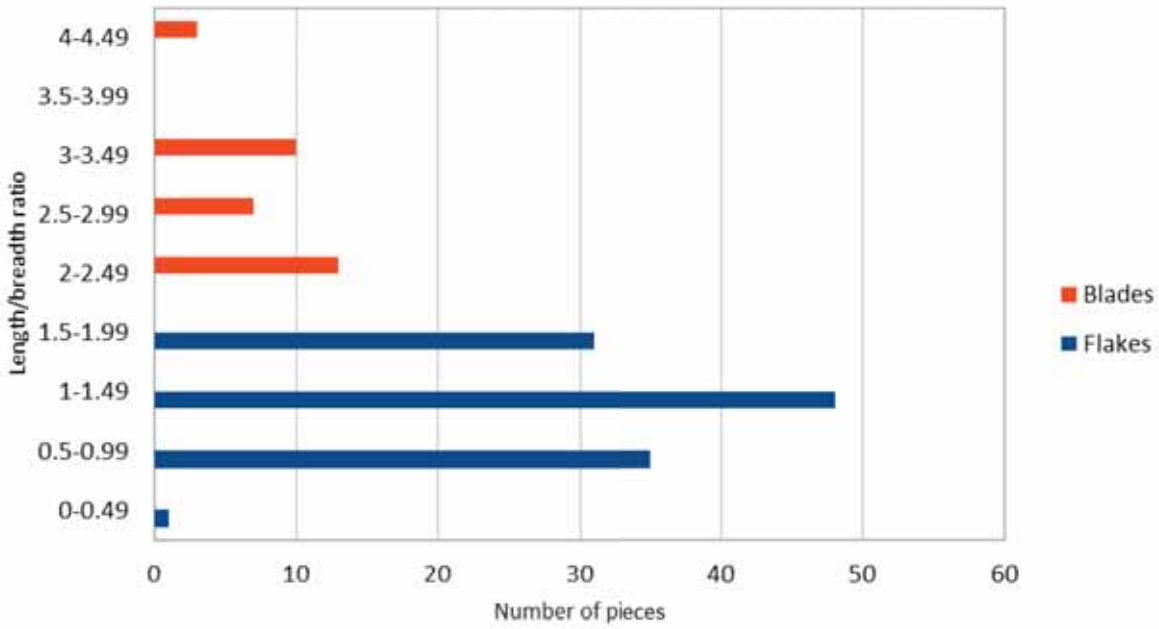


Graph 2: The range of complete debitage within a general reduction sequence

B.1.15 Among the complete blade and flake blanks there is almost a total lack of primary debitage (Graph 2). This suggests that nodules were being prepared elsewhere. However, given that stone working activity could be dispersed beyond the limits of the site and that 57% of the complete debitage represents the early/intermediate stages of reduction, this suggests that the complete removal of cortical material prior to full core reduction was not a priority. Moreover, late prehistoric reduction strategies are often focused on the *ad hoc* production of a few usable blanks resulting in a predominance of secondary and inner flakes, within a given assemblage (ibid, 59), and this probably accounts for the preponderance of secondary debitage at the site.

B.1.16 Blank manufacture is focused on of the production of flakes (Tables 1 and 2). The average length/width dimensions for the unmodified debitage is approximately 42×16mm for blades and 35×29mm for flakes. In terms of appearance flakes can be described as generally quite wide and squarish in morphology, while the blades are also

generally quite broad and many only just fall into the required length/breadth ratio of 2:1 to qualify as blades (Graph 3).



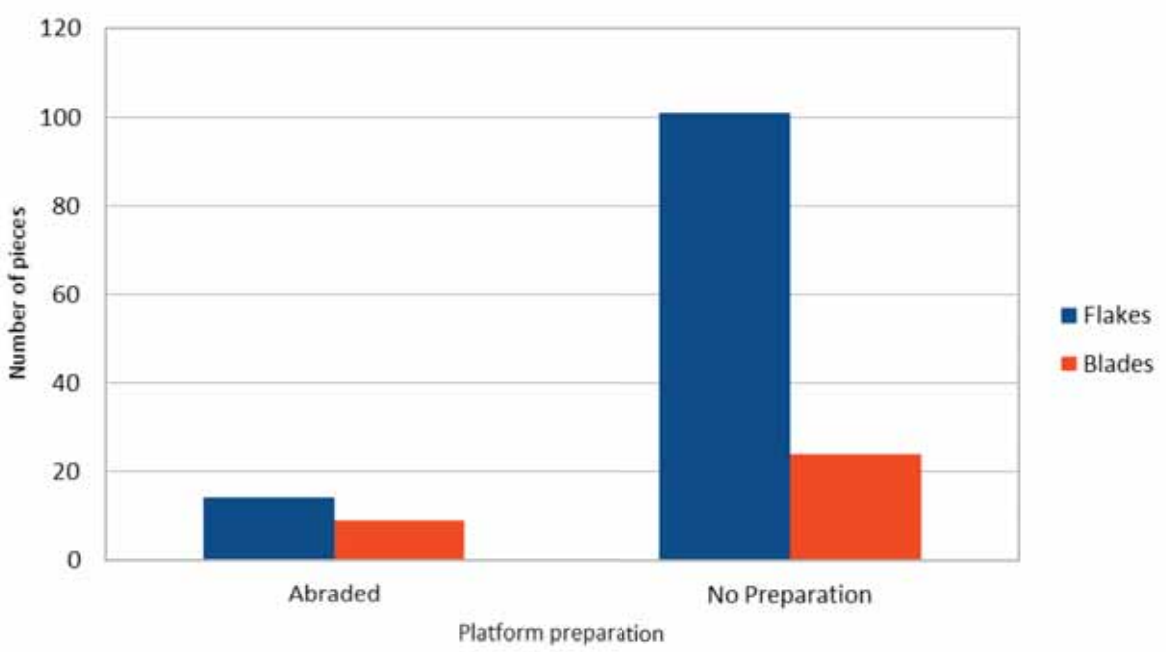
Graph 3: The distribution of length/breadth ratios among complete debitage

B.1.17 Graph 3 shows that the majority of the blade debitage falls within the 2-2.49 ratio, being twice as long as they are wide or slightly longer. Most of the flake debitage is within the 1-1.49 ratio, and they have roughly equal length and width measurements. It is of note that the second highest count is for flakes within the 1.5-1.99 ratio. Some of those pieces can be described as 'blade-like' in their morphology and appear to be the product of an unstructured approach to reduction, and are unlikely to reflect failed attempts at blade manufacture. Beyond the blade core mentioned above, evidence for the structured manufacture of blades, or true blades, attributable to Late Mesolithic/Early Neolithic stone working traditions, is negligible; with only three complete examples recorded which are indicative of a small amount of a residual earlier technology within the assemblage. A broken broad blade from natural deposit 165, which also contained Later Neolithic pottery, is one such example.

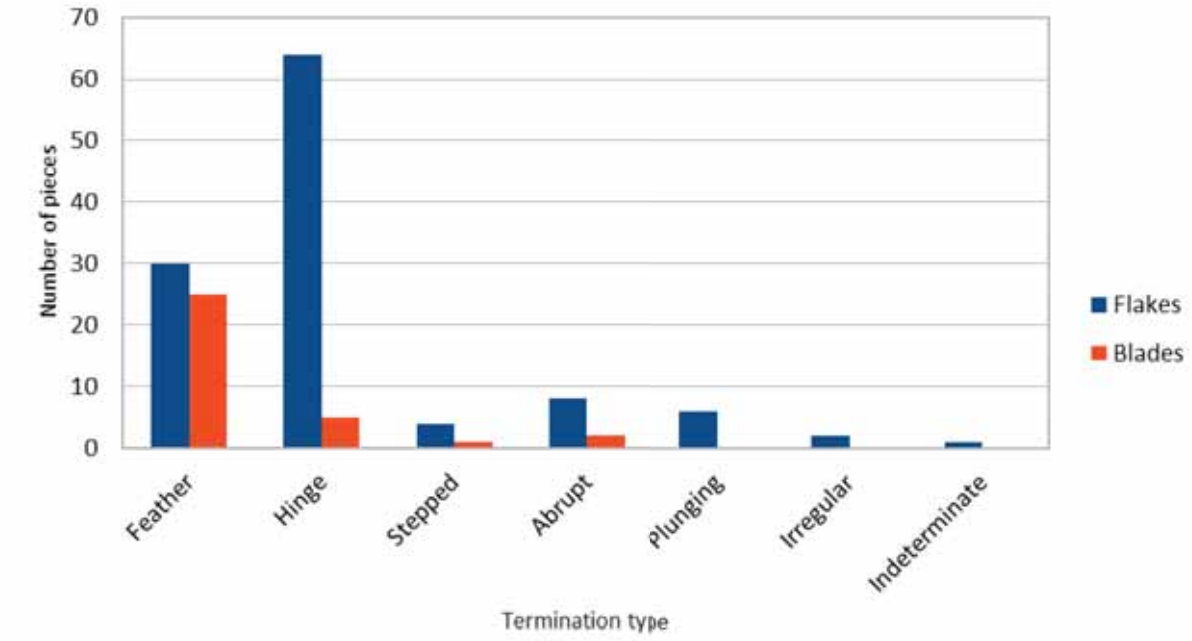
B.1.18 The platform edges of cores saw very little preparation prior to the removal of blanks (Graph 4). The small amount of blades and flakes that do show evidence for such had simple abrasion applied to the platform edge, probably to remove burrs before striking. As the majority of the debitage does not show evidence for platform preparation it can be implied that a simple unstructured means to blank production was employed, and while this is common to Late Neolithic/Early Bronze Age reduction strategies, it is more-so associated with later prehistoric stone working traditions.

B.1.19 Graph 5 shows that a wide range of flake and blade debitage distal terminations exist within the assemblage, with the majority defined as 'feather' terminations. The latter denotes that blades and flakes have been removed cleanly from the core face and represent the ideal form of blank production. Terminations of this type are often associated with skilled knapping and softer percussive techniques. However, the quality of the raw material can also be a contributing factor to how regularly these terminations

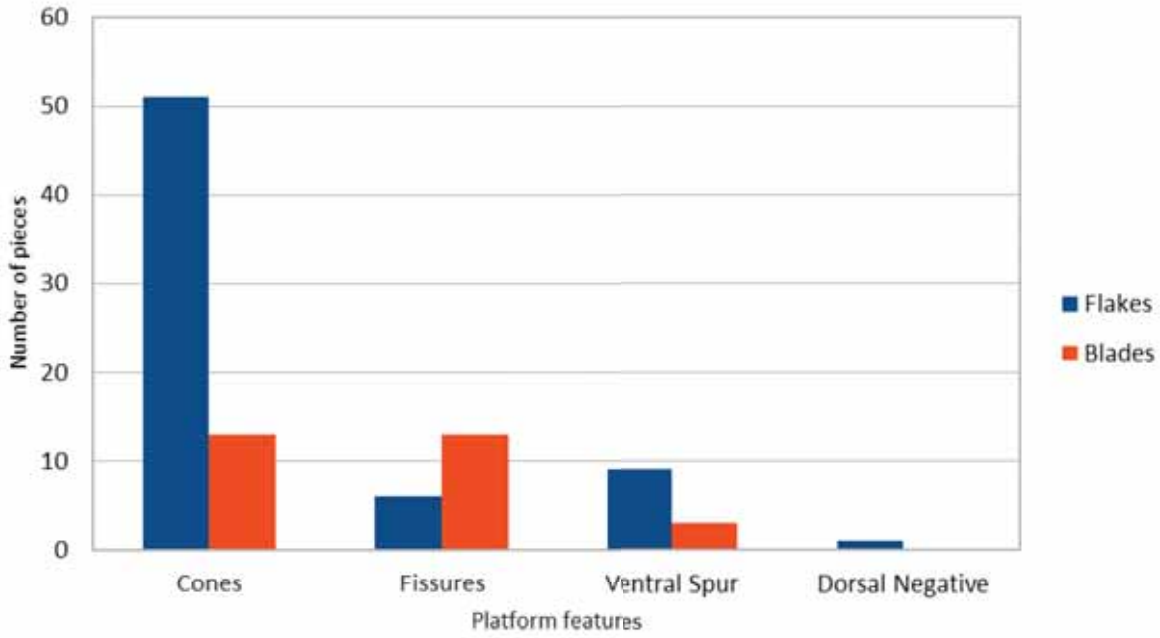
occurred. The remaining 62% of the debitage comprises a range of termination types (Graph 5). Hinge and step terminations are often associated with hard hammer technology and/or less controlled knapping and are frequent indicators of a late prehistoric stone working traditions (ibid).



Graph 4: Distribution of platform preparation on complete debitage

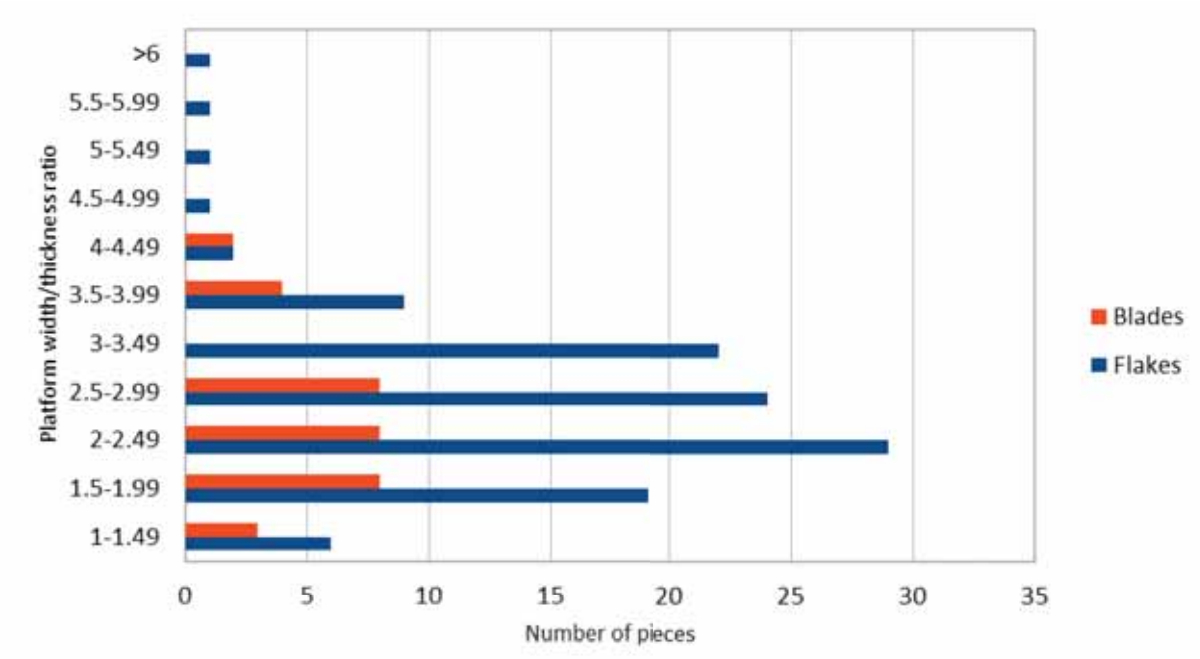


Graph 5: The various termination types on complete debitage within the assemblage

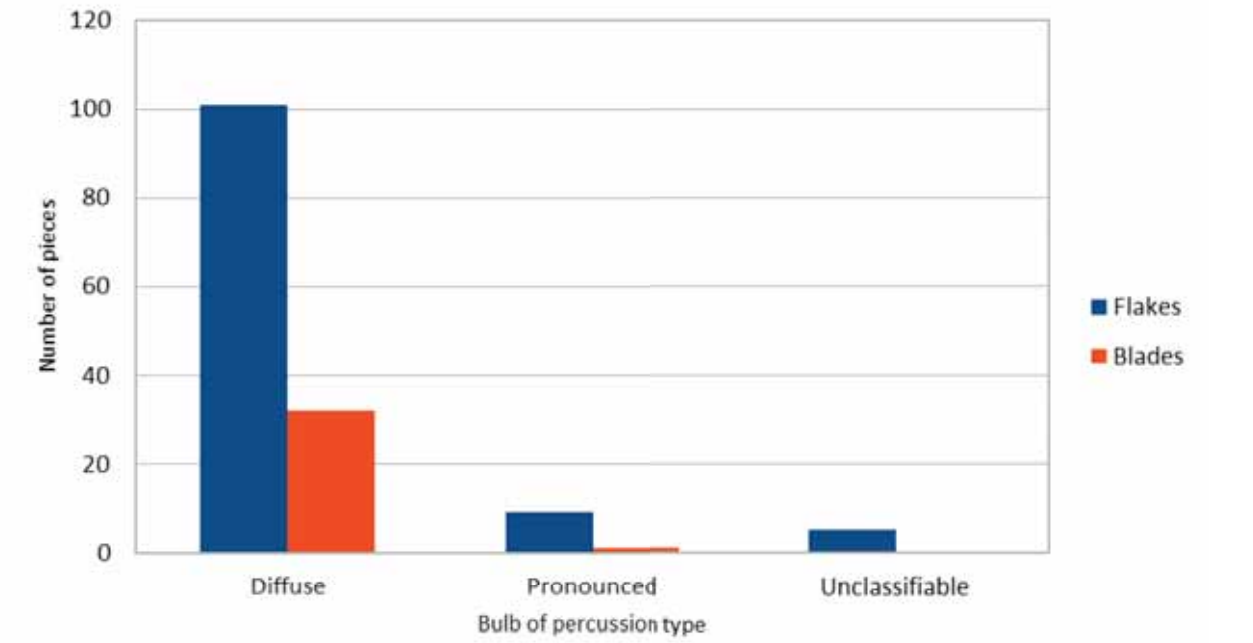


Graph 6: Debitage features on complete blades and flakes

B.1.20 A large amount (65%) of the complete debitage displays platform features consistent with the use of direct percussion during reduction (Graph 6). Hertzian cones and fissures are frequent, and are a product of a heavy direct force applied during the removal of flakes and blades from nodules. In that respect they probably indicate the predominant use of hard hammers during reduction (Butler 2005). A preponderance of these features is also a technological trait associated with later prehistoric reduction strategies.



Graph 7: Platform size ratio on complete debitage



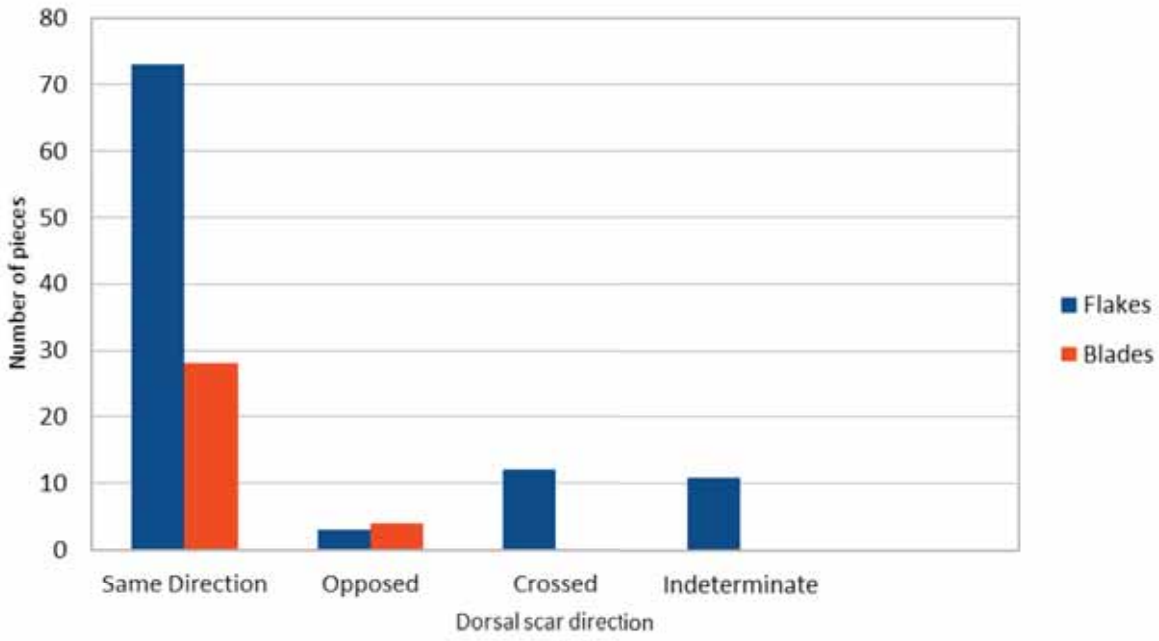
Graph 8: The range of the bulb of percussion types on the complete debitage

B.1.21 The data shown in Graphs 7 and 8 also suggests a reliance on a hard hammer technology at the site. Graph 7 depicts a concentration of platform sizes between the ratios 2 and 3.49. This indicates that platforms generally tend to be at least as twice as wide as their thickness with 39% of them being wider still. Table 1 shows a high number of blades and flakes with diffuse percussive bulbs within the assemblage. While this appears to suggest a leaning towards soft-hammer usage, broad, hard hammers also have a tendency to produce more diffuse bulbs, as the force is applied through a larger point of contact, as indicated by the platform dimensions (Lord, 1993, 21). While no hammer stones were recovered from the site, analysis of the debitage and platform attributes of the complete blades and flakes suggests broad, hard hammers, such as cobbles or flint nodules were employed with some significant force during reduction strategies. As noted, the crushing on the base of the core noted above could be an indicator of its use as a hammer.

B.1.22 The analysis of dorsal negative scar direction can potentially indicate the types of core reduction strategies being utilised within an assemblage. However, with the present assemblage it appears that not enough complete debitage survives in order to make valid statements. The same could also be said for the number of cores. Notwithstanding, Graph 9 does show some variety in dorsal scar direction in the assemblage, that can be tentatively equated with the evidence for flaking trajectories exhibited by the cores. Blades and flakes with dorsal negative scar directions indicative of a uni-directional reduction strategy are the most frequent. While some of those pieces undoubtedly relate to Neolithic stone working, the majority could also relate to a later prehistoric unstructured reduction strategy, most likely reflecting *ad hoc* removals from partially flaked nodules.

B.1.23 Blade and flake blanks exhibiting secondary retouch includes several scrapers along with a small number of pieces, including an indeterminate chunk, bearing miscellaneous retouch to an edge (Graph 9). Of the 23 retouched pieces, two edge retouched flakes

and a blade, and a two sided scraper are broken. Furthermore, 12 of the complete examples have cortex remaining on their dorsal faces. The scrapers can be divided into four classifications: side (*e.g.* subsoil context 02), end (*e.g.* context 679 of ditch **680**; Period 2.1), side and end (*e.g.* context 26 of ditch **25**; Period 1), and two sided (*e.g.* context 228 of pit **231**; Period 1). Of those, side and end scrapers are the most numerous and seven out of the 12 can be assigned to that classification. While scrapers are often difficult to categorise in terms of a typo-chronology schema, they are often the dominant tool type in Later Bronze Age assemblages (Butler 2005, 182). All the examples in this assemblage were produced by modifying large thick flakes, most still retaining cortex. The three scrapers from context 228 (pit **231**; Period 1), are no exception to this, however they were recovered from a context containing a small amount of Late Neolithic ceramics. This indicates that they are potentially chronologically earlier than the bulk of the assemblage, although technologically they exhibit no difference to the other scrapers. An edge retouched blade, from context 70 (deposit 85; Period 2.3), comprises a curved secondary broad blade with inverse retouch applied to both lateral edges. The piece also appears to be bilaterally notched, and this could represent evidence for the piece having been hafted. Ultimately, the retouched portion of the assemblage appears to reflect tools associated with the working and processing of hides and other organic materials such as wood and plants.



Graph 9: The direction of dorsal negative scars on the complete debitage

Discussion

B.1.24 The lithic assemblage from East Tilbury was recovered from 103 contexts which related to a number of cut features, some of which were dated to (Later) Bronze Age activity. The worked flint was generally recovered in small amounts from features across the site, with the largest collection of 73 pieces derived from the fill of pit **459** (Period 2.3), which also contained Middle Bronze Age ceramic. Individually, 86 contexts contained less than 5 lithics. Furthermore, contexts grouped with specific features still on average contained less than 10 struck lithics. That said, the contexts associated with large enclosure ditch **597** (Period 2.1) contained a total of 62 lithics, the second highest concentration from a single feature.

B.1.25 The minimal amount of edge damage within the assemblage suggests that deposition was fairly rapid and a minimal amount of post-depositional movement has taken place. However, the quantities of lithics deposited in any given feature appear too small to be considered as either deliberate deposition or dumps of knapping refuse. One possible explanation for this is that stone working did not take place on a large scale: raw material was returned to on an as needed basis and knapping activity took place *ad hoc*, at various locations on site (Wickham-Jones & Holden 1999).

B.1.26 Due to its technological character, the bulk of the assemblage can be assigned to a Bronze Age stone working tradition, and given this material's technological similarities with other flake based assemblages in the area, such as that recovered from excavations at Stansted (McLaren 2010), it is likely to date to the Middle/Later part of the period. Neolithic occupation at Tilbury is alluded to by the presence of Later Neolithic Groove ware pottery in two contexts, and an enclosure of Late Neolithic/Early Bronze Age date, although, it should be noted that apart from three scrapers noted above, the bulk of the lithic material associated with potential Neolithic features is broken, non-diagnostic debitage.

B.1.27 Deposit 165, contained a small number of Grooved ware fragments along with elements of a parallel sided blade technology. The latter is reminiscent of a Late Mesolithic/Early Neolithic technology, which implies that the material could be residual within a Late Neolithic feature. Moreover, the lack of diagnostic implements within the feature assemblage means that the technological character is difficult to place chronologically and to discuss at any great length. The fact that the pottery could be residual within a later feature is also a possibility. Context 228, the latest fill of pit **231** (Period 1) also contained a small amount of abraded Grooved ware pottery. The struck lithics from this context could potentially represent a Late Neolithic technology, but as there is a lack of truly diagnostic pieces, other than the three scrapers mentioned above, which are not technologically distinctive from the others contained in the wider assemblage, it is again possible that the pottery is residual within a later feature.

B.1.28 Bronze Age settlement activity, characterised by enclosures, gullies and post-holes, is known from the wider area of the Upper Thames Valley, such as Corporation Farm south of Abingdon (Lambrick with Robinson 2009, 119) and further north at various sites along the A120 (Timby *et al.* 2007, 13). Struck lithics from those sites exhibit a similar range of technological attributes to the majority of those recorded at East Tilbury. For example, lithic assemblages recorded from Bronze Age sites along the A120 were spread thinly over several contexts and mainly comprised hard hammer struck flakes with large, plain platforms, that exhibited very little evidence for being prepared prior to detachment. Technologically, the material is consistent with a flake-based, later prehistoric industry showing a suite of technological characteristics as that defined by Young and Humphrey (1999, 232–3).

B.1.29 Furthermore, Middle/Late Bronze Age lithic technology is generally difficult to identify as it lacks the kind of diagnostic tool forms that allow the characterisation of earlier prehistoric technologies. Dating by lithics alone has to rely on technological data produced during metrical analysis. In the case of East Tilbury, the date of the majority of the lithic assemblage is supported by other artefactual evidence and to a lesser extent the association of lithics with diagnostic Middle/Late Bronze Age ceramics. In summary, the majority of the lithic assemblage from East Tilbury is typical of a Middle/Late Bronze Age stone working tradition, exhibiting a range of technological characteristics commensurate with similar dated assemblages from the wider region.

B.2 Prehistoric pottery

By Sarah Percival

Introduction

B.2.1 A total of 1864 sherds weighing 22,765g were collected from 79 excavated contexts from ditches, pits, postholes, gullies and natural features as well as from unstratified surface collection. Unstratified sherds form less than 2% of the total assemblage. The pottery is fragmentary and no complete vessels were recovered. The sherds are mostly small and poorly preserved with the exception of three incomplete cremation urns which form large and robust sherds. The average sherd weight including the urn sherds is 12g.

Spot date	*Quantity*	*Weight (g)*	*Weight (%)*
Later Neolithic	23	153	0.7
Later Neolithic Early Bronze Age	4	25	0.1
Early Bronze Age	6	24	0.1
Middle To Later Bronze Age	1814	22446	98.6
Iron Age	10	80	0.4
Not closely datable	7	37	0.2
Total	**1864**	**22765**	**100.0**

Table 3: Quantity and weight of prehistoric pottery by spot date

Methodology

B.2.2 The assemblage was analysed in accordance with the Guidelines for analysis and publication laid down by the Prehistoric Ceramic Research Group (PCRG 2010). The total assemblage was studied and a full catalogue was prepared. The sherds were examined using a binocular microscope (x10 magnification) and were divided into fabric groups defined on the basis of inclusion types. Fabric codes were prefixed by a letter code representing the main inclusion present (F representing flint, G grog and Q quartz). Vessel form was recorded; R representing rim sherds, B base sherds, D decorated sherds and U undecorated body sherds. Forms follow later prehistoric vessel forms (Brudenell 2011). The sherds were counted and weighed to the nearest whole gramme. Decoration and abrasion were also noted. The pottery and archive are curated by OA East.

Results

Period 1: Later Neolithic to Early Bronze Age

B.2.3 The small Neolithic to Earlier Bronze Age component of the assemblage comprised 33 sherds weighing 202g. The dating of the sherds is based on fabric type and decoration as no rims or profiles survive.

B.2.4 Seven sherds from alluvial deposit 165 include an impressed-decorated sherd and a chunky base in flint tempered fabrics F2 and F3 which are probably from Later Neolithic Impressed Ware vessels similar to examples found at Mucking but are otherwise not closely datable (Evans *et al*. 2016, fig.2.18, 20).

B.2.5 Pit **231** contained 16 sherds of Grooved Ware weighing 117g in grog-tempered fabrics (G1, G2 and QGF) including a flat base and six body sherds decorated with incised vertical panels filled with diagonal lines, decoration typical of the Durrington Walls Grooved Ware sub-style (Longworth 1971). Grooved Ware has been found locally at

Mucking where 283 sherds, also grog-tempered and of the Durrington Walls sub-style, were recovered from 12 pits and other features during excavations in the 1960s and 70s (Evans *et al.* 2016, fig.2.22).

B.2.6 Four small Beaker sherds, two decorated, were recovered from the fills of ditches **10**, **12** and **25**. Two Beaker fabrics were identified, one grog with flint used for the fingertip-impressed rusticated sherd and the second sand with grog used for the finer square-toothed comb-impressed sherd. Non-funerary Beaker pottery was also found at Mucking which produced 77 sherds in a range of similar fabrics some with comb-impressed and rusticated examples (Evans *et al.* 2016, fig.2.26, 12 & 15; fig. 2.27, 1-14).

B.2.7 Six base and body sherds weighing 24g in sandy fabric with sub-rounded pale grog inclusions (fabric QG) came from the fill of pit **227.** The sherds have distinctive fabric and wet-hand wiped surfaces suggesting that they are from an urn or similar. Brown notes both Collared Urn and Biconical Urn fragments within the assemblage from Mucking (Evans *et al.* 2016, 107).

Period 2: Middle and Later Bronze Age

B.2.8 A large assemblage of 1,814 coarse, flint-tempered sherds weighing 2,446g contains Deverel-Rimbury Middle Bronze Age forms with some post Deverel-Rimbury (PDR) Later Bronze Age style vessels. Included within the assemblage are the bases of three large cremation urns. Radiocarbon dates on bone from context 08 of pit **07** containing a single sherd of flint-tempered pottery produced a date of 1699-1605 cal. BC (79%, SUERC58006), well within the Middle Bronze Age, whilst cremated bone from pit **215,** which contained 18 sherds including rims of two angular PDR vessel forms, produced a date of 1208-1011 cal. BC (95.4% SUERC 58010) consistent with the very end of the Middle Bronze Age. It is likely that that the assemblage dates to the Middle/Late Bronze Age transition (Champion 2011, 158) and with this in mind the pottery types are considered together as they are likely to represent a chronological continuum.

Forms

B.2.9 The cremation vessels survive only as large fragile base sherds with one reconstructible example suggesting a diameter at the base of *c.26*0mm. The walls of the vessels form approximately 90º angles at the base suggesting a possible tub like form. The exterior of the vessel walls are finished with vertical wipe marks.

B.2.10 Rims from a further 23 vessels are present (Table 4). These are mainly coarse jars of ellipsoid tub or barrel form alongside angular shouldered forms.

B.2.11 Bowl forms are poorly represented within the assemblage though this may reflect the high fragmentation and small size of the sherds. Burnishing, a possible indicator of finer bowl sherds, is found on just over 2% of the assemblage (523g). A single rim from a type L bowl, with well-defined shoulders and hollow neck is similar to an example from Mucking North Ring (Bond 1988, fig.20, 7).

B.2.12 Three tub-shaped vessels represent the Middle Bronze Age element of the assemblage. These include one undecorated vessel, one chunky flat-rimmed example decorated with fingertip impressions along the rim top, one similar rim with slashes to the rim top and one upright plain rim with an applied cordon with slashed decoration on the vessel body. All three of these forms find parallel within the Middle Bronze Assemblage from Mucking (Brown 2016, fig.2.39, 1,2,12 and 13; fig. 2.40, 29).

B.2.13 Other possible Middle Bronze Age forms include the ellipsoidal jars (types B and C).and the flared rim jar (type D). One measurable rim from a type B jar has a rim diameter of

170mm whilst the flared rim jar (type D) is 270mm. Vessels of similar form are again present within the contemporary assemblage from Mucking (Brown 2016, fig.2.39 17 and 19) although ellipsoid jars also appear in the Later Bronze Age assemblages at both the North and South rings at Mucking and Lofts Farm (Bond 1988, fig.20, 8: Brown 1988, fig.14,9) suggesting that the form was long lived.

B.2.14 Vessels of more angular form (types E, F, G and I) are more typical of the Later Bronze Age. Of these the most numerous within the assemblage is jar type F which has a high rounded shoulder. This form is found at both Mucking South Ring and at Lofts Farm (Brudenell 2016, fig.3.4, 3; Brown 1988, fig.17, 72 & 73). Tripartite jar (type I) is also present at Lofts Farm (Brown 1988, fig, 17, 78), whilst slack shouldered form (type G) represent a forerunner of the ubiquitous Iron Age jar type.

B.2.15 Fine body sherds from possible cups survive within the assemblage but diagnostic cup rims do not survive. One body sherd from a handled vessel was recovered also paralleled at Mucking (Brudenell 2016, fig.3.4, 5).

Vessel type	*Form*	*Description*	*No. of vessels*	*Quantity*	*Weight (g)*
Bowl	L	Bowls with well-defined shoulders and hollow necks.	1	1	24
Jars	A	Jars with rounded bodies and short upright neck	3	4	49
	B	Ellipsoid jars with no neck	5	5	123
	C	Ellipsoid jars with in-turned rim	1	1	32
	D	Ovoid barrel-shaped jar	1	1	98
	E	Angular shoulder from bipartite jar		36	480
	F	Jar with high rounded shoulder short out-turned neck	4	6	80
	G	Jar with slack shoulder	1	1	13
	I	Tripartite jar angular shoulder concave neck	2	3	53
	U	Undiagnostic	1	1	9
	Tub	Tub	4	4	198
Total			**23**	**63**	**1159**

Table 4: Middle to Later Bronze Age vessel forms

Fabrics

B.2.16 Flint-tempered fabrics dominate forming 93.5% of the assemblage by weight (20,994g) when including the large cremation urn bases. The flint fabrics are broadly divided by inclusion size and density, and form the bulk of the assemblage. Sandy fabrics are more diverse containing a range of sandy inclusions and others including flint and shell but occur in much smaller quantities (Table 5).

B.2.17 The fabrics compare well with the Late Bronze Age assemblage from Mucking where flint was found in 92% of the sherds with smaller quantities of organic inclusions, sand, quartz and grog (Brudenell 2916, 160). The Middle Bronze Age assemblage had a similar fabric profile (Brown 2016), however no grog tempered vessels were found at Tilbury.

Deposition

B.2.18 Whilst the three cremation bases form a little over one quarter of the assemblage by weight, over 40% of the non funerary pottery was recovered from the fills of ditches (Table 6), much of it from a concentration or midden around sections **597, 610, 611, 631, 637, 661, 670, 680**, **686** and **697** (Enclosure 1). Pottery from layered fills within these ditch sections contain diagnostic forms which are predominantly Middle Bronze

Age with particular concentrations in fills 693 and 694 of section **697**; fills 677 and 678 of section **680** and 663 and 665 of section **670**. The assemblage from section **680** is of especial interest and as it contains Middle Bronze Age ellipsoid forms in fill 678 overlain by sherds containing angular forms in fill 677. It is possible that the ditch around section **680** remained open for sometime, collecting a mix of Late Deverel-Rimbury and early Post Deverel-Rimbury pottery.

Fabric code	*Fabric Description*	*Quantity*	*Quantity (%)*	*Weight (g)*	*Weight (%)*
F1	Common coarse angular flint > 4mm in fine clay matrix	234	12.90	1415	6.30
F1V	Common coarse angular flint > 4mm in fine clay matrix with moderate sub-rounded voids (perhaps chalk)	10	0.55	20	0.09
F2	Moderate to common angular flint c3mm in sandy clay matrix	1266	69.79	18085	80.57
F3	Moderate fine angular flint <3mm in sandy clay matrix	76	4.19	1166	5.19
F4	Moderate very coarse angular flint 3mm -7mm in sandy clay matrix	37	2.04	308	1.37
Q	Sandy fabric (too small to identify)	8	0.44	6	0.03
Q1	Sandy fabric with common round clear and opaque quartz	9	0.50	21	0.09
Q3	Fine sandy fabric with common round clear and opaque quartz	5	0.28	13	0.06
QF	Sandy fabric with common round clear and opaque quartz and rare to moderate angular flint	151	8.32	1358	6.05
QS	Sandy fabric with common round clear and opaque quartz with occasional shell	12	0.66	33	0.15
QsparseF	Sandy fabric with common round clear and opaque quartz with rare flint	1	0.06	5	0.02
QV	Sandy fabric with common round clear and opaque quartz occasional plate like voids (shell?)	5	0.28	16	0.07
	Total	**1814**	**100.00**	**22446**	**100.00**

Table 5: Quantity and weight of pottery by fabric

Feature type	*No. of vessels*	*Quantity*	*Weight (g)*	*Weight (%)*
Ditch	15	690	9746	43.42
Cremation	3	146	6165	27.47
Pit	7	534	4338	19.33
Post hole	3	188	869	3.87
Gully	2	48	476	2.12
Subsoil	1	103	383	1.71
Spread	1	74	341	1.52
Glacial channel		11	79	0.35
Layer		6	19	0.08
Grave		6	16	0.07
Surface spread		7	11	0.05
Natural		1	3	0.01
Total		**1814**	**22446**	**100.00**

Table 6: Quantity and weight of pottery by feature type

B.2.19 Postholes **87, 89, 93, 109, 299, 301, 303, 315, 366, 463, 517** contained pottery with larger assemblages coming from **87, 89, 93** and **109**. Little diagnostic pottery was found however, with the exception of posthole **109** which contained body sherds from a small cup and a rim from a high shouldered jar which suggests a Later Bronze Age date for this feature and **403** which has a sherd decorated with fingernail impressions more suggestive of the Middle Bronze Age.

B.2.20 Gullies **211** and **217** contained 36 and 12 sherds respectively, plus two rims from vessels of Middle Bronze Age form.

B.2.21 Pottery from pits formed just under 20% of the assemblage, with most comprising undiagnostic flinty body sherds. However, notable collections being found in pit **456** are Middle Bronze Age whilst **215** and **563** contain angular Later Bronze Age forms.

Iron Age

B.2.1 Seven sandy body sherds and a possibly shell tempered rim from spread 564 and two sandy body sherds from the fill of ditch **597** may be of Later Iron Age date.

Discussion

Period 1: Later Neolithic to Early Bronze Age

B.2.2 The earlier prehistoric assemblage indicates sporadic occupation at the site in the period from approximately 3400 cal. BC when the Neolithic Impressed Ware sherds were deposited, the sherds subsequently becoming incorporated within natural layer 165.

B.2.3 Limited activity by Grooved Ware users includes pit digging and pottery deposition around 2900-2100 cal. BC, contemporary with the much more extensive but similar pit digging and occupation noted at Mucking (Evans *et al.* 2016). Beaker activity, contemporary or more likely a little later than the Grooved Ware phase, was sparse and did not include the digging of features, with the sherds being scattered and redeposited in later ditch fills.

B.2.4 The small number of urn sherds are also likely to be domestic in origin as these were recovered as broken and incomplete vessels in a pit fill. Biconical Urn represents the immediate precursor of the Middle Bronze Age Deverel-Rimbury forms (Evans *et al.* 2016, 107). Both grog-tempered urn sherds and Middledle Bronze Age flint-gritted Deverel-Rimbury pottery were found in the area around Tilbury at Mucking as well as several other sites noted by Brown (Evans *et al.* 2016, 107).

Period 2: Middle and Later Bronze Age

B.2.5 The pottery compares well with the enormous assemblage recovered from the adjacent sites at Mucking. Like Mucking there are elements of Middle and Later Bronze Age forms in a range of similar fabrics. The pottery and radiocarbon dates suggest the occupation at the site took place over the transition between the Middle and Later Bronze Age making the assemblage comparable with several assemblages excavated in Kent along the line of the High Speed 1 rail track. These assemblages (from sites at Tutt Hill and Beechbrook Wood) include 'groups which are characterised by association of traditional Deverel-Rimbury vessels with new forms... which would later be much more widespread in the succeeding Later Bronze Age' and, Champion suggests in Kent that this appears to be a 'widespread phenomenon' (Champion 2011, 158). Tilbury is well placed to exploit relationships with Kent and may have been early adopters of similar transitional pottery styles, perhaps associated with the widespread laying out of field systems both at Tilbury and at Mucking (though these may be even earlier, see Evans *et al.* 2016, 103).

B.3 Romano-British pottery

By Alice Lyons

Introduction and methodology

B.3.1 A total of 17 sherds, weighing 53g, of Early Roman pottery were recovered from two deposits at East Tilbury. The pottery is severely abraded with and average sherd weight of only 3g and consistent with being exposed to severe post-depositional disturbance (such as ploughing or possibly flooding).

B.3.2 The pottery was examined following the guidelines of the Study Group for Roman Pottery (Darling 2004). Relevant publications were used for referencing the local fabrics and forms (Biddulph 2015; Thompson 1982).

B.3.3 The total assemblage was studied. The sherds were examined using a hand lens (x10 magnification) and were divided into broad fabric groups defined on the basis of inclusion types present. Vessel forms (jar, bowl) were also recorded. The sherds were counted and weighed to the nearest whole gramme and recorded by context. Decoration, residues and abrasion were also noted. OA East curates the pottery and archive.

Results

B.3.4 Three fragments, weighing 6g of an Early Roman sandy grey ware (GRS) cordoned jar with a raised bead (Thompson 1982, p.139-144, type B3-1) were recovered from deposit 412 of a Middle Bronze Age field system ditch (cut **413**; Period 2.2), within which they must have been intrusive.

B.3.5 Several more sherds were found from within the subsoil. These consist of 3 GRS jar/bowl fragments, weighing 20g, one of which is carinated (Thompson 1982, p.369-372, type E1-4). Also found were 10 undiagnostic sandy red ware (RED) beaker fragments (weighing 20g) and two undiagnostic sandy red ware flagon fragments (8g) with a distinctive white slip (MWSRS).

Conclusion

B.3.6 This pottery is consistent with previously published Early Roman material and appears typical of the area (Biddulph 2015).

B.4 Worked stone

By Sarah Percival

Results

B.4.1 A total of 12 pieces of lava weighing 177g was recovered. The lava is in poor condition and is not closely datable. Two heat cracked stones or pot boilers were also recovered.

Feature	*Feature type*	*Context*	*Lithology*	*Type*	*Quantity*	*Weight (g)*
-	Spread	508	Lava	Quern	2	67
		564	Lava	Quern	2	14
-	Natural deposit	165	Lava	Quern	6	92
459	Pit	456	Stone	Heat cracked stone	1	234
583	Pit	582	Lava	Quern	2	4
680	Ditch	677	Stone	Heat cracked stone	2	72
Total					15	483

Table 7: Quantity and weight of worked stone by context

Conclusion

B.4.2 The small assemblage is too small and abraded to be of further interest.

B.5 Ceramic building material

By Sarah Percival

Introduction and methodology

B.5.1 A total of eight pieces of late to post-medieval ceramic building material weighing 214g were collected from four excavated features and from surface collection. The CBM is fragmentary and mostly small and poorly preserved.

B.5.2 The CBM was counted and weighed by form and fabric and any complete dimensions measured. Abrasion, re-use and burning were also recorded following guidelines laid down by the Archaeological Ceramic Building Materials Group (ACBMG 2002). Terminology follows Brodribb (1987).

Results

B.5.3 Two fabrics were identified (Table 8). Both are sandy with sparse inclusions and are of late to post-medieval date.

Context	*Feature type*	*Fabric*	*Form*	*Quantity*	*Weight (g)*
71	Spread	Orange sandy with sparse flint	Brick?	3	28
508		Orange sandy with sparse dark orange grog. Sanded underside with voids	Flat	1	27
236	Ditch	Orange sandy with sparse dark orange grog. Sanded underside with voids	Flat	1	38
438	Gully	Orange sandy with sparse dark orange grog. Sanded underside with voids	Flat	1	63
534	Ditch	Orange sandy with sparse flint	Peg tile	1	53
650	Ditch	Orange sandy with sparse flint	Uncertain	1	5
Total				8	214

Table 8: Quantity and weight of ceramic building material by fabric

B.5.4 Roof tile fragments including one example with a sub-circular peg hole were recovered from four contexts including surface cleaning and the fills of ditches **237** and **535** (Period 4) and gully **439** (Period 2.2). Three undiagnostic fragments of brick came unstratified surface cleaning and further undiagnostic fragments from the fill of ditch **610** (Period 2.1).

Conclusion

B.5.5 The small redeposited assemblage is too small and abraded to be of further interest.

B.6 Baked clay

By Sarah Percival

Introduction and methodology

B.6.1 A total of 226 fragments weighing 3,118g were collected (Table 9). The assemblage is fragmentary and abraded.

B.6.2 The complete assemblage was analysed and the baked clay recorded by context, grouped by form and fabric, and counted and weighed to the nearest whole gramme. Surface treatment and impressions were recorded along with the form and number of surviving surfaces. Fabrics were identified following examination using a x10 hand lens and are classified by major inclusion present. The archive is held by OA East.

Results

B.6.3 The assemblage comprises 226 fragments in seven fabrics (Table 9). These include two orange sandy fabrics with common elongated voids indicating the former presence of organic inclusions, probably chopped grass or chaff which may be briquetage, or salt-making debris, which is often made of similar fabrics (Fawn *et al.* 1990, 10). Diagnostic briquetage pieces include a complete squat pedestal with splayed circular foot and rectangular body from pit **575** (Period 2.3), a semi-complete horned pedestal from ditch **631** (Period 2.1). Both are similar to examples from Mucking (Bond 1988, fig 37, 20; Evans *et al.* 2016, fig.3.34, 9). Fragments from a further three pedestals were also found. A rim from a possible briquetage vessel was found in the subsoil (context 02). The form of the briquetage suggest a Later Bronze Age date for salt production at the site. Briquetage has been widely found in the area and has been collected from previous sites in East Tilbury (Fawn *et al*. 1990, Gazetteer 1, nos. 285-288).

B.6.4 Forty four fragments also in sandy, quartz-tempered fabric, are from the body and rim of a flat perforated slab again similar to examples from Mucking (Bond 1988, fig.27, 1). The fragments include a simple rounded rim or edge and a perforated fragment from the body of the slab. Perforated slabs have been found at several Later Bronze Age sites in Essex including Springfield Lyons and Lofts Farm, and may be associated with salt production however the function of the objects remains obscure (Brown & Medlycott 2013, fig.3.39; Brown 1988, fig.22).

B.6.5 Fragments from three possible loomweights were found in fills of pit **195** (Period 2.1) and ditches **597** and **670** (period 2.1). The fragments are made of hard orange sandy fabric with common rounded quartz inclusions. The remains of a possible suspension hole perforates the body of the weight which has broken along this point of weakness. The possible weight appears to be of pyramidal form similar to Later Bronze Age examples from Mucking and Springfield Lyons (Bond 1988, fig. 34; Brown & Medlycott 2013, fig.3.41).

B.6.6 A total of 39 fragments weighing 981g are made of flint-tempered fabrics. These include several irregular pieces with deep fingertip impressions, again of unknown function.

Conclusion

B.6.7 The briquetage, perforated slabs and loomweights are of interest. These pieces contribute to a growing assemblage of similar domestic objects from Later Bronze Age sites in Essex such as Mucking, Lofts Farm and Springfield Lyons and suggest craft production was taking place at the site. The briquetage pieces confirm salt working was undertaken at or near the site in the Later Bronze Age.

Feature	Feature type	Context	Fabric	Form	Quantity	Weight (g)
-	Subsoil	2	Hard orange sandy with common quartz	Briquetage	1	85
			fine sandy with many voids	Briquetage	1	6
			Hard orange sandy with common quartz, rare flint	Uncertain	1	6
	Spread	73	Hard orange sandy with common quartz	Uncertain	1	3
		84	Frequent small angular flint in sandy matrix	Uncertain	1	158
			Hard orange sandy with common elongated voids	Uncertain	1	10
			Hard orange sandy with common quartz, common flint	Uncertain	1	13
			Hard orange sandy with common quartz, rare flint	Uncertain	2	8
		165	Sandy with voids and rare medium angular flint	Uncertain	15	344
87	Posthole	86	Hard orange sandy with common quartz	Uncertain	4	19
			Hard orange sandy with common quartz, rare flint	Uncertain	2	92
89	Posthole	88	Hard orange sandy with common quartz, common flint	Uncertain	4	103
126	Pit	125	Hard orange sandy with common elongated voids	Uncertain	9	45
174	Pit	175	Sandy with voids and rare medium angular flint	Structural	8	243
181	Pit	180	Hard orange sandy with common quartz	Uncertain	7	13
195	Pit	194	Hard orange sandy with common quartz	Loomweight	2	270
264	Ditch	263	Sandy with voids and rare medium angular flint	Uncertain	2	56
270	Ditch	269	Hard orange sandy with common quartz, rare flint	Uncertain	2	16
294	Pit	295	Hard orange sandy with common elongated voids	Uncertain	1	3
			Hard orange sandy with common elongated voids, rare medium flint	Uncertain	1	95
297	Pit	298	Hard orange sandy with common quartz	Plate	3	69
				Uncertain	10	28
			Hard orange sandy with common quartz, common flint	Uncertain	1	5
439	Gully	438	Hard orange sandy with common elongated voids	Uncertain	1	7
			Hard orange sandy with common quartz	Plate	1	40
455	Pit	454	Hard orange sandy with common quartz	Briquetage	7	115
				Uncertain	17	3
459	Pit	456	Hard orange sandy with common quartz	Uncertain	2	13
			Reduced silty clay	Structural	6	147
465	Pit	464	Hard orange sandy with common quartz	Uncertain	1	5
475	Posthole	474	Hard orange sandy with common quartz	Uncertain	3	10
485	Pit	484	Hard orange sandy with common quartz	Uncertain	1	2
539	Tree throw	536	Hard orange sandy with common quartz	Uncertain	11	120
575	Pit	574	Hard orange sandy with common quartz	Plate	40	261
				Briquetage	1	56
				Uncertain	7	3
583	Pit	582	Hard orange sandy with common quartz	Briquetage	6	37
				Uncertain	4	3
597	Ditch	613	Hard orange sandy with common quartz	Loom weight	1	89
610	Ditch	607	Hard orange sandy with common quartz	Structural	23	226
631	Ditch	626	Hard orange sandy with common quartz	Structural	3	44

			Hard orange sandy with common quartz	Briquetage	1	44
		633	Hard orange sandy with common quartz	Uncertain	1	5
			Sandy with voids and rare medium angular flint	Structural	1	61
661	Ditch	671	Hard orange sandy with common quartz	Uncertain	1	6
670	Ditch	665	Hard orange sandy with common quartz	Loomweight	5	65
680	Ditch	676	Hard orange sandy with common quartz	Uncertain	1	23
		677	Sandy with voids and rare medium angular flint	Structural	1	43
Total					**226**	**3118**

Table 9: Quantity and weight of baked clay by context

Appendix C. Environmental Reports

C.1 Human skeletal remains

By Louise Loe with Zoë Uí Choileáin

Introduction, provenance and methodology

C.1.1 Three deposits of burnt human bone were excavated during archaeological investigations at Bata Fields, East Tilbury, Essex. The deposits were unurned and date to the Middle and Late Bronze Age. The deposits underwent full osteological analysis and the findings are presented below.

C.1.2 Cremation deposit 07 was recovered from pit **08** (Period 1). The feature was 1.74m long by 0.4m wide and 0.03m deep and contained a loose mid-orange/grey sandy silt. Deposit 214 was recovered from circular pit **215** (Period 3). The pit was 0.56m long, 0.5m wide and 0.18m deep and contained a friable dark orange/grey sandy silt with occasional small and medium-sized stones. Deposit 624 was recovered from 0.6m long, 0.5m wide and 0.15m deep sub-circular pit **625** (Period 3) which contained a loose dark yellow grey sandy silt.

C.1.3 Excavation and processing of the deposits was undertaken in accordance with published guidelines (Brickley and McKinley 2004; BABAO 2010). The features were divided in plan into three segments (numbered 1 to 3) for feature **08** and in two halves (a western half and an eastern half) for features **215** and **624**. Each segment/half was subject to whole earth recovery. For feature **08** this was as three bulk samples from each segment (samples 2-4), in addition to one sample which was collected when the feature was initially identified and cleaned (sample 1). For features **215** and **624** samples were taken in spits of 5cm (numbered in ascending order) until the bottom was reached. All samples were processed by wet sieving which involved passing the material through a stack of sieves with different mesh sizes. This sorted the material into >10mm, 10-4mm and 4-2mm fractions.

C.1.4 The human bone was fully analysed macroscopically in accordance with published guidelines (McKinley 2000; Brickley and McKinley 2004). This involved recording weight and maximum fragment sizes, in order to explore the nature of the deposits, for example, whether they represent formal burials, or dumps of redeposited pyre debris (McKinley 2004, 10). In addition, the colour of the bone, which reflects the efficiency of the cremation process (ibid., 11), was recorded. The deposits were also examined for identifiable bone elements and to estimate the minimum number of individuals (MNI) present. MNI counts were based on the number of repeated elements taking into account differences in size (Buikstra and Ubelaker 1994). Where possible, estimation of sex and age was attempted and any observable pathological conditions or non-metric traits were noted.

Results

C.1.5 A summary of the osteological findings is presented in Appendix C.2. All deposits had a MNI of one.

Deposit 08 – pit 07 (Period 1)

C.1.6 This deposit comprised fragments of skull vault, longbone shafts and ribs and unidentified bone. Very little trabecular bone was present and no hand or foot bones were identified. All of the bone was a buff white colour and showed superficial and deep transverse cracking and warping.

C.1.7 The total weight of the deposit was 121.2g, most of which (107.7g) was from sample 3, recovered from the middle segment of the feature. The maximum fragment size was a piece of skull vault, which measured 23×18mm (from sample 3). The majority of the deposit was from the 4-2mm fraction (60.6g), followed by the 10-4mm fraction (47.6g). Only 13.0g comprised fragments that were over 10mm in size.

C.1.8 The morphology of the fragments, in particular their lack of density, was consistent with juvenile bone (<18 years of age). No repeated elements were observed indicating a MNI of one. The sex of the juvenile was not attempted, because there are currently no nationally accepted standards for attempting this (Brickley and McKinley 2004). No pathology or bony abnormality were observed.

C.1.9 A total weight of 0.2g of calcined (buff white) non-human animal bone was present and has not been included in the total deposit weight discussed above. No grave goods were identified.

Deposit 214 – pit 215 (Period 3)

C.1.10 This deposit comprised fragments that could be identified to upper and lower limbs and skull. In addition, a small amount was identified from the axial skeleton (rib fragments). No teeth, small hand and foot bones or vertebrae were identified. Vault fragments were seen throughout the spits, while upper limb bone fragments were confined to the upper level spits and lower limb bone fragments, to the lower level spits. The bone was predominantly buff white or white with occasional hues of grey and brown and was longitudinally cracked and warped.

C.1.11 The total weight of the deposit was 275.5g and the largest fragments (a piece of femur shaft and a piece of fibula shaft) measured 27×18mm. Most of the deposit comprised fragments which were from the 10-4mm sieve fraction (143.4g). Fragments which were from the >10 mm sieve fraction had a total weight of 54.1g and those from the 4-2mm fraction weighed 78g.

C.1.12 Morphologically, the bone was consistent with that of an adult. The non repetition of elements suggested an MNI of one. No diagnostic features were present with which to estimate a more precise age or the sex. No pathology or bony abnormality was present.

C.1.13 A small amount of probable non-human animal bone was identified and weighed just 0.2g (this weight has not been included in the overall weight for the deposit). The bone was burnt and was a buff white colour. The deposit lacked any discernible artefacts.

Deposit 624 – pit 625 (Period 3)

C.1.14 The deposit, which weighed a total of 25g, comprised fragments of unidentified long bone and miscellaneous unidentified bone, primarily cortical bone. The majority of the deposit was from the 10-4mm fraction followed by the 4-2mm fraction.

C.1.15 The bone was entirely buff white in colour and showed superficial and deep transverse cracking and warping. The maximum fragment size was a fragment of unidentified long bone which measured 6×2mm.

C.1.16 The deposit represents at least one individual, but the lack of identifiable elements precluded the estimation of sex and age. No pathology or bony abnormality were observed.

Discussion and conclusions

C.1.17 The three deposits comprised at least one juvenile (08), one adult (214) and one individual of unknown age (624). All are of unknown sex. Deposits 08 and 214 are likely

to have been formal cremation burials, considering that they are not charcoal rich and they comprise bones from the main regions of the skeleton. This is unlike re-deposited pyre deposits and/or token deposits, which tend to be charcoal rich/contain limited bone. The lack of small elements and trabecular bone may reflect the lack of preservation of these small, more vulnerable bones, or it may reflect the tendency for the larger bones to be targeted for burial over small ones.

C.1.18 All of the deposits were from disturbed features, indicated by the shallow depths at which they were found and, in the case of deposit 08 association with a tree throw. It is therefore not surprising that bone weights are low. Certainly, in the case of the adult, the weight is much lower than the range (1000-2400g) estimated for modern adult cremations (McKinley 2000; 2006). The entire cremated remains were rarely, if ever, included in a burial in the past (McKinley 2000b, 67), but, that said, the weights of these deposits are still relatively low compared with the weights of other archaeological burials from this period.

C.1.19 None of the deposits were contained within an urn, but may have been buried within a bag or box which subsequently decomposed. This would certainly seem to be suggested by the apparent distribution of bone from 214 (pit **215**). Here, the tendency for upper limb bones to be concentrated in the upper spits of the deposit and the lower limbs, in the lower spits, may suggest that the bones had been collected and buried in an order starting with the lower limbs.

C.1.20 The buff white colour, warping and cracking observed on most of the bone from the deposits indicates oxidation at temperatures over 600°C (McKinley 2004,11). Some colour variation was observed in deposit 214 (pit **215**), particularly on the lower limb bones, perhaps because they had been on the edge of the pyre, furthest from the heat source. The variation included grey, which indicates temperatures of over 300°C (but not full oxidation) and brown, which is considered to be unburnt (McKinley 2004,11).

C.2 Osteological data

Deposit (08)	*Skeletal region*	*> 10 mm frags*	*Weight (g)*	*10-4 mm frags*	*Weight (g)*	*4-2 mm frags*	*Weight (g)*
<1>	Skull			Vault fragments	3.8	Vault fragments	0.1
	Axial			-		-	
	Upper limb					-	
	Lower limb					-	
	Unidentified long bone				0.1		0.3
	Unidentified			-	2.8		5.4
	Total weight				**6.7**		**5.8**
<2>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone						
	Unidentified						0.1
	Total weight						**0.1**
<3>	Skull	1 fragment petrous; vault fragments	10.2	Vault fragments; 1 fragment petrous	20.1	Vault fragments	0.3
	Axial			Rib fragments	1.3	Rib fragments	0.1
	Upper limb						
	Lower limb	1 fragment tibia; unidentified fragments	2.8	1 fragment femur; unidentified fragments	4.5		
	Unidentified long bone				6.4		2.3
	Unidentified			Unidentified trabecular fragments; unidentified misc. fragments	8.1		51.6
	Total weight		**13.0**		**40.4**		**54.3**
<4>	Skull			Vault fragments	0.2		
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone						
	Unidentified				0.3		0.4
	Total weight				**0.5**		**0.4**

Table 10: Osteological data for deposit 08

Deposit (214)	Skeletal region	> 10 mm frags	Weight (g)	10-4 mm frags	Weight (g)	4-2 mm frags	Weight (g)
<28>	Skull						
	Axial						
	Upper limb	? radius shaft	1.1				
	Lower limb						
	Unidentified long bone				1.2		
	Unidentified				1.1		2.4
	Total weight		**1.1**		**2.3**		**2.4**
<29>	Skull			Vault	2.9		
	Axial						
	Upper limb			? radius shaft	0.7		
	Lower limb						
	Unidentified long bone				2.3		0.4
	Unidentified				2.1		3.4
	Total weight				**8**		**3.8**
<30>	Skull	Vault	1.1	Vault	6.4		
	Axial						
	Upper limb	? clavicle shaft ? ulna shaft	1.7				
	Lower limb	Tibia shaft; unidentified shaft	5.6				
	Unidentified long bone				18.5		
	Unidentified				4.4		16.7
	Total weight		**8.4**		**29.3**		**16.7**
<31>	Skull	Vault	1.5	Vault	4.9		
	Axial			Rib	1.4		
	Upper limb						
	Lower limb	Femur shaft; ?tibia shaft	13.9				
	Unidentified long bone		3.9	Limb shaft; ? Joint surfaces	11.2		
	Unidentified				16.7		24.2
	Total weight		**19.3**		**34.2**		**24.2**
<32>	Skull			Vault	0.5		
	Axial						
	Upper limb			Radius shaft	1.1		
	Lower limb	? fibula shaft; ?tibia shaft	6.2				
	Unidentified long bone				6.6		
	Unidentified				8.4		8.5
	Total weight		**6.2**		**16.6**		**8.5**
<33>	Skull	Vault	6.7	Vault	1.9		
	Axial						
	Upper limb						
	Lower limb	? femur shaft; ?fibula shaft	4.8				

	Unidentified long bone		6.0		13.8		
	Unidentified				19.9		12.9
	Total weight		**17.5**		**35.6**		**12.9**
<34>	Skull			Vault	2.0		
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone				0.5		
	Unidentified				2.6		1.5
	Total weight				**5.1**		**1.5**
<35>	Skull			Vault; ? zygomatic	2.4		
	Axial						
	Upper limb						
	Lower limb	Fibula shaft	1.6		3.2		
	Unidentified long bone				2.0		
	Unidentified				4.7		8.0
	Total weight		**1.6**		**12.3**		**8.0**

Table 11: Osteological data for deposit 214

Deposit (624)	*Skeletal region*	*> 10 mm frags*	*Weight (g)*	*10-4 mm frags*	*Weight (g)*	*4-2 mm frags*	*Weight (g)*
<84>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone						
	Unidentified						1
	Total weight						**1**
<85>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone						
	Unidentified				3		2
	Total weight				**3**		**2**
<86>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone						
	Unidentified				3		2
	Total weight				**3**		**2**
<87>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone				0.1		
	Unidentified				1.9		2
	Total weight				**2**		**2**
<88>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone				0.2		
	Unidentified				3.8		2
	Total weight				**4**		**2**
<89>	Skull						
	Axial						
	Upper limb						
	Lower limb						
	Unidentified long bone				0.1		

	Unidentified				2.9		1
	Total weight				**3**		**1**

Table 12: Osteological data for deposit 624

C.3 Faunal remains

By Zoë Uí Choileáin

Introduction

C.3.1 A total weight of 80g of animal bone was recovered from the site at East Tilbury. In all 22 fragments were recovered, five of which were identifiable to species (Table 10). The preservation was on the whole poor, with only teeth surviving well and fragmentation was high. All of the material came from various slots across two Bronze Age ditches.

Methodology

C.3.2 All identifiable elements were recorded using a version of the criteria described in Davis (1992). Completeness was assessed in terms of percentage and zones present (Dobney & Reilly 1988). Identification of the assemblage was undertaken with the aid of Schmid (1972). No measurements were taken as no bones were complete. Taphonomic criteria including indications of butchery, pathology, gnawing activity and surface modifications as a result of weathering were also recorded where evident.

Results

C.3.3 The results are summarised in the table below:

Cut	*Context*	*Unid*	*Sheep/ goat*	*Cow*	*NMI*
547	546	1			1
611	623	1			1
631	626	3			1
661	673	6	1		1
697	695	6	1	3	2

Table 13: Summary of faunal remains

C.3.4 There were no repeated elements from any species in any context. A minimum number of one individual is therefore assumed for each species in any given context.

C.3.5 In general the bone was badly degraded and the only recognisable fragments were cow and sheep teeth. No pathology or butchery marks were noted. The bone from context 626 (ditch 631; Period 2.1) was partially burnt implying that this probably represents domestic waste from cooking.

Cut	*Context*	*Weight (g)*	*Fragment size*
597	613	2	4-10mm
611	621	2	4-10mm
	623	8	4-10mm

Table 14: Calcined bone

C.3.6 A small collection of calcined bone was recovered, primarily from ditch **611** (Period 2.1; Table 11). There were no identifiable fragments present. Bone colour was dark brown – black which suggests low temperatures and these also most likely represent domestic waste.

Discussion and conclusion

C.3.7 The assemblage present primarily represents domestic animals with only cow and sheep/goat being identifiable. In general this assemblage would seem to represent domestic waste. The size of the assemblage is, however, insufficient for further consideration on animal use and economy.

C.4 Environmental samples

By Rachel Fosberry

Introduction

C.4.1 One hundred and thirteen bulk samples were taken from features within the excavated areas at Bata Fields, East Tilbury, in order to assess the quality of preservation of plant remains and their potential to contribute to the research aims of the project.

C.4.2 Features sampled include cremations, pits, postholes and ditches and a barrow, all of which are thought to date to the prehistoric period. The majority of the samples were taken from deposits that date to three phases of activity evident in the Middle Bronze Age with a smaller number of samples taken from the preceding Late Neolithic/Early Bronze Age and also from two Late Bronze Age cremations.

C.4.3 Environmental samples taken during the evaluation phase of this site had shown that preserved plant remains are sparse although occasional charred grains and chaff elements were recovered from some of the Bronze Age deposits (Pocock & Simmonds 2005).

Methodology

C.4.4 The total volume (up to 20L) of each of the cremation samples and, initially, a single bucket (approximately 10L) of each of the bulk samples was processed by water flotation (using a modified Siraff three-tank system) for the recovery of charred plant remains, dating evidence and any other artefactual evidence that might be present. The floating component (flot) of the samples was collected in a 0.3mm nylon mesh and the residue was washed through 10mm, 5mm, 2mm and a 0.5mm sieves. Both flot and residues were allowed to air dry. A magnet was dragged through each residue fraction prior to sorting for artefacts. Any artefacts present were noted and reintegrated with the hand-excavated finds.

C.4.5 The dried flots were subsequently sorted using a binocular microscope at magnifications up to x 60 and a list of the recorded remains are presented in Tables 12 to 15. Identification of plant remains is with reference to the *Digital Seed Atlas of the Netherlands* and the authors' own reference collection. Nomenclature is according to Zohary and Hopf (2000) for cereals and Stace (1997) for other plants. Carbonized seeds and grains, by the process of burning and burial, become blackened and often distort and fragment leading to difficulty in identification. Plant remains have been identified to species where possible. The identification of cereals has been based on the characteristic morphology of the grains and chaff as described by Jacomet (2006).

C.4.6 Based on the results of an initial assessment of the flots, the remaining soil of selected samples was processed to ensure maximum retrieval of preserved remains.

Quantification

C.4.7 For the purpose of this report, items such as seeds, cereal grains and legumes have been scanned and recorded qualitatively according to the following categories:

= 1-5, ## = 6-10, ### = 11-25 specimens

C.4.8 Items that cannot be easily quantified such as charcoal has been scored for abundance:

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

Results

C.4.9 The results are discussed by period:

Period 1: Late Neolithic/ Early Bronze Age

C.4.10 The earliest features on site does not contain preserved plant remains other than occasional charcoal fragments that are evidence of the burning of wood (that could include lightning strikes). The four samples taken from cremation deposit 07 (pit **08**) are devoid of charcoal suggesting that bone was carefully collected from the funeral pyre prior to burial. Samples taken from ditch **22** (**23**, **25**, **30**) which formed the eastern annular ditch of monument **51** were similarly unproductive in terms of preserved remains although a moderate amount of charcoal was recovered from ditch slot **30**.

Sample No.	*Context No.*	*Cut No.*	*Area*	*Feature Type*	*Volume processed (L)*	*Flot Volume (ml)*	*Charcoal*
1	8	7	A	Cremation	9	1	0
2	8	7	A	Cremation	4	1	0
3	8	7	A	Cremation	5	1	0
4	8	7	A	Cremation	5	1	0
5	21	22	A	Ditch	8	5	+
6	24	23	A	Ditch	10	10	+
7	26	25	A	Ditch	9	1	+
8	29	30	A	Ditch	8	25	+++
36	226	227	B	Pit	9	1	++
37	228	231	B	Pit	8	1	++
113	698	699	B	Ditch	8	1	+

Table 15: Samples from Period 1 deposits

Period 2.1: Middle Bronze Age

C.4.11 Seven of the thirty-six samples taken from the earliest phase of activity in the Middle Bronze Age contain charred cereal grains. Preservation of the remains is generally poor to moderate and the grains are frequently present as single specimens only. Barley (*Hordeum vulgare*) and wheat (*Triticum* sp.) are both represented; some of the barley grains have the morphological appearance of the earliest variety known as 6-row barley and the wheat grains are likely to be either emmer (*T. dicoccum*) or spelt (*T. spelta*). A single glume base present in fill 663 of ditch **670** in Area B can be identified as emmer wheat.

C.4.12 Area B was slightly more productive than Area A; cereals were recovered from ditch **597** (**610**, **670**, **680**) in the south-eastern area of the site. Two probable beans (Fabaceae) were also recovered from this feature; whilst they are known to have been cultivated in the Bronze Age, pulses are rare and it is possible that these items may be intrusive. Weeds seeds are infrequent but the species present are members of the goosefoot (Chenopodiaceae) and buckweed (Polygonaceae) families that are likely to be contemporary with the Middle Bronze Age deposits.

C.4.13 Samples taken from each of the seven slots excavated through the ditch of barrow **240** (**242**, **244**, **246**, **248**, **264**, **266** and **268**) are devoid of plant remains other than sparse charcoal.

Sample no.	Context no.	Cut no.	Feature type	Area	Volume processed (L)	Flot volume (ml)	Cereals	Chaff	Legumes	Weed seeds	Charcoal	Flot comments
22	156	155	Gully	A	10	15	0	0	0	0	+	Sparse charcoal only
24	175	174	Pit	A	10	20	#	0	0	0	++	Single charred grain
25	100	181	Tree throw	A	8	20	0	0	0	0	++	Sparse charcoal only
26	194	195	Pit	A	6	10	0	0	0	0	+	Sparse charcoal only
27	210	211	Gully	A	8	15	#	0	0	0	+	Single charred grain
38	241	242	Barrow	A	10	15	0	0	0	0	+	Sparse charcoal only
39	243	244	Barrow	A	7	30	0	0	0	0	++	Sparse charcoal only
40	245	246	Barrow	A	9	15	0	0	0	0	0	No preservation
41	247	248	Barrow	A	8	30	0	0	0	0	++	Sparse charcoal only
42	263	264	Barrow	A	7	40	0	0	0	0	0	No preservation
43	265	266	Barrow	A	8	20	0	0	0	0	+	Sparse charcoal only
44	267	268	Barrow	A	8	30	0	0	0	0	++	Sparse charcoal only
46	275	278	Pit	A	8	50	#	0	0	0	++	Single spelt/emmer grain
47	281	282	Ring gully	A	8	20	0	0	0	0	0	No preservation
48	283	284	Ring gully	A	8	40	0	0	0	0	0	No preservation
50	325	326	Ring gully	A	8	30	0	0	0	0	0	No preservation
51	331	332	Ring gully	A	8	20	0	0	0	0	0	No preservation
52	335	336	Ring gully	A	8	10	0	0	0	0	0	No preservation
76	546	547	Ditch	B	7	30	0	0	0	0	+++	Charcoal rich
92	609	610	Ditch	B	8	1	0	0	0	0	0	No preservation
93	650	610	Ditch	B	8	1	#	0	0	#	+	1x each of barley, emmer/spelt, elderberry and black-bindweed seeds
98	621	611	Ditch	B	7	1	0	0	0	0	0	No preservation
99	622	611	Ditch	B	8	15	#	0	#	0	+	2 x spelt/emmer grain, 2 x beans
100	623	611	Ditch	B	9	1	0	0	0	0	+	Sparse charcoal only
96	613	618	Ditch	B	7	1	0	0	0	0	+	Sparse charcoal only
97	616	618	Ditch	B	8	1	0	0	0	0	0	No preservation
95	632	631	Ditch	B	6	1	0	0	0	0	+	Sparse charcoal only
101	640	637	Ditch	B	8	1	0	0	0	0	0	No preservation
102	642	637	Ditch	B	8	1	0	0	0	0	0	No preservation
103	639	637	Ditch	B	8	1	0	0	0	0	0	No preservation
106	671	661	Ditch	B	10	1	0	0	0	0	0	No preservation
104	663	670	Ditch	B	8	1	0	#	0	##	+	Emmer glume base, 7x chenopodium
105	664	670	Ditch	B	9	30	#	0	0	#	++	2x barley grains, 3x chenopodium, 2x black-bindweed
110	677	680	Ditch	B	7	30	#	0	0	0	++	3 x emmer/spelt grain
108	683	686	Ditch	B	7	1	0	0	0	0	+	Sparse charcoal only
112	694	697	Ditch	B	8	30	0	0	0	0	+++	Moderate charcoal

Table 16: Samples from Period 2.1 deposits

Period 2.2: Middle Bronze Age

C.4.14 A single sample taken from fill 540 of ditch **541** did not contain preserved plant remains.

Period 2.3: Middle Bronze Age

C.4.1 Samples taken from Period 2.3 were more productive than those taken from earlier phases but quantities of charred remains are still low. Charred plant remains were most common in a cluster of features in the centre of Area A that includes post holes **87**, **89**, **93** and **109** and pits **122** and **294**. Charred barley and emmer and spelt wheat grains and chaff elements are present in addition to seeds of sedges (Cyperaceae), docks (*Rumex* sp.), black-bindweed (*Fallopia convolvulus*) and vetches (*Vicia* sp.). These remains suggest that there was occupation in this area of the site with evidence of small-scale cereal processing and the possibility of the use of sedges for flooring/thatching or for fuel.

C.4.2 The plant remains recovered from Area B do not reveal any pattern of distribution other than they are from features spread across the western edge of the site. Charred grain was present in tree-throws **559** and **599** perhaps indicating that these features were convenient repositories for domestic waste. Fill 480 of pit **481** produced the largest assemblage of charred remains consisting of barley and wheat grains.

Sample no.	*Context no.*	*Cut no.*	*Area*	*Feature Type*	*Volume processed (L)*	*Flot Volume (ml)*	*Cereals*	*Chaff*	*Legumes*	*Weed Seeds*	*Charcoal*	*Flot comments*
9	86	87	A	Posthole	8	15	#	#	0	#	+++	Single charred cf. spelt grain and glume base, charred sedge seed
10	88	89	A	Posthole	8	45	#	0	0	0	+++	Single indet grain
11	92	93	A	Posthole	8	30	#	0	0	#	+	4x spelt/emmer grain, 2 x sedge seeds
12	94	95	A	Ditch	10	20	0	0	0	0	++	Sparse charcoal only
13	108	109	A	Posthole	7	10	#	0	0	0	++	Two spelt grains, four indet grains
14	112	113	A	Posthole	3	1	0	0	0	0	+	Sparse charcoal only
15	114	115	A	Posthole	5	1	0	0	0	0	+	Sparse charcoal only
16	116	117	A	Posthole	7	15	#	0	0	0	+	2 indet grains
17	118	120	A	Pit	10	40	0	0	0	0	+++	Charcoal rich
18	121	122	A	Pit	8	5	#	#	0	0	+	Barley, wheat, degraded spikelet fork
19	125	126	A	Pit	8	5	0	0	0	0	+	Sparse charcoal only
20	133	131	A	Pit	10	30	0	0	0	#	+	Single charred dock seed
21	133	131	A	Pit	9	30	0	0	0	0	+	Sparse charcoal only
23	161	162	A	Ditch	8	30	0	0	0	0	+	Sparse charcoal only
49	296	294	A	Pit	8	50	##	#	#	#	++	3 x spelt/emmer grain, 2 x emmer glume bases plus indet glume bases and sf. 6 indet grains, vetch fragment, black-bindweed, knotgrass and dock seeds
55	386	387	A	Posthole	4	1	0	0	0	0	+	Sparse charcoal only
53	402	403	B	Pit	7	30	0	0	0	0	+++	Moderate charcoal
54	404	405	B	Pit	4	10	#	0	0	0	+	Single indet wheat grain
56	426	427	B	Posthole	6	1	0	0	0	0	+	Sparse charcoal only
57	428	429	B	Pit	8	1	0	0	0	0	+	Sparse charcoal only

58	430	431	B	Pit	4	1	0	0	0	0	0	No preservation
59	432	433	B	Pit	2	1	0	0	0	0	0	No preservation
60	446	447	B	Post hole	1	1	0	0	0	0	+	Sparse charcoal only
61	448	449	B	Post hole	3	1	0	0	0	0	0	No preservation
62	450	451	B	Pit	9	2	0	0	0	0	+	Sparse charcoal only
63	452	453	B	Pit	8	1	0	0	0	0	+	Sparse charcoal only
64	454	455	B	Pit	5	1	0	0	0	0	+	Sparse charcoal only
65	456	459	B	Pit	8	1	0	0	0	0	+	Sparse charcoal only
66	460	461	B	Posthole	7	1	0	0	0	0	+	Sparse charcoal only
67	462	463	B	Posthole	5	1	0	0	0	0	+	Sparse charcoal only
68	464	465	B	Pit	7	1	0	0	0	0	+	Sparse charcoal only
69	480	481	B	Pit	8	1	## #	0	0	0	+	7 x barley, 9 x spelt/emmer, 6 x fragmented grain, 4x indet grain
70	482	483	B	Pit	8	1	0	0	0	0	+	Sparse charcoal only
71	484	485	B	Pit	6	2	0	0	0	0	0	No preservation
72	502	503	B	Pit	6	1	0	0	0	0	0	No preservation
77	558	559	B	Tree throw	8	1	#	0	0	0	+	Single barley grain
79	558	559	B	Tree throw	10	5	#	0	0	#	+	1x barley grain and 1x indet grain, 1x black-bindweed seed
80	562	563	B	Pit	8	1	0	0	0	0	0	No preservation
81	572	573	B	Pit	7	5	0	0	0	0	+	Sparse charcoal only
82	574	575	B	Pit	9	1	#	0	0	0	+	Fragment of indet grain
90	582	583	B	Pit	9	1	0	0	0	#	+	Single grass seed
83	588	625	B	Pit	7	1	0	0	0	0	+	Sparse charcoal only
94	636	631	B	Ditch	8	1	#	0	0	0	+	Single barley grain
91	635	636	B	Pit	8	200	0	0	0	0	++	Charcoal rich
107	635	636	B	Pit	9	200	0	0	0	0	+++	Charcoal rich
111	687	688	B	Pit	9	20	0	0	0	0	+++	Moderate charcoal
109	598	599	B	Pit/ Tree throw	9	1	#	0	0	0	+	4x emmer/spelt grain, 4x indet grain

Table 17: Samples from Period 2.3 deposits

Period 3: Late Bronze Age

C.4.3 Samples were taken from two cremation deposits. Two of the eight samples taken from cremation **215** in Area A contain moderate amounts of charcoal (Sample 29 and 31) and there are occasional charred wheat grains along with charred seeds of knotgrass (*Polygonum* sp.), sedges (*Carex* spp.) and fragments of tubers of onion-couch grass (*Arrhenatherum elatius).* Only one of the six samples from cremation **625** (Area B) contains preserved plant remains which is a single charred tuber in Sample 88. Charcoal volumes in this cremation are low.

Discussion

C.4.4 In general, as with most prehistoric sites, preserved plant remains are low in density and diversity. The charred plant remains consist mainly of cereal grains that were all poorly preserved, probably due to taphonomy. The poor preservation did not always allow detailed identifications and most of the grains have been identified simply as cereals although the morphology of the wheat grains and the presence of chaff items indicates that hulled wheats were being consumed. Emmer wheat is the variety most likely to have been cultivated in the Bronze Age (Grieg 1991) and seems to be the most

common wheat variety cultivated at the Bata Fields site. Barley would have been a staple crop to be used for both human and animal consumption and it is also likely to have been used in brewing, although no evidence of this was found. Evidence of spelt is rare but both grains and a glume base that have the distinctive morphology of this species have been identified.

Sample no.	Context no.	Cut no.	Area	Volume (L) processed	Flot Volume (ml)	Cereals	Weed Seeds	Charcoal	Flot comments
28	214	215	A	8	2	0	0	+	Sparse charcoal only
29	214	215	A	8	5	0	#	+++	Single charred sedge seed
30	214	215	A	9	10	0	#	+	Single charred arrhenatherum tuber
31	214	215	A	10	30	0	#	++++	Single charred sedge seed
32	214	215	A	4	1	0	#	+	Single fragment of charred arrhenatherum tuber
33	214	215	A	5	1	0	#	+	Single charred knotgrass seed
34	214	215	A	5	1	0	0	+	Sparse charcoal only
35	214	215	A	8	1	#	#	+	Single charred spelt/emmer grain, polygonaceae seed
84	624	625	B	5	5	0	0	++	Occasional charcoal
85	624	625	B	7	1	0	0	++	Occasional charcoal
86	624	625	B	9	10	0	0	++	Occasional charcoal
87	624	625	B	7	1	0	0	++	Occasional charcoal
88	624	625	B	6	1	0	#	+	Single Arrhenatherum tuber
89	624	625	B	8	1	0	0	+	Sparse charcoal only

Table 18: Samples from Period 3 cremation deposits

C.4.5 Cereals have been recovered from pit and posthole fills and also from cremation **214**. It is likely that the majority of these finds are the result of general scatters of burnt material being present on the site and being accidentally included in the backfills. The small quantities recovered are unlikely to be indicative of deliberate deposition although it is possible that grain was included as a funerary offering that has not survived the intense burning of the pyre.

C.4.6 The weed seeds present are of interest as there are several examples of members of the knotweed or buckwheat family. It is highly likely that these plants were recognised as having nutritional value and were a welcome addition to the prehistoric diet (Godwin 1975, 233).The leaves could have used in stews and the numerous seeds that these plants produce could have been roasted and ground into a flour. Onion-couch grass forms bulbous tubers (basal internodes) just bellow the soil surface and may also have been collected as a food source although the burnt tubers are commonly found in cremation deposits, particularly those dating to the Bronze Age, and most likely represent de-turfing around the pyre-site to create a fire break (Stevens, 1998) or may simply have become carbonised due to proximity to the pyre.

5.1.3 Flake hammerscale was recovered from several of the sample residues and indicates a low-level spread of blacksmithing waste over the site. It is most likely that these small flakes worked their way down through the soil into the Bronze Age deposits and are the result of later agricultural practice to spread midden material over fields to fertilise the

soil. With this in mind, it is possible that some of the charred grains and legumes are also intrusive.

5.1.4 The charred plant assemblage recovered from Bata Fields, East Tilbury has contributed to the regional understanding of the Middle Bronze Age with regard to mixed farming regimes with the continuation of emmer cultivation, evidence of the importance of barley as a crop and the probable introduction of spelt cultivation (which would eventually supersede emmer). Caruthers (2008, 34.2) reports on similar cereal assemblages from Middle Bronze Age deposits from excavations at both Stansted Airport and the A120 in which barley and emmer predominate. The inclusion of smaller quantities of spelt mixed with autumn-germinating weed seeds such as cleavers, black-bindweed and vetches are interpreted as the experimental introduction of spelt which is sown in late autumn/winter.

APPENDIX D. RADIOCARBON CERTIFICATES

Scottish Universities Environmental Research Centre

Director: Professor R M Ellam
Rankine Avenue, Scottish Enterprise Technology Park,
East Kilbride, Glasgow G75 0QF, Scotland, UK
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

20 February 2015

Laboratory Code	SUERC-58006 (GU36285)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	THBA14
Context Reference	8
Sample Reference	3
Material	Cremated bone : human
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	3358 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

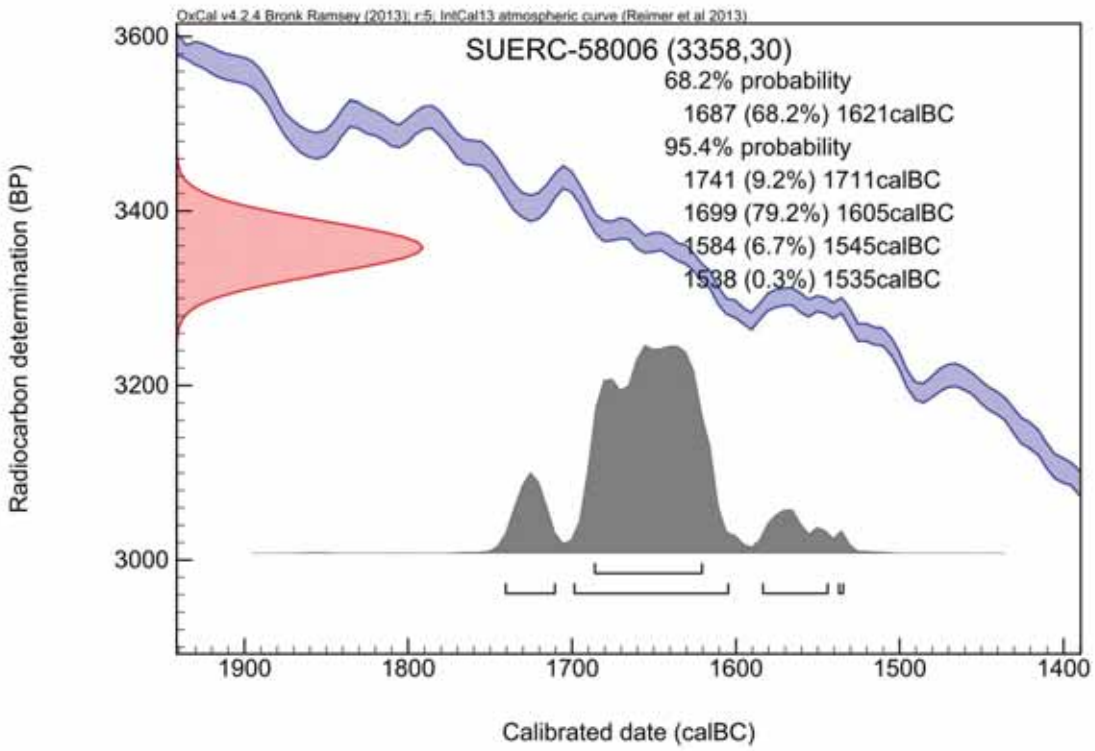
Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 20/02/2015

Checked and signed off by :- P. Naysmith Date :- 20/02/2015

University of Glasgow

The University of Edinburgh

Calibration Plot



Scottish Universities Environmental Research Centre
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RADIOCARBON DATING CERTIFICATE

20 February 2015

Laboratory Code	SUERC-58010 (GU36286)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	THBA14
Context Reference	214
Sample Reference	32
Material	Cremated bone : human
$\delta^{13}C$ relative to VPDB	-19.2 ‰
Radiocarbon Age BP	2909 ± 30

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

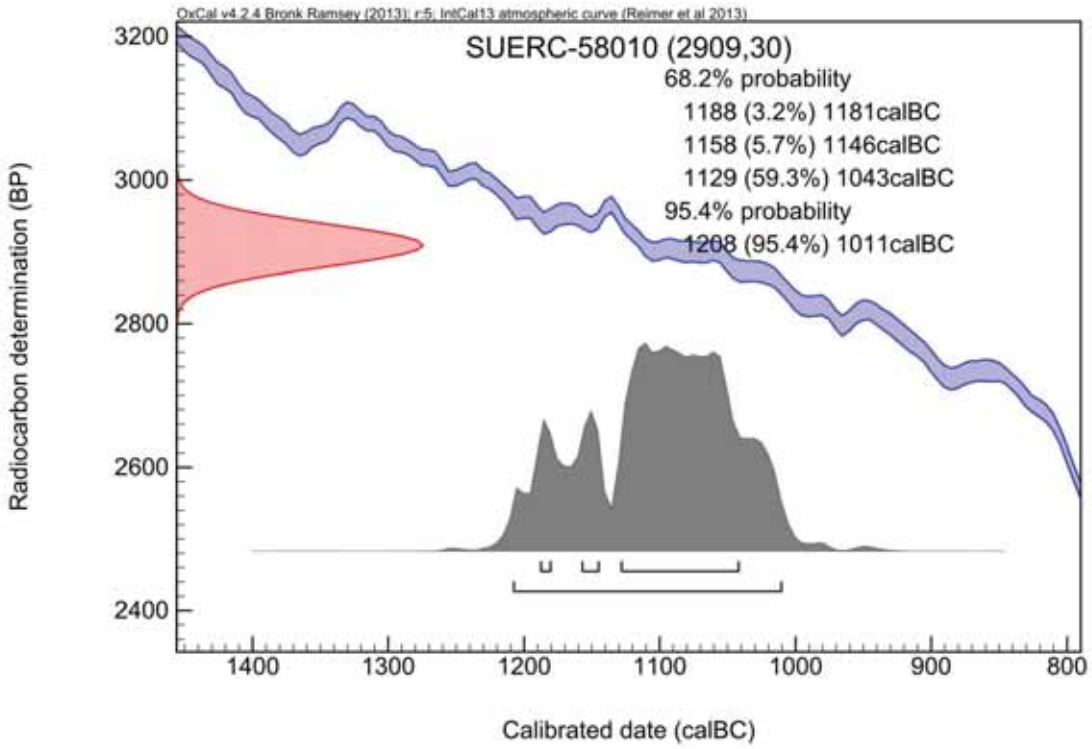
Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 20/02/2015

Checked and signed off by :- P. Naysmith Date :- 20/02/2015

University of Glasgow

The University of Edinburgh

Calibration Plot



Scottish Universities Environmental Research Centre
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Director: Professor R M Ellam Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

RADIOCARBON DATING CERTIFICATE

13 October 2015

Laboratory Code	SUERC-63286 (GU38864)
Submitter	Rachel Fosberry Oxford Archaeology East 15 Trafalgar Way Bar Hill Cambs. CB23 8SQ
Site Reference	THBA14
Context Reference	624
Sample Reference	86
Material	Calcined bone : Human long bone
$\delta^{13}C$ relative to VPDB	-25.0 ‰ assumed
Radiocarbon Age BP	2929 ± 29

N.B. The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

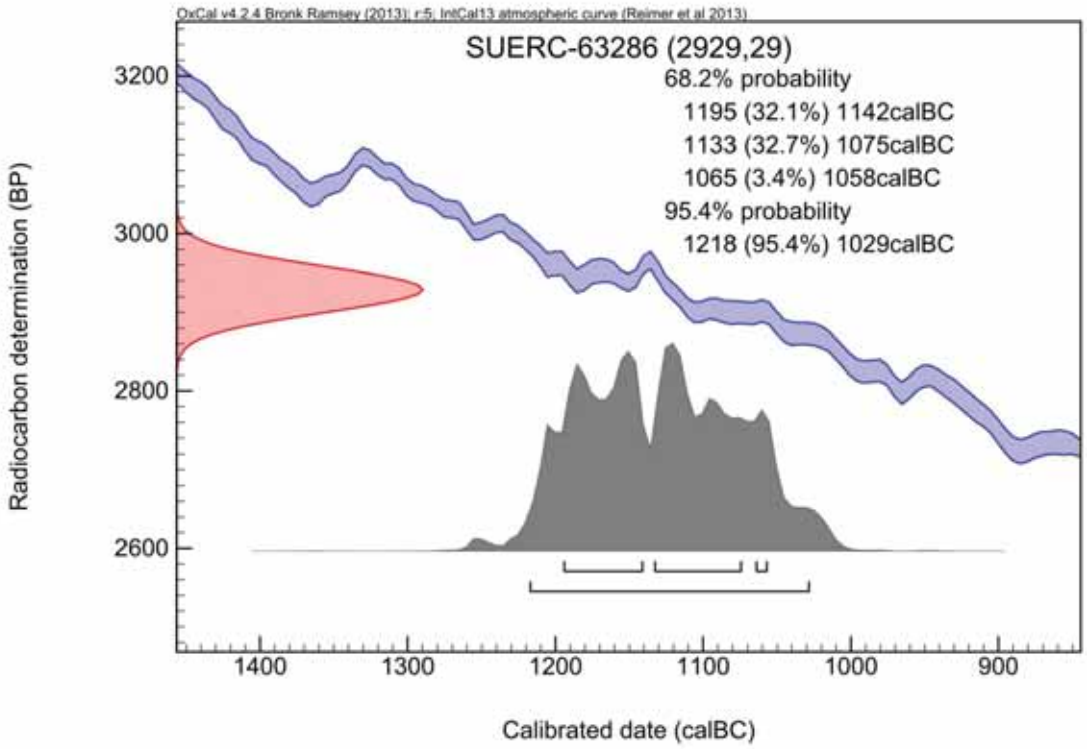
Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email Gordon.Cook@glasgow.ac.uk or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- E. Dunbar Date :- 13/10/2015

Checked and signed off by :- P. Naysmith Date :- 13/10/2015

University of Glasgow

Calibration Plot



Appendix E. Essex HER Summary Sheet

Site name/Address: Land off Bata Avenue, East Tilbury, Essex, RM18 8SD	
Parish: East Tilbury	**District:** Thurrock
NGR: 567711, 178553	**Site Code:** THBA14
Type of Work: Excavation	**Site Director/Group:** OA East
Date of Work: 7 Oct -14 Nov 2014 6 May-25 June 2015	**Size of Area Investigated:** 2.92ha
Curating Museum: Thurrock Museum	**Funding source:** CgMs Consulting
Further Seasons Anticipated?: No	**Related EHCR No.s:** ETL05
Final Report: Yes	**OASIS number:** oxfordar3-191718
Periods Represented: Late Neolithic/Early Bronze Age, Middle-Late Bronze Age, modern	

From October to November 2014, and from April to June 2015 Oxford Archaeology East carried out two archaeological excavations on land off Bata Avenue, East Tilbury, Essex (NGR 567711, 178553) ahead of the construction of a new housing development along with associated roadways, open green spaces and sub-surface drainage infrastructure.

The works (totalling 2.92ha) identified archaeological remains ranging in date from the Late Neolithic through to the Late Bronze Age along with modern agricultural activity. The finds assemblages was dominated by pottery dating from the Middle Bronze Age, the majority of which was found in a large north-south to west-east ditch on the western side of the site. Lesser amounts of Late Neolithic, Early and Late Bronze Age were also collected. High quality struck flint (which was particularly prevalent across the eastern side of the site), quantities of baked clay and baked clay objects were also present. Environmental remains were generally poor, with the small quantities recovered likely to be the result of accidental scatter rather than deliberate deposition. These environmental assemblages were almost exclusively collect from pits and postholes, with the majority of the ditches being sterile.

The earliest feature on (the eastern side) of the site was a Late Neolithic/Early Bronze Age double enclosure measuring approximately 11m by 15m. This consisted of an annular ring ditch with a contemporary sub-rectangular ditch extending westward from it, with a small entrance way to the south. A single cremation was recovered from the centre of the sub-rectangular enclosure but with no associated dating evidence the cremation was subject to radiocarbon dating.

Situated in the eastern centre of the site was a small annular ditch (with an internal measurement of just 3.5m). This 'mini barrow' is of a Middle Bronze Age date and contained a small assemblage of pottery and struck flint. Two further highly truncated possible barrows were identified to east and south-west. No datable material was recovered from these. No internal features were identified within the barrows.

A total of eight linear gullies on two separate alignments were seen to be running toward and terminating at the barrow. These sets of parallel gullies are potentially droveways of Middle Bronze Age date. Each set of gullies formed a walkway between 2m and 5m in width.

Small pits (some containing Middle Bronze Age pottery and worked flint) have been found scattered across the excavation area with some clustering, particularly in the north-west area of the site to the north of a very large ditch. The ditch, which measured up to 3.5m wide and 1.6m deep, contained a layer of dark soil rich in burnt flint and a mix of Late Deverel-Rimbury and early Post Deverel-Rimbury pottery. The pottery rich fill is reminiscent of a midden which may have been located on its northern edge.

Across the north-western side of site was a Middle Bronze Age coaxial field system, aligned north-east to south-west, with smaller internal divisions seen extending at right angles from it.

Two sides of a Middle Bronze Age enclosure was seen on the eastern side of the site, with a staggered entranceway on its south-west side. Within this enclosure were approximately 30 postholes forming a number of structures. Also seen within this enclosure was a large area of compacted ground containing Middle Bronze Age pottery, loomweight fragments and struck flint. This has been interpreted as a potential work area. Another area similar (yet smaller) to this was seen across the centre of the western side of site. Located at the southernmost end of site, close to one of these droveways was a single pit containing a large quantity of cremated bone and Late Bronze Age pottery. Another cremation found on the western side of the site, but did not contain any pottery. Two complete urns and the truncated base of a third were also identified on the north-western side of the site. However these were devoid of cremated remains. Across the entire site was a series of modern field boundaries, which was positioned on the same alignment as the Middle Bronze Age field system. These ditches correspond with field boundaries on the 1873 and 1938 Ordnance Survey Maps. Overall, the archaeological excavations at Bata Fields have identified features relating to a prehistoric settlement, funerary and monumental landscape with activity spanning the Early Neolithic through to the Late Bronze Age.
Previous Summaries/Reports: N/A

Author of Summary: Louise Bush	Date of Summary: March 2016

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Appendix G. OASIS Report Form

Project Details

OASIS Number	oxfordar3-191718		
Project Name	Land at Bata Fields, East Tilbury, Thurrock, Essex		
Project Dates (fieldwork)	Start 07-10-2014	Finish	25-06-2015
Previous Work (by OA East)	No	Future Work	No

Project Reference Codes

Site Code	THBA14	Planning App. No.	
HER No.		Related HER/OASIS No.	

Type of Project/Techniques Used

Prompt: Direction from Local Planning Authority - PPS 5

Please select all techniques used:

☐ Field Observation (periodic visits)	☒ Part Excavation	☐ Salvage Record
☐ Full Excavation (100%)	☐ Part Survey	☐ Systematic Field Walking
☐ Full Survey	☐ Recorded Observation	☐ Systematic Metal Detector Survey
☐ Geophysical Survey	☐ Remote Operated Vehicle Survey	☐ Test Pit Survey
☐ Open-Area Excavation	☐ Salvage Excavation	☒ Watching Brief

Monument Types/Significant Finds & Their Periods

List feature types using the NMR Monument Type Thesaurus and significant finds using the MDA Object type Thesaurus together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
Ditch	Bronze Age -2.5k to -700	Pottery	Bronze Age -2.5k to -700
Pit	Bronze Age -2.5k to -700	Flint	Neolithic -4k to -2k
Posthole	Bronze Age -2.5k to -700	Cremated bone	Bronze Age -2.5k to -700

Project Location

County	Essex	Site Address (including postcode if possible)	
District	Thurrock	Land off Bata Avenue East Tilbury Essex RM18 8SD	
Parish	East Tilbury		
HER	Essex		
Study Area	2.92ha	National Grid Reference	TQ 676 786

Project Originators

Organisation	OA EAST
Project Brief Originator	Suzanne Gailey
Project Design Originator	Louise Bush
Project Manager	Aileen Connor
Supervisor	Louise Bush

Project Archives

Physical Archive	Digital Archive	Paper Archive
Thurrock Museum	OA East	Thurrock Museum
THBA14	XEXBAT14	THBA14

Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	☒	☐	☐
Ceramics	☒	☐	☐
Environmental	☒	☐	☐
Glass	☐	☐	☐
Human Bones	☒	☐	☐
Industrial	☐	☐	☐
Leather	☐	☐	☐
Metal	☐	☐	☐
Stratigraphic		☐	☐
Survey		☒	☐
Textiles	☐	☐	☐
Wood	☐	☐	☐
Worked Bone	☐	☐	☐
Worked Stone/Lithic	☒	☐	☐
None	☐	☐	☒
Other	☐	☐	☐

Digital Media	Paper Media
☒ Database	☐ Aerial Photos
☒ GIS	☒ Context Sheet
☐ Geophysics	☐ Correspondence
☒ Images	☐ Diary
☒ Illustrations	☐ Drawing
☐ Moving Image	☐ Manuscript
☐ Spreadsheets	☐ Map
☒ Survey	☐ Matrices
☒ Text	☐ Microfilm
☐ Virtual Reality	☐ Misc.
	☐ Research/Notes
	☒ Photos
	☒ Plans
	☒ Report
	☒ Sections
	☐ Survey

Notes:

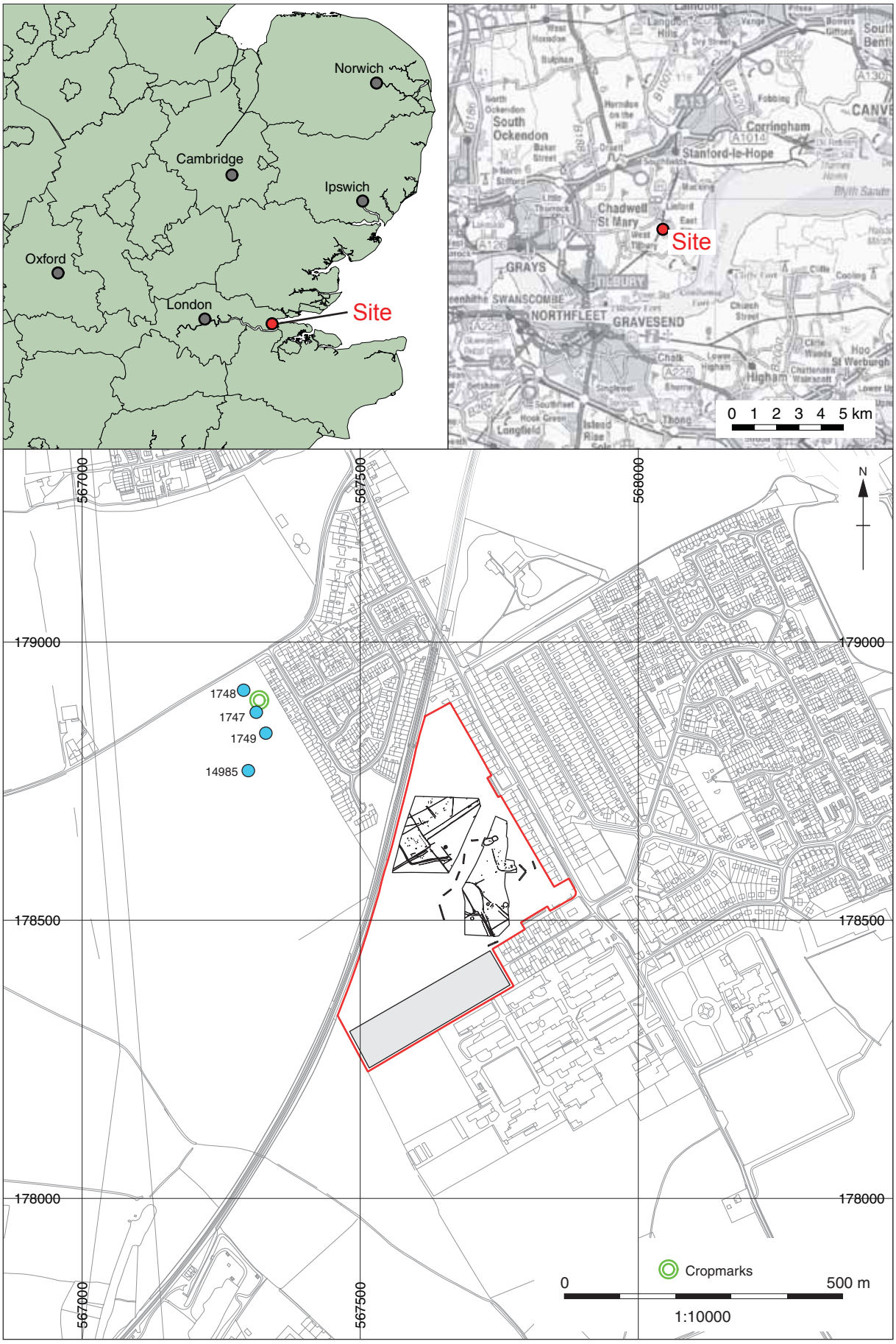

Figure 1: Site location with excavation areas (black) and watching brief area (grey)

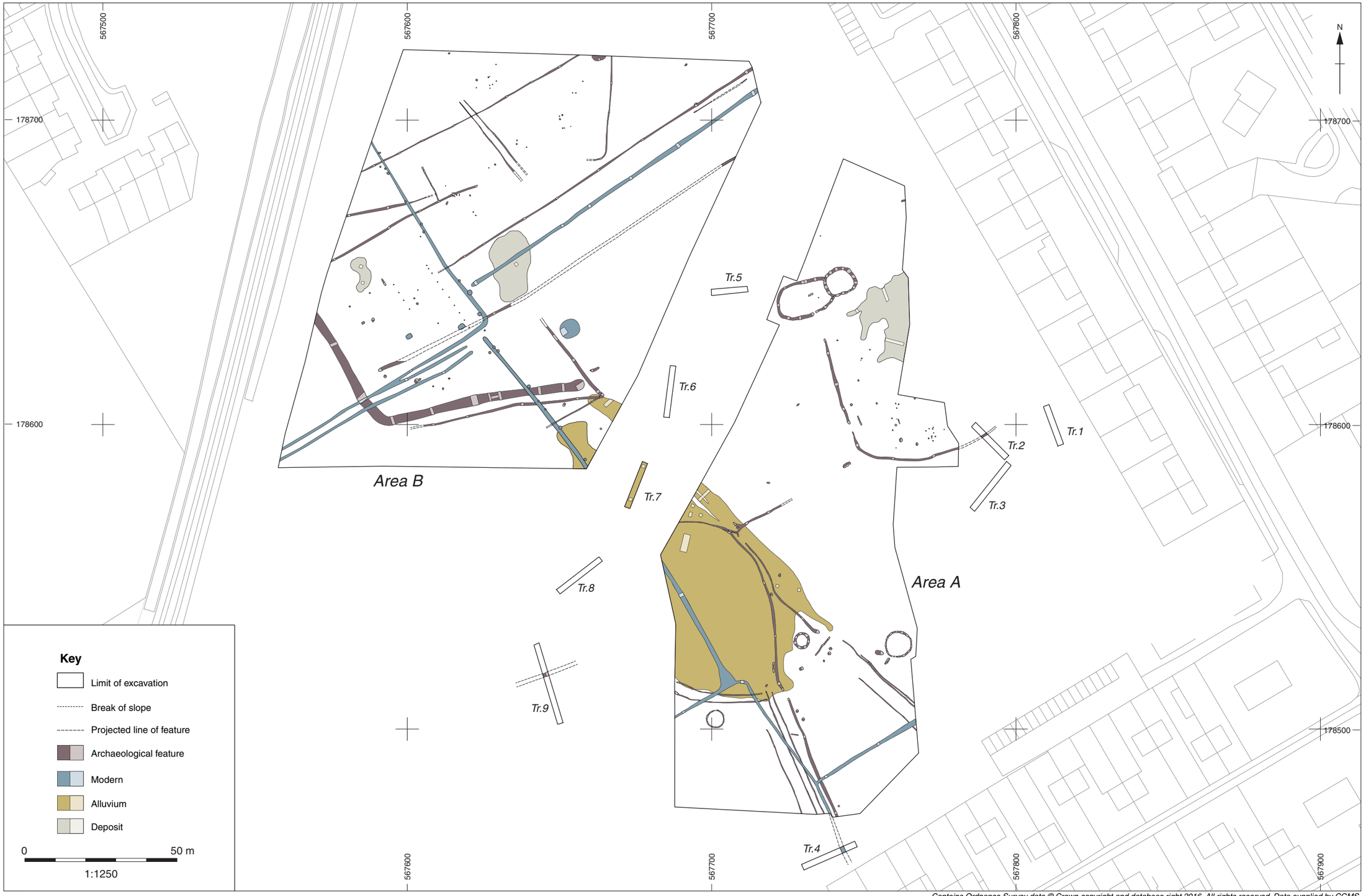

Figure 2: All features plan

Figure 3: Undated

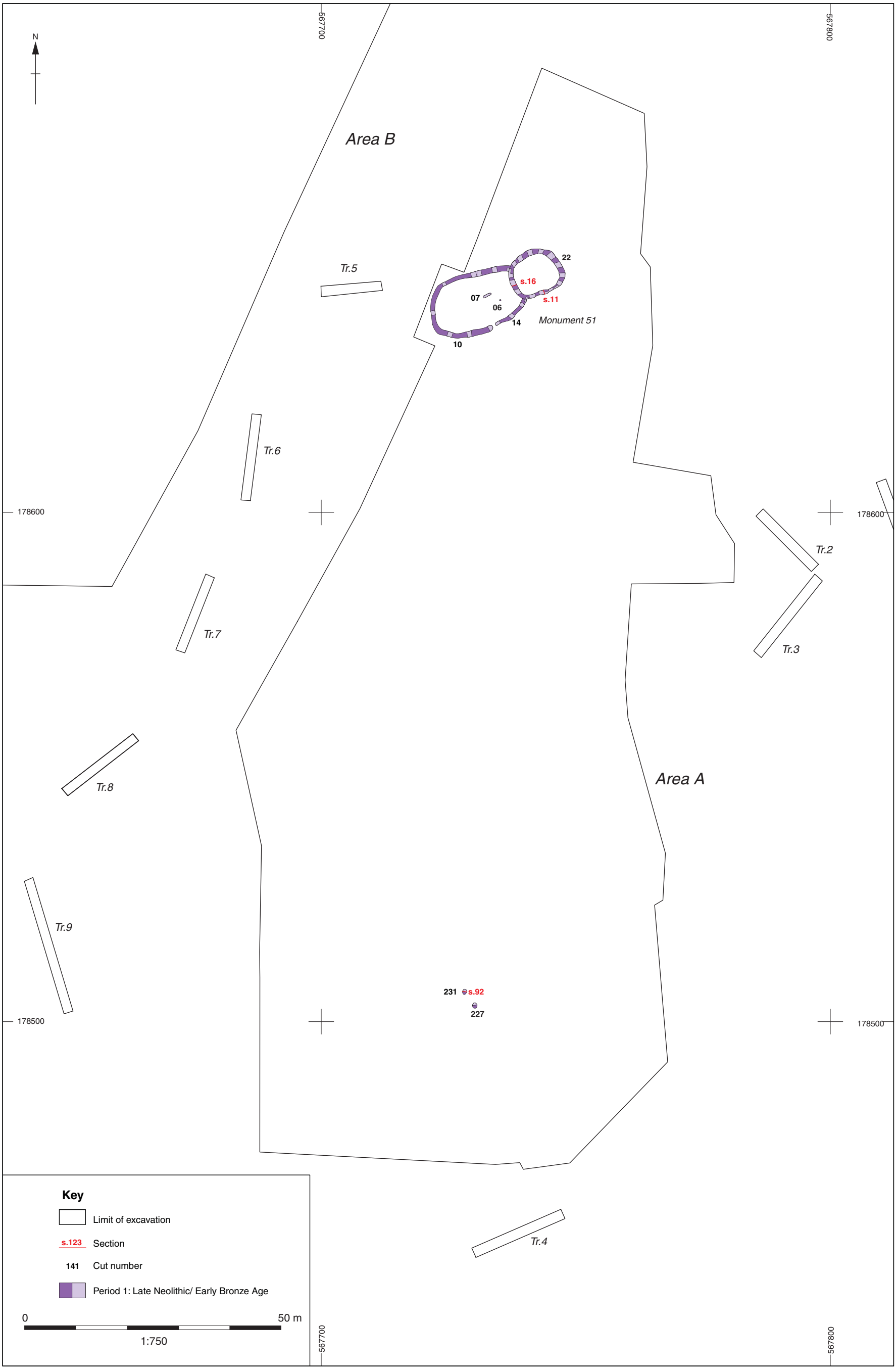

Figure 4: Period 1: Late Neolithic/ Early Bronze Age

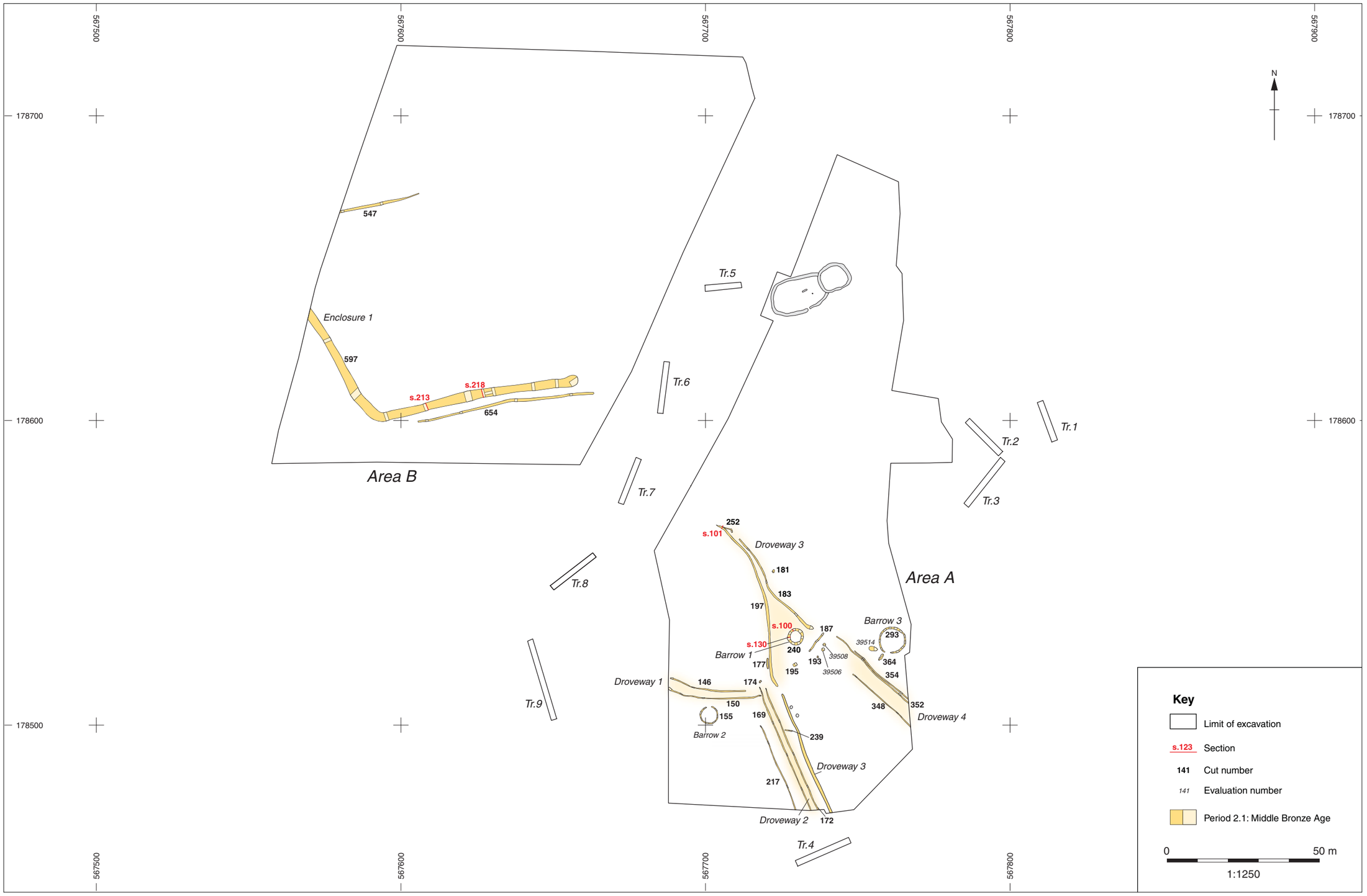

Figure 5: Period 2.1: Middle Bronze Age

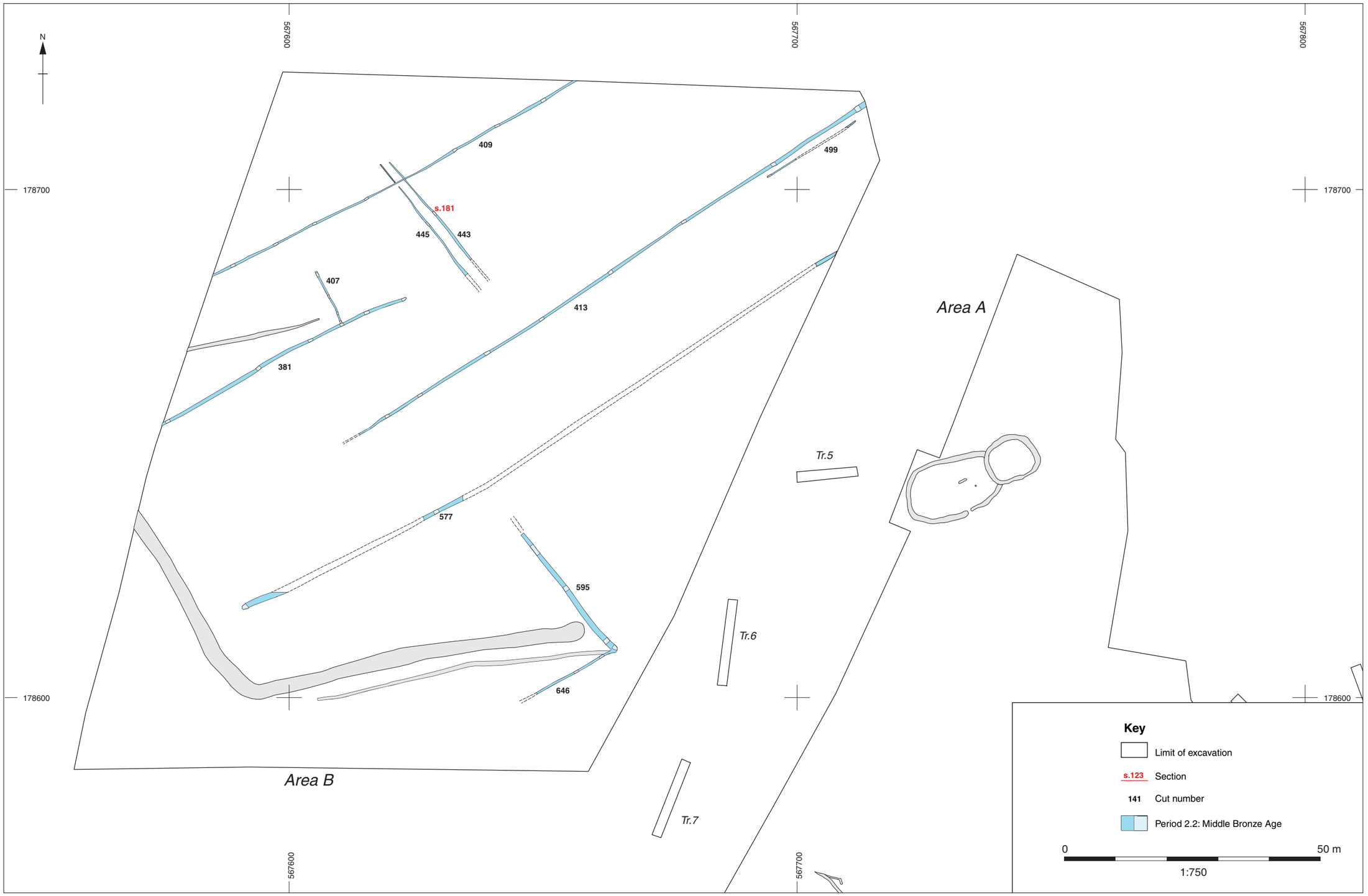

Figure 6: Period 2.2: Middle Bronze Age

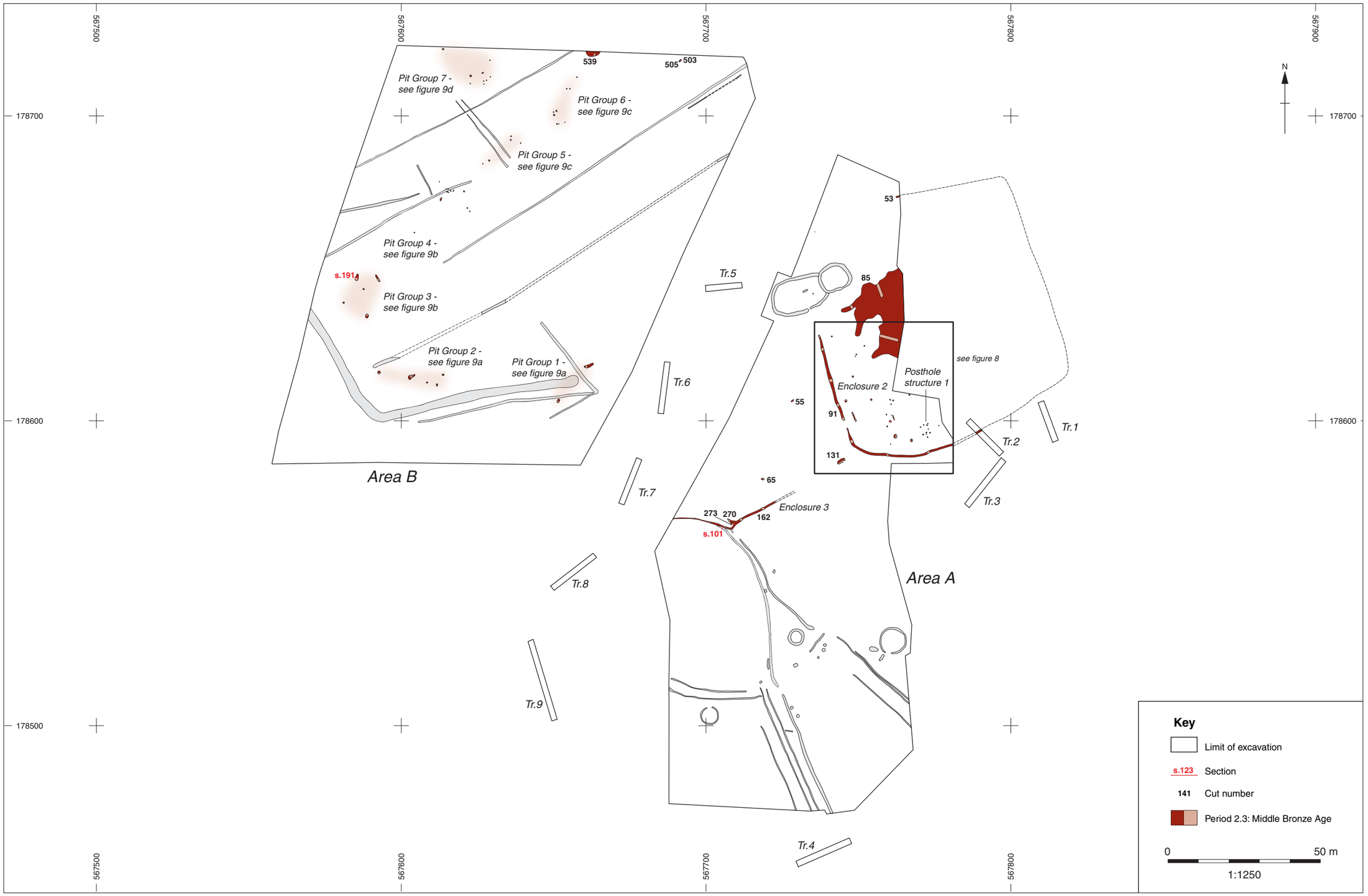

Figure 7: Period 2.3: Middle Bronze Age

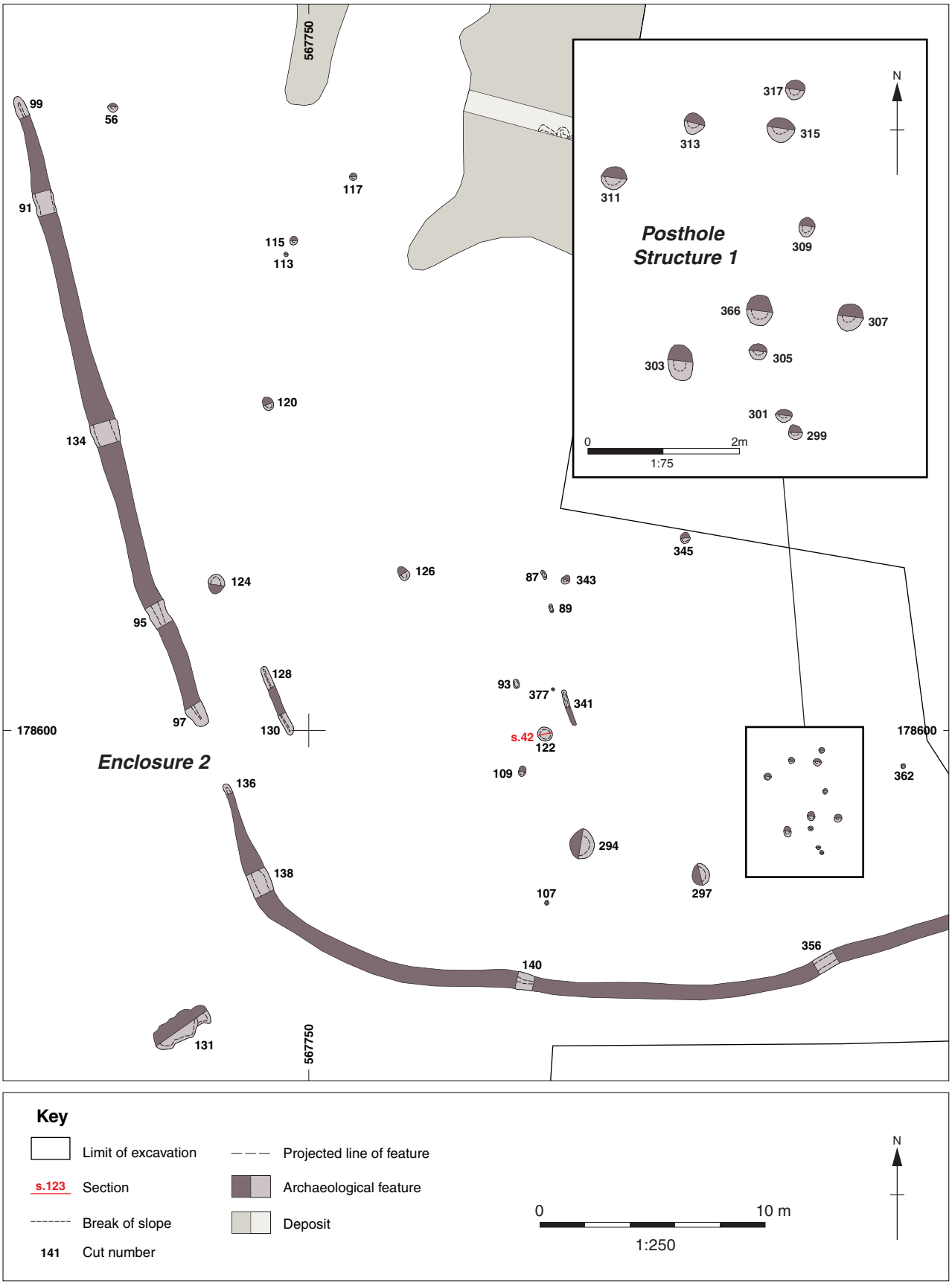

Figure 8: Features within Enclosure **2**

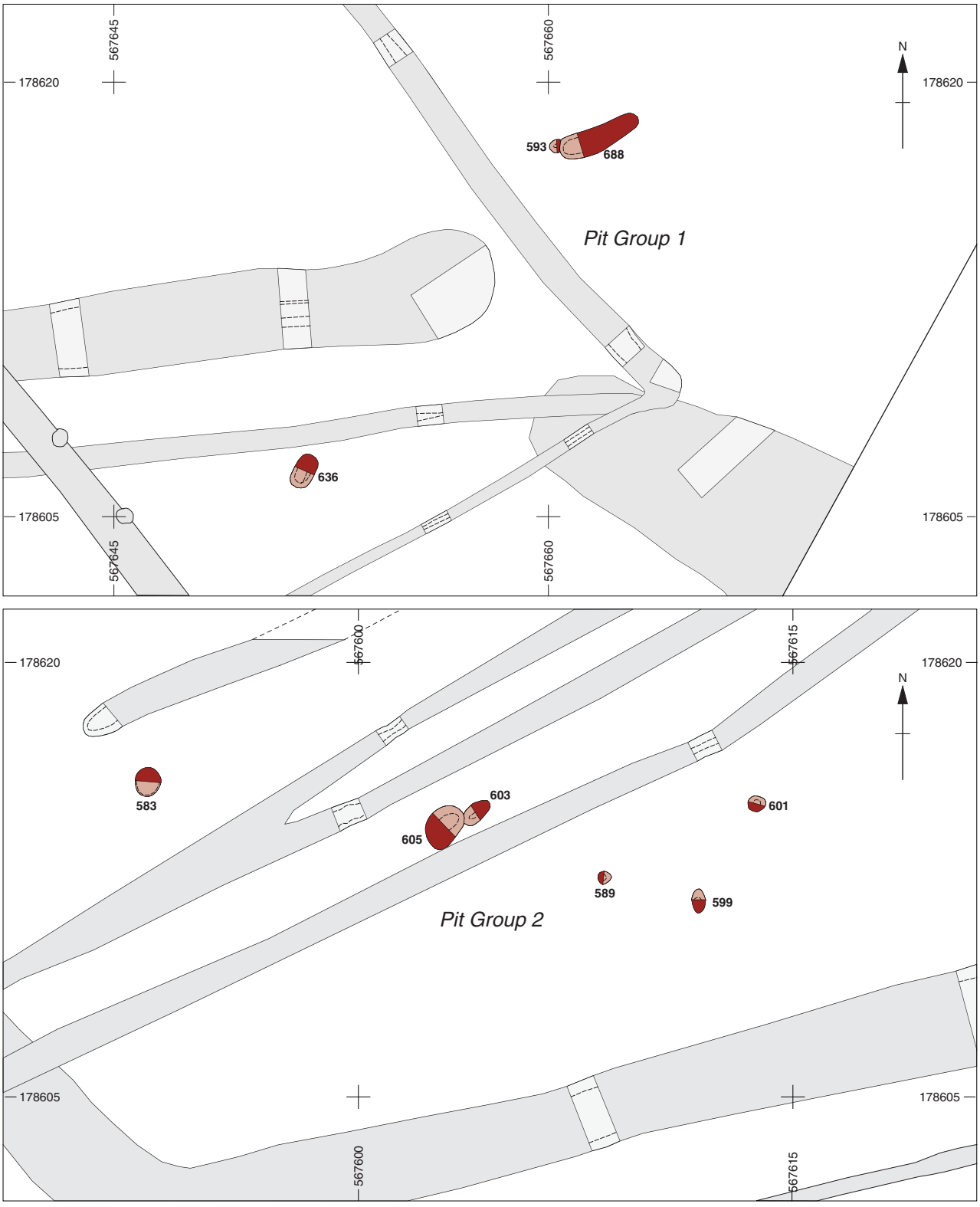

Figure 9a: Pit Groups 1 and 2

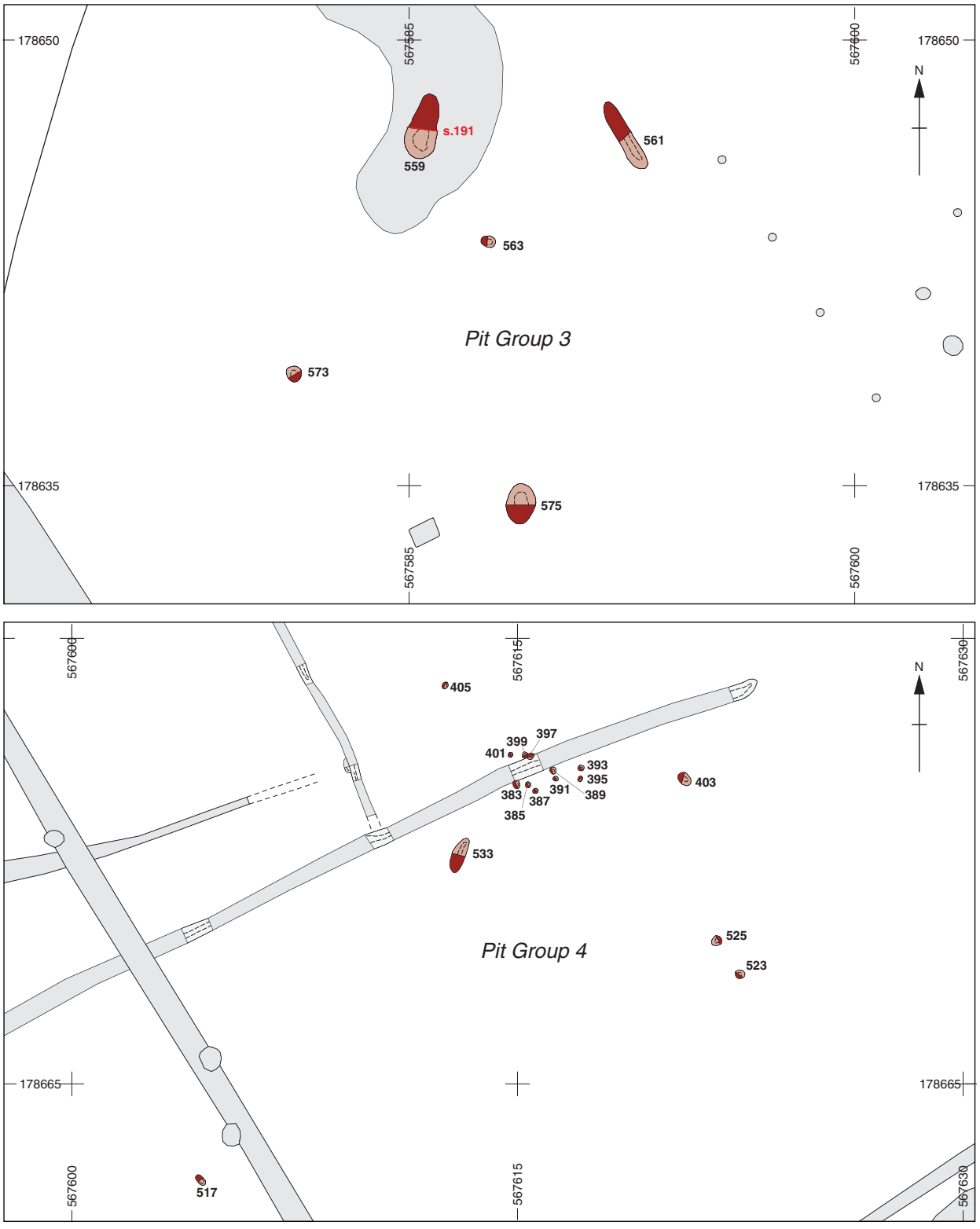

Figure 9b: Pit Groups 3 and 4

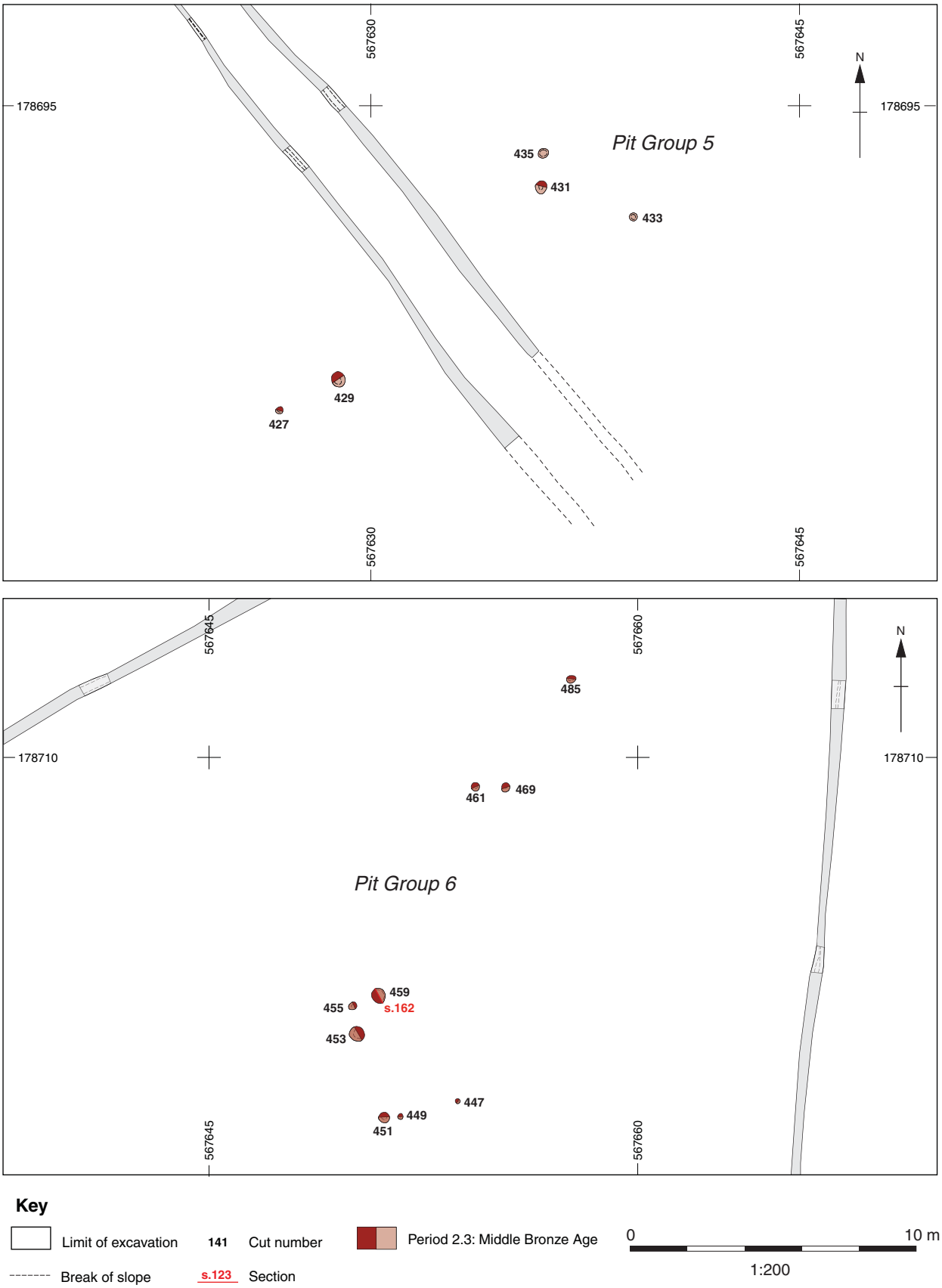

Figure 9c: Pit Groups 5 and 6

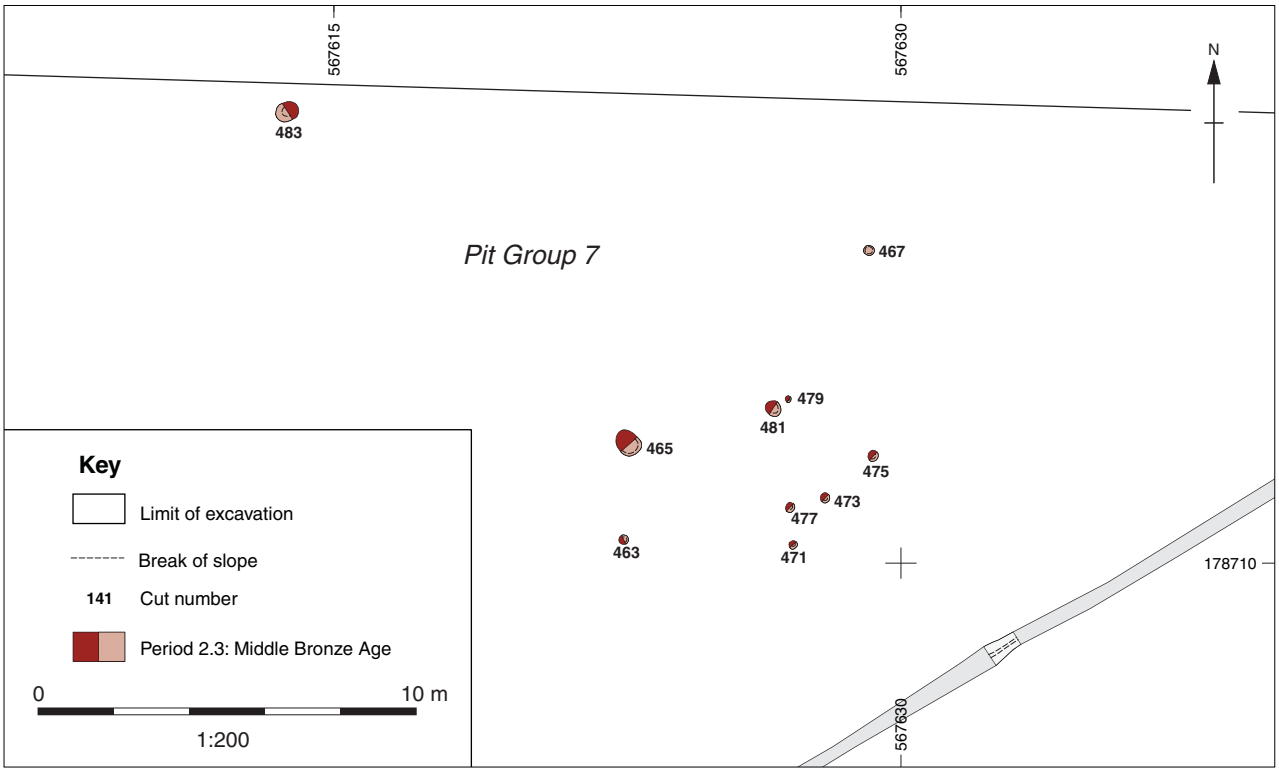

Figure 9d: Pit Group 7

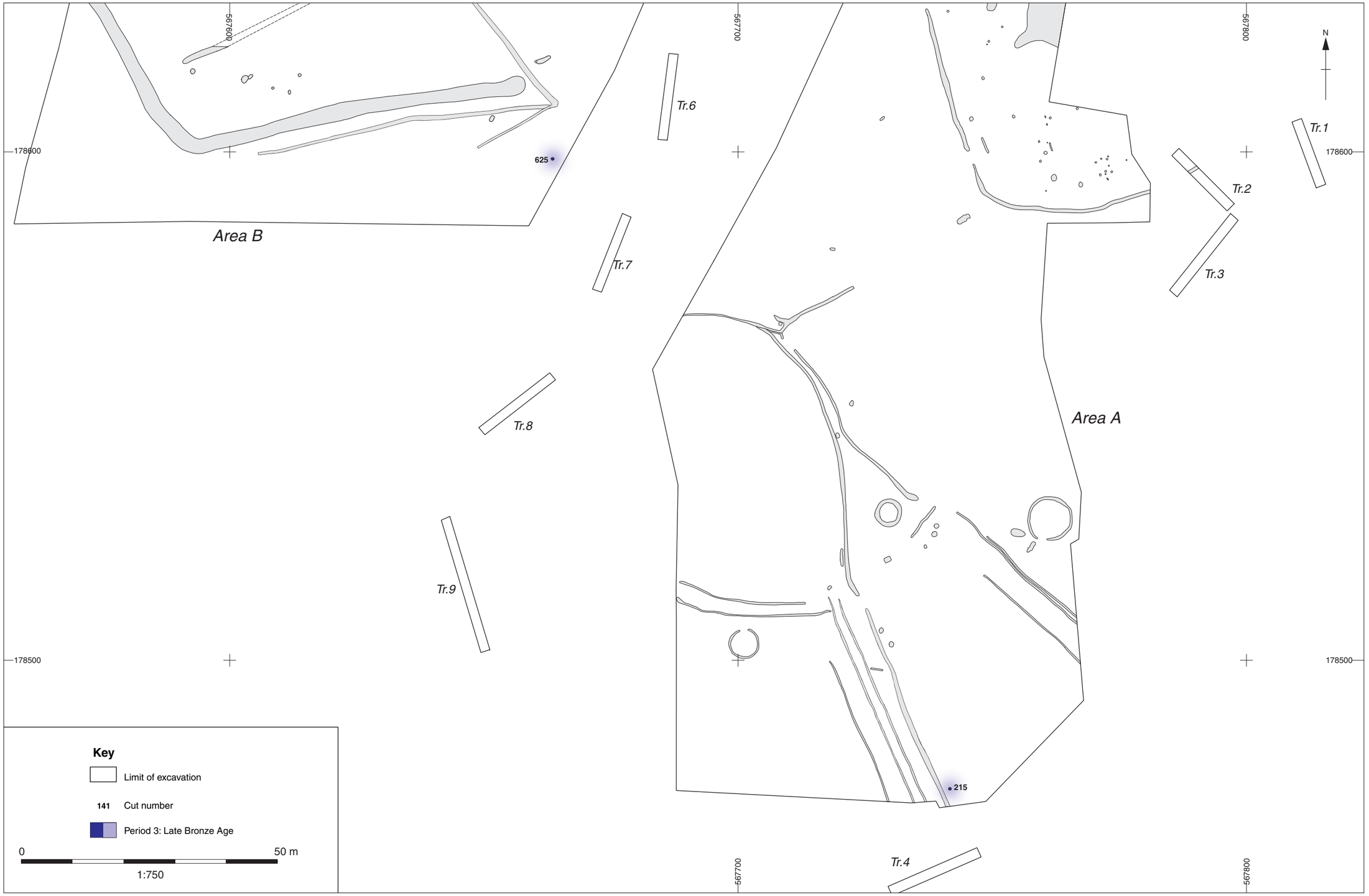

Figure 10: Period 3: Late Bronze Age

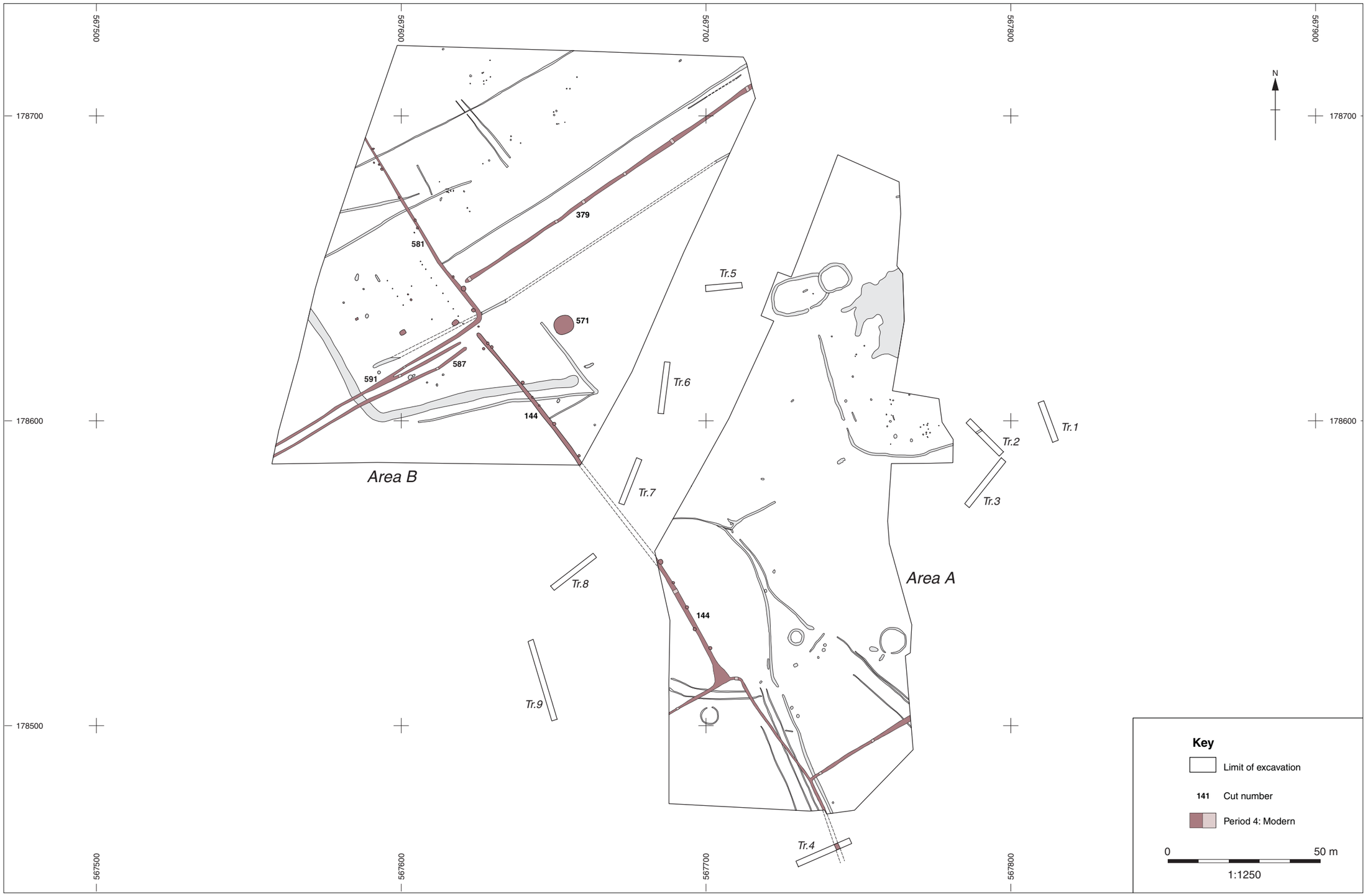

Figure 11: Period 4: Modern

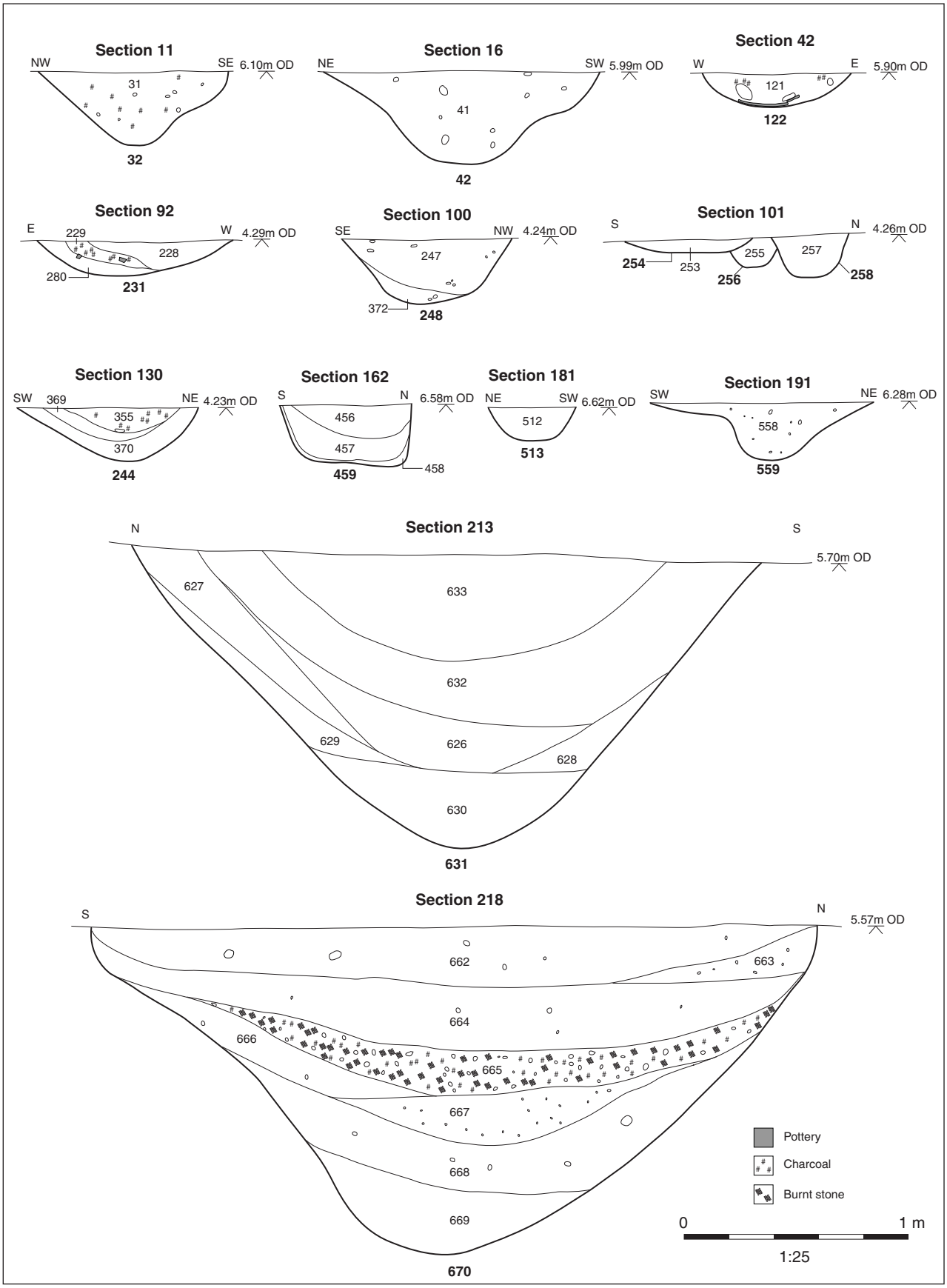

Figure 12: Selected sections

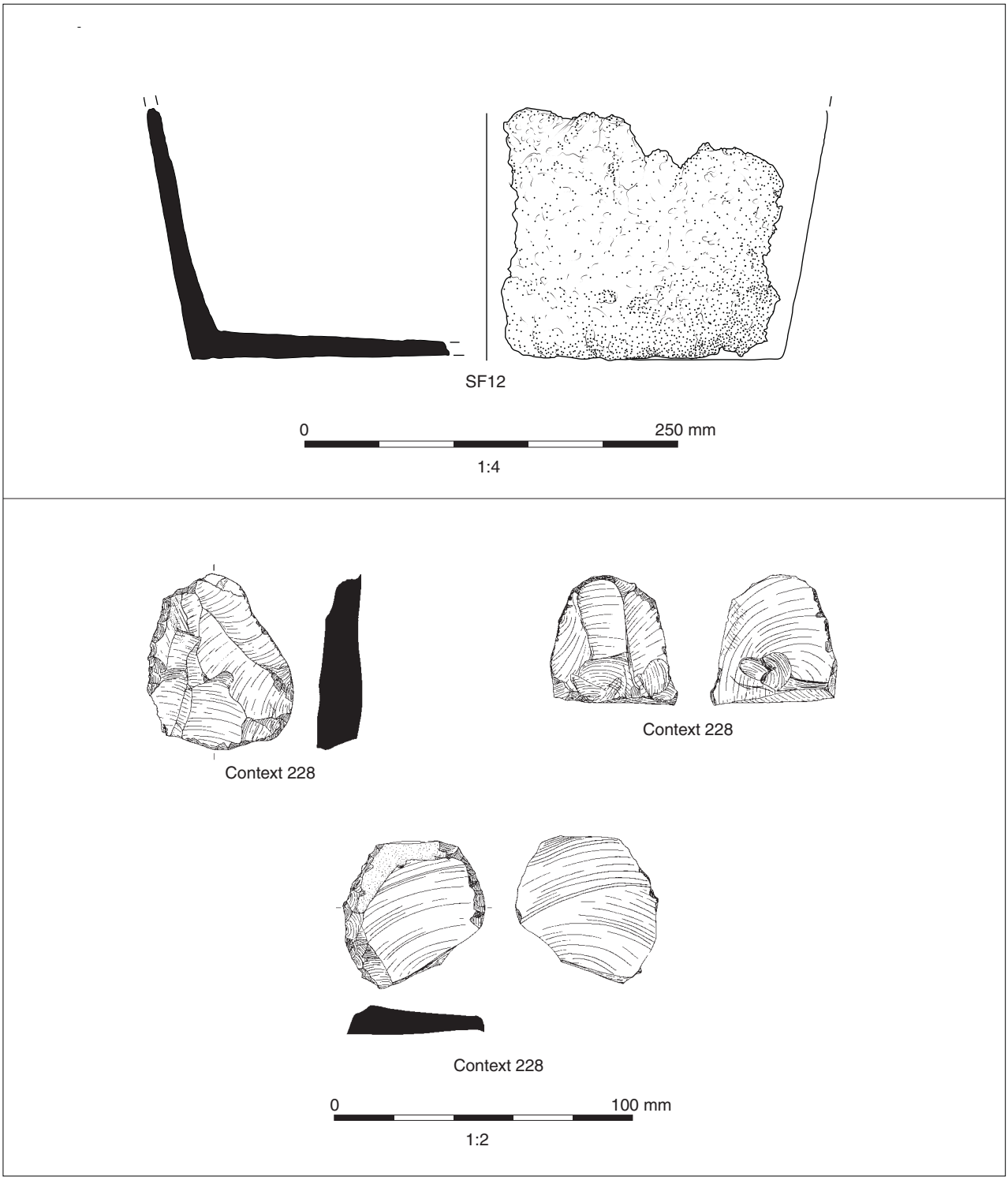

Figure 13: Pottery and flint illustrations

Plate 1: Monument **51**, looking west-southwest

Plate 2: General site shot of barrow **240** and alluvial deposit 142, looking south

Plate 3: Barrow **240**, looking west

Plate 4: Possible barrow **293** and pit **364**, looking north

Plate 5: Gully **169**, looking south

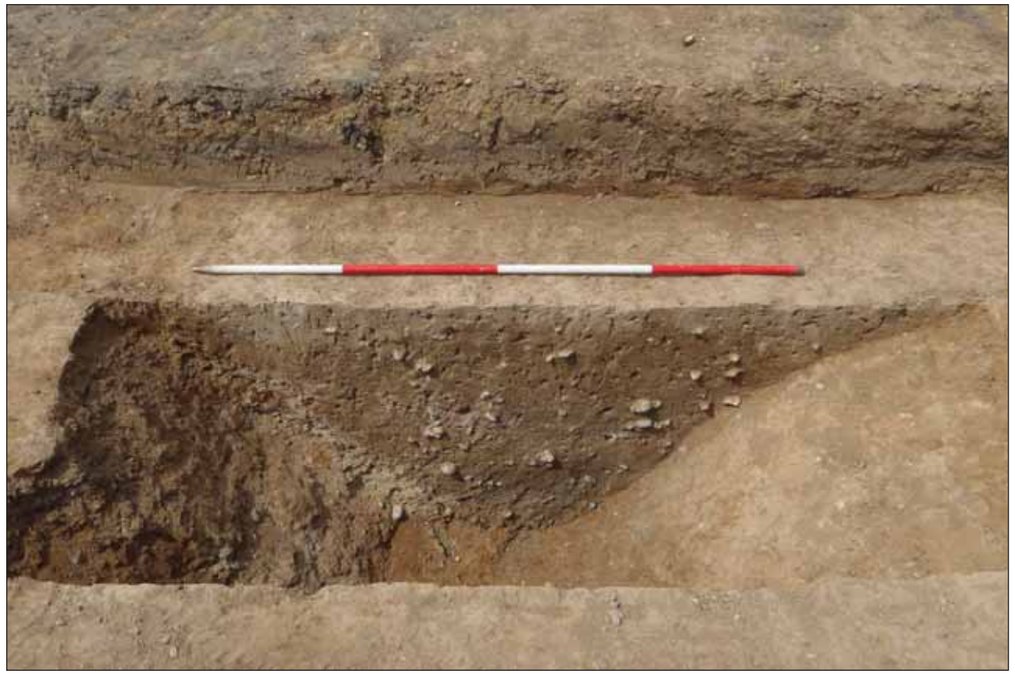

Plate 6: Slot **637** in ditch **597**, looking west

Plate 7: Slot **610** in ditch **597**, looking east

Plate 8: Slot 670 in ditch **567**, looking south-west

Plate 9: Midden deposit in ditch **597**, looking north-east

Plate 10: Pit **294**, looking west

Plate 11: *In situ* pottery in pit **122**

Plate 12: Vessel SF12 in pit **435**

Plate 13: Pit **459**, looking south-west

Plate 14: Vessel SF13 before excavation in pit **467**

Plate 15: Cremation **215** during excavation

Plate 16: Machine strip in watching brief area, looking west

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